TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-36683-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
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Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Approved for release.
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Project Management Assistant I
3/29/2018 5:00 PM

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03/29/2018

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Job Number: 320-36683-1

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I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Approved for release.
Thomas A Chupela
Project Management Assistant I
3/29/2018 5:00 PM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-36683-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 3/2/2018 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED HYDROCARBONS (PFC)
Samples SB008(5'-7') (320-36683-3), DUPE006 (320-36683-4), SB013(5'-7') (320-36683-5), SB002(5'-7') (320-36683-7), SB012(5'-7') (320-36683-8) and SB012(10'-12') (320-36683-10) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 03/12/2018, 03/21/2018 and 03/23/2018 and analyzed on 03/21/2018, 03/27/2018 and 03/29/2018.

The laboratory control sample (LCS) for 320-212510 recovered outside control limits for Perfluorodecane Sulfonic acid (PFDS). The associated samples were re-prepared outside holding time with LCS recoveries in control for PFDS. Both sets of data have been reported.

Various Isotope Dilution Analyte (IDA) recoveries associated with the following samples are below the method recommended limit: SB008(5'-7') (320-36683-3), DUPE006 (320-36683-4), SB013(5'-7') (320-36683-5), SB002(5'-7') (320-36683-7), SB012(10'-12') (320-36683-10[MS]), (LCS 320-212510/2-A) and (MB 320-212510/1-A). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 320-212510 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recoveries were within acceptance limits.

The matrix spike (MS) recovery for preparation batch 320-214600 and analytical batch 320-215311 was outside control limits for Perfluorodecanesulfonic acid (PFDS). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples were re-prepared outside of preparation holding time due to laboratory control sample failing for PFDS: SB012(5'-7') (320-36683-8), SB012(10'-12') (320-36683-10), SB012(10'-12') (320-36683-10[MS]) and SB012(10'-12') (320-36683-10[MSD]).

The following samples were re-prepared outside of preparation holding time due to low PFDS recovery in the laboratory control sample (LCS): SB008(5'-7') (320-36683-3), DUPE006 (320-36683-4), SB013(5'-7') (320-36683-5) and SB002(5'-7') (320-36683-7).

Perfluorobutanoic acid (PFBA) and Perfluorooctanesulfonic acid (PFOS) were detected in method blank MB 320-212510/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Perfluoroheptanesulfonic Acid (PFHpS), Perfluorononanoic acid (PFNA) and Perfluorooctanesulfonic acid (PFOS) failed the recovery criteria high for the MS of sample SB012(10'-12')MS (320-36683-10) in batch 320-214277.

For the MSD of sample SB012(10'-12')MSD (320-36683-10) in batch 320-214277, Several analytes failed the recovery criteria low. Perfluorotridecanoic Acid (PFTriA) failed the recovery criteria high. Also, 6:2FTS, Perfluoroheptanesulfonic Acid (PFHpS), Perfluorohexanesulfonic acid (PFHxS) and Perfluorooctanesulfonic acid (PFOS) exceeded the RPD limit.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Results for samples SB008(5'-7') (320-36683-3), DUPE006 (320-36683-4), SB013(5'-7') (320-36683-5), SB002(5'-7') (320-36683-7), SB012(5'-7') (320-36683-8), SB012(10'-12') (320-36683-10), SB012(10'-12') (320-36683-10[MS]) and SB012(10'-12') (320-36683-10[MSD]) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

No other difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All other quality control parameters were within the acceptance limits.

PERFLUORINATED ALKYL SUBSTANCES (PFAS)

Samples SB008-SPLP(2'-4') (320-36683-1), DUPE007 (320-36683-2), SB013-SPLP(8'-10') (320-36683-6) and SB012-SPLP(2'-4') (320-36683-9) were analyzed for Perfluorinated Alkyl Substances (PFAS) in accordance with PFC. The samples were leached on 03/05/2018, prepared on 03/14/2018 and analyzed on 03/17/2018 and 03/19/2018.

Due to the high concentration of Perfluorooctanesulfonic acid (PFOS) and Perfluorohexanesulfonic acid (PFHxS), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-211148 and 320-212987 and analytical batch 320-213581 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Results for samples SB008-SPLP(2'-4') (320-36683-1), DUPE007 (320-36683-2) and SB013-SPLP(8'-10') (320-36683-6) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-211148 and 320-212987 and analytical batch 320-213785 were outside control limits for several analytes. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Due to the high concentration of Perfluorooctanesulfonic acid (PFOS) and Perfluorohexanesulfonic acid (PFHxS), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-211148 and 320-212987 and analytical batch 320-213785 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Perfluorobutanoic acid (PFBA) and Perfluorohexanesulfonic acid (PFHxS) were detected in method blank LB 320-211148/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Perfluorooctanesulfonic acid (PFOS) and Perfluoroundecanoic acid (PFUnA) failed the recovery criteria low for the MS of sample SB012-SPLP(2'-4')MS (320-36683-9) in batch 320-213785. Several analytes failed the recovery criteria high.

Perfluorooctanesulfonic acid (PFOS) failed the recovery criteria low for the MSD of sample SB012-SPLP(2'-4')MSD (320-36683-9) in batch 320-213785. Several analytes failed the recovery criteria high.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Results for samples SB012-SPLP(2'-4') (320-36683-9), SB012-SPLP(2'-4') (320-36683-9[MS]) and SB012-SPLP(2'-4') (320-36683-9[MSD]) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

No other difficulties were encountered during the PFCs analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples SB008(5'-7') (320-36683-3), DUPE006 (320-36683-4), SB013(5'-7') (320-36683-5), SB002(5'-7') (320-36683-7), SB012(5'-7') (320-36683-8) and SB012(10'-12') (320-36683-10) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 03/05/2018.

The sample duplicate (DUP) precision for analytical batch 320-211192 was outside control limits; however, the RPD does not apply to samples with less than 10% moisture content. Sample non-homogeneity is suspected. Data is being reported.

Percent Moisture exceeded the RPD limit for the duplicate of sample SB012(10'-12')DU (320-36683-10).

Refer to the QC report for details.

No other difficulties were encountered during the %solids/moisture analysis.

All other quality control parameters were within the acceptance limits.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-36683-1	SB008-SPLP(2'-4')	Solid	03/01/18 09:15	03/02/18 09:15
320-36683-2	DUPE007	Solid	03/01/18 00:00	03/02/18 09:15
320-36683-3	SB008(5'-7')	Solid	03/01/18 09:30	03/02/18 09:15
320-36683-4	DUPE006	Solid	03/01/18 00:00	03/02/18 09:15
320-36683-5	SB013(5'-7')	Solid	03/01/18 10:10	03/02/18 09:15
320-36683-6	SB013-SPLP(8'-10')	Solid	03/01/18 10:20	03/02/18 09:15
320-36683-7	SB002(5'-7')	Solid	03/01/18 11:15	03/02/18 09:15
320-36683-8	SB012(5'-7')	Solid	03/01/18 12:00	03/02/18 09:15
320-36683-9	SB012-SPLP(2'-4')	Solid	03/01/18 11:45	03/02/18 09:15
320-36683-10	SB012(10'-12')	Solid	03/01/18 12:30	03/02/18 09:15

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Client Sample ID: SB008-SPLP(2'-4') — Lab Sample ID: 320-36683-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.60	B	1.97	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	10.9		1.97	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	10.2		1.97	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	7.57		1.97	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	9.50		1.97	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	12.5		1.97	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	39.8		1.97	0.30	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	3.33		1.97	1.08	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.97	0.20	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	32.7	B	1.97	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	2.61		1.97	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	39.4		1.97	0.34	ng/L	1		537 (modified)	SPLP East
8:2FTS	3.99	J	19.7	1.97	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	1530	D	197	53.1	ng/L	100		537 (modified)	SPLP East

Client Sample ID: DUPE007 — Lab Sample ID: 320-36683-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.32	B	1.98	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	10.3		1.98	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	9.98		1.98	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	5.79		1.98	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	7.78		1.98	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	10.1		1.98	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	27.3		1.98	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	2.13		1.98	1.09	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	0.84	J	1.98	0.20	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	32.3	B	1.98	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	2.16		1.98	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	40.9		1.98	0.35	ng/L	1		537 (modified)	SPLP East
8:2FTS	2.76	J	19.8	1.98	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	1740	D	198	53.4	ng/L	100		537 (modified)	SPLP East

Client Sample ID: SB008(5'-7') — Lab Sample ID: 320-36683-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.000039	J B	0.00020	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.000060	J	0.00020	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000070	J	0.00020	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00026		0.00020	0.000088	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00017	J	0.00020	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00078		0.00020	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.000047	J	0.00020	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.00017	J	0.0020	0.00015	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.025	B D	0.0026	0.0010	mg/Kg	5	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Client Sample ID: DUPE006 — Lab Sample ID: 320-36683-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.000034	J B	0.00021	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.000057	J	0.00021	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000073	J	0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00022		0.00021	0.000089	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00015	J	0.00021	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.000056	J	0.00021	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00068		0.00021	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.000044	J	0.00021	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.00016	J	0.0021	0.00016	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.021	B D	0.0026	0.0010	mg/Kg	5	☼	537 (modified)	Total/NA

Client Sample ID: SB013(5'-7') — Lab Sample ID: 320-36683-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00018	J B	0.00023	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00027		0.00023	0.000090	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00041		0.00023	0.000049	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00011	J	0.00023	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00026		0.00023	0.00010	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00032		0.00023	0.000042	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0019		0.00023	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.000096	J	0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.00018	J	0.0023	0.00018	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.15	B D	0.012	0.0047	mg/Kg	20	☼	537 (modified)	Total/NA

Client Sample ID: SB013-SPLP(8'-10') — Lab Sample ID: 320-36683-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.34	B	1.88	0.33	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	1.70	J	1.88	0.46	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	3.20		1.88	0.55	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.81	J	1.88	0.24	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	4.51		1.88	0.80	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	1.91		1.88	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	42.1	B	1.88	0.16	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	1.40	J	1.88	0.18	ng/L	1		537 (modified)	SPLP East
8:2FTS	2.46	J	18.8	1.88	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	1170	D	188	50.8	ng/L	100		537 (modified)	SPLP East

Client Sample ID: SB002(5'-7') — Lab Sample ID: 320-36683-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00017	J B	0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00023		0.00021	0.000082	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00025		0.00021	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00030		0.00021	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB002(5'-7') (Continued) — Lab Sample ID: 320-36683-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.0020		0.00021	0.000092	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.0023		0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.000066	J	0.00021	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00024		0.00021	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.00023		0.00021	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.00041	J	0.0021	0.00027	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.026	B D	0.0053	0.0021	mg/Kg	10	☼	537 (modified)	Total/NA
6:2FTS - DL	0.074	D	0.021	0.0016	mg/Kg	10	☼	537 (modified)	Total/NA

Client Sample ID: SB012(5'-7') — Lab Sample ID: 320-36683-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00028	B	0.00021	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00038		0.00021	0.000081	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.0011		0.00021	0.000044	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00025		0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0017		0.00021	0.000090	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.021		0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.0021		0.00021	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.000092	J	0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.00031		0.00021	0.000026	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.011		0.00021	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.0016		0.00021	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.00090	J	0.0021	0.00016	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.81	B D	0.052	0.021	mg/Kg	100	☼	537 (modified)	Total/NA

Client Sample ID: SB012-SPLP(2'-4') — Lab Sample ID: 320-36683-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	30.7	B F1	1.96	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	32.0		1.96	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	105	F1	1.96	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	21.9		1.96	0.24	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	99.6		1.96	0.83	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	107	F1	1.96	0.26	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	219		1.96	0.30	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	196		1.96	1.08	ng/L	1		537 (modified)	SPLP East
Perfluorododecanoic acid (PFDoA)	3.56		1.96	0.54	ng/L	1		537 (modified)	SPLP East
Perfluorotridecanoic Acid (PFTriA)	17.2		1.96	1.27	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	41.1		1.96	0.20	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	27.4	F1	1.96	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorodecanesulfonic acid (PFDS)	4.67	F1	1.96	0.31	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	64.3		1.96	0.34	ng/L	1		537 (modified)	SPLP East
6:2FTS	12.9	J	19.6	1.96	ng/L	1		537 (modified)	SPLP East
8:2FTS	23.3		19.6	1.96	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS) - DL	704	D B	196	16.6	ng/L	100		537 (modified)	SPLP East

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB012-SPLP(2'-4') (Continued)

Lab Sample ID: 320-36683-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS) - DL	23100	D	196	52.9	ng/L	100		537 (modified)	SPLP East

Client Sample ID: SB012(10'-12')

Lab Sample ID: 320-36683-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.000066	J B	0.00020	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00020	0.000079	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00054		0.00020	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00020	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0013		0.00020	0.000088	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.015		0.00020	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00020	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.000083	J	0.00020	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.00019	J	0.00020	0.000026	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0074	F1 F2	0.00020	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.0048	F1 F2	0.00020	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00015	J	0.00020	0.000084	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.0053	F1 F2	0.0020	0.00015	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.00071	J	0.0020	0.00026	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	D B F2	0.026	0.010	mg/Kg	50	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB008-SPLP(2'-4')

Date Collected: 03/01/18 09:15
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-1
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.60**	**B**	1.97	0.34	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluoropentanoic acid (PFPeA)	**10.9**		1.97	0.48	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorohexanoic acid (PFHxA)	**10.2**		1.97	0.57	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluoroheptanoic acid (PFHpA)	**7.57**		1.97	0.25	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorooctanoic acid (PFOA)	**9.50**		1.97	0.84	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorononanoic acid (PFNA)	**12.5**		1.97	0.27	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorodecanoic acid (PFDA)	**39.8**		1.97	0.30	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluoroundecanoic acid (PFUnA)	**3.33**		1.97	1.08	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorobutanesulfonic acid (PFBS)	**0.70**	**J**	1.97	0.20	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorohexanesulfonic acid (PFHxS)	**32.7**	**B**	1.97	0.17	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.61**		1.97	0.19	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.97	0.31	ng/L		03/14/18 20:27	03/19/18 17:20	1
Perfluorooctane Sulfonamide (FOSA)	**39.4**		1.97	0.34	ng/L		03/14/18 20:27	03/19/18 17:20	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.05	U	19.7	3.05	ng/L		03/14/18 20:27	03/19/18 17:20	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87	ng/L		03/14/18 20:27	03/19/18 17:20	1
6:2FTS	1.97	U	19.7	1.97	ng/L		03/14/18 20:27	03/19/18 17:20	1
8:2FTS	**3.99**	**J**	19.7	1.97	ng/L		03/14/18 20:27	03/19/18 17:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*68*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C5 PFPeA	*68*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C2 PFHxA	*66*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C4-PFHpA	*67*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C4 PFOA	*73*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C5 PFNA	*58*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C2 PFDA	*74*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C2 PFUnA	*73*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C2 PFDoA	*68*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C2-PFTeDA	*81*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C3-PFBS	*78*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
18O2 PFHxS	*76*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C4 PFOS	*72*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
13C8 FOSA	*81*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
d3-NMeFOSAA	*54*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
d5-NEtFOSAA	*57*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
M2-6:2FTS	*91*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*
M2-8:2FTS	*91*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:20*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**1530**	**D**	197	53.1	ng/L		03/14/18 20:27	03/17/18 15:59	100

Client Sample ID: SB008-SPLP(2'-4')

Lab Sample ID: 320-36683-1

Date Collected: 03/01/18 09:15

Matrix: Solid

Date Received: 03/02/18 09:15

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	61	*	25 - 150	03/14/18 20:27	03/17/18 15:59	100

Client Sample ID: DUPE007

Lab Sample ID: 320-36683-2

Date Collected: 03/01/18 00:00

Matrix: Solid

Date Received: 03/02/18 09:15

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.32**	**B**	1.98	0.35	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluoropentanoic acid (PFPeA)	**10.3**		1.98	0.48	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorohexanoic acid (PFHxA)	**9.98**		1.98	0.57	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluoroheptanoic acid (PFHpA)	**5.79**		1.98	0.25	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorooctanoic acid (PFOA)	**7.78**		1.98	0.84	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorononanoic acid (PFNA)	**10.1**		1.98	0.27	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorodecanoic acid (PFDA)	**27.3**		1.98	0.31	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluoroundecanoic acid (PFUnA)	**2.13**		1.98	1.09	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.98	0.54	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorotridecanoic Acid (PFTriA)	1.29	U	1.98	1.29	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.98	0.29	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorobutanesulfonic acid (PFBS)	**0.84**	**J**	1.98	0.20	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorohexanesulfonic acid (PFHxS)	**32.3**	**B**	1.98	0.17	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.16**		1.98	0.19	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32	ng/L		03/14/18 20:27	03/19/18 17:28	1
Perfluorooctane Sulfonamide (FOSA)	**40.9**		1.98	0.35	ng/L		03/14/18 20:27	03/19/18 17:28	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.07	U	19.8	3.07	ng/L		03/14/18 20:27	03/19/18 17:28	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88	ng/L		03/14/18 20:27	03/19/18 17:28	1
6:2FTS	1.98	U	19.8	1.98	ng/L		03/14/18 20:27	03/19/18 17:28	1
8:2FTS	**2.76**	**J**	19.8	1.98	ng/L		03/14/18 20:27	03/19/18 17:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	73		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C5 PFPeA	75		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C2 PFHxA	70		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C4-PFHpA	76		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C4 PFOA	82		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C5 PFNA	59		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C2 PFDA	83		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C2 PFUnA	74		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C2 PFDoA	65		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C2-PFTeDA	77		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C3-PFBS	77		25 - 150	03/14/18 20:27	03/19/18 17:28	1
18O2 PFHxS	83		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C4 PFOS	74		25 - 150	03/14/18 20:27	03/19/18 17:28	1
13C8 FOSA	83		25 - 150	03/14/18 20:27	03/19/18 17:28	1
d3-NMeFOSAA	54		25 - 150	03/14/18 20:27	03/19/18 17:28	1
d5-NEtFOSAA	61		25 - 150	03/14/18 20:27	03/19/18 17:28	1

Client Sample ID: DUPE007

Lab Sample ID: 320-36683-2

Date Collected: 03/01/18 00:00
Matrix: Solid
Date Received: 03/02/18 09:15

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*96*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:28*	*1*
M2-8:2FTS	*94*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:28*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**1740**	**D**	198	53.4	ng/L		03/14/18 20:27	03/17/18 16:07	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*62*	*	*25 - 150*	*03/14/18 20:27*	*03/17/18 16:07*	*100*

Client Sample ID: SB008(5'-7')

Lab Sample ID: 320-36683-3

Date Collected: 03/01/18 09:30
Matrix: Solid
Date Received: 03/02/18 09:15
Percent Solids: 96.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.000039**	**J B**	0.00020	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluoropentanoic acid (PFPeA)	0.000079	U	0.00020	0.000079	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorohexanoic acid (PFHxA)	**0.000060**	**J**	0.00020	0.000043	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluoroheptanoic acid (PFHpA)	**0.000070**	**J**	0.00020	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorooctanoic acid (PFOA)	**0.00026**		0.00020	0.000088	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorononanoic acid (PFNA)	**0.00017**	**J**	0.00020	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorodecanoic acid (PFDA)	0.000023	U	0.00020	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluoroundecanoic acid (PFUnA)	0.000037	U	0.00020	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00020	0.000069	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorotridecanoic Acid (PFTriA)	0.000052	U	0.00020	0.000052	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00020	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00078**		0.00020	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.000047**	**J**	0.00020	0.000036	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
Perfluorooctane Sulfonamide (FOSA)	0.000084	U	0.00020	0.000084	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
6:2FTS	**0.00017**	**J**	0.0020	0.00015	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1
8:2FTS	0.00026	U	0.0020	0.00026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C5 PFPeA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C2 PFHxA	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C4-PFHpA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C4 PFOA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C5 PFNA	*74*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C2 PFDA	*60*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C2 PFUnA	*35*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C2 PFDoA	*11*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C2-PFTeDA	*1*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*

Client Sample ID: SB008(5'-7')

Date Collected: 03/01/18 09:30
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-3

Matrix: Solid
Percent Solids: 96.3

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3-PFBS	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
18O2 PFHxS	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C4 PFOS	*69*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
13C8 FOSA	*44*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
d3-NMeFOSAA	*20*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
d5-NEtFOSAA	*16*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
M2-6:2FTS	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*
M2-8:2FTS	*61*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:12*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.025**	**B D**	0.0026	0.0010	mg/Kg	☼	03/12/18 15:35	03/21/18 23:06	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*66*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:06*	*5*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000040	U H	0.00020	0.000040	mg/Kg	☼	03/21/18 18:54	03/27/18 03:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*90*		*25 - 150*	*03/21/18 18:54*	*03/27/18 03:28*	*1*

Client Sample ID: DUPE006

Date Collected: 03/01/18 00:00
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-4

Matrix: Solid
Percent Solids: 96.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.000034**	**J B**	0.00021	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluoropentanoic acid (PFPeA)	0.000080	U	0.00021	0.000080	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorohexanoic acid (PFHxA)	**0.000057**	**J**	0.00021	0.000043	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluoroheptanoic acid (PFHpA)	**0.000073**	**J**	0.00021	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorooctanoic acid (PFOA)	**0.00022**		0.00021	0.000089	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorononanoic acid (PFNA)	**0.00015**	**J**	0.00021	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorodecanoic acid (PFDA)	0.000023	U	0.00021	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluoroundecanoic acid (PFUnA)	**0.000056**	**J**	0.00021	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00021	0.000069	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorotridecanoic Acid (PFTriA)	0.000053	U	0.00021	0.000053	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorotetradecanoic acid (PFTeA)	0.000056	U	0.00021	0.000056	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00021	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00068**		0.00021	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.000044**	**J**	0.00021	0.000036	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00021	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
Perfluorooctane Sulfonamide (FOSA)	0.000085	U	0.00021	0.000085	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0021	0.00040	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0021	0.00038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1

Client Sample ID: DUPE006

Date Collected: 03/01/18 00:00
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-4

Matrix: Solid
Percent Solids: 96.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	**0.00016**	**J**	0.0021	0.00016	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1
8:2FTS	0.00026	U	0.0021	0.00026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C5 PFPeA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C2 PFHxA	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C4-PFHpA	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C4 PFOA	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C5 PFNA	*65*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C2 PFDA	*48*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C2 PFUnA	*27*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C2 PFDoA	*13*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C2-PFTeDA	*4*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C3-PFBS	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
18O2 PFHxS	*73*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C4 PFOS	*59*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
13C8 FOSA	*39*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
d3-NMeFOSAA	*17*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
d5-NEtFOSAA	*16*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
M2-6:2FTS	*71*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*
M2-8:2FTS	*44*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:20*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.021**	**B D**	0.0026	0.0010	mg/Kg	☼	03/12/18 15:35	03/21/18 23:14	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*59*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:14*	*5*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000041	U H	0.00021	0.000041	mg/Kg	☼	03/21/18 18:54	03/27/18 03:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*76*		*25 - 150*	*03/21/18 18:54*	*03/27/18 03:36*	*1*

Client Sample ID: SB013(5'-7')

Date Collected: 03/01/18 10:10
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-5

Matrix: Solid
Percent Solids: 85.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00018**	**J B**	0.00023	0.000033	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluoropentanoic acid (PFPeA)	**0.00027**		0.00023	0.000090	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorohexanoic acid (PFHxA)	**0.00041**		0.00023	0.000049	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluoroheptanoic acid (PFHpA)	**0.00011**	**J**	0.00023	0.000034	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorooctanoic acid (PFOA)	**0.00026**		0.00023	0.00010	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorononanoic acid (PFNA)	**0.00032**		0.00023	0.000042	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorodecanoic acid (PFDA)	0.000026	U	0.00023	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluoroundecanoic acid (PFUnA)	0.000042	U	0.00023	0.000042	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorododecanoic acid (PFDoA)	0.000078	U	0.00023	0.000078	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1

Client Sample ID: SB013(5'-7')

Date Collected: 03/01/18 10:10
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-5

Matrix: Solid
Percent Solids: 85.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic Acid (PFTriA)	0.000060	U	0.00023	0.000060	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorotetradecanoic acid (PFTeA)	0.000063	U	0.00023	0.000063	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorobutanesulfonic acid (PFBS)	0.000029	U	0.00023	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0019**		0.00023	0.000036	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.000096**	**J**	0.00023	0.000041	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorodecanesulfonic acid (PFDS)	0.000046	U *	0.00023	0.000046	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
Perfluorooctane Sulfonamide (FOSA)	0.000096	U	0.00023	0.000096	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00046	U	0.0023	0.00046	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00043	U	0.0023	0.00043	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
6:2FTS	**0.00018**	**J**	0.0023	0.00018	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1
8:2FTS	0.00029	U	0.0023	0.00029	mg/Kg	☼	03/12/18 15:35	03/21/18 00:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C5 PFPeA	*75*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C2 PFHxA	*73*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C4-PFHpA	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C4 PFOA	*75*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C5 PFNA	*50*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C2 PFDA	*39*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C2 PFUnA	*18*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C2 PFDoA	*8*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C2-PFTeDA	*1*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C3-PFBS	*68*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
18O2 PFHxS	*68*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C4 PFOS	*42*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
13C8 FOSA	*33*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
d3-NMeFOSAA	*14*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
d5-NEtFOSAA	*13*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
M2-6:2FTS	*65*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*
M2-8:2FTS	*32*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:36*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.15**	**B D**	0.012	0.0047	mg/Kg	☼	03/12/18 15:35	03/21/18 23:29	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*49*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:29*	*20*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000045	U H	0.00023	0.000045	mg/Kg	☼	03/21/18 18:54	03/27/18 03:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*68*		*25 - 150*	*03/21/18 18:54*	*03/27/18 03:44*	*1*

Client Sample ID: SB013-SPLP(8'-10')

Date Collected: 03/01/18 10:20
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-6

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.34**	**B**	1.88	0.33	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluoropentanoic acid (PFPeA)	**1.70**	**J**	1.88	0.46	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorohexanoic acid (PFHxA)	**3.20**		1.88	0.55	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluoroheptanoic acid (PFHpA)	**0.81**	**J**	1.88	0.24	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorooctanoic acid (PFOA)	**4.51**		1.88	0.80	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorononanoic acid (PFNA)	**1.91**		1.88	0.25	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorodecanoic acid (PFDA)	0.29	U	1.88	0.29	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluoroundecanoic acid (PFUnA)	1.04	U	1.88	1.04	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorododecanoic acid (PFDoA)	0.52	U	1.88	0.52	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorotridecanoic Acid (PFTriA)	1.22	U	1.88	1.22	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorotetradecanoic acid (PFTeA)	0.27	U	1.88	0.27	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorobutanesulfonic acid (PFBS)	0.19	U	1.88	0.19	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorohexanesulfonic acid (PFHxS)	**42.1**	**B**	1.88	0.16	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	**1.40**	**J**	1.88	0.18	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorodecanesulfonic acid (PFDS)	0.30	U	1.88	0.30	ng/L		03/14/18 20:27	03/19/18 17:36	1
Perfluorooctane Sulfonamide (FOSA)	0.33	U	1.88	0.33	ng/L		03/14/18 20:27	03/19/18 17:36	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.92	U	18.8	2.92	ng/L		03/14/18 20:27	03/19/18 17:36	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.79	U	18.8	1.79	ng/L		03/14/18 20:27	03/19/18 17:36	1
6:2FTS	1.88	U	18.8	1.88	ng/L		03/14/18 20:27	03/19/18 17:36	1
8:2FTS	**2.46**	**J**	18.8	1.88	ng/L		03/14/18 20:27	03/19/18 17:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C5 PFPeA	*80*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C2 PFHxA	*76*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C4-PFHpA	*76*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C4 PFOA	*79*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C5 PFNA	*67*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C2 PFDA	*84*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C2 PFUnA	*76*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C2 PFDoA	*75*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C2-PFTeDA	*110*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C3-PFBS	*83*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
18O2 PFHxS	*83*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C4 PFOS	*75*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
13C8 FOSA	*82*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
d3-NMeFOSAA	*55*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
d5-NEtFOSAA	*63*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
M2-6:2FTS	*88*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*
M2-8:2FTS	*101*		*25 - 150*	*03/14/18 20:27*	*03/19/18 17:36*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**1170**	**D**	188	50.8	ng/L		03/14/18 20:27	03/17/18 16:15	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*62*	*	*25 - 150*	*03/14/18 20:27*	*03/17/18 16:15*	*100*

Client Sample ID: SB002(5'-7')

Date Collected: 03/01/18 11:15
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-7

Matrix: Solid
Percent Solids: 93.1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00017**	**J B**	0.00021	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluoropentanoic acid (PFPeA)	**0.00023**		0.00021	0.000082	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorohexanoic acid (PFHxA)	**0.00025**		0.00021	0.000045	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluoroheptanoic acid (PFHpA)	**0.00030**		0.00021	0.000031	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorooctanoic acid (PFOA)	**0.0020**		0.00021	0.000092	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorononanoic acid (PFNA)	**0.0023**		0.00021	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorodecanoic acid (PFDA)	**0.000066**	**J**	0.00021	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluoroundecanoic acid (PFUnA)	0.000038	U	0.00021	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00021	0.000071	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorotridecanoic Acid (PFTriA)	0.000054	U	0.00021	0.000054	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00021	0.000058	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00021	0.000027	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00024**		0.00021	0.000033	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.00023**		0.00021	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorodecanesulfonic acid (PFDS)	0.000042	U *	0.00021	0.000042	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
Perfluorooctane Sulfonamide (FOSA)	0.000087	U	0.00021	0.000087	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0021	0.00042	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1
8:2FTS	**0.00041**	**J**	0.0021	0.00027	mg/Kg	☼	03/12/18 15:35	03/21/18 00:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C5 PFPeA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C2 PFHxA	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C4-PFHpA	*91*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C4 PFOA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C5 PFNA	*70*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C2 PFDA	*55*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C2 PFUnA	*33*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C2 PFDoA	*19*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C2-PFTeDA	*7*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C3-PFBS	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
18O2 PFHxS	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C4 PFOS	*65*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
13C8 FOSA	*46*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
d3-NMeFOSAA	*22*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
d5-NEtFOSAA	*18*	*	*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*
M2-8:2FTS	*56*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:43*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.026**	**B D**	0.0053	0.0021	mg/Kg	☼	03/12/18 15:35	03/21/18 23:37	10
6:2FTS	**0.074**	**D**	0.021	0.0016	mg/Kg	☼	03/12/18 15:35	03/21/18 23:37	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*64*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:37*	*10*
M2-6:2FTS	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:37*	*10*

Client Sample ID: SB002(5'-7')

Lab Sample ID: 320-36683-7
Date Collected: 03/01/18 11:15
Matrix: Solid
Date Received: 03/02/18 09:15
Percent Solids: 93.1

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000042	U H	0.00021	0.000042	mg/Kg	☼	03/21/18 18:54	03/27/18 04:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*73*		*25 - 150*	*03/21/18 18:54*	*03/27/18 04:08*	*1*

Client Sample ID: SB012(5'-7')

Lab Sample ID: 320-36683-8
Date Collected: 03/01/18 12:00
Matrix: Solid
Date Received: 03/02/18 09:15
Percent Solids: 95.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00028**	**B**	0.00021	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluoropentanoic acid (PFPeA)	**0.00038**		0.00021	0.000081	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorohexanoic acid (PFHxA)	**0.0011**		0.00021	0.000044	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluoroheptanoic acid (PFHpA)	**0.00025**		0.00021	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorooctanoic acid (PFOA)	**0.0017**		0.00021	0.000090	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorononanoic acid (PFNA)	**0.021**		0.00021	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorodecanoic acid (PFDA)	**0.0021**		0.00021	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluoroundecanoic acid (PFUnA)	**0.000092**	**J**	0.00021	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorododecanoic acid (PFDoA)	0.000070	U	0.00021	0.000070	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorotridecanoic Acid (PFTriA)	0.000053	U	0.00021	0.000053	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorotetradecanoic acid (PFTeA)	0.000056	U	0.00021	0.000056	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorobutanesulfonic acid (PFBS)	**0.00031**		0.00021	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorohexanesulfonic acid (PFHxS)	**0.011**		0.00021	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.0016**		0.00021	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorodecanesulfonic acid (PFDS)	0.000041	U *	0.00021	0.000041	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
Perfluorooctane Sulfonamide (FOSA)	0.000086	U	0.00021	0.000086	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.0021	0.00041	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
6:2FTS	**0.00090**	**J**	0.0021	0.00016	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1
8:2FTS	0.00026	U	0.0021	0.00026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C5 PFPeA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C2 PFHxA	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C4-PFHpA	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C4 PFOA	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C5 PFNA	*33*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C2 PFDA	*56*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C2 PFUnA	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C2 PFDoA	*26*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C2-PFTeDA	*25*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C3-PFBS	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
18O2 PFHxS	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C4 PFOS	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
13C8 FOSA	*38*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*

Client Sample ID: SB012(5'-7')

Lab Sample ID: 320-36683-8
Date Collected: 03/01/18 12:00
Matrix: Solid
Date Received: 03/02/18 09:15
Percent Solids: 95.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d3-NMeFOSAA	*25*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
d5-NEtFOSAA	*25*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
M2-6:2FTS	*74*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*
M2-8:2FTS	*57*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:51*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.81**	**B D**	0.052	0.021	mg/Kg	☼	03/12/18 15:35	03/21/18 23:45	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*59*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:45*	*100*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000040	U H	0.00021	0.000040	mg/Kg	☼	03/23/18 15:02	03/29/18 01:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*32*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:36*	*1*

Client Sample ID: SB012-SPLP(2'-4')

Lab Sample ID: 320-36683-9
Date Collected: 03/01/18 11:45
Matrix: Solid
Date Received: 03/02/18 09:15

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**30.7**	**B F1**	1.96	0.34	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluoropentanoic acid (PFPeA)	**32.0**		1.96	0.48	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorohexanoic acid (PFHxA)	**105**	**F1**	1.96	0.57	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluoroheptanoic acid (PFHpA)	**21.9**		1.96	0.24	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorooctanoic acid (PFOA)	**99.6**		1.96	0.83	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorononanoic acid (PFNA)	**107**	**F1**	1.96	0.26	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorodecanoic acid (PFDA)	**219**		1.96	0.30	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluoroundecanoic acid (PFUnA)	**196**		1.96	1.08	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorododecanoic acid (PFDoA)	**3.56**		1.96	0.54	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorotridecanoic Acid (PFTriA)	**17.2**		1.96	1.27	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorotetradecanoic acid (PFTeA)	0.28	U	1.96	0.28	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorobutanesulfonic acid (PFBS)	**41.1**		1.96	0.20	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	**27.4**	**F1**	1.96	0.19	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorodecanesulfonic acid (PFDS)	**4.67**	**F1**	1.96	0.31	ng/L		03/14/18 20:27	03/19/18 18:31	1
Perfluorooctane Sulfonamide (FOSA)	**64.3**		1.96	0.34	ng/L		03/14/18 20:27	03/19/18 18:31	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.03	U	19.6	3.03	ng/L		03/14/18 20:27	03/19/18 18:31	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	19.6	1.86	ng/L		03/14/18 20:27	03/19/18 18:31	1
6:2FTS	**12.9**	**J**	19.6	1.96	ng/L		03/14/18 20:27	03/19/18 18:31	1
8:2FTS	**23.3**		19.6	1.96	ng/L		03/14/18 20:27	03/19/18 18:31	1

Client Sample ID: SB012-SPLP(2'-4')

Lab Sample ID: 320-36683-9

Date Collected: 03/01/18 11:45

Matrix: Solid

Date Received: 03/02/18 09:15

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*61*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C5 PFPeA	*72*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C2 PFHxA	*68*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C4-PFHpA	*63*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C4 PFOA	*75*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C5 PFNA	*34*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C2 PFDA	*83*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C2 PFUnA	*77*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C2 PFDoA	*74*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C2-PFTeDA	*81*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C3-PFBS	*80*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
18O2 PFHxS	*76*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C4 PFOS	*39*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
13C8 FOSA	*85*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
d3-NMeFOSAA	*59*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
d5-NEtFOSAA	*65*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
M2-6:2FTS	*86*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*
M2-8:2FTS	*103*		*25 - 150*	*03/14/18 20:27*	*03/19/18 18:31*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	**704**	**D B**	196	16.6	ng/L		03/14/18 20:27	03/19/18 17:44	100
Perfluorooctanesulfonic acid (PFOS)	**23100**	**D**	196	52.9	ng/L		03/14/18 20:27	03/19/18 17:44	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*62*	*	*25 - 150*	*03/14/18 20:27*	*03/19/18 17:44*	*100*
13C4 PFOS	*55*	*	*25 - 150*	*03/14/18 20:27*	*03/19/18 17:44*	*100*

Client Sample ID: SB012(10'-12')

Lab Sample ID: 320-36683-10

Date Collected: 03/01/18 12:30

Matrix: Solid

Date Received: 03/02/18 09:15

Percent Solids: 97.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.000066**	**J B**	0.00020	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluoropentanoic acid (PFPeA)	**0.00015**	**J**	0.00020	0.000079	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorohexanoic acid (PFHxA)	**0.00054**		0.00020	0.000043	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluoroheptanoic acid (PFHpA)	**0.00018**	**J**	0.00020	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorooctanoic acid (PFOA)	**0.0013**		0.00020	0.000088	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorononanoic acid (PFNA)	**0.015**		0.00020	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorodecanoic acid (PFDA)	**0.00010**	**J**	0.00020	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluoroundecanoic acid (PFUnA)	**0.000083**	**J**	0.00020	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00020	0.000069	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorotridecanoic Acid (PFTriA)	0.000052	U F1	0.00020	0.000052	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorobutanesulfonic acid (PFBS)	**0.00019**	**J**	0.00020	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0074**	**F1 F2**	0.00020	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1

Client Sample ID: SB012(10'-12')

Date Collected: 03/01/18 12:30
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-10

Matrix: Solid
Percent Solids: 97.3

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	**0.0048**	**F1 F2**	0.00020	0.000036	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
Perfluorooctane Sulfonamide (FOSA)	**0.00015**	**J**	0.00020	0.000084	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
6:2FTS	**0.0053**	**F1 F2**	0.0020	0.00015	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1
8:2FTS	**0.00071**	**J**	0.0020	0.00026	mg/Kg	☼	03/12/18 15:35	03/21/18 00:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C5 PFPeA	*85*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C2 PFHxA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C4-PFHpA	*91*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C4 PFOA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C5 PFNA	*51*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C2 PFDA	*68*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C2 PFUnA	*51*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C2 PFDoA	*43*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C2-PFTeDA	*51*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C3-PFBS	*87*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
18O2 PFHxS	*85*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C4 PFOS	*58*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
13C8 FOSA	*49*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
d3-NMeFOSAA	*35*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
d5-NEtFOSAA	*36*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
M2-6:2FTS	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*
M2-8:2FTS	*65*		*25 - 150*	*03/12/18 15:35*	*03/21/18 00:59*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.32**	**D B F2**	0.026	0.010	mg/Kg	☼	03/12/18 15:35	03/21/18 23:53	50

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*65*		*25 - 150*	*03/12/18 15:35*	*03/21/18 23:53*	*50*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000040	U H F1	0.00020	0.000040	mg/Kg	☼	03/23/18 15:02	03/29/18 01:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*46*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:59*	*1*

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-36631-A-1-C MS - RE	Matrix Spike								
320-36631-A-1-D MSD - RE	Matrix Spike Duplicate								
320-36683-3	SB008(5'-7')	73	78	76	84	82	74	60	35
320-36683-3 - DL	SB008(5'-7')								
320-36683-3 - RE	SB008(5'-7')								
320-36683-4	DUPE006	69	78	76	77	77	65	48	27
320-36683-4 - DL	DUPE006								
320-36683-4 - RE	DUPE006								
320-36683-5	SB013(5'-7')	72	75	73	77	75	50	39	18 *
320-36683-5 - DL	SB013(5'-7')								
320-36683-5 - RE	SB013(5'-7')								
320-36683-7	SB002(5'-7')	80	82	81	91	82	70	55	33
320-36683-7 - DL	SB002(5'-7')								
320-36683-7 - RE	SB002(5'-7')								
320-36683-8	SB012(5'-7')	78	78	76	77	76	33	56	37
320-36683-8 - DL	SB012(5'-7')								
320-36683-8 - RE	SB012(5'-7')								
320-36683-10	SB012(10'-12')	82	85	82	91	84	51	68	51
320-36683-10 - DL	SB012(10'-12')								
320-36683-10 - RE	SB012(10'-12')								
320-36683-10 MS	SB012(10'-12')	82	82	83	86	83	50	60	44
320-36683-10 MS - DL	SB012(10'-12')								
320-36683-10 MS - RE	SB012(10'-12')								
320-36683-10 MSD	SB012(10'-12')	77	77	79	82	82	53	64	48
320-36683-10 MSD - DL	SB012(10'-12')								
320-36683-10 MSD - RE	SB012(10'-12')								
LCS 320-212510/2-A	Lab Control Sample	72	79	77	85	84	85	70	52
LCS 320-212987/2-A	Lab Control Sample	84	82	84	85	90	88	97	86
LCS 320-214230/2-A	Lab Control Sample								
LCS 320-214600/2-A	Lab Control Sample								
MB 320-212510/1-A	Method Blank	73	81	80	86	83	83	71	58
MB 320-212987/1-A	Method Blank	73	74	74	77	81	79	78	75
MB 320-214230/1-A	Method Blank								
MB 320-214600/1-A	Method Blank								

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	NMeFOSA (25-150)	NEtFOSA (25-150)
320-36631-A-1-C MS - RE	Matrix Spike					90			
320-36631-A-1-D MSD - RE	Matrix Spike Duplicate					78			
320-36683-3	SB008(5'-7')	11 *	1 *	81	80	69	44	20 *	16 *
320-36683-3 - DL	SB008(5'-7')					66			
320-36683-3 - RE	SB008(5'-7')					90			
320-36683-4	DUPE006	13 *	4 *	76	73	59	39	17 *	16 *
320-36683-4 - DL	DUPE006					59			
320-36683-4 - RE	DUPE006					76			
320-36683-5	SB013(5'-7')	8 *	1 *	68	68	42	33	14 *	13 *
320-36683-5 - DL	SB013(5'-7')					49			
320-36683-5 - RE	SB013(5'-7')					68			
320-36683-7	SB002(5'-7')	19 *	7 *	82	82	65	46	22 *	18 *

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOSA	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-36683-7 - DL	SB002(5'-7')					64			
320-36683-7 - RE	SB002(5'-7')					73			
320-36683-8	SB012(5'-7')	26	25	81	81	37	38	25	25
320-36683-8 - DL	SB012(5'-7')					59			
320-36683-8 - RE	SB012(5'-7')					32			
320-36683-10	SB012(10'-12')	43	51	87	85	58	49	35	36
320-36683-10 - DL	SB012(10'-12')					65			
320-36683-10 - RE	SB012(10'-12')					46			
320-36683-10 MS	SB012(10'-12')	28	30	85	83	56	46	24 *	23 *
320-36683-10 MS - DL	SB012(10'-12')					67			
320-36683-10 MS - RE	SB012(10'-12')					61			
320-36683-10 MSD	SB012(10'-12')	41	55	78	82	61	45	33	33
320-36683-10 MSD - DL	SB012(10'-12')					69			
320-36683-10 MSD - RE	SB012(10'-12')					58			
LCS 320-212510/2-A	Lab Control Sample	29	13 *	82	82	69	50	37	37
LCS 320-212987/2-A	Lab Control Sample	86	101	81	87	87	82	82	84
LCS 320-214230/2-A	Lab Control Sample					91			
LCS 320-214600/2-A	Lab Control Sample					82			
MB 320-212510/1-A	Method Blank	33	14 *	81	80	69	48	33	32
MB 320-212987/1-A	Method Blank	72	86	70	76	72	72	70	78
MB 320-214230/1-A	Method Blank					95			
MB 320-214600/1-A	Method Blank					80			

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
320-36631-A-1-C MS - RE	Matrix Spike								
320-36631-A-1-D MSD - RE	Matrix Spike Duplicate								
320-36683-3	SB008(5'-7')	77	61						
320-36683-3 - DL	SB008(5'-7')								
320-36683-3 - RE	SB008(5'-7')								
320-36683-4	DUPE006	71	44						
320-36683-4 - DL	DUPE006								
320-36683-4 - RE	DUPE006								
320-36683-5	SB013(5'-7')	65	32						
320-36683-5 - DL	SB013(5'-7')								
320-36683-5 - RE	SB013(5'-7')								
320-36683-7	SB002(5'-7')		56						
320-36683-7 - DL	SB002(5'-7')	78							
320-36683-7 - RE	SB002(5'-7')								
320-36683-8	SB012(5'-7')	74	57						
320-36683-8 - DL	SB012(5'-7')								
320-36683-8 - RE	SB012(5'-7')								
320-36683-10	SB012(10'-12')	76	65						
320-36683-10 - DL	SB012(10'-12')								
320-36683-10 - RE	SB012(10'-12')								
320-36683-10 MS	SB012(10'-12')	77	63						
320-36683-10 MS - DL	SB012(10'-12')								
320-36683-10 MS - RE	SB012(10'-12')								
320-36683-10 MSD	SB012(10'-12')	75	65						

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)						
320-36683-10 MSD - DL	SB012(10'-12')								
320-36683-10 MSD - RE	SB012(10'-12')								
LCS 320-212510/2-A	Lab Control Sample	83	64						
LCS 320-212987/2-A	Lab Control Sample	95	99						
LCS 320-214230/2-A	Lab Control Sample								
LCS 320-214600/2-A	Lab Control Sample								
MB 320-212510/1-A	Method Blank	73	55						
MB 320-212987/1-A	Method Blank	85	85						
MB 320-214230/1-A	Method Blank								
MB 320-214600/1-A	Method Blank								

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-36683-1 - DL	SB008-SPLP(2'-4')								
320-36683-1	SB008-SPLP(2'-4')	68	68	66	67	73	58	74	73
320-36683-2 - DL	DUPE007								
320-36683-2	DUPE007	73	75	70	76	82	59	83	74
320-36683-6 - DL	SB013-SPLP(8'-10')								
320-36683-6	SB013-SPLP(8'-10')	84	80	76	76	79	67	84	76
320-36683-9	SB012-SPLP(2'-4')	61	72	68	63	75	34	83	77
320-36683-9 - DL	SB012-SPLP(2'-4')								
320-36683-9 MS	SB012-SPLP(2'-4')	63	74	71	64	76	31	82	79
320-36683-9 MS - DL	SB012-SPLP(2'-4')								
320-36683-9 MSD	SB012-SPLP(2'-4')	59	69	66	61	74	31	79	77
320-36683-9 MSD - DL	SB012-SPLP(2'-4')								

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid

Prep Type: SPLP East

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
LB 320-211148/1-B	Method Blank	84	86	84	88	89	92	93	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOS/	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-36683-1 - DL	SB008-SPLP(2'-4')					61 *			
320-36683-1	SB008-SPLP(2'-4')	68	81	78	76	72	81	54	57
320-36683-2 - DL	DUPE007					62 *			
320-36683-2	DUPE007	65	77	77	83	74	83	54	61
320-36683-6 - DL	SB013-SPLP(8'-10')					62 *			
320-36683-6	SB013-SPLP(8'-10')	75	110	83	83	75	82	55	63
320-36683-9	SB012-SPLP(2'-4')	74	81	80	76	39	85	59	65
320-36683-9 - DL	SB012-SPLP(2'-4')				62 *	55 *			
320-36683-9 MS	SB012-SPLP(2'-4')	70	85	86	75	35	84	60	65
320-36683-9 MS - DL	SB012-SPLP(2'-4')				55 *	53 *			
320-36683-9 MSD	SB012-SPLP(2'-4')	68	81	78	73	34	81	56	64
320-36683-9 MSD - DL	SB012-SPLP(2'-4')				66 *	66 *			
LB 320-211148/1-B	Method Blank	89	98	84	86	83	84	84	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
320-36683-1 - DL	SB008-SPLP(2'-4')								
320-36683-1	SB008-SPLP(2'-4')	91	91						
320-36683-2 - DL	DUPE007								
320-36683-2	DUPE007	96	94						
320-36683-6 - DL	SB013-SPLP(8'-10')								
320-36683-6	SB013-SPLP(8'-10')	88	101						
320-36683-9	SB012-SPLP(2'-4')	86	103						
320-36683-9 - DL	SB012-SPLP(2'-4')								
320-36683-9 MS	SB012-SPLP(2'-4')	82	104						
320-36683-9 MS - DL	SB012-SPLP(2'-4')								
320-36683-9 MSD	SB012-SPLP(2'-4')	83	100						
320-36683-9 MSD - DL	SB012-SPLP(2'-4')								
LB 320-211148/1-B	Method Blank	90	102						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-212510/1-A
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 212510

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0000394	J	0.00020	0.000028	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorooctanesulfonic acid (PFOS)	0.000310	J	0.00050	0.00020	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
6:2FTS	0.00015	U	0.0020	0.00015	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
8:2FTS	0.00025	U	0.0020	0.00025	mg/Kg		03/12/18 15:35	03/20/18 23:09	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C5 PFPeA	*81*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFHxA	*80*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C4-PFHpA	*86*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C4 PFOA	*83*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C5 PFNA	*83*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFDA	*71*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFUnA	*58*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFDoA	*33*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2-PFTeDA	*14*	*	*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C3-PFBS	*81*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
18O2 PFHxS	*80*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C4 PFOS	*69*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C8 FOSA	*48*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
d3-NMeFOSAA	*33*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
d5-NEtFOSAA	*32*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
M2-6:2FTS	*73*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
M2-8:2FTS	*55*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-212510/2-A
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00200	0.00198		mg/Kg		99	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00200	0.00186		mg/Kg		93	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00200	0.00200		mg/Kg		100	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00203		mg/Kg		101	76 - 124
Perfluorooctanoic acid (PFOA)	0.00200	0.00198		mg/Kg		99	76 - 121
Perfluorononanoic acid (PFNA)	0.00200	0.00189		mg/Kg		95	74 - 126
Perfluorodecanoic acid (PFDA)	0.00200	0.00206		mg/Kg		103	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00156		mg/Kg		78	74 - 114
Perfluorododecanoic acid (PFDoA)	0.00200	0.00198		mg/Kg		99	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00129		mg/Kg		64	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00202		mg/Kg		101	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00172		mg/Kg		97	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00165		mg/Kg		91	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00216		mg/Kg		113	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00220		mg/Kg		118	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.000908	*	mg/Kg		47	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00196		mg/Kg		98	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00192	J	mg/Kg		96	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00185	J	mg/Kg		92	65 - 135
6:2FTS	0.00190	0.00176	J	mg/Kg		93	65 - 135
8:2FTS	0.00192	0.00188	J	mg/Kg		98	65 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*72*		*25 - 150*
13C5 PFPeA	*79*		*25 - 150*
13C2 PFHxA	*77*		*25 - 150*
13C4-PFHpA	*85*		*25 - 150*
13C4 PFOA	*84*		*25 - 150*
13C5 PFNA	*85*		*25 - 150*
13C2 PFDA	*70*		*25 - 150*
13C2 PFUnA	*52*		*25 - 150*
13C2 PFDoA	*29*		*25 - 150*
13C2-PFTeDA	*13*	*	*25 - 150*
13C3-PFBS	*82*		*25 - 150*
18O2 PFHxS	*82*		*25 - 150*
13C4 PFOS	*69*		*25 - 150*
13C8 FOSA	*50*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-212510/2-A
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212510

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	37		25 - 150
d5-NEtFOSAA	37		25 - 150
M2-6:2FTS	83		25 - 150
M2-8:2FTS	64		25 - 150

Lab Sample ID: 320-36683-10 MS
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: SB012(10'-12')
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.000066	J B	0.00203	0.00218		mg/Kg	☼	104	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00203	0.00211		mg/Kg	☼	96	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00054		0.00203	0.00258		mg/Kg	☼	100	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00203	0.00217		mg/Kg	☼	98	76 - 124
Perfluorooctanoic acid (PFOA)	0.0013		0.00203	0.00341		mg/Kg	☼	103	76 - 121
Perfluorononanoic acid (PFNA)	0.015		0.00203	0.0183	4	mg/Kg	☼	150	74 - 126
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00203	0.00243		mg/Kg	☼	114	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.000083	J	0.00203	0.00181		mg/Kg	☼	85	74 - 114
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00203	0.00210		mg/Kg	☼	103	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.000052	U F1	0.00203	0.00194		mg/Kg	☼	95	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00203	0.00189		mg/Kg	☼	93	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00019	J	0.00180	0.00203		mg/Kg	☼	102	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.0074	F1 F2	0.00185	0.00907	4	mg/Kg	☼	89	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.0048	F1 F2	0.00194	0.00820	F1	mg/Kg	☼	173	78 - 146
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00196	0.00139		mg/Kg	☼	71	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00015	J	0.00203	0.00219		mg/Kg	☼	100	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.00203	0.00202		mg/Kg	☼	100	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.00203	0.00212		mg/Kg	☼	104	65 - 135
6:2FTS	0.0053	F1 F2	0.00193	0.00713		mg/Kg	☼	96	65 - 135
8:2FTS	0.00071	J	0.00195	0.00240		mg/Kg	☼	86	65 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	82		25 - 150
13C5 PFPeA	82		25 - 150
13C2 PFHxA	83		25 - 150
13C4-PFHpA	86		25 - 150
13C4 PFOA	83		25 - 150
13C5 PFNA	50		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-36683-10 MS
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: SB012(10'-12')
Prep Type: Total/NA
Prep Batch: 212510

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2 PFDA	60		25 - 150
13C2 PFUnA	44		25 - 150
13C2 PFDoA	28		25 - 150
13C2-PFTeDA	30		25 - 150
13C3-PFBS	85		25 - 150
18O2 PFHxS	83		25 - 150
13C4 PFOS	56		25 - 150
13C8 FOSA	46		25 - 150
d3-NMeFOSAA	24	*	25 - 150
d5-NEtFOSAA	23	*	25 - 150
M2-6:2FTS	77		25 - 150
M2-8:2FTS	63		25 - 150

Lab Sample ID: 320-36683-10 MSD
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: SB012(10'-12')
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.000066	J B	0.00205	0.00217		mg/Kg	☼	103	81 - 133	0	30
Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00205	0.00214		mg/Kg	☼	97	79 - 120	1	30
Perfluorohexanoic acid (PFHxA)	0.00054		0.00205	0.00236		mg/Kg	☼	89	75 - 125	9	30
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00205	0.00220		mg/Kg	☼	99	76 - 124	2	30
Perfluorooctanoic acid (PFOA)	0.0013		0.00205	0.00286		mg/Kg	☼	76	76 - 121	18	30
Perfluorononanoic acid (PFNA)	0.015		0.00205	0.0138	4	mg/Kg	☼	-72	74 - 126	28	30
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00205	0.00238		mg/Kg	☼	111	74 - 124	2	30
Perfluoroundecanoic acid (PFUnA)	0.000083	J	0.00205	0.00185		mg/Kg	☼	86	74 - 114	2	30
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00205	0.00210		mg/Kg	☼	103	75 - 123	0	30
Perfluorotridecanoic Acid (PFTriA)	0.000052	U F1	0.00205	0.00254	F1	mg/Kg	☼	124	43 - 116	27	30
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00205	0.00199		mg/Kg	☼	97	22 - 129	5	30
Perfluorobutanesulfonic acid (PFBS)	0.00019	J	0.00181	0.00206		mg/Kg	☼	104	73 - 142	2	30
Perfluorohexanesulfonic acid (PFHxS)	0.0074	F1 F2	0.00186	0.00596	F1 F2	mg/Kg	☼	-79	75 - 121	41	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.0048	F1 F2	0.00195	0.00584	F1 F2	mg/Kg	☼	51	78 - 146	34	30
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00197	0.00154		mg/Kg	☼	78	54 - 113	10	30
Perfluorooctane Sulfonamide (FOSA)	0.00015	J	0.00205	0.00222		mg/Kg	☼	101	62 - 135	1	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.00205	0.00212		mg/Kg	☼	104	65 - 135	5	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.00205	0.00204		mg/Kg	☼	99	65 - 135	4	30
6:2FTS	0.0053	F1 F2	0.00194	0.00422	F1 F2	mg/Kg	☼	-54	65 - 135	51	30
8:2FTS	0.00071	J	0.00196	0.00230		mg/Kg	☼	81	65 - 135	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	77		25 - 150
13C5 PFPeA	77		25 - 150
13C2 PFHxA	79		25 - 150
13C4-PFHpA	82		25 - 150
13C4 PFOA	82		25 - 150
13C5 PFNA	53		25 - 150
13C2 PFDA	64		25 - 150
13C2 PFUnA	48		25 - 150
13C2 PFDoA	41		25 - 150
13C2-PFTeDA	55		25 - 150
13C3-PFBS	78		25 - 150
18O2 PFHxS	82		25 - 150
13C4 PFOS	61		25 - 150
13C8 FOSA	45		25 - 150
d3-NMeFOSAA	33		25 - 150
d5-NEtFOSAA	33		25 - 150
M2-6:2FTS	75		25 - 150
M2-8:2FTS	65		25 - 150

Lab Sample ID: MB 320-212987/1-A
Matrix: Solid
Analysis Batch: 213581

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 212987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorohexanesulfonic acid (PFHxS)	0.275	J	2.00	0.17	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32	ng/L		03/14/18 20:27	03/17/18 15:12	1
Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35	ng/L		03/14/18 20:27	03/17/18 15:12	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10	ng/L		03/14/18 20:27	03/17/18 15:12	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90	ng/L		03/14/18 20:27	03/17/18 15:12	1
6:2FTS	2.00	U	20.0	2.00	ng/L		03/14/18 20:27	03/17/18 15:12	1
8:2FTS	2.00	U	20.0	2.00	ng/L		03/14/18 20:27	03/17/18 15:12	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	73		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C5 PFPeA	74		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C2 PFHxA	74		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C4-PFHpA	77		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C4 PFOA	81		25 - 150	03/14/18 20:27	03/17/18 15:12	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-212987/1-A
Matrix: Solid
Analysis Batch: 213581

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 212987

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	79		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C2 PFDA	78		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C2 PFUnA	75		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C2 PFDoA	72		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C2-PFTeDA	86		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C3-PFBS	70		25 - 150	03/14/18 20:27	03/17/18 15:12	1
18O2 PFHxS	76		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C4 PFOS	72		25 - 150	03/14/18 20:27	03/17/18 15:12	1
13C8 FOSA	72		25 - 150	03/14/18 20:27	03/17/18 15:12	1
d3-NMeFOSAA	70		25 - 150	03/14/18 20:27	03/17/18 15:12	1
d5-NEtFOSAA	78		25 - 150	03/14/18 20:27	03/17/18 15:12	1
M2-6:2FTS	85		25 - 150	03/14/18 20:27	03/17/18 15:12	1
M2-8:2FTS	85		25 - 150	03/14/18 20:27	03/17/18 15:12	1

Lab Sample ID: LCS 320-212987/2-A
Matrix: Solid
Analysis Batch: 213581

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	44.68		ng/L		112	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	42.28		ng/L		106	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	43.93		ng/L		110	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	44.57		ng/L		111	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	43.74		ng/L		109	64 - 124
Perfluorononanoic acid (PFNA)	40.0	45.99		ng/L		115	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	45.22		ng/L		113	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.48		ng/L		94	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	46.48		ng/L		116	71 - 131
Perfluorotridecanoic Acid (PFTriA)	40.0	43.71		ng/L		109	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	40.98		ng/L		102	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	42.42		ng/L		120	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.95		ng/L		102	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.50		ng/L		112	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	38.78		ng/L		104	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	40.79		ng/L		106	68 - 128
Perfluorooctane Sulfonamide (FOSA)	40.0	44.09		ng/L		110	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	45.28		ng/L		113	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	44.25		ng/L		111	65 - 125

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-212987/2-A
Matrix: Solid
Analysis Batch: 213581

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212987

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
6:2FTS			37.9	41.42		ng/L		109	66 - 126		
8:2FTS			38.3	42.74		ng/L		112	67 - 127		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*25 - 150*
13C5 PFPeA	*82*		*25 - 150*
13C2 PFHxA	*84*		*25 - 150*
13C4-PFHpA	*85*		*25 - 150*
13C4 PFOA	*90*		*25 - 150*
13C5 PFNA	*88*		*25 - 150*
13C2 PFDA	*97*		*25 - 150*
13C2 PFUnA	*86*		*25 - 150*
13C2 PFDoA	*86*		*25 - 150*
13C2-PFTeDA	*101*		*25 - 150*
13C3-PFBS	*81*		*25 - 150*
18O2 PFHxS	*87*		*25 - 150*
13C4 PFOS	*87*		*25 - 150*
13C8 FOSA	*82*		*25 - 150*
d3-NMeFOSAA	*82*		*25 - 150*
d5-NEtFOSAA	*84*		*25 - 150*
M2-6:2FTS	*95*		*25 - 150*
M2-8:2FTS	*99*		*25 - 150*

Lab Sample ID: MB 320-214230/1-A
Matrix: Solid
Analysis Batch: 214957

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		03/21/18 18:54	03/27/18 01:24	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*95*		*25 - 150*	*03/21/18 18:54*	*03/27/18 01:24*	*1*

Lab Sample ID: LCS 320-214230/2-A
Matrix: Solid
Analysis Batch: 214957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214230

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorodecanesulfonic acid (PFDS)			0.00193	0.00181		mg/Kg		94	54 - 113		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFOS	*91*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-214600/1-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214600

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		03/23/18 15:02	03/29/18 00:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*80*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*

Lab Sample ID: LCS 320-214600/2-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00169		mg/Kg		88	54 - 113

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFOS	*82*		*25 - 150*

Lab Sample ID: LB 320-211148/1-B
Matrix: Solid
Analysis Batch: 213581

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 212987

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.444	J	1.97	0.34	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluoropentanoic acid (PFPeA)	0.48	U	1.97	0.48	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorohexanoic acid (PFHxA)	0.57	U	1.97	0.57	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluoroheptanoic acid (PFHpA)	0.25	U	1.97	0.25	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorooctanoic acid (PFOA)	0.84	U	1.97	0.84	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorononanoic acid (PFNA)	0.27	U	1.97	0.27	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorodecanoic acid (PFDA)	0.31	U	1.97	0.31	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluoroundecanoic acid (PFUnA)	1.08	U	1.97	1.08	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.97	0.20	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorohexanesulfonic acid (PFHxS)	0.252	J	1.97	0.17	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.97	0.19	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorooctanesulfonic acid (PFOS)	0.53	U	1.97	0.53	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.97	0.32	ng/L		03/14/18 20:27	03/17/18 15:27	1
Perfluorooctane Sulfonamide (FOSA)	0.34	U	1.97	0.34	ng/L		03/14/18 20:27	03/17/18 15:27	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.05	U	19.7	3.05	ng/L		03/14/18 20:27	03/17/18 15:27	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87	ng/L		03/14/18 20:27	03/17/18 15:27	1
6:2FTS	1.97	U	19.7	1.97	ng/L		03/14/18 20:27	03/17/18 15:27	1
8:2FTS	1.97	U	19.7	1.97	ng/L		03/14/18 20:27	03/17/18 15:27	1

Isotope Dilution	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*25 - 150*	*03/14/18 20:27*	*03/17/18 15:27*	*1*
13C5 PFPeA	*86*		*25 - 150*	*03/14/18 20:27*	*03/17/18 15:27*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LB 320-211148/1-B
Matrix: Solid
Analysis Batch: 213581

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 212987

Isotope Dilution	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	84		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C4-PFHpA	88		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C4 PFOA	89		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C5 PFNA	92		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C2 PFDA	93		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C2 PFUnA	92		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C2 PFDoA	89		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C2-PFTeDA	98		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C3-PFBS	84		25 - 150	03/14/18 20:27	03/17/18 15:27	1
18O2 PFHxS	86		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C4 PFOS	83		25 - 150	03/14/18 20:27	03/17/18 15:27	1
13C8 FOSA	84		25 - 150	03/14/18 20:27	03/17/18 15:27	1
d3-NMeFOSAA	84		25 - 150	03/14/18 20:27	03/17/18 15:27	1
d5-NEtFOSAA	92		25 - 150	03/14/18 20:27	03/17/18 15:27	1
M2-6:2FTS	90		25 - 150	03/14/18 20:27	03/17/18 15:27	1
M2-8:2FTS	102		25 - 150	03/14/18 20:27	03/17/18 15:27	1

Lab Sample ID: 320-36683-9 MS
Matrix: Solid
Analysis Batch: 213785

Client Sample ID: SB012-SPLP(2'-4')
Prep Type: SPLP East
Prep Batch: 212987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	30.7	B F1	39.8	88.81	F1	ng/L		146	70 - 130
Perfluoropentanoic acid (PFPeA)	32.0		39.8	76.77		ng/L		112	66 - 126
Perfluorohexanoic acid (PFHxA)	105	F1	39.8	150.4		ng/L		114	66 - 126
Perfluoroheptanoic acid (PFHpA)	21.9		39.8	68.59		ng/L		117	66 - 126
Perfluorooctanoic acid (PFOA)	99.6		39.8	138.8		ng/L		99	64 - 124
Perfluorononanoic acid (PFNA)	107	F1	39.8	165.3	F1	ng/L		147	68 - 128
Perfluorodecanoic acid (PFDA)	219		39.8	300.4	4	ng/L		205	69 - 129
Perfluoroundecanoic acid (PFUnA)	196		39.8	214.6	4	ng/L		47	60 - 120
Perfluorododecanoic acid (PFDoA)	3.56		39.8	49.89		ng/L		116	71 - 131
Perfluorotridecanoic Acid (PFTriA)	17.2		39.8	56.04		ng/L		98	72 - 132
Perfluorotetradecanoic acid (PFTeA)	0.28	U	39.8	39.18		ng/L		98	68 - 128
Perfluorobutanesulfonic acid (PFBS)	41.1		35.2	75.83		ng/L		99	73 - 133
Perfluoroheptanesulfonic Acid (PFHpS)	27.4	F1	37.9	142.7	F1	ng/L		304	68 - 128
Perfluorodecanesulfonic acid (PFDS)	4.67	F1	38.4	103.1	F1	ng/L		257	68 - 128
Perfluorooctane Sulfonamide (FOSA)	64.3		39.8	109.6		ng/L		114	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.03	U	39.8	43.34		ng/L		109	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	39.8	45.53		ng/L		114	65 - 125

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-36683-9 MS
Matrix: Solid
Analysis Batch: 213785

Client Sample ID: SB012-SPLP(2'-4')
Prep Type: SPLP East
Prep Batch: 212987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
6:2FTS	12.9	J	37.7	53.55		ng/L		108	66 - 126
8:2FTS	23.3		38.1	68.40		ng/L		118	67 - 127

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*63*		*25 - 150*
13C5 PFPeA	*74*		*25 - 150*
13C2 PFHxA	*71*		*25 - 150*
13C4-PFHpA	*64*		*25 - 150*
13C4 PFOA	*76*		*25 - 150*
13C5 PFNA	*31*		*25 - 150*
13C2 PFDA	*82*		*25 - 150*
13C2 PFUnA	*79*		*25 - 150*
13C2 PFDoA	*70*		*25 - 150*
13C2-PFTeDA	*85*		*25 - 150*
13C3-PFBS	*86*		*25 - 150*
18O2 PFHxS	*75*		*25 - 150*
13C4 PFOS	*35*		*25 - 150*
13C8 FOSA	*84*		*25 - 150*
d3-NMeFOSAA	*60*		*25 - 150*
d5-NEtFOSAA	*65*		*25 - 150*
M2-6:2FTS	*82*		*25 - 150*
M2-8:2FTS	*104*		*25 - 150*

Lab Sample ID: 320-36683-9 MSD
Matrix: Solid
Analysis Batch: 213785

Client Sample ID: SB012-SPLP(2'-4')
Prep Type: SPLP East
Prep Batch: 212987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	30.7	B F1	37.7	77.76		ng/L		125	70 - 130	13	30
Perfluoropentanoic acid (PFPeA)	32.0		37.7	74.67		ng/L		113	66 - 126	3	30
Perfluorohexanoic acid (PFHxA)	105	F1	37.7	155.9	F1	ng/L		135	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)	21.9		37.7	67.10		ng/L		120	66 - 126	2	30
Perfluorooctanoic acid (PFOA)	99.6		37.7	136.0		ng/L		97	64 - 124	2	30
Perfluorononanoic acid (PFNA)	107	F1	37.7	156.1	F1	ng/L		131	68 - 128	6	30
Perfluorodecanoic acid (PFDA)	219		37.7	309.1	4	ng/L		239	69 - 129	3	30
Perfluoroundecanoic acid (PFUnA)	196		37.7	235.4	4	ng/L		105	60 - 120	9	30
Perfluorododecanoic acid (PFDoA)	3.56		37.7	48.52		ng/L		119	71 - 131	3	30
Perfluorotridecanoic Acid (PFTriA)	17.2		37.7	56.38		ng/L		104	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)	0.28	U	37.7	40.12		ng/L		106	68 - 128	2	30
Perfluorobutanesulfonic acid (PFBS)	41.1		33.3	78.57		ng/L		112	73 - 133	4	30
Perfluoroheptanesulfonic Acid (PFHpS)	27.4	F1	35.9	138.1	F1	ng/L		308	68 - 128	3	30
Perfluorodecanesulfonic acid (PFDS)	4.67	F1	36.3	107.4	F1	ng/L		283	68 - 128	4	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-36683-9 MSD
Matrix: Solid
Analysis Batch: 213785

Client Sample ID: SB012-SPLP(2'-4')
Prep Type: SPLP East
Prep Batch: 212987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctane Sulfonamide (FOSA)	64.3		37.7	109.9		ng/L		121	70 - 130	0	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.03	U	37.7	46.27		ng/L		123	67 - 127	7	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	37.7	42.10		ng/L		112	65 - 125	8	30
6:2FTS	12.9	J	35.7	53.95		ng/L		115	66 - 126	1	30
8:2FTS	23.3		36.1	66.69		ng/L		120	67 - 127	3	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*59*		*25 - 150*
13C5 PFPeA	*69*		*25 - 150*
13C2 PFHxA	*66*		*25 - 150*
13C4-PFHpA	*61*		*25 - 150*
13C4 PFOA	*74*		*25 - 150*
13C5 PFNA	*31*		*25 - 150*
13C2 PFDA	*79*		*25 - 150*
13C2 PFUnA	*77*		*25 - 150*
13C2 PFDoA	*68*		*25 - 150*
13C2-PFTeDA	*81*		*25 - 150*
13C3-PFBS	*78*		*25 - 150*
18O2 PFHxS	*73*		*25 - 150*
13C4 PFOS	*34*		*25 - 150*
13C8 FOSA	*81*		*25 - 150*
d3-NMeFOSAA	*56*		*25 - 150*
d5-NEtFOSAA	*64*		*25 - 150*
M2-6:2FTS	*83*		*25 - 150*
M2-8:2FTS	*100*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Lab Sample ID: 320-36683-10 MS
Matrix: Solid
Analysis Batch: 214277

Client Sample ID: SB012(10'-12')
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	D B F2	0.00189	0.323	4	mg/Kg	☼	186	69 - 131

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFOS - DL	*67*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Lab Sample ID: 320-36683-10 MSD — **Client Sample ID: SB012(10'-12')**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 214277 — **Prep Batch: 212510**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	D B F2	0.00190	0.216	4 F2	mg/Kg	☼	-5443	69 - 131	40	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFOS - DL	*69*		*25 - 150*

Lab Sample ID: 320-36683-9 MS — **Client Sample ID: SB012-SPLP(2'-4')**
Matrix: Solid — **Prep Type: SPLP East**
Analysis Batch: 213785 — **Prep Batch: 212987**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanesulfonic acid (PFHxS) - DL	704	D B	36.2	787.9	4	ng/L		231	63 - 123
Perfluorooctanesulfonic acid (PFOS) - DL	23100	D	36.9	22520	4	ng/L		-1558	67 - 127

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
18O2 PFHxS - DL	*55*	*	*25 - 150*
13C4 PFOS - DL	*53*	*	*25 - 150*

Lab Sample ID: 320-36683-9 MSD — **Client Sample ID: SB012-SPLP(2'-4')**
Matrix: Solid — **Prep Type: SPLP East**
Analysis Batch: 213785 — **Prep Batch: 212987**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS) - DL	704	D B	34.3	773.6	4	ng/L		202	63 - 123	2	30
Perfluorooctanesulfonic acid (PFOS) - DL	23100	D	35.0	23050	4	ng/L		-131	67 - 127	2	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
18O2 PFHxS - DL	*66*	*	*25 - 150*
13C4 PFOS - DL	*66*	*	*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Lab Sample ID: 320-36631-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 214957 — **Prep Batch: 214230**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanesulfonic acid (PFDS) - RE	0.000040	U	0.00193	0.00164		mg/Kg	☼	85	54 - 113

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFOS - RE	*90*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE (Continued)

Lab Sample ID: 320-36631-A-1-D MSD
Matrix: Solid
Analysis Batch: 214957

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 214230

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanesulfonic acid (PFDS) - RE	0.000040	U	0.00196	0.00166		mg/Kg	☼	84	54 - 113	1	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFOS - RE	*78*		*25 - 150*

Lab Sample ID: 320-36683-10 MS
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: SB012(10'-12')
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorodecanesulfonic acid (PFDS) - RE	0.000040	U H F1	0.00198	0.00239	H F1	mg/Kg	☼	121	54 - 113		

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFOS - RE	*61*		*25 - 150*

Lab Sample ID: 320-36683-10 MSD
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: SB012(10'-12')
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanesulfonic acid (PFDS) - RE	0.000040	U H F1	0.00195	0.00220	H	mg/Kg	☼	113	54 - 113	8	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFOS - RE	*58*		*25 - 150*

Qualifiers

LCMS

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
*	LCS or LCSD is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
*	Isotope Dilution analyte is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Leach Batch: 211148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-1	SB008-SPLP(2'-4')	SPLP East	Solid	1312	
320-36683-1 - DL	SB008-SPLP(2'-4')	SPLP East	Solid	1312	
320-36683-2	DUPE007	SPLP East	Solid	1312	
320-36683-2 - DL	DUPE007	SPLP East	Solid	1312	
320-36683-6 - DL	SB013-SPLP(8'-10')	SPLP East	Solid	1312	
320-36683-6	SB013-SPLP(8'-10')	SPLP East	Solid	1312	
320-36683-9	SB012-SPLP(2'-4')	SPLP East	Solid	1312	
320-36683-9 - DL	SB012-SPLP(2'-4')	SPLP East	Solid	1312	
LB 320-211148/1-B	Method Blank	SPLP East	Solid	1312	
320-36683-9 MS	SB012-SPLP(2'-4')	SPLP East	Solid	1312	
320-36683-9 MS - DL	SB012-SPLP(2'-4')	SPLP East	Solid	1312	
320-36683-9 MSD	SB012-SPLP(2'-4')	SPLP East	Solid	1312	
320-36683-9 MSD - DL	SB012-SPLP(2'-4')	SPLP East	Solid	1312	

Prep Batch: 212510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-3	SB008(5'-7')	Total/NA	Solid	SHAKE	
320-36683-3 - DL	SB008(5'-7')	Total/NA	Solid	SHAKE	
320-36683-4	DUPE006	Total/NA	Solid	SHAKE	
320-36683-4 - DL	DUPE006	Total/NA	Solid	SHAKE	
320-36683-5 - DL	SB013(5'-7')	Total/NA	Solid	SHAKE	
320-36683-5	SB013(5'-7')	Total/NA	Solid	SHAKE	
320-36683-7 - DL	SB002(5'-7')	Total/NA	Solid	SHAKE	
320-36683-7	SB002(5'-7')	Total/NA	Solid	SHAKE	
320-36683-8 - DL	SB012(5'-7')	Total/NA	Solid	SHAKE	
320-36683-8	SB012(5'-7')	Total/NA	Solid	SHAKE	
320-36683-10	SB012(10'-12')	Total/NA	Solid	SHAKE	
320-36683-10 - DL	SB012(10'-12')	Total/NA	Solid	SHAKE	
MB 320-212510/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-212510/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-36683-10 MS	SB012(10'-12')	Total/NA	Solid	SHAKE	
320-36683-10 MS - DL	SB012(10'-12')	Total/NA	Solid	SHAKE	
320-36683-10 MSD	SB012(10'-12')	Total/NA	Solid	SHAKE	
320-36683-10 MSD - DL	SB012(10'-12')	Total/NA	Solid	SHAKE	

Prep Batch: 212987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-1	SB008-SPLP(2'-4')	SPLP East	Solid	3535	211148
320-36683-1 - DL	SB008-SPLP(2'-4')	SPLP East	Solid	3535	211148
320-36683-2	DUPE007	SPLP East	Solid	3535	211148
320-36683-2 - DL	DUPE007	SPLP East	Solid	3535	211148
320-36683-6	SB013-SPLP(8'-10')	SPLP East	Solid	3535	211148
320-36683-6 - DL	SB013-SPLP(8'-10')	SPLP East	Solid	3535	211148
320-36683-9	SB012-SPLP(2'-4')	SPLP East	Solid	3535	211148
320-36683-9 - DL	SB012-SPLP(2'-4')	SPLP East	Solid	3535	211148
LB 320-211148/1-B	Method Blank	SPLP East	Solid	3535	211148
MB 320-212987/1-A	Method Blank	Total/NA	Solid	3535	
LCS 320-212987/2-A	Lab Control Sample	Total/NA	Solid	3535	
320-36683-9 MS	SB012-SPLP(2'-4')	SPLP East	Solid	3535	211148
320-36683-9 MS - DL	SB012-SPLP(2'-4')	SPLP East	Solid	3535	211148
320-36683-9 MSD - DL	SB012-SPLP(2'-4')	SPLP East	Solid	3535	211148

LCMS (Continued)

Prep Batch: 212987 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-9 MSD	SB012-SPLP(2'-4')	SPLP East	Solid	3535	211148

Analysis Batch: 213581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-1 - DL	SB008-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-2 - DL	DUPE007	SPLP East	Solid	537 (modified)	212987
320-36683-6 - DL	SB013-SPLP(8'-10')	SPLP East	Solid	537 (modified)	212987
LB 320-211148/1-B	Method Blank	SPLP East	Solid	537 (modified)	212987
MB 320-212987/1-A	Method Blank	Total/NA	Solid	537 (modified)	212987
LCS 320-212987/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	212987

Analysis Batch: 213785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-1	SB008-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-2	DUPE007	SPLP East	Solid	537 (modified)	212987
320-36683-6	SB013-SPLP(8'-10')	SPLP East	Solid	537 (modified)	212987
320-36683-9 - DL	SB012-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-9	SB012-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-9 MS - DL	SB012-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-9 MS	SB012-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-9 MSD - DL	SB012-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987
320-36683-9 MSD	SB012-SPLP(2'-4')	SPLP East	Solid	537 (modified)	212987

Analysis Batch: 214053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-3	SB008(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-4	DUPE006	Total/NA	Solid	537 (modified)	212510
320-36683-5	SB013(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-7	SB002(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-8	SB012(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-10	SB012(10'-12')	Total/NA	Solid	537 (modified)	212510
MB 320-212510/1-A	Method Blank	Total/NA	Solid	537 (modified)	212510
LCS 320-212510/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	212510
320-36683-10 MS	SB012(10'-12')	Total/NA	Solid	537 (modified)	212510
320-36683-10 MSD	SB012(10'-12')	Total/NA	Solid	537 (modified)	212510

Prep Batch: 214230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-3 - RE	SB008(5'-7')	Total/NA	Solid	SHAKE	
320-36683-4 - RE	DUPE006	Total/NA	Solid	SHAKE	
320-36683-5 - RE	SB013(5'-7')	Total/NA	Solid	SHAKE	
320-36683-7 - RE	SB002(5'-7')	Total/NA	Solid	SHAKE	
MB 320-214230/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-214230/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-36631-A-1-C MS - RE	Matrix Spike	Total/NA	Solid	SHAKE	
320-36631-A-1-D MSD - RE	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	

Analysis Batch: 214277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-3 - DL	SB008(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-4 - DL	DUPE006	Total/NA	Solid	537 (modified)	212510

LCMS (Continued)

Analysis Batch: 214277 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-5 - DL	SB013(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-7 - DL	SB002(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-8 - DL	SB012(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36683-10 - DL	SB012(10'-12')	Total/NA	Solid	537 (modified)	212510
320-36683-10 MS - DL	SB012(10'-12')	Total/NA	Solid	537 (modified)	212510
320-36683-10 MSD - DL	SB012(10'-12')	Total/NA	Solid	537 (modified)	212510

Prep Batch: 214600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-8 - RE	SB012(5'-7')	Total/NA	Solid	SHAKE	
320-36683-10 - RE	SB012(10'-12')	Total/NA	Solid	SHAKE	
MB 320-214600/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-214600/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-36683-10 MS - RE	SB012(10'-12')	Total/NA	Solid	SHAKE	
320-36683-10 MSD - RE	SB012(10'-12')	Total/NA	Solid	SHAKE	

Analysis Batch: 214957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-3 - RE	SB008(5'-7')	Total/NA	Solid	537 (modified)	214230
320-36683-4 - RE	DUPE006	Total/NA	Solid	537 (modified)	214230
320-36683-5 - RE	SB013(5'-7')	Total/NA	Solid	537 (modified)	214230
320-36683-7 - RE	SB002(5'-7')	Total/NA	Solid	537 (modified)	214230
MB 320-214230/1-A	Method Blank	Total/NA	Solid	537 (modified)	214230
LCS 320-214230/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	214230
320-36631-A-1-C MS - RE	Matrix Spike	Total/NA	Solid	537 (modified)	214230
320-36631-A-1-D MSD - RE	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	214230

Analysis Batch: 215311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-8 - RE	SB012(5'-7')	Total/NA	Solid	537 (modified)	214600
320-36683-10 - RE	SB012(10'-12')	Total/NA	Solid	537 (modified)	214600
MB 320-214600/1-A	Method Blank	Total/NA	Solid	537 (modified)	214600
LCS 320-214600/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	214600
320-36683-10 MS - RE	SB012(10'-12')	Total/NA	Solid	537 (modified)	214600
320-36683-10 MSD - RE	SB012(10'-12')	Total/NA	Solid	537 (modified)	214600

General Chemistry

Analysis Batch: 211192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36683-3	SB008(5'-7')	Total/NA	Solid	D 2216	
320-36683-4	DUPE006	Total/NA	Solid	D 2216	
320-36683-5	SB013(5'-7')	Total/NA	Solid	D 2216	
320-36683-7	SB002(5'-7')	Total/NA	Solid	D 2216	
320-36683-8	SB012(5'-7')	Total/NA	Solid	D 2216	
320-36683-10	SB012(10'-12')	Total/NA	Solid	D 2216	
320-36683-10 DU	SB012(10'-12')	Total/NA	Solid	D 2216	

Lab Chronicle

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Client Sample ID: SB008-SPLP(2'-4')

Lab Sample ID: 320-36683-1
Date Collected: 03/01/18 09:15
Matrix: Solid
Date Received: 03/02/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312	DL		211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)	DL	100	213581	03/17/18 15:59	CBW	TAL SAC
SPLP East	Leach	1312			211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535			212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)		1	213785	03/19/18 17:20	CBW	TAL SAC

Client Sample ID: DUPE007

Lab Sample ID: 320-36683-2
Date Collected: 03/01/18 00:00
Matrix: Solid
Date Received: 03/02/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312	DL		211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)	DL	100	213581	03/17/18 16:07	CBW	TAL SAC
SPLP East	Leach	1312			211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535			212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)		1	213785	03/19/18 17:28	CBW	TAL SAC

Client Sample ID: SB008(5'-7')

Lab Sample ID: 320-36683-3
Date Collected: 03/01/18 09:30
Matrix: Solid
Date Received: 03/02/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	211192	03/05/18 13:40	TCS	TAL SAC

Client Sample ID: SB008(5'-7')

Lab Sample ID: 320-36683-3
Date Collected: 03/01/18 09:30
Matrix: Solid
Date Received: 03/02/18 09:15
Percent Solids: 96.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 00:12	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	214277	03/21/18 23:06	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214230	03/21/18 18:54	JER	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	214957	03/27/18 03:28	JRB	TAL SAC

Client Sample ID: DUPE006
Date Collected: 03/01/18 00:00
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	211192	03/05/18 13:40	TCS	TAL SAC

Client Sample ID: DUPE006
Date Collected: 03/01/18 00:00
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-4
Matrix: Solid
Percent Solids: 96.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 00:20	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	214277	03/21/18 23:14	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214230	03/21/18 18:54	JER	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	214957	03/27/18 03:36	JRB	TAL SAC

Client Sample ID: SB013(5'-7')
Date Collected: 03/01/18 10:10
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	211192	03/05/18 13:40	TCS	TAL SAC

Client Sample ID: SB013(5'-7')
Date Collected: 03/01/18 10:10
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-5
Matrix: Solid
Percent Solids: 85.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 00:36	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	20	214277	03/21/18 23:29	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214230	03/21/18 18:54	JER	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	214957	03/27/18 03:44	JRB	TAL SAC

Client Sample ID: SB013-SPLP(8'-10')
Date Collected: 03/01/18 10:20
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312	DL		211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)	DL	100	213581	03/17/18 16:15	CBW	TAL SAC
SPLP East	Leach	1312			211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535			212987	03/14/18 20:27	JER	TAL SAC

Client Sample ID: SB013-SPLP(8'-10')
Date Collected: 03/01/18 10:20
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Analysis	537 (modified)		1	213785	03/19/18 17:36	CBW	TAL SAC

Client Sample ID: SB002(5'-7')
Date Collected: 03/01/18 11:15
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	211192	03/05/18 13:40	TCS	TAL SAC

Client Sample ID: SB002(5'-7')
Date Collected: 03/01/18 11:15
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-7
Matrix: Solid
Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 00:43	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	214277	03/21/18 23:37	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214230	03/21/18 18:54	JER	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	214957	03/27/18 04:08	JRB	TAL SAC

Client Sample ID: SB012(5'-7')
Date Collected: 03/01/18 12:00
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	211192	03/05/18 13:40	TCS	TAL SAC

Client Sample ID: SB012(5'-7')
Date Collected: 03/01/18 12:00
Date Received: 03/02/18 09:15

Lab Sample ID: 320-36683-8
Matrix: Solid
Percent Solids: 95.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 00:51	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100	214277	03/21/18 23:45	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 01:36	CBW	TAL SAC

Lab Chronicle

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36683-1

Client Sample ID: SB012-SPLP(2'-4')

Lab Sample ID: 320-36683-9
Date Collected: 03/01/18 11:45
Matrix: Solid
Date Received: 03/02/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312	DL		211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)	DL	100	213785	03/19/18 17:44	CBW	TAL SAC
SPLP East	Leach	1312			211148	03/05/18 14:10	NIM	TAL SAC
SPLP East	Prep	3535			212987	03/14/18 20:27	JER	TAL SAC
SPLP East	Analysis	537 (modified)		1	213785	03/19/18 18:31	CBW	TAL SAC

Client Sample ID: SB012(10'-12')

Lab Sample ID: 320-36683-10
Date Collected: 03/01/18 12:30
Matrix: Solid
Date Received: 03/02/18 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	211192	03/05/18 13:40	TCS	TAL SAC

Client Sample ID: SB012(10'-12')

Lab Sample ID: 320-36683-10
Date Collected: 03/01/18 12:30
Matrix: Solid
Date Received: 03/02/18 09:15
Percent Solids: 97.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 00:59	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50	214277	03/21/18 23:53	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 01:59	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-36683-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
Arizona	State Program	9	AZ0708	08-11-18
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-18
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-18 *
Kansas	NELAP	7	E-10375	10-31-18
L-A-B	DoD ELAP		L2468	01-20-21
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-14-18
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-18
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	04-01-18
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-18 *
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	07-31-18
USDA	Federal		P330-11-00436	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
New York	NELAP	2	11452	04-01-18
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	PFOS #
SB002(5'-7') DL	320-36683-7 DL	78	64

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB008(5'-7')	320-36683-3	73	78	81	76	84	80	77	82
DUPE006	320-36683-4	69	78	76	76	77	73	71	77
SB013(5'-7')	320-36683-5	72	75	68	73	77	68	65	75
SB012(5'-7')	320-36683-8	78	78	81	76	77	81	74	76
SB012(10'-12')	320-36683-10	82	85	87	82	91	85	76	84
	MB 320-212510/1-A	73	81	81	80	86	80	73	83
	LCS 320-212510/2-A	72	79	82	77	85	82	83	84
SB012(10'-12') MS	320-36683-10 MS	82	82	85	83	86	83	77	83
SB012(10'-12') MSD	320-36683-10 MSD	77	77	78	79	82	82	75	82

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
SB008(5'-7')	320-36683-3	69	74	44	61	60	20 *	16 *	35
DUPE006	320-36683-4	59	65	39	44	48	17 *	16 *	27
SB013(5'-7')	320-36683-5	42	50	33	32	39	14 *	13 *	18 *
SB012(5'-7')	320-36683-8	37	33	38	57	56	25	25	37
SB012(10'-12')	320-36683-10	58	51	49	65	68	35	36	51
	MB 320-212510/1-A	69	83	48	55	71	33	32	58
	LCS 320-212510/2-A	69	85	50	64	70	37	37	52
SB012(10'-12') MS	320-36683-10 MS	56	50	46	63	60	24 *	23 *	44
SB012(10'-12') MSD	320-36683-10 MSD	61	53	45	65	64	33	33	48

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
SB008(5'-7')	320-36683-3	11 *	1 *
DUPE006	320-36683-4	13 *	4 *
SB013(5'-7')	320-36683-5	8 *	1 *
SB012(5'-7')	320-36683-8	26	25
SB012(10'-12')	320-36683-10	43	51
	MB 320-212510/1-A	33	14 *
	LCS 320-212510/2-A	29	13 *
SB012(10'-12') MS	320-36683-10 MS	28	30
SB012(10'-12') MSD	320-36683-10 MSD	41	55

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB002(5'-7')	320-36683-7	80	82	82	81	91	82	82	65

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #
SB002(5'-7')	320-36683-7	70	46	56	55	22 *	18 *	33	19 *

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFTDA #
SB002(5'-7')	320-36683-7	7 *

	QC LIMITS
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #
SB008(5'-7') DL	320-36683-3 DL	66
SB008(5'-7') RE	320-36683-3 RE	90
DUPE006 DL	320-36683-4 DL	59
DUPE006 RE	320-36683-4 RE	76
SB013(5'-7') DL	320-36683-5 DL	49
SB013(5'-7') RE	320-36683-5 RE	68
SB002(5'-7') RE	320-36683-7 RE	73
SB012(5'-7') DL	320-36683-8 DL	59
SB012(5'-7') RE	320-36683-8 RE	32
SB012(10'-12') DL	320-36683-10 DL	65
SB012(10'-12') RE	320-36683-10 RE	46
	MB 320-214230/1-A	95
	MB 320-214600/1-A	80
	LCS 320-214230/2-A	91
	LCS 320-214600/2-A	82
SB012(10'-12') MS DL	320-36683-10 MS DL	67
SB012(10'-12') MS RE	320-36683-10 MS RE	61
	320-36631-A-1-C MS RE	90
SB012(10'-12') MSD DL	320-36683-10 MSD DL	69
SB012(10'-12') MSD RE	320-36683-10 MSD RE	58
	320-36631-A-1-D MSD RE	78

	QC LIMITS
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB008-SPLP(2'-4')	320-36683-1	68	68	78	66	67	76	91	73
DUPE007	320-36683-2	73	75	77	70	76	83	96	82
SB013-SPLP(8'-10')	320-36683-6	84	80	83	76	76	83	88	79
SB012-SPLP(2'-4')	320-36683-9	61	72	80	68	63	76	86	75
	MB 320-212987/1-A	73	74	70	74	77	76	85	81
	LB 320-211148/1-B	84	86	84	84	88	86	90	89
	LCS 320-212987/2-A	84	82	81	84	85	87	95	90
SB012-SPLP(2'-4') MS	320-36683-9 MS	63	74	86	71	64	75	82	76
SB012-SPLP(2'-4') MSD	320-36683-9 MSD	59	69	78	66	61	73	83	74

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
SB008-SPLP(2'-4')	320-36683-1	58	72	81	91	74	54	57	73
DUPE007	320-36683-2	59	74	83	94	83	54	61	74
SB013-SPLP(8'-10')	320-36683-6	67	75	82	101	84	55	63	76
SB012-SPLP(2'-4')	320-36683-9	34	39	85	103	83	59	65	77
	MB 320-212987/1-A	79	72	72	85	78	70	78	75
	LB 320-211148/1-B	92	83	84	102	93	84	92	92
	LCS 320-212987/2-A	88	87	82	99	97	82	84	86
SB012-SPLP(2'-4') MS	320-36683-9 MS	31	35	84	104	82	60	65	79
SB012-SPLP(2'-4') MSD	320-36683-9 MSD	31	34	81	100	79	56	64	77

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
SB008-SPLP(2'-4')	320-36683-1	68	81
DUPE007	320-36683-2	65	77
SB013-SPLP(8'-10')	320-36683-6	75	110
SB012-SPLP(2'-4')	320-36683-9	74	81
	MB 320-212987/1-A	72	86
	LB 320-211148/1-B	89	98
	LCS 320-212987/2-A	86	101
SB012-SPLP(2'-4') MS	320-36683-9 MS	70	85
SB012-SPLP(2'-4') MSD	320-36683-9 MSD	68	81

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS	#	PFOS	#
SB012-SPLP(2'-4') DL	320-36683-9 DL	62	*	55	*
SB012-SPLP(2'-4') MS DL	320-36683-9 MS DL	55	*	53	*
SB012-SPLP(2'-4') MSD DL	320-36683-9 MSD DL	66	*	66	*

	QC LIMITS
PFHxS = 18O2 PFHxS	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS	#
SB008-SPLP(2'-4') DL	320-36683-1 DL	61	*
DUPE007 DL	320-36683-2 DL	62	*
SB013-SPLP(8'-10') DL	320-36683-6 DL	62	*

	QC LIMITS
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_024.d

Lab ID: LCS 320-212510/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00200	0.00198	99	81-133	
Perfluoropentanoic acid (PFPeA)	0.00200	0.00186	93	79-120	
Perfluorohexanoic acid (PFHxA)	0.00200	0.00200	100	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00203	101	76-124	
Perfluorooctanoic acid (PFOA)	0.00200	0.00198	99	76-121	
Perfluorononanoic acid (PFNA)	0.00200	0.00189	95	74-126	
Perfluorodecanoic acid (PFDA)	0.00200	0.00206	103	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00156	78	74-114	
Perfluorododecanoic acid (PFDoA)	0.00200	0.00198	99	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00129	64	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00202	101	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00172	97	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00165	91	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00216	113	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00220	118	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.000908	47	54-113	*
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00196	98	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00192 J	96	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00185 J	92	65-135	
6:2FTS	0.00190	0.00176 J	93	65-135	
8:2FTS	0.00192	0.00188 J	98	65-135	
13C4 PFBA	0.00500	0.00362	72	25-150	
13C5 PFPeA	0.00500	0.00397	79	25-150	
13C2 PFHxA	0.00500	0.00383	77	25-150	
13C4-PFHpA	0.00500	0.00424	85	25-150	
13C4 PFOA	0.00500	0.00422	84	25-150	
13C5 PFNA	0.00500	0.00424	85	25-150	
13C2 PFDA	0.00500	0.00350	70	25-150	
13C2 PFUnA	0.00500	0.00261	52	25-150	
13C2 PFDoA	0.00500	0.00146	29	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_024.d

Lab ID: LCS 320-212510/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00500	0.000646	13	25-150	*
13C3-PFBS	0.00465	0.00382	82	25-150	
18O2 PFHxS	0.00473	0.00390	82	25-150	
13C4 PFOS	0.00478	0.00328	69	25-150	
13C8 FOSA	0.00500	0.00248	50	25-150	
d3-NMeFOSAA	0.00500	0.00183	37	25-150	
d5-NEtFOSAA	0.00500	0.00186	37	25-150	
M2-6:2FTS	0.00475	0.00394	83	25-150	
M2-8:2FTS	0.00479	0.00305	64	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2017.03.17LLZA_025.d

Lab ID: LCS 320-212987/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	44.68	112	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	42.28	106	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	43.93	110	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	44.57	111	66-126	
Perfluorooctanoic acid (PFOA)	40.0	43.74	109	64-124	
Perfluorononanoic acid (PFNA)	40.0	45.99	115	68-128	
Perfluorodecanoic acid (PFDA)	40.0	45.22	113	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	37.48	94	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	46.48	116	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	43.71	109	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	40.98	102	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	42.42	120	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.95	102	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.50	112	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.78	104	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	40.79	106	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	44.09	110	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	45.28	113	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	44.25	111	65-125	
6:2FTS	37.9	41.42	109	66-126	
8:2FTS	38.3	42.74	112	67-127	
13C4 PFBA	100	83.64	84	25-150	
13C5 PFPeA	100	82.11	82	25-150	
13C2 PFHxA	100	83.80	84	25-150	
13C4-PFHpA	100	84.88	85	25-150	
13C4 PFOA	100	89.57	90	25-150	
13C5 PFNA	100	88.45	88	25-150	
13C2 PFDA	100	96.77	97	25-150	
13C2 PFUnA	100	85.92	86	25-150	
13C2 PFDoA	100	85.59	86	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2017.03.17LLZA_025.d

Lab ID: LCS 320-212987/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	100	100.7	101	25-150	
13C3-PFBS	93.0	75.40	81	25-150	
18O2 PFHxS	94.6	82.59	87	25-150	
13C4 PFOS	95.6	83.59	87	25-150	
13C8 FOSA	100	81.98	82	25-150	
d3-NMeFOSAA	100	81.80	82	25-150	
d5-NEtFOSAA	100	84.38	84	25-150	
M2-6:2FTS	95.0	90.59	95	25-150	
M2-8:2FTS	95.8	94.96	99	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.26LLA_053.d

Lab ID: LCS 320-214230/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00181	94	54-113	
13C4 PFOS	0.00478	0.00436	91	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_008.d

Lab ID: LCS 320-214600/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00169	88	54-113	
13C4 PFOS	0.00478	0.00393	82	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East Level: Low Lab File ID: 2018.03.19LLAX_018.d

Lab ID: 320-36683-9 MS Client ID: SB012-SPLP(2'-4') MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	39.8	30.7	88.81	146	70-130	F1
Perfluoropentanoic acid (PFPeA)	39.8	32.0	76.77	112	66-126	
Perfluorohexanoic acid (PFHxA)	39.8	105	150.4	114	66-126	
Perfluoroheptanoic acid (PFHpA)	39.8	21.9	68.59	117	66-126	
Perfluorooctanoic acid (PFOA)	39.8	99.6	138.8	99	64-124	
Perfluorononanoic acid (PFNA)	39.8	107	165.3	147	68-128	F1
Perfluorodecanoic acid (PFDA)	39.8	219	300.4	205	69-129	4
Perfluoroundecanoic acid (PFUnA)	39.8	196	214.6	47	60-120	4
Perfluorododecanoic acid (PFDoA)	39.8	3.56	49.89	116	71-131	
Perfluorotridecanoic Acid (PFTriA)	39.8	17.2	56.04	98	72-132	
Perfluorotetradecanoic acid (PFTeA)	39.8	0.28 U	39.18	98	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.2	41.1	75.83	99	73-133	
Perfluoroheptanesulfonic Acid (PFHpS)	37.9	27.4	142.7	304	68-128	F1
Perfluorodecanesulfonic acid (PFDS)	38.4	4.67	103.1	257	68-128	F1
Perfluorooctane Sulfonamide (FOSA)	39.8	64.3	109.6	114	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	39.8	3.03 U	43.34	109	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	39.8	1.86 U	45.53	114	65-125	
6:2FTS	37.7	12.9 J	53.55	108	66-126	
8:2FTS	38.1	23.3	68.40	118	67-127	
13C4 PFBA	99.5	60.0	62.38	63	25-150	
13C5 PFPeA	99.5	70.6	73.66	74	25-150	
13C2 PFHxA	99.5	66.5	70.72	71	25-150	
13C4-PFHpA	99.5	61.6	64.01	64	25-150	
13C4 PFOA	99.5	73.7	75.73	76	25-150	
13C5 PFNA	99.5	33.0	31.20	31	25-150	
13C2 PFDA	99.5	81.0	81.78	82	25-150	
13C2 PFUnA	99.5	75.8	78.14	79	25-150	
13C2 PFDoA	99.5	72.2	69.30	70	25-150	
13C2-PFTeDA	99.5	79.7	84.60	85	25-150	
13C3-PFBS	92.6	72.4	79.36	86	25-150	
18O2 PFHxS	94.1	70.2	70.92	75	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East Level: Low Lab File ID: 2018.03.19LLAX_018.d

Lab ID: 320-36683-9 MS Client ID: SB012-SPLP(2'-4') MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
13C4 PFOS	95.1	36.5	33.28	35	25-150	
13C8 FOSA	99.5	82.9	83.44	84	25-150	
d3-NMeFOSAA	99.5	57.9	60.00	60	25-150	
d5-NEtFOSAA	99.5	63.9	64.45	65	25-150	
M2-6:2FTS	94.5	80.1	77.83	82	25-150	
M2-8:2FTS	95.3	96.4	99.41	104	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East Level: Low Lab File ID: 2018.03.19LLAX_012.d

Lab ID: 320-36683-9 MS DL Client ID: SB012-SPLP(2'-4') MS DL

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorohexanesulfonic acid (PFHxS)	36.2	704	787.9	231	63-123	4
Perfluorooctanesulfonic acid (PFOS)	36.9	23100	22520	-1558	67-127	4
18O2 PFHxS	94.1	57.7	52.13	55	25-150	*
13C4 PFOS	95.1	51.4	50.00	53	25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_038.d

Lab ID: 320-36683-10 MS Client ID: SB012(10'-12') MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00203	0.000066 J	0.00218	104	81-133	
Perfluoropentanoic acid (PFPeA)	0.00203	0.00015 J	0.00211	96	79-120	
Perfluorohexanoic acid (PFHxA)	0.00203	0.00054	0.00258	100	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00203	0.00018 J	0.00217	98	76-124	
Perfluorooctanoic acid (PFOA)	0.00203	0.0013	0.00341	103	76-121	
Perfluorononanoic acid (PFNA)	0.00203	0.015	0.0183	150	74-126	4
Perfluorodecanoic acid (PFDA)	0.00203	0.00010 J	0.00243	114	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00203	0.000083 J	0.00181	85	74-114	
Perfluorododecanoic acid (PFDoA)	0.00203	0.000069 U	0.00210	103	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00203	0.000052 U	0.00194	95	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00203	0.000055 U	0.00189	93	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00180	0.00019 J	0.00203	102	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00185	0.0074	0.00907	89	75-121	4
Perfluoroheptanesulfonic Acid (PFHpS)	0.00194	0.0048	0.00820	173	78-146	F1
Perfluorodecanesulfonic acid (PFDS)	0.00196	0.000040 U	0.00139	71	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00203	0.00015 J	0.00219	100	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00203	0.00040 U	0.00202	100	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00203	0.00038 U	0.00212	104	65-135	
6:2FTS	0.00193	0.0053	0.00713	96	65-135	
8:2FTS	0.00195	0.00071 J	0.00240	86	65-135	
13C4 PFBA	0.00509	0.0042	0.00416	82	25-150	
13C5 PFPeA	0.00509	0.0043	0.00417	82	25-150	
13C2 PFHxA	0.00509	0.0042	0.00421	83	25-150	
13C4-PFHpA	0.00509	0.0047	0.00437	86	25-150	
13C4 PFOA	0.00509	0.0043	0.00424	83	25-150	
13C5 PFNA	0.00509	0.0026	0.00252	50	25-150	
13C2 PFDA	0.00509	0.0035	0.00304	60	25-150	
13C2 PFUnA	0.00509	0.0026	0.00224	44	25-150	
13C2 PFDoA	0.00509	0.0022	0.00143	28	25-150	
13C2-PFTeDA	0.00509	0.0026	0.00153	30	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_038.d

Lab ID: 320-36683-10 MS Client ID: SB012(10'-12') MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
13C3-PFBS	0.00473	0.0041	0.00400	85	25-150	
18O2 PFHxS	0.00481	0.0041	0.00398	83	25-150	
13C4 PFOS	0.00486	0.0029	0.00271	56	25-150	
13C8 FOSA	0.00509	0.0025	0.00231	46	25-150	
d3-NMeFOSAA	0.00509	0.0018	0.00123	24	25-150	*
d5-NEtFOSAA	0.00509	0.0018	0.00115	23	25-150	*
M2-6:2FTS	0.00483	0.0037	0.00371	77	25-150	
M2-8:2FTS	0.00487	0.0032	0.00308	63	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_022.d

Lab ID: 320-36683-10 MS RE Client ID: SB012(10'-12') MS RE

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00198	0.000040 U	0.00239	121	54-113	H F1
13C4 PFOS	0.00491	0.0022	0.00301	61	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.21LLC_022.d

Lab ID: 320-36683-10 MS DL Client ID: SB012(10'-12') MS DL

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.00189	0.32	0.323	186	69-131	4
13C4 PFOS	0.00486	0.0032	0.00324	67	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.26LLA_055.d

Lab ID: 320-36631-A-1-C MS RE Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.000040 U	0.00164	85	54-113	
13C4 PFOS	0.00478	0.0043	0.00432	90	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East Level: Low Lab File ID: 2018.03.19LLAX_019.d

Lab ID: 320-36683-9 MSD Client ID: SB012-SPLP(2'-4') MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	37.7	77.76	125	13	30	70-130	
Perfluoropentanoic acid (PFPeA)	37.7	74.67	113	3	30	66-126	
Perfluorohexanoic acid (PFHxA)	37.7	155.9	135	4	30	66-126	F1
Perfluoroheptanoic acid (PFHpA)	37.7	67.10	120	2	30	66-126	
Perfluorooctanoic acid (PFOA)	37.7	136.0	97	2	30	64-124	
Perfluorononanoic acid (PFNA)	37.7	156.1	131	6	30	68-128	F1
Perfluorodecanoic acid (PFDA)	37.7	309.1	239	3	30	69-129	4
Perfluoroundecanoic acid (PFUnA)	37.7	235.4	105	9	30	60-120	4
Perfluorododecanoic acid (PFDoA)	37.7	48.52	119	3	30	71-131	
Perfluorotridecanoic Acid (PFTriA)	37.7	56.38	104	1	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	37.7	40.12	106	2	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	33.3	78.57	112	4	30	73-133	
Perfluoroheptanesulfonic Acid (PFHpS)	35.9	138.1	308	3	30	68-128	F1
Perfluorodecanesulfonic acid (PFDS)	36.3	107.4	283	4	30	68-128	F1
Perfluorooctane Sulfonamide (FOSA)	37.7	109.9	121	0	30	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	37.7	46.27	123	7	30	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	37.7	42.10	112	8	30	65-125	
6:2FTS	35.7	53.95	115	1	30	66-126	
8:2FTS	36.1	66.69	120	3	30	67-127	
13C4 PFBA	94.3	55.34	59			25-150	
13C5 PFPeA	94.3	64.86	69			25-150	
13C2 PFHxA	94.3	62.13	66			25-150	
13C4-PFHpA	94.3	57.16	61			25-150	
13C4 PFOA	94.3	70.01	74			25-150	
13C5 PFNA	94.3	29.42	31			25-150	
13C2 PFDA	94.3	74.46	79			25-150	
13C2 PFUnA	94.3	72.25	77			25-150	
13C2 PFDoA	94.3	64.02	68			25-150	
13C2-PFTeDA	94.3	76.14	81			25-150	
13C3-PFBS	87.7	68.01	78			25-150	
18O2 PFHxS	89.2	64.87	73			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East Level: Low Lab File ID: 2018.03.19LLAX_019.d

Lab ID: 320-36683-9 MSD Client ID: SB012-SPLP(2'-4') MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C4 PFOS	90.1	30.76	34			25-150	
13C8 FOSA	94.3	76.17	81			25-150	
d3-NMeFOSAA	94.3	52.43	56			25-150	
d5-NEtFOSAA	94.3	59.91	64			25-150	
M2-6:2FTS	89.6	74.60	83			25-150	
M2-8:2FTS	90.3	90.40	100			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid (SPLP East Level: Low Lab File ID: 2018.03.19LLAX_013.d

Lab ID: 320-36683-9 MSD DL Client ID: SB012-SPLP(2'-4') MSD DL

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorohexanesulfonic acid (PFHxS)	34.3	773.6	202	2	30	63-123	4
Perfluorooctanesulfonic acid (PFOS)	35.0	23050	-131	2	30	67-127	4
18O2 PFHxS	89.2	58.56	66			25-150	*
13C4 PFOS	90.1	59.83	66			25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_039.d

Lab ID: 320-36683-10 MSD Client ID: SB012(10'-12') MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00205	0.00217	103	0	30	81-133	
Perfluoropentanoic acid (PFPeA)	0.00205	0.00214	97	1	30	79-120	
Perfluorohexanoic acid (PFHxA)	0.00205	0.00236	89	9	30	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00205	0.00220	99	2	30	76-124	
Perfluorooctanoic acid (PFOA)	0.00205	0.00286	76	18	30	76-121	
Perfluorononanoic acid (PFNA)	0.00205	0.0138	-72	28	30	74-126	4
Perfluorodecanoic acid (PFDA)	0.00205	0.00238	111	2	30	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00205	0.00185	86	2	30	74-114	
Perfluorododecanoic acid (PFDoA)	0.00205	0.00210	103	0	30	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00205	0.00254	124	27	30	43-116	F1
Perfluorotetradecanoic acid (PFTeA)	0.00205	0.00199	97	5	30	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00181	0.00206	104	2	30	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00186	0.00596	-79	41	30	75-121	F1 F2
Perfluoroheptanesulfonic Acid (PFHpS)	0.00195	0.00584	51	34	30	78-146	F1 F2
Perfluorodecanesulfonic acid (PFDS)	0.00197	0.00154	78	10	30	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00205	0.00222	101	1	30	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00205	0.00212	104	5	30	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00205	0.00204	99	4	30	65-135	
6:2FTS	0.00194	0.00422	-54	51	30	65-135	F1 F2
8:2FTS	0.00196	0.00230	81	4	30	65-135	
13C4 PFBA	0.00512	0.00394	77			25-150	
13C5 PFPeA	0.00512	0.00394	77			25-150	
13C2 PFHxA	0.00512	0.00404	79			25-150	
13C4-PFHpA	0.00512	0.00419	82			25-150	
13C4 PFOA	0.00512	0.00418	82			25-150	
13C5 PFNA	0.00512	0.00272	53			25-150	
13C2 PFDA	0.00512	0.00328	64			25-150	
13C2 PFUnA	0.00512	0.00248	48			25-150	
13C2 PFDoA	0.00512	0.00209	41			25-150	
13C2-PFTeDA	0.00512	0.00281	55			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_039.d

Lab ID: 320-36683-10 MSD Client ID: SB012(10'-12') MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C3-PFBS	0.00476	0.00370	78			25-150	
18O2 PFHxS	0.00484	0.00396	82			25-150	
13C4 PFOS	0.00489	0.00299	61			25-150	
13C8 FOSA	0.00512	0.00230	45			25-150	
d3-NMeFOSAA	0.00512	0.00166	33			25-150	
d5-NEtFOSAA	0.00512	0.00168	33			25-150	
M2-6:2FTS	0.00486	0.00366	75			25-150	
M2-8:2FTS	0.00490	0.00320	65			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_023.d

Lab ID: 320-36683-10 MSD RE Client ID: SB012(10'-12') MSD RE

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00195	0.00220	113	8	30	54-113	H
13C4 PFOS	0.00482	0.00281	58			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.21LLC_023.d

Lab ID: 320-36683-10 MSD DL Client ID: SB012(10'-12') MSD DL

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.00190	0.216	-5443	40	30	69-131	4 F2
13C4 PFOS	0.00489	0.00338	69			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.26LLA_056.d

Lab ID: 320-36631-A-1-D MSD RE Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00196	0.00166	84	1	30	54-113	
13C4 PFOS	0.00487	0.00379	78			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab File ID: 2018.03.20LLA_023.d Lab Sample ID: MB 320-212510/1-A

Matrix: Solid Date Extracted: 03/12/2018 15:35

Instrument ID: A8_N Date Analyzed: 03/20/2018 23:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-212510/2-A	2018.03.20LLA_024.d	03/20/2018 23:17
SB008(5'-7')	320-36683-3	2018.03.20LLA_031.d	03/21/2018 00:12
DUPE006	320-36683-4	2018.03.20LLA_032.d	03/21/2018 00:20
SB013(5'-7')	320-36683-5	2018.03.20LLA_034.d	03/21/2018 00:36
SB002(5'-7')	320-36683-7	2018.03.20LLA_035.d	03/21/2018 00:43
SB012(5'-7')	320-36683-8	2018.03.20LLA_036.d	03/21/2018 00:51
SB012(10'-12')	320-36683-10	2018.03.20LLA_037.d	03/21/2018 00:59
SB012(10'-12') MS	320-36683-10 MS	2018.03.20LLA_038.d	03/21/2018 01:07
SB012(10'-12') MSD	320-36683-10 MSD	2018.03.20LLA_039.d	03/21/2018 01:15
SB008(5'-7') DL	320-36683-3 DL	2018.03.21LLC_015.d	03/21/2018 23:06
DUPE006 DL	320-36683-4 DL	2018.03.21LLC_016.d	03/21/2018 23:14
SB013(5'-7') DL	320-36683-5 DL	2018.03.21LLC_018.d	03/21/2018 23:29
SB002(5'-7') DL	320-36683-7 DL	2018.03.21LLC_019.d	03/21/2018 23:37
SB012(5'-7') DL	320-36683-8 DL	2018.03.21LLC_020.d	03/21/2018 23:45
SB012(10'-12') DL	320-36683-10 DL	2018.03.21LLC_021.d	03/21/2018 23:53
SB012(10'-12') MS DL	320-36683-10 MS DL	2018.03.21LLC_022.d	03/22/2018 00:01
SB012(10'-12') MSD DL	320-36683-10 MSD DL	2018.03.21LLC_023.d	03/22/2018 00:09

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab File ID: 2017.03.17LLZA_024.d Lab Sample ID: MB 320-212987/1-A

Matrix: Water Date Extracted: 03/14/2018 20:27

Instrument ID: A8_N Date Analyzed: 03/17/2018 15:12

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-212987/2-A	2017.03.17LLZA_025.d	03/17/2018 15:20
	LB 320-211148/1-B	2017.03.17LLZA_026.d	03/17/2018 15:27
SB008-SPLP(2'-4') DL	320-36683-1 DL	2017.03.17LLZA_030.d	03/17/2018 15:59
DUPE007 DL	320-36683-2 DL	2017.03.17LLZA_031.d	03/17/2018 16:07
SB013-SPLP(8'-10') DL	320-36683-6 DL	2017.03.17LLZA_032.d	03/17/2018 16:15
SB008-SPLP(2'-4')	320-36683-1	2018.03.19LLAX_008.d	03/19/2018 17:20
DUPE007	320-36683-2	2018.03.19LLAX_009.d	03/19/2018 17:28
SB013-SPLP(8'-10')	320-36683-6	2018.03.19LLAX_010.d	03/19/2018 17:36
SB012-SPLP(2'-4') DL	320-36683-9 DL	2018.03.19LLAX_011.d	03/19/2018 17:44
SB012-SPLP(2'-4') MS DL	320-36683-9 MS DL	2018.03.19LLAX_012.d	03/19/2018 17:51
SB012-SPLP(2'-4') MSD DL	320-36683-9 MSD DL	2018.03.19LLAX_013.d	03/19/2018 17:59
SB012-SPLP(2'-4')	320-36683-9	2018.03.19LLAX_017.d	03/19/2018 18:31
SB012-SPLP(2'-4') MS	320-36683-9 MS	2018.03.19LLAX_018.d	03/19/2018 18:39
SB012-SPLP(2'-4') MSD	320-36683-9 MSD	2018.03.19LLAX_019.d	03/19/2018 18:46

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab File ID: 2018.03.26LLA_052.d Lab Sample ID: MB 320-214230/1-A

Matrix: Solid Date Extracted: 03/21/2018 18:54

Instrument ID: A8_N Date Analyzed: 03/27/2018 01:24

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-214230/2-A	2018.03.26LLA_053.d	03/27/2018 01:31
	320-36631-A-1-C MS RE	2018.03.26LLA_055.d	03/27/2018 01:47
	320-36631-A-1-D MSD RE	2018.03.26LLA_056.d	03/27/2018 01:55
SB008(5'-7') RE	320-36683-3 RE	2018.03.26LLA_068.d	03/27/2018 03:28
DUPE006 RE	320-36683-4 RE	2018.03.26LLA_069.d	03/27/2018 03:36
SB013(5'-7') RE	320-36683-5 RE	2018.03.26LLA_070.d	03/27/2018 03:44
SB002(5'-7') RE	320-36683-7 RE	2018.03.26LLA_073.d	03/27/2018 04:08

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab File ID: 2018.03.28LLFF_007.d Lab Sample ID: MB 320-214600/1-A

Matrix: Solid Date Extracted: 03/23/2018 15:02

Instrument ID: A8_N Date Analyzed: 03/29/2018 00:10

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-214600/2-A	2018.03.28LLFF_008.d	03/29/2018 00:18
SB012(5'-7') RE	320-36683-8 RE	2018.03.28LLFF_018.d	03/29/2018 01:36
SB012(10'-12') RE	320-36683-10 RE	2018.03.28LLFF_021.d	03/29/2018 01:59
SB012(10'-12') MS RE	320-36683-10 MS RE	2018.03.28LLFF_022.d	03/29/2018 02:07
SB012(10'-12') MSD RE	320-36683-10 MSD RE	2018.03.28LLFF_023.d	03/29/2018 02:15

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: IC 320-213554/5 Date Analyzed: 03/16/2018 23:33

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.16ICAL_005. Heated Purge: (Y/N) N

Calibration ID: 38193

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4548538	2.68				
UPPER LIMIT		6822807	2.88				
LOWER LIMIT		2274269	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-213554/9		4410810	2.68				
ICV 320-213554/10		4328656	2.67				
CCVIS 320-213578/3		4909748	2.68				
CCV 320-213657/3 CCVIS		4352112	2.71				
CCV 320-214045/3 CCVIS		4239672	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: CCVIS 320-213578/3 Date Analyzed: 03/17/2018 12:28

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2017.03.17LLZA_003. Heated Purge: (Y/N) N

Calibration ID: 38193

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4909748	2.68				
UPPER LIMIT		7364622	2.88				
LOWER LIMIT		2454874	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-213578/1		4634690	2.68				
CCVL 320-213578/2		4718161	2.68				
CCV 320-213581/1		4763514	2.68				
MB 320-212987/1-A		5328033	2.68				
LCS 320-212987/2-A		4727175	2.68				
LB 320-211148/1-B		3932953	2.67				
320-36683-1 DL	SB008-SPLP(2'-4') DL	61864*	2.68				
320-36683-2 DL	DUPE007 DL	60538*	2.68				
320-36683-6 DL	SB013-SPLP(8'-10') DL	59821*	2.69				
CCV 320-213581/12		4673279	2.68				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: CCV 320-213657/3 Date Analyzed: 03/19/2018 10:26

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.19LLA_005.d Heated Purge: (Y/N) N

Calibration ID: 38193

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4352112	2.71				
UPPER LIMIT		6528168	2.91				
LOWER LIMIT		2176056	2.51				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-213657/1		4400639	2.72				
CCVL 320-213657/2		4430116	2.71				
CCV 320-213785/1		4055310	2.70				
320-36683-1	SB008-SPLP(2'-4')	4981968	2.70				
320-36683-2	DUPE007	4745538	2.69				
320-36683-6	SB013-SPLP(8'-10')	4255380	2.69				
320-36683-9 DL	SB012-SPLP(2'-4') DL	53947*	2.69				
320-36683-9 MS DL	SB012-SPLP(2'-4') MS DL	61427*	2.69				
320-36683-9 MSD DL	SB012-SPLP(2'-4') MSD DL	54841*	2.70				
CCV 320-213785/10		3829789	2.70				
320-36683-9	SB012-SPLP(2'-4')	3987382	2.69				
320-36683-9 MS	SB012-SPLP(2'-4') MS	4421533	2.69				
320-36683-9 MSD	SB012-SPLP(2'-4') MSD	4352613	2.69				
CCV 320-213785/18		4109801	2.69				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: CCV 320-214045/3 Date Analyzed: 03/20/2018 19:30

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.20LLB_003.d Heated Purge: (Y/N) N

Calibration ID: 38193

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4239672	2.68				
UPPER LIMIT		6359508	2.88				
LOWER LIMIT		2119836	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-214045/1		4183960	2.69				
CCVL 320-214045/2		4478615	2.69				
CCV 320-214053/1		4680397	2.70				
MB 320-212510/1-A		4605601	2.68				
LCS 320-212510/2-A		4421732	2.68				
320-36683-3	SB008(5'-7')	4638716	2.68				
320-36683-4	DUPE006	4617752	2.68				
CCV 320-214053/12		4306135	2.68				
320-36683-5	SB013(5'-7')	4570493	2.68				
320-36683-7	SB002(5'-7')	4429178	2.68				
320-36683-8	SB012(5'-7')	4590500	2.68				
320-36683-10	SB012(10'-12')	4242186	2.69				
320-36683-10 MS	SB012(10'-12') MS	4454486	2.68				
320-36683-10 MSD	SB012(10'-12') MSD	4726713	2.69				
CCV 320-214053/23		4753634	2.69				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: IC 320-214175/5 Date Analyzed: 03/21/2018 18:47

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.21LLICALAX_ Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		5311138	2.70				
UPPER LIMIT		7966707	2.90				
LOWER LIMIT		2655569	2.50				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-214175/9		5094636	2.69				
ICV 320-214175/10		5042269	2.70				
CCV 320-214277/1		5442410	2.70				
320-36683-3 DL	SB008(5'-7') DL	1128539*	2.69				
320-36683-4 DL	DUPE006 DL	1086869*	2.70				
CCV 320-214277/12		5290619	2.69				
320-36683-5 DL	SB013(5'-7') DL	274765*	2.70				
320-36683-7 DL	SB002(5'-7') DL	565251*	2.70				
320-36683-8 DL	SB012(5'-7') DL	60192*	2.70				
320-36683-10 DL	SB012(10'-12') DL	119942*	2.70				
320-36683-10 MS DL	SB012(10'-12') MS DL	116122*	2.69				
320-36683-10 MSD DL	SB012(10'-12') MSD DL	122812*	2.69				
CCV 320-214277/23		5242214	2.70				
CCV 320-214954/3 CCVIS		5188572	2.68				
CCV 320-215311/3 CCVIS		4749284	2.70				
CCV 320-215399/3 CCVIS		4856254	2.67				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: CCV 320-214954/3 Date Analyzed: 03/26/2018 21:21

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.26LLB_005.d Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		5188572	2.68				
UPPER LIMIT		7782858	2.88				
LOWER LIMIT		2594286	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-214954/1		4842867	2.68				
CCVL 320-214954/2		4901047	2.68				
CCV 320-214957/1		4825221	2.70				
MB 320-214230/1-A		5552735	2.69				
LCS 320-214230/2-A		5290396	2.69				
320-36631-A-1-C MS RE		5307272	2.68				
320-36631-A-1-D MSD RE		6061355	2.68				
CCV 320-214957/11		4798661	2.69				
320-36683-3 RE	SB008(5'-7') RE	5293328	2.68				
320-36683-4 RE	DUPE006 RE	6546245	2.69				
320-36683-5 RE	SB013(5'-7') RE	5316491	2.68				
CCV 320-214957/22		4694876	2.68				
320-36683-7 RE	SB002(5'-7') RE	6381768	2.69				
CCV 320-214957/28		4681789	2.69				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: CCV 320-215311/3 Date Analyzed: 03/29/2018 00:02

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.28LLFF_006. Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4749284	2.70				
UPPER LIMIT		7123926	2.90				
LOWER LIMIT		2374642	2.50				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-215311/1		4759356	2.70				
CCVL 320-215311/2		4782622	2.70				
MB 320-214600/1-A		5707612	2.70				
LCS 320-214600/2-A		5062517	2.70				
CCV 320-215311/14		4518281	2.71				
320-36683-8 RE	SB012(5'-7') RE	5742414	2.70				
320-36683-10 RE	SB012(10'-12') RE	5901045	2.70				
320-36683-10 MS RE	SB012(10'-12') MS RE	4882236	2.70				
320-36683-10 MSD RE	SB012(10'-12') MSD RE	5429069	2.70				
CCV 320-215311/23		4632500	2.71				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Sample No.: CCV 320-215399/3 Date Analyzed: 03/29/2018 09:03

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.29LLA_006.d Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4856254	2.67				
UPPER LIMIT		7284381	2.87				
LOWER LIMIT		2428127	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-215399/1		4752982	2.67				
CCVL 320-215399/2		4717799	2.67				
CCV 320-215399/10		4708999	2.68				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008-SPLP(2'-4') | Lab Sample ID: 320-36683-1

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_008.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 09:15

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 254.1(mL) | Date Analyzed: 03/19/2018 17:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	6.60	B	1.97	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	10.9		1.97	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	10.2		1.97	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	7.57		1.97	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	9.50		1.97	0.84
375-95-1	Perfluorononanoic acid (PFNA)	12.5		1.97	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	39.8		1.97	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	3.33		1.97	1.08
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.70	J	1.97	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.7	B	1.97	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.61		1.97	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.97	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	39.4		1.97	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.05	U	19.7	3.05
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87
27619-97-2	6:2FTS	1.97	U	19.7	1.97
39108-34-4	8:2FTS	3.99	J	19.7	1.97

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008-SPLP(2'-4') | Lab Sample ID: 320-36683-1

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_008.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 09:15

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 254.1(mL) | Date Analyzed: 03/19/2018 17:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	68		25-150
STL01893	13C5 PFPeA	68		25-150
STL00993	13C2 PFHxA	66		25-150
STL01892	13C4-PFHpA	67		25-150
STL00990	13C4 PFOA	73		25-150
STL00995	13C5 PFNA	58		25-150
STL00996	13C2 PFDA	74		25-150
STL00997	13C2 PFUnA	73		25-150
STL00998	13C2 PFDoA	68		25-150
STL02116	13C2-PFTeDA	81		25-150
STL02337	13C3-PFBS	78		25-150
STL00994	18O2 PFHxS	76		25-150
STL00991	13C4 PFOS	72		25-150
STL01056	13C8 FOSA	81		25-150
STL02118	d3-NMeFOSAA	54		25-150
STL02117	d5-NEtFOSAA	57		25-150
STL02279	M2-6:2FTS	91		25-150
STL02280	M2-8:2FTS	91		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d
Lims ID: 320-36683-A-1-B
Client ID: SB008-SPLP(2'-4')
Sample Type: Client
Inject. Date: 19-Mar-2018 17:20:32 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-1-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:02:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.444	-0.004	0.534	4313059	1.70		67.8	29411	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.444	0.002	1.004	268428	0.1678			34.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.630	3068061	1.71		68.4	62127	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.705	-0.005	1.000	398708	0.2781			61.7	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.740	-0.005	0.643	80132	1.81		77.8	196	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.740	-0.005	1.000	47430	0.0178			9.3	
298.90 > 99.00	1.735	1.740	-0.005	1.000	19188		2.47(1.25-3.74)		14.9	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.992	-0.006	1.000	347262	0.2603			124	
313.00 > 119.00	1.986	1.992	-0.006	1.000	33898		10.24(5.03-15.10)		313	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.992	-0.006	0.736	3305723	1.65		66.1	62766	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.863	3274349	1.68		67.3	61430	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	261260	0.1924			97.4	
363.00 > 169.00	2.328	2.335	-0.007	1.000	96758		2.70(1.13-3.40)		1086	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	1833914	0.8298			547	
399.00 > 99.00	2.341	2.348	-0.007	1.000	570724		3.21(1.50-4.49)		691	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.867	4686324	1.80		76.3	88749	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.675	-0.008	1.000	37503	0.0498			813	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.675	-0.008	0.988	1073642	2.15		90.7	1743	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.706	-0.015	0.997	3448855	1.84		73.4	75879	
* 62 13C2-PFOA										
415.00 > 370.00	2.699	2.706	-0.007		4981968	2.50			132781	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.699	2.706	-0.007	1.003	371602	0.2413			83.2	M
413.00 > 169.00	2.699	2.706	-0.007	1.003	212235		1.75(0.84-2.52)		763	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.706	-0.007	1.000	114652	0.0663			79.7	
449.00 > 99.00	2.699	2.706	-0.007	1.000	29619		3.87(1.94-5.82)		202	
D 18 13C4 PFOS										
503.00 > 80.00	3.066	3.083	-0.017	1.136	3146664	1.73		72.5	4866	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.074	3.083	-0.009	1.002	38073029	26.7			35987	E
499.00 > 99.00	3.066	3.083	-0.017	1.000	11635145		3.27(2.31-6.93)		78642	
20 Perfluorononanoic acid										
463.00 > 419.00	3.074	3.083	-0.009	1.000	283554	0.3172			221	
463.00 > 169.00	3.074	3.083	-0.009	1.000	67204		4.22(1.90-5.69)		874	
D 19 13C5 PFNA										
468.00 > 423.00	3.074	3.083	-0.009	1.139	2191800	1.46		58.3	44387	
D 21 13C8 FOSA										
506.00 > 78.00	3.400	3.403	-0.003	1.260	5293042	2.01		80.5	67248	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.400	3.412	-0.012	1.000	2061944	1.00			69.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.428	3.439	-0.011	1.270	1015438	2.17		90.5	3284	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.428	3.439	-0.011	1.000	53991	0.1013			2031	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.437	3.448	-0.011	1.000	891319	1.01			1832	
513.00 > 169.00	3.437	3.448	-0.011	1.000	168522		5.29(2.36-7.09)		1597	
D 23 13C2 PFDA										
515.00 > 470.00	3.437	3.448	-0.011	1.273	2321665	1.85		73.9	43680	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.606	-0.023	1.327	555680	1.34		53.6	11895	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.762	3.775	-0.013	1.394	567705	1.43		57.3	1540	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.786	-0.024	1.394	1788862	1.82		72.8	62593	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.762	3.786	-0.024	1.000	50735	0.0846			54.4	M
563.00 > 169.00	3.772	3.786	-0.014	1.003	12665		4.01(2.12-6.36)		118	
D 36 13C2 PFDoA										
615.00 > 570.00	4.060	4.084	-0.024	1.504	1578703	1.69		67.7	10658	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.566	4.581	-0.015	1.692	1719986	2.02		80.8	15688	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d

Injection Date: 19-Mar-2018 17:20:32 Instrument ID: A8_N

Lims ID: 320-36683-A-1-B Lab Sample ID: 320-36683-1

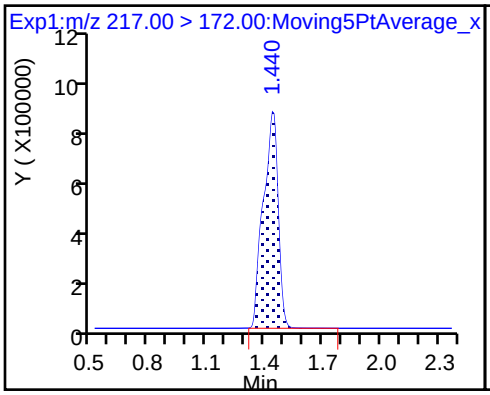
Client ID: SB008-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4

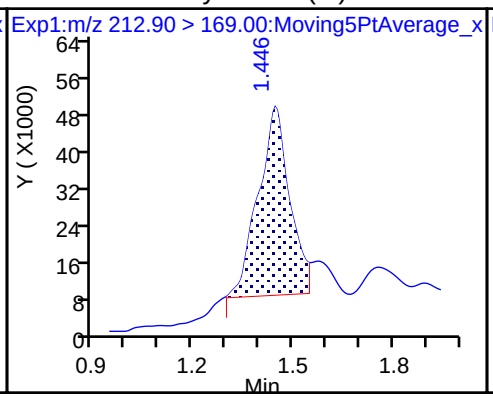
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

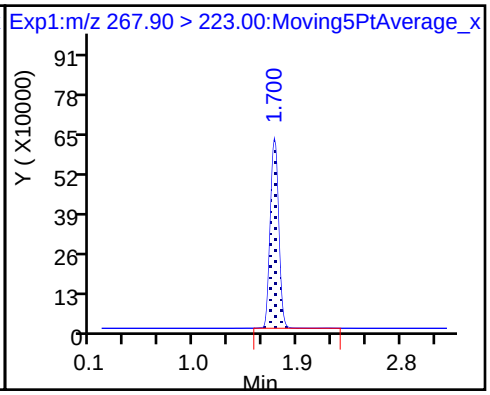
D 1 13C4 PFBA



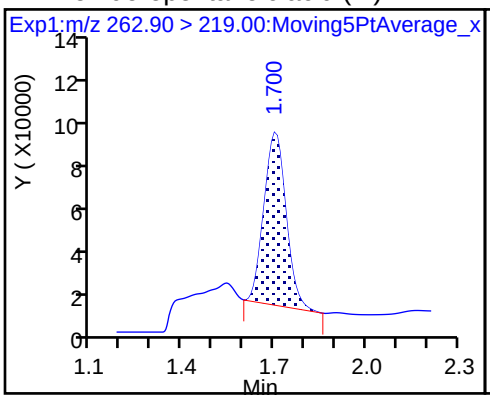
2 Perfluorobutyric acid (M)



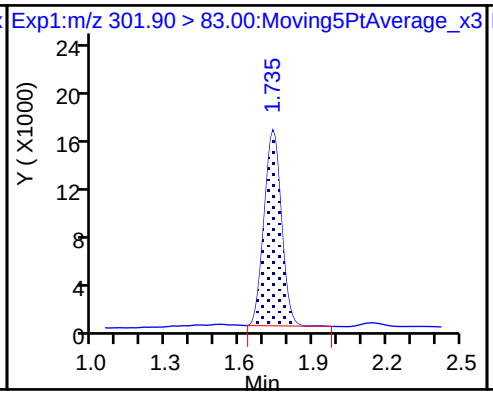
D 3 13C5-PFPeA



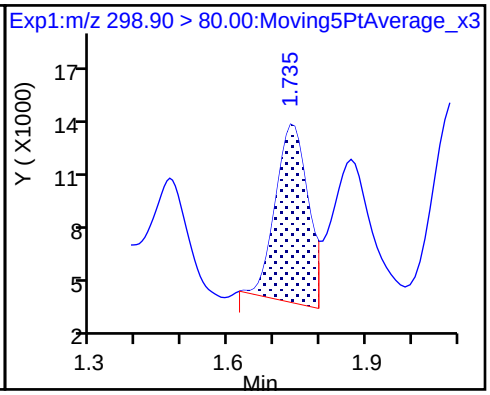
4 Perfluoropentanoic acid (M)



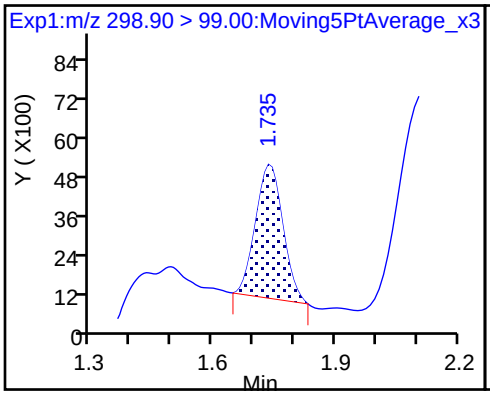
D 47 13C3-PFBS



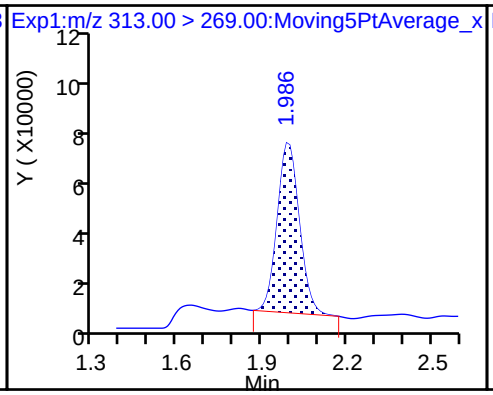
5 Perfluorobutanesulfonic acid



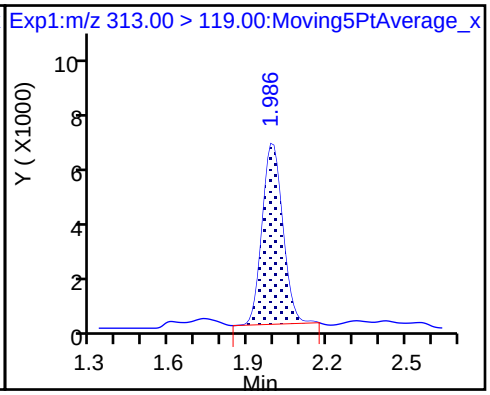
5 Perfluorobutanesulfonic acid



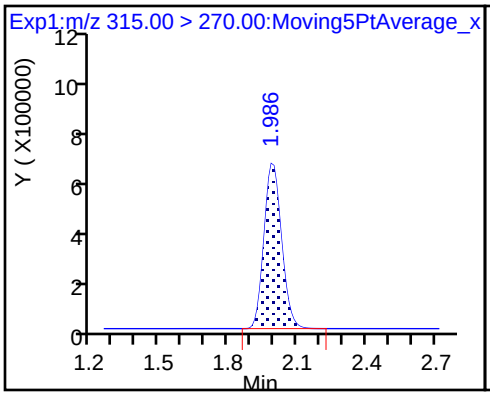
6 Perfluorohexanoic acid



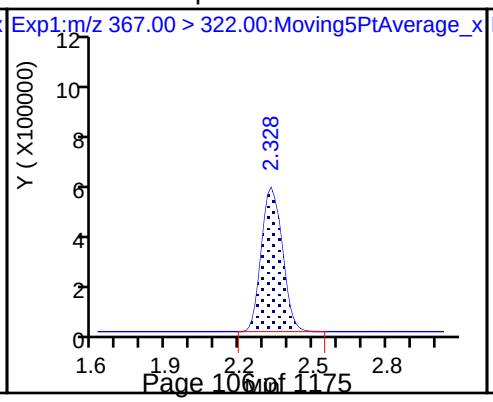
6 Perfluorohexanoic acid



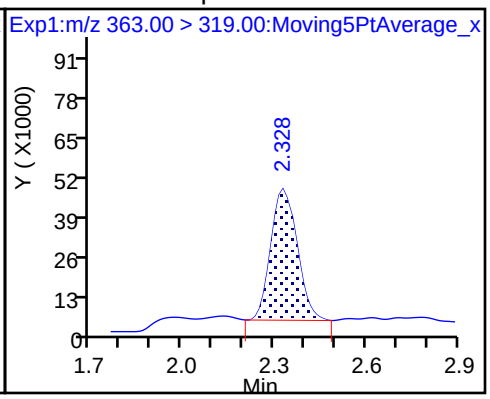
D 7 13C2 PFHxA



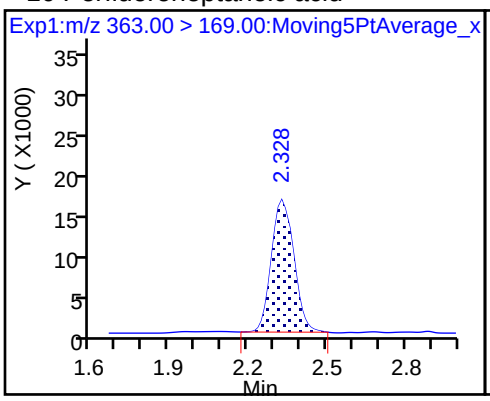
D 9 13C4-PFHpA



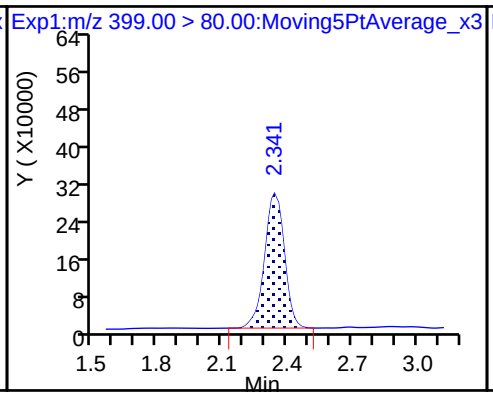
10 Perfluoroheptanoic acid



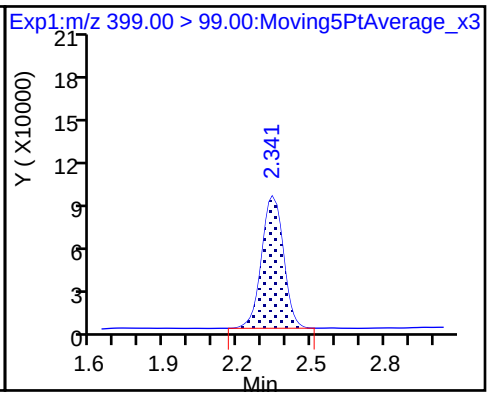
10 Perfluoroheptanoic acid



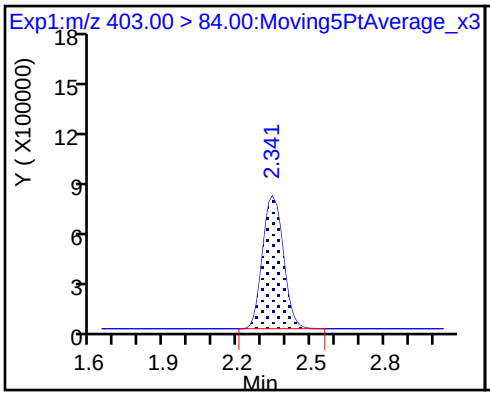
8 Perfluorohexanesulfonic acid



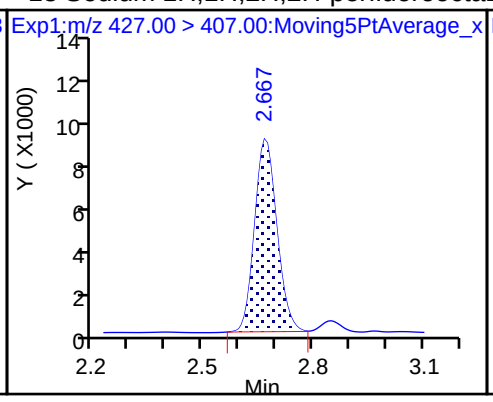
8 Perfluorohexanesulfonic acid



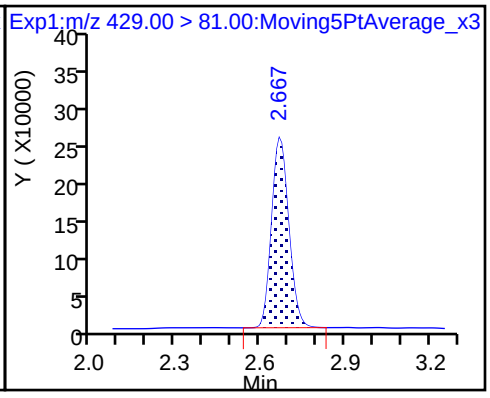
D 11 18O2 PFHxS



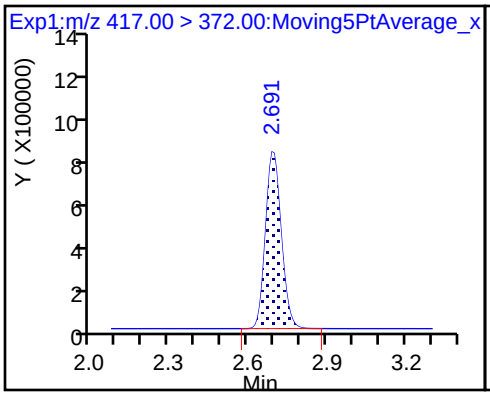
13 Sodium 1H,1H,2H,2H-perfluorooctane



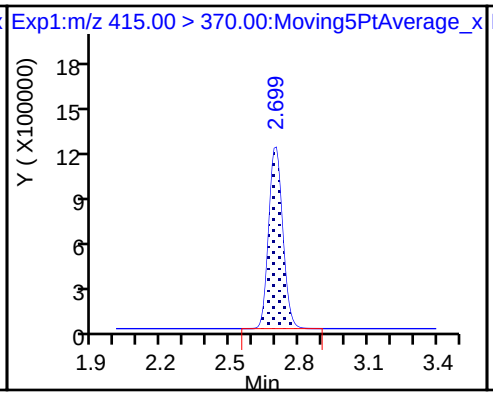
D 12 M2-6:2FTS



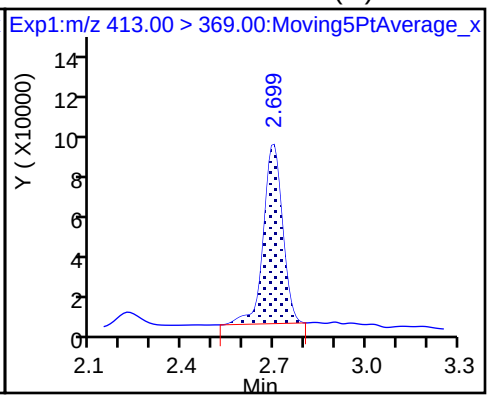
D 14 13C4 PFOA



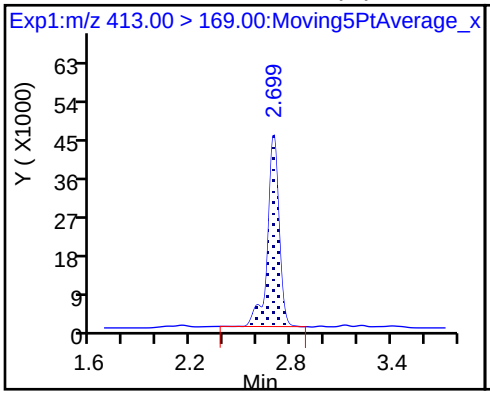
* 62 13C2-PFOA



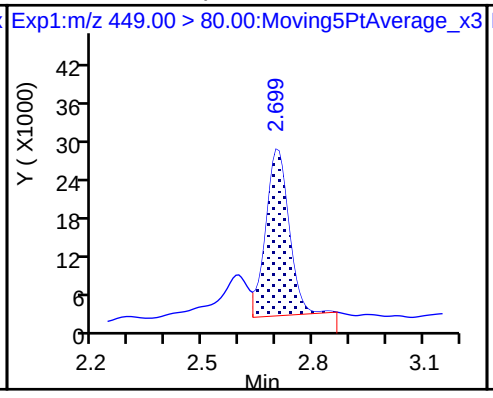
15 Perfluorooctanoic acid (M)



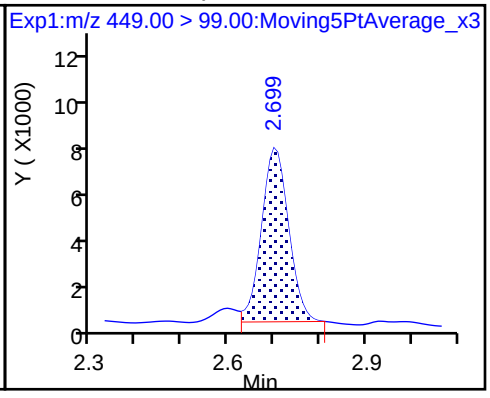
15 Perfluorooctanoic acid (M)



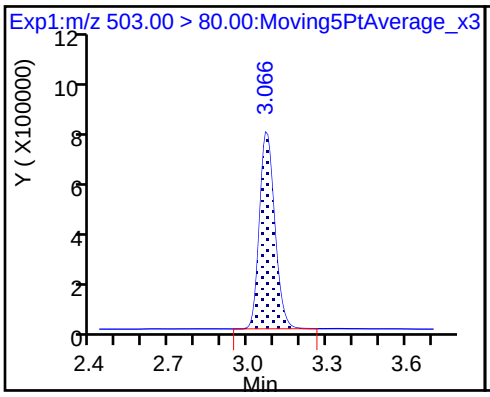
16 Perfluoroheptanesulfonic acid



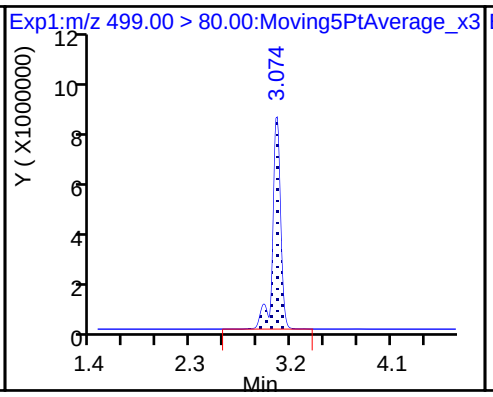
16 Perfluoroheptanesulfonic acid



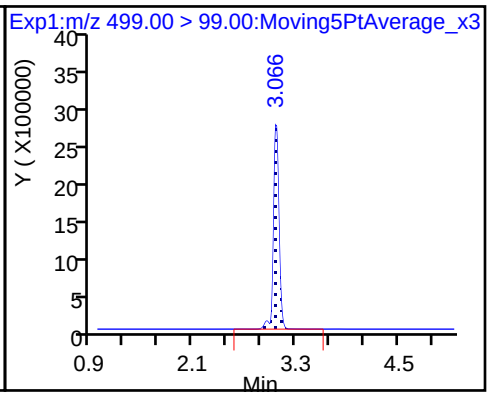
D 18 13C4 PFOS



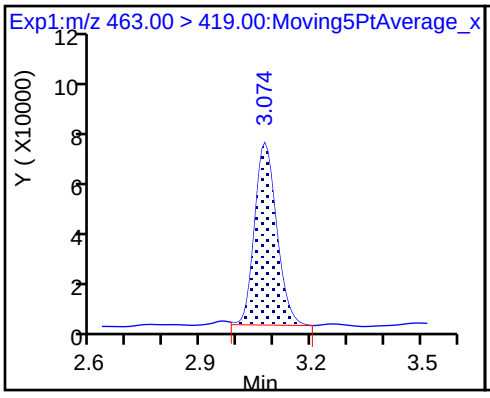
17 Perfluorooctane sulfonic acid



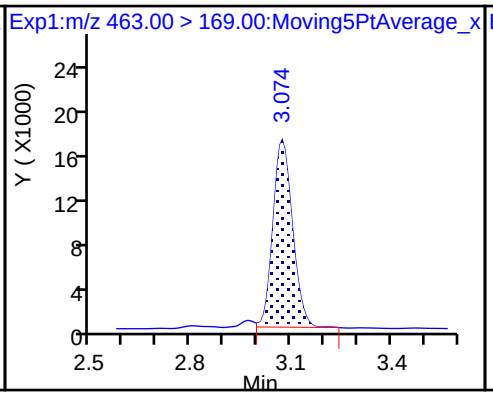
17 Perfluorooctane sulfonic acid



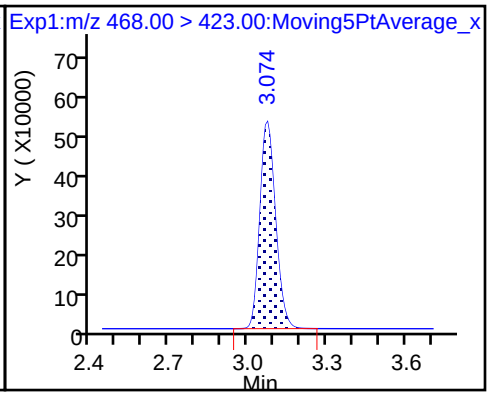
20 Perfluorononanoic acid



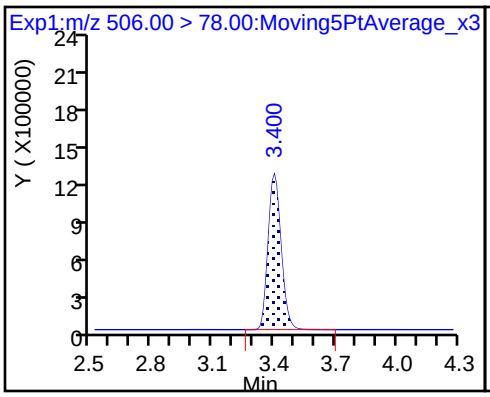
20 Perfluorononanoic acid



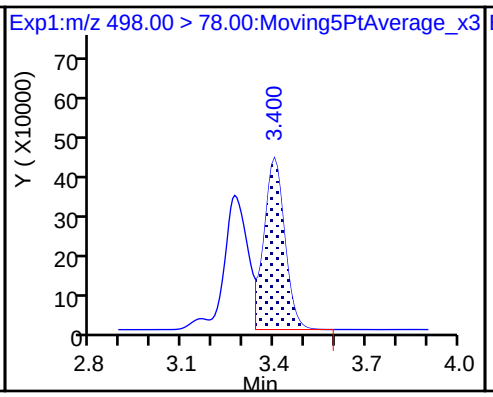
D 19 13C5 PFNA



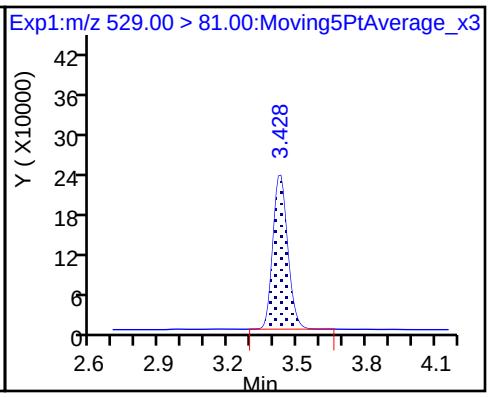
D 21 13C8 FOSA



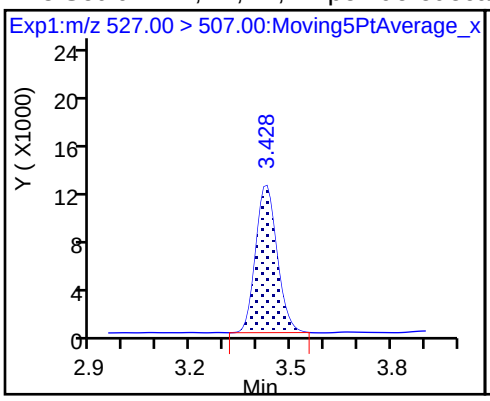
22 Perfluorooctane Sulfonamide



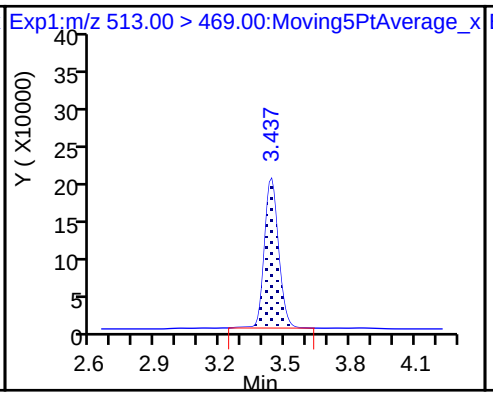
D 26 M2-8:2FTS



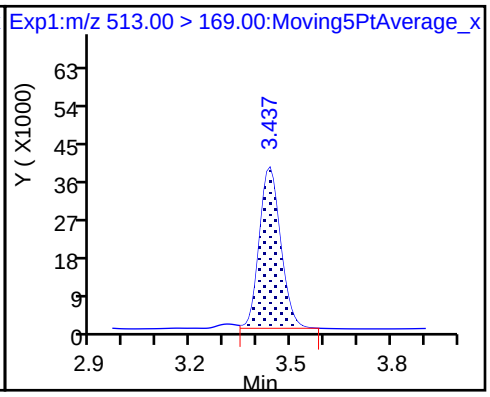
25 Sodium 1H,1H,2H,2H-perfluorodecane



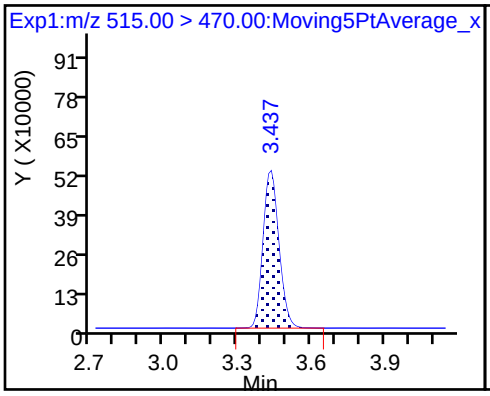
24 Perfluorodecanoic acid



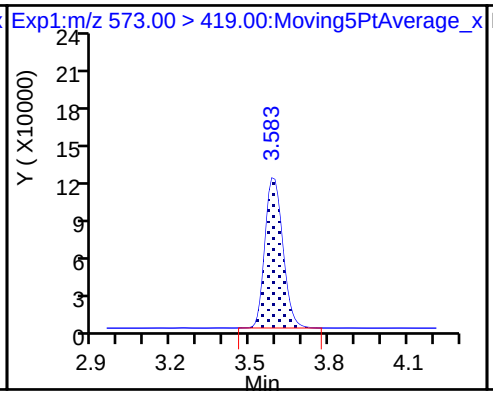
24 Perfluorodecanoic acid



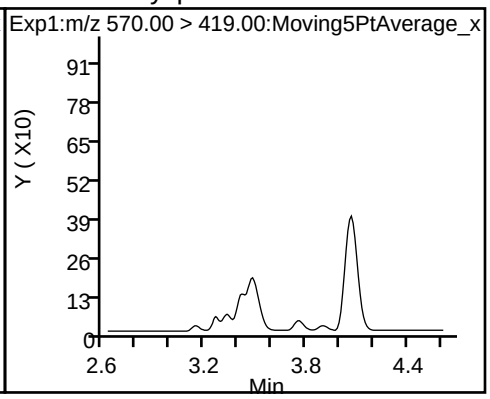
D 23 13C2 PFDA



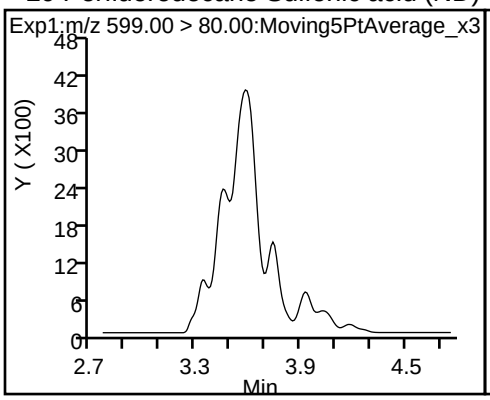
D 27 d3-NMeFOSAA



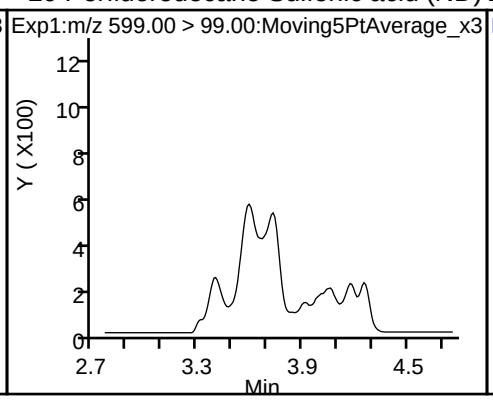
28 N-methyl perfluorooctane sulfonami (ND)



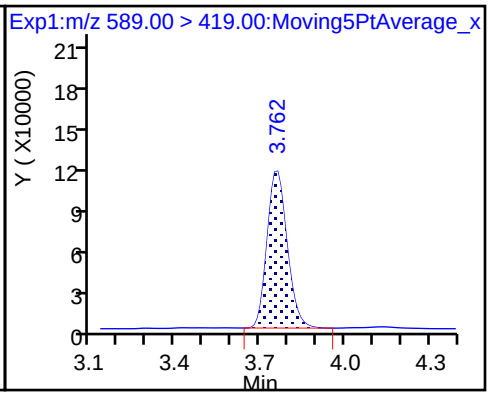
29 Perfluorodecane Sulfonic acid (ND)



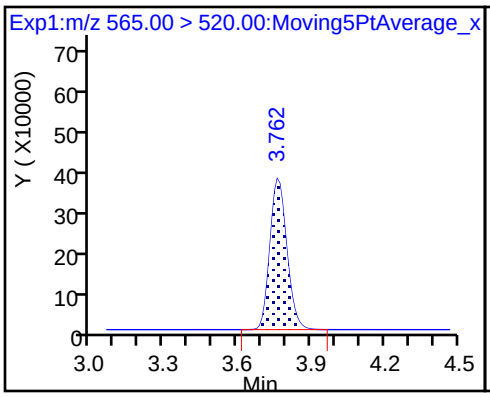
29 Perfluorodecane Sulfonic acid (ND)



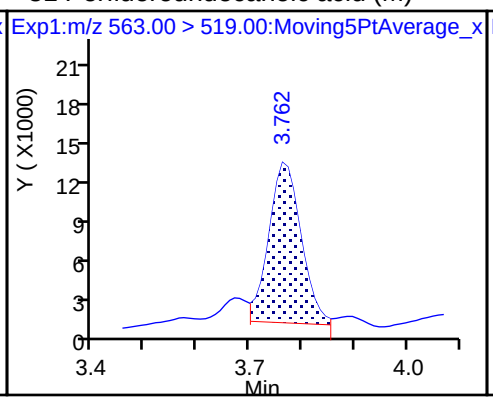
D 32 d5-NEtFOSAA



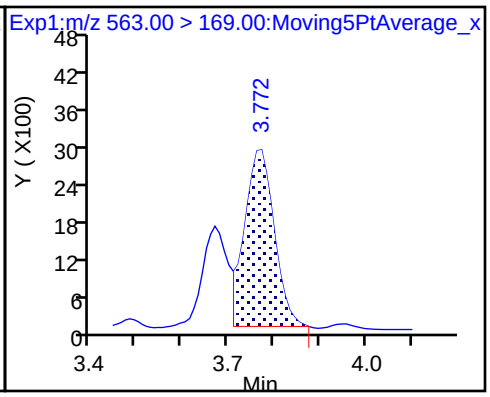
D 30 13C2 PFUnA



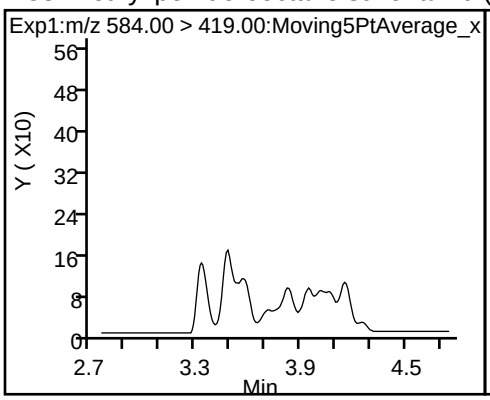
31 Perfluoroundecanoic acid (M)



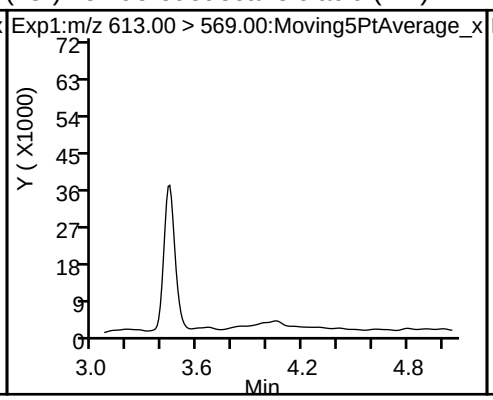
31 Perfluoroundecanoic acid



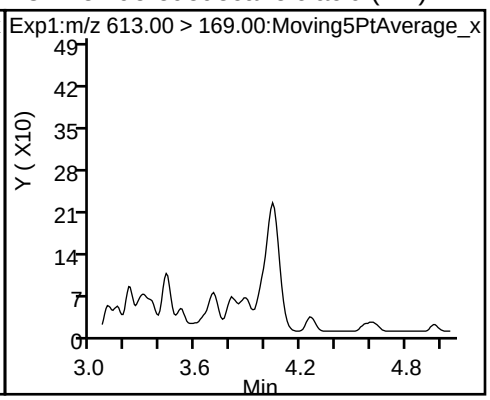
33 N-ethyl perfluorooctane sulfonamid (ND)



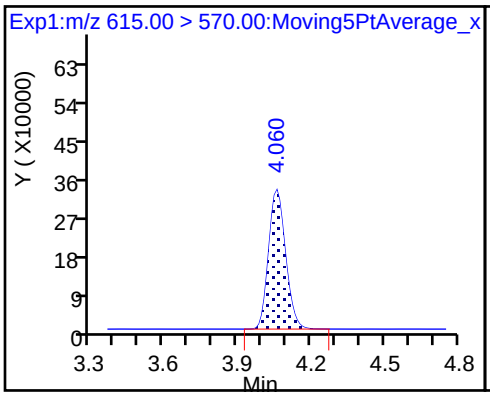
37 Perfluorododecanoic acid (ND)



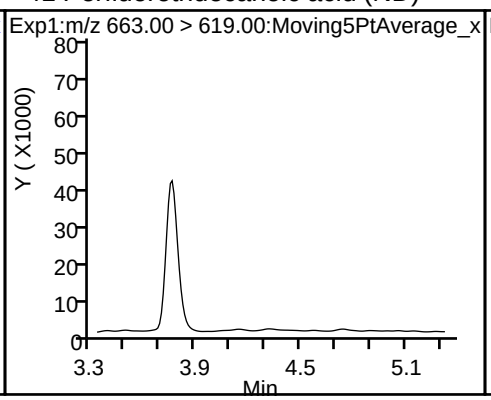
37 Perfluorododecanoic acid (ND)



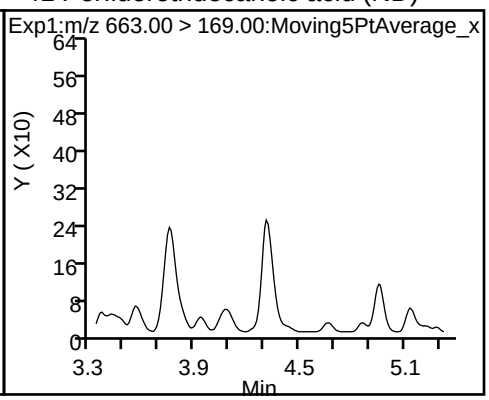
D 36 13C2 PFDoA



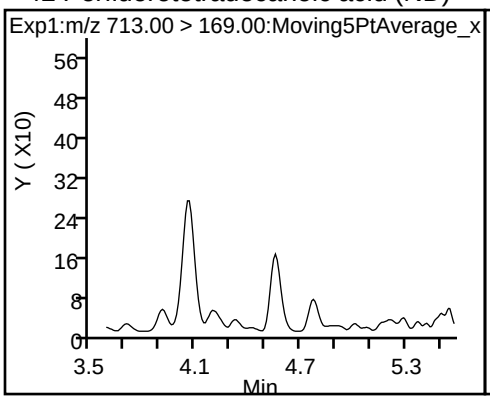
41 Perfluorotridecanoic acid (ND)



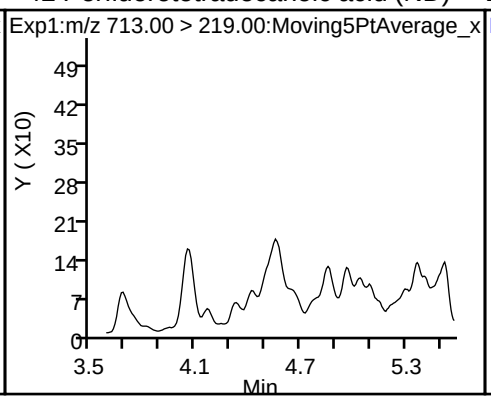
41 Perfluorotridecanoic acid (ND)



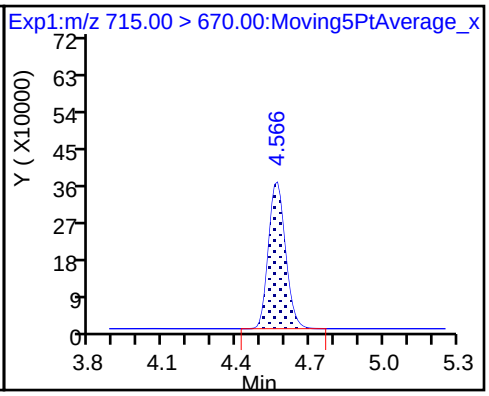
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

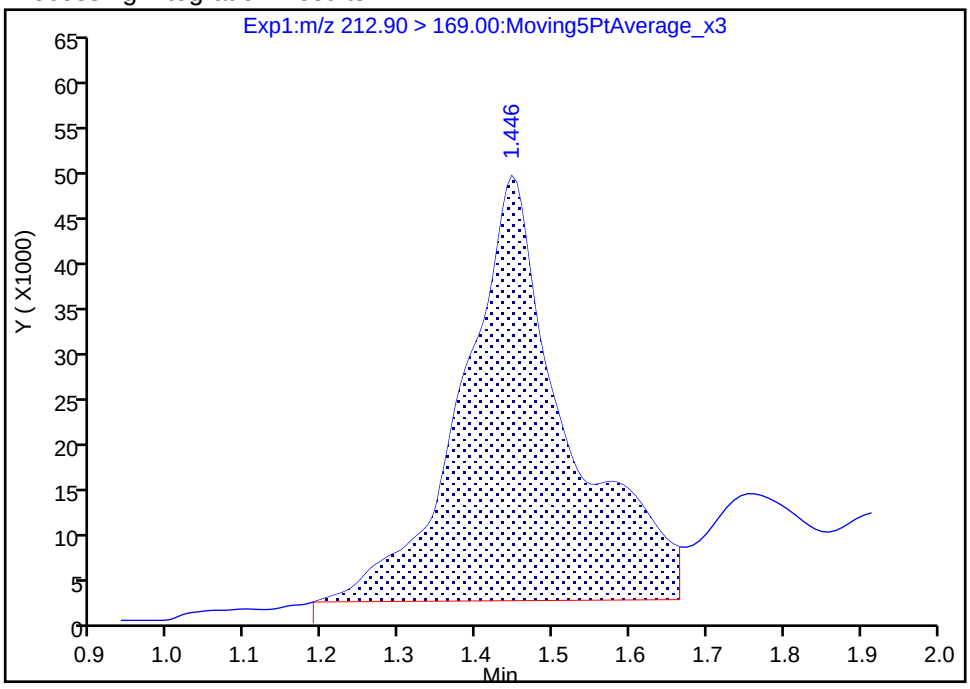
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d				
Injection Date:	19-Mar-2018 17:20:32	Instrument ID:	A8_N		
Lims ID:	320-36683-A-1-B	Lab Sample ID:	320-36683-1		
Client ID:	SB008-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

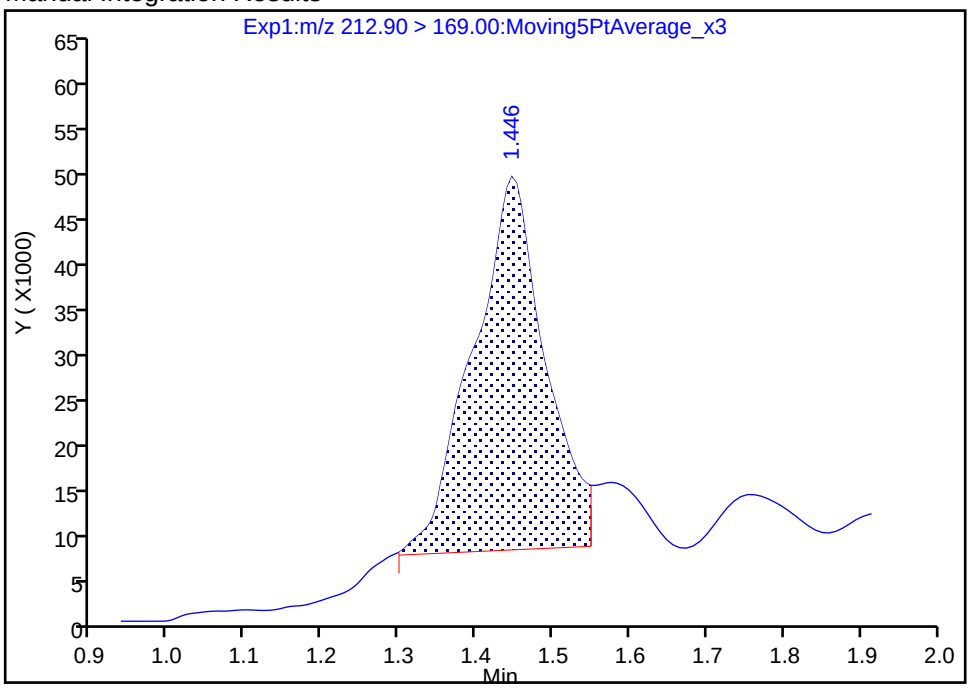
Processing Integration Results

RT: 1.45
Area: 441711
Amount: 0.276062
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 268428
Amount: 0.167763
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:01:21

Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

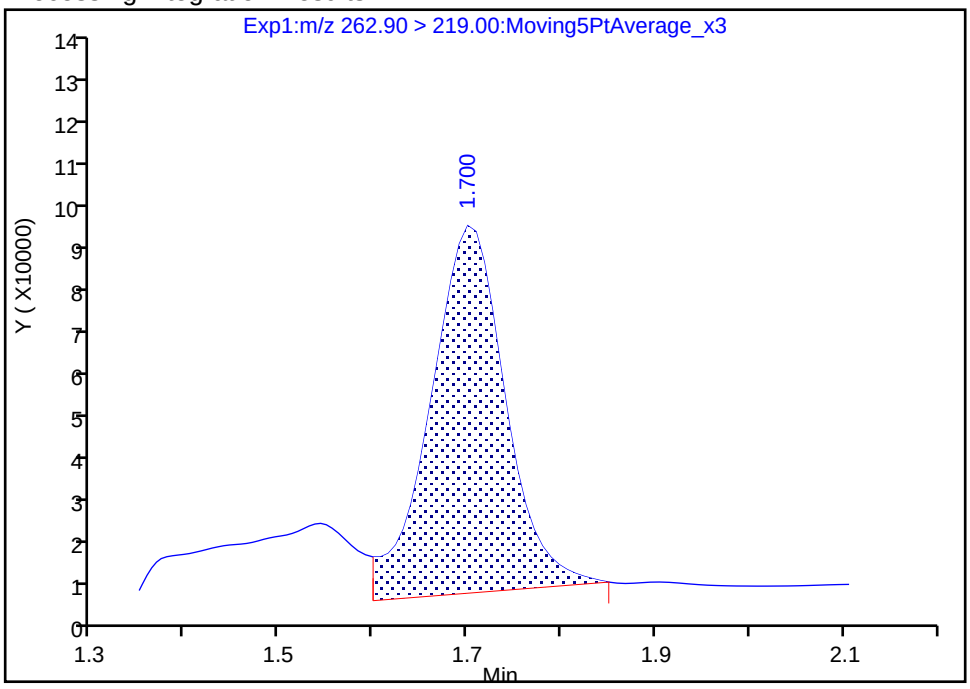
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d				
Injection Date:	19-Mar-2018 17:20:32	Instrument ID:	A8_N		
Lims ID:	320-36683-A-1-B	Lab Sample ID:	320-36683-1		
Client ID:	SB008-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

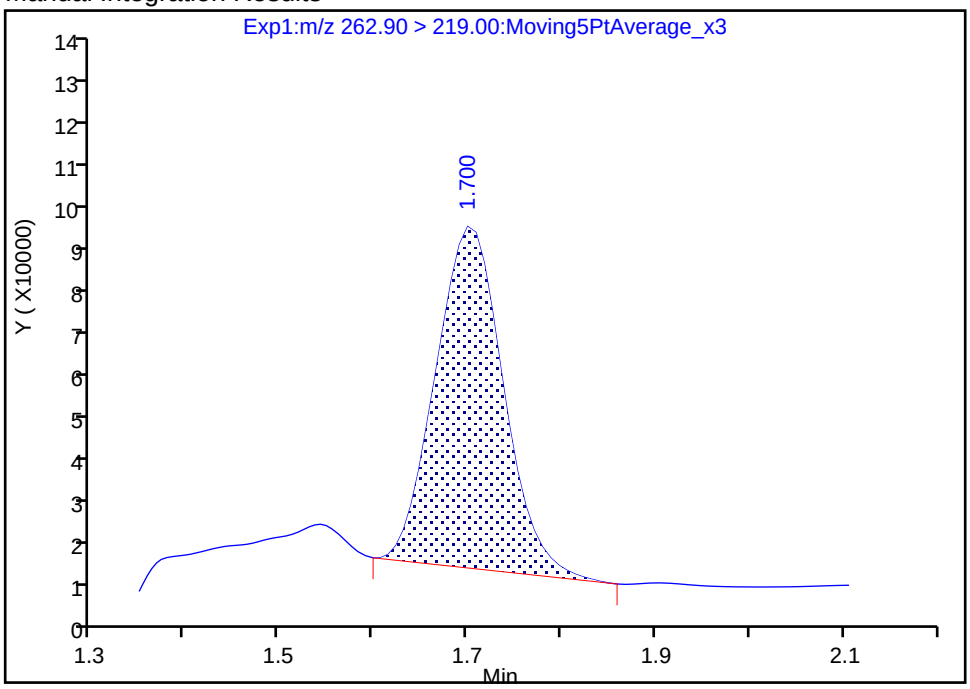
Processing Integration Results

RT: 1.70
Area: 475112
Amount: 0.331421
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 398708
Amount: 0.278125
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:01:31

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

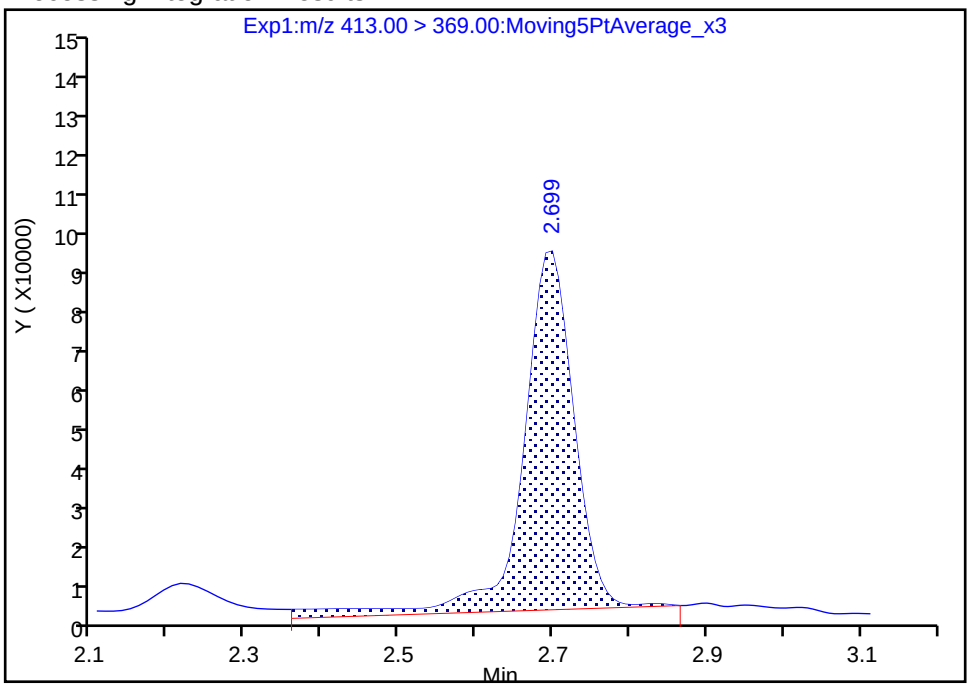
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d				
Injection Date:	19-Mar-2018 17:20:32	Instrument ID:	A8_N		
Lims ID:	320-36683-A-1-B	Lab Sample ID:	320-36683-1		
Client ID:	SB008-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

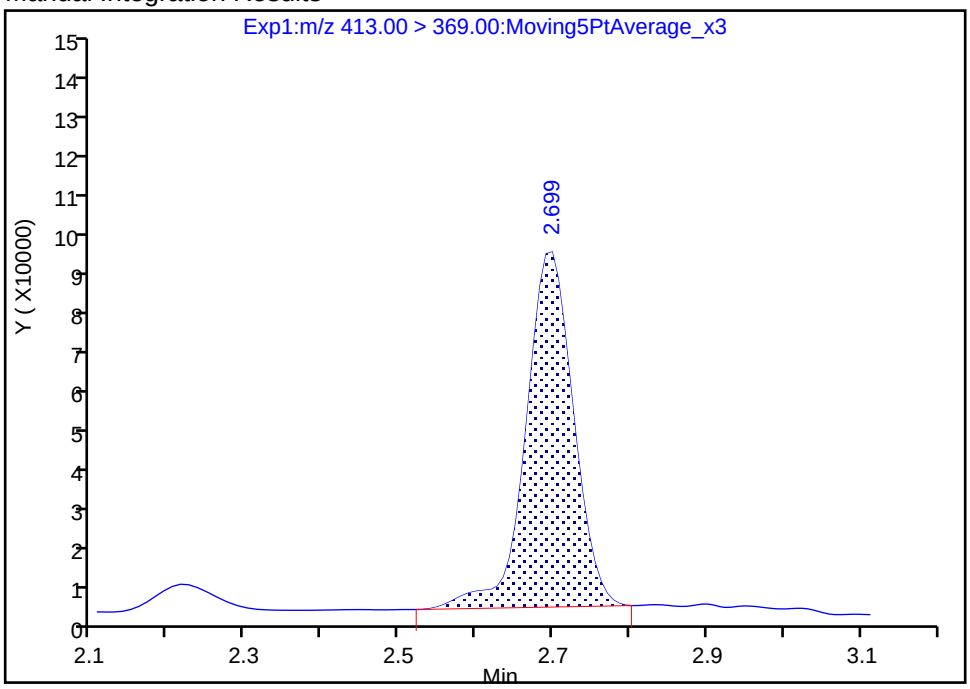
Processing Integration Results

RT: 2.70
Area: 407435
Amount: 0.264554
Amount Units: ng/ml



Manual Integration Results

RT: 2.70
Area: 371602
Amount: 0.241287
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:01:40

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

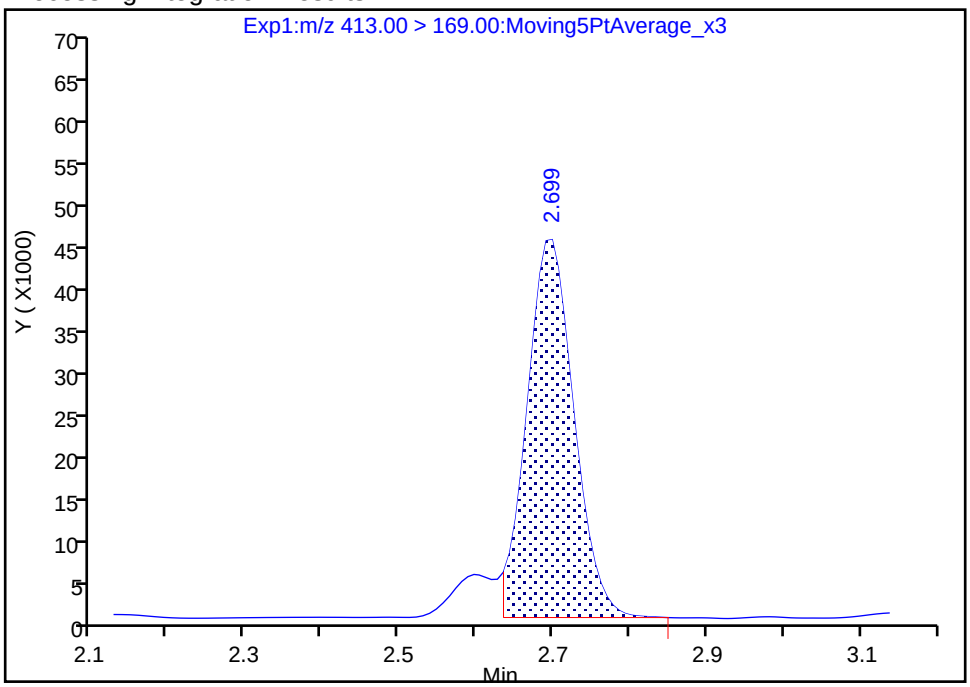
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d				
Injection Date:	19-Mar-2018 17:20:32	Instrument ID:	A8_N		
Lims ID:	320-36683-A-1-B	Lab Sample ID:	320-36683-1		
Client ID:	SB008-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

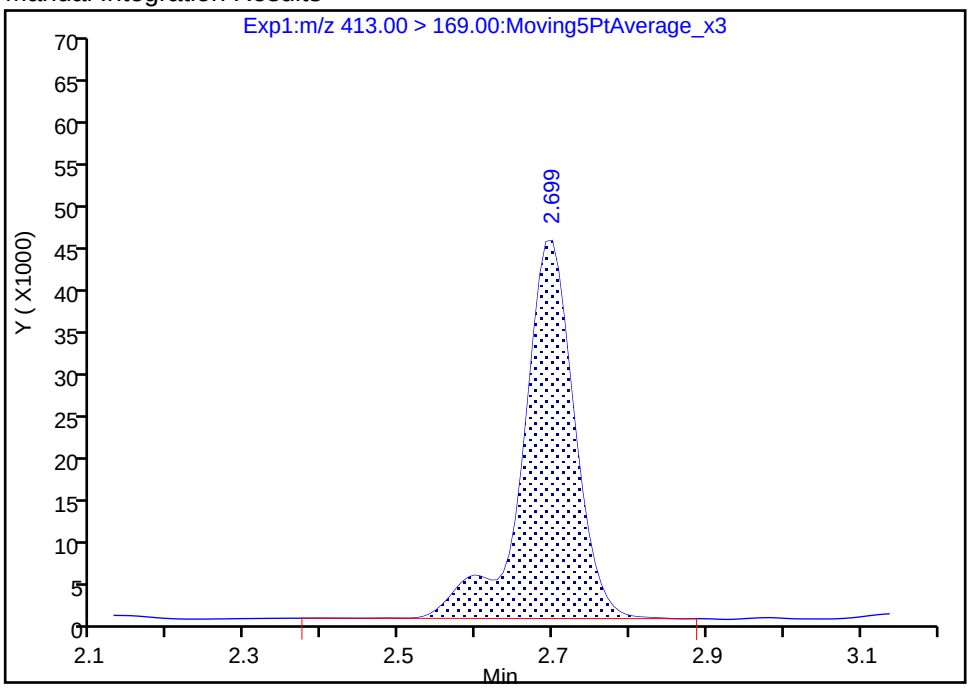
Processing Integration Results

RT: 2.70
Area: 190532
Amount: 0.264554
Amount Units: ng/ml



Manual Integration Results

RT: 2.70
Area: 212235
Amount: 0.241287
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:01:46

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

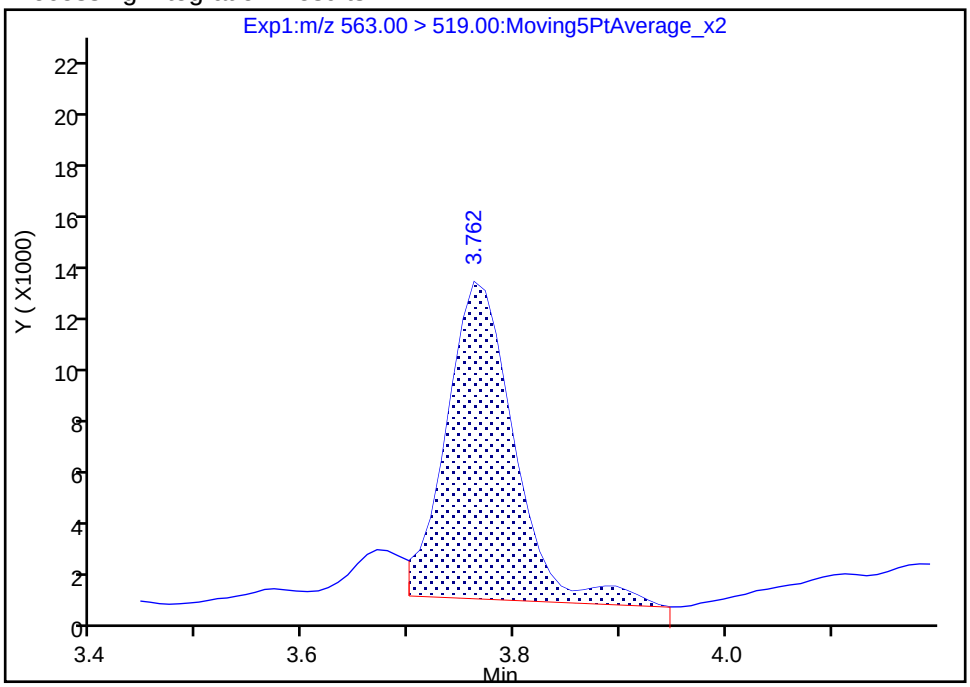
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_008.d				
Injection Date:	19-Mar-2018 17:20:32	Instrument ID:	A8_N		
Lims ID:	320-36683-A-1-B	Lab Sample ID:	320-36683-1		
Client ID:	SB008-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

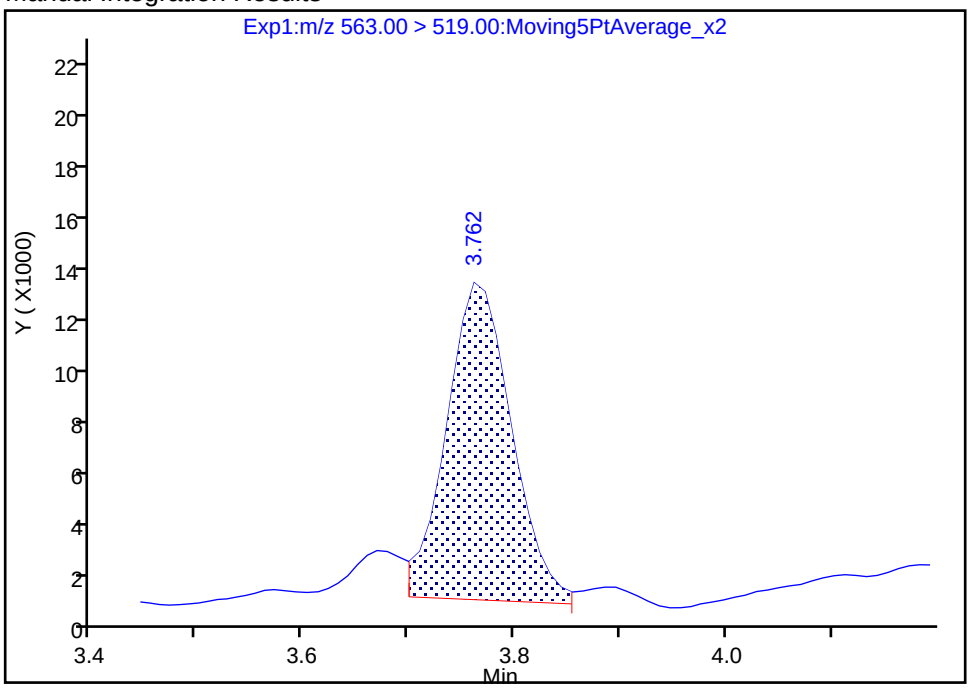
Processing Integration Results

RT: 3.76
Area: 53164
Amount: 0.088657
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 50735
Amount: 0.084607
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:02:05

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008-SPLP(2'-4') DL Lab Sample ID: 320-36683-1 DL

Matrix: Solid (SPLP East) Lab File ID: 2017.03.17LLZA_030.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 09:15

Extraction Method: 3535 Date Extracted: 03/14/2018 20:27

Sample wt/vol: 254.1(mL) Date Analyzed: 03/17/2018 15:59

Con. Extract Vol.: 10.00(mL) Dilution Factor: 100

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1530	D	197	53.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	61	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_030.d
Lims ID: 320-36683-A-1-B
Client ID: SB008-SPLP(2'-4')
Sample Type: Client
Inject. Date: 17-Mar-2018 15:59:23 ALS Bottle#: 23 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-a-1-b 100X
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:51:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.535	48278	0.0153		61.1	1009	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.631	37029	0.0166		66.5	1001	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.987	-0.011	0.737	40819	0.0164		65.7	1817	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	37094	0.0153		61.4	2107	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	23264	0.0105			3.2	
399.00 > 99.00	2.328	2.328	0.0	1.000	7640		3.05(1.50-4.49)		3.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	46926	0.0146		61.5	1980	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.665	0.0	0.994	15914	0.0257		108	331	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.680	0.0		61864	0.0250			2459	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.689	-0.009	1.000	46287	0.0198		79.3	2761	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.051	0.0	1.000	580103	0.3878			2128	
499.00 > 99.00	3.051	3.051	0.0	1.000	140781		4.12(2.31-6.93)		1045	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.058	-0.007	1.138	33027	0.0146		61.3	1209	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.065	-0.014	1.138	32523	0.0174		69.7	1362	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.397	3.389	0.008	1.003	22660	0.0108			63.8	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.398	-0.010	1.264	53876	0.0165		66.0	1560	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.417	-0.011	1.271	9574	0.0165		68.8	191	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.426	-0.002	1.277	27766	0.0178		71.2	485	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.579	-0.001	1.335	9814	0.0191		76.2	548	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.748	-0.010	1.394	11421	0.0232		92.8	20.3	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.758	-0.010	1.398	20294	0.0166		66.5	839	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.056	-0.010	1.509	17465	0.0151		60.3	108	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.554	-0.011	1.695	16375	0.0155		62.0	180	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 13:55:22 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_030.d

Injection Date: 17-Mar-2018 15:59:23 Instrument ID: A8_N

Lims ID: 320-36683-A-1-B Lab Sample ID: 320-36683-1

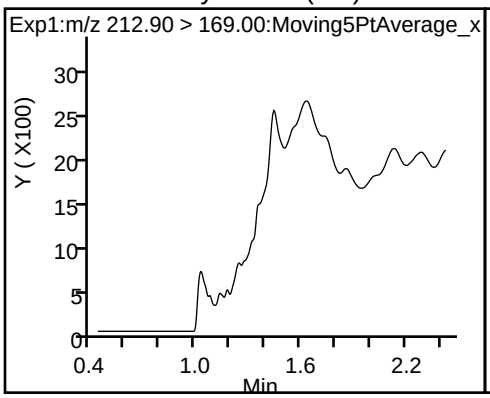
Client ID: SB008-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 8

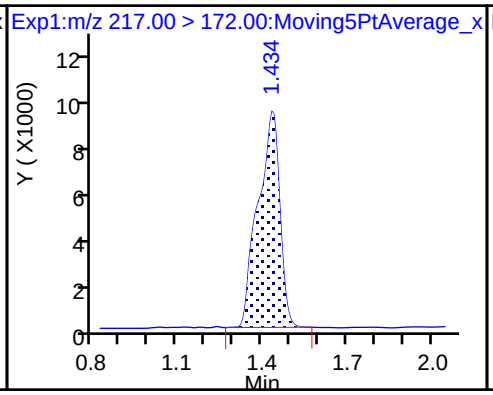
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

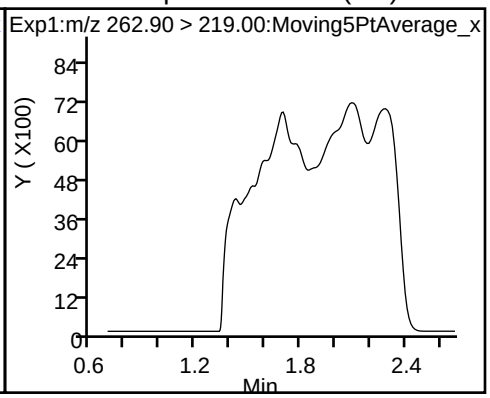
2 Perfluorobutyric acid (ND)



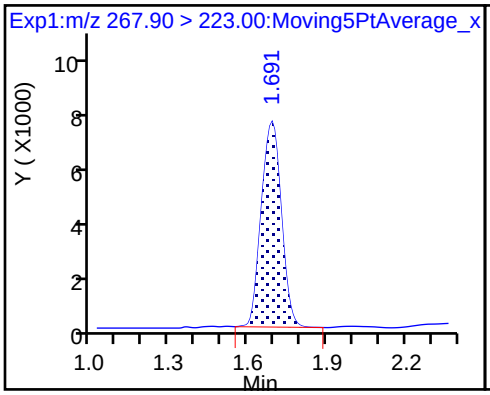
D 1 13C4 PFBA



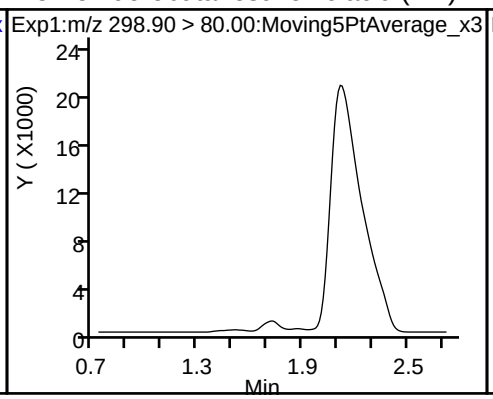
4 Perfluoropentanoic acid (ND)



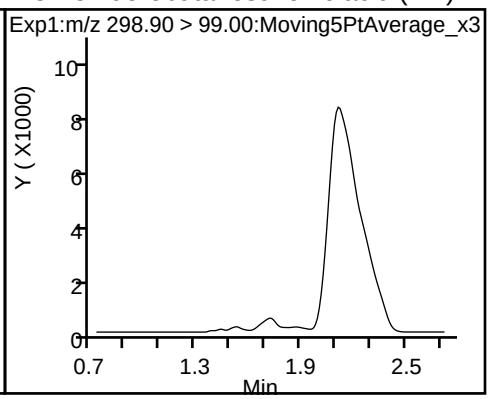
D 3 13C5-PFPeA



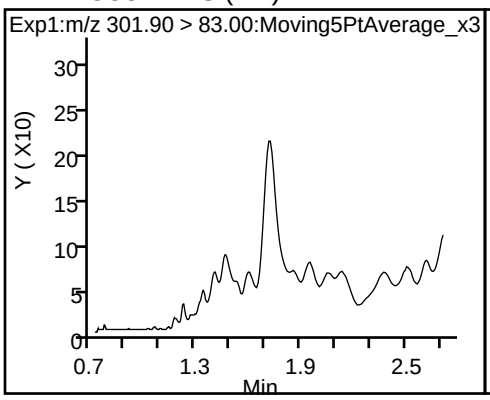
5 Perfluorobutanesulfonic acid (ND)



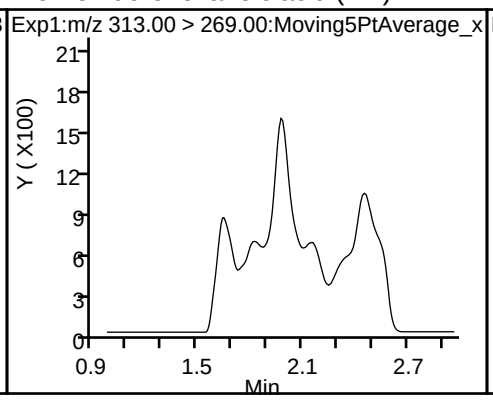
5 Perfluorobutanesulfonic acid (ND)



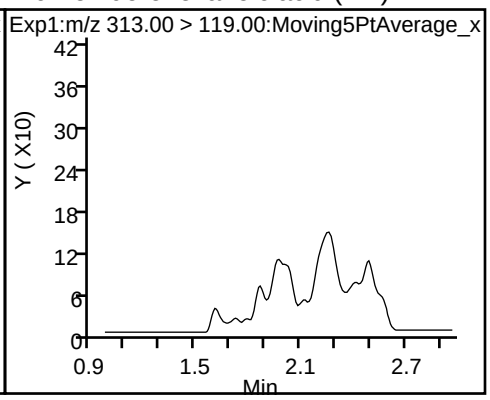
D 47 13C3-PFBS (ND)



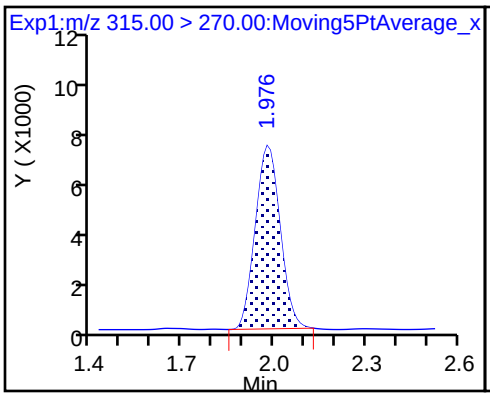
6 Perfluorohexanoic acid (ND)



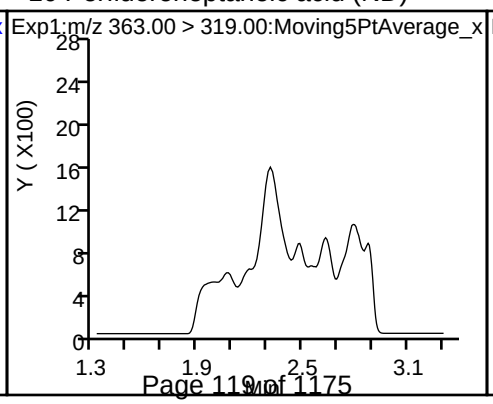
6 Perfluorohexanoic acid (ND)



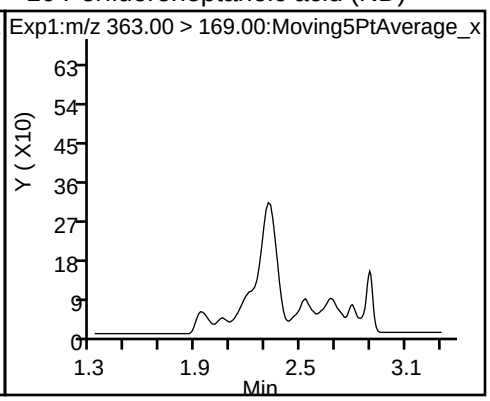
D 7 13C2 PFHxA



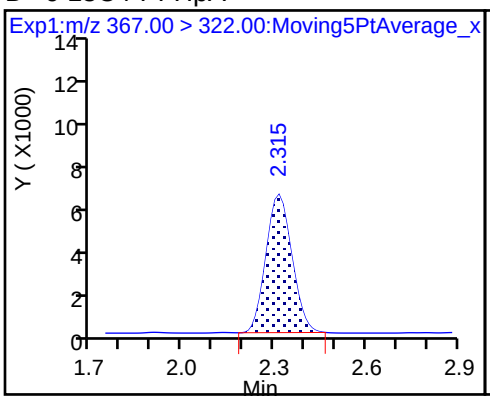
10 Perfluoroheptanoic acid (ND)



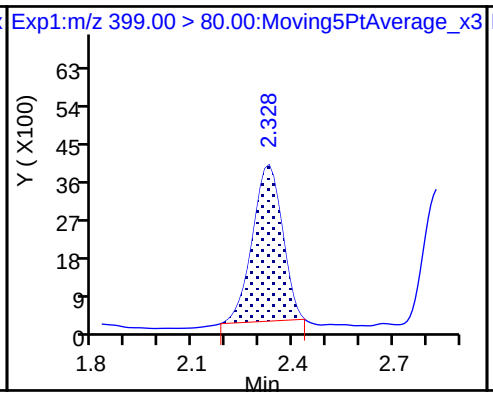
10 Perfluoroheptanoic acid (ND)



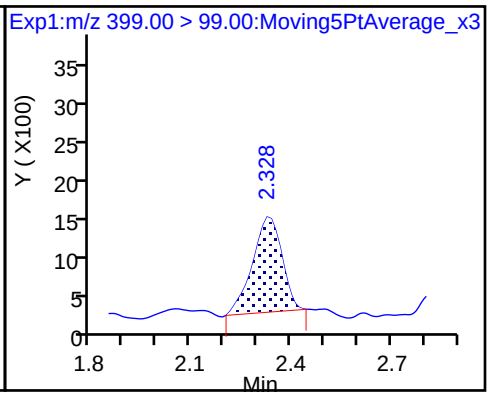
D 9 13C4-PFHpA



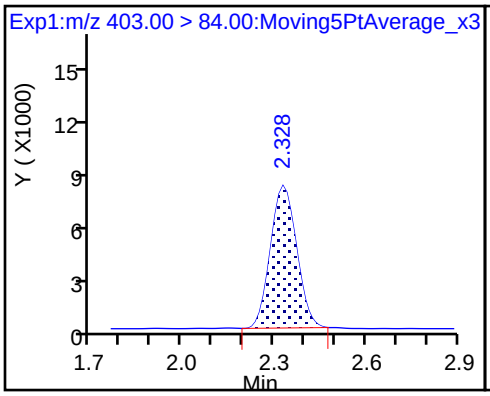
8 Perfluorohexanesulfonic acid



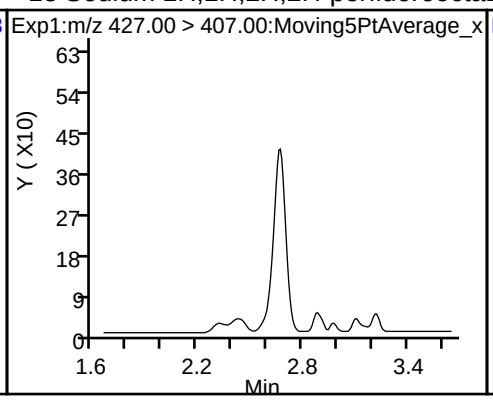
8 Perfluorohexanesulfonic acid



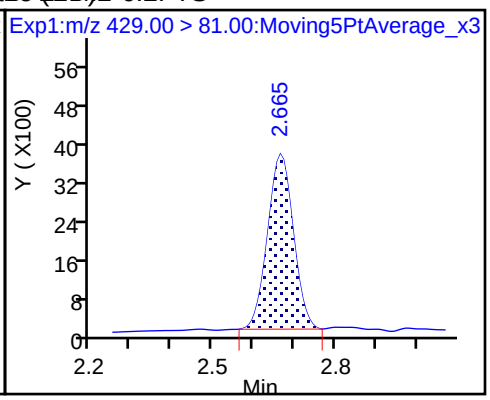
D 11 18O2 PFHxS



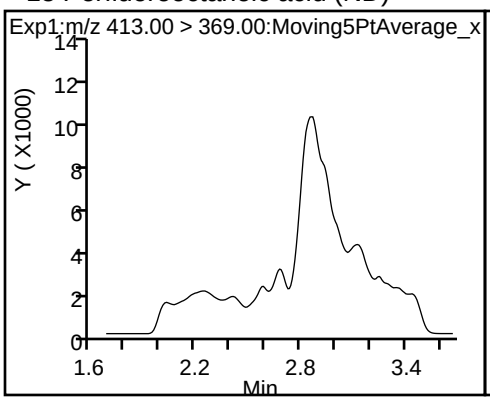
13 Sodium 1H,1H,2H,2H-perfluorooctane (X10)



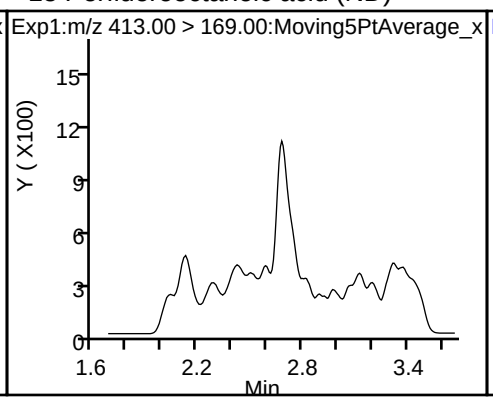
D 12 M2-6:2FTS



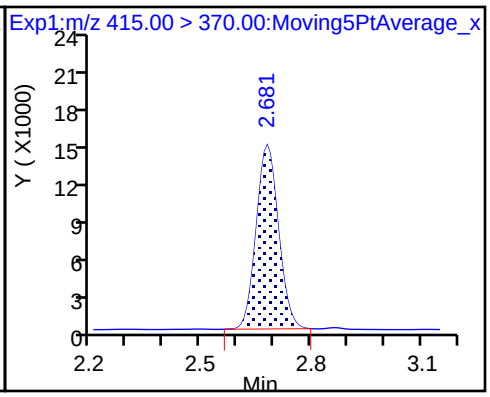
15 Perfluorooctanoic acid (ND)



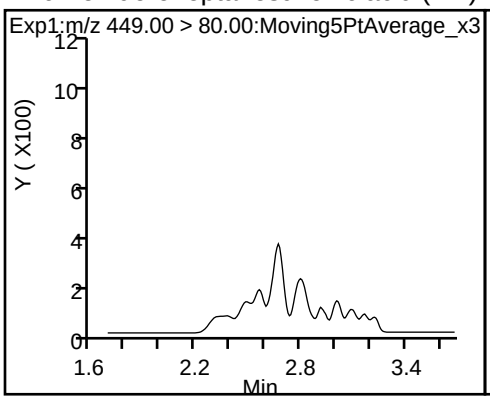
15 Perfluorooctanoic acid (ND)



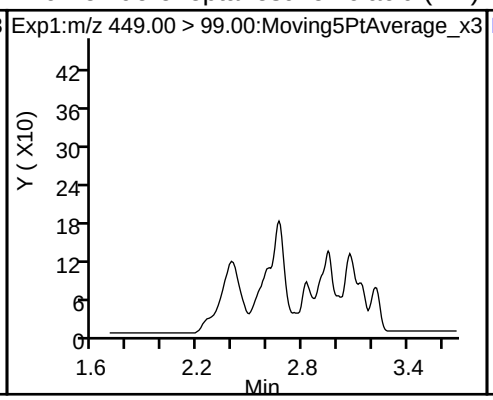
* 62 13C2-PFOA



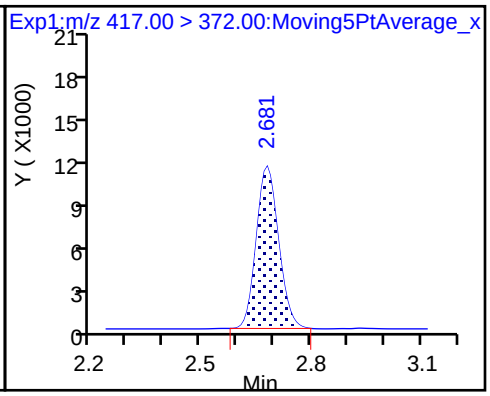
16 Perfluoroheptanesulfonic acid (ND)



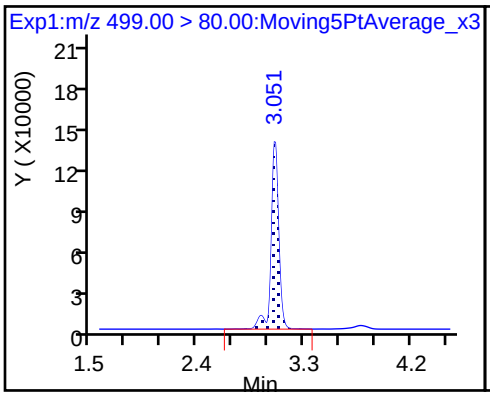
16 Perfluoroheptanesulfonic acid (ND)



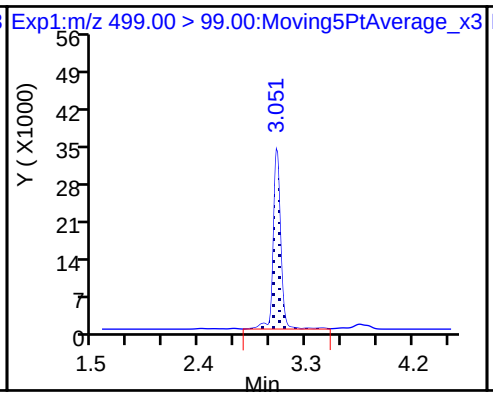
D 14 13C4 PFOA



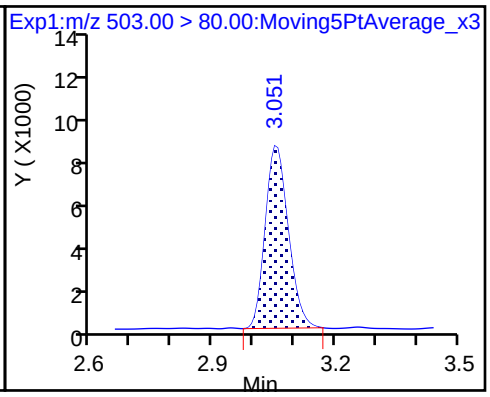
17 Perfluorooctane sulfonic acid



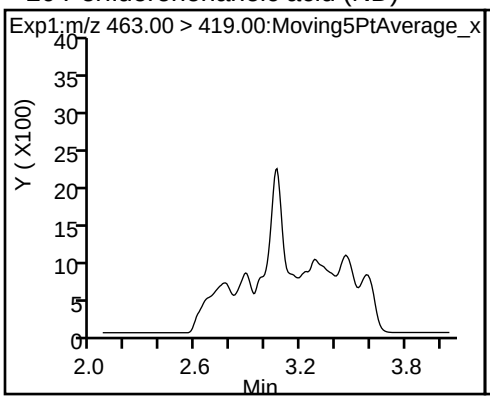
17 Perfluorooctane sulfonic acid



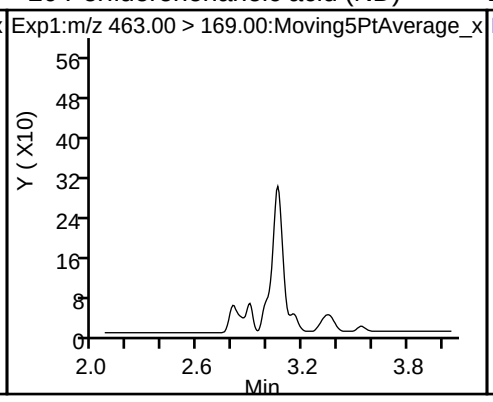
D 18 13C4 PFOS



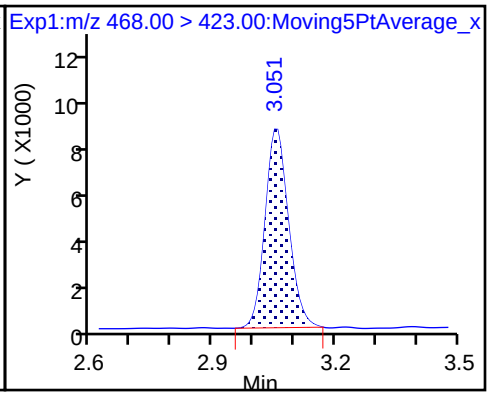
20 Perfluorononanoic acid (ND)



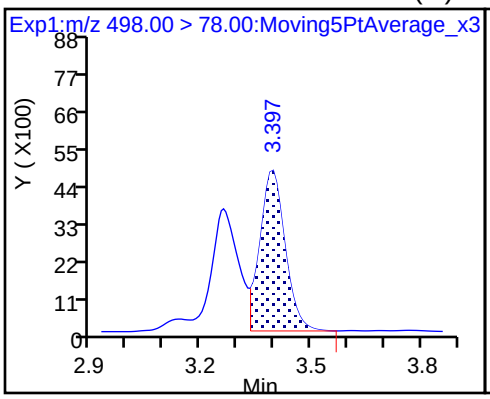
20 Perfluorononanoic acid (ND)



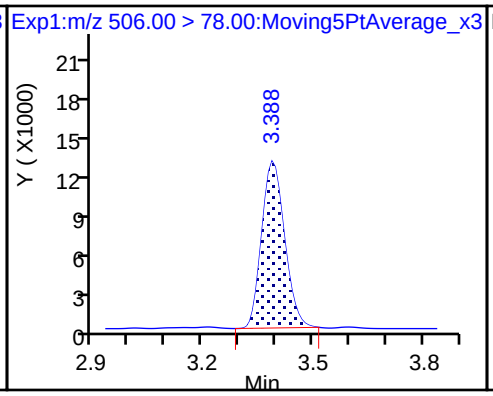
D 19 13C5 PFNA



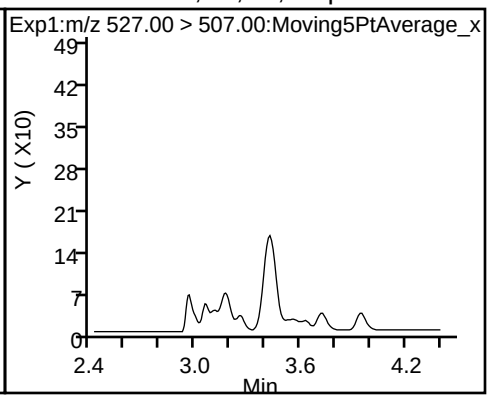
22 Perfluorooctane Sulfonamide (M)



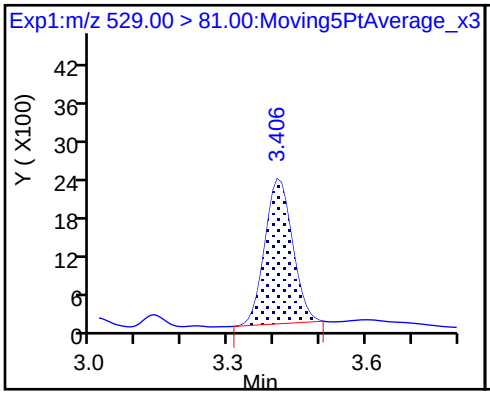
D 21 13C8 FOSA



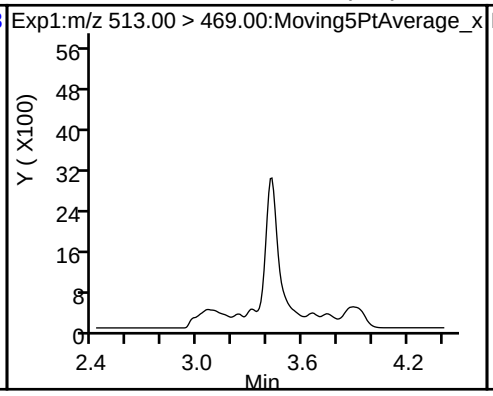
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



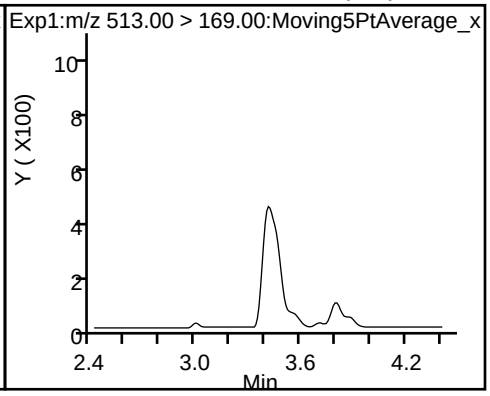
D 26 M2-8:2FTS



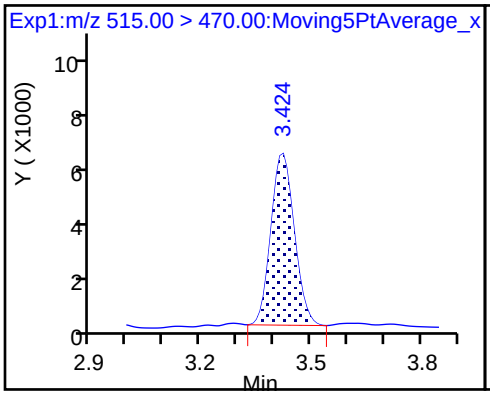
24 Perfluorodecanoic acid (ND)



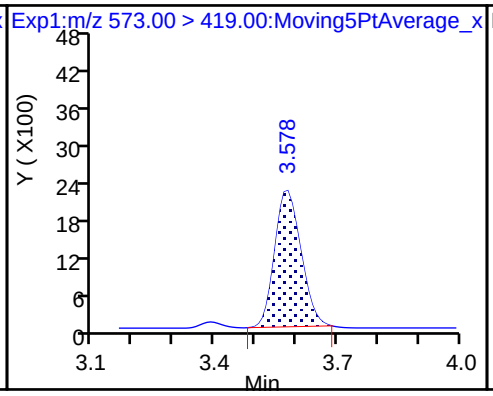
24 Perfluorodecanoic acid (ND)



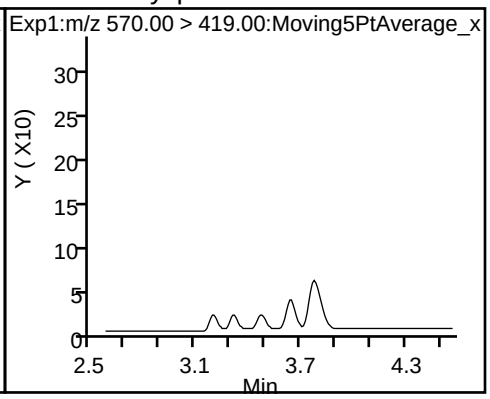
D 23 13C2 PFDA



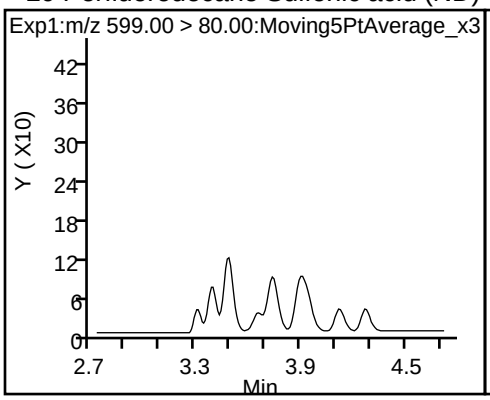
D 27 d3-NMeFOSAA



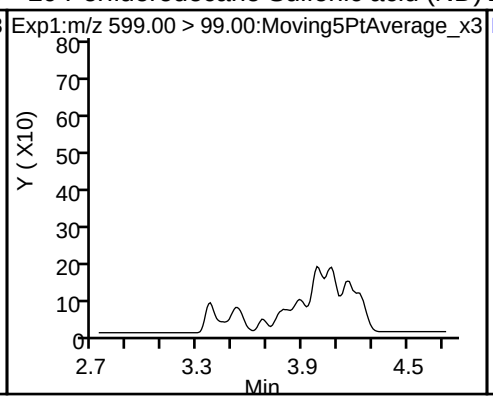
28 N-methyl perfluorooctane sulfonami (ND)



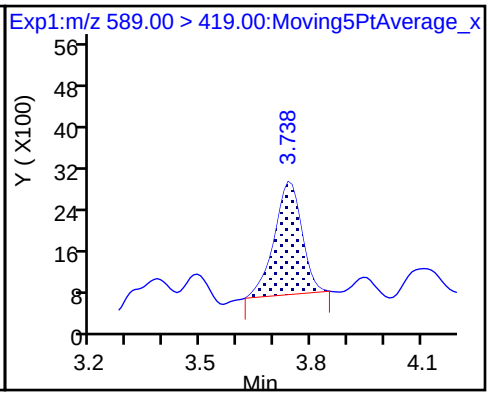
29 Perfluorodecane Sulfonic acid (ND)



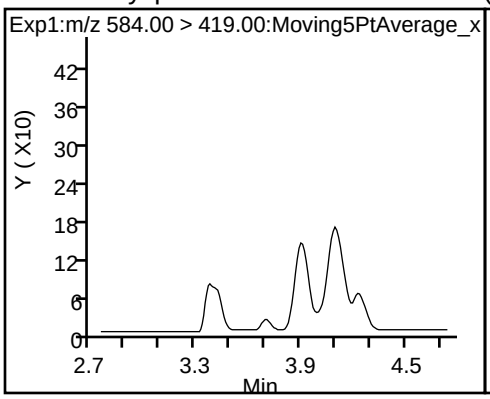
29 Perfluorodecane Sulfonic acid (ND)



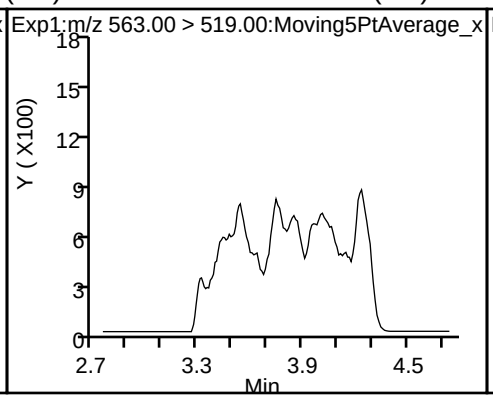
D 32 d5-NEtFOSAA



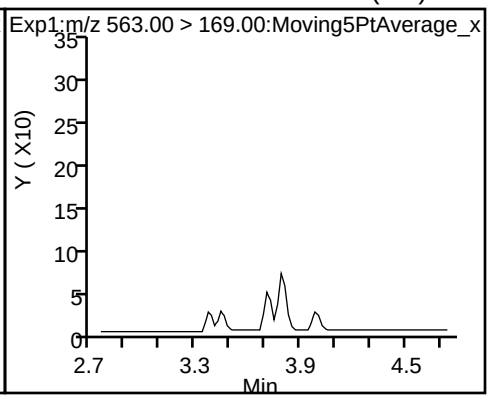
33 N-ethyl perfluorooctane sulfonamid (ND)



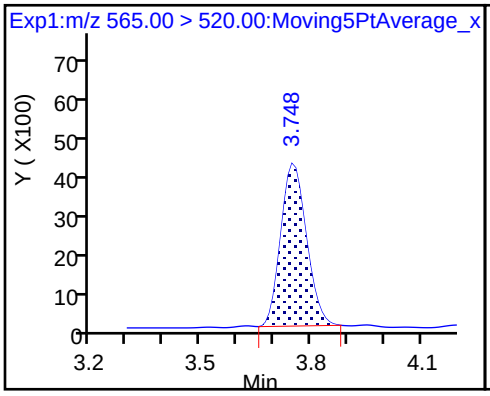
31 Perfluoroundecanoic acid (ND)



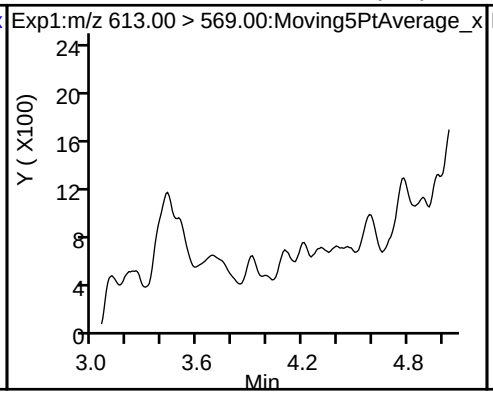
31 Perfluoroundecanoic acid (ND)



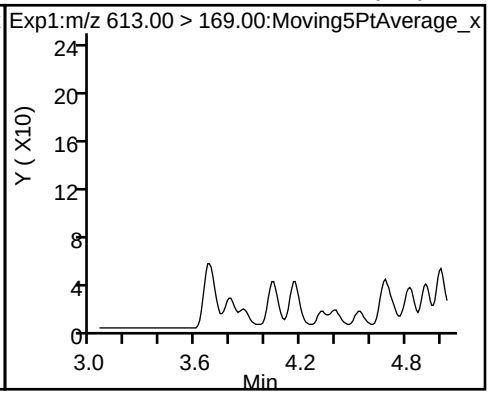
D 30 13C2 PFUnA



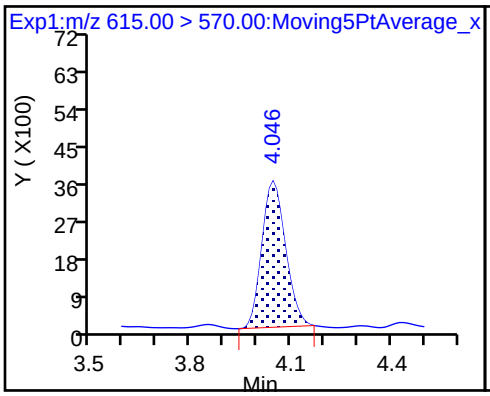
37 Perfluorododecanoic acid (ND)



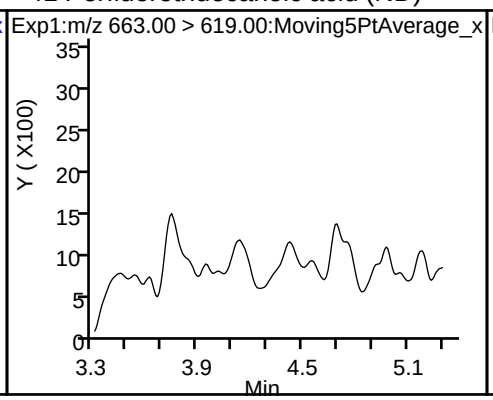
37 Perfluorododecanoic acid (ND)



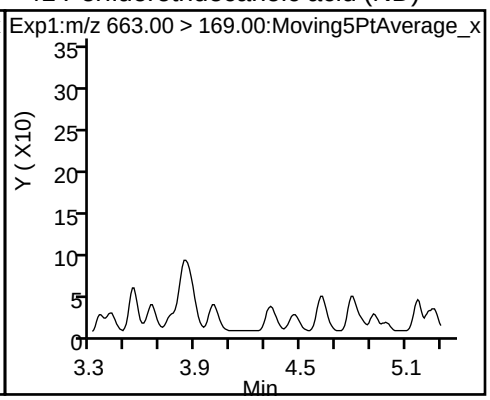
D 36 13C2 PFDoA



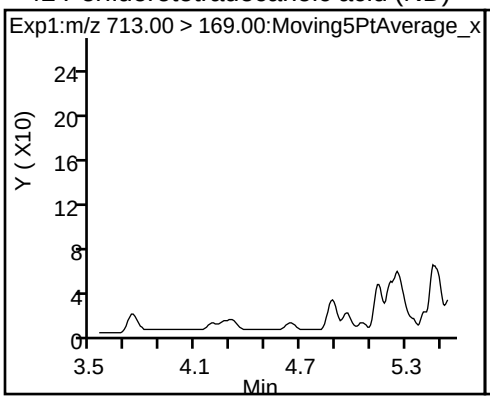
41 Perfluorotridecanoic acid (ND)



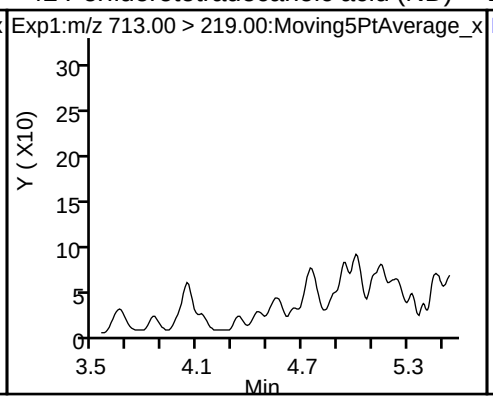
41 Perfluorotridecanoic acid (ND)



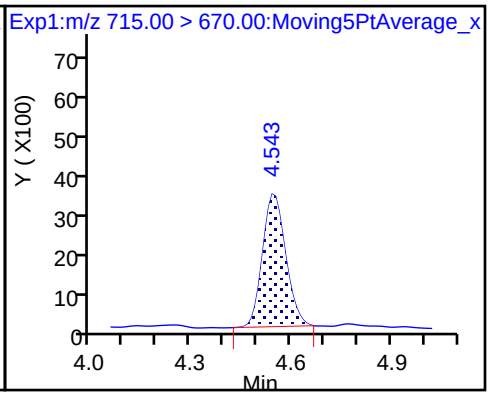
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE007 | Lab Sample ID: 320-36683-2

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_009.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 00:00

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 252.6(mL) | Date Analyzed: 03/19/2018 17:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	5.32	B	1.98	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	10.3		1.98	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	9.98		1.98	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.79		1.98	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	7.78		1.98	0.84
375-95-1	Perfluorononanoic acid (PFNA)	10.1		1.98	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	27.3		1.98	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.13		1.98	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.98	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.29	U	1.98	1.29
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.98	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.84	J	1.98	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.3	B	1.98	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.16		1.98	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	40.9		1.98	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.07	U	19.8	3.07
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88
27619-97-2	6:2FTS	1.98	U	19.8	1.98
39108-34-4	8:2FTS	2.76	J	19.8	1.98

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE007 | Lab Sample ID: 320-36683-2

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_009.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 00:00

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 252.6(mL) | Date Analyzed: 03/19/2018 17:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	73		25-150
STL01893	13C5 PFPeA	75		25-150
STL00993	13C2 PFHxA	70		25-150
STL01892	13C4-PFHpA	76		25-150
STL00990	13C4 PFOA	82		25-150
STL00995	13C5 PFNA	59		25-150
STL00996	13C2 PFDA	83		25-150
STL00997	13C2 PFUnA	74		25-150
STL00998	13C2 PFDoA	65		25-150
STL02116	13C2-PFTeDA	77		25-150
STL02337	13C3-PFBS	77		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	74		25-150
STL01056	13C8 FOSA	83		25-150
STL02118	d3-NMeFOSAA	54		25-150
STL02117	d5-NEtFOSAA	61		25-150
STL02279	M2-6:2FTS	96		25-150
STL02280	M2-8:2FTS	94		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_009.d
Lims ID: 320-36683-A-2-B
Client ID: DUPE007
Sample Type: Client
Inject. Date: 19-Mar-2018 17:28:20 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-2-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:03:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.438	1.444	-0.006	0.534	4450926	1.84		73.5	72530	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.444	1.444	0.0	1.004	222073	0.1345			47.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.696	1.705	-0.009	0.630	3189753	1.87		74.6	37701	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.696	1.705	-0.009	1.000	387977	0.2603			70.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.732	1.740	-0.008	0.644	75358	1.79		76.8	288	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.732	1.740	-0.008	1.000	53008	0.0211			16.6	
298.90 > 99.00	1.732	1.740	-0.008	1.000	20453		2.59(1.25-3.74)		15.2	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.992	-0.011	1.000	340731	0.2520			161	
313.00 > 119.00	1.981	1.992	-0.011	1.000	30573		11.14(5.03-15.10)		345	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.992	-0.011	0.736	3350066	1.76		70.3	67452	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.335	-0.013	0.863	3504739	1.89		75.6	75229	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.335	-0.013	1.000	212675	0.1464			114	
363.00 > 169.00	2.322	2.335	-0.013	1.000	91599		2.32(1.13-3.40)		1116	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.348	-0.013	1.000	1866506	0.8163			1413	
399.00 > 99.00	2.335	2.348	-0.013	1.000	581229		3.21(1.50-4.49)		845	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.348	-0.013	0.868	4848083	1.96		82.9	120602	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.659	2.675	-0.016	1.000	34858	0.0459			511	
D 12 M2-6:2FTS										
429.00 > 81.00	2.659	2.675	-0.016	0.988	1083266	2.28		96.1	4888	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.706	-0.015	1.000	3650790	2.04		81.6	97327	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.706	-0.015		4745538	2.50			87054	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.706	-0.015	1.000	320435	0.1966			80.6	
413.00 > 169.00	2.691	2.706	-0.015	1.000	191493		1.67(0.84-2.52)		606	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.706	-0.015	1.000	91422	0.0545			141	
449.00 > 99.00	2.691	2.706	-0.015	1.000	23722		3.85(1.94-5.82)		172	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.083	-0.023	1.137	3047996	1.76		73.7	11792	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.067	3.083	-0.016	1.002	40374358	29.2			45174	E
499.00 > 99.00	3.060	3.083	-0.023	1.000	12369641		3.26(2.31-6.93)		75208	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.083	-0.016	1.000	220528	0.2556			196	
463.00 > 169.00	3.067	3.083	-0.016	1.000	52923		4.17(1.90-5.69)		678	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.083	-0.016	1.140	2115887	1.48		59.1	46007	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.403	-0.010	1.261	5211778	2.08		83.2	74405	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.412	-0.019	1.000	2094291	1.03			83.7	
D 26 M2-8:2FTS										
529.00 > 81.00	3.420	3.439	-0.019	1.271	1006178	2.26		94.2	9807	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.420	3.439	-0.019	1.000	36812	0.0697			1424	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.429	3.448	-0.019	1.000	652835	0.6895			1169	
513.00 > 169.00	3.429	3.448	-0.019	1.000	114240		5.71(2.36-7.09)		1332	
D 23 13C2 PFDA										
515.00 > 470.00	3.429	3.448	-0.019	1.274	2494609	2.08		83.4	51770	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.606	-0.022	1.332	534208	1.35		54.1	14343	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.754	3.775	-0.021	1.395	578279	1.53		61.2	1364	
D 30 13C2 PFUnA										
565.00 > 520.00	3.764	3.786	-0.022	1.399	1732808	1.85		74.0	60111	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.764	3.786	-0.022	1.000	31181	0.0537			39.0	
563.00 > 169.00	3.764	3.786	-0.022	1.000	7368		4.23(2.12-6.36)		91.4	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.836	3.786	0.050	1.022	1839	0.008120			37.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.052	4.084	-0.032	1.506	1452159	1.63		65.4	8865	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.581	-0.020	1.695	1561999	1.93		77.1	15048	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_009.d

Injection Date: 19-Mar-2018 17:28:20 Instrument ID: A8_N

Lims ID: 320-36683-A-2-B Lab Sample ID: 320-36683-2

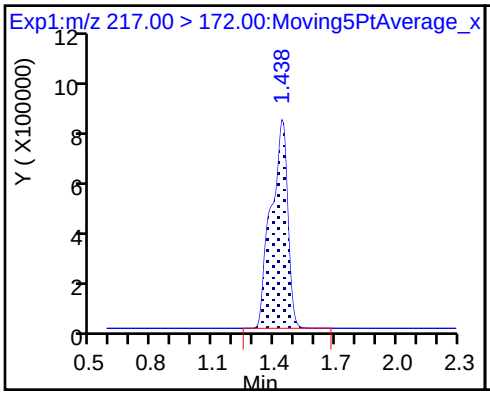
Client ID: DUPE007

Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5

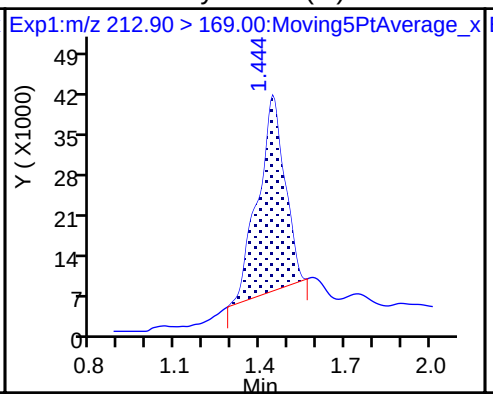
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

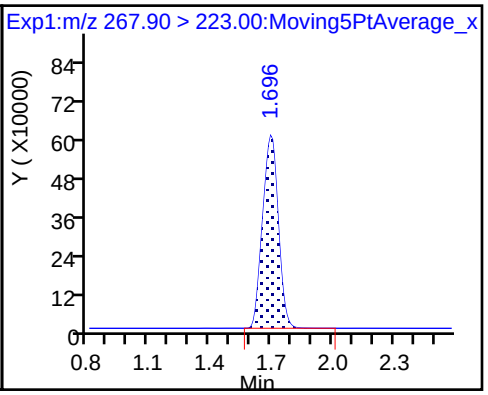
D 1 13C4 PFBA



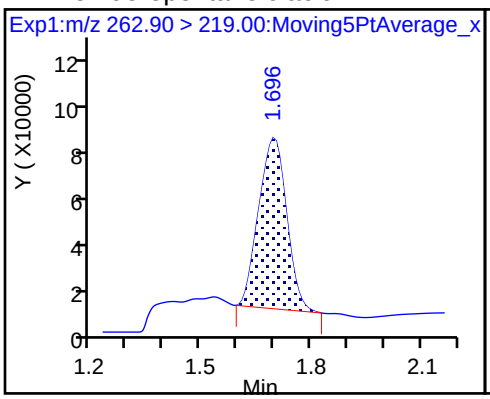
2 Perfluorobutyric acid (M)



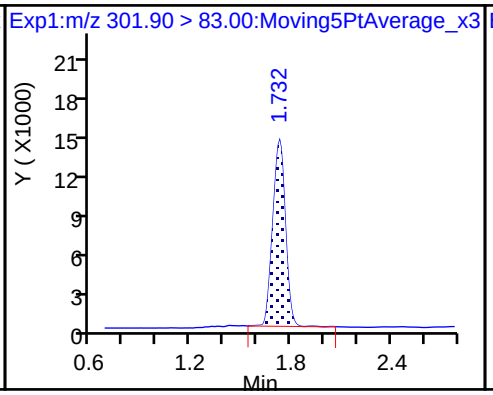
D 3 13C5-PFPeA



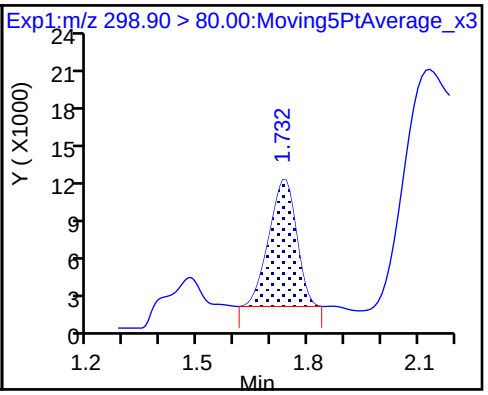
4 Perfluoropentanoic acid



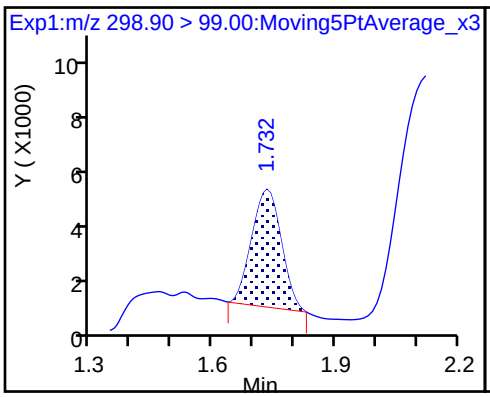
D 47 13C3-PFBS



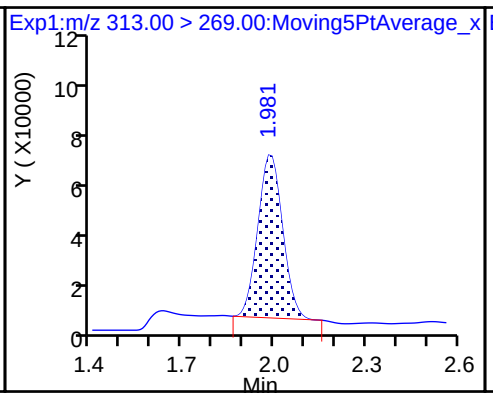
5 Perfluorobutanesulfonic acid



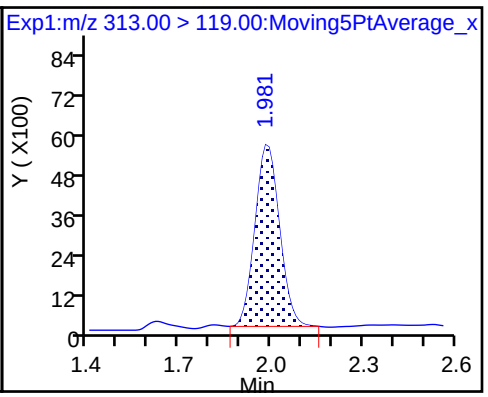
5 Perfluorobutanesulfonic acid



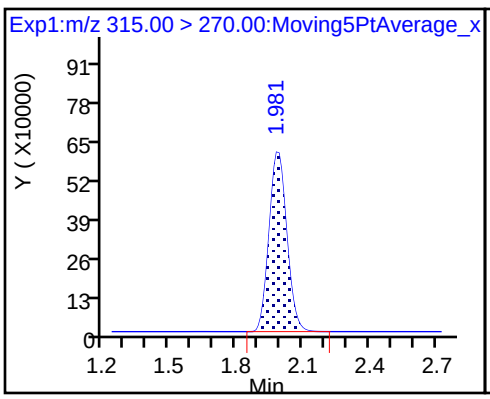
6 Perfluorohexanoic acid



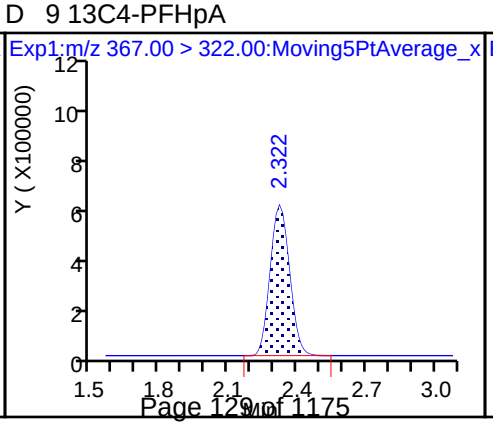
6 Perfluorohexanoic acid



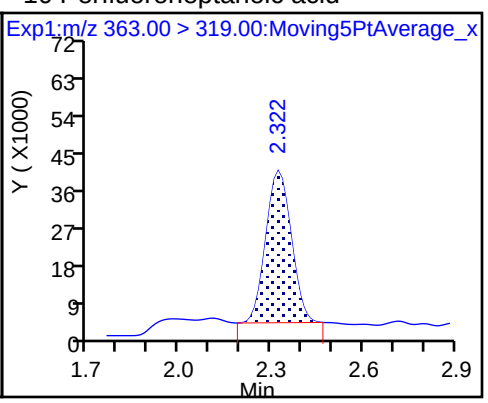
D 7 13C2 PFHxA



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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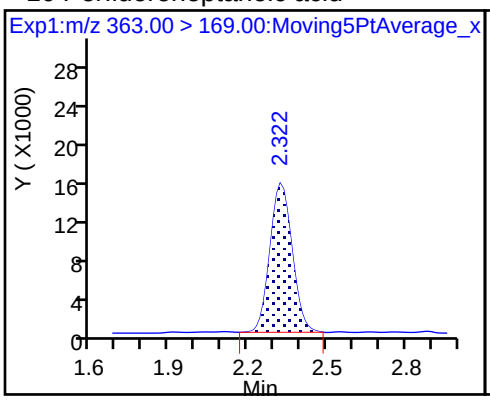
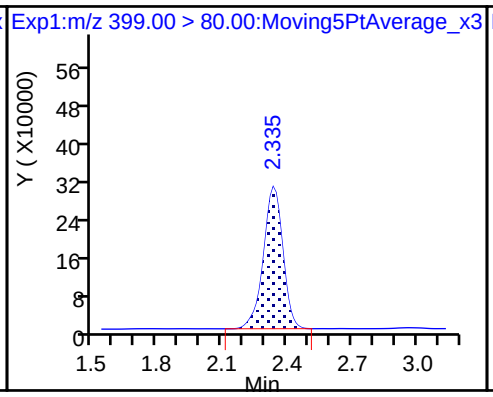
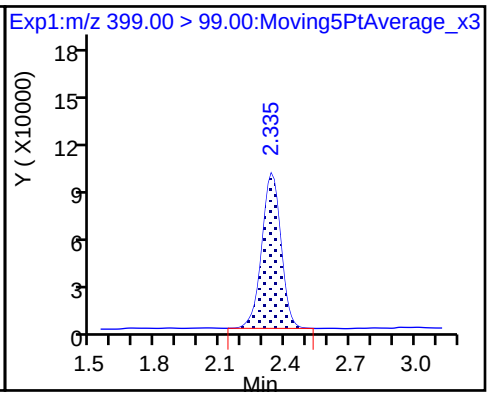


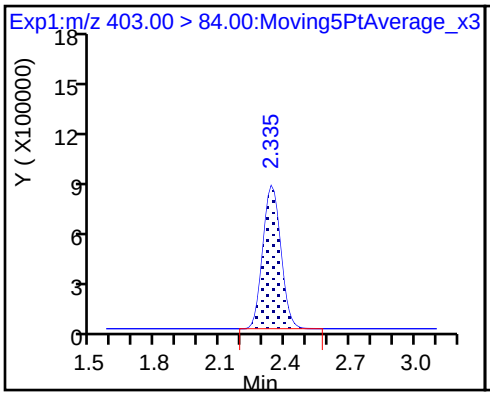
8 Perfluorohexanesulfonic acid



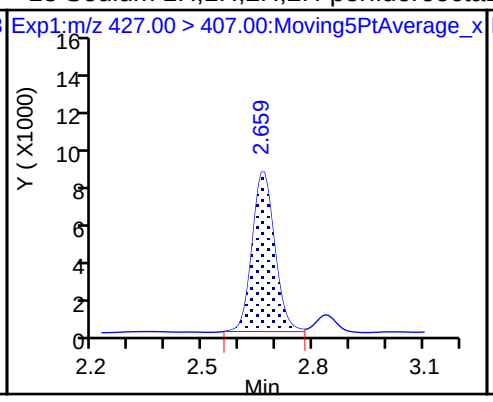
8 Perfluorohexanesulfonic acid



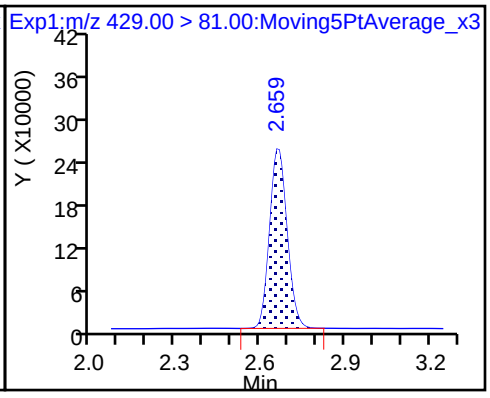
D 11 18O2 PFHxS



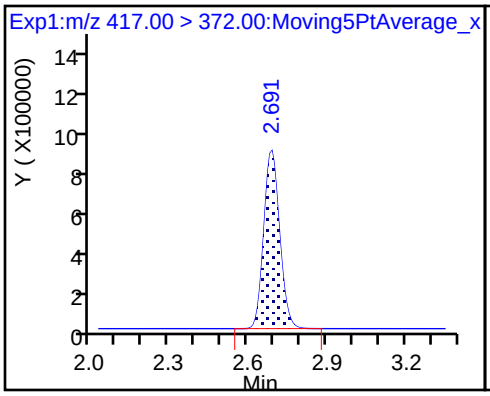
13 Sodium 1H,1H,2H,2H-perfluorooctane



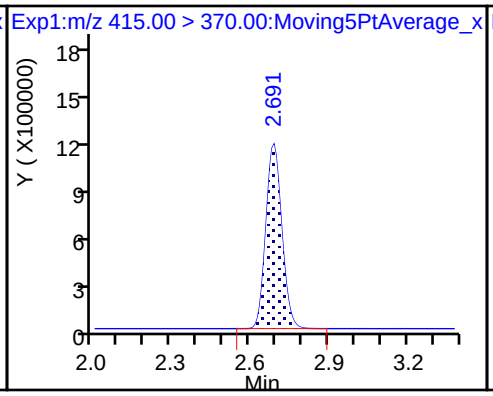
D 12 M2-6:2FTS



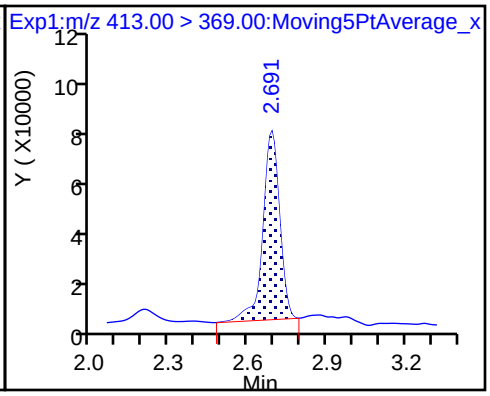
D 14 13C4 PFOA



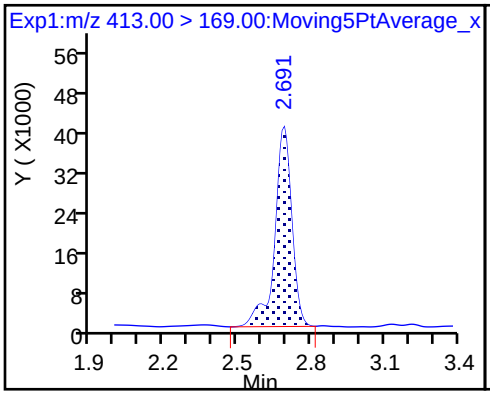
* 62 13C2-PFOA



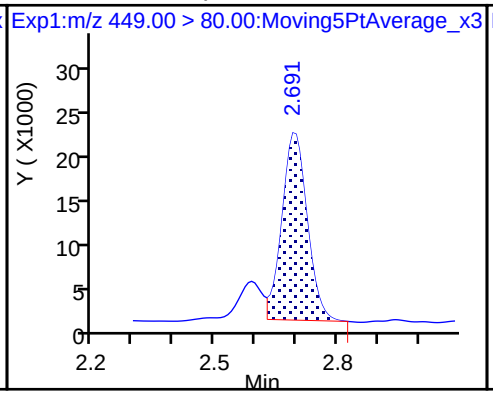
15 Perfluorooctanoic acid



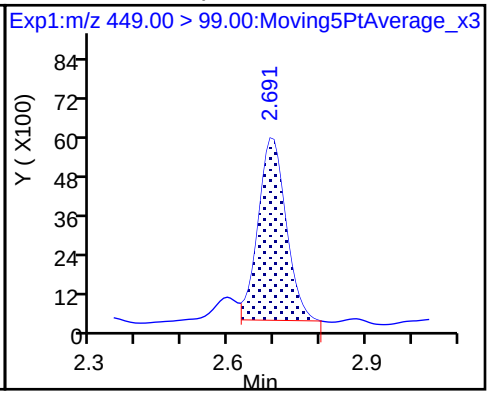
15 Perfluorooctanoic acid



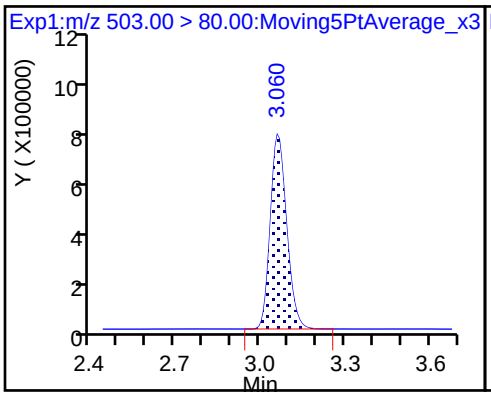
16 Perfluoroheptanesulfonic acid



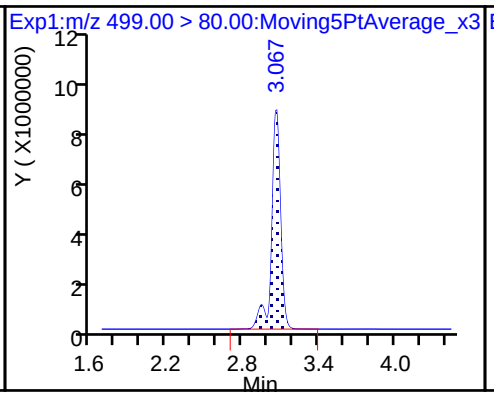
16 Perfluoroheptanesulfonic acid



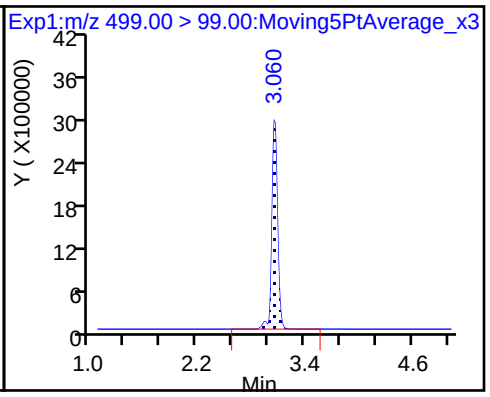
D 18 13C4 PFOS



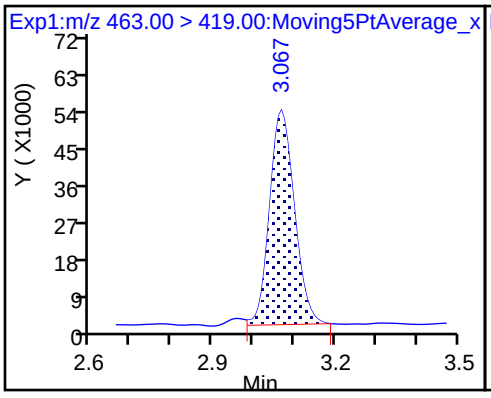
17 Perfluorooctane sulfonic acid



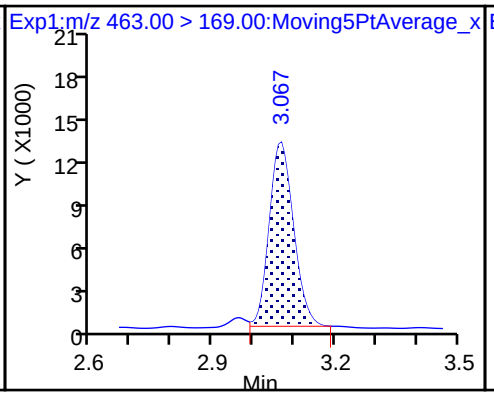
17 Perfluorooctane sulfonic acid



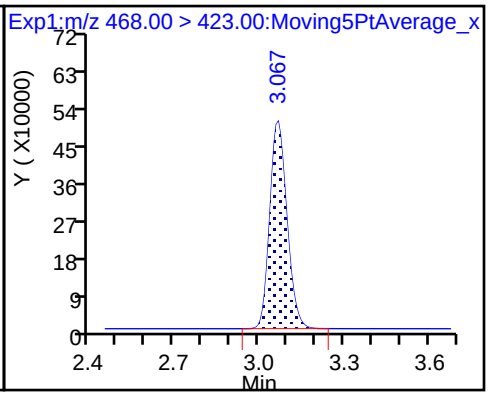
20 Perfluorononanoic acid



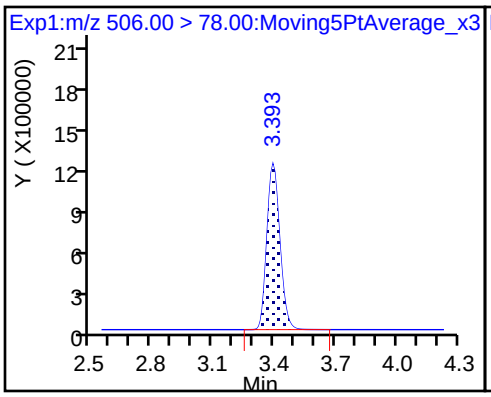
20 Perfluorononanoic acid



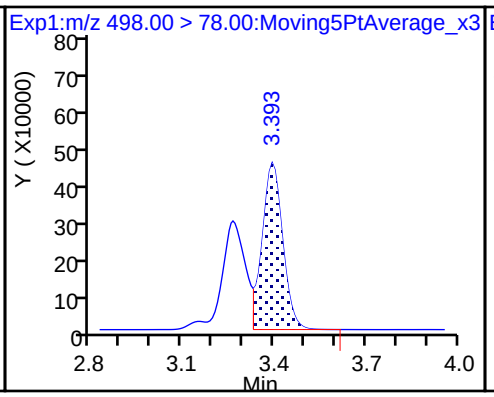
D 19 13C5 PFNA



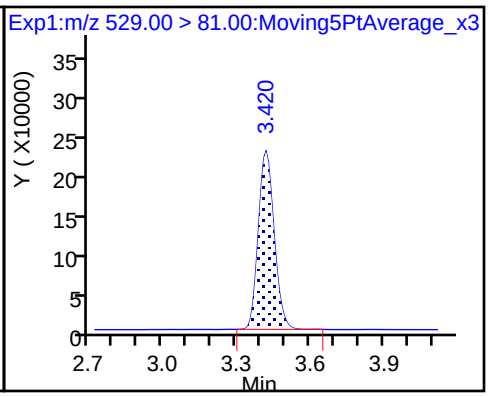
D 21 13C8 FOSA



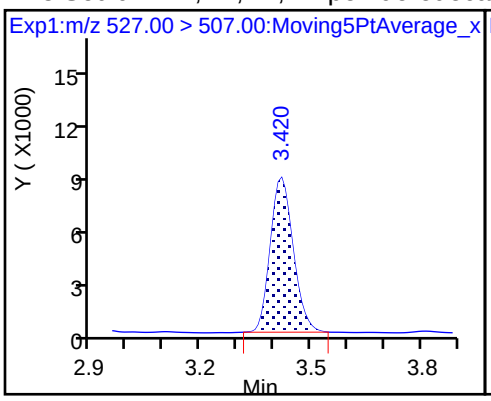
22 Perfluorooctane Sulfonamide



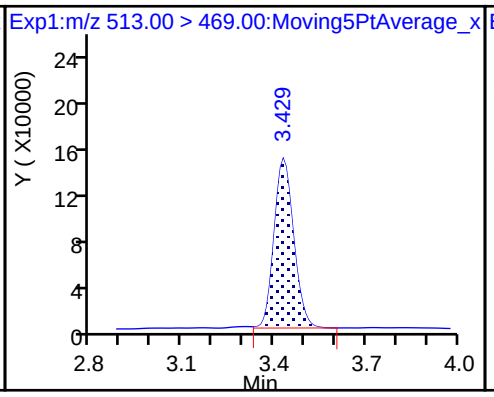
D 26 M2-8:2FTS



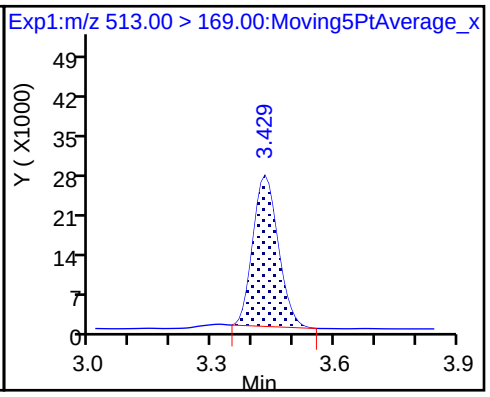
25 Sodium 1H,1H,2H,2H-perfluorodecane



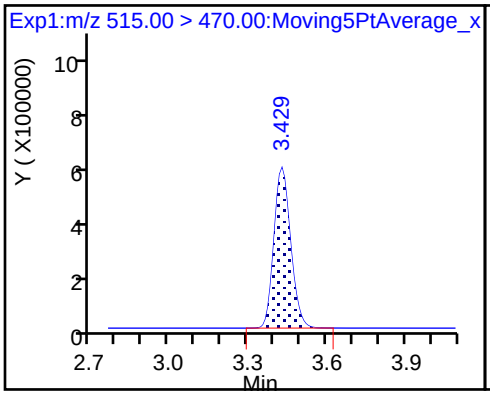
24 Perfluorodecanoic acid



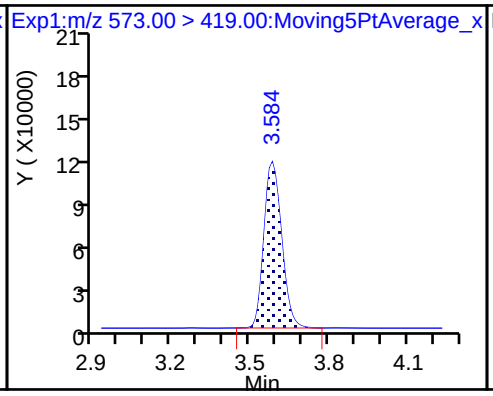
24 Perfluorodecanoic acid



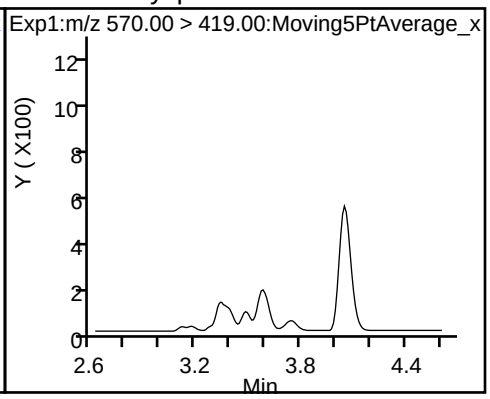
D 23 13C2 PFDA



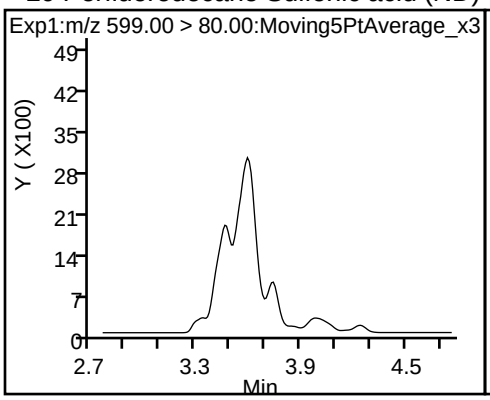
D 27 d3-NMeFOSAA



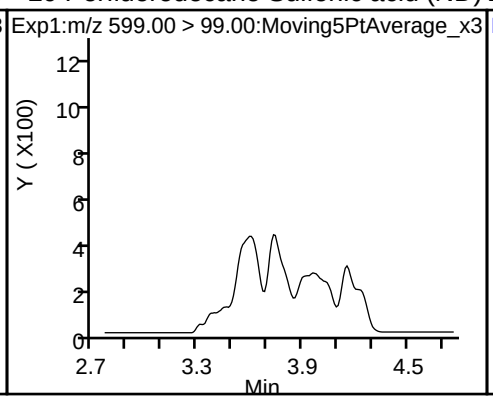
28 N-methyl perfluorooctane sulfonami (ND)



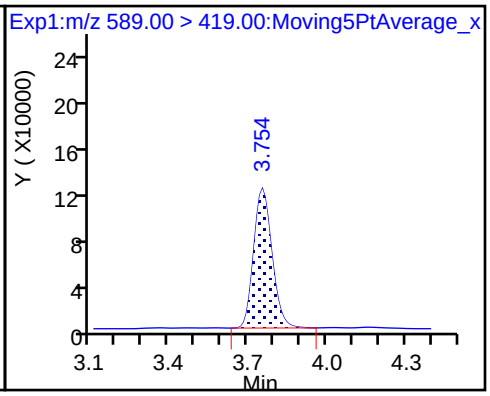
29 Perfluorodecane Sulfonic acid (ND)



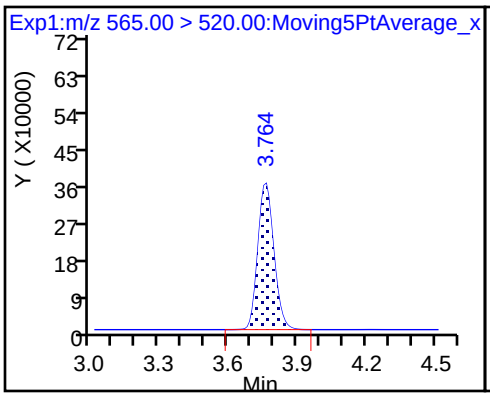
29 Perfluorodecane Sulfonic acid (ND)



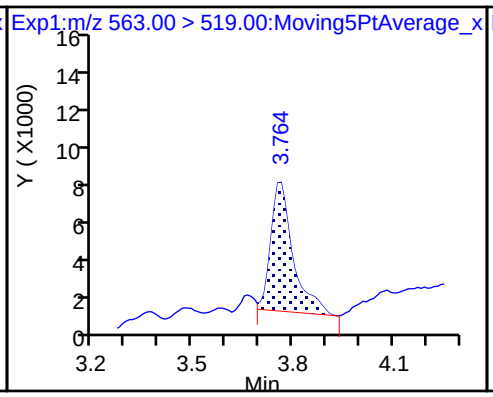
D 32 d5-NEtFOSAA



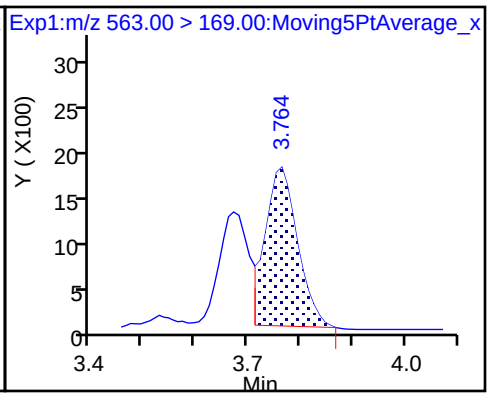
D 30 13C2 PFUnA



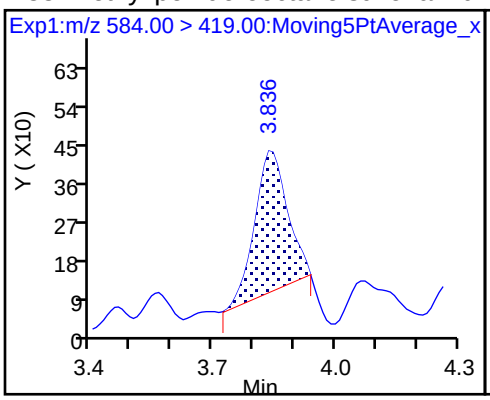
31 Perfluoroundecanoic acid



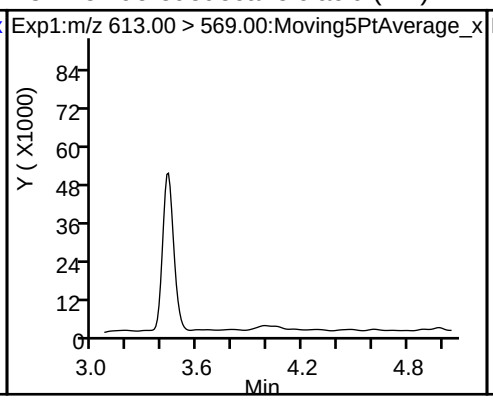
31 Perfluoroundecanoic acid



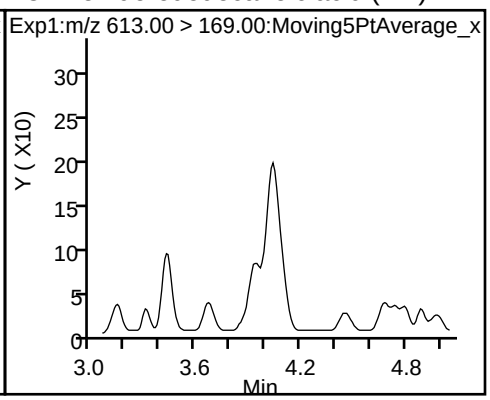
33 N-ethyl perfluorooctane sulfonamid



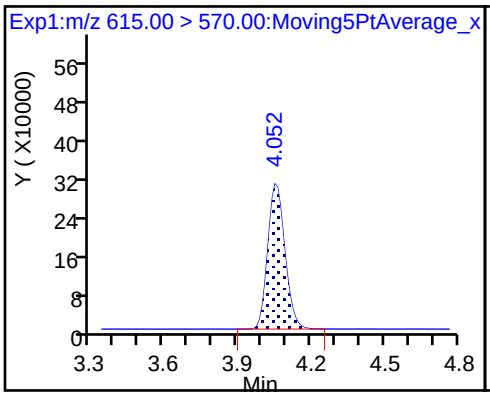
37 Perfluorododecanoic acid (ND)



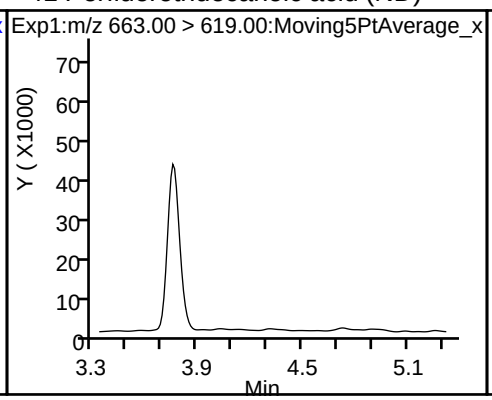
37 Perfluorododecanoic acid (ND)



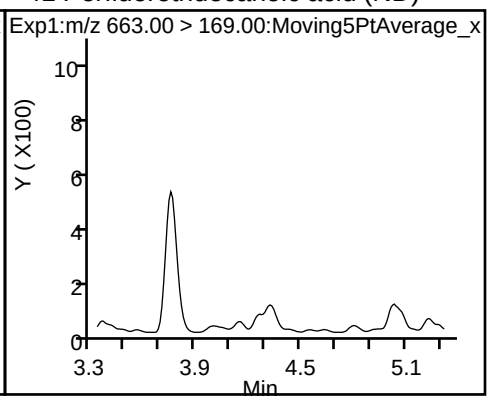
D 36 13C2 PFDoA



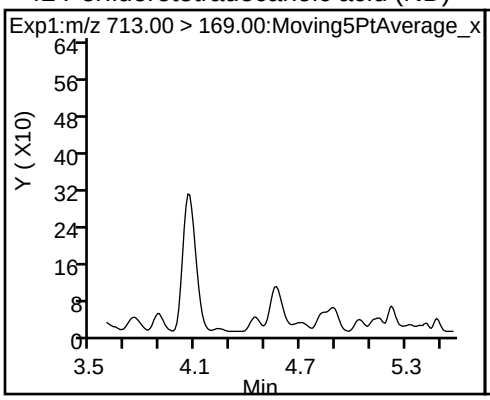
41 Perfluorotridecanoic acid (ND)



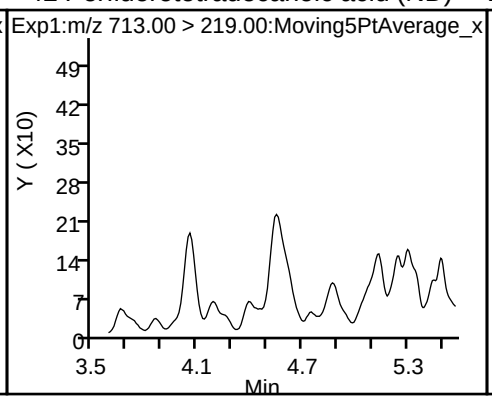
41 Perfluorotridecanoic acid (ND)



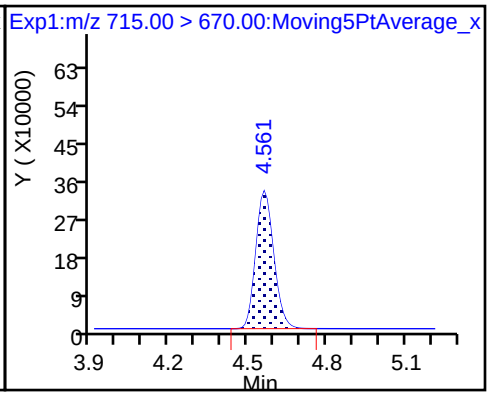
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

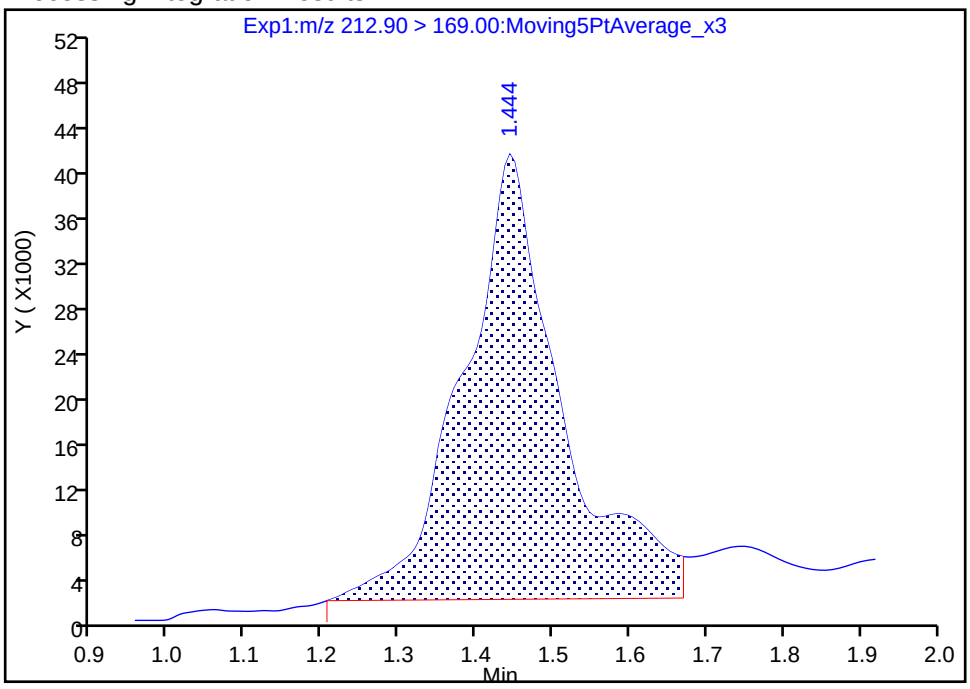
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_009.d				
Injection Date:	19-Mar-2018 17:28:20	Instrument ID:	A8_N		
Lims ID:	320-36683-A-2-B	Lab Sample ID:	320-36683-2		
Client ID:	DUPE007				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	4	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

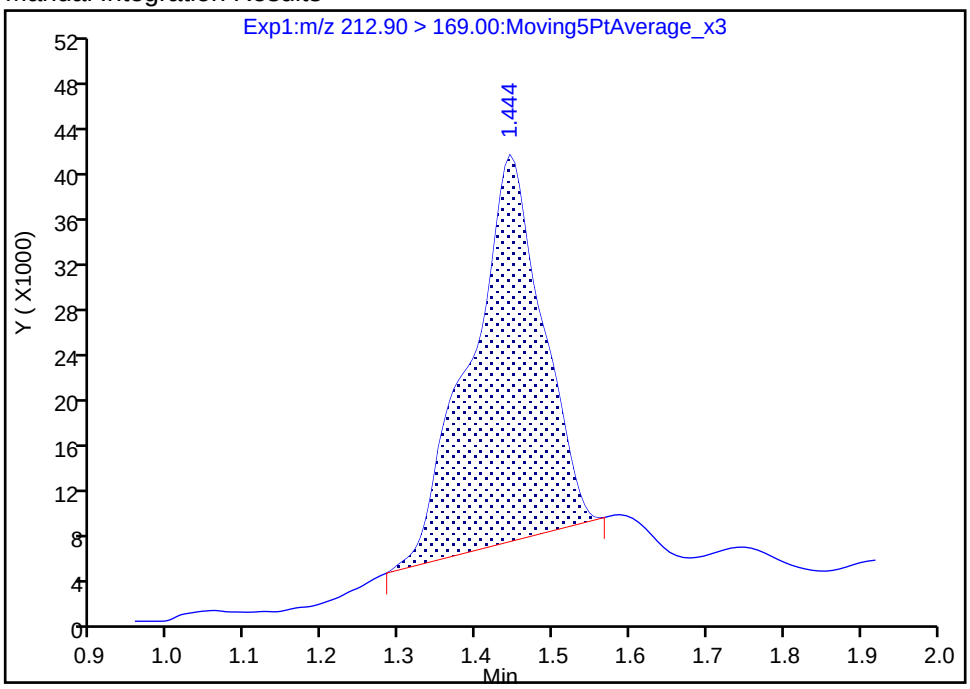
Processing Integration Results

RT: 1.44
Area: 347164
Amount: 0.210251
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 222073
Amount: 0.134493
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:12:39

Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE007 DL Lab Sample ID: 320-36683-2 DL

Matrix: Solid (SPLP East) Lab File ID: 2017.03.17LLZA_031.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 00:00

Extraction Method: 3535 Date Extracted: 03/14/2018 20:27

Sample wt/vol: 252.6(mL) Date Analyzed: 03/17/2018 16:07

Con. Extract Vol.: 10.00(mL) Dilution Factor: 100

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1740	D	198	53.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	62	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_031.d
Lims ID: 320-36683-A-2-B
Client ID: DUPE007
Sample Type: Client
Inject. Date: 17-Mar-2018 16:07:13 ALS Bottle#: 24 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-a-2-b 100X
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:51:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.441	-0.006	0.535	48444	0.0157		62.7	1022	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.700	-0.008	0.631	37408	0.0172		68.6	1016	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.987	-0.011	0.737	42875	0.0176		70.5	1548	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	43678	0.0185		73.9	1823	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	20836	0.009074			3.0	
399.00 > 99.00	2.328	2.328	0.0	1.000	7648		2.72(1.50-4.49)		3.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	48690	0.0154		65.2	2124	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.665	0.0	0.994	15231	0.0251		106	388	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.680	0.001		60538	0.0250			2951	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.689	-0.008	1.000	44164	0.0193		77.4	2585	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.051	0.007	1.000	654778	0.4406			2356	
499.00 > 99.00	3.051	3.051	0.0	0.998	156131		4.19(2.31-6.93)		1570	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.141	32811	0.0149		62.2	1369	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.065	-0.007	1.141	31674	0.0173		69.3	1324	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	22477	0.0129			74.7	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.398	-0.009	1.264	44789	0.0140		56.1	1278	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.417	-0.010	1.271	8050	0.0141		59.1	192	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.426	-0.010	1.274	25999	0.0170		68.1	386	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.579	-0.008	1.332	8667	0.0172		68.8	603	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.748	-0.008	1.395	10142	0.0210		84.2	17.3	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.758	-0.008	1.399	18925	0.0158		63.3	550	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.056	-0.008	1.510	18273	0.0161		64.5	153	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.554	-0.010	1.695	18206	0.0176		70.4	165	

Report Date: 20-Mar-2018 13:55:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_031.d

Injection Date: 17-Mar-2018 16:07:13 Instrument ID: A8_N

Lims ID: 320-36683-A-2-B Lab Sample ID: 320-36683-2

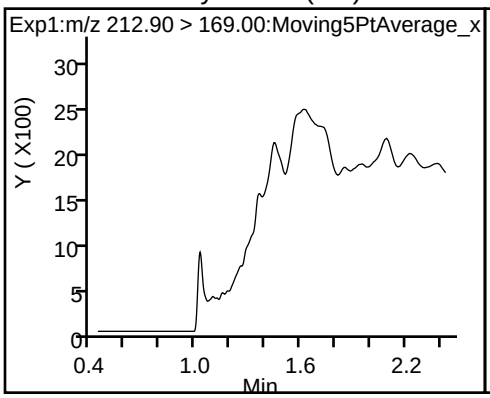
Client ID: DUPE007

Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 9

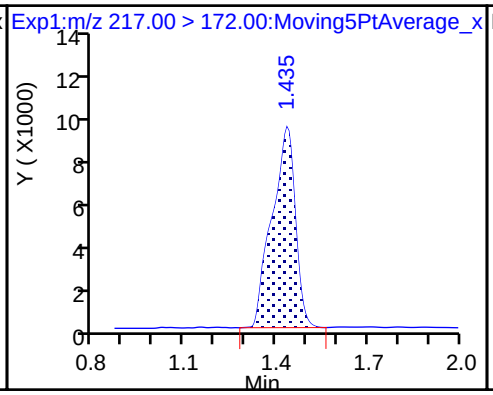
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

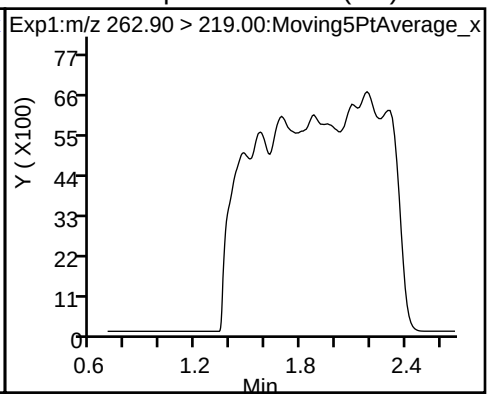
2 Perfluorobutyric acid (ND)



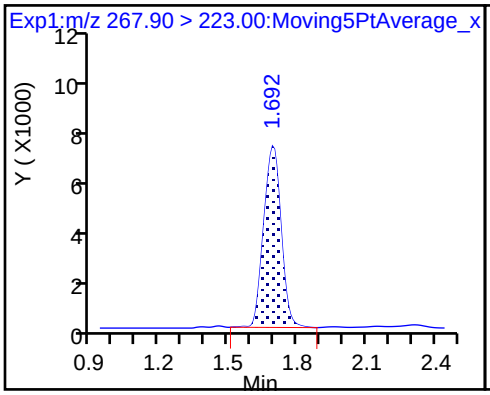
D 1 13C4 PFBA



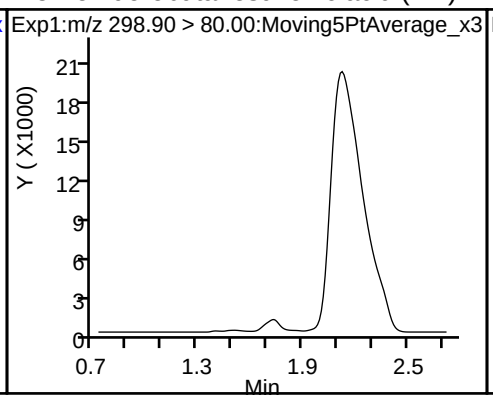
4 Perfluoropentanoic acid (ND)



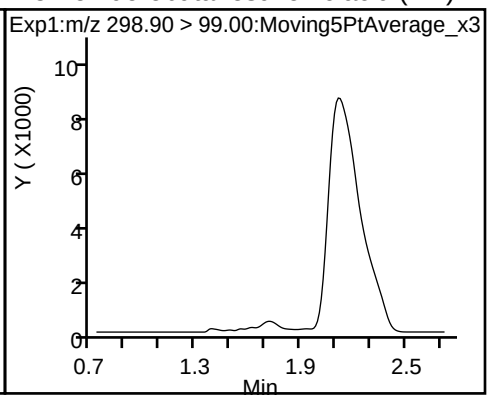
D 3 13C5-PFPeA



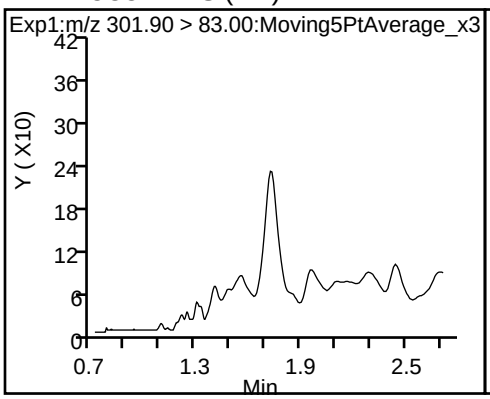
5 Perfluorobutanesulfonic acid (ND)



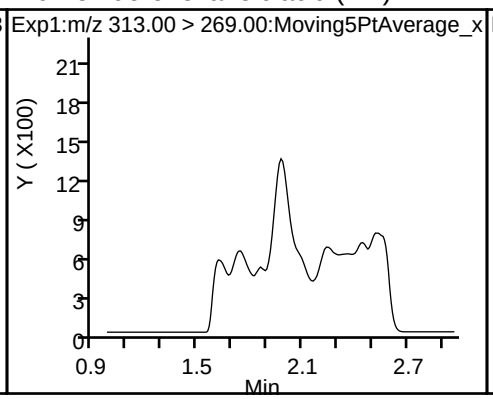
5 Perfluorobutanesulfonic acid (ND)



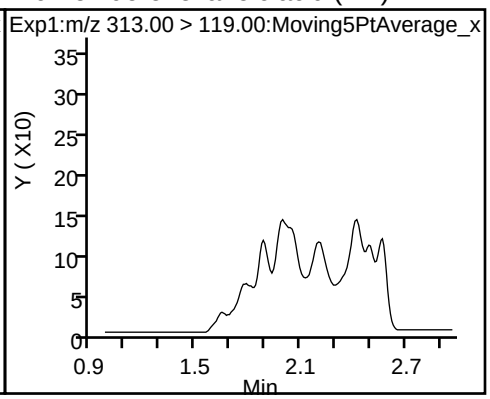
D 47 13C3-PFBS (ND)



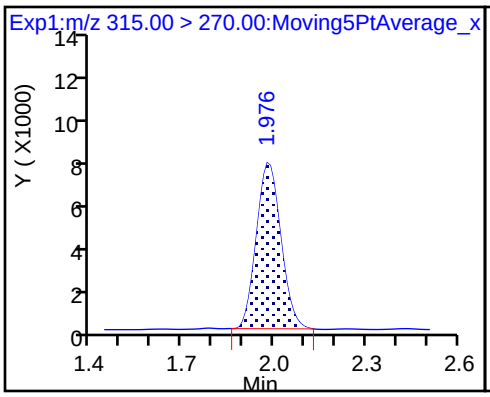
6 Perfluorohexanoic acid (ND)



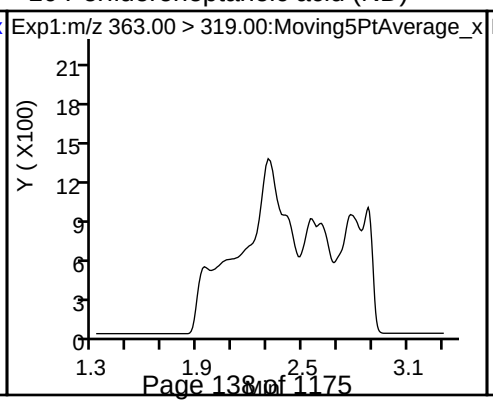
6 Perfluorohexanoic acid (ND)



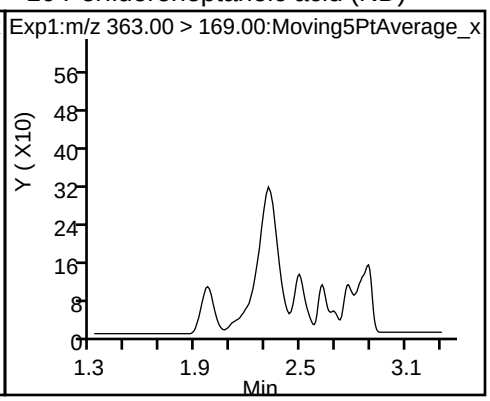
D 7 13C2 PFHxA



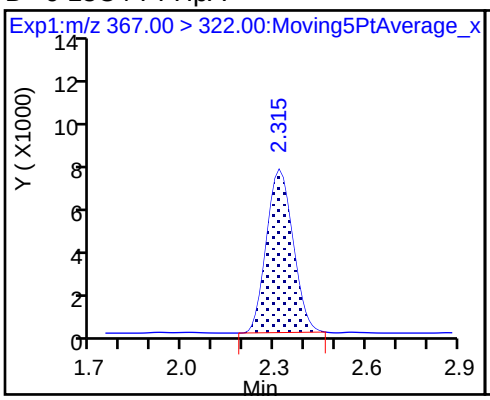
10 Perfluoroheptanoic acid (ND)



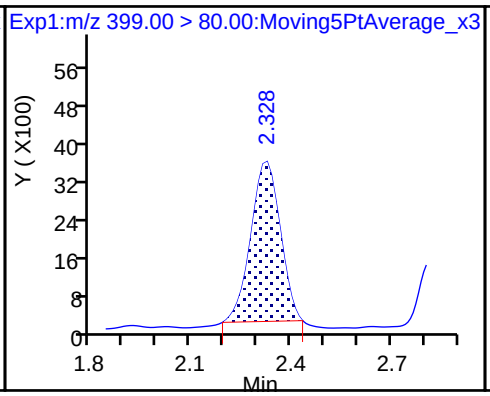
10 Perfluoroheptanoic acid (ND)



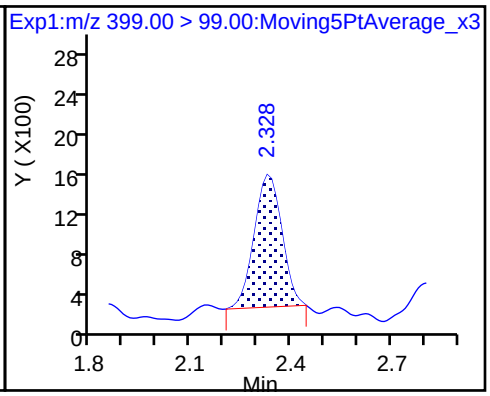
D 9 13C4-PFHpA



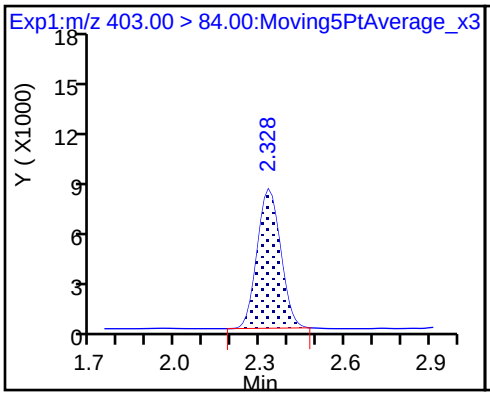
8 Perfluorohexanesulfonic acid



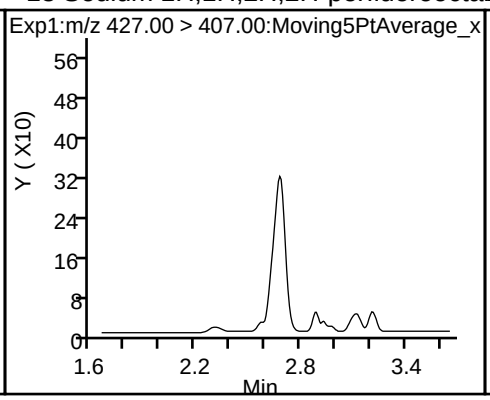
8 Perfluorohexanesulfonic acid



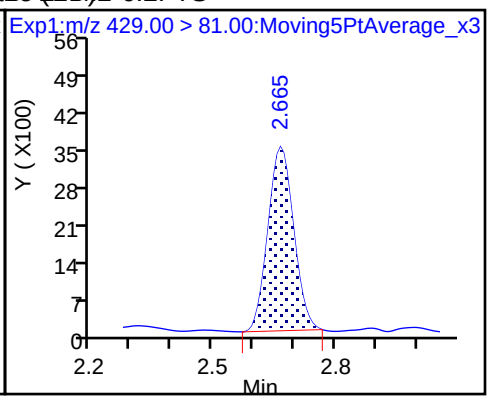
D 11 18O2 PFHxS



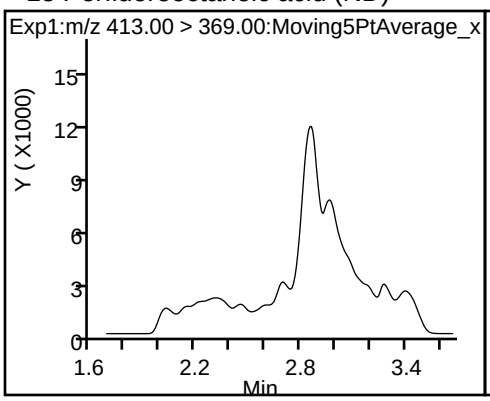
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (4:2)



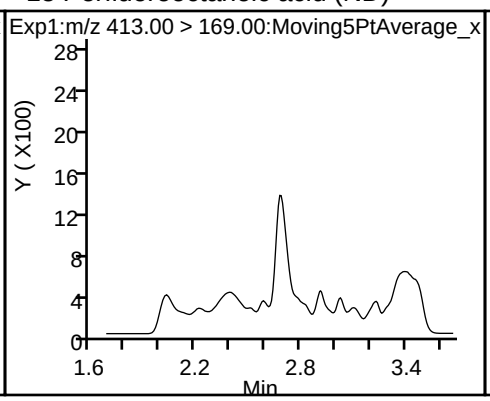
D 12 M2-6:2FTS



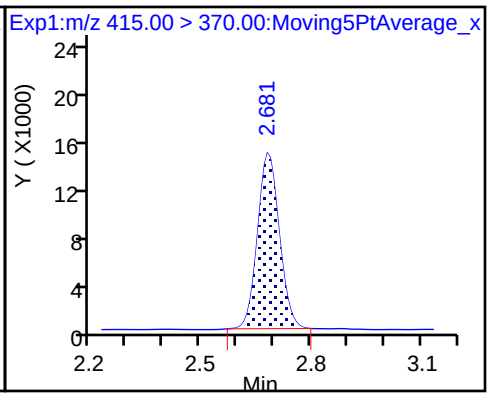
15 Perfluorooctanoic acid (ND)



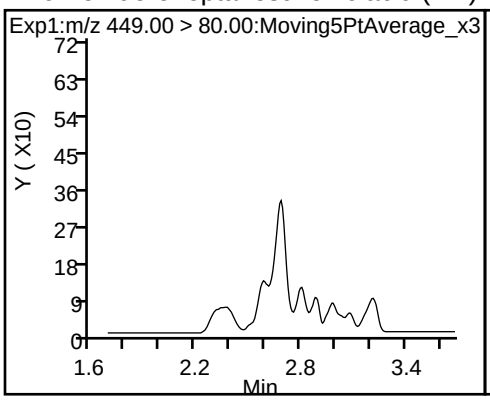
15 Perfluorooctanoic acid (ND)



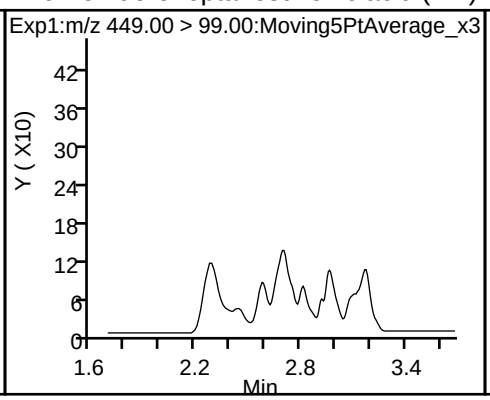
* 62 13C2-PFOA



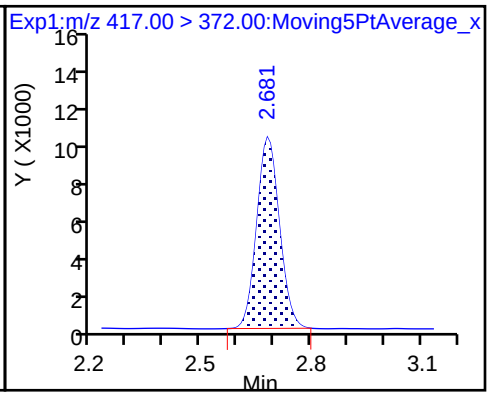
16 Perfluoroheptanesulfonic acid (ND)



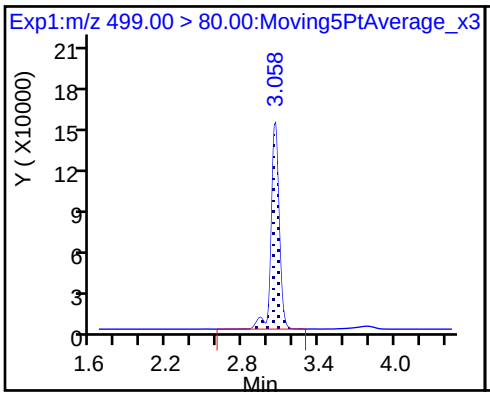
16 Perfluoroheptanesulfonic acid (ND)



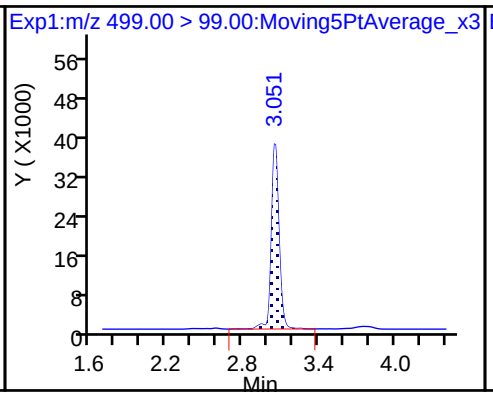
D 14 13C4 PFOA



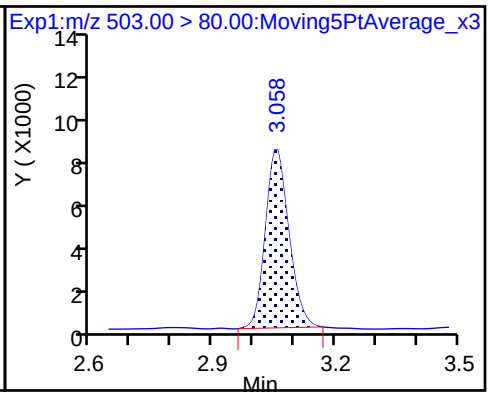
17 Perfluorooctane sulfonic acid



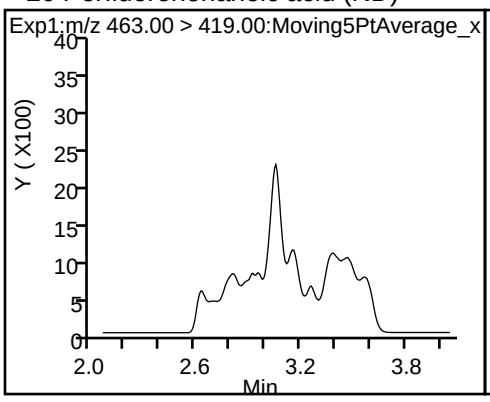
17 Perfluorooctane sulfonic acid



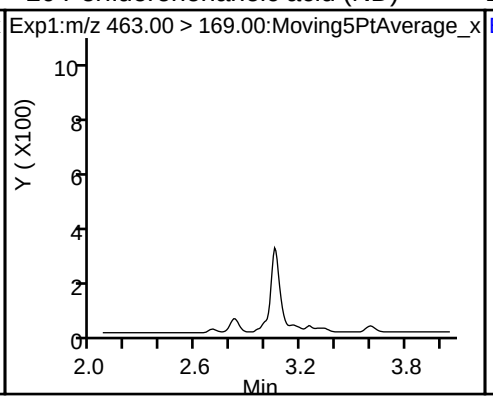
D 18 13C4 PFOS



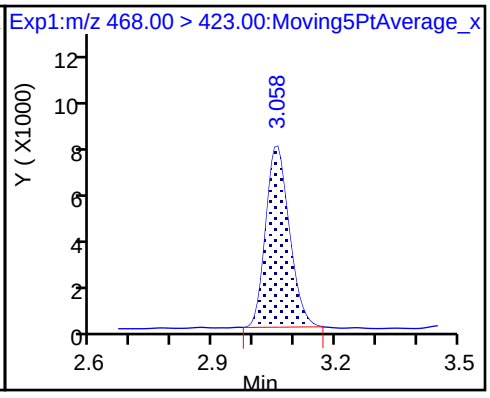
20 Perfluorononanoic acid (ND)



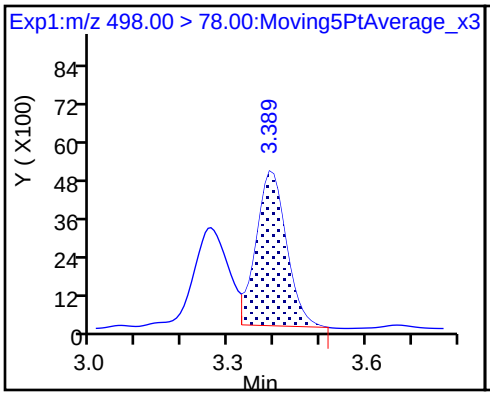
20 Perfluorononanoic acid (ND)



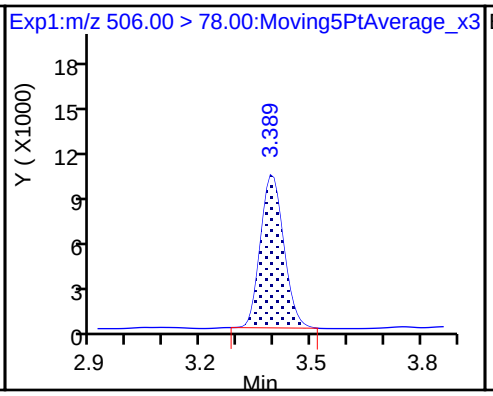
D 19 13C5 PFNA



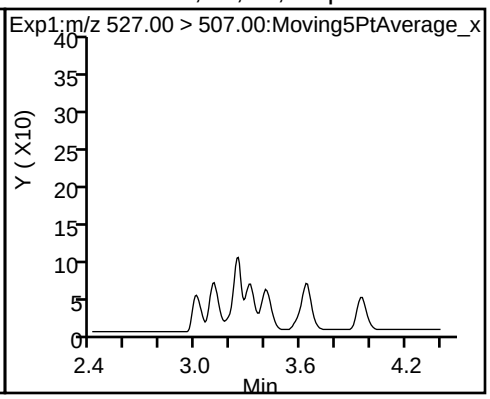
22 Perfluorooctane Sulfonamide



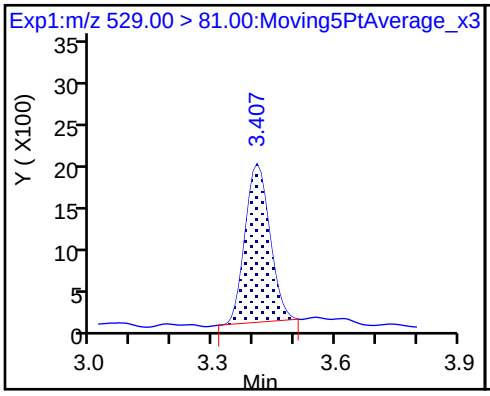
D 21 13C8 FOSA



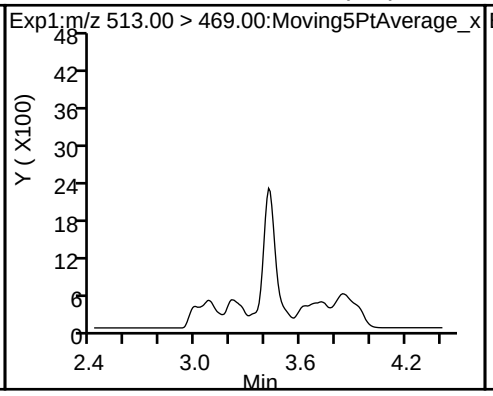
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



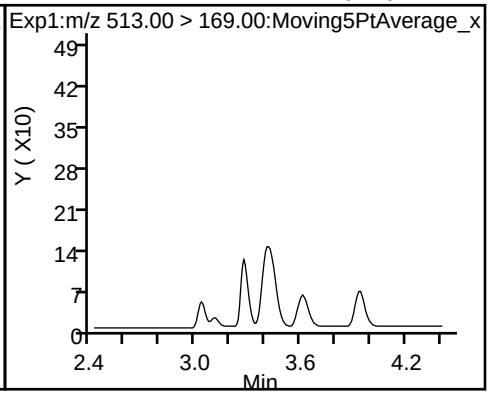
D 26 M2-8:2FTS



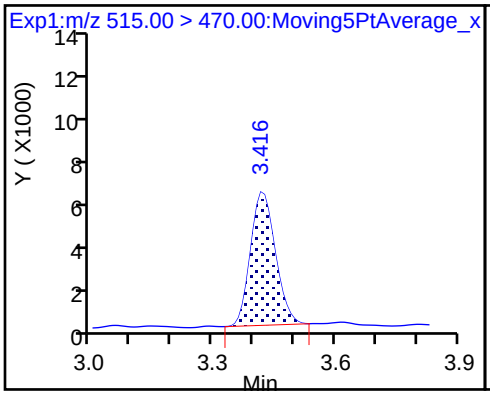
24 Perfluorodecanoic acid (ND)



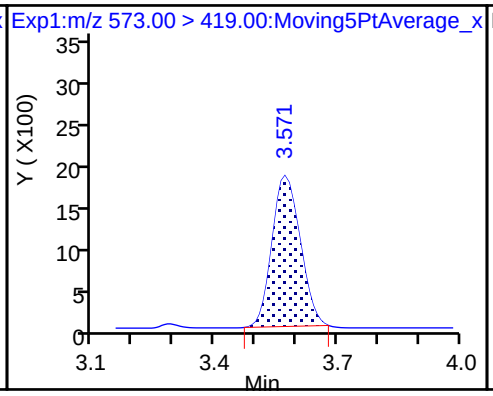
24 Perfluorodecanoic acid (ND)



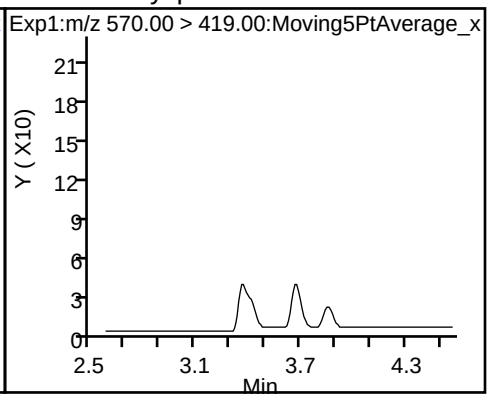
D 23 13C2 PFDA



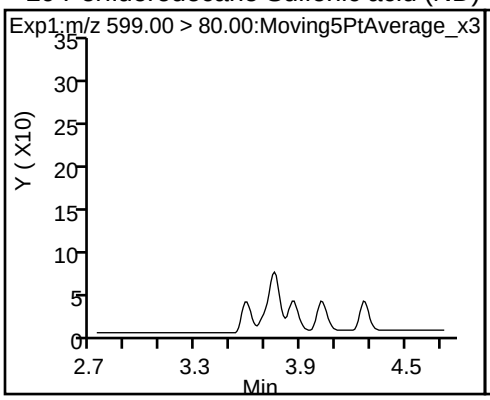
D 27 d3-NMeFOSAA



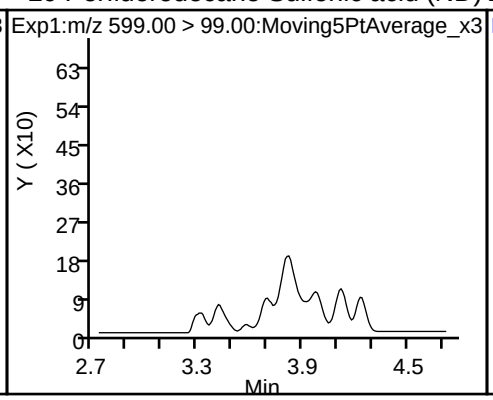
28 N-methyl perfluorooctane sulfonami (ND)



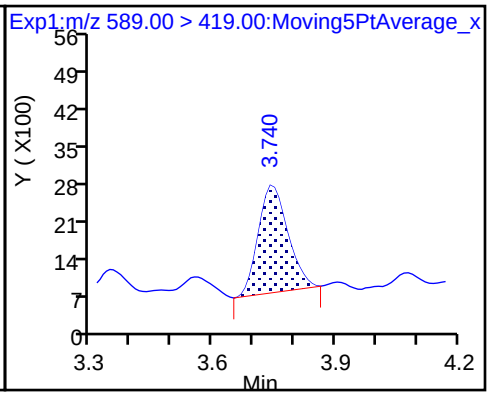
29 Perfluorodecane Sulfonic acid (ND)



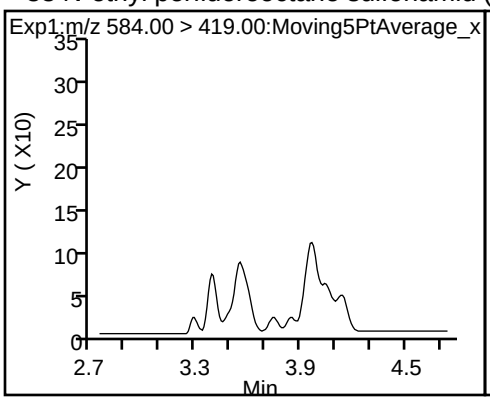
29 Perfluorodecane Sulfonic acid (ND)



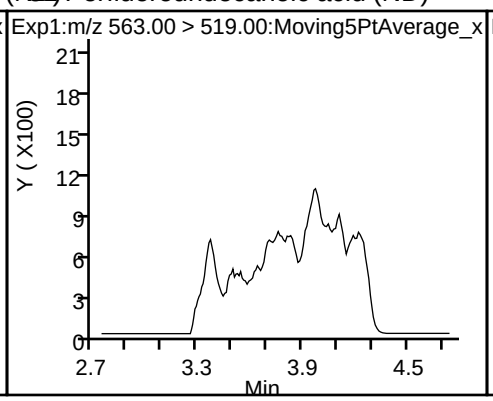
D 32 d5-NEtFOSAA



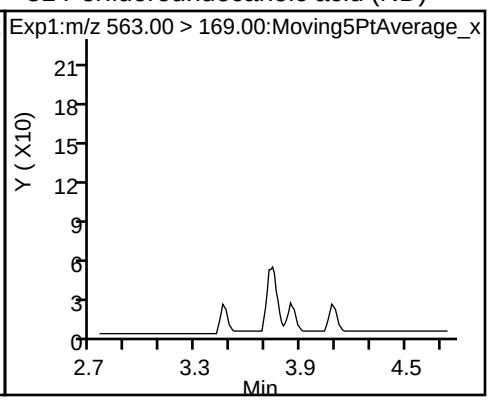
33 N-ethyl perfluorooctane sulfonamid (ND)



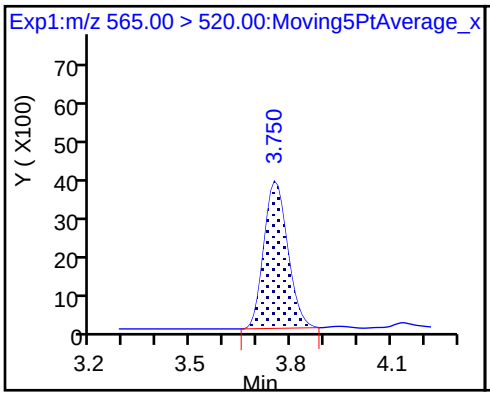
31 Perfluoroundecanoic acid (ND)



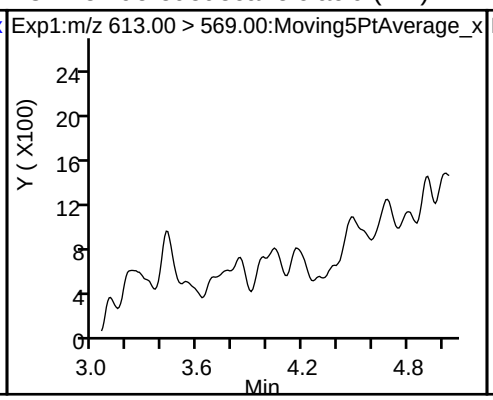
31 Perfluoroundecanoic acid (ND)



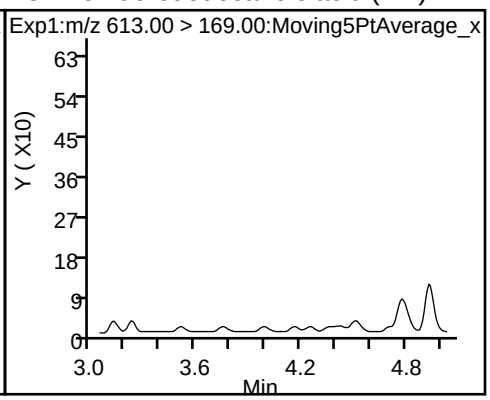
D 30 13C2 PFUnA



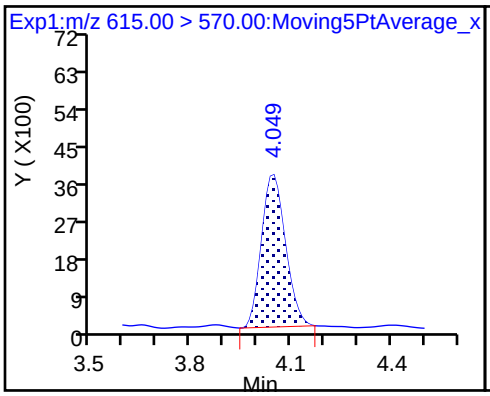
37 Perfluorododecanoic acid (ND)



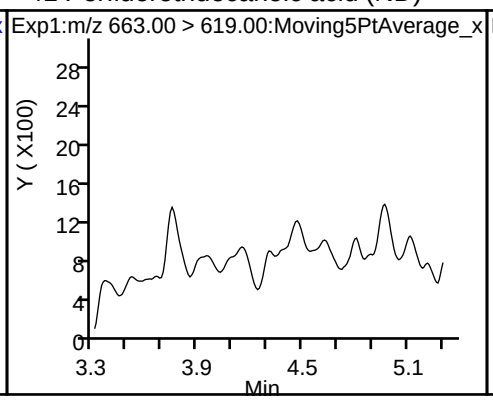
37 Perfluorododecanoic acid (ND)



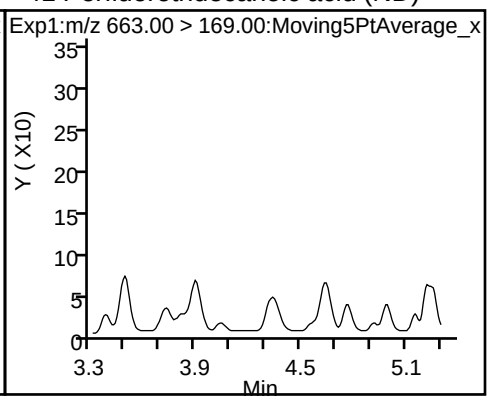
D 36 13C2 PFDoA



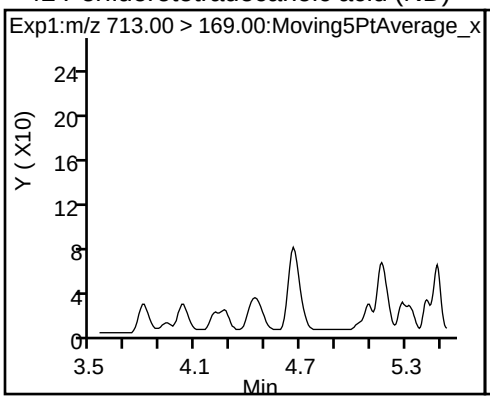
41 Perfluorotridecanoic acid (ND)



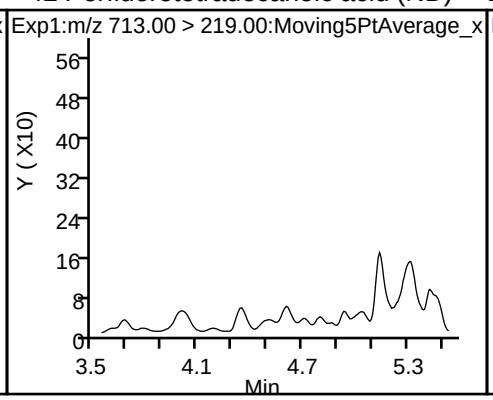
41 Perfluorotridecanoic acid (ND)



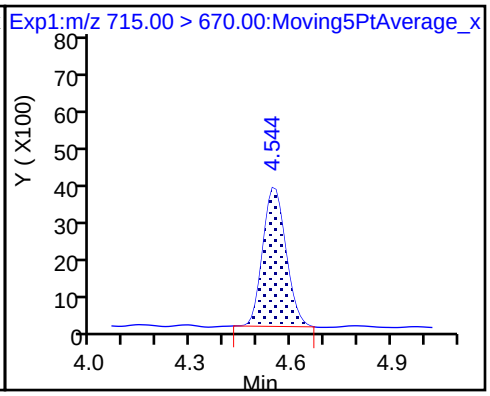
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008(5'-7') | Lab Sample ID: 320-36683-3

Matrix: Solid | Lab File ID: 2018.03.20LLA_031.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 09:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.07(g) | Date Analyzed: 03/21/2018 00:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000039	J B	0.00020	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000079	U	0.00020	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000060	J	0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000070	J	0.00020	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00026		0.00020	0.000088
375-95-1	Perfluorononanoic acid (PFNA)	0.00017	J	0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.000023	U	0.00020	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000037	U	0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00020	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000052	U	0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00020	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00078		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000047	J	0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000084	U	0.00020	0.000084
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038
27619-97-2	6:2FTS	0.00017	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00026	U	0.0020	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008(5'-7') | Lab Sample ID: 320-36683-3

Matrix: Solid | Lab File ID: 2018.03.20LLA_031.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 09:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.07(g) | Date Analyzed: 03/21/2018 00:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	73		25-150
STL01893	13C5 PFPeA	78		25-150
STL00993	13C2 PFHxA	76		25-150
STL01892	13C4-PFHpA	84		25-150
STL00990	13C4 PFOA	82		25-150
STL00995	13C5 PFNA	74		25-150
STL00996	13C2 PFDA	60		25-150
STL00997	13C2 PFUnA	35		25-150
STL00998	13C2 PFDoA	11	*	25-150
STL02116	13C2-PFTeDA	1	*	25-150
STL02337	13C3-PFBS	81		25-150
STL00994	18O2 PFHxS	80		25-150
STL00991	13C4 PFOS	69		25-150
STL01056	13C8 FOSA	44		25-150
STL02118	d3-NMeFOSAA	20	*	25-150
STL02117	d5-NEtFOSAA	16	*	25-150
STL02279	M2-6:2FTS	77		25-150
STL02280	M2-8:2FTS	61		25-150

Report Date: 22-Mar-2018 10:56:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_031.d
Lims ID: 320-36683-A-3-A
Client ID: SB008(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 00:12:34 ALS Bottle#: 22 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-3-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:12:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	4347509	1.84		73.4	66782	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.004	30925	0.0192			8.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3278008	1.96		78.5	60594	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.709	-0.018	0.995	29344	0.0192			8.5	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.647	78030	1.89		81.4	430	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	3547370	1.90		76.1	84290	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	41717	0.0291			62.9	
313.00 > 119.00	1.997	1.997	0.0	1.005	4906		8.50(5.03-15.10)		81.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3788254	2.09		83.6	68359	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	53744	0.0342			69.3	
363.00 > 169.00	2.315	2.328	-0.013	1.000	24110		2.23(1.13-3.40)		359	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4567849	1.89		79.9	82339	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	819725	0.3805			1397	
399.00 > 99.00	2.328	2.341	-0.013	1.000	257580		3.18(1.50-4.49)		671	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	843751	1.82		76.5	23974	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.663	0.002	1.003	48224	0.0815			1562	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.681	-0.001	1.000	3577377	2.04		81.8	90076	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.680	2.695	-0.015	1.000	202000	0.1264			53.4	
413.00 > 169.00	2.680	2.695	-0.015	1.000	121334		1.66(0.84-2.52)		343	
* 62 13C2-PFOA										
415.00 > 370.00	2.680	2.695	-0.015		4638716	2.50			74815	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.703	-0.015	1.000	35503	0.0231			247	
449.00 > 99.00	2.688	2.703	-0.015	1.000	7685		4.62(1.94-5.82)		149	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.141	2794754	1.65		69.2	43236	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2605543	1.86		74.4	53423	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.000	14717728	11.6			32383	E
499.00 > 99.00	3.058	3.067	-0.009	1.000	3437473		4.28(2.31-6.93)		30112	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.067	-0.009	1.000	85768	0.0807			128	
463.00 > 169.00	3.058	3.067	-0.009	1.000	18953		4.53(1.90-5.69)		333	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.268	2708573	1.11		44.3	46133	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.401	-0.003	1.000	17421	0.0165			95.5	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.408	0.0	1.271	632753	1.45		60.6	14125	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.278	1761997	1.51		60.3	39385	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.419	-0.011	1.000	3815	0.0115			146	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.335	197691	0.5119		20.5	7182	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	150860	0.4086		16.3	276	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	792745	0.8657		34.6	33028	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.510	240746	0.2772		11.1	1604	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.699	26431	0.0333		1.3	333	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Report Date: 22-Mar-2018 10:56:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_031.d

Injection Date: 21-Mar-2018 00:12:34 Instrument ID: A8_N

Lims ID: 320-36683-A-3-A Lab Sample ID: 320-36683-3

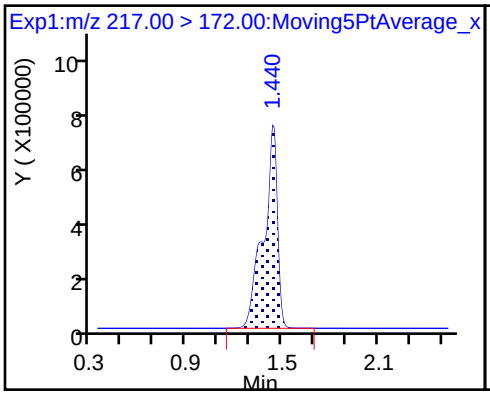
Client ID: SB008(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 10

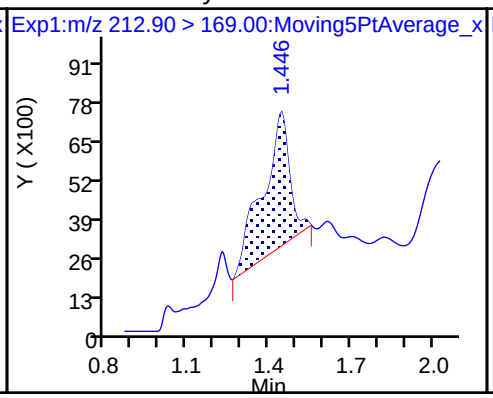
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

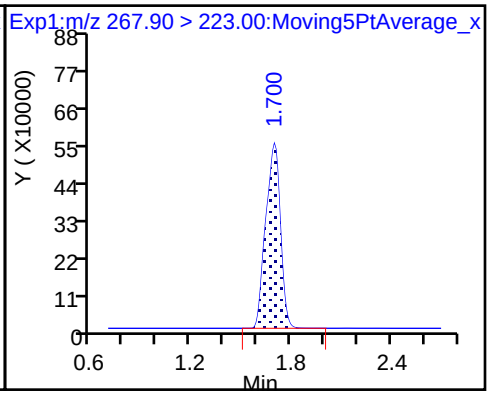
D 1 13C4 PFBA



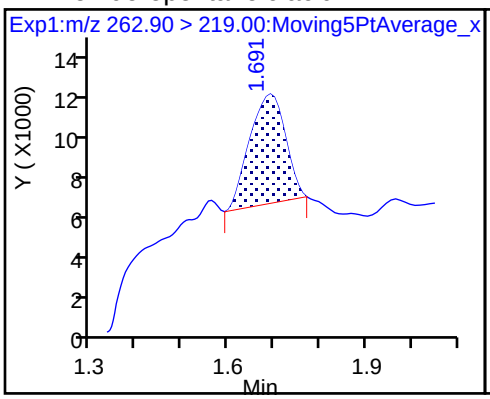
2 Perfluorobutyric acid



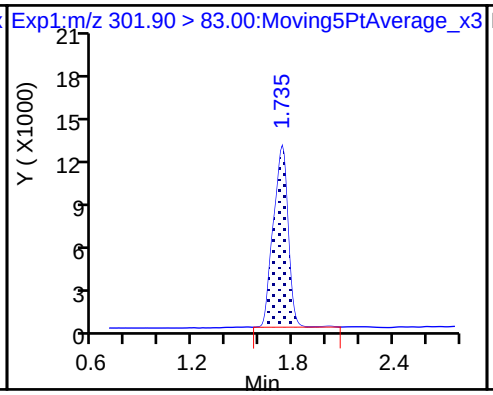
D 3 13C5-PFPeA



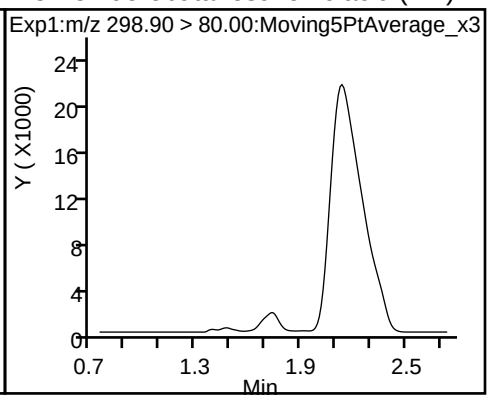
4 Perfluoropentanoic acid



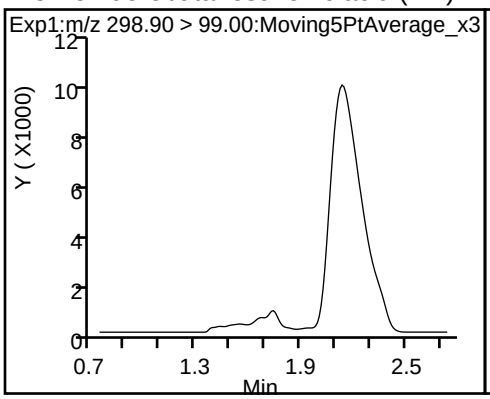
D 47 13C3-PFBS



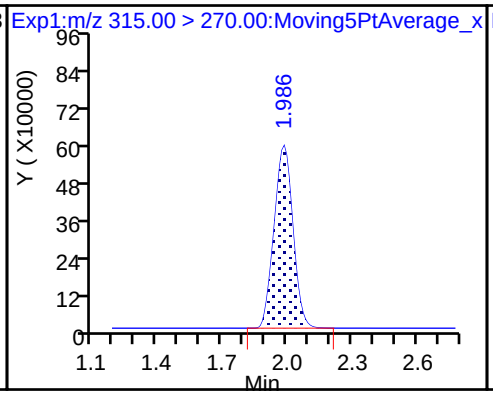
5 Perfluorobutanesulfonic acid (ND)



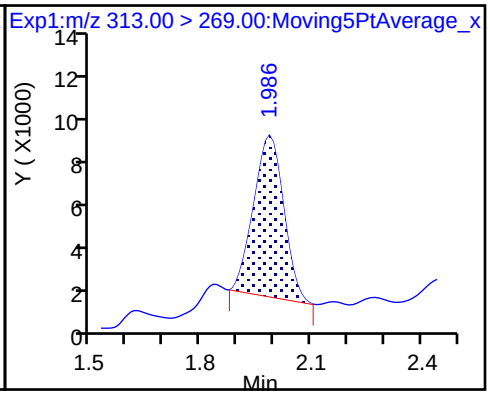
5 Perfluorobutanesulfonic acid (ND)



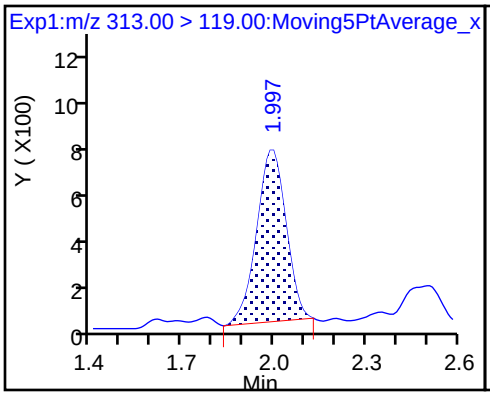
D 7 13C2 PFHxA



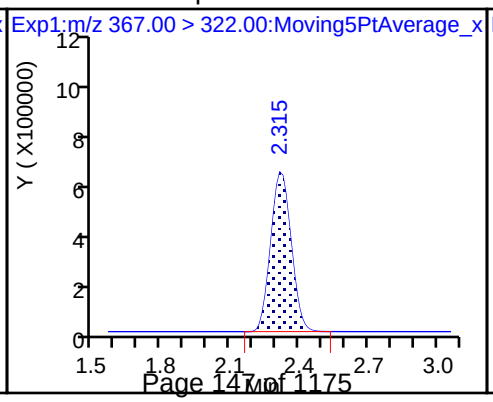
6 Perfluorohexanoic acid



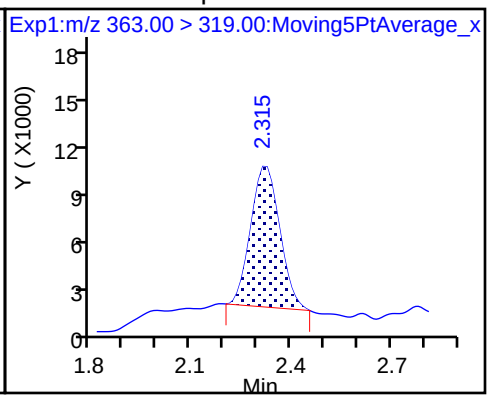
6 Perfluorohexanoic acid



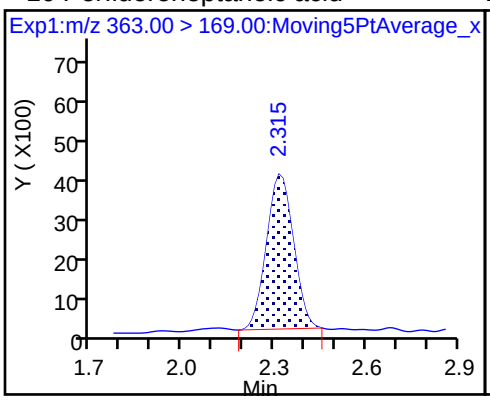
D 9 13C4-PFHpA



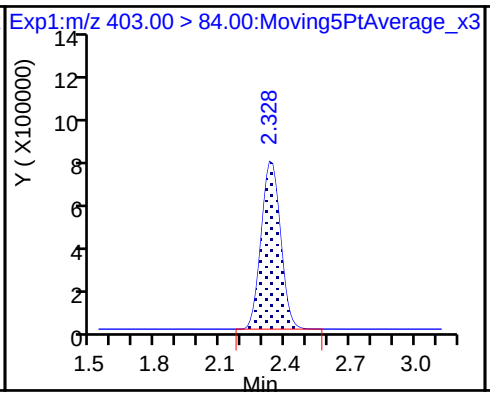
10 Perfluoroheptanoic acid



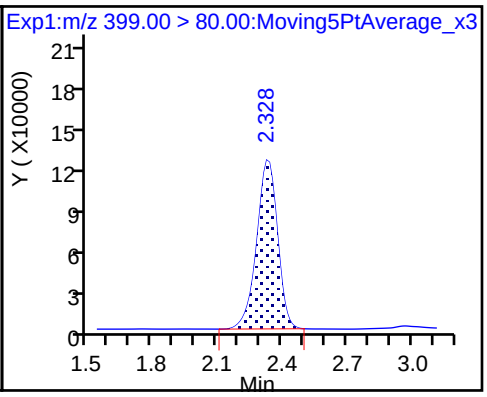
10 Perfluoroheptanoic acid



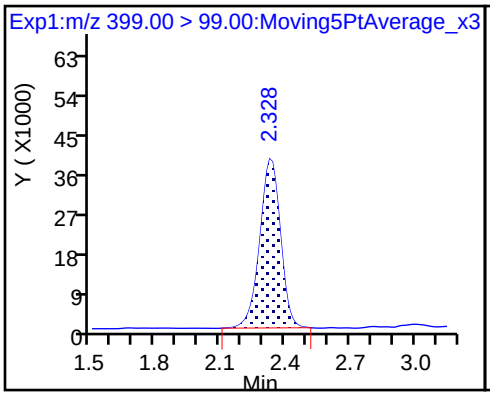
D 11 18O2 PFHxS



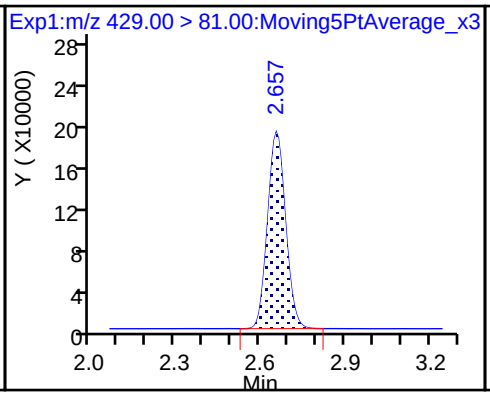
8 Perfluorohexanesulfonic acid



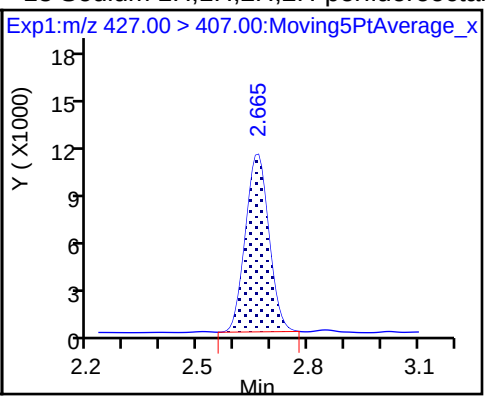
8 Perfluorohexanesulfonic acid



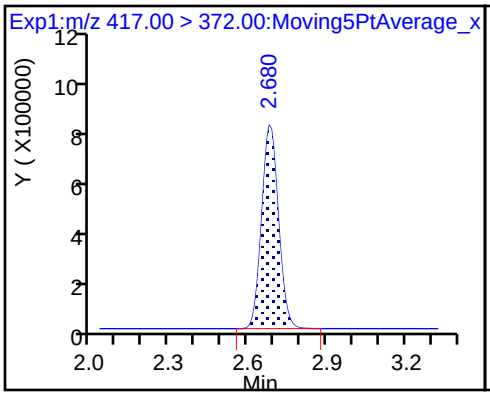
D 12 M2-6:2FTS



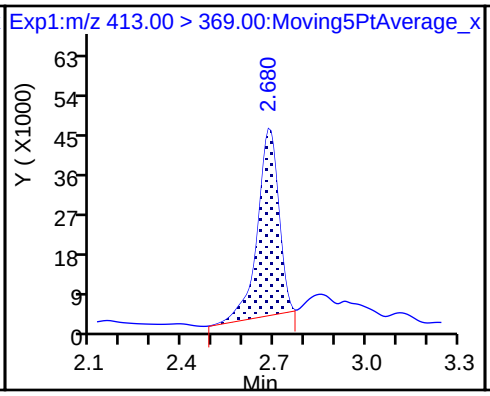
13 Sodium 1H,1H,2H,2H-perfluorooctane



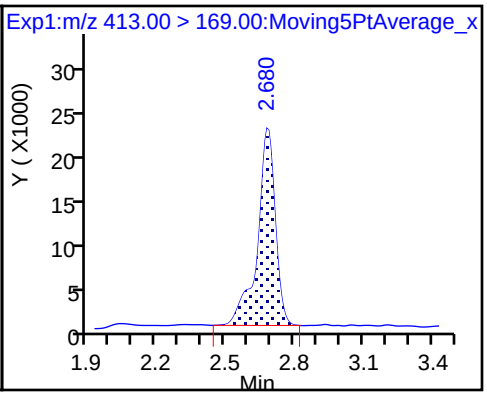
D 14 13C4 PFOA



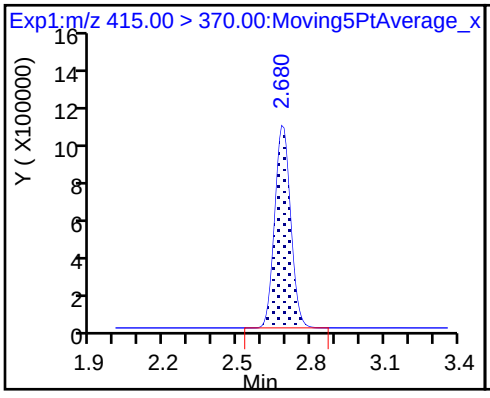
15 Perfluorooctanoic acid



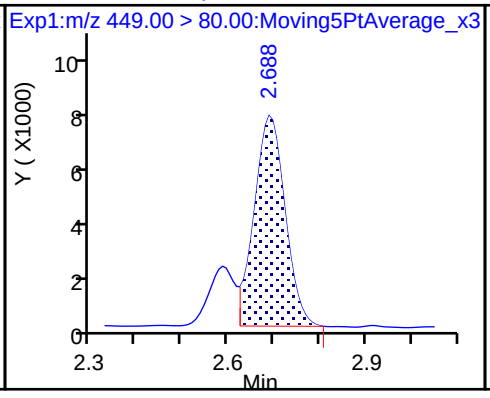
15 Perfluorooctanoic acid



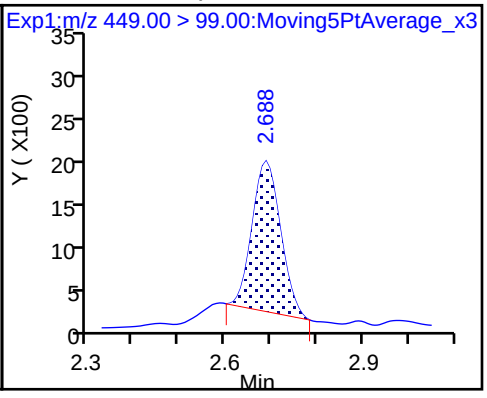
* 62 13C2-PFOA



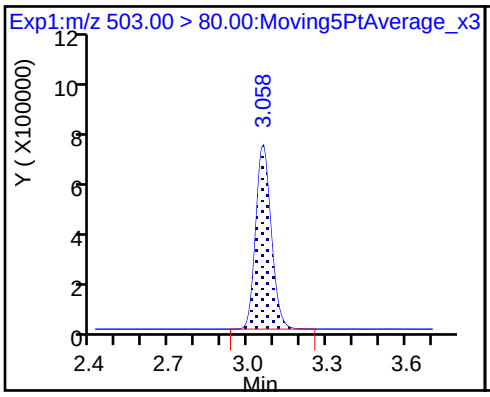
16 Perfluoroheptanesulfonic acid



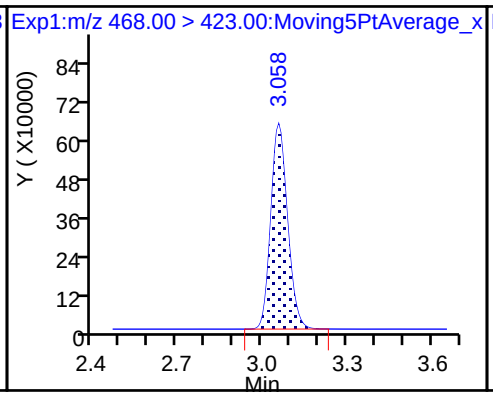
16 Perfluoroheptanesulfonic acid



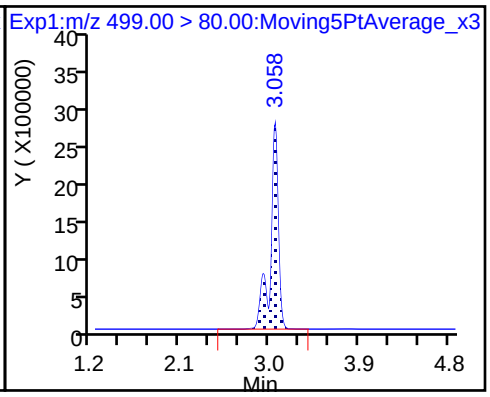
D 18 13C4 PFOS



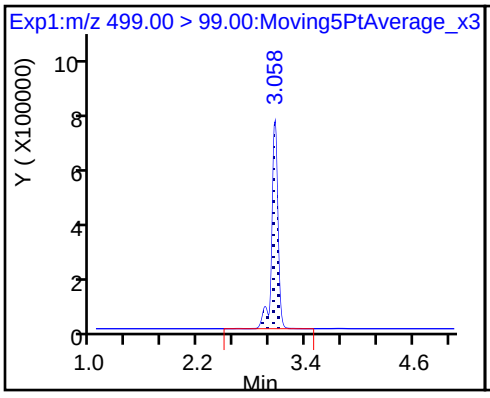
D 19 13C5 PFNA



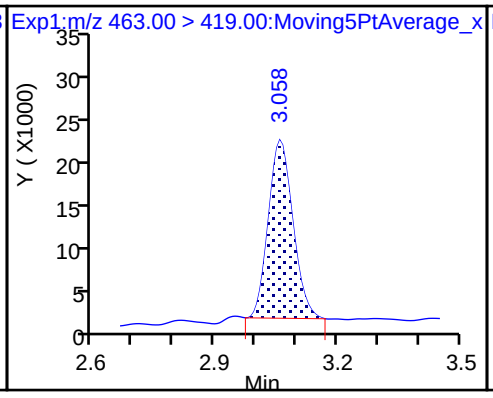
17 Perfluorooctane sulfonic acid



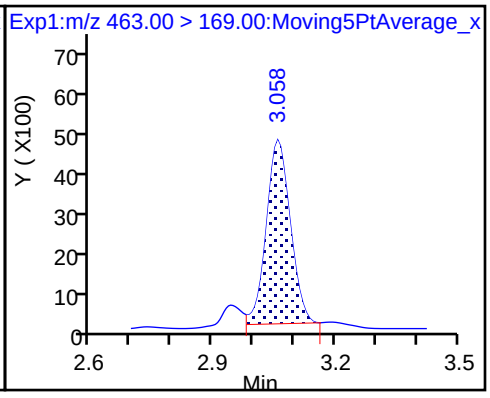
17 Perfluorooctane sulfonic acid



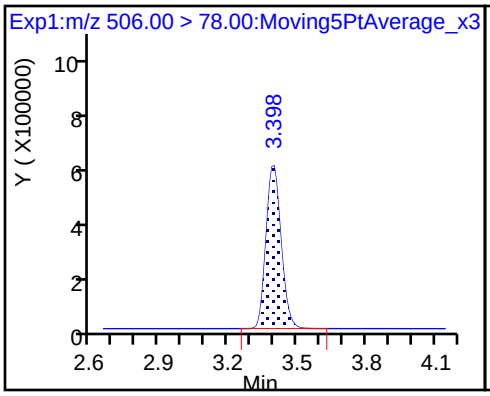
20 Perfluorononanoic acid



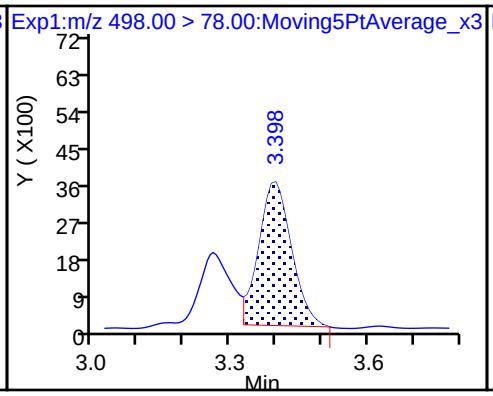
20 Perfluorononanoic acid



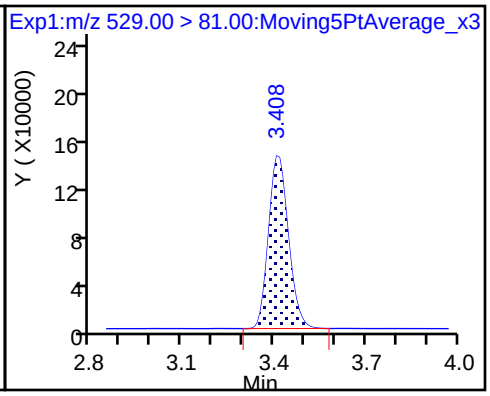
D 21 13C8 FOSA



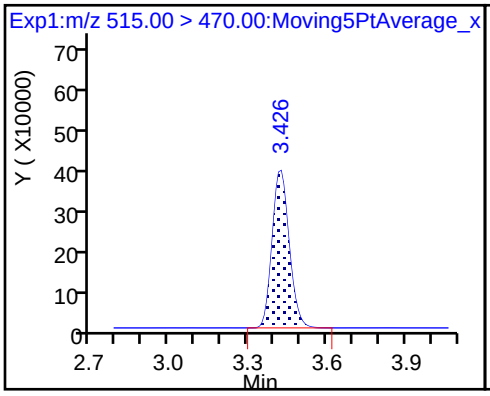
22 Perfluorooctane Sulfonamide



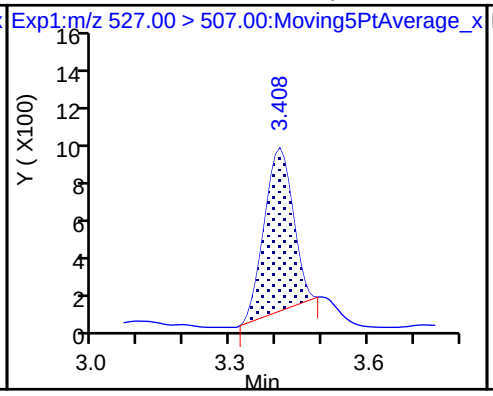
D 26 M2-8:2FTS



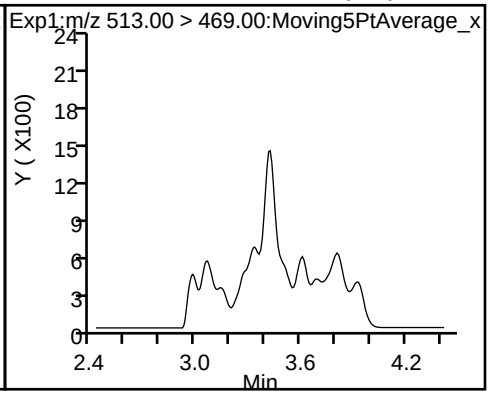
D 23 13C2 PFDA



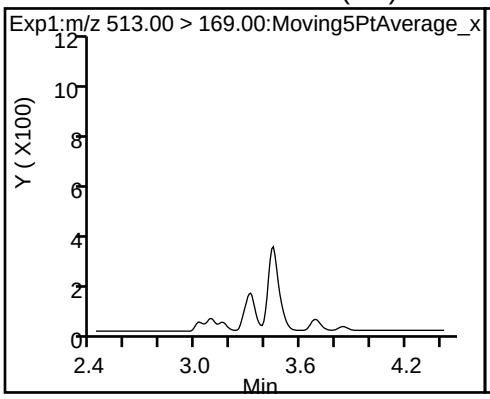
25 Sodium 1H,1H,2H,2H-perfluorodecan



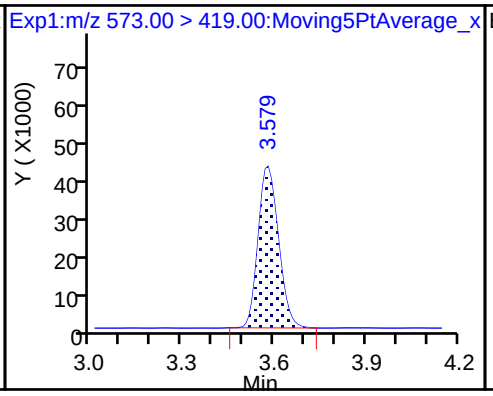
24 Perfluorodecanoic acid (ND)



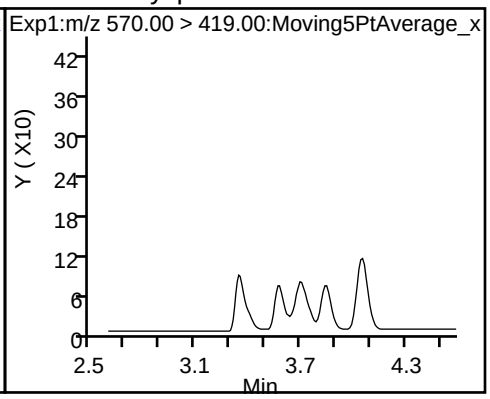
24 Perfluorodecanoic acid (ND)



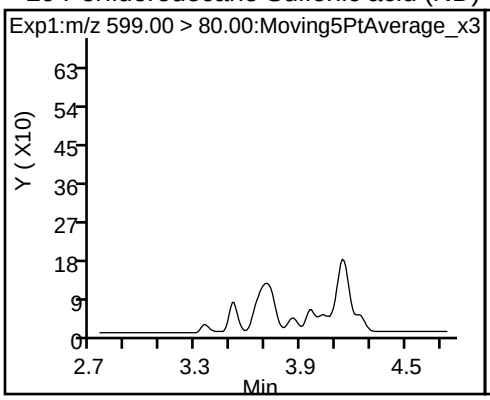
D 27 d3-NMeFOSAA



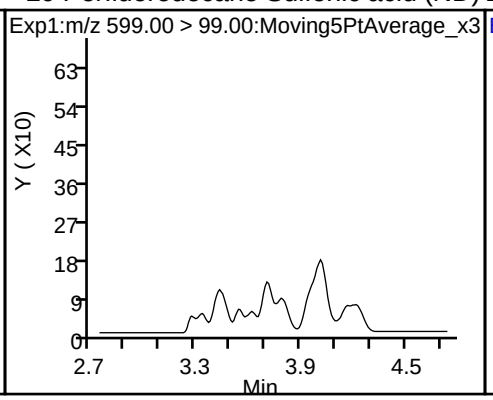
28 N-methyl perfluorooctane sulfonami (ND)



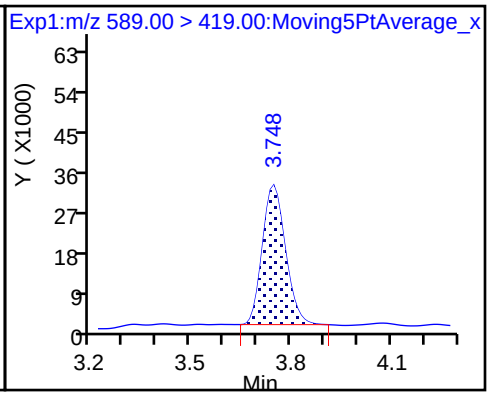
29 Perfluorodecane Sulfonic acid (ND)



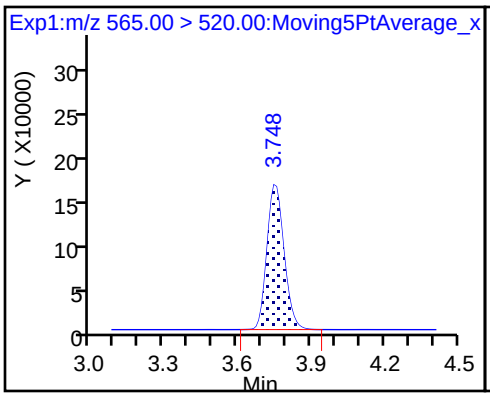
29 Perfluorodecane Sulfonic acid (ND)



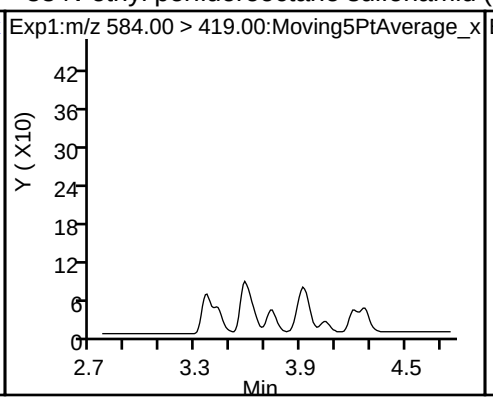
D 32 d5-NEtFOSAA



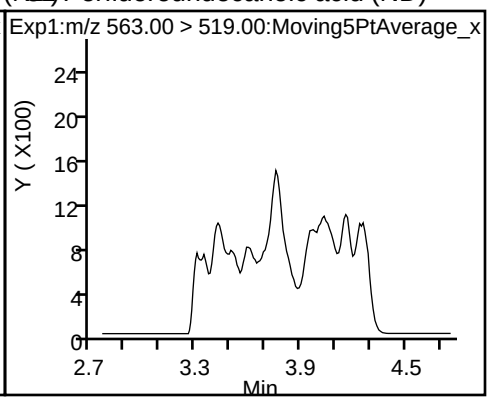
D 30 13C2 PFUnA



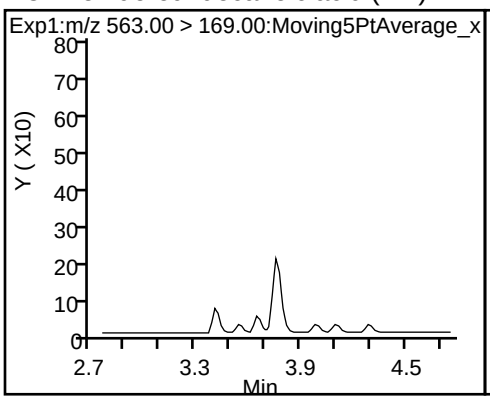
33 N-ethyl perfluorooctane sulfonamid (ND)



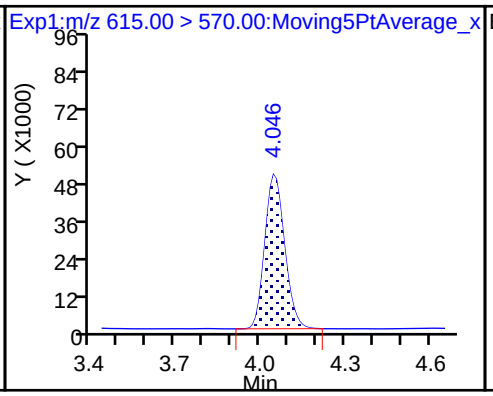
31 Perfluoroundecanoic acid (ND)



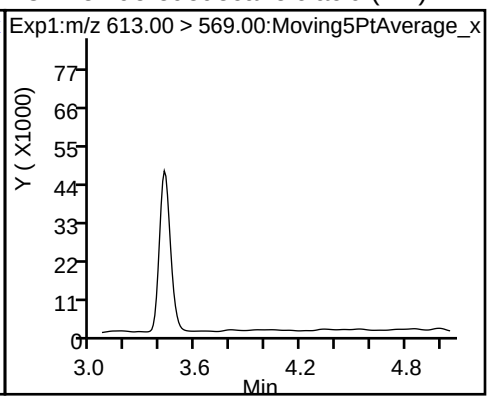
31 Perfluoroundecanoic acid (ND)



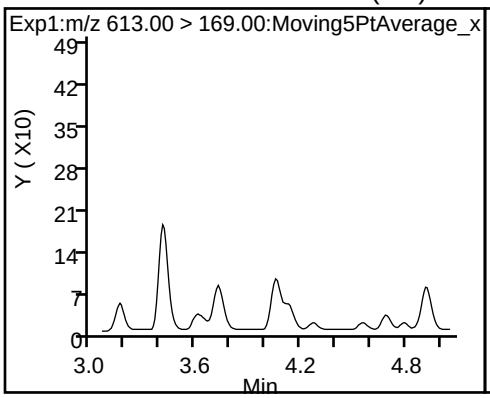
D 36 13C2 PFDoA



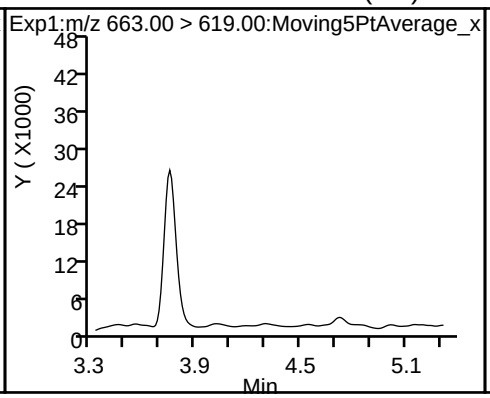
37 Perfluorododecanoic acid (ND)



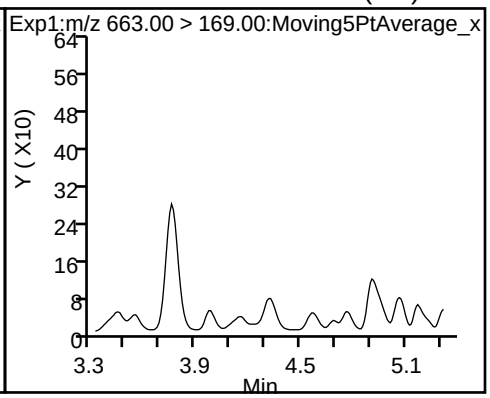
37 Perfluorododecanoic acid (ND)



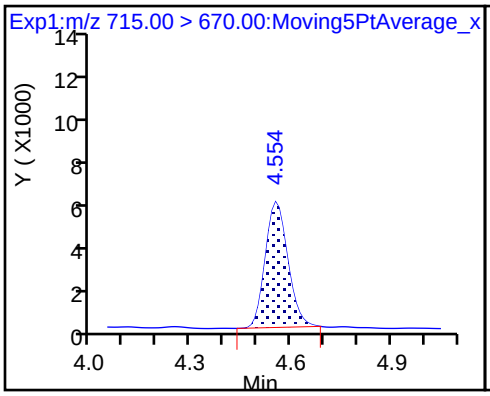
41 Perfluorotridecanoic acid (ND)



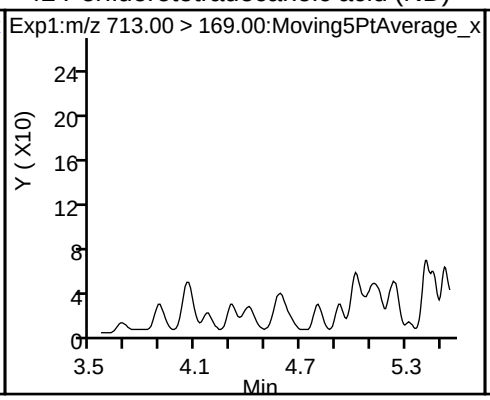
41 Perfluorotridecanoic acid (ND)



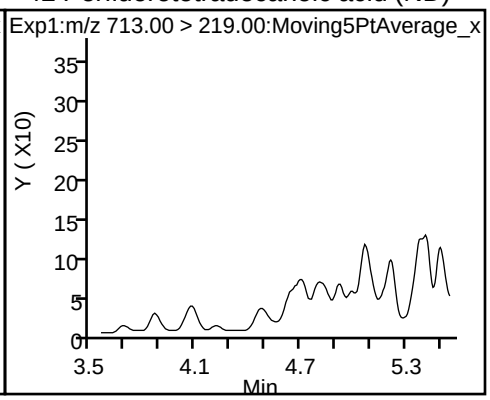
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008(5'-7') RE | Lab Sample ID: 320-36683-3 RE

Matrix: Solid | Lab File ID: 2018.03.26LLA_068.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 09:30

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.08(g) | Date Analyzed: 03/27/2018 03:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000040*	*U H*	*0.00020*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	90		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_068.d
Lims ID: 320-36683-A-3-B
Client ID: SB008(5'-7')
Sample Type: Client
Inject. Date: 27-Mar-2018 03:28:57 ALS Bottle#: 47 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-3-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:43:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:36:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.441	0.003	0.538	5979715	2.23		89.2	97253	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.444	1.447	-0.003	1.000	26113	0.0116			5.0	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.700	0.005	0.636	4034160	2.27		90.7	120691	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.705	1.709	-0.004	1.000	39553	0.0217			21.4	M
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.736	0.004	0.649	87519	2.16		92.7	479	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.987	-0.006	0.738	4315046	2.19		87.8	109786	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.998	-0.006	1.006	58222	0.0330			52.1	
313.00 > 119.00	1.992	1.998	-0.006	1.006	4451		13.08(5.03-15.10)		41.7	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.315	0.007	0.866	4371296	2.25		90.1	105855	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.328	-0.006	1.000	59834	0.0331			42.3	
363.00 > 169.00	2.322	2.328	-0.006	1.000	24428		2.45(1.13-3.40)		61.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.328	0.007	0.870	5195029	2.17		91.8	111268	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.341	-0.006	1.000	945940	0.3869			5543	
399.00 > 99.00	2.335	2.341	-0.006	1.000	295478		3.20(1.50-4.49)		588	
D 12 M2-6:2FTS										
429.00 > 81.00	2.659	2.649	0.010	0.991	1066529	2.65		112	20874	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.651	2.665	-0.014	0.997	90882	0.1161			734	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.681	0.002	1.000	4432932	2.23		89.3	94570	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.689	-0.006		5293328	2.50			88521	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.689	-0.006	1.000	260559	0.1301			94.7	
413.00 > 169.00	2.683	2.689	-0.006	1.000	149651		1.74(0.84-2.52)		387	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.697	-0.006	1.000	38789	0.0194			236	
449.00 > 99.00	2.683	2.697	-0.014	0.997	11847		3.27(1.94-5.82)		66.5	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.051	0.002	1.138	3730488	2.14		89.6	53065	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.051	0.002	1.138	3740965	2.14		85.5	78008	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.053	3.065	-0.012	1.000	18644192	10.7			78966	E
499.00 > 99.00	3.053	3.065	-0.012	1.000	4509982		4.13(2.31-6.93)		23254	
20 Perfluorononanoic acid										
463.00 > 419.00	3.053	3.065	-0.012	1.000	129382	0.0867			168	
463.00 > 169.00	3.053	3.065	-0.012	1.000	30170		4.29(1.90-5.69)		437	
D 21 13C8 FOSA										
506.00 > 78.00	3.383	3.389	-0.006	1.261	4762746	2.03		81.1	63262	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.398	-0.006	1.003	5312	0.002828			72.3	
D 26 M2-8:2FTS										
529.00 > 81.00	3.411	3.399	0.013	1.271	1174381	2.16		90.3	23843	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.411	3.417	-0.006	1.000	1827	0.002919			40.1	
D 23 13C2 PFDA										
515.00 > 470.00	3.420	3.417	0.003	1.275	3368101	2.20		87.8	76601	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.571	0.003	1.332	1649381	2.04		81.7	50847	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.744	3.738	0.006	1.395	1821222	1.98		79.2	18090	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.748	0.006	1.399	2679785	1.95		78.1	55796	
D 36 13C2 PFDoA										
615.00 > 570.00	4.052	4.036	0.016	1.511	3007855	1.93		77.3	23931	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.543	0.007	1.696	3988356	2.10		83.9	24066	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags
M - Manually Integrated

Report Date: 27-Mar-2018 10:43:57 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_068.d

Injection Date: 27-Mar-2018 03:28:57 Instrument ID: A8_N

Lims ID: 320-36683-A-3-B Lab Sample ID: 320-36683-3

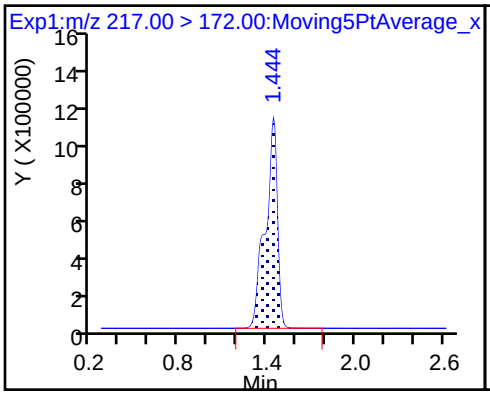
Client ID: SB008(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 47 Worklist Smp#: 18

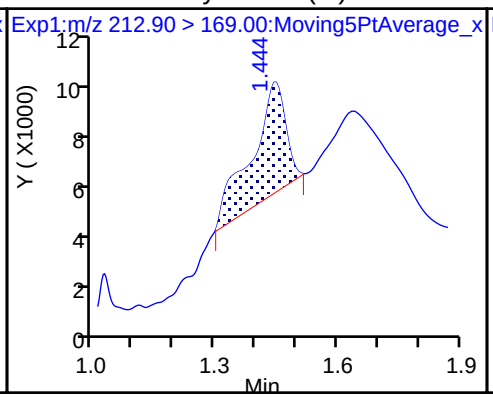
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

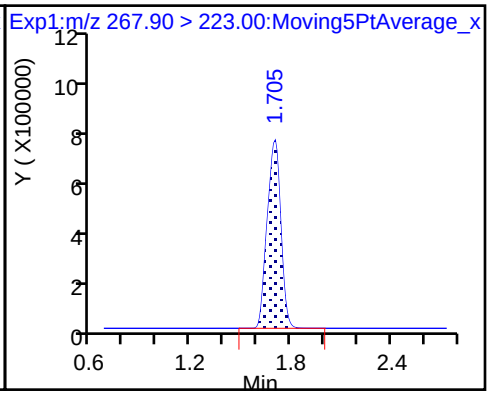
D 1 13C4 PFBA



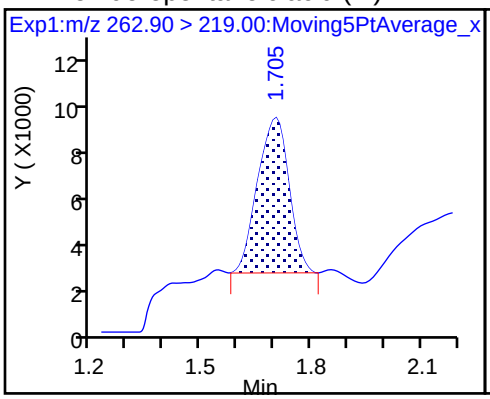
2 Perfluorobutyric acid (M)



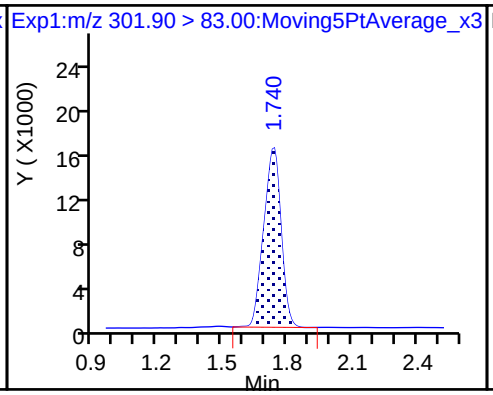
D 3 13C5-PFPeA



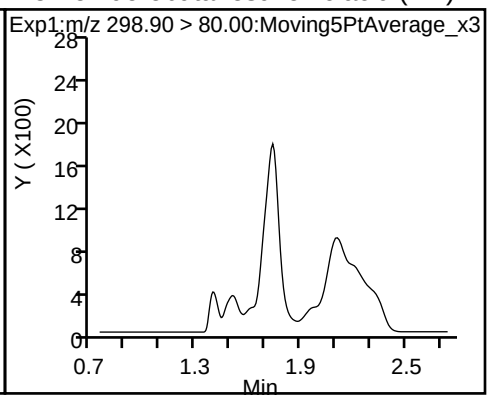
4 Perfluoropentanoic acid (M)



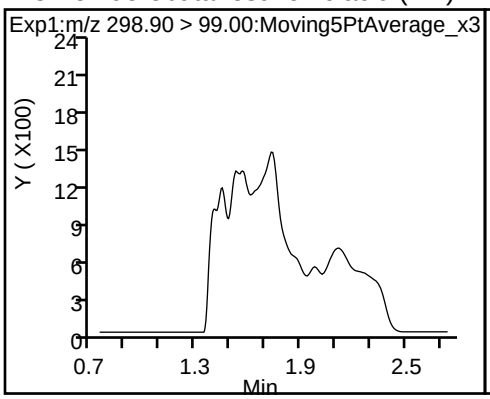
D 47 13C3-PFBS



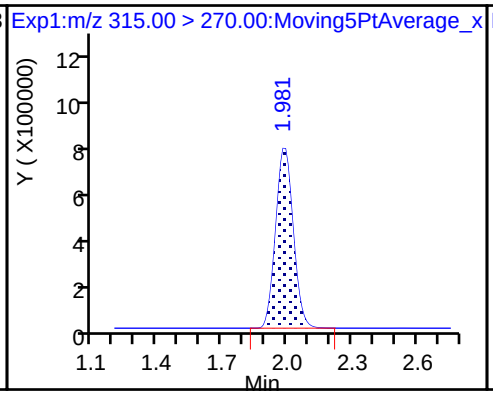
5 Perfluorobutanesulfonic acid (ND)



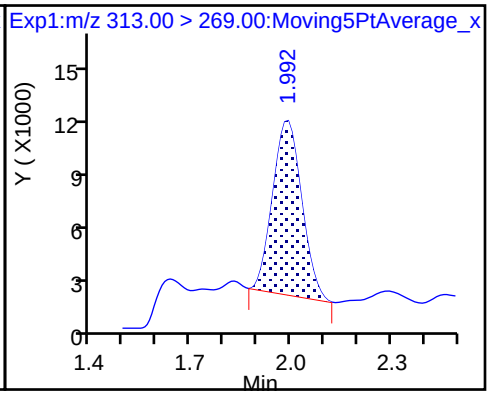
5 Perfluorobutanesulfonic acid (ND)



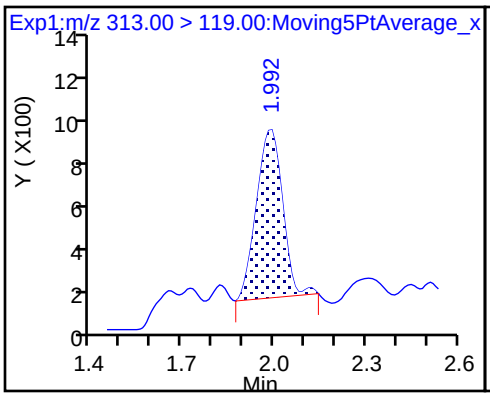
D 7 13C2 PFHxA



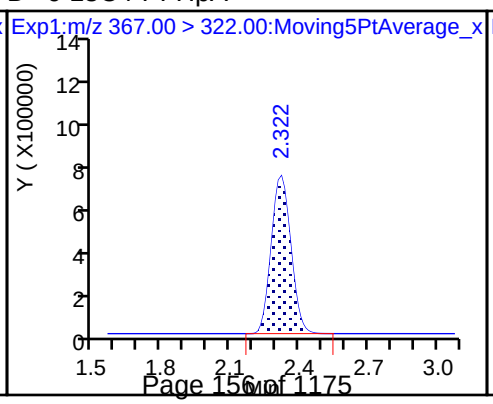
6 Perfluorohexanoic acid



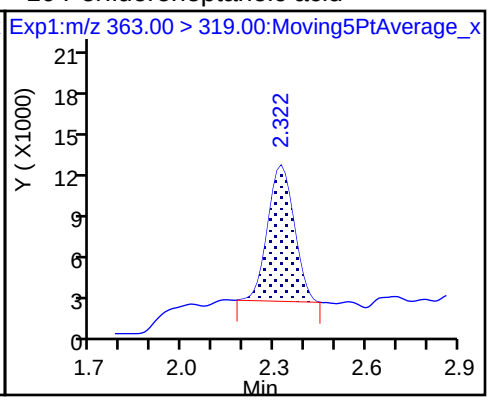
6 Perfluorohexanoic acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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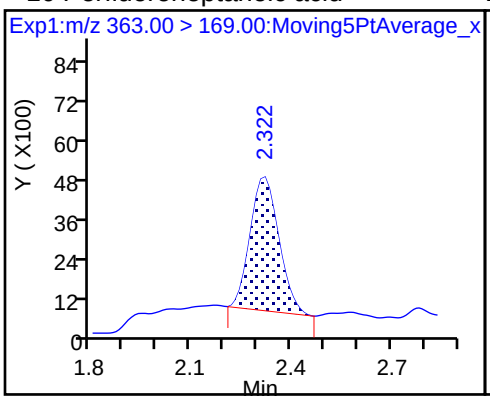
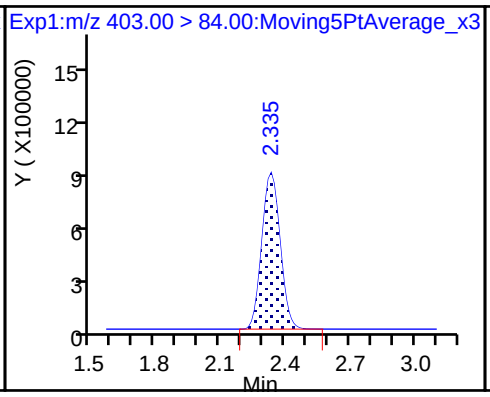
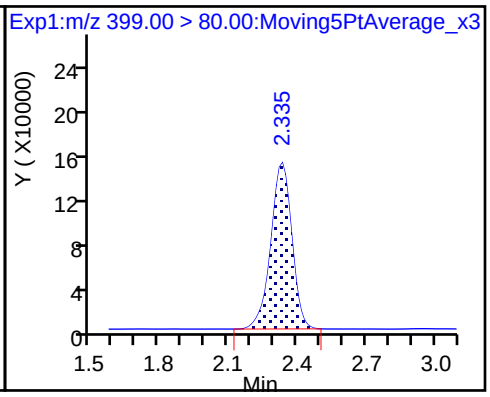


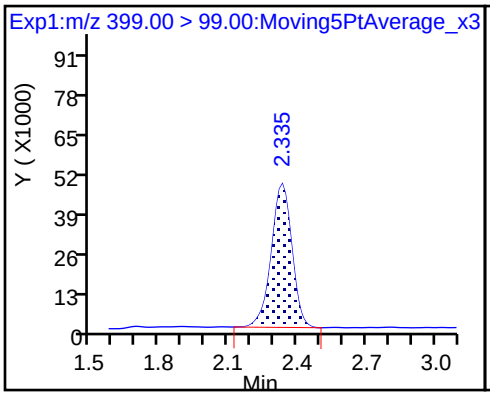
D 11 18O2 PFHxS



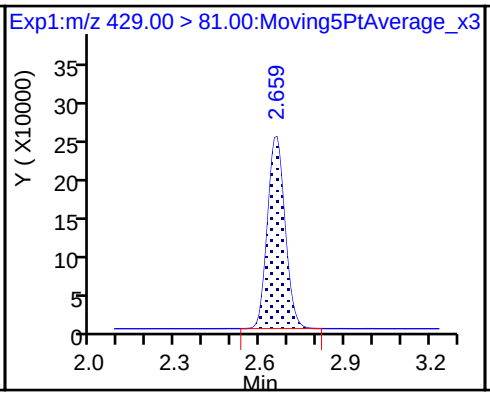
8 Perfluorohexanesulfonic acid



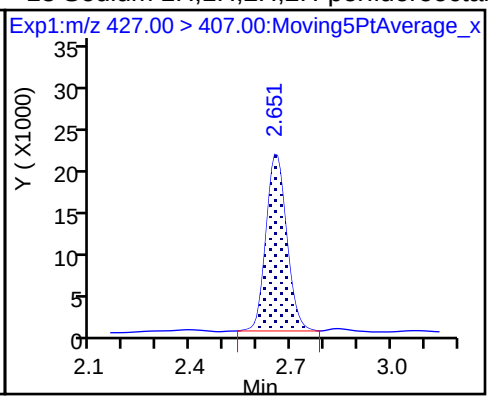
8 Perfluorohexanesulfonic acid



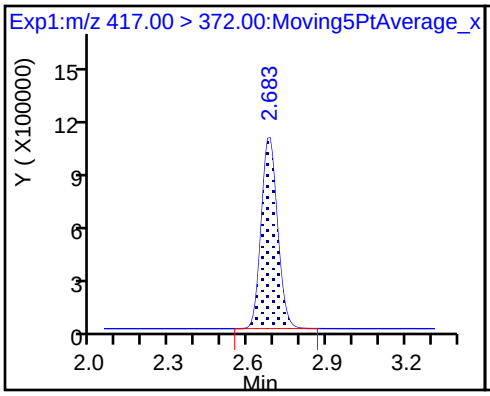
D 12 M2-6:2FTS



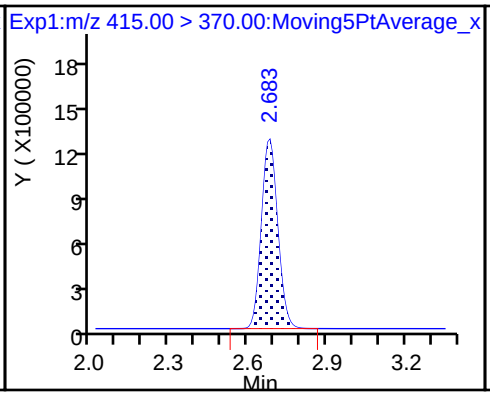
13 Sodium 1H,1H,2H,2H-perfluorooctane



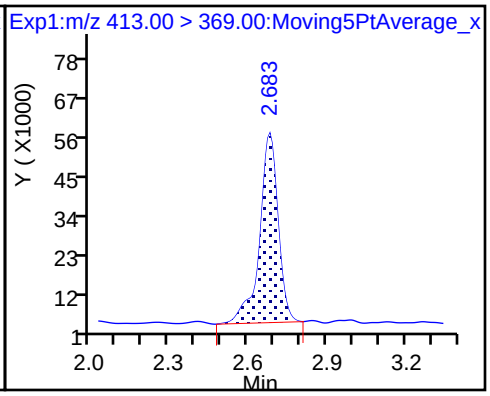
D 14 13C4 PFOA



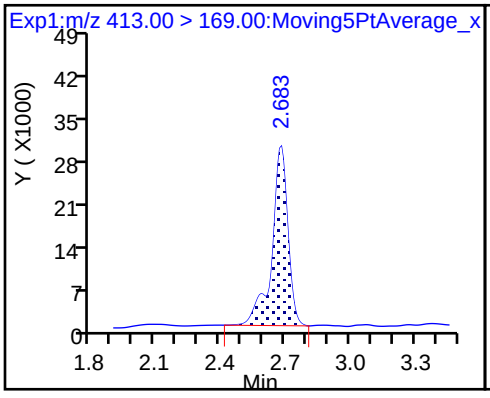
* 62 13C2-PFOA



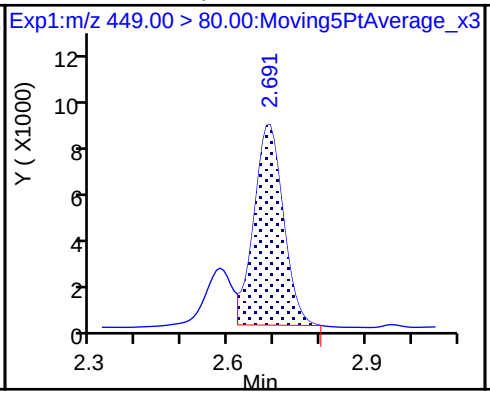
15 Perfluorooctanoic acid



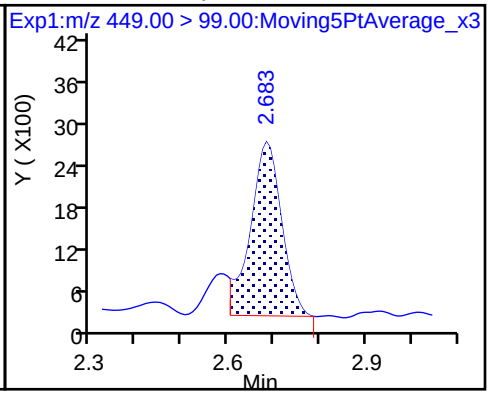
15 Perfluorooctanoic acid



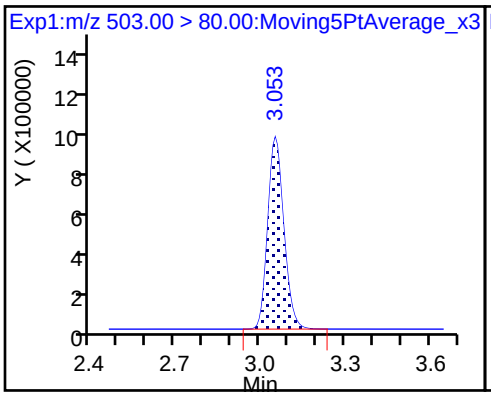
16 Perfluoroheptanesulfonic acid



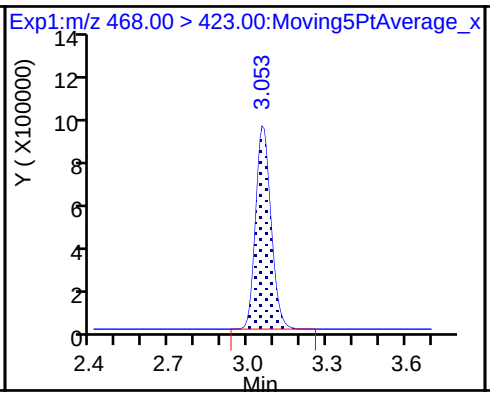
16 Perfluoroheptanesulfonic acid



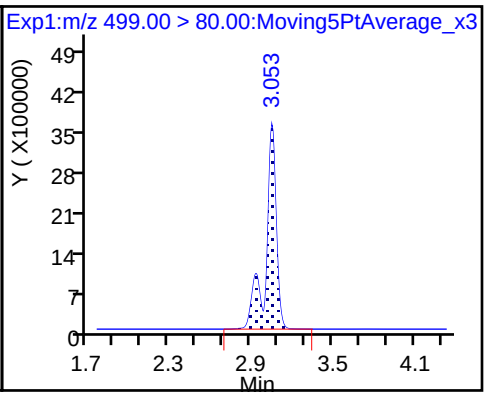
D 18 13C4 PFOS



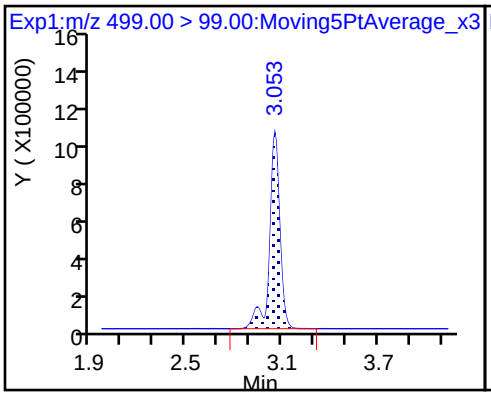
D 19 13C5 PFNA



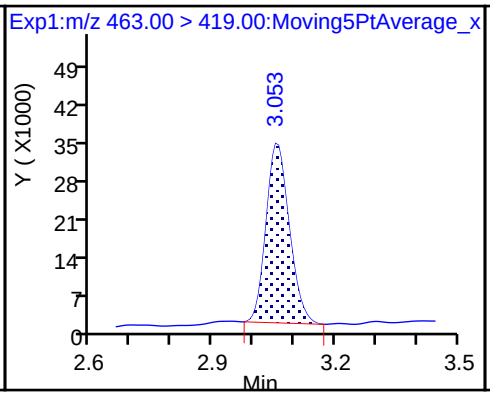
17 Perfluorooctane sulfonic acid



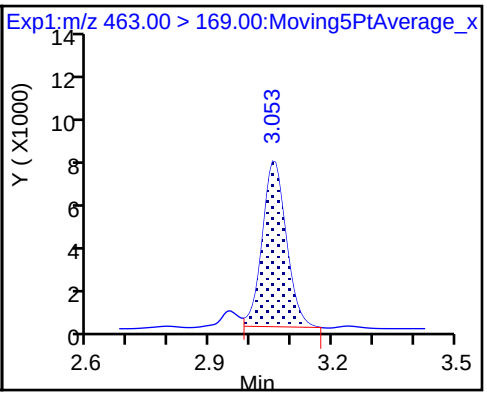
17 Perfluorooctane sulfonic acid



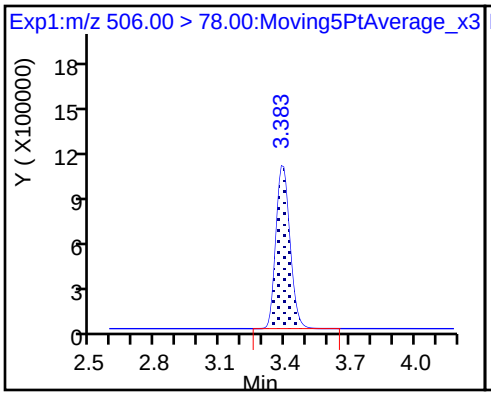
20 Perfluorononanoic acid



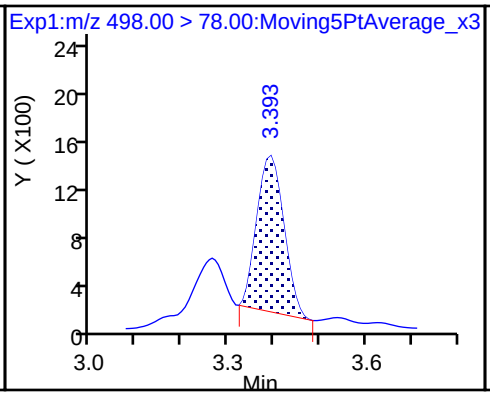
20 Perfluorononanoic acid



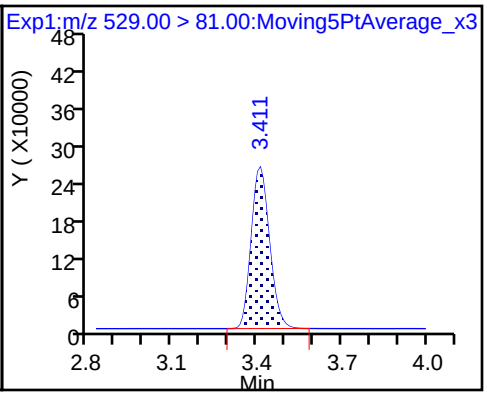
D 21 13C8 FOSA



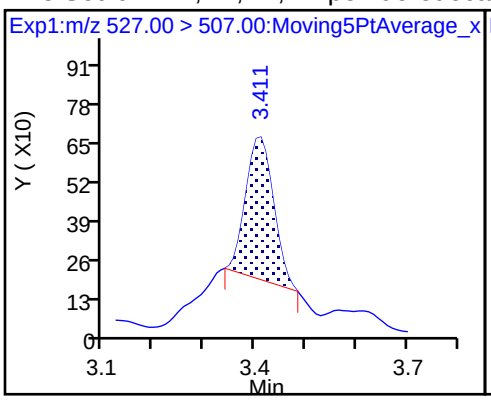
22 Perfluorooctane Sulfonamide



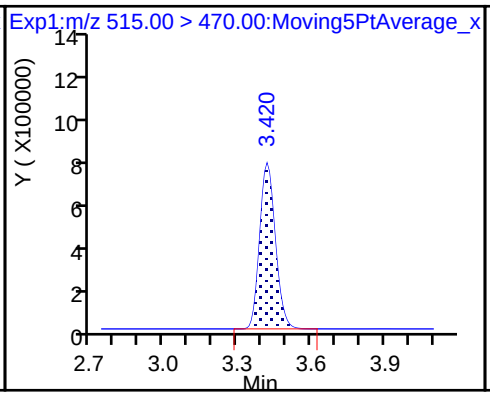
D 26 M2-8:2FTS



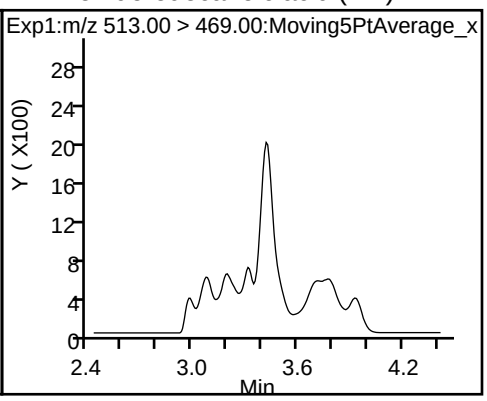
25 Sodium 1H,1H,2H,2H-perfluorodecane



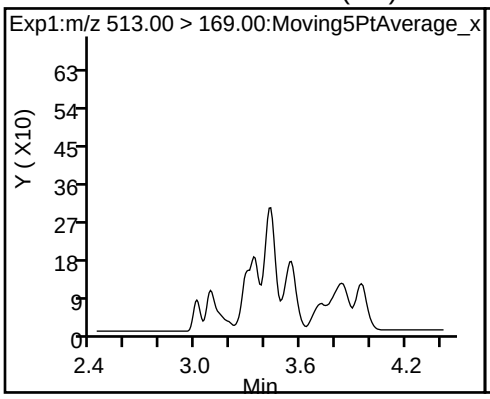
D 23 13C2 PFDA



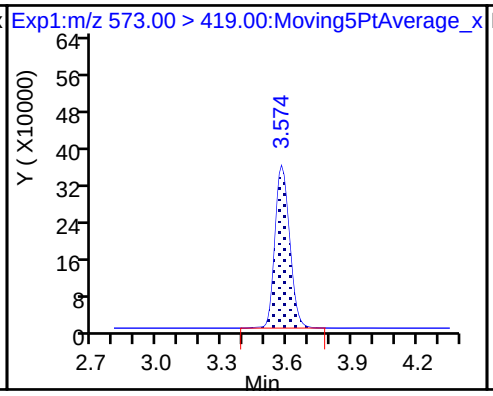
24 Perfluorodecanoic acid (ND)



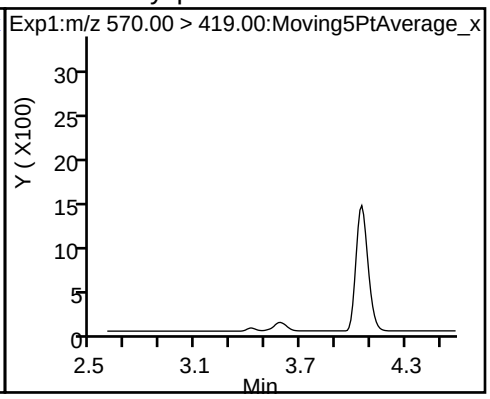
24 Perfluorodecanoic acid (ND)



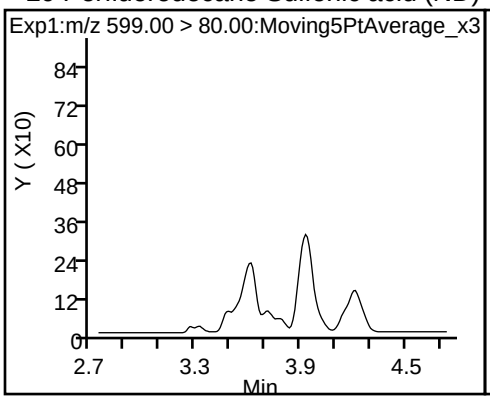
D 27 d3-NMeFOSAA



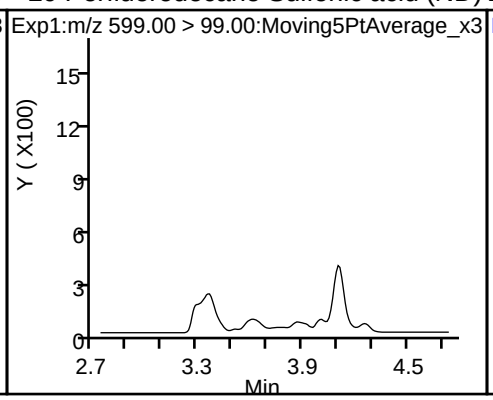
28 N-methyl perfluorooctane sulfonami (ND)



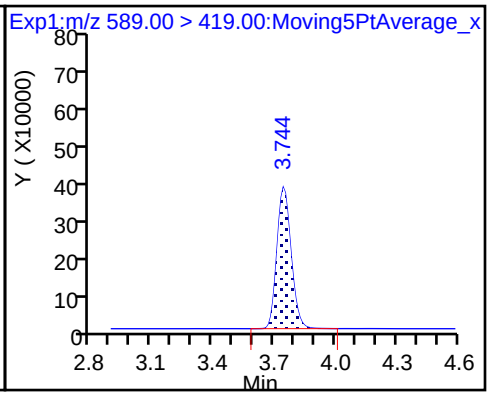
29 Perfluorodecane Sulfonic acid (ND)



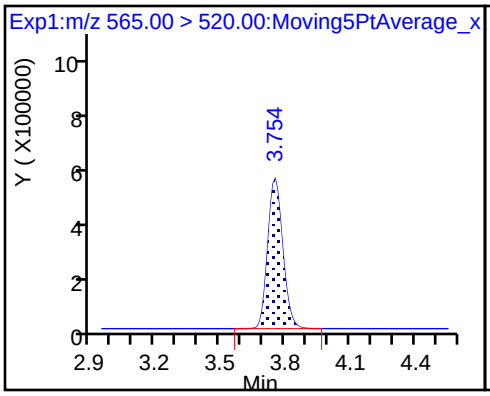
29 Perfluorodecane Sulfonic acid (ND)



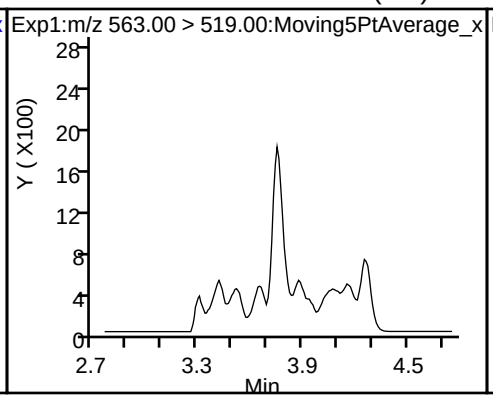
D 32 d5-NEtFOSAA



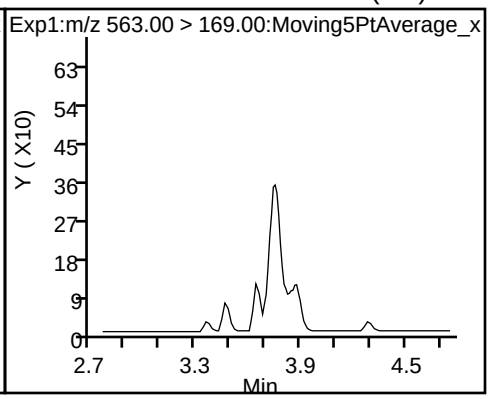
D 30 13C2 PFUnA



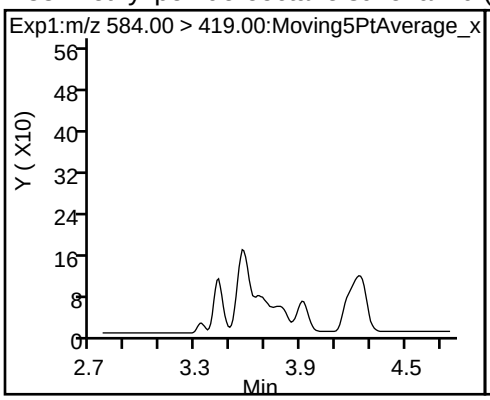
31 Perfluoroundecanoic acid (ND)



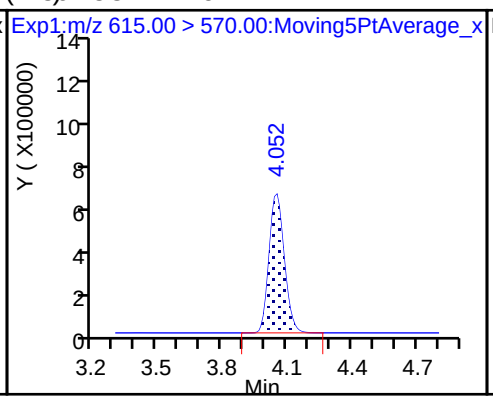
31 Perfluoroundecanoic acid (ND)



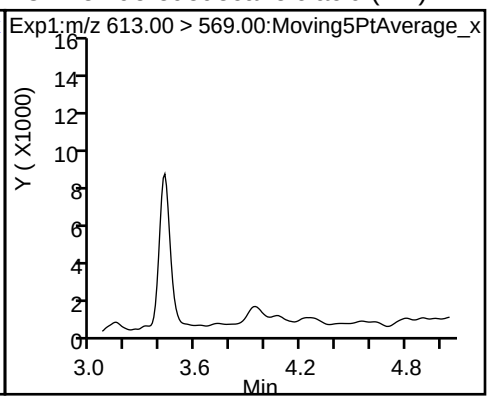
33 N-ethyl perfluorooctane sulfonamid (ND)



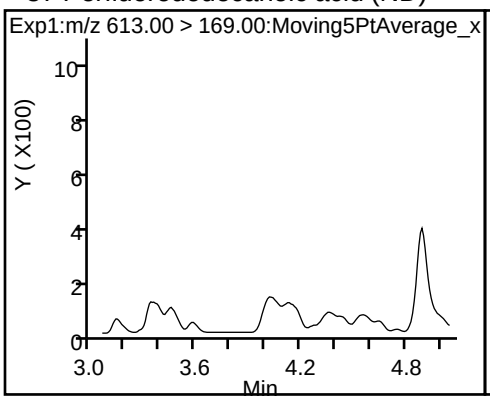
D 36 13C2 PFDoA



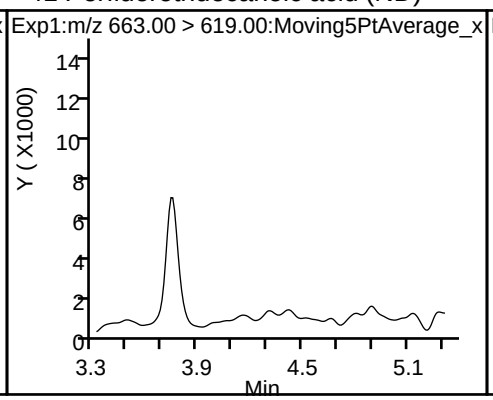
37 Perfluorododecanoic acid (ND)



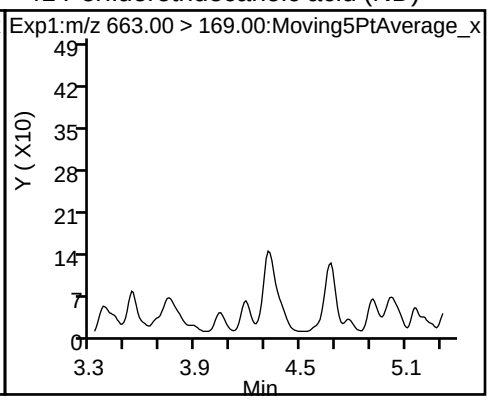
37 Perfluorododecanoic acid (ND)



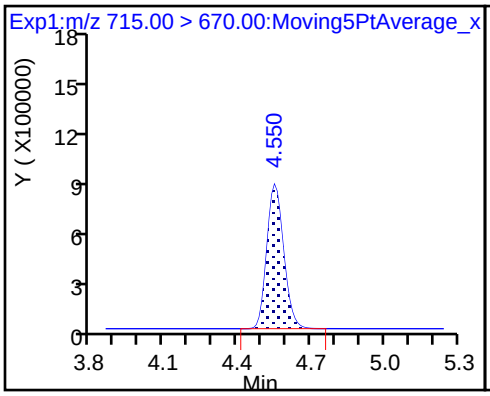
41 Perfluorotridecanoic acid (ND)



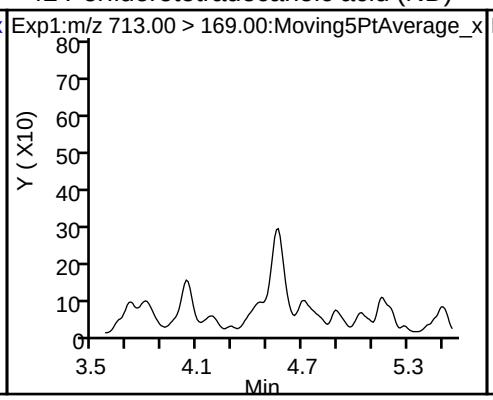
41 Perfluorotridecanoic acid (ND)



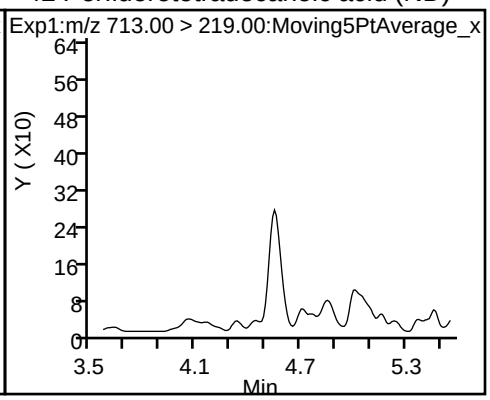
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB008(5'-7') DL Lab Sample ID: 320-36683-3 DL

Matrix: Solid Lab File ID: 2018.03.21LLC_015.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 09:30

Extraction Method: SHAKE Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.07(g) Date Analyzed: 03/21/2018 23:06

Con. Extract Vol.: 10.00(mL) Dilution Factor: 5

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.025	B D	0.0026	0.0010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	66		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_015.d
Lims ID: 320-36683-A-3-A
Client ID: SB008(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 23:06:17 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-36683-a-3-a 5X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:52:48 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:28:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.446	-0.006	0.536	1112342	0.3893		77.9	11975	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.453	-0.007	1.004	5533	0.002640			3.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.632	773750	0.4082		81.6	28863	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.735	0.0	0.646	16726	0.3866		83.1	124	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.997	-0.011	0.739	823250	0.3927		78.5	29220	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	825435	0.3991		79.8	27661	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	14130	0.008274			27.9	
363.00 > 169.00	2.328	2.328	0.0	1.000	6847		2.06(1.13-3.40)		81.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	978736	0.3836		81.1	33395	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	188777	0.0820			1972	
399.00 > 99.00	2.341	2.341	0.0	1.000	61256		3.08(1.50-4.49)		225	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.665	0.0	0.991	150562	0.3511		73.9	3505	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.673	-0.008	1.000	30178	0.0546			1801	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.688	0.0	1.000	786019	0.3715		74.3	26381	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.697	-0.009		1128539	0.5000			29450	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.697	-0.009	1.000	56560	0.0318			16.5	
413.00 > 169.00	2.688	2.697	-0.009	1.000	31868		1.77(0.84-2.52)		73.2	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.137	586006	0.3157		66.0	13341	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	715016	0.3832		76.6	30067	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	3270341	2.39			14924	
499.00 > 99.00	3.058	3.065	-0.007	1.000	735472		4.45(2.31-6.93)		10281	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	22790	0.0160			35.0	
463.00 > 169.00	3.065	3.072	-0.007	1.000	6964		3.27(1.90-5.69)		268	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.388	0.009	1.264	536206	0.2142		42.8	10919	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.415	0.0	1.270	159346	0.2752		57.5	4011	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.424	0.0	1.274	487874	0.2984		59.7	12442	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.578	0.0	1.331	91175	0.1059		21.2	3915	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	259867	0.1776		35.5	10857	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	89527	0.0913		18.3	816	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.509	93565	0.0564		11.3	1152	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	12824	0.006325		1.3	163	

Report Date: 22-Mar-2018 12:53:06 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_015.d

Injection Date: 21-Mar-2018 23:06:17 Instrument ID: A8_N

Lims ID: 320-36683-A-3-A Lab Sample ID: 320-36683-3

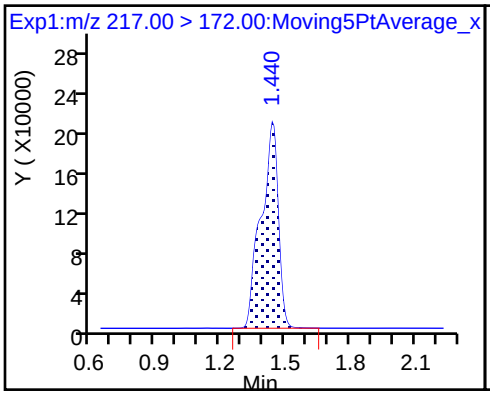
Client ID: SB008(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

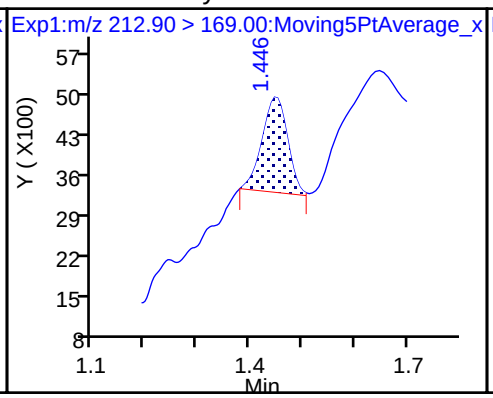
Injection Vol: 2.0 ul Dil. Factor: 5.0000

Method: A8_N Limit Group: LC PFC ICAL

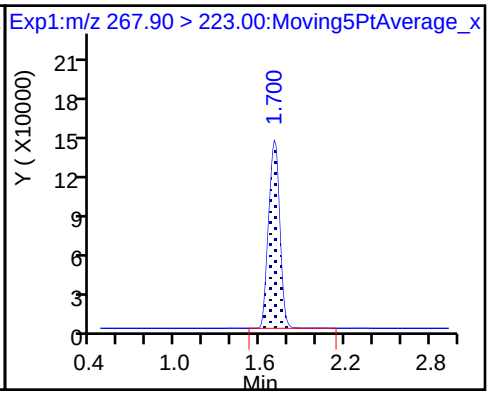
D 1 13C4 PFBA



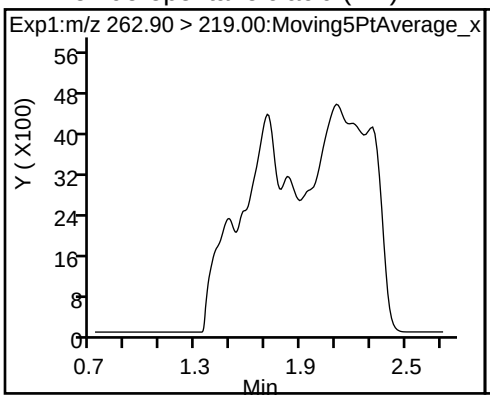
2 Perfluorobutyric acid



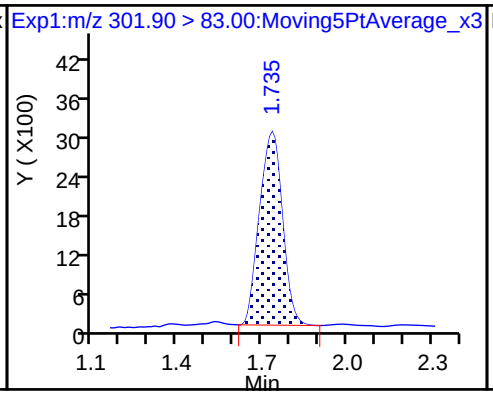
D 3 13C5-PFPeA



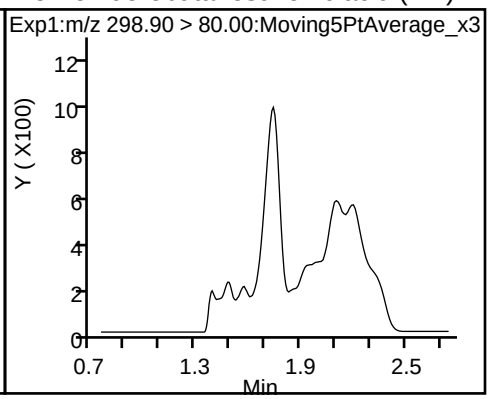
4 Perfluoropentanoic acid (ND)



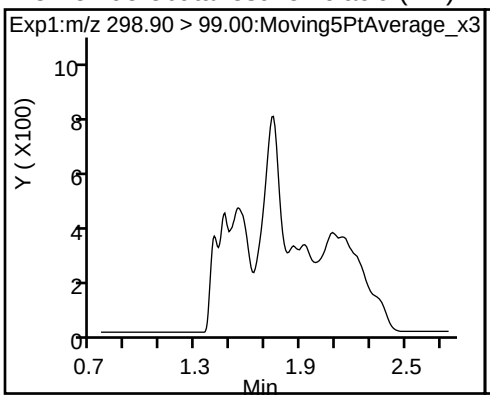
D 47 13C3-PFBS



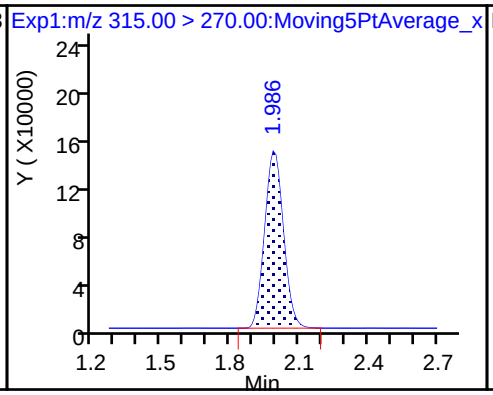
5 Perfluorobutanesulfonic acid (ND)



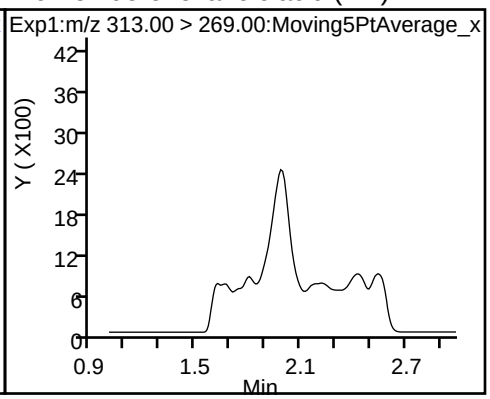
5 Perfluorobutanesulfonic acid (ND)



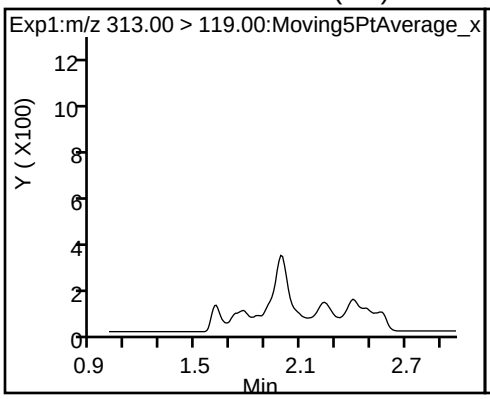
D 7 13C2 PFHxA



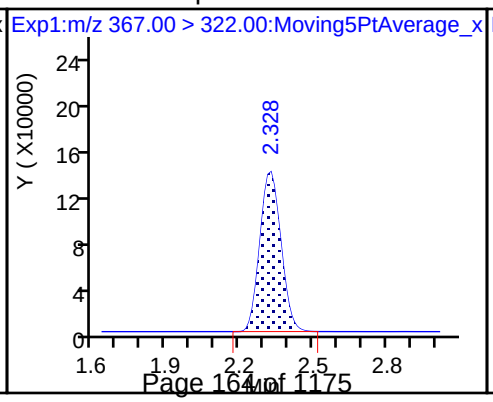
6 Perfluorohexanoic acid (ND)



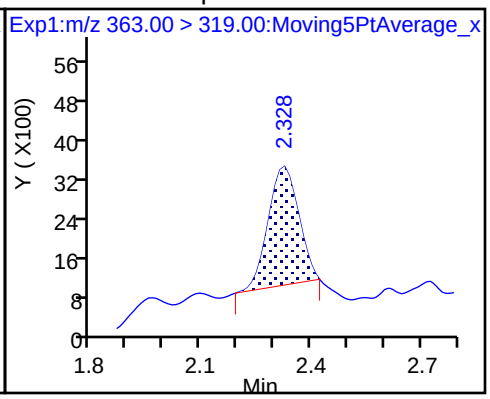
6 Perfluorohexanoic acid (ND)



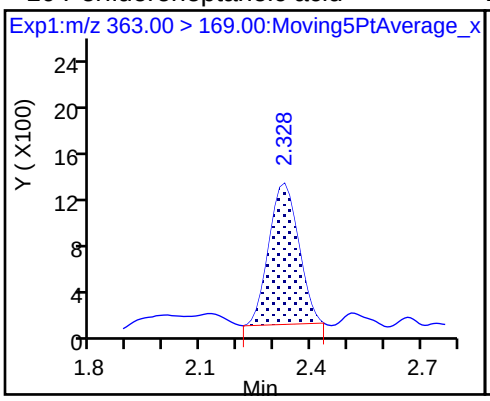
D 9 13C4-PFHpA



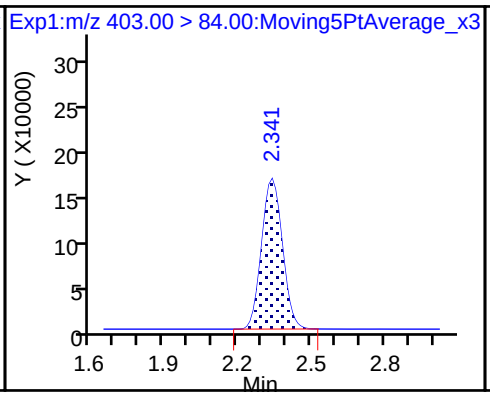
10 Perfluoroheptanoic acid



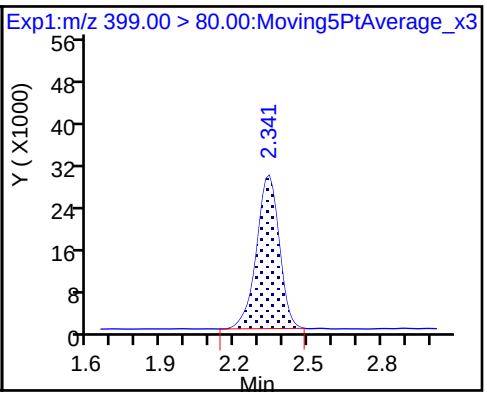
10 Perfluoroheptanoic acid



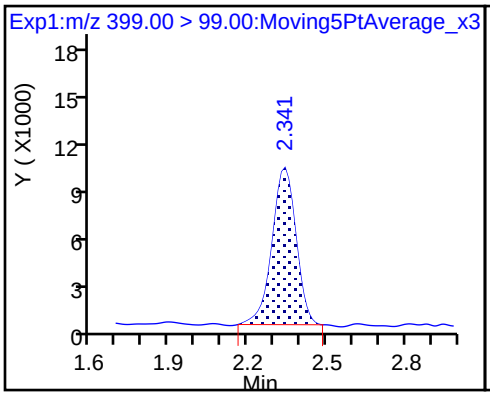
D 11 18O2 PFHxS



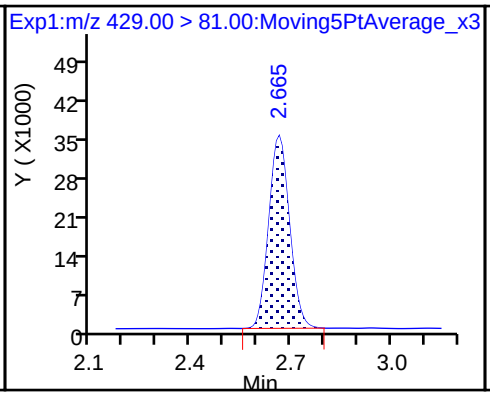
8 Perfluorohexanesulfonic acid



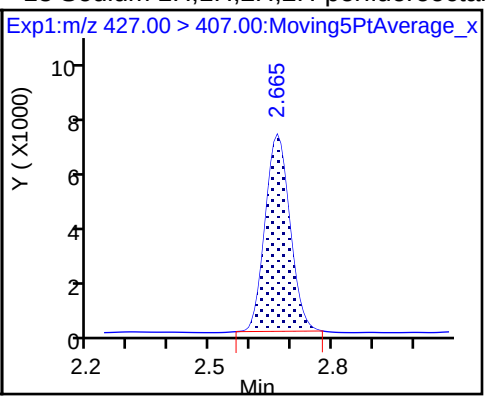
8 Perfluorohexanesulfonic acid



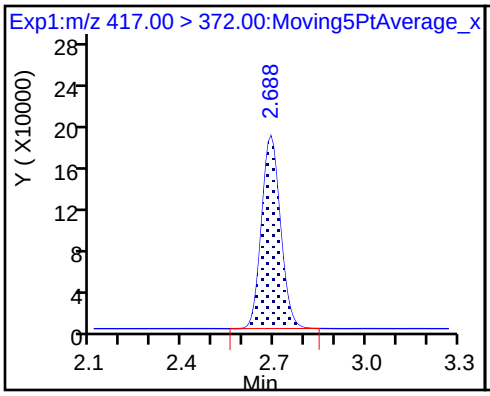
D 12 M2-6:2FTS



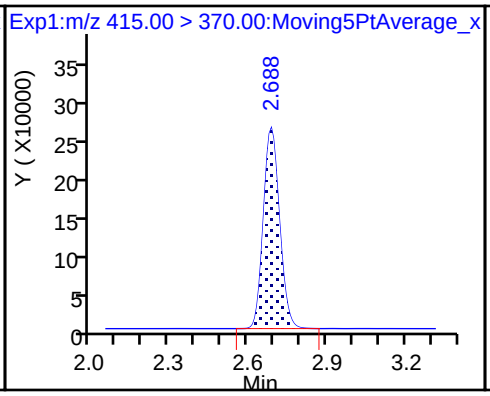
13 Sodium 1H,1H,2H,2H-perfluorooctane



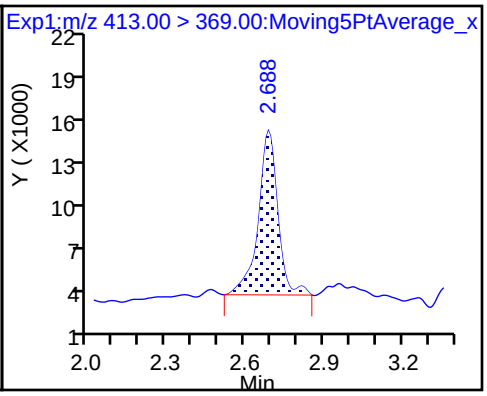
D 14 13C4 PFOA



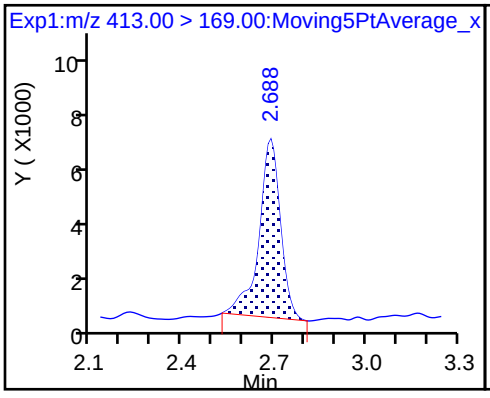
* 62 13C2-PFOA



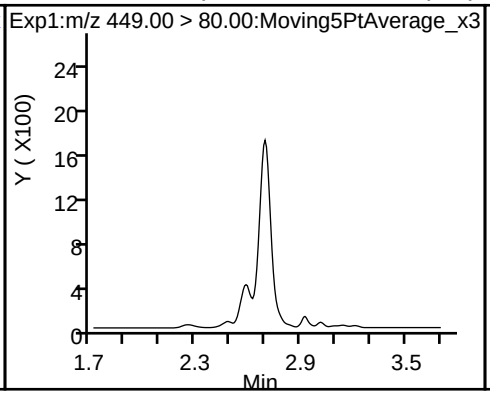
15 Perfluorooctanoic acid



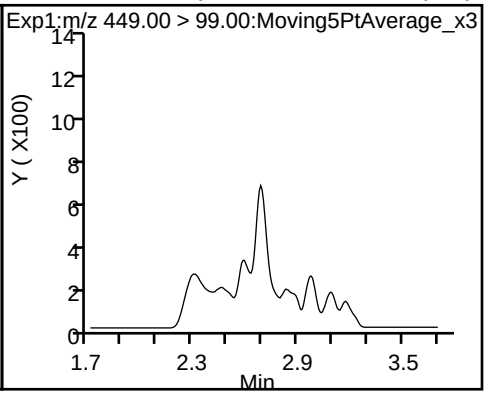
15 Perfluorooctanoic acid



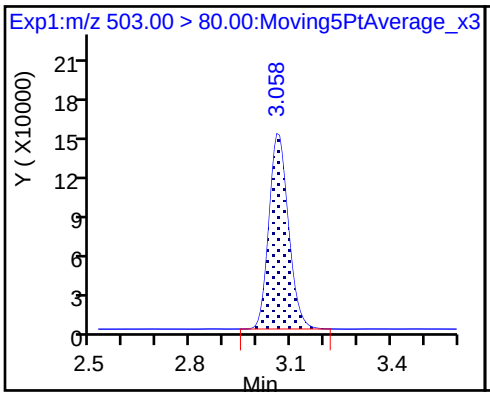
16 Perfluoroheptanesulfonic acid (ND)



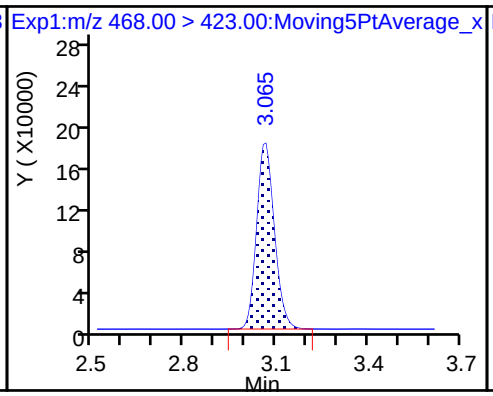
16 Perfluoroheptanesulfonic acid (ND)



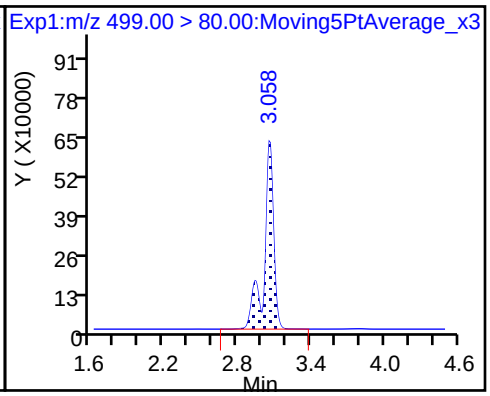
D 18 13C4 PFOS



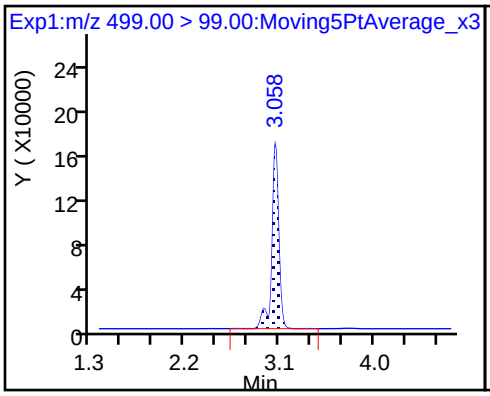
D 19 13C5 PFNA



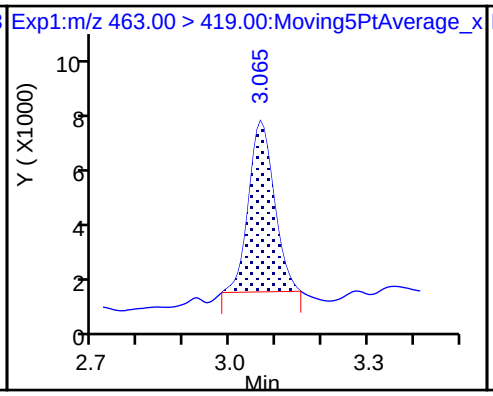
17 Perfluorooctane sulfonic acid



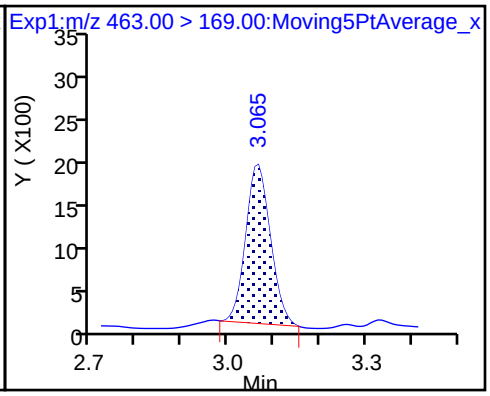
17 Perfluorooctane sulfonic acid



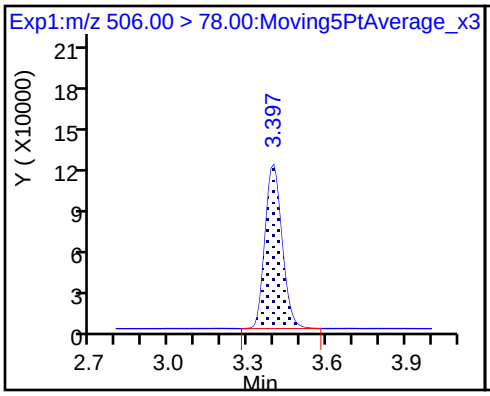
20 Perfluorononanoic acid



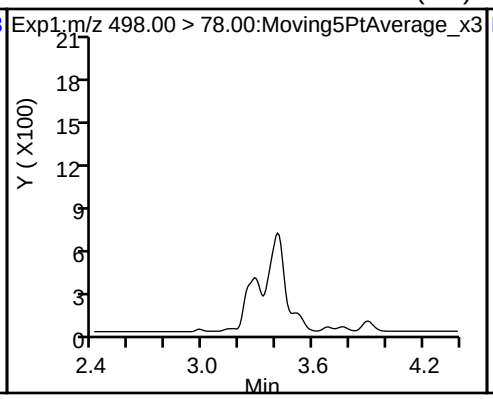
20 Perfluorononanoic acid



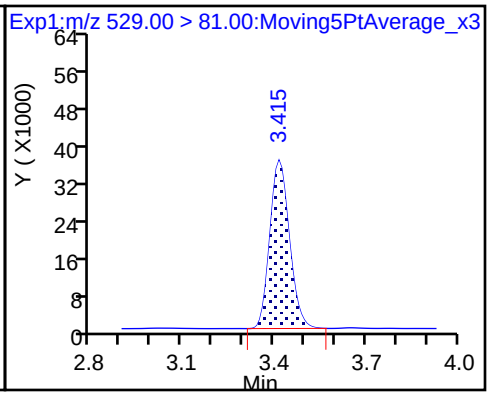
D 21 13C8 FOSA



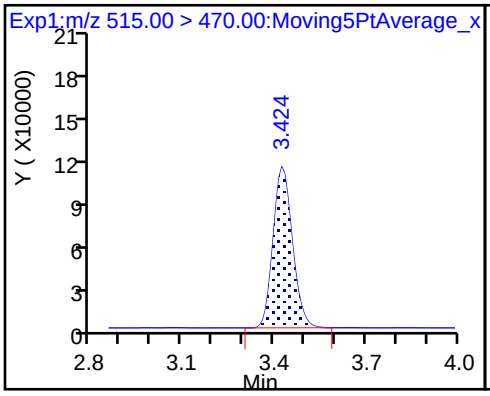
22 Perfluorooctane Sulfonamide (ND)



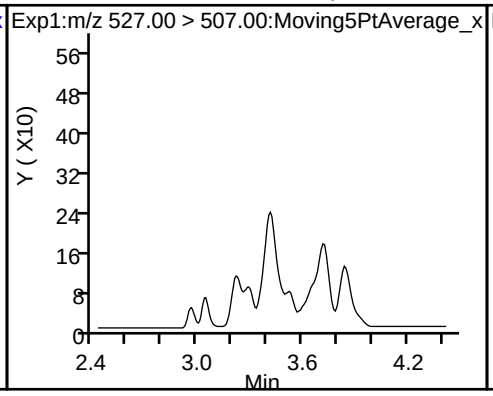
D 26 M2-8:2FTS



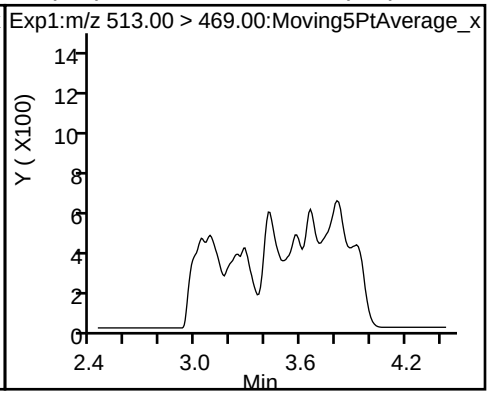
D 23 13C2 PFDA



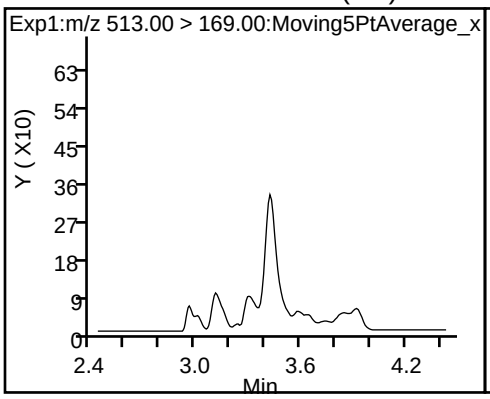
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



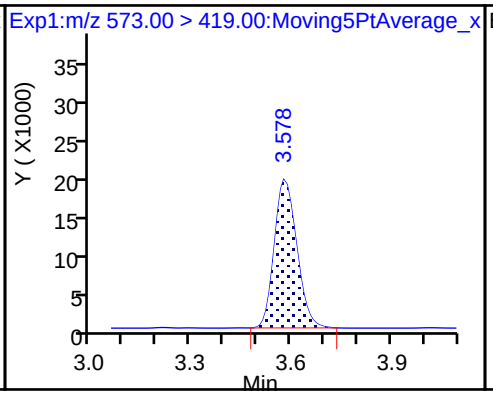
24 Perfluorodecanoic acid (ND)



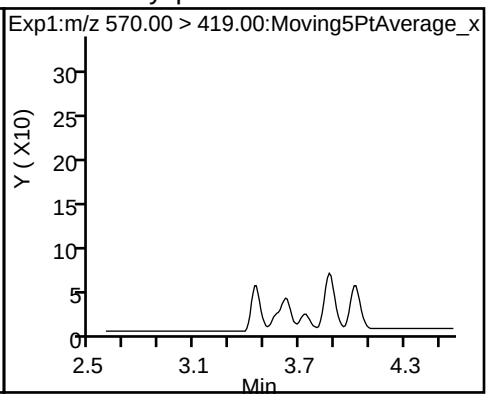
24 Perfluorodecanoic acid (ND)



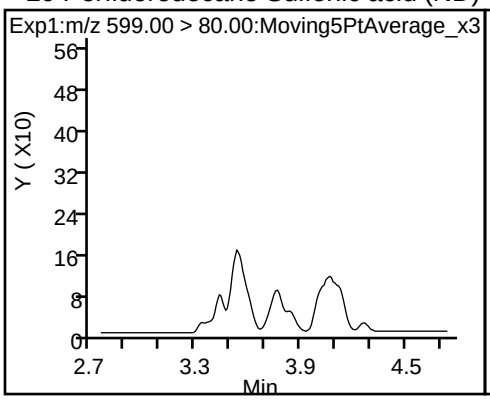
D 27 d3-NMeFOSAA



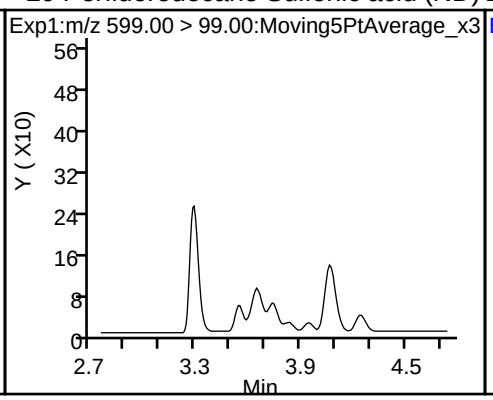
28 N-methyl perfluorooctane sulfonami (ND)



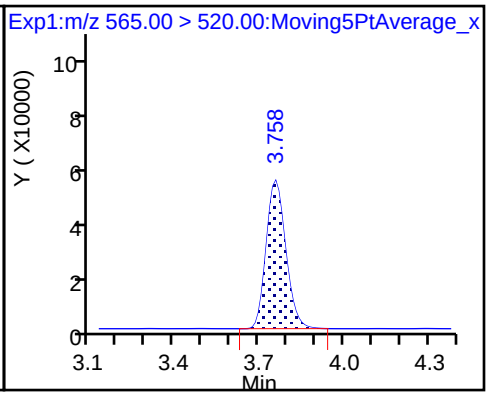
29 Perfluorodecane Sulfonic acid (ND)



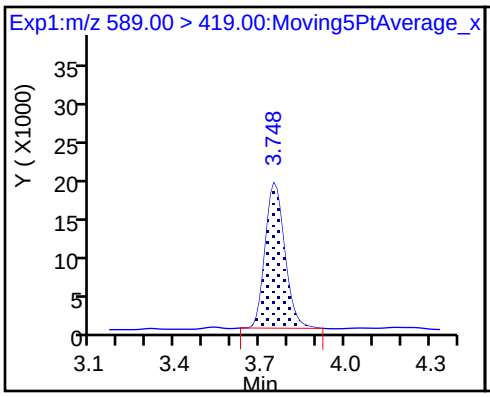
29 Perfluorodecane Sulfonic acid (ND)



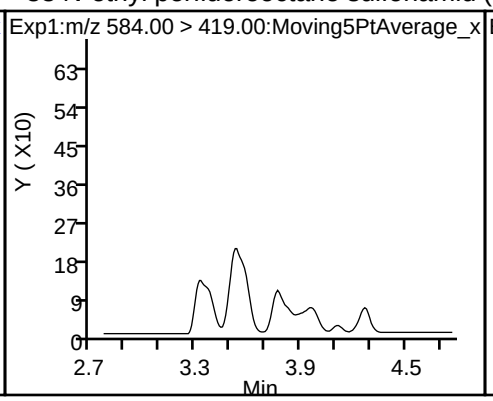
D 30 13C2 PFUnA



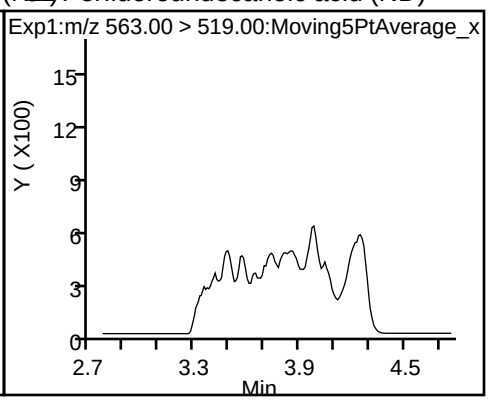
D 32 d5-NEtFOSAA



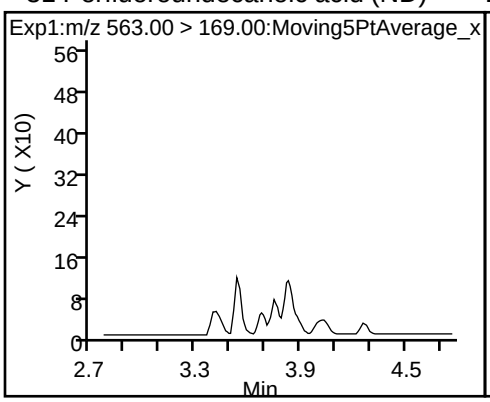
33 N-ethyl perfluorooctane sulfonamid (ND)



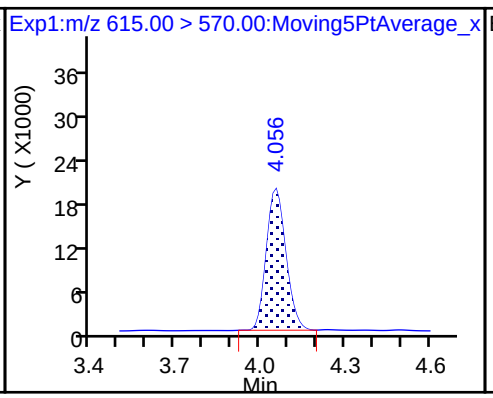
31 Perfluoroundecanoic acid (ND)



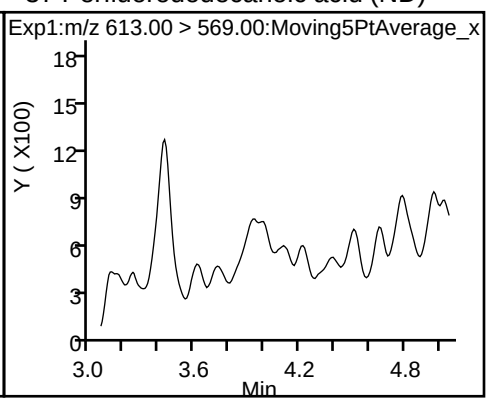
31 Perfluoroundecanoic acid (ND)



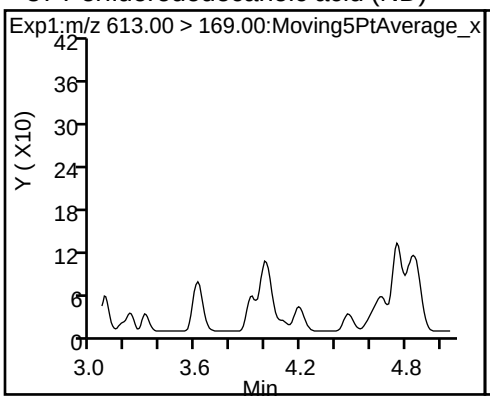
D 36 13C2 PFDoA



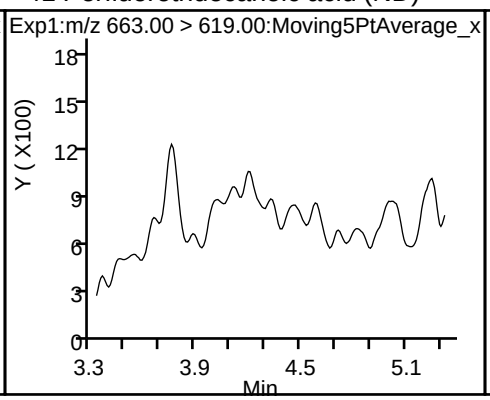
37 Perfluorododecanoic acid (ND)



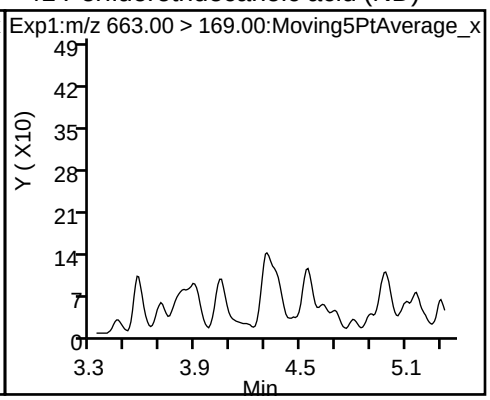
37 Perfluorododecanoic acid (ND)



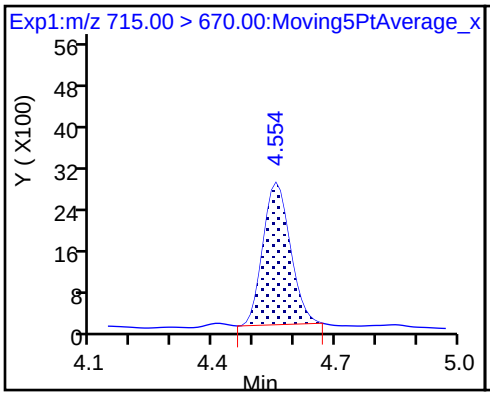
41 Perfluorotridecanoic acid (ND)



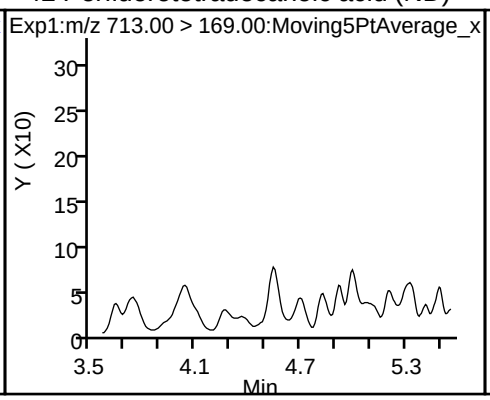
41 Perfluorotridecanoic acid (ND)



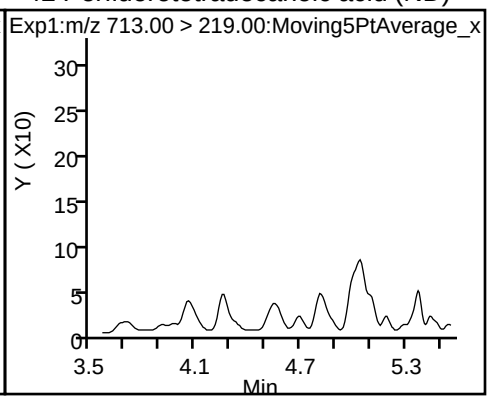
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE006 | Lab Sample ID: 320-36683-4

Matrix: Solid | Lab File ID: 2018.03.20LLA_032.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 00:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/21/2018 00:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000034	J B	0.00021	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000080	U	0.00021	0.000080
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000057	J	0.00021	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000073	J	0.00021	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00022		0.00021	0.000089
375-95-1	Perfluorononanoic acid (PFNA)	0.00015	J	0.00021	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.000023	U	0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000056	J	0.00021	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00021	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000053	U	0.00021	0.000053
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000056	U	0.00021	0.000056
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00021	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00068		0.00021	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000044	J	0.00021	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00021	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000085	U	0.00021	0.000085
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0021	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0021	0.00038
27619-97-2	6:2FTS	0.00016	J	0.0021	0.00016
39108-34-4	8:2FTS	0.00026	U	0.0021	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE006 | Lab Sample ID: 320-36683-4

Matrix: Solid | Lab File ID: 2018.03.20LLA_032.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 00:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/21/2018 00:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	69		25-150
STL01893	13C5 PFPeA	78		25-150
STL00993	13C2 PFHxA	76		25-150
STL01892	13C4-PFHpA	77		25-150
STL00990	13C4 PFOA	77		25-150
STL00995	13C5 PFNA	65		25-150
STL00996	13C2 PFDA	48		25-150
STL00997	13C2 PFUnA	27		25-150
STL00998	13C2 PFDoA	13	*	25-150
STL02116	13C2-PFTeDA	4	*	25-150
STL02337	13C3-PFBS	76		25-150
STL00994	18O2 PFHxS	73		25-150
STL00991	13C4 PFOS	59		25-150
STL01056	13C8 FOSA	39		25-150
STL02118	d3-NMeFOSAA	17	*	25-150
STL02117	d5-NEtFOSAA	16	*	25-150
STL02279	M2-6:2FTS	71		25-150
STL02280	M2-8:2FTS	44		25-150

Report Date: 22-Mar-2018 10:56:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_032.d
Lims ID: 320-36683-A-4-A
Client ID: DUPE006
Sample Type: Client
Inject. Date: 21-Mar-2018 00:20:22 ALS Bottle#: 23 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-4-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 09:59:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.537	4071664	1.73		69.1	62580	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.446	-0.005	1.000	25016	0.0166			7.8	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3247237	1.95		78.1	76957	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	72313	1.76		75.8	321	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	3513991	1.89		75.8	82447	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	39023	0.0275			57.9	
313.00 > 119.00	1.987	1.997	-0.010	1.000	4230		9.23(5.03-15.10)		90.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3471246	1.92		77.0	79938	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	50979	0.0354			69.7	
363.00 > 169.00	2.315	2.328	-0.013	1.000	17091		2.98(1.13-3.40)		250	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4175192	1.73		73.3	96215	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	646199	0.3282			1011	
399.00 > 99.00	2.328	2.341	-0.013	1.000	218987		2.95(1.50-4.49)		578	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	780204	1.69		71.1	17586	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	43335	0.0792			1396	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3331546	1.91		76.5	67843	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.695	-0.014	1.000	160008	0.1076			43.0	
413.00 > 169.00	2.681	2.695	-0.014	1.000	96138		1.66(0.84-2.52)		275	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4617752	2.50			85845	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	27764	0.0213			226	
449.00 > 99.00	2.689	2.703	-0.014	1.000	5709		4.86(1.94-5.82)		87.8	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.141	2369361	1.41		58.9	38988	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2258221	1.62		64.8	60868	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.000	10847399	10.1			25162	E
499.00 > 99.00	3.058	3.067	-0.009	1.000	2502076		4.34(2.31-6.93)		13925	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.067	-0.009	1.000	66518	0.0722			113	
463.00 > 169.00	3.058	3.067	-0.009	1.000	19695		3.38(1.90-5.69)		407	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.268	2374450	0.9742		39.0	47590	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.401	-0.003	1.000	26946	0.0292			106	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.408	0.0	1.271	461301	1.06		44.4	10275	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.278	1401388	1.20		48.1	22380	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.419	-0.002	1.003	4116	0.0170			127	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.335	160657	0.4179		16.7	8753	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	143931	0.3916		15.7	285	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.402	615371	0.6751		27.0	21327	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	0.997	5569	0.0270			12.0	
563.00 > 169.00	3.758	3.762	-0.004	1.000	2006		2.78(2.12-6.36)		169	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.509	284674	0.3293		13.2	2177	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.699	83787	0.1062		4.2	972	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_032.d

Injection Date: 21-Mar-2018 00:20:22 Instrument ID: A8_N

Lims ID: 320-36683-A-4-A Lab Sample ID: 320-36683-4

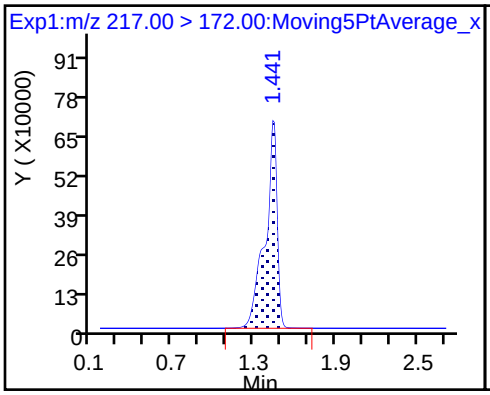
Client ID: DUPE006

Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 11

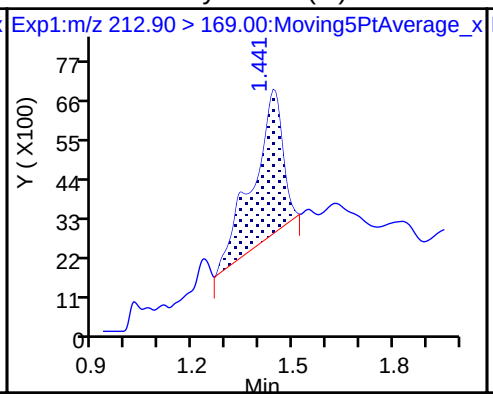
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

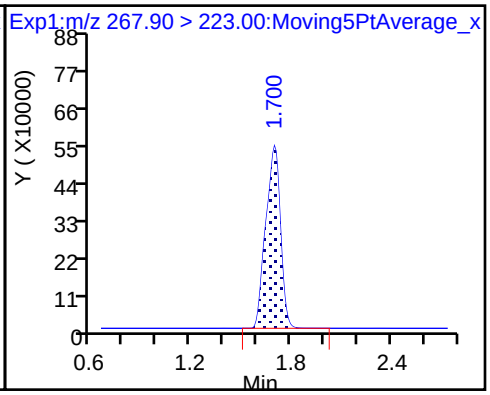
D 1 13C4 PFBA



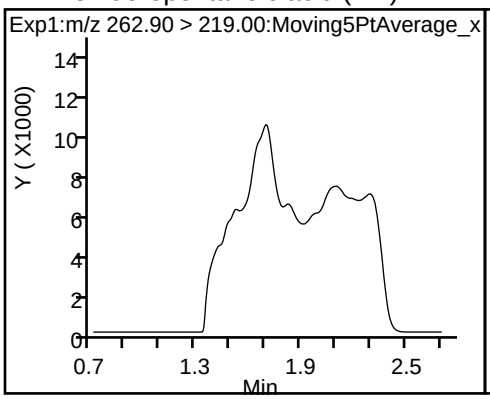
2 Perfluorobutyric acid (M)



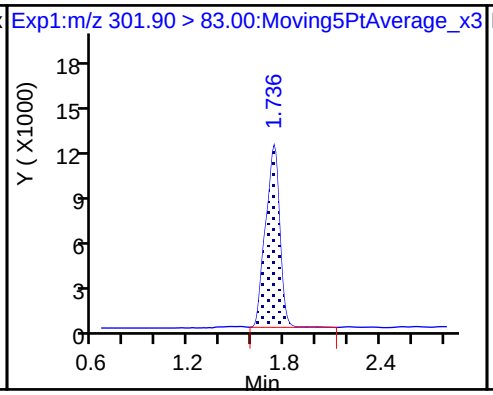
D 3 13C5-PFPeA



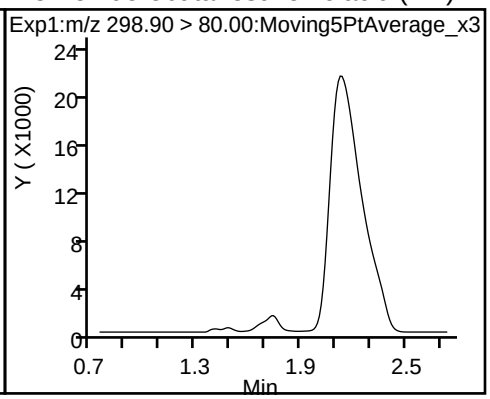
4 Perfluoropentanoic acid (ND)



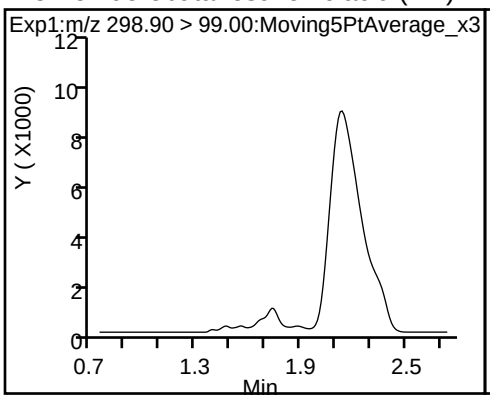
D 47 13C3-PFBS



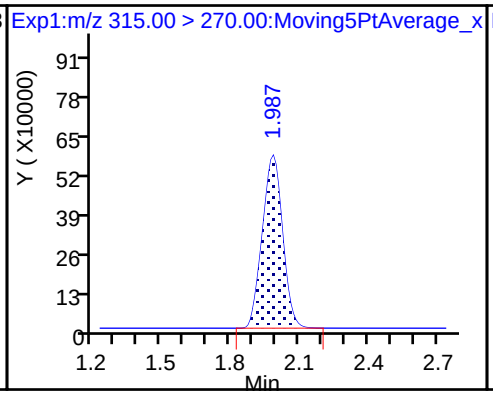
5 Perfluorobutanesulfonic acid (ND)



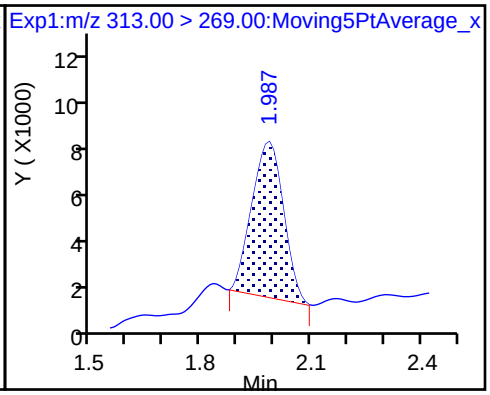
5 Perfluorobutanesulfonic acid (ND)



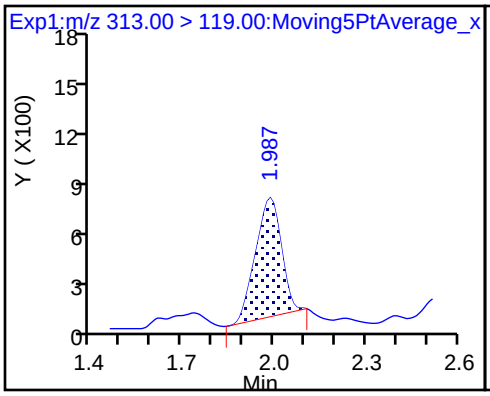
D 7 13C2 PFHxA



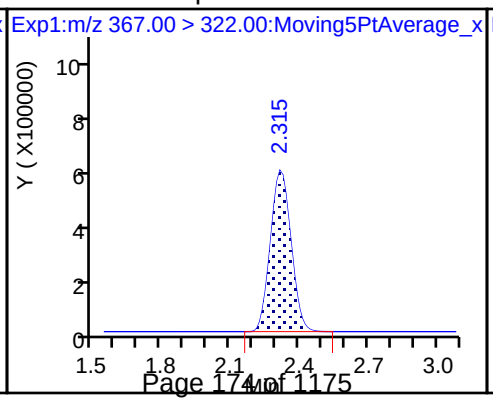
6 Perfluorohexanoic acid



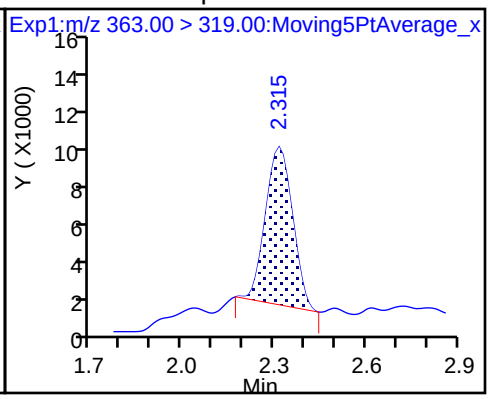
6 Perfluorohexanoic acid



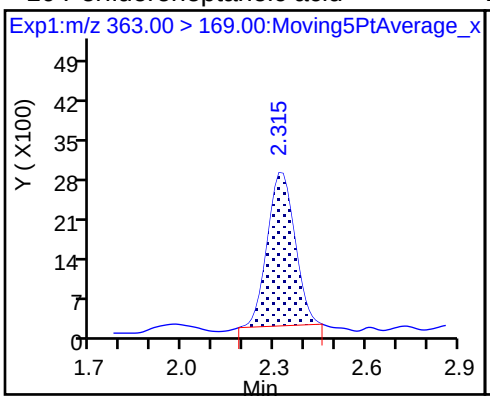
D 9 13C4-PFHpA



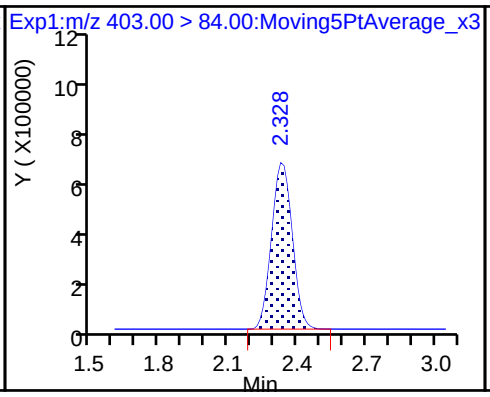
10 Perfluoroheptanoic acid



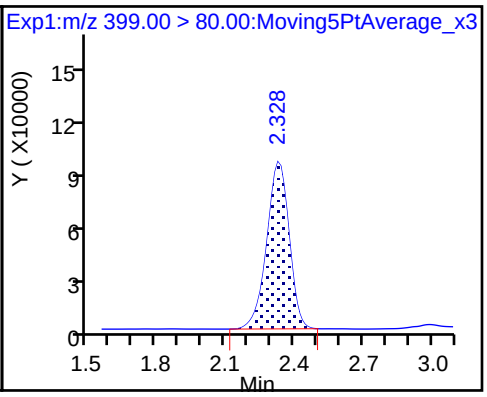
10 Perfluoroheptanoic acid



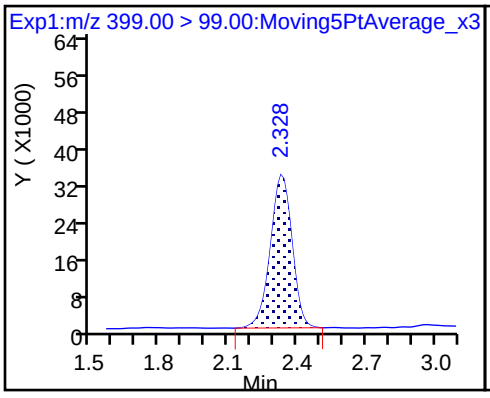
D 11 18O2 PFHxS



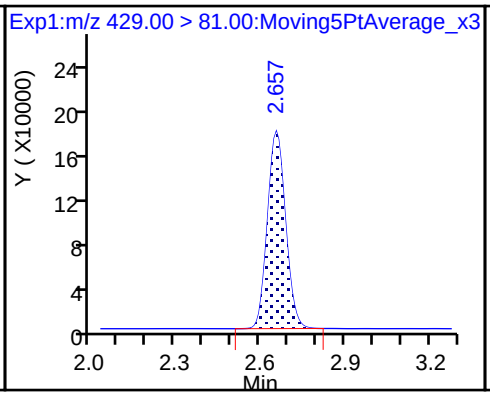
8 Perfluorohexanesulfonic acid



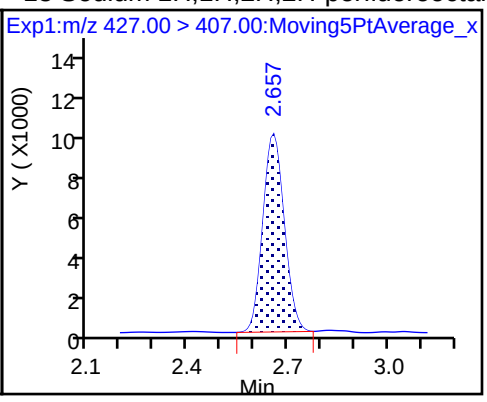
8 Perfluorohexanesulfonic acid



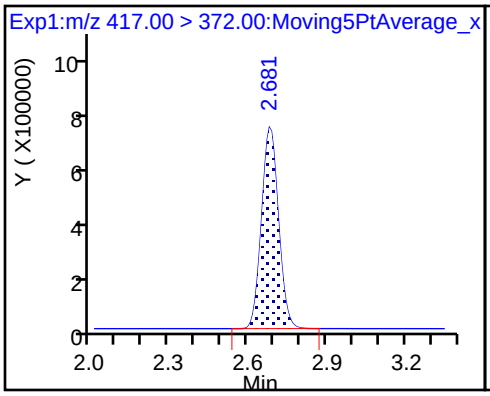
D 12 M2-6:2FTS



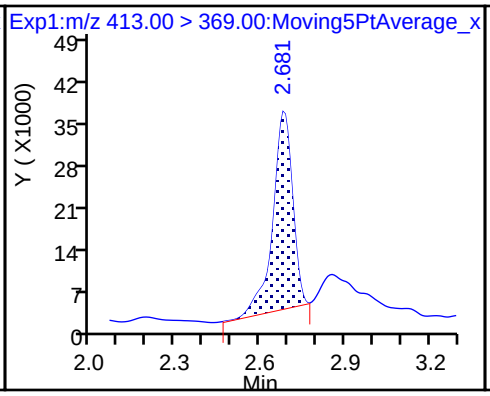
13 Sodium 1H,1H,2H,2H-perfluorooctane



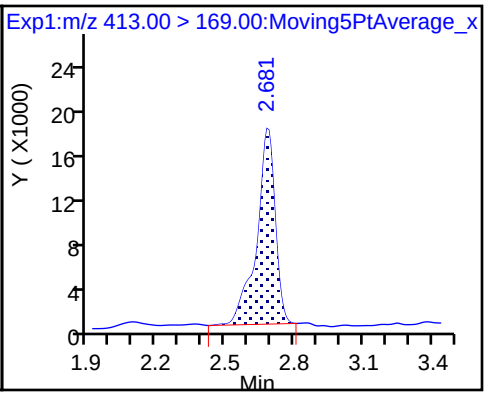
D 14 13C4 PFOA



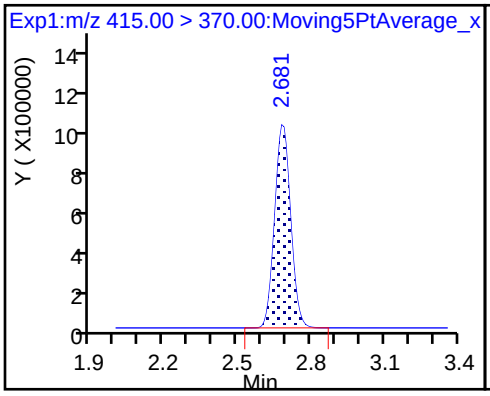
15 Perfluorooctanoic acid



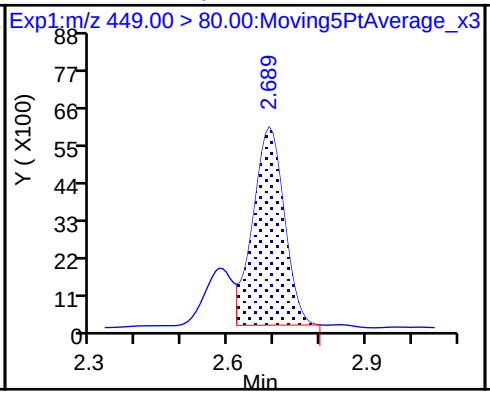
15 Perfluorooctanoic acid



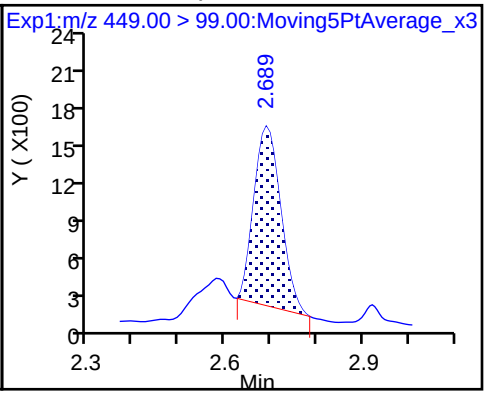
* 62 13C2-PFOA



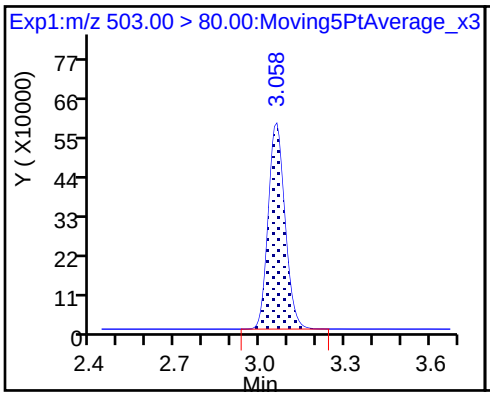
16 Perfluoroheptanesulfonic acid



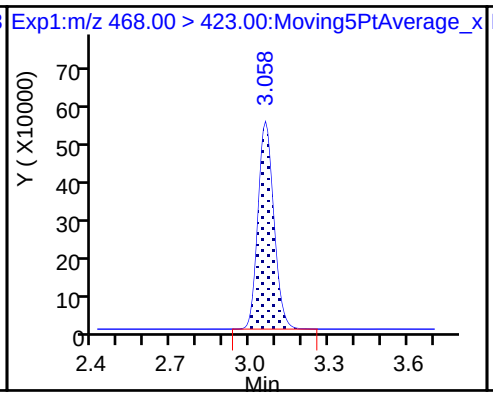
16 Perfluoroheptanesulfonic acid



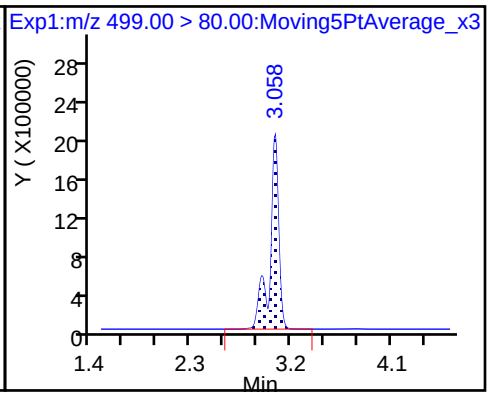
D 18 13C4 PFOS



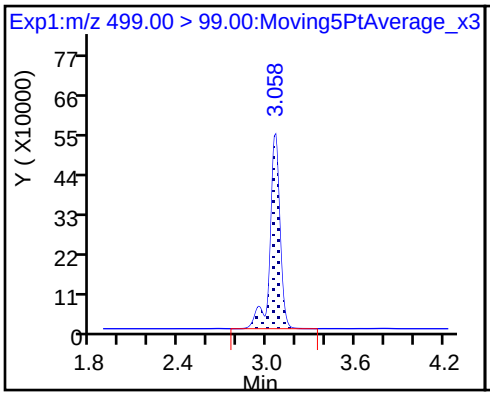
D 19 13C5 PFNA



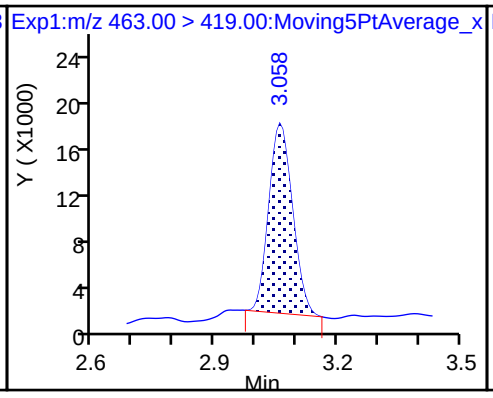
17 Perfluorooctane sulfonic acid



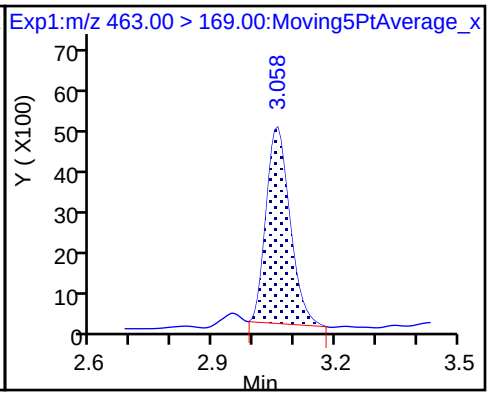
17 Perfluorooctane sulfonic acid



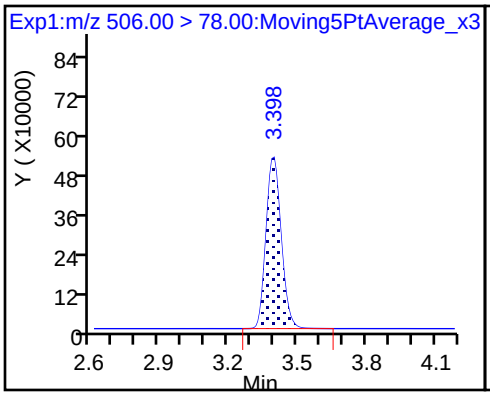
20 Perfluorononanoic acid



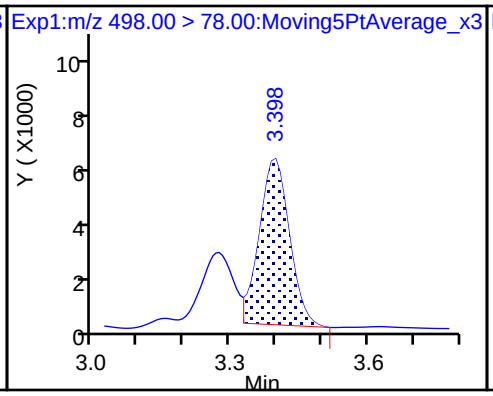
20 Perfluorononanoic acid



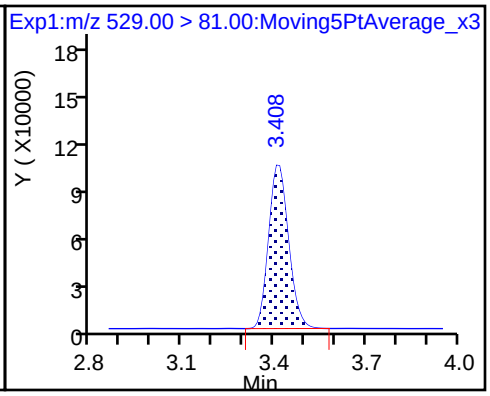
D 21 13C8 FOSA



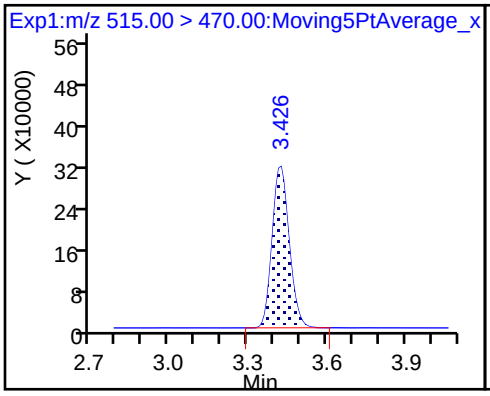
22 Perfluorooctane Sulfonamide



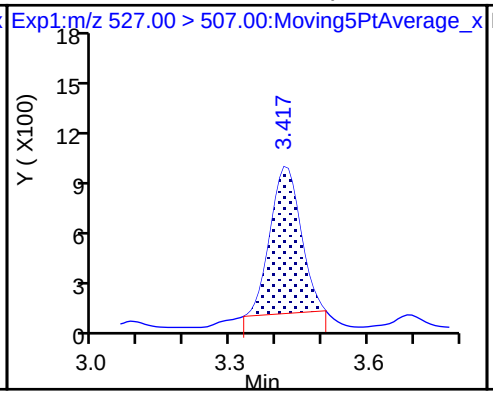
D 26 M2-8:2FTS



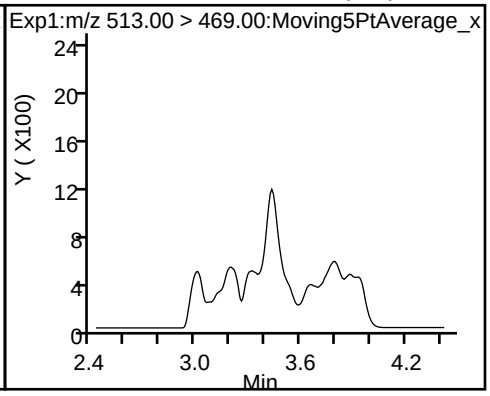
D 23 13C2 PFDA



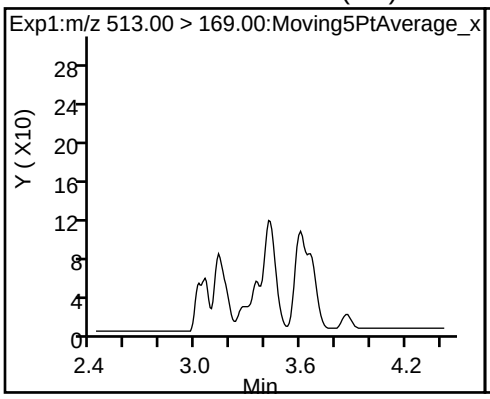
25 Sodium 1H,1H,2H,2H-perfluorodecan



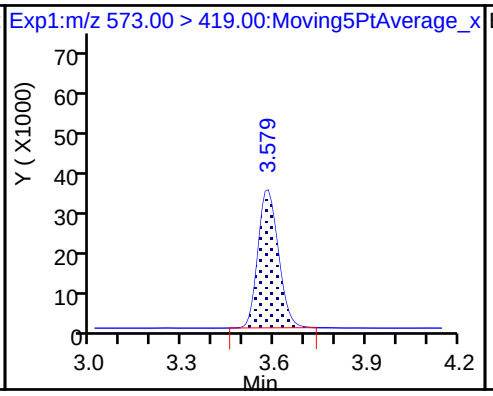
24 Perfluorodecanoic acid (ND)



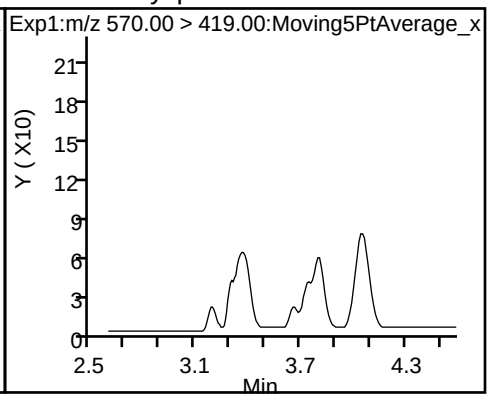
24 Perfluorodecanoic acid (ND)



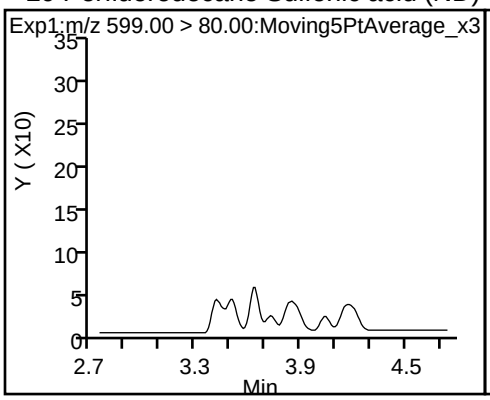
D 27 d3-NMeFOSAA



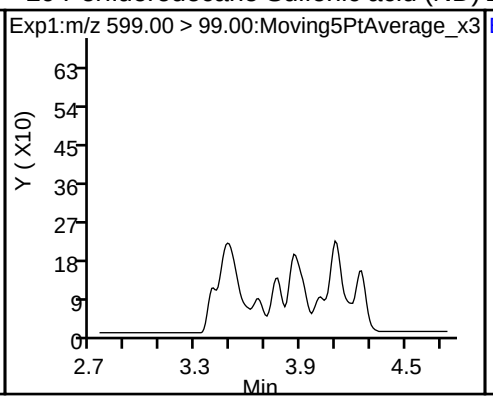
28 N-methyl perfluorooctane sulfonami (ND)



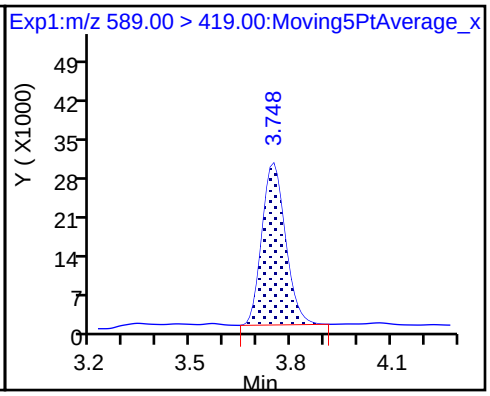
29 Perfluorodecane Sulfonic acid (ND)



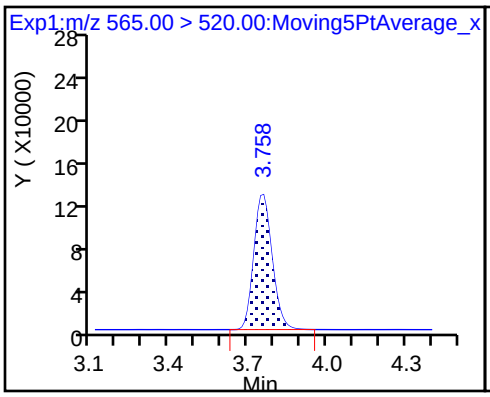
29 Perfluorodecane Sulfonic acid (ND)



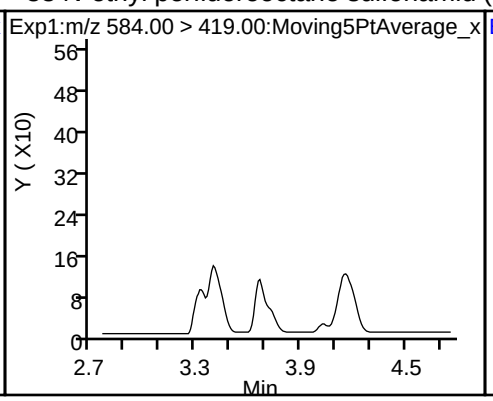
D 32 d5-NEtFOSAA



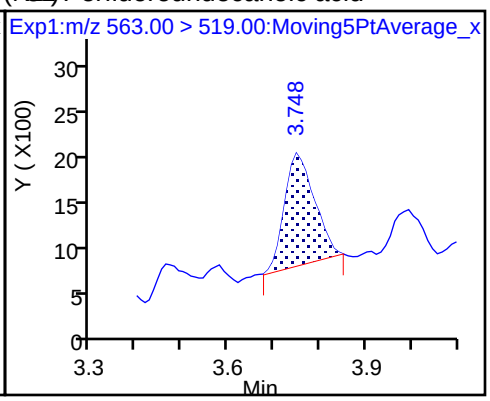
D 30 13C2 PFUnA



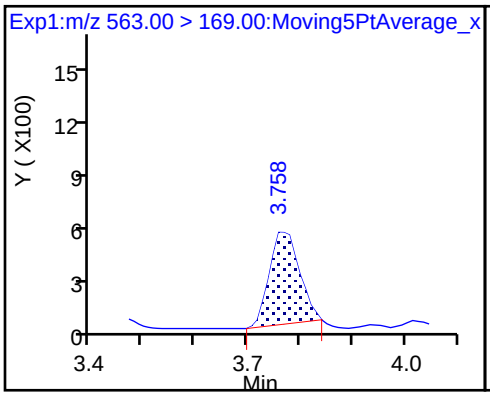
33 N-ethyl perfluorooctane sulfonamid (ND)



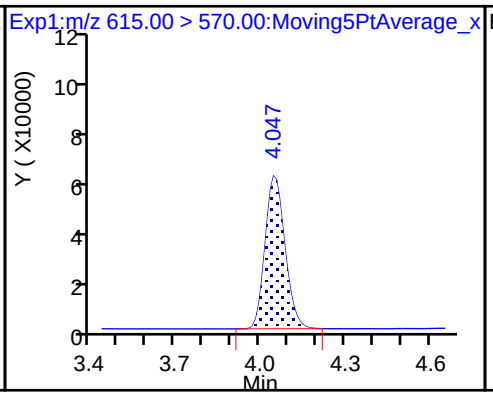
31 Perfluoroundecanoic acid



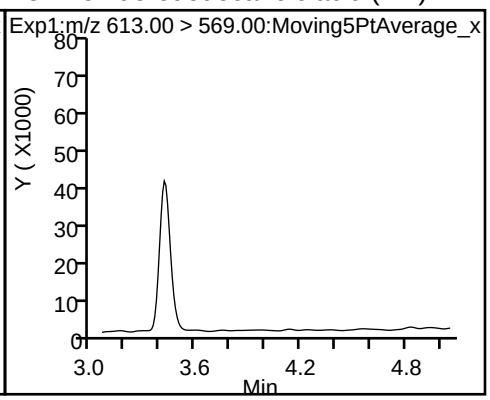
31 Perfluoroundecanoic acid



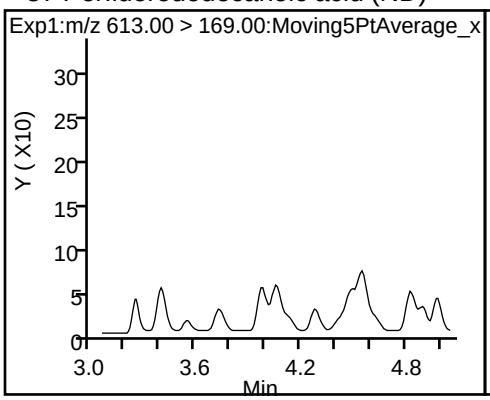
D 36 13C2 PFDoA



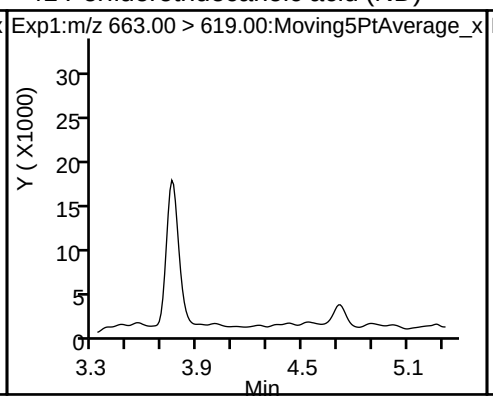
37 Perfluorododecanoic acid (ND)



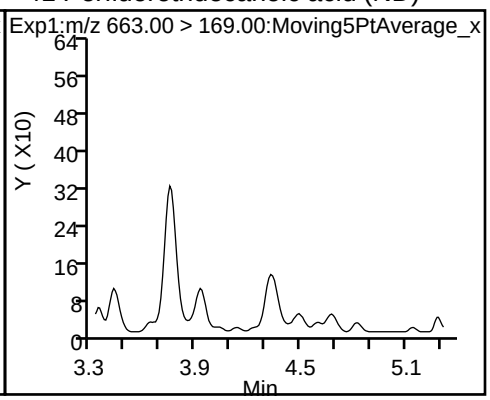
37 Perfluorododecanoic acid (ND)



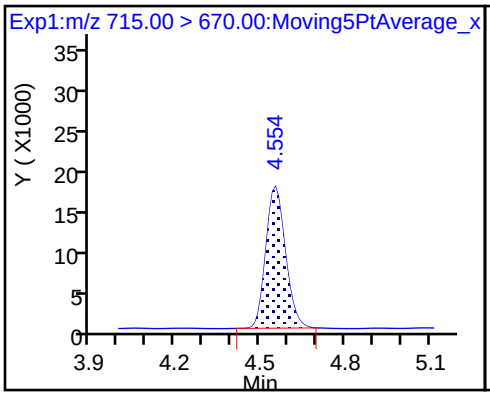
41 Perfluorotridecanoic acid (ND)



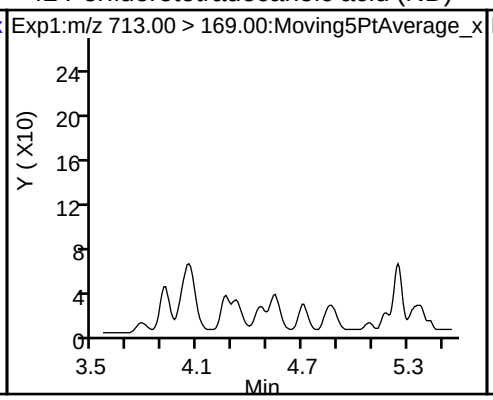
41 Perfluorotridecanoic acid (ND)



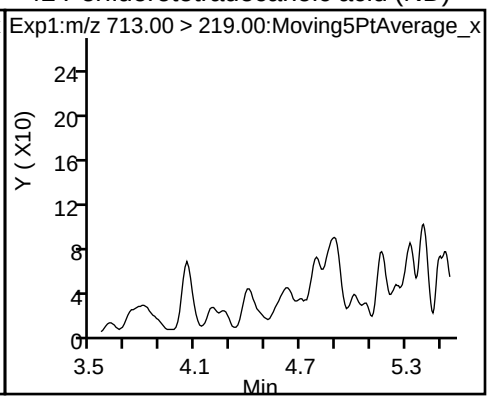
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

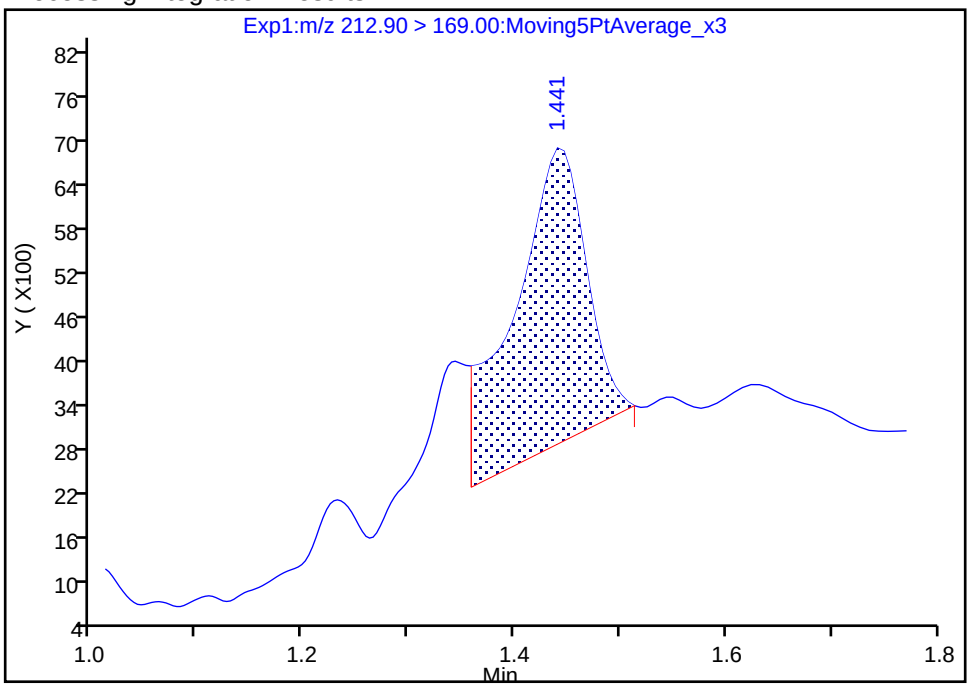
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_032.d				
Injection Date:	21-Mar-2018 00:20:22	Instrument ID:	A8_N		
Lims ID:	320-36683-A-4-A	Lab Sample ID:	320-36683-4		
Client ID:	DUPE006				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

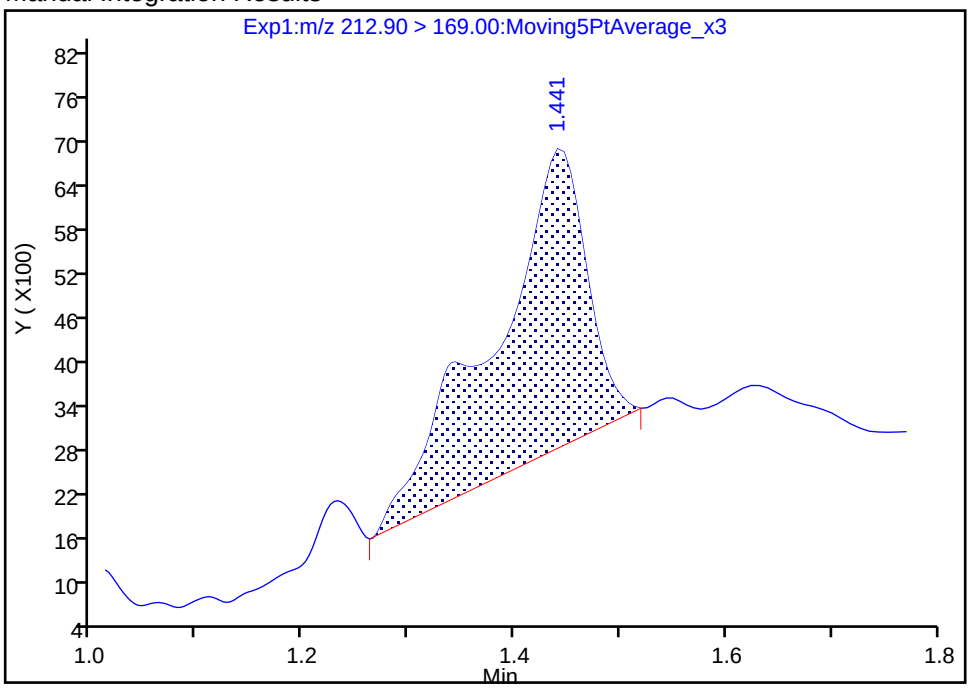
Processing Integration Results

RT: 1.44
Area: 19261
Amount: 0.012751
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 25016
Amount: 0.016561
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 09:58:29

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE006 RE | Lab Sample ID: 320-36683-4 RE

Matrix: Solid | Lab File ID: 2018.03.26LLA_069.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 00:00

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 4.97(g) | Date Analyzed: 03/27/2018 03:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000041*	*U H*	*0.00021*	*0.000041*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	76		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_069.d
Lims ID: 320-36683-A-4-B
Client ID: DUPE006
Sample Type: Client
Inject. Date: 27-Mar-2018 03:36:45 ALS Bottle#: 48 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-4-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:43:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:39:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.538	6289789	1.90		75.9	95107	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.452	1.447	0.005	1.004	23886	0.0101			5.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.700	0.008	0.636	4131249	1.88		75.1	126179	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.709	-0.009	0.995	32755	0.0176			19.5	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.646	87716	1.75		75.2	561	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.739	4485415	1.84		73.8	115416	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.998	-0.012	1.000	42651	0.0233			40.6	
313.00 > 119.00	1.997	1.998	-0.001	1.005	4136		10.31(5.03-15.10)		51.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.327	2.315	0.012	0.866	4600488	1.92		76.7	111289	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.327	2.328	-0.001	1.000	61352	0.0322			46.0	
363.00 > 169.00	2.327	2.328	-0.001	1.000	20128		3.05(1.13-3.40)		53.9	
D 11 18O2 PFHxS										
403.00 > 84.00	2.340	2.328	0.012	0.871	5512802	1.86		78.8	94888	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.340	2.341	-0.001	1.000	871539	0.3359			4575	
399.00 > 99.00	2.340	2.341	-0.001	1.000	271637		3.21(1.50-4.49)		495	
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.649	0.014	0.991	1098645	2.21		93.0	17448	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.663	2.665	-0.002	1.000	73297	0.0909			505	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.687	2.681	0.006	1.000	4497427	1.83		73.3	133097	
* 62 13C2-PFOA										
415.00 > 370.00	2.687	2.689	-0.002		6546245	2.50			92553	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.687	2.689	-0.002	1.000	236212	0.1162			93.2	M
413.00 > 169.00	2.687	2.689	-0.002	1.000	129083		1.83(0.84-2.52)		306	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.695	2.697	-0.003	1.000	33373	0.0159			229	
449.00 > 99.00	2.695	2.697	-0.003	1.000	10622		3.14(1.94-5.82)		68.5	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.138	3915420	1.82		76.1	55694	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.051	0.014	1.141	3964721	1.83		73.3	110635	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.065	-0.007	1.000	17015683	9.32			81684	E
499.00 > 99.00	3.058	3.065	-0.007	1.000	4191707		4.06(2.31-6.93)		26839	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.065	0.0	1.000	113033	0.0715			150	
463.00 > 169.00	3.065	3.065	0.0	1.000	28476		3.97(1.90-5.69)		441	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.389	0.008	1.264	4994022	1.72		68.8	87089	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.398	-0.001	1.000	2811	0.001427			32.3	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.399	0.017	1.271	1180654	1.76		73.4	20365	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.417	0.007	1.274	3530232	1.86		74.4	50322	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.571	0.007	1.332	1660290	1.66		66.5	51407	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.738	0.010	1.395	1825167	1.60		64.2	14581	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.399	2877019	1.70		67.8	67336	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.748	3.758	-0.010	0.997	3985	0.004016			16.6	M
563.00 > 169.00	3.768	3.758	0.010	1.003	1733		2.30(2.12-6.36)		101	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.506	3100356	1.61		64.4	22081	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.543	0.010	1.695	4132258	1.76		70.3	21256	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2018 10:43:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_069.d

Injection Date: 27-Mar-2018 03:36:45 Instrument ID: A8_N

Lims ID: 320-36683-A-4-B Lab Sample ID: 320-36683-4

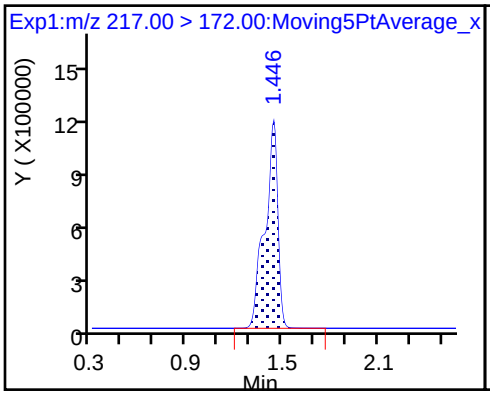
Client ID: DUPE006

Operator ID: SACINSTLCMS01 ALS Bottle#: 48 Worklist Smp#: 19

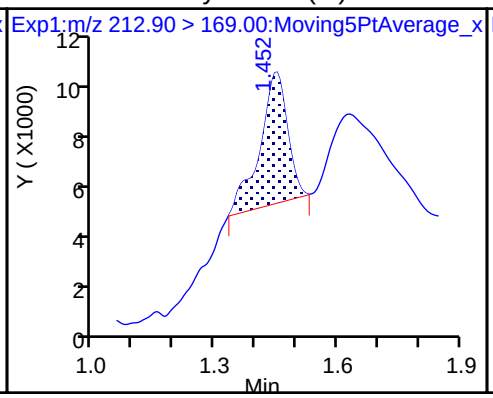
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

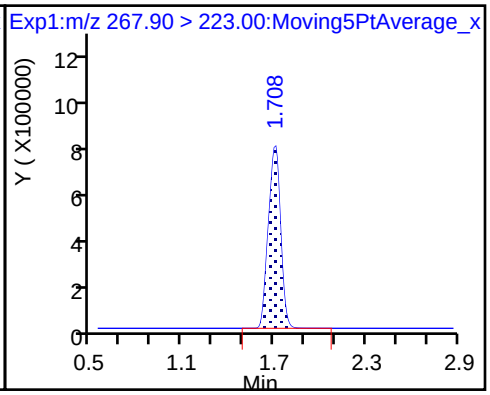
D 1 13C4 PFBA



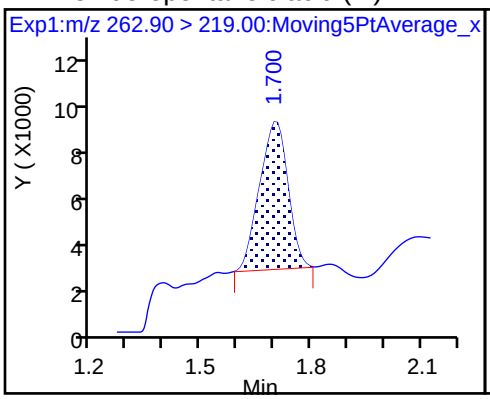
2 Perfluorobutyric acid (M)



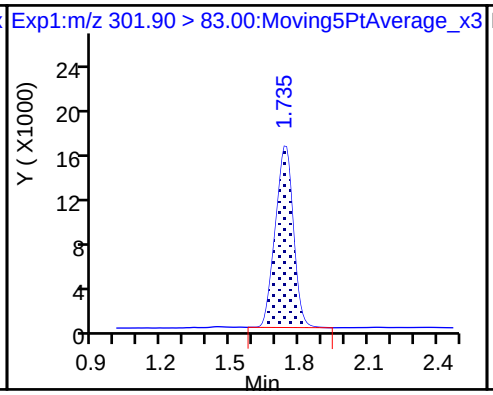
D 3 13C5-PFPeA



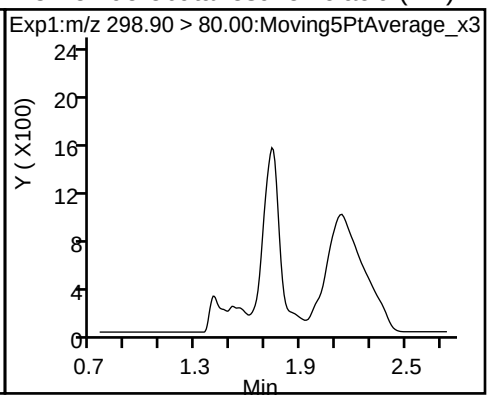
4 Perfluoropentanoic acid (M)



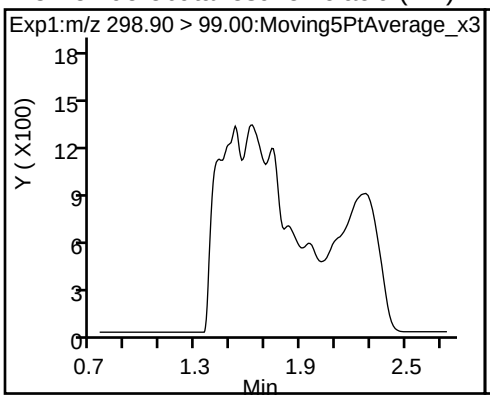
D 47 13C3-PFBS



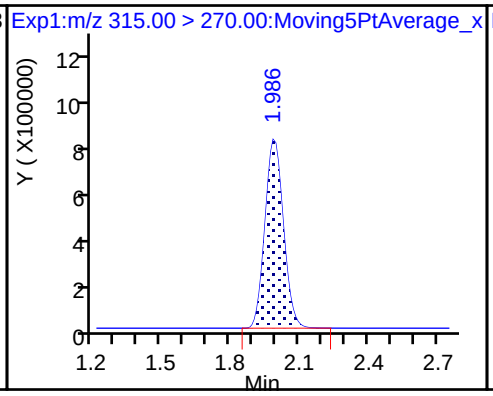
5 Perfluorobutanesulfonic acid (ND)



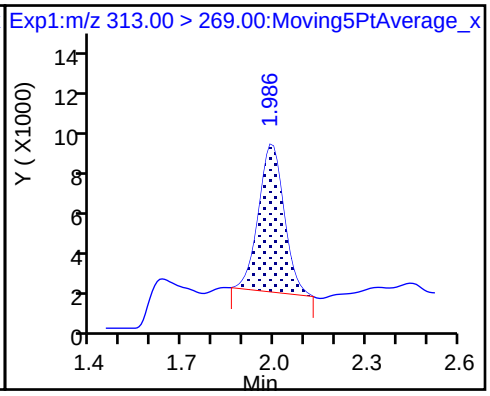
5 Perfluorobutanesulfonic acid (ND)



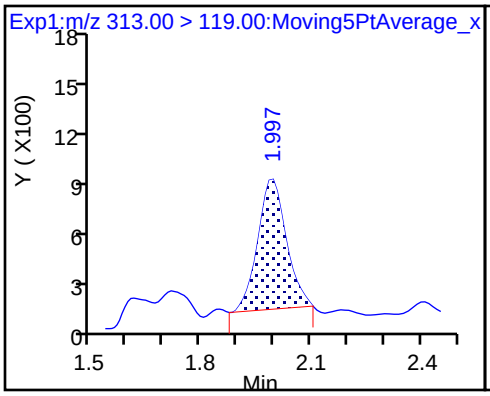
D 7 13C2 PFHxA



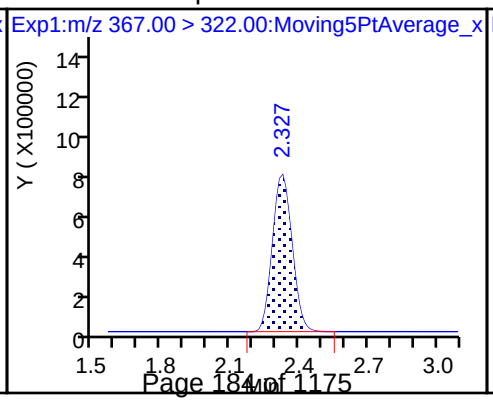
6 Perfluorohexanoic acid



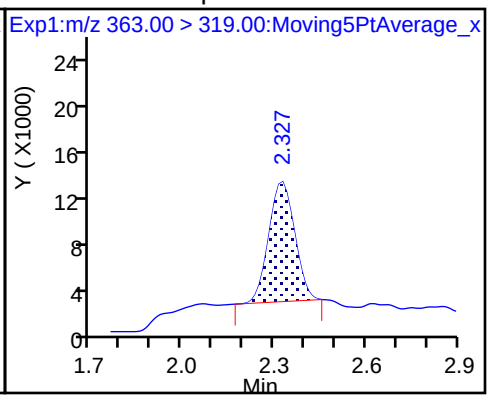
6 Perfluorohexanoic acid



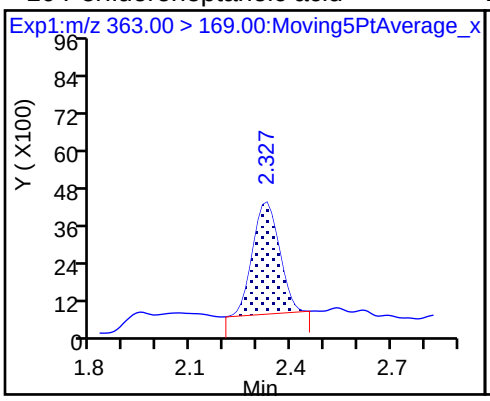
D 9 13C4-PFHpA



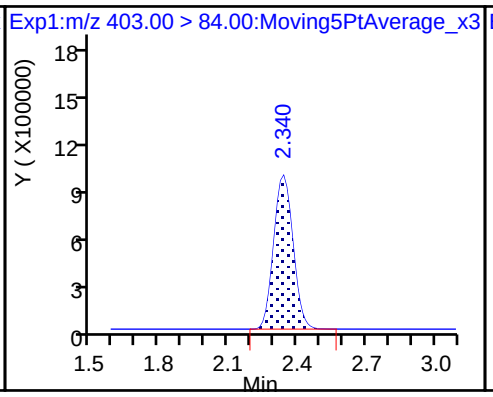
10 Perfluoroheptanoic acid



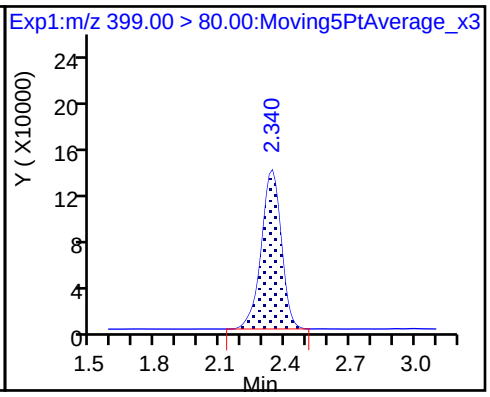
10 Perfluoroheptanoic acid



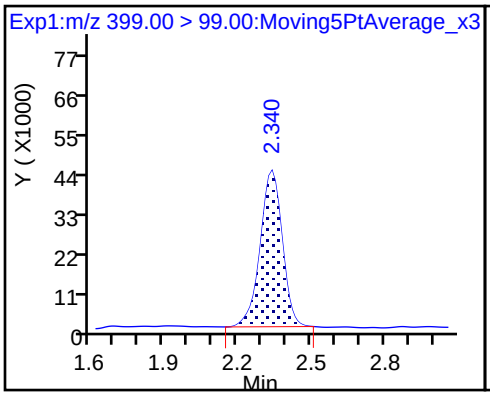
D 11 18O2 PFHxS



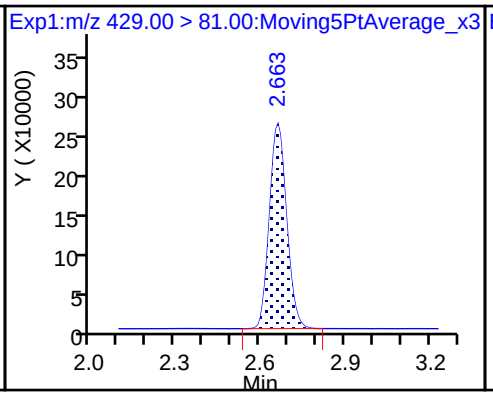
8 Perfluorohexanesulfonic acid



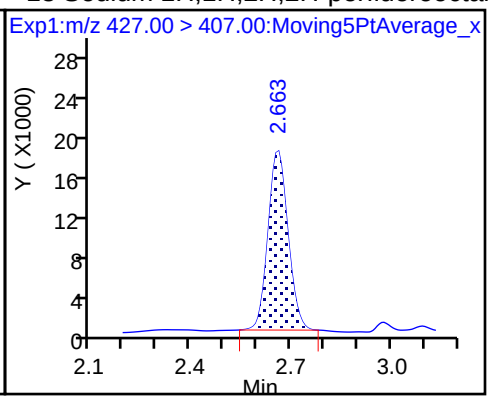
8 Perfluorohexanesulfonic acid



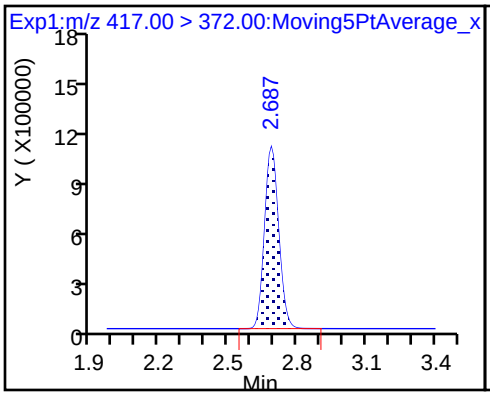
D 12 M2-6:2FTS



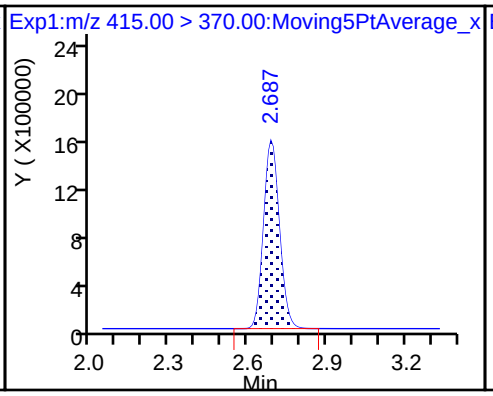
13 Sodium 1H,1H,2H,2H-perfluorooctane



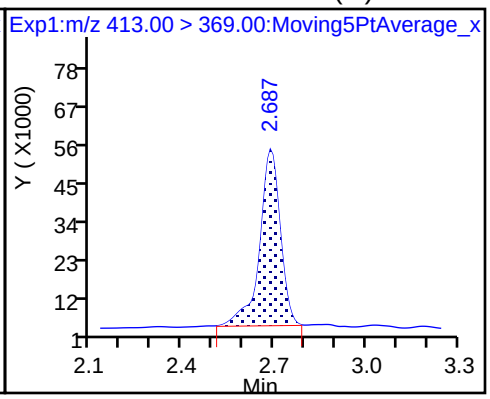
D 14 13C4 PFOA



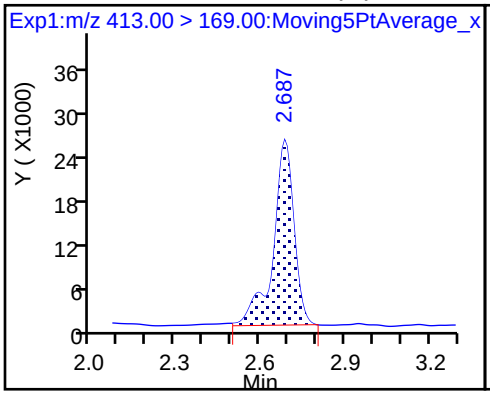
* 62 13C2-PFOA



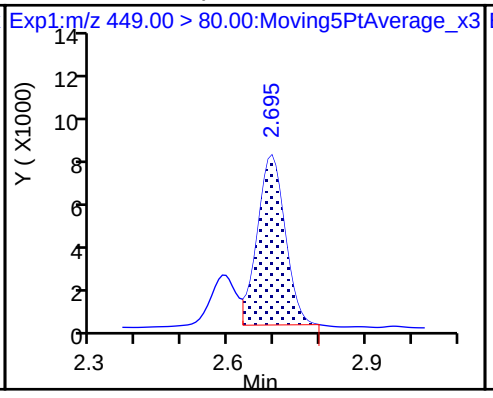
15 Perfluorooctanoic acid (M)



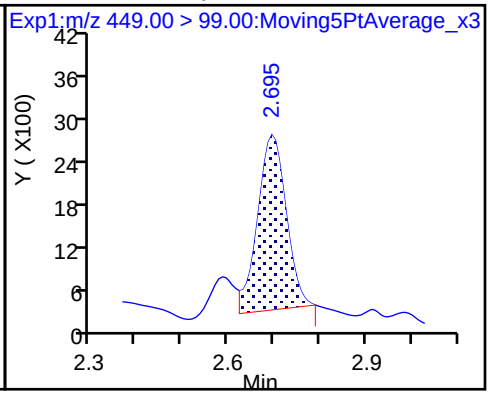
15 Perfluorooctanoic acid (M)



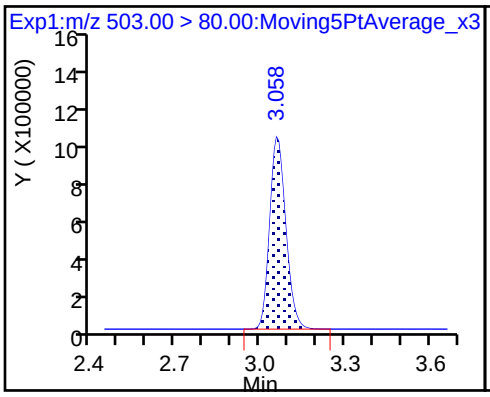
16 Perfluoroheptanesulfonic acid



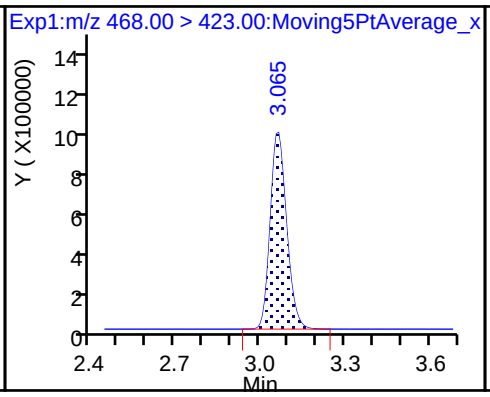
16 Perfluoroheptanesulfonic acid



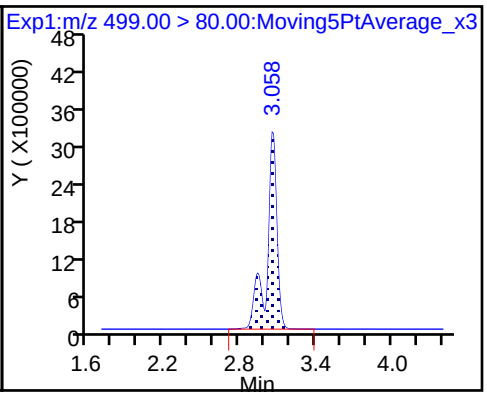
D 18 13C4 PFOS



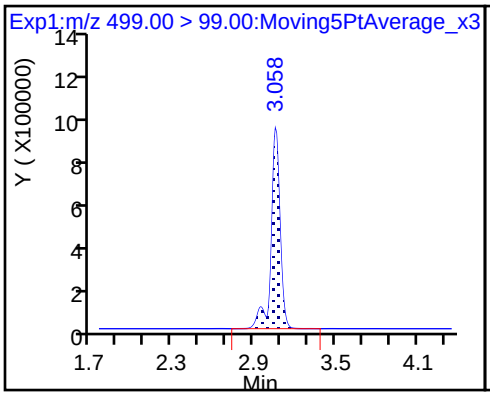
D 19 13C5 PFNA



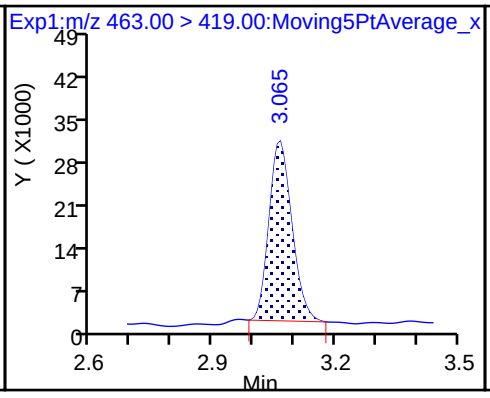
17 Perfluorooctane sulfonic acid



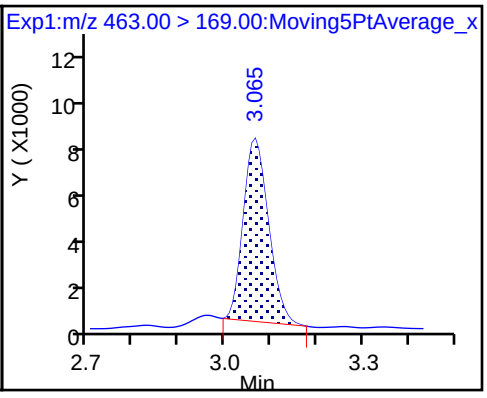
17 Perfluorooctane sulfonic acid



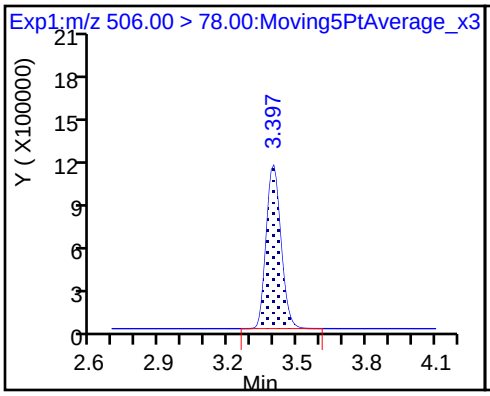
20 Perfluorononanoic acid



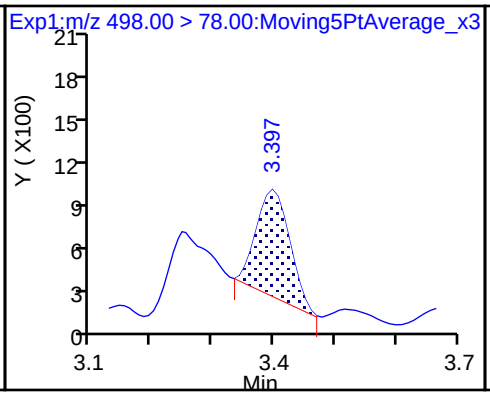
20 Perfluorononanoic acid



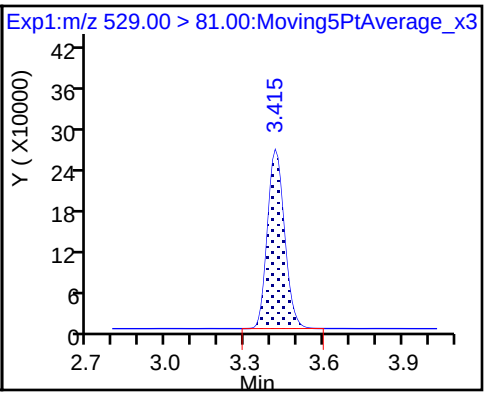
D 21 13C8 FOSA



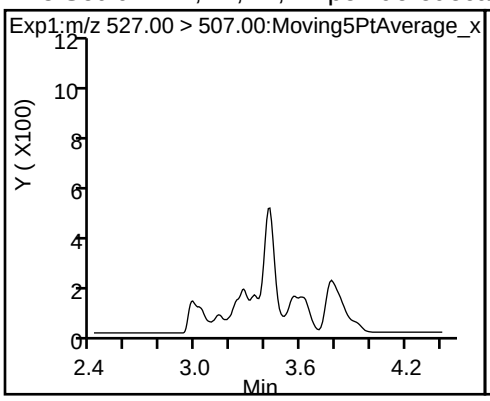
22 Perfluorooctane Sulfonamide



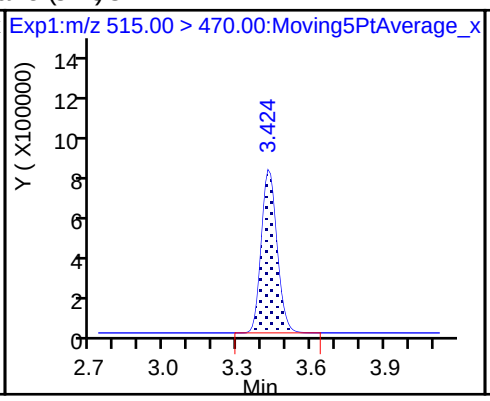
D 26 M2-8:2FTS



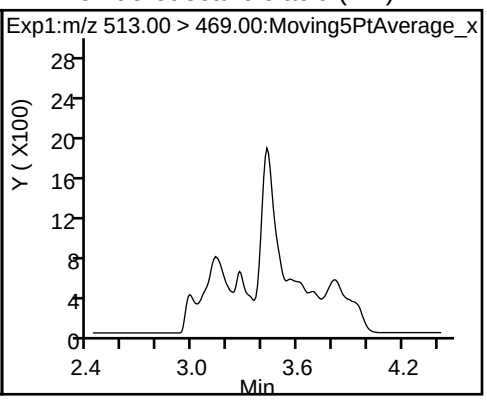
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



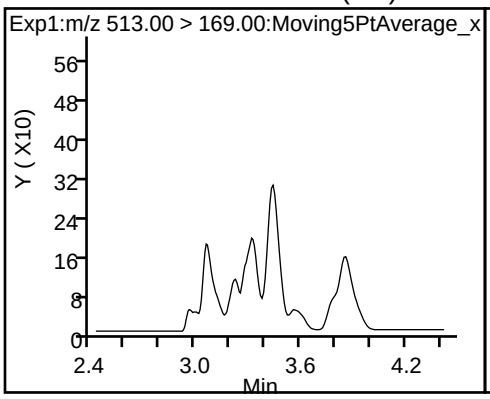
D 23 13C2 PFDA



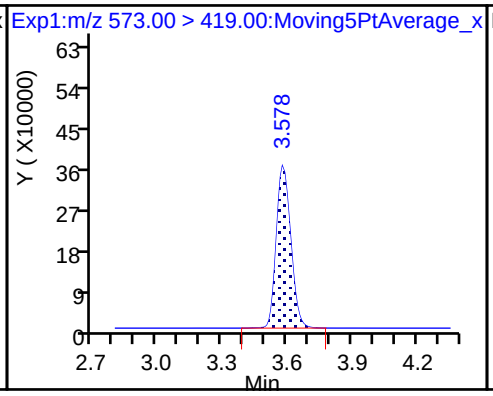
24 Perfluorodecanoic acid (ND)



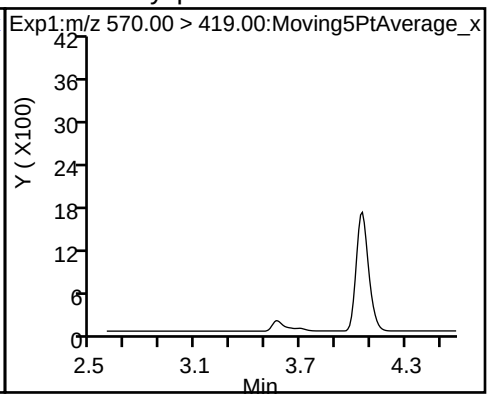
24 Perfluorodecanoic acid (ND)



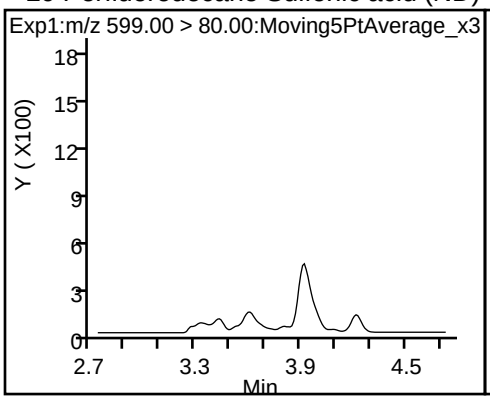
D 27 d3-NMeFOSAA



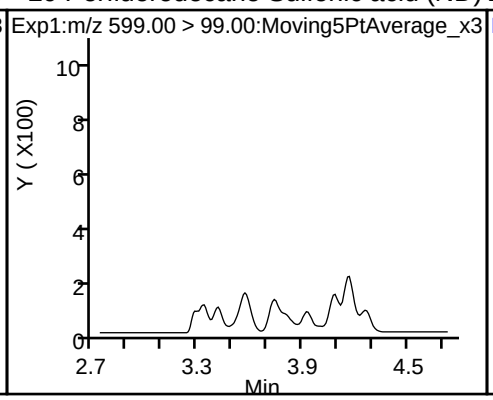
28 N-methyl perfluorooctane sulfonami (ND)



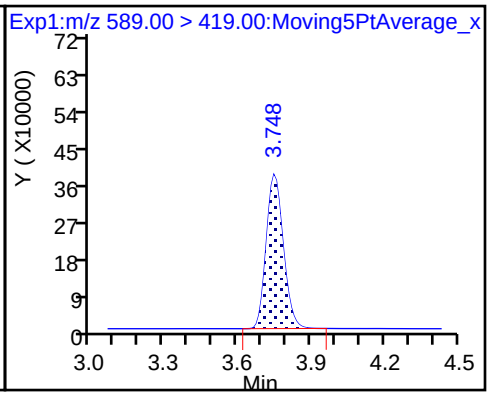
29 Perfluorodecane Sulfonic acid (ND)



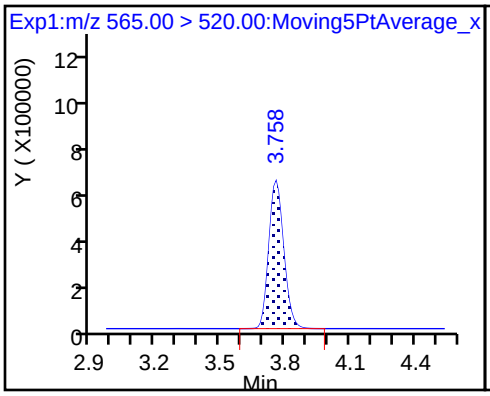
29 Perfluorodecane Sulfonic acid (ND)



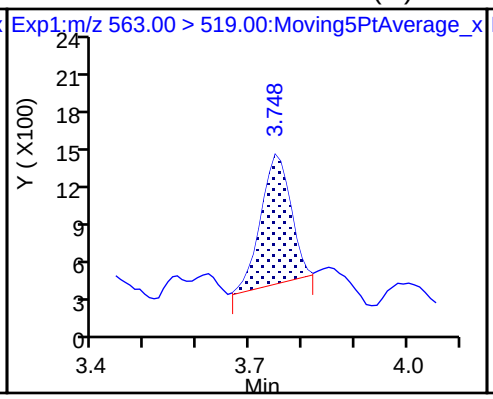
D 32 d5-NEtFOSAA



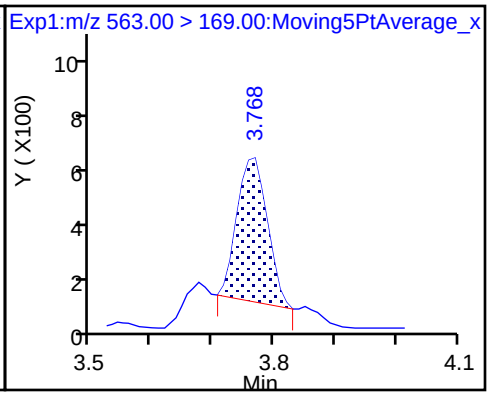
D 30 13C2 PFUnA



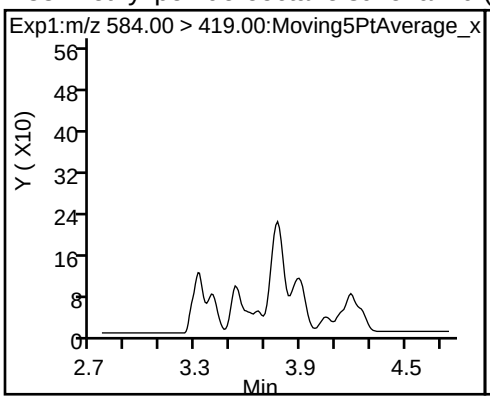
31 Perfluoroundecanoic acid (M)



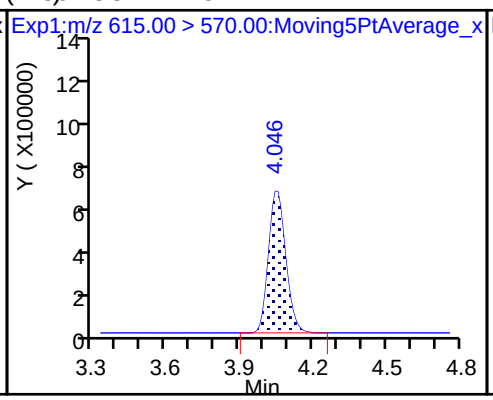
31 Perfluoroundecanoic acid



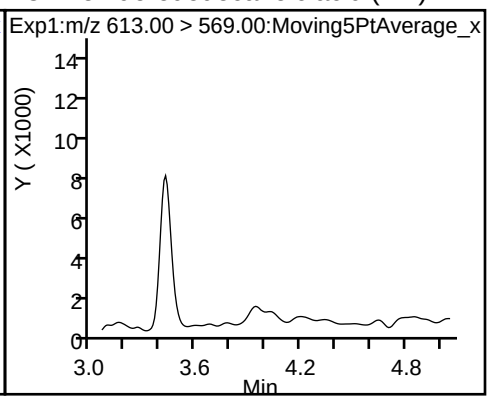
33 N-ethyl perfluorooctane sulfonamid (ND)



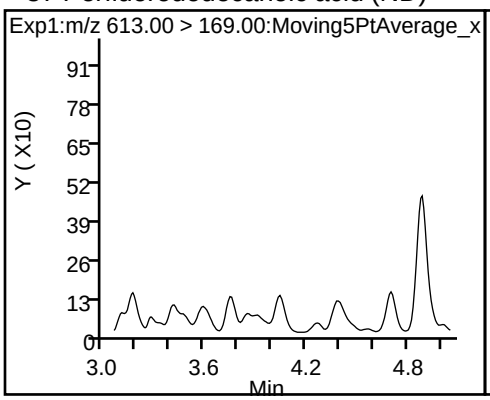
D 36 13C2 PFDoA



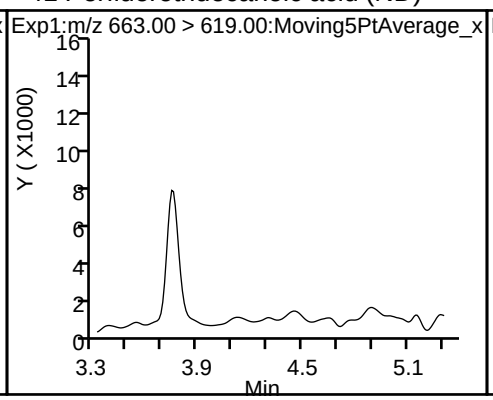
37 Perfluorododecanoic acid (ND)



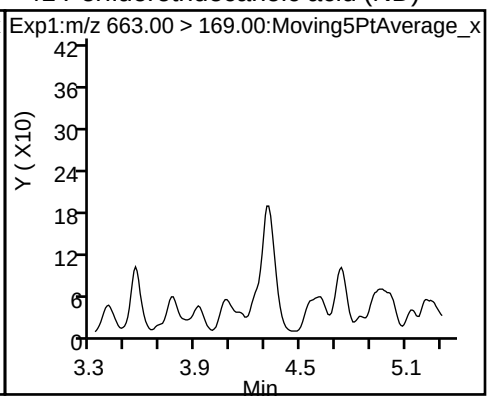
37 Perfluorododecanoic acid (ND)



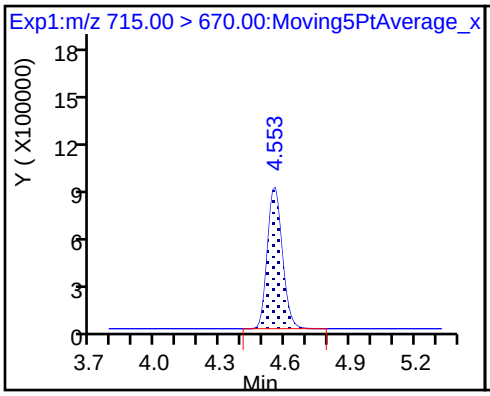
41 Perfluorotridecanoic acid (ND)



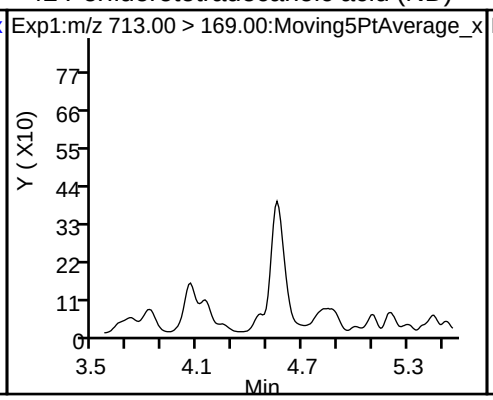
41 Perfluorotridecanoic acid (ND)



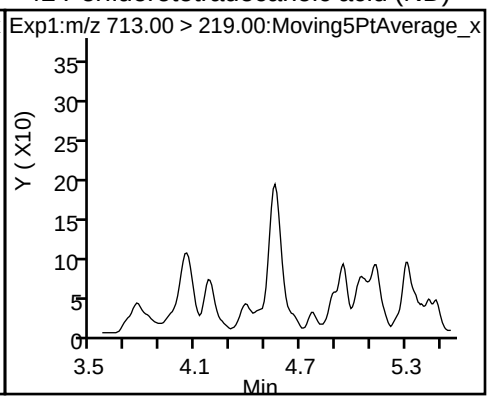
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: DUPE006 DL | Lab Sample ID: 320-36683-4 DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_016.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 00:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/21/2018 23:14

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 5

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.021	B D	0.0026	0.0010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	59		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_016.d
Lims ID: 320-36683-A-4-A
Client ID: DUPE006
Sample Type: Client
Inject. Date: 21-Mar-2018 23:14:07 ALS Bottle#: 19 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-36683-a-4-a 5X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:52:48 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:29:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.452	1.446	0.006	0.539	1043695	0.3793		75.9	12586	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.459	1.453	0.005	1.004	9919	0.005043			3.6	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	724209	0.3967		79.3	16876	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	15838	0.3801		81.7	110	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	810762	0.4016		80.3	24160	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	797222	0.4002		80.0	22319	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.328	2.328	0.0	1.000	12520	0.007591			23.3	R
363.00 > 169.00	2.341	2.328	0.013	1.006	3408		3.67(1.13-3.40)		43.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	882622	0.3592		75.9	24850	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	155588	0.0749			1271	
399.00 > 99.00	2.341	2.341	0.0	1.000	42981		3.62(1.50-4.49)		181	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.665	0.007	0.991	146090	0.3538		74.5	4265	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.673	-0.001	1.000	9793	0.0183			765	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.688	0.008	1.000	828652	0.4067		81.3	21684	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		1086869	0.5000			25225	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	43976	0.0235			12.6	
413.00 > 169.00	2.696	2.697	-0.001	1.000	22578		1.95(0.84-2.52)		51.9	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	506116	0.2831		59.2	7844	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	625955	0.3484		69.7	17289	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	2405498	2.04			11002	
499.00 > 99.00	3.065	3.065	0.0	1.000	563836		4.27(2.31-6.93)		5389	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	18865	0.0151			27.0	
463.00 > 169.00	3.065	3.072	-0.007	0.998	4780		3.95(1.90-5.69)		157	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.260	485293	0.2013		40.3	9840	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.398	0.009	1.003	2704	0.002826			41.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.415	0.010	1.270	115196	0.2066		43.1	2835	
D 23 13C2 PFDA										
515.00 > 470.00	3.434	3.424	0.010	1.274	375173	0.2382		47.6	12140	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.426	-0.001	1.000	1742	0.005675			50.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	87057	0.1050		21.0	3817	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.394	202502	0.1437		28.7	5242	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	83568	0.0885		17.7	627	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.504	107221	0.0671		13.4	1286	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.693	41070	0.0210		4.2	396	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_016.d

Injection Date: 21-Mar-2018 23:14:07 Instrument ID: A8_N

Lims ID: 320-36683-A-4-A Lab Sample ID: 320-36683-4

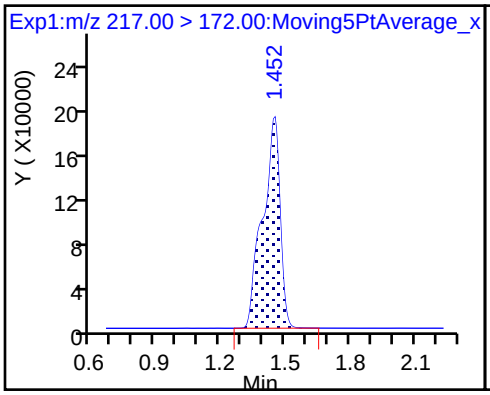
Client ID: DUPE006

Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 11

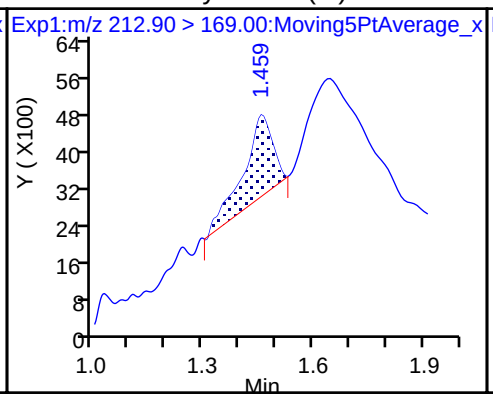
Injection Vol: 2.0 ul Dil. Factor: 5.0000

Method: A8_N Limit Group: LC PFC ICAL

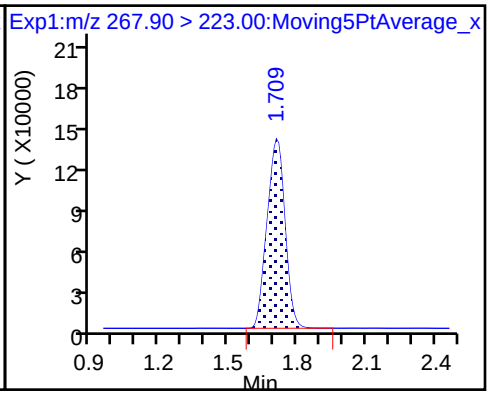
D 1 13C4 PFBA



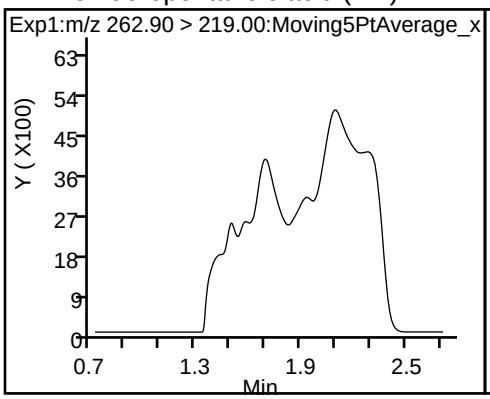
2 Perfluorobutyric acid (M)



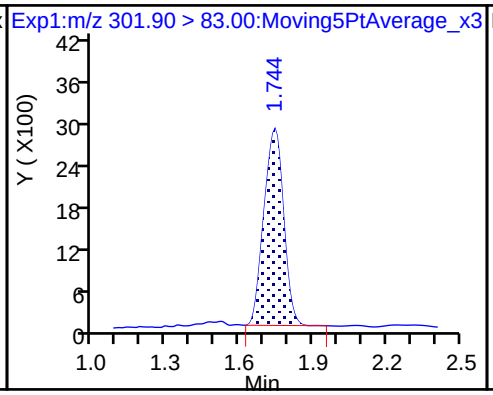
D 3 13C5-PFPeA



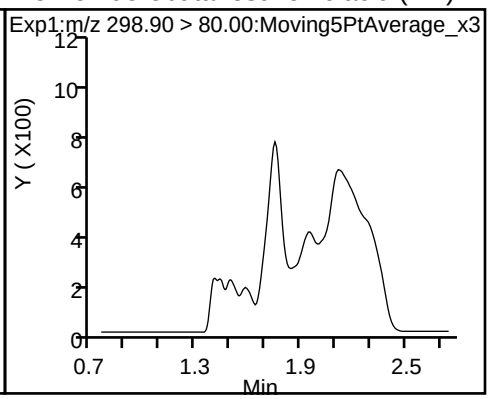
4 Perfluoropentanoic acid (ND)



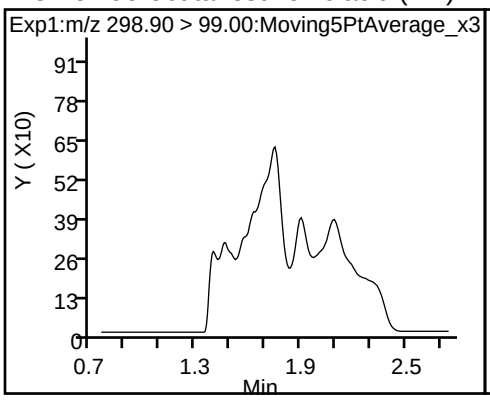
D 47 13C3-PFBS



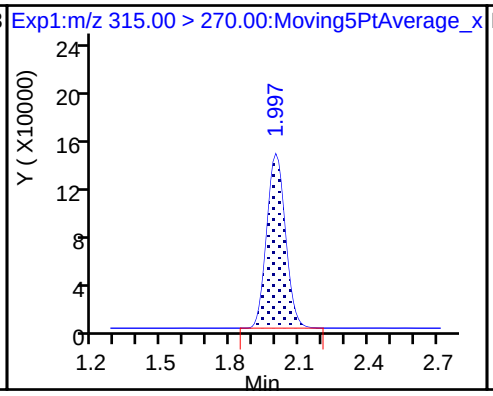
5 Perfluorobutanesulfonic acid (ND)



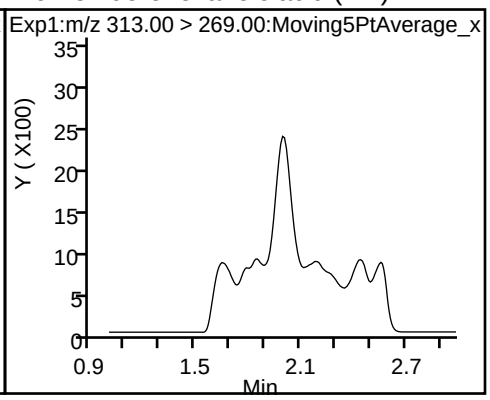
5 Perfluorobutanesulfonic acid (ND)



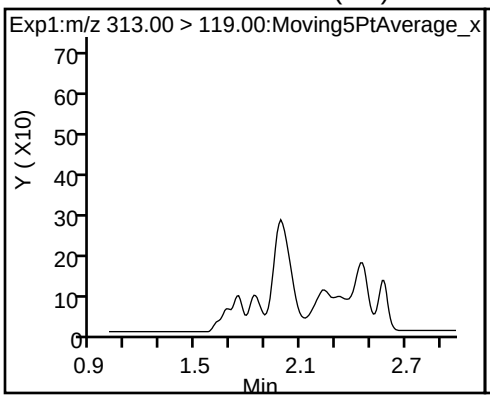
D 7 13C2 PFHxA



6 Perfluorohexanoic acid (ND)



6 Perfluorohexanoic acid (ND)



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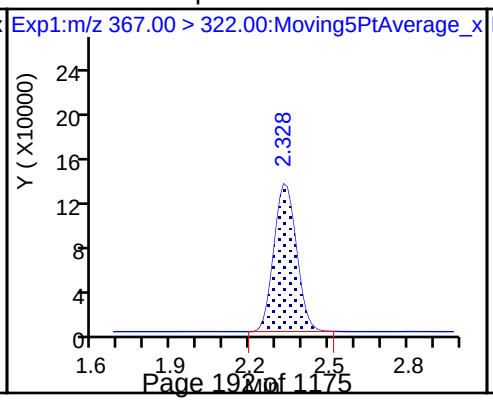
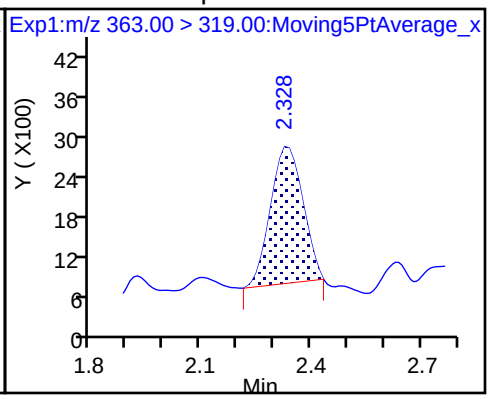


10 Perfluoroheptanoic acid



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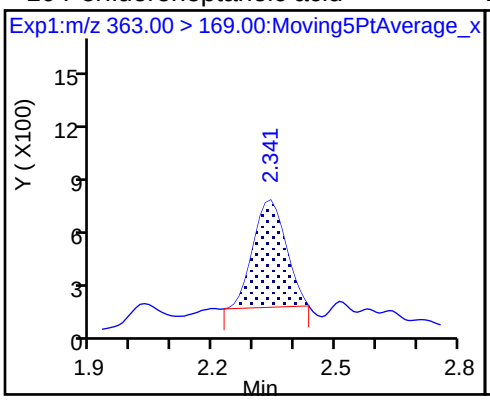
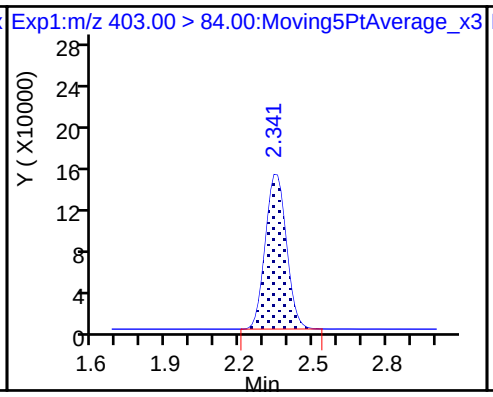
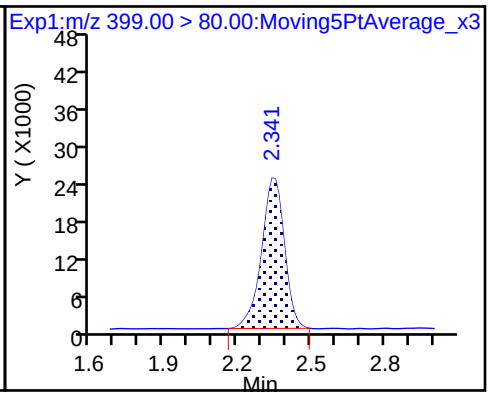


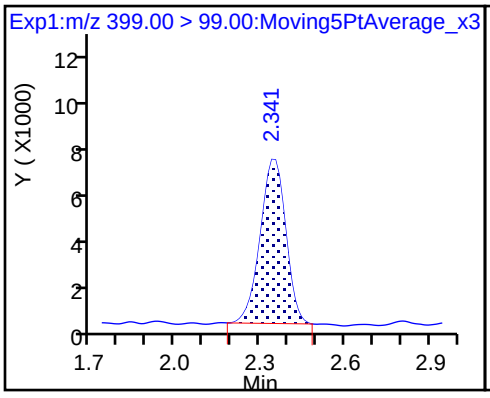
D 11 18O2 PFHxS



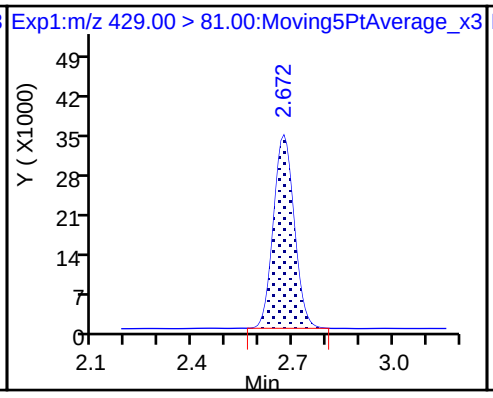
8 Perfluorohexanesulfonic acid



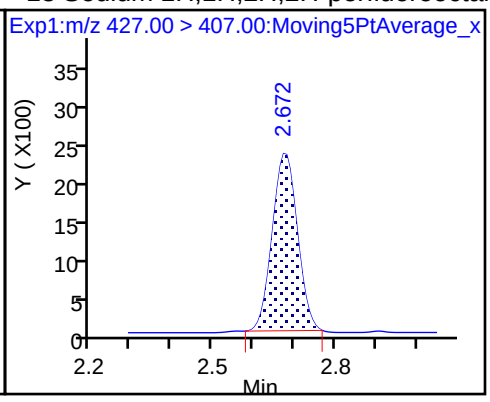
8 Perfluorohexanesulfonic acid



D 12 M2-6:2FTS



13 Sodium 1H,1H,2H,2H-perfluorooctane



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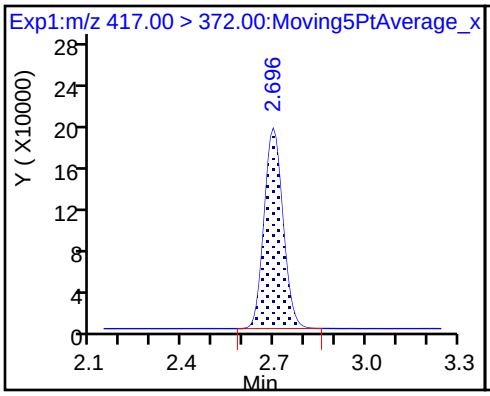
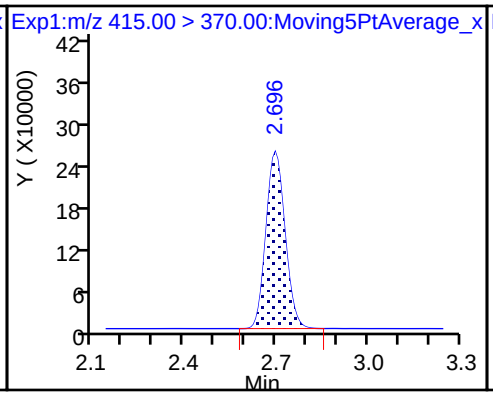
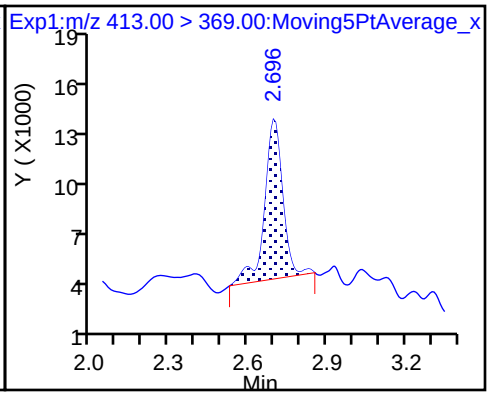


* 62 13C2-PFOA



15 Perfluorooctanoic acid



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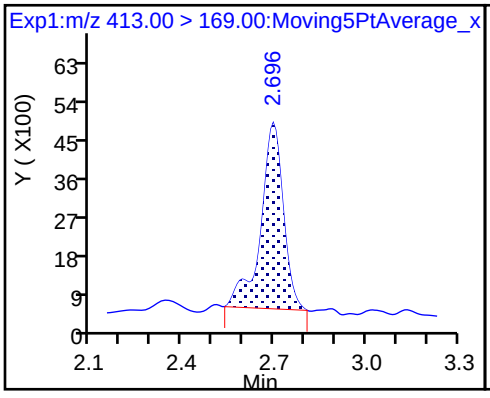
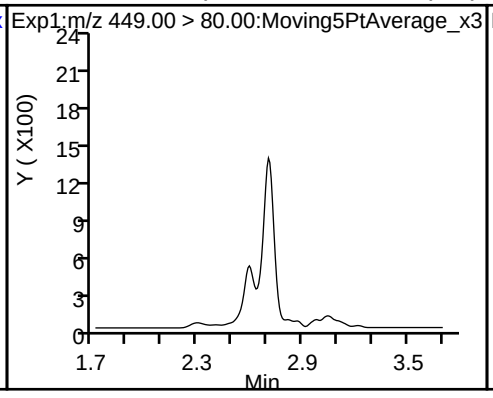


16 Perfluoroheptanesulfonic acid (ND)



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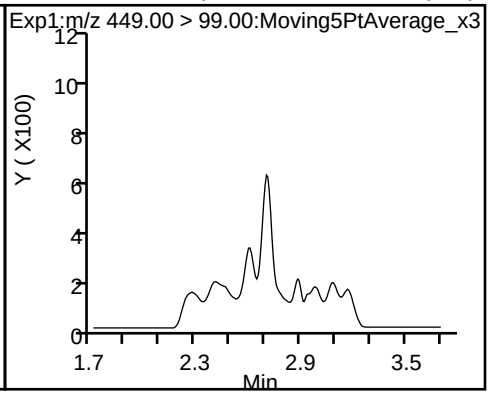
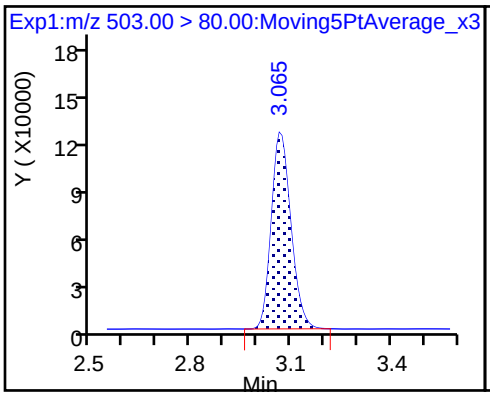


D 18 13C4 PFOS



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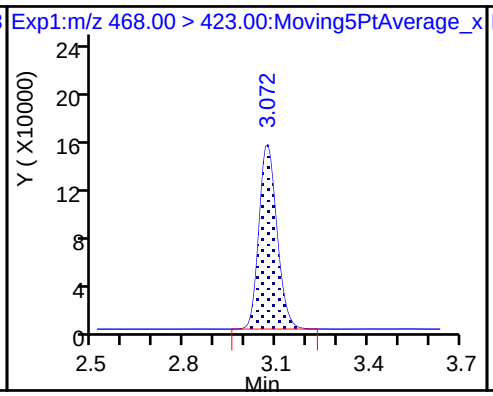

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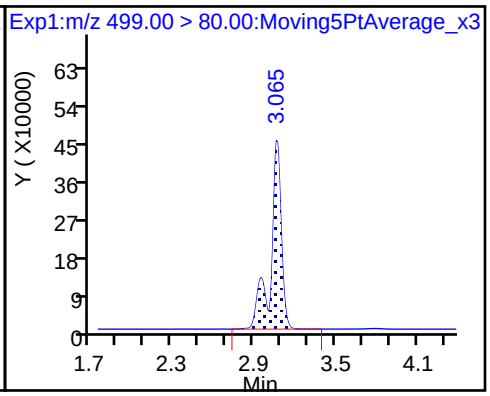

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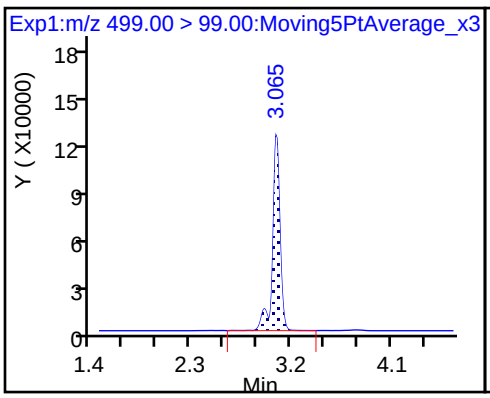
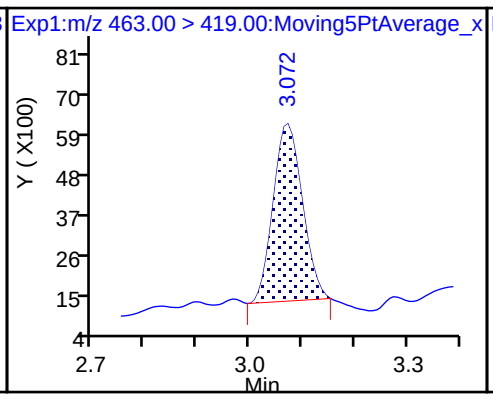


20 Perfluorononanoic acid



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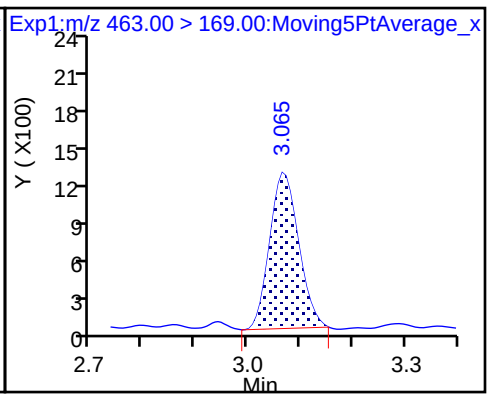
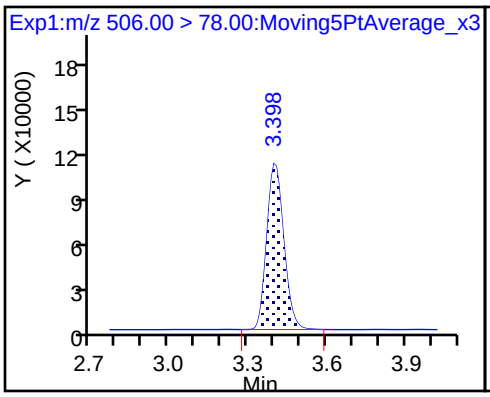
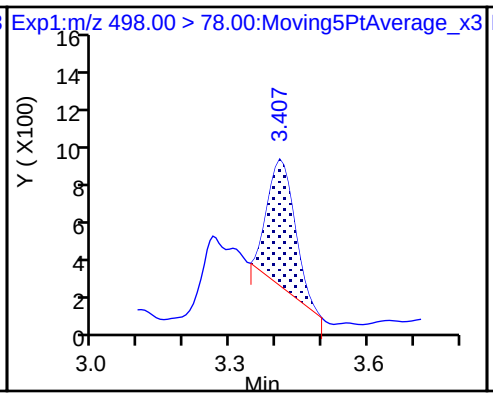


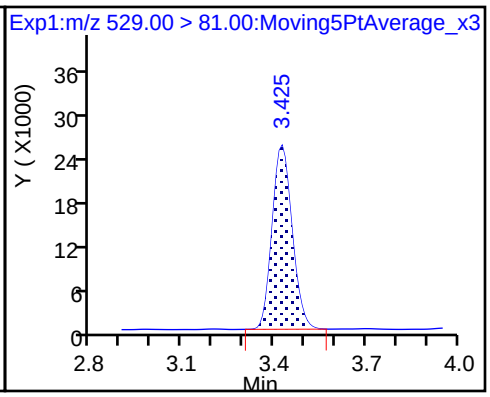
D 21 13C8 FOSA



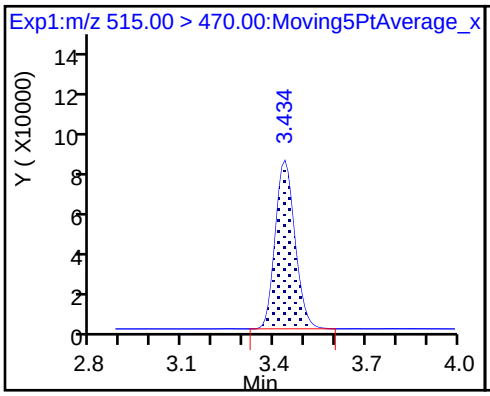
22 Perfluorooctane Sulfonamide



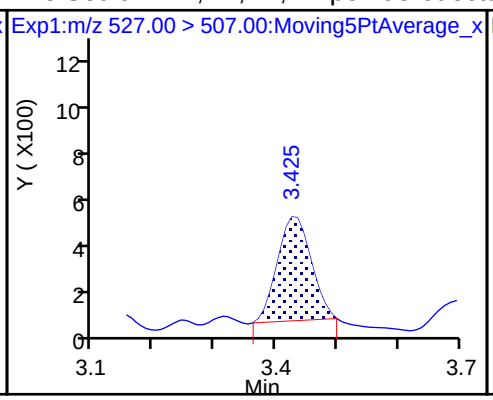
D 26 M2-8:2FTS



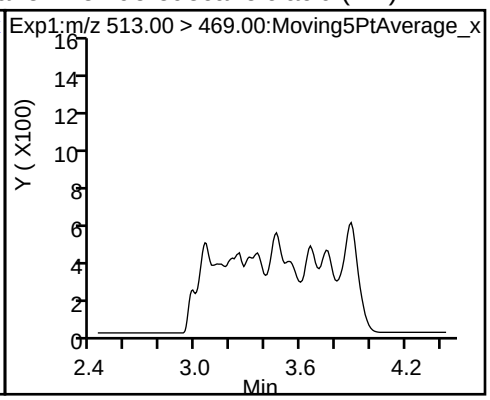
D 23 13C2 PFDA



25 Sodium 1H,1H,2H,2H-perfluorodecan



24 Perfluorodecanoic acid (ND)



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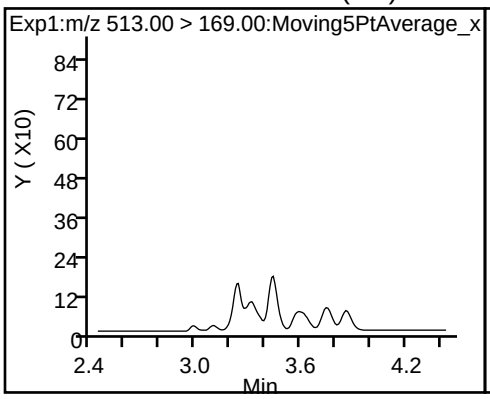
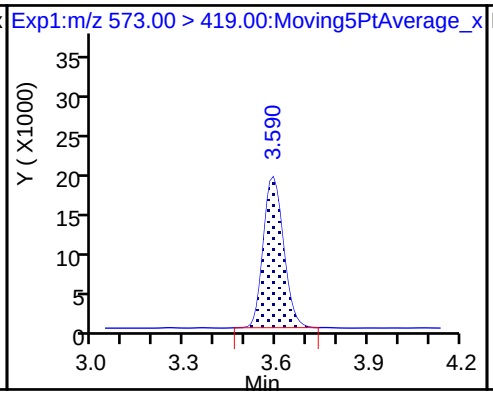
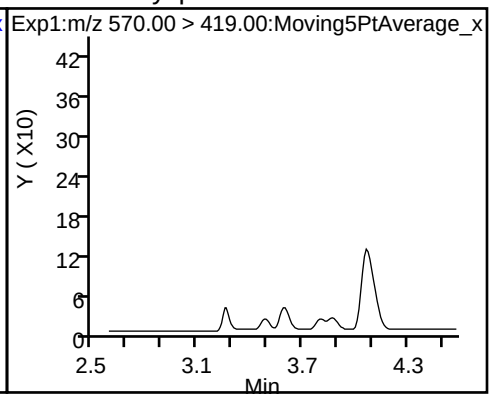


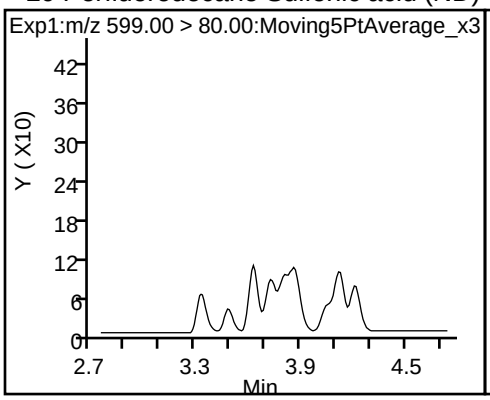
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid (ND)



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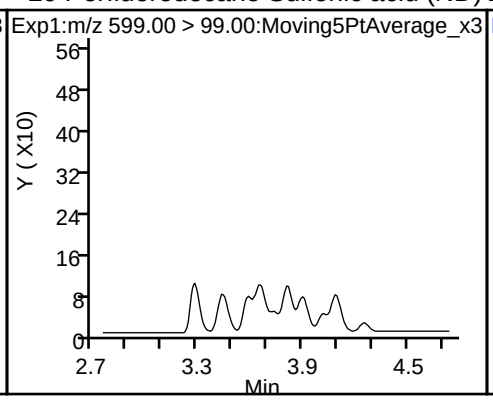
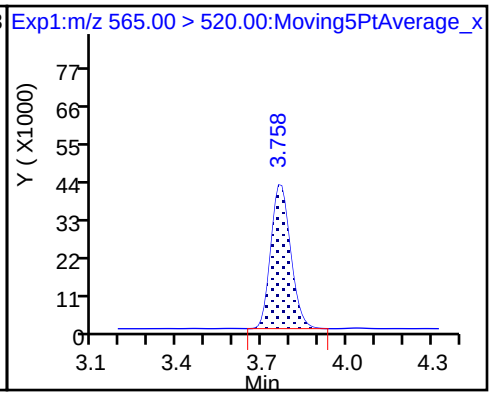


D 30 13C2 PFUnA



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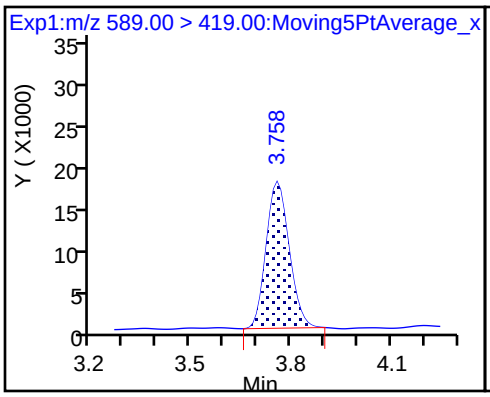
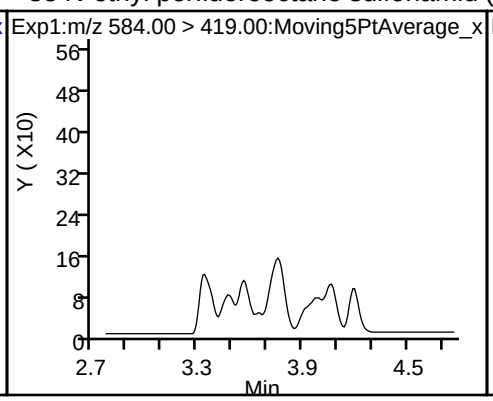
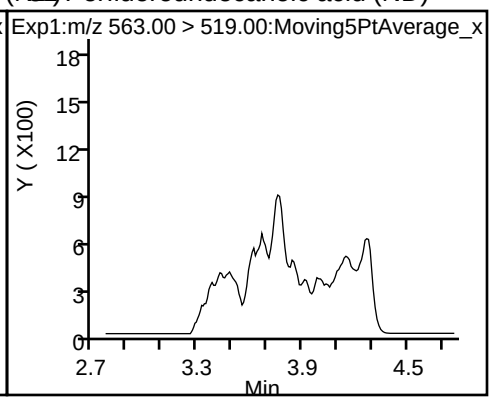


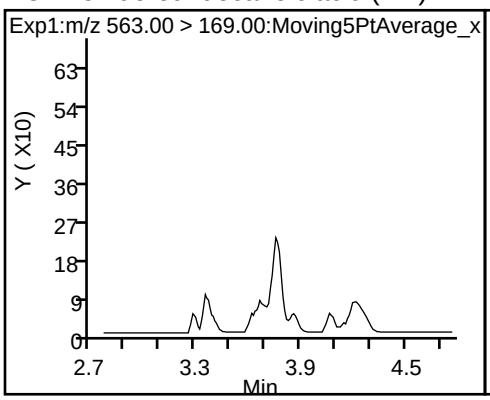
33 N-ethyl perfluorooctane sulfonamid (ND)



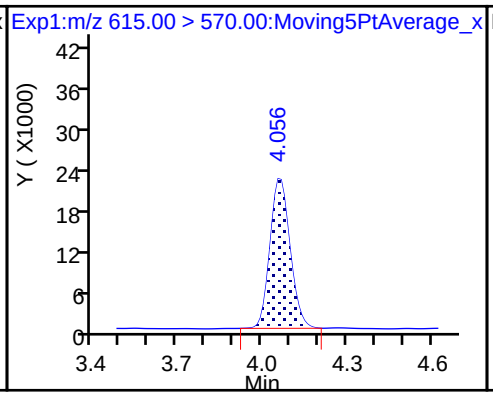
31 Perfluoroundecanoic acid (ND)



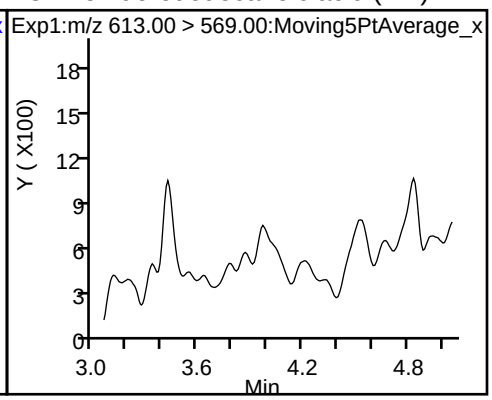
31 Perfluoroundecanoic acid (ND)



D 36 13C2 PFDoA



37 Perfluorododecanoic acid (ND)



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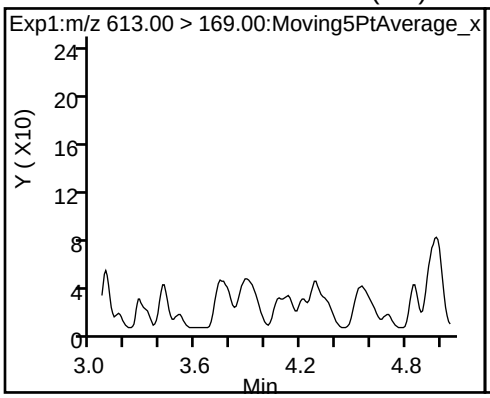

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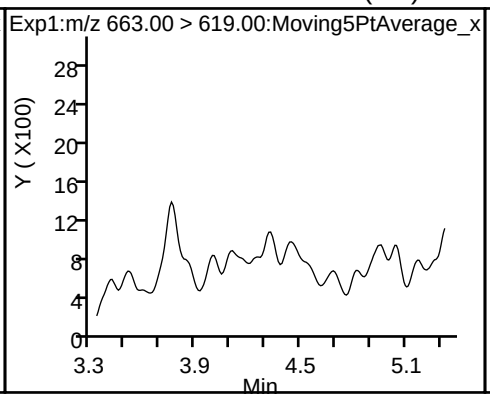

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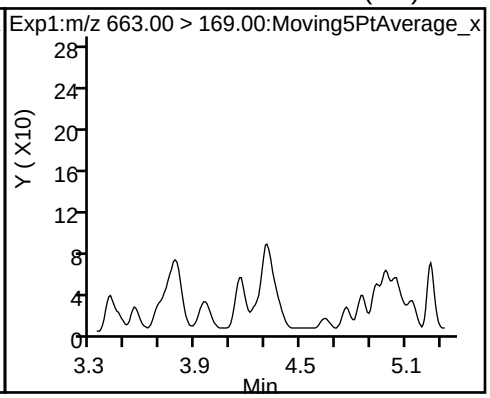
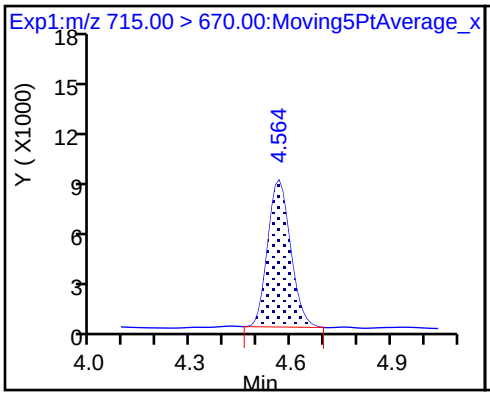
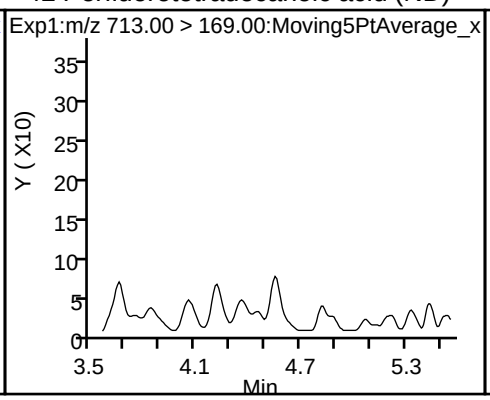


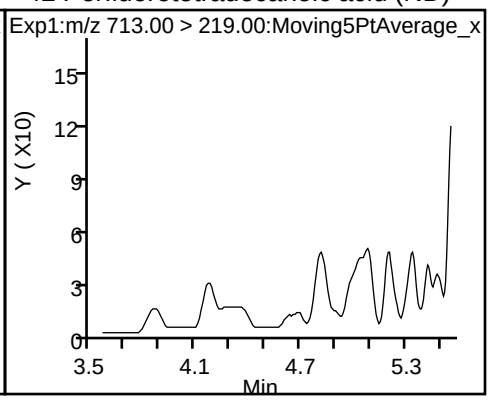
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013(5'-7') | Lab Sample ID: 320-36683-5

Matrix: Solid | Lab File ID: 2018.03.20LLA_034.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 10:10

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/21/2018 00:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 15.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00018	J B	0.00023	0.000033
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00027		0.00023	0.000090
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00041		0.00023	0.000049
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00011	J	0.00023	0.000034
335-67-1	Perfluorooctanoic acid (PFOA)	0.00026		0.00023	0.00010
375-95-1	Perfluorononanoic acid (PFNA)	0.00032		0.00023	0.000042
335-76-2	Perfluorodecanoic acid (PFDA)	0.000026	U	0.00023	0.000026
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000042	U	0.00023	0.000042
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000078	U	0.00023	0.000078
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000060	U	0.00023	0.000060
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000063	U	0.00023	0.000063
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000029	U	0.00023	0.000029
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0019		0.00023	0.000036
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000096	J	0.00023	0.000041
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000046	U *	0.00023	0.000046
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000096	U	0.00023	0.000096
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00046	U	0.0023	0.00046
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00043	U	0.0023	0.00043
27619-97-2	6:2FTS	0.00018	J	0.0023	0.00018
39108-34-4	8:2FTS	0.00029	U	0.0023	0.00029

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013(5'-7') | Lab Sample ID: 320-36683-5

Matrix: Solid | Lab File ID: 2018.03.20LLA_034.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 10:10

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/21/2018 00:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 15.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	72		25-150
STL01893	13C5 PFPeA	75		25-150
STL00993	13C2 PFHxA	73		25-150
STL01892	13C4-PFHpA	77		25-150
STL00990	13C4 PFOA	75		25-150
STL00995	13C5 PFNA	50		25-150
STL00996	13C2 PFDA	39		25-150
STL00997	13C2 PFUnA	18	*	25-150
STL00998	13C2 PFDoA	8	*	25-150
STL02116	13C2-PFTeDA	1	*	25-150
STL02337	13C3-PFBS	68		25-150
STL00994	18O2 PFHxS	68		25-150
STL00991	13C4 PFOS	42		25-150
STL01056	13C8 FOSA	33		25-150
STL02118	d3-NMeFOSAA	14	*	25-150
STL02117	d5-NEtFOSAA	13	*	25-150
STL02279	M2-6:2FTS	65		25-150
STL02280	M2-8:2FTS	32		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_034.d
Lims ID: 320-36683-A-5-A
Client ID: SB013(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 00:36:00 ALS Bottle#: 24 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-5-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:01:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.441	1.441	0.0	0.537	4188414	1.79		71.8	80794	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.446	-0.005	1.000	119004	0.0766			40.0	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3075452	1.87		74.7	82772	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.709	-0.009	1.000	164269	0.1143			40.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	64050	1.58		67.8	269	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	3361053	1.83		73.2	108715	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.997	-0.021	0.995	236784	0.1745			375	
313.00 > 119.00	1.976	1.997	-0.021	0.995	22578		10.49(5.03-15.10)		446	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3415729	1.91		76.5	68206	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	64608	0.0456			81.0	
363.00 > 169.00	2.315	2.328	-0.013	1.000	25142		2.57(1.13-3.40)		271	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	3837077	1.61		68.1	76649	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	1498720	0.8282			2336	
399.00 > 99.00	2.328	2.341	-0.013	1.000	472379		3.17(1.50-4.49)		1134	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	707276	1.55		65.1	11271	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	38680	0.0780			1071	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3223224	1.87		74.8	79697	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.695	-0.014	1.000	159789	0.1110			45.2	
413.00 > 169.00	2.681	2.695	-0.014	1.000	94840		1.68(0.84-2.52)		275	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4570493	2.50			144321	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	37696	0.0410			264	
449.00 > 99.00	2.681	2.703	-0.022	0.997	9897		3.81(1.94-5.82)		145	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	1670603	1.00		42.0	33750	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.058	-0.007	1.138	1734500	1.26		50.3	36890	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.051	3.067	-0.016	1.000	42098486	55.6			62472	E
499.00 > 99.00	3.051	3.067	-0.016	1.000	12254183		3.44(2.31-6.93)		80920	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.067	-0.016	1.000	95925	0.1356			167	
463.00 > 169.00	3.058	3.067	-0.009	1.002	21395		4.48(1.90-5.69)		434	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.264	2012476	0.8343		33.4	22307	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.401	-0.012	1.000	22213	0.0284			98.9	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.408	-0.001	1.271	324191	0.7547		31.5	9058	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.417	-0.001	1.274	1121288	0.9730		38.9	20920	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.419	-0.003	1.003	5614	0.0330			219	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.570	0.0	1.332	134935	0.3546		14.2	7413	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	119742	0.3292		13.2	215	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	416784	0.4619		18.5	21771	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.762	-0.014	1.000	1648	0.0351			36.9	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.509	177141	0.2070		8.3	1230	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.544	-0.001	1.695	27934	0.0358		1.4	322	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_034.d

Injection Date: 21-Mar-2018 00:36:00 Instrument ID: A8_N

Lims ID: 320-36683-A-5-A Lab Sample ID: 320-36683-5

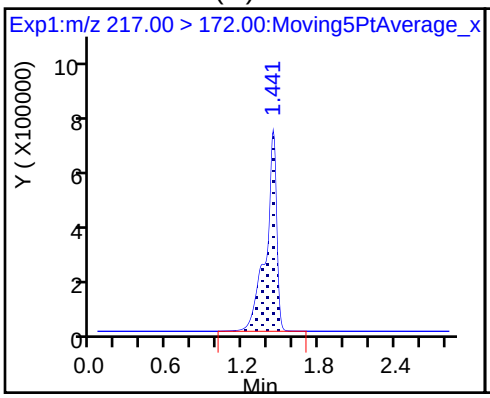
Client ID: SB013(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 13

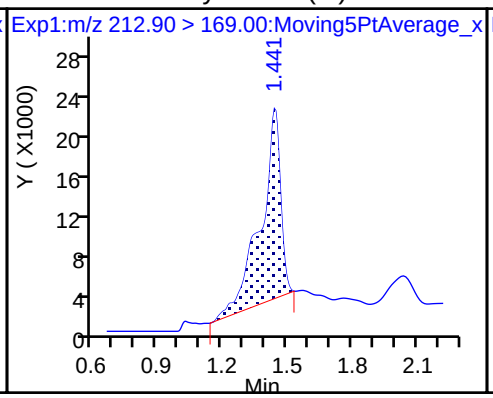
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

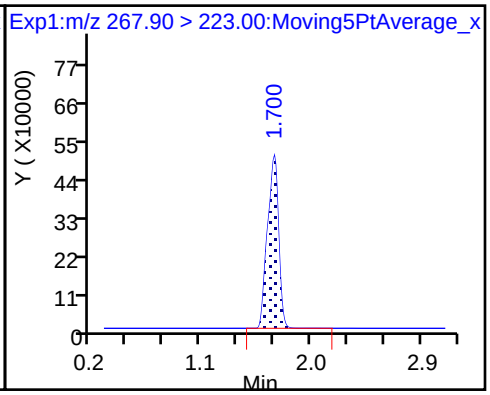
D 1 13C4 PFBA (M)



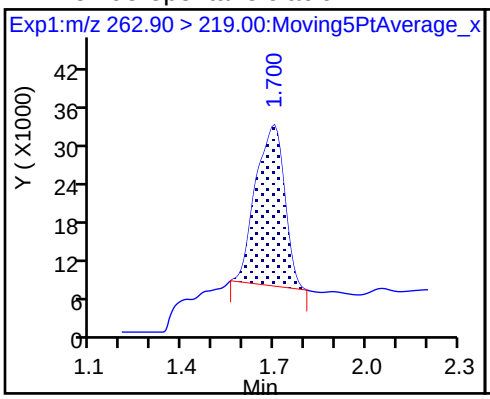
2 Perfluorobutyric acid (M)



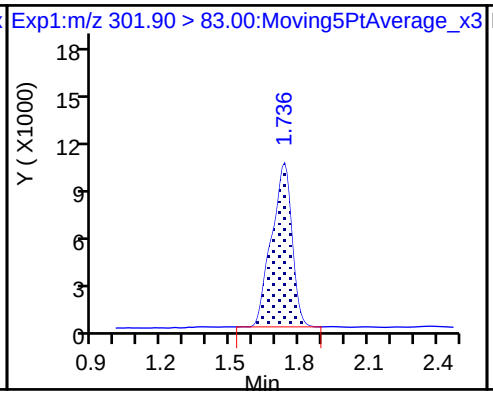
D 3 13C5-PFPeA



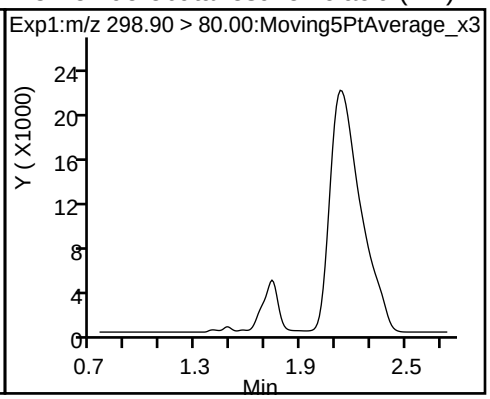
4 Perfluoropentanoic acid



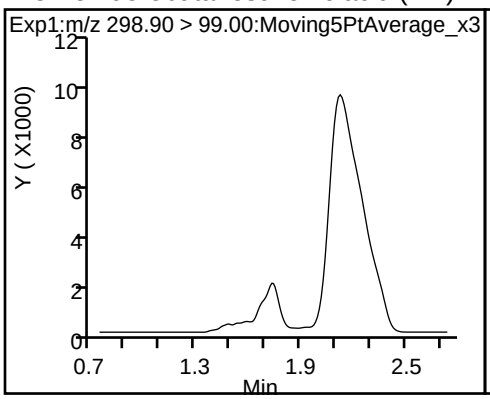
D 47 13C3-PFBS



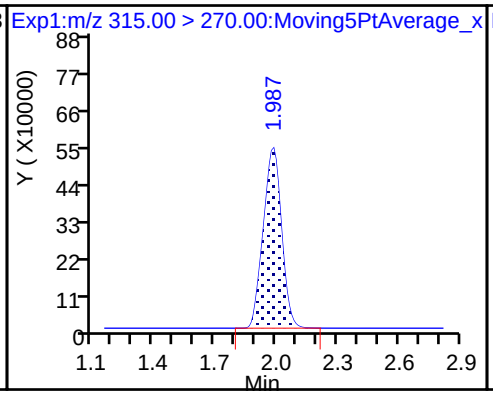
5 Perfluorobutanesulfonic acid (ND)



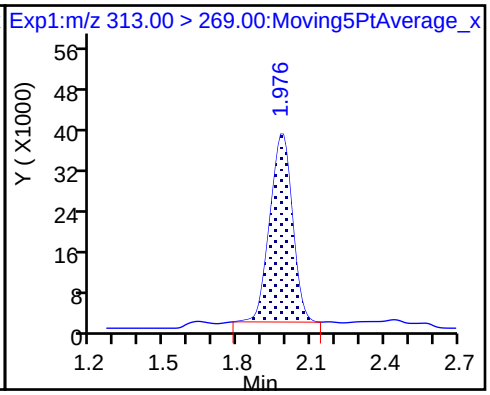
5 Perfluorobutanesulfonic acid (ND)



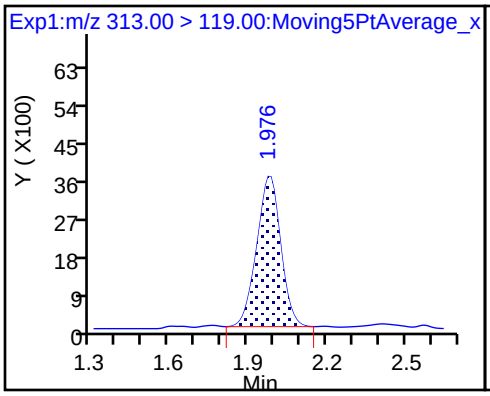
D 7 13C2 PFHxA



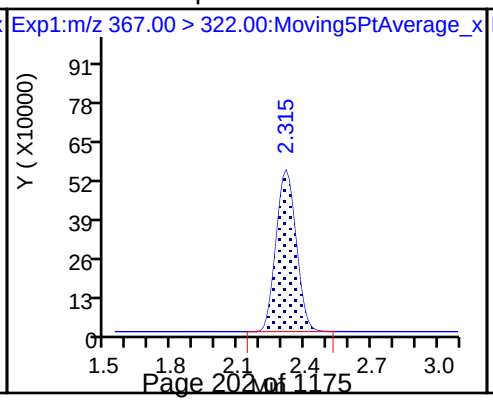
6 Perfluorohexanoic acid



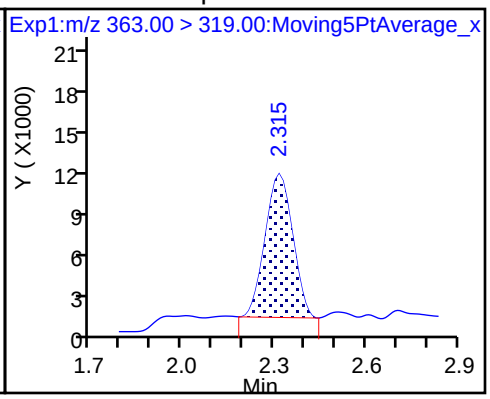
6 Perfluorohexanoic acid



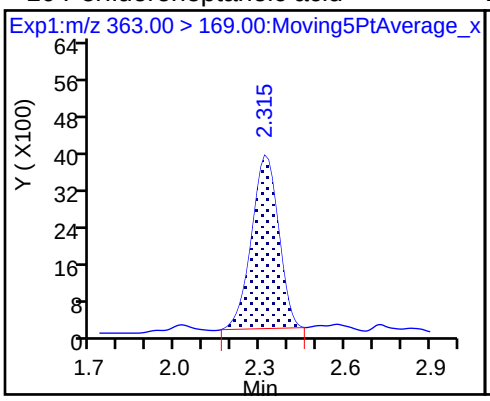
D 9 13C4-PFHpA



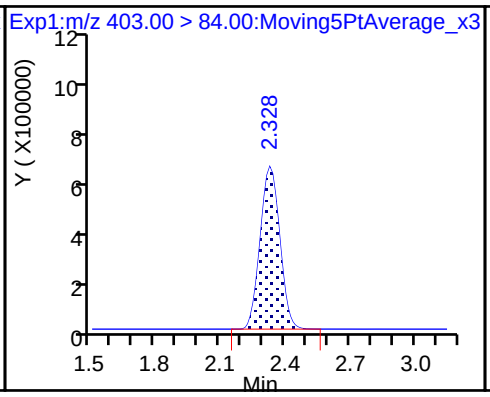
10 Perfluoroheptanoic acid



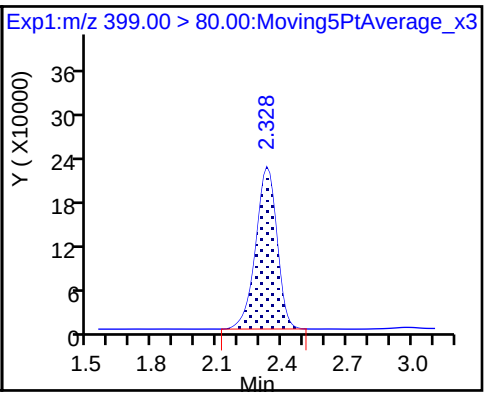
10 Perfluoroheptanoic acid



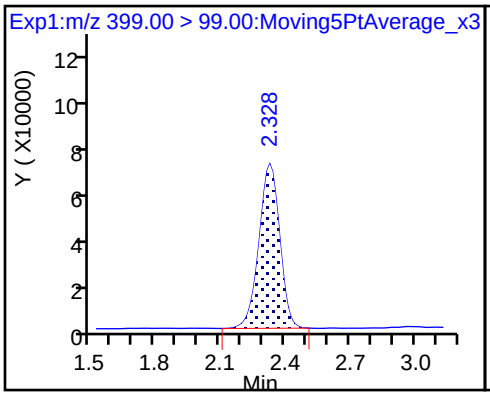
D 11 18O2 PFHxS



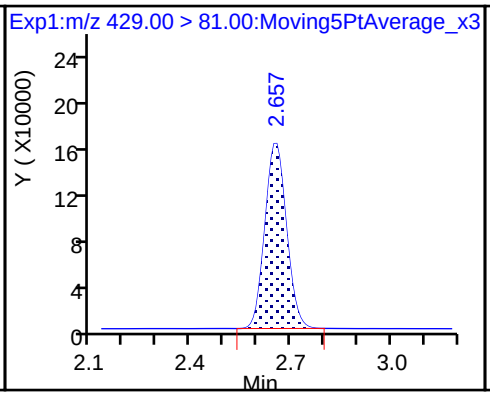
8 Perfluorohexanesulfonic acid



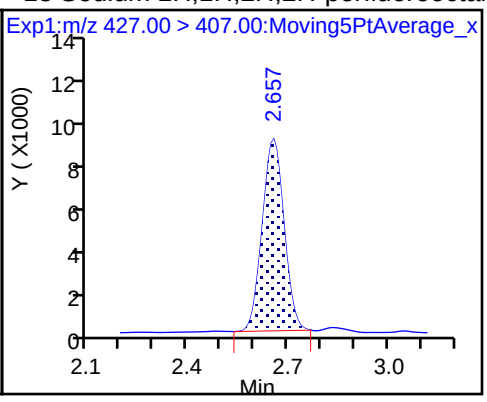
8 Perfluorohexanesulfonic acid



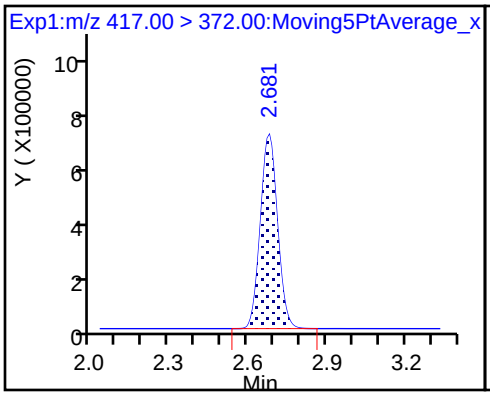
D 12 M2-6:2FTS



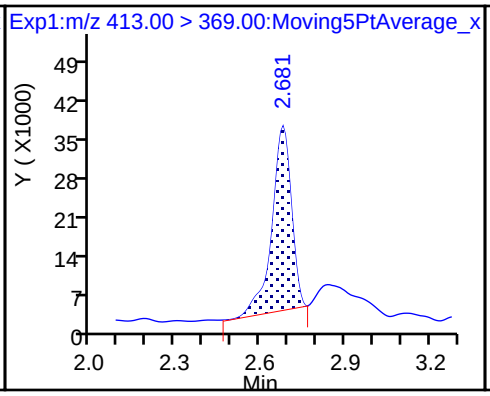
13 Sodium 1H,1H,2H,2H-perfluorooctane



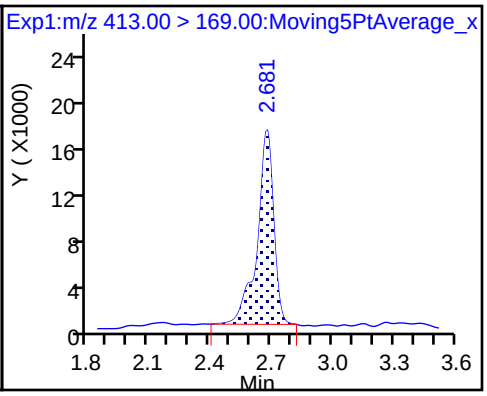
D 14 13C4 PFOA



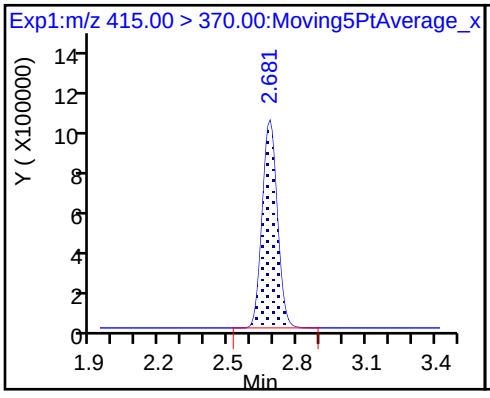
15 Perfluorooctanoic acid



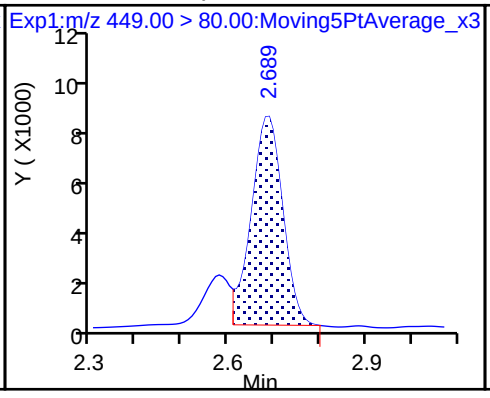
15 Perfluorooctanoic acid



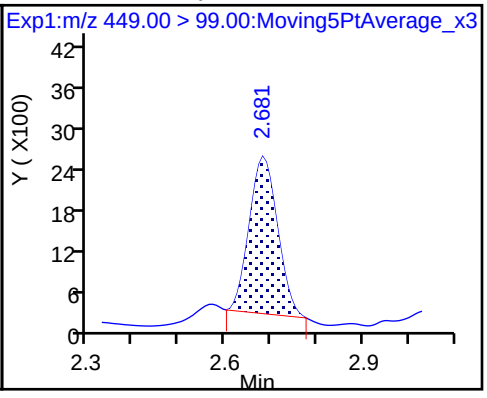
* 62 13C2-PFOA



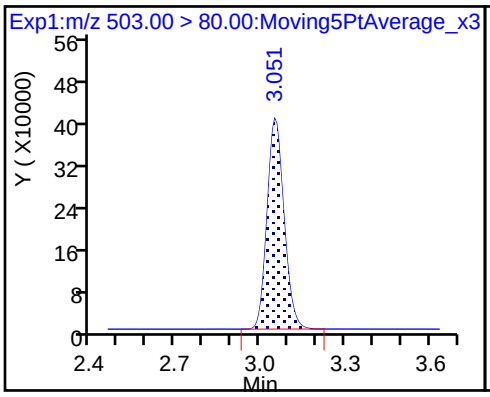
16 Perfluoroheptanesulfonic acid



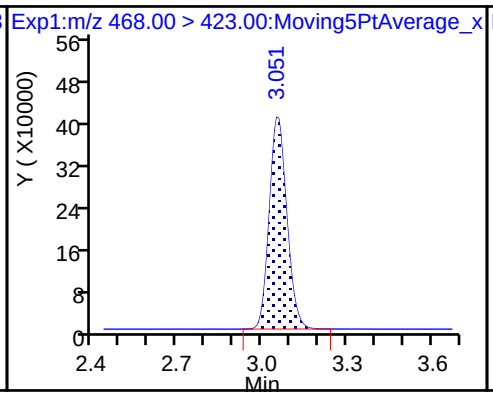
16 Perfluoroheptanesulfonic acid



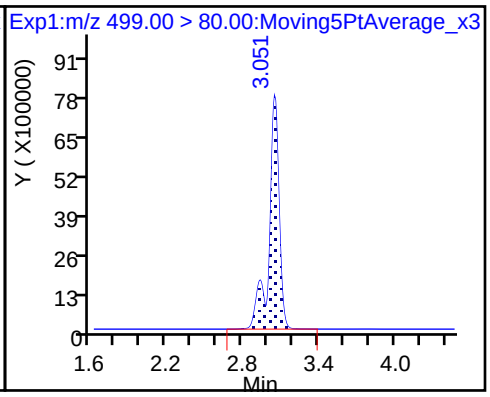
D 18 13C4 PFOS



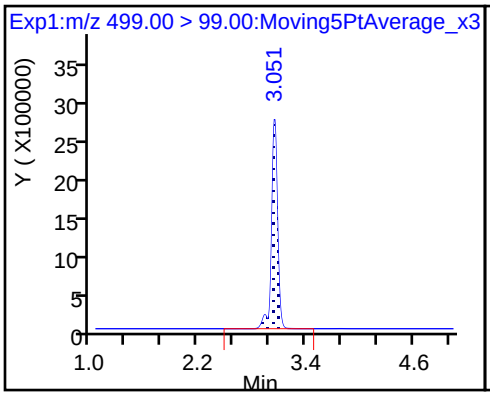
D 19 13C5 PFNA



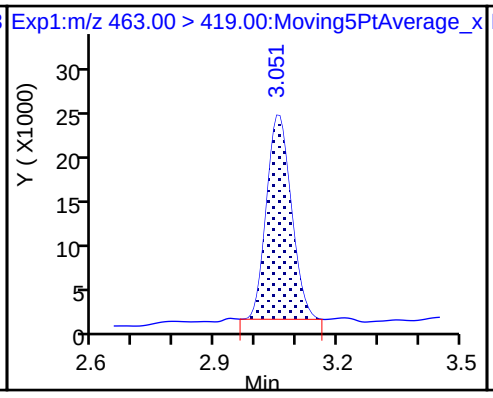
17 Perfluorooctane sulfonic acid



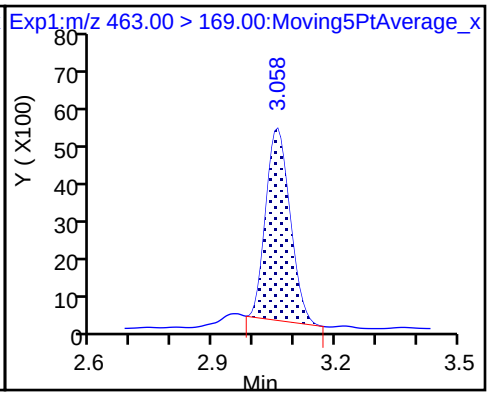
17 Perfluorooctane sulfonic acid



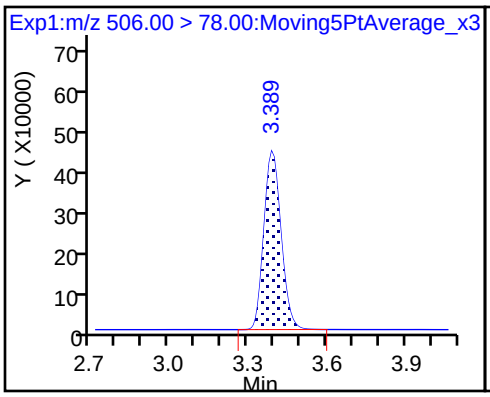
20 Perfluorononanoic acid



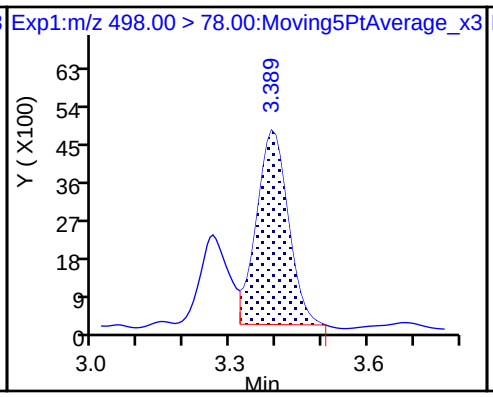
20 Perfluorononanoic acid



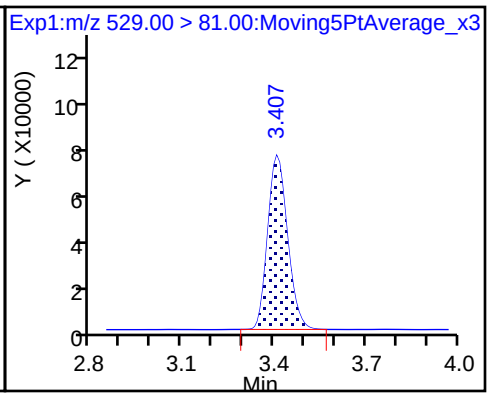
D 21 13C8 FOSA



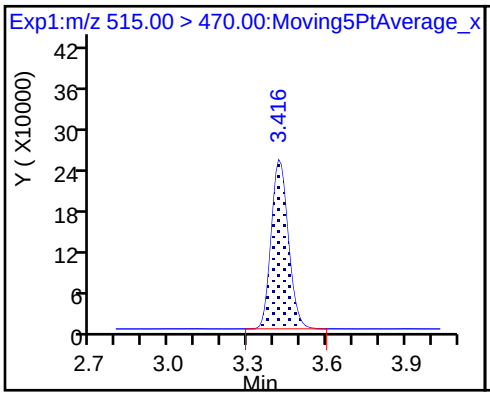
22 Perfluorooctane Sulfonamide



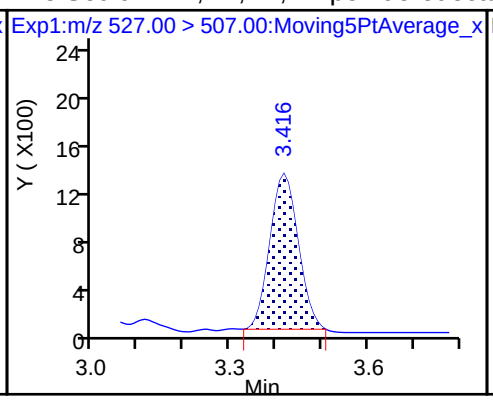
D 26 M2-8:2FTS



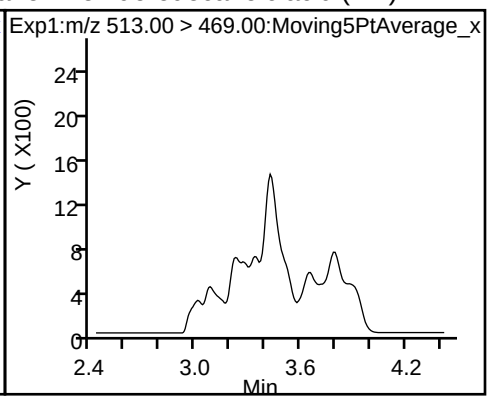
D 23 13C2 PFDA



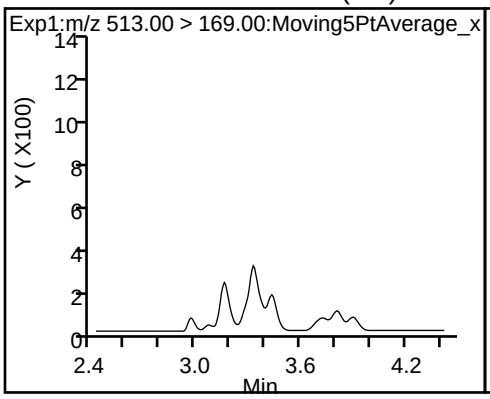
25 Sodium 1H,1H,2H,2H-perfluorodecan



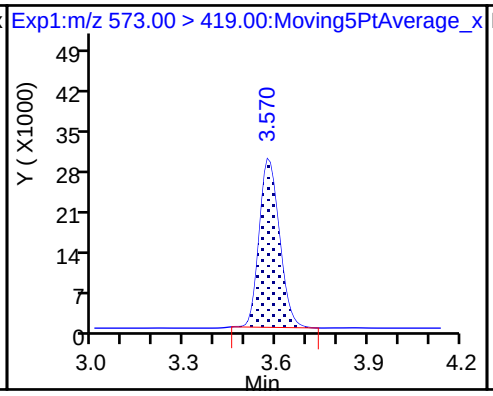
24 Perfluorodecanoic acid (ND)



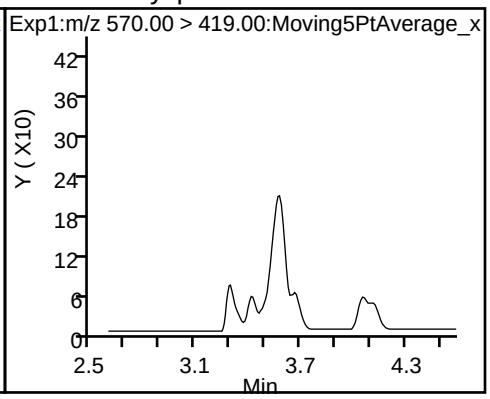
24 Perfluorodecanoic acid (ND)



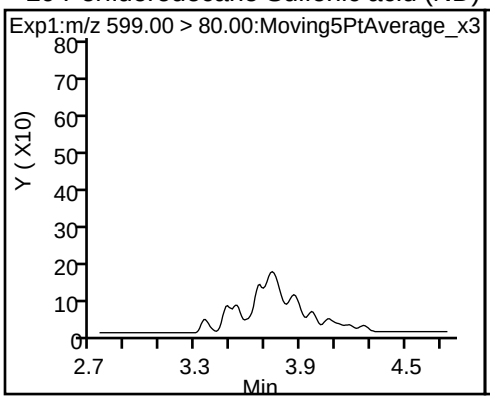
D 27 d3-NMeFOSAA



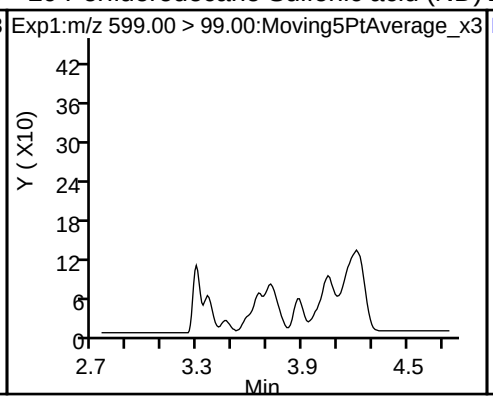
28 N-methyl perfluorooctane sulfonami (ND)



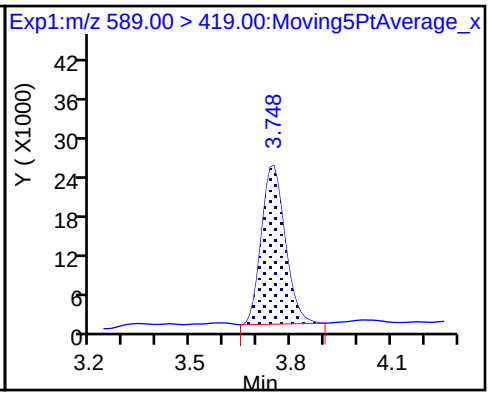
29 Perfluorodecane Sulfonic acid (ND)



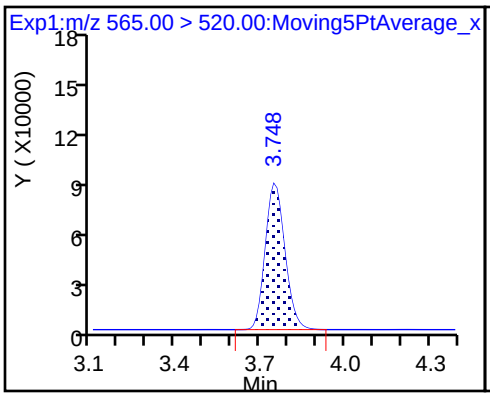
29 Perfluorodecane Sulfonic acid (ND)



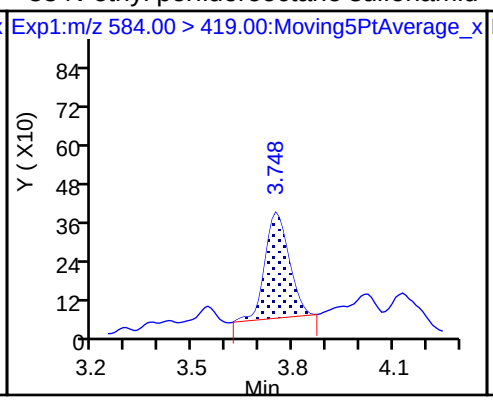
D 32 d5-NEtFOSAA



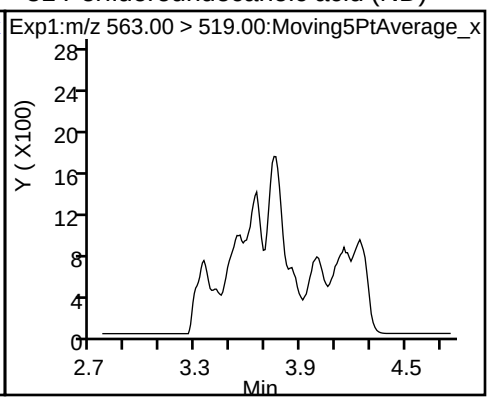
D 30 13C2 PFUnA



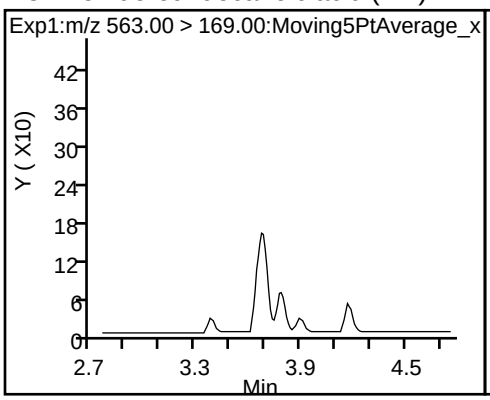
33 N-ethyl perfluorooctane sulfonamid



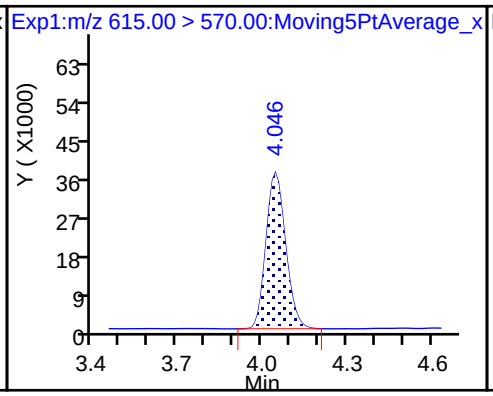
31 Perfluoroundecanoic acid (ND)



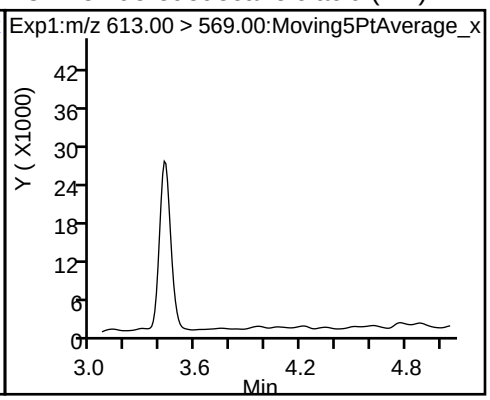
31 Perfluoroundecanoic acid (ND)



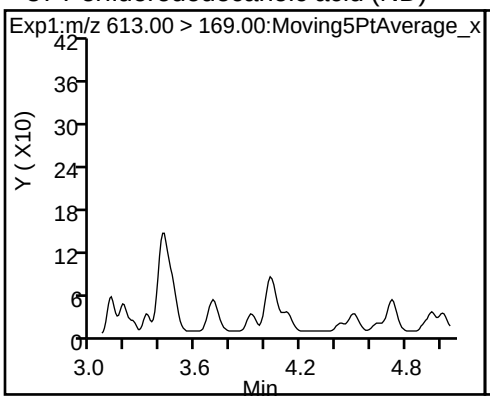
D 36 13C2 PFDoA



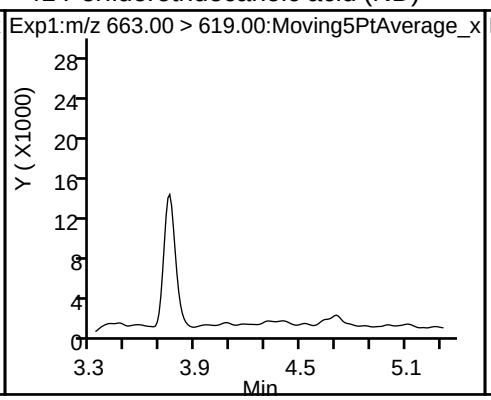
37 Perfluorododecanoic acid (ND)



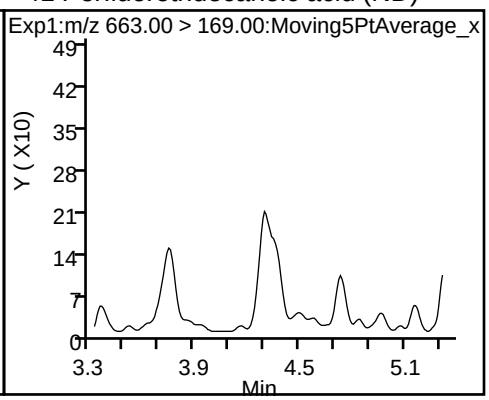
37 Perfluorododecanoic acid (ND)



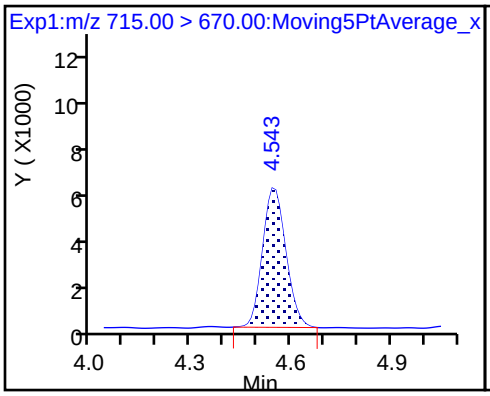
41 Perfluorotridecanoic acid (ND)



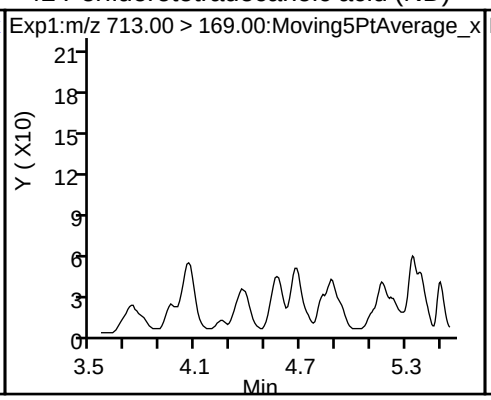
41 Perfluorotridecanoic acid (ND)



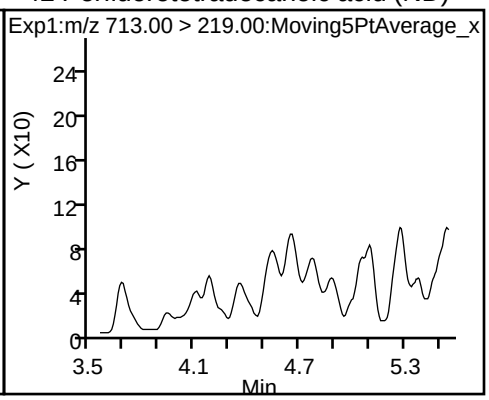
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

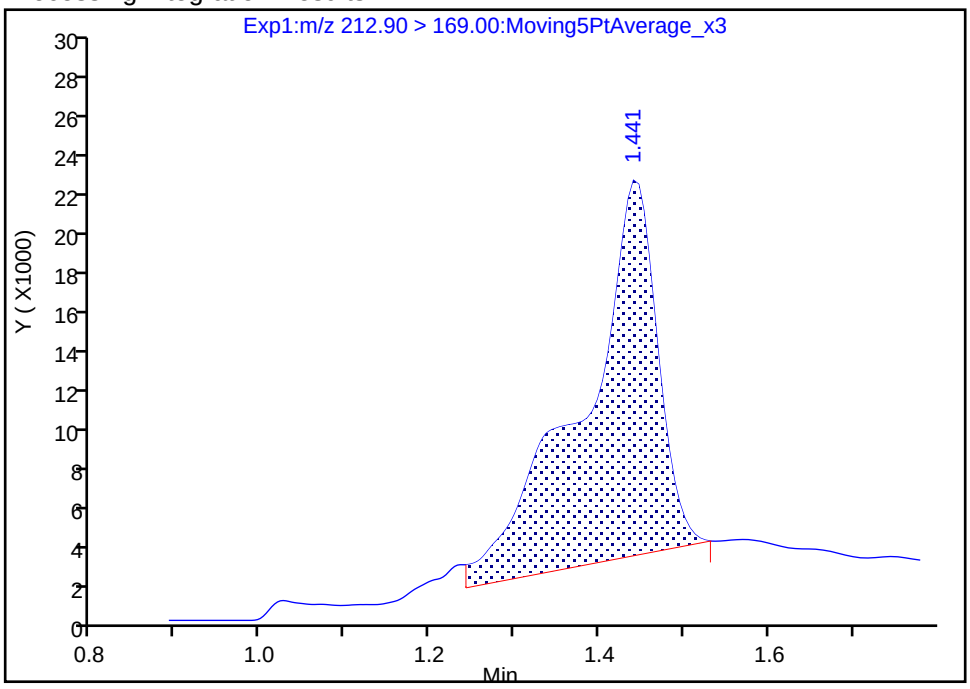
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_034.d				
Injection Date:	21-Mar-2018 00:36:00	Instrument ID:	A8_N		
Lims ID:	320-36683-A-5-A	Lab Sample ID:	320-36683-5		
Client ID:	SB013(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

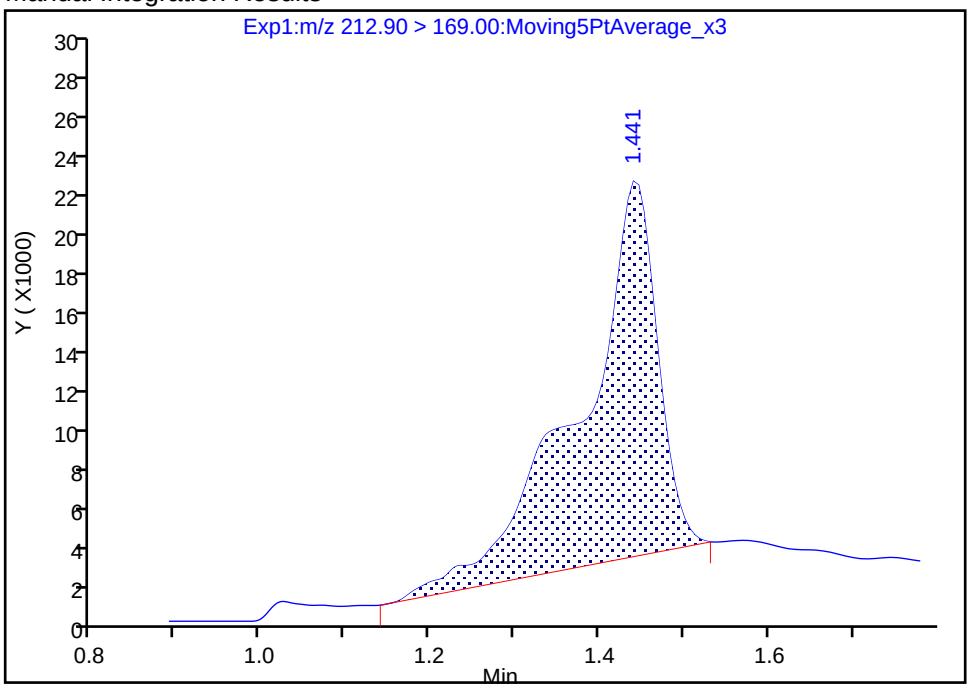
Processing Integration Results

RT: 1.44
Area: 115724
Amount: 0.074478
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 119004
Amount: 0.076589
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:00:50

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

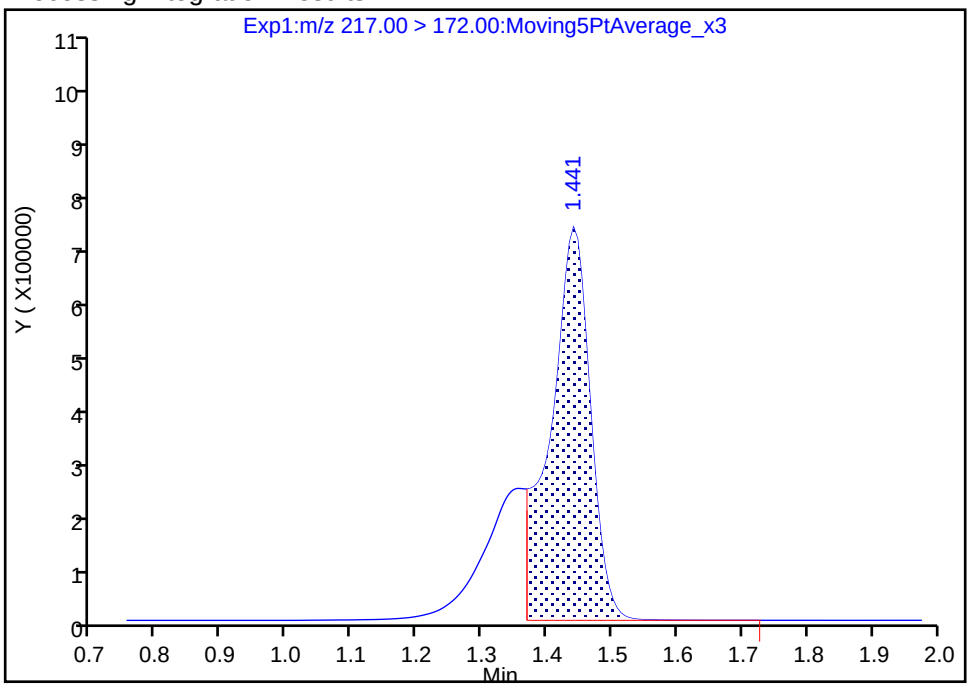
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_034.d				
Injection Date:	21-Mar-2018 00:36:00	Instrument ID:	A8_N		
Lims ID:	320-36683-A-5-A	Lab Sample ID:	320-36683-5		
Client ID:	SB013(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

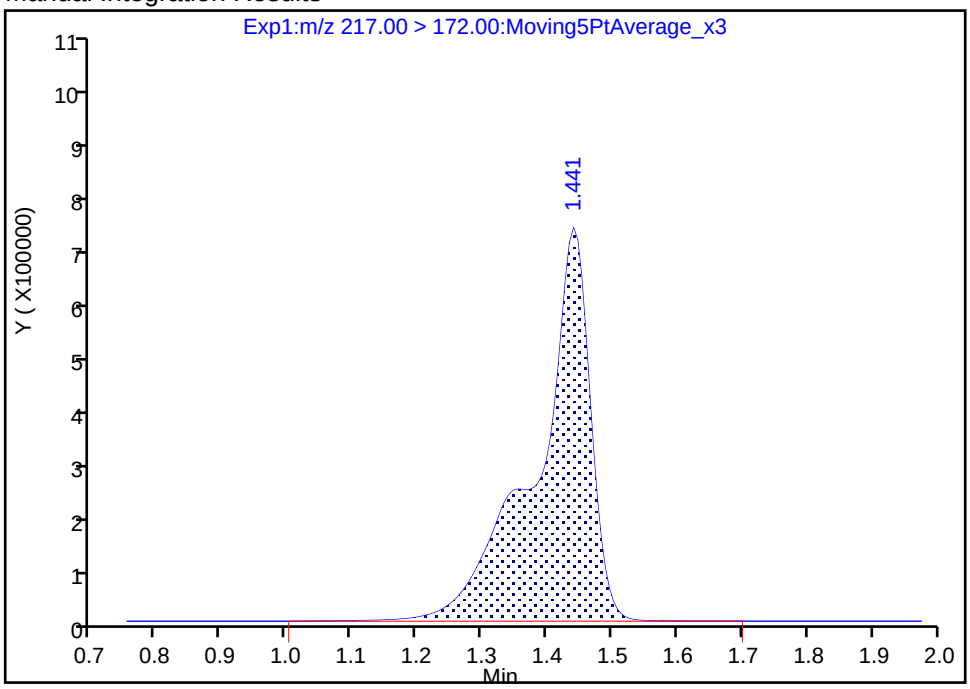
Processing Integration Results

RT: 1.44
Area: 3073820
Amount: 1.317112
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 4188414
Amount: 1.794708
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:00:44

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013(5'-7') RE | Lab Sample ID: 320-36683-5 RE

Matrix: Solid | Lab File ID: 2018.03.26LLA_070.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 10:10

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.07(g) | Date Analyzed: 03/27/2018 03:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 15.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000045*	*U H*	*0.00023*	*0.000045*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	68		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_070.d
Lims ID: 320-36683-A-5-B
Client ID: SB013(5'-7')
Sample Type: Client
Inject. Date: 27-Mar-2018 03:44:34 ALS Bottle#: 49 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-5-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:43:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:40:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.439	1.441	-0.002	0.537	6202985	2.30		92.2	80344	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.439	1.447	-0.008	1.000	114953	0.0492			24.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.634	4177729	2.34		93.6	97091	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.709	-0.010	1.000	178346	0.0947			103	
D 47 13C3-PFBS										
301.90 > 83.00	1.734	1.736	-0.002	0.648	85675	2.10		90.4	595	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.734	1.745	-0.011	1.000	26832	0.009371			148	
298.90 > 99.00	1.734	1.745	-0.011	1.000	10467		2.56(1.25-3.74)		21.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.987	-0.002	0.741	4347058	2.20		88.0	130517	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.985	1.998	-0.013	1.000	243632	0.1371			224	M
313.00 > 119.00	1.985	1.998	-0.013	1.000	24120		10.10(5.03-15.10)		273	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.315	-0.001	0.864	4524670	2.32		92.9	97321	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.328	-0.014	1.000	66636	0.0356			49.0	
363.00 > 169.00	2.314	2.328	-0.014	1.000	25820		2.58(1.13-3.40)		71.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.328	-0.001	0.869	5268177	2.19		92.7	90636	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.341	-0.014	1.000	1691065	0.6821			9203	
399.00 > 99.00	2.327	2.341	-0.014	1.000	541317		3.12(1.50-4.49)		904	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.649	0.006	0.991	997840	2.47		104	17154	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.665	-0.010	1.000	102211	0.1395			634	
D 14 13C4 PFOA										
417.00 > 372.00	2.678	2.681	-0.003	1.000	4409556	2.21		88.5	105951	
* 62 13C2-PFOA										
415.00 > 370.00	2.678	2.689	-0.011		5316491	2.50			98540	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.678	2.689	-0.011	1.000	220373	0.1106			87.8	
413.00 > 169.00	2.678	2.689	-0.011	1.000	114650		1.92(0.84-2.52)		274	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.686	2.697	-0.011	1.000	44247	0.0290			252	
449.00 > 99.00	2.686	2.697	-0.011	1.000	11825		3.74(1.94-5.82)		69.6	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.051	-0.001	1.139	2847369	1.63		68.1	44408	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.051	-0.001	1.139	3155836	1.80		71.8	87190	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.050	3.065	-0.015	1.000	59515902	44.8			135396	E
499.00 > 99.00	3.050	3.065	-0.015	1.000	18746525		3.17(2.31-6.93)		280335	
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.065	-0.015	1.000	146673	0.1165			211	
463.00 > 169.00	3.050	3.065	-0.015	1.000	32569		4.50(1.90-5.69)		472	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.389	-0.001	1.265	4652132	1.97		78.9	43824	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.378	3.398	-0.020	0.997	2483	0.001354			40.7	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.399	0.008	1.272	1054309	1.93		80.7	19679	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.397	3.417	-0.020	0.997	3772	0.006714			73.9	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.417	-0.002	1.275	3422903	2.22		88.9	52515	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.426	-0.011	1.000	8709	0.006438			30.7	
513.00 > 169.00	3.415	3.426	-0.011	1.000	1866		4.67(2.36-7.09)		23.8	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.571	-0.002	1.332	1628921	2.01		80.3	51009	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.738	0.0	1.395	1684753	1.82		72.9	15116	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.399	2674416	1.94		77.6	79854	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.510	2935801	1.88		75.1	23465	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.543	0.0	1.696	3991218	2.09		83.6	21634	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2018 10:44:01 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_070.d

Injection Date: 27-Mar-2018 03:44:34 Instrument ID: A8_N

Lims ID: 320-36683-A-5-B Lab Sample ID: 320-36683-5

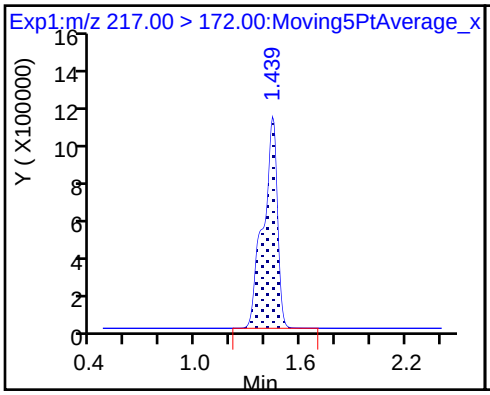
Client ID: SB013(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 49 Worklist Smp#: 20

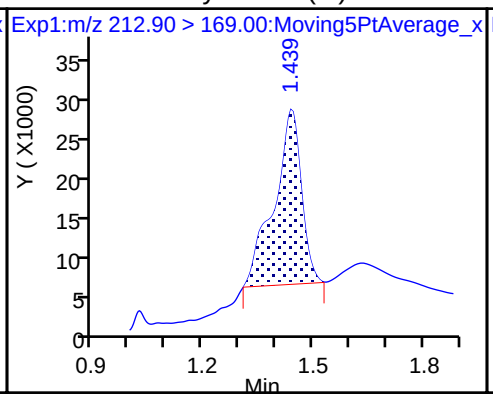
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

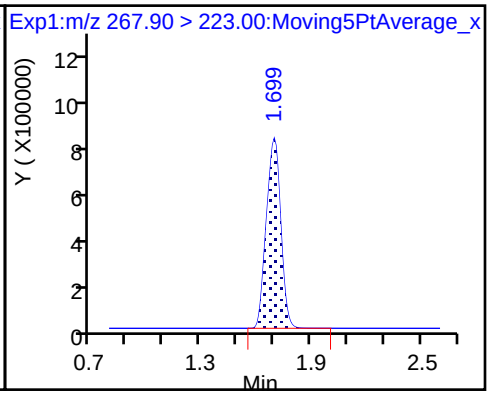
D 1 13C4 PFBA



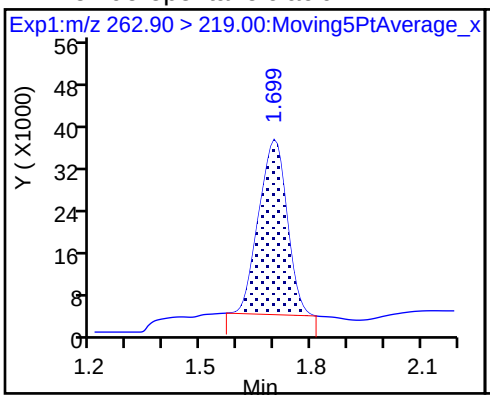
2 Perfluorobutyric acid (M)



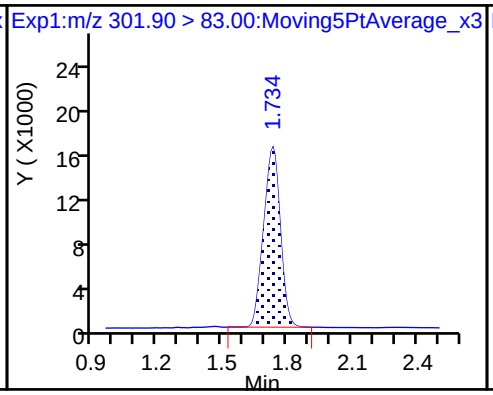
D 3 13C5-PFPeA



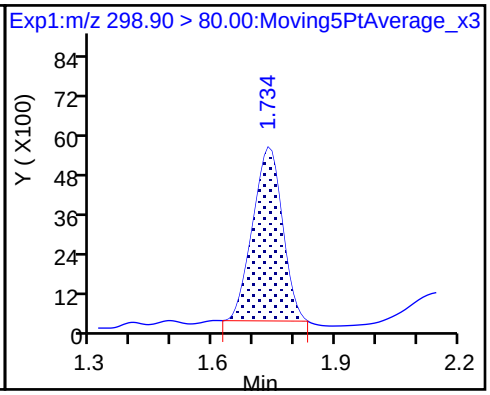
4 Perfluoropentanoic acid



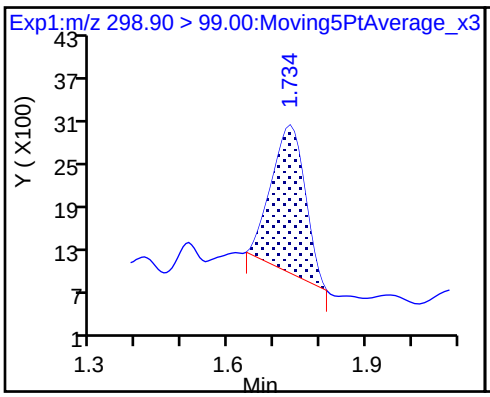
D 47 13C3-PFBS



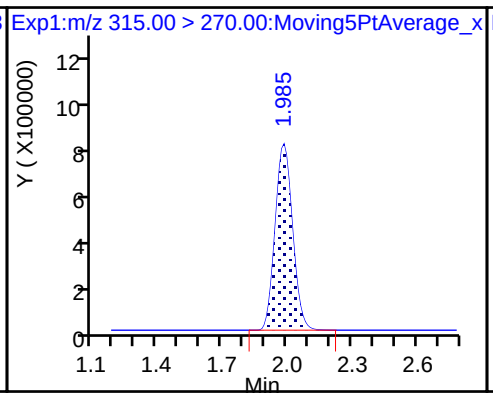
5 Perfluorobutanesulfonic acid



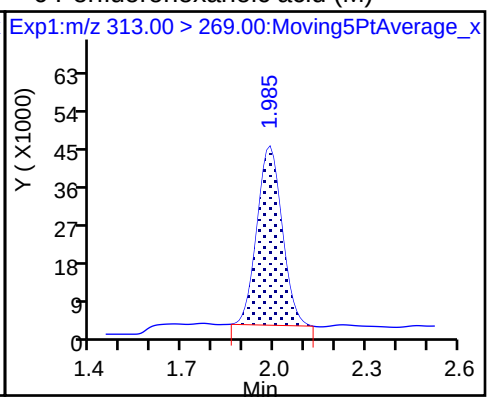
5 Perfluorobutanesulfonic acid



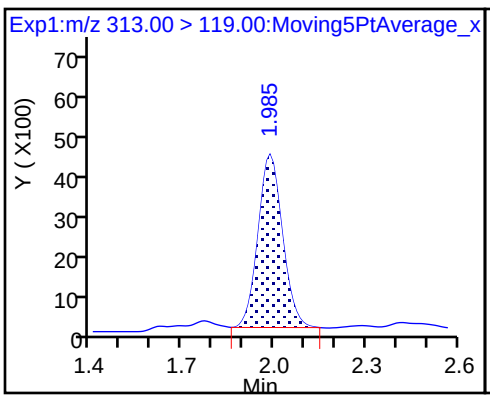
D 7 13C2 PFHxA



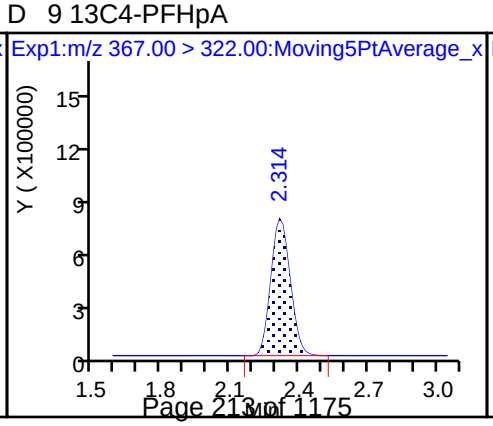
6 Perfluorohexanoic acid (M)



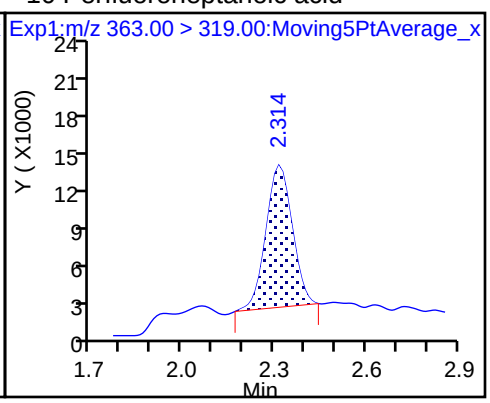
6 Perfluorohexanoic acid



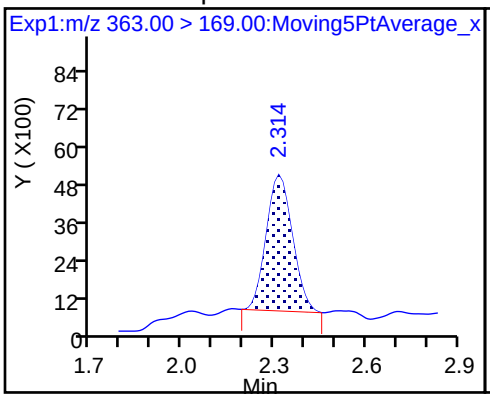
D 9 13C4-PFHpA



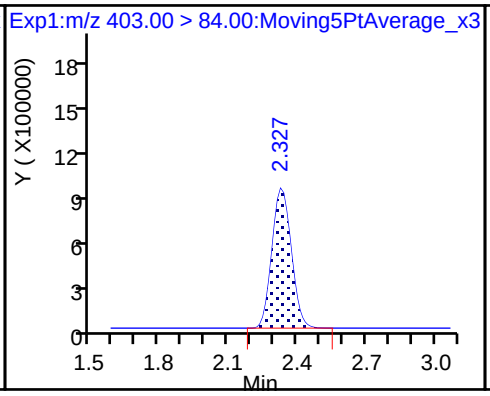
10 Perfluoroheptanoic acid



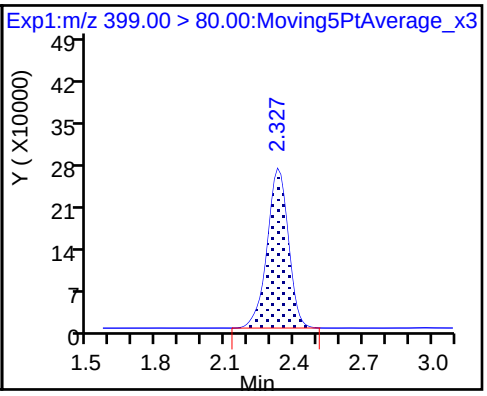
10 Perfluoroheptanoic acid



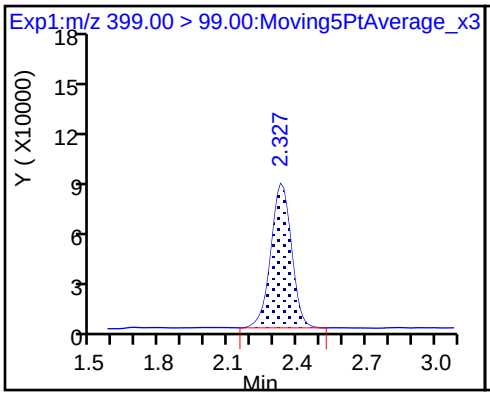
D 11 18O2 PFHxS



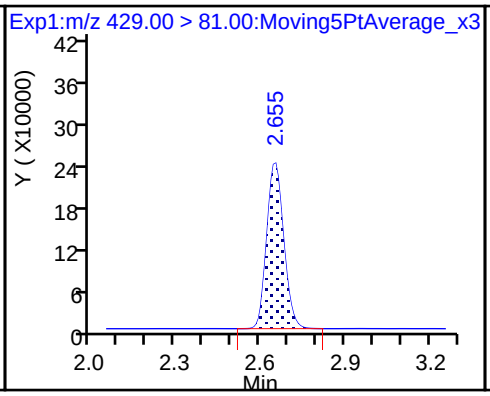
8 Perfluorohexanesulfonic acid



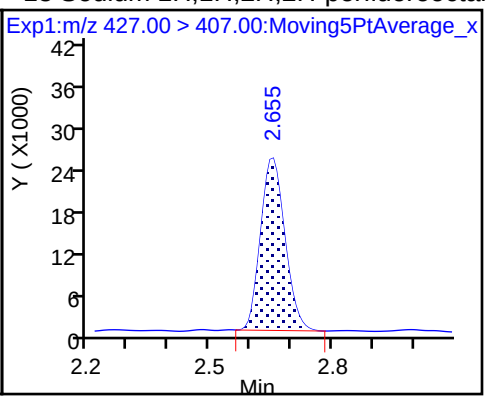
8 Perfluorohexanesulfonic acid



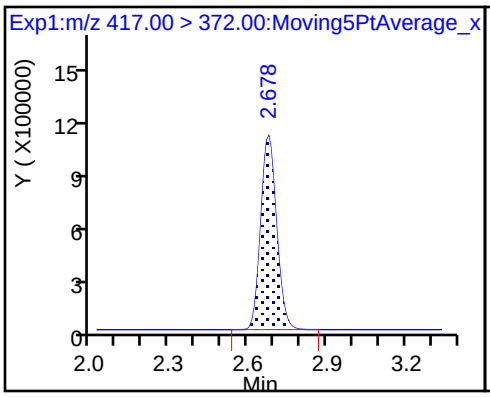
D 12 M2-6:2FTS



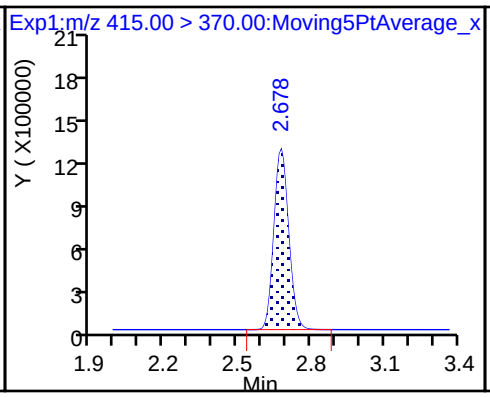
13 Sodium 1H,1H,2H,2H-perfluorooctane



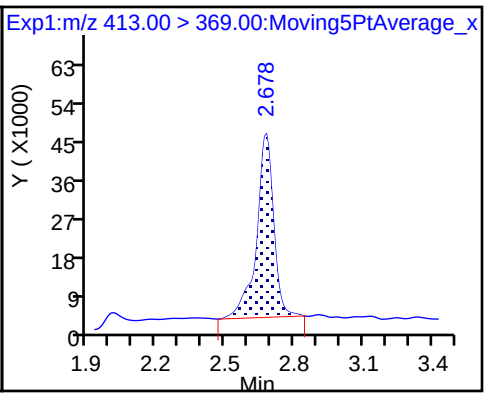
D 14 13C4 PFOA



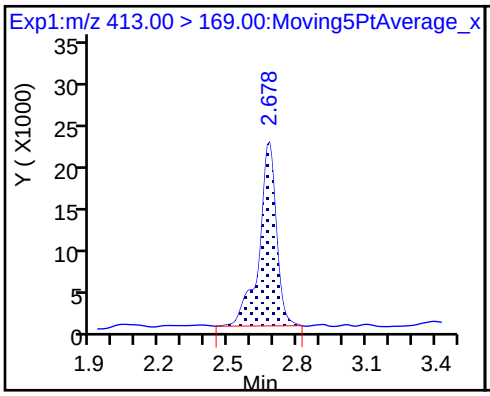
* 62 13C2-PFOA



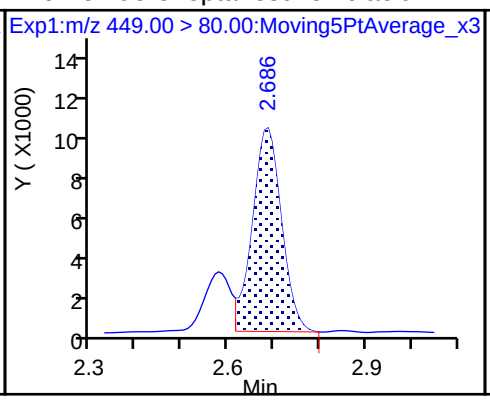
15 Perfluorooctanoic acid



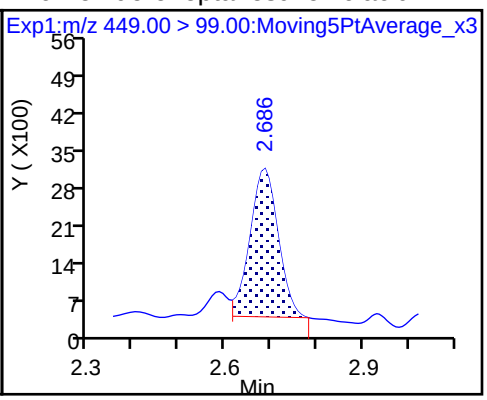
15 Perfluorooctanoic acid



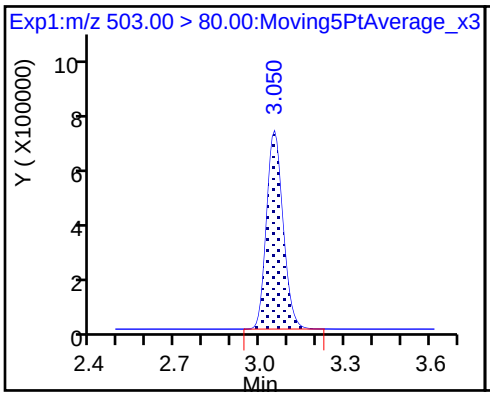
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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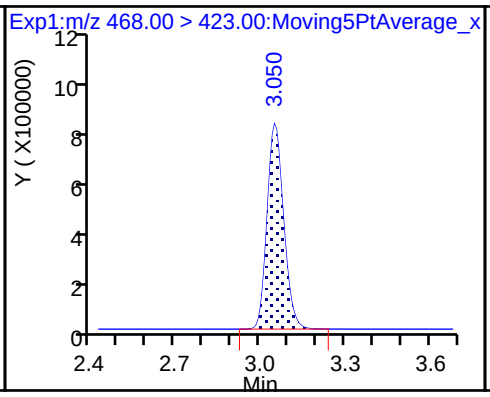
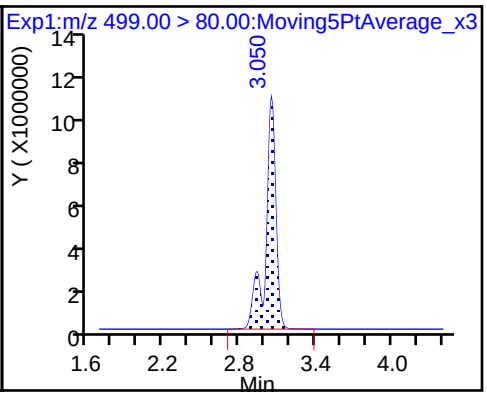
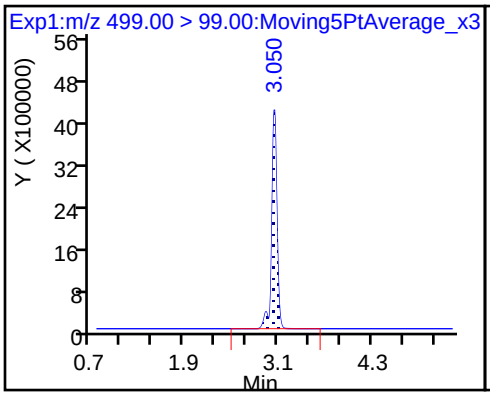


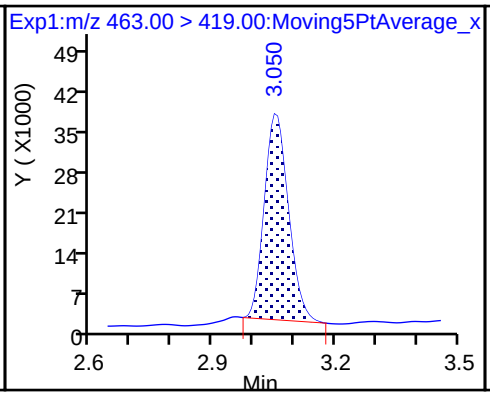
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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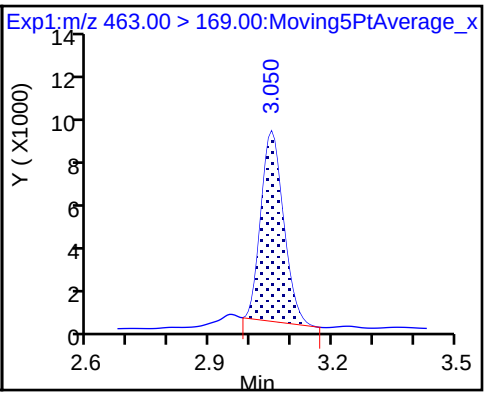
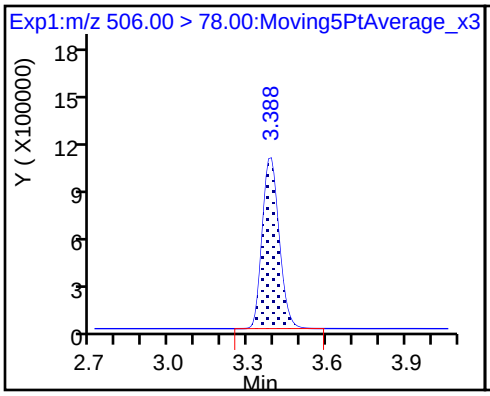
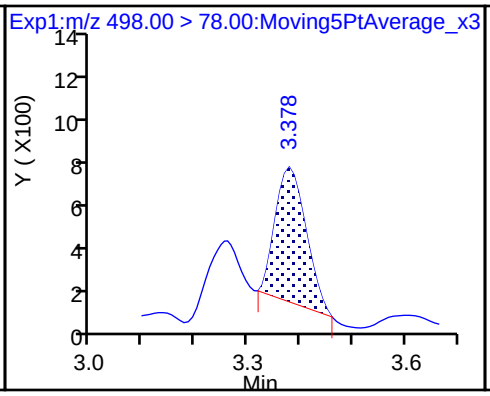


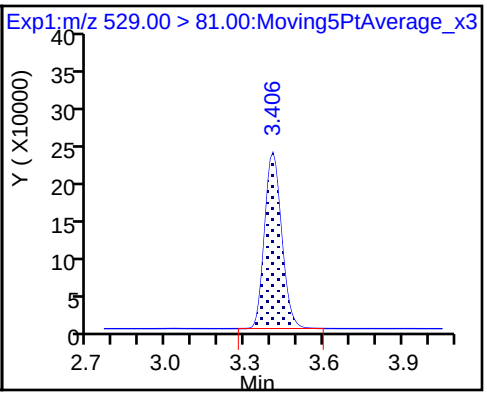
D 21 13C8 FOSA



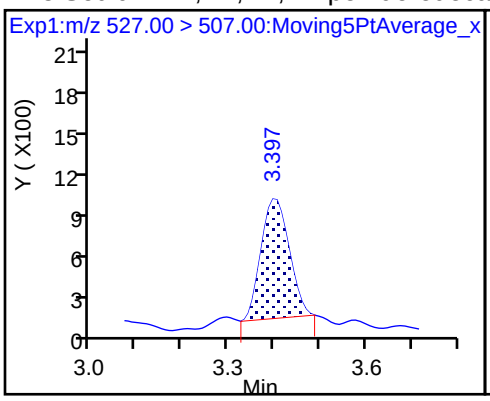
22 Perfluorooctane Sulfonamide



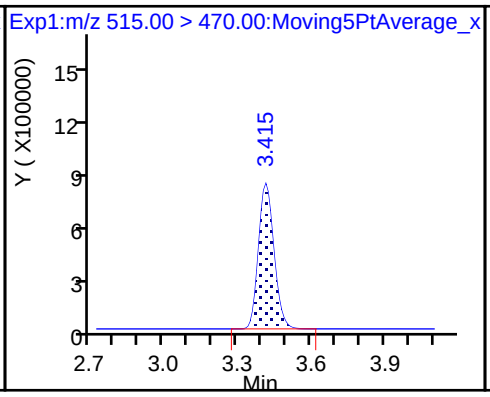
D 26 M2-8:2FTS



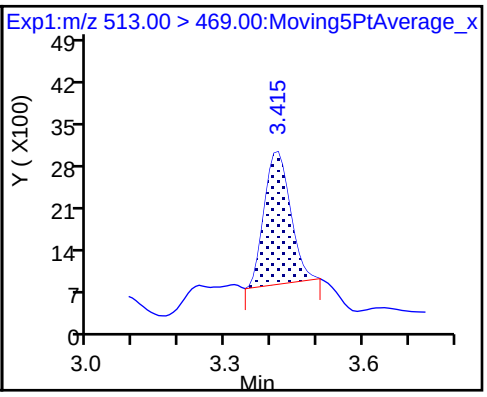
25 Sodium 1H,1H,2H,2H-perfluorodecane



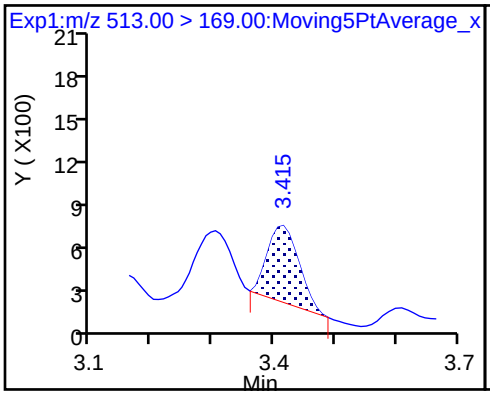
D 23 13C2 PFDA



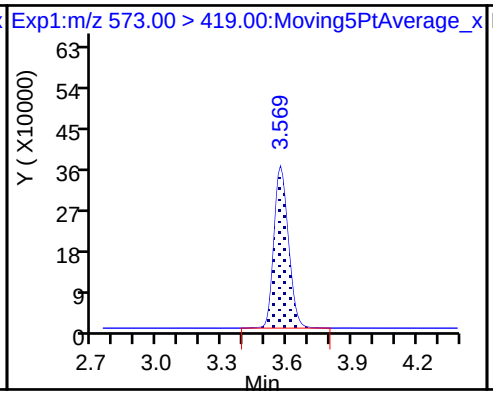
24 Perfluorodecanoic acid



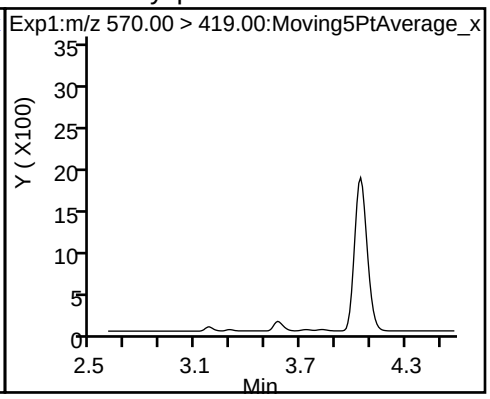
24 Perfluorodecanoic acid



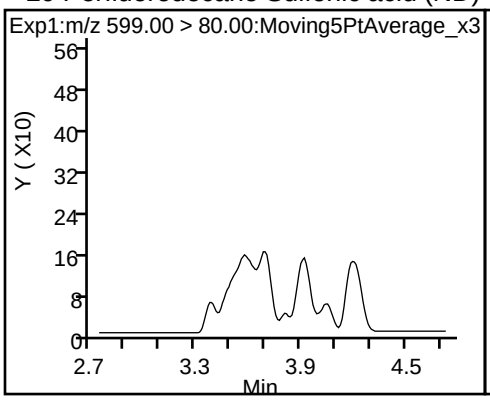
D 27 d3-NMeFOSAA



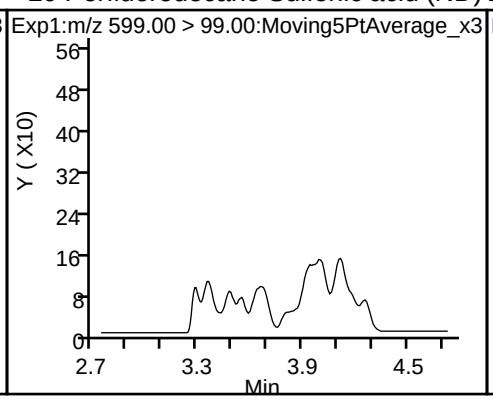
28 N-methyl perfluorooctane sulfonami (ND)



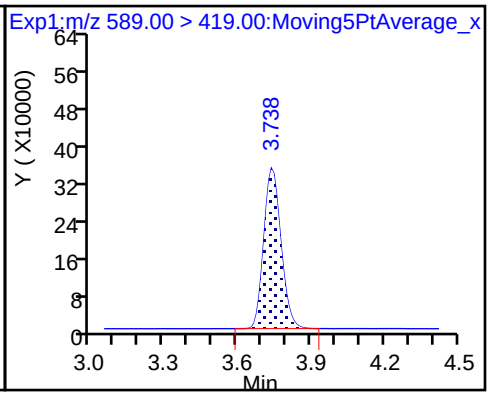
29 Perfluorodecane Sulfonic acid (ND)



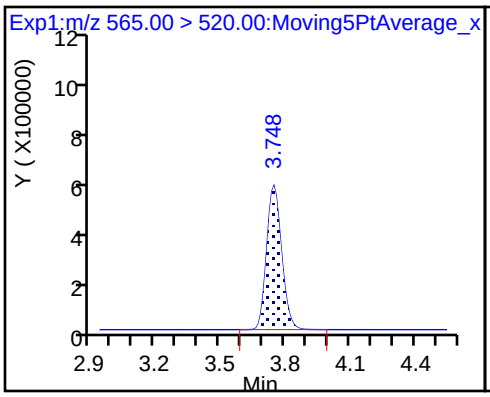
29 Perfluorodecane Sulfonic acid (ND)



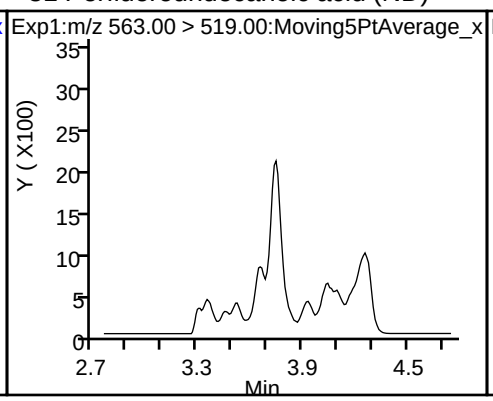
D 32 d5-NEtFOSAA



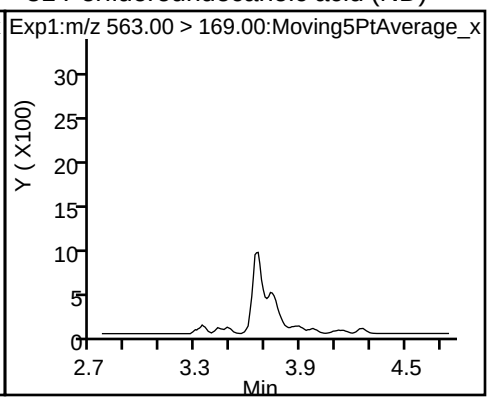
D 30 13C2 PFUnA



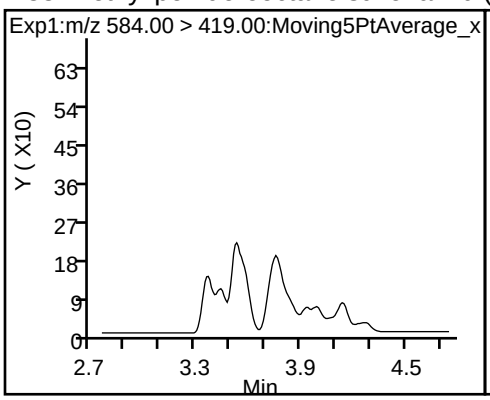
31 Perfluoroundecanoic acid (ND)



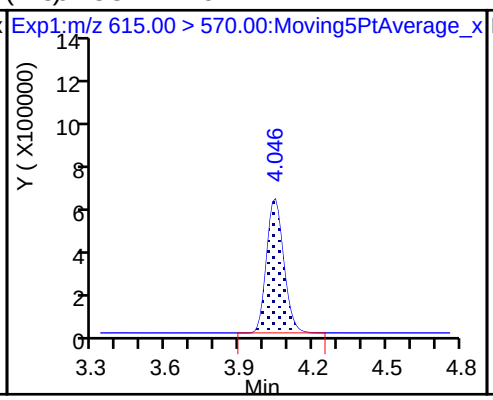
31 Perfluoroundecanoic acid (ND)



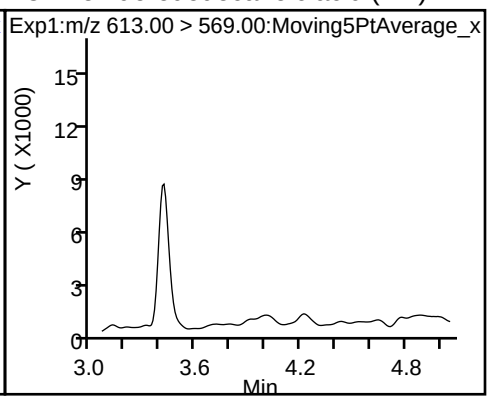
33 N-ethyl perfluorooctane sulfonamid (ND)



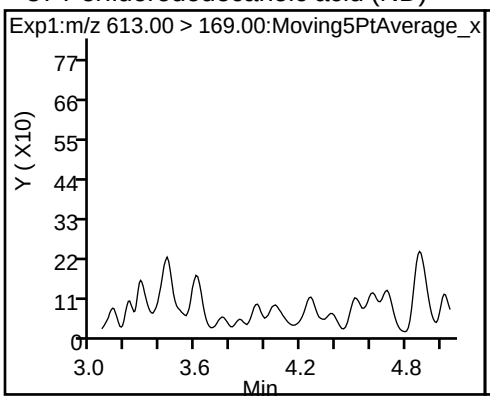
D 36 13C2 PFDoA



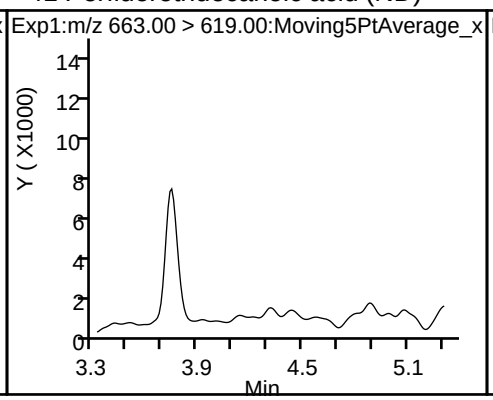
37 Perfluorododecanoic acid (ND)



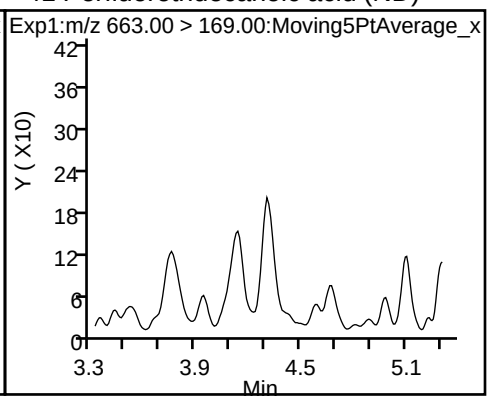
37 Perfluorododecanoic acid (ND)



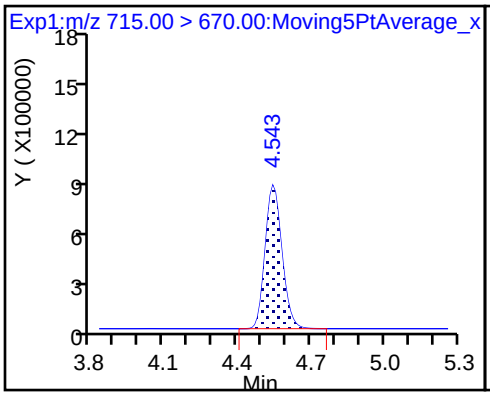
41 Perfluorotridecanoic acid (ND)



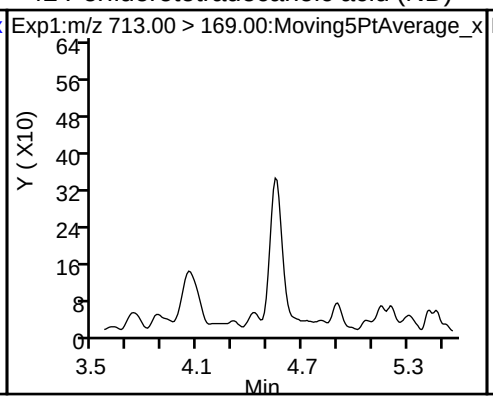
41 Perfluorotridecanoic acid (ND)



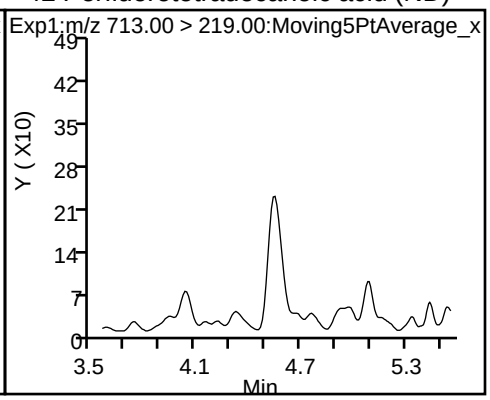
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013(5'-7') DL Lab Sample ID: 320-36683-5 DL

Matrix: Solid Lab File ID: 2018.03.21LLC_018.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 10:10

Extraction Method: SHAKE Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) Date Analyzed: 03/21/2018 23:29

Con. Extract Vol.: 10.00(mL) Dilution Factor: 20

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 15.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.15	B D	0.012	0.0047

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	49		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_018.d
Lims ID: 320-36683-A-5-A
Client ID: SB013(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 23:29:50 ALS Bottle#: 20 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-36683-a-5-a 20X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:30:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.452	1.446	0.006	0.539	267782	0.0962		77.0	3147	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.453	-0.001	1.000	8870	0.004394			3.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	179550	0.0973		77.8	5789	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	3744	0.0889		76.4	89.1	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	204803	0.1003		80.3	6164	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.328	0.013	0.868	199060	0.0988		79.1	8538	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.341	0.013	0.873	209267	0.0842		71.2	5982	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.341	0.013	1.000	86088	0.0437			898	
399.00 > 99.00	2.354	2.341	0.013	1.000	26957		3.19(1.50-4.49)		116	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.665	0.007	0.991	32531	0.0779		65.6	754	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.673	-0.001	1.000	4913	0.0103			294	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.688	0.008	1.000	190914	0.0927		74.1	6345	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		274765	0.1250			8062	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	12925	0.007491			3.3	
413.00 > 169.00	2.697	2.697	0.0	1.000	0		0.00(0.84-2.52)			

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.058	0.014	1.139	106161	0.0587		49.1	2634	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	143164	0.0788		63.0	7311	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.065	0.007	1.000	3173860	3.21			15586	
499.00 > 99.00	3.072	3.065	0.007	1.000	756856		4.19(2.31-6.93)		8052	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.388	0.019	1.264	108292	0.0444		35.5	3461	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	0.997	3968	0.004646			95.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.415	0.011	1.271	18896	0.0335		28.0	544	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.424	0.011	1.274	77411	0.0486		38.9	1721	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	16976	0.0203		16.2	380	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.748	0.020	1.398	33559	0.0236		18.8	1006	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	21942	0.0230		18.4	163	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	1544	0.009415			29.2	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.047	0.020	1.508	16496	0.0102		8.2	179	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.693	3841	0.001945		1.6	40.5	

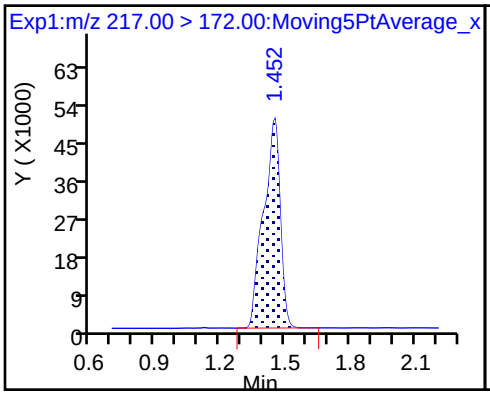
Report Date: 22-Mar-2018 12:53:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

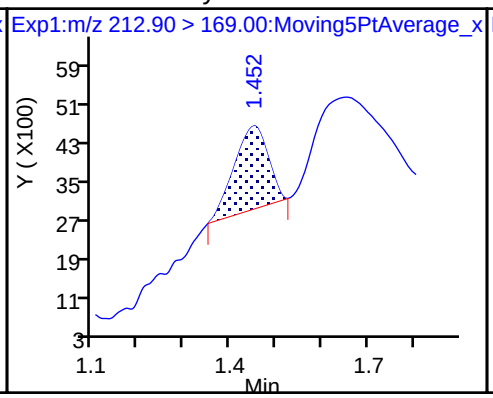
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_018.d

Injection Date:	21-Mar-2018 23:29:50	Instrument ID:	A8_N		
Lims ID:	320-36683-A-5-A	Lab Sample ID:	320-36683-5		
Client ID:	SB013(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	20.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

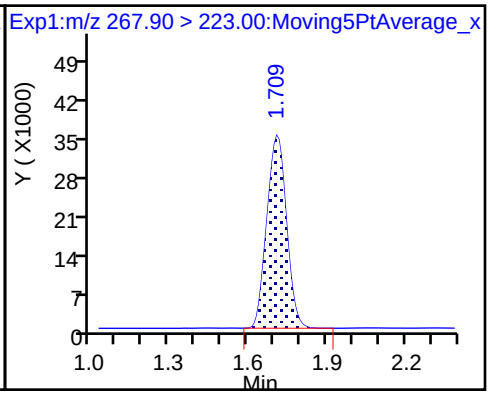
D 1 13C4 PFBA



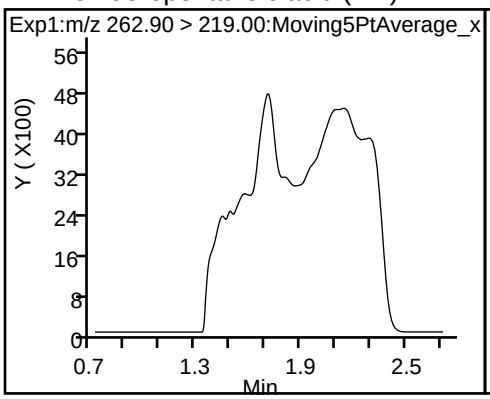
2 Perfluorobutyric acid



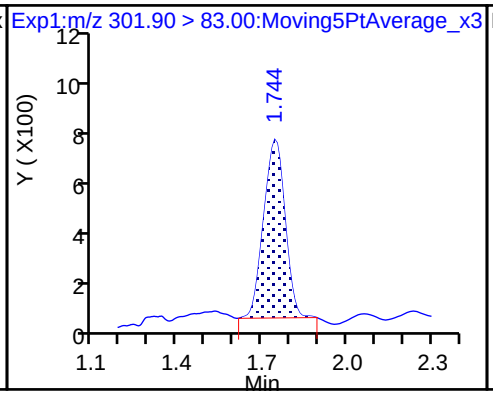
D 3 13C5-PFPeA



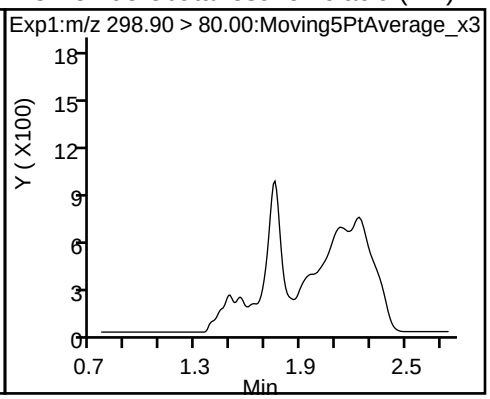
4 Perfluoropentanoic acid (ND)



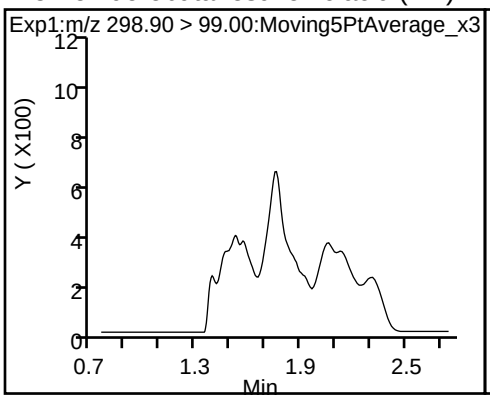
D 47 13C3-PFBS



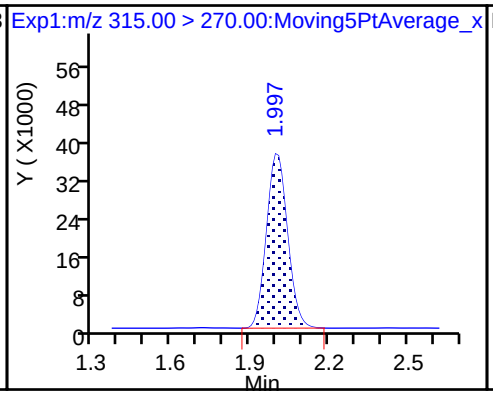
5 Perfluorobutanesulfonic acid (ND)



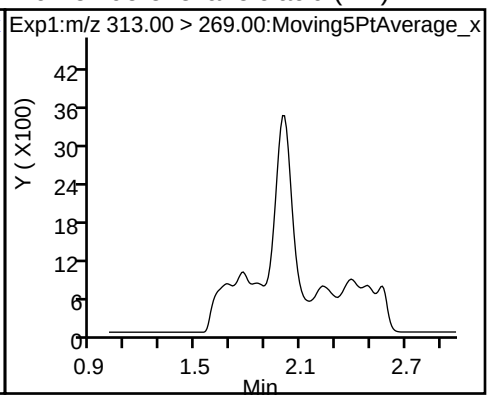
5 Perfluorobutanesulfonic acid (ND)



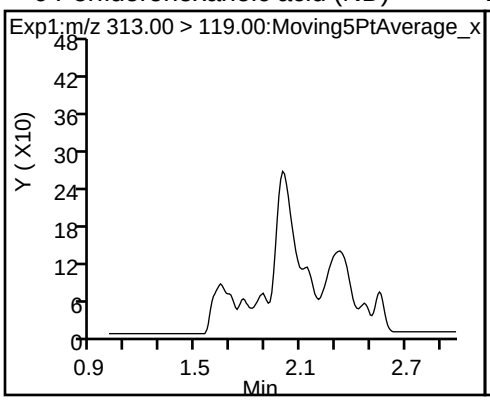
D 7 13C2 PFHxA



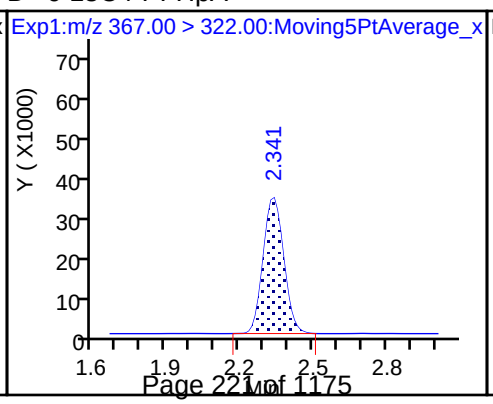
6 Perfluorohexanoic acid (ND)



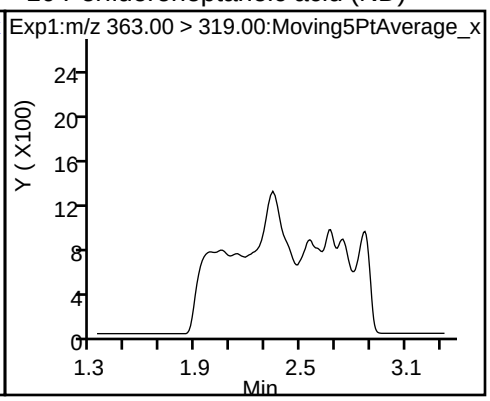
6 Perfluorohexanoic acid (ND)



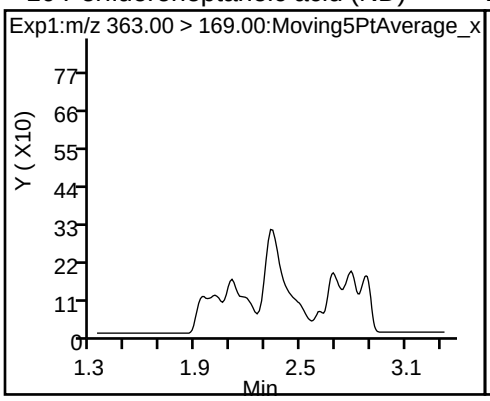
D 9 13C4-PFHpA



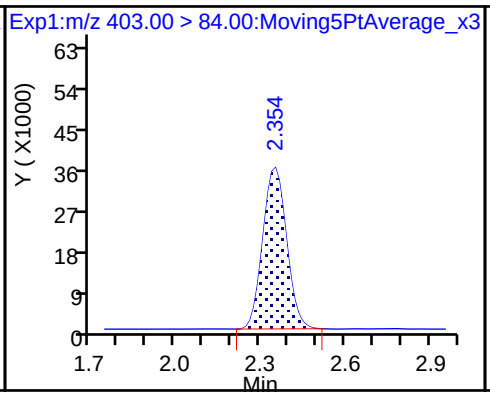
10 Perfluoroheptanoic acid (ND)



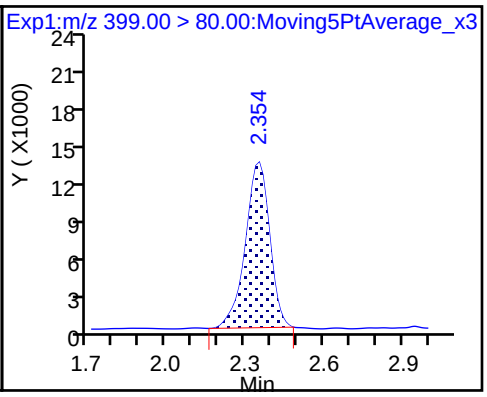
10 Perfluoroheptanoic acid (ND)



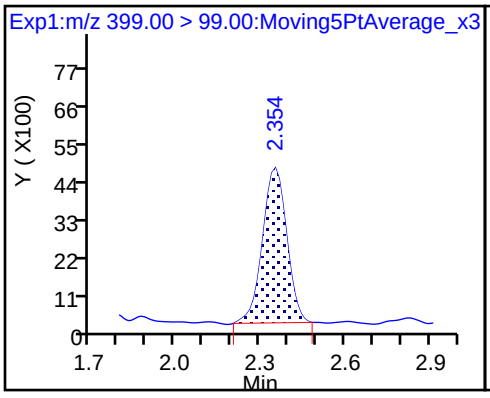
D 11 18O2 PFHxS



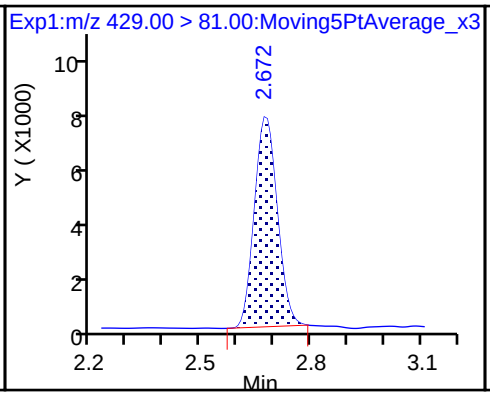
8 Perfluorohexanesulfonic acid



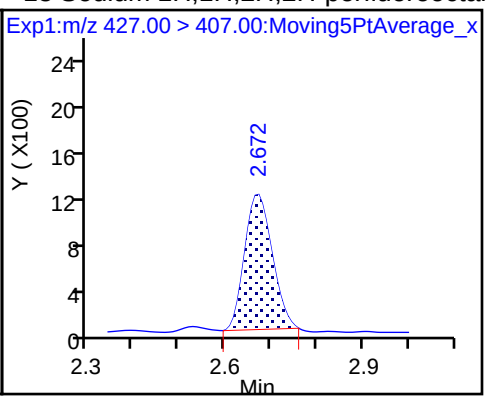
8 Perfluorohexanesulfonic acid



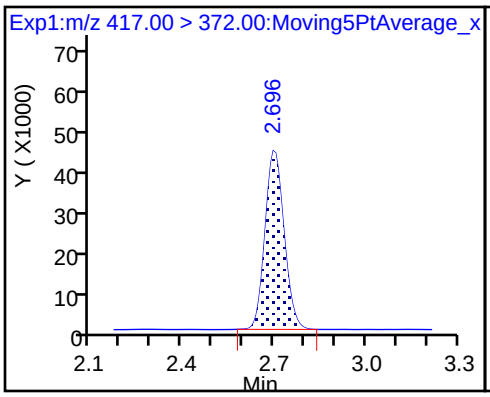
D 12 M2-6:2FTS



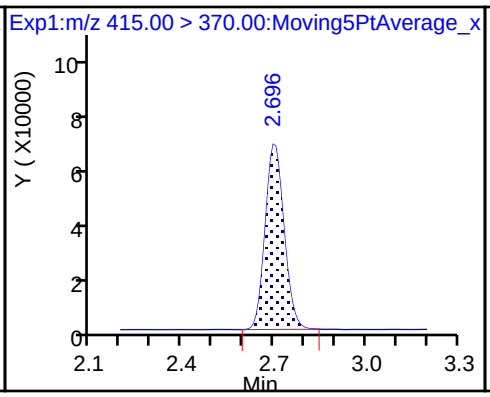
13 Sodium 1H,1H,2H,2H-perfluorooctane



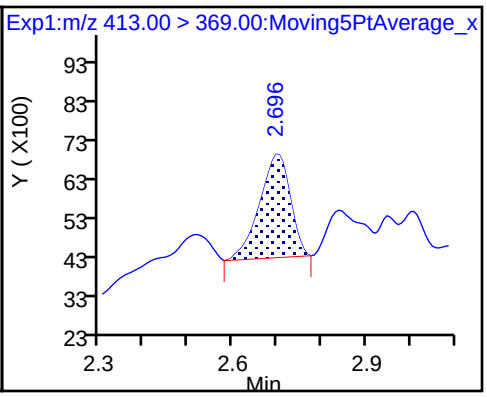
D 14 13C4 PFOA



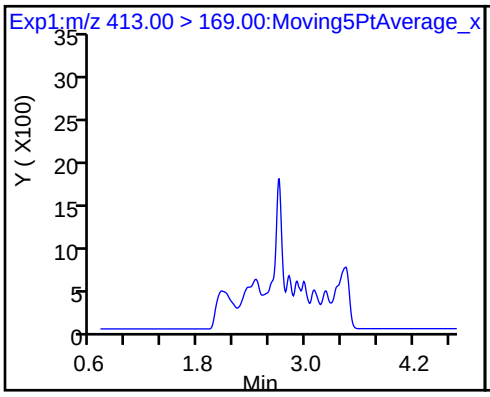
* 62 13C2-PFOA



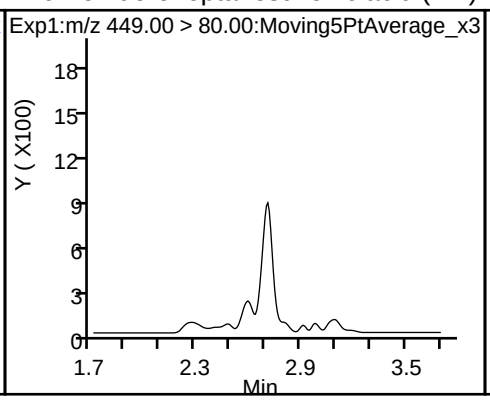
15 Perfluorooctanoic acid



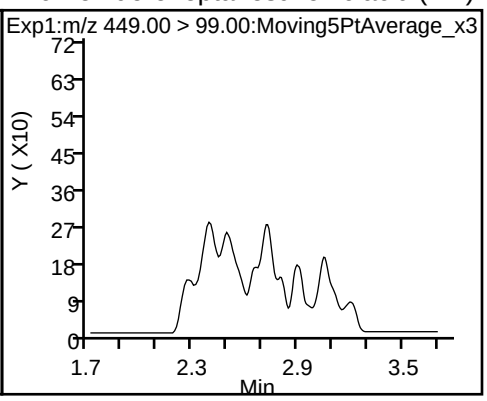
15 Perfluorooctanoic acid



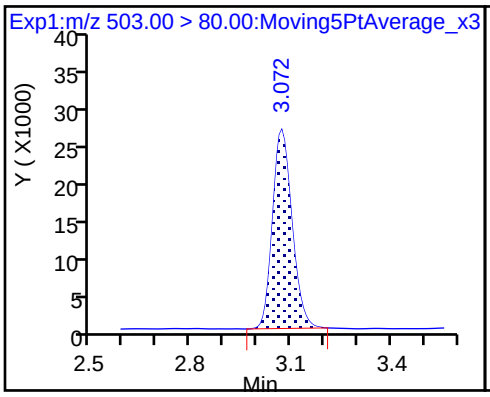
16 Perfluoroheptanesulfonic acid (ND)



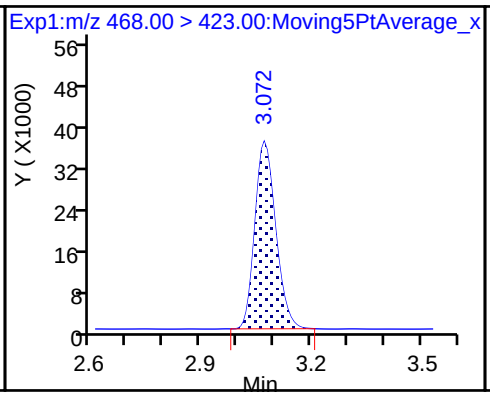
16 Perfluoroheptanesulfonic acid (ND)



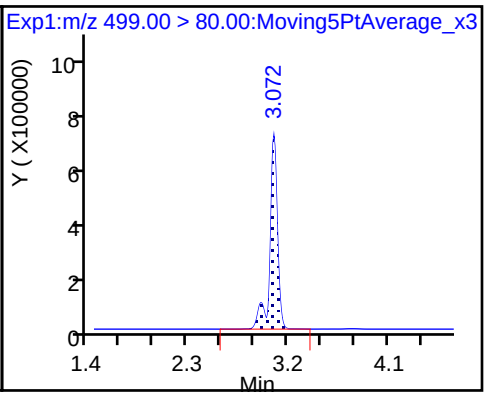
D 18 13C4 PFOS



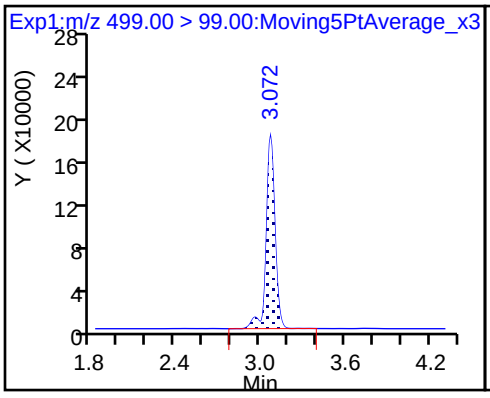
D 19 13C5 PFNA



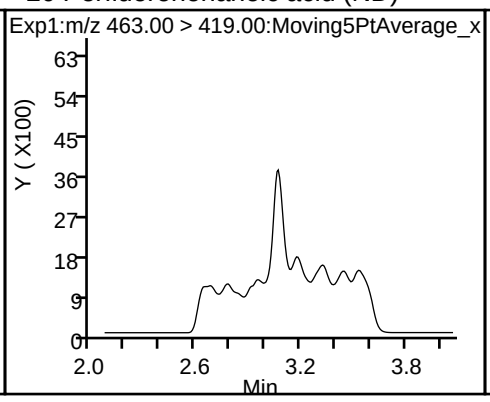
17 Perfluorooctane sulfonic acid



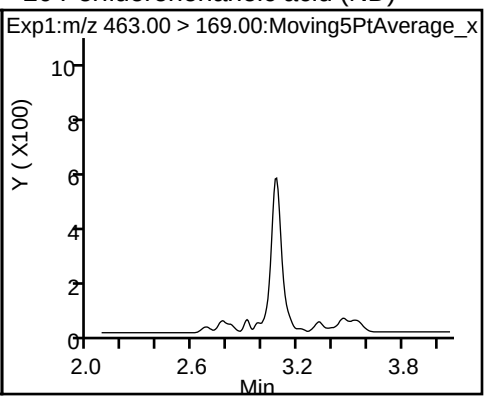
17 Perfluorooctane sulfonic acid



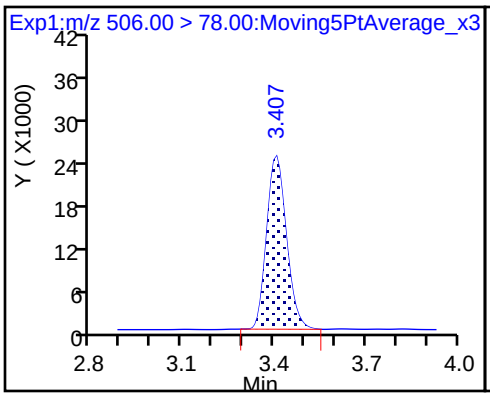
20 Perfluorononanoic acid (ND)



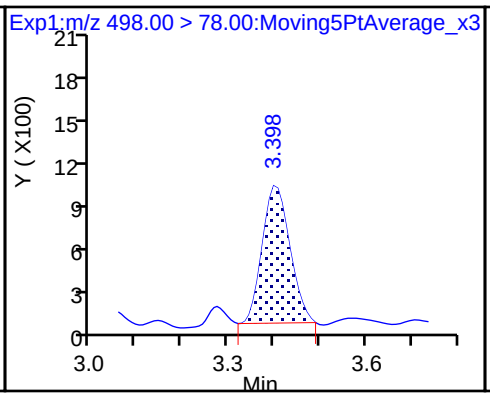
20 Perfluorononanoic acid (ND)



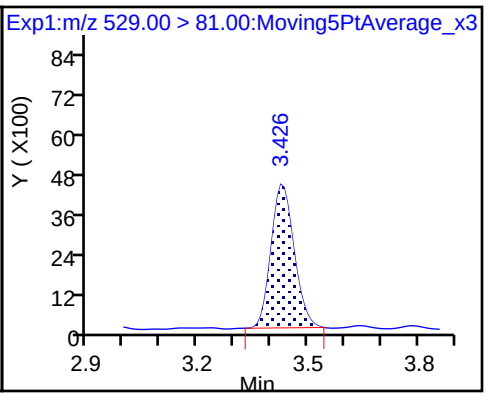
D 21 13C8 FOSA



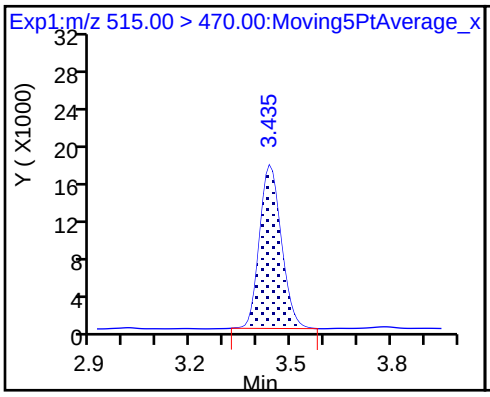
22 Perfluorooctane Sulfonamide



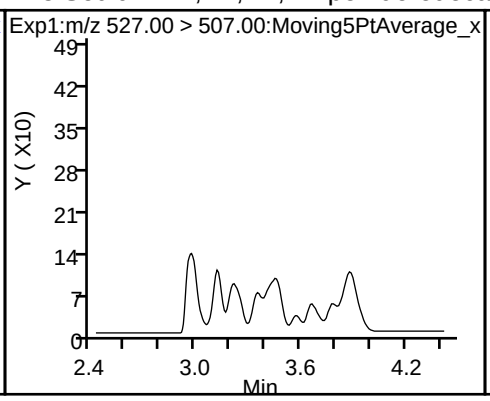
D 26 M2-8:2FTS



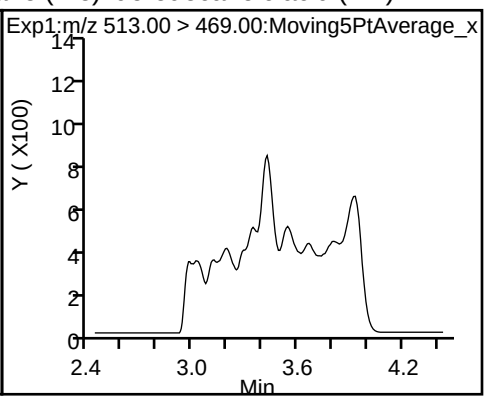
D 23 13C2 PFDA



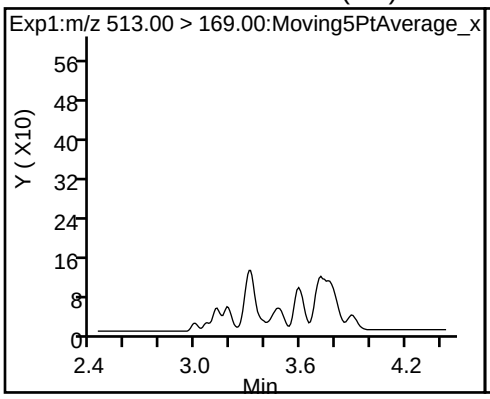
25 Sodium 1H,1H,2H,2H-perfluorodecane2(ND)



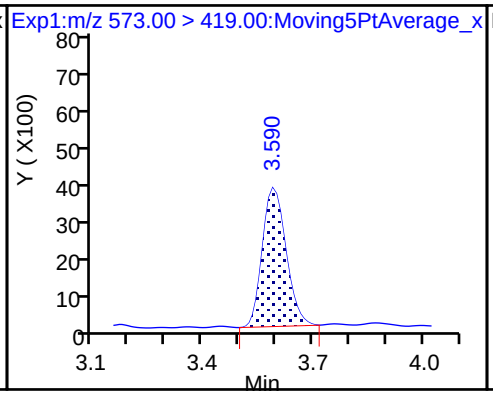
24 Perfluorodecanoic acid (ND)



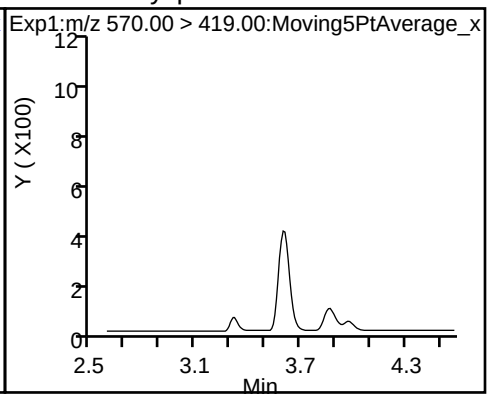
24 Perfluorodecanoic acid (ND)



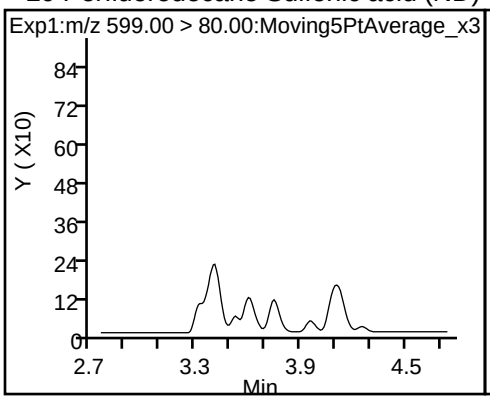
D 27 d3-NMeFOSAA



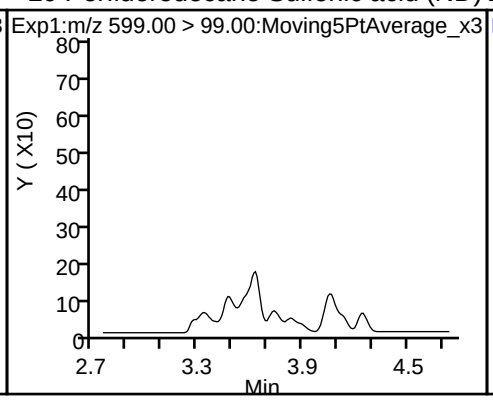
28 N-methyl perfluorooctane sulfonami (ND)



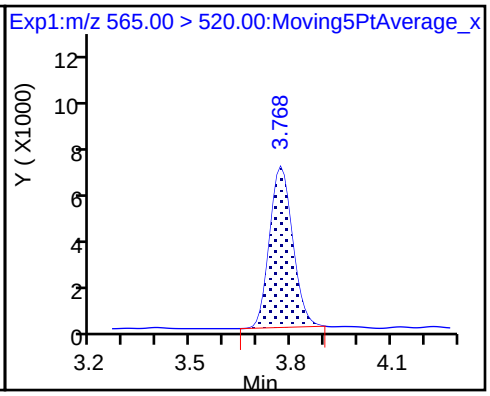
29 Perfluorodecane Sulfonic acid (ND)



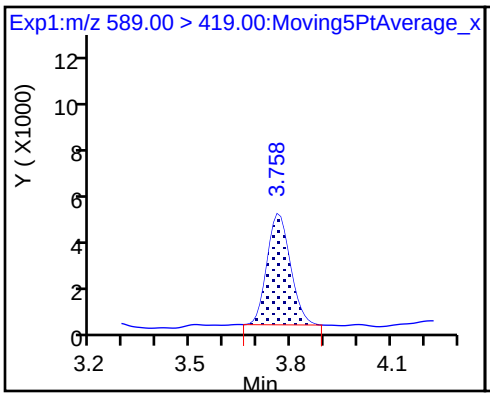
29 Perfluorodecane Sulfonic acid (ND)



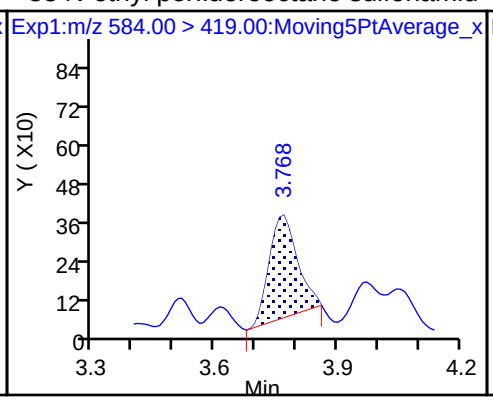
D 30 13C2 PFUnA



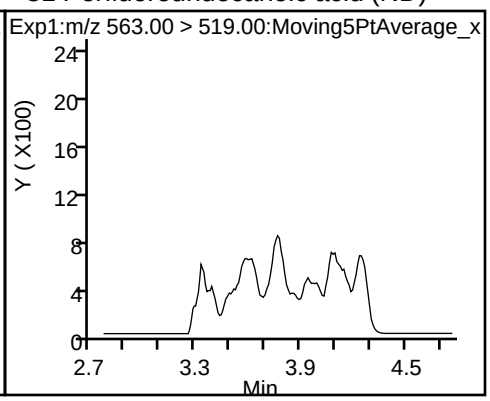
D 32 d5-NEtFOSAA



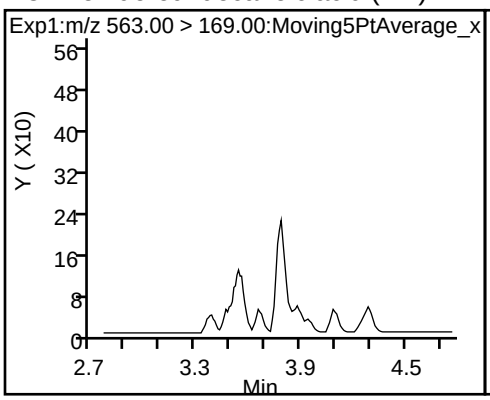
33 N-ethyl perfluorooctane sulfonamid



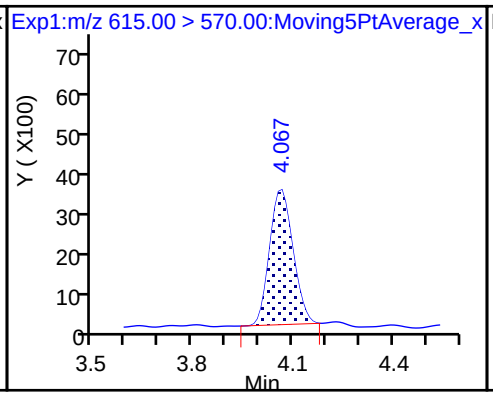
31 Perfluoroundecanoic acid (ND)



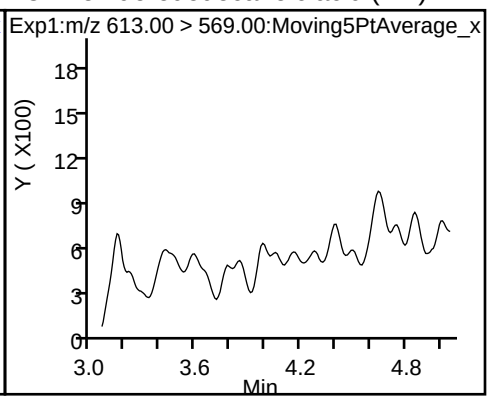
31 Perfluoroundecanoic acid (ND)



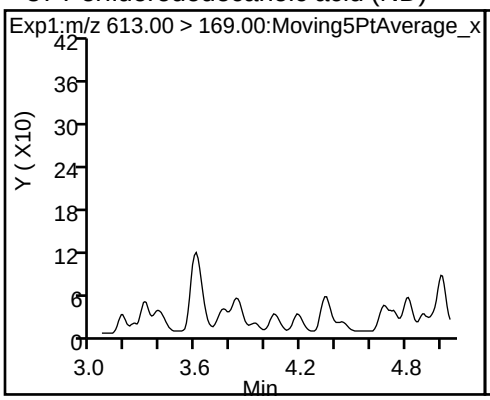
D 36 13C2 PFDoA



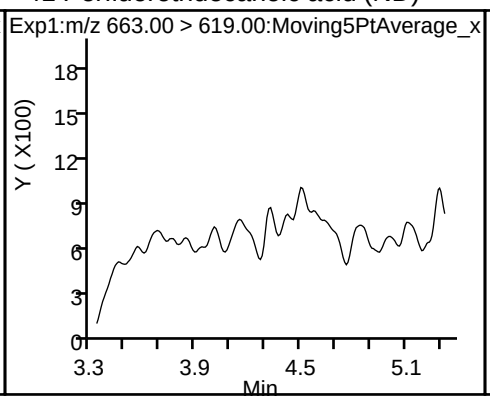
37 Perfluorododecanoic acid (ND)



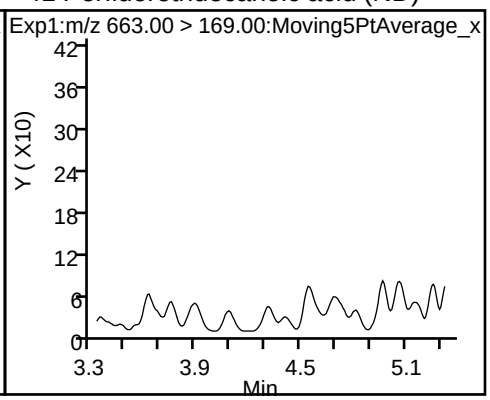
37 Perfluorododecanoic acid (ND)



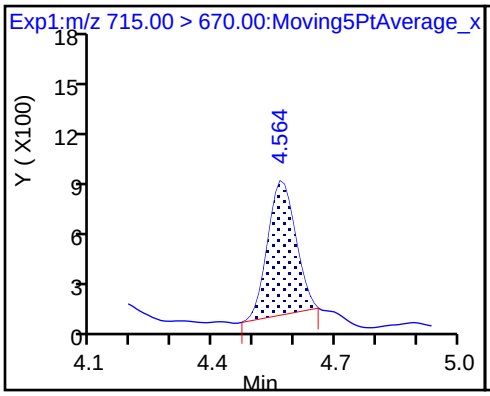
41 Perfluorotridecanoic acid (ND)



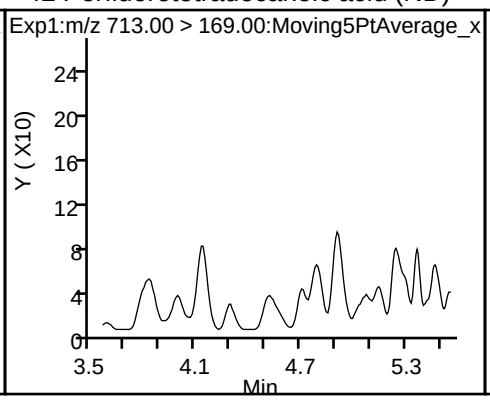
41 Perfluorotridecanoic acid (ND)



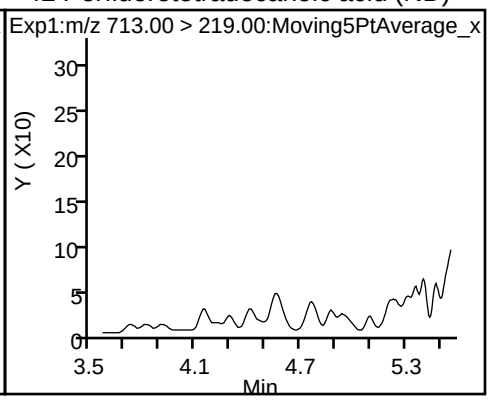
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013-SPLP(8'-10') | Lab Sample ID: 320-36683-6

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_010.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 10:20

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 265.5(mL) | Date Analyzed: 03/19/2018 17:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	4.34	B	1.88	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.70	J	1.88	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	3.20		1.88	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.81	J	1.88	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	4.51		1.88	0.80
375-95-1	Perfluorononanoic acid (PFNA)	1.91		1.88	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	0.29	U	1.88	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.04	U	1.88	1.04
307-55-1	Perfluorododecanoic acid (PFDoA)	0.52	U	1.88	0.52
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.22	U	1.88	1.22
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.27	U	1.88	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.19	U	1.88	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	42.1	B	1.88	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.40	J	1.88	0.18
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.30	U	1.88	0.30
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.33	U	1.88	0.33
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.92	U	18.8	2.92
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.79	U	18.8	1.79
27619-97-2	6:2FTS	1.88	U	18.8	1.88
39108-34-4	8:2FTS	2.46	J	18.8	1.88

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013-SPLP(8'-10') | Lab Sample ID: 320-36683-6

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_010.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 10:20

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 265.5(mL) | Date Analyzed: 03/19/2018 17:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	84		25-150
STL01893	13C5 PFPeA	80		25-150
STL00993	13C2 PFHxA	76		25-150
STL01892	13C4-PFHpA	76		25-150
STL00990	13C4 PFOA	79		25-150
STL00995	13C5 PFNA	67		25-150
STL00996	13C2 PFDA	84		25-150
STL00997	13C2 PFUnA	76		25-150
STL00998	13C2 PFDoA	75		25-150
STL02116	13C2-PFTeDA	110		25-150
STL02337	13C3-PFBS	83		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	75		25-150
STL01056	13C8 FOSA	82		25-150
STL02118	d3-NMeFOSAA	55		25-150
STL02117	d5-NEtFOSAA	63		25-150
STL02279	M2-6:2FTS	88		25-150
STL02280	M2-8:2FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_010.d
Lims ID: 320-36683-B-6-B
Client ID: SB013-SPLP(8'-10')
Sample Type: Client
Inject. Date: 19-Mar-2018 17:36:12 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-b-6-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:04:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.444	-0.003	0.536	4572643	2.10		84.2	73933	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.444	0.003	1.004	195582	0.1153			39.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.632	3070668	2.00		80.1	49802	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.705	-0.005	1.000	64784	0.0452			18.0	M
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.740	-0.004	0.646	72647	1.92		82.6	258	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.992	-0.006	1.000	111338	0.0850			111	
313.00 > 119.00	1.986	1.992	-0.006	1.000	8267		13.47(5.03-15.10)		124	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.992	-0.006	0.739	3244463	1.90		75.9	81023	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.866	3138337	1.89		75.5	65474	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	27974	0.0215			26.1	
363.00 > 169.00	2.328	2.335	-0.007	1.000	11771		2.38(1.13-3.40)		136	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	2297960	1.12			1871	
399.00 > 99.00	2.341	2.348	-0.007	1.000	699855		3.28(1.50-4.49)		851	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	4361890	1.97		83.2	105413	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.675	-0.010	1.000	16946	0.0273			573	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.675	-0.010	0.991	886955	2.08		87.7	4941	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.706	-0.017	1.000	3153661	1.96		78.6	80822	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.706	-0.017		4255380	2.50			110419	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.696	2.706	-0.010	1.003	168658	0.1198			55.5	
413.00 > 169.00	2.696	2.706	-0.010	1.003	108925		1.55(0.84-2.52)		444	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.706	-0.010	1.000	56604	0.0372			104	
449.00 > 99.00	2.696	2.706	-0.010	1.000	15298		3.70(1.94-5.82)		144	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.083	-0.018	1.140	2766621	1.78		74.6	16279	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.065	3.083	-0.018	1.000	33126325	26.4			38915	E
499.00 > 99.00	3.065	3.083	-0.018	1.000	9114500		3.63(2.31-6.93)		172870	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.072	3.083	-0.011	1.002	44169	0.0507			42.6	
463.00 > 169.00	3.072	3.083	-0.011	1.002	11150		3.96(1.90-5.69)		218	M
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.083	-0.018	1.140	2135878	1.66		66.5	50643	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.403	-0.005	1.264	4599148	2.05		81.9	54632	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.412	-0.005	1.003	5628	0.003148			54.0	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.439	-0.014	1.274	965695	2.41		101	10819	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.439	-0.014	1.000	33111	0.0653			1067	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.448	-0.013	1.277	2257475	2.10		84.2	56925	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.606	-0.016	1.335	488099	1.38		55.1	17391	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.775	-0.017	1.398	531715	1.57		62.8	1587	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.786	-0.028	1.398	1606194	1.91		76.5	47293	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.084	-0.028	1.509	1493366	1.87		75.0	9663	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.581	-0.017	1.698	1998570	2.75		110	20096	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags
M - Manually Integrated

Report Date: 20-Mar-2018 14:13:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_010.d

Injection Date: 19-Mar-2018 17:36:12 Instrument ID: A8_N

Lims ID: 320-36683-B-6-B Lab Sample ID: 320-36683-6

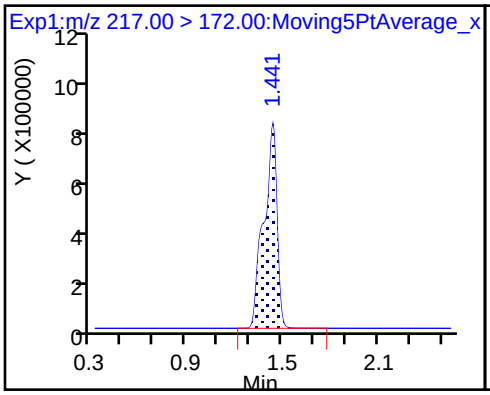
Client ID: SB013-SPLP(8'-10')

Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 6

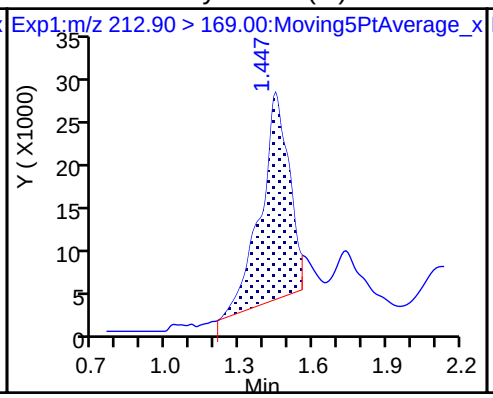
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

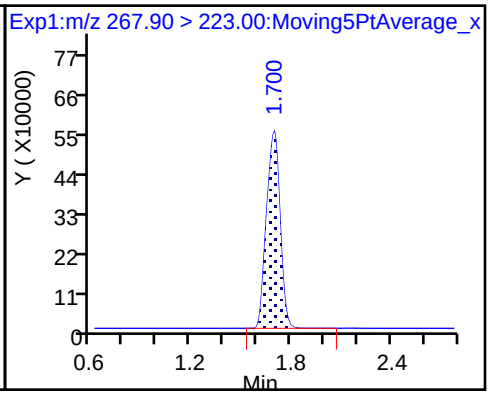
D 1 13C4 PFBA



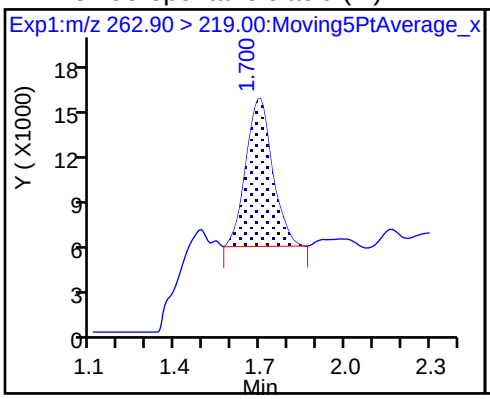
2 Perfluorobutyric acid (M)



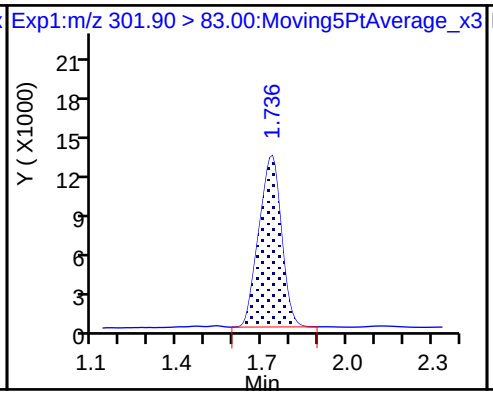
D 3 13C5-PFPeA



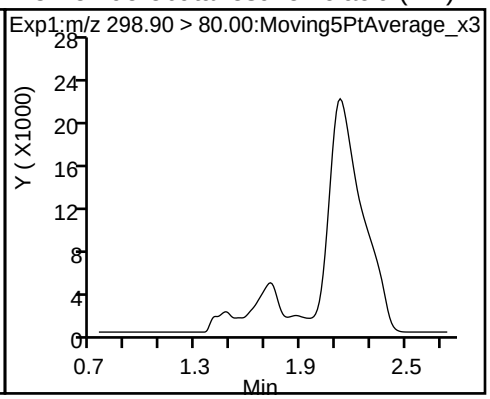
4 Perfluoropentanoic acid (M)



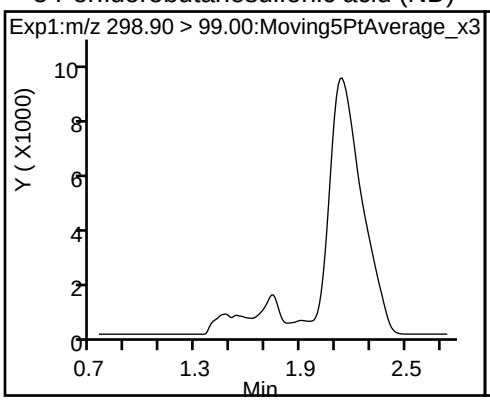
D 47 13C3-PFBS



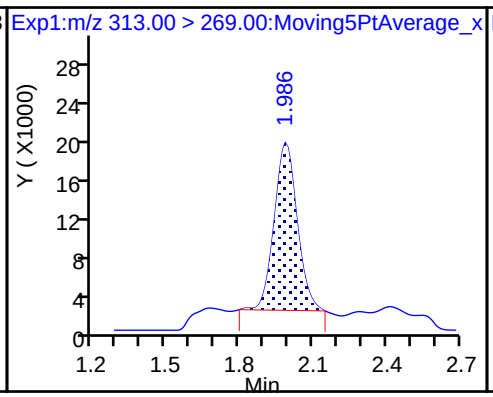
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)



6 Perfluorohexanoic acid



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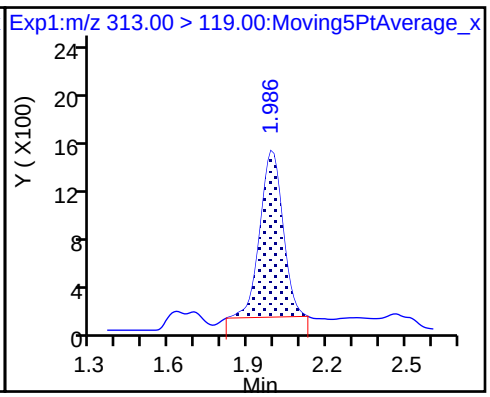
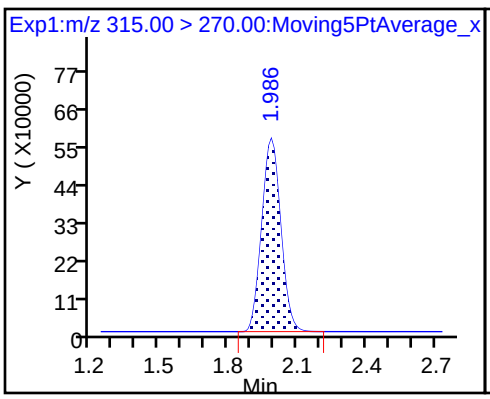
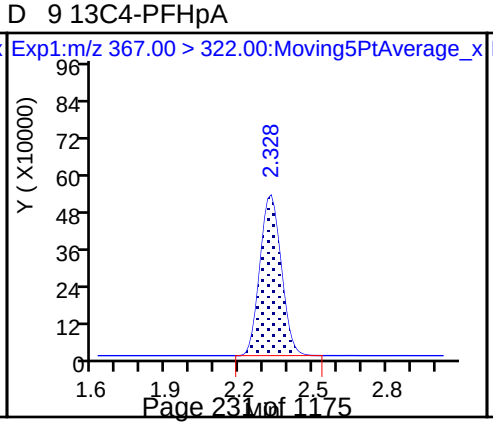


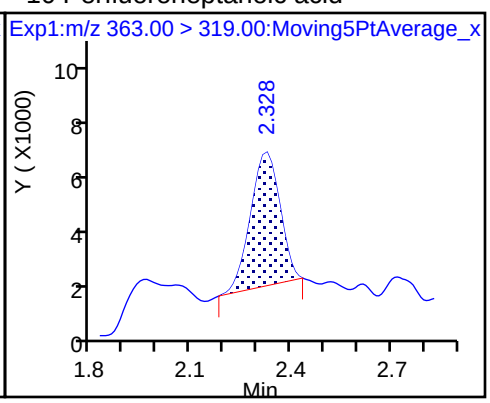
D 7 13C2 PFHxA



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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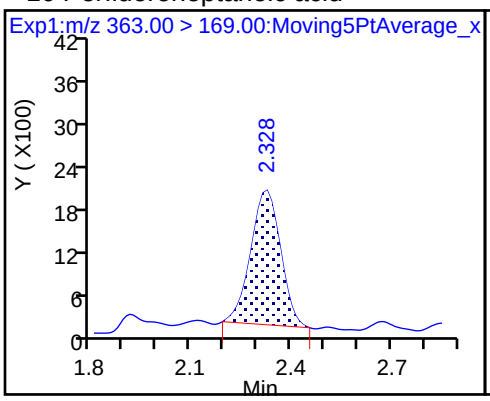
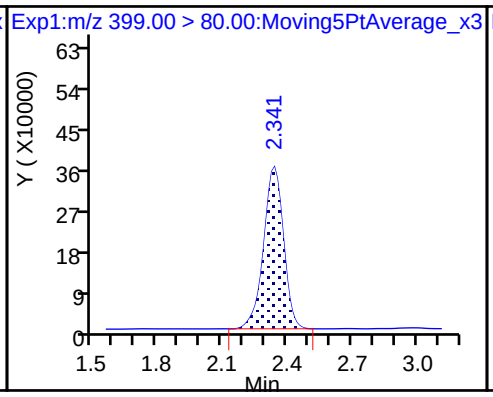
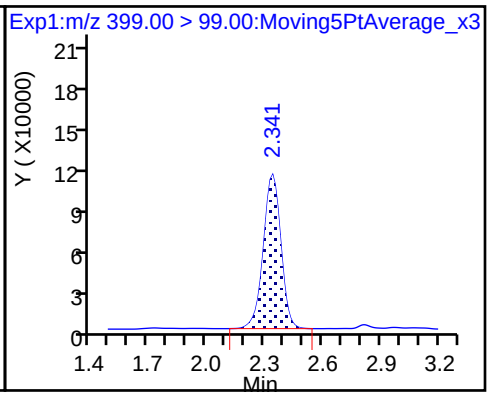


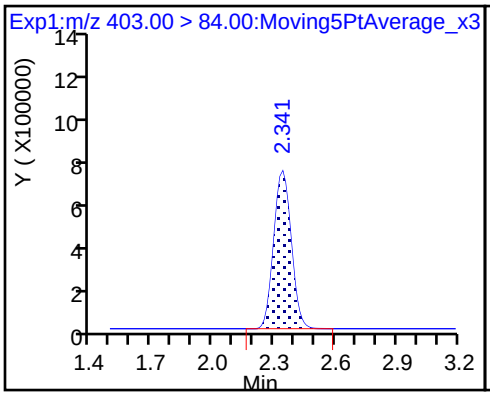
8 Perfluorohexanesulfonic acid



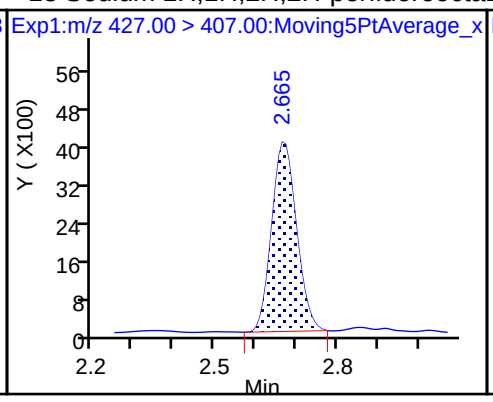
8 Perfluorohexanesulfonic acid



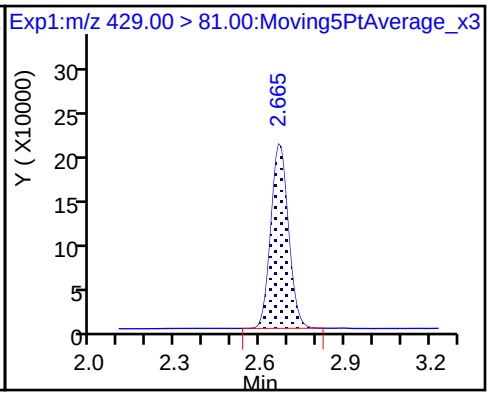
D 11 18O2 PFHxS



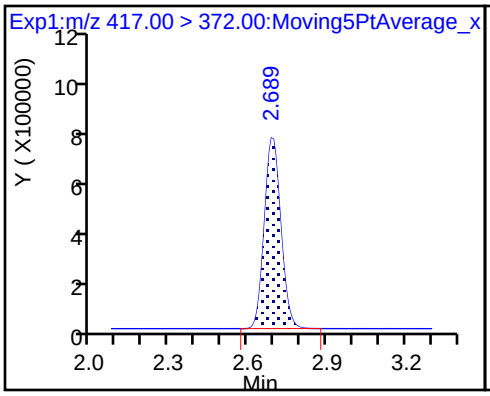
13 Sodium 1H,1H,2H,2H-perfluorooctane



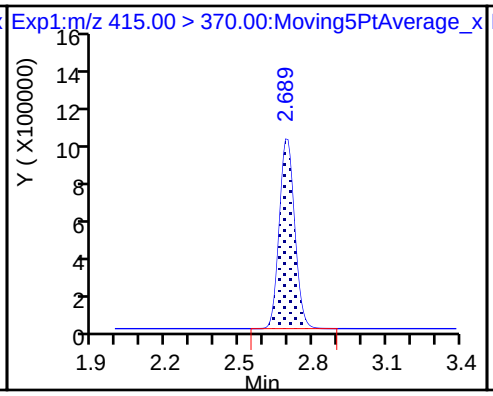
D 12 M2-6:2FTS



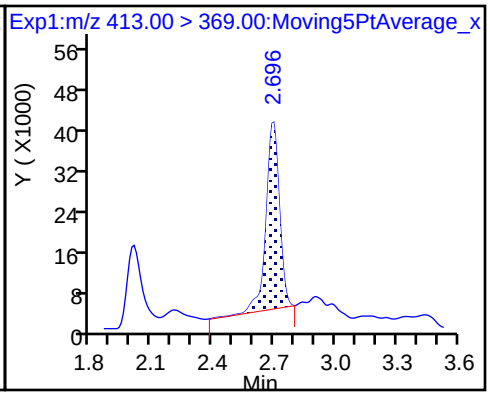
D 14 13C4 PFOA



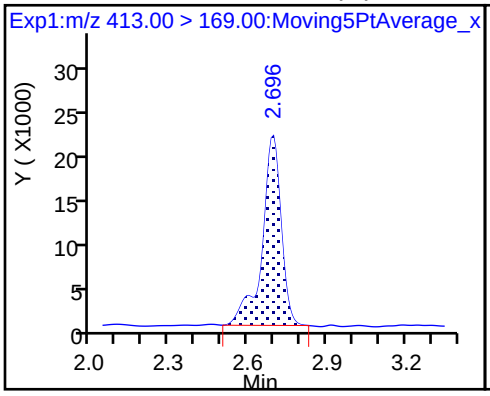
* 62 13C2-PFOA



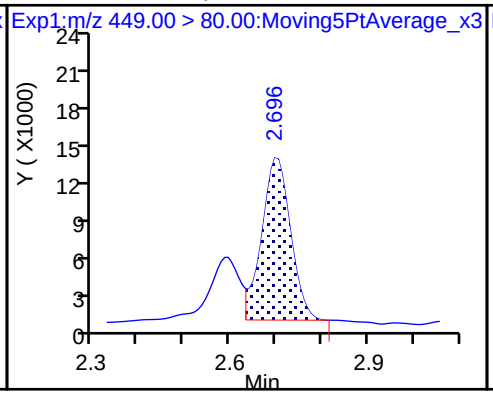
15 Perfluorooctanoic acid



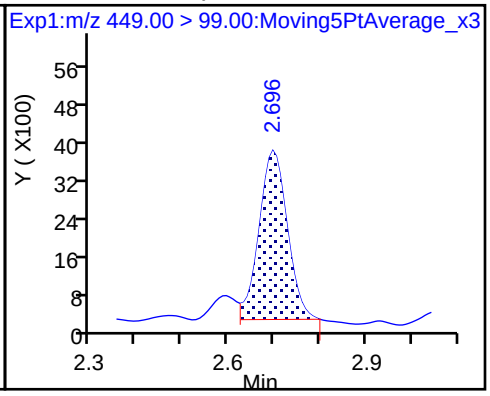
15 Perfluorooctanoic acid (M)



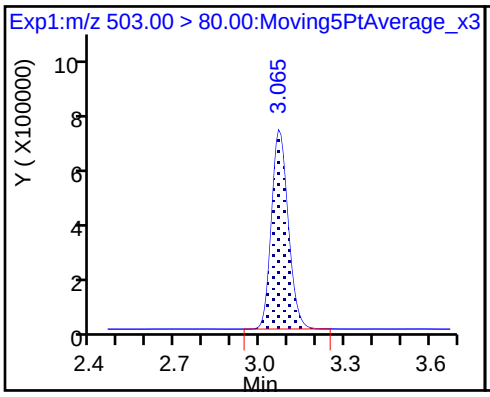
16 Perfluoroheptanesulfonic acid



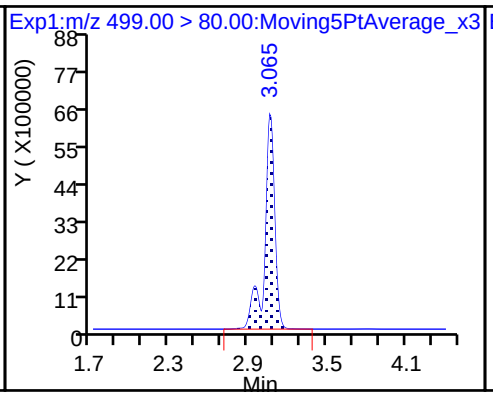
16 Perfluoroheptanesulfonic acid



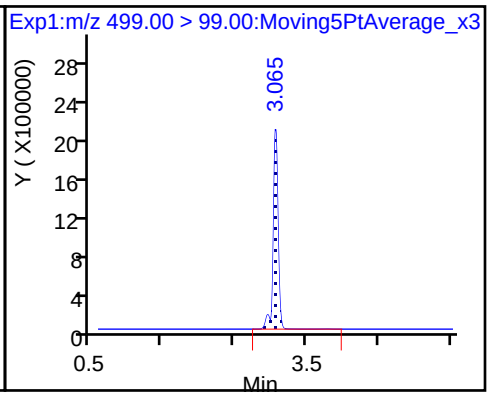
D 18 13C4 PFOS



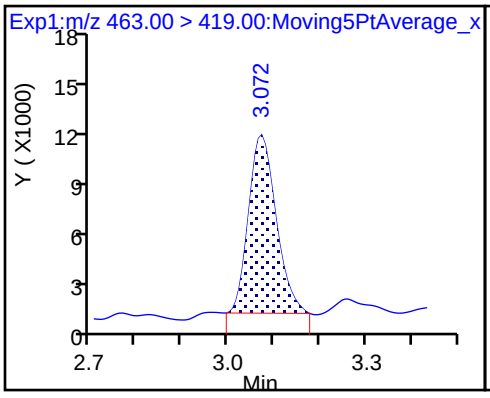
17 Perfluorooctane sulfonic acid



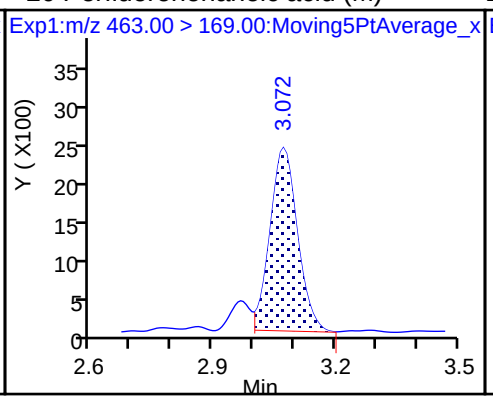
17 Perfluorooctane sulfonic acid



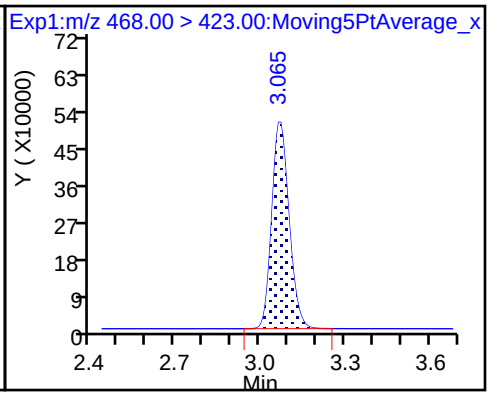
20 Perfluorononanoic acid



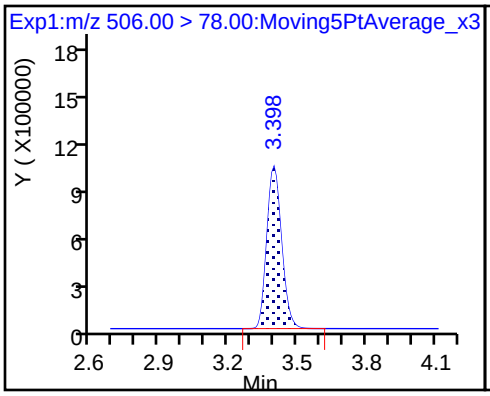
20 Perfluorononanoic acid (M)



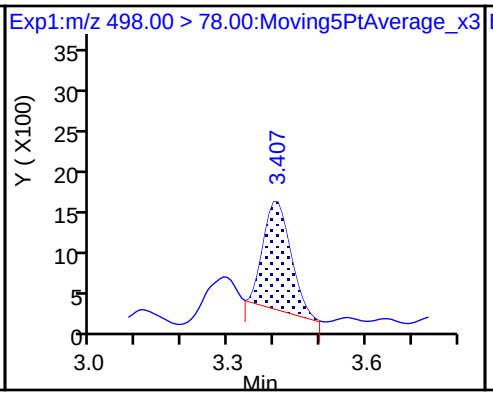
D 19 13C5 PFNA



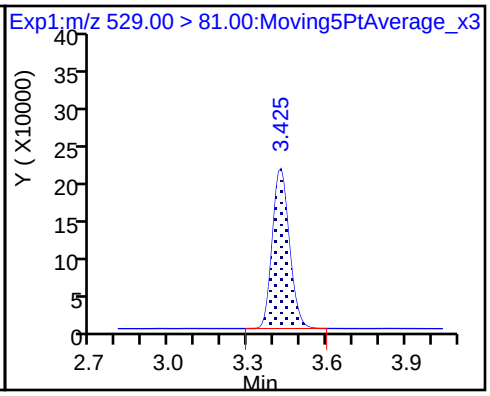
D 21 13C8 FOSA



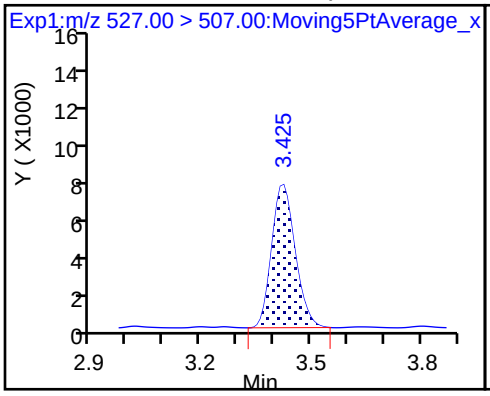
22 Perfluorooctane Sulfonamide



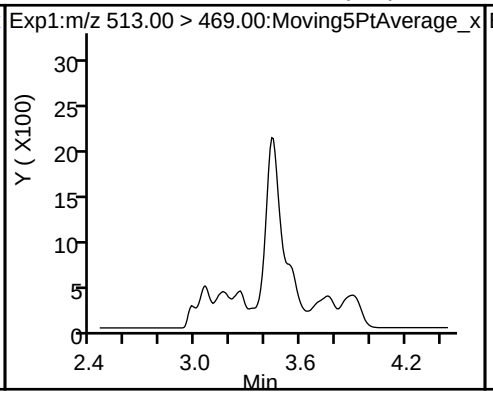
D 26 M2-8:2FTS



25 Sodium 1H,1H,2H,2H-perfluorodecane



24 Perfluorodecanoic acid (ND)



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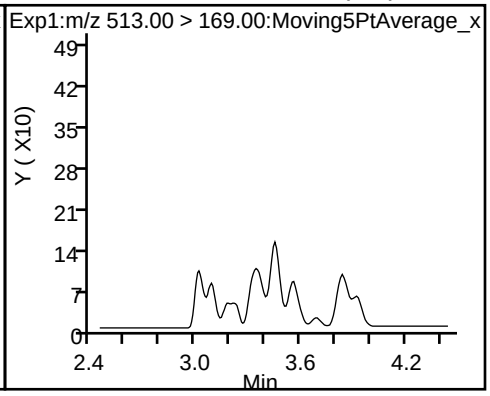
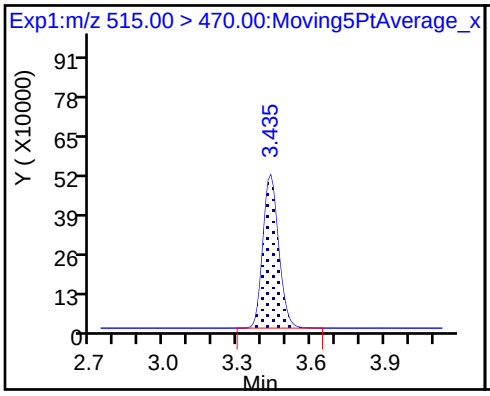
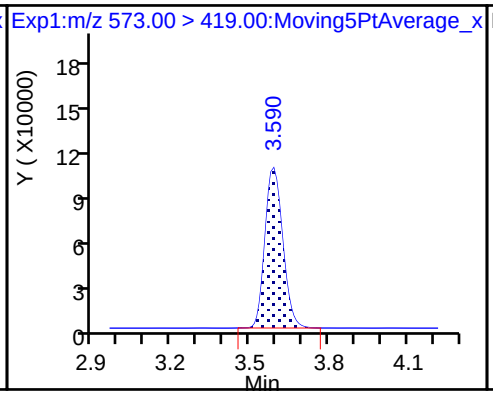


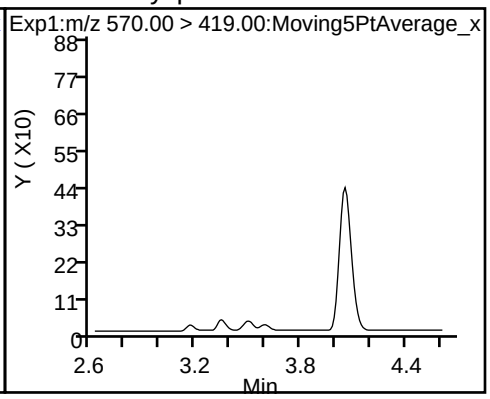
D 23 13C2 PFDA



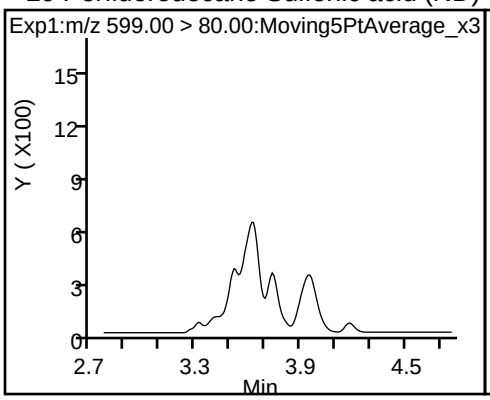
D 27 d3-NMeFOSAA



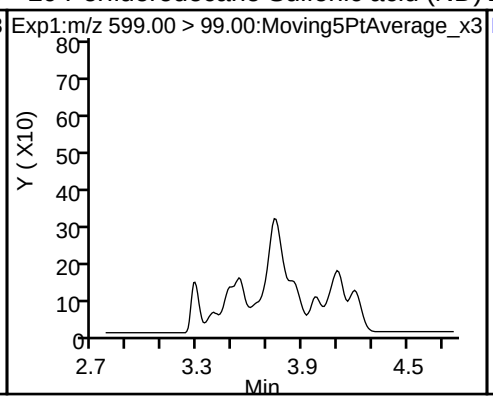
28 N-methyl perfluorooctane sulfonami (ND)



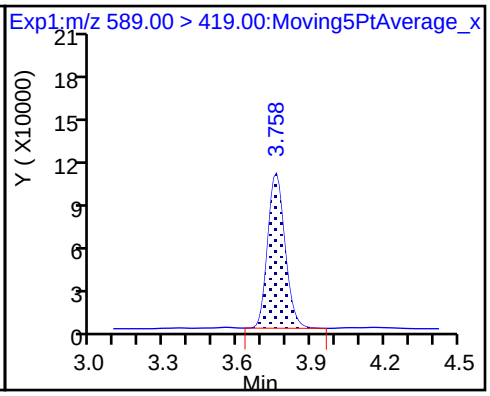
29 Perfluorodecane Sulfonic acid (ND)



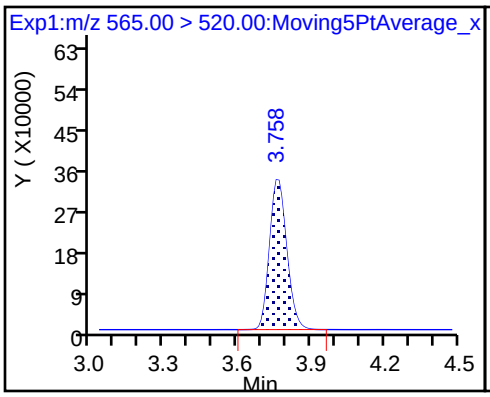
29 Perfluorodecane Sulfonic acid (ND)



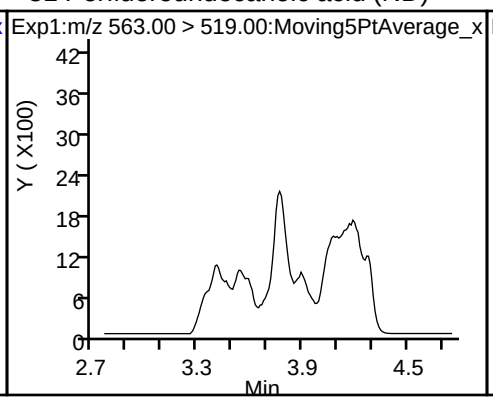
D 32 d5-NEtFOSAA



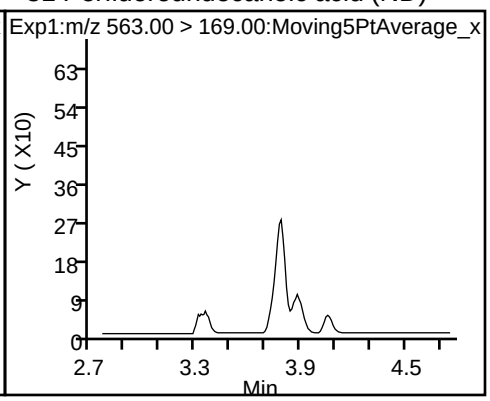
D 30 13C2 PFUnA



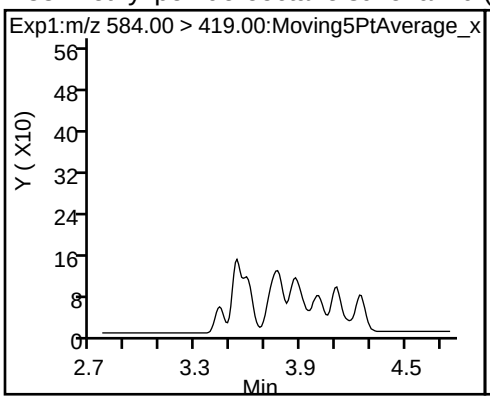
31 Perfluoroundecanoic acid (ND)



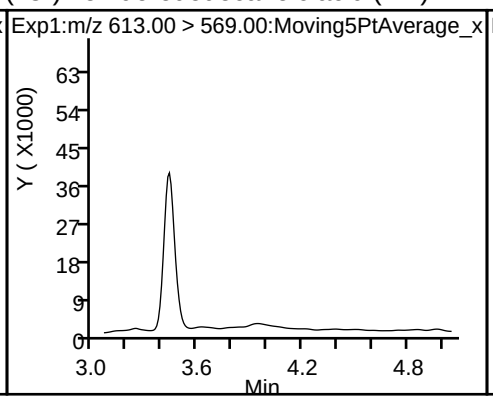
31 Perfluoroundecanoic acid (ND)



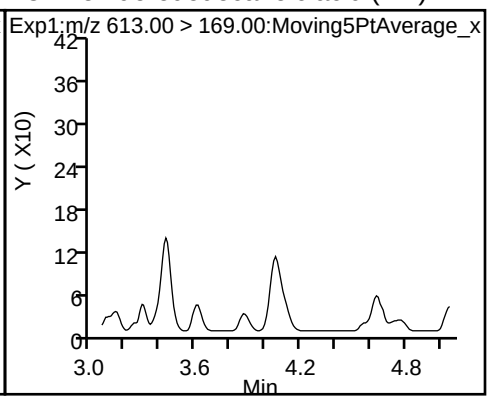
33 N-ethyl perfluorooctane sulfonamid (ND)



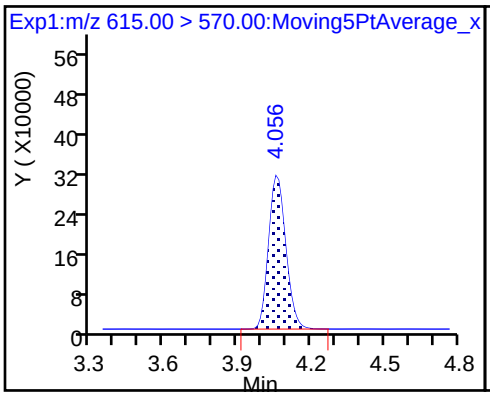
37 Perfluorododecanoic acid (ND)



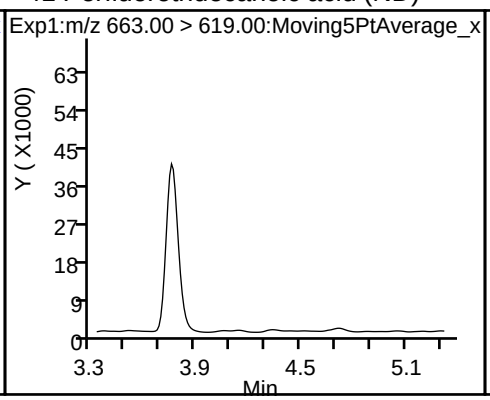
37 Perfluorododecanoic acid (ND)



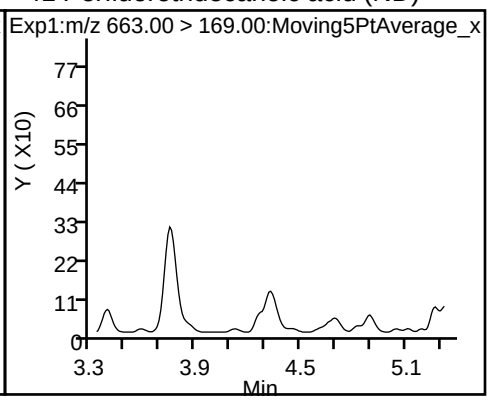
D 36 13C2 PFDoA



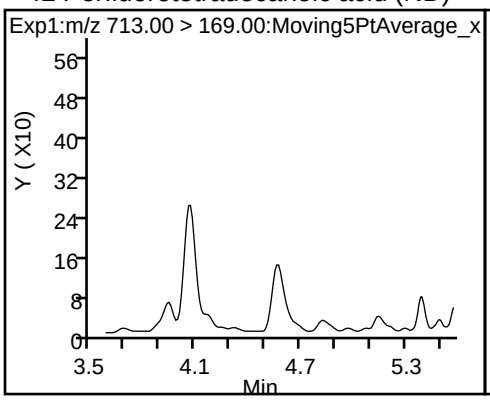
41 Perfluorotridecanoic acid (ND)



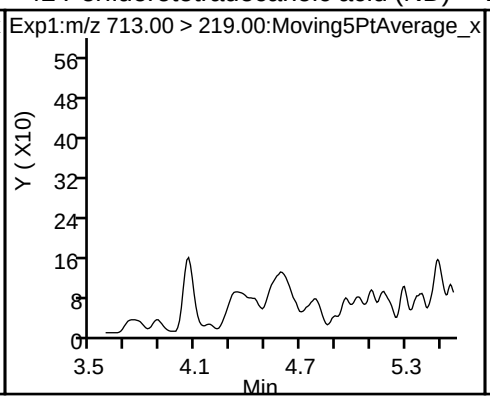
41 Perfluorotridecanoic acid (ND)



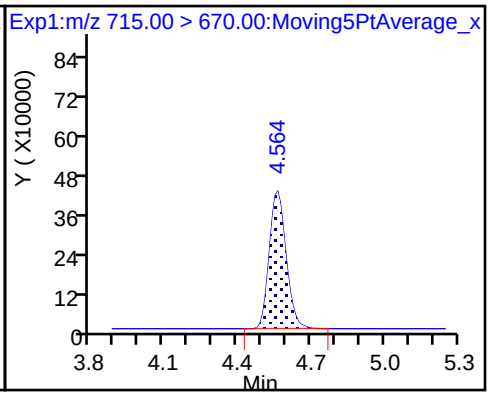
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

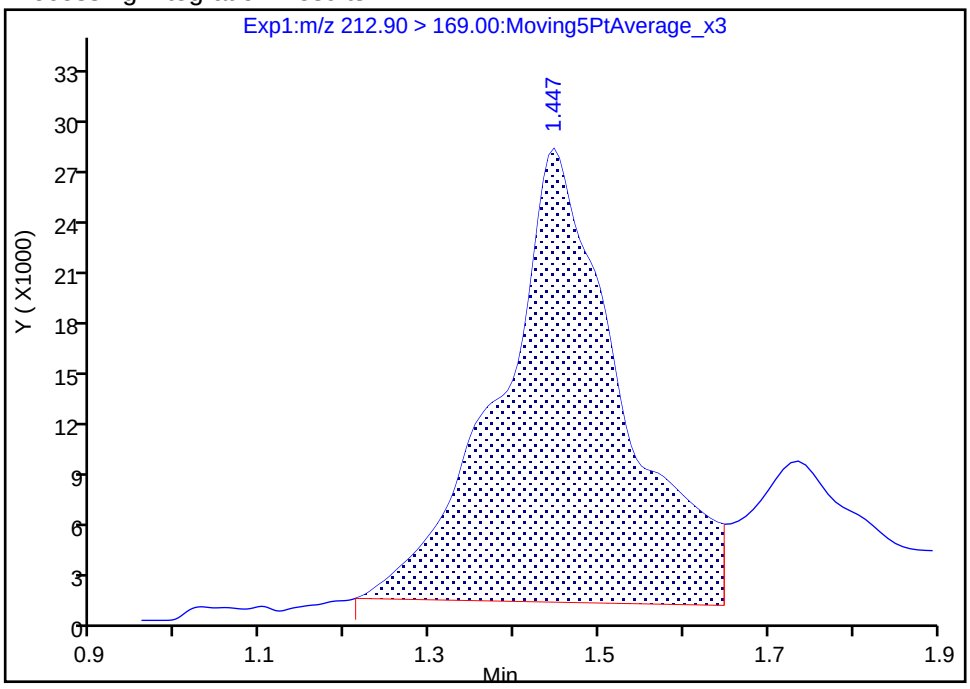
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_010.d				
Injection Date:	19-Mar-2018 17:36:12	Instrument ID:	A8_N		
Lims ID:	320-36683-B-6-B	Lab Sample ID:	320-36683-6		
Client ID:	SB013-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

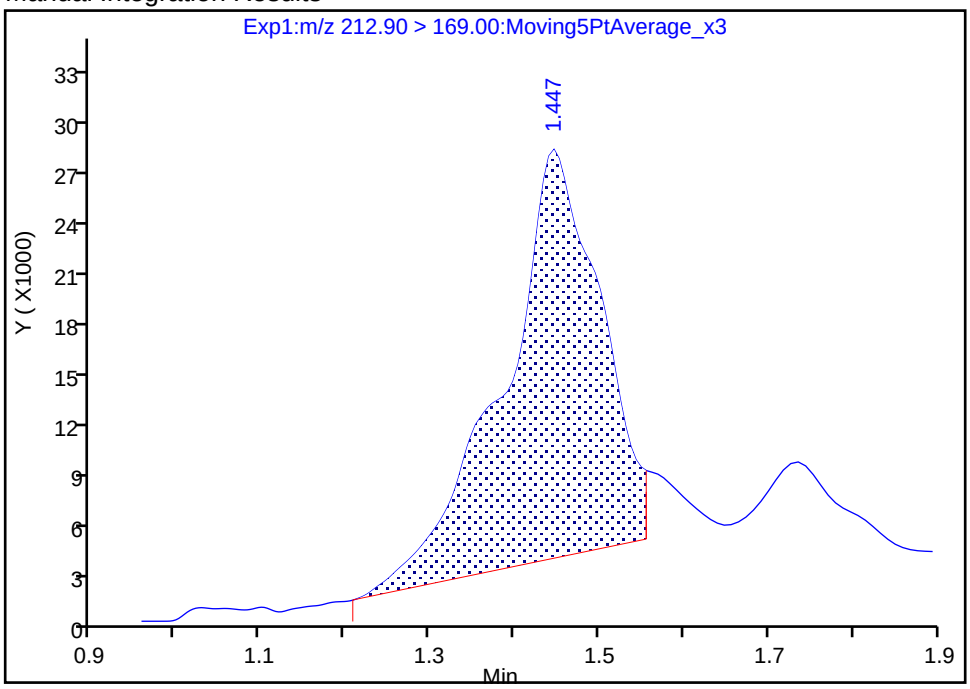
Processing Integration Results

RT: 1.45
Area: 271671
Amount: 0.160151
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 195582
Amount: 0.115296
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:04:05

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

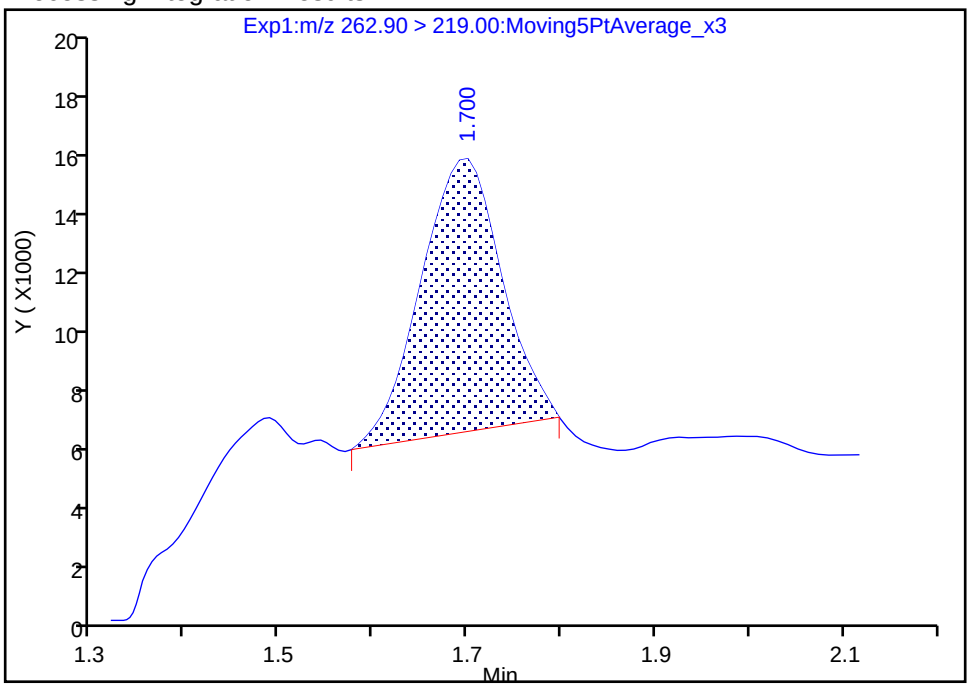
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_010.d				
Injection Date:	19-Mar-2018 17:36:12	Instrument ID:	A8_N		
Lims ID:	320-36683-B-6-B	Lab Sample ID:	320-36683-6		
Client ID:	SB013-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

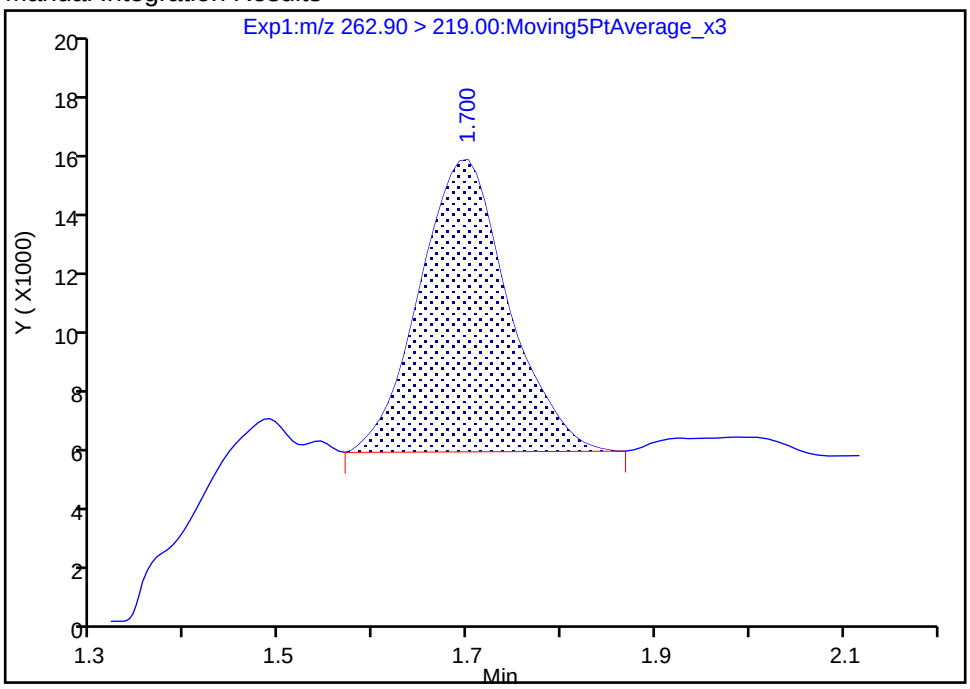
Processing Integration Results

RT: 1.70
Area: 55527
Amount: 0.038701
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 64784
Amount: 0.045153
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:04:14

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

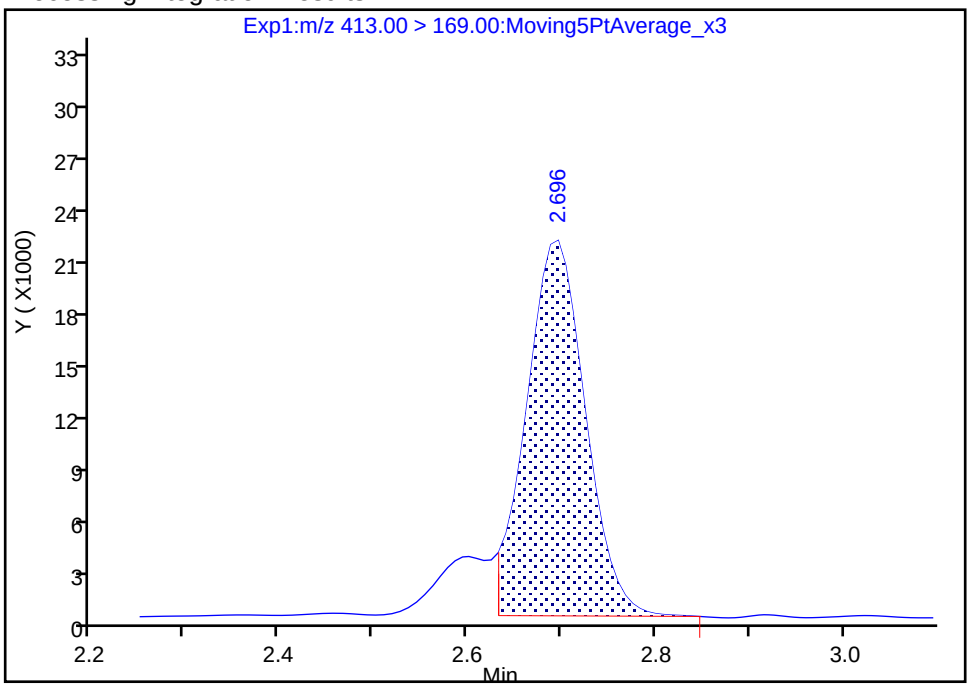
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_010.d				
Injection Date:	19-Mar-2018 17:36:12	Instrument ID:	A8_N		
Lims ID:	320-36683-B-6-B	Lab Sample ID:	320-36683-6		
Client ID:	SB013-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

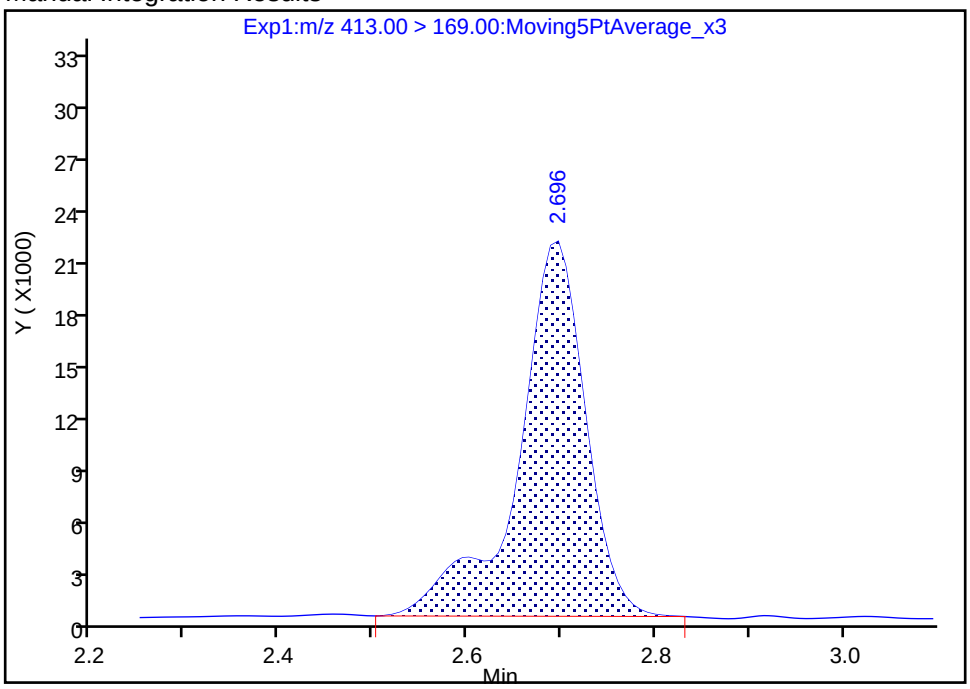
Processing Integration Results

RT: 2.70
Area: 94687
Amount: 0.119763
Amount Units: ng/ml



Manual Integration Results

RT: 2.70
Area: 108925
Amount: 0.119763
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:04:25

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

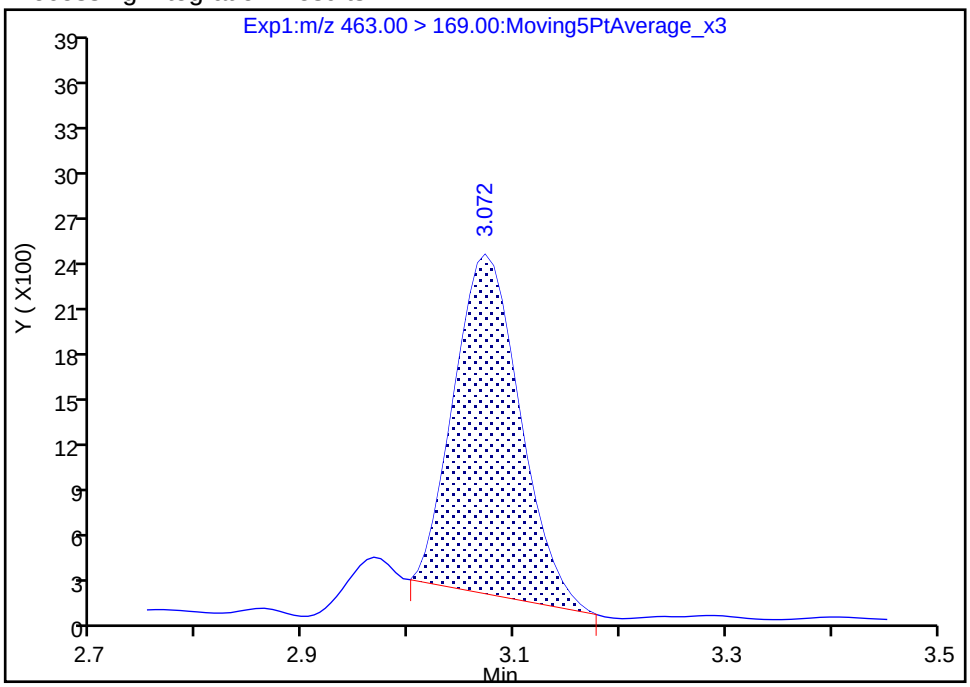
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_010.d				
Injection Date:	19-Mar-2018 17:36:12	Instrument ID:	A8_N		
Lims ID:	320-36683-B-6-B	Lab Sample ID:	320-36683-6		
Client ID:	SB013-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

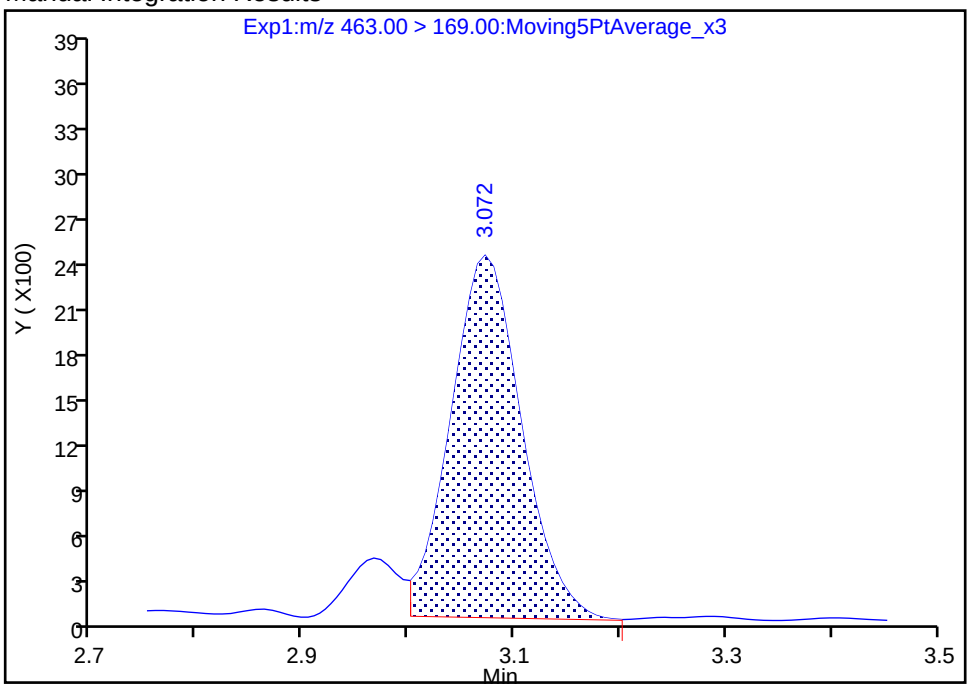
Processing Integration Results

RT: 3.07
Area: 9736
Amount: 0.050708
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 11150
Amount: 0.050708
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:04:37

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB013-SPLP(8'-10') DL Lab Sample ID: 320-36683-6 DL

Matrix: Solid (SPLP East) Lab File ID: 2017.03.17LLZA_032.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 10:20

Extraction Method: 3535 Date Extracted: 03/14/2018 20:27

Sample wt/vol: 265.5(mL) Date Analyzed: 03/17/2018 16:15

Con. Extract Vol.: 10.00(mL) Dilution Factor: 100

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1170	D	188	50.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	62	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_032.d
Lims ID: 320-36683-B-6-B
Client ID: SB013-SPLP(8'-10')
Sample Type: Client
Inject. Date: 17-Mar-2018 16:15:00 ALS Bottle#: 25 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-b-6-b 100X
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:51:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.434	0.018	1.008	397	0.000242			0.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.536	44229	0.0145		57.9	936	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.633	31590	0.0147		58.6	873	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.987	-0.012	0.735	37929	0.0158		63.1	999	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.315	-0.001	0.861	39473	0.0169		67.6	1315	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.328	-0.001	1.000	26349	0.0126			3.9	
399.00 > 99.00	2.327	2.328	-0.001	1.000	7491		3.52(1.50-4.49)		3.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.341	-0.014	0.866	44393	0.0142		60.2	1836	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.665	0.006	0.994	16495	0.0276		116	284	
* 62 13C2-PFOA										
415.00 > 370.00	2.686	2.680	0.006		59821	0.0250			2380	
D 14 13C4 PFOA										
417.00 > 372.00	2.686	2.689	-0.003	1.000	41217	0.0183		73.1	3260	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.051	0.006	1.000	456597	0.3118			1460	
499.00 > 99.00	3.057	3.051	0.006	1.000	117932		3.87(2.31-6.93)		881	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.058	-0.001	1.138	32324	0.0148		62.0	1124	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.065	-0.008	1.138	33426	0.0185		74.1	1176	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.398	-0.011	1.261	45793	0.0145		58.0	1741	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.417	-0.002	1.271	9324	0.0166		69.2	208	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.426	-0.011	1.271	22447	0.0149		59.5	396	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.579	-0.001	1.332	7357	0.0148		59.1	544	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.399	10122	0.0213		85.0	17.4	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.758	0.0	1.399	21242	0.0180		72.0	1115	
D 36 13C2 PFDoA										
615.00 > 570.00	4.045	4.056	-0.011	1.506	19813	0.0177		70.8	134	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.554	-0.001	1.695	16833	0.0165		65.9	182	

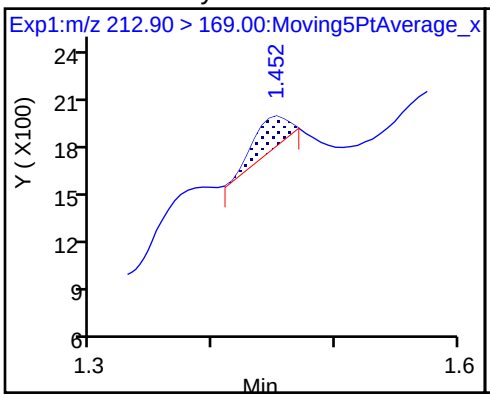
Report Date: 20-Mar-2018 13:55:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

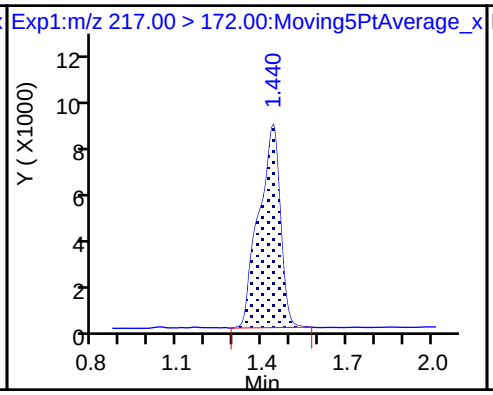
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_032.d

Injection Date:	17-Mar-2018 16:15:00	Instrument ID:	A8_N		
Lims ID:	320-36683-B-6-B	Lab Sample ID:	320-36683-6		
Client ID:	SB013-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

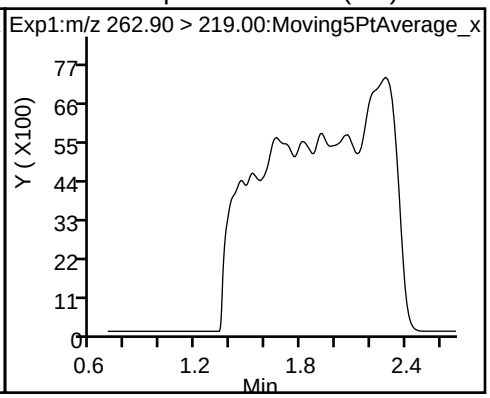
2 Perfluorobutyric acid



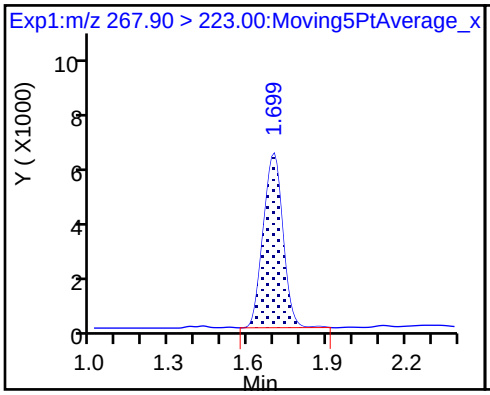
D 1 13C4 PFBA



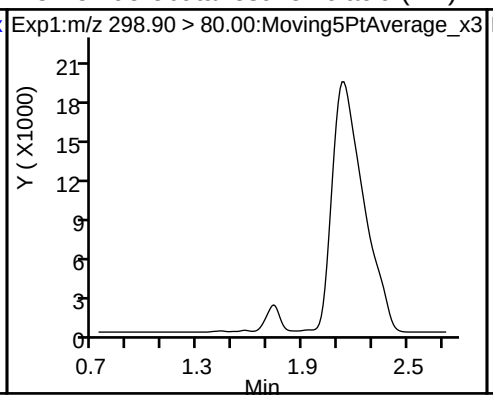
4 Perfluoropentanoic acid (ND)



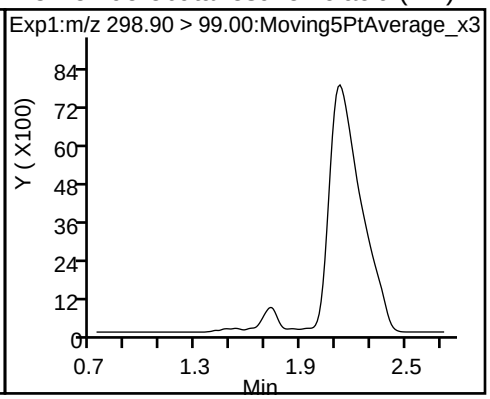
D 3 13C5-PFPeA



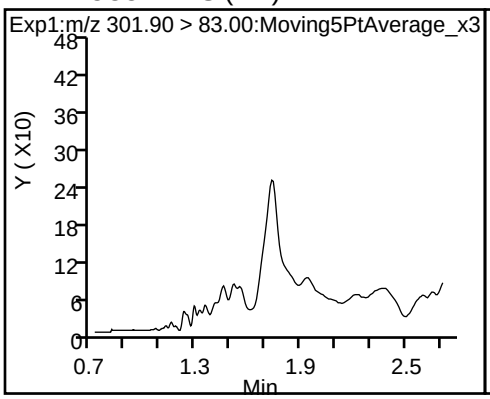
5 Perfluorobutanesulfonic acid (ND)



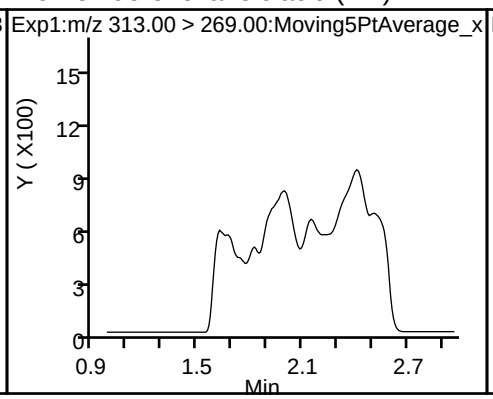
5 Perfluorobutanesulfonic acid (ND)



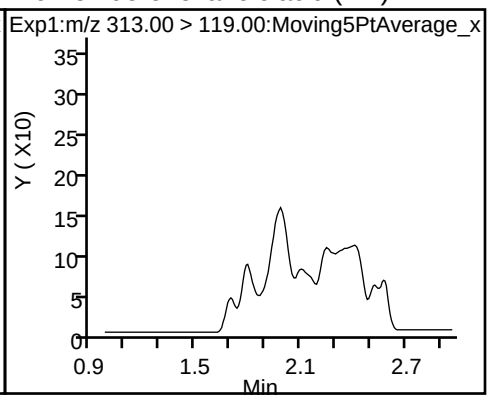
D 47 13C3-PFBS (ND)



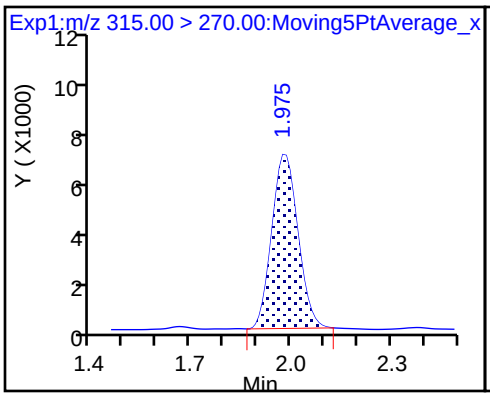
6 Perfluorohexanoic acid (ND)



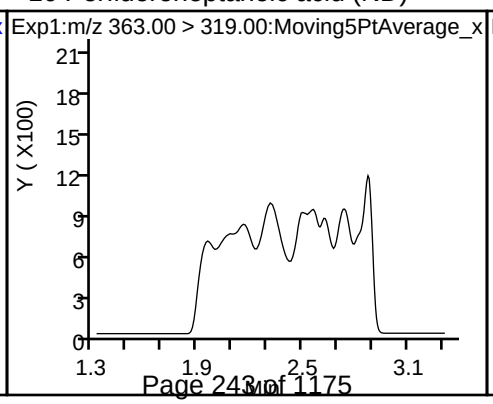
6 Perfluorohexanoic acid (ND)



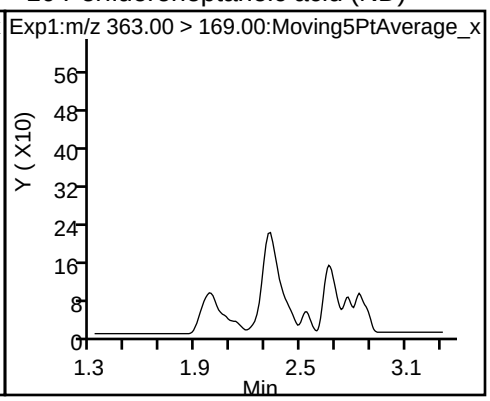
D 7 13C2 PFHxA



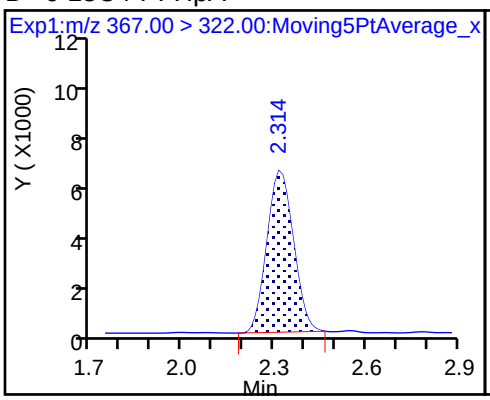
10 Perfluoroheptanoic acid (ND)



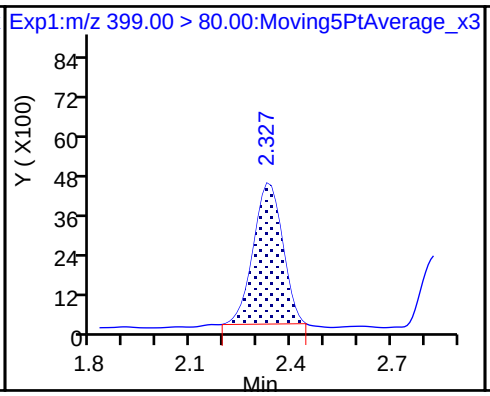
10 Perfluoroheptanoic acid (ND)



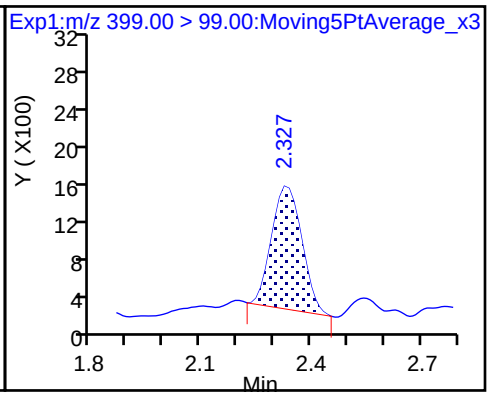
D 9 13C4-PFHpA



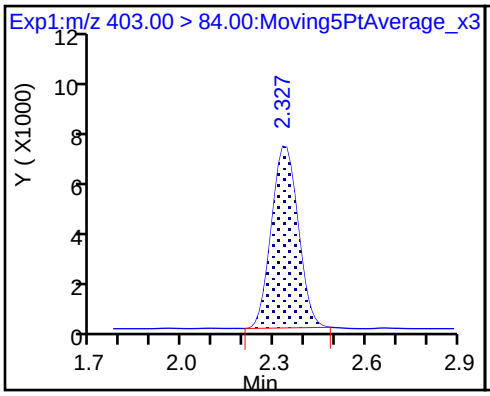
8 Perfluorohexanesulfonic acid



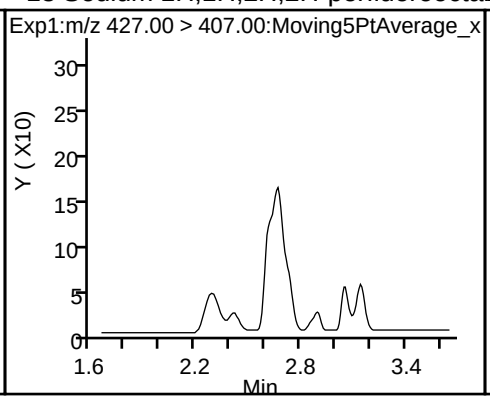
8 Perfluorohexanesulfonic acid



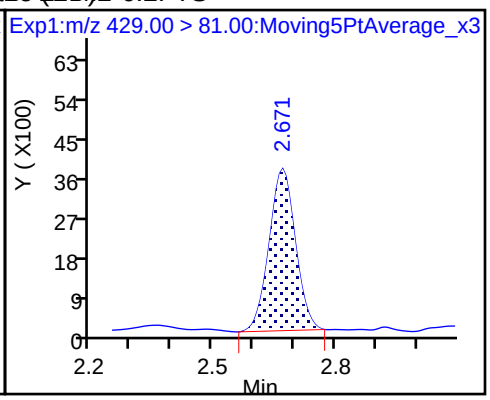
D 11 18O2 PFHxS



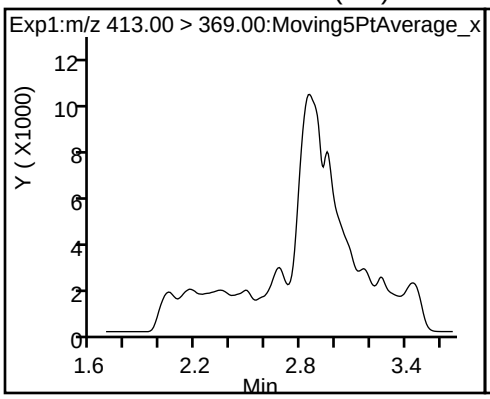
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (ND)



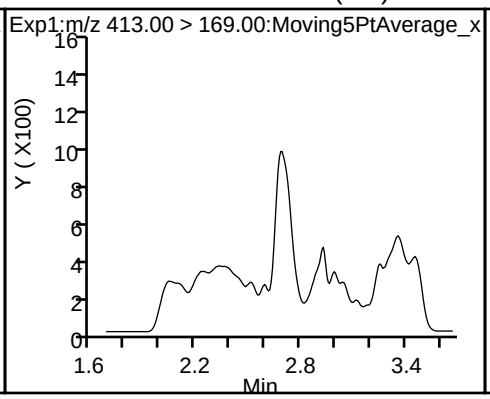
D 12 M2-6:2FTS



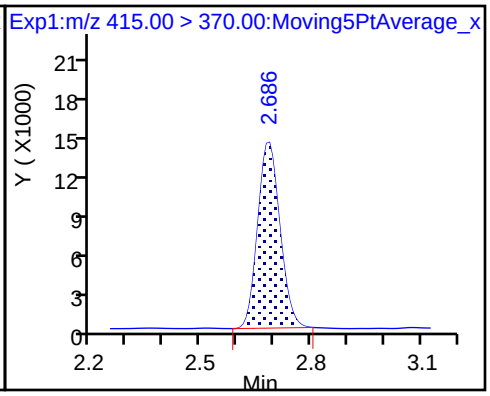
15 Perfluorooctanoic acid (ND)



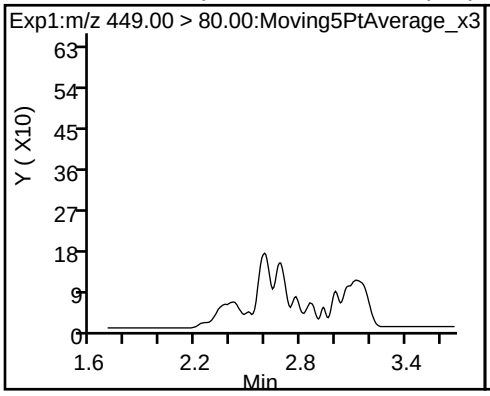
15 Perfluorooctanoic acid (ND)



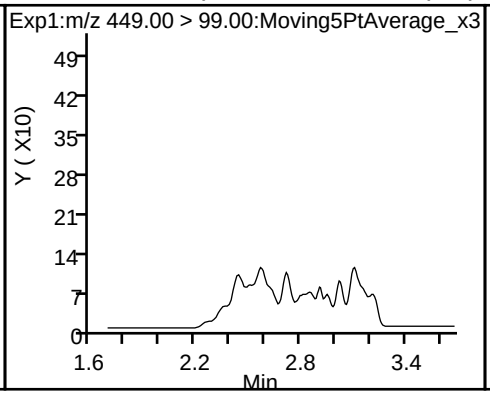
* 62 13C2-PFOA



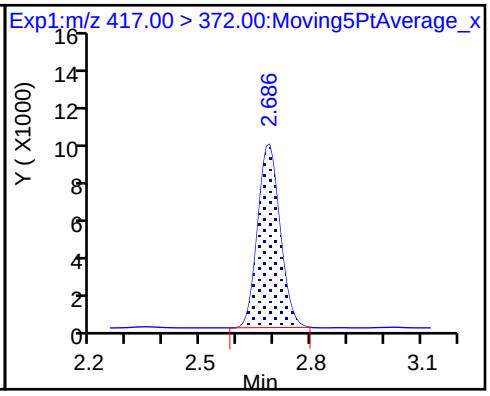
16 Perfluoroheptanesulfonic acid (ND)



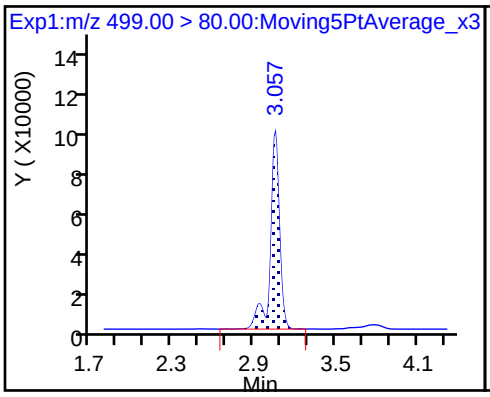
16 Perfluoroheptanesulfonic acid (ND)



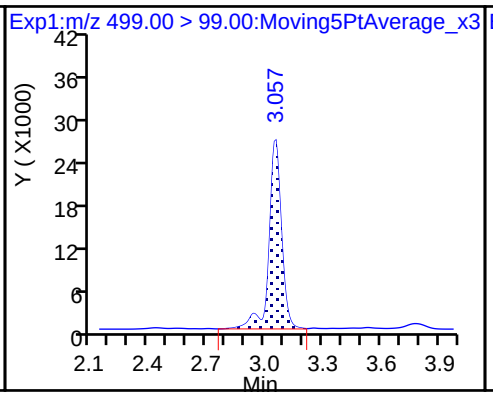
D 14 13C4 PFOA



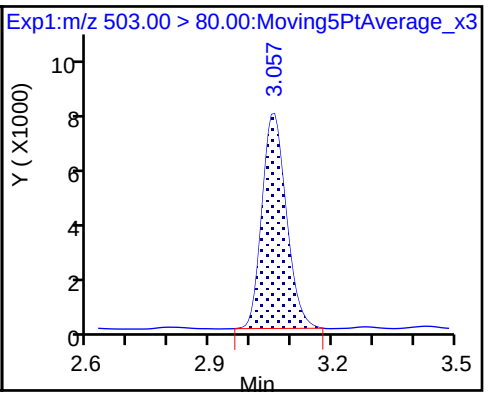
17 Perfluorooctane sulfonic acid



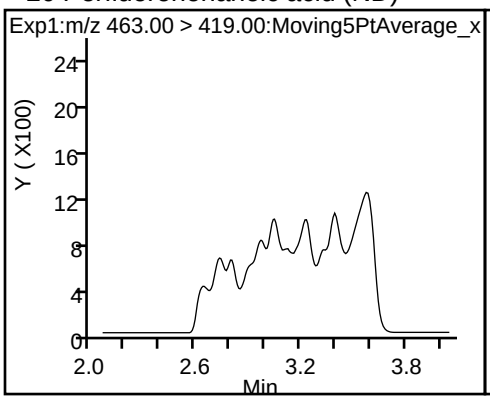
17 Perfluorooctane sulfonic acid



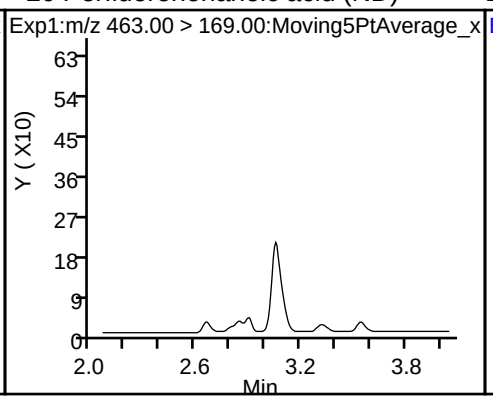
D 18 13C4 PFOS



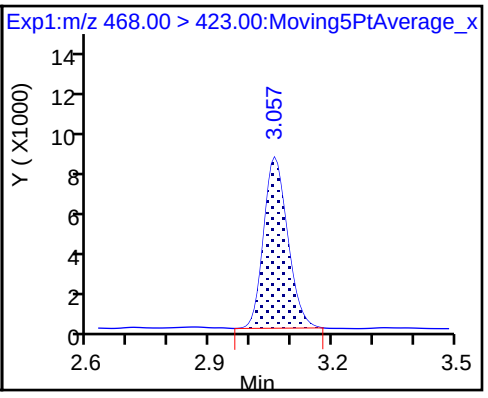
20 Perfluorononanoic acid (ND)



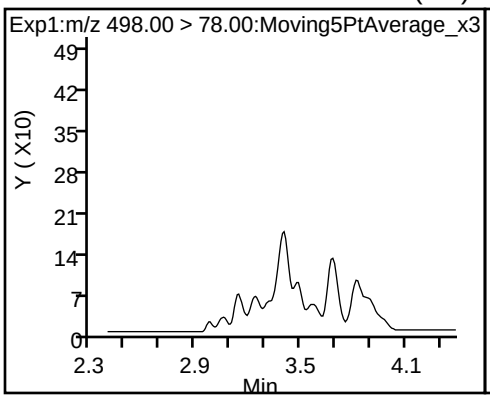
20 Perfluorononanoic acid (ND)



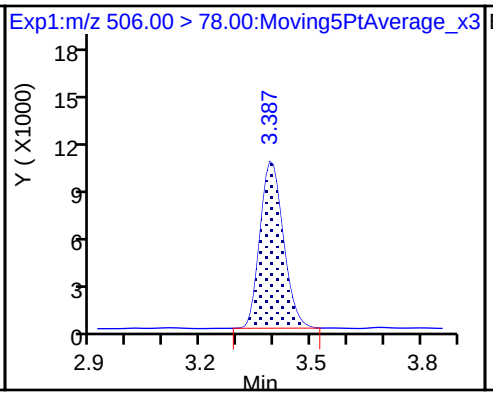
D 19 13C5 PFNA



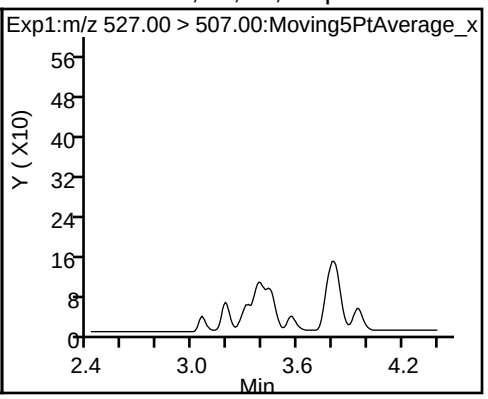
22 Perfluorooctane Sulfonamide (ND)



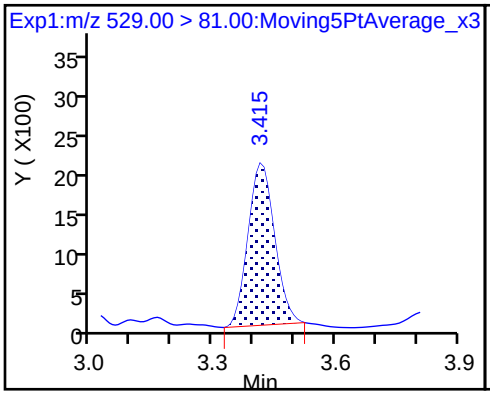
D 21 13C8 FOSA



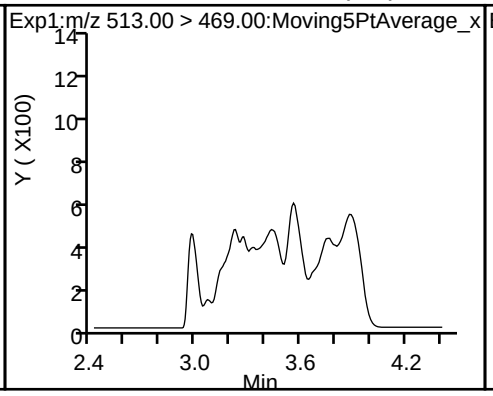
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



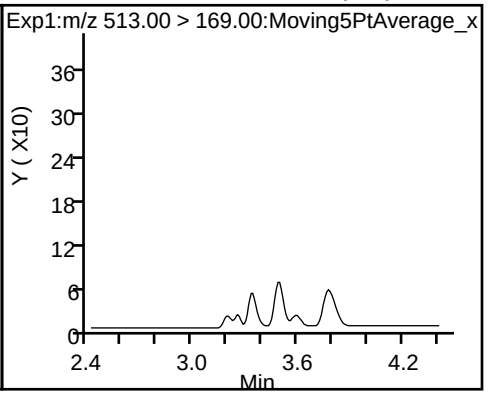
D 26 M2-8:2FTS



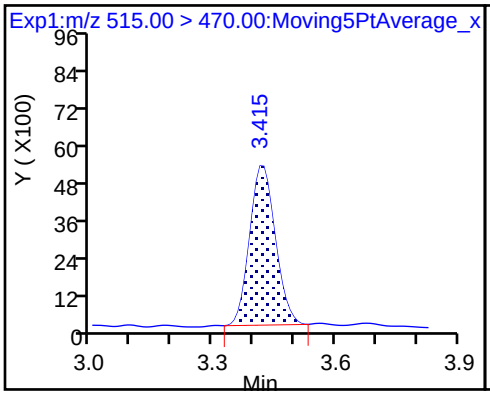
24 Perfluorodecanoic acid (ND)



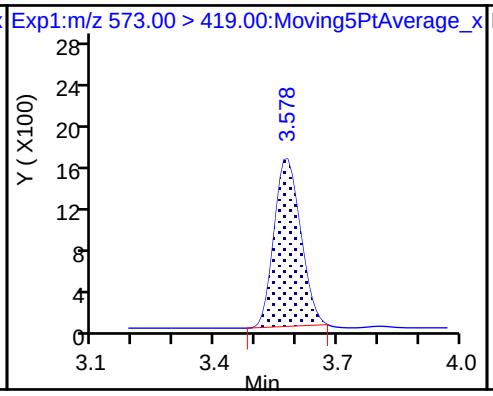
24 Perfluorodecanoic acid (ND)



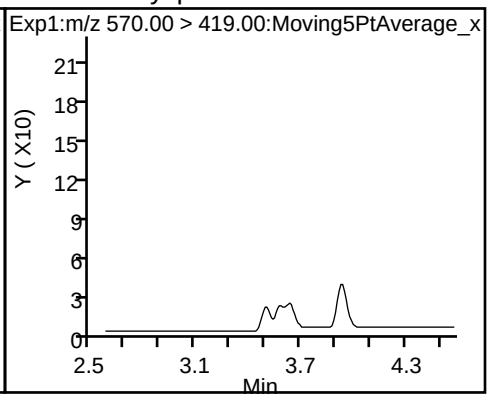
D 23 13C2 PFDA



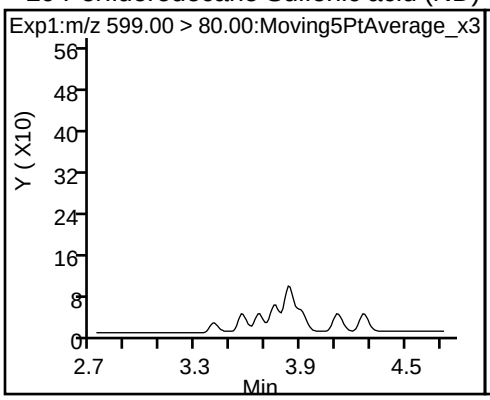
D 27 d3-NMeFOSAA



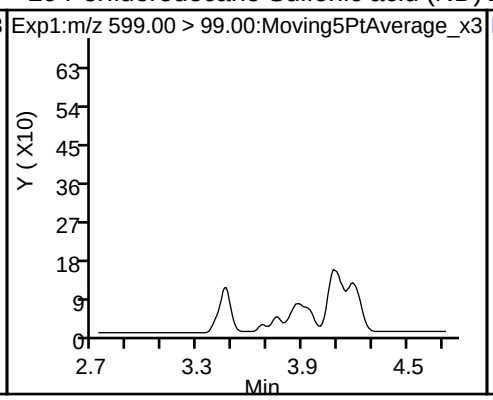
28 N-methyl perfluorooctane sulfonami (ND)



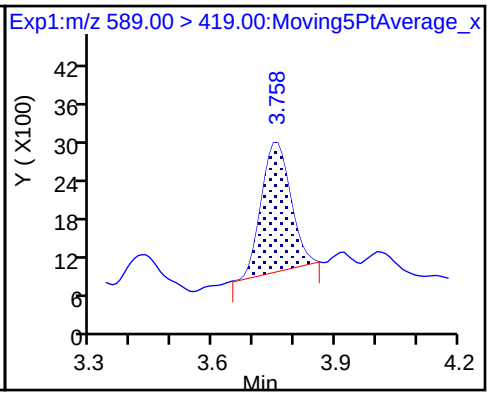
29 Perfluorodecane Sulfonic acid (ND)



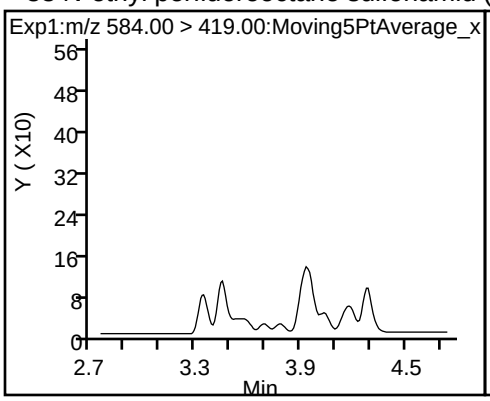
29 Perfluorodecane Sulfonic acid (ND)



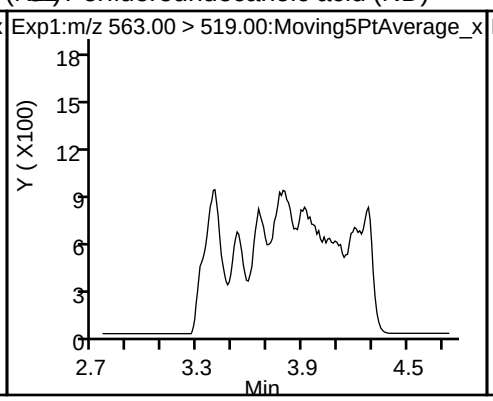
D 32 d5-NEtFOSAA



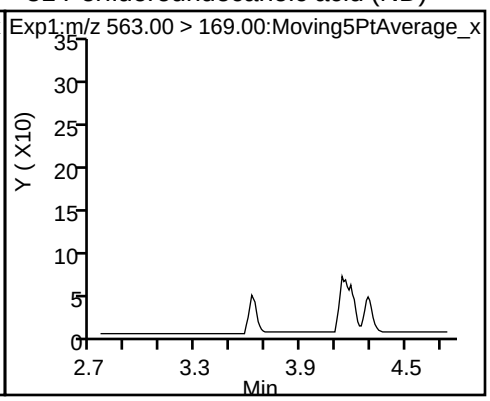
33 N-ethyl perfluorooctane sulfonamid (ND)



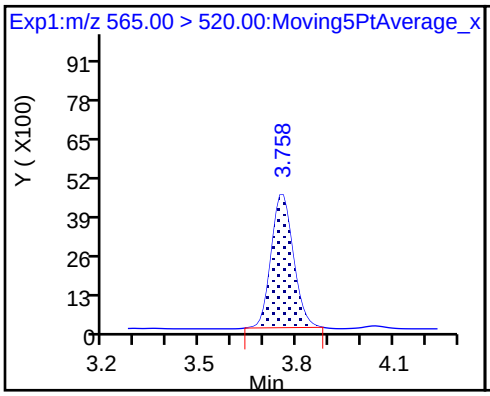
31 Perfluoroundecanoic acid (ND)



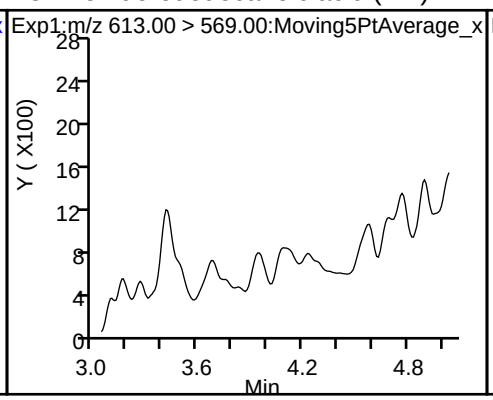
31 Perfluoroundecanoic acid (ND)



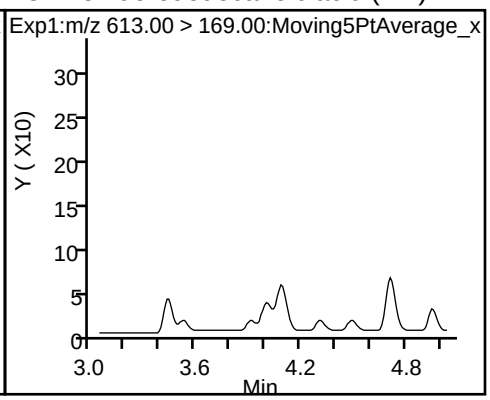
D 30 13C2 PFUnA



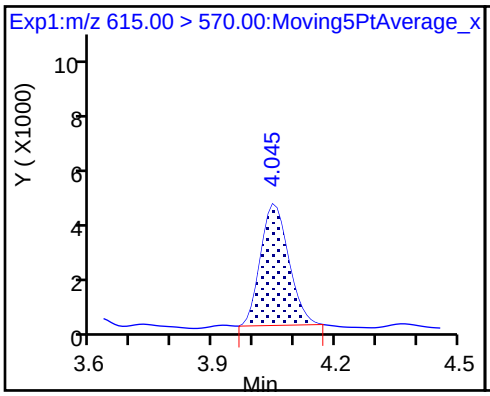
37 Perfluorododecanoic acid (ND)



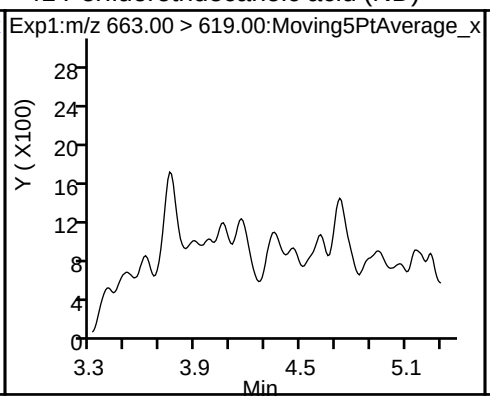
37 Perfluorododecanoic acid (ND)



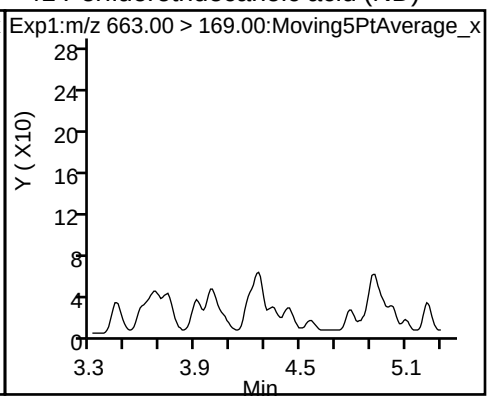
D 36 13C2 PFDoA



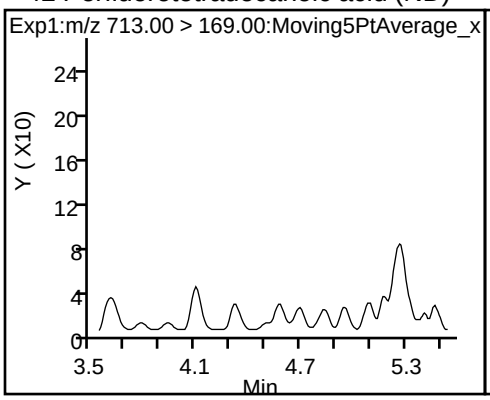
41 Perfluorotridecanoic acid (ND)



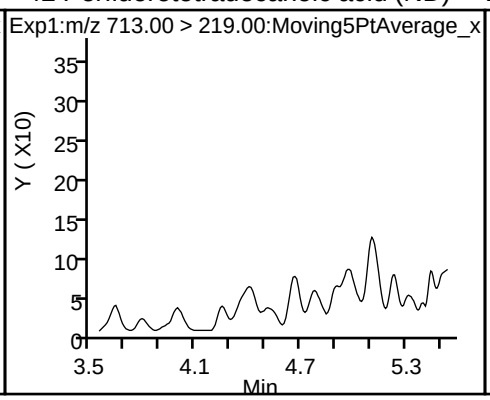
41 Perfluorotridecanoic acid (ND)



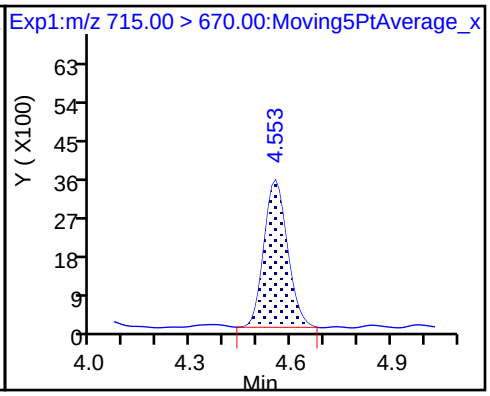
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB002(5'-7') | Lab Sample ID: 320-36683-7

Matrix: Solid | Lab File ID: 2018.03.20LLA_035.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:15

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.04(g) | Date Analyzed: 03/21/2018 00:43

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00017	J B	0.00021	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00023		0.00021	0.000082
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00025		0.00021	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00030		0.00021	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.0020		0.00021	0.000092
375-95-1	Perfluorononanoic acid (PFNA)	0.0023		0.00021	0.000038
335-76-2	Perfluorodecanoic acid (PFDA)	0.000066	J	0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000038	U	0.00021	0.000038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00021	0.000071
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000054	U	0.00021	0.000054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00021	0.000058
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00021	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00024		0.00021	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00023		0.00021	0.000037
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000042	U *	0.00021	0.000042
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000087	U	0.00021	0.000087
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0021	0.00042
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039
39108-34-4	8:2FTS	0.00041	J	0.0021	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB002(5'-7') | Lab Sample ID: 320-36683-7

Matrix: Solid | Lab File ID: 2018.03.20LLA_035.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:15

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.04(g) | Date Analyzed: 03/21/2018 00:43

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	80		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	81		25-150
STL01892	13C4-PFHpA	91		25-150
STL00990	13C4 PFOA	82		25-150
STL00995	13C5 PFNA	70		25-150
STL00996	13C2 PFDA	55		25-150
STL00997	13C2 PFUnA	33		25-150
STL00998	13C2 PFDoA	19	*	25-150
STL02116	13C2-PFTeDA	7	*	25-150
STL02337	13C3-PFBS	82		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	65		25-150
STL01056	13C8 FOSA	46		25-150
STL02118	d3-NMeFOSAA	22	*	25-150
STL02117	d5-NEtFOSAA	18	*	25-150
STL02280	M2-8:2FTS	56		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_035.d
Lims ID: 320-36683-A-7-A
Client ID: SB002(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 00:43:51 ALS Bottle#: 25 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-7-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:29:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	4512238	2.00		79.8	54316	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.004	136773	0.0817			48.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3268306	2.05		81.9	88643	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.709	-0.009	1.000	166976	0.1093			52.7	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.647	74687	1.90		81.6	337	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	3623874	2.04		81.5	74324	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	173836	0.1188			388	
313.00 > 119.00	1.986	1.997	-0.011	1.000	13174		13.20(5.03-15.10)		264	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3927765	2.27		90.8	105418	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	230108	0.1413			309	
363.00 > 169.00	2.315	2.328	-0.013	1.000	87471		2.63(1.13-3.40)		1189	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4499484	1.95		82.4	91466	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	236388	0.1114			152	
399.00 > 99.00	2.328	2.341	-0.013	1.000	56696		4.17(1.50-4.49)		138	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	785717	1.77		74.7	17022	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.657	2.663	-0.006	1.000	17994551	32.7			215836	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3421918	2.05		81.9	76950	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.695	-0.014	1.000	1463172	0.9575			574	
413.00 > 169.00	2.681	2.695	-0.014	1.000	730864		2.00(0.84-2.52)		2580	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4429178	2.50			110055	
16 Perfluoroheptanesulfonic acid										R
449.00 > 80.00	2.673	2.703	-0.030	1.000	147539	0.1069			176	R
449.00 > 99.00	2.681	2.703	-0.022	1.003	20984		7.03(1.94-5.82)		401	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2510781	1.56		65.1	47575	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2354216	1.76		70.4	63427	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.051	3.067	-0.016	1.000	13045934	11.5			37274	E
499.00 > 99.00	3.051	3.067	-0.016	1.000	3298345		3.96(2.31-6.93)		27226	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.067	-0.009	1.000	1018187	1.06			1705	
463.00 > 169.00	3.058	3.067	-0.009	1.000	241272		4.22(1.90-5.69)		6579	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.389	-0.001	1.264	2672620	1.14		45.7	45096	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.401	-0.013	1.000	9597	0.009238			71.3	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.408	0.007	1.274	555433	1.33		55.7	15482	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.417	-0.002	1.274	1540508	1.38		55.2	28605	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.419	-0.013	0.997	55910	0.1918			2076	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.424	3.428	-0.004	1.003	18223	0.0312			49.1	R
513.00 > 169.00	3.415	3.428	-0.013	1.000	2250		8.10(2.36-7.09)		75.4	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.332	202152	0.5482		21.9	10916	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	160168	0.4543		18.2	265	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	730820	0.8358		33.4	38306	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.510	404131	0.4874		19.5	2894	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.699	133423	0.1763		7.1	1633	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

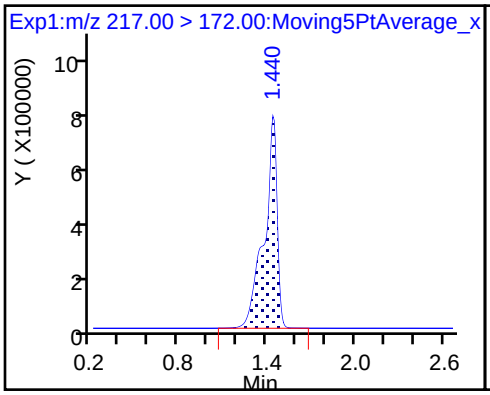
Report Date: 22-Mar-2018 10:56:16 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

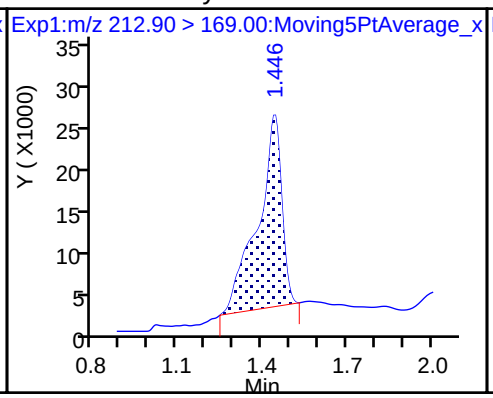
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_035.d

Injection Date:	21-Mar-2018 00:43:51	Instrument ID:	A8_N		
Lims ID:	320-36683-A-7-A	Lab Sample ID:	320-36683-7		
Client ID:	SB002(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

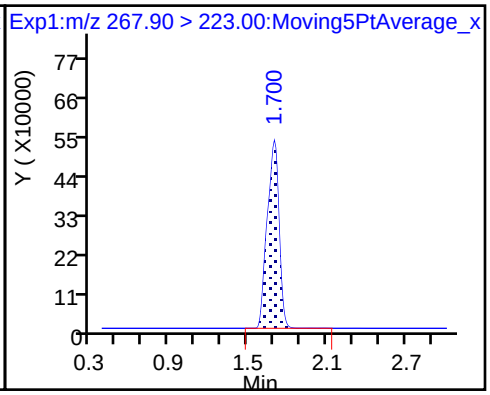
D 1 13C4 PFBA



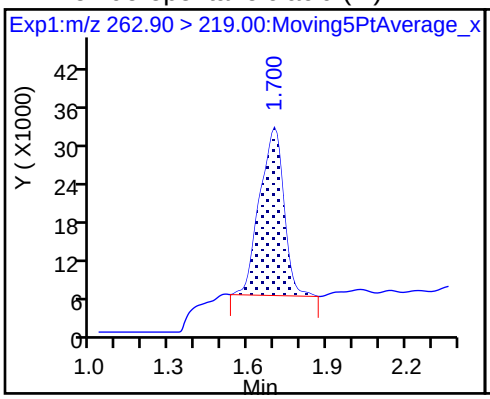
2 Perfluorobutyric acid



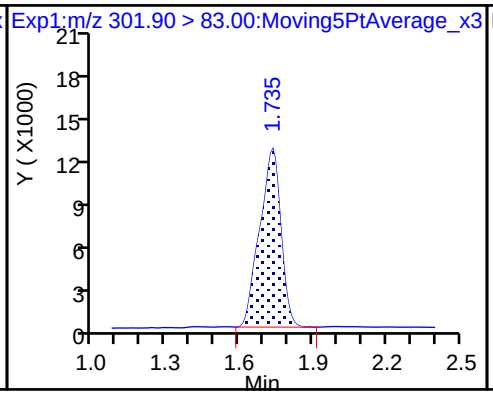
D 3 13C5-PFPeA



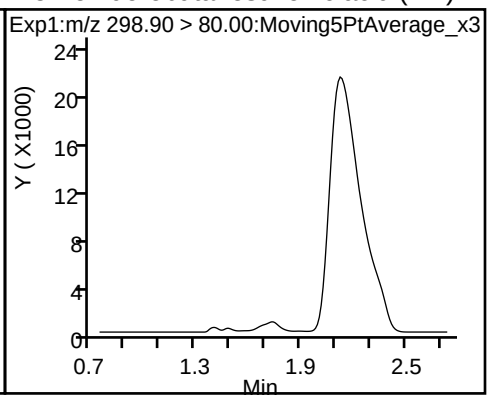
4 Perfluoropentanoic acid (M)



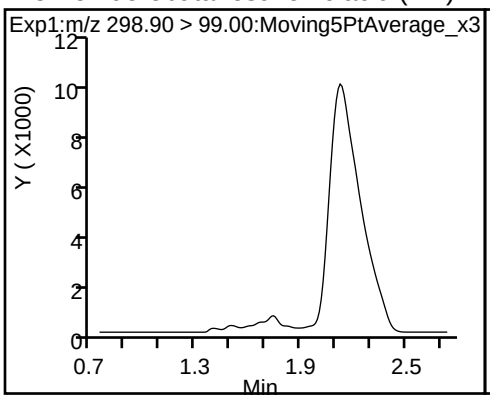
D 47 13C3-PFBS



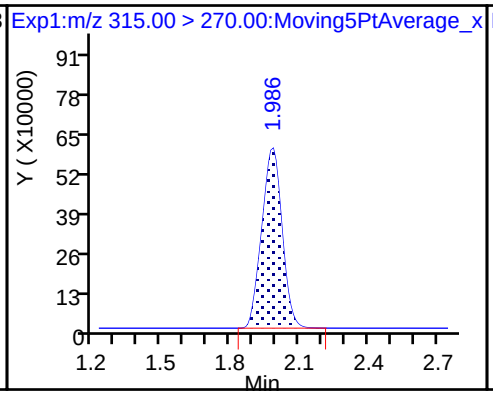
5 Perfluorobutanesulfonic acid (ND)



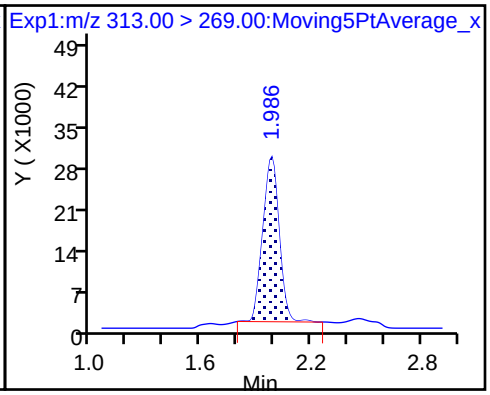
5 Perfluorobutanesulfonic acid (ND)



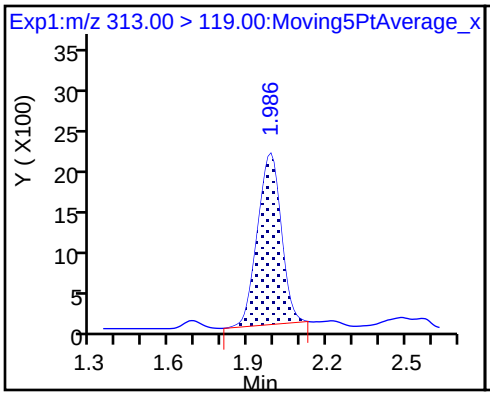
D 7 13C2 PFHxA



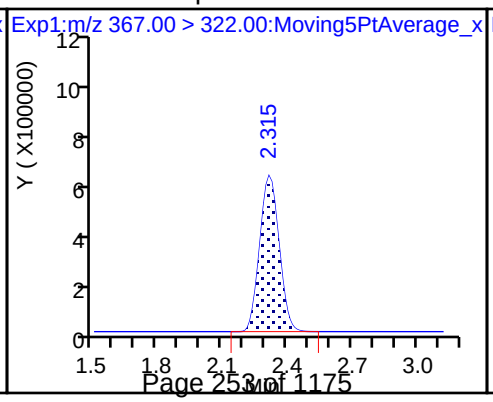
6 Perfluorohexanoic acid



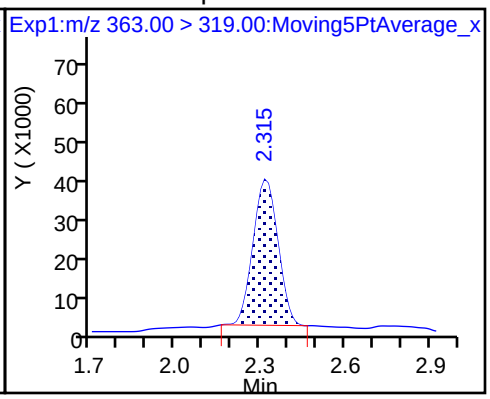
6 Perfluorohexanoic acid



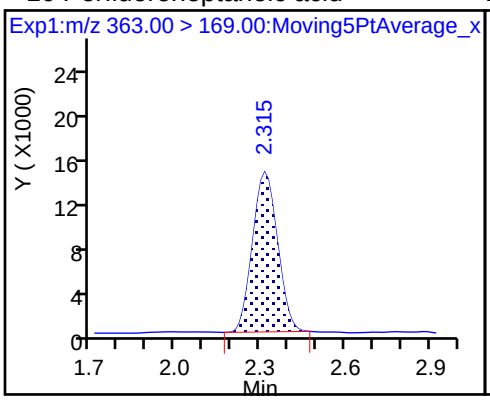
D 9 13C4-PFHpA



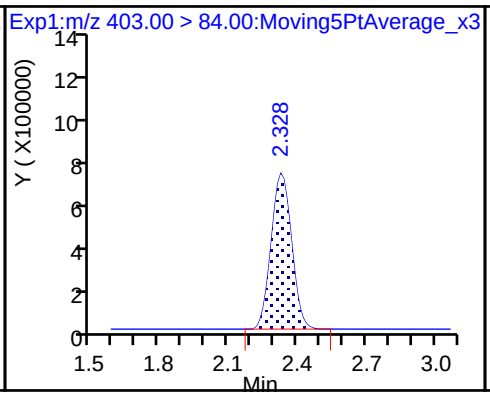
10 Perfluoroheptanoic acid



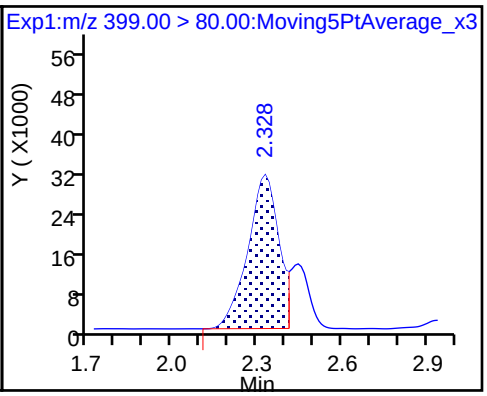
10 Perfluoroheptanoic acid



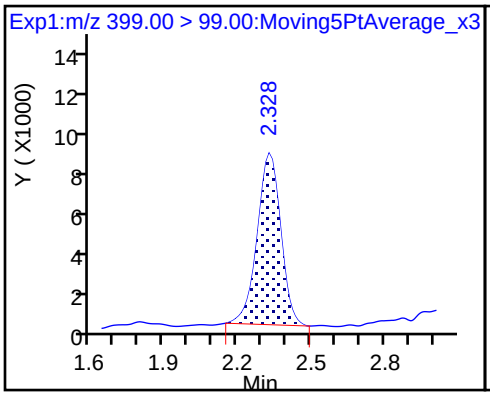
D 11 18O2 PFHxS



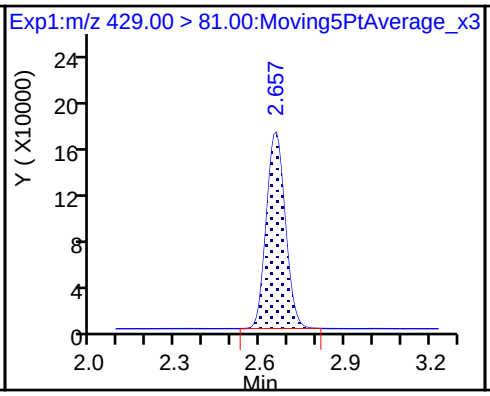
8 Perfluorohexanesulfonic acid



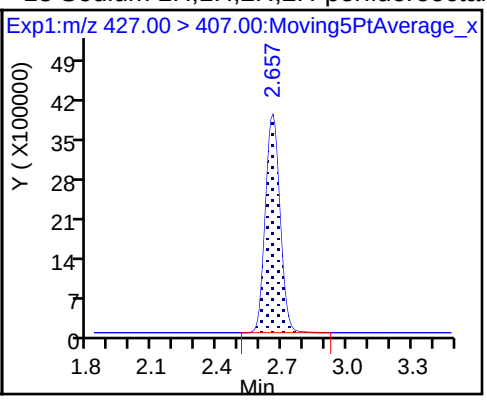
8 Perfluorohexanesulfonic acid



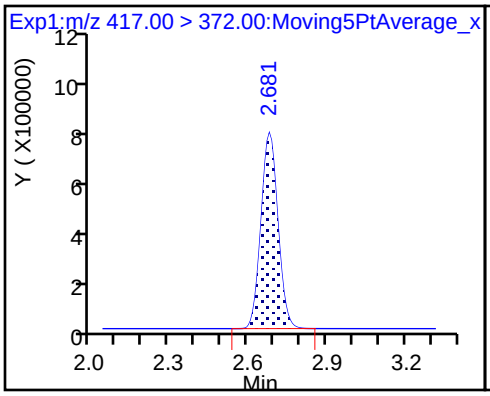
D 12 M2-6:2FTS



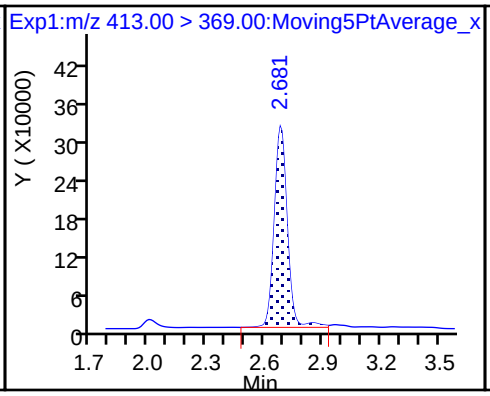
13 Sodium 1H,1H,2H,2H-perfluorooctane



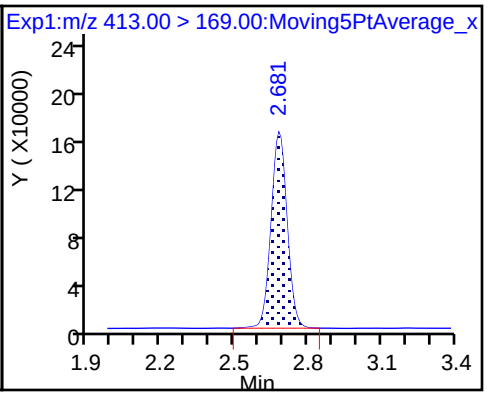
D 14 13C4 PFOA



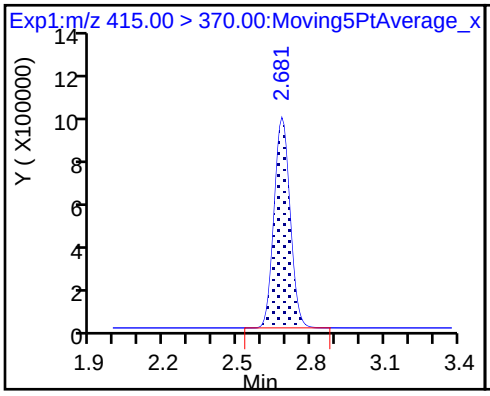
15 Perfluorooctanoic acid



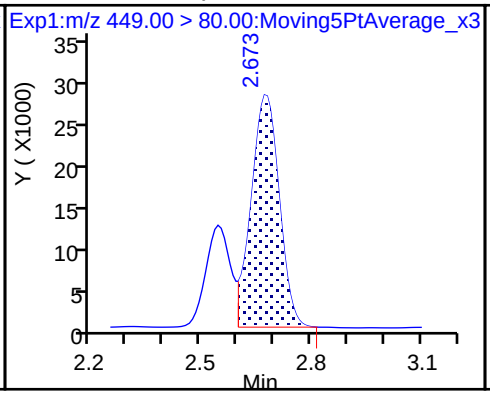
15 Perfluorooctanoic acid



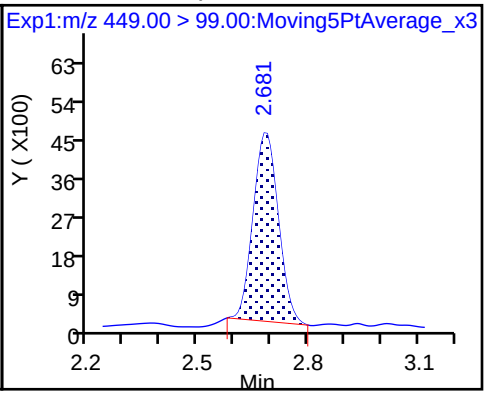
* 62 13C2-PFOA



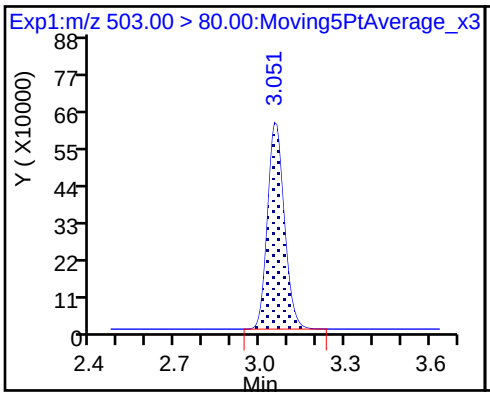
16 Perfluoroheptanesulfonic acid



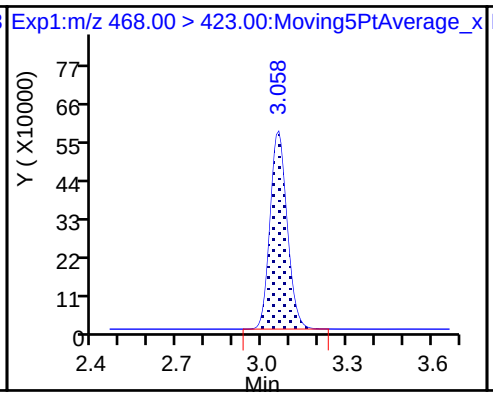
16 Perfluoroheptanesulfonic acid



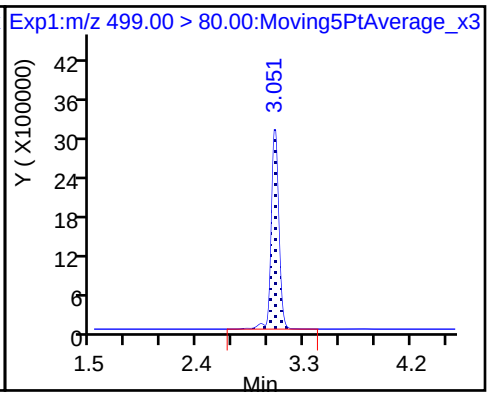
D 18 13C4 PFOS



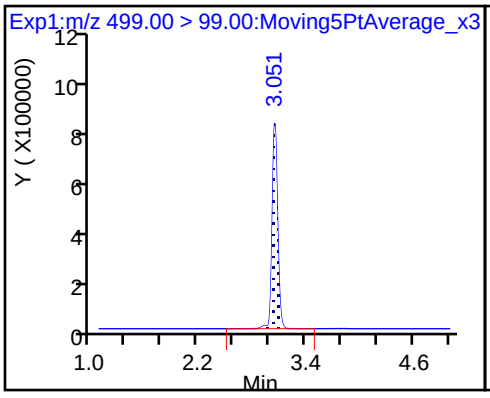
D 19 13C5 PFNA



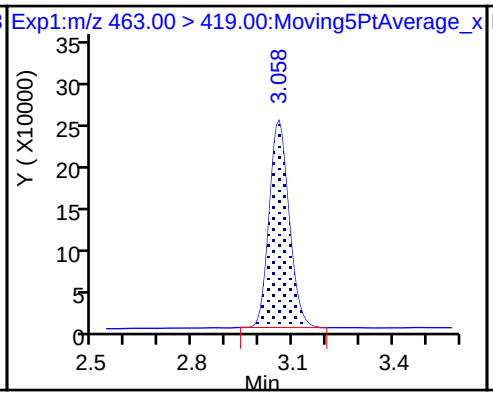
17 Perfluorooctane sulfonic acid



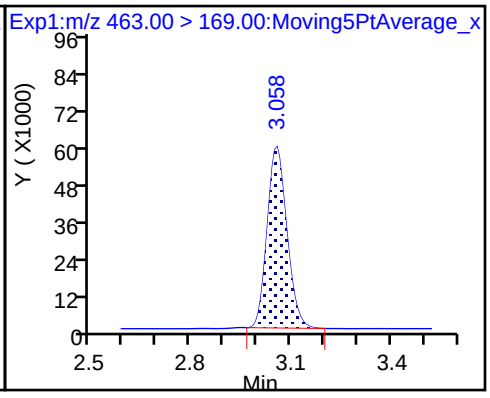
17 Perfluorooctane sulfonic acid



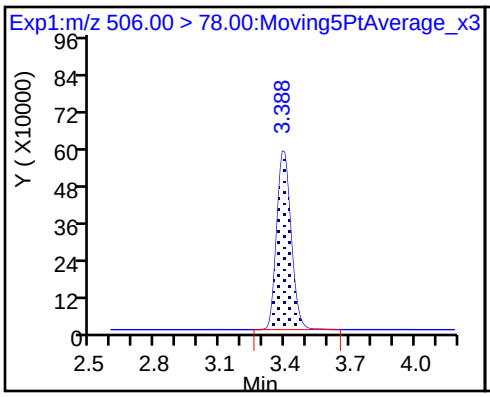
20 Perfluorononanoic acid



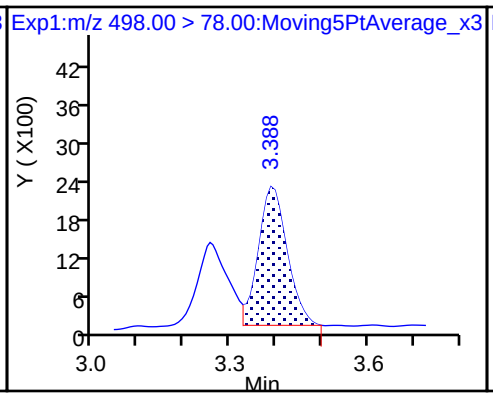
20 Perfluorononanoic acid



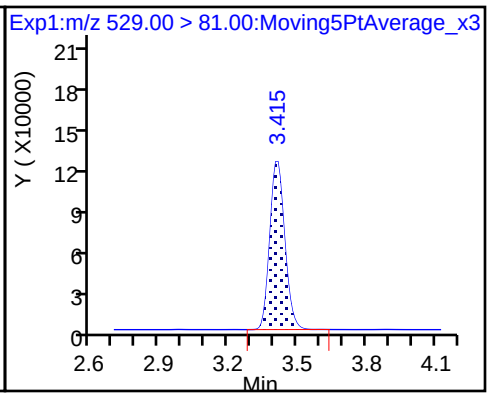
D 21 13C8 FOSA



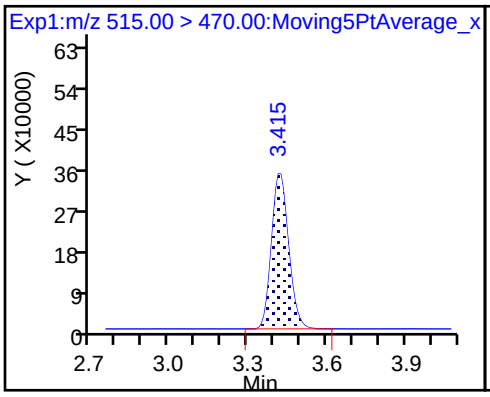
22 Perfluorooctane Sulfonamide



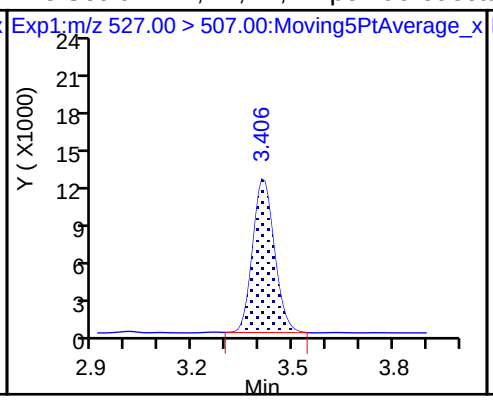
D 26 M2-8:2FTS



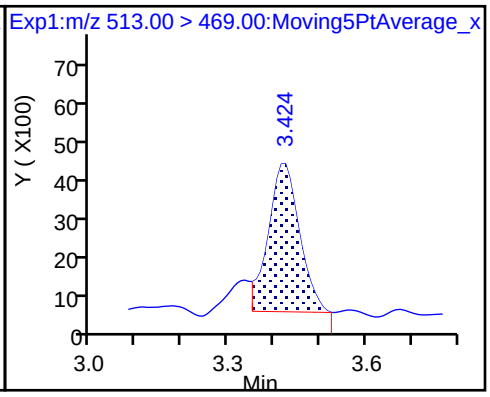
D 23 13C2 PFDA



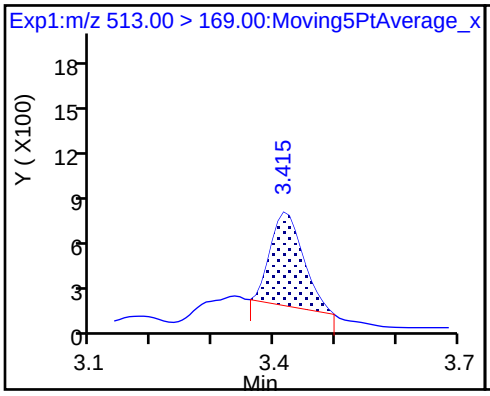
25 Sodium 1H,1H,2H,2H-perfluorodecan



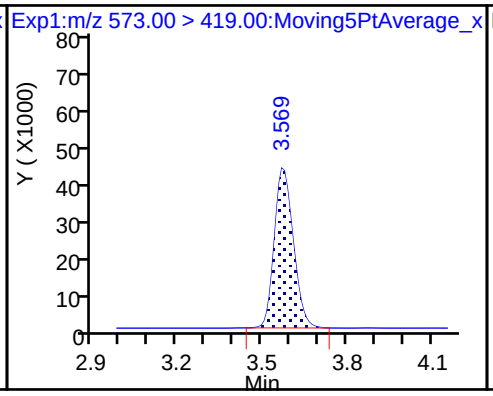
24 Perfluorodecanoic acid



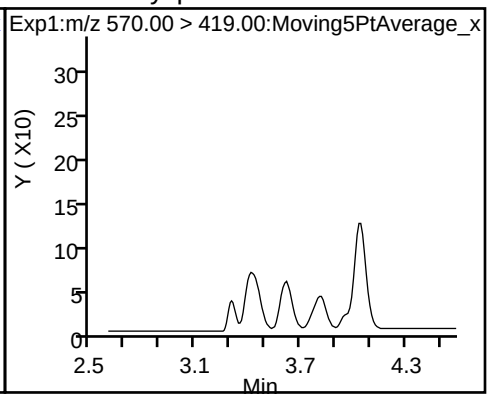
24 Perfluorodecanoic acid



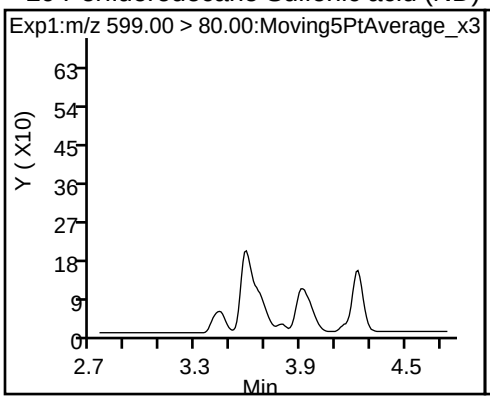
D 27 d3-NMeFOSAA



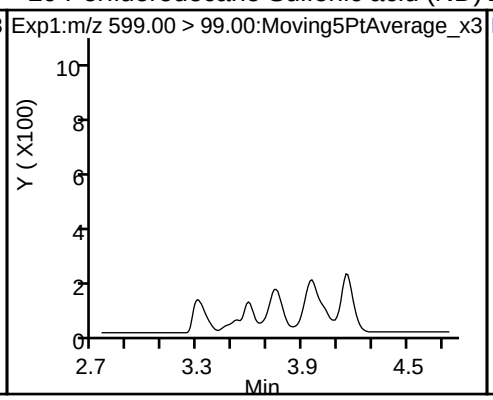
28 N-methyl perfluorooctane sulfonami (ND)



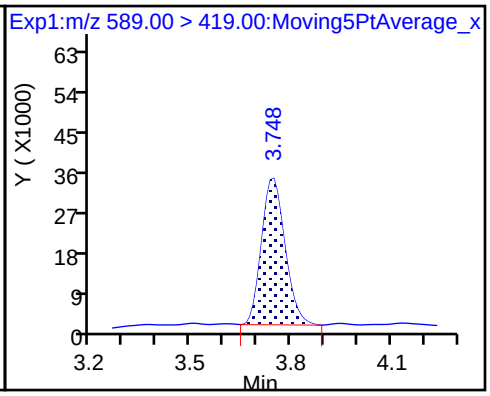
29 Perfluorodecane Sulfonic acid (ND)



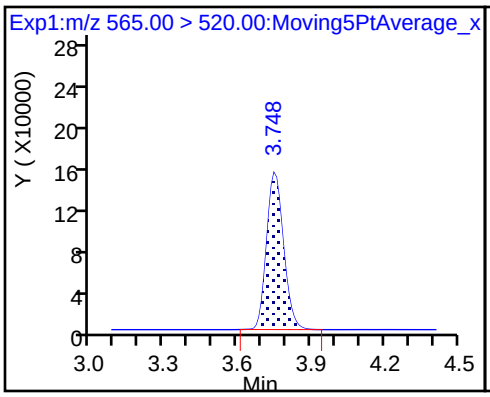
29 Perfluorodecane Sulfonic acid (ND)



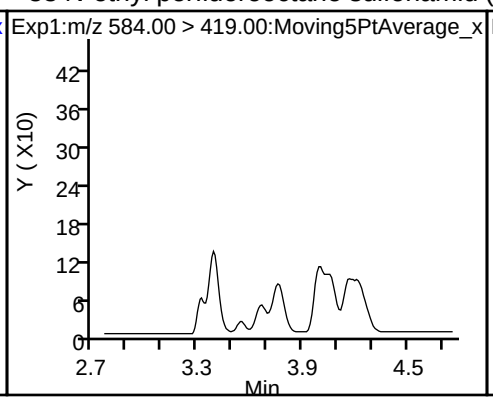
D 32 d5-NEtFOSAA



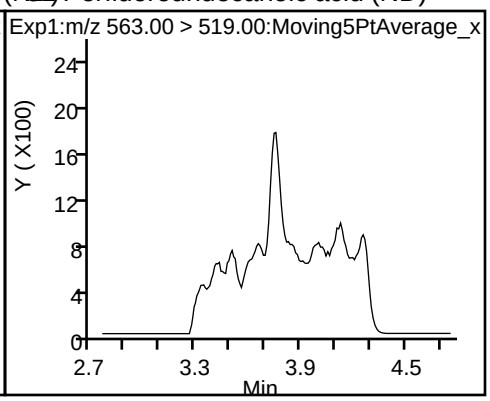
D 30 13C2 PFUnA



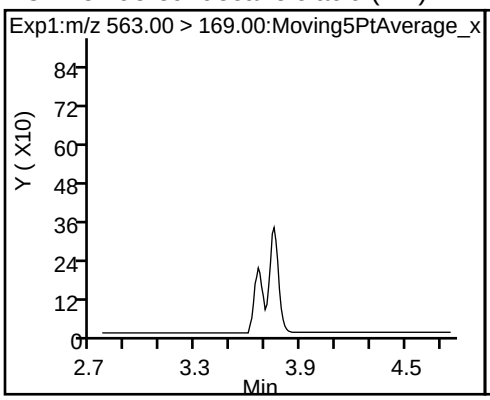
33 N-ethyl perfluorooctane sulfonamid (ND)



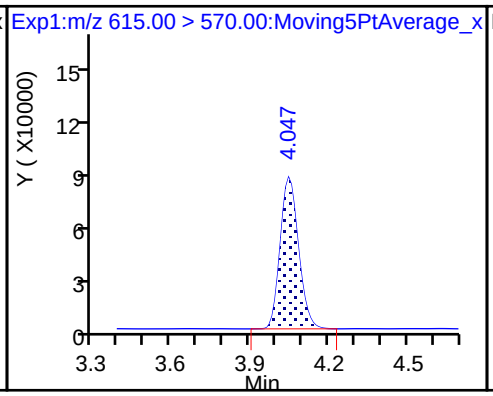
31 Perfluoroundecanoic acid (ND)



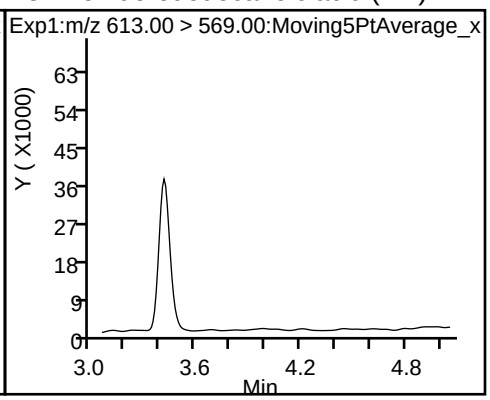
31 Perfluoroundecanoic acid (ND)



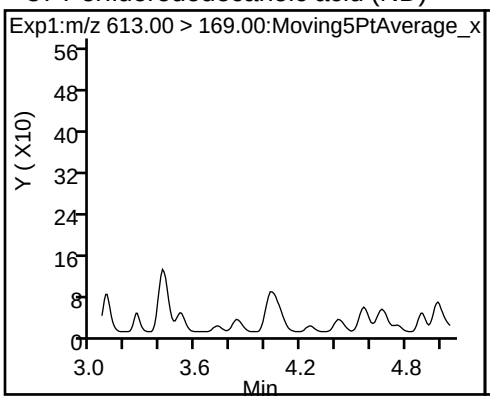
D 36 13C2 PFDoA



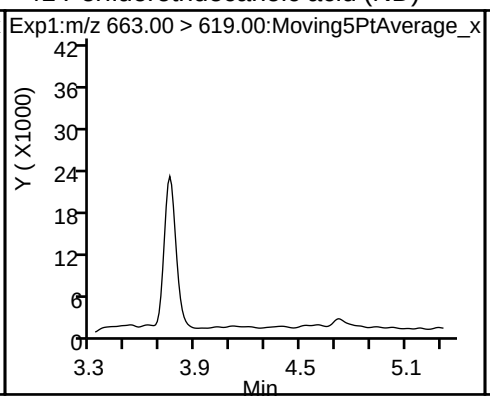
37 Perfluorododecanoic acid (ND)



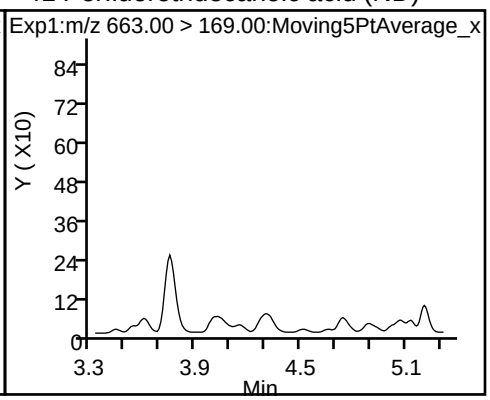
37 Perfluorododecanoic acid (ND)



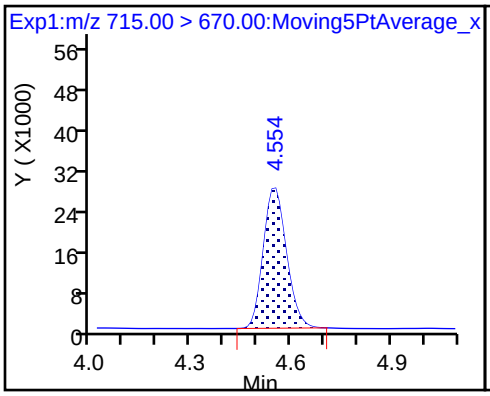
41 Perfluorotridecanoic acid (ND)



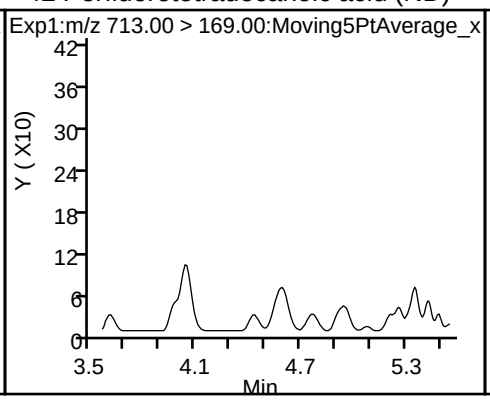
41 Perfluorotridecanoic acid (ND)



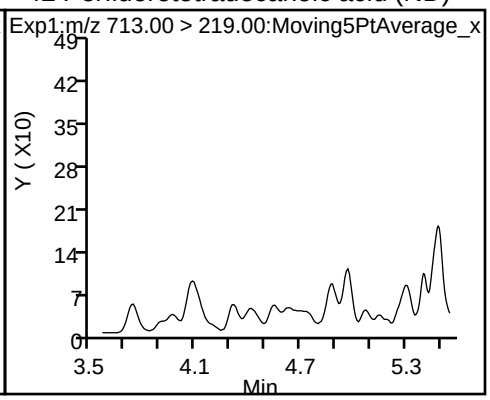
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

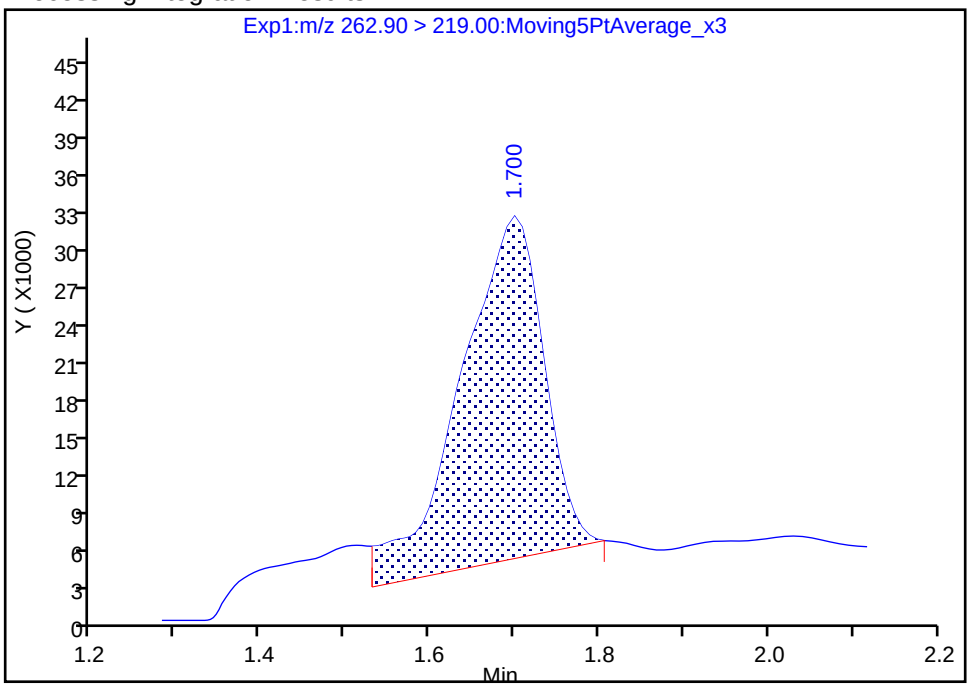
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_035.d				
Injection Date:	21-Mar-2018 00:43:51	Instrument ID:	A8_N		
Lims ID:	320-36683-A-7-A	Lab Sample ID:	320-36683-7		
Client ID:	SB002(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

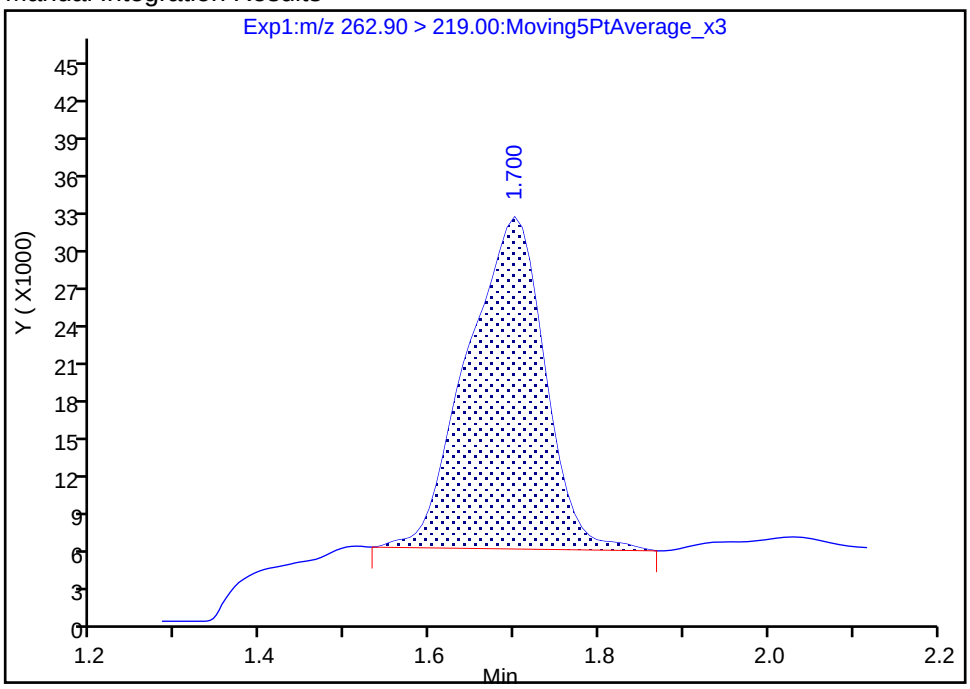
Processing Integration Results

RT: 1.70
Area: 186481
Amount: 0.122113
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 166976
Amount: 0.109340
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:25:18

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB002(5'-7') RE | Lab Sample ID: 320-36683-7 RE

Matrix: Solid | Lab File ID: 2018.03.26LLA_073.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:15

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.01(g) | Date Analyzed: 03/27/2018 04:08

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000042*	*U H*	*0.00021*	*0.000042*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	73		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_073.d
Lims ID: 320-36683-A-7-B
Client ID: SB002(5'-7')
Sample Type: Client
Inject. Date: 27-Mar-2018 04:08:02 ALS Bottle#: 50 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-7-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:44:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:42:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.538	6264155	1.94		77.5	93939	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.446	0.0	1.000	140671	0.0596			31.6	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	164426	0.0842			91.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.632	4327694	2.02		80.7	97027	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.645	87016	1.78		76.5	401	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.986	0.0	1.000	162377	0.0873			180	
313.00 > 119.00	1.986	1.986	0.0	1.000	13970		11.62(5.03-15.10)		183	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.739	4548661	1.92		76.7	137016	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	246872	0.1254			189	
363.00 > 169.00	2.315	2.315	0.0	1.000	101640		2.43(1.13-3.40)		286	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.861	4759407	2.03		81.4	89058	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.327	0.001	0.994	195699	0.0739			917	
399.00 > 99.00	2.328	2.327	0.001	0.994	56509		3.46(1.50-4.49)		91.5	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	5624738	1.95		82.4	105943	
D 12 M2-6:2FTS										
429.00 > 81.00	2.656	2.649	0.007	0.988	987956	2.04		85.8	12317	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.656	2.655	0.001	1.000	16593060	22.9			100469	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.679	0.009	1.003	1628167	0.8109			669	
413.00 > 169.00	2.688	2.679	0.009	1.003	904649		1.80(0.84-2.52)		2791	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.679	0.009		6381768	2.50			100743	
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.681	-0.001	0.997	4443598	1.86		74.3	94331	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.687	0.001	1.000	117247	0.0598			235	
449.00 > 99.00	2.688	2.687	0.001	1.000	29515		3.97(1.94-5.82)		186	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.051	0.007	1.000	1401278	0.9529			1372	
463.00 > 169.00	3.058	3.051	0.007	1.000	342973		4.09(1.90-5.69)		7747	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.051	0.007	1.000	16164687	9.49			84758	E
499.00 > 99.00	3.058	3.051	0.007	1.000	4157286		3.89(2.31-6.93)		28761	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.051	0.007	1.138	3685600	1.75		69.9	83997	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.138	3655979	1.74		72.9	57862	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.380	0.018	1.003	4970	0.002569			70.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.261	4906717	1.73		69.3	74067	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.399	0.018	1.271	1390835	2.12		88.7	28496	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.407	0.009	1.000	97837	0.1320			2175	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.416	0.009	1.000	32554	0.0224			85.1	
513.00 > 169.00	3.425	3.416	0.009	1.000	5849		5.57(2.36-7.09)		73.8	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.417	0.008	1.274	3681241	1.99		79.6	70138	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.571	0.008	1.331	1886311	1.94		77.5	59301	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.738	0.010	1.394	1755986	1.58		63.3	17299	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.748	0.010	1.003	2505	0.003817			63.6	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.758	3.748	0.010	1.000	11146	0.0114			54.4	M
563.00 > 169.00	3.758	3.748	0.010	1.000	1867		5.97(2.12-6.36)		62.1	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2825656	1.71		68.3	73353	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.505	3383009	1.80		72.1	30657	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.307	0.011	1.000	5786	0.003885			4.7	
663.00 > 169.00	4.318	4.307	0.011	1.000	2141		2.70(1.25-3.76)		32.1	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.543	0.011	1.694	4557248	1.99		79.5	34432	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

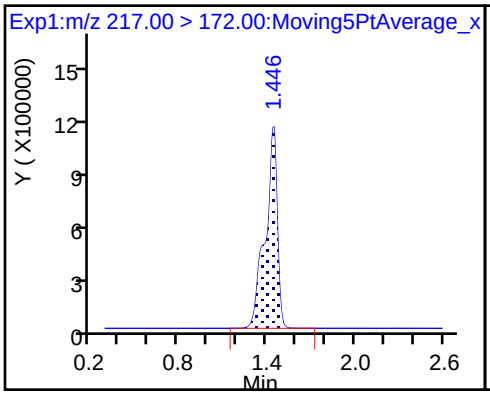
Report Date: 27-Mar-2018 10:44:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

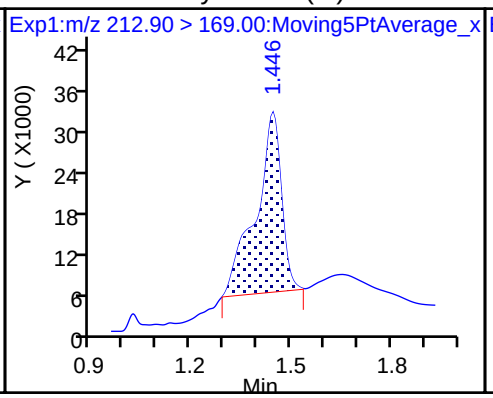
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_073.d

Injection Date:	27-Mar-2018 04:08:02	Instrument ID:	A8_N		
Lims ID:	320-36683-A-7-B	Lab Sample ID:	320-36683-7		
Client ID:	SB002(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	50	Worklist Smp#:	23
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

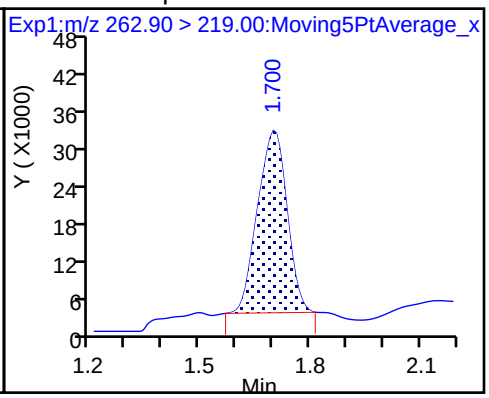
D 1 13C4 PFBA



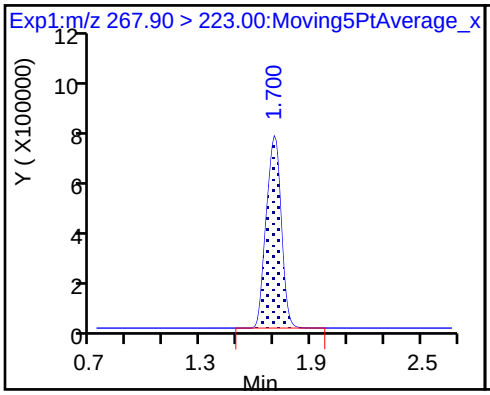
2 Perfluorobutyric acid (M)



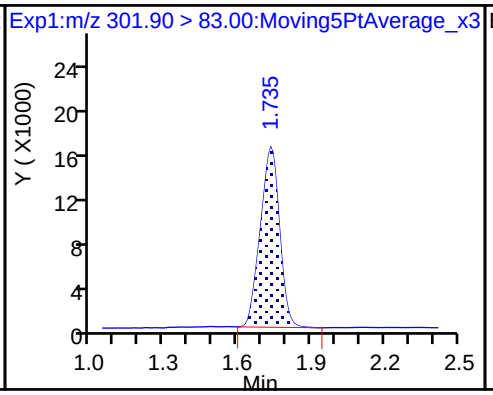
4 Perfluoropentanoic acid



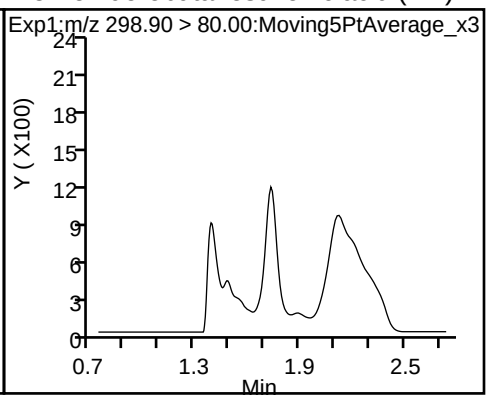
D 3 13C5-PFPeA



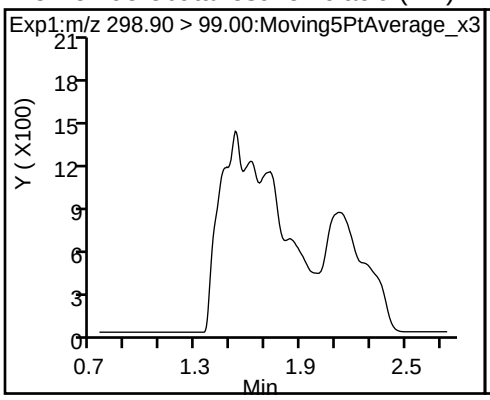
D 47 13C3-PFBS



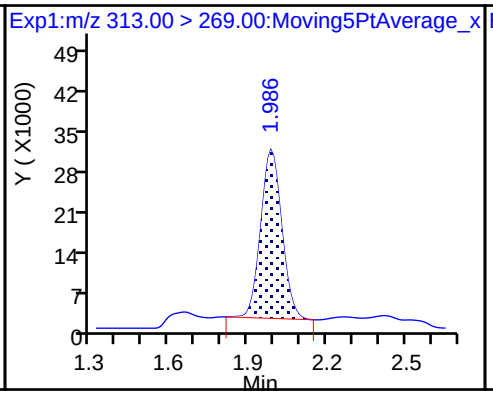
5 Perfluorobutanesulfonic acid (ND)



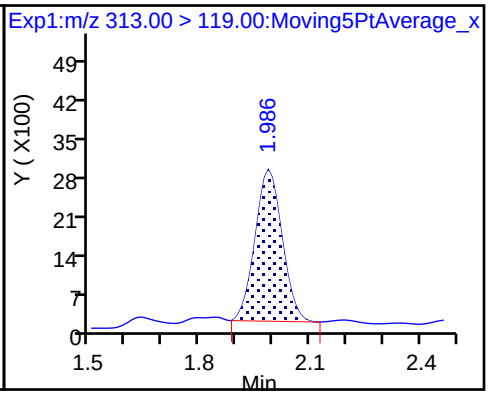
5 Perfluorobutanesulfonic acid (ND)



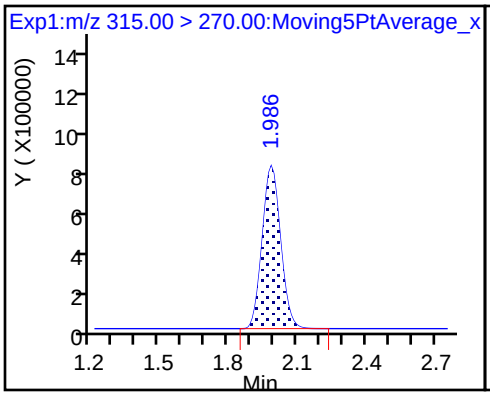
6 Perfluorohexanoic acid



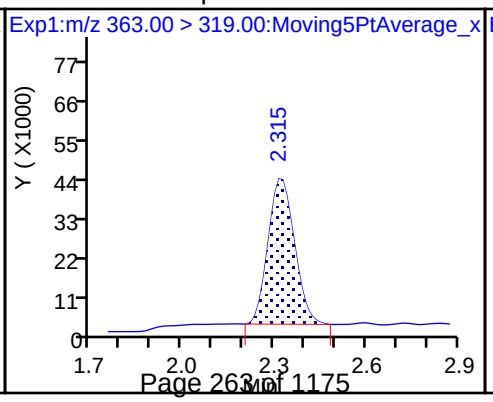
6 Perfluorohexanoic acid



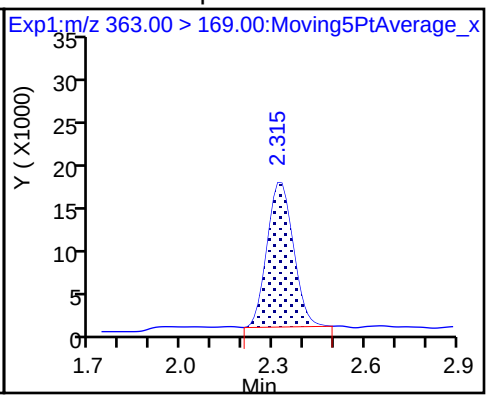
D 7 13C2 PFHxA



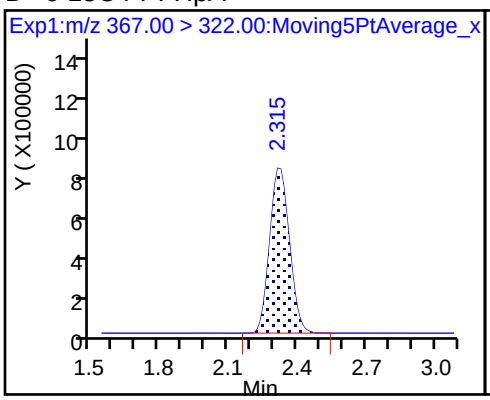
10 Perfluoroheptanoic acid



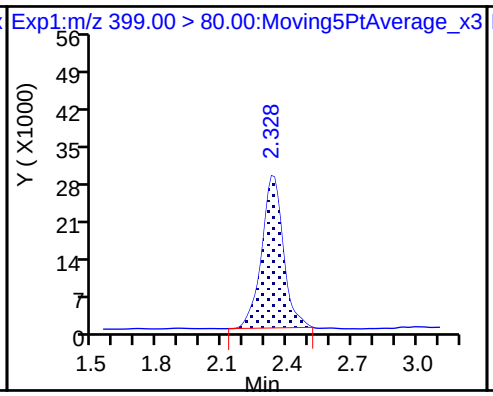
10 Perfluoroheptanoic acid



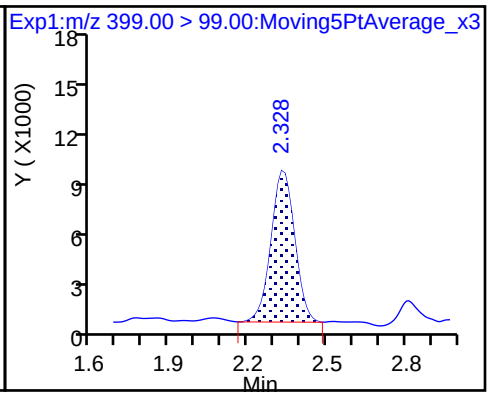
D 9 13C4-PFHpA



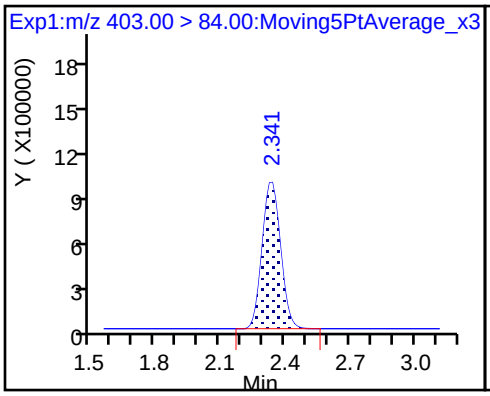
8 Perfluorohexanesulfonic acid



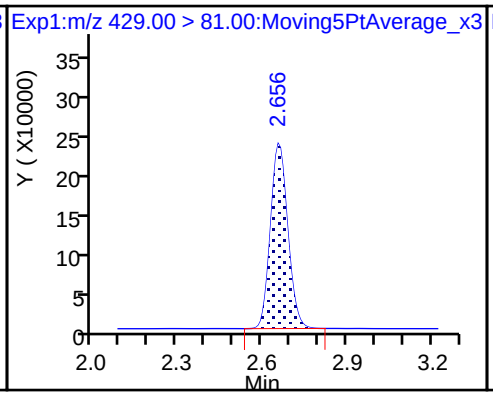
8 Perfluorohexanesulfonic acid



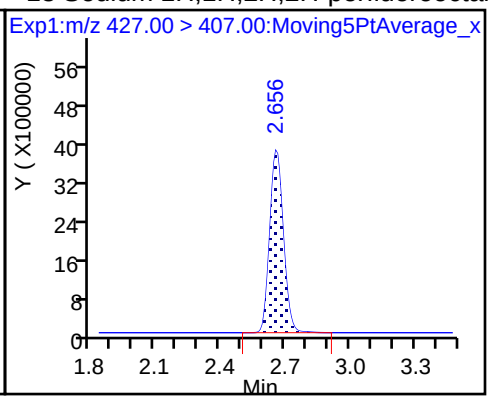
D 11 18O2 PFHxS



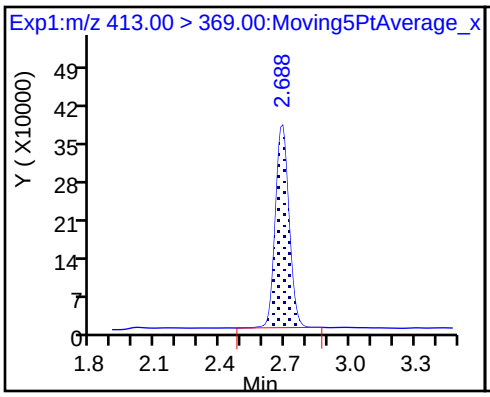
D 12 M2-6:2FTS



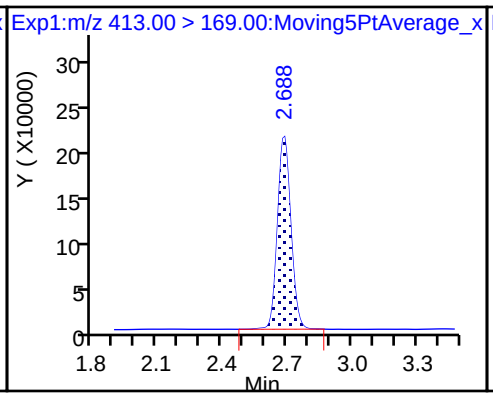
13 Sodium 1H,1H,2H,2H-perfluorooctane



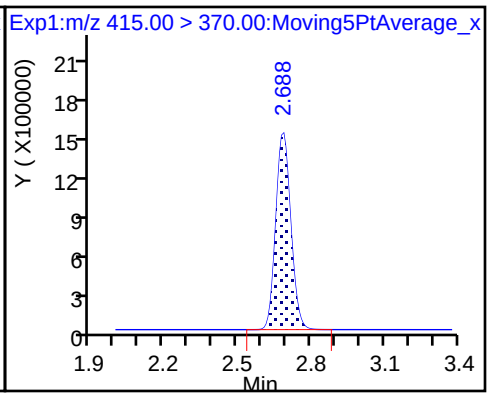
15 Perfluorooctanoic acid



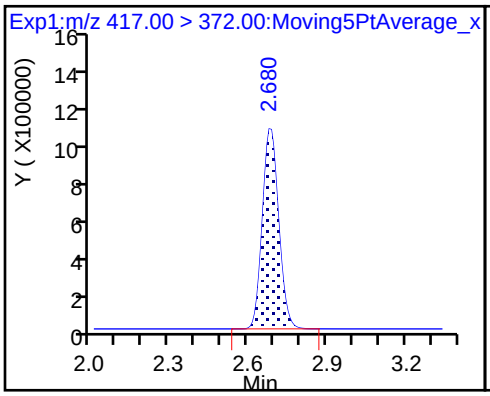
15 Perfluorooctanoic acid



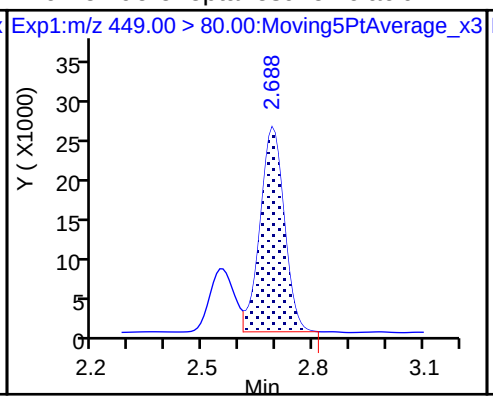
* 62 13C2-PFOA



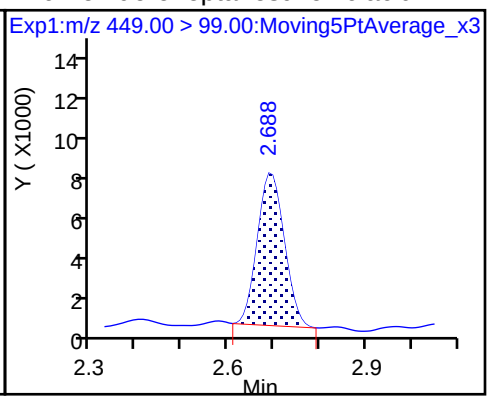
D 14 13C4 PFOA



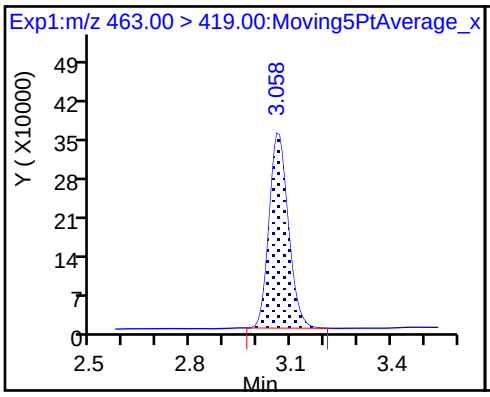
16 Perfluoroheptanesulfonic acid



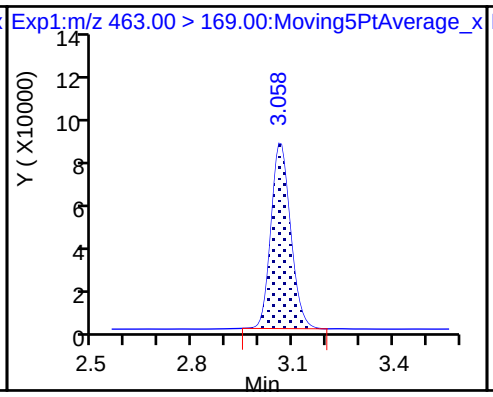
16 Perfluoroheptanesulfonic acid



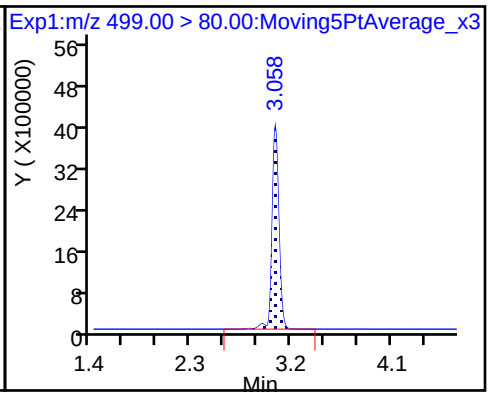
20 Perfluorononanoic acid



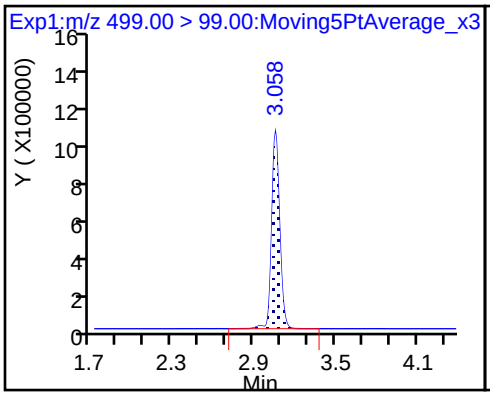
20 Perfluorononanoic acid



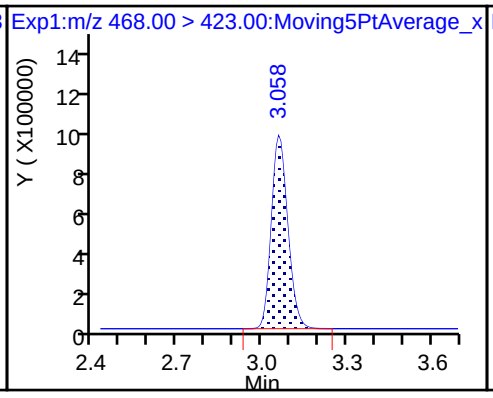
17 Perfluorooctane sulfonic acid



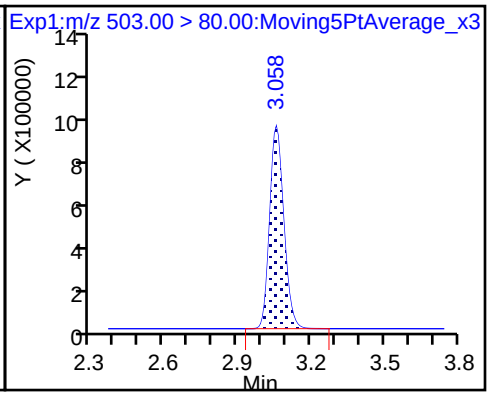
17 Perfluorooctane sulfonic acid



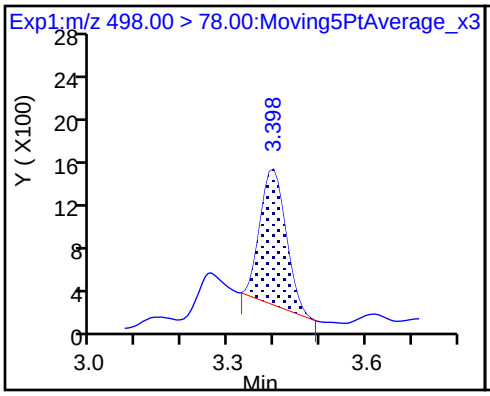
D 19 13C5 PFNA



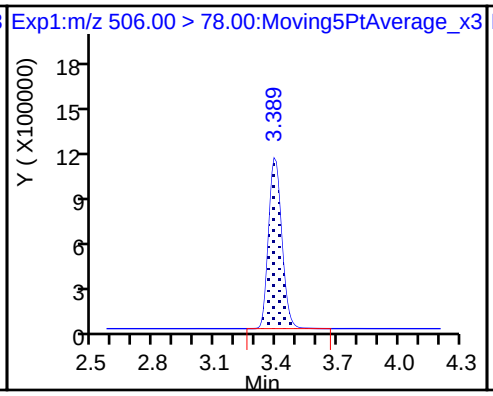
D 18 13C4 PFOS



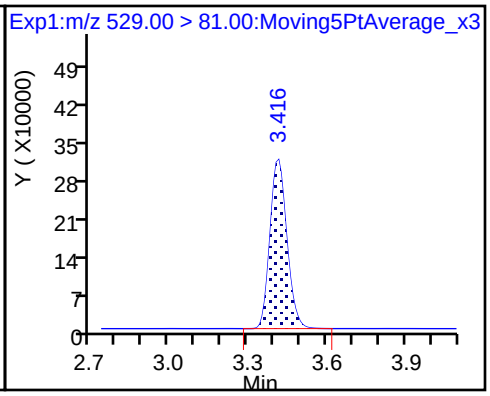
22 Perfluorooctane Sulfonamide



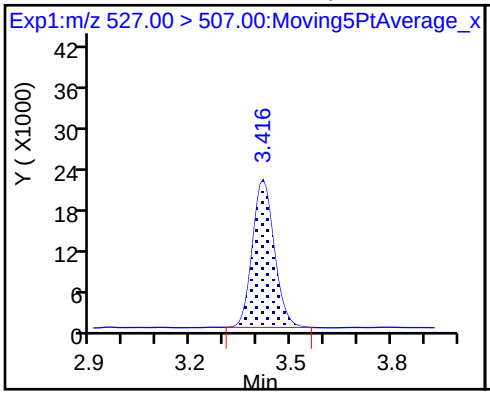
D 21 13C8 FOSA



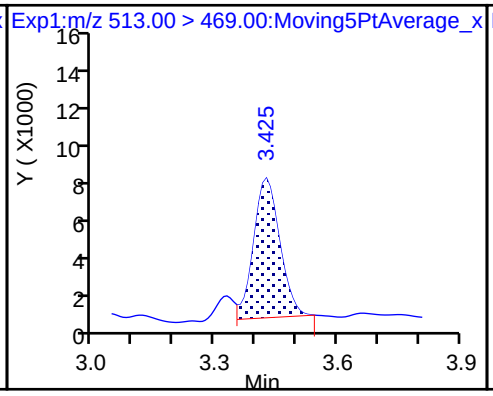
D 26 M2-8:2FTS



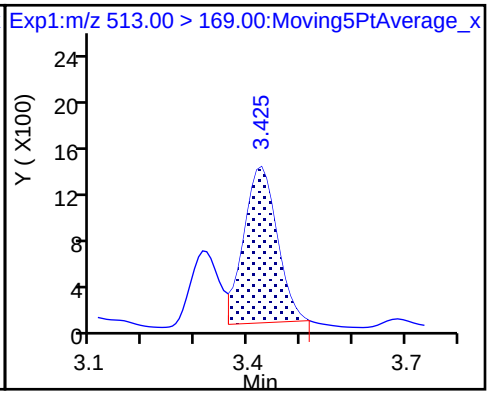
25 Sodium 1H,1H,2H,2H-perfluorodecane



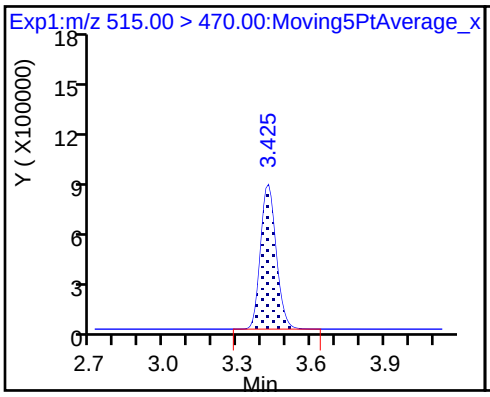
24 Perfluorodecanoic acid



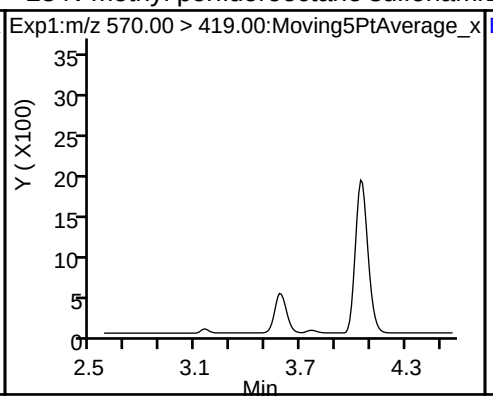
24 Perfluorodecanoic acid



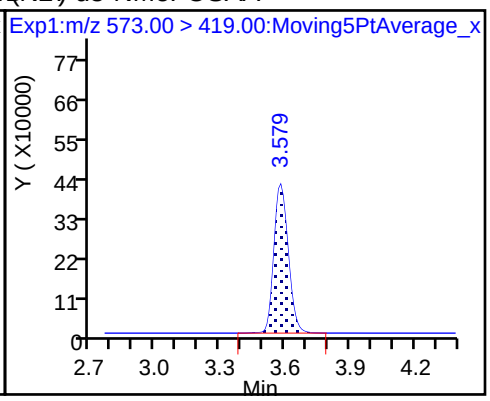
D 23 13C2 PFDA



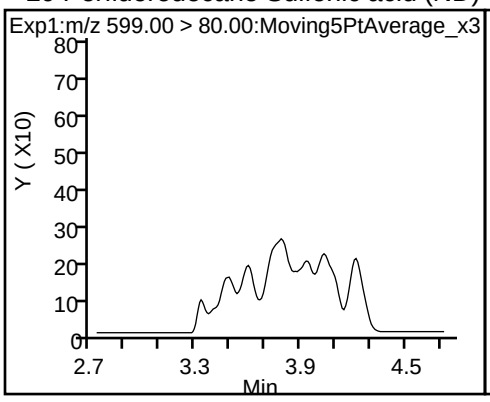
28 N-methyl perfluorooctane sulfonamid (ND)



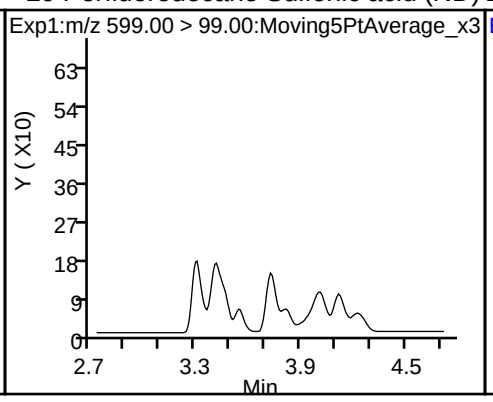
D 27 d3-NMeFOSAA



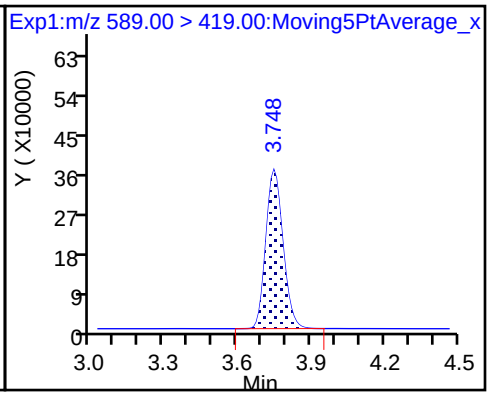
29 Perfluorodecane Sulfonic acid (ND)



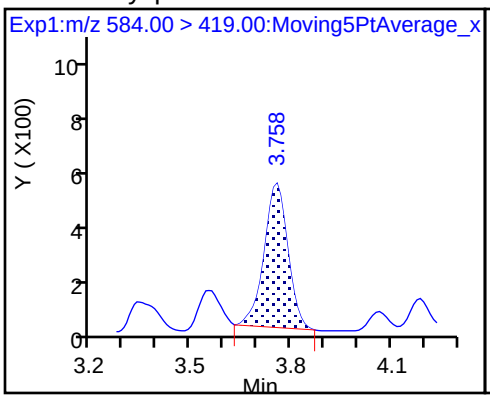
29 Perfluorodecane Sulfonic acid (ND)



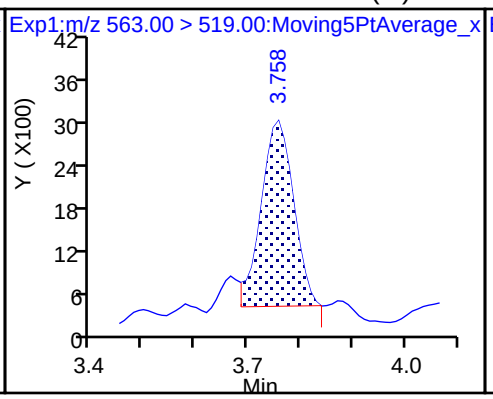
D 32 d5-NEtFOSAA



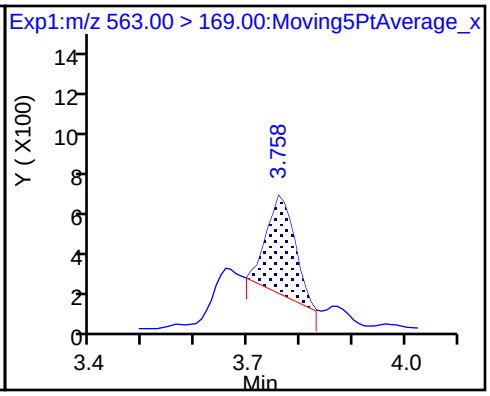
33 N-ethyl perfluorooctane sulfonamid



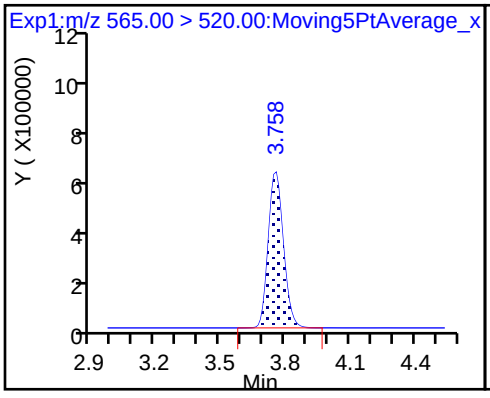
31 Perfluoroundecanoic acid (M)



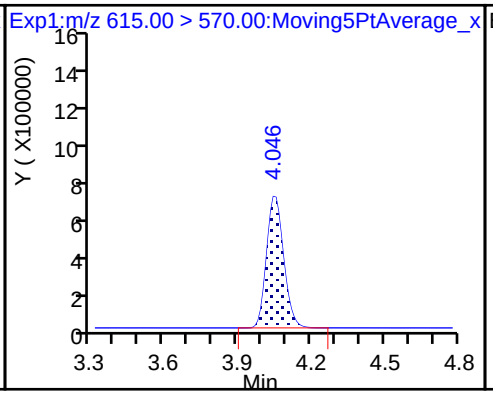
31 Perfluoroundecanoic acid



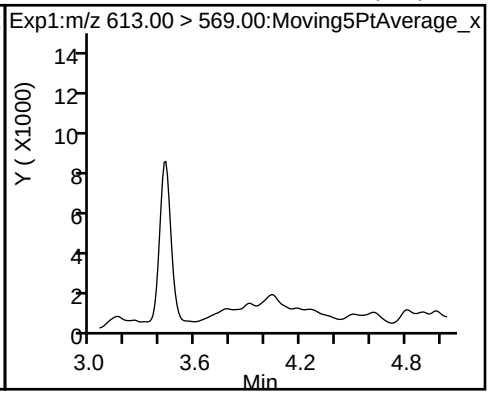
D 30 13C2 PFUnA



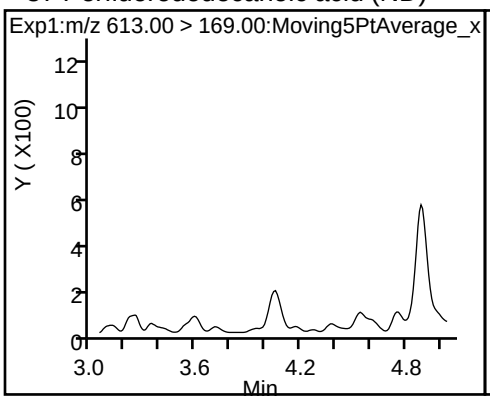
D 36 13C2 PFDoA



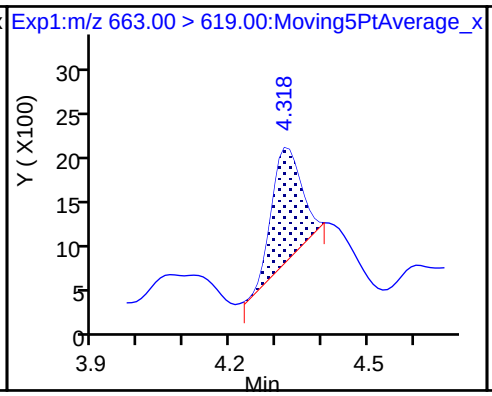
37 Perfluorododecanoic acid (ND)



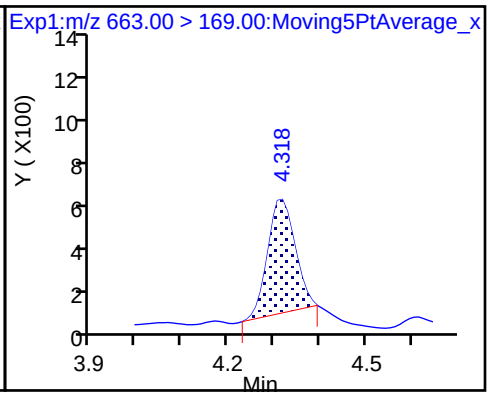
37 Perfluorododecanoic acid (ND)



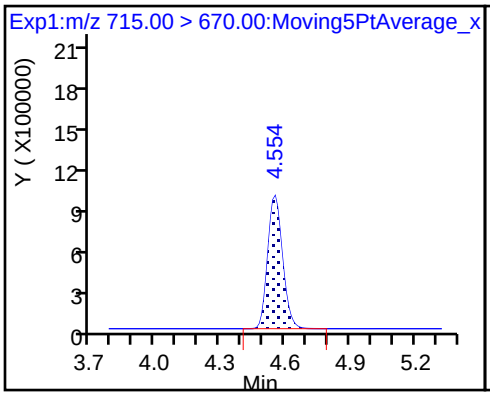
41 Perfluorotridecanoic acid



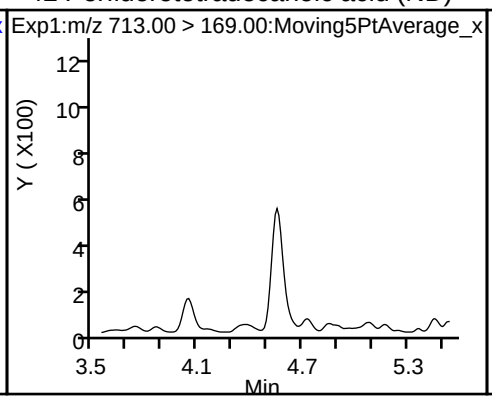
41 Perfluorotridecanoic acid



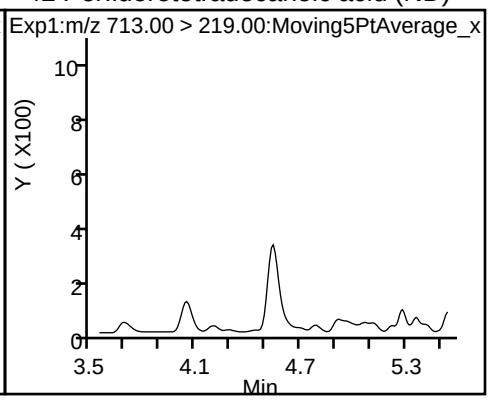
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB002(5'-7') DL | Lab Sample ID: 320-36683-7 DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_019.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:15

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.04(g) | Date Analyzed: 03/21/2018 23:37

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.026	B D	0.0053	0.0021
27619-97-2	6:2FTS	0.074	D	0.021	0.0016

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	64		25-150
STL02279	M2-6:2FTS	78		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_019.d
Lims ID: 320-36683-A-7-A
Client ID: SB002(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 23:37:39 ALS Bottle#: 21 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-36683-a-7-a 10X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:32:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.446	0.0	0.536	584580	0.2042		81.7	7770	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.453	-0.001	1.004	19448	0.008827			7.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	404431	0.2130		85.2	12920	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	8142	0.1879		80.8	58.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	417900	0.1990		79.6	15182	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	19477	0.0114			55.2	
313.00 > 119.00	2.008	1.997	0.011	1.005	1696		11.48(5.03-15.10)		36.0	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	419553	0.2025		81.0	14174	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.328	0.013	1.006	29037	0.0167			56.4	
363.00 > 169.00	2.328	2.328	0.0	1.000	10723		2.71(1.13-3.40)		155	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	478673	0.1873		79.2	20482	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	24708	0.0110			194	
399.00 > 99.00	2.341	2.341	0.0	1.000	7634		3.24(1.50-4.49)		33.1	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.665	0.008	0.991	79740	0.1856		78.2	2393	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	2045813	3.49			80015	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.688	0.008	1.000	437317	0.2063		82.5	14789	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		565251	0.2500			16655	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	178995	0.0906			55.7	
413.00 > 169.00	2.696	2.697	-0.001	1.000	98208		1.82(0.84-2.52)		255	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.704	2.704	0.0	1.000	12950	0.008504			142	
449.00 > 99.00	2.704	2.704	0.0	1.000	2452		5.28(1.94-5.82)		31.3	M
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	284071	0.1528		63.9	5084	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	347359	0.1859		74.3	17198	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.065	0.007	1.002	1606963	1.21			8904	
499.00 > 99.00	3.072	3.065	0.007	1.002	380200		4.23(2.31-6.93)		3326	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	141329	0.1020			221	
463.00 > 169.00	3.072	3.072	0.0	1.000	34755		4.07(1.90-5.69)		1220	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.010	1.260	273630	0.1091		43.6	5640	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.398	0.010	1.003	2591	0.002401			46.7	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.415	0.011	1.271	69767	0.1203		50.2	1551	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.424	0.011	1.274	215412	0.1315		52.6	6918	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	6830	0.0184			286	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	49856	0.0578		23.1	2137	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.394	113294	0.0773		30.9	5775	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	51367	0.0523		20.9	493	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.505	68640	0.0413		16.5	1017	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.559	4.554	0.005	1.691	27735	0.0137		5.5	310	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_019.d

Injection Date: 21-Mar-2018 23:37:39 Instrument ID: A8_N

Lims ID: 320-36683-A-7-A Lab Sample ID: 320-36683-7

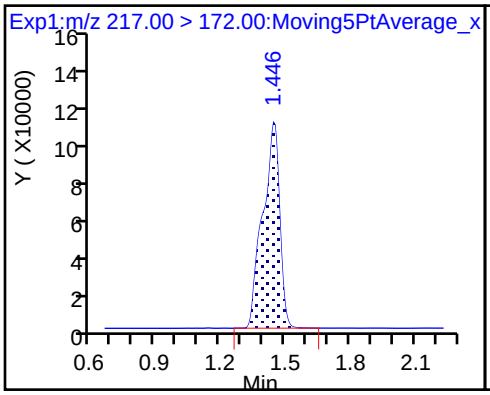
Client ID: SB002(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 14

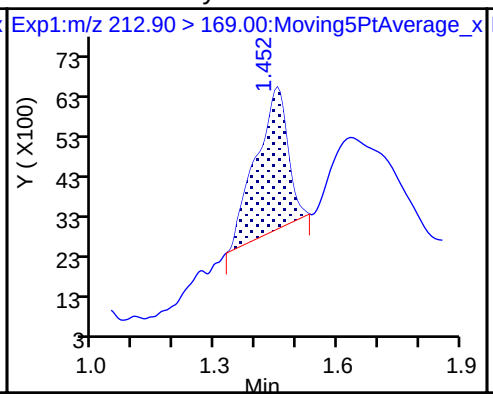
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

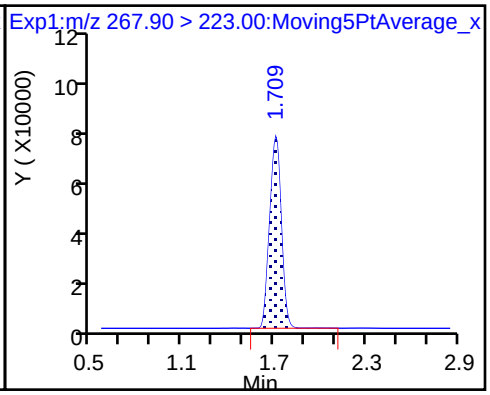
D 1 13C4 PFBA



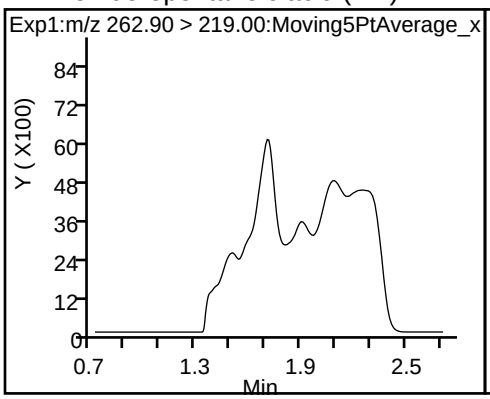
2 Perfluorobutyric acid



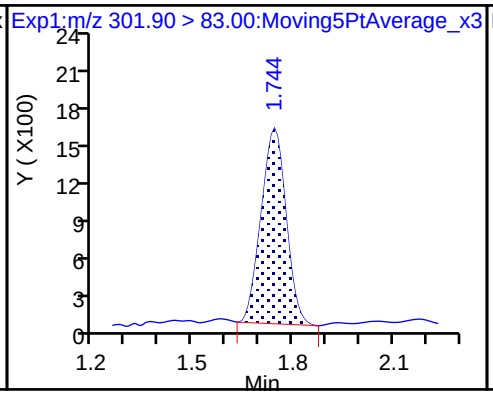
D 3 13C5-PFPeA



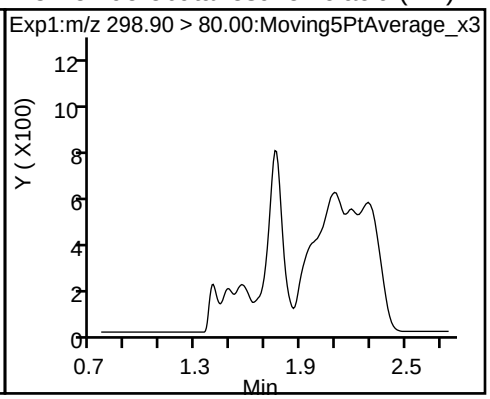
4 Perfluoropentanoic acid (ND)



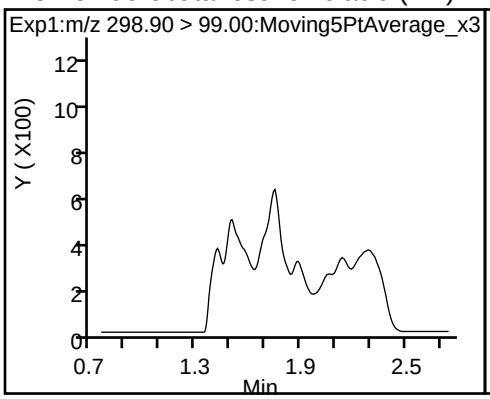
D 47 13C3-PFBS



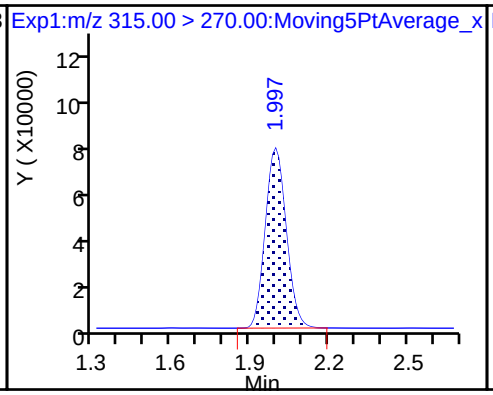
5 Perfluorobutanesulfonic acid (ND)



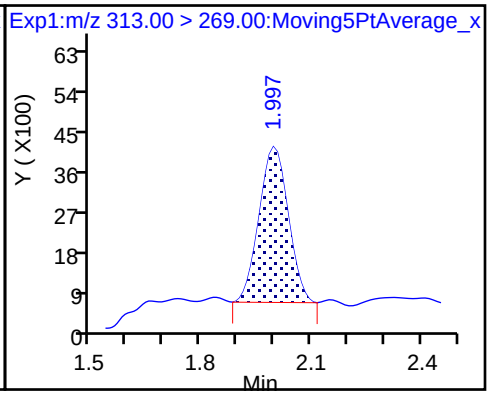
5 Perfluorobutanesulfonic acid (ND)



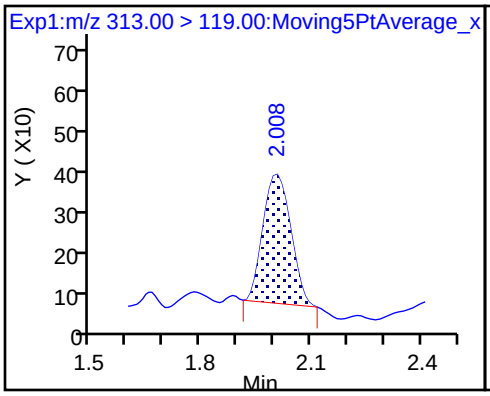
D 7 13C2 PFHxA



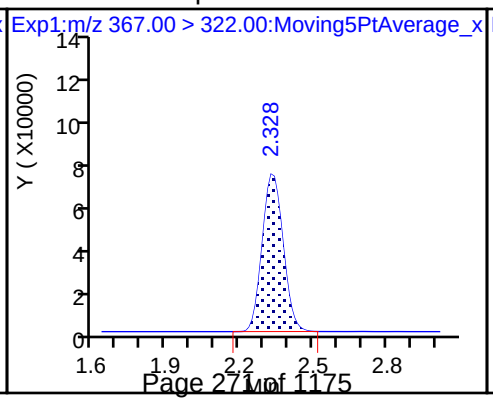
6 Perfluorohexanoic acid



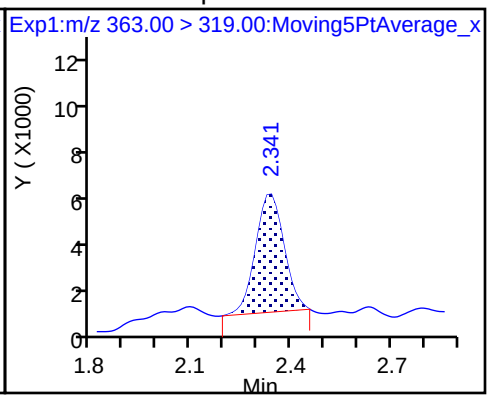
6 Perfluorohexanoic acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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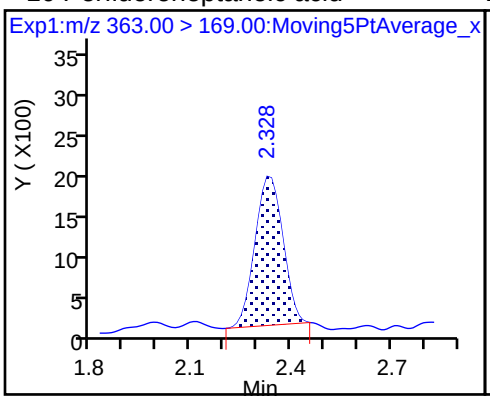
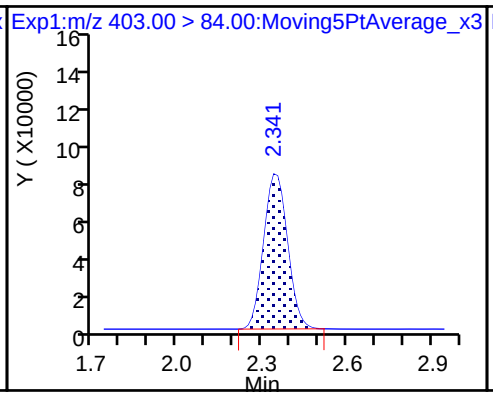
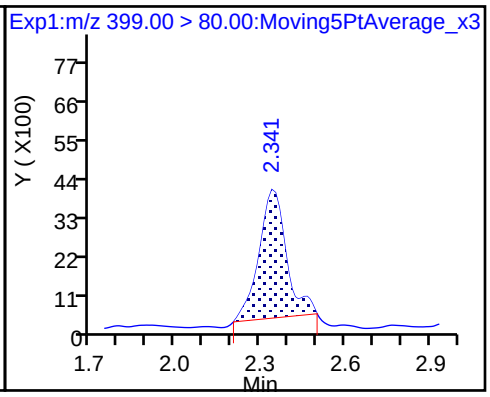


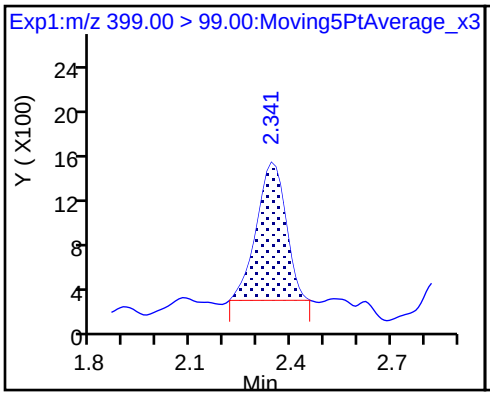
D 11 18O2 PFHxS



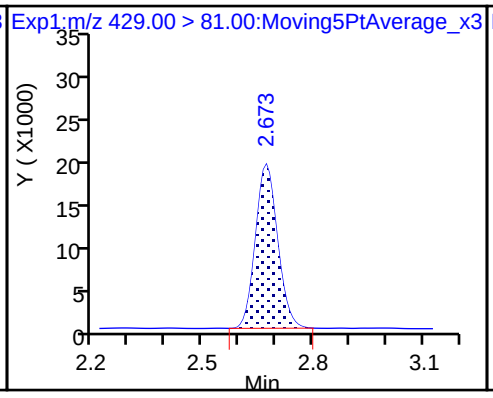
8 Perfluorohexanesulfonic acid



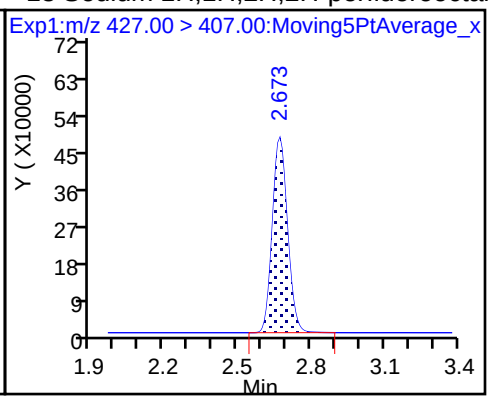
8 Perfluorohexanesulfonic acid



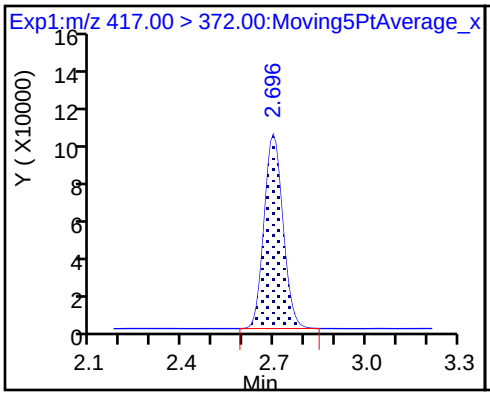
D 12 M2-6:2FTS



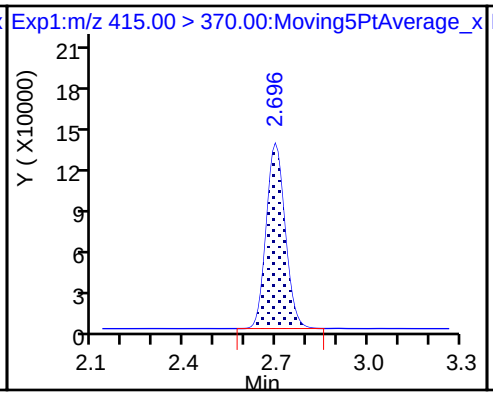
13 Sodium 1H,1H,2H,2H-perfluorooctane



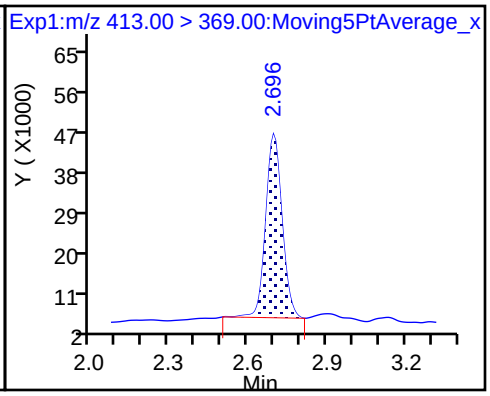
D 14 13C4 PFOA



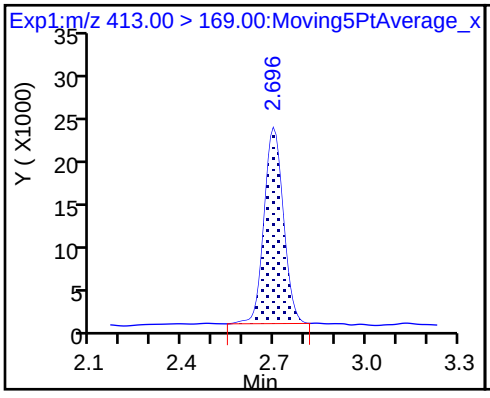
* 62 13C2-PFOA



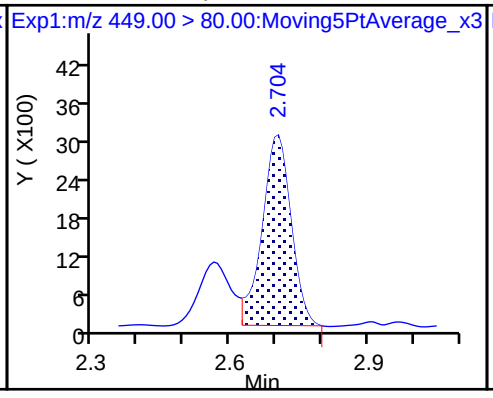
15 Perfluorooctanoic acid



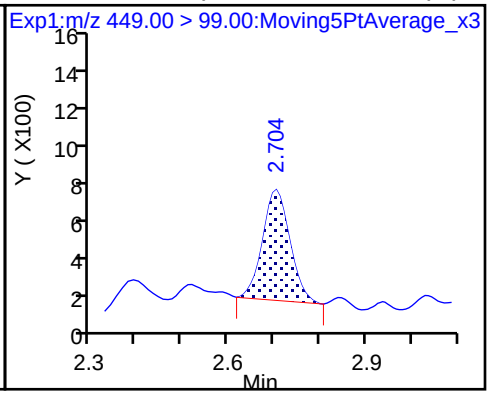
15 Perfluorooctanoic acid



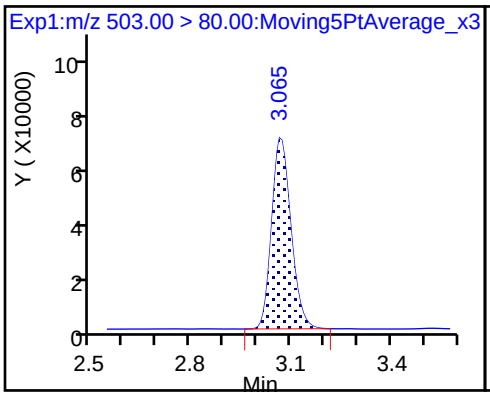
16 Perfluoroheptanesulfonic acid



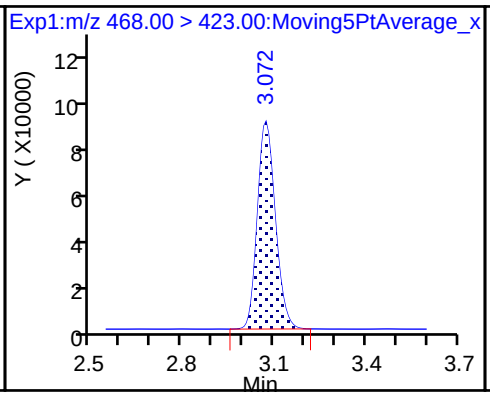
16 Perfluoroheptanesulfonic acid (M)



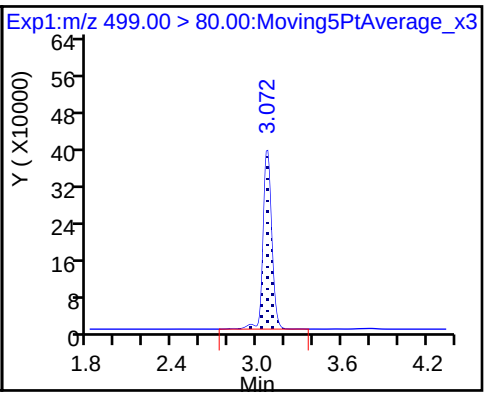
D 18 13C4 PFOS



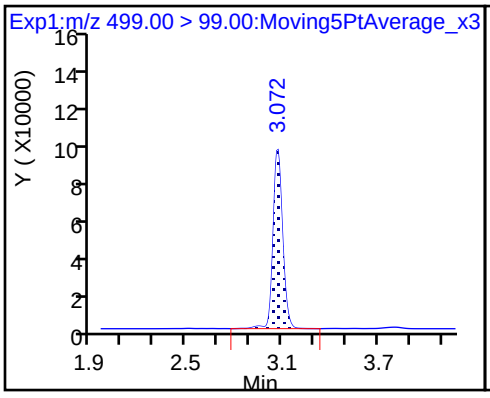
D 19 13C5 PFNA



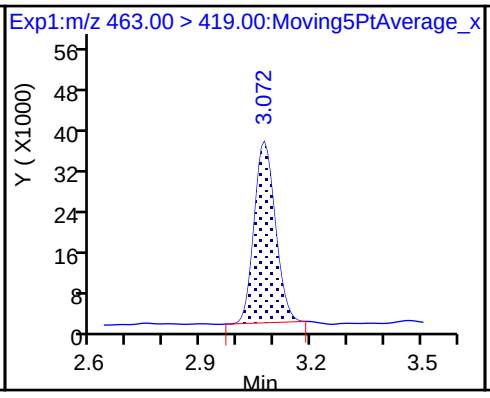
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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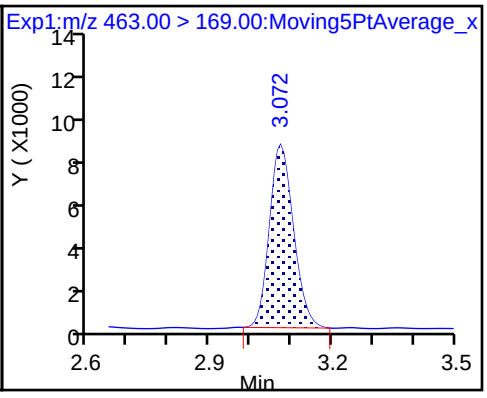
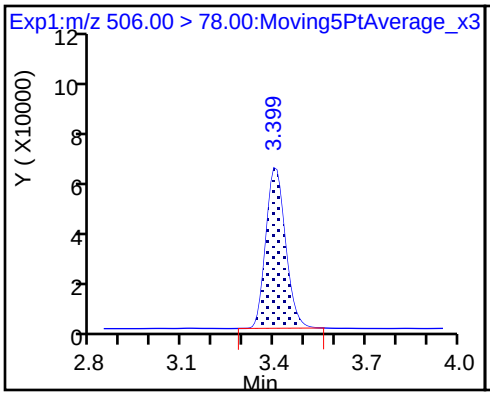
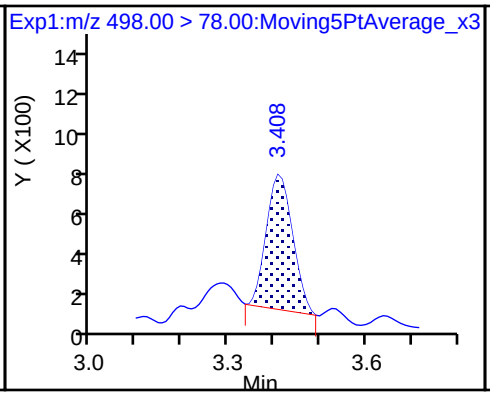


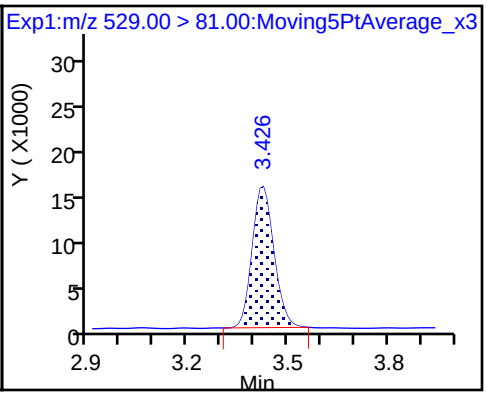
D 21 13C8 FOSA



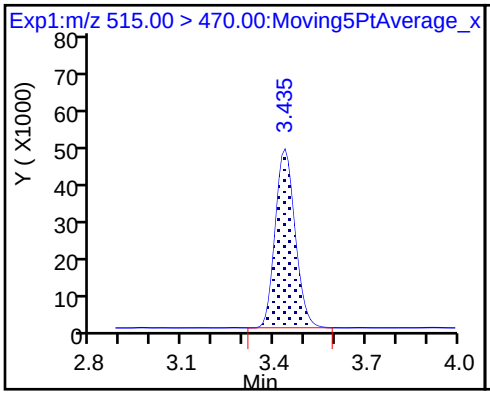
22 Perfluorooctane Sulfonamide



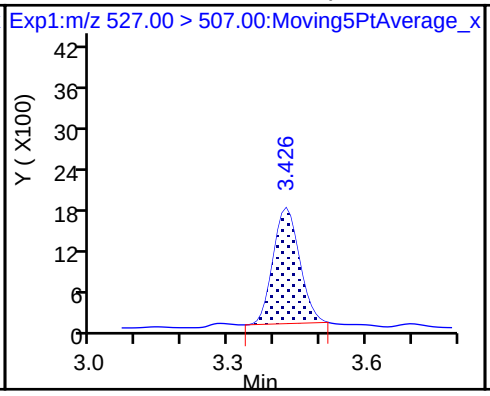
D 26 M2-8:2FTS



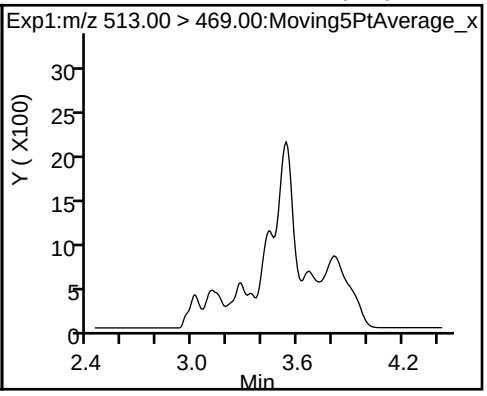
D 23 13C2 PFDA



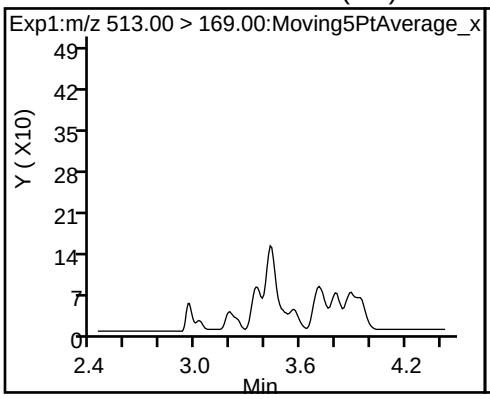
25 Sodium 1H,1H,2H,2H-perfluorodecan



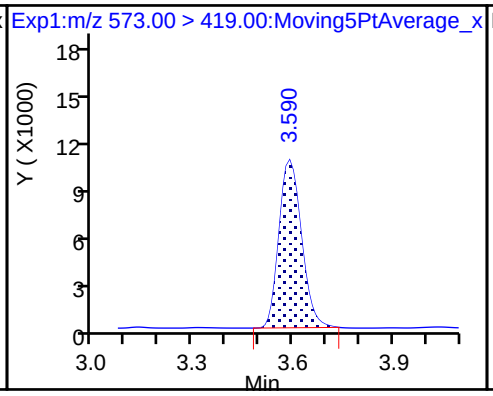
24 Perfluorodecanoic acid (ND)



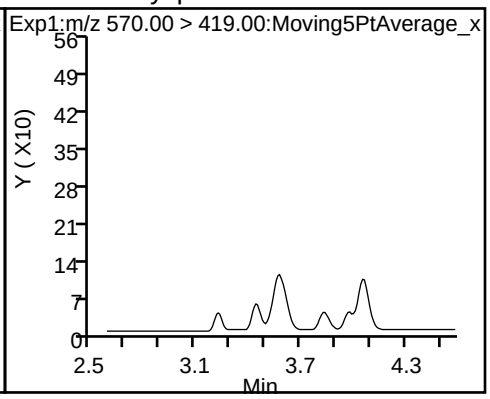
24 Perfluorodecanoic acid (ND)



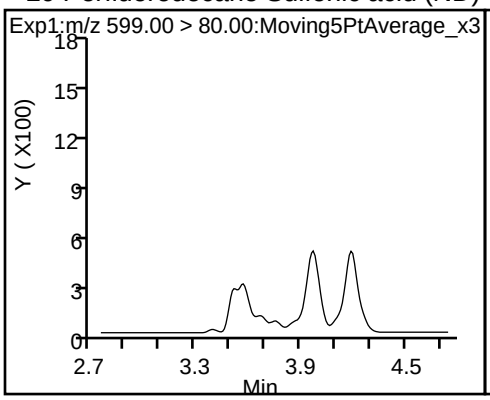
D 27 d3-NMeFOSAA



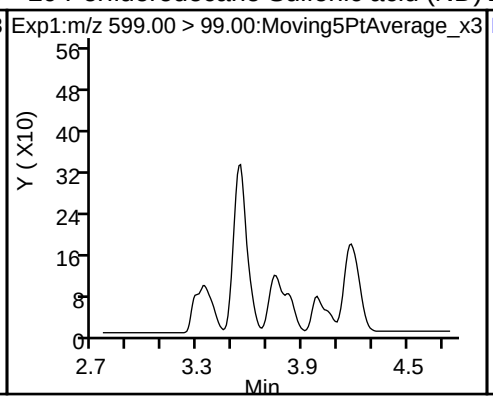
28 N-methyl perfluorooctane sulfonami (ND)



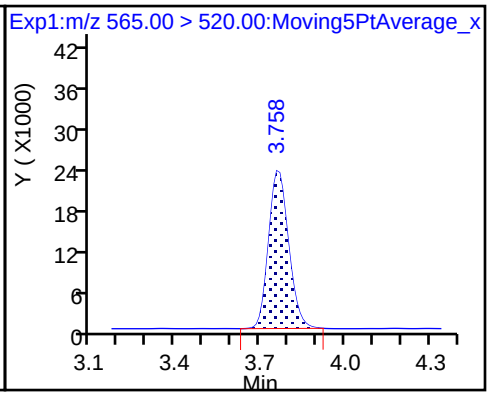
29 Perfluorodecane Sulfonic acid (ND)



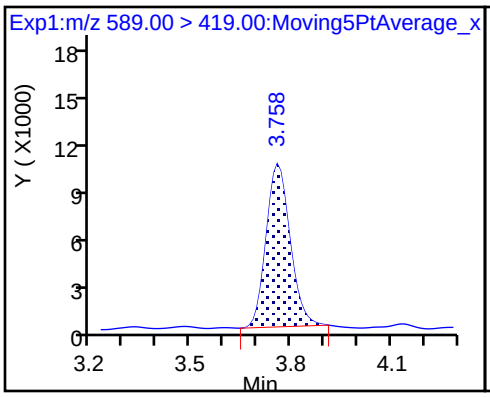
29 Perfluorodecane Sulfonic acid (ND)



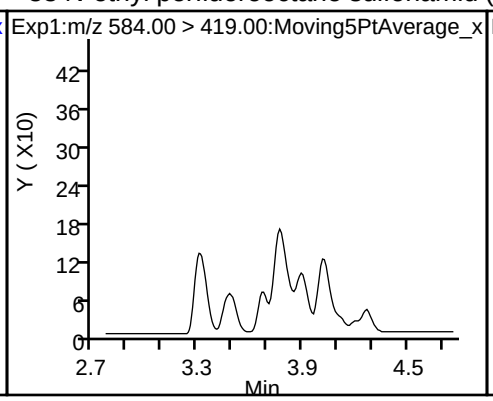
D 30 13C2 PFUnA



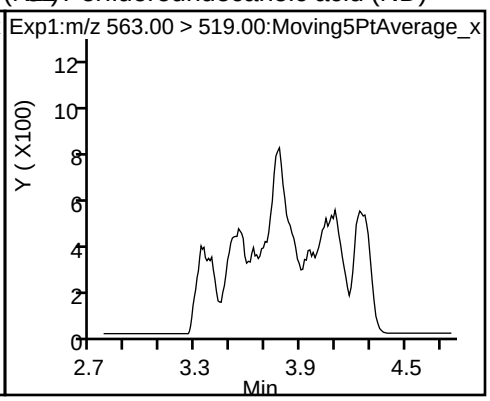
D 32 d5-NEtFOSAA



33 N-ethyl perfluorooctane sulfonamid (ND)



31 Perfluoroundecanoic acid (ND)



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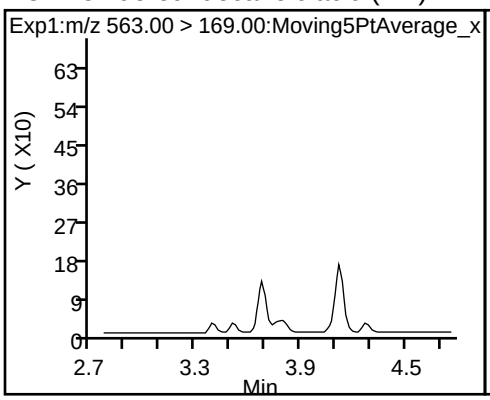
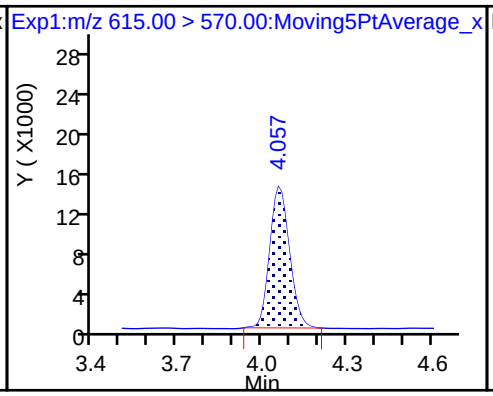
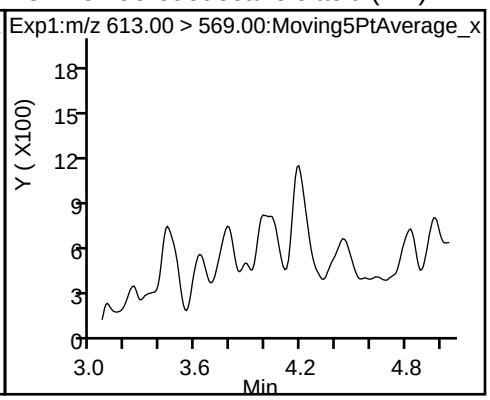


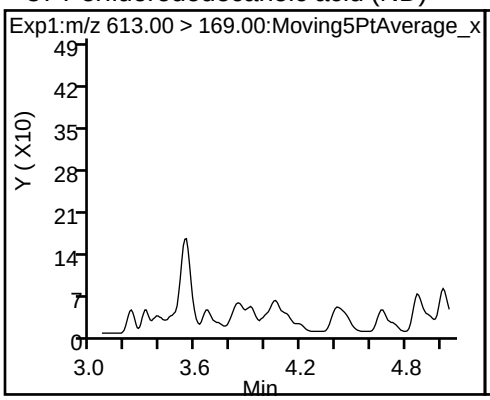
D 36 13C2 PFDoA



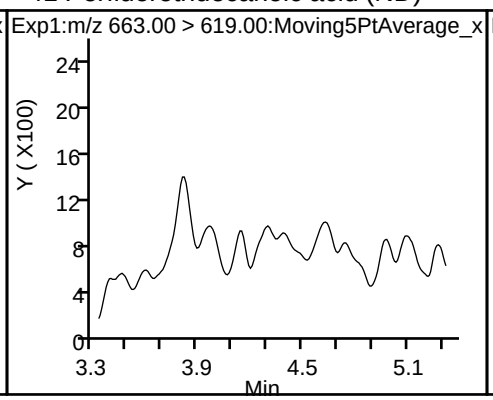
37 Perfluorododecanoic acid (ND)



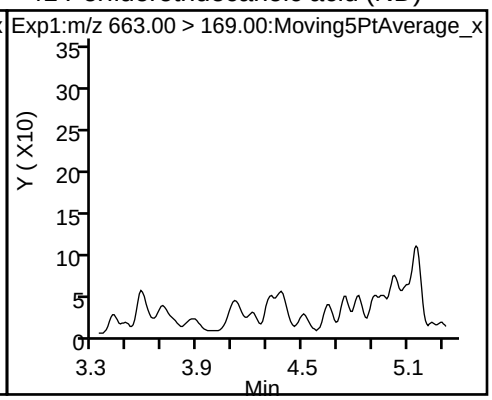
37 Perfluorododecanoic acid (ND)



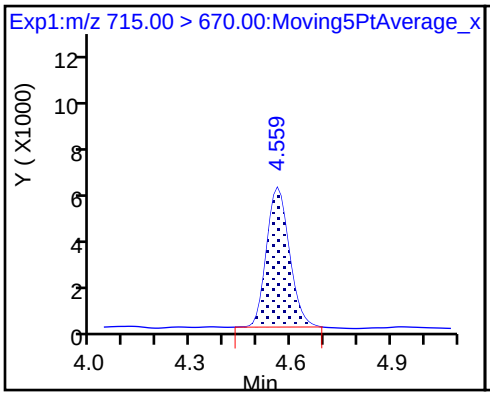
41 Perfluorotridecanoic acid (ND)



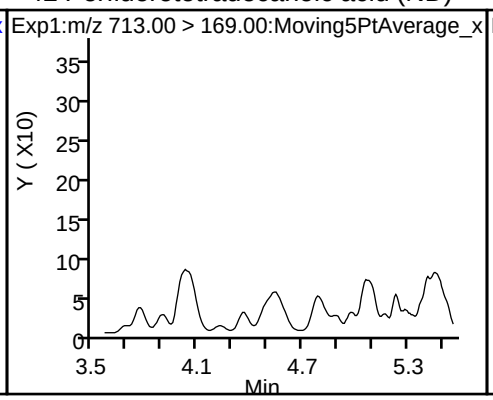
41 Perfluorotridecanoic acid (ND)



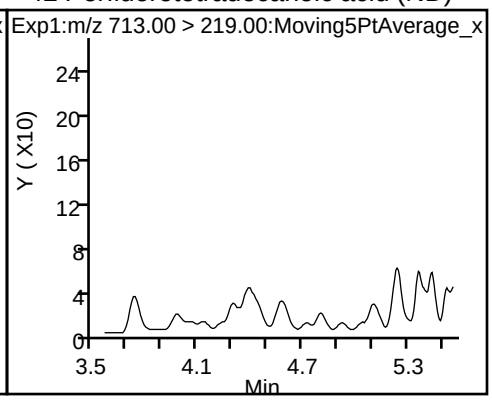
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(5'-7') | Lab Sample ID: 320-36683-8

Matrix: Solid | Lab File ID: 2018.03.20LLA_036.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.01(g) | Date Analyzed: 03/21/2018 00:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00028	B	0.00021	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00038		0.00021	0.000081
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0011		0.00021	0.000044
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00025		0.00021	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.0017		0.00021	0.000090
375-95-1	Perfluorononanoic acid (PFNA)	0.021		0.00021	0.000038
335-76-2	Perfluorodecanoic acid (PFDA)	0.0021		0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000092	J	0.00021	0.000038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000070	U	0.00021	0.000070
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000053	U	0.00021	0.000053
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000056	U	0.00021	0.000056
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00031		0.00021	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.011		0.00021	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.0016		0.00021	0.000037
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000041	U *	0.00021	0.000041
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000086	U	0.00021	0.000086
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.0021	0.00041
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039
27619-97-2	6:2FTS	0.00090	J	0.0021	0.00016
39108-34-4	8:2FTS	0.00026	U	0.0021	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(5'-7') | Lab Sample ID: 320-36683-8

Matrix: Solid | Lab File ID: 2018.03.20LLA_036.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.01(g) | Date Analyzed: 03/21/2018 00:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	78		25-150
STL01893	13C5 PFPeA	78		25-150
STL00993	13C2 PFHxA	76		25-150
STL01892	13C4-PFHpA	77		25-150
STL00990	13C4 PFOA	76		25-150
STL00995	13C5 PFNA	33		25-150
STL00996	13C2 PFDA	56		25-150
STL00997	13C2 PFUnA	37		25-150
STL00998	13C2 PFDoA	26		25-150
STL02116	13C2-PFTeDA	25		25-150
STL02337	13C3-PFBS	81		25-150
STL00994	18O2 PFHxS	81		25-150
STL00991	13C4 PFOS	37		25-150
STL01056	13C8 FOSA	38		25-150
STL02118	d3-NMeFOSAA	25		25-150
STL02117	d5-NEtFOSAA	25		25-150
STL02279	M2-6:2FTS	74		25-150
STL02280	M2-8:2FTS	57		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_036.d
Lims ID: 320-36683-A-8-A
Client ID: SB012(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 00:51:41 ALS Bottle#: 26 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-8-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:31:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.443	1.441	0.002	0.538	4548407	1.94		77.6	85794	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.443	1.446	-0.003	1.000	228641	0.1355			27.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.700	0.003	0.635	3222745	1.95		78.0	66395	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.709	-0.015	0.995	274185	0.1821			34.5	M
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.736	0.002	0.648	76436	1.87		80.6	402	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.744	-0.006	1.000	378705	0.1489			124	
298.90 > 99.00	1.738	1.744	-0.006	1.000	161884		2.34(1.25-3.74)		125	
D 7 13C2 PFHxA										
315.00 > 270.00	1.989	1.987	0.002	0.742	3489693	1.89		75.7	83845	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.979	1.997	-0.018	0.995	740047	0.5254			609	M
313.00 > 119.00	1.989	1.997	-0.008	1.000	61359		12.06(5.03-15.10)		847	
D 9 13C4-PFHpA										
367.00 > 322.00	2.318	2.315	0.003	0.864	3467639	1.93		77.3	95387	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.318	2.328	-0.010	1.000	174015	0.1210			149	
363.00 > 169.00	2.318	2.328	-0.010	1.000	69019		2.52(1.13-3.40)		843	
D 11 18O2 PFHxS										
403.00 > 84.00	2.331	2.328	0.003	0.869	4611297	1.93		81.5	95327	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.331	2.341	-0.010	1.000	10936295	5.03			14834	
399.00 > 99.00	2.331	2.341	-0.010	1.000	3417354		3.20(1.50-4.49)		8380	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.659	2.657	0.002	0.991	805786	1.75		73.9	14177	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.659	2.663	-0.004	1.000	243675	0.4315			11080	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.681	0.001	1.000	3296543	1.90		76.1	108132	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.682	2.695	-0.013	1.000	1199758	0.8150			352	M
413.00 > 169.00	2.682	2.695	-0.013	1.000	687627		1.74(0.84-2.52)		2190	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.695	-0.013		4590500	2.50			75329	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.703	-0.013	1.000	614451	0.7583			1199	
449.00 > 99.00	2.690	2.703	-0.013	1.000	172087		3.57(1.94-5.82)		1511	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.051	0.002	1.138	1473735	0.8807		36.8	13824	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.058	0.002	1.141	1142117	0.8244		33.0	23022	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.060	3.067	-0.007	1.002	166801839	249.9			42013	E
499.00 > 99.00	3.053	3.067	-0.014	1.000	51708011		3.23(2.31-6.93)		1170725	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.067	-0.007	1.000	4577234	9.83			6072	
463.00 > 169.00	3.060	3.067	-0.007	1.000	1174857		3.90(1.90-5.69)		6750	
D 21 13C8 FOSA										
506.00 > 78.00	3.391	3.389	0.002	1.264	2291244	0.9457		37.8	36739	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.391	3.401	-0.010	1.000	35793	0.0402			77.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.408	0.002	1.271	589734	1.37		57.1	8897	
D 23 13C2 PFDA										
515.00 > 470.00	3.419	3.417	0.002	1.275	1613777	1.39		55.8	33219	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.419	-0.009	1.000	14728	0.0476			422	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.419	3.428	-0.009	1.000	613128	1.00			1372	
513.00 > 169.00	3.419	3.428	-0.009	1.000	113251		5.41(2.36-7.09)		609	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.570	0.003	1.332	234219	0.6129		24.5	12701	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.742	3.748	-0.006	1.395	227246	0.6219		24.9	433	
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.748	0.004	1.399	844261	0.9316		37.3	25350	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.752	3.762	-0.010	1.000	12410	0.0438			30.1	
563.00 > 169.00	3.752	3.762	-0.010	1.000	2870		4.32(2.12-6.36)		253	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.046	0.005	1.510	563566	0.6558		26.2	3320	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.549	4.544	0.005	1.696	481171	0.6135		24.5	5641	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:18 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_036.d

Injection Date: 21-Mar-2018 00:51:41 Instrument ID: A8_N

Lims ID: 320-36683-A-8-A Lab Sample ID: 320-36683-8

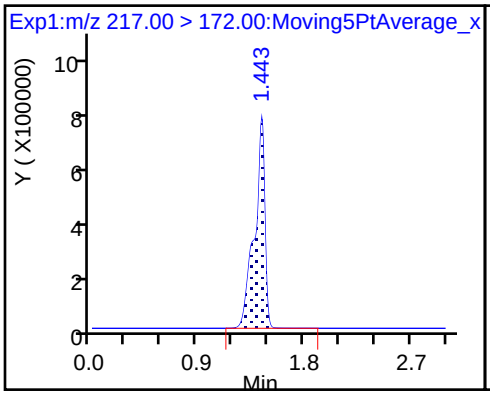
Client ID: SB012(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 15

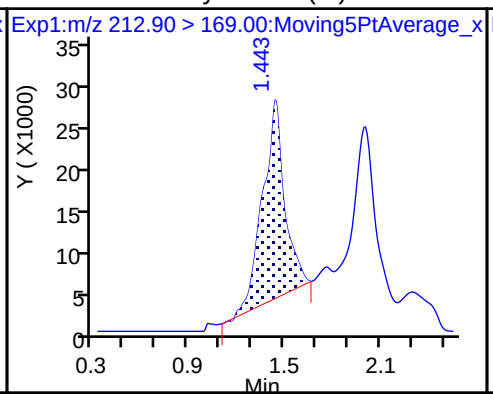
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

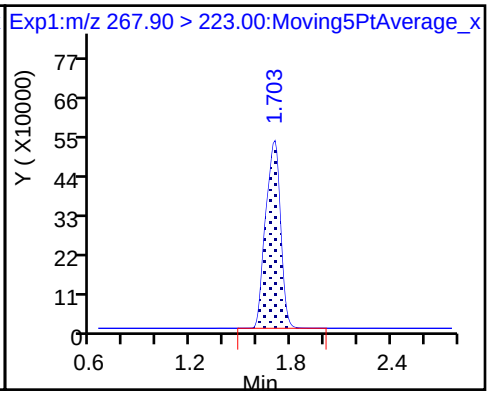
D 1 13C4 PFBA



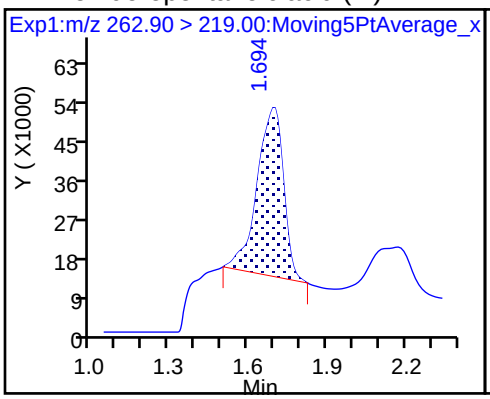
2 Perfluorobutyric acid (M)



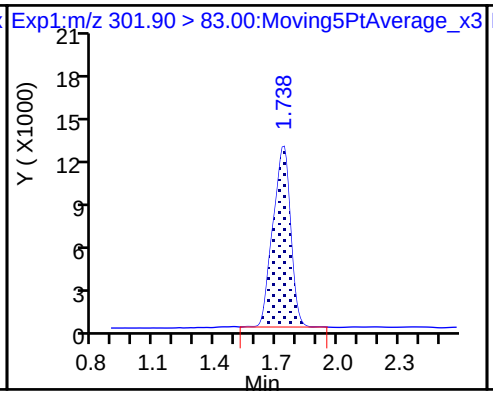
D 3 13C5-PFPeA



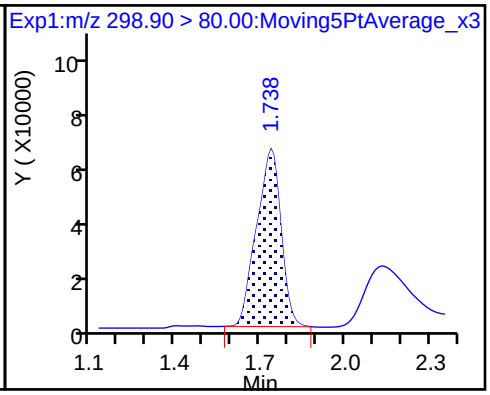
4 Perfluoropentanoic acid (M)



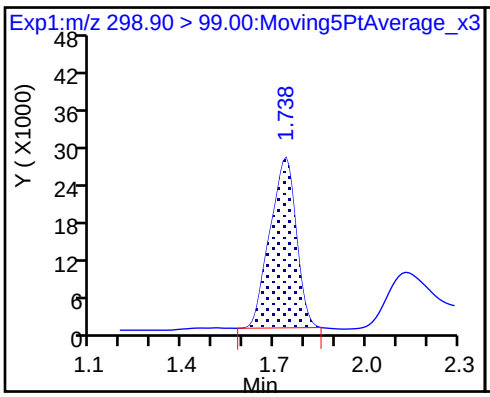
D 47 13C3-PFBS



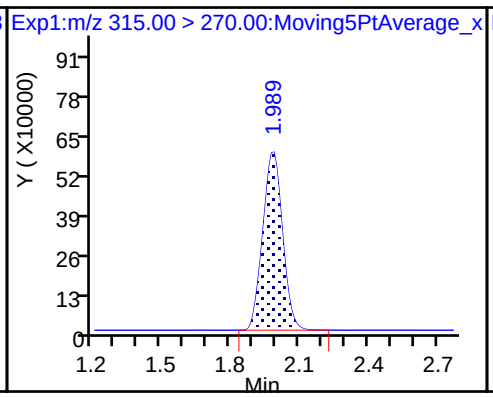
5 Perfluorobutanesulfonic acid



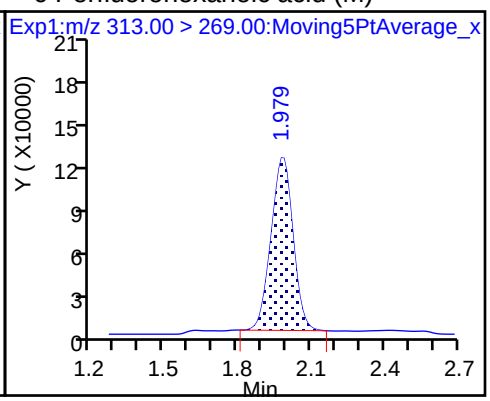
5 Perfluorobutanesulfonic acid



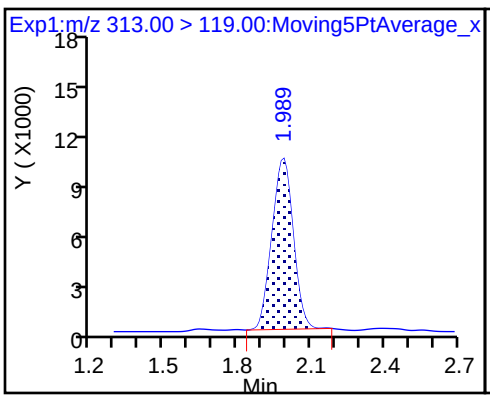
D 7 13C2 PFHxA



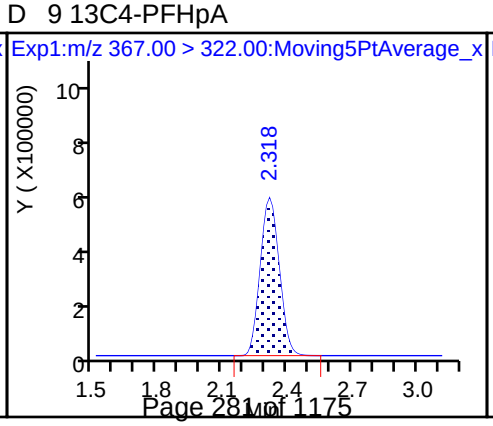
6 Perfluorohexanoic acid (M)



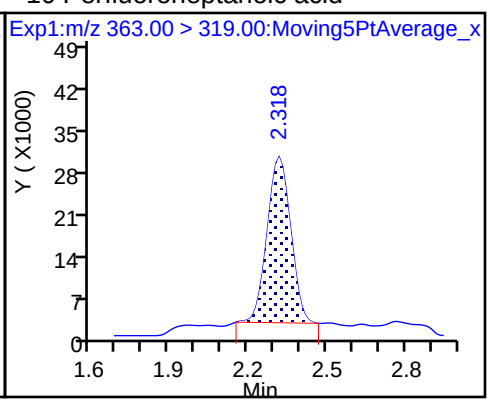
6 Perfluorohexanoic acid



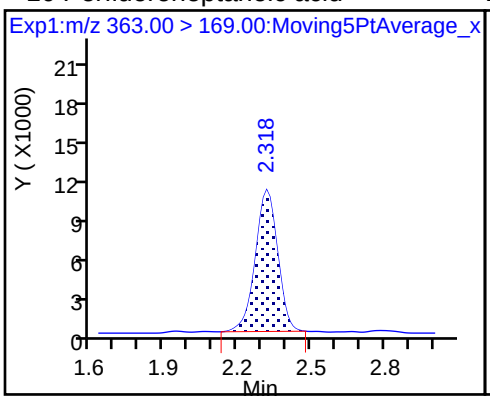
D 9 13C4-PFHpA



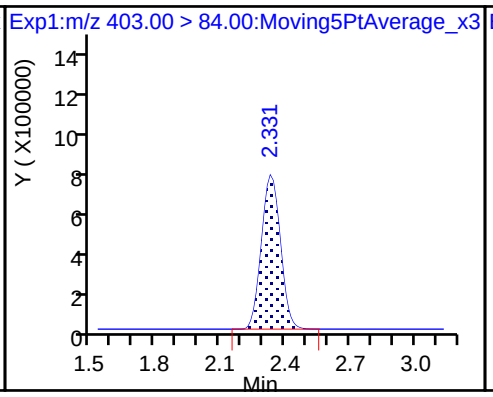
10 Perfluoroheptanoic acid



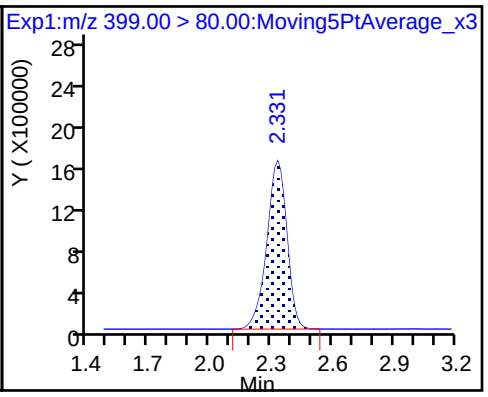
10 Perfluoroheptanoic acid



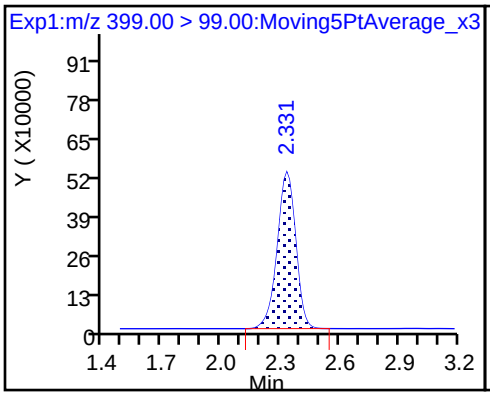
D 11 18O2 PFHxS



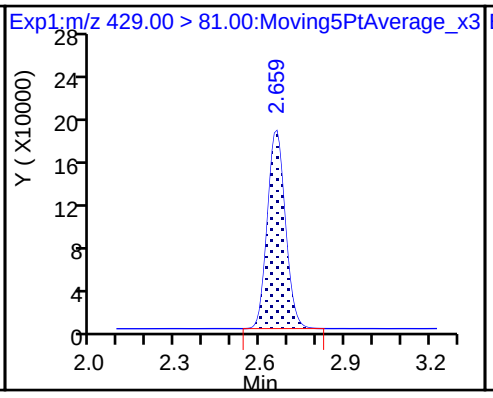
8 Perfluorohexanesulfonic acid



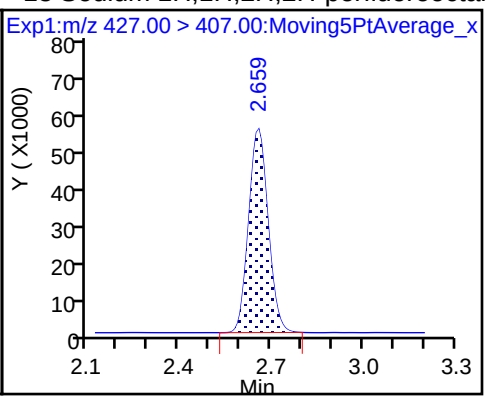
8 Perfluorohexanesulfonic acid



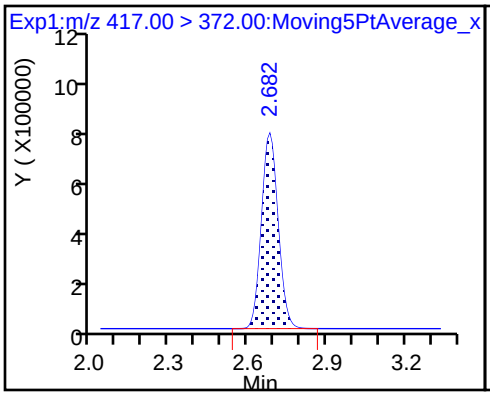
D 12 M2-6:2FTS



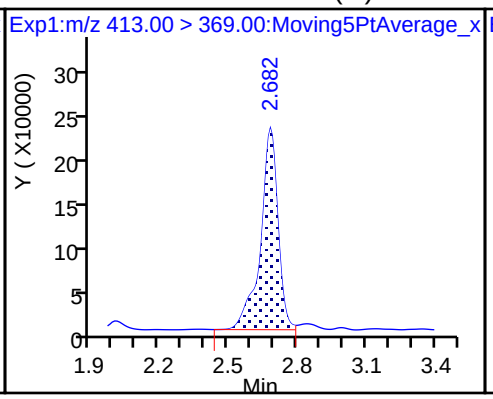
13 Sodium 1H,1H,2H,2H-perfluorooctane



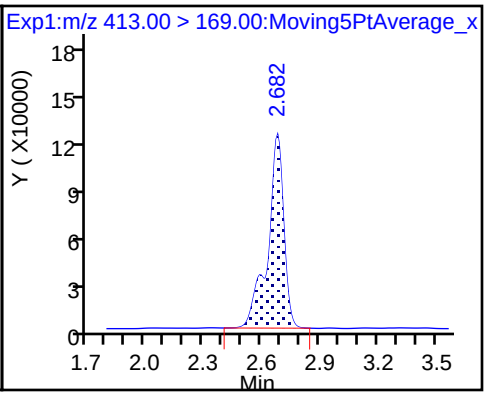
D 14 13C4 PFOA



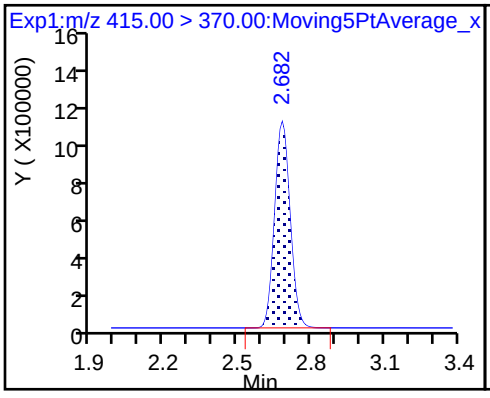
15 Perfluorooctanoic acid (M)



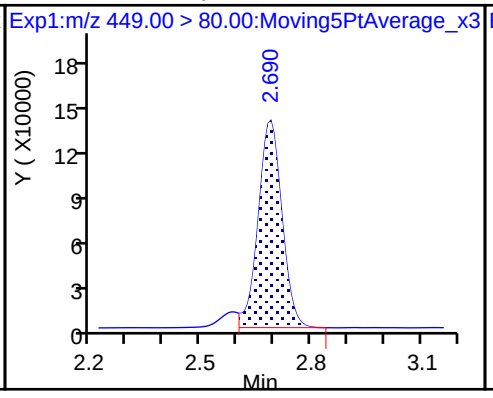
15 Perfluorooctanoic acid



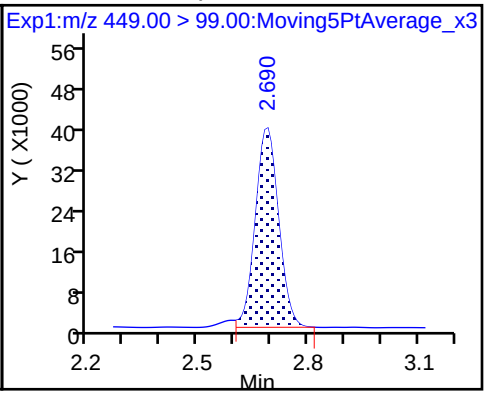
* 62 13C2-PFOA



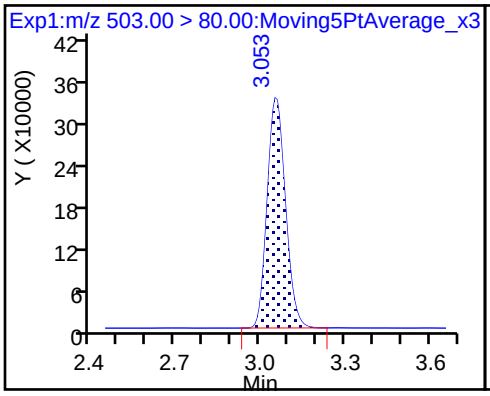
16 Perfluoroheptanesulfonic acid



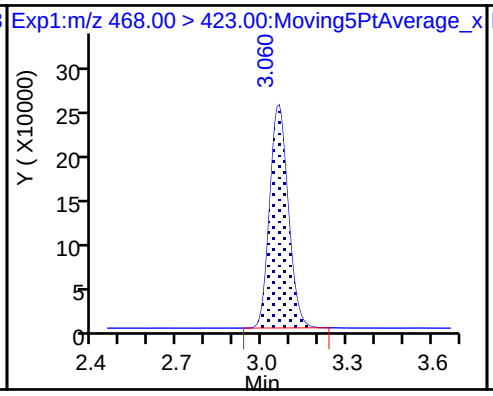
16 Perfluoroheptanesulfonic acid



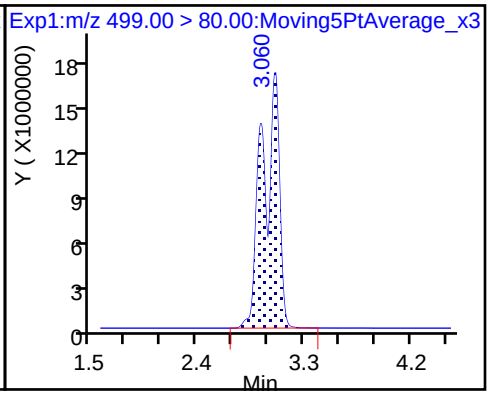
D 18 13C4 PFOS



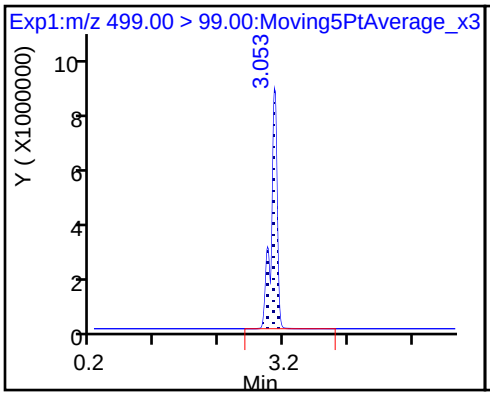
D 19 13C5 PFNA



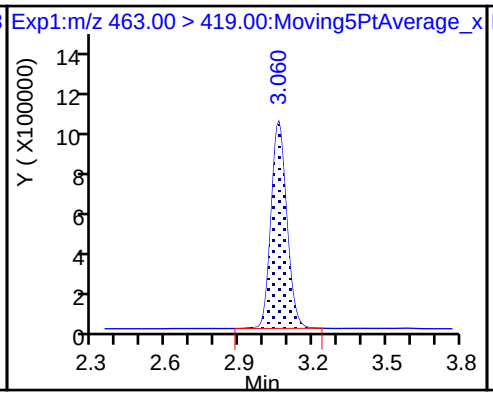
17 Perfluorooctane sulfonic acid



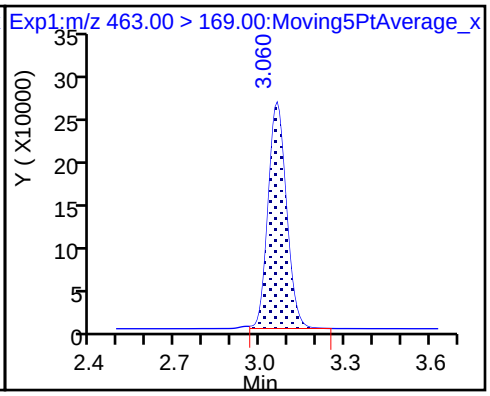
17 Perfluorooctane sulfonic acid



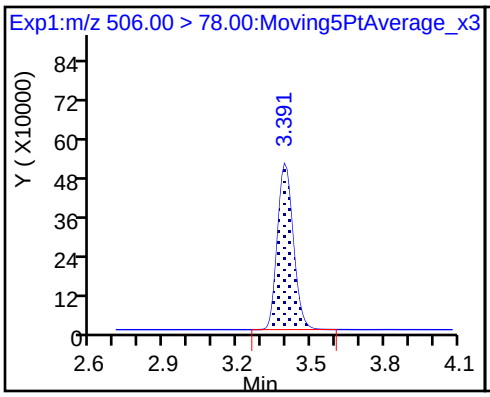
20 Perfluorononanoic acid



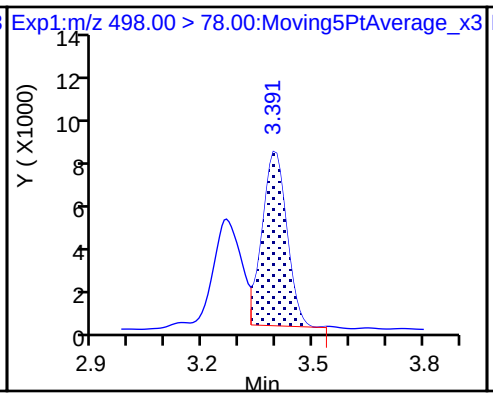
20 Perfluorononanoic acid



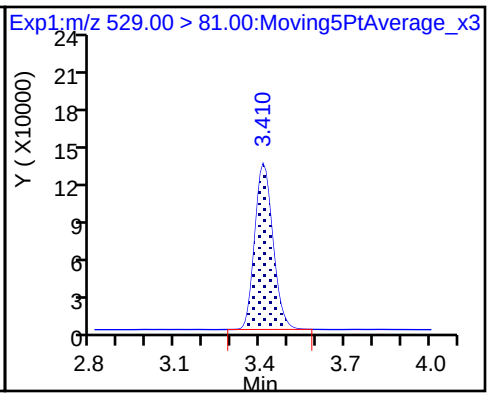
D 21 13C8 FOSA



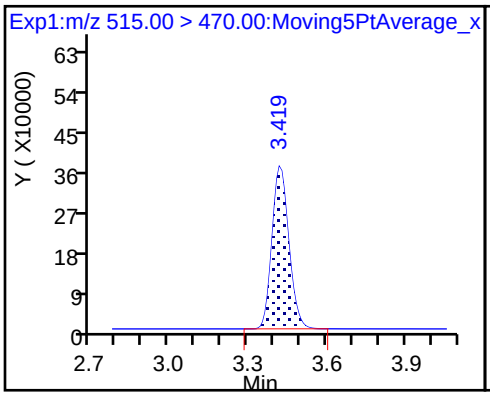
22 Perfluorooctane Sulfonamide



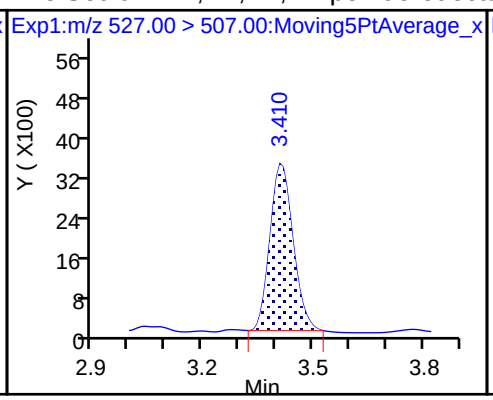
D 26 M2-8:2FTS



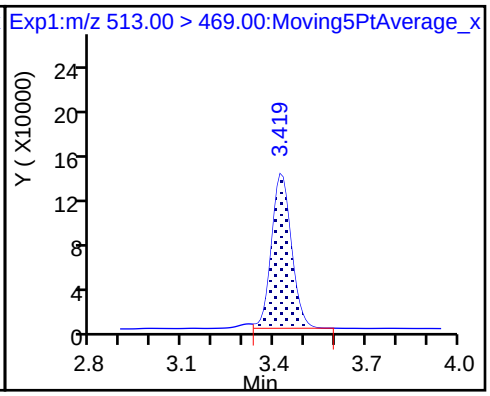
D 23 13C2 PFDA



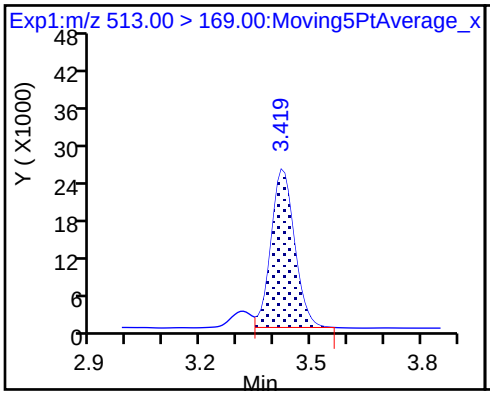
25 Sodium 1H,1H,2H,2H-perfluorodecan



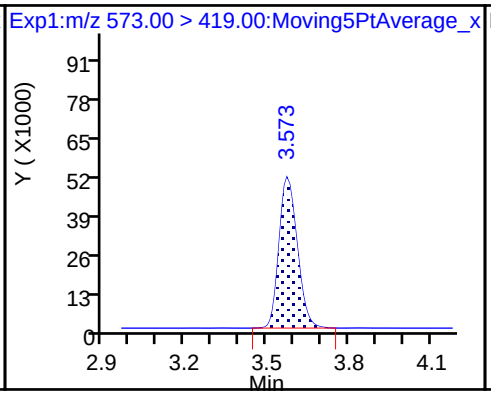
24 Perfluorodecanoic acid



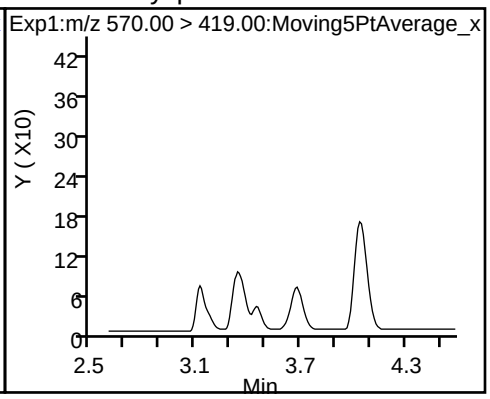
24 Perfluorodecanoic acid



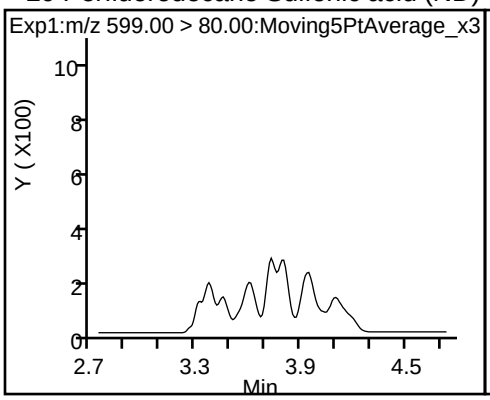
D 27 d3-NMeFOSAA



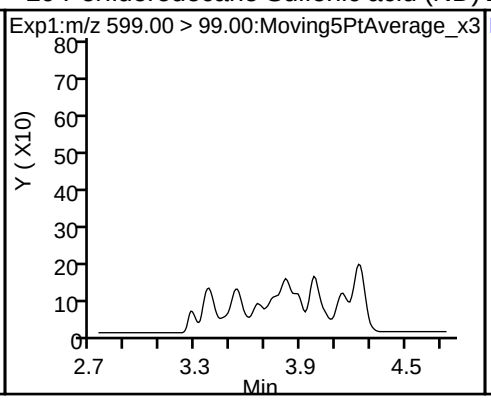
28 N-methyl perfluorooctane sulfonami (ND)



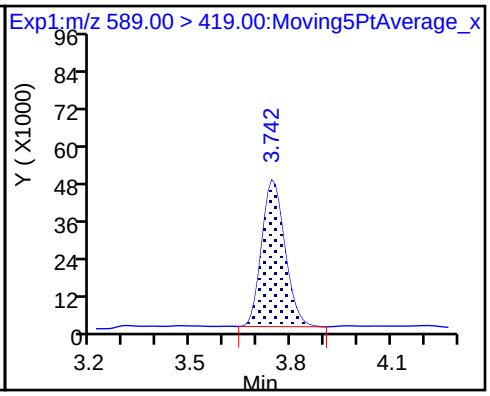
29 Perfluorodecane Sulfonic acid (ND)



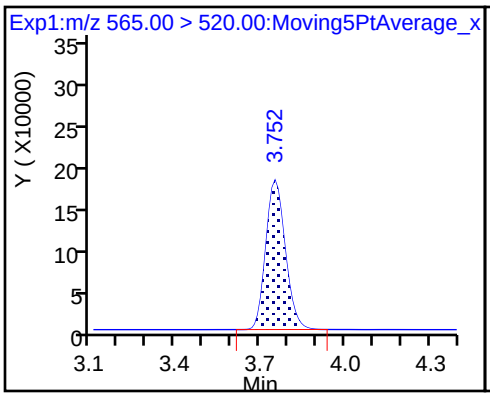
29 Perfluorodecane Sulfonic acid (ND)



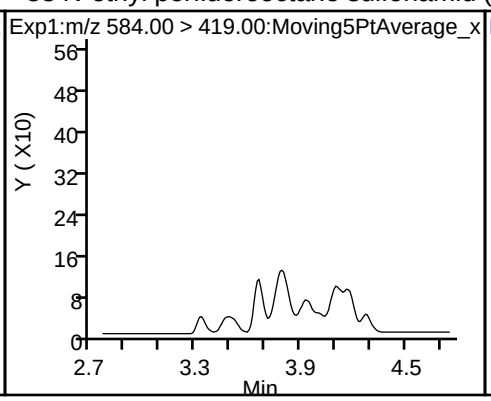
D 32 d5-NEtFOSAA



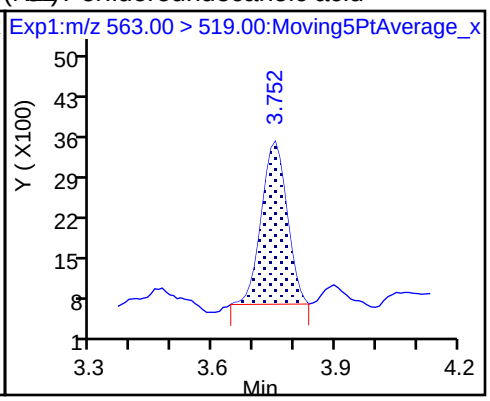
D 30 13C2 PFUnA



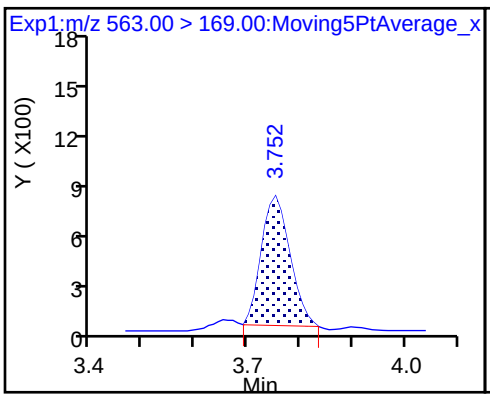
33 N-ethyl perfluorooctane sulfonamid (ND)



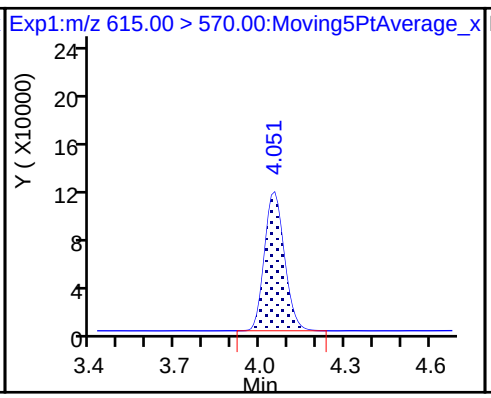
31 Perfluoroundecanoic acid



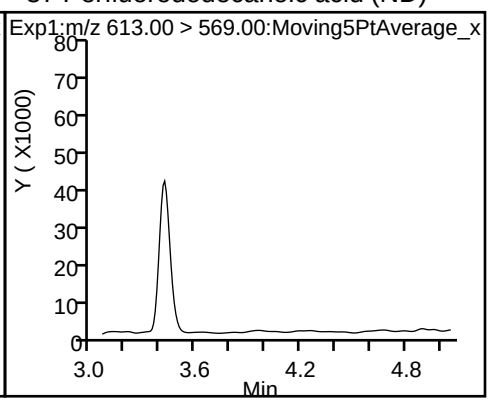
31 Perfluoroundecanoic acid



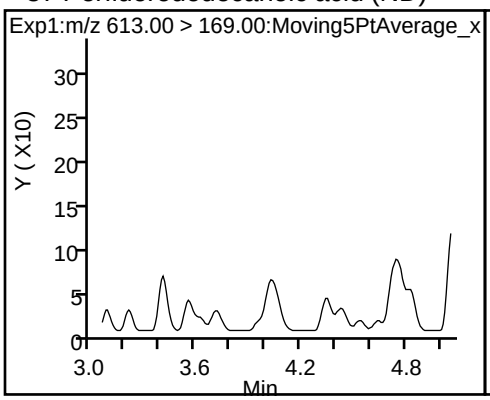
D 36 13C2 PFDoA



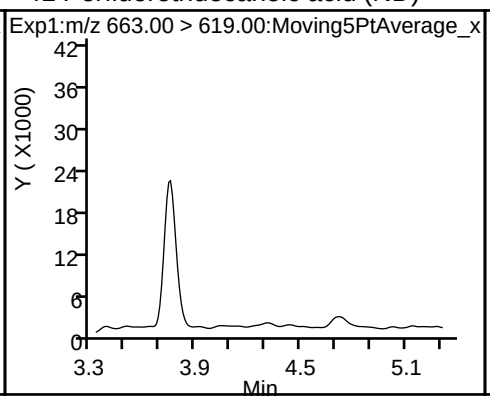
37 Perfluorododecanoic acid (ND)



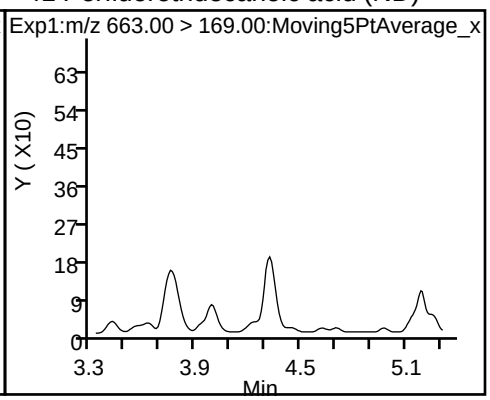
37 Perfluorododecanoic acid (ND)



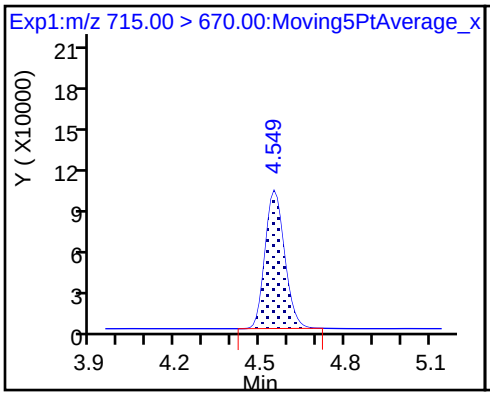
41 Perfluorotridecanoic acid (ND)



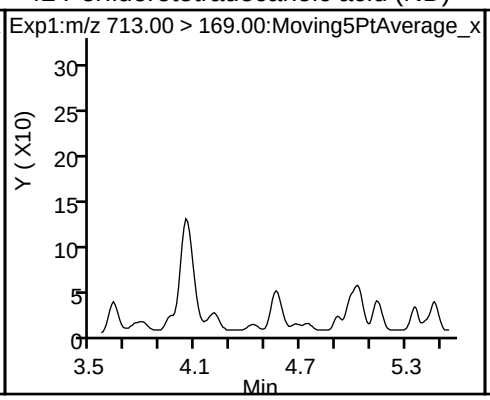
41 Perfluorotridecanoic acid (ND)



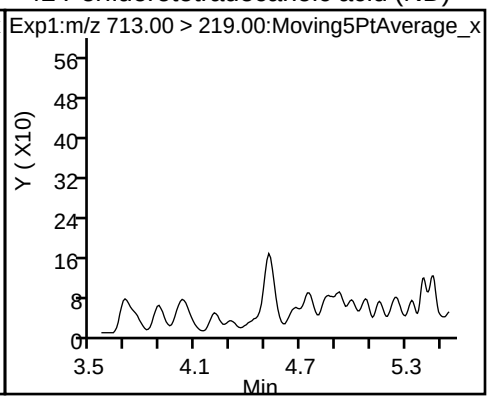
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

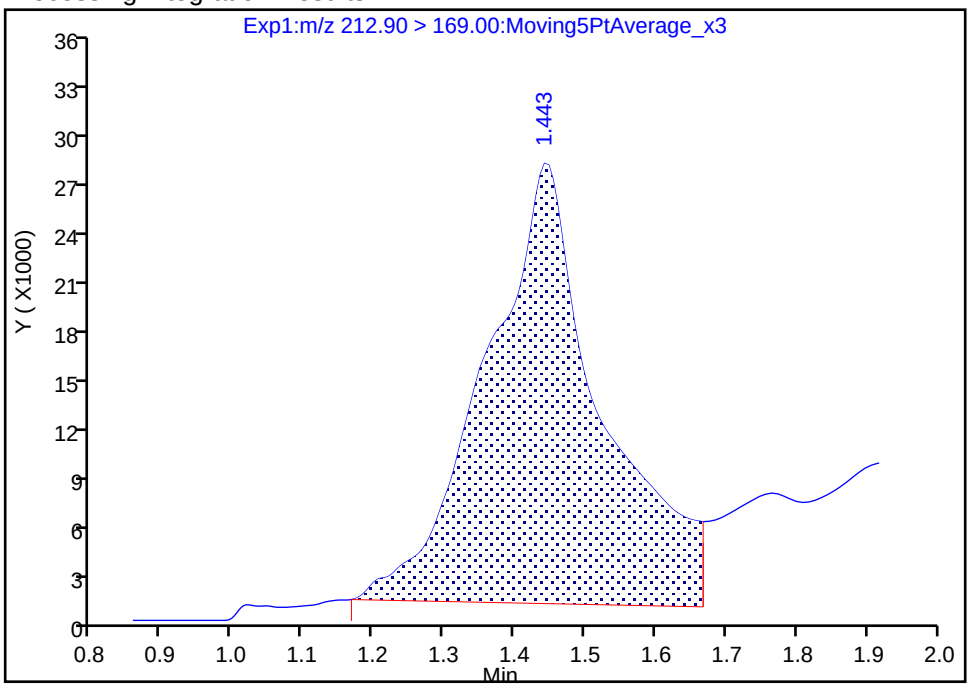
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_036.d				
Injection Date:	21-Mar-2018 00:51:41	Instrument ID:	A8_N		
Lims ID:	320-36683-A-8-A	Lab Sample ID:	320-36683-8		
Client ID:	SB012(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

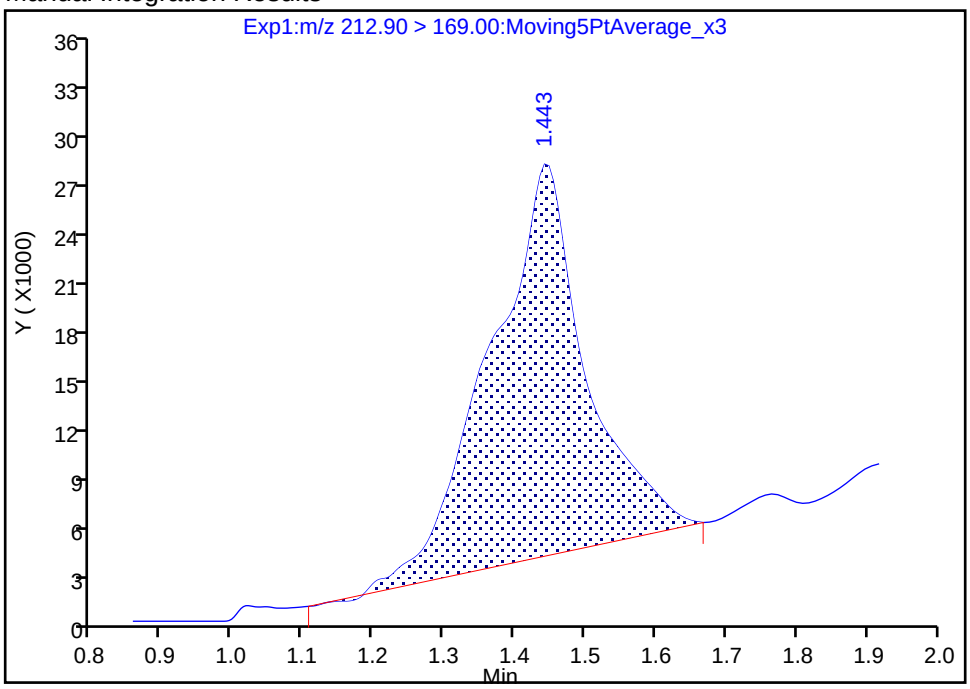
Processing Integration Results

RT: 1.44
Area: 309954
Amount: 0.183692
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 228641
Amount: 0.135503
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:29:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

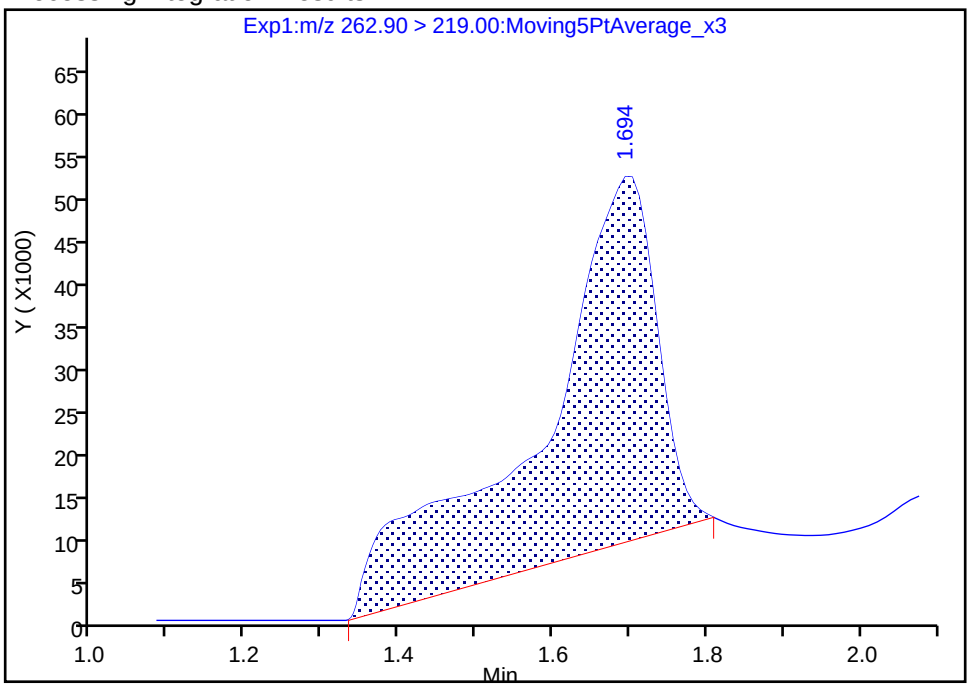
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_036.d				
Injection Date:	21-Mar-2018 00:51:41	Instrument ID:	A8_N		
Lims ID:	320-36683-A-8-A	Lab Sample ID:	320-36683-8		
Client ID:	SB012(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

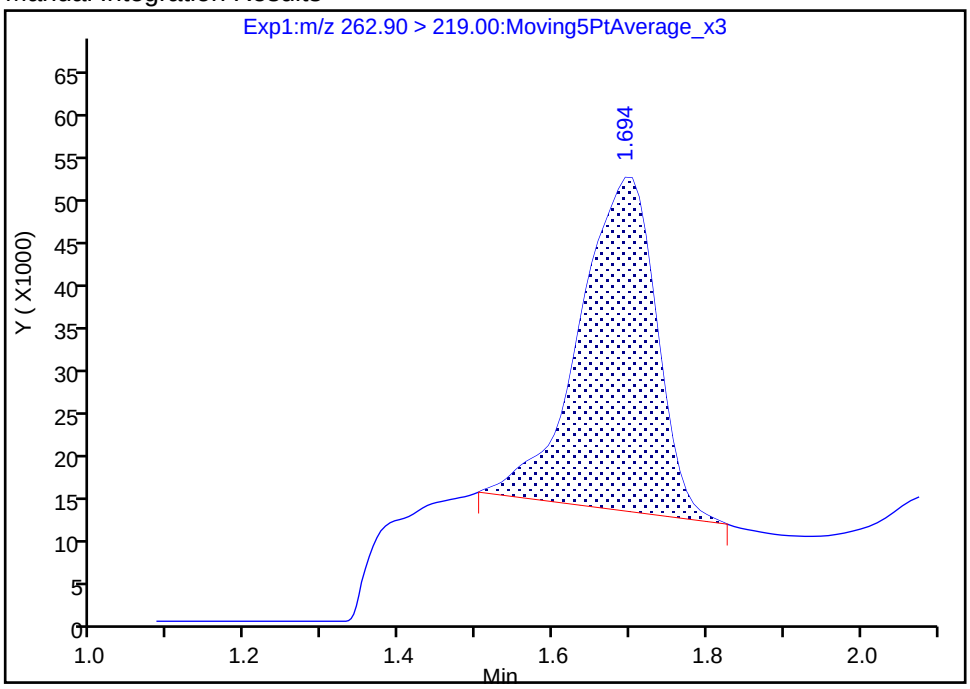
Processing Integration Results

RT: 1.69
Area: 463350
Amount: 0.307703
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 274185
Amount: 0.182082
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:30:11

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

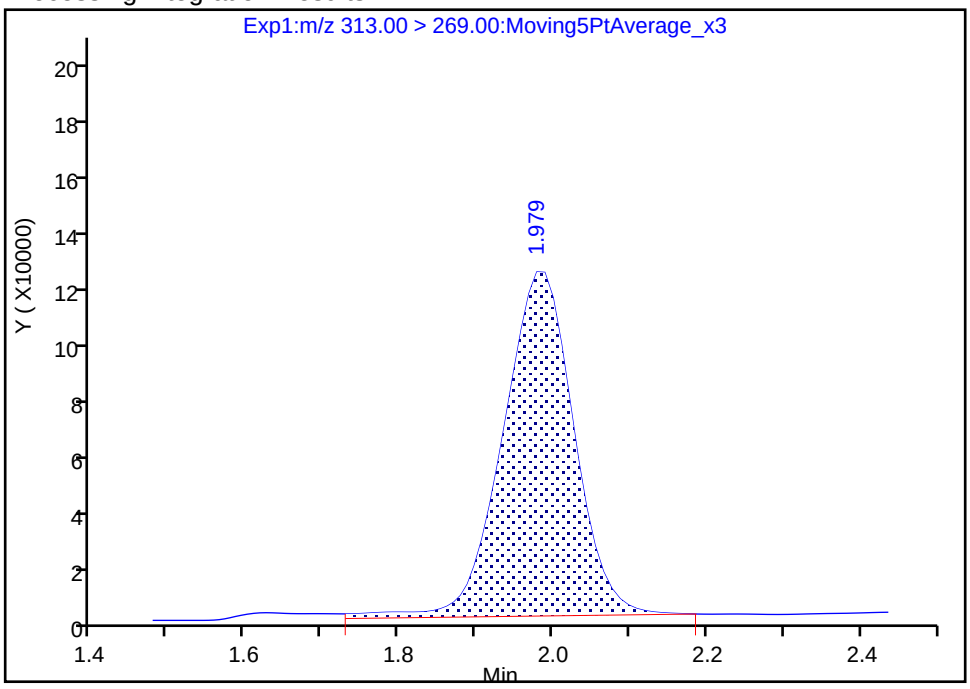
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_036.d				
Injection Date:	21-Mar-2018 00:51:41	Instrument ID:	A8_N		
Lims ID:	320-36683-A-8-A	Lab Sample ID:	320-36683-8		
Client ID:	SB012(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

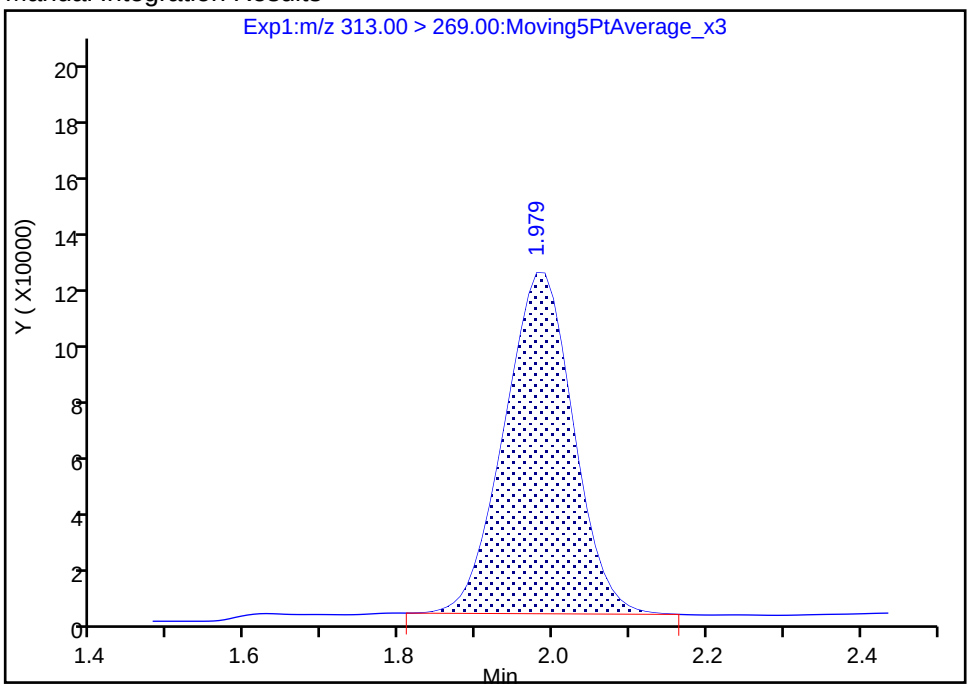
Processing Integration Results

RT: 1.98
Area: 771876
Amount: 0.548015
Amount Units: ng/ml



Manual Integration Results

RT: 1.98
Area: 740047
Amount: 0.525417
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:30:27

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

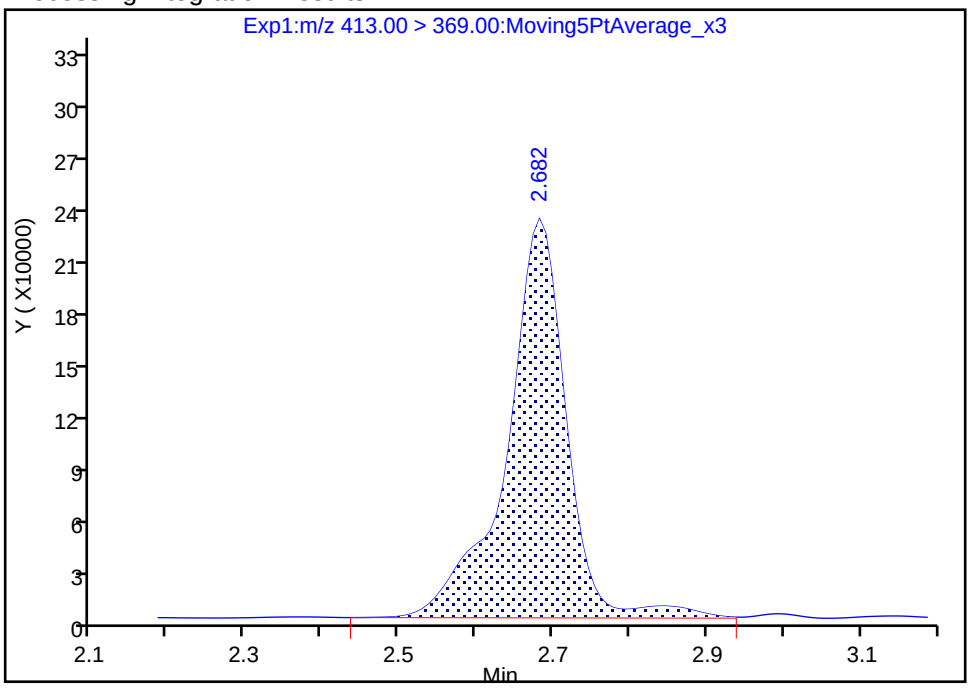
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_036.d				
Injection Date:	21-Mar-2018 00:51:41	Instrument ID:	A8_N		
Lims ID:	320-36683-A-8-A	Lab Sample ID:	320-36683-8		
Client ID:	SB012(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

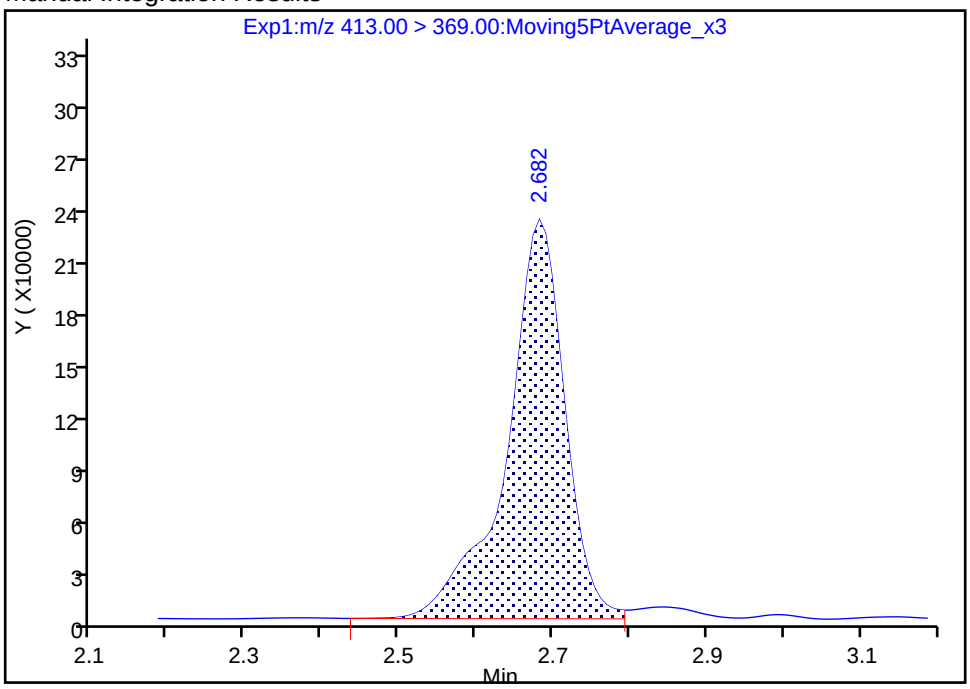
Processing Integration Results

RT: 2.68
Area: 1238463
Amount: 0.841307
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 1199758
Amount: 0.815015
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:31:19

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(5'-7') RE | Lab Sample ID: 320-36683-8 RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_018.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:00

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) | Date Analyzed: 03/29/2018 01:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000040*	*U H*	*0.00021*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	32		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_018.d
Lims ID: 320-36683-A-8-B
Client ID: SB012(5'-7')
Sample Type: Client
Inject. Date: 29-Mar-2018 01:36:29 ALS Bottle#: 23 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-8-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: hannigana Date: 29-Mar-2018 08:10:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.533	4610836	1.59		63.4	98734	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.446	-0.006	1.000	255535	0.1470			32.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.632	3259547	1.69		67.6	55547	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	234766	0.1597			44.3	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	64926	1.47		63.4	388	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.000	318804	0.1469			147	
298.90 > 99.00	1.744	1.753	-0.009	1.000	130855		2.44(1.25-3.74)		125	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	686760	0.5231			508	
313.00 > 119.00	1.997	2.008	-0.011	1.000	60454		11.36(5.03-15.10)		527	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.738	3210383	1.50		60.2	81546	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.341	-0.013	1.000	186990	0.1334			79.4	
363.00 > 169.00	2.328	2.341	-0.013	1.000	65724		2.85(1.13-3.40)		99.0	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.354	-0.013	0.995	9786765	5.27			32984	
399.00 > 99.00	2.341	2.354	-0.013	0.995	3033160		3.23(1.50-4.49)		12712	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.861	3388381	1.61		64.4	105553	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.870	3943377	1.52		64.2	68111	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.689	-0.009	1.003	222680	0.4730			2661	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.025	0.988	641200	1.47		61.9	19392	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.704	2.712	-0.008	1.003	1145866	0.7886			390	
413.00 > 169.00	2.696	2.712	-0.016	1.000	666986		1.72(0.84-2.52)		1788	
* 62 13C2-PFOA										
415.00 > 370.00	2.704	2.712	-0.008		5742414	2.50			135005	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.704	2.720	-0.016	1.000	576731	0.7483			1263	M
449.00 > 99.00	2.704	2.720	-0.016	1.000	160977		3.58(1.94-5.82)		1499	M
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.721	-0.025	0.997	3215491	1.49		59.7	75940	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.072	3.080	-0.008	1.000	176393101	263.2			35151	E
499.00 > 99.00	3.072	3.080	-0.008	1.000	56029801		3.15(2.31-6.93)		245886	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.080	3.088	-0.008	1.000	6763368	10.7			6985	E
463.00 > 169.00	3.080	3.088	-0.008	1.000	1727709		3.91(1.90-5.69)		29915	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.139	1585626	0.8351		33.4	36658	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.136	1437674	0.7610		31.8	17542	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.417	-0.009	1.000	19861	0.0140			61.2	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.260	3598012	1.41		56.5	36995	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	13406	0.0374			176	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.444	3.444	0.0	1.000	937600	1.05			1766	M
513.00 > 169.00	3.444	3.444	0.0	1.000	161968		5.79(2.36-7.09)		560	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.270	672980	1.14		47.7	9018	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.273	2251146	1.35		54.1	32173	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.331	1065820	1.22		48.7	31504	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.779	-0.011	1.000	29659	0.0474			161	
563.00 > 169.00	3.768	3.779	-0.011	1.000	6011		4.93(2.12-6.36)		227	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.779	-0.011	1.003	2881	0.007714			63.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.390	999479	1.00		40.1	4263	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.393	1812915	1.22		48.7	45792	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.089	-0.021	1.504	1943539	1.15		46.0	21646	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.688	2374330	1.15		46.0	17741	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

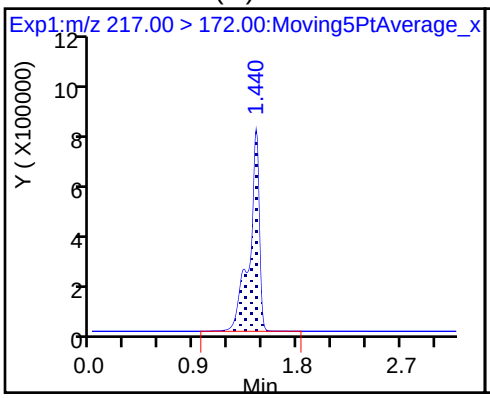
Report Date: 29-Mar-2018 09:09:35 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

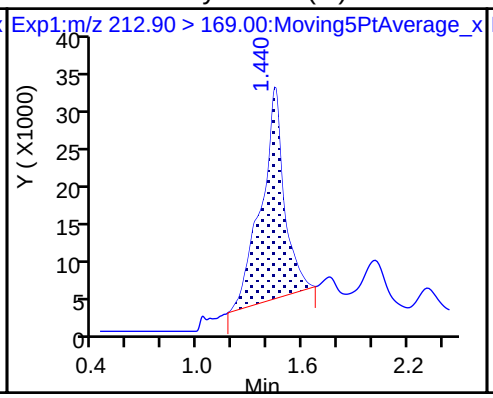
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_018.d

Injection Date:	29-Mar-2018 01:36:29	Instrument ID:	A8_N		
Lims ID:	320-36683-A-8-B	Lab Sample ID:	320-36683-8		
Client ID:	SB012(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

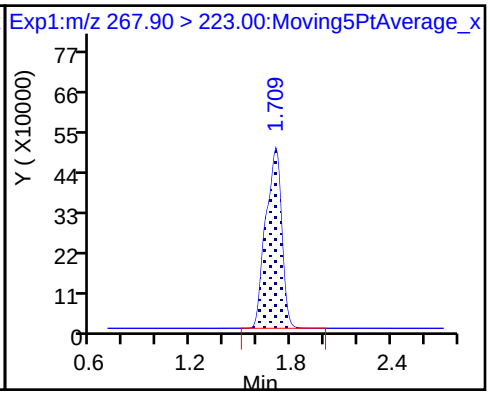
D 1 13C4 PFBA (M)



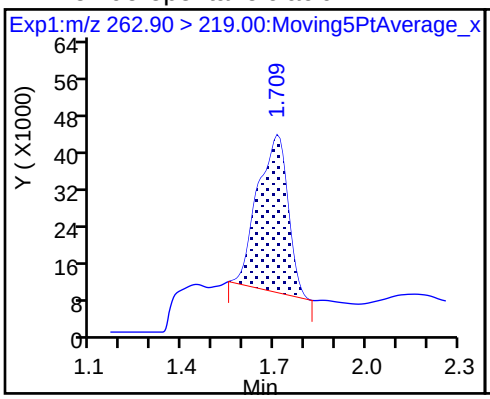
2 Perfluorobutyric acid (M)



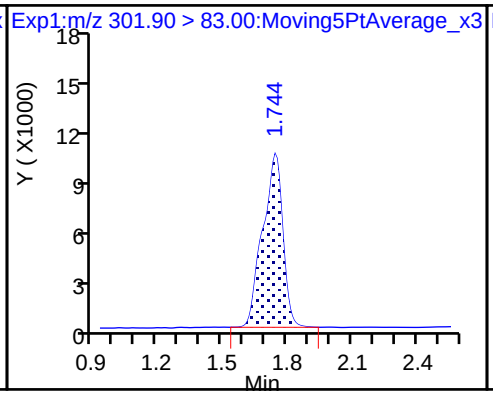
D 3 13C5-PFPeA



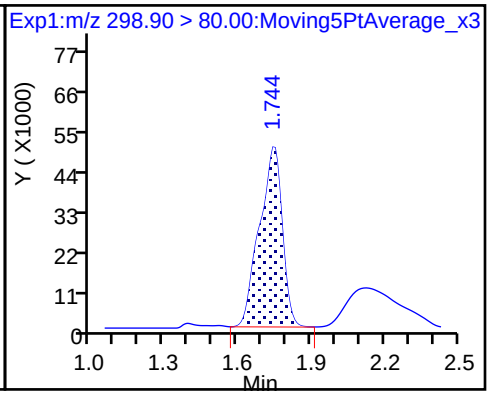
4 Perfluoropentanoic acid



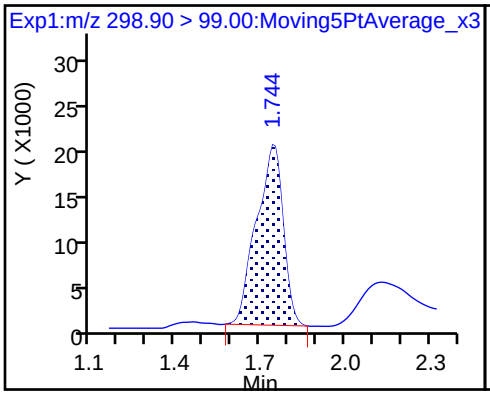
D 47 13C3-PFBS



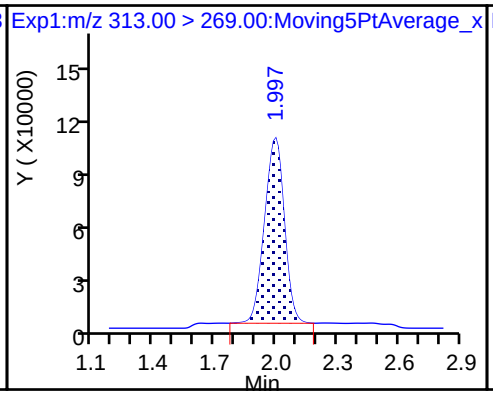
5 Perfluorobutanesulfonic acid



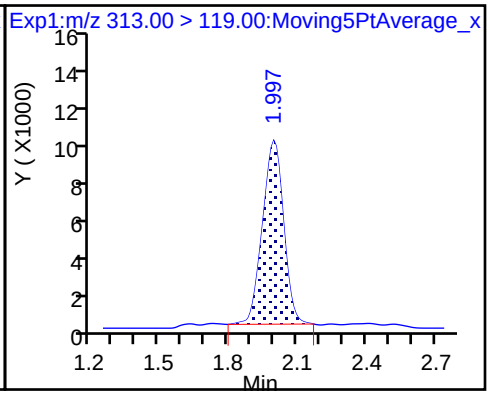
5 Perfluorobutanesulfonic acid



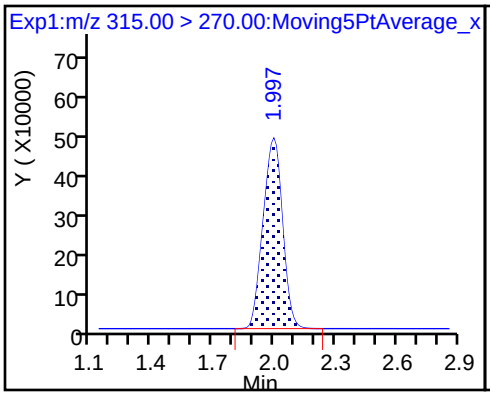
6 Perfluorohexanoic acid



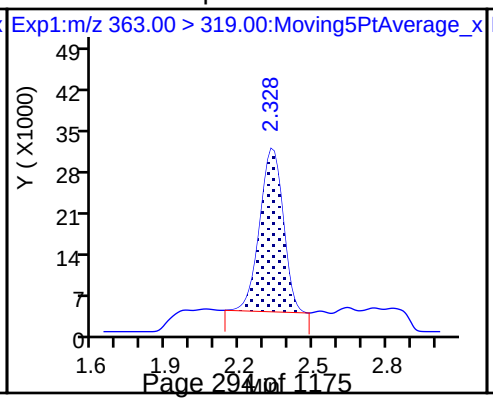
6 Perfluorohexanoic acid



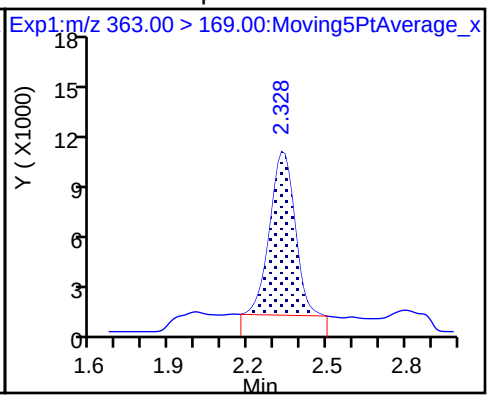
D 7 13C2 PFHxA



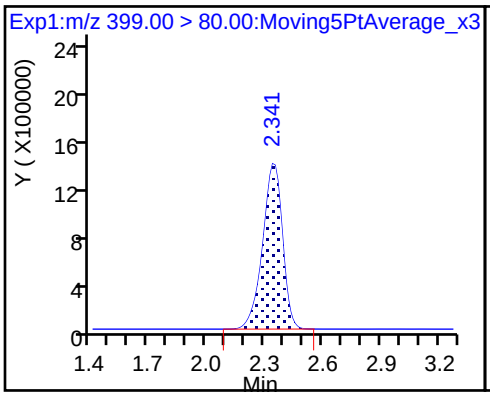
10 Perfluoroheptanoic acid



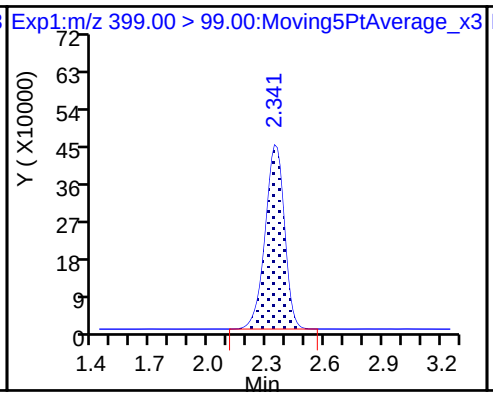
10 Perfluoroheptanoic acid



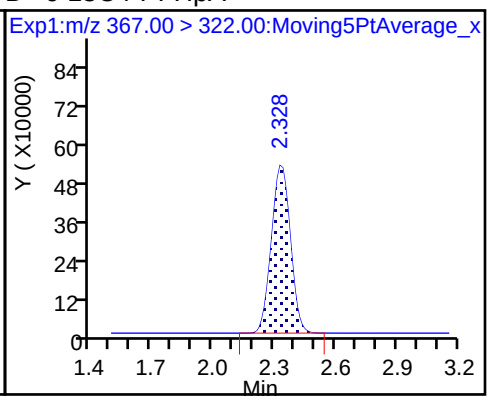
8 Perfluorohexanesulfonic acid



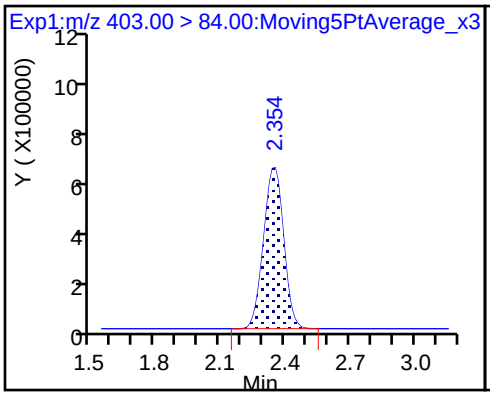
8 Perfluorohexanesulfonic acid



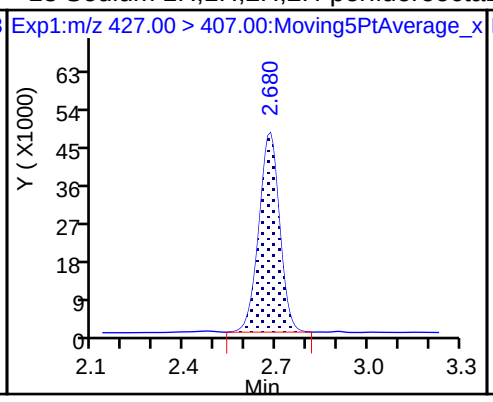
D 9 13C4-PFHpA



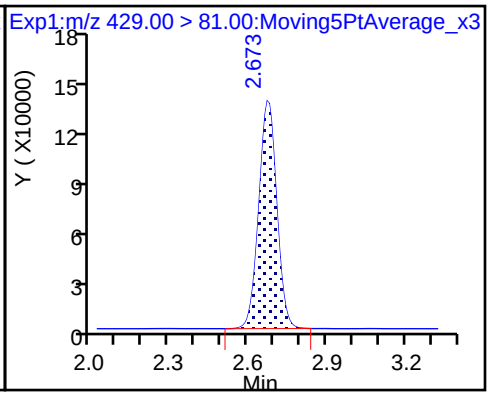
D 11 18O2 PFHxS



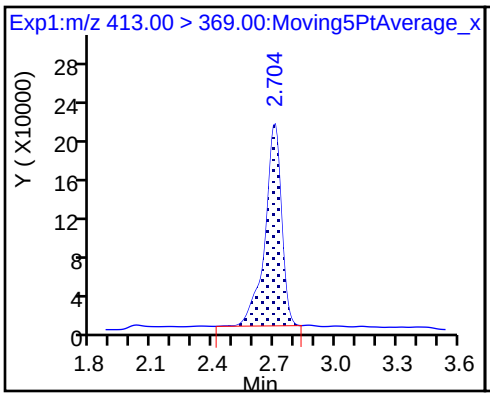
13 Sodium 1H,1H,2H,2H-perfluorooctane



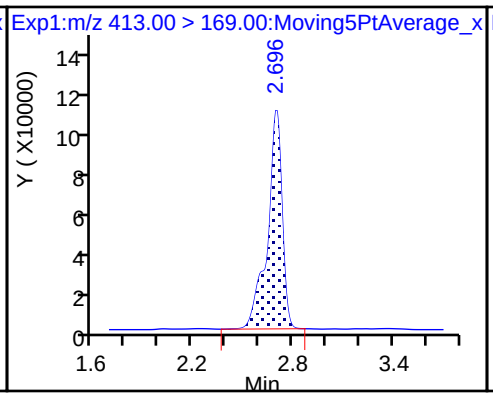
D 12 M2-6:2FTS



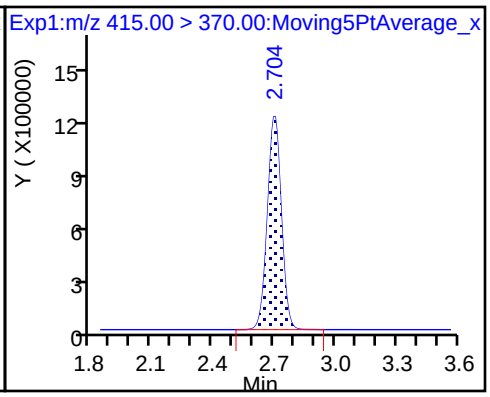
15 Perfluorooctanoic acid



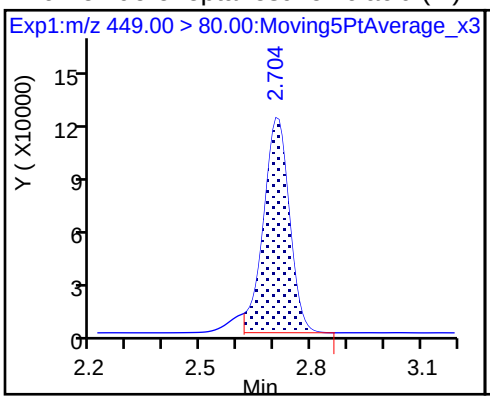
15 Perfluorooctanoic acid



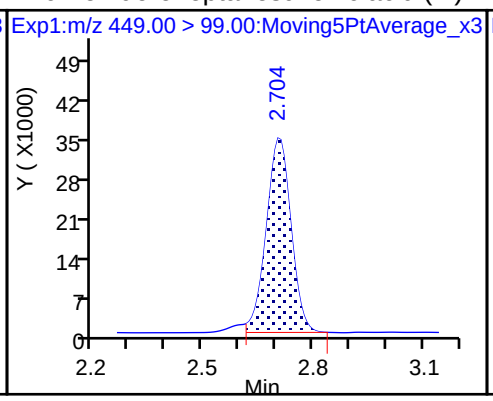
* 62 13C2-PFOA



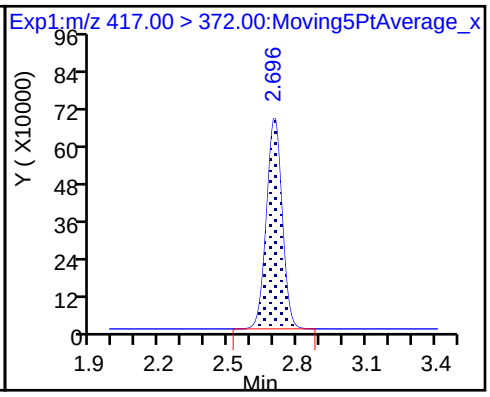
16 Perfluoroheptanesulfonic acid (M)



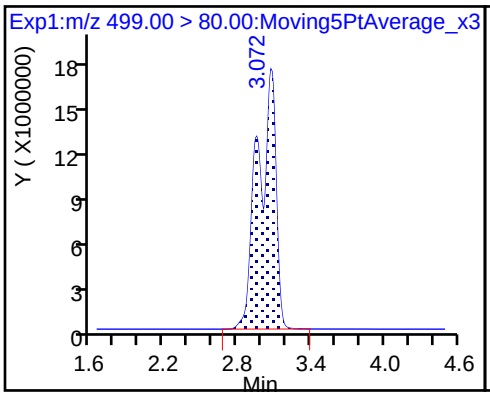
16 Perfluoroheptanesulfonic acid (M)



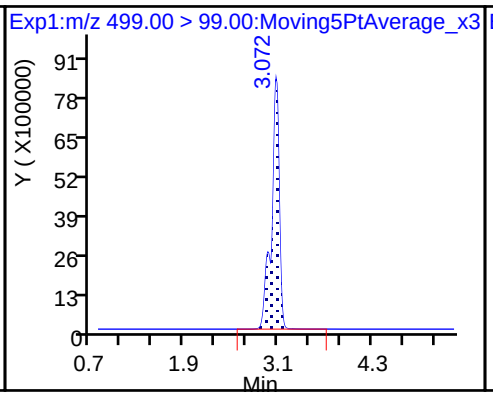
D 14 13C4 PFOA



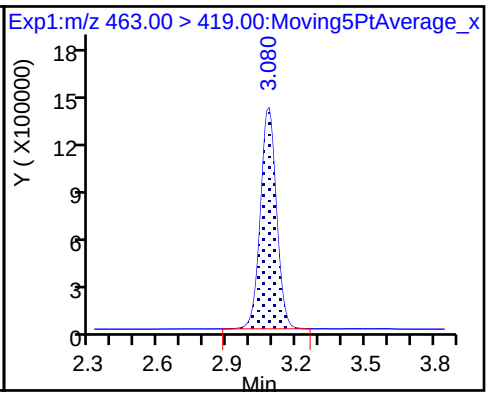
17 Perfluorooctane sulfonic acid



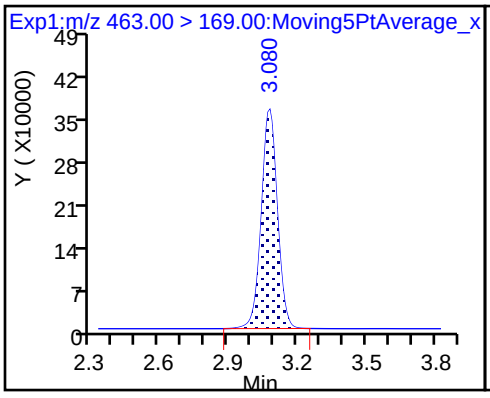
17 Perfluorooctane sulfonic acid



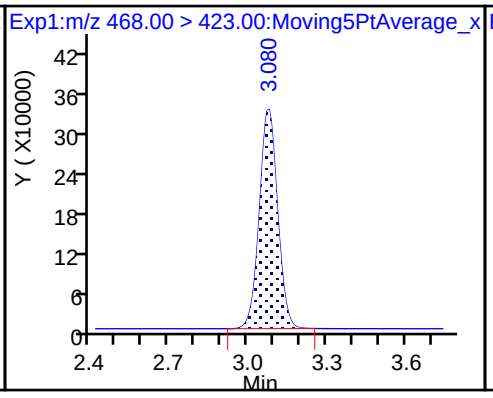
20 Perfluorononanoic acid



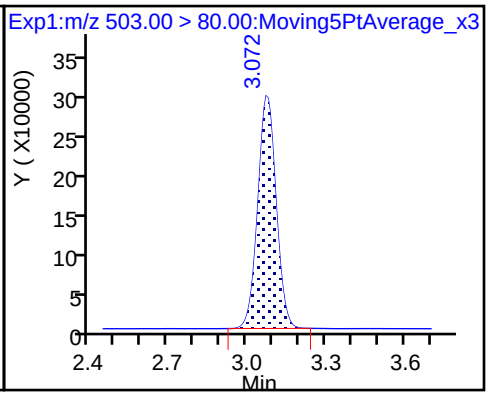
20 Perfluorononanoic acid



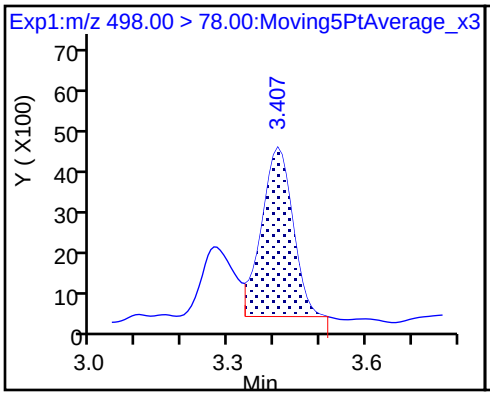
D 19 13C5 PFNA



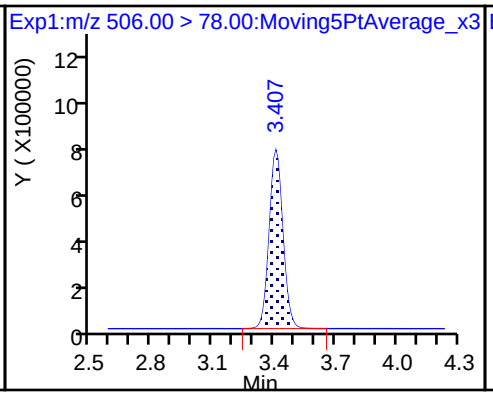
D 18 13C4 PFOS



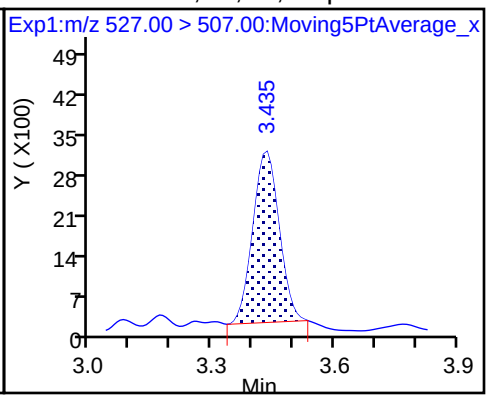
22 Perfluorooctane Sulfonamide



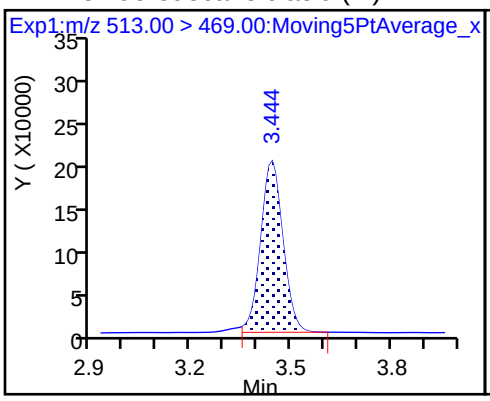
D 21 13C8 FOSA



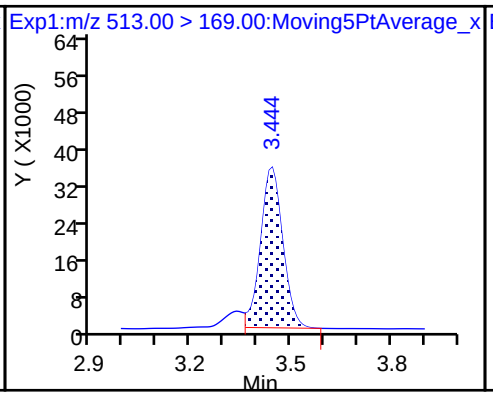
25 Sodium 1H,1H,2H,2H-perfluorodecane



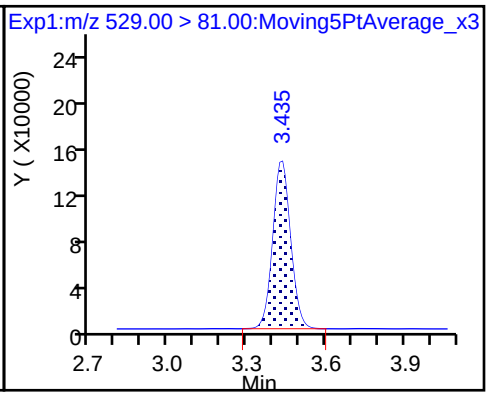
24 Perfluorodecanoic acid (M)



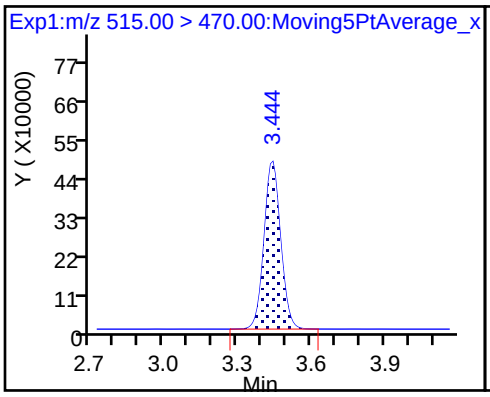
24 Perfluorodecanoic acid



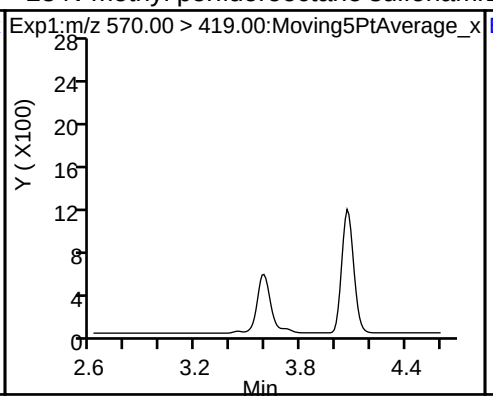
D 26 M2-8:2FTS



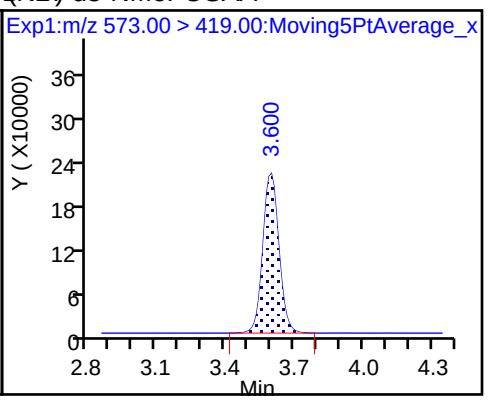
D 23 13C2 PFDA



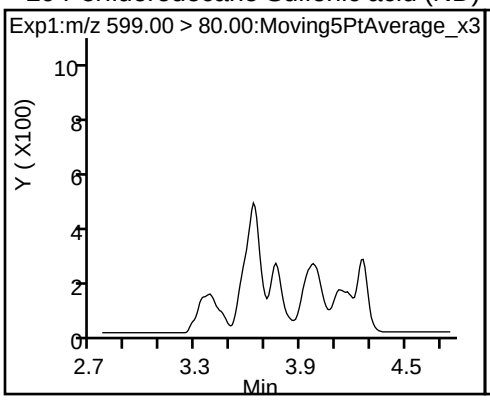
28 N-methyl perfluorooctane sulfonamid (ND)



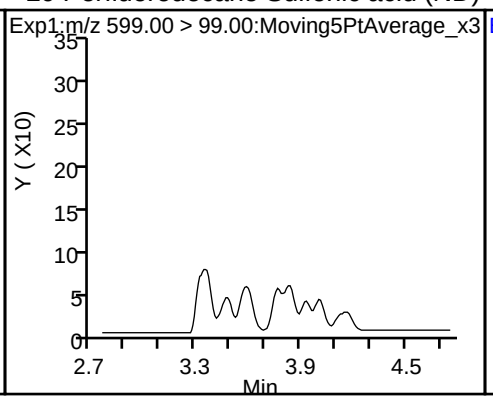
D 27 d3-NMeFOSAA



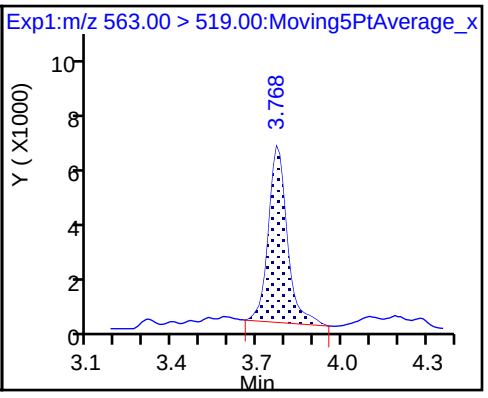
29 Perfluorodecane Sulfonic acid (ND)



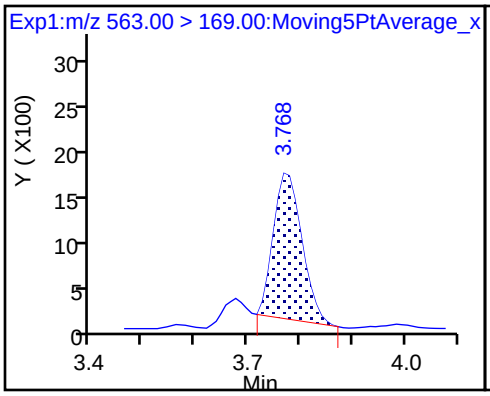
29 Perfluorodecane Sulfonic acid (ND)



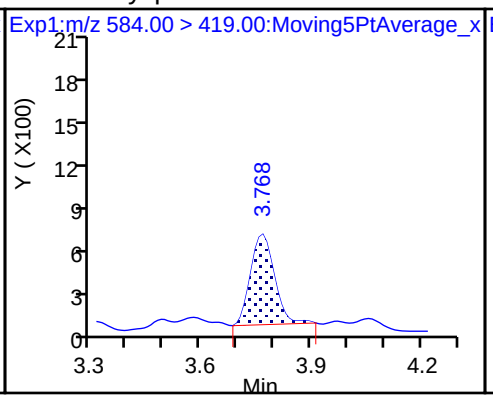
31 Perfluoroundecanoic acid



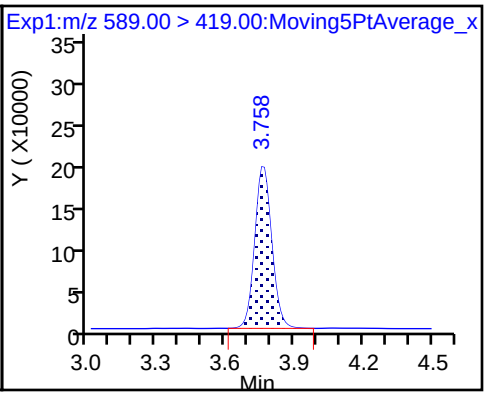
31 Perfluoroundecanoic acid



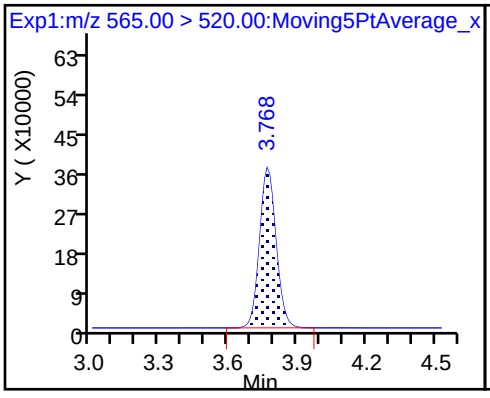
33 N-ethyl perfluorooctane sulfonamid



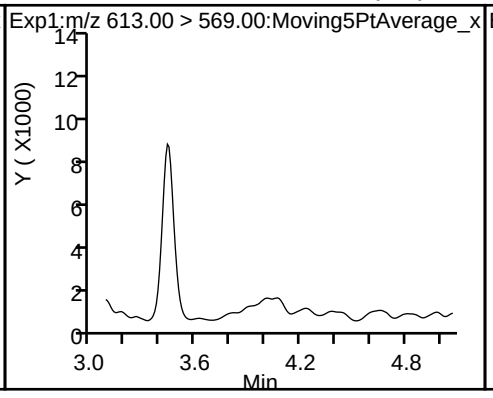
D 32 d5-NEtFOSAA



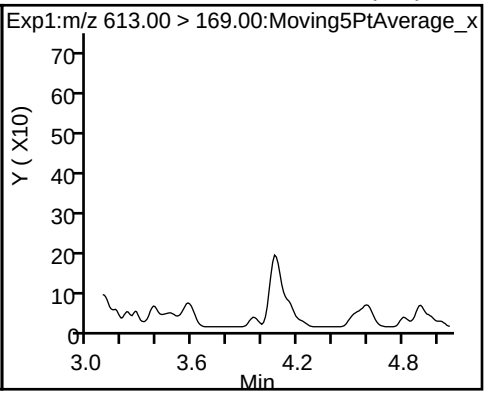
D 30 13C2 PFUnA



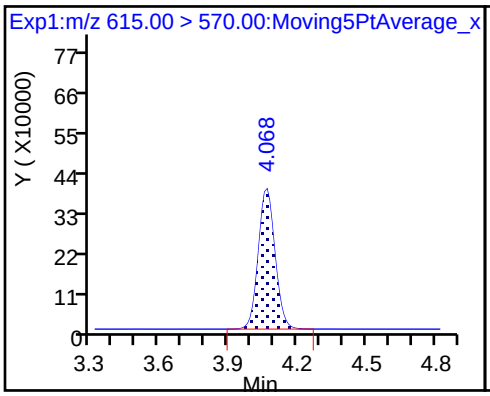
37 Perfluorododecanoic acid (ND)



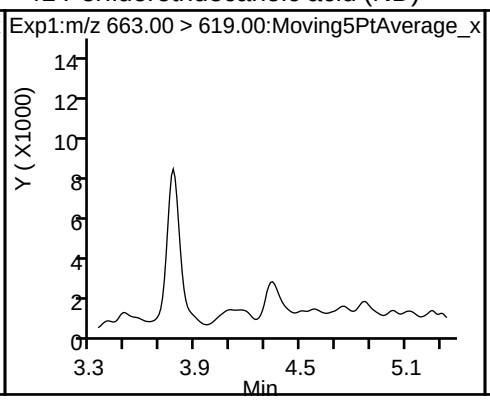
37 Perfluorododecanoic acid (ND)



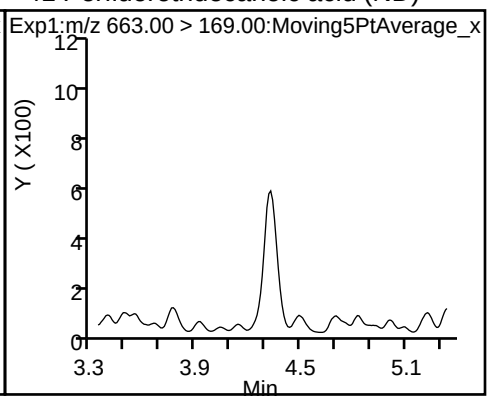
D 36 13C2 PFDoA



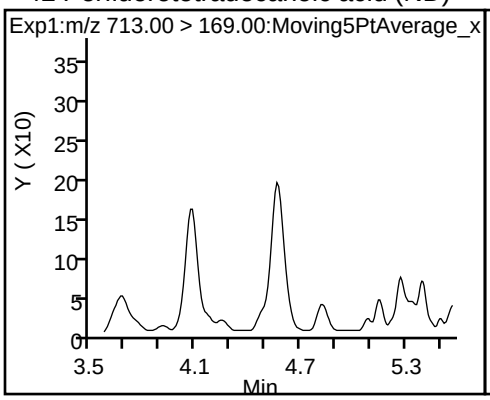
41 Perfluorotridecanoic acid (ND)



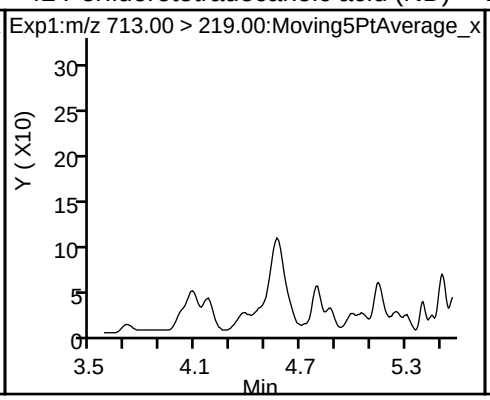
41 Perfluorotridecanoic acid (ND)



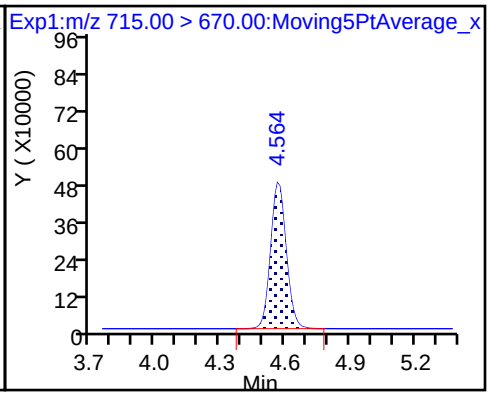
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(5'-7') DL Lab Sample ID: 320-36683-8 DL

Matrix: Solid Lab File ID: 2018.03.21LLC_020.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 12:00

Extraction Method: SHAKE Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.01(g) Date Analyzed: 03/21/2018 23:45

Con. Extract Vol.: 10.00(mL) Dilution Factor: 100

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.81	B D	0.052	0.021

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	59		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_020.d
Lims ID: 320-36683-A-8-A
Client ID: SB012(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 23:45:31 ALS Bottle#: 22 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-a-8-a 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:33:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.446	-0.006	0.534	55798	0.0183		73.2	816	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.630	38089	0.0188		75.3	1029	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.997	-0.011	0.737	40529	0.0181		72.5	1864	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	38696	0.0175		70.2	1655	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	46911	0.0172		72.9	1633	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	117863	0.0534			1073	
399.00 > 99.00	2.341	2.341	0.0	1.000	37397		3.15(1.50-4.49)		120	
D 12 M2-6:2FTS										
429.00 > 81.00	2.680	2.665	0.015	0.994	15647	0.0342		144	458	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.673	0.007	1.000	22841	0.0199			1114	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.688	0.0	0.997	49122	0.0218		87.1	1702	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		60192	0.0250			1787	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.704	2.697	0.007	1.006	19244	0.008670			4.9	M
413.00 > 169.00	2.696	2.697	-0.001	1.003	13915		1.38(0.84-2.52)		32.2	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.704	-0.008	1.000	7772	0.005207			205	
449.00 > 99.00	2.704	2.704	0.0	1.003	3197		2.43(1.94-5.82)		42.6	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	27842	0.0141		58.8	454	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.137	31979	0.0161		64.3	1175	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4999340	3.85			20826	
499.00 > 99.00	3.065	3.065	0.0	1.000	1070790		4.67(2.31-6.93)		9575	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	126256	0.0989			181	
463.00 > 169.00	3.065	3.072	-0.007	1.000	29611		4.26(1.90-5.69)		1213	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.260	20410	0.007643		30.6	940	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.415	0.001	1.267	7341	0.0119		49.6	149	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.270	22413	0.0128		51.4	617	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	6581	0.007167		28.7	241	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.394	14441	0.009254		37.0	521	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	6148	0.005877		23.5	56.0	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.768	-0.020	0.997	1830	0.007965			26.7	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.504	13527	0.007639		30.6	151	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.689	10738	0.004965		19.9	102	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_020.d

Injection Date: 21-Mar-2018 23:45:31 Instrument ID: A8_N

Lims ID: 320-36683-A-8-A Lab Sample ID: 320-36683-8

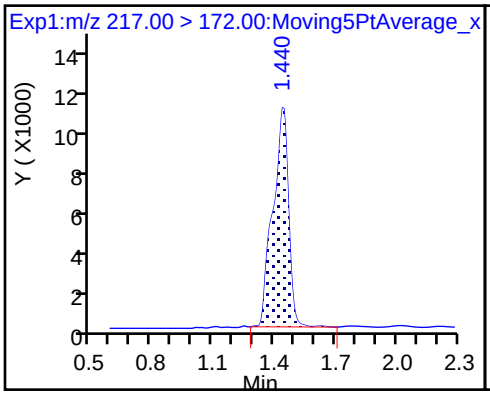
Client ID: SB012(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 15

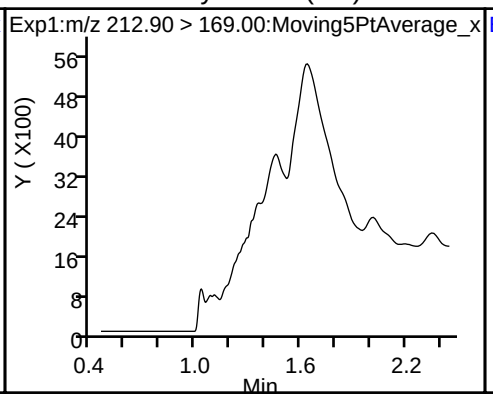
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

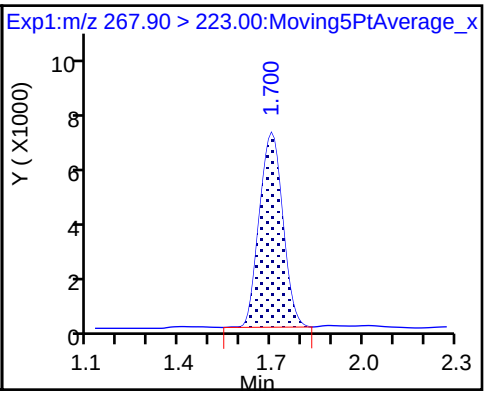
D 1 13C4 PFBA



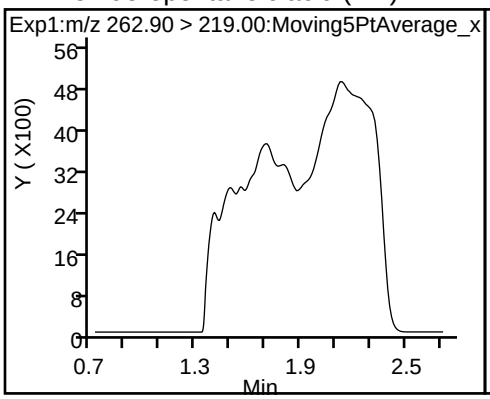
2 Perfluorobutyric acid (ND)



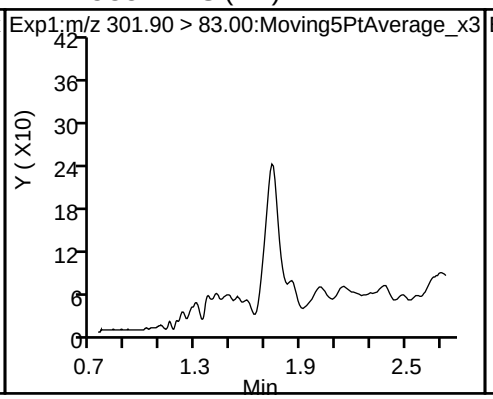
D 3 13C5-PFPeA



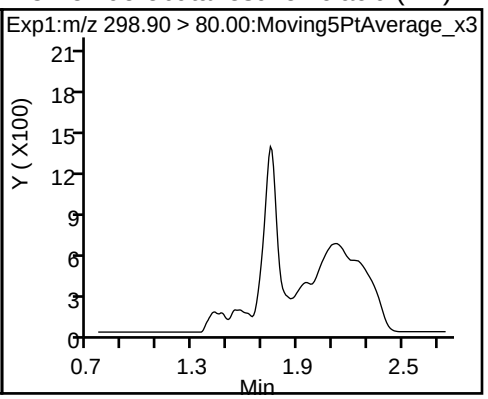
4 Perfluoropentanoic acid (ND)



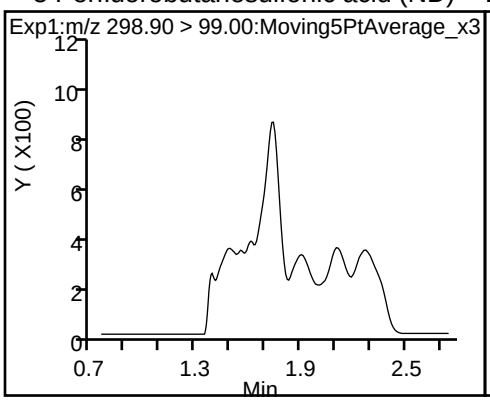
D 47 13C3-PFBS (ND)



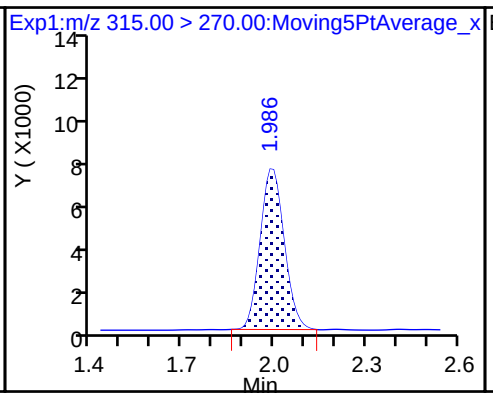
5 Perfluorobutanesulfonic acid (ND)



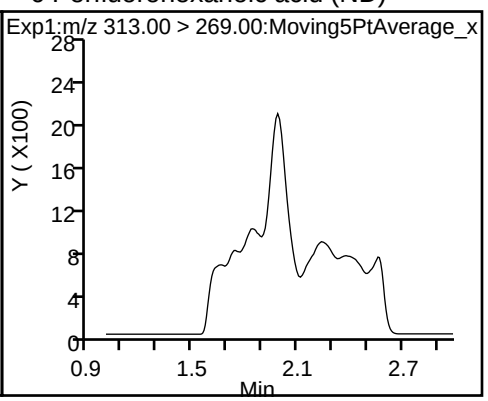
5 Perfluorobutanesulfonic acid (ND)



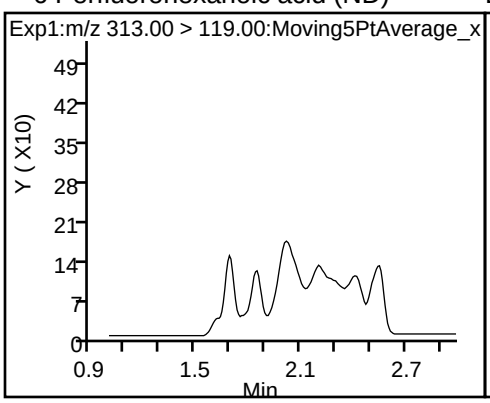
D 7 13C2 PFHxA



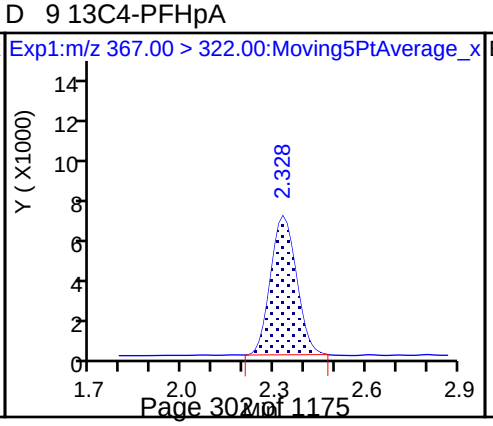
6 Perfluorohexanoic acid (ND)



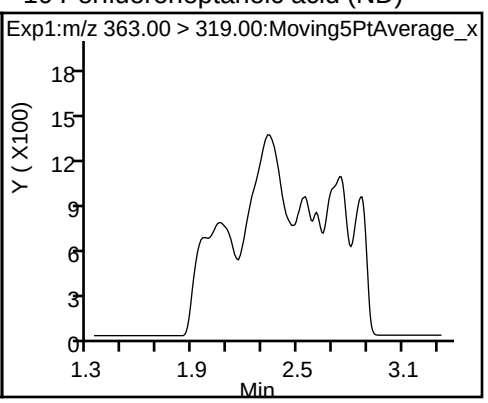
6 Perfluorohexanoic acid (ND)



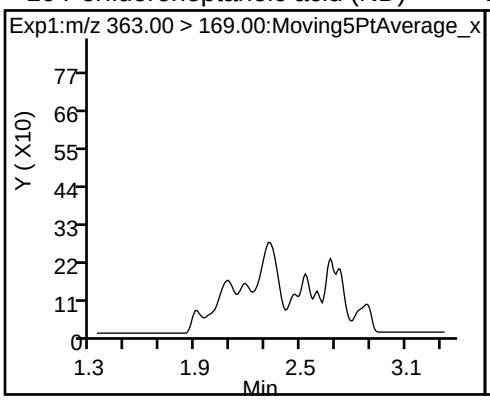
D 9 13C4-PFHpA



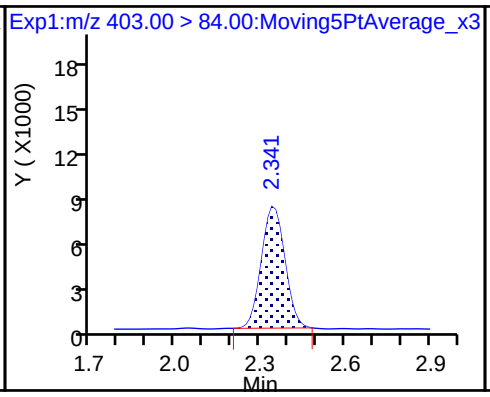
10 Perfluoroheptanoic acid (ND)



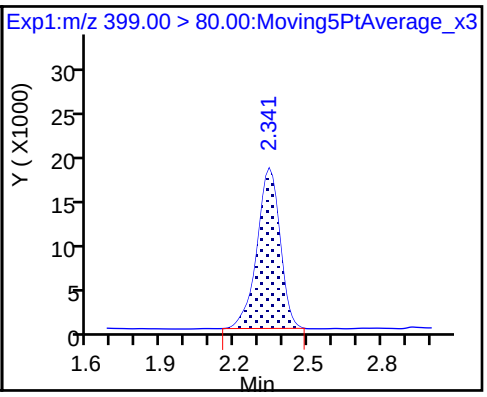
10 Perfluoroheptanoic acid (ND)



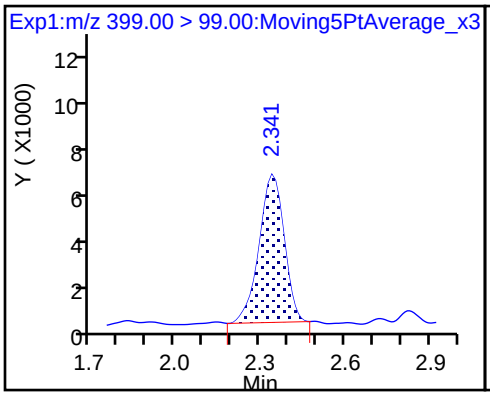
D 11 18O2 PFHxS



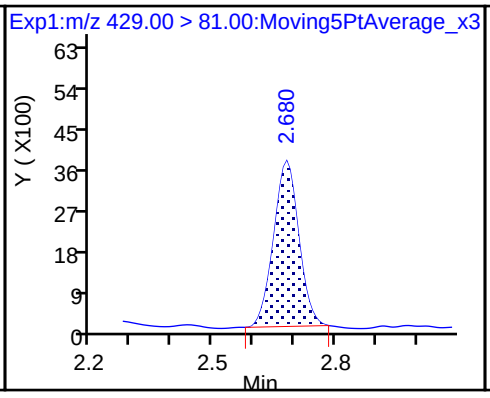
8 Perfluorohexanesulfonic acid



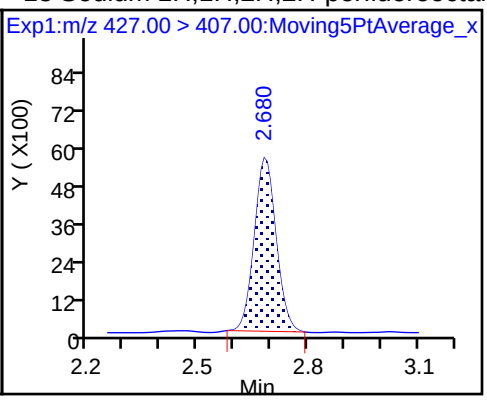
8 Perfluorohexanesulfonic acid



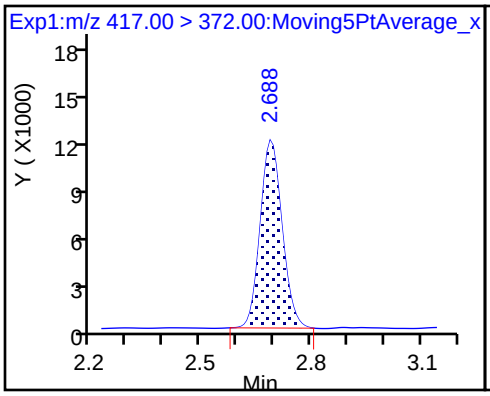
D 12 M2-6:2FTS



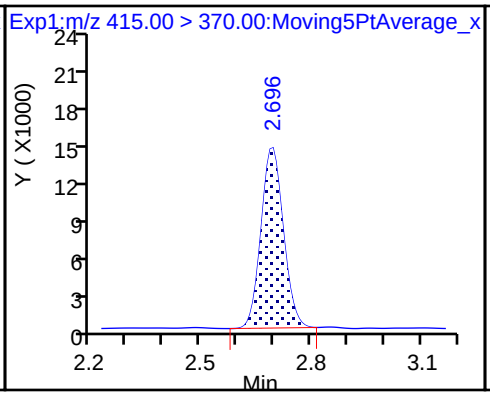
13 Sodium 1H,1H,2H,2H-perfluorooctane



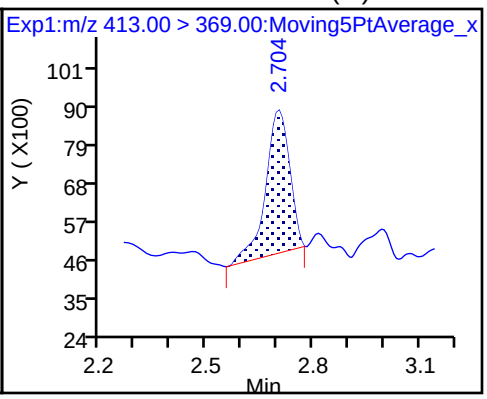
D 14 13C4 PFOA



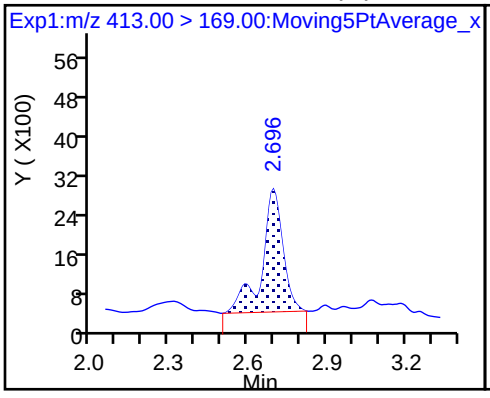
* 62 13C2-PFOA



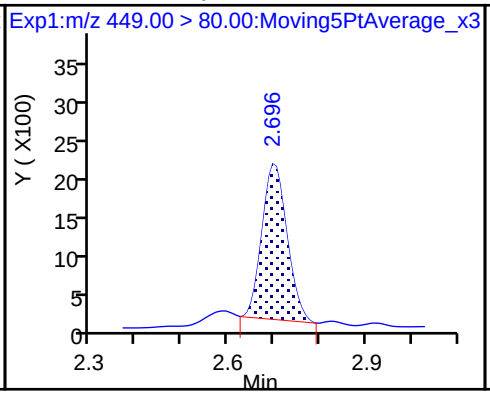
15 Perfluorooctanoic acid (M)



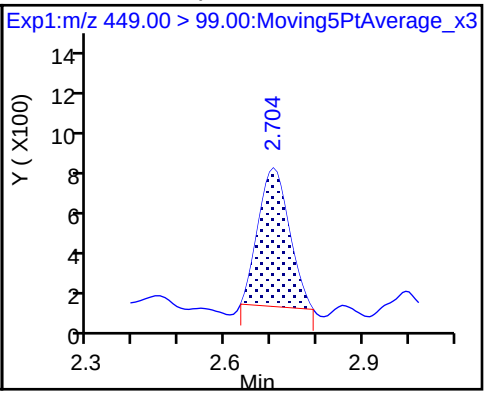
15 Perfluorooctanoic acid (M)



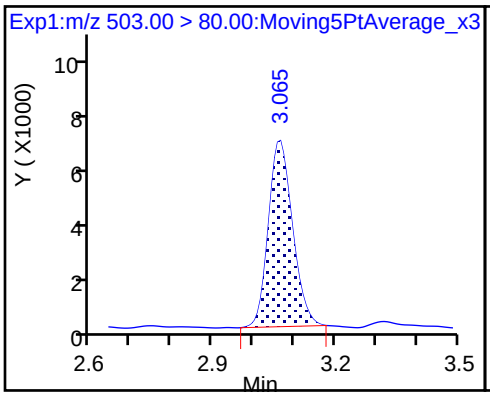
16 Perfluoroheptanesulfonic acid



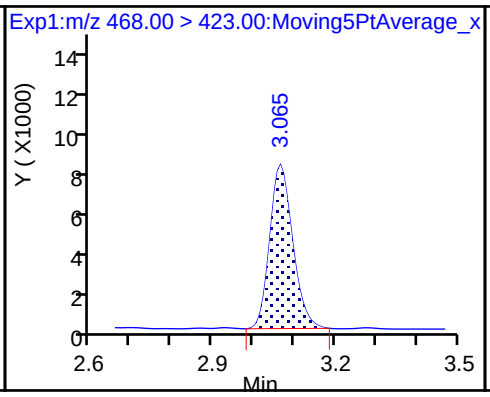
16 Perfluoroheptanesulfonic acid



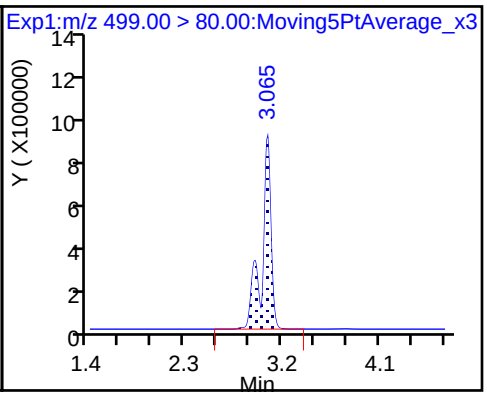
D 18 13C4 PFOS



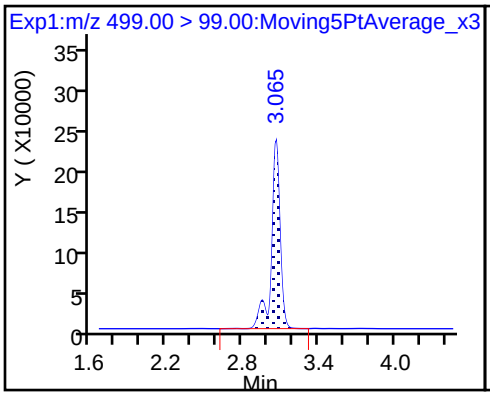
D 19 13C5 PFNA



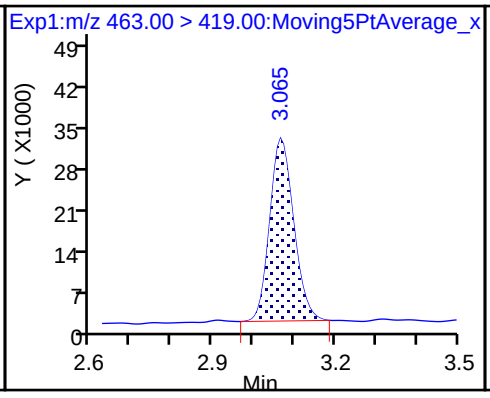
17 Perfluorooctane sulfonic acid



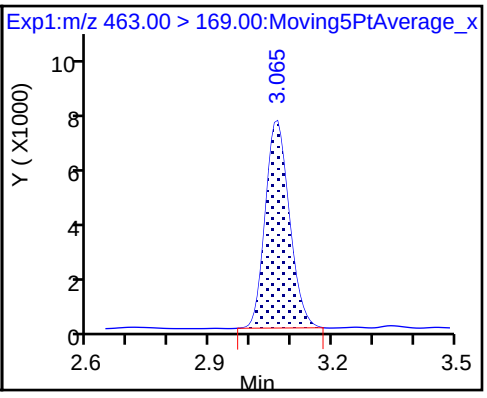
17 Perfluorooctane sulfonic acid



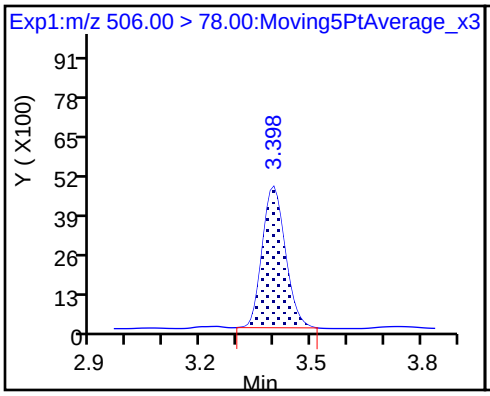
20 Perfluorononanoic acid



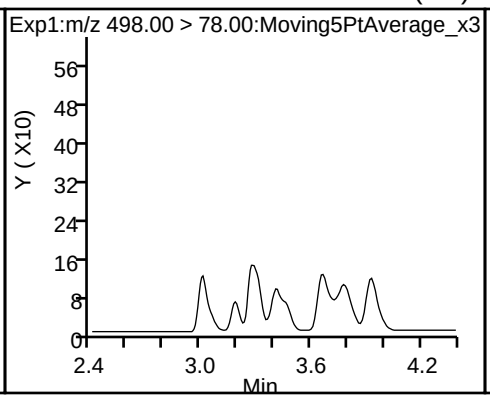
20 Perfluorononanoic acid



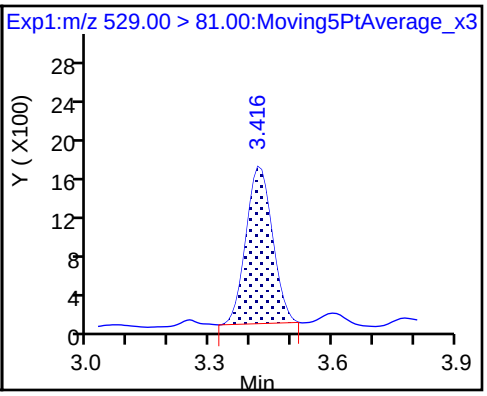
D 21 13C8 FOSA



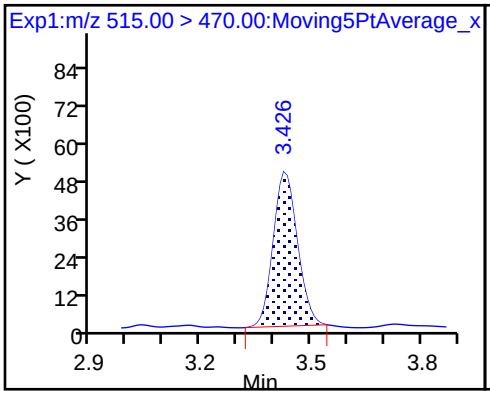
22 Perfluorooctane Sulfonamide (ND)



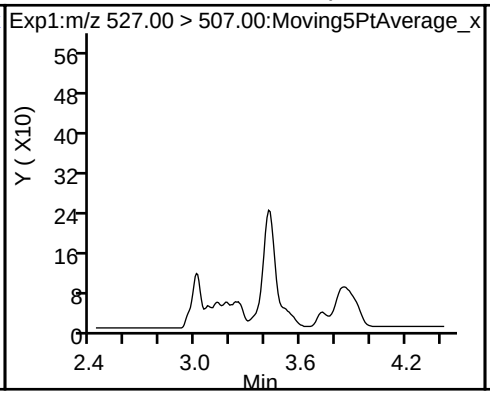
D 26 M2-8:2FTS



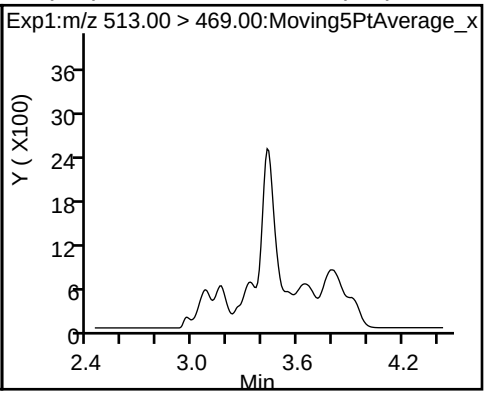
D 23 13C2 PFDA



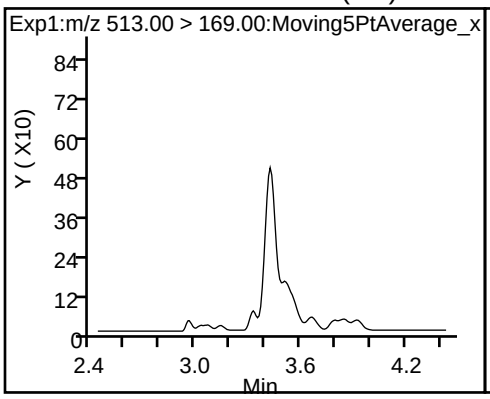
25 Sodium 1H,1H,2H,2H-perfluorodecane2(ND)



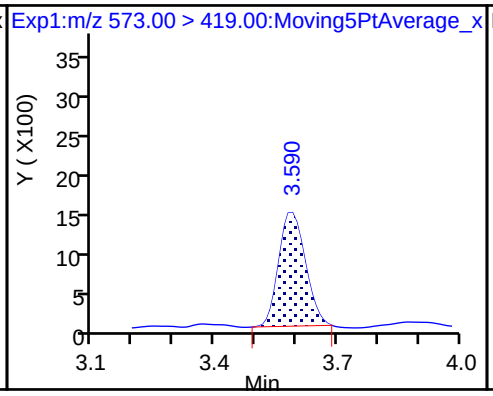
24 Perfluorodecanoic acid (ND)



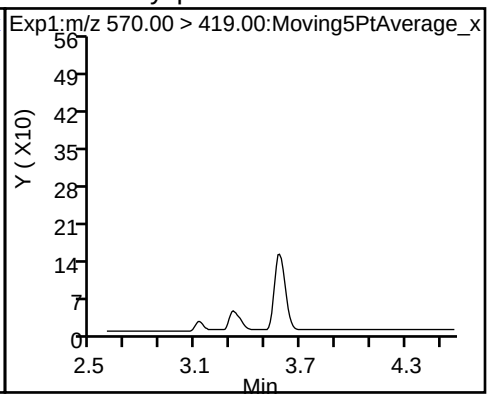
24 Perfluorodecanoic acid (ND)



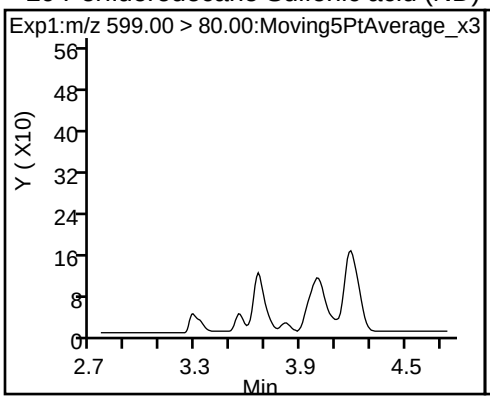
D 27 d3-NMeFOSAA



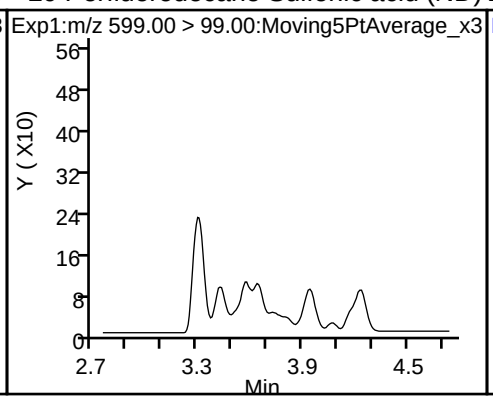
28 N-methyl perfluorooctane sulfonami (ND)



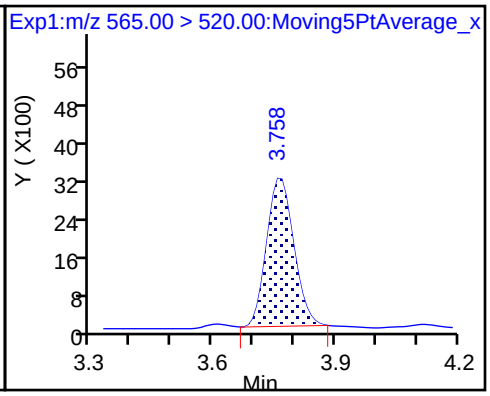
29 Perfluorodecane Sulfonic acid (ND)



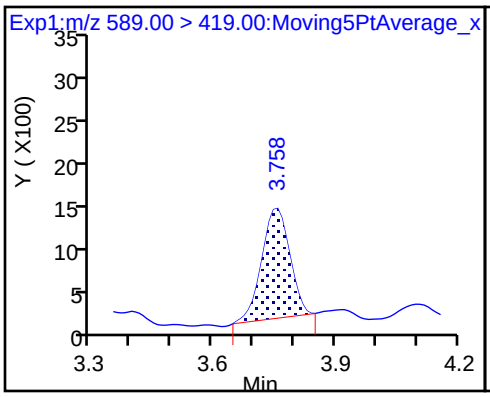
29 Perfluorodecane Sulfonic acid (ND)



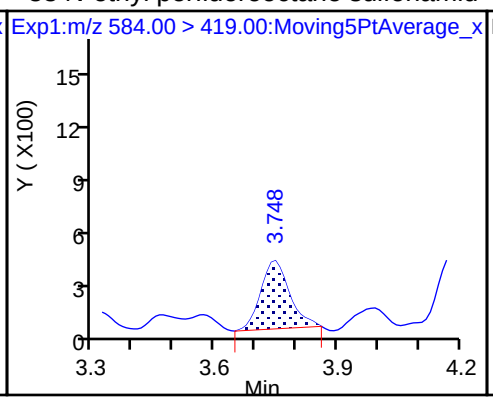
D 30 13C2 PFUnA



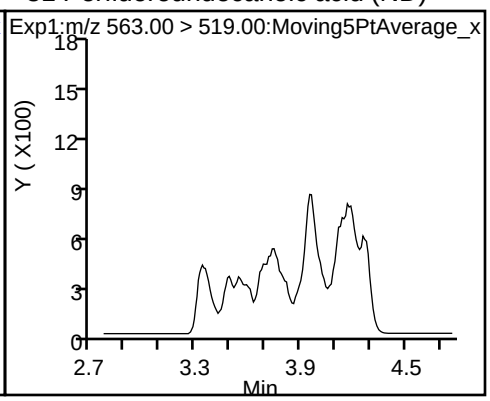
D 32 d5-NEtFOSAA



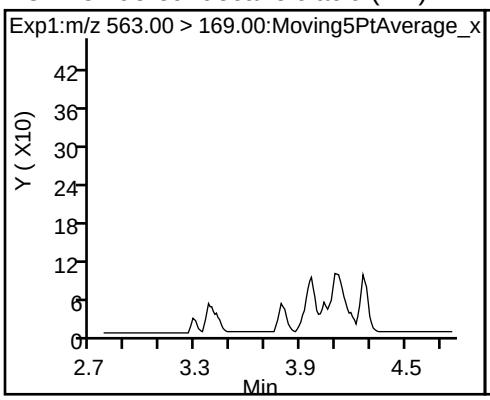
33 N-ethyl perfluorooctane sulfonamid



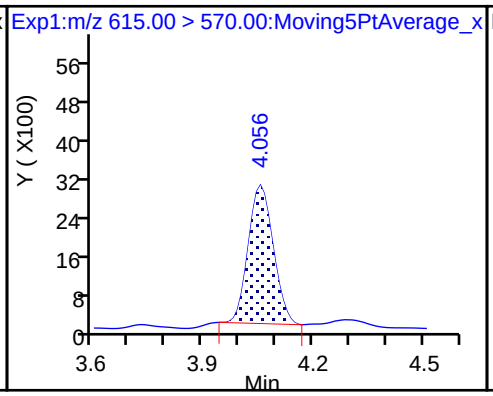
31 Perfluoroundecanoic acid (ND)



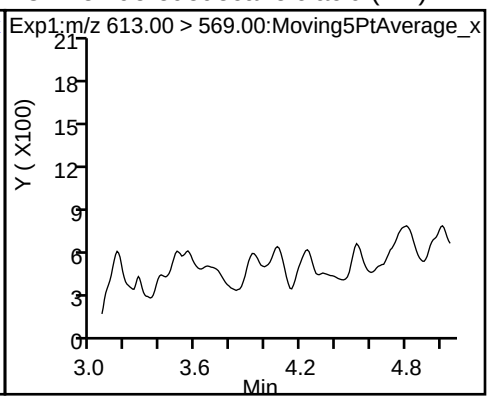
31 Perfluoroundecanoic acid (ND)



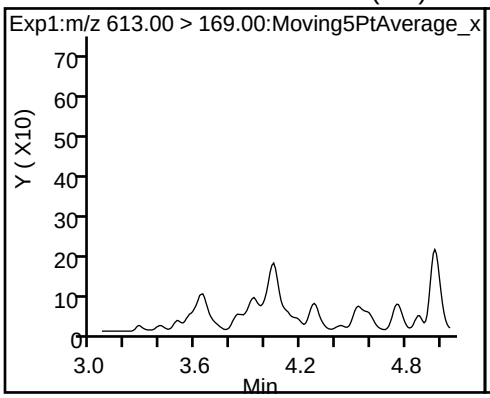
D 36 13C2 PFDoA



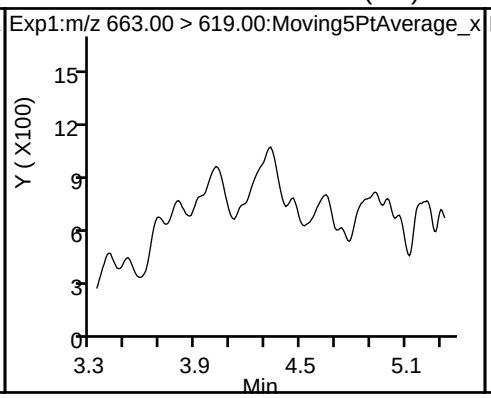
37 Perfluorododecanoic acid (ND)



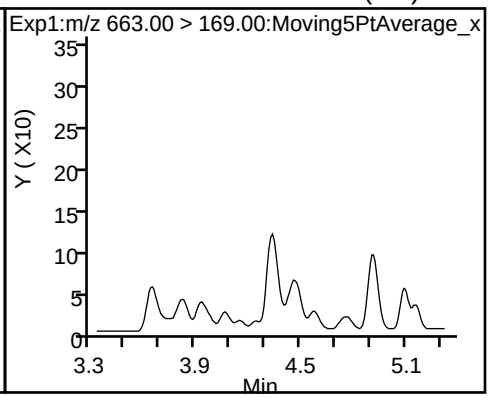
37 Perfluorododecanoic acid (ND)



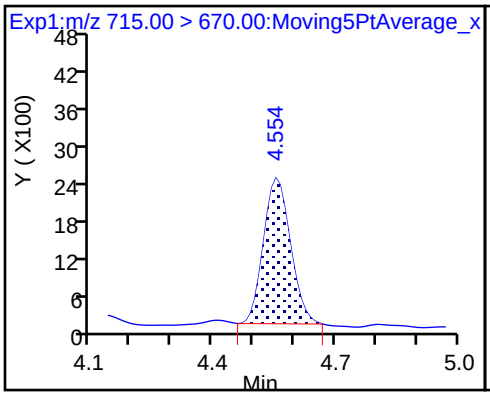
41 Perfluorotridecanoic acid (ND)



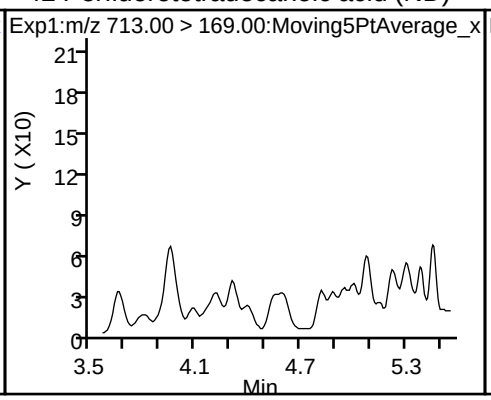
41 Perfluorotridecanoic acid (ND)



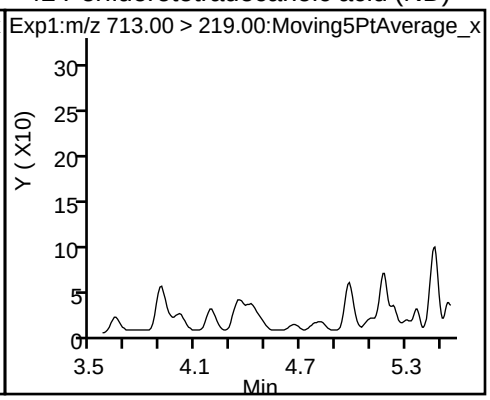
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') | Lab Sample ID: 320-36683-9

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_017.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 255.4(mL) | Date Analyzed: 03/19/2018 18:31

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	30.7	B F1	1.96	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	32.0		1.96	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	105	F1	1.96	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	21.9		1.96	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	99.6		1.96	0.83
375-95-1	Perfluorononanoic acid (PFNA)	107	F1	1.96	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	219		1.96	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	196		1.96	1.08
307-55-1	Perfluorododecanoic acid (PFDoA)	3.56		1.96	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	17.2		1.96	1.27
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.28	U	1.96	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	41.1		1.96	0.20
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	27.4	F1	1.96	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	4.67	F1	1.96	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	64.3		1.96	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.03	U	19.6	3.03
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	19.6	1.86
27619-97-2	6:2FTS	12.9	J	19.6	1.96
39108-34-4	8:2FTS	23.3		19.6	1.96

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') | Lab Sample ID: 320-36683-9

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_017.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 255.4(mL) | Date Analyzed: 03/19/2018 18:31

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	61		25-150
STL01893	13C5 PFPeA	72		25-150
STL00993	13C2 PFHxA	68		25-150
STL01892	13C4-PFHpA	63		25-150
STL00990	13C4 PFOA	75		25-150
STL00995	13C5 PFNA	34		25-150
STL00996	13C2 PFDA	83		25-150
STL00997	13C2 PFUnA	77		25-150
STL00998	13C2 PFDoA	74		25-150
STL02116	13C2-PFTeDA	81		25-150
STL02337	13C3-PFBS	80		25-150
STL00994	18O2 PFHxS	76		25-150
STL00991	13C4 PFOS	39		25-150
STL01056	13C8 FOSA	85		25-150
STL02118	d3-NMeFOSAA	59		25-150
STL02117	d5-NEtFOSAA	65		25-150
STL02279	M2-6:2FTS	86		25-150
STL02280	M2-8:2FTS	103		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d
Lims ID: 320-36683-B-9-D
Client ID: SB012-SPLP(2'-4')
Sample Type: Client
Inject. Date: 19-Mar-2018 18:31:10 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-b-9-d
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:18 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:08:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.444	0.003	0.538	3118700	1.53		61.3	32472	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.444	0.003	1.000	907589	0.7845			25.0	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.632	2589243	1.80		72.1	12903	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.705	-0.005	1.000	988337	0.8169			23.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.740	-0.004	0.646	65583	1.85		79.6	186	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.740	0.005	1.005	2291201	1.05			492	
298.90 > 99.00	1.736	1.740	-0.004	1.000	879058		2.61(1.25-3.74)		532	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.992	-0.005	1.000	2945244	2.68			455	
313.00 > 119.00	1.987	1.992	-0.005	1.000	263287		11.19(5.03-15.10)		1230	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.992	-0.005	0.739	2721941	1.70		68.0	50006	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.866	2451982	1.57		63.0	52389	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.328	2.335	-0.007	1.000	568963	0.5597			101	M
363.00 > 169.00	2.328	2.335	-0.007	1.000	245892		2.31(1.13-3.40)		1805	
8 Perfluorohexanesulfonic acid										E
399.00 > 80.00	2.341	2.348	-0.007	1.000	28771024	16.4			13760	E
399.00 > 99.00	2.341	2.348	-0.007	1.000	9899212		2.91(1.50-4.49)		11005	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	3728415	1.79		75.9	58466	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.675	-0.010	1.000	188244	0.3290			2167	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.675	-0.010	0.991	816417	2.05		86.2	2984	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.706	-0.017	1.000	2829866	1.88		75.3	61156	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.706	-0.017		3987382	2.50			94999	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.697	2.706	-0.009	1.003	3213138	2.54			601	M
413.00 > 169.00	2.689	2.706	-0.017	1.000	1940355		1.66(0.84-2.52)		5980	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.706	-0.009	1.000	521038	0.6990			351	
449.00 > 99.00	2.697	2.706	-0.009	1.000	147102		3.54(1.94-5.82)		528	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.083	-0.018	1.140	1355652	0.9327		39.0	3669	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.065	3.083	-0.018	1.000	177949626	289.8			24355	E
499.00 > 99.00	3.065	3.083	-0.018	1.000	59057065		3.01(2.31-6.93)		53602	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.083	-0.018	1.000	1125968	2.72			475	
463.00 > 169.00	3.065	3.083	-0.018	1.000	294870		3.82(1.90-5.69)		1654	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.083	-0.018	1.140	1013293	0.8420		33.7	19207	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.403	-0.005	1.264	4458333	2.12		84.7	40234	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.412	-0.014	1.000	2845955	1.64			71.6	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.439	-0.022	1.271	923124	2.46		103	2069	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.439	-0.022	1.000	288899	0.5962			6493	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.448	-0.022	1.000	4410791	5.59			2848	
513.00 > 169.00	3.426	3.448	-0.022	1.000	830262		5.31(2.36-7.09)		1368	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.448	-0.022	1.274	2079509	2.07		82.7	39162	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.606	-0.027	1.331	490963	1.48		59.2	6641	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.765	-0.027	1.000	43164	0.1192			9.8	
599.00 > 99.00	3.738	3.765	-0.027	1.000	20526		2.10(1.39-4.16)		49.6	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.775	-0.017	1.398	518300	1.63		65.3	1434	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.786	-0.028	1.398	1524472	1.94		77.5	29083	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.786	-0.028	1.000	2554251	5.00			1438	
563.00 > 169.00	3.758	3.786	-0.028	1.000	676121		3.78(2.12-6.36)		518	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.758	3.786	-0.028	1.000	4291	0.0211			41.4	M
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.058	4.084	-0.026	1.000	51190	0.0908			15.0	M
613.00 > 169.00	4.058	4.084	-0.026	1.000	11936		4.29(2.13-6.40)		82.5	
D 36 13C2 PFDoA										
615.00 > 570.00	4.058	4.084	-0.026	1.509	1377199	1.85		73.8	8026	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.346	-0.028	1.000	249044	0.4394			71.3	
663.00 > 169.00	4.318	4.346	-0.028	1.000	87538		2.84(1.25-3.76)		1202	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.581	-0.017	1.698	1387520	2.04		81.5	11260	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	5.004	-0.031	1.849	1090320	1.09		43.8	5075	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d

Injection Date: 19-Mar-2018 18:31:10 Instrument ID: A8_N

Lims ID: 320-36683-B-9-D Lab Sample ID: 320-36683-9

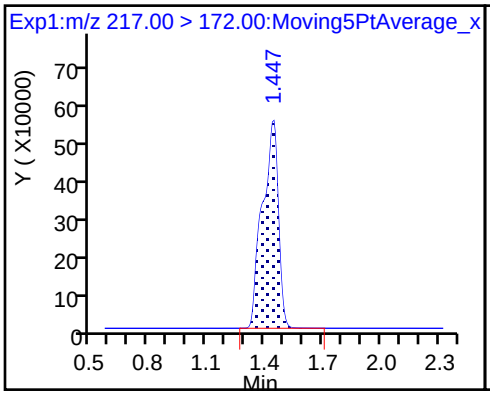
Client ID: SB012-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 13

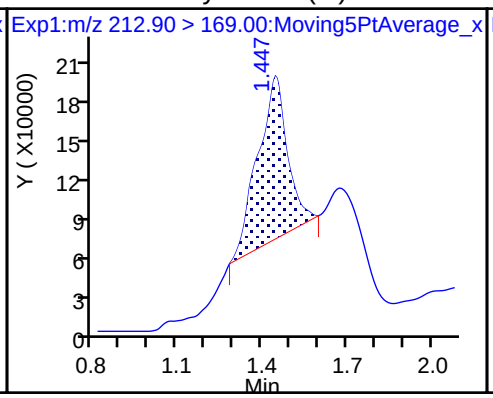
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

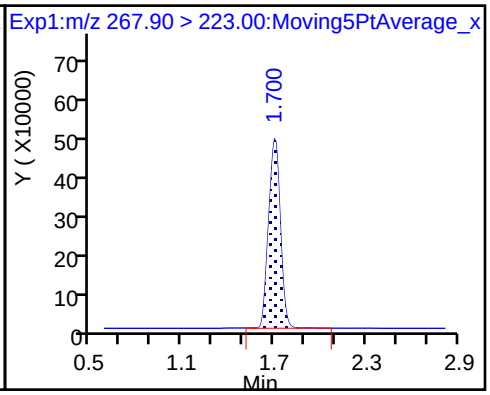
D 1 13C4 PFBA



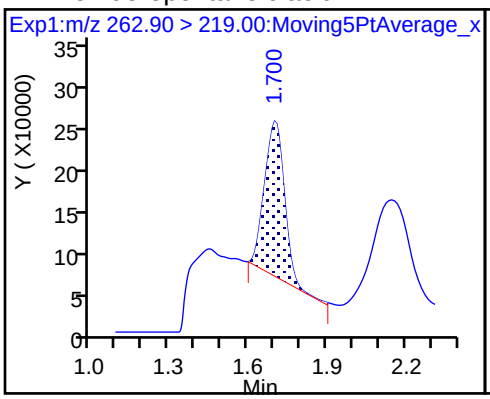
2 Perfluorobutyric acid (M)



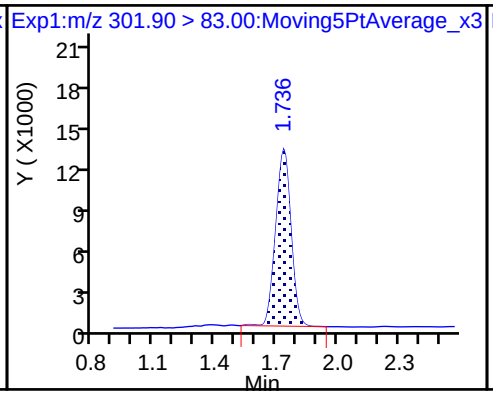
D 3 13C5-PFPeA



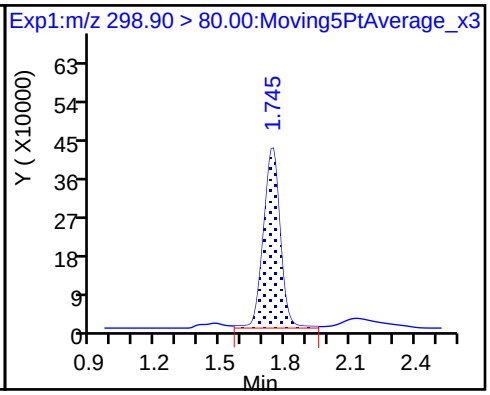
4 Perfluoropentanoic acid



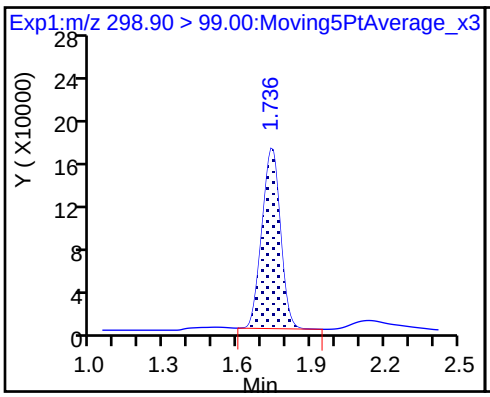
D 47 13C3-PFBS



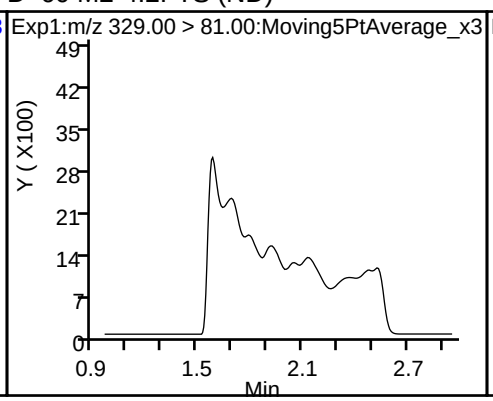
5 Perfluorobutanesulfonic acid



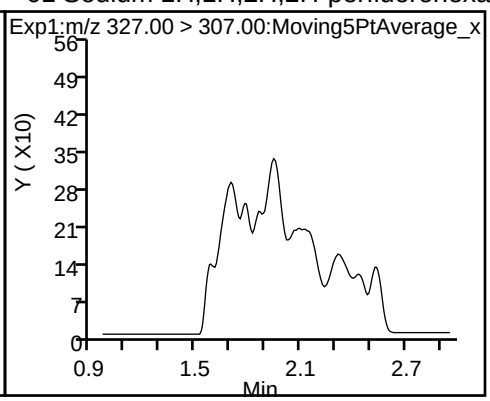
5 Perfluorobutanesulfonic acid



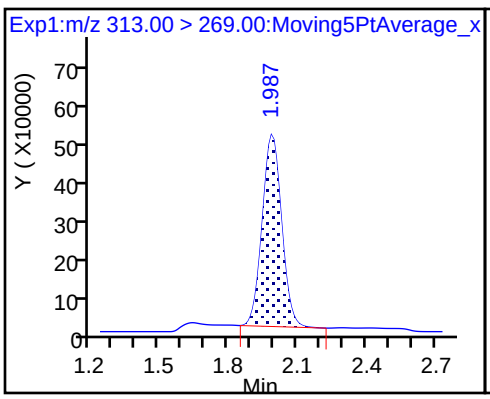
D 60 M2-4:2FTS (ND)



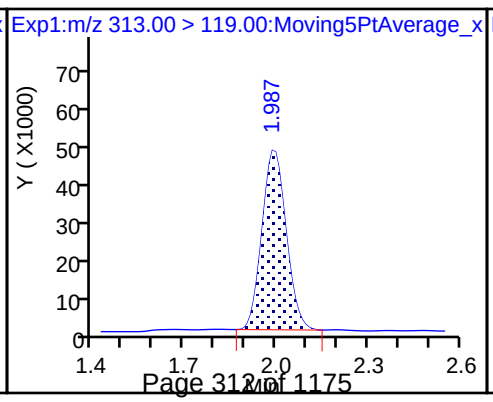
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



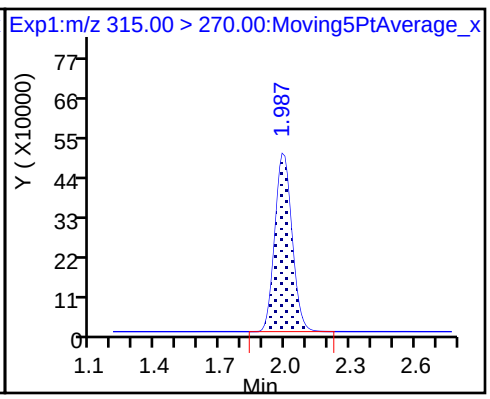
6 Perfluorohexanoic acid



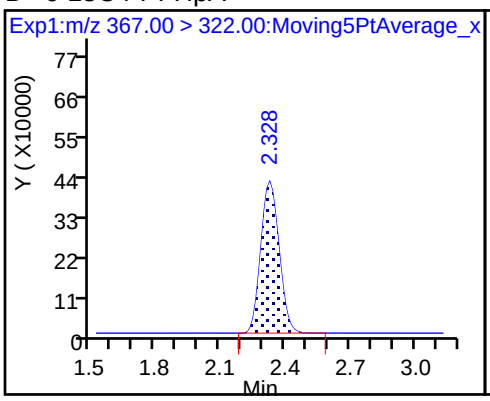
6 Perfluorohexanoic acid



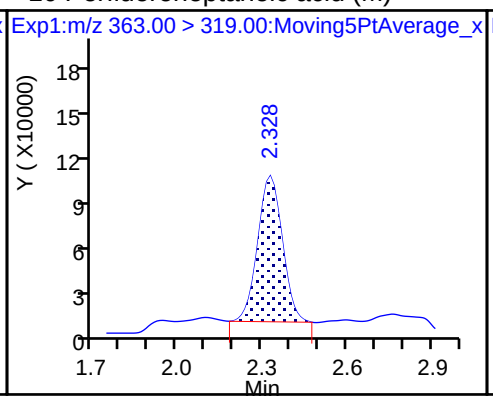
D 7 13C2 PFHxA



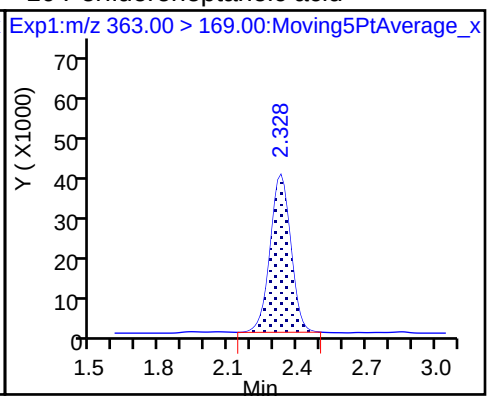
D 9 13C4-PFHpA



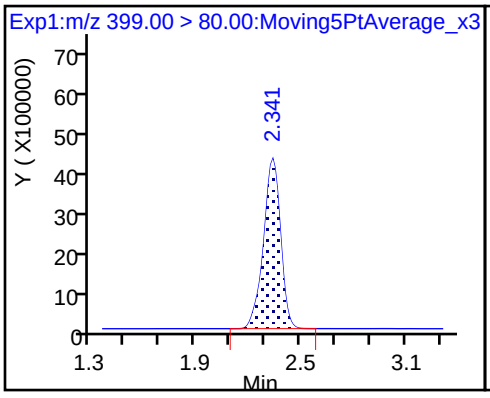
10 Perfluoroheptanoic acid (M)



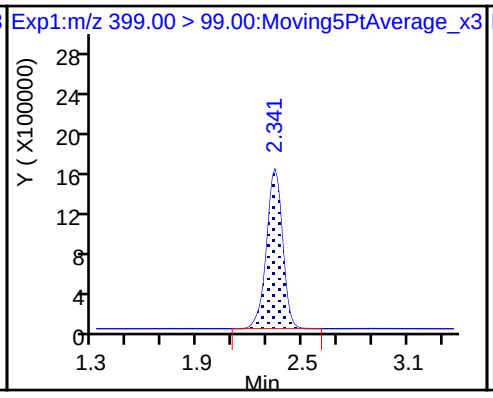
10 Perfluoroheptanoic acid



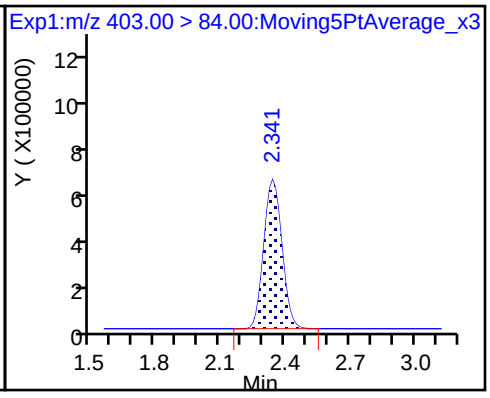
8 Perfluorohexanesulfonic acid



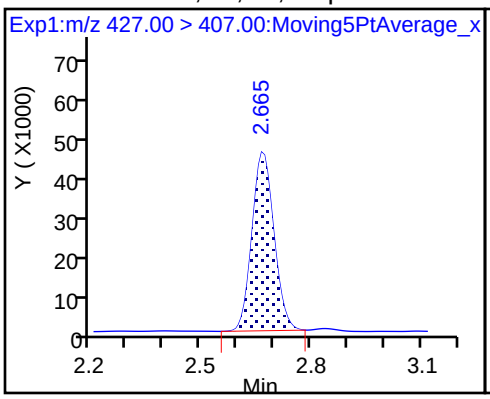
8 Perfluorohexanesulfonic acid



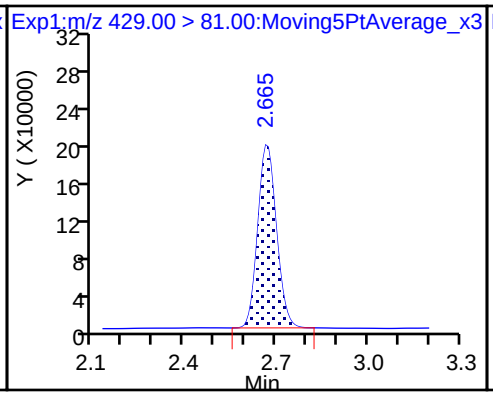
D 11 18O2 PFHxS



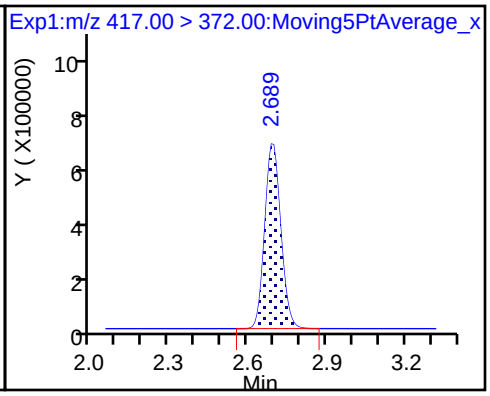
13 Sodium 1H,1H,2H,2H-perfluorooctan



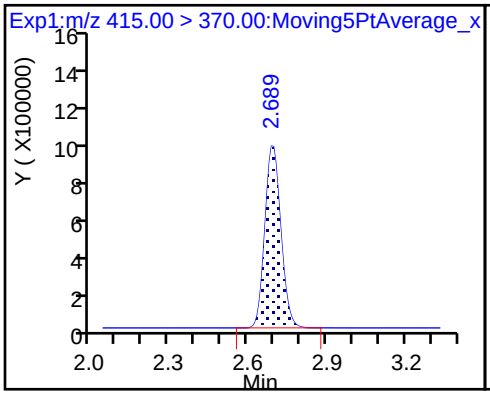
D 12 M2-6:2FTS



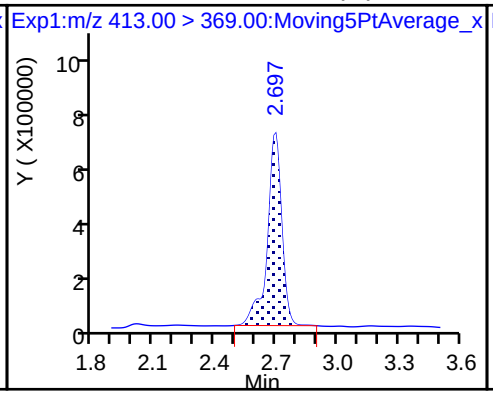
D 14 13C4 PFOA



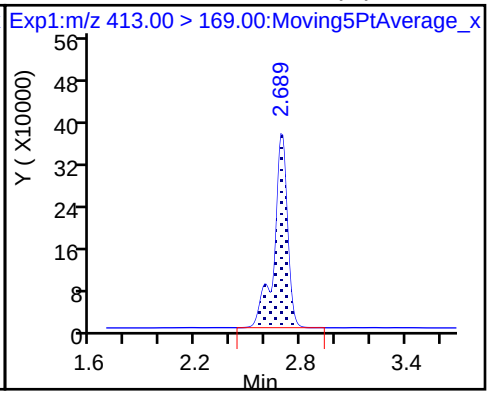
* 62 13C2-PFOA



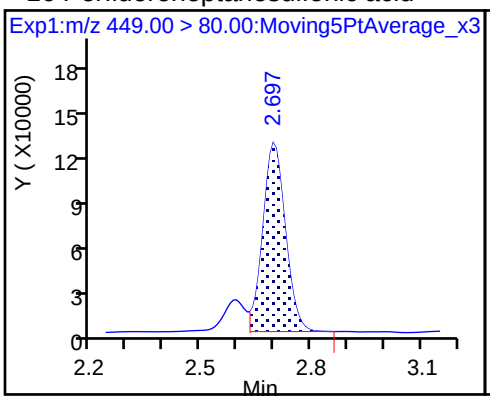
15 Perfluorooctanoic acid (M)



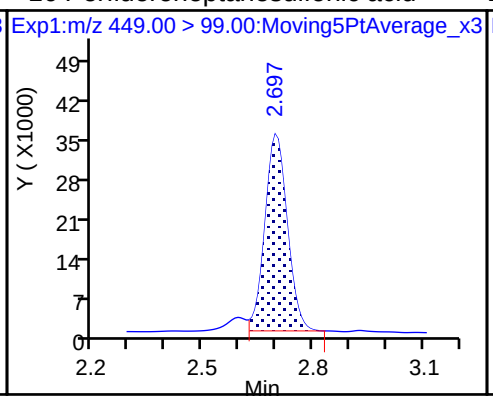
15 Perfluorooctanoic acid (M)



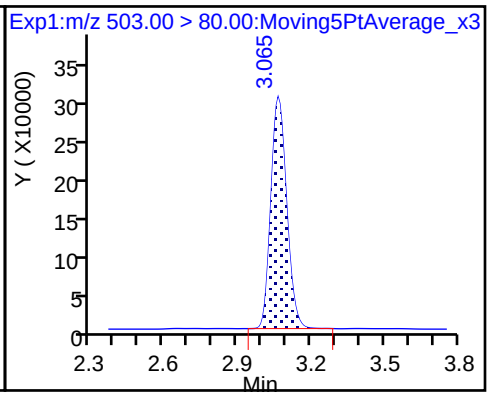
16 Perfluoroheptanesulfonic acid



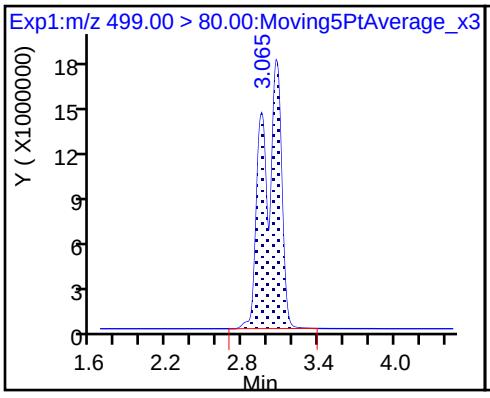
16 Perfluoroheptanesulfonic acid



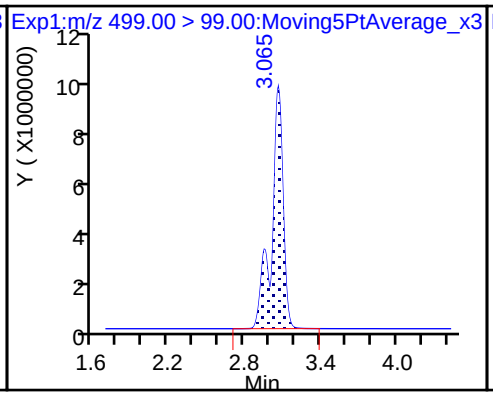
D 18 13C4 PFOS



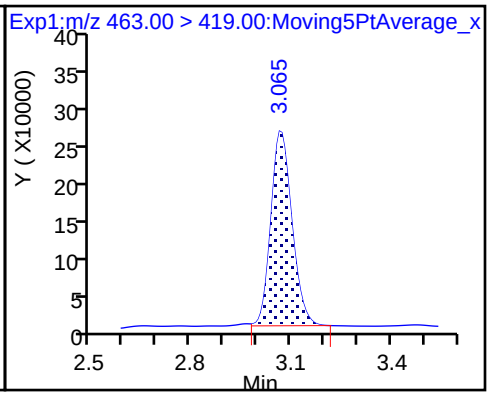
17 Perfluorooctane sulfonic acid



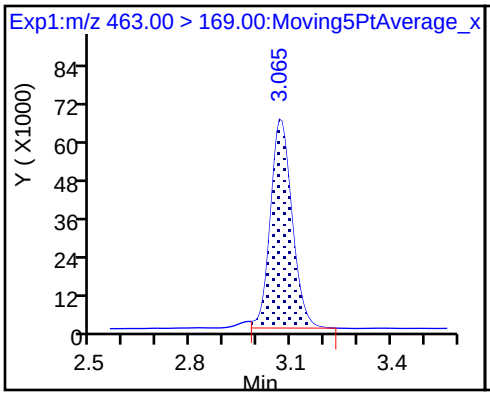
17 Perfluorooctane sulfonic acid



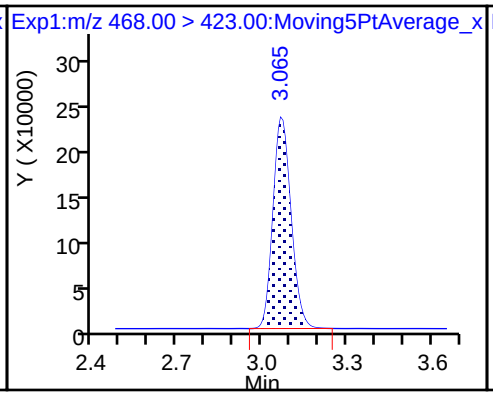
20 Perfluorononanoic acid



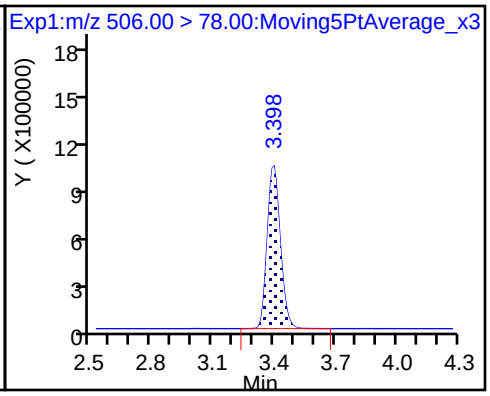
20 Perfluorononanoic acid



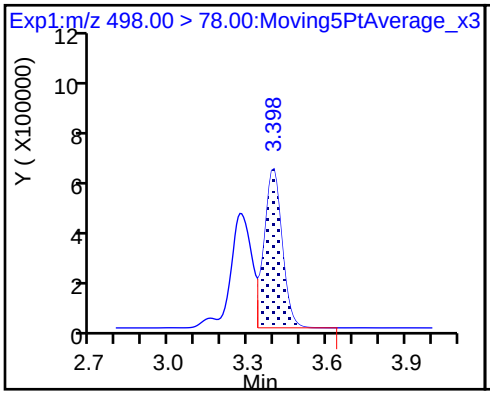
D 19 13C5 PFNA



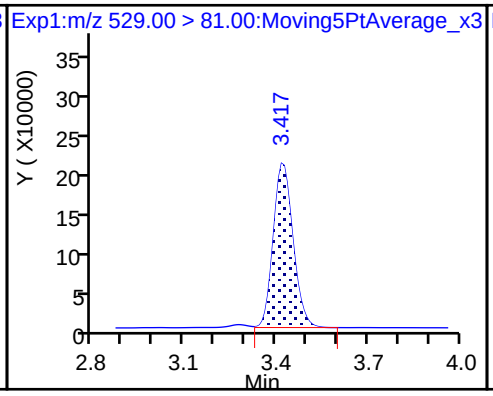
D 21 13C8 FOSA



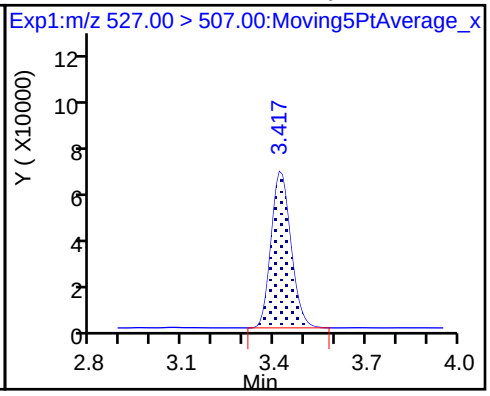
22 Perfluorooctane Sulfonamide



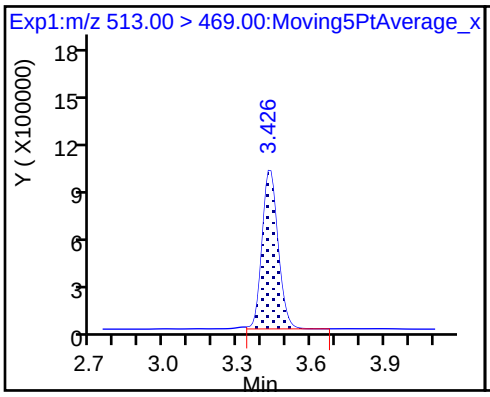
D 26 M2-8:2FTS



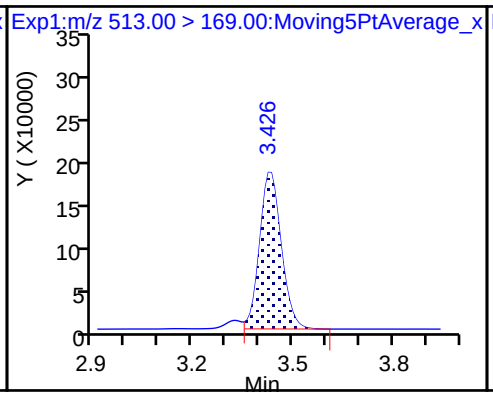
25 Sodium 1H,1H,2H,2H-perfluorodecane



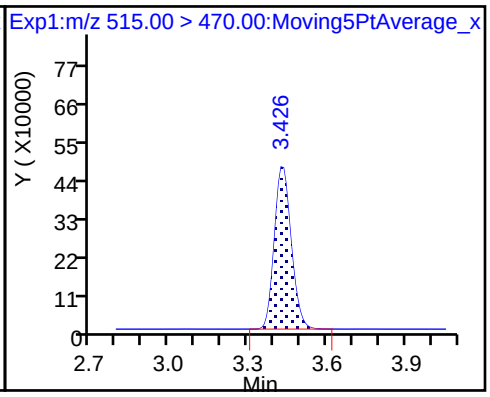
24 Perfluorodecanoic acid



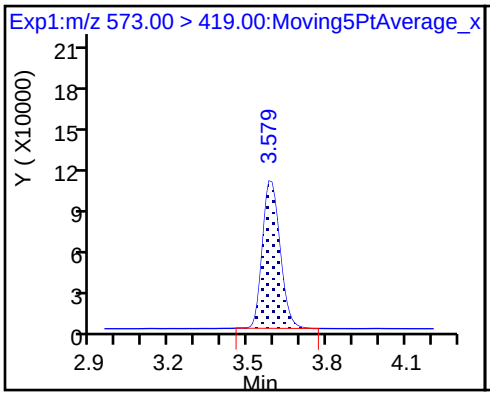
24 Perfluorodecanoic acid



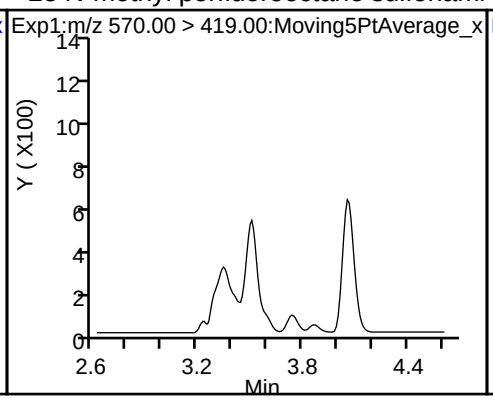
D 23 13C2 PFDA



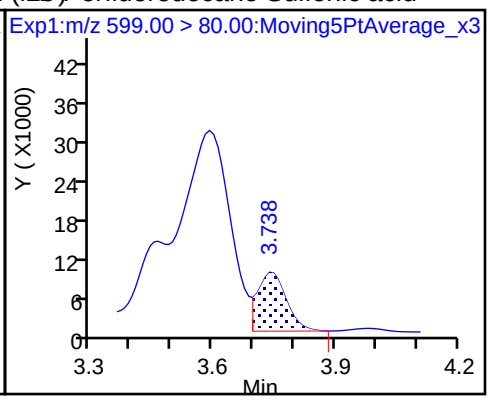
D 27 d3-NMeFOSAA



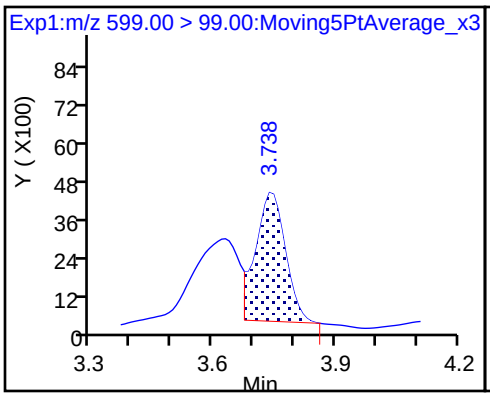
28 N-methyl perfluorooctane sulfonami (M)



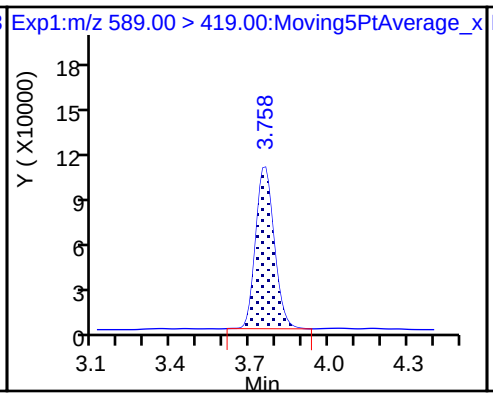
29 Perfluorodecane Sulfonic acid



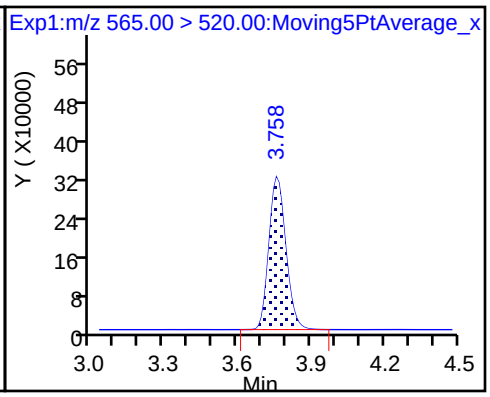
29 Perfluorodecane Sulfonic acid



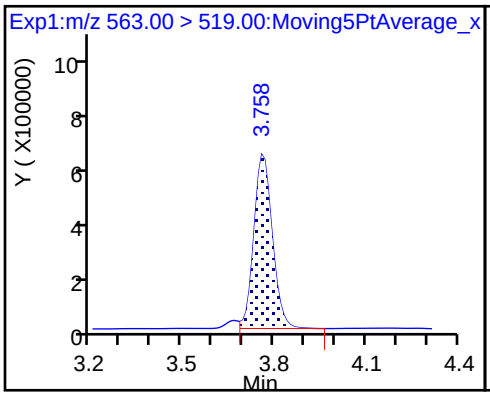
D 32 d5-NEtFOSAA



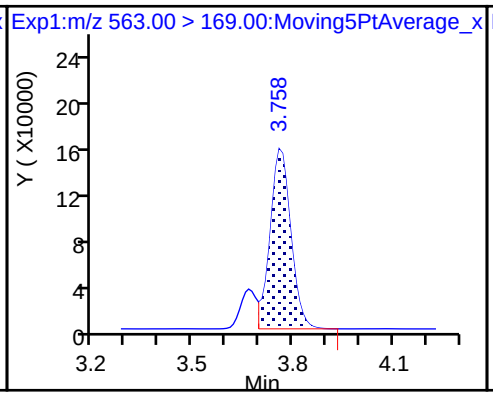
D 30 13C2 PFUnA



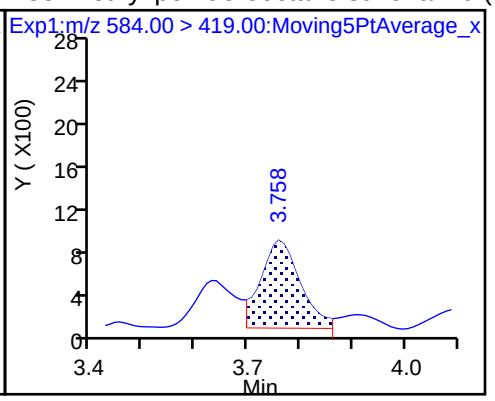
31 Perfluoroundecanoic acid



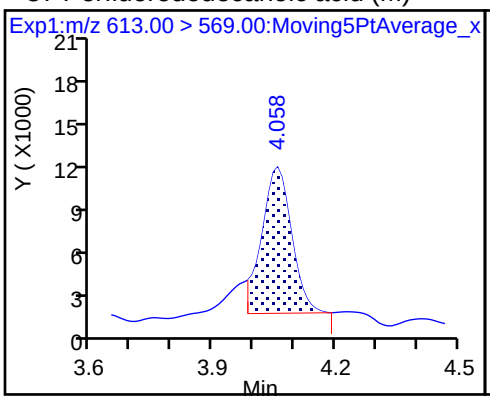
31 Perfluoroundecanoic acid



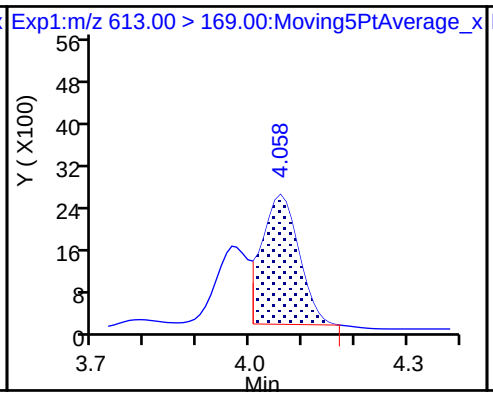
33 N-ethyl perfluorooctane sulfonamid (M)



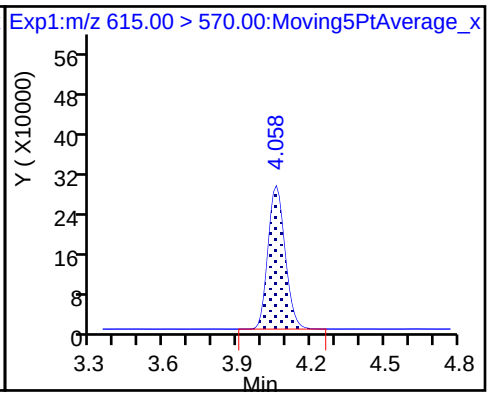
37 Perfluorododecanoic acid (M)



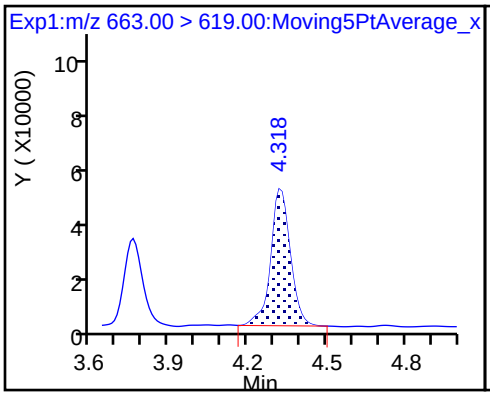
37 Perfluorododecanoic acid



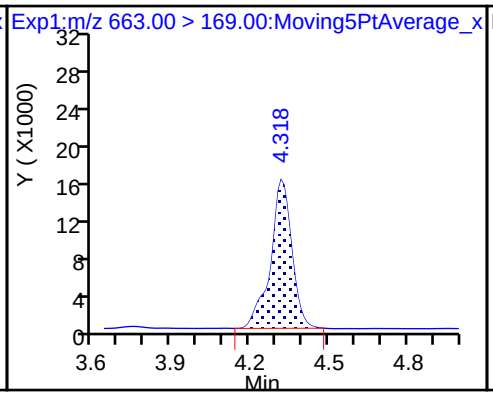
D 36 13C2 PFDoA



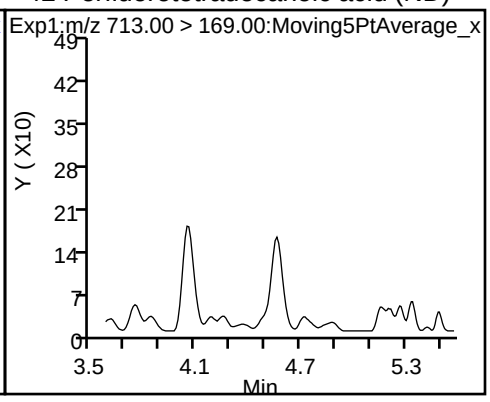
41 Perfluorotridecanoic acid



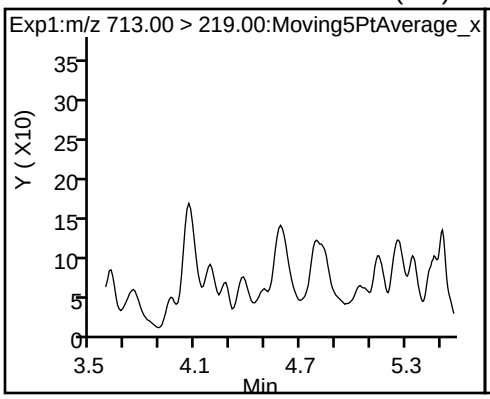
41 Perfluorotridecanoic acid



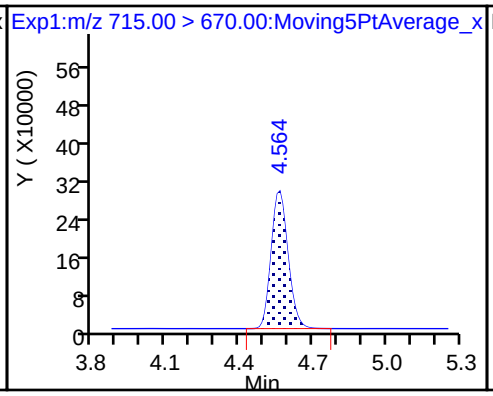
42 Perfluorotetradecanoic acid (ND)



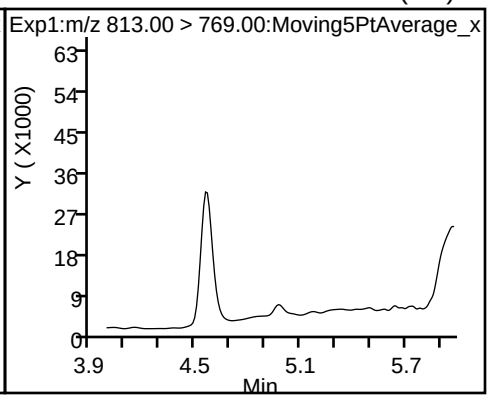
42 Perfluorotetradecanoic acid (ND)



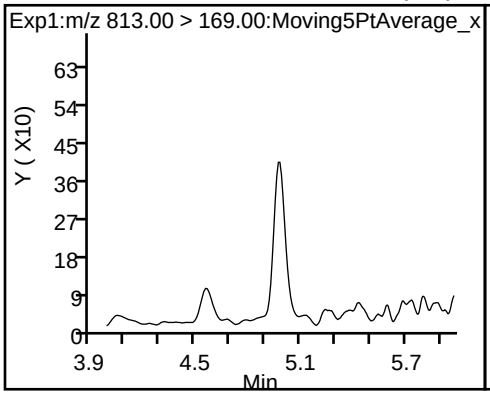
D 43 13C2-PFTeDA



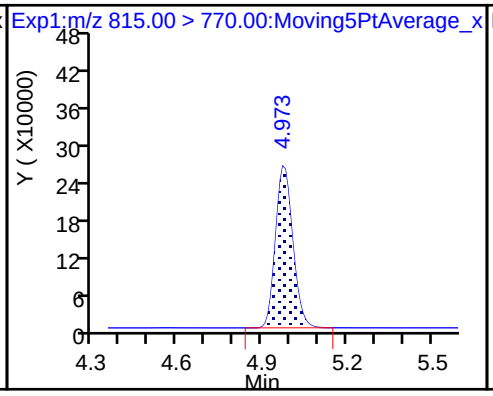
45 Perfluorohexadecanoic acid (ND)



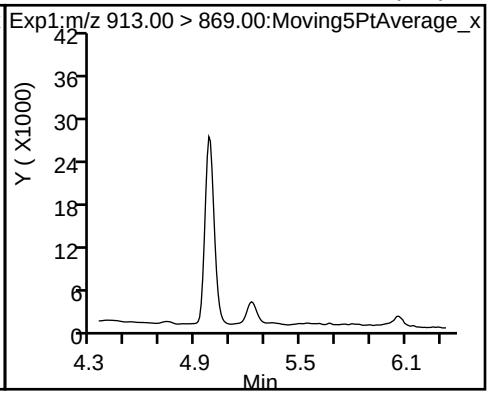
45 Perfluorohexadecanoic acid (ND)



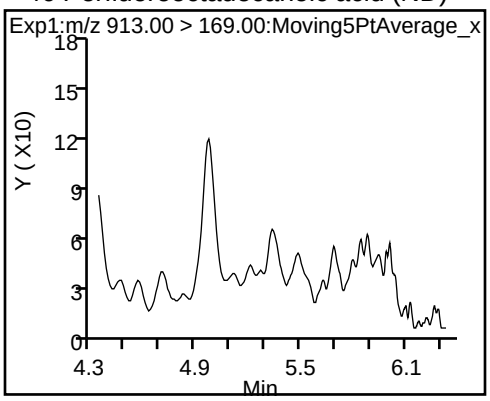
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

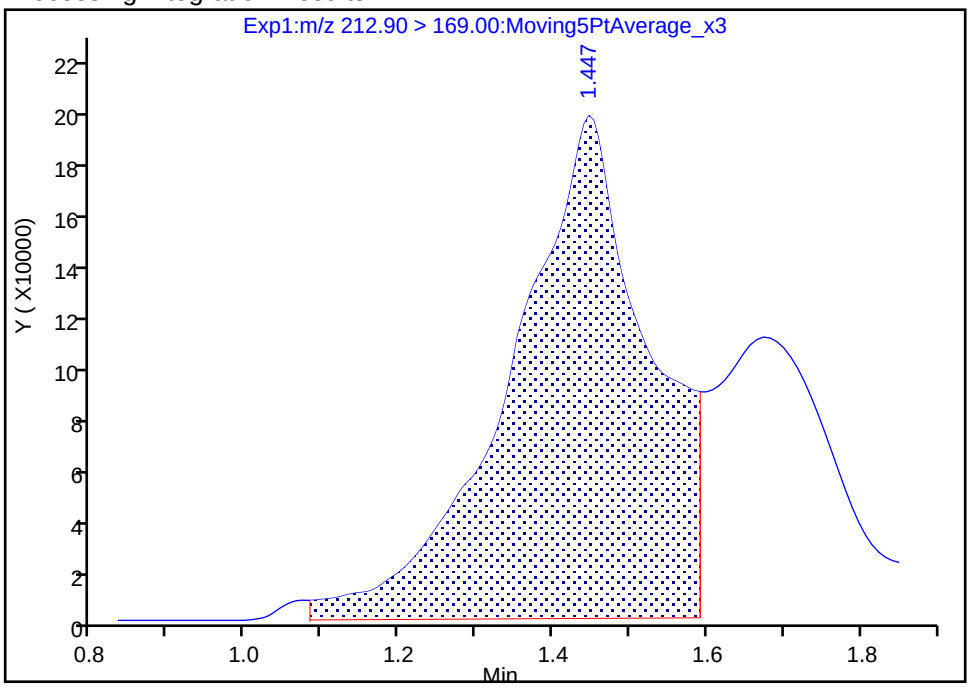
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d				
Injection Date:	19-Mar-2018 18:31:10	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-D	Lab Sample ID:	320-36683-9		
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

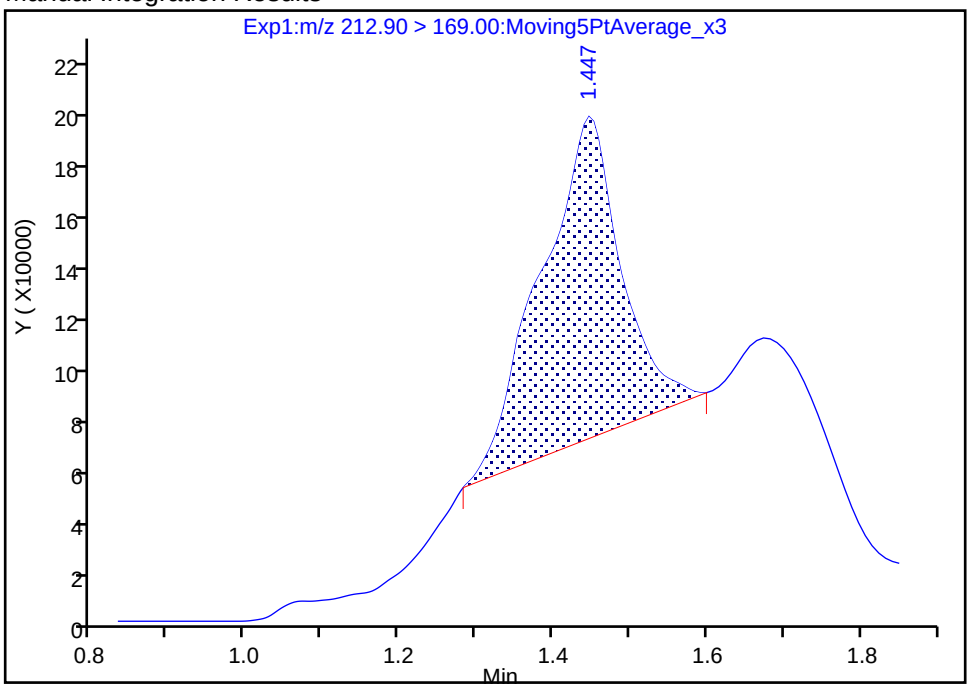
Processing Integration Results

RT: 1.45
Area: 2426486
Amount: 2.097284
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 907589
Amount: 0.784456
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:11:54

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

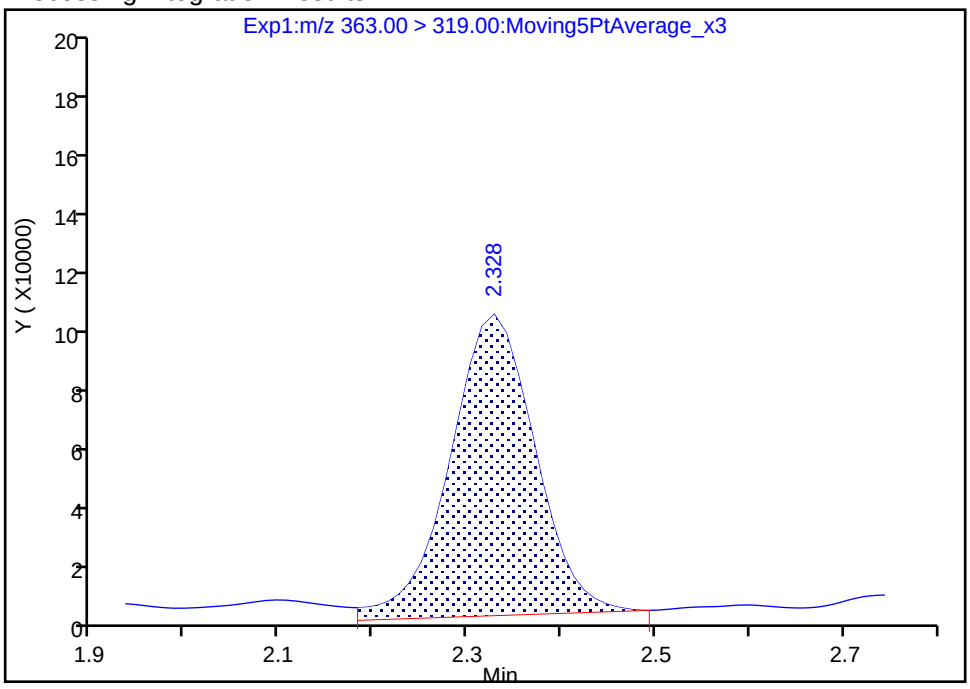
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d				
Injection Date:	19-Mar-2018 18:31:10	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-D	Lab Sample ID:	320-36683-9		
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

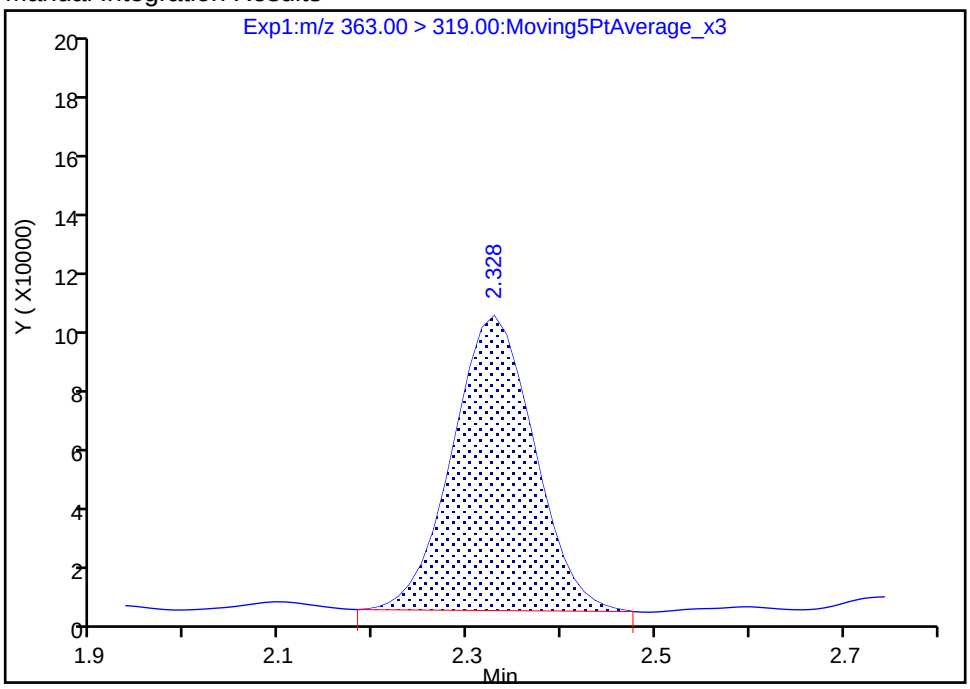
Processing Integration Results

RT: 2.33
Area: 608162
Amount: 0.598233
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 568963
Amount: 0.559674
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:09:00

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

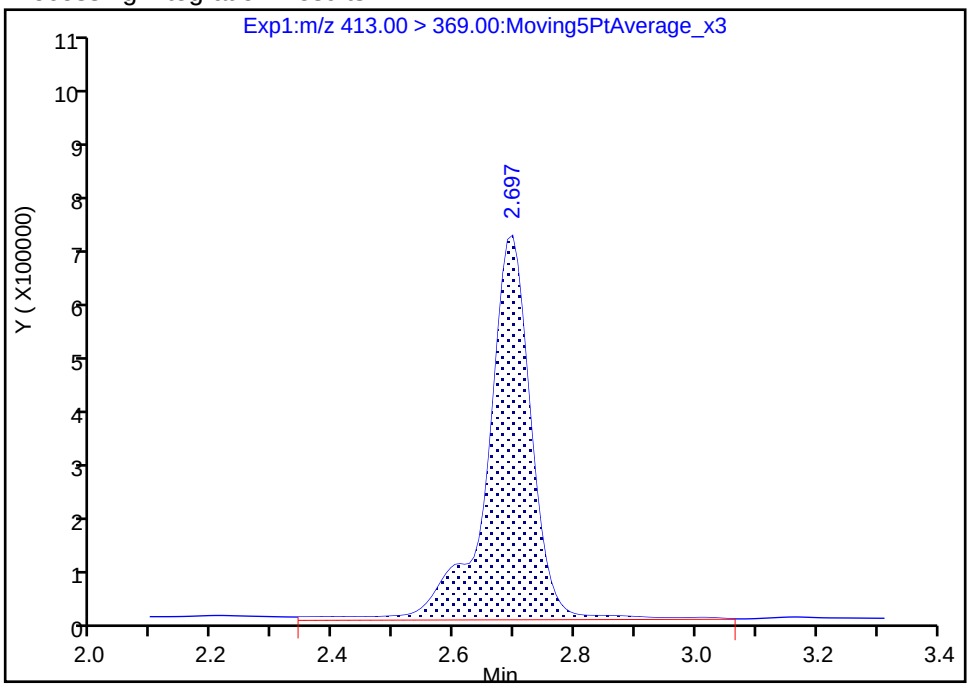
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d				
Injection Date:	19-Mar-2018 18:31:10	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-D	Lab Sample ID:	320-36683-9		
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

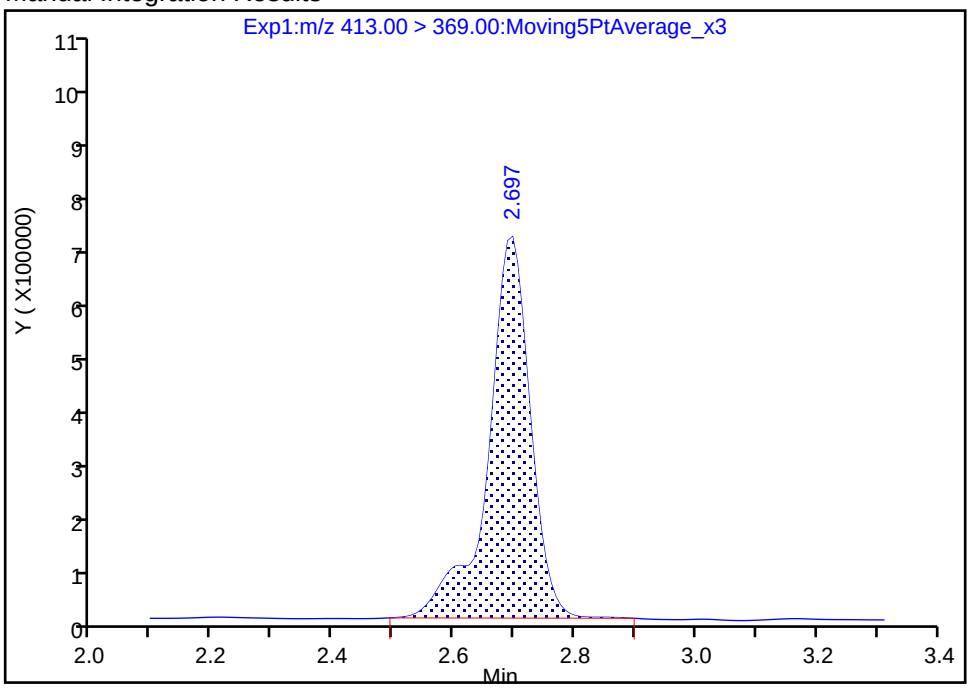
Processing Integration Results

RT: 2.70
Area: 3437400
Amount: 2.720161
Amount Units: ng/ml



Manual Integration Results

RT: 2.70
Area: 3213138
Amount: 2.542693
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:09:05

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

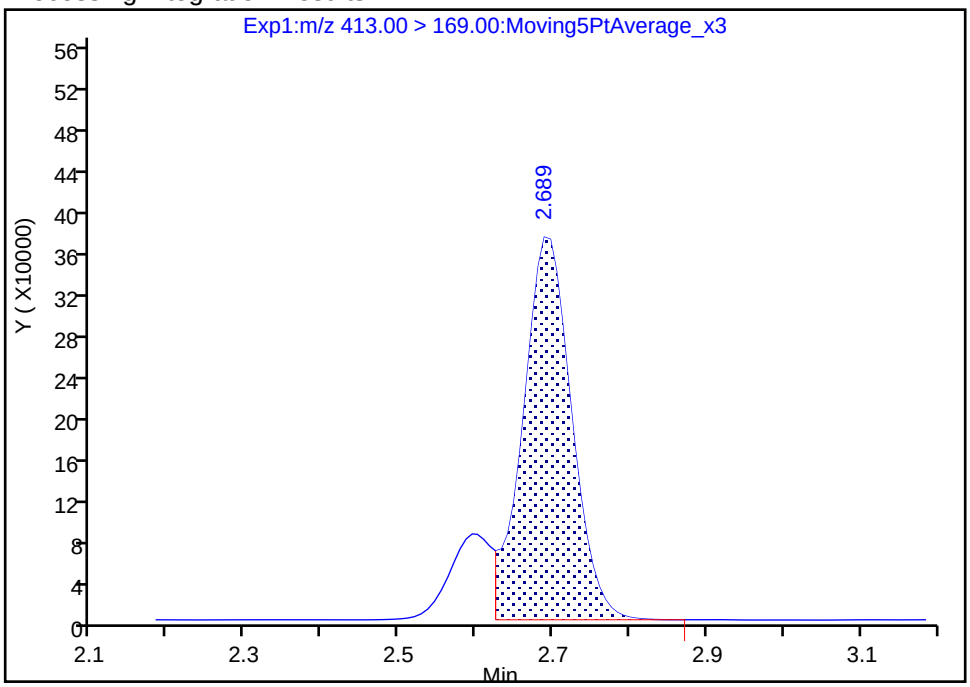
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d				
Injection Date:	19-Mar-2018 18:31:10	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-D	Lab Sample ID:	320-36683-9		
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

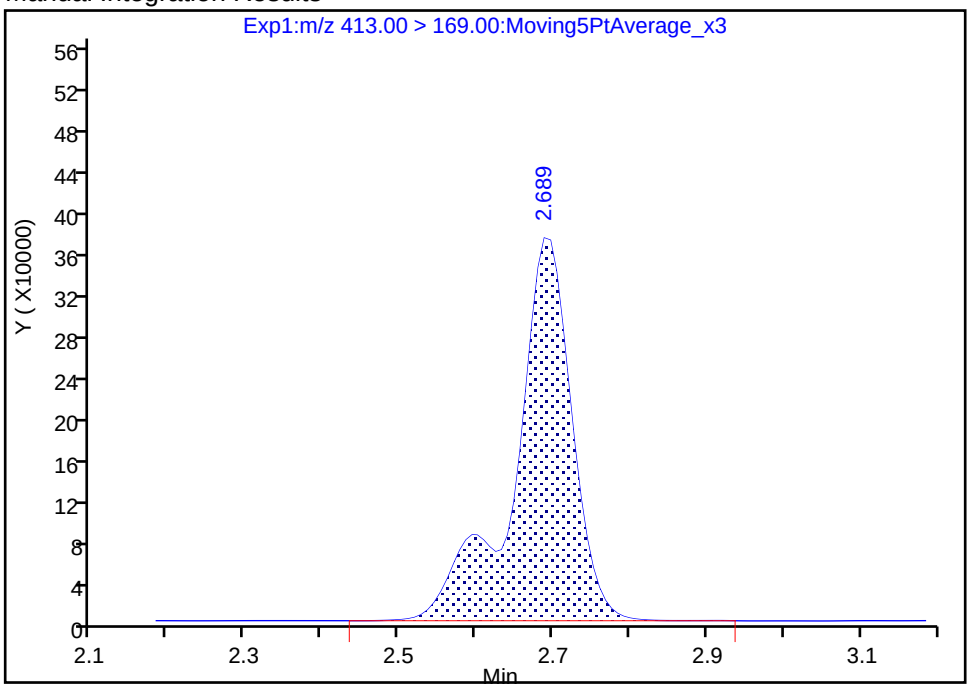
Processing Integration Results

RT: 2.69
Area: 1625006
Amount: 2.720161
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 1940355
Amount: 2.542693
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:09:10

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

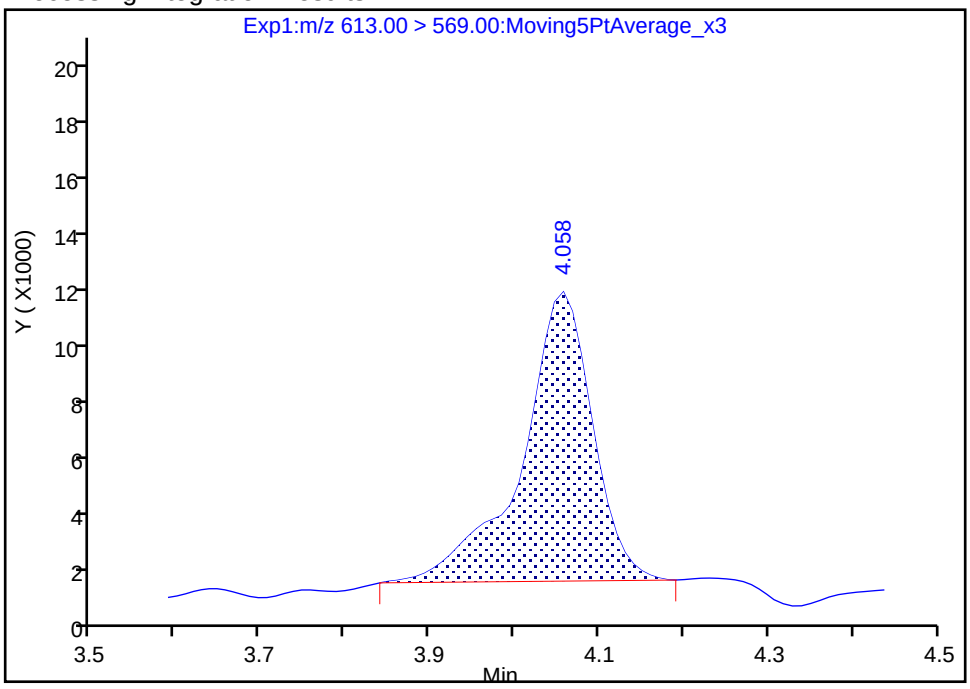
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d				
Injection Date:	19-Mar-2018 18:31:10	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-D	Lab Sample ID:	320-36683-9		
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

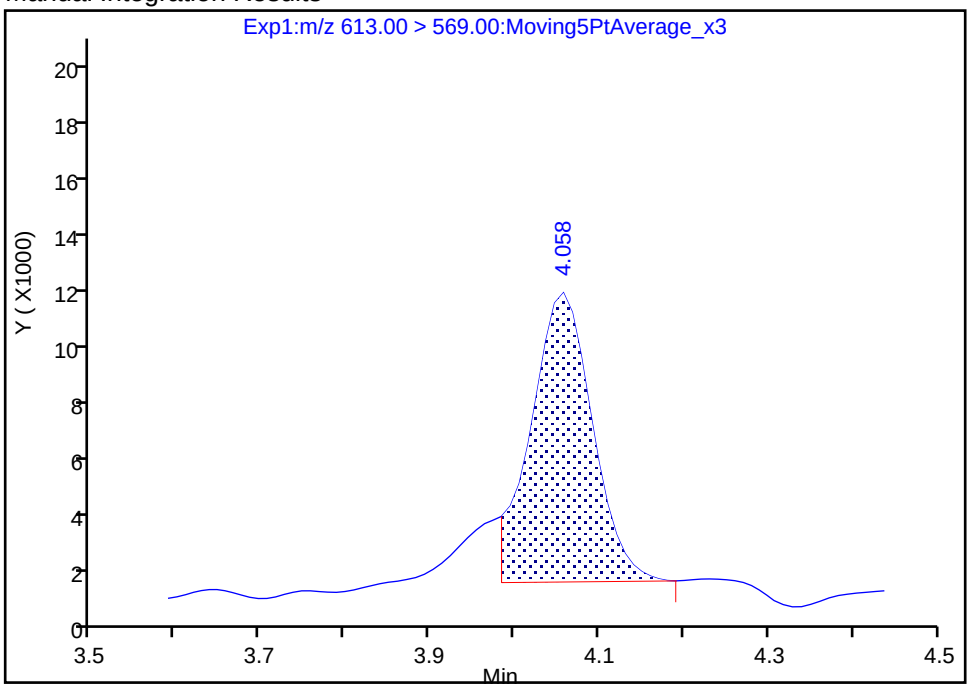
Processing Integration Results

RT: 4.06
Area: 59126
Amount: 0.104919
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 51190
Amount: 0.090836
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:09:32

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

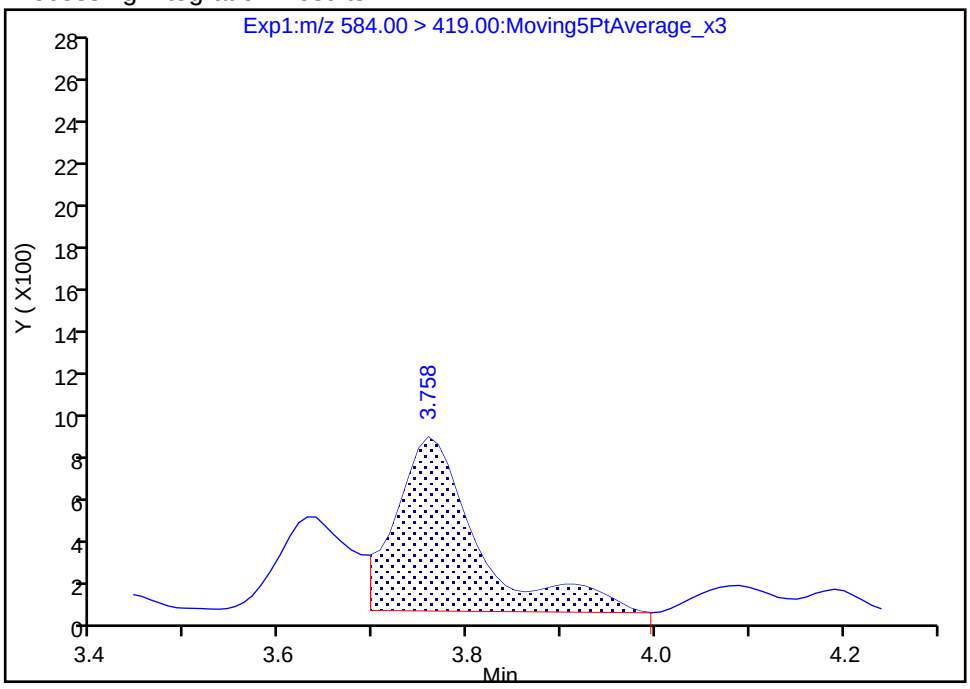
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_017.d				
Injection Date:	19-Mar-2018 18:31:10	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-D	Lab Sample ID:	320-36683-9		
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

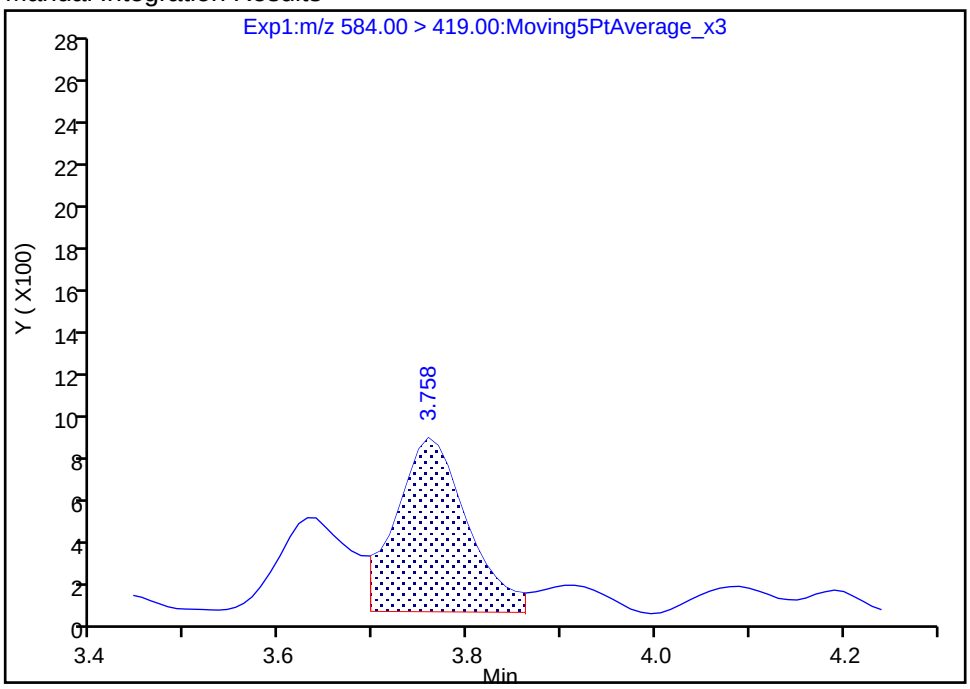
Processing Integration Results

RT: 3.76
Area: 4978
Amount: 0.024524
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 4291
Amount: 0.021140
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:09:26

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') DL | Lab Sample ID: 320-36683-9 DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_011.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 255.4(mL) | Date Analyzed: 03/19/2018 17:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	704	D B	196	16.6
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	23100	D	196	52.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	62	*	25-150
STL00991	13C4 PFOS	55	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_011.d
Lims ID: 320-36683-B-9-D
Client ID: SB012-SPLP(2'-4')
Sample Type: Client
Inject. Date: 19-Mar-2018 17:44:04 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-b-9-d 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:05:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.444	-0.003	0.536	43281	0.0157		62.8	964	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.444	0.003	1.004	21061	0.0131			5.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.701	1.705	-0.005	0.632	30886	0.0159		63.6	765	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.740	-0.004	1.000	27633	NR			11.3	
298.90 > 99.00	1.736	1.740	-0.004	1.000	11426		2.42(1.25-3.74)		9.2	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.992	-0.005	1.000	33741	0.0256			67.9	
313.00 > 119.00	1.998	1.992	0.006	1.005	3272		10.31(5.03-15.10)		56.0	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.992	-0.005	0.739	32653	0.0151		60.3	1196	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.866	33272	0.0158		63.1	1418	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.316	2.335	-0.019	0.994	11996	0.008696			19.7	
363.00 > 169.00	2.328	2.335	-0.007	1.000	6438		1.86(1.13-3.40)		106	M
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	351363	0.1799			596	
399.00 > 99.00	2.341	2.348	-0.007	1.000	114601		3.07(1.50-4.49)		182	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	41417	0.0147		62.3	1439	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.675	-0.002	1.000	2549	0.002855			162	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.675	-0.002	0.994	12738	0.0236		99.4	428	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.706	-0.017	1.000	37354	0.0184		73.4	2201	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.706	-0.017		53947	0.0250			3269	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.706	-0.017	1.000	42482	0.0255			14.9	
413.00 > 169.00	2.689	2.706	-0.017	1.000	23988		1.77(0.84-2.52)		101	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.083	-0.025	1.137	25823	0.0131		54.9	720	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.083	-0.018	1.002	6899138	5.90			18490	
499.00 > 99.00	3.058	3.083	-0.025	1.000	1509029		4.57(2.31-6.93)		10916	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.083	-0.018	1.000	32716	0.0330			67.9	
463.00 > 169.00	3.065	3.083	-0.018	1.000	6317		5.18(1.90-5.69)		242	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.083	-0.018	1.140	24319	0.0149		59.7	907	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.403	-0.004	1.264	44430	0.0156		62.4	840	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.412	-0.013	1.000	25511	0.0148			58.5	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.439	-0.022	1.271	6342	0.0125		52.2	133	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.448	-0.022	1.000	41715	0.0452			219	
513.00 > 169.00	3.435	3.448	-0.013	1.003	8991		4.64(2.36-7.09)		297	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.448	-0.022	1.274	24315	0.0179		71.5	614	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.580	3.606	-0.026	1.331	7261	0.0162		64.7	329	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.759	3.775	-0.016	1.398	9637	0.0224		89.8	16.0	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.786	-0.027	1.398	14217	0.0133		53.4	494	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.759	3.786	-0.027	1.000	21147	0.0444			31.2	M
563.00 > 169.00	3.769	3.786	-0.017	1.003	7433		2.85(2.12-6.36)		266	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.084	-0.027	1.509	14059	0.0139		55.7	78.7	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.581	-0.027	1.694	12698	0.0138		55.1	155	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	5.004	-0.031	1.849	11544	0.008562		34.2	81.2	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_011.d

Injection Date: 19-Mar-2018 17:44:04 Instrument ID: A8_N

Lims ID: 320-36683-B-9-D Lab Sample ID: 320-36683-9

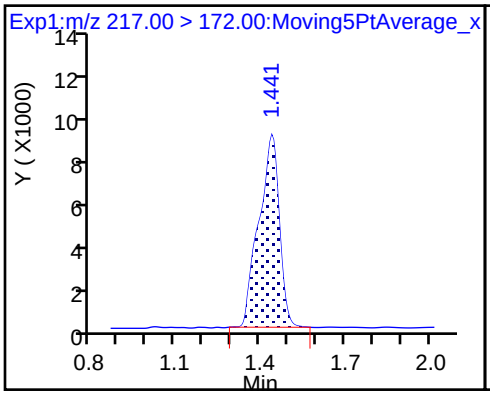
Client ID: SB012-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 6 Worklist Smp#: 7

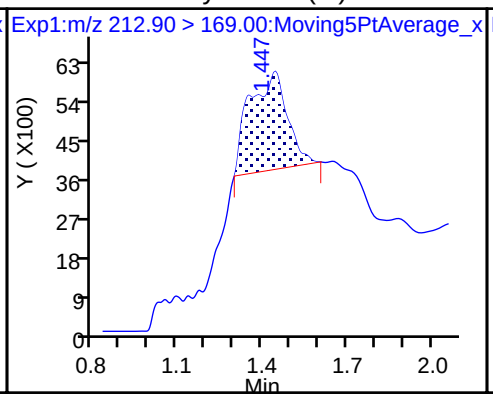
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

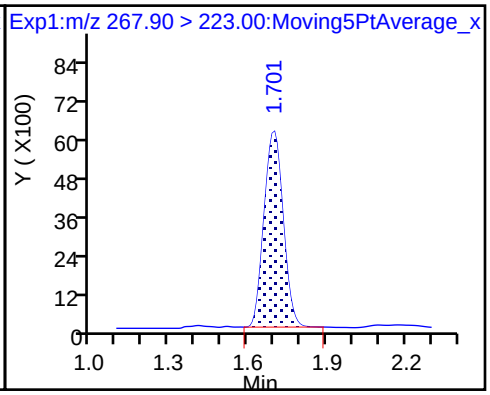
D 1 13C4 PFBA



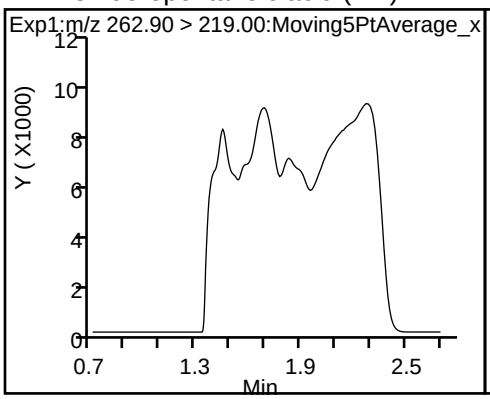
2 Perfluorobutyric acid (M)



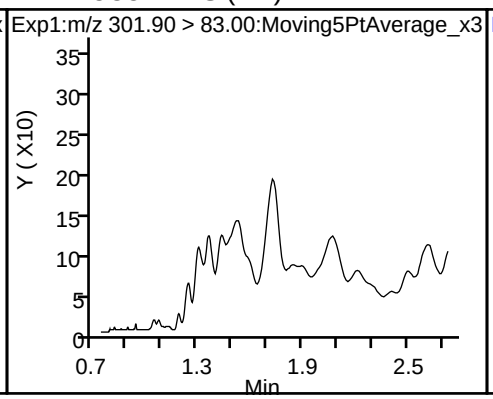
D 3 13C5-PFPeA



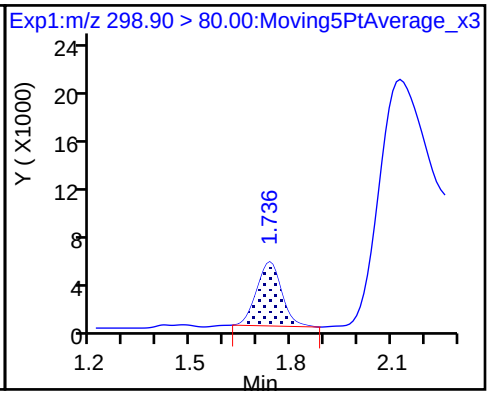
4 Perfluoropentanoic acid (ND)



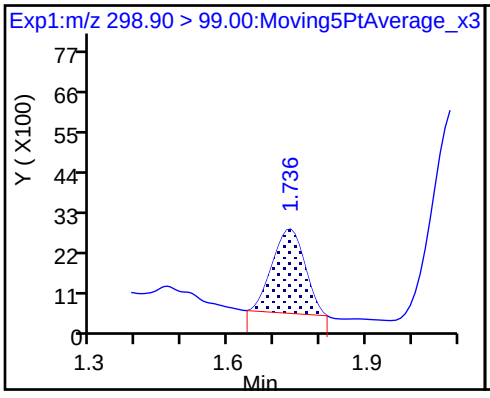
D 47 13C3-PFBS (ND)



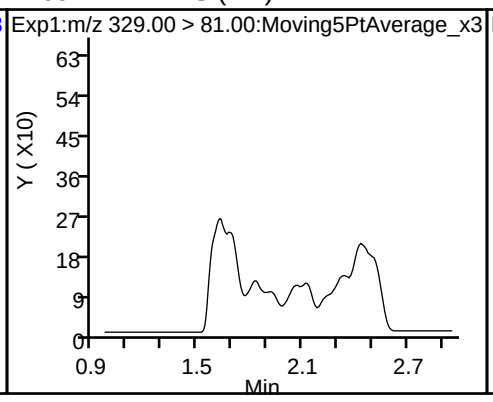
5 Perfluorobutanesulfonic acid



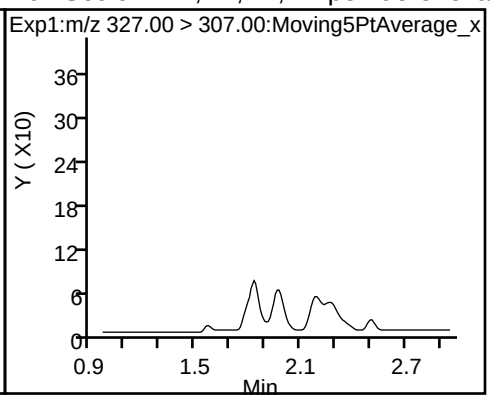
5 Perfluorobutanesulfonic acid



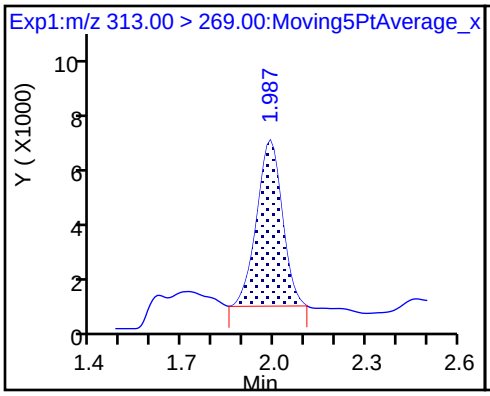
D 60 M2-4:2FTS (ND)



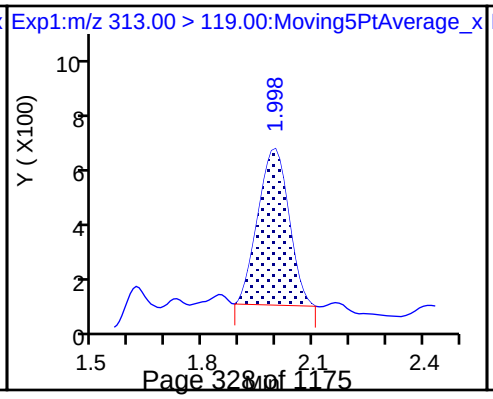
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



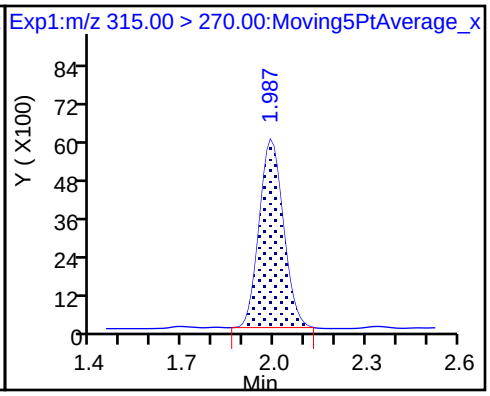
6 Perfluorohexanoic acid



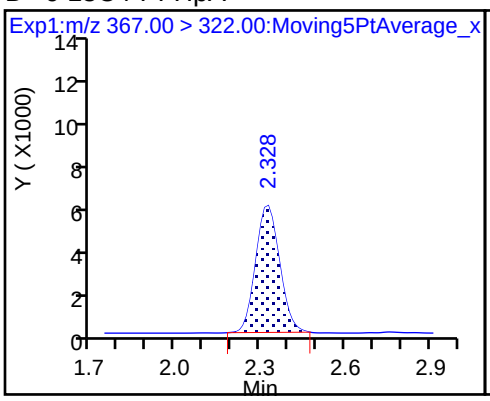
6 Perfluorohexanoic acid



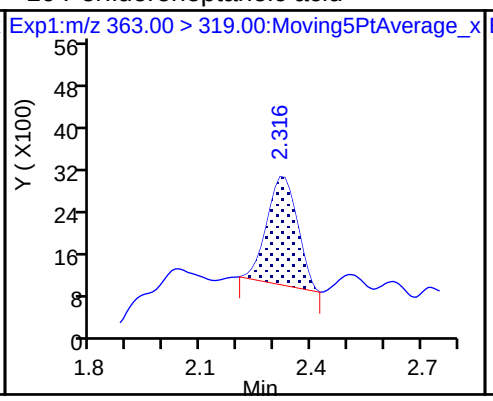
D 7 13C2 PFHxA



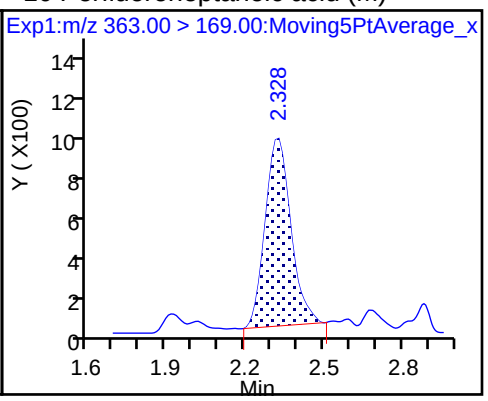
D 9 13C4-PFHpA



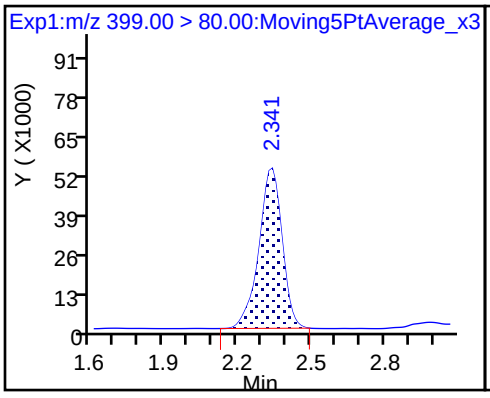
10 Perfluoroheptanoic acid



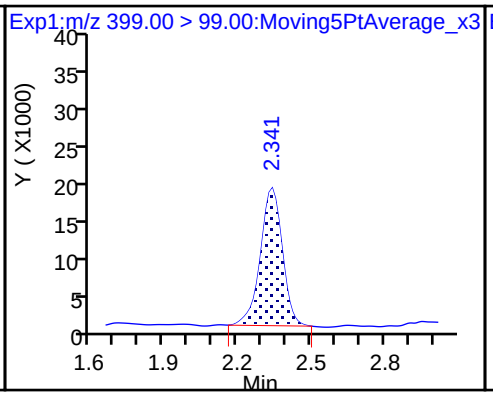
10 Perfluoroheptanoic acid (M)



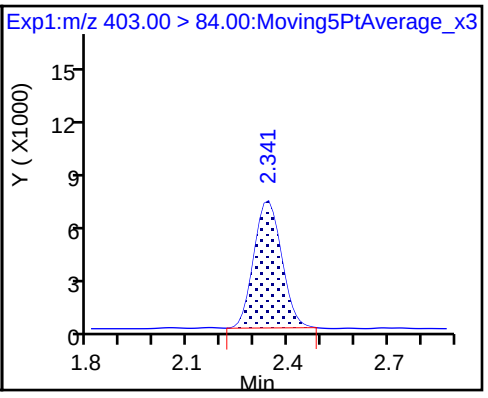
8 Perfluorohexanesulfonic acid



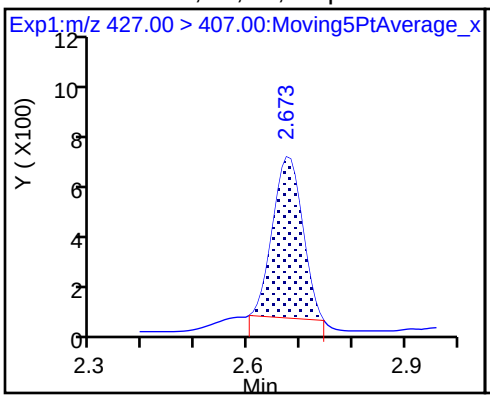
8 Perfluorohexanesulfonic acid



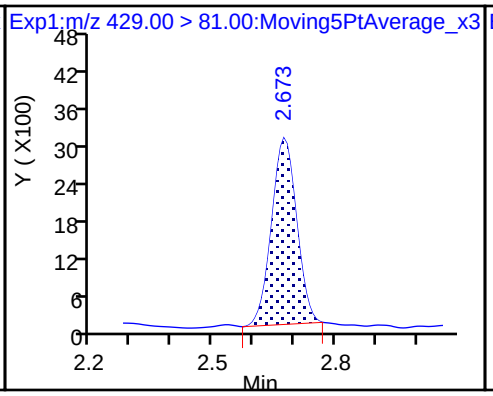
D 11 18O2 PFHxS



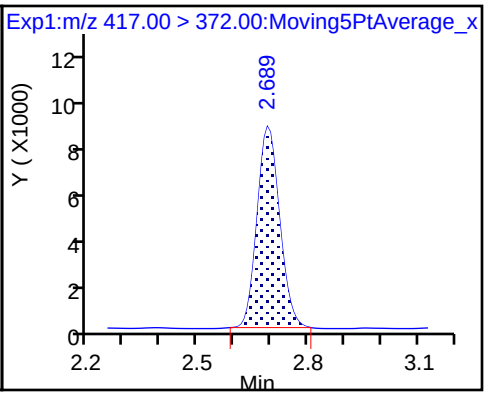
13 Sodium 1H,1H,2H,2H-perfluorooctane



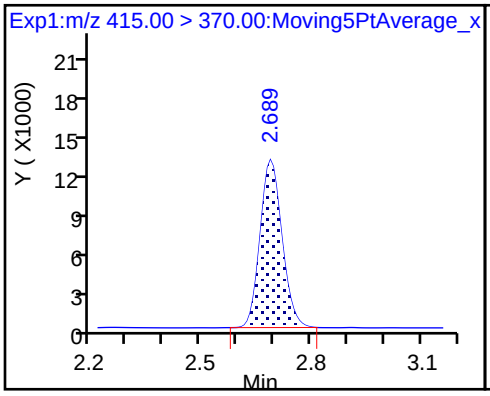
D 12 M2-6:2FTS



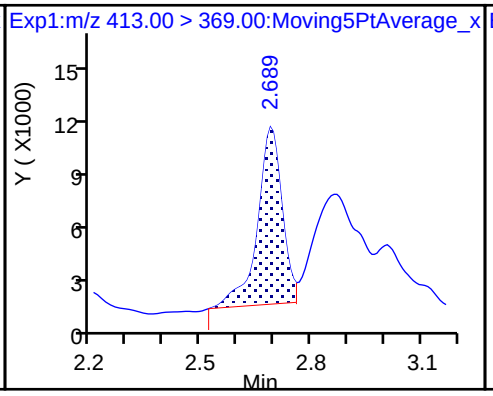
D 14 13C4 PFOA



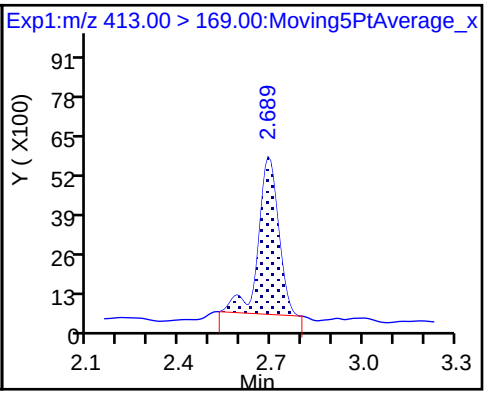
* 62 13C2-PFOA



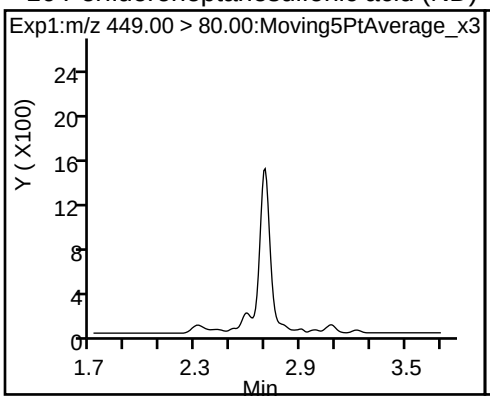
15 Perfluorooctanoic acid



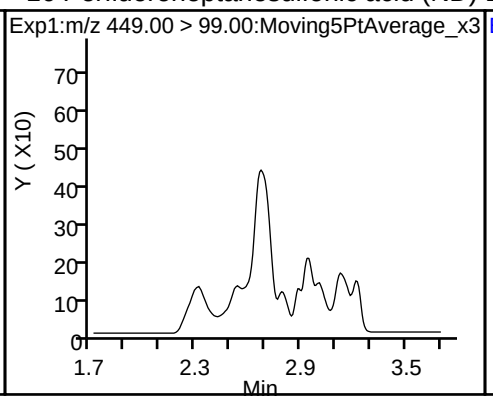
15 Perfluorooctanoic acid

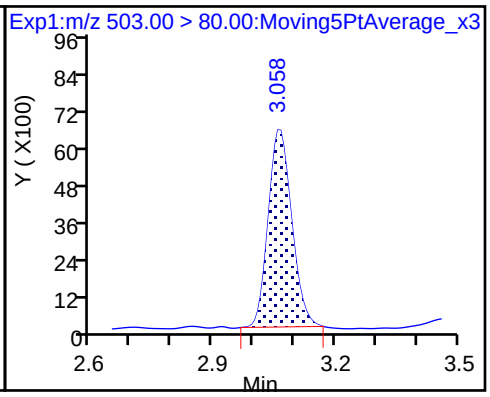


16 Perfluoroheptanesulfonic acid (ND)

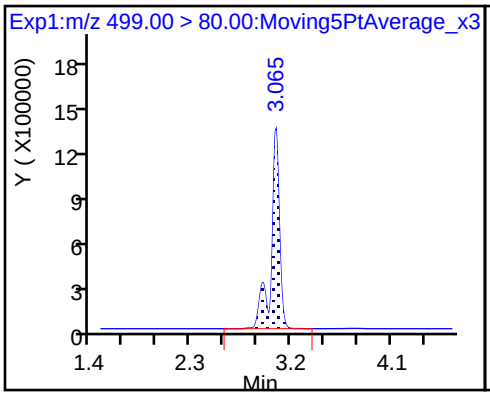


16 Perfluoroheptanesulfonic acid (ND) D 18 13C4 PFOS

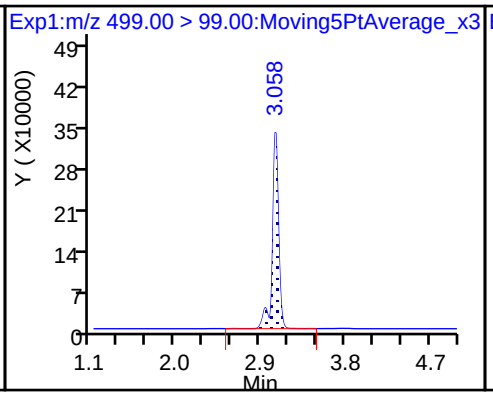




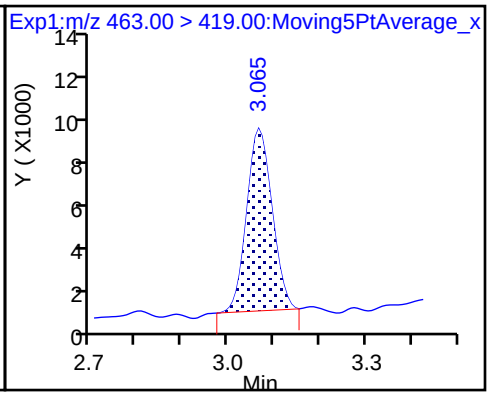
17 Perfluorooctane sulfonic acid



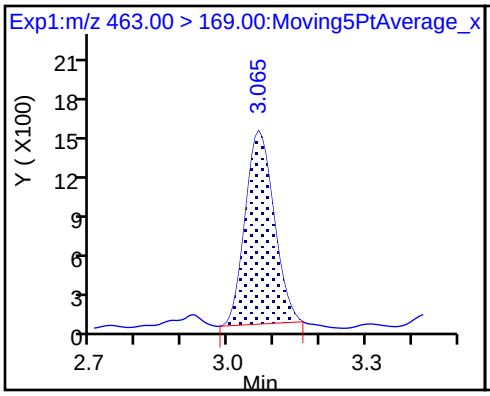
17 Perfluorooctane sulfonic acid



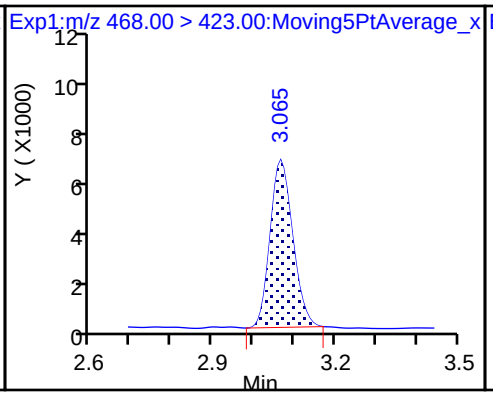
20 Perfluorononanoic acid



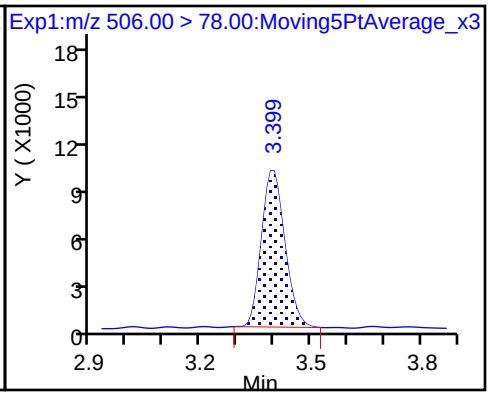
20 Perfluorononanoic acid



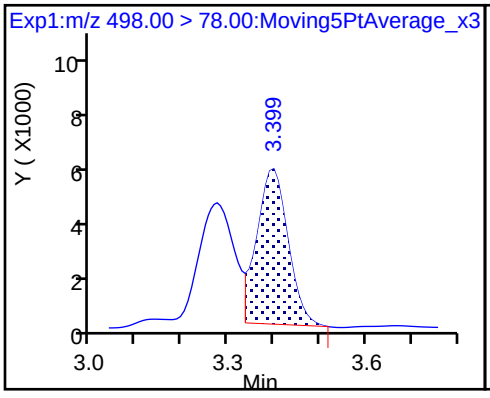
D 19 13C5 PFNA



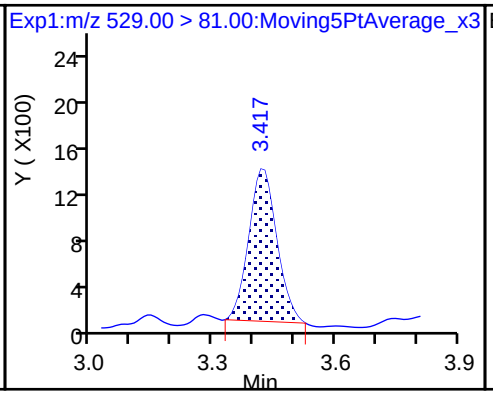
D 21 13C8 FOSA



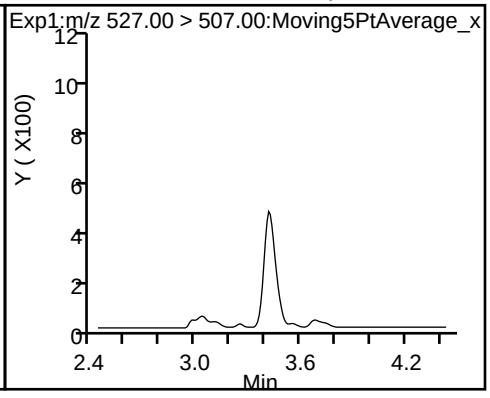
22 Perfluorooctane Sulfonamide



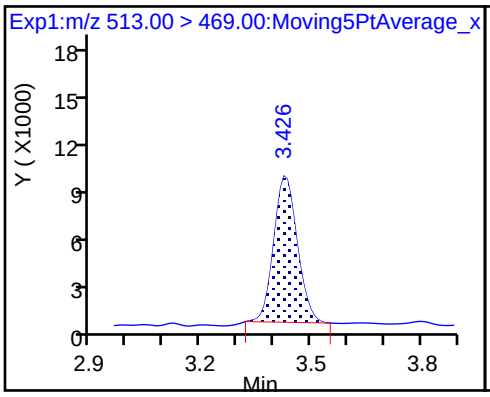
D 26 M2-8:2FTS



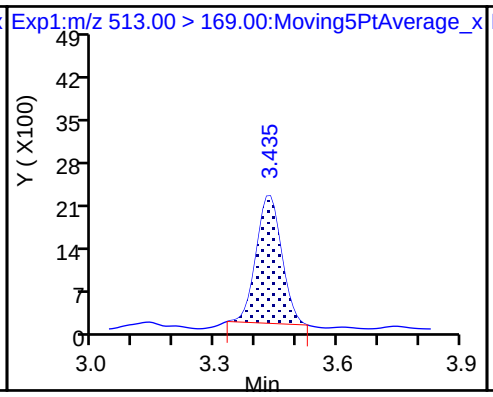
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



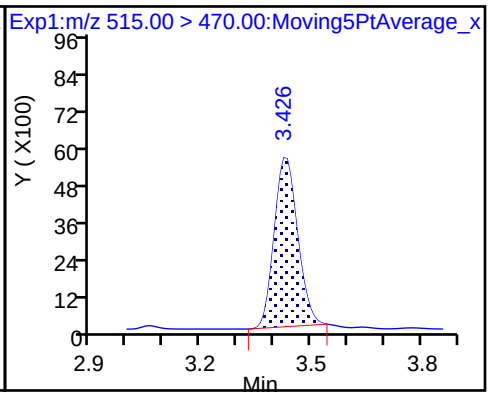
24 Perfluorodecanoic acid



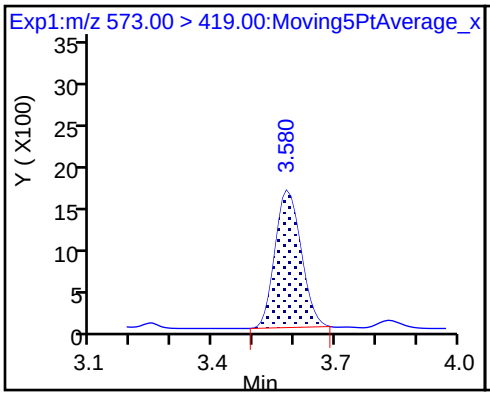
24 Perfluorodecanoic acid



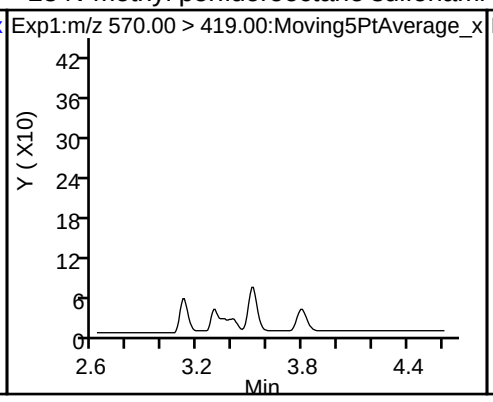
D 23 13C2 PFDA



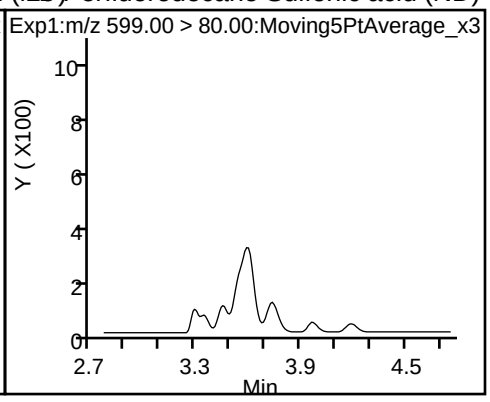
D 27 d3-NMeFOSAA



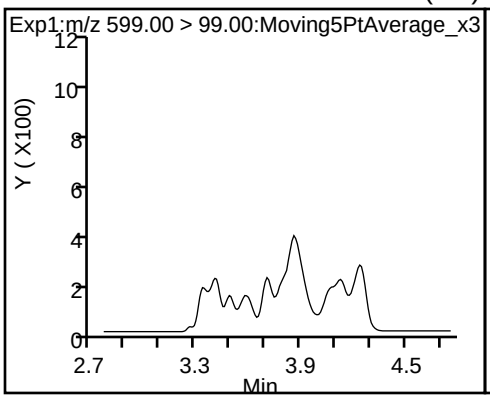
28 N-methyl perfluorooctane sulfonami (ND)



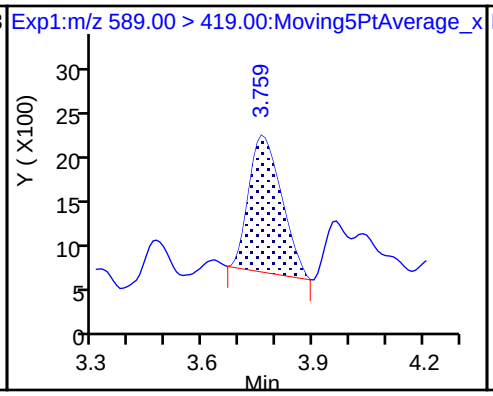
29 Perfluorodecane Sulfonic acid (ND)



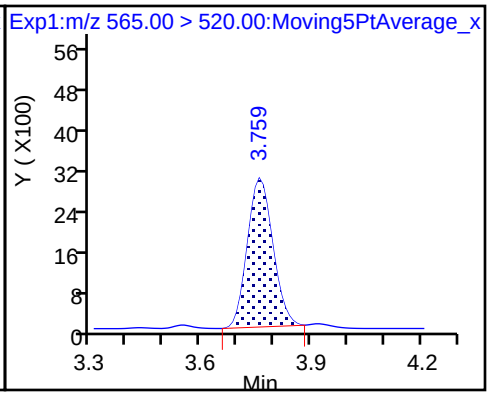
29 Perfluorodecane Sulfonic acid (ND)



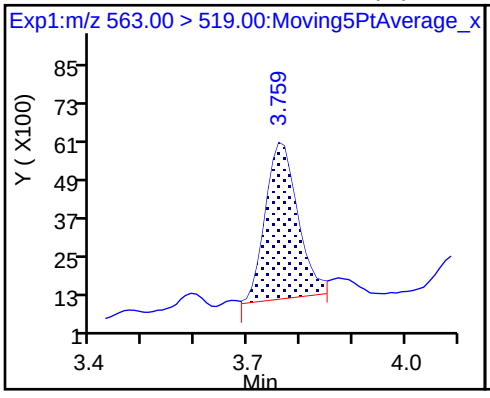
D 32 d5-NEtFOSAA



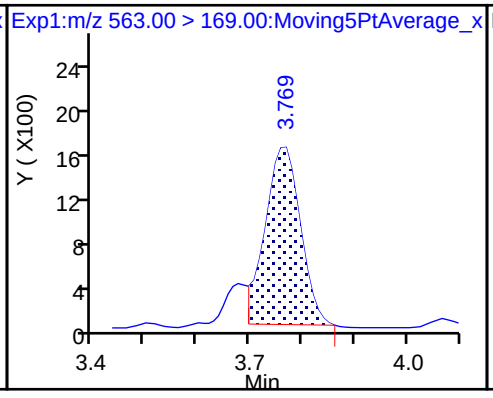
D 30 13C2 PFUnA



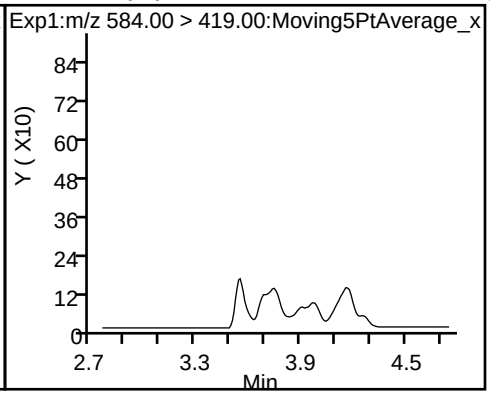
31 Perfluoroundecanoic acid (M)



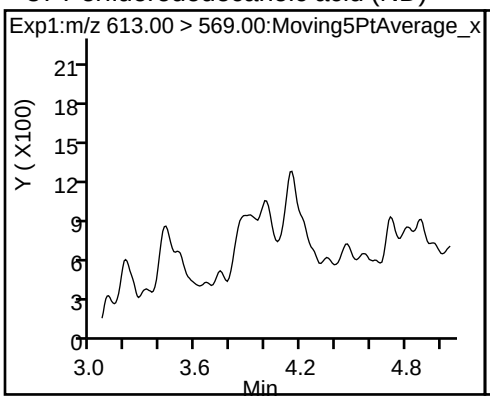
31 Perfluoroundecanoic acid



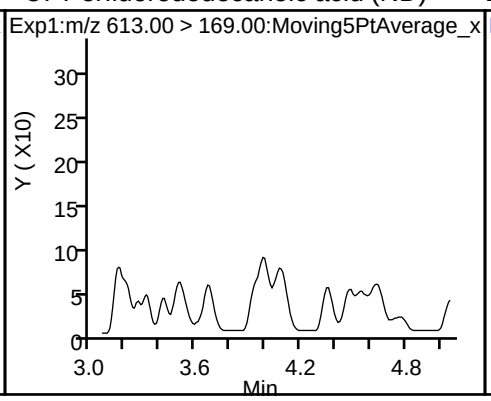
33 N-ethyl perfluorooctane sulfonamid (ND)



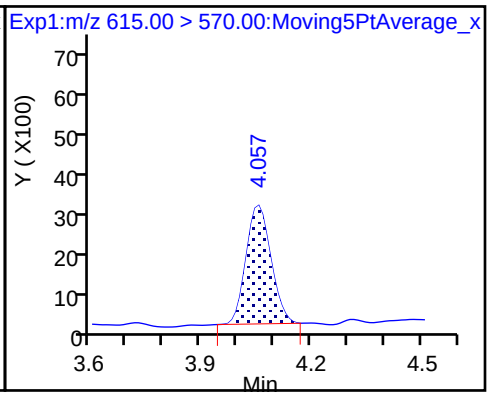
37 Perfluorododecanoic acid (ND)



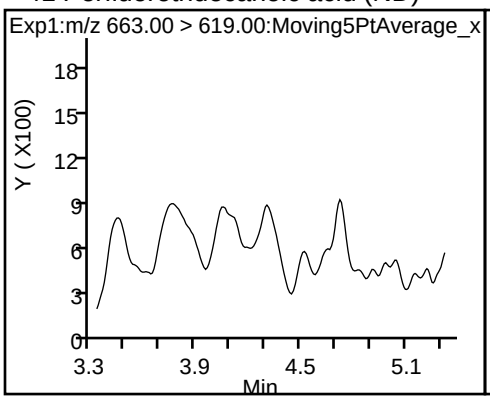
37 Perfluorododecanoic acid (ND)



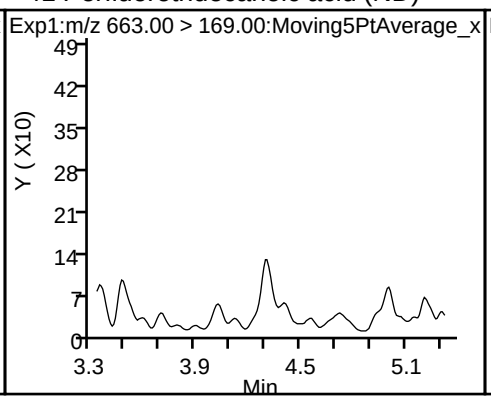
D 36 13C2 PFDoA



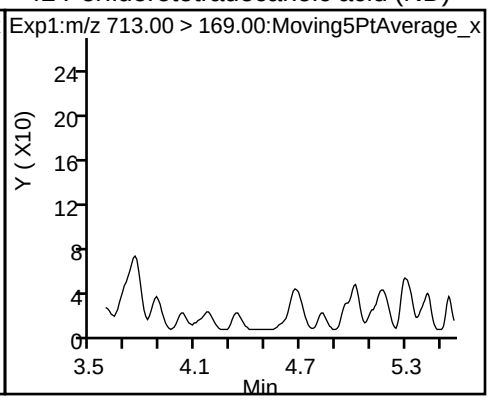
41 Perfluorotridecanoic acid (ND)



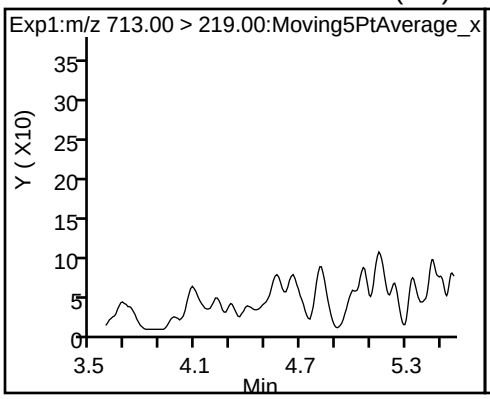
41 Perfluorotridecanoic acid (ND)



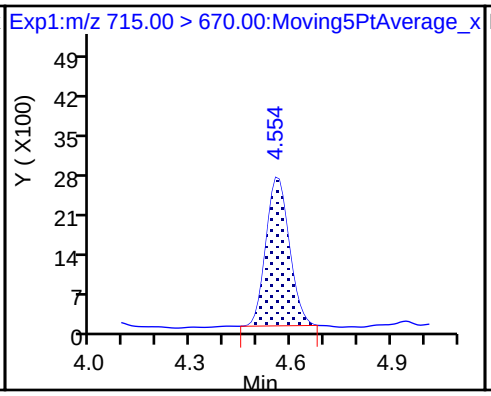
42 Perfluorotetradecanoic acid (ND)



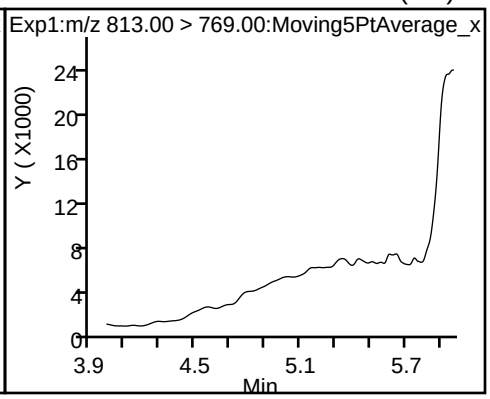
42 Perfluorotetradecanoic acid (ND)



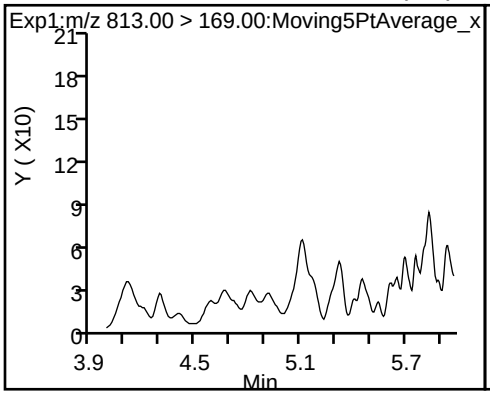
D 43 13C2-PFTeDA



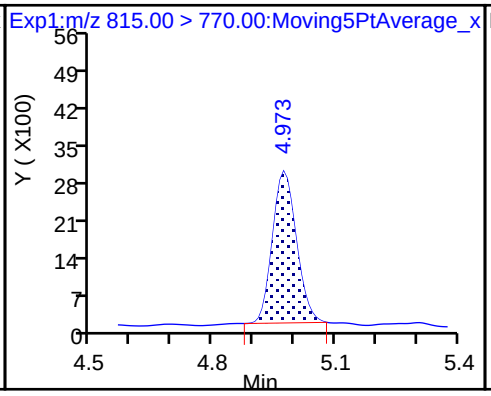
45 Perfluorohexadecanoic acid (ND)



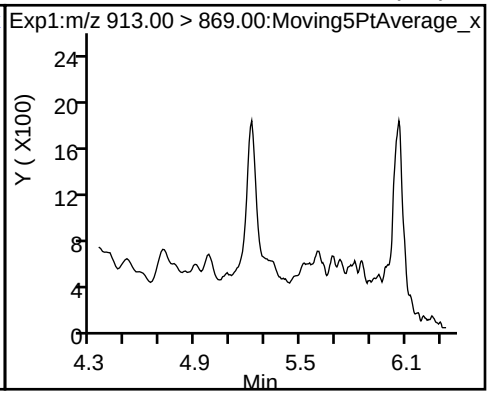
45 Perfluorohexadecanoic acid (ND)



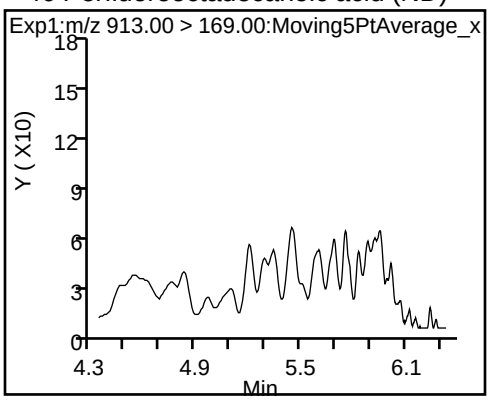
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') | Lab Sample ID: 320-36683-10

Matrix: Solid | Lab File ID: 2018.03.20LLA_037.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 00:59

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000066	J B	0.00020	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00020	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00054		0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00020	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.0013		0.00020	0.000088
375-95-1	Perfluorononanoic acid (PFNA)	0.015		0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00010	J	0.00020	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000083	J	0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00020	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000052	U F1	0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00019	J	0.00020	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0074	F1 F2	0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.0048	F1 F2	0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00015	J	0.00020	0.000084
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038
27619-97-2	6:2FTS	0.0053	F1 F2	0.0020	0.00015
39108-34-4	8:2FTS	0.00071	J	0.0020	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') | Lab Sample ID: 320-36683-10

Matrix: Solid | Lab File ID: 2018.03.20LLA_037.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 00:59

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	82		25-150
STL01893	13C5 PFPeA	85		25-150
STL00993	13C2 PFHxA	82		25-150
STL01892	13C4-PFHpA	91		25-150
STL00990	13C4 PFOA	84		25-150
STL00995	13C5 PFNA	51		25-150
STL00996	13C2 PFDA	68		25-150
STL00997	13C2 PFUnA	51		25-150
STL00998	13C2 PFDoA	43		25-150
STL02116	13C2-PFTeDA	51		25-150
STL02337	13C3-PFBS	87		25-150
STL00994	18O2 PFHxS	85		25-150
STL00991	13C4 PFOS	58		25-150
STL01056	13C8 FOSA	49		25-150
STL02118	d3-NMeFOSAA	35		25-150
STL02117	d5-NEtFOSAA	36		25-150
STL02279	M2-6:2FTS	76		25-150
STL02280	M2-8:2FTS	65		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d
Lims ID: 320-36683-A-10-A
Client ID: SB012(10'-12')
Sample Type: Client
Inject. Date: 21-Mar-2018 00:59:30 ALS Bottle#: 27 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-10-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:37:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.538	4446812	2.05		82.1	63755	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.446	0.0	1.000	53028	0.0321			15.2	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.633	3228946	2.11		84.5	78588	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.699	1.709	-0.010	1.000	113121	0.0750			26.7	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.646	75853	2.01		86.5	392	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	233506	0.0925			81.9	
298.90 > 99.00	1.744	1.744	0.0	1.005	97348		2.40(1.25-3.74)		79.6	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.739	3486815	2.05		81.8	84241	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	373037	0.2651			555	
313.00 > 119.00	1.986	1.997	-0.011	1.000	30628		12.18(5.03-15.10)		644	
D 9 13C4-PFHpA										
367.00 > 322.00	2.327	2.315	0.012	0.866	3785436	2.28		91.4	88643	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.327	2.328	-0.001	1.000	137356	0.0875			142	
363.00 > 169.00	2.315	2.328	-0.013	0.994	53781		2.55(1.13-3.40)		750	
D 11 18O2 PFHxS										
403.00 > 84.00	2.340	2.328	0.012	0.871	4433701	2.01		84.8	92730	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.340	2.341	-0.001	1.000	7585482	3.63			11560	
399.00 > 99.00	2.340	2.341	-0.001	1.000	2261761		3.35(1.50-4.49)		6434	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.657	0.006	0.991	767850	1.81		76.2	17277	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.663	2.663	0.0	1.000	1388353	2.58			45634	
D 14 13C4 PFOA										
417.00 > 372.00	2.687	2.681	0.006	1.000	3357366	2.10		83.9	85708	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.687	2.695	-0.008	1.000	961870	0.6416			264	M
413.00 > 169.00	2.687	2.695	-0.008	1.000	537916		1.79(0.84-2.52)		1537	
* 62 13C2-PFOA										
415.00 > 370.00	2.687	2.695	-0.008		4242186	2.50			80528	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.695	2.703	-0.008	1.000	2816180	2.37			667	
449.00 > 99.00	2.695	2.703	-0.008	1.000	753679		3.74(1.94-5.82)		1304	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.138	2161660	1.40		58.5	24545	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.141	1641014	1.28		51.3	37529	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.000	116658039	119.1			49118	E
499.00 > 99.00	3.058	3.067	-0.009	1.000	33933595		3.44(2.31-6.93)		86172	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.067	-0.002	1.000	5001440	7.47			8102	
463.00 > 169.00	3.065	3.067	-0.002	1.000	1193117		4.19(1.90-5.69)		4677	
D 21 13C8 FOSA										
506.00 > 78.00	3.400	3.389	0.011	1.266	2718510	1.21		48.6	43353	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.400	3.401	-0.001	1.000	78618	0.0744			123	
D 26 M2-8:2FTS										
529.00 > 81.00	3.418	3.408	0.010	1.272	616154	1.55		64.5	15214	
D 23 13C2 PFDA										
515.00 > 470.00	3.428	3.417	0.011	1.276	1830883	1.71		68.5	34148	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.409	3.419	-0.010	0.997	112909	0.3491			3547	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.428	3.428	0.0	1.000	35557	0.0512			88.8	
513.00 > 169.00	3.428	3.428	0.0	1.000	6811		5.22(2.36-7.09)		47.1	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.570	0.013	1.334	310149	0.8782		35.1	13253	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.748	0.003	1.396	303959	0.9002		36.0	643	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.748	0.003	1.396	1071896	1.28		51.2	27866	
31 Perfluoroundecanoic acid										RM
563.00 > 519.00	3.751	3.762	-0.011	1.000	14617	0.0407			38.8	RM
563.00 > 169.00	3.751	3.762	-0.011	1.000	2130		6.86(2.12-6.36)		112	M
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.046	0.004	1.507	860519	1.08		43.3	5815	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.556	4.544	0.012	1.696	917834	1.27		50.7	14718	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.964	0.001	1.848	1093513	1.03		41.3	5833	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d

Injection Date: 21-Mar-2018 00:59:30 Instrument ID: A8_N

Lims ID: 320-36683-A-10-A Lab Sample ID: 320-36683-10

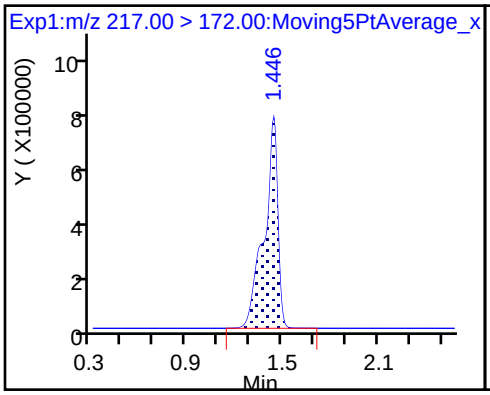
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 27 Worklist Smp#: 16

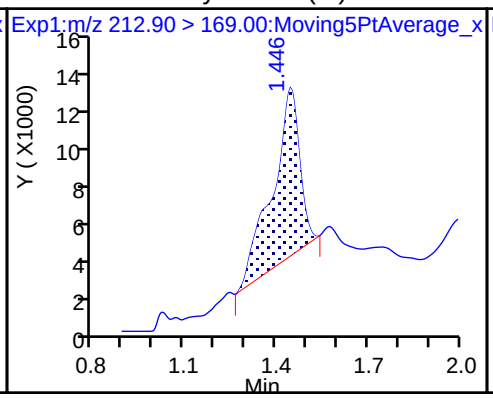
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

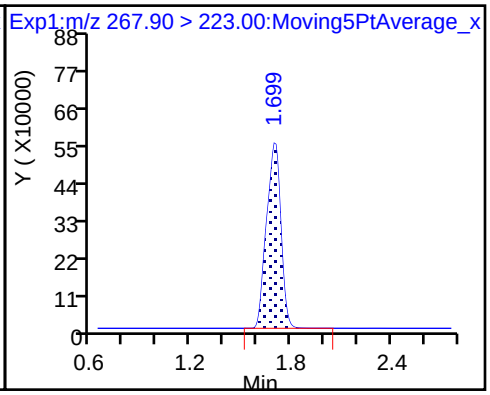
D 1 13C4 PFBA



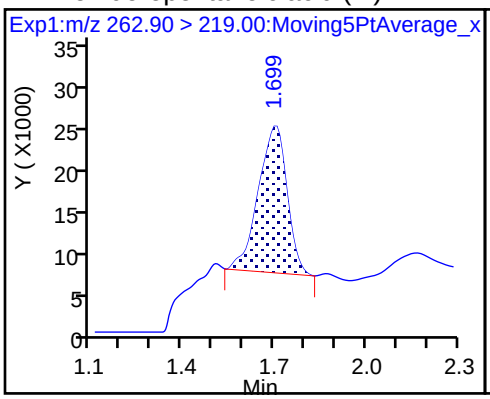
2 Perfluorobutyric acid (M)



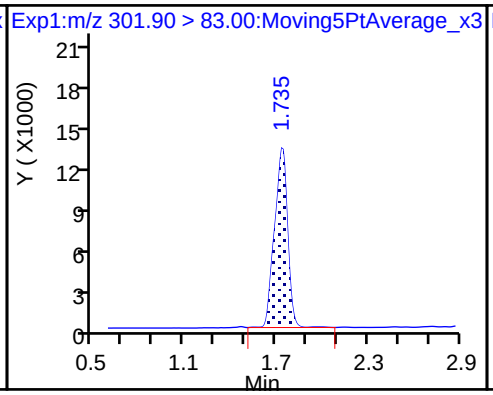
D 3 13C5-PFPeA



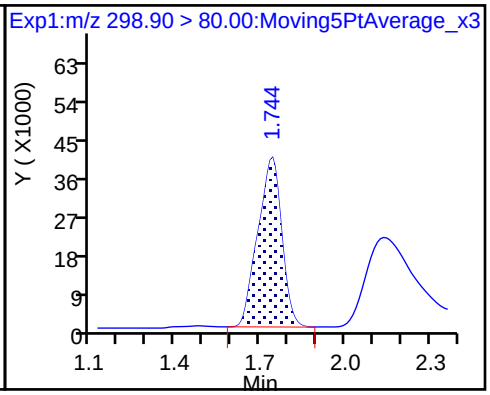
4 Perfluoropentanoic acid (M)



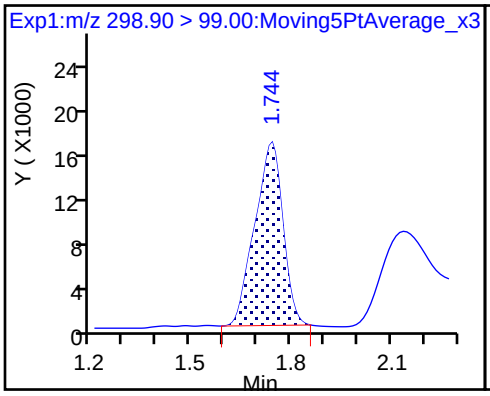
D 47 13C3-PFBS



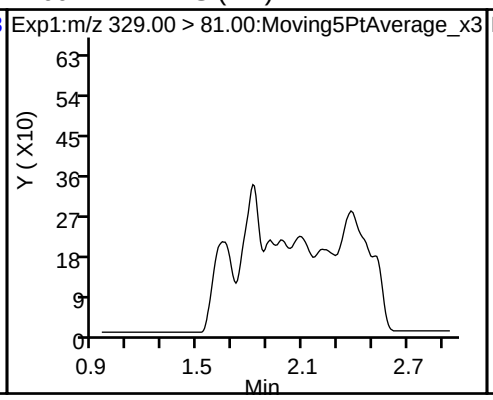
5 Perfluorobutanesulfonic acid



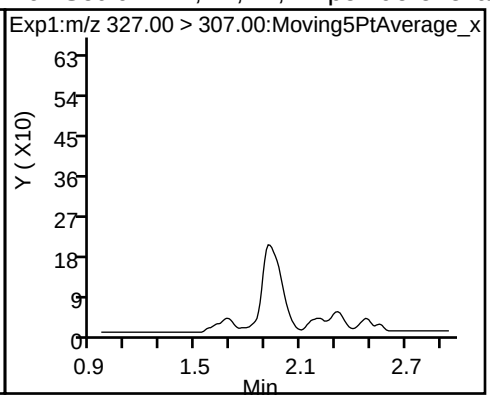
5 Perfluorobutanesulfonic acid



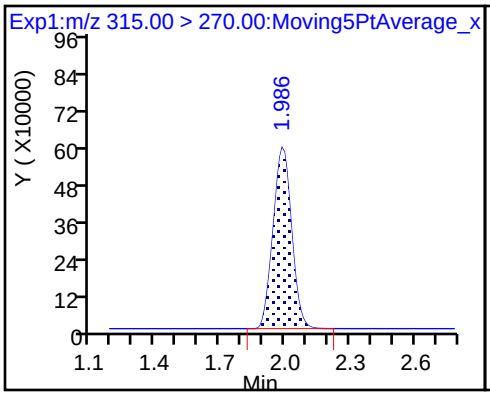
D 60 M2-4:2FTS (ND)



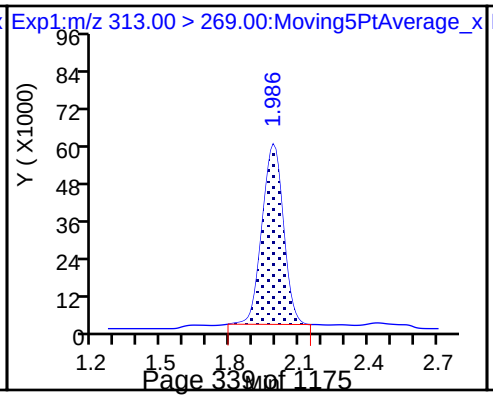
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



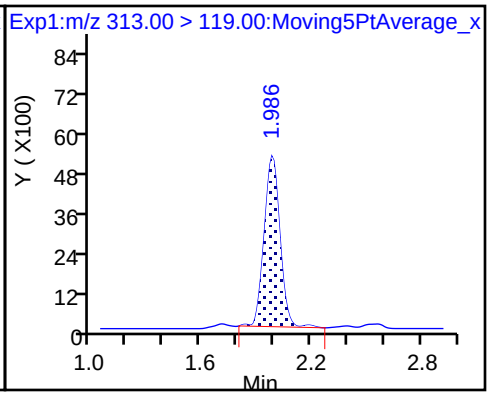
D 7 13C2 PFHxA



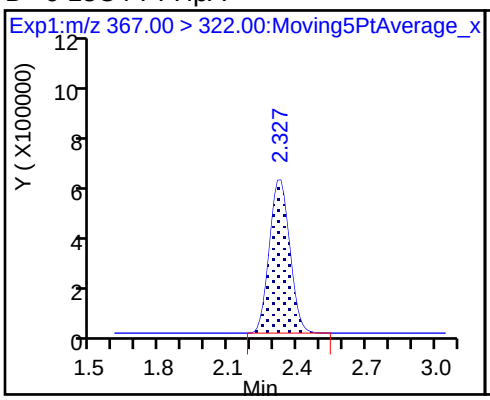
6 Perfluorohexanoic acid



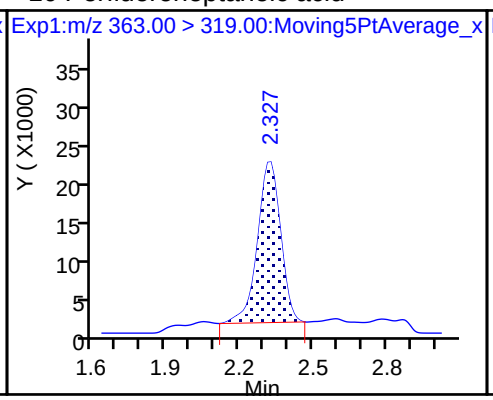
6 Perfluorohexanoic acid



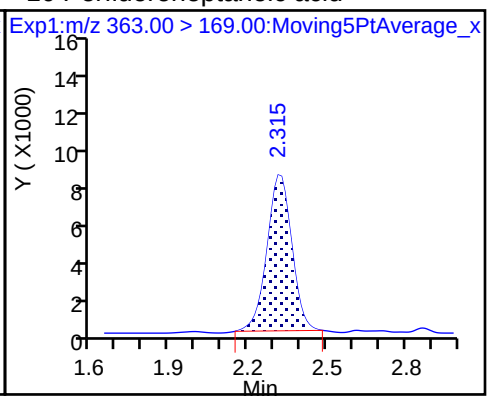
D 9 13C4-PFHpA



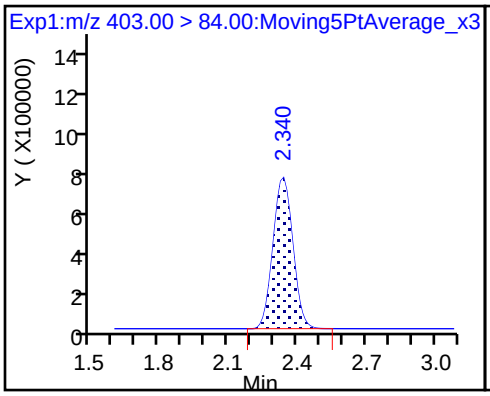
10 Perfluoroheptanoic acid



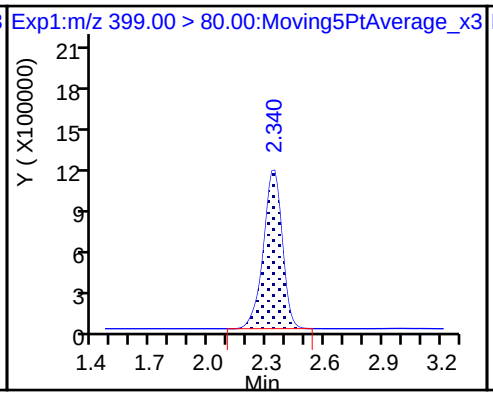
10 Perfluoroheptanoic acid



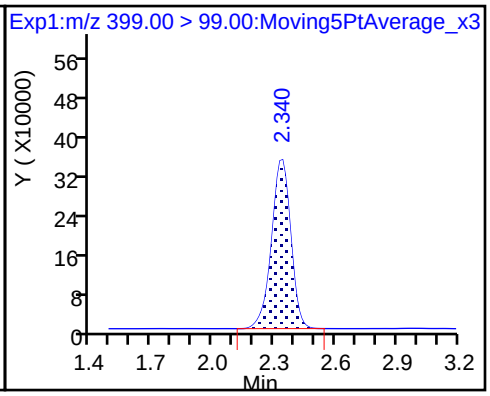
D 11 18O2 PFHxS



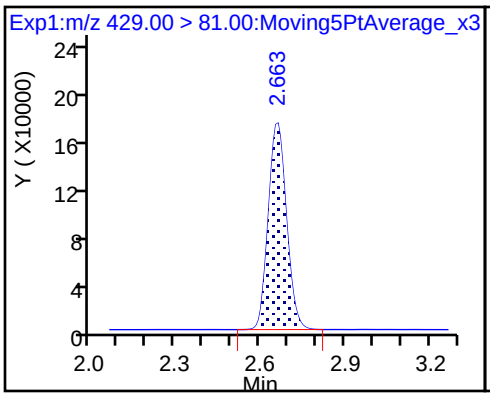
8 Perfluorohexanesulfonic acid



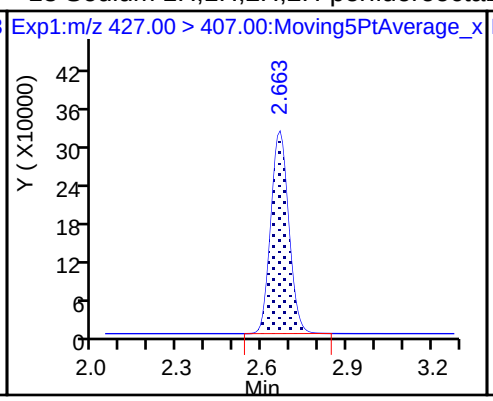
8 Perfluorohexanesulfonic acid



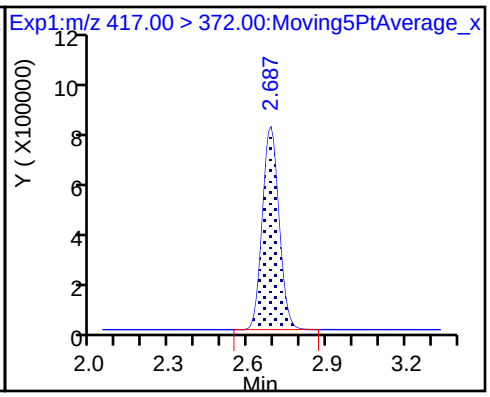
D 12 M2-6:2FTS



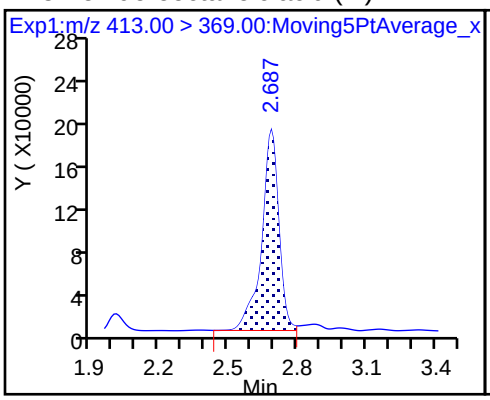
13 Sodium 1H,1H,2H,2H-perfluorooctane



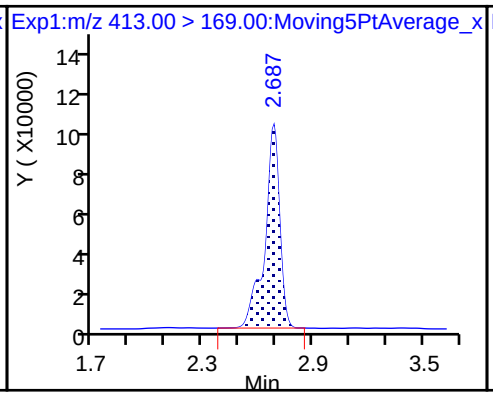
D 14 13C4 PFOA



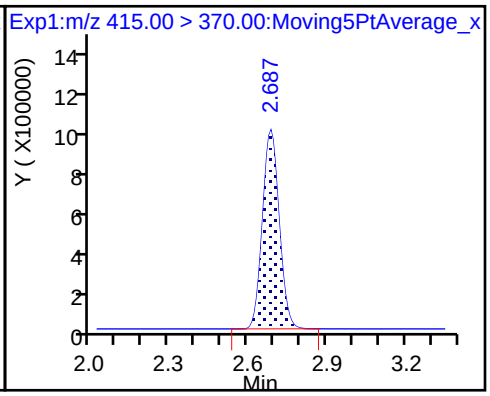
15 Perfluorooctanoic acid (M)



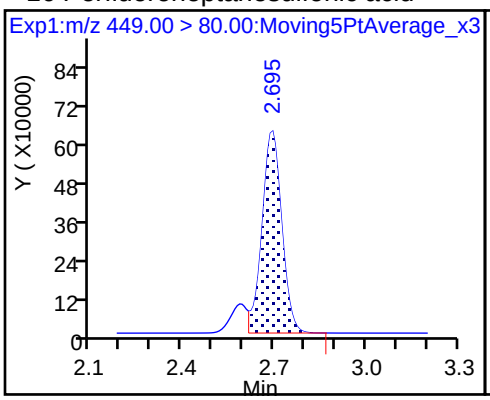
15 Perfluorooctanoic acid



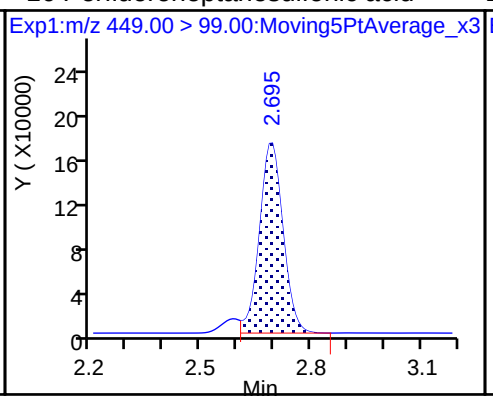
* 62 13C2-PFOA



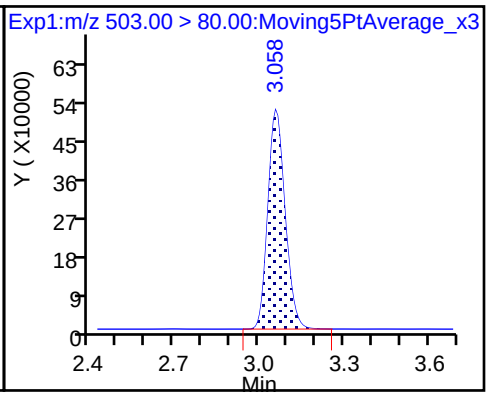
16 Perfluoroheptanesulfonic acid



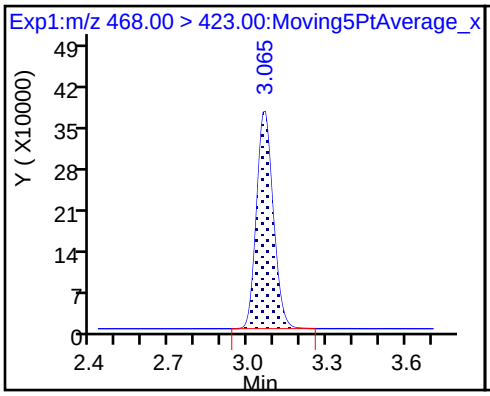
16 Perfluoroheptanesulfonic acid



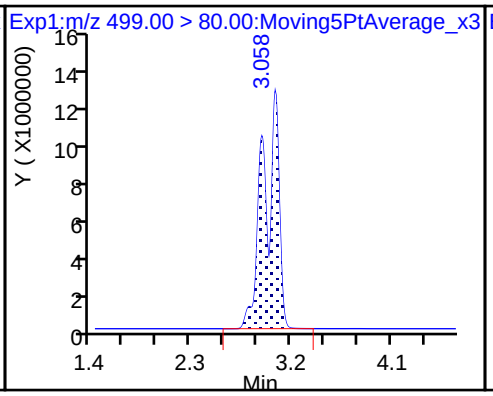
D 18 13C4 PFOS



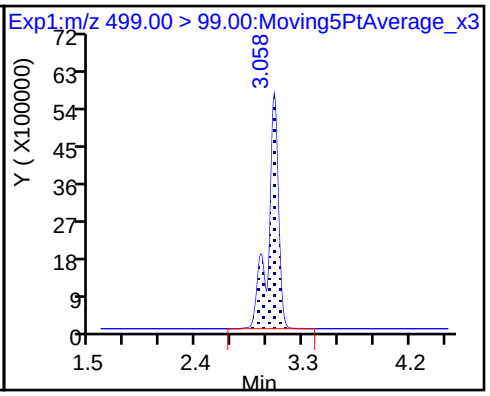
D 19 13C5 PFNA



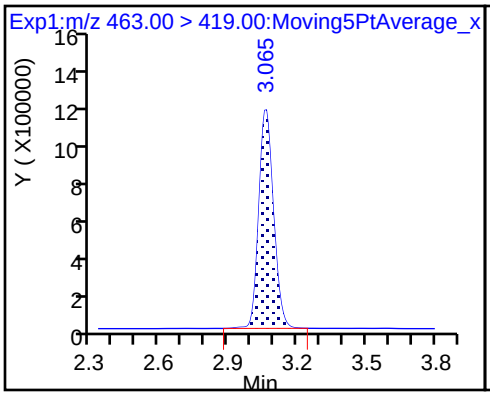
17 Perfluorooctane sulfonic acid



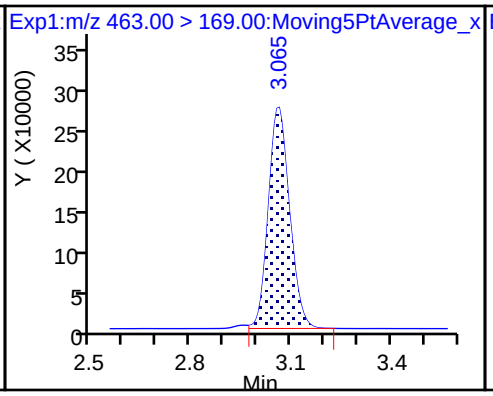
17 Perfluorooctane sulfonic acid



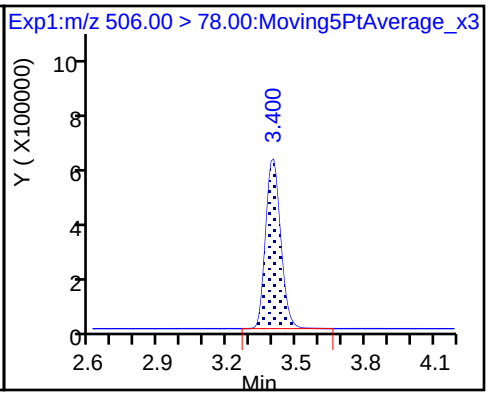
20 Perfluorononanoic acid



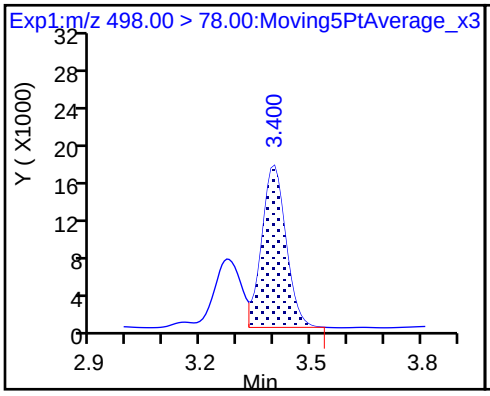
20 Perfluorononanoic acid



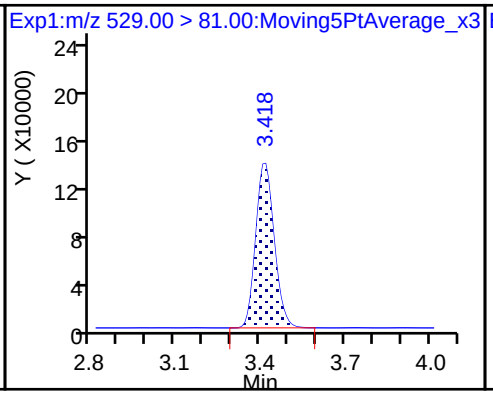
D 21 13C8 FOSA



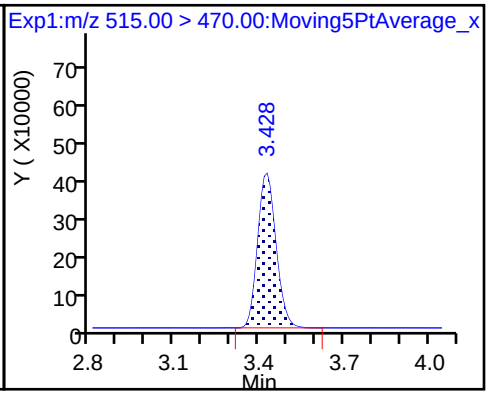
22 Perfluorooctane Sulfonamide



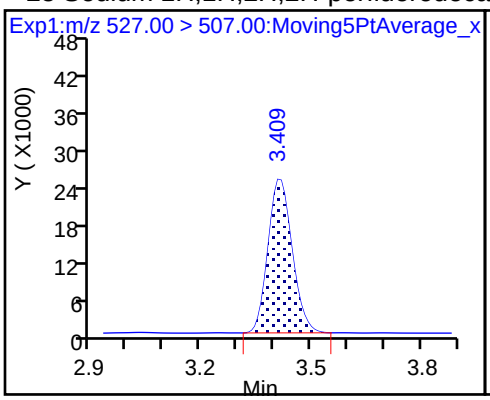
D 26 M2-8:2FTS



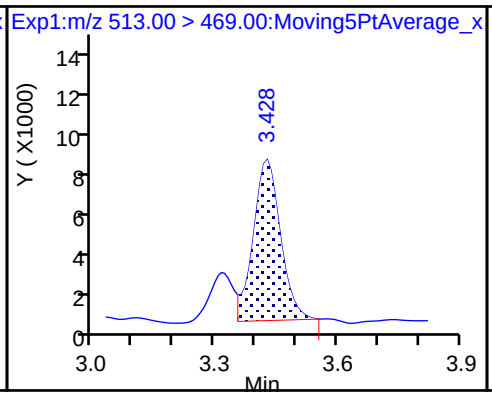
D 23 13C2 PFDA



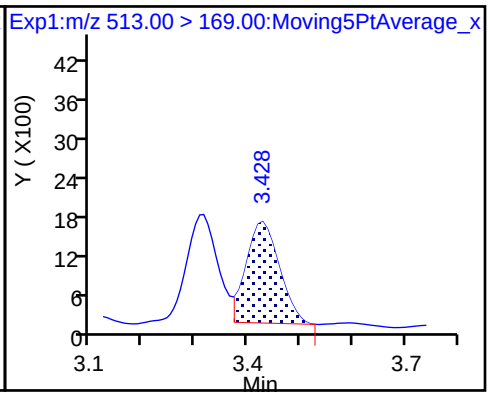
25 Sodium 1H,1H,2H,2H-perfluorodecane



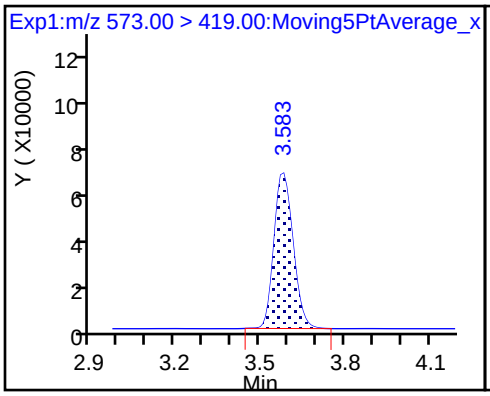
24 Perfluorodecanoic acid



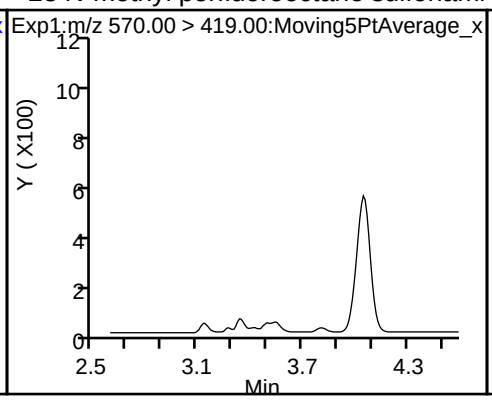
24 Perfluorodecanoic acid



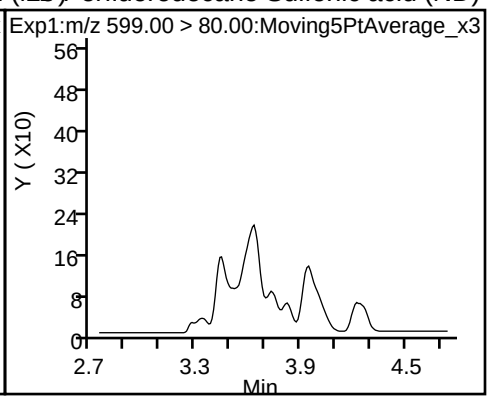
D 27 d3-NMeFOSAA



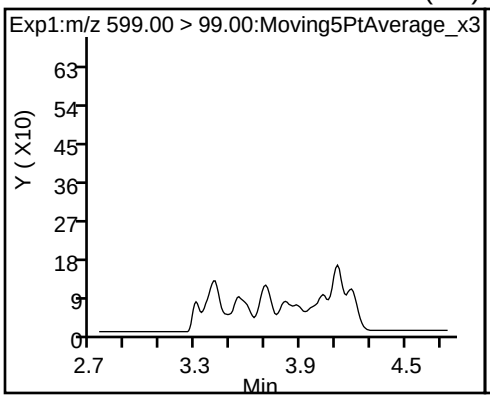
28 N-methyl perfluorooctane sulfonami (ND)



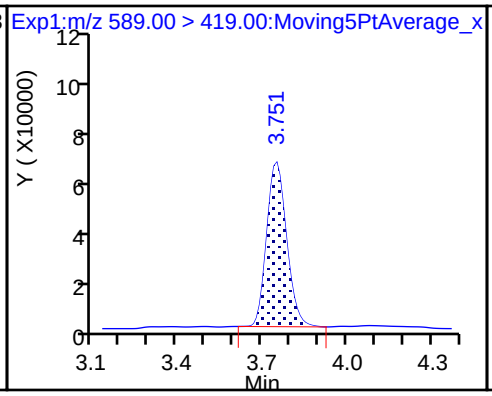
29 Perfluorodecane Sulfonic acid (ND)



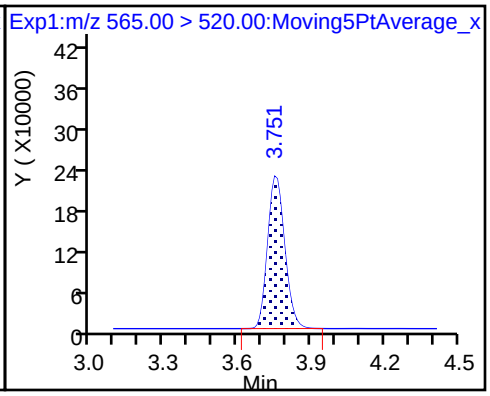
29 Perfluorodecane Sulfonic acid (ND)



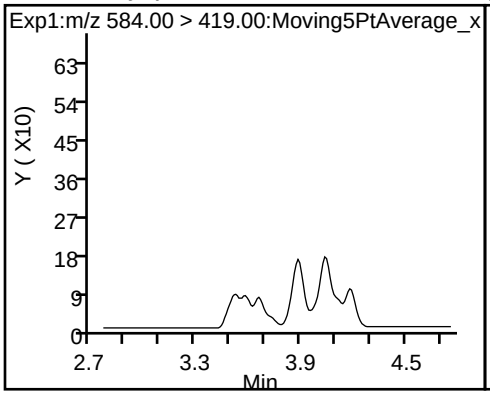
D 32 d5-NEtFOSAA



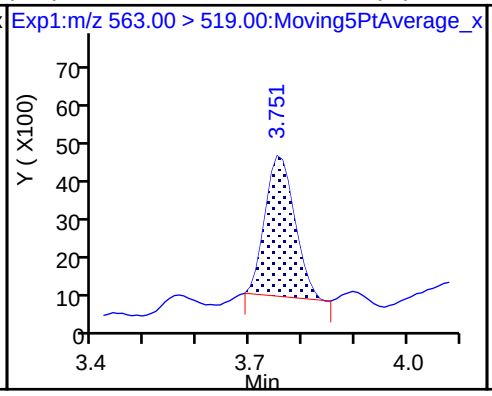
D 30 13C2 PFUnA



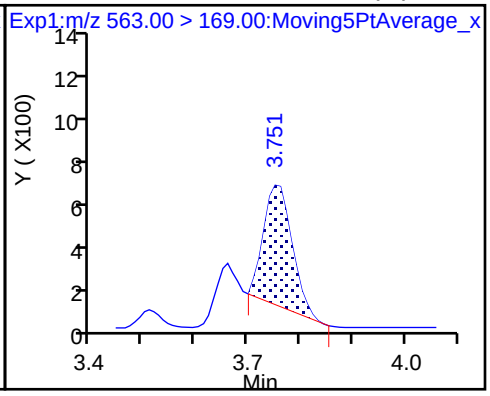
33 N-ethyl perfluorooctane sulfonamid (ND)



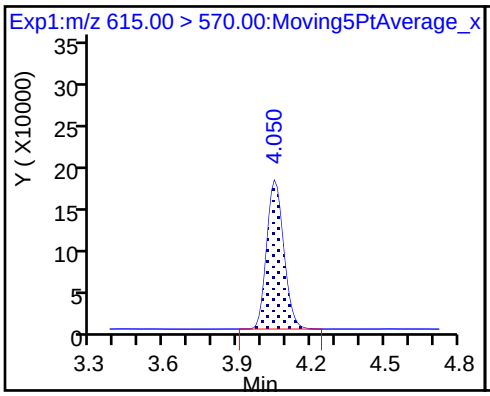
31 Perfluoroundecanoic acid (M)



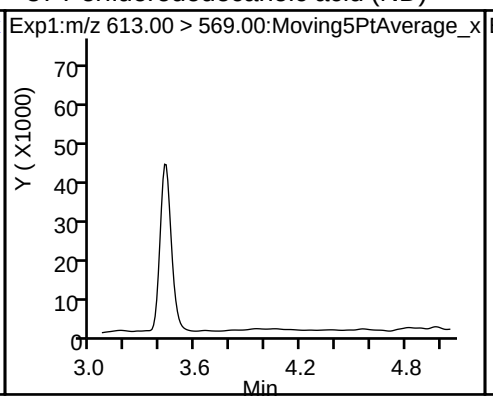
31 Perfluoroundecanoic acid (M)



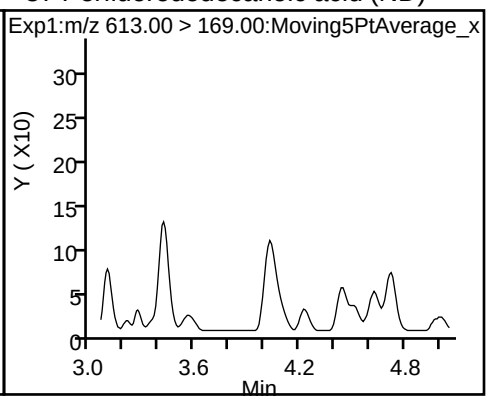
D 36 13C2 PFDoA



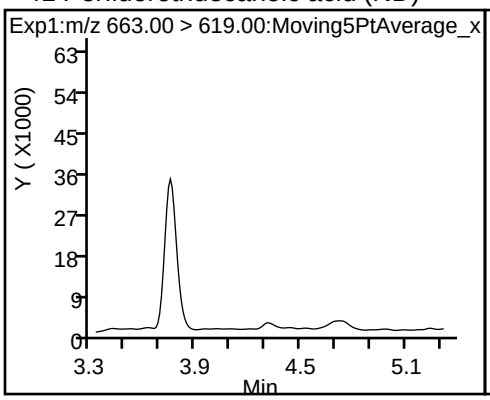
37 Perfluorododecanoic acid (ND)



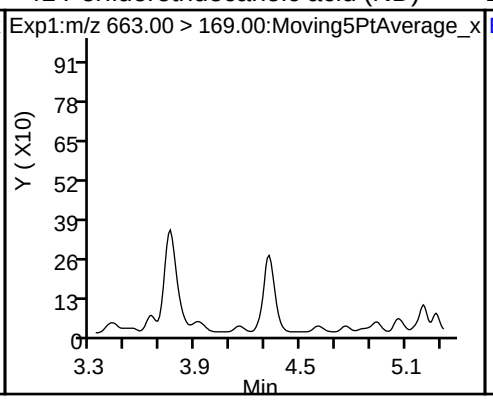
37 Perfluorododecanoic acid (ND)



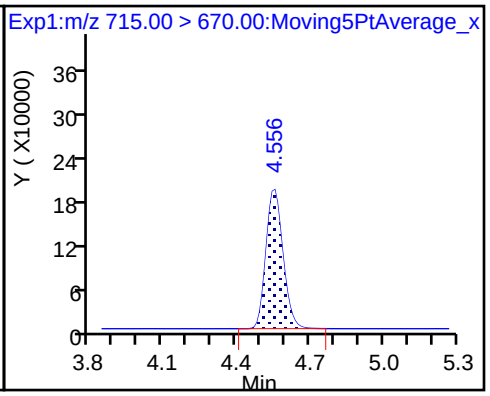
41 Perfluorotridecanoic acid (ND)



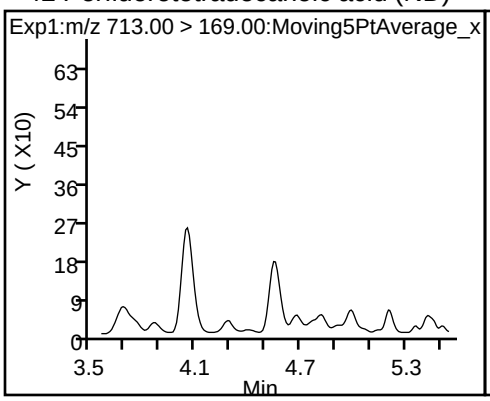
41 Perfluorotridecanoic acid (ND)



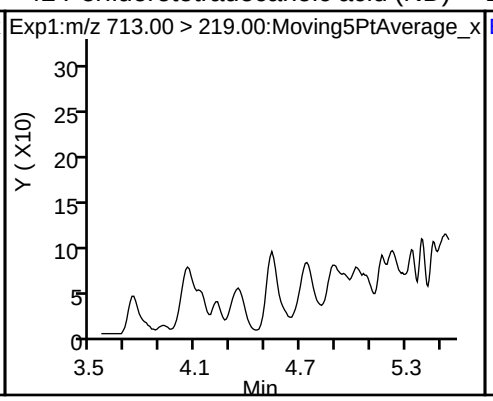
D 43 13C2-PFTeDA



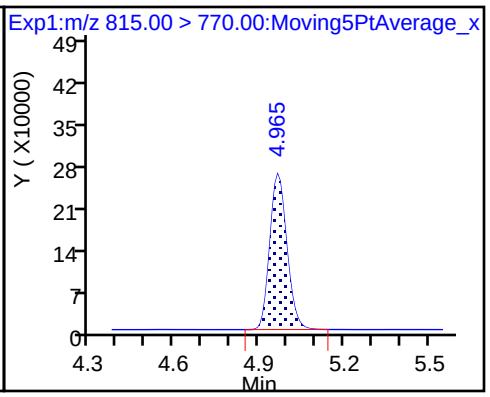
42 Perfluorotetradecanoic acid (ND)



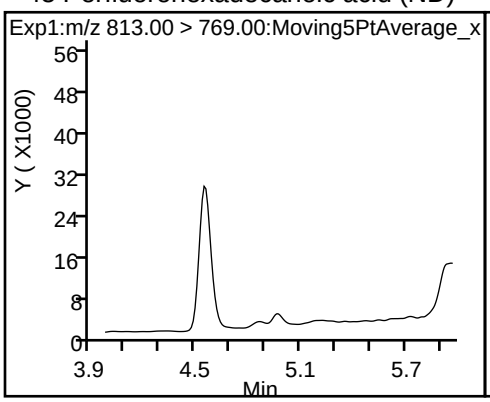
42 Perfluorotetradecanoic acid (ND)



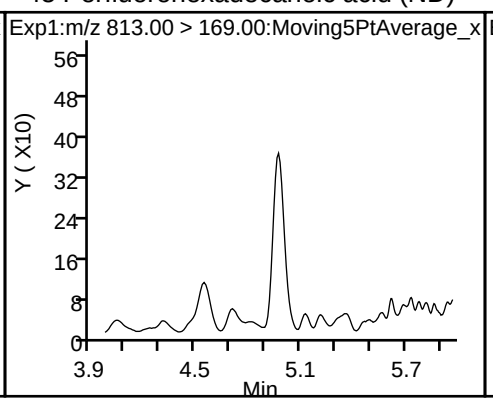
D 44 13C2-PFHxDA



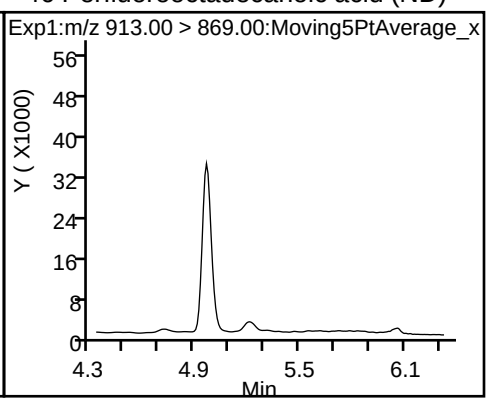
45 Perfluorohexadecanoic acid (ND)



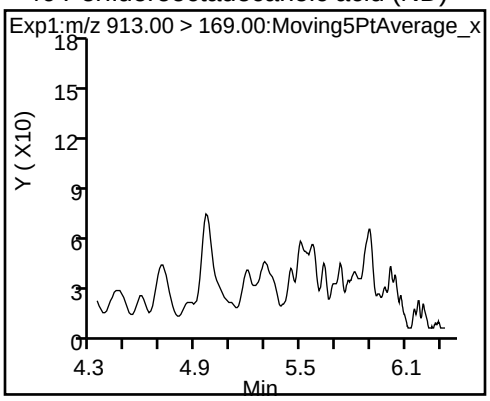
45 Perfluorohexadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

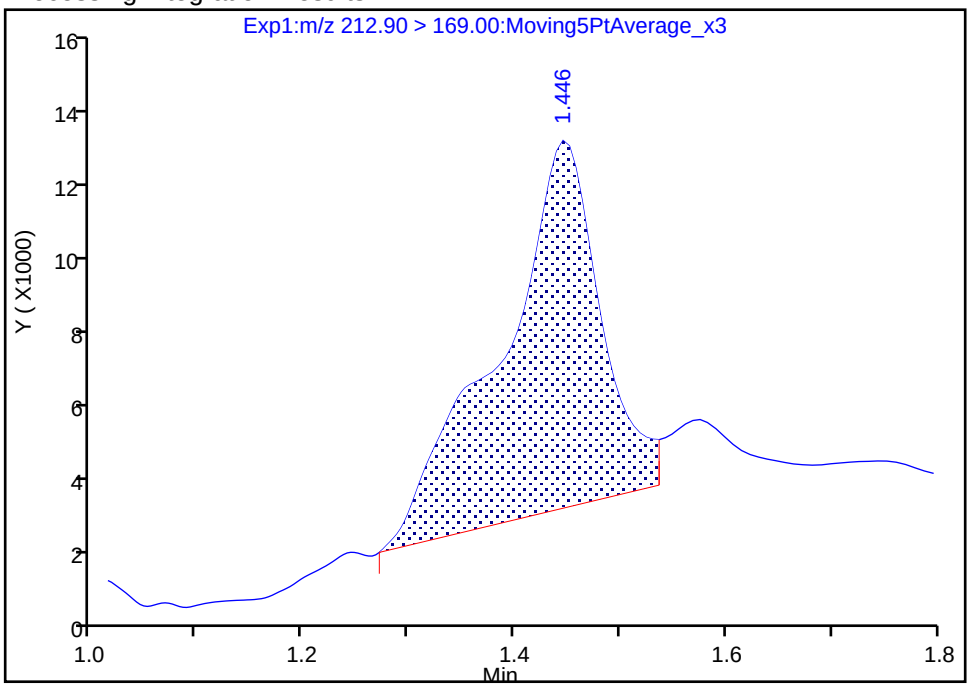
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d				
Injection Date:	21-Mar-2018 00:59:30	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-A	Lab Sample ID:	320-36683-10		
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

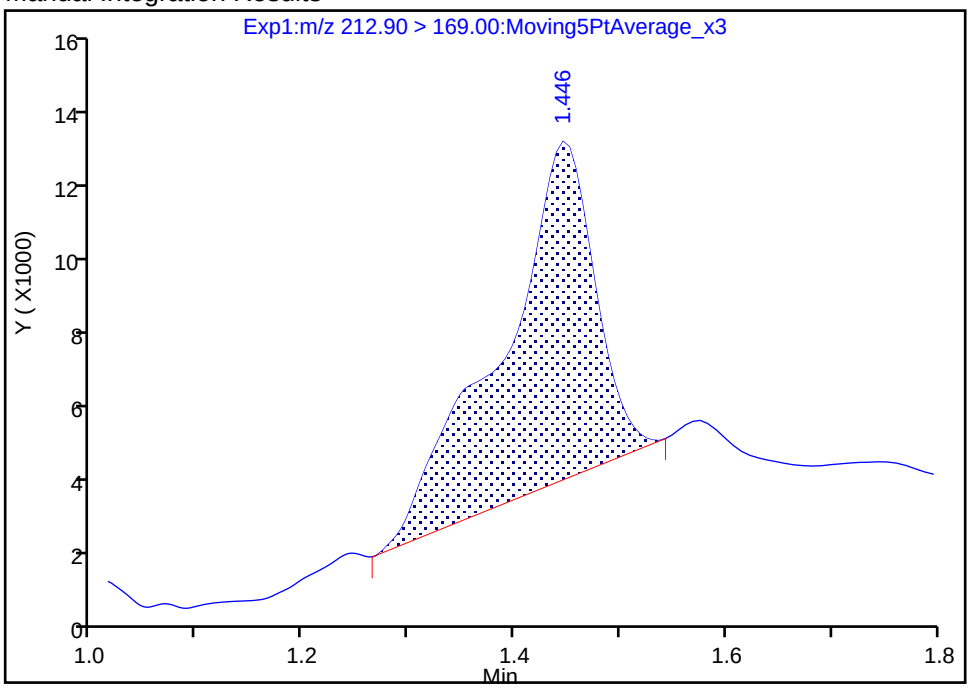
Processing Integration Results

RT: 1.45
Area: 61938
Amount: 0.037546
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 53028
Amount: 0.032145
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:35:12

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

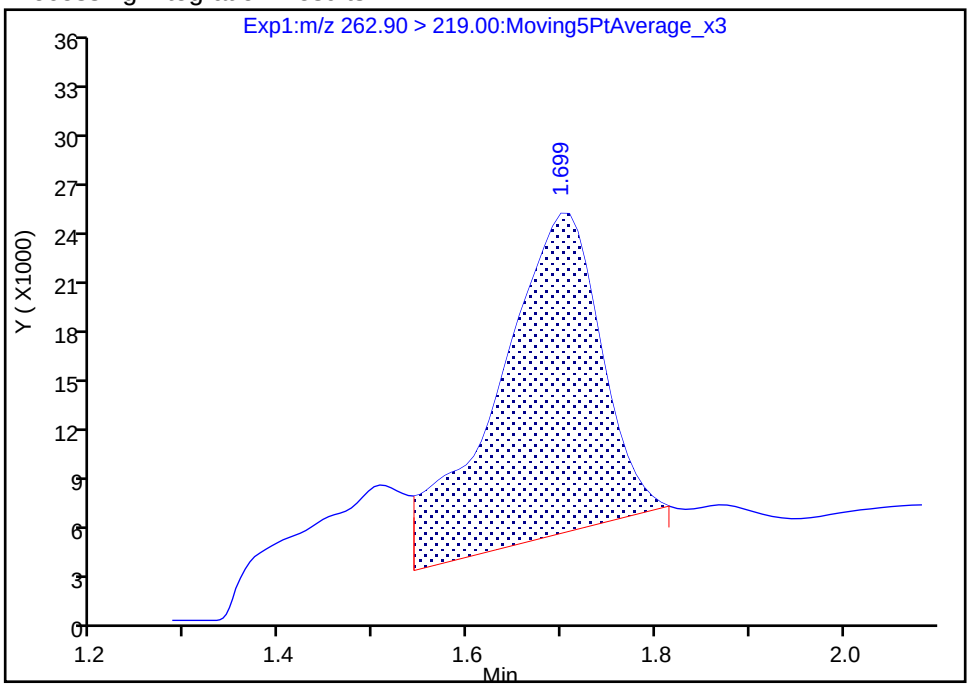
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d				
Injection Date:	21-Mar-2018 00:59:30	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-A	Lab Sample ID:	320-36683-10		
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

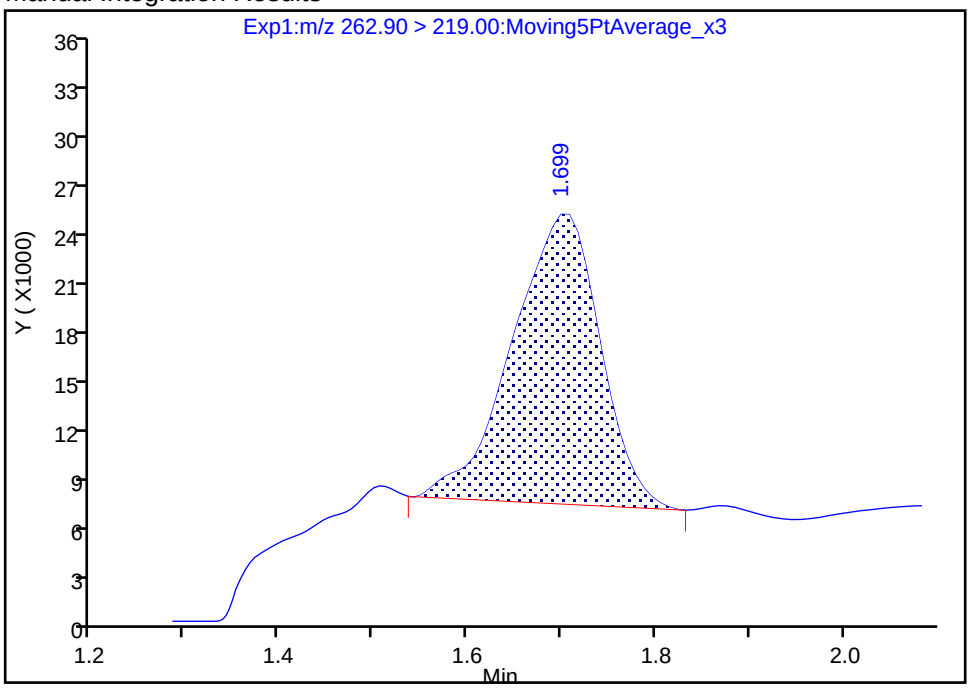
Processing Integration Results

RT: 1.70
Area: 148440
Amount: 0.098387
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 113121
Amount: 0.074977
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:35:29

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

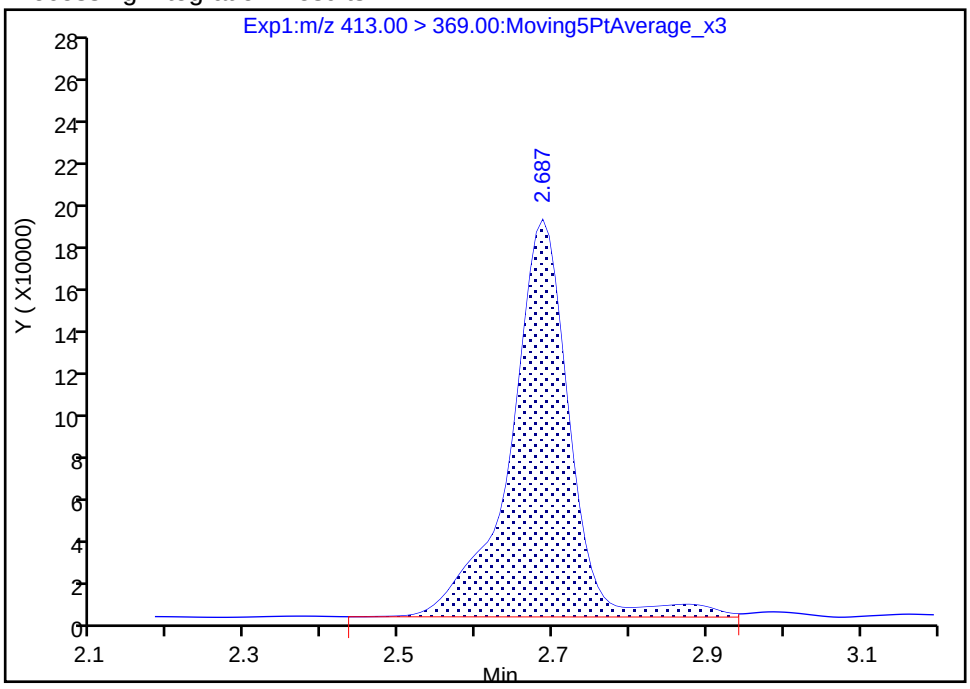
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d				
Injection Date:	21-Mar-2018 00:59:30	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-A	Lab Sample ID:	320-36683-10		
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

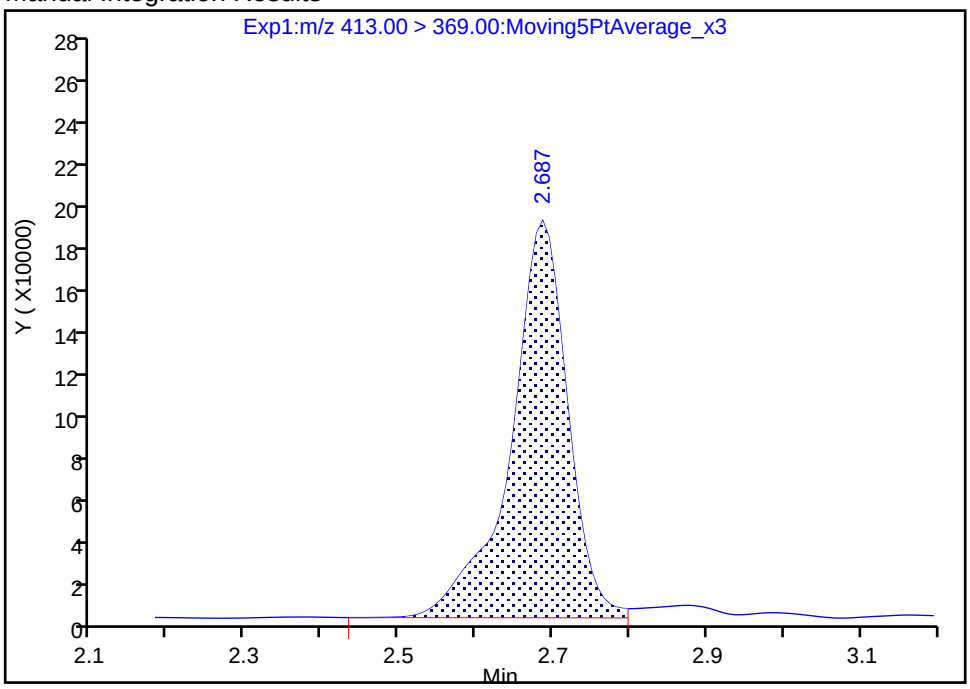
Processing Integration Results

RT: 2.69
Area: 1000601
Amount: 0.667410
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 961870
Amount: 0.641576
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:36:14

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

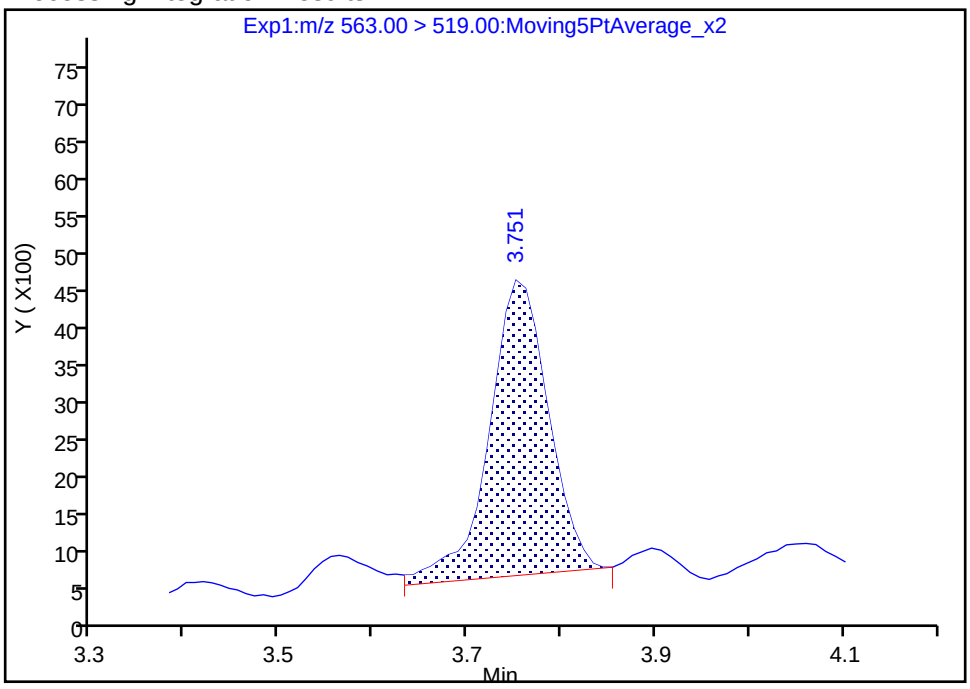
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d				
Injection Date:	21-Mar-2018 00:59:30	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-A	Lab Sample ID:	320-36683-10		
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

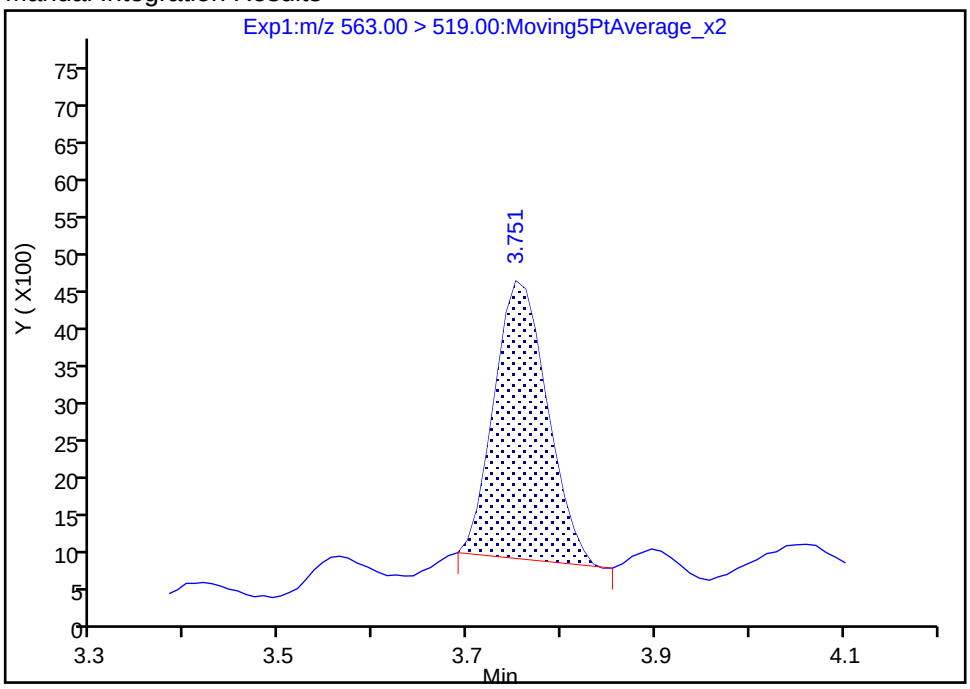
Processing Integration Results

RT: 3.75
Area: 17362
Amount: 0.048319
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 14617
Amount: 0.040680
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:37:12

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

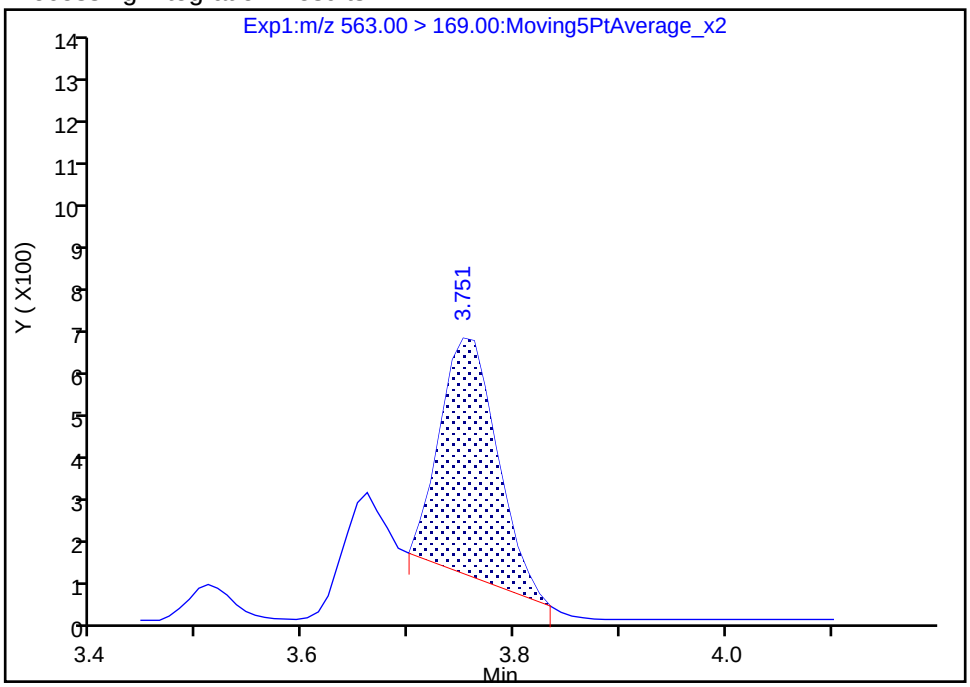
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_037.d				
Injection Date:	21-Mar-2018 00:59:30	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-A	Lab Sample ID:	320-36683-10		
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	16
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

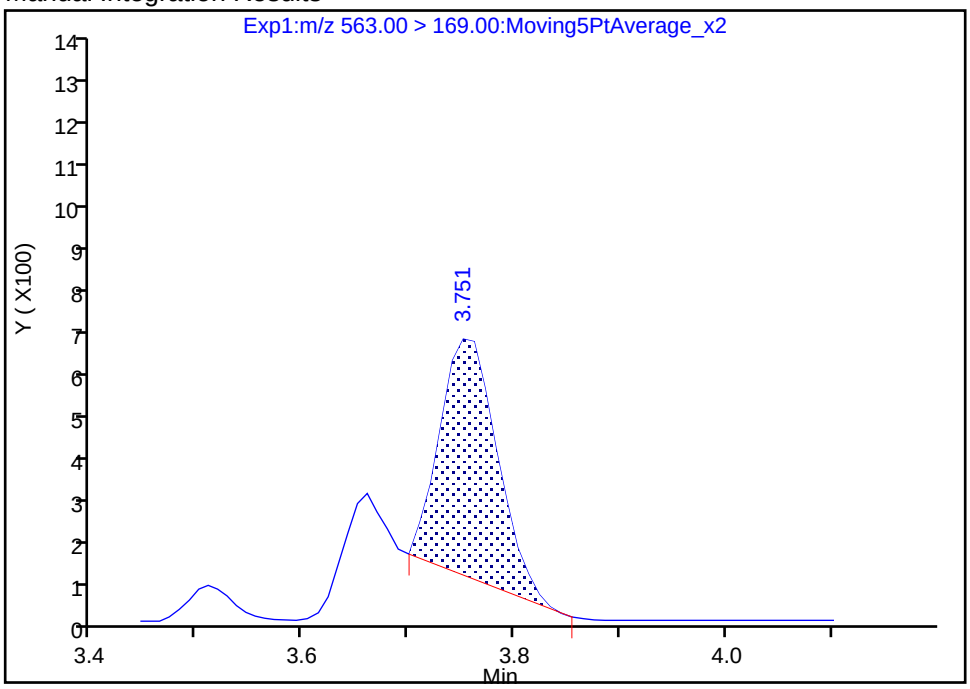
Processing Integration Results

RT: 3.75
Area: 2113
Amount: 0.048319
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 2130
Amount: 0.040680
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:37:28

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') RE | Lab Sample ID: 320-36683-10 RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_021.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.07(g) | Date Analyzed: 03/29/2018 01:59

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000040*	*U H F1*	*0.00020*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	46		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_021.d
Lims ID: 320-36683-A-10-D
Client ID: SB012(10'-12')
Sample Type: Client
Inject. Date: 29-Mar-2018 01:59:53 ALS Bottle#: 24 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-D
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:07:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.434	1.441	-0.007	0.532	5062647	1.69		67.8	43714	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.434	1.446	-0.012	1.000	112127	0.0588			21.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.630	3460887	1.75		69.8	63460	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.718	-0.018	1.000	100460	0.0644			30.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.745	-0.009	0.644	71884	1.59		68.3	497	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.005	152832	0.0636			80.5	
298.90 > 99.00	1.744	1.753	-0.009	1.005	64086		2.38(1.25-3.74)		70.1	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	2.008	-0.022	1.000	366922	0.2431			318	
313.00 > 119.00	1.997	2.008	-0.011	1.005	31414		11.68(5.03-15.10)		295	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	2.009	-0.023	0.737	3691614	1.68		67.4	101019	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.341	-0.013	1.000	136192	0.0890			62.9	
363.00 > 169.00	2.328	2.341	-0.013	1.000	62969		2.16(1.13-3.40)		87.9	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.354	-0.013	1.000	6589370	3.32			27113	
399.00 > 99.00	2.341	2.354	-0.013	1.000	2031103		3.24(1.50-4.49)		9339	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	3698938	1.71		68.4	59355	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	4213796	1.58		66.8	75682	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.689	-0.016	1.000	1168543	2.20			12832	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	722175	1.61		67.8	19966	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.712	-0.016	1.000	996446	0.6355			369	
413.00 > 169.00	2.697	2.712	-0.016	1.000	568676		1.75(0.84-2.52)		1534	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.712	-0.016		5901045	2.50			108378	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.704	2.720	-0.016	1.000	2747473	2.39			617	
449.00 > 99.00	2.704	2.720	-0.016	1.000	761308		3.61(1.94-5.82)		1195	M
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.025	1.000	3469701	1.57		62.7	84697	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.072	3.080	-0.008	1.000	121086964	121.4			48853	E
499.00 > 99.00	3.072	3.080	-0.008	1.000	36538100		3.31(2.31-6.93)		96465	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.088	-0.016	1.000	6926539	7.59			8143	
463.00 > 169.00	3.072	3.088	-0.016	1.000	1794209		3.86(1.90-5.69)		43627	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	2287376	1.17		46.9	46156	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	2140129	1.10		46.1	26710	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.417	-0.009	1.000	13971	0.009308			53.7	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	3806341	1.45		58.2	45453	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.435	-0.009	1.000	111268	0.2502			2041	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.444	-0.009	1.000	51940	0.0503			130	
513.00 > 169.00	3.435	3.444	-0.009	1.000	10260		5.06(2.36-7.09)		50.1	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	834594	1.38		57.5	16396	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	2611484	1.53		61.1	40466	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.611	-0.019	1.332	1121401	1.25		49.8	38617	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.771	3.779	-0.008	1.000	13682	0.0197			54.7	
563.00 > 169.00	3.771	3.779	-0.008	1.000	3889		3.52(2.12-6.36)		116	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.779	-0.019	1.395	1206557	1.18		47.1	4185	
D 30 13C2 PFUnA										
565.00 > 520.00	3.771	3.790	-0.019	1.398	2011472	1.31		52.6	57542	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.089	-0.030	1.505	2210476	1.27		50.9	17878	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.585	-0.020	1.693	2934993	1.38		55.4	17654	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.982	4.990	-0.008	1.000	33738	-0.001887			9.9	
813.00 > 169.00	4.982	4.990	-0.008	1.000	5877		5.74(2.86-8.58)		74.0	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	5.008	-0.026	1.848	4143071	1.19		47.7	13091	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:39 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_021.d

Injection Date: 29-Mar-2018 01:59:53 Instrument ID: A8_N

Lims ID: 320-36683-A-10-D Lab Sample ID: 320-36683-10

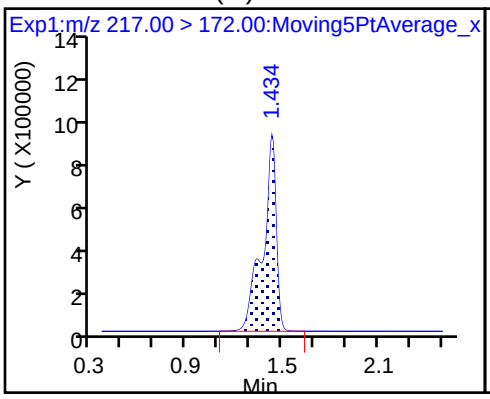
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 18

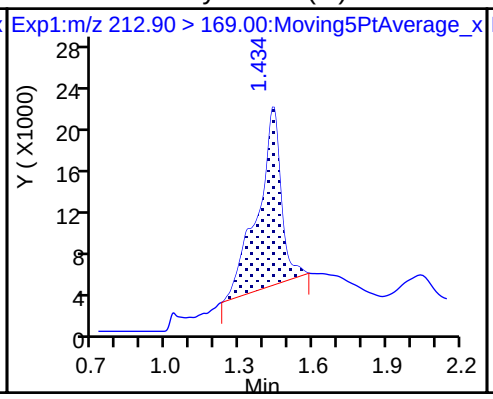
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

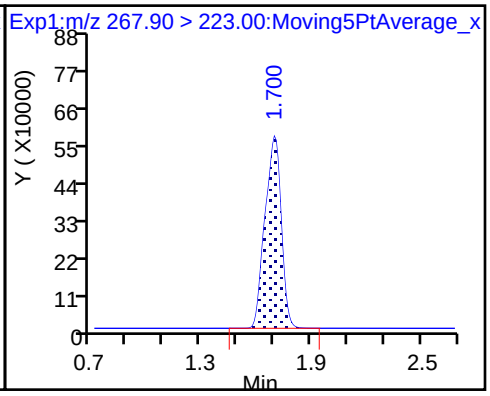
D 1 13C4 PFBA (M)



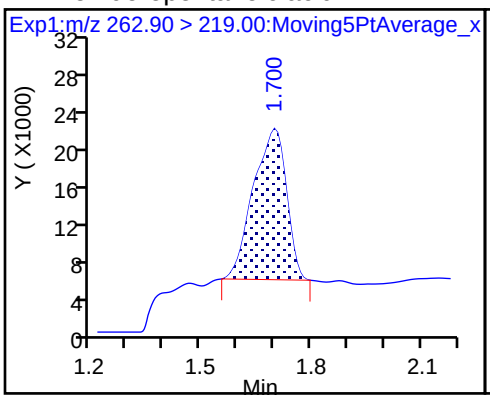
2 Perfluorobutyric acid (M)



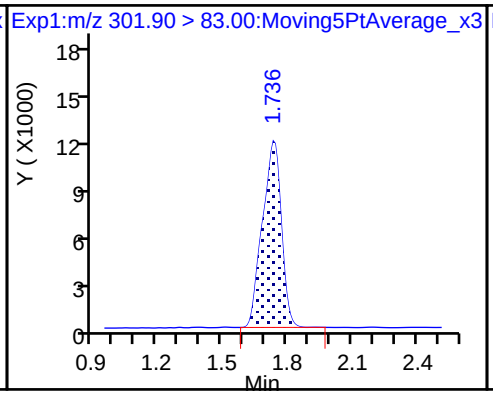
D 3 13C5-PFPeA



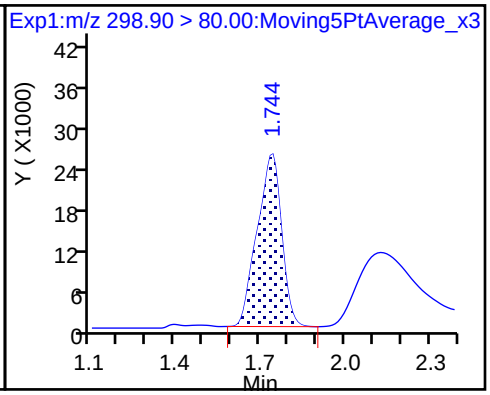
4 Perfluoropentanoic acid



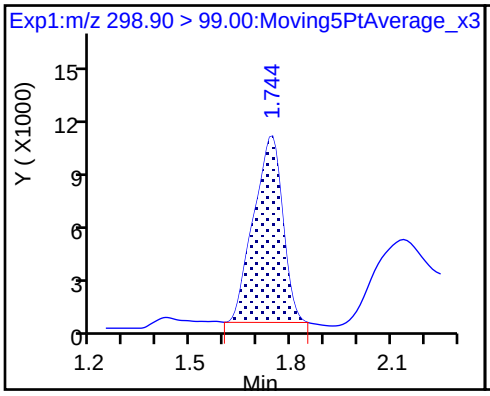
D 47 13C3-PFBS



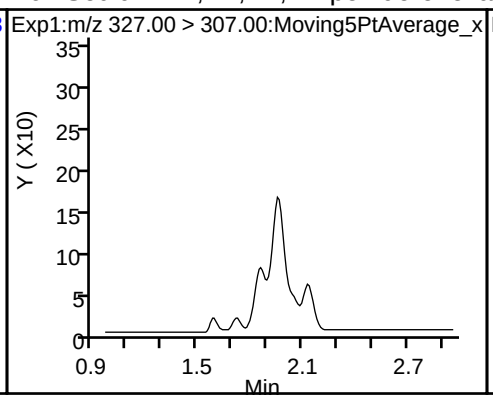
5 Perfluorobutanesulfonic acid



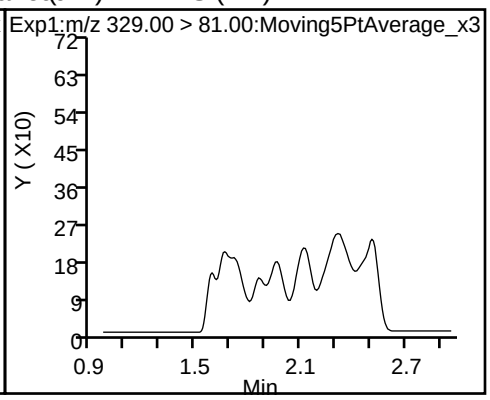
5 Perfluorobutanesulfonic acid



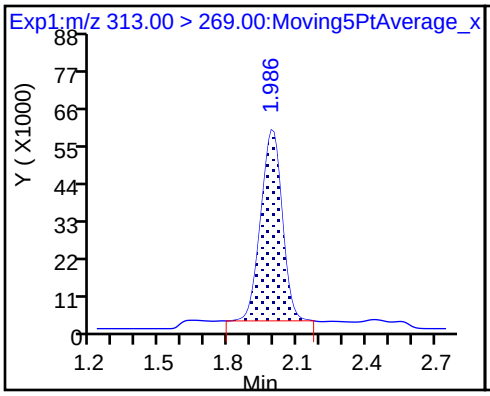
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



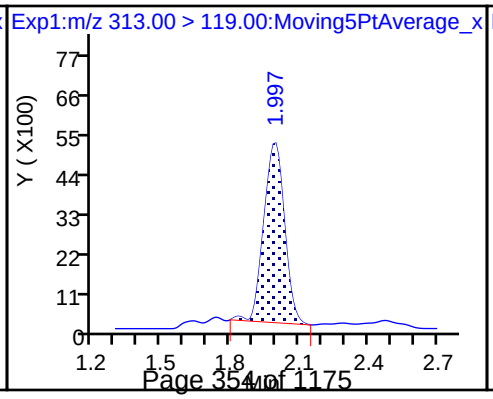
D 60 M2-4:2FTS (ND)



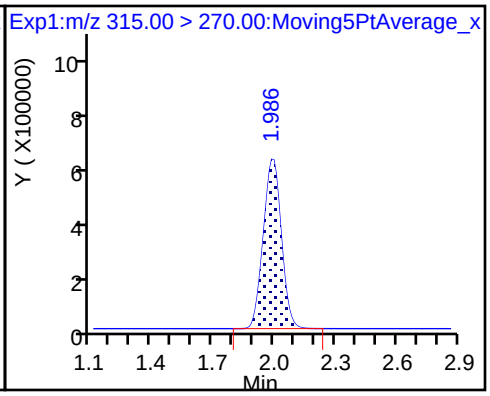
6 Perfluorohexanoic acid



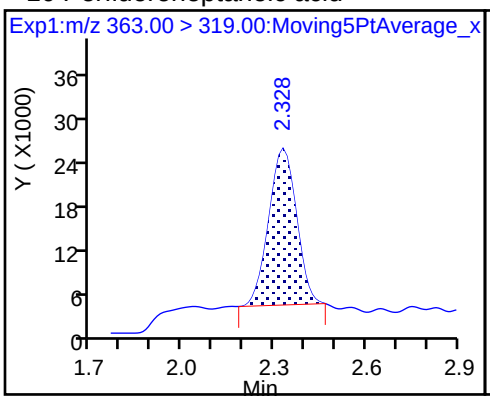
6 Perfluorohexanoic acid



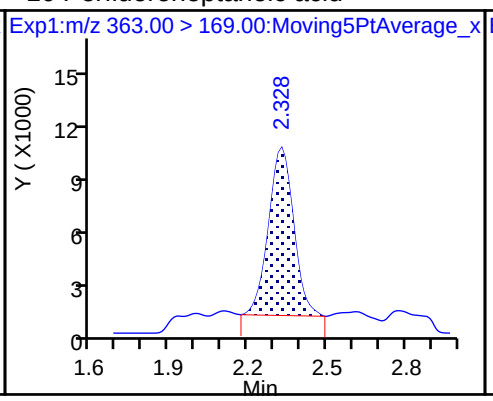
D 7 13C2 PFHxA



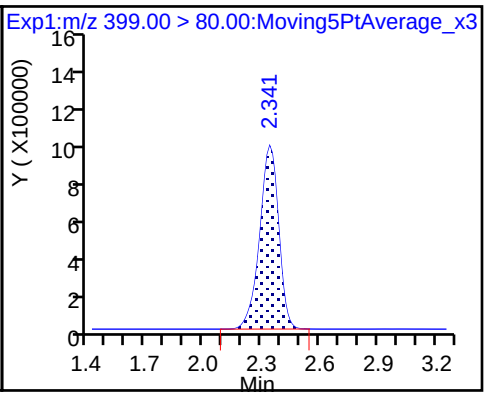
10 Perfluoroheptanoic acid



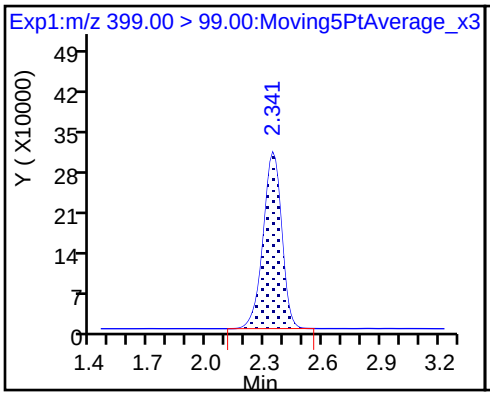
10 Perfluoroheptanoic acid



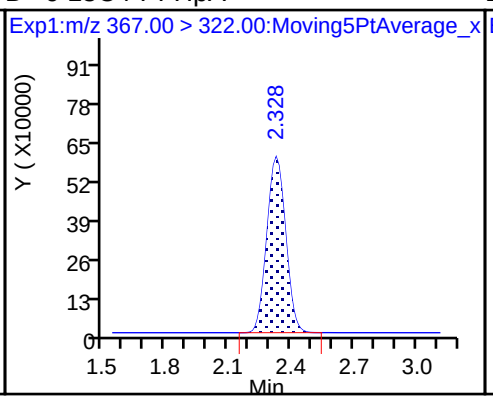
8 Perfluorohexanesulfonic acid



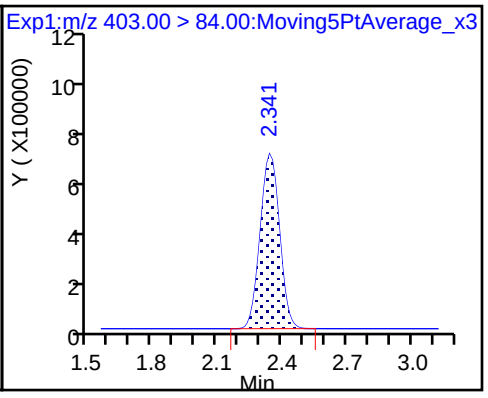
8 Perfluorohexanesulfonic acid



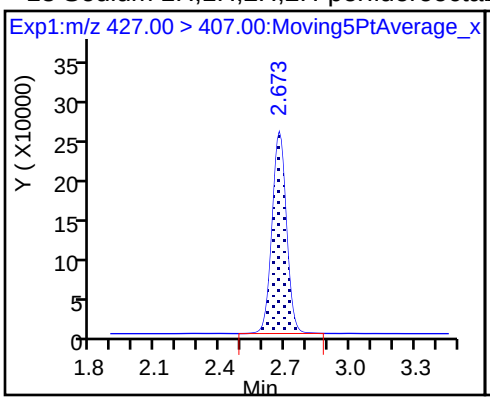
D 9 13C4-PFHpA



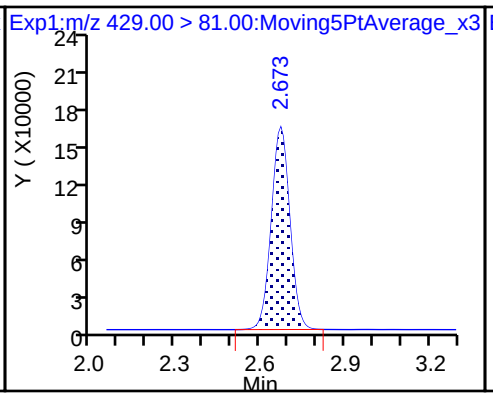
D 11 18O2 PFHxS



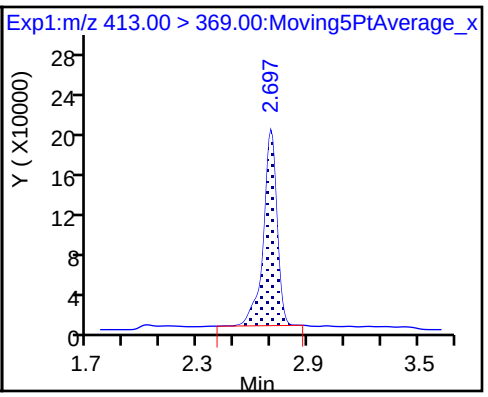
13 Sodium 1H,1H,2H,2H-perfluorooctane



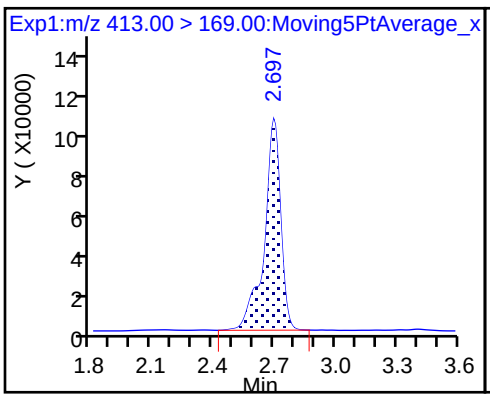
D 12 M2-6:2FTS



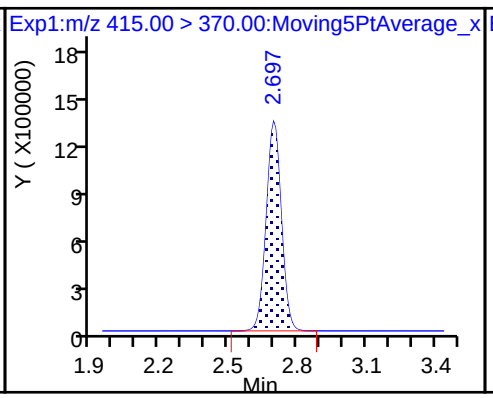
15 Perfluorooctanoic acid



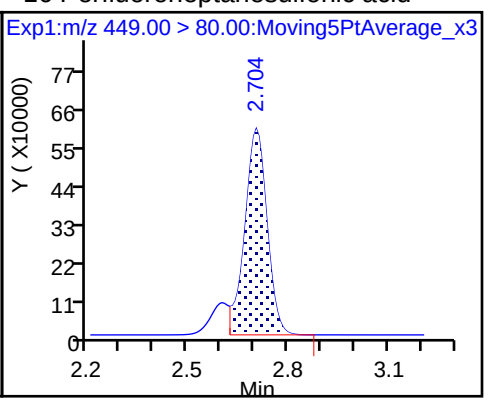
15 Perfluorooctanoic acid



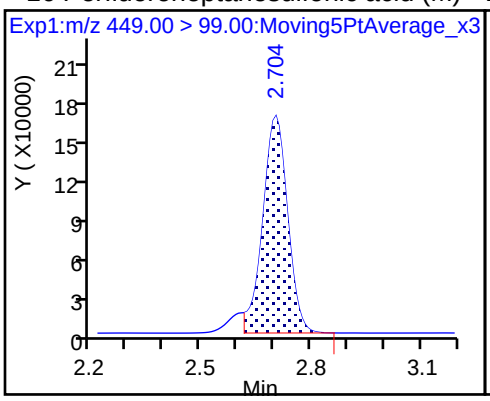
* 62 13C2-PFOA



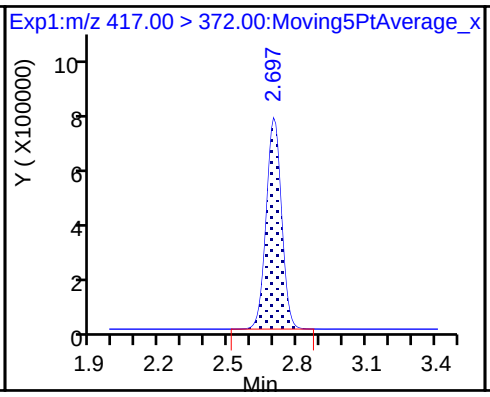
16 Perfluoroheptanesulfonic acid



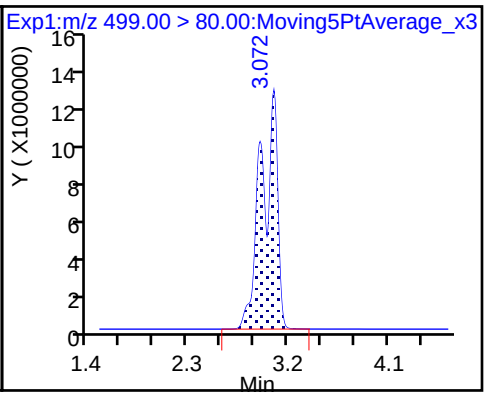
16 Perfluoroheptanesulfonic acid (M)



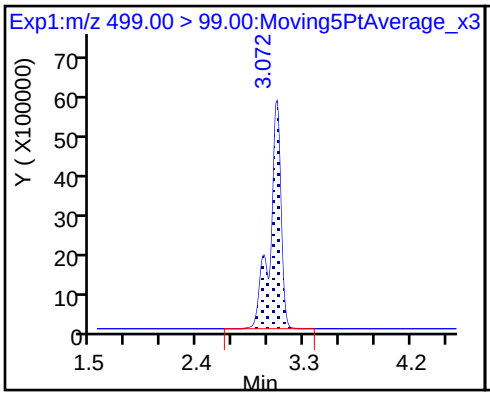
D 14 13C4 PFOA



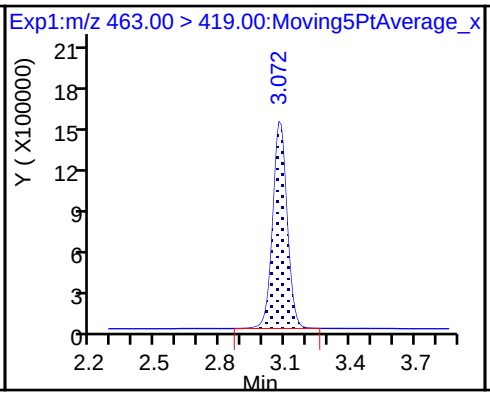
17 Perfluorooctane sulfonic acid



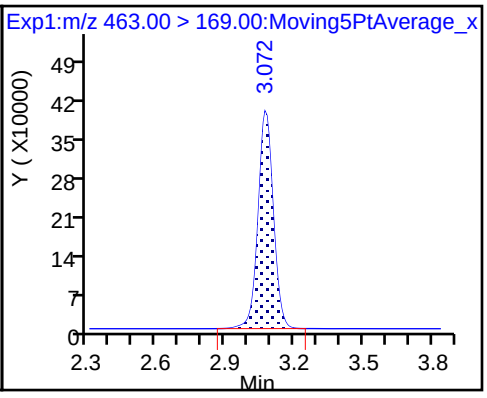
17 Perfluorooctane sulfonic acid



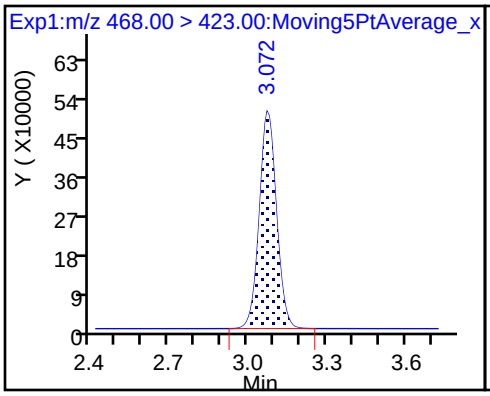
20 Perfluorononanoic acid



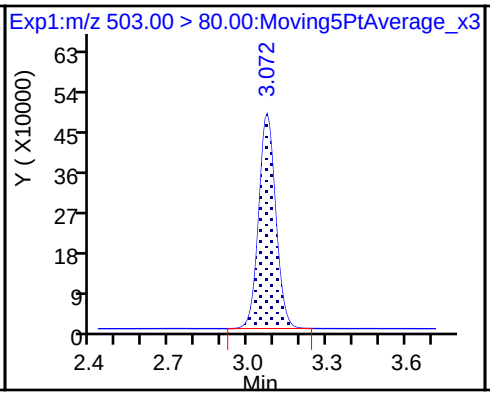
20 Perfluorononanoic acid



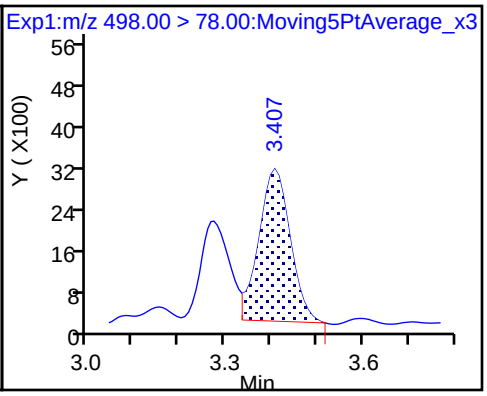
D 19 13C5 PFNA



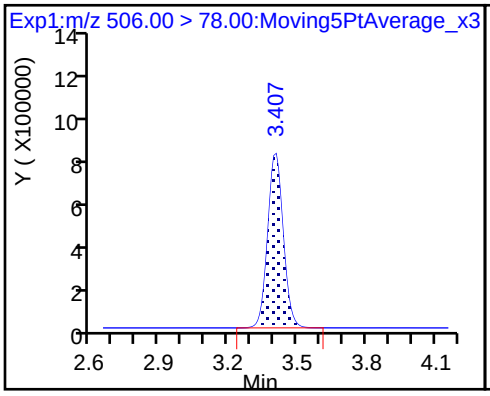
D 18 13C4 PFOS



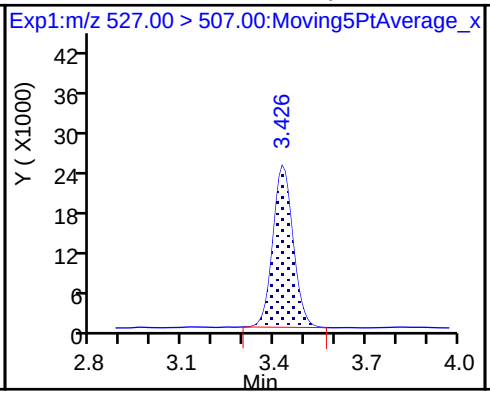
22 Perfluorooctane Sulfonamide



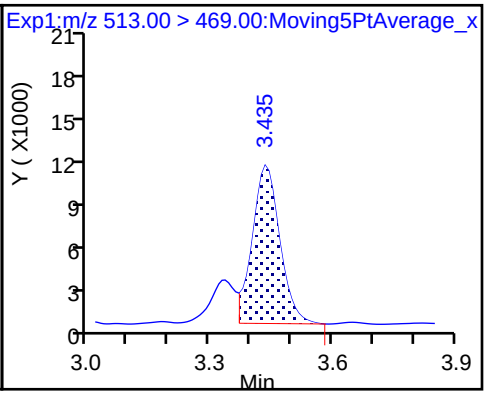
D 21 13C8 FOSA



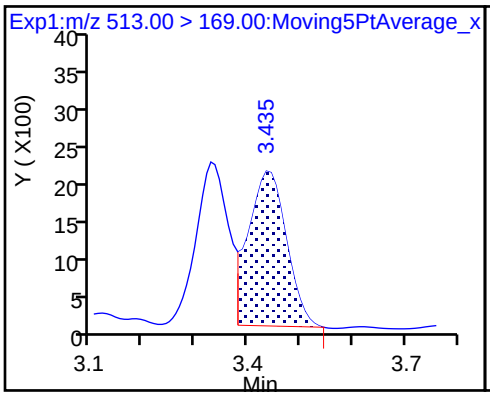
25 Sodium 1H,1H,2H,2H-perfluorodecan



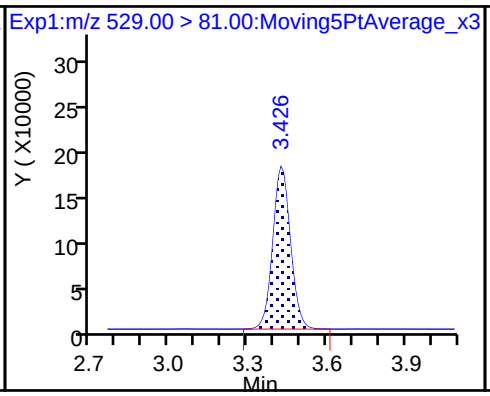
24 Perfluorodecanoic acid



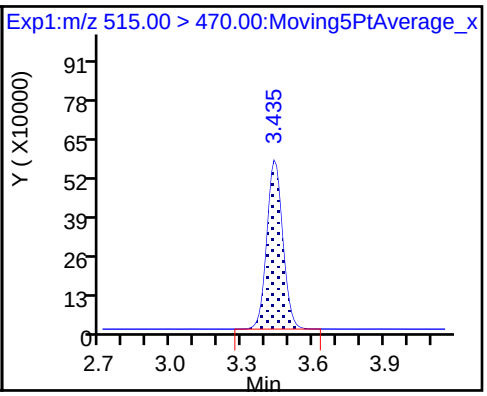
24 Perfluorodecanoic acid



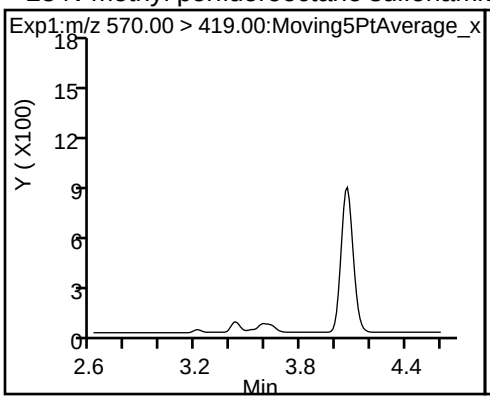
D 26 M2-8:2FTS



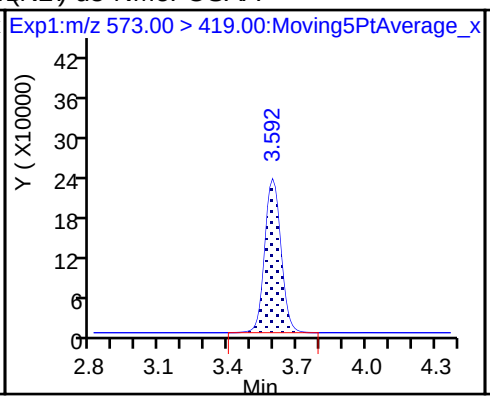
D 23 13C2 PFDA



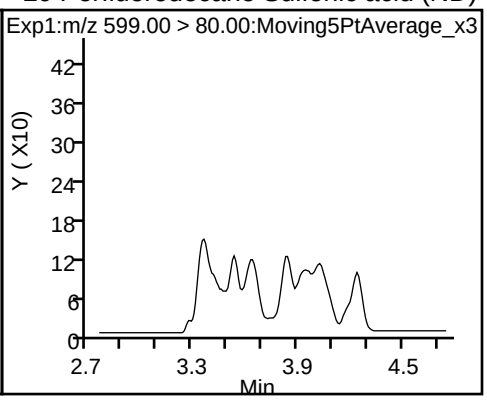
28 N-methyl perfluorooctane sulfonamid (ND)



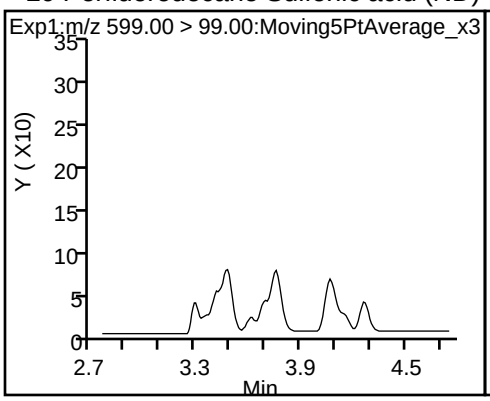
D 27 d3-NMeFOSAA



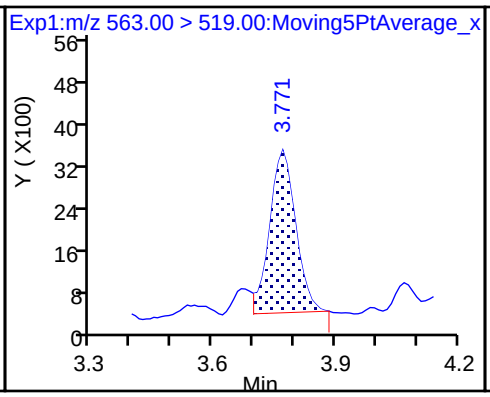
29 Perfluorodecane Sulfonic acid (ND)



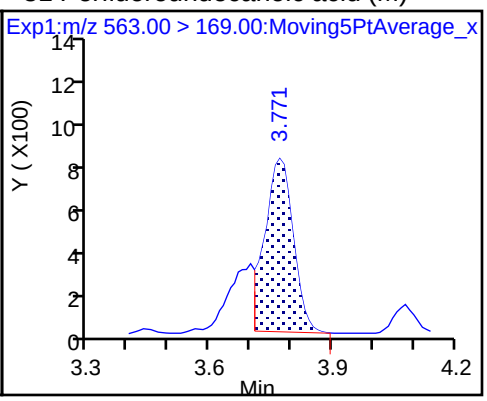
29 Perfluorodecane Sulfonic acid (ND)



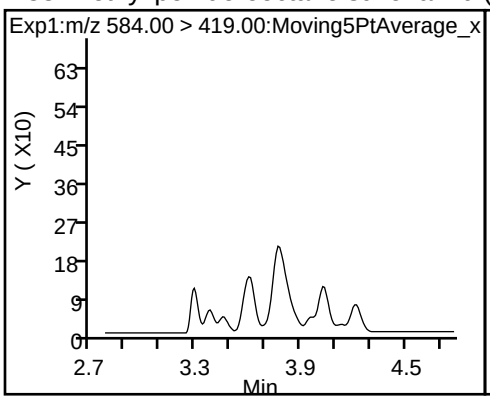
31 Perfluoroundecanoic acid



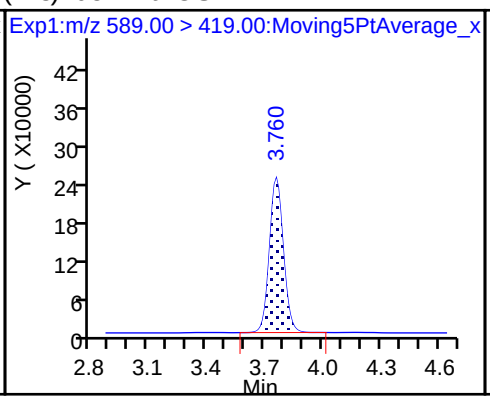
31 Perfluoroundecanoic acid (M)



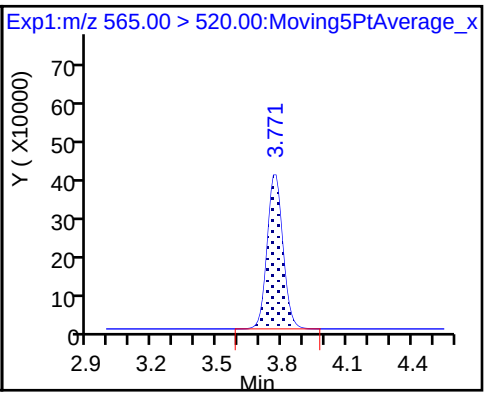
33 N-ethyl perfluorooctane sulfonamid (ND)



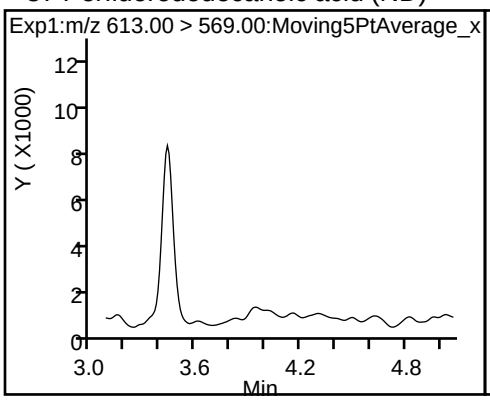
D 32 d5-NEtFOSAA



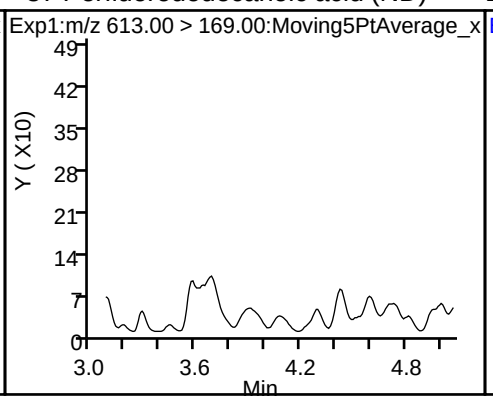
D 30 13C2 PFUnA



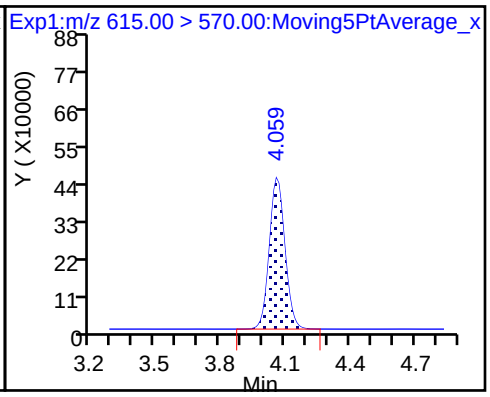
37 Perfluorododecanoic acid (ND)



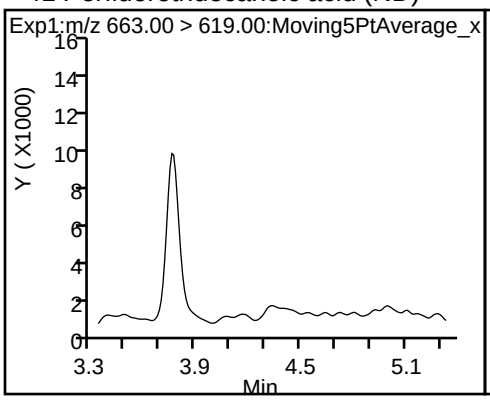
37 Perfluorododecanoic acid (ND)



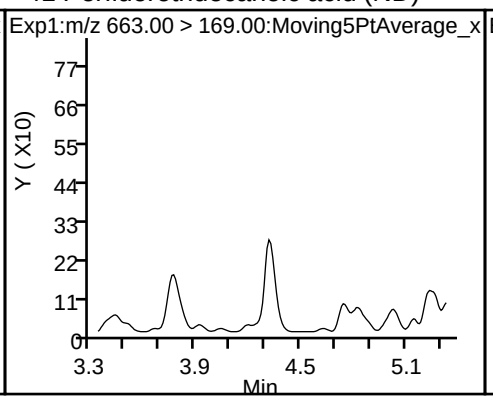
D 36 13C2 PFDoA



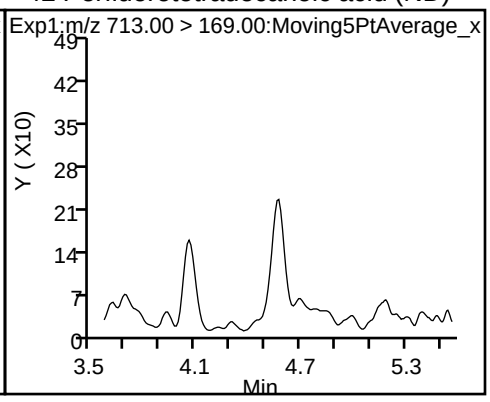
41 Perfluorotridecanoic acid (ND)



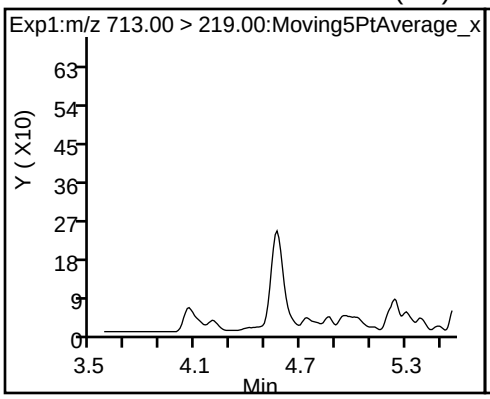
41 Perfluorotridecanoic acid (ND)



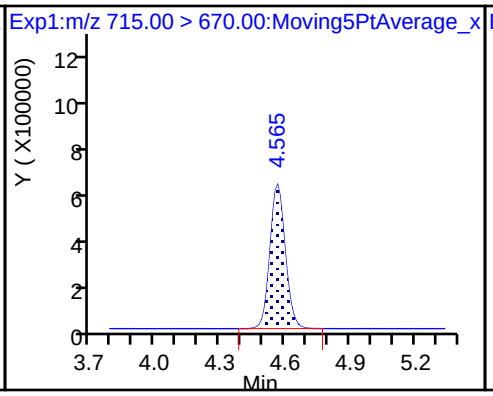
42 Perfluorotetradecanoic acid (ND)



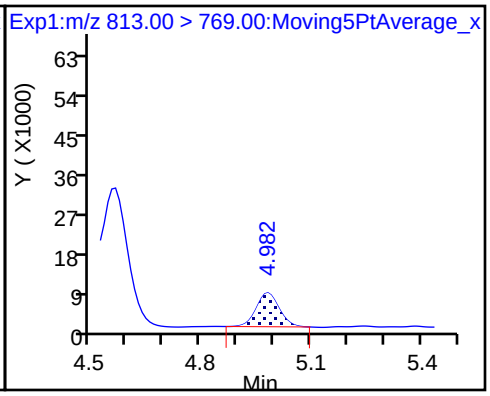
42 Perfluorotetradecanoic acid (ND)



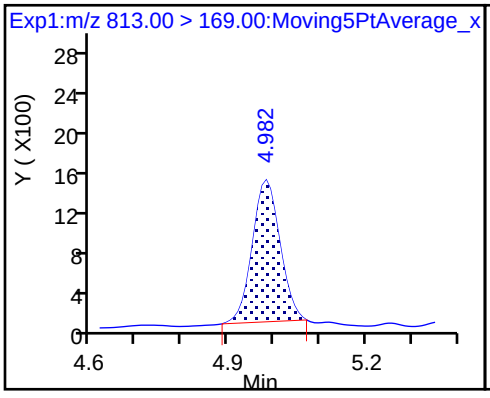
D 43 13C2-PFTeDA



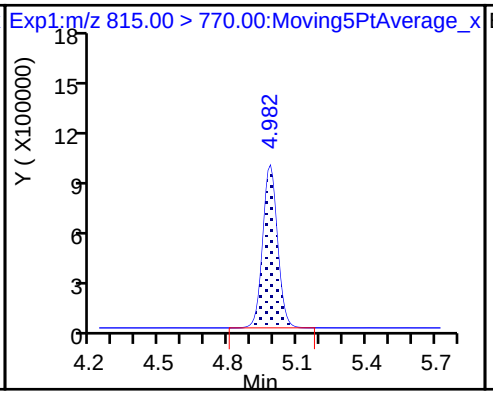
45 Perfluorohexadecanoic acid



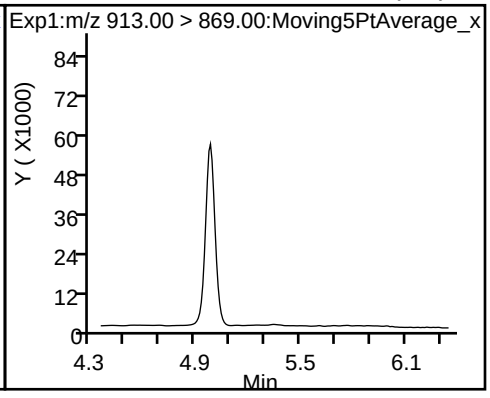
45 Perfluorohexadecanoic acid



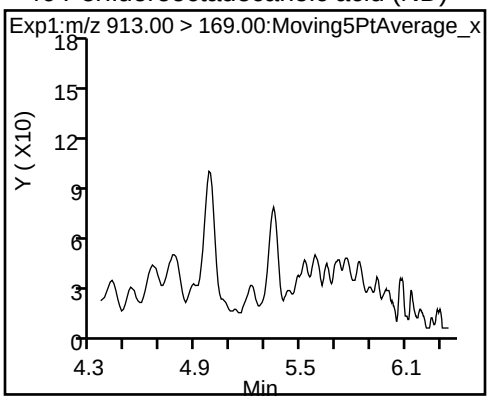
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') DL | Lab Sample ID: 320-36683-10 DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_021.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 23:53

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.32	D B F2	0.026	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	65		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_021.d
Lims ID: 320-36683-A-10-A
Client ID: SB012(10'-12')
Sample Type: Client
Inject. Date: 21-Mar-2018 23:53:24 ALS Bottle#: 23 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-a-10-a 50X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:34:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.537	110195	0.0363		72.6	1204	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.453	1.453	0.0	1.004	5203	0.002506			2.2	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	72047	0.0358		71.5	1980	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.997	0.001	0.741	83495	0.0375		74.9	2980	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	82002	0.0373		74.6	2360	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	102903	0.0380		80.2	4490	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	167194	0.0690			1872	
399.00 > 99.00	2.341	2.341	0.0	1.000	44356		3.77(1.50-4.49)		124	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.665	0.016	0.994	33929	0.0745		157	792	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.681	2.673	0.008	1.000	73081	0.0587			4286	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.688	0.001	0.997	90813	0.0404		80.8	3118	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		119942	0.0500			4686	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.003	30967	0.0151			8.8	
413.00 > 169.00	2.697	2.697	0.0	1.003	12651		2.45(0.84-2.52)		30.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.704	-0.007	1.000	57002	0.0348			515	
449.00 > 99.00	2.697	2.704	-0.007	1.000	16342		3.49(1.94-5.82)		231	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	61161	0.0310		64.9	1223	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.137	65332	0.0329		65.9	3296	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4446537	3.12			12629	
499.00 > 99.00	3.065	3.065	0.0	1.000	1001989		4.44(2.31-6.93)		11520	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	188489	0.1446			269	
463.00 > 169.00	3.065	3.072	-0.007	1.000	49251		3.83(1.90-5.69)		2042	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.011	1.260	53705	0.0202		40.4	1256	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.267	16467	0.0268		55.9	435	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.270	51296	0.0295		59.0	1292	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.426	-0.018	0.997	2921	0.006657			74.1	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.327	15153	0.0166		33.1	536	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.394	29841	0.0192		38.4	770	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	15687	0.0151		30.1	122	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.504	28731	0.0163		32.6	316	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.689	36493	0.0169		33.9	349	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.972	0.001	1.844	64518	0.0183		36.5	407	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:18 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_021.d

Injection Date: 21-Mar-2018 23:53:24 Instrument ID: A8_N

Lims ID: 320-36683-A-10-A Lab Sample ID: 320-36683-10

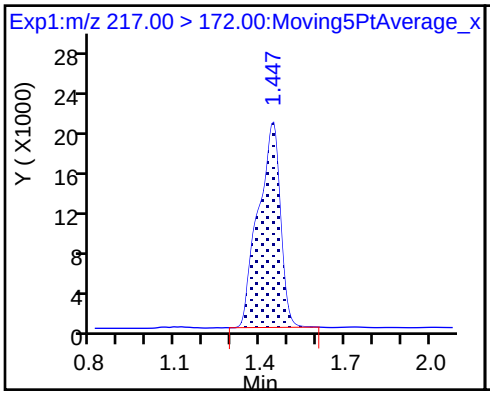
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 16

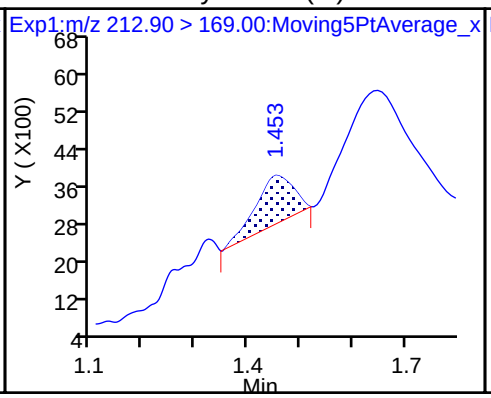
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

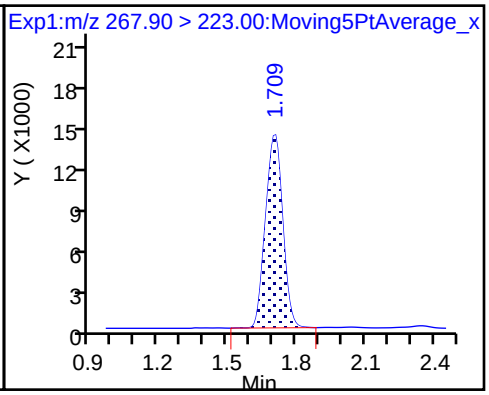
D 1 13C4 PFBA



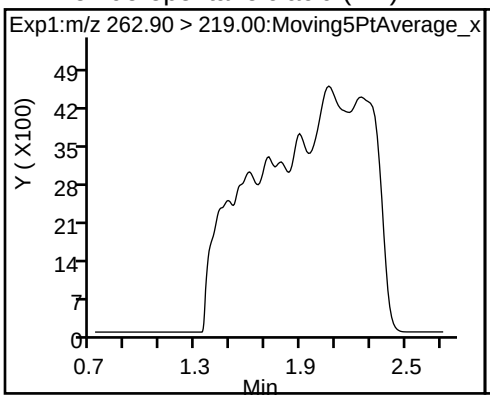
2 Perfluorobutyric acid (M)



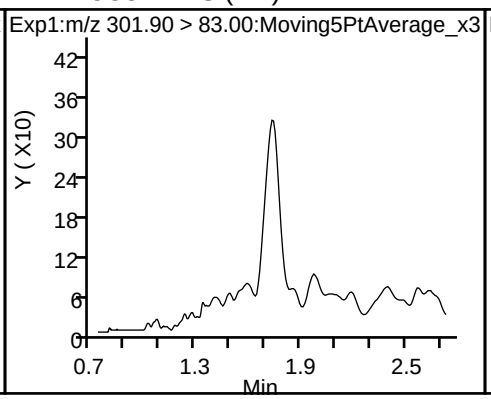
D 3 13C5-PFPeA



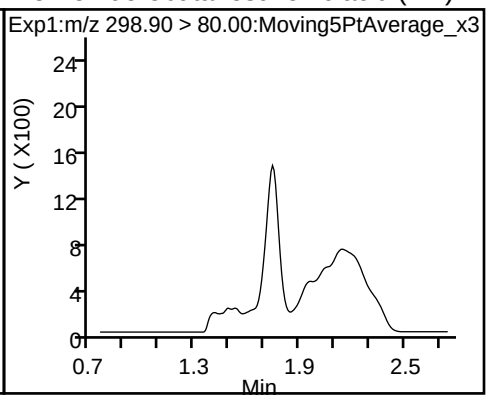
4 Perfluoropentanoic acid (ND)



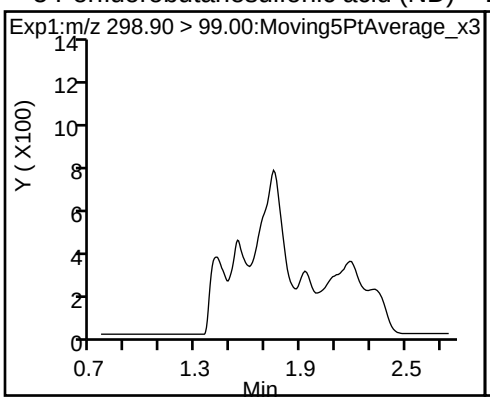
D 47 13C3-PFBS (ND)



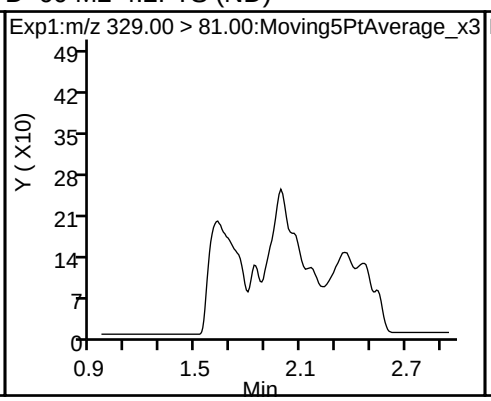
5 Perfluorobutanesulfonic acid (ND)



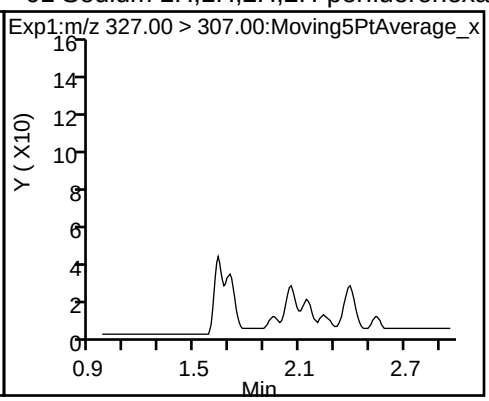
5 Perfluorobutanesulfonic acid (ND)



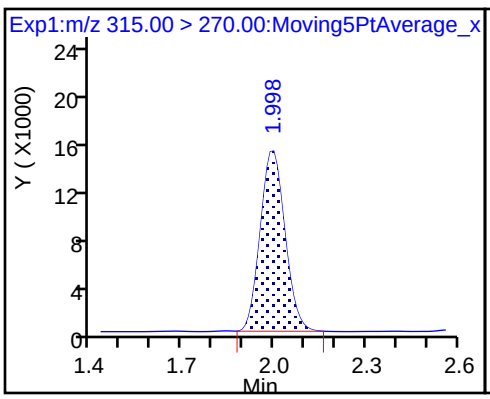
D 60 M2-4:2FTS (ND)



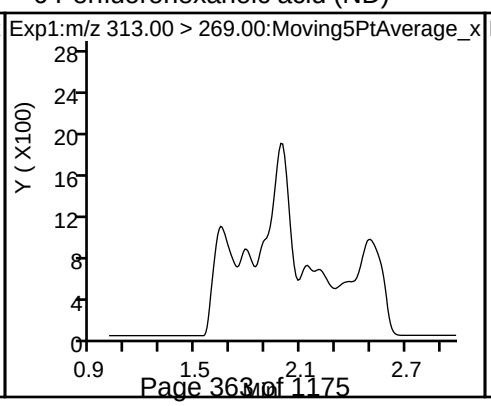
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



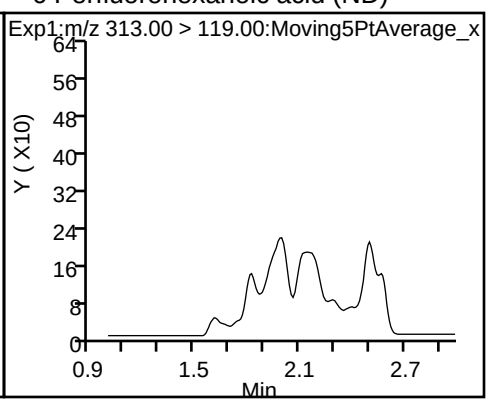
D 7 13C2 PFHxA



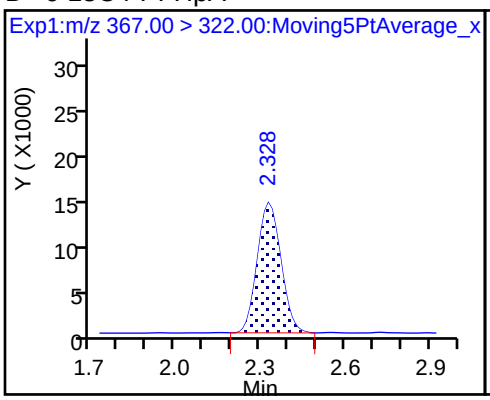
6 Perfluorohexanoic acid (ND)



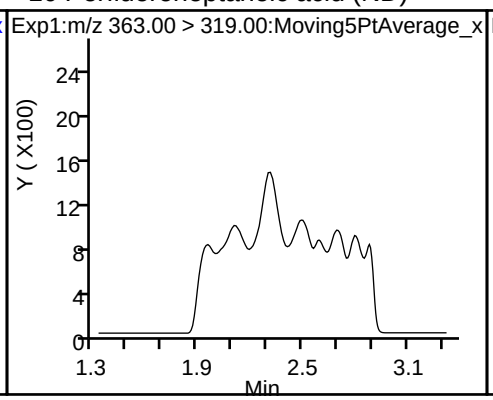
6 Perfluorohexanoic acid (ND)



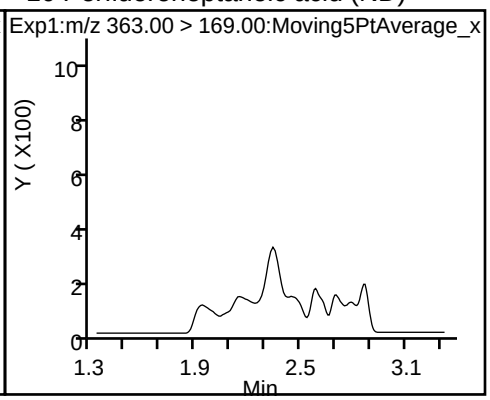
D 9 13C4-PFHpA



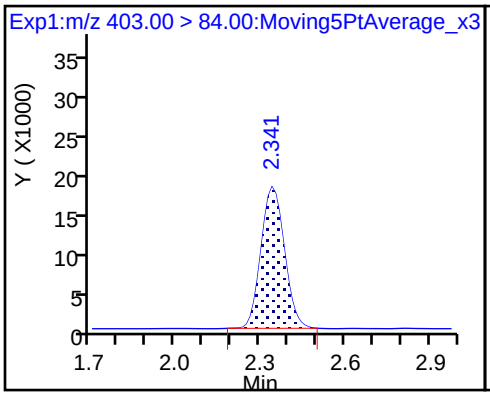
10 Perfluoroheptanoic acid (ND)



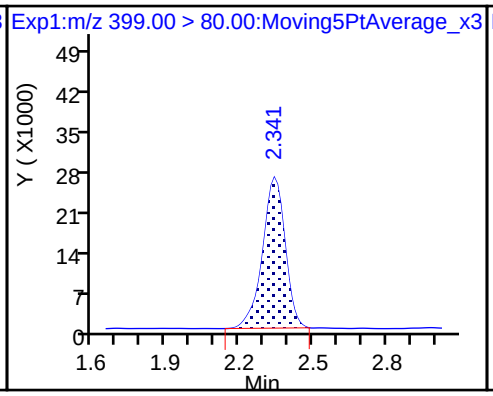
10 Perfluoroheptanoic acid (ND)



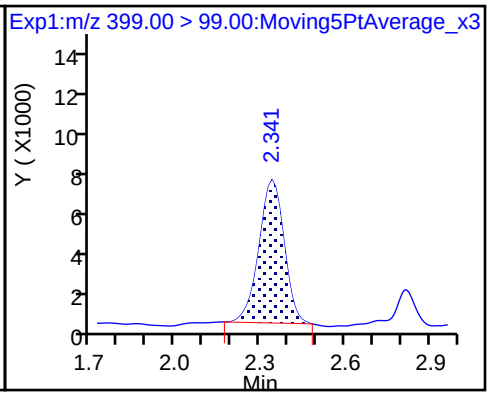
D 11 18O2 PFHxS



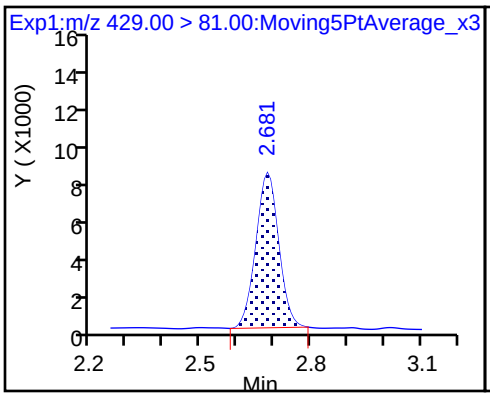
8 Perfluorohexanesulfonic acid



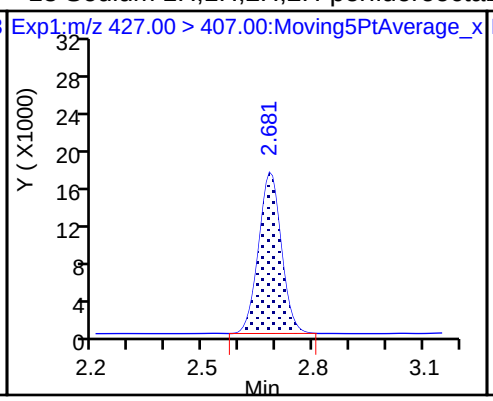
8 Perfluorohexanesulfonic acid



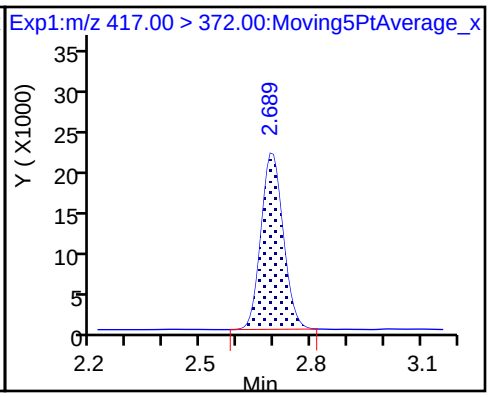
D 12 M2-6:2FTS



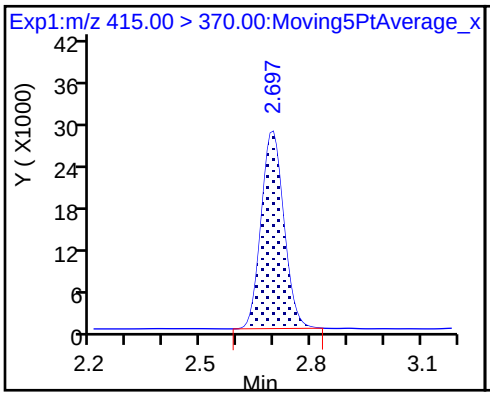
13 Sodium 1H,1H,2H,2H-perfluorooctane



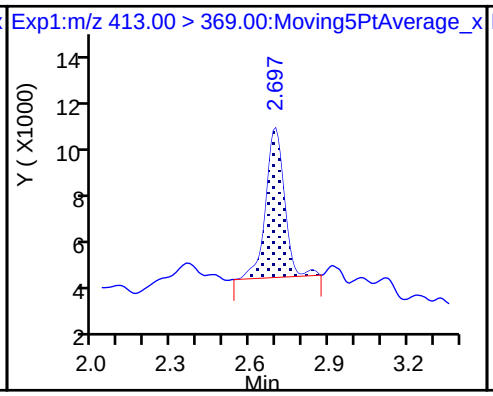
D 14 13C4 PFOA



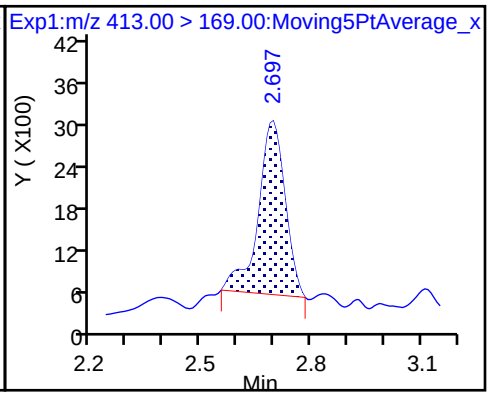
* 62 13C2-PFOA



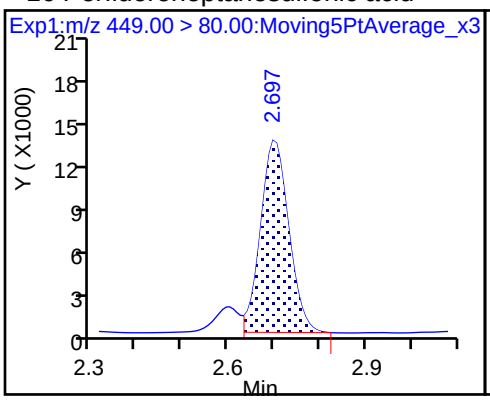
15 Perfluorooctanoic acid



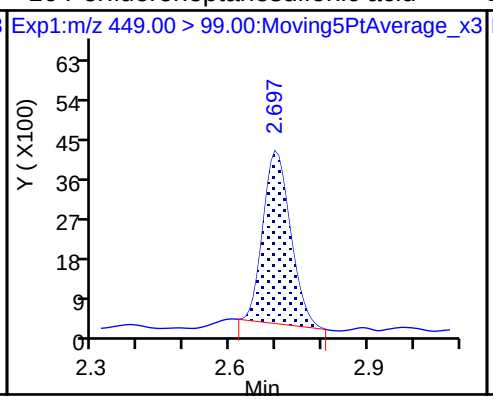
15 Perfluorooctanoic acid



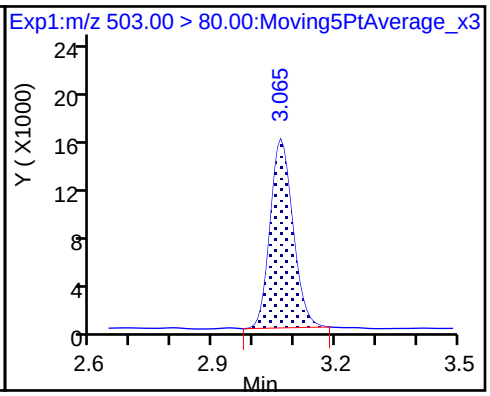
16 Perfluoroheptanesulfonic acid



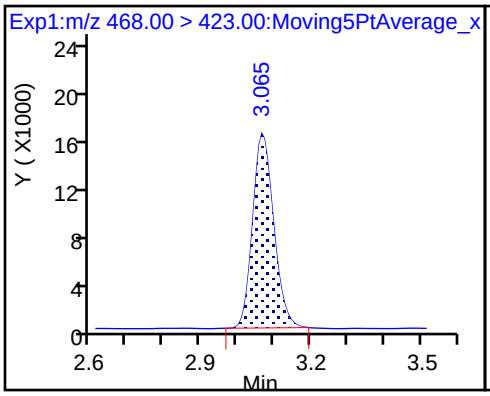
16 Perfluoroheptanesulfonic acid



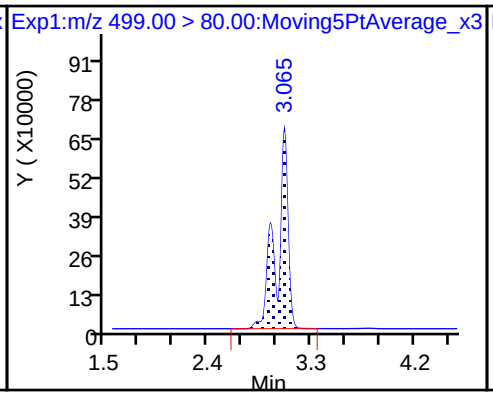
D 18 13C4 PFOS



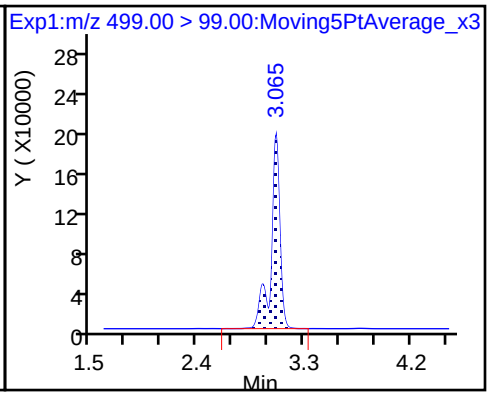
D 19 13C5 PFNA



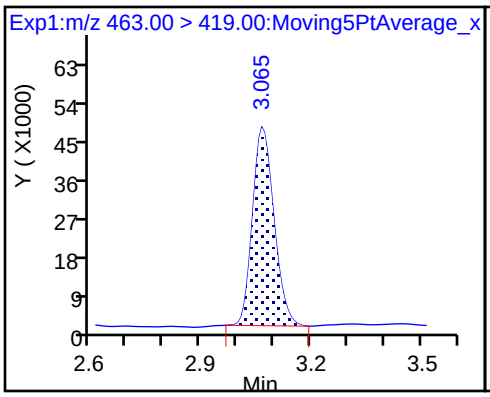
17 Perfluorooctane sulfonic acid



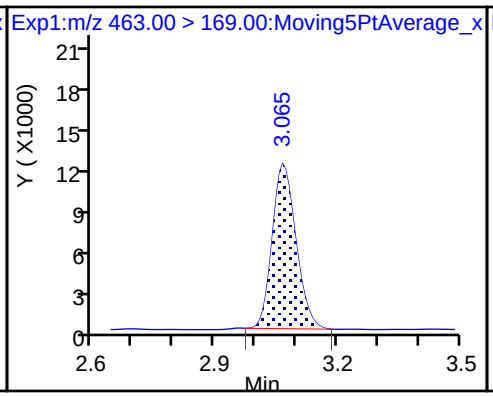
17 Perfluorooctane sulfonic acid



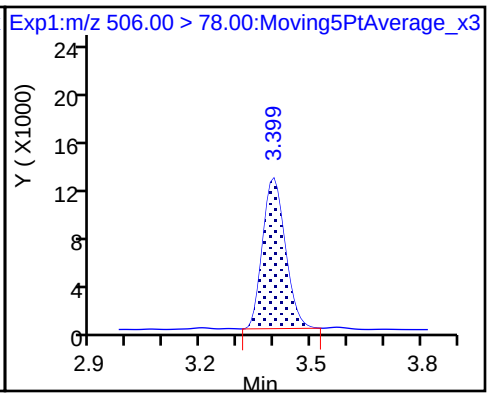
20 Perfluorononanoic acid



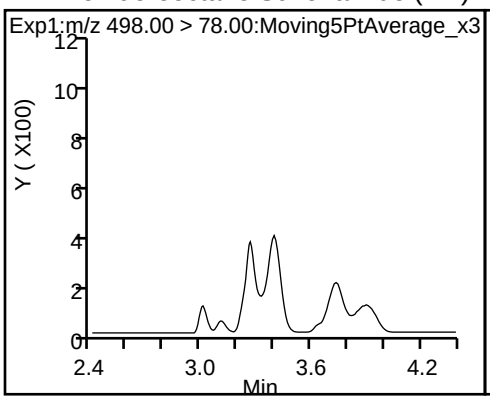
20 Perfluorononanoic acid



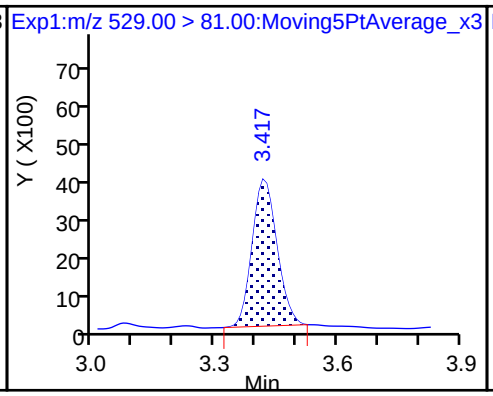
D 21 13C8 FOSA



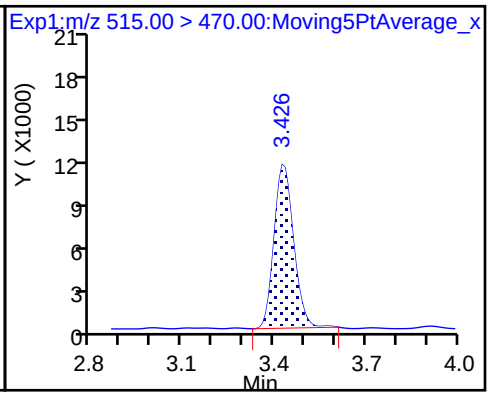
22 Perfluorooctane Sulfonamide (ND)



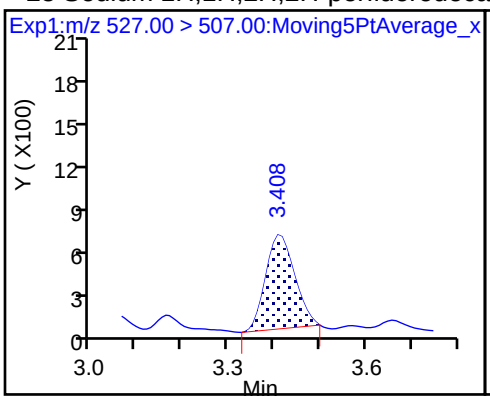
D 26 M2-8:2FTS



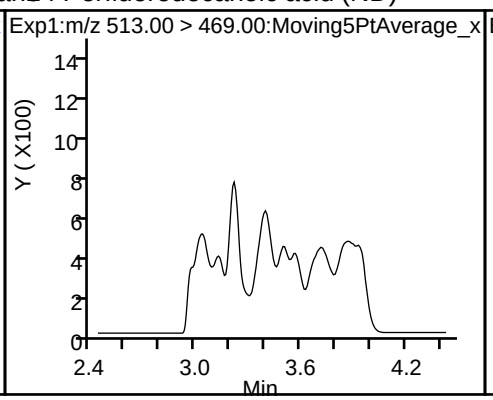
D 23 13C2 PFDA



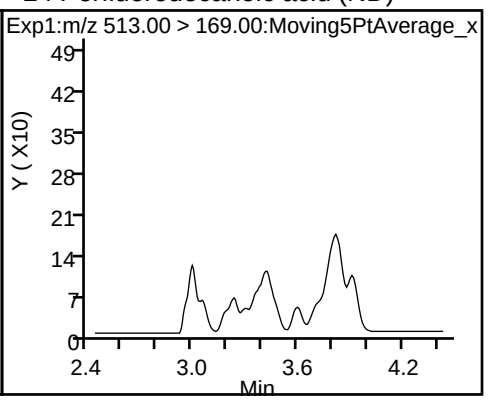
25 Sodium 1H,1H,2H,2H-perfluorodecane



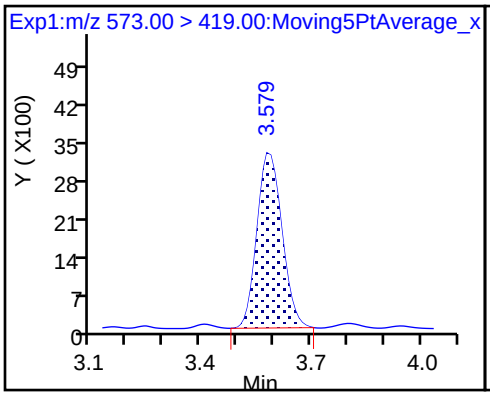
24 Perfluorodecanoic acid (ND)



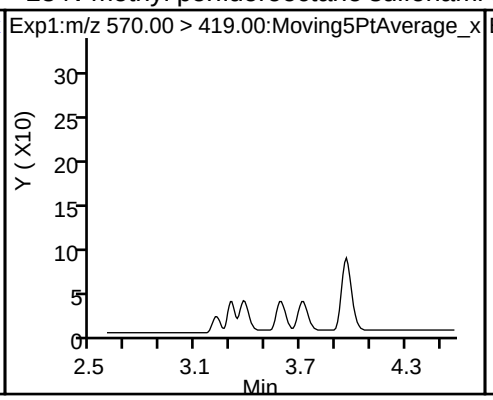
24 Perfluorodecanoic acid (ND)



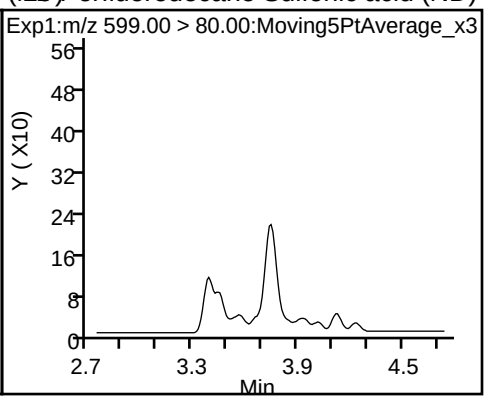
D 27 d3-NMeFOSAA



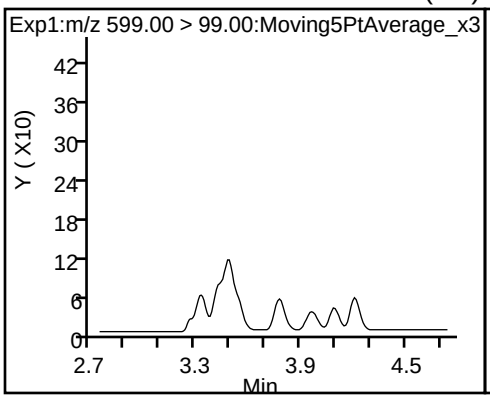
28 N-methyl perfluorooctane sulfonami (ND)



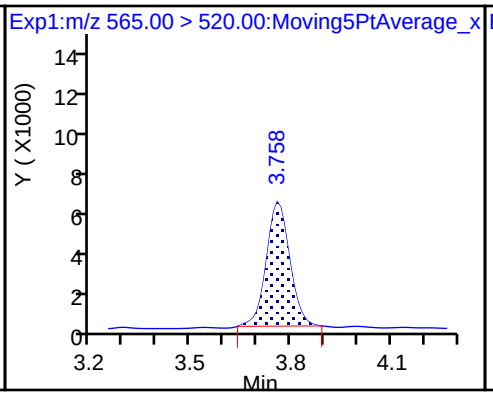
29 Perfluorodecane Sulfonic acid (ND)



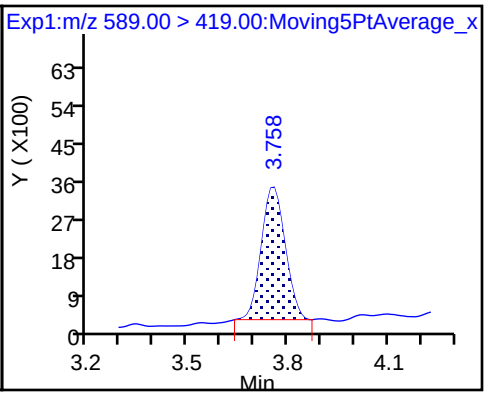
29 Perfluorodecane Sulfonic acid (ND)



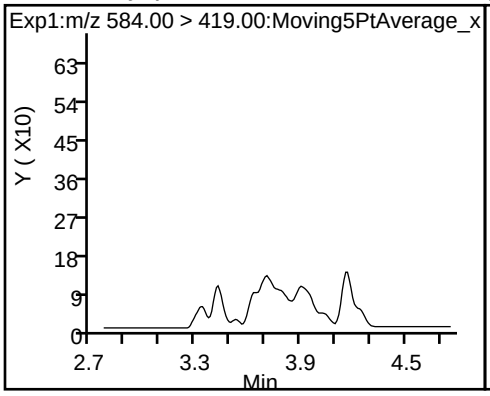
D 30 13C2 PFUnA



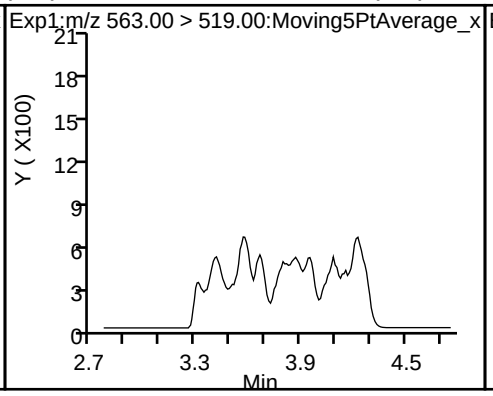
D 32 d5-NEtFOSAA



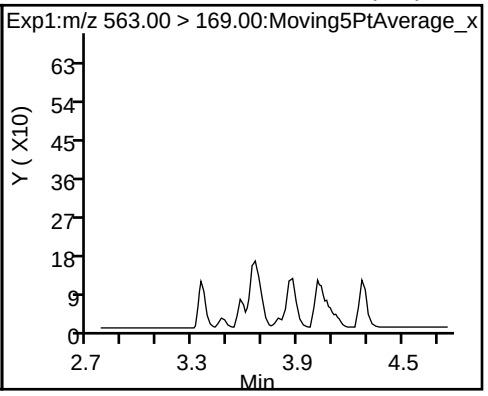
33 N-ethyl perfluorooctane sulfonamid (ND)



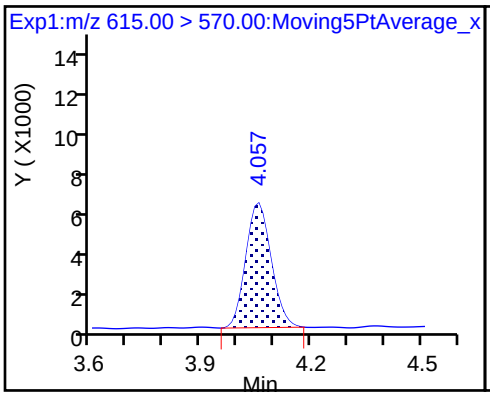
31 Perfluoroundecanoic acid (ND)



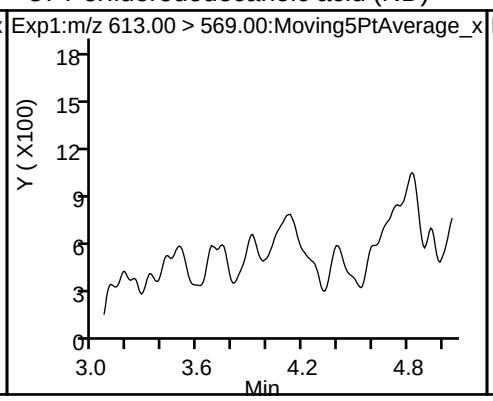
31 Perfluoroundecanoic acid (ND)



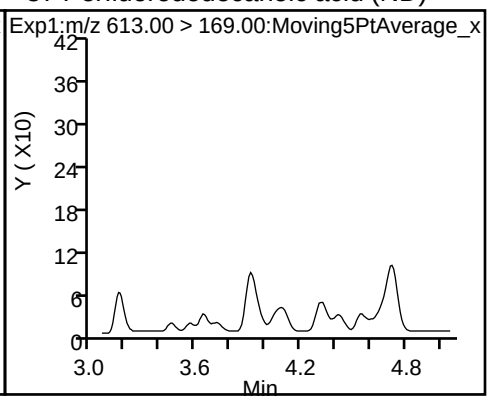
D 36 13C2 PFDoA



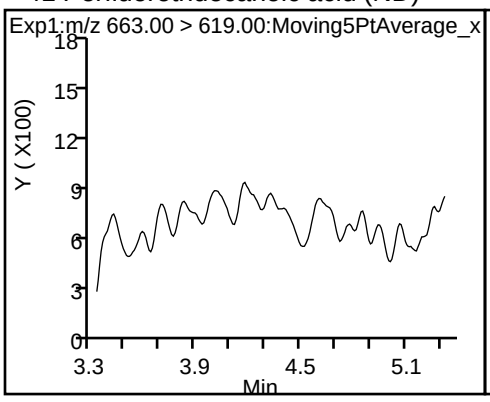
37 Perfluorododecanoic acid (ND)



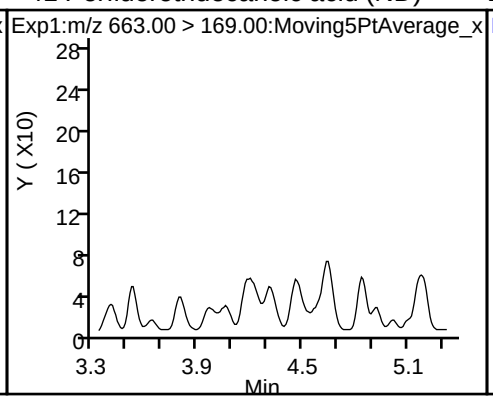
37 Perfluorododecanoic acid (ND)



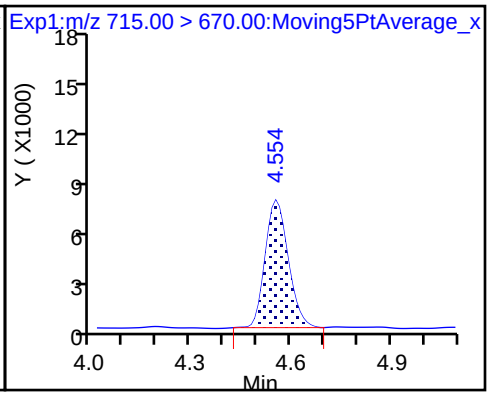
41 Perfluorotridecanoic acid (ND)



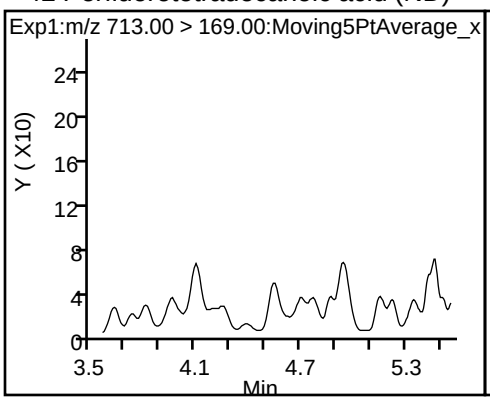
41 Perfluorotridecanoic acid (ND)



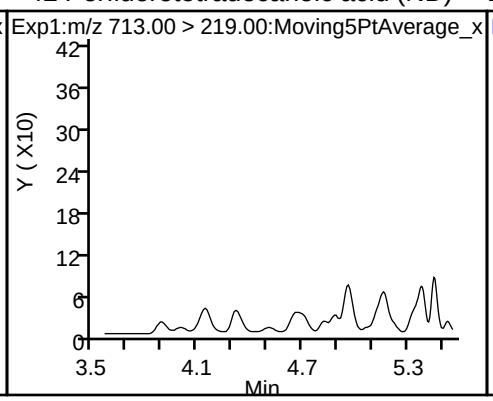
D 43 13C2-PFTeDA



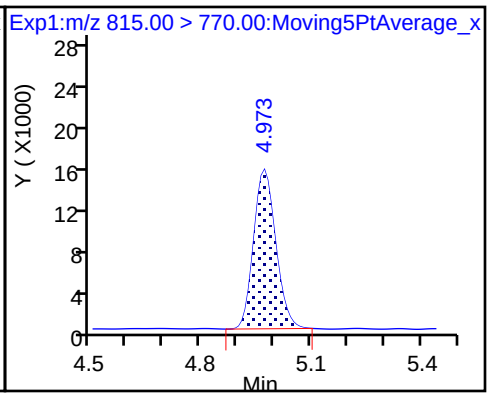
42 Perfluorotetradecanoic acid (ND)



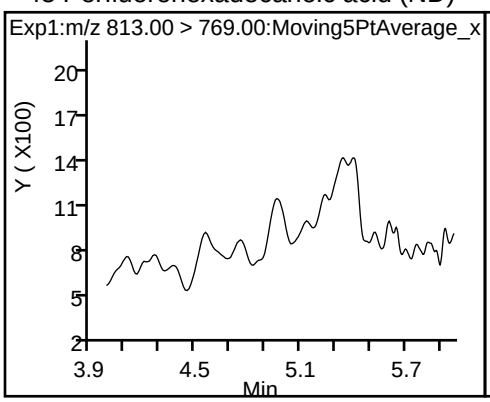
42 Perfluorotetradecanoic acid (ND)



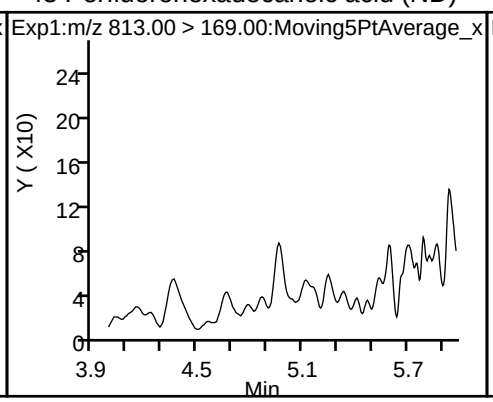
D 44 13C2-PFHxDA



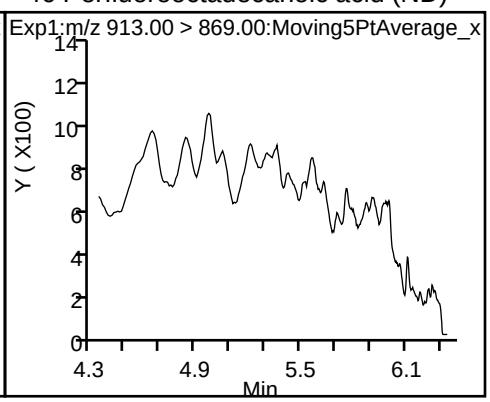
45 Perfluorohexadecanoic acid (ND)



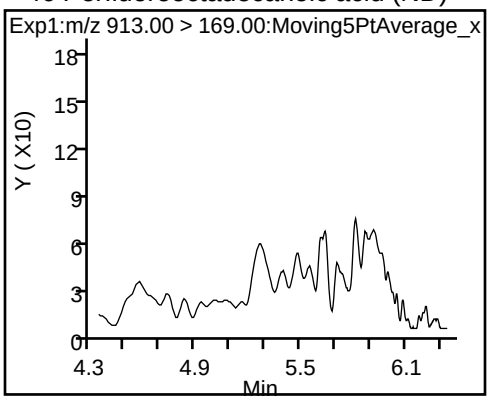
45 Perfluorohexadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-213554/2	2018.03.16ICAL_002.d
Level 2	IC 320-213554/3	2018.03.16ICAL_003.d
Level 3	IC 320-213554/4	2018.03.16ICAL_004.d
Level 4	IC 320-213554/5	2018.03.16ICAL_005.d
Level 5	IC 320-213554/6	2018.03.16ICAL_006.d
Level 6	IC 320-213554/7	2018.03.16ICAL_007.d
Level 7	IC 320-213554/8	2018.03.16ICAL_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9031 0.9533	0.9199 0.9384	0.9308	0.8987	0.9480	AveID		0.9274				2.3		35.0			
Perfluoropentanoic acid (PFPeA)	1.2009 1.1519	1.2167 1.1599	1.1152	1.1407	1.1917	AveID		1.1681				3.1		35.0			
Perfluorobutanesulfonic acid (PFBS)	78.227 81.199	75.406 70.304	75.634	77.520	83.350	AveID		77.377				5.5		50.0			
4:2 FTS	16.857 15.350	17.089 14.717	16.180	16.069	16.257	AveID		16.074				5.1		50.0			
Perfluorohexanoic acid (PFHxA)	1.0350 1.0221	1.0062 1.0289	0.9979	0.9561	1.0171	AveID		1.0090				2.6		35.0			
Perfluoroheptanoic acid (PFHpA)	1.0914 1.0923	0.9748 1.0133	1.0620	1.0062	1.0155	AveID		1.0365				4.4		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3314 1.0433	1.1983 1.0665	1.0904	0.9939	1.0839	AveID		1.1154				10.2		35.0			
6:2FTS	1.4578 1.7282	1.6726 1.7536	1.7189	1.5984	1.7228	AveID		1.6646				6.3		35.0			
Perfluorooctanoic acid (PFOA)	1.2771 1.1667	1.0727 1.1183	1.0176	1.0536	1.1087	AveID		1.1164				7.7		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2442 1.3776	1.3119 1.2616	1.2979	1.3309	1.3750	AveID		1.3142				3.9		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.1186 1.1281	1.0756 1.0976	1.0125	1.0497	1.0960	AveID		1.0826				3.7		35.0			
Perfluorononanoic acid (PFNA)	0.9418 1.1047	1.0637 1.0209	0.9751	0.9774	1.0532	AveID		1.0196				5.7		35.0			
Perfluorooctane Sulfonamide (FOSA)	0.9443 1.0041	0.9582 0.9184	0.9707	0.9921	1.0142	AveID		0.9717				3.5		35.0			
8:2FTS	1.1650 1.3410	1.2889 1.1925	1.2506	1.2474	1.3153	AveID		1.2573				5.1		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	0.8359 1.0050	0.9109 0.9765	0.9435	0.9911	0.9791	AveID		0.9489				6.2		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9706 1.0514	1.1969 1.0691	0.9778	0.9880	1.0369	AveID		1.0415				7.5		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6130 0.6489	0.6312 0.6417	0.6325	0.6589	0.6434	AveID		0.6385				2.3		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.0125 1.0565	1.0388 0.9572	0.9286	0.9109	0.9491	AveID		0.9791				5.8		35.0			
Perfluoroundecanoic acid (PFUnA)	1.0505 0.8162	0.9268 0.8167	0.7463	0.7128	0.7970	AveID		0.8380				13.8		35.0			
Perfluorododecanoic acid (PFDoA)	0.9632 1.0357	0.9788 1.0559	1.0311	1.0661	1.0300	AveID		1.0230				3.7		35.0			
Perfluorotridecanoic Acid (PFTriA)	0.8910 1.0818	1.0005 1.0734	1.0473	1.0432	1.0643	AveID		1.0288				6.4		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.3265 0.2648	0.3171 0.2554	0.2524	0.2568	0.2575	AveID		0.2758				11.5		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	+++++ 0.9115	1.3587 0.9795	1.0139	0.8995	0.9099	L2ID	0.0220	0.9179							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.0308 1.0048	0.9673 0.9799	0.9247	0.9147	1.0022	AveID		0.9749				4.4		50.0			
13C4 PFBA	1.2265 1.3466	1.2477 1.3727	1.2117	1.2531	1.2775	Ave		1.2765				4.8		50.0			
13C5 PFPeA	0.8872 0.9351	0.9058 0.9286	0.8843	0.8735	0.8895	Ave		0.9006				2.6		50.0			
13C3-PFBS	0.0208 0.0233	0.0220 0.0255	0.0212	0.0213	0.0216	Ave		0.0222				7.4		50.0			
M2-4:2FTS	0.1551 0.1601	0.1641 0.1564	0.1525	0.1597	0.1651	Ave		0.1590				2.9		50.0			
13C2 PFHxA	0.9862 1.0374	1.0207 1.0115	0.9703	1.0040	0.9998	Ave		1.0043				2.2		50.0			
13C4-PFHpA	0.9921 0.9834	1.0180 0.9949	0.9154	0.9647	0.9683	Ave		0.9767				3.3		50.0			
18O2 PFHxS	1.2954 1.3719	1.2605 1.3987	1.2062	1.3166	1.2722	Ave		1.3031				5.1		50.0			
M2-6:2FTS	0.2545 0.2618	0.2468 0.2527	0.2417	0.2487	0.2447	Ave		0.2501				2.7		50.0			
13C4 PFOA	0.9512 0.9322	0.9573 0.9523	0.9243	0.9466	0.9377	Ave		0.9431				1.3		50.0			
13C4 PFOS	0.8639 0.9586	0.8770 1.0055	0.8622	0.8952	0.9169	Ave		0.9113				5.9		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C5 PFNA	0.7492 0.7662	0.7527 0.7694	0.7279	0.7580	0.7581	Ave		0.7545				1.8		50.0			
13C8 FOSA	1.2871 1.3566	1.3145 1.3871	1.2648	1.3058	1.3205	Ave		1.3195				3.1		50.0			
M2-8:2FTS	0.2435 0.2384	0.2372 0.2331	0.2312	0.2322	0.2292	Ave		0.2350				2.1		50.0			
13C2 PFDA	0.6263 0.6332	0.6245 0.6212	0.6276	0.6404	0.6390	Ave		0.6303				1.2		50.0			
d3-NMeFOSAA	0.2079 0.2129	0.1974 0.2312	0.1977	0.2031	0.2066	Ave		0.2081				5.6		50.0			
d5-NEtFOSAA	0.1986 0.1928	0.1988 0.2089	0.1891	0.2048	0.2000	Ave		0.1990				3.4		50.0			
13C2 PFUnA	0.4833 0.5045	0.4984 0.4965	0.4885	0.4973	0.4862	Ave		0.4935				1.6		50.0			
13C2 PFDoA	0.4493 0.4968	0.4705 0.5082	0.4480	0.4436	0.4594	Ave		0.4680				5.4		50.0			
13C2-PFTeDA	0.3906 0.4640	0.4021 0.4788	0.4082	0.4159	0.4304	Ave		0.4272				7.7		50.0			
13C2-PFHxDA	0.5746 0.6782	0.5826 0.6550	0.6045	0.6305	0.6481	Ave		0.6248				6.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-213554/2	2018.03.16ICAL_002.d
Level 2	IC 320-213554/3	2018.03.16ICAL_003.d
Level 3	IC 320-213554/4	2018.03.16ICAL_004.d
Level 4	IC 320-213554/5	2018.03.16ICAL_005.d
Level 5	IC 320-213554/6	2018.03.16ICAL_006.d
Level 6	IC 320-213554/7	2018.03.16ICAL_007.d
Level 7	IC 320-213554/8	2018.03.16ICAL_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	50796 10415661	102112 19640198	528325	2048994	5293287	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	48859 8739905	98047 16422736	461977	1812805	4633188	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	65826 13581651	130200 24136015	662611	2653315	6966452	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	14987 2712672	31176 5338400	149763	581100	1435640	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	46811 8603151	91368 15868989	453548	1746371	4444832	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	49656 8715974	88286 15371232	455401	1765971	4297988	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	71975 10568253	122279 20699070	560663	2166532	5484826	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
6:2FTS		AveID	16131 3480117	34810 6406487	184494	685622	1746834	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	55709 8824823	91352 16238419	440615	1814577	4544060	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	46925 10200411	97440 18413921	499055	2063678	5246040	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	41124 8142540	77874 15616435	379502	1586675	4076350	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	32357 6868229	71226 11976618	332490	1348017	3490132	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctane Sulfonamide (FOSA)		AveID	55737 11053457	112048 19424864	575124	2356961	5854030	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2FTS		AveID	12463 2485319	26051 4059707	129787	504855	1262293	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	24009 5163613	50605 9249996	277398	1154786	2734556	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
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RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	9255 1816591	21013 3769629	90574	365056	936613	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	23409 4865112	47472 9484295	246261	1034588	2485881	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	9219 1652592	18367 3048852	82250	339482	829764	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	23282 3341411	41093 6182513	170791	644915	1693687	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	19846 4174943	40972 8183198	216392	860515	2068374	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	18358 4360483	41880 8318181	219791	842010	2137089	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	5848 997084	11344 1864512	48261	194321	484453	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	+++++ 5015728	70421 9782635	287100	1031926	2577679	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	27160 5529461	50136 9786600	261856	1049380	2839194	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	5624795 5463195	5550000 5232633	5676105	5699617	5583889	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4068590 3793612	4029181 3539835	4142560	3973031	3888024	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	88526 87984	90825 90294	92166	90021	87930	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	664416 606545	681561 556890	667108	678619	674169	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4522587 4208738	4540073 3855910	4545197	4566628	4369955	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4-PFHpA	13PFOA	Ave	4549638 3989677	4528336 3792427	4288080	4387932	4232279	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PFOA	Ave	5619871 5265275	5304007 5044040	5345110	5665272	5260610	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PFOA	Ave	1108827 1008963	1042798 915248	1075617	1074637	1016091	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PFOA	Ave	4362221 3782089	4258090 3630259	4329764	4305669	4098618	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PFOA	Ave	3787315 3717789	3729283 3664287	3861206	3892764	3831418	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PFOA	Ave	3435835 3108543	3347940 2932926	3409796	3447867	3313741	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PFOA	Ave	5902761 5503896	5846985 5287574	5924910	5939465	5771845	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
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Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
M2-8:2FTS	13PF OA	Ave	1069796 926664	1010561 851096	1037774	1011812	959683	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	2872260 2569062	2777841 2368082	2940123	2912792	2792979	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	953572 863871	877839 881475	926313	923680	903252	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	910554 782136	884068 796299	885725	931709	874289	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2216285 2046915	2216867 1892487	2288527	2262020	2125072	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2060387 2015472	2093019 1937420	2098644	2017899	2008069	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	1791304 1882383	1788676 1825202	1912234	1891848	1881480	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	2634864 2751498	2591496 2496909	2831717	2868070	2832854	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 16-Mar-2018 23:09:38 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:23 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:22:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.440	0.0	0.537	5624795	2.40		96.1	97481	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.440	0.0	1.000	50796	0.0243		97.4	35.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.696	0.003	0.634	4068590	2.46		98.5	158093	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.698	0.001	1.000	48859	0.0257		103	18.2	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.730	-0.004	0.644	88526	2.17		93.4	449	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.733	0.002	1.005	65826	0.0223		101	30.6	
298.90 > 99.00	1.735	1.733	0.002	1.005	26391		2.49(1.25-3.74)	101	27.7	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.942	0.002	0.726	664416	2.28		97.6	6383	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.944	0.0	1.000	14987	0.0245		105	963	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.979	-0.004	0.737	4522587	2.46		98.2	135381	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.982	0.003	1.005	46811	0.0256		103	114	
313.00 > 119.00	1.985	1.982	0.003	1.005	3650		12.82(5.03-15.10)	103	71.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.311	0.003	0.864	4549638	2.54		102	109297	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.311	0.003	1.000	49656	0.0263		105	111	
363.00 > 169.00	2.314	2.311	0.003	1.000	17084		2.91(1.13-3.40)	105	311	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.326	0.001	0.869	5619871	2.35		99.4	87133	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.326	0.001	1.000	71975	0.0272		119	9.7	
399.00 > 99.00	2.327	2.326	0.001	1.000	21084		3.41(1.50-4.49)	119	8.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.647	2.651	-0.004	0.988	1108827	2.42		102	28430	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.652	0.003	1.003	16131	0.0208		87.6	934	
D 14 13C4 PFOA										
417.00 > 372.00	2.678	2.678	0.0	1.000	4362221	2.52		101	92087	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.678	2.678	0.0	1.000	55709	0.0286		114	16.3	
413.00 > 169.00	2.678	2.678	0.0	1.000	27729		2.01(0.84-2.52)	114	123	
* 62 13C2-PFOA										
415.00 > 370.00	2.678	2.678	0.0		4585960	2.50			82370	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.678	2.684	-0.006	1.000	46925	0.0225		94.7	1370	
449.00 > 99.00	2.678	2.684	-0.006	1.000	12121		3.87(1.94-5.82)	94.7	305	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.050	0.0	1.139	3787315	2.27		94.8	64073	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.050	0.0	1.000	41124	0.0240		103	182	
499.00 > 99.00	3.050	3.050	0.0	1.000	9710		4.24(2.31-6.93)	103	77.0	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.052	-0.002	1.139	3435835	2.48		99.3	78094	
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.052	-0.002	1.000	32357	0.0231		92.4	77.4	
463.00 > 169.00	3.050	3.052	-0.002	1.000	7238		4.47(1.90-5.69)	92.4	195	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.388	-0.001	1.265	5902761	2.44		97.5	58949	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.388	-0.001	1.000	55737	0.0243		97.2	2105	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.406	0.0	1.271	1069796	2.48		104	23969	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.406	0.0	1.000	12463	0.0222		92.7	395	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.416	-0.001	1.275	2872260	2.48		99.4	53902	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.416	-0.001	1.000	24009	0.0220		88.1	136	
513.00 > 169.00	3.415	3.416	-0.001	1.000	4159		5.77(2.36-7.09)	88.1	203	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.332	953572	2.50		99.9	25950	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.569	3.571	-0.002	1.000	9255	0.0233		93.2	129	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.729	-0.002	1.000	23409	0.0231		96.0	834	
599.00 > 99.00	3.727	3.729	-0.002	1.000	8746		2.68(1.39-4.16)	96.0	198	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.740	-0.003	1.395	910554	2.49		99.8	2200	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.746	0.001	1.003	9219	0.0259		103	186	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.747	0.0	1.399	2216285	2.45		97.9	57806	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.747	3.750	-0.003	1.000	23282	0.0313		125	69.0	
563.00 > 169.00	3.747	3.750	-0.003	1.000	6053		3.85(2.12-6.36)	125	769	
D 36 13C2 PFDoA										
615.00 > 570.00	4.045	4.041	0.004	1.510	2060387	2.40		96.0	12314	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.045	4.042	0.003	1.000	19846	0.0235		94.2	3.5	
613.00 > 169.00	4.045	4.042	0.003	1.000	6752		2.94(2.13-6.40)	94.2	239	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.304	0.002	1.000	18358	0.0217		86.6	3.9	
663.00 > 169.00	4.306	4.304	0.002	1.000	6063		3.03(1.25-3.76)	86.6	75.3	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.696	1791304	2.29		91.4	12132	
42 Perfluorotetradecanoic acid										RM
713.00 > 169.00	4.553	4.545	0.008	1.002	5848	0.0296		118	85.1	R
713.00 > 219.00	4.543	4.545	-0.002	1.000	2605		2.24(0.71-2.13)	118	29.1	M
D 44 13C2-PFHxDA										
815.00 > 770.00	4.954	4.956	-0.002	1.850	2634864	2.30		92.0	9891	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.954	4.960	-0.006	1.000	51807	0.0296		118	4.6	
813.00 > 169.00	4.954	4.960	-0.006	1.000	6716		7.71(2.86-8.58)	118	95.1	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.320	0.002	1.000	27160	0.0264		106	4.9	
913.00 > 169.00	5.322	5.320	0.002	1.000	3181		8.54(3.83-11.48)	106	48.6	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:24 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_002.d

Injection Date: 16-Mar-2018 23:09:38 Instrument ID: A8_N

Lims ID: IC L1 Full

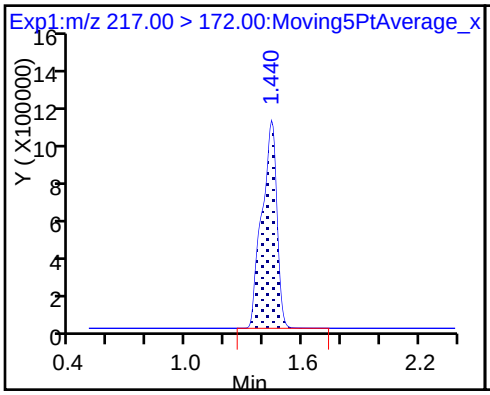
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

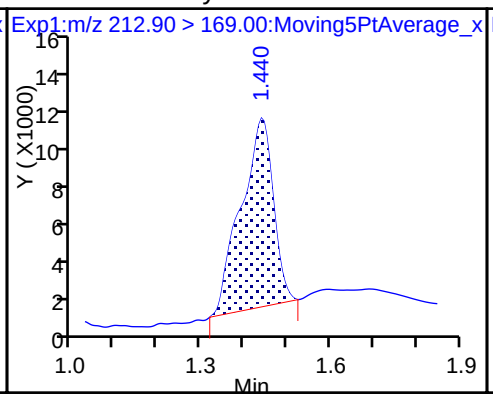
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

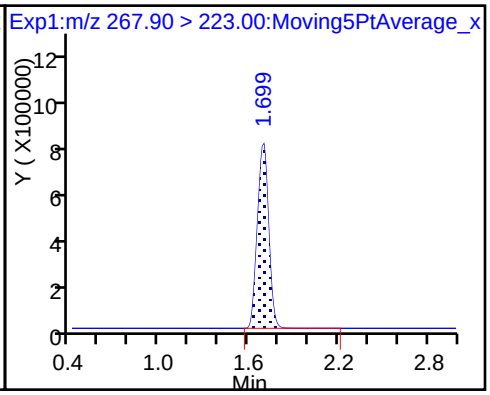
D 1 13C4 PFBA



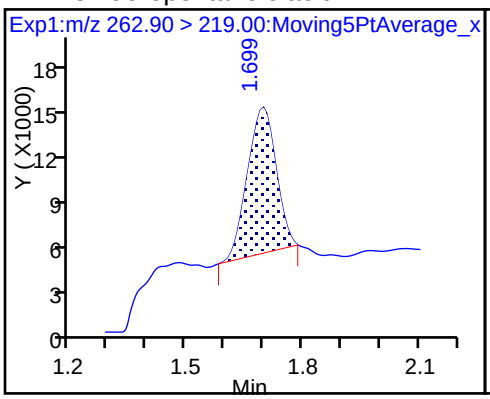
2 Perfluorobutyric acid



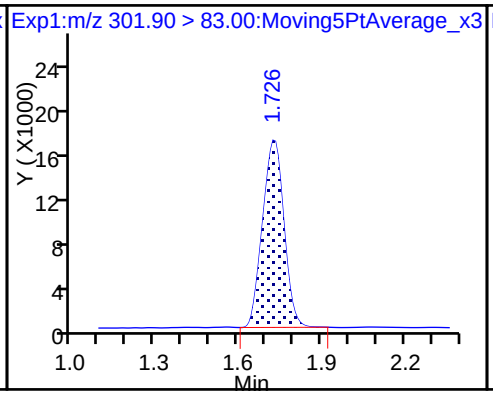
D 3 13C5-PFPeA



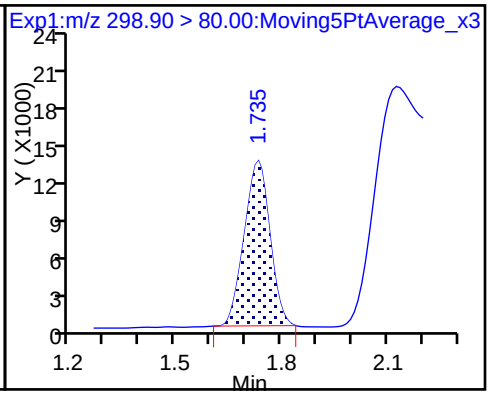
4 Perfluoropentanoic acid



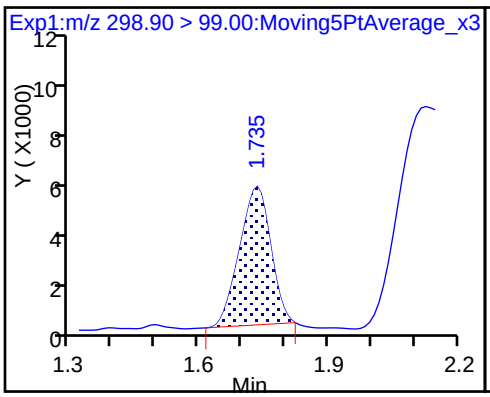
D 47 13C3-PFBS



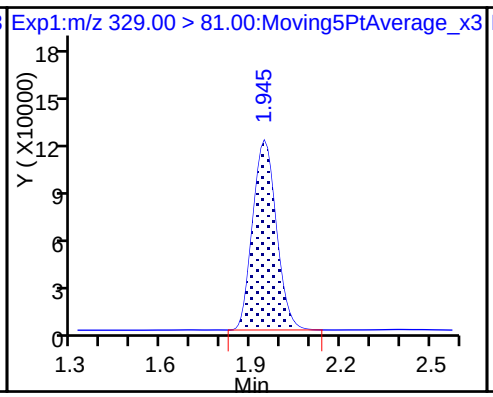
5 Perfluorobutanesulfonic acid



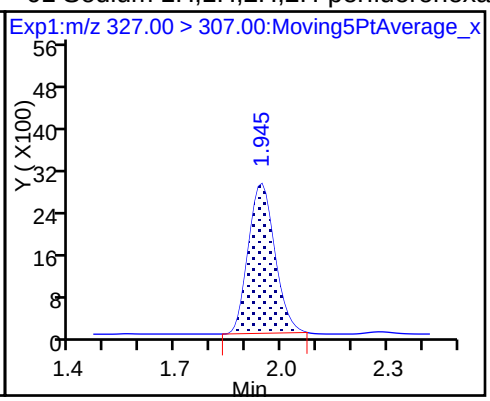
5 Perfluorobutanesulfonic acid



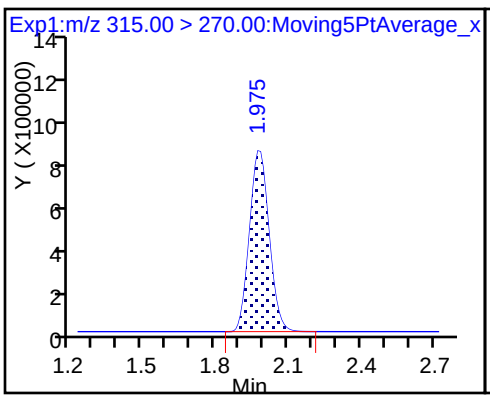
D 60 M2-4:2FTS



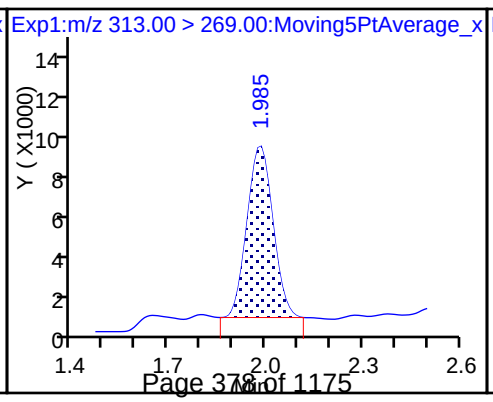
61 Sodium 1H,1H,2H,2H-perfluorohexane



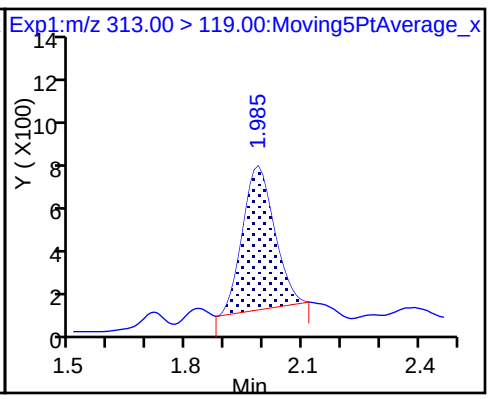
D 7 13C2 PFHxA



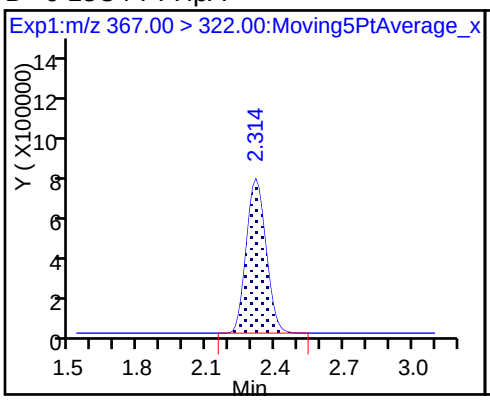
6 Perfluorohexanoic acid



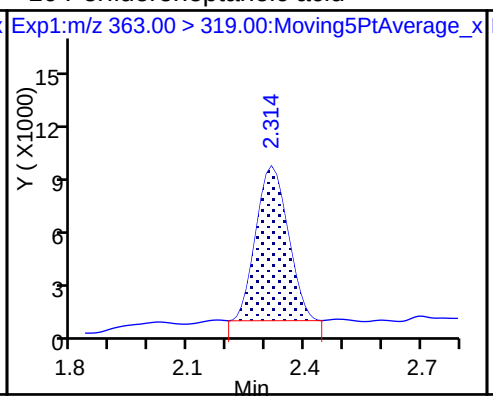
6 Perfluorohexanoic acid



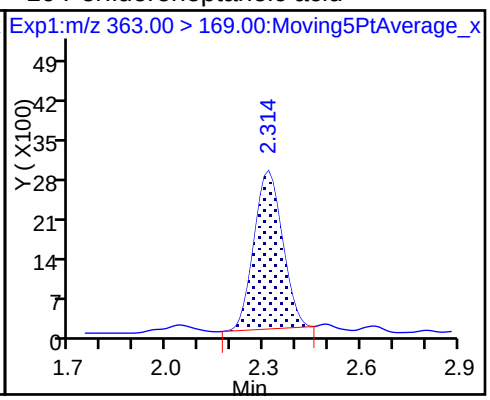
D 9 13C4-PFHpA



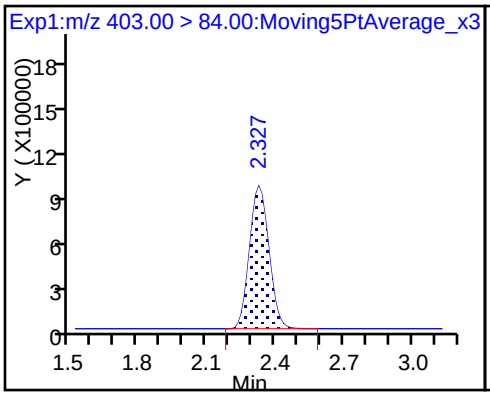
10 Perfluoroheptanoic acid



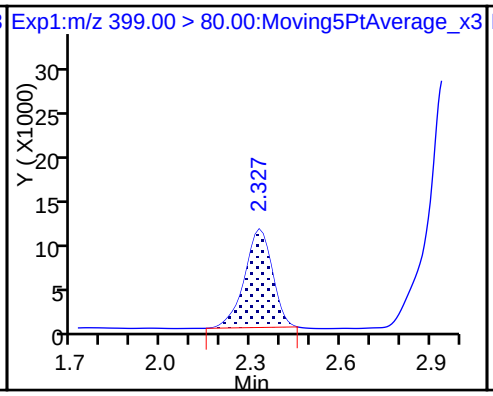
10 Perfluoroheptanoic acid



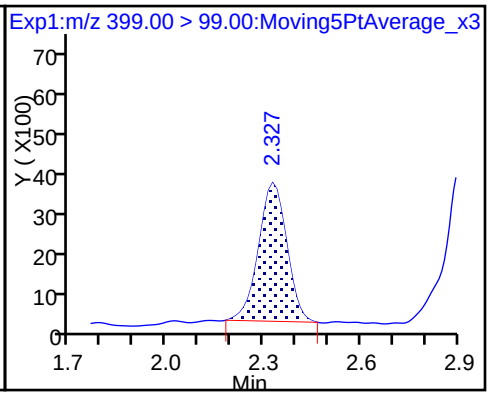
D 11 18O2 PFHxS



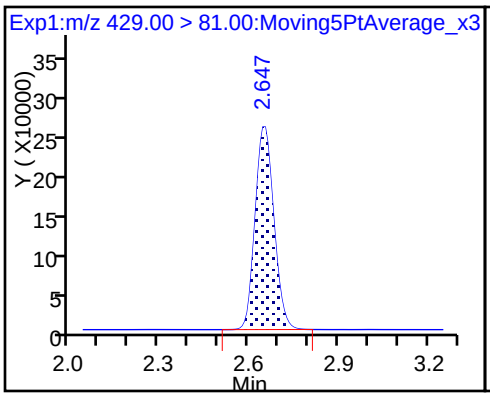
8 Perfluorohexanesulfonic acid



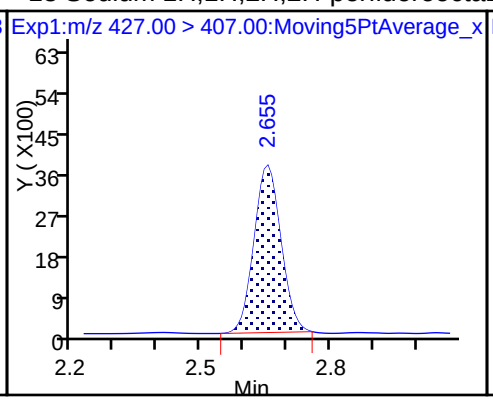
8 Perfluorohexanesulfonic acid



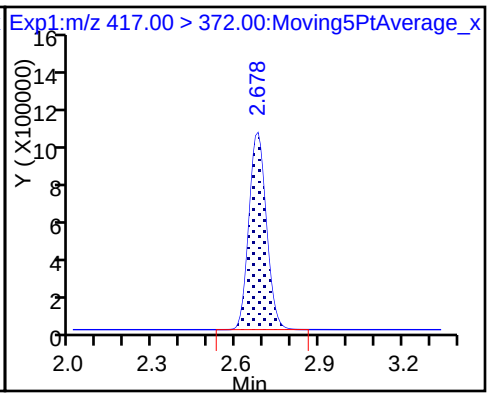
D 12 M2-6:2FTS



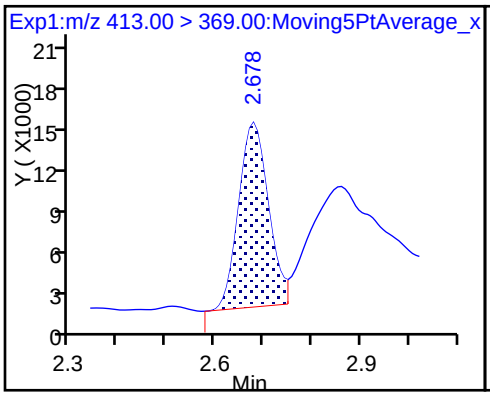
13 Sodium 1H,1H,2H,2H-perfluorooctane



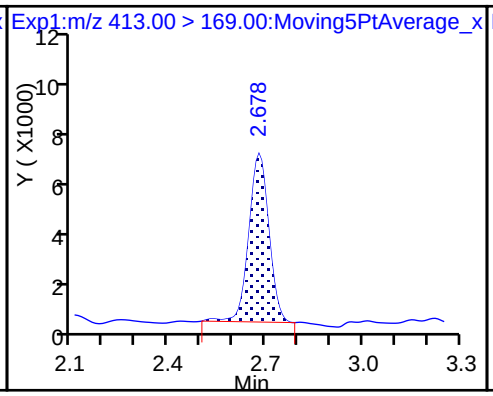
D 14 13C4 PFOA



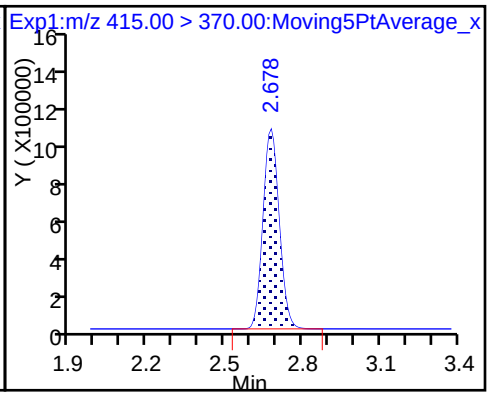
15 Perfluorooctanoic acid



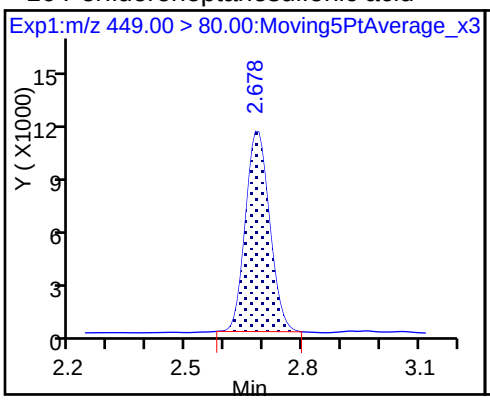
15 Perfluorooctanoic acid



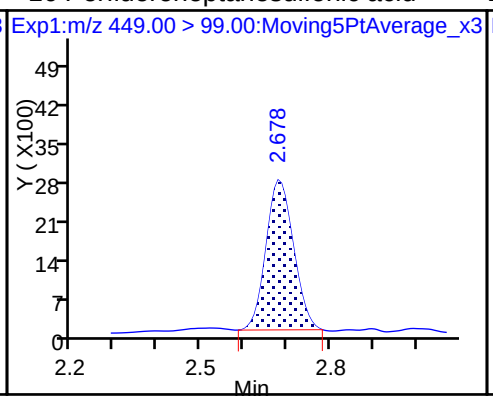
* 62 13C2-PFOA



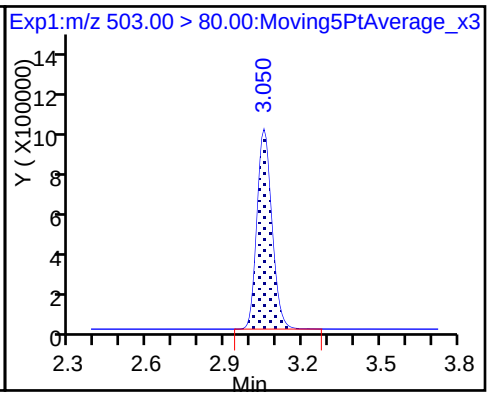
16 Perfluoroheptanesulfonic acid



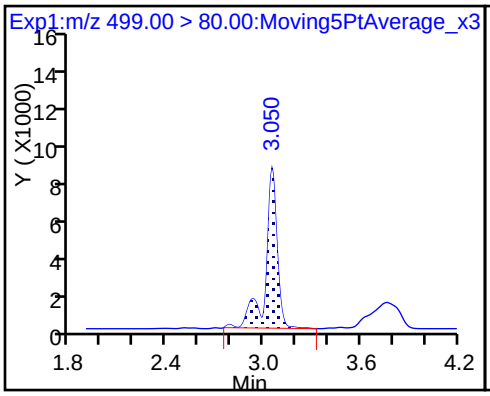
16 Perfluoroheptanesulfonic acid



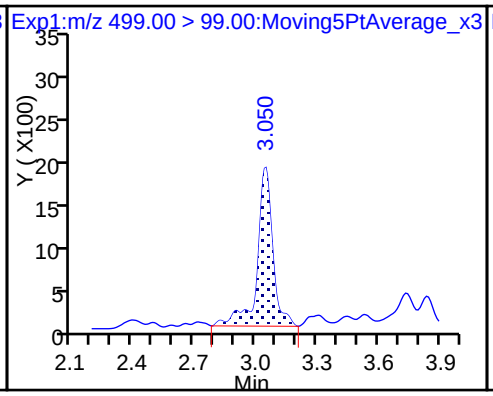
D 18 13C4 PFOS



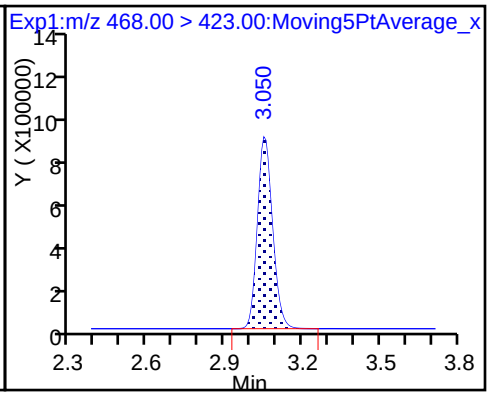
17 Perfluorooctane sulfonic acid



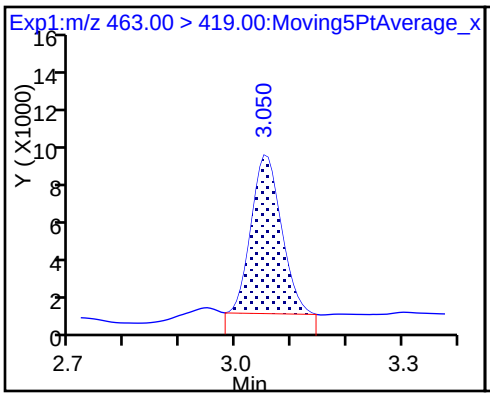
17 Perfluorooctane sulfonic acid



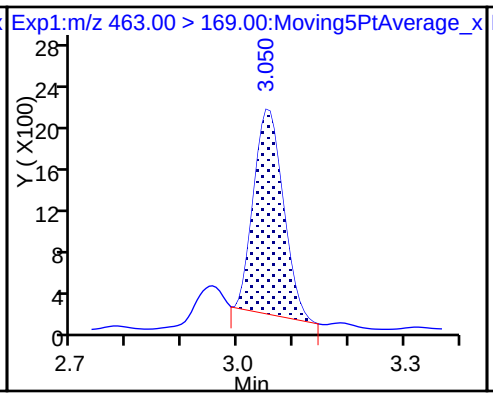
D 19 13C5 PFNA



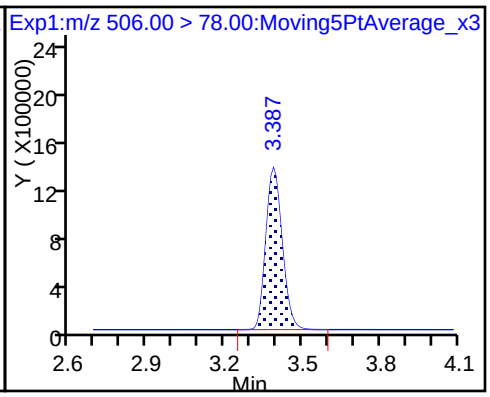
20 Perfluorononanoic acid



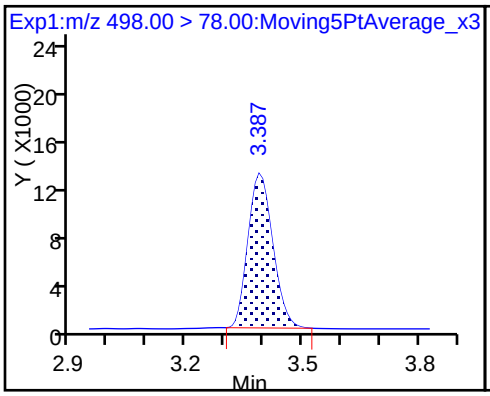
20 Perfluorononanoic acid



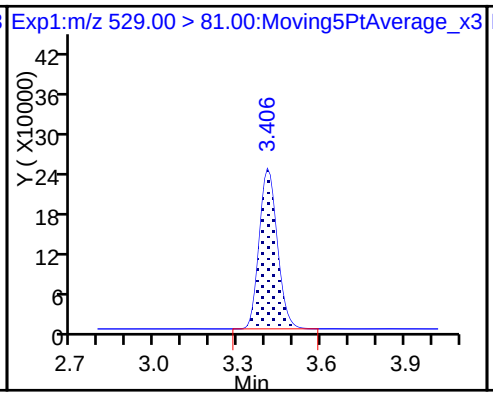
D 21 13C8 FOSA



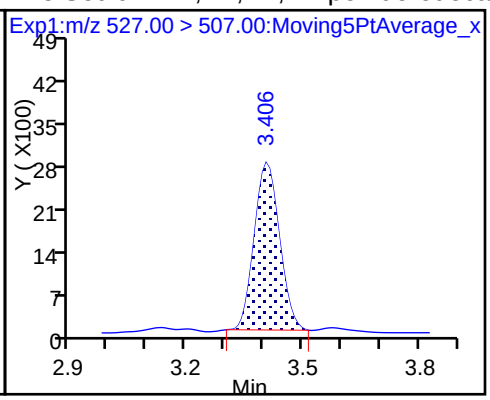
22 Perfluorooctane Sulfonamide



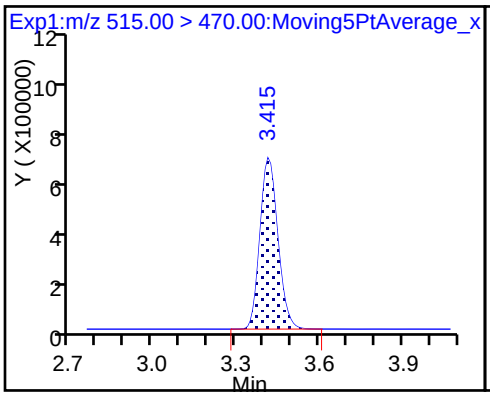
D 26 M2-8:2FTS



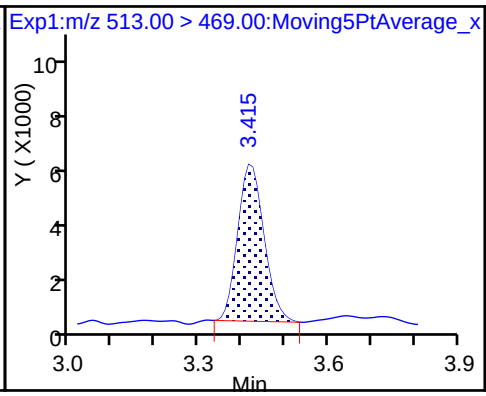
25 Sodium 1H,1H,2H,2H-perfluorodecane



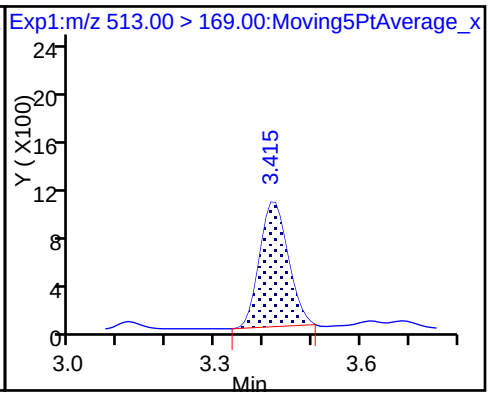
D 23 13C2 PFDA



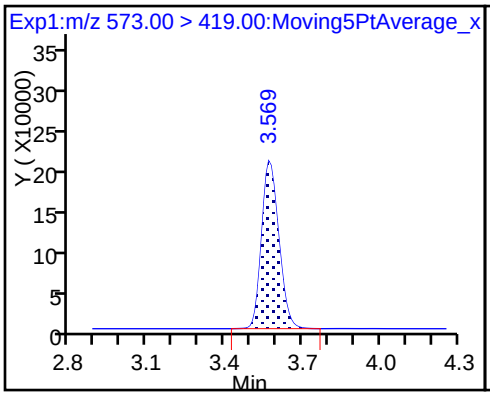
24 Perfluorodecanoic acid



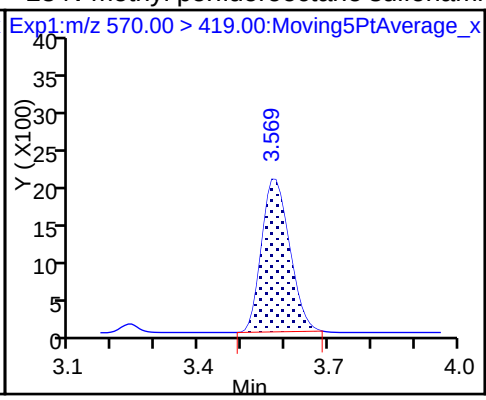
24 Perfluorodecanoic acid



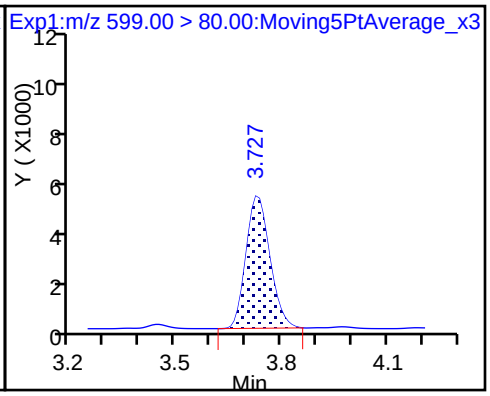
D 27 d3-NMeFOSAA



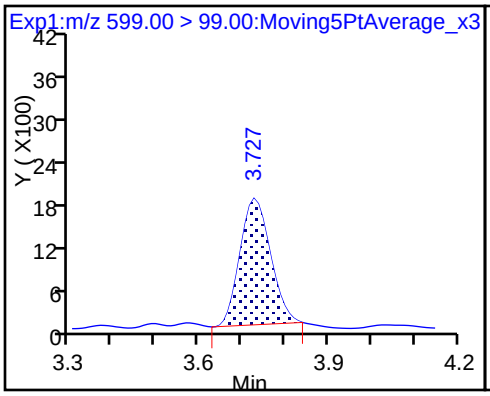
28 N-methyl perfluorooctane sulfonami



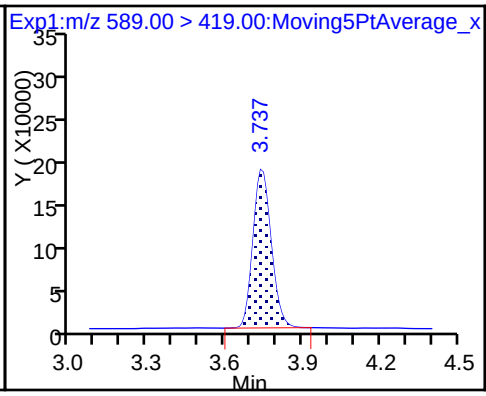
29 Perfluorodecane Sulfonic acid



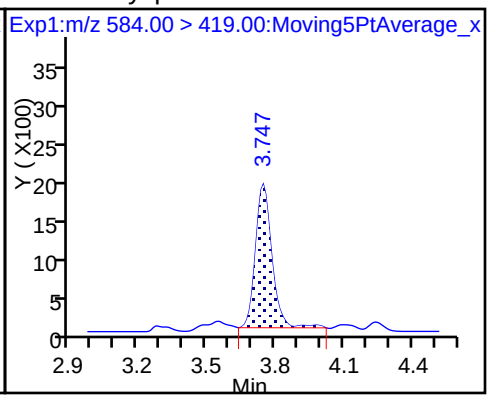
29 Perfluorodecane Sulfonic acid



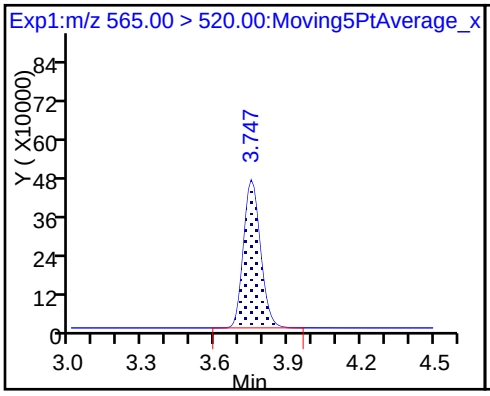
D 32 d5-NEtFOSAA



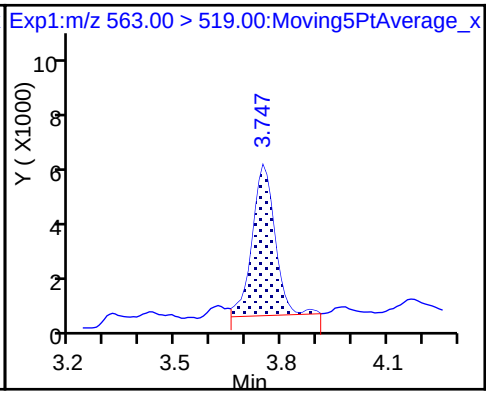
33 N-ethyl perfluorooctane sulfonamid



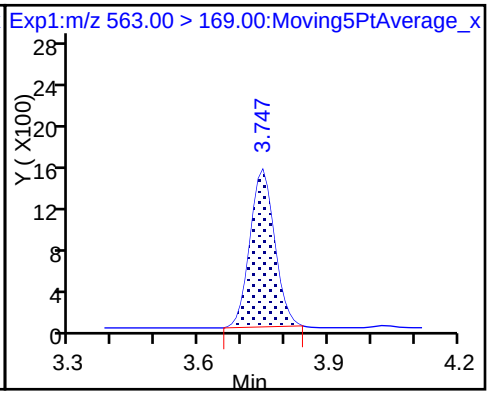
D 30 13C2 PFUnA



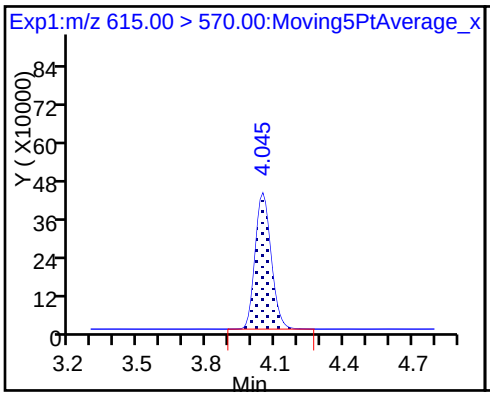
31 Perfluoroundecanoic acid



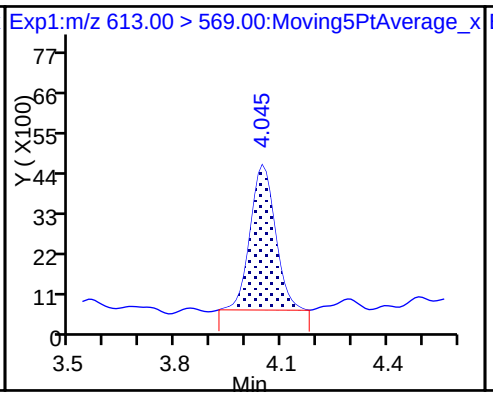
31 Perfluoroundecanoic acid



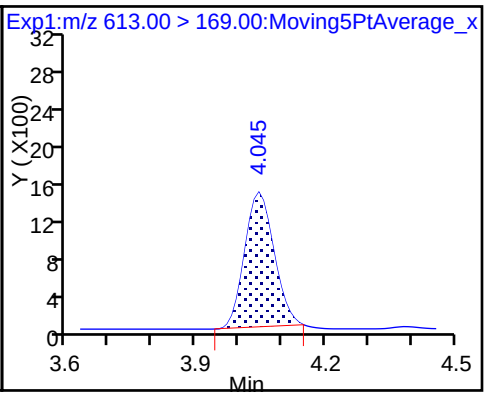
D 36 13C2 PFDoA



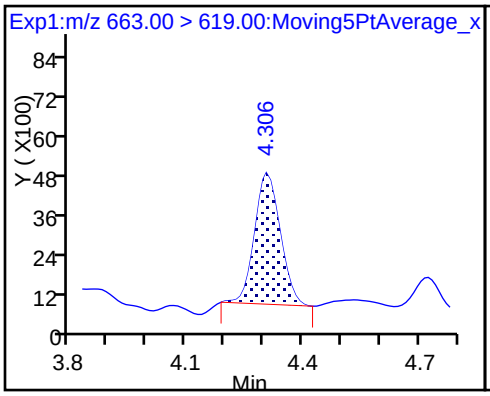
37 Perfluorododecanoic acid



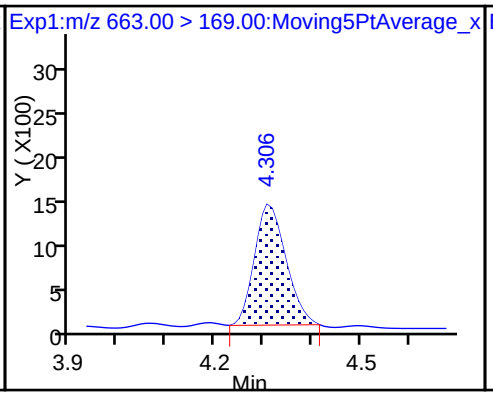
37 Perfluorododecanoic acid



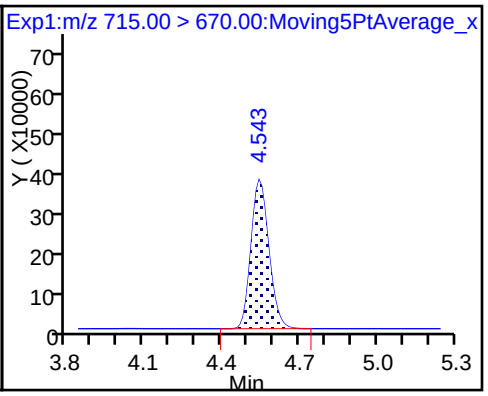
41 Perfluorotridecanoic acid



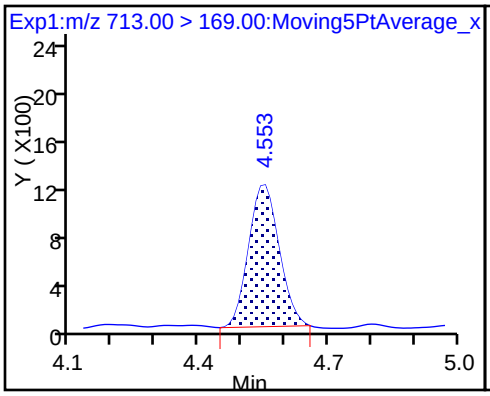
41 Perfluorotridecanoic acid



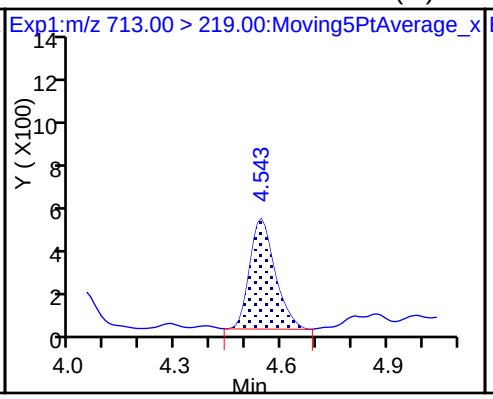
D 43 13C2-PFTeDA



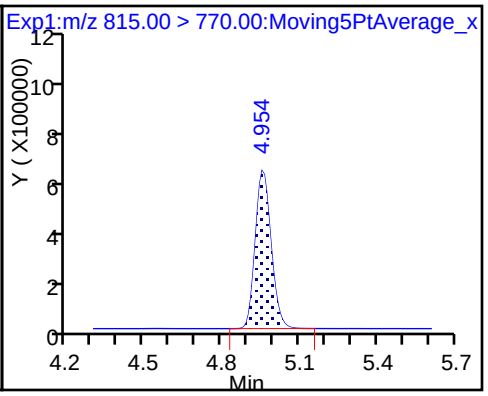
42 Perfluorotetradecanoic acid



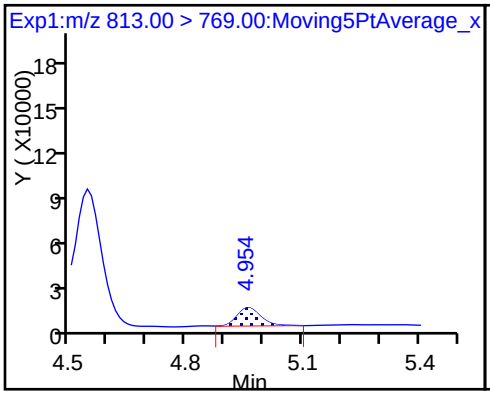
42 Perfluorotetradecanoic acid (M)



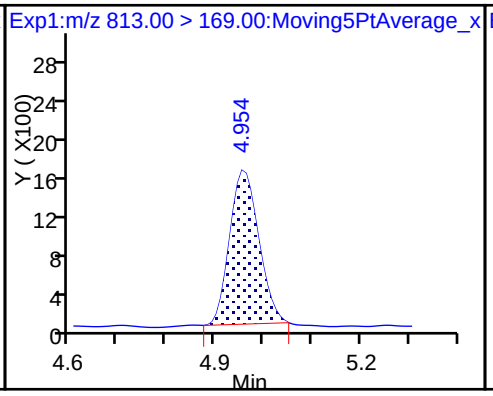
D 44 13C2-PFHxDA



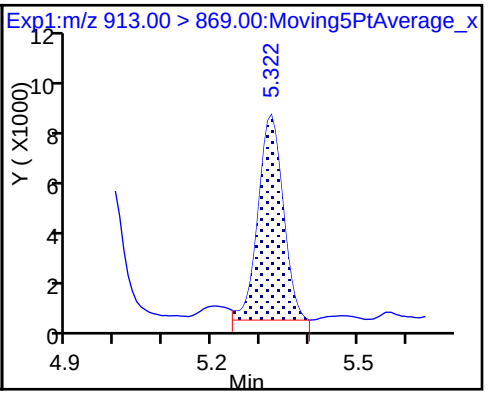
45 Perfluorohexadecanoic acid



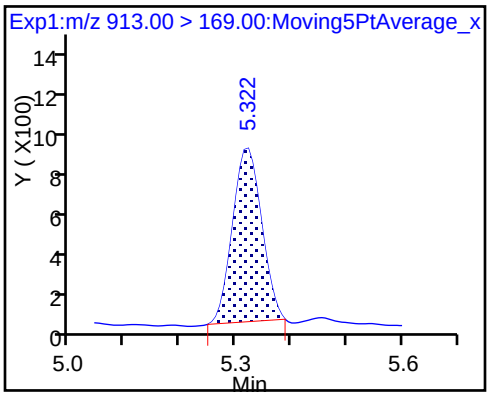
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

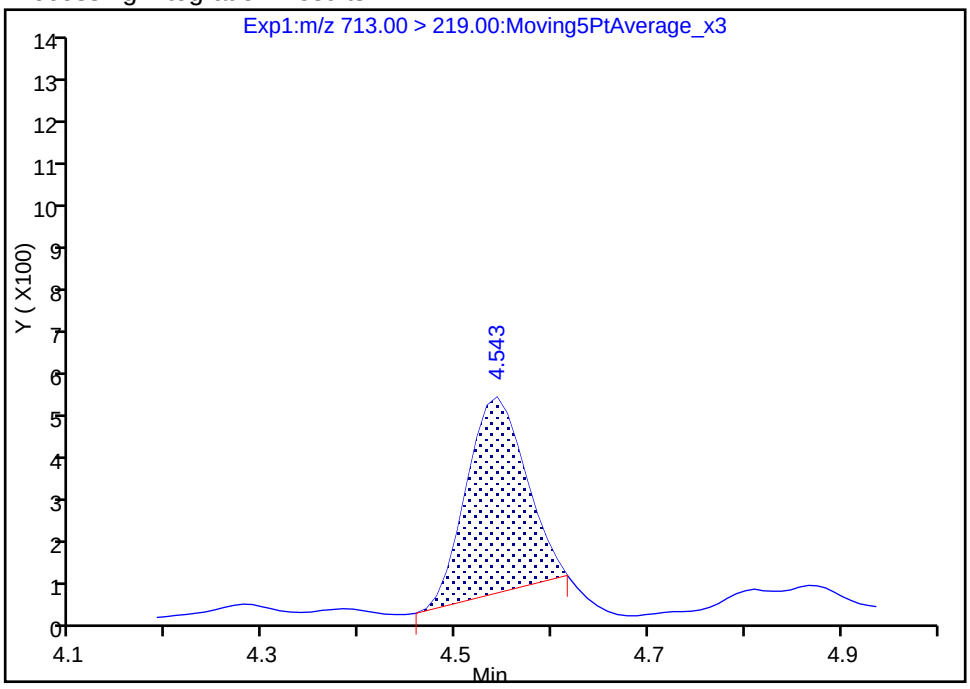
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_002.d				
Injection Date:	16-Mar-2018 23:09:38	Instrument ID:	A8_N		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

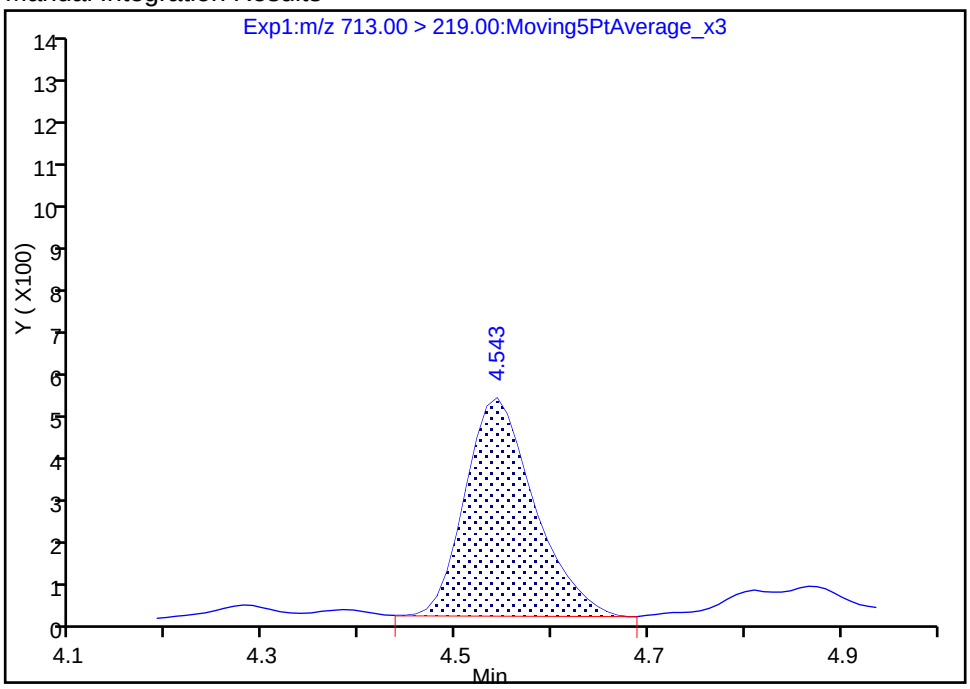
Processing Integration Results

RT: 4.54
Area: 2007
Amount: 0.029595
Amount Units: ng/ml



Manual Integration Results

RT: 4.54
Area: 2605
Amount: 0.029595
Amount Units: ng/ml



Reviewer: phomsophat, 18-Mar-2018 12:21:46

Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 16-Mar-2018 23:17:30 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:26 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:26:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.440	-0.006	1.000	102112	0.0496		99.2	71.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	5550000	2.44		97.7	117440	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.696	-0.005	0.633	4029181	2.51		101	110520	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.691	1.698	-0.007	1.000	98047	0.0521		104	37.0	M
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.730	-0.003	0.646	90825	2.30		98.8	600	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.733	-0.006	1.000	130200	0.0431		97.5	57.1	
298.90 > 99.00	1.727	1.733	-0.006	1.000	54547		2.39(1.25-3.74)	97.5	56.6	
D 60 M2-4:2FTS										
329.00 > 81.00	1.935	1.942	-0.007	0.724	681561	2.41		103	7423	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.944	0.001	1.000	31176	0.0496		106	1916	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.739	4540073	2.54		102	165466	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.982	-0.006	1.000	91368	0.0499		99.7	279	
313.00 > 119.00	1.976	1.982	-0.006	1.000	9865		9.26(5.03-15.10)	99.7	215	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.311	-0.009	1.000	88286	0.0470		94.0	203	
363.00 > 169.00	2.315	2.311	0.004	1.006	35361		2.50(1.13-3.40)	94.0	603	
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.311	-0.009	0.861	4528336	2.61		104	107667	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	122279	0.0489		107	15.0	
399.00 > 99.00	2.315	2.326	-0.011	0.994	38807		3.15(1.50-4.49)	107	15.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.871	5304007	2.29		96.7	74003	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.651	-0.002	0.991	1042798	2.34		98.7	24434	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.652	-0.003	1.000	34810	0.0476		100	2049	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.678	-0.005		4448085	2.50			94177	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.678	-0.005	1.000	91352	0.0480		96.1	29.6	
413.00 > 169.00	2.673	2.678	-0.005	1.000	58410		1.56(0.84-2.52)	96.1	259	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.678	-0.005	1.000	4258090	2.54		102	99222	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.684	-0.003	1.000	97440	0.0475		99.8	3317	
449.00 > 99.00	2.681	2.684	-0.003	1.000	26688		3.65(1.94-5.82)	99.8	771	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.050	-0.006	1.000	77874	0.0461		99.4	286	
499.00 > 99.00	3.044	3.050	-0.006	1.000	17535		4.44(2.31-6.93)	99.4	155	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.050	-0.006	1.139	3729283	2.30		96.2	62938	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.052	-0.001	1.000	71226	0.0522		104	158	
463.00 > 169.00	3.051	3.052	-0.001	1.000	15976		4.46(1.90-5.69)	104	477	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.052	-0.001	1.142	3347940	2.49		99.8	65056	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.388	0.0	1.000	112048	0.0493		98.6	3219	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.388	0.0	1.268	5846985	2.49		99.6	50840	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.406	0.0	1.000	26051	0.0491		103	818	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.406	0.0	1.274	1010561	2.42		101	20290	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.416	-0.001	1.000	50605	0.0480		96.0	236	
513.00 > 169.00	3.415	3.416	-0.001	1.000	11137		4.54(2.36-7.09)	96.0	853	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.416	-0.001	1.278	2777841	2.48		99.1	52102	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.335	877839	2.37		94.8	37604	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.569	3.571	-0.002	1.000	21013	0.0575		115	312	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.729	-0.001	1.000	47472	0.0476		98.9	3260	
599.00 > 99.00	3.728	3.729	-0.001	1.000	17973		2.64(1.39-4.16)	98.9	382	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.399	884068	2.50		99.9	1895	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.738	3.746	-0.008	1.000	18367	0.0530		106	607	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.747	0.001	1.402	2216867	2.52		101	57832	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.750	-0.002	1.000	41093	0.0553		111	118	
563.00 > 169.00	3.748	3.750	-0.002	1.000	9481		4.33(2.12-6.36)	111	797	
D 36 13C2 PFDoA										
615.00 > 570.00	4.036	4.041	-0.005	1.510	2093019	2.51		101	12512	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.036	4.042	-0.006	1.000	40972	0.0478		95.7	8.3	
613.00 > 169.00	4.036	4.042	-0.006	1.000	10185		4.02(2.13-6.40)	95.7	283	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.299	4.304	-0.005	1.000	41880	0.0486		97.3	8.6	
663.00 > 169.00	4.299	4.304	-0.005	1.000	13756		3.04(1.25-3.76)	97.3	197	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.545	-0.001	1.700	1788676	2.35		94.1	13285	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.533	4.545	-0.012	0.998	11344	0.0575		115	184	
713.00 > 219.00	4.533	4.545	-0.012	0.998	6523		1.74(0.71-2.13)	115	75.7	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.854	2591496	2.33		93.2	9208	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.960	-0.005	1.000	70421	0.0500		100	6.2	
813.00 > 169.00	4.955	4.960	-0.005	1.000	12531		5.62(2.86-8.58)	100	156	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.320	-0.005	1.000	50136	0.0496		99.2	9.6	
913.00 > 169.00	5.315	5.320	-0.005	1.000	6133		8.17(3.83-11.48)	99.2	92.0	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:27 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_003.d

Injection Date: 16-Mar-2018 23:17:30 Instrument ID: A8_N

Lims ID: IC L2 Full

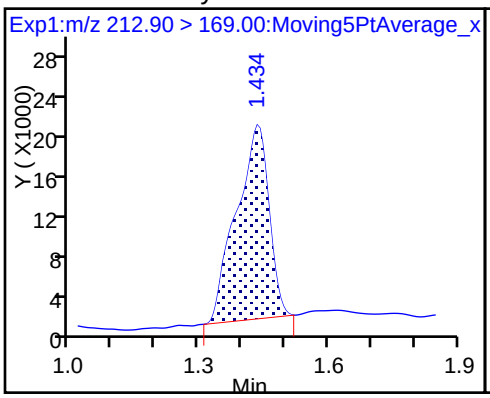
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

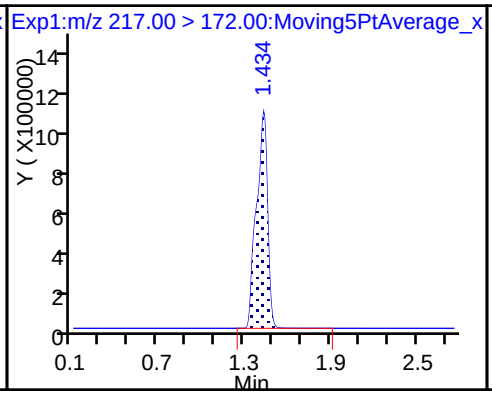
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

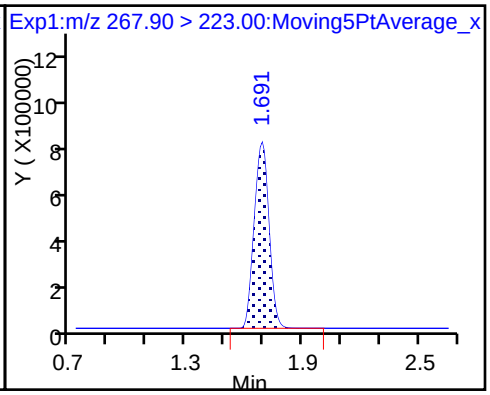
2 Perfluorobutyric acid



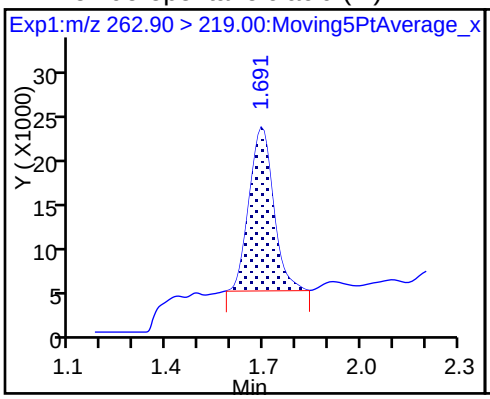
D 1 13C4 PFBA



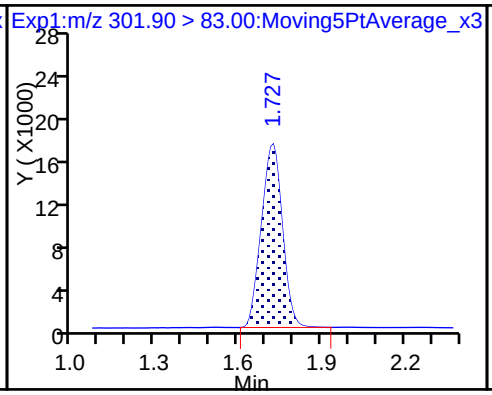
D 3 13C5-PFPeA



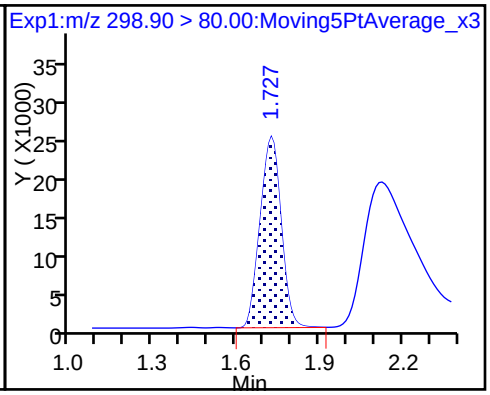
4 Perfluoropentanoic acid (M)



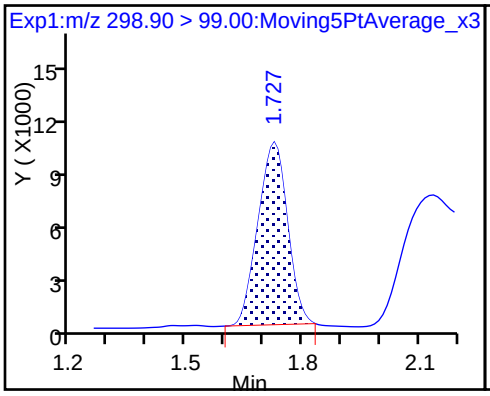
D 47 13C3-PFBS



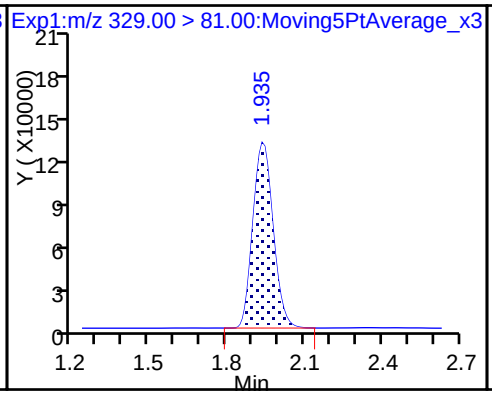
5 Perfluorobutanesulfonic acid



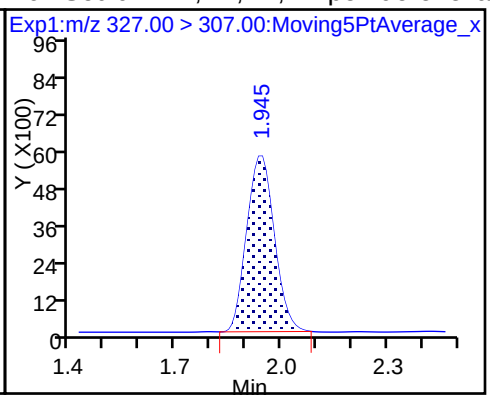
5 Perfluorobutanesulfonic acid



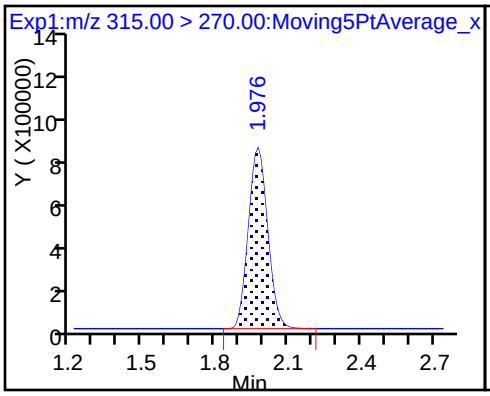
D 60 M2-4:2FTS



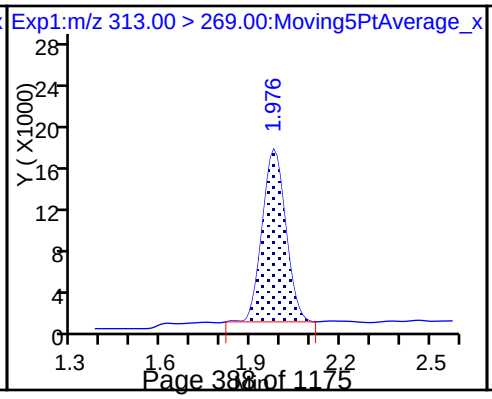
61 Sodium 1H,1H,2H,2H-perfluorohexane



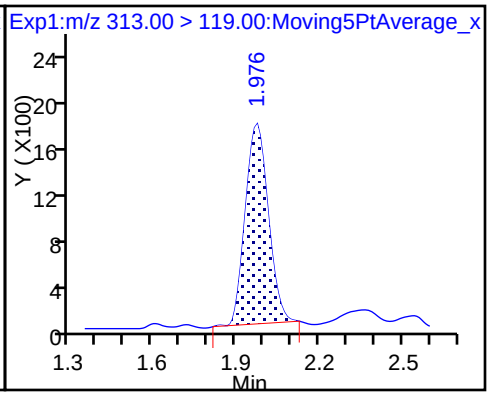
D 7 13C2 PFHxA



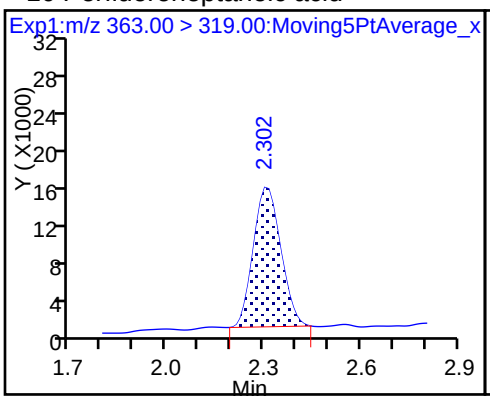
6 Perfluorohexanoic acid



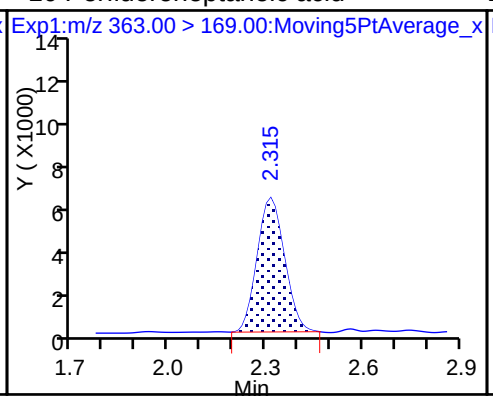
6 Perfluorohexanoic acid



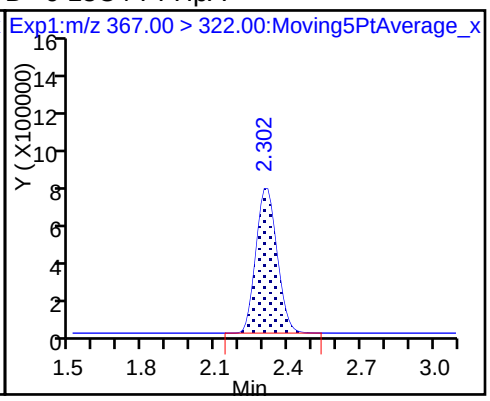
10 Perfluoroheptanoic acid



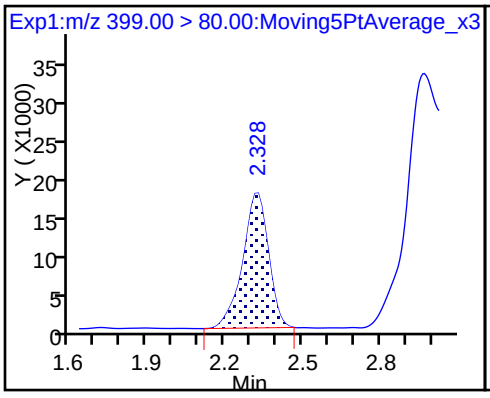
10 Perfluoroheptanoic acid



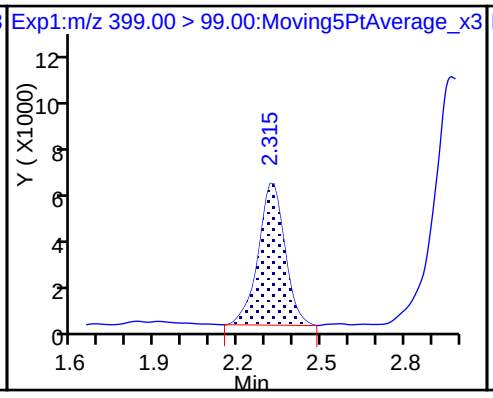
D 9 13C4-PFHpA



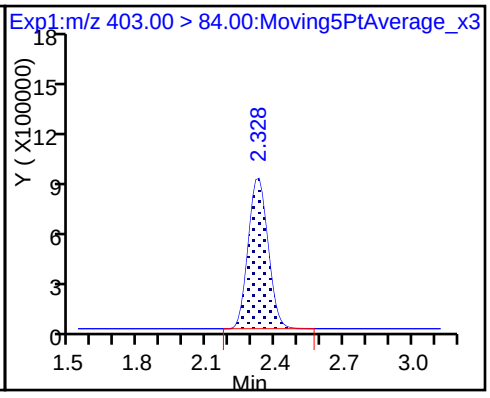
8 Perfluorohexanesulfonic acid



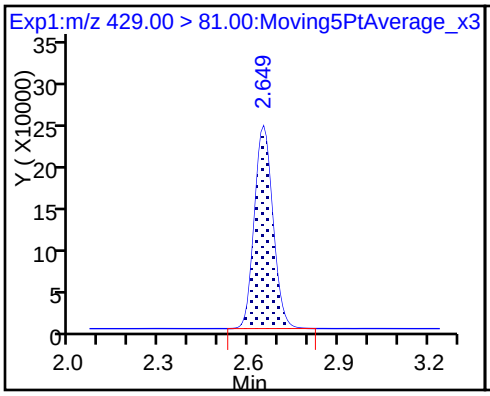
8 Perfluorohexanesulfonic acid



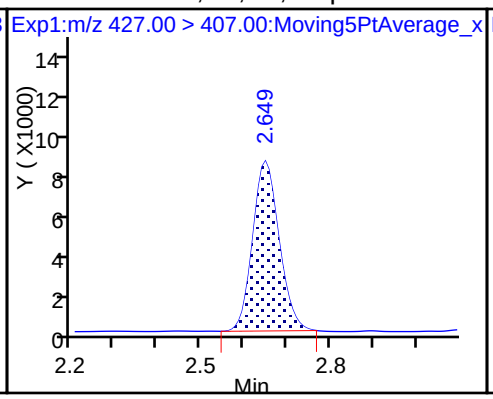
D 11 18O2 PFHxS



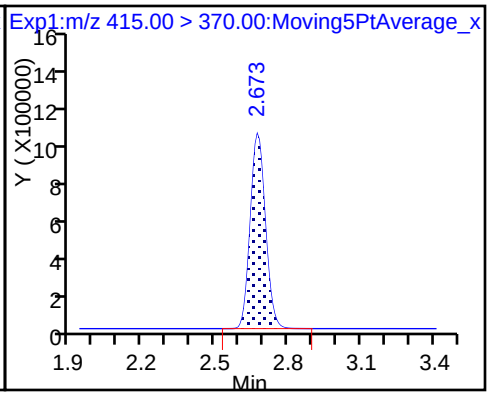
D 12 M2-6:2FTS



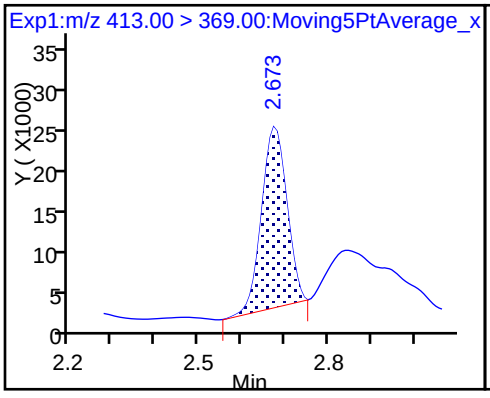
13 Sodium 1H,1H,2H,2H-perfluorooctane



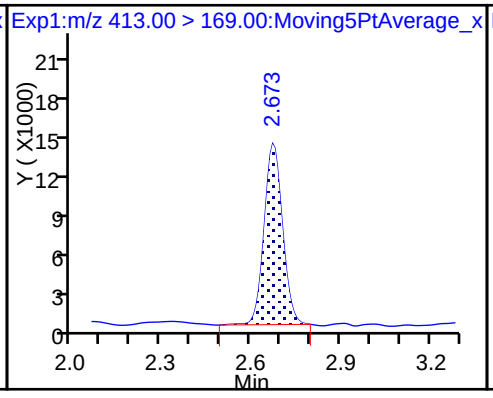
M62 13C2-PFOA



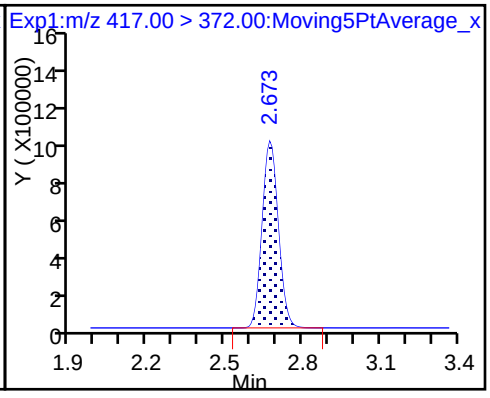
15 Perfluorooctanoic acid



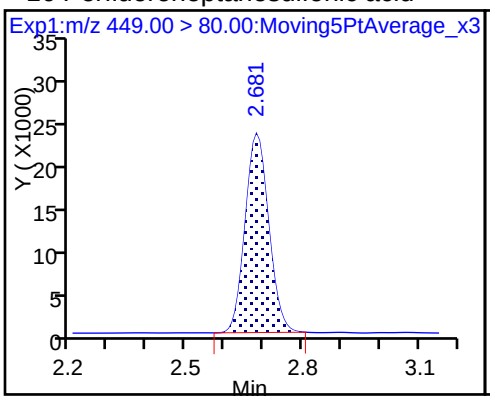
15 Perfluorooctanoic acid



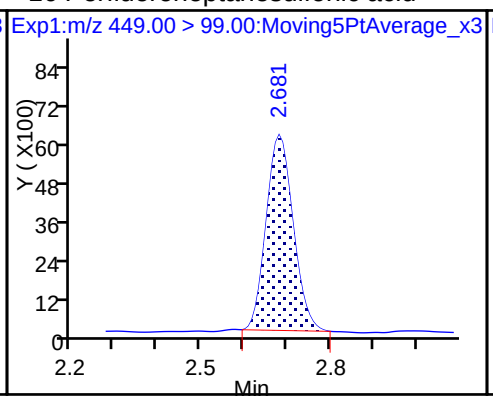
D 14 13C4 PFOA



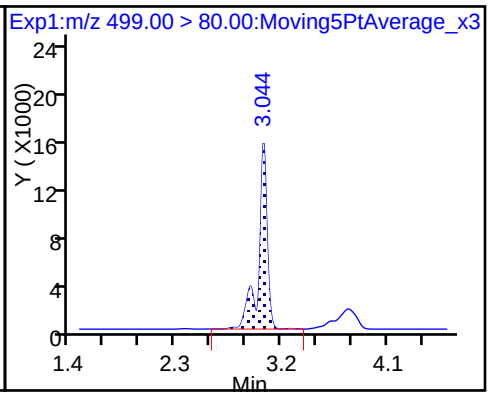
16 Perfluoroheptanesulfonic acid



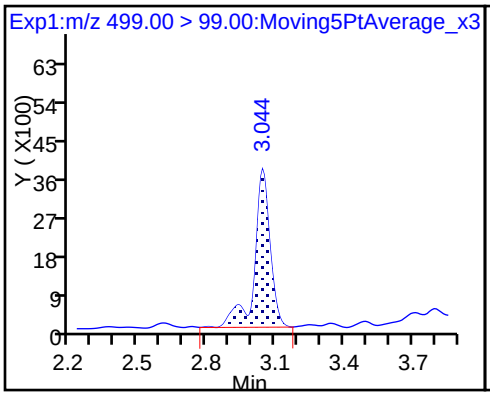
16 Perfluoroheptanesulfonic acid



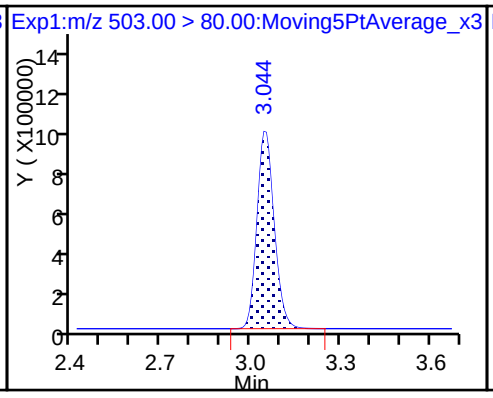
17 Perfluorooctane sulfonic acid



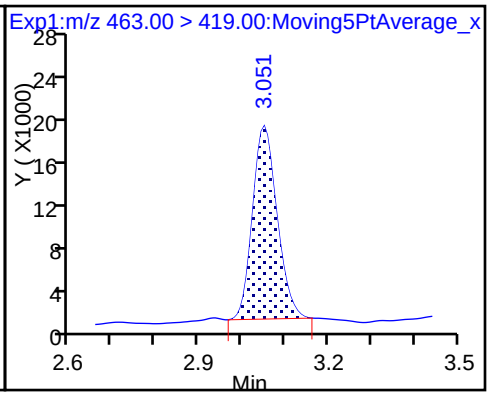
17 Perfluorooctane sulfonic acid



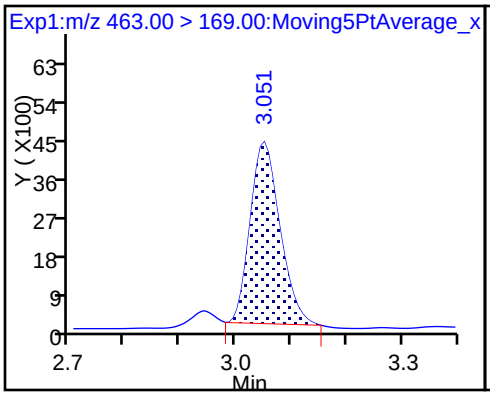
D 18 13C4 PFOS



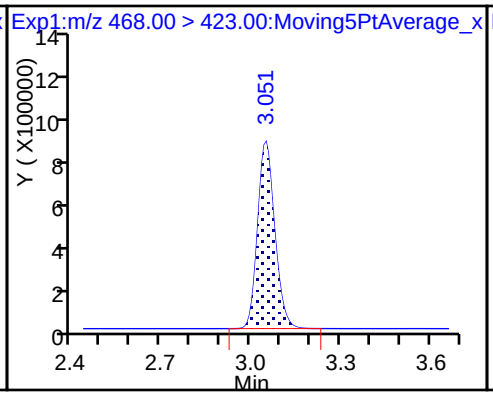
20 Perfluorononanoic acid



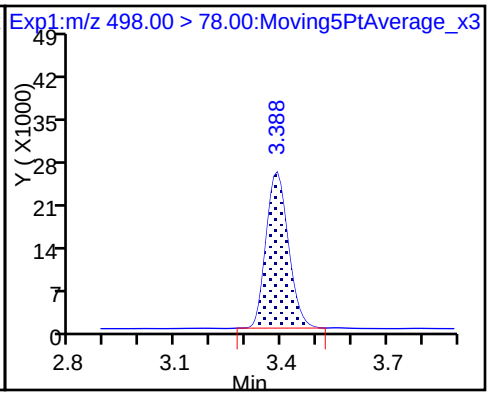
20 Perfluorononanoic acid



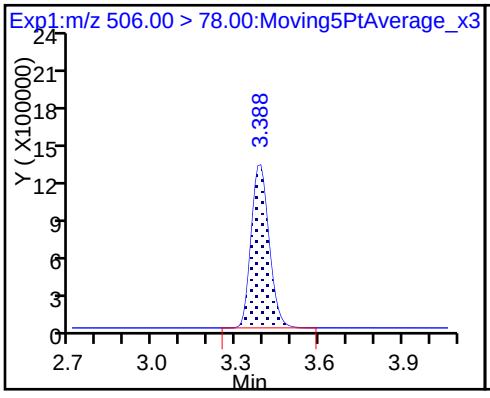
D 19 13C5 PFNA



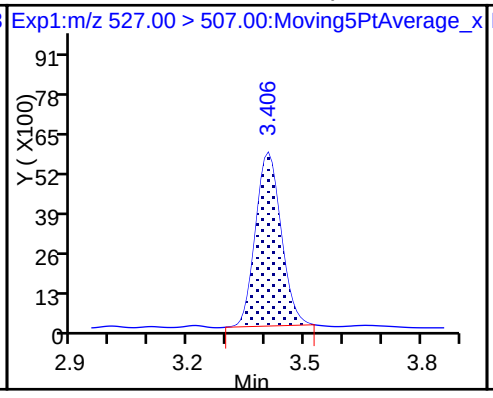
22 Perfluorooctane Sulfonamide



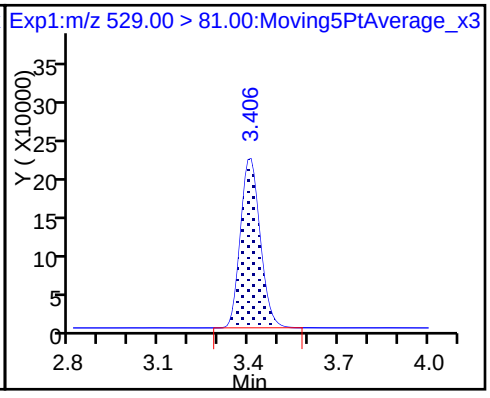
D 21 13C8 FOSA



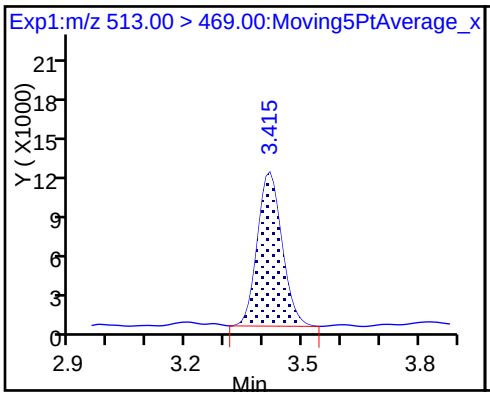
25 Sodium 1H,1H,2H,2H-perfluorodecane



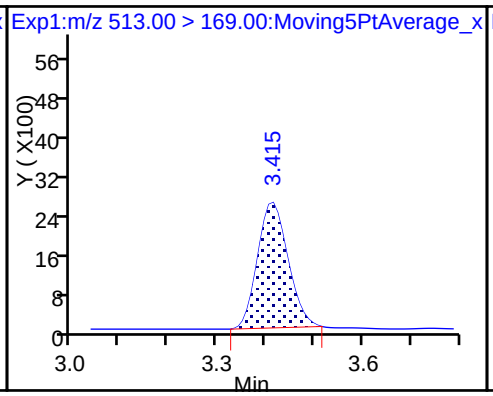
D 26 M2-8:2FTS



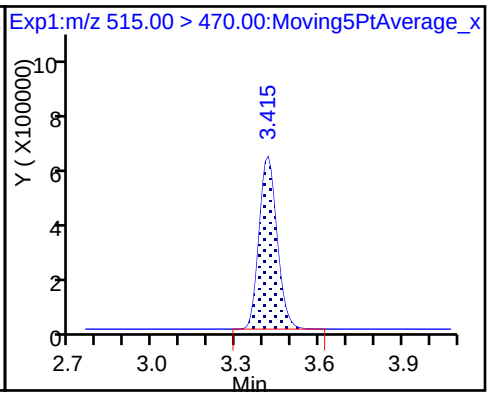
24 Perfluorodecanoic acid



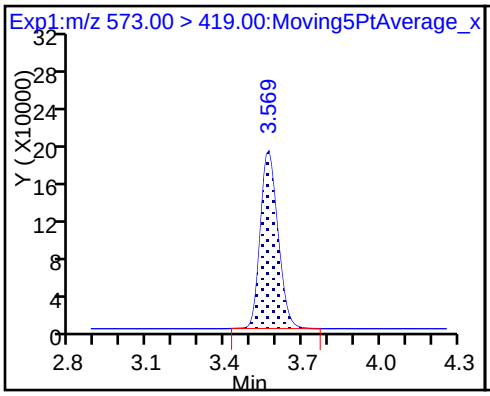
24 Perfluorodecanoic acid



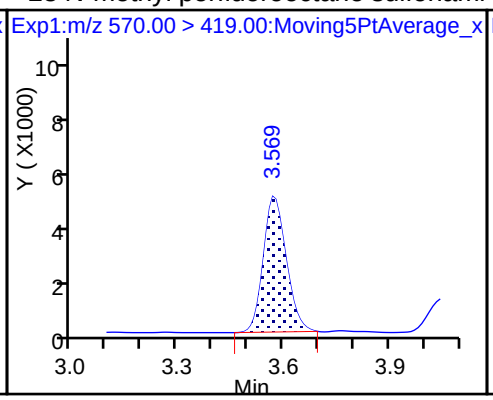
D 23 13C2 PFDA



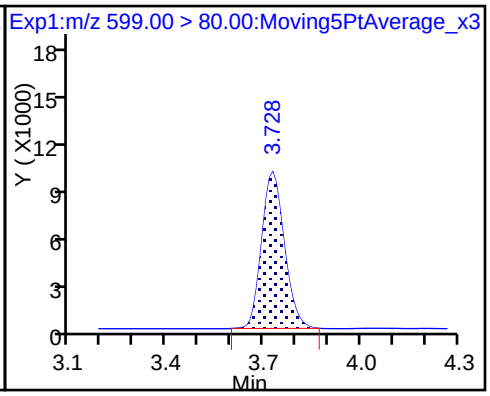
D 27 d3-NMeFOSAA



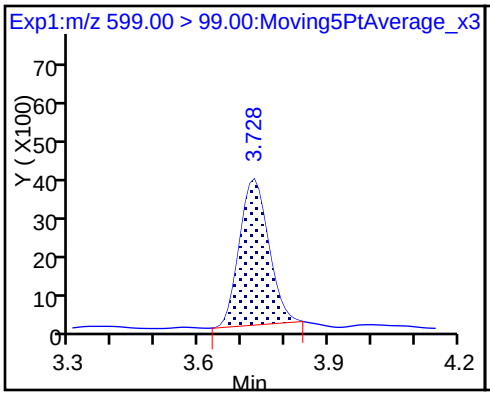
28 N-methyl perfluorooctane sulfonami



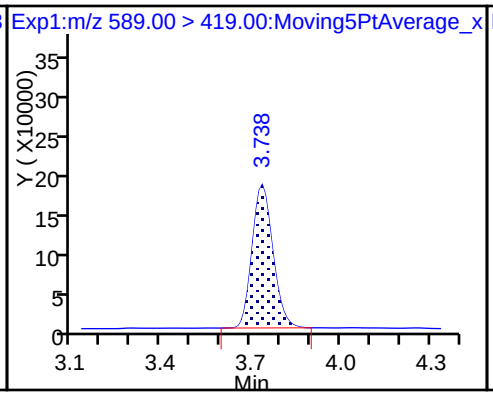
29 Perfluorodecane Sulfonic acid



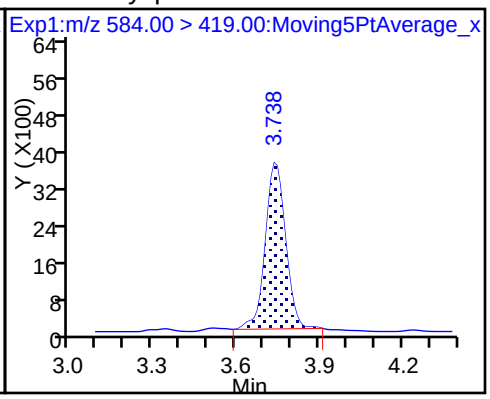
29 Perfluorodecane Sulfonic acid



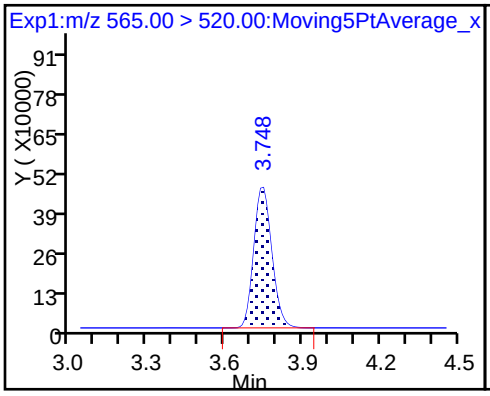
D 32 d5-NEtFOSAA



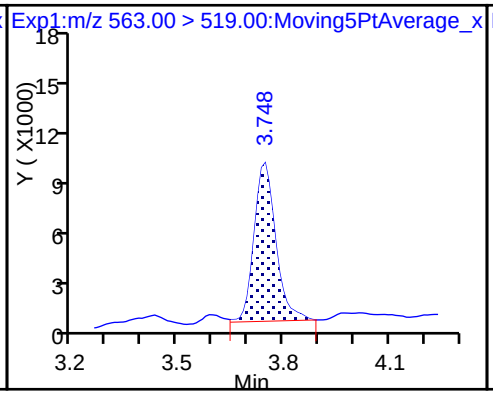
33 N-ethyl perfluorooctane sulfonamid



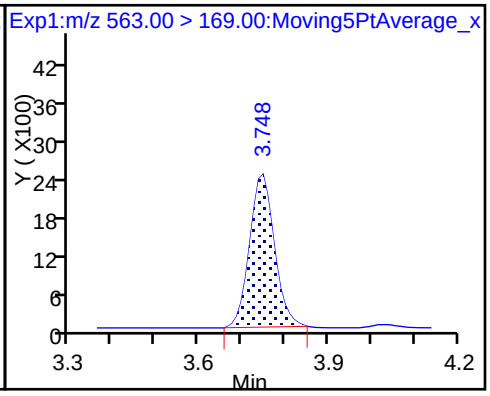
D 30 13C2 PFUnA



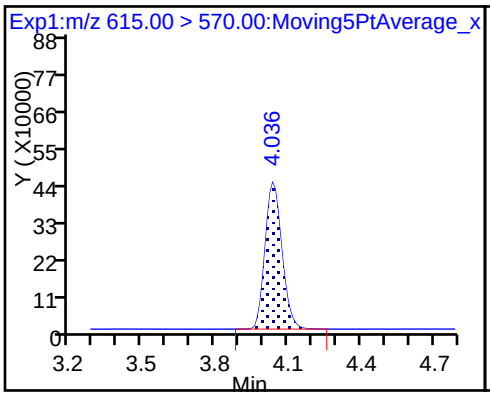
31 Perfluoroundecanoic acid



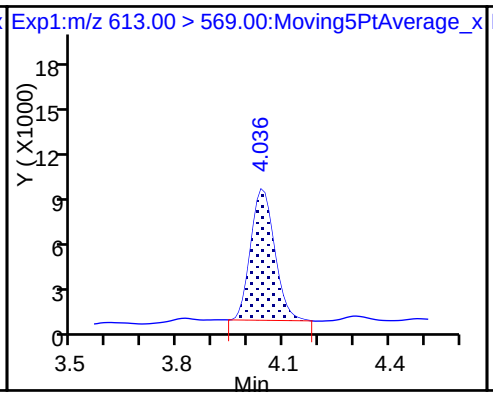
31 Perfluoroundecanoic acid



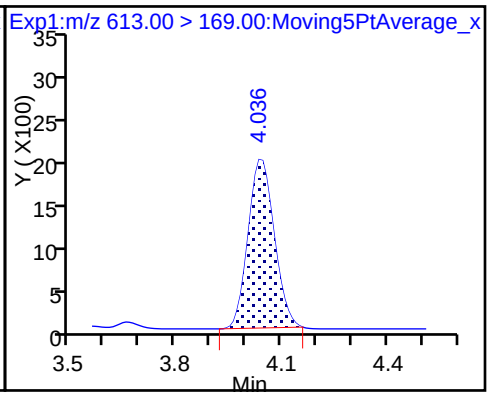
D 36 13C2 PFDoA



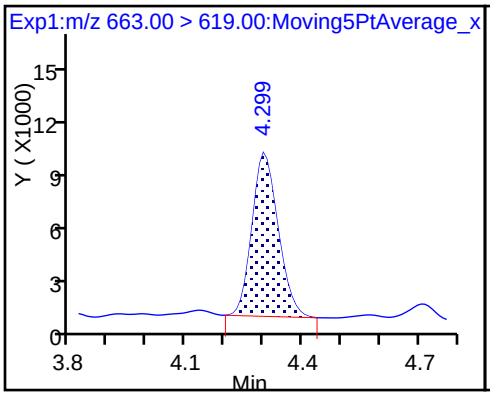
37 Perfluorododecanoic acid



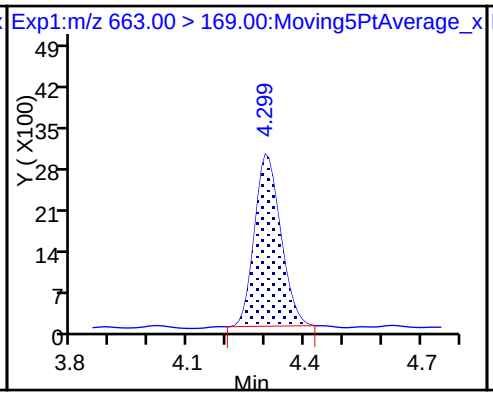
37 Perfluorododecanoic acid



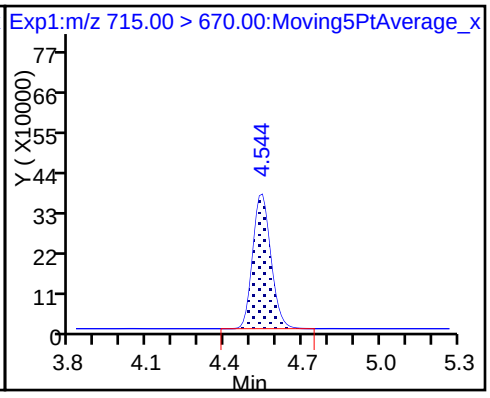
41 Perfluorotridecanoic acid



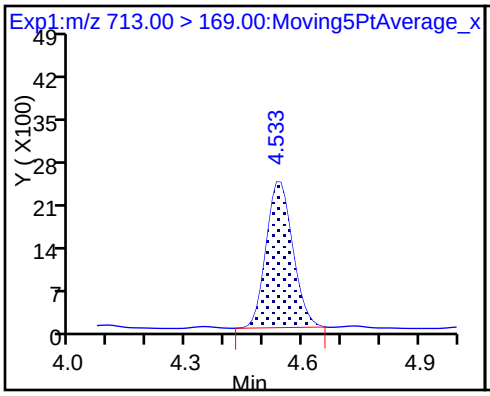
41 Perfluorotridecanoic acid



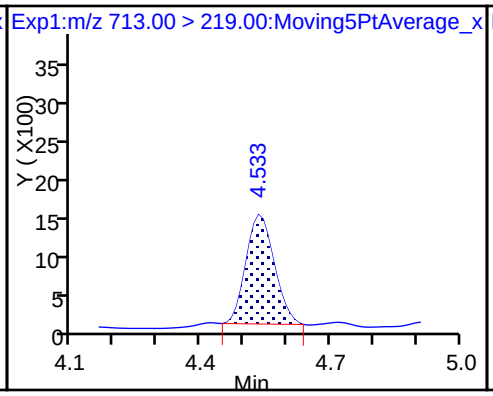
D 43 13C2-PFTeDA



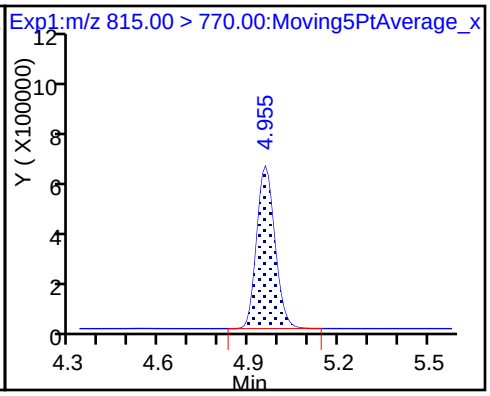
42 Perfluorotetradecanoic acid



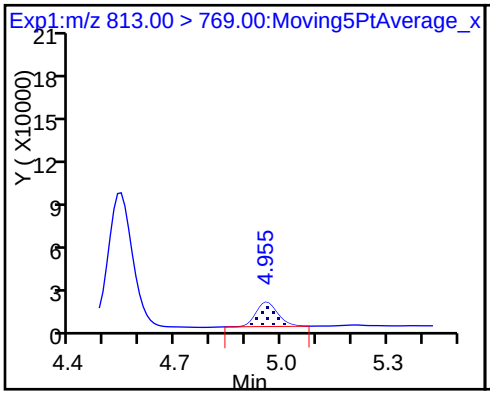
42 Perfluorotetradecanoic acid



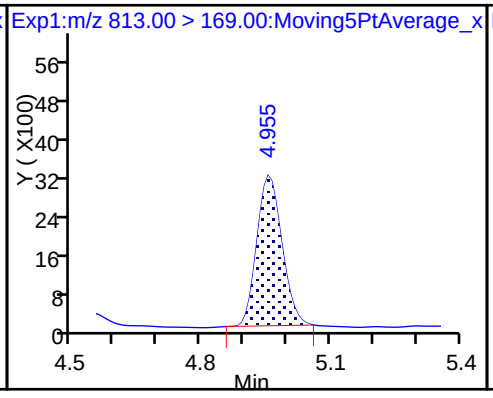
D 44 13C2-PFHxDA



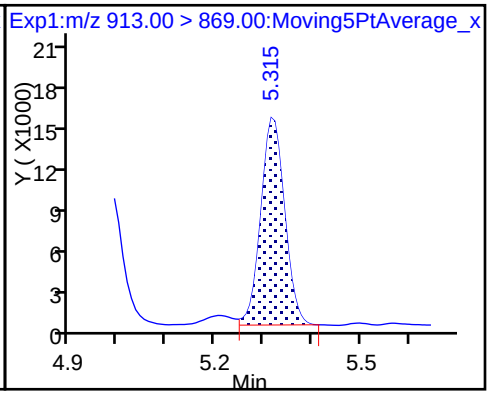
45 Perfluorohexadecanoic acid



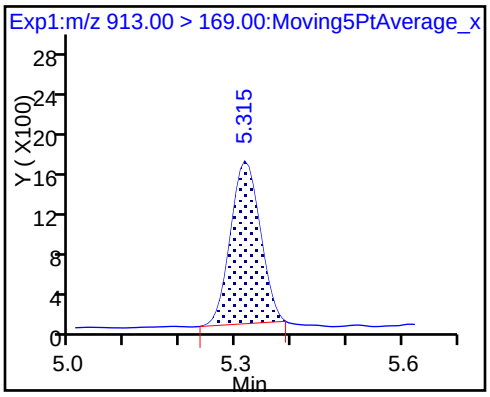
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

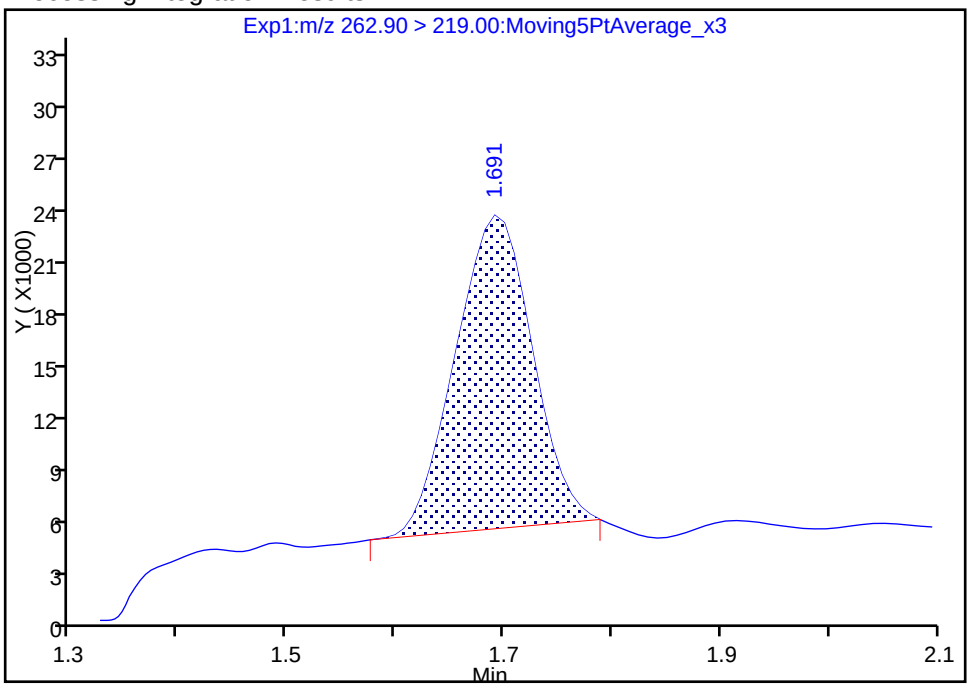
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_003.d
Injection Date: 16-Mar-2018 23:17:30 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

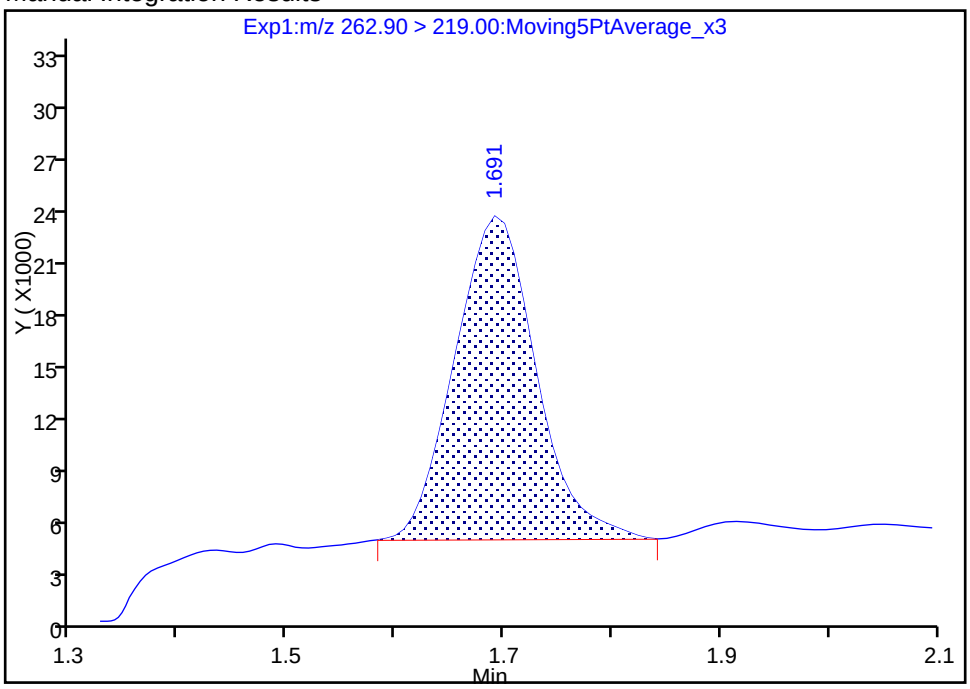
Processing Integration Results

RT: 1.69
Area: 89608
Amount: 0.048214
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 98047
Amount: 0.052079
Amount Units: ng/ml



Reviewer: phomsophat, 18-Mar-2018 12:24:49
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 16-Mar-2018 23:25:20 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:29 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:26:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	5676105	2.37		94.9	109752	
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.440	-0.006	1.000	528325	0.2509		100	384	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.696	-0.005	0.633	4142560	2.45		98.2	134338	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.698	-0.007	1.000	461977	0.2387		95.5	175	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.730	-0.003	0.646	92166	2.21		95.2	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.733	-0.006	1.000	662611	0.2160		97.7	292	
298.90 > 99.00	1.727	1.733	-0.006	1.000	285306		2.32(1.25-3.74)	97.7	291	
D 60 M2-4:2FTS										
329.00 > 81.00	1.935	1.942	-0.007	0.724	667108	2.24		95.9	6920	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.935	1.944	-0.009	1.000	149763	0.2350		101	9381	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.739	4545197	2.42		96.6	103442	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.982	-0.006	1.000	453548	0.2472		98.9	1336	
313.00 > 119.00	1.976	1.982	-0.006	1.000	39826		11.39(5.03-15.10)	98.9	879	
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.311	-0.009	0.861	4288080	2.34		93.7	102910	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.311	-0.009	1.000	455401	0.2562		102	989	
363.00 > 169.00	2.302	2.311	-0.009	1.000	171167		2.66(1.13-3.40)	102	3577	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.326	-0.011	0.866	5345110	2.19		92.6	52778	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.315	2.326	-0.011	1.000	560663	0.2224		97.8	68.7	
399.00 > 99.00	2.315	2.326	-0.011	1.000	186807		3.00(1.50-4.49)	97.8	69.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.641	2.651	-0.010	0.988	1075617	2.29		96.6	22683	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.641	2.652	-0.011	1.000	184494	0.2447		103	10820	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.678	-0.005	1.000	4329764	2.45		98.0	91608	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.678	-0.005	1.000	440615	0.2279		91.2	139	
413.00 > 169.00	2.673	2.678	-0.005	1.000	250016		1.76(0.84-2.52)	91.2	1020	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.678	-0.005		4684467	2.50			99324	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.673	2.684	-0.011	1.000	499055	0.2351		98.8	11674	
449.00 > 99.00	2.673	2.684	-0.011	1.000	131789		3.79(1.94-5.82)	98.8	3882	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.050	-0.006	1.139	3861206	2.26		94.6	55017	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.050	-0.006	1.000	379502	0.2170		93.5	1600	
499.00 > 99.00	3.044	3.050	-0.006	1.000	84823		4.47(2.31-6.93)	93.5	1099	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.052	-0.008	1.139	3409796	2.41		96.5	78236	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.052	-0.008	1.000	332490	0.2391		95.6	758	
463.00 > 169.00	3.044	3.052	-0.008	1.000	79660		4.17(1.90-5.69)	95.6	2508	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.388	-0.008	1.265	5924910	2.40		95.9	50173	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.388	-0.008	1.000	575124	0.2497		99.9	21834	
D 26 M2-8:2FTS										
529.00 > 81.00	3.398	3.406	-0.008	1.272	1037774	2.36		98.4	19457	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.398	3.406	-0.008	1.000	129787	0.2382		99.5	5835	
D 23 13C2 PFDA										
515.00 > 470.00	3.407	3.416	-0.009	1.275	2940123	2.49		99.6	50957	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.416	-0.009	1.000	277398	0.2486		99.4	1278	
513.00 > 169.00	3.407	3.416	-0.009	1.000	47991		5.78(2.36-7.09)	99.4	2723	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.561	3.570	-0.009	1.333	926313	2.38		95.0	22741	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.570	3.571	-0.001	1.002	90574	0.2347		93.9	1811	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.729	-0.002	1.000	246261	0.2387		99.1	7488	
599.00 > 99.00	3.727	3.729	-0.002	1.000	83238		2.96(1.39-4.16)	99.1	1772	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.398	885725	2.38		95.0	2102	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.738	3.746	-0.008	1.000	82250	0.2371		94.8	2411	
D 30 13C2 PFUnA										
565.00 > 520.00	3.738	3.747	-0.009	1.398	2288527	2.47		99.0	47946	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.750	-0.002	1.003	170791	0.2226		89.1	579	
563.00 > 169.00	3.738	3.750	-0.012	1.000	47832		3.57(2.12-6.36)	89.1	3804	
D 36 13C2 PFDoA										
615.00 > 570.00	4.035	4.041	-0.006	1.510	2098644	2.39		95.7	12400	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.035	4.042	-0.007	1.000	216392	0.2520		101	42.4	
613.00 > 169.00	4.035	4.042	-0.007	1.000	56005		3.86(2.13-6.40)	101	1660	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.304	-0.006	1.000	219791	0.2545		102	46.0	
663.00 > 169.00	4.298	4.304	-0.006	1.000	71054		3.09(1.25-3.76)	102	1089	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.700	1912234	2.39		95.6	14787	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.545	-0.002	1.000	48261	0.2288		91.5	592	
713.00 > 219.00	4.533	4.545	-0.012	0.998	37105		1.30(0.71-2.13)	91.5	412	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.854	2831717	2.42		96.8	9806	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.960	0.004	1.002	287100	0.2522		101	24.5	
813.00 > 169.00	4.964	4.960	0.004	1.002	51630		5.56(2.86-8.58)	101	604	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.324	5.320	0.004	1.000	261856	0.2371		94.9	47.1	
913.00 > 169.00	5.316	5.320	-0.004	0.999	33024		7.93(3.83-11.48)	94.9	438	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:30 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_004.d

Injection Date: 16-Mar-2018 23:25:20 Instrument ID: A8_N

Lims ID: IC L3 Full

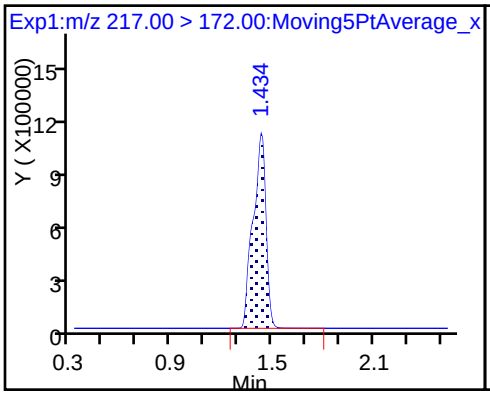
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

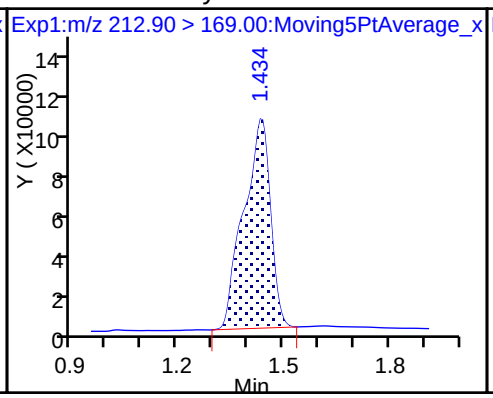
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

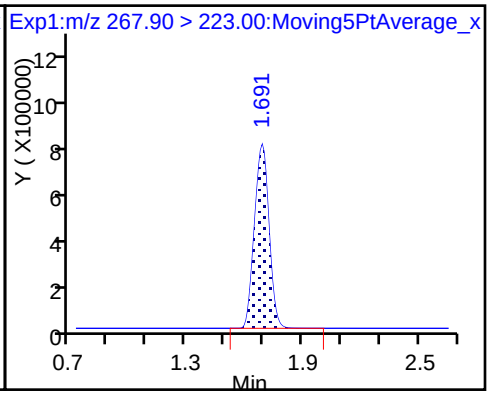
D 1 13C4 PFBA



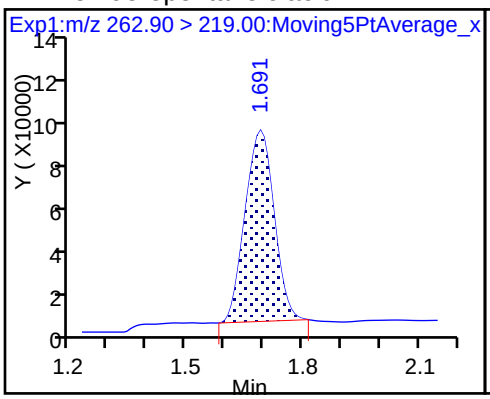
2 Perfluorobutyric acid



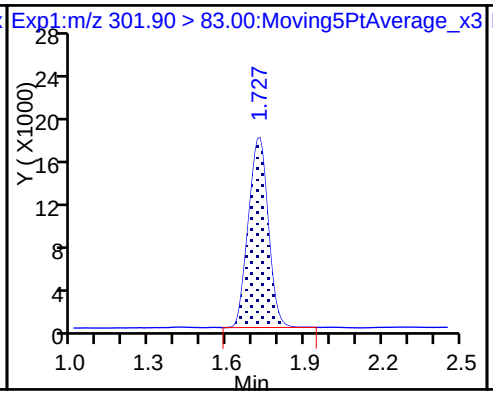
D 3 13C5-PFPeA



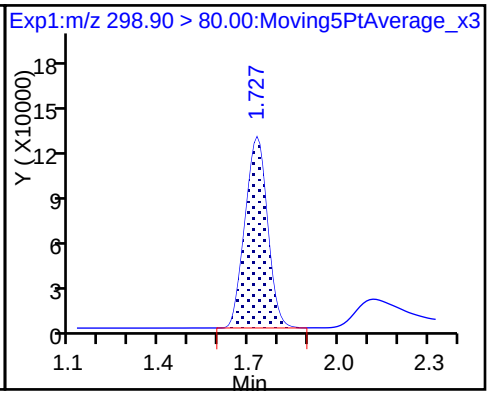
4 Perfluoropentanoic acid



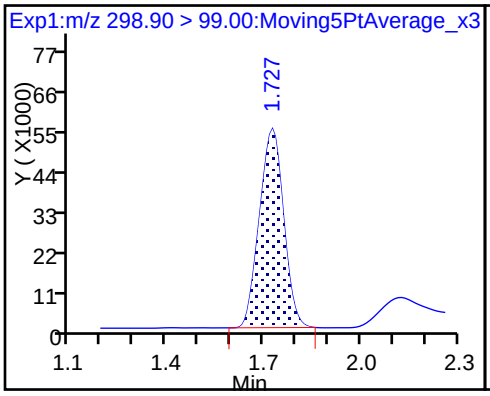
D 47 13C3-PFBS



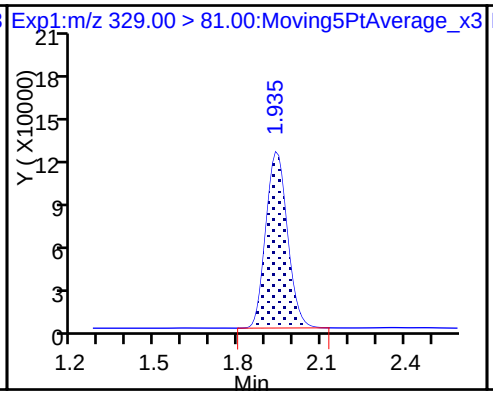
5 Perfluorobutanesulfonic acid



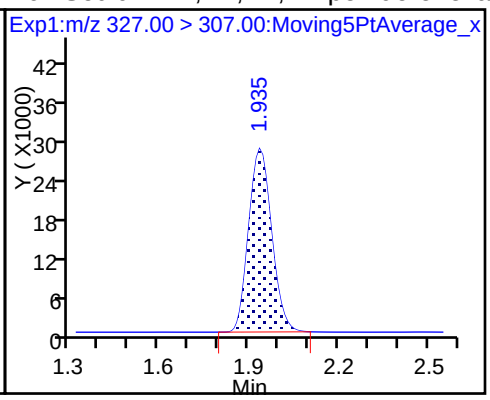
5 Perfluorobutanesulfonic acid



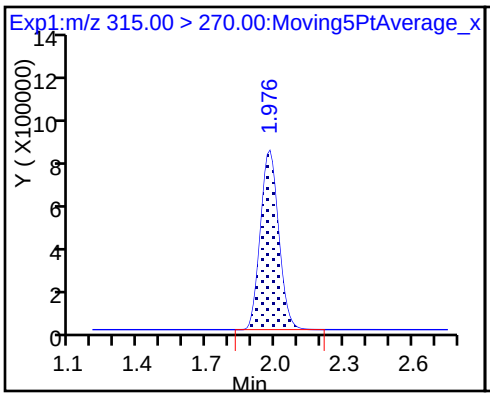
D 60 M2-4:2FTS



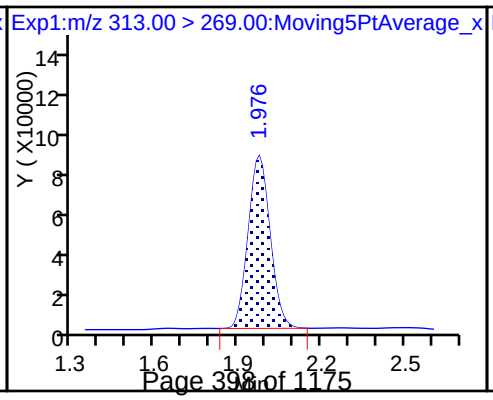
61 Sodium 1H,1H,2H,2H-perfluorohexane



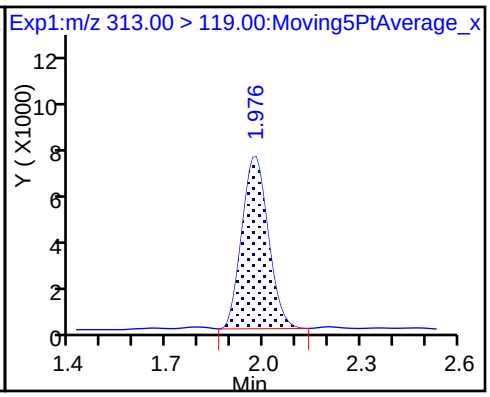
D 7 13C2 PFHxA



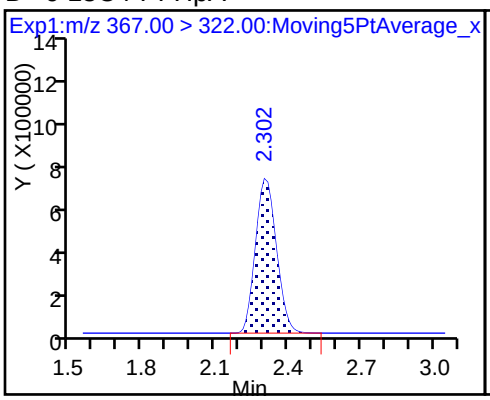
6 Perfluorohexanoic acid



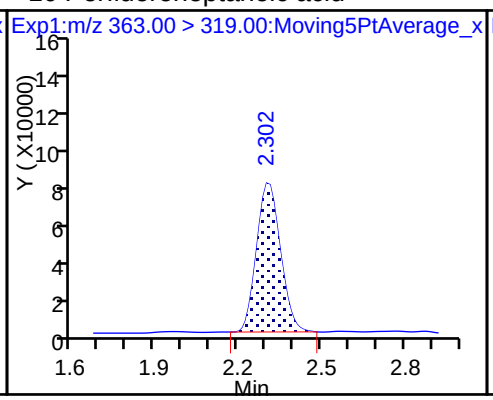
6 Perfluorohexanoic acid



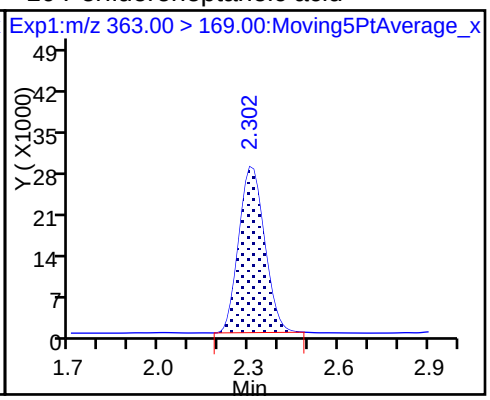
D 9 13C4-PFHpA



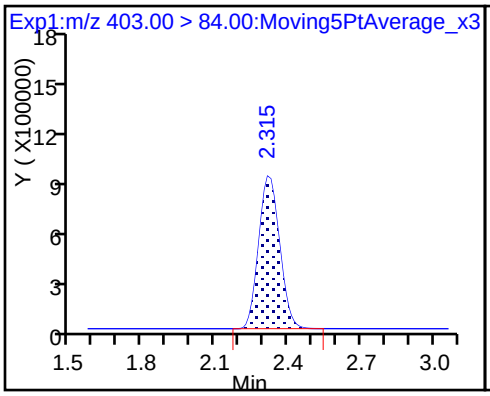
10 Perfluoroheptanoic acid



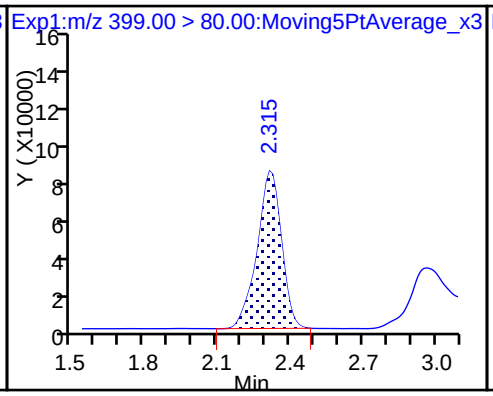
10 Perfluoroheptanoic acid



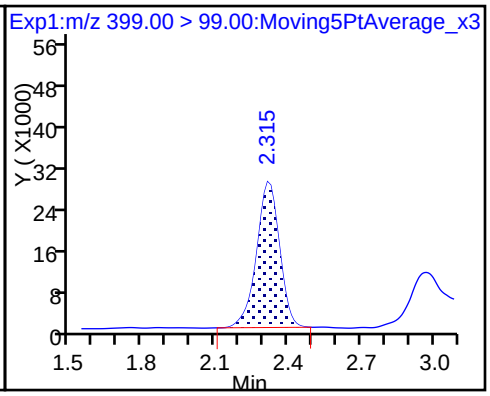
D 11 18O2 PFHxS



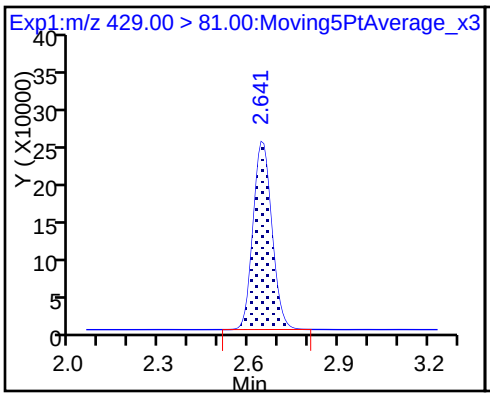
8 Perfluorohexanesulfonic acid



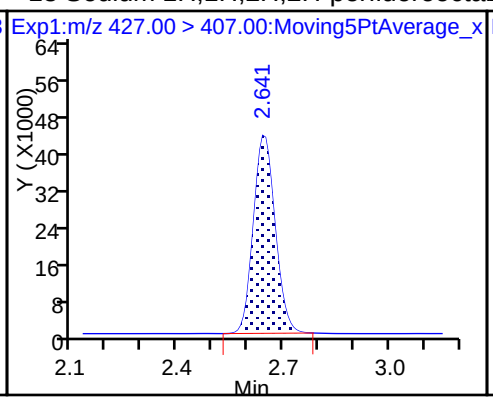
8 Perfluorohexanesulfonic acid



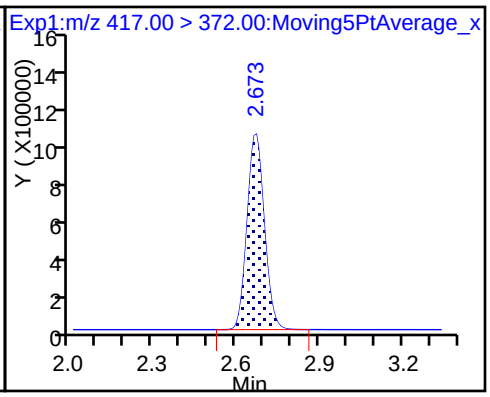
D 12 M2-6:2FTS



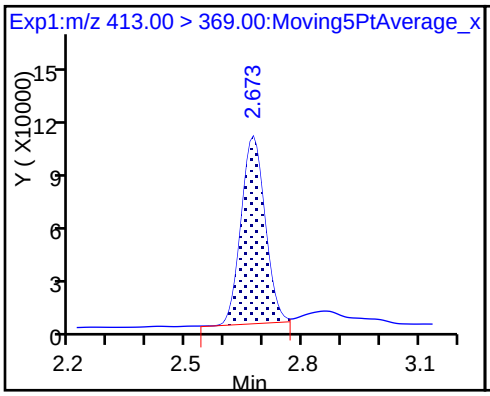
13 Sodium 1H,1H,2H,2H-perfluorooctane



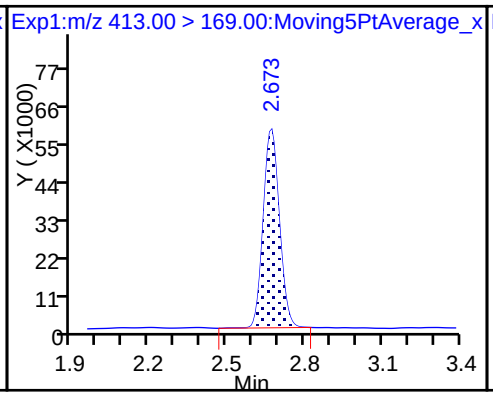
D 14 13C4 PFOA



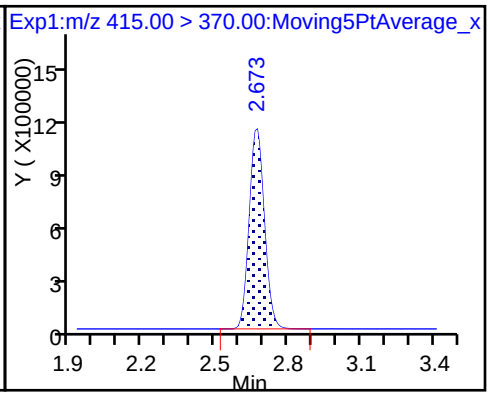
15 Perfluorooctanoic acid



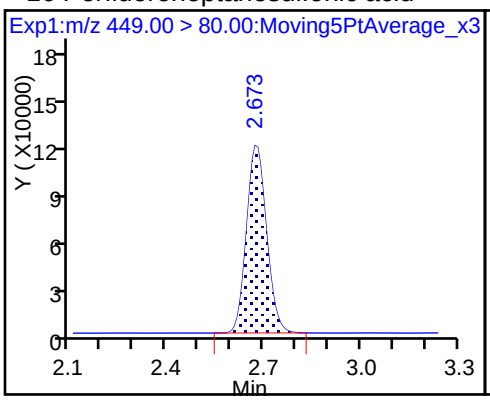
15 Perfluorooctanoic acid



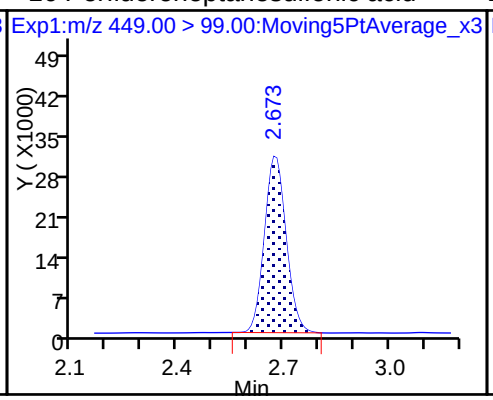
* 62 13C2-PFOA



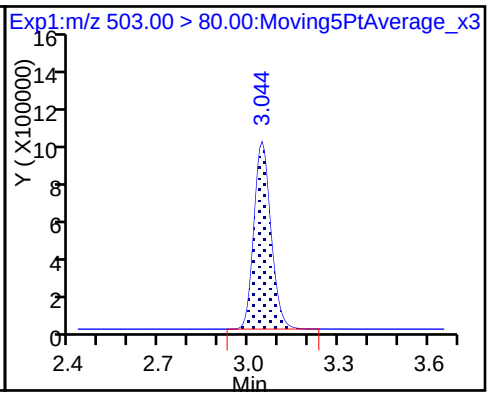
16 Perfluoroheptanesulfonic acid



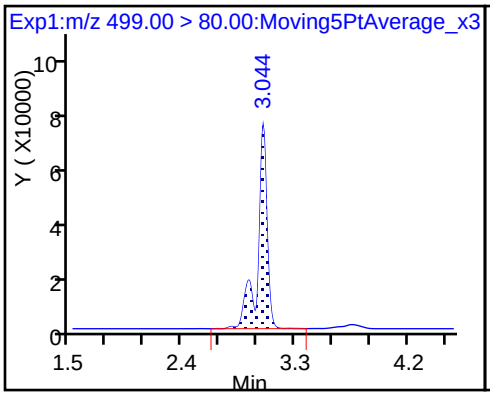
16 Perfluoroheptanesulfonic acid



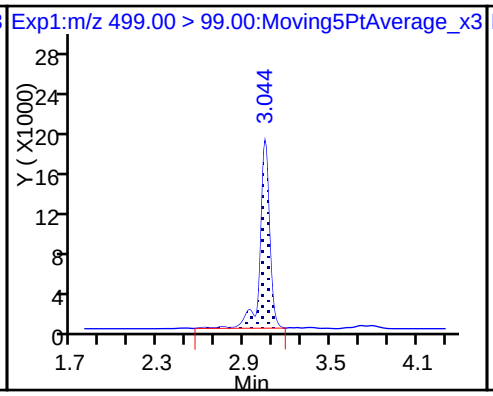
D 18 13C4 PFOS



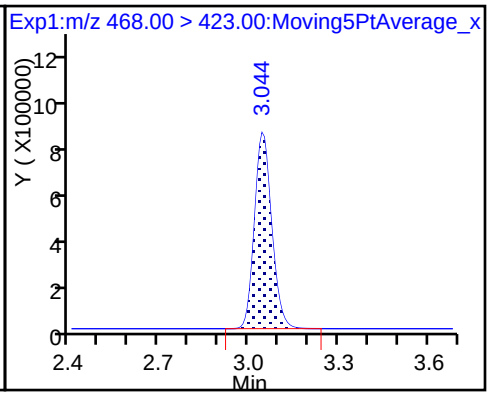
17 Perfluorooctane sulfonic acid



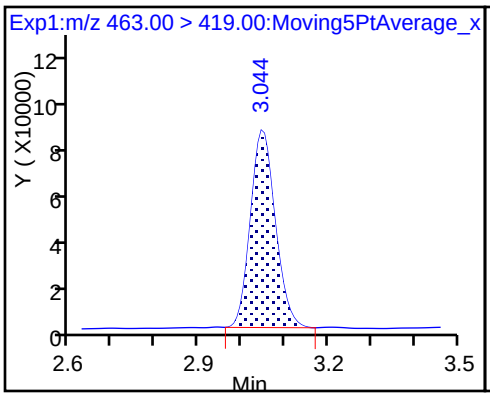
17 Perfluorooctane sulfonic acid



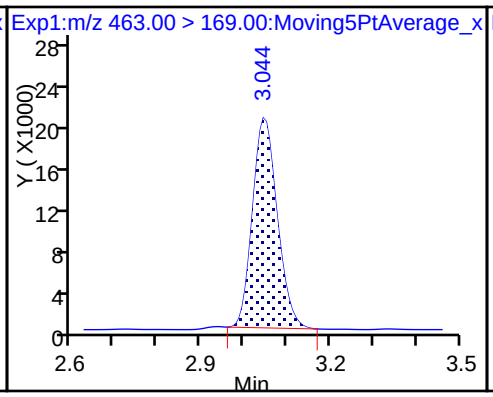
D 19 13C5 PFNA



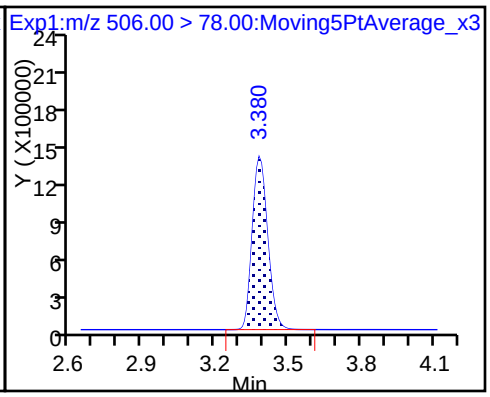
20 Perfluorononanoic acid



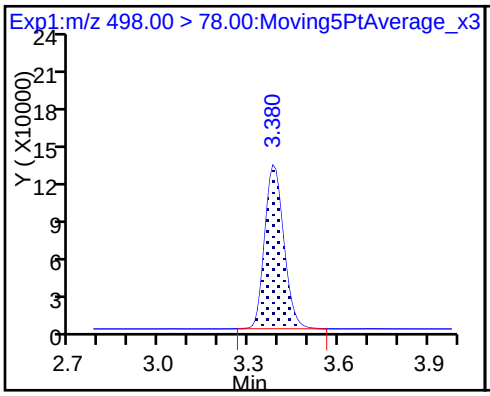
20 Perfluorononanoic acid



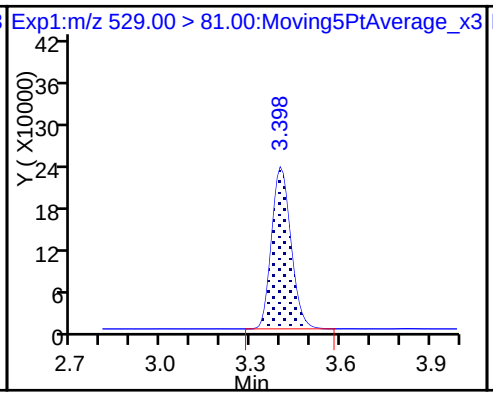
D 21 13C8 FOSA



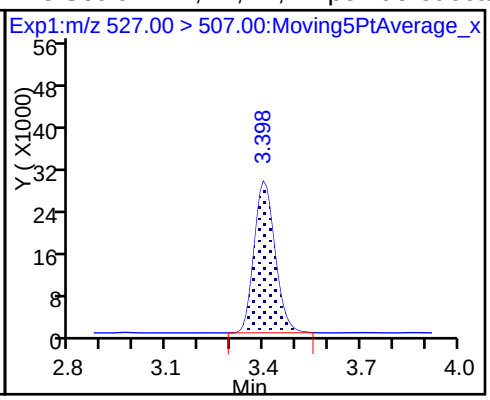
22 Perfluorooctane Sulfonamide



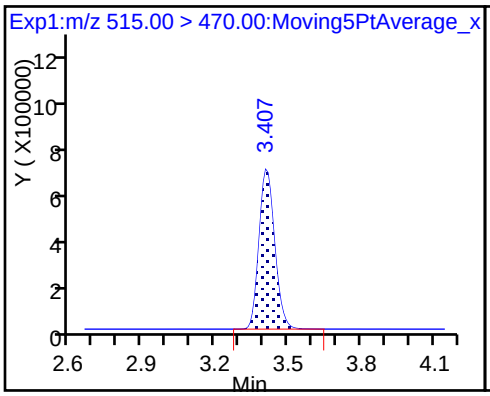
D 26 M2-8:2FTS



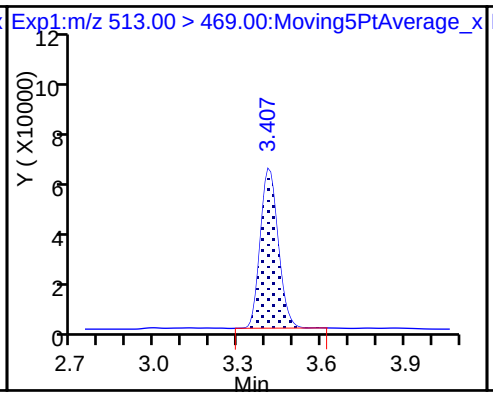
25 Sodium 1H,1H,2H,2H-perfluorodecane



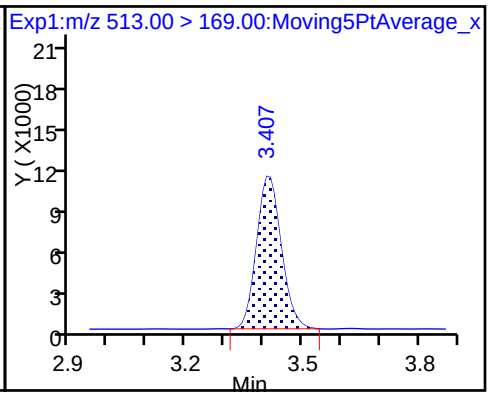
D 23 13C2 PFDA



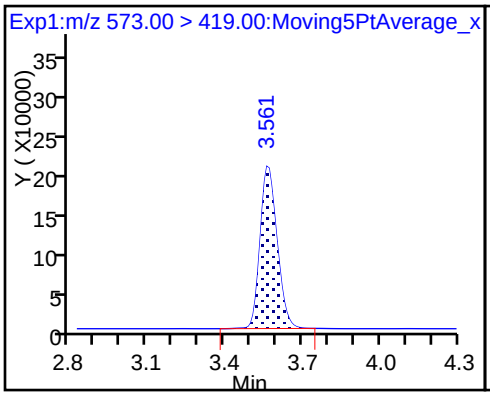
24 Perfluorodecanoic acid



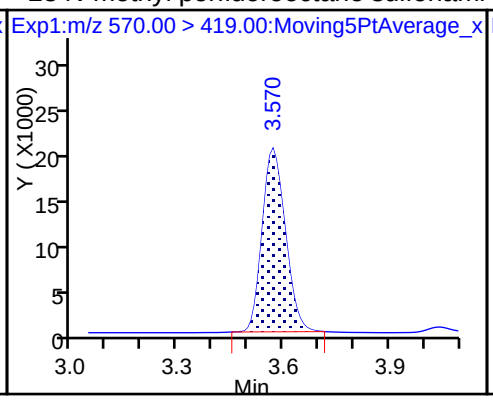
24 Perfluorodecanoic acid



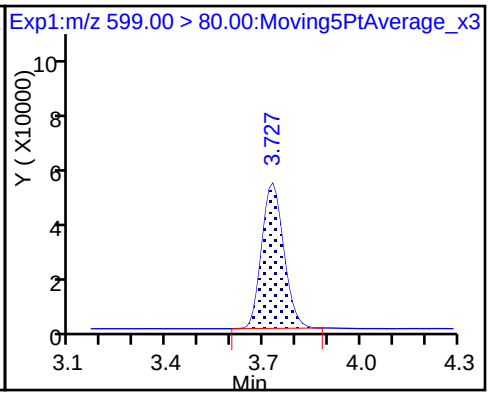
D 27 d3-NMeFOSAA



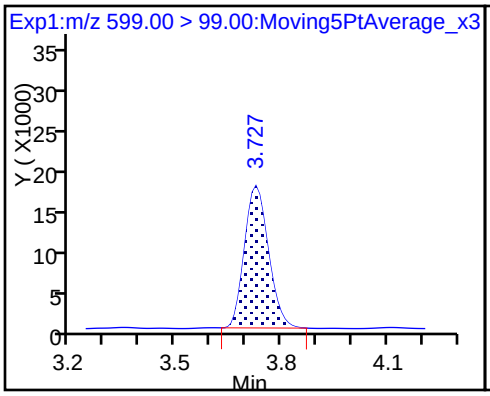
28 N-methyl perfluorooctane sulfonami



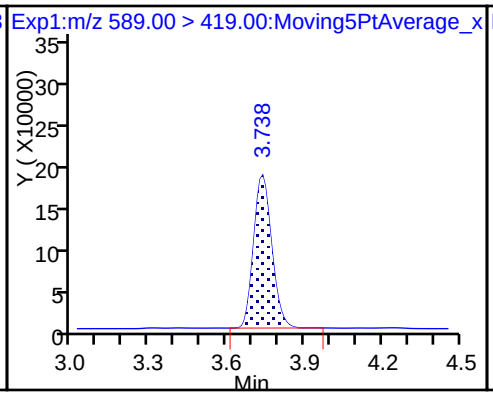
29 Perfluorodecane Sulfonic acid



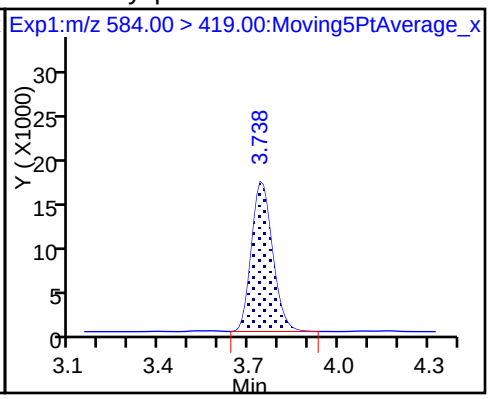
29 Perfluorodecane Sulfonic acid



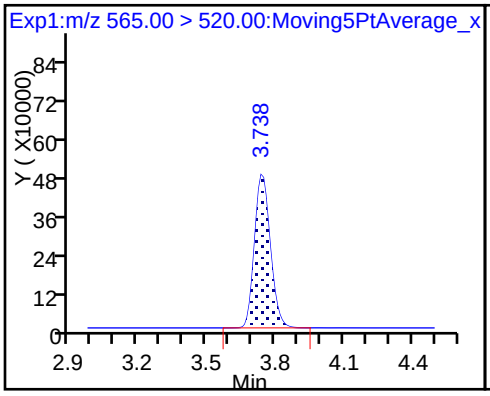
D 32 d5-NEtFOSAA



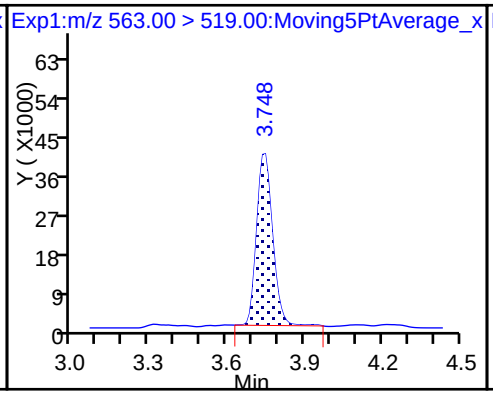
33 N-ethyl perfluorooctane sulfonamid



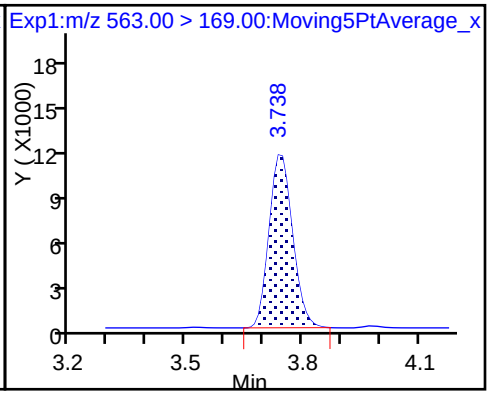
D 30 13C2 PFUnA



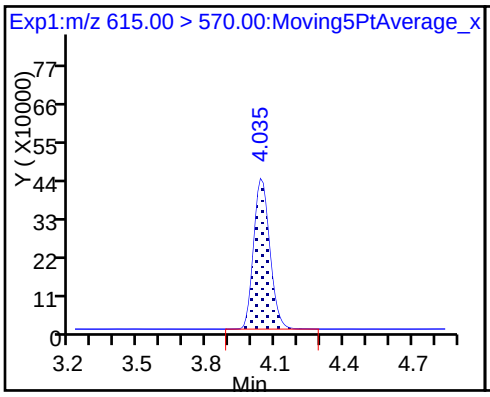
31 Perfluoroundecanoic acid



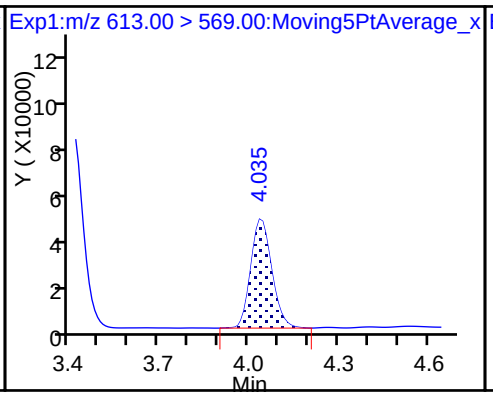
31 Perfluoroundecanoic acid



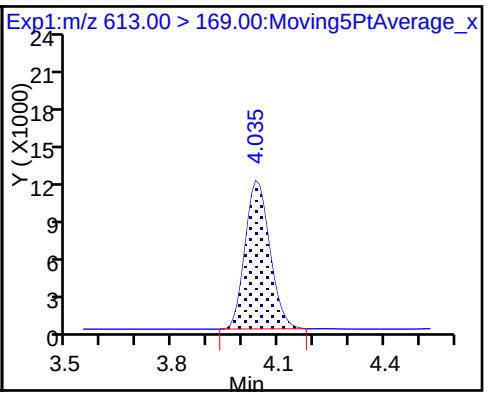
D 36 13C2 PFDoA



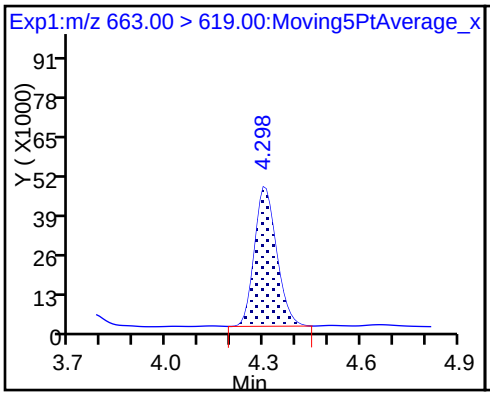
37 Perfluorododecanoic acid



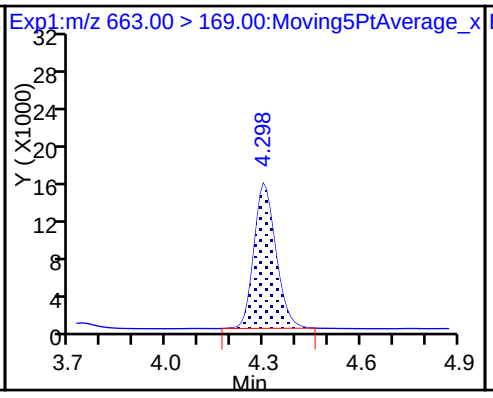
37 Perfluorododecanoic acid



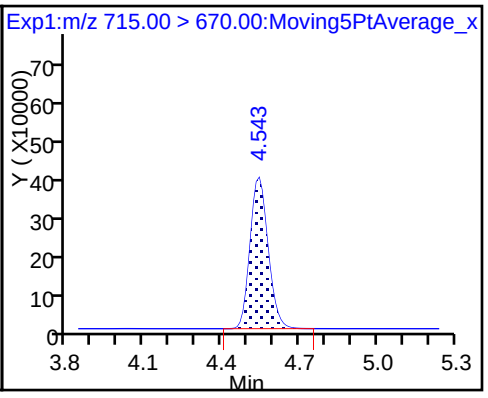
41 Perfluorotridecanoic acid



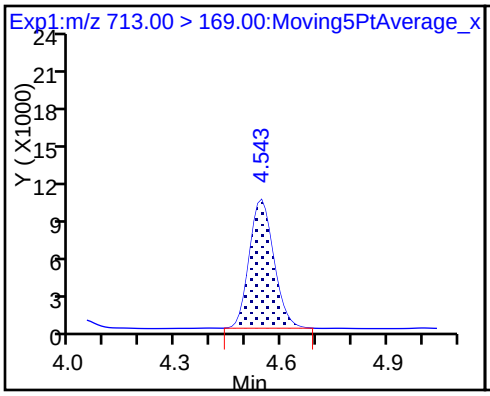
41 Perfluorotridecanoic acid



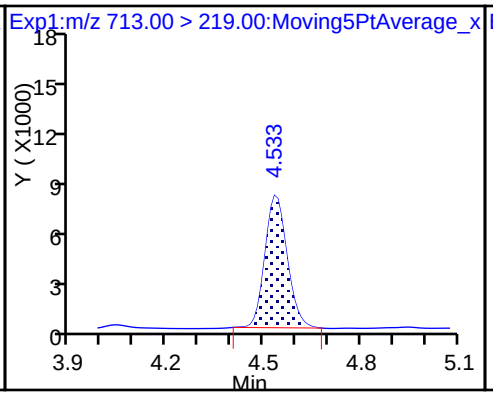
D 43 13C2-PFTeDA



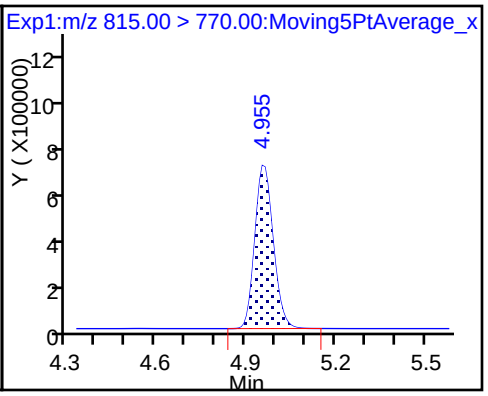
42 Perfluorotetradecanoic acid



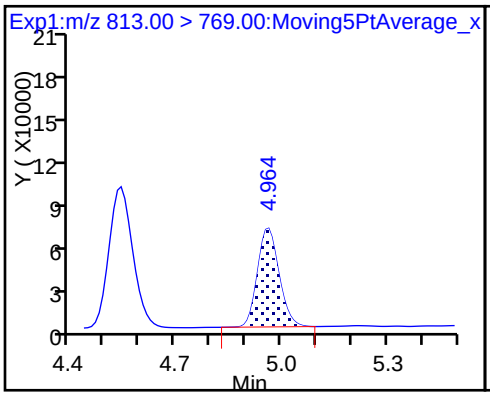
42 Perfluorotetradecanoic acid



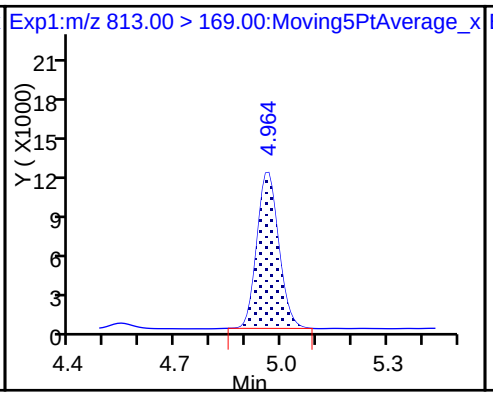
D 44 13C2-PFHxDA



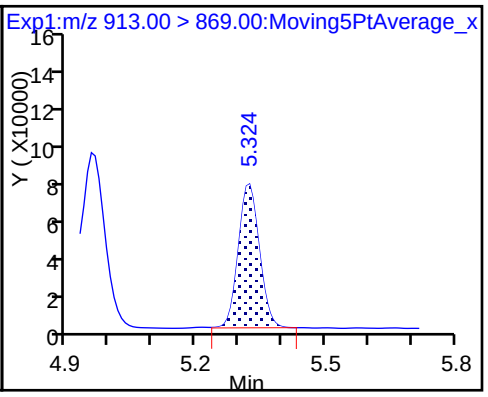
45 Perfluorohexadecanoic acid



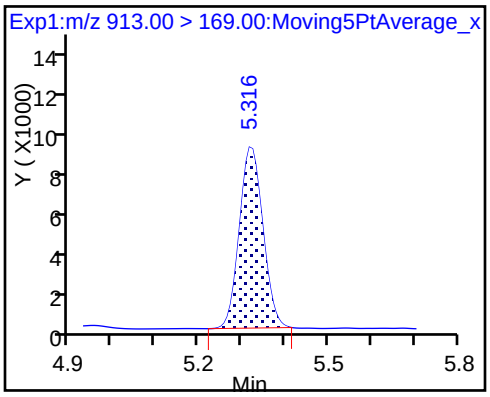
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 16-Mar-2018 23:33:12 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:31 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:27:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.440	0.006	1.000	2048994	0.9691		96.9	1463	
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.440	0.006	0.540	5699617	2.45		98.2	108848	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.696	0.004	0.635	3973031	2.42		97.0	96403	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.698	0.002	1.000	1812805	0.9765		97.7	700	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.730	0.005	0.648	90021	2.23		95.8	613	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.733	0.002	1.000	2653315	0.8856		100	1187	
298.90 > 99.00	1.735	1.733	0.002	1.000	1107170		2.40(1.25-3.74)	100	1201	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.942	0.003	0.726	678619	2.35		100	8368	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.944	0.001	1.000	581100	0.9337		100.0	36050	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.979	0.007	0.741	4566628	2.50		100.0	103809	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.982	0.004	1.000	1746371	0.9475		94.7	4897	
313.00 > 119.00	1.986	1.982	0.004	1.000	160043		10.91(5.03-15.10)	94.7	4154	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	1765971	0.9707		97.1	4174	
363.00 > 169.00	2.315	2.311	0.004	1.000	712366		2.48(1.13-3.40)	97.1	9197	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.864	4387932	2.47		98.8	105925	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	2166532	0.8109		89.1	266	
399.00 > 99.00	2.328	2.326	0.002	1.000	727892		2.98(1.50-4.49)	89.1	289	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.869	5665272	2.39		101	73746	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.651	0.004	0.991	1074637	2.36		99.4	20843	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.652	0.003	1.000	685622	0.9103		96.0	32328	
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.678	0.001		4548538	2.50			66870	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.679	2.678	0.001	1.000	1814577	0.9438		94.4	537	
413.00 > 169.00	2.679	2.678	0.001	1.000	996715		1.82(0.84-2.52)	94.4	4229	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.678	0.001	1.000	4305669	2.51		100	84376	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.687	2.684	0.003	1.000	2063678	0.9641		101	34981	
449.00 > 99.00	2.687	2.684	0.003	1.000	531695		3.88(1.94-5.82)	101	12416	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.050	0.001	1.000	1586675	0.8998		97.0	5561	
499.00 > 99.00	3.051	3.050	0.001	1.000	346297		4.58(2.31-6.93)	97.0	3419	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.050	0.001	1.139	3892764	2.35		98.2	39597	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.052	-0.001	1.000	1348017	0.9587		95.9	3480	
463.00 > 169.00	3.051	3.052	-0.001	1.000	327207		4.12(1.90-5.69)	95.9	13777	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.052	-0.001	1.139	3447867	2.51		100	54153	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.388	0.001	1.000	2356961	1.02		102	67255	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.265	5939465	2.47		99.0	44890	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.406	0.001	1.000	504855	0.9505		99.2	16199	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.406	0.001	1.272	1011812	2.37		98.8	22738	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.416	0.0	1.000	1154786	1.04		104	7234	
513.00 > 169.00	3.417	3.416	0.0	1.000	206837		5.58(2.36-7.09)	104	11727	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.416	0.0	1.275	2912792	2.54		102	59751	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.333	923680	2.44		97.6	28465	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	365056	0.9486		94.9	4565	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.729	0.001	1.000	1034588	0.99		103	36475	
599.00 > 99.00	3.730	3.729	0.001	1.000	336956		3.07(1.39-4.16)	103	6525	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.740	0.0	1.396	931709	2.57		103	2248	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.746	0.004	1.003	339482	0.9304		93.0	8733	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.747	0.003	1.400	2262020	2.52		101	67227	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.750	0.0	1.000	644915	0.8505		85.1	1928	
563.00 > 169.00	3.750	3.750	0.0	1.000	168712		3.82(2.12-6.36)	85.1	13449	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.041	-0.003	1.507	2017899	2.37		94.8	12596	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.042	0.007	1.003	860515	1.04		104	177	
613.00 > 169.00	4.049	4.042	0.007	1.003	216685		3.97(2.13-6.40)	104	5598	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.304	0.003	1.000	842010	1.01		101	177	
663.00 > 169.00	4.307	4.304	0.003	1.000	259137		3.25(1.25-3.76)	101	3693	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.545	-0.001	1.696	1891848	2.43		97.4	14773	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.545	-0.001	1.000	194321	0.9311		93.1	2372	
713.00 > 219.00	4.544	4.545	-0.001	1.000	138985		1.40(0.71-2.13)	93.1	1610	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.956	4.956	0.0	1.850	2868070	2.52		101	11418	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.960	0.004	1.002	1031926	0.9560		95.6	89.6	
813.00 > 169.00	4.964	4.960	0.004	1.002	177707		5.81(2.86-8.58)	95.6	2206	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.323	5.320	0.003	1.000	1049380	0.9382		93.8	201	
913.00 > 169.00	5.316	5.320	-0.004	0.999	136421		7.69(3.83-11.48)	93.8	1641	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:32 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_005.d

Injection Date: 16-Mar-2018 23:33:12 Instrument ID: A8_N

Lims ID: IC L4 Full

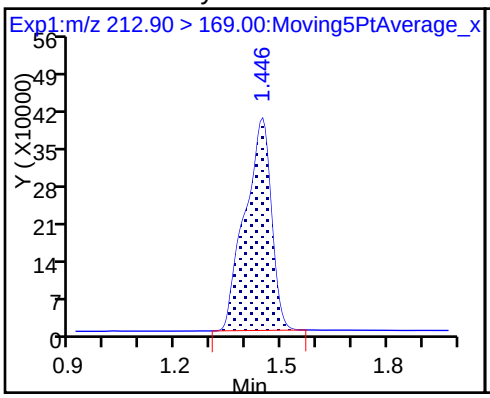
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

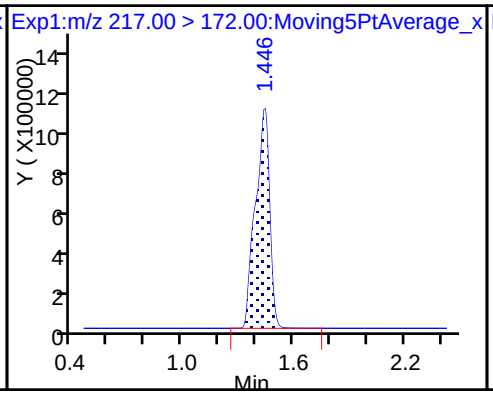
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

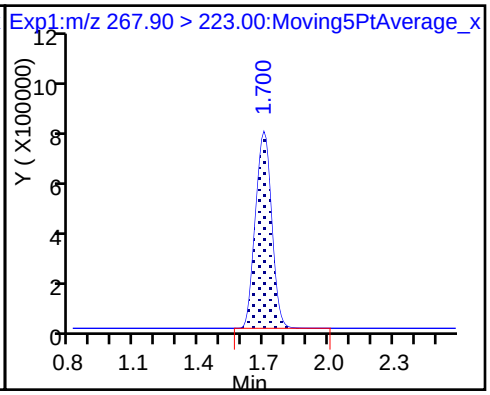
2 Perfluorobutyric acid



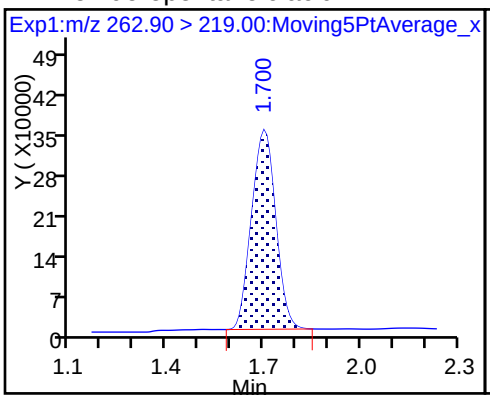
D 1 13C4 PFBA



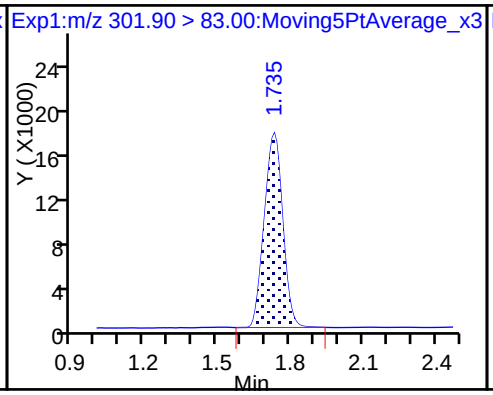
D 3 13C5-PFPeA



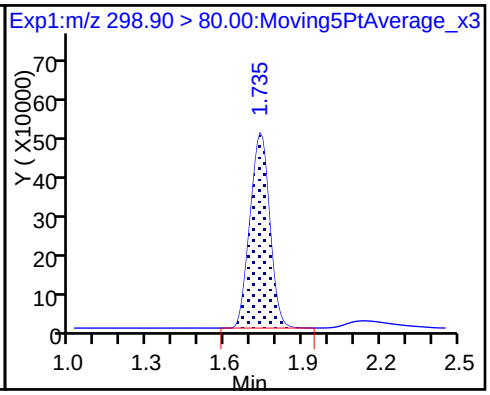
4 Perfluoropentanoic acid



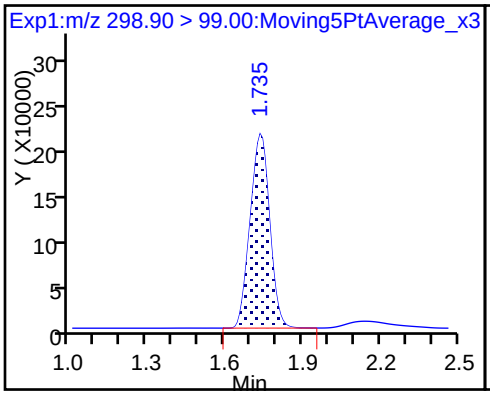
D 47 13C3-PFBS



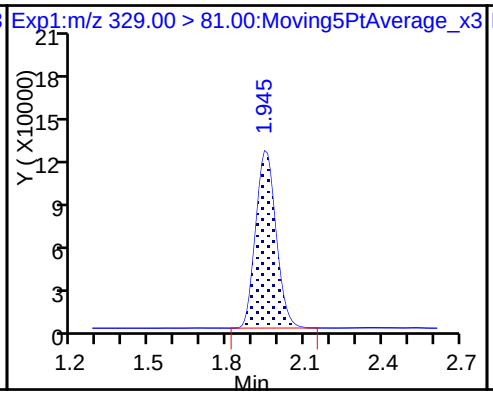
5 Perfluorobutanesulfonic acid



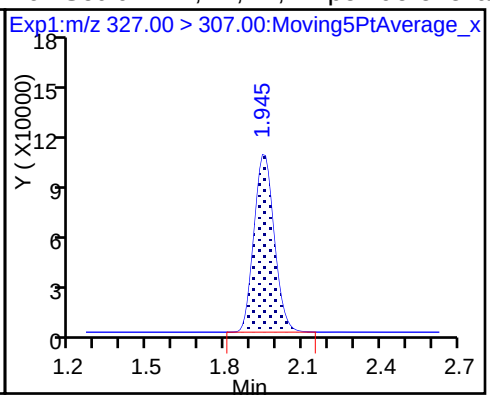
5 Perfluorobutanesulfonic acid



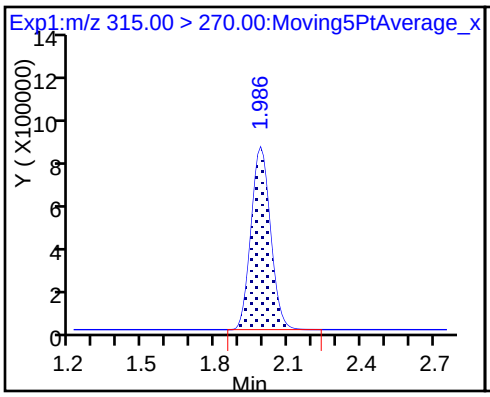
D 60 M2-4:2FTS



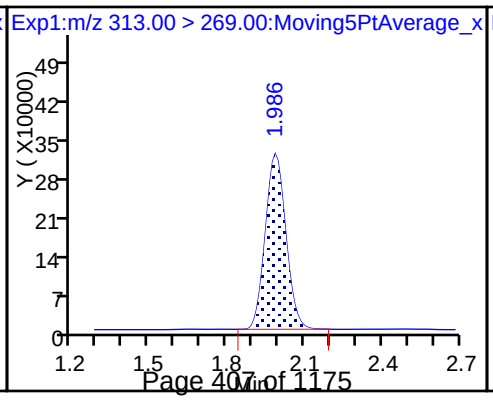
61 Sodium 1H,1H,2H,2H-perfluorohexane



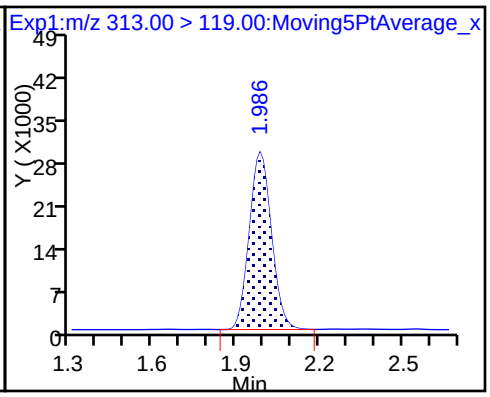
D 7 13C2 PFHxA



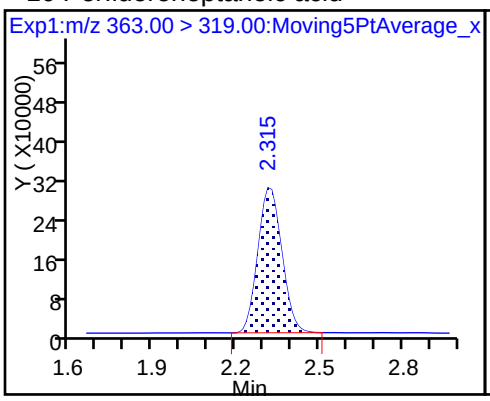
6 Perfluorohexanoic acid



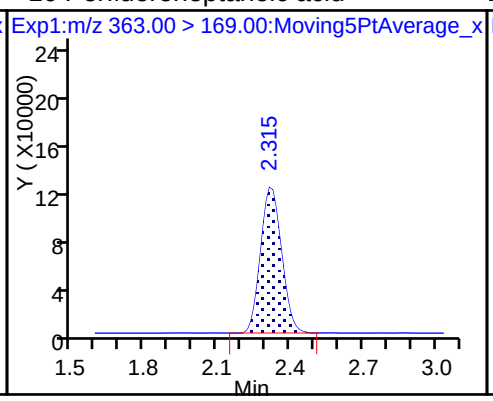
6 Perfluorohexanoic acid



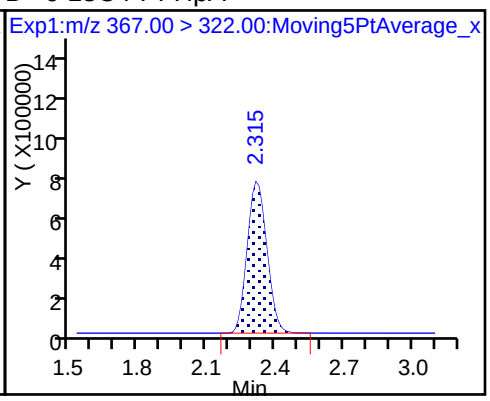
10 Perfluoroheptanoic acid



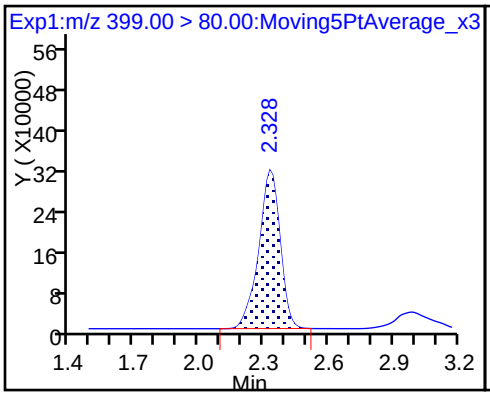
10 Perfluoroheptanoic acid



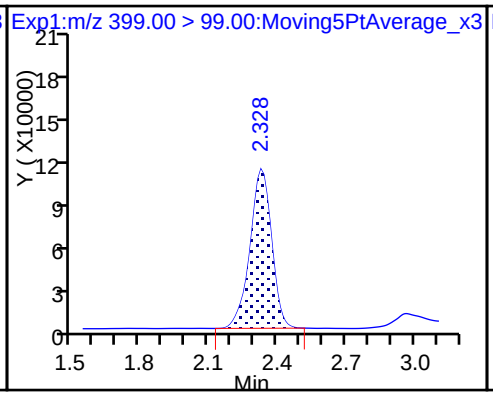
D 9 13C4-PFHpA



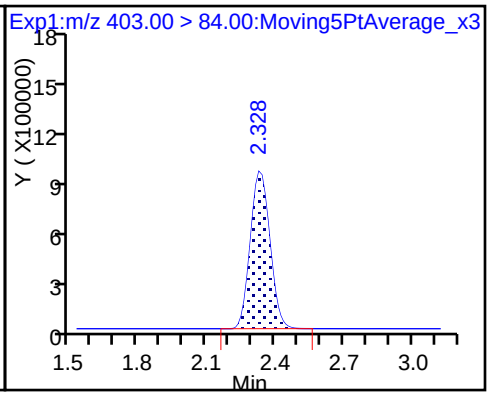
8 Perfluorohexanesulfonic acid



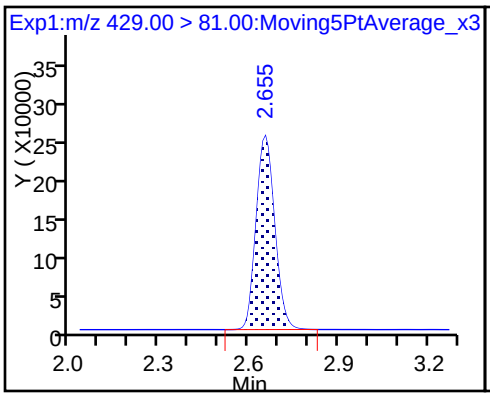
8 Perfluorohexanesulfonic acid



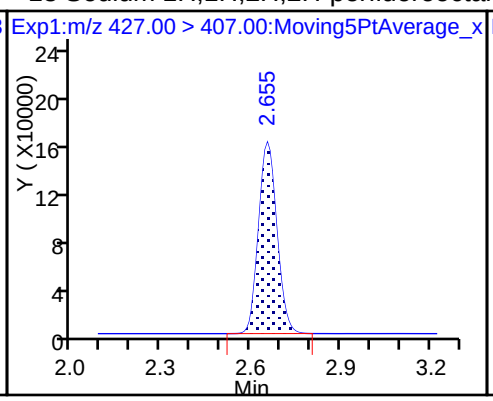
D 11 18O2 PFHxS



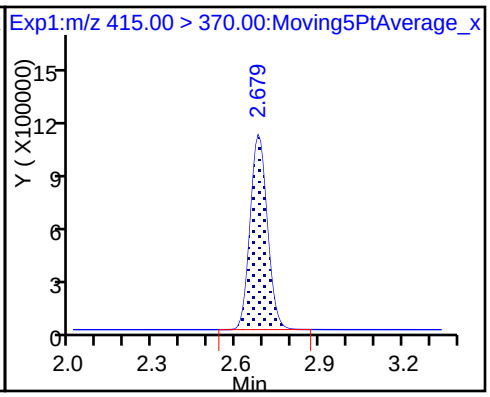
D 12 M2-6:2FTS



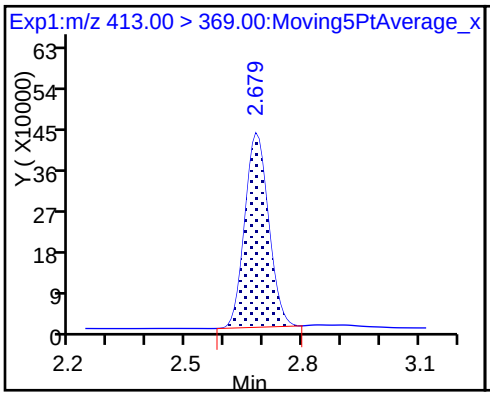
13 Sodium 1H,1H,2H,2H-perfluorooctane



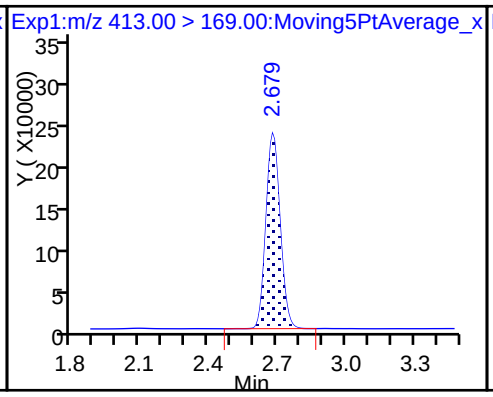
M62 13C2-PFOA



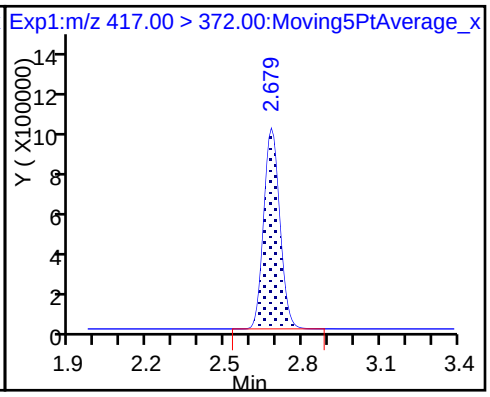
15 Perfluorooctanoic acid



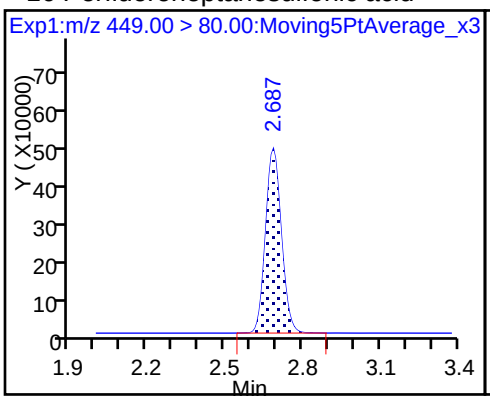
15 Perfluorooctanoic acid



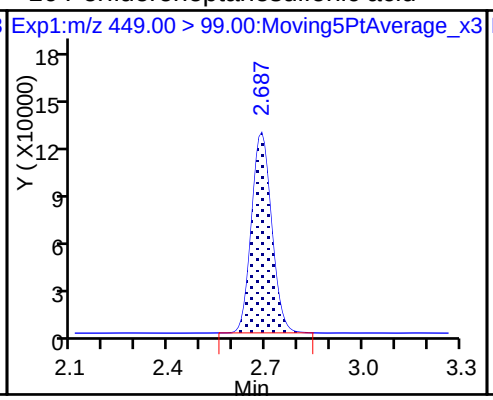
D 14 13C4 PFOA



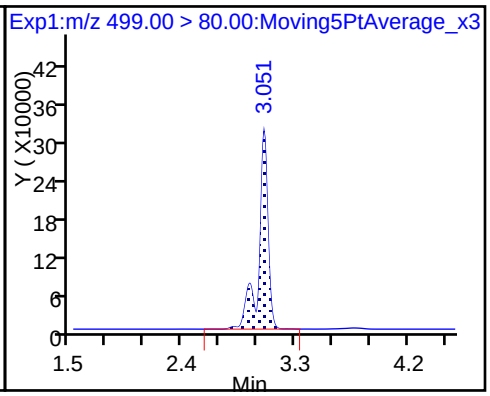
16 Perfluoroheptanesulfonic acid



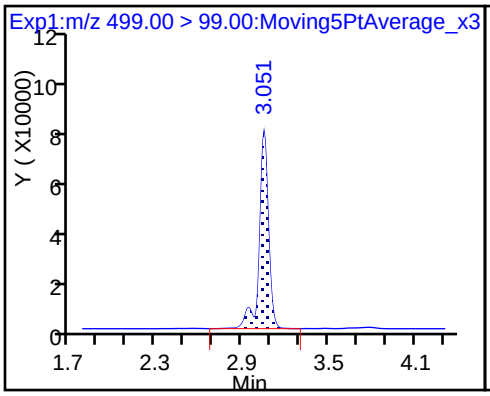
16 Perfluoroheptanesulfonic acid



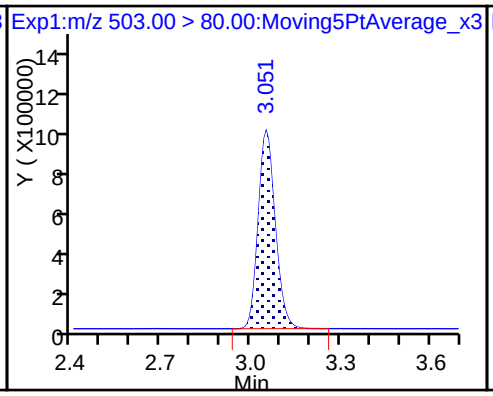
17 Perfluorooctane sulfonic acid



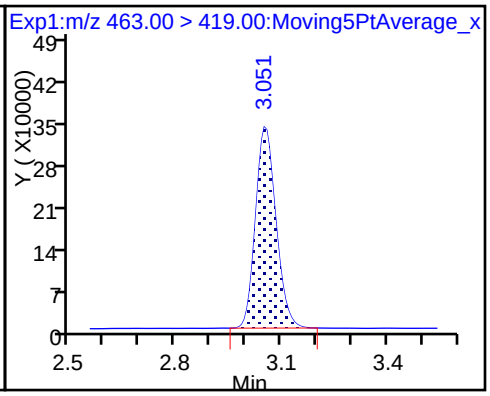
17 Perfluorooctane sulfonic acid



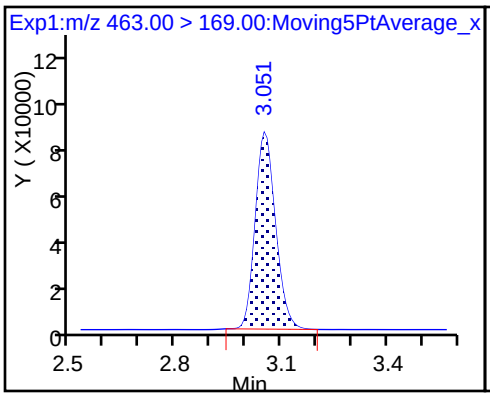
D 18 13C4 PFOS



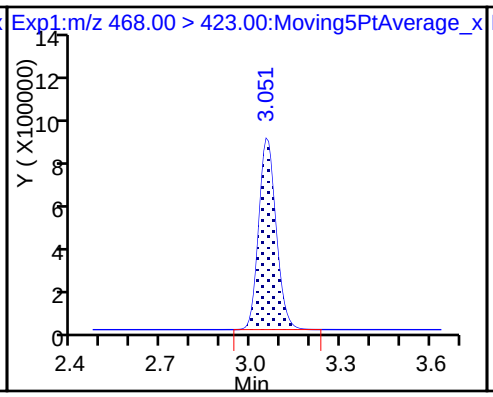
20 Perfluorononanoic acid



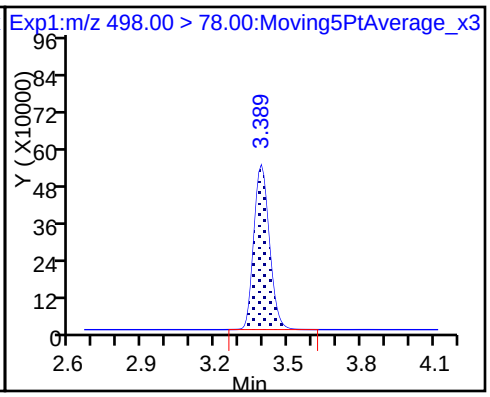
20 Perfluorononanoic acid



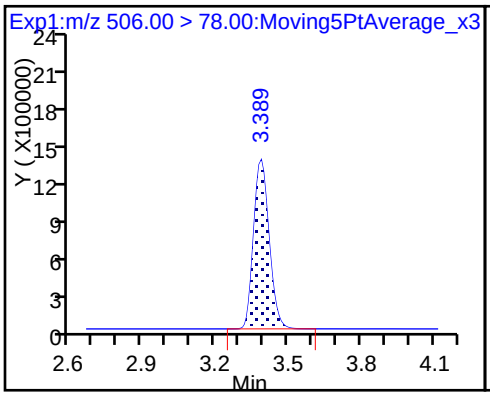
D 19 13C5 PFNA



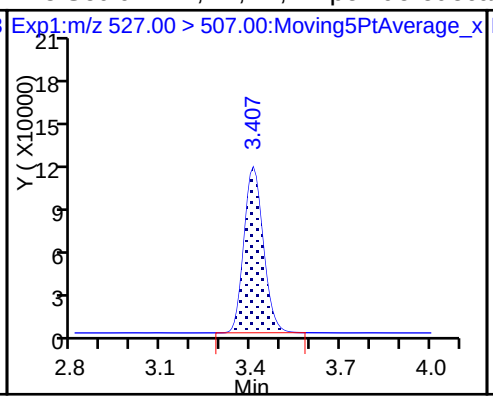
22 Perfluorooctane Sulfonamide



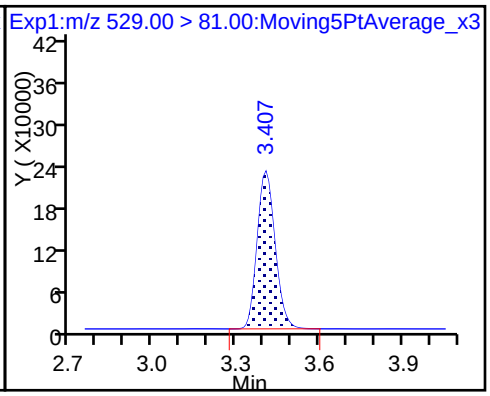
D 21 13C8 FOSA



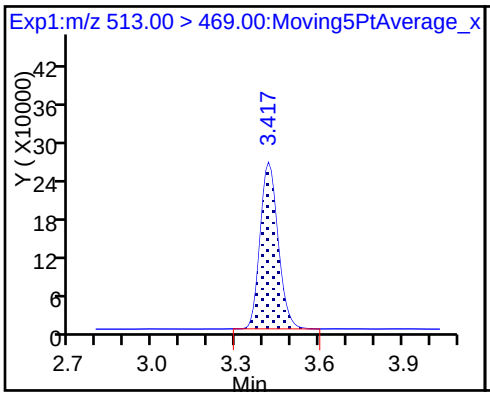
25 Sodium 1H,1H,2H,2H-perfluorodecane



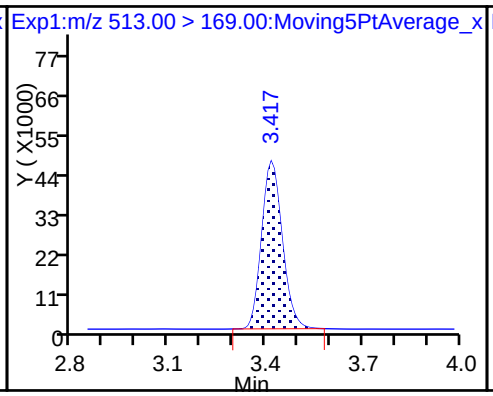
D 26 M2-8:2FTS



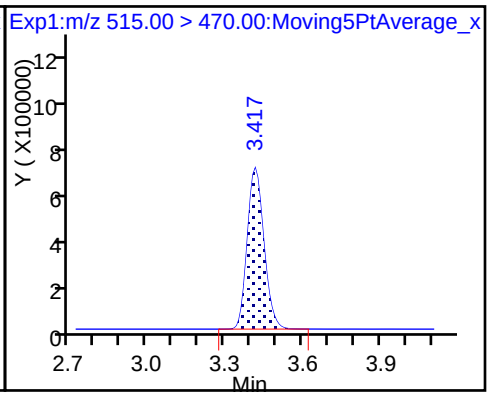
24 Perfluorodecanoic acid



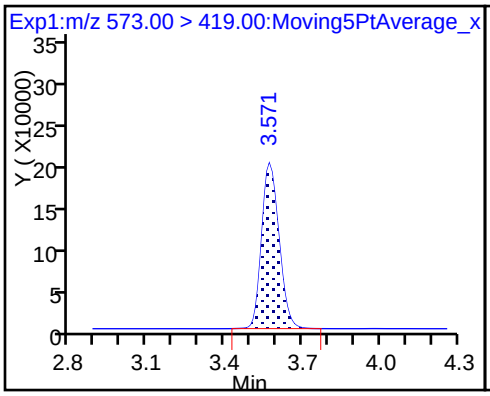
24 Perfluorodecanoic acid



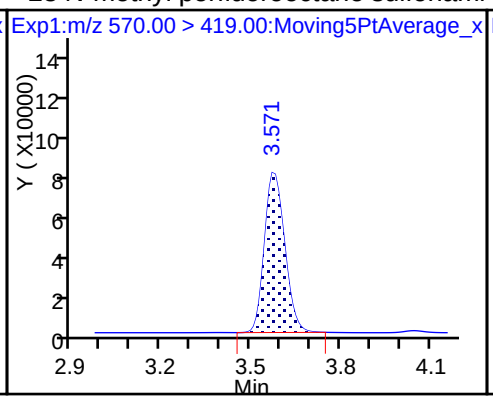
D 23 13C2 PFDA



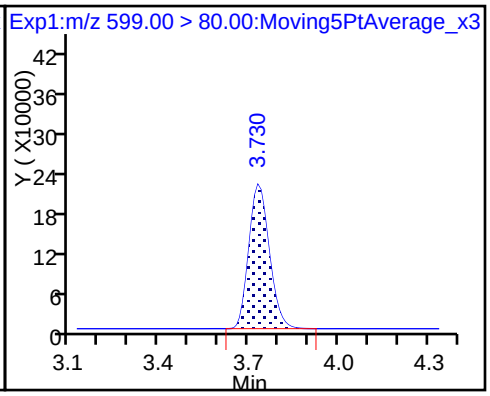
D 27 d3-NMeFOSAA



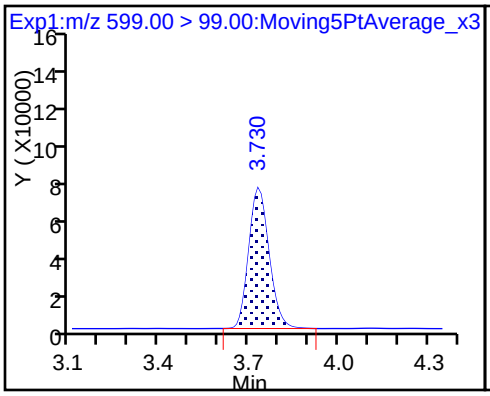
28 N-methyl perfluorooctane sulfonami



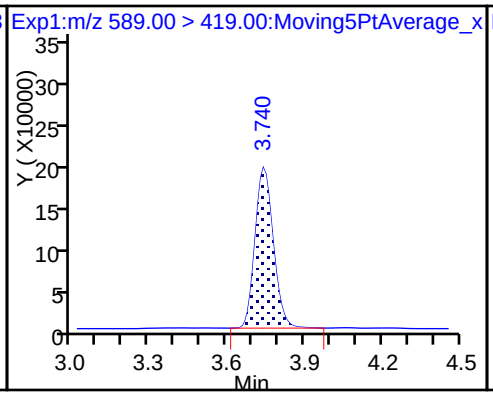
29 Perfluorodecane Sulfonic acid



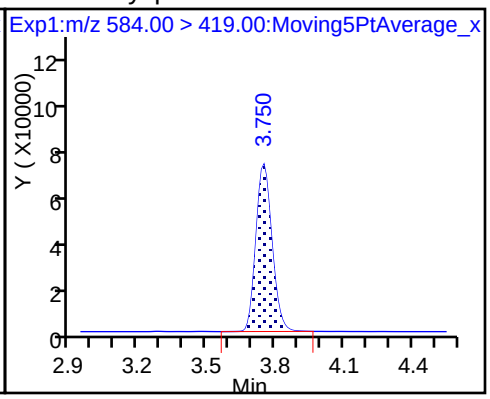
29 Perfluorodecane Sulfonic acid



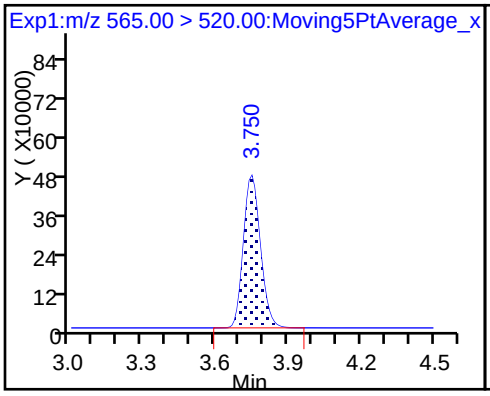
D 32 d5-NEtFOSAA



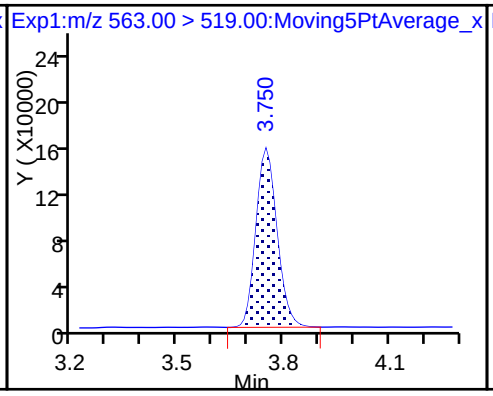
33 N-ethyl perfluorooctane sulfonamid



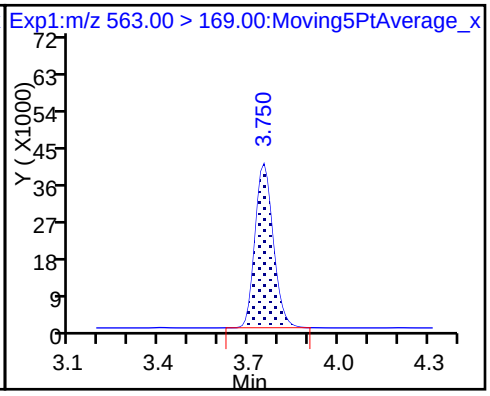
D 30 13C2 PFUnA



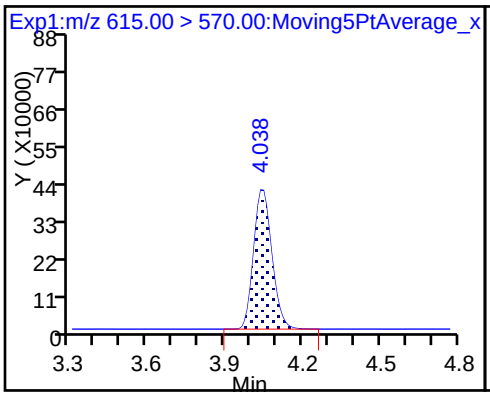
31 Perfluoroundecanoic acid



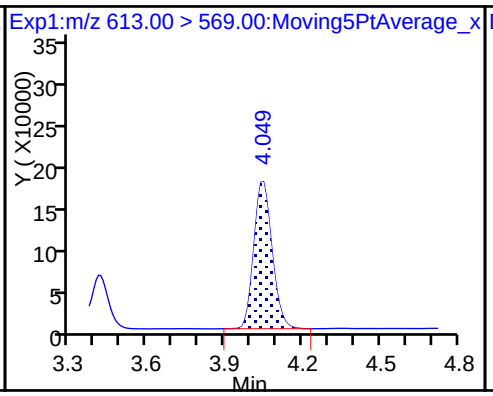
31 Perfluoroundecanoic acid



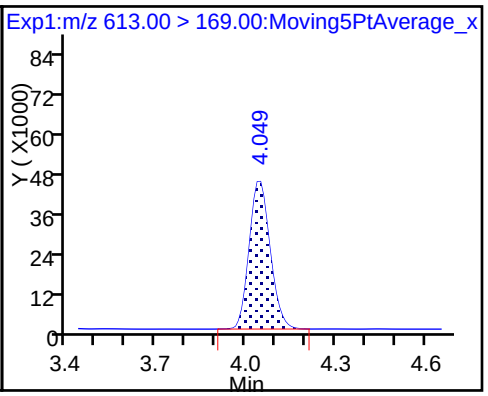
D 36 13C2 PFDoA



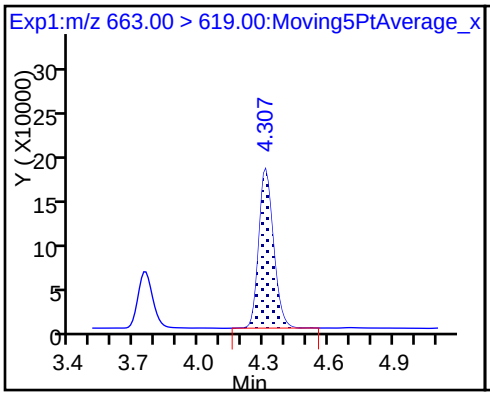
37 Perfluorododecanoic acid



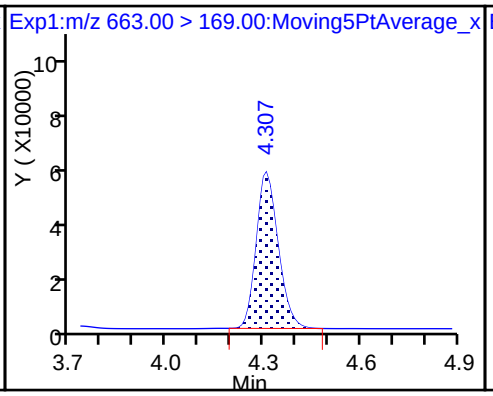
37 Perfluorododecanoic acid



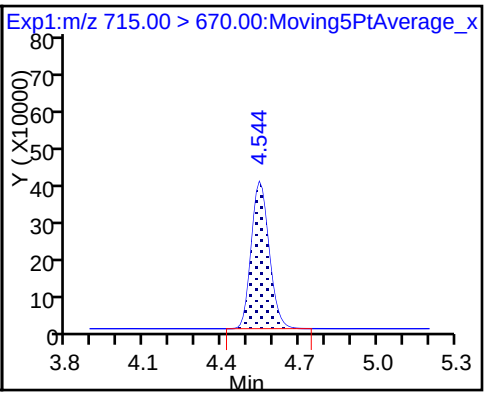
41 Perfluorotridecanoic acid



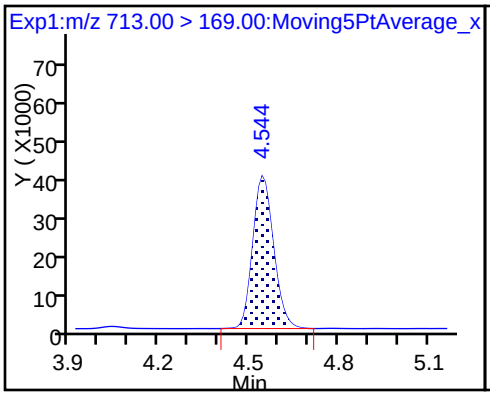
41 Perfluorotridecanoic acid



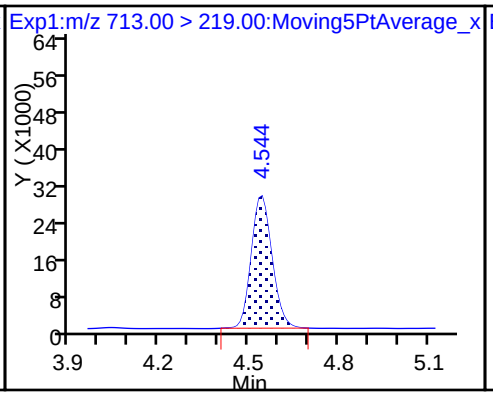
D 43 13C2-PFTeDA



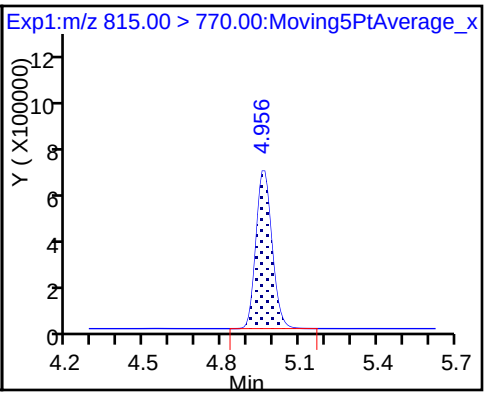
42 Perfluorotetradecanoic acid



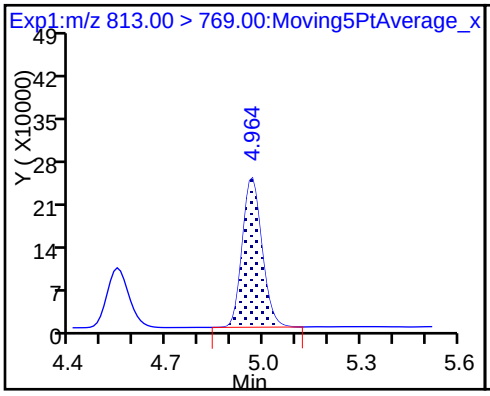
42 Perfluorotetradecanoic acid



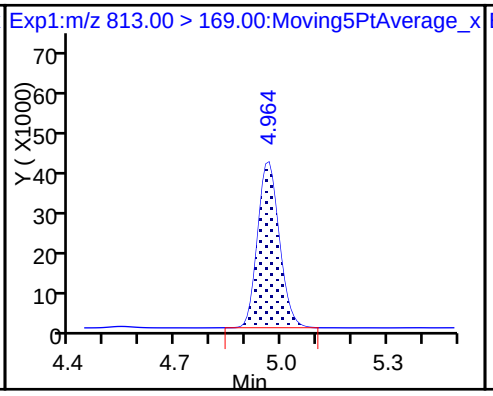
D 44 13C2-PFHxDA



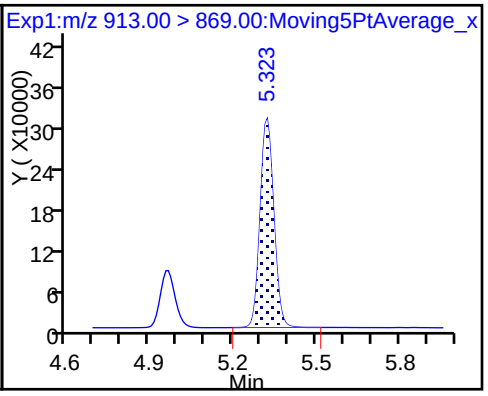
45 Perfluorohexadecanoic acid



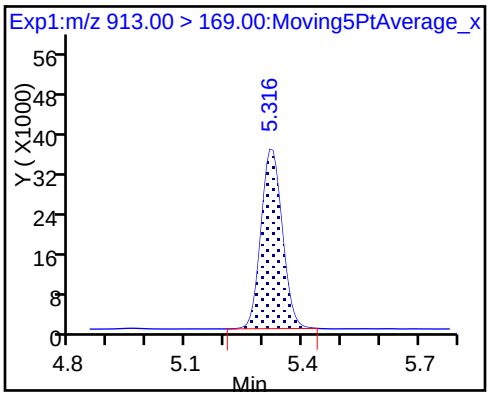
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 16-Mar-2018 23:41:00 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:34 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:27:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.440	0.001	0.537	5583889	2.50		100	97262	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.440	0.001	1.000	5293287	2.56		102	3727	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.696	0.004	0.634	3888024	2.47		98.8	122892	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.698	0.002	1.000	4633188	2.55		102	1776	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.730	-0.003	0.644	87930	2.26		97.3	430	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.733	0.003	1.005	6966452	2.38		108	3077	
298.90 > 99.00	1.736	1.733	0.003	1.005	2830396		2.46(1.25-3.74)	108	2805	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.942	0.004	0.726	674169	2.43		104	7621	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.944	0.002	1.000	1435640	2.36		101	52474	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.979	0.008	0.741	4369955	2.49		99.6	129893	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.982	0.005	1.000	4444832	2.52		101	13990	
313.00 > 119.00	1.987	1.982	0.005	1.000	418029		10.63(5.03-15.10)	101	9309	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.864	4232279	2.48		99.1	100489	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	4297988	2.45		98.0	8927	
363.00 > 169.00	2.315	2.311	0.004	1.000	1767362		2.43(1.13-3.40)	98.0	24587	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.869	5260610	2.31		97.6	73562	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	5484826	2.21		97.2	681	
399.00 > 99.00	2.328	2.326	0.002	1.000	1779244		3.08(1.50-4.49)	97.2	678	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.651	0.006	0.991	1016091	2.32		97.8	21630	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.652	0.005	1.000	1746834	2.45		103	50845	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.678	0.003	1.000	4098618	2.49		99.4	95002	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.678	0.003	1.000	4544060	2.48		99.3	1326	
413.00 > 169.00	2.681	2.678	0.003	1.000	2512882		1.81(0.84-2.52)	99.3	9876	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.678	0.003		4371024	2.50			78442	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.684	0.005	1.000	5246040	2.49		105	56295	
449.00 > 99.00	2.689	2.684	0.005	1.000	1380173		3.80(1.94-5.82)	105	21498	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.050	0.001	1.138	3831418	2.40		101	26391	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.050	0.001	1.000	4076350	2.35		101	13303	
499.00 > 99.00	3.051	3.050	0.001	1.000	872560		4.67(2.31-6.93)	101	7654	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.052	0.006	1.141	3313741	2.51		100	68947	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.052	0.006	1.000	3490132	2.58		103	8593	
463.00 > 169.00	3.058	3.052	0.006	1.000	871364		4.01(1.90-5.69)	103	27131	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.264	5771845	2.50		100	52306	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.388	0.001	1.000	5854030	2.61		104	55097	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.406	0.001	1.271	959683	2.34		97.5	23723	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.406	0.001	1.000	1262293	2.51		105	40259	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.416	0.001	1.275	2792979	2.53		101	45181	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.416	0.001	1.000	2734556	2.58		103	14321	
513.00 > 169.00	3.417	3.416	0.001	1.000	464662		5.89(2.36-7.09)	103	15026	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	903252	2.48		99.3	32461	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	936613	2.49		99.6	10122	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.729	0.001	1.000	2485881	2.43		101	74404	
599.00 > 99.00	3.730	3.729	0.001	1.000	853763		2.91(1.39-4.16)	101	20150	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.740	0.0	1.395	874289	2.51		101	1957	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.746	0.004	1.003	829764	2.42		96.9	24200	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.747	0.003	1.399	2125072	2.46		98.5	88600	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.750	0.0	1.000	1693687	2.38		95.1	6339	
563.00 > 169.00	3.750	3.750	0.0	1.000	443503		3.82(2.12-6.36)	95.1	34848	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.041	-0.003	1.506	2008069	2.45		98.2	11583	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.038	4.042	-0.004	1.000	2068374	2.52		101	393	
613.00 > 169.00	4.038	4.042	-0.004	1.000	574695		3.60(2.13-6.40)	101	11882	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.304	0.003	1.000	2137089	2.59		103	451	
663.00 > 169.00	4.307	4.304	0.003	1.000	681261		3.14(1.25-3.76)	103	10326	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.545	-0.001	1.695	1881480	2.52		101	16479	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.545	-0.001	1.000	484453	2.33		93.4	7772	
713.00 > 219.00	4.544	4.545	-0.001	1.000	341862		1.42(0.71-2.13)	93.4	3917	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.956	4.956	0.0	1.849	2832854	2.59		104	11035	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.956	4.960	-0.004	1.000	2577679	2.45		98.2	239	
813.00 > 169.00	4.956	4.960	-0.004	1.000	464123		5.55(2.86-8.58)	98.2	5007	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.316	5.320	-0.004	1.000	2839194	2.57		103	547	
913.00 > 169.00	5.316	5.320	-0.004	1.000	355131		7.99(3.83-11.48)	103	3172	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:35 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_006.d

Injection Date: 16-Mar-2018 23:41:00 Instrument ID: A8_N

Lims ID: IC L5 Full

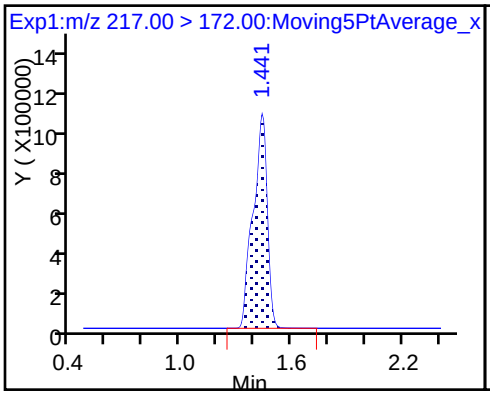
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

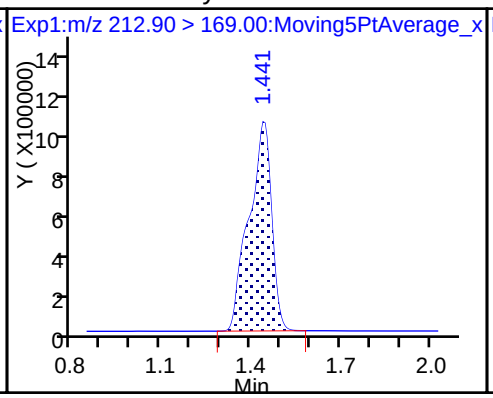
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

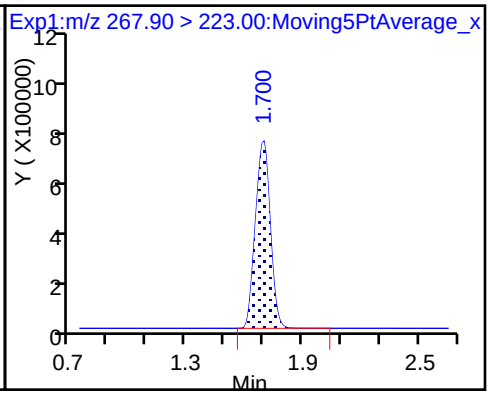
D 1 13C4 PFBA



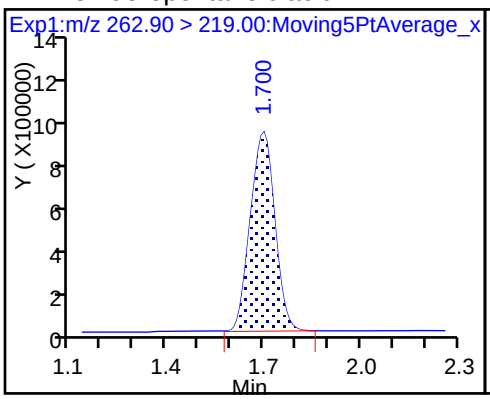
2 Perfluorobutyric acid



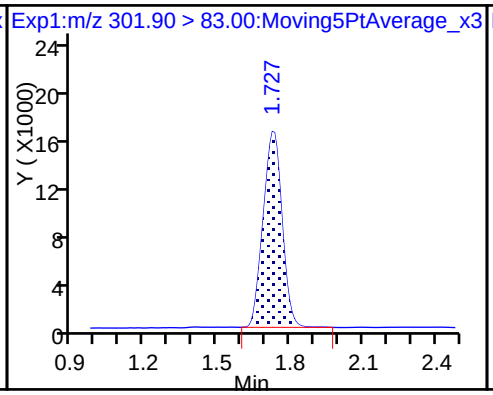
D 3 13C5-PFPeA



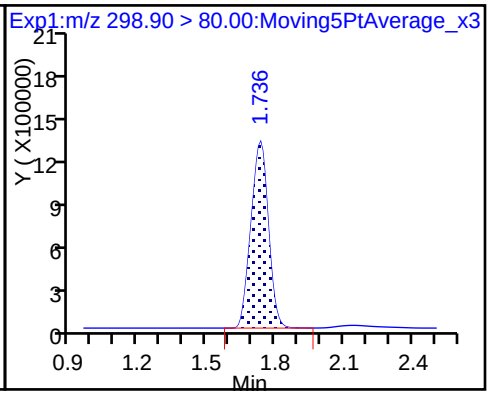
4 Perfluoropentanoic acid



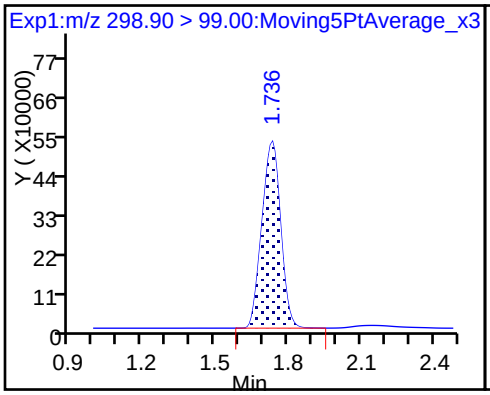
D 47 13C3-PFBS



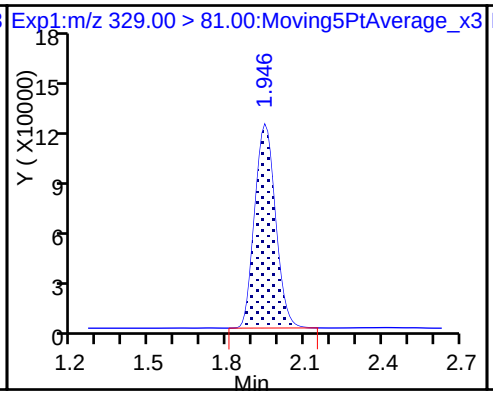
5 Perfluorobutanesulfonic acid



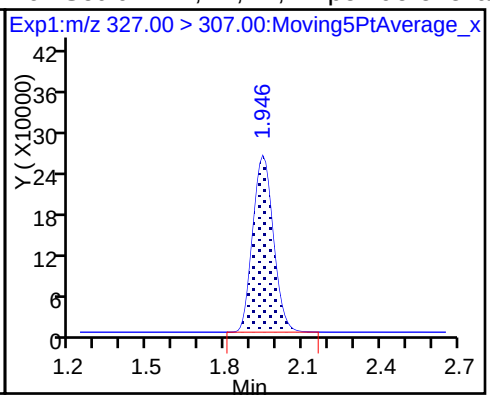
5 Perfluorobutanesulfonic acid



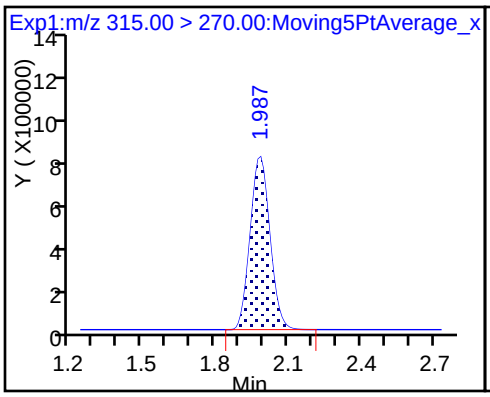
D 60 M2-4:2FTS



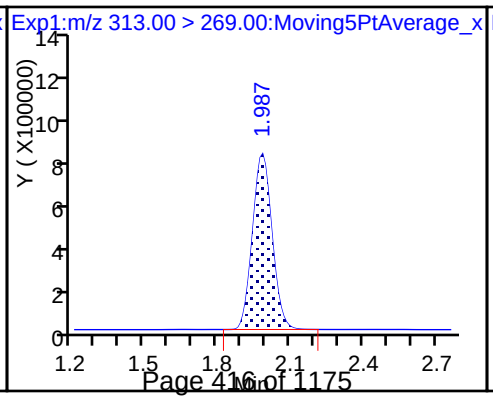
61 Sodium 1H,1H,2H,2H-perfluorohexane



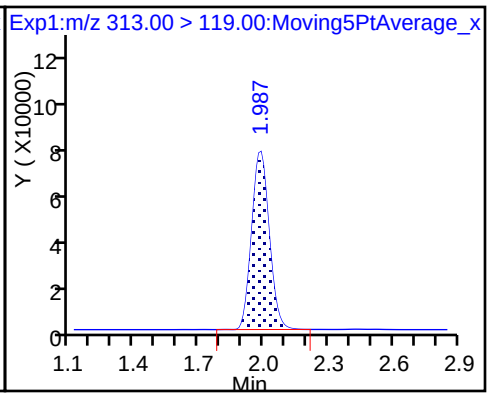
D 7 13C2 PFHxA



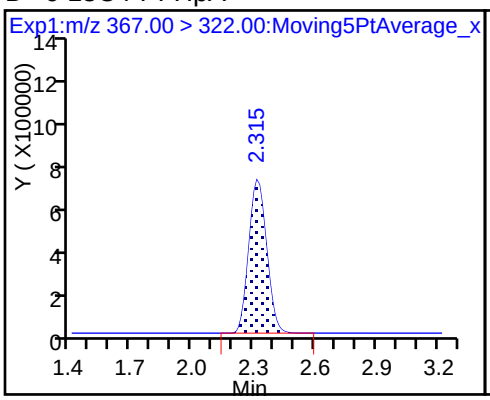
6 Perfluorohexanoic acid



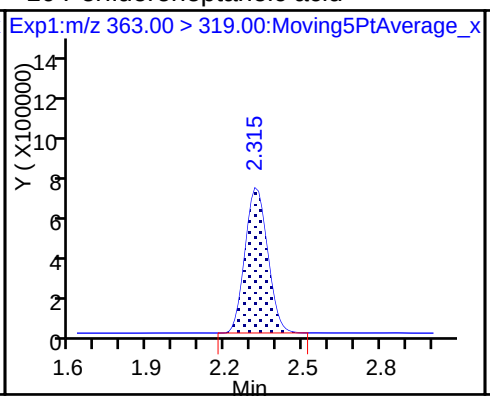
6 Perfluorohexanoic acid



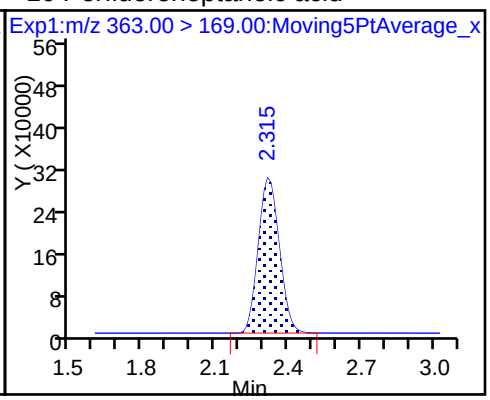
D 9 13C4-PFHpA



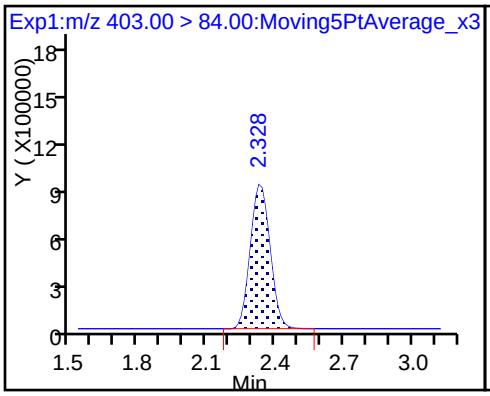
10 Perfluoroheptanoic acid



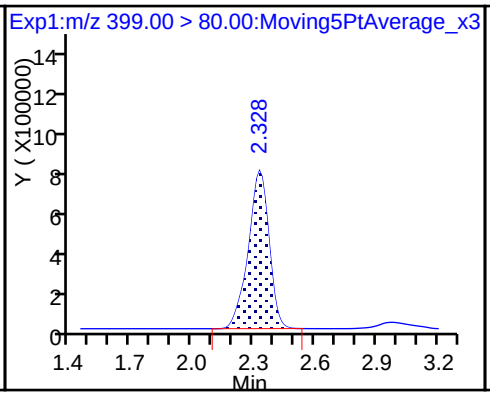
10 Perfluoroheptanoic acid



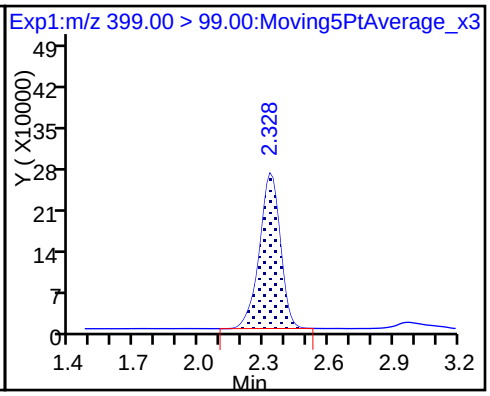
D 11 18O2 PFHxS



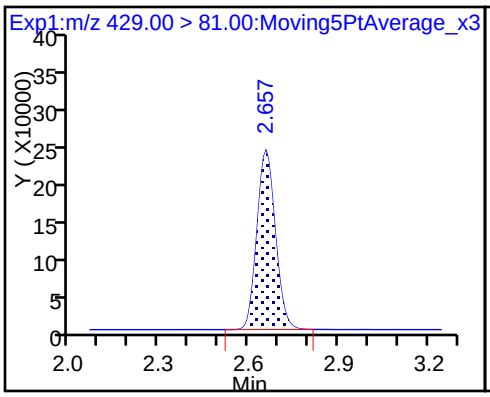
8 Perfluorohexanesulfonic acid



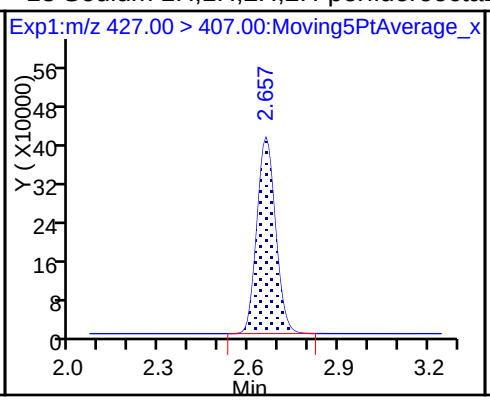
8 Perfluorohexanesulfonic acid



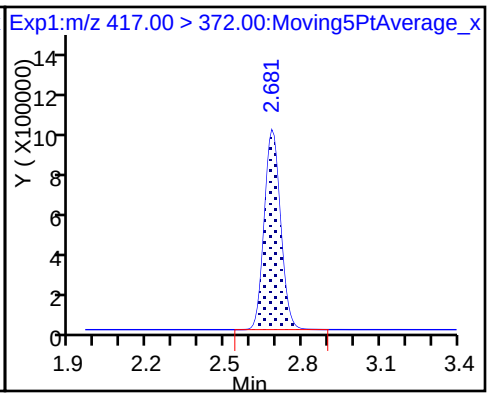
D 12 M2-6:2FTS



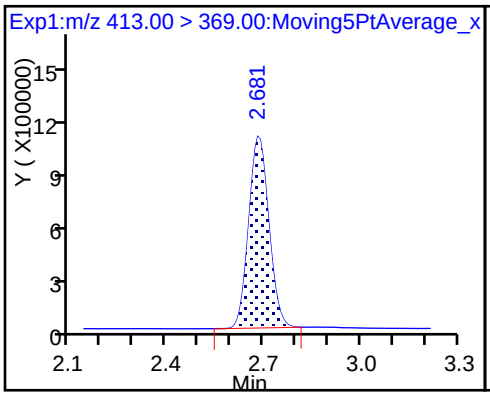
13 Sodium 1H,1H,2H,2H-perfluorooctane



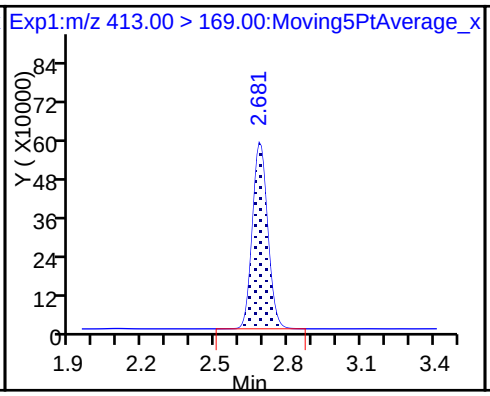
D 14 13C4 PFOA



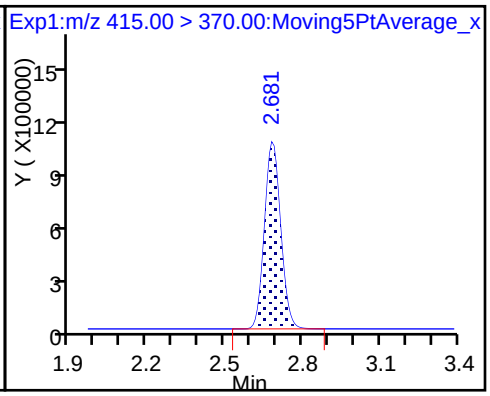
15 Perfluorooctanoic acid



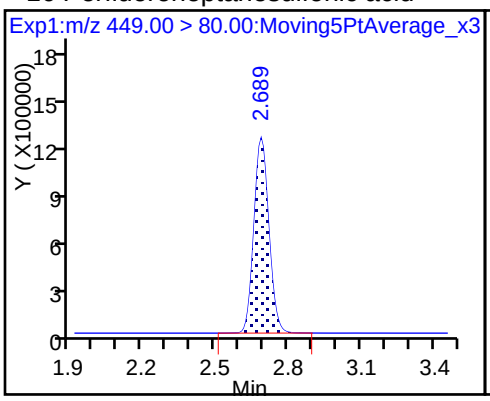
15 Perfluorooctanoic acid



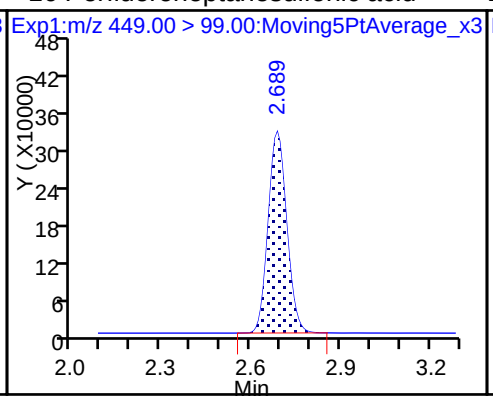
* 62 13C2-PFOA



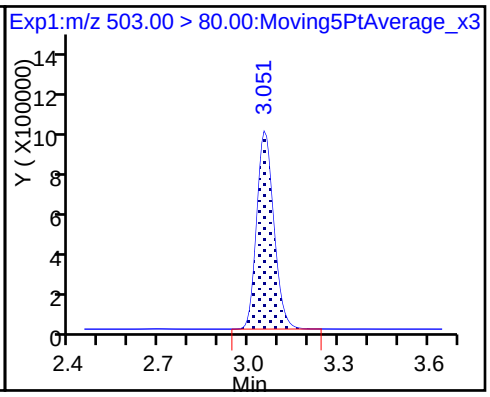
16 Perfluoroheptanesulfonic acid



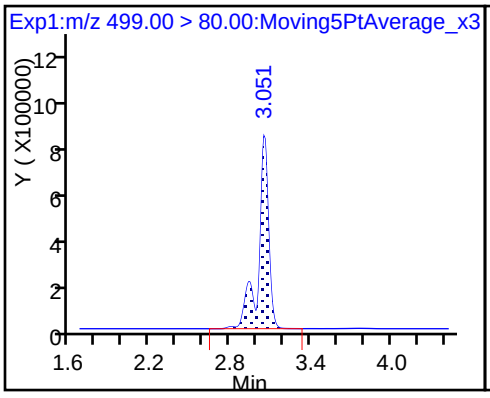
16 Perfluoroheptanesulfonic acid



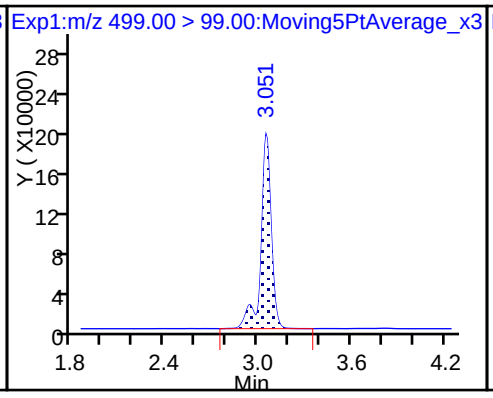
D 18 13C4 PFOS



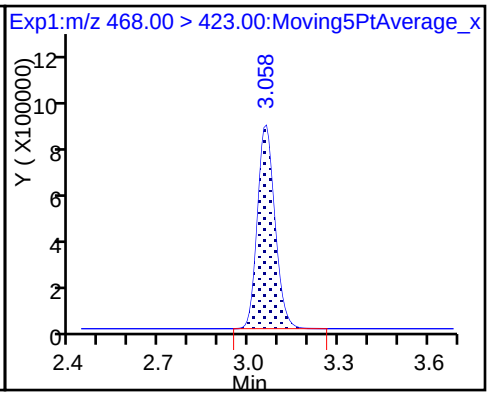
17 Perfluorooctane sulfonic acid



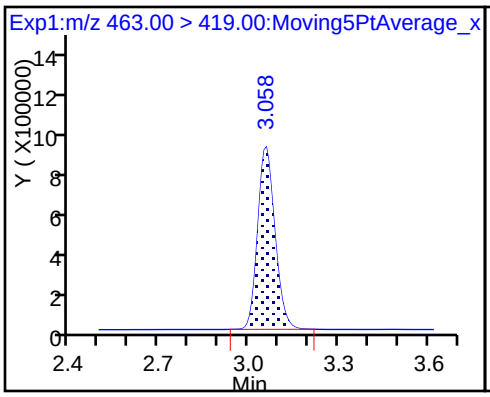
17 Perfluorooctane sulfonic acid



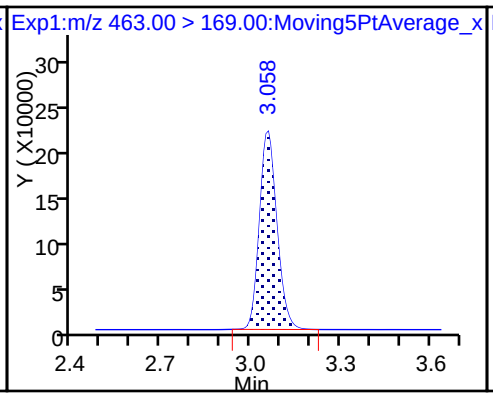
D 19 13C5 PFNA



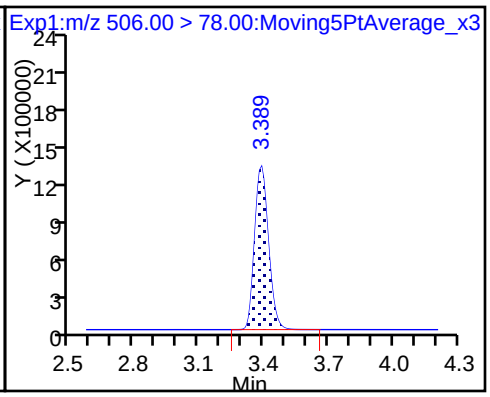
20 Perfluorononanoic acid



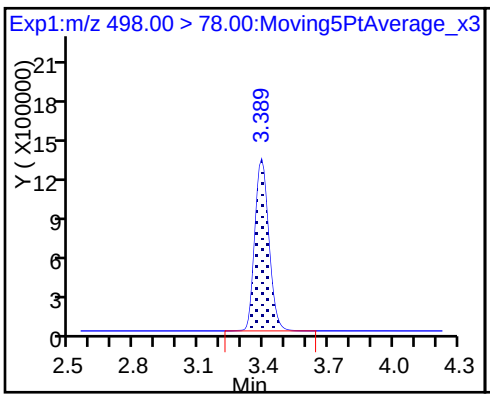
20 Perfluorononanoic acid



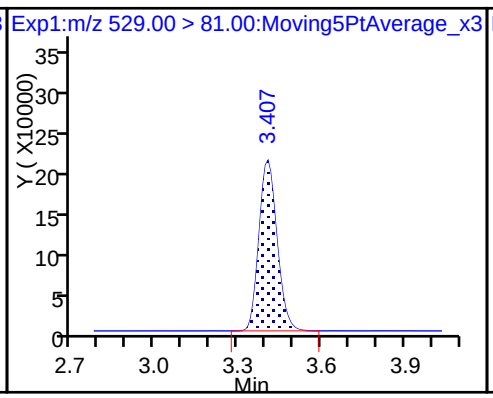
D 21 13C8 FOSA



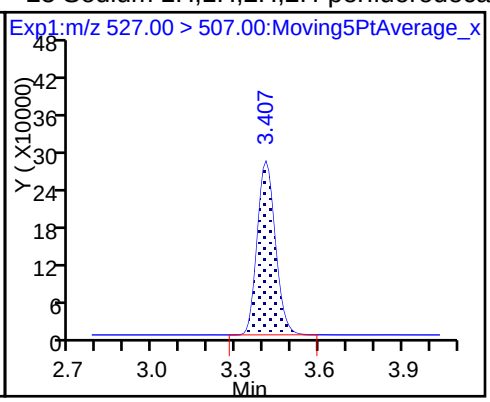
22 Perfluorooctane Sulfonamide



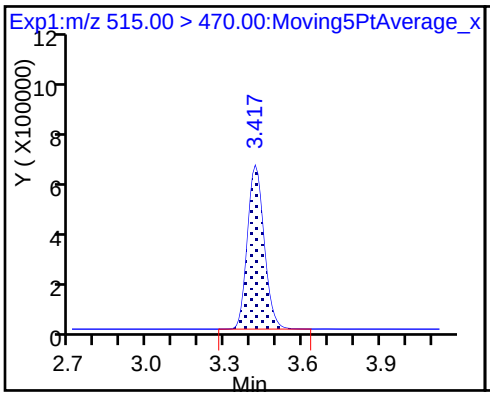
D 26 M2-8:2FTS



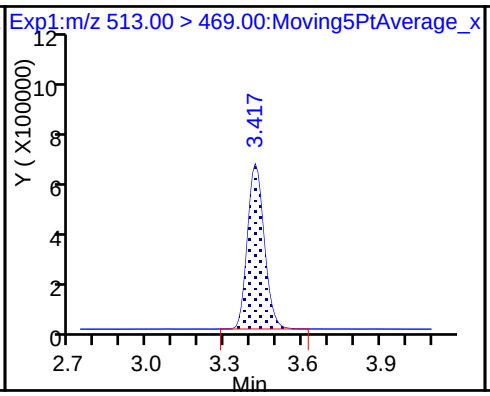
25 Sodium 1H,1H,2H,2H-perfluorodecane



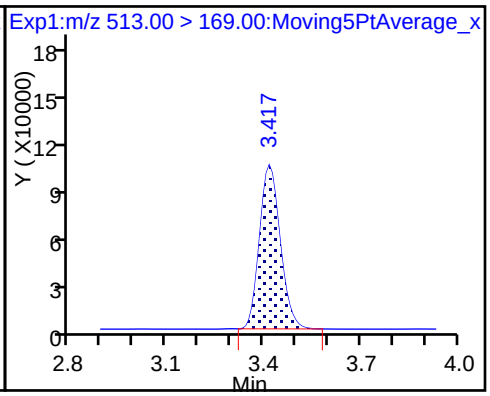
D 23 13C2 PFDA



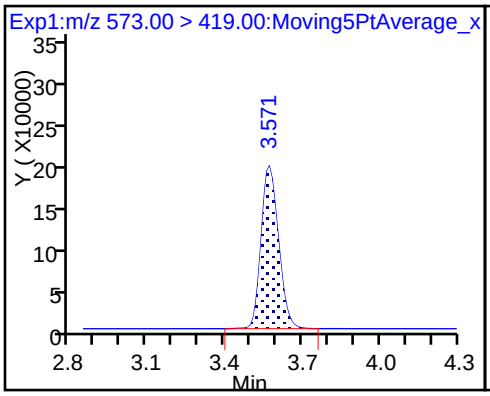
24 Perfluorodecanoic acid



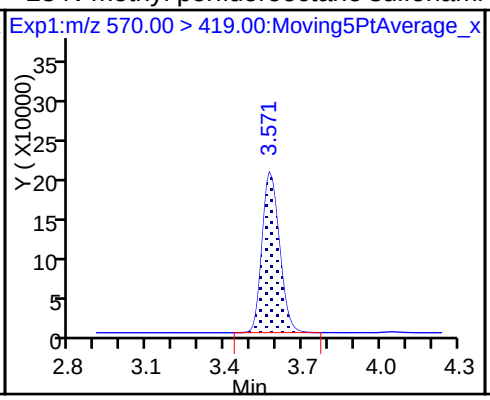
24 Perfluorodecanoic acid



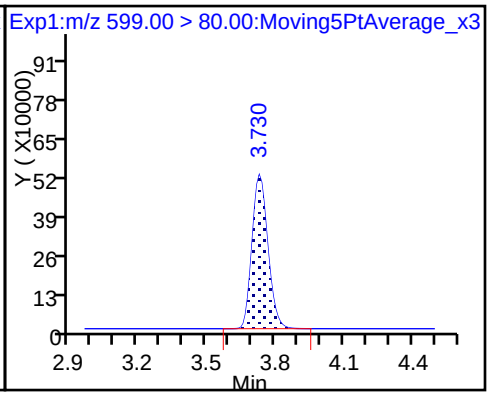
D 27 d3-NMeFOSAA



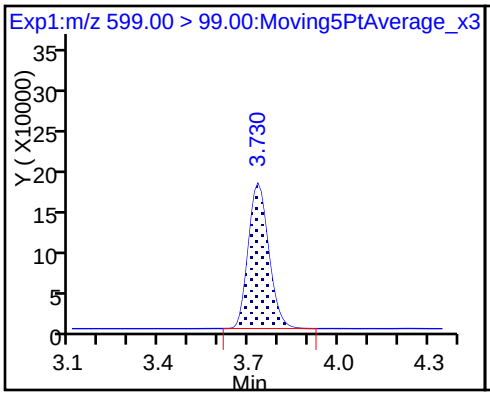
28 N-methyl perfluorooctane sulfonami



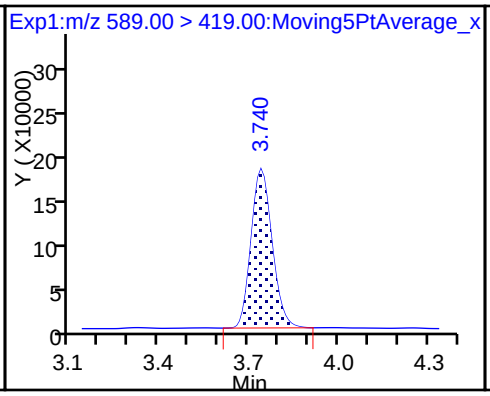
29 Perfluorodecane Sulfonic acid



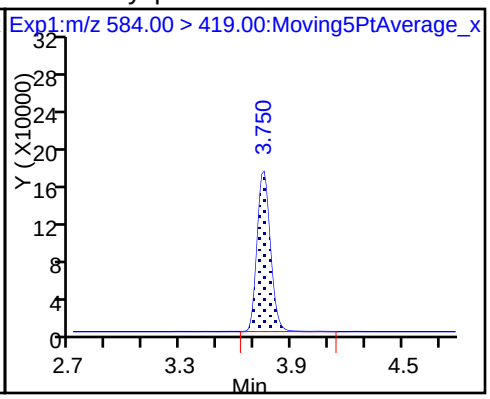
29 Perfluorodecane Sulfonic acid



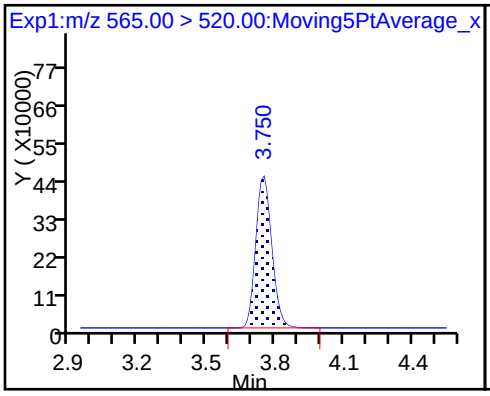
D 32 d5-NEtFOSAA



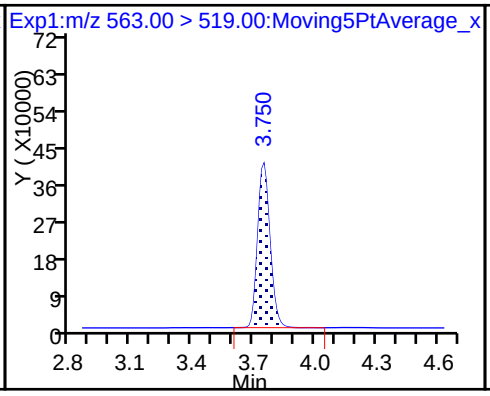
33 N-ethyl perfluorooctane sulfonamid



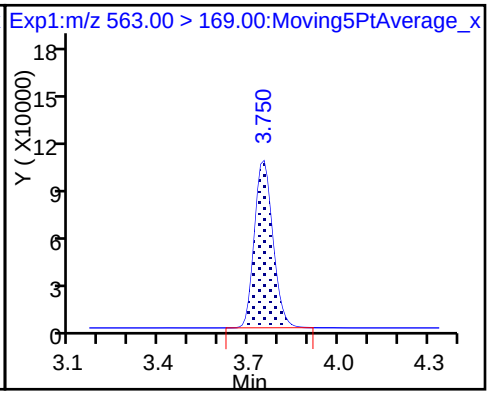
D 30 13C2 PFUnA



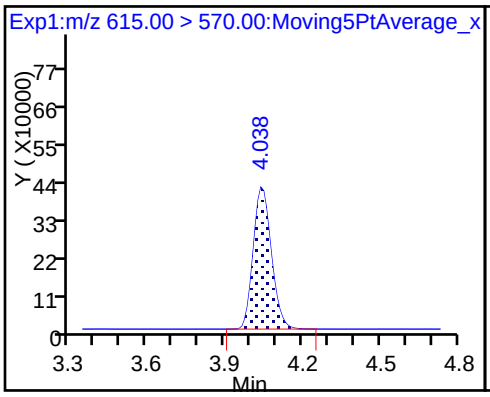
31 Perfluoroundecanoic acid



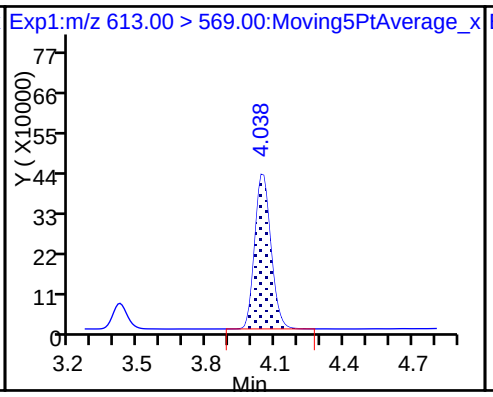
31 Perfluoroundecanoic acid



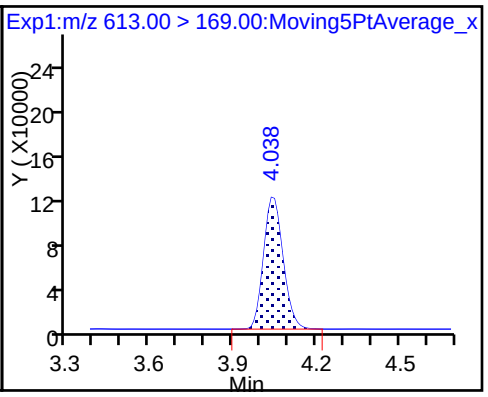
D 36 13C2 PFDoA



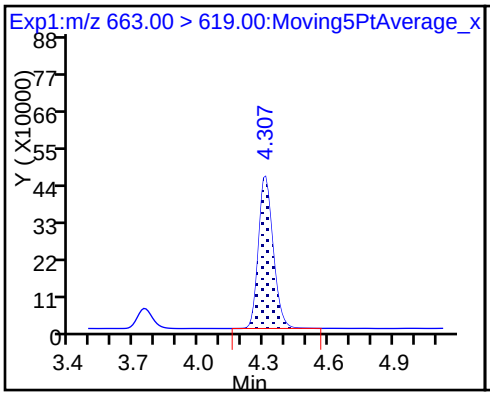
37 Perfluorododecanoic acid



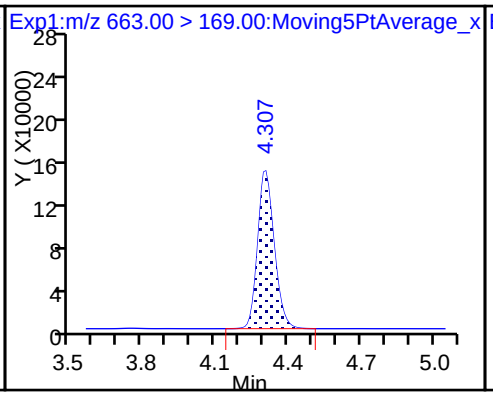
37 Perfluorododecanoic acid



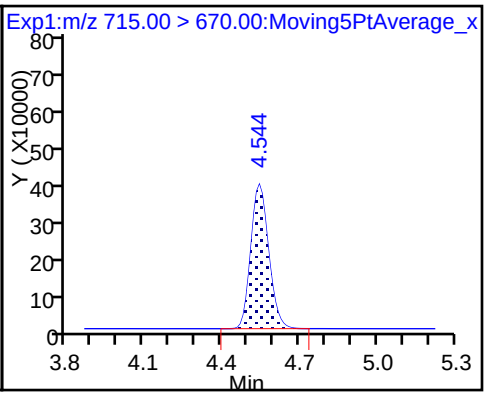
41 Perfluorotridecanoic acid



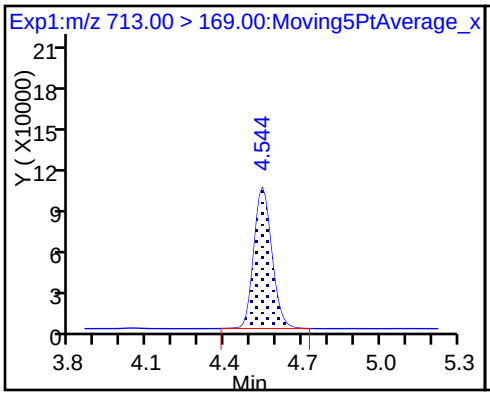
41 Perfluorotridecanoic acid



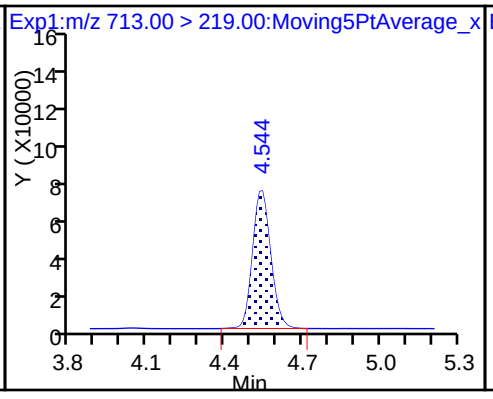
D 43 13C2-PFTeDA



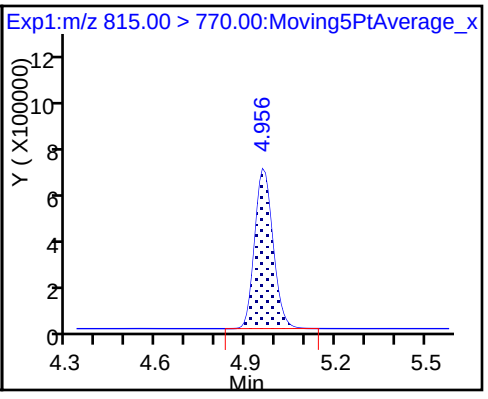
42 Perfluorotetradecanoic acid



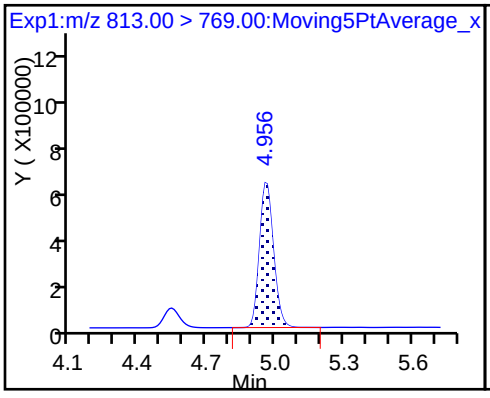
42 Perfluorotetradecanoic acid



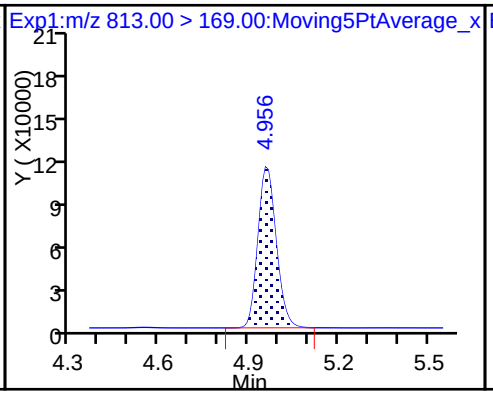
D 44 13C2-PFHxDA



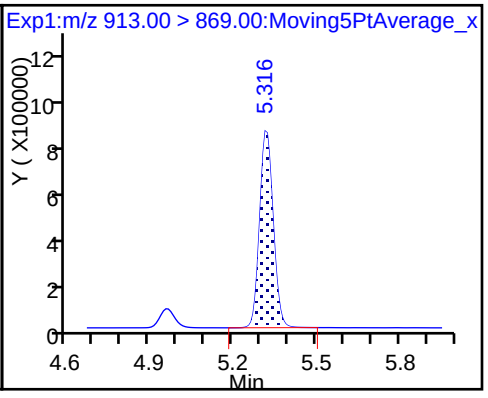
45 Perfluorohexadecanoic acid



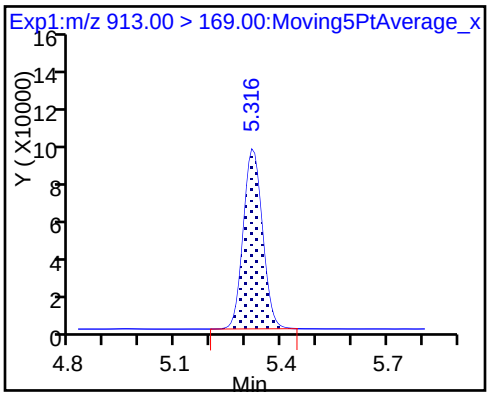
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 16-Mar-2018 23:48:48 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:36 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:28:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.440	0.001	1.000	10415661	5.14		103	6969	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.440	0.001	0.537	5463195	2.64		105	103496	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.696	-0.004	0.631	3793612	2.60		104	182073	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.698	0.003	1.005	8739905	4.93		98.6	3539	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.730	0.006	0.647	87984	2.44		105	391	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.733	0.003	1.000	13581651	4.64		105	5968	
298.90 > 99.00	1.736	1.733	0.003	1.000	5754978		2.36(1.25-3.74)	105	5892	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.942	0.004	0.726	606545	2.35		101	7956	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.944	0.002	1.000	2712672	4.46		95.5	125275	
D 7 13C2 PFHxA										
315.00 > 270.00	1.977	1.979	-0.002	0.737	4208738	2.58		103	125674	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.977	1.982	-0.005	1.000	8603151	5.06		101	27161	
313.00 > 119.00	1.977	1.982	-0.005	1.000	784941		10.96(5.03-15.10)	101	15567	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.311	0.005	1.000	8715974	5.27		105	20309	
363.00 > 169.00	2.316	2.311	0.005	1.000	3434804		2.54(1.13-3.40)	105	52445	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.311	0.005	0.864	3989677	2.52		101	83904	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.326	0.003	1.000	10568253	4.26		93.5	1292	
399.00 > 99.00	2.329	2.326	0.003	1.000	3624727		2.92(1.50-4.49)	93.5	1385	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.326	0.003	0.869	5265275	2.49		105	74528	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.651	-0.002	0.988	1008963	2.49		105	25787	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.652	-0.003	1.000	3480117	4.92		104	101458	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.678	0.003		4057033	2.50			85493	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.678	0.003	1.000	8824823	5.23		105	4529	
413.00 > 169.00	2.681	2.678	0.003	1.000	4743138		1.86(0.84-2.52)	105	14953	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.678	0.003	1.000	3782089	2.47		98.8	66618	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.684	0.005	1.000	10200411	4.99		105	90746	
449.00 > 99.00	2.689	2.684	0.005	1.000	2708022		3.77(1.94-5.82)	105	34891	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.050	0.001	1.000	8142540	4.84		104	22835	
499.00 > 99.00	3.051	3.050	0.001	1.000	1769376		4.60(2.31-6.93)	104	19465	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.050	0.001	1.138	3717789	2.51		105	20437	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.052	-0.001	1.000	6868229	5.42		108	15321	
463.00 > 169.00	3.058	3.052	0.006	1.002	1674670		4.10(1.90-5.69)	108	45917	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.052	-0.001	1.138	3108543	2.54		102	54931	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.390	3.388	0.002	1.000	11053457	5.17		103	95702	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.388	0.002	1.264	5503896	2.57		103	50171	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.406	0.002	1.000	2485319	5.11		107	69206	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.406	0.002	1.271	926664	2.43		101	29544	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.416	0.001	1.000	5163613	5.30		106	23997	
513.00 > 169.00	3.417	3.416	0.001	1.000	953909		5.41(2.36-7.09)	106	30588	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.416	0.001	1.274	2569062	2.51		100	38614	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	863871	2.56		102	31262	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	1816591	5.05		101	14472	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.729	-0.001	1.000	4865112	4.90		102	78838	
599.00 > 99.00	3.728	3.729	-0.001	1.000	1681464		2.89(1.39-4.16)	102	44020	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.394	782136	2.42		96.9	1528	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.746	0.002	1.003	1652592	5.40		108	26349	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.747	0.001	1.398	2046915	2.56		102	71430	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.750	-0.002	1.000	3341411	4.87		97.4	10669	
563.00 > 169.00	3.748	3.750	-0.002	1.000	911410		3.67(2.12-6.36)	97.4	73504	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.041	0.005	1.509	2015472	2.65		106	11968	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.042	0.004	1.000	4174943	5.06		101	931	
613.00 > 169.00	4.046	4.042	0.004	1.000	1007116		4.15(2.13-6.40)	101	25827	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.304	0.002	1.000	4360483	5.26		105	1014	
663.00 > 169.00	4.306	4.304	0.002	1.000	1390861		3.14(1.25-3.76)	105	22943	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.695	1882383	2.72		109	15198	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.545	-0.002	1.000	997084	4.80		96.0	13070	
713.00 > 219.00	4.543	4.545	-0.002	1.000	701265		1.42(0.71-2.13)	96.0	8580	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.848	2751498	2.71		109	10851	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.963	4.960	0.003	1.002	5015728	4.94		98.8	457	
813.00 > 169.00	4.955	4.960	-0.005	1.000	891008		5.63(2.86-8.58)	98.8	7241	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.320	0.002	1.000	5529461	5.15		103	954	
913.00 > 169.00	5.315	5.320	-0.005	0.999	707340		7.82(3.83-11.48)	103	5678	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:37 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_007.d

Injection Date: 16-Mar-2018 23:48:48 Instrument ID: A8_N

Lims ID: IC L6 Full

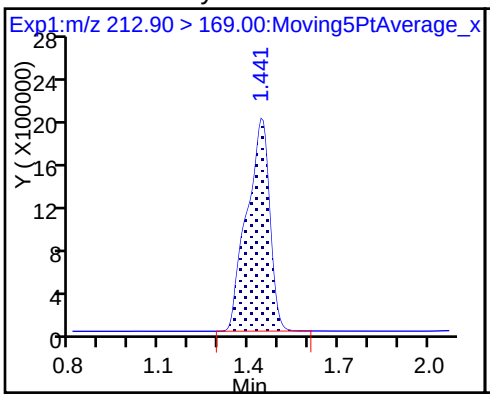
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

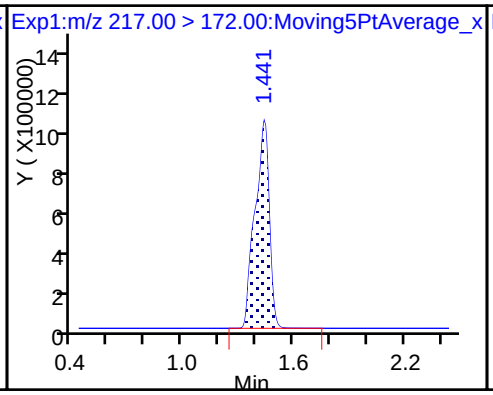
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

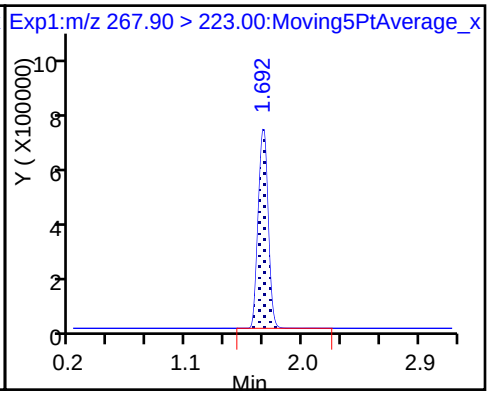
2 Perfluorobutyric acid



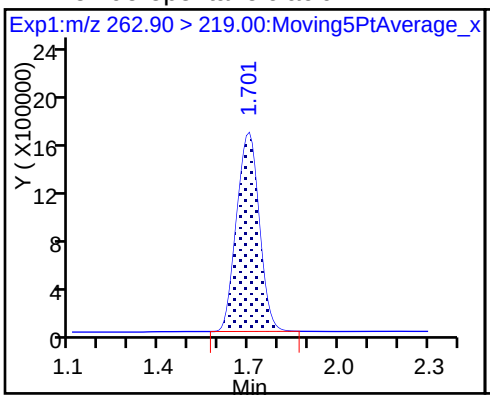
D 1 13C4 PFBA



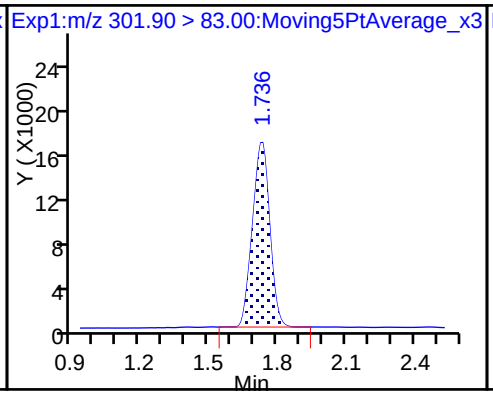
D 3 13C5-PFPeA



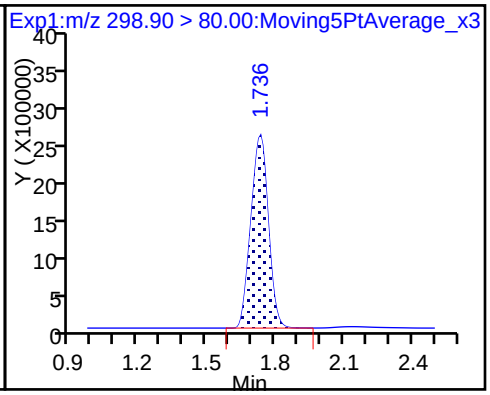
4 Perfluoropentanoic acid



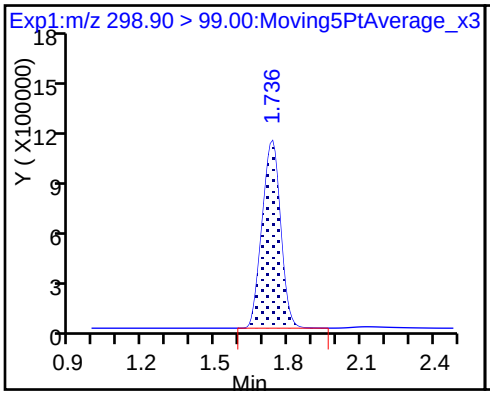
D 47 13C3-PFBS



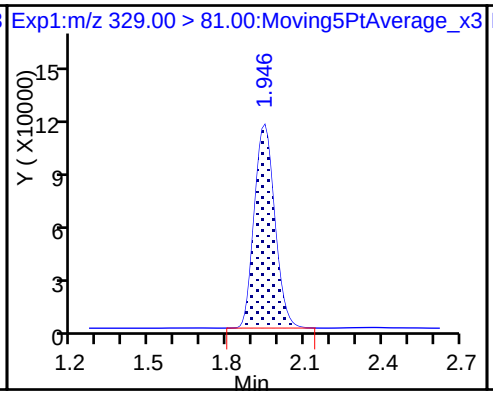
5 Perfluorobutanesulfonic acid



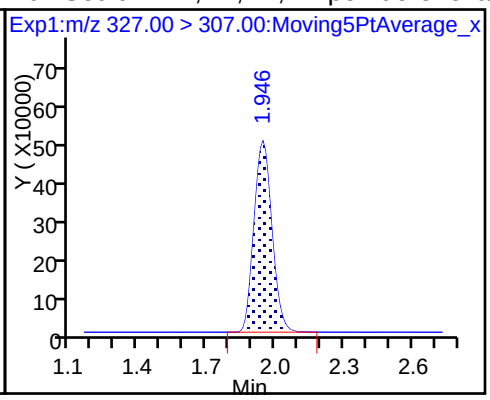
5 Perfluorobutanesulfonic acid



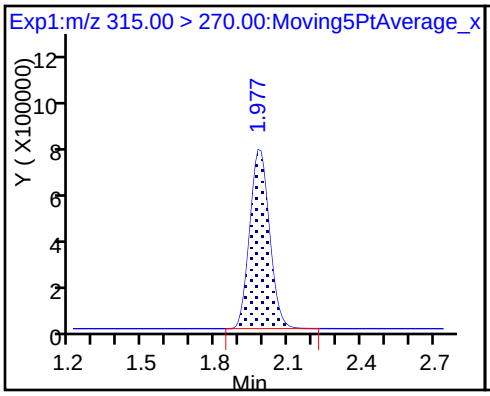
D 60 M2-4:2FTS



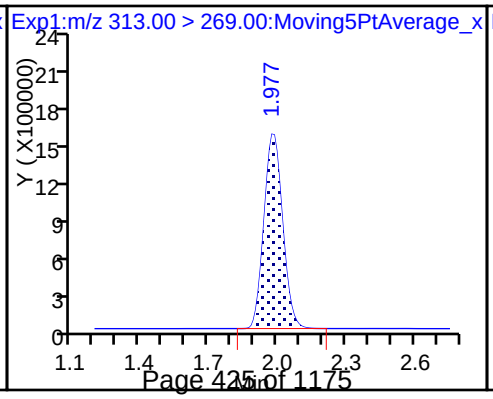
61 Sodium 1H,1H,2H,2H-perfluorohexane



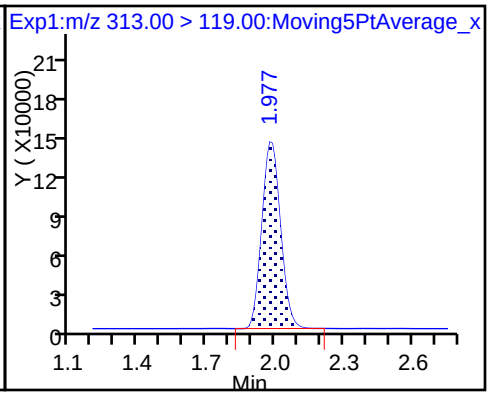
D 7 13C2 PFHxA



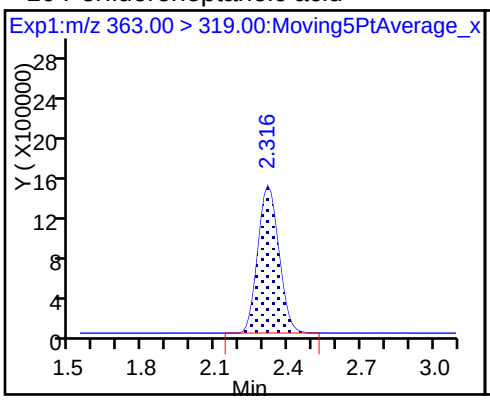
6 Perfluorohexanoic acid



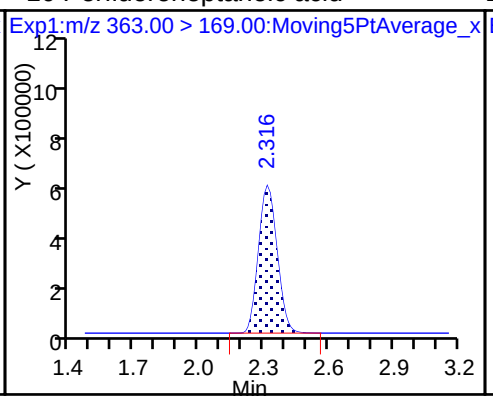
6 Perfluorohexanoic acid



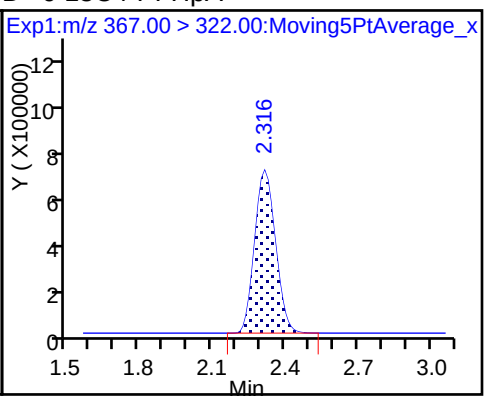
10 Perfluoroheptanoic acid



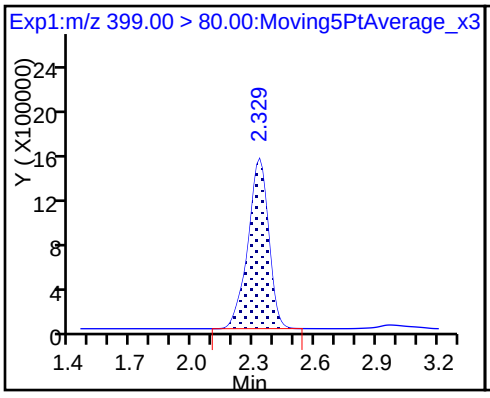
10 Perfluoroheptanoic acid



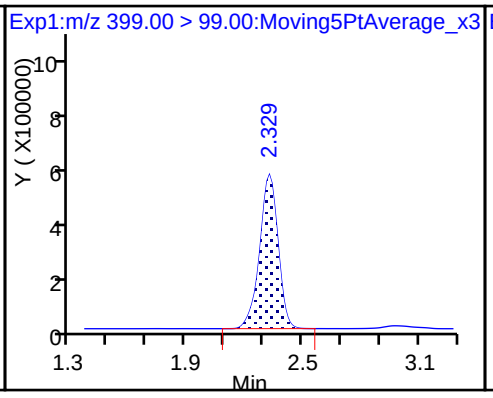
D 9 13C4-PFHpA



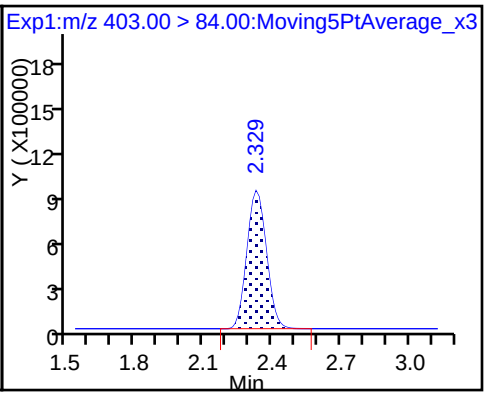
8 Perfluorohexanesulfonic acid



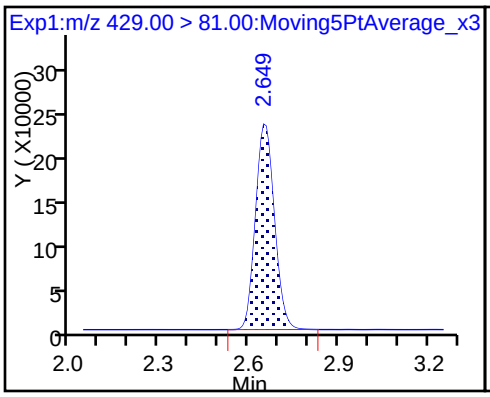
8 Perfluorohexanesulfonic acid



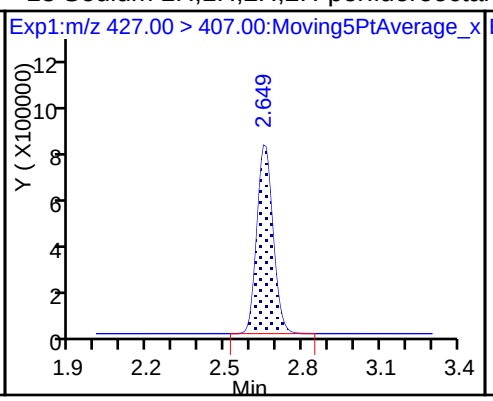
D 11 18O2 PFHxS



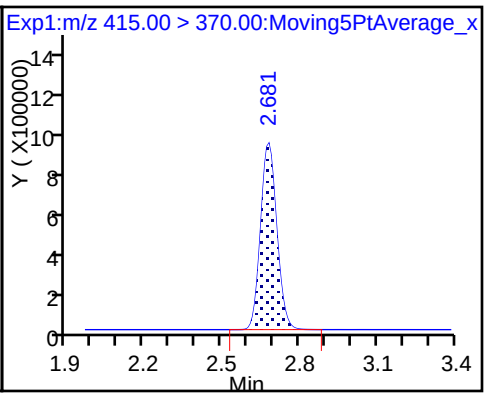
D 12 M2-6:2FTS



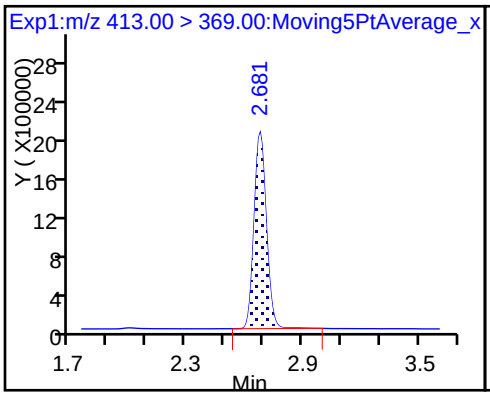
13 Sodium 1H,1H,2H,2H-perfluorooctane



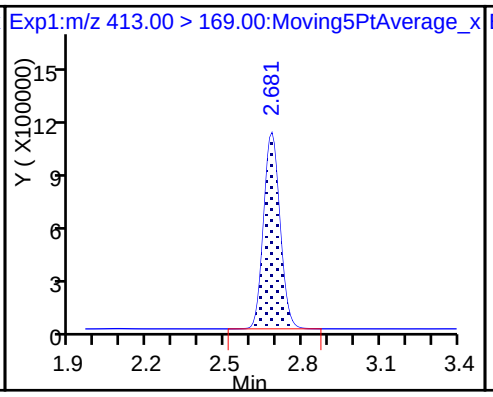
M2 13C2-PFOA



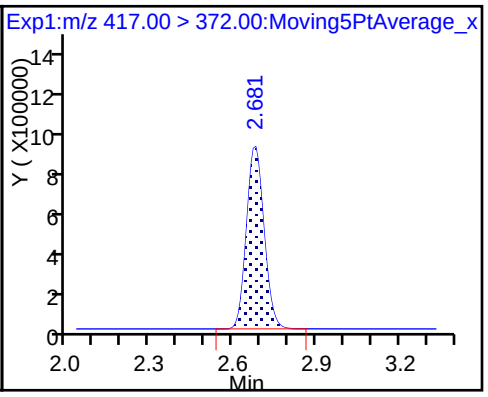
15 Perfluorooctanoic acid



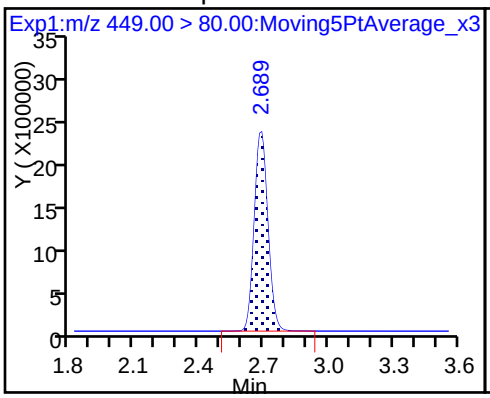
15 Perfluorooctanoic acid



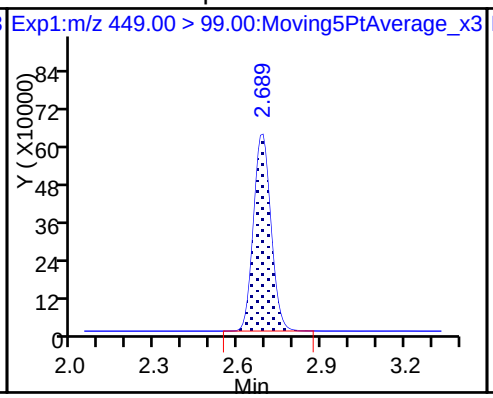
D 14 13C4 PFOA



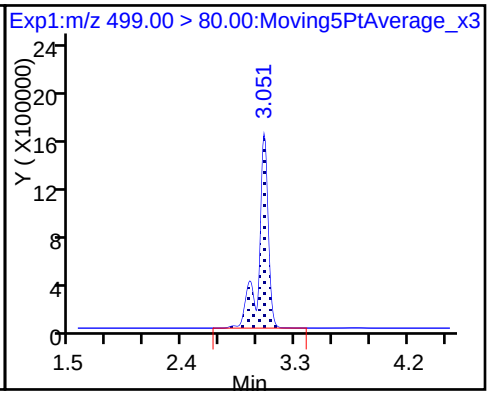
16 Perfluoroheptanesulfonic acid



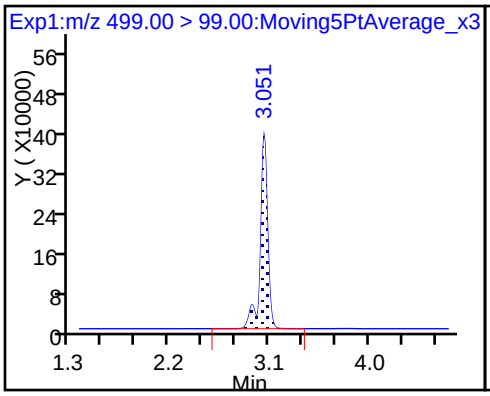
16 Perfluoroheptanesulfonic acid



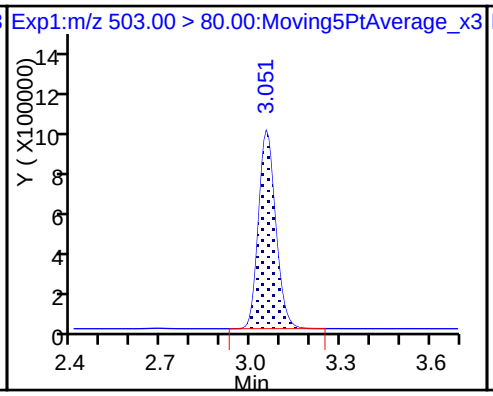
17 Perfluorooctane sulfonic acid



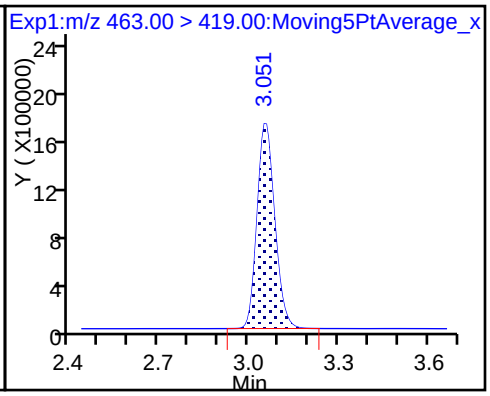
17 Perfluorooctane sulfonic acid



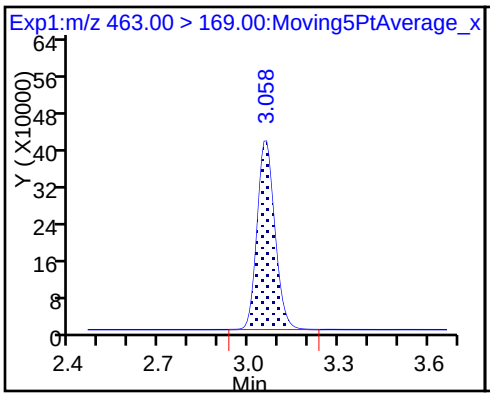
D 18 13C4 PFOS



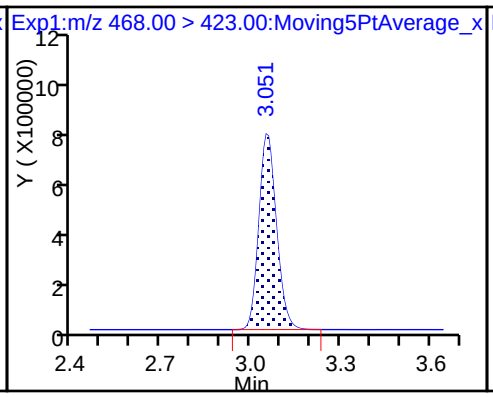
20 Perfluorononanoic acid



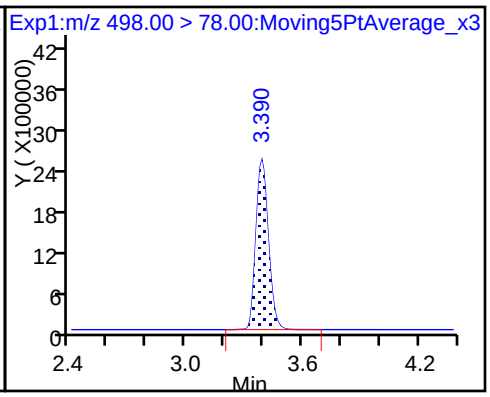
20 Perfluorononanoic acid



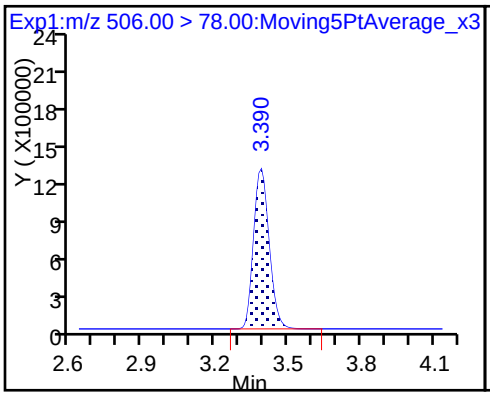
D 19 13C5 PFNA



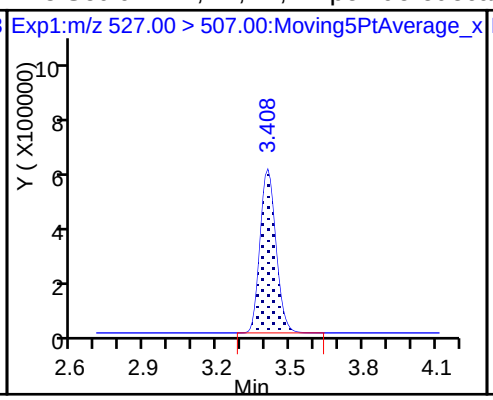
22 Perfluorooctane Sulfonamide



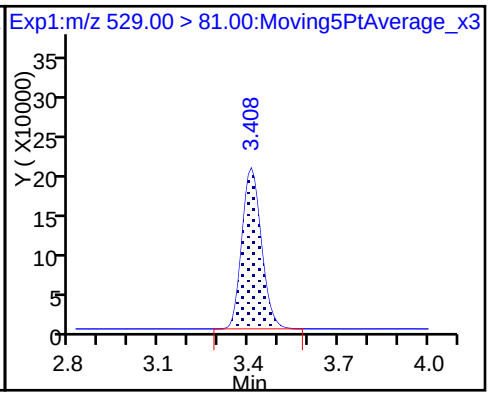
D 21 13C8 FOSA



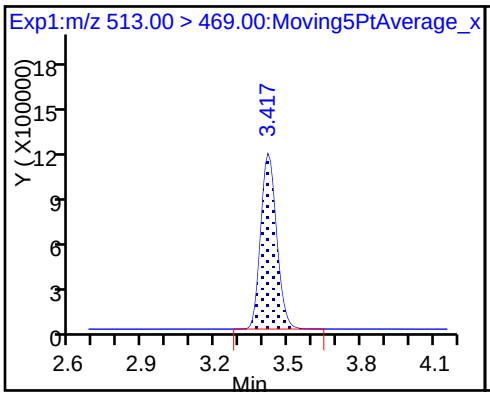
25 Sodium 1H,1H,2H,2H-perfluorodecane



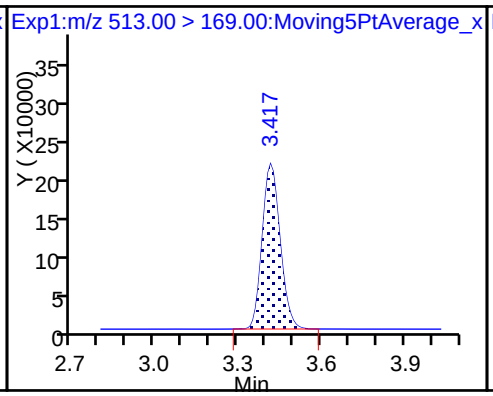
D 26 M2-8:2FTS



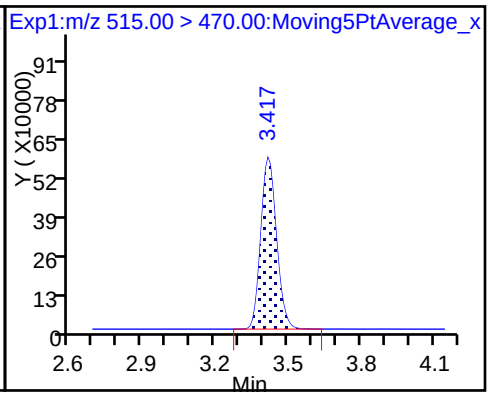
24 Perfluorodecanoic acid



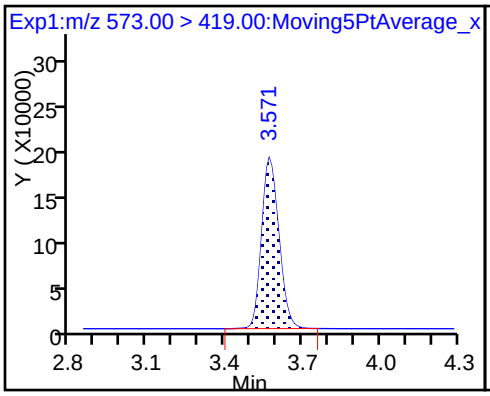
24 Perfluorodecanoic acid



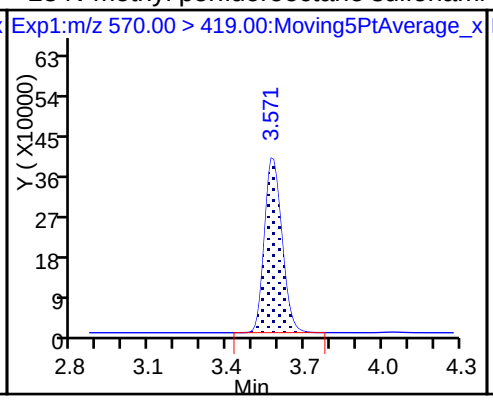
D 23 13C2 PFDA



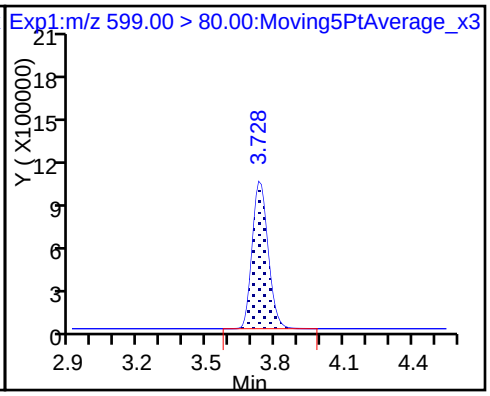
D 27 d3-NMeFOSAA



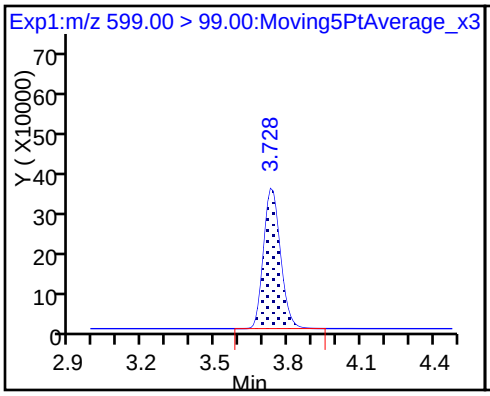
28 N-methyl perfluorooctane sulfonami



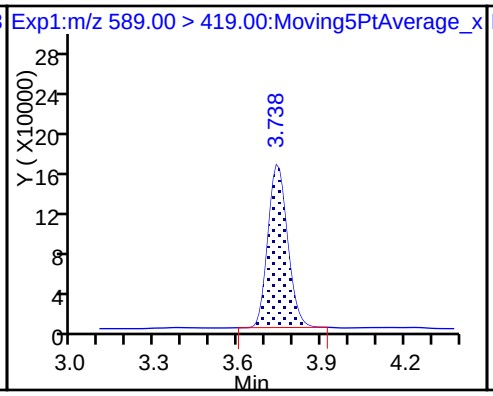
29 Perfluorodecane Sulfonic acid



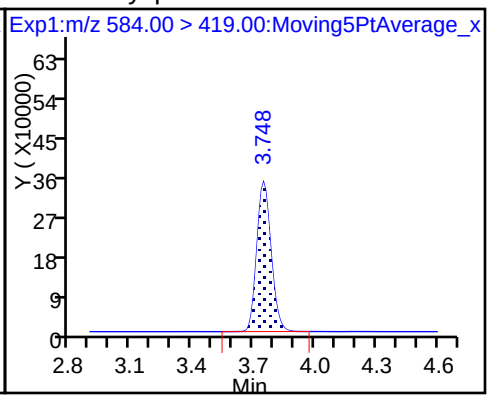
29 Perfluorodecane Sulfonic acid



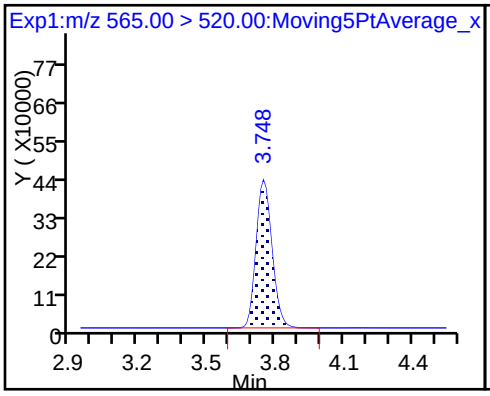
D 32 d5-NEtFOSAA



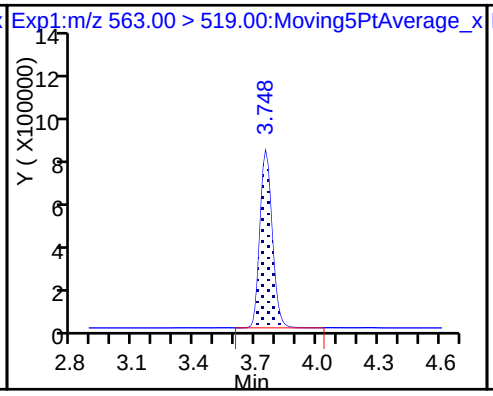
33 N-ethyl perfluorooctane sulfonamid



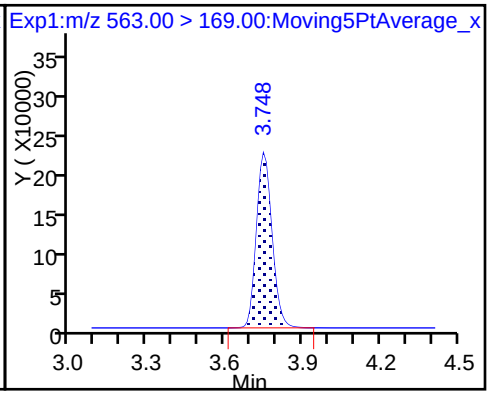
D 30 13C2 PFUnA



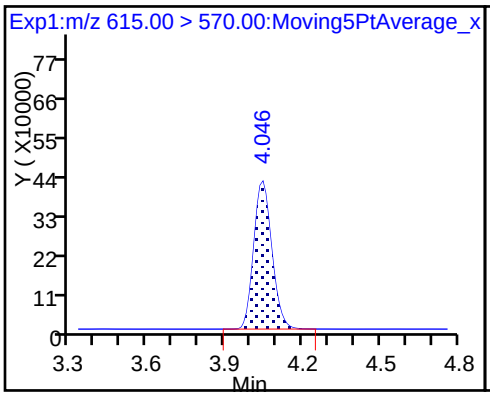
31 Perfluoroundecanoic acid



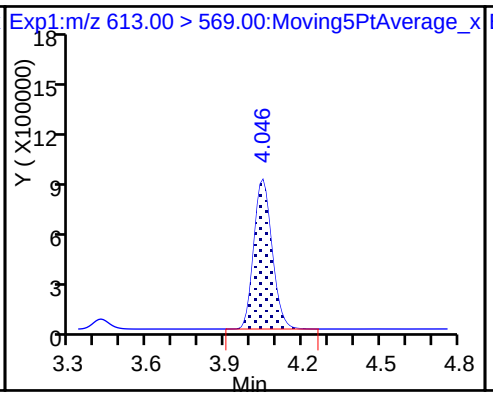
31 Perfluoroundecanoic acid



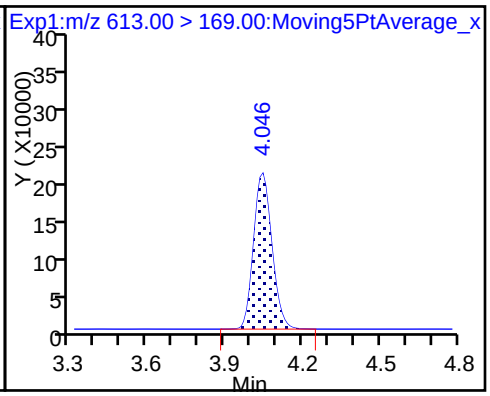
D 36 13C2 PFDoA



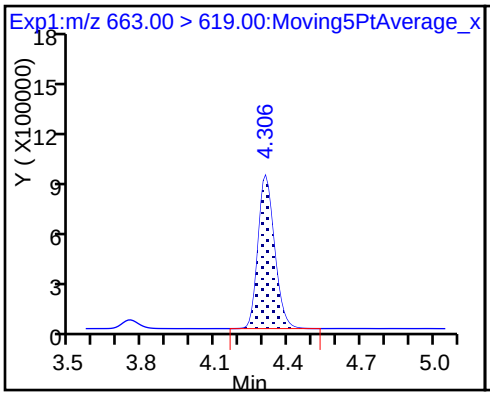
37 Perfluorododecanoic acid



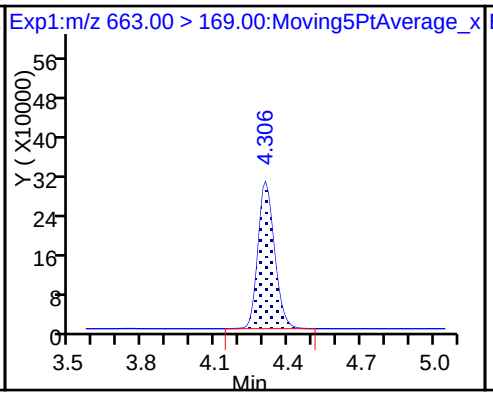
37 Perfluorododecanoic acid



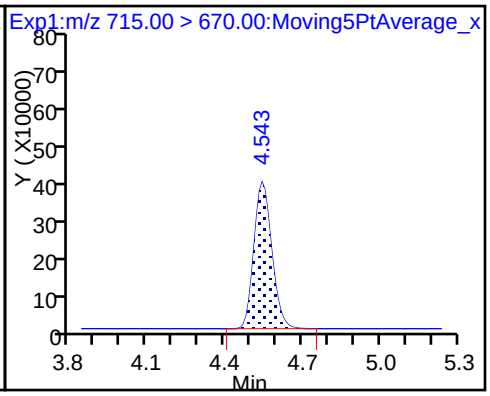
41 Perfluorotridecanoic acid



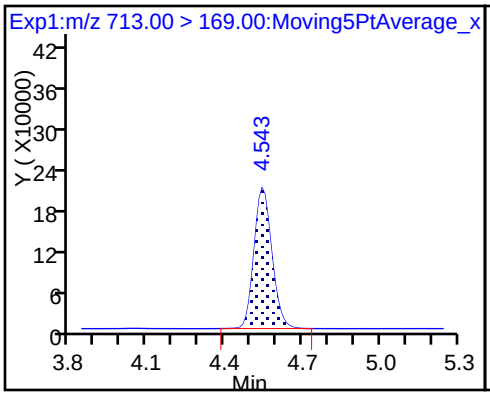
41 Perfluorotridecanoic acid



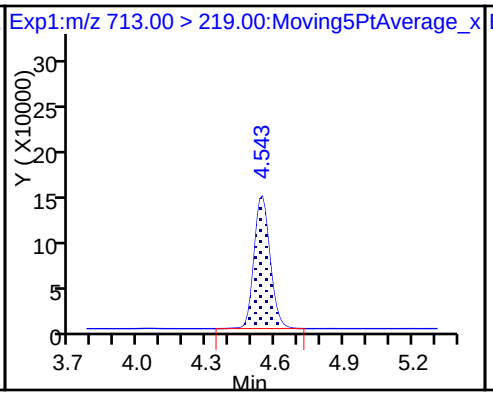
D 43 13C2-PFTeDA



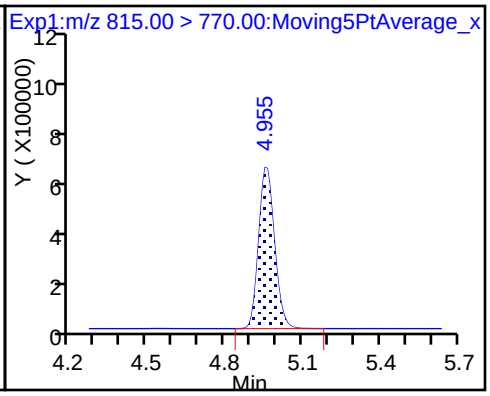
42 Perfluorotetradecanoic acid



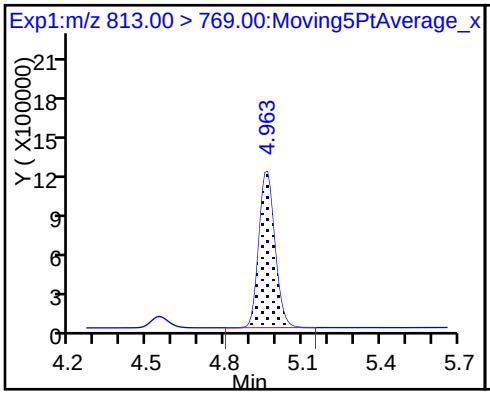
42 Perfluorotetradecanoic acid



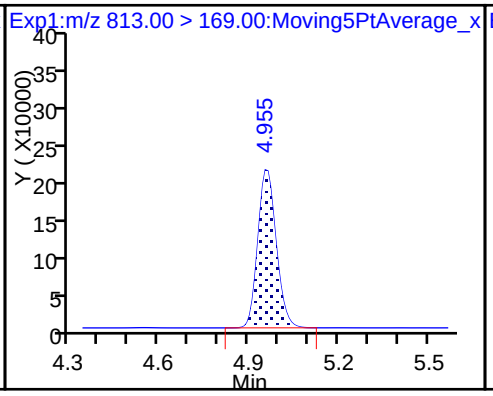
D 44 13C2-PFHxDA



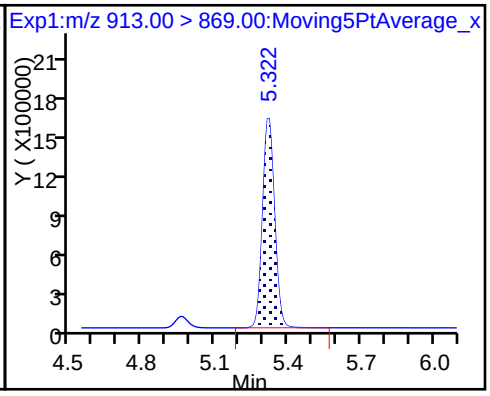
45 Perfluorohexadecanoic acid



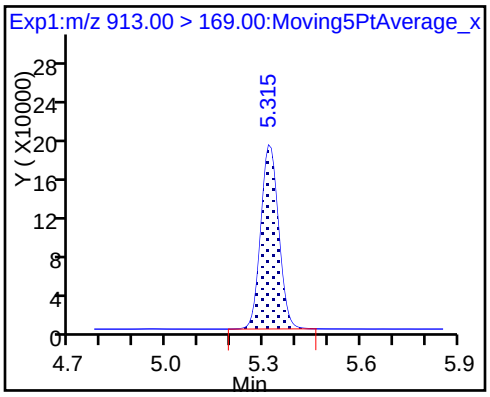
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 16-Mar-2018 23:56:35 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:39 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:28:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.440	0.001	0.537	5232633	2.69		108	82309	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.440	0.001	1.000	19640198	10.1		101	12323	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.696	0.004	0.634	3539835	2.58		103	134420	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.698	0.002	1.000	16422736	9.93		99.3	6981	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.730	0.006	0.647	90294	2.66		115	493	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.733	0.003	1.000	24136015	8.03		90.9	10324	
298.90 > 99.00	1.736	1.733	0.003	1.000	10904597		2.21(1.25-3.74)	90.9	11290	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.942	0.004	0.726	556890	2.30		98.4	5405	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.944	0.002	1.000	5338400	8.55		91.6	141725	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.737	3855910	2.52		101	136520	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.982	0.005	1.005	15868989	10.2		102	57308	
313.00 > 119.00	1.987	1.982	0.005	1.005	1454246		10.91(5.03-15.10)	102	37142	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.864	3792427	2.55		102	79264	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	15371232	9.78		97.8	34467	
363.00 > 169.00	2.315	2.311	0.004	1.000	6374993		2.41(1.13-3.40)	97.8	76069	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.869	5044040	2.54		107	56616	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	20699070	8.70		95.6	2537	
399.00 > 99.00	2.328	2.326	0.002	1.000	7211194		2.87(1.50-4.49)	95.6	2748	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.651	0.006	0.991	915248	2.40		101	23462	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.652	0.005	1.000	6406487	9.99		105	124176	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.678	0.003	1.000	3630259	2.52		101	75171	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.678	0.003	1.000	16238419	10.0		100	9944	
413.00 > 169.00	2.681	2.678	0.003	1.000	8853138		1.83(0.84-2.52)	100	22165	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.678	0.003		3812028	2.50			66649	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.684	0.005	1.000	18413921	9.14		96.0	110339	
449.00 > 99.00	2.689	2.684	0.005	1.000	5292149		3.48(1.94-5.82)	96.0	61394	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.050	0.008	1.141	3664287	2.64		110	13294	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.050	0.008	1.000	15616435	9.41		101	43524	
499.00 > 99.00	3.058	3.050	0.008	1.000	3487558		4.48(2.31-6.93)	101	28558	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.052	0.006	1.141	2932926	2.55		102	55102	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.052	0.006	1.000	11976618	10.0		100	25729	
463.00 > 169.00	3.058	3.052	0.006	1.000	3098902		3.86(1.90-5.69)	100	63947	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.264	5287574	2.63		105	52245	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.388	0.001	1.000	19424864	9.45		94.5	152749	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.406	0.002	1.271	851096	2.38		99.2	18761	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.406	0.002	1.000	4059707	9.09		94.8	88539	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.416	0.010	1.278	2368082	2.46		98.6	32884	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.416	0.010	1.000	9249996	10.3		103	52454	
513.00 > 169.00	3.426	3.416	0.010	1.000	1762214		5.25(2.36-7.09)	103	39146	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.335	881475	2.78		111	31541	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.571	0.008	1.000	3769629	10.3		103	31554	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.729	0.009	1.000	9484295	9.69		101	141067	
599.00 > 99.00	3.738	3.729	0.009	1.000	3276453		2.89(1.39-4.16)	101	62459	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.740	0.008	1.398	796299	2.62		105	1800	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.746	0.002	1.000	3048852	9.78		97.8	124025	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.747	0.001	1.398	1892487	2.51		101	55785	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.750	0.008	1.003	6182513	9.75		97.5	20684	
563.00 > 169.00	3.748	3.750	-0.002	1.000	1594060		3.88(2.12-6.36)	97.5	47801	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.041	0.006	1.509	1937420	2.72		109	11175	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.042	0.005	1.000	8183198	10.3		103	1805	
613.00 > 169.00	4.047	4.042	0.005	1.000	2137875		3.83(2.13-6.40)	103	36830	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.304	0.003	1.000	8318181	10.4		104	1942	
663.00 > 169.00	4.307	4.304	0.003	1.000	2521670		3.30(1.25-3.76)	104	26552	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.545	0.009	1.699	1825202	2.80		112	11851	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.545	0.009	1.000	1864512	9.26		92.6	22768	
713.00 > 219.00	4.543	4.545	-0.002	0.998	1299349		1.43(0.71-2.13)	92.6	12775	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.956	0.008	1.852	2496909	2.62		105	9297	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.960	0.004	1.000	9782635	10.6		106	843	
813.00 > 169.00	4.964	4.960	0.004	1.000	1695189		5.77(2.86-8.58)	106	12082	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.320	0.002	1.000	9786600	10.1		101	1689	
913.00 > 169.00	5.322	5.320	0.002	1.000	1244402		7.86(3.83-11.48)	101	7790	

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:40 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Injection Date: 16-Mar-2018 23:56:35 Instrument ID: A8_N

Lims ID: IC L7 Full

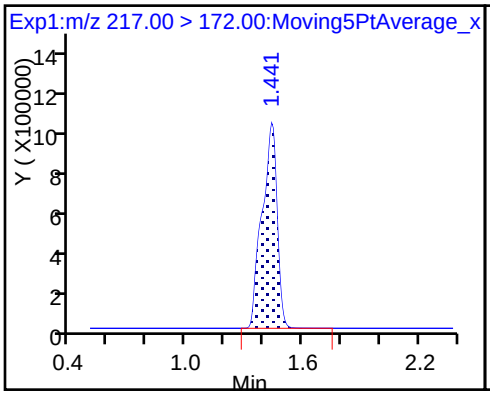
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

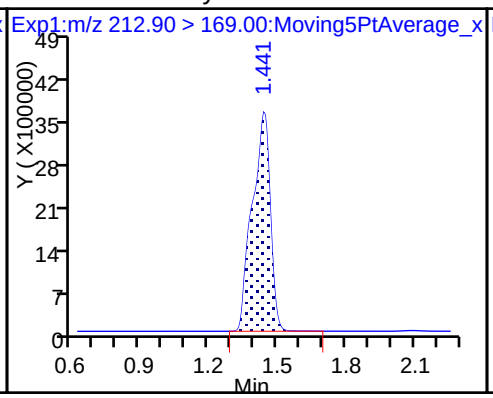
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

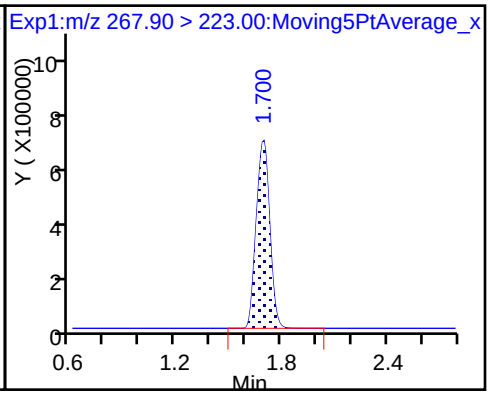
D 1 13C4 PFBA



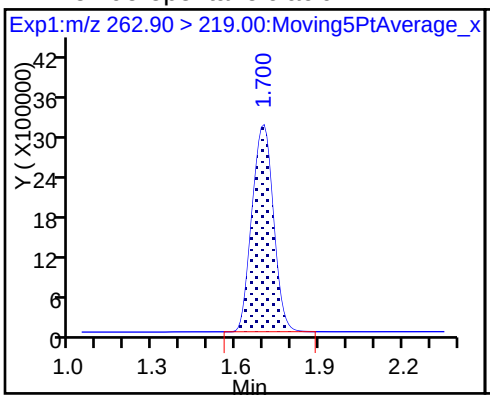
2 Perfluorobutyric acid



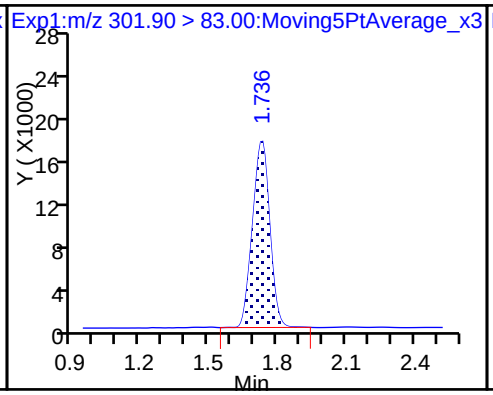
D 3 13C5-PFPeA



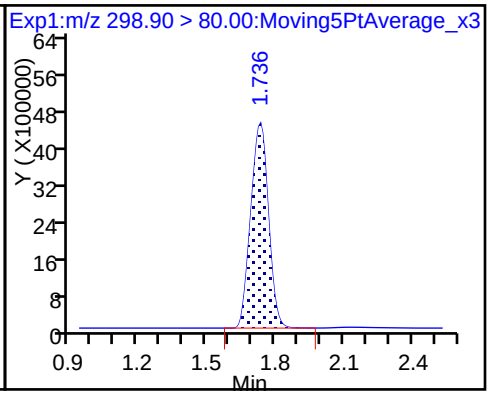
4 Perfluoropentanoic acid



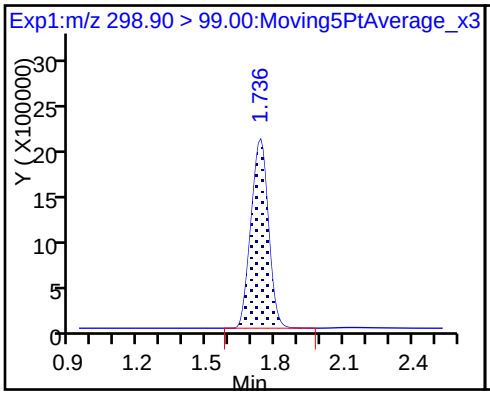
D 47 13C3-PFBS



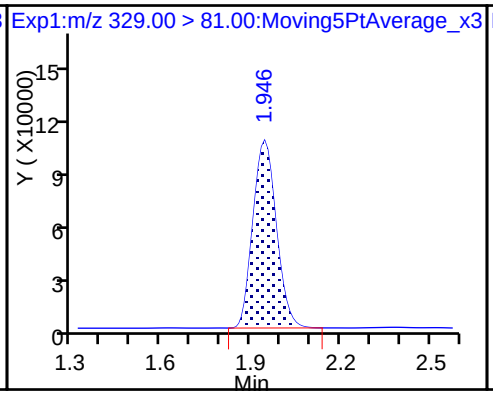
5 Perfluorobutanesulfonic acid



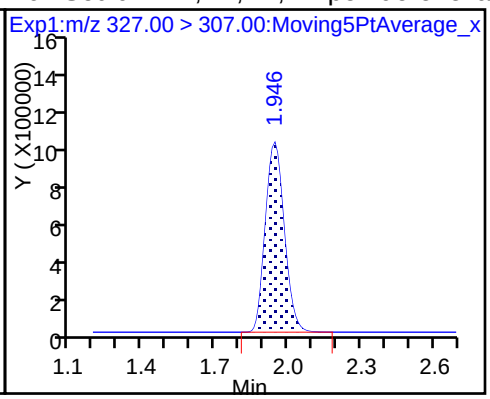
5 Perfluorobutanesulfonic acid



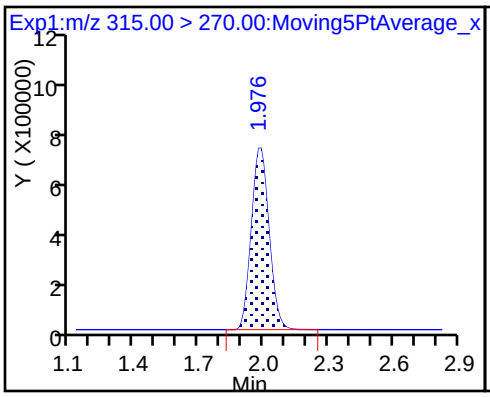
D 60 M2-4:2FTS



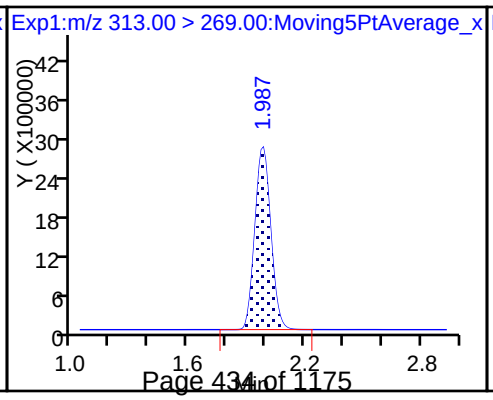
61 Sodium 1H,1H,2H,2H-perfluorohexane



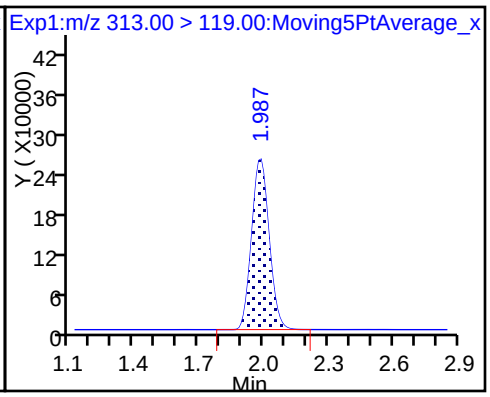
D 7 13C2 PFHxA



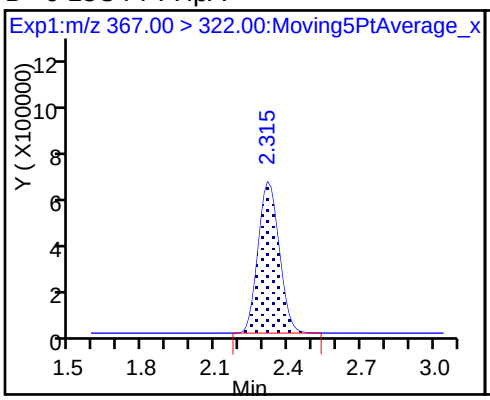
6 Perfluorohexanoic acid



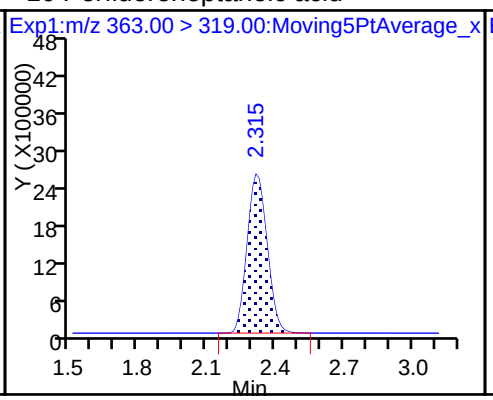
6 Perfluorohexanoic acid



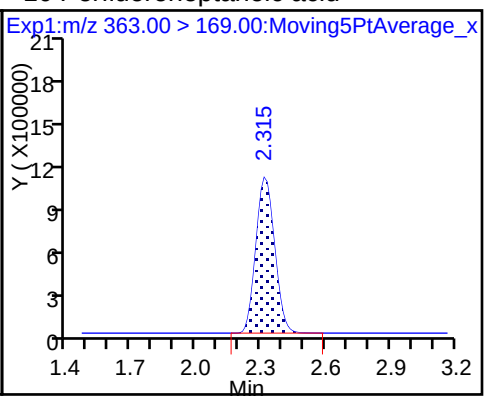
D 9 13C4-PFHpA



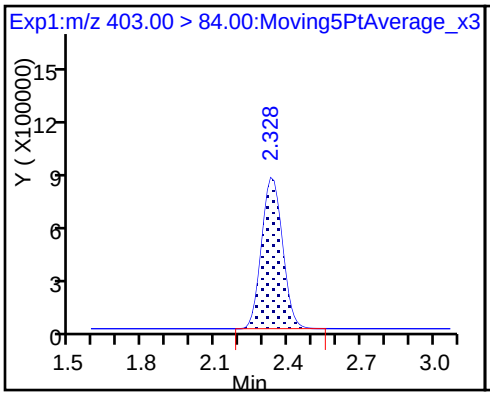
10 Perfluoroheptanoic acid



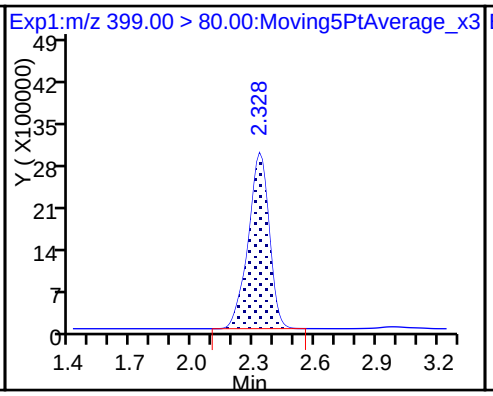
10 Perfluoroheptanoic acid



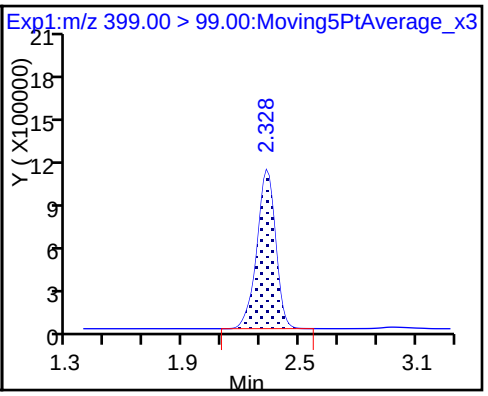
D 11 18O2 PFHxS



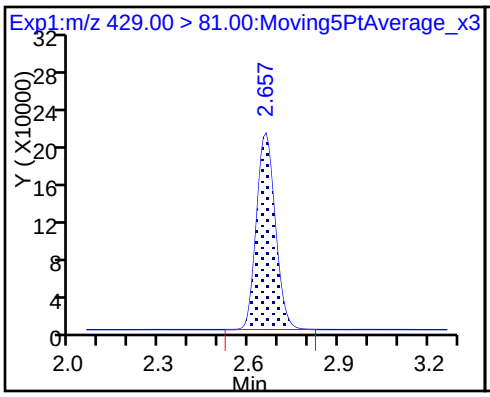
8 Perfluorohexanesulfonic acid



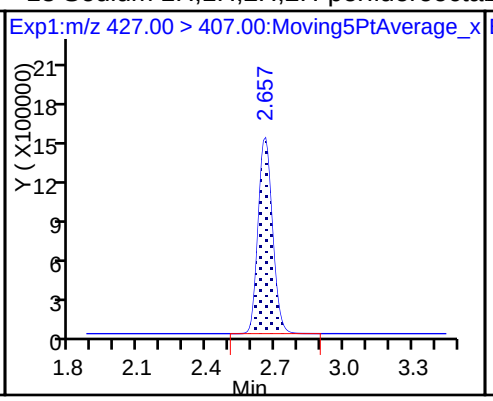
8 Perfluorohexanesulfonic acid



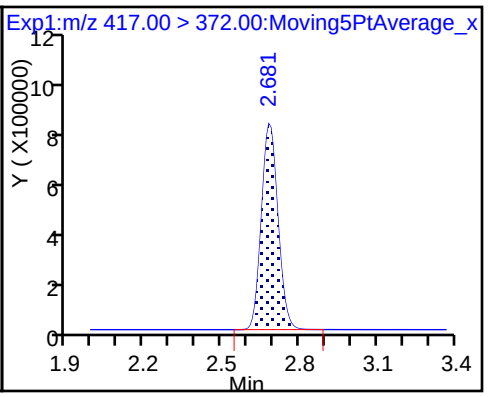
D 12 M2-6:2FTS



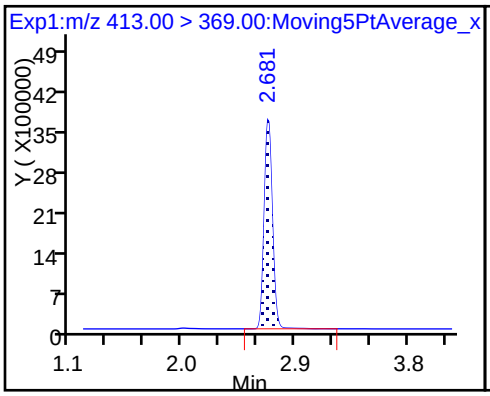
13 Sodium 1H,1H,2H,2H-perfluorooctane



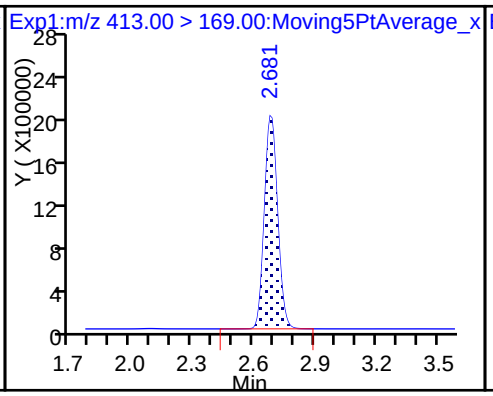
D 14 13C4 PFOA



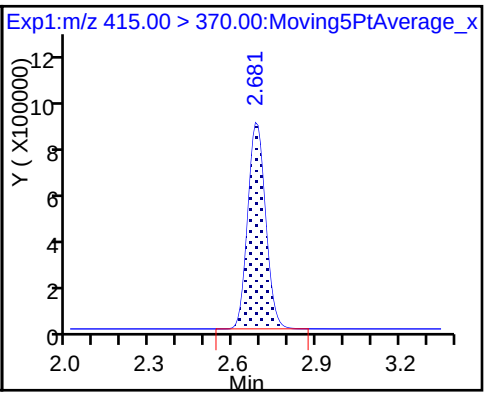
15 Perfluorooctanoic acid



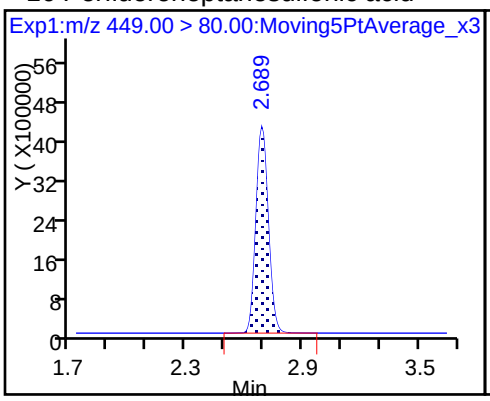
15 Perfluorooctanoic acid



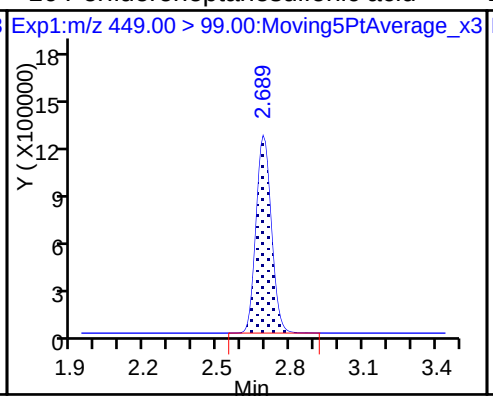
* 62 13C2-PFOA



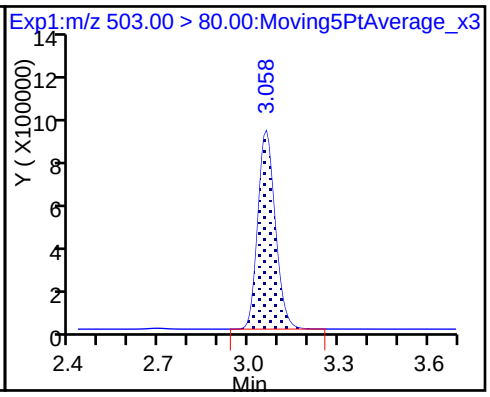
16 Perfluoroheptanesulfonic acid



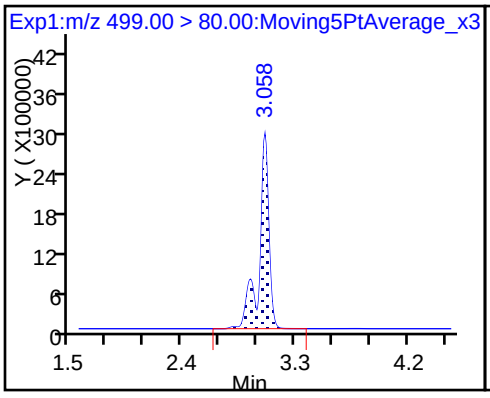
16 Perfluoroheptanesulfonic acid



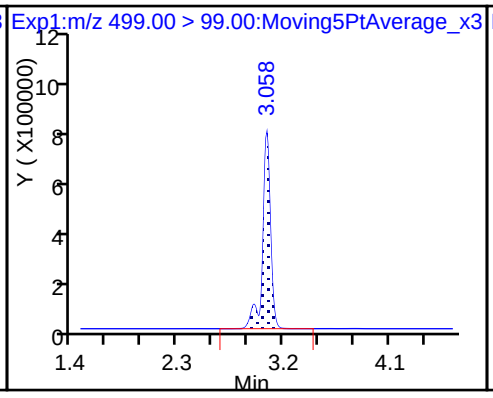
D 18 13C4 PFOS



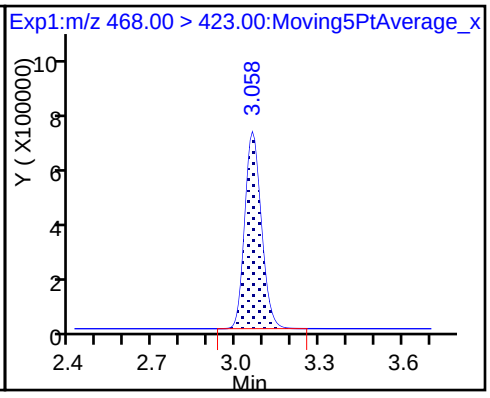
17 Perfluorooctane sulfonic acid



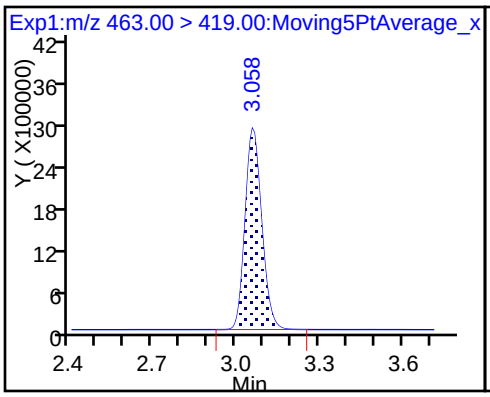
17 Perfluorooctane sulfonic acid



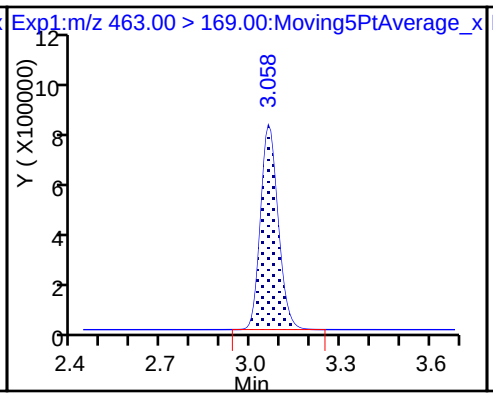
D 19 13C5 PFNA



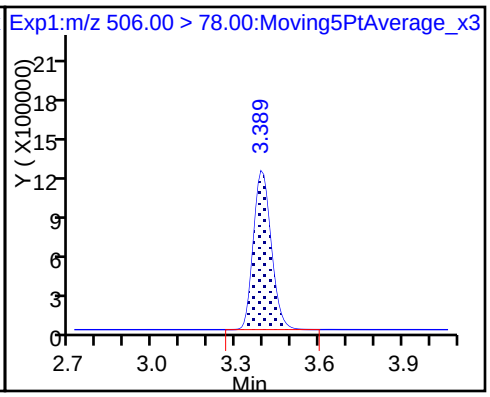
20 Perfluorononanoic acid



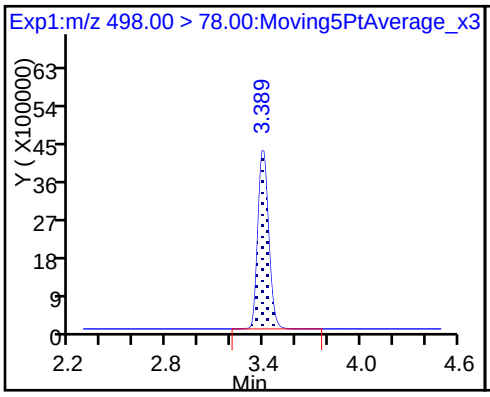
20 Perfluorononanoic acid



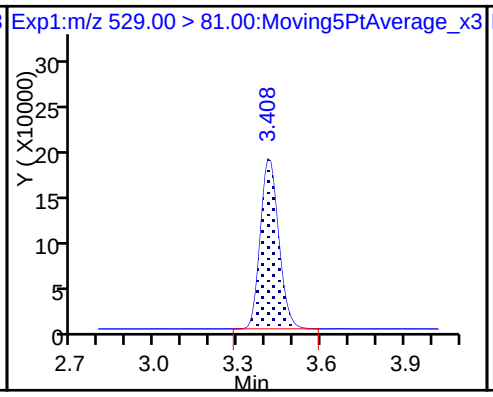
D 21 13C8 FOSA



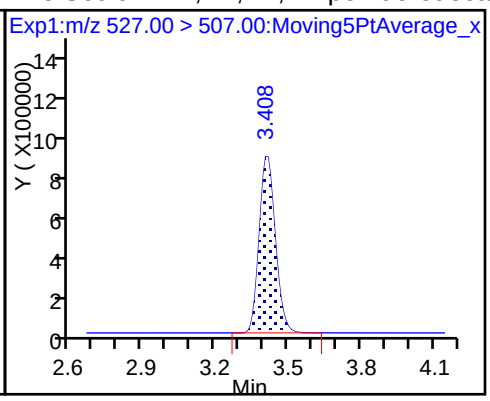
22 Perfluorooctane Sulfonamide



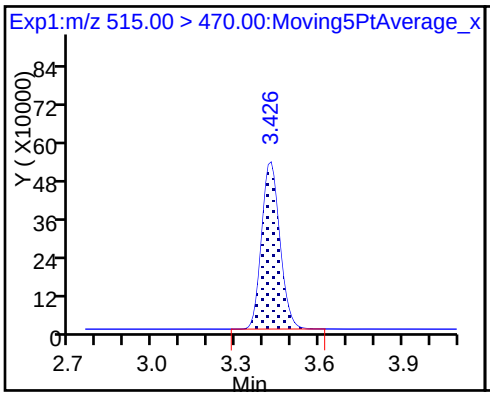
D 26 M2-8:2FTS



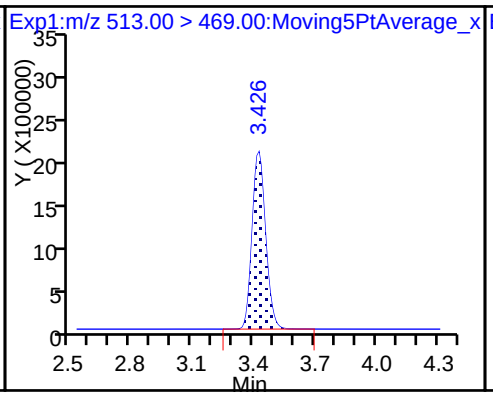
25 Sodium 1H,1H,2H,2H-perfluorodecane



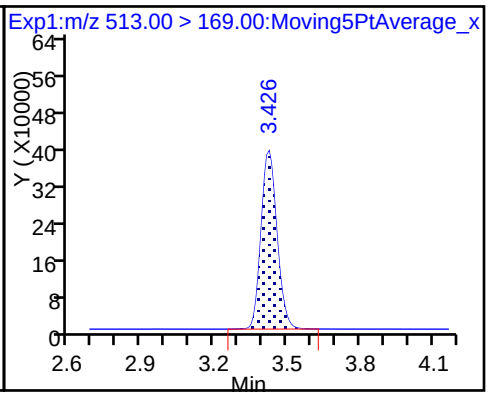
D 23 13C2 PFDA



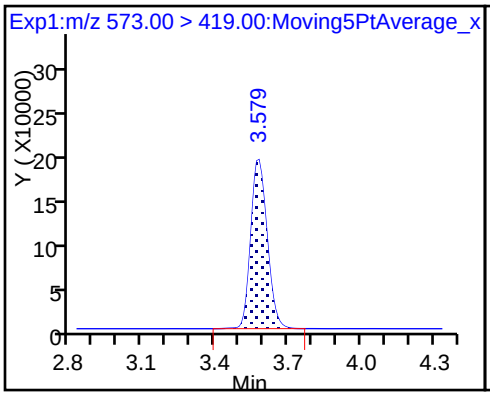
24 Perfluorodecanoic acid



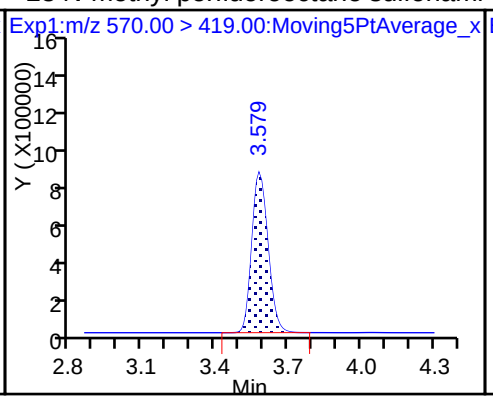
24 Perfluorodecanoic acid



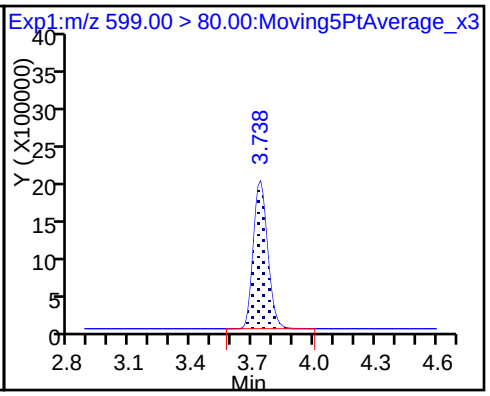
D 27 d3-NMeFOSAA



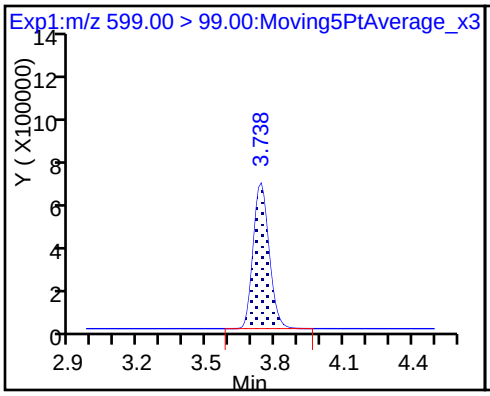
28 N-methyl perfluorooctane sulfonami



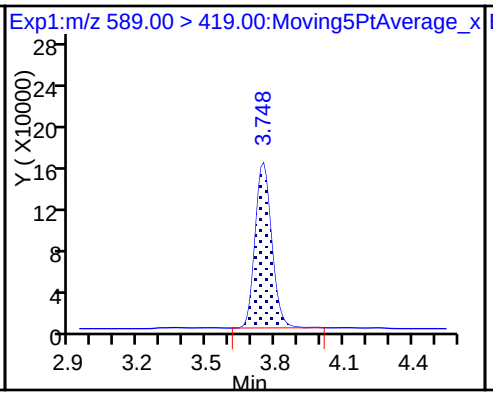
29 Perfluorodecane Sulfonic acid



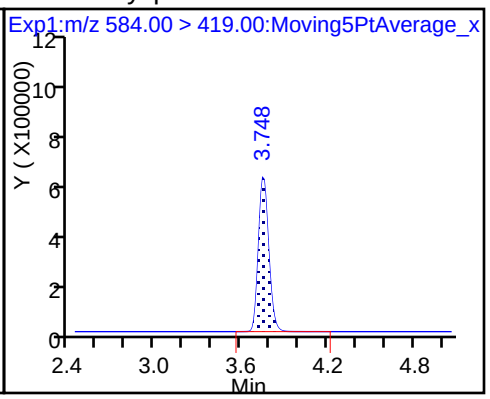
29 Perfluorodecane Sulfonic acid



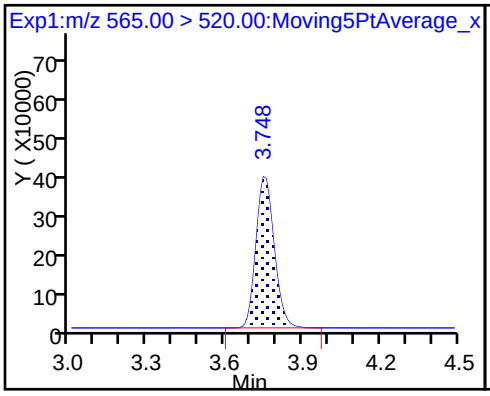
D 32 d5-NEtFOSAA



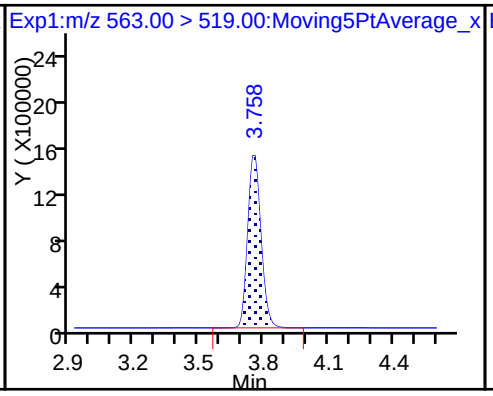
33 N-ethyl perfluorooctane sulfonamid



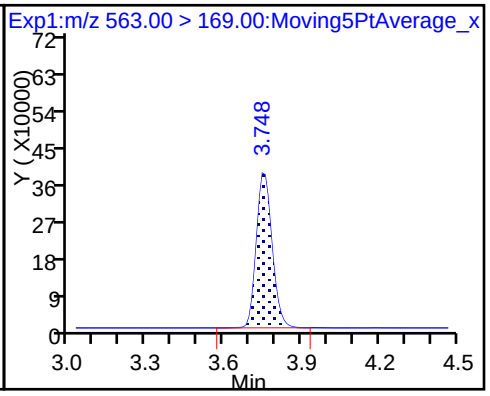
D 30 13C2 PFUnA



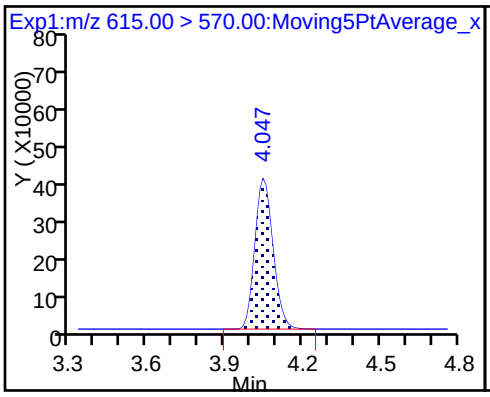
31 Perfluoroundecanoic acid



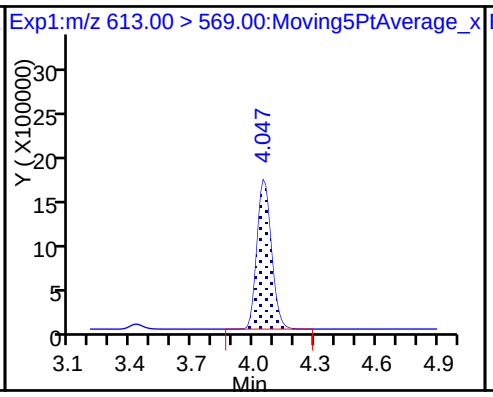
31 Perfluoroundecanoic acid



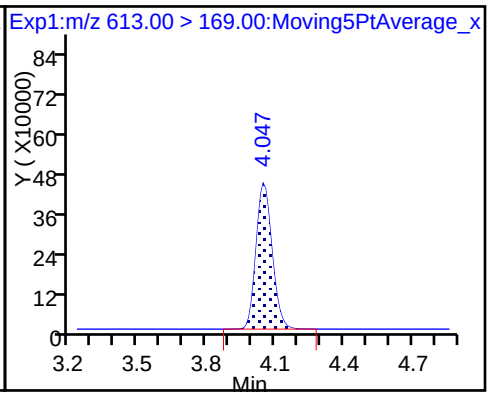
D 36 13C2 PFDoA



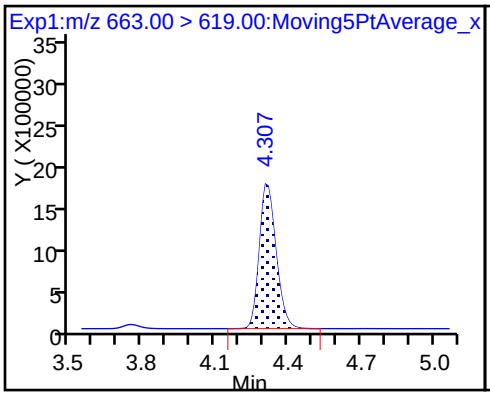
37 Perfluorododecanoic acid



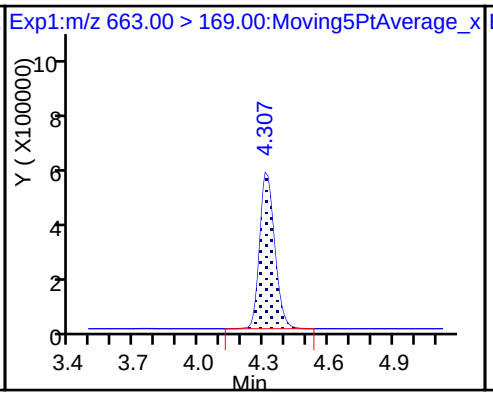
37 Perfluorododecanoic acid



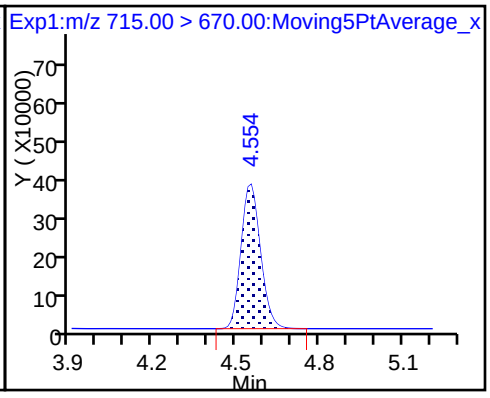
41 Perfluorotridecanoic acid



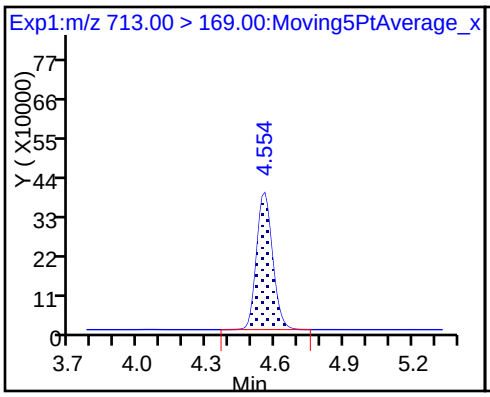
41 Perfluorotridecanoic acid



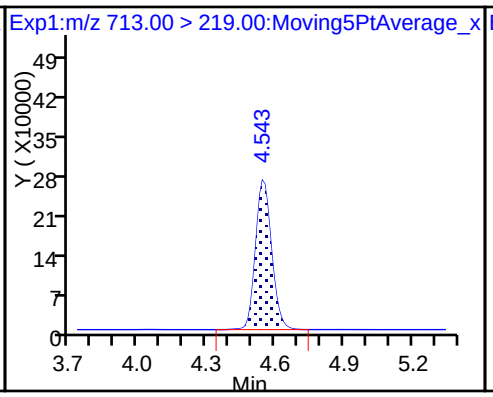
D 43 13C2-PFTeDA



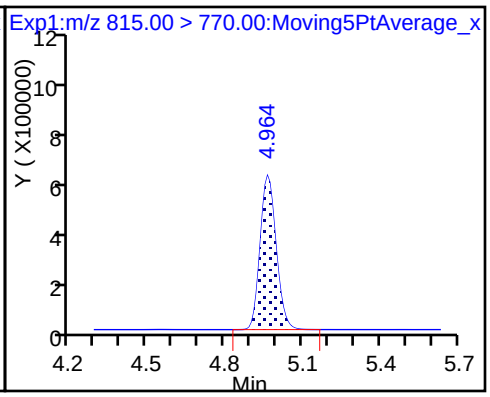
42 Perfluorotetradecanoic acid



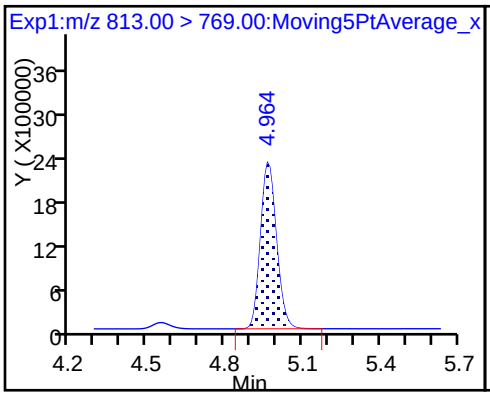
42 Perfluorotetradecanoic acid



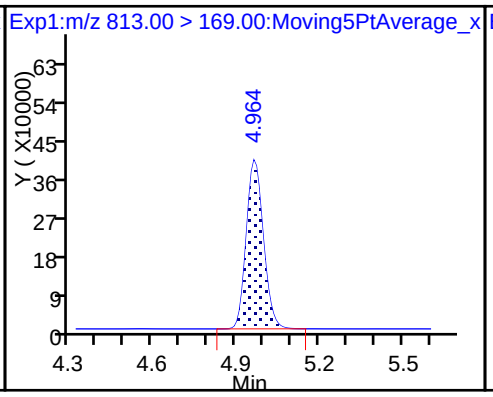
D 44 13C2-PFHxDA



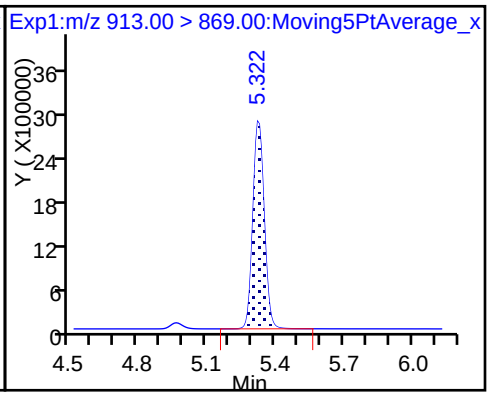
45 Perfluorohexadecanoic acid



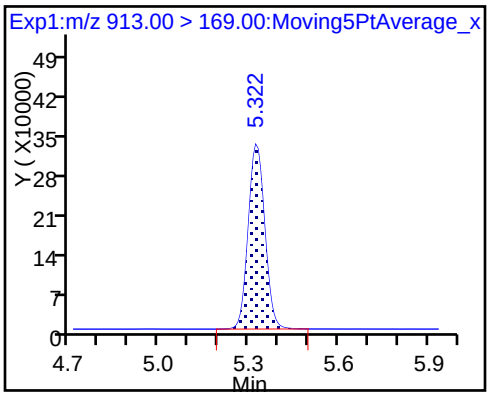
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-214175/2	2018.03.21LLICALAX_002.d
Level 2	IC 320-214175/3	2018.03.21LLICALAX_003.d
Level 3	IC 320-214175/4	2018.03.21LLICALAX_004.d
Level 4	IC 320-214175/5	2018.03.21LLICALAX_005.d
Level 5	IC 320-214175/6	2018.03.21LLICALAX_006.d
Level 6	IC 320-214175/7	2018.03.21LLICALAX_007.d
Level 7	IC 320-214175/8	2018.03.21LLICALAX_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9770 0.9654	0.9782 0.9163	0.9137	0.9039	0.9410	AveID		0.9422				3.4		35.0			
Perfluoropentanoic acid (PFPeA)	1.0398 1.1898	1.1118 1.1431	1.1414	1.1024	1.1643	AveID		1.1275				4.3		35.0			
Perfluorobutanesulfonic acid (PFBS)	77.286 78.553	78.814 75.366	76.480	76.225	81.199	AveID		77.703				2.5		50.0			
4:2 FTS	16.804 16.788	16.170 15.667	16.310	15.390	15.941	AveID		16.153				3.3		50.0			
Perfluorohexanoic acid (PFHxA)	1.0196 1.0524	1.0518 1.0118	1.0085	0.9645	1.0478	AveID		1.0223				3.1		35.0			
Perfluoroheptanoic acid (PFHpA)	0.9689 1.0612	1.0927 1.0383	0.9816	0.9771	1.1215	AveID		1.0345				5.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3404 1.1223	1.1639 1.0409	1.0385	1.0319	1.0535	AveID		1.1130				10.1		35.0			
6:2FTS	1.5576 1.7957	1.8911 1.7717	1.7412	1.6933	1.7547	AveID		1.7436				5.9		35.0			
Perfluorooctanoic acid (PFOA)	1.2278 1.1265	1.2535 1.0919	1.0964	1.0565	1.0550	AveID		1.1297				7.1		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.3002 1.3237	1.2934 1.2343	1.2772	1.2479	1.2922	AveID		1.2813				2.4		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.1788 1.1274	1.0854 1.1317	1.0974	1.0467	1.1303	AveID		1.1139				3.8		35.0			
Perfluorononanoic acid (PFNA)	0.9610 1.0030	0.9765 1.0457	0.9865	0.9543	1.0556	AveID		0.9975				4.0		35.0			
Perfluorooctane Sulfonamide (FOSA)	1.0217 1.0333	0.9663 0.9452	0.9546	0.9908	0.9888	AveID		0.9858				3.4		35.0			
8:2FTS	1.3252 1.2619	1.1418 1.3311	1.2543	1.2466	1.3731	AveID		1.2763				5.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	1.0098 1.0266	0.8873 0.9840	1.0025	0.9567	1.0497	AveID		0.9881				5.4		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.8624 1.0715	0.9123 1.0518	1.0465	0.9523	1.1088	AveID		1.0008				9.2		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6016 0.7415	0.6694 0.7211	0.6530	0.6412	0.7322	AveID		0.6800				7.8		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.9224 0.9962	0.8646 0.9417	0.9112	0.8903	1.0134	AveID		0.9342				5.8		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9695 0.8449	0.8967 0.9028	0.7661	0.8243	0.8309	AveID		0.8622				7.7		35.0			
Perfluorododecanoic acid (PFDoA)	1.0503 1.1100	1.0998 1.0309	1.0210	0.9776	1.0349	AveID		1.0464				4.4		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.0242 1.2189	1.0806 1.0484	1.0979	1.1164	1.1188	AveID		1.1007				5.7		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2400 0.2554	0.2594 0.2499	0.2475	0.2303	0.2521	AveID		0.2478				4.0		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7892 0.9151	1.3570 0.8645	0.9897	0.9038	0.9928	L2ID	0.0221	0.9088							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.9497 0.9330	0.9448 0.8894	0.9065	0.8854	0.9637	AveID		0.9246				3.3		50.0			
13C4 PFBA	1.2518 1.2929	1.2583 1.3406	1.2790	1.2572	1.1820	Ave		1.2660				3.8		50.0			
13C5 PFPeA	0.8327 0.8439	0.8366 0.8891	0.8605	0.8349	0.7813	Ave		0.8399				3.9		50.0			
13C3-PFBS	0.0186 0.0196	0.0192 0.0199	0.0198	0.0192	0.0180	Ave		0.0192				3.4		50.0			
M2-4:2FTS	0.1314 0.1321	0.1400 0.1255	0.1372	0.1358	0.1246	Ave		0.1324				4.4		50.0			
13C2 PFHxA	0.9295 0.9198	0.9713 0.9356	0.9418	0.9249	0.8788	Ave		0.9288				3.0		50.0			
13C4-PFHpA	0.9506 0.9047	0.8936 0.9073	0.9677	0.9239	0.8667	Ave		0.9164				3.7		50.0			
18O2 PFHxS	1.1127 1.0890	1.1664 1.1449	1.1850	1.1305	1.0840	Ave		1.1303				3.4		50.0			
M2-6:2FTS	0.1884 0.1805	0.1973 0.1957	0.1922	0.1932	0.1826	Ave		0.1900				3.4		50.0			
13C4 PFOA	0.9424 0.9146	0.9504 0.9162	0.9605	0.9718	0.9058	Ave		0.9374				2.7		50.0			
13C4 PFOS	0.8084 0.8115	0.8346 0.8334	0.8459	0.8297	0.7939	Ave		0.8225				2.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C5 PFNA	0.8159 0.8363	0.8387 0.8194	0.8535	0.8423	0.7801	Ave		0.8266				2.9		50.0			
13C8 FOSA	1.0958 1.1026	1.0947 1.0892	1.1838	1.1159	1.0823	Ave		1.1092				3.1		50.0			
M2-8:2FTS	0.2677 0.2568	0.2739 0.2387	0.2803	0.2476	0.2307	Ave		0.2565				7.2		50.0			
13C2 PFDA	0.7397 0.7226	0.7599 0.7138	0.7506	0.7132	0.6715	Ave		0.7245				4.1		50.0			
d3-NMeFOSAA	0.3775 0.3991	0.3624 0.3991	0.4007	0.3777	0.3530	Ave		0.3814				5.0		50.0			
d5-NEtFOSAA	0.4563 0.4090	0.4567 0.4048	0.4709	0.4518	0.3919	Ave		0.4345				7.2		50.0			
13C2 PFUnA	0.6503 0.6562	0.6561 0.6125	0.7132	0.6358	0.6130	Ave		0.6482				5.3		50.0			
13C2 PFDoA	0.7369 0.7139	0.7087 0.7752	0.7608	0.7433	0.7097	Ave		0.7355				3.6		50.0			
13C2-PFTeDA	0.9180 0.8827	0.8229 0.9495	0.9129	0.9482	0.8540	Ave		0.8983				5.3		50.0			
13C2-PFHxDA	1.4911 1.5654	1.2829 1.5109	1.5999	1.5088	1.3493	Ave		1.4726				7.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-214175/2	2018.03.21LLICALAX_002.d
Level 2	IC 320-214175/3	2018.03.21LLICALAX_003.d
Level 3	IC 320-214175/4	2018.03.21LLICALAX_004.d
Level 4	IC 320-214175/5	2018.03.21LLICALAX_005.d
Level 5	IC 320-214175/6	2018.03.21LLICALAX_006.d
Level 6	IC 320-214175/7	2018.03.21LLICALAX_007.d
Level 7	IC 320-214175/8	2018.03.21LLICALAX_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	64128 12506996	131334 22360079	612393	2414180	5823834	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	45401 10061856	99242 18500324	514727	1955236	4762694	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	66644 13614957	142407 24100878	700112	2745542	6781882	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	15310 3074271	30869 5293270	157752	585674	1406742	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	49694 9699799	109004 17232401	497709	1895160	4820853	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	48297 9620973	104181 17149506	497784	1917800	5088526	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	71171 11144344	131804 19742275	586824	2255246	5440694	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
6:2FTS		AveID	14587 3079977	37735 5982174	166250	658727	1590173	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	60671 10325028	127108 18212815	551855	2181038	5003450	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	52467 10247281	109652 17826274	539007	2094073	5113485	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	46371 8507880	89694 15932478	451427	1712110	4360129	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	41117 8405623	87380 15598692	441188	1707633	4311504	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctane Sulfonamide (FOSA)		AveID	58708 11417156	112857 18741888	592188	2348890	5602803	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2FTS		AveID	17824 3110907	31966 5541846	176483	628171	1588740	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	39168 7434177	71937 12786299	394276	1449524	3690292	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	17070 4285891	35274 7642171	219720	764025	2049489	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	24583 5812987	57466 10545265	279040	1089522	2934010	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	22073 4082815	42131 6938724	224858	854457	2079318	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	33058 5555779	62776 10065814	286311	1113457	2666750	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	40586 7940975	83165 14548343	407079	1543700	3845398	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	39576 8719608	81708 14795343	437729	1762916	4156865	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	11552 2258774	22776 4319552	118401	463840	1127193	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	139895 14354924	185745 23776796	829775	2896964	7013285	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	74253 14635504	129317 24460507	760025	2837993	6807875	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6564034 6477851	6712910 6100844	6702182	6677108	6188661	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4366350 4228437	4463093 4046135	4509425	4434133	4090438	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	90718 91170	95045 84106	96305	94733	87868	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	643318 618185	697680 533647	671337	673891	609343	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4874041 4608558	5181558 4257747	4935175	4912134	4600880	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4-PFHpA	13PFOA	Ave	4984623 4533044	4767222 4129064	5071076	4906862	4537445	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PFOA	Ave	5519750 5161589	5886251 4928998	5874354	5679886	5368855	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PFOA	Ave	938472 859398	999800 845912	956838	974611	908164	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PFOA	Ave	4941609 4582778	5069957 4169807	5033130	5161114	4742395	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PFOA	Ave	4052357 3887079	4256604 3625826	4237867	4212796	3973858	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PFOA	Ave	4278627 4190429	4474026 3729104	4472333	4473666	4084349	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PFOA	Ave	5746202 5524474	5839734 4957065	6203337	5926892	5666432	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
M2-8:2FTS	13PF OA	Ave	1345013 1232595	1399775 1040808	1407067	1259787	1157021	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	3878963 3620699	4053733 3248595	3933118	3787833	3515629	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1979468 1999896	1933236 1816501	2099631	2005802	1848322	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2392883 2049207	2436559 1842170	2467789	2399407	2051910	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	3409956 3287781	3500228 2787354	3737470	3376806	3209638	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	3864207 3576857	3780852 3528118	3986883	3947765	3715622	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	4813878 4422729	4389855 4321269	4783571	5036200	4471429	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	7818840 7843306	6843963 6875940	8384119	8013194	7064103	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 21-Mar-2018 18:24:14 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:19 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:00:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.536	6564034	2.47		98.9	83431	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	64128	0.0259		104	24.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4366350	2.48		99.1	93154	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	45401	0.0231		92.2	23.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	90718	2.26		97.0	614	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	66644	0.0220		99.5	376	
298.90 > 99.00	1.745	1.745	0.0	1.000	28118		2.37(1.25-3.74)	99.5	171	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	643318	2.32		99.2	7775	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	15310	0.0243		104	941	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4874041	2.50		100	145438	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	49694	0.0249		99.7	127	
313.00 > 119.00	1.998	1.998	0.0	1.000	4724		10.52(5.03-15.10)	99.7	94.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.333	0.008	0.868	4984623	2.59		104	93288	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.000	48297	0.0234		93.7	96.7	
363.00 > 169.00	2.341	2.335	0.006	1.000	20477		2.36(1.13-3.40)	93.7	268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.346	0.008	1.000	71171	0.0274		120	609	
399.00 > 99.00	2.354	2.346	0.008	1.000	22990		3.10(1.50-4.49)	120	94.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.873	5519750	2.33		98.4	62536	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	938472	2.36		99.2	21899	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	14587	0.0212		89.3	1143	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	4941609	2.51		101	82002	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5243768	2.50			67801	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.705	2.697	0.008	1.003	60671	0.0272		109	17.7	
413.00 > 169.00	2.697	2.697	0.0	1.000	32946		1.84(0.84-2.52)	109	87.6	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	52467	0.0242		101	1533	
449.00 > 99.00	2.705	2.703	0.002	1.000	13197		3.98(1.94-5.82)	101	181	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.139	4052357	2.35		98.3	50838	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.072	3.070	0.002	1.000	46371	0.0246		106	171	
499.00 > 99.00	3.072	3.070	0.002	1.000	11047		4.20(2.31-6.93)	106	85.3	M
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4278627	2.47		98.7	81507	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	41117	0.0241		96.3	48.9	
463.00 > 169.00	3.072	3.072	0.0	1.000	9349		4.40(1.90-5.69)	96.3	229	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	5746202	2.47		98.8	46543	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	58708	0.0259		104	1350	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1345013	2.50		104	42755	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	17824	0.0249		104	503	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3878963	2.55		102	72834	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	39168	0.0255		102	160	
513.00 > 169.00	3.435	3.435	0.0	1.000	6534		5.99(2.36-7.09)	102	158	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	1979468	2.47		99.0	38616	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	17070	0.0215		86.2	131	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	24583	0.0213		88.5	853	
599.00 > 99.00	3.748	3.749	-0.001	1.000	8435		2.91(1.39-4.16)	88.5	305	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2392883	2.63		105	11372	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.000	33058	0.0281		112	146	
563.00 > 169.00	3.769	3.768	0.001	1.000	10108		3.27(2.12-6.36)	112	319	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.768	0.001	1.003	22073	0.0247		98.7	505	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.768	0.001	1.398	3409956	2.51		100	42217	
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.066	0.002	1.508	3864207	2.50		100	26731	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.068	0.0	1.000	40586	0.0251		100	34.7	
613.00 > 169.00	4.068	4.068	0.0	1.000	8184		4.96(2.13-6.40)	100	145	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.329	-0.001	1.000	39576	0.0233		93.0	27.3	
663.00 > 169.00	4.328	4.329	-0.001	1.000	13312		2.97(1.25-3.76)	93.0	278	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.568	0.006	1.696	4813878	2.55		102	33813	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.003	1.000	11552	0.0242		96.8	204	
713.00 > 219.00	4.564	4.571	-0.007	0.998	8925		1.29(0.71-2.13)	96.8	192	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.851	7818840	2.53		101	18128	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	139895	0.0249		99.7	45.6	
813.00 > 169.00	4.990	4.989	0.001	1.000	24399		5.73(2.86-8.58)	99.7	287	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.358	5.354	0.004	1.000	74253	0.0257		103	25.7	
913.00 > 169.00	5.351	5.354	-0.003	0.999	8840		8.40(3.83-11.48)	103	123	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d

Injection Date: 21-Mar-2018 18:24:14 Instrument ID: A8_N

Lims ID: IC L1 Full

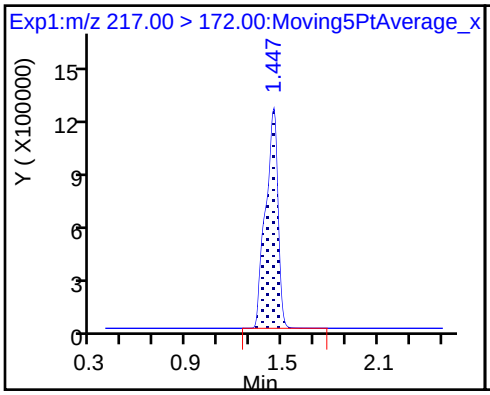
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

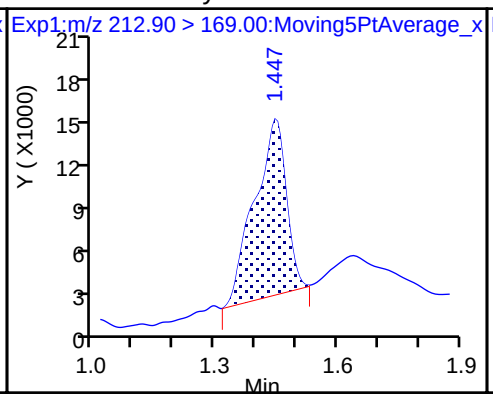
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

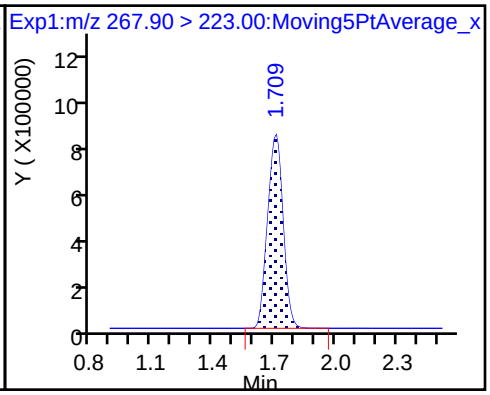
D 1 13C4 PFBA



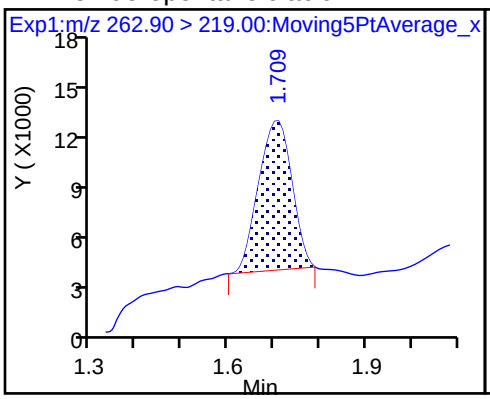
2 Perfluorobutyric acid



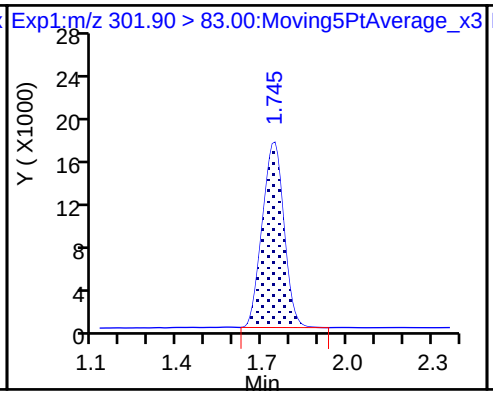
D 3 13C5-PFPeA



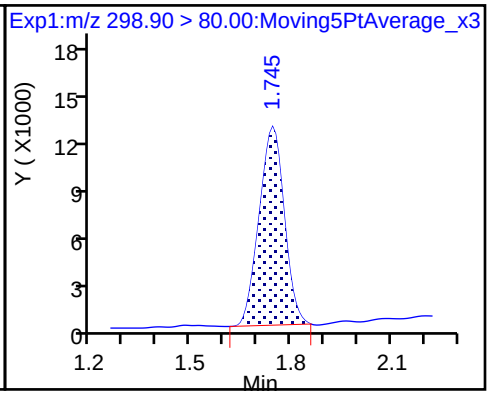
4 Perfluoropentanoic acid



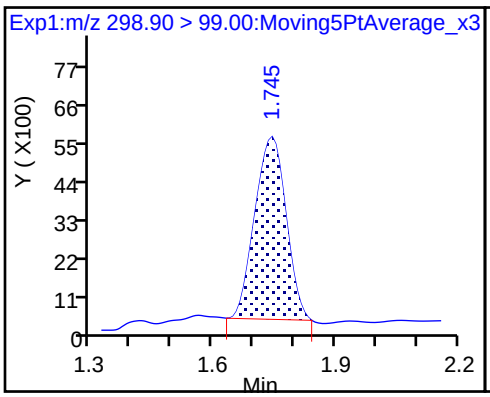
D 47 13C3-PFBS



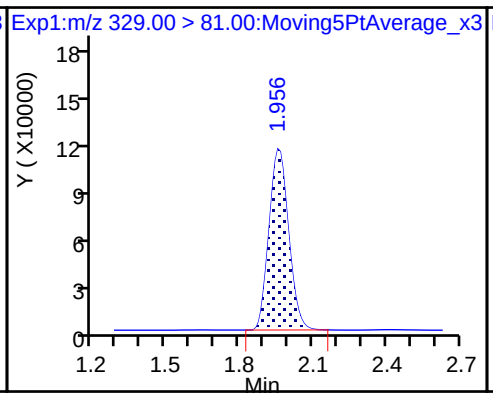
5 Perfluorobutanesulfonic acid



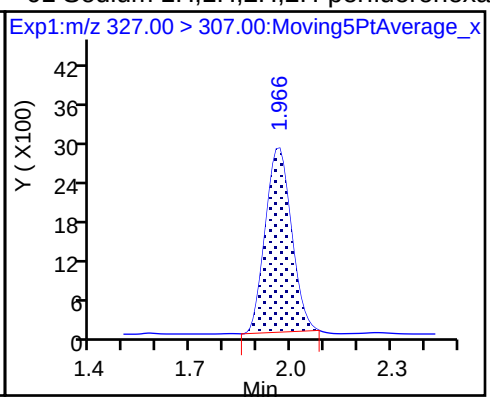
5 Perfluorobutanesulfonic acid



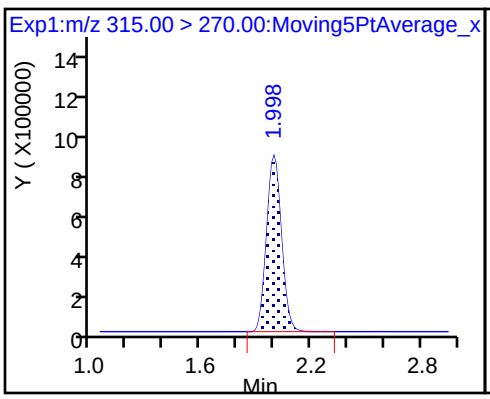
D 60 M2-4:2FTS



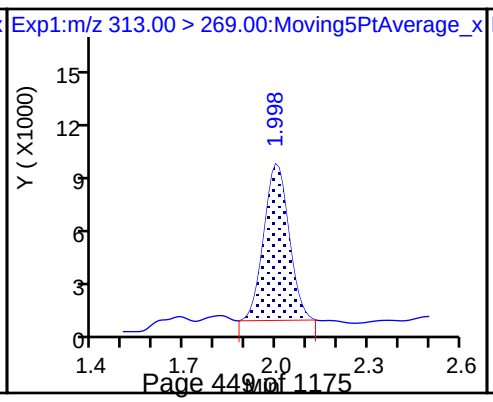
61 Sodium 1H,1H,2H,2H-perfluorohexane



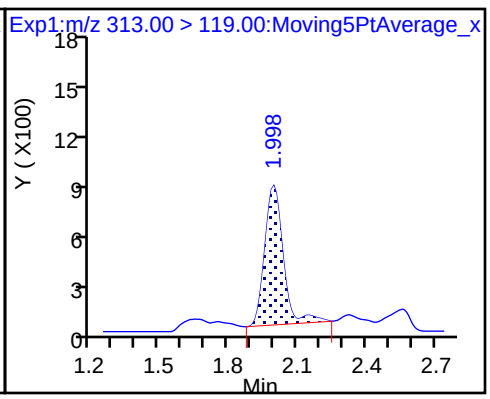
D 7 13C2 PFHxA



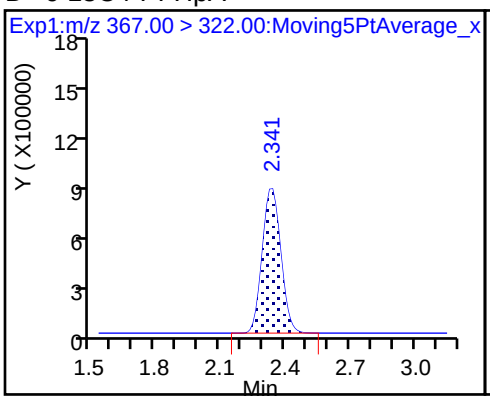
6 Perfluorohexanoic acid



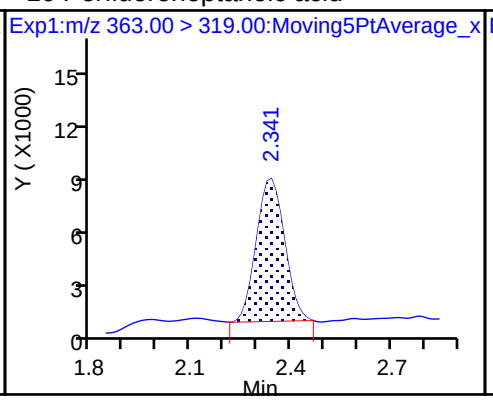
6 Perfluorohexanoic acid



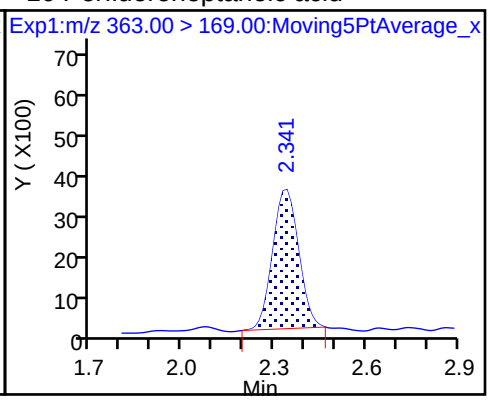
D 9 13C4-PFHpA



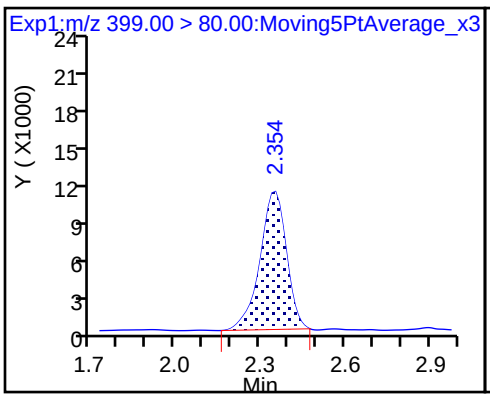
10 Perfluoroheptanoic acid



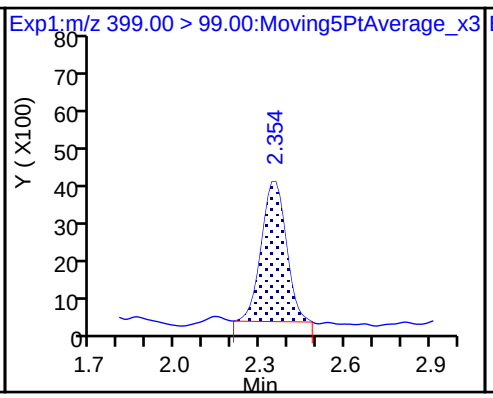
10 Perfluoroheptanoic acid



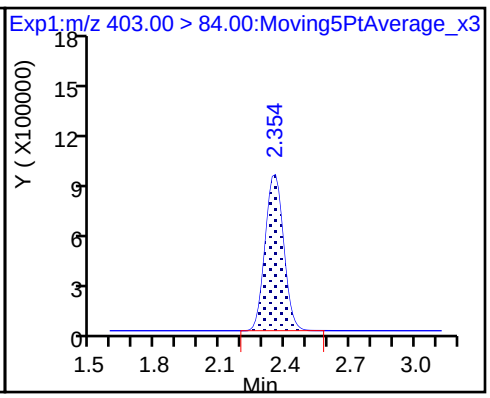
8 Perfluorohexanesulfonic acid



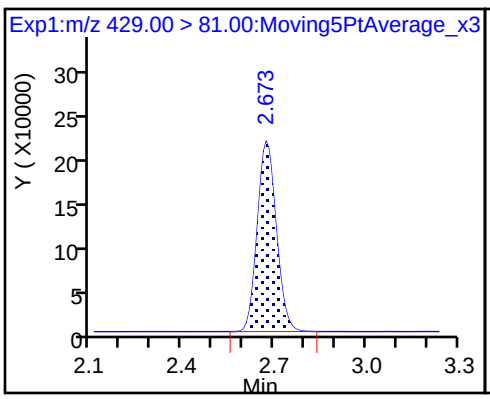
8 Perfluorohexanesulfonic acid



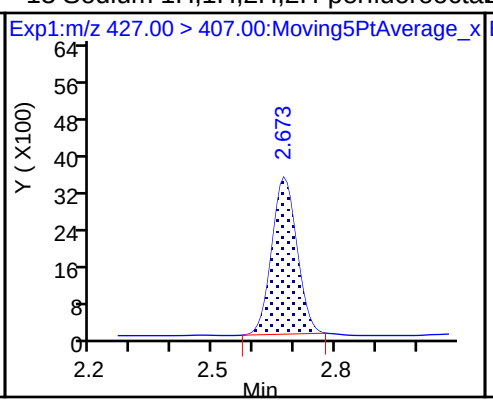
D 11 18O2 PFHxS



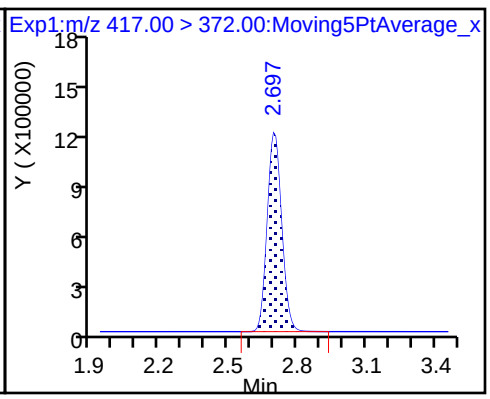
D 12 M2-6:2FTS



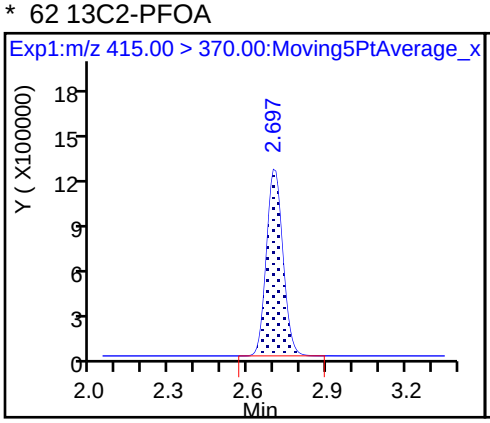
13 Sodium 1H,1H,2H,2H-perfluorooctane



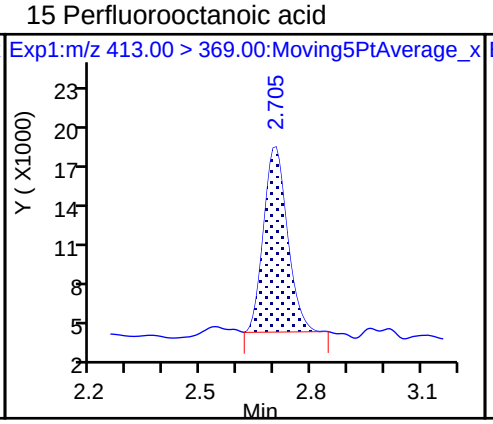
D 14 13C4 PFOA



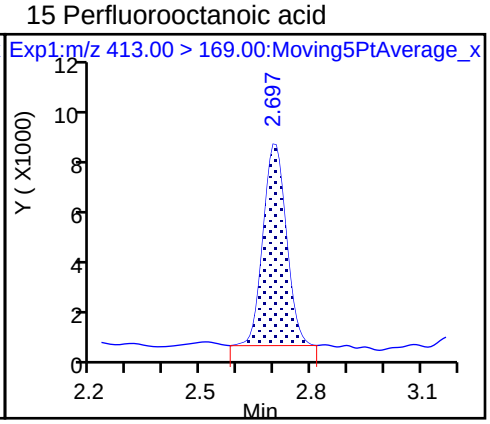
* 62 13C2-PFOA



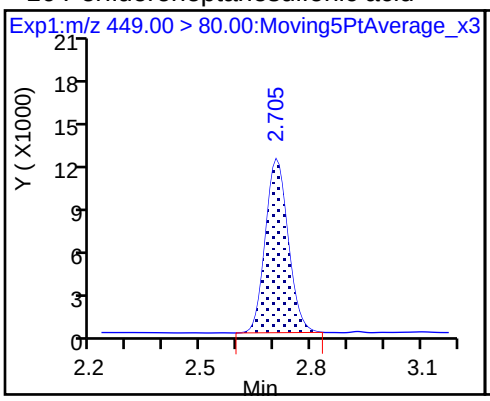
15 Perfluorooctanoic acid



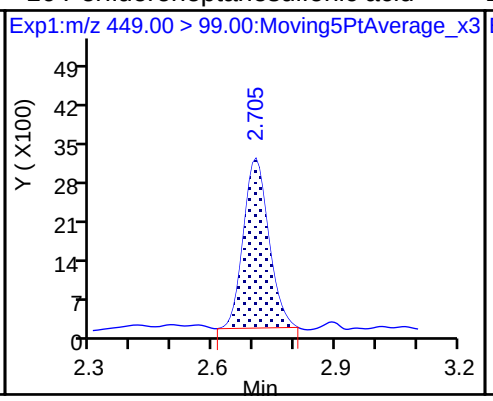
15 Perfluorooctanoic acid



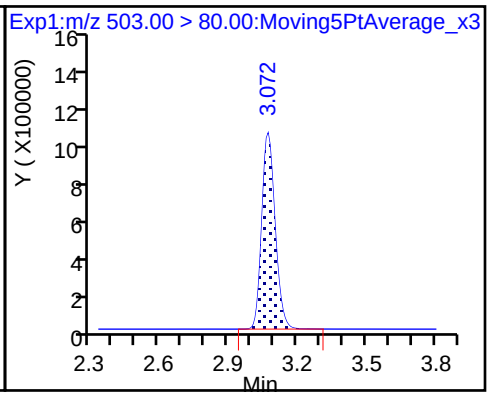
16 Perfluoroheptanesulfonic acid



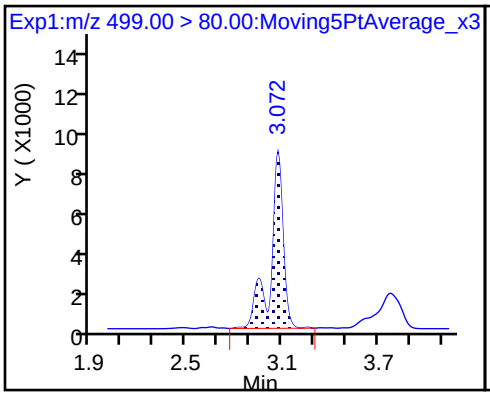
16 Perfluoroheptanesulfonic acid



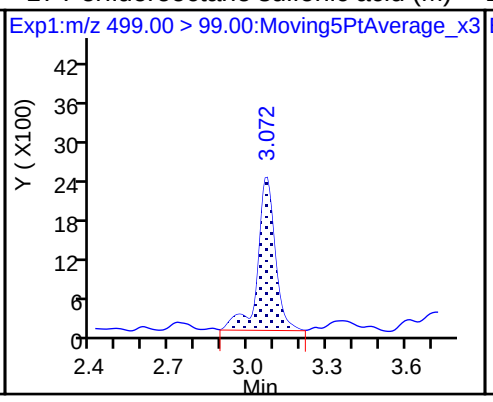
D 18 13C4 PFOS



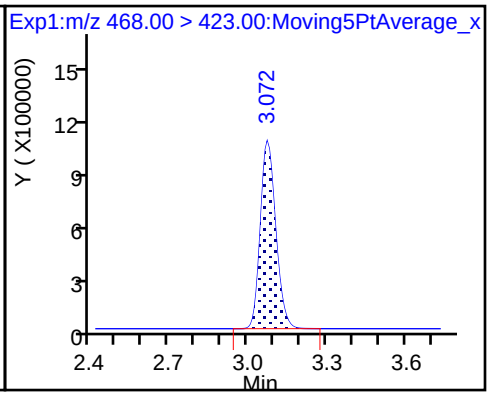
17 Perfluorooctane sulfonic acid



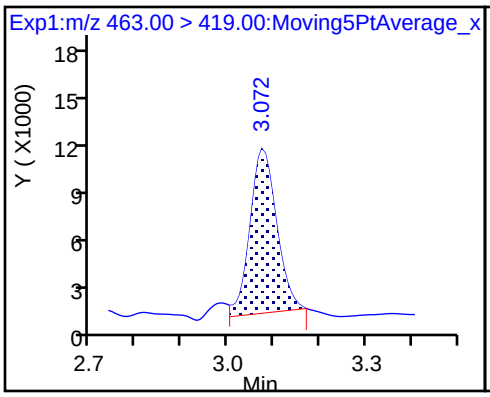
17 Perfluorooctane sulfonic acid (M)



D 19 13C5 PFNA



20 Perfluorononanoic acid



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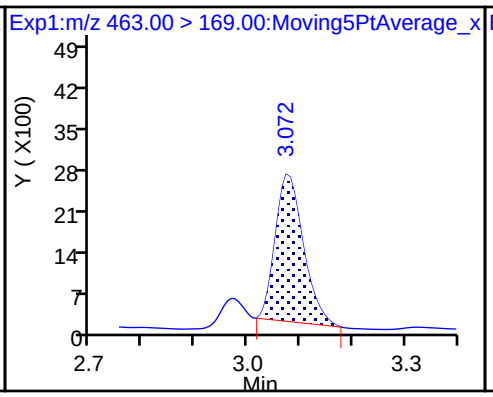
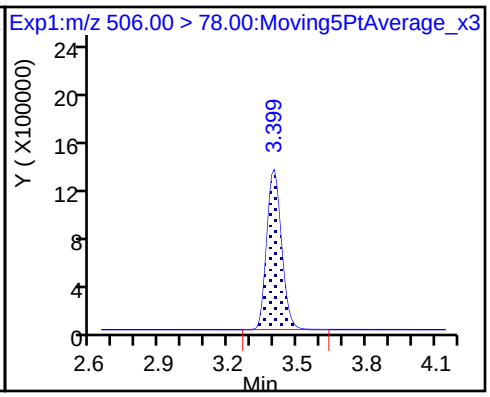
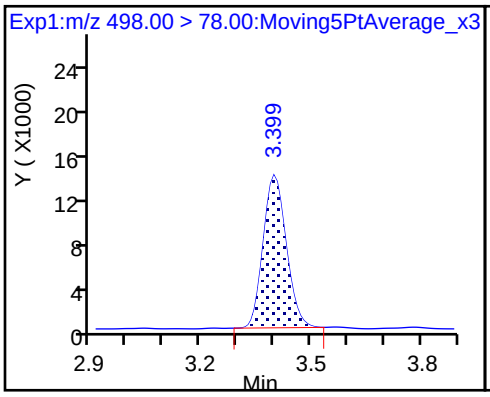


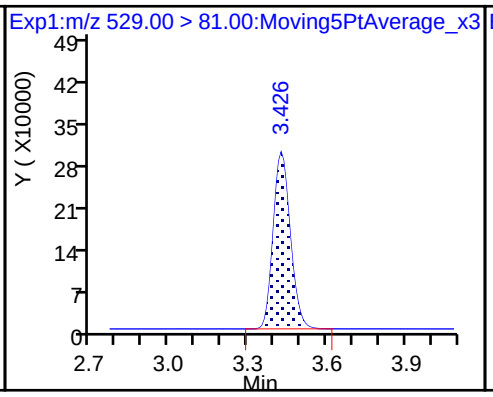
D 21 13C8 FOSA



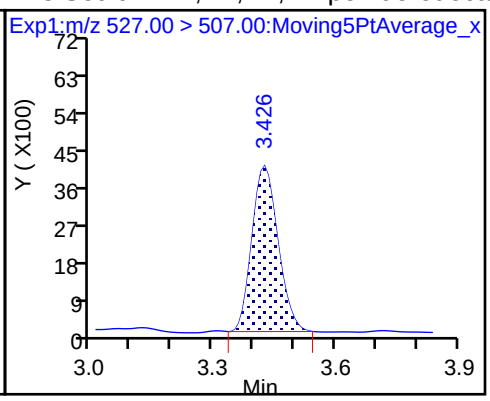
22 Perfluorooctane Sulfonamide



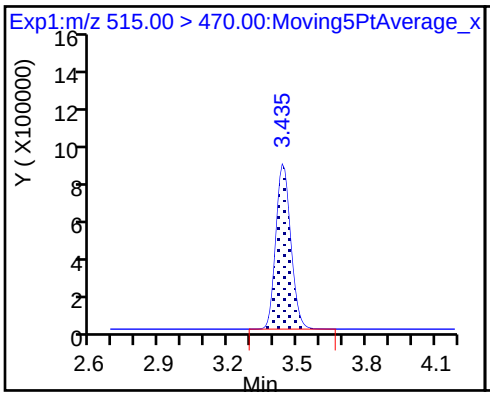
D 26 M2-8:2FTS



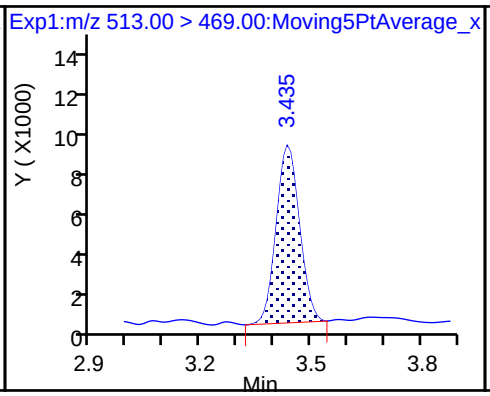
25 Sodium 1H,1H,2H,2H-perfluorodecane



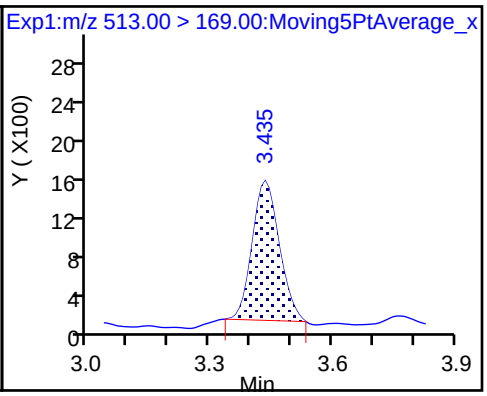
D 23 13C2 PFDA



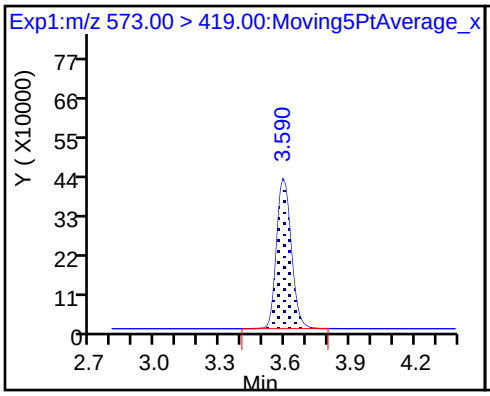
24 Perfluorodecanoic acid



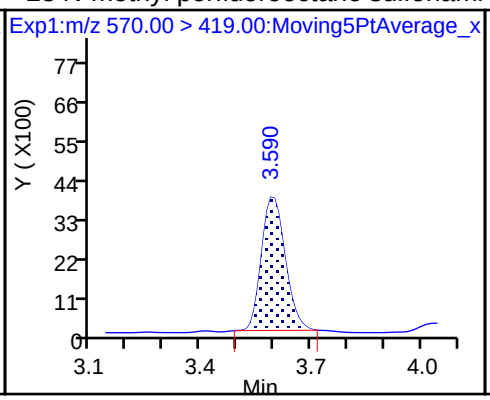
24 Perfluorodecanoic acid



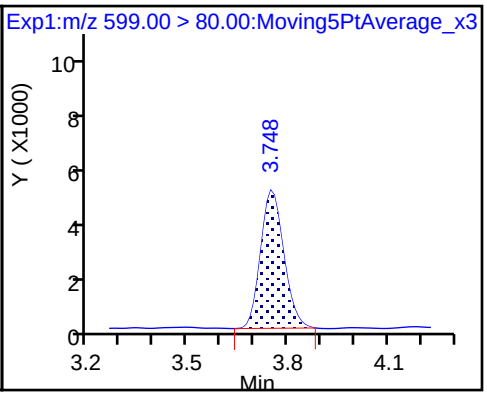
D 27 d3-NMeFOSAA



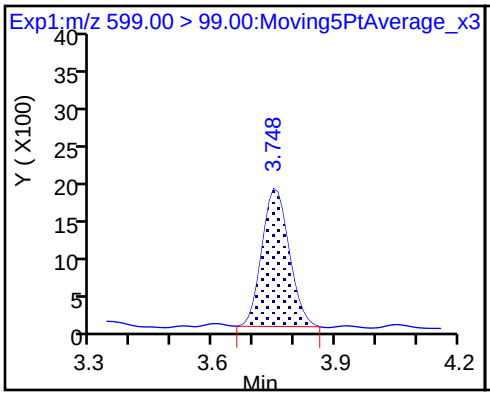
28 N-methyl perfluorooctane sulfonami



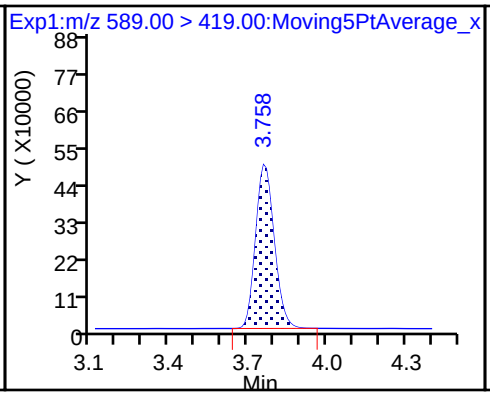
29 Perfluorodecane Sulfonic acid



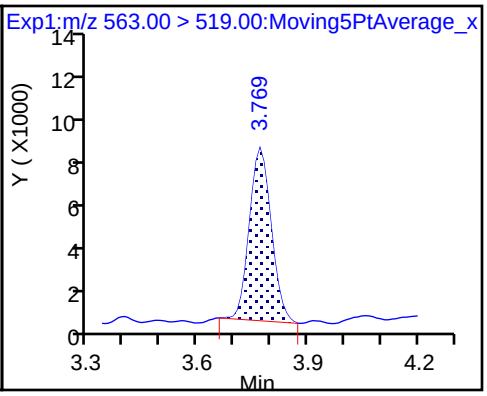
29 Perfluorodecane Sulfonic acid



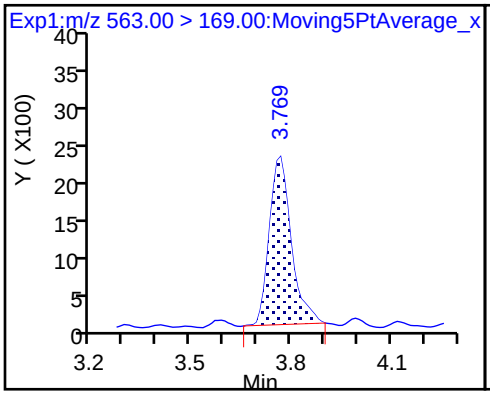
D 32 d5-NEtFOSAA



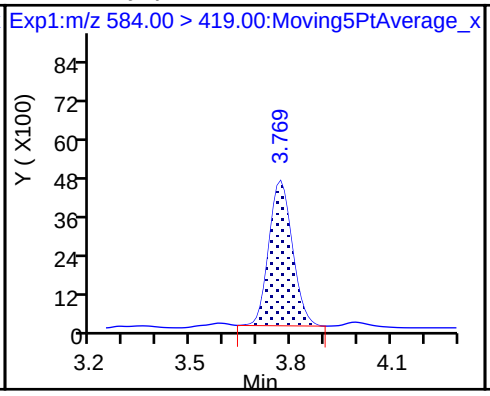
31 Perfluoroundecanoic acid



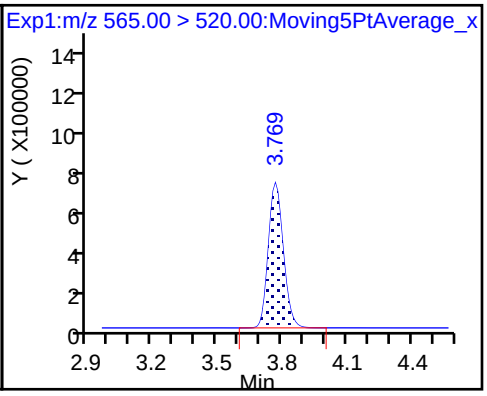
31 Perfluoroundecanoic acid



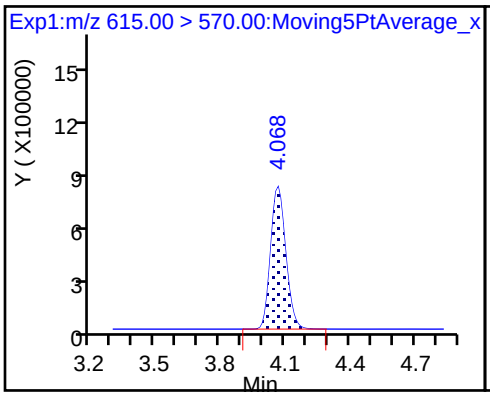
33 N-ethyl perfluorooctane sulfonamid



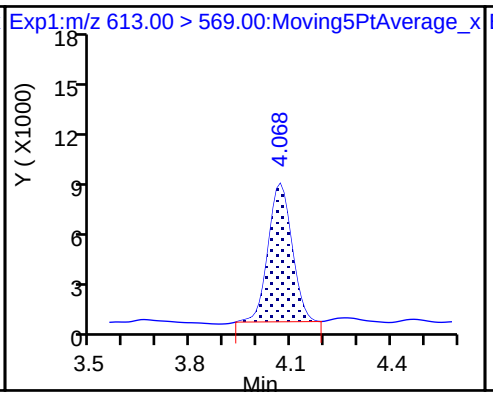
D 30 13C2 PFUnA



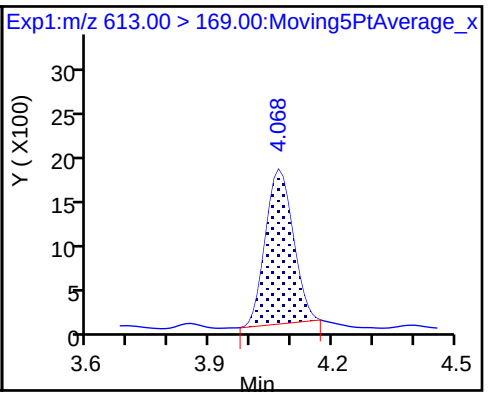
D 36 13C2 PFDoA



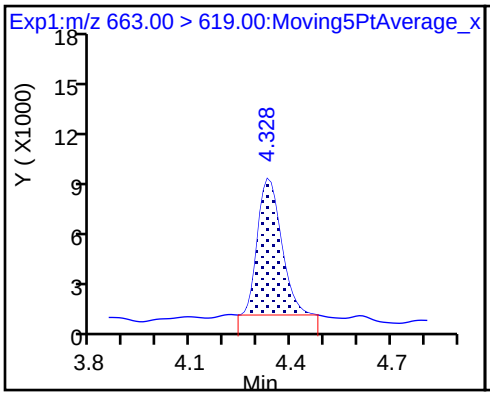
37 Perfluorododecanoic acid



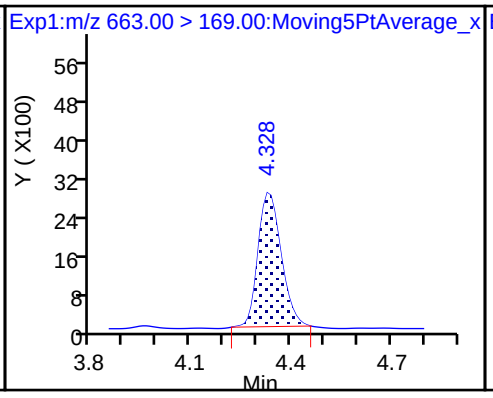
37 Perfluorododecanoic acid



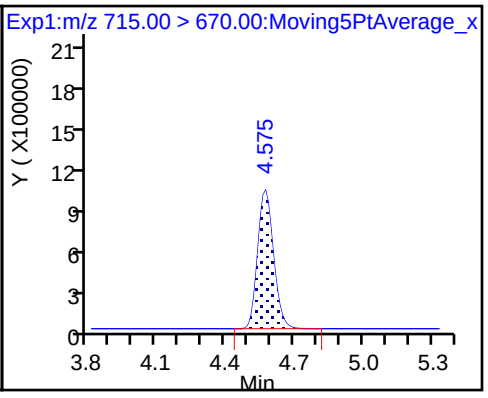
41 Perfluorotridecanoic acid



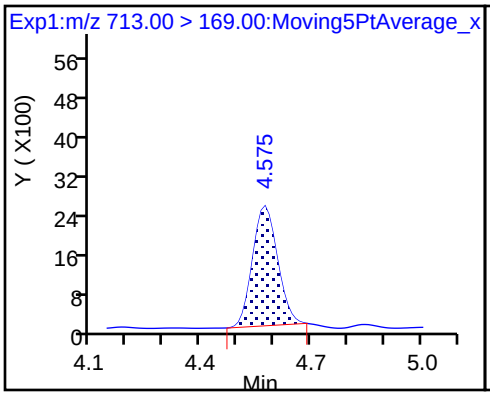
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



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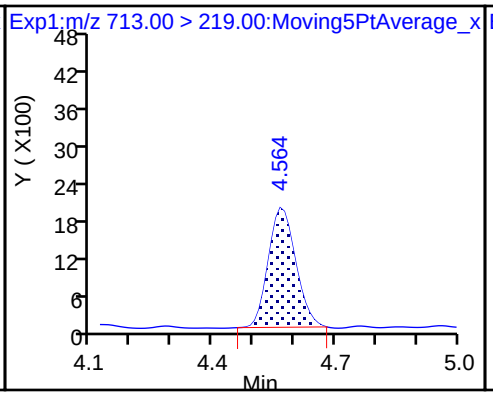
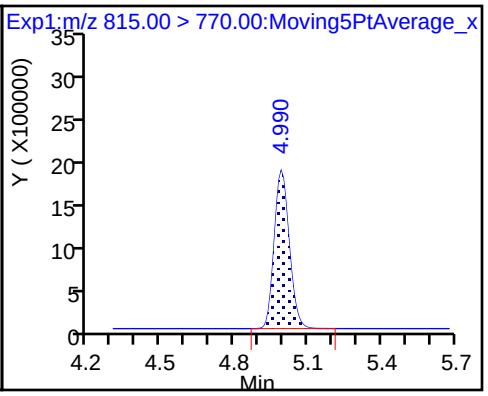
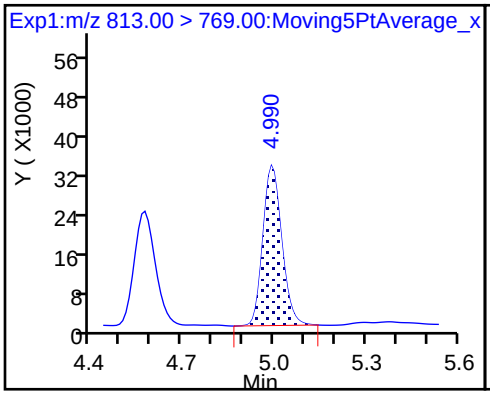


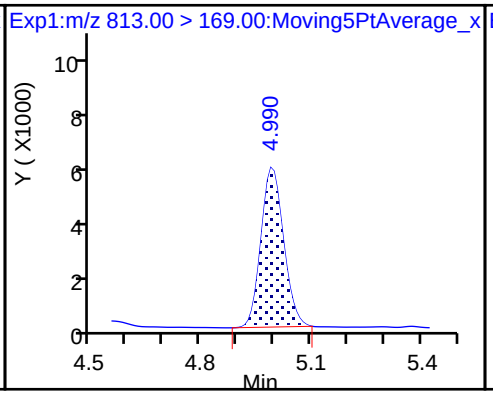
D 44 13C2-PFHxDA



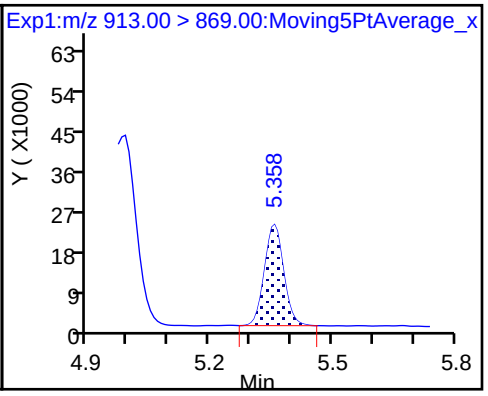
45 Perfluorohexadecanoic acid



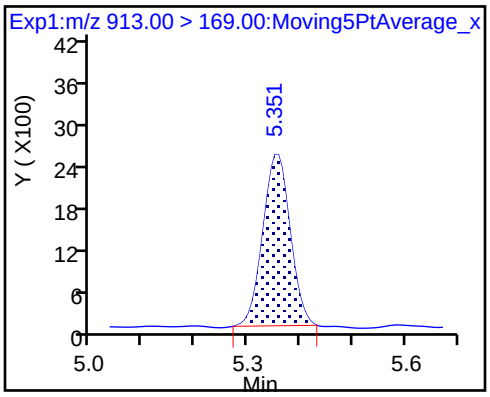
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

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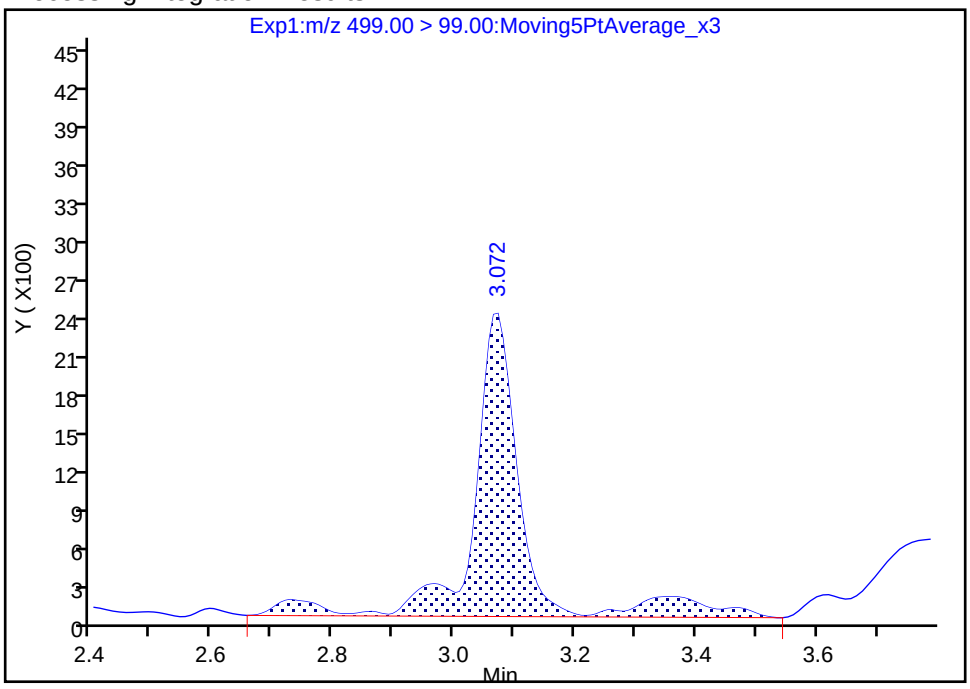
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

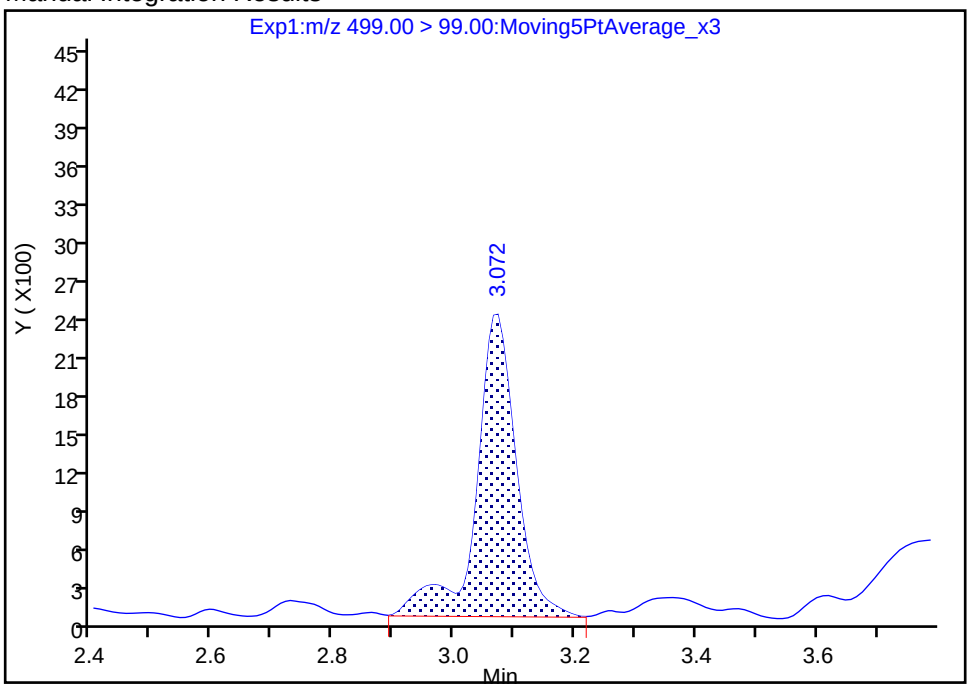
Processing Integration Results

RT: 3.07
Area: 13417
Amount: 0.025454
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 11047
Amount: 0.024551
Amount Units: ng/ml



Reviewer: phomsophat, 21-Mar-2018 19:22:35
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 21-Mar-2018 18:32:06 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:24 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:01:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.447	0.006	0.538	6712910	2.48		99.4	74780	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.449	0.004	1.000	131334	0.0519		104	51.1	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.710	0.008	1.000	99242	0.0493		98.6	52.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.710	0.008	0.636	4463093	2.49		99.6	170407	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.646	95045	2.32		99.9	742	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.754	1.745	0.009	1.005	142407	0.0448		101	854	
298.90 > 99.00	1.754	1.745	0.009	1.005	60865		2.34(1.25-3.74)	101	355	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.959	0.007	0.728	697680	2.47		106	9203	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	30869	0.0467		100	1890	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.009	1.998	0.011	1.000	109004	0.0514		103	280	
313.00 > 119.00	1.998	1.998	0.0	0.995	10400		10.48(5.03-15.10)	103	241	
D 7 13C2 PFHxA										
315.00 > 270.00	2.009	1.998	0.011	0.743	5181558	2.61		105	132505	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.333	0.008	0.866	4767222	2.44		97.5	90402	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.000	104181	0.0528		106	196	
363.00 > 169.00	2.341	2.335	0.006	1.000	41833		2.49(1.13-3.40)	106	451	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.346	0.008	1.000	131804	0.0476		105	1325	
399.00 > 99.00	2.354	2.346	0.008	1.000	47613		2.77(1.50-4.49)	105	223	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.871	5886251	2.44		103	63857	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.672	0.007	1.000	37735	0.0514		108	2241	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.672	0.007	0.991	999800	2.47		104	23113	
* 62 13C2-PFOA										
415.00 > 370.00	2.702	2.695	0.007		5334725	2.50			83817	
D 14 13C4 PFOA										
417.00 > 372.00	2.702	2.695	0.007	1.000	5069957	2.53		101	74355	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.702	2.697	0.005	1.000	127108	0.0555		111	40.5	
413.00 > 169.00	2.702	2.697	0.005	1.000	59408		2.14(0.84-2.52)	111	145	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.703	0.007	1.000	109652	0.0481		101	2629	
449.00 > 99.00	2.710	2.703	0.007	1.000	29467		3.72(1.94-5.82)	101	328	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.137	4256604	2.43		101	42340	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.137	4474026	2.54		101	84326	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.000	89694	0.0452		97.4	274	
499.00 > 99.00	3.072	3.070	0.002	1.000	22534		3.98(2.31-6.93)	97.4	162	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.072	0.008	1.003	87380	0.0489		97.9	102	
463.00 > 169.00	3.080	3.072	0.008	1.003	21332		4.10(1.90-5.69)	97.9	528	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.396	0.001	1.257	5839734	2.47		98.7	42573	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	112857	0.0490		98.0	1944	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.426	0.007	1.000	31966	0.0429		89.5	895	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.426	0.007	1.270	1399775	2.56		107	26042	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.435	0.007	1.000	71937	0.0449		89.8	349	
513.00 > 169.00	3.442	3.435	0.007	1.000	15536		4.63(2.36-7.09)	89.8	510	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.435	0.007	1.274	4053733	2.62		105	70301	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.591	0.008	1.332	1933236	2.38		95.0	40929	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.599	3.594	0.005	1.000	35274	0.0456		91.2	272	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.749	0.009	1.000	57466	0.0475		98.4	1493	
599.00 > 99.00	3.758	3.749	0.009	1.000	18714		3.07(1.39-4.16)	98.4	448	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.759	0.009	1.394	2436559	2.63		105	12783	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.394	3500228	2.53		101	72445	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.000	42131	0.0463		92.5	1086	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	62776	0.0520		104	262	
563.00 > 169.00	3.768	3.768	0.0	1.000	16020		3.92(2.12-6.36)	104	775	
D 36 13C2 PFDoA										
615.00 > 570.00	4.073	4.066	0.007	1.507	3780852	2.41		96.4	28974	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.068	0.005	1.000	83165	0.0526		105	73.8	
613.00 > 169.00	4.073	4.068	0.005	1.000	18963		4.39(2.13-6.40)	105	336	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.335	4.329	0.006	1.000	81708	0.0491		98.2	55.2	
663.00 > 169.00	4.335	4.329	0.006	1.000	28392		2.88(1.25-3.76)	98.2	490	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.571	4.568	0.002	1.691	4389855	2.29		91.6	28506	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.581	4.571	0.010	1.002	22776	0.0523		105	394	
713.00 > 219.00	4.571	4.571	-0.001	1.000	16546		1.38(0.71-2.13)	105	443	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.995	4.987	0.008	1.848	6843963	2.18		87.1	16591	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.995	4.989	0.006	1.000	185745	0.0504		101	64.9	
813.00 > 169.00	4.995	4.989	0.006	1.000	27597		6.73(2.86-8.58)	101	326	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.361	5.354	0.007	1.000	129317	0.0511		102	50.9	
913.00 > 169.00	5.361	5.354	0.007	1.000	15542		8.32(3.83-11.48)	102	221	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_003.d

Injection Date: 21-Mar-2018 18:32:06 Instrument ID: A8_N

Lims ID: IC L2 Full

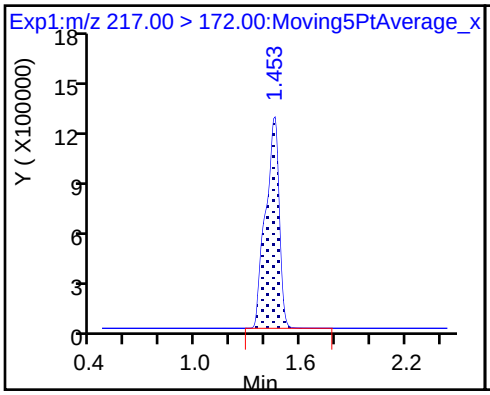
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

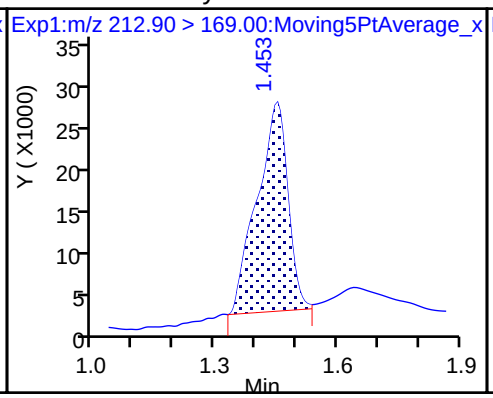
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

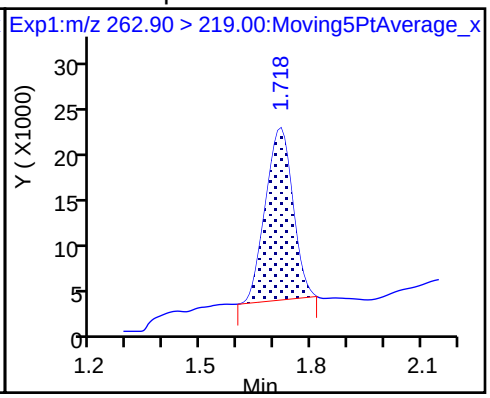
D 1 13C4 PFBA



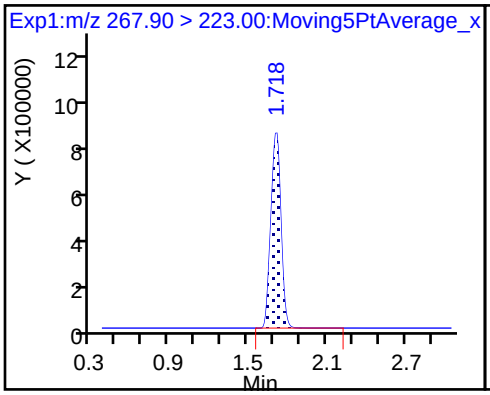
2 Perfluorobutyric acid



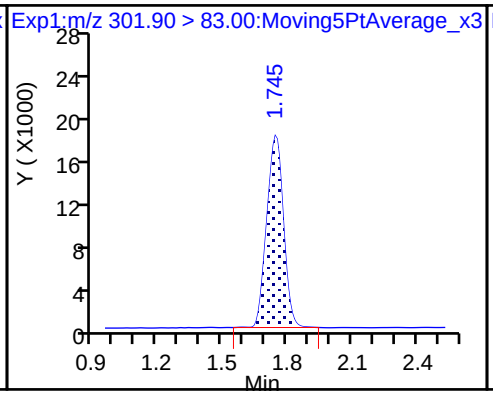
4 Perfluoropentanoic acid



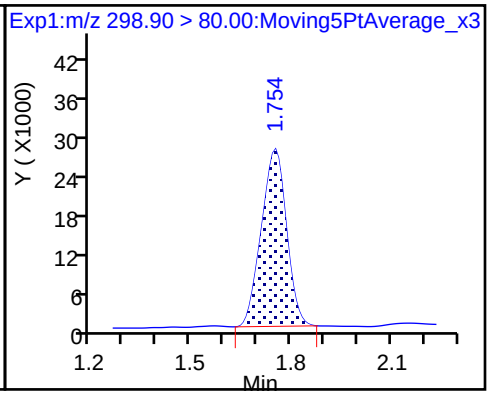
D 3 13C5-PFPeA



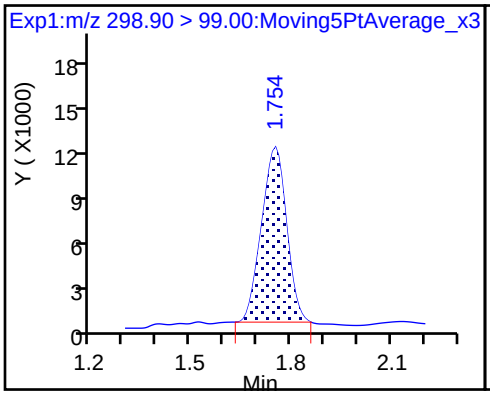
D 47 13C3-PFBS



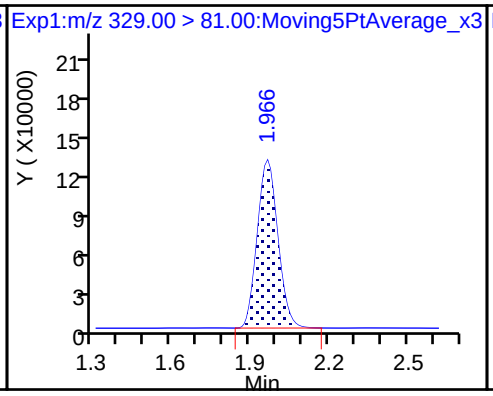
5 Perfluorobutanesulfonic acid



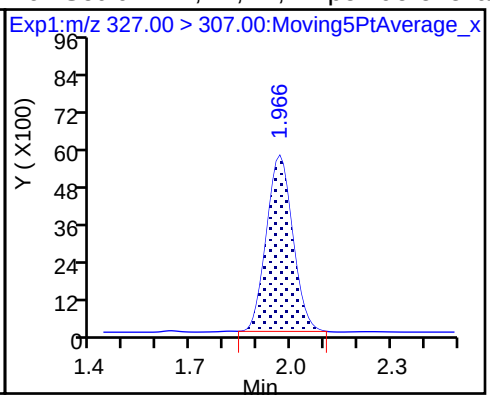
5 Perfluorobutanesulfonic acid



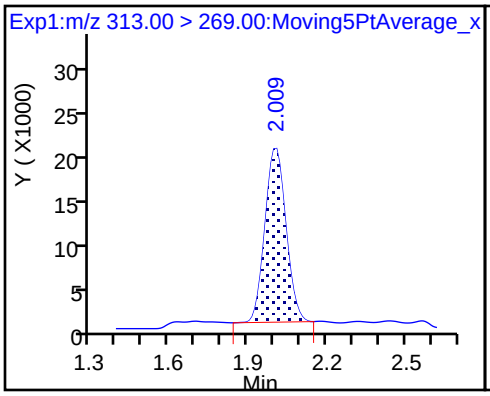
D 60 M2-4:2FTS



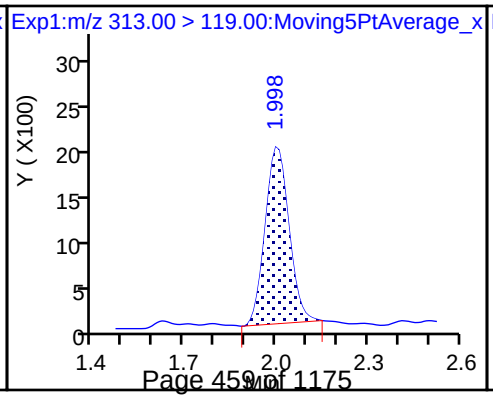
61 Sodium 1H,1H,2H,2H-perfluorohexane



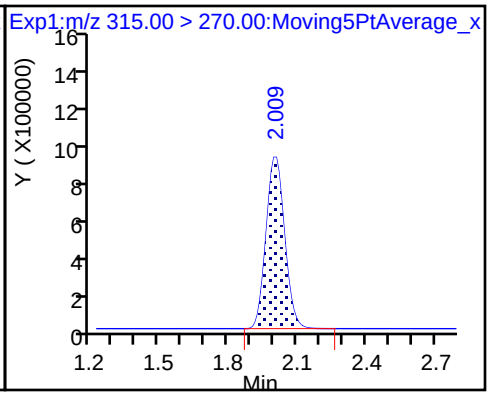
6 Perfluorohexanoic acid



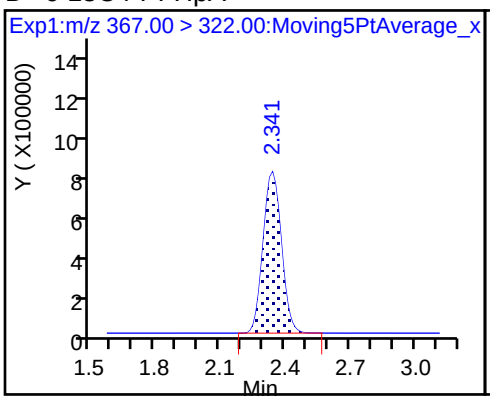
6 Perfluorohexanoic acid



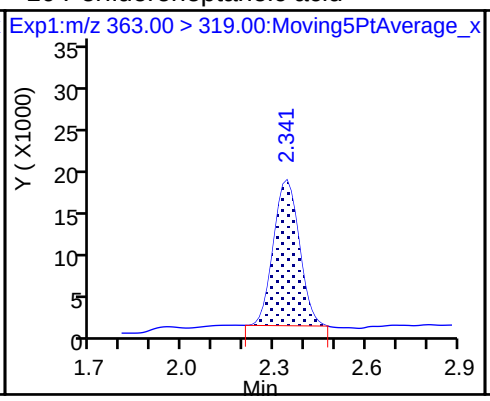
D 7 13C2 PFHxA



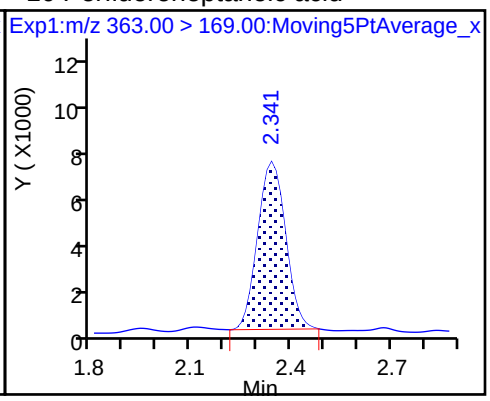
D 9 13C4-PFHpA



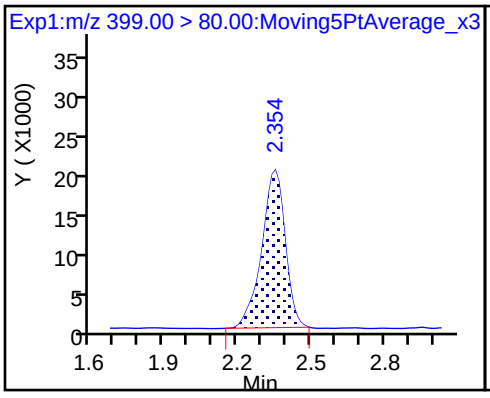
10 Perfluoroheptanoic acid



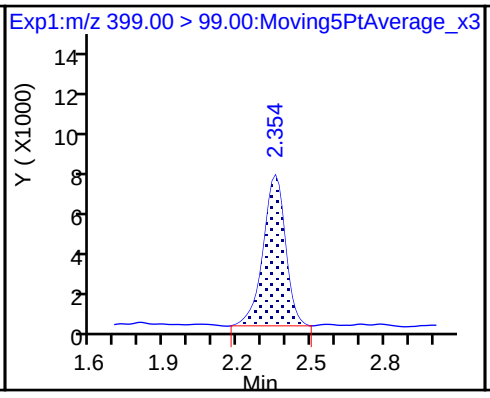
10 Perfluoroheptanoic acid



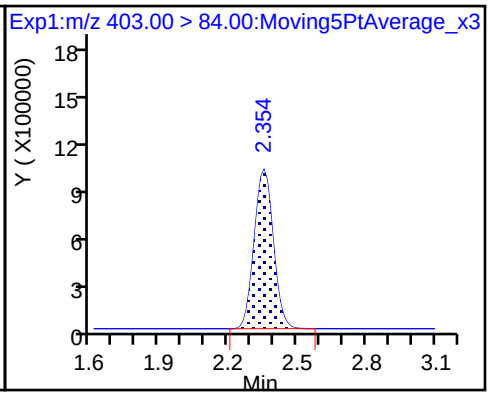
8 Perfluorohexanesulfonic acid



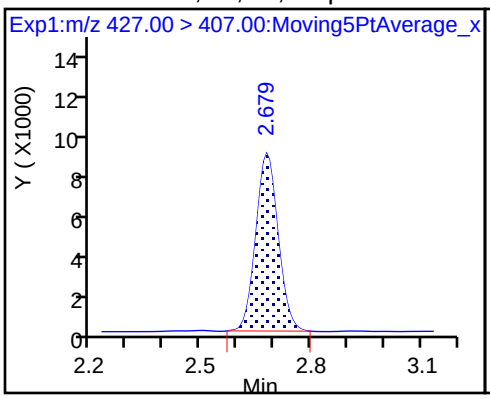
8 Perfluorohexanesulfonic acid



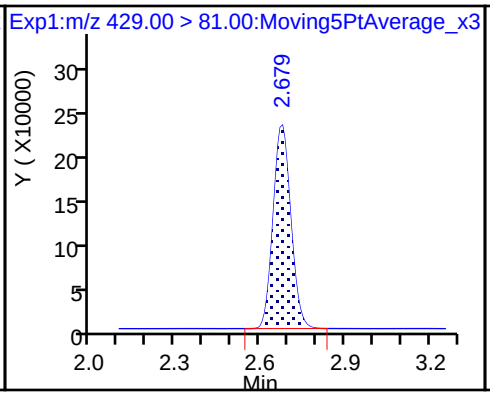
D 11 18O2 PFHxS



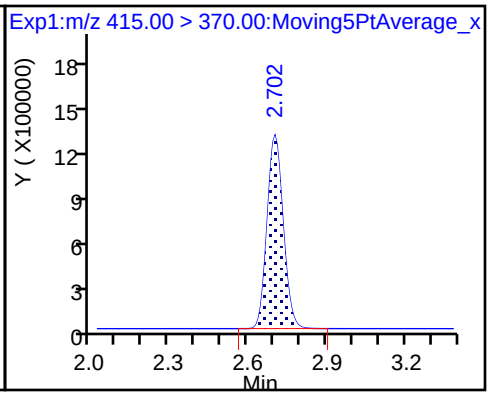
13 Sodium 1H,1H,2H,2H-perfluorooctan



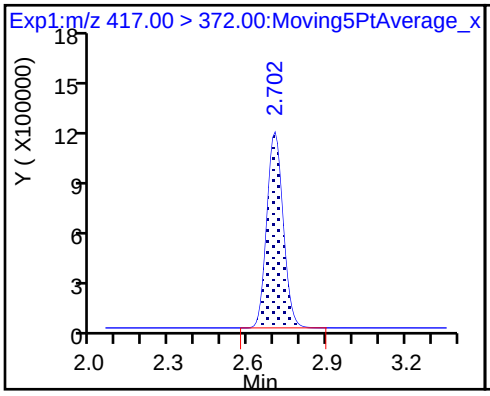
D 12 M2-6:2FTS



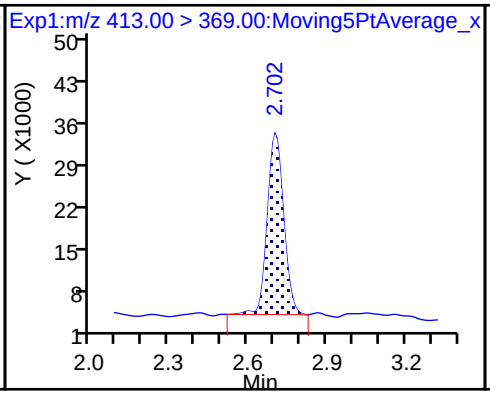
* 62 13C2-PFOA



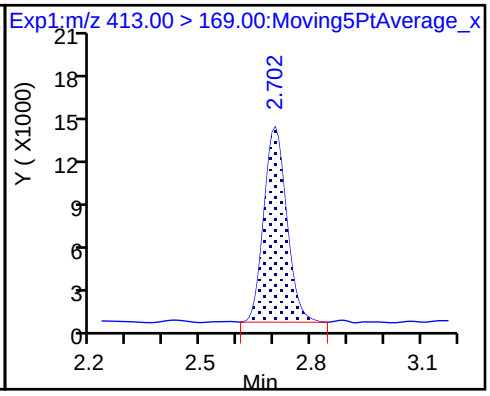
D 14 13C4 PFOA



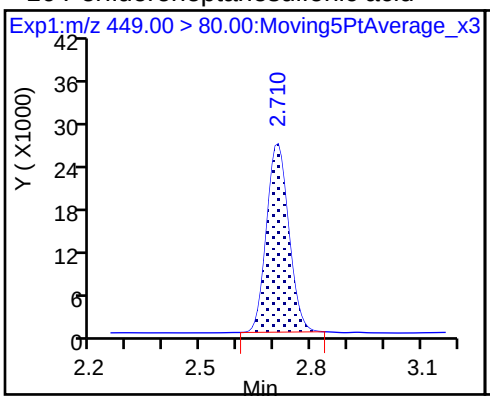
15 Perfluorooctanoic acid



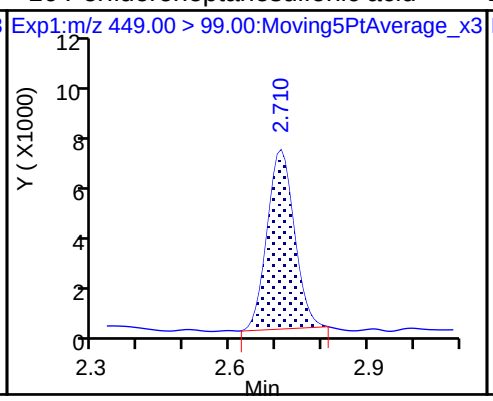
15 Perfluorooctanoic acid



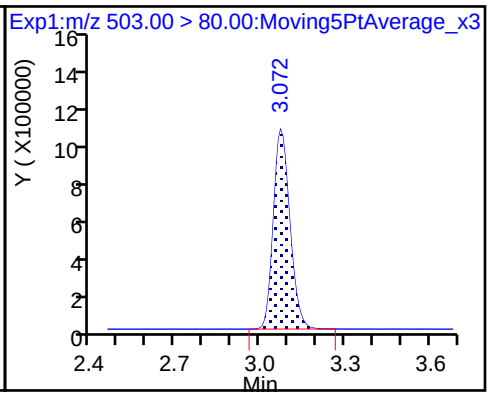
16 Perfluoroheptanesulfonic acid



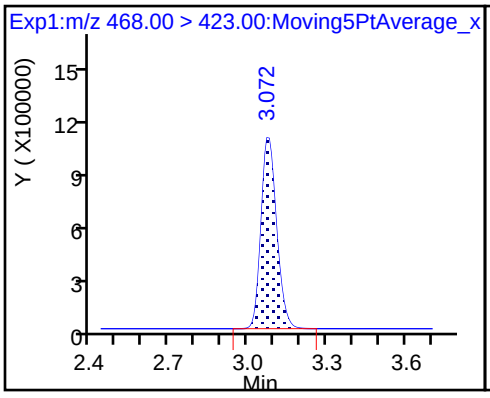
16 Perfluoroheptanesulfonic acid



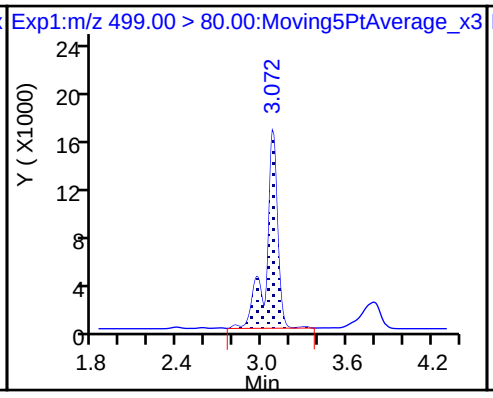
D 18 13C4 PFOS



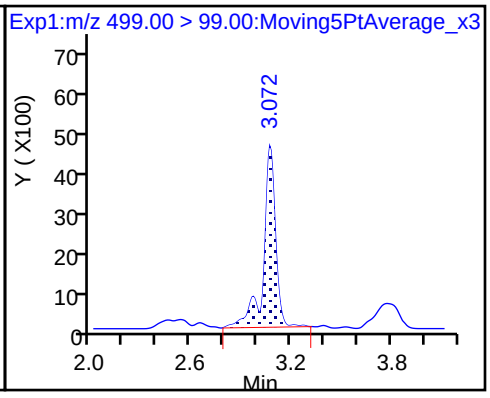
D 19 13C5 PFNA



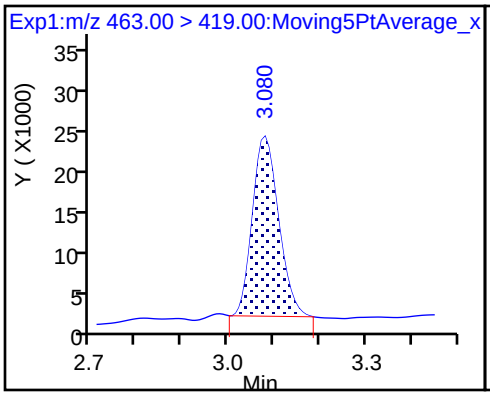
17 Perfluorooctane sulfonic acid



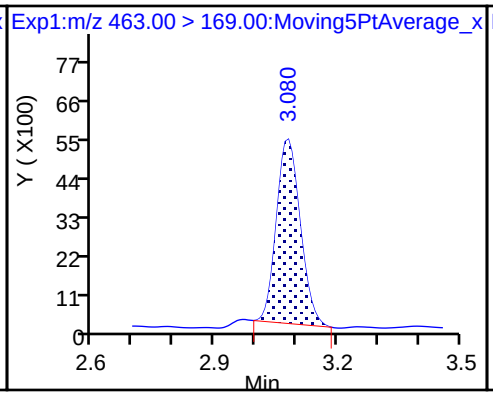
17 Perfluorooctane sulfonic acid



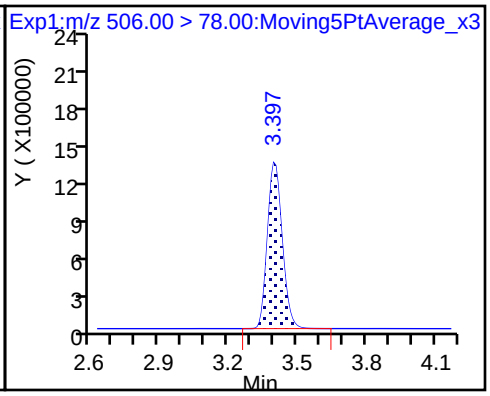
20 Perfluorononanoic acid



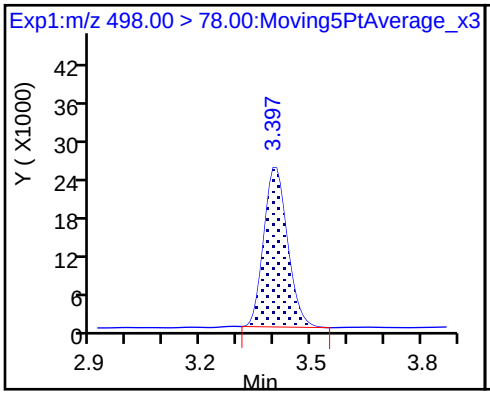
20 Perfluorononanoic acid



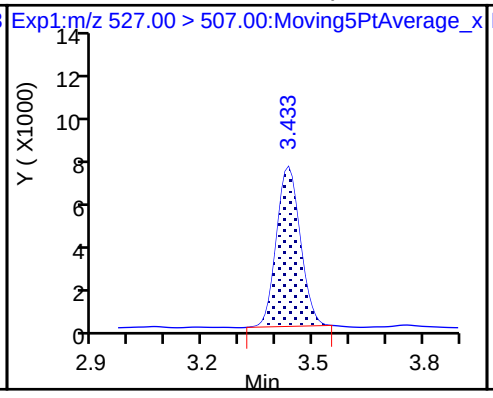
D 21 13C8 FOSA



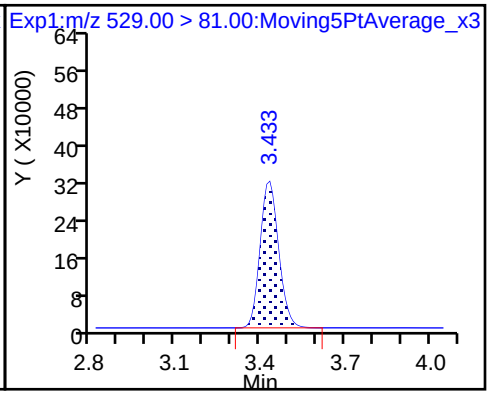
22 Perfluorooctane Sulfonamide



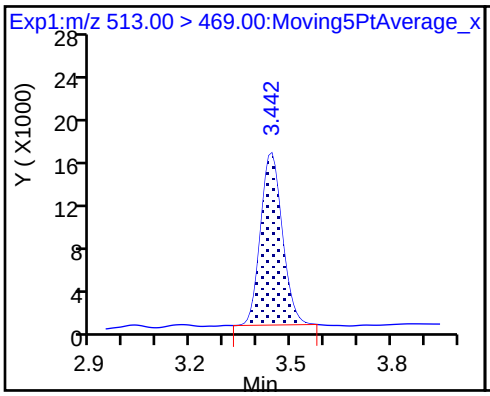
25 Sodium 1H,1H,2H,2H-perfluorodecane



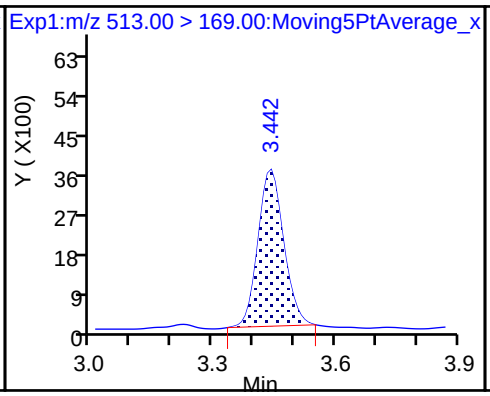
D 26 M2-8:2FTS



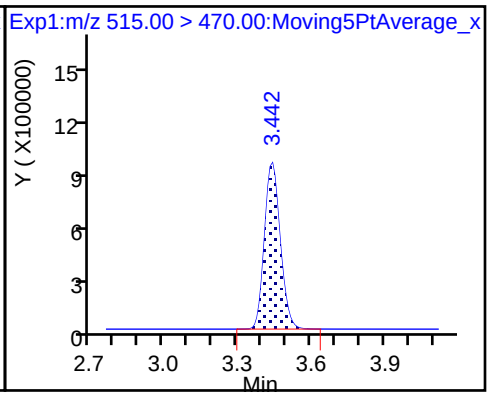
24 Perfluorodecanoic acid



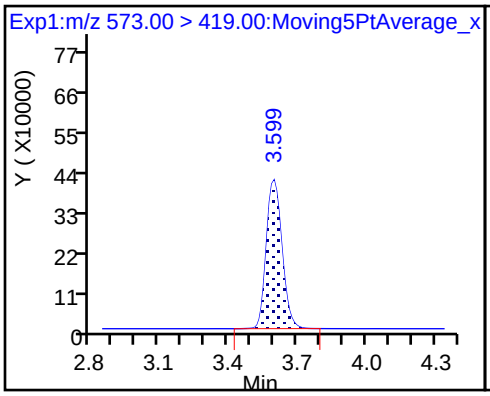
24 Perfluorodecanoic acid



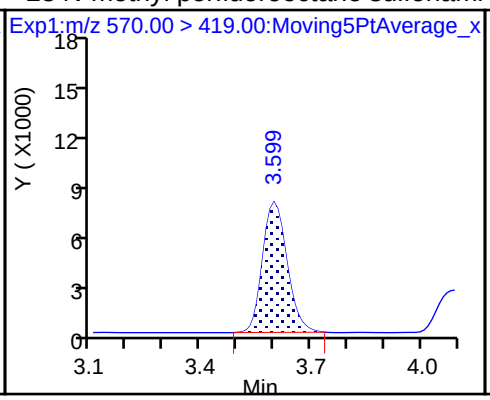
D 23 13C2 PFDA



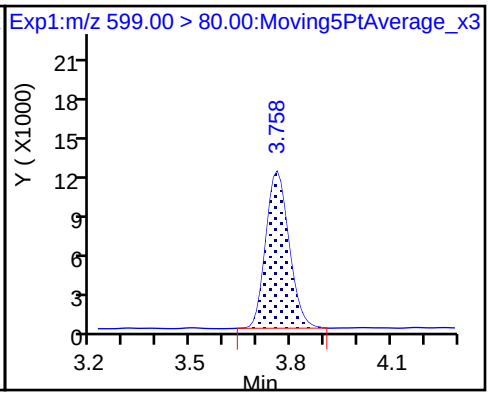
D 27 d3-NMeFOSAA



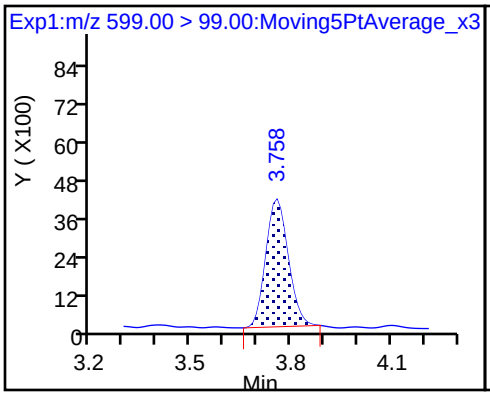
28 N-methyl perfluorooctane sulfonami



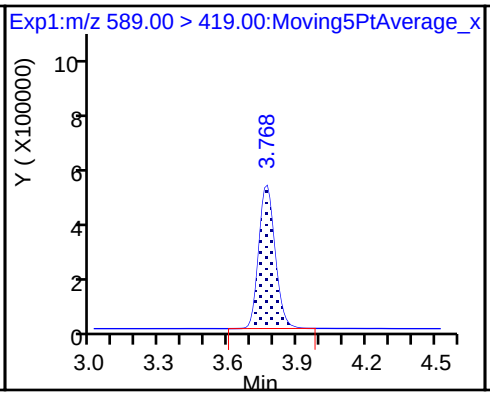
29 Perfluorodecane Sulfonic acid



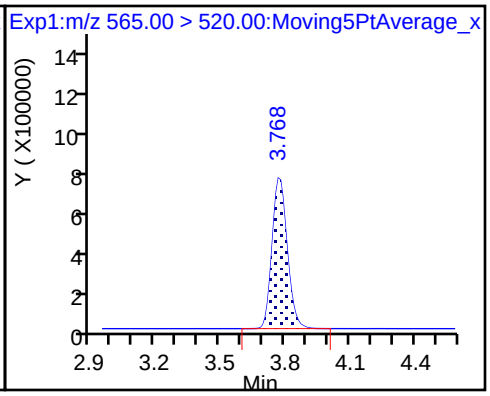
29 Perfluorodecane Sulfonic acid



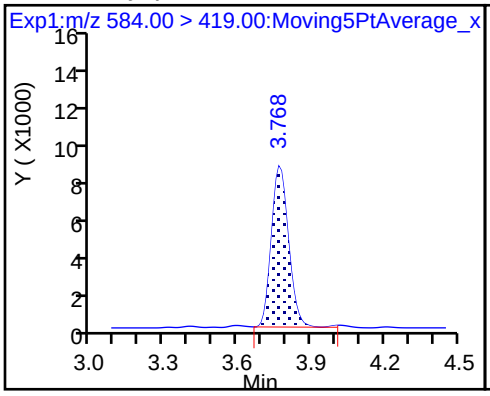
D 32 d5-NEtFOSAA



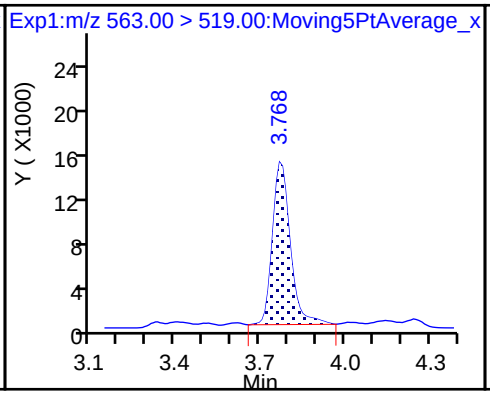
D 30 13C2 PFUnA



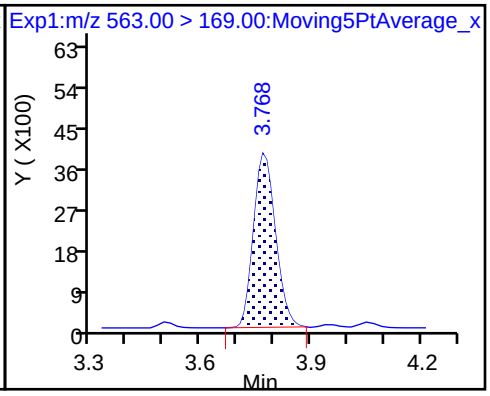
33 N-ethyl perfluorooctane sulfonamid



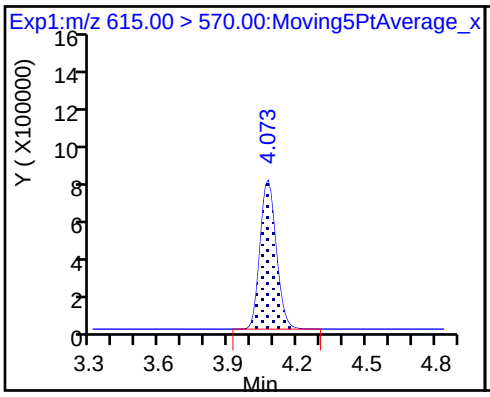
31 Perfluoroundecanoic acid



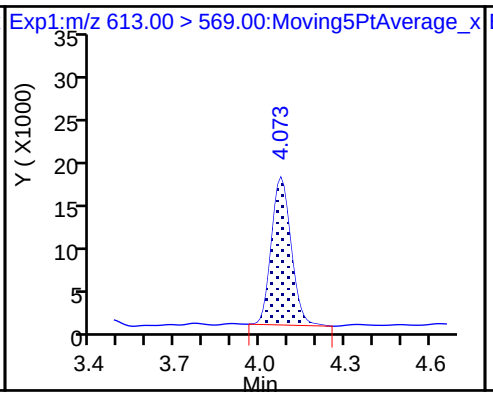
31 Perfluoroundecanoic acid



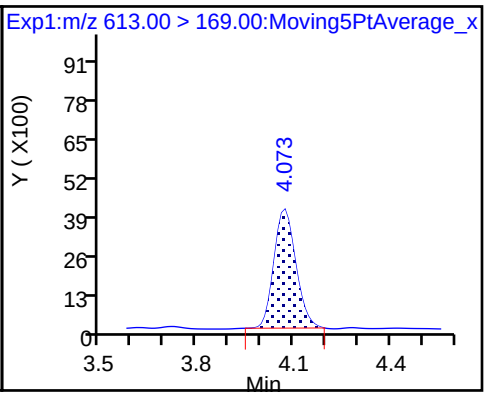
D 36 13C2 PFDoA



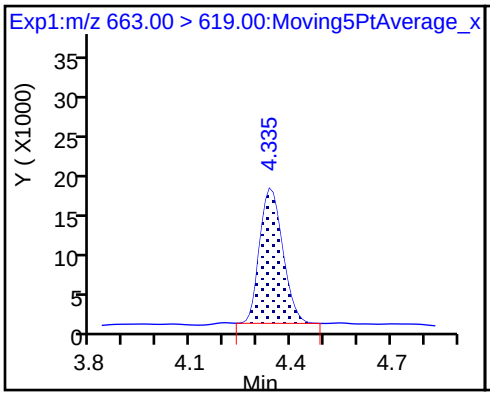
37 Perfluorododecanoic acid



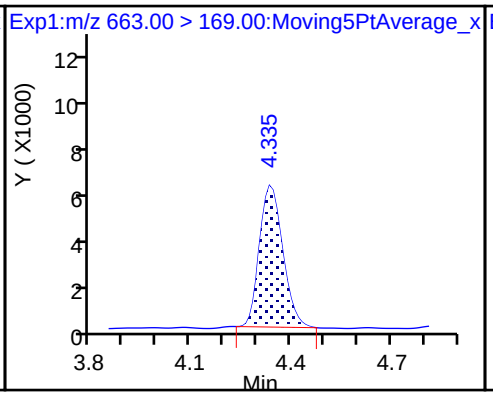
37 Perfluorododecanoic acid



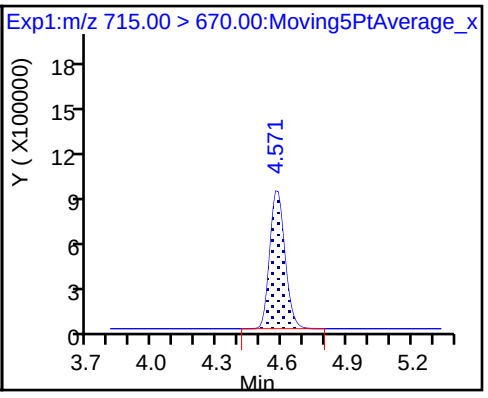
41 Perfluorotridecanoic acid



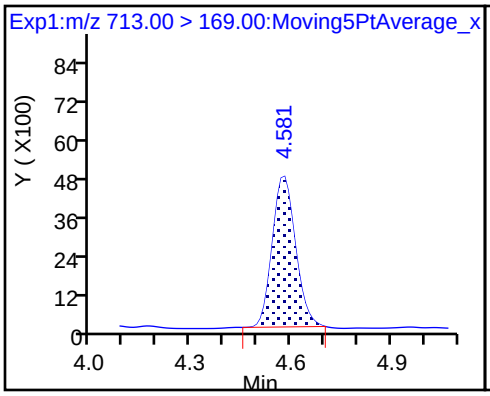
41 Perfluorotridecanoic acid



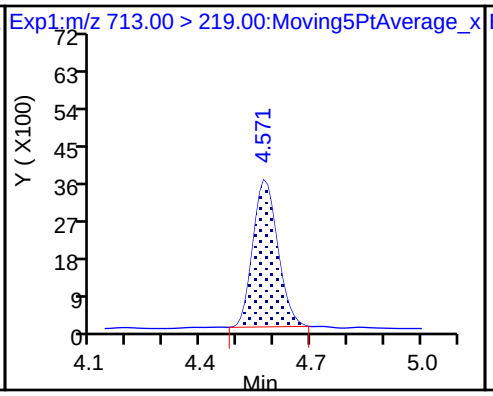
D 43 13C2-PFTeDA



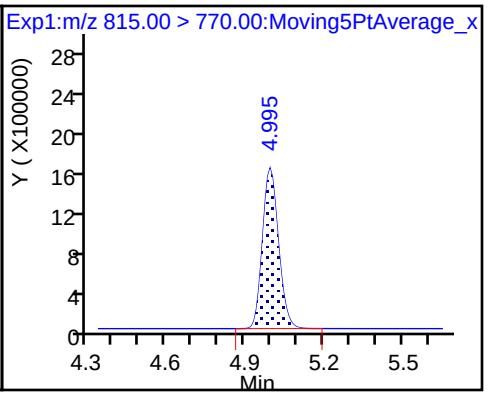
42 Perfluorotetradecanoic acid



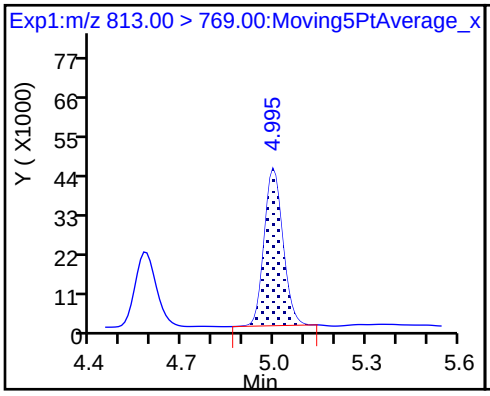
42 Perfluorotetradecanoic acid



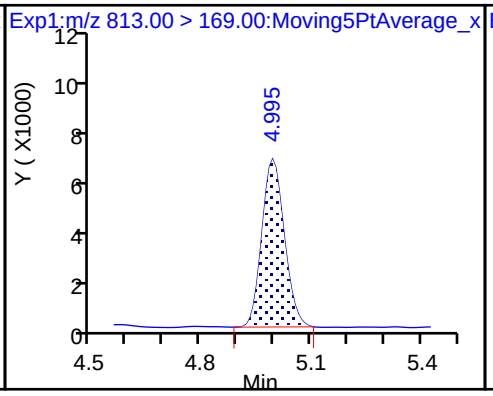
D 44 13C2-PFHxDA



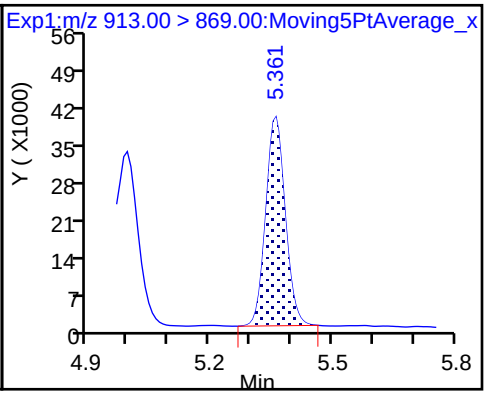
45 Perfluorohexadecanoic acid



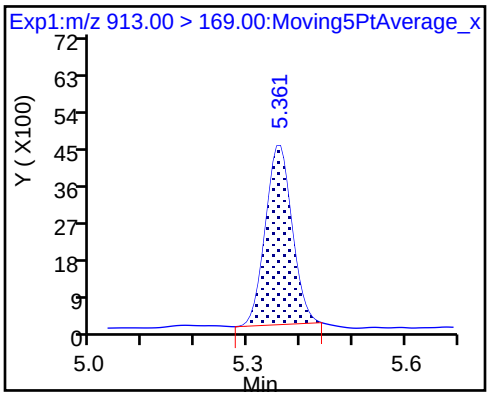
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 21-Mar-2018 18:39:58 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:23:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.536	6702182	2.53		101	75015	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	612393	0.2424		97.0	243	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4509425	2.56		102	109848	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	514727	0.2531		101	294	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	96305	2.40		103	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	700112	0.2175		98.4	3860	
298.90 > 99.00	1.745	1.745	0.0	1.000	305236		2.29(1.25-3.74)	98.4	1868	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	671337	2.42		104	8849	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	157752	0.2358		101	9759	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4935175	2.53		101	100521	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	497709	0.2466		98.6	1488	
313.00 > 119.00	1.998	1.998	0.0	1.000	45082		11.04(5.03-15.10)	98.6	905	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	5071076	2.64		106	96377	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	497784	0.2372		94.9	1108	
363.00 > 169.00	2.328	2.335	-0.007	1.000	196215		2.54(1.13-3.40)	94.9	2375	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	586824	0.2123		93.3	5073	
399.00 > 99.00	2.341	2.346	-0.005	1.000	193855		3.03(1.50-4.49)	93.3	806	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5874354	2.48		105	67207	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	956838	2.40		101	20351	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	166250	0.2367		99.9	7823	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	5033130	2.56		102	66085	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5240249	2.50			72893	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	551855	0.2426		97.1	186	
413.00 > 169.00	2.697	2.697	0.0	1.000	289099		1.91(0.84-2.52)	97.1	792	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	539007	0.2372		99.7	10606	
449.00 > 99.00	2.705	2.703	0.002	1.000	146271		3.68(1.94-5.82)	99.7	2312	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	4237867	2.46		103	39217	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.002	451427	0.2285		98.5	1564	
499.00 > 99.00	3.072	3.070	0.002	1.002	100623		4.49(2.31-6.93)	98.5	894	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4472333	2.58		103	73916	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	441188	0.2472		98.9	582	
463.00 > 169.00	3.072	3.072	0.0	1.000	113267		3.90(1.90-5.69)	98.9	1929	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	6203337	2.67		107	61203	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	592188	0.2421		96.8	13446	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1407067	2.62		109	26205	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	176483	0.2354		98.3	7854	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3933118	2.59		104	68284	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	394276	0.2536		101	1808	
513.00 > 169.00	3.435	3.435	0.0	1.000	66021		5.97(2.36-7.09)	101	3009	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	2099631	2.63		105	32210	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	219720	0.2614		105	1753	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	279040	0.2314		96.0	7395	
599.00 > 99.00	3.748	3.749	-0.001	1.000	91540		3.05(1.39-4.16)	96.0	3261	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2467789	2.71		108	15339	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.000	286311	0.2221		88.9	1276	
563.00 > 169.00	3.769	3.768	0.001	1.000	74133		3.86(2.12-6.36)	88.9	2992	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.768	0.001	1.003	224858	0.2438		97.5	5777	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.768	0.001	1.397	3737470	2.75		110	87838	
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.066	0.002	1.508	3986883	2.59		103	35715	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.068	0.0	1.000	407079	0.2439		97.6	349	
613.00 > 169.00	4.068	4.068	0.0	1.000	100267		4.06(2.13-6.40)	97.6	2078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	-0.001	1.000	437729	0.2494		99.7	324	
663.00 > 169.00	4.329	4.329	-0.001	1.000	138849		3.15(1.25-3.76)	99.7	2090	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.692	4783571	2.54		102	32092	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.004	1.002	118401	0.2497		99.9	1652	
713.00 > 219.00	4.564	4.571	-0.007	1.000	85338		1.39(0.71-2.13)	99.9	2012	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.850	8384119	2.72		109	19806	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	829775	0.2480		99.2	259	
813.00 > 169.00	4.990	4.989	0.001	1.000	141643		5.86(2.86-8.58)	99.2	1896	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.355	5.354	0.001	1.000	760025	0.2451		98.0	259	
913.00 > 169.00	5.355	5.354	0.001	1.000	94500		8.04(3.83-11.48)	98.0	1322	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_004.d

Injection Date: 21-Mar-2018 18:39:58 Instrument ID: A8_N

Lims ID: IC L3 Full

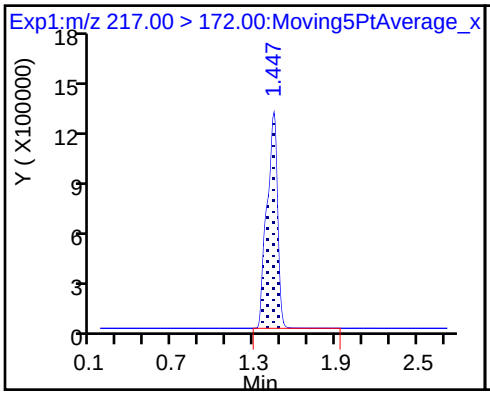
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

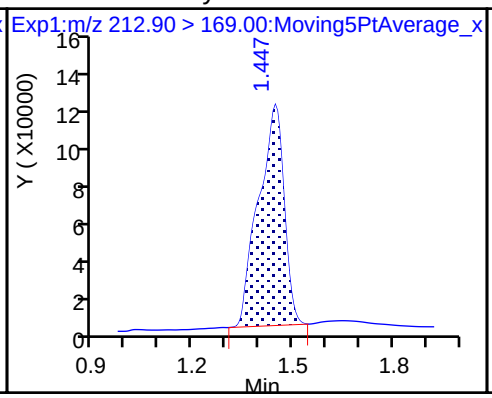
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

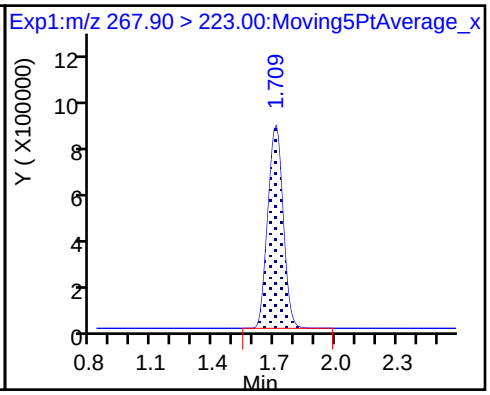
D 1 13C4 PFBA



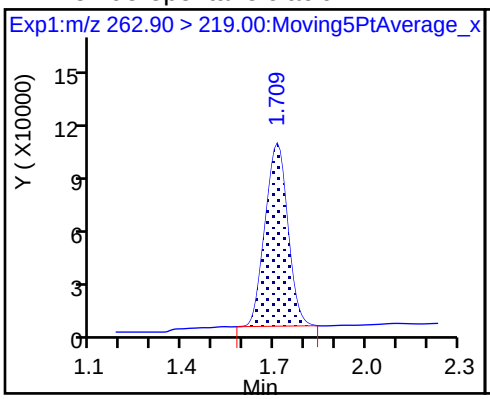
2 Perfluorobutyric acid



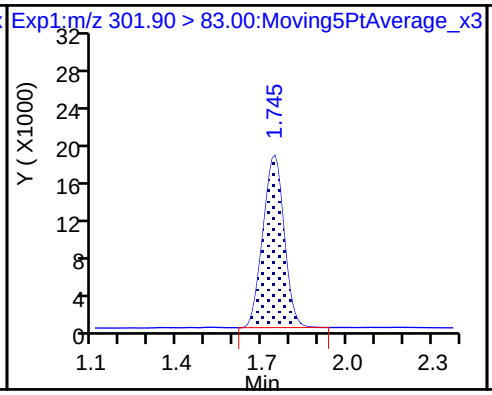
D 3 13C5-PFPeA



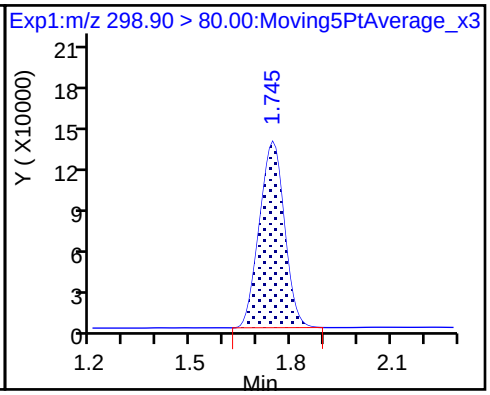
4 Perfluoropentanoic acid



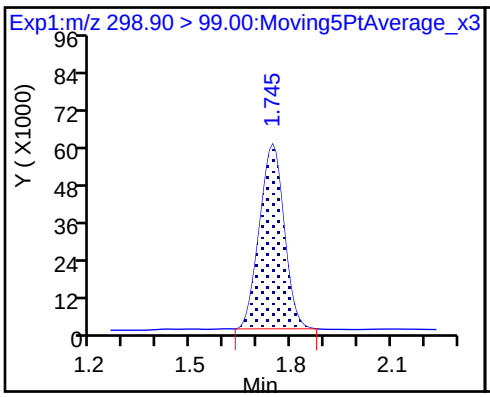
D 47 13C3-PFBS



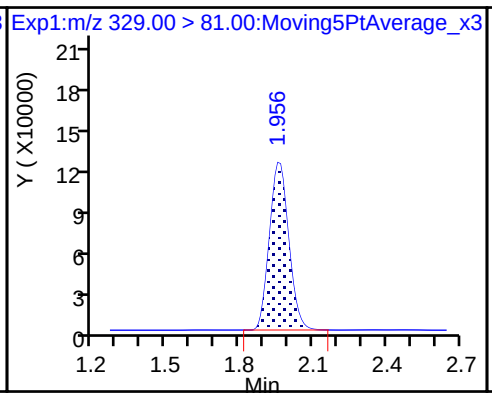
5 Perfluorobutanesulfonic acid



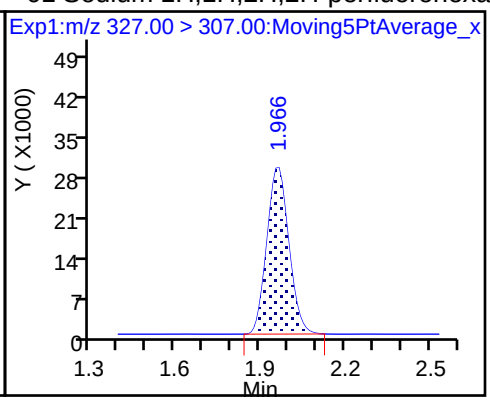
5 Perfluorobutanesulfonic acid



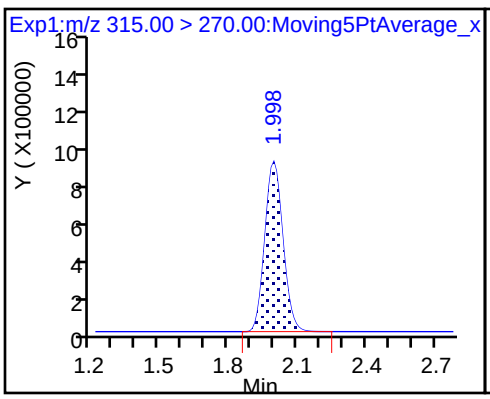
D 60 M2-4:2FTS



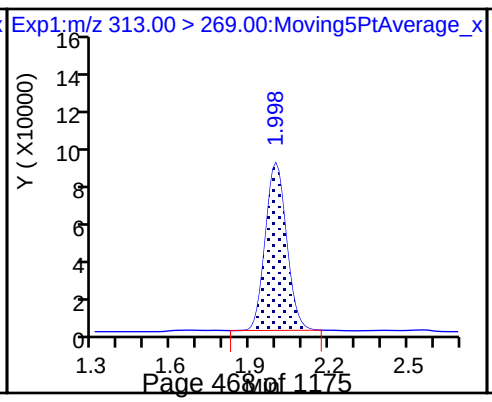
61 Sodium 1H,1H,2H,2H-perfluorohexane



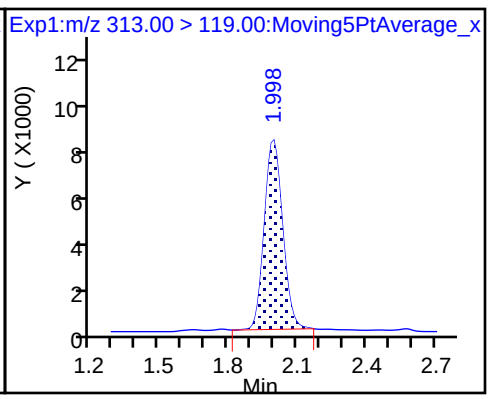
D 7 13C2 PFHxA



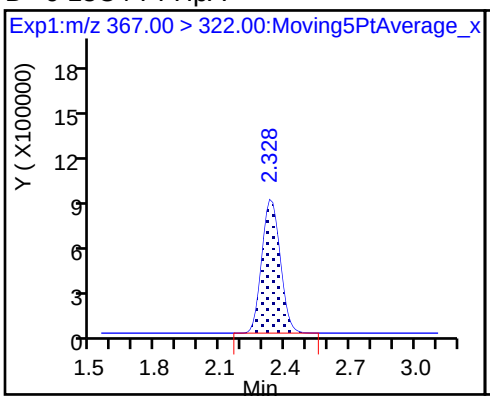
6 Perfluorohexanoic acid



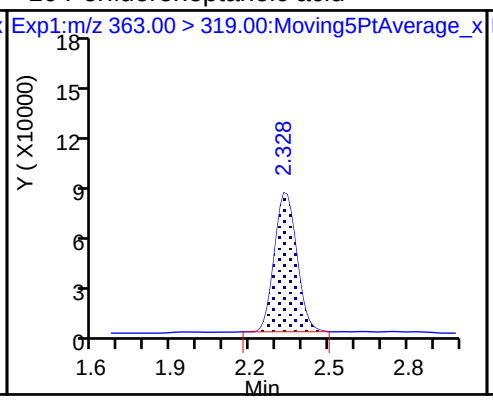
6 Perfluorohexanoic acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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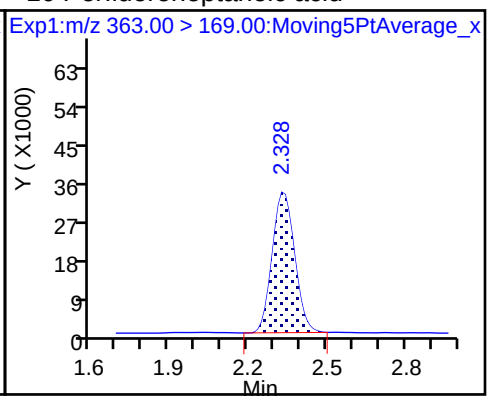
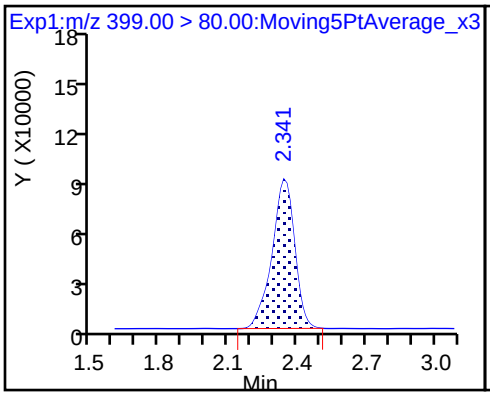
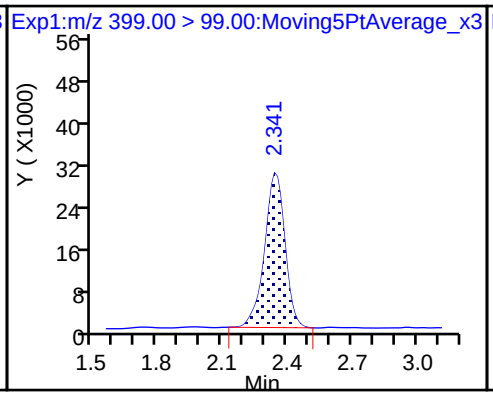


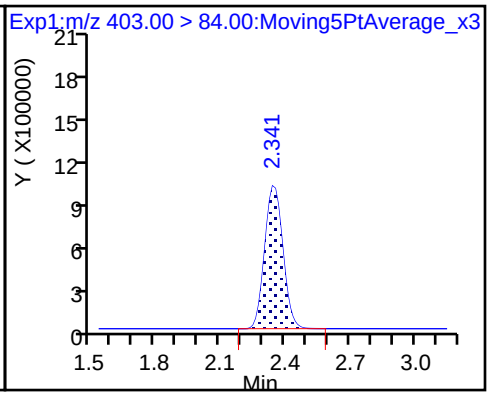
8 Perfluorohexanesulfonic acid



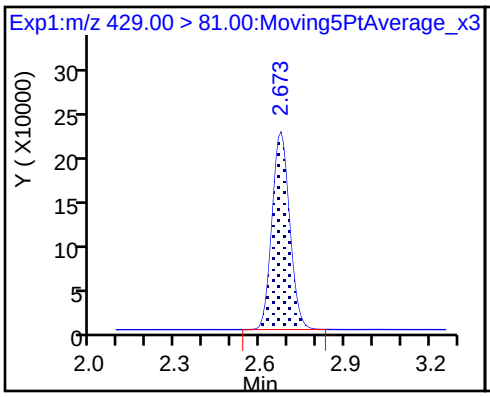
8 Perfluorohexanesulfonic acid



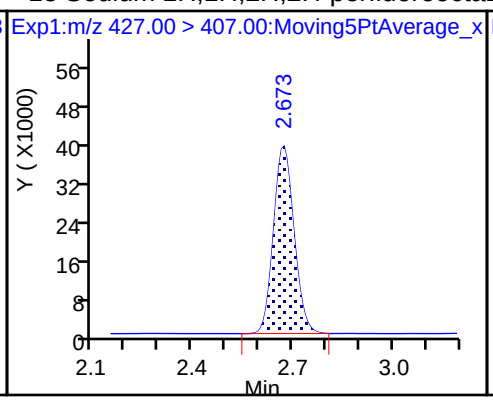
D 11 18O2 PFHxS



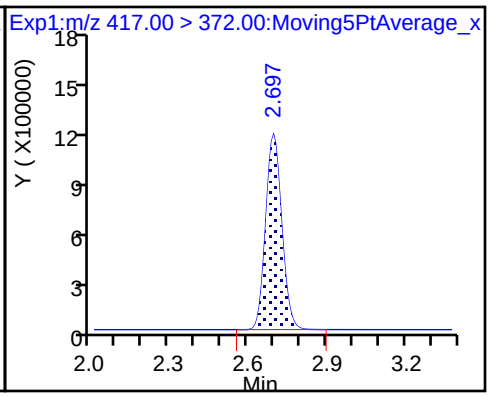
D 12 M2-6:2FTS



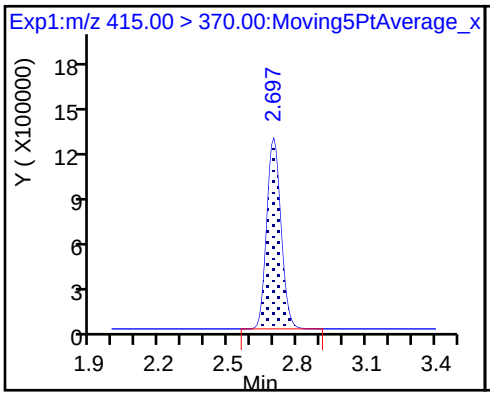
13 Sodium 1H,1H,2H,2H-perfluorooctane



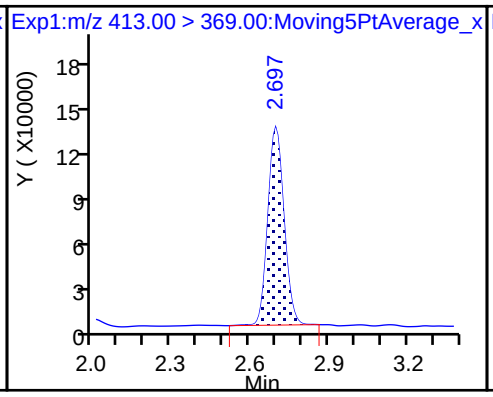
D 14 13C4 PFOA



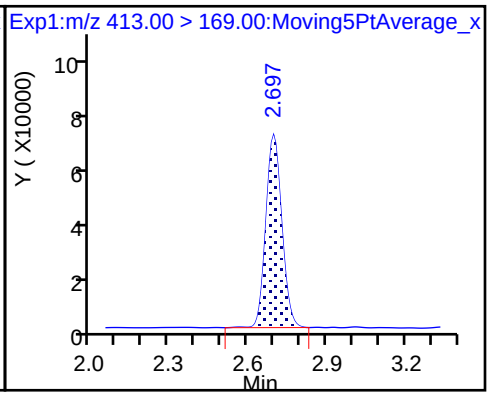
* 62 13C2-PFOA



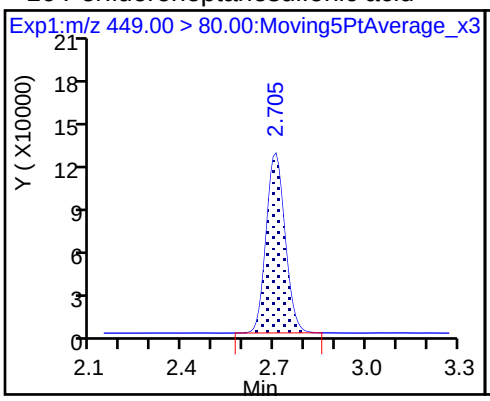
15 Perfluorooctanoic acid



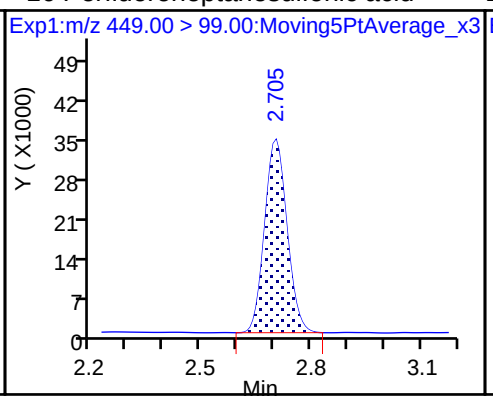
15 Perfluorooctanoic acid



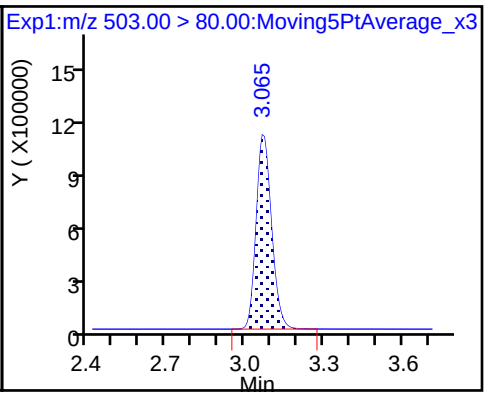
16 Perfluoroheptanesulfonic acid



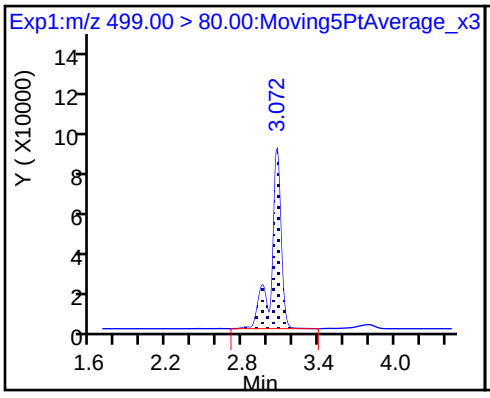
16 Perfluoroheptanesulfonic acid



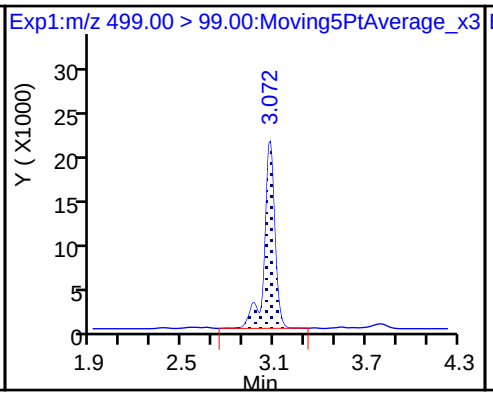
D 18 13C4 PFOS



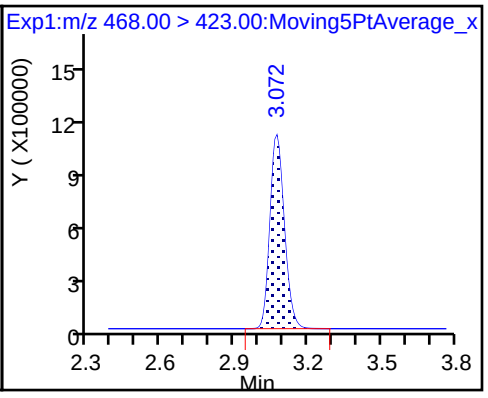
17 Perfluorooctane sulfonic acid



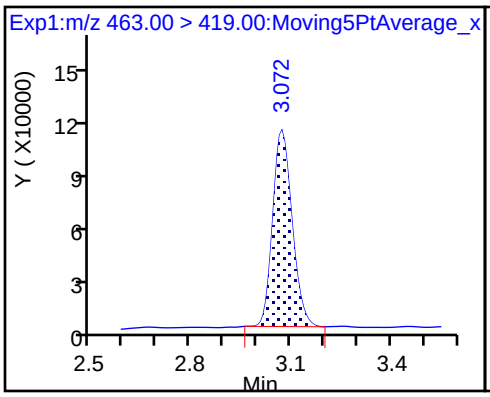
17 Perfluorooctane sulfonic acid



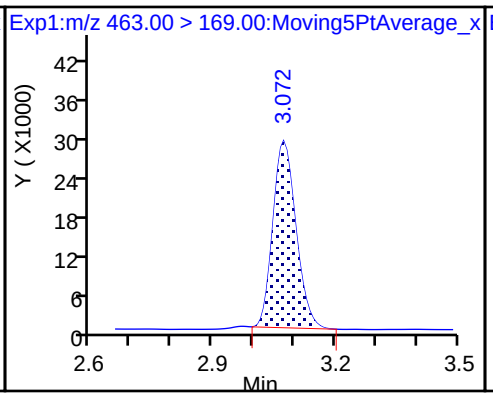
D 19 13C5 PFNA



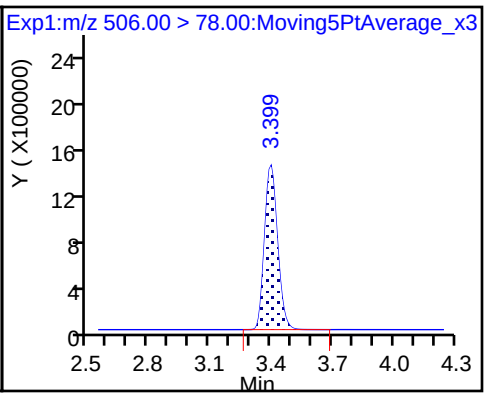
20 Perfluorononanoic acid



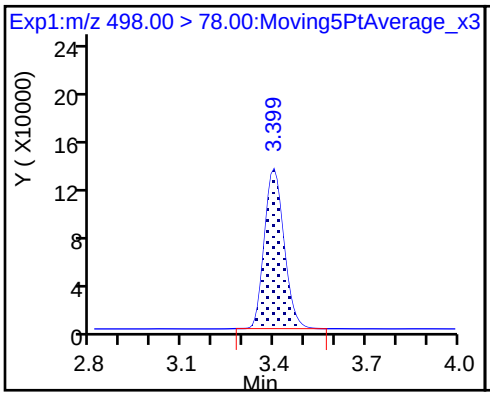
20 Perfluorononanoic acid



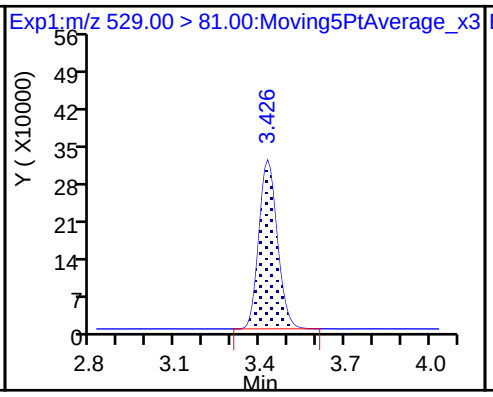
D 21 13C8 FOSA



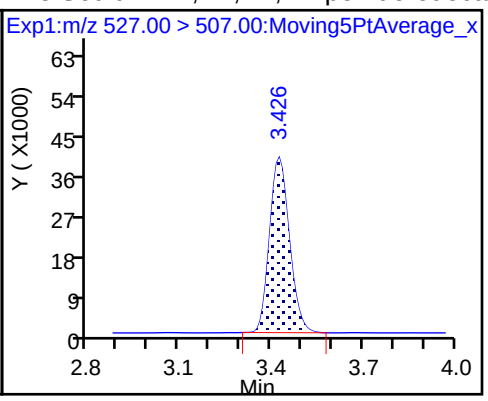
22 Perfluorooctane Sulfonamide



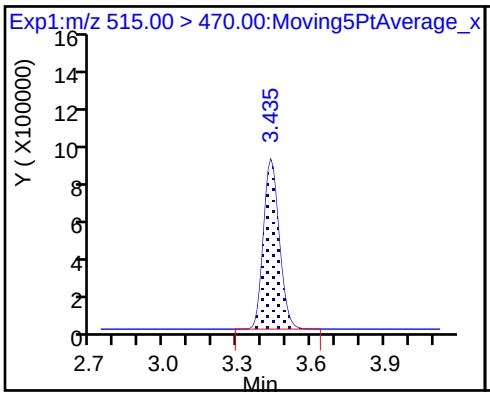
D 26 M2-8:2FTS



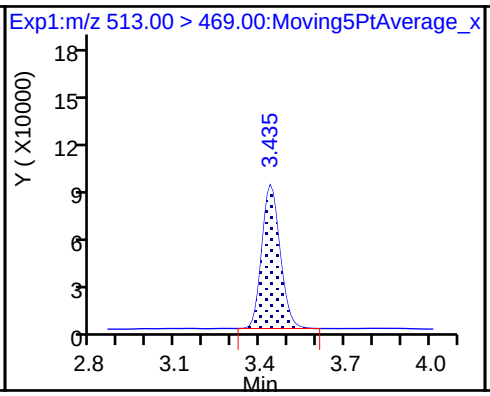
25 Sodium 1H,1H,2H,2H-perfluorodecane



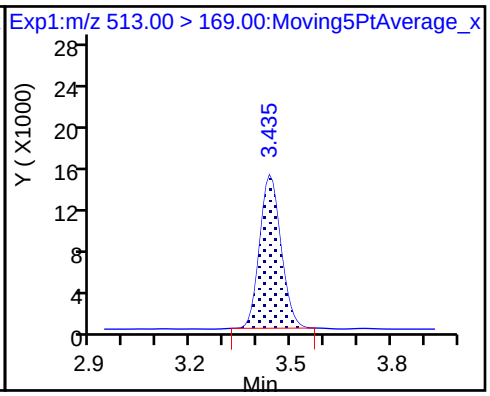
D 23 13C2 PFDA



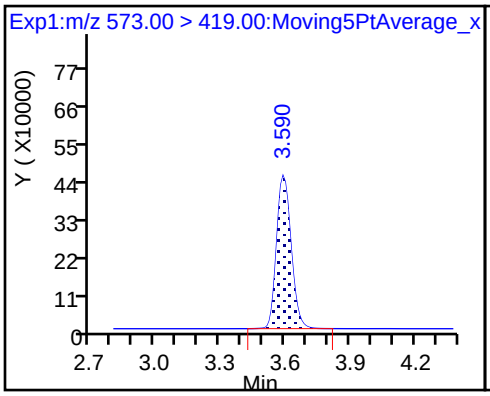
24 Perfluorodecanoic acid



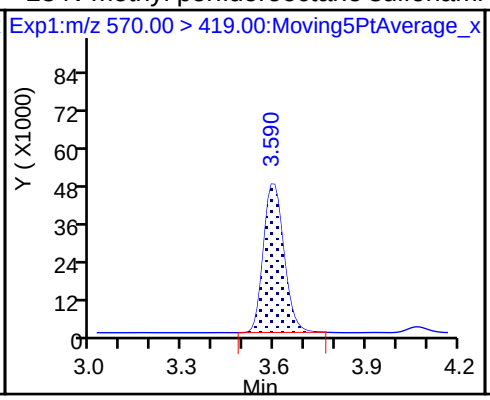
24 Perfluorodecanoic acid



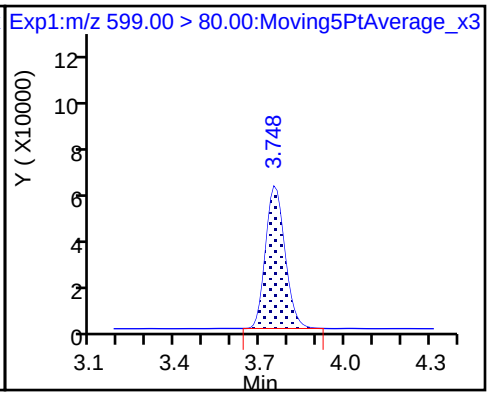
D 27 d3-NMeFOSAA



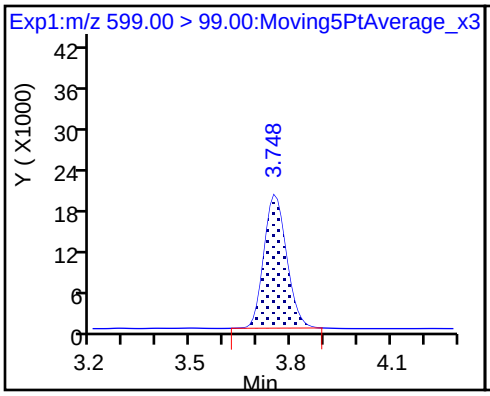
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid



29 Perfluorodecane Sulfonic acid



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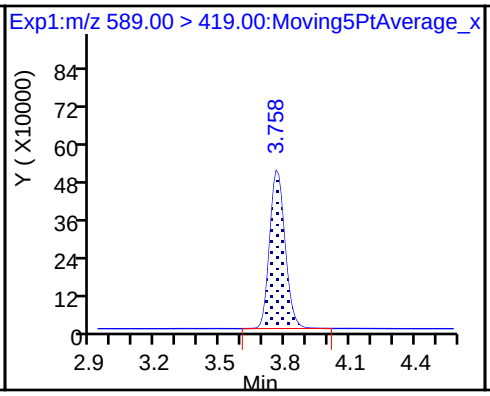
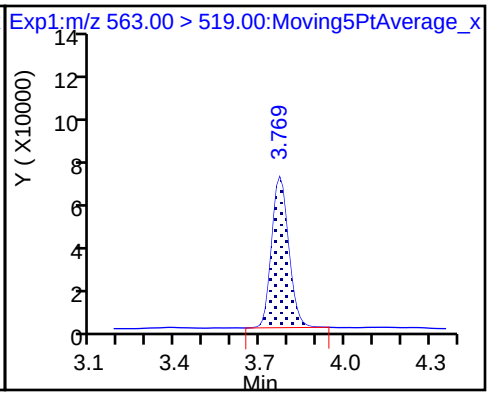
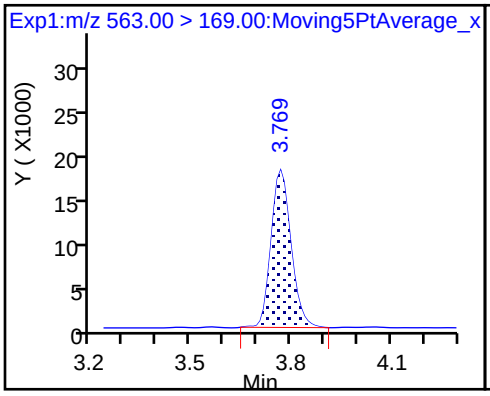


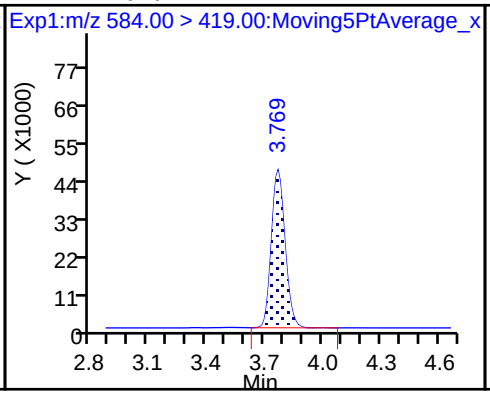
31 Perfluoroundecanoic acid



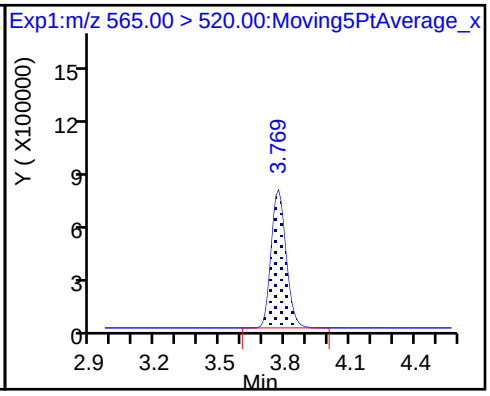
31 Perfluoroundecanoic acid



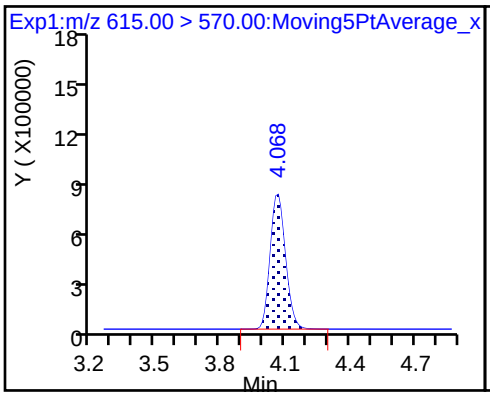
33 N-ethyl perfluorooctane sulfonamid



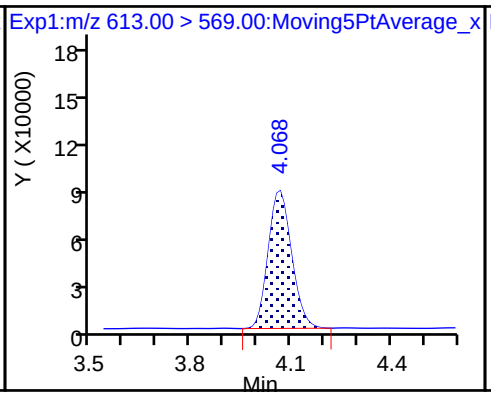
D 30 13C2 PFUnA



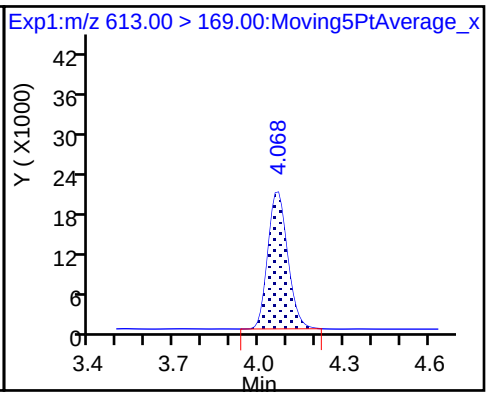
D 36 13C2 PFDoA



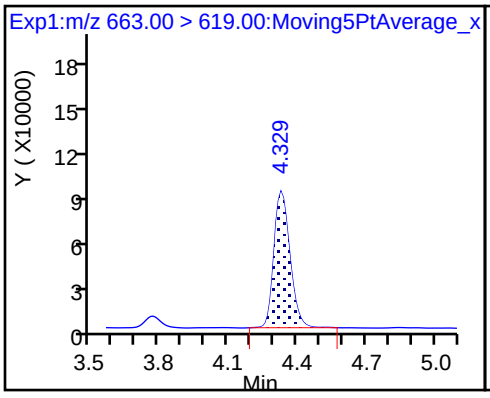
37 Perfluorododecanoic acid



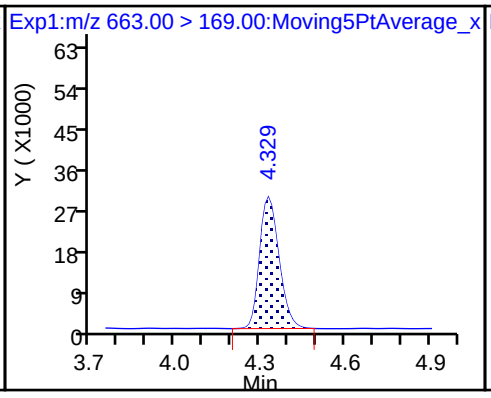
37 Perfluorododecanoic acid



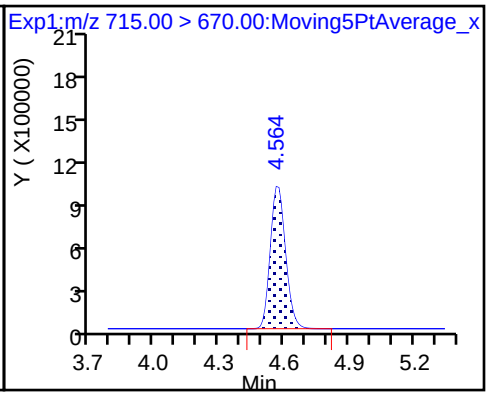
41 Perfluorotridecanoic acid



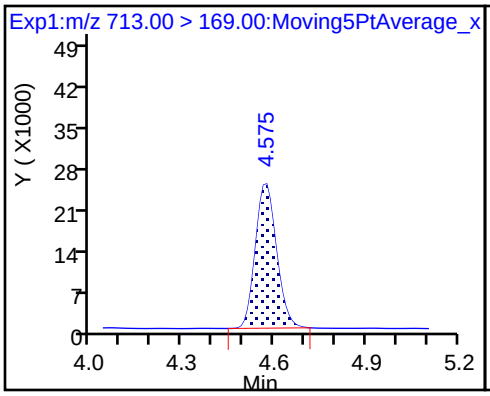
41 Perfluorotridecanoic acid



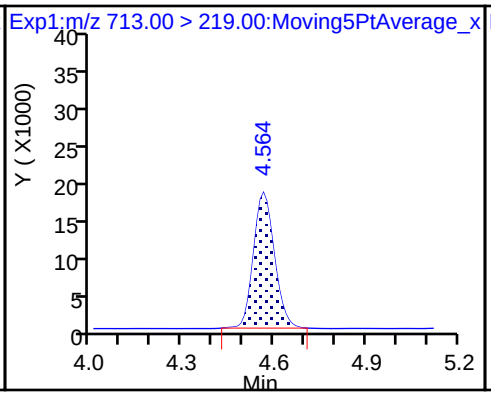
D 43 13C2-PFTeDA



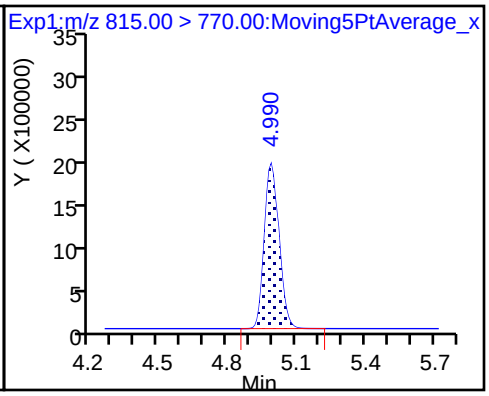
42 Perfluorotetradecanoic acid



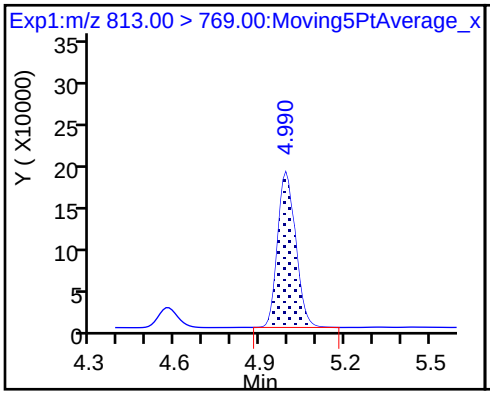
42 Perfluorotetradecanoic acid



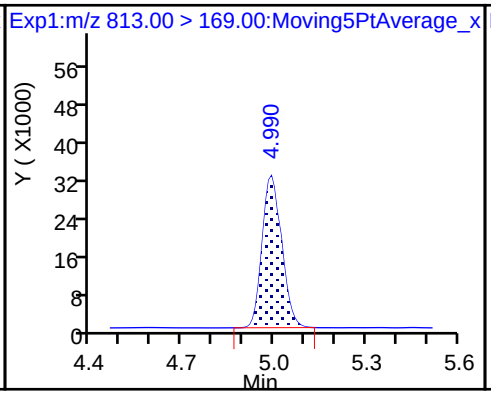
D 44 13C2-PFHxDA



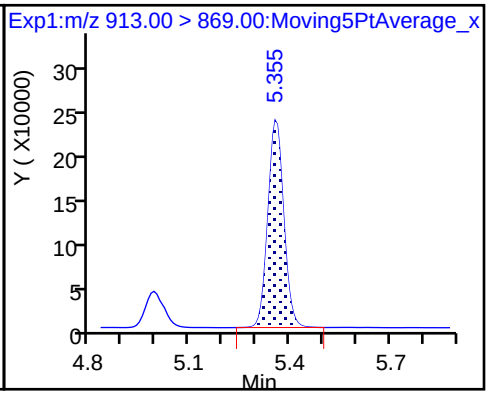
45 Perfluorohexadecanoic acid



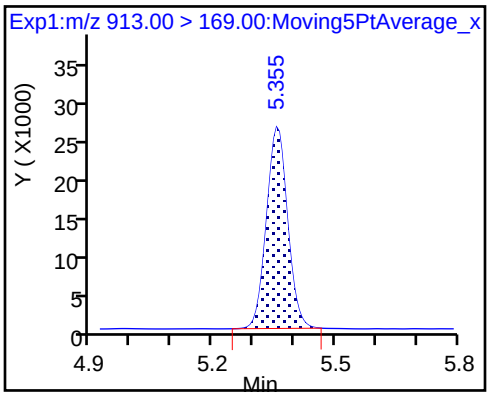
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 21-Mar-2018 18:47:49 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:36 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:24:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.537	6677108	2.48		99.3	91884	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	2414180	0.9593		95.9	1039	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	1955236	0.9777		97.8	1101	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4434133	2.49		99.4	122232	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	94733	2.33		100	728	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	2745542	0.8672		98.1	15073	
298.90 > 99.00	1.745	1.745	0.0	1.000	1158456		2.37(1.25-3.74)	98.1	8636	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	673891	2.40		103	7759	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.962	-0.006	1.000	585674	0.8899		95.3	36020	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	1895160	0.9434		94.3	5502	
313.00 > 119.00	1.998	1.998	0.0	1.000	171177		11.07(5.03-15.10)	94.3	5106	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4912134	2.49		99.6	148634	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	4906862	2.52		101	91934	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	1917800	0.9445		94.5	4030	
363.00 > 169.00	2.328	2.335	-0.007	1.000	781323		2.45(1.13-3.40)	94.5	11000	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	2255246	0.8437		92.7	14407	
399.00 > 99.00	2.341	2.346	-0.005	1.000	758154		2.97(1.50-4.49)	92.7	2920	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5679886	2.37		100	64479	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	658727	0.9206		97.1	39075	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	974611	2.41		102	32347	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5311138	2.50			78253	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	5161114	2.59		104	75890	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	2181038	0.9352		93.5	739	
413.00 > 169.00	2.697	2.697	0.0	1.000	1079898		2.02(0.84-2.52)	93.5	2905	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	2094073	0.9272		97.4	32757	
449.00 > 99.00	2.705	2.703	0.002	1.000	562149		3.73(1.94-5.82)	97.4	7735	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	4212796	2.41		101	38767	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4473666	2.55		102	61714	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.002	1712110	0.8720		94.0	5345	
499.00 > 99.00	3.065	3.070	-0.005	1.000	388300		4.41(2.31-6.93)	94.0	3489	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1707633	0.9567		95.7	2306	
463.00 > 169.00	3.072	3.072	0.0	1.000	412933		4.14(1.90-5.69)	95.7	8555	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	5926892	2.52		101	51859	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	2348890	1.01		101	35724	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	628171	0.9357		97.7	12703	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1259787	2.31		96.5	25503	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1449524	0.9682		96.8	7703	
513.00 > 169.00	3.435	3.435	0.0	1.000	250563		5.79(2.36-7.09)	96.8	5629	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3787833	2.46		98.4	60985	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.591	0.001	1.332	2005802	2.48		99.0	38757	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.592	3.594	-0.002	1.000	764025	0.9515		95.2	5524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.750	3.749	0.001	1.000	1089522	0.9090		94.3	25437	
599.00 > 99.00	3.750	3.749	0.001	1.000	401224		2.72(1.39-4.16)	94.3	7593	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.759	0.001	1.394	2399407	2.60		104	12942	
D 30 13C2 PFUnA										
565.00 > 520.00	3.770	3.768	0.002	1.398	3376806	2.45		98.1	53912	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.770	3.768	0.002	1.003	854457	0.9529		95.3	15864	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.770	3.768	0.002	1.000	1113457	0.9561		95.6	5076	
563.00 > 169.00	3.770	3.768	0.002	1.000	264745		4.21(2.12-6.36)	95.6	9089	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.066	-0.007	1.505	3947765	2.53		101	38697	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.068	0.001	1.003	1543700	0.9343		93.4	1390	
613.00 > 169.00	4.069	4.068	0.001	1.003	381642		4.04(2.13-6.40)	93.4	5997	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	1762916	1.01		101	1166	
663.00 > 169.00	4.329	4.329	0.0	1.000	525318		3.36(1.25-3.76)	101	9931	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.568	-0.003	1.693	5036200	2.64		106	31784	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.565	4.571	-0.006	1.000	463840	0.9292		92.9	6420	
713.00 > 219.00	4.565	4.571	-0.006	1.000	332536		1.39(0.71-2.13)	92.9	6906	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.987	-0.005	1.847	8013194	2.56		102	20349	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.989	0.002	1.002	2896964	0.9702		97.0	883	
813.00 > 169.00	4.991	4.989	0.002	1.002	467916		6.19(2.86-8.58)	97.0	4401	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	2837993	0.9576		95.8	899	
913.00 > 169.00	5.352	5.354	-0.002	1.000	349894		8.11(3.83-11.48)	95.8	3684	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:38 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_005.d

Injection Date: 21-Mar-2018 18:47:49 Instrument ID: A8_N

Lims ID: IC L4 Full

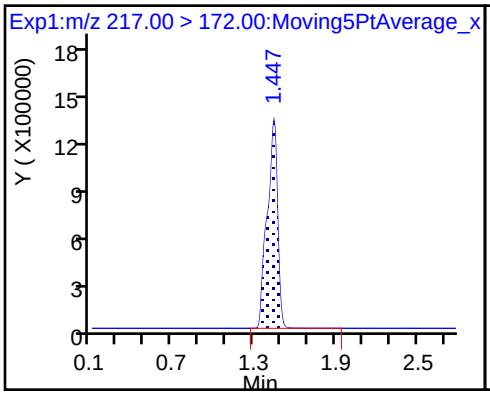
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

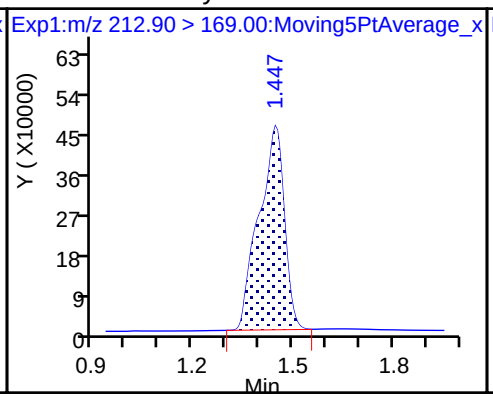
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

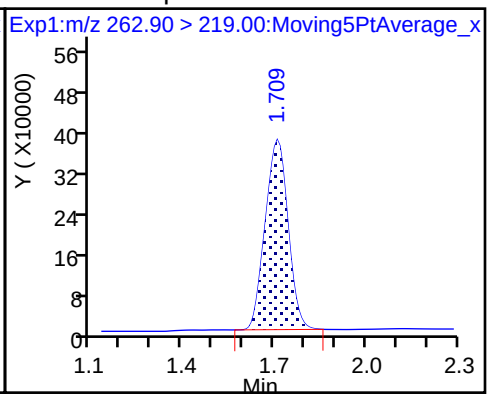
D 1 13C4 PFBA



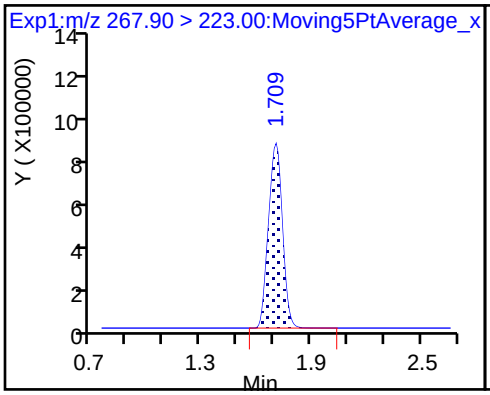
2 Perfluorobutyric acid



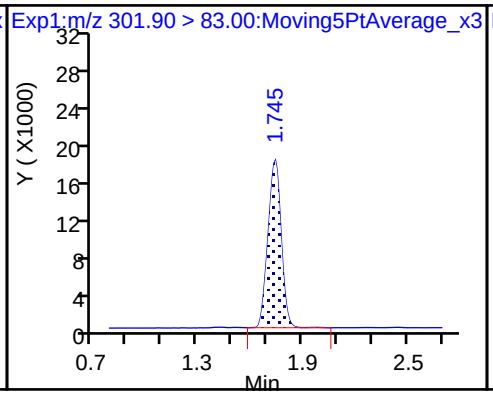
4 Perfluoropentanoic acid



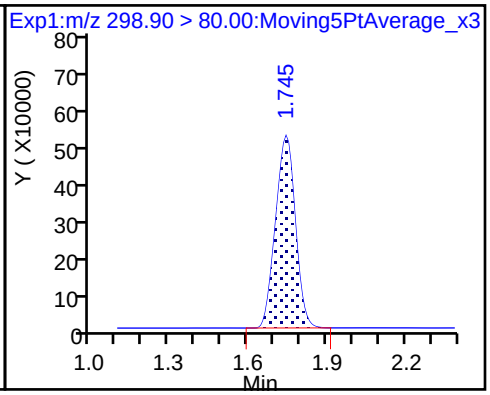
D 3 13C5-PFPeA



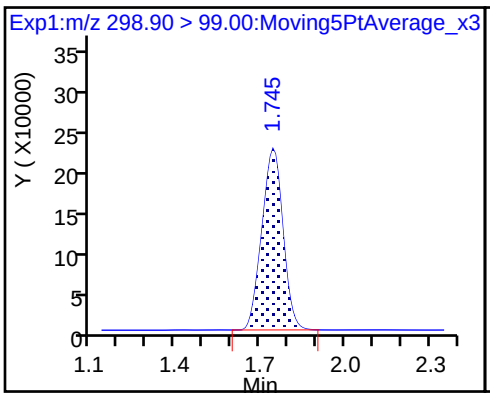
D 47 13C3-PFBS



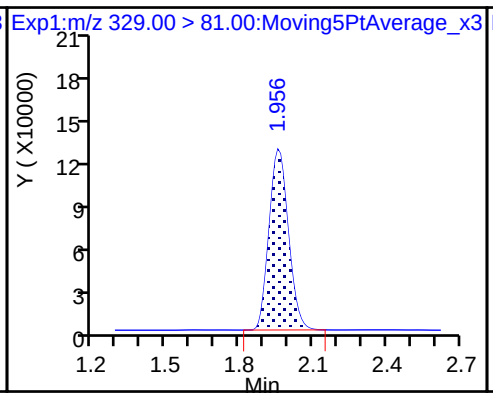
5 Perfluorobutanesulfonic acid



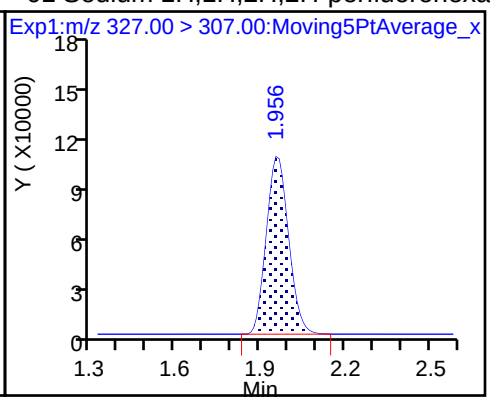
5 Perfluorobutanesulfonic acid



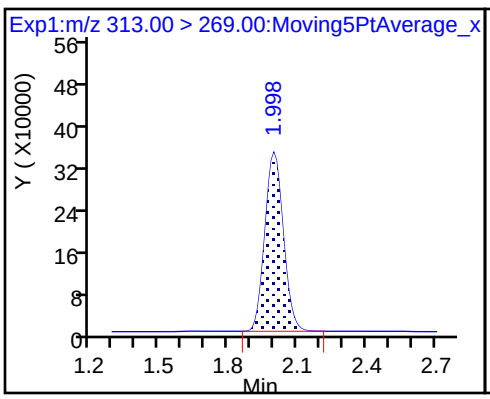
D 60 M2-4:2FTS



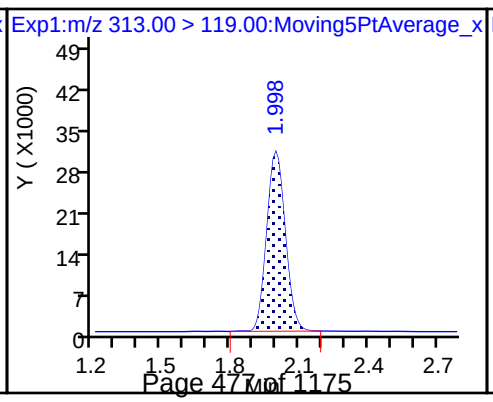
61 Sodium 1H,1H,2H,2H-perfluorohexane



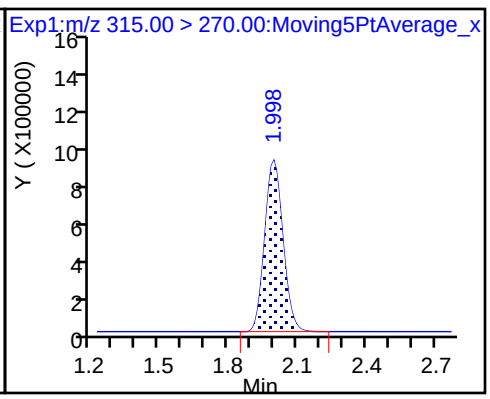
6 Perfluorohexanoic acid



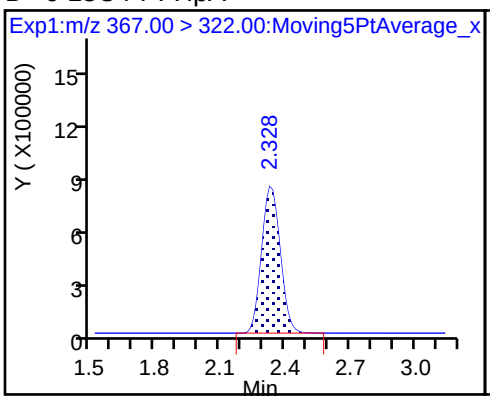
6 Perfluorohexanoic acid



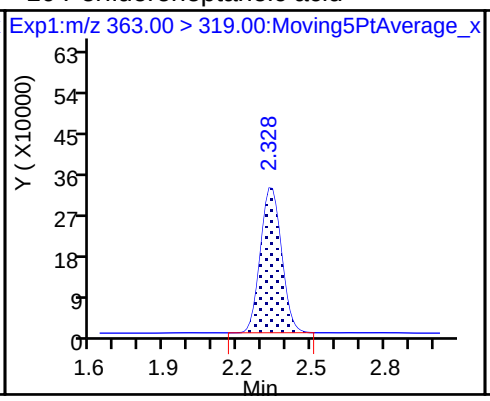
D 7 13C2 PFHxA



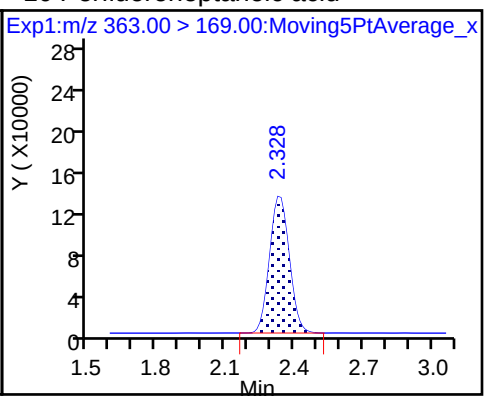
D 9 13C4-PFHpA



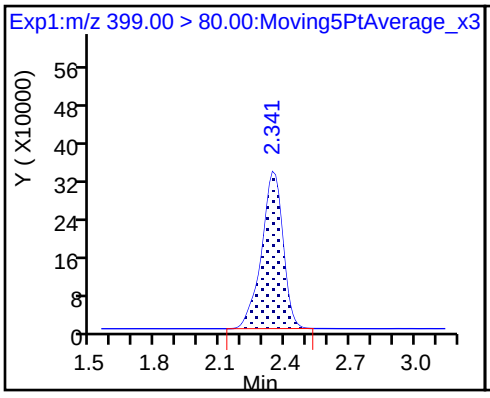
10 Perfluoroheptanoic acid



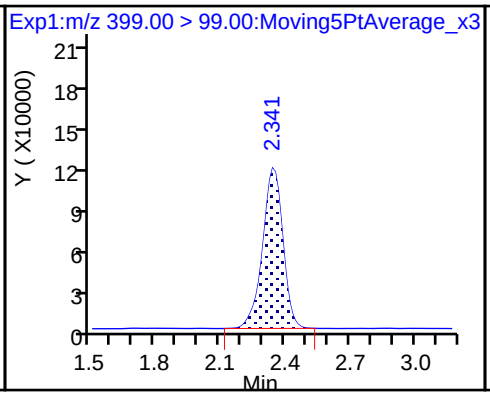
10 Perfluoroheptanoic acid



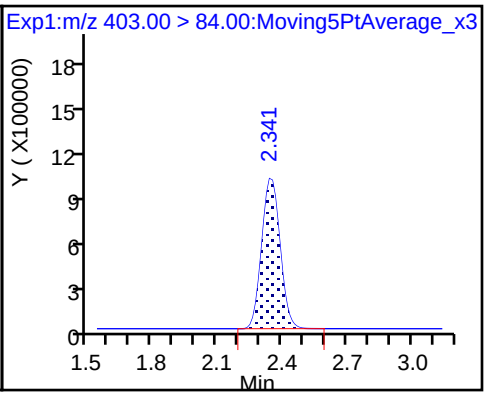
8 Perfluorohexanesulfonic acid



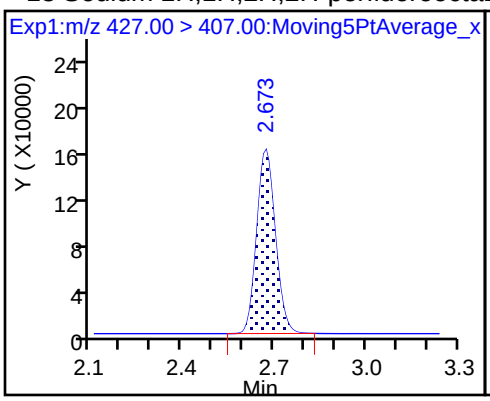
8 Perfluorohexanesulfonic acid



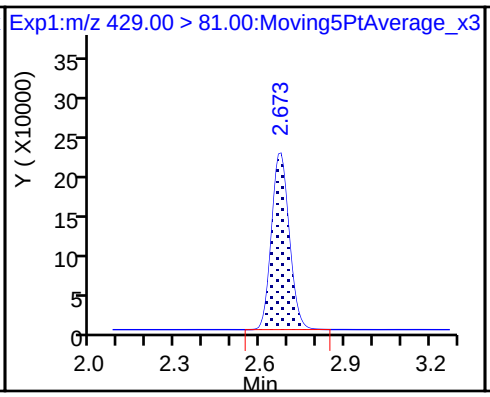
D 11 18O2 PFHxS



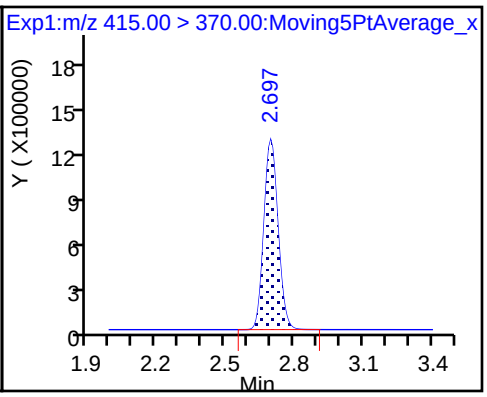
13 Sodium 1H,1H,2H,2H-perfluorooctan



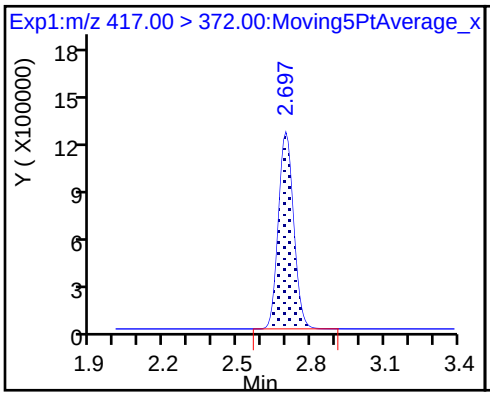
D 12 M2-6:2FTS



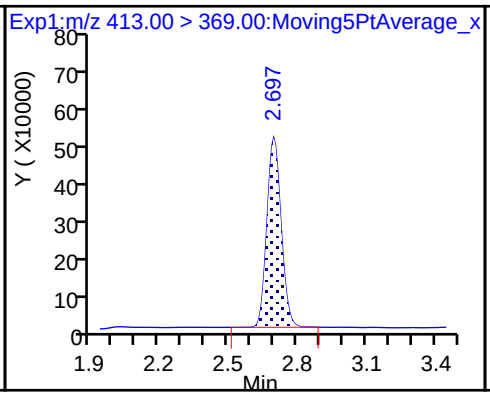
* 62 13C2-PFOA



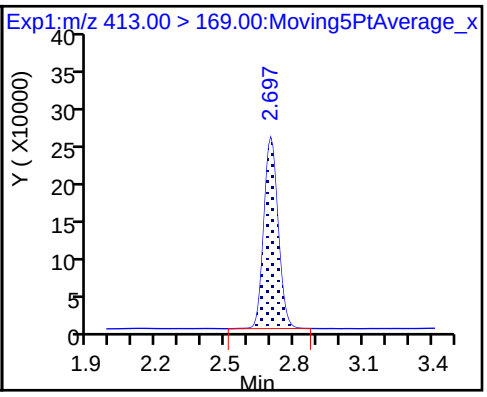
D 14 13C4 PFOA



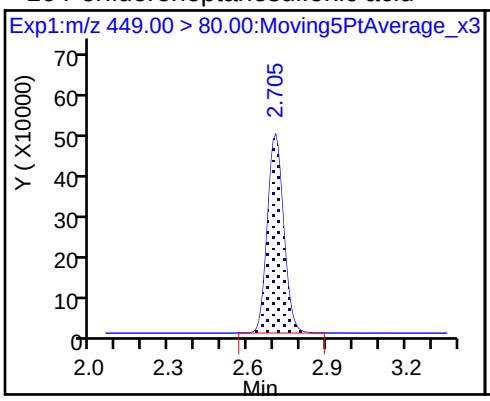
15 Perfluorooctanoic acid



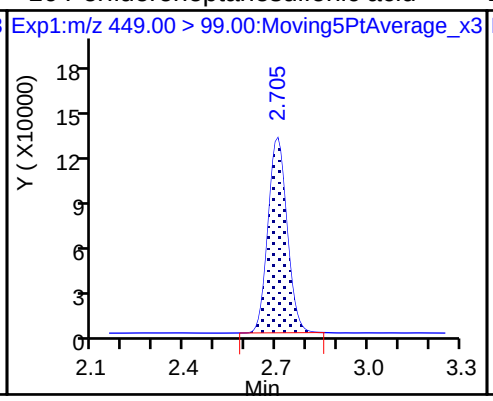
15 Perfluorooctanoic acid



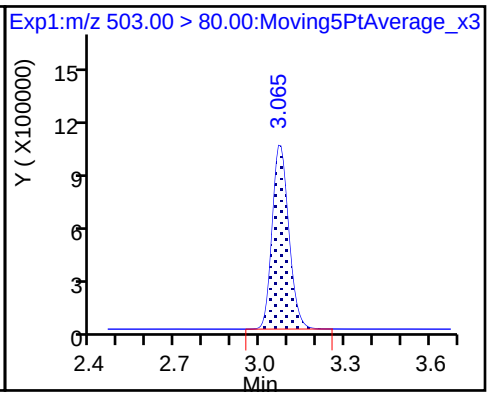
16 Perfluoroheptanesulfonic acid



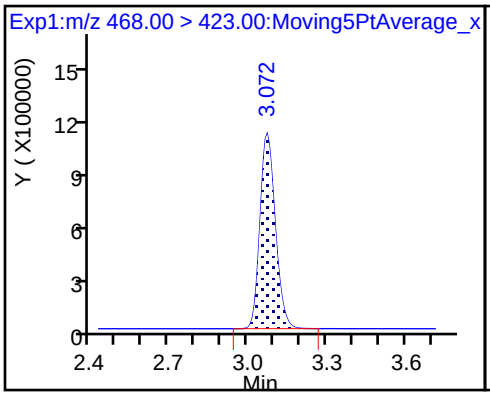
16 Perfluoroheptanesulfonic acid



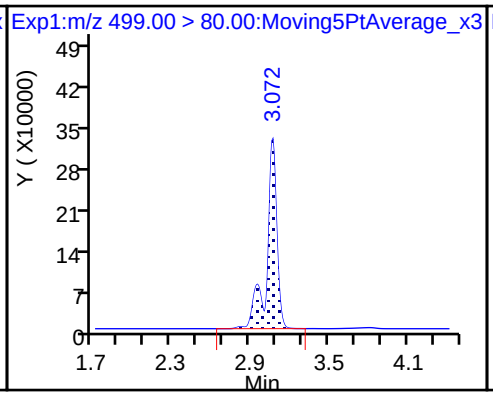
D 18 13C4 PFOS



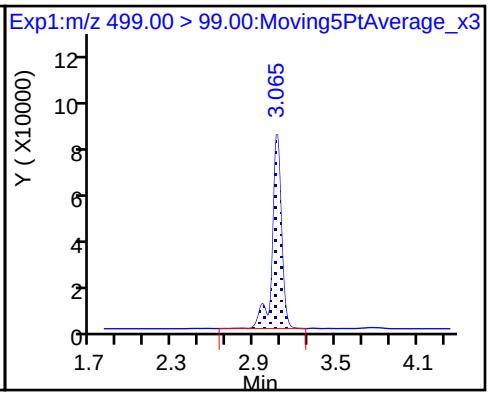
D 19 13C5 PFNA



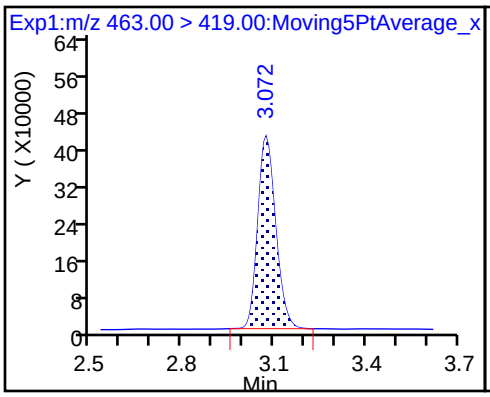
17 Perfluorooctane sulfonic acid



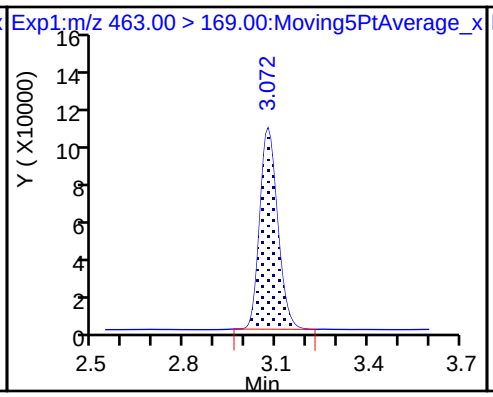
17 Perfluorooctane sulfonic acid



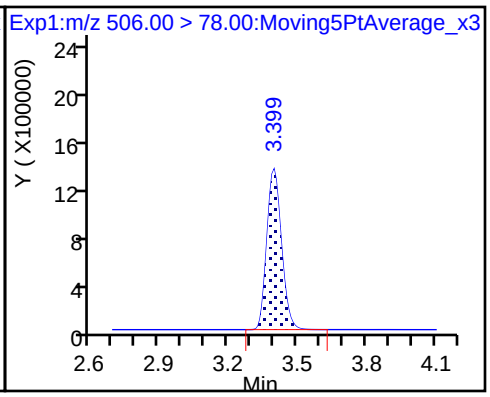
20 Perfluorononanoic acid



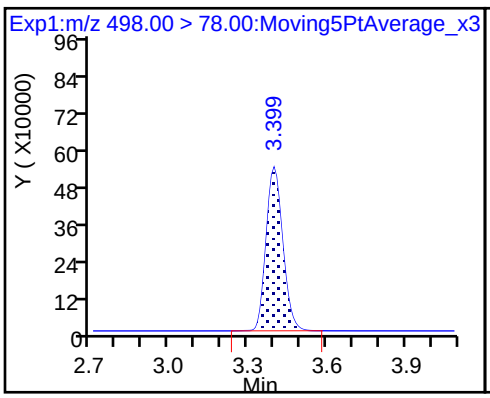
20 Perfluorononanoic acid



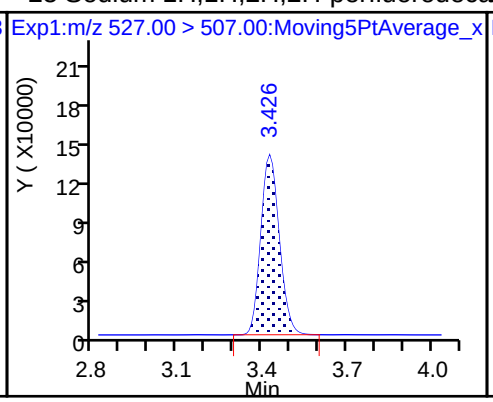
D 21 13C8 FOSA



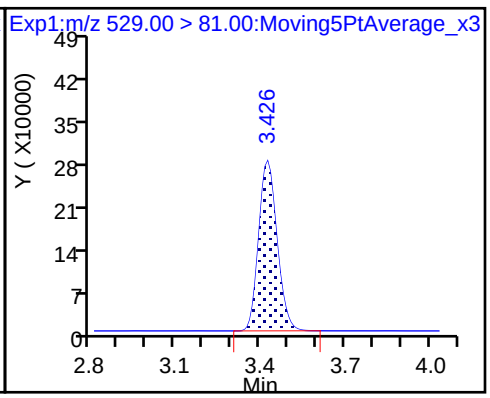
22 Perfluorooctane Sulfonamide



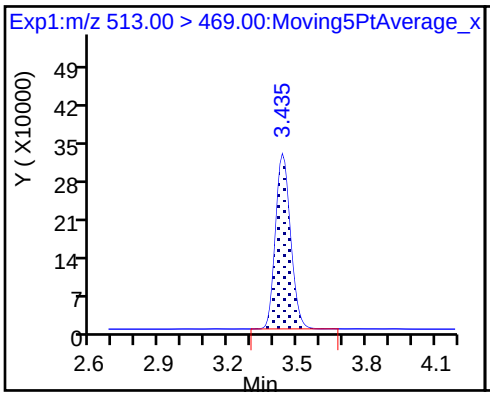
25 Sodium 1H,1H,2H,2H-perfluorodecane



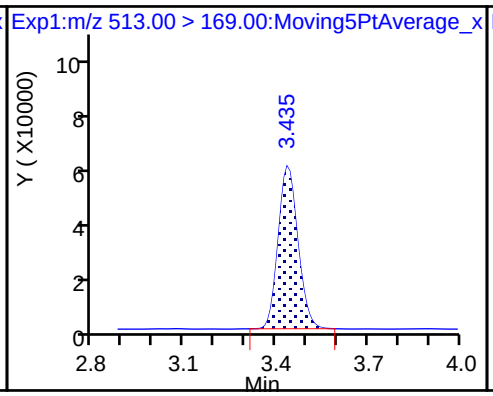
D 26 M2-8:2FTS



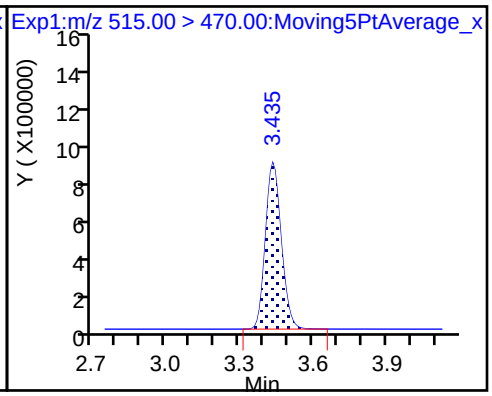
24 Perfluorodecanoic acid



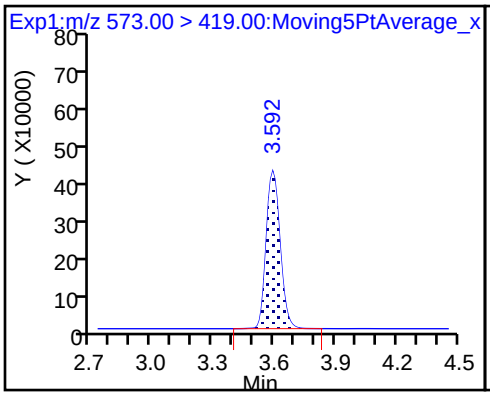
24 Perfluorodecanoic acid



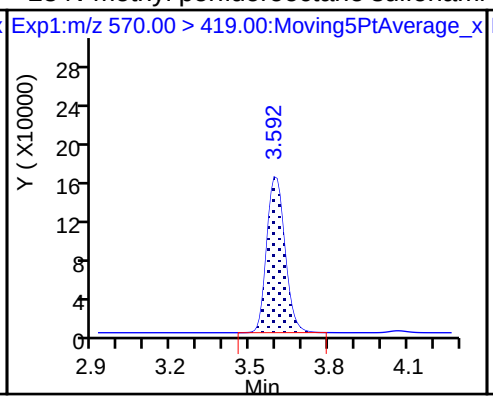
D 23 13C2 PFDA



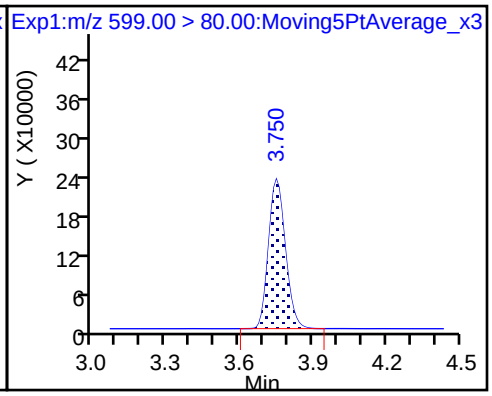
D 27 d3-NMeFOSAA



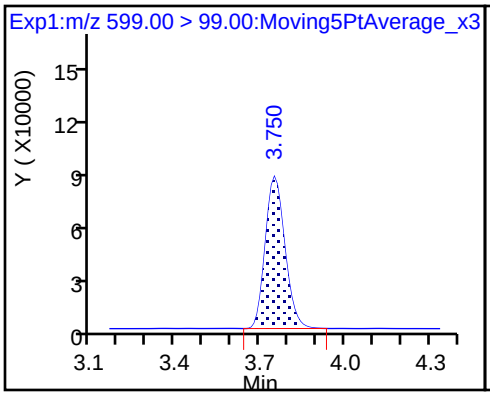
28 N-methyl perfluorooctane sulfonami



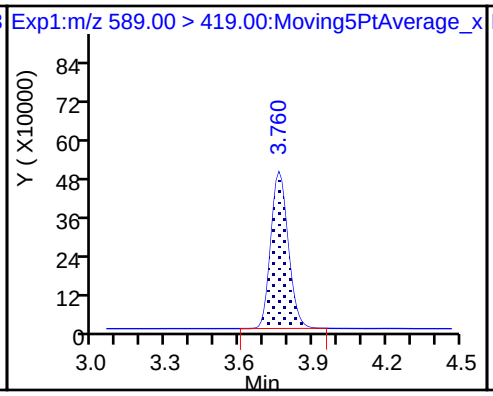
29 Perfluorodecane Sulfonic acid



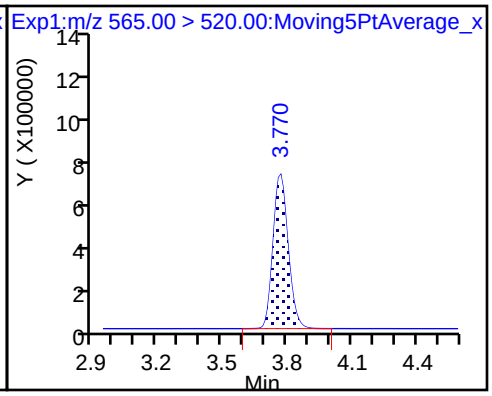
29 Perfluorodecane Sulfonic acid



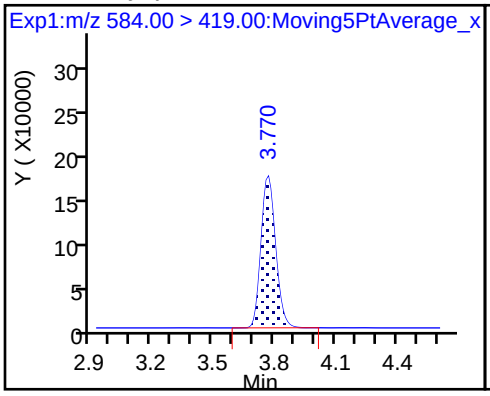
D 32 d5-NEtFOSAA



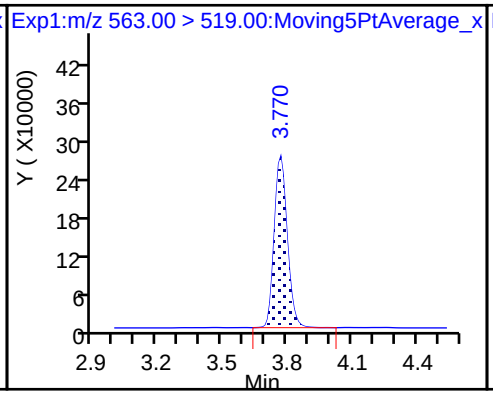
D 30 13C2 PFUnA



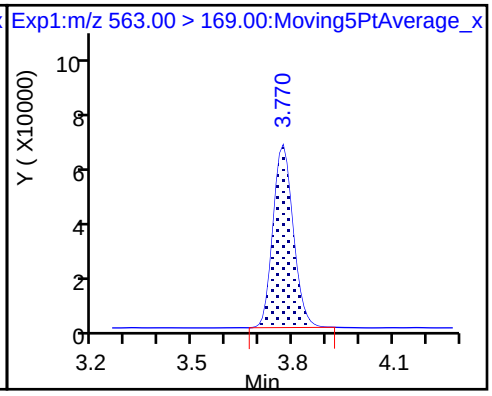
33 N-ethyl perfluorooctane sulfonamid



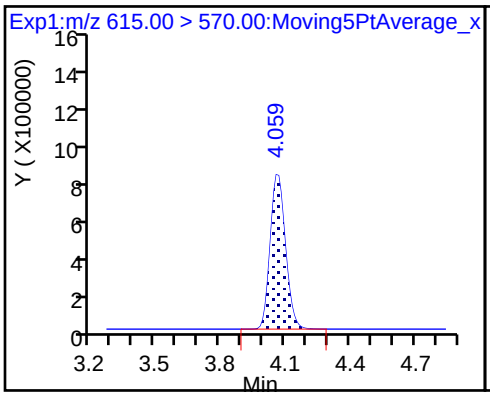
31 Perfluoroundecanoic acid



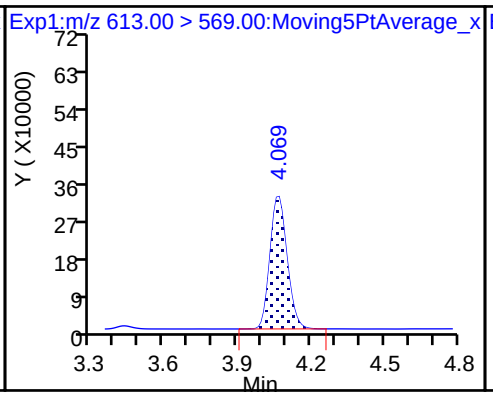
31 Perfluoroundecanoic acid



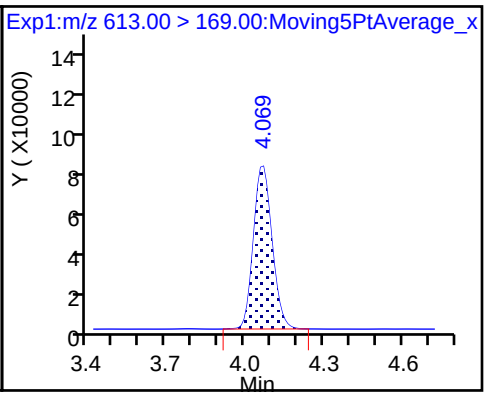
D 36 13C2 PFDoA



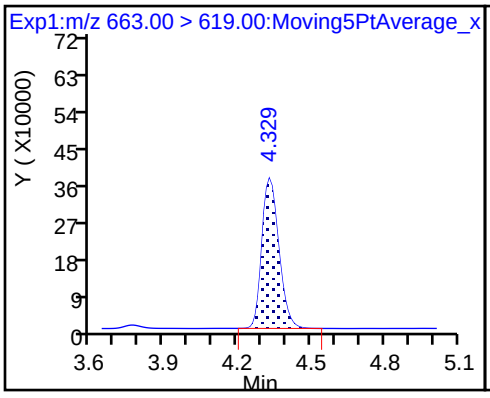
37 Perfluorododecanoic acid



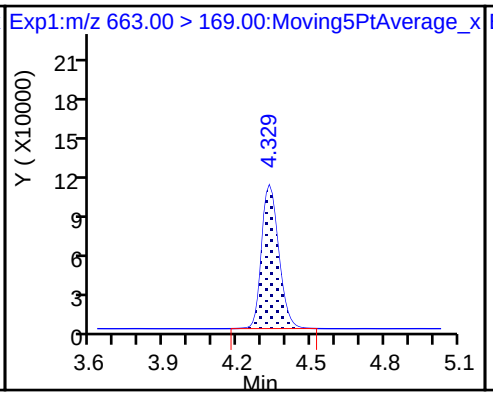
37 Perfluorododecanoic acid



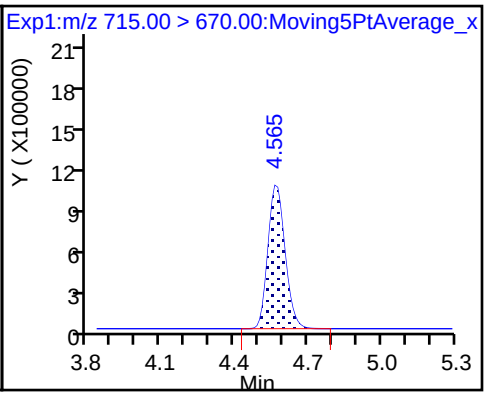
41 Perfluorotridecanoic acid



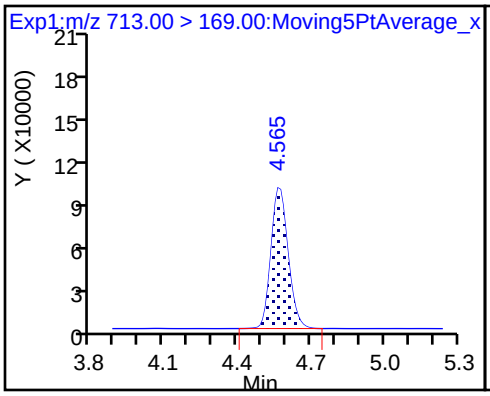
41 Perfluorotridecanoic acid



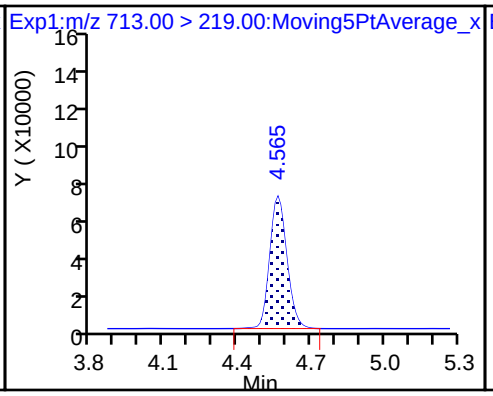
D 43 13C2-PFTeDA



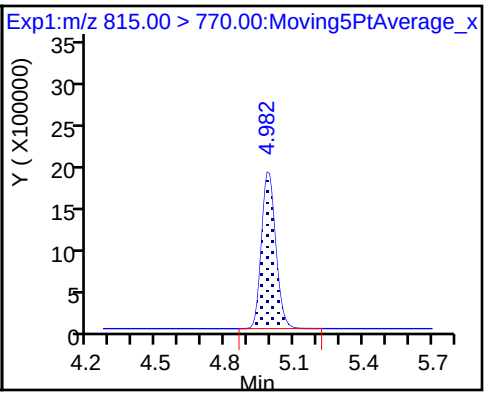
42 Perfluorotetradecanoic acid



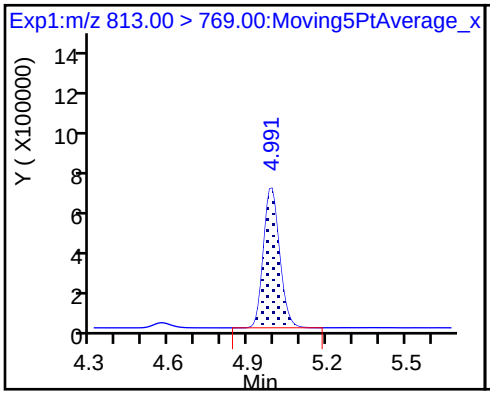
42 Perfluorotetradecanoic acid



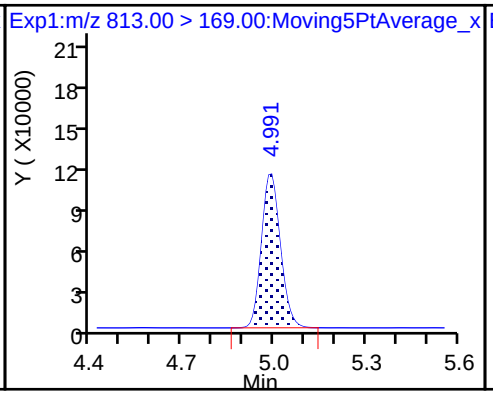
D 44 13C2-PFHxDA



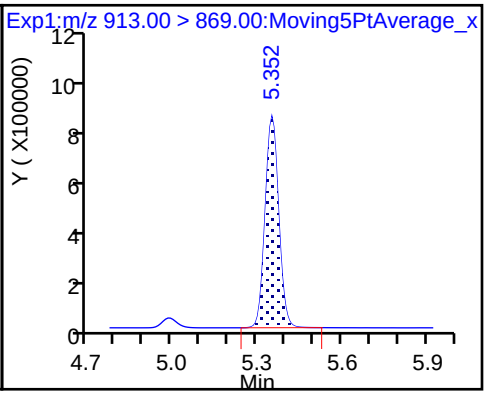
45 Perfluorohexadecanoic acid



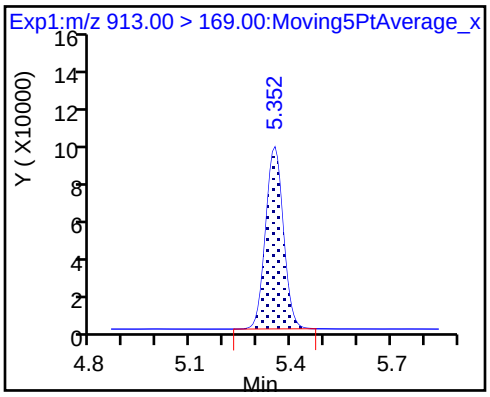
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 21-Mar-2018 18:55:39 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:40 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:24:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.447	-0.001	0.536	6188661	2.33		93.4	78410	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.449	0.003	1.004	5823834	2.50		99.9	2918	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4090438	2.33		93.0	131212	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	4762694	2.58		103	2851	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.743	0.001	0.647	87868	2.19		94.1	734	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.000	6781882	2.31		104	33882	
298.90 > 99.00	1.744	1.745	-0.001	1.000	2805006		2.42(1.25-3.74)	104	17877	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.959	0.007	0.729	609343	2.20		94.1	6498	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	1406742	2.30		98.7	64063	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.741	4600880	2.37		94.6	103804	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	4820853	2.56		102	14937	
313.00 > 119.00	1.997	1.998	-0.001	1.000	437719		11.01(5.03-15.10)	102	11379	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	4537445	2.36		94.6	85099	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.006	5088526	2.71		108	9556	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1858876		2.74(1.13-3.40)	108	18291	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	0.995	5440694	2.15		94.6	25940	
399.00 > 99.00	2.341	2.346	-0.005	0.995	1777291		3.06(1.50-4.49)	94.6	6637	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.873	5368855	2.27		95.9	60715	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.672	0.0	0.991	908164	2.28		96.1	19487	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.672	0.0	1.000	1590173	2.39		101	53321	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.695	0.001	1.000	4742395	2.42		96.6	65924	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.695	0.001		5235561	2.50			73005	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	5003450	2.33		93.4	1574	
413.00 > 169.00	2.696	2.697	-0.001	1.000	2673743		1.87(0.84-2.52)	93.4	6944	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.703	0.001	1.000	5113485	2.40		101	52355	
449.00 > 99.00	2.704	2.703	0.001	1.000	1305904		3.92(1.94-5.82)	101	14612	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.139	3973858	2.31		96.5	34284	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.000	4360129	2.35		101	13023	
499.00 > 99.00	3.072	3.070	0.002	1.000	949206		4.59(2.31-6.93)	101	11305	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4084349	2.36		94.4	91801	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	4311504	2.65		106	5737	
463.00 > 169.00	3.072	3.072	0.0	1.000	1044625		4.13(1.90-5.69)	106	21568	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.396	0.002	1.260	5666432	2.44		97.6	47804	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.397	0.001	1.000	5602803	2.51		100	74799	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.271	1157021	2.15		89.9	32125	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	1588740	2.58		108	39307	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3515629	2.32		92.7	59893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	3690292	2.66		106	13711	
513.00 > 169.00	3.435	3.435	0.0	1.000	621400		5.94(2.36-7.09)	106	1806	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	1848322	2.31		92.6	43598	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.594	0.006	1.003	2049489	2.77		111	10939	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	2934010	2.60		108	55841	
599.00 > 99.00	3.748	3.749	-0.001	1.000	945062		3.10(1.39-4.16)	108	19624	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2051910	2.26		90.2	11879	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	2666750	2.41		96.4	11171	
563.00 > 169.00	3.768	3.768	0.0	1.000	636340		4.19(2.12-6.36)	96.4	22140	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	2079318	2.71		108	23647	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.398	3209638	2.36		94.6	51590	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.066	0.001	1.508	3715622	2.41		96.5	29822	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.068	-0.001	1.000	3845398	2.47		98.9	3613	
613.00 > 169.00	4.067	4.068	-0.001	1.000	845112		4.55(2.13-6.40)	98.9	12526	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	-0.001	1.000	4156865	2.54		102	2825	
663.00 > 169.00	4.329	4.329	-0.001	1.000	1286777		3.23(1.25-3.76)	102	15589	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.568	0.007	1.697	4471429	2.38		95.1	25225	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.004	1.000	1127193	2.54		102	13059	
713.00 > 219.00	4.564	4.571	-0.007	0.998	791381		1.42(0.71-2.13)	102	14928	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.851	7064103	2.29		91.6	18829	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	7013285	2.71		108	2178	
813.00 > 169.00	4.990	4.989	0.001	1.000	1094747		6.41(2.86-8.58)	108	9232	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	6807875	2.61		104	2083	
913.00 > 169.00	5.352	5.354	-0.002	1.000	815201		8.35(3.83-11.48)	104	6311	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_006.d

Injection Date: 21-Mar-2018 18:55:39 Instrument ID: A8_N

Lims ID: IC L5 Full

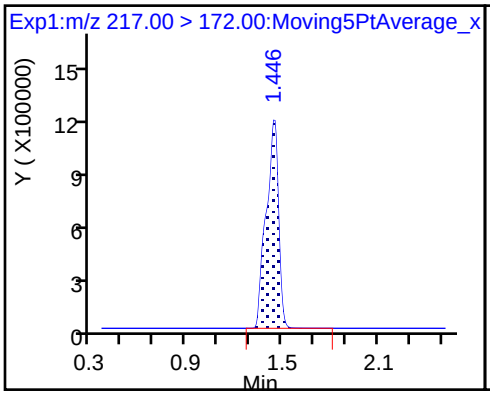
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

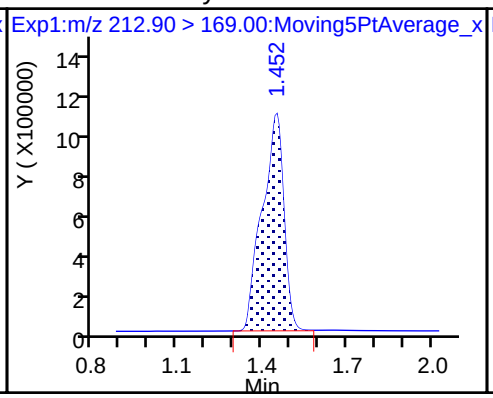
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

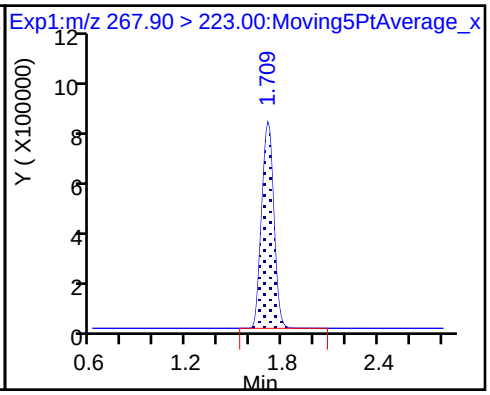
D 1 13C4 PFBA



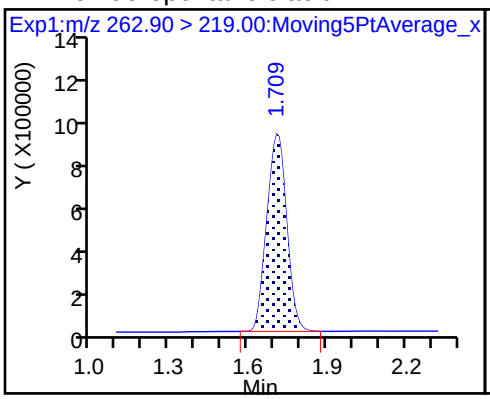
2 Perfluorobutyric acid



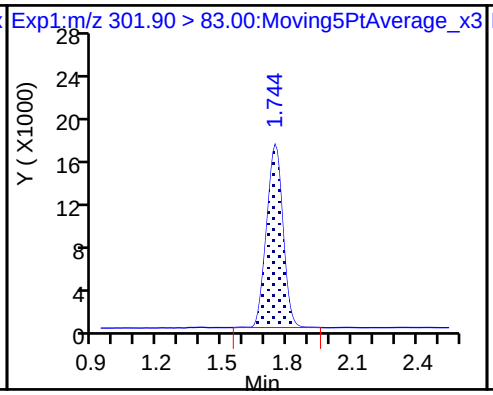
D 3 13C5-PFPeA



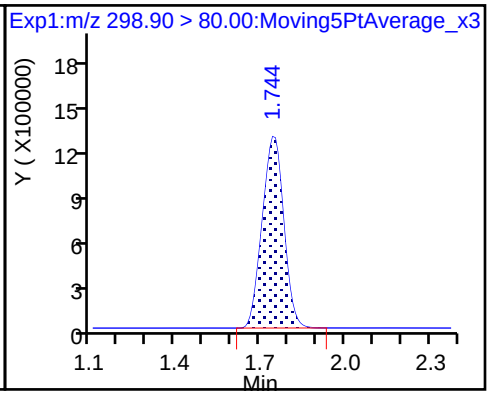
4 Perfluoropentanoic acid



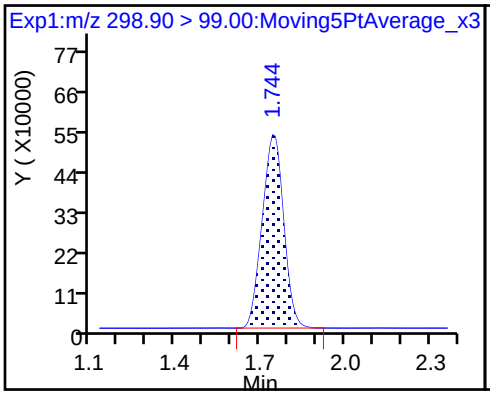
D 47 13C3-PFBS



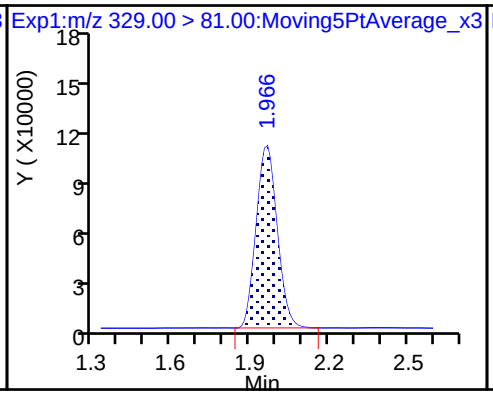
5 Perfluorobutanesulfonic acid



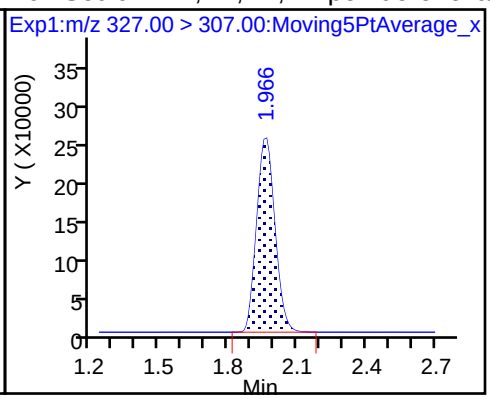
5 Perfluorobutanesulfonic acid



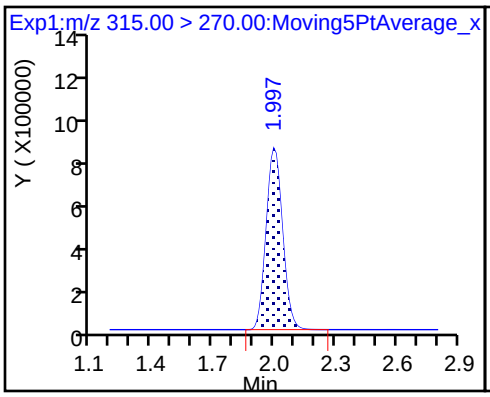
D 60 M2-4:2FTS



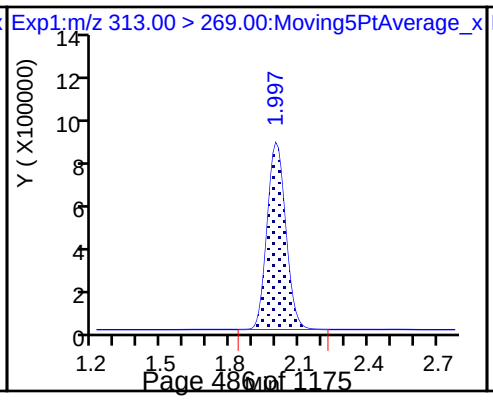
61 Sodium 1H,1H,2H,2H-perfluorohexane



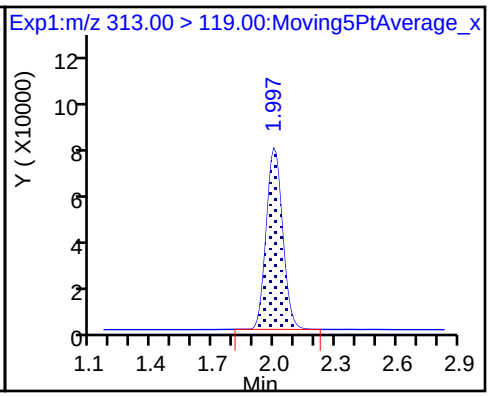
D 7 13C2 PFHxA



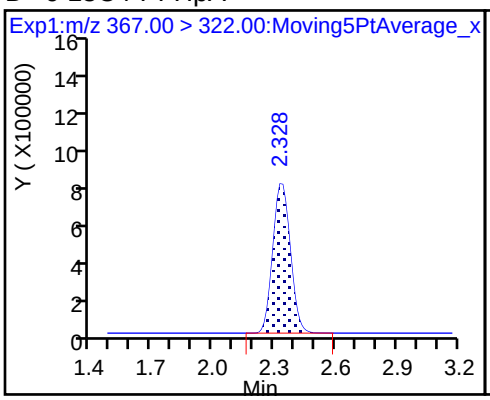
6 Perfluorohexanoic acid



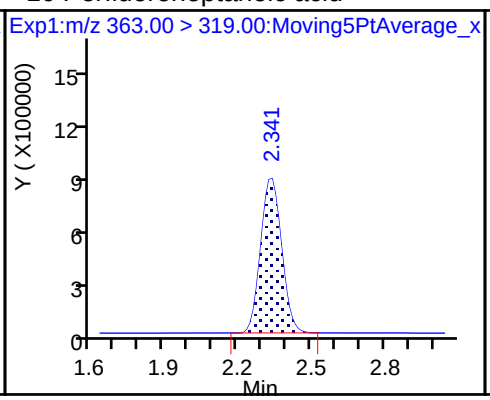
6 Perfluorohexanoic acid



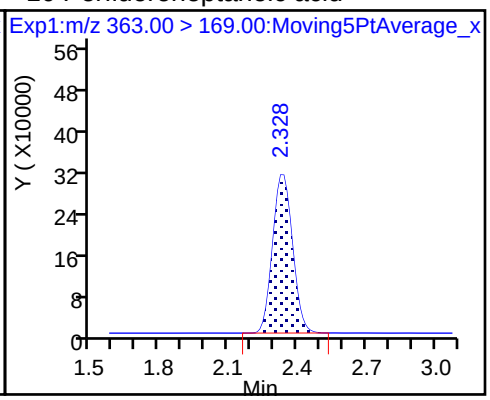
D 9 13C4-PFHpA



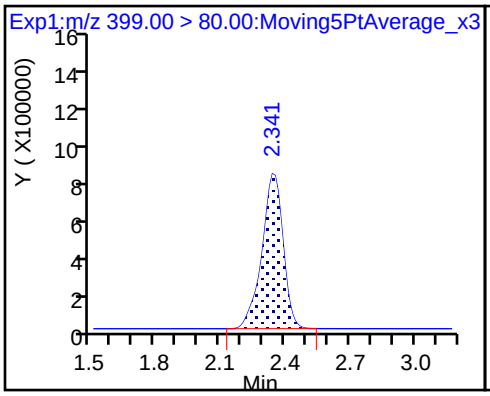
10 Perfluoroheptanoic acid



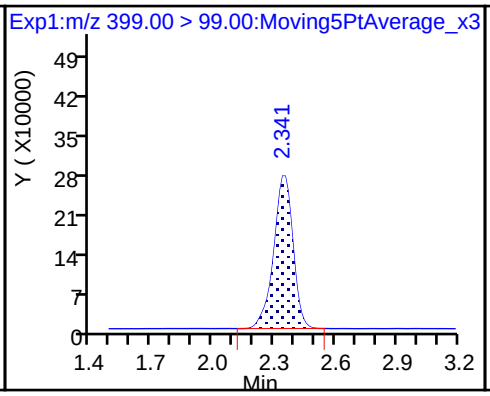
10 Perfluoroheptanoic acid



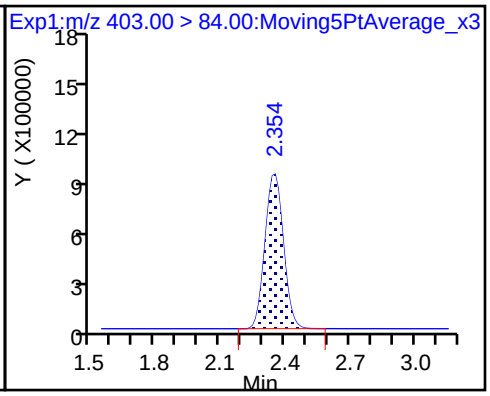
8 Perfluorohexanesulfonic acid



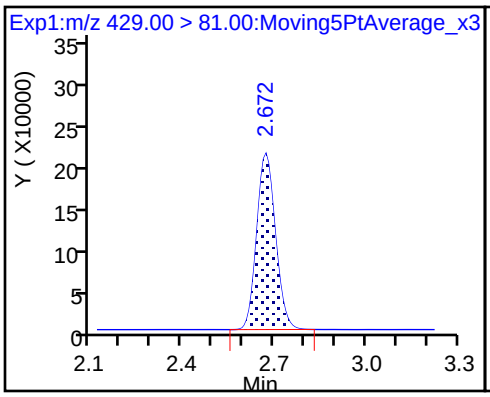
8 Perfluorohexanesulfonic acid



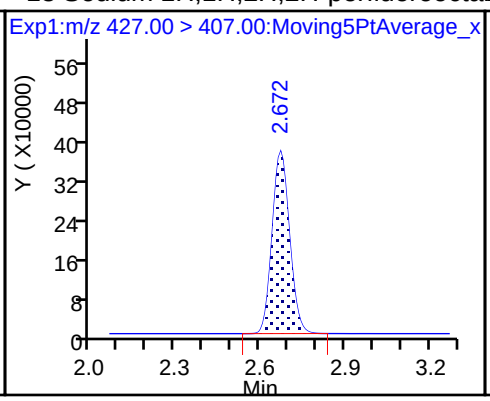
D 11 18O2 PFHxS



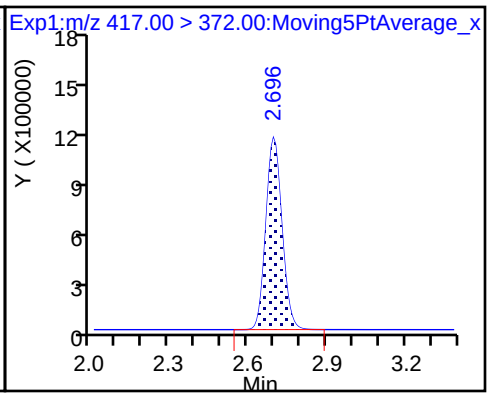
D 12 M2-6:2FTS



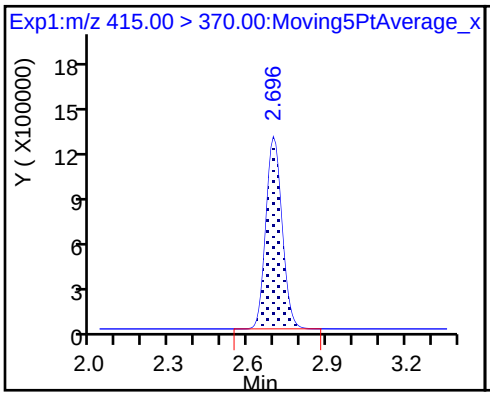
13 Sodium 1H,1H,2H,2H-perfluorooctane



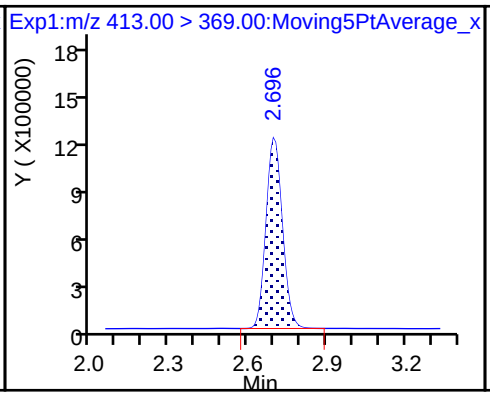
D 14 13C4 PFOA



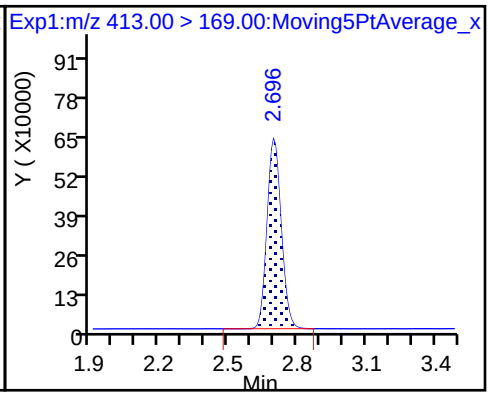
* 62 13C2-PFOA



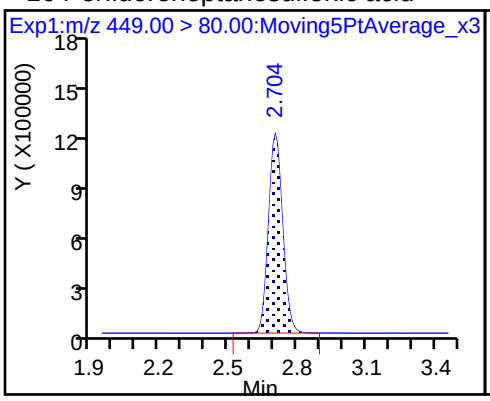
15 Perfluorooctanoic acid



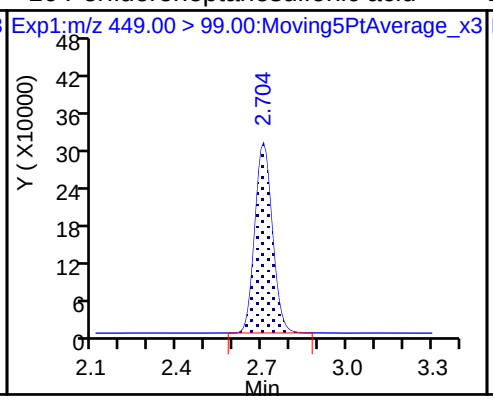
15 Perfluorooctanoic acid



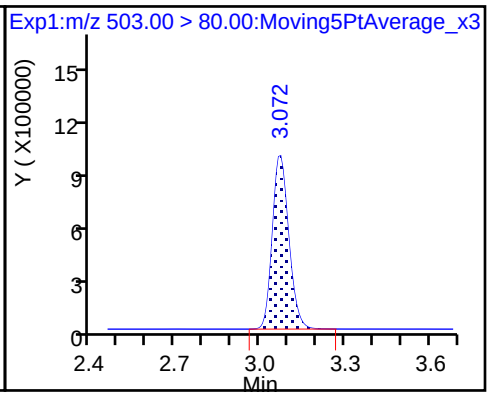
16 Perfluoroheptanesulfonic acid



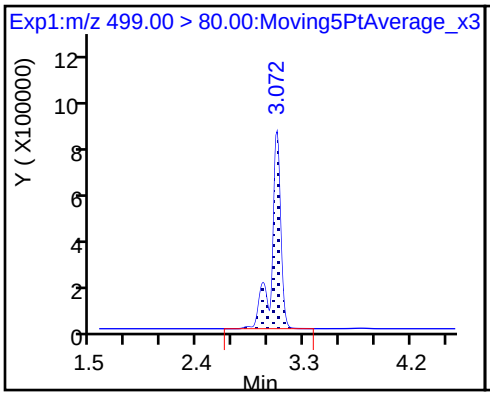
16 Perfluoroheptanesulfonic acid



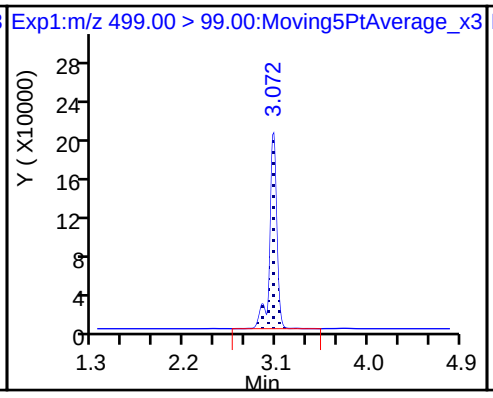
D 18 13C4 PFOS



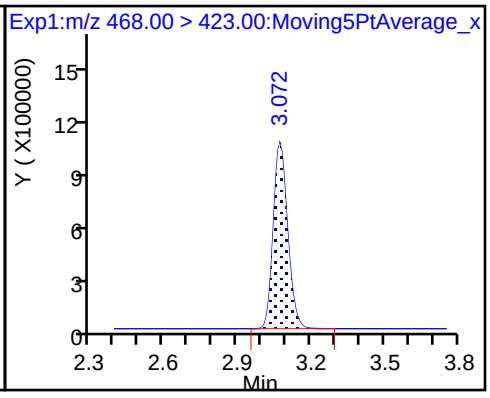
17 Perfluorooctane sulfonic acid



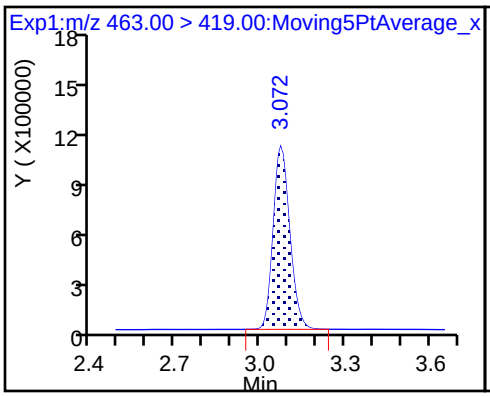
17 Perfluorooctane sulfonic acid



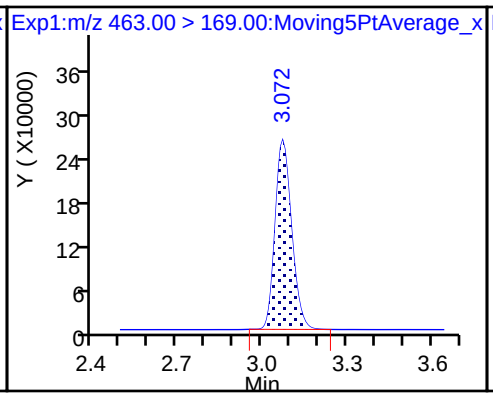
D 19 13C5 PFNA



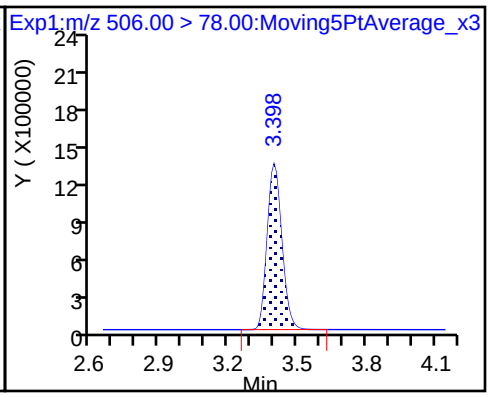
20 Perfluorononanoic acid



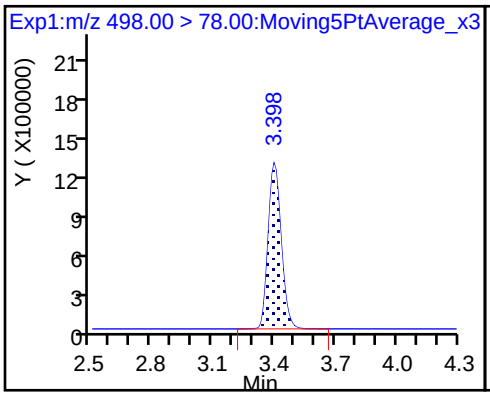
20 Perfluorononanoic acid



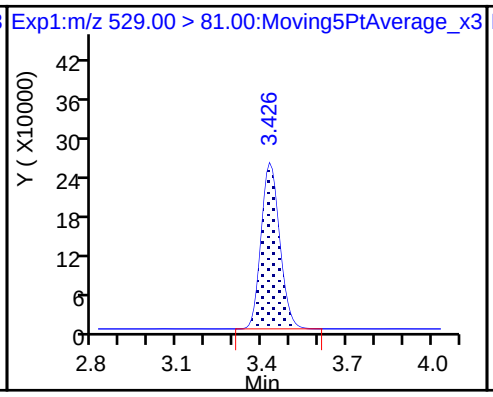
D 21 13C8 FOSA



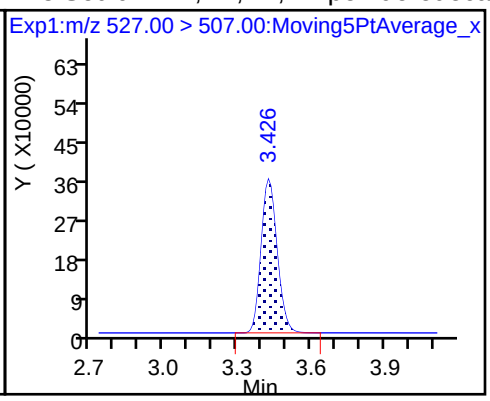
22 Perfluorooctane Sulfonamide



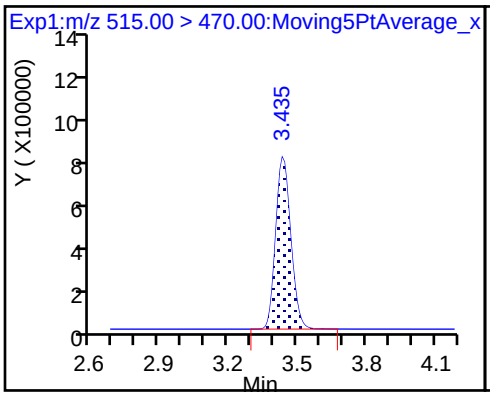
D 26 M2-8:2FTS



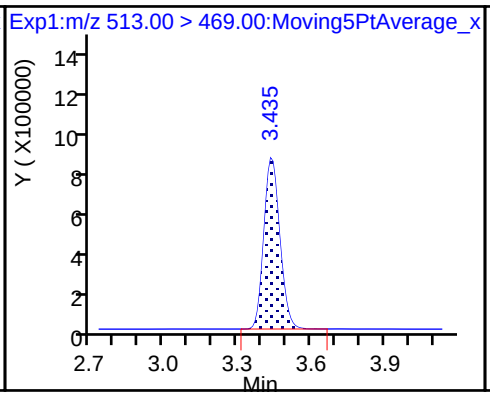
25 Sodium 1H,1H,2H,2H-perfluorodecane



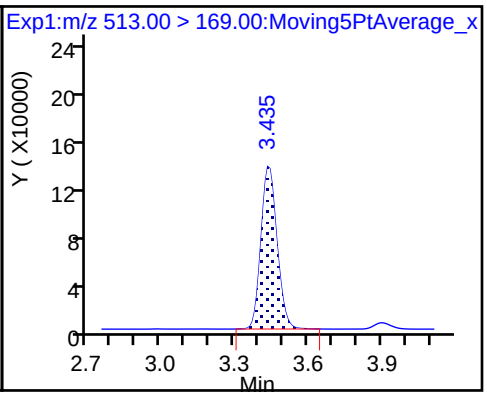
D 23 13C2 PFDA



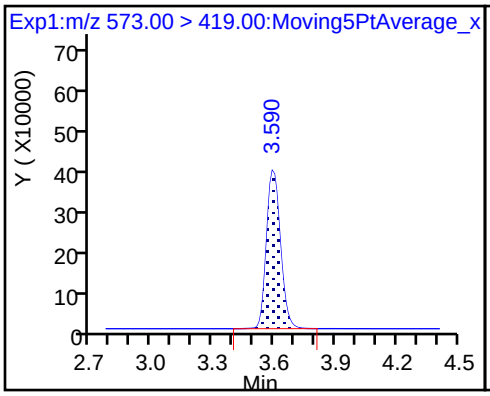
24 Perfluorodecanoic acid



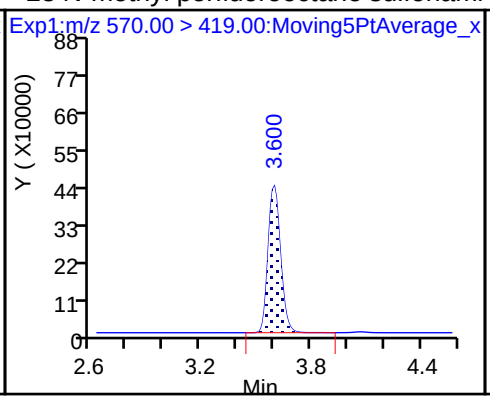
24 Perfluorodecanoic acid



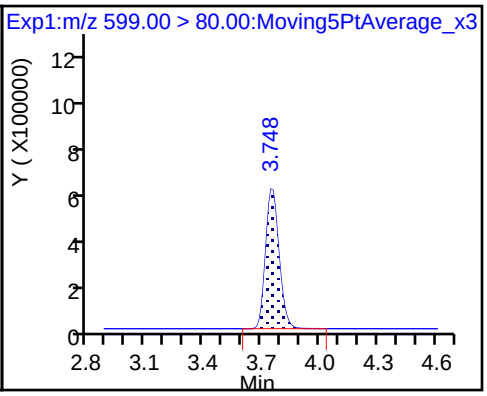
D 27 d3-NMeFOSAA



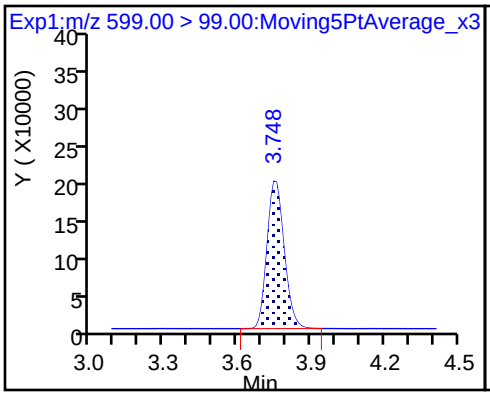
28 N-methyl perfluorooctane sulfonami



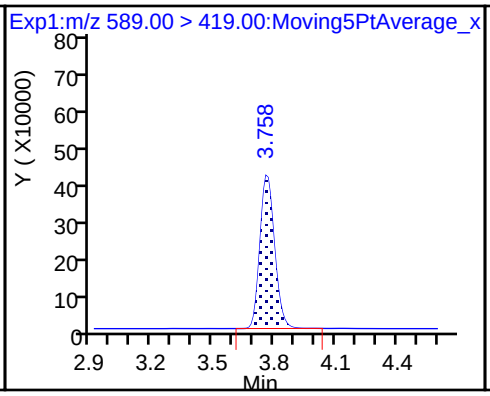
29 Perfluorodecane Sulfonic acid



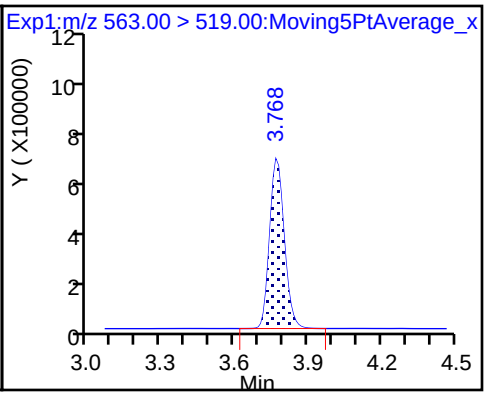
29 Perfluorodecane Sulfonic acid



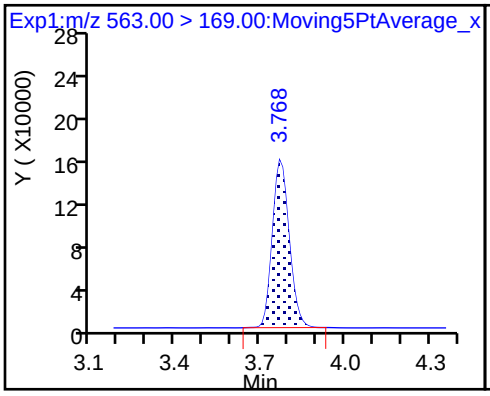
D 32 d5-NEtFOSAA



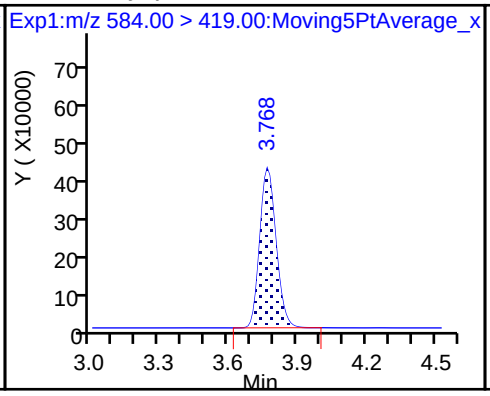
31 Perfluoroundecanoic acid



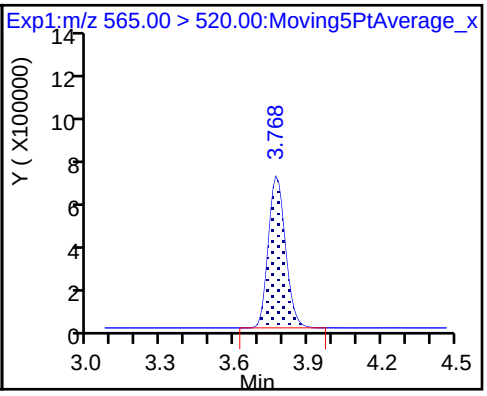
31 Perfluoroundecanoic acid



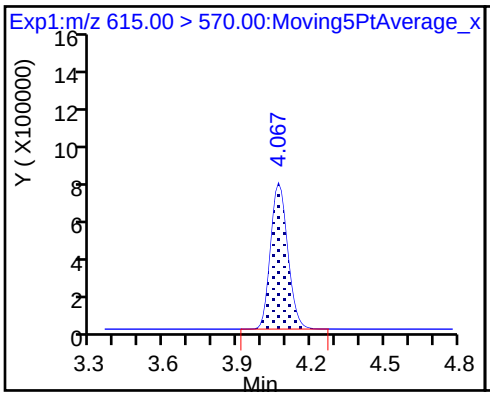
33 N-ethyl perfluorooctane sulfonamid



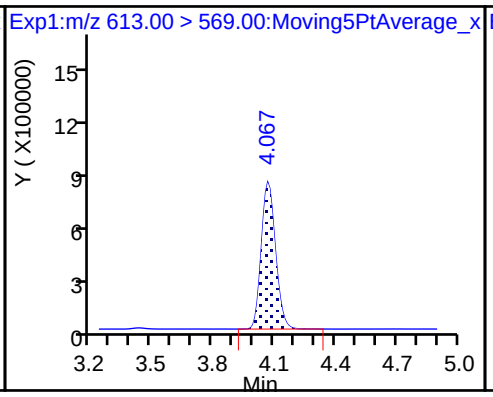
D 30 13C2 PFUnA



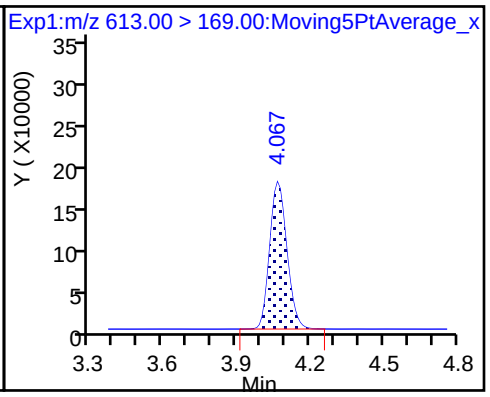
D 36 13C2 PFDoA



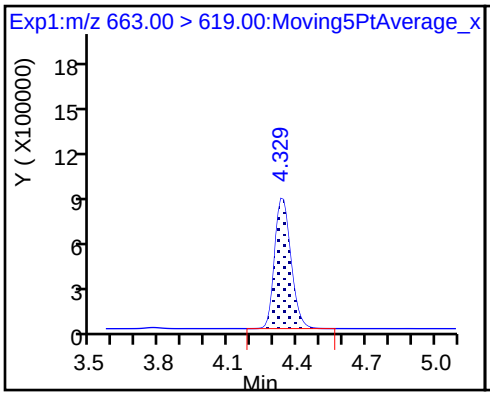
37 Perfluorododecanoic acid



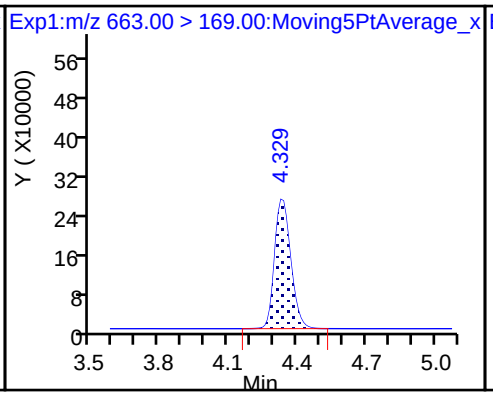
37 Perfluorododecanoic acid



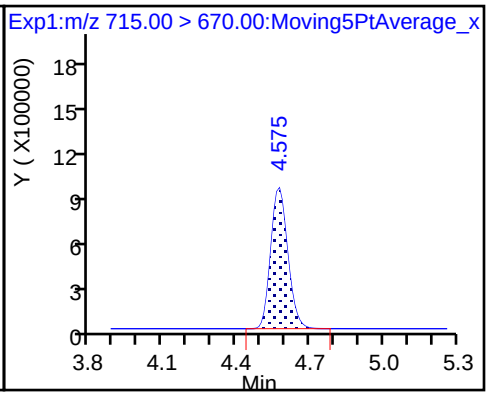
41 Perfluorotridecanoic acid



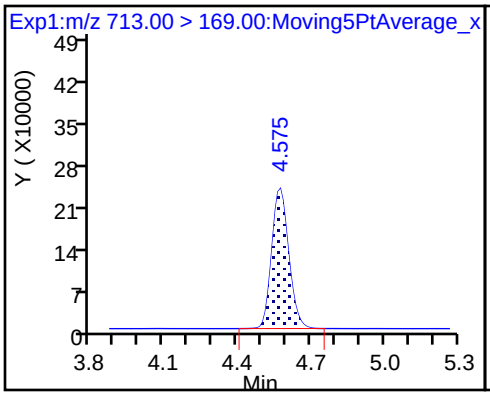
41 Perfluorotridecanoic acid



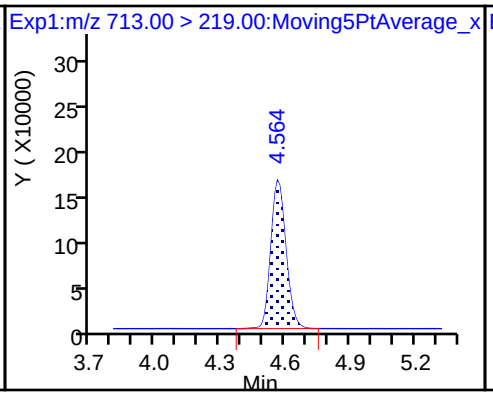
D 43 13C2-PFTeDA



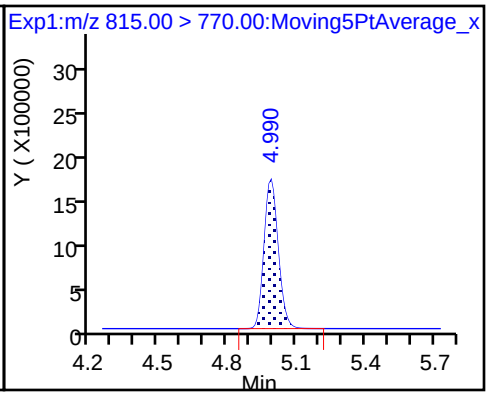
42 Perfluorotetradecanoic acid



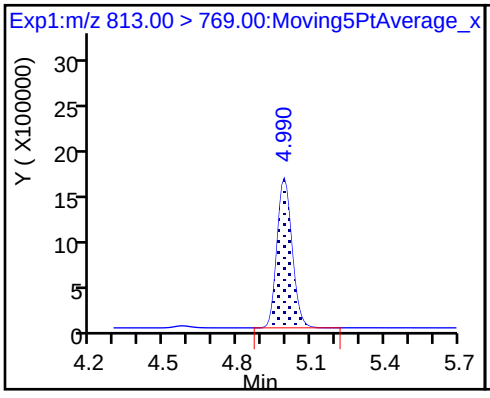
42 Perfluorotetradecanoic acid



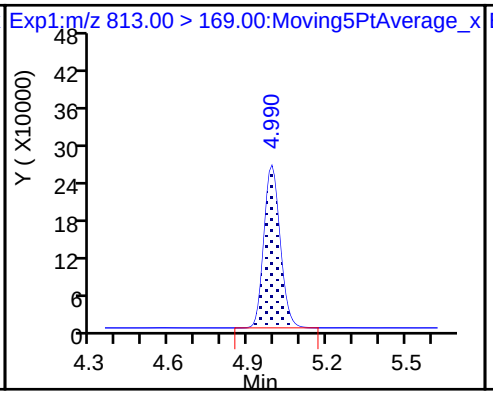
D 44 13C2-PFHxDA



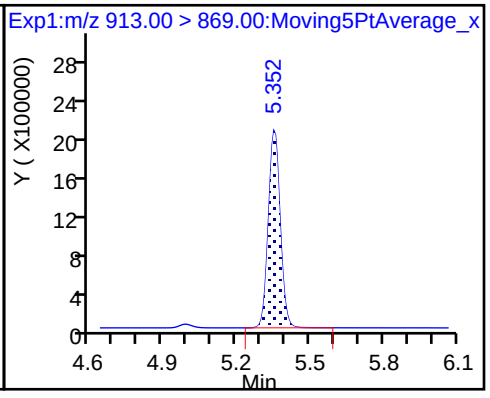
45 Perfluorohexadecanoic acid



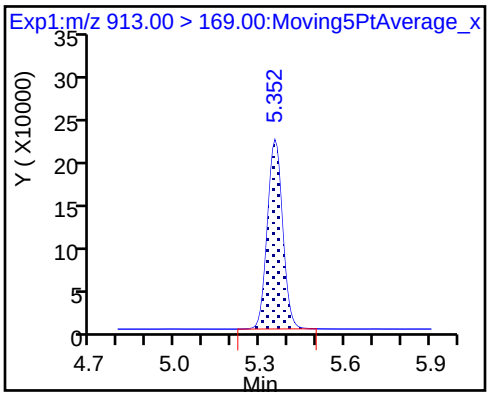
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 21-Mar-2018 19:03:30 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:44 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:25:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.538	6477851	2.55		102	71577	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	12506996	5.12		102	5009	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	10061856	5.28		106	5962	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.636	4228437	2.51		100	115375	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.743	-0.007	0.646	91170	2.37		102	642	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.005	13614957	4.47		101	59974	
298.90 > 99.00	1.744	1.745	-0.001	1.005	5744856		2.37(1.25-3.74)	101	34133	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.727	618185	2.33		99.8	9508	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.962	-0.006	1.000	3074271	4.85		104	113750	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	9699799	5.15		103	27756	
313.00 > 119.00	1.997	1.998	-0.001	1.000	852897		11.37(5.03-15.10)	103	18827	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.743	4608558	2.48		99.0	117004	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.866	4533044	2.47		98.7	76306	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	9620973	5.13		103	19806	
363.00 > 169.00	2.328	2.335	-0.007	1.000	3676177		2.62(1.13-3.40)	103	44226	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	11144344	4.59		101	37424	
399.00 > 99.00	2.341	2.346	-0.005	1.000	3686233		3.02(1.50-4.49)	101	14506	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	5161589	2.28		96.3	51420	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.672	-0.007	1.000	3079977	4.88		103	79193	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.672	-0.007	0.991	859398	2.26		95.0	19868	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.695	-0.006		5010487	2.50			60852	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.695	-0.006	1.000	4582778	2.44		97.6	62576	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.697	-0.008	1.000	10325028	4.99		99.7	3798	
413.00 > 169.00	2.689	2.697	-0.008	1.000	5578097		1.85(0.84-2.52)	99.7	12866	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.703	-0.007	1.000	10247281	4.92		103	95353	
449.00 > 99.00	2.697	2.703	-0.007	1.000	2802979		3.66(1.94-5.82)	103	30967	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.140	3887079	2.36		98.7	34652	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.070	-0.005	1.140	4190429	2.53		101	73908	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.070	-0.005	1.000	8507880	4.70		101	25330	
499.00 > 99.00	3.065	3.070	-0.005	1.000	1865180		4.56(2.31-6.93)	101	16885	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	8405623	5.03		101	11383	
463.00 > 169.00	3.065	3.072	-0.007	1.000	2050780		4.10(1.90-5.69)	101	33608	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.396	-0.007	1.261	5524474	2.49		99.4	47817	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.397	0.001	1.003	11417156	5.24		105	103044	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	3110907	4.74		98.9	52787	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.274	1232595	2.40		100	20905	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	7434177	5.20		104	34723	
513.00 > 169.00	3.435	3.435	0.0	1.000	1267093		5.87(2.36-7.09)	104	25626	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.278	3620699	2.49		99.7	67474	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.335	1999896	2.62		105	32859	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	4285891	5.35		107	16332	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	5812987	5.26		109	81589	
599.00 > 99.00	3.748	3.749	-0.001	1.000	1938375		3.00(1.39-4.16)	109	40850	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.398	2049207	2.35		94.1	11579	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.402	3287781	2.53		101	48915	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	4082815	5.33		107	52088	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	5555779	4.90		98.0	24720	
563.00 > 169.00	3.768	3.768	0.0	1.000	1268479		4.38(2.12-6.36)	98.0	37902	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.066	0.001	1.513	3576857	2.43		97.1	25243	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.068	-0.001	1.000	7940975	5.30		106	7729	
613.00 > 169.00	4.067	4.068	-0.001	1.000	1842955		4.31(2.13-6.40)	106	22214	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	8719608	5.54		111	6299	
663.00 > 169.00	4.329	4.329	0.0	1.000	2643202		3.30(1.25-3.76)	111	25957	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.698	4422729	2.46		98.3	24229	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.571	-0.007	1.000	2258774	5.15		103	23470	
713.00 > 219.00	4.564	4.571	-0.007	1.000	1681977		1.34(0.71-2.13)	103	21838	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.987	-0.006	1.853	7843306	2.66		106	20262	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.989	-0.008	1.000	14354924	5.01		100	4032	
813.00 > 169.00	4.981	4.989	-0.008	1.000	2391479		6.00(2.86-8.58)	100	14747	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	14635504	5.05		101	3845	
913.00 > 169.00	5.345	5.354	-0.009	0.999	1844593		7.93(3.83-11.48)	101	7769	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:45 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_007.d

Injection Date: 21-Mar-2018 19:03:30 Instrument ID: A8_N

Lims ID: IC L6 Full

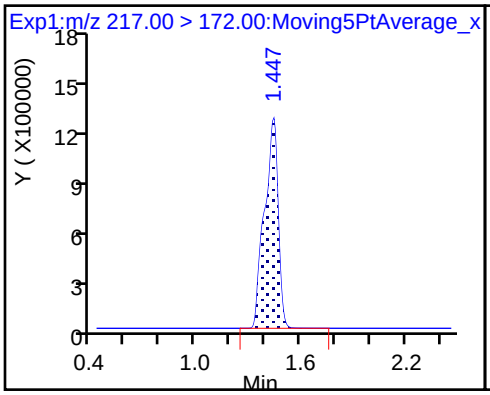
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

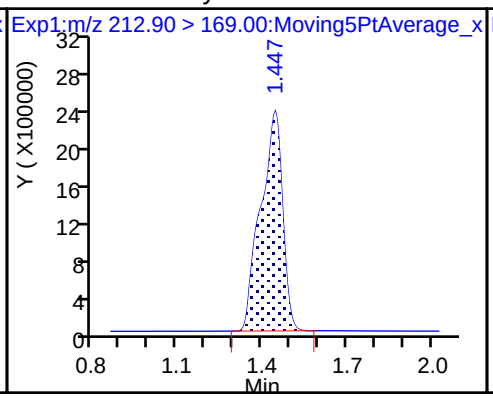
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

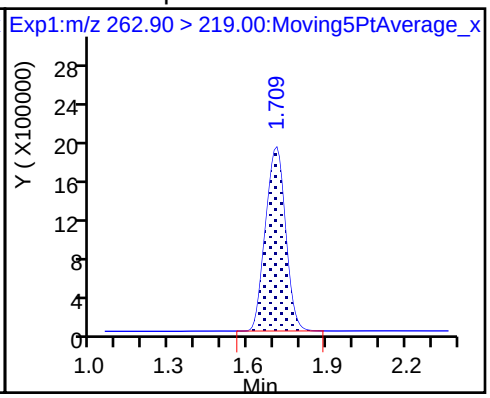
D 1 13C4 PFBA



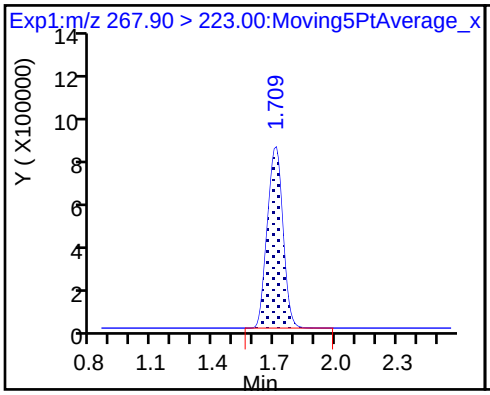
2 Perfluorobutyric acid



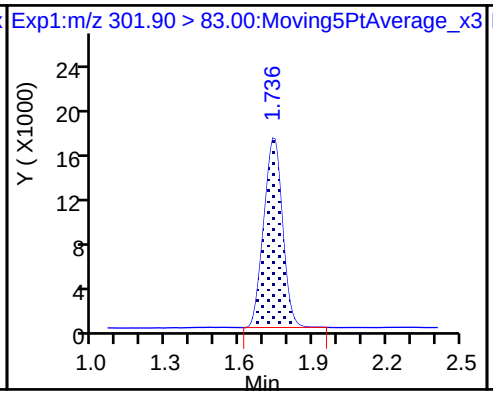
4 Perfluoropentanoic acid



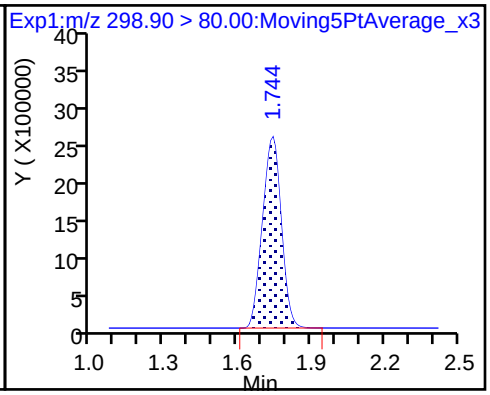
D 3 13C5-PFPeA



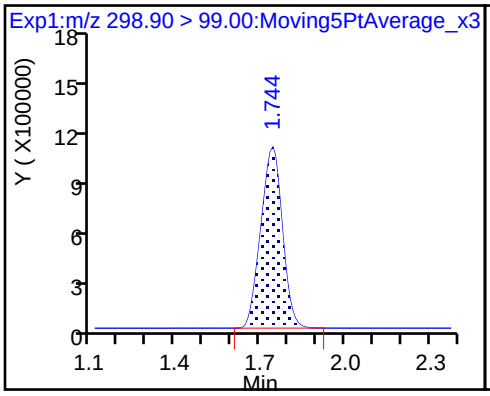
D 47 13C3-PFBS



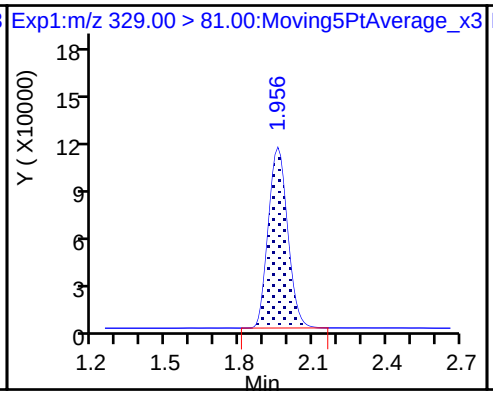
5 Perfluorobutanesulfonic acid



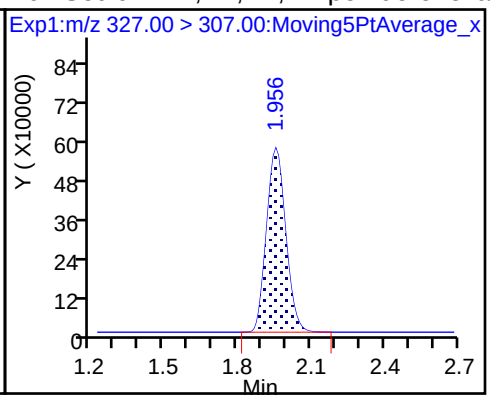
5 Perfluorobutanesulfonic acid



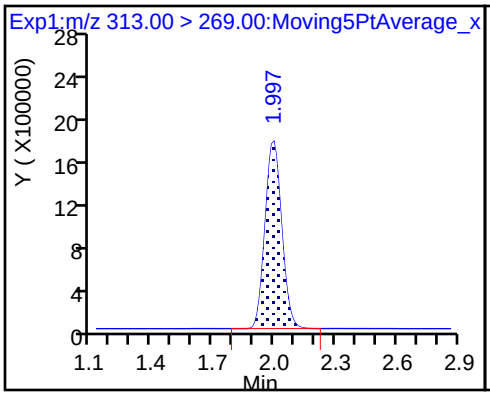
D 60 M2-4:2FTS



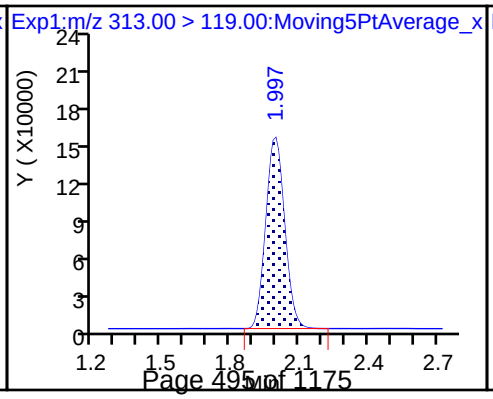
61 Sodium 1H,1H,2H,2H-perfluorohexane



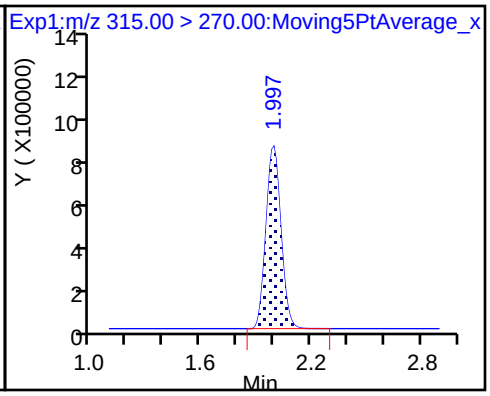
6 Perfluorohexanoic acid



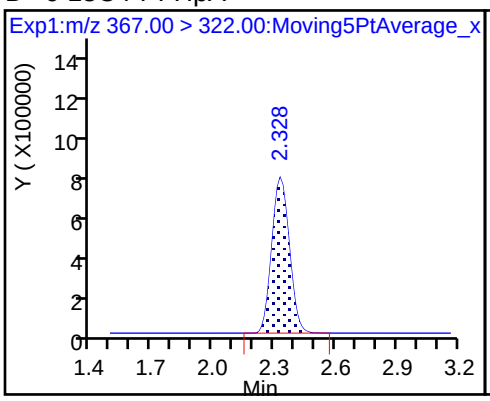
6 Perfluorohexanoic acid



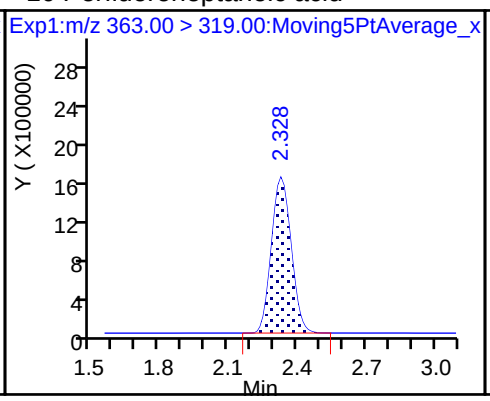
D 7 13C2 PFHxA



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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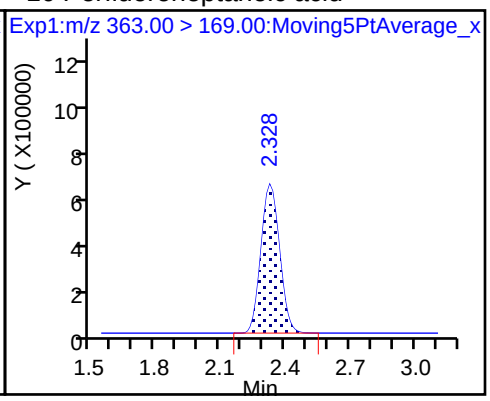
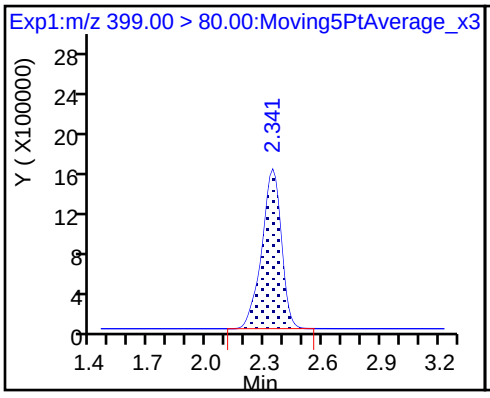


8 Perfluorohexanesulfonic acid



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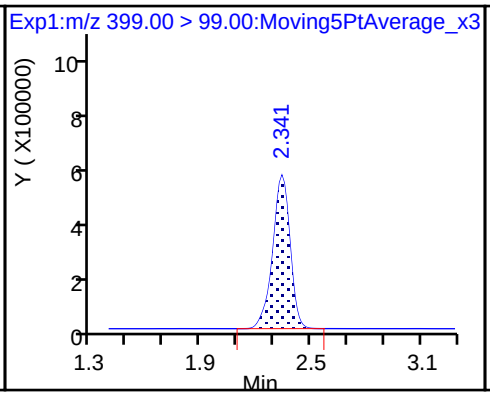
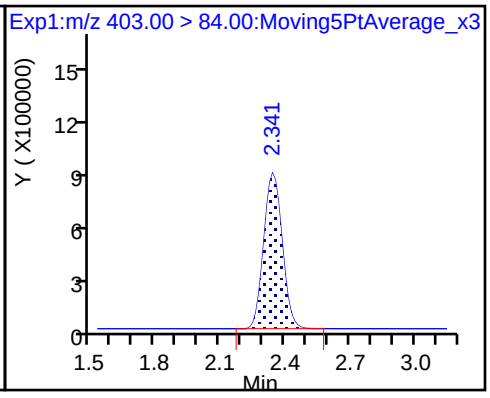
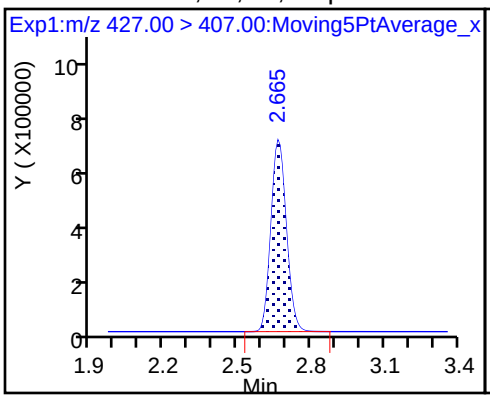


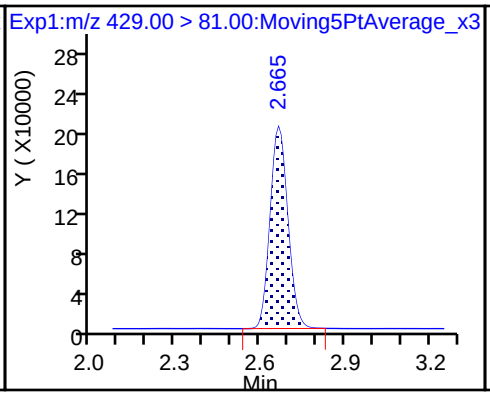
D 11 18O2 PFHxS



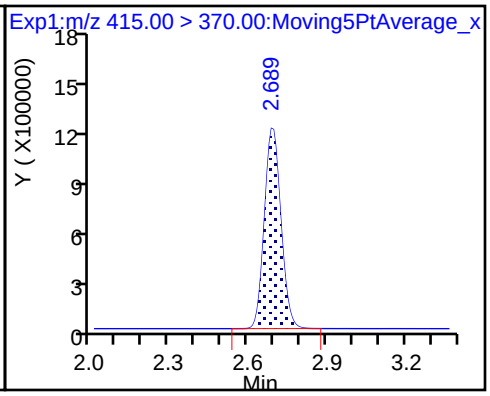
13 Sodium 1H,1H,2H,2H-perfluorooctan



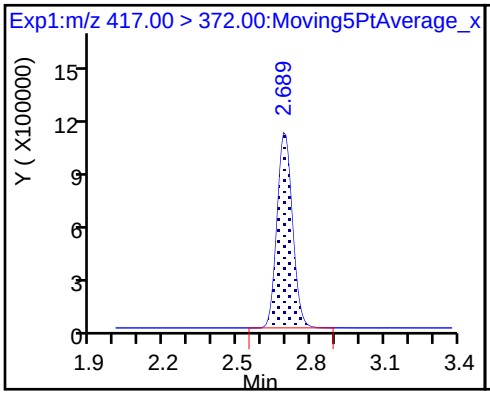
D 12 M2-6:2FTS



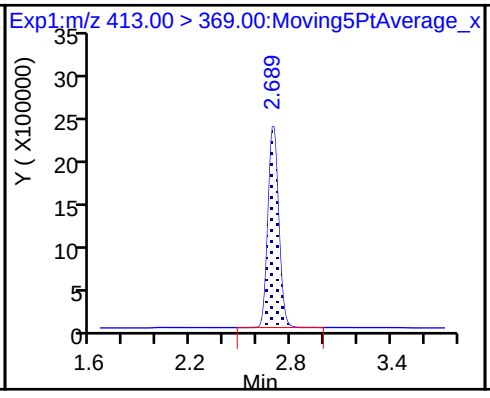
* 62 13C2-PFOA



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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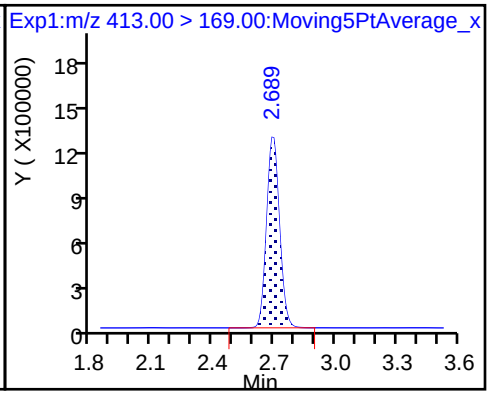
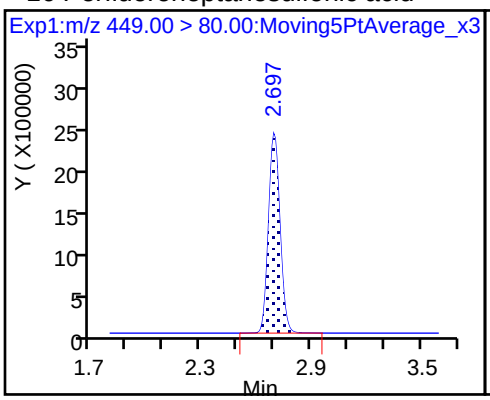
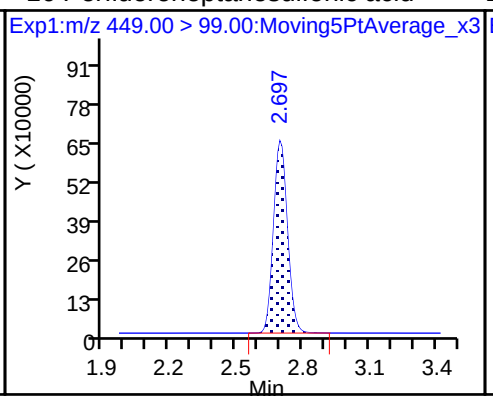


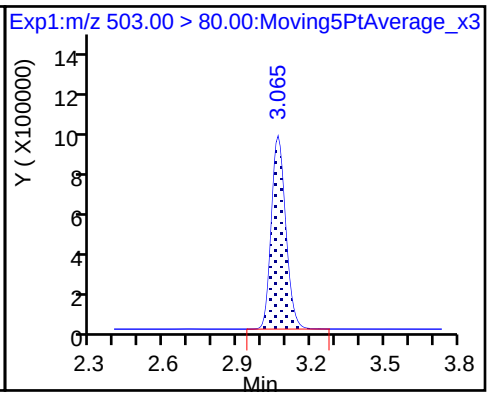
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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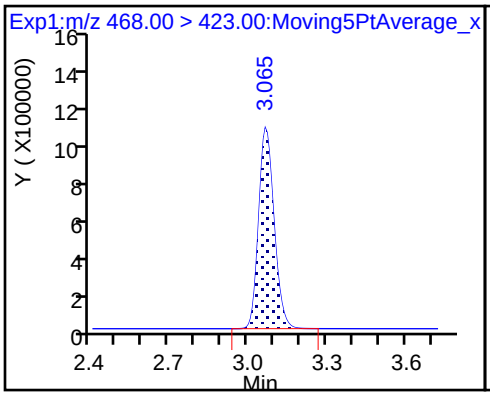
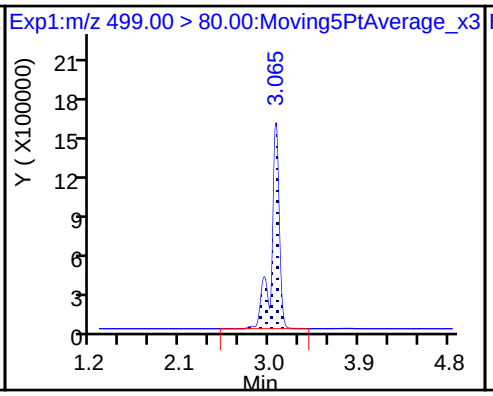
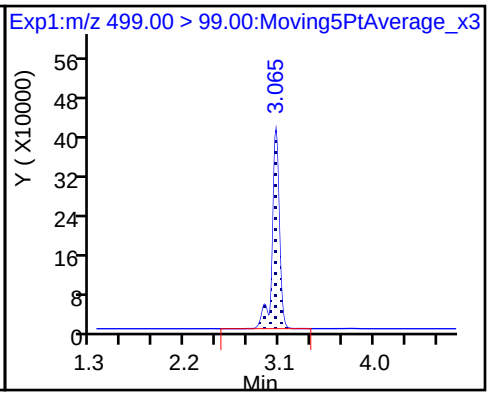


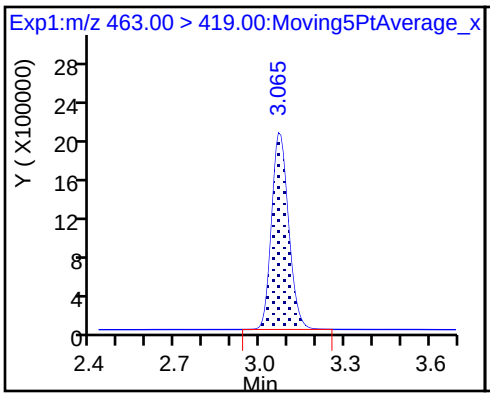
17 Perfluorooctane sulfonic acid



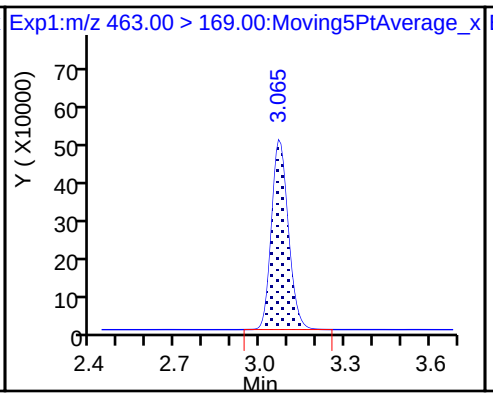
17 Perfluorooctane sulfonic acid



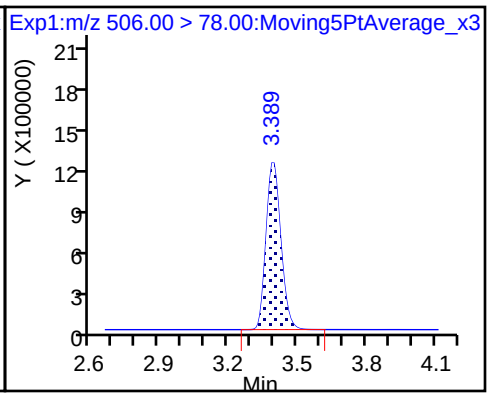
20 Perfluorononanoic acid



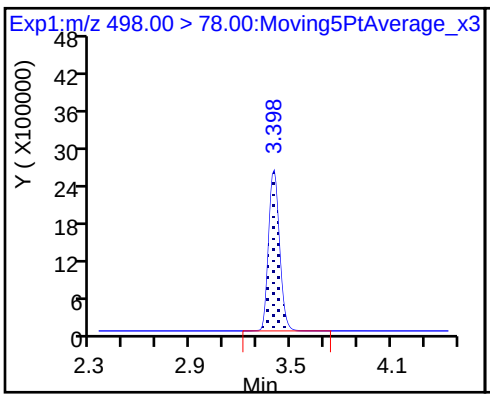
20 Perfluorononanoic acid



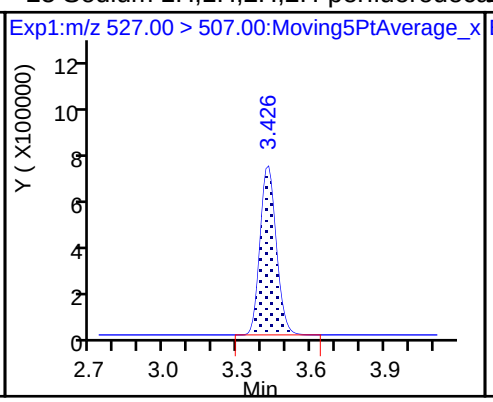
D 21 13C8 FOSA



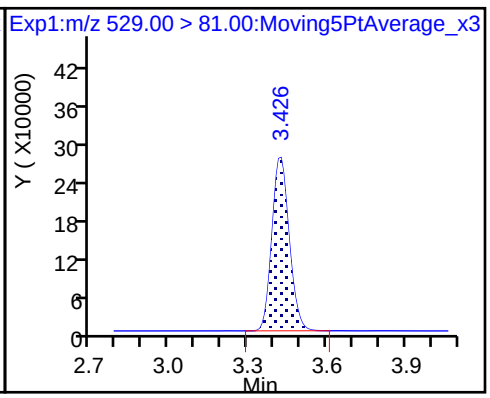
22 Perfluorooctane Sulfonamide



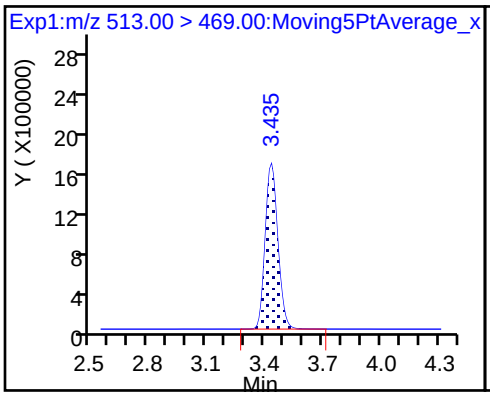
25 Sodium 1H,1H,2H,2H-perfluorodecane



D 26 M2-8:2FTS



24 Perfluorodecanoic acid



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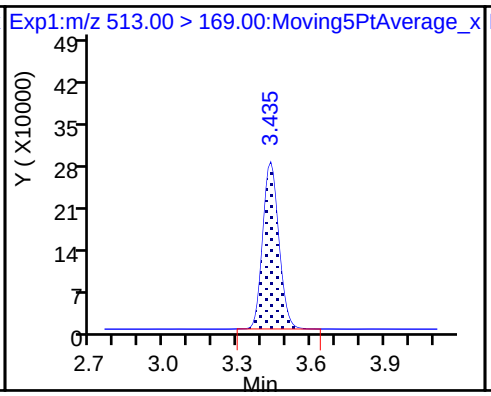
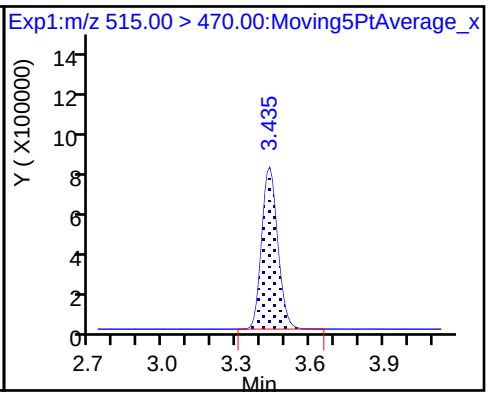
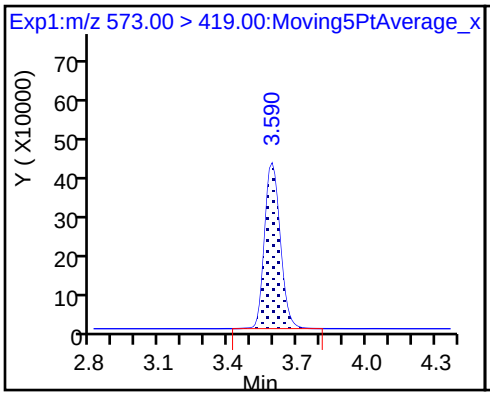


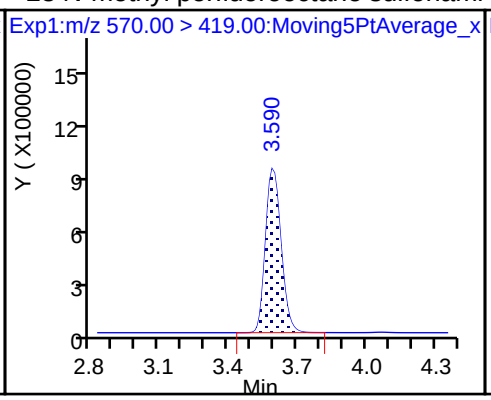
D 23 13C2 PFDA



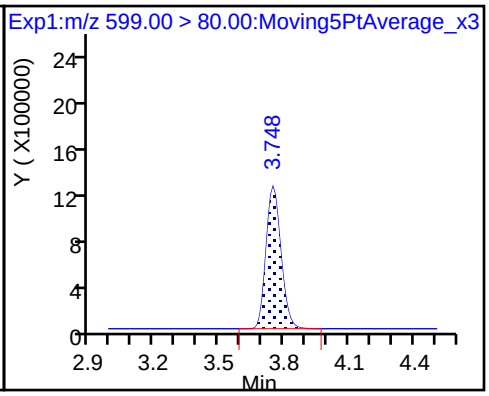
D 27 d3-NMeFOSAA



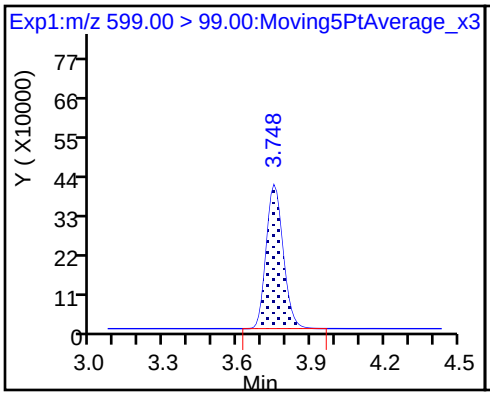
28 N-methyl perfluorooctane sulfonami



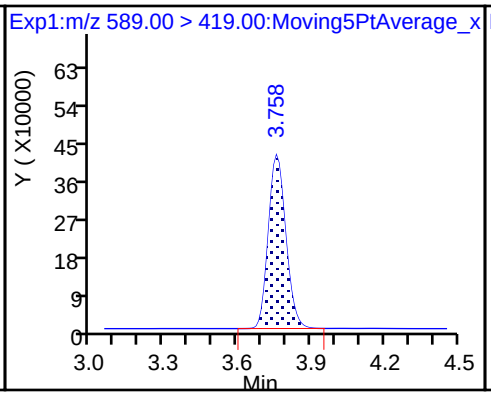
29 Perfluorodecane Sulfonic acid



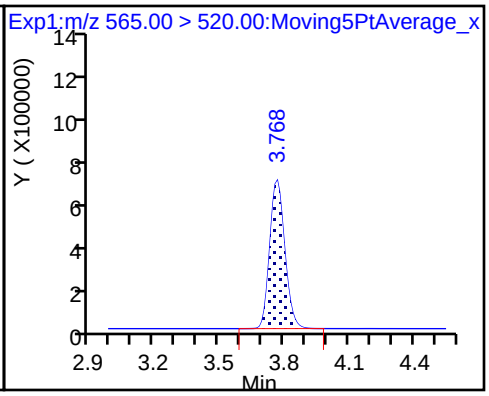
29 Perfluorodecane Sulfonic acid



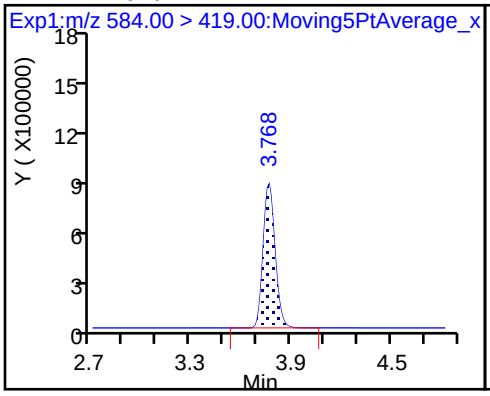
D 32 d5-NEtFOSAA



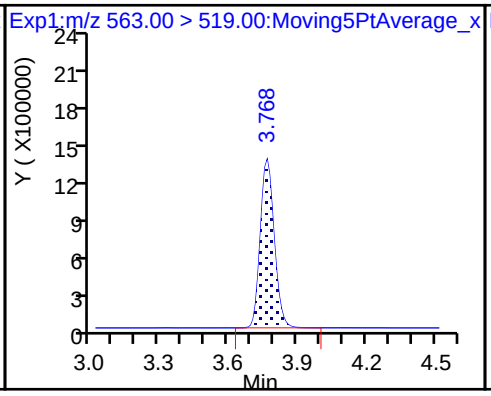
D 30 13C2 PFUnA



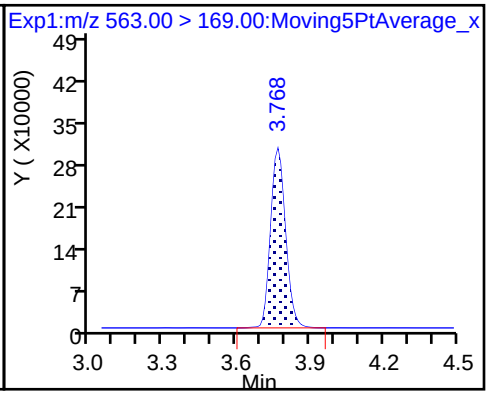
33 N-ethyl perfluorooctane sulfonamid



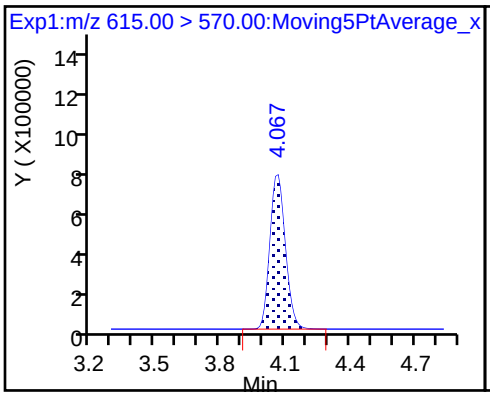
31 Perfluoroundecanoic acid



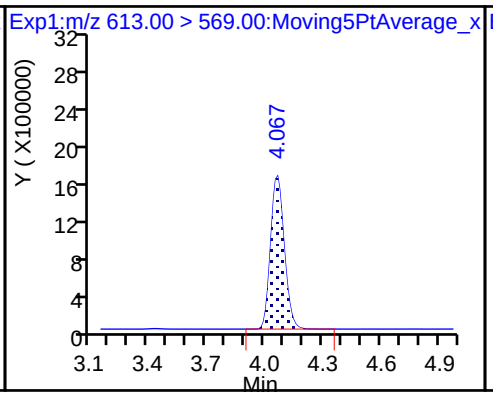
31 Perfluoroundecanoic acid



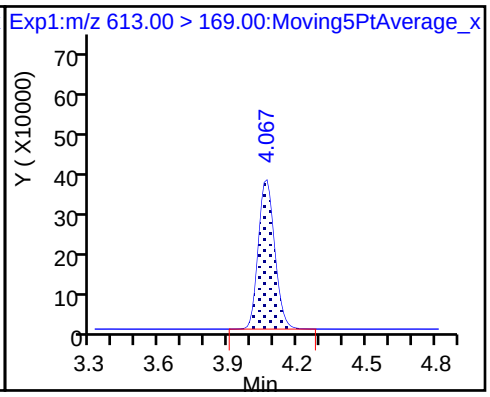
D 36 13C2 PFDoA



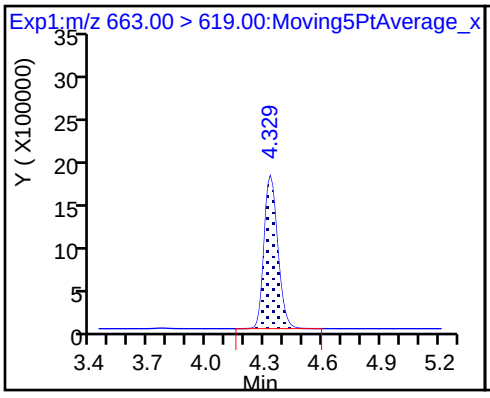
37 Perfluorododecanoic acid



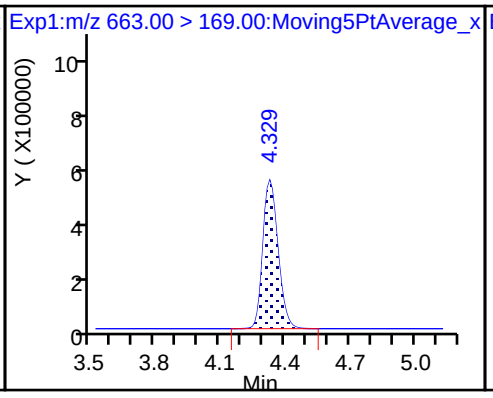
37 Perfluorododecanoic acid



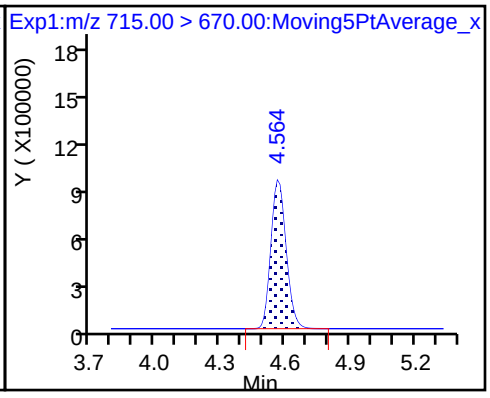
41 Perfluorotridecanoic acid



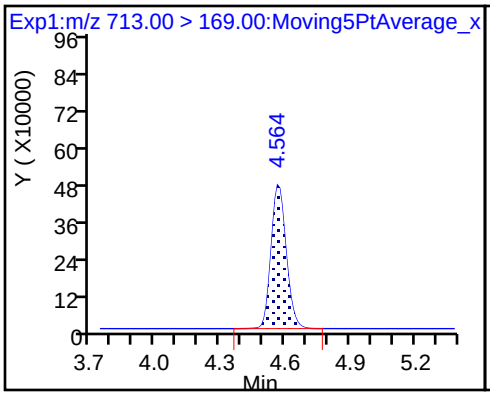
41 Perfluorotridecanoic acid



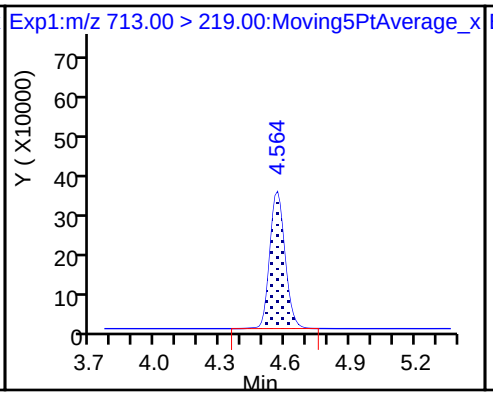
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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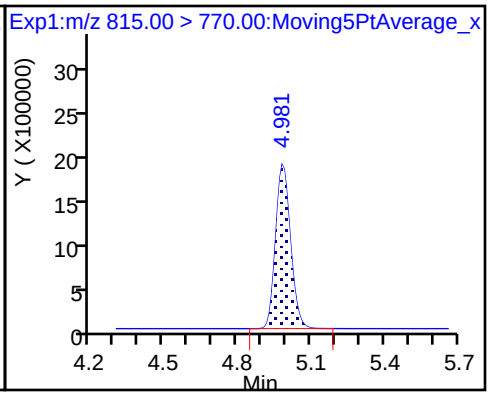
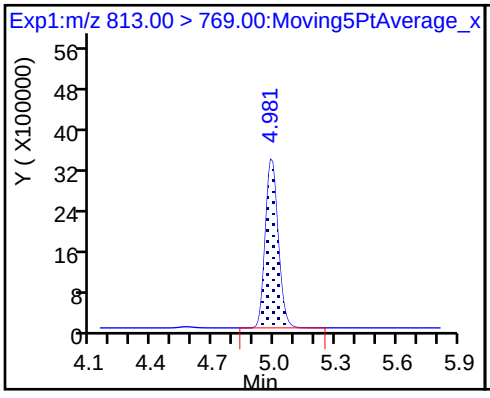
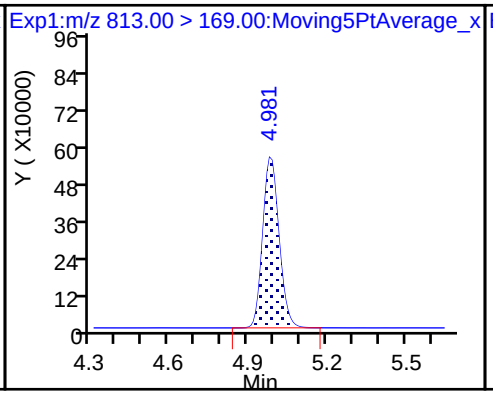


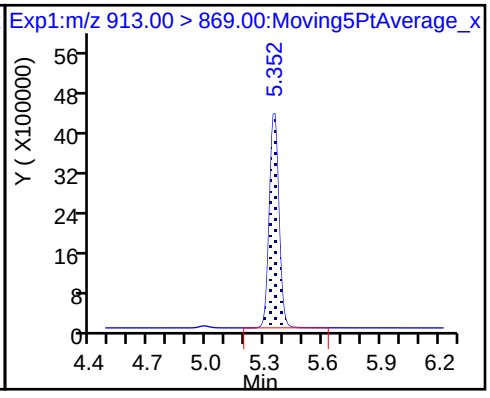
45 Perfluorohexadecanoic acid



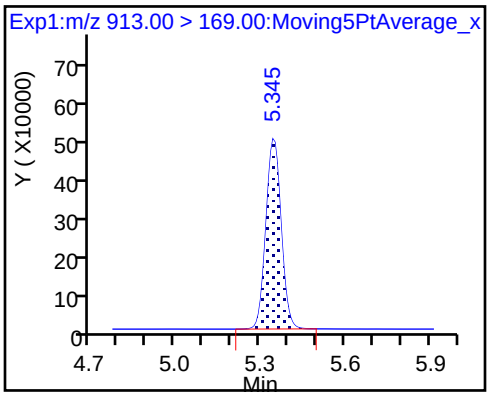
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 21-Mar-2018 19:11:19 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:48 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:26:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.447	-0.003	0.537	6100844	2.65		106	75996	
2 Perfluorobutyric acid										
212.90 > 169.00	1.450	1.449	0.001	1.004	22360079	9.72		97.2	8015	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.710	-0.005	0.634	4046135	2.65		106	97369	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.705	1.710	-0.005	1.000	18500324	10.1		101	10333	
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.743	-0.003	0.647	84106	2.41		104	620	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.745	-0.005	1.000	24100878	8.57		97.0	85607	
298.90 > 99.00	1.740	1.745	-0.005	1.000	10977956		2.20(1.25-3.74)	97.0	60614	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.959	0.001	0.729	533647	2.21		94.8	6419	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.962	-0.002	1.000	5293270	9.06		97.0	195984	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.998	-0.006	0.740	4257747	2.52		101	74703	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.998	-0.006	1.000	17232401	9.90		99.0	44074	
313.00 > 119.00	1.992	1.998	-0.006	1.000	1540944		11.18(5.03-15.10)	99.0	34184	
D 9 13C4-PFHpA										
367.00 > 322.00	2.335	2.333	0.002	0.868	4129064	2.48		99.0	69460	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.335	2.335	0.0	1.000	17149506	10.0		100	30306	
363.00 > 169.00	2.335	2.335	0.0	1.000	6613832		2.59(1.13-3.40)	100	48365	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.348	2.346	0.002	1.000	19742275	8.51		93.5	51185	
399.00 > 99.00	2.348	2.346	0.002	1.000	7022065		2.81(1.50-4.49)	93.5	22400	
D 11 18O2 PFHxS										
403.00 > 84.00	2.348	2.348	0.0	0.873	4928998	2.40		101	64840	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.672	-0.005	0.991	845912	2.45		103	18074	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.672	-0.005	1.000	5982174	9.63		102	108087	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.695	-0.004	1.000	4169807	2.44		97.7	59737	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.695	-0.004		4550962	2.50			65302	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.697	-0.006	1.000	18212815	9.67		96.7	5500	
413.00 > 169.00	2.691	2.697	-0.006	1.000	10080594		1.81(0.84-2.52)	96.7	18247	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.703	-0.004	1.000	17826274	9.17		96.3	103505	
449.00 > 99.00	2.699	2.703	-0.004	1.000	4999808		3.57(1.94-5.82)	96.3	34087	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.068	-0.001	1.140	3625826	2.42		101	21910	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.067	3.070	-0.003	1.000	15932478	9.43		102	19647	M
499.00 > 99.00	3.067	3.070	-0.003	1.000	3468678		4.59(2.31-6.93)	102	82323	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.070	-0.003	1.140	3729104	2.48		99.1	64949	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.072	-0.005	1.000	15598692	10.5		105	18229	
463.00 > 169.00	3.067	3.072	-0.005	1.000	3729122		4.18(1.90-5.69)	105	50397	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.396	-0.004	1.261	4957065	2.46		98.2	34240	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.397	-0.005	1.000	18741888	9.59		95.9	103813	
D 26 M2-8:2FTS										
529.00 > 81.00	3.420	3.426	-0.006	1.271	1040808	2.23		93.1	16509	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.420	3.426	-0.006	1.000	5541846	10.0		104	80664	
D 23 13C2 PFDA										
515.00 > 470.00	3.429	3.435	-0.006	1.274	3248595	2.46		98.5	64981	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.429	3.435	-0.006	1.000	12786299	9.96		99.6	52903	
513.00 > 169.00	3.429	3.435	-0.006	1.000	2320539		5.51(2.36-7.09)	99.6	85814	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.591	-0.007	1.332	1816501	2.62		105	27279	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.595	3.594	0.001	1.003	7642171	10.5		105	37247	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.744	3.749	-0.005	1.000	10545265	10.2		106	168906	
599.00 > 99.00	3.744	3.749	-0.005	1.000	3537256		2.98(1.39-4.16)	106	56975	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.754	3.759	-0.005	1.395	1842170	2.33		93.2	10683	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.764	3.768	-0.004	1.000	10065814	10.5		105	36194	
563.00 > 169.00	3.764	3.768	-0.004	1.000	2312836		4.35(2.12-6.36)	105	50289	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.764	3.768	-0.004	1.003	6938724	10.1		101	87182	
D 30 13C2 PFUnA										
565.00 > 520.00	3.764	3.768	-0.004	1.399	2787354	2.36		94.5	52309	
D 36 13C2 PFDoA										
615.00 > 570.00	4.063	4.066	-0.003	1.510	3528118	2.64		105	29032	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.063	4.068	-0.005	1.000	14548343	9.85		98.5	12448	
613.00 > 169.00	4.063	4.068	-0.005	1.000	3568672		4.08(2.13-6.40)	98.5	36734	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.325	4.329	-0.004	1.000	14795343	9.52		95.2	10222	
663.00 > 169.00	4.325	4.329	-0.004	1.000	4868530		3.04(1.25-3.76)	95.2	33458	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.568	-0.007	1.695	4321269	2.64		106	28163	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.571	-0.010	1.000	4319552	10.1		101	40804	
713.00 > 219.00	4.561	4.571	-0.010	1.000	3132710		1.38(0.71-2.13)	101	38066	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.978	4.987	-0.009	1.850	6875940	2.56		103	18896	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.987	4.989	-0.002	1.002	23776796	9.49		94.9	6474	
813.00 > 169.00	4.978	4.989	-0.011	1.000	4555370		5.22(2.86-8.58)	94.9	19192	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.349	5.354	-0.005	1.000	24460507	9.62		96.2	5275	
913.00 > 169.00	5.342	5.354	-0.012	0.999	3189601		7.67(3.83-11.48)	96.2	10811	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:49 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Injection Date: 21-Mar-2018 19:11:19 Instrument ID: A8_N

Lims ID: IC L7 Full

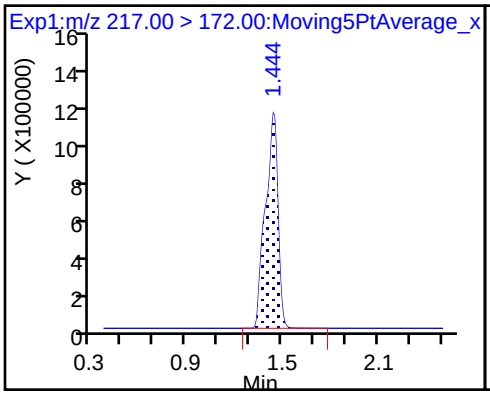
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

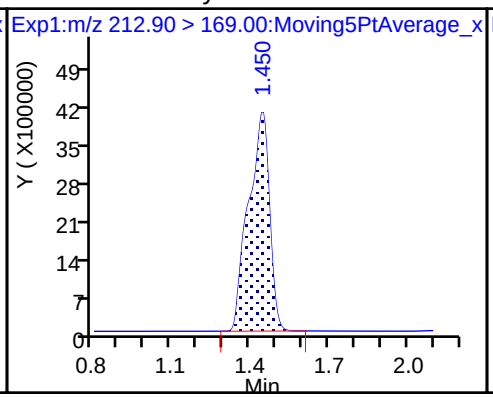
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

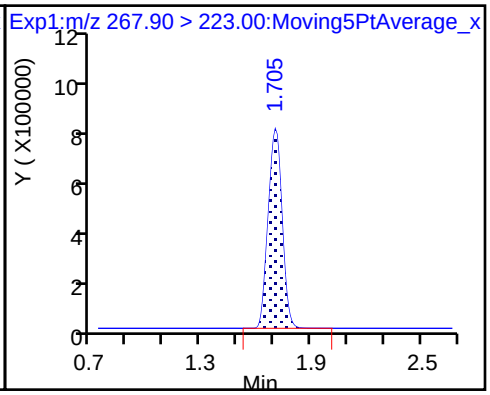
D 1 13C4 PFBA



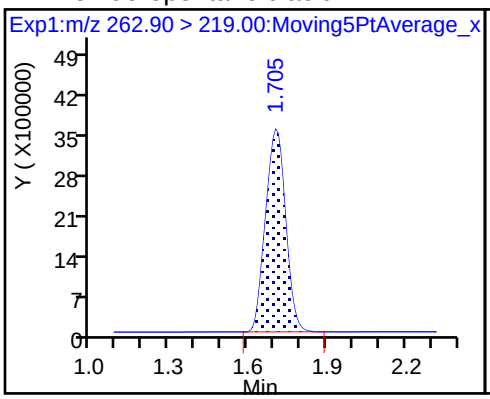
2 Perfluorobutyric acid



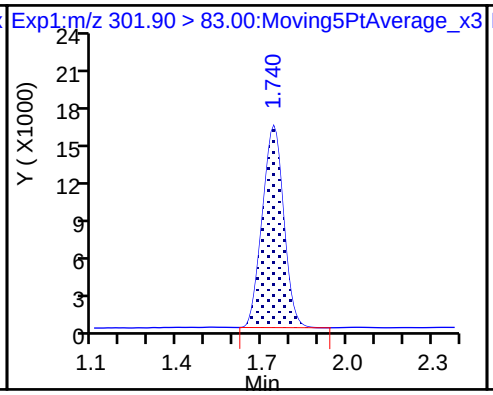
D 3 13C5-PFPeA



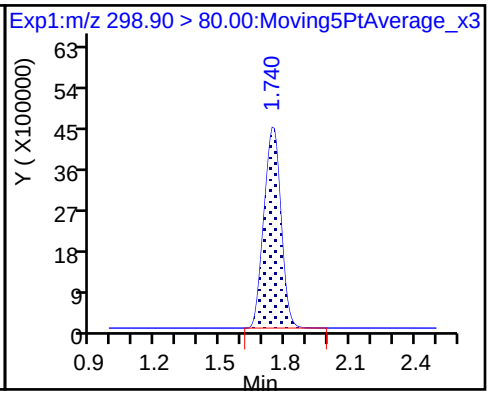
4 Perfluoropentanoic acid



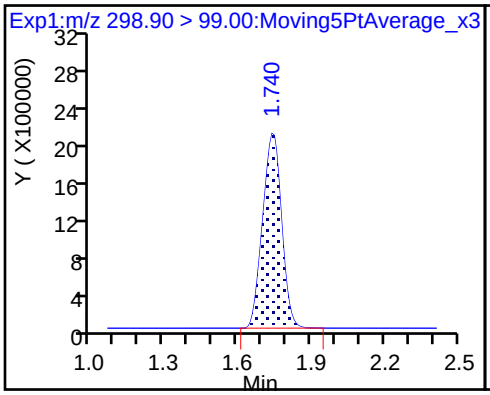
D 47 13C3-PFBS



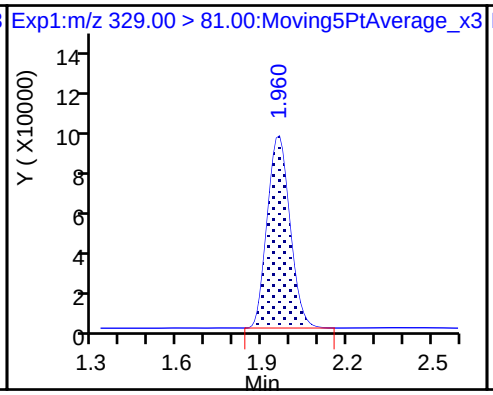
5 Perfluorobutanesulfonic acid



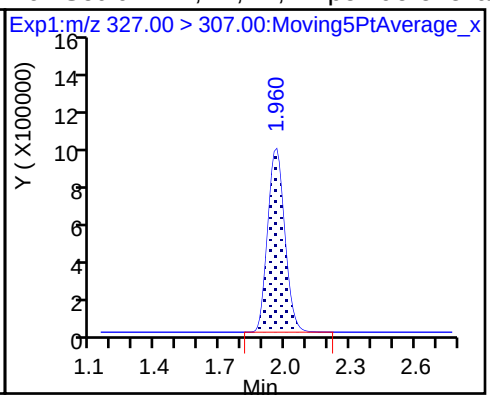
5 Perfluorobutanesulfonic acid



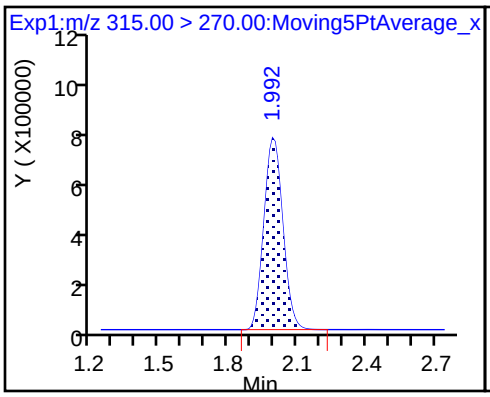
D 60 M2-4:2FTS



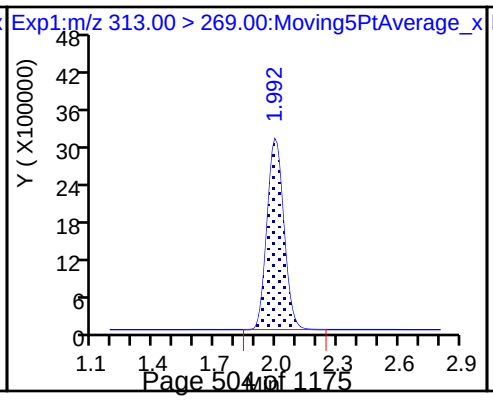
61 Sodium 1H,1H,2H,2H-perfluorohexane



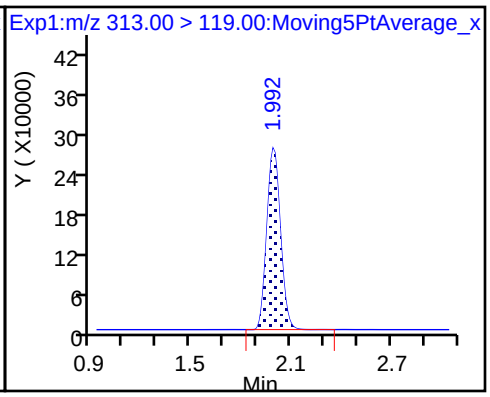
D 7 13C2 PFHxA



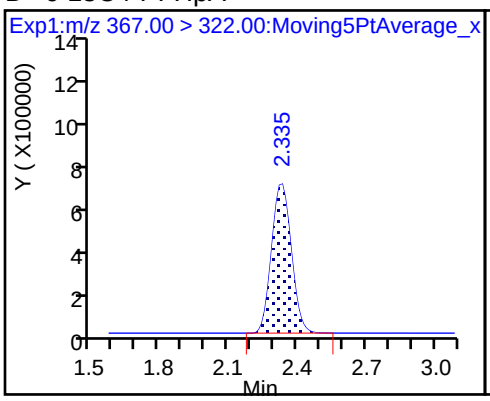
6 Perfluorohexanoic acid



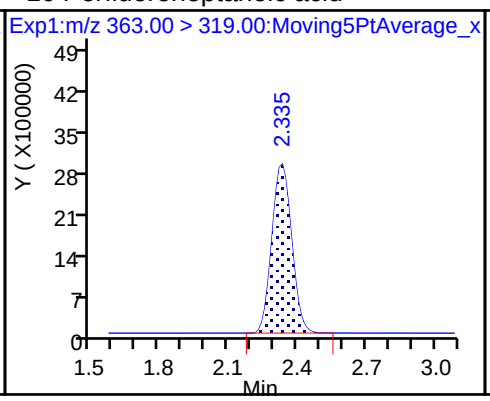
6 Perfluorohexanoic acid



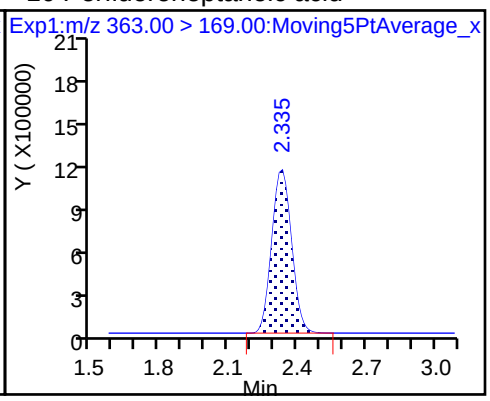
D 9 13C4-PFHpA



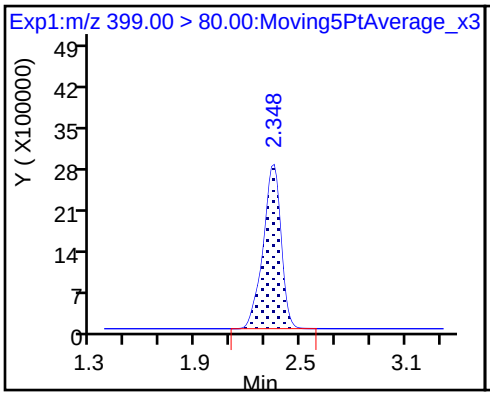
10 Perfluoroheptanoic acid



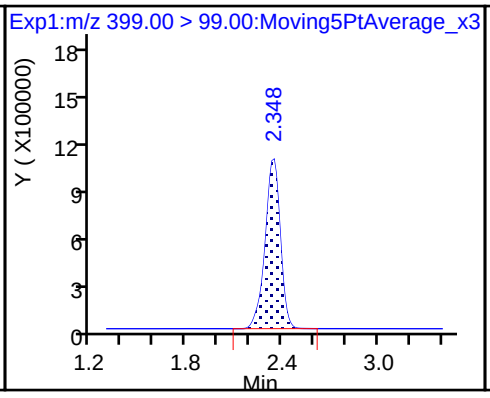
10 Perfluoroheptanoic acid



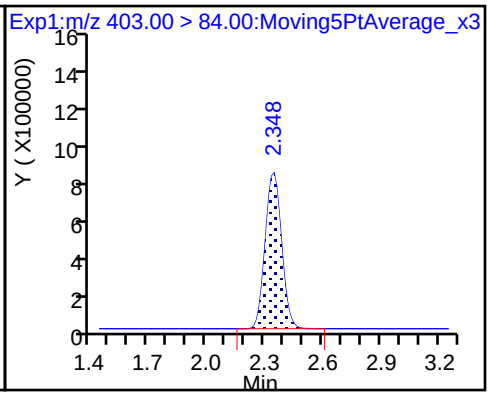
8 Perfluorohexanesulfonic acid



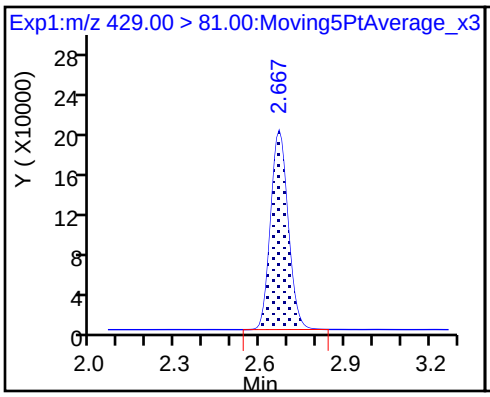
8 Perfluorohexanesulfonic acid



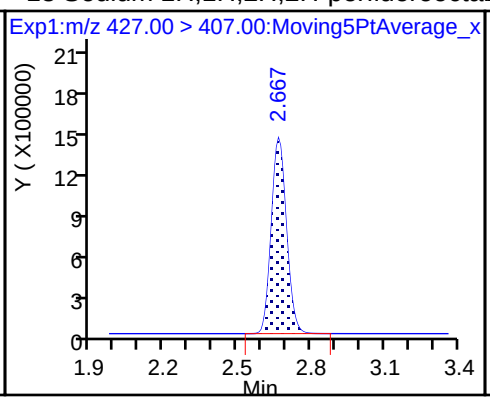
D 11 18O2 PFHxS



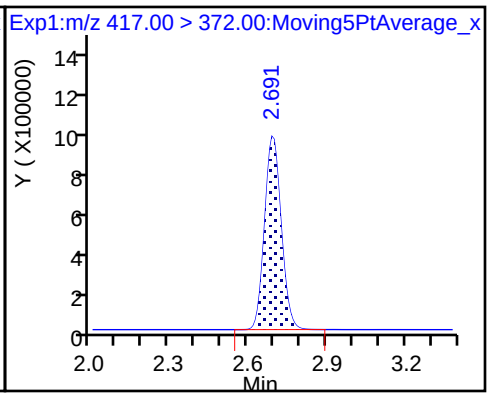
D 12 M2-6:2FTS



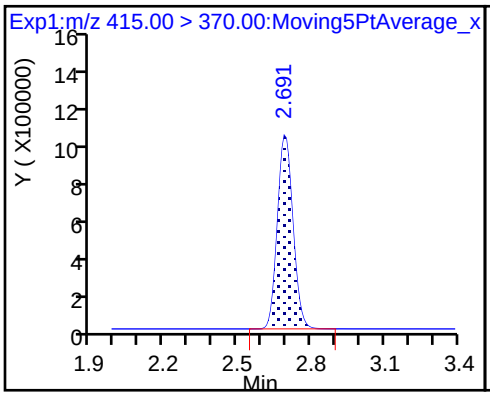
13 Sodium 1H,1H,2H,2H-perfluorooctane



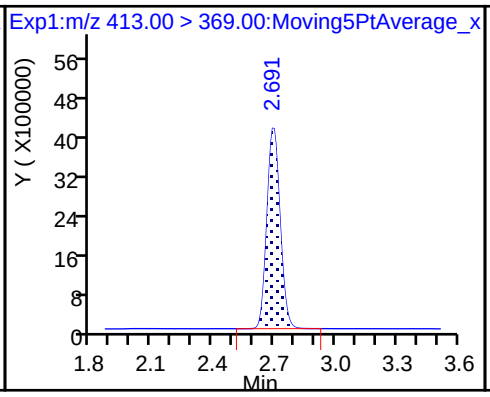
D 14 13C4 PFOA



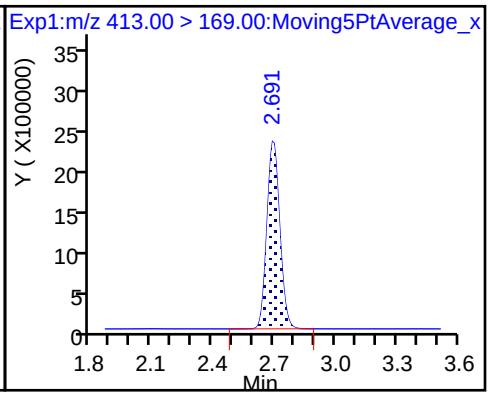
* 62 13C2-PFOA



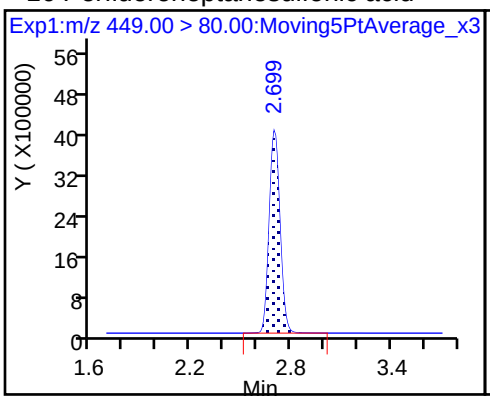
15 Perfluorooctanoic acid



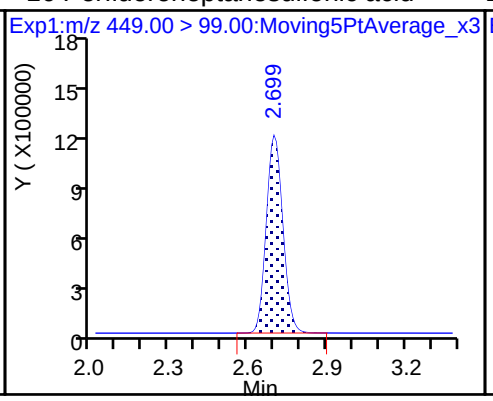
15 Perfluorooctanoic acid



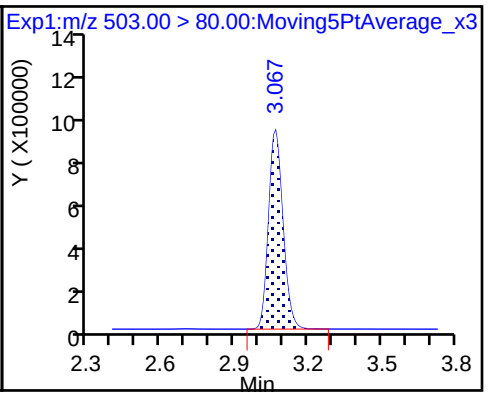
16 Perfluoroheptanesulfonic acid



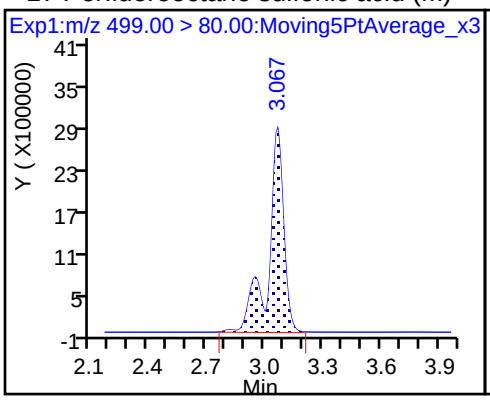
16 Perfluoroheptanesulfonic acid



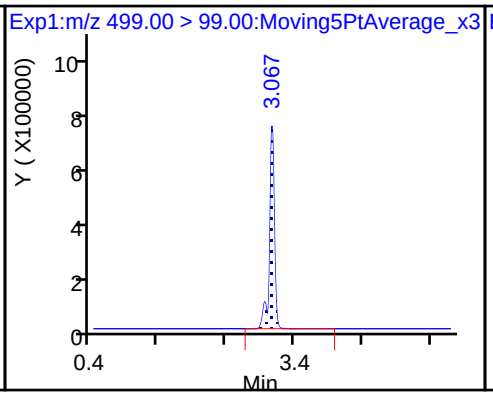
D 18 13C4 PFOS



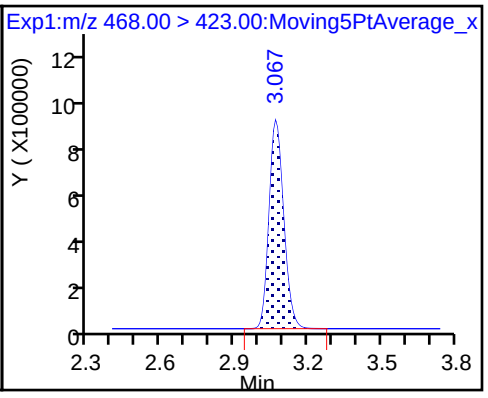
17 Perfluorooctane sulfonic acid (M)



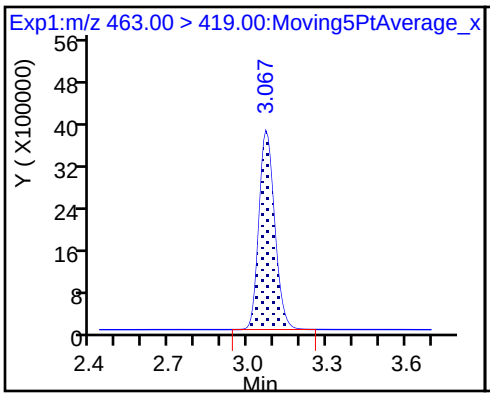
17 Perfluorooctane sulfonic acid



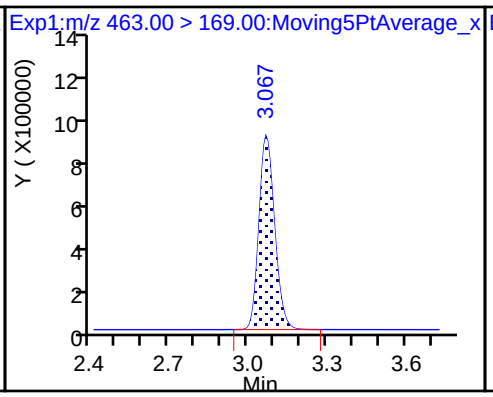
D 19 13C5 PFNA



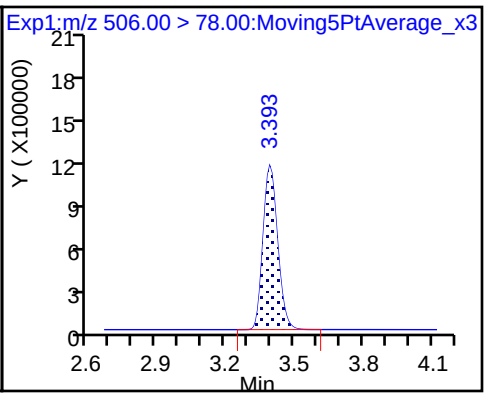
20 Perfluorononanoic acid



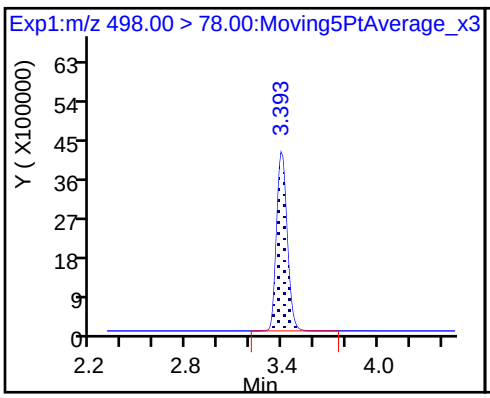
20 Perfluorononanoic acid



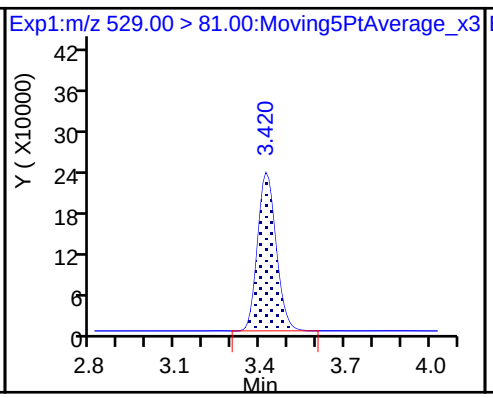
D 21 13C8 FOSA



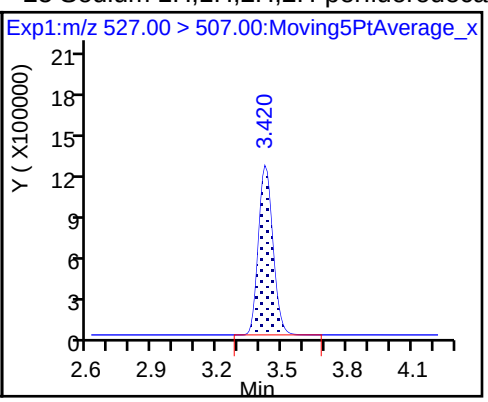
22 Perfluorooctane Sulfonamide



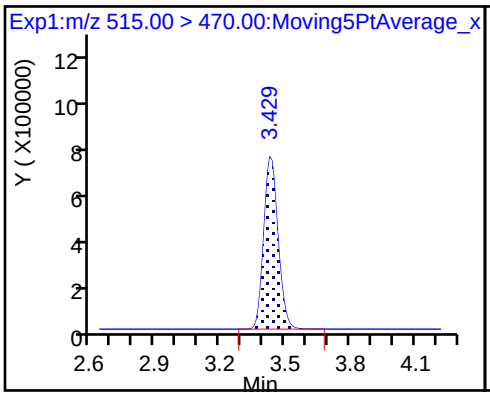
D 26 M2-8:2FTS



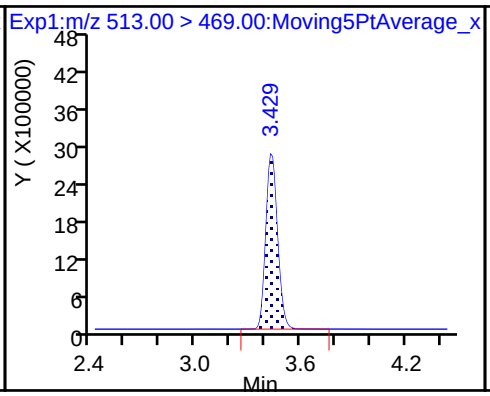
25 Sodium 1H,1H,2H,2H-perfluorodecane



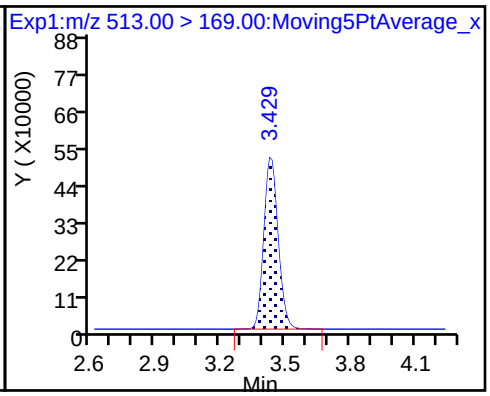
D 23 13C2 PFDA



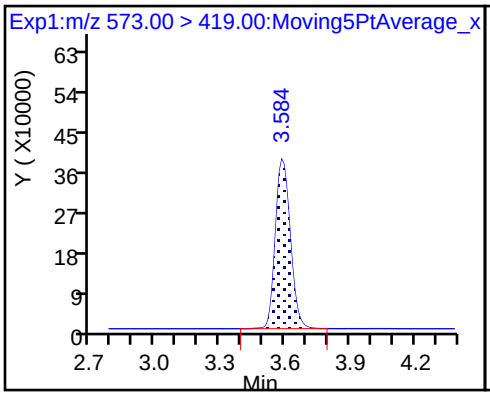
24 Perfluorodecanoic acid



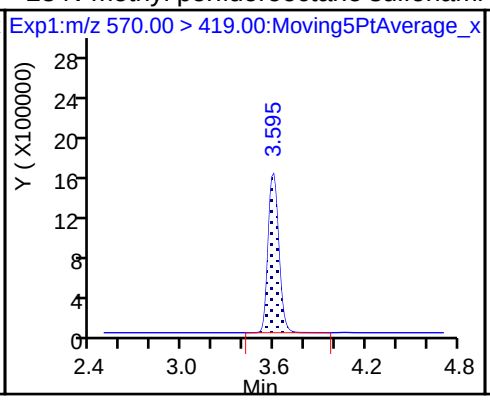
24 Perfluorodecanoic acid



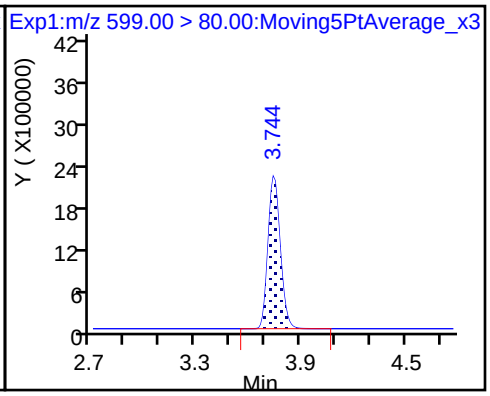
D 27 d3-NMeFOSAA



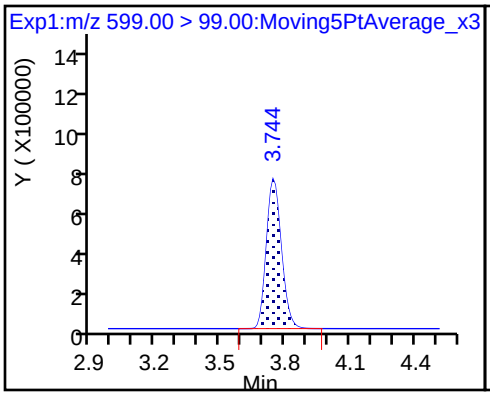
28 N-methyl perfluorooctane sulfonami



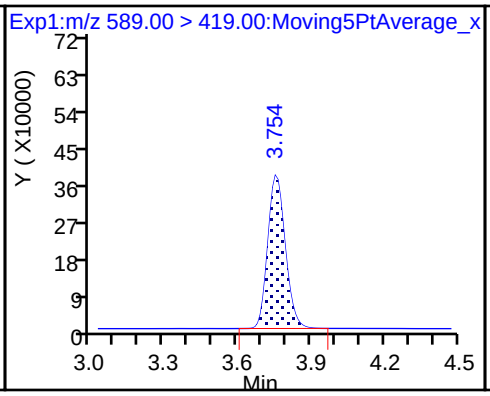
29 Perfluorodecane Sulfonic acid



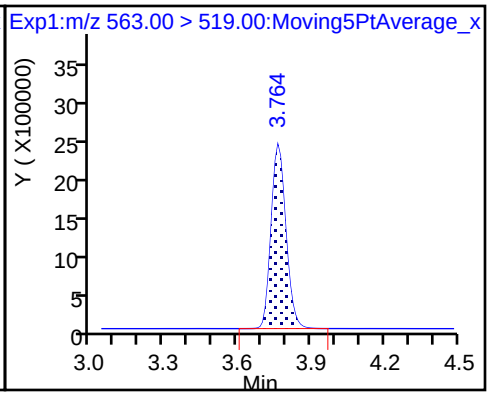
29 Perfluorodecane Sulfonic acid



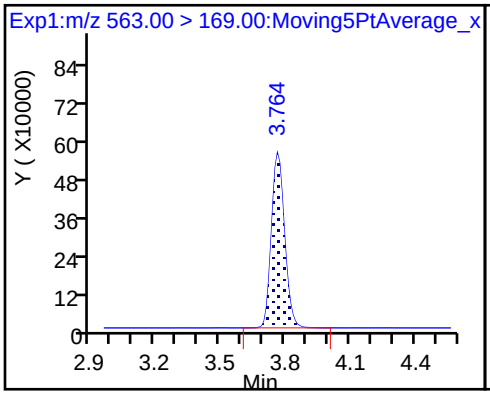
D 32 d5-NEtFOSAA



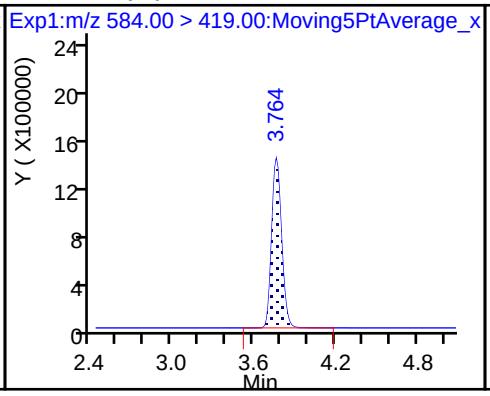
31 Perfluoroundecanoic acid



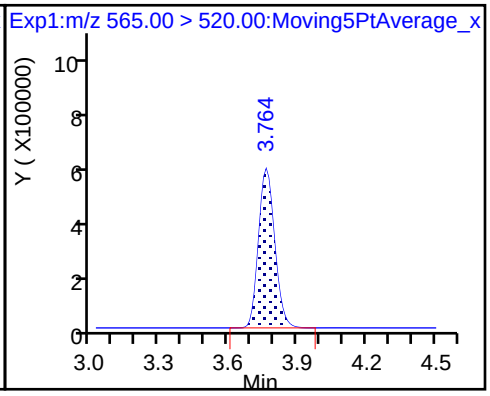
31 Perfluoroundecanoic acid



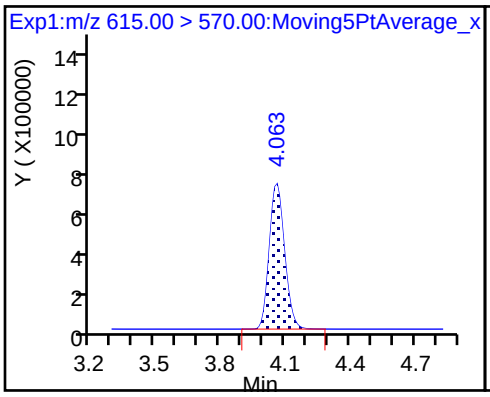
33 N-ethyl perfluorooctane sulfonamid



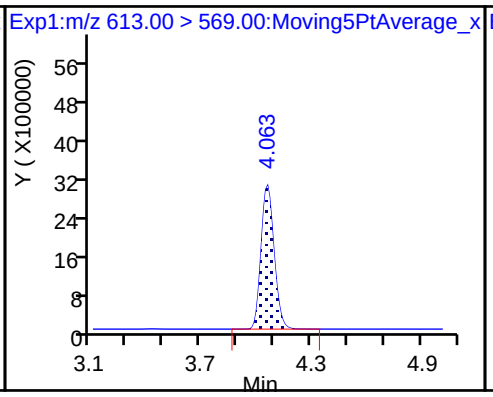
D 30 13C2 PFUnA



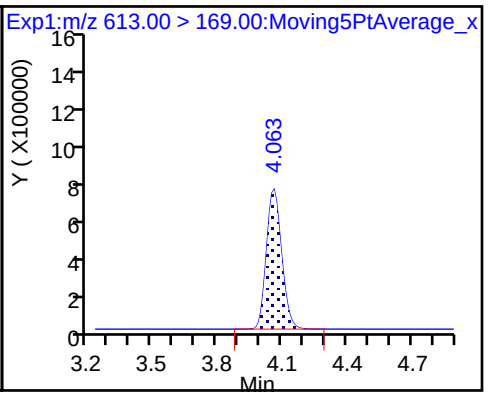
D 36 13C2 PFDoA



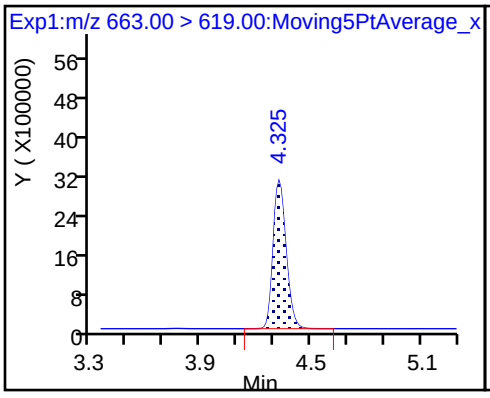
37 Perfluorododecanoic acid



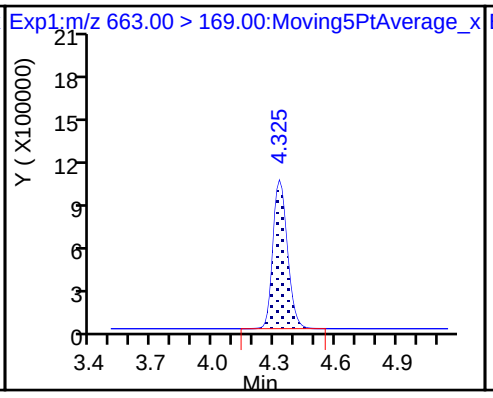
37 Perfluorododecanoic acid



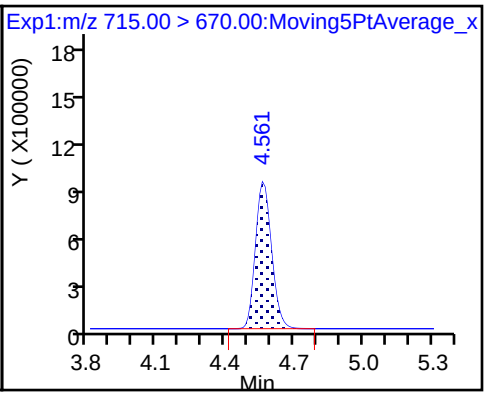
41 Perfluorotridecanoic acid



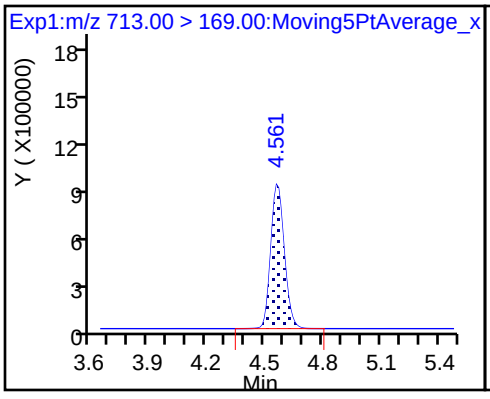
41 Perfluorotridecanoic acid



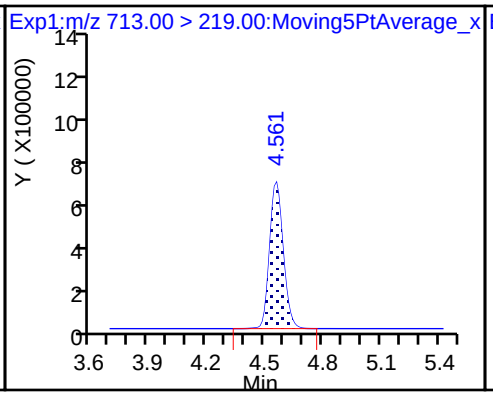
D 43 13C2-PFTeDA



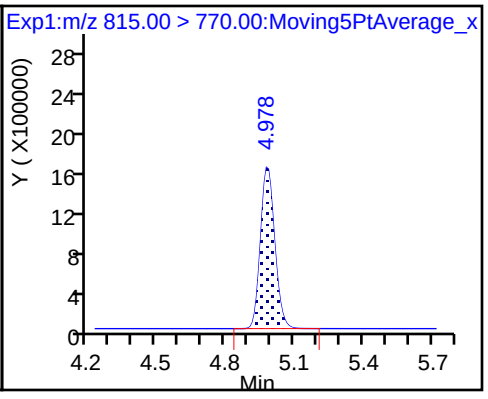
42 Perfluorotetradecanoic acid



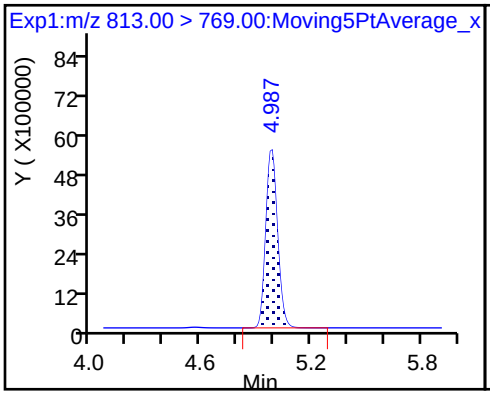
42 Perfluorotetradecanoic acid



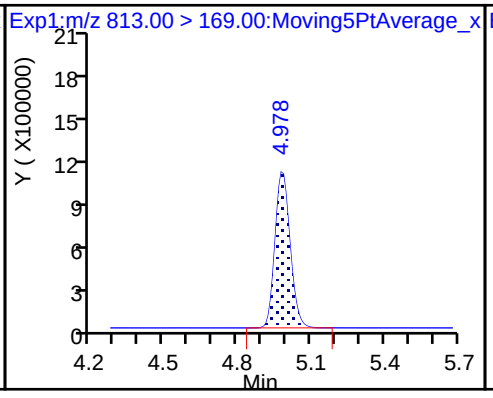
D 44 13C2-PFHxDA



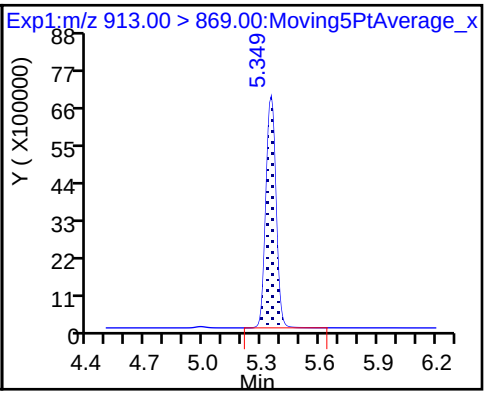
45 Perfluorohexadecanoic acid



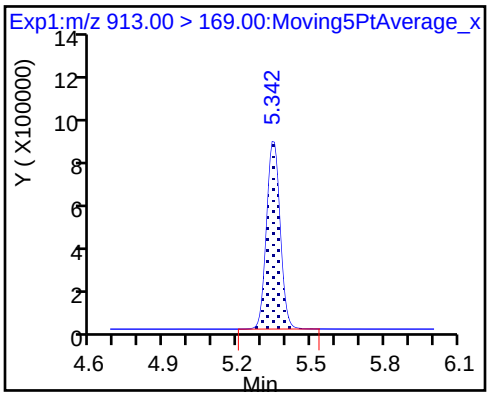
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

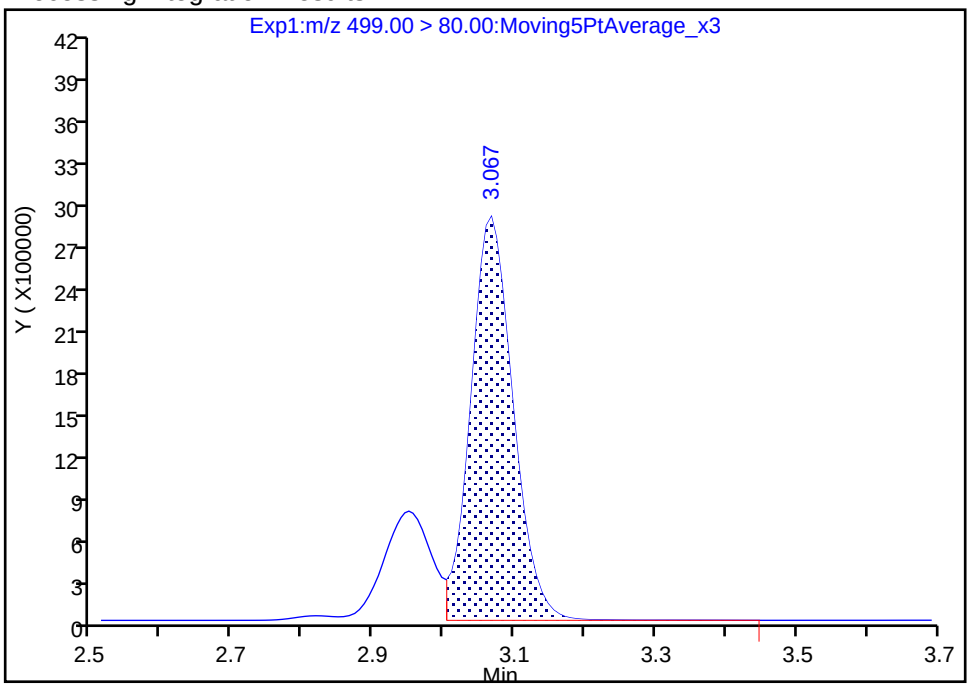
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d				
Injection Date:	21-Mar-2018 19:11:19	Instrument ID:	A8_N		
Lims ID:	IC L7 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

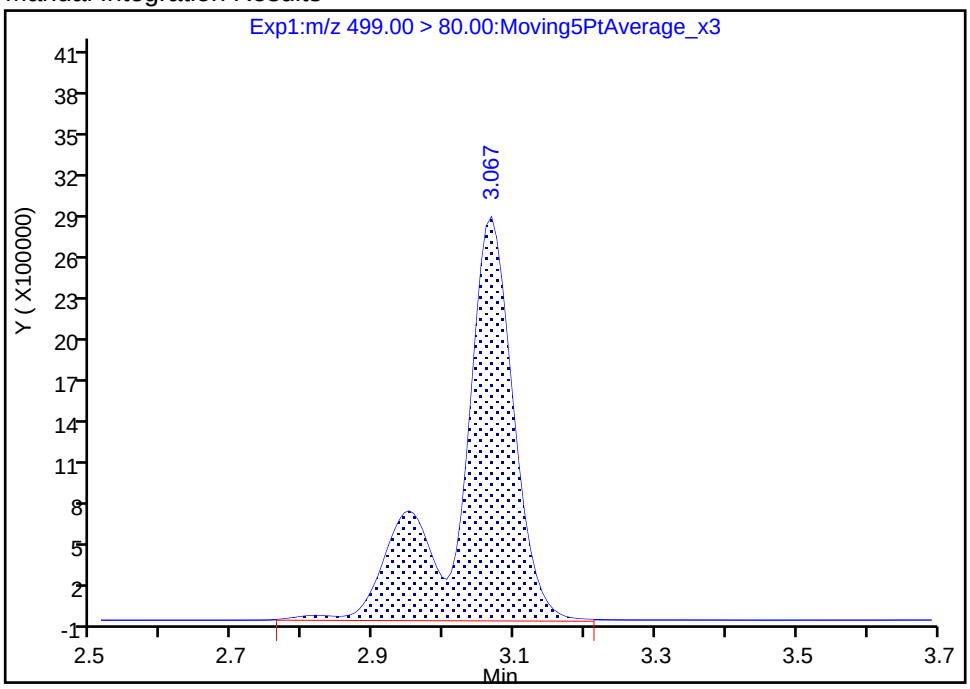
Processing Integration Results

RT: 3.07
Area: 12038170
Amount: 7.385381
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 15932478
Amount: 9.427786
Amount Units: ng/ml



Reviewer: phomsophat, 21-Mar-2018 19:25:51

Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: ICV 320-213554/10 Calibration Date: 03/17/2018 00:12

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.16ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9442		2.55	2.50	1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.141		2.44	2.50	-2.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	80.09		2.29	2.21	3.5	50.0
4:2 FTS	AveID	16.07	16.34		2.38	2.34	1.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9865		2.44	2.50	-2.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.084		2.61	2.50	4.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.081		2.21	2.28	-3.1	40.0
6:2FTS	AveID	1.665	1.612		2.30	2.38	-3.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.132		2.53	2.50	1.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.364		2.47	2.38	3.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.055		2.59	2.50	3.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.106		2.37	2.31	2.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.048		2.70	2.50	7.9	40.0
8:2FTS	AveID	1.257	1.264		2.41	2.40	0.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	1.023		2.69	2.50	7.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.082		2.60	2.50	3.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6837		2.58	2.41	7.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	1.001		2.56	2.50	2.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7586		2.26	2.50	-9.5	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.089		2.66	2.50	6.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.066		2.59	2.50	3.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2637		2.39	2.50	-4.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9122		2.46	2.50	-1.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.031		2.64	2.50	5.8	50.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	None				0.0100	2.36	-100.0*	50.0
Adona	None				0.0100	2.50	-100.0*	50.0
HFPO-DA (GenX)	None				0.0100	2.50	-100.0*	40.0
13C4 PFBA	Ave	1.277	1.322		2.59	2.50	3.5	50.0
13C5 PFPeA	Ave	0.9006	0.9221		2.56	2.50	2.4	50.0
13C3-PFBS	Ave	0.0222	0.0230		2.40	2.33	3.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: ICV 320-213554/10 Calibration Date: 03/17/2018 00:12

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.16ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-4:2FTS	Ave	0.1590	0.1602		2.35	2.34	0.7	50.0
13C2 PFHxA	Ave	1.004	1.051		2.62	2.50	4.7	50.0
13C4-PFHpA	Ave	0.9767	0.9820		2.51	2.50	0.5	50.0
18O2 PFHxS	Ave	1.303	1.344		2.44	2.37	3.2	50.0
M2-6:2FTS	Ave	0.2501	0.2591		2.46	2.38	3.6	40.0
13C4 PFOA	Ave	0.9431	0.9566		2.54	2.50	1.4	50.0
13C4 PFOS	Ave	0.9113	0.9222		2.42	2.39	1.2	50.0
13C5 PFNA	Ave	0.7545	0.7649		2.53	2.50	1.4	50.0
13C8 FOSA	Ave	1.319	1.362		2.58	2.50	3.2	50.0
M2-8:2FTS	Ave	0.2350	0.2426		2.47	2.40	3.3	40.0
13C2 PFDA	Ave	0.6303	0.6356		2.52	2.50	0.8	50.0
d3-NMeFOSAA	Ave	0.2081	0.2105		2.53	2.50	1.1	50.0
13C2 PFUnA	Ave	0.4935	0.4851		2.46	2.50	-1.7	50.0
d5-NEtFOSAA	Ave	0.1990	0.2082		2.62	2.50	4.6	50.0
13C2 PFDoA	Ave	0.4680	0.4577		2.45	2.50	-2.2	50.0
13C2-PFTeDA	Ave	0.4272	0.4340		2.54	2.50	1.6	50.0
13C2-PFHxDA	Ave	0.6248	0.6152		2.46	2.50	-1.5	50.0
13C3 HFPO-DA	None				0.000000	2.50	-100.0*	50.0

FORM VII 537 (modified)

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_011.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 17-Mar-2018 00:12:15 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:48:58 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:44:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.440	-0.006	1.000	5401885	2.55			3628	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	5721403	2.59		104	100585	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.696	-0.005	0.633	3991424	2.56		102	129117	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.698	-0.007	1.000	4556129	2.44			1758	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.730	-0.004	0.646	92394	2.40		103	522	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.733	-0.007	1.000	7041872	2.29			3158	
298.90 > 99.00	1.726	1.733	-0.007	1.000	2973557		2.37(1.25-3.74)		3032	
D 60 M2-4:2FTS										
329.00 > 81.00	1.935	1.942	-0.007	0.724	647518	2.35		101	7120	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.935	1.944	-0.009	1.000	1517989	2.38			70600	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.740	4550837	2.62		105	138888	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.982	-0.006	1.000	4489252	2.44			14788	
313.00 > 119.00	1.976	1.982	-0.006	1.000	404861		11.09(5.03-15.10)		9174	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	4606134	2.61			9749	
363.00 > 169.00	2.315	2.311	0.004	1.000	1700073		2.71(1.13-3.40)		31377	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.867	4250721	2.51		101	79088	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	5734629	2.21			691	
399.00 > 99.00	2.328	2.326	0.002	1.000	1813461		3.16(1.50-4.49)		679	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.871	5505090	2.44		103	71055	
D 12 M2-6:2FTS										
429.00 > 81.00	2.647	2.651	-0.004	0.991	1065489	2.46		104	27640	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.647	2.652	-0.005	1.000	1717537	2.30			57256	
* 62 13C2-PFOA										
415.00 > 370.00	2.671	2.678	-0.007		4328656	2.50			72093	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.671	2.678	-0.007	1.000	4685701	2.53			2031	
413.00 > 169.00	2.671	2.678	-0.007	1.000	2533012		1.85(0.84-2.52)		9849	
D 14 13C4 PFOA										
417.00 > 372.00	2.671	2.678	-0.007	1.000	4140983	2.54		101	80592	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.679	2.684	-0.005	1.000	5171675	2.46			58106	
449.00 > 99.00	2.679	2.684	-0.005	1.000	1381220		3.74(1.94-5.82)		27188	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.050	-0.006	1.000	4087568	2.36			13209	
499.00 > 99.00	3.044	3.050	-0.006	1.000	930895		4.39(2.31-6.93)		7381	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.050	-0.006	1.140	3816155	2.42		101	27105	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.052	-0.008	1.000	3491934	2.59			8077	
463.00 > 169.00	3.044	3.052	-0.008	1.000	854685		4.09(1.90-5.69)		23856	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.052	-0.008	1.140	3310919	2.53		101	82406	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.379	3.388	-0.009	1.000	6180644	2.70			60921	
D 21 13C8 FOSA										
506.00 > 78.00	3.379	3.388	-0.009	1.265	5896208	2.58		103	64390	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.397	3.406	-0.009	1.000	1274172	2.41			47471	
D 26 M2-8:2FTS										
529.00 > 81.00	3.397	3.406	-0.009	1.272	1006077	2.47		103	28136	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.416	-0.001	1.003	2813387	2.69			14655	
513.00 > 169.00	3.406	3.416	-0.010	1.000	488219		5.76(2.36-7.09)		21628	
D 23 13C2 PFDA										
515.00 > 470.00	3.406	3.416	-0.010	1.275	2751448	2.52		101	40710	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.560	3.570	-0.010	1.333	911160	2.53		101	24502	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.569	3.571	-0.002	1.002	986114	2.60			9760	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.729	-0.002	1.000	2633762	2.58			55447	
599.00 > 99.00	3.727	3.729	-0.002	1.000	848075		3.11(1.39-4.16)		17795	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.399	901386	2.62		105	1738	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.738	3.746	-0.008	1.000	902302	2.56			18632	
D 30 13C2 PFUnA										
565.00 > 520.00	3.738	3.747	-0.009	1.399	2099983	2.46		98.3	54166	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.738	3.750	-0.012	1.000	1592969	2.26			4442	
563.00 > 169.00	3.748	3.750	-0.002	1.003	444020		3.59(2.12-6.36)		52364	
D 36 13C2 PFDoA										
615.00 > 570.00	4.035	4.041	-0.006	1.511	1981289	2.45		97.8	11104	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.035	4.042	-0.007	1.000	2158005	2.66			385	
613.00 > 169.00	4.035	4.042	-0.007	1.000	519175		4.16(2.13-6.40)		15351	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.304	-0.006	1.000	2112495	2.59			427	
663.00 > 169.00	4.298	4.304	-0.006	1.000	714785		2.96(1.25-3.76)		8933	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.701	1878436	2.54		102	15695	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.545	-0.002	1.000	495306	2.39			6051	
713.00 > 219.00	4.533	4.545	-0.012	0.998	349581		1.42(0.71-2.13)		4317	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.855	2662998	2.46		98.5	9883	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.960	-0.005	1.000	2429227	2.46			209	
813.00 > 169.00	4.955	4.960	-0.005	1.000	445490		5.45(2.86-8.58)		4231	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.320	-0.005	1.000	2745943	2.64			471	
913.00 > 169.00	5.315	5.320	-0.005	1.000	337941		8.13(3.83-11.48)		3421	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:48:59 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_011.d

Injection Date: 17-Mar-2018 00:12:15 Instrument ID: A8_N

Lims ID: ICV Full

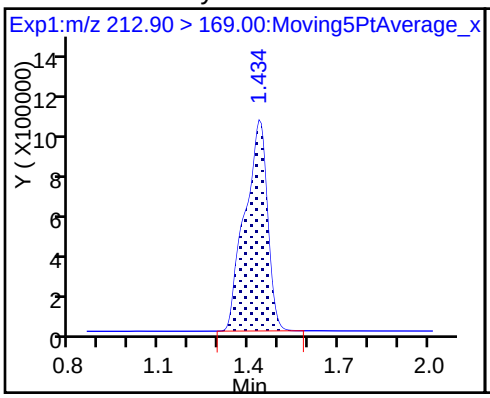
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

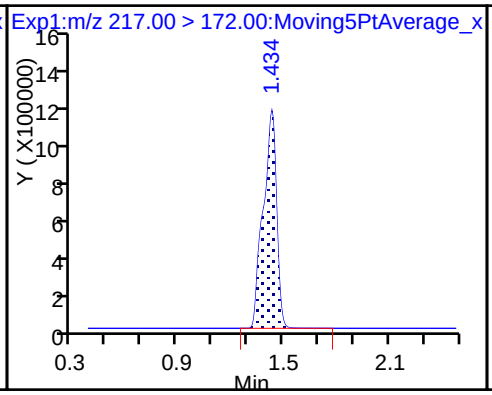
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

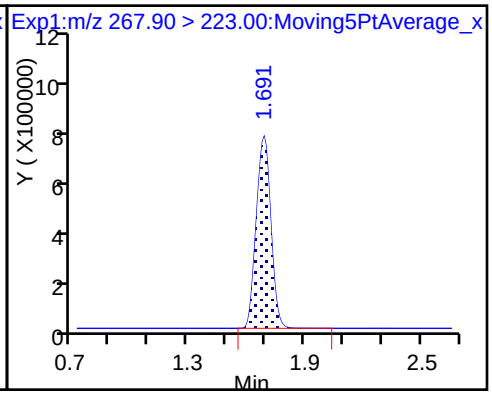
2 Perfluorobutyric acid



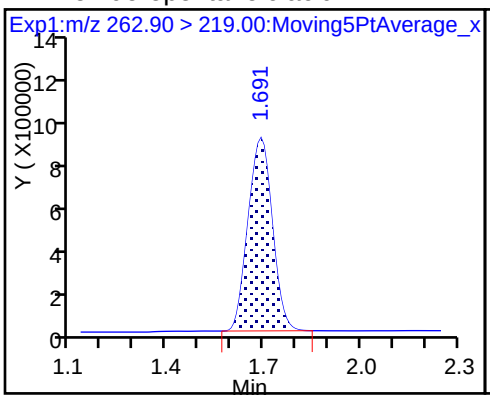
D 1 13C4 PFBA



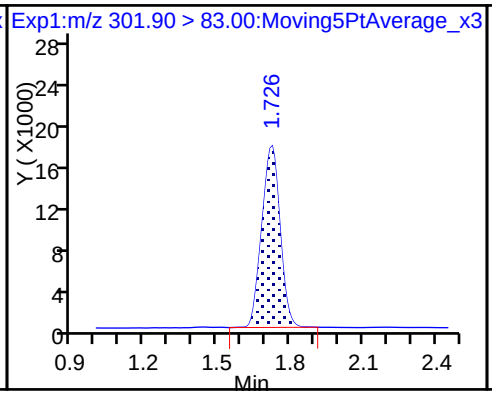
D 3 13C5-PFPeA



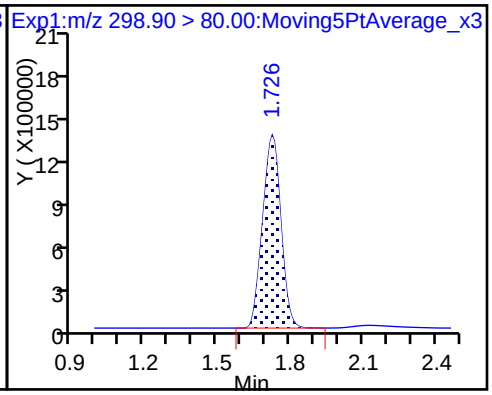
4 Perfluoropentanoic acid



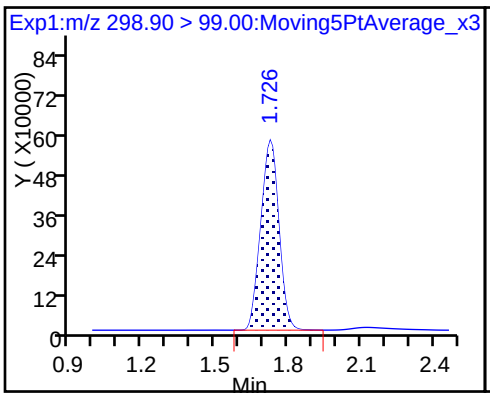
D 47 13C3-PFBS



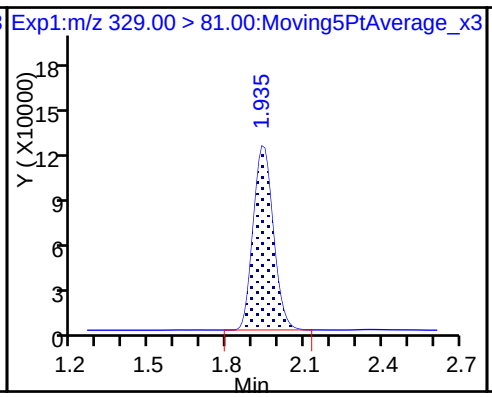
5 Perfluorobutanesulfonic acid



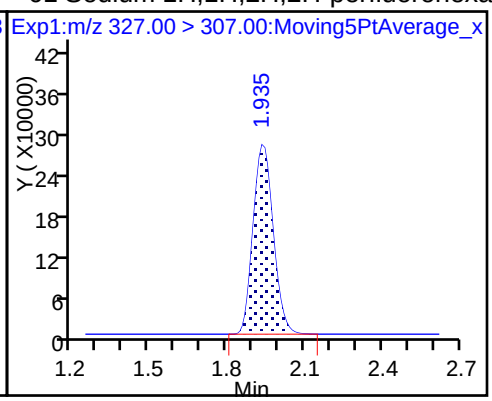
5 Perfluorobutanesulfonic acid



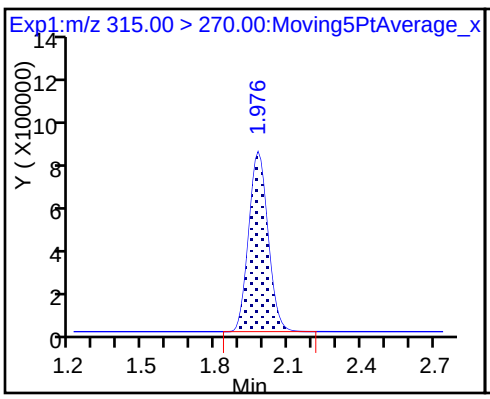
D 60 M2-4:2FTS



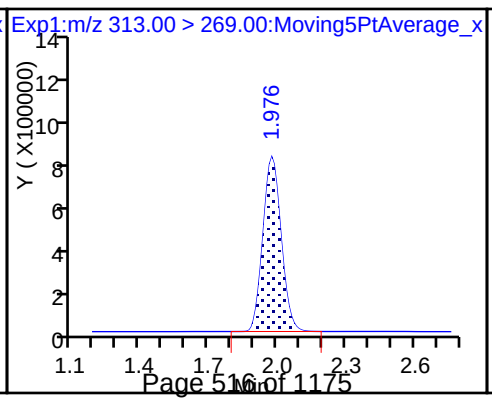
61 Sodium 1H,1H,2H,2H-perfluorohexane



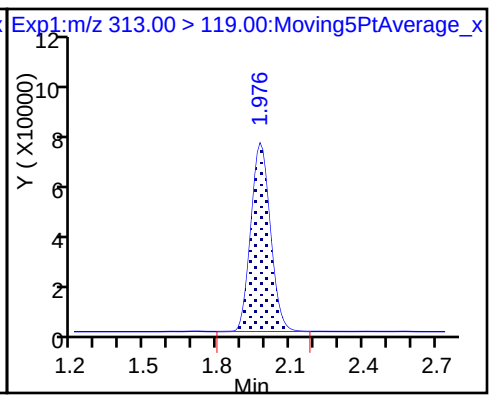
D 7 13C2 PFHxA



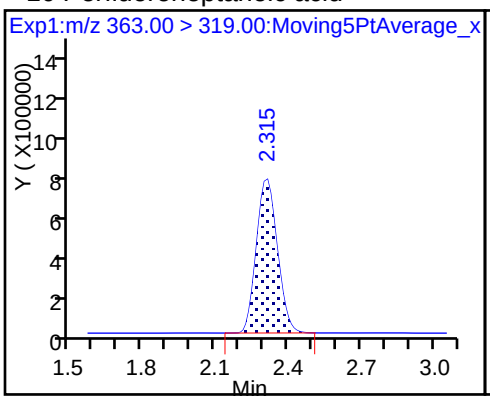
6 Perfluorohexanoic acid



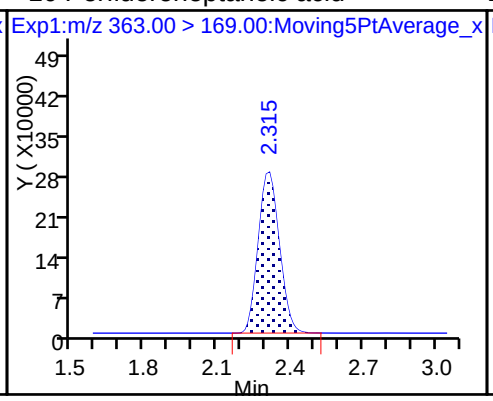
6 Perfluorohexanoic acid



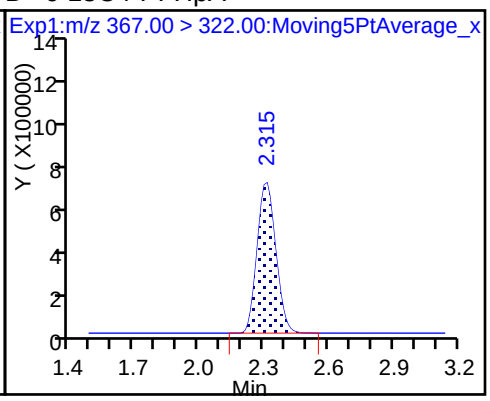
10 Perfluoroheptanoic acid



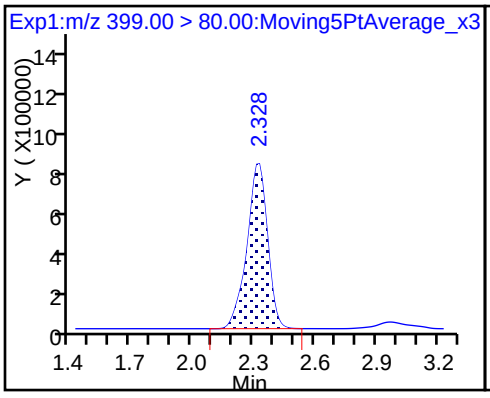
10 Perfluoroheptanoic acid



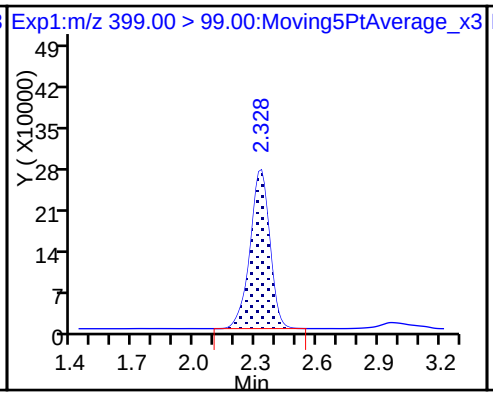
D 9 13C4-PFHpA



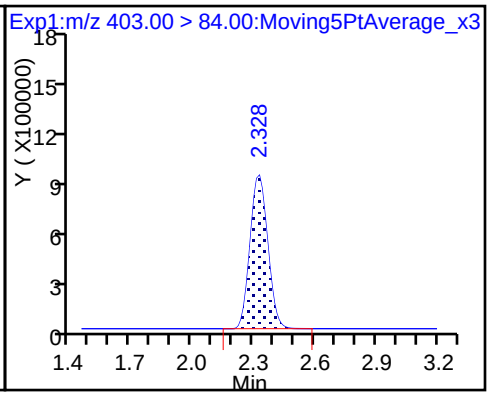
8 Perfluorohexanesulfonic acid



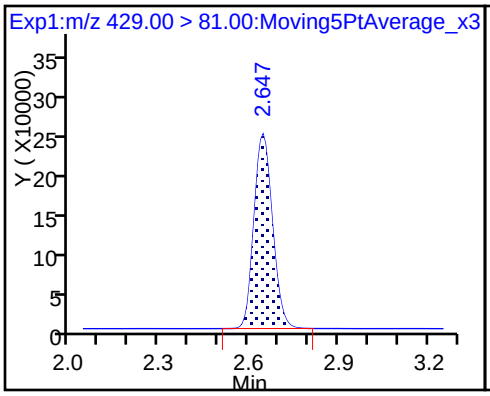
8 Perfluorohexanesulfonic acid



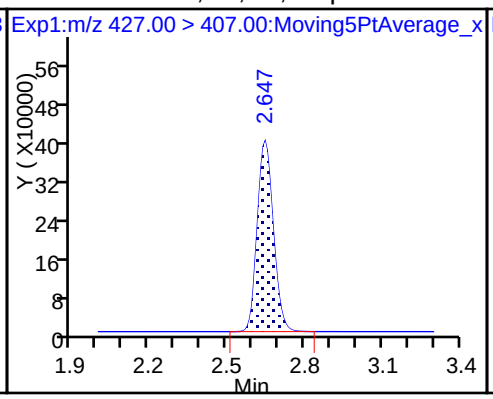
D 11 18O2 PFHxS



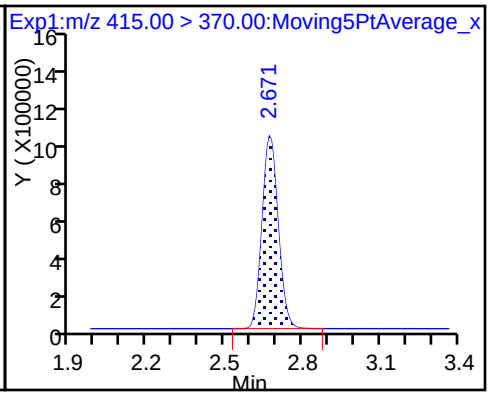
D 12 M2-6:2FTS



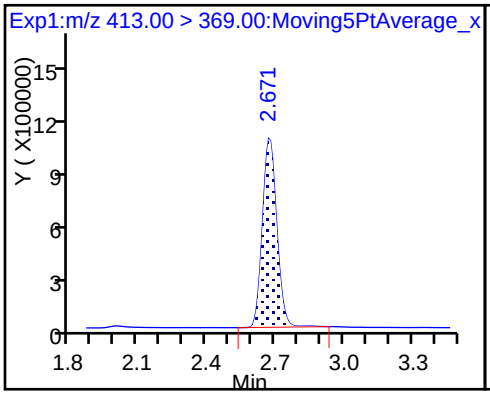
13 Sodium 1H,1H,2H,2H-perfluorooctane



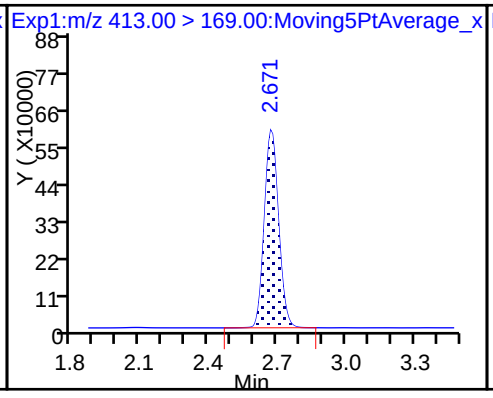
M2 13C2-PFOA



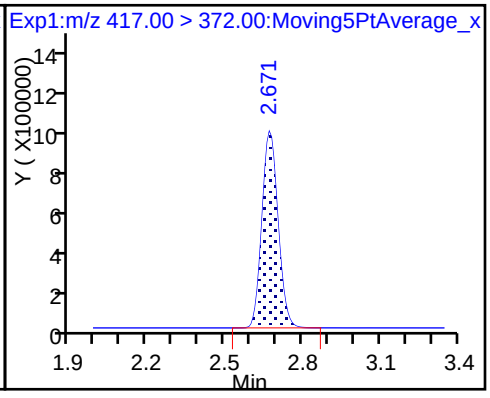
15 Perfluorooctanoic acid



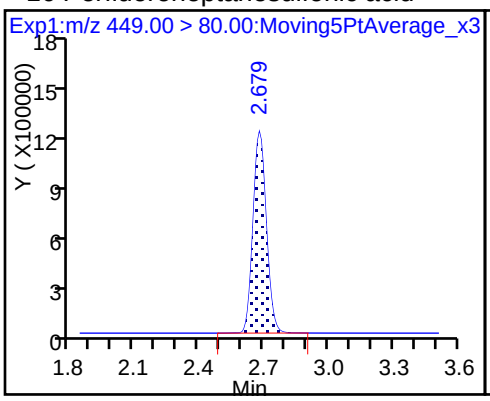
15 Perfluorooctanoic acid



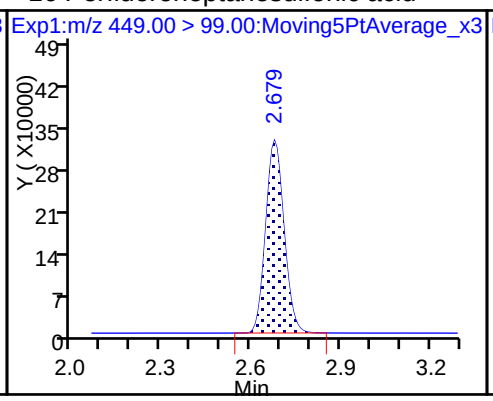
D 14 13C4 PFOA



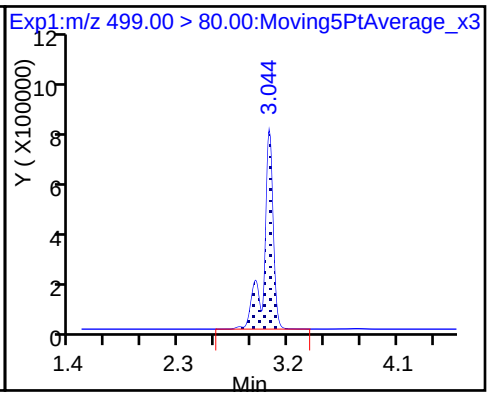
16 Perfluoroheptanesulfonic acid



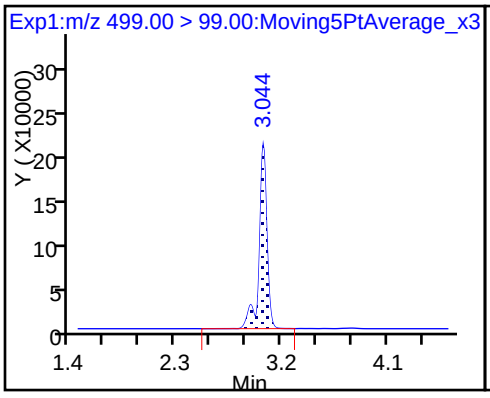
16 Perfluoroheptanesulfonic acid



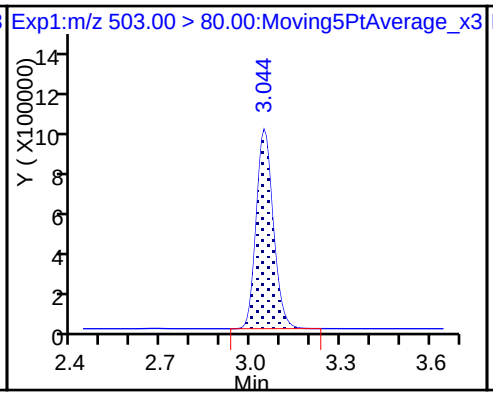
17 Perfluorooctane sulfonic acid



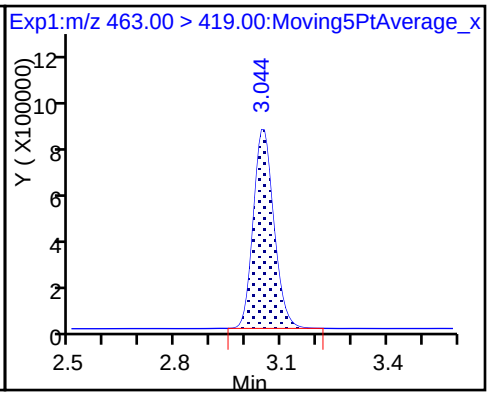
17 Perfluorooctane sulfonic acid



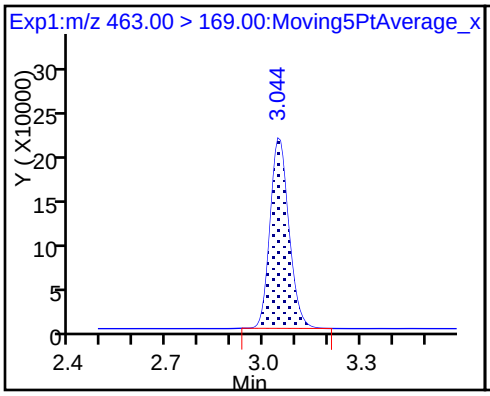
D 18 13C4 PFOS



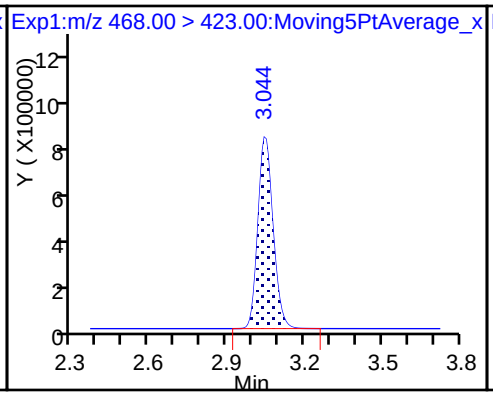
20 Perfluorononanoic acid



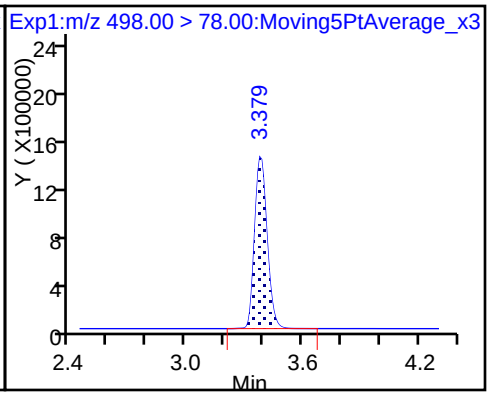
20 Perfluorononanoic acid



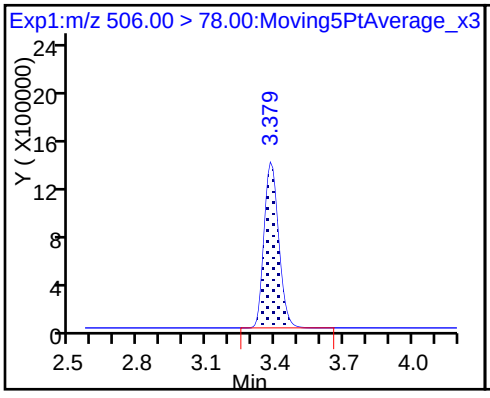
D 19 13C5 PFNA



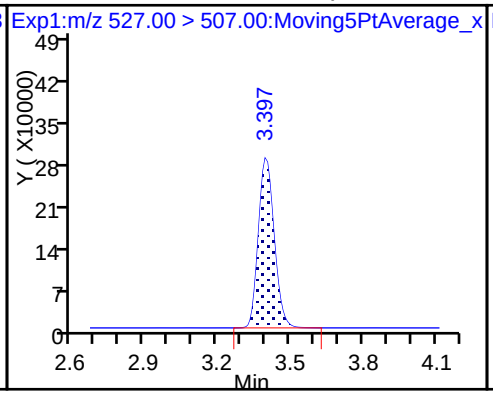
22 Perfluorooctane Sulfonamide



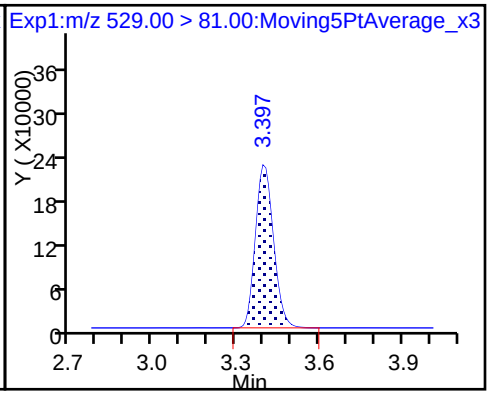
D 21 13C8 FOSA



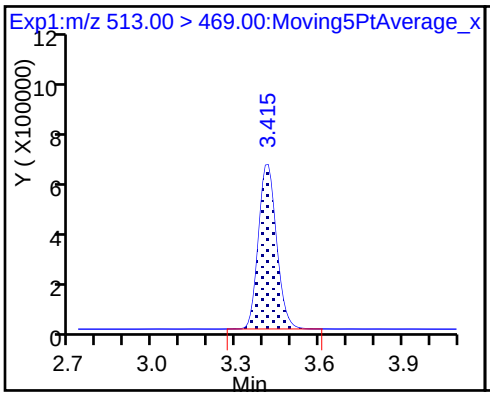
25 Sodium 1H,1H,2H,2H-perfluorodecane



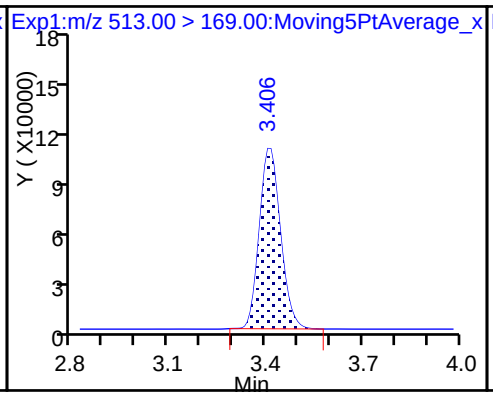
D 26 M2-8:2FTS



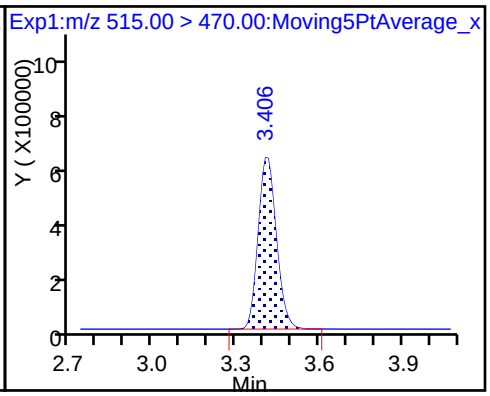
24 Perfluorodecanoic acid



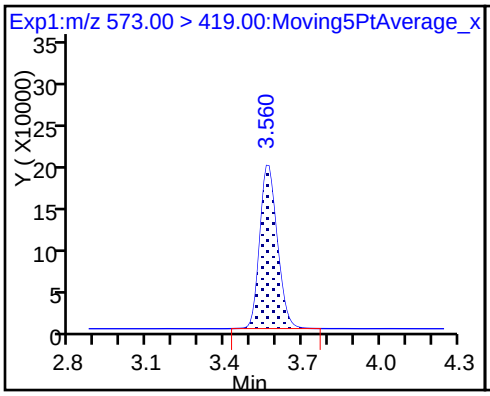
24 Perfluorodecanoic acid



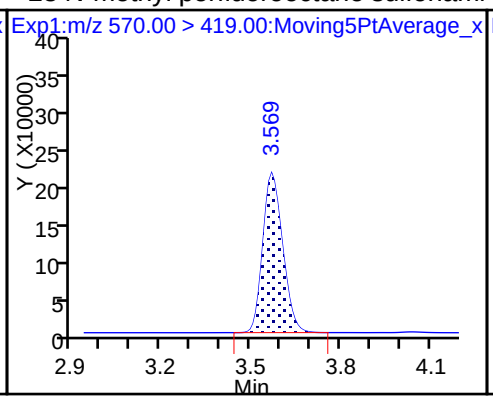
D 23 13C2 PFDA



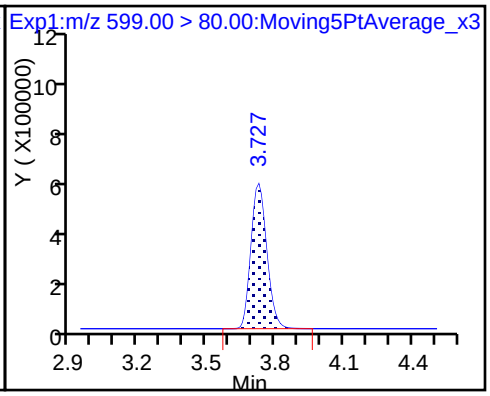
D 27 d3-NMeFOSAA



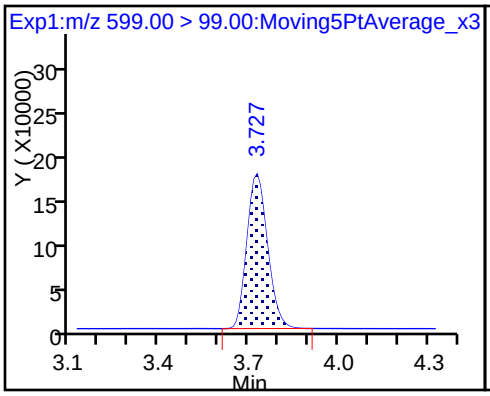
28 N-methyl perfluorooctane sulfonami



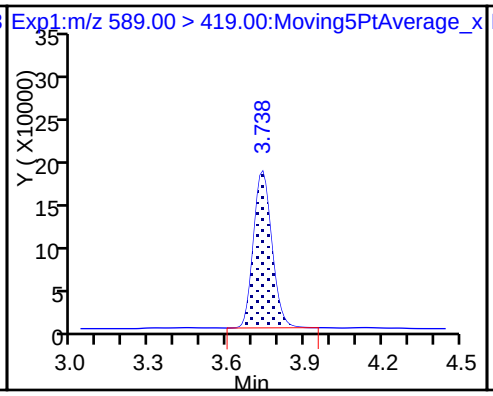
29 Perfluorodecane Sulfonic acid



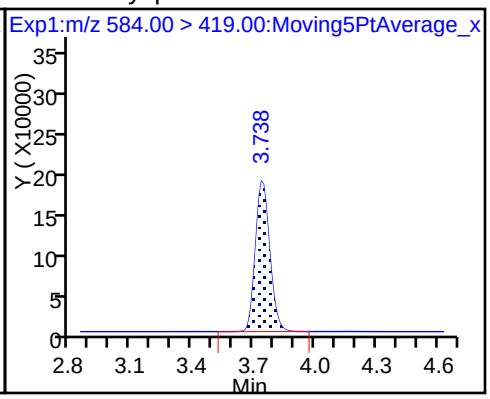
29 Perfluorodecane Sulfonic acid



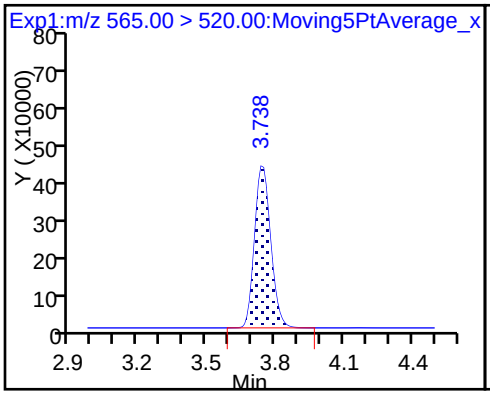
D 32 d5-NEtFOSAA



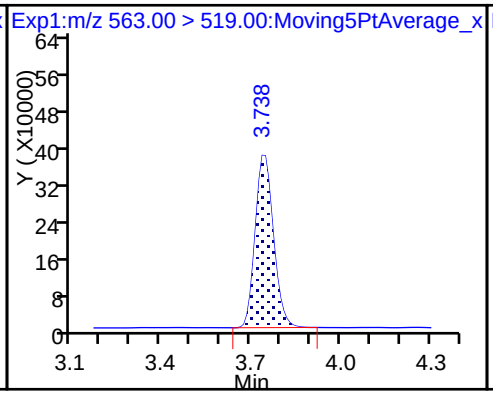
33 N-ethyl perfluorooctane sulfonamid



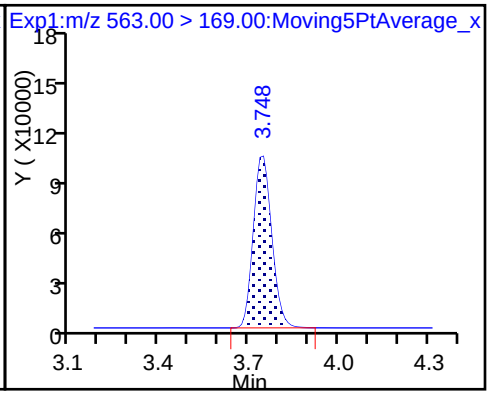
D 30 13C2 PFUnA



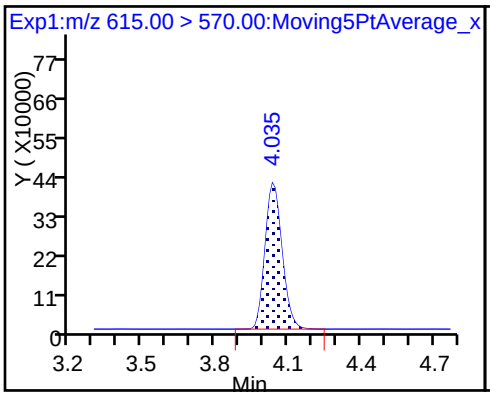
31 Perfluoroundecanoic acid



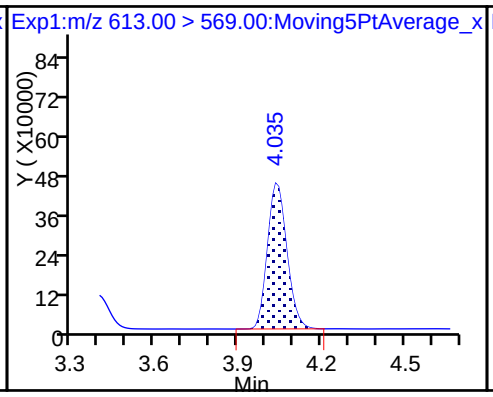
31 Perfluoroundecanoic acid



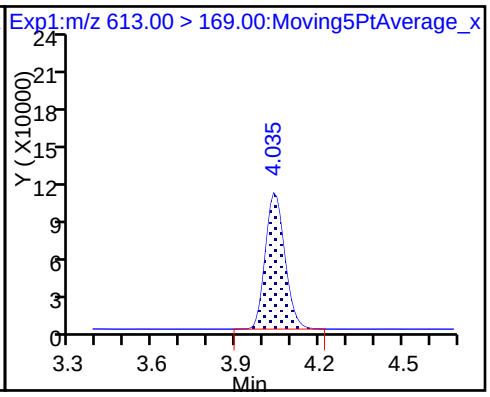
D 36 13C2 PFDoA



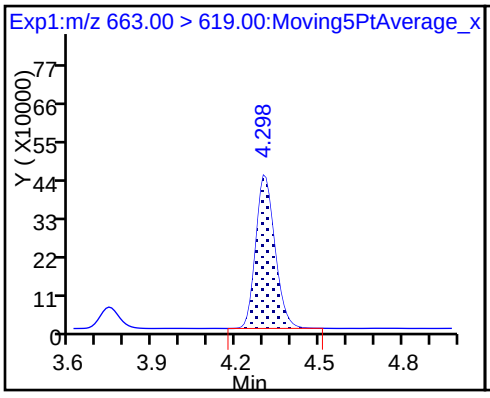
37 Perfluorododecanoic acid



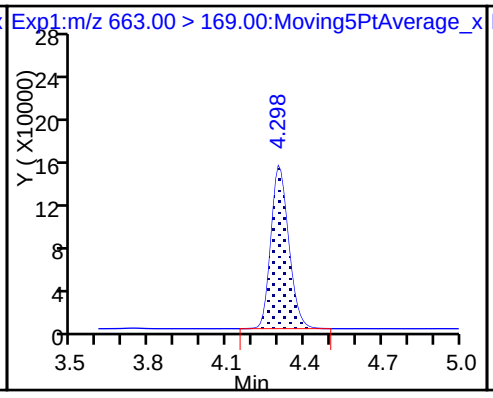
37 Perfluorododecanoic acid



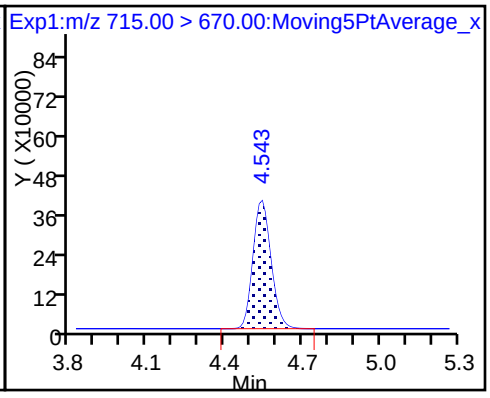
41 Perfluorotridecanoic acid



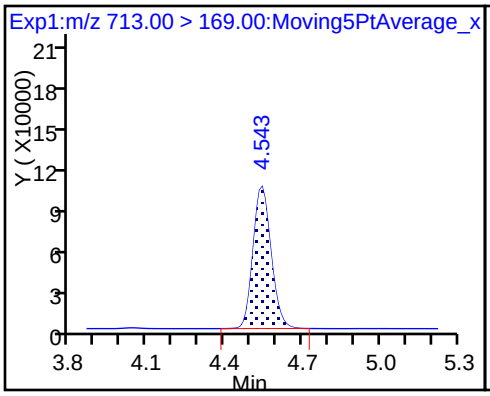
41 Perfluorotridecanoic acid



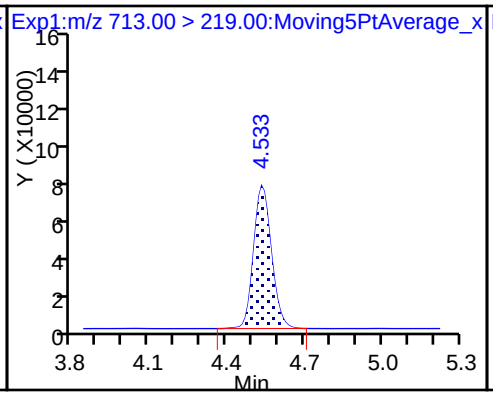
D 43 13C2-PFTeDA



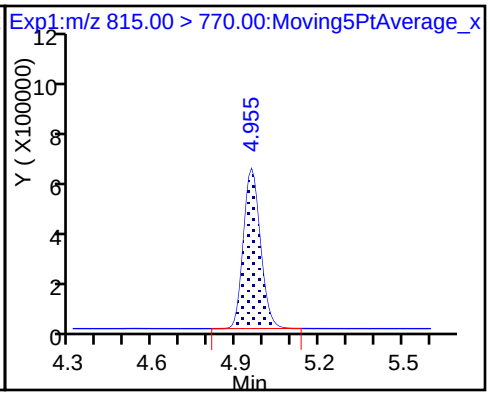
42 Perfluorotetradecanoic acid



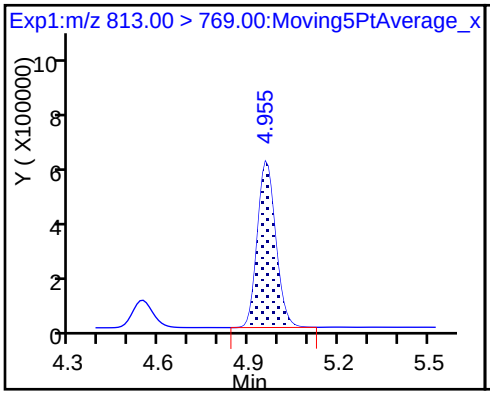
42 Perfluorotetradecanoic acid



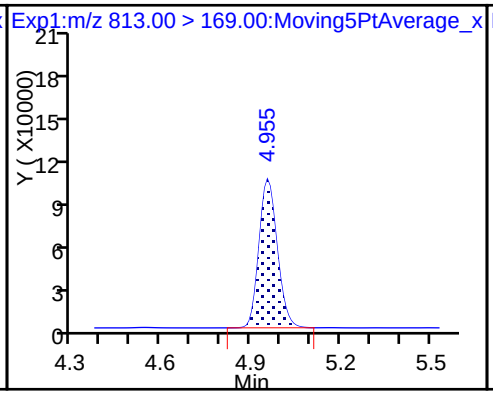
D 44 13C2-PFHxDA



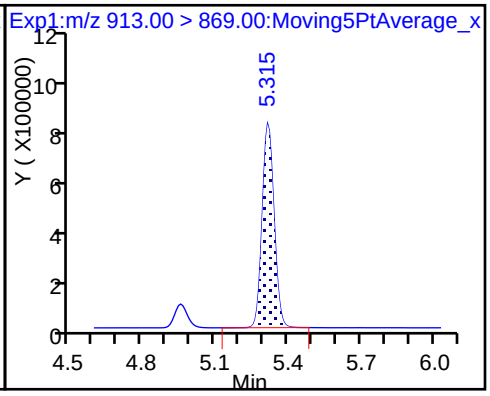
45 Perfluorohexadecanoic acid



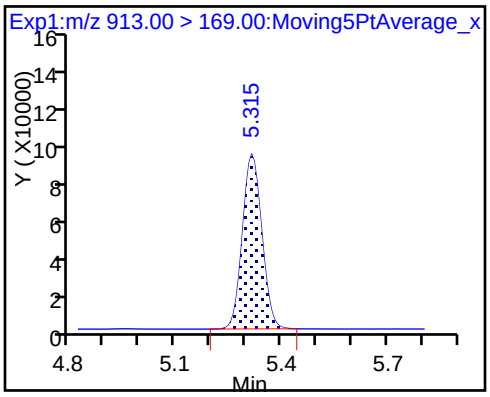
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-213578/2 Calibration Date: 03/17/2018 12:20

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9665		0.0521	0.0500	4.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.161		0.0497	0.0500	-0.6	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	77.07		0.0440	0.0442	-0.4	50.0
4:2 FTS	AveID	16.07	14.87		0.130	0.0467	-7.5	
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.023		0.0507	0.0500	1.4	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.071		0.0517	0.0500	3.4	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.126		0.0459	0.0455	1.0	50.0
6:2FTS	AveID	1.665	1.625		0.0500	0.0474	-2.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.090		0.0488	0.0500	-2.4	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.354		0.0490	0.0476	3.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.057		0.0518	0.0500	3.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.132		0.0485	0.0464	4.5	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.040		0.0535	0.0500	7.0	50.0
8:2FTS	AveID	1.257	1.333		0.0508	0.0479	6.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	1.052		0.0555	0.0500	10.9	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.208		0.0780	0.0500	15.9	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6648		0.0502	0.0482	4.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9129		0.0480	0.0500	-6.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.8497		0.0507	0.0500	1.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	0.9569		0.0468	0.0500	-6.5	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.029		0.0500	0.0500	0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.3036		0.0551	0.0500	10.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.333		0.0486	0.0500	-2.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9575		0.0491	0.0500	-1.8	50.0
13C4 PFBA	Ave	1.277	1.171		2.29	2.50	-8.3	50.0
13C5 PFPeA	Ave	0.9006	0.8412		2.34	2.50	-6.6	50.0
13C3-PFBS	Ave	0.0222	0.0211		2.21	2.33	-5.2	50.0
M2-4:2FTS	Ave	0.1590	0.1397		2.05	2.34	-12.1	50.0
13C2 PFHxA	Ave	1.004	0.9936		2.47	2.50	-1.1	50.0
13C4-PFHpA	Ave	0.9767	0.9508		2.43	2.50	-2.6	50.0
18O2 PFHxS	Ave	1.303	1.290		2.34	2.37	-1.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-213578/2 Calibration Date: 03/17/2018 12:20

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2443		2.32	2.38	-2.3	50.0
13C4 PFOA	Ave	0.9431	0.9417		2.50	2.50	-0.1	50.0
13C4 PFOS	Ave	0.9113	0.8732		2.29	2.39	-4.2	50.0
13C5 PFNA	Ave	0.7545	0.7573		2.51	2.50	0.4	50.0
13C8 FOSA	Ave	1.319	1.293		2.45	2.50	-2.0	50.0
M2-8:2FTS	Ave	0.2350	0.2473		2.52	2.40	5.3	50.0
13C2 PFDA	Ave	0.6303	0.6405		2.54	2.50	1.6	50.0
d3-NMeFOSAA	Ave	0.2081	0.2038		2.45	2.50	-2.1	50.0
d5-NEtFOSAA	Ave	0.1990	0.2279		2.86	2.50	14.5	50.0
13C2 PFUnA	Ave	0.4935	0.5165		2.62	2.50	4.7	50.0
13C2 PFDoA	Ave	0.4680	0.4856		2.59	2.50	3.8	50.0
13C2-PFTeDA	Ave	0.4272	0.4237		2.48	2.50	-0.8	50.0
13C2-PFHxDA	Ave	0.6248	0.6390		2.56	2.50	2.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\2017.03.17LLZA_002.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 17-Mar-2018 12:20:16 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:08:07 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK039

First Level Reviewer: westendorfc Date: 20-Mar-2018 08:58:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.434	0.007	0.537	5523035	2.29		91.7	94655	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	106755	0.0521		104	74.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.691	0.009	0.634	3968994	2.34		93.4	123967	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	92198	0.0497		99.4	32.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.727	0.0	0.644	92479	2.20		94.8	542	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.005	135496	0.0440		99.6	59.8	
298.90 > 99.00	1.736	1.736	0.0	1.005	57363		2.36(1.25-3.74)		60.9	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.935	0.010	0.726	615560	2.05		87.9	6502	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.946	-0.001	1.000	27622	0.0432		92.5	1725	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.976	0.0	0.737	4687747	2.47		98.9	165481	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.987	-0.001	1.005	95941	0.0507		101	332	
313.00 > 119.00	1.976	1.987	-0.011	1.000	8475		11.32(5.03-15.10)		249	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.302	0.013	0.864	4486104	2.43		97.4	106312	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	5756985	2.34		99.0	64054	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	96123	0.0517		103	189	
363.00 > 169.00	2.315	2.328	-0.013	1.000	42267		2.27(1.13-3.40)		874	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	124727	0.0459		101	16.2	
399.00 > 99.00	2.328	2.328	0.0	1.000	43030		2.90(1.50-4.49)		16.3	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.649	0.008	0.991	1095016	2.32		97.7	24792	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.665	-0.008	1.000	35505	0.0463		97.6	2699	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.673	0.008	1.000	4442978	2.50		99.9	68429	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.689	-0.008		4718161	2.50			64387	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.689	-0.008	1.000	96850	0.0488		97.6	29.6	
413.00 > 169.00	2.681	2.689	-0.008	1.000	56099		1.73(0.84-2.52)		233	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.697	-0.009	1.000	106208	0.0490		103	2686	
449.00 > 99.00	2.689	2.697	-0.009	1.000	29241		3.63(1.94-5.82)		671	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.044	0.007	1.138	3938487	2.29		95.8	61702	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.044	0.014	1.141	3572989	2.51		100	73989	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.058	3.058	0.0	1.002	86520	0.0485		105	288	
499.00 > 99.00	3.051	3.058	-0.007	1.000	20696		4.18(2.31-6.93)		169	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.065	-0.007	1.000	75527	0.0518		104	180	
463.00 > 169.00	3.058	3.065	-0.007	1.000	16839		4.49(1.90-5.69)		436	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.380	0.009	1.264	6102123	2.45		98.0	51332	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.398	0.009	1.271	1117854	2.52		105	23032	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	1.000	126946	0.0535		107	2455	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.407	0.009	1.275	3022189	2.54		102	33919	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.417	-0.010	1.000	29796	0.0508		106	1129	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.426	-0.010	1.000	63613	0.0555		111	314	
513.00 > 169.00	3.416	3.426	-0.010	1.000	10532		6.04(2.36-7.09)		605	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.561	0.010	1.332	961752	2.45		97.9	29413	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.581	3.590	-0.009	1.003	23227	0.0580		116	335	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.727	0.013	1.395	1075419	2.86		115	2422	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.738	0.012	1.399	2436822	2.62		105	72503	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.738	-0.008	1.000	52803	0.0502		104	1901	
599.00 > 99.00	3.730	3.738	-0.008	1.000	16678		3.17(1.39-4.16)		453	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.758	-0.008	1.003	19635	0.0466		93.2	531	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.758	-0.008	1.000	41413	0.0507		101	145	
563.00 > 169.00	3.750	3.758	-0.008	1.000	10436		3.97(2.12-6.36)		622	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.036	0.002	1.506	2291171	2.59		104	15380	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.056	-0.007	1.003	43849	0.0468		93.5	8.2	
613.00 > 169.00	4.038	4.056	-0.018	1.000	12303		3.56(2.13-6.40)		289	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.318	-0.011	1.000	47164	0.0500		100	8.7	
663.00 > 169.00	4.299	4.318	-0.019	0.998	13640		3.46(1.25-3.76)		191	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.533	0.011	1.695	1998929	2.48		99.2	14306	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.554	-0.010	1.000	12139	0.0551		110	202	
713.00 > 219.00	4.534	4.554	-0.020	0.998	8515		1.43(0.71-2.13)		116	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.956	4.955	0.001	1.849	3014778	2.56		102	9723	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.956	4.973	-0.016	1.000	80347	0.0486		97.2	8.6	
813.00 > 169.00	4.956	4.973	-0.016	1.000	13205		6.08(2.86-8.58)		125	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.323	5.330	-0.007	1.000	57730	0.0491		98.2	12.0	
913.00 > 169.00	5.323	5.330	-0.007	1.000	7511		7.69(3.83-11.48)		65.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 14:08:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\2017.03.17LLZA_002.d

Injection Date: 17-Mar-2018 12:20:16 Instrument ID: A8_N

Lims ID: CCVL

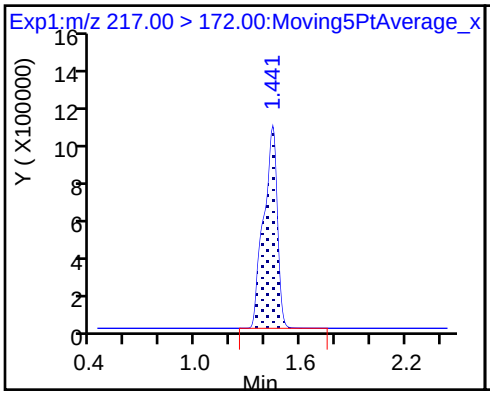
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

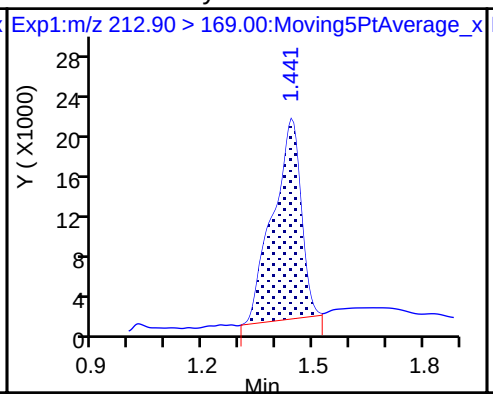
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

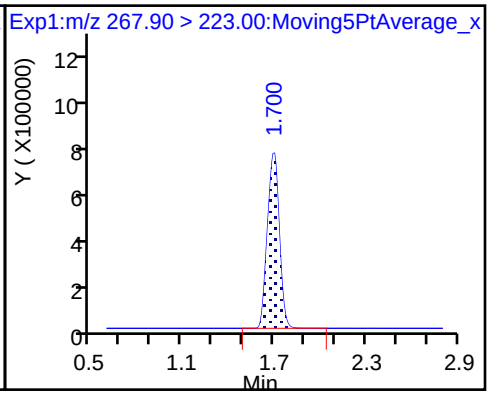
D 1 13C4 PFBA



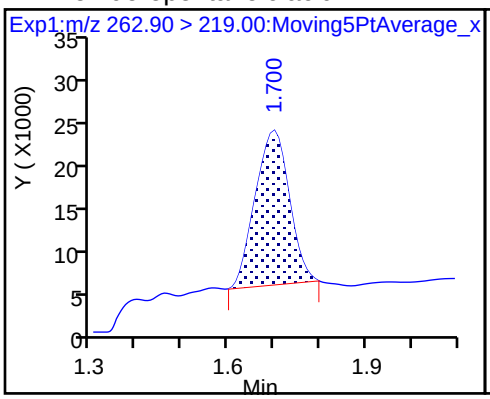
2 Perfluorobutyric acid



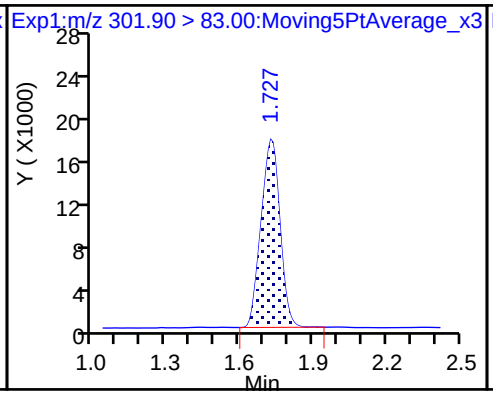
D 3 13C5-PFPeA



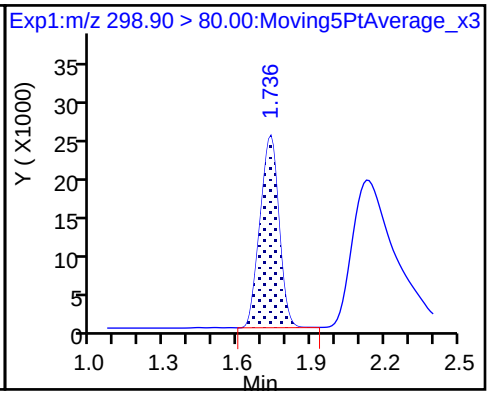
4 Perfluoropentanoic acid



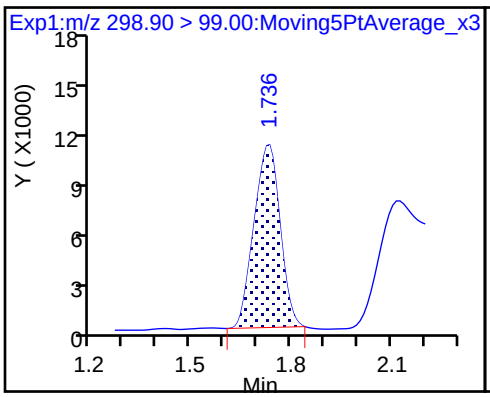
D 47 13C3-PFBS



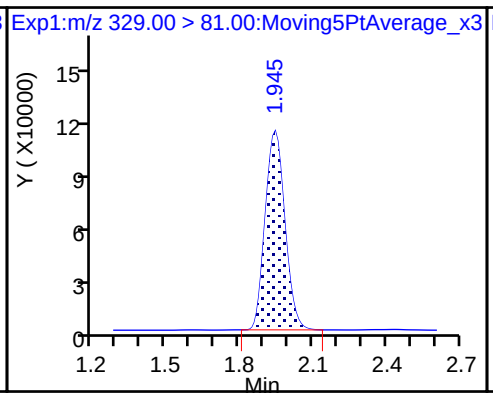
5 Perfluorobutanesulfonic acid



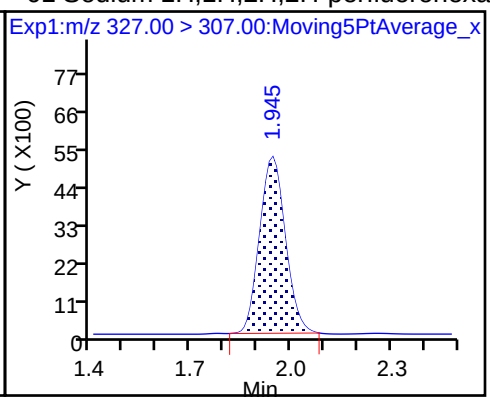
5 Perfluorobutanesulfonic acid



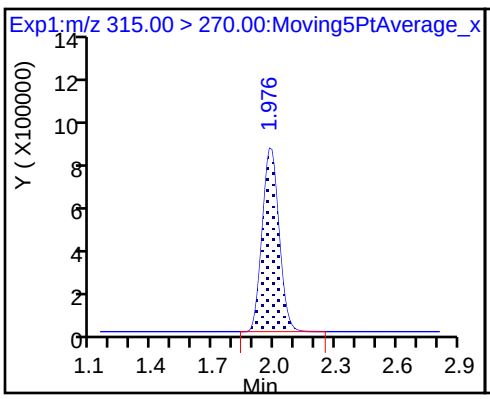
D 60 M2-4:2FTS



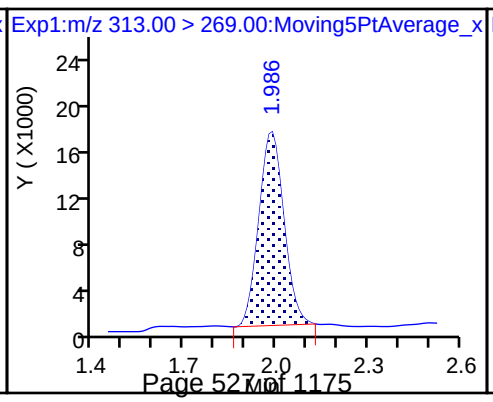
61 Sodium 1H,1H,2H,2H-perfluorohexane



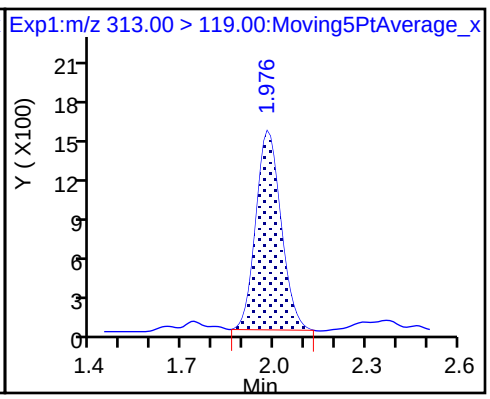
D 7 13C2 PFHxA



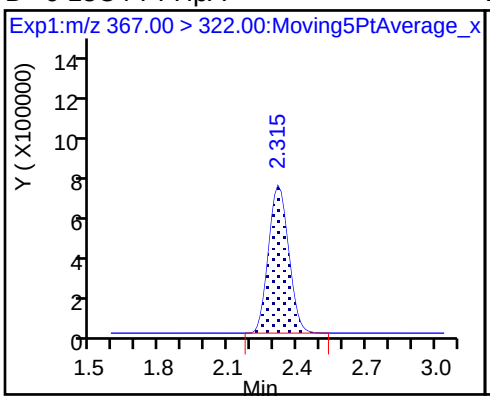
6 Perfluorohexanoic acid



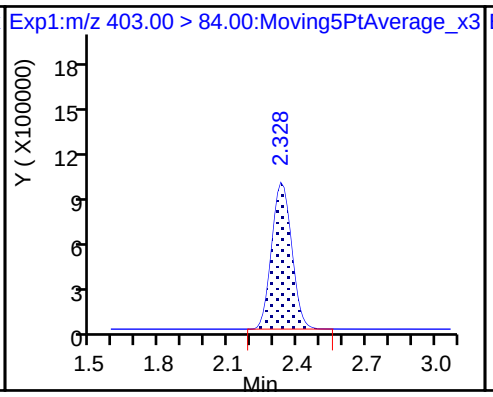
6 Perfluorohexanoic acid



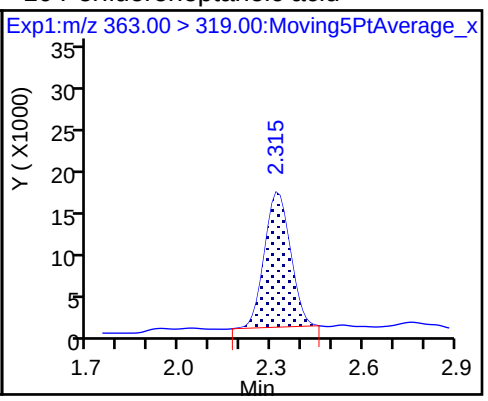
D 9 13C4-PFHpA



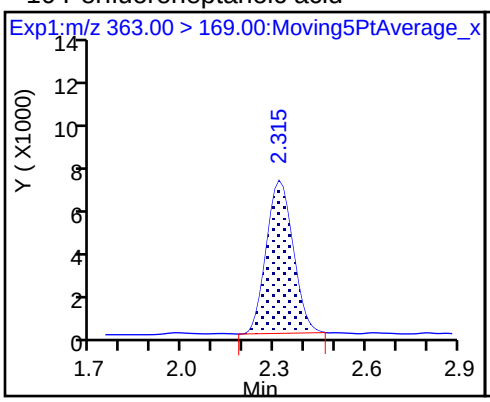
D 11 18O2 PFHxS



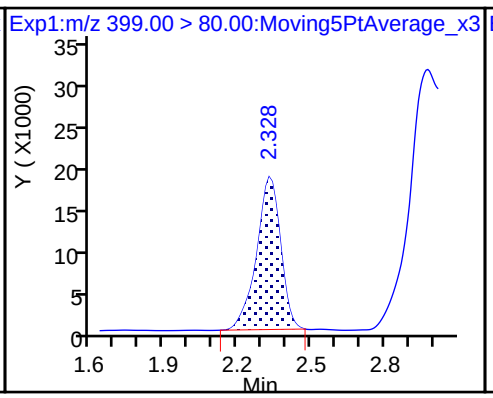
10 Perfluoroheptanoic acid



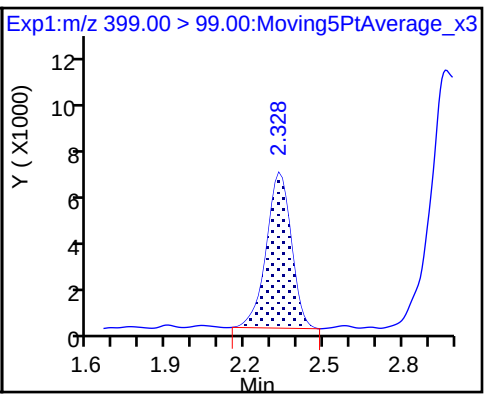
10 Perfluoroheptanoic acid



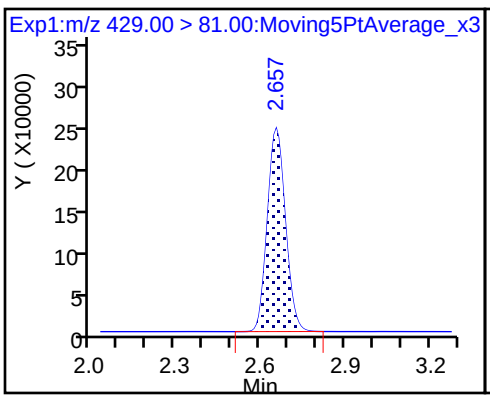
8 Perfluorohexanesulfonic acid



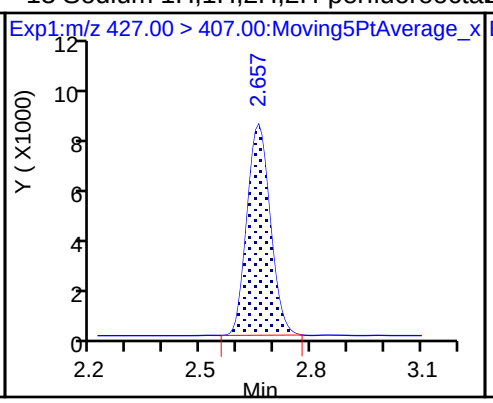
8 Perfluorohexanesulfonic acid



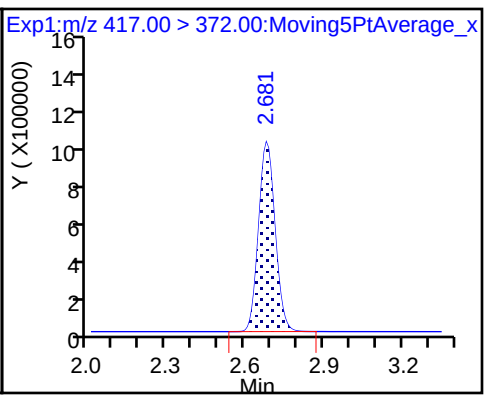
D 12 M2-6:2FTS



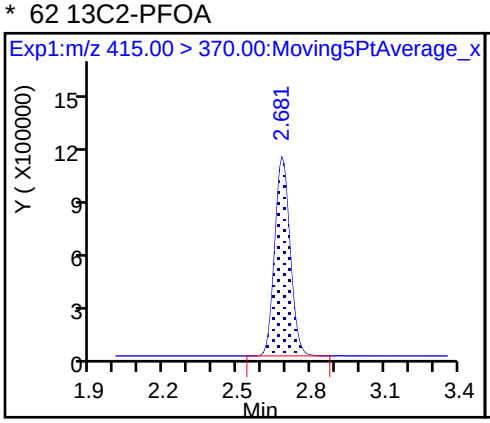
13 Sodium 1H,1H,2H,2H-perfluorooctane



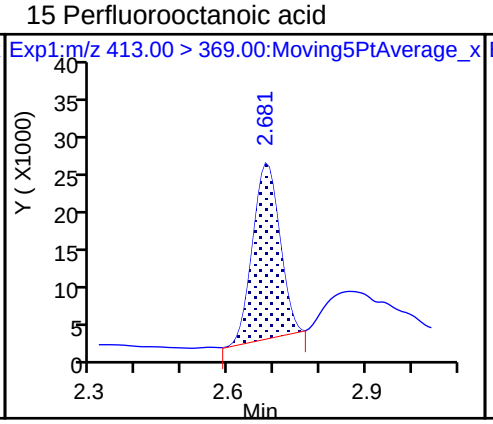
D 14 13C4 PFOA



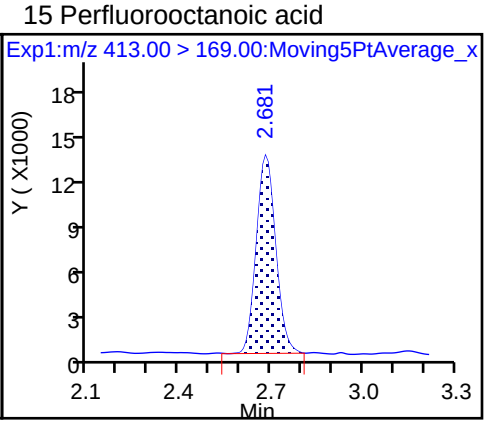
* 62 13C2-PFOA



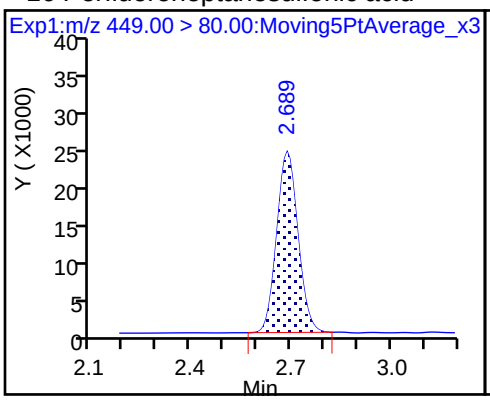
15 Perfluorooctanoic acid



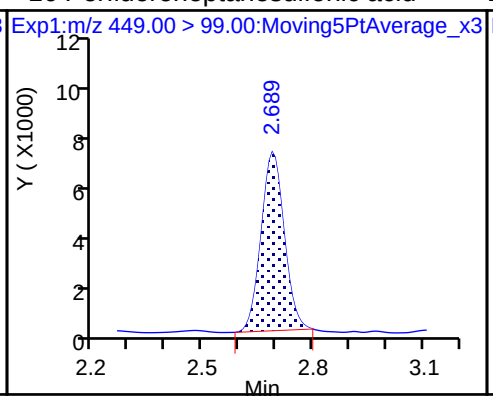
15 Perfluorooctanoic acid



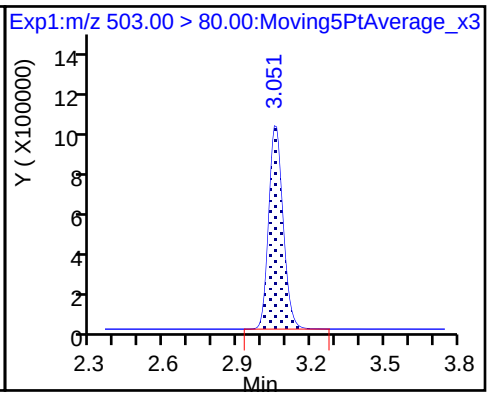
16 Perfluoroheptanesulfonic acid



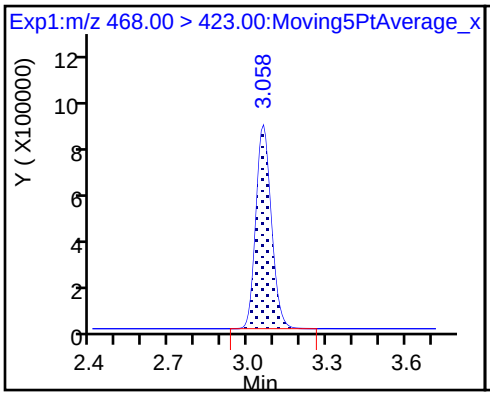
16 Perfluoroheptanesulfonic acid



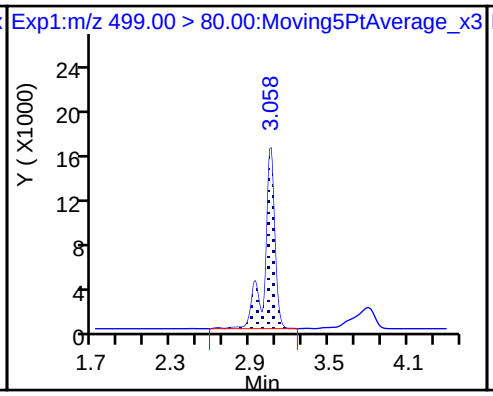
D 18 13C4 PFOS



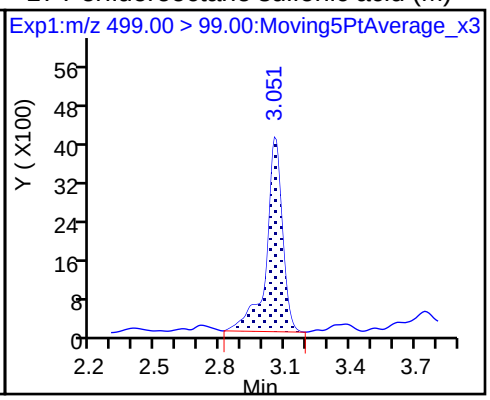
D 19 13C5 PFNA



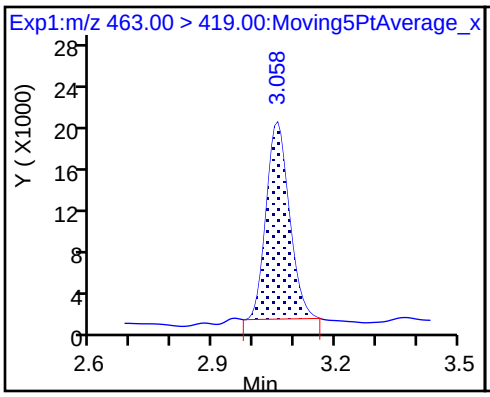
17 Perfluorooctane sulfonic acid



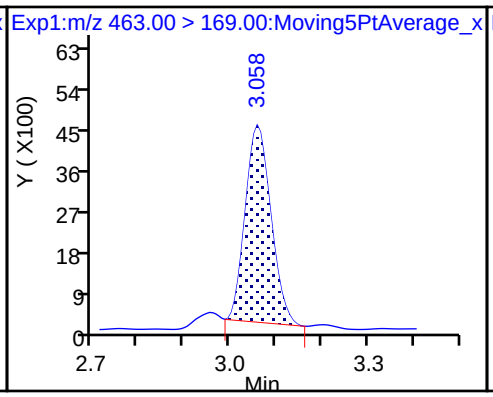
17 Perfluorooctane sulfonic acid (M)



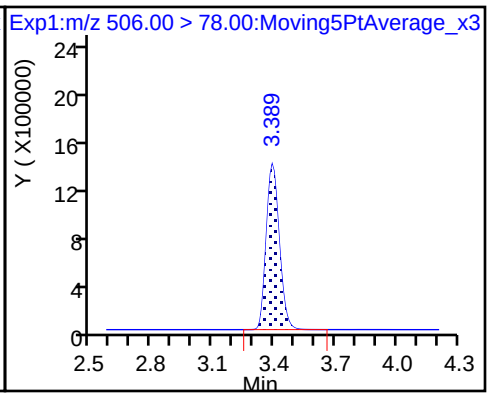
20 Perfluorononanoic acid



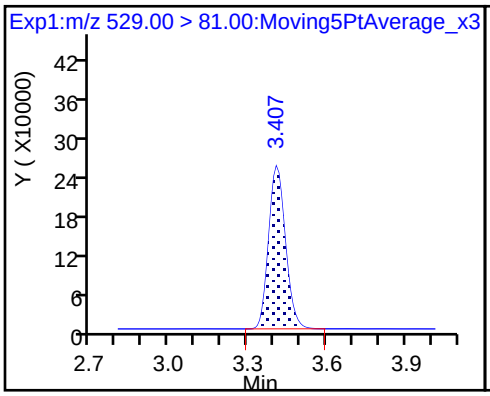
20 Perfluorononanoic acid



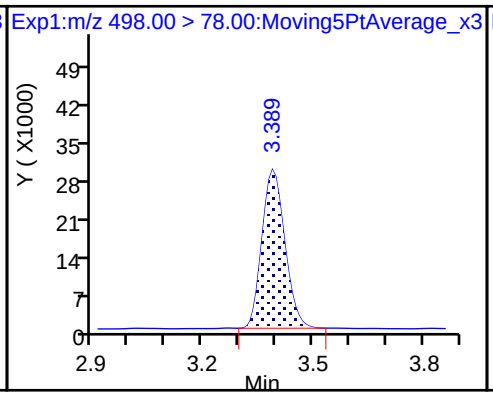
D 21 13C8 FOSA



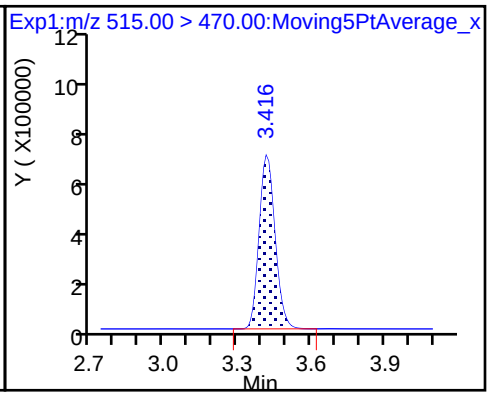
D 26 M2-8:2FTS



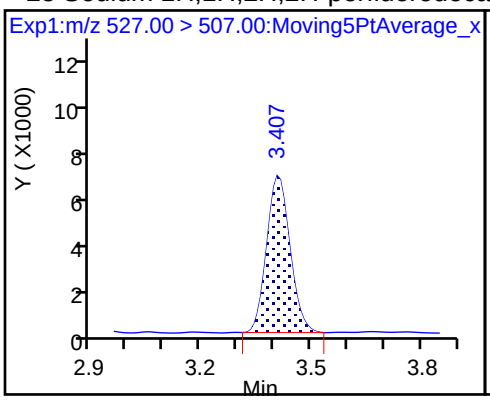
22 Perfluorooctane Sulfonamide



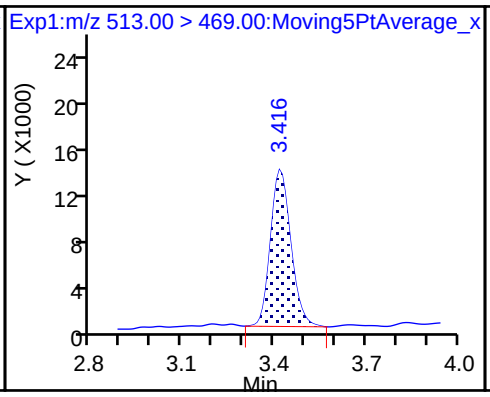
D 23 13C2 PFDA



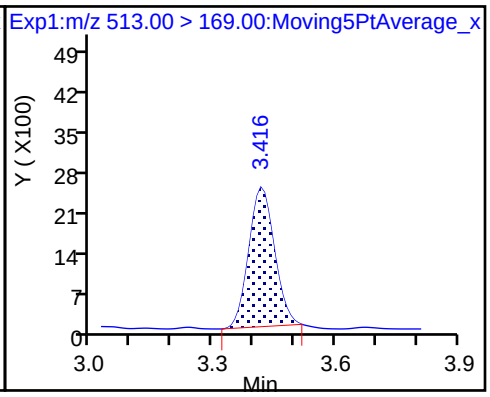
25 Sodium 1H,1H,2H,2H-perfluorodecan



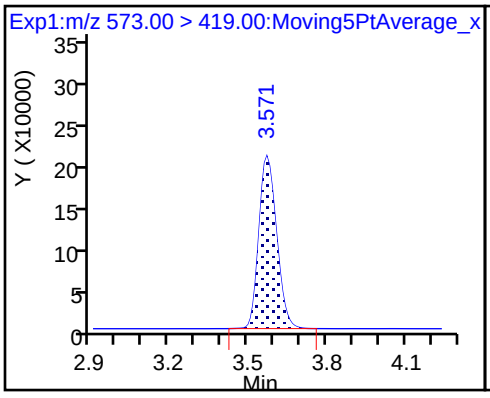
24 Perfluorodecanoic acid



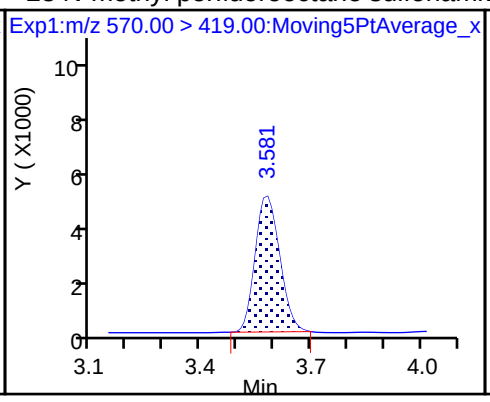
24 Perfluorodecanoic acid



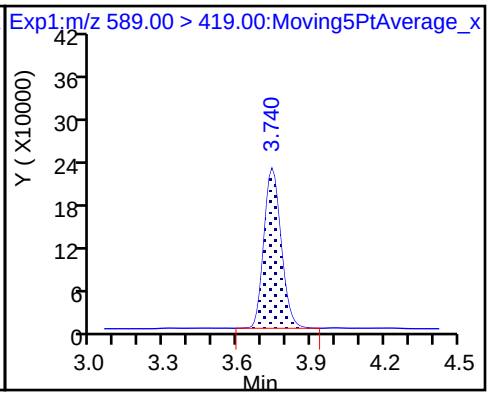
D 27 d3-NMeFOSAA



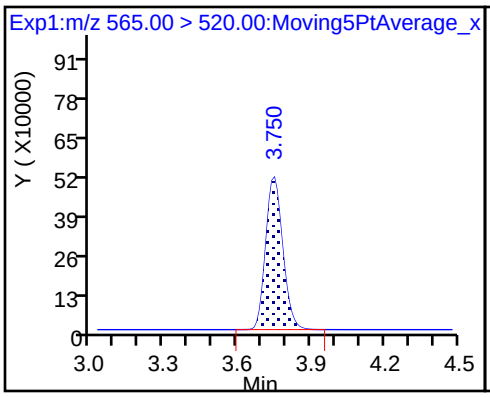
28 N-methyl perfluorooctane sulfonami



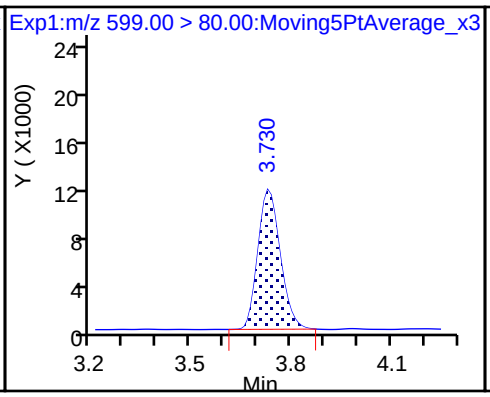
D 32 d5-NEtFOSAA



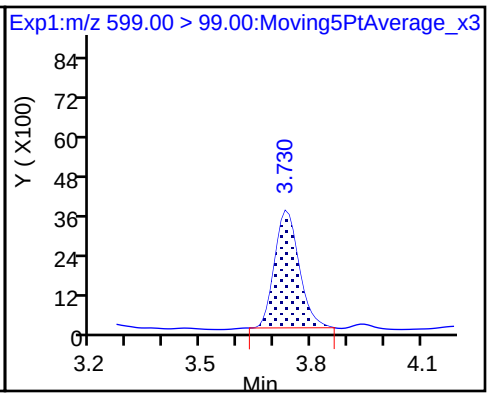
D 30 13C2 PFUnA



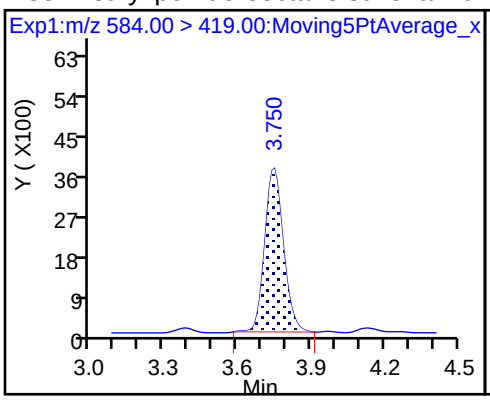
29 Perfluorodecane Sulfonic acid



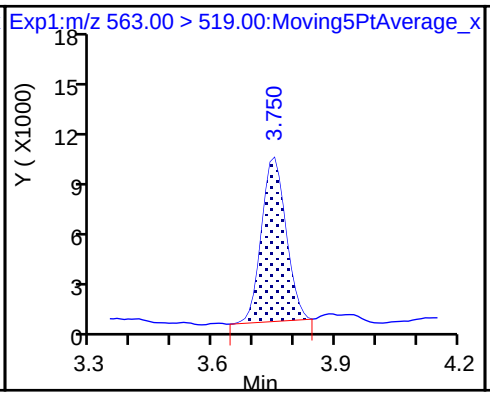
29 Perfluorodecane Sulfonic acid



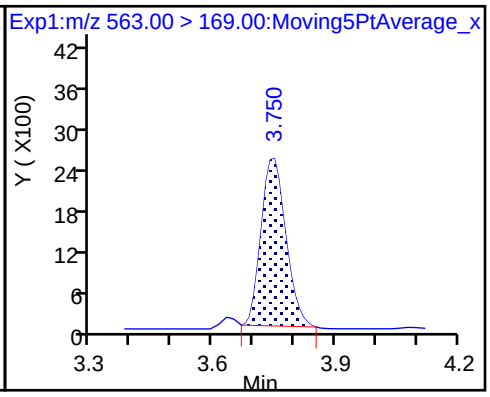
33 N-ethyl perfluorooctane sulfonamid



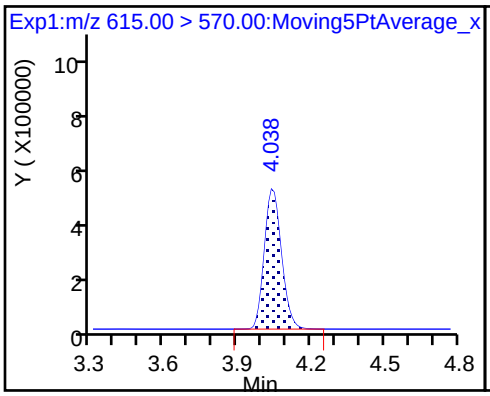
31 Perfluoroundecanoic acid



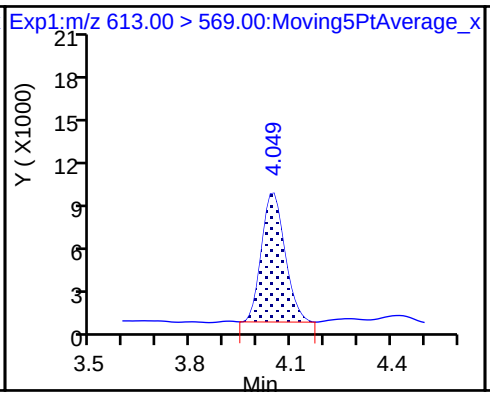
31 Perfluoroundecanoic acid



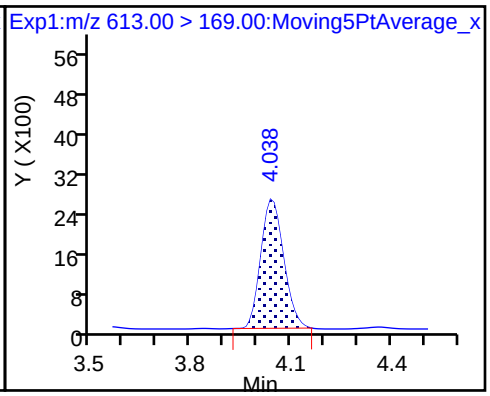
D 36 13C2 PFDoA



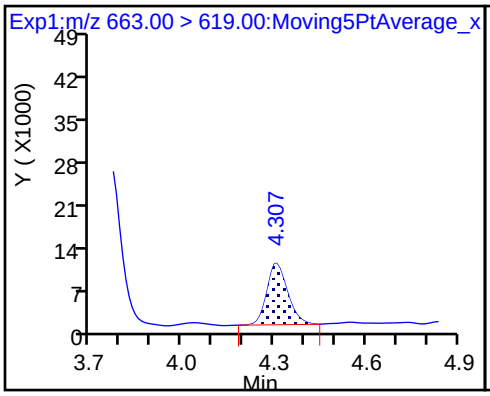
37 Perfluorododecanoic acid



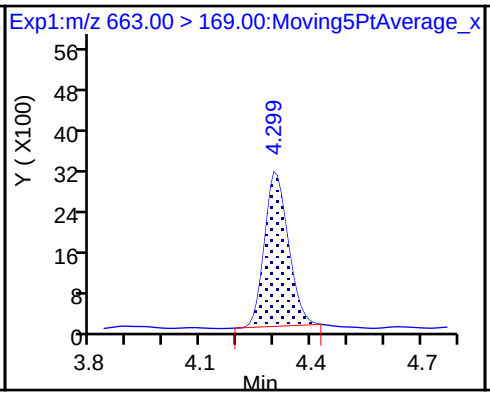
37 Perfluorododecanoic acid



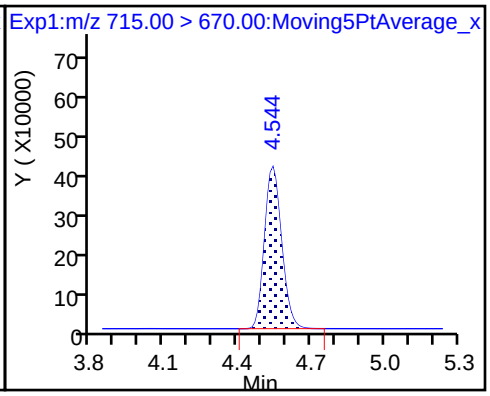
41 Perfluorotridecanoic acid



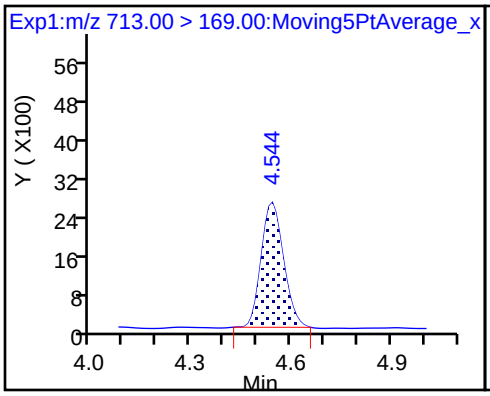
41 Perfluorotridecanoic acid



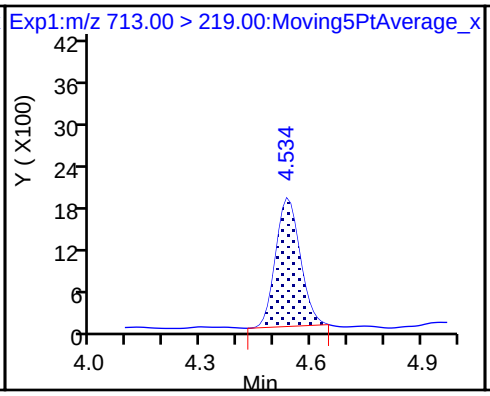
D 43 13C2-PFTeDA



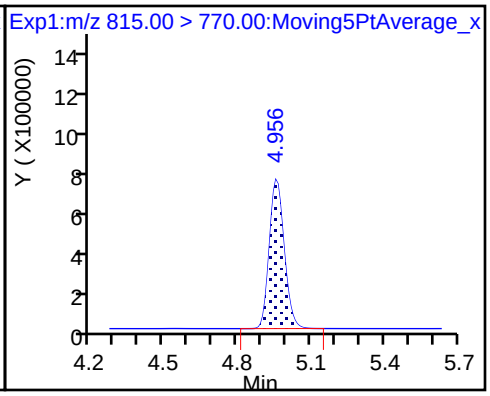
42 Perfluorotetradecanoic acid



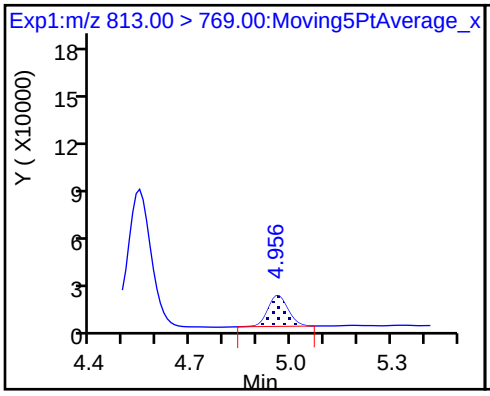
42 Perfluorotetradecanoic acid



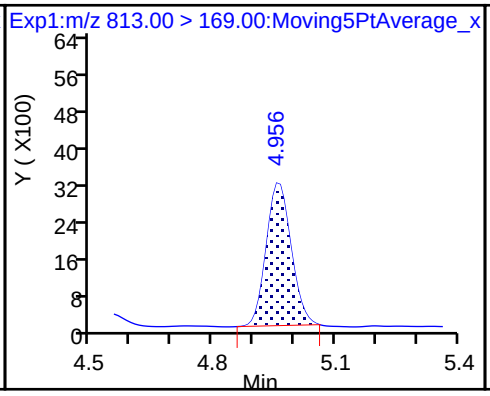
D 44 13C2-PFHxDA



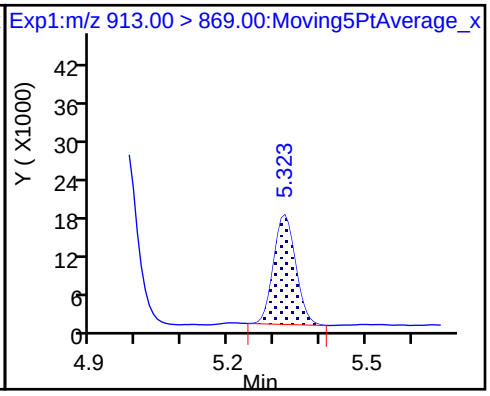
45 Perfluorohexadecanoic acid



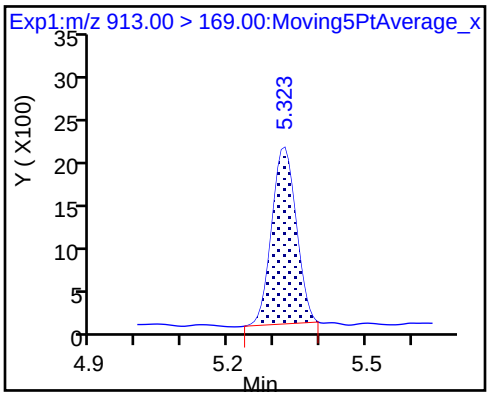
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

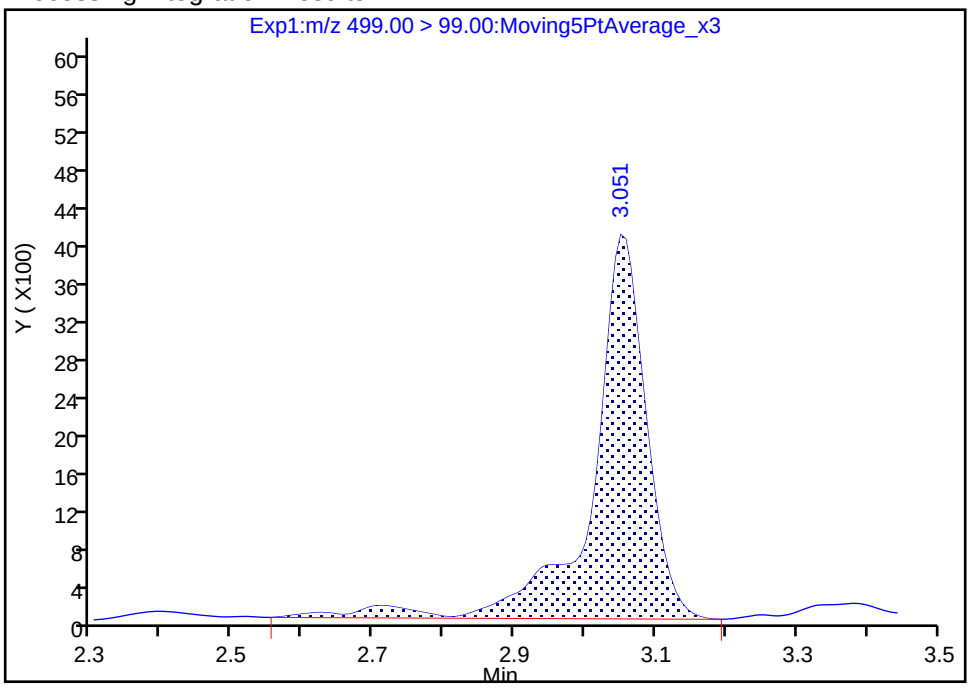
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\2017.03.17LLZA_002.d
Injection Date: 17-Mar-2018 12:20:16 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

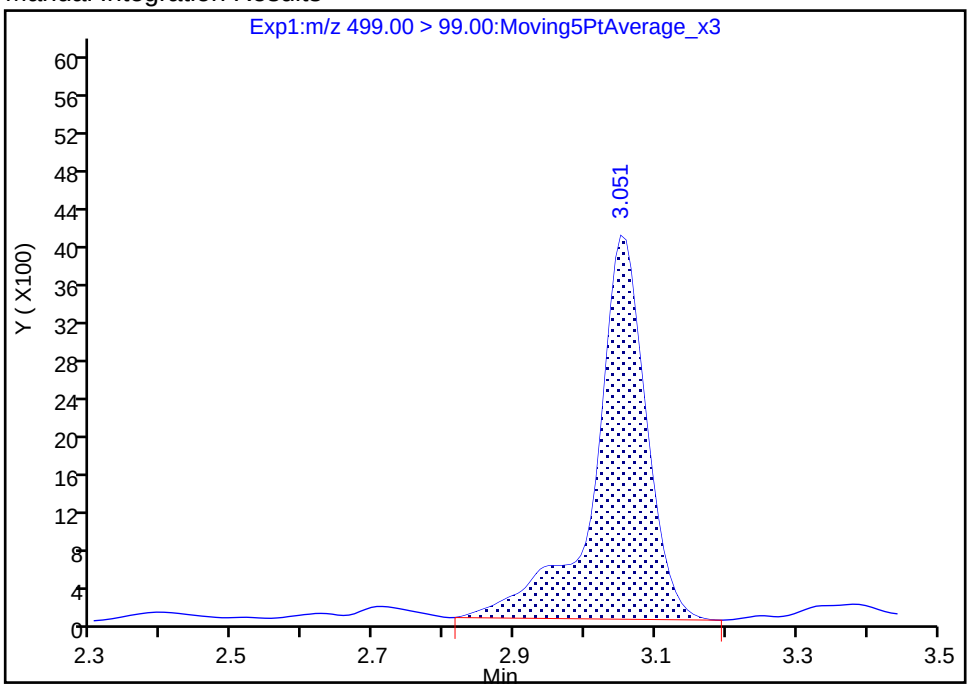
Processing Integration Results

RT: 3.05
Area: 21799
Amount: 0.048497
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 20696
Amount: 0.048497
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 08:58:14
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVIS 320-213578/3 Calibration Date: 03/17/2018 12:28

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.8955		0.966	1.00	-3.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.135		0.972	1.00	-2.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	78.21		0.894	0.884	1.1	50.0
4:2 FTS	AveID	16.07	14.01		0.814	0.934	-12.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.005		0.996	1.00	-0.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.063		1.03	1.00	2.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	0.999		0.815	0.910	-10.5	40.0
6:2FTS	AveID	1.665	1.664		0.947	0.948	-0.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.280		0.928	0.952	-2.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.094		0.980	1.00	-2.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9592		0.941	1.00	-5.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.014		0.869	0.928	-6.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9887		1.02	1.00	1.7	40.0
8:2FTS	AveID	1.257	1.338		1.02	0.958	6.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9291		0.979	1.00	-2.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	0.9749		0.936	1.00	-6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.5971		0.901	0.964	-6.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9426		0.963	1.00	-3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7194		0.858	1.00	-14.2	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.012		0.990	1.00	-1.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.062		1.03	1.00	3.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2492		0.904	1.00	-9.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9019		0.959	1.00	-4.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9469		0.971	1.00	-2.9	50.0
13C4 PFBA	Ave	1.277	1.165		2.28	2.50	-8.7	50.0
13C5 PFPeA	Ave	0.9006	0.8162		2.27	2.50	-9.4	50.0
13C3-PFBS	Ave	0.0222	0.0209		2.19	2.33	-5.8	50.0
M2-4:2FTS	Ave	0.1590	0.1361		2.00	2.34	-14.4	50.0
13C2 PFHxA	Ave	1.004	0.9288		2.31	2.50	-7.5	50.0
13C4-PFHpA	Ave	0.9767	0.9030		2.31	2.50	-7.5	50.0
18O2 PFHxS	Ave	1.303	1.254		2.28	2.37	-3.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVIS 320-213578/3 Calibration Date: 03/17/2018 12:28

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2361		2.24	2.38	-5.6	40.0
13C4 PFOA	Ave	0.9431	0.9348		2.48	2.50	-0.9	50.0
13C4 PFOS	Ave	0.9113	0.8915		2.34	2.39	-2.2	50.0
13C5 PFNA	Ave	0.7545	0.7660		2.54	2.50	1.5	50.0
13C8 FOSA	Ave	1.319	1.287		2.44	2.50	-2.5	50.0
M2-8:2FTS	Ave	0.2350	0.2308		2.35	2.40	-1.8	40.0
13C2 PFDA	Ave	0.6303	0.6215		2.47	2.50	-1.4	50.0
d3-NMeFOSAA	Ave	0.2081	0.2073		2.49	2.50	-0.4	50.0
13C2 PFUnA	Ave	0.4935	0.5061		2.56	2.50	2.5	50.0
d5-NEtFOSAA	Ave	0.1990	0.2045		2.57	2.50	2.7	50.0
13C2 PFDoA	Ave	0.4680	0.4588		2.45	2.50	-2.0	50.0
13C2-PFTeDA	Ave	0.4272	0.4537		2.66	2.50	6.2	50.0
13C2-PFHxDA	Ave	0.6248	0.6779		2.71	2.50	8.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\2017.03.17LLZA_003.d
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 17-Mar-2018 12:28:05 ALS Bottle#: 28 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:08:10 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK039

First Level Reviewer: westendorfc Date: 20-Mar-2018 08:58:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.434	0.007	0.537	5719294	2.28		91.3	121156	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2048629	0.9655		96.6	1415	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.691	0.0	0.631	4007403	2.27		90.6	109379	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.005	1819422	0.9717		97.2	727	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.727	0.0	0.644	95636	2.19		94.2	545	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.005	2844021	0.8936		101	1263	
298.90 > 99.00	1.736	1.736	0.0	1.005	1179698		2.41(1.25-3.74)		1185	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.935	0.010	0.726	624284	2.00		85.6	7141	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	538169	0.8139		87.1	33235	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.976	0.0	0.737	4560100	2.31		92.5	91394	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	1832810	1.00		99.6	6877	
313.00 > 119.00	1.976	1.976	0.0	1.000	171550		10.68(5.03-15.10)		3417	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.302	0.013	0.864	4433649	2.31		92.5	73847	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	5824039	2.28		96.2	75835	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	1885847	1.03		103	4084	
363.00 > 169.00	2.315	2.315	0.0	1.000	720828		2.62(1.13-3.40)		10997	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	2238021	0.8148		89.5	278	
399.00 > 99.00	2.328	2.328	0.0	1.000	767060		2.92(1.50-4.49)		293	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.649	0.0	0.988	1101347	2.24		94.4	21255	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.649	0.0	1.000	731308	0.9474		99.9	24341	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.673	0.0	0.997	4589808	2.48		99.1	96583	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4909748	2.50			94144	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.003	2008229	0.9798		98.0	860	
413.00 > 169.00	2.681	2.681	0.0	1.003	1050430		1.91(0.84-2.52)		3943	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.681	0.0	1.000	2134107	0.9276		97.4	30914	
449.00 > 99.00	2.681	2.681	0.0	1.000	579232		3.68(1.94-5.82)		9641	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.044	0.007	1.138	4184202	2.34		97.8	44408	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.044	0.007	1.138	3760622	2.54		102	63182	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.051	0.0	1.000	1647419	0.8692		93.7	5095	
499.00 > 99.00	3.051	3.051	0.0	1.000	366261		4.50(2.31-6.93)		3136	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.051	0.0	1.000	1442831	0.9408		94.1	3410	
463.00 > 169.00	3.051	3.051	0.0	1.000	358227		4.03(1.90-5.69)		7389	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.380	0.009	1.264	6317729	2.44		97.5	51341	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.398	0.009	1.271	1085685	2.35		98.2	26848	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	2498465	1.02		102	37866	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.407	0.009	1.274	3051164	2.46		98.6	45635	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.407	0.0	1.000	580891	1.02		106	18458	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.416	0.0	1.000	1133887	0.9791		97.9	5786	
513.00 > 169.00	3.416	3.416	0.0	1.000	216362		5.24(2.36-7.09)		12199	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.561	0.010	1.332	1017914	2.49		99.6	31201	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	396940	0.9360		93.6	5702	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.727	0.013	1.395	1003817	2.57		103	2034	
D 30 13C2 PFUnA										
565.00 > 520.00	3.740	3.738	0.002	1.395	2484802	2.56		103	102534	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.729	3.729	0.0	1.000	1007734	0.9015		93.5	30419	
599.00 > 99.00	3.729	3.729	0.0	1.000	356480		2.83(1.39-4.16)		8379	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.750	0.0	1.003	378491	0.9628		96.3	12870	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.750	0.0	1.003	715049	0.8585		85.8	2724	
563.00 > 169.00	3.750	3.750	0.0	1.003	202715		3.53(2.12-6.36)		24020	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.036	0.002	1.506	2252605	2.45		98.0	16713	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.038	4.038	0.0	1.000	912106	0.9895		99.0	161	
613.00 > 169.00	4.038	4.038	0.0	1.000	230283		3.96(2.13-6.40)		4764	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	956502	1.03		103	198	
663.00 > 169.00	4.307	4.307	0.0	1.000	299468		3.19(1.25-3.76)		3343	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.533	0.011	1.695	2227422	2.66		106	16212	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.544	0.0	1.000	222067	0.9038		90.4	2589	
713.00 > 219.00	4.544	4.544	0.0	1.000	165159		1.34(0.71-2.13)		2296	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.955	0.0	1.849	3328530	2.71		109	10710	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.955	0.0	1.000	1200751	0.9586		95.9	117	
813.00 > 169.00	4.955	4.955	0.0	1.000	215106		5.58(2.86-8.58)		1895	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.323	5.323	0.0	1.000	1260773	0.9713		97.1	257	
913.00 > 169.00	5.323	5.323	0.0	1.000	157533		8.00(3.83-11.48)		1401	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 14:08:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b\2017.03.17LLZA_003.d

Injection Date: 17-Mar-2018 12:28:05 Instrument ID: A8_N

Lims ID: CCVIS

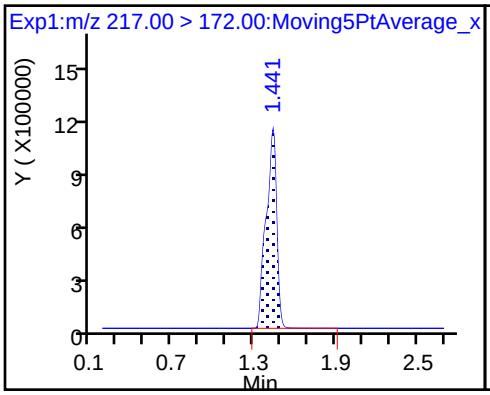
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 3

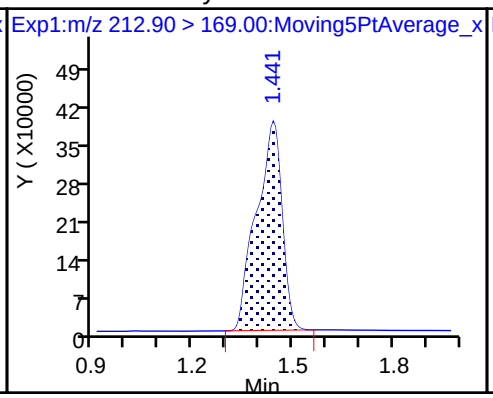
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

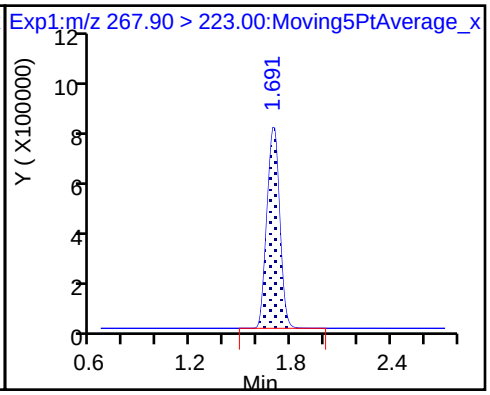
D 1 13C4 PFBA



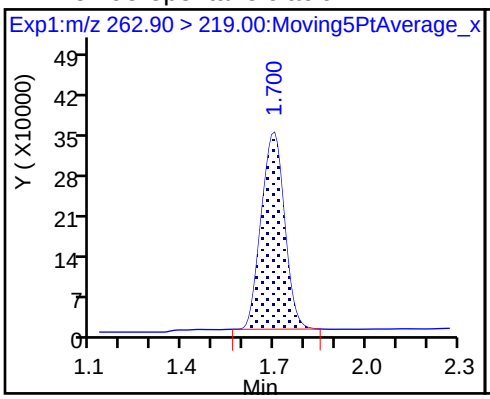
2 Perfluorobutyric acid



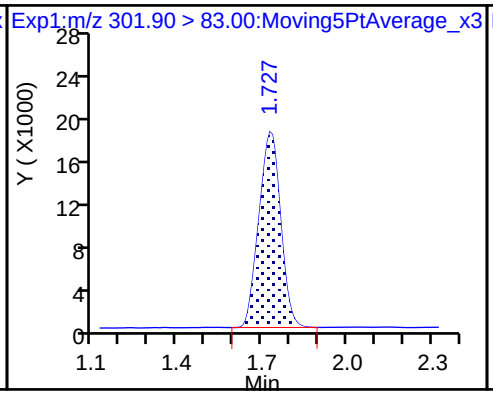
D 3 13C5-PFPeA



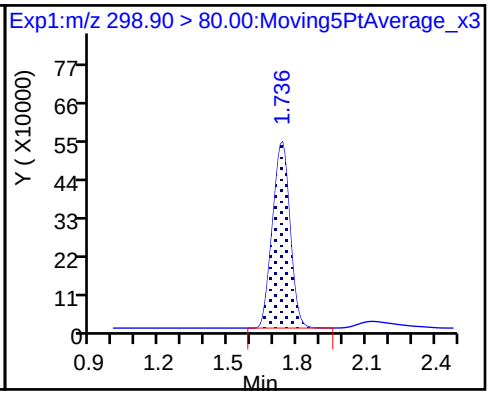
4 Perfluoropentanoic acid



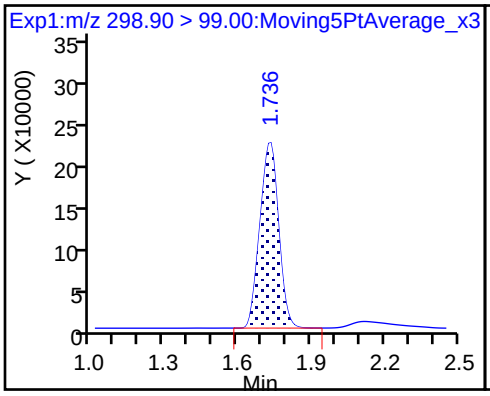
D 47 13C3-PFBS



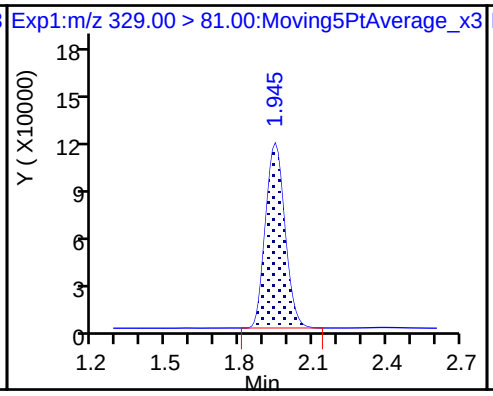
5 Perfluorobutanesulfonic acid



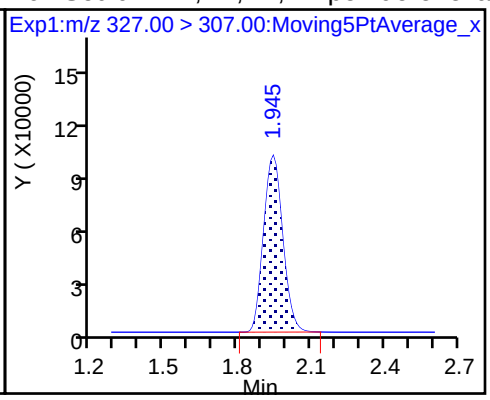
5 Perfluorobutanesulfonic acid



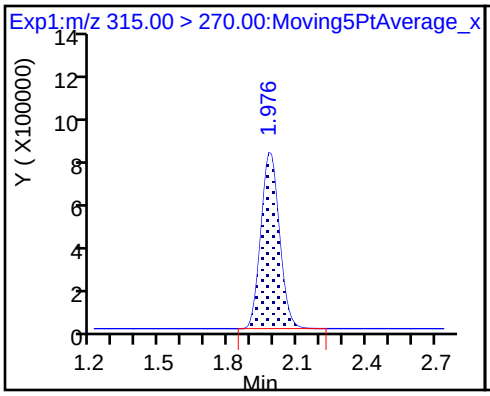
D 60 M2-4:2FTS



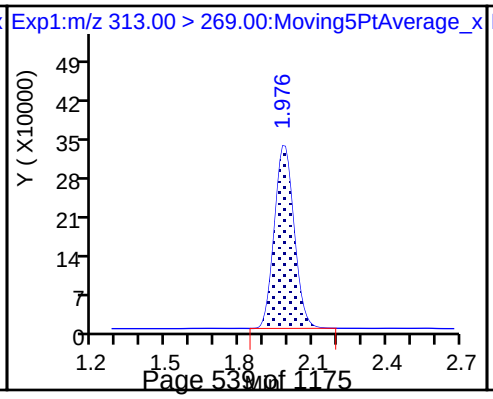
61 Sodium 1H,1H,2H,2H-perfluorohexane



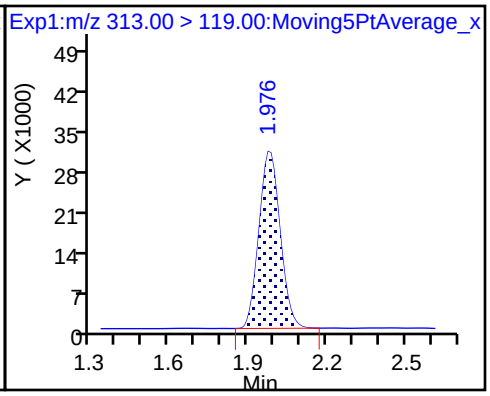
D 7 13C2 PFHxA



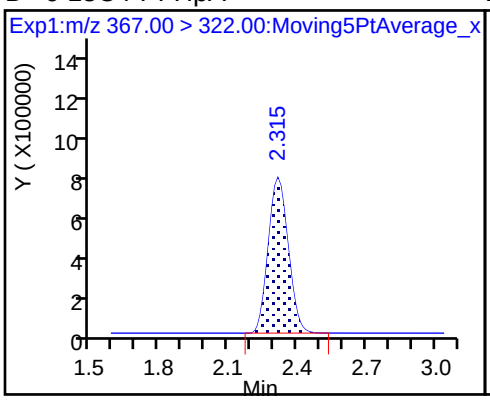
6 Perfluorohexanoic acid



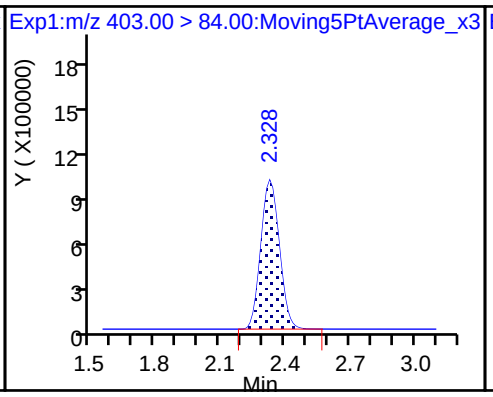
6 Perfluorohexanoic acid



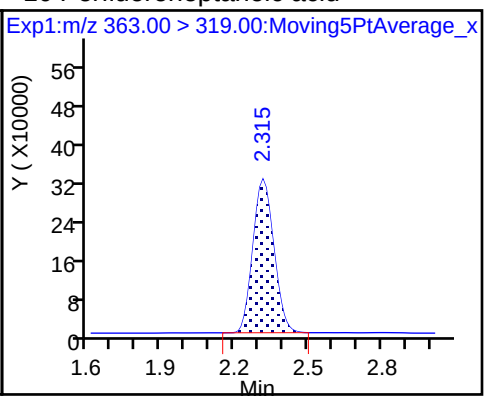
D 9 13C4-PFHpA



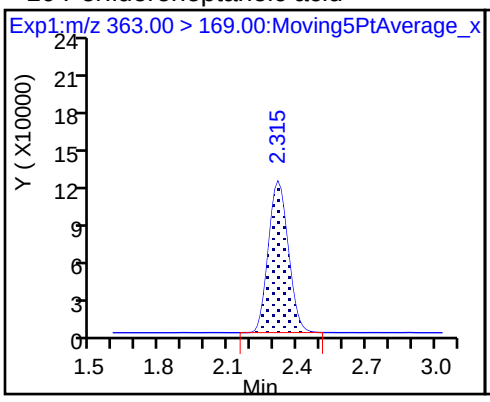
D 11 18O2 PFHxS



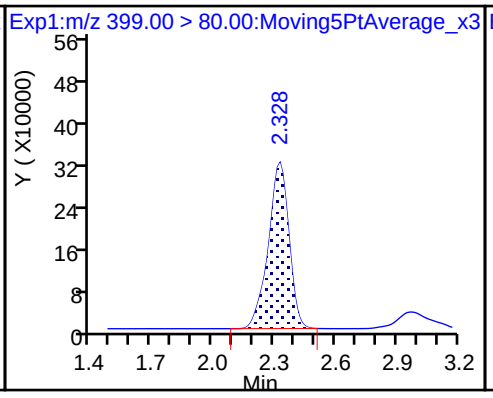
10 Perfluoroheptanoic acid



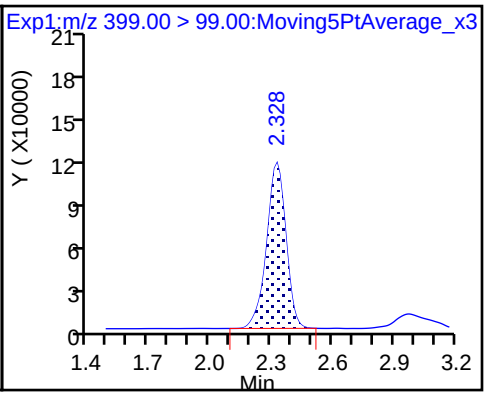
10 Perfluoroheptanoic acid



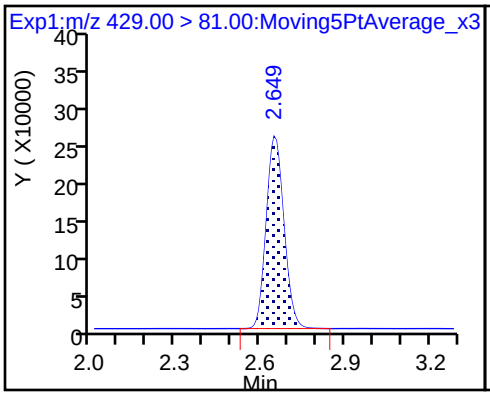
8 Perfluorohexanesulfonic acid



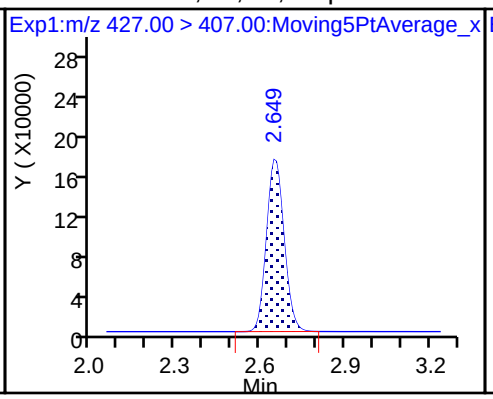
8 Perfluorohexanesulfonic acid



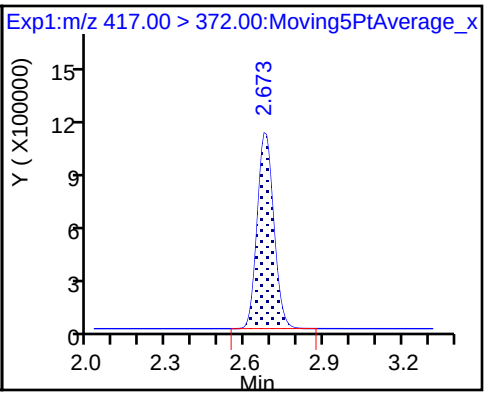
D 12 M2-6:2FTS



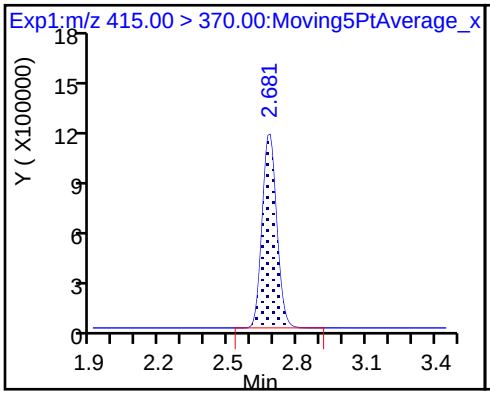
13 Sodium 1H,1H,2H,2H-perfluorooctane



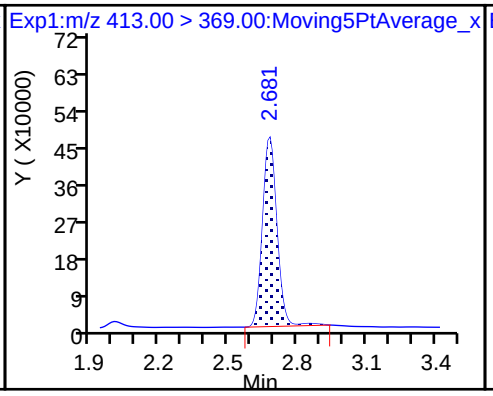
D 14 13C4 PFOA



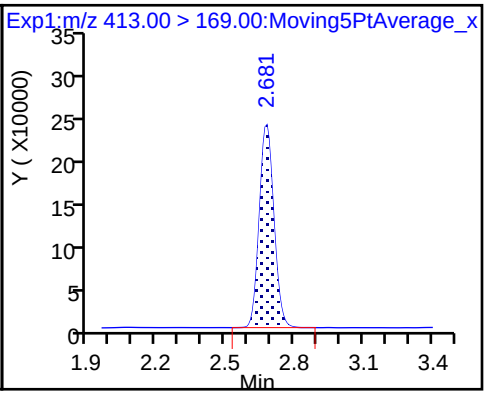
* 62 13C2-PFOA



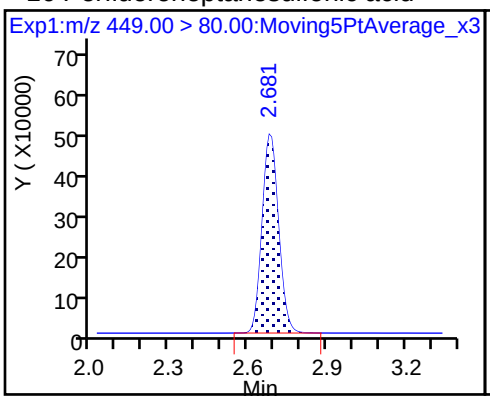
15 Perfluorooctanoic acid



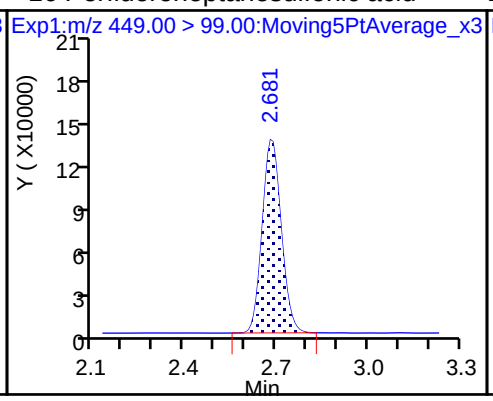
15 Perfluorooctanoic acid



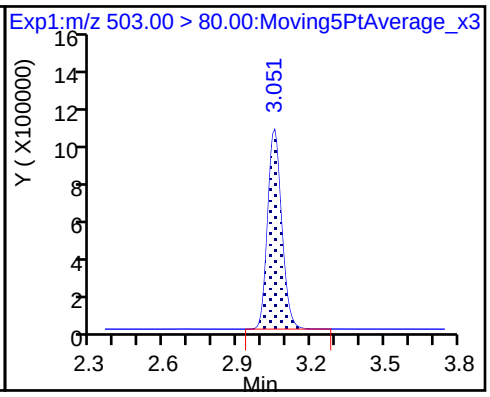
16 Perfluoroheptanesulfonic acid



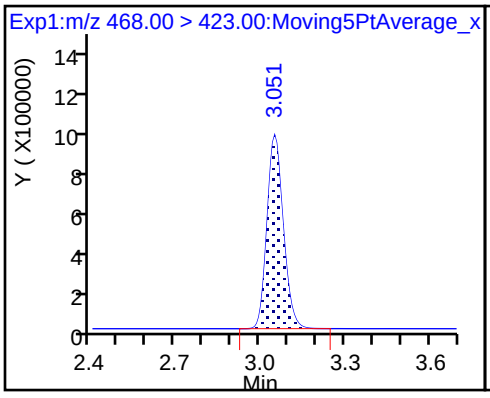
16 Perfluoroheptanesulfonic acid



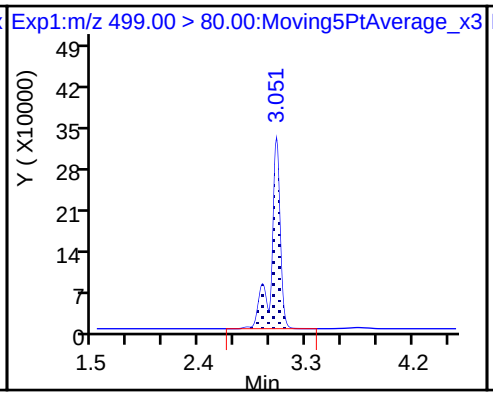
D 18 13C4 PFOS



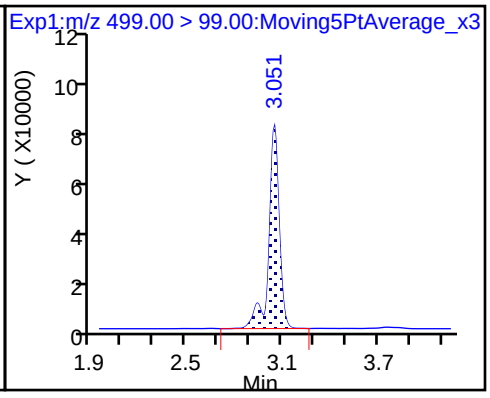
D 19 13C5 PFNA



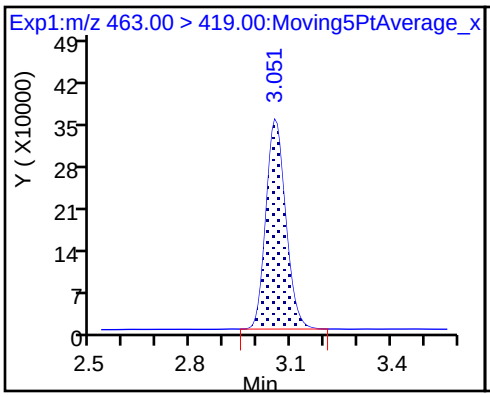
17 Perfluorooctane sulfonic acid



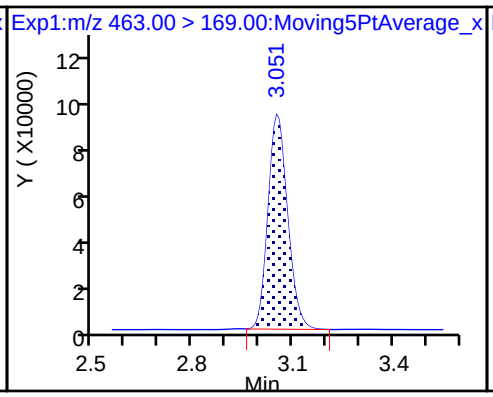
17 Perfluorooctane sulfonic acid



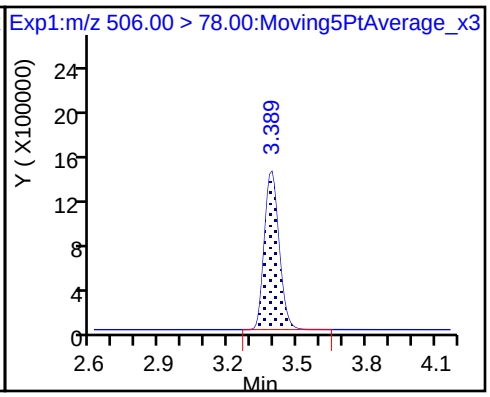
20 Perfluorononanoic acid



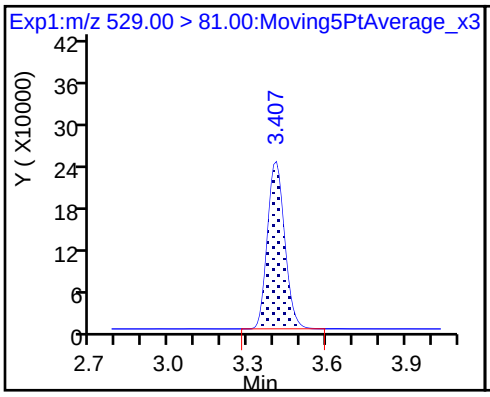
20 Perfluorononanoic acid



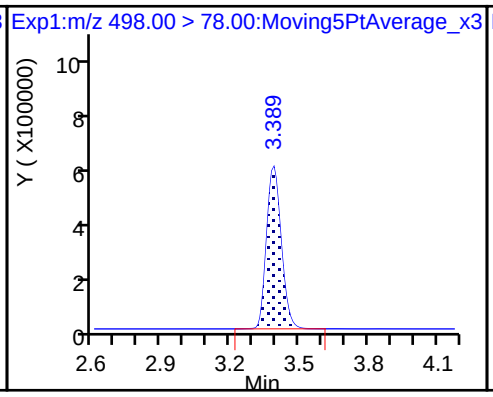
D 21 13C8 FOSA



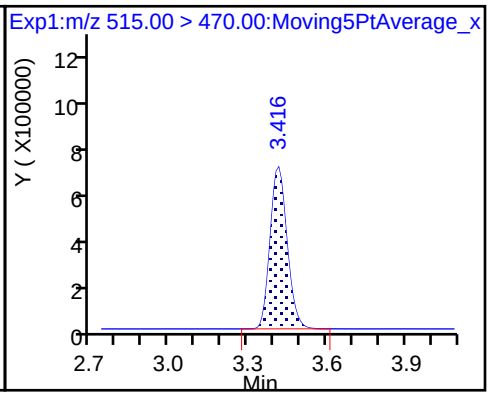
D 26 M2-8:2FTS



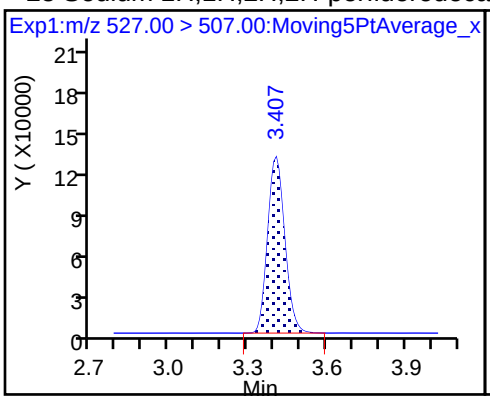
22 Perfluorooctane Sulfonamide



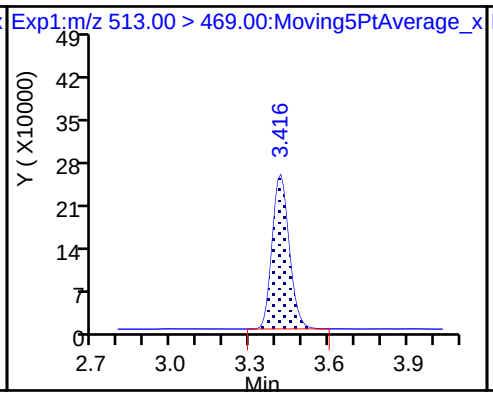
D 23 13C2 PFDA



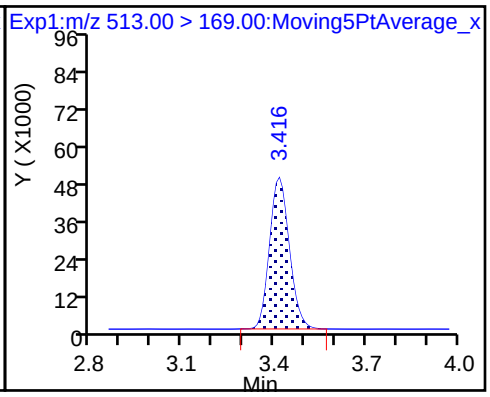
25 Sodium 1H,1H,2H,2H-perfluorodecan



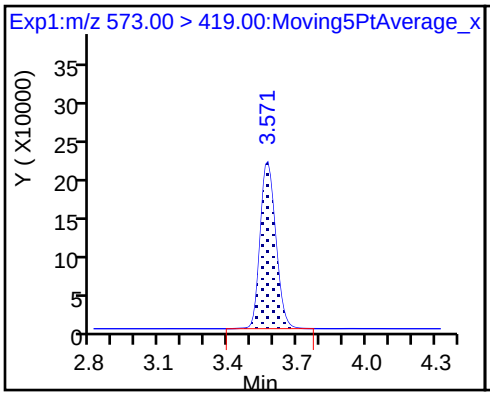
24 Perfluorodecanoic acid



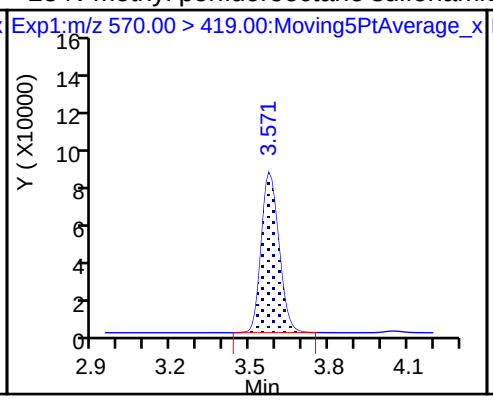
24 Perfluorodecanoic acid



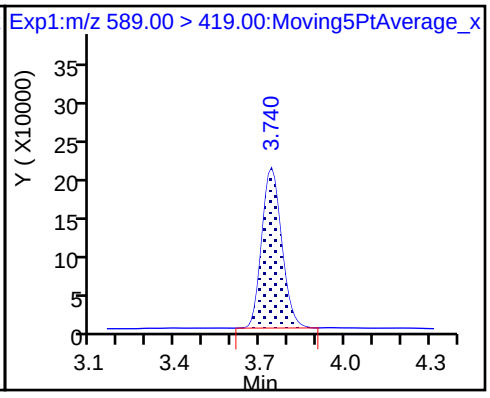
D 27 d3-NMeFOSAA



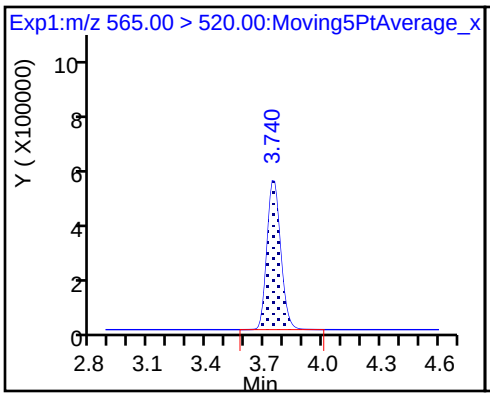
28 N-methyl perfluorooctane sulfonami



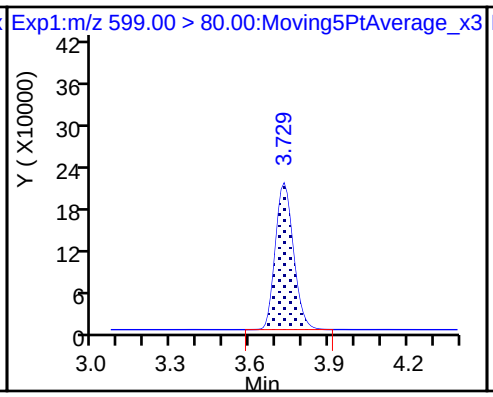
D 32 d5-NEtFOSAA



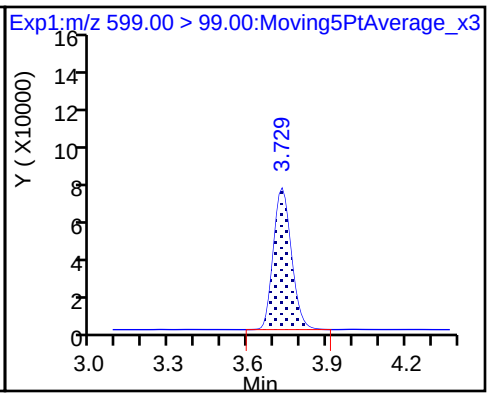
D 30 13C2 PFUnA



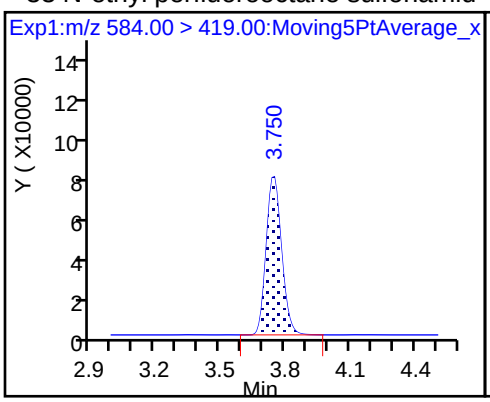
29 Perfluorodecane Sulfonic acid



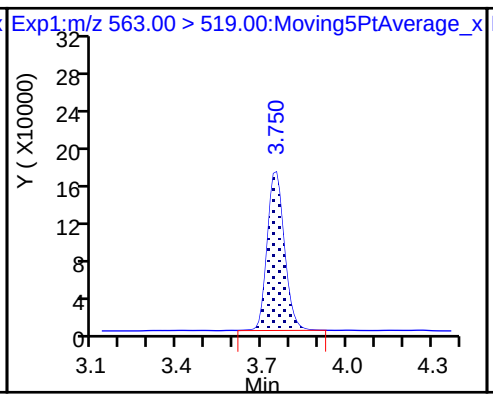
29 Perfluorodecane Sulfonic acid



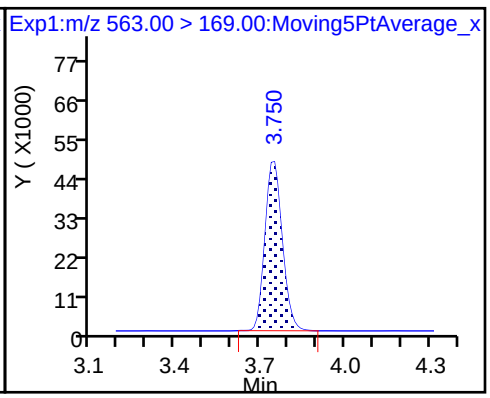
33 N-ethyl perfluorooctane sulfonamid



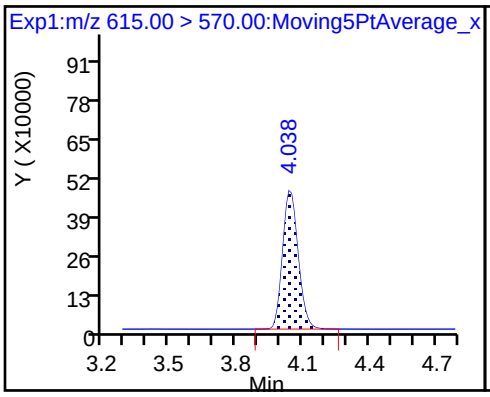
31 Perfluoroundecanoic acid



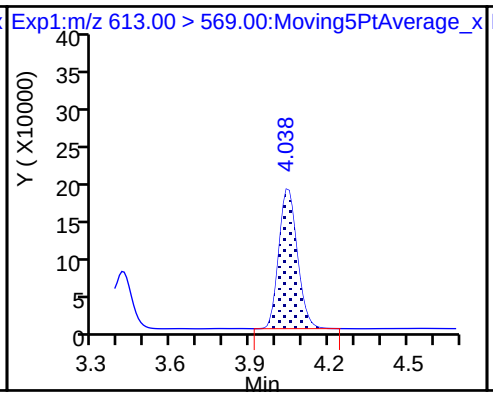
31 Perfluoroundecanoic acid



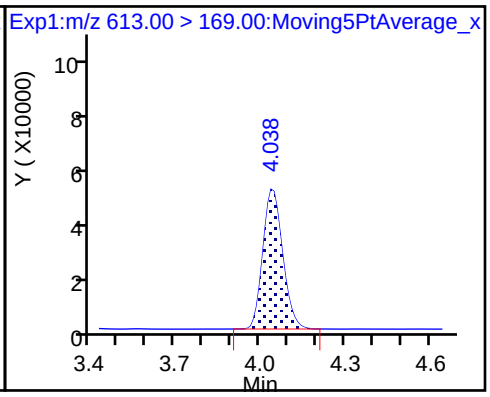
D 36 13C2 PFDoA



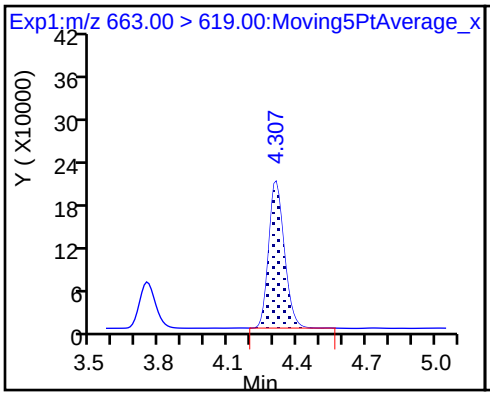
37 Perfluorododecanoic acid



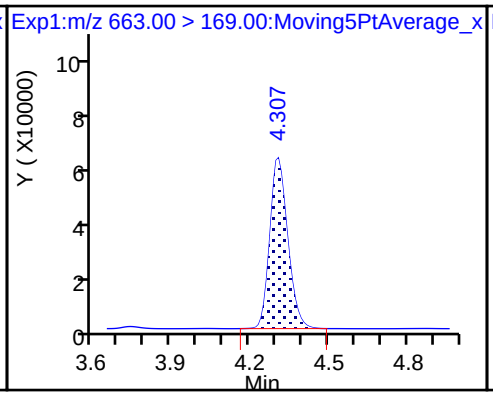
37 Perfluorododecanoic acid



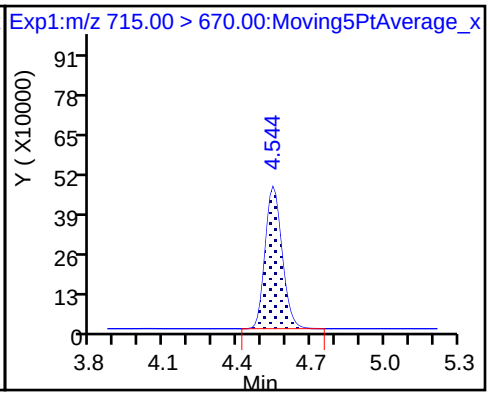
41 Perfluorotridecanoic acid



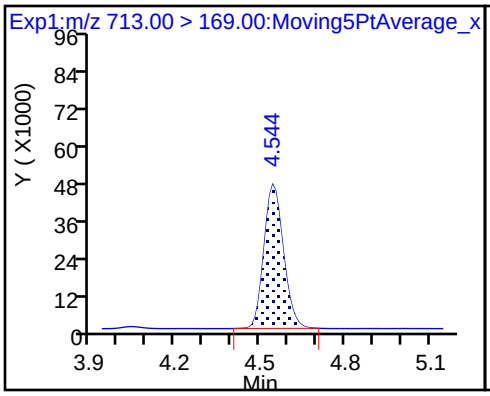
41 Perfluorotridecanoic acid



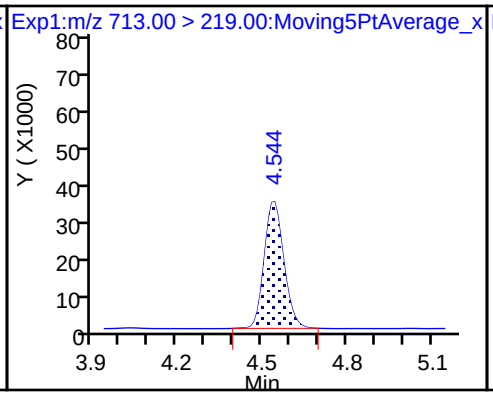
D 43 13C2-PFTeDA



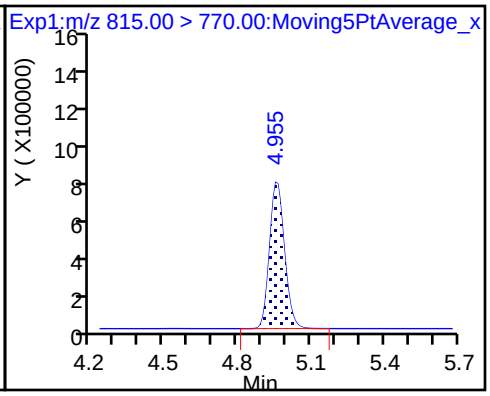
42 Perfluorotetradecanoic acid



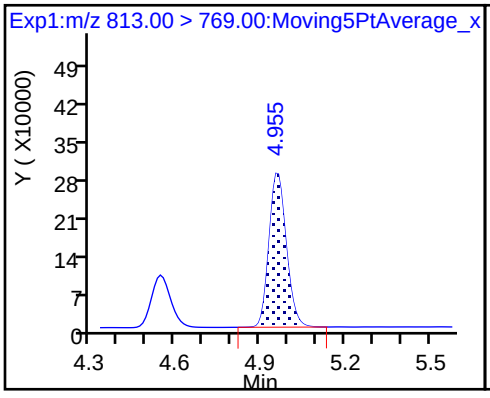
42 Perfluorotetradecanoic acid



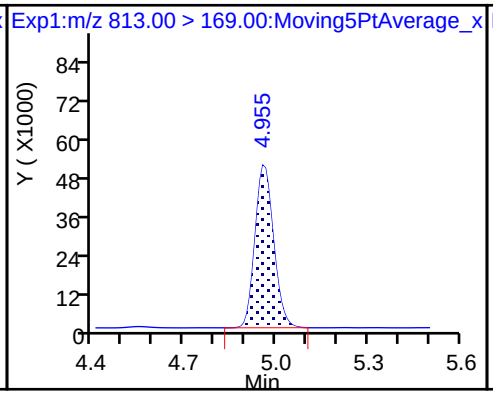
D 44 13C2-PFHxDA



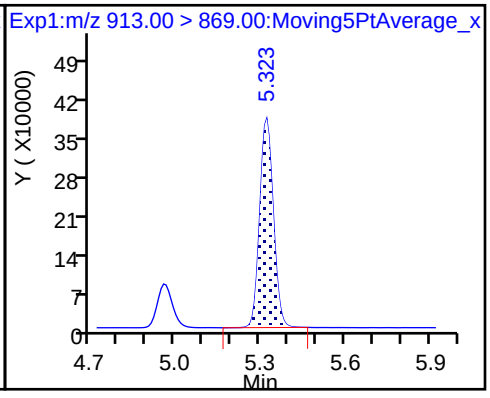
45 Perfluorohexadecanoic acid



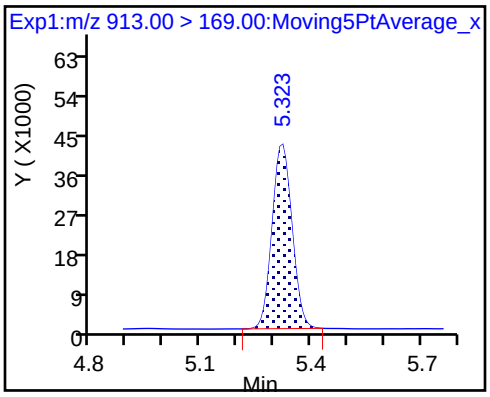
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213581/1 Calibration Date: 03/17/2018 15:04

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_023.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9004		0.971	1.00	-2.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.090		0.933	1.00	-6.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	78.50		0.897	0.884	1.5	50.0
4:2 FTS	AveID	16.07	14.77		0.858	0.934	-8.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9890		0.980	1.00	-2.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.043		1.01	1.00	0.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	0.9835		0.802	0.910	-11.8	40.0
6:2FTS	AveID	1.665	1.620		0.922	0.948	-2.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.071		0.960	1.00	-4.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.259		0.912	0.952	-4.2	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.017		0.872	0.928	-6.1	40.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9851		0.966	1.00	-3.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9906		1.02	1.00	1.9	40.0
8:2FTS	AveID	1.257	1.185		0.903	0.958	-5.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9442		0.995	1.00	-0.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.017		0.976	1.00	-2.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6452		0.974	0.964	1.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.8747		0.893	1.00	-10.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7364		0.879	1.00	-12.1	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.050		1.03	1.00	2.6	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.079		1.05	1.00	4.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2589		0.939	1.00	-6.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9451		1.01	1.00	0.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9562		0.981	1.00	-1.9	50.0
13C4 PFBA	Ave	1.277	1.216		2.38	2.50	-4.7	50.0
13C5 PFPeA	Ave	0.9006	0.8666		2.41	2.50	-3.8	50.0
13C3-PFBS	Ave	0.0222	0.0216		2.26	2.33	-3.0	50.0
M2-4:2FTS	Ave	0.1590	0.1407		2.07	2.34	-11.5	50.0
13C2 PFHxA	Ave	1.004	0.9696		2.41	2.50	-3.5	50.0
13C4-PFHpA	Ave	0.9767	0.9299		2.38	2.50	-4.8	50.0
18O2 PFHxS	Ave	1.303	1.314		2.38	2.37	0.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213581/1 Calibration Date: 03/17/2018 15:04

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_023.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2423		2.30	2.38	-3.1	40.0
13C4 PFOA	Ave	0.9431	0.9696		2.57	2.50	2.8	50.0
13C4 PFOS	Ave	0.9113	0.9155		2.40	2.39	0.5	50.0
13C5 PFNA	Ave	0.7545	0.7518		2.49	2.50	-0.4	50.0
13C8 FOSA	Ave	1.319	1.278		2.42	2.50	-3.1	50.0
M2-8:2FTS	Ave	0.2350	0.2623		2.67	2.40	11.6	40.0
13C2 PFDA	Ave	0.6303	0.6424		2.55	2.50	1.9	50.0
d3-NMeFOSAA	Ave	0.2081	0.2079		2.50	2.50	-0.1	50.0
d5-NEtFOSAA	Ave	0.1990	0.2152		2.70	2.50	8.1	50.0
13C2 PFUnA	Ave	0.4935	0.4786		2.42	2.50	-3.0	50.0
13C2 PFDoA	Ave	0.4680	0.4477		2.39	2.50	-4.3	50.0
13C2-PFTeDA	Ave	0.4272	0.4406		2.58	2.50	3.1	50.0
13C2-PFHxDA	Ave	0.6248	0.6470		2.59	2.50	3.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_023.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 17-Mar-2018 15:04:26 ALS Bottle#: 28 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:48:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.434	0.0	1.000	2086338	0.9708		97.1	1478	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.535	5792767	2.38		95.3	110543	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.691	0.0	1.000	1799602	0.9330		93.3	697	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.631	4128183	2.41		96.2	198598	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.726	0.0	1.000	2850354	0.8968		101	1322	
298.90 > 99.00	1.726	1.726	0.0	1.000	1162646		2.45(1.25-3.74)		1205	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.736	-0.010	0.644	95497	2.26		97.0	561	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	566771	0.8584		91.9	26250	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.946	-0.001	0.726	625995	2.07		88.5	6714	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	1827119	0.9801		98.0	7005	
313.00 > 119.00	1.976	1.976	0.0	1.000	171991		10.62(5.03-15.10)		3475	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.987	-0.011	0.737	4618578	2.41		96.5	167143	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	1848947	1.01		101	3741	
363.00 > 169.00	2.315	2.315	0.0	1.000	716383		2.58(1.13-3.40)		10013	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	4429753	2.38		95.2	74223	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	2240329	0.8024		88.2	279	
399.00 > 99.00	2.328	2.328	0.0	1.000	771917		2.90(1.50-4.49)		290	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	5919997	2.38		101	71433	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.657	0.0	1.000	708864	0.9225		97.3	32483	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.665	-0.008	0.991	1096369	2.30		96.9	25407	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.680	2.680	0.0	1.000	1979274	0.9596		96.0	890	
413.00 > 169.00	2.680	2.680	0.0	1.000	1036965		1.91(0.84-2.52)		4116	
* 62 13C2-PFOA										
415.00 > 370.00	2.680	2.680	0.0		4763514	2.50			74283	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	2090503	0.9119		95.8	32434	
449.00 > 99.00	2.688	2.688	0.0	1.000	575589		3.63(1.94-5.82)		11171	
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.689	-0.009	1.000	4618778	2.57		103	97581	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.051	0.0	1.000	1646216	0.8717		93.9	5356	
499.00 > 99.00	3.051	3.051	0.0	1.000	382094		4.31(2.31-6.93)		3293	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.058	-0.007	1.138	4169237	2.40		100	44168	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.058	0.0	1.000	1411011	0.9662		96.6	3398	
463.00 > 169.00	3.058	3.058	0.0	1.000	356820		3.95(1.90-5.69)		8039	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.065	-0.007	1.141	3581001	2.49		99.6	49094	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	2412317	1.02		102	33924	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.398	-0.009	1.265	6087842	2.42		96.9	65643	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.408	0.0	1.000	567639	0.9033		94.3	12778	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.417	-0.009	1.271	1197083	2.67		112	24620	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.417	0.0	1.000	1155807	1.00		99.5	5534	
513.00 > 169.00	3.417	3.417	0.0	1.000	209498		5.52(2.36-7.09)		7796	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.426	-0.009	1.275	3060214	2.55		102	52863	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.579	-0.009	1.332	990222	2.50		99.9	36125	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.579	0.0	1.002	402748	0.9763		97.6	4840	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.728	0.0	1.000	1084956	0.9741		101	28294	
599.00 > 99.00	3.728	3.728	0.0	1.000	350812		3.09(1.39-4.16)		9157	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.748	-0.010	1.395	1024907	2.70		108	2326	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.748	0.0	1.003	358612	0.8934		89.3	12338	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.748	0.0	1.000	671507	0.8787		87.9	2169	
563.00 > 169.00	3.748	3.748	0.0	1.000	192314		3.49(2.12-6.36)		15513	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.758	-0.010	1.398	2279831	2.42		97.0	47523	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.047	0.0	1.000	895266	1.03		103	145	
613.00 > 169.00	4.047	4.047	0.0	1.000	221239		4.05(2.13-6.40)		5739	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.056	-0.009	1.510	2132511	2.39		95.7	13280	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	920637	1.05		105	185	
663.00 > 169.00	4.307	4.307	0.0	1.000	293883		3.13(1.25-3.76)		4151	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.544	0.0	1.000	217334	0.9388		93.9	2865	
713.00 > 219.00	4.533	4.544	-0.011	0.998	156566		1.39(0.71-2.13)		2180	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.554	-0.010	1.695	2098668	2.58		103	15820	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.955	0.0	1.000	1165138	1.01		101	103	
813.00 > 169.00	4.955	4.955	0.0	1.000	198301		5.88(2.86-8.58)		1814	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.973	-0.017	1.849	3082194	2.59		104	10321	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.315	0.0	1.000	1178822	0.9807		98.1	209	
913.00 > 169.00	5.315	5.315	0.0	1.000	153304		7.69(3.83-11.48)		1704	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 13:55:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_023.d

Injection Date: 17-Mar-2018 15:04:26 Instrument ID: A8_N

Lims ID: CCV L4

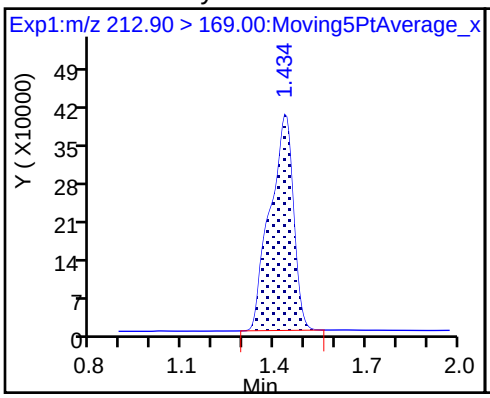
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 1

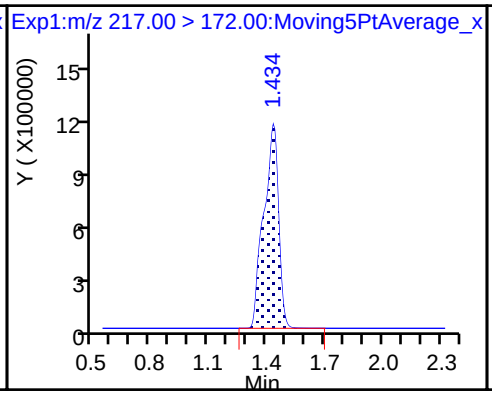
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

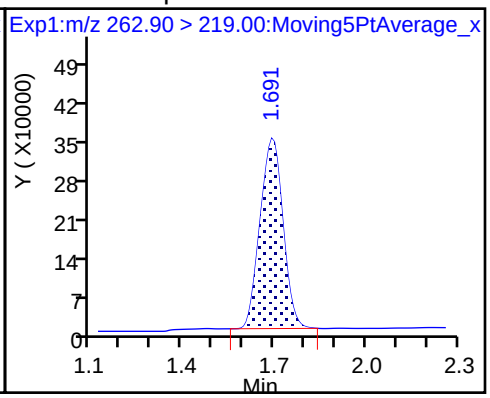
2 Perfluorobutyric acid



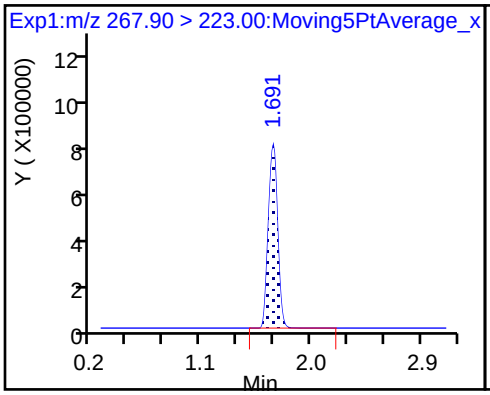
D 1 13C4 PFBA



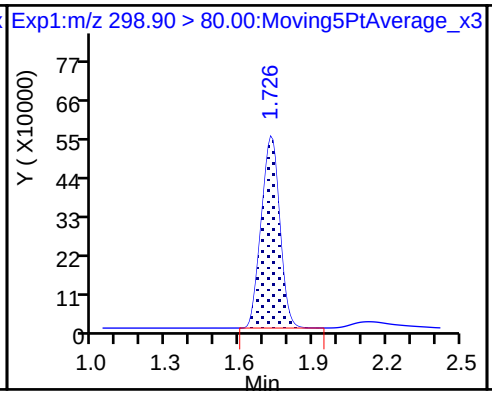
4 Perfluoropentanoic acid



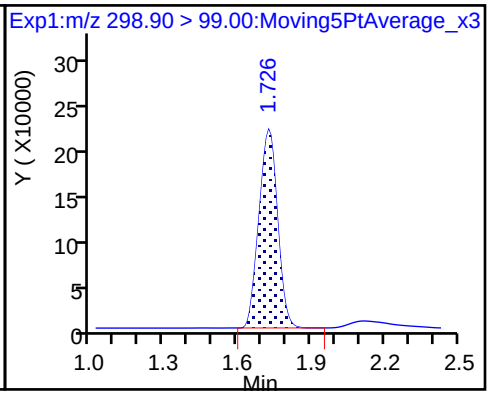
D 3 13C5-PFPeA



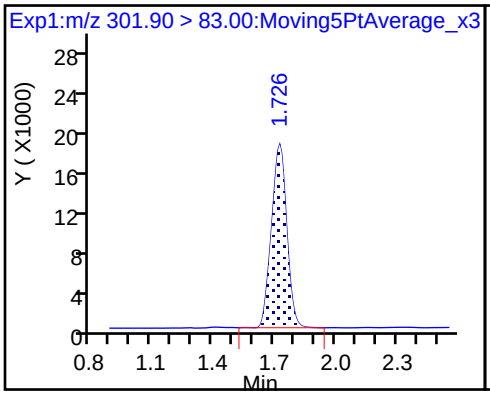
5 Perfluorobutanesulfonic acid



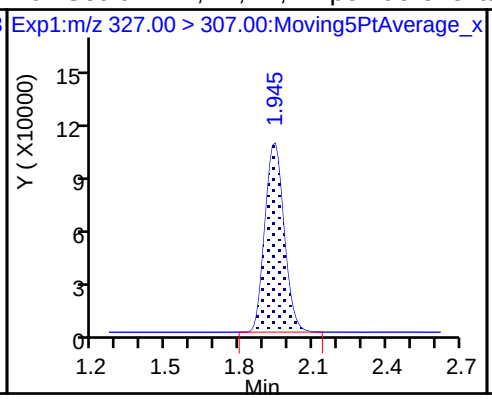
5 Perfluorobutanesulfonic acid



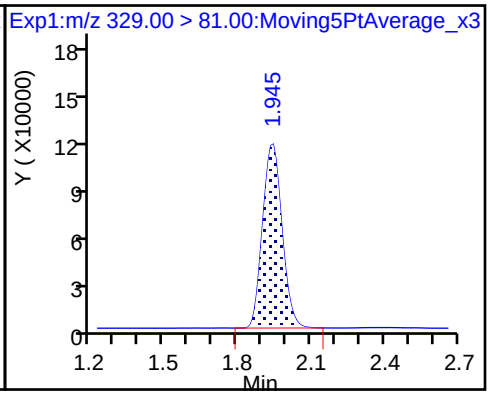
D 47 13C3-PFBS



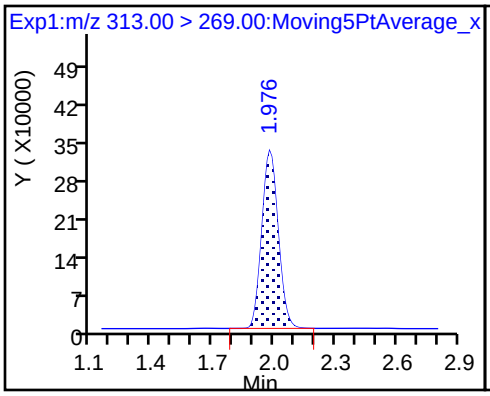
61 Sodium 1H,1H,2H,2H-perfluorohexane



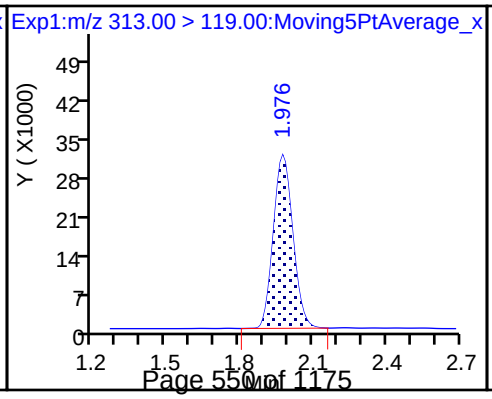
D 60 M2-4:2FTS



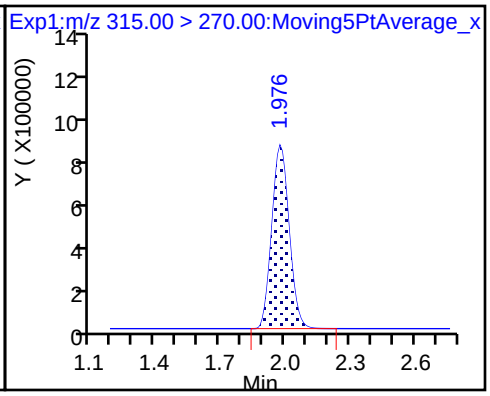
6 Perfluorohexanoic acid



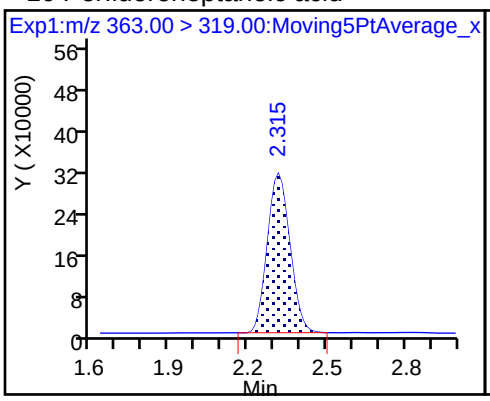
6 Perfluorohexanoic acid



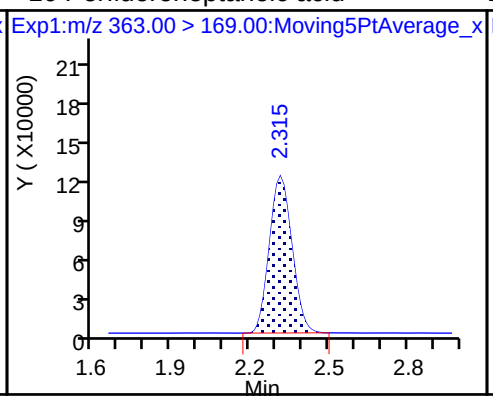
D 7 13C2 PFHxA



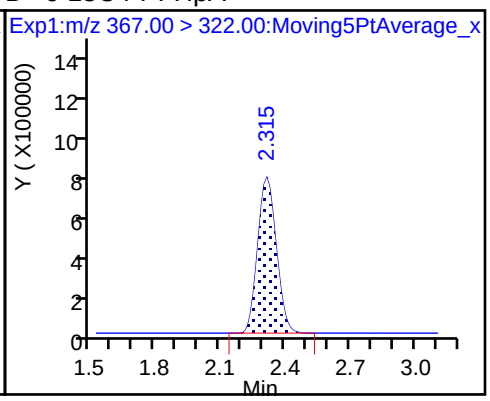
10 Perfluoroheptanoic acid



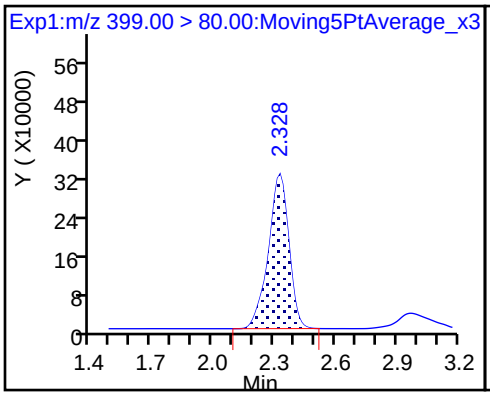
10 Perfluoroheptanoic acid



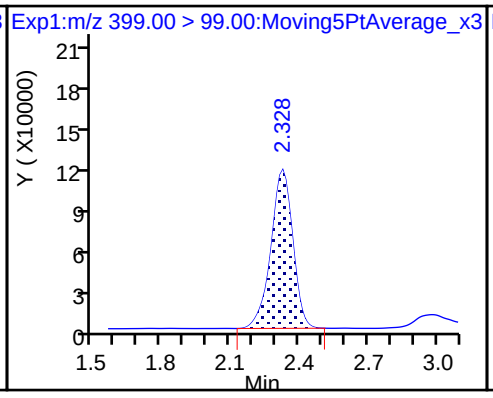
D 9 13C4-PFHpA



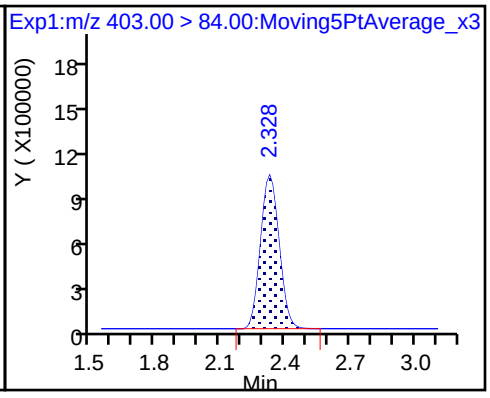
8 Perfluorohexanesulfonic acid



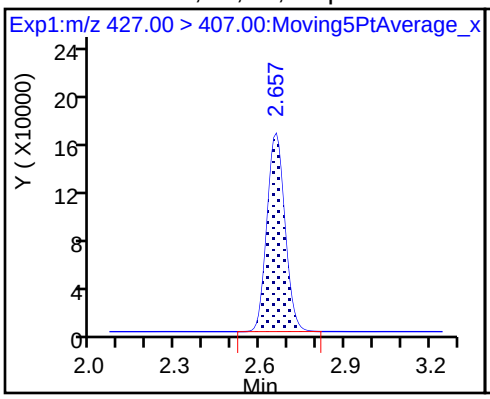
8 Perfluorohexanesulfonic acid



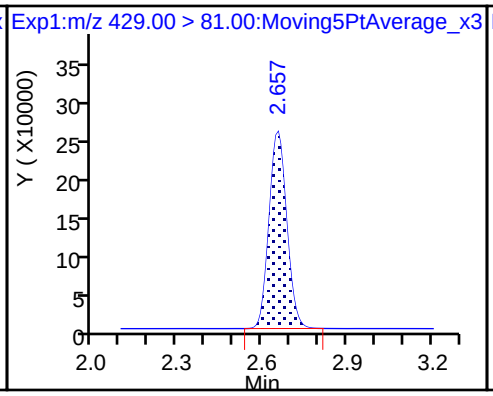
D 11 18O2 PFHxS



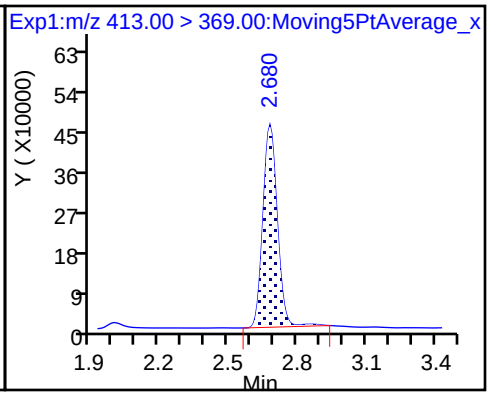
13 Sodium 1H,1H,2H,2H-perfluorooctane



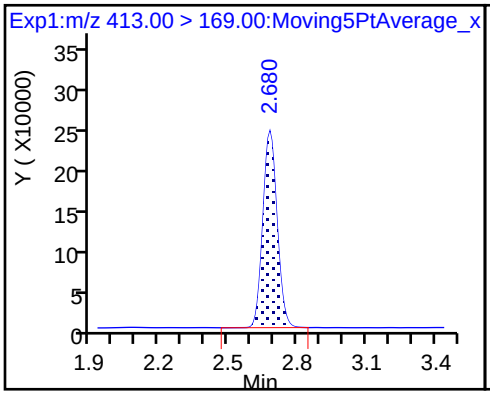
D 12 M2-6:2FTS



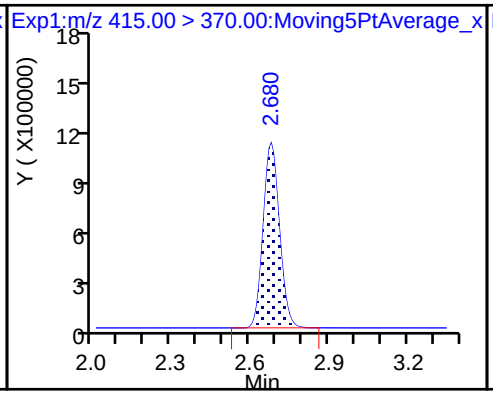
15 Perfluorooctanoic acid



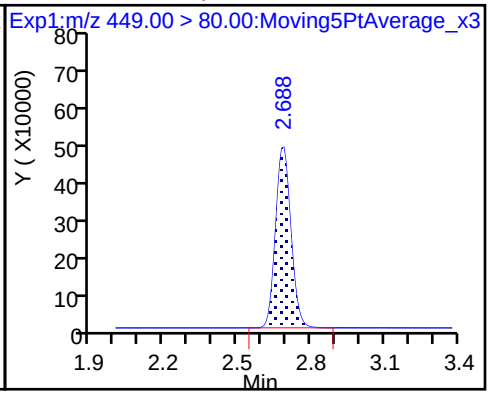
15 Perfluorooctanoic acid



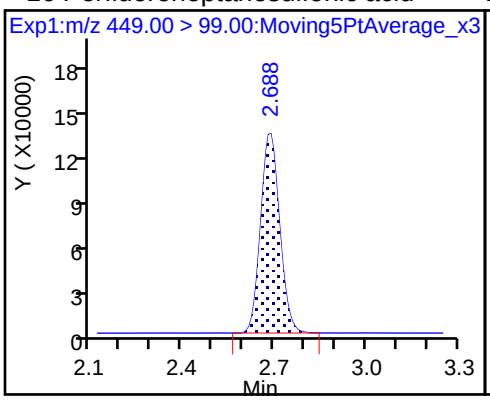
* 62 13C2-PFOA



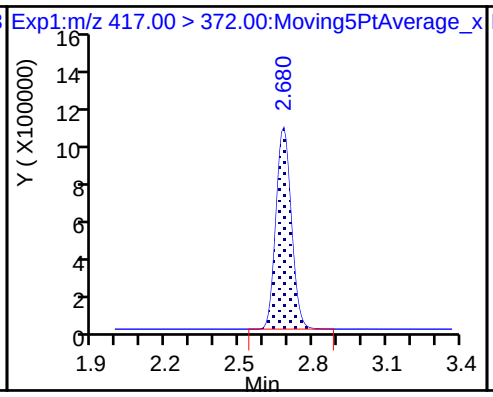
16 Perfluoroheptanesulfonic acid



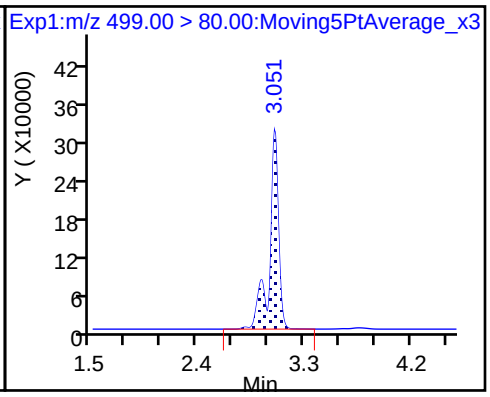
16 Perfluoroheptanesulfonic acid



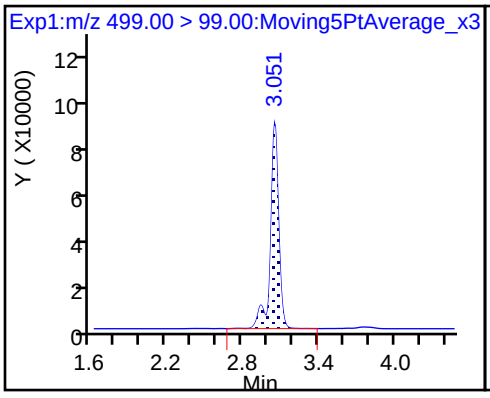
D 14 13C4 PFOA



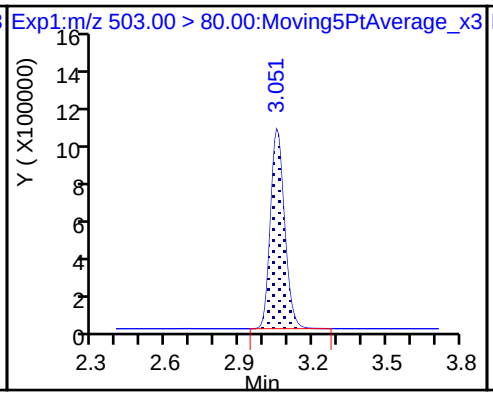
17 Perfluorooctane sulfonic acid



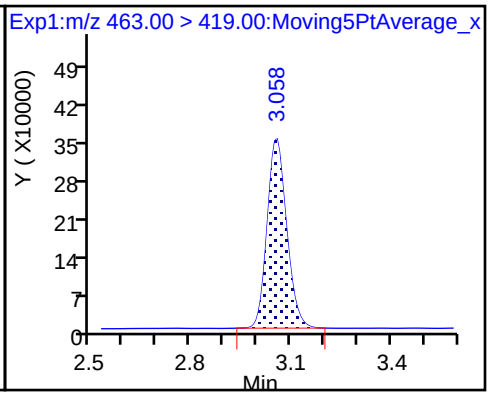
17 Perfluorooctane sulfonic acid



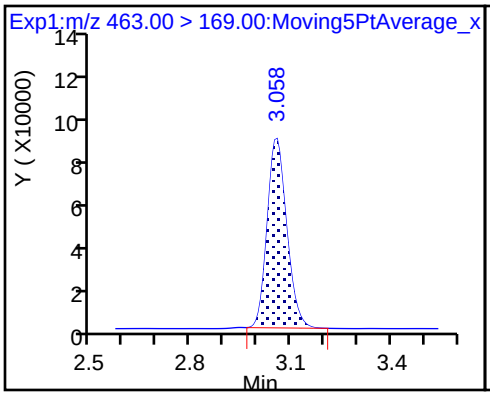
D 18 13C4 PFOS



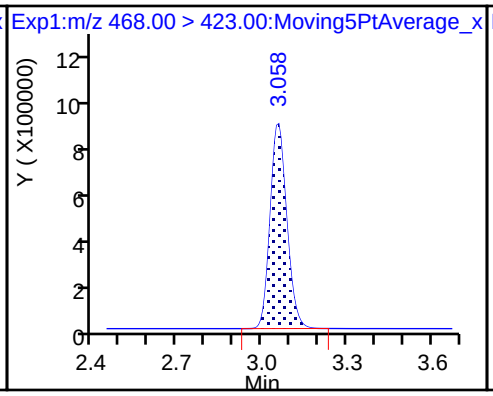
20 Perfluorononanoic acid



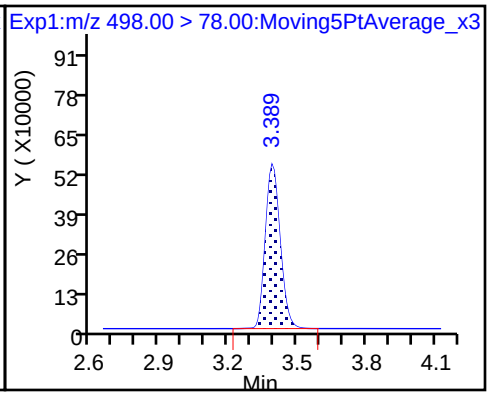
20 Perfluorononanoic acid



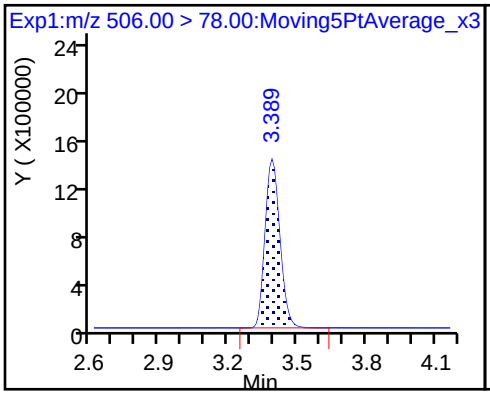
D 19 13C5 PFNA



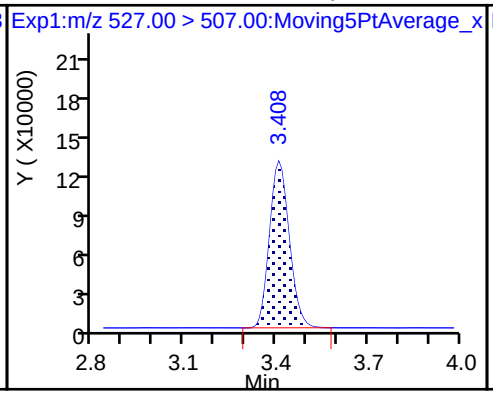
22 Perfluorooctane Sulfonamide



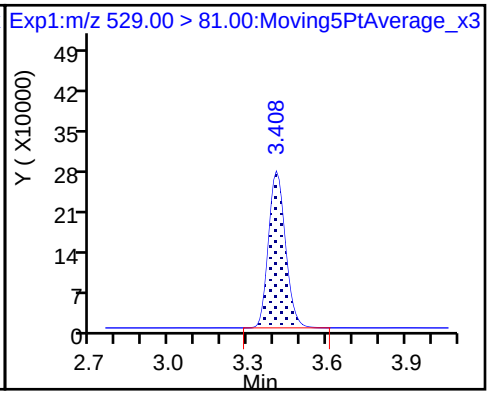
D 21 13C8 FOSA



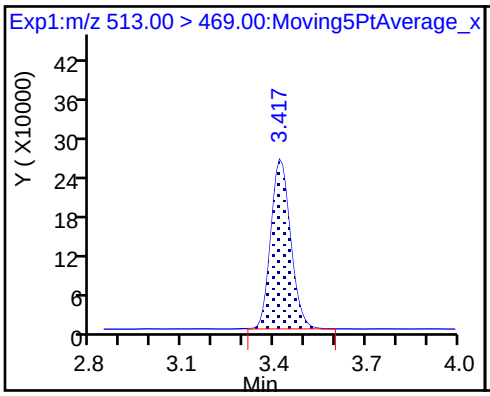
25 Sodium 1H,1H,2H,2H-perfluorodecane



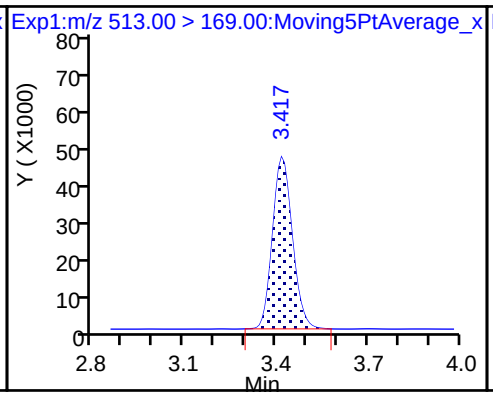
D 26 M2-8:2FTS



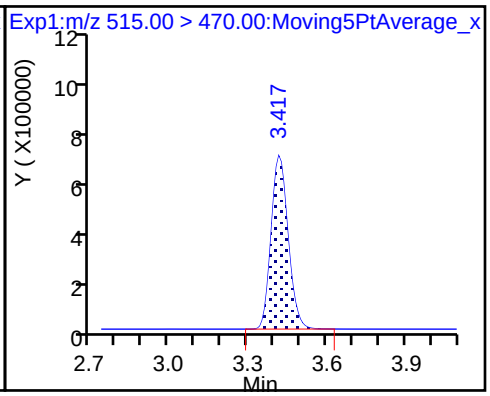
24 Perfluorodecanoic acid



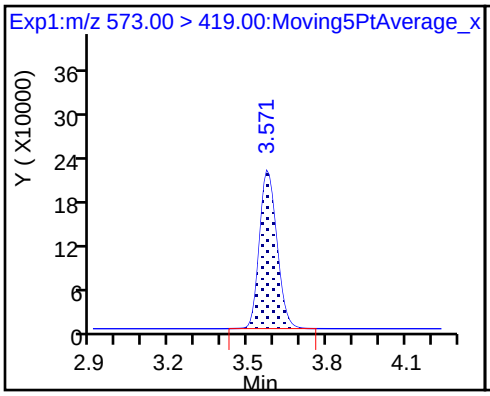
24 Perfluorodecanoic acid



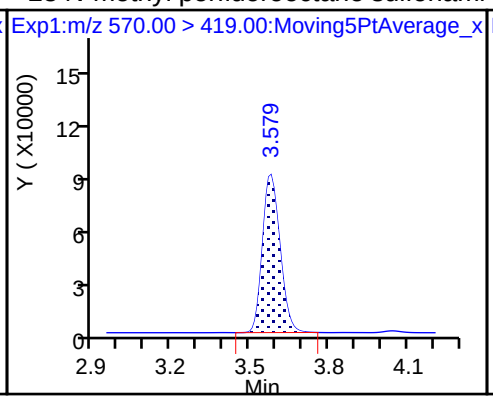
D 23 13C2 PFDA



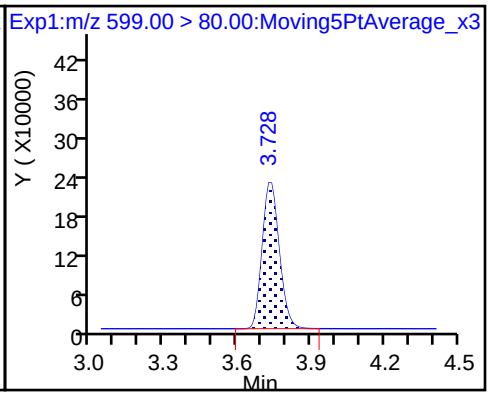
D 27 d3-NMeFOSAA



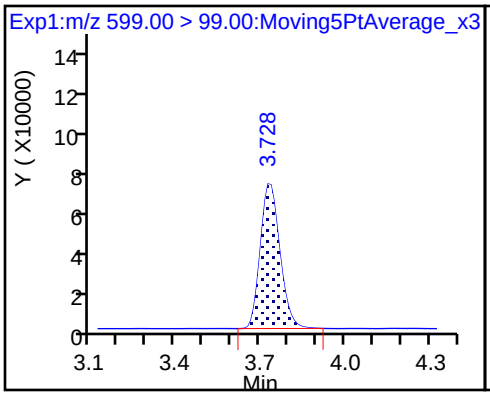
28 N-methyl perfluorooctane sulfonami



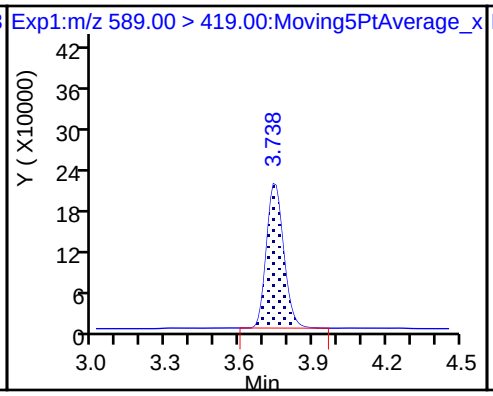
29 Perfluorodecane Sulfonic acid



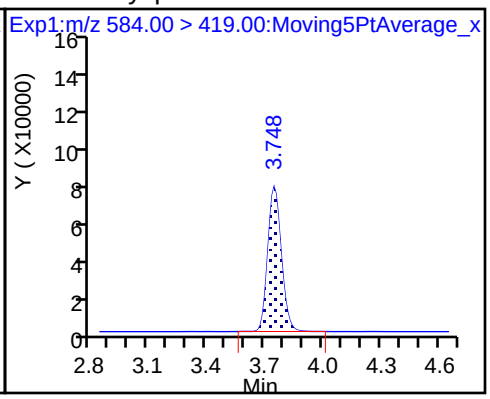
29 Perfluorodecane Sulfonic acid



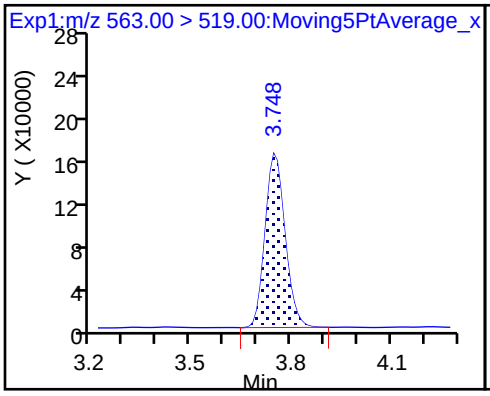
D 32 d5-NEtFOSAA



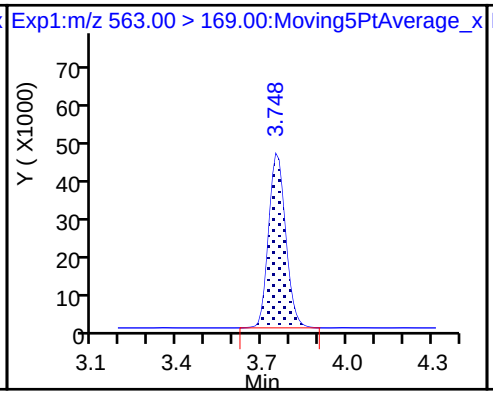
33 N-ethyl perfluorooctane sulfonamid



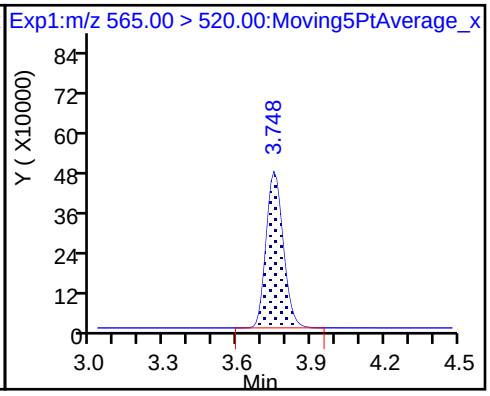
31 Perfluoroundecanoic acid



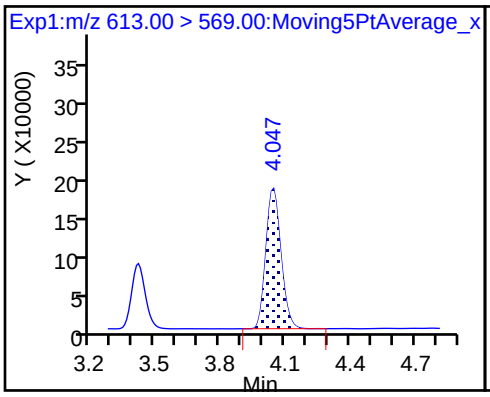
31 Perfluoroundecanoic acid



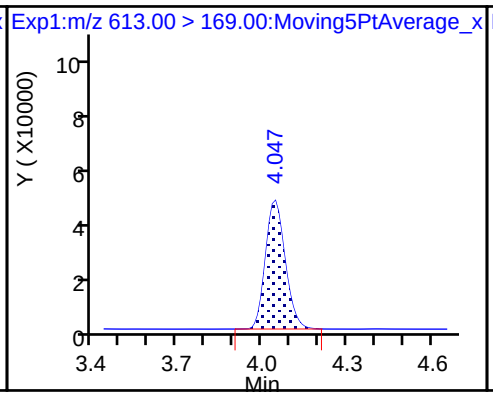
D 30 13C2 PFUnA



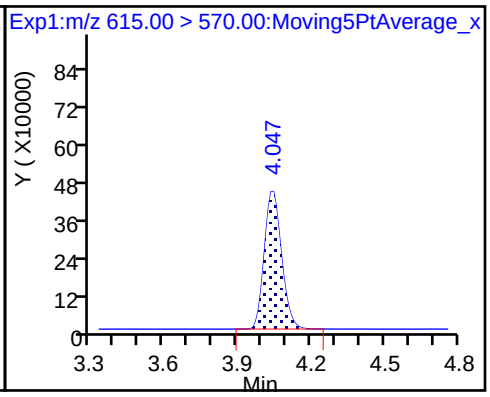
37 Perfluorododecanoic acid



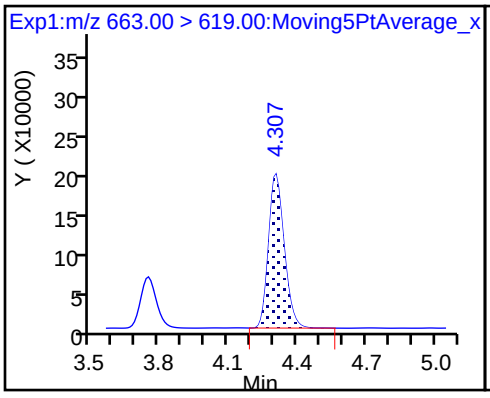
37 Perfluorododecanoic acid



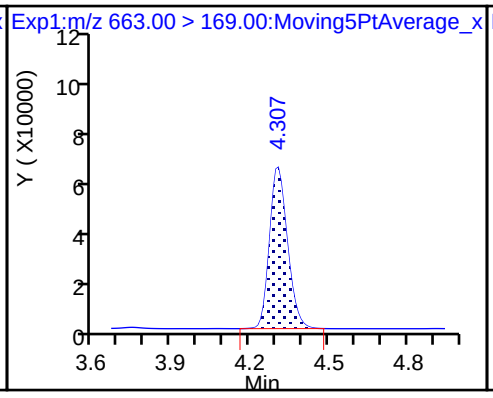
D 36 13C2 PFDoA



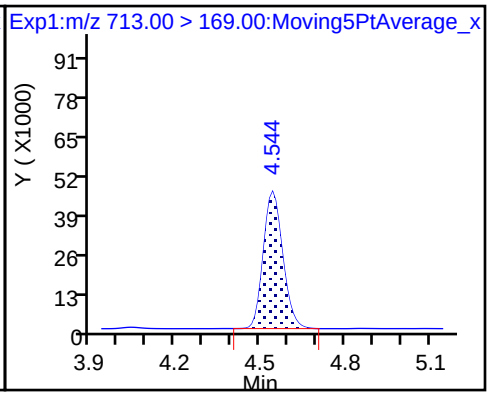
41 Perfluorotridecanoic acid



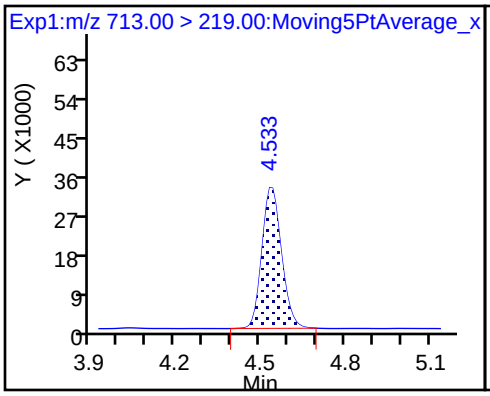
41 Perfluorotridecanoic acid



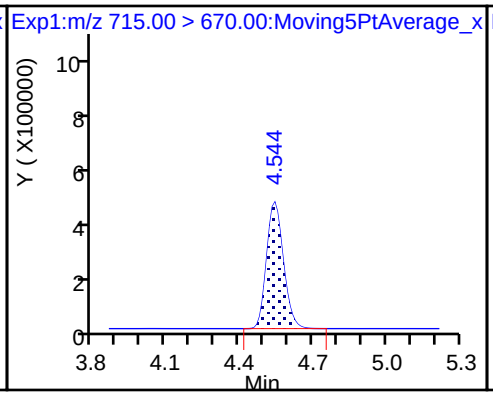
42 Perfluorotetradecanoic acid



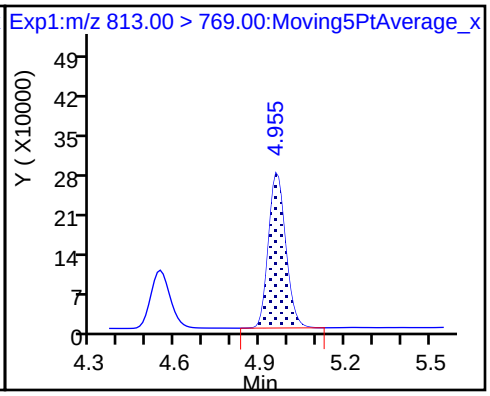
42 Perfluorotetradecanoic acid



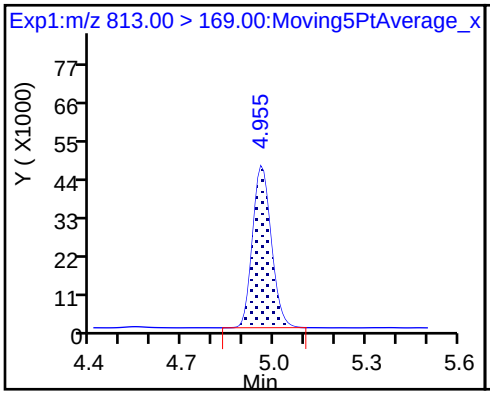
D 43 13C2-PFTeDA



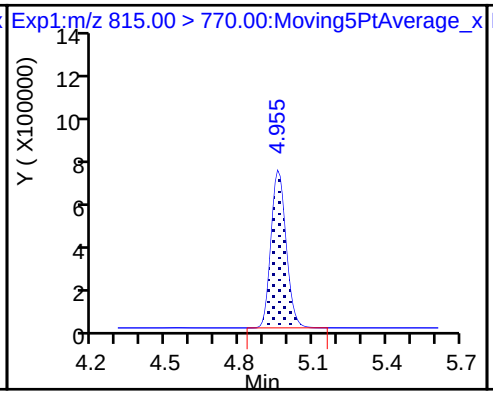
45 Perfluorohexadecanoic acid



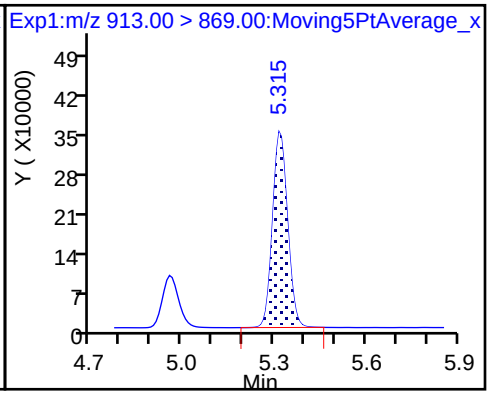
45 Perfluorohexadecanoic acid



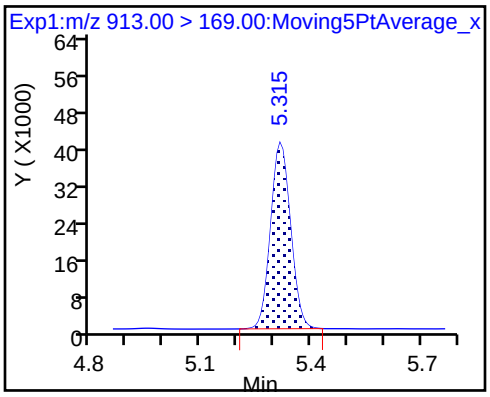
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213581/12 Calibration Date: 03/17/2018 16:30

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9507		2.56	2.50	2.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.173		2.51	2.50	0.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	83.63		2.39	2.21	8.1	50.0
4:2 FTS	AveID	16.07	14.56		2.12	2.34	-9.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9837		2.44	2.50	-2.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.045		2.52	2.50	0.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.055		2.15	2.28	-5.5	40.0
6:2FTS	AveID	1.665	1.653		2.35	2.37	-0.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.142		2.56	2.50	2.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.314		2.38	2.38	-0.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.056		2.59	2.50	3.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.047		2.24	2.32	-3.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.043		2.68	2.50	7.3	40.0
8:2FTS	AveID	1.257	1.232		2.35	2.40	-2.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	1.027		2.71	2.50	8.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.058		2.54	2.50	1.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6667		2.52	2.41	4.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.8958		2.29	2.50	-8.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7722		2.30	2.50	-7.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.061		2.59	2.50	3.7	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.019		2.48	2.50	-0.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2581		2.34	2.50	-6.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9472		2.56	2.50	2.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9614		2.47	2.50	-1.4	50.0
13C4 PFBA	Ave	1.277	1.196		2.34	2.50	-6.3	50.0
13C5 PFPeA	Ave	0.9006	0.8544		2.37	2.50	-5.1	50.0
13C3-PFBS	Ave	0.0222	0.0213		2.23	2.33	-4.2	50.0
M2-4:2FTS	Ave	0.1590	0.1403		2.06	2.34	-11.7	50.0
13C2 PFHxA	Ave	1.004	0.9651		2.40	2.50	-3.9	50.0
13C4-PFHpA	Ave	0.9767	0.9328		2.39	2.50	-4.5	50.0
18O2 PFHxS	Ave	1.303	1.286		2.34	2.37	-1.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213581/12 Calibration Date: 03/17/2018 16:30

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2017.03.17LLZA_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2471		2.35	2.38	-1.2	40.0
13C4 PFOA	Ave	0.9431	0.9292		2.46	2.50	-1.5	50.0
13C4 PFOS	Ave	0.9113	0.9408		2.47	2.39	3.2	50.0
13C5 PFNA	Ave	0.7545	0.7525		2.49	2.50	-0.3	50.0
13C8 FOSA	Ave	1.319	1.316		2.49	2.50	-0.3	50.0
M2-8:2FTS	Ave	0.2350	0.2544		2.59	2.40	8.3	40.0
13C2 PFDA	Ave	0.6303	0.6256		2.48	2.50	-0.7	50.0
d3-NMeFOSAA	Ave	0.2081	0.2009		2.41	2.50	-3.5	50.0
13C2 PFUnA	Ave	0.4935	0.4832		2.45	2.50	-2.1	50.0
d5-NEtFOSAA	Ave	0.1990	0.2126		2.67	2.50	6.9	50.0
13C2 PFDoA	Ave	0.4680	0.4486		2.40	2.50	-4.1	50.0
13C2-PFTeDA	Ave	0.4272	0.4391		2.57	2.50	2.8	50.0
13C2-PFHxDA	Ave	0.6248	0.5987		2.40	2.50	-4.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_034.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 17-Mar-2018 16:30:37 ALS Bottle#: 29 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:26 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:52:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.434	0.007	1.000	5314409	2.56		103	3617	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.537	5590290	2.34		93.7	93169	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.691	0.009	1.000	4681655	2.51		100	1723	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3992867	2.37		94.9	123649	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.726	0.010	1.005	7358797	2.39		108	3172	
298.90 > 99.00	1.736	1.726	0.010	1.005	3046313		2.42(1.25-3.74)		2959	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.736	-0.009	0.643	92566	2.23		95.8	484	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.945	0.001	1.000	1353626	2.12		90.6	60749	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.946	0.0	0.725	612514	2.06		88.3	6891	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.976	0.011	1.005	4436953	2.44		97.5	16301	
313.00 > 119.00	1.987	1.976	0.011	1.005	434338		10.22(5.03-15.10)		10878	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.987	-0.011	0.736	4510282	2.40		96.1	131024	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.315	0.001	1.000	4555070	2.52		101	11080	
363.00 > 169.00	2.316	2.315	0.001	1.000	1858268		2.45(1.13-3.40)		28097	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.315	0.001	0.863	4359006	2.39		95.5	102866	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	5768607	2.15		94.5	696	
399.00 > 99.00	2.328	2.328	0.0	1.000	2003689		2.88(1.50-4.49)		781	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.868	5686585	2.33		98.7	67727	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.657	0.003	1.000	1809598	2.35		99.3	51384	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.665	-0.005	0.991	1097029	2.35		98.8	24797	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.680	0.004	1.000	4957009	2.56		102	2275	
413.00 > 169.00	2.684	2.680	0.004	1.000	2693882		1.84(0.84-2.52)		9385	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.680	0.004		4673279	2.50			71054	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.688	0.003	1.000	5498589	2.38		100.0	43608	
449.00 > 99.00	2.691	2.688	0.003	1.000	1451083		3.79(1.94-5.82)		21028	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.689	-0.005	1.000	4342531	2.46		98.5	99030	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.060	3.051	0.009	1.000	4272358	2.24		96.7	12494	
499.00 > 99.00	3.060	3.051	0.009	1.000	946042		4.52(2.31-6.93)		6873	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.058	0.002	1.140	4203081	2.47		103	32735	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.058	0.002	1.000	3712237	2.59		104	8766	
463.00 > 169.00	3.060	3.058	0.002	1.000	872561		4.25(1.90-5.69)		23876	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.065	-0.005	1.140	3516571	2.49		99.7	78321	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.392	3.389	0.003	1.000	6412499	2.68		107	51049	
D 21 13C8 FOSA										
506.00 > 78.00	3.392	3.398	-0.006	1.264	6149115	2.49		99.7	69128	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.408	0.002	1.000	1403475	2.35		98.0	51929	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.417	-0.007	1.271	1138902	2.59		108	25413	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.428	3.417	0.011	1.000	3002613	2.71		108	17476	
513.00 > 169.00	3.419	3.417	0.002	0.997	516172		5.82(2.36-7.09)		16269	
D 23 13C2 PFDA										
515.00 > 470.00	3.428	3.426	0.002	1.277	2923679	2.48		99.3	36221	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.579	0.004	1.335	938976	2.41		96.5	32676	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.583	3.579	0.004	1.000	993476	2.54		102	12440	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.742	3.728	0.014	1.000	2825716	2.52		104	49198	
599.00 > 99.00	3.742	3.728	0.014	1.000	900366		3.14(1.39-4.16)		16947	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.748	0.004	1.398	993679	2.67		107	1886	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.752	3.748	0.004	1.000	890084	2.29		91.5	18238	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.752	3.748	0.004	1.000	1743523	2.30		92.1	7332	
563.00 > 169.00	3.752	3.748	0.004	1.000	477341		3.65(2.12-6.36)		22778	
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.758	-0.006	1.398	2257916	2.45		97.9	77291	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.047	0.004	1.000	2224610	2.59		104	432	
613.00 > 169.00	4.051	4.047	0.004	1.000	594860		3.74(2.13-6.40)		17675	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.056	-0.005	1.509	2096346	2.40		95.9	12079	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.312	4.307	0.005	1.000	2136393	2.48		99.1	438	
663.00 > 169.00	4.312	4.307	0.005	1.000	705796		3.03(1.25-3.76)		7815	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.549	4.544	0.005	1.000	529557	2.34		93.6	7819	
713.00 > 219.00	4.549	4.544	0.005	1.000	379562		1.40(0.71-2.13)		3964	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.549	4.554	-0.005	1.695	2051923	2.57		103	19373	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.955	0.012	1.000	2650141	2.56		102	249	
813.00 > 169.00	4.967	4.955	0.012	1.000	455127		5.82(2.86-8.58)		3985	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.973	-0.005	1.851	2797940	2.40		95.8	11047	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.332	5.315	0.017	1.000	2689935	2.47		98.6	481	
913.00 > 169.00	5.325	5.315	0.010	0.999	348771		7.71(3.83-11.48)		3204	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 13:55:27 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_034.d

Injection Date: 17-Mar-2018 16:30:37 Instrument ID: A8_N

Lims ID: CCV L5

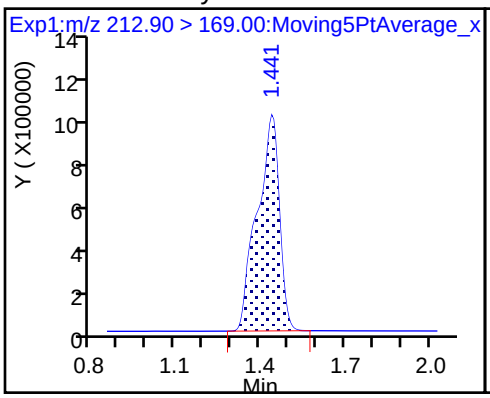
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 12

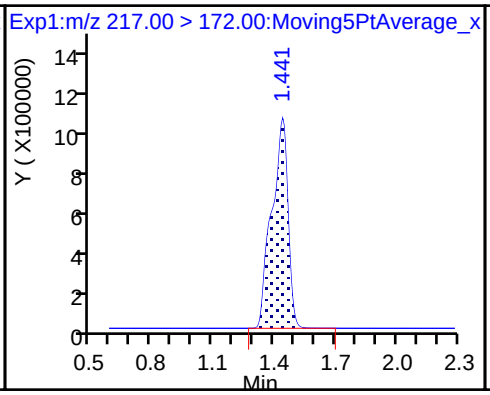
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

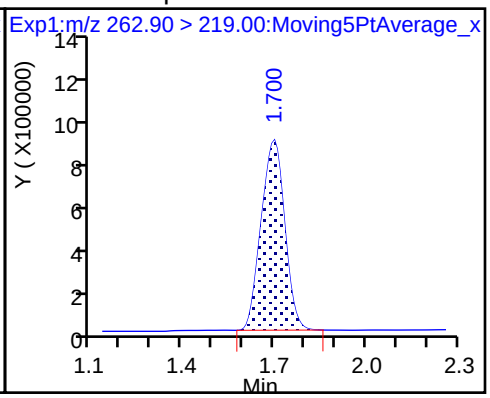
2 Perfluorobutyric acid



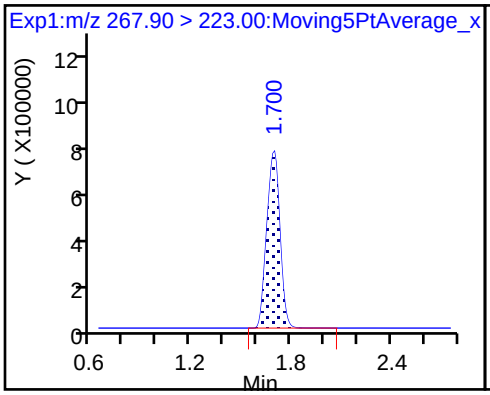
D 1 13C4 PFBA



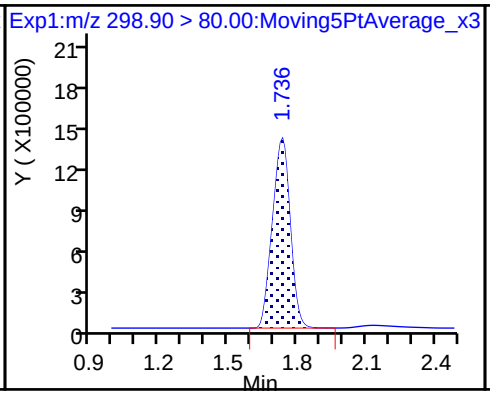
4 Perfluoropentanoic acid



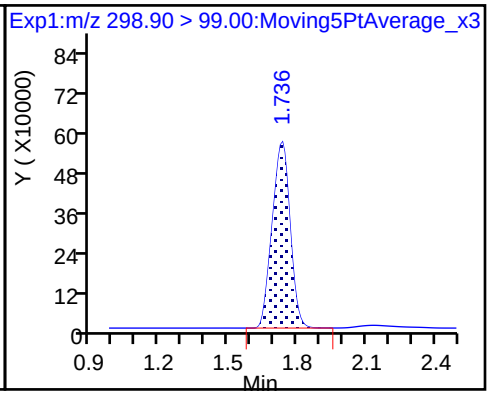
D 3 13C5-PFPeA



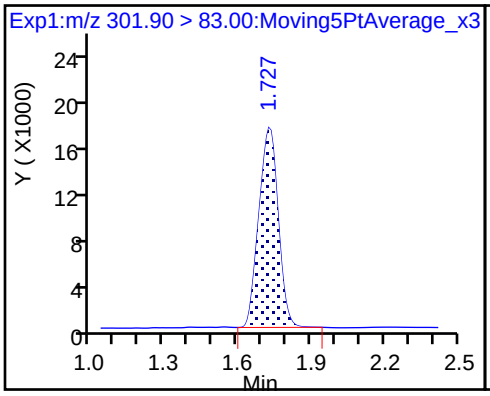
5 Perfluorobutanesulfonic acid



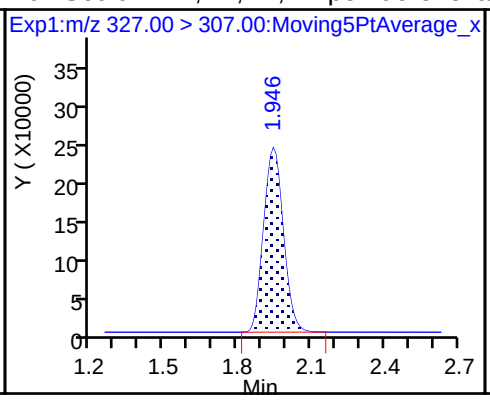
5 Perfluorobutanesulfonic acid



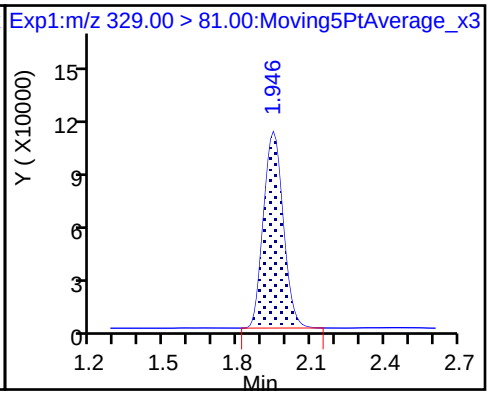
D 47 13C3-PFBS



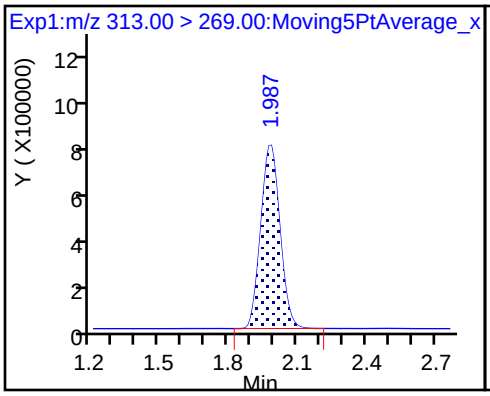
61 Sodium 1H,1H,2H,2H-perfluorohexane



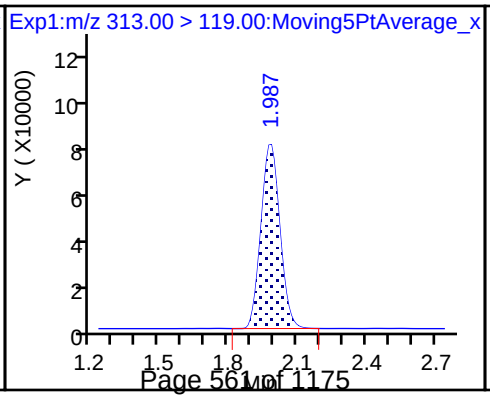
D 60 M2-4:2FTS



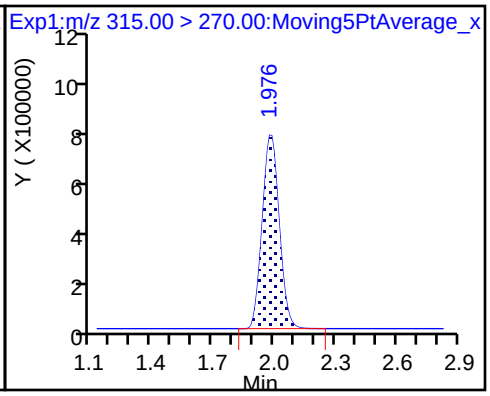
6 Perfluorohexanoic acid



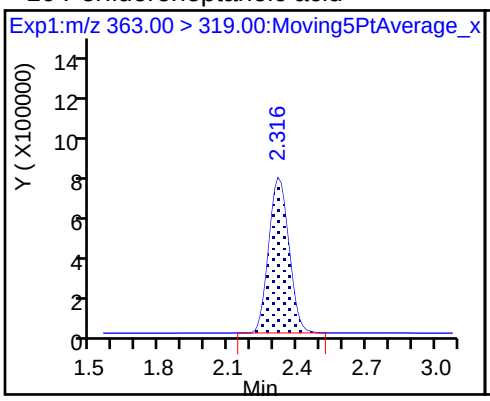
6 Perfluorohexanoic acid



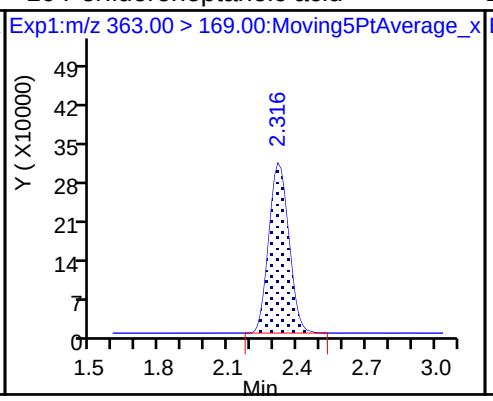
D 7 13C2 PFHxA



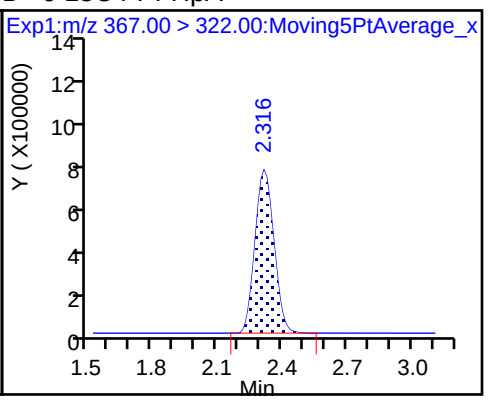
10 Perfluoroheptanoic acid



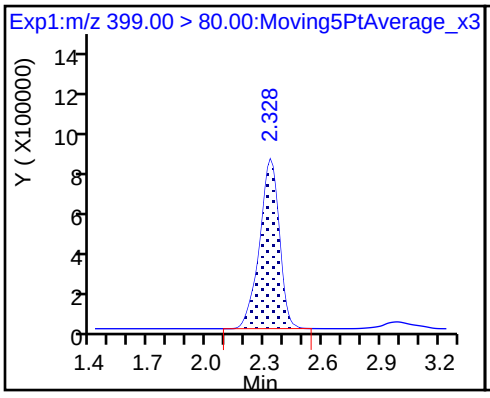
10 Perfluoroheptanoic acid



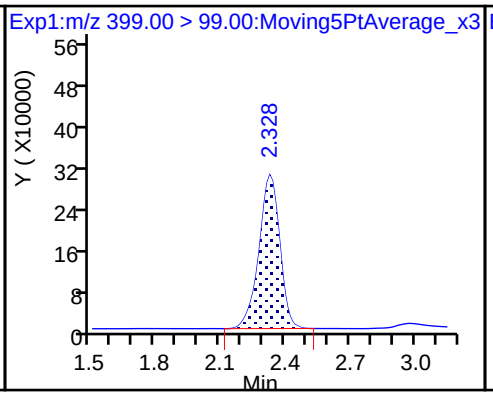
D 9 13C4-PFHpA



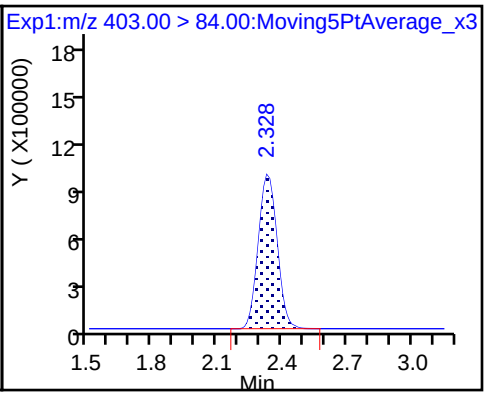
8 Perfluorohexanesulfonic acid



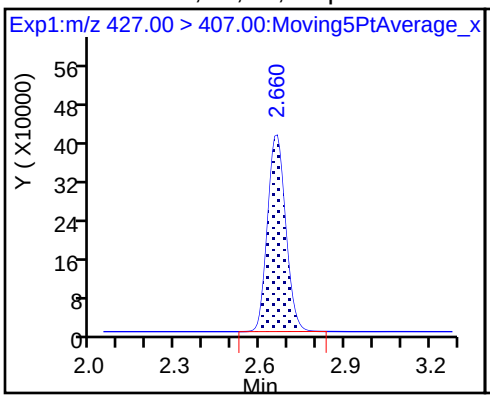
8 Perfluorohexanesulfonic acid



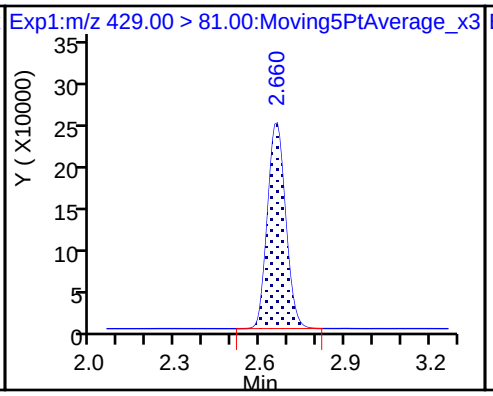
D 11 18O2 PFHxS



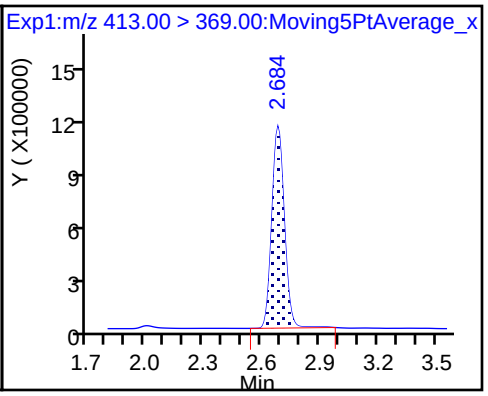
13 Sodium 1H,1H,2H,2H-perfluorooctane



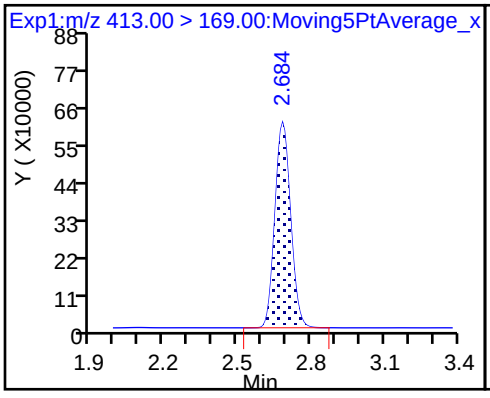
D 12 M2-6:2FTS



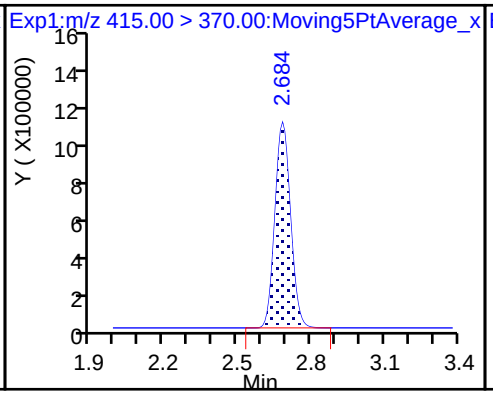
15 Perfluorooctanoic acid



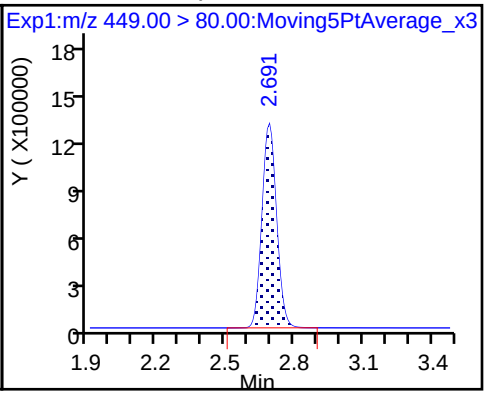
15 Perfluorooctanoic acid



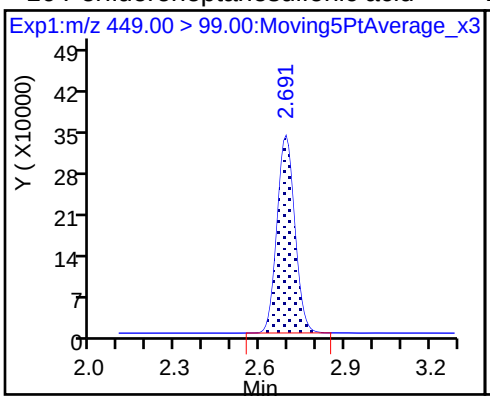
* 62 13C2-PFOA



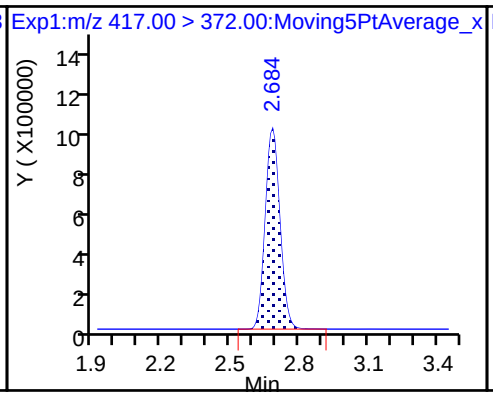
16 Perfluoroheptanesulfonic acid



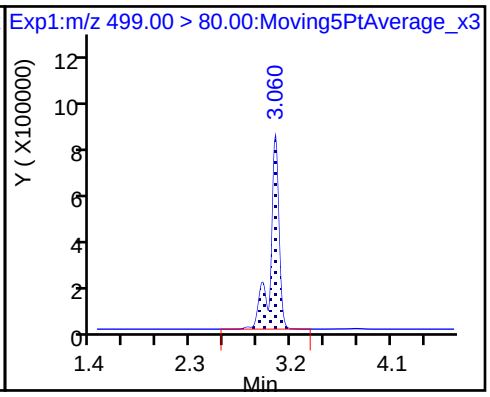
16 Perfluoroheptanesulfonic acid



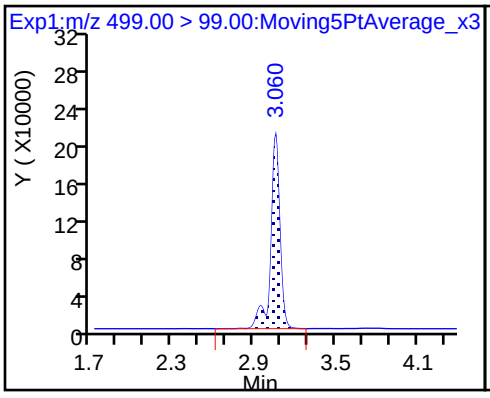
D 14 13C4 PFOA



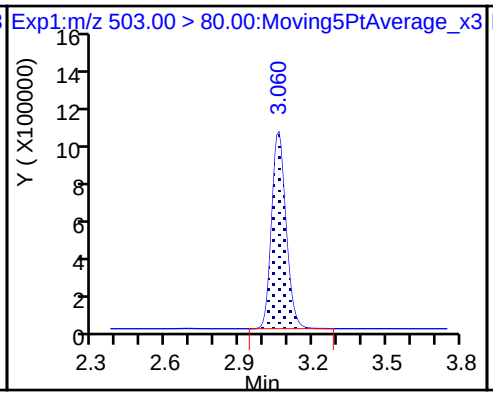
17 Perfluorooctane sulfonic acid



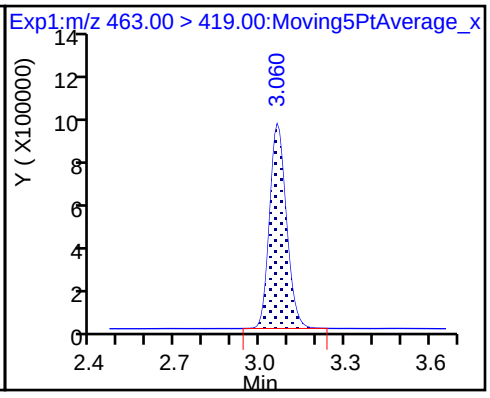
17 Perfluorooctane sulfonic acid



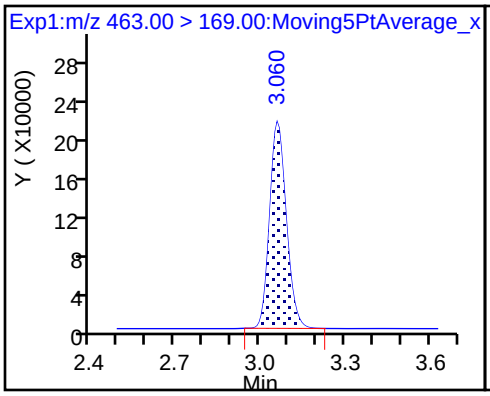
D 18 13C4 PFOS



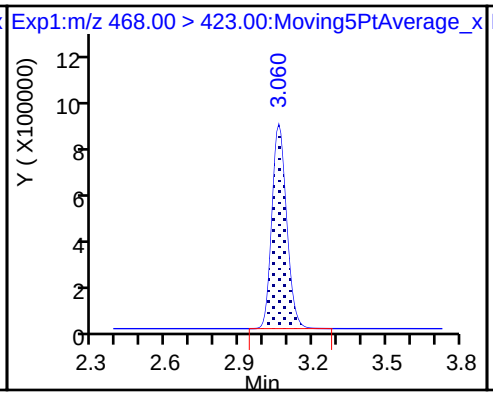
20 Perfluorononanoic acid



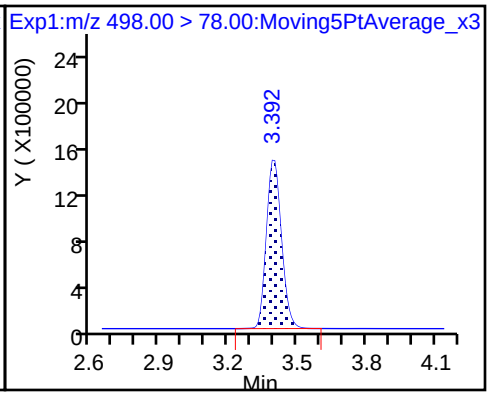
20 Perfluorononanoic acid



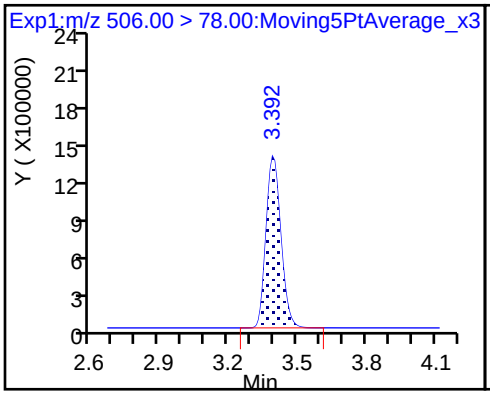
D 19 13C5 PFNA



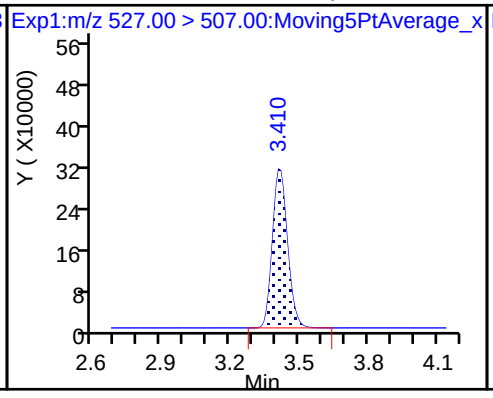
22 Perfluorooctane Sulfonamide



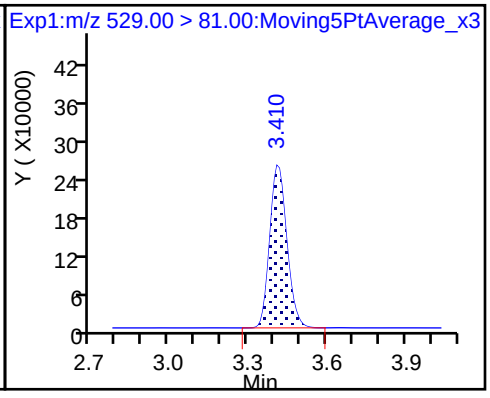
D 21 13C8 FOSA



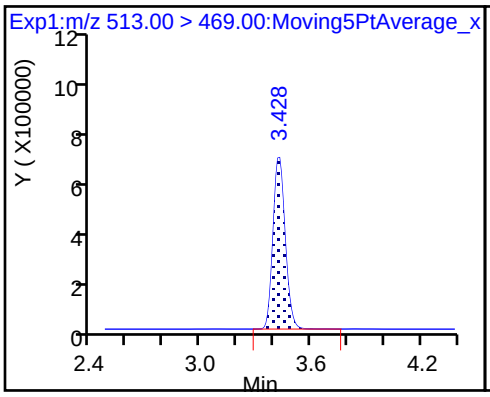
25 Sodium 1H,1H,2H,2H-perfluorodecane



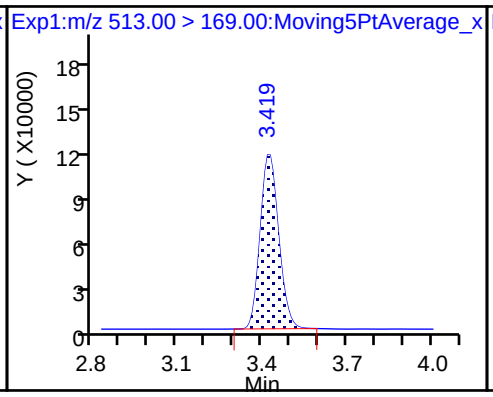
D 26 M2-8:2FTS



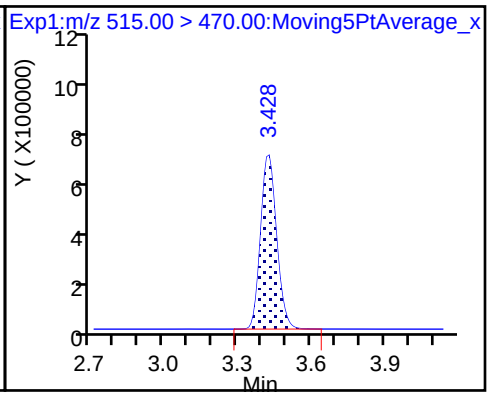
24 Perfluorodecanoic acid



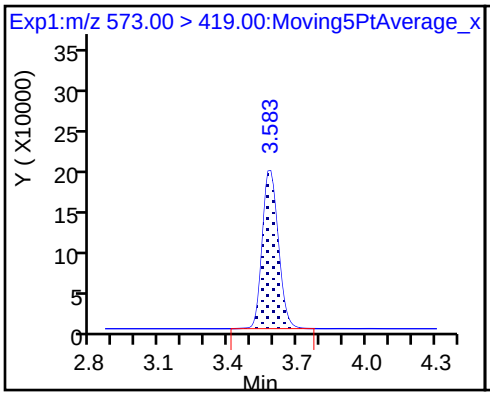
24 Perfluorodecanoic acid



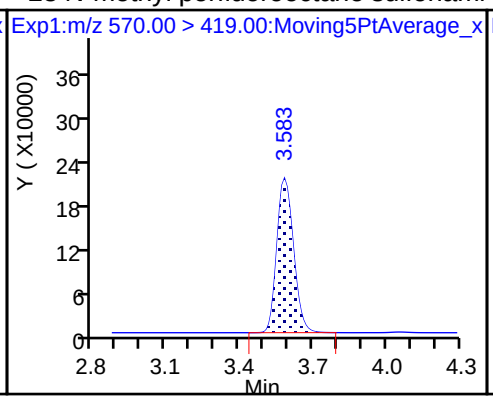
D 23 13C2 PFDA



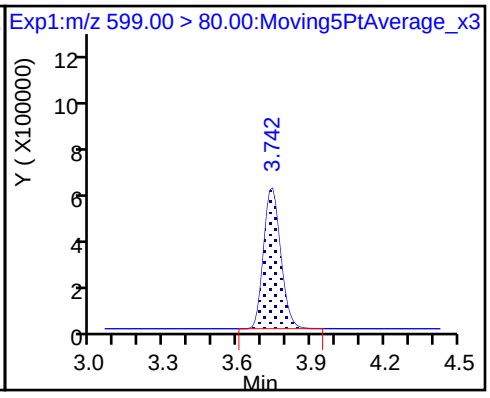
D 27 d3-NMeFOSAA



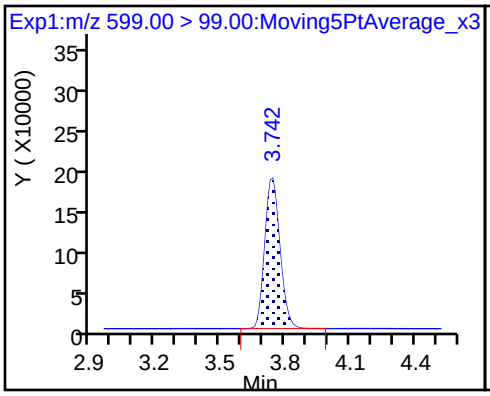
28 N-methyl perfluorooctane sulfonami



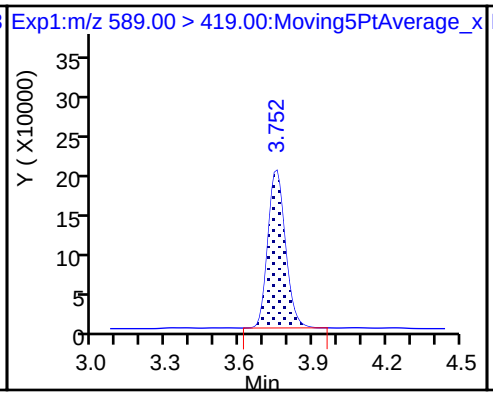
29 Perfluorodecane Sulfonic acid



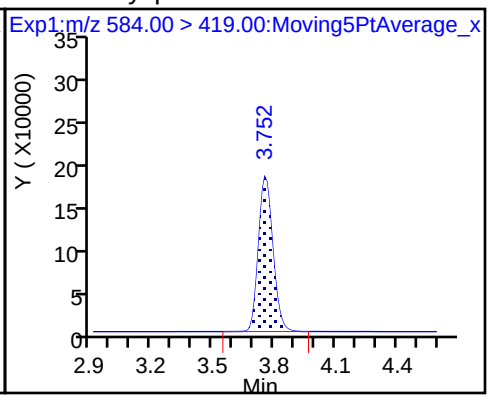
29 Perfluorodecane Sulfonic acid



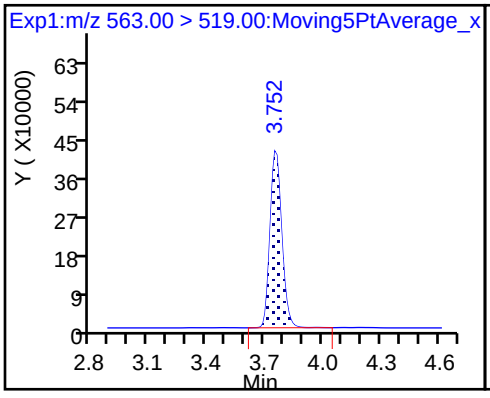
D 32 d5-NEtFOSAA



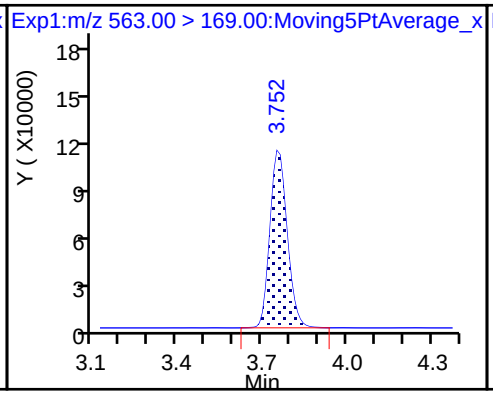
33 N-ethyl perfluorooctane sulfonamid



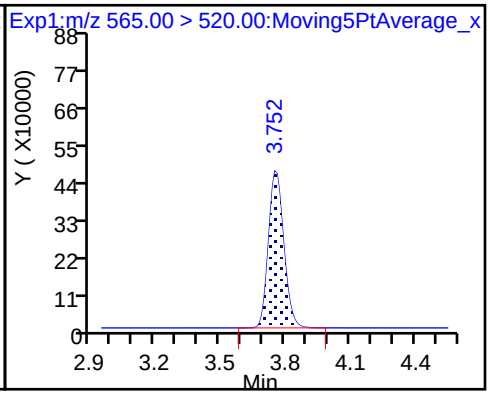
31 Perfluoroundecanoic acid



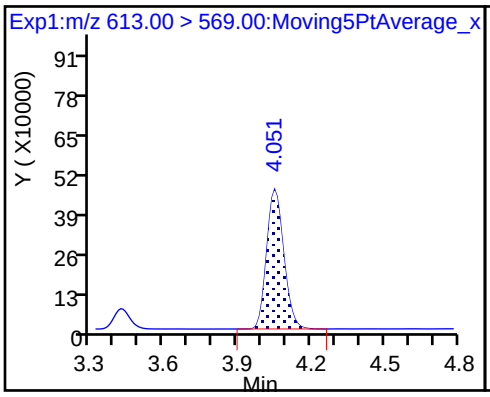
31 Perfluoroundecanoic acid



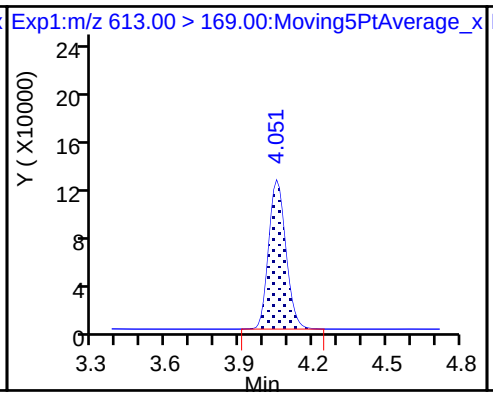
D 30 13C2 PFUnA



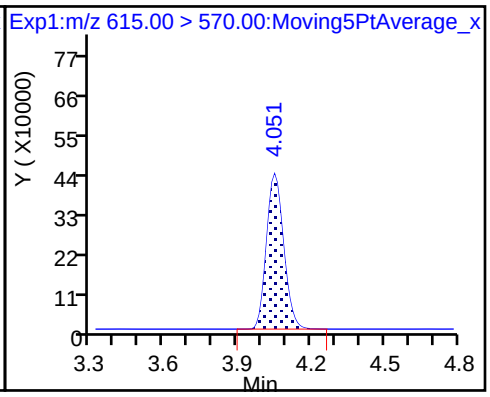
37 Perfluorododecanoic acid



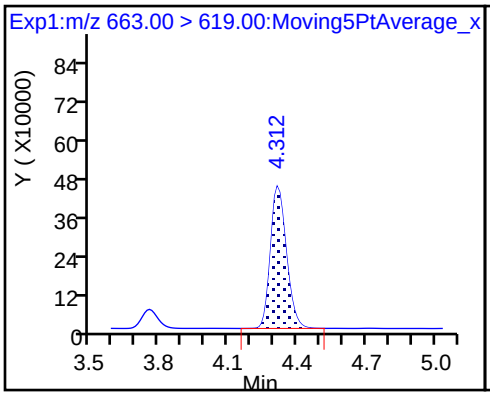
37 Perfluorododecanoic acid



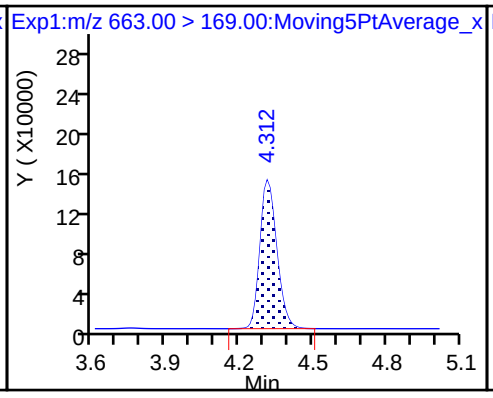
D 36 13C2 PFDoA



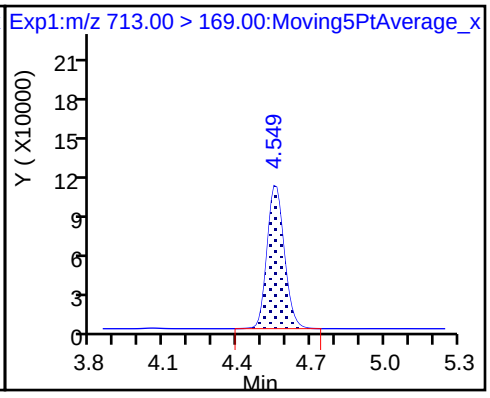
41 Perfluorotridecanoic acid



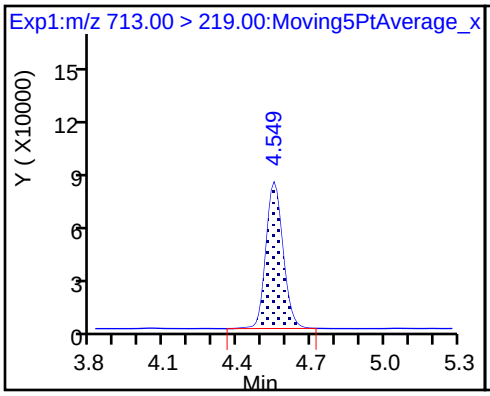
41 Perfluorotridecanoic acid



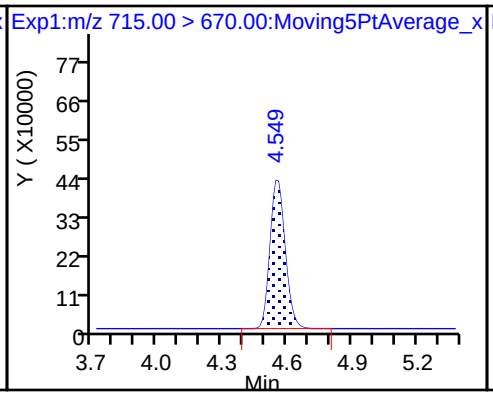
42 Perfluorotetradecanoic acid



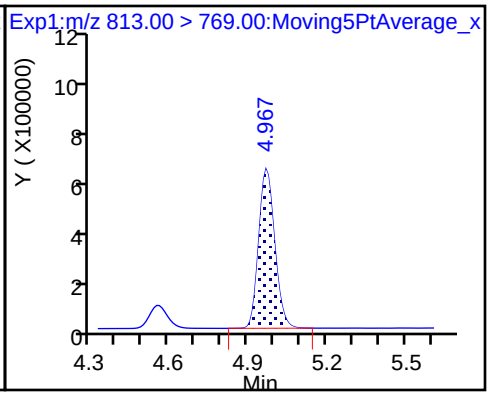
42 Perfluorotetradecanoic acid



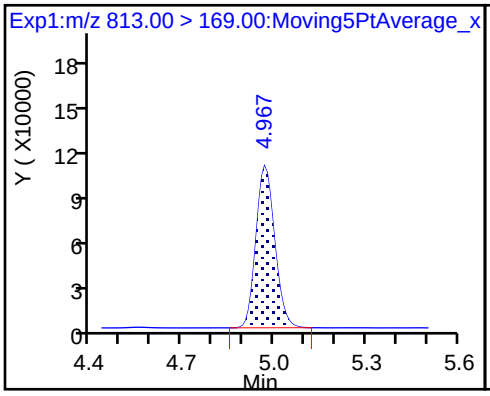
D 43 13C2-PFTeDA



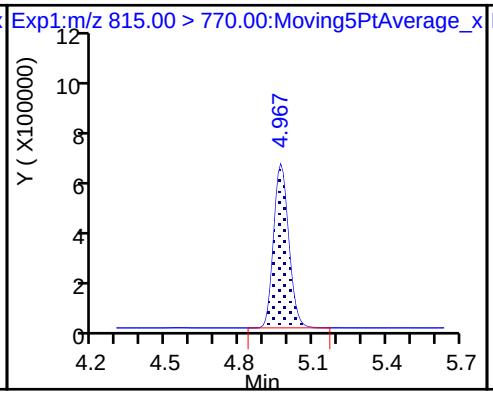
45 Perfluorohexadecanoic acid



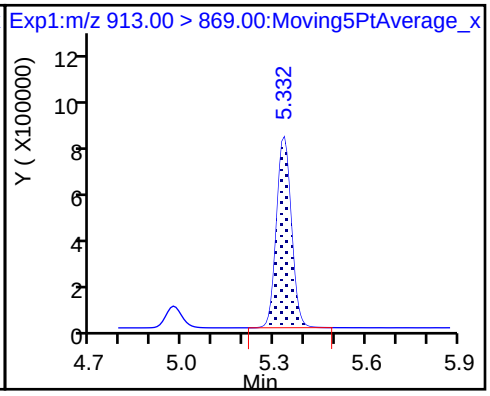
45 Perfluorohexadecanoic acid



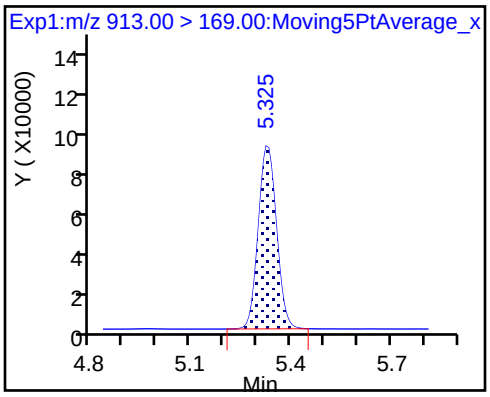
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-213657/2 Calibration Date: 03/19/2018 10:18

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLA_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9378		0.0506	0.0500	1.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.115		0.0477	0.0500	-4.5	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	76.95		0.0440	0.0442	-0.6	50.0
4:2 FTS	AveID	16.07	11.46		0.130	0.0467	-28.7	
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.057		0.0524	0.0500	4.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.056		0.0509	0.0500	1.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.221		0.0498	0.0455	9.5	50.0
6:2FTS	AveID	1.665	1.659		0.0500	0.0474	-0.3	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.404		0.0509	0.0476	6.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.106		0.0495	0.0500	-0.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9655		0.0473	0.0500	-5.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.098		0.0470	0.0464	1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.020		0.0525	0.0500	5.0	50.0
8:2FTS	AveID	1.257	1.252		0.0500	0.0479	-0.4	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	1.068		0.0563	0.0500	12.6	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.297		0.0780	0.0500	24.5	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6771		0.0511	0.0482	6.0	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.6906		0.0412	0.0500	-17.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.8817		0.0480	0.0500	-9.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.163		0.0568	0.0500	13.6	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.205		0.0586	0.0500	17.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2681		0.0486	0.0500	-2.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.348		0.0495	0.0500	-1.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.059		0.0543	0.0500	8.6	50.0
13C4 PFBA	Ave	1.277	1.198		2.35	2.50	-6.2	50.0
13C5 PFPeA	Ave	0.9006	0.7801		2.17	2.50	-13.4	50.0
13C3-PFBS	Ave	0.0222	0.0220		2.30	2.33	-1.2	50.0
M2-4:2FTS	Ave	0.1590	0.1182		1.74	2.34	-25.7	50.0
13C2 PFHxA	Ave	1.004	0.9144		2.28	2.50	-8.9	50.0
13C4-PFHpA	Ave	0.9767	0.9748		2.50	2.50	-0.2	50.0
18O2 PFHxS	Ave	1.303	1.305		2.37	2.37	0.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-213657/2 Calibration Date: 03/19/2018 10:18

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLA_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2121		2.01	2.38	-15.2	50.0
13C4 PFOA	Ave	0.9431	0.9351		2.48	2.50	-0.9	50.0
13C4 PFOS	Ave	0.9113	0.8719		2.29	2.39	-4.3	50.0
13C5 PFNA	Ave	0.7545	0.7718		2.56	2.50	2.3	50.0
13C8 FOSA	Ave	1.319	1.336		2.53	2.50	1.2	50.0
M2-8:2FTS	Ave	0.2350	0.2500		2.55	2.40	6.4	50.0
13C2 PFDA	Ave	0.6303	0.6634		2.63	2.50	5.2	50.0
d3-NMeFOSAA	Ave	0.2081	0.2277		2.74	2.50	9.4	50.0
13C2 PFUnA	Ave	0.4935	0.5190		2.63	2.50	5.2	50.0
d5-NEtFOSAA	Ave	0.1990	0.2439		3.06	2.50	22.6	50.0
13C2 PFDoA	Ave	0.4680	0.4703		2.51	2.50	0.5	50.0
13C2-PFTeDA	Ave	0.4272	0.4690		2.75	2.50	9.8	50.0
13C2-PFHxDA	Ave	0.6248	0.6768		2.71	2.50	8.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b\2018.03.19LLA_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 19-Mar-2018 10:18:23 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 19-Mar-2018 10:49:52 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK040

First Level Reviewer: hannigana Date: 19-Mar-2018 10:49:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.434	0.012	0.534	5306857	2.35		93.8	94820	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	99536	0.0506		101	50.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.691	0.017	0.630	3456106	2.17		86.6	74851	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.709	-0.001	1.000	77072	0.0477		95.5	27.9	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.726	0.018	0.643	90439	2.30		98.8	563	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	132302	0.0440		99.4	58.7	
298.90 > 99.00	1.744	1.744	0.0	1.000	55587		2.38(1.25-3.74)		57.2	
D 60 M2-4:2FTS										
329.00 > 81.00	1.965	1.945	0.020	0.725	488969	1.74		74.3	4307	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.965	1.966	-0.001	1.000	20813	0.0333		71.3	1311	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.976	0.020	0.737	4050905	2.28		91.1	122605	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	-0.001	1.000	85605	0.0524		105	303	
313.00 > 119.00	2.007	1.997	0.010	1.005	6561		13.05(5.03-15.10)		200	
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.315	0.025	0.863	4318633	2.50		99.8	92758	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.328	0.025	0.868	5470957	2.37		100	72821	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.341	-0.001	1.000	91167	0.0509		102	184	
363.00 > 169.00	2.340	2.341	-0.001	1.000	38412		2.37(1.13-3.40)		679	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.354	-0.001	1.000	128558	0.0498		110	18.0	
399.00 > 99.00	2.353	2.354	-0.001	1.000	44225		2.91(1.50-4.49)		18.1	
D 12 M2-6:2FTS										
429.00 > 81.00	2.686	2.647	0.039	0.991	892605	2.01		84.8	18596	
D 14 13C4 PFOA										
417.00 > 372.00	2.710	2.679	0.031	1.000	4142391	2.48		99.1	107975	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.686	2.689	-0.003	1.000	29557	0.0472		99.7	1396	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.718	2.712	0.006	1.003	91652	0.0495		99.1	28.0	
413.00 > 169.00	2.710	2.712	-0.002	1.000	51396		1.78(0.84-2.52)		198	
* 62 13C2-PFOA										
415.00 > 370.00	2.710	2.712	-0.002		4430116	2.50			74389	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.718	2.720	-0.002	1.000	103289	0.0509		107	2754	
449.00 > 99.00	2.718	2.720	-0.002	1.000	26360		3.92(1.94-5.82)		888	
D 18 13C4 PFOS										
503.00 > 80.00	3.087	3.051	0.036	1.139	3692727	2.29		95.7	42895	
D 19 13C5 PFNA										
468.00 > 423.00	3.095	3.051	0.044	1.142	3419035	2.56		102	58798	
20 Perfluorononanoic acid										
463.00 > 419.00	3.095	3.096	-0.001	1.000	66021	0.0473		94.7	137	
463.00 > 169.00	3.095	3.096	-0.001	1.000	15914		4.15(1.90-5.69)		385	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.095	3.096	-0.001	1.003	78699	0.0470		101	292	
499.00 > 99.00	3.095	3.096	-0.001	1.003	21216		3.71(2.31-6.93)		193	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.388	0.018	1.257	5916427	2.53		101	83369	
D 26 M2-8:2FTS										
529.00 > 81.00	3.451	3.406	0.045	1.273	1060910	2.55		106	23425	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.406	0.0	1.000	120741	0.0525		105	4525	
D 23 13C2 PFDA										
515.00 > 470.00	3.460	3.415	0.045	1.277	2938904	2.63		105	36866	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.451	3.452	-0.001	1.000	26566	0.0477		99.6	851	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.460	3.461	-0.001	1.000	62778	0.0563		113	308	R
513.00 > 169.00	3.460	3.461	-0.001	1.000	7580		8.28(2.36-7.09)		335	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.620	3.569	0.051	1.336	1008690	2.73		109	30452	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.620	3.620	0.0	1.000	26156	0.0622		124	373	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.789	3.738	0.051	1.398	1080568	3.06		123	2095	
D 30 13C2 PFUnA										
565.00 > 520.00	3.789	3.748	0.041	1.398	2299129	2.63		105	68220	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.778	3.779	-0.001	1.000	50427	0.0511		106	3509	
599.00 > 99.00	3.778	3.779	-0.001	1.000	17478		2.89(1.39-4.16)		402	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.799	3.800	-0.001	1.003	19055	0.0450		90.1	385	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.789	3.800	-0.011	1.000	31755	0.0412		82.4	105	
563.00 > 169.00	3.789	3.800	-0.011	1.000	10254		3.10(2.12-6.36)		650	
D 36 13C2 PFDoA										
615.00 > 570.00	4.088	4.036	0.052	1.508	2083262	2.51		100	12647	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.088	4.099	-0.011	1.000	48437	0.0568		114	8.3	
613.00 > 169.00	4.088	4.099	-0.011	1.000	10996		4.40(2.13-6.40)		206	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.361	4.361	0.0	1.000	50207	0.0586		117	8.9	R
663.00 > 169.00	4.361	4.361	0.0	1.000	11272		4.45(1.25-3.76)		124	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.606	4.544	0.062	1.699	2077648	2.74		110	16057	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.606	4.606	0.0	1.000	11142	0.0486		97.2	145	
713.00 > 219.00	4.595	4.606	-0.011	0.998	8067		1.38(0.71-2.13)		107	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.025	4.955	0.070	1.854	2998377	2.71		108	9442	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.025	5.026	-0.001	1.000	80864	0.0495		98.9	8.0	
813.00 > 169.00	5.025	5.026	-0.001	1.000	14622		5.53(2.86-8.58)		188	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.407	5.407	0.0	1.000	63486	0.0543		109	11.8	
913.00 > 169.00	5.401	5.407	-0.006	0.999	8244		7.70(3.83-11.48)		147	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 19-Mar-2018 10:49:53 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b\2018.03.19LLA_004.d

Injection Date: 19-Mar-2018 10:18:23 Instrument ID: A8_N

Lims ID: CCVL

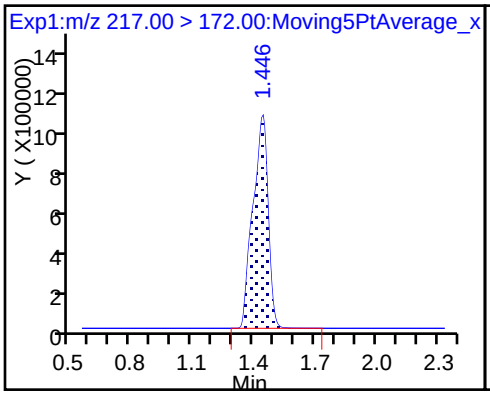
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

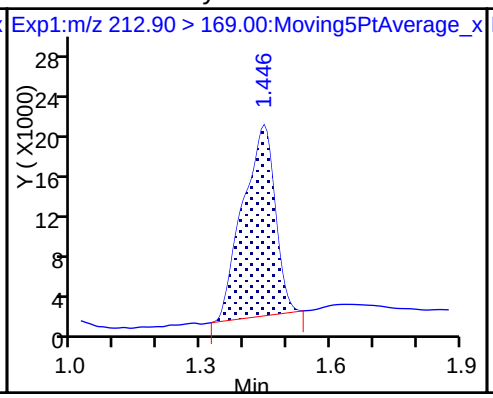
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

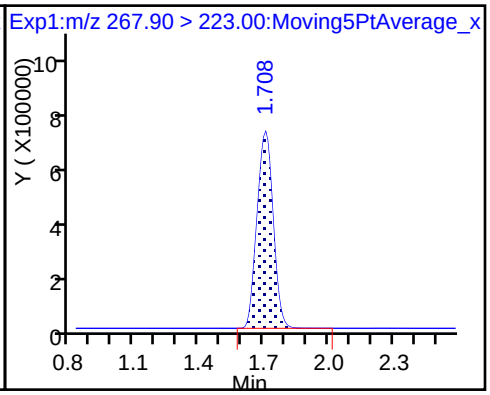
D 1 13C4 PFBA



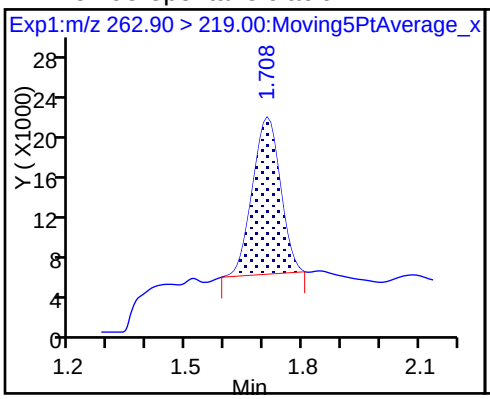
2 Perfluorobutyric acid



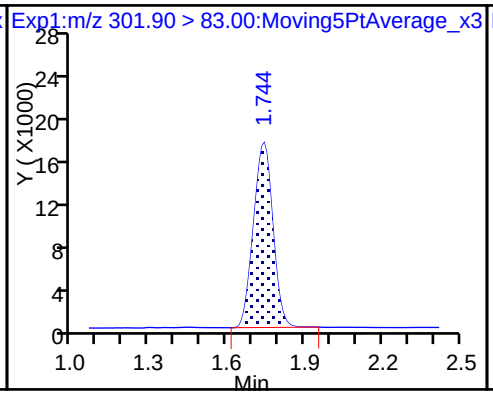
D 3 13C5-PFPeA



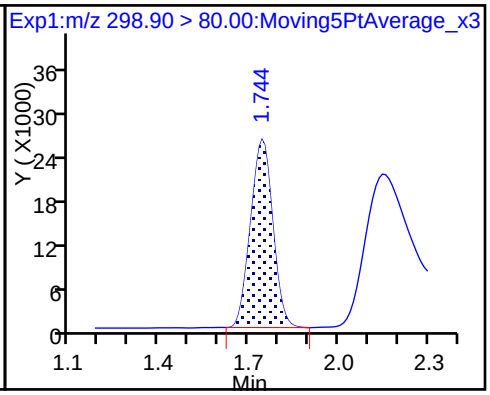
4 Perfluoropentanoic acid



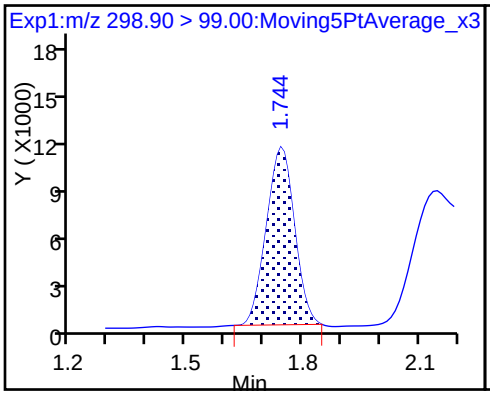
D 47 13C3-PFBS



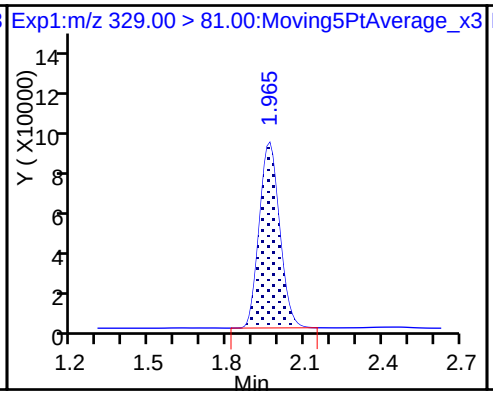
5 Perfluorobutanesulfonic acid



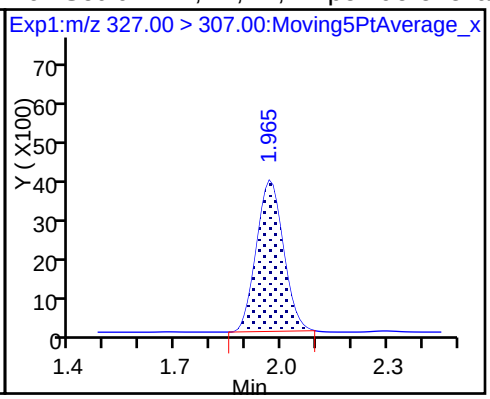
5 Perfluorobutanesulfonic acid



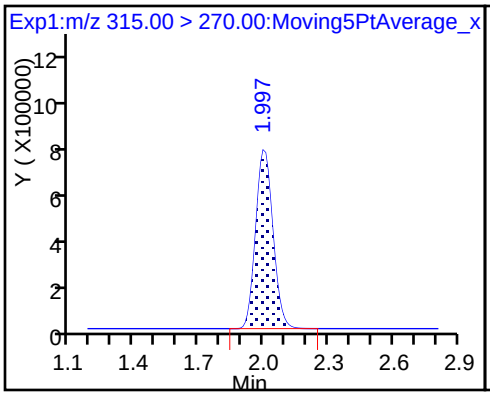
D 60 M2-4:2FTS



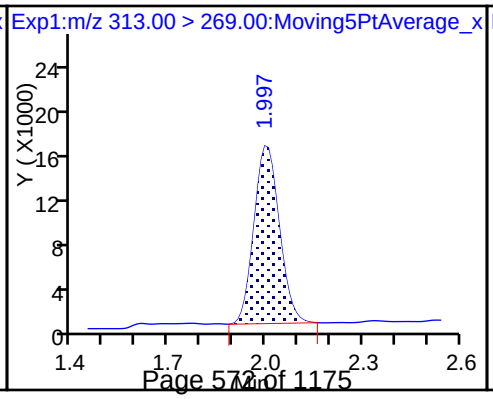
61 Sodium 1H,1H,2H,2H-perfluorohexane



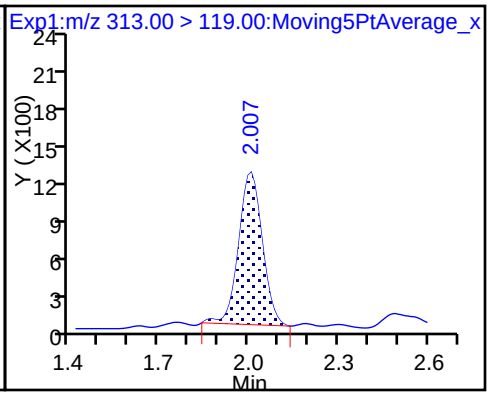
D 7 13C2 PFHxA



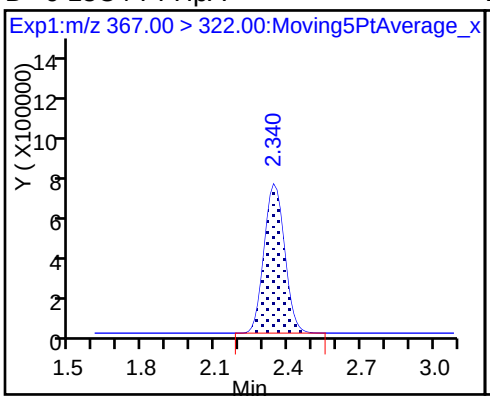
6 Perfluorohexanoic acid



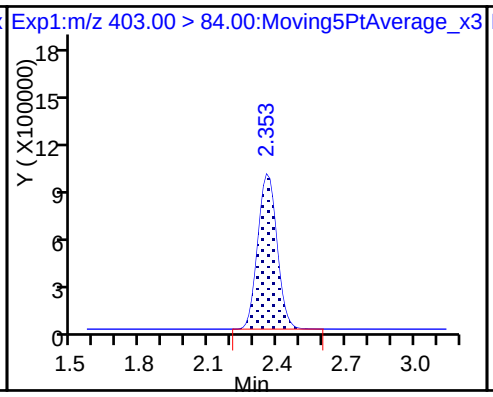
6 Perfluorohexanoic acid



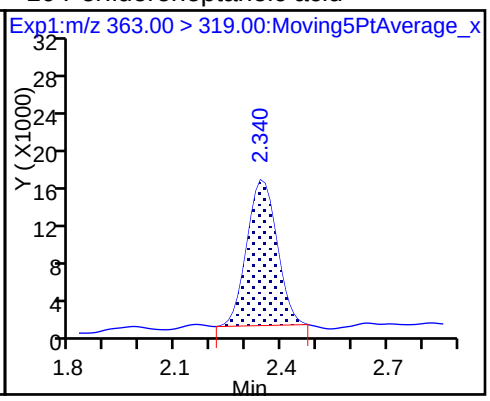
D 9 13C4-PFHpA



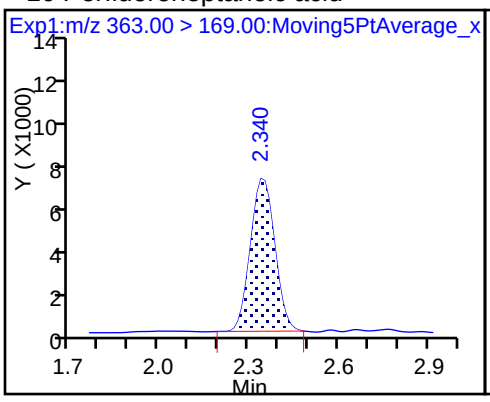
D 11 18O2 PFHxS



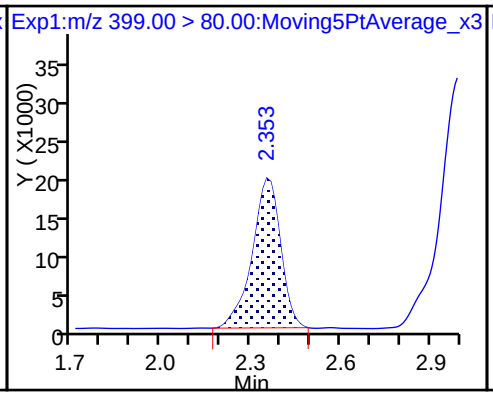
10 Perfluoroheptanoic acid



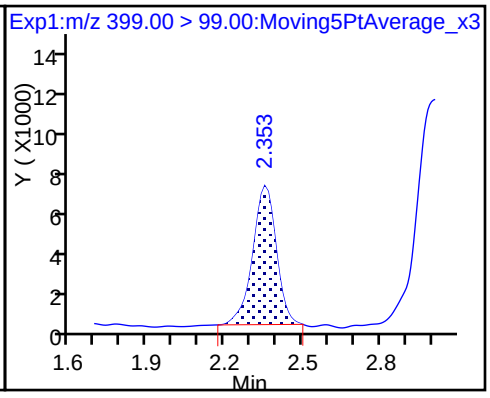
10 Perfluoroheptanoic acid



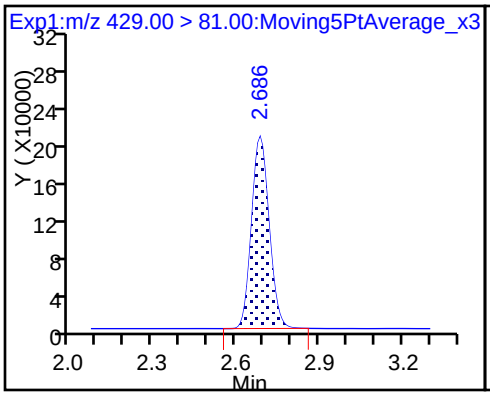
8 Perfluorohexanesulfonic acid



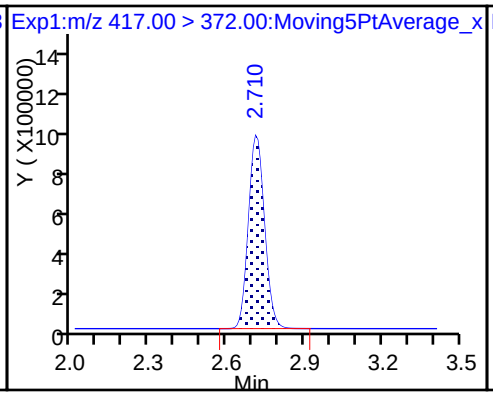
8 Perfluorohexanesulfonic acid



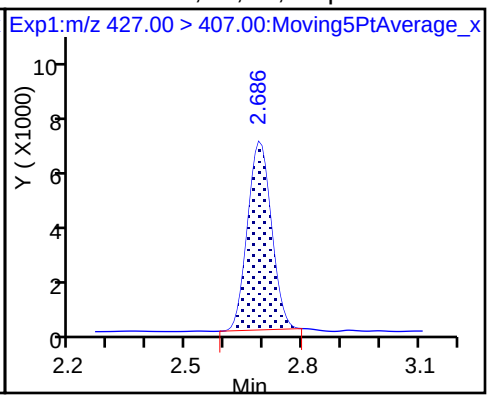
D 12 M2-6:2FTS



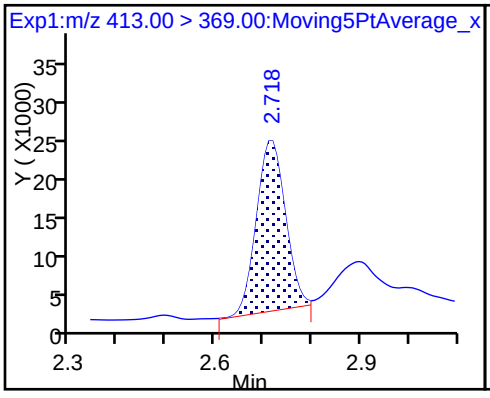
D 14 13C4 PFOA



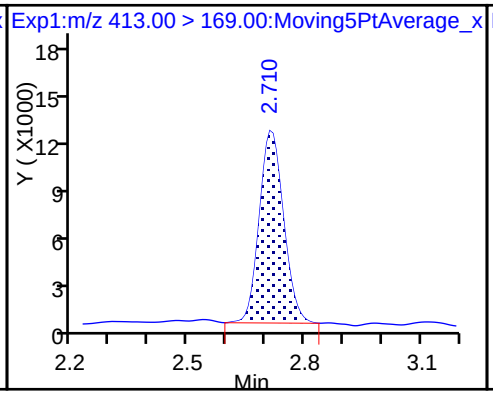
13 Sodium 1H,1H,2H,2H-perfluorooctane



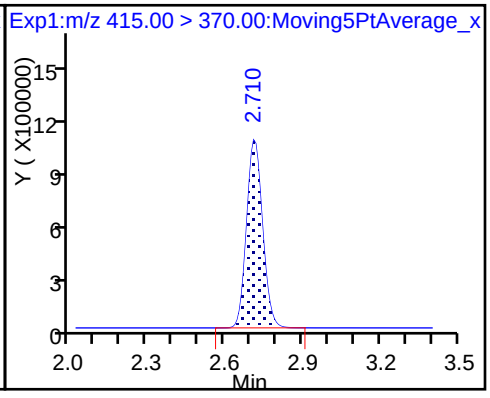
15 Perfluorooctanoic acid



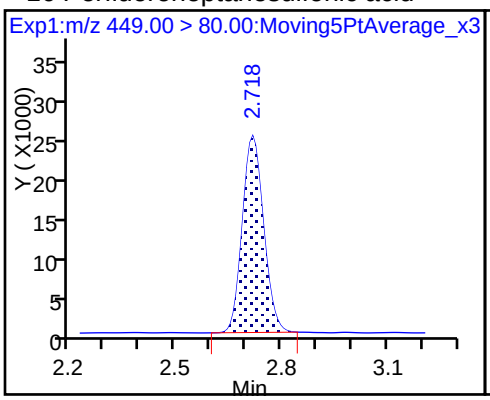
15 Perfluorooctanoic acid



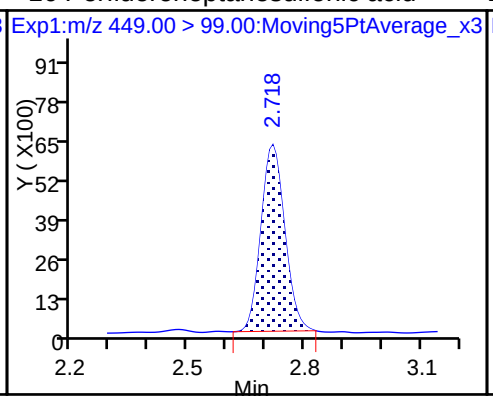
* 62 13C2-PFOA



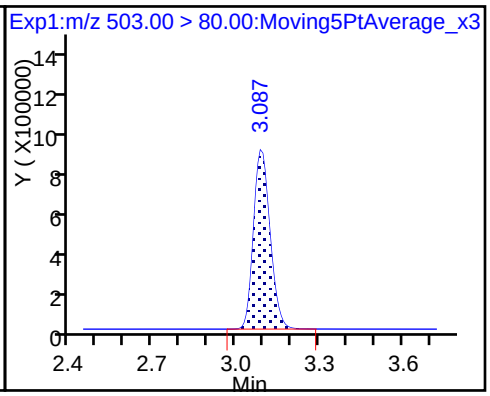
16 Perfluoroheptanesulfonic acid



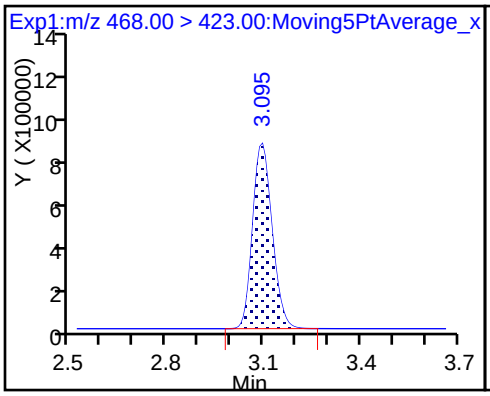
16 Perfluoroheptanesulfonic acid



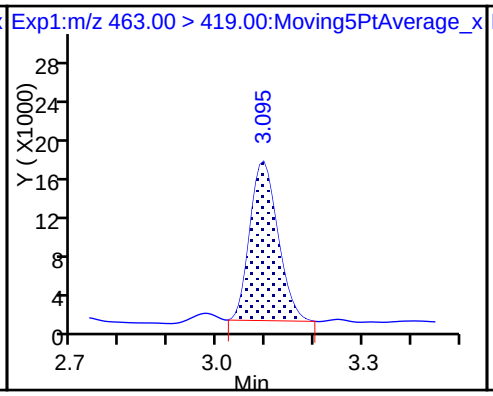
D 18 13C4 PFOS



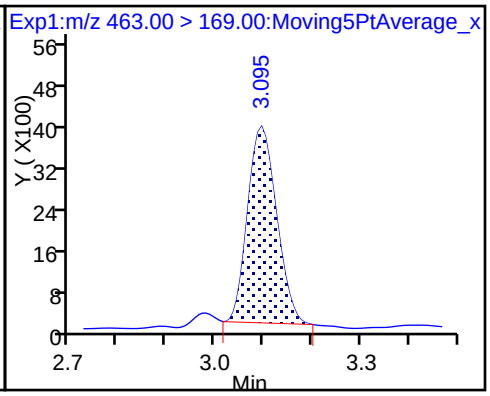
D 19 13C5 PFNA



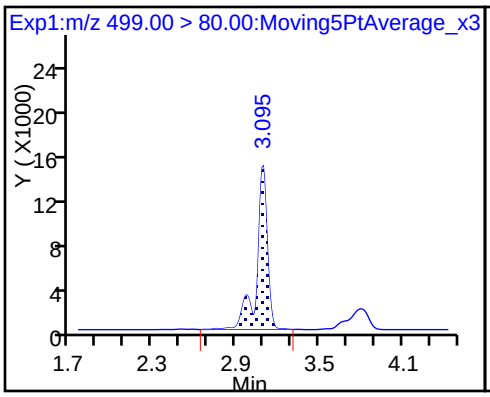
20 Perfluorononanoic acid



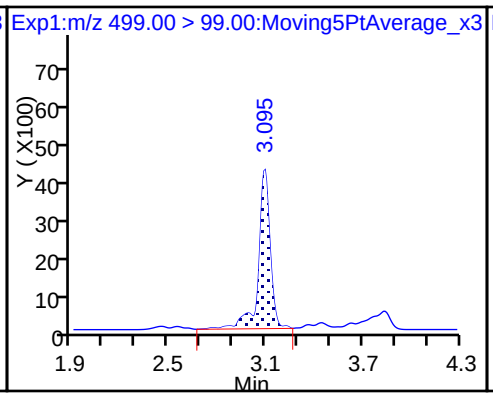
20 Perfluorononanoic acid



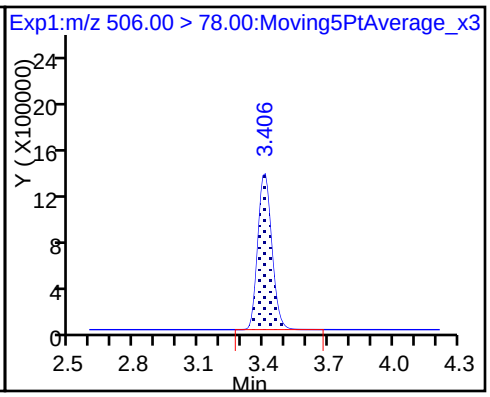
17 Perfluorooctane sulfonic acid



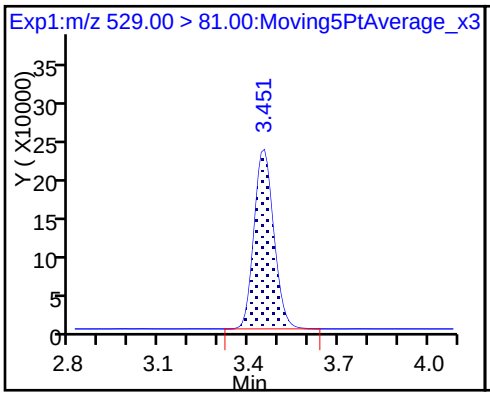
17 Perfluorooctane sulfonic acid



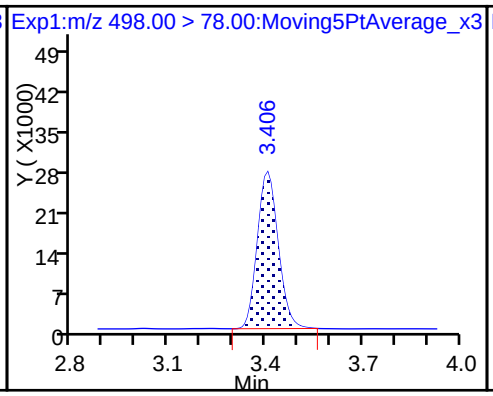
D 21 13C8 FOSA



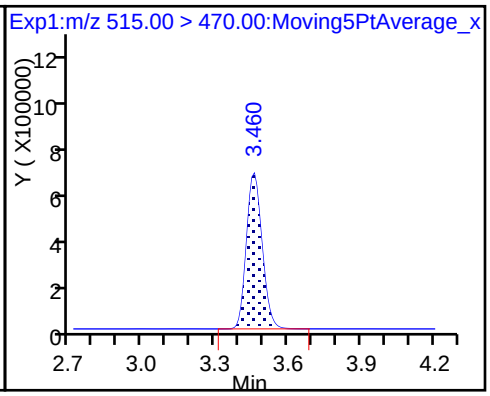
D 26 M2-8:2FTS



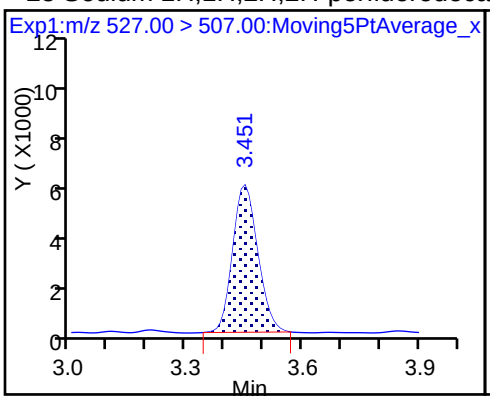
22 Perfluorooctane Sulfonamide



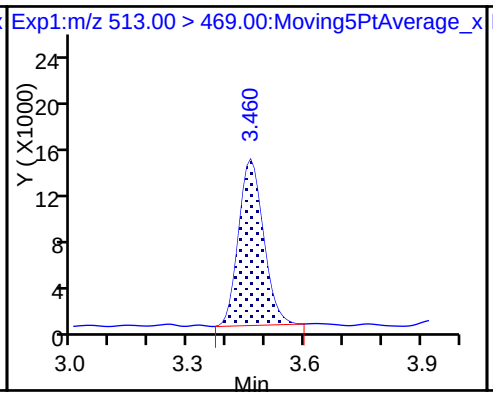
D 23 13C2 PFDA



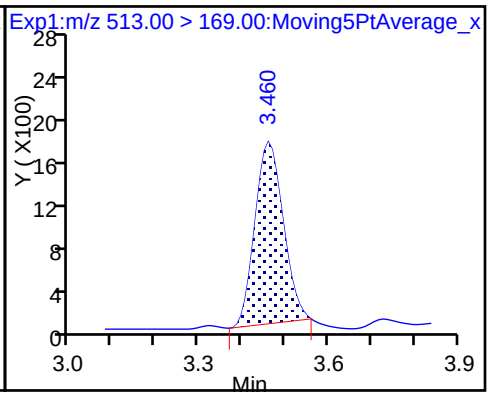
25 Sodium 1H,1H,2H,2H-perfluorodecan



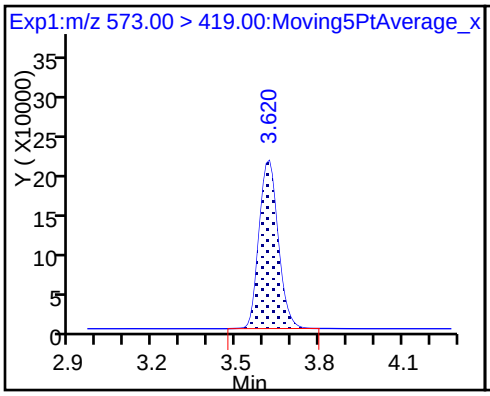
24 Perfluorodecanoic acid



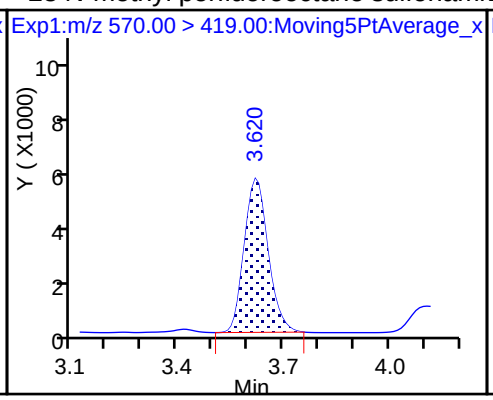
24 Perfluorodecanoic acid



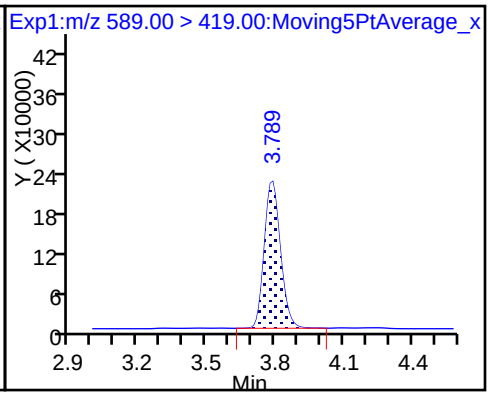
D 27 d3-NMeFOSAA



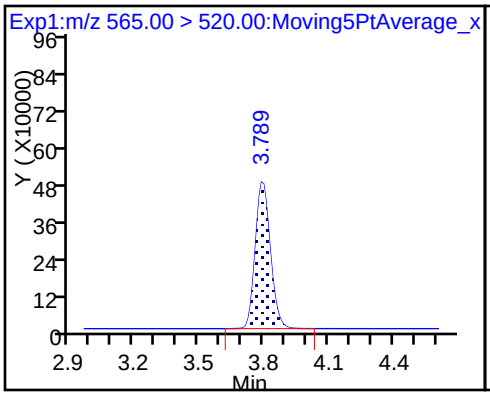
28 N-methyl perfluorooctane sulfonami



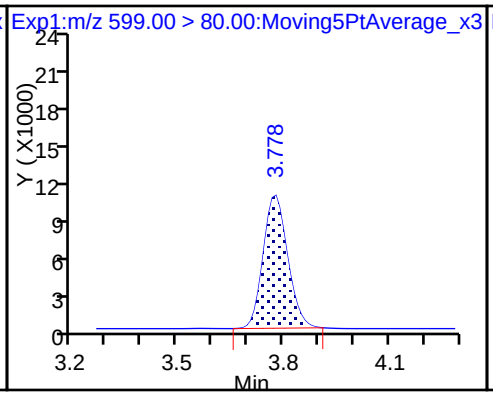
D 32 d5-NEtFOSAA



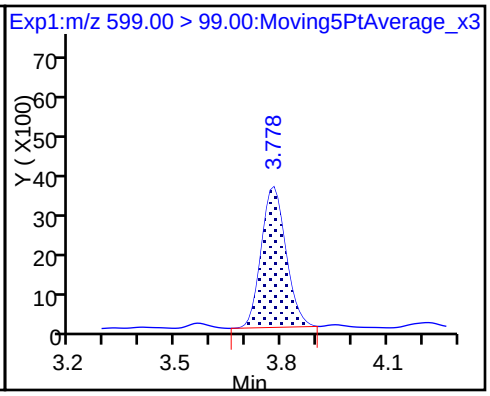
D 30 13C2 PFUnA



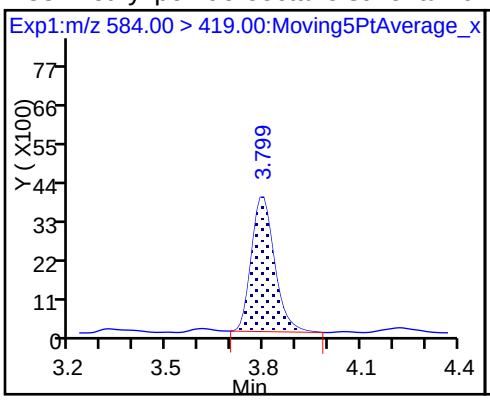
29 Perfluorodecane Sulfonic acid



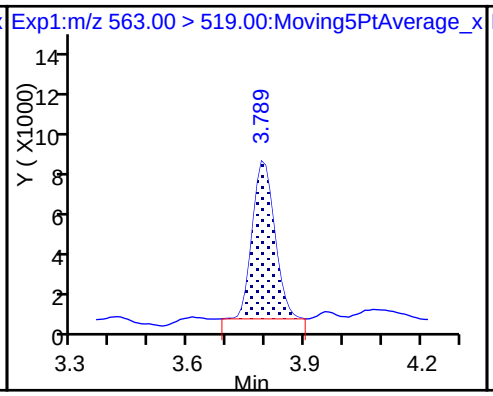
29 Perfluorodecane Sulfonic acid



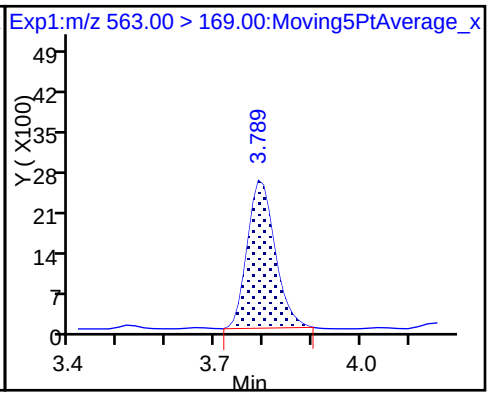
33 N-ethyl perfluorooctane sulfonamid



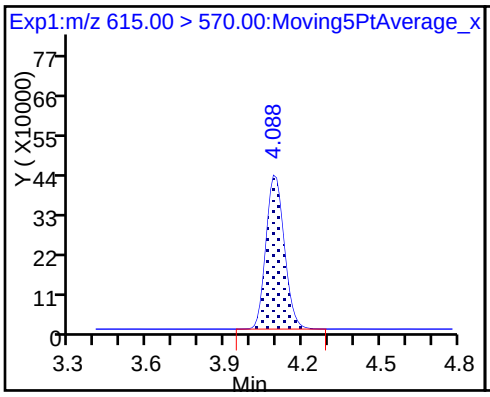
31 Perfluoroundecanoic acid



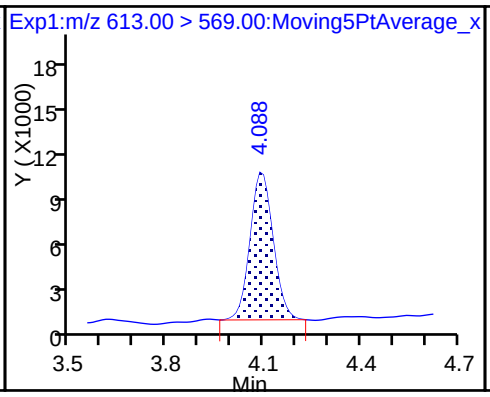
31 Perfluoroundecanoic acid



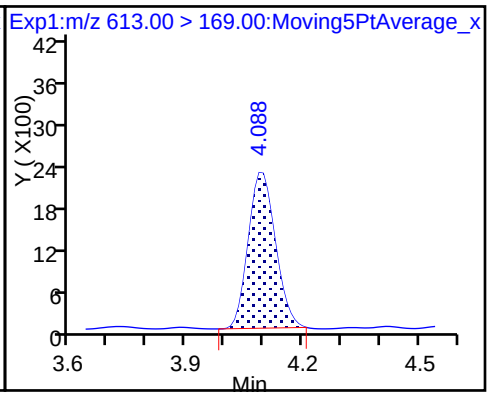
D 36 13C2 PFDoA



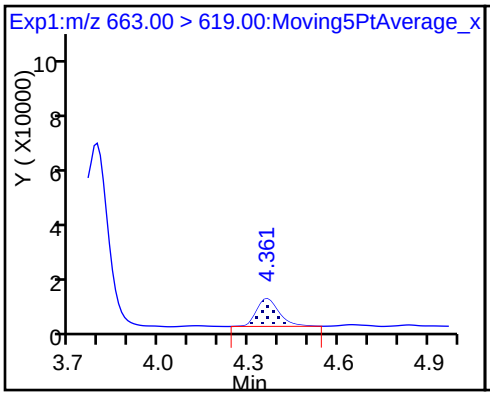
37 Perfluorododecanoic acid



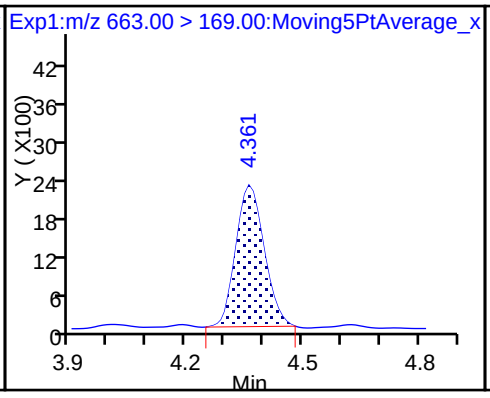
37 Perfluorododecanoic acid



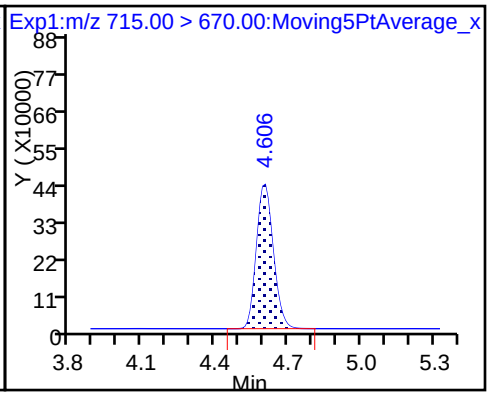
41 Perfluorotridecanoic acid



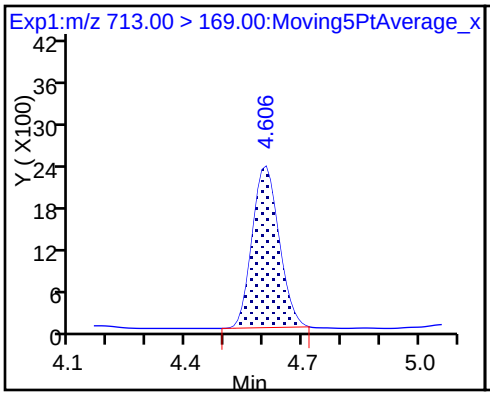
41 Perfluorotridecanoic acid



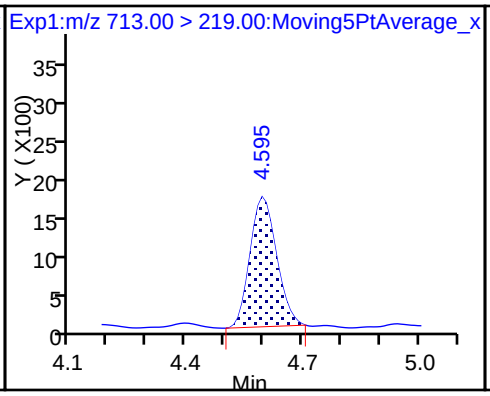
D 43 13C2-PFTeDA



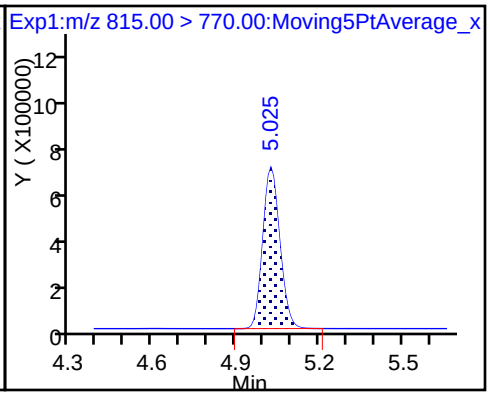
42 Perfluorotetradecanoic acid



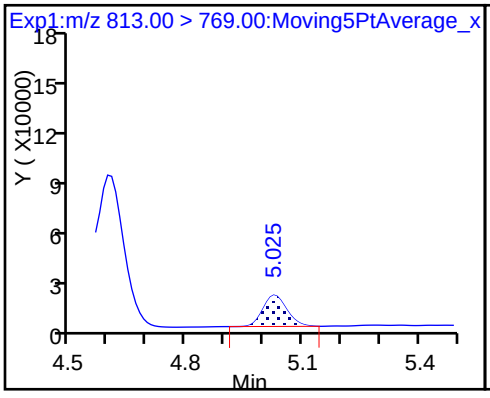
42 Perfluorotetradecanoic acid



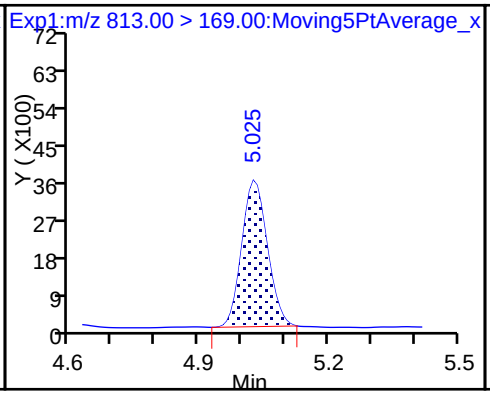
D 44 13C2-PFHxDA



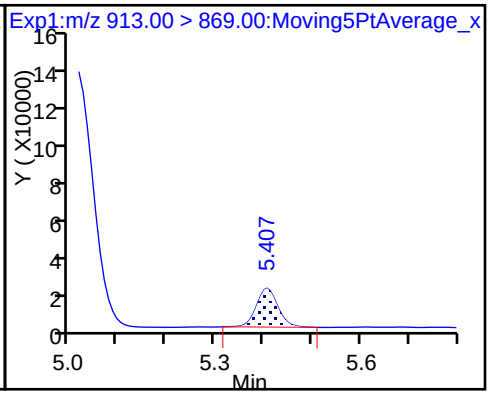
45 Perfluorohexadecanoic acid



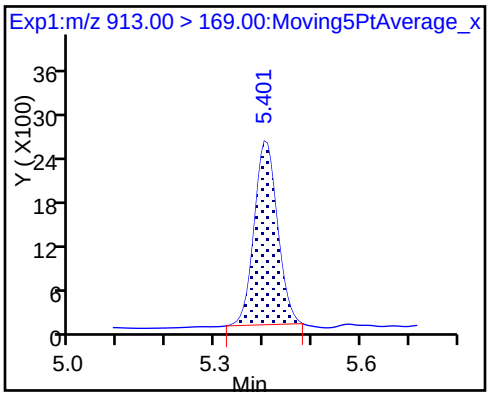
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213657/3 Calibration Date: 03/19/2018 10:26

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9165		0.988	1.00	-1.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.075		0.920	1.00	-8.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	74.42		0.850	0.884	-3.8	50.0
4:2 FTS	AveID	16.07	10.81		0.628	0.934	-32.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9512		0.943	1.00	-5.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.020		0.984	1.00	-1.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.006		0.821	0.910	-9.8	40.0
6:2FTS	AveID	1.665	1.591		0.906	0.948	-4.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.118		1.00	1.00	0.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.305		0.945	0.952	-0.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9664		0.948	1.00	-5.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.037		0.889	0.928	-4.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9916		1.02	1.00	2.0	40.0
8:2FTS	AveID	1.257	1.194		0.909	0.958	-5.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9577		1.01	1.00	0.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	0.9891		0.950	1.00	-5.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6594		0.996	0.964	3.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.8987		0.918	1.00	-8.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7435		0.887	1.00	-11.3	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.037		1.01	1.00	1.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9834		0.956	1.00	-4.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2630		0.954	1.00	-4.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9599		1.02	1.00	2.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.041		1.07	1.00	6.8	50.0
13C4 PFBA	Ave	1.277	1.249		2.45	2.50	-2.1	50.0
13C5 PFPeA	Ave	0.9006	0.8626		2.40	2.50	-4.2	50.0
13C3-PFBS	Ave	0.0222	0.0232		2.43	2.33	4.4	50.0
M2-4:2FTS	Ave	0.1590	0.1207		1.77	2.34	-24.1	50.0
13C2 PFHxA	Ave	1.004	0.9768		2.43	2.50	-2.7	50.0
13C4-PFHpA	Ave	0.9767	0.9609		2.46	2.50	-1.6	50.0
18O2 PFHxS	Ave	1.303	1.350		2.45	2.37	3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213657/3 Calibration Date: 03/19/2018 10:26

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2284		2.17	2.38	-8.7	40.0
13C4 PFOA	Ave	0.9431	0.9569		2.54	2.50	1.5	50.0
13C4 PFOS	Ave	0.9113	0.9442		2.48	2.39	3.6	50.0
13C5 PFNA	Ave	0.7545	0.7965		2.64	2.50	5.6	50.0
13C8 FOSA	Ave	1.319	1.410		2.67	2.50	6.9	50.0
M2-8:2FTS	Ave	0.2350	0.2777		2.83	2.40	18.2	40.0
13C2 PFDA	Ave	0.6303	0.6757		2.68	2.50	7.2	50.0
d3-NMeFOSAA	Ave	0.2081	0.2418		2.90	2.50	16.2	50.0
d5-NEtFOSAA	Ave	0.1990	0.2565		3.22	2.50	28.9	50.0
13C2 PFUnA	Ave	0.4935	0.5296		2.68	2.50	7.3	50.0
13C2 PFDoA	Ave	0.4680	0.4952		2.65	2.50	5.8	50.0
13C2-PFTeDA	Ave	0.4272	0.4814		2.82	2.50	12.7	50.0
13C2-PFHxDA	Ave	0.6248	0.6770		2.71	2.50	8.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b\2018.03.19LLA_005.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 19-Mar-2018 10:26:10 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 19-Mar-2018 10:50:19 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK040

First Level Reviewer: hannigana Date: 19-Mar-2018 10:50:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.434	0.012	0.533	5437147	2.45		97.9	99119	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	1993178	0.9882		98.8	1038	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.691	0.018	0.630	3753986	2.39		95.8	108895	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1613809	0.9200		92.0	635	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.726	0.018	0.643	93946	2.43		104	2062	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	2658395	0.8503		96.2	1193	
298.90 > 99.00	1.744	1.744	0.0	1.000	1119186		2.38(1.25-3.74)		1207	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.945	0.021	0.725	490507	1.77		75.9	4875	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	407849	0.6279		67.2	19068	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.976	0.021	0.736	4251149	2.43		97.3	111328	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1617450	0.9427		94.3	5759	
313.00 > 119.00	1.997	1.997	0.0	1.000	152127		10.63(5.03-15.10)		3964	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.315	0.026	0.863	4181725	2.46		98.4	89951	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.328	0.026	0.868	5557764	2.45		104	60263	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	1706455	0.9843		98.4	3517	
363.00 > 169.00	2.341	2.341	0.0	1.000	677139		2.52(1.13-3.40)		9700	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	2151233	0.8207		90.2	295	
399.00 > 99.00	2.354	2.354	0.0	1.000	729738		2.95(1.50-4.49)		313	
D 12 M2-6:2FTS										
429.00 > 81.00	2.689	2.647	0.042	0.991	944394	2.17		91.3	18599	
D 14 13C4 PFOA										
417.00 > 372.00	2.712	2.679	0.033	1.000	4164729	2.54		101	109291	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.689	2.689	0.0	1.000	599807	0.9062		95.6	23455	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.712	2.712	0.0	1.000	1862154	1.00		100	793	
413.00 > 169.00	2.712	2.712	0.0	1.000	999168		1.86(0.84-2.52)		3694	
* 62 13C2-PFOA										
415.00 > 370.00	2.712	2.712	0.0		4352112	2.50			67958	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.720	2.720	0.0	1.000	2041266	0.9450		99.3	28759	
449.00 > 99.00	2.720	2.720	0.0	1.000	547952		3.73(1.94-5.82)		10119	
D 18 13C4 PFOS										
503.00 > 80.00	3.088	3.051	0.037	1.138	3928323	2.48		104	36871	
D 19 13C5 PFNA										
468.00 > 423.00	3.096	3.051	0.045	1.141	3466509	2.64		106	75355	
20 Perfluorononanoic acid										
463.00 > 419.00	3.096	3.096	0.0	1.000	1340030	0.9479		94.8	3247	
463.00 > 169.00	3.096	3.096	0.0	1.000	338755		3.96(1.90-5.69)		10251	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.096	3.096	0.0	1.003	1581382	0.8887		95.8	5941	
499.00 > 99.00	3.088	3.096	-0.008	1.000	351584		4.50(2.31-6.93)		3676	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.388	0.018	1.256	6136742	2.67		107	66256	
D 26 M2-8:2FTS										
529.00 > 81.00	3.452	3.406	0.046	1.273	1157745	2.83		118	26139	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.406	0.0	1.000	2434008	1.02		102	55448	
D 23 13C2 PFDA										
515.00 > 470.00	3.461	3.415	0.046	1.276	2940491	2.68		107	35093	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.452	3.452	0.0	1.000	552742	0.9095		94.9	11234	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.461	3.461	0.0	1.000	1126463	1.01		101	6040	
513.00 > 169.00	3.461	3.461	0.0	1.000	202728		5.56(2.36-7.09)		7591	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.620	3.569	0.051	1.335	1052245	2.90		116	55870	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.620	3.620	0.0	1.000	416304	0.9496		95.0	4603	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.789	3.738	0.051	1.397	1116285	3.22		129	2155	
D 30 13C2 PFUnA										
565.00 > 520.00	3.800	3.748	0.052	1.401	2304646	2.68		107	52890	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.779	3.779	0.0	1.000	1044835	1.00		103	36656	
599.00 > 99.00	3.779	3.779	0.0	1.000	340845		3.07(1.39-4.16)		6521	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.800	3.800	0.0	1.003	401260	0.9179		91.8	9072	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.800	3.800	0.0	1.000	685396	0.8872		88.7	2446	
563.00 > 169.00	3.800	3.800	0.0	1.000	191791		3.57(2.12-6.36)		11566	
D 36 13C2 PFDoA										
615.00 > 570.00	4.089	4.036	0.053	1.508	2155236	2.65		106	14328	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.099	4.099	0.0	1.003	894158	1.01		101	172	
613.00 > 169.00	4.099	4.099	0.0	1.003	217105		4.12(2.13-6.40)		3731	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.361	4.361	0.0	1.000	847785	0.9559		95.6	144	
663.00 > 169.00	4.361	4.361	0.0	1.000	274339		3.09(1.25-3.76)		3738	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.606	4.544	0.062	1.698	2095015	2.82		113	16225	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.606	4.606	0.0	1.000	220386	0.9536		95.4	2690	
713.00 > 219.00	4.596	4.606	-0.010	0.998	158541		1.39(0.71-2.13)		1951	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.026	4.955	0.071	1.853	2946556	2.71		108	9203	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.026	5.026	0.0	1.000	1131316	1.02		102	110	
813.00 > 169.00	5.026	5.026	0.0	1.000	194510		5.82(2.86-8.58)		1635	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.407	5.407	0.0	1.000	1227322	1.07		107	220	
913.00 > 169.00	5.407	5.407	0.0	1.000	168376		7.29(3.83-11.48)		2140	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 19-Mar-2018 10:50:20 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b\2018.03.19LLA_005.d

Injection Date: 19-Mar-2018 10:26:10 Instrument ID: A8_N

Lims ID: CCV L4

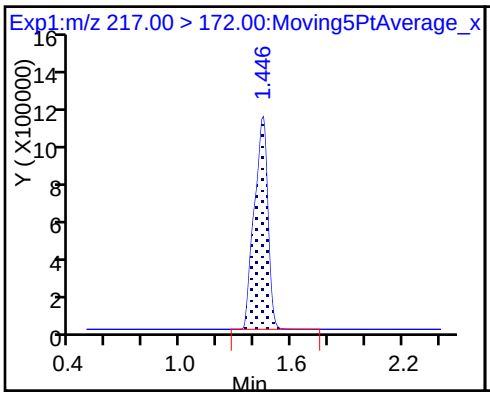
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

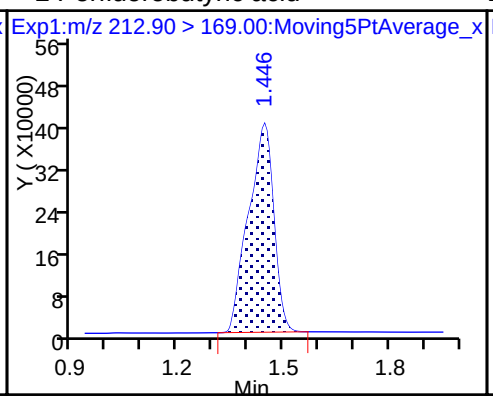
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

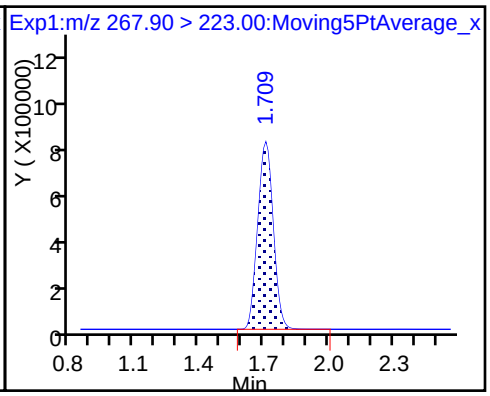
D 1 13C4 PFBA



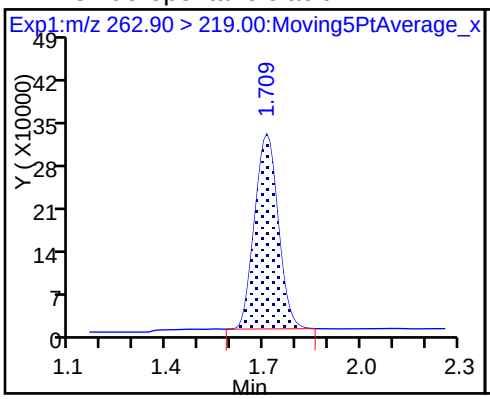
2 Perfluorobutyric acid



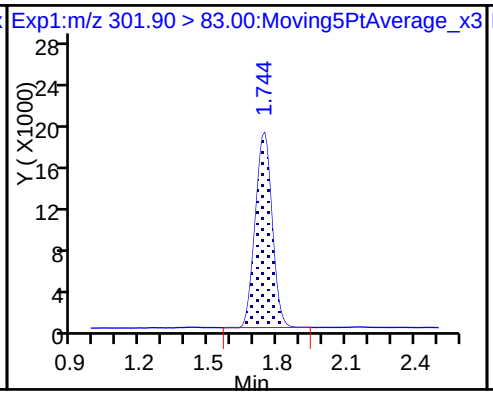
D 3 13C5-PFPeA



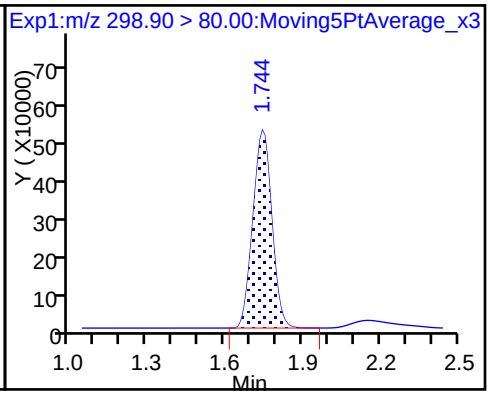
4 Perfluoropentanoic acid



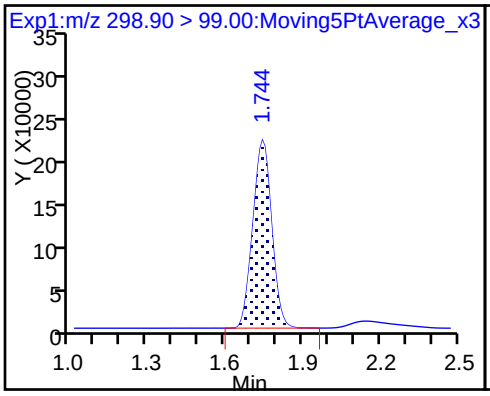
D 47 13C3-PFBS



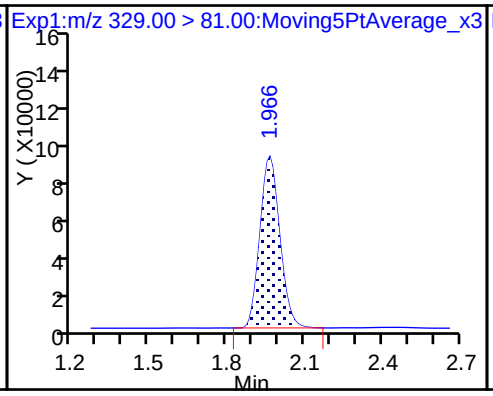
5 Perfluorobutanesulfonic acid



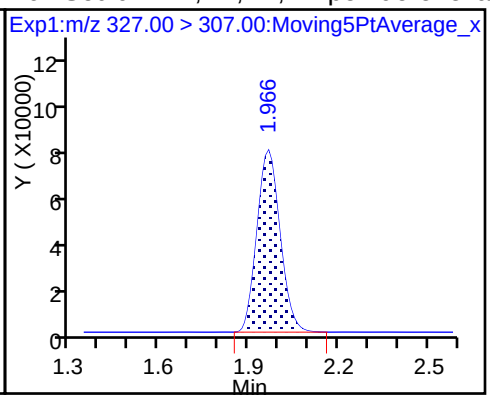
5 Perfluorobutanesulfonic acid



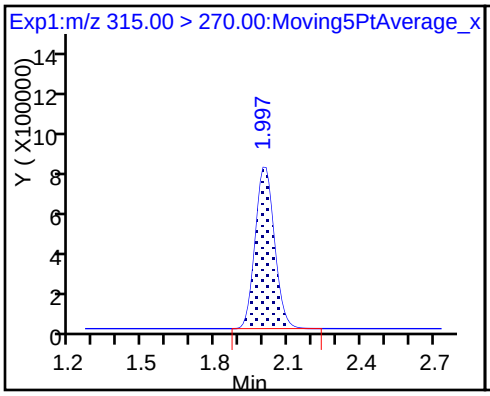
D 60 M2-4:2FTS



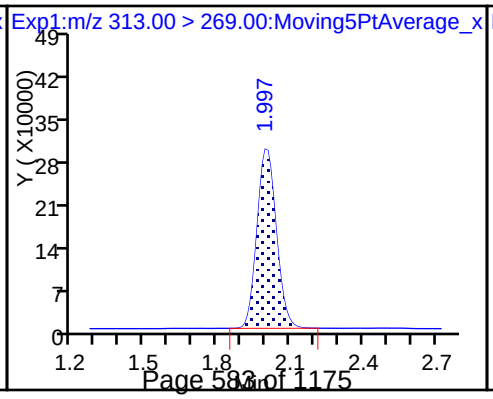
61 Sodium 1H,1H,2H,2H-perfluorohexane



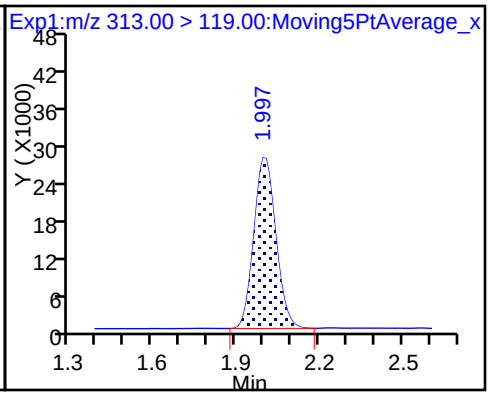
D 7 13C2 PFHxA



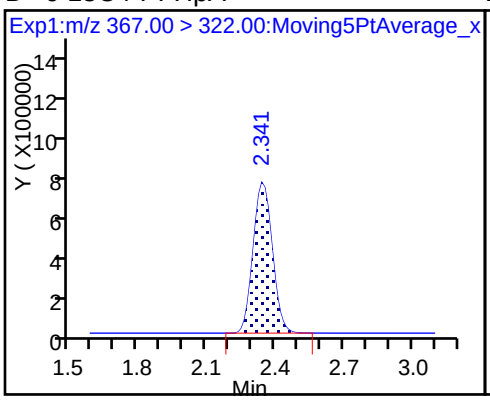
6 Perfluorohexanoic acid



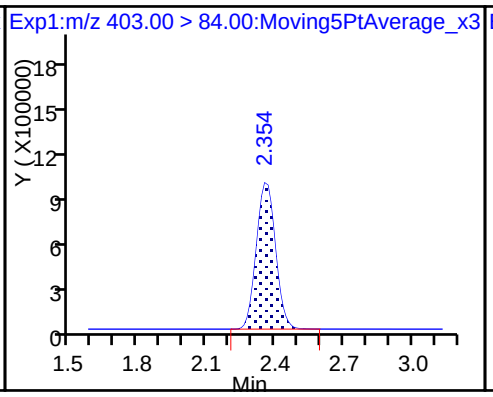
6 Perfluorohexanoic acid



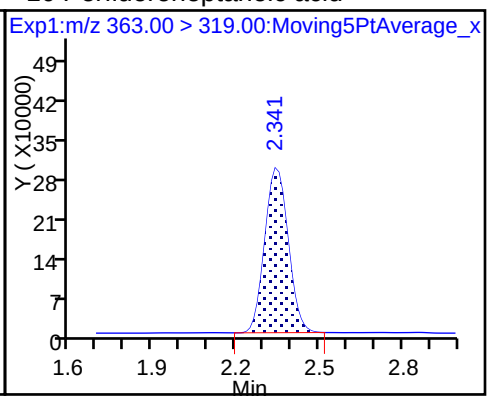
D 9 13C4-PFHpA



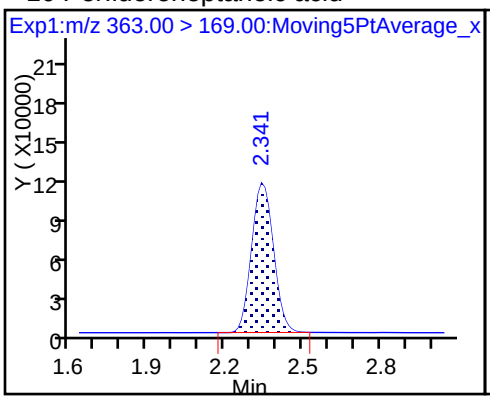
D 11 18O2 PFHxS



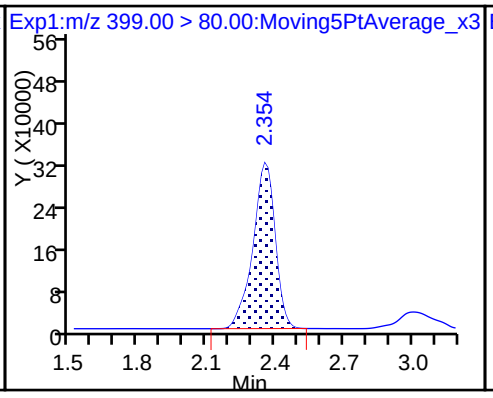
10 Perfluoroheptanoic acid



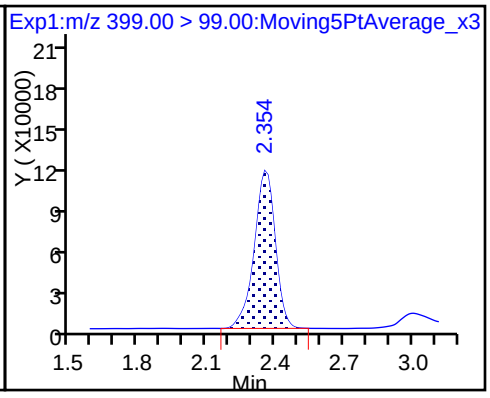
10 Perfluoroheptanoic acid



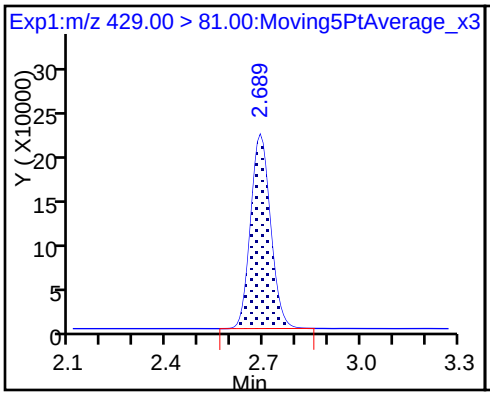
8 Perfluorohexanesulfonic acid



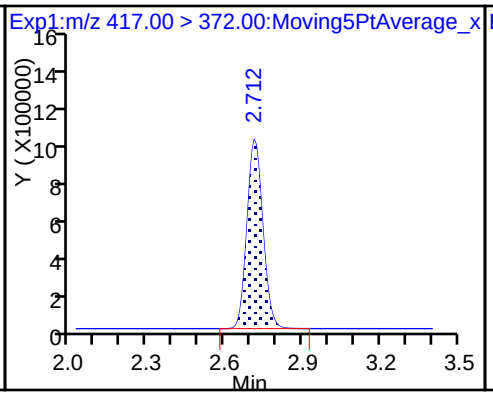
8 Perfluorohexanesulfonic acid



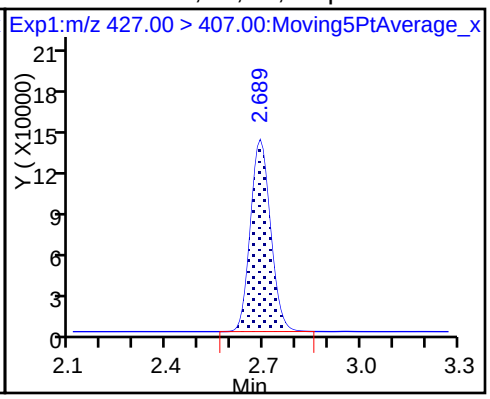
D 12 M2-6:2FTS



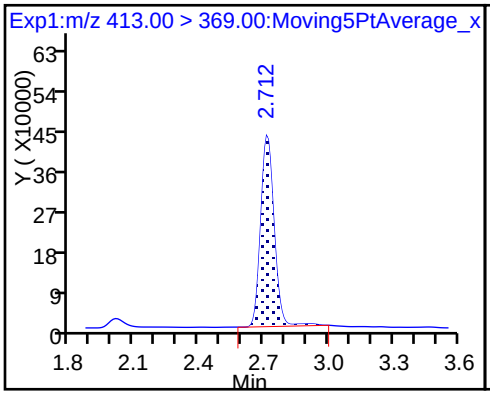
D 14 13C4 PFOA



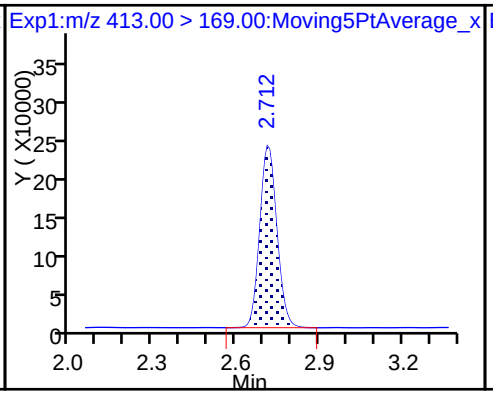
13 Sodium 1H,1H,2H,2H-perfluorooctane



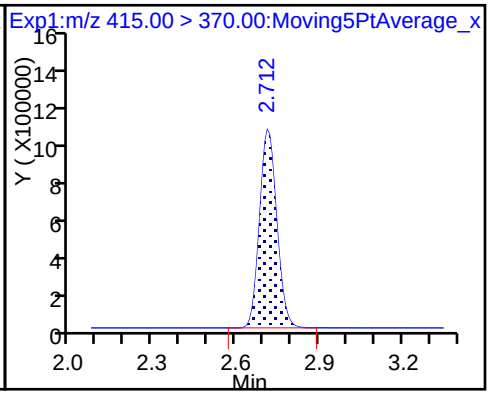
15 Perfluorooctanoic acid



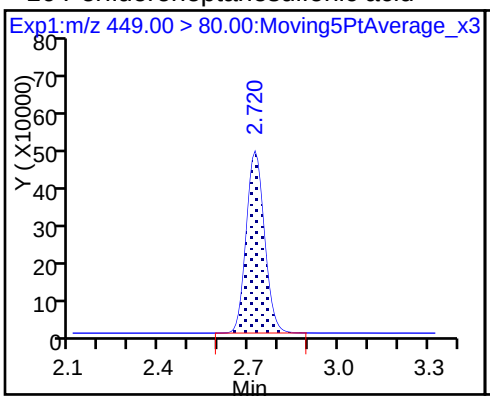
15 Perfluorooctanoic acid



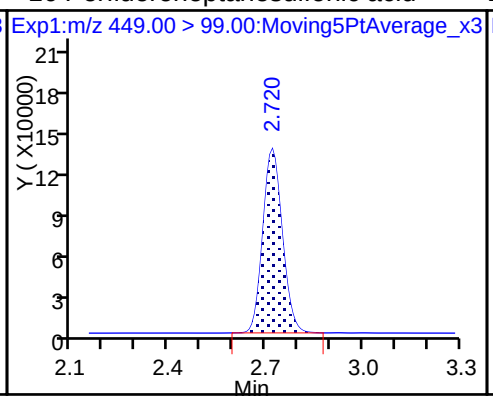
* 62 13C2-PFOA



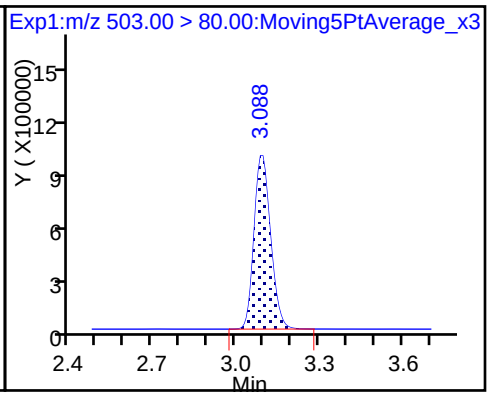
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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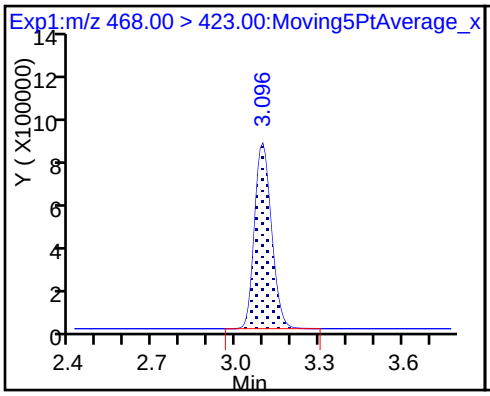
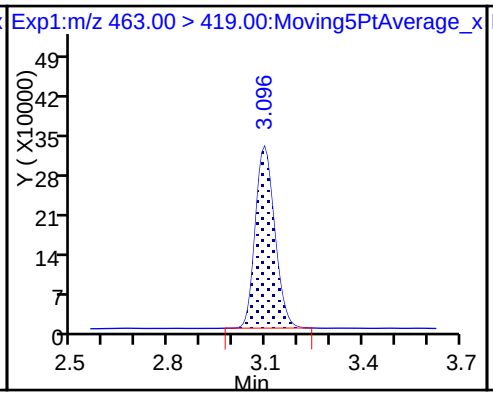
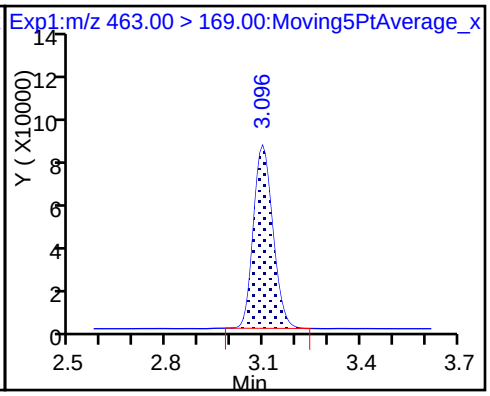


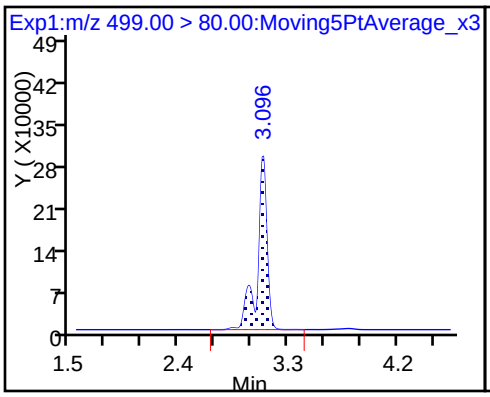
20 Perfluorononanoic acid



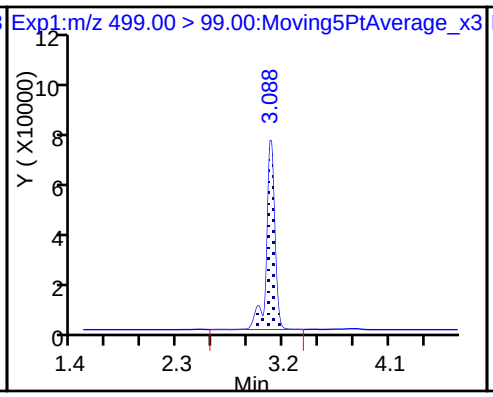
20 Perfluorononanoic acid



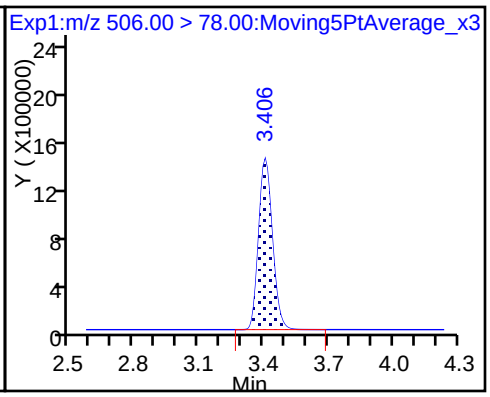
17 Perfluorooctane sulfonic acid



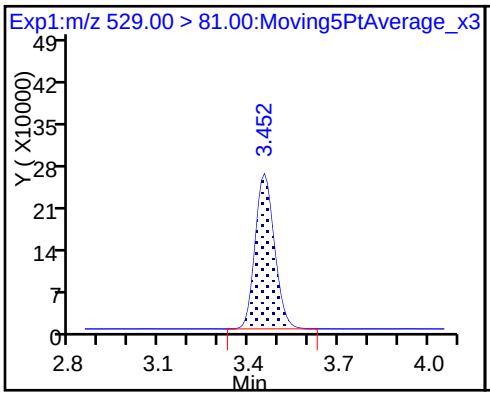
17 Perfluorooctane sulfonic acid



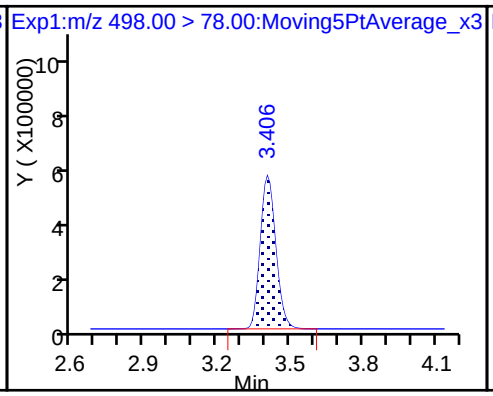
D 21 13C8 FOSA



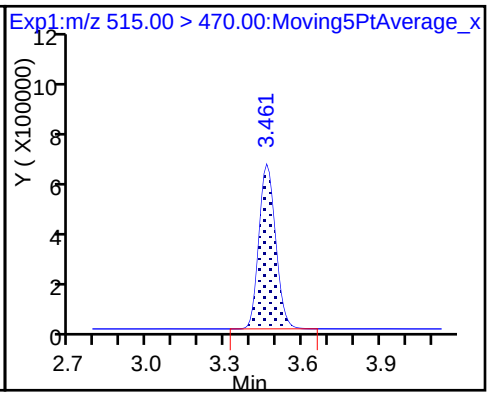
D 26 M2-8:2FTS



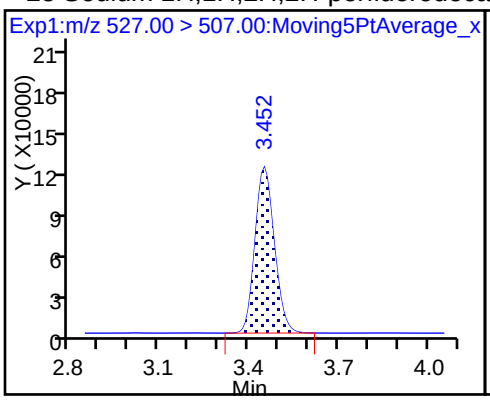
22 Perfluorooctane Sulfonamide



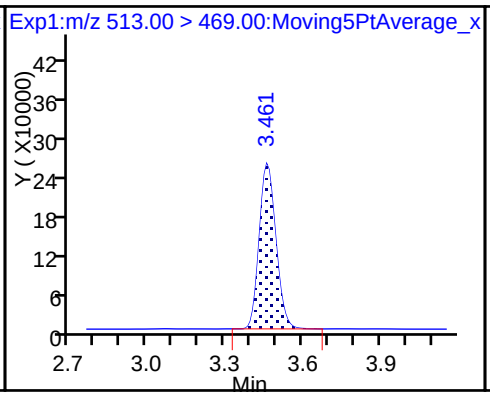
D 23 13C2 PFDA



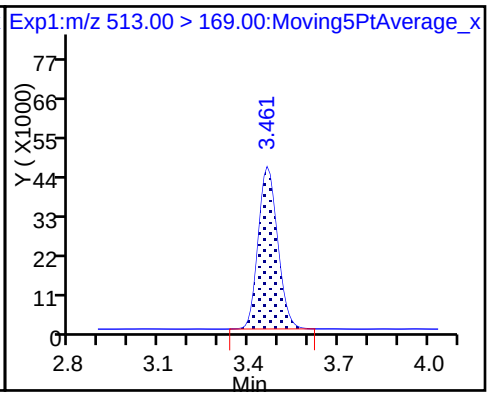
25 Sodium 1H,1H,2H,2H-perfluorodecan



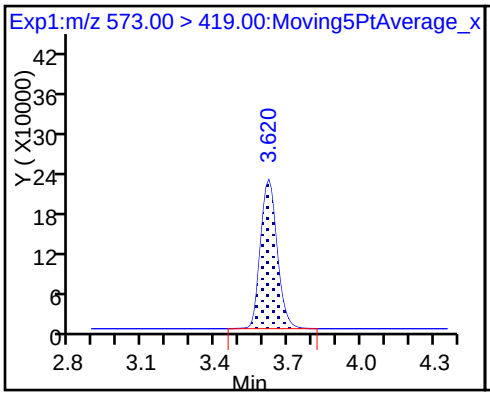
24 Perfluorodecanoic acid



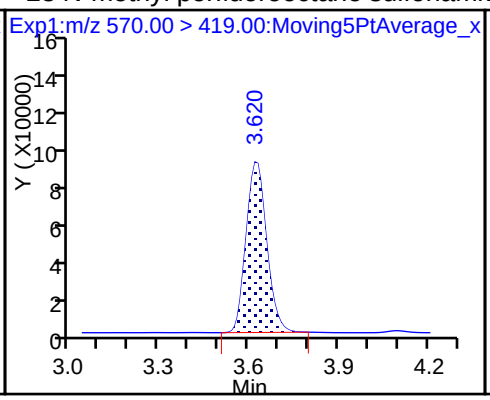
24 Perfluorodecanoic acid



D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami



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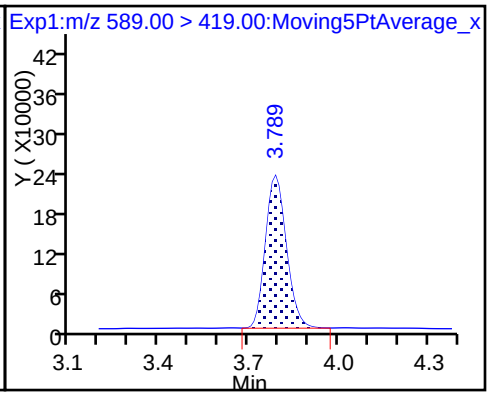

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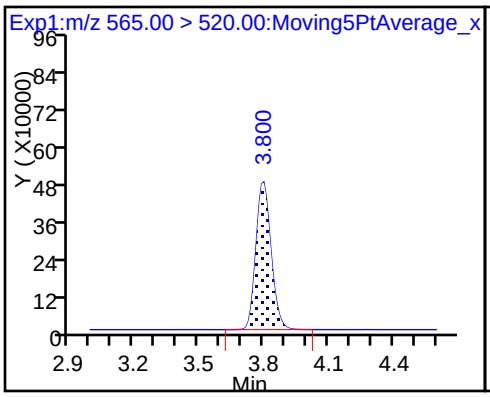
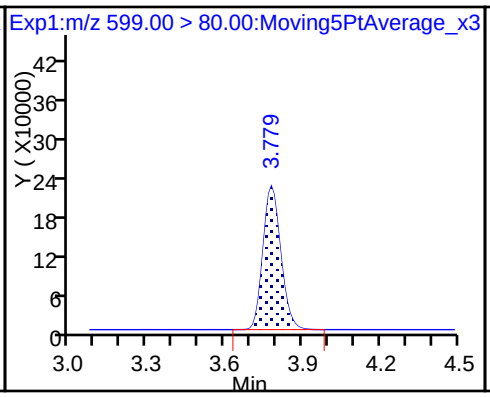
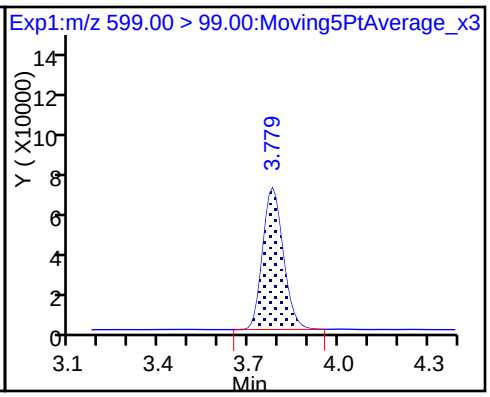


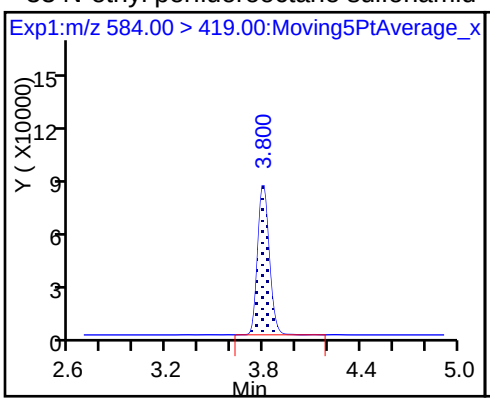
29 Perfluorodecane Sulfonic acid



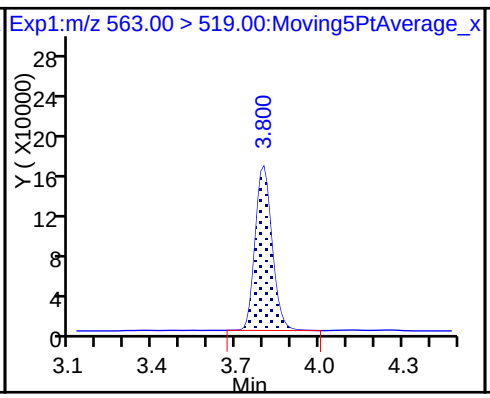
29 Perfluorodecane Sulfonic acid



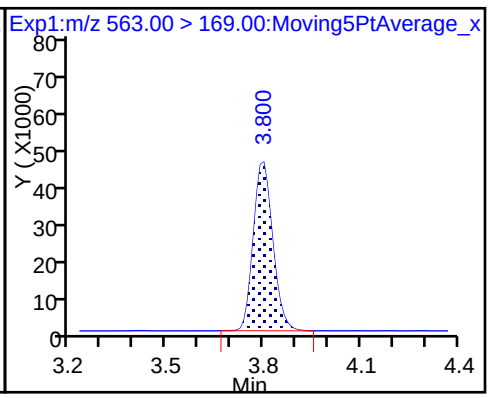
33 N-ethyl perfluorooctane sulfonamid



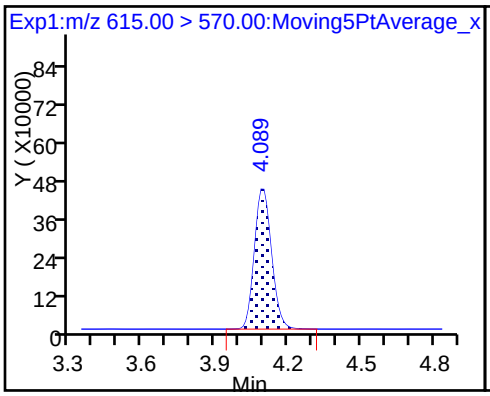
31 Perfluoroundecanoic acid



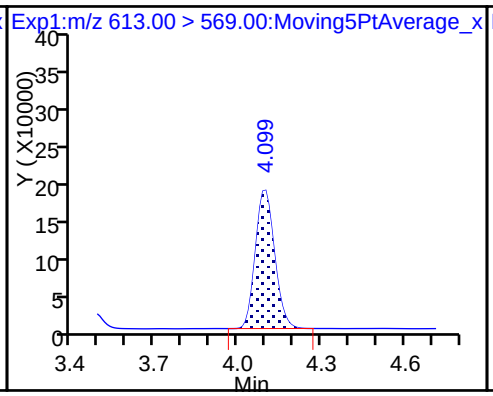
31 Perfluoroundecanoic acid



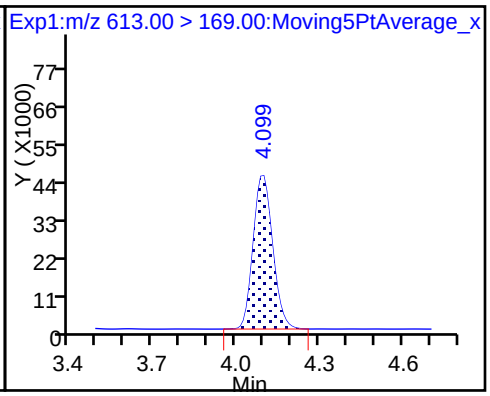
D 36 13C2 PFDoA



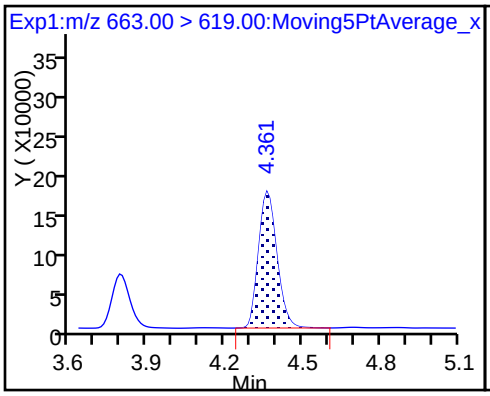
37 Perfluorododecanoic acid



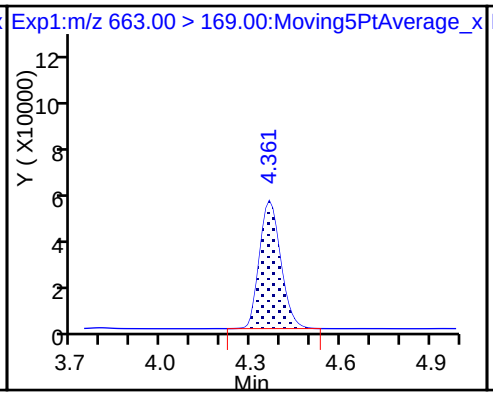
37 Perfluorododecanoic acid



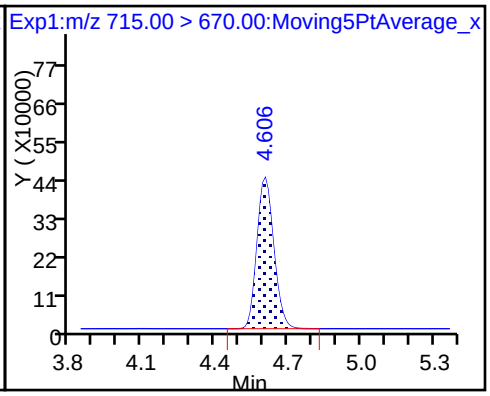
41 Perfluorotridecanoic acid



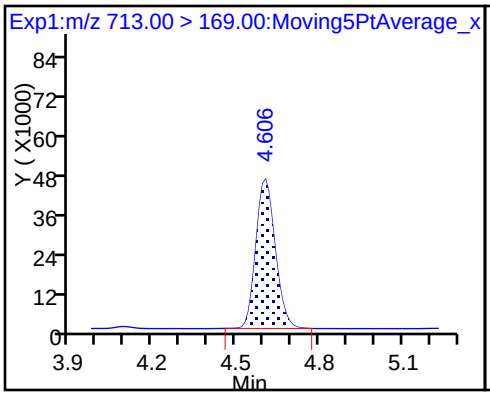
41 Perfluorotridecanoic acid



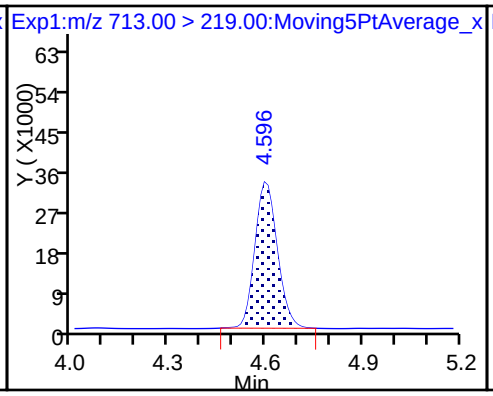
D 43 13C2-PFTeDA



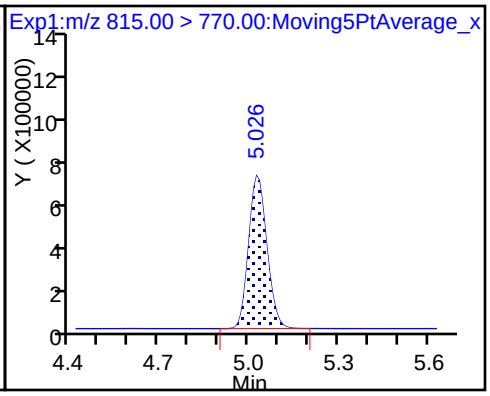
42 Perfluorotetradecanoic acid



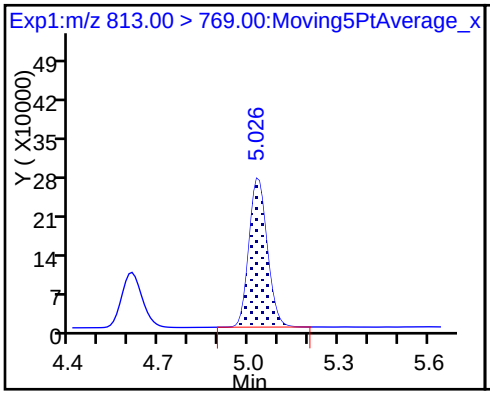
42 Perfluorotetradecanoic acid



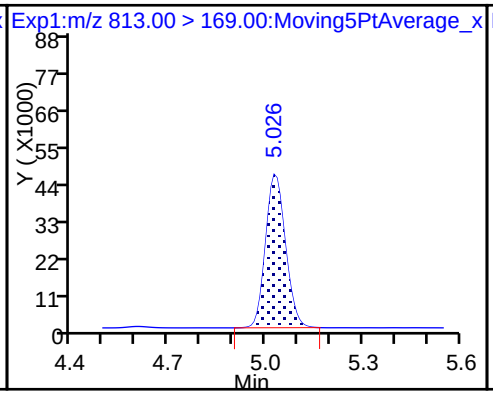
D 44 13C2-PFHxDA



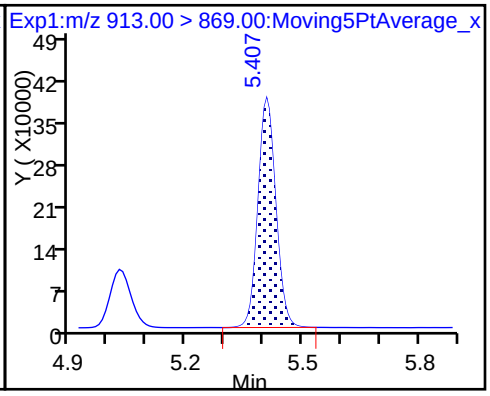
45 Perfluorohexadecanoic acid



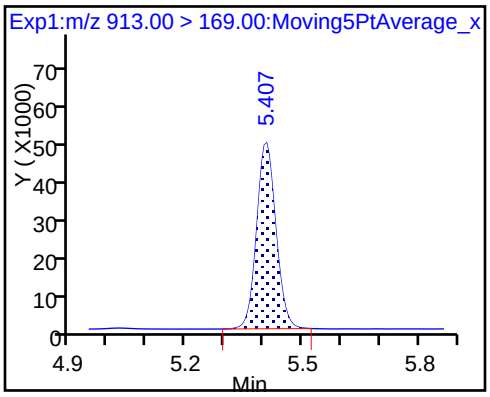
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213785/1 Calibration Date: 03/19/2018 16:57

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLAX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9027		0.973	1.00	-2.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.091		0.934	1.00	-6.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	79.80		0.912	0.884	3.1	50.0
4:2 FTS	AveID	16.07	18.14		1.05	0.934	12.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9801		0.971	1.00	-2.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.009		0.974	1.00	-2.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.017		0.830	0.910	-8.8	40.0
6:2FTS	AveID	1.665	1.601		0.912	0.948	-3.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.107		0.992	1.00	-0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.334		0.966	0.952	1.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9594		0.941	1.00	-5.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.020		0.874	0.928	-5.8	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.997		1.03	1.00	2.6	40.0
8:2FTS	AveID	1.257	1.260		0.960	0.958	0.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9926		1.05	1.00	4.6	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.062		1.02	1.00	2.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6186		0.934	0.964	-3.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.8590		0.877	1.00	-12.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7235		0.863	1.00	-13.7	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.013		0.990	1.00	-1.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9640		0.937	1.00	-6.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2832		1.03	1.00	2.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9272		0.986	1.00	-1.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9124		0.936	1.00	-6.4	50.0
13C4 PFBA	Ave	1.277	1.470		2.88	2.50	15.2	50.0
13C5 PFPeA	Ave	0.9006	0.9716		2.70	2.50	7.9	50.0
13C3-PFBS	Ave	0.0222	0.0240		2.51	2.33	8.0	50.0
M2-4:2FTS	Ave	0.1590	0.1996		2.93	2.34	25.5	50.0
13C2 PFHxA	Ave	1.004	1.036		2.58	2.50	3.1	50.0
13C4-PFHpA	Ave	0.9767	0.9689		2.48	2.50	-0.8	50.0
18O2 PFHxS	Ave	1.303	1.397		2.54	2.37	7.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213785/1 Calibration Date: 03/19/2018 16:57

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLAX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2491		2.37	2.38	-0.4	40.0
13C4 PFOA	Ave	0.9431	0.9373		2.49	2.50	-0.6	50.0
13C4 PFOS	Ave	0.9113	0.9827		2.58	2.39	7.8	50.0
13C5 PFNA	Ave	0.7545	0.7709		2.55	2.50	2.2	50.0
13C8 FOSA	Ave	1.319	1.488		2.82	2.50	12.8	50.0
M2-8:2FTS	Ave	0.2350	0.2406		2.45	2.40	2.4	40.0
13C2 PFDA	Ave	0.6303	0.6220		2.47	2.50	-1.3	50.0
d3-NMeFOSAA	Ave	0.2081	0.1433		1.72	2.50	-31.1	50.0
d5-NEtFOSAA	Ave	0.1990	0.1672		2.10	2.50	-16.0	50.0
13C2 PFUnA	Ave	0.4935	0.4617		2.34	2.50	-6.5	50.0
13C2 PFDoA	Ave	0.4680	0.3923		2.10	2.50	-16.2	50.0
13C2-PFTeDA	Ave	0.4272	0.3885		2.27	2.50	-9.1	50.0
13C2-PFHxDA	Ave	0.6248	0.5758		2.30	2.50	-7.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_005.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 19-Mar-2018 16:57:05 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:59:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.444	0.002	0.536	5962254	2.88		115	128625	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.444	0.002	1.000	2152800	0.9733		97.3	1205	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.705	0.004	0.634	3940036	2.70		108	110405	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.705	0.004	1.000	1720138	0.9344		93.4	643	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.740	0.004	0.647	90516	2.51		108	563	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.740	0.004	1.000	2746381	0.9117		103	1169	
298.90 > 99.00	1.744	1.740	0.004	1.000	1111370		2.47(1.25-3.74)		1064	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.960	-0.005	0.725	755954	2.93		126	12664	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.960	-0.005	1.000	659642	1.05		113	30350	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.992	0.005	1.000	1646209	0.9713		97.1	6967	
313.00 > 119.00	1.997	1.992	0.005	1.000	153323		10.74(5.03-15.10)		3486	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.992	0.005	0.741	4199307	2.58		103	126049	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.863	3929130	2.48		99.2	55580	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	1586165	0.9737		97.4	3180	
363.00 > 169.00	2.328	2.335	-0.007	1.000	627510		2.53(1.13-3.40)		13252	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	2098473	0.8300		91.2	3451	
399.00 > 99.00	2.341	2.348	-0.007	1.000	725280		2.89(1.50-4.49)		1421	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5360948	2.54		107	70280	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.675	-0.003	1.000	613194	0.9116		96.2	23757	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.675	-0.003	0.991	959703	2.37		99.6	32459	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.706	-0.010	1.000	3801057	2.48		99.4	98590	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.706	-0.010		4055310	2.50			63113	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.706	-0.010	1.000	1683783	0.99		99.2	491	
413.00 > 169.00	2.696	2.706	-0.010	1.000	888910		1.89(0.84-2.52)		3731	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.706	-0.002	1.000	2023808	0.9661		101	34382	
449.00 > 99.00	2.704	2.706	-0.002	1.000	541485		3.74(1.94-5.82)		10858	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.083	-0.011	1.139	3809768	2.58		108	43349	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.083	-0.011	1.000	1508598	0.8742		94.2	4960	
499.00 > 99.00	3.065	3.083	-0.018	0.998	339104		4.45(2.31-6.93)		2446	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.083	-0.011	1.000	1199828	0.9410		94.1	2873	
463.00 > 169.00	3.072	3.083	-0.011	1.000	288199		4.16(1.90-5.69)		10158	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.083	-0.011	1.139	3126382	2.55		102	55075	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.403	-0.005	1.260	6033363	2.82		113	52690	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.412	-0.014	1.000	2405077	1.03		103	60693	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.439	-0.014	1.271	934640	2.45		102	23312	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.439	-0.014	1.000	470875	0.9597		100	21105	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.448	-0.013	1.000	1001447	1.05		105	6600	
513.00 > 169.00	3.435	3.448	-0.013	1.000	167850		5.97(2.36-7.09)		7580	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.448	-0.013	1.274	2522401	2.47		98.7	38216	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.606	-0.016	1.331	581265	1.72		68.9	24851	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.617	-0.017	1.003	246927	1.02		102	4767	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.765	-0.017	1.000	950577	0.9339		96.9	28449	
599.00 > 99.00	3.748	3.765	-0.017	1.000	336717		2.82(1.39-4.16)		4142	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.775	-0.017	1.394	678018	2.10		84.0	1695	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.786	-0.018	1.398	1872300	2.34		93.5	35787	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.786	-0.018	1.000	541848	0.8633		86.3	779	
563.00 > 169.00	3.768	3.786	-0.018	1.000	147336		3.68(2.12-6.36)		9021	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.786	-0.018	1.003	232973	0.8774		87.7	4773	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.084	-0.017	1.000	644802	0.99		99.0	141	
613.00 > 169.00	4.067	4.084	-0.017	1.000	173326		3.72(2.13-6.40)		3617	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.084	-0.017	1.508	1591049	2.10		83.8	9973	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.346	-0.018	1.000	613516	0.9371		93.7	159	
663.00 > 169.00	4.328	4.346	-0.018	1.000	198634		3.09(1.25-3.76)		3182	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.581	-0.017	1.000	178456	1.03		103	4114	
713.00 > 219.00	4.564	4.581	-0.017	1.000	122070		1.46(0.71-2.13)		1063	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.581	-0.017	1.693	1575323	2.27		90.9	12572	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	5.004	-0.023	1.000	866061	0.9862		98.6	51.1	
813.00 > 169.00	4.981	5.004	-0.023	1.000	151734		5.71(2.86-8.58)		1999	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.004	-0.023	1.848	2335093	2.30		92.2	10272	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.374	-0.030	1.000	852204	0.9359		93.6	255	
913.00 > 169.00	5.344	5.374	-0.030	1.000	110636		7.70(3.83-11.48)		1434	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 14:13:04 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_005.d

Injection Date: 19-Mar-2018 16:57:05 Instrument ID: A8_N

Lims ID: CCV L4

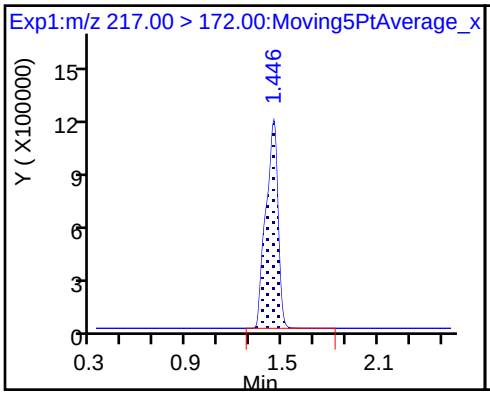
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

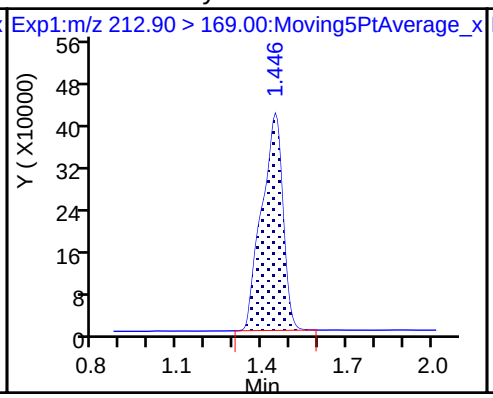
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

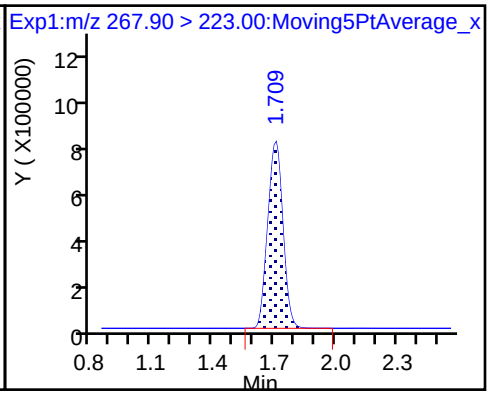
D 1 13C4 PFBA



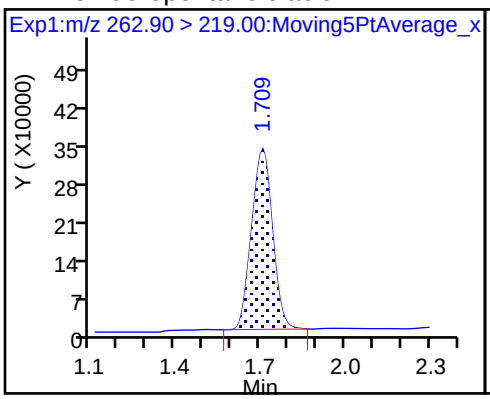
2 Perfluorobutyric acid



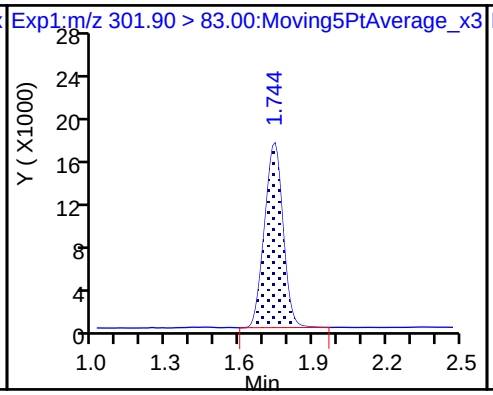
D 3 13C5-PFPeA



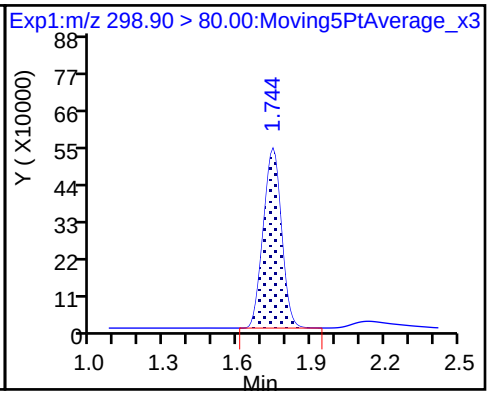
4 Perfluoropentanoic acid



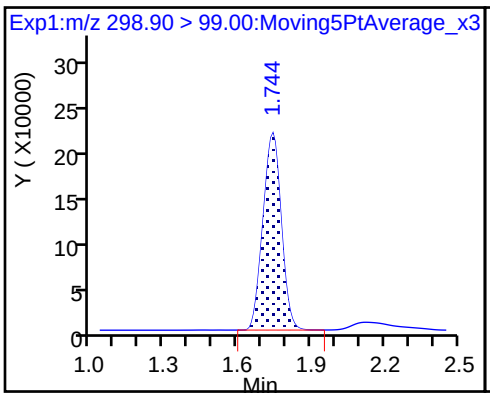
D 47 13C3-PFBS



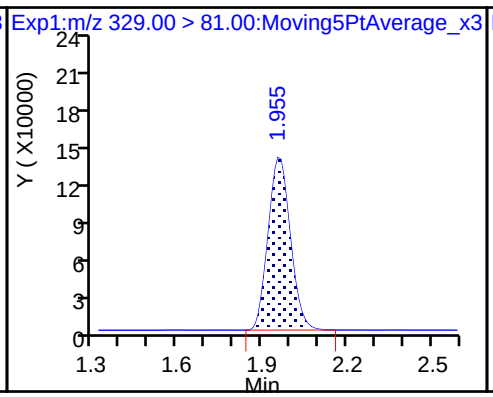
5 Perfluorobutanesulfonic acid



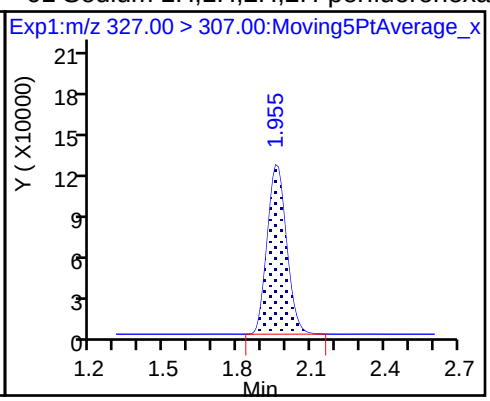
5 Perfluorobutanesulfonic acid



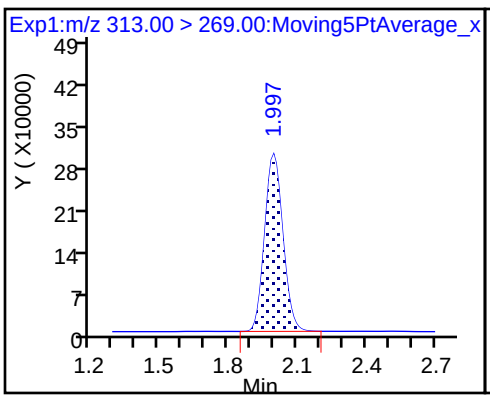
D 60 M2-4:2FTS



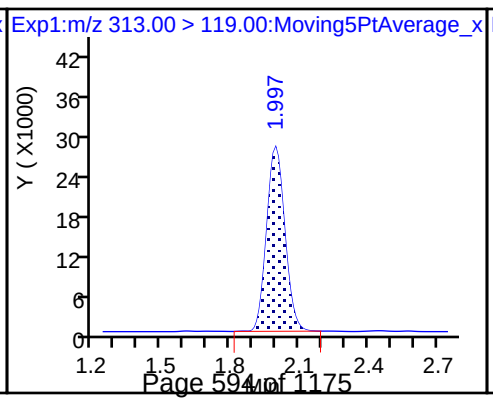
61 Sodium 1H,1H,2H,2H-perfluorohexane



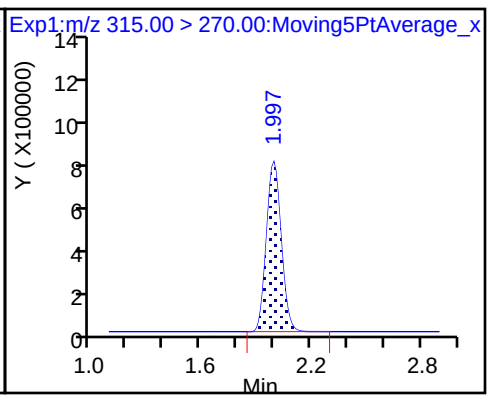
6 Perfluorohexanoic acid



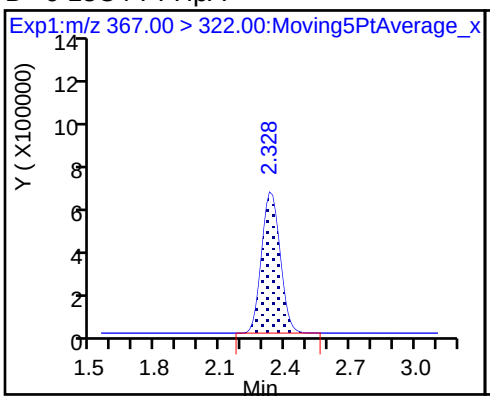
6 Perfluorohexanoic acid



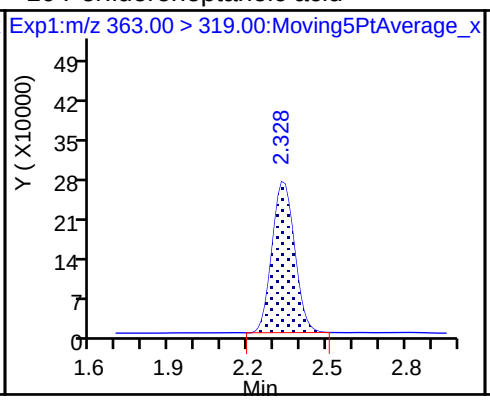
D 7 13C2 PFHxA



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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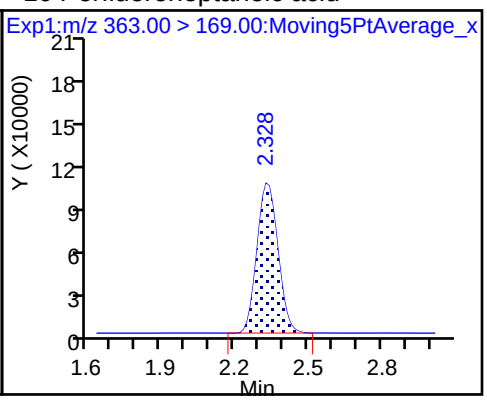
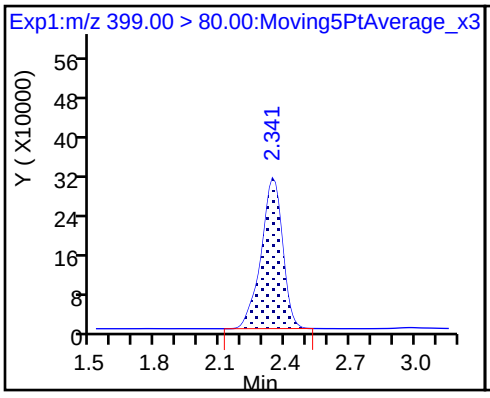


8 Perfluorohexanesulfonic acid



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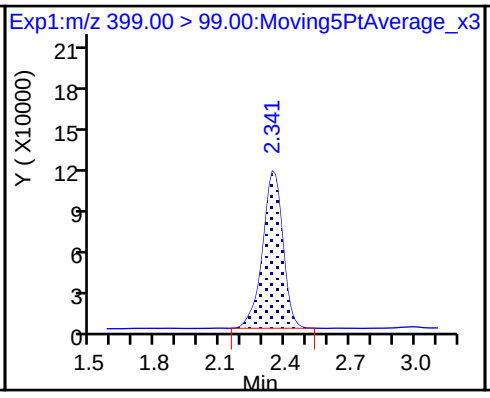
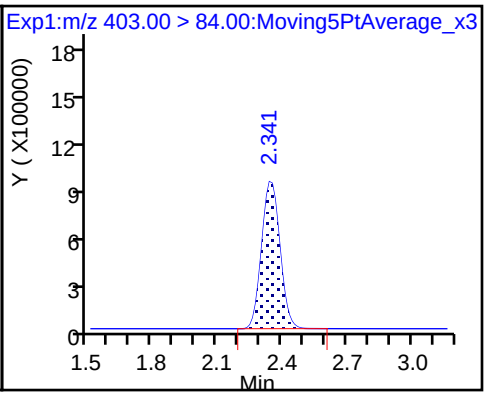
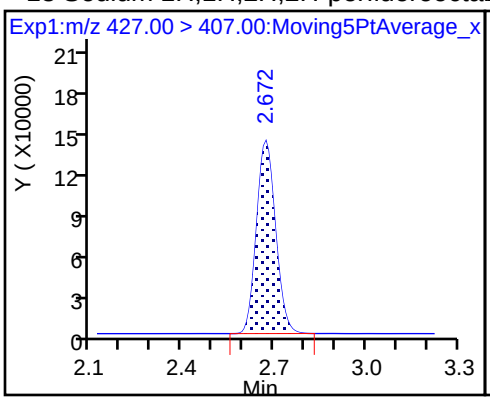


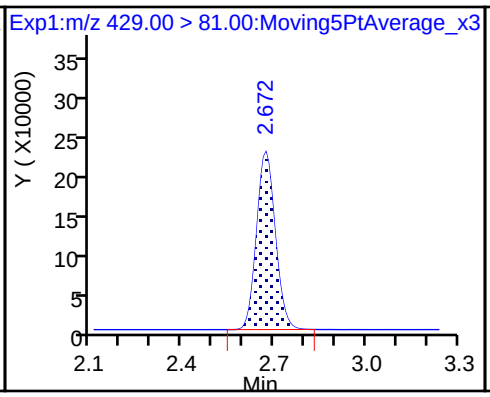
D 11 18O2 PFHxS



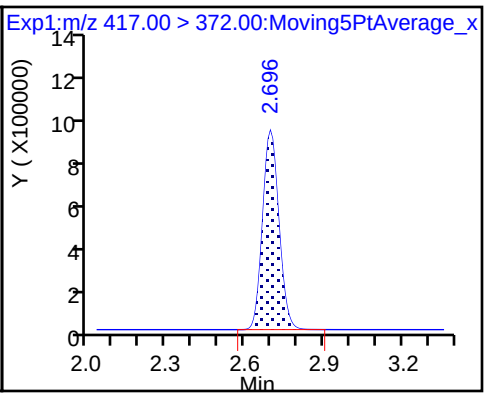
13 Sodium 1H,1H,2H,2H-perfluorooctan



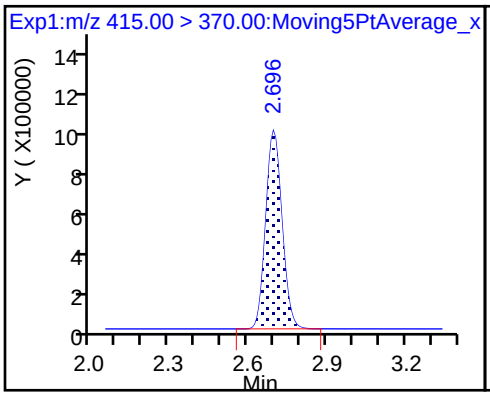
D 12 M2-6:2FTS



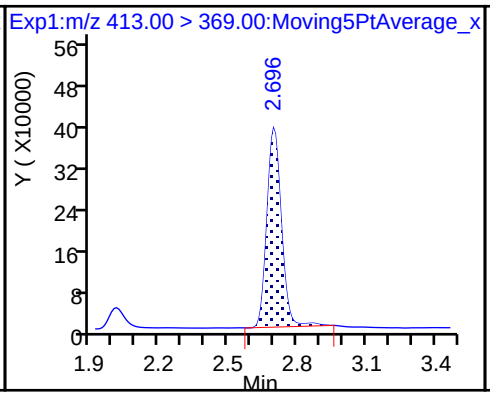
D 14 13C4 PFOA



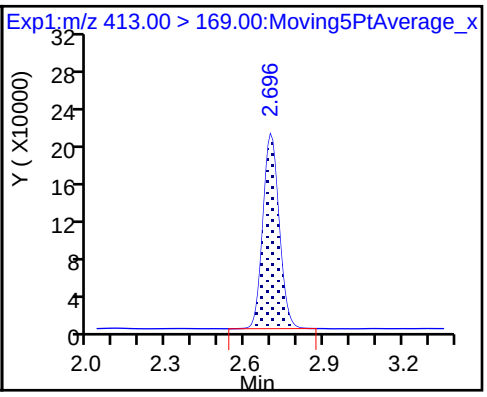
* 62 13C2-PFOA



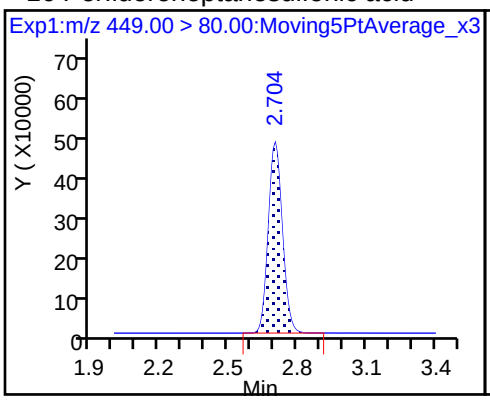
15 Perfluorooctanoic acid



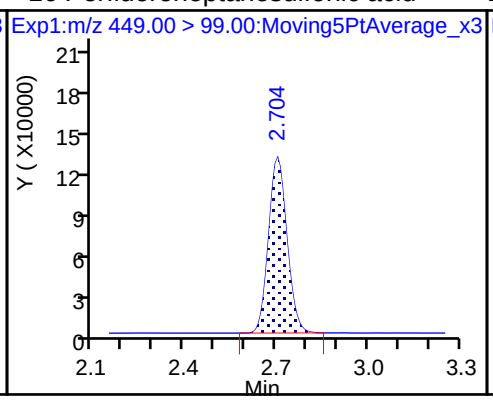
15 Perfluorooctanoic acid



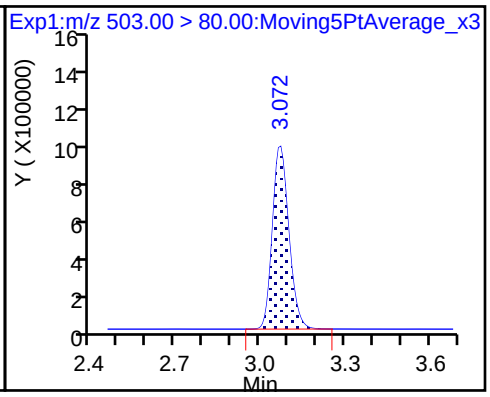
16 Perfluoroheptanesulfonic acid



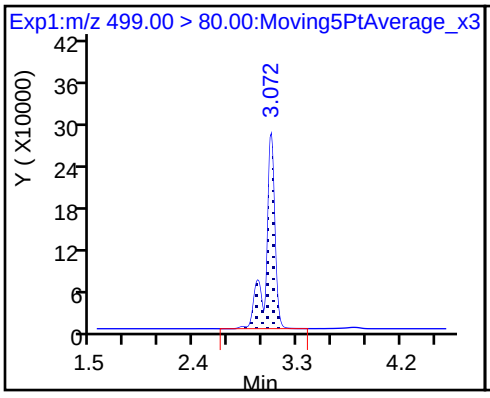
16 Perfluoroheptanesulfonic acid



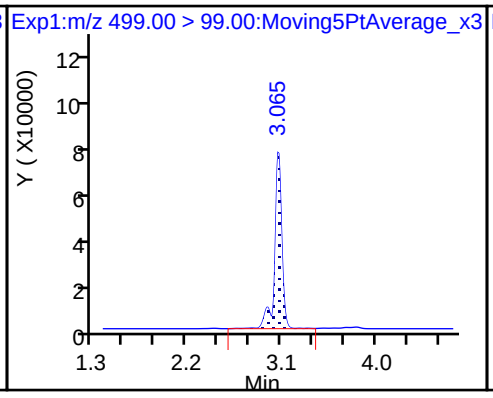
D 18 13C4 PFOS



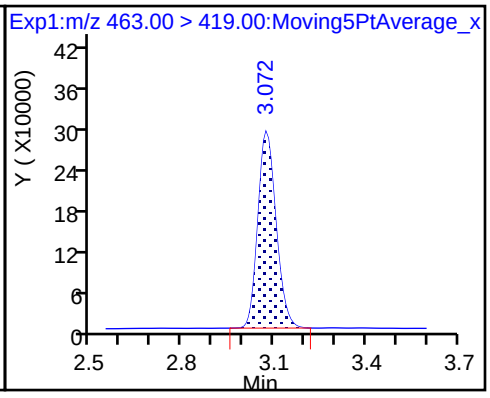
17 Perfluorooctane sulfonic acid



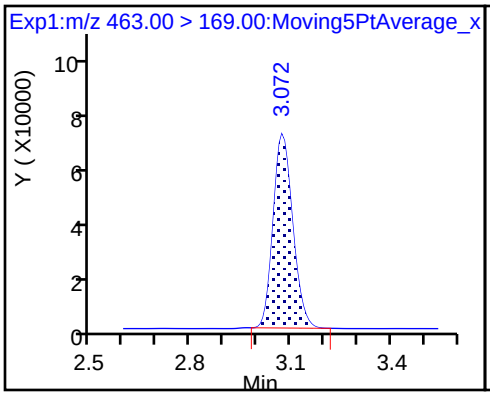
17 Perfluorooctane sulfonic acid



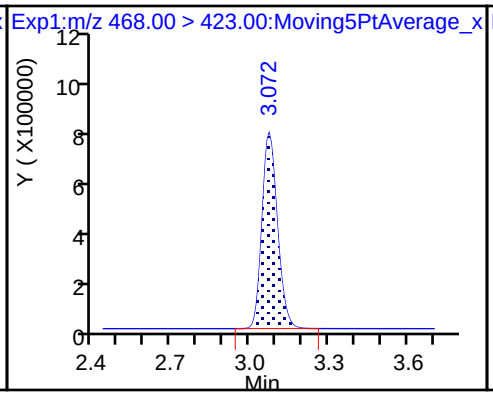
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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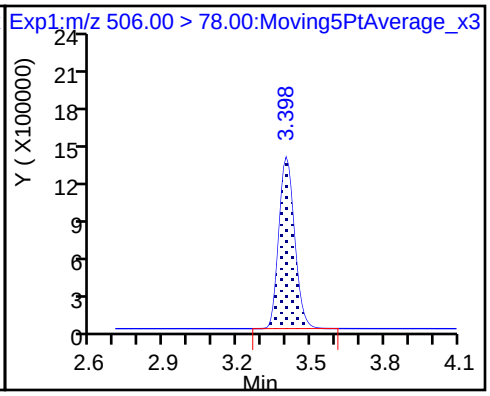
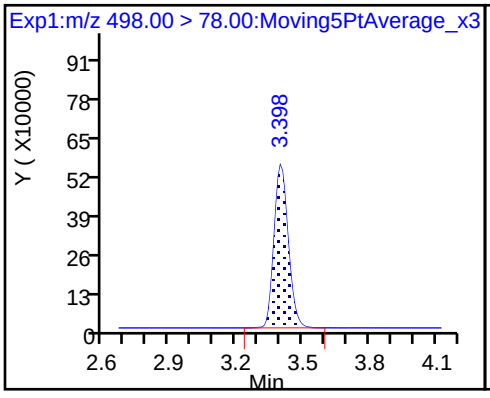
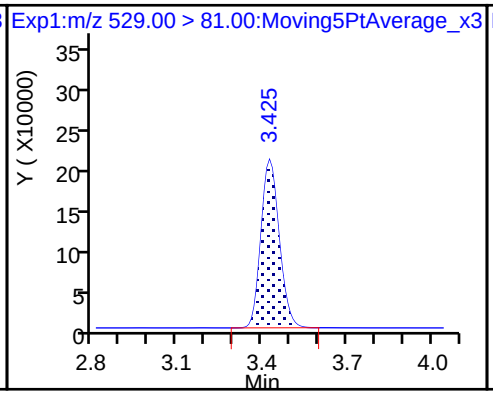


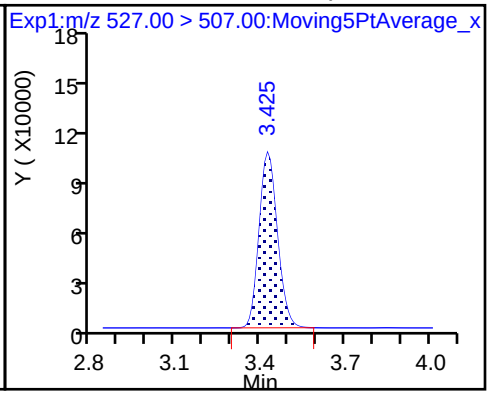
22 Perfluorooctane Sulfonamide



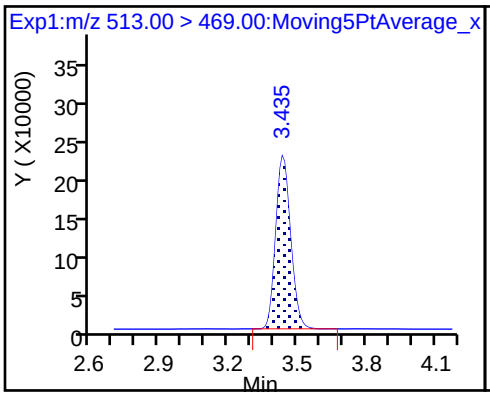
D 26 M2-8:2FTS



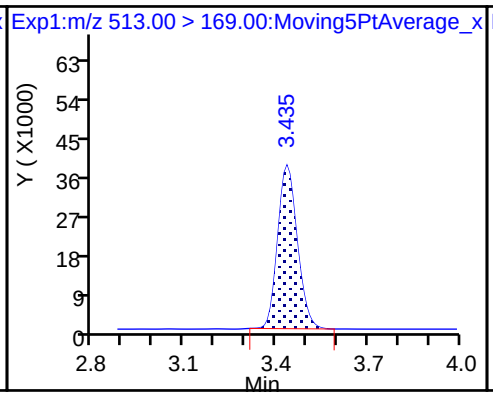
25 Sodium 1H,1H,2H,2H-perfluorodecane



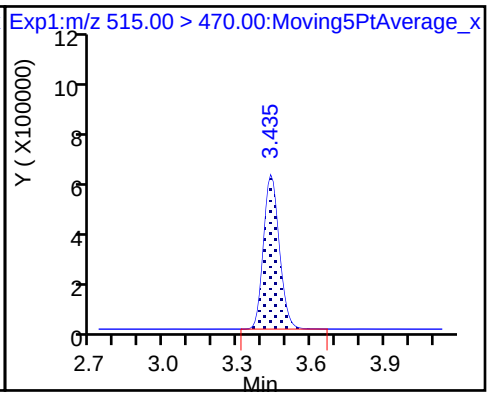
24 Perfluorodecanoic acid



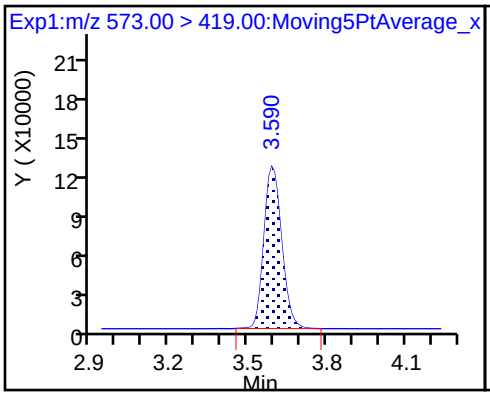
24 Perfluorodecanoic acid



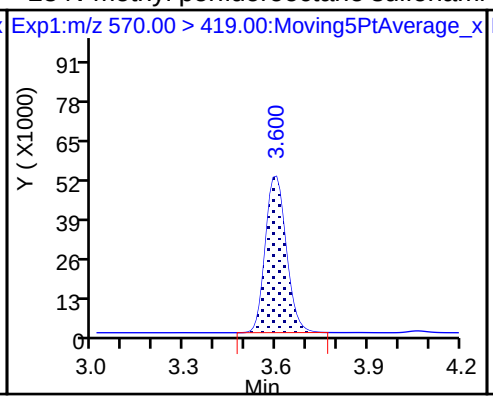
D 23 13C2 PFDA



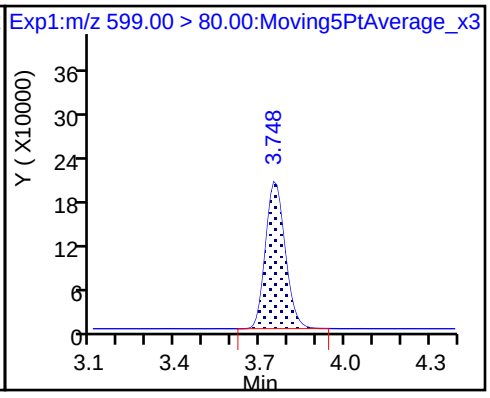
D 27 d3-NMeFOSAA



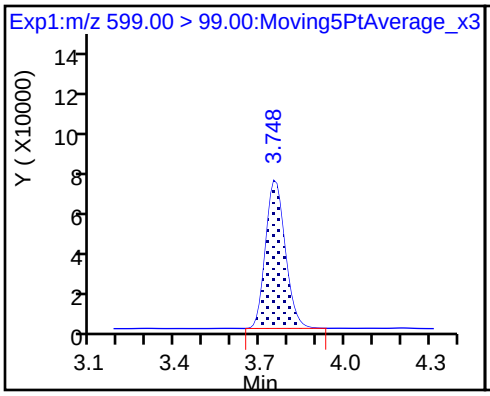
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid



29 Perfluorodecane Sulfonic acid



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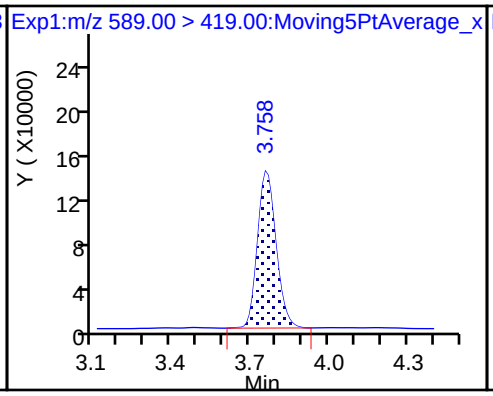
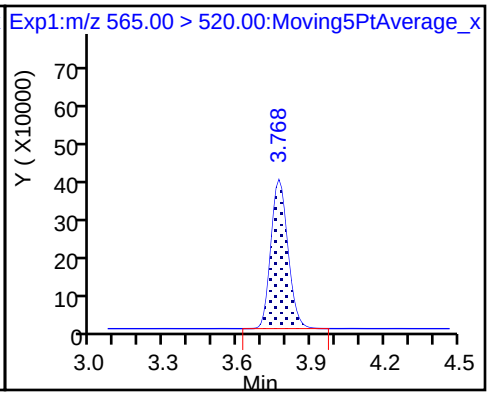
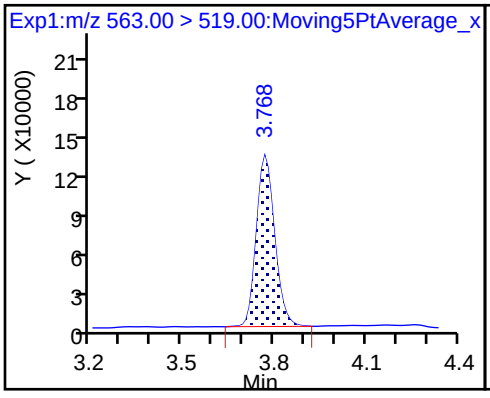


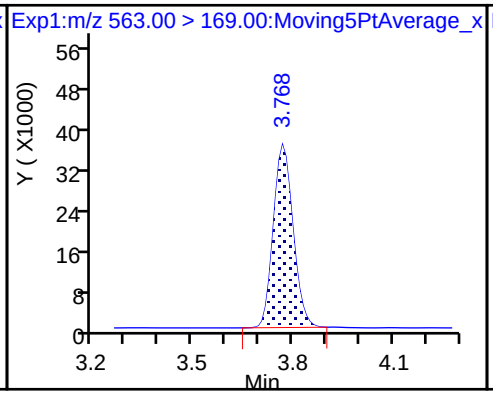
D 30 13C2 PFUnA



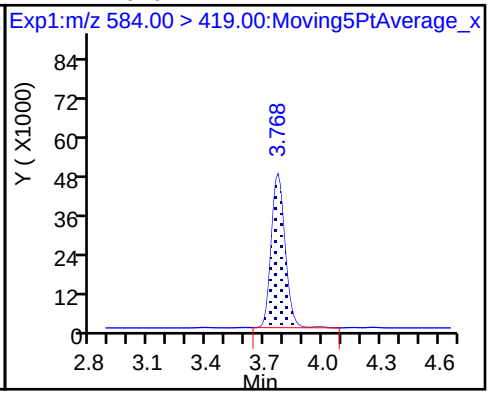
31 Perfluoroundecanoic acid



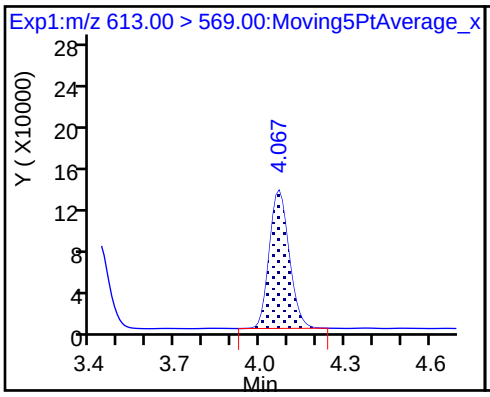
31 Perfluoroundecanoic acid



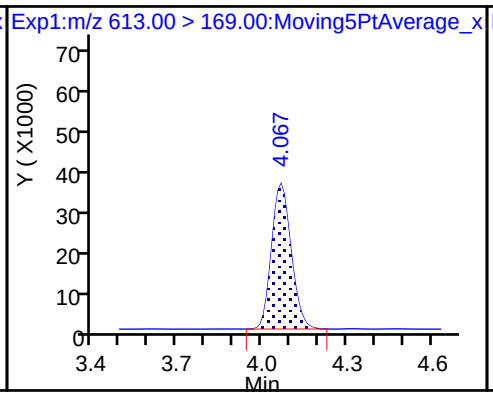
33 N-ethyl perfluorooctane sulfonamid



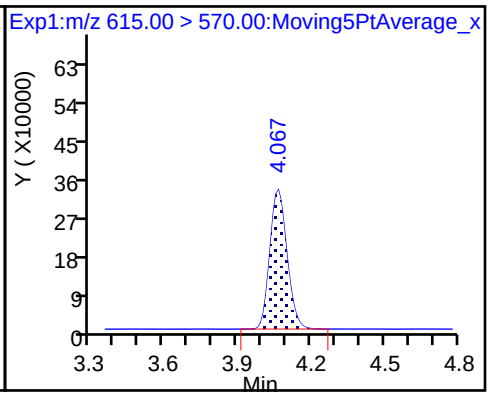
37 Perfluorododecanoic acid



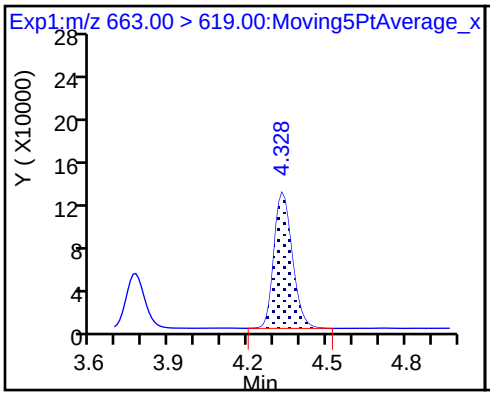
37 Perfluorododecanoic acid



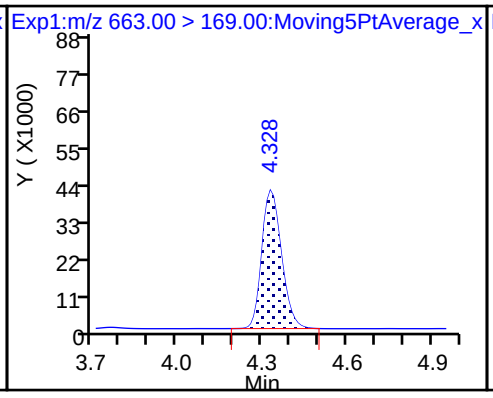
D 36 13C2 PFDoA



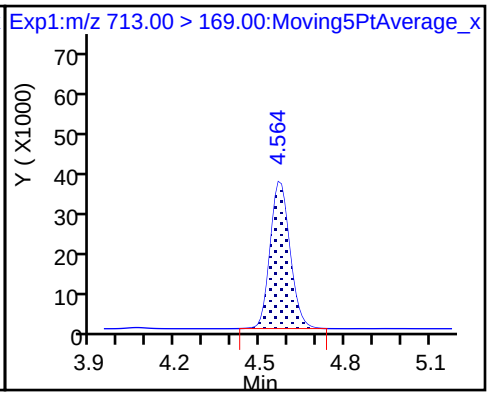
41 Perfluorotridecanoic acid



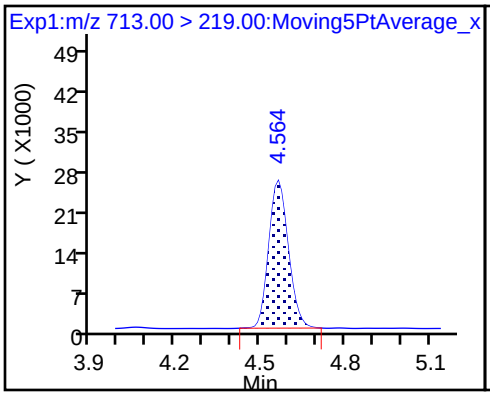
41 Perfluorotridecanoic acid



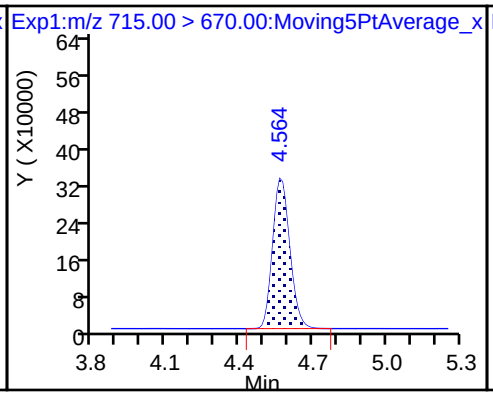
42 Perfluorotetradecanoic acid



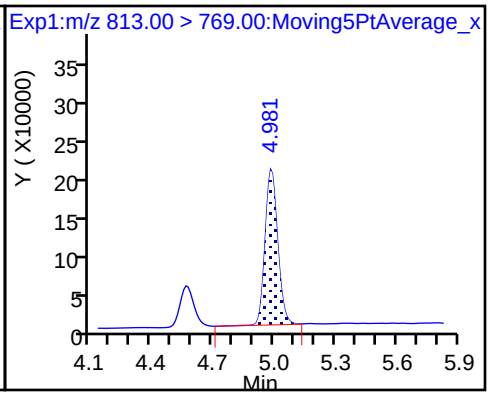
42 Perfluorotetradecanoic acid



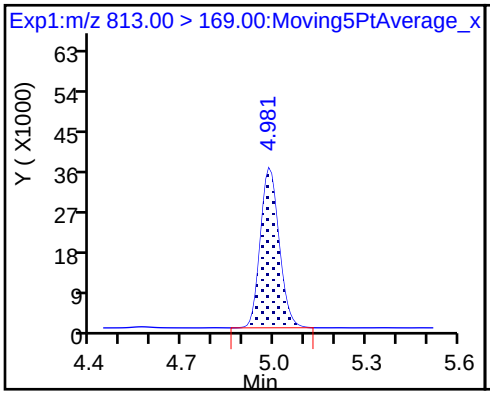
D 43 13C2-PFTeDA



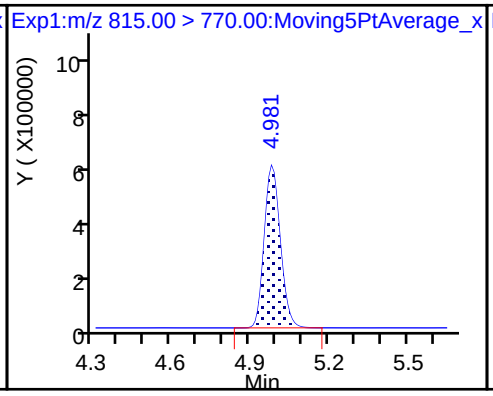
45 Perfluorohexadecanoic acid



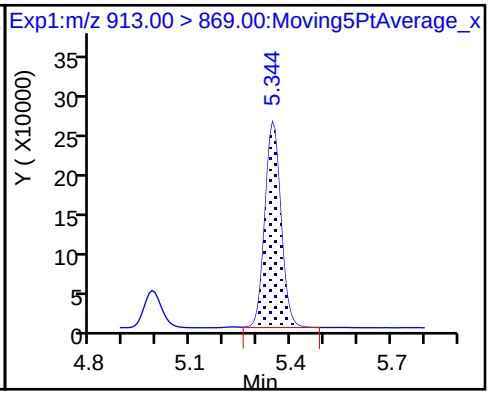
45 Perfluorohexadecanoic acid



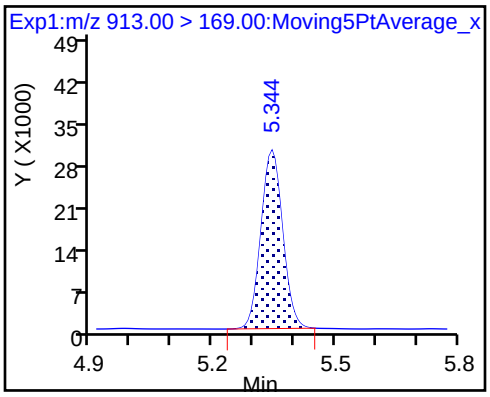
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213785/10 Calibration Date: 03/19/2018 18:07

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLAX_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9362		2.52	2.50	0.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.142		2.44	2.50	-2.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	82.44		2.36	2.21	6.5	50.0
4:2 FTS	AveID	16.07	19.54		2.84	2.34	21.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.011		2.51	2.50	0.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.071		2.58	2.50	3.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.044		2.13	2.28	-6.4	40.0
6:2FTS	AveID	1.665	1.659		2.36	2.37	-0.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.096		2.46	2.50	-1.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.415		2.56	2.38	7.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.048		2.57	2.50	2.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.128		2.42	2.32	4.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.032		2.66	2.50	6.2	40.0
8:2FTS	AveID	1.257	1.290		2.46	2.40	2.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9788		2.58	2.50	3.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.036		2.49	2.50	-0.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6516		2.46	2.41	2.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.8899		2.27	2.50	-9.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7606		2.27	2.50	-9.2	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.040		2.54	2.50	1.7	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9001		2.19	2.50	-12.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2667		2.42	2.50	-3.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9480		2.56	2.50	2.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9737		2.50	2.50	-0.1	50.0
13C4 PFBA	Ave	1.277	1.481		2.90	2.50	16.0	50.0
13C5 PFPeA	Ave	0.9006	0.9836		2.73	2.50	9.2	50.0
13C3-PFBS	Ave	0.0222	0.0242		2.53	2.33	8.7	50.0
M2-4:2FTS	Ave	0.1590	0.2070		3.04	2.34	30.2	50.0
13C2 PFHxA	Ave	1.004	1.080		2.69	2.50	7.6	50.0
13C4-PFHpA	Ave	0.9767	0.9916		2.54	2.50	1.5	50.0
18O2 PFHxS	Ave	1.303	1.504		2.73	2.37	15.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213785/10 Calibration Date: 03/19/2018 18:07

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLAX_014.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2494		2.37	2.38	-0.3	40.0
13C4 PFOA	Ave	0.9431	0.9573		2.54	2.50	1.5	50.0
13C4 PFOS	Ave	0.9113	0.9711		2.55	2.39	6.6	50.0
13C5 PFNA	Ave	0.7545	0.7694		2.55	2.50	2.0	50.0
13C8 FOSA	Ave	1.319	1.473		2.79	2.50	11.7	50.0
M2-8:2FTS	Ave	0.2350	0.2429		2.48	2.40	3.4	40.0
13C2 PFDA	Ave	0.6303	0.6364		2.52	2.50	1.0	50.0
d3-NMeFOSAA	Ave	0.2081	0.1636		1.97	2.50	-21.4	50.0
13C2 PFUnA	Ave	0.4935	0.4656		2.36	2.50	-5.7	50.0
d5-NEtFOSAA	Ave	0.1990	0.1702		2.14	2.50	-14.5	50.0
13C2 PFDoA	Ave	0.4680	0.4578		2.45	2.50	-2.2	50.0
13C2-PFTeDA	Ave	0.4272	0.4044		2.37	2.50	-5.3	50.0
13C2-PFHxDA	Ave	0.6248	0.5559		2.22	2.50	-11.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_014.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 19-Mar-2018 18:07:36 ALS Bottle#: 14 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:18 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:07:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.444	0.002	0.536	5672869	2.90		116	98043	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.444	0.002	1.000	5310870	2.52		101	2917	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.705	0.004	0.634	3767120	2.73		109	144977	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.705	0.004	1.000	4301879	2.44		97.8	1593	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.740	0.004	0.647	86057	2.53		109	1627	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.740	0.004	1.000	6743680	2.35		107	2718	
298.90 > 99.00	1.744	1.740	0.004	1.000	2735240		2.47(1.25-3.74)		2540	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.960	-0.005	0.725	740273	3.04		130	11315	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.960	-0.005	1.000	1688813	2.84		122	77182	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.992	0.005	1.000	4182503	2.50		100	19136	
313.00 > 119.00	1.997	1.992	0.005	1.000	385531		10.85(5.03-15.10)		8587	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.992	0.005	0.741	4137122	2.69		108	105918	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.863	3797760	2.54		102	79330	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	4067506	2.58		103	7605	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1531493		2.66(1.13-3.40)		28463	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	5473033	2.13		93.6	8031	
399.00 > 99.00	2.341	2.348	-0.007	1.000	1832236		2.99(1.50-4.49)		3524	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5448373	2.73		115	83636	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.675	-0.003	1.000	1502221	2.36		99.6	43362	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.675	-0.003	0.991	907532	2.37		99.7	26023	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.706	-0.010	1.000	3666401	2.54		102	76927	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.706	-0.010		3829789	2.50			87950	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.706	-0.010	1.000	4019007	2.45		98.2	1009	
413.00 > 169.00	2.696	2.706	-0.010	1.000	2159942		1.86(0.84-2.52)		8920	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.706	-0.002	1.000	5011422	2.56		108	51317	
449.00 > 99.00	2.704	2.706	-0.002	1.000	1349000		3.71(1.94-5.82)		21148	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.083	-0.011	1.139	3555446	2.55		107	33942	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.083	-0.011	1.000	3894118	2.42		104	10520	
499.00 > 99.00	3.072	3.083	-0.011	1.000	869821		4.48(2.31-6.93)		6693	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.083	-0.011	1.000	3088863	2.57		103	6855	
463.00 > 169.00	3.072	3.083	-0.011	1.000	756680		4.08(1.90-5.69)		30621	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.083	-0.011	1.139	2946623	2.55		102	60050	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.403	0.004	1.264	5642716	2.79		112	63077	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.412	-0.005	1.000	5823689	2.66		106	77188	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.439	-0.013	1.271	891222	2.48		103	17793	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.439	-0.013	1.000	1149230	2.46		103	42278	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.448	-0.004	1.003	2385718	2.58		103	11529	
513.00 > 169.00	3.444	3.448	-0.004	1.003	437996		5.45(2.36-7.09)		32719	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.448	-0.013	1.274	2437433	2.52		101	45268	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.606	-0.016	1.331	626524	1.97		78.6	22075	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.617	-0.017	1.003	648904	2.49		99.4	11585	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.765	-0.007	1.000	2335937	2.46		102	69466	
599.00 > 99.00	3.758	3.765	-0.007	1.000	777412		3.00(1.39-4.16)		10138	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.775	-0.007	1.398	651841	2.14		85.5	1500	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.786	-0.018	1.398	1783015	2.36		94.3	52642	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.786	-0.018	1.000	1356171	2.27		90.8	2304	
563.00 > 169.00	3.768	3.786	-0.018	1.000	396576		3.42(2.12-6.36)		19329	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.786	-0.018	1.000	580081	2.27		90.9	9157	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.084	-0.017	1.000	1823824	2.54		102	390	
613.00 > 169.00	4.067	4.084	-0.017	1.000	467749		3.90(2.13-6.40)		10890	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.084	-0.017	1.508	1753306	2.45		97.8	9605	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.346	-0.018	1.000	1578101	2.19		87.5	396	
663.00 > 169.00	4.328	4.346	-0.018	1.000	530921		2.97(1.25-3.76)		7878	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.581	-0.017	1.000	413032	2.42		96.7	7146	
713.00 > 219.00	4.564	4.581	-0.017	1.000	267655		1.54(0.71-2.13)		2426	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.581	-0.017	1.693	1548834	2.37		94.7	16090	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	5.004	-0.023	1.000	2018366	2.56		102	135	
813.00 > 169.00	4.981	5.004	-0.023	1.000	351310		5.75(2.86-8.58)		3985	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.004	-0.023	1.847	2129043	2.22		89.0	10329	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.374	-0.030	1.000	2073065	2.50		99.9	559	
913.00 > 169.00	5.344	5.374	-0.030	1.000	277279		7.48(3.83-11.48)		2886	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 14:13:19 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_014.d

Injection Date: 19-Mar-2018 18:07:36 Instrument ID: A8_N

Lims ID: CCV L5

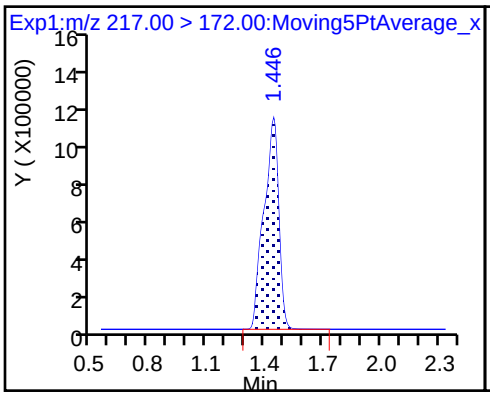
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 10

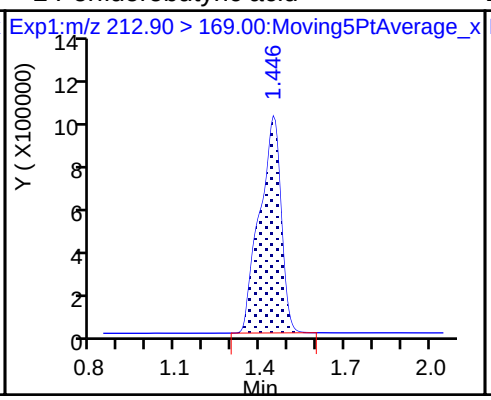
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

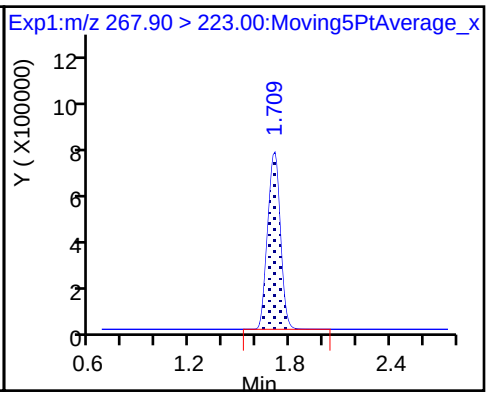
D 1 13C4 PFBA



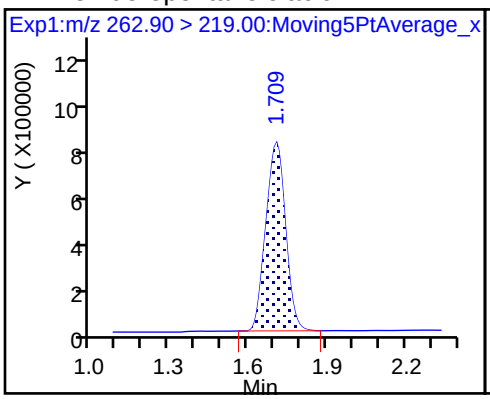
2 Perfluorobutyric acid



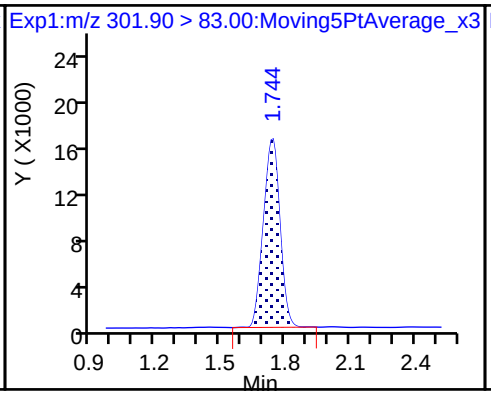
D 3 13C5-PFPeA



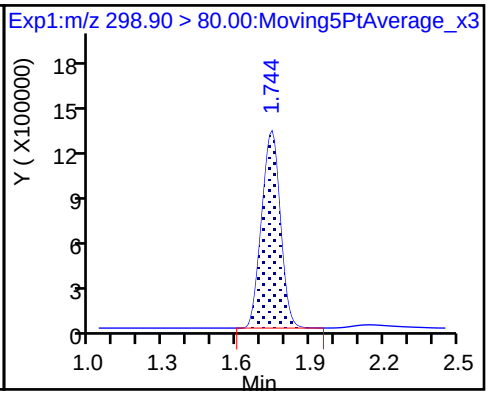
4 Perfluoropentanoic acid



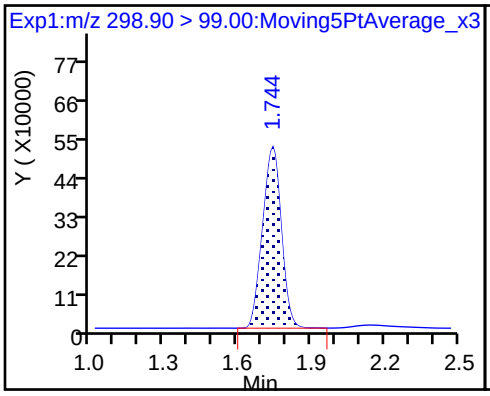
D 47 13C3-PFBS



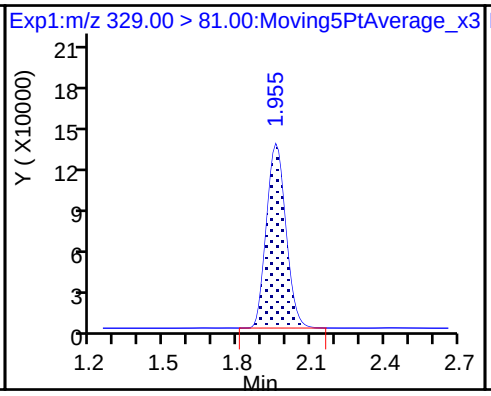
5 Perfluorobutanesulfonic acid



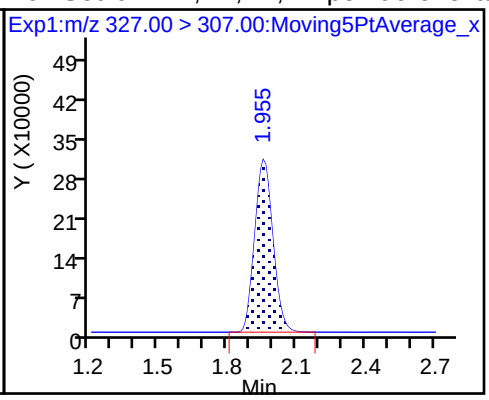
5 Perfluorobutanesulfonic acid



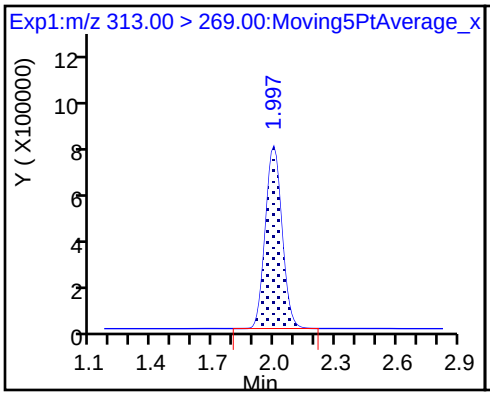
D 60 M2-4:2FTS



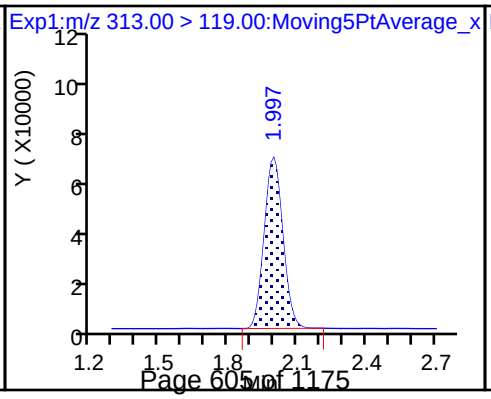
61 Sodium 1H,1H,2H,2H-perfluorohexane



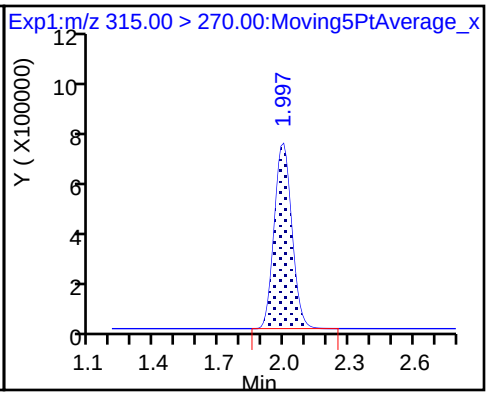
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



D 7 13C2 PFHxA



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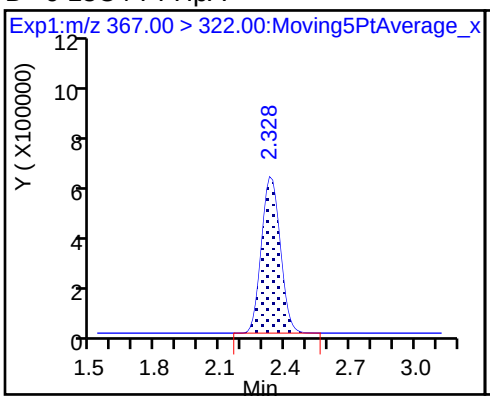
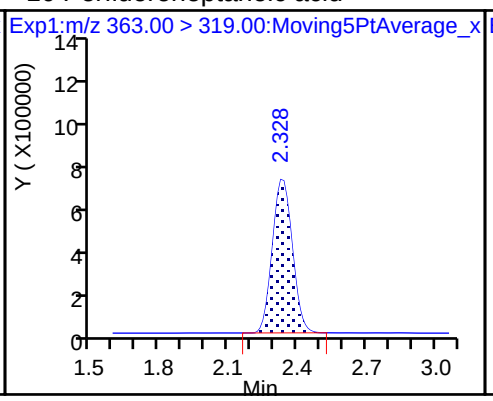


10 Perfluoroheptanoic acid



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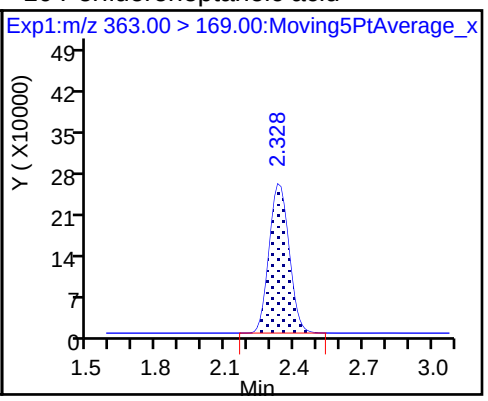
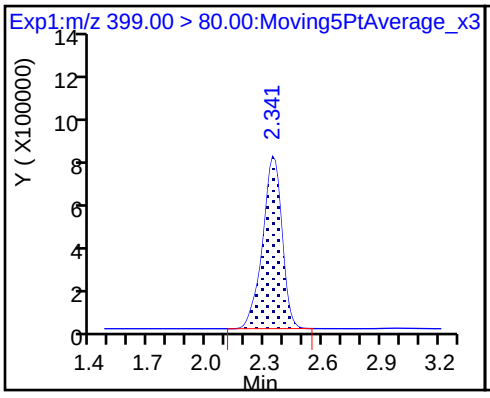
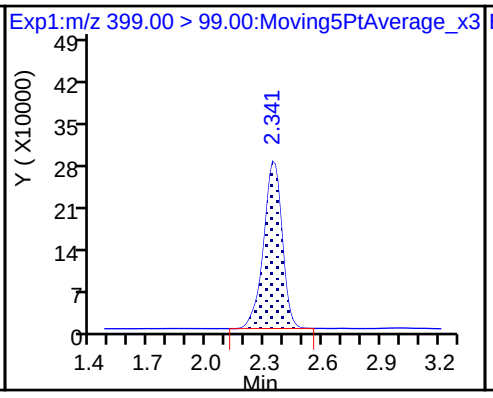


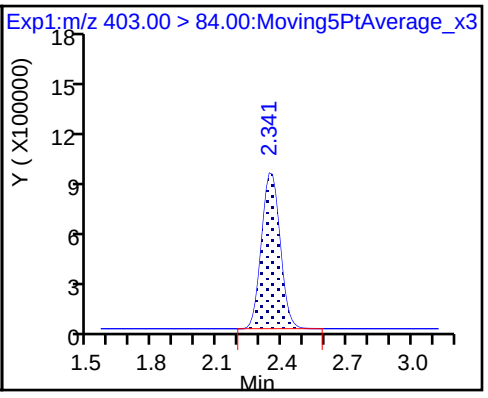
8 Perfluorohexanesulfonic acid



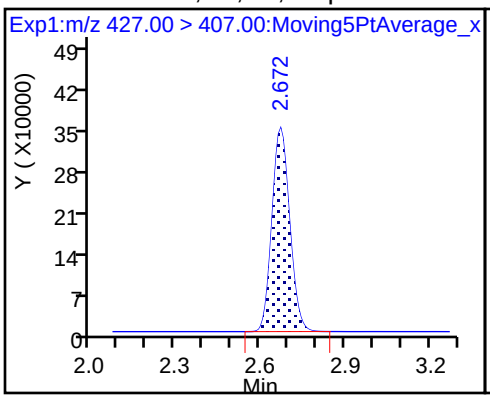
8 Perfluorohexanesulfonic acid



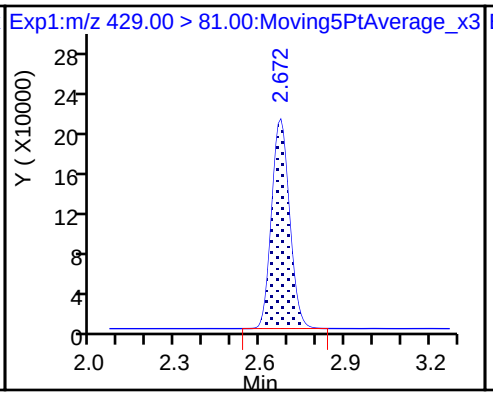
D 11 18O2 PFHxS



13 Sodium 1H,1H,2H,2H-perfluorooctane



D 12 M2-6:2FTS



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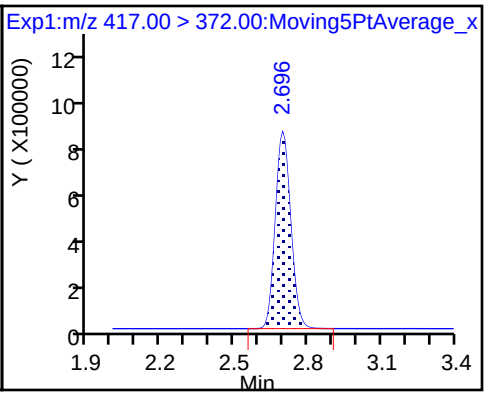
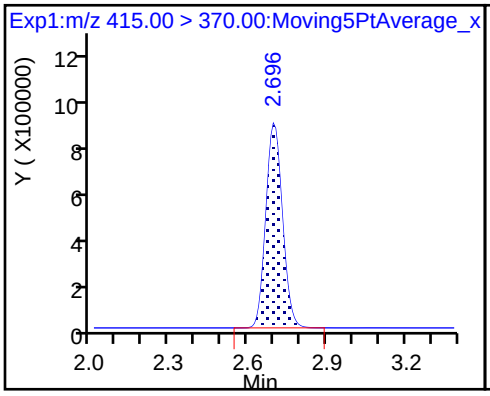
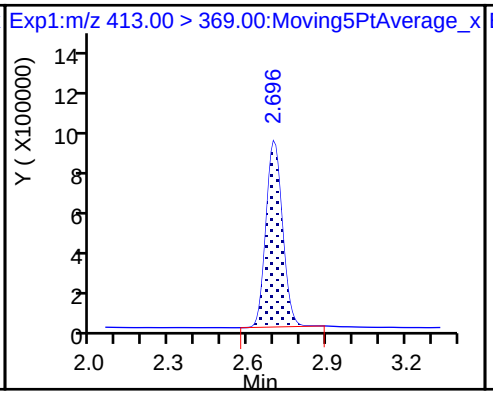


* 62 13C2-PFOA



15 Perfluorooctanoic acid



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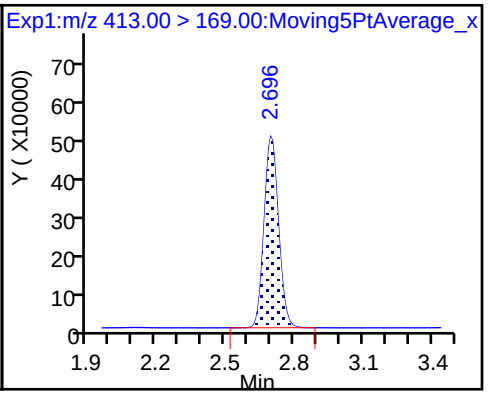
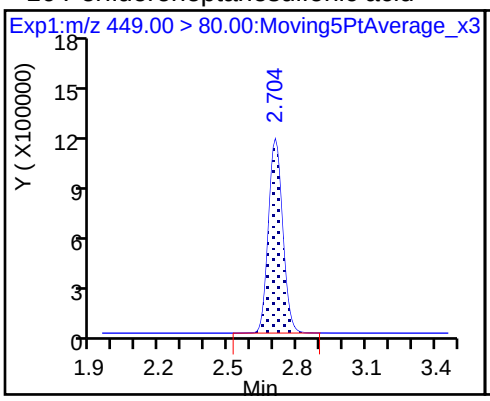
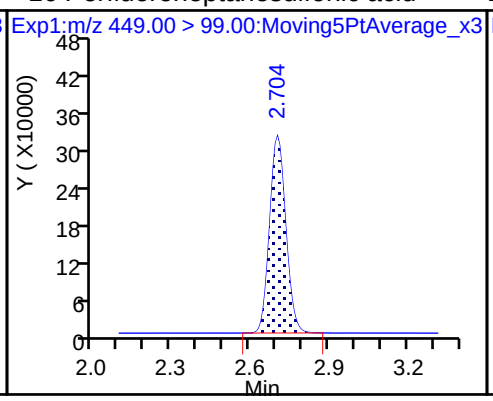


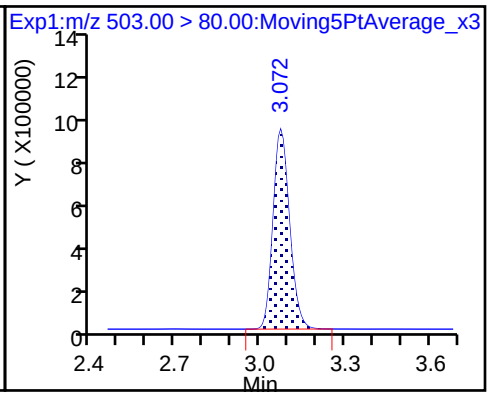
16 Perfluoroheptanesulfonic acid



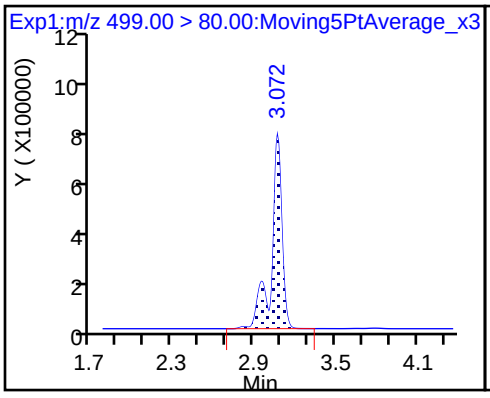
16 Perfluoroheptanesulfonic acid



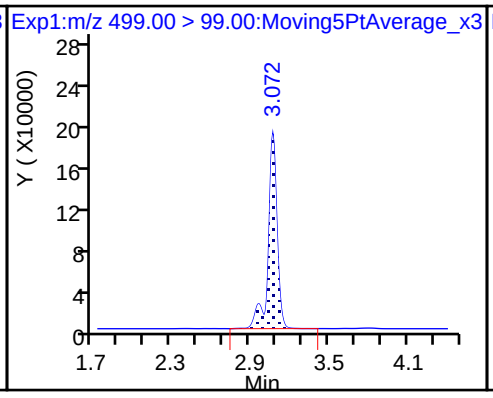
D 18 13C4 PFOS



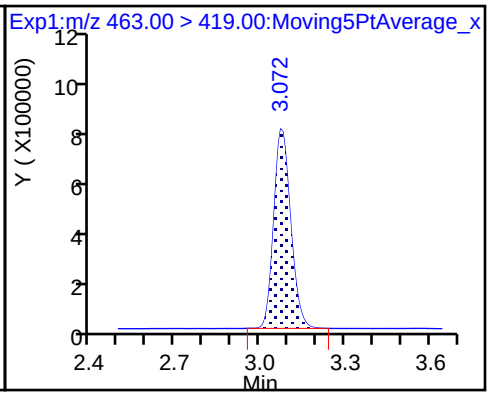
17 Perfluorooctane sulfonic acid



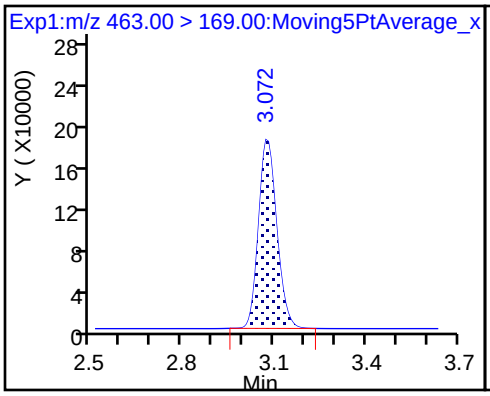
17 Perfluorooctane sulfonic acid



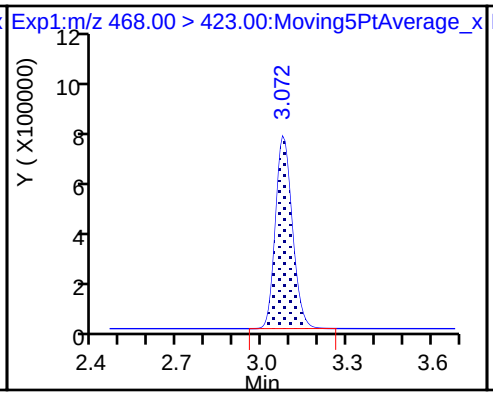
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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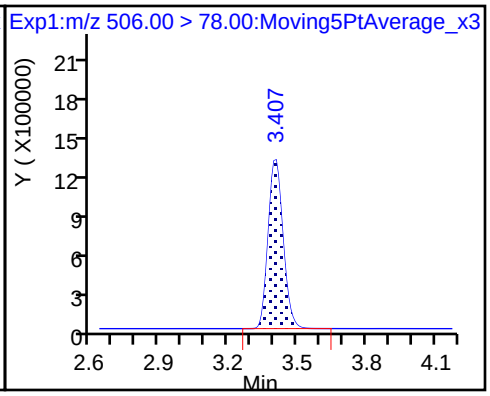
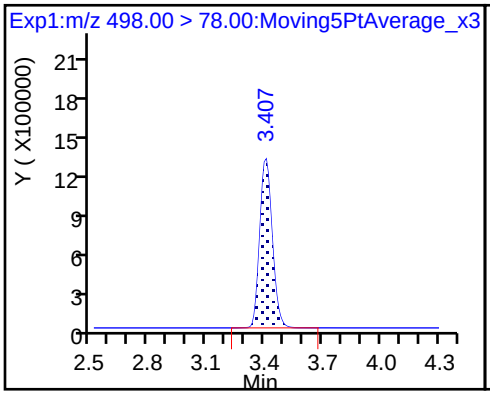
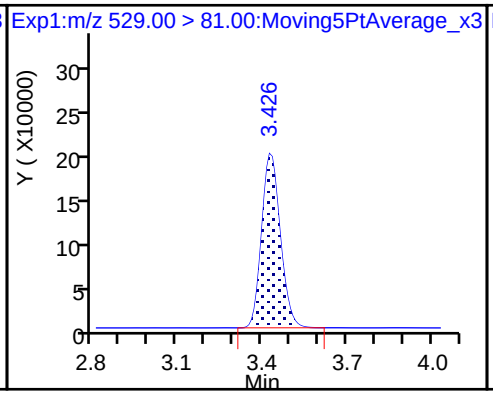


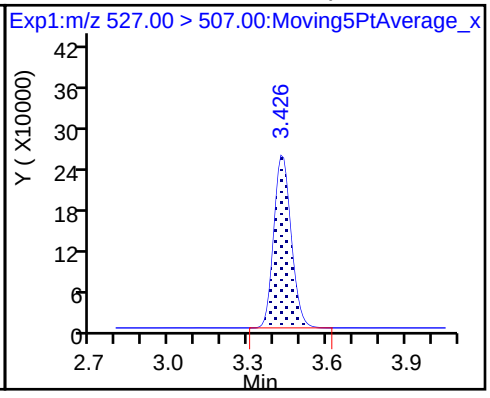
22 Perfluorooctane Sulfonamide



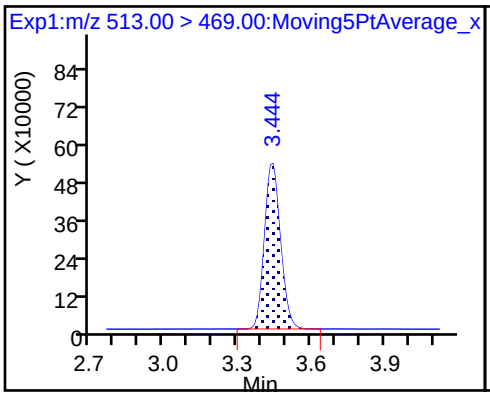
D 26 M2-8:2FTS



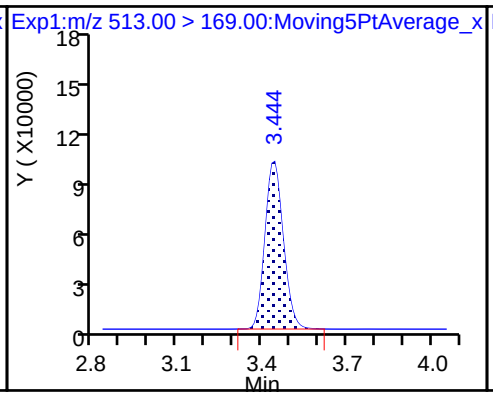
25 Sodium 1H,1H,2H,2H-perfluorodecane



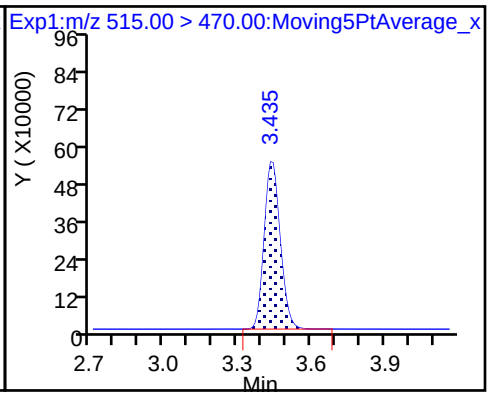
24 Perfluorodecanoic acid



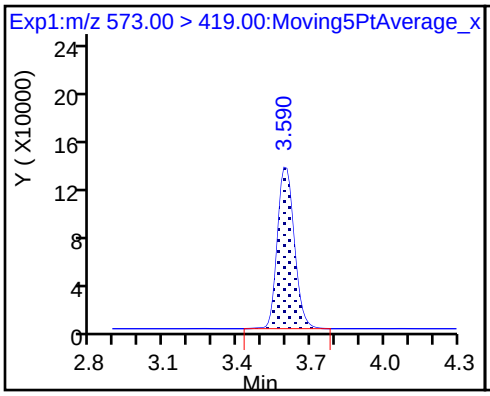
24 Perfluorodecanoic acid



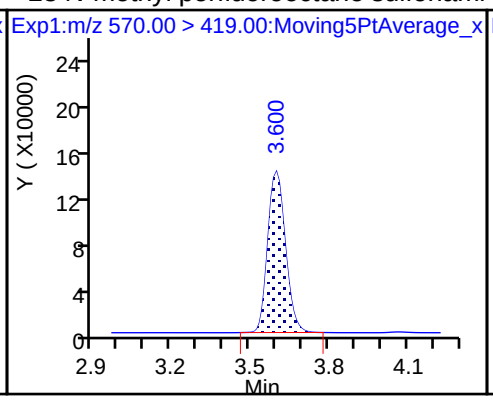
D 23 13C2 PFDA



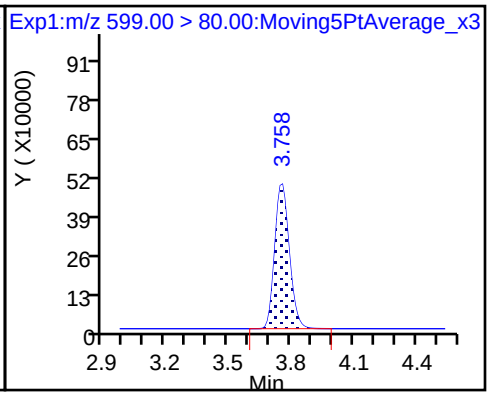
D 27 d3-NMeFOSAA



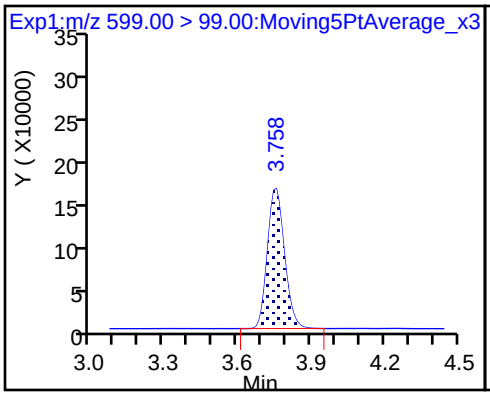
28 N-methyl perfluorooctane sulfonami



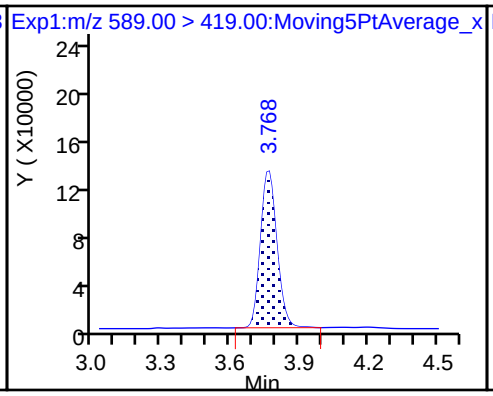
29 Perfluorodecane Sulfonic acid



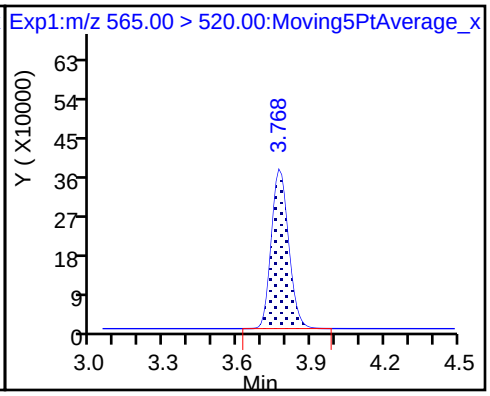
29 Perfluorodecane Sulfonic acid



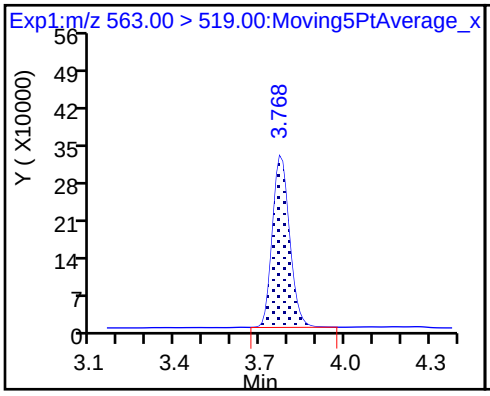
D 32 d5-NEtFOSAA



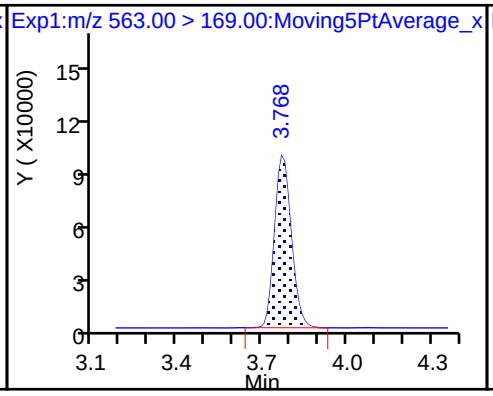
D 30 13C2 PFUnA



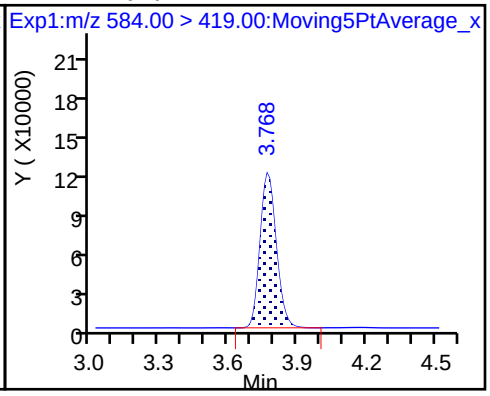
31 Perfluoroundecanoic acid



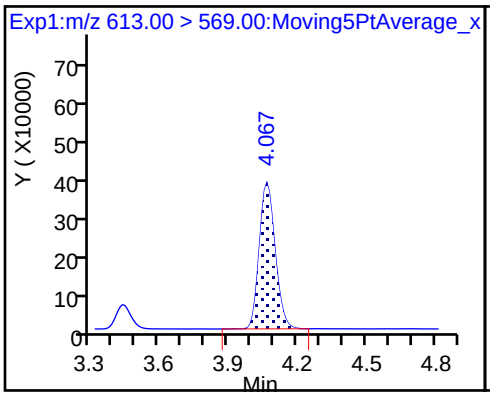
31 Perfluoroundecanoic acid



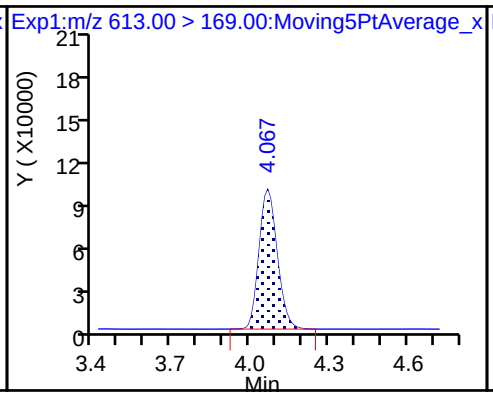
33 N-ethyl perfluorooctane sulfonamid



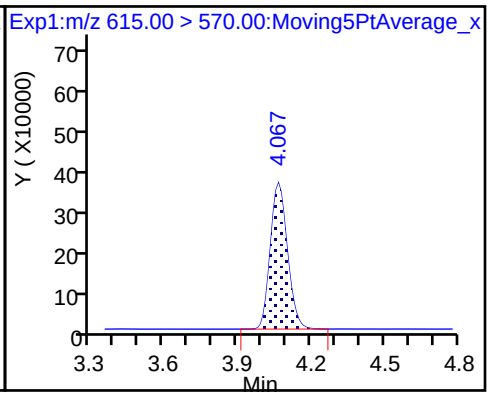
37 Perfluorododecanoic acid



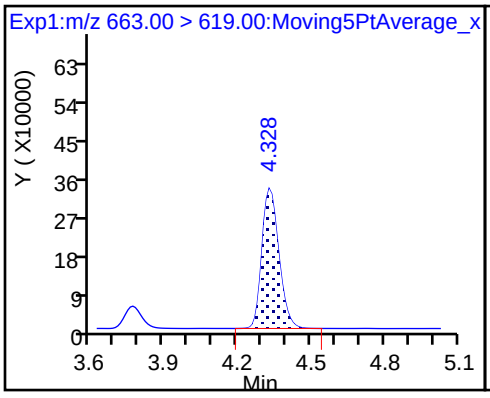
37 Perfluorododecanoic acid



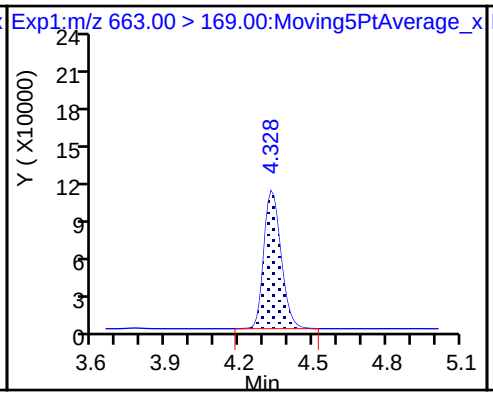
D 36 13C2 PFDoA



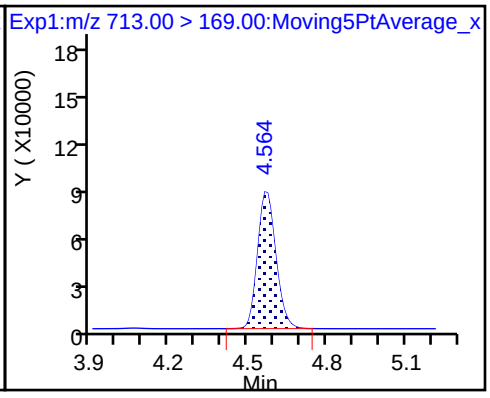
41 Perfluorotridecanoic acid



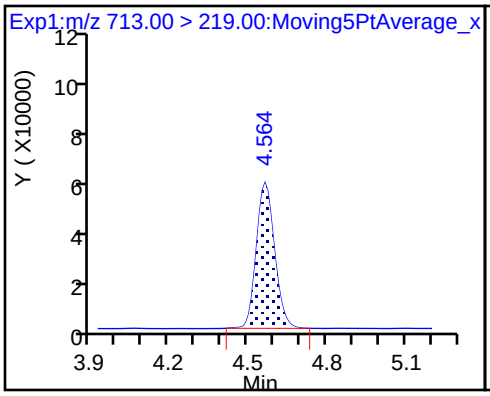
41 Perfluorotridecanoic acid



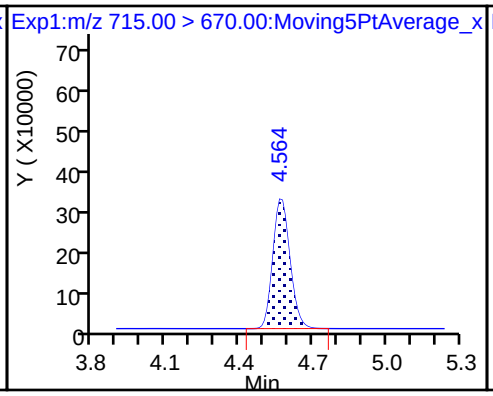
42 Perfluorotetradecanoic acid



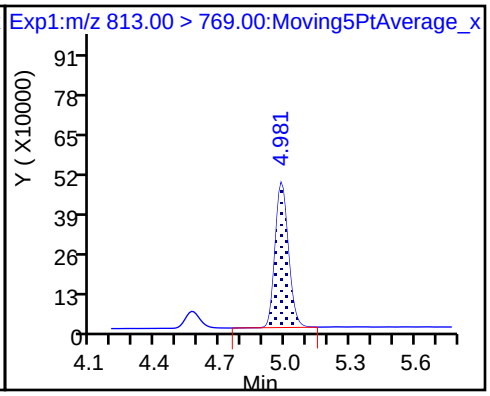
42 Perfluorotetradecanoic acid



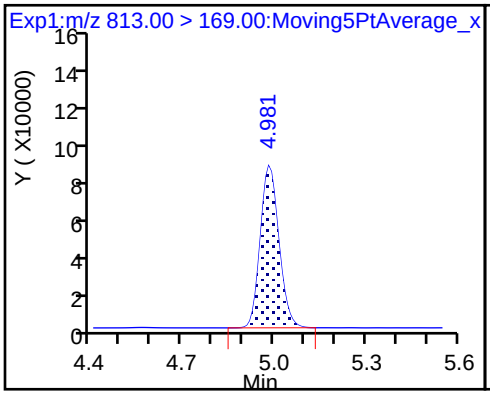
D 43 13C2-PFTeDA



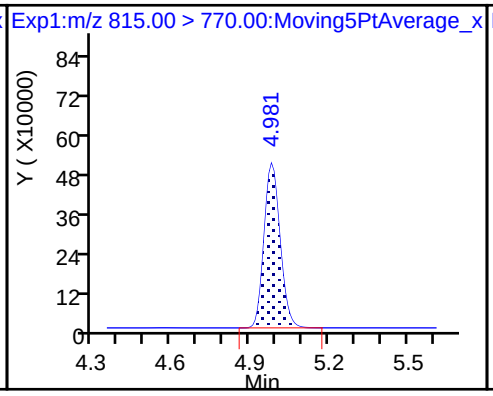
45 Perfluorohexadecanoic acid



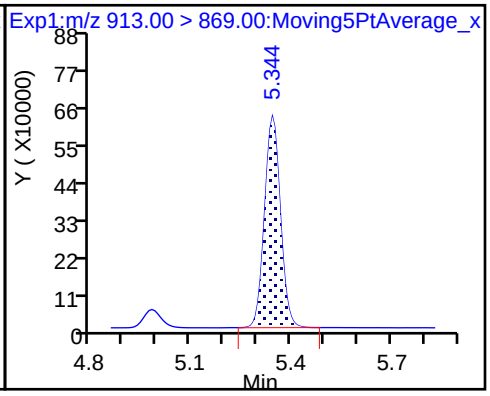
45 Perfluorohexadecanoic acid



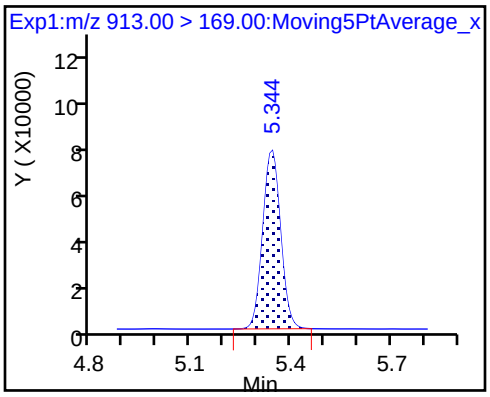
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213785/18 Calibration Date: 03/19/2018 19:10

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLAX_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9039		0.975	1.00	-2.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.119		0.958	1.00	-4.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	79.12		0.904	0.884	2.3	50.0
4:2 FTS	AveID	16.07	19.00		1.10	0.934	18.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9591		0.951	1.00	-4.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.031		0.995	1.00	-0.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.060		0.865	0.910	-5.0	40.0
6:2FTS	AveID	1.665	1.677		0.955	0.948	0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.333		0.966	0.952	1.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.065		0.954	1.00	-4.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9622		0.944	1.00	-5.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.076		0.923	0.928	-0.6	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9837		1.01	1.00	1.2	40.0
8:2FTS	AveID	1.257	1.267		0.965	0.958	0.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9672		1.02	1.00	1.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.043		1.00	1.00	0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6147		0.928	0.964	-3.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9214		0.941	1.00	-5.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7629		0.910	1.00	-9.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	0.9674		0.946	1.00	-5.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9718		0.945	1.00	-5.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2472		0.896	1.00	-10.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.039		1.11	1.00	10.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.998		1.02	1.00	2.4	50.0
13C4 PFBA	Ave	1.277	1.419		2.78	2.50	11.2	50.0
13C5 PFPeA	Ave	0.9006	0.9308		2.58	2.50	3.4	50.0
13C3-PFBS	Ave	0.0222	0.0225		2.35	2.33	1.1	50.0
M2-4:2FTS	Ave	0.1590	0.1910		2.81	2.34	20.1	50.0
13C2 PFHxA	Ave	1.004	1.029		2.56	2.50	2.5	50.0
13C4-PFHpA	Ave	0.9767	0.9808		2.51	2.50	0.4	50.0
18O2 PFHxS	Ave	1.303	1.322		2.40	2.37	1.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-213785/18 Calibration Date: 03/19/2018 19:10

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.19LLAX_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2376		2.26	2.38	-5.0	40.0
13C4 PFOA	Ave	0.9431	0.9610		2.55	2.50	1.9	50.0
13C4 PFOS	Ave	0.9113	0.9208		2.42	2.39	1.0	50.0
13C5 PFNA	Ave	0.7545	0.7524		2.49	2.50	-0.3	50.0
13C8 FOSA	Ave	1.319	1.421		2.69	2.50	7.7	50.0
M2-8:2FTS	Ave	0.2350	0.2360		2.41	2.40	0.4	40.0
13C2 PFDA	Ave	0.6303	0.6379		2.53	2.50	1.2	50.0
d3-NMeFOSAA	Ave	0.2081	0.1660		1.99	2.50	-20.2	50.0
d5-NEtFOSAA	Ave	0.1990	0.1738		2.18	2.50	-12.7	50.0
13C2 PFUnA	Ave	0.4935	0.4606		2.33	2.50	-6.7	50.0
13C2 PFDoA	Ave	0.4680	0.4464		2.38	2.50	-4.6	50.0
13C2-PFTeDA	Ave	0.4272	0.4353		2.55	2.50	1.9	50.0
13C2-PFHxDA	Ave	0.6248	0.5405		2.16	2.50	-13.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_022.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 19-Mar-2018 19:10:23 ALS Bottle#: 13 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:33 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:11:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.444	-0.004	0.536	5831487	2.78		111	103977	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.444	-0.004	1.000	2108506	0.9746		97.5	1204	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.705	-0.006	0.633	3825381	2.58		103	149939	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.705	-0.006	1.000	1711759	0.9577		95.8	618	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.740	-0.014	0.642	85897	2.35		101	503	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.740	-0.005	1.005	2584044	0.9039		102	1069	
298.90 > 99.00	1.735	1.740	-0.005	1.005	1070520		2.41(1.25-3.74)		995	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.960	-0.015	0.724	733233	2.81		120	11492	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.960	-0.015	1.000	655460	1.10		118	40877	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.992	-0.006	1.000	1622179	0.9505		95.1	5966	
313.00 > 119.00	1.986	1.992	-0.006	1.000	147014		11.03(5.03-15.10)		2679	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.992	-0.006	0.739	4228406	2.56		102	128132	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.335	-0.021	0.861	4030765	2.51		100	75634	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.335	-0.021	1.000	1662682	0.99		99.5	3403	
363.00 > 169.00	2.314	2.335	-0.021	1.000	640273		2.60(1.13-3.40)		9814	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.348	-0.021	1.000	2096236	0.8648		95.0	3523	
399.00 > 99.00	2.327	2.348	-0.021	1.000	705393		2.97(1.50-4.49)		1649	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.348	-0.021	0.866	5139920	2.40		101	79220	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.675	-0.020	1.000	621126	0.9552		101	24081	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.675	-0.020	0.988	927747	2.26		95.0	27137	
D 14 13C4 PFOA										
417.00 > 372.00	2.687	2.706	-0.019	1.000	3949563	2.55		102	92401	
* 62 13C2-PFOA										
415.00 > 370.00	2.687	2.706	-0.019		4109801	2.50			74217	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.687	2.706	-0.019	1.000	1682251	0.9538		95.4	616	
413.00 > 169.00	2.687	2.706	-0.019	1.000	884058		1.90(0.84-2.52)		3641	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.687	2.706	-0.019	1.000	1921462	0.9660		101	37632	
449.00 > 99.00	2.687	2.706	-0.019	1.000	513996		3.74(1.94-5.82)		9365	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.083	-0.025	1.138	3617611	2.41		101	47921	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.083	-0.025	1.000	1511713	0.9225		99.4	4175	
499.00 > 99.00	3.058	3.083	-0.025	1.000	340826		4.44(2.31-6.93)		2764	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.083	-0.025	1.000	1190003	0.9437		94.4	2921	
463.00 > 169.00	3.058	3.083	-0.025	1.000	305082		3.90(1.90-5.69)		8412	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.083	-0.025	1.138	3092010	2.49		99.7	77398	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.403	-0.015	1.261	5841412	2.69		108	55497	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.412	-0.024	1.000	2298396	1.01		101	29153	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.439	-0.024	1.271	929222	2.41		100	25841	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.439	-0.024	1.000	470800	0.9652		101	17571	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.448	-0.024	1.000	1014193	1.02		102	6165	
513.00 > 169.00	3.424	3.448	-0.024	1.000	181259		5.60(2.36-7.09)		8195	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.448	-0.024	1.274	2621457	2.53		101	49199	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.606	-0.028	1.332	682328	1.99		79.8	24598	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.578	3.617	-0.039	1.000	284697	1.00		100	4397	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.765	-0.028	1.000	896916	0.9280		96.3	27007	
599.00 > 99.00	3.737	3.765	-0.028	1.000	309762		2.90(1.39-4.16)		5026	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.775	-0.027	1.395	714203	2.18		87.3	1533	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.786	-0.028	1.399	1892814	2.33		93.3	49261	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.786	-0.028	1.000	577635	0.9104		91.0	1155	
563.00 > 169.00	3.758	3.786	-0.028	1.000	159744		3.62(2.12-6.36)		9601	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.786	-0.028	1.003	263232	0.9411		94.1	5404	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.084	-0.028	1.003	709815	0.9456		94.6	146	
613.00 > 169.00	4.056	4.084	-0.028	1.003	197665		3.59(2.13-6.40)		5849	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.084	-0.038	1.506	1834405	2.38		95.4	10194	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.346	-0.029	1.000	713066	0.9446		94.5	157	
663.00 > 169.00	4.317	4.346	-0.029	1.000	234723		3.04(1.25-3.76)		3034	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.581	-0.027	1.000	176848	0.8962		89.6	2170	
713.00 > 219.00	4.543	4.581	-0.038	0.998	119477		1.48(0.71-2.13)		1243	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.581	-0.027	1.695	1788888	2.55		102	16399	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	5.004	-0.032	1.002	922966	1.11		111	63.2	
813.00 > 169.00	4.964	5.004	-0.040	1.000	153243		6.02(2.86-8.58)		1998	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	5.004	-0.040	1.848	2221215	2.16		86.5	8768	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.374	-0.045	1.000	886863	1.02		102	215	
913.00 > 169.00	5.329	5.374	-0.045	1.000	112080		7.91(3.83-11.48)		1255	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 20-Mar-2018 14:13:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_022.d

Injection Date: 19-Mar-2018 19:10:23 Instrument ID: A8_N

Lims ID: CCV L4

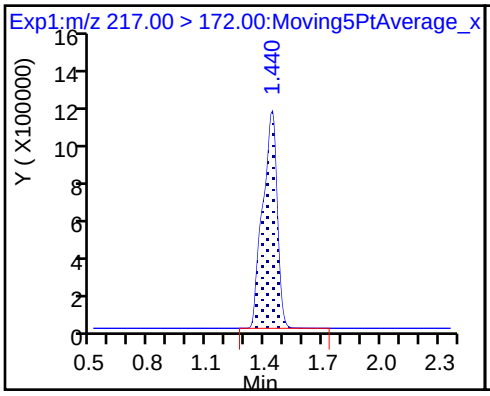
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 18

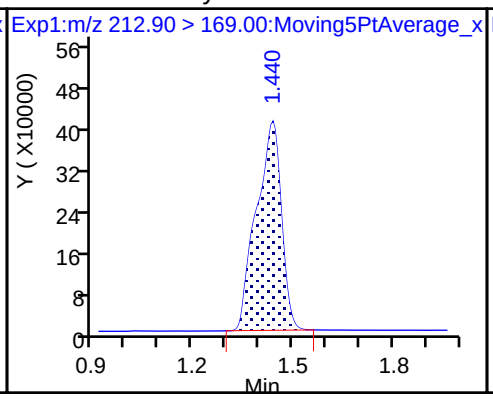
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

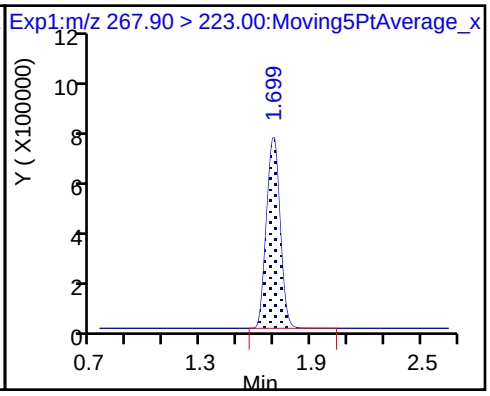
D 1 13C4 PFBA



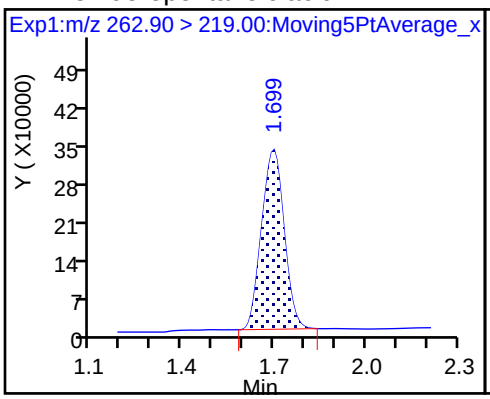
2 Perfluorobutyric acid



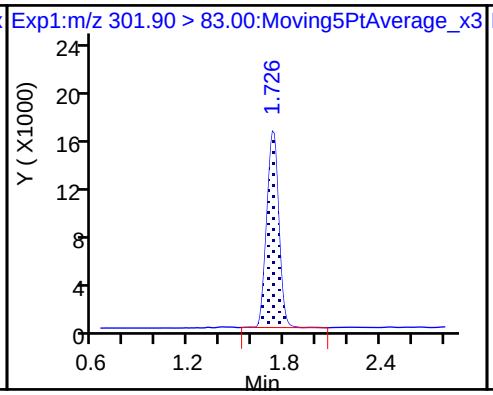
D 3 13C5-PFPeA



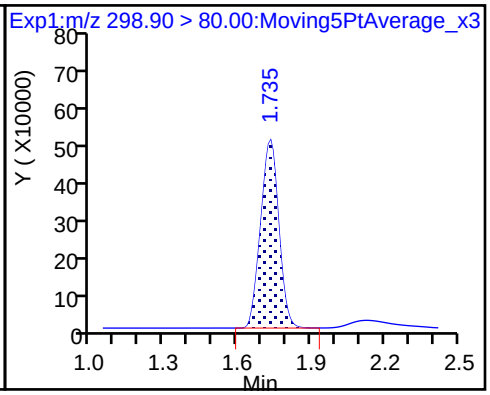
4 Perfluoropentanoic acid



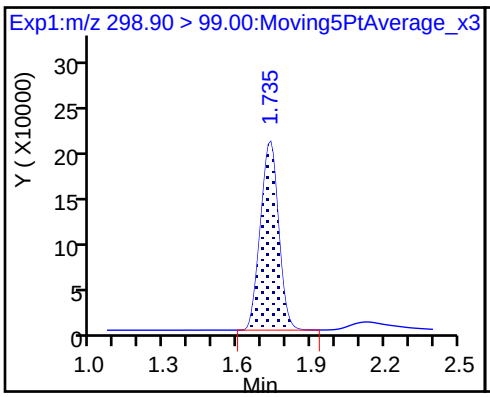
D 47 13C3-PFBS



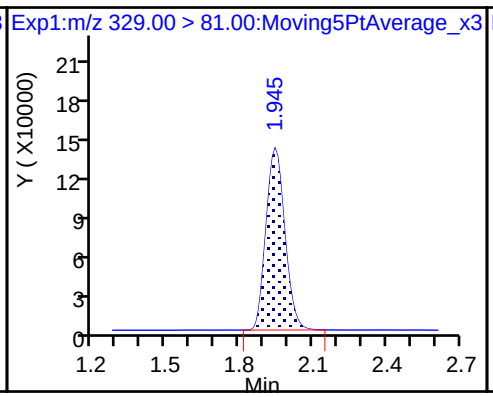
5 Perfluorobutanesulfonic acid



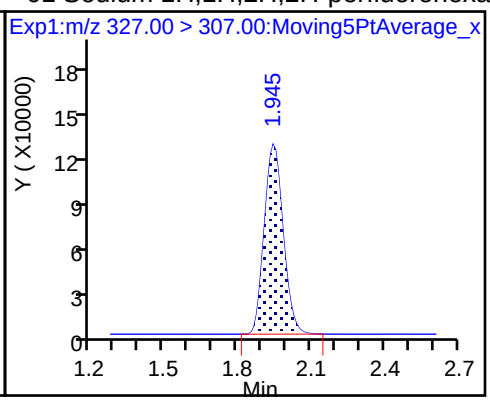
5 Perfluorobutanesulfonic acid



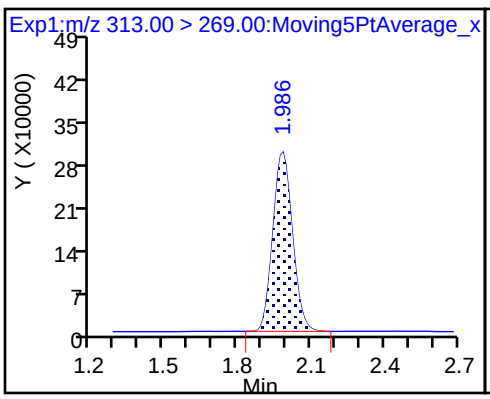
D 60 M2-4:2FTS



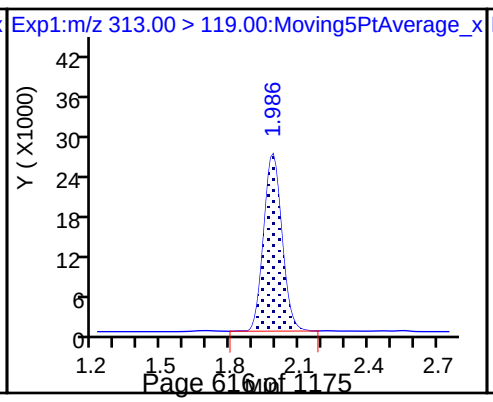
61 Sodium 1H,1H,2H,2H-perfluorohexane



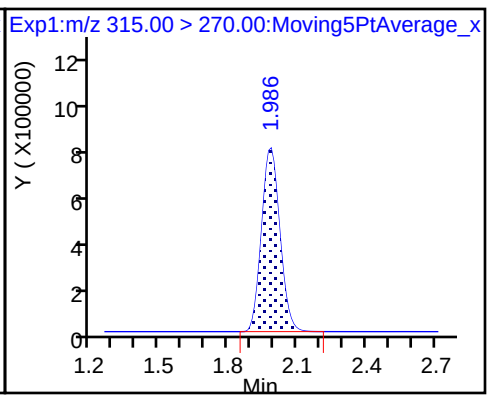
6 Perfluorohexanoic acid



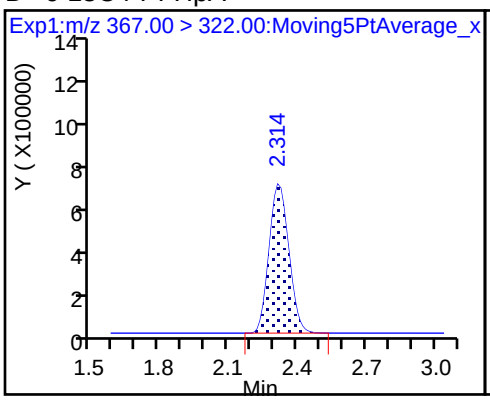
6 Perfluorohexanoic acid



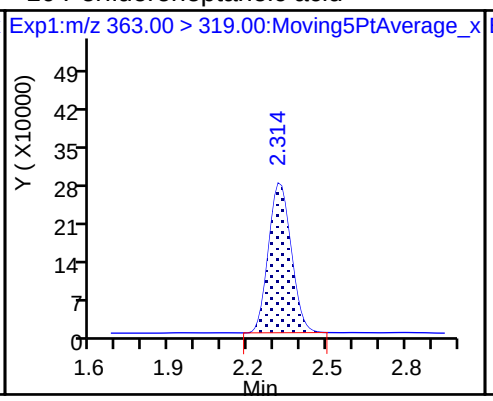
D 7 13C2 PFHxA



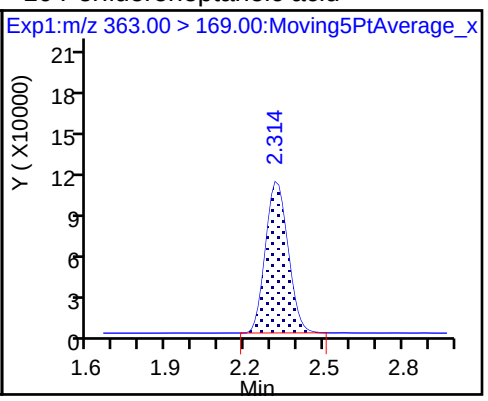
D 9 13C4-PFHpA



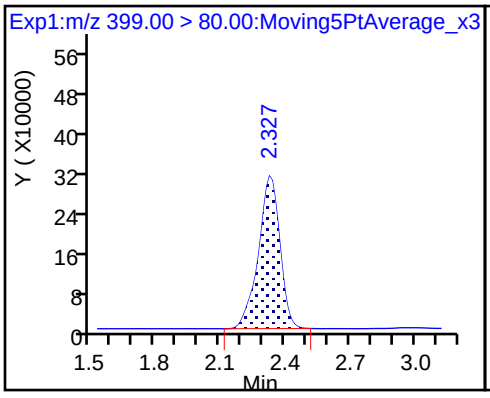
10 Perfluoroheptanoic acid



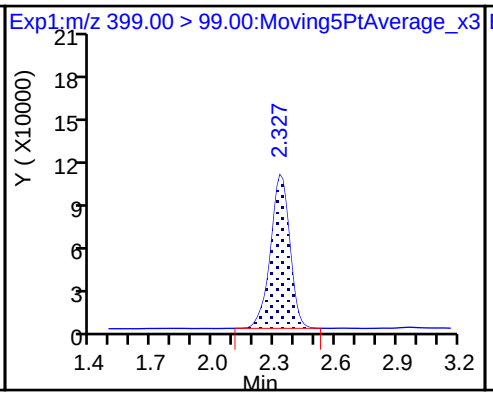
10 Perfluoroheptanoic acid



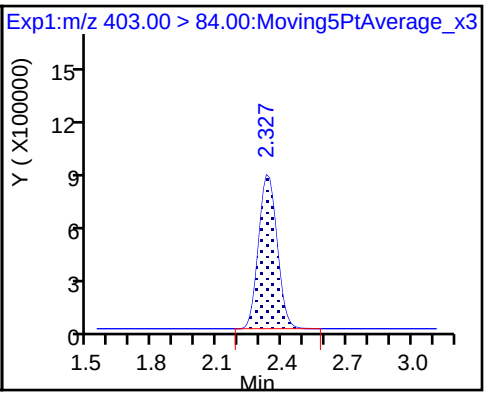
8 Perfluorohexanesulfonic acid



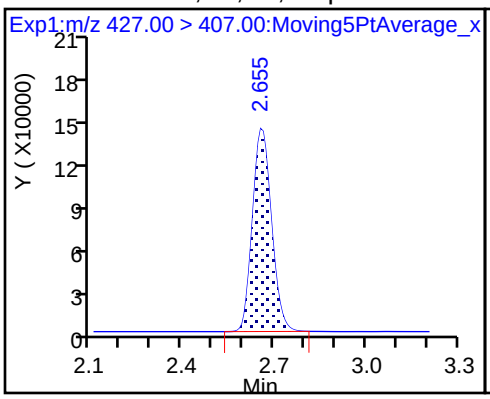
8 Perfluorohexanesulfonic acid



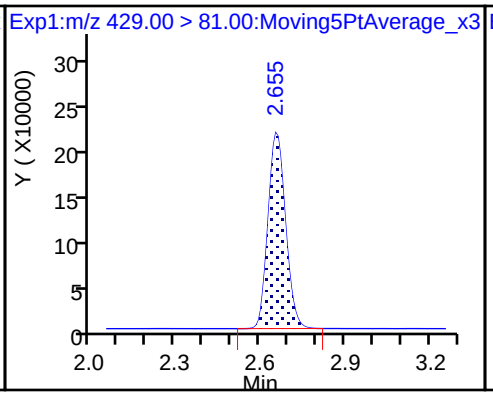
D 11 18O2 PFHxS



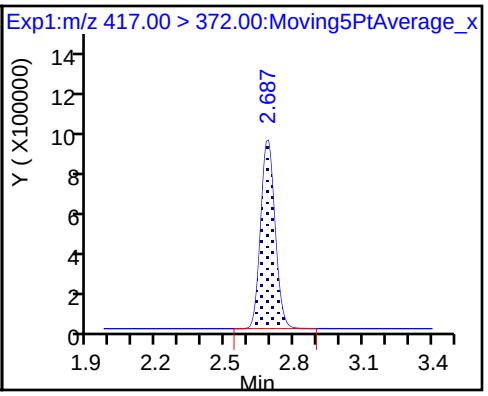
13 Sodium 1H,1H,2H,2H-perfluorooctan



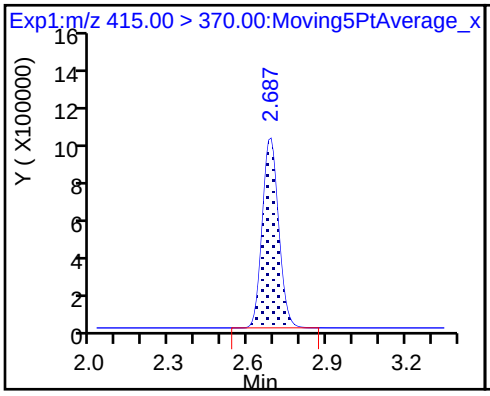
D 12 M2-6:2FTS



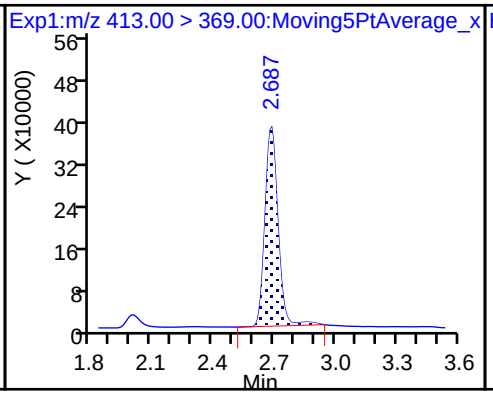
D 14 13C4 PFOA



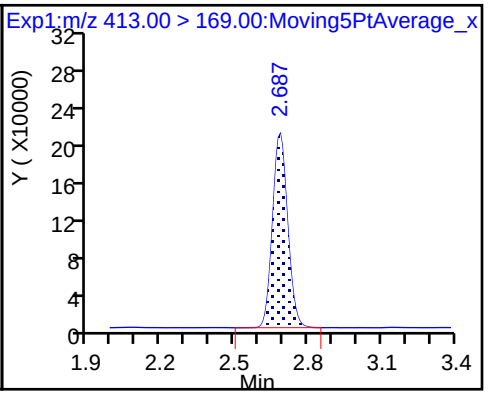
* 62 13C2-PFOA



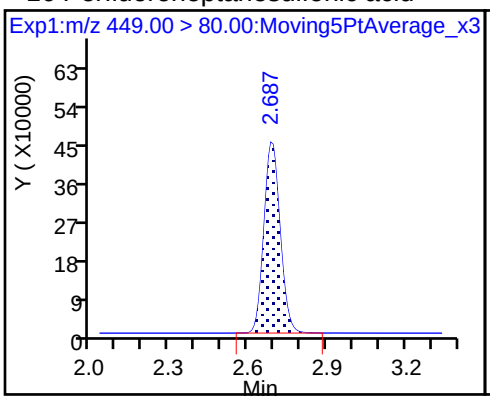
15 Perfluorooctanoic acid



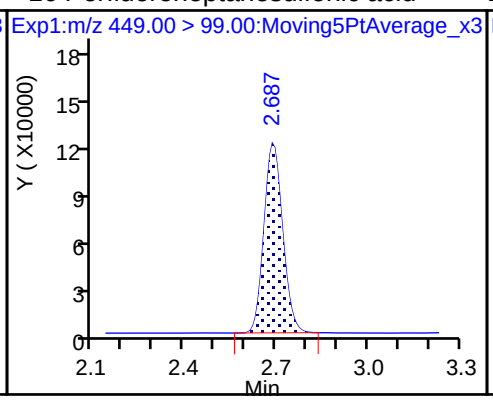
15 Perfluorooctanoic acid



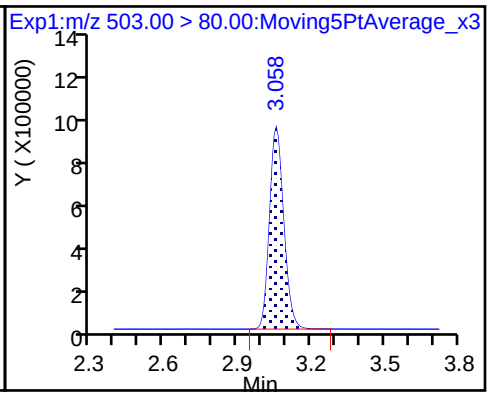
16 Perfluoroheptanesulfonic acid



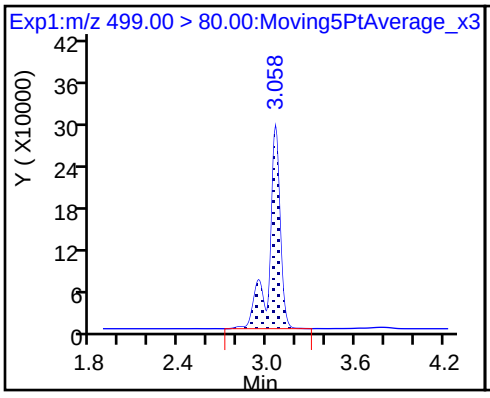
16 Perfluoroheptanesulfonic acid



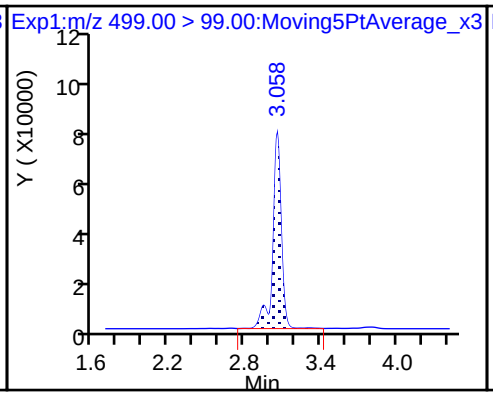
D 18 13C4 PFOS



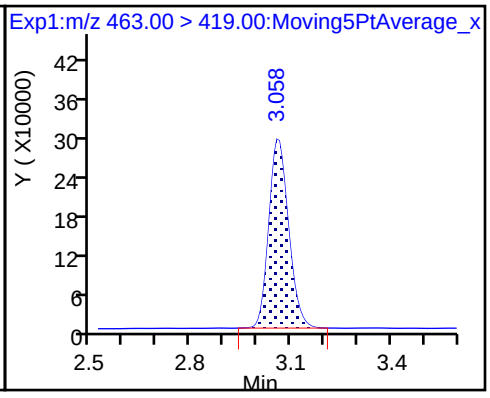
17 Perfluorooctane sulfonic acid



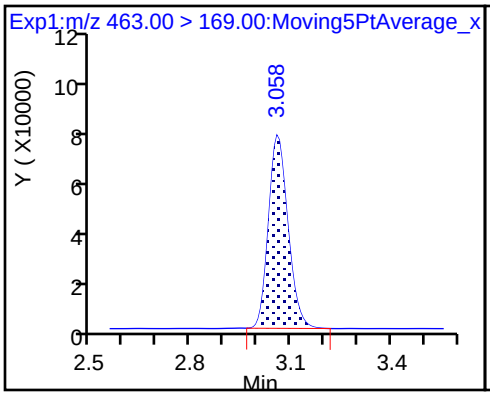
17 Perfluorooctane sulfonic acid



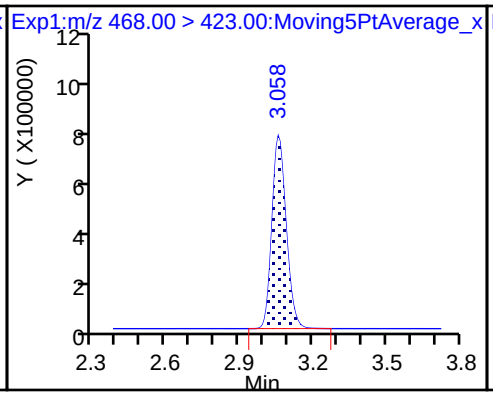
20 Perfluorononanoic acid



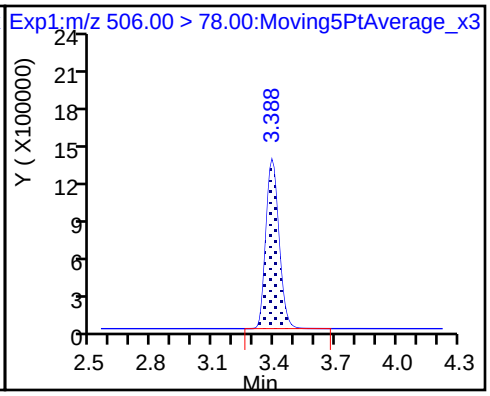
20 Perfluorononanoic acid



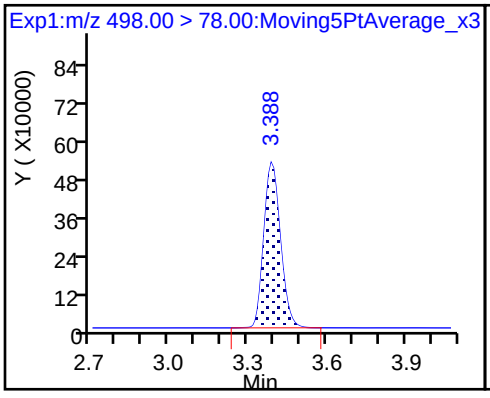
D 19 13C5 PFNA



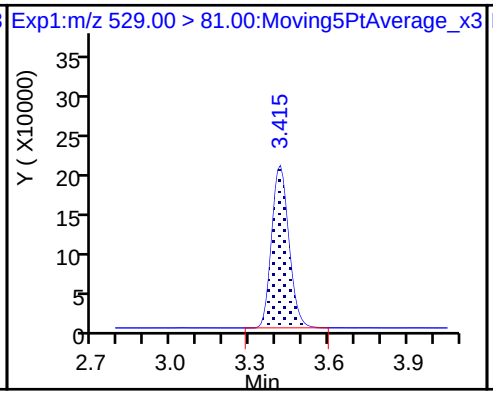
D 21 13C8 FOSA



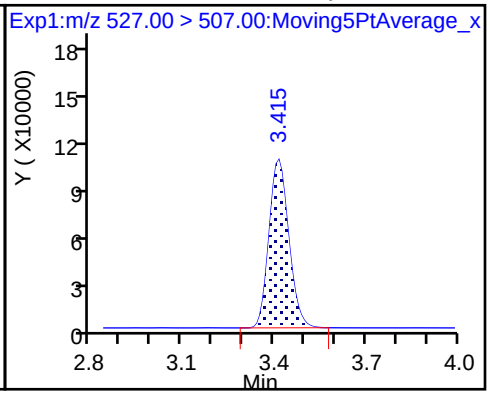
22 Perfluorooctane Sulfonamide



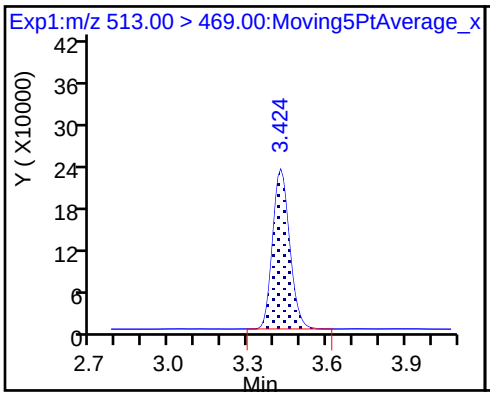
D 26 M2-8:2FTS



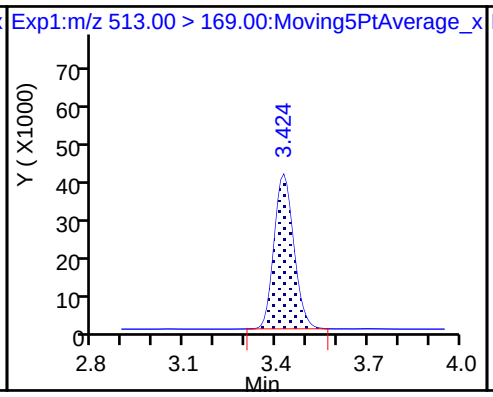
25 Sodium 1H,1H,2H,2H-perfluorodecane



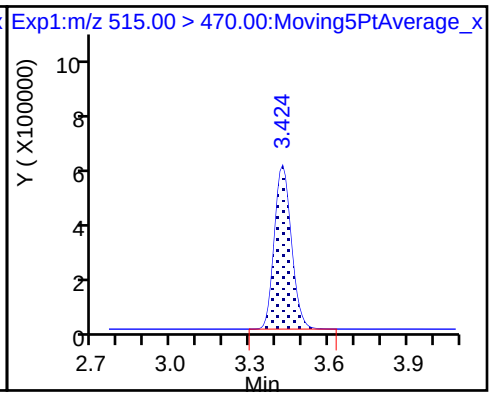
24 Perfluorodecanoic acid



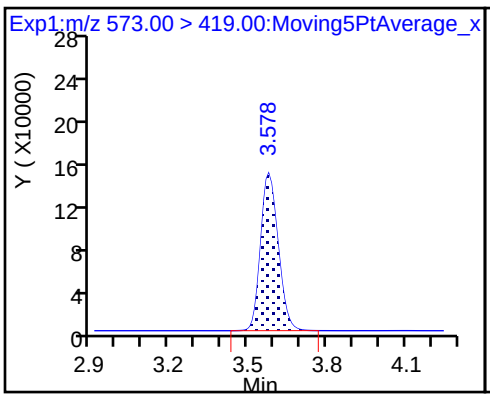
24 Perfluorodecanoic acid



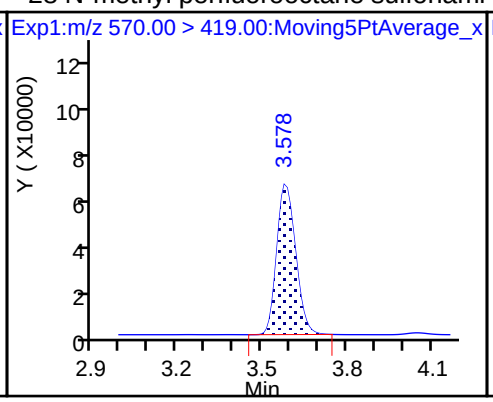
D 23 13C2 PFDA



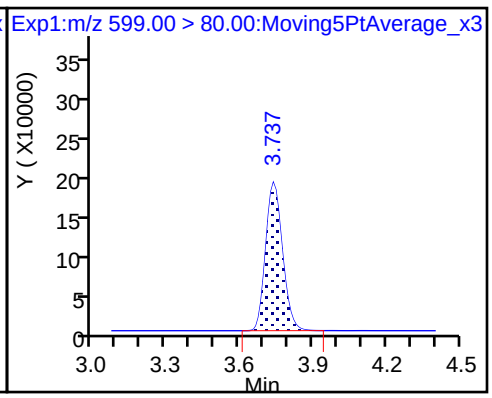
D 27 d3-NMeFOSAA



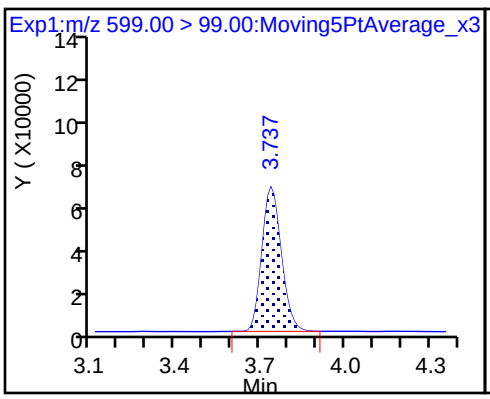
28 N-methyl perfluorooctane sulfonami



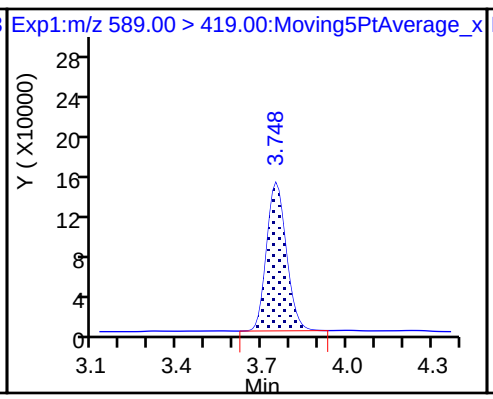
29 Perfluorodecane Sulfonic acid



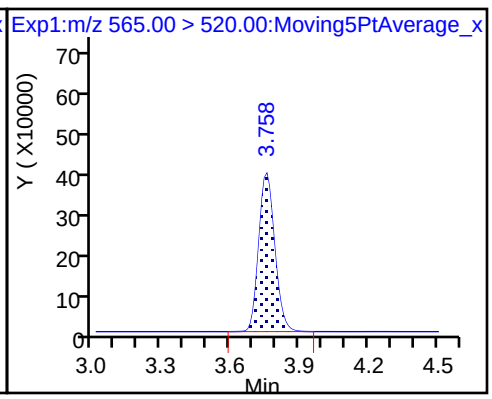
29 Perfluorodecane Sulfonic acid



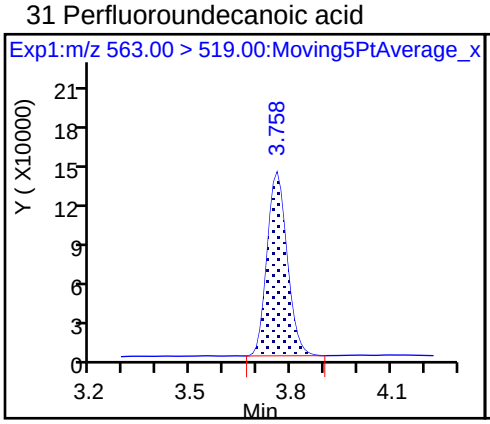
D 32 d5-NEtFOSAA



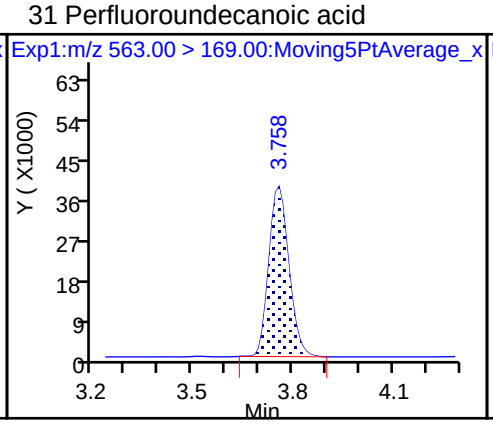
D 30 13C2 PFUnA



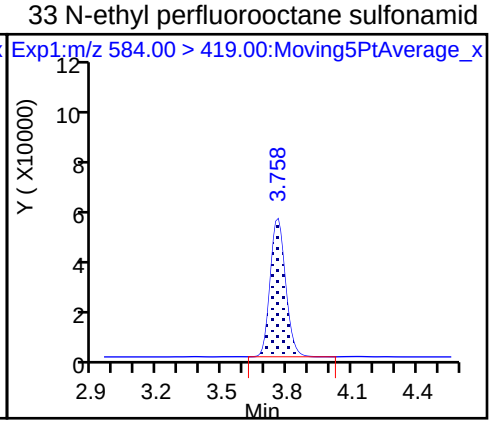
31 Perfluoroundecanoic acid



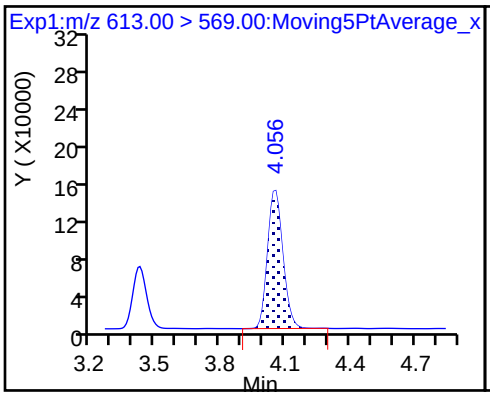
31 Perfluoroundecanoic acid



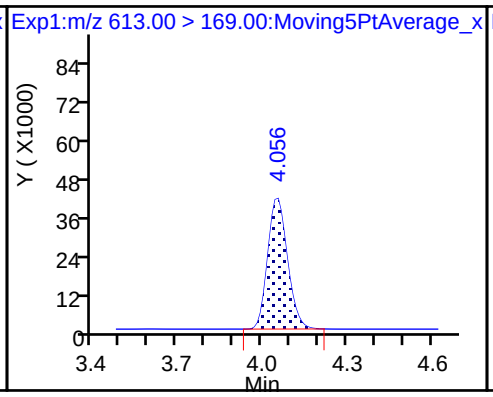
33 N-ethyl perfluorooctane sulfonamid



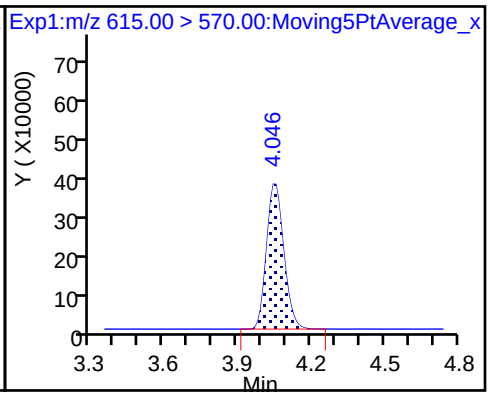
37 Perfluorododecanoic acid



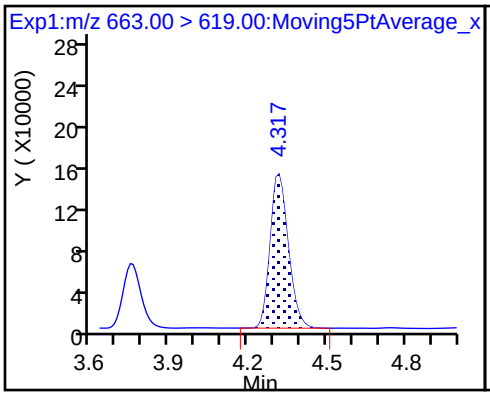
37 Perfluorododecanoic acid



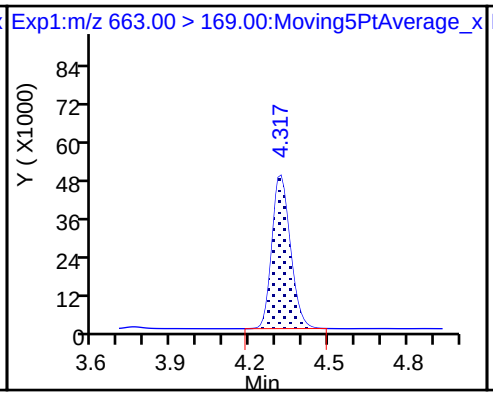
D 36 13C2 PFDoA



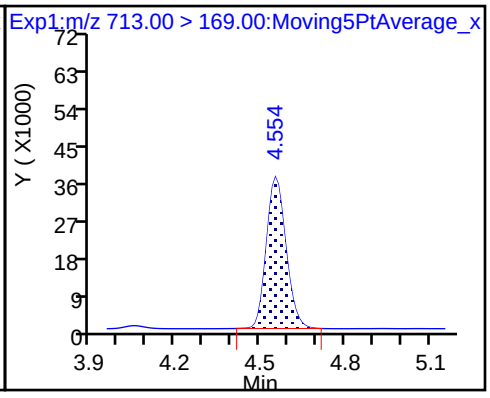
41 Perfluorotridecanoic acid



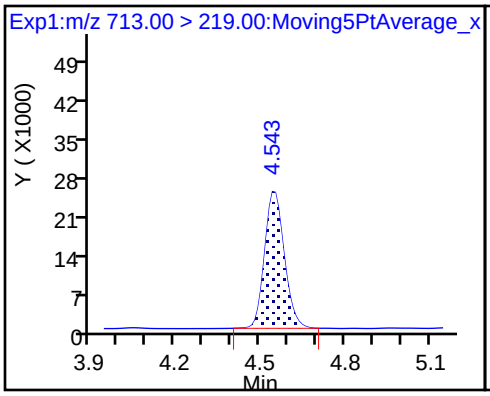
41 Perfluorotridecanoic acid



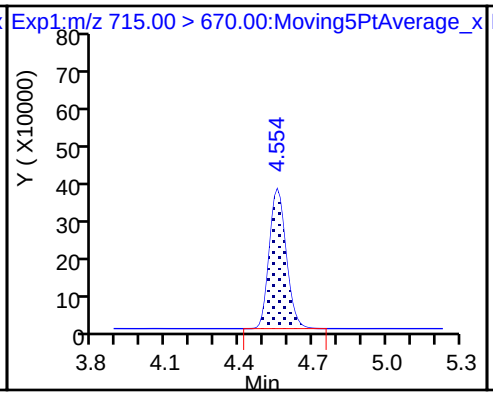
42 Perfluorotetradecanoic acid



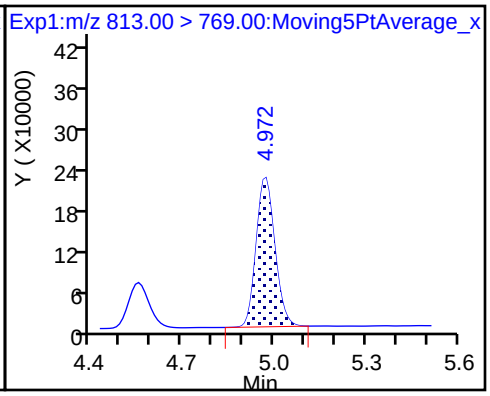
42 Perfluorotetradecanoic acid



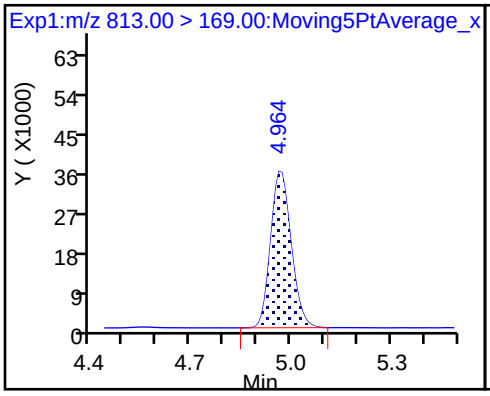
D 43 13C2-PFTeDA



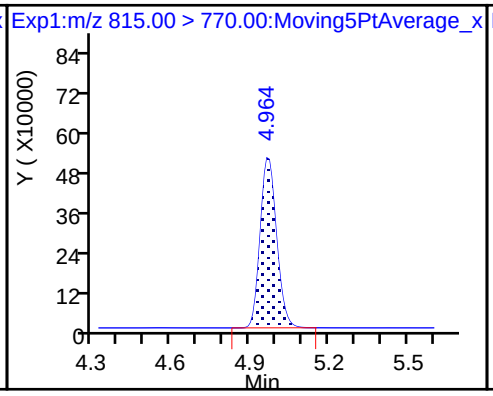
45 Perfluorohexadecanoic acid



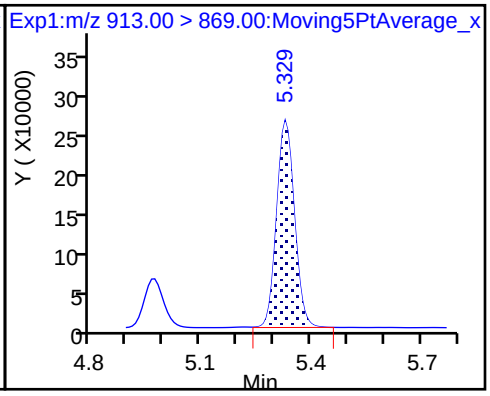
45 Perfluorohexadecanoic acid



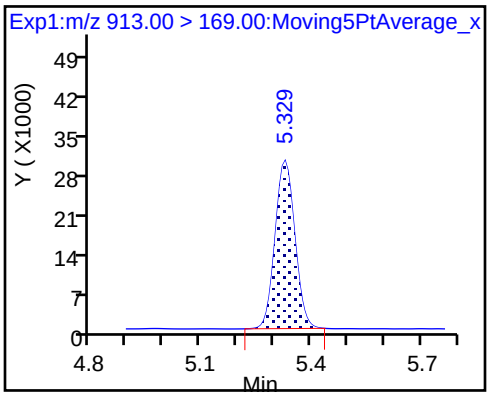
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-214045/2 Calibration Date: 03/20/2018 19:22

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9407		0.0507	0.0500	1.4	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.239		0.0530	0.0500	6.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	77.96		0.0445	0.0442	0.8	50.0
4:2 FTS	AveID	16.07	16.15		0.130	0.0467	0.4	
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.101		0.0545	0.0500	9.1	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.169		0.0564	0.0500	12.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.232		0.0502	0.0455	10.4	50.0
6:2FTS	AveID	1.665	2.330		0.0663	0.0474	40.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.180		0.0529	0.0500	5.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.267		0.0459	0.0476	-3.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.069		0.0458	0.0464	-1.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.997		0.0489	0.0500	-2.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9626		0.0495	0.0500	-0.9	50.0
8:2FTS	AveID	1.257	1.071		0.0500	0.0479	-14.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9845		0.0519	0.0500	3.8	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.011		0.0780	0.0500	-2.9	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.7292		0.0550	0.0482	14.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9604		0.0490	0.0500	-1.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.9598		0.0573	0.0500	14.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.046		0.0511	0.0500	2.2	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.009		0.0490	0.0500	-1.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2770		0.0502	0.0500	0.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.285		0.0460	0.0500	-8.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9185		0.0471	0.0500	-5.8	50.0
13C4 PFBA	Ave	1.277	1.141		2.24	2.50	-10.6	50.0
13C5 PFPeA	Ave	0.9006	0.8183		2.27	2.50	-9.1	50.0
13C3-PFBS	Ave	0.0222	0.0210		2.19	2.33	-5.7	50.0
M2-4:2FTS	Ave	0.1590	0.1346		1.98	2.34	-15.3	50.0
13C2 PFHxA	Ave	1.004	0.9444		2.35	2.50	-6.0	50.0
13C4-PFHpA	Ave	0.9767	0.9620		2.46	2.50	-1.5	50.0
18O2 PFHxS	Ave	1.303	1.257		2.28	2.37	-3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-214045/2 Calibration Date: 03/20/2018 19:22

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2266		2.15	2.38	-9.4	50.0
13C4 PFOA	Ave	0.9431	0.9028		2.39	2.50	-4.3	50.0
13C4 PFOS	Ave	0.9113	0.8783		2.30	2.39	-3.6	50.0
13C5 PFNA	Ave	0.7545	0.7624		2.53	2.50	1.0	50.0
13C8 FOSA	Ave	1.319	1.303		2.47	2.50	-1.3	50.0
M2-8:2FTS	Ave	0.2350	0.2347		2.39	2.40	-0.1	50.0
13C2 PFDA	Ave	0.6303	0.6343		2.52	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.2081	0.1952		2.35	2.50	-6.2	50.0
d5-NEtFOSAA	Ave	0.1990	0.2048		2.57	2.50	2.9	50.0
13C2 PFUnA	Ave	0.4935	0.4478		2.27	2.50	-9.3	50.0
13C2 PFDoA	Ave	0.4680	0.4444		2.37	2.50	-5.0	50.0
13C2-PFTeDA	Ave	0.4272	0.4165		2.44	2.50	-2.5	50.0
13C2-PFHxDA	Ave	0.6248	0.5762		2.31	2.50	-7.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_002.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 20-Mar-2018 19:22:44 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 21-Mar-2018 09:57:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: westendorfc Date: 21-Mar-2018 09:56:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.435	0.005	1.000	96158	0.0507		101	42.3	
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.536	5111085	2.23		89.4	97289	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.632	3665050	2.27		90.9	140831	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.701	0.0	1.000	90785	0.0530		106	26.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.727	0.008	0.646	87298	2.19		94.3	515	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.736	-0.001	1.000	129388	0.0445		101	53.9	
298.90 > 99.00	1.735	1.736	-0.001	1.000	54436		2.38(1.25-3.74)		49.8	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.946	0.010	0.727	563116	1.98		84.7	8484	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.946	0.010	1.000	28310	0.0469		100	1311	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	0.0	0.739	4229476	2.35		94.0	108650	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.987	-0.001	1.000	93112	0.0545		109	240	
313.00 > 119.00	1.997	1.987	0.010	1.005	8647		10.77(5.03-15.10)		213	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.866	4308607	2.46		98.5	103202	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.329	0.0	1.000	100753	0.0564		113	164	
363.00 > 169.00	2.328	2.329	0.0	1.000	33437		3.01(1.13-3.40)		521	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.329	0.013	1.000	126151	0.0502		110	235	
399.00 > 99.00	2.341	2.329	0.013	1.000	37197		3.39(1.50-4.49)		102	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	5324348	2.28		96.4	75169	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.657	0.008	0.991	964129	2.15		90.6	18584	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.657	0.008	1.000	44836	0.0663		140	2657	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.681	0.007	1.000	4043408	2.39		95.7	85289	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.689	-0.001	1.000	95462	0.0529		106	23.4	
413.00 > 169.00	2.688	2.689	-0.001	1.000	50646		1.88(0.84-2.52)		169	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.689	-0.001		4478615	2.50			74154	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.689	0.007	1.000	94860	0.0459		96.4	3650	
449.00 > 99.00	2.696	2.689	0.007	1.000	27096		3.50(1.94-5.82)		700	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.137	3760585	2.30		96.4	93450	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	3414346	2.53		101	84461	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.058	0.007	1.000	68049	0.0489		97.7	122	
463.00 > 169.00	3.065	3.058	0.007	1.000	16053		4.24(1.90-5.69)		516	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.058	0.0	1.000	78027	0.0458		98.7	216	
499.00 > 99.00	3.058	3.058	0.0	1.000	20027		3.90(2.31-6.93)		124	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.397	0.001	1.264	5833581	2.47		98.7	47203	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.399	-0.001	1.000	112307	0.0495		99.1	2563	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.415	0.001	1.271	1006865	2.39		99.9	22621	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.417	-0.001	1.000	21562	0.0408		85.2	957	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.424	0.001	1.274	2840666	2.52		101	49324	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.426	-0.001	1.000	55934	0.0519		104	265	
513.00 > 169.00	3.425	3.426	-0.001	1.000	12229		4.57(2.36-7.09)		715	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	874324	2.34		93.8	37880	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.580	0.010	1.003	17678	0.0485		97.1	248	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.738	-0.001	1.000	55306	0.0550		114	2316	
599.00 > 99.00	3.737	3.738	-0.001	1.000	16989		3.26(1.39-4.16)		363	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	917394	2.57		103	2219	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2005465	2.27		90.7	41944	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.759	0.0	1.003	17621	0.0490		98.1	452	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.759	0.0	1.000	38498	0.0573		115	106	
563.00 > 169.00	3.758	3.759	0.0	1.000	9189		4.19(2.12-6.36)		758	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.509	1990279	2.37		95.0	10260	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.047	0.009	1.000	41634	0.0511		102	7.0	
613.00 > 169.00	4.056	4.047	0.009	1.000	9329		4.46(2.13-6.40)		396	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.307	0.011	1.000	40155	0.0490		98.1	8.0	
663.00 > 169.00	4.307	4.307	0.0	0.997	13923		2.88(1.25-3.76)		248	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	1865385	2.44		97.5	17869	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	10335	0.0502		100	153	
713.00 > 219.00	4.554	4.554	0.0	1.000	6873		1.50(0.71-2.13)		93.4	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.964	0.008	1.000	66292	0.0460		92.0	5.9	
813.00 > 169.00	4.972	4.964	0.008	1.000	13844		4.79(2.86-8.58)		151	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	4.964	0.008	1.850	2580459	2.31		92.2	9297	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.322	0.008	1.000	47404	0.0471		94.2	9.6	
913.00 > 169.00	5.322	5.322	0.0	0.999	5854		8.10(3.83-11.48)		80.8	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 21-Mar-2018 09:57:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_002.d

Injection Date: 20-Mar-2018 19:22:44 Instrument ID: A8_N

Lims ID: CCVL

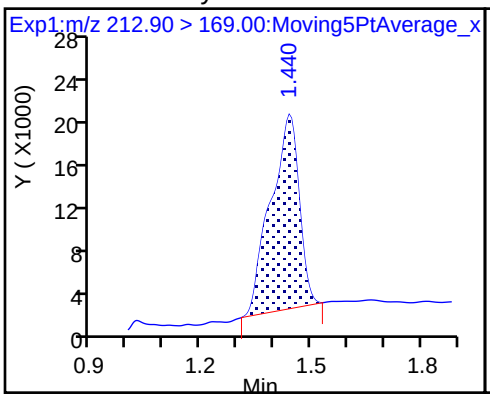
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

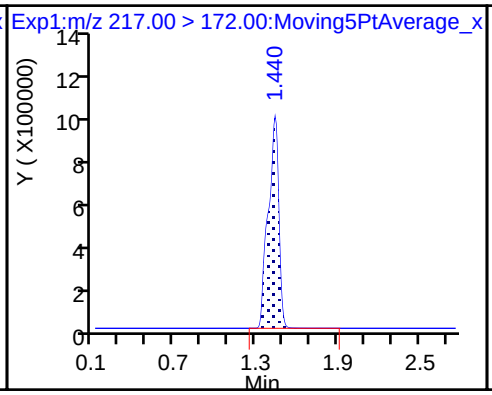
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

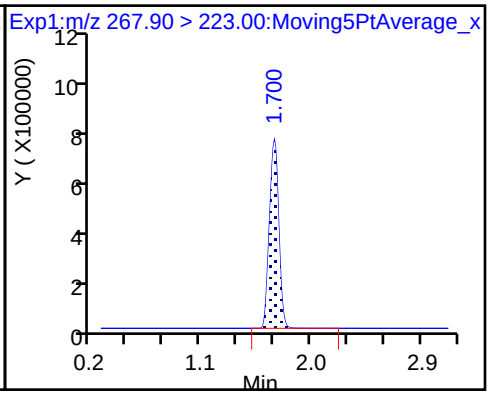
2 Perfluorobutyric acid



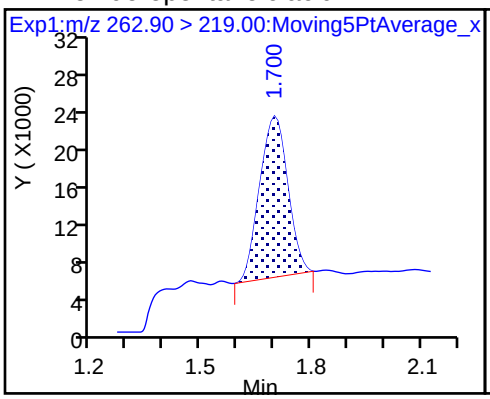
D 1 13C4 PFBA



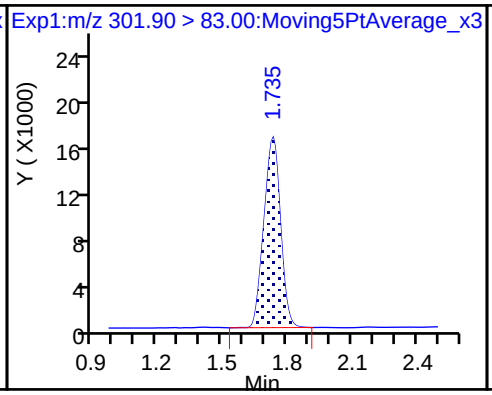
D 3 13C5-PFPeA



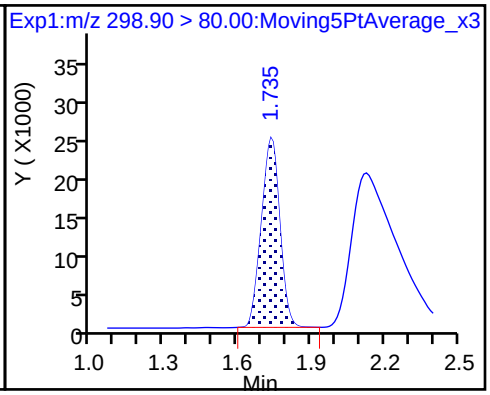
4 Perfluoropentanoic acid



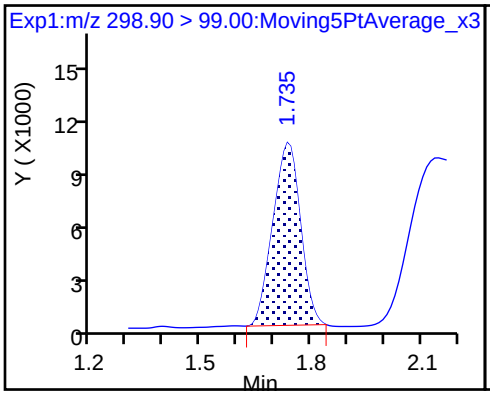
D 47 13C3-PFBS



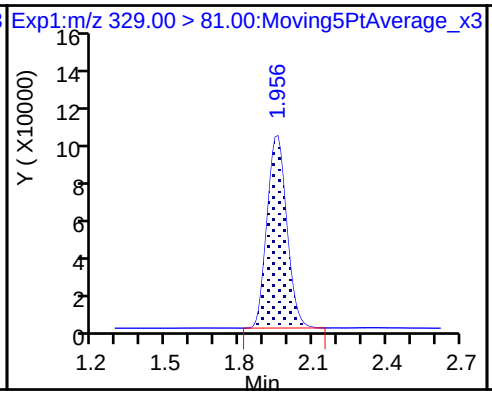
5 Perfluorobutanesulfonic acid



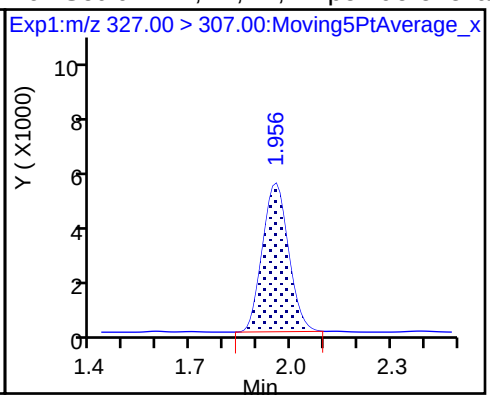
5 Perfluorobutanesulfonic acid



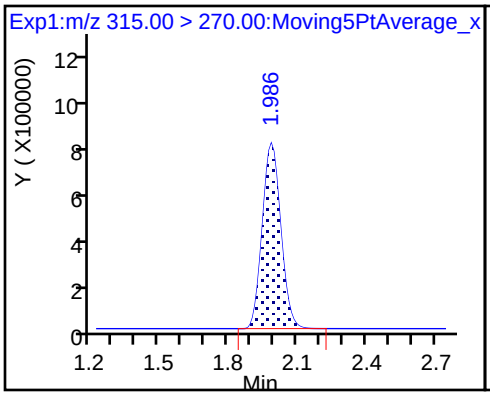
D 60 M2-4:2FTS



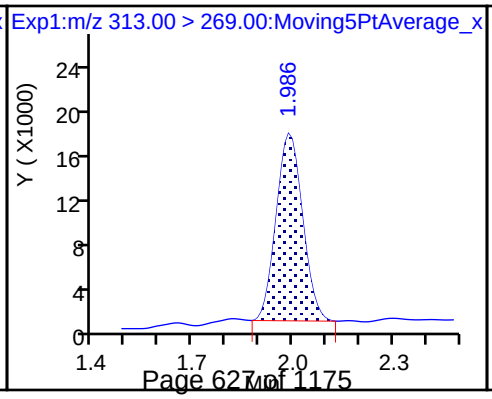
61 Sodium 1H,1H,2H,2H-perfluorohexane



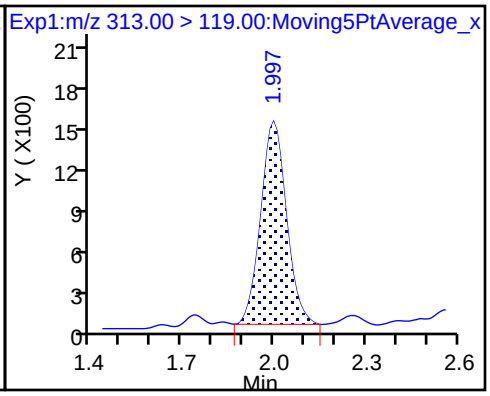
D 7 13C2 PFHxA



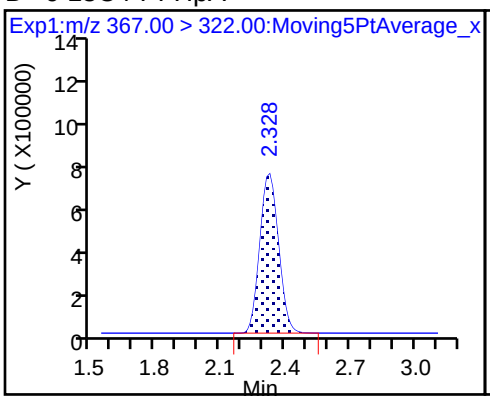
6 Perfluorohexanoic acid



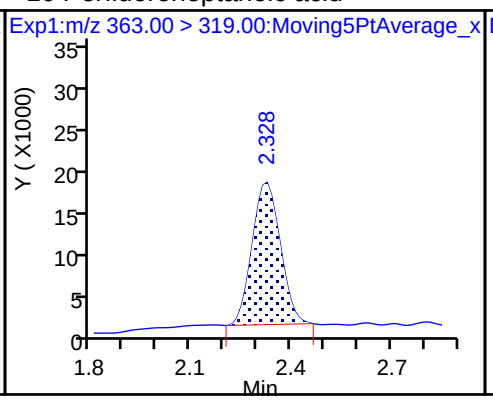
6 Perfluorohexanoic acid



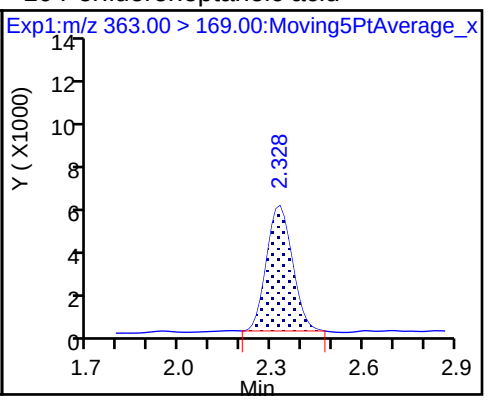
D 9 13C4-PFHpA



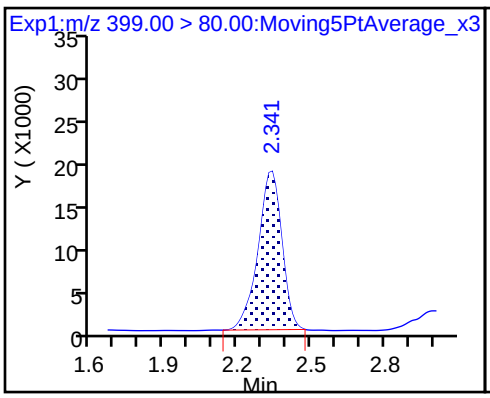
10 Perfluoroheptanoic acid



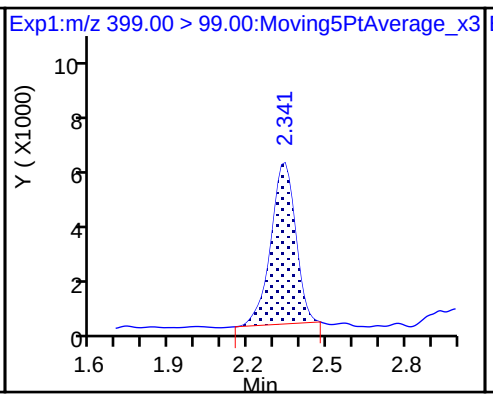
10 Perfluoroheptanoic acid



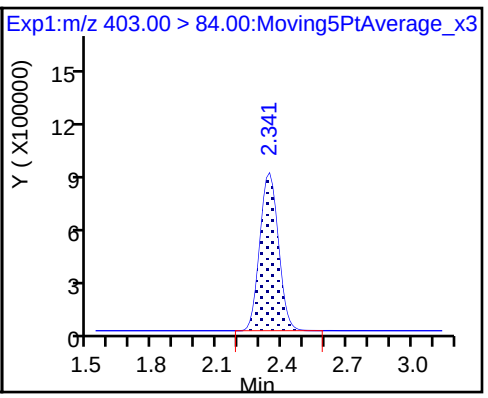
8 Perfluorohexanesulfonic acid



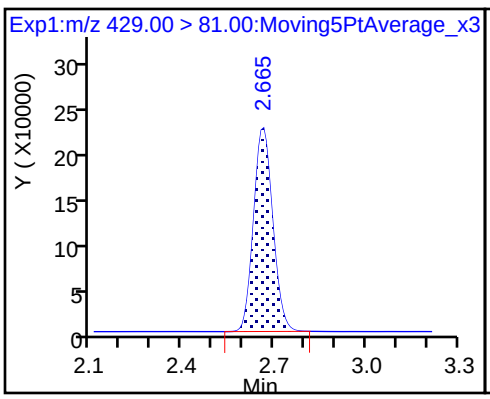
8 Perfluorohexanesulfonic acid



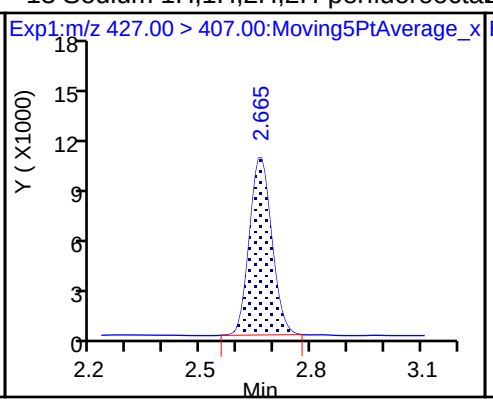
D 11 18O2 PFHxS



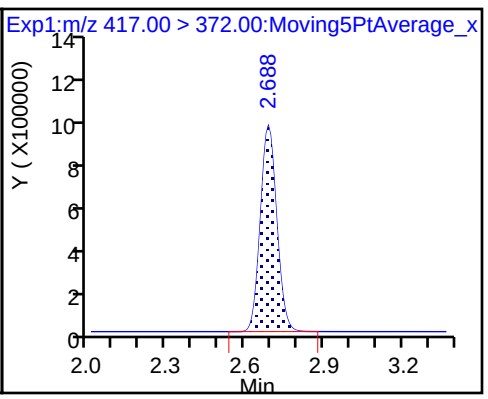
D 12 M2-6:2FTS



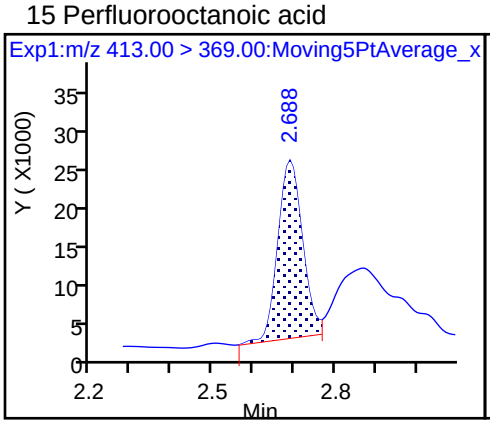
13 Sodium 1H,1H,2H,2H-perfluorooctane



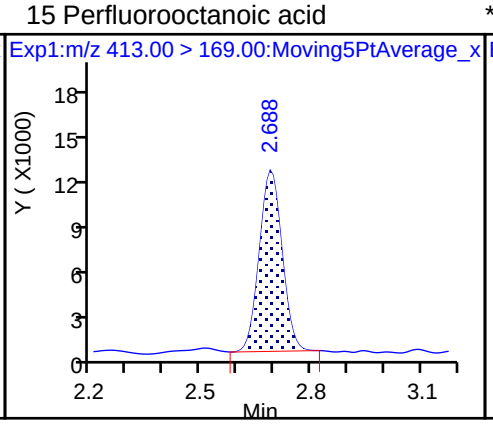
D 14 13C4 PFOA



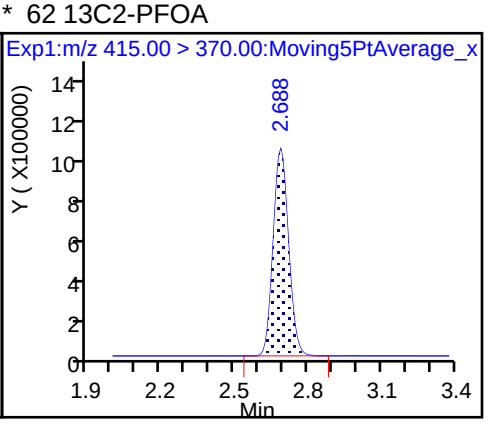
15 Perfluorooctanoic acid



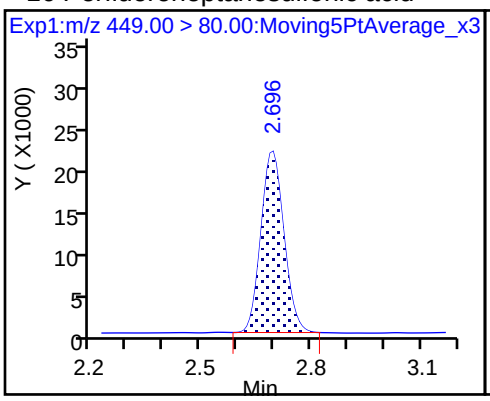
15 Perfluorooctanoic acid



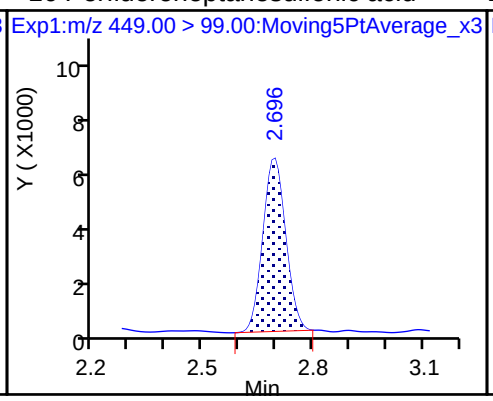
* 62 13C2-PFOA



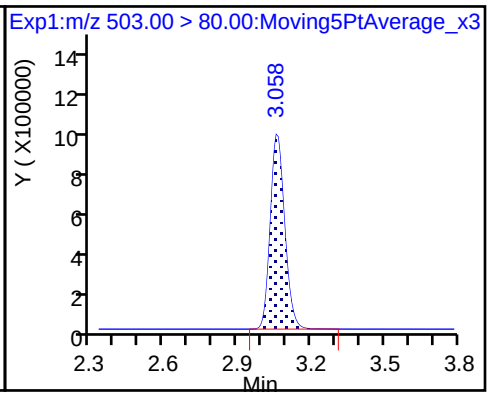
16 Perfluoroheptanesulfonic acid



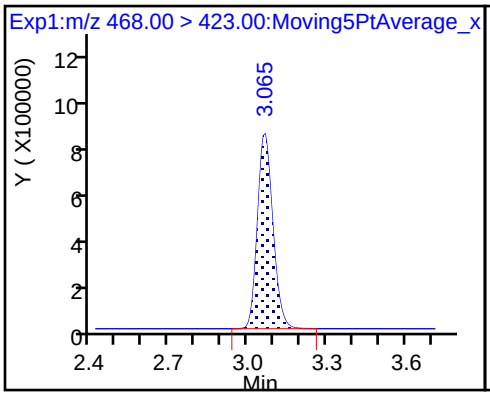
16 Perfluoroheptanesulfonic acid



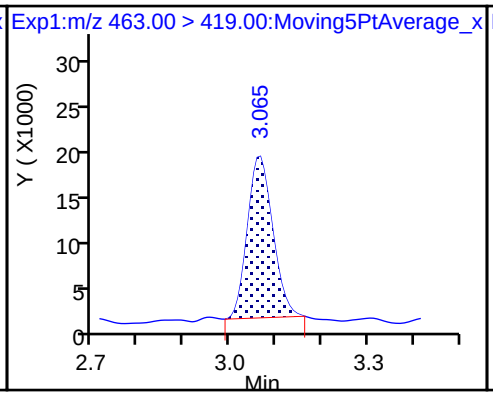
D 18 13C4 PFOS



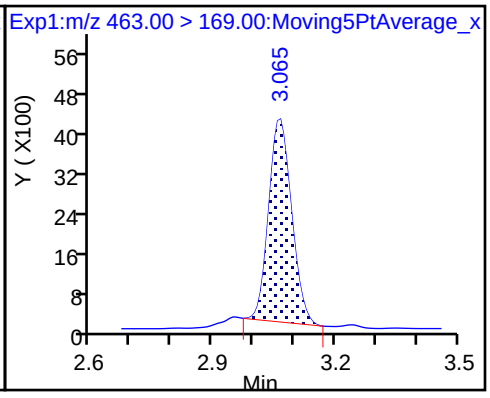
D 19 13C5 PFNA



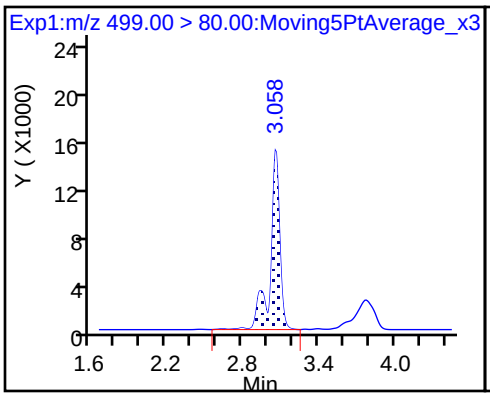
20 Perfluorononanoic acid



20 Perfluorononanoic acid



17 Perfluorooctane sulfonic acid



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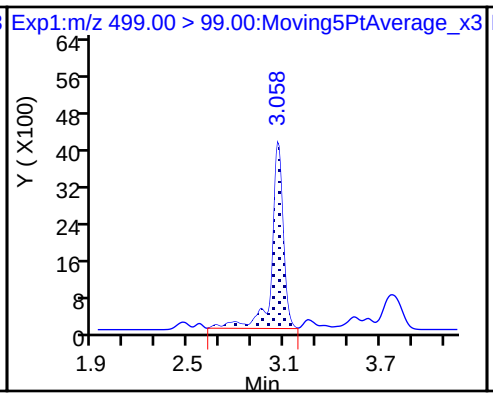
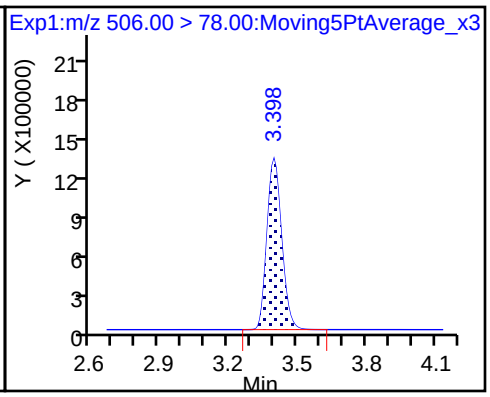
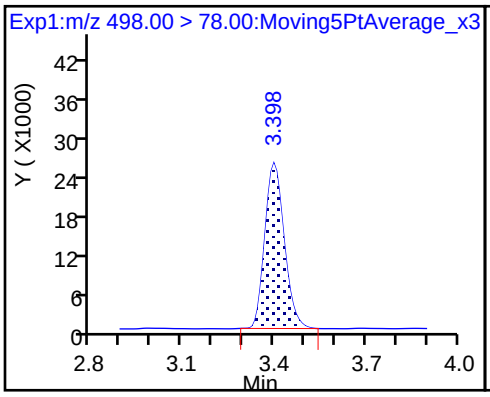


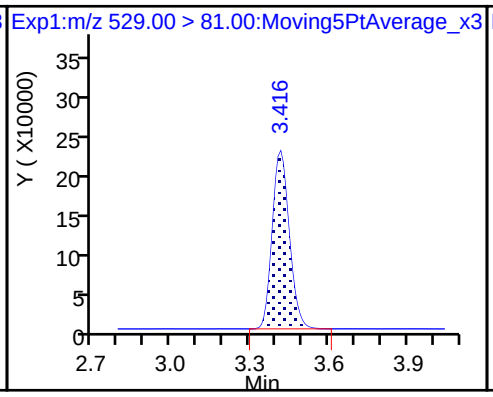
D 21 13C8 FOSA



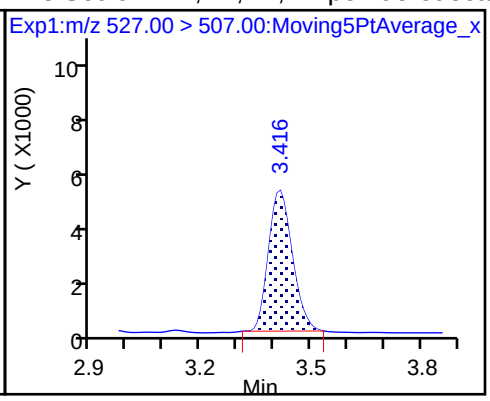
22 Perfluorooctane Sulfonamide



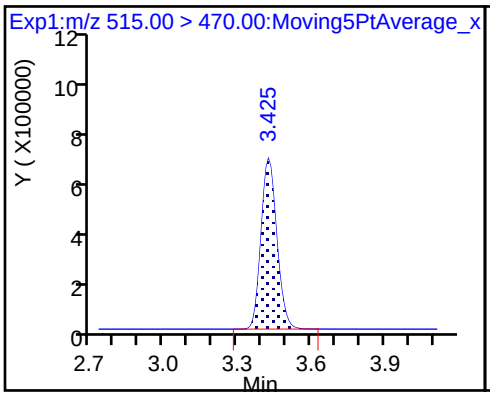
D 26 M2-8:2FTS



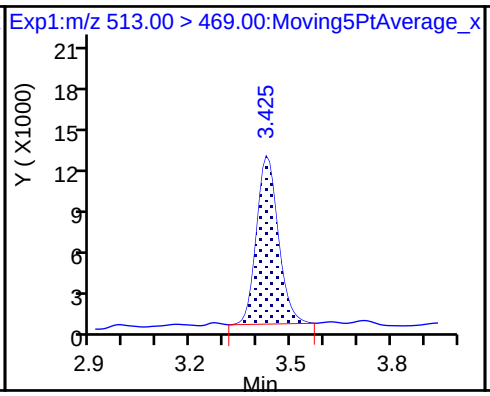
25 Sodium 1H,1H,2H,2H-perfluorodecane



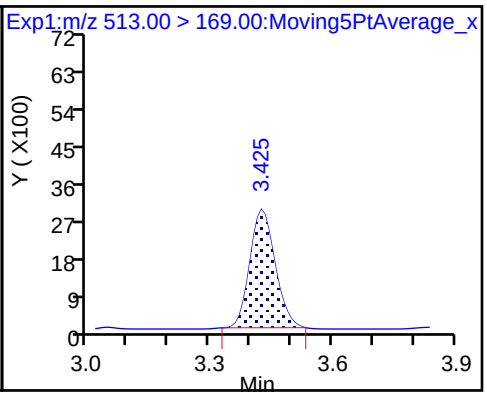
D 23 13C2 PFDA



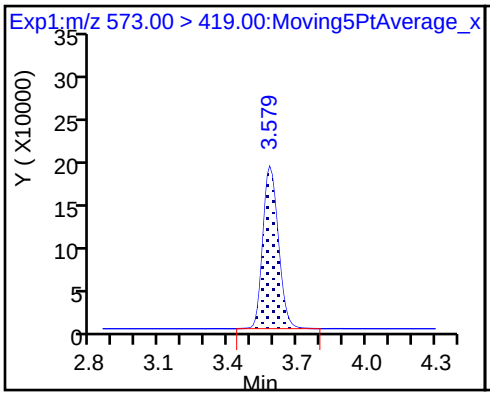
24 Perfluorodecanoic acid



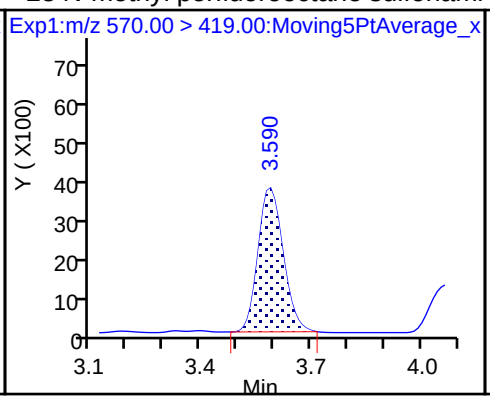
24 Perfluorodecanoic acid



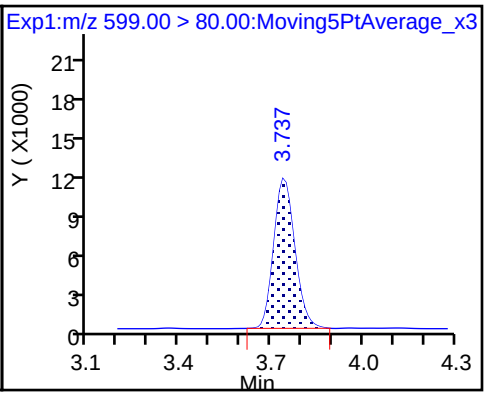
D 27 d3-NMeFOSAA



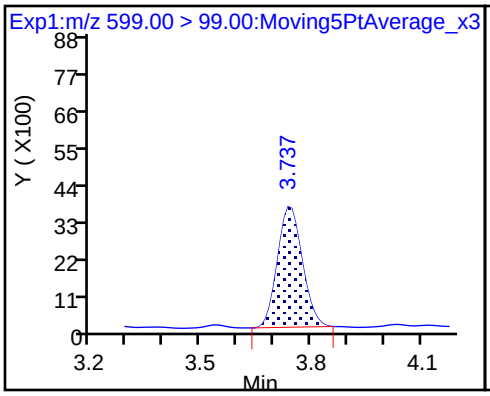
28 N-methyl perfluorooctane sulfonami



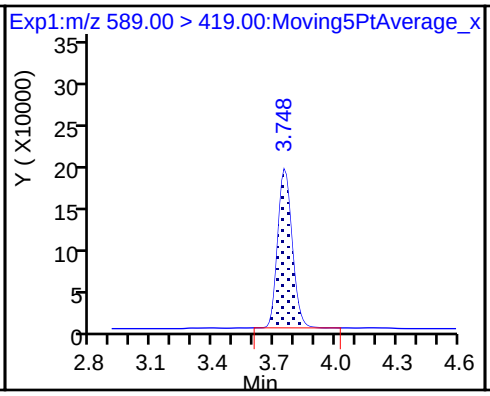
29 Perfluorodecane Sulfonic acid



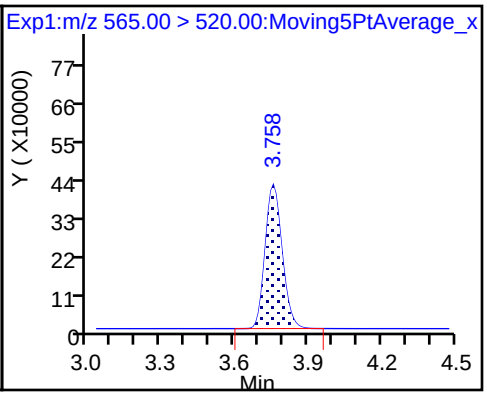
29 Perfluorodecane Sulfonic acid



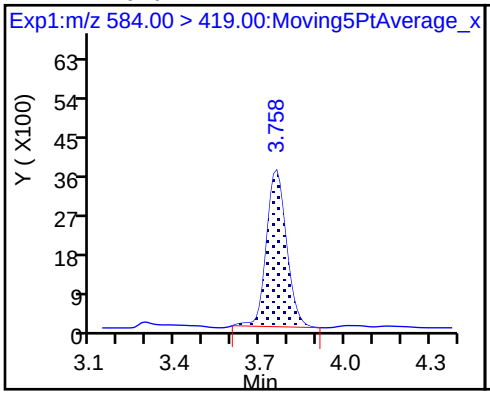
D 32 d5-NEtFOSAA



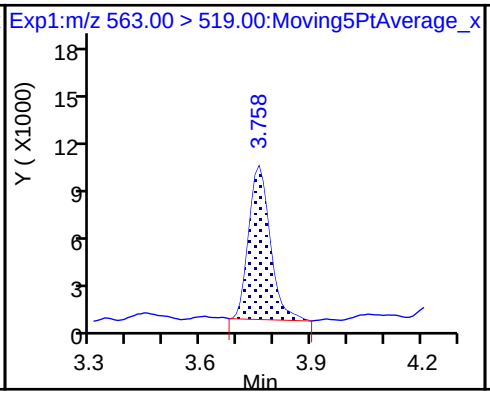
D 30 13C2 PFUnA



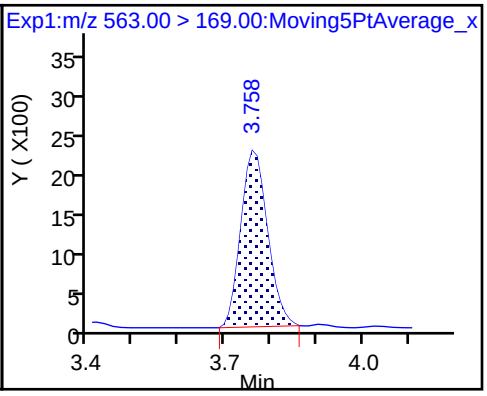
33 N-ethyl perfluorooctane sulfonamid



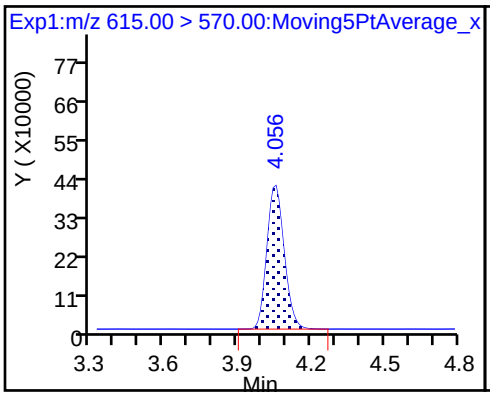
31 Perfluoroundecanoic acid



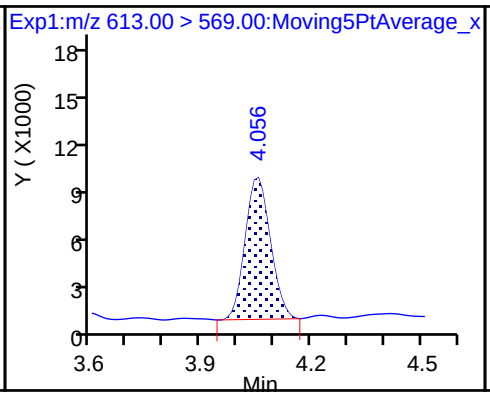
31 Perfluoroundecanoic acid



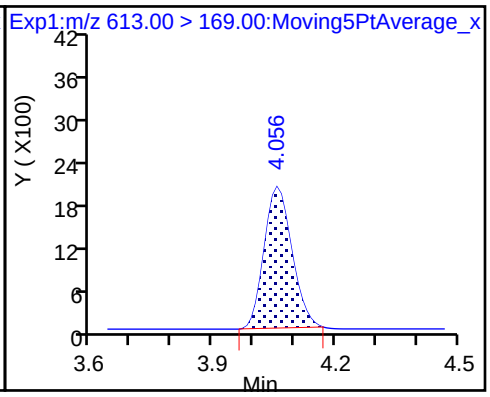
D 36 13C2 PFDoA



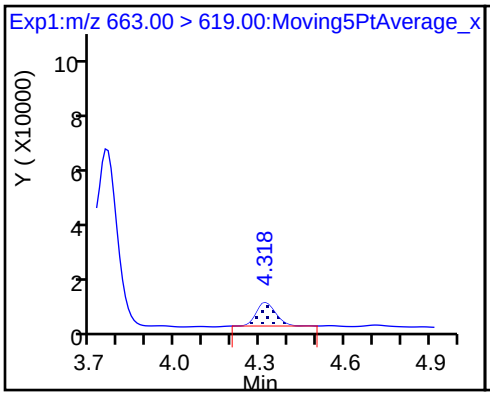
37 Perfluorododecanoic acid



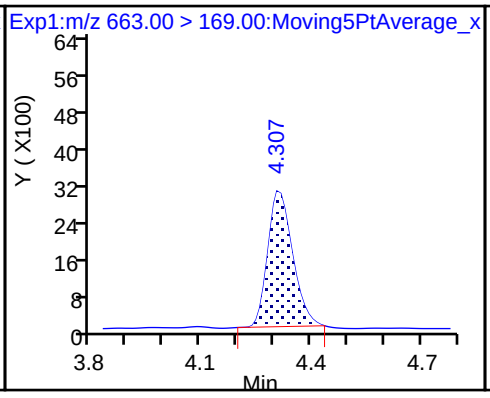
37 Perfluorododecanoic acid



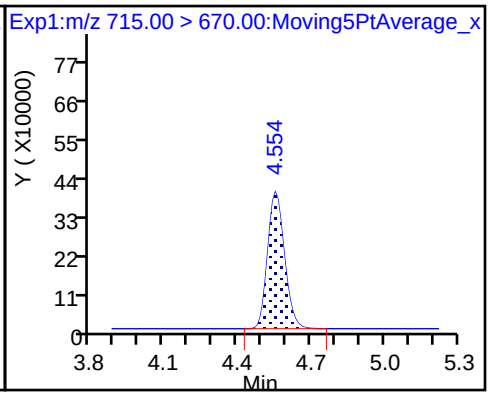
41 Perfluorotridecanoic acid



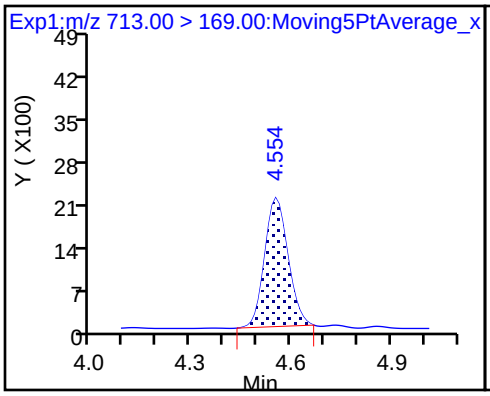
41 Perfluorotridecanoic acid



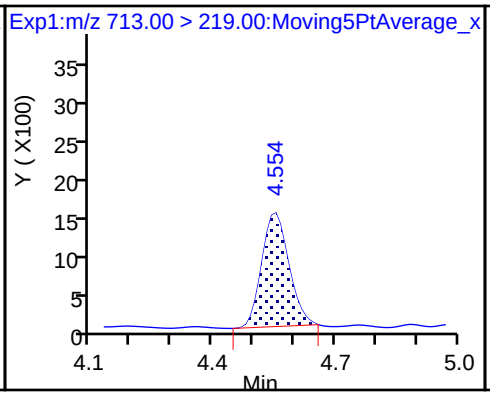
D 43 13C2-PFTeDA



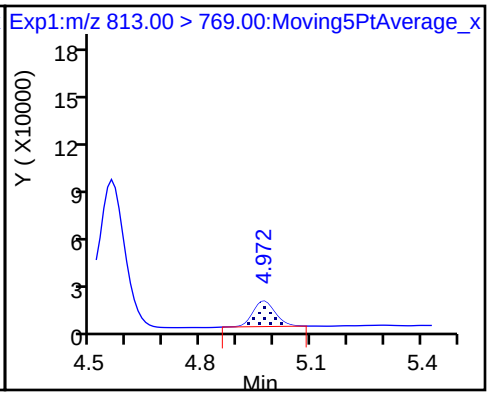
42 Perfluorotetradecanoic acid



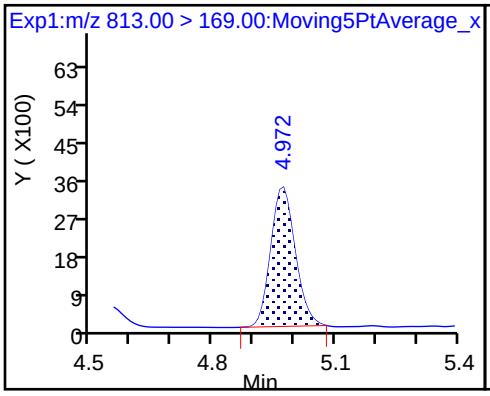
42 Perfluorotetradecanoic acid



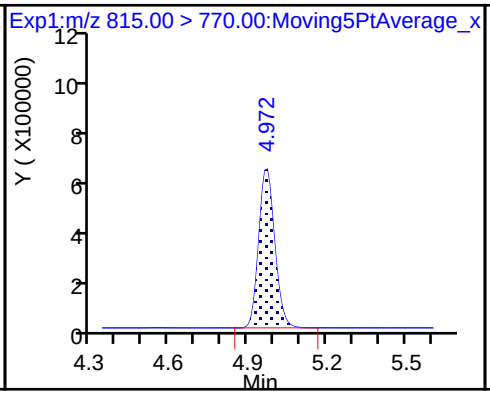
45 Perfluorohexadecanoic acid



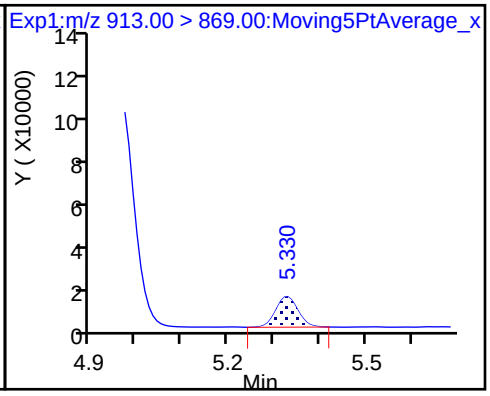
45 Perfluorohexadecanoic acid



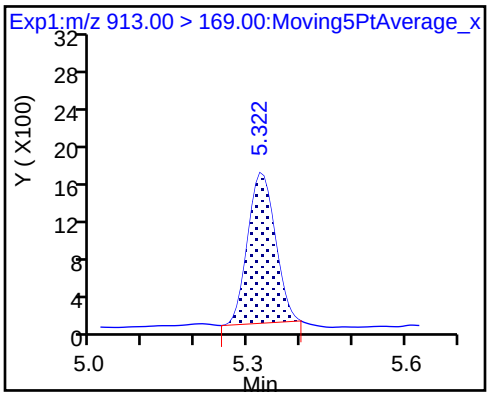
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214045/3 Calibration Date: 03/20/2018 19:30

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9470		2.55	2.50	2.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.162		2.49	2.50	-0.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	78.72		2.25	2.21	1.7	50.0
4:2 FTS	AveID	16.07	14.32		2.08	2.34	-10.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9848		2.44	2.50	-2.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.090		2.63	2.50	5.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.061		2.16	2.28	-4.9	40.0
6:2FTS	AveID	1.665	1.701		2.42	2.37	2.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.154		2.58	2.50	3.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.343		2.43	2.38	2.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.031		2.53	2.50	1.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.112		2.38	2.32	2.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9909		2.55	2.50	2.0	40.0
8:2FTS	AveID	1.257	1.305		2.49	2.40	3.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9781		2.58	2.50	3.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.082		2.60	2.50	3.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6490		2.45	2.41	1.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	1.019		2.60	2.50	4.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7736		2.31	2.50	-7.7	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.078		2.64	2.50	5.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.102		2.68	2.50	7.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2526		2.29	2.50	-8.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8739		2.36	2.50	-5.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.037		2.66	2.50	6.4	50.0
13C4 PFBA	Ave	1.277	1.162		2.28	2.50	-9.0	50.0
13C5 PFPeA	Ave	0.9006	0.8347		2.32	2.50	-7.3	50.0
13C3-PFBS	Ave	0.0222	0.0219		2.29	2.33	-1.4	50.0
M2-4:2FTS	Ave	0.1590	0.1394		2.05	2.34	-12.3	50.0
13C2 PFHxA	Ave	1.004	0.9683		2.41	2.50	-3.6	50.0
13C4-PFHpA	Ave	0.9767	0.9349		2.39	2.50	-4.3	50.0
18O2 PFHxS	Ave	1.303	1.281		2.32	2.37	-1.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214045/3 Calibration Date: 03/20/2018 19:30

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2229		2.12	2.38	-10.9	40.0
13C4 PFOA	Ave	0.9431	0.9110		2.42	2.50	-3.4	50.0
13C4 PFOS	Ave	0.9113	0.8948		2.35	2.39	-1.8	50.0
13C5 PFNA	Ave	0.7545	0.7692		2.55	2.50	2.0	50.0
13C8 FOSA	Ave	1.319	1.357		2.57	2.50	2.9	50.0
M2-8:2FTS	Ave	0.2350	0.2221		2.26	2.40	-5.5	40.0
13C2 PFDA	Ave	0.6303	0.6340		2.51	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.2081	0.1826		2.19	2.50	-12.3	50.0
13C2 PFUnA	Ave	0.4935	0.4565		2.31	2.50	-7.5	50.0
d5-NEtFOSAA	Ave	0.1990	0.1846		2.32	2.50	-7.3	50.0
13C2 PFDoA	Ave	0.4680	0.4536		2.42	2.50	-3.1	50.0
13C2-PFTeDA	Ave	0.4272	0.4162		2.44	2.50	-2.6	50.0
13C2-PFHxDA	Ave	0.6248	0.6013		2.41	2.50	-3.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_003.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 20-Mar-2018 19:30:32 ALS Bottle#: 14 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 21-Mar-2018 09:57:16 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: westendorfc Date: 21-Mar-2018 09:57:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.004	4663240	2.55		102	2441	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.535	4924368	2.27		91.0	77553	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.631	3538910	2.32		92.7	96706	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.005	4111013	2.49		99.4	1382	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.727	0.0	0.644	86407	2.29		98.6	440	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.005	6465917	2.25		102	2616	
298.90 > 99.00	1.736	1.736	0.0	1.005	2690888		2.40(1.25-3.74)		2419	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.946	-0.001	0.726	552099	2.05		87.7	7268	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	1242547	2.08		89.1	57242	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	0.0	0.741	4105399	2.41		96.4	91594	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.986	0.0	1.000	4042886	2.44		97.6	15204	
313.00 > 119.00	1.986	1.986	0.0	1.000	368671		10.97(5.03-15.10)		8171	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3963791	2.39		95.7	60228	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	4320987	2.63		105	8378	
363.00 > 169.00	2.315	2.315	0.0	1.000	1601882		2.70(1.13-3.40)		24290	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	5240231	2.16		95.1	7880	
399.00 > 99.00	2.328	2.328	0.0	1.000	1731302		3.03(1.50-4.49)		4493	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	5135972	2.32		98.3	61808	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	897727	2.12		89.1	22823	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.657	0.0	1.000	1523792	2.42		102	43784	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3862348	2.41		96.6	68548	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	4455369	2.58		103	1662	
413.00 > 169.00	2.681	2.681	0.0	1.000	2297716		1.94(0.84-2.52)		8270	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4239672	2.50			88723	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	4849828	2.43		102	59497	
449.00 > 99.00	2.688	2.688	0.0	1.000	1258376		3.85(1.94-5.82)		29246	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.141	3626681	2.35		98.2	28707	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	3261225	2.55		102	47435	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.058	0.0	1.000	3361978	2.53		101	7137	
463.00 > 169.00	3.058	3.058	0.0	1.000	853770		3.94(1.90-5.69)		26621	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.058	0.0	1.000	3915257	2.38		103	9722	
499.00 > 99.00	3.058	3.058	0.0	1.000	860418		4.55(2.31-6.93)		6682	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.397	-0.008	1.264	5754831	2.57		103	48442	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	5702239	2.55		102	75148	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.415	-0.008	1.271	902000	2.26		94.5	25070	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.407	0.0	1.000	1177363	2.49		104	26161	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.424	-0.008	1.275	2687803	2.51		101	37531	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.425	0.0	1.003	2629029	2.58		103	13891	
513.00 > 169.00	3.425	3.425	0.0	1.003	478768		5.49(2.36-7.09)		2116	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.578	-0.008	1.332	774150	2.19		87.7	27626	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.579	0.0	1.002	837808	2.60		104	8262	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.738	0.0	1.000	2373350	2.45		102	45316	
599.00 > 99.00	3.738	3.738	0.0	1.000	798949		2.97(1.39-4.16)		13870	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	782421	2.32		92.7	1515	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1935403	2.31		92.5	49884	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.748	0.0	1.000	797375	2.60		104	18104	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.748	0.0	1.000	1497261	2.31		92.3	4889	
563.00 > 169.00	3.758	3.748	0.010	1.003	411312		3.64(2.12-6.36)		32780	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.047	-0.001	1.509	1922888	2.42		96.9	12477	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.046	0.0	1.000	2073465	2.64		105	396	
613.00 > 169.00	4.046	4.046	0.0	1.000	537318		3.86(2.13-6.40)		11119	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	2118450	2.68		107	461	
663.00 > 169.00	4.307	4.307	0.0	1.000	639978		3.31(1.25-3.76)		7456	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.699	1764690	2.44		97.4	17510	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	445673	2.29		91.6	6171	
713.00 > 219.00	4.543	4.554	-0.011	0.998	341830		1.30(0.71-2.13)		3431	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.964	0.0	1.000	2227757	2.36		94.2	195	
813.00 > 169.00	4.964	4.964	0.0	1.000	411046		5.42(2.86-8.58)		3652	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.852	2549294	2.41		96.2	10532	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.322	0.0	1.000	2643999	2.66		106	486	
913.00 > 169.00	5.322	5.322	0.0	1.000	337586		7.83(3.83-11.48)		3439	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 21-Mar-2018 09:57:18 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_003.d

Injection Date: 20-Mar-2018 19:30:32 Instrument ID: A8_N

Lims ID: CCV L5

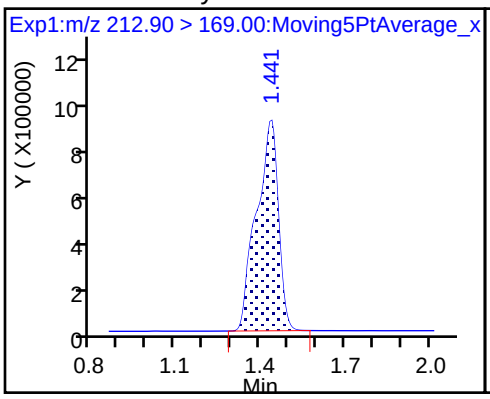
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 3

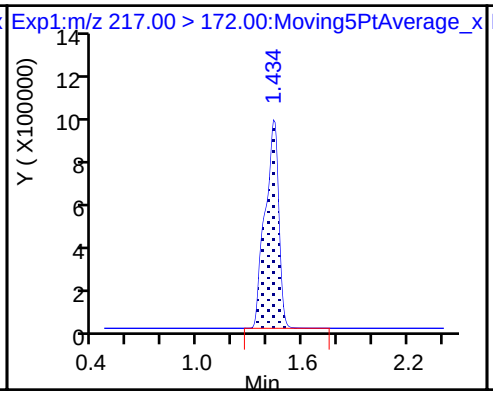
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

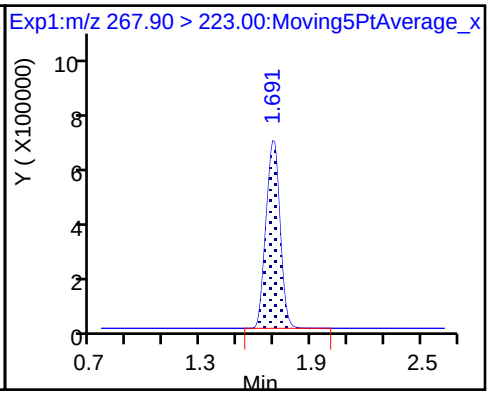
2 Perfluorobutyric acid



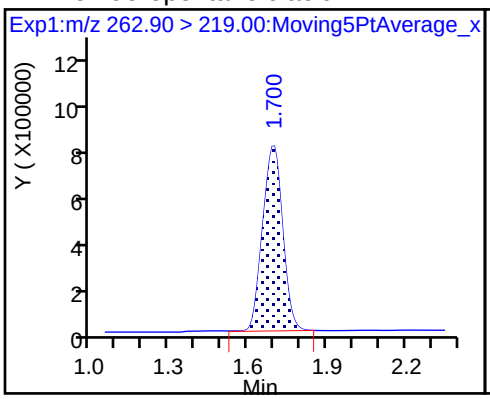
D 1 13C4 PFBA



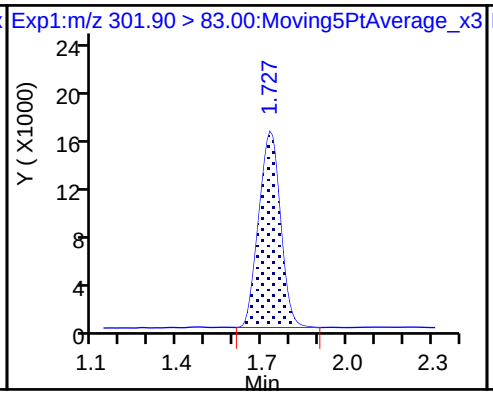
D 3 13C5-PFPeA



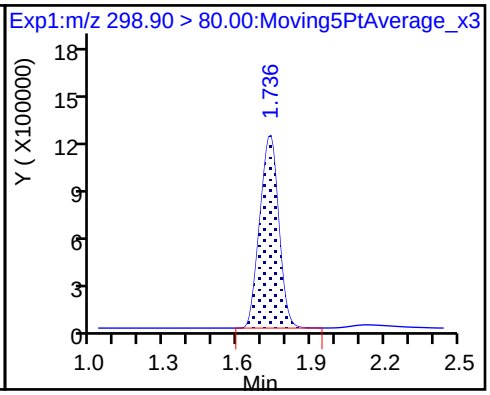
4 Perfluoropentanoic acid



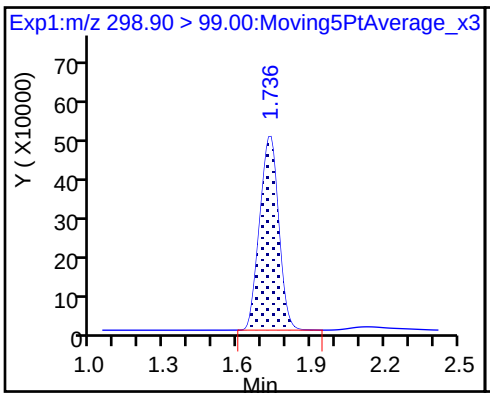
D 47 13C3-PFBS



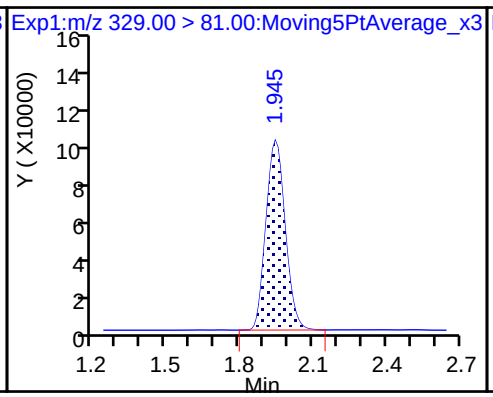
5 Perfluorobutanesulfonic acid



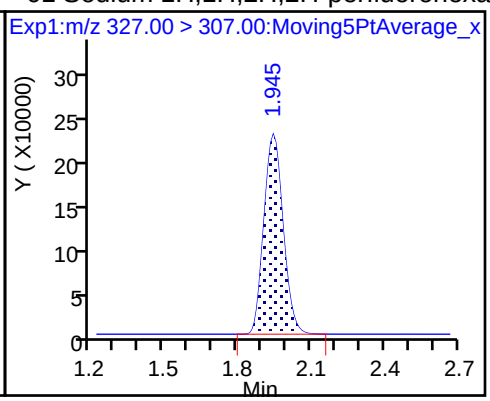
5 Perfluorobutanesulfonic acid



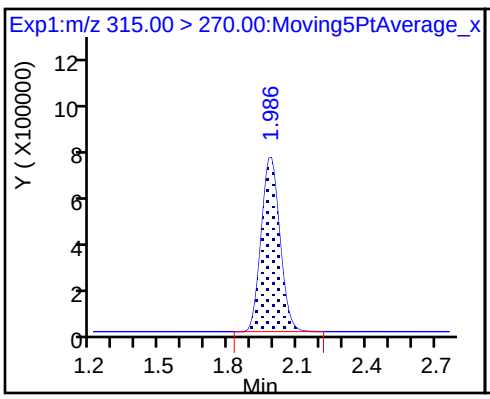
D 60 M2-4:2FTS



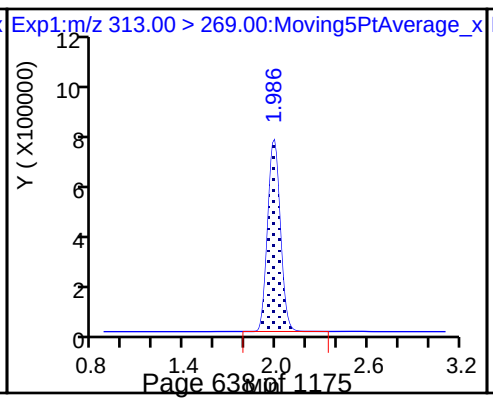
61 Sodium 1H,1H,2H,2H-perfluorohexane



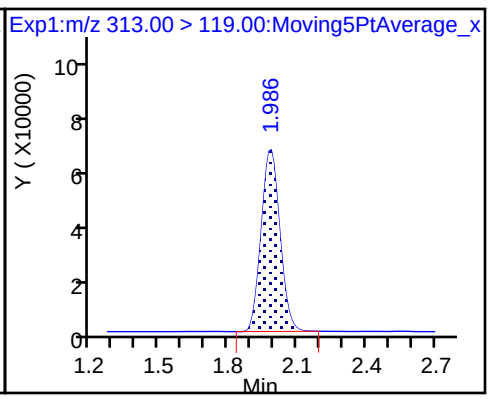
D 7 13C2 PFHxA



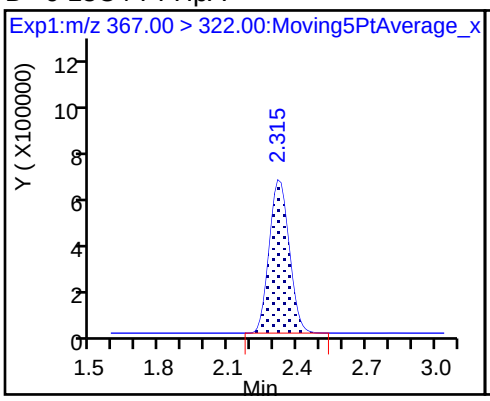
6 Perfluorohexanoic acid



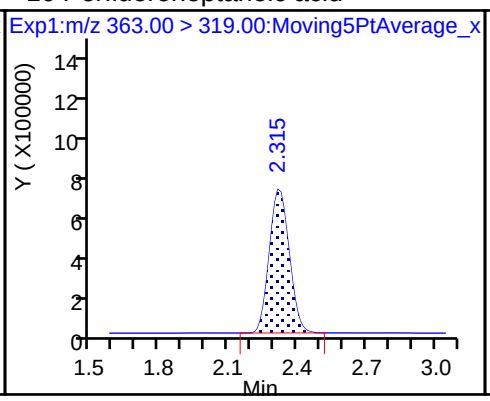
6 Perfluorohexanoic acid



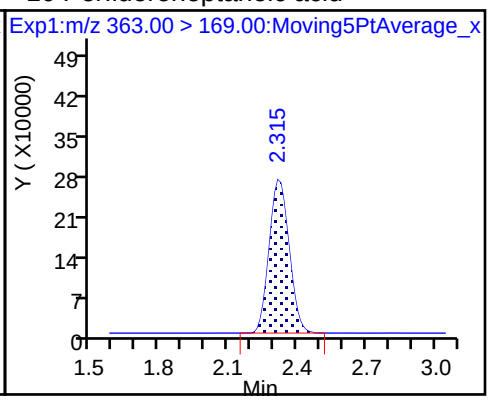
D 9 13C4-PFHpA



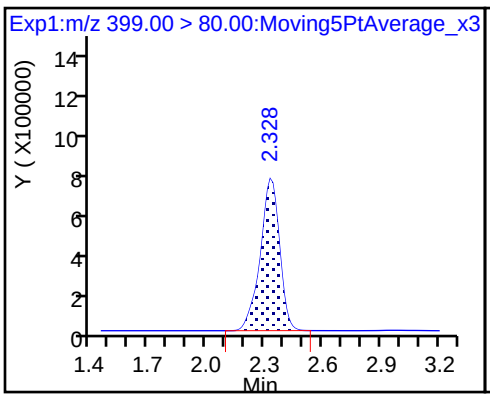
10 Perfluoroheptanoic acid



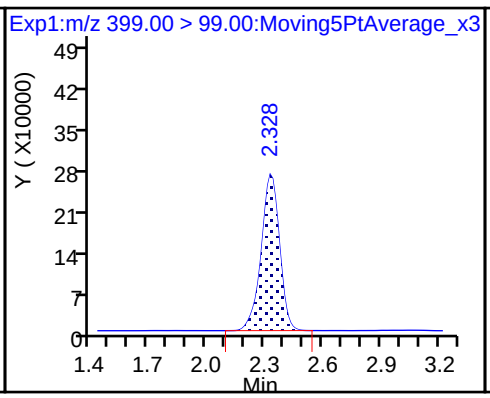
10 Perfluoroheptanoic acid



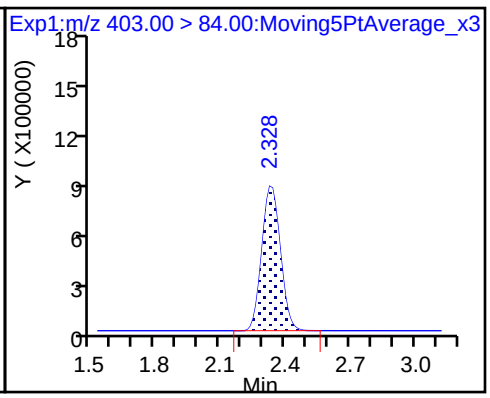
8 Perfluorohexanesulfonic acid



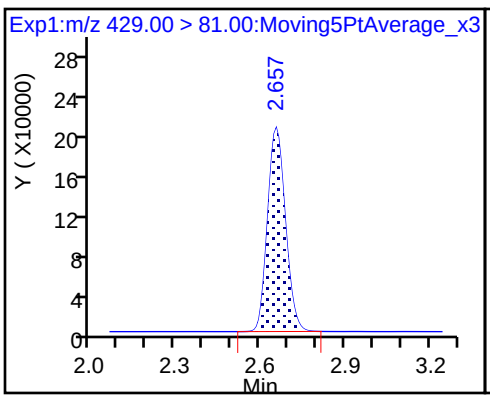
8 Perfluorohexanesulfonic acid



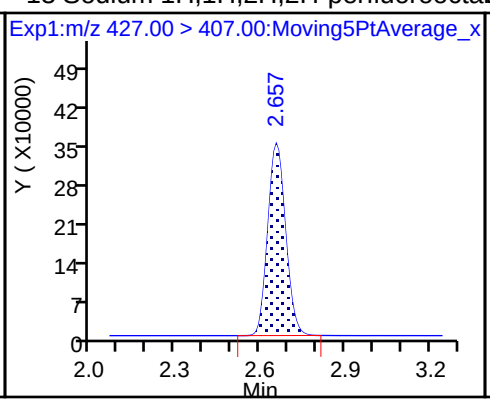
D 11 18O2 PFHxS



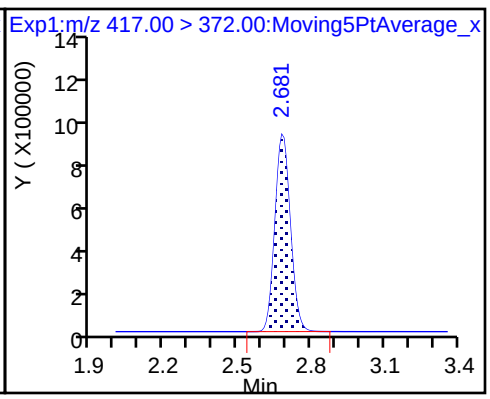
D 12 M2-6:2FTS



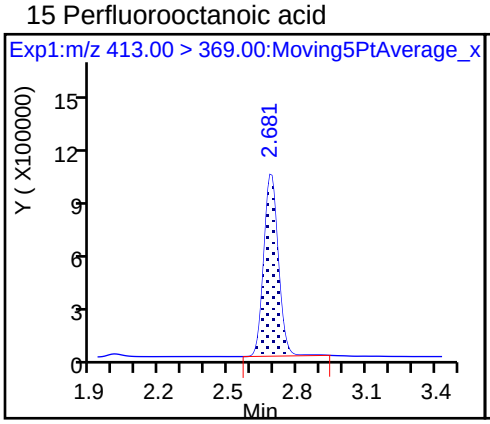
13 Sodium 1H,1H,2H,2H-perfluorooctane



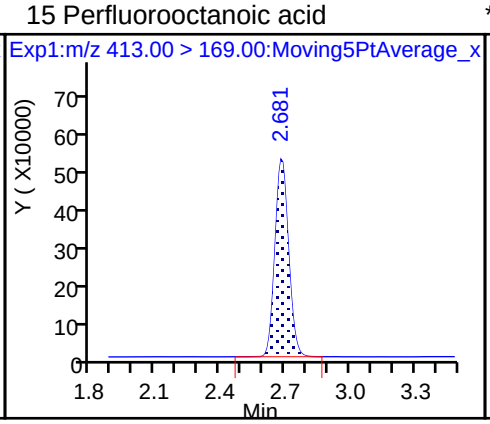
D 14 13C4 PFOA



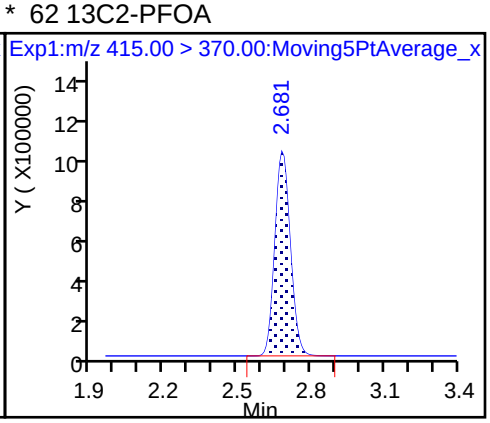
15 Perfluorooctanoic acid



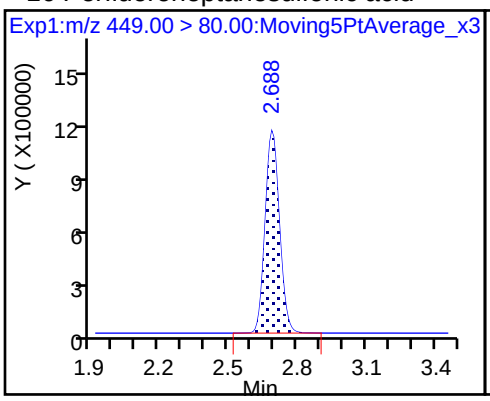
15 Perfluorooctanoic acid



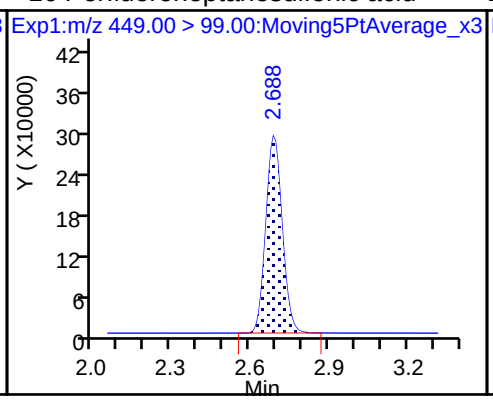
* 62 13C2-PFOA



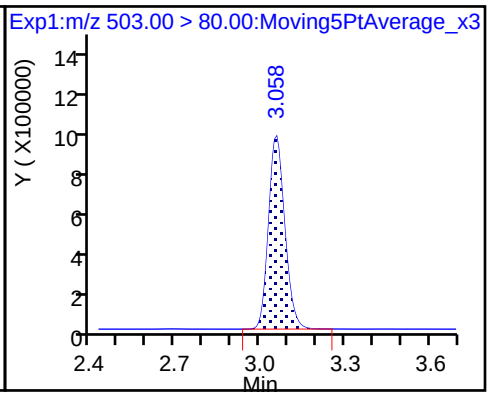
16 Perfluoroheptanesulfonic acid



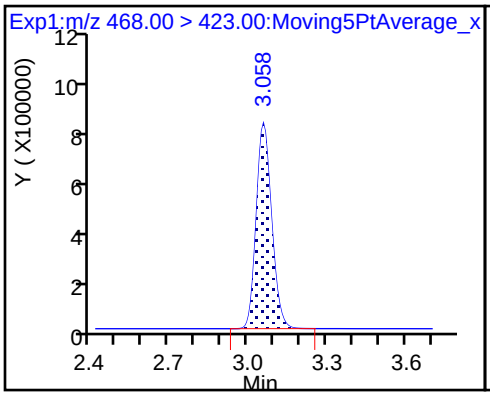
16 Perfluoroheptanesulfonic acid



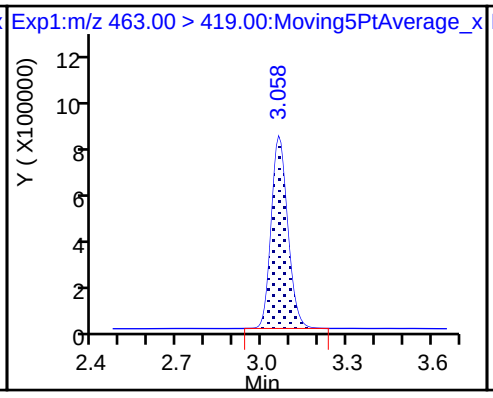
D 18 13C4 PFOS



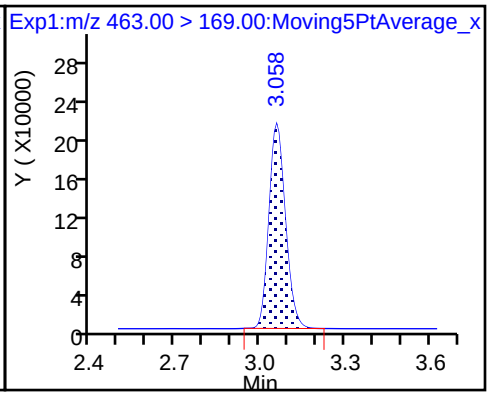
D 19 13C5 PFNA



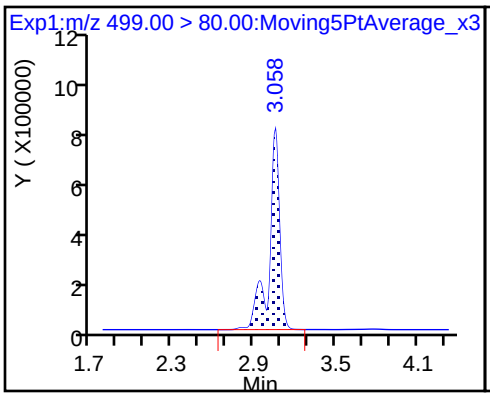
20 Perfluorononanoic acid



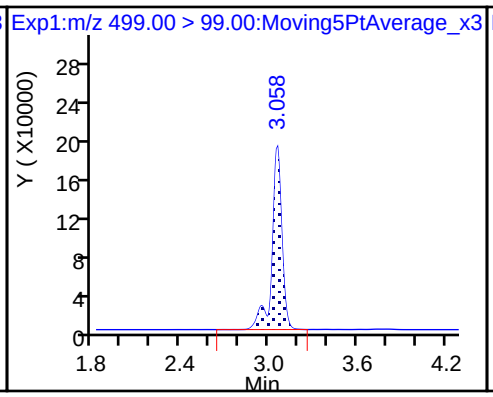
20 Perfluorononanoic acid



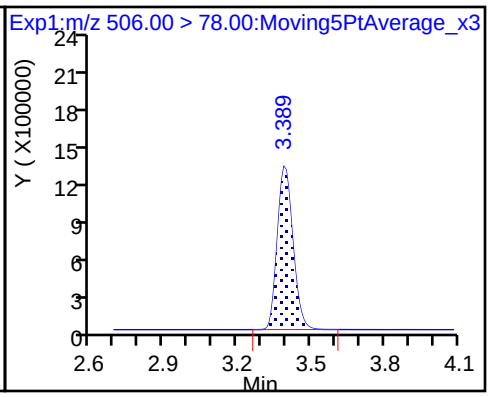
17 Perfluorooctane sulfonic acid



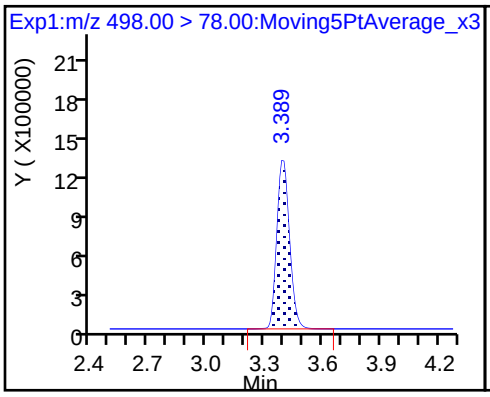
17 Perfluorooctane sulfonic acid



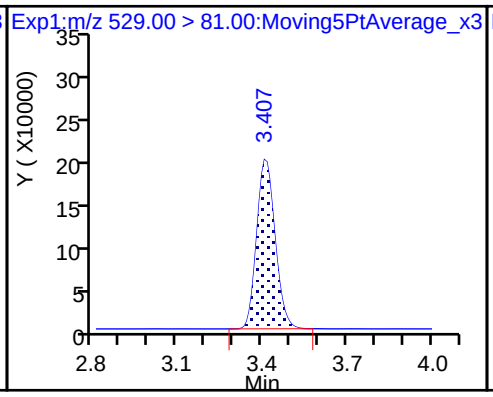
D 21 13C8 FOSA



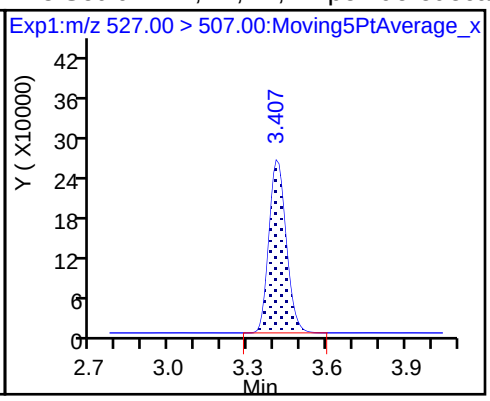
22 Perfluorooctane Sulfonamide



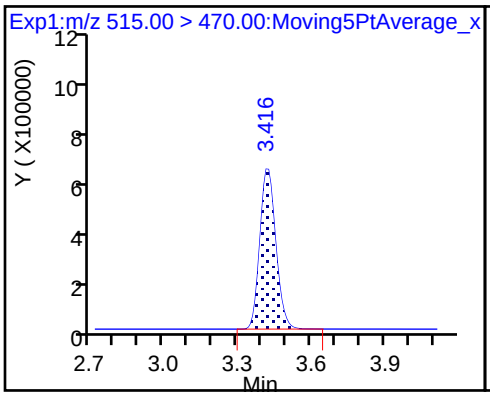
D 26 M2-8:2FTS



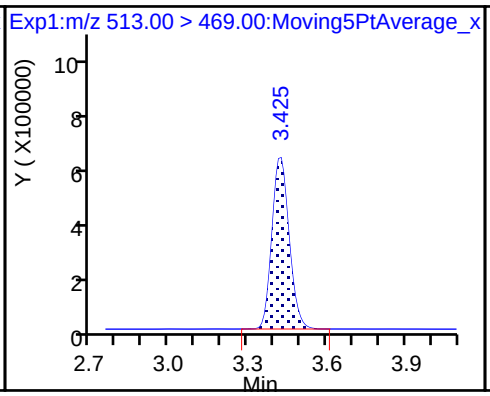
25 Sodium 1H,1H,2H,2H-perfluorodecane



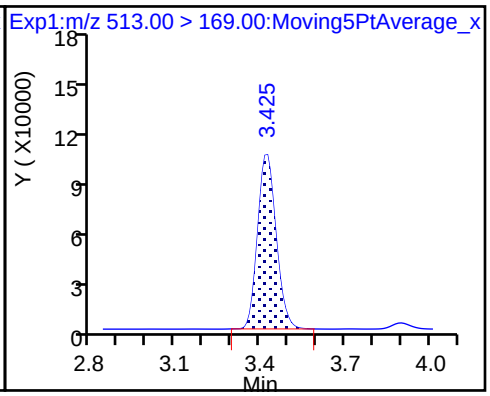
D 23 13C2 PFDA



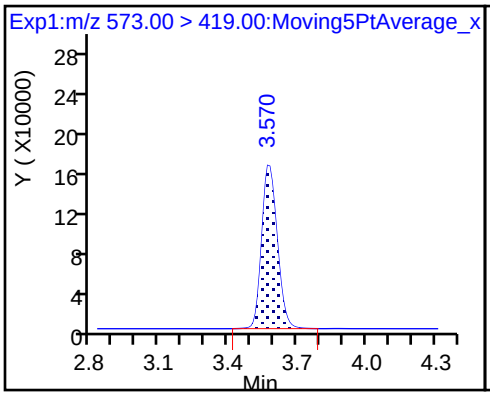
24 Perfluorodecanoic acid



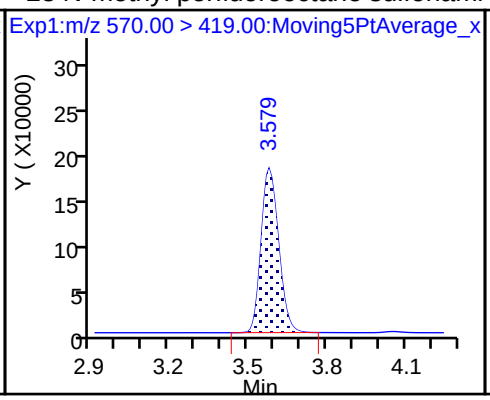
24 Perfluorodecanoic acid



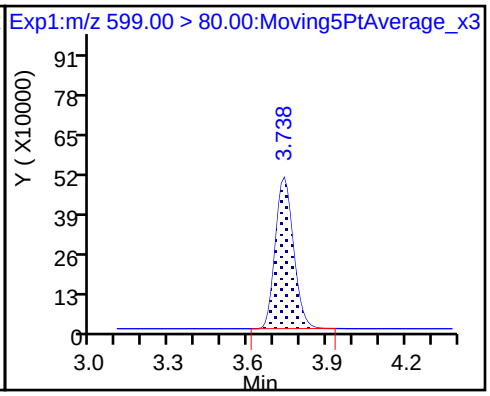
D 27 d3-NMeFOSAA



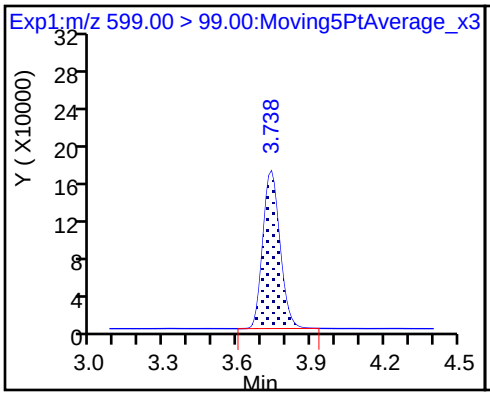
28 N-methyl perfluorooctane sulfonami



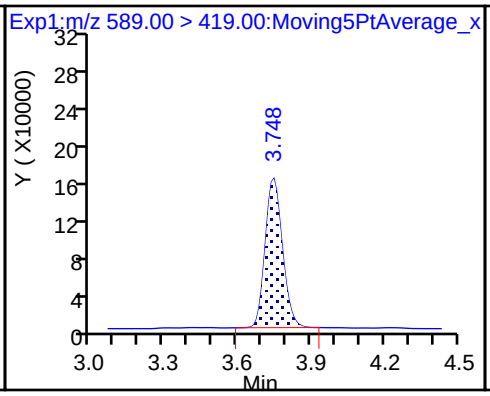
29 Perfluorodecane Sulfonic acid



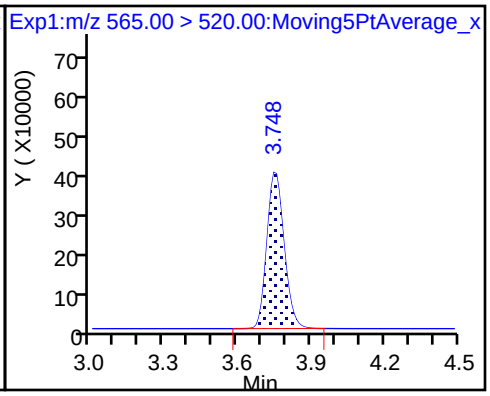
29 Perfluorodecane Sulfonic acid



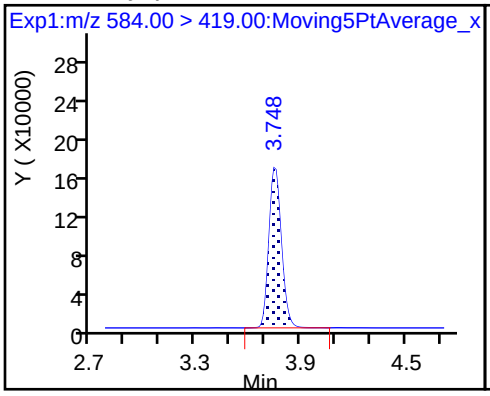
D 32 d5-NEtFOSAA



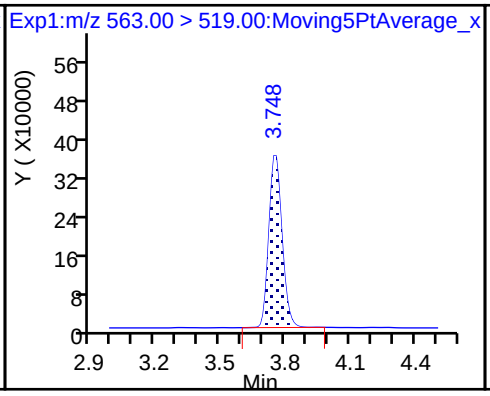
D 30 13C2 PFUnA



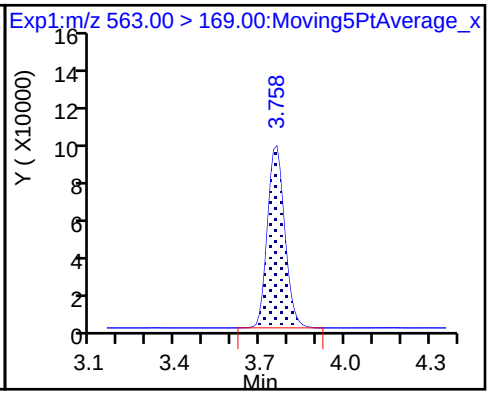
33 N-ethyl perfluorooctane sulfonamid



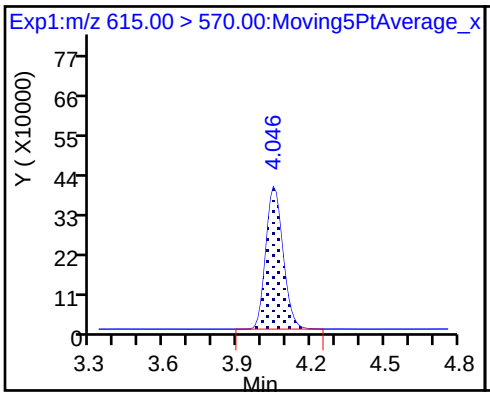
31 Perfluoroundecanoic acid



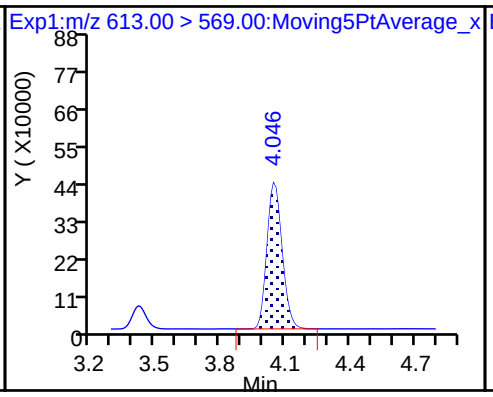
31 Perfluoroundecanoic acid



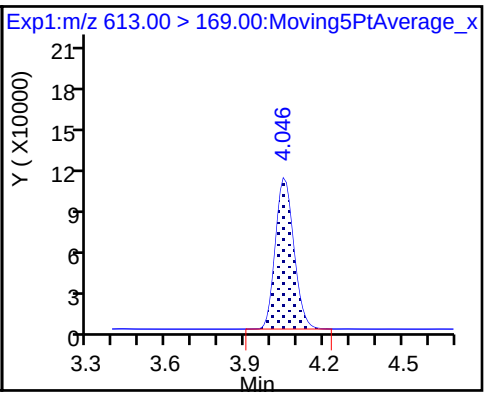
D 36 13C2 PFDoA



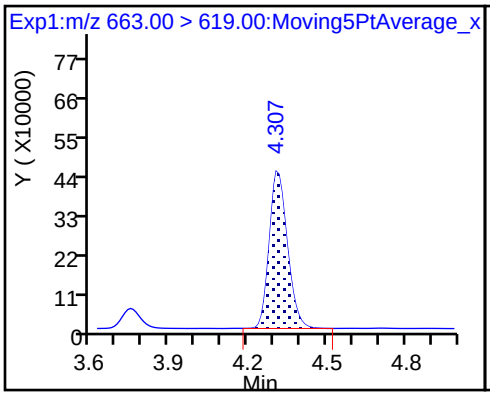
37 Perfluorododecanoic acid



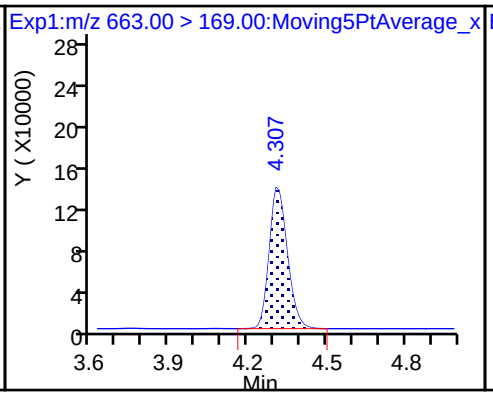
37 Perfluorododecanoic acid



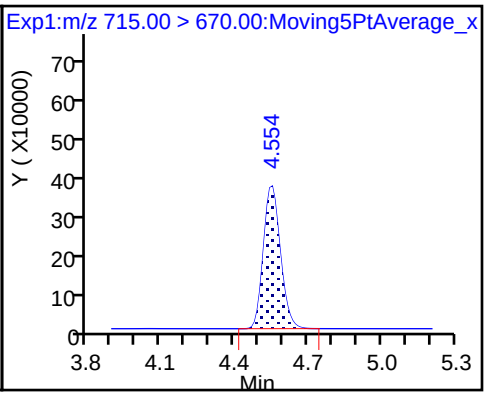
41 Perfluorotridecanoic acid



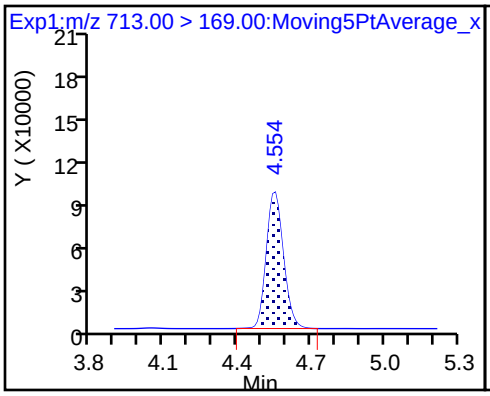
41 Perfluorotridecanoic acid



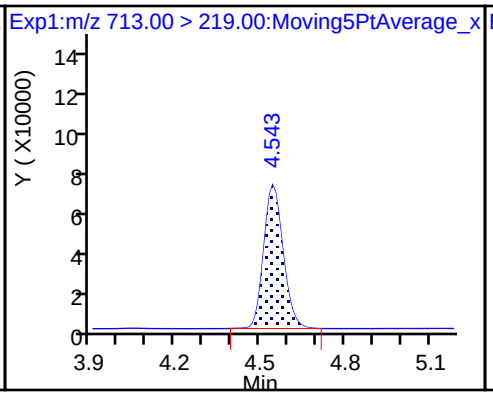
D 43 13C2-PFTeDA



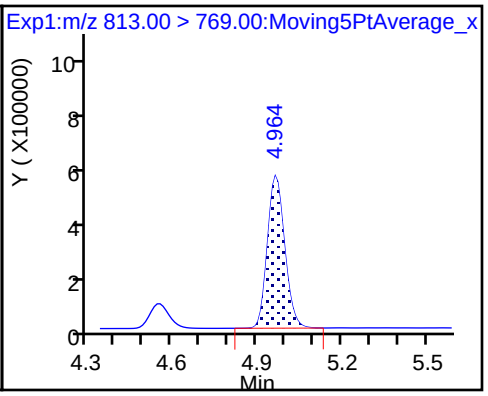
42 Perfluorotetradecanoic acid



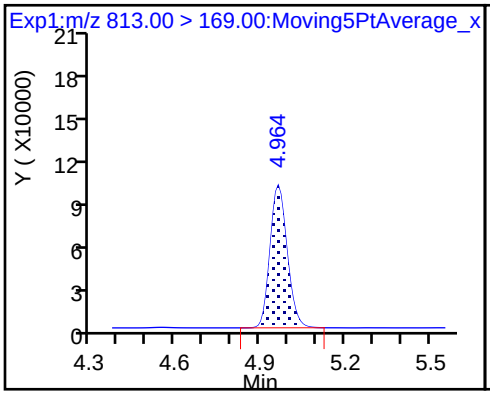
42 Perfluorotetradecanoic acid



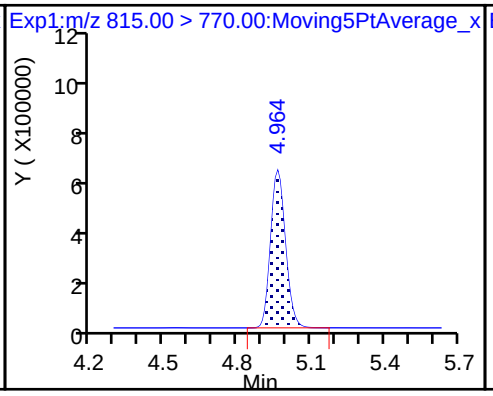
45 Perfluorohexadecanoic acid



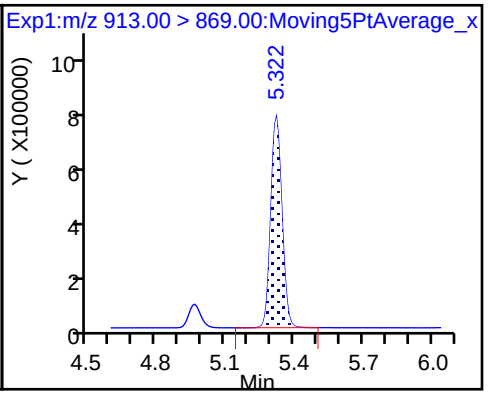
45 Perfluorohexadecanoic acid



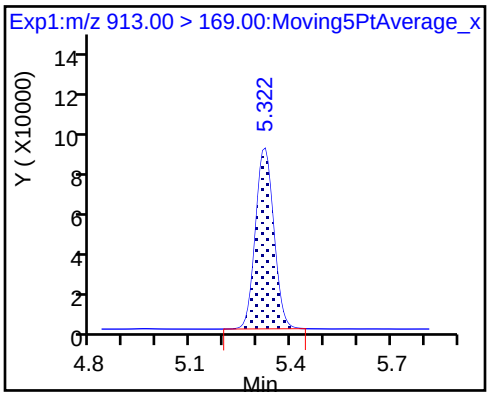
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214053/1 Calibration Date: 03/20/2018 23:01

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9121		0.983	1.00	-1.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.107		0.947	1.00	-5.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	75.59		0.864	0.884	-2.3	50.0
4:2 FTS	AveID	16.07	13.89		0.807	0.934	-13.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.017		1.01	1.00	0.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.005		0.969	1.00	-3.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.038		0.847	0.910	-6.9	40.0
6:2FTS	AveID	1.665	1.552		0.884	0.948	-6.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.103		0.988	1.00	-1.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.229		0.890	0.952	-6.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9737		0.955	1.00	-4.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.004		0.860	0.928	-7.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9695		0.998	1.00	-0.2	40.0
8:2FTS	AveID	1.257	1.290		0.983	0.958	2.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9710		1.02	1.00	2.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	0.9918		0.952	1.00	-4.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6127		0.925	0.964	-4.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9211		0.941	1.00	-5.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7509		0.896	1.00	-10.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.043		1.02	1.00	1.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9525		0.926	1.00	-7.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2606		0.945	1.00	-5.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9645		1.03	1.00	2.7	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9889		1.01	1.00	1.4	50.0
13C4 PFBA	Ave	1.277	1.200		2.35	2.50	-6.0	50.0
13C5 PFPeA	Ave	0.9006	0.8507		2.36	2.50	-5.5	50.0
13C3-PFBS	Ave	0.0222	0.0225		2.36	2.33	1.4	50.0
M2-4:2FTS	Ave	0.1590	0.1399		2.05	2.34	-12.0	50.0
13C2 PFHxA	Ave	1.004	0.9694		2.41	2.50	-3.5	50.0
13C4-PFHpA	Ave	0.9767	0.9899		2.53	2.50	1.4	50.0
18O2 PFHxS	Ave	1.303	1.266		2.30	2.37	-2.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214053/1 Calibration Date: 03/20/2018 23:01

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2443		2.32	2.38	-2.3	40.0
13C4 PFOA	Ave	0.9431	0.9761		2.59	2.50	3.5	50.0
13C4 PFOS	Ave	0.9113	0.9526		2.50	2.39	4.5	50.0
13C5 PFNA	Ave	0.7545	0.7932		2.63	2.50	5.1	50.0
13C8 FOSA	Ave	1.319	1.370		2.60	2.50	3.8	50.0
M2-8:2FTS	Ave	0.2350	0.2349		2.40	2.40	-0.0	40.0
13C2 PFDA	Ave	0.6303	0.6587		2.61	2.50	4.5	50.0
d3-NMeFOSAA	Ave	0.2081	0.1972		2.37	2.50	-5.3	50.0
d5-NEtFOSAA	Ave	0.1990	0.2070		2.60	2.50	4.0	50.0
13C2 PFUnA	Ave	0.4935	0.4896		2.48	2.50	-0.8	50.0
13C2 PFDoA	Ave	0.4680	0.4616		2.47	2.50	-1.4	50.0
13C2-PFTeDA	Ave	0.4272	0.4245		2.48	2.50	-0.6	50.0
13C2-PFHxDA	Ave	0.6248	0.5984		2.40	2.50	-4.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_022.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 20-Mar-2018 23:01:55 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 09:41:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.537	5617146	2.35		94.0	78548	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	2049407	0.9835		98.3	1088	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.700	0.009	0.634	3981824	2.36		94.5	195713	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1762727	0.9474		94.7	588	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.644	98122	2.36		101	2351	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2820151	0.8636		97.7	1143	
298.90 > 99.00	1.744	1.744	0.0	1.005	1171990		2.41(1.25-3.74)		1121	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.946	0.009	0.726	611484	2.05		88.0	8896	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	547461	0.8070		86.4	26013	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.987	0.010	0.741	4537057	2.41		96.5	103094	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1844961	1.01		101	6758	
313.00 > 119.00	1.997	1.997	0.0	1.000	171650		10.75(5.03-15.10)		4390	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.864	4633169	2.53		101	132141	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1862001	0.9693		96.9	3530	
363.00 > 169.00	2.328	2.328	0.0	1.000	728309		2.56(1.13-3.40)		10408	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.869	5606936	2.30		97.2	96529	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2239191	0.8468		93.1	3954	
399.00 > 99.00	2.341	2.341	0.0	1.000	744503		3.01(1.50-4.49)		2120	
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.657	0.006	0.988	1086363	2.32		97.7	32069	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.663	2.663	0.0	1.000	673007	0.8839		93.2	22805	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.681	0.014	1.000	4568746	2.59		104	98380	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.695	0.0	1.000	2016416	0.9884		98.8	652	
413.00 > 169.00	2.695	2.695	0.0	1.000	992596		2.03(0.84-2.52)		3677	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		4680397	2.50			91535	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	2086670	0.8904		93.5	41246	
449.00 > 99.00	2.703	2.703	0.0	1.000	555959		3.75(1.94-5.82)		10143	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.051	0.016	1.138	4262130	2.50		105	49295	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.058	0.009	1.138	3712241	2.63		105	77484	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.067	3.067	0.0	1.000	1660971	0.8603		92.7	5147	
499.00 > 99.00	3.067	3.067	0.0	1.000	371505		4.47(2.31-6.93)		3403	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.067	0.0	1.000	1445893	0.9551		95.5	2849	
463.00 > 169.00	3.067	3.067	0.0	1.000	357917		4.04(1.90-5.69)		11316	
D 21 13C8 FOSA										
506.00 > 78.00	3.401	3.389	0.012	1.262	6412105	2.60		104	66304	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.401	0.0	1.000	2486504	1.00		99.8	37607	
D 26 M2-8:2FTS										
529.00 > 81.00	3.419	3.408	0.011	1.269	1053413	2.39		100.0	21325	
D 23 13C2 PFDA										
515.00 > 470.00	3.428	3.417	0.011	1.272	3082970	2.61		105	43487	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.419	3.419	0.0	1.000	543664	0.9831		103	15278	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.428	3.428	0.0	1.000	1197428	1.02		102	6321	
513.00 > 169.00	3.428	3.428	0.0	1.000	219940		5.44(2.36-7.09)		8269	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.570	0.013	1.330	922766	2.37		94.7	33062	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.594	3.594	0.0	1.003	366076	0.9522		95.2	4310	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	1053282	0.9250		96.0	27644	
599.00 > 99.00	3.741	3.741	0.0	1.000	371952		2.83(1.39-4.16)		7863	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.748	0.004	1.392	969025	2.60		104	1769	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.748	0.014	1.396	2291330	2.48		99.2	53076	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.762	0.0	1.003	357040	0.9408		94.1	9180	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	688259	0.8961		89.6	2102	
563.00 > 169.00	3.762	3.762	0.0	1.000	182450		3.77(2.12-6.36)		14589	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.046	0.015	1.507	2160559	2.47		98.6	12102	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	901041	1.02		102	148	
613.00 > 169.00	4.061	4.061	0.0	1.000	227281		3.96(2.13-6.40)		5833	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.320	4.320	0.0	1.000	823170	0.9259		92.6	158	
663.00 > 169.00	4.320	4.320	0.0	1.000	268454		3.07(1.25-3.76)		2981	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.556	4.544	0.012	1.691	1986655	2.48		99.4	15300	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.556	4.556	0.0	1.000	207065	0.9448		94.5	2407	
713.00 > 219.00	4.556	4.556	0.0	1.000	144644		1.43(0.71-2.13)		1448	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.964	0.010	1.846	2800859	2.39		95.8	10458	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.974	0.0	1.000	1080583	1.03		103	95.2	
813.00 > 169.00	4.974	4.974	0.0	1.000	184825		5.85(2.86-8.58)		1770	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.331	5.331	0.0	1.000	1107926	1.01		101	215	
913.00 > 169.00	5.331	5.331	0.0	1.000	136577		8.11(3.83-11.48)		1602	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:55:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_022.d

Injection Date: 20-Mar-2018 23:01:55 Instrument ID: A8_N

Lims ID: CCV L4

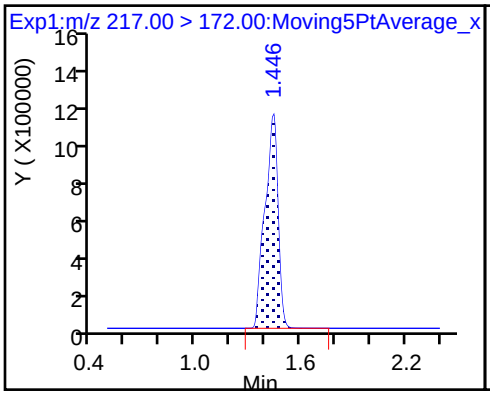
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

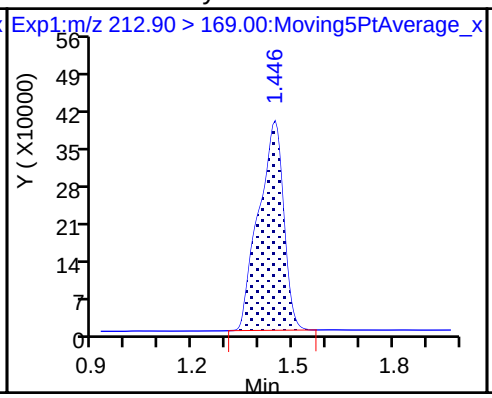
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

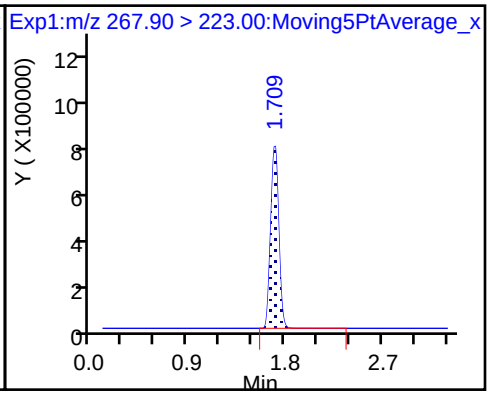
D 1 13C4 PFBA



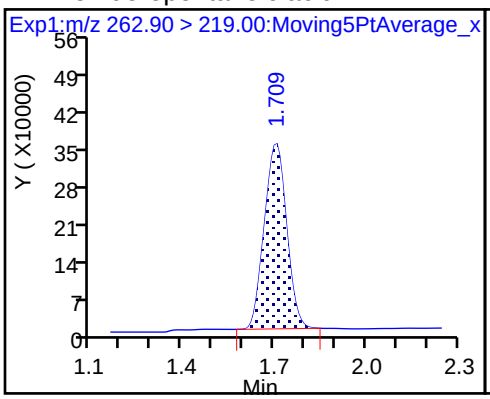
2 Perfluorobutyric acid



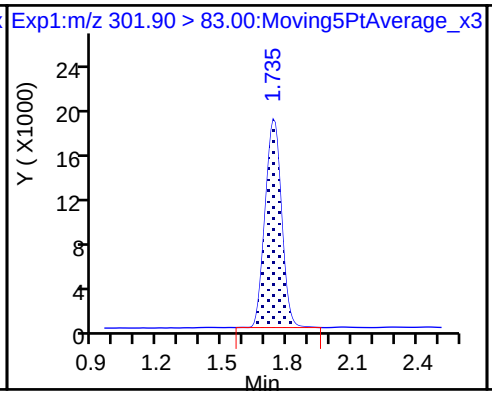
D 3 13C5-PFPeA



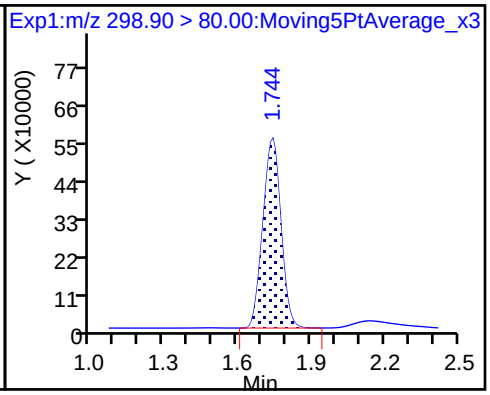
4 Perfluoropentanoic acid



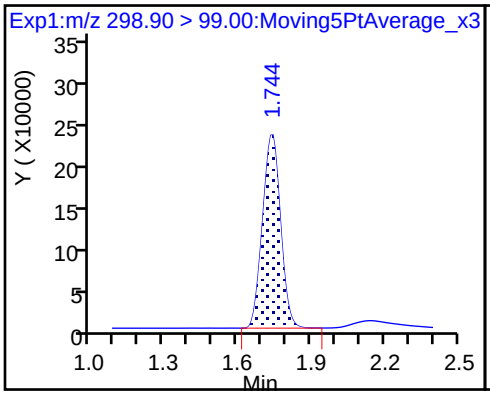
D 47 13C3-PFBS



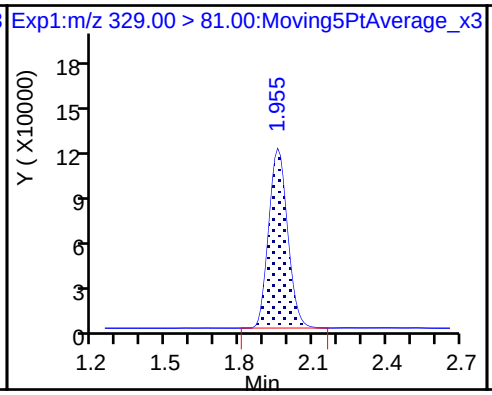
5 Perfluorobutanesulfonic acid



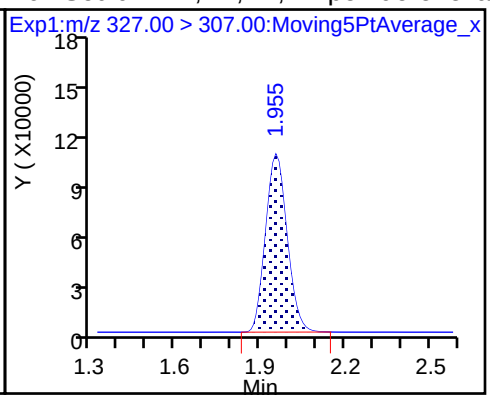
5 Perfluorobutanesulfonic acid



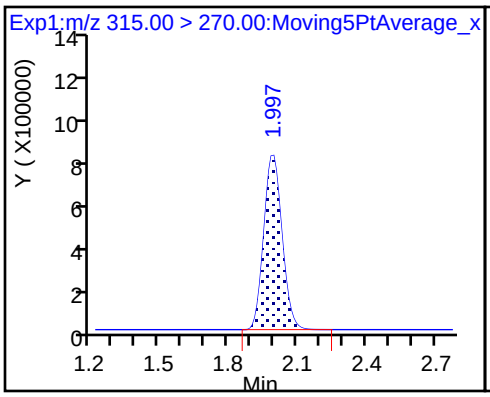
D 60 M2-4:2FTS



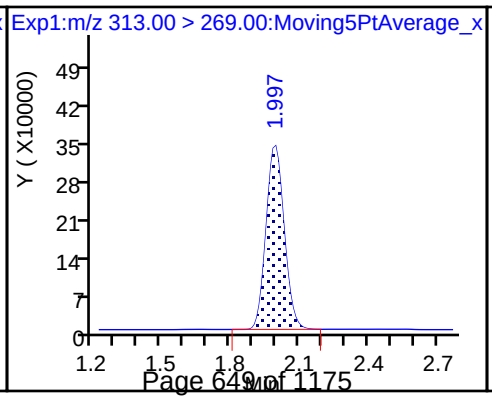
61 Sodium 1H,1H,2H,2H-perfluorohexane



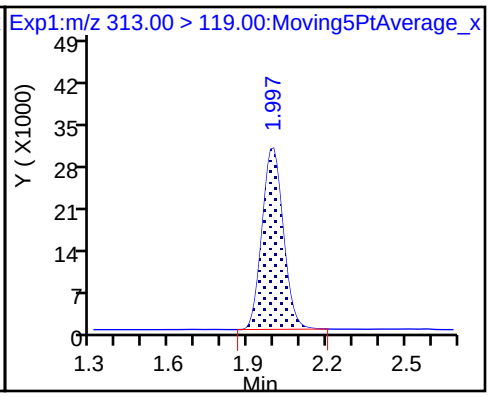
D 7 13C2 PFHxA



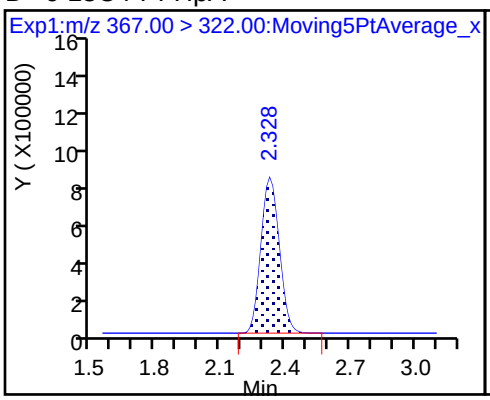
6 Perfluorohexanoic acid



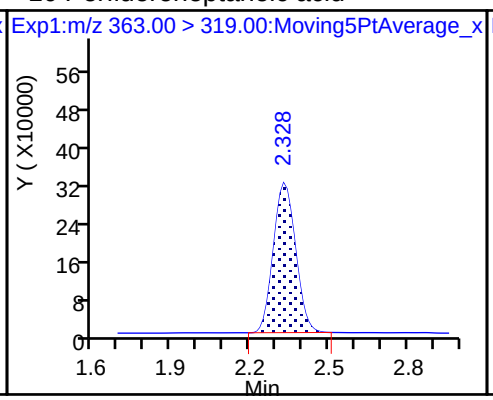
6 Perfluorohexanoic acid



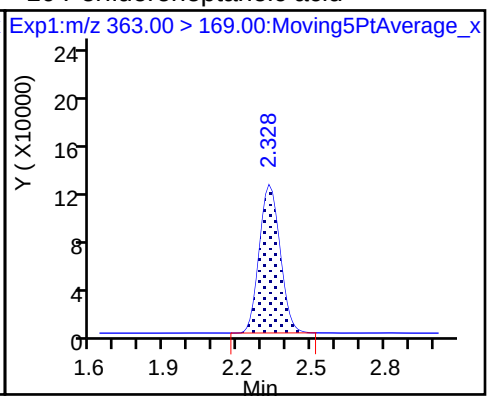
D 9 13C4-PFHpA



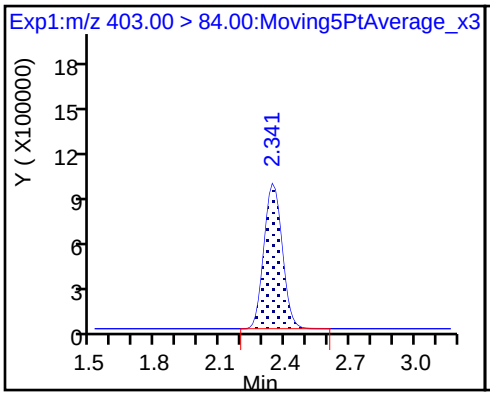
10 Perfluoroheptanoic acid



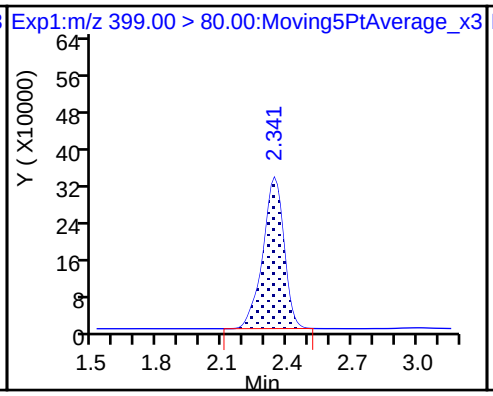
10 Perfluoroheptanoic acid



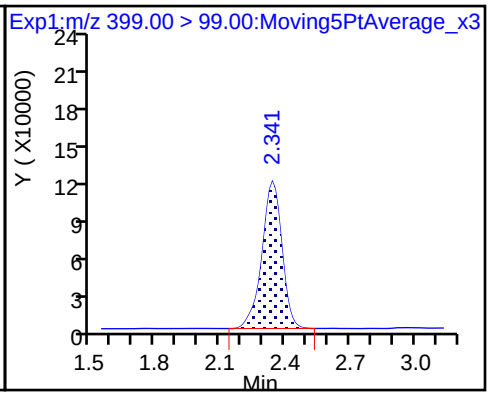
D 11 18O2 PFHxS



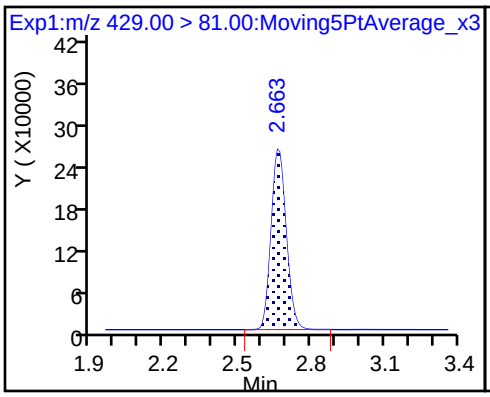
8 Perfluorohexanesulfonic acid



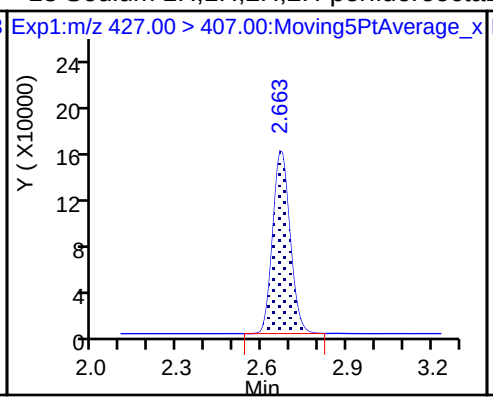
8 Perfluorohexanesulfonic acid



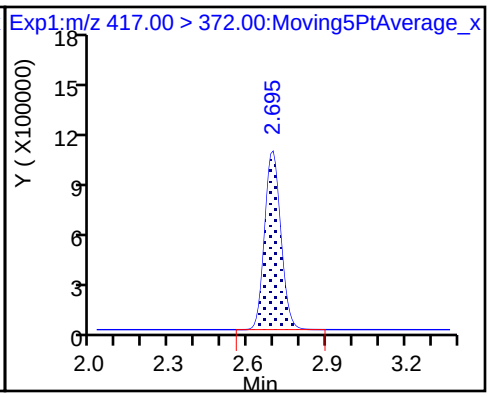
D 12 M2-6:2FTS



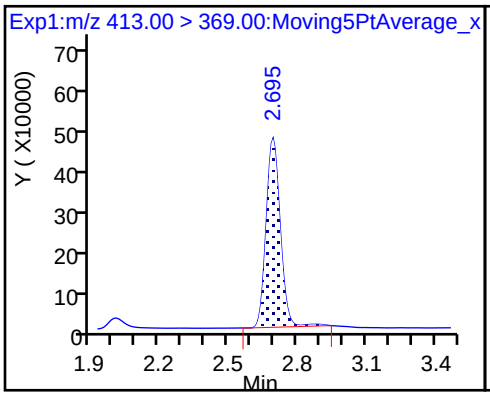
13 Sodium 1H,1H,2H,2H-perfluorooctane



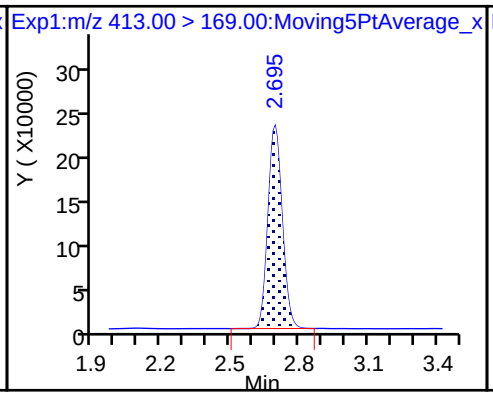
D 14 13C4 PFOA



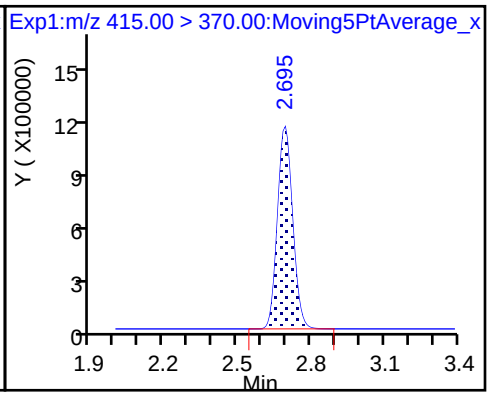
15 Perfluorooctanoic acid



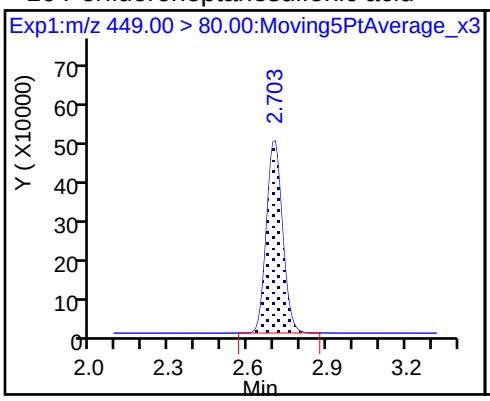
15 Perfluorooctanoic acid



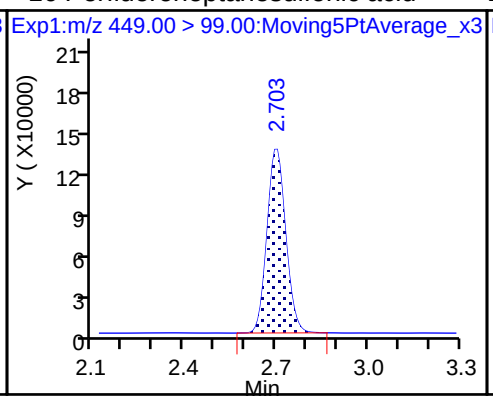
* 62 13C2-PFOA



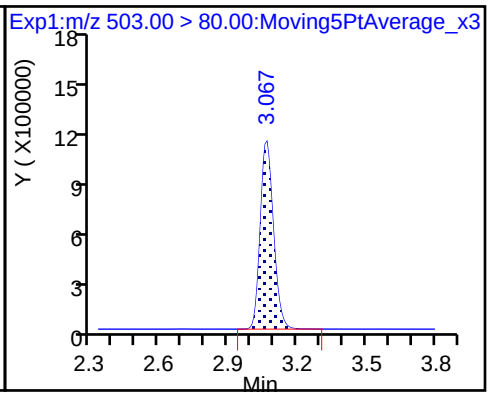
16 Perfluoroheptanesulfonic acid



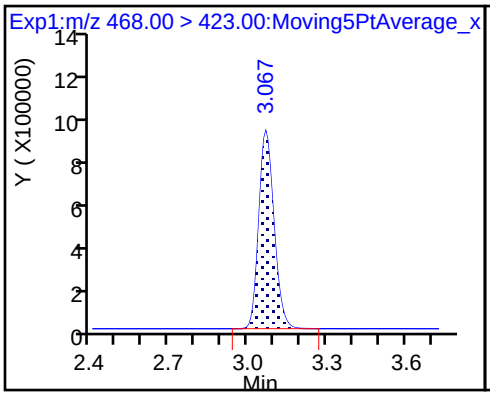
16 Perfluoroheptanesulfonic acid



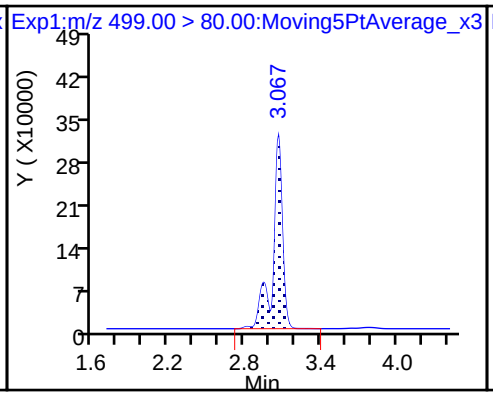
D 18 13C4 PFOS



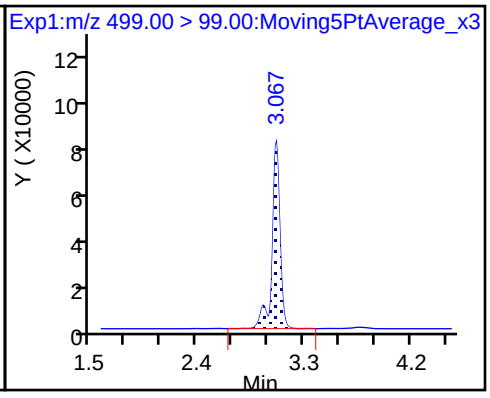
D 19 13C5 PFNA



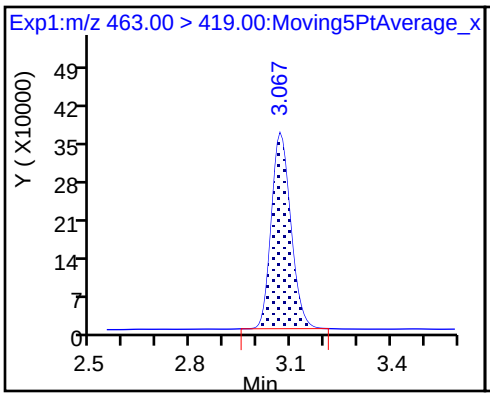
17 Perfluorooctane sulfonic acid



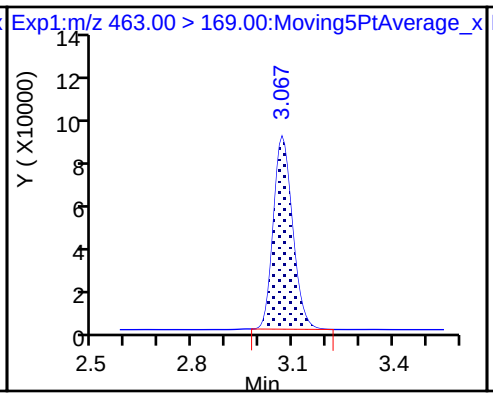
17 Perfluorooctane sulfonic acid



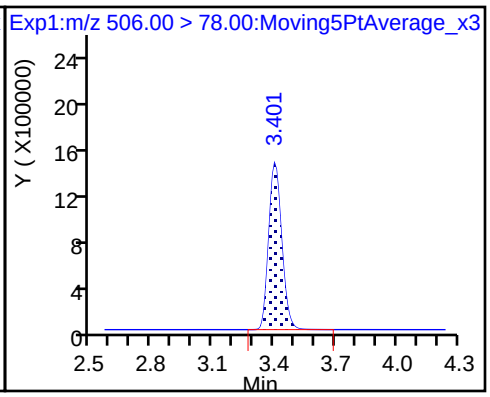
20 Perfluorononanoic acid



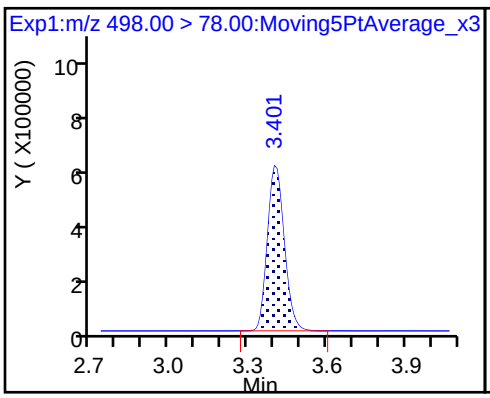
20 Perfluorononanoic acid



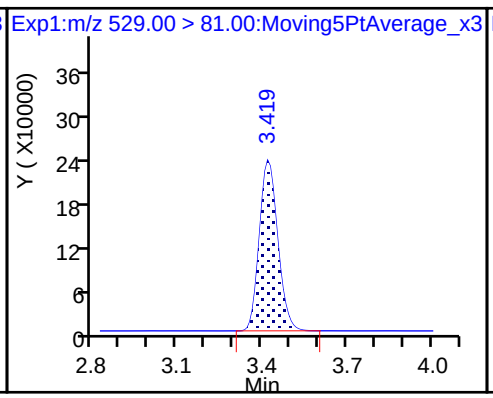
D 21 13C8 FOSA



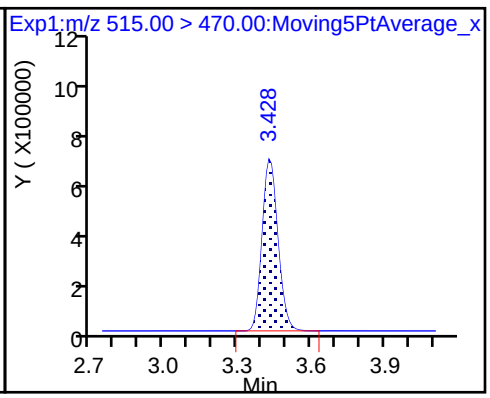
22 Perfluorooctane Sulfonamide



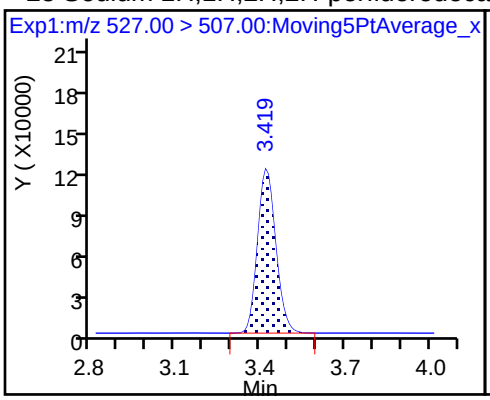
D 26 M2-8:2FTS



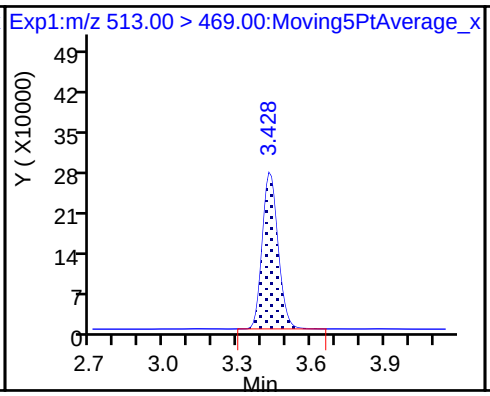
D 23 13C2 PFDA



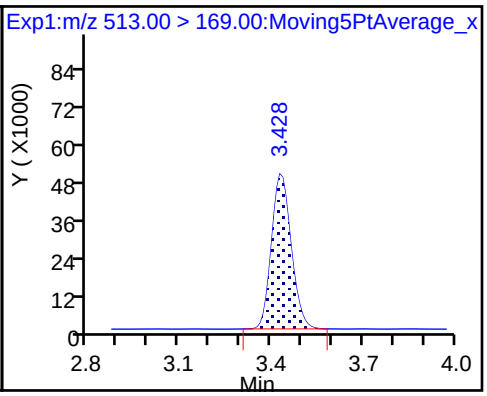
25 Sodium 1H,1H,2H,2H-perfluorodecan



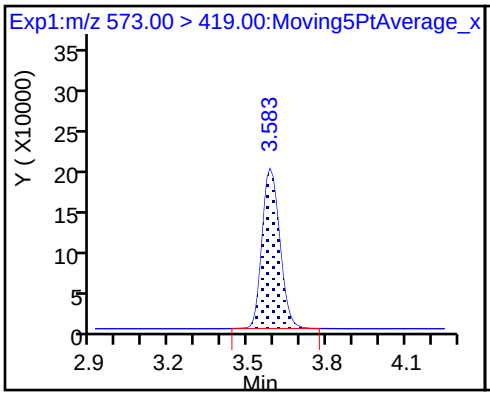
24 Perfluorodecanoic acid



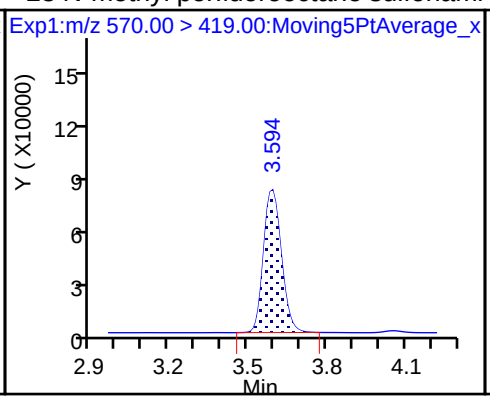
24 Perfluorodecanoic acid



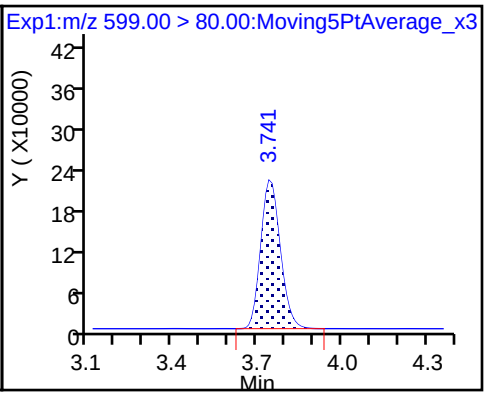
D 27 d3-NMeFOSAA



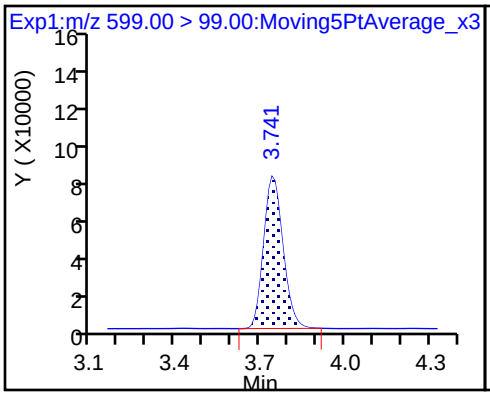
28 N-methyl perfluorooctane sulfonami



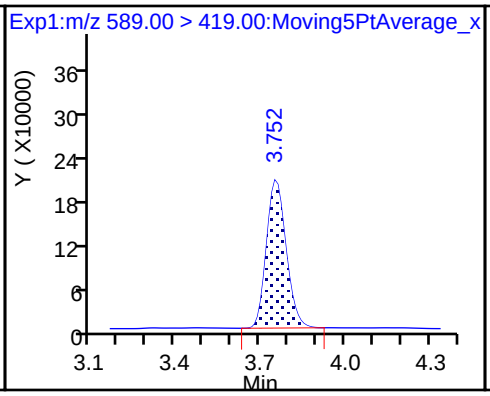
29 Perfluorodecane Sulfonic acid



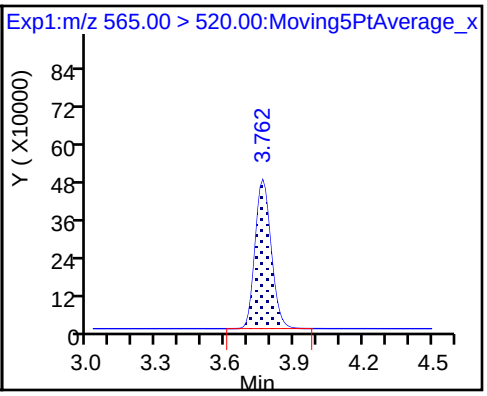
29 Perfluorodecane Sulfonic acid



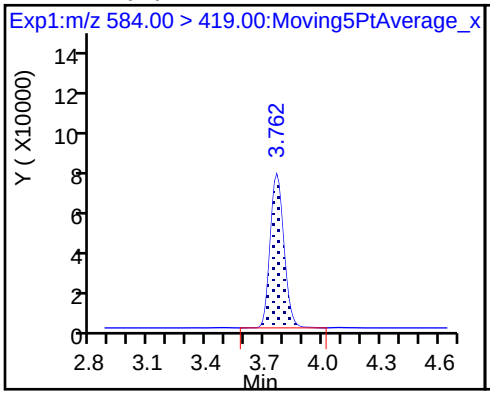
D 32 d5-NEtFOSAA



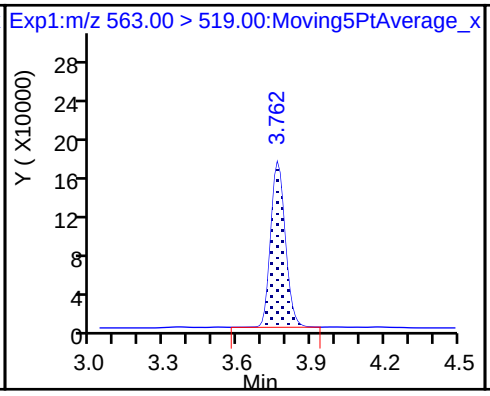
D 30 13C2 PFUnA



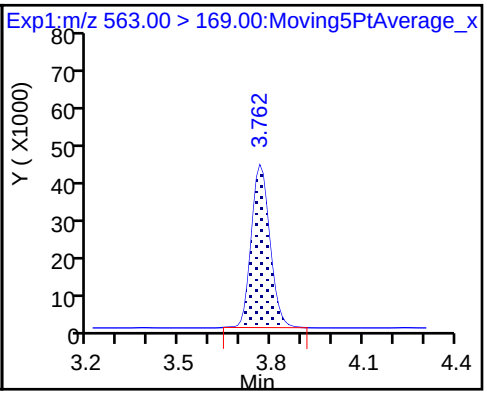
33 N-ethyl perfluorooctane sulfonamid



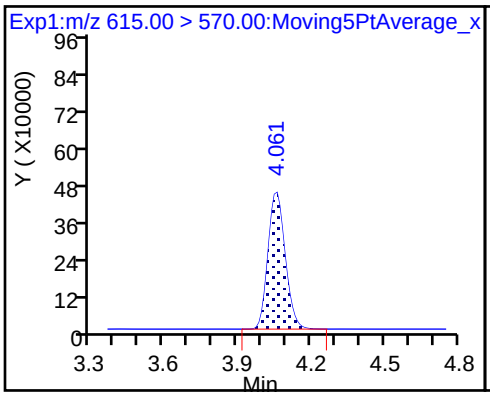
31 Perfluoroundecanoic acid



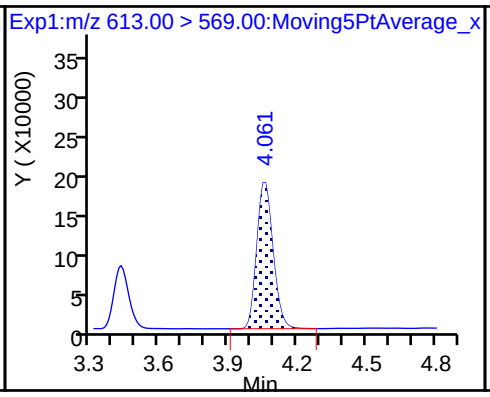
31 Perfluoroundecanoic acid



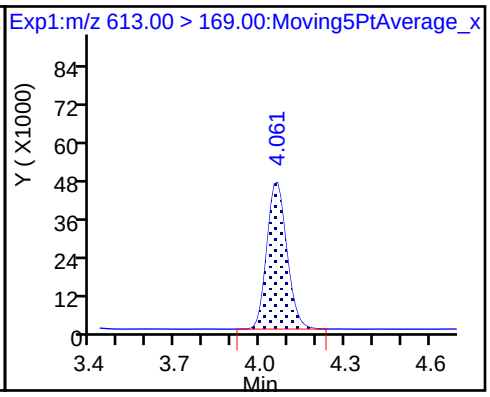
D 36 13C2 PFDoA



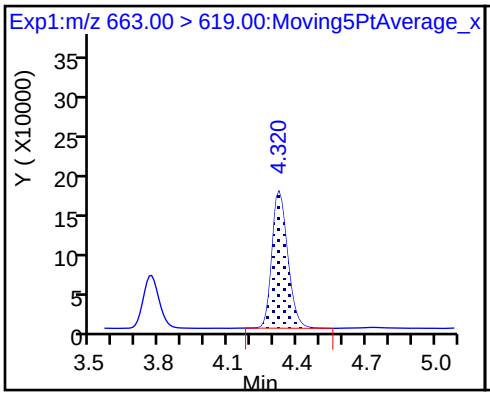
37 Perfluorododecanoic acid



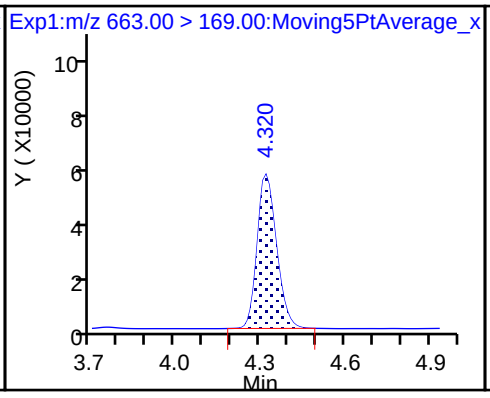
37 Perfluorododecanoic acid



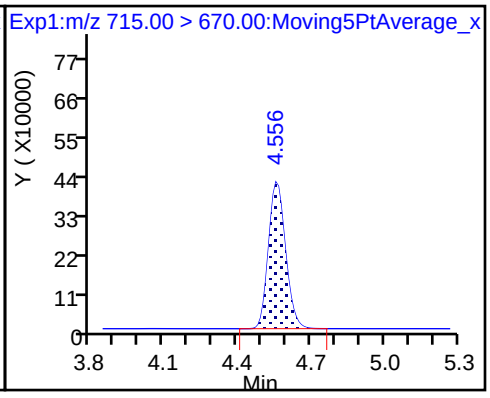
41 Perfluorotridecanoic acid



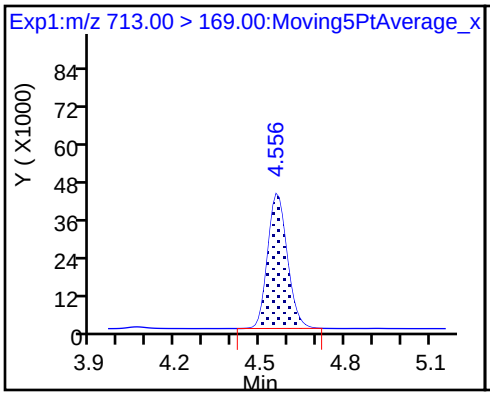
41 Perfluorotridecanoic acid



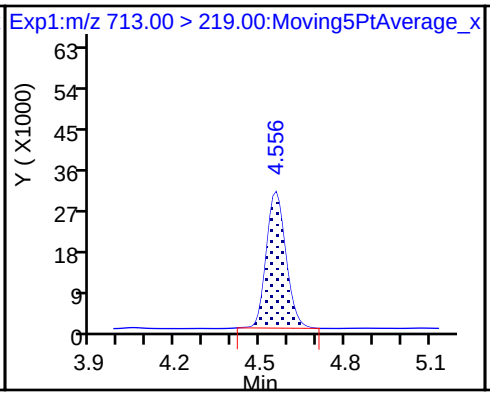
D 43 13C2-PFTeDA



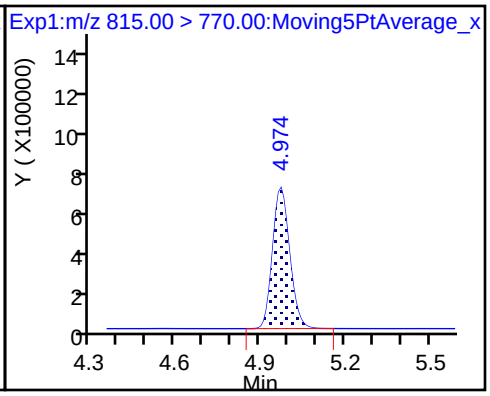
42 Perfluorotetradecanoic acid



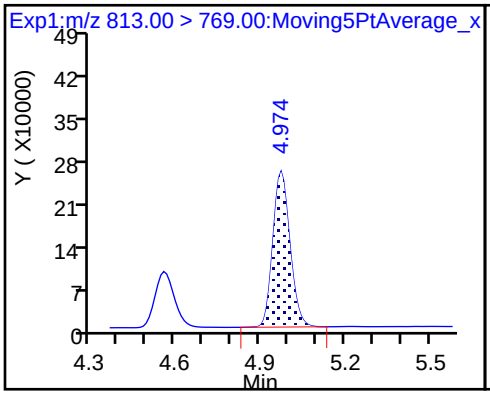
42 Perfluorotetradecanoic acid



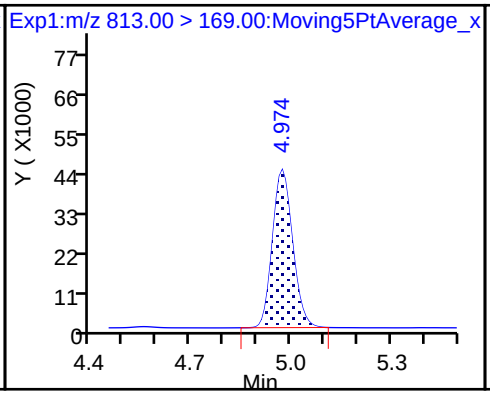
D 44 13C2-PFHxDA



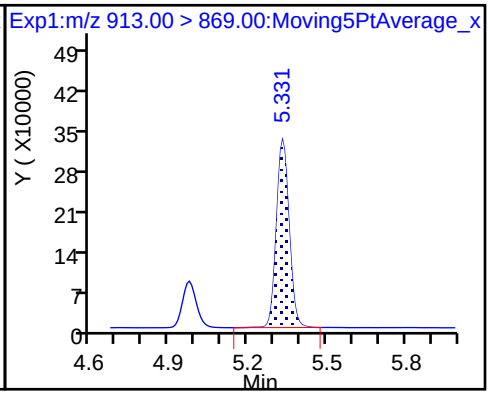
45 Perfluorohexadecanoic acid



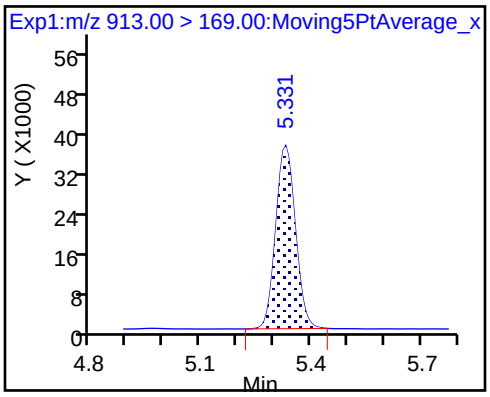
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214053/12 Calibration Date: 03/21/2018 00:28

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_033.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9303		2.51	2.50	0.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.167		2.50	2.50	-0.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	80.36		2.30	2.21	3.9	50.0
4:2 FTS	AveID	16.07	13.56		1.97	2.34	-15.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.042		2.58	2.50	3.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.054		2.54	2.50	1.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.101		2.25	2.28	-1.3	40.0
6:2FTS	AveID	1.665	1.766		2.51	2.37	6.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.125		2.52	2.50	0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.339		2.42	2.38	1.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.030		2.53	2.50	1.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.087		2.33	2.32	0.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.031		2.65	2.50	6.1	40.0
8:2FTS	AveID	1.257	1.320		2.51	2.40	5.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9851		2.60	2.50	3.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.092		2.62	2.50	4.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6698		2.53	2.41	4.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9688		2.47	2.50	-1.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7712		2.30	2.50	-8.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	0.9948		2.43	2.50	-2.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9504		2.31	2.50	-7.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2398		2.17	2.50	-13.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9482		2.56	2.50	2.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9327		2.39	2.50	-4.3	50.0
13C4 PFBA	Ave	1.277	1.131		2.22	2.50	-11.4	50.0
13C5 PFPeA	Ave	0.9006	0.7938		2.20	2.50	-11.9	50.0
13C3-PFBS	Ave	0.0222	0.0211		2.21	2.33	-4.9	50.0
M2-4:2FTS	Ave	0.1590	0.1291		1.90	2.34	-18.8	50.0
13C2 PFHxA	Ave	1.004	0.8939		2.23	2.50	-11.0	50.0
13C4-PFHpA	Ave	0.9767	0.9066		2.32	2.50	-7.2	50.0
18O2 PFHxS	Ave	1.303	1.173		2.13	2.37	-10.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214053/12 Calibration Date: 03/21/2018 00:28

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_033.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2085		1.98	2.38	-16.6	40.0
13C4 PFOA	Ave	0.9431	0.9046		2.40	2.50	-4.1	50.0
13C4 PFOS	Ave	0.9113	0.8732		2.29	2.39	-4.2	50.0
13C5 PFNA	Ave	0.7545	0.7313		2.42	2.50	-3.1	50.0
13C8 FOSA	Ave	1.319	1.236		2.34	2.50	-6.3	50.0
M2-8:2FTS	Ave	0.2350	0.2001		2.04	2.40	-14.8	40.0
13C2 PFDA	Ave	0.6303	0.6054		2.40	2.50	-4.0	50.0
d3-NMeFOSAA	Ave	0.2081	0.1822		2.19	2.50	-12.5	50.0
d5-NEtFOSAA	Ave	0.1990	0.1898		2.38	2.50	-4.6	50.0
13C2 PFUnA	Ave	0.4935	0.4633		2.35	2.50	-6.1	50.0
13C2 PFDoA	Ave	0.4680	0.4541		2.43	2.50	-3.0	50.0
13C2-PFTeDA	Ave	0.4272	0.4147		2.43	2.50	-2.9	50.0
13C2-PFHxDA	Ave	0.6248	0.5871		2.35	2.50	-6.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_033.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 00:28:13 ALS Bottle#: 14 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:14:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.438	1.441	-0.003	0.536	4869668	2.21		88.6	76522	
2 Perfluorobutyric acid										
212.90 > 169.00	1.444	1.446	-0.002	1.004	4530278	2.51		100	2542	
D 3 13C5-PFPeA										
267.90 > 223.00	1.696	1.700	-0.004	0.632	3418137	2.20		88.1	93822	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.696	1.709	-0.013	1.000	3988779	2.50		99.9	1379	
D 47 13C3-PFBS										
301.90 > 83.00	1.732	1.736	-0.004	0.645	84596	2.21		95.1	444	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.732	1.744	-0.012	1.000	6461810	2.30		104	2537	
298.90 > 99.00	1.732	1.744	-0.012	1.000	2665045		2.42(1.25-3.74)		2454	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.946	0.004	0.727	519389	1.90		81.2	7930	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.955	-0.005	1.000	1151989	1.97		84.4	71033	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.987	-0.006	0.738	3849045	2.23		89.0	98645	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.997	-0.016	1.000	4009235	2.58		103	14256	
313.00 > 119.00	1.981	1.997	-0.016	1.000	357701		11.21(5.03-15.10)		9121	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.315	0.007	0.866	3904065	2.32		92.8	73324	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.328	-0.006	1.000	4115326	2.54		102	7328	
363.00 > 169.00	2.322	2.328	-0.006	1.000	1611313		2.55(1.13-3.40)		24632	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.328	0.007	0.870	4776706	2.13		90.0	57940	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.341	-0.006	1.000	5060913	2.25		98.7	8055	
399.00 > 99.00	2.335	2.341	-0.006	1.000	1663126		3.04(1.50-4.49)		4403	
D 12 M2-6:2FTS										
429.00 > 81.00	2.659	2.657	0.002	0.991	853005	1.98		83.4	19757	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.659	2.663	-0.004	1.000	1503006	2.51		106	49947	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.681	0.002	1.000	3895329	2.40		95.9	90414	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.695	-0.012	1.000	4382323	2.52		101	1306	
413.00 > 169.00	2.683	2.695	-0.012	1.000	2235473		1.96(0.84-2.52)		7714	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.695	-0.012		4306135	2.50			83781	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.703	-0.013	1.000	4791624	2.42		102	59116	
449.00 > 99.00	2.691	2.703	-0.013	1.000	1199018		4.00(1.94-5.82)		21291	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.051	0.002	1.138	3594801	2.29		95.8	32668	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.058	-0.005	1.138	3149058	2.42		96.9	60112	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.053	3.067	-0.014	1.000	3792989	2.33		100	9287	
499.00 > 99.00	3.053	3.067	-0.014	1.000	834997		4.54(2.31-6.93)		5917	
20 Perfluorononanoic acid										
463.00 > 419.00	3.053	3.067	-0.014	1.000	3243889	2.53		101	6203	
463.00 > 169.00	3.053	3.067	-0.014	1.000	811169		4.00(1.90-5.69)		22572	
D 21 13C8 FOSA										
506.00 > 78.00	3.392	3.389	0.003	1.265	5321093	2.34		93.7	54739	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.392	3.401	-0.009	1.000	5486780	2.65		106	69158	
D 26 M2-8:2FTS										
529.00 > 81.00	3.411	3.408	0.003	1.271	825447	2.04		85.2	26034	
D 23 13C2 PFDA										
515.00 > 470.00	3.420	3.417	0.003	1.275	2606868	2.40		96.0	41723	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.411	3.419	-0.008	1.000	1089553	2.51		105	26854	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.420	3.428	-0.008	1.000	2568132	2.60		104	12277	
513.00 > 169.00	3.420	3.428	-0.008	1.000	466079		5.51(2.36-7.09)		1862	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.570	0.004	1.332	784482	2.19		87.5	19010	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.574	3.594	-0.020	1.000	856844	2.62		105	10297	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.733	3.741	-0.008	1.000	2427865	2.53		105	64341	
599.00 > 99.00	3.733	3.741	-0.008	1.000	773252		3.14(1.39-4.16)		13498	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.748	-0.005	1.395	817234	2.38		95.4	1213	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.748	0.006	1.399	1994891	2.35		93.9	41268	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.762	-0.008	1.003	791740	2.47		99.0	16040	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.754	3.762	-0.008	1.000	1538541	2.30		92.0	5512	
563.00 > 169.00	3.754	3.762	-0.008	1.000	413064		3.72(2.12-6.36)		32975	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.046	-0.004	1.507	1955230	2.43		97.0	14534	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.042	4.061	-0.019	1.000	1944974	2.43		97.2	346	
613.00 > 169.00	4.042	4.061	-0.019	1.000	488471		3.98(2.13-6.40)		20167	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.313	4.320	-0.007	1.000	1858153	2.31		92.4	378	
663.00 > 169.00	4.313	4.320	-0.007	1.000	608720		3.05(1.25-3.76)		7950	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.544	0.006	1.696	1785561	2.43		97.1	14479	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.556	-0.006	1.000	428226	2.17		87.0	4974	
713.00 > 219.00	4.550	4.556	-0.006	1.000	307829		1.39(0.71-2.13)		3004	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.960	4.964	-0.004	1.849	2528228	2.35		94.0	10734	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.969	4.974	-0.005	1.002	2397220	2.56		102	212	
813.00 > 169.00	4.960	4.974	-0.014	1.000	397108		6.04(2.86-8.58)		3765	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.331	-0.012	1.000	2358085	2.39		95.7	457	
913.00 > 169.00	5.319	5.331	-0.012	1.000	304589		7.74(3.83-11.48)		3136	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:56:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_033.d

Injection Date: 21-Mar-2018 00:28:13 Instrument ID: A8_N

Lims ID: CCV L5

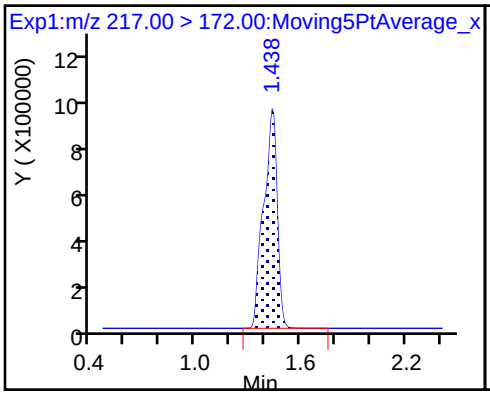
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 12

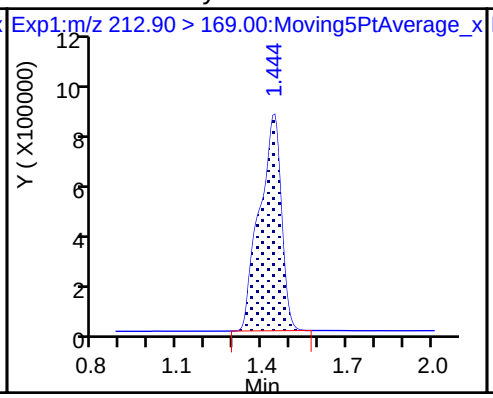
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

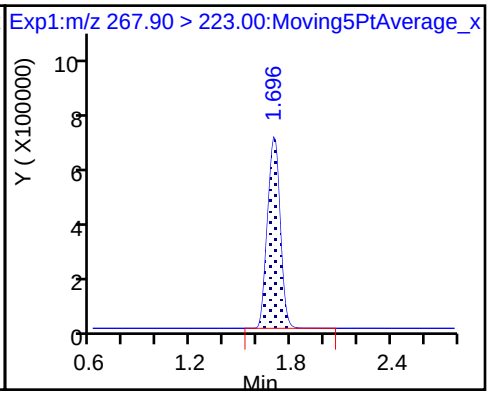
D 1 13C4 PFBA



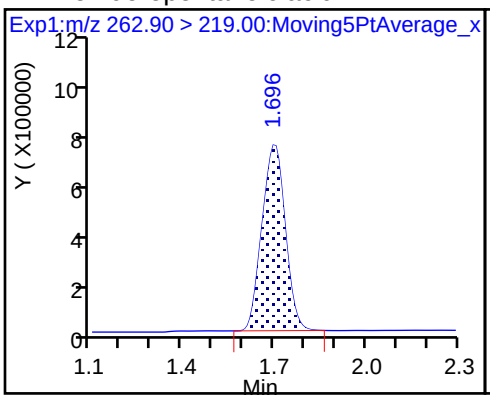
2 Perfluorobutyric acid



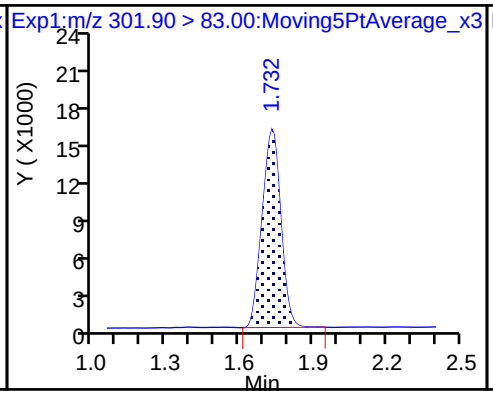
D 3 13C5-PFPeA



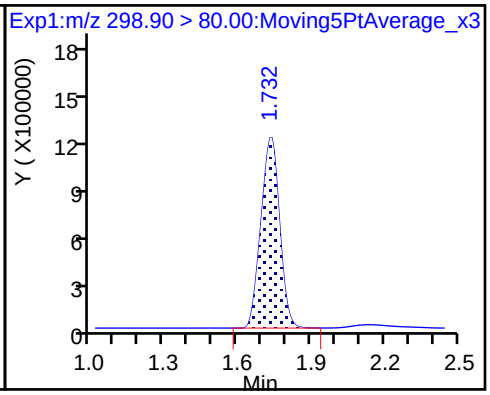
4 Perfluoropentanoic acid



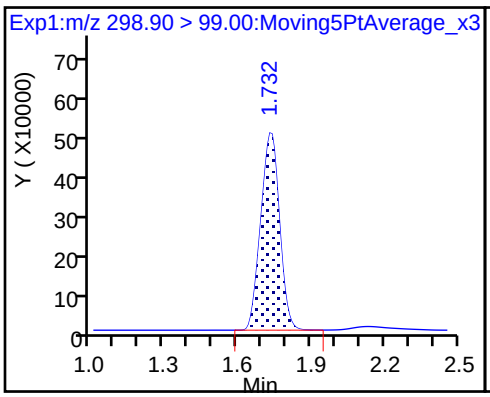
D 47 13C3-PFBS



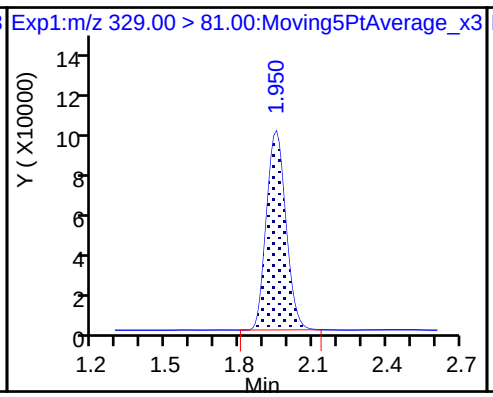
5 Perfluorobutanesulfonic acid



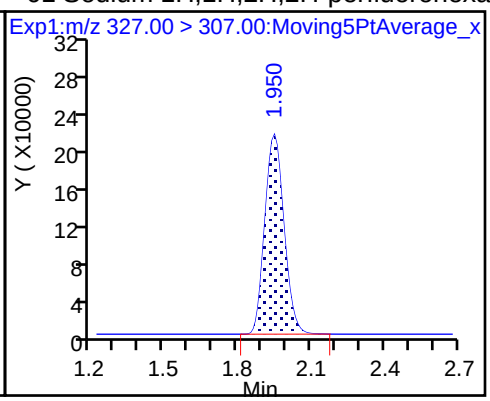
5 Perfluorobutanesulfonic acid



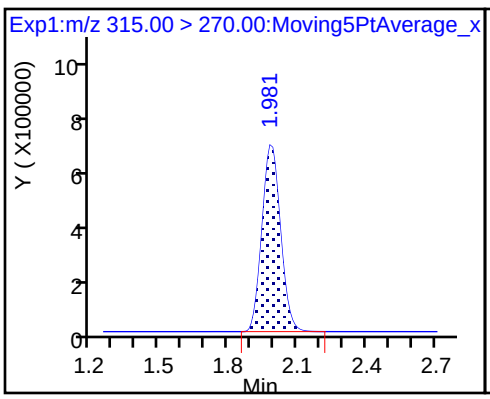
D 60 M2-4:2FTS



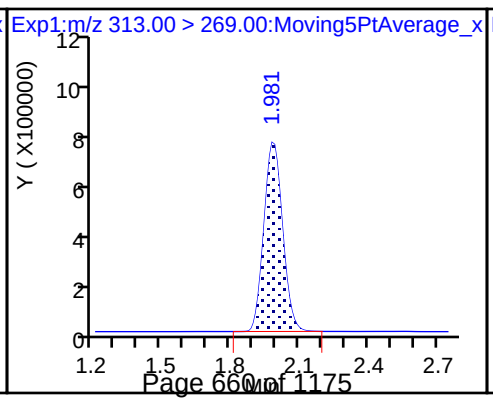
61 Sodium 1H,1H,2H,2H-perfluorohexane



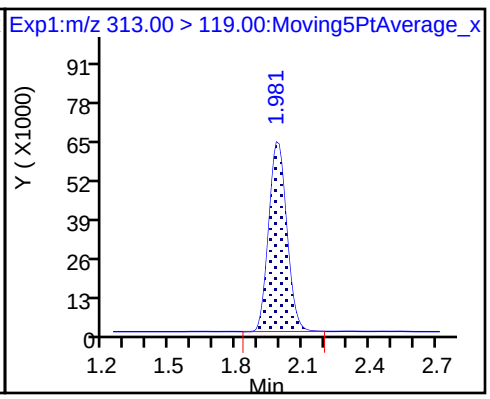
D 7 13C2 PFHxA



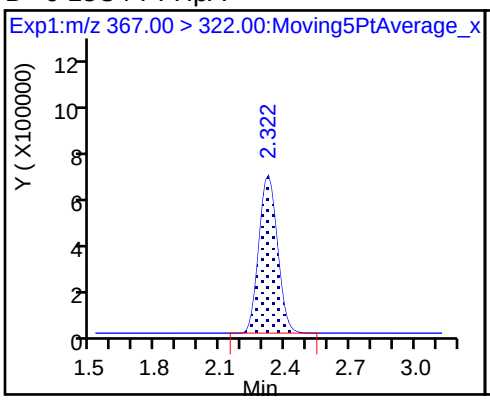
6 Perfluorohexanoic acid



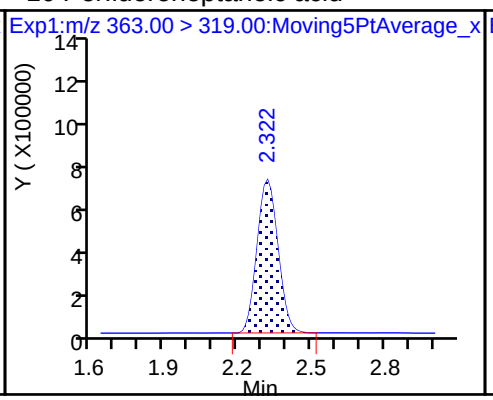
6 Perfluorohexanoic acid



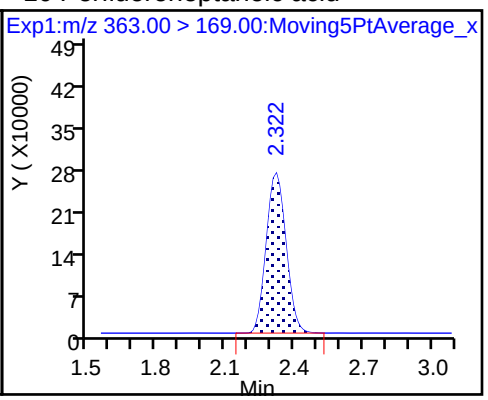
D 9 13C4-PFHpA



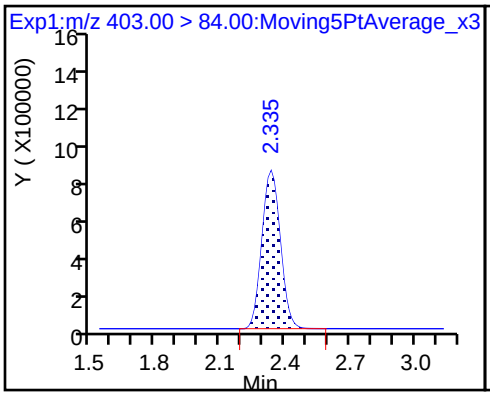
10 Perfluoroheptanoic acid



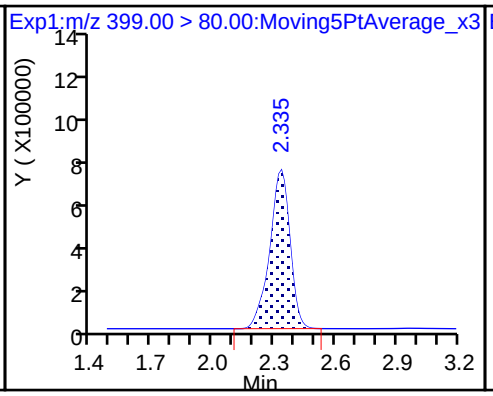
10 Perfluoroheptanoic acid



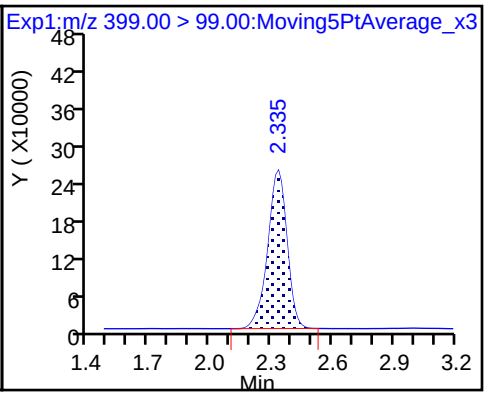
D 11 18O2 PFHxS



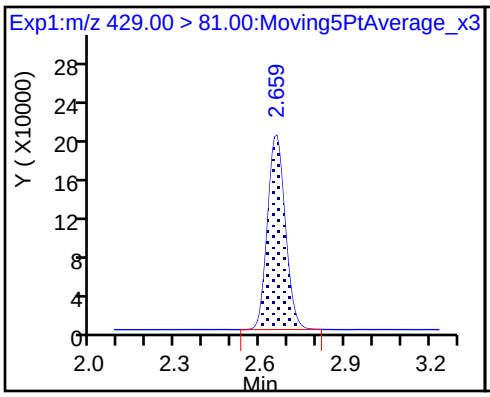
8 Perfluorohexanesulfonic acid



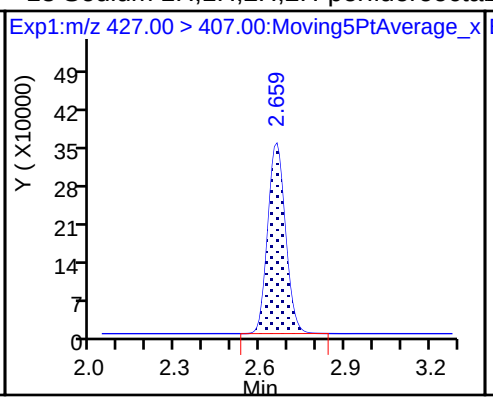
8 Perfluorohexanesulfonic acid



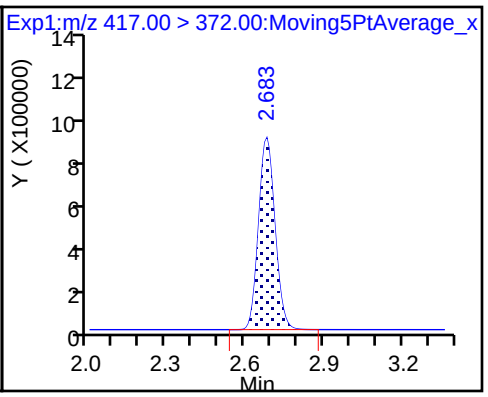
D 12 M2-6:2FTS



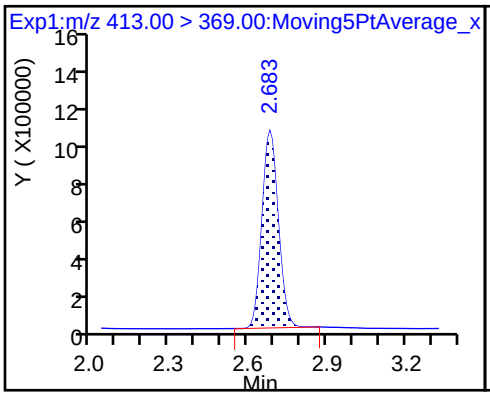
13 Sodium 1H,1H,2H,2H-perfluorooctane



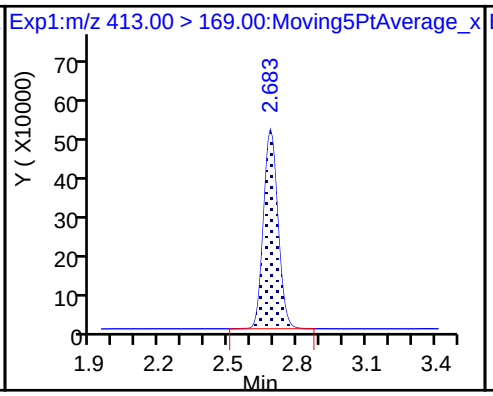
D 14 13C4 PFOA



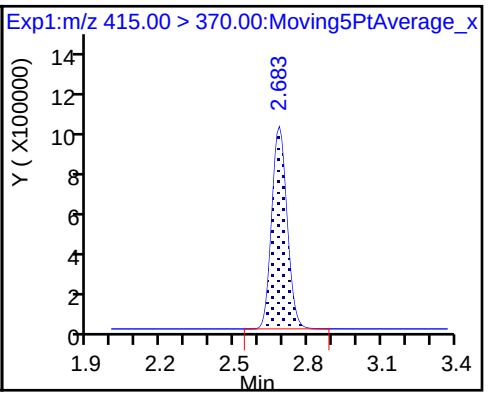
15 Perfluorooctanoic acid



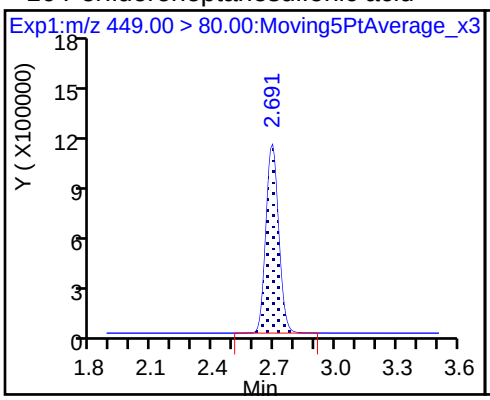
15 Perfluorooctanoic acid



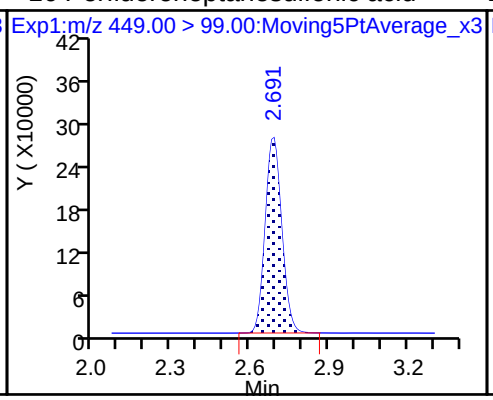
* 62 13C2-PFOA



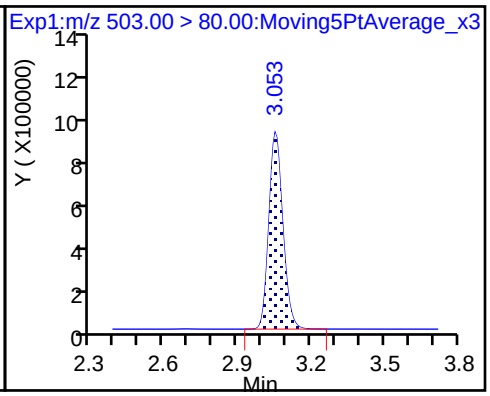
16 Perfluoroheptanesulfonic acid



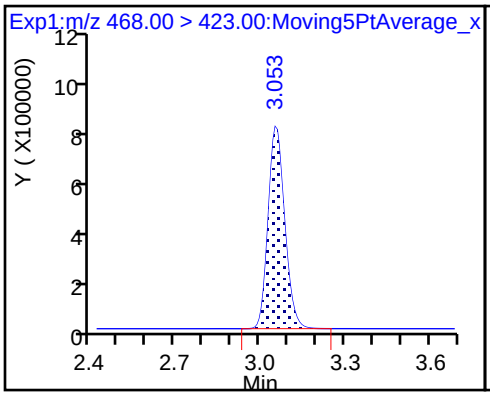
16 Perfluoroheptanesulfonic acid



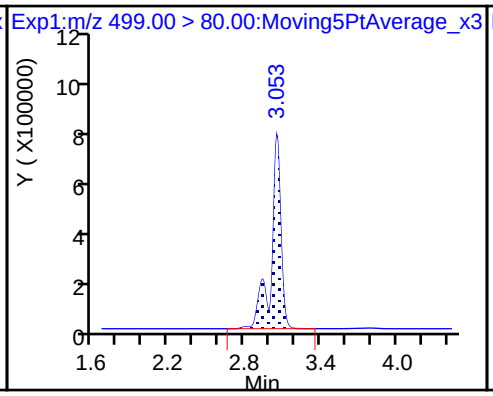
D 18 13C4 PFOS



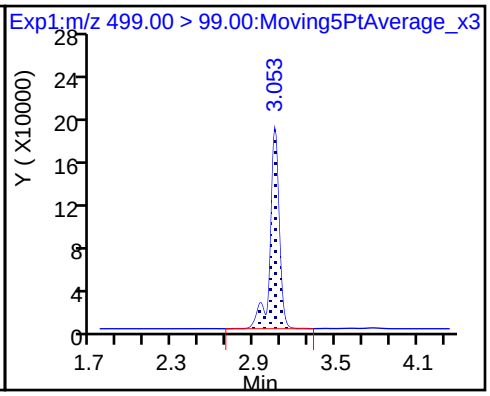
D 19 13C5 PFNA



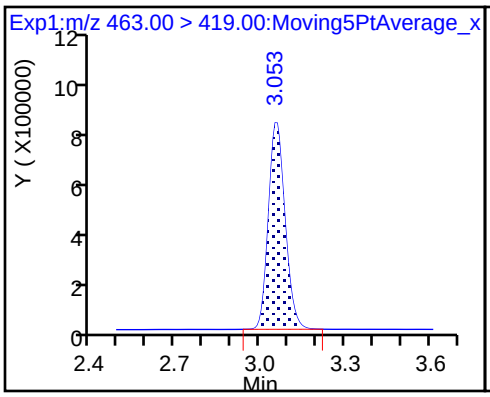
17 Perfluorooctane sulfonic acid



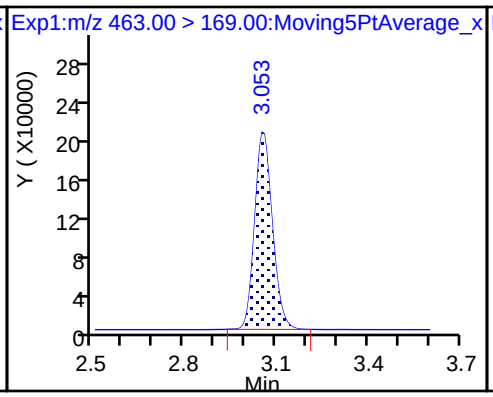
17 Perfluorooctane sulfonic acid



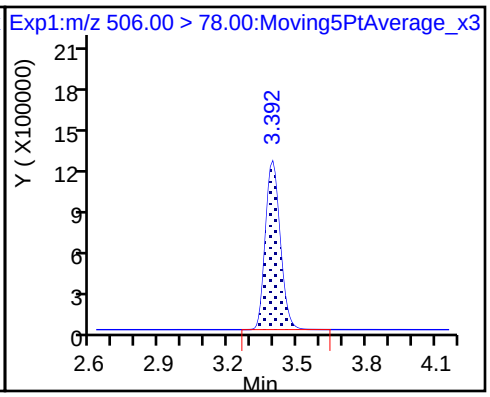
20 Perfluorononanoic acid



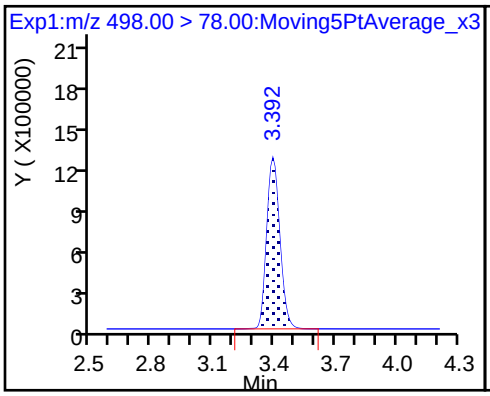
20 Perfluorononanoic acid



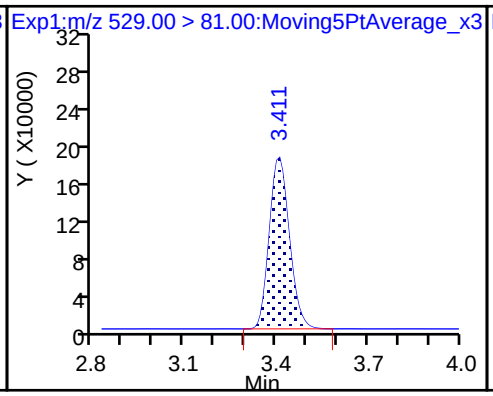
D 21 13C8 FOSA



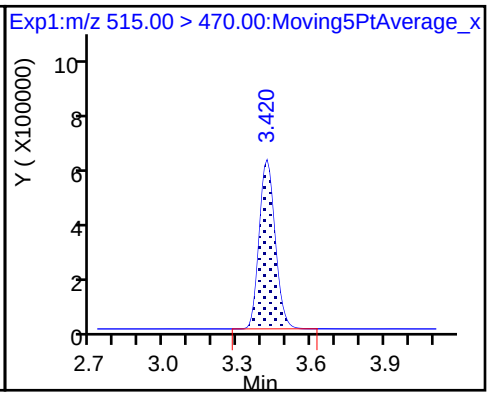
22 Perfluorooctane Sulfonamide



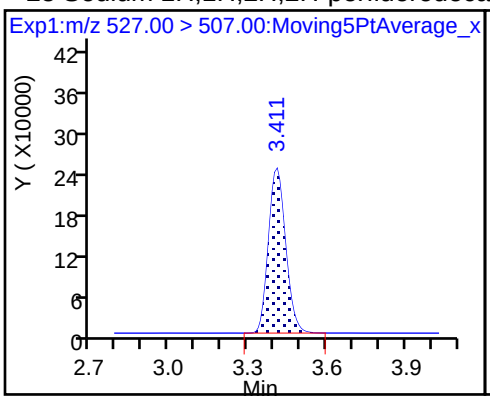
D 26 M2-8:2FTS



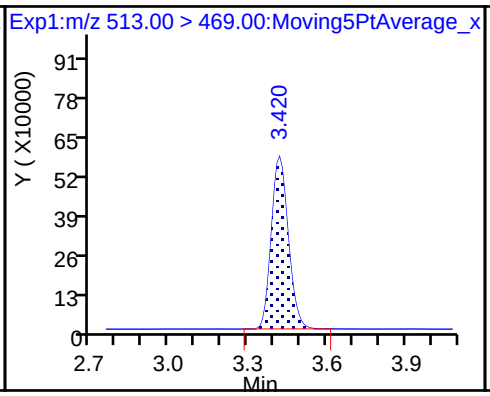
D 23 13C2 PFDA



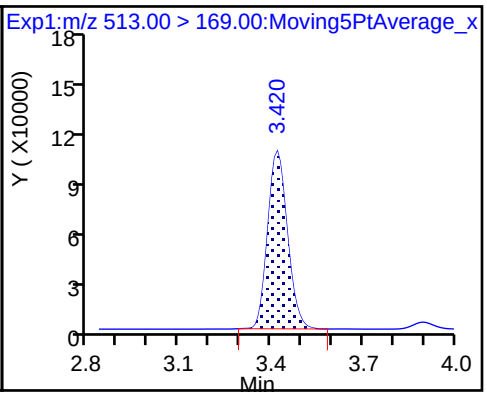
25 Sodium 1H,1H,2H,2H-perfluorodecan



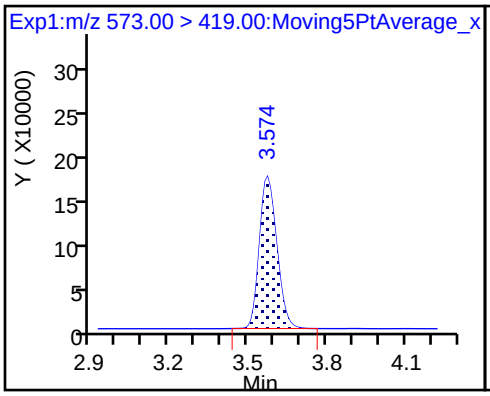
24 Perfluorodecanoic acid



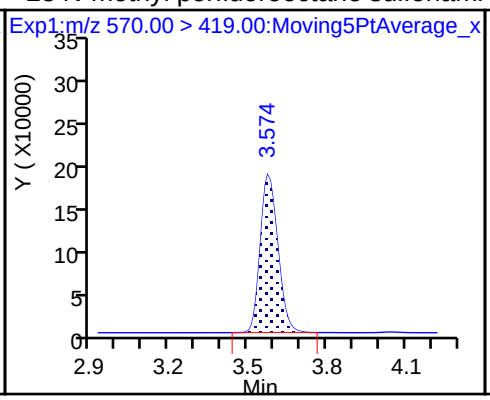
24 Perfluorodecanoic acid



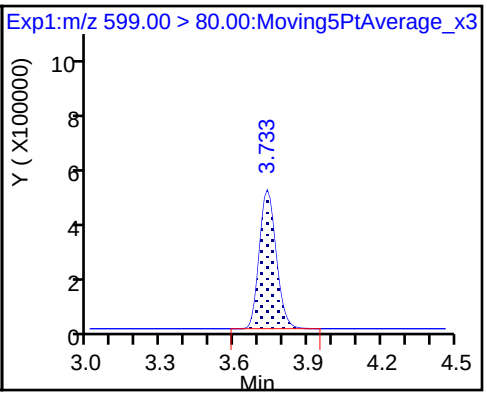
D 27 d3-NMeFOSAA



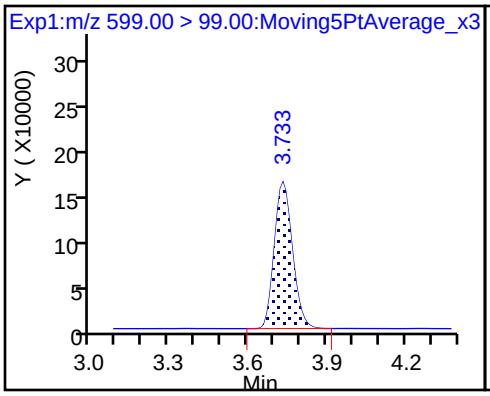
28 N-methyl perfluorooctane sulfonami



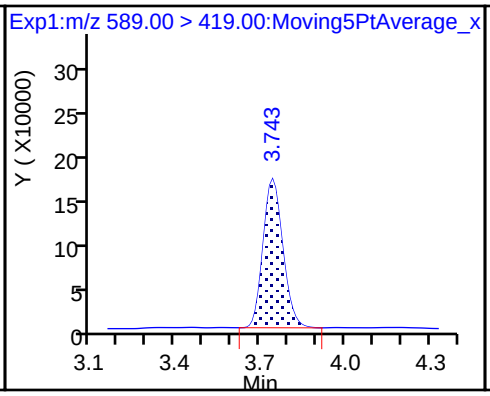
29 Perfluorodecane Sulfonic acid



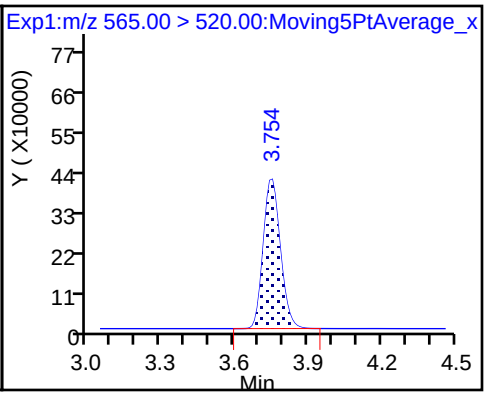
29 Perfluorodecane Sulfonic acid



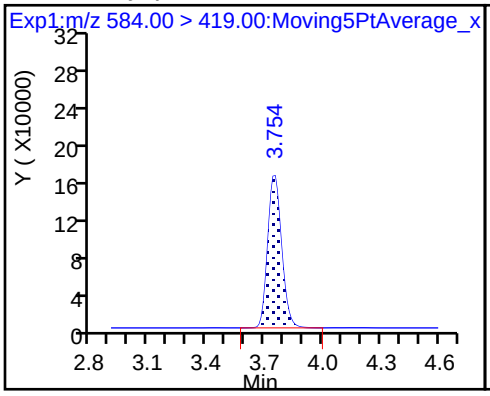
D 32 d5-NEtFOSAA



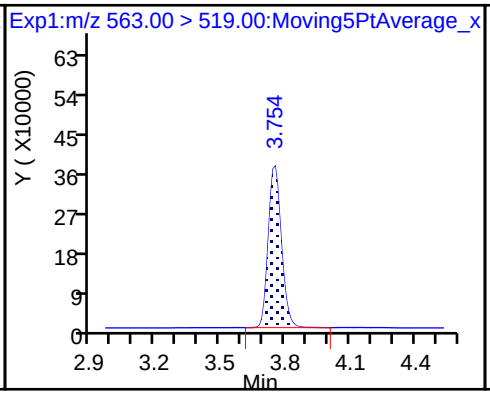
D 30 13C2 PFUnA



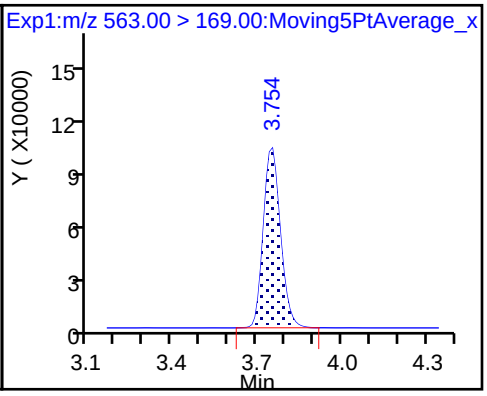
33 N-ethyl perfluorooctane sulfonamid



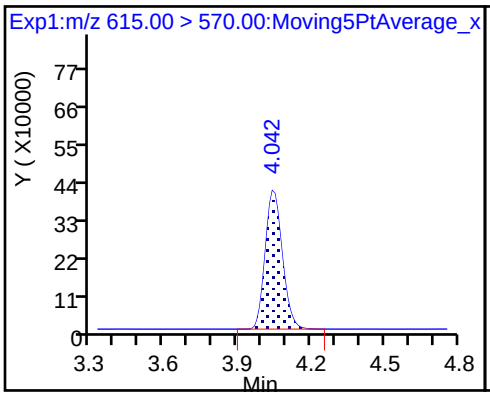
31 Perfluoroundecanoic acid



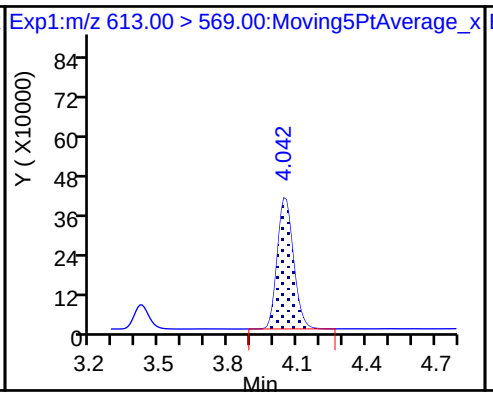
31 Perfluoroundecanoic acid



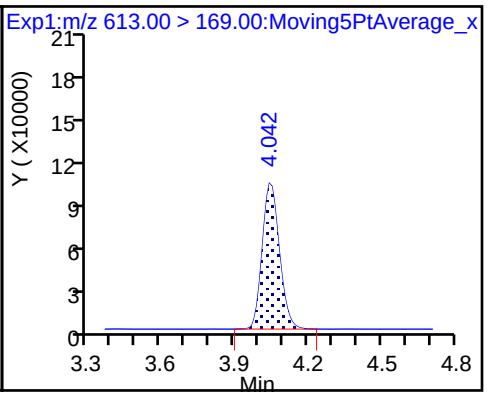
D 36 13C2 PFDoA



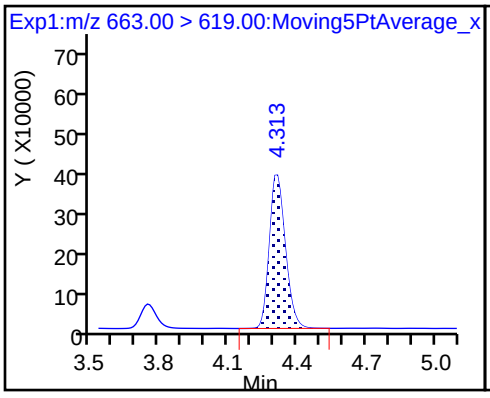
37 Perfluorododecanoic acid



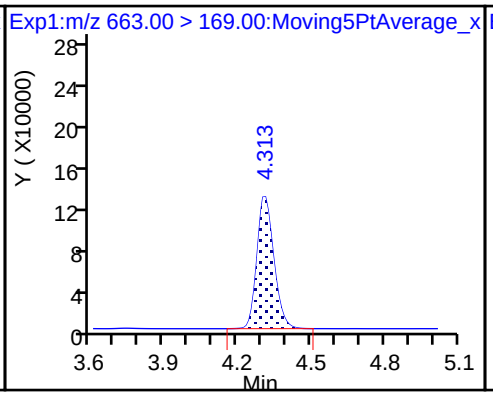
37 Perfluorododecanoic acid



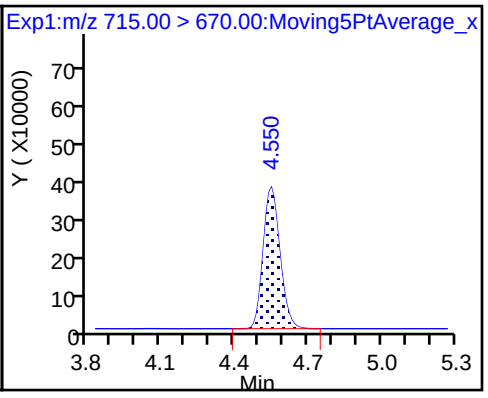
41 Perfluorotridecanoic acid



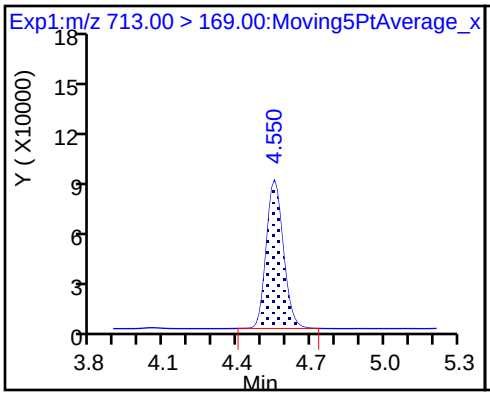
41 Perfluorotridecanoic acid



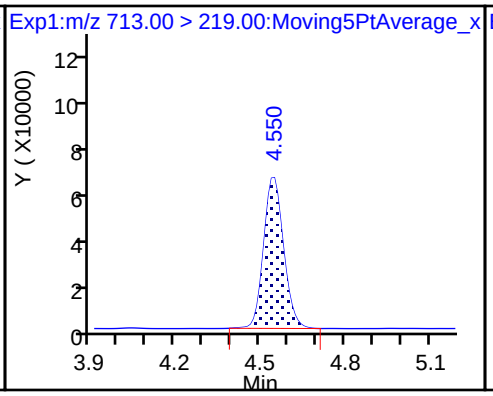
D 43 13C2-PFTeDA



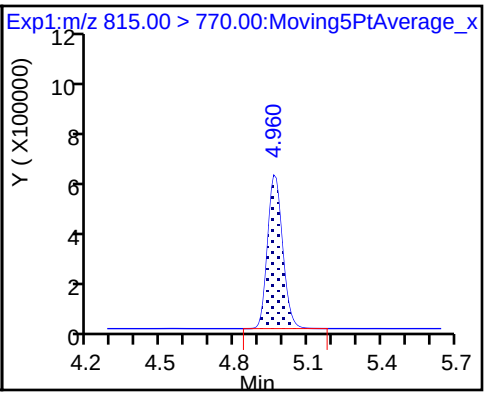
42 Perfluorotetradecanoic acid



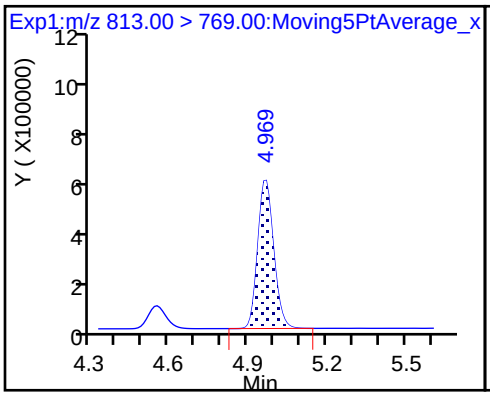
42 Perfluorotetradecanoic acid



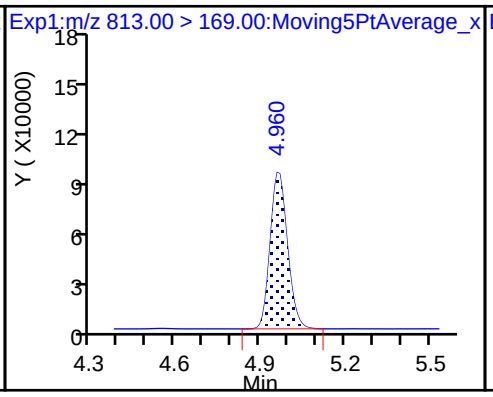
D 44 13C2-PFHxDA



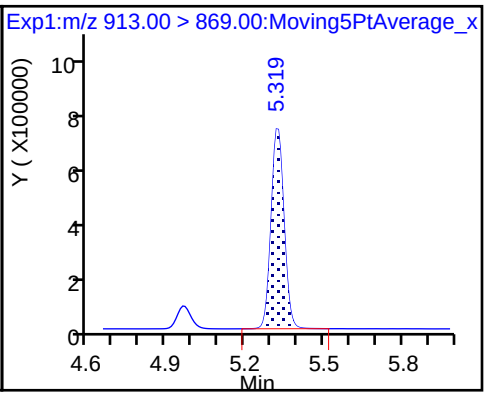
45 Perfluorohexadecanoic acid



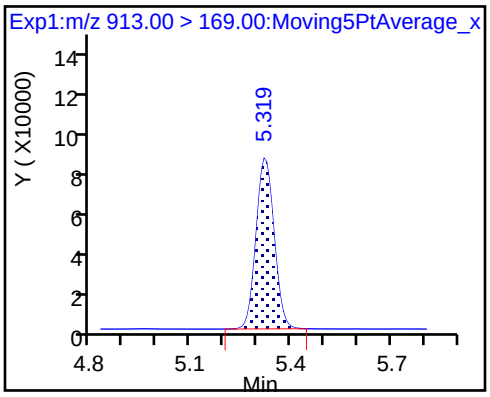
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214053/23 Calibration Date: 03/21/2018 01:54

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9027		0.973	1.00	-2.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.128		0.965	1.00	-3.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	77.21		0.882	0.884	-0.2	50.0
4:2 FTS	AveID	16.07	13.12		0.763	0.934	-18.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9911		0.982	1.00	-1.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.007		0.971	1.00	-2.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.060		0.865	0.910	-5.0	40.0
6:2FTS	AveID	1.665	1.709		0.973	0.948	2.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.084		0.971	1.00	-2.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.283		0.929	0.952	-2.4	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9925		0.973	1.00	-2.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.043		0.894	0.928	-3.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.002		1.03	1.00	3.1	40.0
8:2FTS	AveID	1.257	1.163		0.886	0.958	-7.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.995		1.05	1.00	4.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	0.9749		0.936	1.00	-6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6181		0.933	0.964	-3.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	1.000		1.02	1.00	2.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7417		0.885	1.00	-11.5	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	0.9673		0.946	1.00	-5.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9326		0.906	1.00	-9.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2390		0.867	1.00	-13.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9026		0.959	1.00	-4.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.8763		0.899	1.00	-10.1	50.0
13C4 PFBA	Ave	1.277	1.176		2.30	2.50	-7.9	50.0
13C5 PFPeA	Ave	0.9006	0.8361		2.32	2.50	-7.2	50.0
13C3-PFBS	Ave	0.0222	0.0218		2.28	2.33	-1.7	50.0
M2-4:2FTS	Ave	0.1590	0.1314		1.93	2.34	-17.4	50.0
13C2 PFHxA	Ave	1.004	0.9545		2.38	2.50	-5.0	50.0
13C4-PFHpA	Ave	0.9767	0.9313		2.38	2.50	-4.7	50.0
18O2 PFHxS	Ave	1.303	1.245		2.26	2.37	-4.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214053/23 Calibration Date: 03/21/2018 01:54

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2113		2.01	2.38	-15.5	40.0
13C4 PFOA	Ave	0.9431	0.9327		2.47	2.50	-1.1	50.0
13C4 PFOS	Ave	0.9113	0.9158		2.40	2.39	0.5	50.0
13C5 PFNA	Ave	0.7545	0.7569		2.51	2.50	0.3	50.0
13C8 FOSA	Ave	1.319	1.313		2.49	2.50	-0.5	50.0
M2-8:2FTS	Ave	0.2350	0.2292		2.34	2.40	-2.4	40.0
13C2 PFDA	Ave	0.6303	0.6163		2.44	2.50	-2.2	50.0
d3-NMeFOSAA	Ave	0.2081	0.1931		2.32	2.50	-7.2	50.0
13C2 PFUnA	Ave	0.4935	0.4820		2.44	2.50	-2.3	50.0
d5-NEtFOSAA	Ave	0.1990	0.1975		2.48	2.50	-0.7	50.0
13C2 PFDoA	Ave	0.4680	0.4583		2.45	2.50	-2.1	50.0
13C2-PFTeDA	Ave	0.4272	0.4218		2.47	2.50	-1.3	50.0
13C2-PFHxDA	Ave	0.6248	0.6233		2.49	2.50	-0.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_044.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 01:54:15 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:33 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.538	5591401	2.30		92.1	90721	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.447	0.0	1.000	2019032	0.9734		97.3	1028	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.700	0.009	0.636	3974723	2.32		92.8	155978	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1793032	0.9654		96.5	631	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.646	96536	2.28		98.3	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2833803	0.8820		99.8	1173	
298.90 > 99.00	1.744	1.744	0.0	1.005	1163666		2.44(1.25-3.74)		1105	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.946	0.010	0.727	583189	1.93		82.6	11013	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	508928	0.7625		81.6	19228	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.987	0.010	0.743	4537398	2.38		95.0	118210	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1798723	0.9822		98.2	6329	
313.00 > 119.00	1.997	1.997	0.0	1.000	171175		10.51(5.03-15.10)		3488	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.866	4426855	2.38		95.3	75270	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1782763	0.9713		97.1	3261	
363.00 > 169.00	2.328	2.328	0.0	1.000	711314		2.51(1.13-3.40)		9393	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	5598609	2.26		95.5	80414	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2283144	0.8647		95.0	3781	
399.00 > 99.00	2.341	2.341	0.0	1.000	766083		2.98(1.50-4.49)		2057	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.657	0.008	0.991	954099	2.01		84.5	32071	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.665	0.0	1.000	650658	0.9730		103	18951	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.681	0.007	1.000	4433677	2.47		98.9	86841	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.689	0.0	1.000	1923201	0.9714		97.1	663	
413.00 > 169.00	2.689	2.689	0.0	1.000	1046960		1.84(0.84-2.52)		3191	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.689	0.0		4753634	2.50			70474	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.696	0.0	1.000	2126584	0.9293		97.6	29783	
449.00 > 99.00	2.696	2.696	0.0	1.000	561231		3.79(1.94-5.82)		12067	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.051	0.014	1.140	4161825	2.40		100	43767	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	3598076	2.51		100	69432	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1684959	0.8938		96.3	4433	
499.00 > 99.00	3.065	3.065	0.0	1.000	375844		4.48(2.31-6.93)		2744	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.065	0.0	1.000	1428435	0.9735		97.3	2689	
463.00 > 169.00	3.065	3.065	0.0	1.000	344495		4.15(1.90-5.69)		10744	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.264	6242103	2.49		99.5	64290	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	2501679	1.03		103	37533	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.408	0.008	1.271	1043866	2.34		97.6	26201	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.417	0.008	1.274	2929622	2.44		97.8	47122	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.416	0.0	1.000	485725	0.8864		92.5	12167	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.425	0.0	1.000	1166033	1.05		105	5482	
513.00 > 169.00	3.425	3.425	0.0	1.000	209835		5.56(2.36-7.09)		6713	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.331	917791	2.32		92.8	22034	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	357913	0.9361		93.6	3814	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1037555	0.9332		96.8	43476	
599.00 > 99.00	3.748	3.748	0.0	1.000	355545		2.92(1.39-4.16)		7396	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.398	939041	2.48		99.3	1646	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2291238	2.44		97.7	43531	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.000	375439	1.02		102	7110	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	679747	0.8850		88.5	1711	
563.00 > 169.00	3.758	3.758	0.0	1.000	183415		3.71(2.12-6.36)		14564	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.046	0.010	1.509	2178550	2.45		97.9	14608	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.056	0.0	1.000	842949	0.9456		94.6	146	
613.00 > 169.00	4.056	4.056	0.0	1.000	219589		3.84(2.13-6.40)		5066	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.317	0.0	1.000	812659	0.9065		90.6	168	
663.00 > 169.00	4.317	4.317	0.0	1.000	255632		3.18(1.25-3.76)		4156	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.694	2004937	2.47		98.7	17472	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	191691	0.8667		86.7	2632	
713.00 > 219.00	4.554	4.554	0.0	1.000	134101		1.43(0.71-2.13)		1761	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.964	0.009	1.850	2962899	2.49		99.8	10899	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.000	1069763	0.9594		95.9	90.9	
813.00 > 169.00	4.973	4.973	0.0	1.000	173335		6.17(2.86-8.58)		2073	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.330	0.0	1.000	1038568	0.8989		89.9	216	
913.00 > 169.00	5.330	5.330	0.0	1.000	139097		7.47(3.83-11.48)		1634	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:56:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_044.d

Injection Date: 21-Mar-2018 01:54:15 Instrument ID: A8_N

Lims ID: CCV L4

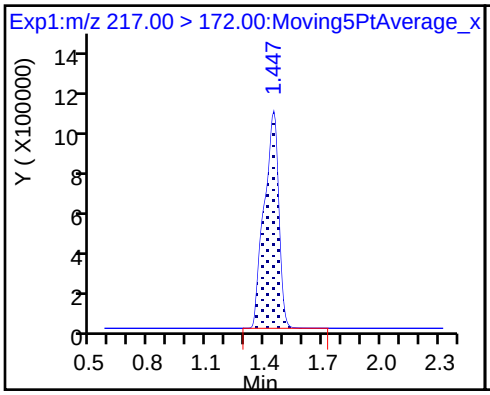
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

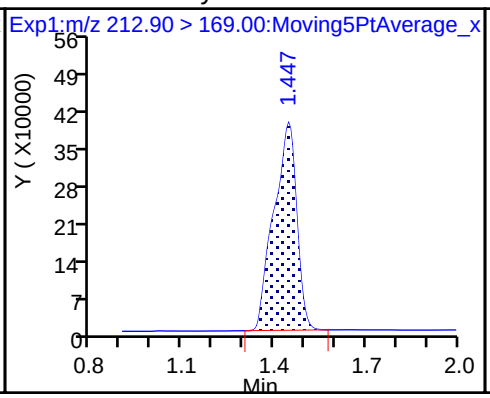
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

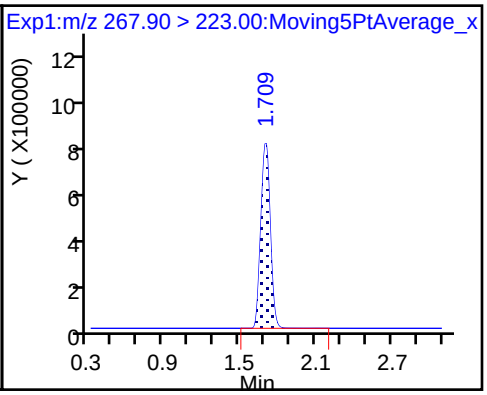
D 1 13C4 PFBA



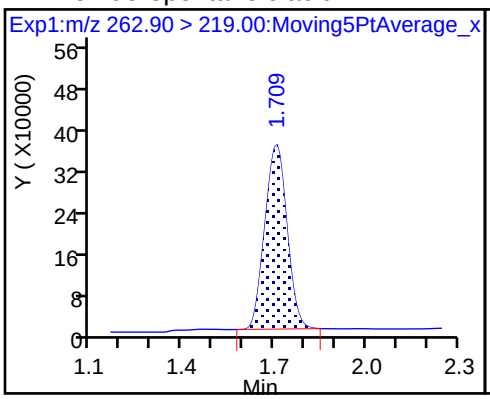
2 Perfluorobutyric acid



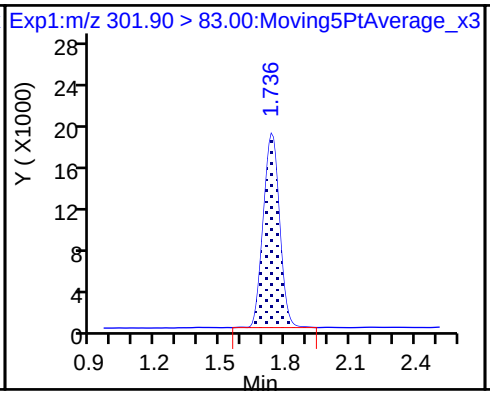
D 3 13C5-PFPeA



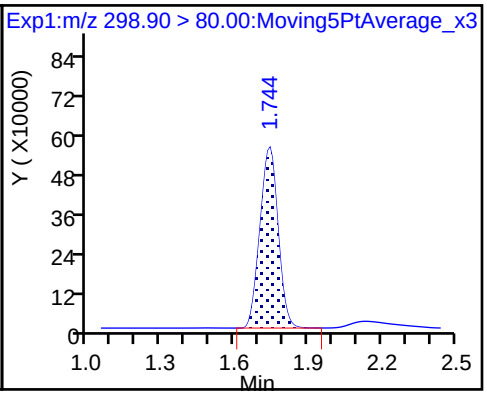
4 Perfluoropentanoic acid



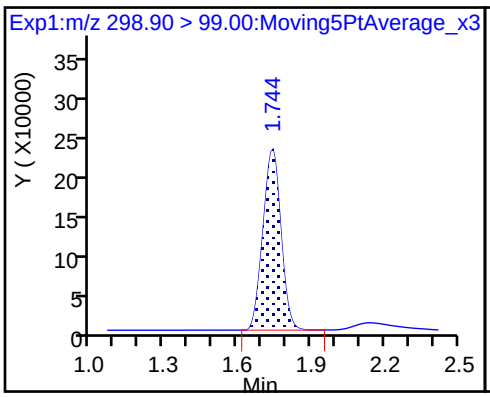
D 47 13C3-PFBS



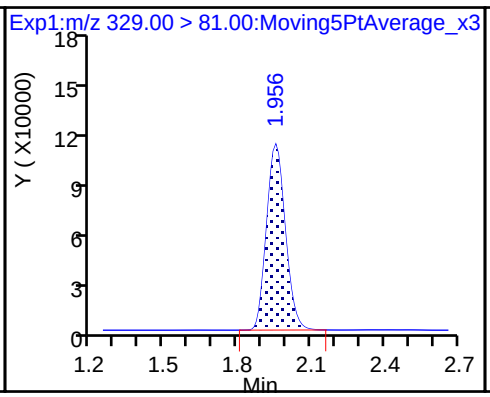
5 Perfluorobutanesulfonic acid



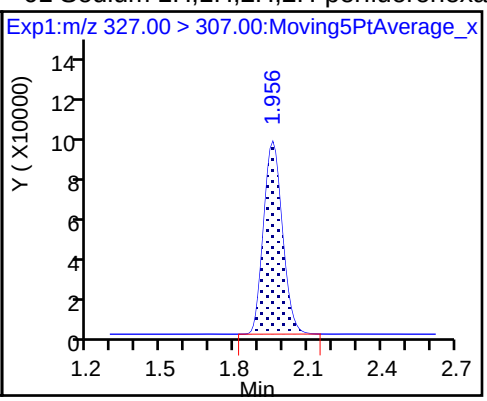
5 Perfluorobutanesulfonic acid



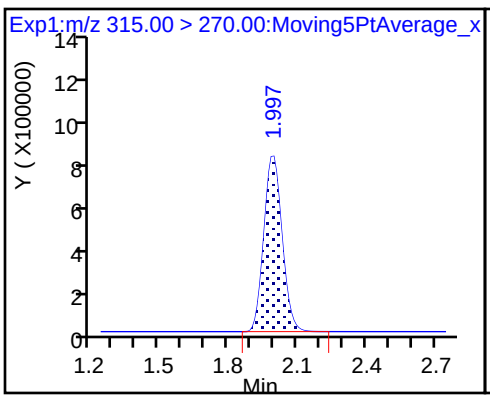
D 60 M2-4:2FTS



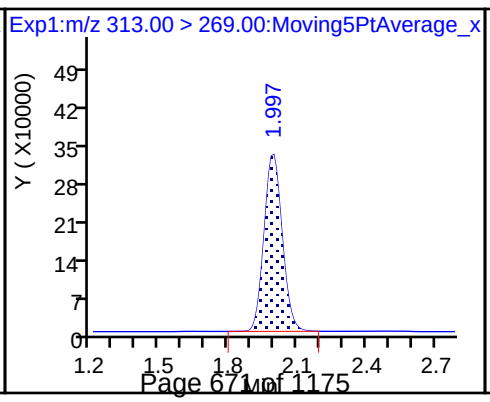
61 Sodium 1H,1H,2H,2H-perfluorohexane



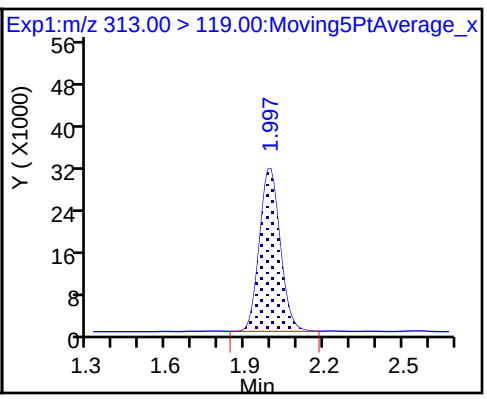
D 7 13C2 PFHxA



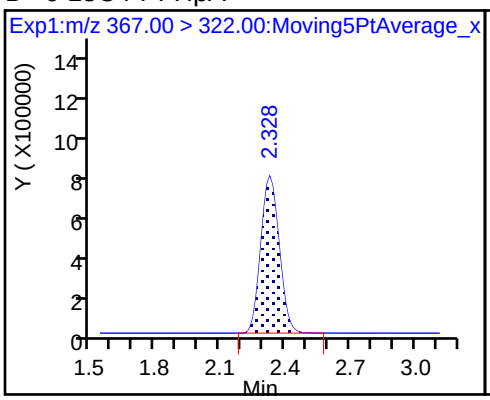
6 Perfluorohexanoic acid



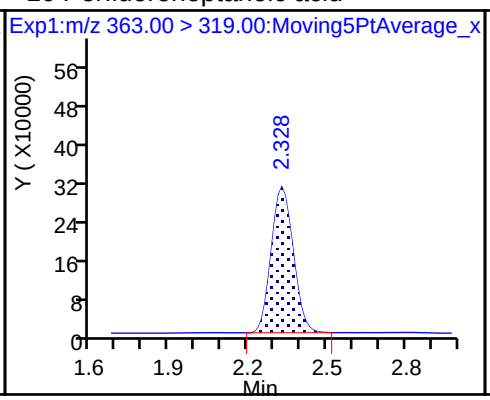
6 Perfluorohexanoic acid



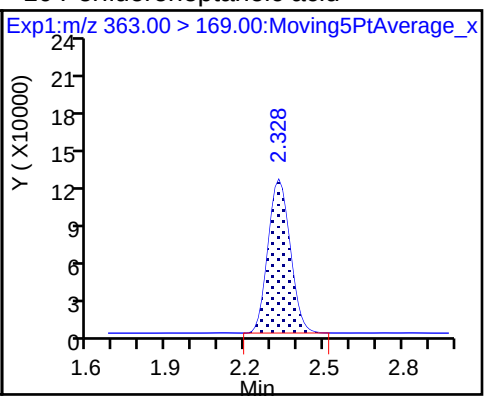
D 9 13C4-PFHpA



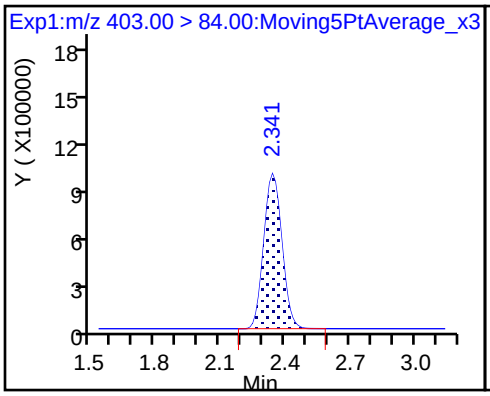
10 Perfluoroheptanoic acid



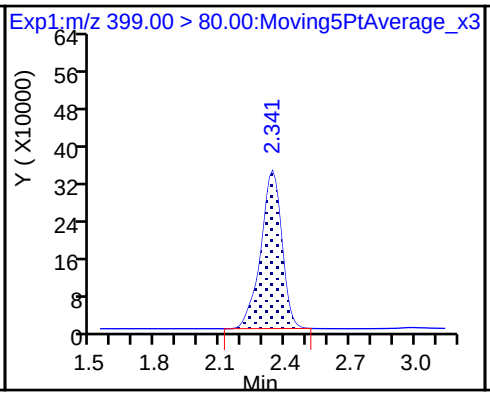
10 Perfluoroheptanoic acid



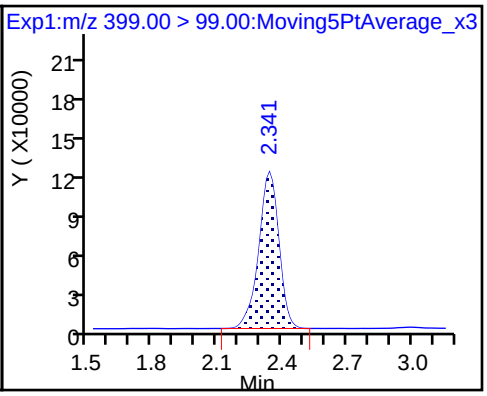
D 11 18O2 PFHxS



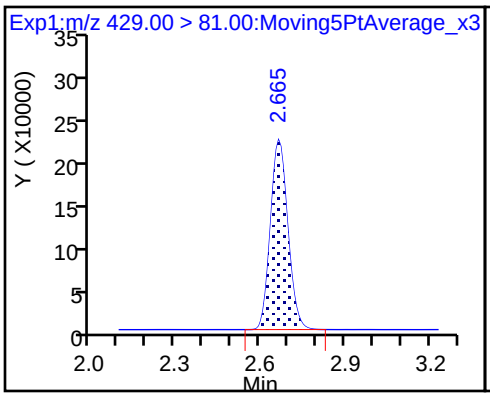
8 Perfluorohexanesulfonic acid



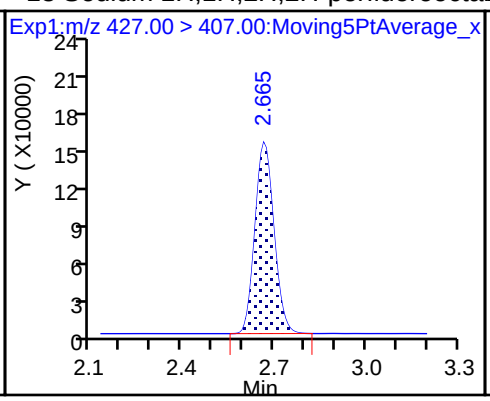
8 Perfluorohexanesulfonic acid



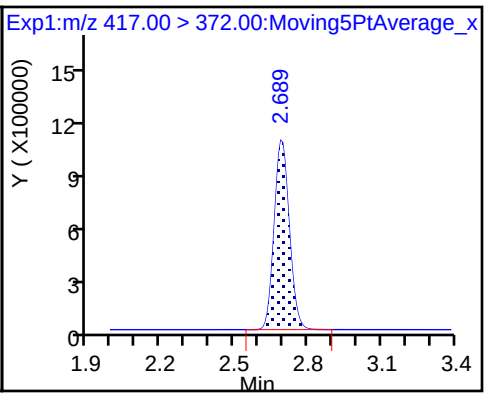
D 12 M2-6:2FTS



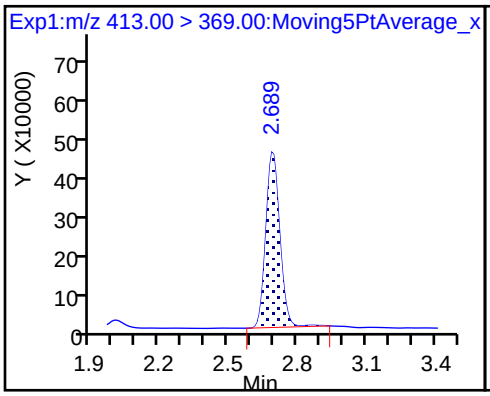
13 Sodium 1H,1H,2H,2H-perfluorooctane



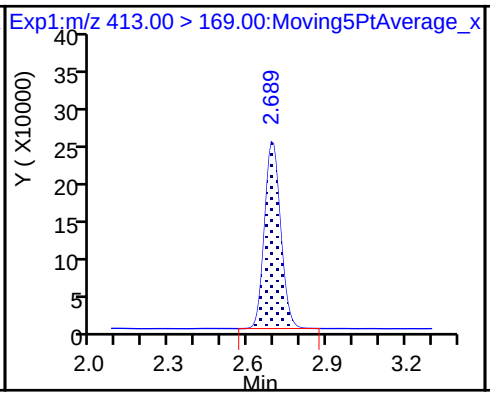
D 14 13C4 PFOA



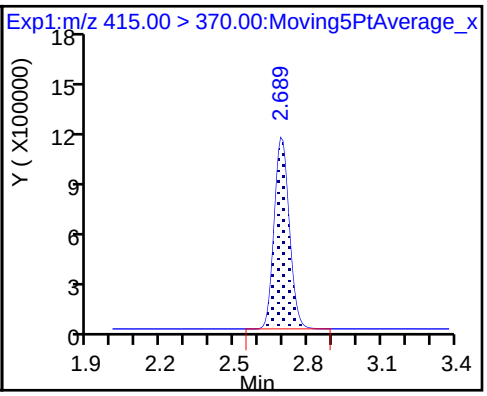
15 Perfluorooctanoic acid



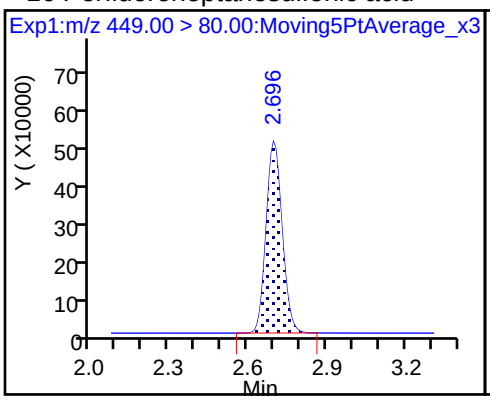
15 Perfluorooctanoic acid



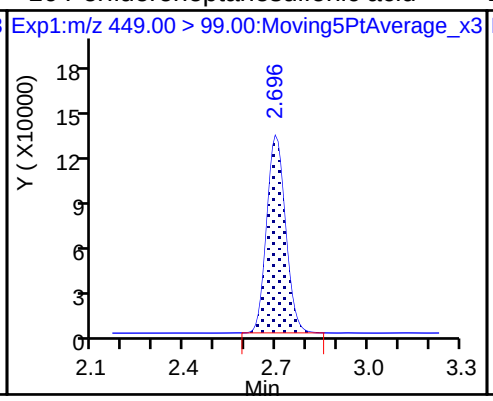
* 62 13C2-PFOA



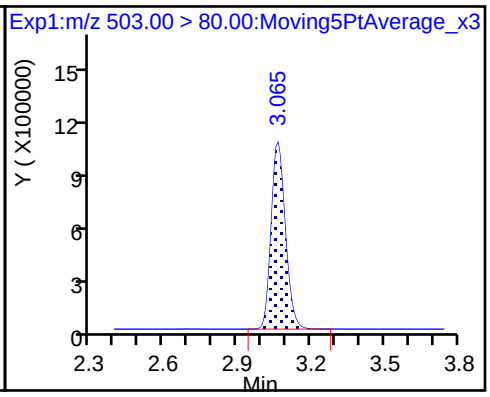
16 Perfluoroheptanesulfonic acid



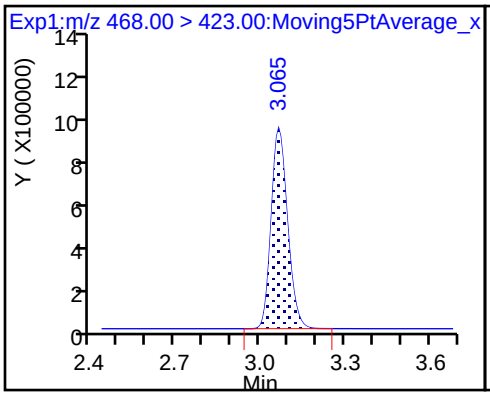
16 Perfluoroheptanesulfonic acid



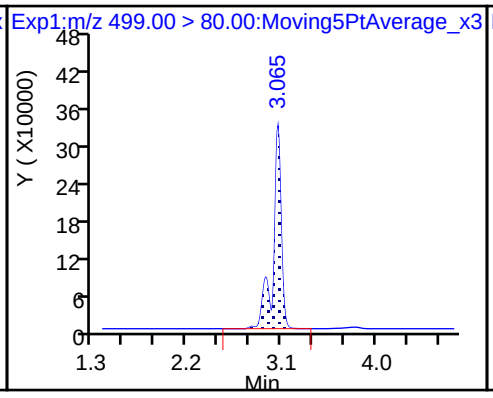
D 18 13C4 PFOS



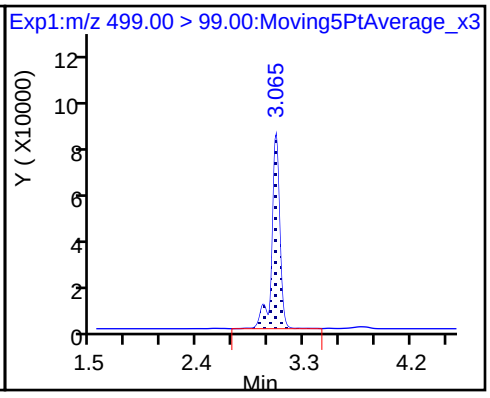
D 19 13C5 PFNA



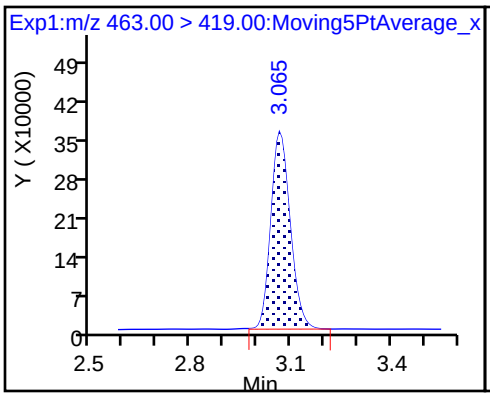
17 Perfluorooctane sulfonic acid



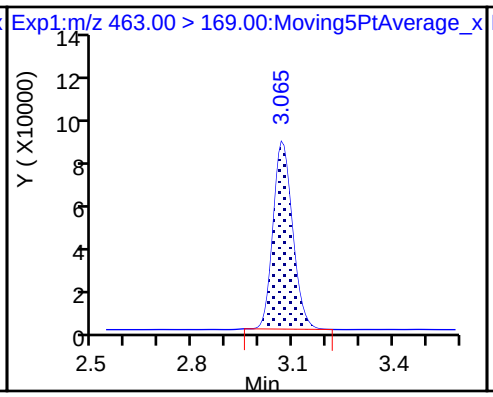
17 Perfluorooctane sulfonic acid



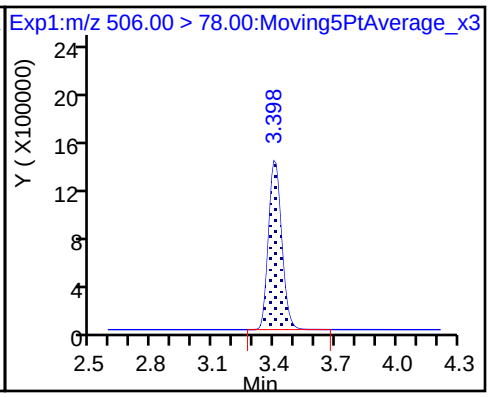
20 Perfluorononanoic acid



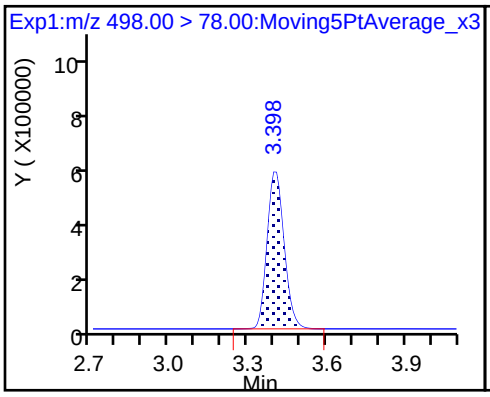
20 Perfluorononanoic acid



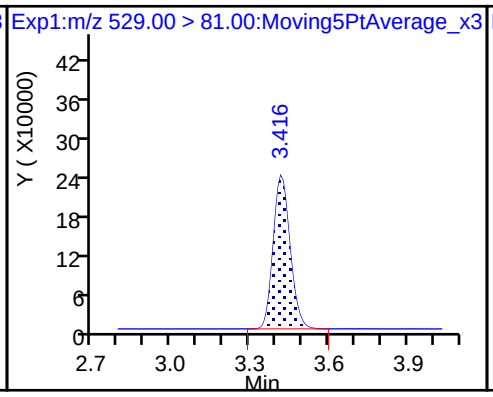
D 21 13C8 FOSA



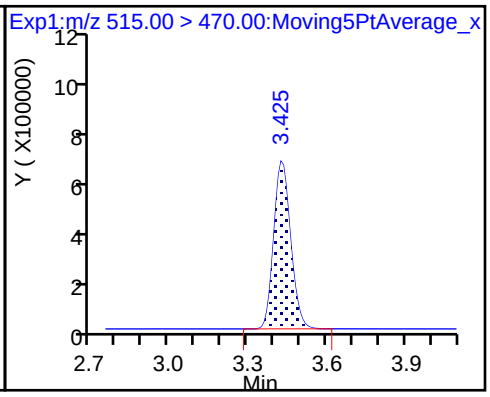
22 Perfluorooctane Sulfonamide



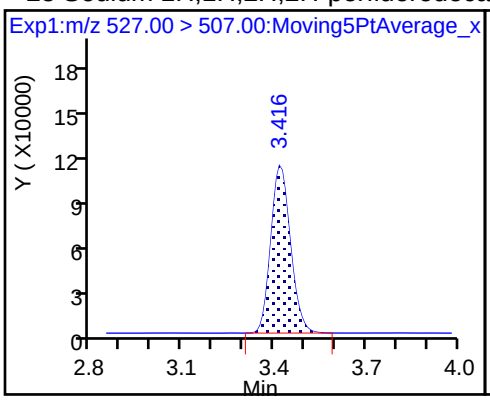
D 26 M2-8:2FTS



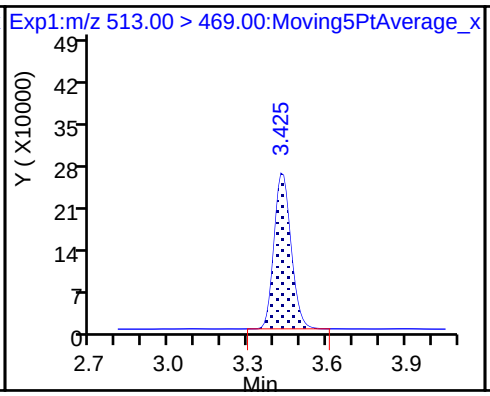
D 23 13C2 PFDA



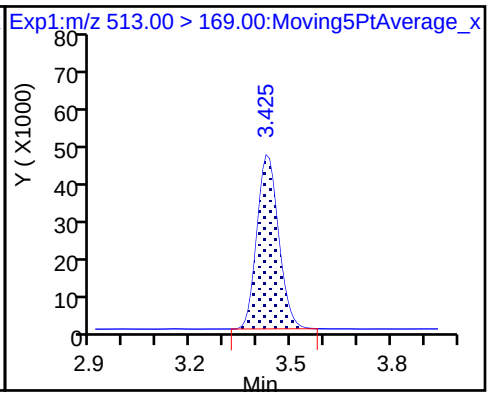
25 Sodium 1H,1H,2H,2H-perfluorodecan



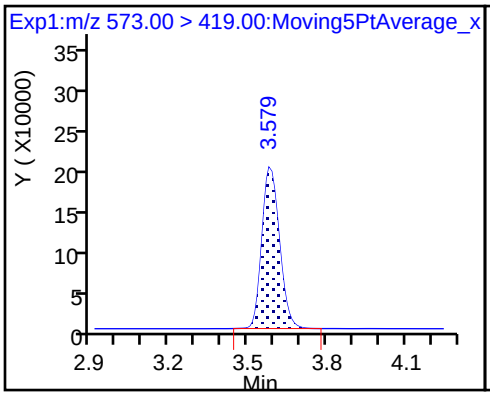
24 Perfluorodecanoic acid



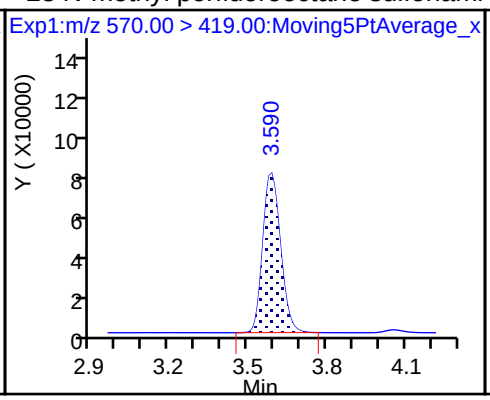
24 Perfluorodecanoic acid



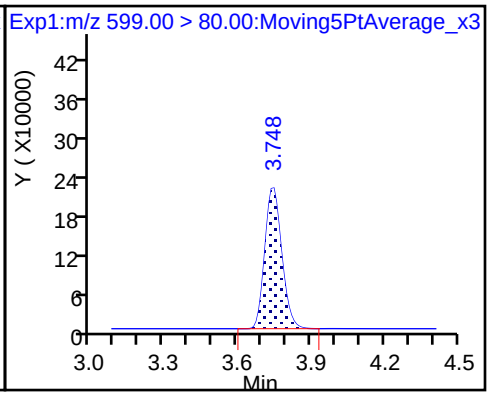
D 27 d3-NMeFOSAA



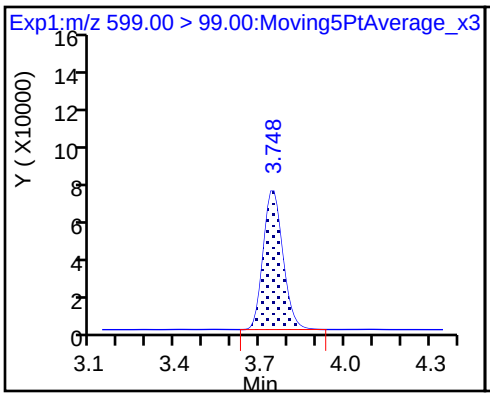
28 N-methyl perfluorooctane sulfonami



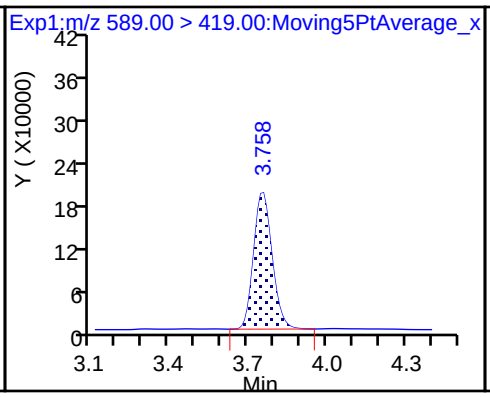
29 Perfluorodecane Sulfonic acid



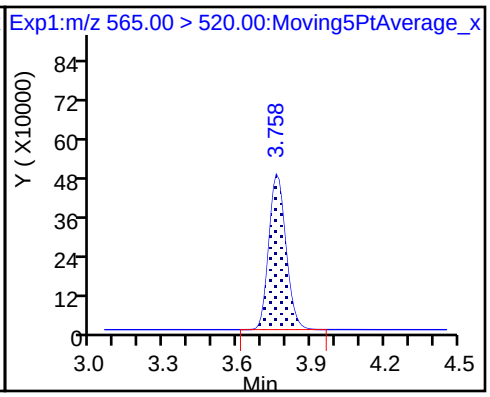
29 Perfluorodecane Sulfonic acid



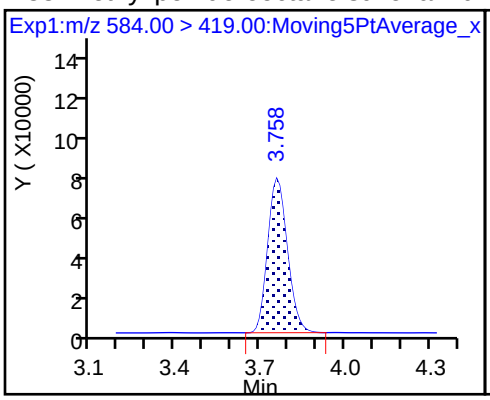
D 32 d5-NEtFOSAA



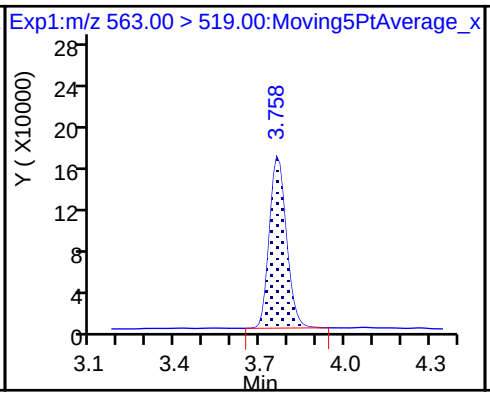
D 30 13C2 PFUnA



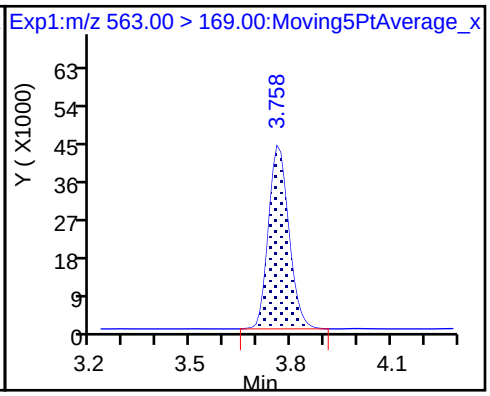
33 N-ethyl perfluorooctane sulfonamid



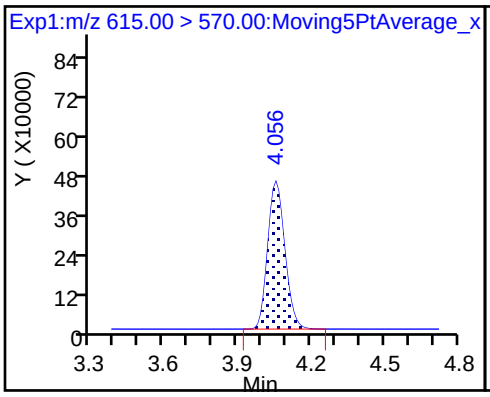
31 Perfluoroundecanoic acid



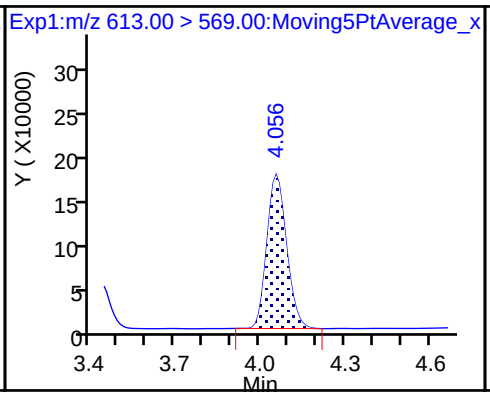
31 Perfluoroundecanoic acid



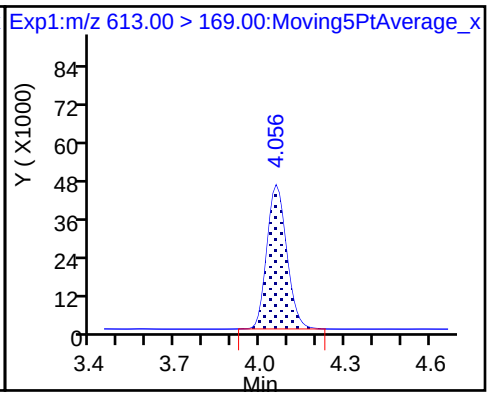
D 36 13C2 PFDoA



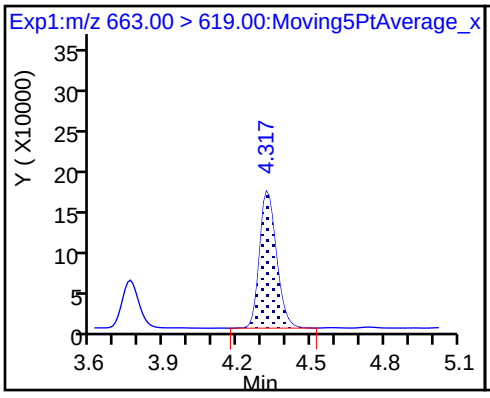
37 Perfluorododecanoic acid



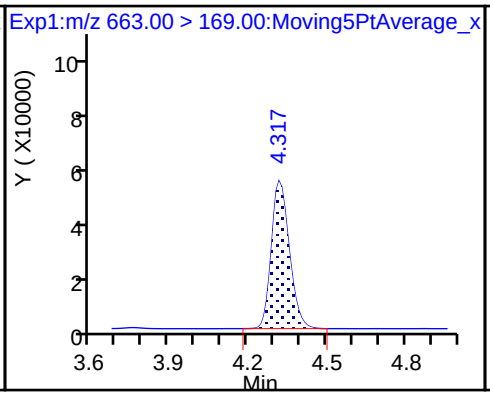
37 Perfluorododecanoic acid



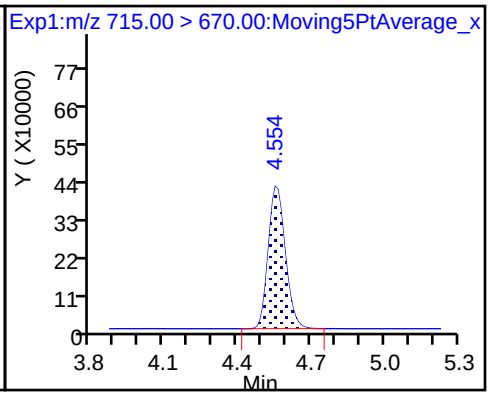
41 Perfluorotridecanoic acid



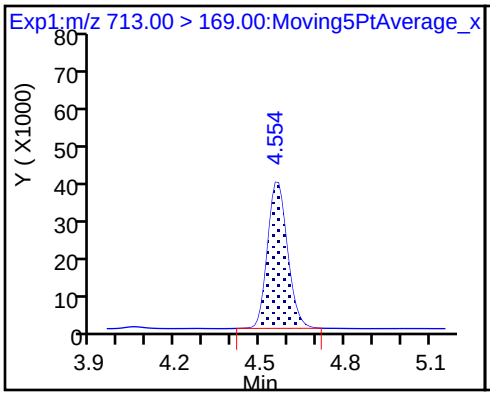
41 Perfluorotridecanoic acid



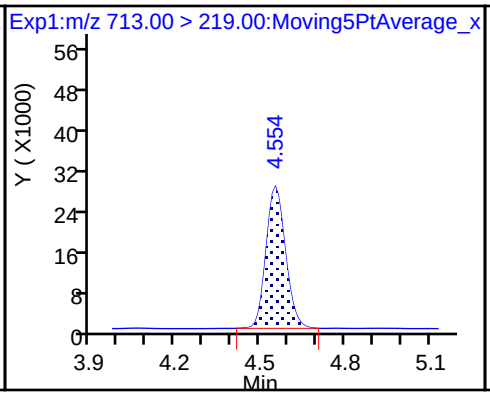
D 43 13C2-PFTeDA



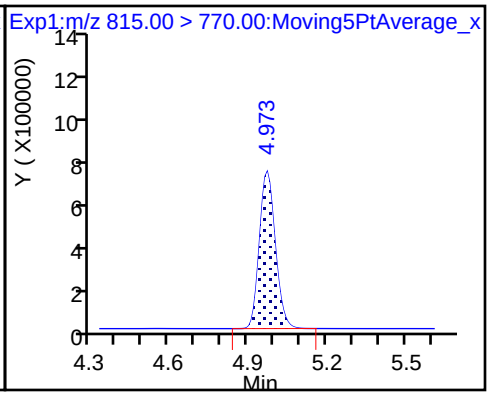
42 Perfluorotetradecanoic acid



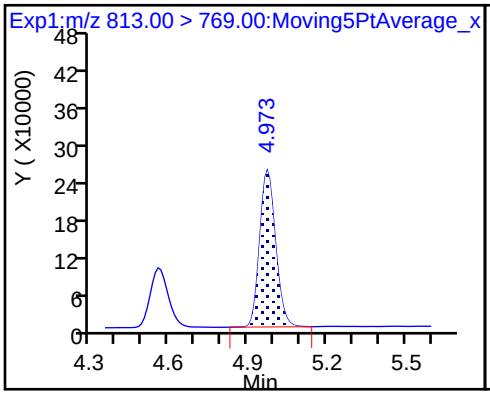
42 Perfluorotetradecanoic acid



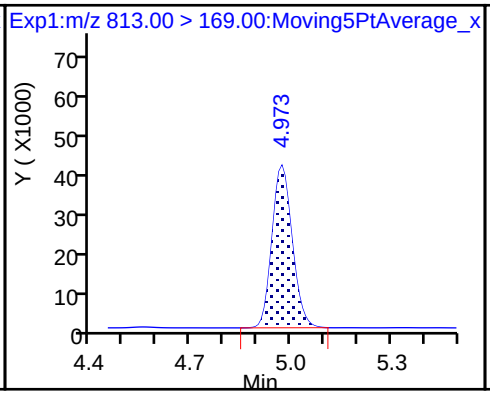
D 44 13C2-PFHxDA



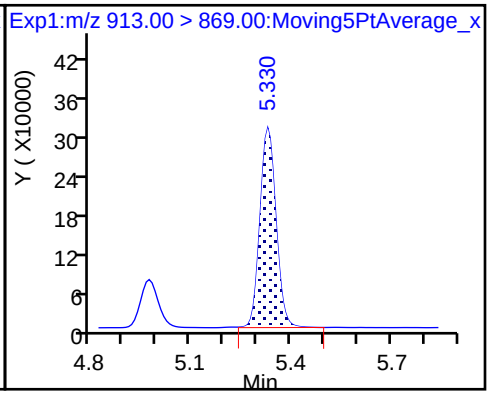
45 Perfluorohexadecanoic acid



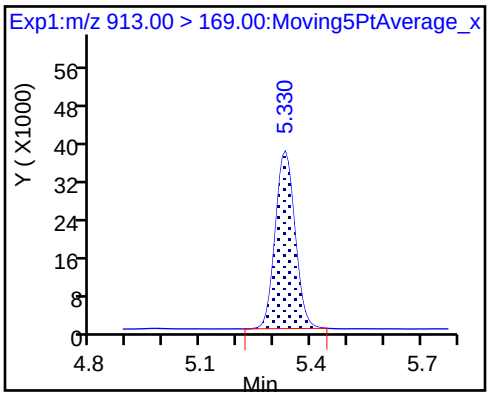
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: ICV 320-214175/10 Calibration Date: 03/21/2018 19:26

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLICALAX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9615		2.55	2.50	2.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.089		2.42	2.50	-3.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.20		2.23	2.21	0.6	50.0
4:2 FTS	AveID	16.15	15.34		2.22	2.34	-5.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9816		2.40	2.50	-4.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.059		2.56	2.50	2.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.067		2.19	2.28	-4.1	40.0
6:2FTS	AveID	1.744	1.722		2.35	2.38	-1.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.152		2.55	2.50	2.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.320		2.45	2.38	3.1	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.152		2.39	2.31	3.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.042		2.61	2.50	4.5	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.011		2.56	2.50	2.6	40.0
8:2FTS	AveID	1.276	1.320		2.48	2.40	3.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.017		2.57	2.50	2.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.043		2.61	2.50	4.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7758		2.75	2.41	14.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9386		2.51	2.50	0.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7832		2.27	2.50	-9.2	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.118		2.67	2.50	6.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.202		2.73	2.50	9.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2294		2.31	2.50	-7.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9290		2.53	2.50	1.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9401		2.54	2.50	1.7	50.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	None				0.0100	2.36	-100.0*	50.0
Adona	None				0.0100	2.50	-100.0*	50.0
HFPO-DA (GenX)	None				0.0100	2.50	-100.0*	40.0
13C4 PFBA	Ave	1.266	1.264		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	0.8399	0.8702		2.59	2.50	3.6	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.41	2.33	3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: ICV 320-214175/10 Calibration Date: 03/21/2018 19:26

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLICALAX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-4:2FTS	Ave	0.1324	0.1327		2.34	2.34	0.3	50.0
13C2 PFHxA	Ave	0.9288	0.9535		2.57	2.50	2.7	50.0
13C4-PFHpA	Ave	0.9164	0.9262		2.53	2.50	1.1	50.0
18O2 PFHxS	Ave	1.130	1.159		2.43	2.37	2.6	50.0
M2-6:2FTS	Ave	0.1900	0.1878		2.35	2.38	-1.2	40.0
13C4 PFOA	Ave	0.9374	0.9430		2.52	2.50	0.6	50.0
13C4 PFOS	Ave	0.8225	0.8093		2.35	2.39	-1.6	50.0
13C5 PFNA	Ave	0.8266	0.8343		2.52	2.50	0.9	50.0
13C8 FOSA	Ave	1.109	1.126		2.54	2.50	1.5	50.0
M2-8:2FTS	Ave	0.2565	0.2604		2.43	2.40	1.5	40.0
13C2 PFDA	Ave	0.7245	0.7523		2.60	2.50	3.8	50.0
d3-NMeFOSAA	Ave	0.3814	0.4010		2.63	2.50	5.1	50.0
13C2 PFUnA	Ave	0.6482	0.6709		2.59	2.50	3.5	50.0
d5-NEtFOSAA	Ave	0.4345	0.4611		2.65	2.50	6.1	50.0
13C2 PFDoA	Ave	0.7355	0.7399		2.52	2.50	0.6	50.0
13C2-PFTeDA	Ave	0.8983	0.9540		2.66	2.50	6.2	50.0
13C2-PFHxDA	Ave	1.473	1.524		2.59	2.50	3.5	50.0
13C3 HFPO-DA	None				0.000000	2.50	-100.0*	50.0

FORM VII 537 (modified)

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 21-Mar-2018 19:26:58 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:44:33 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: roycea Date: 22-Mar-2018 08:34:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.447	-0.001	0.537	6375865	2.50		99.9	65785	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.449	0.003	1.004	6130285	2.55			2673	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	4780167	2.42			2819	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4387769	2.59		104	120384	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.743	0.001	0.647	93121	2.41		104	803	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.000	6929756	2.23			34258	
298.90 > 99.00	1.744	1.745	-0.001	1.000	2824316		2.45(1.25-3.74)		16599	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.959	-0.004	0.726	625050	2.34		100	8149	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.962	-0.007	1.000	1436368	2.22			86809	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	4719162	2.40			15114	
313.00 > 119.00	1.997	1.998	-0.001	1.000	441716		10.68(5.03-15.10)		13104	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.741	4807774	2.57		103	122947	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.864	4670113	2.53		101	98504	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	4946435	2.56			10531	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1933812		2.56(1.13-3.40)		20438	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	5687997	2.19			28544	
399.00 > 99.00	2.341	2.346	-0.005	1.000	1847781		3.08(1.50-4.49)		6889	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.869	5529570	2.43		103	78148	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.672	-0.001	1.000	1549124	2.35			45102	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.672	-0.001	0.991	899400	2.35		98.8	20841	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		5042269	2.50			69178	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.695	0.0	1.000	4754986	2.52		101	74531	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.697	-0.002	1.000	5479179	2.55			1995	
413.00 > 169.00	2.695	2.697	-0.002	1.000	2731487		2.01(0.84-2.52)		6729	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	5118411	2.45			49555	
449.00 > 99.00	2.703	2.703	0.0	1.000	1344486		3.81(1.94-5.82)		14152	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	3900957	2.35		98.4	30995	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.070	-0.005	1.137	4206881	2.52		101	69098	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.070	-0.005	1.000	4349012	2.39			13682	
499.00 > 99.00	3.065	3.070	-0.005	1.000	929853		4.68(2.31-6.93)		10185	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.002	4384621	2.61			6586	
463.00 > 169.00	3.072	3.072	0.0	1.002	1021043		4.29(1.90-5.69)		25043	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.396	0.001	1.261	5679191	2.54		102	42851	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	5742102	2.56			54328	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.426	-0.002	1.000	1663512	2.48			30818	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.426	-0.002	1.271	1257938	2.43		102	30914	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.435	-0.002	1.000	3857119	2.57			20699	
513.00 > 169.00	3.433	3.435	-0.002	1.000	642231		6.01(2.36-7.09)		14683	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.435	-0.002	1.274	3793489	2.60		104	78039	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.589	3.591	-0.002	1.332	2021939	2.63		105	30702	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.589	3.594	-0.005	1.000	2108804	2.61			12474	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	3054904	2.75			64961	
599.00 > 99.00	3.748	3.749	-0.001	1.000	1042020		2.93(1.39-4.16)		31253	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.395	2324977	2.65		106	11021	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.768	-0.010	1.395	3383068	2.59		104	54133	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.768	-0.010	1.000	2182165	2.51			31564	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.003	2649764	2.27			13982	
563.00 > 169.00	3.769	3.768	0.001	1.003	676794		3.92(2.12-6.36)		27181	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.066	-0.010	1.505	3730503	2.51		101	31020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.068	-0.012	1.000	4172212	2.67			3940	
613.00 > 169.00	4.056	4.068	-0.012	1.000	959658		4.35(2.13-6.40)		18022	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.329	-0.011	1.000	4483777	2.73			3252	
663.00 > 169.00	4.318	4.329	-0.011	1.000	1408477		3.18(1.25-3.76)		18234	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.694	4810393	2.65		106	33667	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.571	-0.007	1.000	1103419	2.31			12823	
713.00 > 219.00	4.554	4.571	-0.017	0.998	846648		1.30(0.71-2.13)		16046	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.987	-0.006	1.848	7683636	2.59		103	21190	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.989	-0.008	1.000	7138289	2.53			2182	
813.00 > 169.00	4.981	4.989	-0.008	1.000	1127804		6.33(2.86-8.58)		8335	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.354	-0.010	1.000	7223481	2.54			2062	
913.00 > 169.00	5.344	5.354	-0.010	1.000	891804		8.10(3.83-11.48)		5703	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:44:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_010.d

Injection Date: 21-Mar-2018 19:26:58 Instrument ID: A8_N

Lims ID: ICV Full

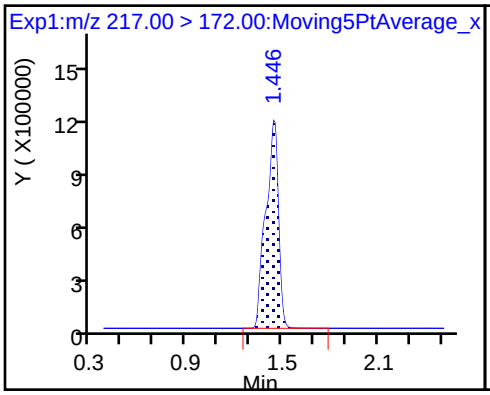
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

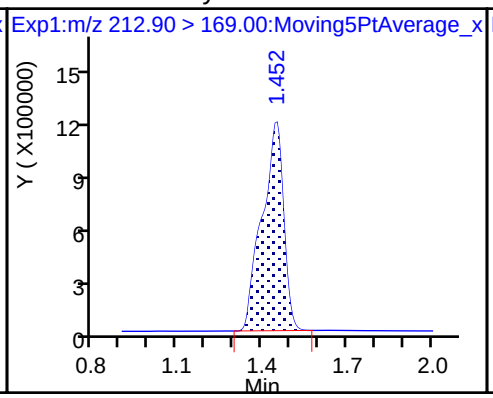
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

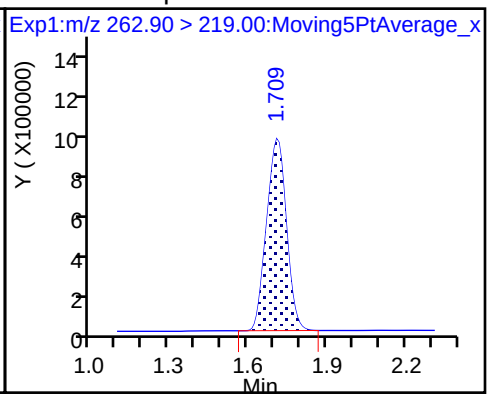
D 1 13C4 PFBA



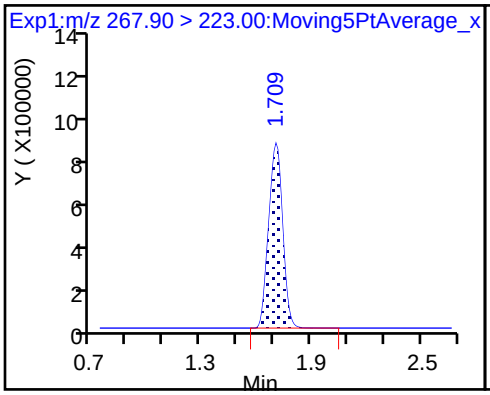
2 Perfluorobutyric acid



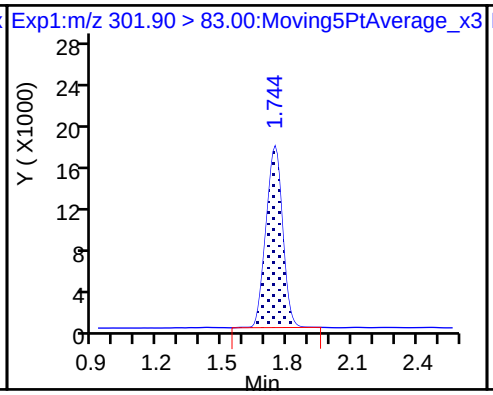
4 Perfluoropentanoic acid



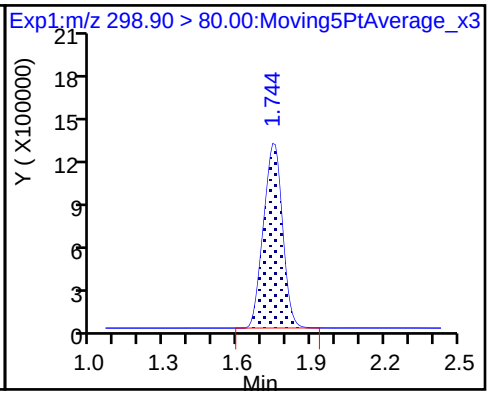
D 3 13C5-PFPeA



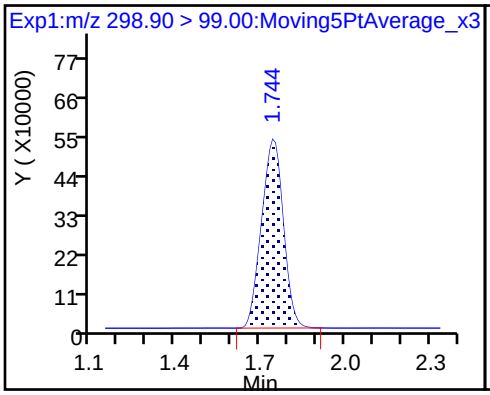
D 47 13C3-PFBS



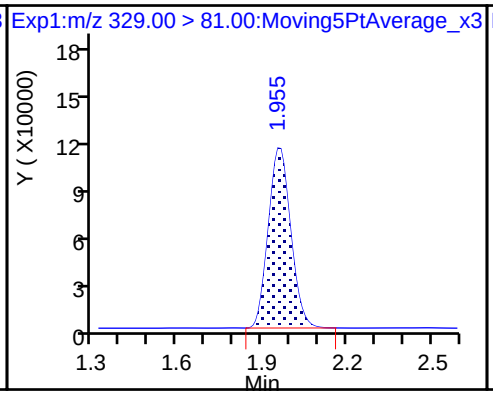
5 Perfluorobutanesulfonic acid



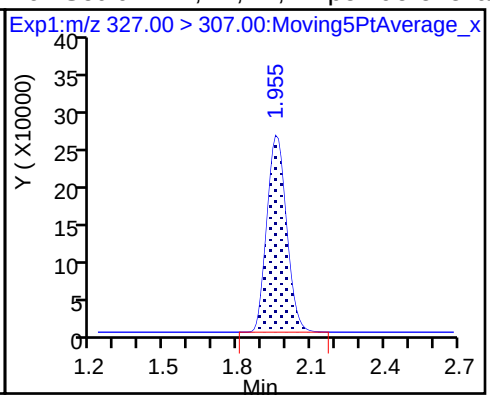
5 Perfluorobutanesulfonic acid



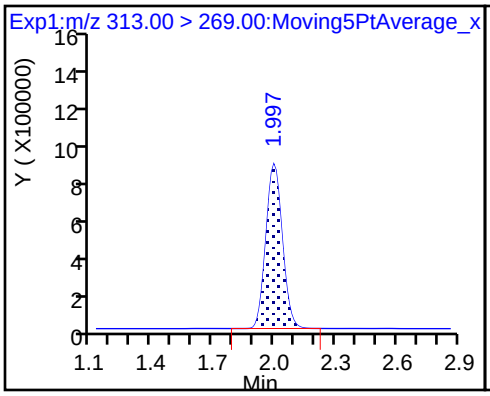
D 60 M2-4:2FTS



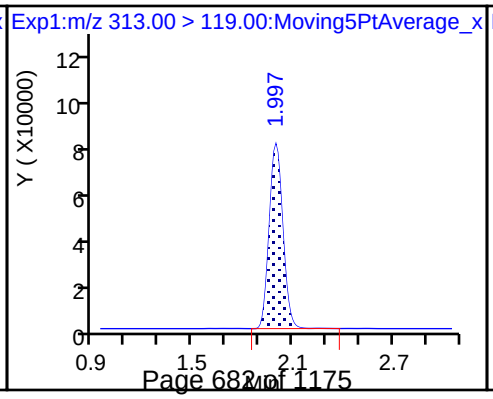
61 Sodium 1H,1H,2H,2H-perfluorohexane



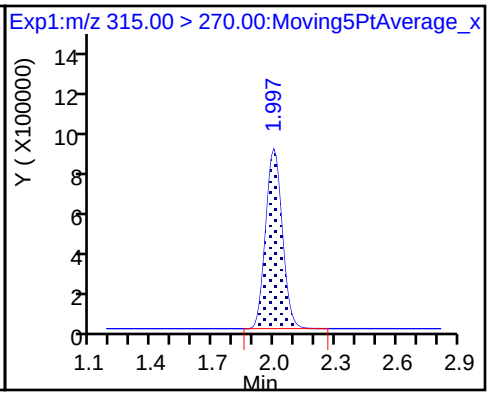
6 Perfluorohexanoic acid



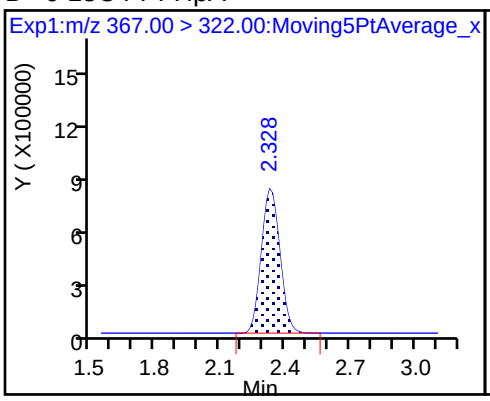
6 Perfluorohexanoic acid



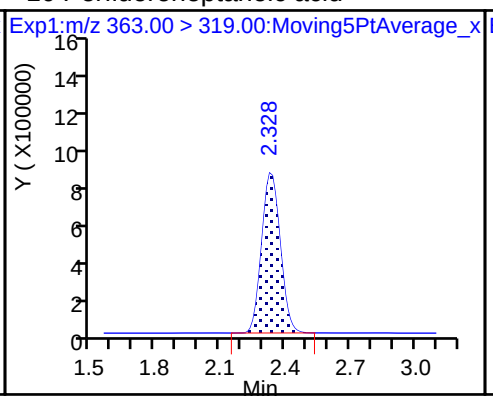
D 7 13C2 PFHxA



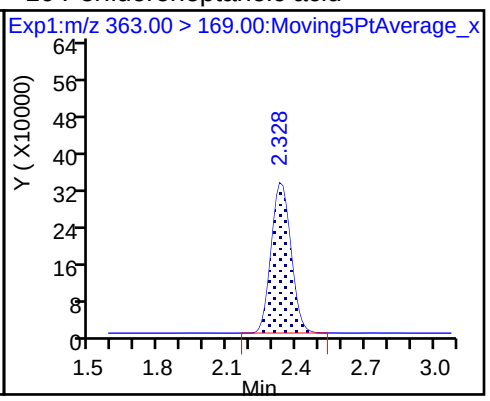
D 9 13C4-PFHpA



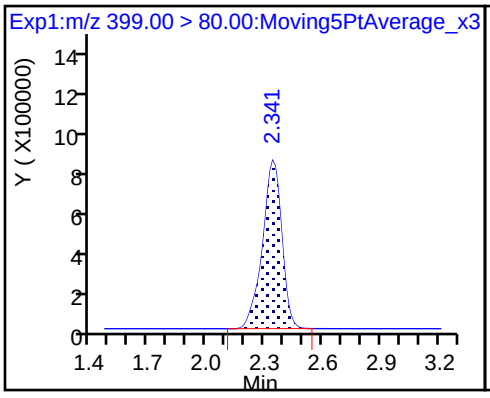
10 Perfluoroheptanoic acid



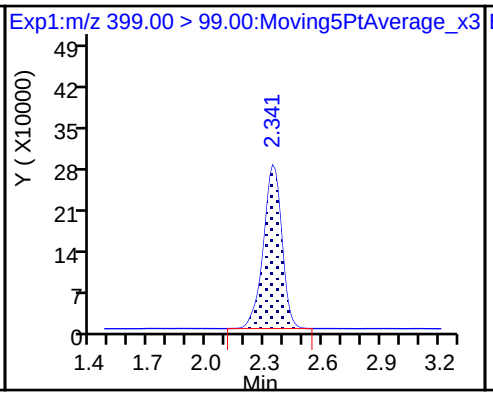
10 Perfluoroheptanoic acid



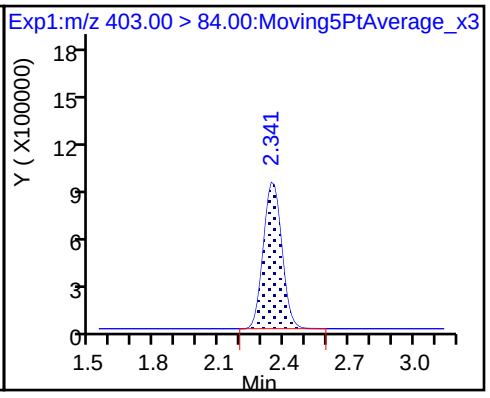
8 Perfluorohexanesulfonic acid



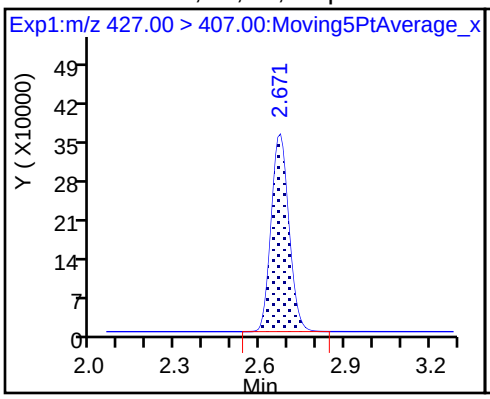
8 Perfluorohexanesulfonic acid



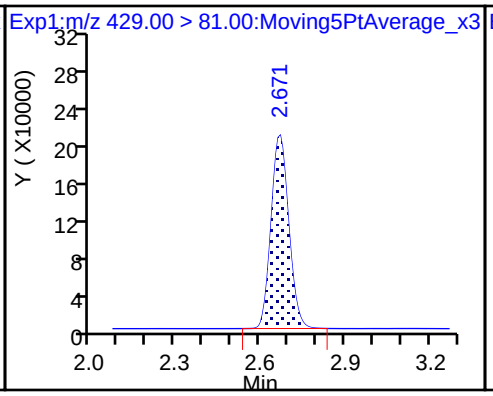
D 11 18O2 PFHxS



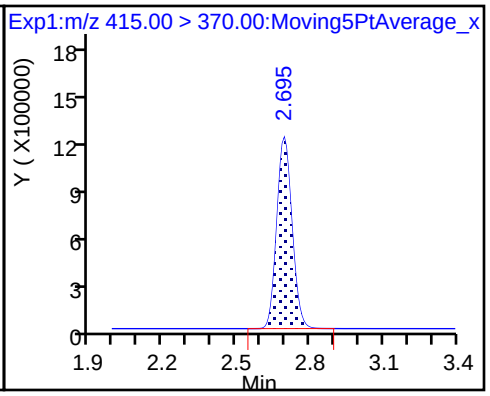
13 Sodium 1H,1H,2H,2H-perfluorooctan



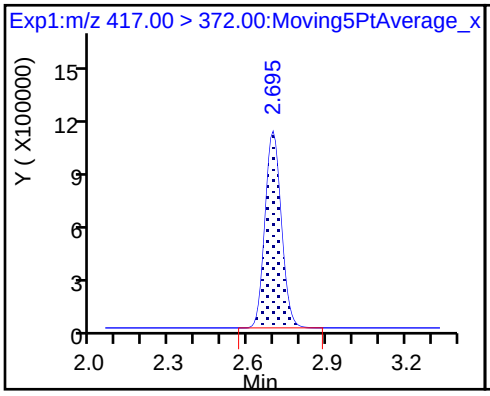
D 12 M2-6:2FTS



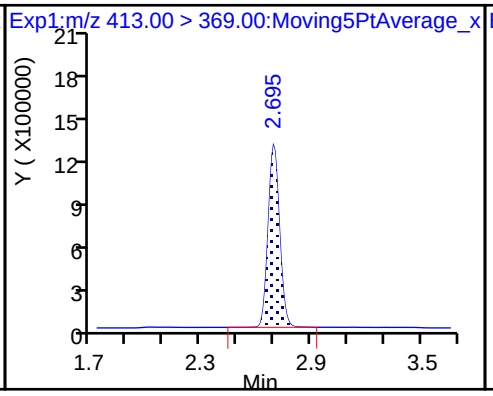
* 62 13C2-PFOA



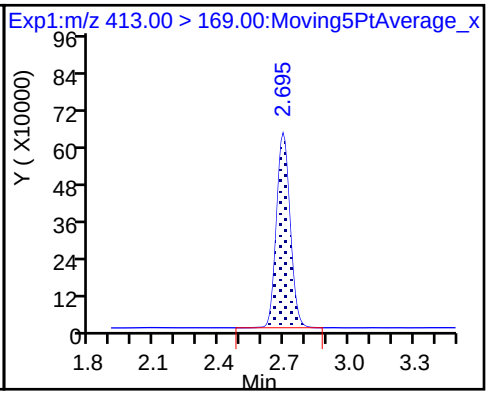
D 14 13C4 PFOA



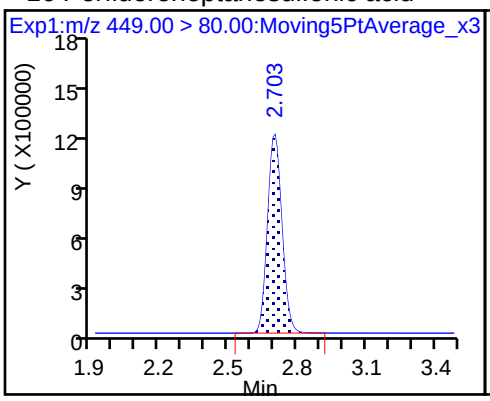
15 Perfluorooctanoic acid



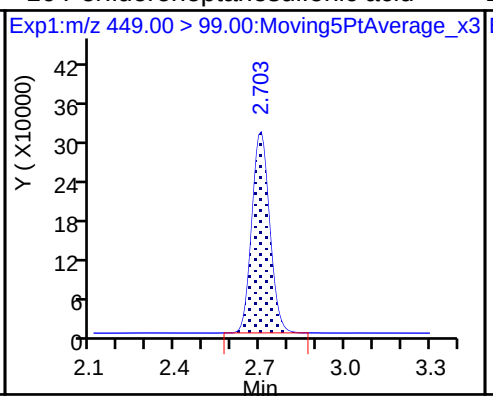
15 Perfluorooctanoic acid



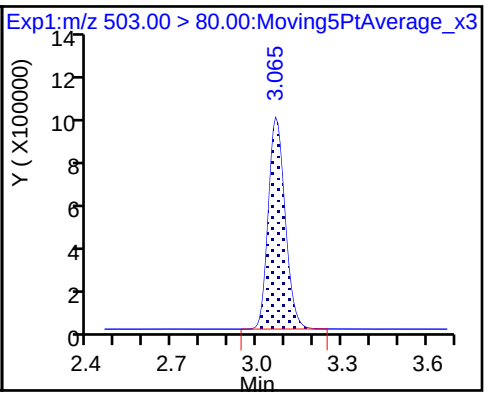
16 Perfluoroheptanesulfonic acid



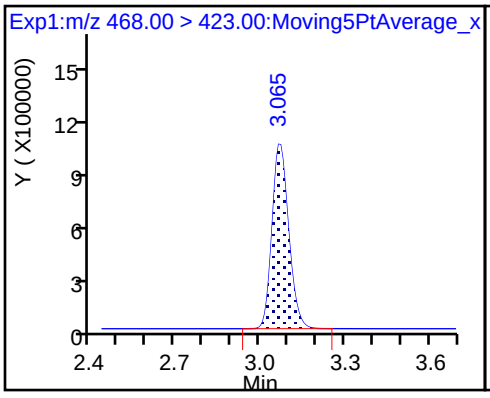
16 Perfluoroheptanesulfonic acid



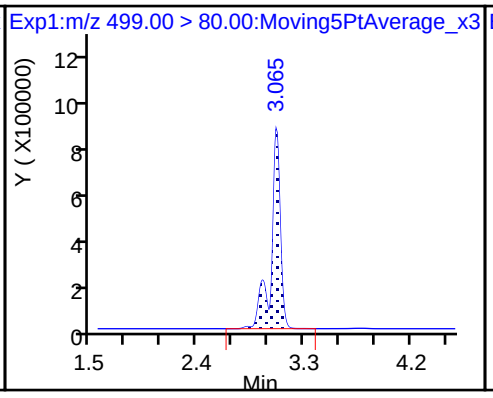
D 18 13C4 PFOS



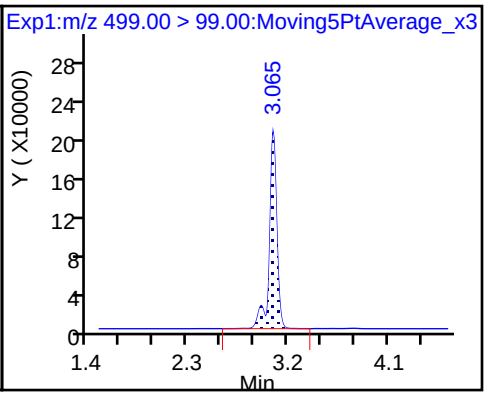
D 19 13C5 PFNA



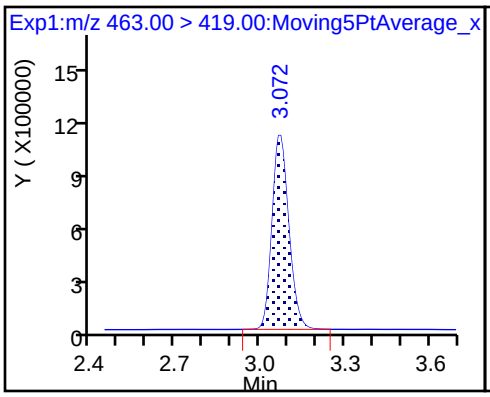
17 Perfluorooctane sulfonic acid



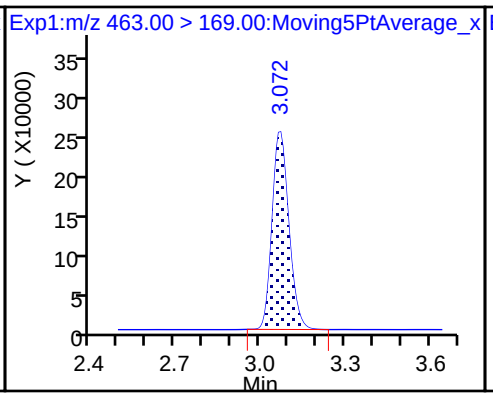
17 Perfluorooctane sulfonic acid



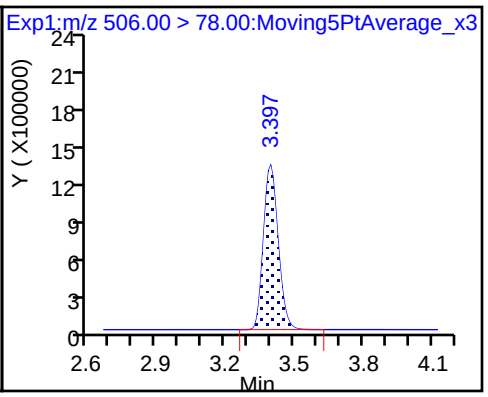
20 Perfluorononanoic acid



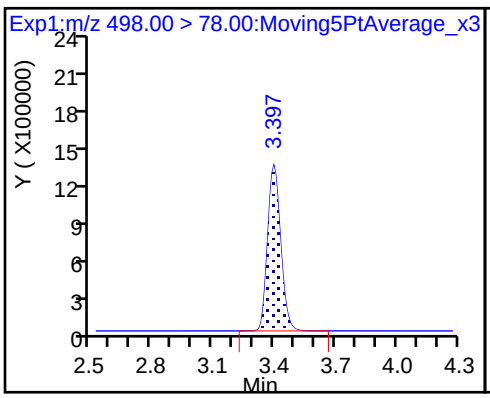
20 Perfluorononanoic acid



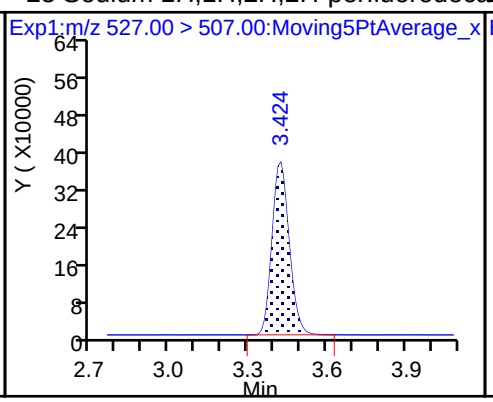
D 21 13C8 FOSA



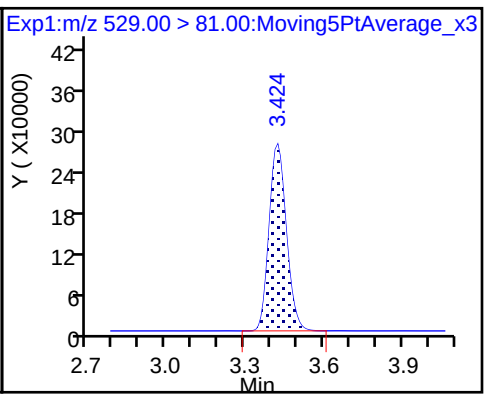
22 Perfluorooctane Sulfonamide



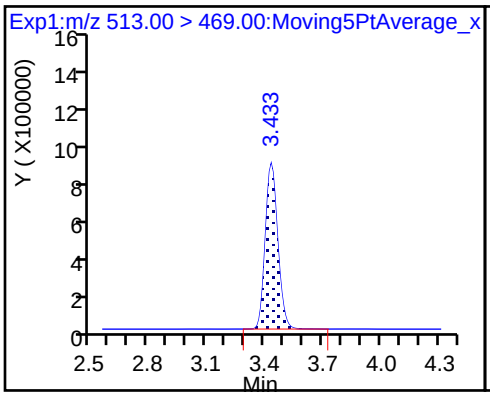
25 Sodium 1H,1H,2H,2H-perfluorodecane



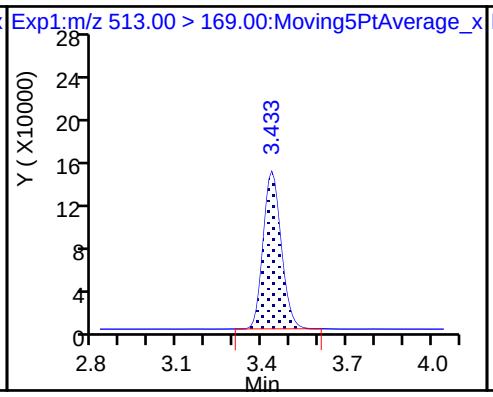
D 26 M2-8:2FTS



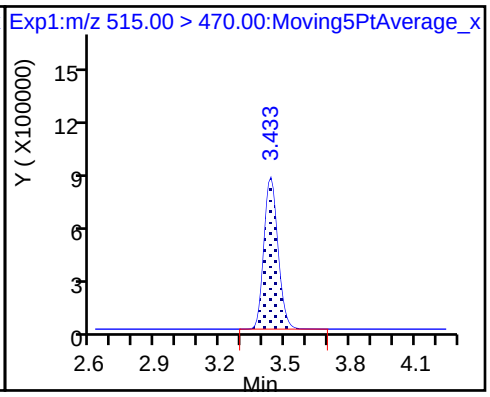
24 Perfluorodecanoic acid



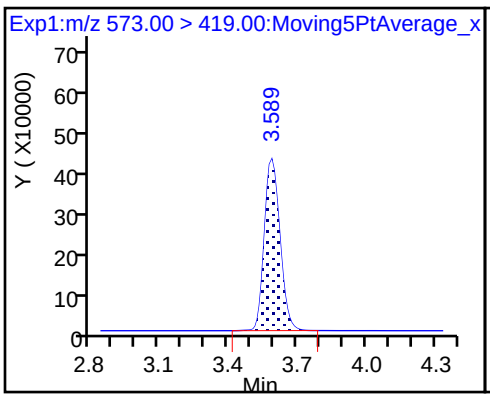
24 Perfluorodecanoic acid



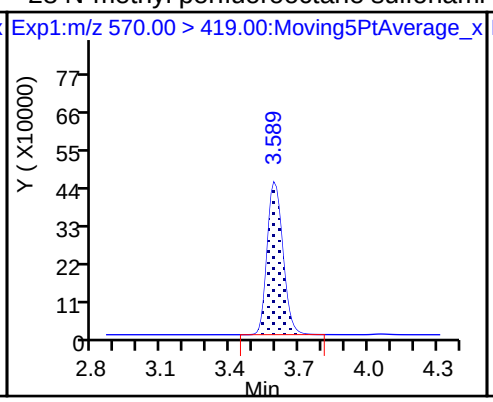
D 23 13C2 PFDA



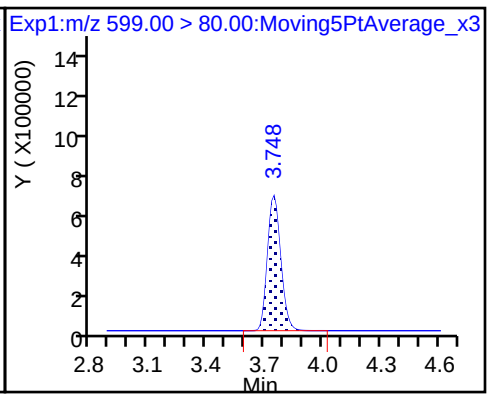
D 27 d3-NMeFOSAA



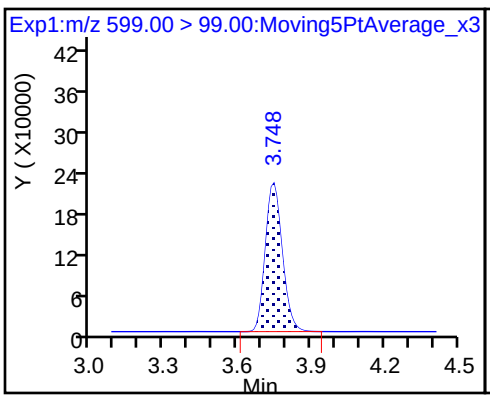
28 N-methyl perfluorooctane sulfonami



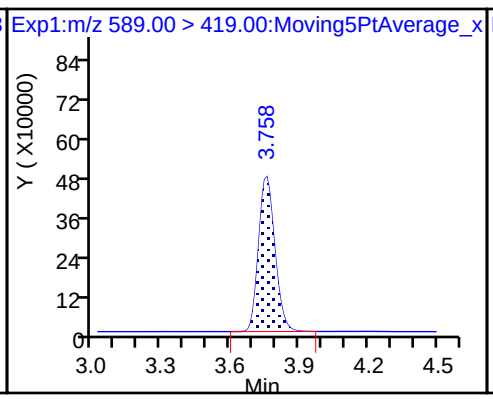
29 Perfluorodecane Sulfonic acid



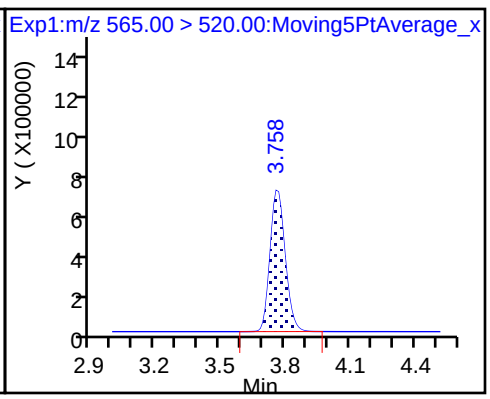
29 Perfluorodecane Sulfonic acid



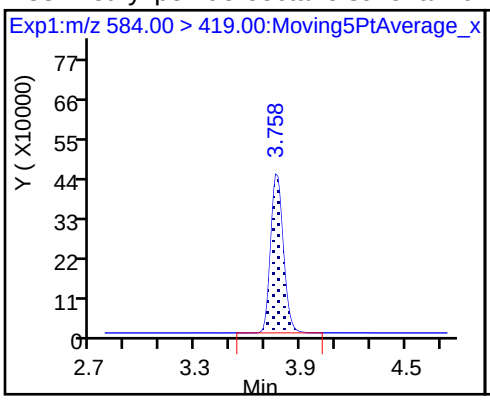
D 32 d5-NEtFOSAA



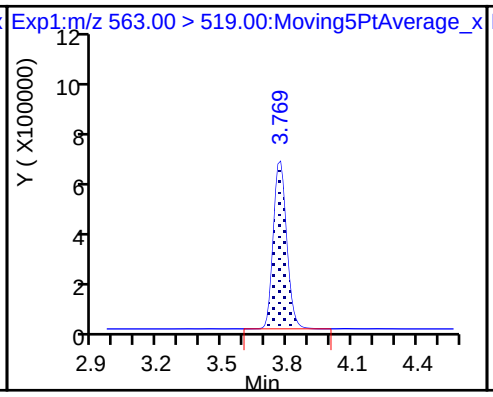
D 30 13C2 PFUnA



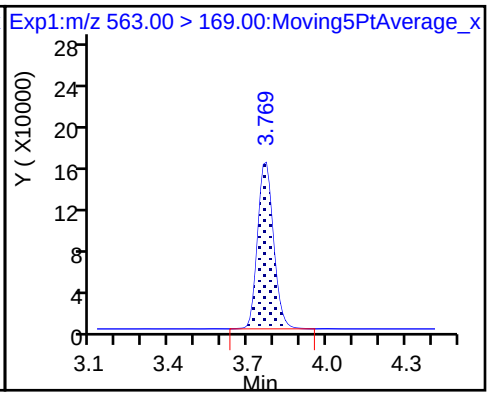
33 N-ethyl perfluorooctane sulfonamid



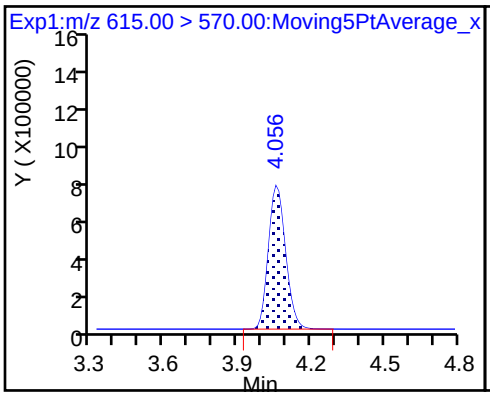
31 Perfluoroundecanoic acid



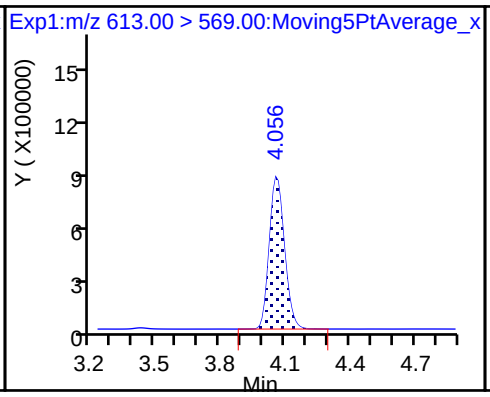
31 Perfluoroundecanoic acid



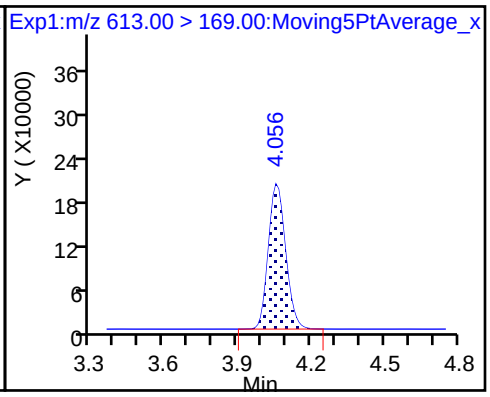
D 36 13C2 PFDoA



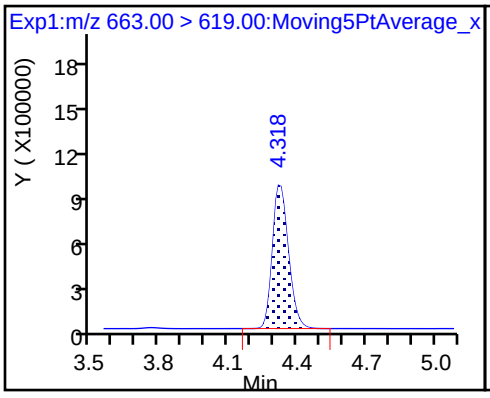
37 Perfluorododecanoic acid



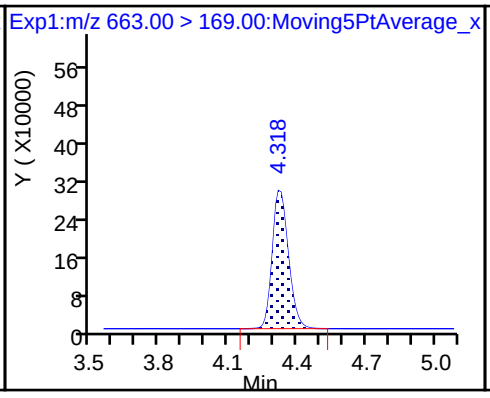
37 Perfluorododecanoic acid



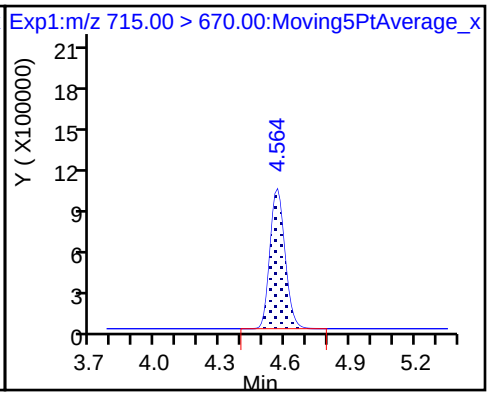
41 Perfluorotridecanoic acid



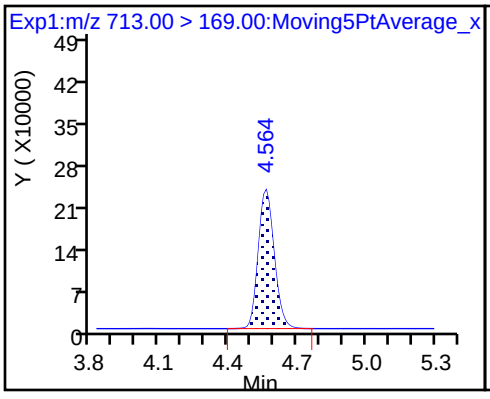
41 Perfluorotridecanoic acid



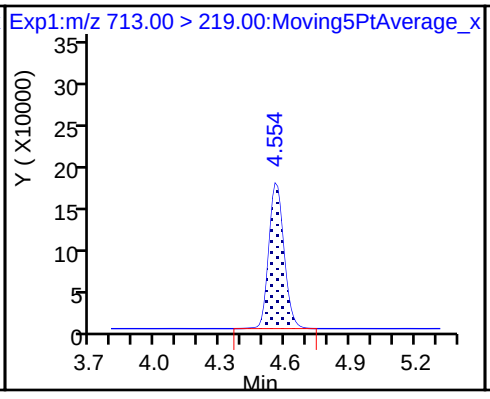
D 43 13C2-PFTeDA



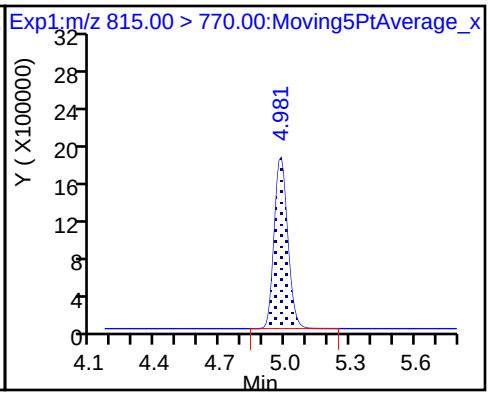
42 Perfluorotetradecanoic acid



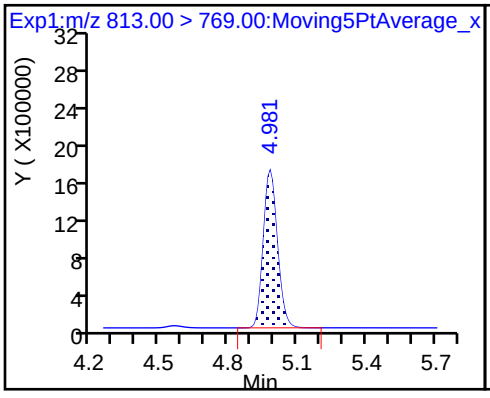
42 Perfluorotetradecanoic acid



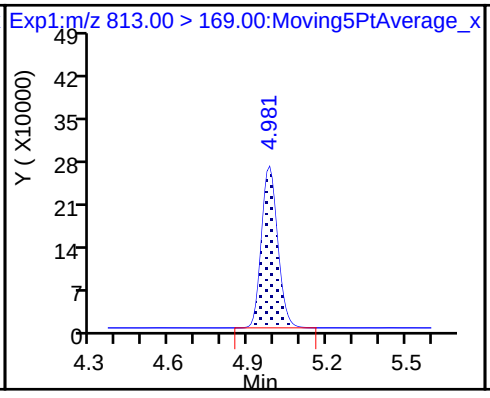
D 44 13C2-PFHxDA



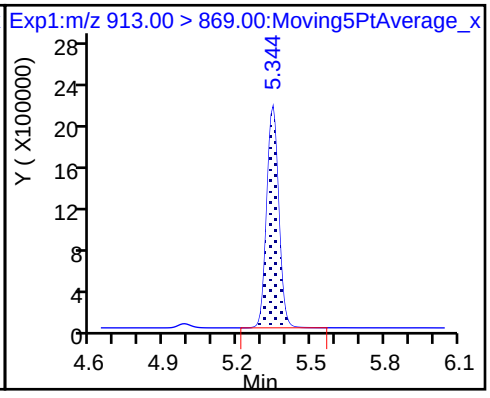
45 Perfluorohexadecanoic acid



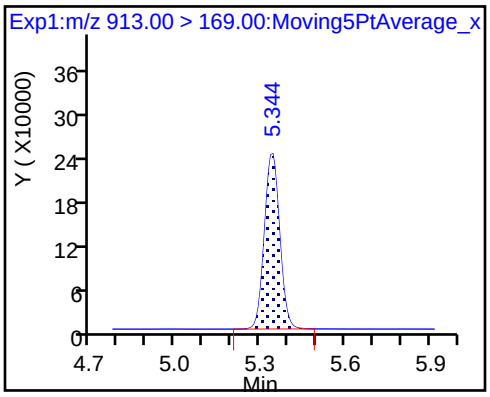
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214277/1 Calibration Date: 03/21/2018 21:55

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8994		0.955	1.00	-4.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.140		1.01	1.00	1.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.84		0.874	0.884	-1.1	50.0
4:2 FTS	AveID	16.15	15.80		0.914	0.934	-2.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9583		0.937	1.00	-6.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.073		1.04	1.00	3.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.053		0.861	0.910	-5.4	40.0
6:2FTS	AveID	1.744	1.671		0.908	0.948	-4.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.122		0.994	1.00	-0.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.254		0.932	0.952	-2.1	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.064		0.886	0.928	-4.5	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9367		0.939	1.00	-6.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9788		0.993	1.00	-0.7	40.0
8:2FTS	AveID	1.276	1.302		0.978	0.958	2.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9466		0.958	1.00	-4.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.003		1.00	1.00	0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6772		0.960	0.964	-0.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8946		0.958	1.00	-4.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7808		0.906	1.00	-9.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.022		0.977	1.00	-2.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.103		1.00	1.00	0.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2396		0.967	1.00	-3.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9400		1.01	1.00	1.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9835		1.06	1.00	6.4	50.0
13C4 PFBA	Ave	1.266	1.211		2.39	2.50	-4.3	50.0
13C5 PFPeA	Ave	0.8399	0.8139		2.42	2.50	-3.1	50.0
13C3-PFBS	Ave	0.0192	0.0187		2.27	2.33	-2.6	50.0
M2-4:2FTS	Ave	0.1324	0.1374		2.42	2.34	3.8	50.0
13C2 PFHxA	Ave	0.9288	0.9248		2.49	2.50	-0.4	50.0
13C4-PFHpA	Ave	0.9164	0.8849		2.41	2.50	-3.4	50.0
18O2 PFHxS	Ave	1.130	1.085		2.27	2.37	-4.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214277/1 Calibration Date: 03/21/2018 21:55

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1875		2.34	2.38	-1.3	40.0
13C4 PFOA	Ave	0.9374	0.8822		2.35	2.50	-5.9	50.0
13C4 PFOS	Ave	0.8225	0.7912		2.30	2.39	-3.8	50.0
13C5 PFNA	Ave	0.8266	0.8314		2.51	2.50	0.6	50.0
13C8 FOSA	Ave	1.109	1.030		2.32	2.50	-7.2	50.0
M2-8:2FTS	Ave	0.2565	0.2506		2.34	2.40	-2.3	40.0
13C2 PFDA	Ave	0.7245	0.7350		2.54	2.50	1.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.3861		2.53	2.50	1.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.4509		2.60	2.50	3.8	50.0
13C2 PFUnA	Ave	0.6482	0.6475		2.50	2.50	-0.1	50.0
13C2 PFDoA	Ave	0.7355	0.7141		2.43	2.50	-2.9	50.0
13C2-PFTeDA	Ave	0.8983	0.8631		2.40	2.50	-3.9	50.0
13C2-PFHxDA	Ave	1.473	1.380		2.34	2.50	-6.3	50.0

FORM VII 537 (modified)

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 21:55:54 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:52:48 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.446	0.007	0.539	6591133	2.39		95.7	96564	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.000	2371154	0.9545		95.5	1104	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	4429775	2.42		96.9	142257	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.005	2020338	1.01		101	1125	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	94543	2.27		97.4	581	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2762001	0.8741		98.9	15136	
298.90 > 99.00	1.744	1.753	-0.009	1.000	1131631		2.44(1.25-3.74)		6492	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.956	0.010	0.729	698511	2.42		104	9912	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	600194	0.9138		97.8	37166	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	5032868	2.49		99.6	129910	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1929178	0.9373		93.7	5404	
313.00 > 119.00	1.997	1.997	0.0	1.000	179109		10.77(5.03-15.10)		3200	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	4816178	2.41		96.6	81047	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	2067221	1.04		104	4045	
363.00 > 169.00	2.328	2.328	0.0	1.000	742973		2.78(1.13-3.40)		7774	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.341	0.013	0.873	5586370	2.27		96.0	67718	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	0.995	2264224	0.8612		94.6	12647	
399.00 > 99.00	2.341	2.341	0.0	0.995	707805		3.20(1.50-4.49)		2132	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.665	0.008	0.991	969255	2.34		98.7	20363	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	646368	0.9084		95.8	30015	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.688	0.009	1.000	4801375	2.35		94.1	71068	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		5442410	2.50			91840	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	2155773	0.99		99.4	643	
413.00 > 169.00	2.697	2.697	0.0	1.000	1123062		1.92(0.84-2.52)		3148	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.704	0.0	1.000	2056634	0.9320		97.9	29816	
449.00 > 99.00	2.704	2.704	0.0	1.000	555843		3.70(1.94-5.82)		6490	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	4116326	2.30		96.2	31258	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	4524603	2.51		101	79510	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1700479	0.8863		95.5	7044	
499.00 > 99.00	3.065	3.065	0.0	1.000	367516		4.63(2.31-6.93)		3989	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1695353	0.9391		93.9	2292	
463.00 > 169.00	3.072	3.072	0.0	1.000	423438		4.00(1.90-5.69)		12993	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.260	5603850	2.32		92.8	48677	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	2193968	0.99		99.3	30933	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.415	0.011	1.270	1306599	2.34		97.7	32535	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.424	0.011	1.274	4000149	2.54		101	60060	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	680666	0.9776		102	15143	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1514603	0.9580		95.8	7002	
513.00 > 169.00	3.435	3.435	0.0	1.000	273118		5.55(2.36-7.09)		6864	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	2101065	2.53		101	32121	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.000	842894	1.00		100	5352	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1124344	0.9600		99.6	23732	
599.00 > 99.00	3.748	3.748	0.0	1.000	372604		3.02(1.39-4.16)		7089	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.748	0.020	1.398	3523679	2.50		99.9	73170	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	2454196	2.59		104	14795	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	878198	0.9576		95.8	12735	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	1100442	0.9056		90.6	4822	
563.00 > 169.00	3.768	3.768	0.0	1.000	272713		4.04(2.12-6.36)		8262	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.504	3886619	2.43		97.1	33399	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	1588984	0.9768		97.7	1457	
613.00 > 169.00	4.057	4.057	0.0	1.000	378877		4.19(2.13-6.40)		6462	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.328	0.0	1.000	1714508	1.00		100	1192	
663.00 > 169.00	4.328	4.328	0.0	1.000	538624		3.18(1.25-3.76)		9328	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.692	4697144	2.40		96.1	28244	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	450149	0.9669		96.7	9419	
713.00 > 219.00	4.564	4.564	0.0	1.000	326709		1.38(0.71-2.13)		6142	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.972	0.009	1.847	7510228	2.34		93.7	18433	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.981	0.0	1.000	2823752	1.01		101	881	
813.00 > 169.00	4.981	4.981	0.0	1.000	462056		6.11(2.86-8.58)		3941	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2954608	1.06		106	946	
913.00 > 169.00	5.344	5.344	0.0	1.000	347403		8.50(3.83-11.48)		3219	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 12:52:50 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_006.d

Injection Date: 21-Mar-2018 21:55:54 Instrument ID: A8_N

Lims ID: CCV L4

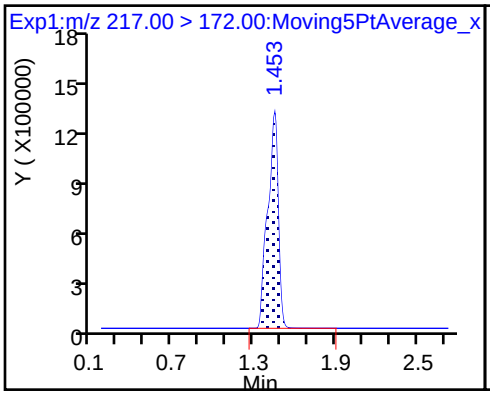
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

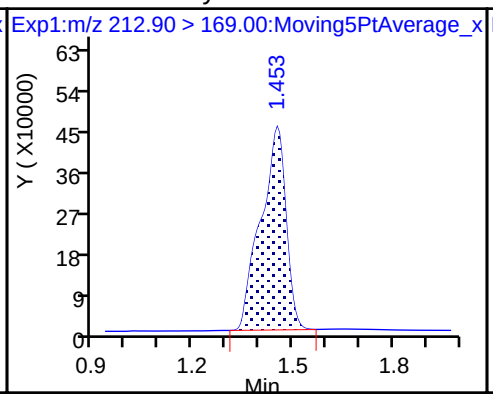
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

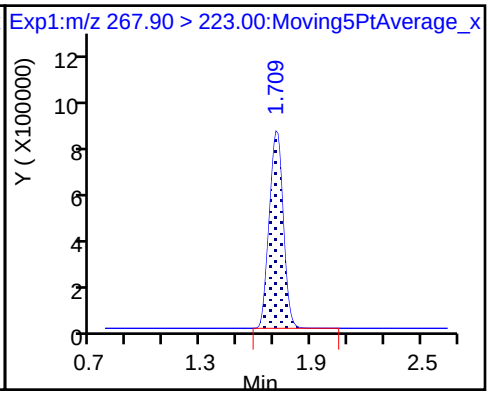
D 1 13C4 PFBA



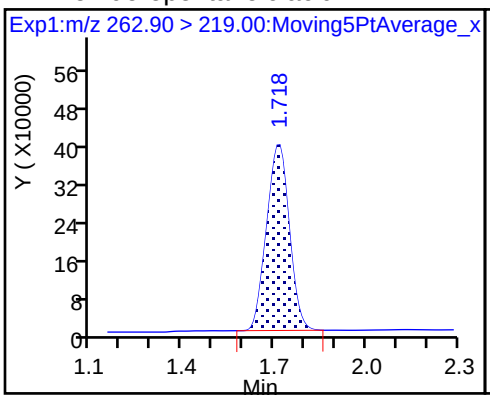
2 Perfluorobutyric acid



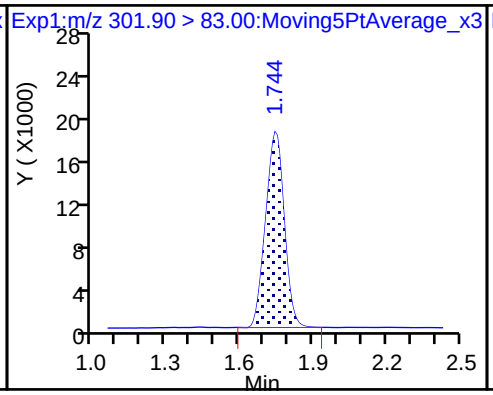
D 3 13C5-PFPeA



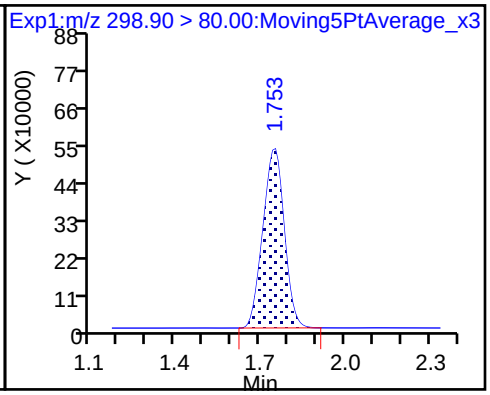
4 Perfluoropentanoic acid



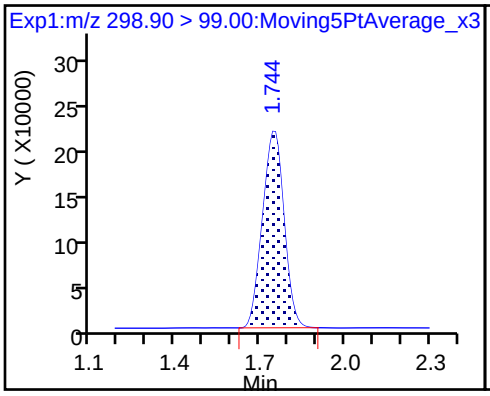
D 47 13C3-PFBS



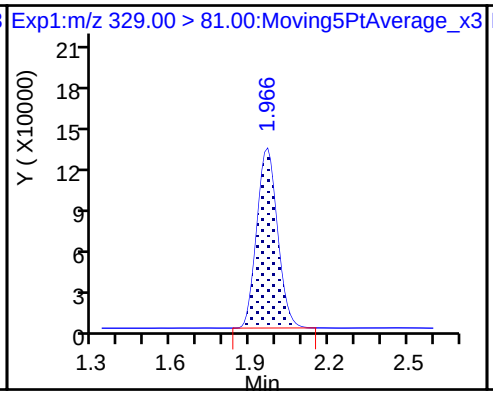
5 Perfluorobutanesulfonic acid



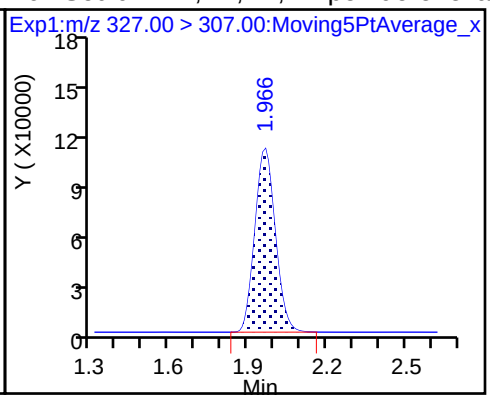
5 Perfluorobutanesulfonic acid



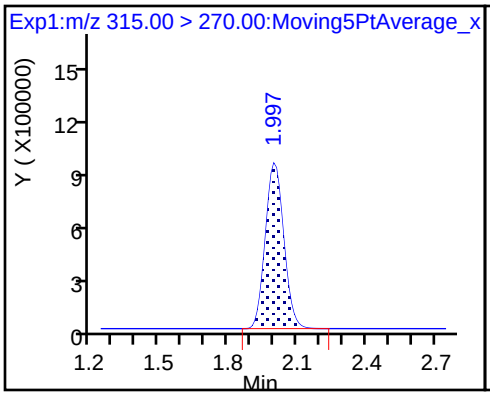
D 60 M2-4:2FTS



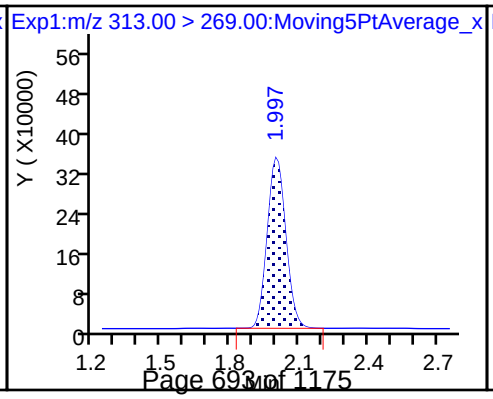
61 Sodium 1H,1H,2H,2H-perfluorohexane



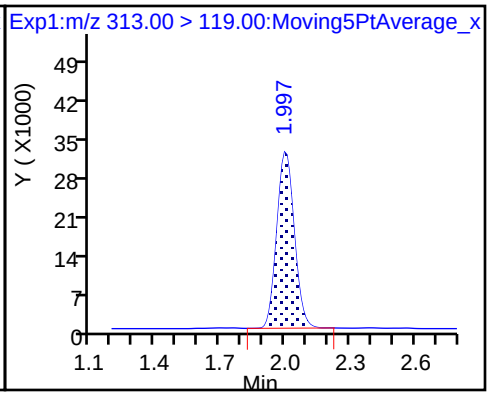
D 7 13C2 PFHxA



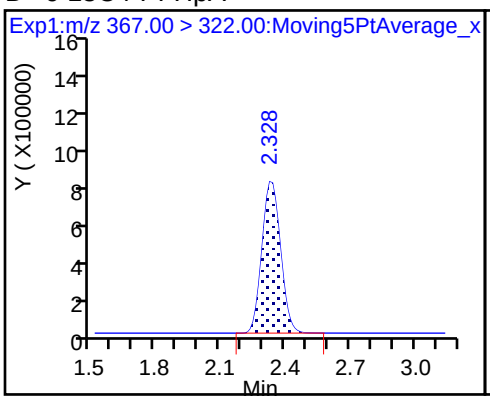
6 Perfluorohexanoic acid



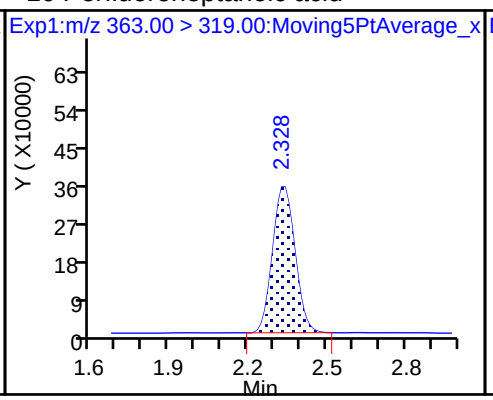
6 Perfluorohexanoic acid



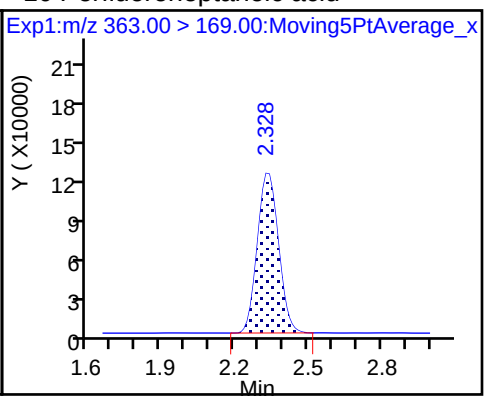
D 9 13C4-PFHpA



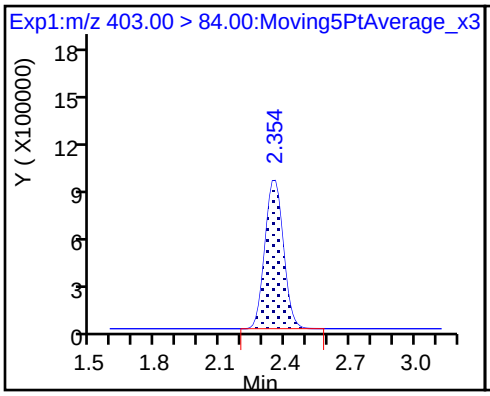
10 Perfluoroheptanoic acid



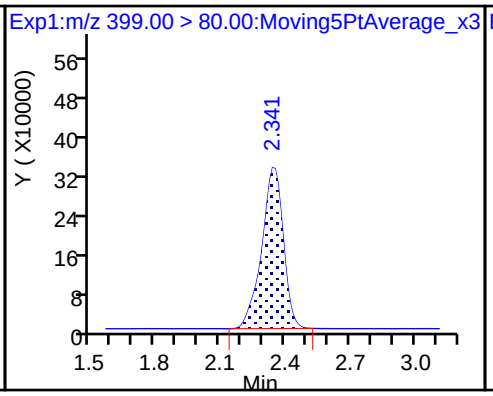
10 Perfluoroheptanoic acid



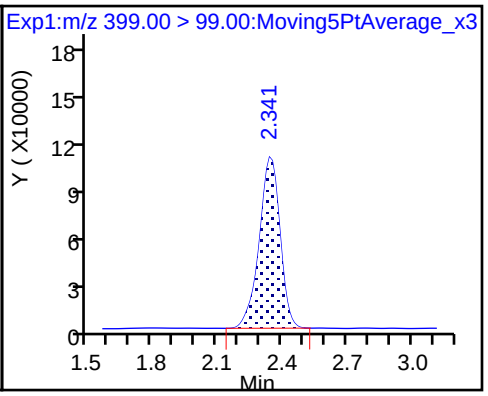
D 11 18O2 PFHxS



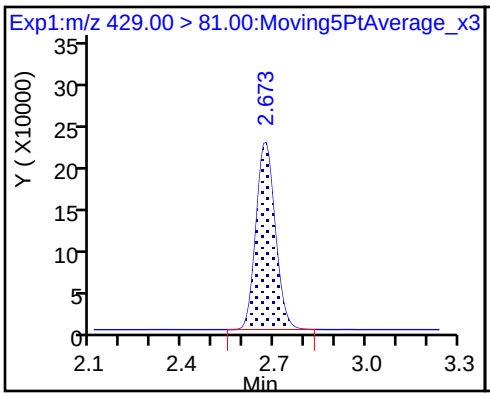
8 Perfluorohexanesulfonic acid



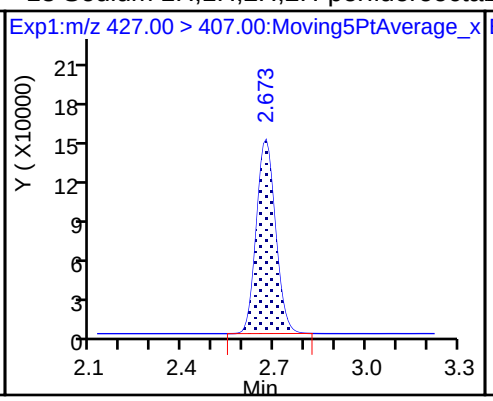
8 Perfluorohexanesulfonic acid



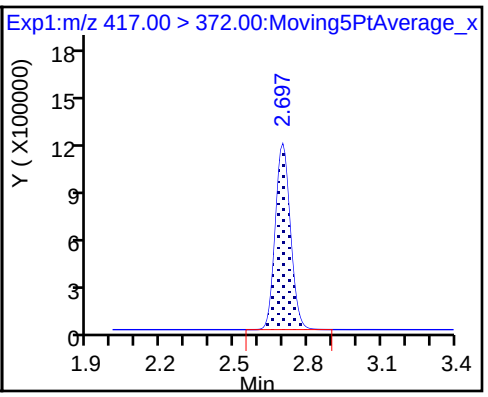
D 12 M2-6:2FTS



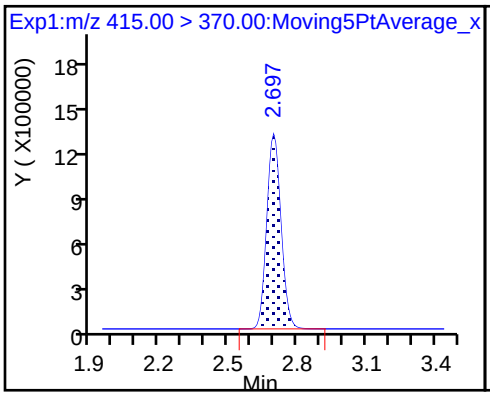
13 Sodium 1H,1H,2H,2H-perfluorooctane



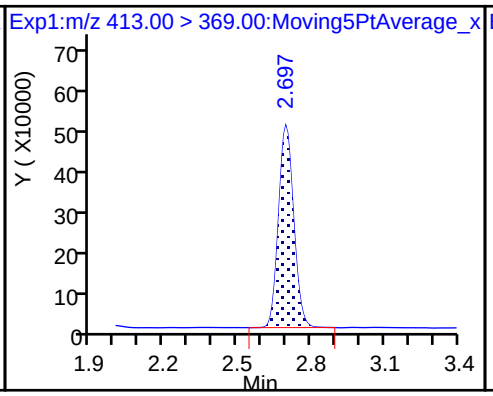
D 14 13C4 PFOA



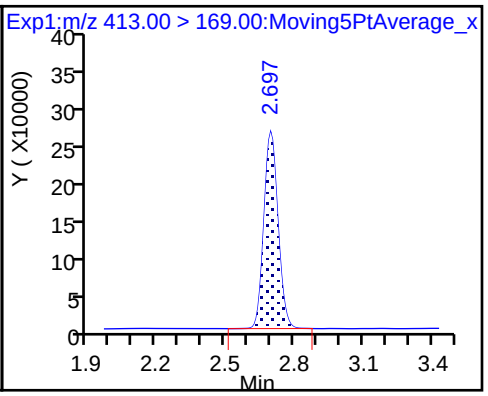
* 62 13C2-PFOA



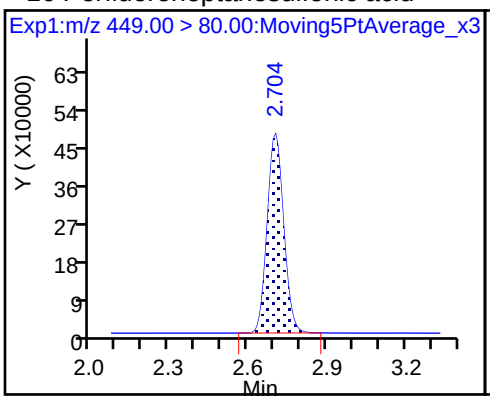
15 Perfluorooctanoic acid



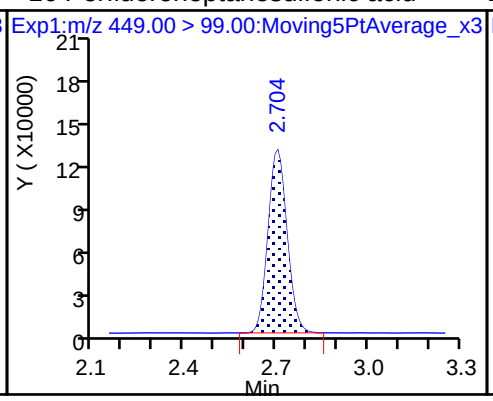
15 Perfluorooctanoic acid



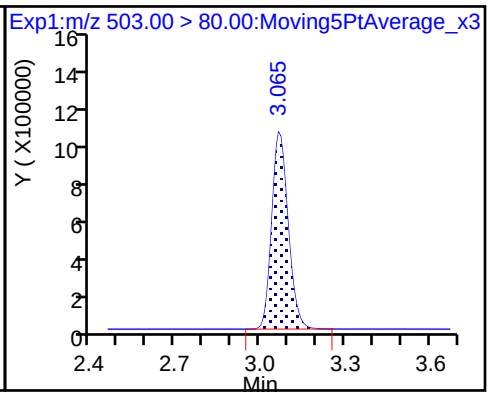
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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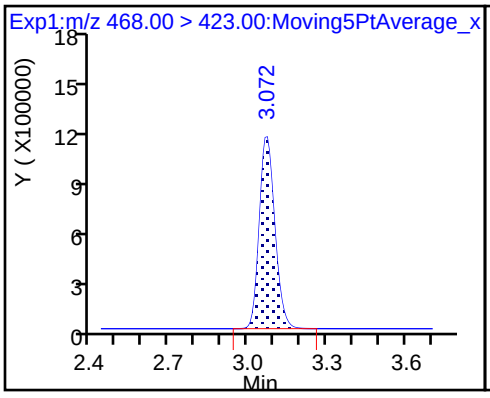
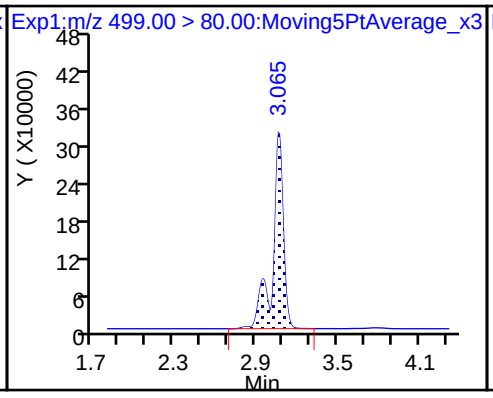
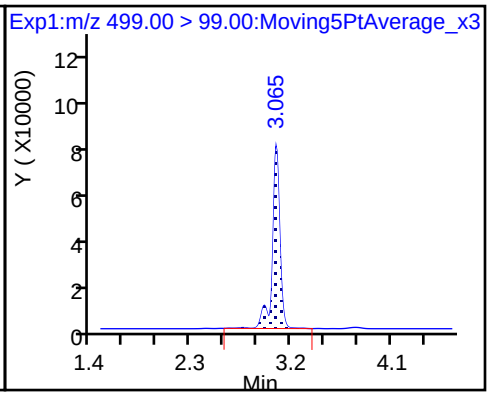


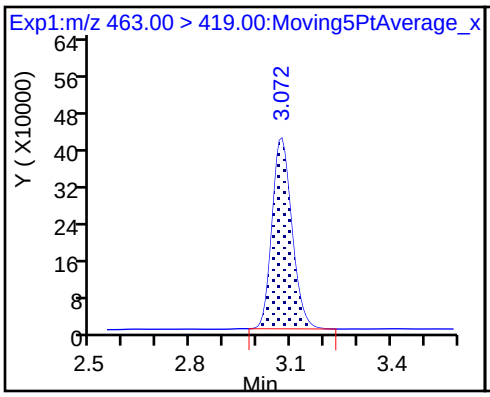
17 Perfluorooctane sulfonic acid



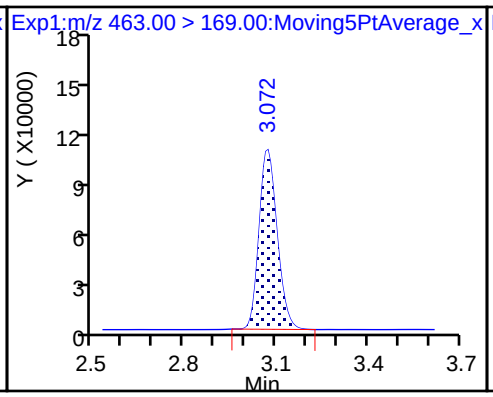
17 Perfluorooctane sulfonic acid



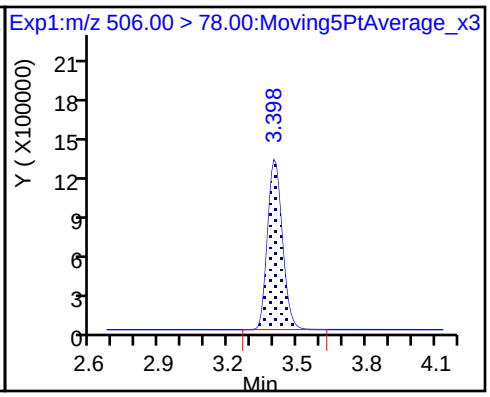
20 Perfluorononanoic acid



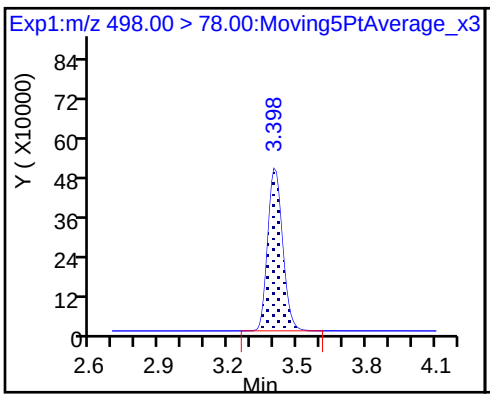
20 Perfluorononanoic acid



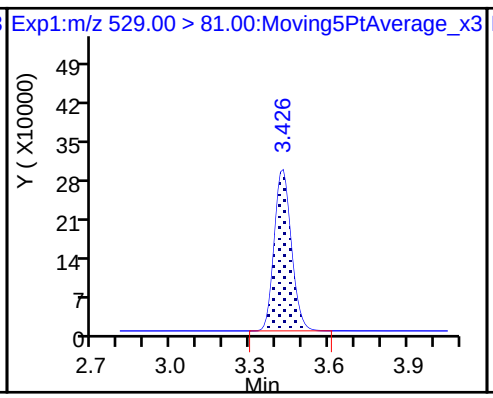
D 21 13C8 FOSA



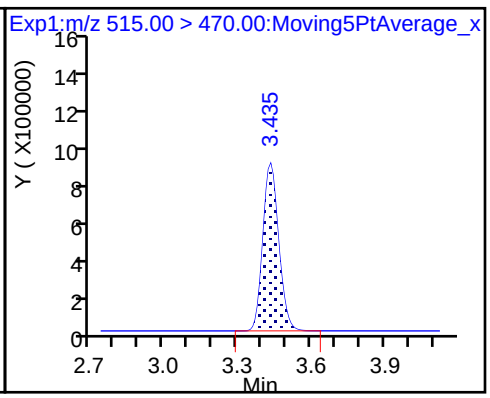
22 Perfluorooctane Sulfonamide



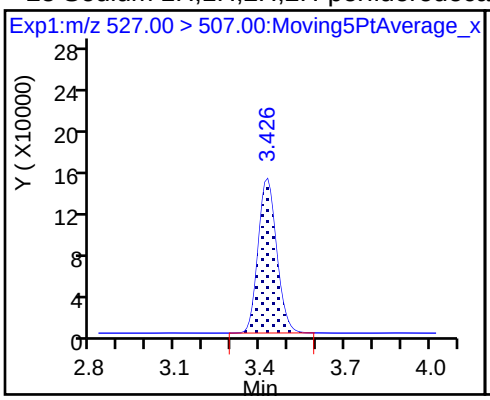
D 26 M2-8:2FTS



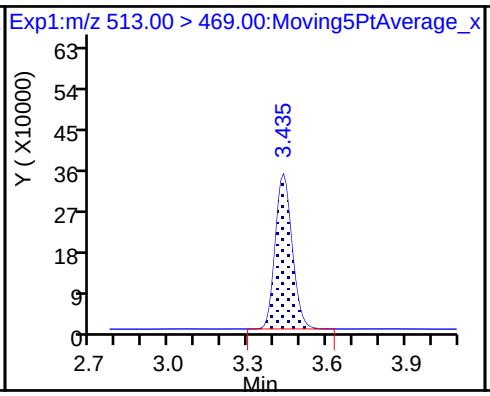
D 23 13C2 PFDA



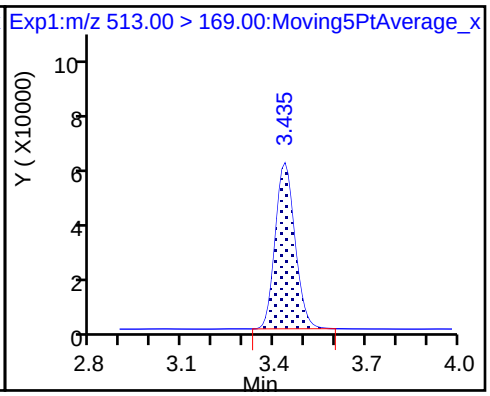
25 Sodium 1H,1H,2H,2H-perfluorodecan



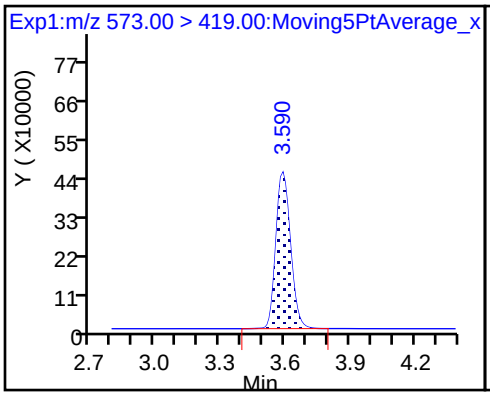
24 Perfluorodecanoic acid



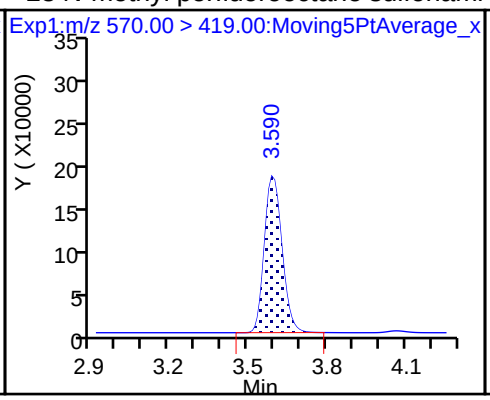
24 Perfluorodecanoic acid



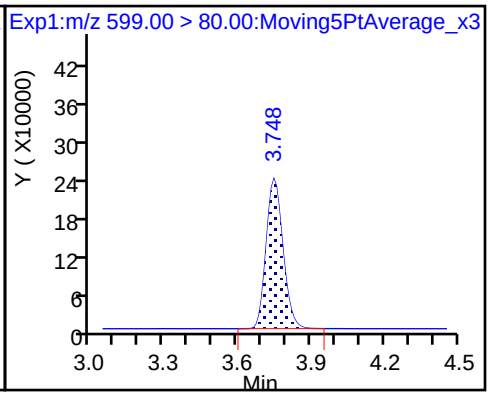
D 27 d3-NMeFOSAA



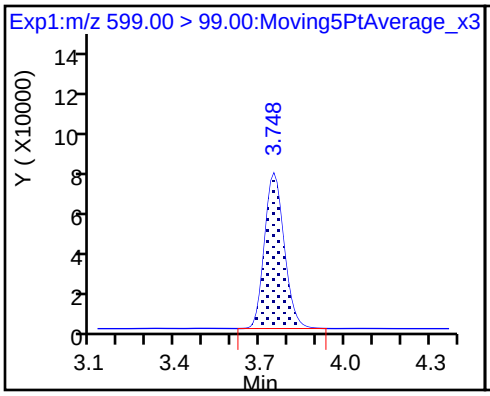
28 N-methyl perfluorooctane sulfonami



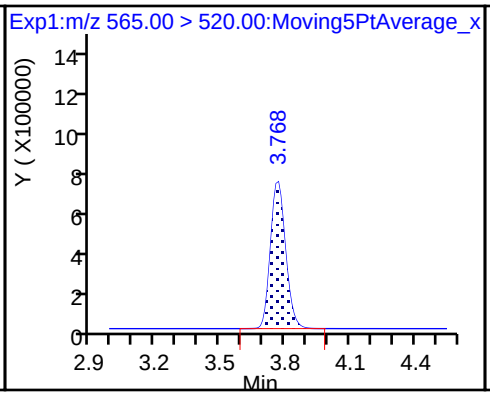
29 Perfluorodecane Sulfonic acid



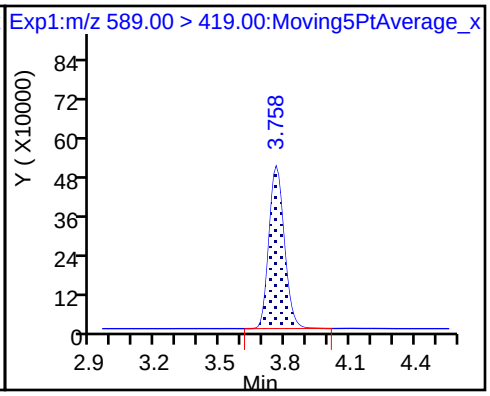
29 Perfluorodecane Sulfonic acid



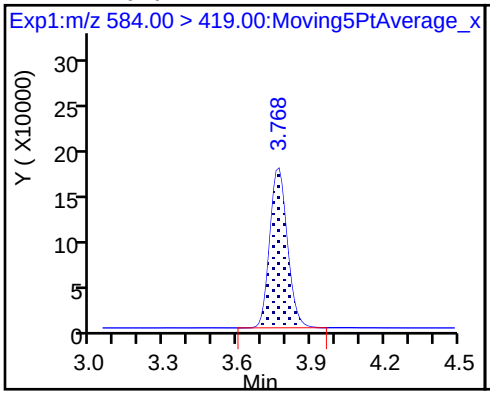
D 30 13C2 PFUnA



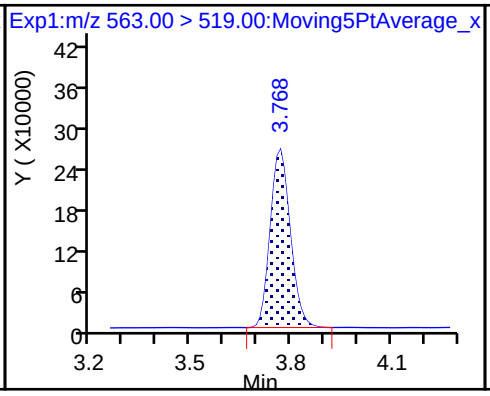
D 32 d5-NEtFOSAA



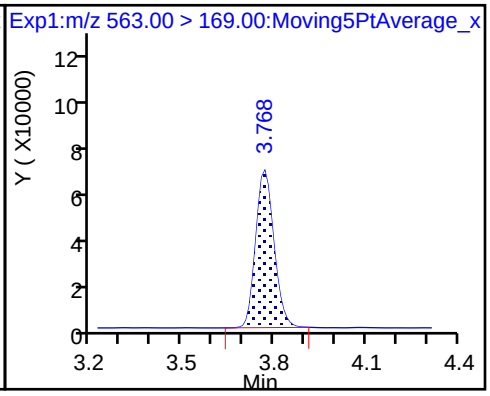
33 N-ethyl perfluorooctane sulfonamid



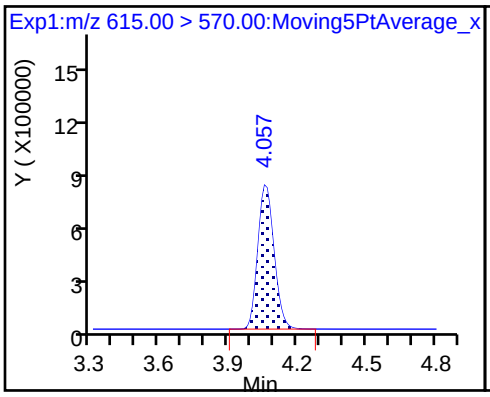
31 Perfluoroundecanoic acid



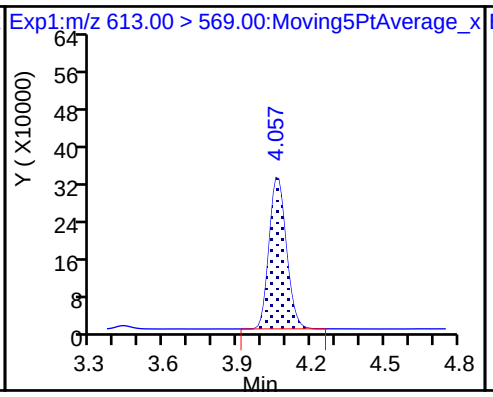
31 Perfluoroundecanoic acid



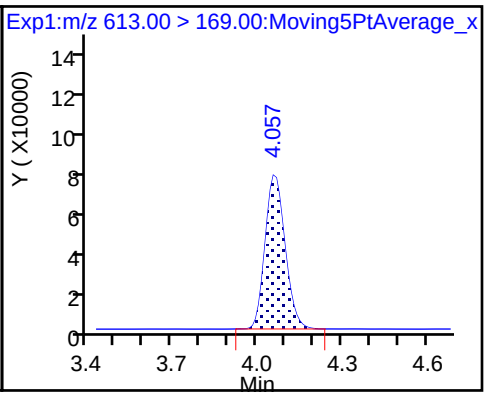
D 36 13C2 PFDoA



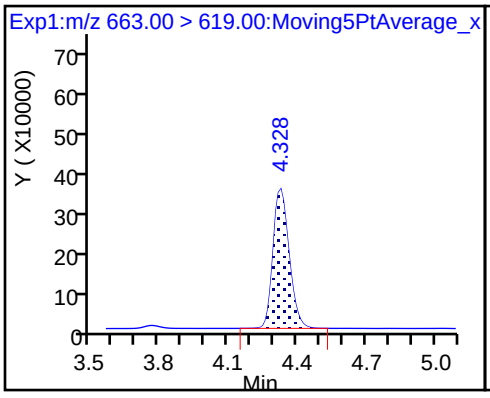
37 Perfluorododecanoic acid



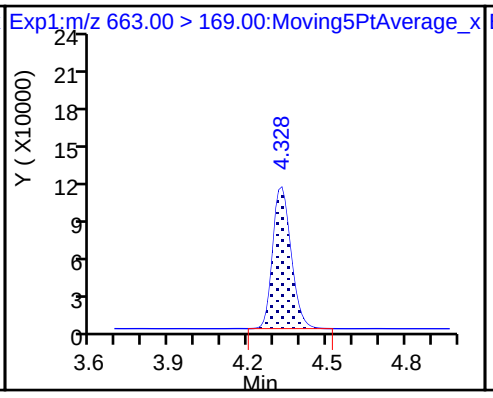
37 Perfluorododecanoic acid



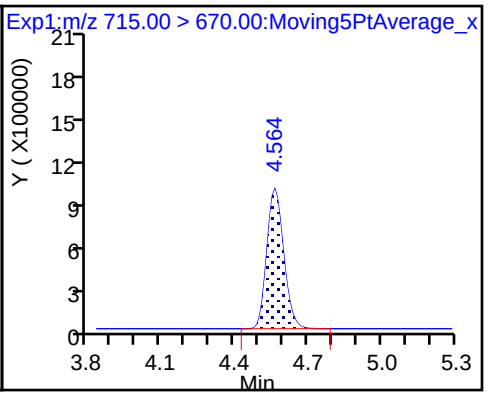
41 Perfluorotridecanoic acid



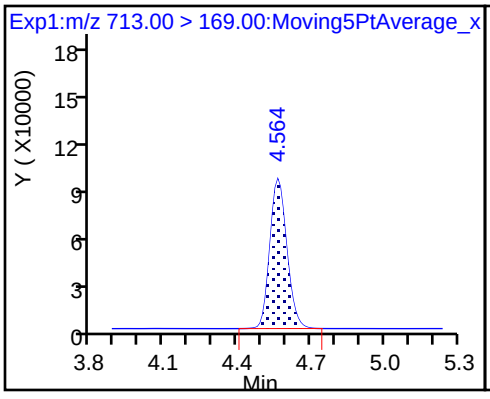
41 Perfluorotridecanoic acid



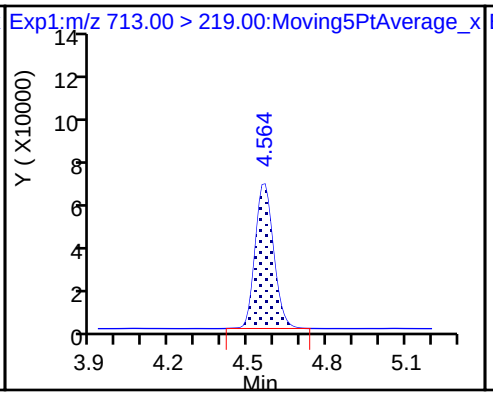
D 43 13C2-PFTeDA



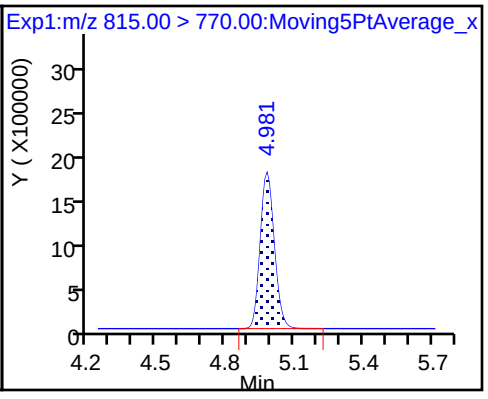
42 Perfluorotetradecanoic acid



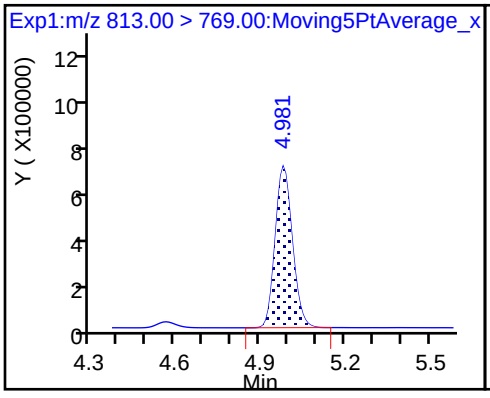
42 Perfluorotetradecanoic acid



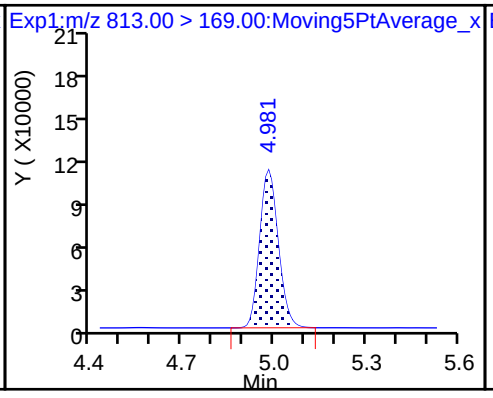
D 44 13C2-PFHxDA



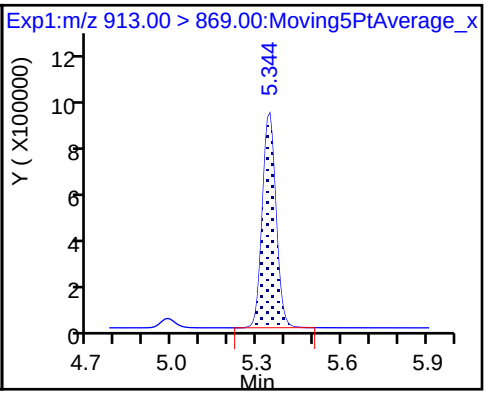
45 Perfluorohexadecanoic acid



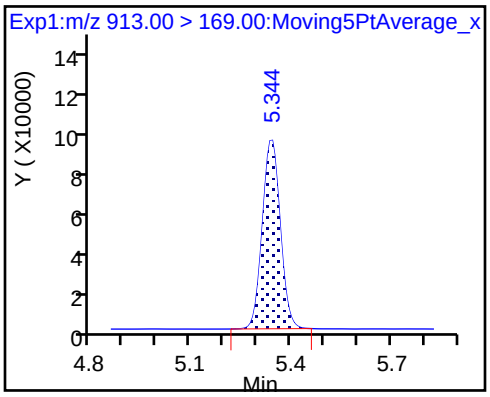
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214277/12 Calibration Date: 03/21/2018 23:21

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9420		2.50	2.50	-0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.121		2.49	2.50	-0.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.95		2.19	2.21	-1.0	50.0
4:2 FTS	AveID	16.15	14.79		2.14	2.34	-8.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9941		2.43	2.50	-2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.045		2.53	2.50	1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.057		2.16	2.28	-5.0	40.0
6:2FTS	AveID	1.744	1.718		2.34	2.37	-1.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.248		2.32	2.38	-2.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.122		2.48	2.50	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.055		2.64	2.50	5.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.094		2.28	2.32	-1.8	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.025		2.60	2.50	4.0	40.0
8:2FTS	AveID	1.276	1.312		2.46	2.40	2.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.016		2.57	2.50	2.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.042		2.60	2.50	4.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6784		2.40	2.41	-0.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9688		2.59	2.50	3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8417		2.44	2.50	-2.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.067		2.55	2.50	2.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.183		2.69	2.50	7.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2438		2.46	2.50	-1.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.028		2.80	2.50	12.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9561		2.59	2.50	3.4	50.0
13C4 PFBA	Ave	1.266	1.184		2.34	2.50	-6.5	50.0
13C5 PFPeA	Ave	0.8399	0.8072		2.40	2.50	-3.9	50.0
13C3-PFBS	Ave	0.0192	0.0187		2.27	2.33	-2.5	50.0
M2-4:2FTS	Ave	0.1324	0.1234		2.18	2.34	-6.8	50.0
13C2 PFHxA	Ave	0.9288	0.8858		2.38	2.50	-4.6	50.0
13C4-PFHpA	Ave	0.9164	0.8819		2.41	2.50	-3.8	50.0
18O2 PFHxS	Ave	1.130	1.083		2.27	2.37	-4.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214277/12 Calibration Date: 03/21/2018 23:21

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1844		2.31	2.38	-2.9	40.0
13C4 PFOA	Ave	0.9374	0.8641		2.31	2.50	-7.8	50.0
13C4 PFOS	Ave	0.8225	0.7844		2.28	2.39	-4.6	50.0
13C5 PFNA	Ave	0.8266	0.7808		2.36	2.50	-5.5	50.0
13C8 FOSA	Ave	1.109	1.046		2.36	2.50	-5.7	50.0
M2-8:2FTS	Ave	0.2565	0.2304		2.15	2.40	-10.2	40.0
13C2 PFDA	Ave	0.7245	0.6867		2.37	2.50	-5.2	50.0
d3-NMeFOSAA	Ave	0.3814	0.3651		2.39	2.50	-4.3	50.0
d5-NEtFOSAA	Ave	0.4345	0.4063		2.34	2.50	-6.5	50.0
13C2 PFUnA	Ave	0.6482	0.6135		2.37	2.50	-5.3	50.0
13C2 PFDoA	Ave	0.7355	0.6894		2.34	2.50	-6.3	50.0
13C2-PFTeDA	Ave	0.8983	0.8376		2.33	2.50	-6.8	50.0
13C2-PFHxDA	Ave	1.473	1.333		2.26	2.50	-9.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 23:21:58 ALS Bottle#: 14 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.538	6263259	2.34		93.5	78970	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.004	5899878	2.50		100.0	2827	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	4270427	2.40		96.1	117621	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	4786882	2.49		99.4	2960	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.735	0.010	0.649	91997	2.27		97.5	725	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.753	-0.008	1.000	6729306	2.19		99.0	31172	
298.90 > 99.00	1.745	1.753	-0.008	1.000	2894220		2.33(1.25-3.74)		19061	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.956	0.0	0.727	609582	2.18		93.2	8535	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.966	-0.010	1.000	1366285	2.14		91.5	49864	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.997	0.001	0.743	4686659	2.38		95.4	121333	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.997	0.001	1.000	4659192	2.43		97.2	15116	
313.00 > 119.00	1.998	1.997	0.001	1.000	441202		10.56(5.03-15.10)		11323	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.328	0.001	0.866	4665953	2.41		96.2	88209	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.329	2.328	0.001	1.000	4876391	2.53		101	10017	
363.00 > 169.00	2.329	2.328	0.001	1.000	1912706		2.55(1.13-3.40)		24957	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	5420741	2.27		95.8	77039	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	5510864	2.16		95.0	28087	
399.00 > 99.00	2.341	2.341	0.0	1.000	1760756		3.13(1.50-4.49)		5901	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.665	0.0	0.991	926685	2.30		97.1	21663	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.673	-0.008	1.000	1589118	2.34		98.6	61448	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.688	0.001	1.000	4571786	2.30		92.2	70991	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.697	-0.008		5290619	2.50			61255	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.003	5129257	2.48		99.3	1720	
413.00 > 169.00	2.697	2.697	0.0	1.003	2609781		1.97(0.84-2.52)		7256	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.704	-0.007	1.000	4929466	2.32		97.4	46613	
449.00 > 99.00	2.697	2.704	-0.007	1.000	1339215		3.68(1.94-5.82)		13719	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.140	3967417	2.28		95.4	35439	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	4130934	2.36		94.5	73876	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4211477	2.28		98.2	17489	
499.00 > 99.00	3.065	3.065	0.0	1.000	908351		4.64(2.31-6.93)		8668	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	4358316	2.64		106	5911	
463.00 > 169.00	3.065	3.072	-0.007	1.000	1027164		4.24(1.90-5.69)		25189	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.011	1.264	5532135	2.36		94.3	57685	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.398	0.001	1.000	5669538	2.60		104	71565	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.271	1167723	2.15		89.8	19988	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.274	3632900	2.37		94.8	48118	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.426	-0.009	1.000	1531748	2.46		103	30980	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.435	-0.009	1.000	3690382	2.57		103	15527	
513.00 > 169.00	3.426	3.435	-0.009	1.000	626605		5.89(2.36-7.09)		2196	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.581	3.578	0.003	1.332	1931639	2.39		95.7	31790	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.592	3.590	0.002	1.003	2013505	2.60		104	12415	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.748	-0.008	1.000	2713858	2.40		99.8	51577	
599.00 > 99.00	3.740	3.748	-0.008	1.000	897285		3.02(1.39-4.16)		23441	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.748	0.012	1.398	3246004	2.37		94.7	61653	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.748	0.002	1.395	2149601	2.34		93.5	11811	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.768	-0.008	1.003	2082450	2.59		104	84860	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.760	3.768	-0.008	1.000	2732169	2.44		97.6	15438	
563.00 > 169.00	3.760	3.768	-0.008	1.000	637349		4.29(2.12-6.36)		14119	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.047	0.012	1.510	3647536	2.34		93.7	32945	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.059	4.057	0.002	1.000	3891726	2.55		102	4010	
613.00 > 169.00	4.059	4.057	0.002	1.000	887380		4.39(2.13-6.40)		12266	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.328	-0.010	1.000	4314423	2.69		107	3326	
663.00 > 169.00	4.318	4.328	-0.010	1.000	1263033		3.42(1.25-3.76)		20320	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.554	0.011	1.698	4431420	2.33		93.2	30552	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.565	4.564	0.001	1.000	1080172	2.46		98.4	14897	
713.00 > 219.00	4.554	4.564	-0.010	0.998	815566		1.32(0.71-2.13)		13151	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.972	0.010	1.853	7050958	2.26		90.5	21677	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.982	4.981	0.001	1.000	7247728	2.80		112	2269	
813.00 > 169.00	4.982	4.981	0.001	1.000	1049664		6.90(2.86-8.58)		7881	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.338	5.344	-0.006	1.000	6741176	2.58		103	2063	
913.00 > 169.00	5.338	5.344	-0.006	1.000	822096		8.20(3.83-11.48)		5106	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 12:53:10 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_017.d

Injection Date: 21-Mar-2018 23:21:58 Instrument ID: A8_N

Lims ID: CCV L5

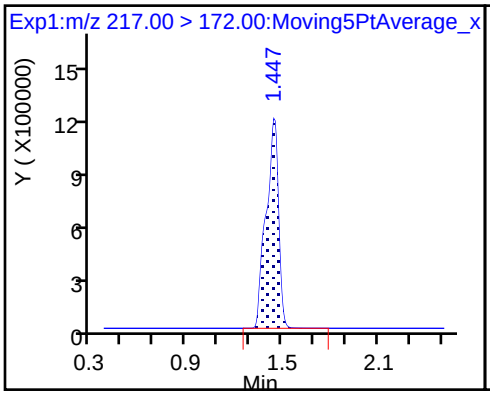
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 12

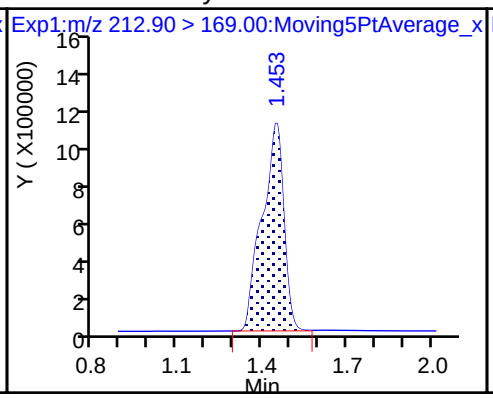
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

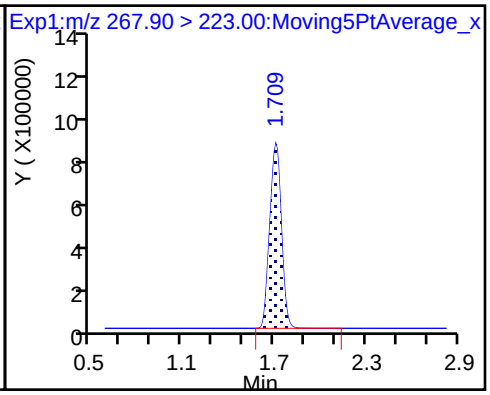
D 1 13C4 PFBA



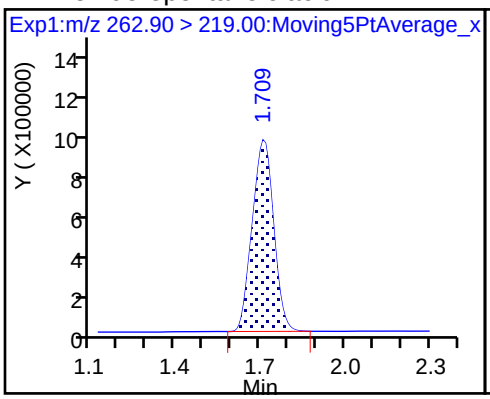
2 Perfluorobutyric acid



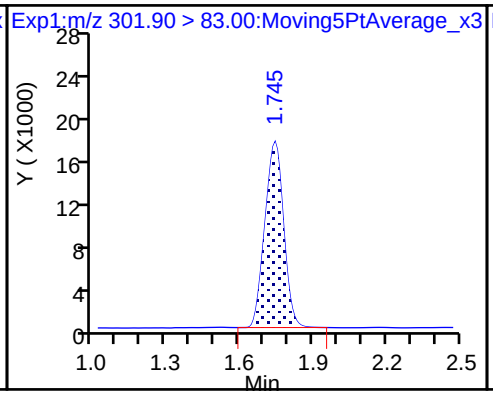
D 3 13C5-PFPeA



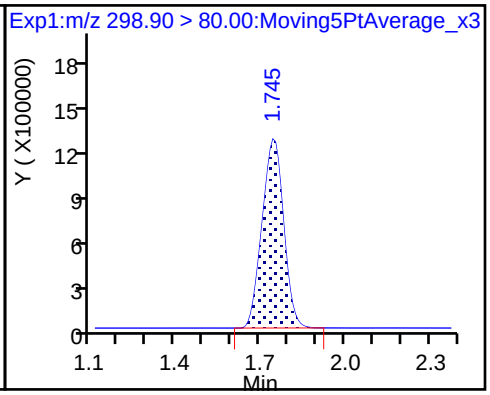
4 Perfluoropentanoic acid



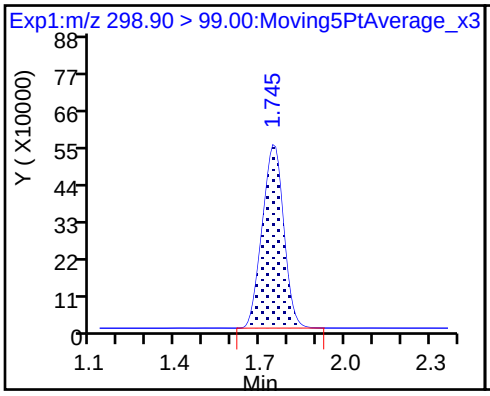
D 47 13C3-PFBS



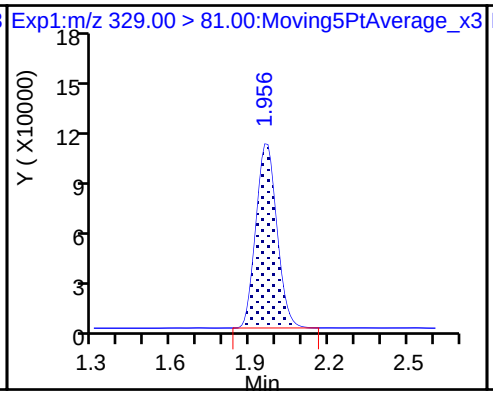
5 Perfluorobutanesulfonic acid



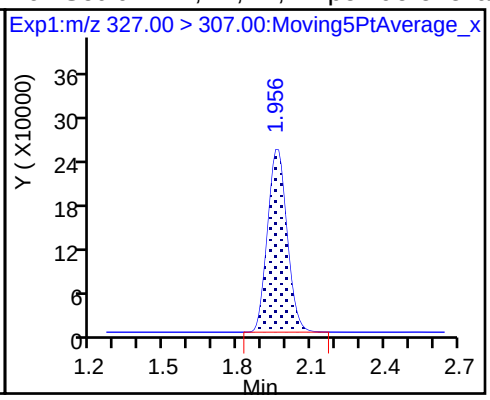
5 Perfluorobutanesulfonic acid



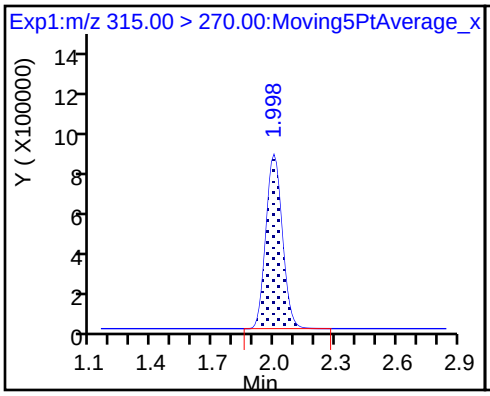
D 60 M2-4:2FTS



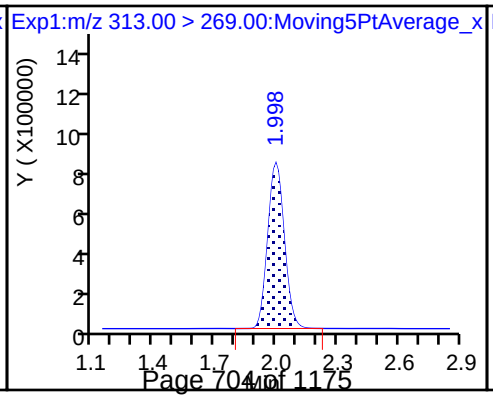
61 Sodium 1H,1H,2H,2H-perfluorohexane



D 7 13C2 PFHxA



6 Perfluorohexanoic acid



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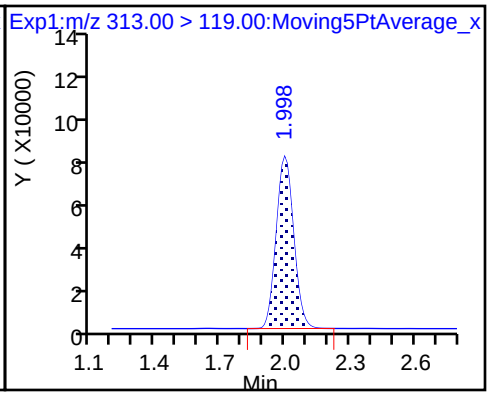
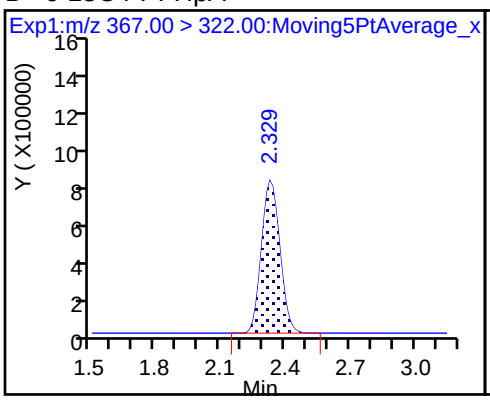
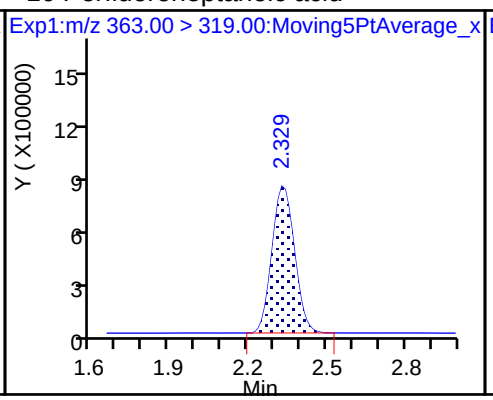


D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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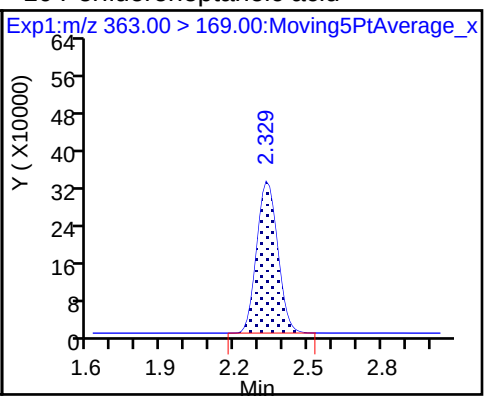
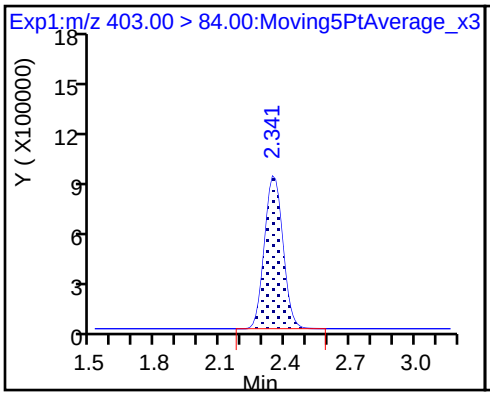
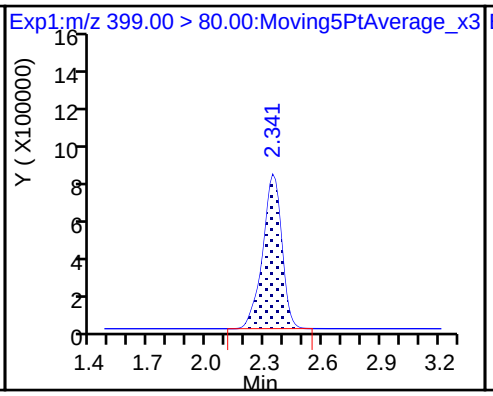


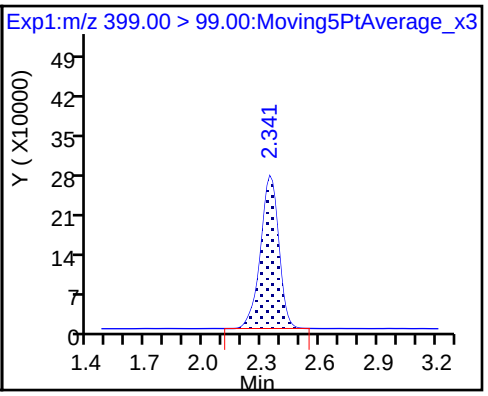
D 11 18O2 PFHxS



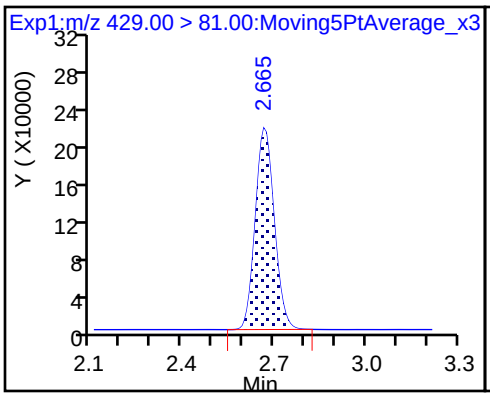
8 Perfluorohexanesulfonic acid



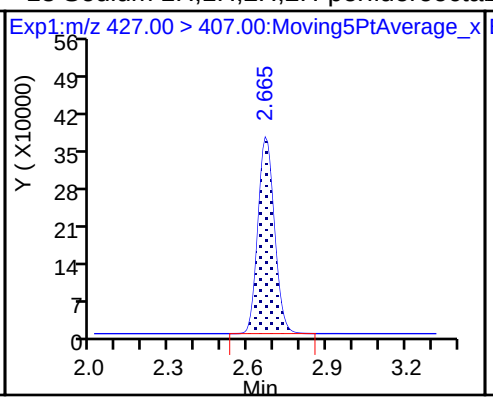
8 Perfluorohexanesulfonic acid



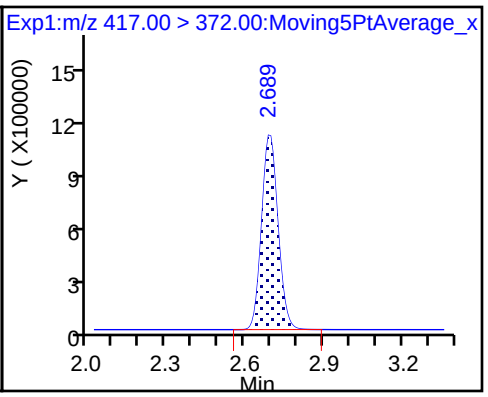
D 12 M2-6:2FTS



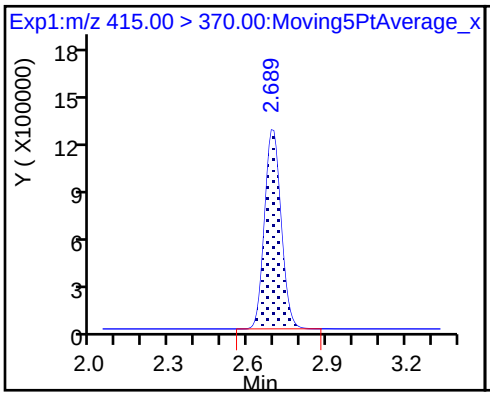
13 Sodium 1H,1H,2H,2H-perfluorooctane



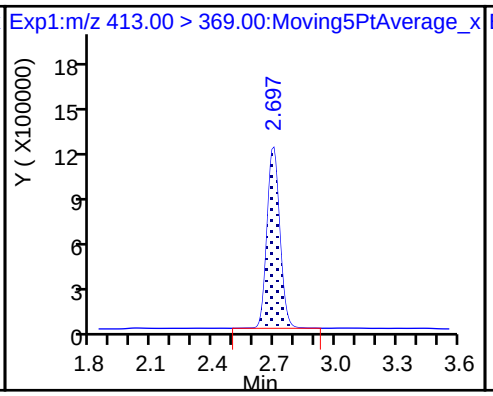
D 14 13C4 PFOA



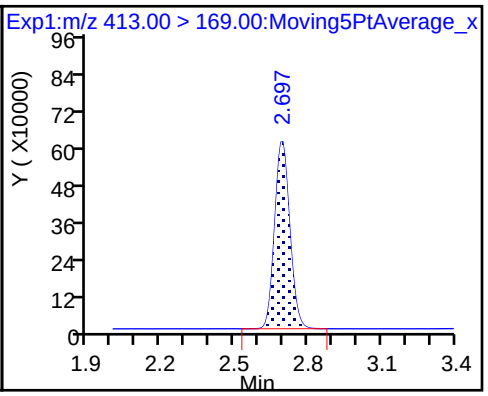
* 62 13C2-PFOA



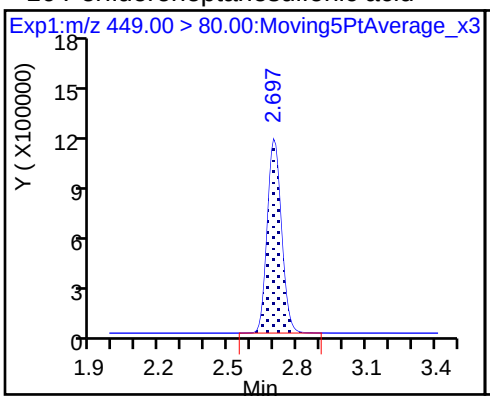
15 Perfluorooctanoic acid



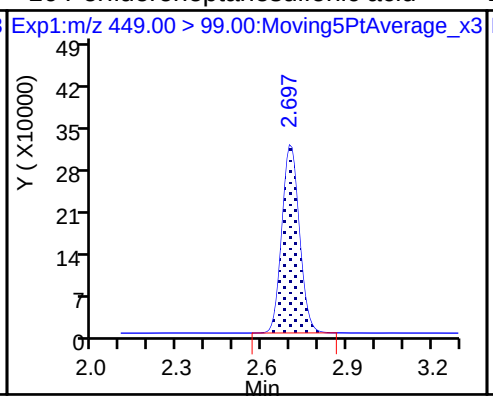
15 Perfluorooctanoic acid



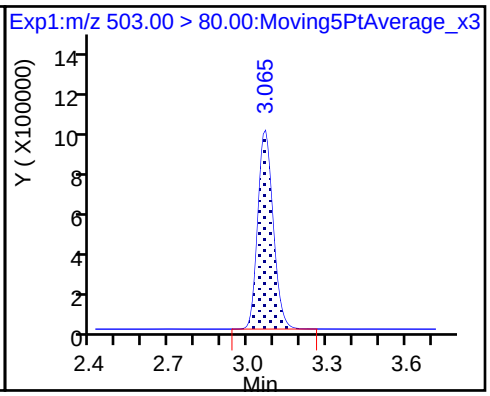
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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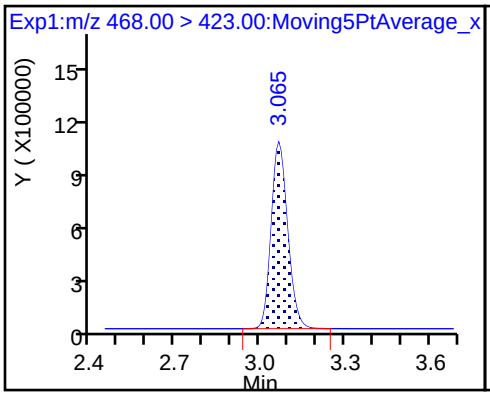
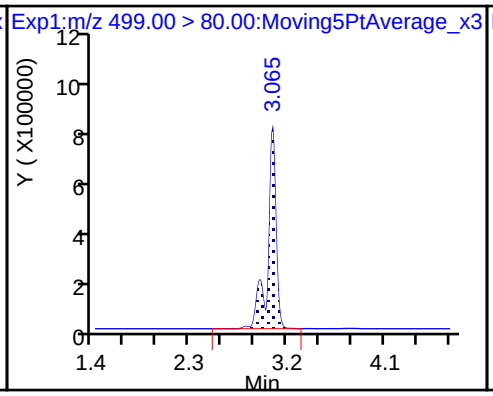
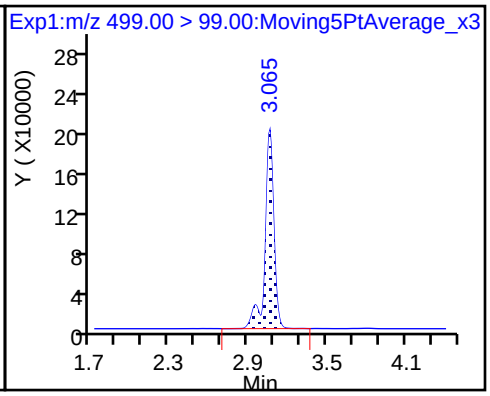


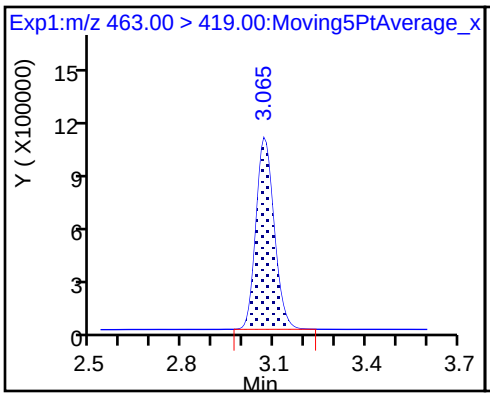
17 Perfluorooctane sulfonic acid



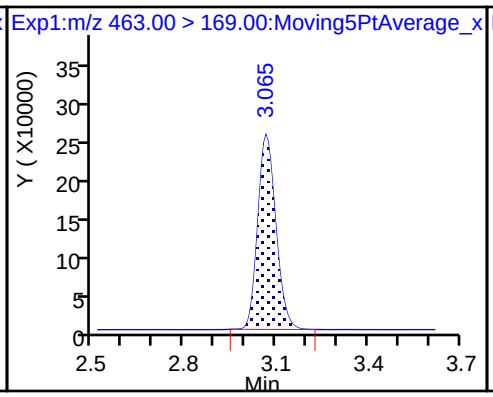
17 Perfluorooctane sulfonic acid



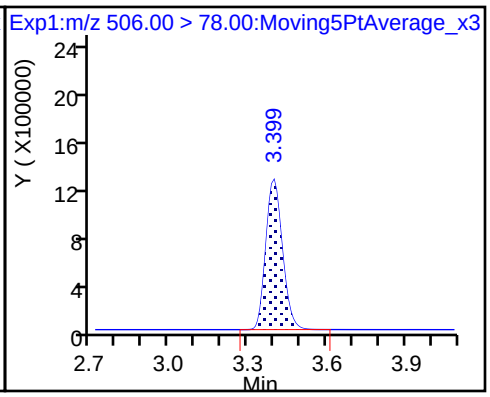
20 Perfluorononanoic acid



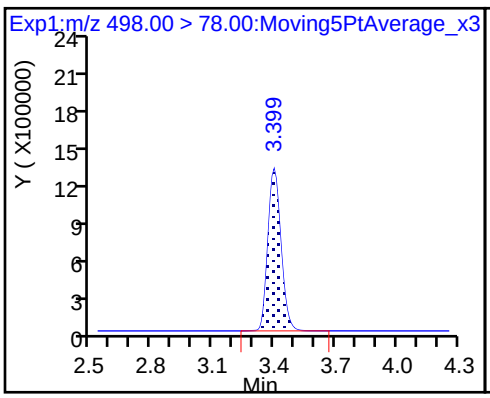
20 Perfluorononanoic acid



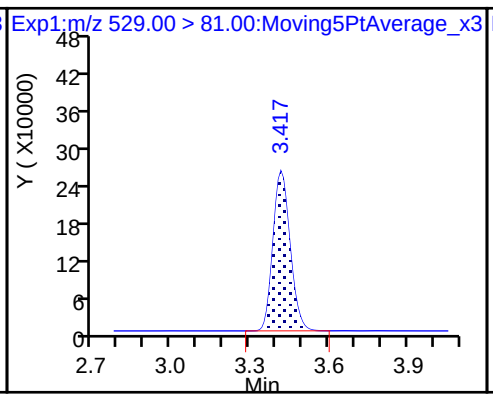
D 21 13C8 FOSA



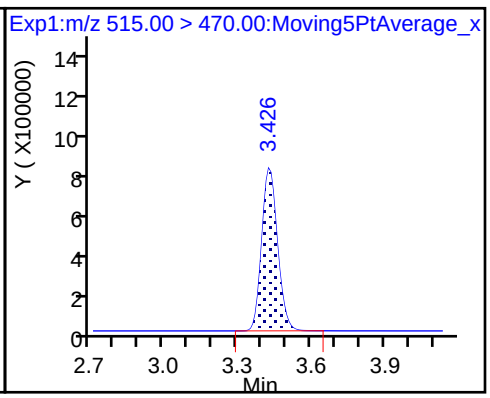
22 Perfluorooctane Sulfonamide



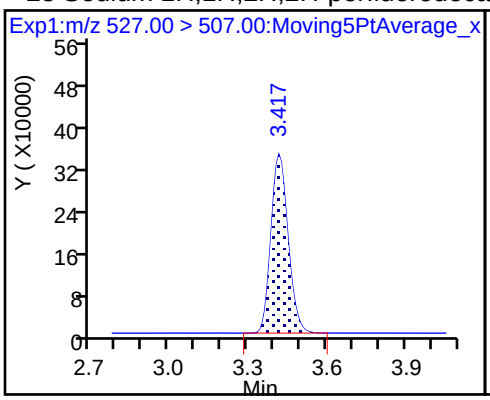
D 26 M2-8:2FTS



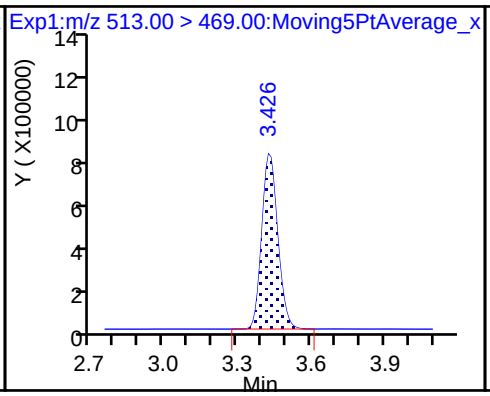
D 23 13C2 PFDA



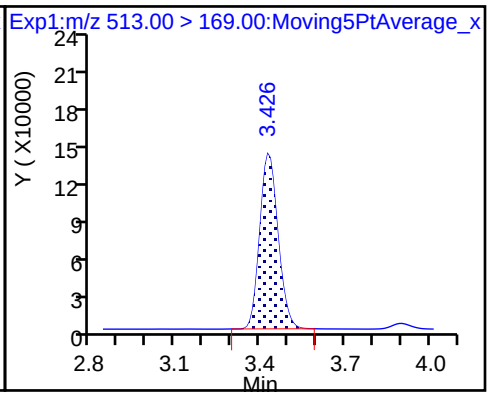
25 Sodium 1H,1H,2H,2H-perfluorodecane



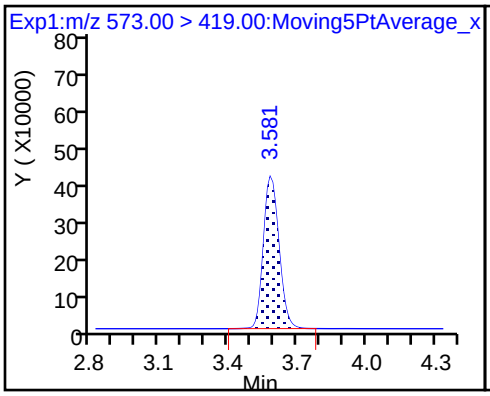
24 Perfluorodecanoic acid



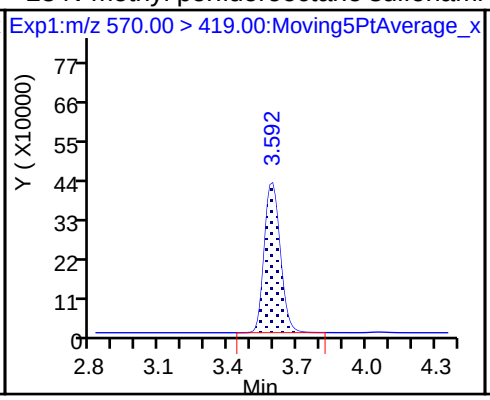
24 Perfluorodecanoic acid



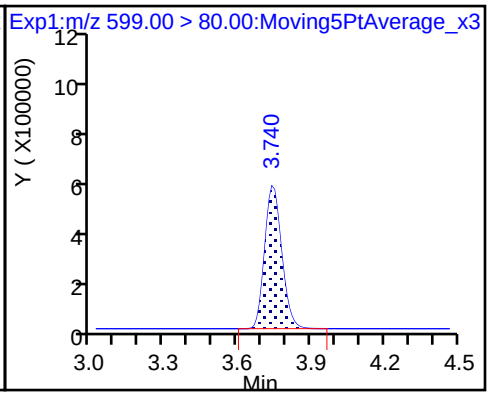
D 27 d3-NMeFOSAA



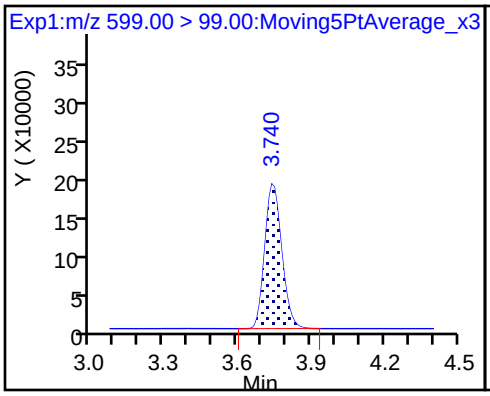
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid



29 Perfluorodecane Sulfonic acid



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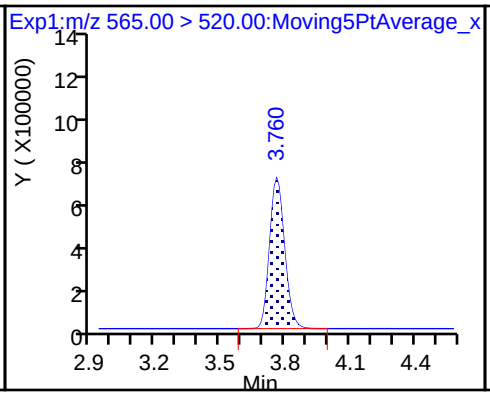
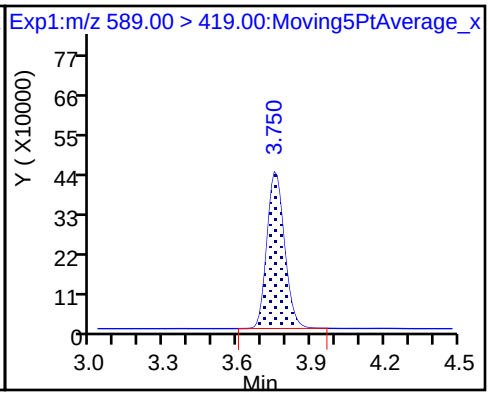
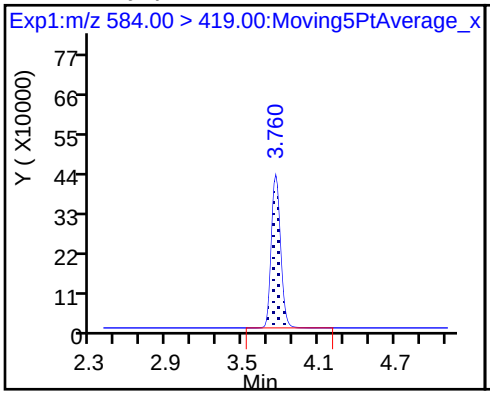


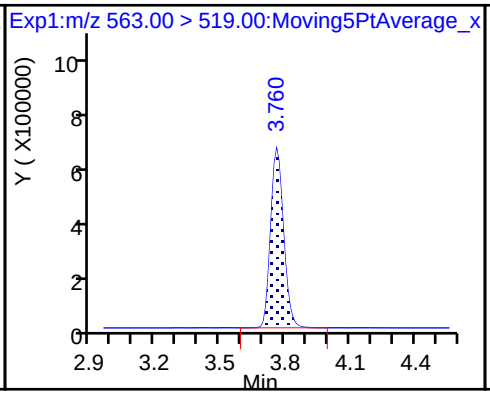
D 32 d5-NEtFOSAA



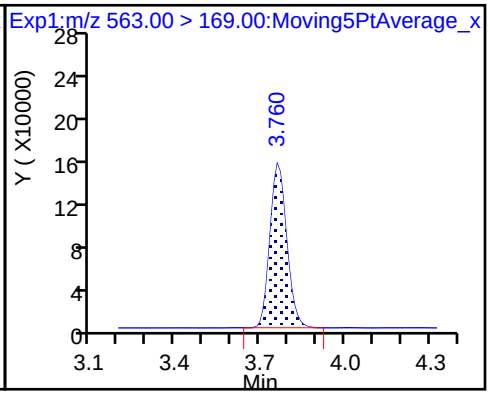
33 N-ethyl perfluorooctane sulfonamid



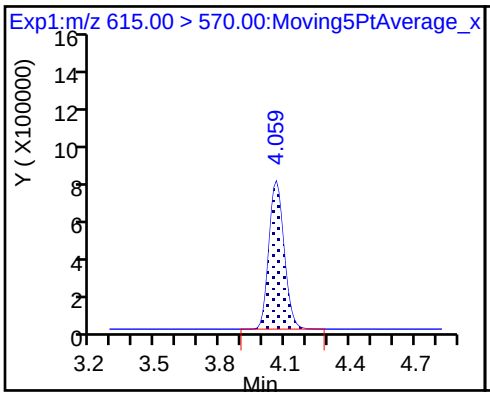
31 Perfluoroundecanoic acid



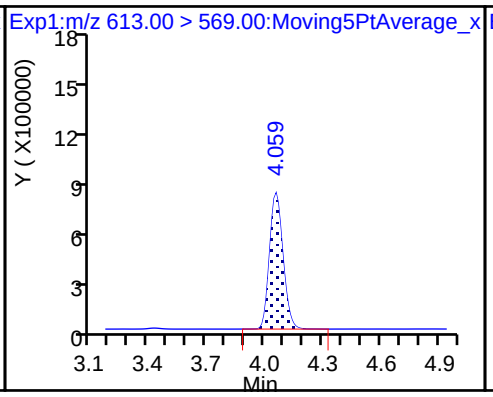
31 Perfluoroundecanoic acid



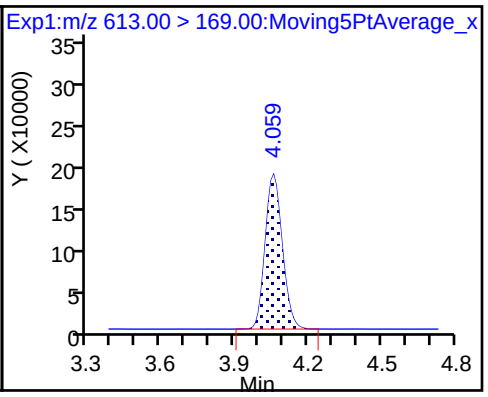
D 36 13C2 PFDoA



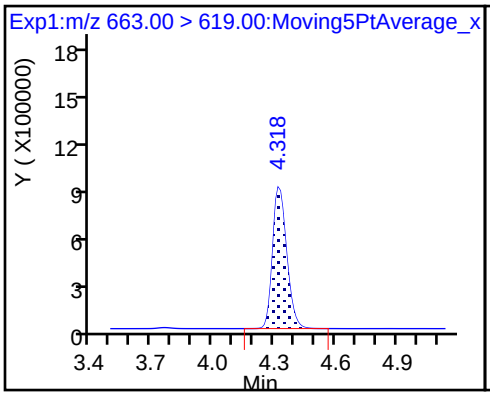
37 Perfluorododecanoic acid



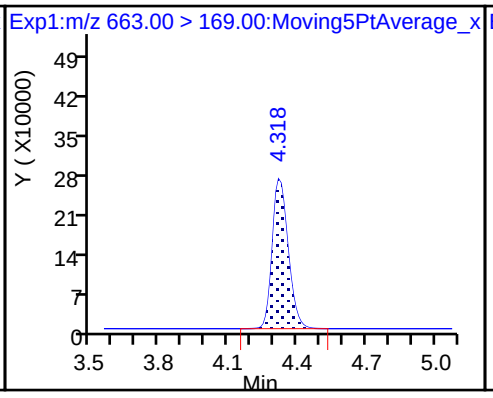
37 Perfluorododecanoic acid



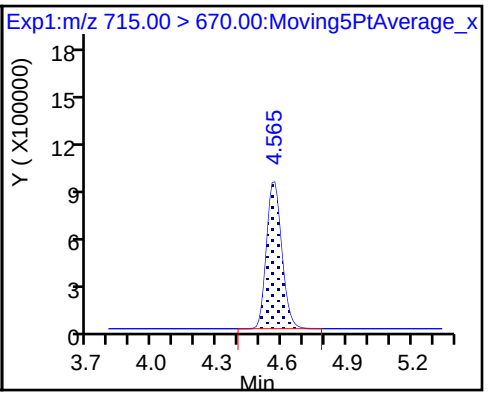
41 Perfluorotridecanoic acid



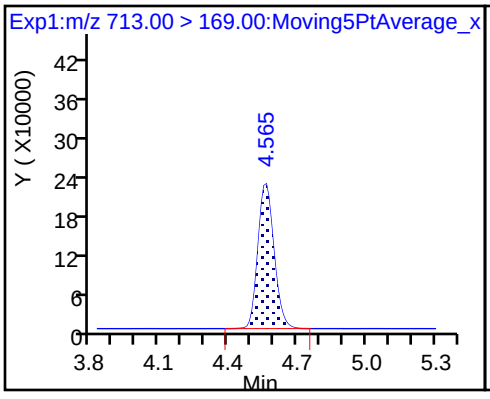
41 Perfluorotridecanoic acid



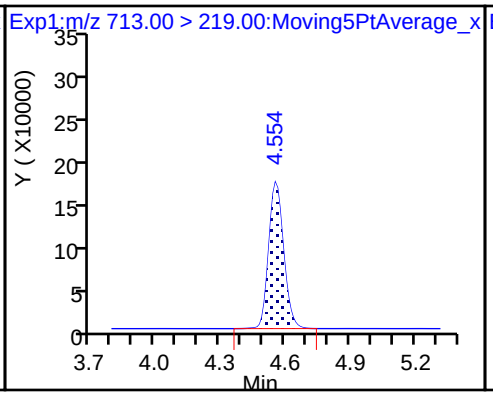
D 43 13C2-PFTeDA



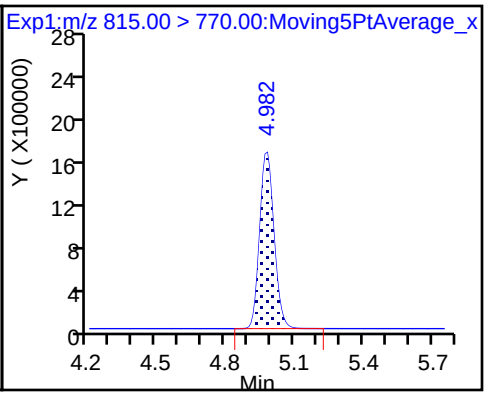
42 Perfluorotetradecanoic acid



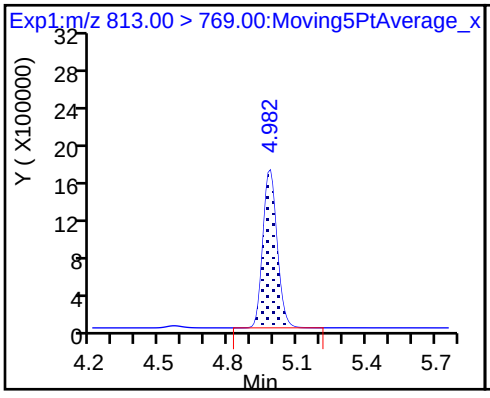
42 Perfluorotetradecanoic acid



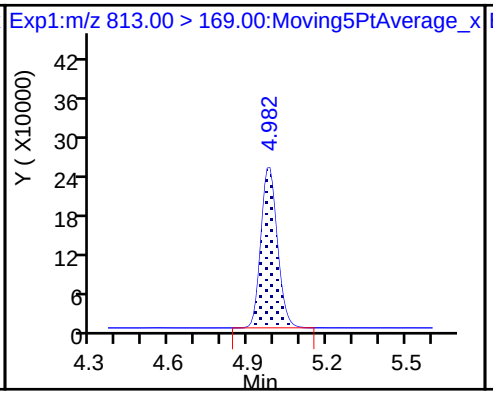
D 44 13C2-PFHxDA



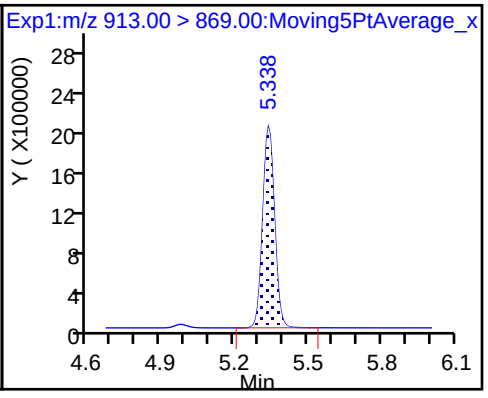
45 Perfluorohexadecanoic acid



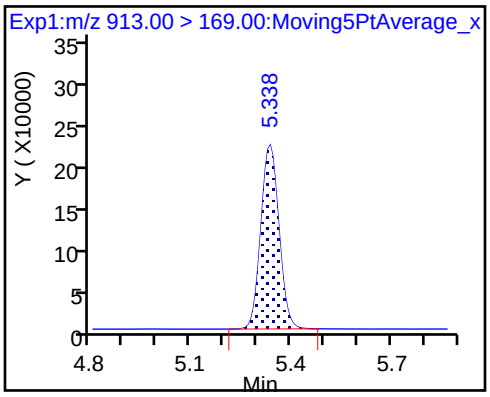
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214277/23 Calibration Date: 03/22/2018 00:48

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8818		0.936	1.00	-6.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.094		0.970	1.00	-3.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.39		0.869	0.884	-1.7	50.0
4:2 FTS	AveID	16.15	15.32		0.886	0.934	-5.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9462		0.926	1.00	-7.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9456		0.914	1.00	-8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.019		0.834	0.910	-8.4	40.0
6:2FTS	AveID	1.744	1.592		0.865	0.948	-8.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.096		0.970	1.00	-3.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.339		0.995	0.952	4.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.119		0.932	0.928	0.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.002		1.00	1.00	0.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9682		0.982	1.00	-1.8	40.0
8:2FTS	AveID	1.276	1.166		0.875	0.958	-8.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9292		0.940	1.00	-6.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9840		0.983	1.00	-1.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7129		1.01	0.964	4.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9413		1.01	1.00	0.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7593		0.881	1.00	-11.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.017		0.972	1.00	-2.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.117		1.02	1.00	1.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2229		0.900	1.00	-10.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9431		1.01	1.00	1.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9398		1.02	1.00	1.6	50.0
13C4 PFBA	Ave	1.266	1.270		2.51	2.50	0.3	50.0
13C5 PFPeA	Ave	0.8399	0.8564		2.55	2.50	2.0	50.0
13C3-PFBS	Ave	0.0192	0.0198		2.40	2.33	3.4	50.0
M2-4:2FTS	Ave	0.1324	0.1353		2.39	2.34	2.2	50.0
13C2 PFHxA	Ave	0.9288	0.9599		2.58	2.50	3.4	50.0
13C4-PFHpA	Ave	0.9164	0.9373		2.56	2.50	2.3	50.0
18O2 PFHxS	Ave	1.130	1.143		2.39	2.37	1.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214277/23 Calibration Date: 03/22/2018 00:48

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2048		2.56	2.38	7.8	40.0
13C4 PFOA	Ave	0.9374	0.9278		2.47	2.50	-1.0	50.0
13C4 PFOS	Ave	0.8225	0.7923		2.30	2.39	-3.7	50.0
13C5 PFNA	Ave	0.8266	0.8352		2.53	2.50	1.0	50.0
13C8 FOSA	Ave	1.109	1.099		2.48	2.50	-0.9	50.0
M2-8:2FTS	Ave	0.2565	0.2557		2.39	2.40	-0.3	40.0
13C2 PFDA	Ave	0.7245	0.7353		2.54	2.50	1.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.4044		2.65	2.50	6.0	50.0
d5-NEtFOSAA	Ave	0.4345	0.4613		2.65	2.50	6.2	50.0
13C2 PFUnA	Ave	0.6482	0.6567		2.53	2.50	1.3	50.0
13C2 PFDoA	Ave	0.7355	0.7576		2.58	2.50	3.0	50.0
13C2-PFTeDA	Ave	0.8983	0.9185		2.56	2.50	2.2	50.0
13C2-PFHxDA	Ave	1.473	1.447		2.46	2.50	-1.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_028.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 22-Mar-2018 00:48:18 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:32 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.536	6656593	2.51		100	83181	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.004	2347945	0.9359		93.6	1089	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	4489197	2.55		102	142202	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1963999	0.9700		97.0	1160	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	96645	2.40		103	754	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	2806957	0.8690		98.3	15316	
298.90 > 99.00	1.744	1.744	0.0	1.000	1135764		2.47(1.25-3.74)		7374	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.956	0.0	0.725	662667	2.39		102	9265	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	594782	0.8858		94.8	36034	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	5032053	2.58		103	113870	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1904562	0.9255		92.6	6571	
313.00 > 119.00	1.997	1.997	0.0	1.000	183034		10.41(5.03-15.10)		3598	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	4913563	2.56		102	92749	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1858450	0.9141		91.4	3887	
363.00 > 169.00	2.328	2.328	0.0	1.000	760773		2.44(1.13-3.40)		11638	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	5667751	2.39		101	87351	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2223335	0.8335		91.6	13486	
399.00 > 99.00	2.341	2.341	0.0	1.000	733661		3.03(1.50-4.49)		3040	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.665	0.008	0.991	1019885	2.56		108	29965	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	647988	0.8654		91.3	25198	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.688	0.009	1.000	4863569	2.47		99.0	59989	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		5242214	2.50			64975	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	2132739	0.9704		97.0	605	
413.00 > 169.00	2.697	2.697	0.0	1.000	1056881		2.02(0.84-2.52)		3226	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.704	0.0	1.000	2117274	0.99		104	33137	
449.00 > 99.00	2.704	2.704	0.0	1.000	561209		3.77(1.94-5.82)		7324	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	3970468	2.30		96.3	46544	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	4378237	2.53		101	89839	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1724987	0.9321		100	7614	
499.00 > 99.00	3.065	3.065	0.0	1.000	372458		4.63(2.31-6.93)		5736	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1754373	1.00		100	2717	
463.00 > 169.00	3.072	3.072	0.0	1.000	402981		4.35(1.90-5.69)		7107	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.260	5760041	2.48		99.1	56338	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.003	2230629	0.9821		98.2	41586	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.415	0.011	1.270	1284332	2.39		99.7	23884	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.424	0.011	1.274	3854437	2.54		101	66772	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	598863	0.8750		91.3	13156	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1432670	0.9405		94.0	6677	
513.00 > 169.00	3.435	3.435	0.0	1.000	261307		5.48(2.36-7.09)		5811	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	2119890	2.65		106	37690	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.000	834405	0.9832		98.3	4147	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1141617	1.01		105	20107	
599.00 > 99.00	3.748	3.748	0.0	1.000	391706		2.91(1.39-4.16)		7461	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.748	0.021	1.398	3442560	2.53		101	59538	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	2418086	2.65		106	12454	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.769	0.0	1.003	910423	1.01		101	13268	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	1045528	0.8806		88.1	5808	
563.00 > 169.00	3.769	3.769	0.0	1.000	248254		4.21(2.12-6.36)		9818	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.505	3971498	2.58		103	29476	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	1616202	0.9723		97.2	1455	
613.00 > 169.00	4.057	4.057	0.0	1.000	375947		4.30(2.13-6.40)		5558	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1774832	1.01		101	1193	
663.00 > 169.00	4.318	4.318	0.0	1.000	548661		3.23(1.25-3.76)		8708	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.693	4815153	2.56		102	32464	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	429389	0.8997		90.0	5968	
713.00 > 219.00	4.554	4.564	-0.010	0.998	316451		1.36(0.71-2.13)		5488	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.972	0.001	1.844	7585998	2.46		98.3	18642	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.000	2861608	1.01		101	910	
813.00 > 169.00	4.973	4.973	0.0	1.000	436675		6.55(2.86-8.58)		4085	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2851799	1.02		102	960	
913.00 > 169.00	5.337	5.337	0.0	1.000	343212		8.31(3.83-11.48)		3523	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 12:53:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_028.d

Injection Date: 22-Mar-2018 00:48:18 Instrument ID: A8_N

Lims ID: CCV L4

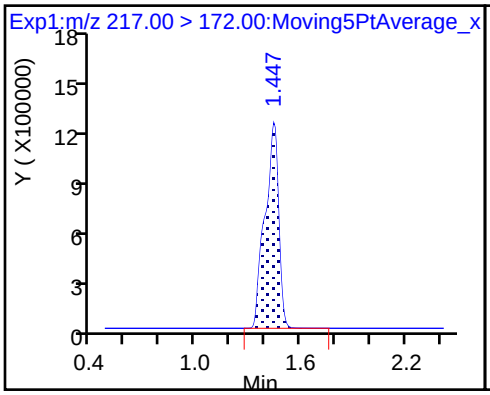
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

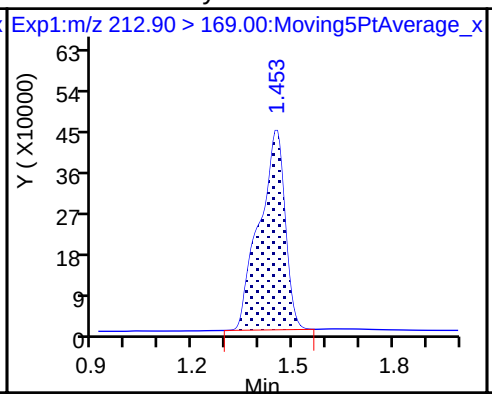
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

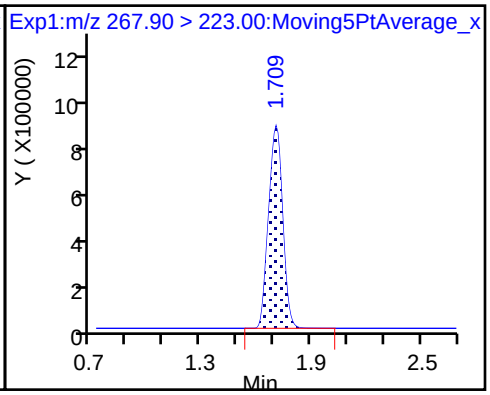
D 1 13C4 PFBA



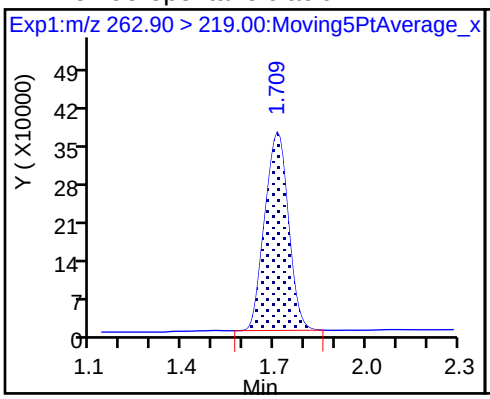
2 Perfluorobutyric acid



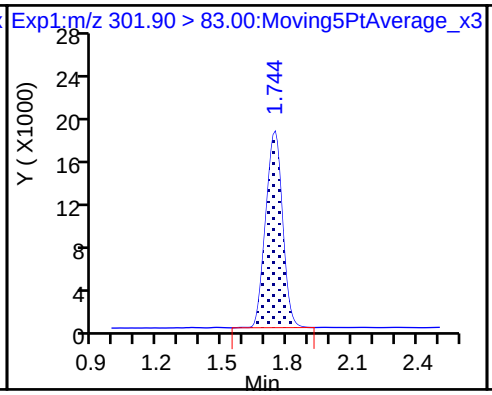
D 3 13C5-PFPeA



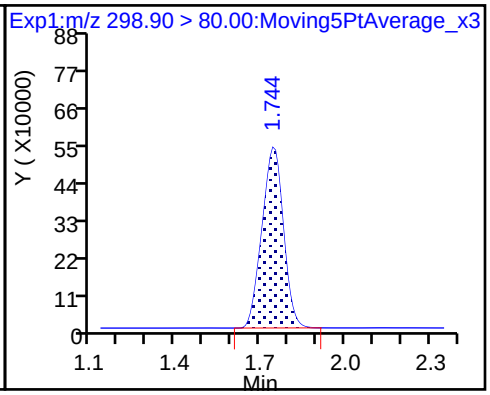
4 Perfluoropentanoic acid



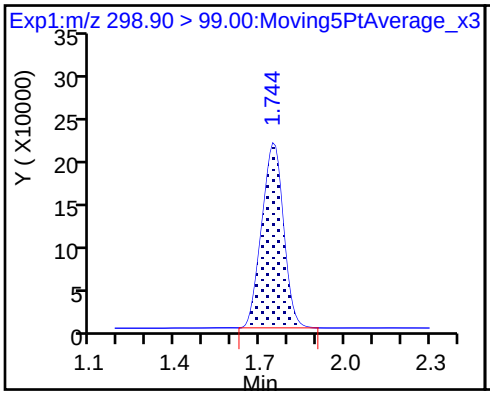
D 47 13C3-PFBS



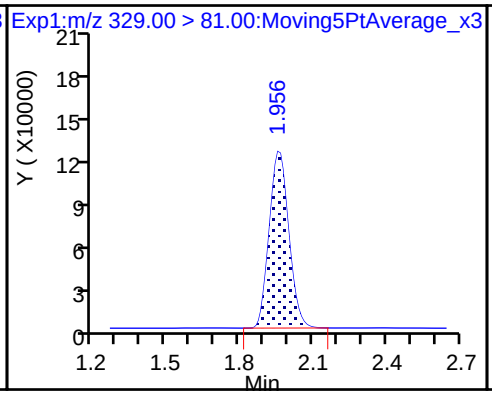
5 Perfluorobutanesulfonic acid



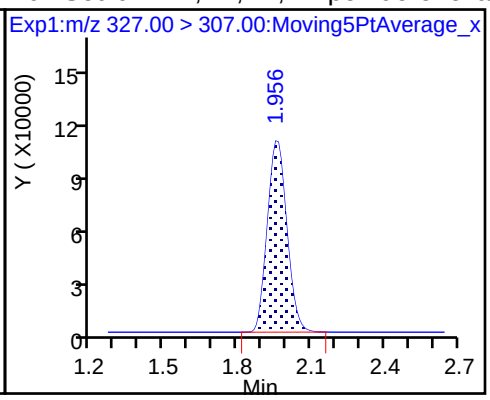
5 Perfluorobutanesulfonic acid



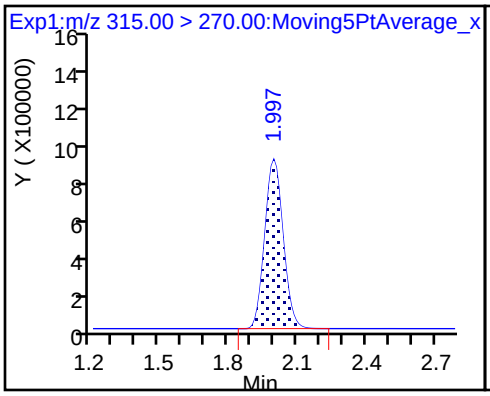
D 60 M2-4:2FTS



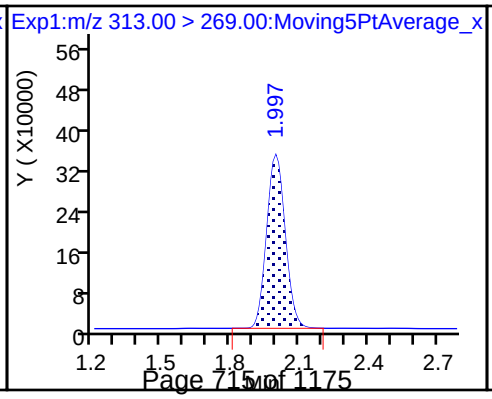
61 Sodium 1H,1H,2H,2H-perfluorohexane



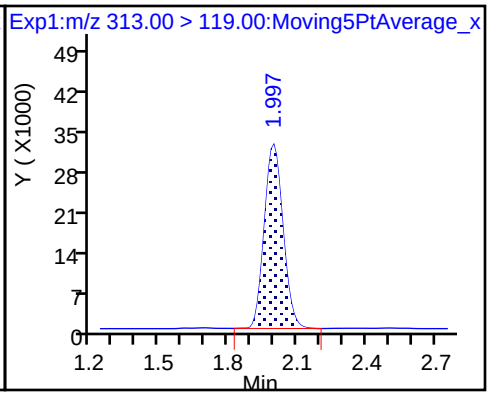
D 7 13C2 PFHxA



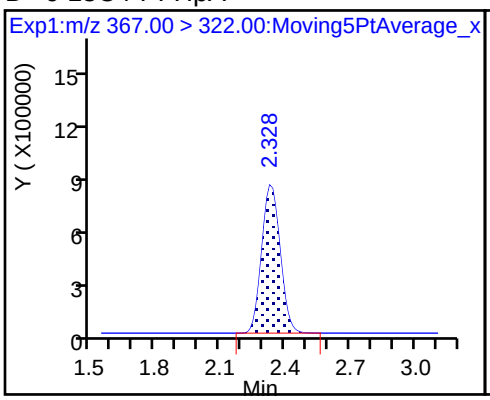
6 Perfluorohexanoic acid



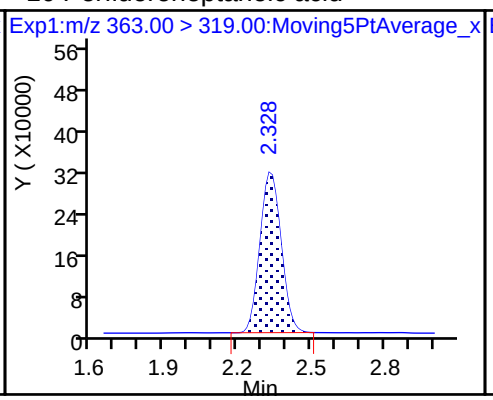
6 Perfluorohexanoic acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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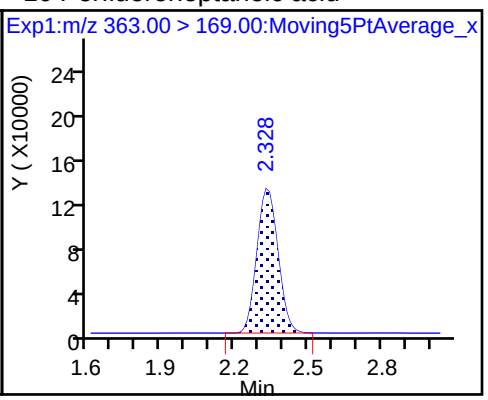
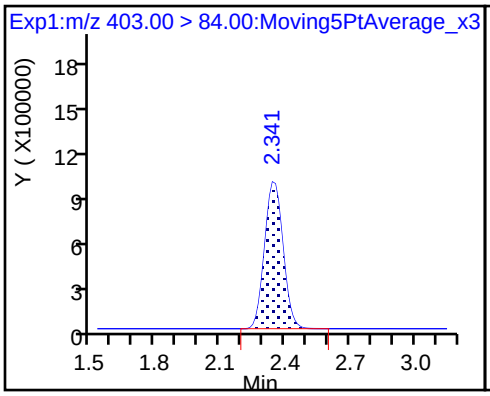
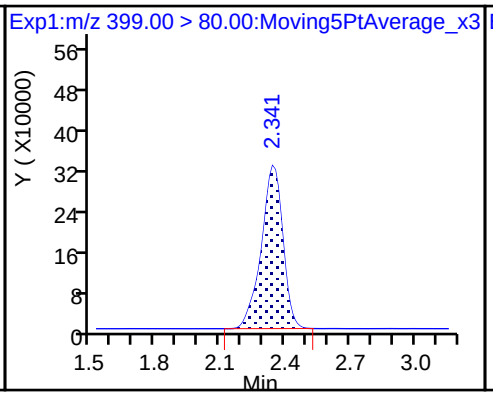


D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid



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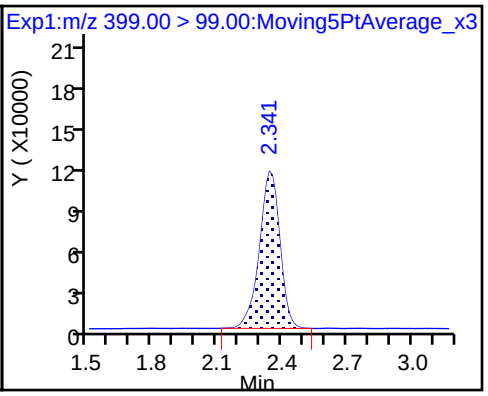
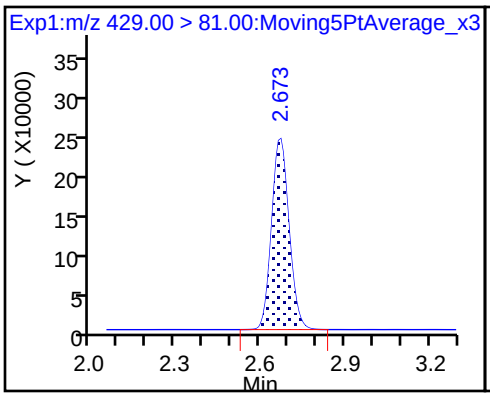
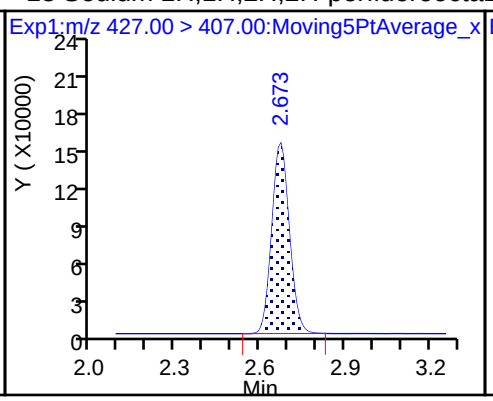


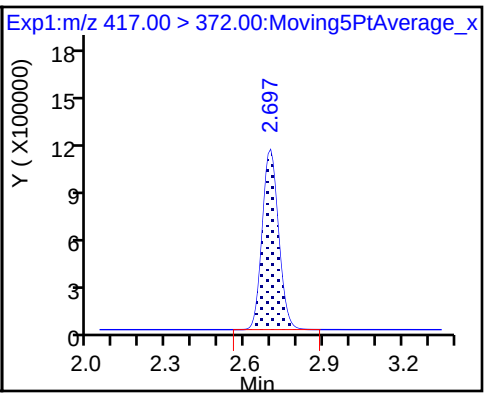
D 12 M2-6:2FTS



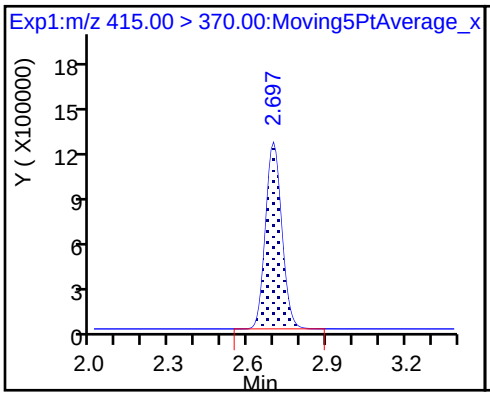
13 Sodium 1H,1H,2H,2H-perfluorooctane



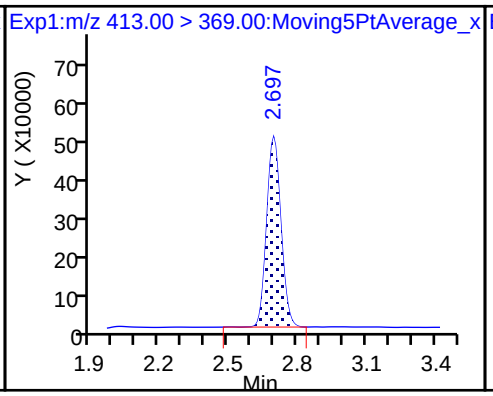
D 14 13C4 PFOA



* 62 13C2-PFOA



15 Perfluorooctanoic acid



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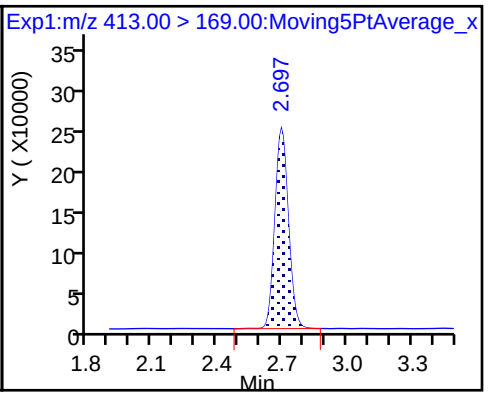
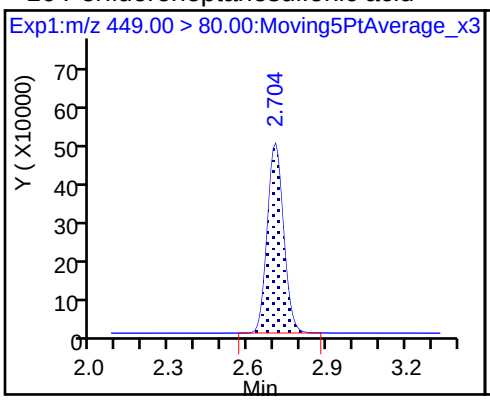
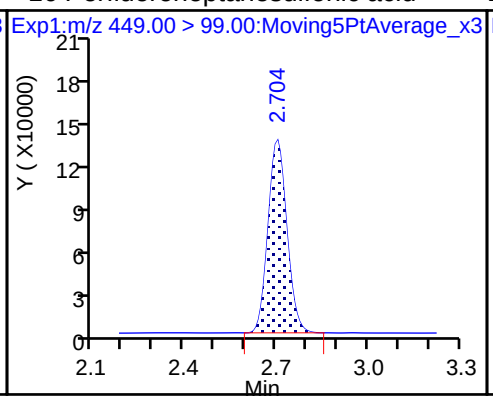


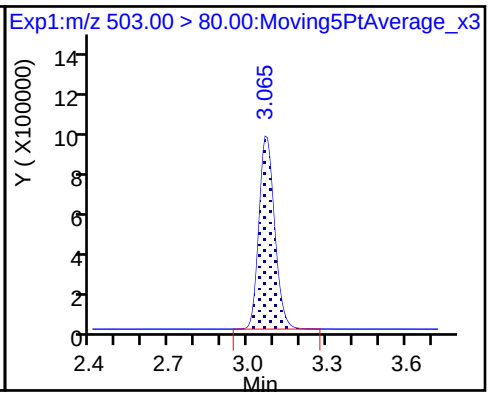
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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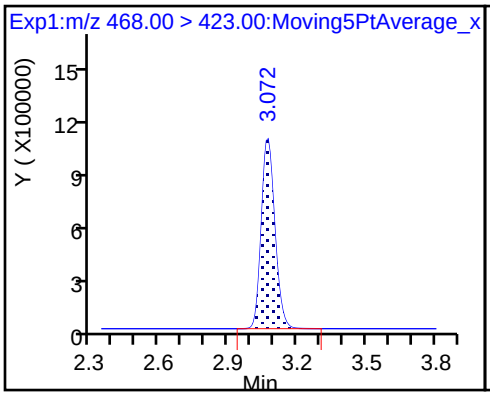
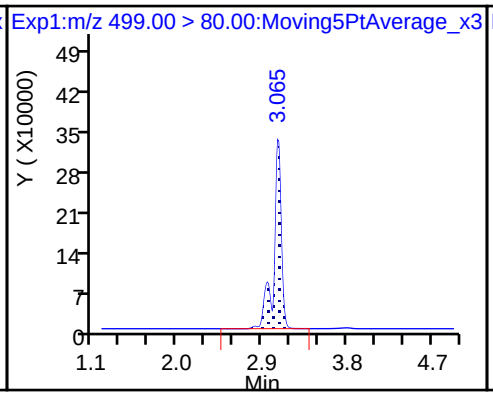
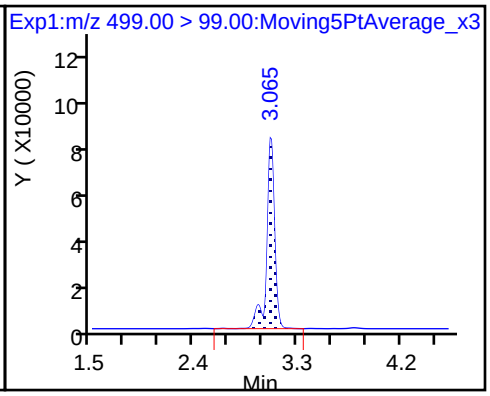


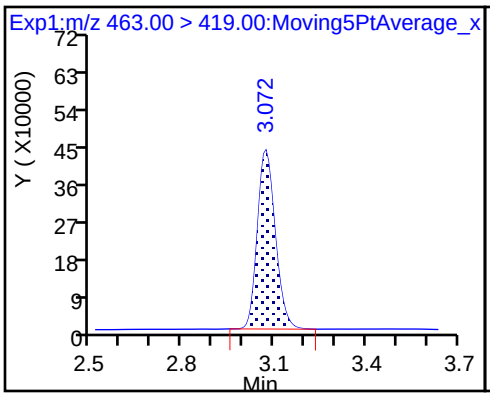
17 Perfluorooctane sulfonic acid



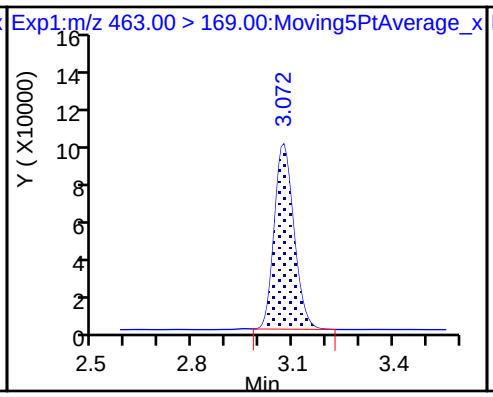
17 Perfluorooctane sulfonic acid



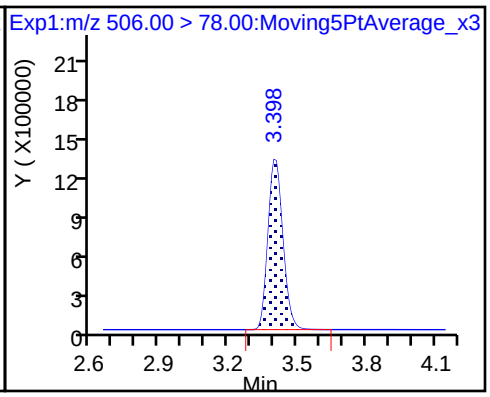
20 Perfluorononanoic acid



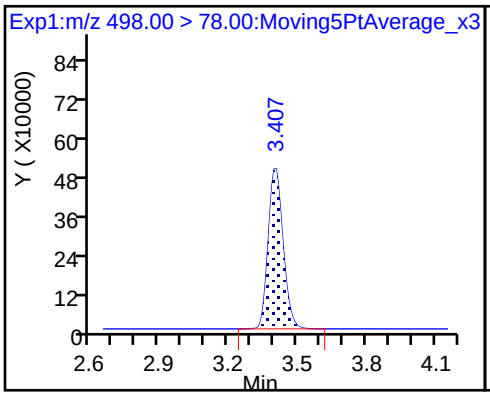
20 Perfluorononanoic acid



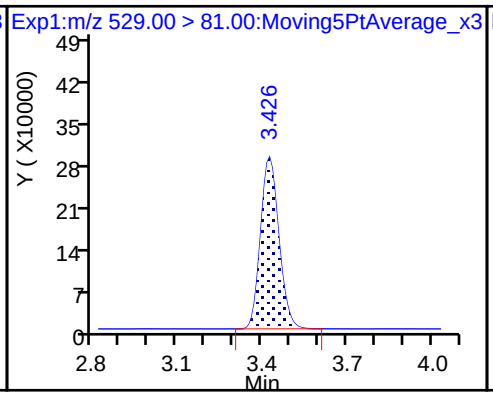
D 21 13C8 FOSA



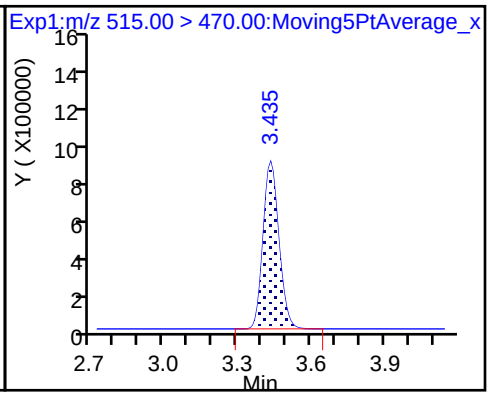
22 Perfluorooctane Sulfonamide



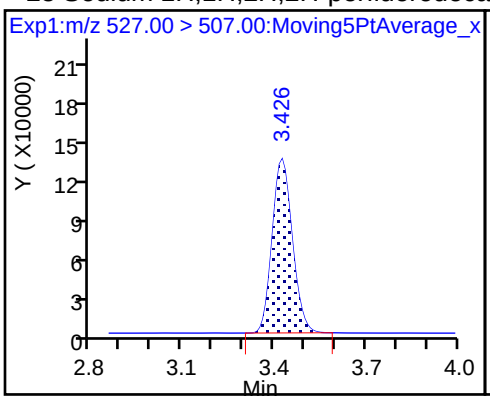
D 26 M2-8:2FTS



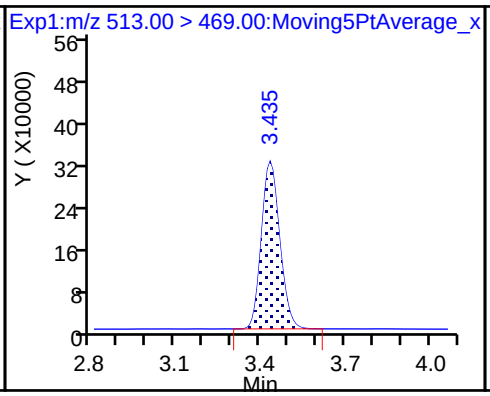
D 23 13C2 PFDA



25 Sodium 1H,1H,2H,2H-perfluorodecan



24 Perfluorodecanoic acid



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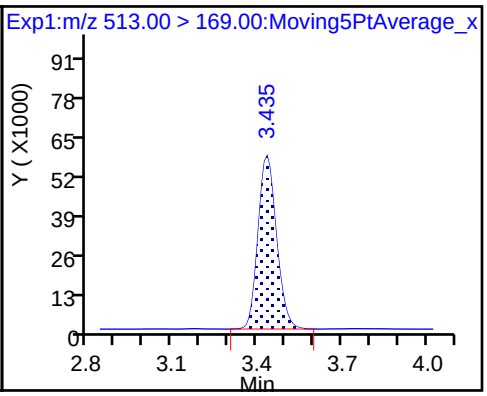
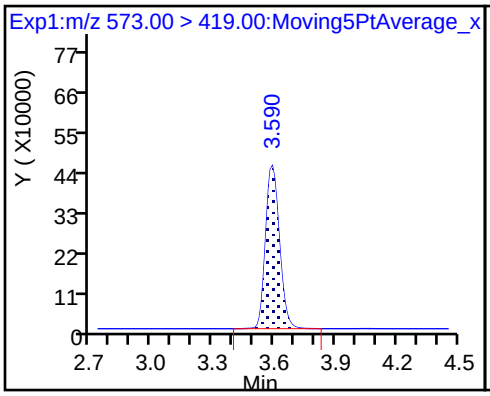
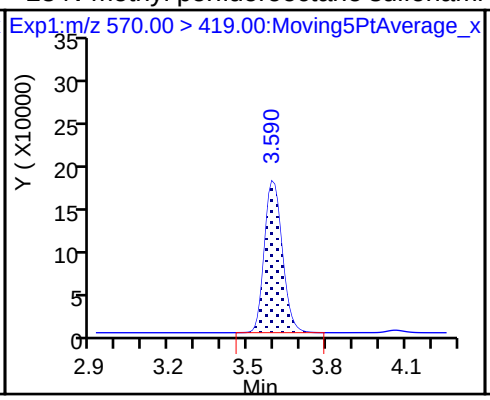


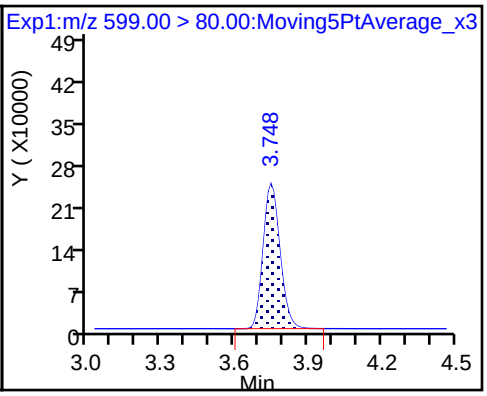
D 27 d3-NMeFOSAA



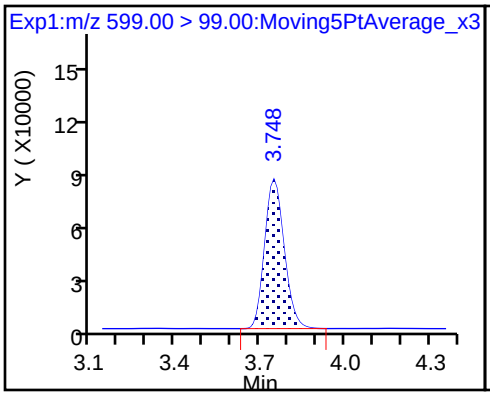
28 N-methyl perfluorooctane sulfonami



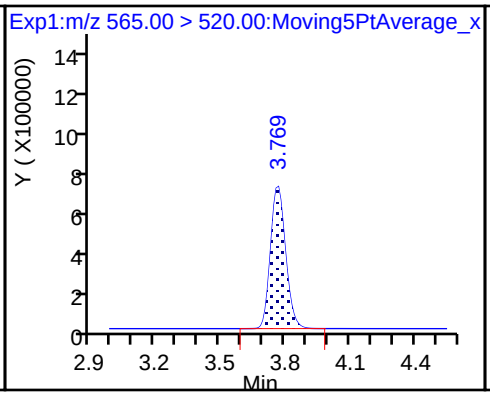
29 Perfluorodecane Sulfonic acid



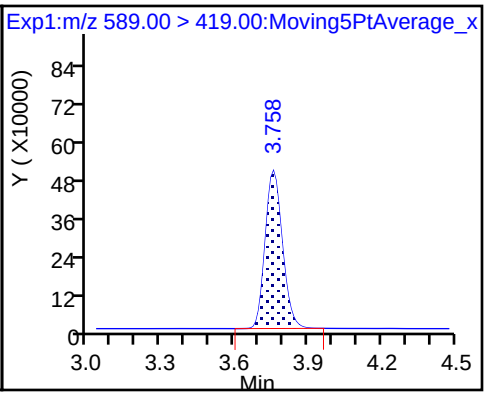
29 Perfluorodecane Sulfonic acid



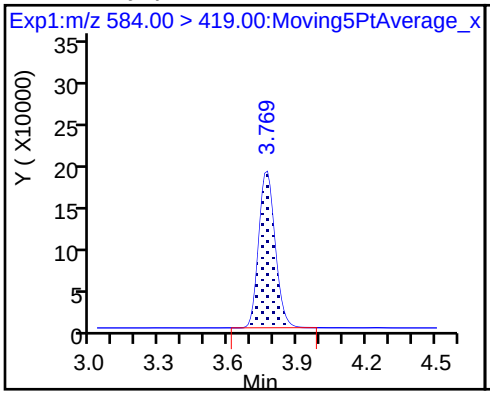
D 30 13C2 PFUnA



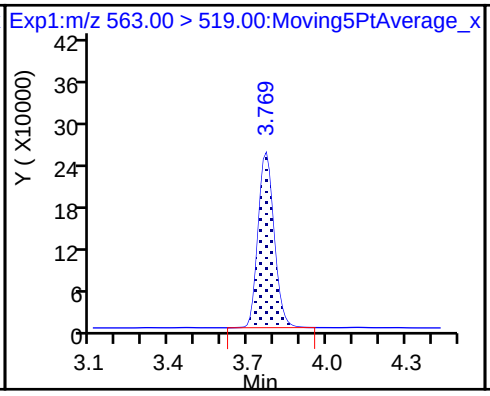
D 32 d5-NEtFOSAA



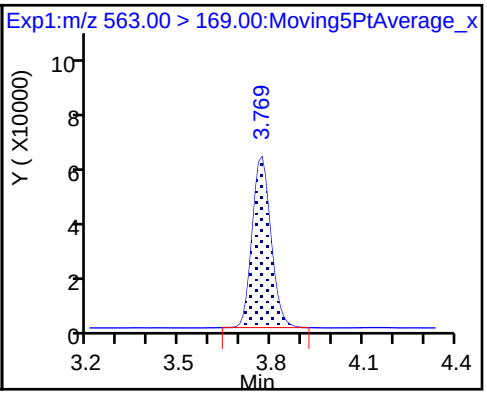
33 N-ethyl perfluorooctane sulfonamid



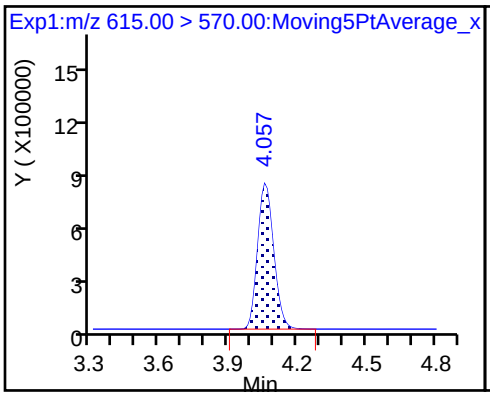
31 Perfluoroundecanoic acid



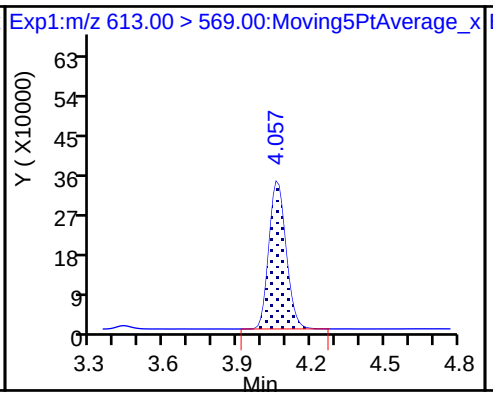
31 Perfluoroundecanoic acid



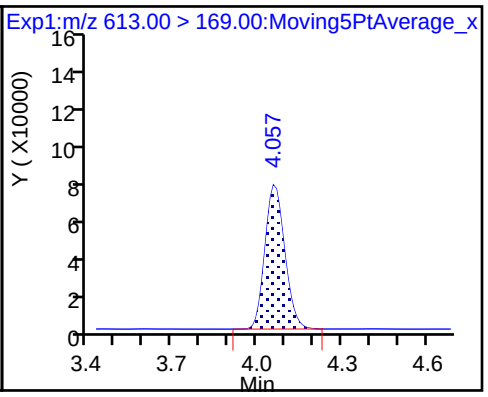
D 36 13C2 PFDoA



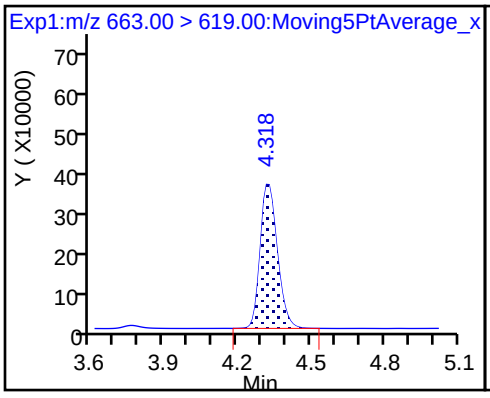
37 Perfluorododecanoic acid



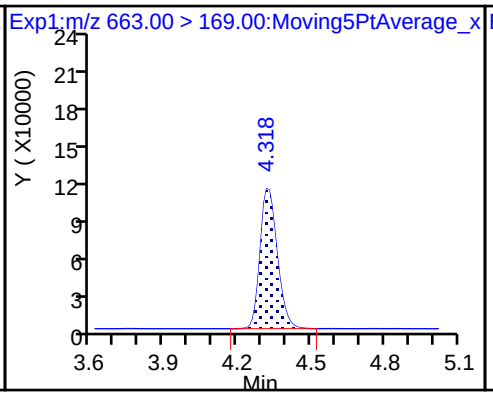
37 Perfluorododecanoic acid



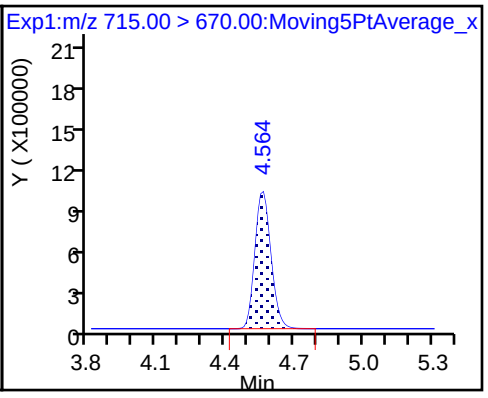
41 Perfluorotridecanoic acid



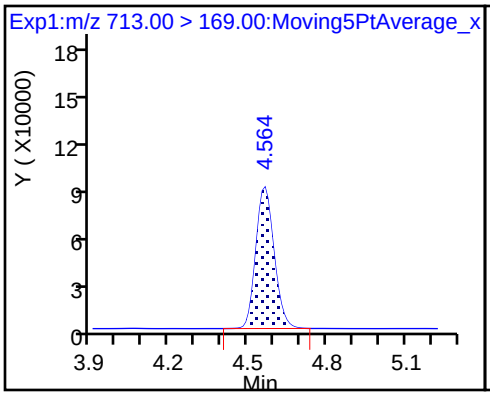
41 Perfluorotridecanoic acid



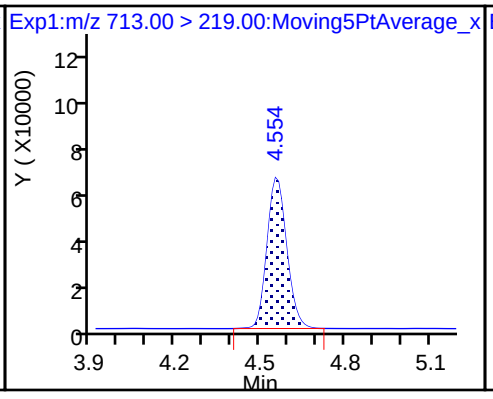
D 43 13C2-PFTeDA



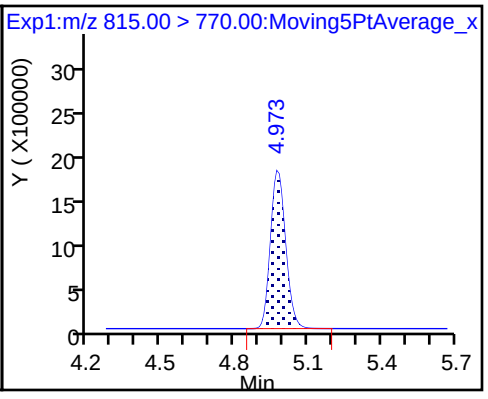
42 Perfluorotetradecanoic acid



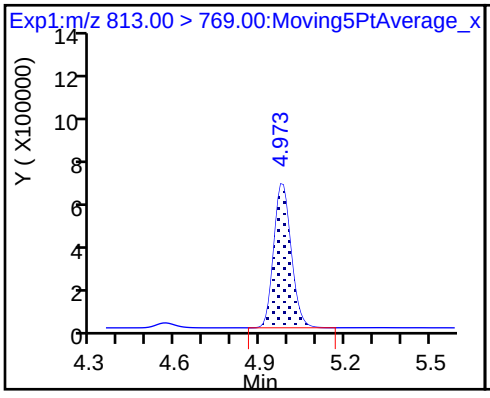
42 Perfluorotetradecanoic acid



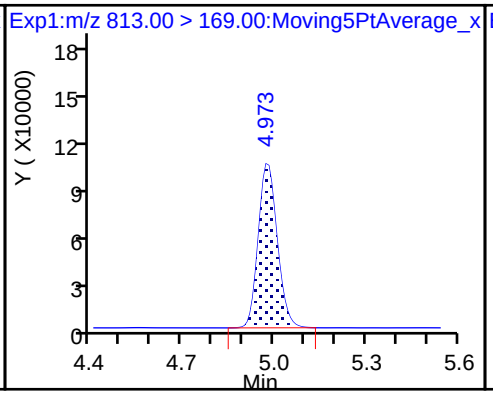
D 44 13C2-PFHxDA



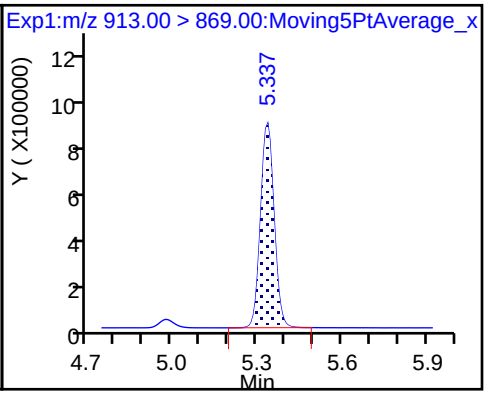
45 Perfluorohexadecanoic acid



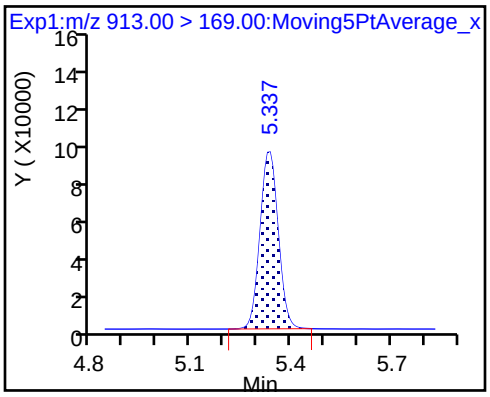
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-214954/2 Calibration Date: 03/26/2018 21:13

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLB_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	1.145		0.0608	0.0500	21.5	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.147		0.0508	0.0500	1.7	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.31		0.0445	0.0442	0.8	50.0
4:2 FTS	AveID	16.15	18.94		0.130	0.0467	17.3	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9810		0.0480	0.0500	-4.0	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.217		0.0588	0.0500	17.6	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.216		0.0497	0.0455	9.3	50.0
6:2FTS	AveID	1.744	2.010		0.0546	0.0474	15.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.165		0.0515	0.0500	3.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.228		0.0456	0.0476	-4.2	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.025		0.0514	0.0500	2.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.042		0.0434	0.0464	-6.5	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9538		0.0484	0.0500	-3.2	50.0
8:2FTS	AveID	1.276	1.065		0.0500	0.0479	-16.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.078		0.0546	0.0500	9.1	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.039		0.0780	0.0500	3.8	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6514		0.0462	0.0482	-4.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8721		0.0480	0.0500	-6.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8008		0.0464	0.0500	-7.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.066		0.0509	0.0500	1.9	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.183		0.0537	0.0500	7.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2476		0.0500	0.0500	-0.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.321		0.0484	0.0500	-3.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9288		0.0502	0.0500	0.4	50.0
13C4 PFBA	Ave	1.266	1.362		2.69	2.50	7.6	50.0
13C5 PFPeA	Ave	0.8399	0.8990		2.68	2.50	7.0	50.0
13C3-PFBS	Ave	0.0192	0.0213		2.59	2.33	11.2	50.0
M2-4:2FTS	Ave	0.1324	0.1743		3.07	2.34	31.7	50.0
13C2 PFHxA	Ave	0.9288	0.9844		2.65	2.50	6.0	50.0
13C4-PFHpA	Ave	0.9164	0.9396		2.56	2.50	2.5	50.0
18O2 PFHxS	Ave	1.130	1.180		2.47	2.37	4.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-214954/2 Calibration Date: 03/26/2018 21:13

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLB_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2433		3.04	2.38	28.1	50.0
13C4 PFOA	Ave	0.9374	0.9439		2.52	2.50	0.7	50.0
13C4 PFOS	Ave	0.8225	0.8886		2.58	2.39	8.0	50.0
13C5 PFNA	Ave	0.8266	0.8385		2.54	2.50	1.4	50.0
13C8 FOSA	Ave	1.109	1.196		2.70	2.50	7.8	50.0
M2-8:2FTS	Ave	0.2565	0.3114		2.91	2.40	21.4	50.0
13C2 PFDA	Ave	0.7245	0.7397		2.55	2.50	2.1	50.0
d3-NMeFOSAA	Ave	0.3814	0.3820		2.50	2.50	0.2	50.0
13C2 PFUnA	Ave	0.6482	0.6258		2.41	2.50	-3.4	50.0
d5-NEtFOSAA	Ave	0.4345	0.4180		2.41	2.50	-3.8	50.0
13C2 PFDoA	Ave	0.7355	0.6370		2.17	2.50	-13.4	50.0
13C2-PFTeDA	Ave	0.8983	0.7848		2.18	2.50	-12.6	50.0
13C2-PFHxDA	Ave	1.473	1.460		2.48	2.50	-0.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55855.b\2018.03.26LLB_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 26-Mar-2018 21:13:13 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55855.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 15:25:02 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.439	0.005	0.538	6674099	2.69		108	109195	
2 Perfluorobutyric acid										
212.90 > 169.00	1.444	1.440	0.004	1.000	152826	0.0608		122	38.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.699	0.006	0.635	4406166	2.68		107	175439	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.705	1.700	0.005	1.000	101049	0.0508		102	43.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.734	0.006	0.649	97187	2.59		111	522	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.735	0.005	1.000	144691	0.0445		101	896	
298.90 > 99.00	1.740	1.735	0.005	1.000	55480		2.61(1.25-3.74)		232	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.954	-0.004	0.727	797831	3.07		132	8388	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.955	-0.005	1.000	36982	0.0548		117	2317	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.986	0.006	1.000	94656	0.0480		96.0	113	
313.00 > 119.00	1.992	1.986	0.006	1.000	10232		9.25(5.03-15.10)		129	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.996	-0.004	0.742	4824651	2.65		106	148428	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.323	2.315	0.008	1.000	112089	0.0588		118	90.3	
363.00 > 169.00	2.323	2.315	0.008	1.000	43578		2.57(1.13-3.40)		104	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.327	-0.004	0.866	4605003	2.56		103	98735	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.328	0.008	1.000	128027	0.0497		109	822	
399.00 > 99.00	2.336	2.328	0.008	1.000	41692		3.07(1.50-4.49)		96.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.340	-0.004	0.870	5470438	2.47		104	67622	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.656	0.004	1.000	45453	0.0546		115	300	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.670	-0.010	0.991	1132901	3.04		128	29415	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.680	0.003	1.000	107757	0.0515		103	31.5	
413.00 > 169.00	2.683	2.680	0.003	1.000	63575		1.69(0.84-2.52)		195	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.680	0.003		4901047	2.50			67752	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.693	2.688	0.005	1.000	101781	0.0456		95.8	2679	
449.00 > 99.00	2.683	2.688	-0.005	0.997	28874		3.53(1.94-5.82)		244	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.694	-0.011	1.000	4626240	2.52		101	97545	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.055	3.051	0.004	1.000	84209	0.0434		93.5	1159	
499.00 > 99.00	3.048	3.051	-0.003	0.998	20469		4.11(2.31-6.93)		133	
20 Perfluorononanoic acid										
463.00 > 419.00	3.055	3.058	-0.003	1.000	84239	0.0514		103	92.5	
463.00 > 169.00	3.055	3.058	-0.003	1.000	22485		3.75(1.90-5.69)		453	
D 19 13C5 PFNA										
468.00 > 423.00	3.055	3.071	-0.016	1.139	4109438	2.54		101	95111	
D 18 13C4 PFOS										
503.00 > 80.00	3.055	3.071	-0.016	1.139	4163190	2.58		108	76290	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.388	0.007	1.000	111813	0.0484		96.8	2857	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.395	0.0	1.265	5861572	2.70		108	64222	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.404	3.406	-0.002	1.000	31136	0.0400		83.4	468	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.415	0.007	1.000	78165	0.0546		109	443	
513.00 > 169.00	3.422	3.415	0.007	1.000	13995		5.59(2.36-7.09)		395	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.431	-0.027	1.268	1462134	2.91		121	27508	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.440	-0.018	1.275	3625481	2.55		102	74173	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.576	3.578	-0.002	1.000	38893	0.0519		104	352	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.597	-0.021	1.333	1871976	2.50		100	33411	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.736	3.727	0.009	1.000	54691	0.0462		95.8	1292	
599.00 > 99.00	3.736	3.727	0.009	1.000	19588		2.79(1.39-4.16)		456	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.746	3.748	-0.002	1.000	35733	0.0467		93.3	710	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.746	3.748	-0.002	1.000	49124	0.0464		92.9	216	
563.00 > 169.00	3.756	3.748	0.008	1.003	12779		3.84(2.12-6.36)		516	
D 30 13C2 PFUnA										
565.00 > 520.00	3.746	3.767	-0.021	1.396	3067115	2.41		96.6	49365	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.746	3.767	-0.021	1.396	2048656	2.41		96.2	10528	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.043	4.046	-0.003	1.000	66576	0.0509		102	56.1	
613.00 > 169.00	4.043	4.046	-0.003	1.000	16904		3.94(2.13-6.40)		328	
D 36 13C2 PFDoA										
615.00 > 570.00	4.043	4.064	-0.021	1.507	3122043	2.17		86.6	16665	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.304	4.306	-0.002	1.000	73881	0.0537		107	47.9	
663.00 > 169.00	4.304	4.306	-0.002	1.000	25543		2.89(1.25-3.76)		393	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.541	4.553	-0.012	1.000	19047	0.0500		99.9	273	
713.00 > 219.00	4.541	4.553	-0.012	1.000	15183		1.25(0.71-2.13)		364	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.541	4.572	-0.031	1.692	3846416	2.18		87.4	19511	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.961	4.964	-0.003	1.002	188960	0.0484		96.7	61.9	
813.00 > 169.00	4.961	4.964	-0.003	1.002	34890		5.42(2.86-8.58)		485	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.953	4.988	-0.035	1.846	7154809	2.48		99.1	18544	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.313	5.330	-0.017	1.000	132900	0.0502		100	35.6	
913.00 > 169.00	5.313	5.330	-0.017	1.000	16882		7.87(3.83-11.48)		242	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2018 15:25:03 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55855.b\2018.03.26LLB_004.d

Injection Date: 26-Mar-2018 21:13:13 Instrument ID: A8_N

Lims ID: CCVL

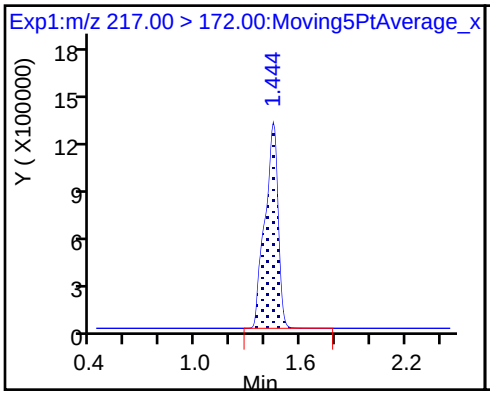
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

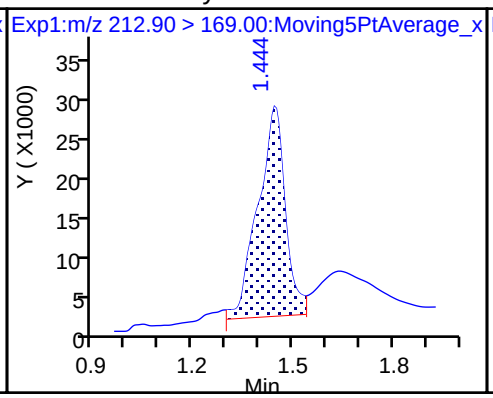
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

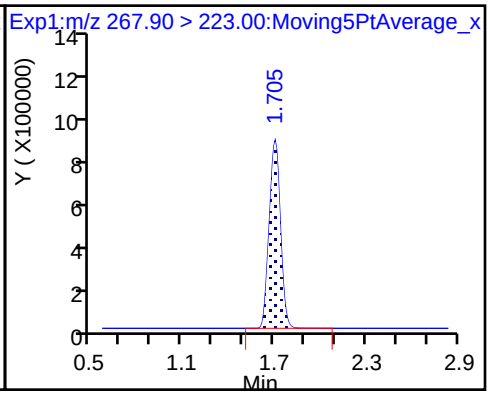
D 1 13C4 PFBA



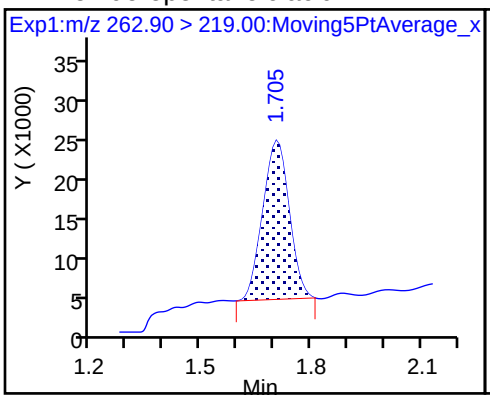
2 Perfluorobutyric acid



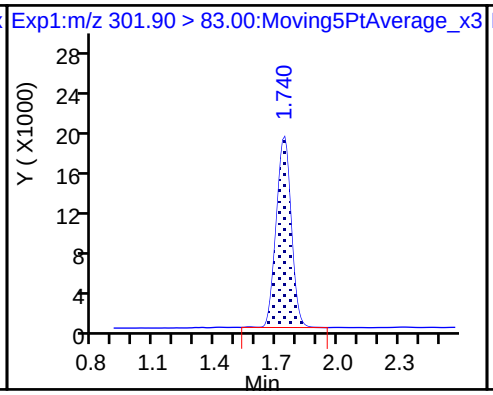
D 3 13C5-PFPeA



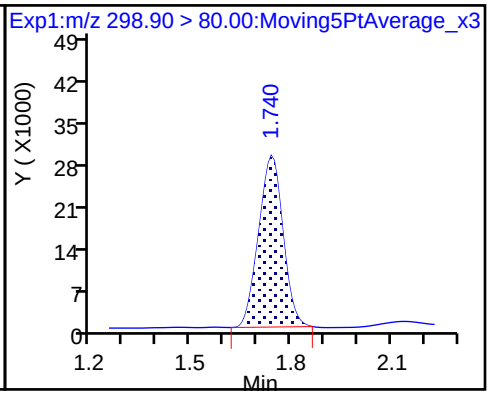
4 Perfluoropentanoic acid



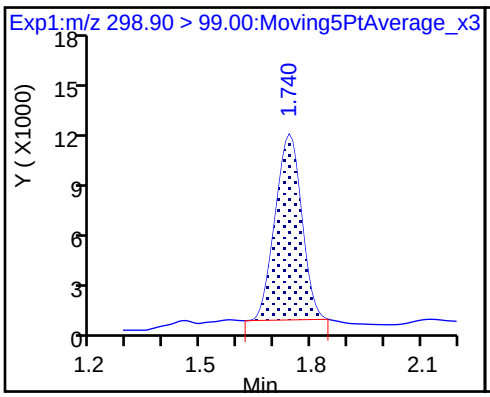
D 47 13C3-PFBS



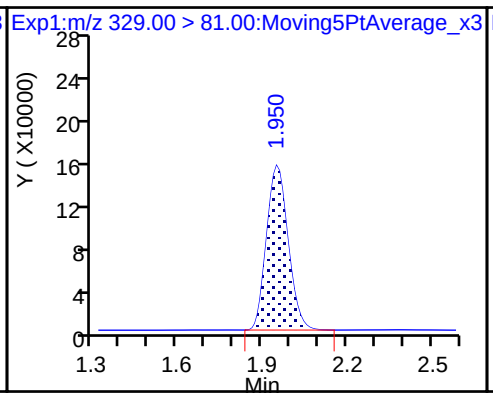
5 Perfluorobutanesulfonic acid



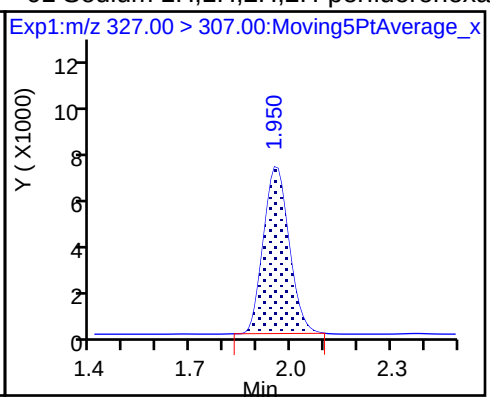
5 Perfluorobutanesulfonic acid



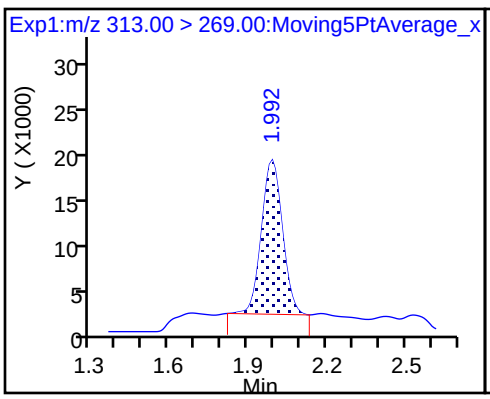
D 60 M2-4:2FTS



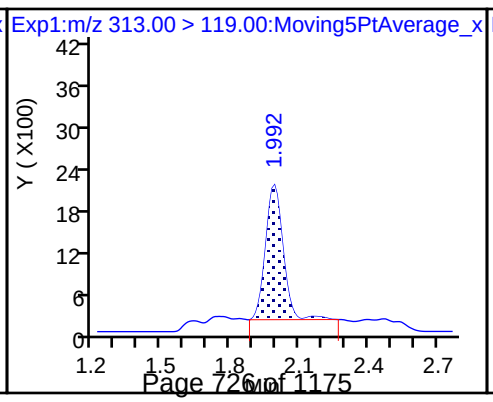
61 Sodium 1H,1H,2H,2H-perfluorohexane



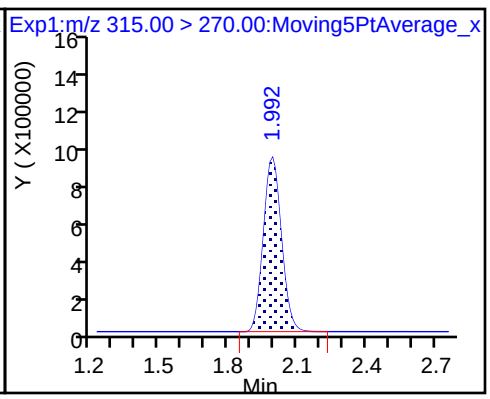
6 Perfluorohexanoic acid



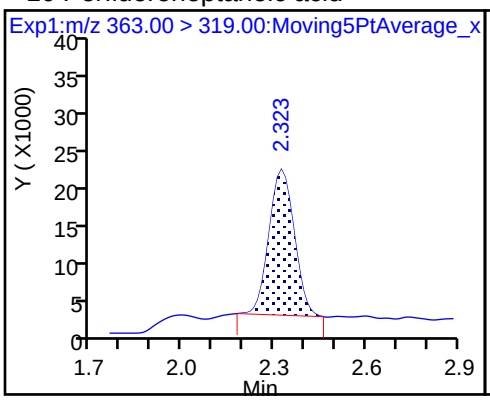
6 Perfluorohexanoic acid



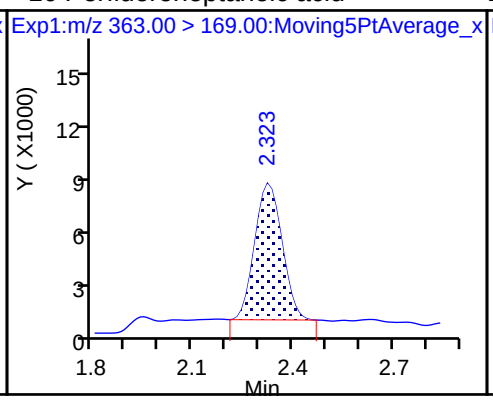
D 7 13C2 PFHxA



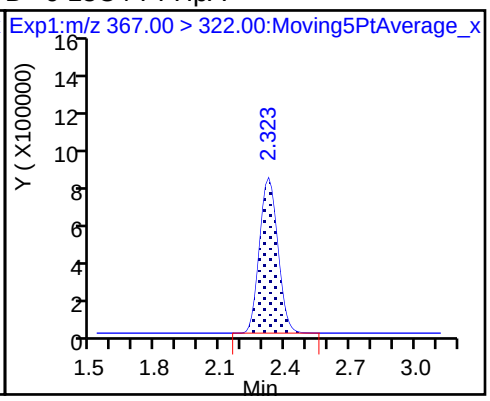
10 Perfluoroheptanoic acid



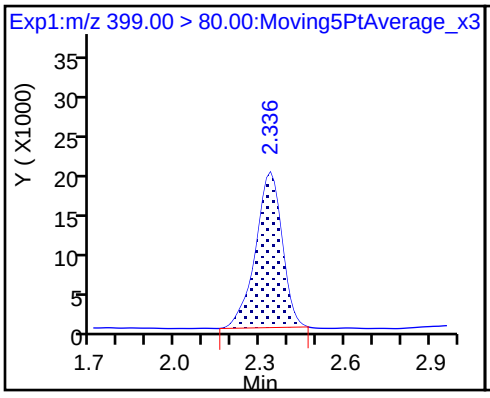
10 Perfluoroheptanoic acid



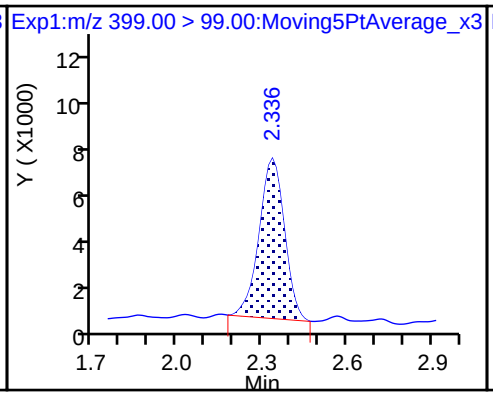
D 9 13C4-PFHpA



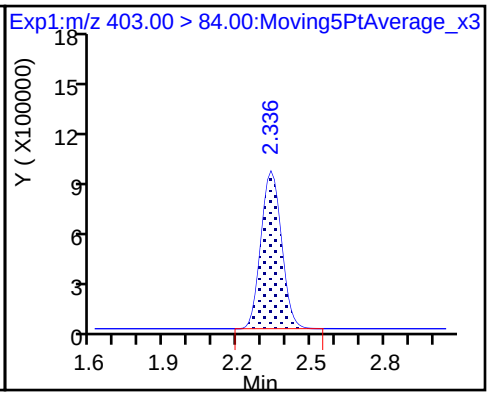
8 Perfluorohexanesulfonic acid



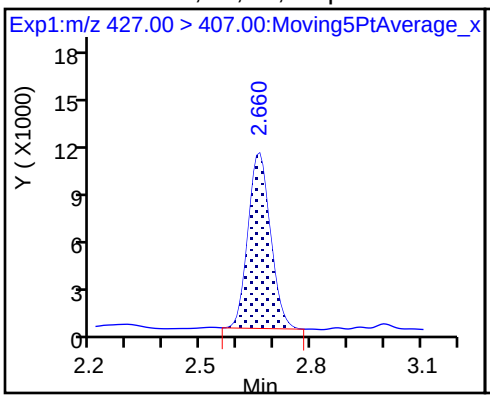
8 Perfluorohexanesulfonic acid



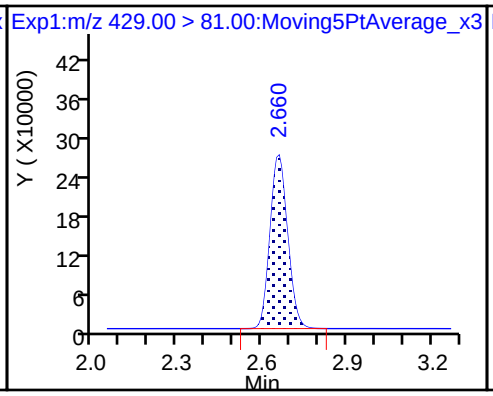
D 11 18O2 PFHxS



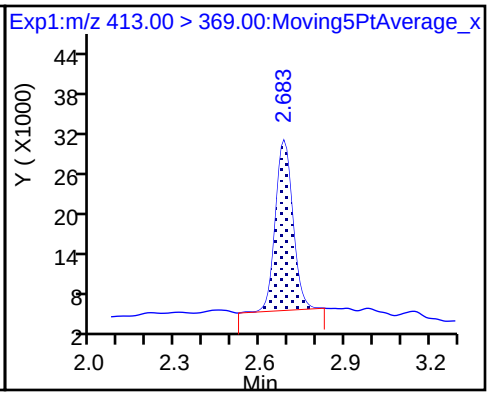
13 Sodium 1H,1H,2H,2H-perfluorooctane



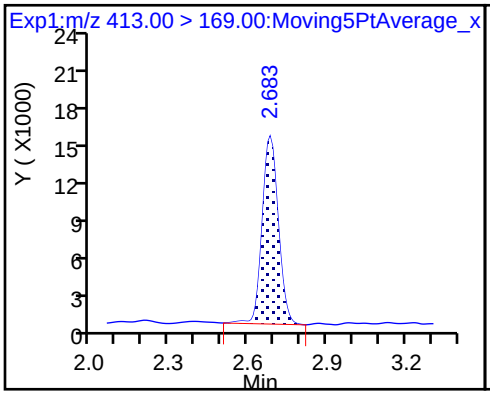
D 12 M2-6:2FTS



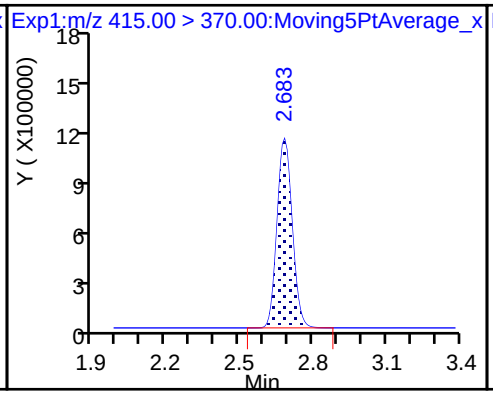
15 Perfluorooctanoic acid



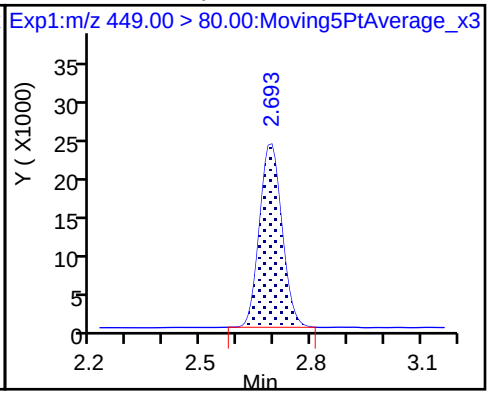
15 Perfluorooctanoic acid



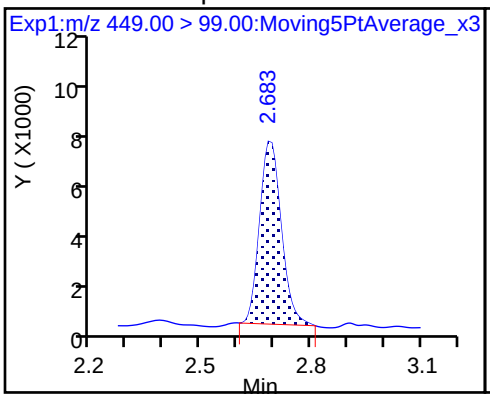
* 62 13C2-PFOA



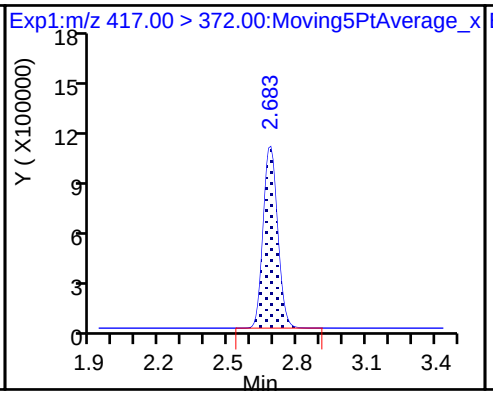
16 Perfluoroheptanesulfonic acid



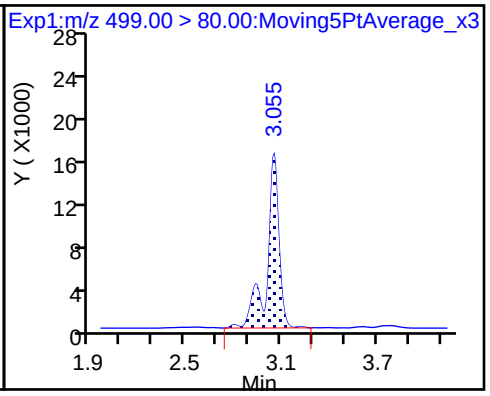
16 Perfluoroheptanesulfonic acid



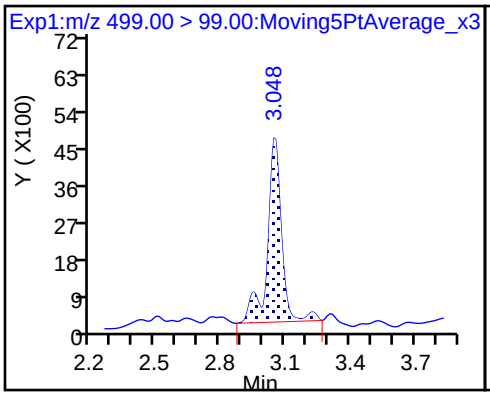
D 14 13C4 PFOA



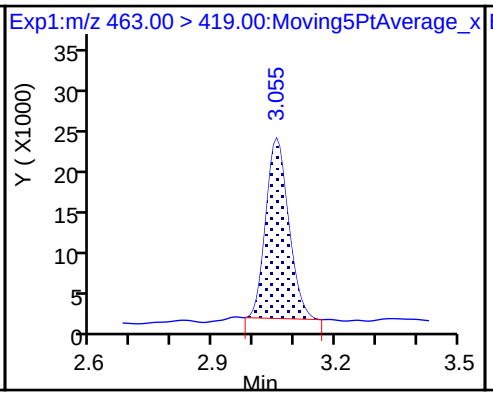
17 Perfluorooctane sulfonic acid



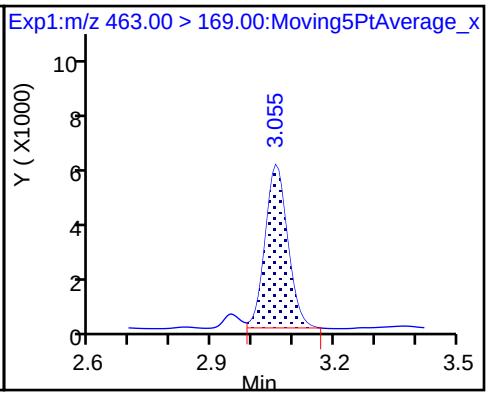
17 Perfluorooctane sulfonic acid



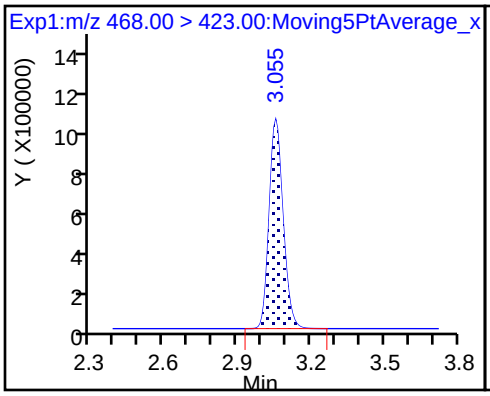
20 Perfluorononanoic acid



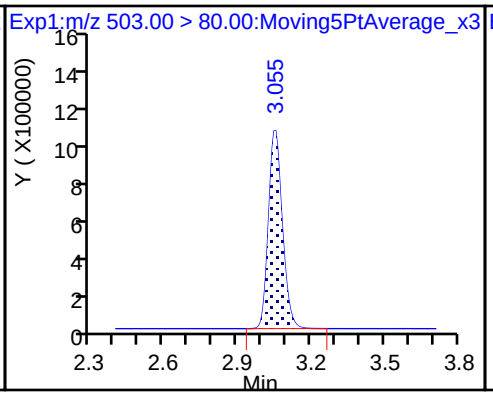
20 Perfluorononanoic acid



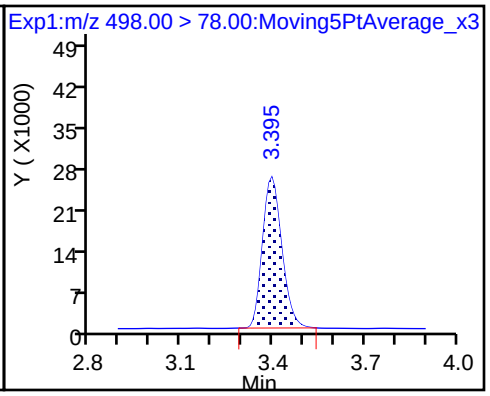
D 19 13C5 PFNA



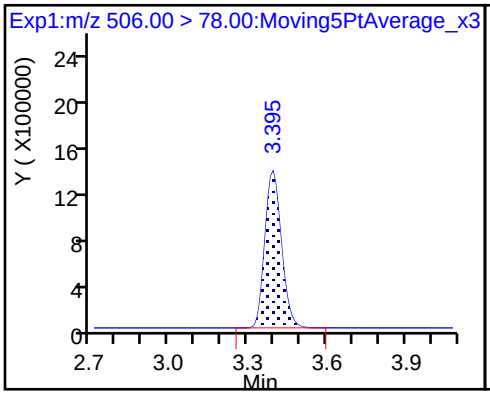
D 18 13C4 PFOS



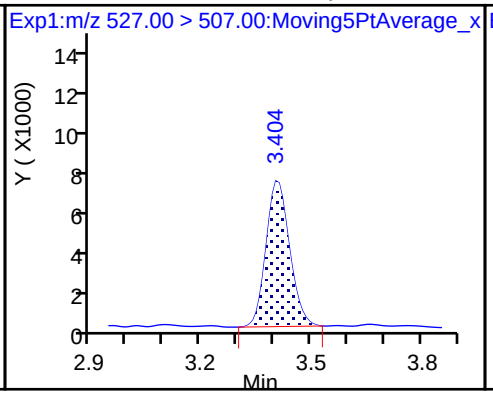
22 Perfluorooctane Sulfonamide



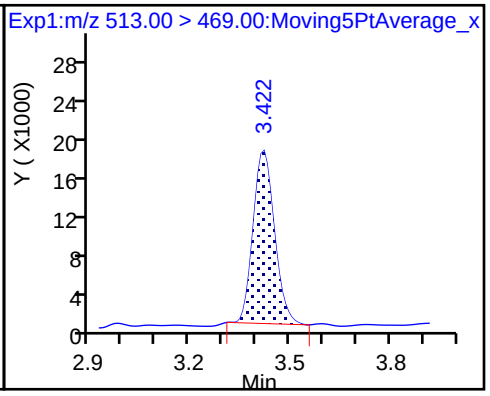
D 21 13C8 FOSA



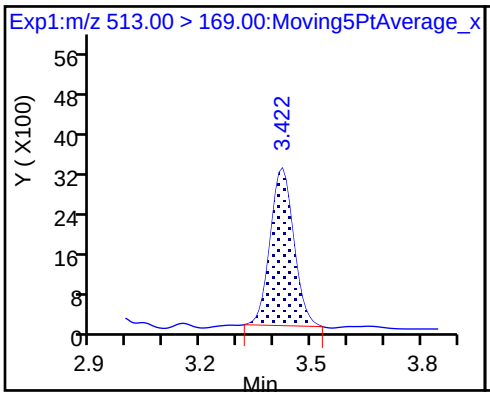
25 Sodium 1H,1H,2H,2H-perfluorodecan



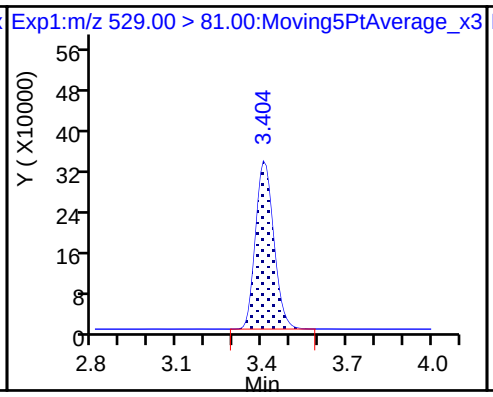
24 Perfluorodecanoic acid



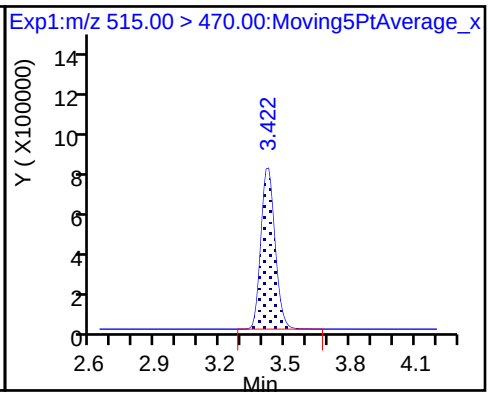
24 Perfluorodecanoic acid



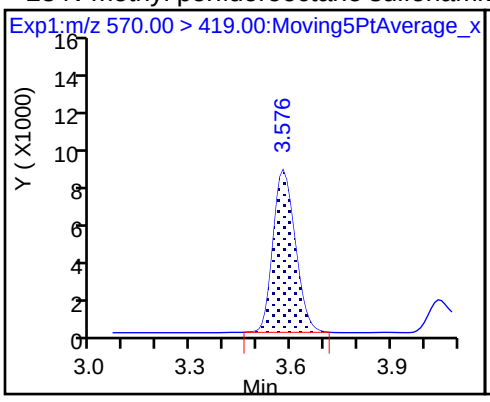
D 26 M2-8:2FTS



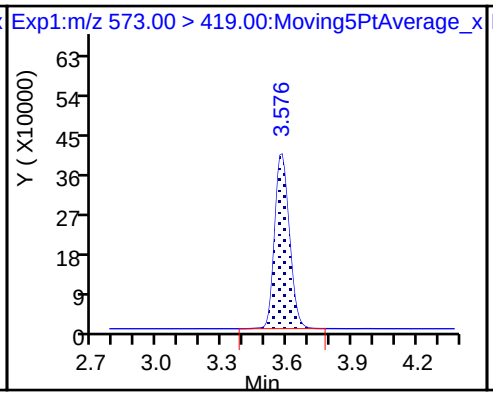
D 23 13C2 PFDA



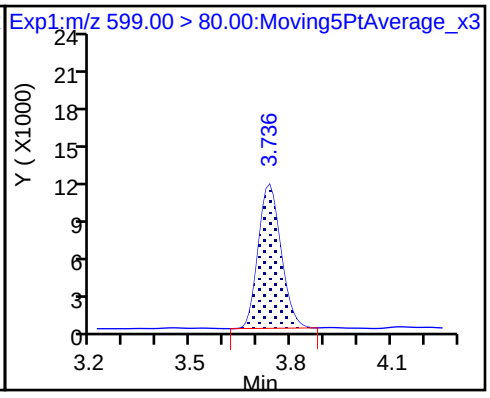
28 N-methyl perfluorooctane sulfonami



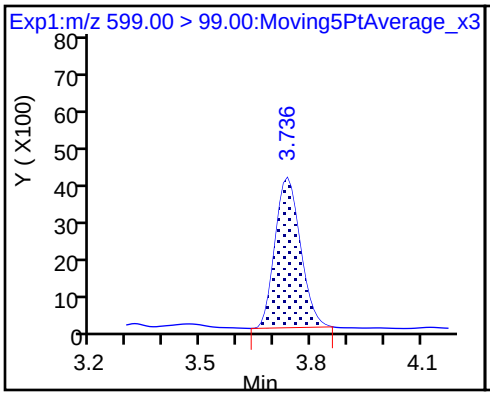
D 27 d3-NMeFOSAA



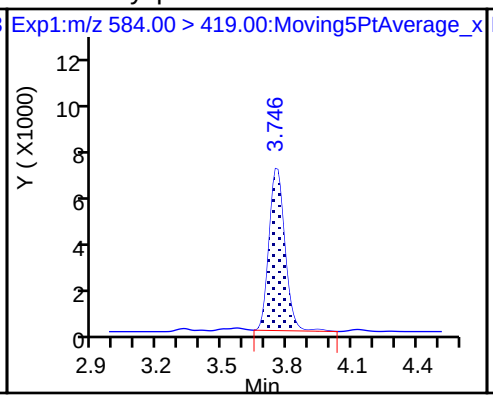
29 Perfluorodecane Sulfonic acid



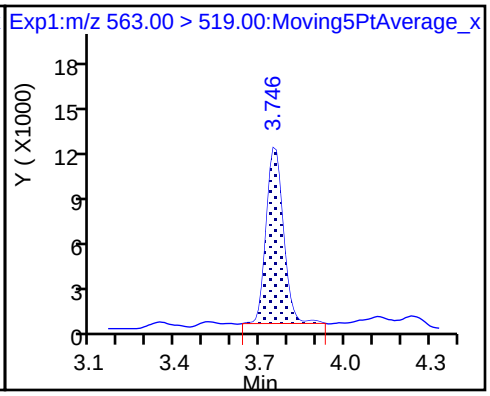
29 Perfluorodecane Sulfonic acid



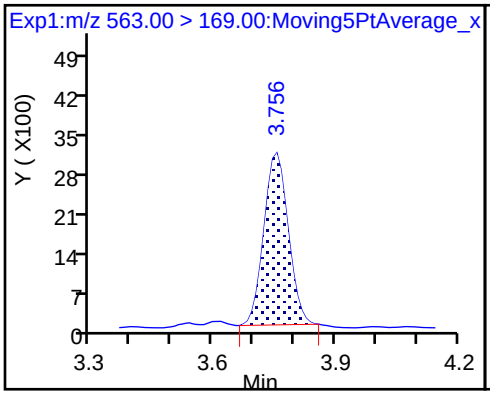
33 N-ethyl perfluorooctane sulfonamid



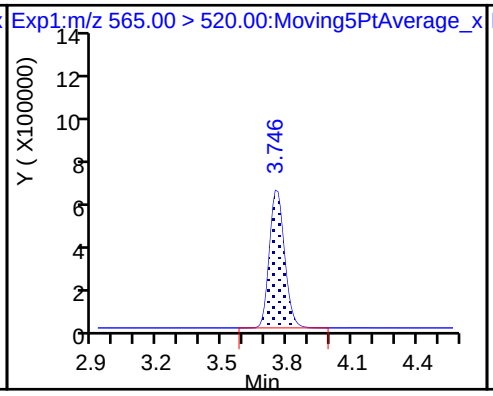
31 Perfluoroundecanoic acid



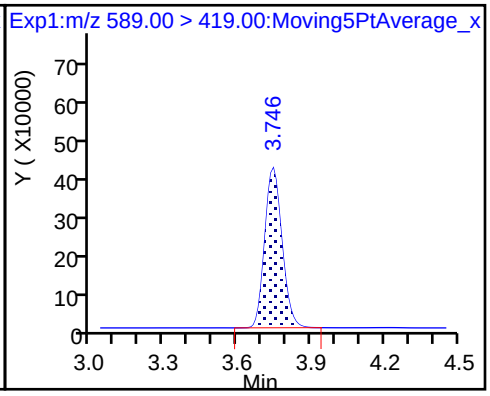
31 Perfluoroundecanoic acid



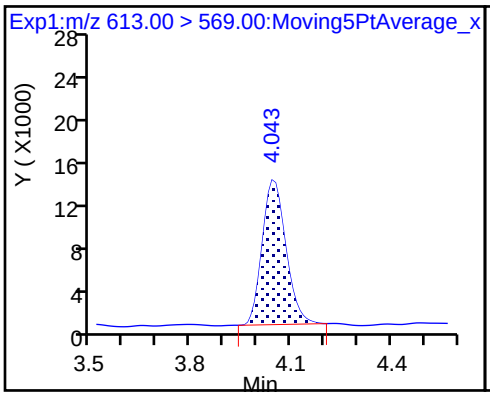
D 30 13C2 PFUnA



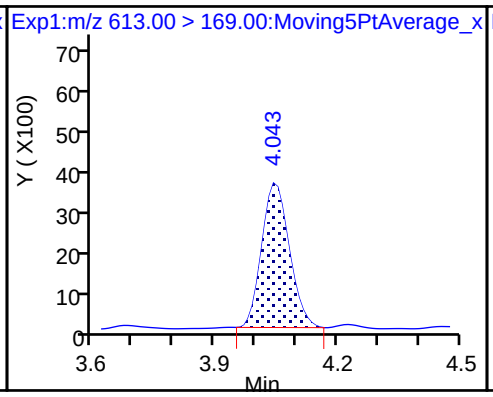
D 32 d5-NEtFOSAA



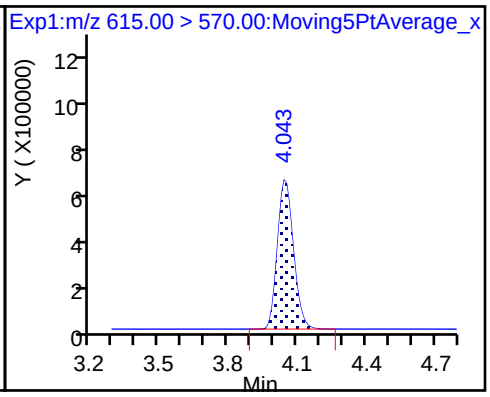
37 Perfluorododecanoic acid



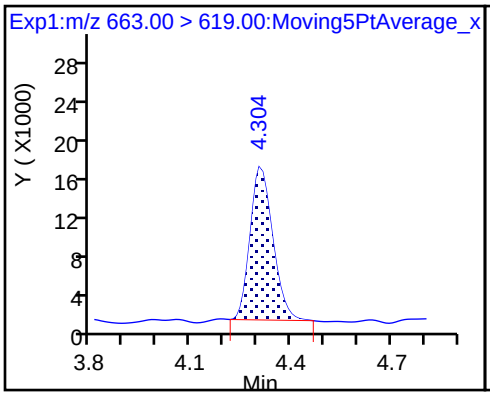
37 Perfluorododecanoic acid



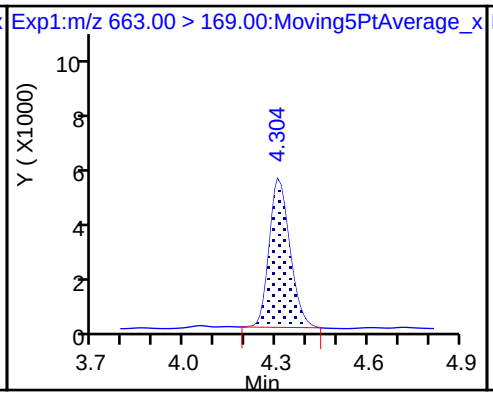
D 36 13C2 PFDoA



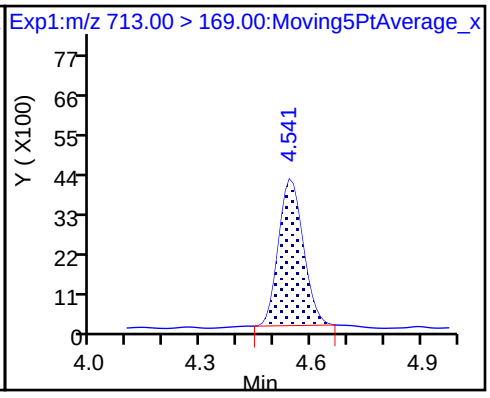
41 Perfluorotridecanoic acid



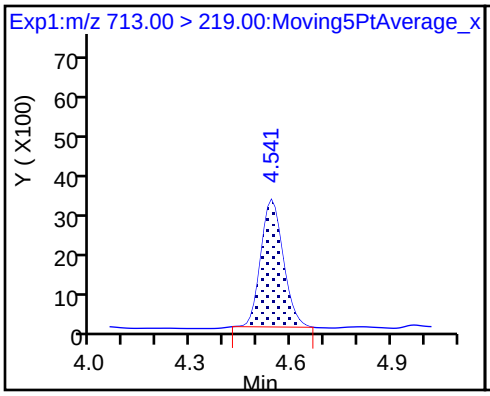
41 Perfluorotridecanoic acid



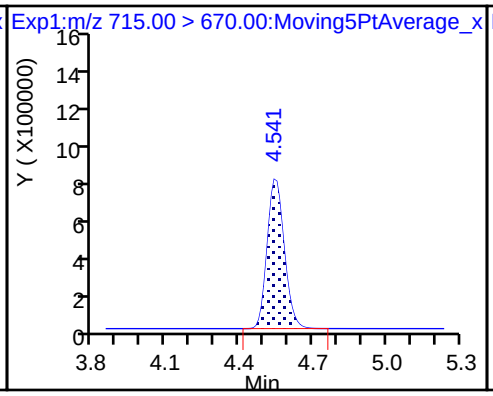
42 Perfluorotetradecanoic acid



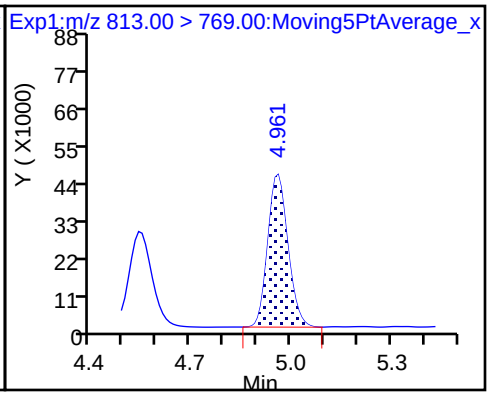
42 Perfluorotetradecanoic acid



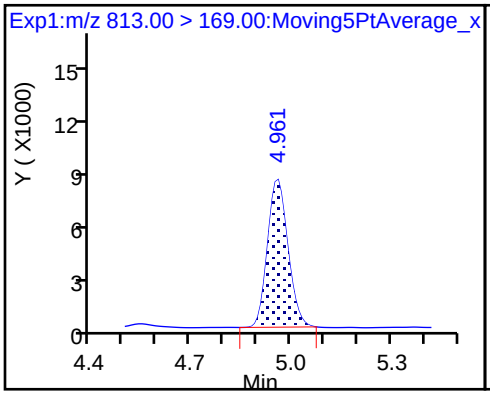
D 43 13C2-PFTeDA



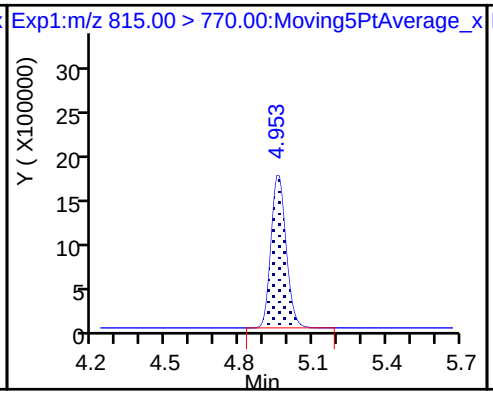
45 Perfluorohexadecanoic acid



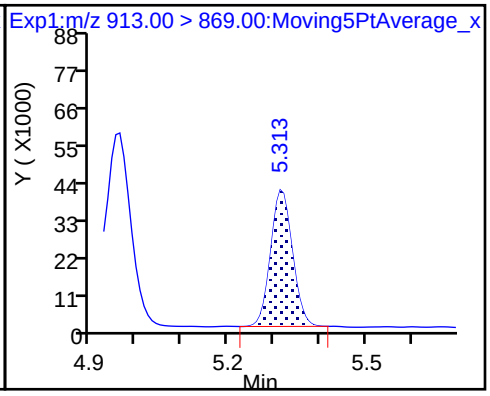
45 Perfluorohexadecanoic acid



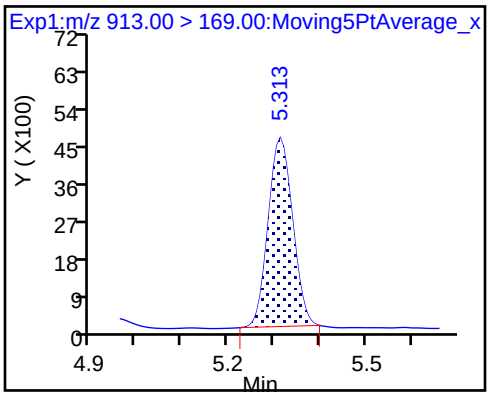
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214954/3 Calibration Date: 03/26/2018 21:21

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9295		0.986	1.00	-1.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.132		1.00	1.00	0.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.16		0.866	0.884	-2.0	50.0
4:2 FTS	AveID	16.15	17.37		1.00	0.934	7.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9457		0.925	1.00	-7.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9855		0.953	1.00	-4.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.019		0.833	0.910	-8.5	40.0
6:2FTS	AveID	1.744	1.758		0.956	0.948	0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.250		0.929	0.952	-2.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.088		0.963	1.00	-3.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.009		1.01	1.00	1.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.022		0.851	0.928	-8.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.997		1.01	1.00	1.2	40.0
8:2FTS	AveID	1.276	1.160		0.871	0.958	-9.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9488		0.960	1.00	-4.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9828		0.982	1.00	-1.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6149		0.872	0.964	-9.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8711		0.932	1.00	-6.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8936		1.04	1.00	3.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.069		1.02	1.00	2.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.285		1.17	1.00	16.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2590		1.05	1.00	4.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9670		1.04	1.00	4.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9531		1.03	1.00	3.1	50.0
13C4 PFBA	Ave	1.266	1.278		2.52	2.50	0.9	50.0
13C5 PFPeA	Ave	0.8399	0.8440		2.51	2.50	0.5	50.0
13C3-PFBS	Ave	0.0192	0.0197		2.39	2.33	2.7	50.0
M2-4:2FTS	Ave	0.1324	0.1576		2.78	2.34	19.0	50.0
13C2 PFHxA	Ave	0.9288	0.9409		2.53	2.50	1.3	50.0
13C4-PFHpA	Ave	0.9164	0.9328		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	1.130	1.175		2.46	2.37	3.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214954/3 Calibration Date: 03/26/2018 21:21

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2241		2.80	2.38	18.0	40.0
13C4 PFOA	Ave	0.9374	0.9245		2.47	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8225	0.8523		2.48	2.39	3.6	50.0
13C5 PFNA	Ave	0.8266	0.8038		2.43	2.50	-2.8	50.0
13C8 FOSA	Ave	1.109	1.075		2.42	2.50	-3.0	50.0
M2-8:2FTS	Ave	0.2565	0.2739		2.56	2.40	6.8	40.0
13C2 PFDA	Ave	0.7245	0.7257		2.50	2.50	0.2	50.0
d3-NMeFOSAA	Ave	0.3814	0.3883		2.55	2.50	1.8	50.0
d5-NEtFOSAA	Ave	0.4345	0.4129		2.38	2.50	-5.0	50.0
13C2 PFUnA	Ave	0.6482	0.5402		2.08	2.50	-16.7	50.0
13C2 PFDoA	Ave	0.7355	0.5864		1.99	2.50	-20.3	50.0
13C2-PFTeDA	Ave	0.8983	0.7523		2.09	2.50	-16.3	50.0
13C2-PFHxDA	Ave	1.473	1.296		2.20	2.50	-12.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55855.b\2018.03.26LLB_005.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Mar-2018 21:21:01 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55855.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 15:25:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.439	0.002	0.537	6629909	2.52		101	92573	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2464964	0.9865		98.6	716	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.699	0.001	0.634	4379142	2.51		100	108901	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	1983480	1.00		100	918	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.734	0.002	0.647	95003	2.39		103	513	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.000	2750956	0.8664		98.0	16554	
298.90 > 99.00	1.736	1.736	0.0	1.000	1160651		2.37(1.25-3.74)		5064	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.954	-0.008	0.726	763483	2.78		119	10436	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.946	0.0	1.000	662862	1.00		108	31438	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.987	0.0	1.000	1846875	0.9251		92.5	2357	
313.00 > 119.00	1.987	1.987	0.0	1.000	172643		10.70(5.03-15.10)		2279	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.996	-0.009	0.741	4882147	2.53		101	113935	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	1907833	0.9526		95.3	1580	
363.00 > 169.00	2.315	2.315	0.0	1.000	779383		2.45(1.13-3.40)		2167	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.327	-0.012	0.864	4839864	2.54		102	83258	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	2259908	0.8328		91.5	11449	
399.00 > 99.00	2.328	2.328	0.0	1.000	752047		3.01(1.50-4.49)		1831	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.340	-0.012	0.869	5765992	2.46		104	83079	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.649	0.0	1.000	775085	0.9557		101	3483	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.670	-0.021	0.988	1104718	2.80		118	25738	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	2087062	0.9628		96.3	667	
413.00 > 169.00	2.681	2.681	0.0	1.000	1095811		1.90(0.84-2.52)		3425	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		5188572	2.50			88416	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.681	0.0	1.000	2104573	0.9286		97.5	35774	
449.00 > 99.00	2.681	2.681	0.0	1.000	580560		3.63(1.94-5.82)		4493	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.694	-0.013	1.000	4797033	2.47		98.6	75609	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.051	0.0	1.000	1677250	0.8512		91.7	21812	
499.00 > 99.00	3.051	3.051	0.0	1.000	389701		4.30(2.31-6.93)		4162	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.051	0.0	1.000	1683122	1.01		101	1882	
463.00 > 169.00	3.051	3.051	0.0	1.000	406114		4.14(1.90-5.69)		8491	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.071	-0.020	1.138	4170442	2.43		97.2	96643	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.071	-0.020	1.138	4227471	2.48		104	49307	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	2226283	1.01		101	36421	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.395	-0.006	1.264	5580183	2.42		97.0	75352	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.399	3.399	0.0	1.000	631941	0.8709		90.9	8194	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.417	0.0	1.000	1429078	0.9602		96.0	6857	
513.00 > 169.00	3.417	3.417	0.0	1.000	266070		5.37(2.36-7.09)		5456	
D 26 M2-8:2FTS										
529.00 > 81.00	3.399	3.431	-0.033	1.268	1361592	2.56		107	27408	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.440	-0.023	1.274	3765572	2.50		100	50136	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	792096	0.9820		98.2	6482	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.597	-0.026	1.332	2014892	2.55		102	40339	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.728	0.0	1.000	1048537	0.8718		90.4	31658	
599.00 > 99.00	3.728	3.728	0.0	1.000	368627		2.84(1.39-4.16)		6521	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.748	0.0	1.003	746479	0.9325		93.2	13916	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.748	0.0	1.000	1001873	1.04		104	5652	
563.00 > 169.00	3.748	3.748	0.0	1.000	227842		4.40(2.12-6.36)		7957	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.767	-0.019	1.398	2803009	2.08		83.3	38904	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.767	-0.029	1.394	2142266	2.38		95.0	13872	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.036	4.036	0.0	1.000	1300482	1.02		102	1161	
613.00 > 169.00	4.036	4.036	0.0	1.000	336772		3.86(2.13-6.40)		6303	
D 36 13C2 PFDoA										
615.00 > 570.00	4.036	4.064	-0.028	1.506	3042606	1.99		79.7	17015	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.298	0.0	1.000	1563365	1.17		117	1026	
663.00 > 169.00	4.298	4.298	0.0	1.000	513923		3.04(1.25-3.76)		9116	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.543	0.0	1.000	404447	1.05		105	5277	
713.00 > 219.00	4.533	4.543	-0.010	0.998	281638		1.44(0.71-2.13)		6487	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.572	-0.029	1.695	3903481	2.09		83.7	22755	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.955	0.0	1.000	2600260	1.04		104	812	
813.00 > 169.00	4.955	4.955	0.0	1.000	448135		5.80(2.86-8.58)		4883	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.988	-0.033	1.848	6722266	2.20		88.0	19733	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.315	0.0	1.000	2562688	1.03		103	687	
913.00 > 169.00	5.315	5.315	0.0	1.000	334590		7.66(3.83-11.48)		3547	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2018 15:25:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55855.b\2018.03.26LLB_005.d

Injection Date: 26-Mar-2018 21:21:01 Instrument ID: A8_N

Lims ID: CCV L4

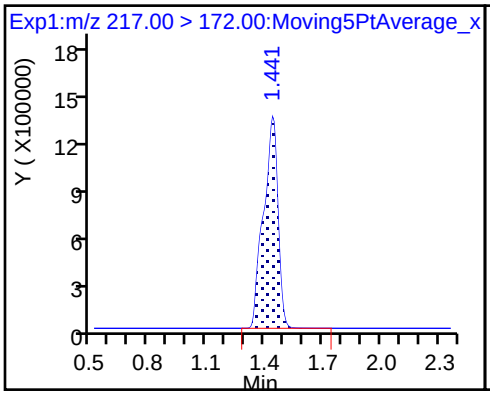
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

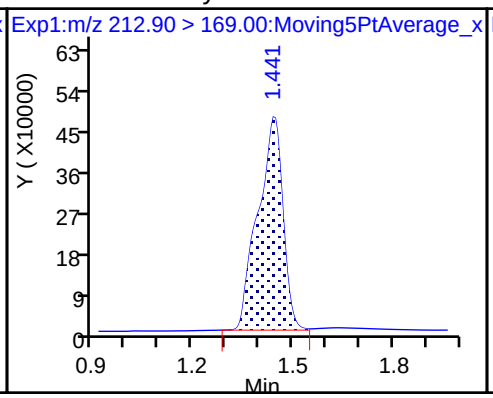
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

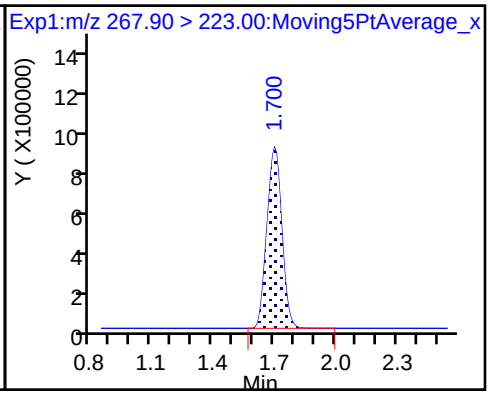
D 1 13C4 PFBA



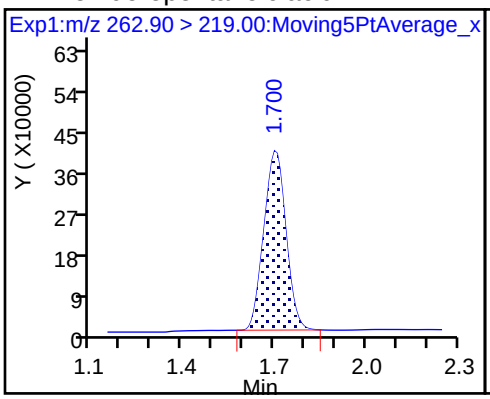
2 Perfluorobutyric acid



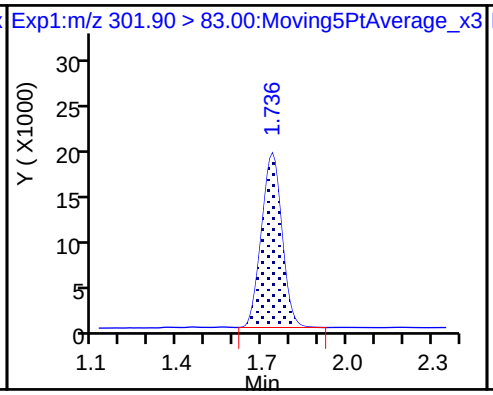
D 3 13C5-PFPeA



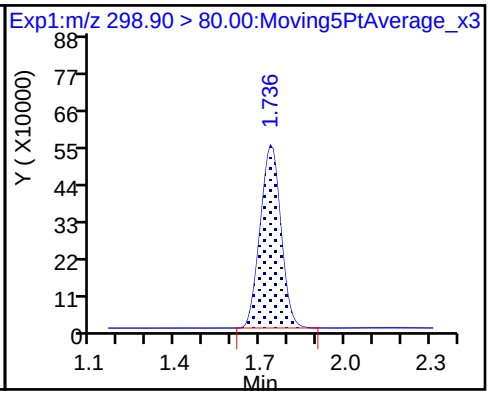
4 Perfluoropentanoic acid



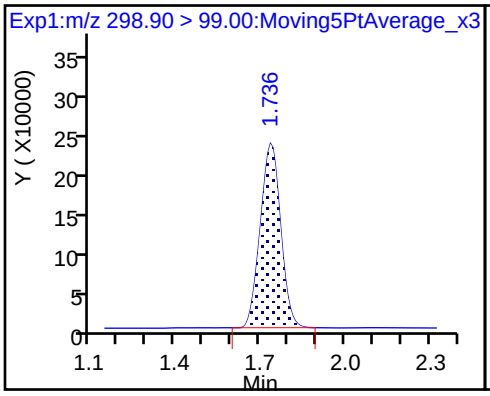
D 47 13C3-PFBS



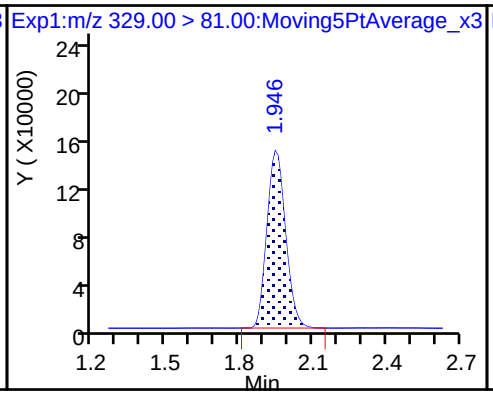
5 Perfluorobutanesulfonic acid



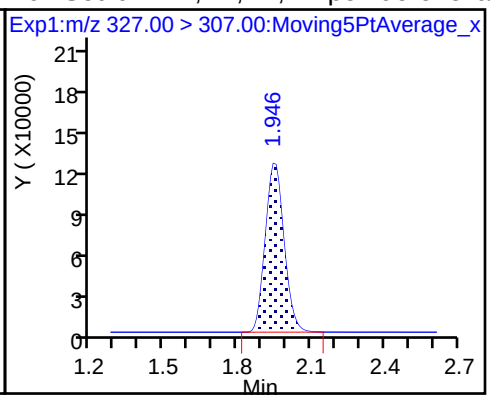
5 Perfluorobutanesulfonic acid



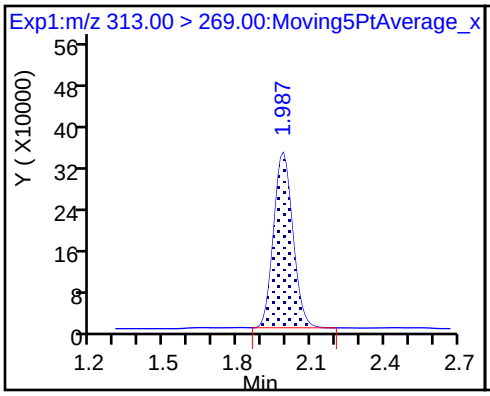
D 60 M2-4:2FTS



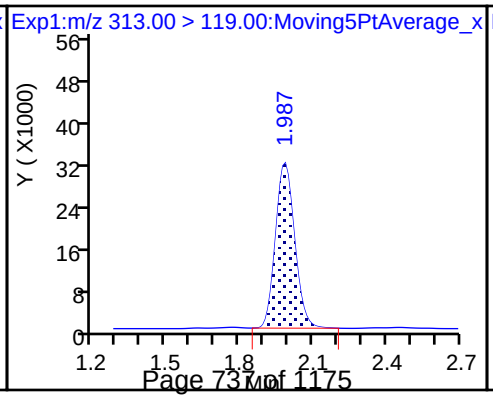
61 Sodium 1H,1H,2H,2H-perfluorohexane



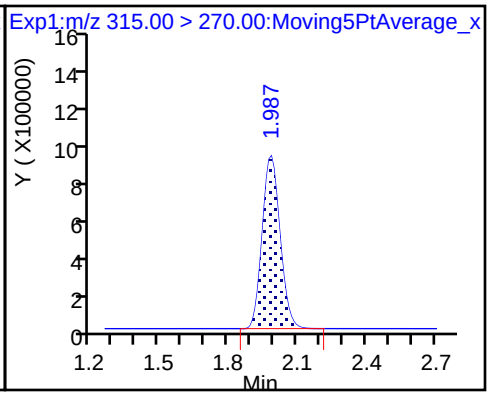
6 Perfluorohexanoic acid



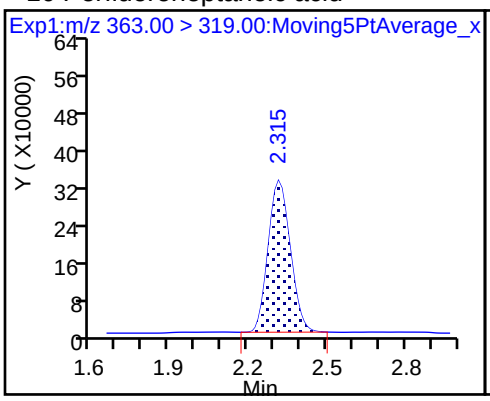
6 Perfluorohexanoic acid



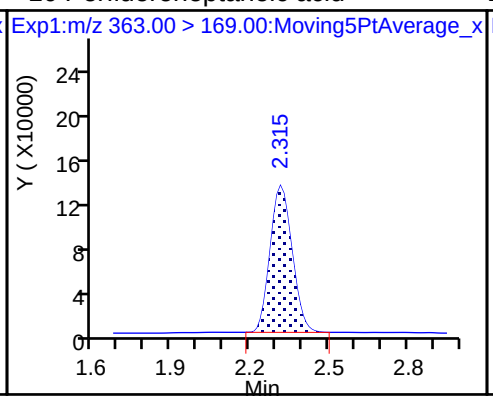
D 7 13C2 PFHxA



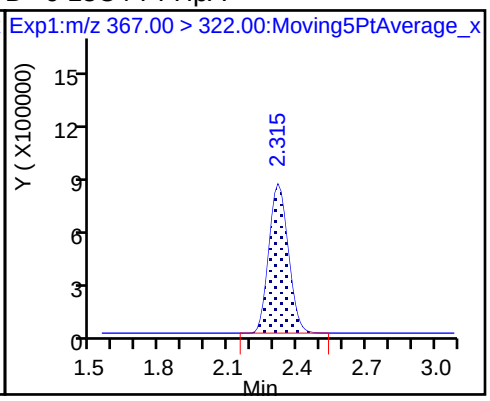
10 Perfluoroheptanoic acid



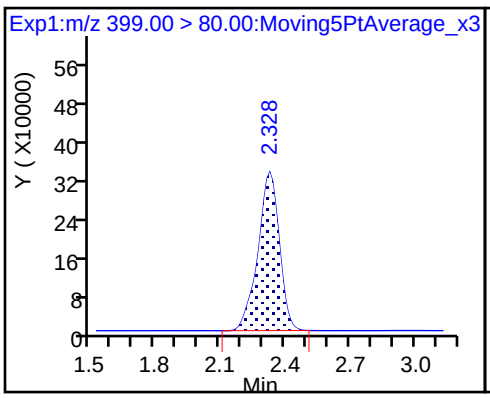
10 Perfluoroheptanoic acid



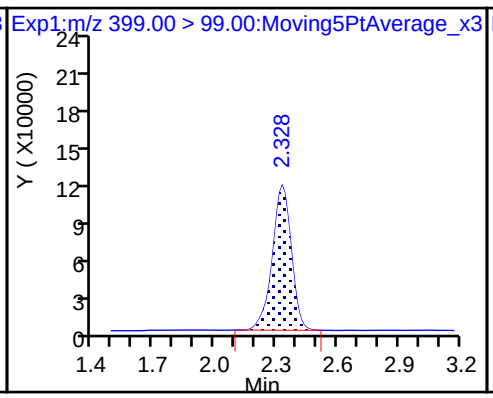
D 9 13C4-PFHpA



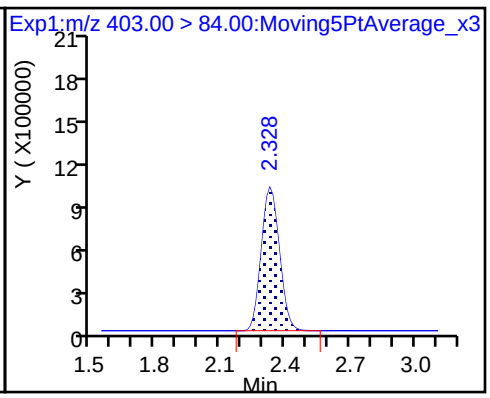
8 Perfluorohexanesulfonic acid



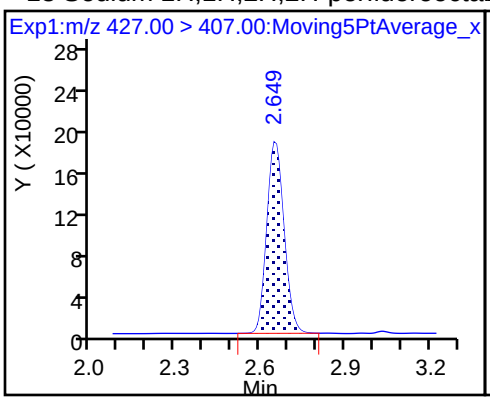
8 Perfluorohexanesulfonic acid



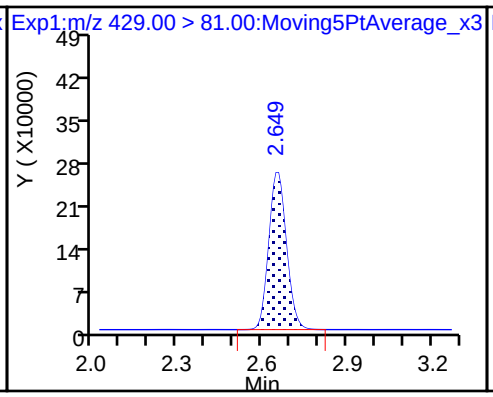
D 11 18O2 PFHxS



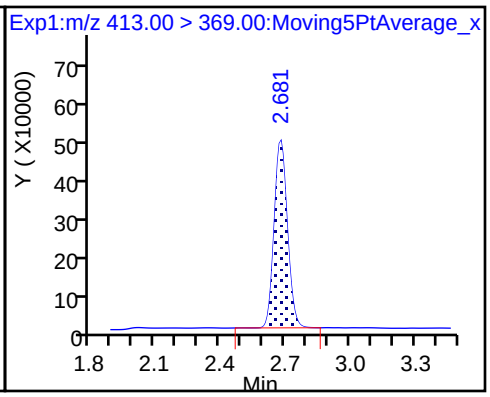
13 Sodium 1H,1H,2H,2H-perfluorooctane



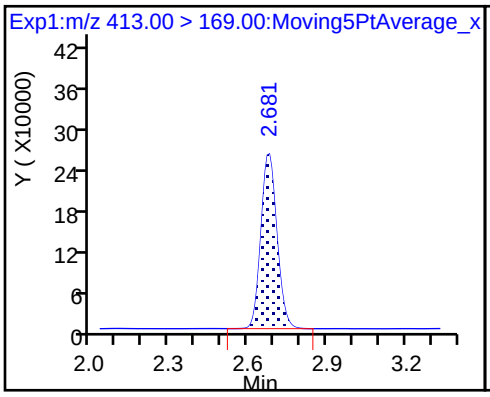
D 12 M2-6:2FTS



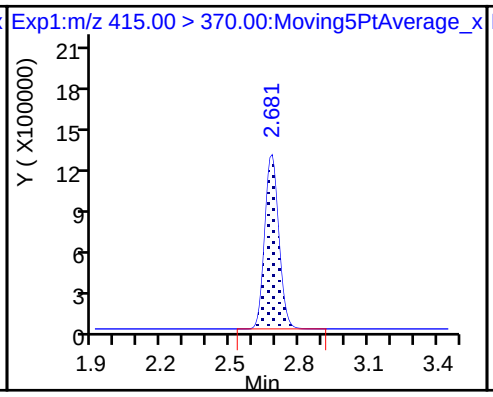
15 Perfluorooctanoic acid



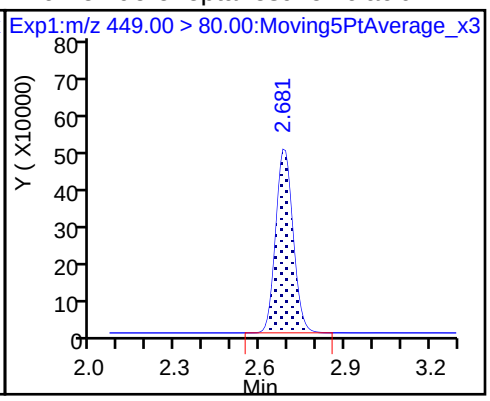
15 Perfluorooctanoic acid



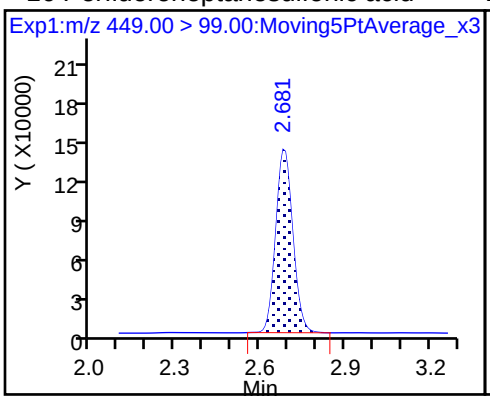
* 62 13C2-PFOA



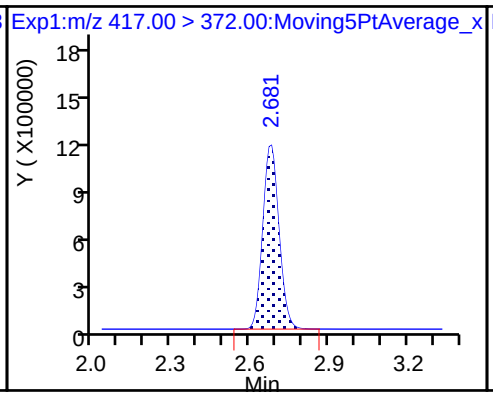
16 Perfluoroheptanesulfonic acid



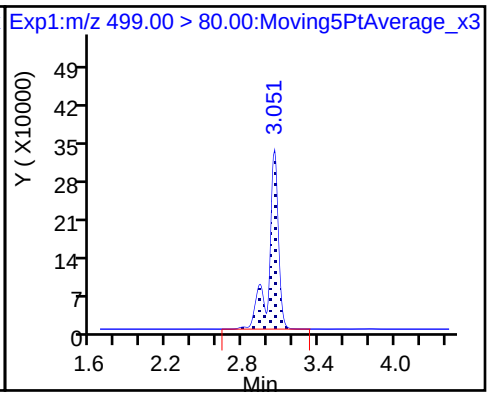
16 Perfluoroheptanesulfonic acid



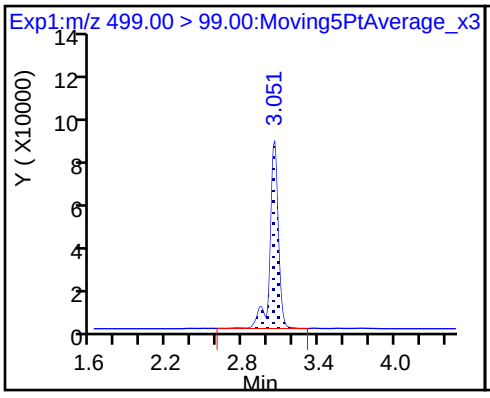
D 14 13C4 PFOA



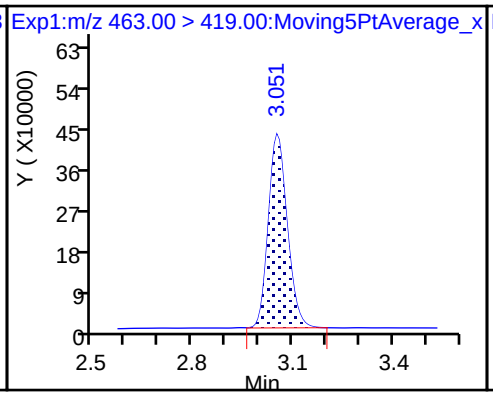
17 Perfluorooctane sulfonic acid



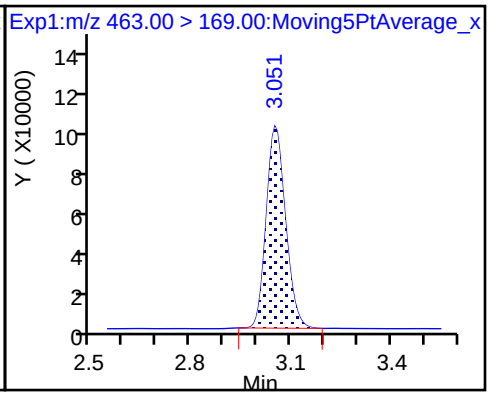
17 Perfluorooctane sulfonic acid



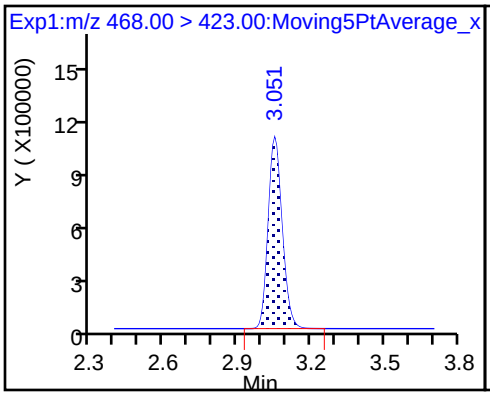
20 Perfluorononanoic acid



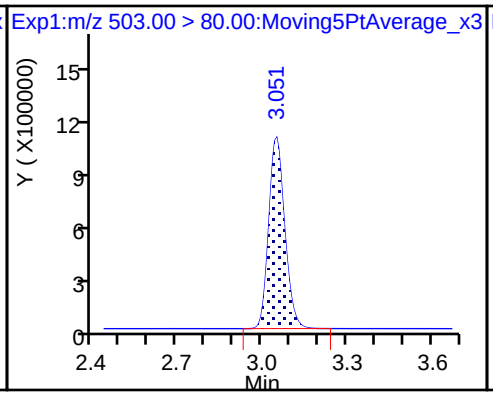
20 Perfluorononanoic acid



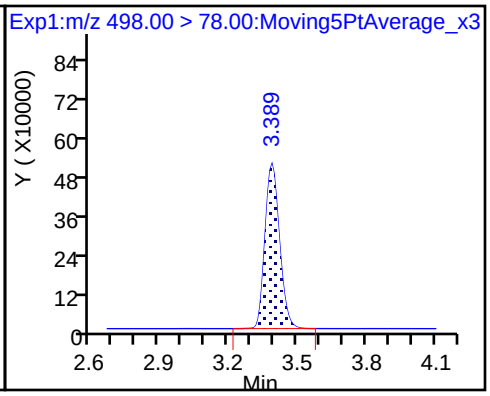
D 19 13C5 PFNA



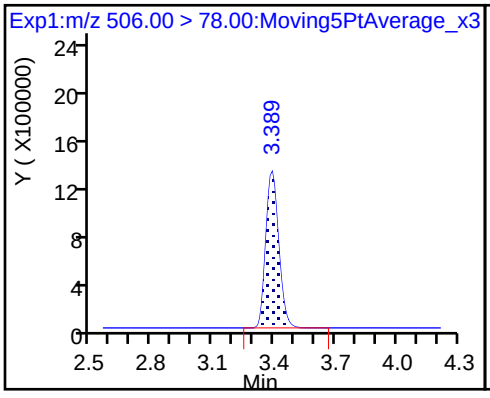
D 18 13C4 PFOS



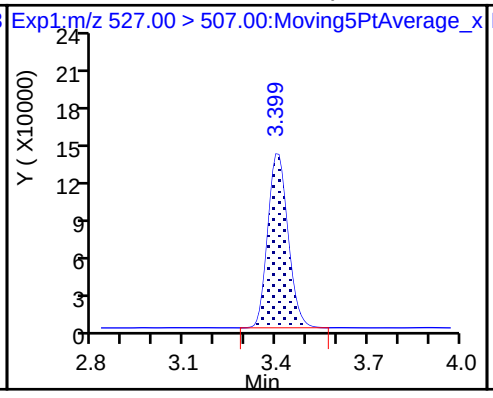
22 Perfluorooctane Sulfonamide



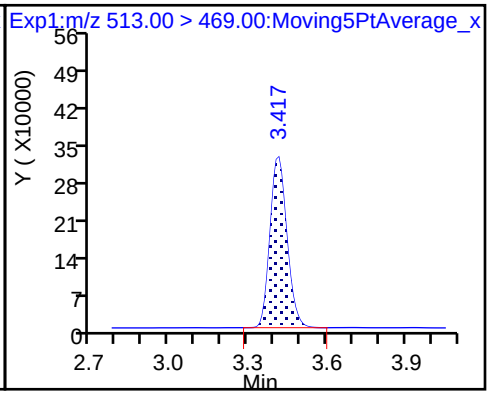
D 21 13C8 FOSA



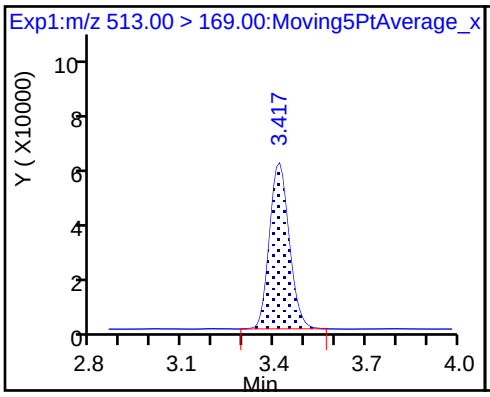
25 Sodium 1H,1H,2H,2H-perfluorodecan



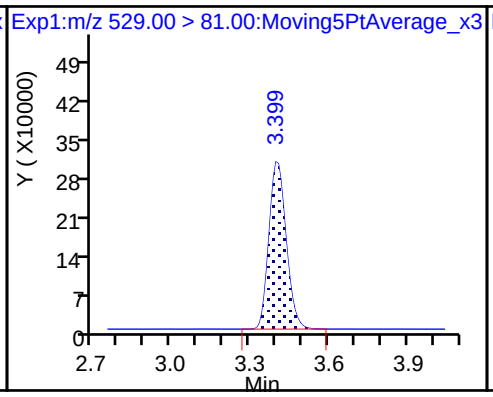
24 Perfluorodecanoic acid



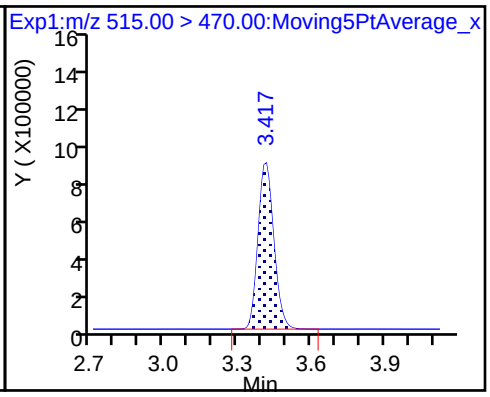
24 Perfluorodecanoic acid



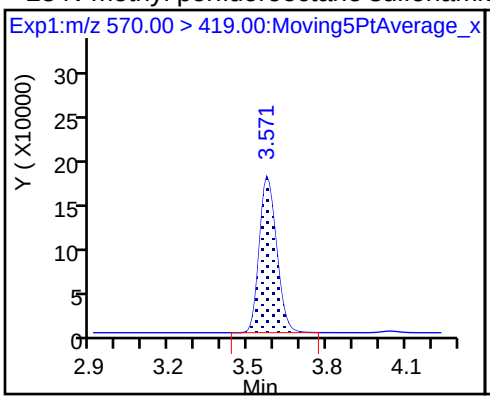
D 26 M2-8:2FTS



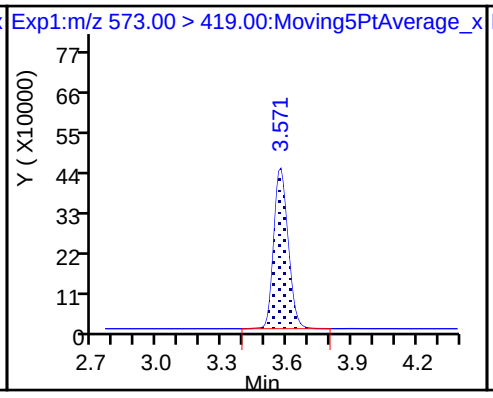
D 23 13C2 PFDA



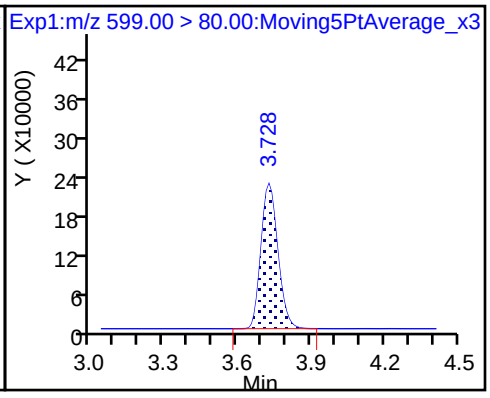
28 N-methyl perfluorooctane sulfonami



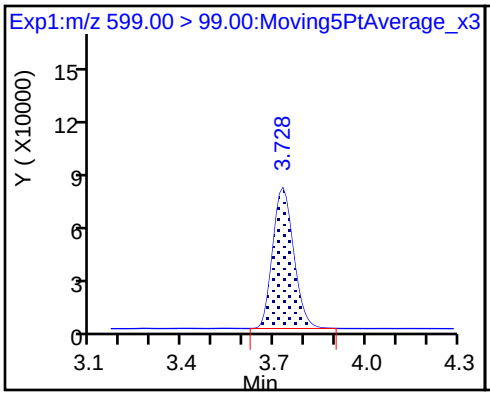
D 27 d3-NMeFOSAA



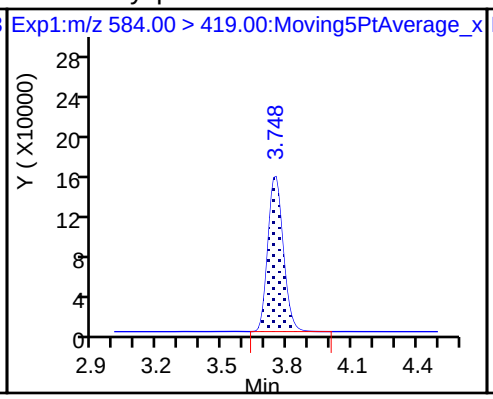
29 Perfluorodecane Sulfonic acid



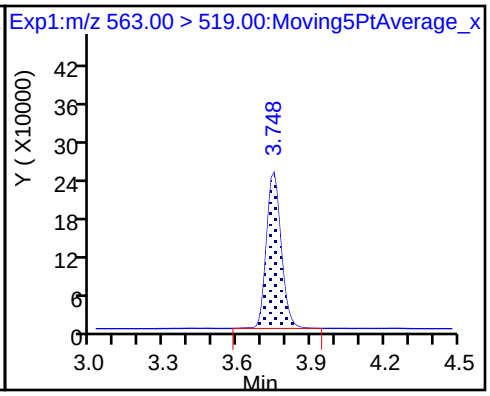
29 Perfluorodecane Sulfonic acid



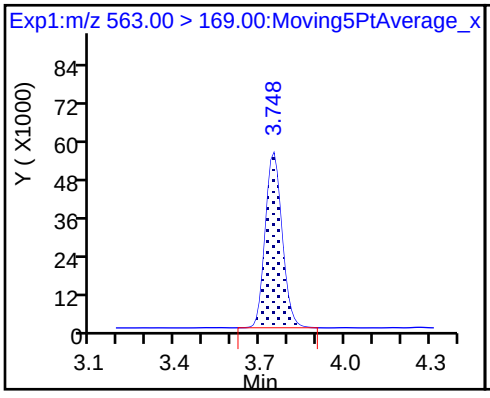
33 N-ethyl perfluorooctane sulfonamid



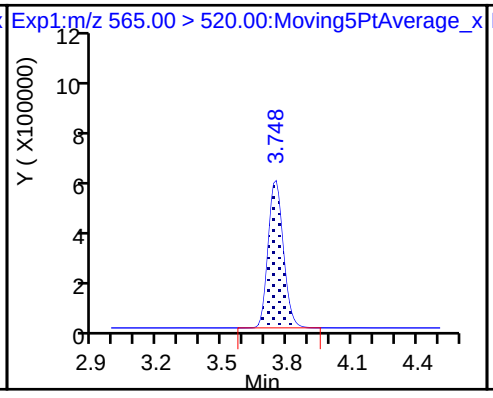
31 Perfluoroundecanoic acid



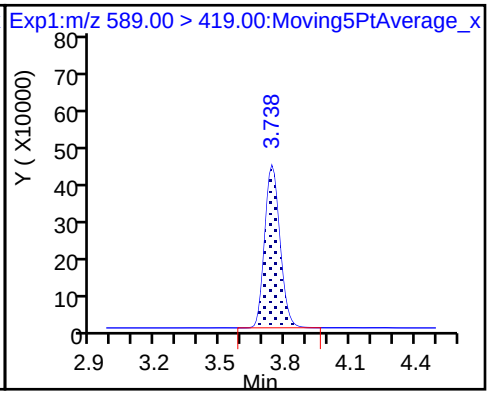
31 Perfluoroundecanoic acid



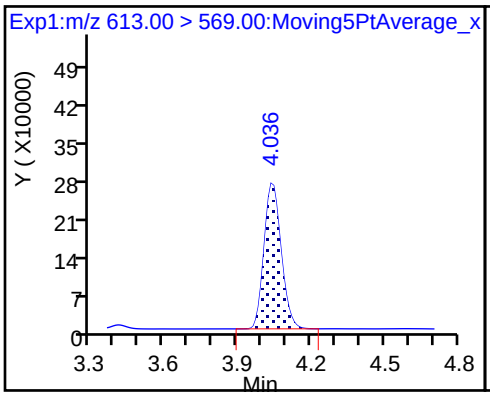
D 30 13C2 PFUnA



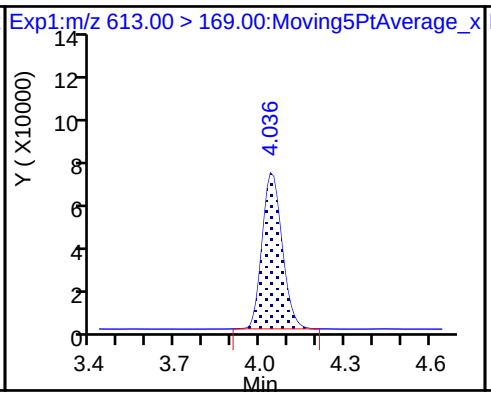
D 32 d5-NEtFOSAA



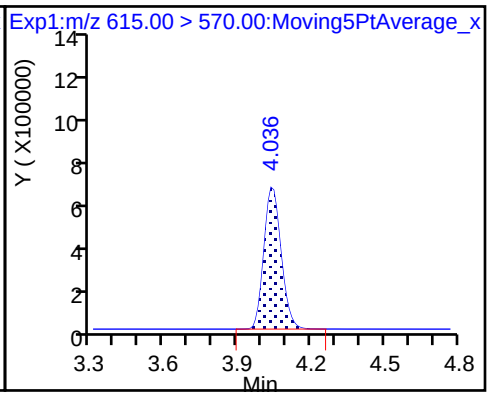
37 Perfluorododecanoic acid



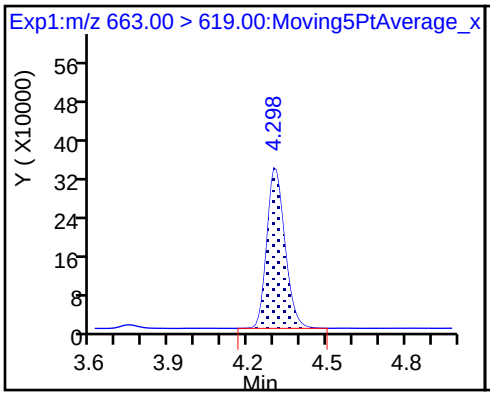
37 Perfluorododecanoic acid



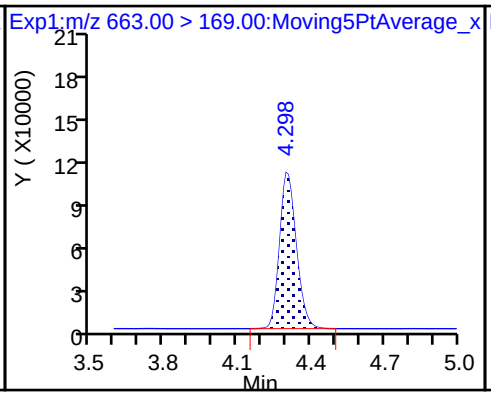
D 36 13C2 PFDoA



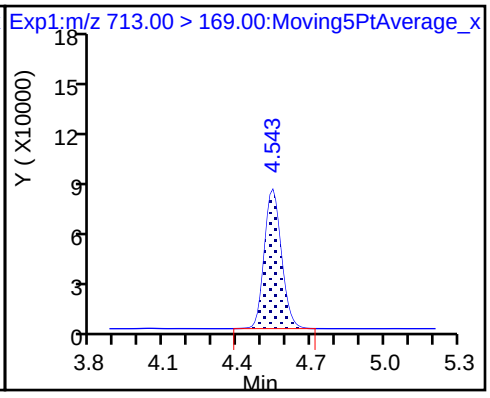
41 Perfluorotridecanoic acid



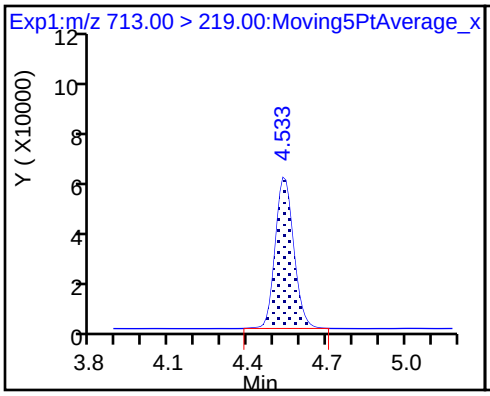
41 Perfluorotridecanoic acid



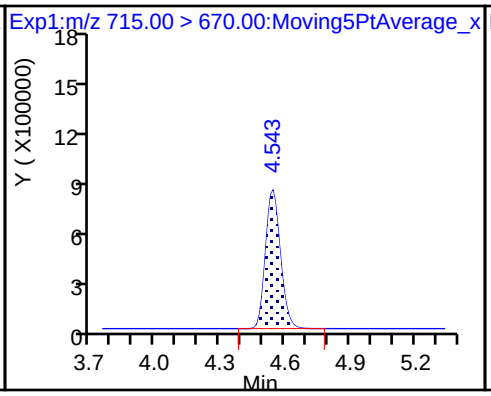
42 Perfluorotetradecanoic acid



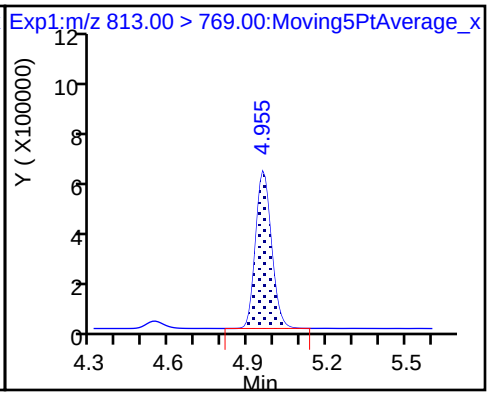
42 Perfluorotetradecanoic acid



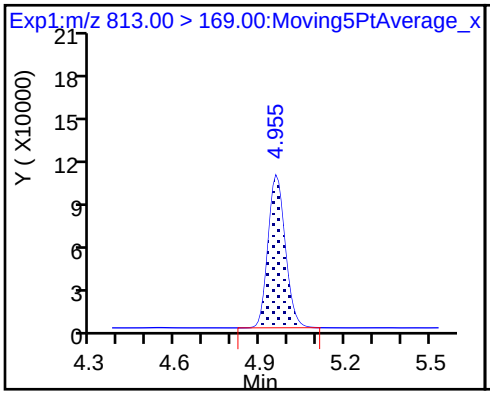
D 43 13C2-PFTeDA



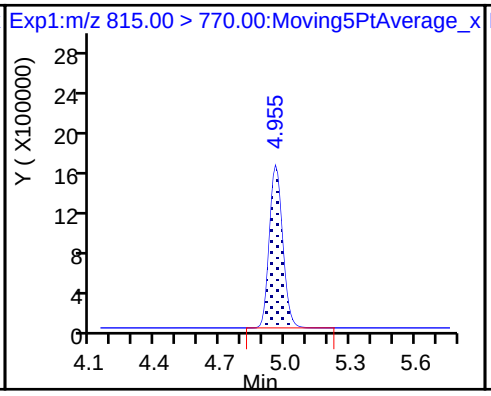
45 Perfluorohexadecanoic acid



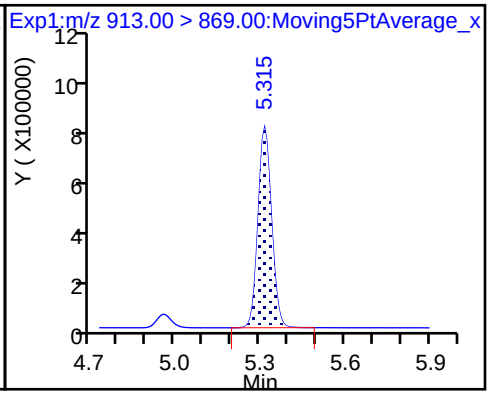
45 Perfluorohexadecanoic acid



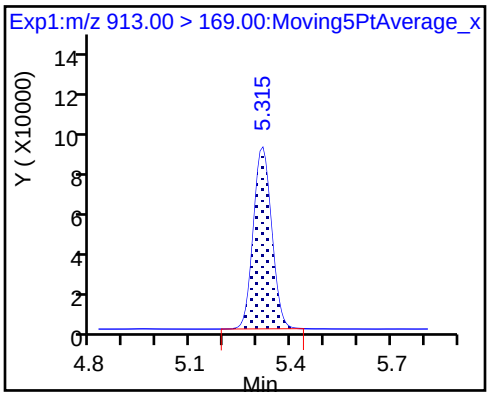
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/1 Calibration Date: 03/27/2018 01:16

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9153		0.971	1.00	-2.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.155		1.02	1.00	2.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.13		0.912	0.884	3.1	50.0
4:2 FTS	AveID	16.15	18.22		1.05	0.934	12.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.001		0.979	1.00	-2.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.002		0.968	1.00	-3.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.064		0.870	0.910	-4.4	40.0
6:2FTS	AveID	1.744	1.623		0.882	0.948	-6.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.085		0.960	1.00	-4.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.294		0.961	0.952	1.0	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.046		0.871	0.928	-6.1	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.997		0.999	1.00	-0.0	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9794		0.993	1.00	-0.7	40.0
8:2FTS	AveID	1.276	1.197		0.898	0.958	-6.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9839		0.996	1.00	-0.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.038		1.04	1.00	3.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6672		0.946	0.964	-1.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9243		0.989	1.00	-1.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8236		0.955	1.00	-4.5	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.018		0.973	1.00	-2.7	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.139		1.04	1.00	3.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2548		1.03	1.00	2.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9270		0.996	1.00	-0.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9072		0.981	1.00	-1.9	50.0
13C4 PFBA	Ave	1.266	1.357		2.68	2.50	7.2	50.0
13C5 PFPeA	Ave	0.8399	0.8802		2.62	2.50	4.8	50.0
13C3-PFBS	Ave	0.0192	0.0196		2.37	2.33	2.0	50.0
M2-4:2FTS	Ave	0.1324	0.1476		2.60	2.34	11.5	50.0
13C2 PFHxA	Ave	0.9288	0.9519		2.56	2.50	2.5	50.0
13C4-PFHpA	Ave	0.9164	0.9627		2.63	2.50	5.1	50.0
18O2 PFHxS	Ave	1.130	1.188		2.49	2.37	5.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/1 Calibration Date: 03/27/2018 01:16

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2384		2.98	2.38	25.5	40.0
13C4 PFOA	Ave	0.9374	0.9715		2.59	2.50	3.6	50.0
13C4 PFOS	Ave	0.8225	0.8479		2.46	2.39	3.1	50.0
13C5 PFNA	Ave	0.8266	0.8220		2.49	2.50	-0.6	50.0
13C8 FOSA	Ave	1.109	1.144		2.58	2.50	3.1	50.0
M2-8:2FTS	Ave	0.2565	0.2887		2.70	2.40	12.5	40.0
13C2 PFDA	Ave	0.7245	0.7205		2.49	2.50	-0.6	50.0
d3-NMeFOSAA	Ave	0.3814	0.3559		2.33	2.50	-6.7	50.0
13C2 PFUnA	Ave	0.6482	0.5921		2.28	2.50	-8.7	50.0
d5-NEtFOSAA	Ave	0.4345	0.4066		2.34	2.50	-6.4	50.0
13C2 PFDoA	Ave	0.7355	0.6550		2.23	2.50	-10.9	50.0
13C2-PFTeDA	Ave	0.8983	0.8331		2.32	2.50	-7.3	50.0
13C2-PFHxDA	Ave	1.473	1.434		2.43	2.50	-2.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_051.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 27-Mar-2018 01:16:16 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:42:55 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.537	6547524	2.68		107	127903	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	2397257	0.9715		97.1	750	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.700	0.008	0.634	4246898	2.62		105	106450	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.708	0.0	1.000	1961527	1.02		102	965	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.736	0.008	0.647	87767	2.37		102	529	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	2674115	0.9117		103	15775	
298.90 > 99.00	1.744	1.744	0.0	1.000	1104176		2.42(1.25-3.74)		4294	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.946	0.009	0.726	665400	2.60		112	7270	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	642308	1.05		113	29997	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.987	0.010	0.741	4593137	2.56		102	141786	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1838297	0.9787		97.9	2492	
313.00 > 119.00	1.997	1.997	0.0	1.000	182274		10.09(5.03-15.10)		2124	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.864	4645276	2.63		105	89056	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1860914	0.9681		96.8	1589	
363.00 > 169.00	2.328	2.328	0.0	1.000	748999		2.48(1.13-3.40)		2141	
D 11 18O2 PFHxS										
403.00 > 84.00	2.340	2.328	0.012	0.869	5422273	2.49		105	85484	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.340	2.340	0.0	1.000	2220497	0.8701		95.6	11762	
399.00 > 99.00	2.340	2.340	0.0	1.000	726138		3.06(1.50-4.49)		1818	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.649	0.022	0.991	1092819	2.98		125	23834	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.671	0.0	1.000	707747	0.8822		93.1	5590	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.681	0.014	1.000	4687616	2.59		104	94187	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		4825221	2.50			88702	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.695	0.0	1.000	2033503	0.9600		96.0	772	
413.00 > 169.00	2.695	2.695	0.0	1.000	1054426		1.93(0.84-2.52)		2972	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	2015930	0.9615		101	37312	
449.00 > 99.00	2.703	2.703	0.0	1.000	559086		3.61(1.94-5.82)		4488	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.051	0.014	1.137	3911036	2.46		103	66013	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.051	0.014	1.137	3966353	2.49		99.4	82428	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1588392	0.8714		93.9	17749	
499.00 > 99.00	3.065	3.065	0.0	1.000	362672		4.38(2.31-6.93)		2326	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.002	1581212	1.00		99.9	2138	
463.00 > 169.00	3.072	3.072	0.0	1.002	407430		3.88(1.90-5.69)		10188	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.261	5517706	2.58		103	60258	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	2161544	0.99		99.3	27455	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.399	0.018	1.268	1334418	2.70		113	27133	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.416	0.0	1.000	638867	0.8984		93.8	11113	
D 23 13C2 PFDA										
515.00 > 470.00	3.434	3.417	0.017	1.275	3476492	2.49		99.4	52231	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.434	3.434	0.0	1.000	1368142	1.00		99.6	5909	
513.00 > 169.00	3.434	3.434	0.0	1.000	262318		5.22(2.36-7.09)		5394	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.571	0.008	1.328	1717378	2.33		93.3	46071	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	713049	1.04		104	5481	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1052558	0.9459		98.1	27625	
599.00 > 99.00	3.748	3.748	0.0	1.000	353179		2.98(1.39-4.16)		7420	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.738	0.020	1.395	1961784	2.34		93.6	12292	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.395	2856798	2.28		91.3	66540	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	941192	0.9553		95.5	3709	
563.00 > 169.00	3.758	3.758	0.0	1.000	232366		4.05(2.12-6.36)		6235	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.000	725307	0.9894		98.9	13609	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.036	0.020	1.505	3160575	2.23		89.1	23402	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.056	0.0	1.000	1287317	0.9731		97.3	1229	
613.00 > 169.00	4.056	4.056	0.0	1.000	313041		4.11(2.13-6.40)		4992	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1440501	1.04		104	912	
663.00 > 169.00	4.318	4.318	0.0	1.000	468725		3.07(1.25-3.76)		7573	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.543	0.011	1.690	4019671	2.32		92.7	25580	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	409634	1.03		103	5364	
713.00 > 219.00	4.554	4.554	0.0	1.000	281672		1.45(0.71-2.13)		4568	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.955	0.018	1.845	6918698	2.43		97.4	17730	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.000	2565509	1.00		99.6	753	
813.00 > 169.00	4.973	4.973	0.0	1.000	452567		5.67(2.86-8.58)		3386	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2510752	0.9812		98.1	705	
913.00 > 169.00	5.330	5.337	-0.007	0.999	323577		7.76(3.83-11.48)		2460	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2018 10:42:56 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_051.d

Injection Date: 27-Mar-2018 01:16:16 Instrument ID: A8_N

Lims ID: CCV L4

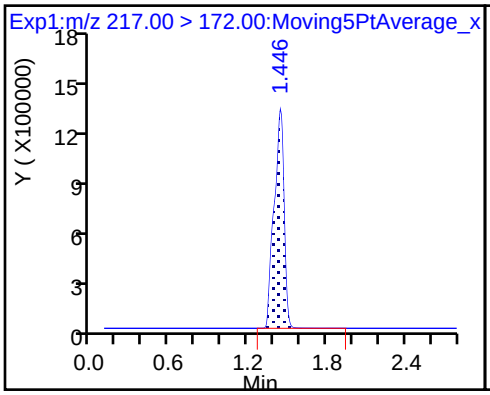
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

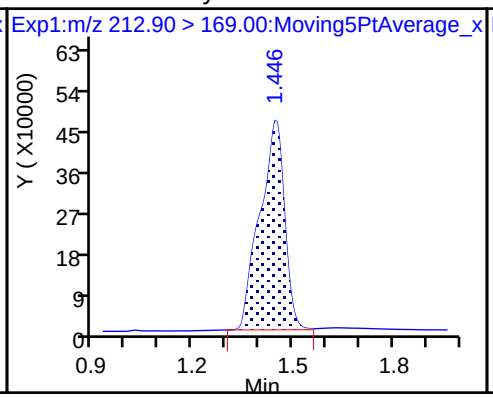
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

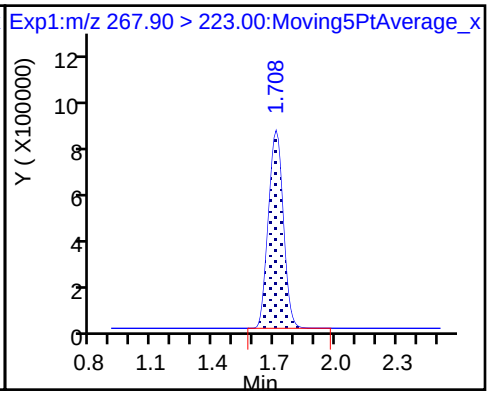
D 1 13C4 PFBA



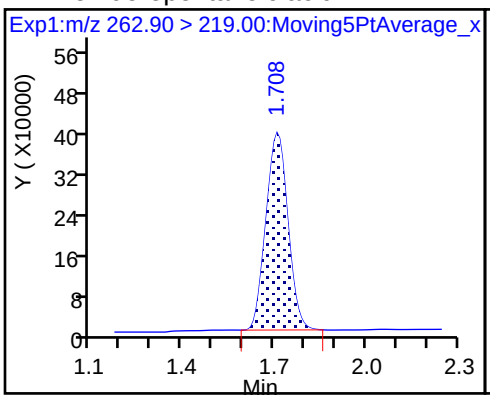
2 Perfluorobutyric acid



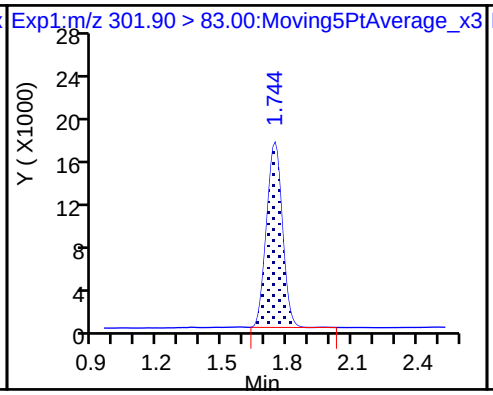
D 3 13C5-PFPeA



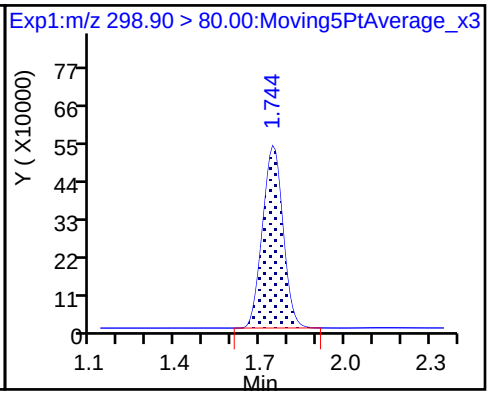
4 Perfluoropentanoic acid



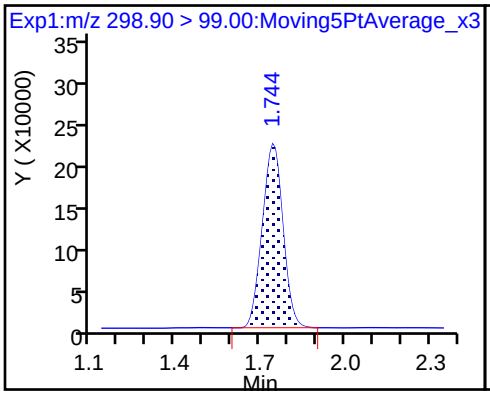
D 47 13C3-PFBS



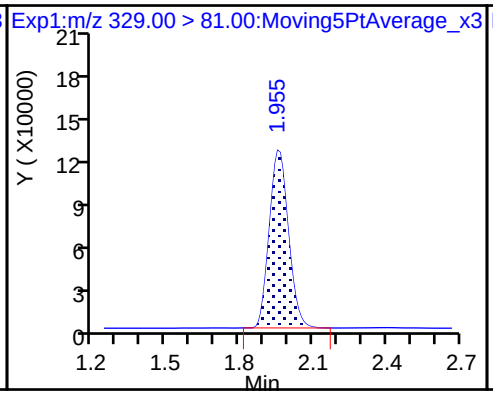
5 Perfluorobutanesulfonic acid



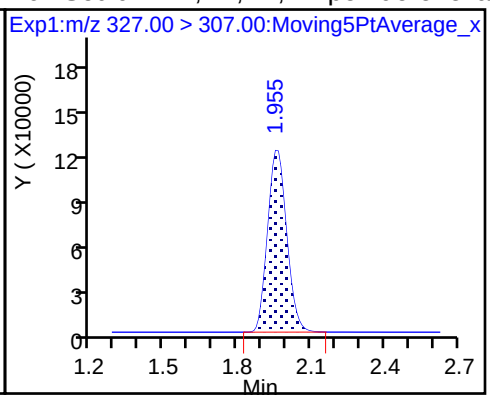
5 Perfluorobutanesulfonic acid



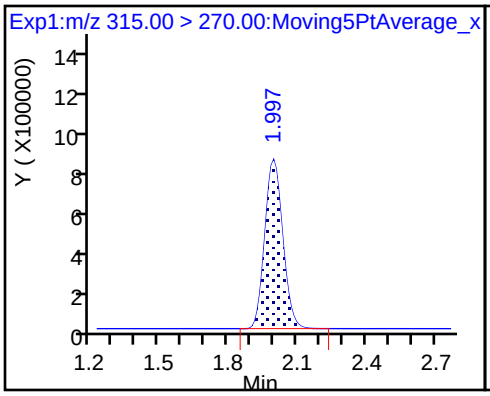
D 60 M2-4:2FTS



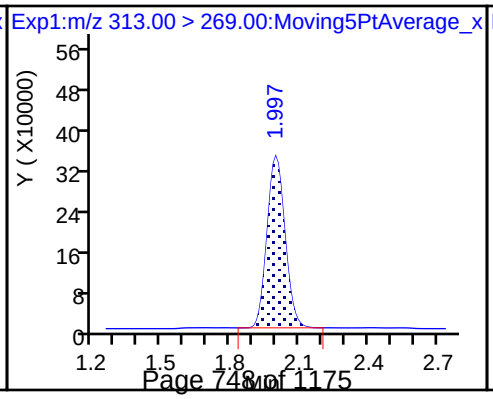
61 Sodium 1H,1H,2H,2H-perfluorohexane



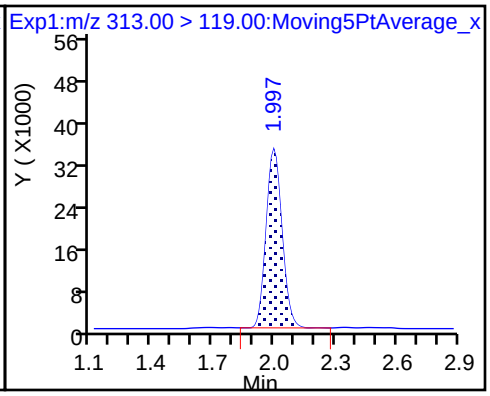
D 7 13C2 PFHxA



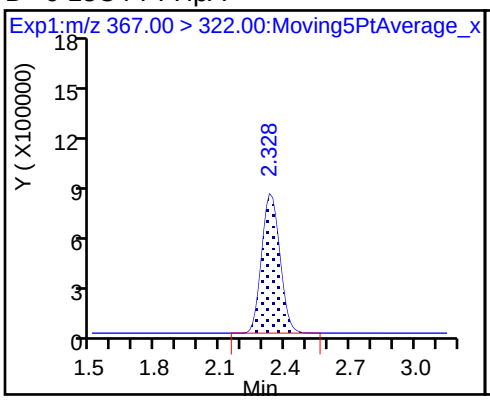
6 Perfluorohexanoic acid



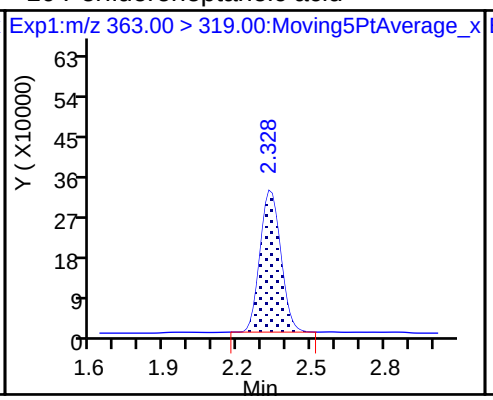
6 Perfluorohexanoic acid



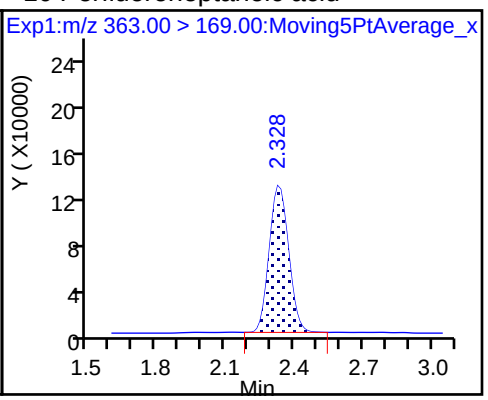
D 9 13C4-PFHpA



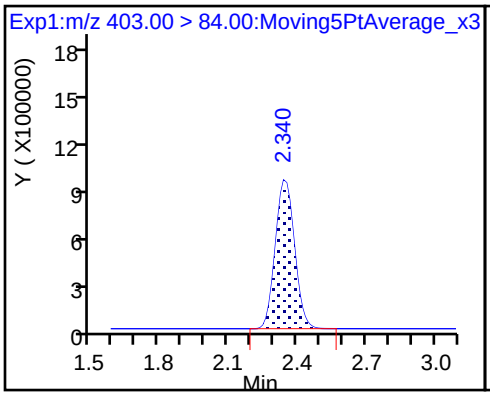
10 Perfluoroheptanoic acid



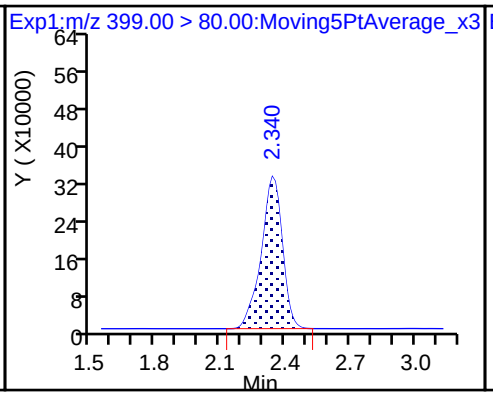
10 Perfluoroheptanoic acid



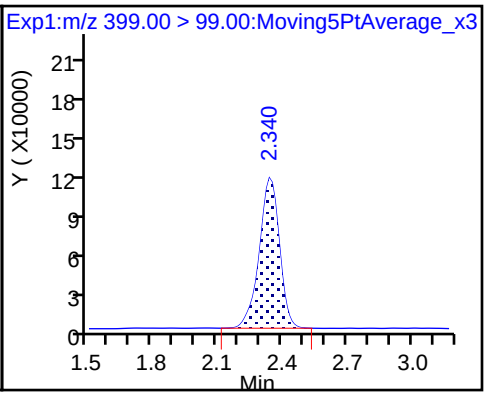
D 11 18O2 PFHxS



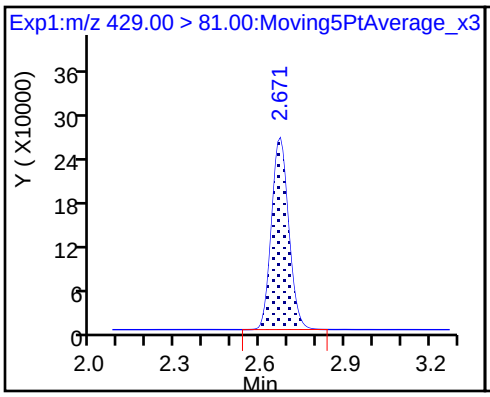
8 Perfluorohexanesulfonic acid



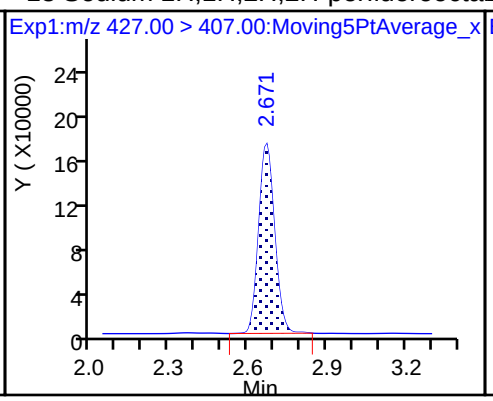
8 Perfluorohexanesulfonic acid



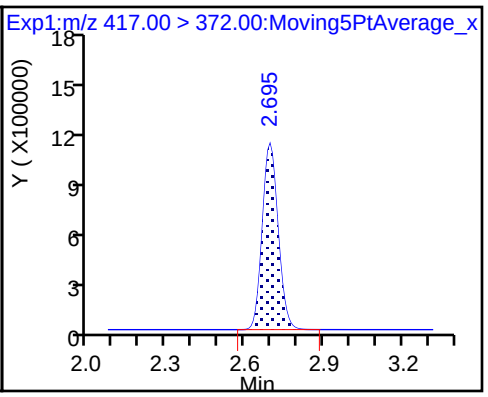
D 12 M2-6:2FTS



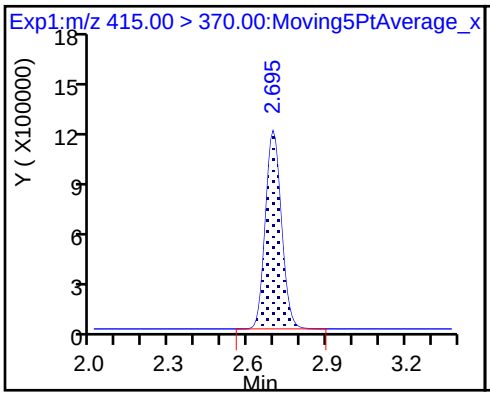
13 Sodium 1H,1H,2H,2H-perfluorooctane



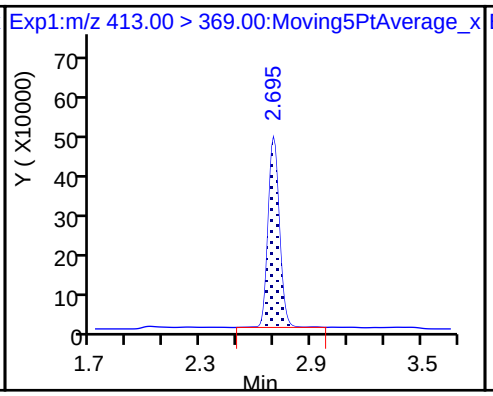
D 14 13C4 PFOA



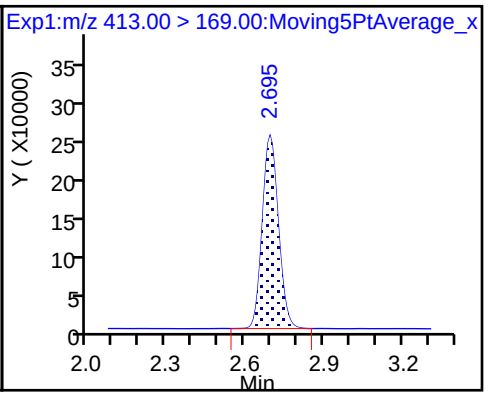
* 62 13C2-PFOA



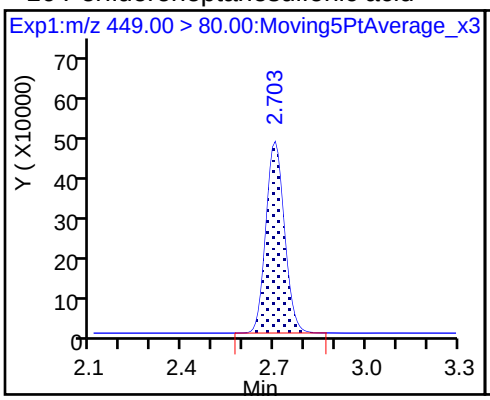
15 Perfluorooctanoic acid



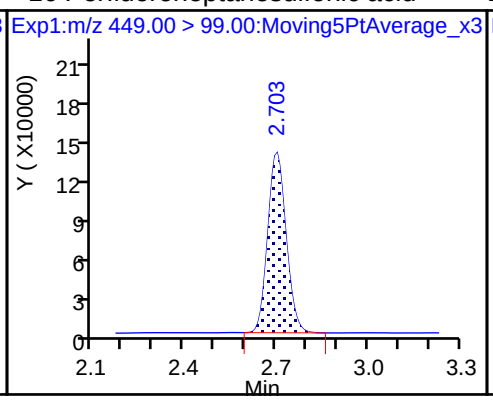
15 Perfluorooctanoic acid



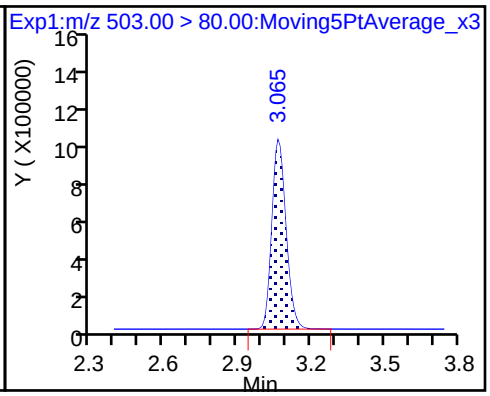
16 Perfluoroheptanesulfonic acid



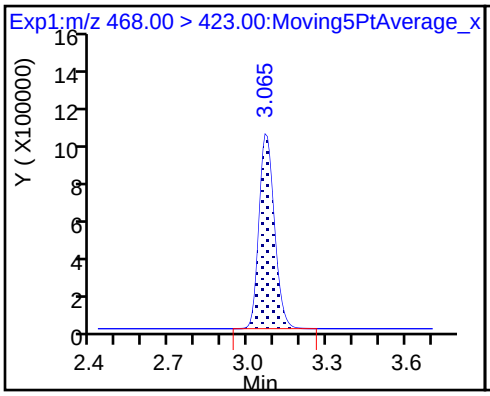
16 Perfluoroheptanesulfonic acid



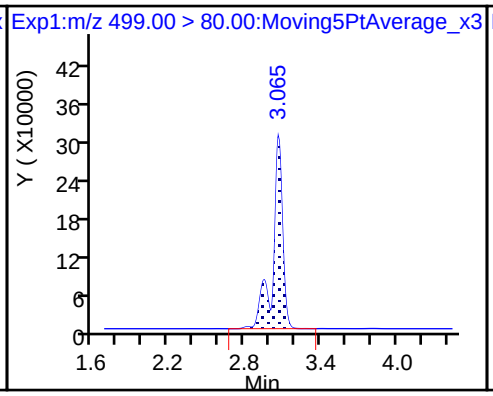
D 18 13C4 PFOS



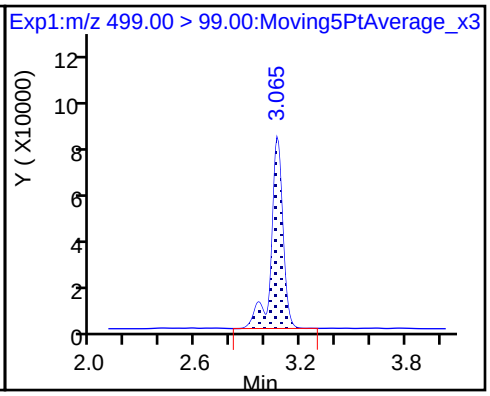
D 19 13C5 PFNA



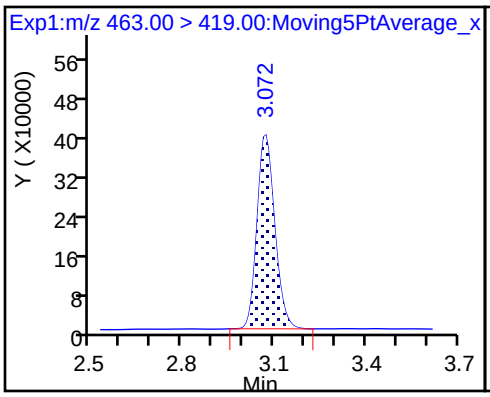
17 Perfluorooctane sulfonic acid



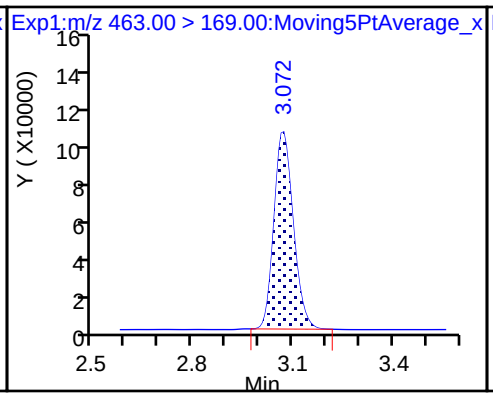
17 Perfluorooctane sulfonic acid



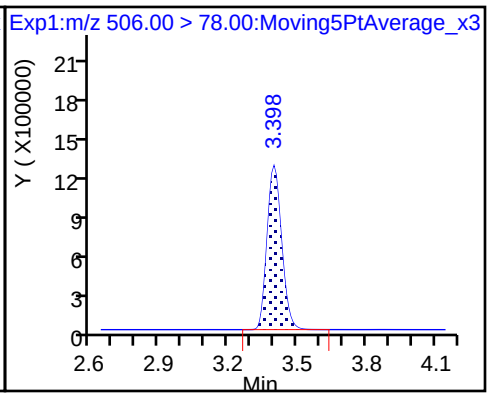
20 Perfluorononanoic acid



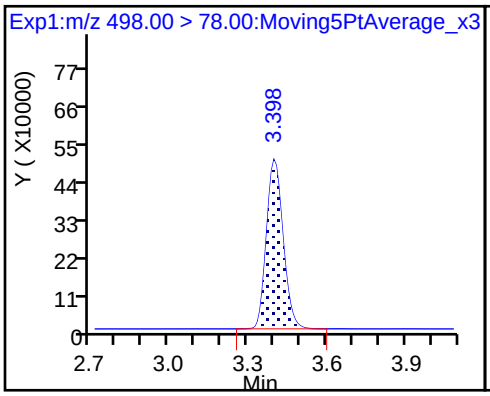
20 Perfluorononanoic acid



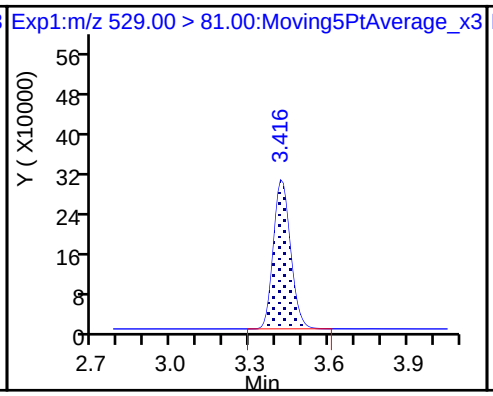
D 21 13C8 FOSA



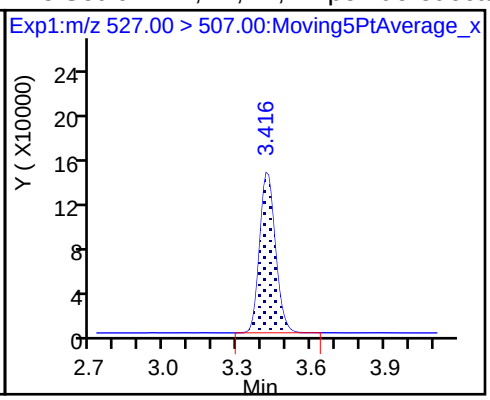
22 Perfluorooctane Sulfonamide



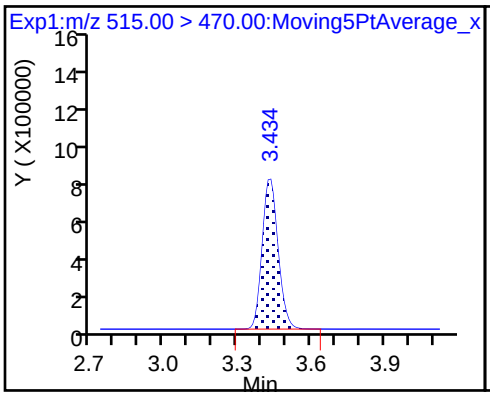
D 26 M2-8:2FTS



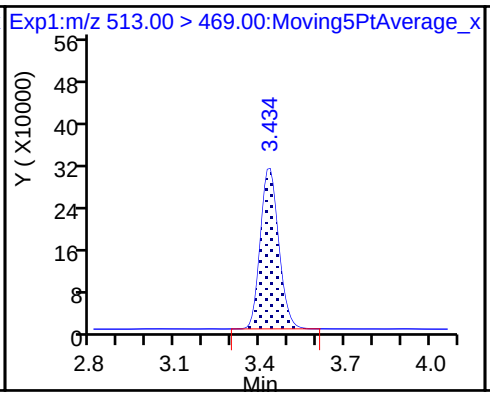
25 Sodium 1H,1H,2H,2H-perfluorodecane



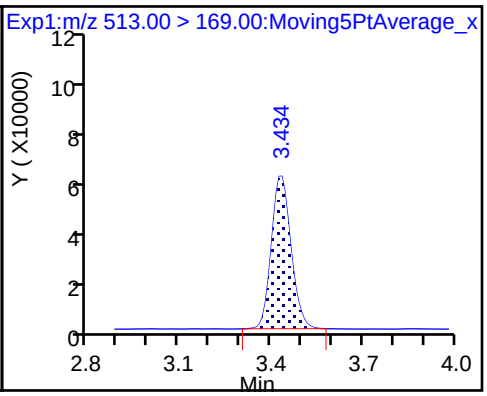
D 23 13C2 PFDA



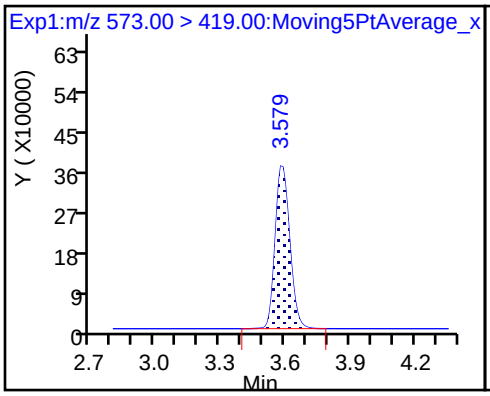
24 Perfluorodecanoic acid



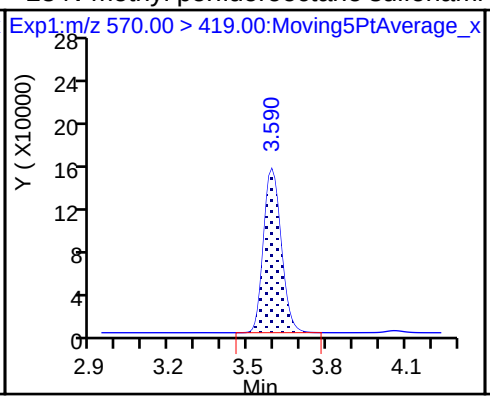
24 Perfluorodecanoic acid



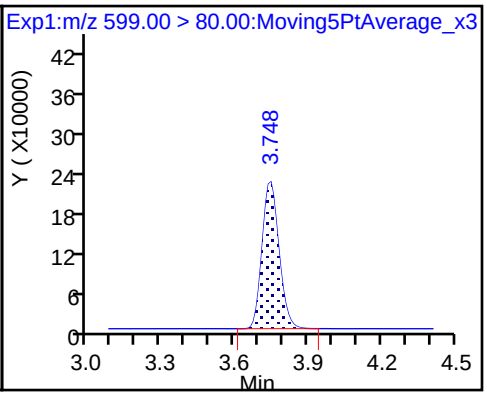
D 27 d3-NMeFOSAA



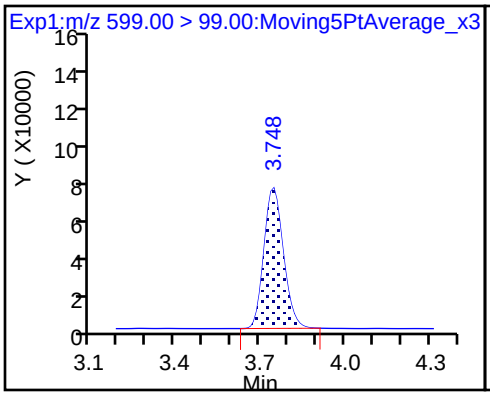
28 N-methyl perfluorooctane sulfonami



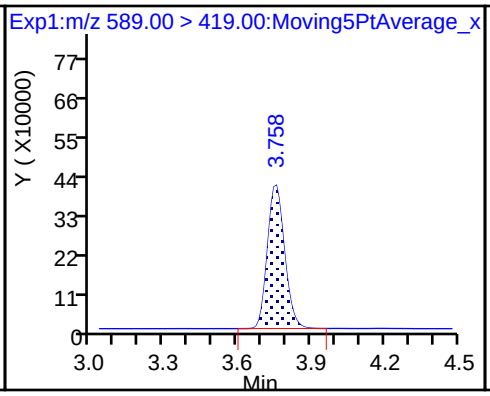
29 Perfluorodecane Sulfonic acid



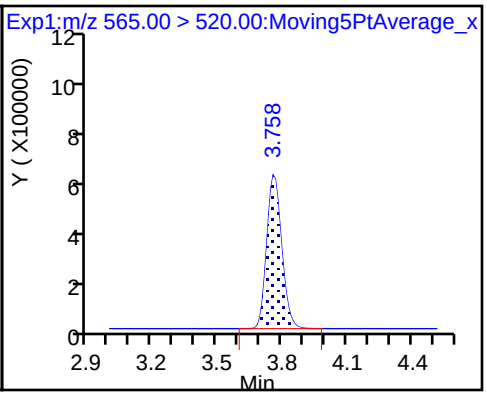
29 Perfluorodecane Sulfonic acid



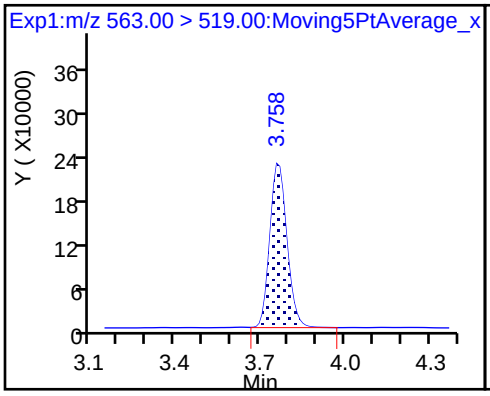
D 32 d5-NEtFOSAA



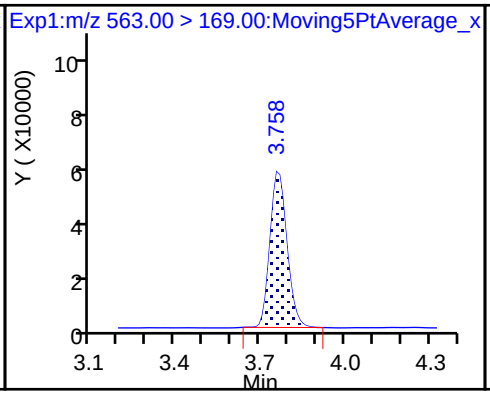
D 30 13C2 PFUnA



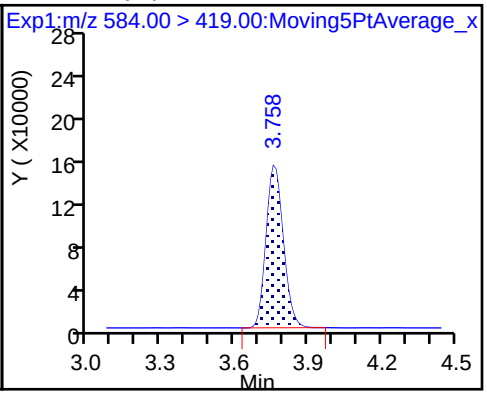
31 Perfluoroundecanoic acid



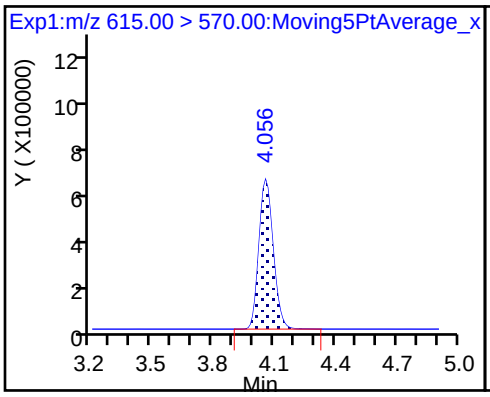
31 Perfluoroundecanoic acid



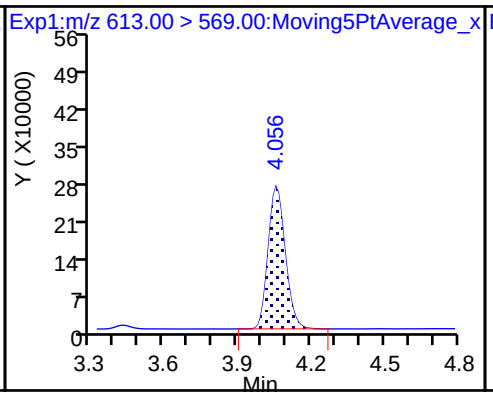
33 N-ethyl perfluorooctane sulfonamid



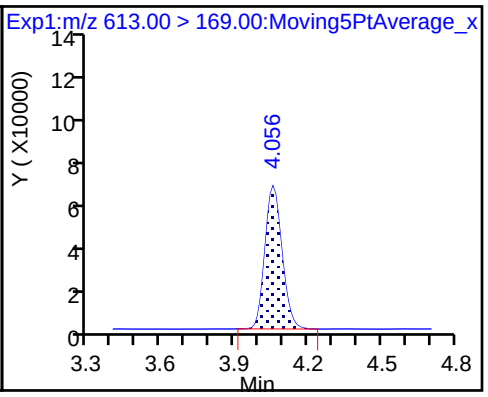
D 36 13C2 PFDoA



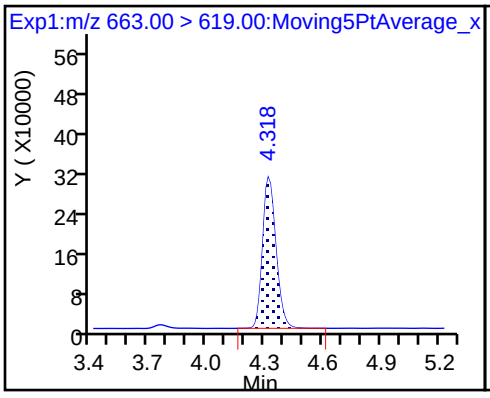
37 Perfluorododecanoic acid



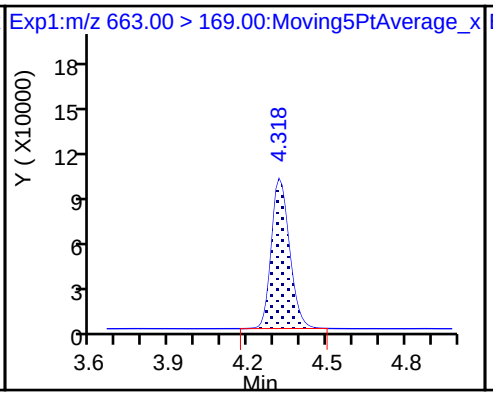
37 Perfluorododecanoic acid



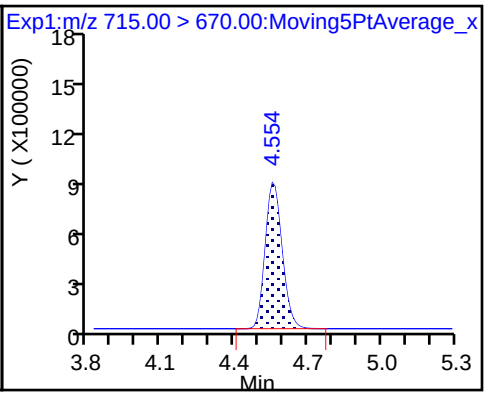
41 Perfluorotridecanoic acid



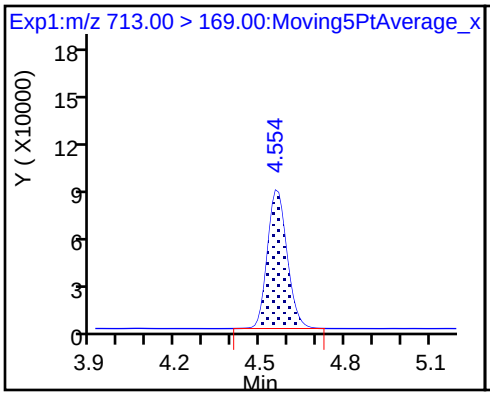
41 Perfluorotridecanoic acid



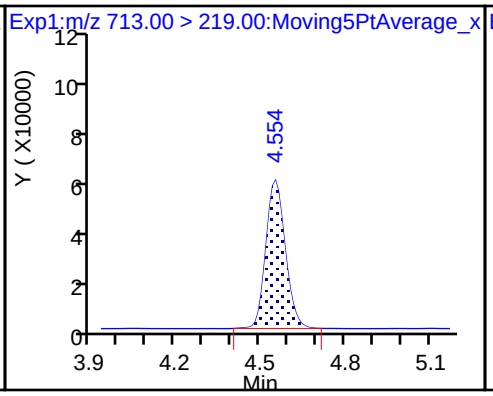
D 43 13C2-PFTeDA



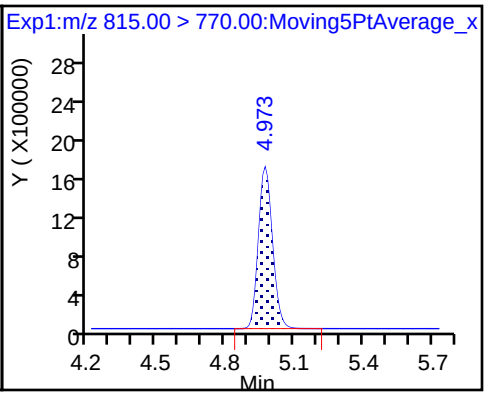
42 Perfluorotetradecanoic acid



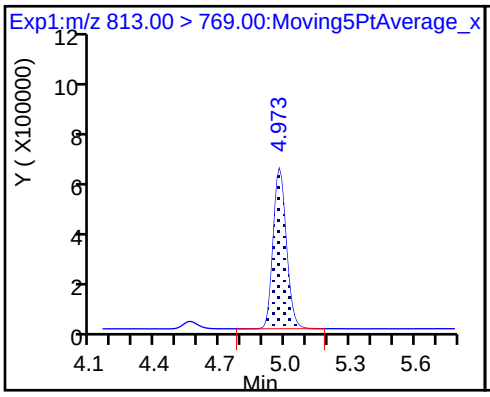
42 Perfluorotetradecanoic acid



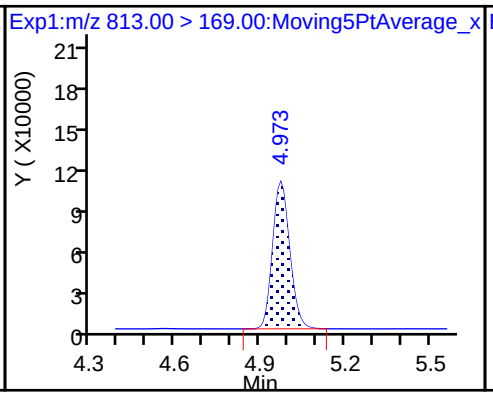
D 44 13C2-PFHxDA



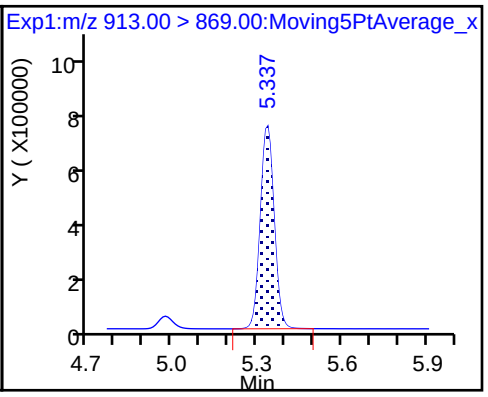
45 Perfluorohexadecanoic acid



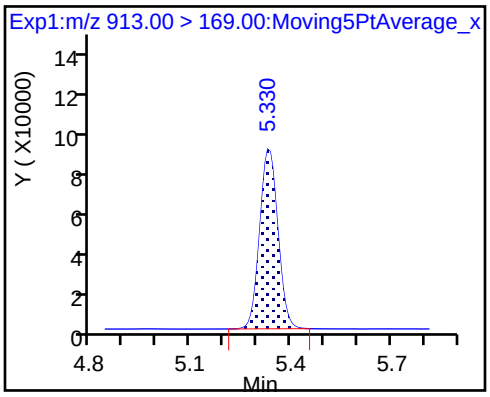
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/11 Calibration Date: 03/27/2018 02:34

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_061.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9605		2.55	2.50	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.153		2.56	2.50	2.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.74		2.27	2.21	2.6	50.0
4:2 FTS	AveID	16.15	16.84		2.43	2.34	4.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.050		2.57	2.50	2.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.085		2.62	2.50	4.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.053		2.15	2.28	-5.4	40.0
6:2FTS	AveID	1.744	1.555		2.11	2.37	-10.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.175		2.60	2.50	4.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.331		2.47	2.38	3.9	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.088		2.73	2.50	9.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.096		2.28	2.32	-1.6	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.016		2.58	2.50	3.0	40.0
8:2FTS	AveID	1.276	1.330		2.50	2.40	4.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9713		2.46	2.50	-1.7	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.103		2.76	2.50	10.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6842		2.43	2.41	0.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9717		2.60	2.50	4.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8256		2.39	2.50	-4.2	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.080		2.58	2.50	3.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.190		2.70	2.50	8.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2483		2.51	2.50	0.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9379		2.56	2.50	2.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.026		2.77	2.50	11.0	50.0
13C4 PFBA	Ave	1.266	1.267		2.50	2.50	0.1	50.0
13C5 PFPeA	Ave	0.8399	0.8317		2.48	2.50	-1.0	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.42	2.33	4.0	50.0
M2-4:2FTS	Ave	0.1324	0.1456		2.57	2.34	10.0	50.0
13C2 PFHxA	Ave	0.9288	0.8729		2.35	2.50	-6.0	50.0
13C4-PFHpA	Ave	0.9164	0.8929		2.44	2.50	-2.6	50.0
18O2 PFHxS	Ave	1.130	1.156		2.42	2.37	2.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/11 Calibration Date: 03/27/2018 02:34

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_061.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2199		2.75	2.38	15.8	40.0
13C4 PFOA	Ave	0.9374	0.8606		2.30	2.50	-8.2	50.0
13C4 PFOS	Ave	0.8225	0.7839		2.28	2.39	-4.7	50.0
13C5 PFNA	Ave	0.8266	0.7504		2.27	2.50	-9.2	50.0
13C8 FOSA	Ave	1.109	1.033		2.33	2.50	-6.8	50.0
M2-8:2FTS	Ave	0.2565	0.2356		2.20	2.40	-8.2	40.0
13C2 PFDA	Ave	0.7245	0.6745		2.33	2.50	-6.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3147		2.06	2.50	-17.5	50.0
d5-NEtFOSAA	Ave	0.4345	0.3688		2.12	2.50	-15.1	50.0
13C2 PFUnA	Ave	0.6482	0.5428		2.09	2.50	-16.3	50.0
13C2 PFDoA	Ave	0.7355	0.5704		1.94	2.50	-22.5	50.0
13C2-PFTeDA	Ave	0.8983	0.7247		2.02	2.50	-19.3	50.0
13C2-PFHxDA	Ave	1.473	1.297		2.20	2.50	-11.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_061.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 27-Mar-2018 02:34:21 ALS Bottle#: 14 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:43:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:14:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.538	6081533	2.50		100	108408	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.447	0.0	1.000	5841294	2.55		102	1853	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.700	0.009	0.636	3991082	2.48		99.0	113296	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	4602140	2.56		102	2405	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.736	0.009	0.649	89004	2.42		104	550	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	6745934	2.27		103	43335	
298.90 > 99.00	1.745	1.745	0.0	1.000	2816482		2.40(1.25-3.74)		9854	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.946	0.010	0.727	652473	2.57		110	7201	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	1505248	2.43		104	70921	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.739	4188861	2.35		94.0	109913	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.005	4398602	2.57		103	7151	
313.00 > 119.00	1.998	1.998	0.0	1.005	421818		10.43(5.03-15.10)		6435	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.866	4284898	2.44		97.4	81259	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	4650596	2.62		105	3854	
363.00 > 169.00	2.328	2.328	0.0	1.000	1789465		2.60(1.13-3.40)		4801	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	5248570	2.42		102	101145	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	5317913	2.15		94.6	18935	
399.00 > 99.00	2.341	2.341	0.0	1.000	1733169		3.07(1.50-4.49)		3799	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.649	0.016	0.991	1002531	2.75		116	20089	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.665	0.0	1.000	1556115	2.11		89.2	12264	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.681	0.008	1.000	4129873	2.30		91.8	98377	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.689	0.0		4798661	2.50			82228	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.689	0.0	1.000	4852088	2.60		104	1939	
413.00 > 169.00	2.689	2.689	0.0	1.000	2568452		1.89(0.84-2.52)		8704	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.697	0.0	1.000	4767483	2.47		104	54372	
449.00 > 99.00	2.697	2.697	0.0	1.000	1270828		3.75(1.94-5.82)		9533	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.137	3596206	2.28		95.3	41604	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.051	0.014	1.140	3600901	2.27		90.8	64282	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.002	3825750	2.28		98.4	30107	
499.00 > 99.00	3.058	3.065	-0.007	1.000	872040		4.39(2.31-6.93)		7693	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.065	0.0	1.000	3918366	2.73		109	5679	
463.00 > 169.00	3.065	3.065	0.0	1.000	964877		4.06(1.90-5.69)		20188	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.264	4959008	2.33		93.2	59497	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	5036610	2.58		103	72163	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.399	0.019	1.271	1082835	2.20		91.8	26735	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	1440051	2.50		104	20294	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.274	3236588	2.33		93.1	48883	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.426	0.0	1.000	3143840	2.46		98.3	16745	
513.00 > 169.00	3.426	3.426	0.0	1.000	570209		5.51(2.36-7.09)		2022	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.571	0.008	1.331	1510163	2.06		82.5	36054	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	1665762	2.76		110	12777	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.738	0.010	1.394	1769959	2.12		84.9	10618	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.738	0.0	1.000	2481181	2.42		101	37035	
599.00 > 99.00	3.738	3.738	0.0	1.000	809520		3.07(1.39-4.16)		8454	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2604480	2.09		83.7	68739	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	2150331	2.39		95.8	12775	
563.00 > 169.00	3.758	3.758	0.0	1.000	543219		3.96(2.12-6.36)		19074	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.003	1719908	2.60		104	39563	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.036	0.021	1.509	2737026	1.94		77.5	19566	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	2956244	2.58		103	2938	
613.00 > 169.00	4.057	4.057	0.0	1.000	735381		4.02(2.13-6.40)		12765	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.317	0.0	1.000	3256888	2.70		108	2262	
663.00 > 169.00	4.317	4.317	0.0	1.000	1036961		3.14(1.25-3.76)		13531	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.543	0.011	1.694	3477793	2.02		80.7	18964	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.002	863438	2.50		100	11836	
713.00 > 219.00	4.554	4.564	-0.010	1.000	660880		1.31(0.71-2.13)		12593	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	4.955	0.017	1.849	6226166	2.20		88.1	16011	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.972	0.0	1.000	5839291	2.56		102	1883	
813.00 > 169.00	4.972	4.972	0.0	1.000	1006067		5.80(2.86-8.58)		7433	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	6387999	2.77		111	1784	
913.00 > 169.00	5.337	5.337	0.0	1.000	818332		7.81(3.83-11.48)		5510	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2018 10:43:32 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_061.d

Injection Date: 27-Mar-2018 02:34:21 Instrument ID: A8_N

Lims ID: CCV L5

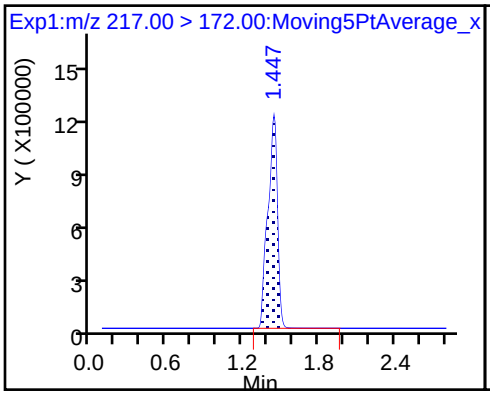
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 11

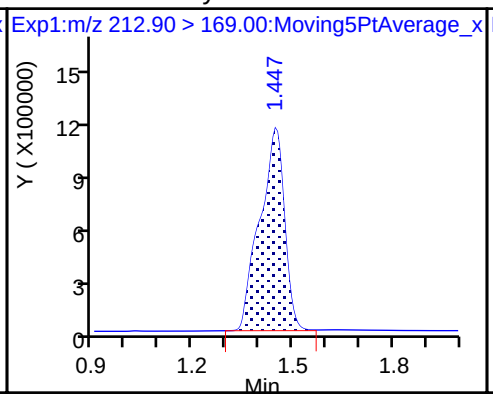
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

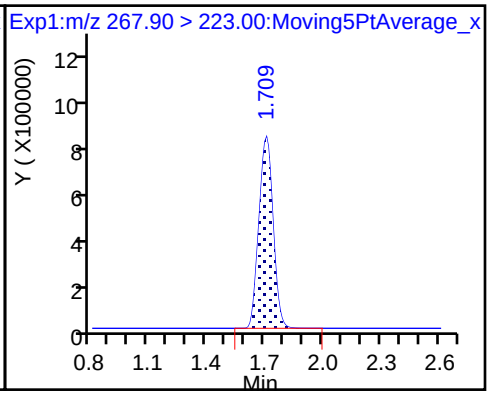
D 1 13C4 PFBA



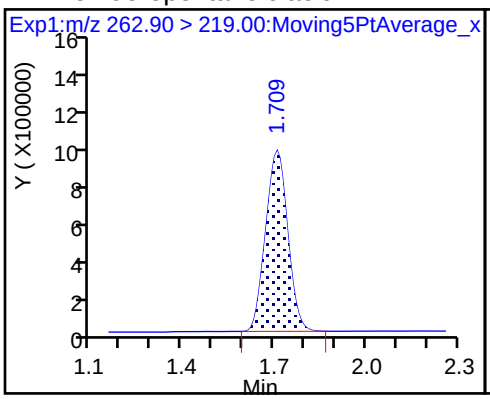
2 Perfluorobutyric acid



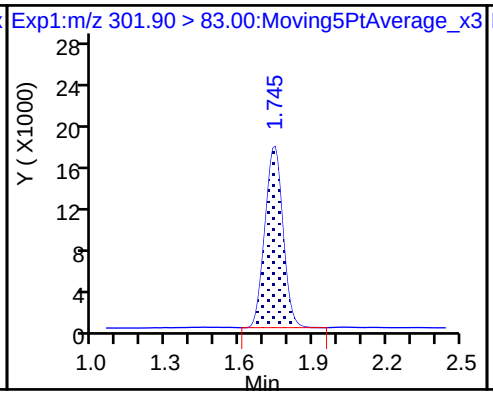
D 3 13C5-PFPeA



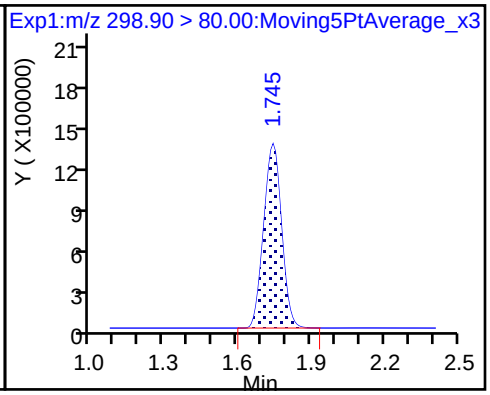
4 Perfluoropentanoic acid



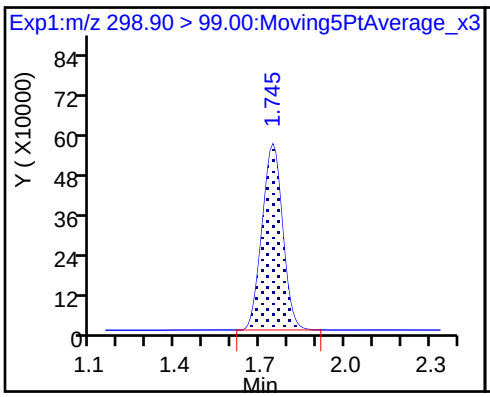
D 47 13C3-PFBS



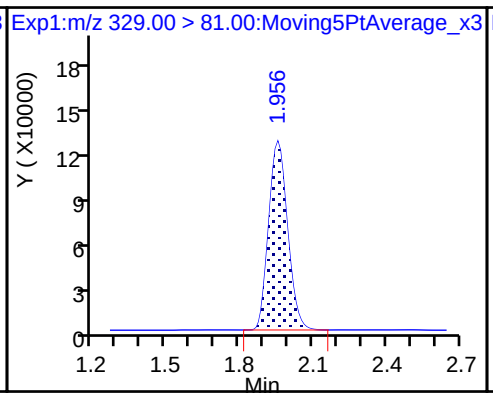
5 Perfluorobutanesulfonic acid



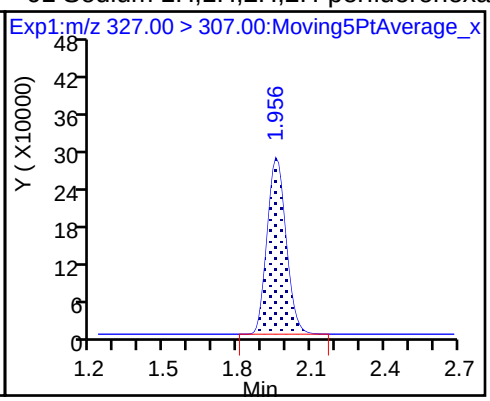
5 Perfluorobutanesulfonic acid



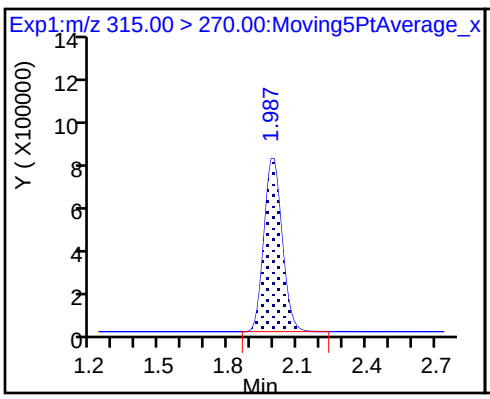
D 60 M2-4:2FTS



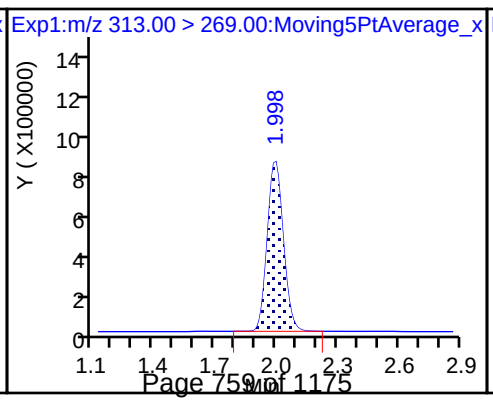
61 Sodium 1H,1H,2H,2H-perfluorohexane



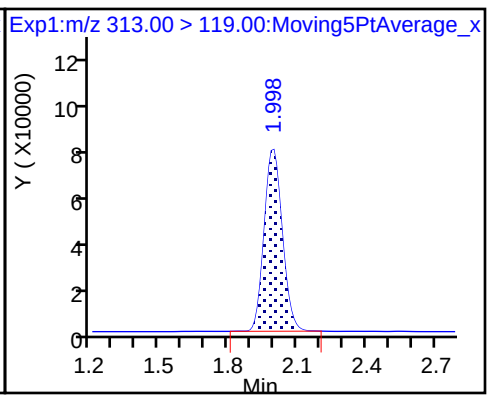
D 7 13C2 PFHxA



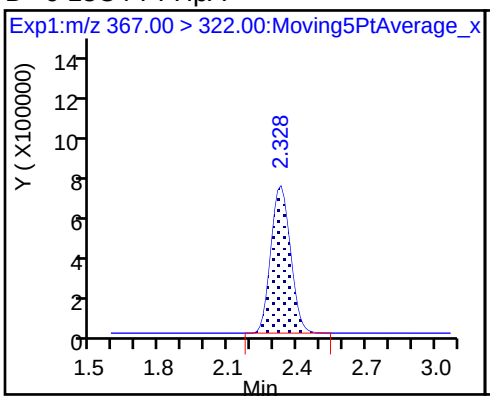
6 Perfluorohexanoic acid



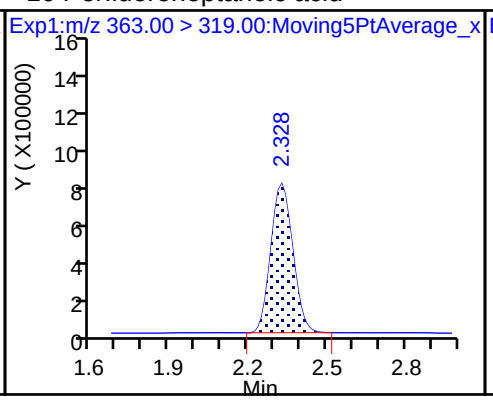
6 Perfluorohexanoic acid



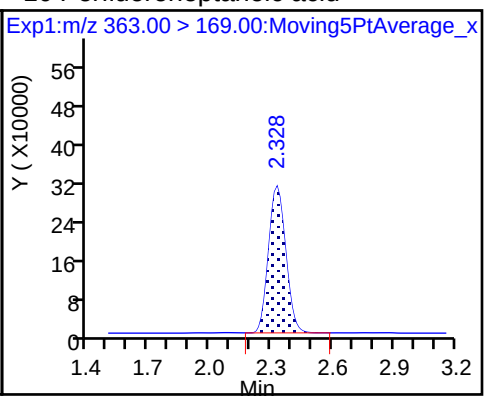
D 9 13C4-PFHpA



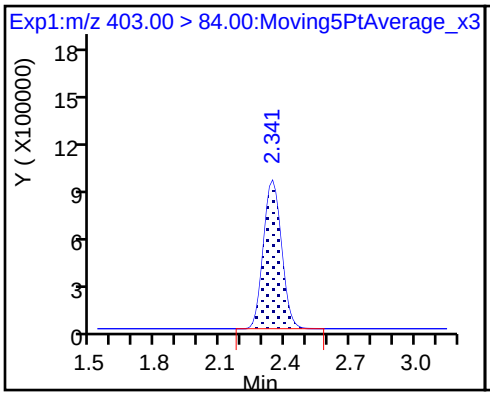
10 Perfluoroheptanoic acid



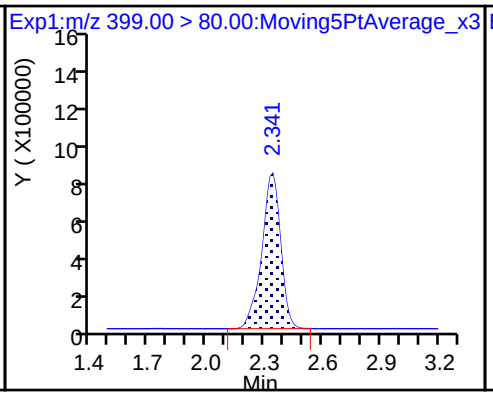
10 Perfluoroheptanoic acid



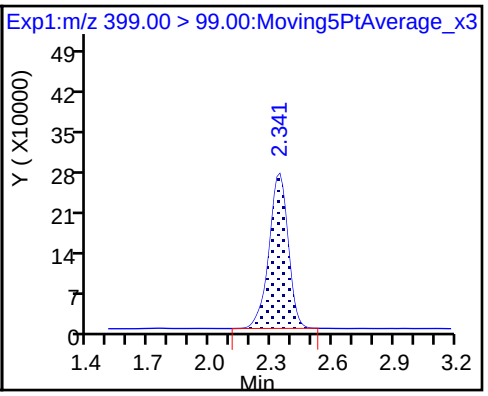
D 11 18O2 PFHxS



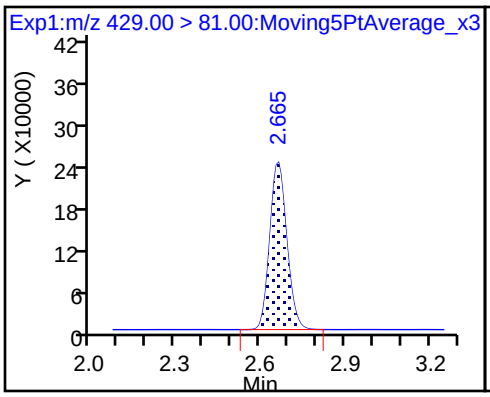
8 Perfluorohexanesulfonic acid



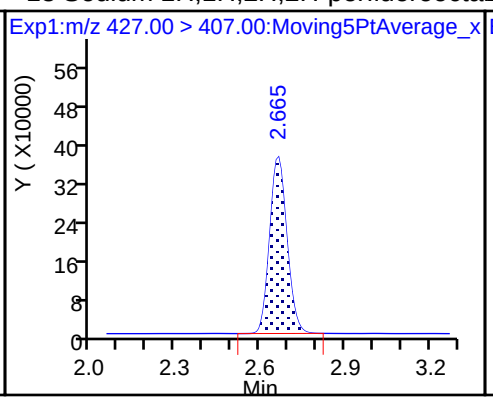
8 Perfluorohexanesulfonic acid



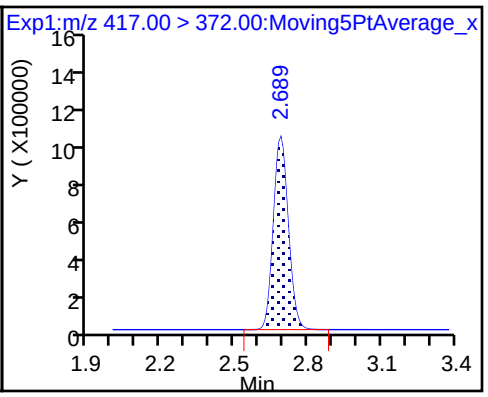
D 12 M2-6:2FTS



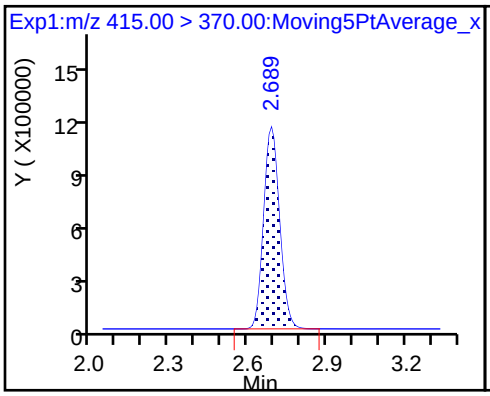
13 Sodium 1H,1H,2H,2H-perfluorooctane



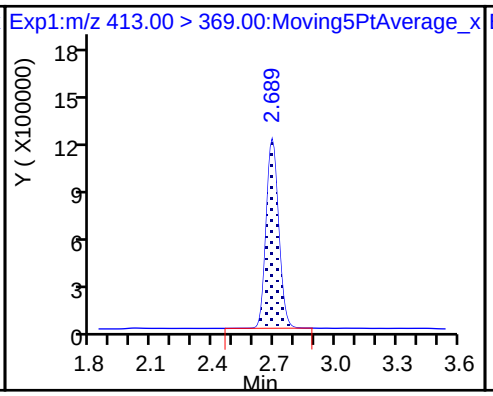
D 14 13C4 PFOA



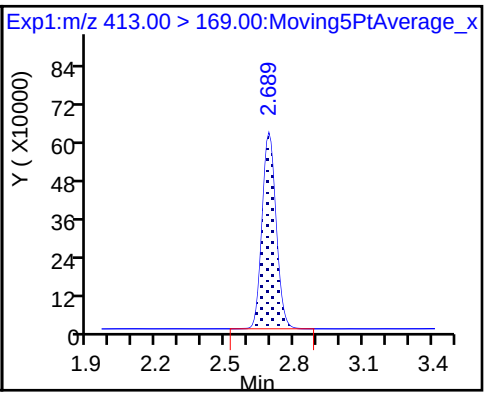
* 62 13C2-PFOA



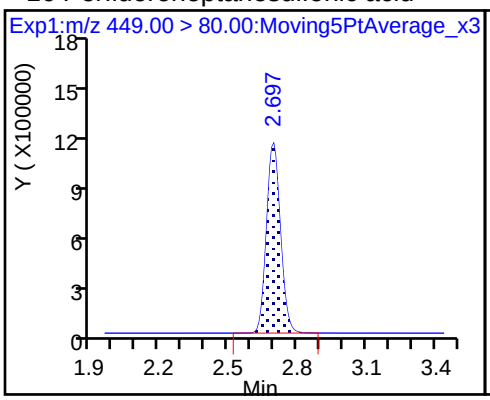
15 Perfluorooctanoic acid



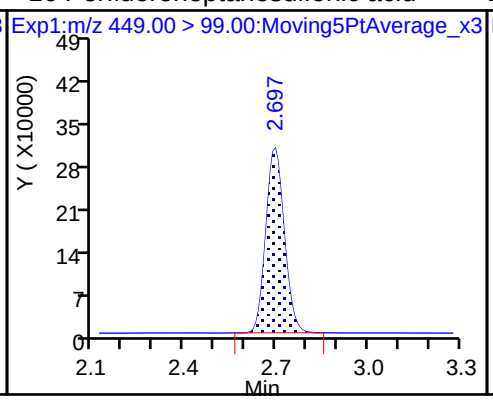
15 Perfluorooctanoic acid



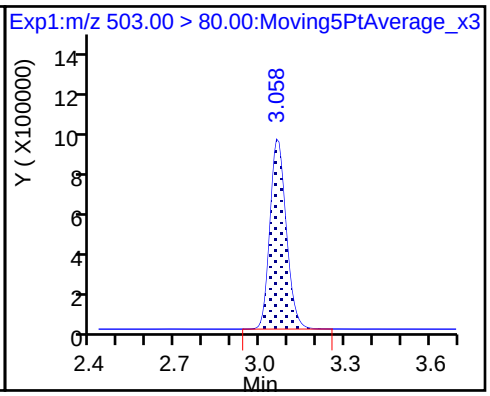
16 Perfluoroheptanesulfonic acid



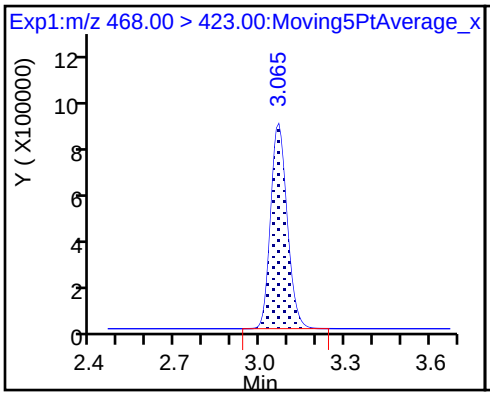
16 Perfluoroheptanesulfonic acid



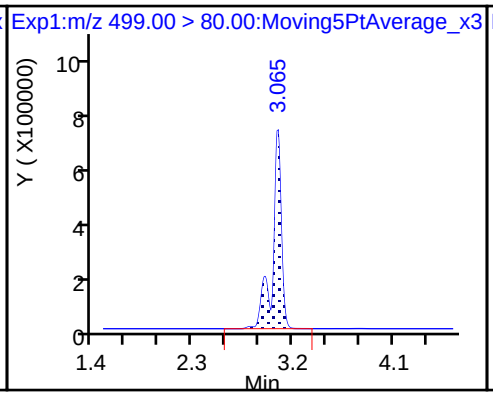
D 18 13C4 PFOS



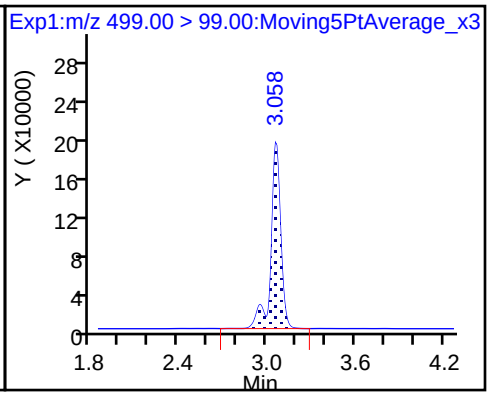
D 19 13C5 PFNA



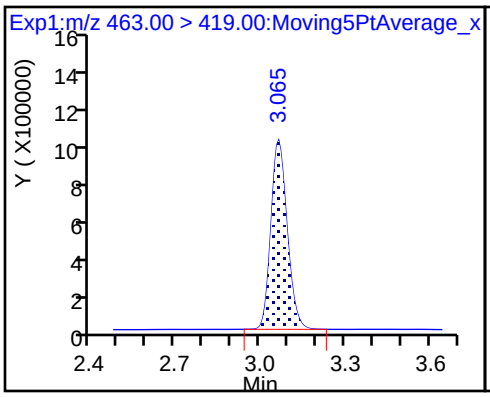
17 Perfluorooctane sulfonic acid



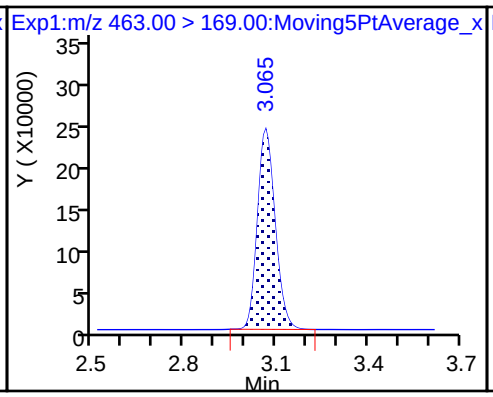
17 Perfluorooctane sulfonic acid



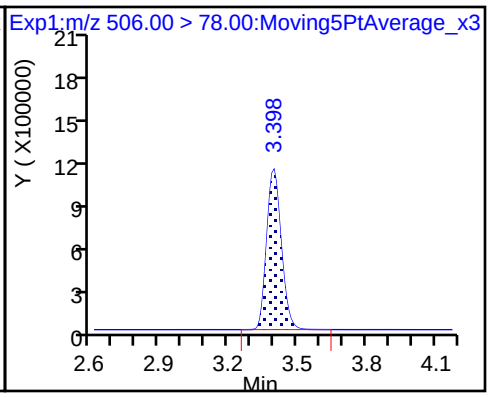
20 Perfluorononanoic acid



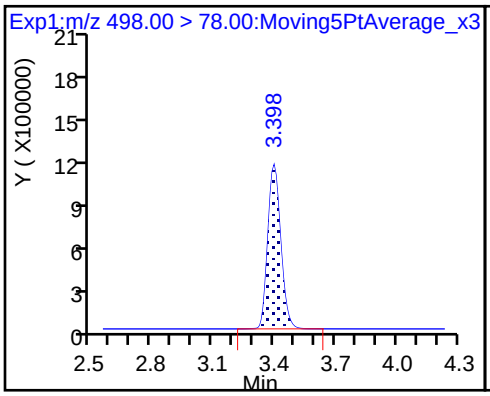
20 Perfluorononanoic acid



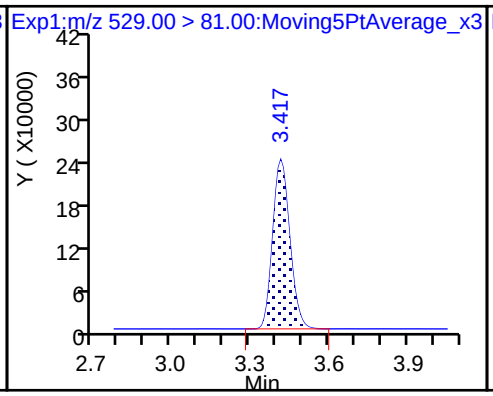
D 21 13C8 FOSA



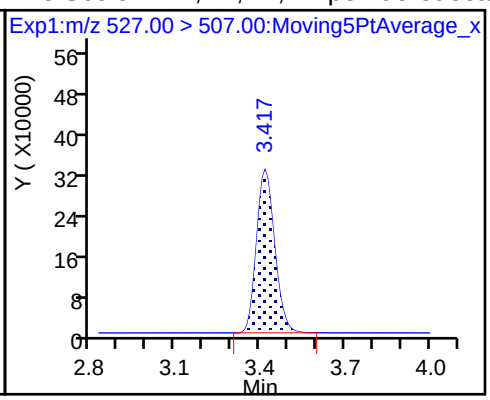
22 Perfluorooctane Sulfonamide



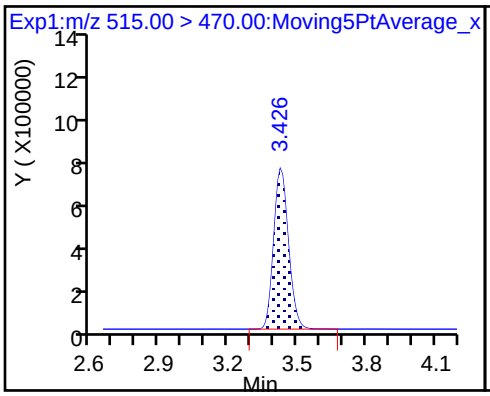
D 26 M2-8:2FTS



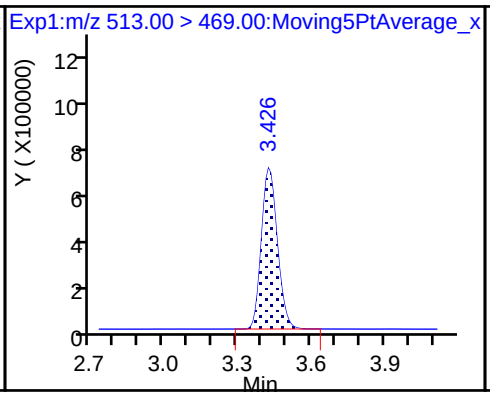
25 Sodium 1H,1H,2H,2H-perfluorodecane



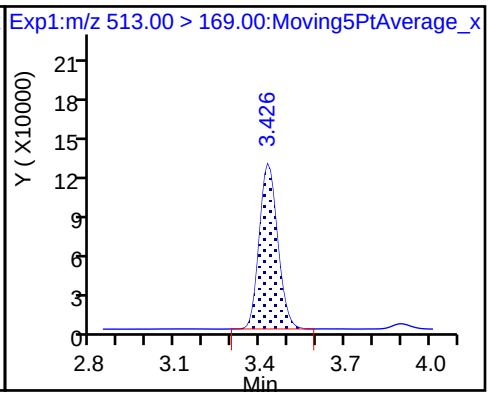
D 23 13C2 PFDA



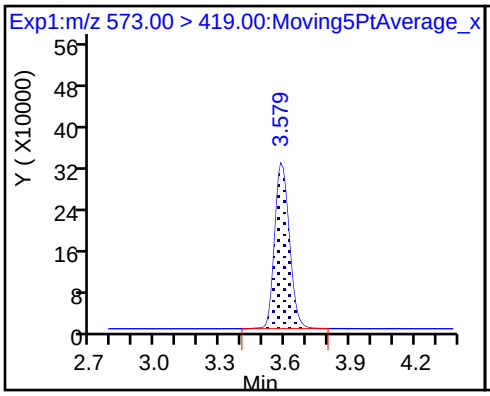
24 Perfluorodecanoic acid



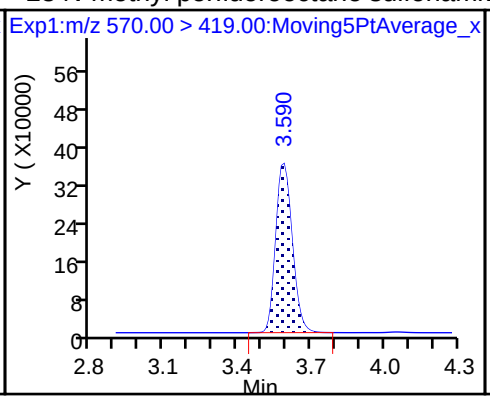
24 Perfluorodecanoic acid



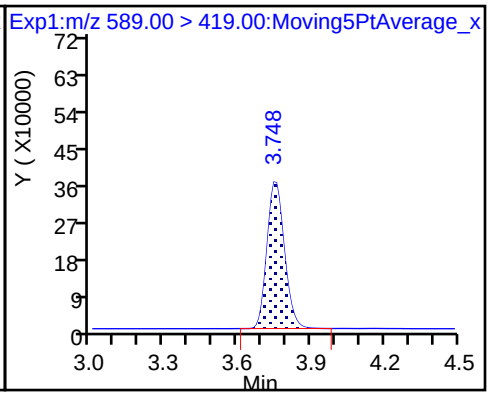
D 27 d3-NMeFOSAA



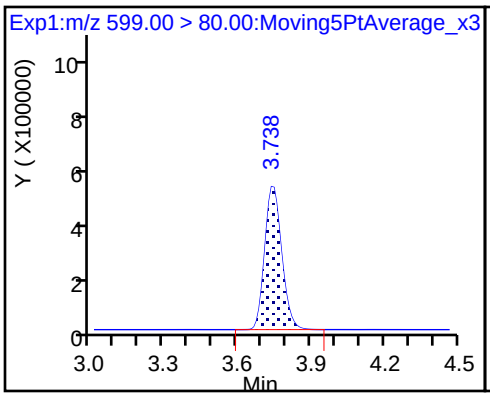
28 N-methyl perfluorooctane sulfonami



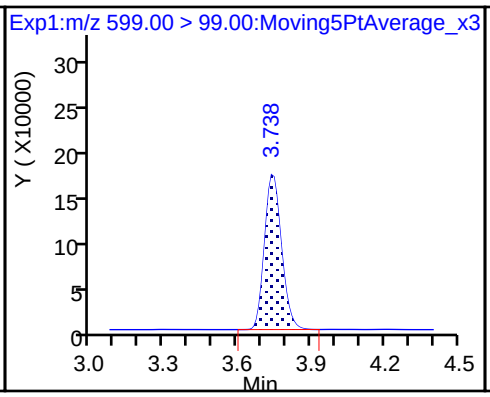
D 32 d5-NEtFOSAA



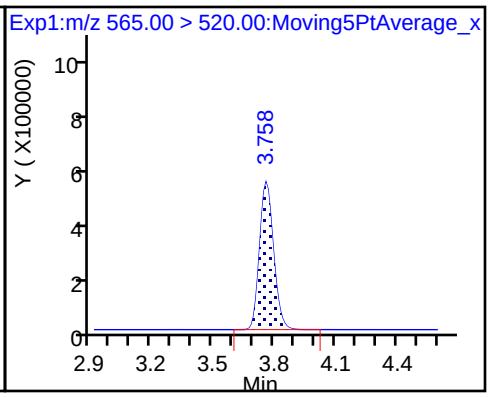
29 Perfluorodecane Sulfonic acid



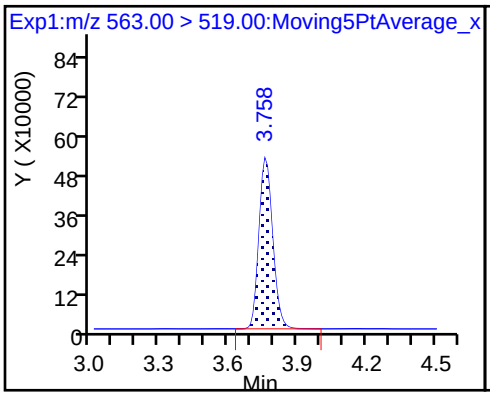
29 Perfluorodecane Sulfonic acid



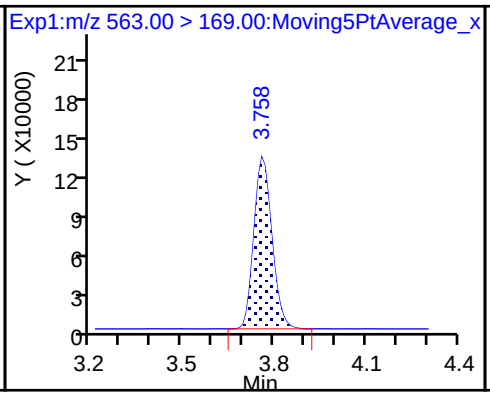
D 30 13C2 PFUnA



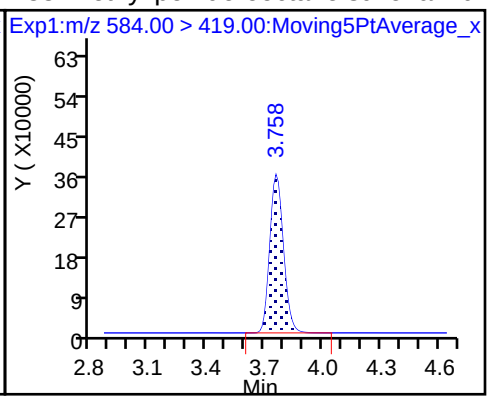
31 Perfluoroundecanoic acid



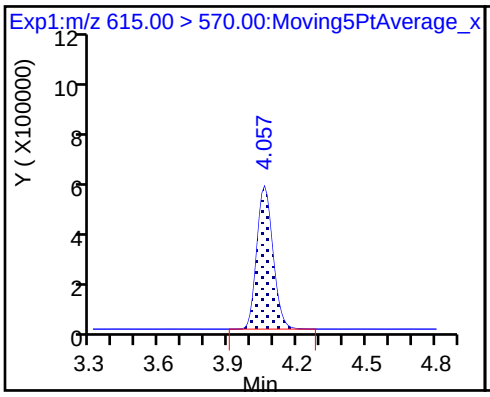
31 Perfluoroundecanoic acid



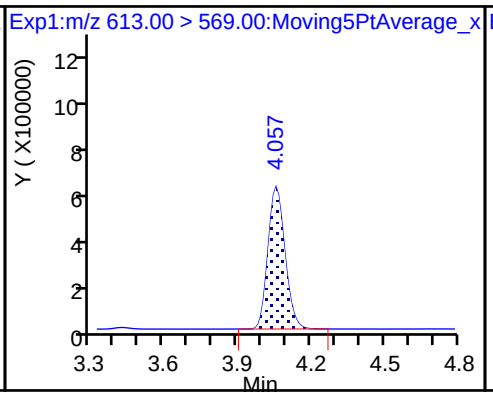
33 N-ethyl perfluorooctane sulfonamid



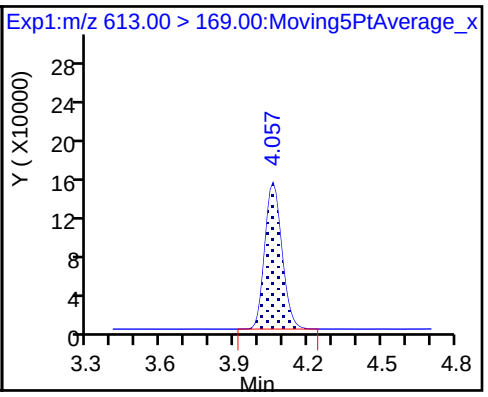
D 36 13C2 PFDoA



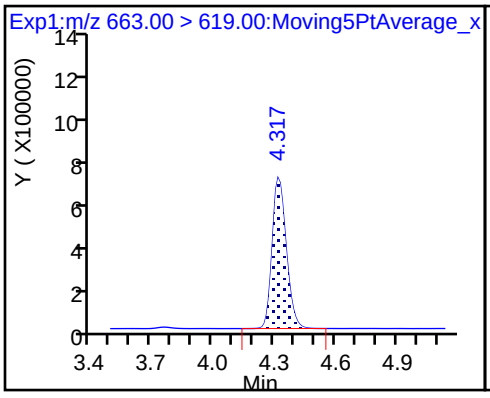
37 Perfluorododecanoic acid



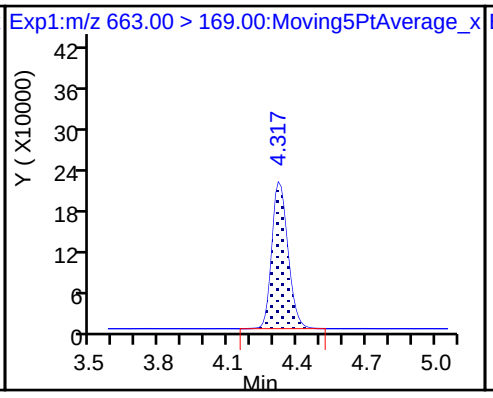
37 Perfluorododecanoic acid



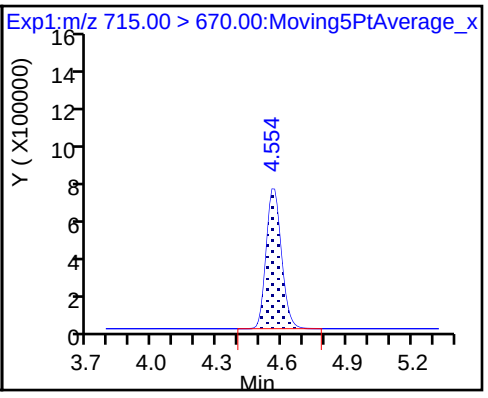
41 Perfluorotridecanoic acid



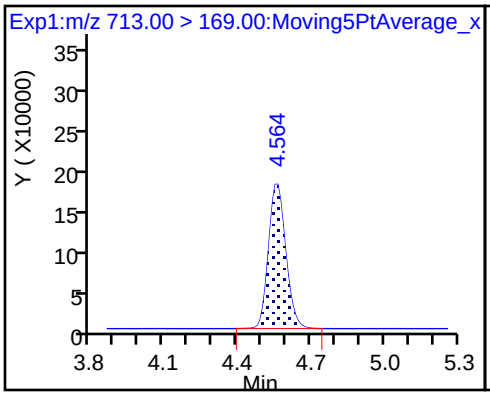
41 Perfluorotridecanoic acid



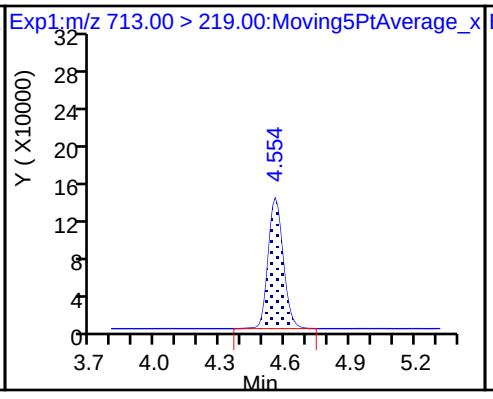
D 43 13C2-PFTeDA



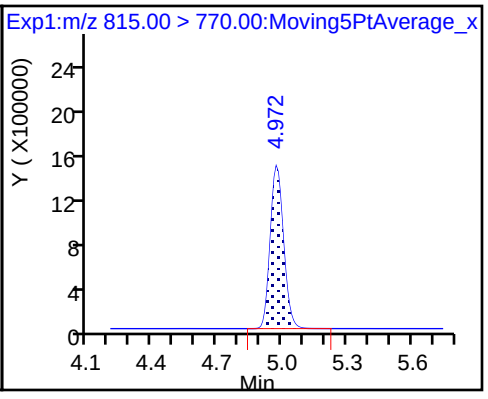
42 Perfluorotetradecanoic acid



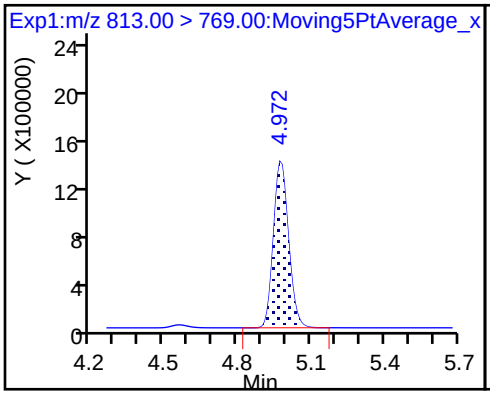
42 Perfluorotetradecanoic acid



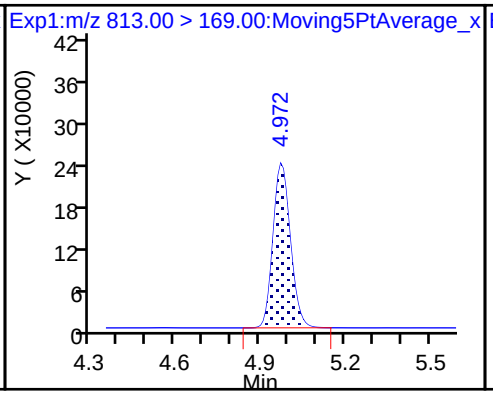
D 44 13C2-PFHxDA



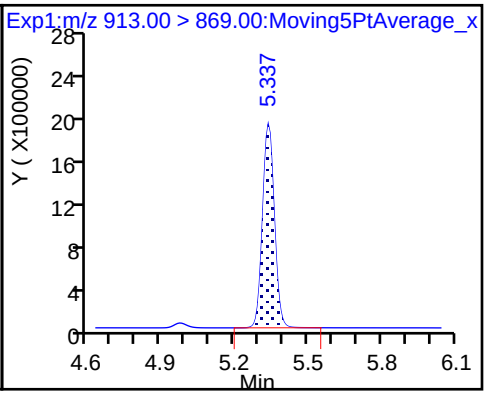
45 Perfluorohexadecanoic acid



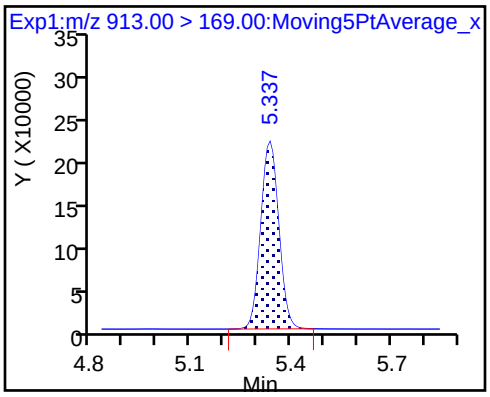
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/22 Calibration Date: 03/27/2018 04:00

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_072.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9087		0.964	1.00	-3.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.106		0.981	1.00	-1.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	75.22		0.856	0.884	-3.2	50.0
4:2 FTS	AveID	16.15	17.36		1.00	0.934	7.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9696		0.948	1.00	-5.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9433		0.912	1.00	-8.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.046		0.855	0.910	-6.1	40.0
6:2FTS	AveID	1.744	1.660		0.902	0.948	-4.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.093		0.967	1.00	-3.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.303		0.968	0.952	1.7	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.017		1.02	1.00	1.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.055		0.879	0.928	-5.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9661		0.980	1.00	-2.0	40.0
8:2FTS	AveID	1.276	1.280		0.961	0.958	0.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9845		0.996	1.00	-0.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.064		1.06	1.00	6.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6382		0.905	0.964	-6.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8979		0.961	1.00	-3.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7961		0.923	1.00	-7.7	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.013		0.968	1.00	-3.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.160		1.05	1.00	5.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2547		1.03	1.00	2.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9074		0.974	1.00	-2.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9269		1.00	1.00	0.2	50.0
13C4 PFBA	Ave	1.266	1.408		2.78	2.50	11.2	50.0
13C5 PFPeA	Ave	0.8399	0.9257		2.76	2.50	10.2	50.0
13C3-PFBS	Ave	0.0192	0.0212		2.57	2.33	10.6	50.0
M2-4:2FTS	Ave	0.1324	0.1675		2.96	2.34	26.6	50.0
13C2 PFHxA	Ave	0.9288	1.021		2.75	2.50	9.9	50.0
13C4-PFHpA	Ave	0.9164	1.018		2.78	2.50	11.1	50.0
18O2 PFHxS	Ave	1.130	1.235		2.58	2.37	9.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/22 Calibration Date: 03/27/2018 04:00

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_072.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2348		2.94	2.38	23.6	40.0
13C4 PFOA	Ave	0.9374	0.9911		2.64	2.50	5.7	50.0
13C4 PFOS	Ave	0.8225	0.8577		2.49	2.39	4.3	50.0
13C5 PFNA	Ave	0.8266	0.8364		2.53	2.50	1.2	50.0
13C8 FOSA	Ave	1.109	1.157		2.61	2.50	4.3	50.0
M2-8:2FTS	Ave	0.2565	0.2675		2.50	2.40	4.3	40.0
13C2 PFDA	Ave	0.7245	0.7225		2.49	2.50	-0.3	50.0
d3-NMeFOSAA	Ave	0.3814	0.3586		2.35	2.50	-6.0	50.0
d5-NEtFOSAA	Ave	0.4345	0.4163		2.40	2.50	-4.2	50.0
13C2 PFUnA	Ave	0.6482	0.5940		2.29	2.50	-8.4	50.0
13C2 PFDoA	Ave	0.7355	0.6634		2.26	2.50	-9.8	50.0
13C2-PFTeDA	Ave	0.8983	0.7940		2.21	2.50	-11.6	50.0
13C2-PFHxDA	Ave	1.473	1.453		2.47	2.50	-1.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_072.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 27-Mar-2018 04:00:11 ALS Bottle#: 13 Worklist Smp#: 22
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:44:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	6608483	2.78		111	92098	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.004	2402061	0.9644		96.4	688	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	4345890	2.76		110	144033	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	1922843	0.9810		98.1	945	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.648	92599	2.57		111	540	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2648240	0.8557		96.8	17005	
298.90 > 99.00	1.735	1.744	-0.009	1.000	1125283		2.35(1.25-3.74)		4489	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.946	0.009	0.730	734642	2.96		127	8781	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	645615	1.00		107	40506	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	4793655	2.75		110	148769	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.986	0.0	1.000	1859236	0.9484		94.8	2760	
313.00 > 119.00	1.986	1.986	0.0	1.000	165050		11.26(5.03-15.10)		2054	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	4779821	2.78		111	90429	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	1803460	0.9118		91.2	1512	
363.00 > 169.00	2.315	2.315	0.0	1.000	722591		2.50(1.13-3.40)		2302	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.328	-0.001	0.869	5485676	2.58		109	72398	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.327	0.0	1.000	2207070	0.8549		93.9	10526	
399.00 > 99.00	2.327	2.327	0.0	1.000	711195		3.10(1.50-4.49)		1583	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.649	0.006	0.991	1047373	2.94		124	23048	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.655	0.0	1.000	693782	0.9023		95.2	6588	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.681	-0.002	1.000	4652844	2.64		106	79927	
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.679	0.0		4694876	2.50			58735	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.679	2.679	0.0	1.000	2033527	0.9672		96.7	664	
413.00 > 169.00	2.679	2.679	0.0	1.000	1066090		1.91(0.84-2.52)		2921	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.687	2.687	0.0	1.000	1998320	0.9683		102	40099	
449.00 > 99.00	2.687	2.687	0.0	1.000	559226		3.57(1.94-5.82)		4976	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.139	3849494	2.49		104	58192	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.051	0.0	1.139	3926738	2.53		101	90618	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.051	0.0	1.000	1577432	0.8792		94.7	13848	
499.00 > 99.00	3.051	3.051	0.0	1.000	354454		4.45(2.31-6.93)		4661	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.051	0.0	1.000	1596931	1.02		102	2336	
463.00 > 169.00	3.051	3.051	0.0	1.000	407133		3.92(1.90-5.69)		7376	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.389	-0.009	1.262	5430052	2.61		104	54336	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.380	0.0	1.000	2098438	0.9800		98.0	53092	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.399	0.009	1.272	1202892	2.50		104	24197	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.407	0.0	1.000	615881	0.9608		100	8100	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.417	-0.001	1.275	3392079	2.49		99.7	59047	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.416	0.0	1.000	1335853	1.00		99.6	6716	
513.00 > 169.00	3.416	3.416	0.0	1.000	260430		5.13(2.36-7.09)		4887	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.571	-0.001	1.333	1683725	2.35		94.0	33363	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.570	3.570	0.0	1.000	716722	1.06		106	5234	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.727	0.0	1.000	990922	0.9047		93.9	34868	
599.00 > 99.00	3.727	3.727	0.0	1.000	336275		2.95(1.39-4.16)		8904	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.738	0.0	1.395	1954329	2.40		95.8	11277	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.399	2788719	2.29		91.6	48391	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.748	0.0	1.000	888042	0.9234		92.3	4122	
563.00 > 169.00	3.748	3.748	0.0	1.000	231838		3.83(2.12-6.36)		9315	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.748	0.0	1.003	701950	0.9612		96.1	20608	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.511	3114506	2.25		90.2	20199	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.046	0.0	1.000	1261451	0.9677		96.8	1124	
613.00 > 169.00	4.046	4.046	0.0	1.000	306737		4.11(2.13-6.40)		4557	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	1444946	1.05		105	1043	
663.00 > 169.00	4.307	4.307	0.0	1.000	458377		3.15(1.25-3.76)		7453	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.543	0.0	1.696	3727705	2.21		88.4	19564	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.543	0.0	1.000	379767	1.03		103	4971	
713.00 > 219.00	4.543	4.543	0.0	1.000	263798		1.44(0.71-2.13)		6154	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.955	0.009	1.853	6822232	2.47		98.7	15799	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.964	0.0	1.000	2476127	0.9741		97.4	798	
813.00 > 169.00	4.964	4.964	0.0	1.000	425667		5.82(2.86-8.58)		4390	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.330	0.0	1.000	2529283	1.00		100	719	
913.00 > 169.00	5.330	5.330	0.0	1.000	318794		7.93(3.83-11.48)		3388	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2018 10:44:10 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_072.d

Injection Date: 27-Mar-2018 04:00:11 Instrument ID: A8_N

Lims ID: CCV L4

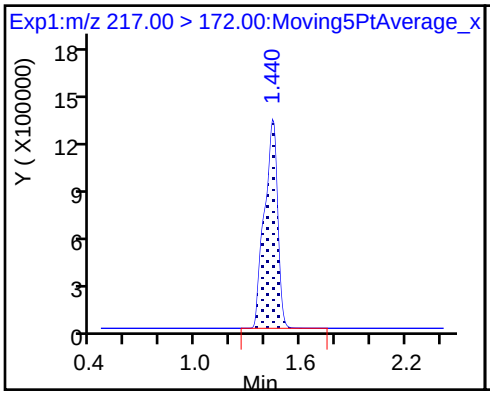
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 22

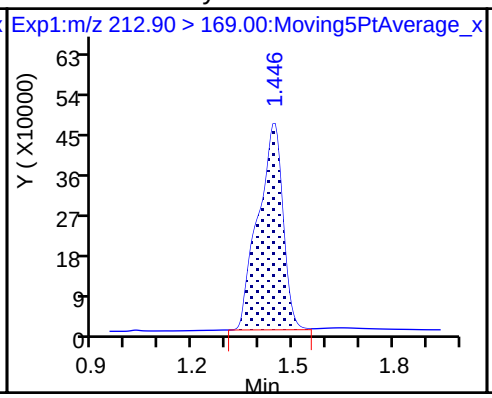
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

D 1 13C4 PFBA



2 Perfluorobutyric acid



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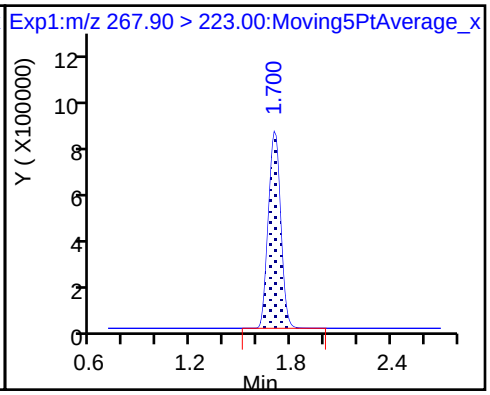
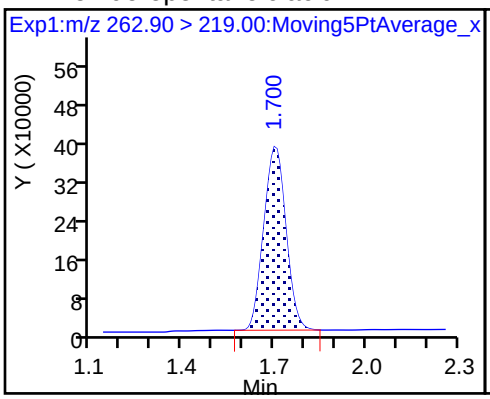
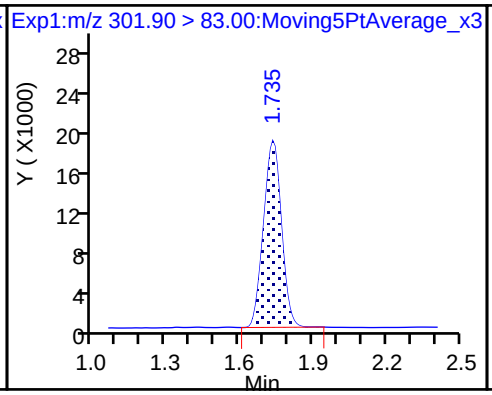


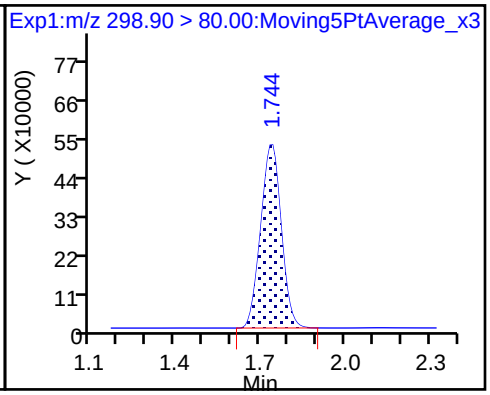
4 Perfluoropentanoic acid



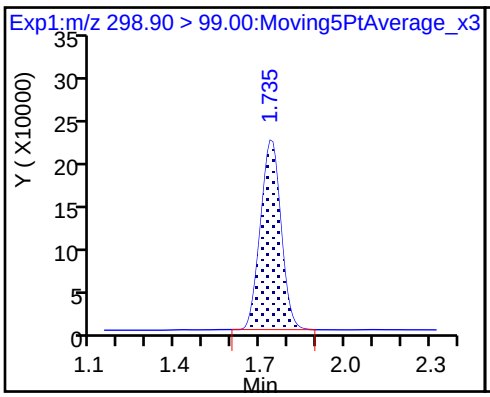
D 47 13C3-PFBS



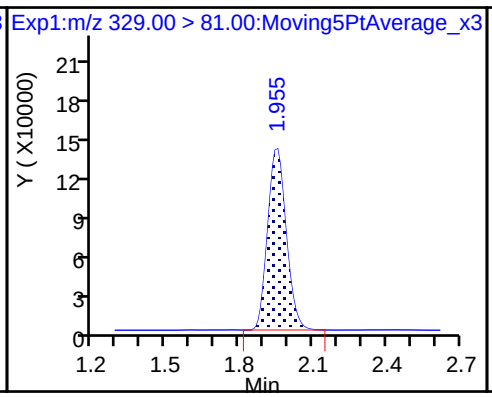
5 Perfluorobutanesulfonic acid



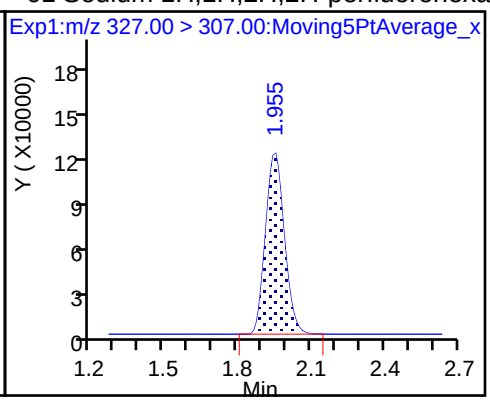
5 Perfluorobutanesulfonic acid



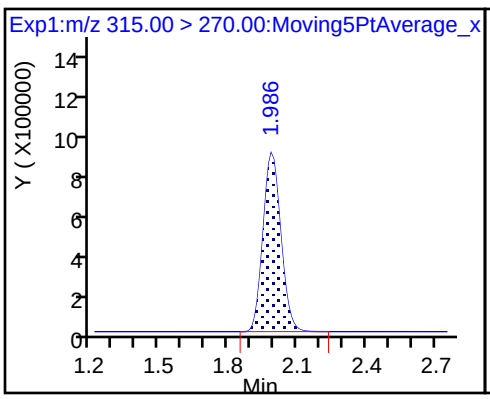
D 60 M2-4:2FTS



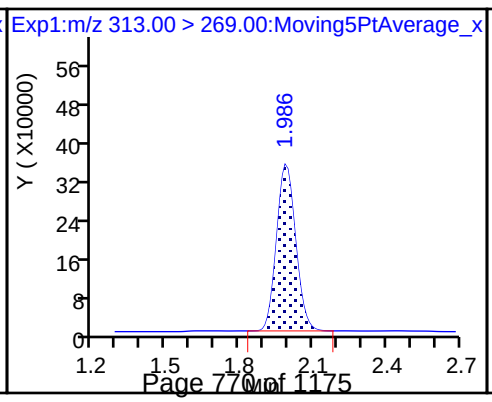
61 Sodium 1H,1H,2H,2H-perfluorohexane



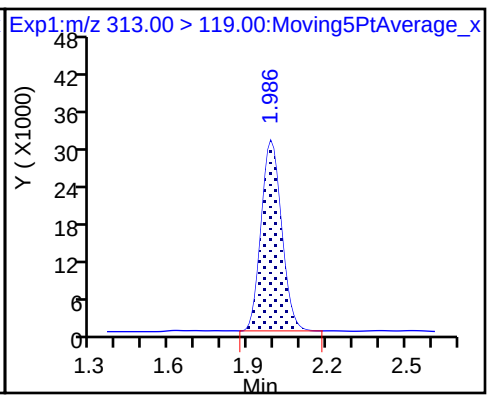
D 7 13C2 PFHxA



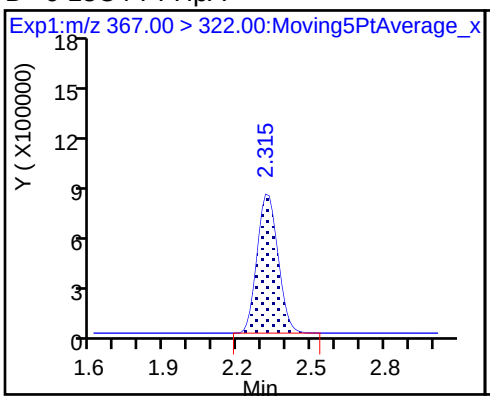
6 Perfluorohexanoic acid



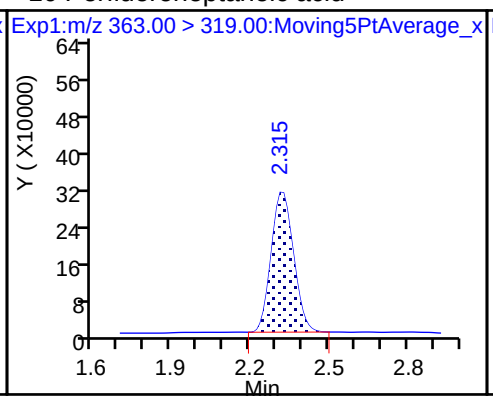
6 Perfluorohexanoic acid



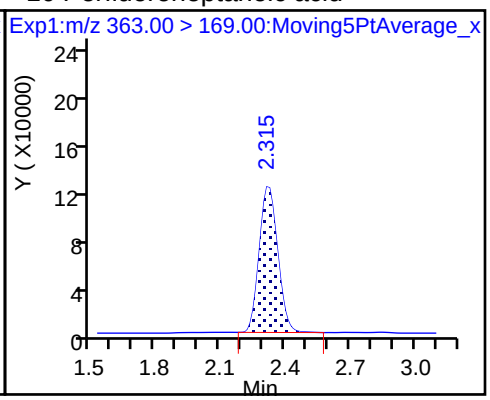
D 9 13C4-PFHpA



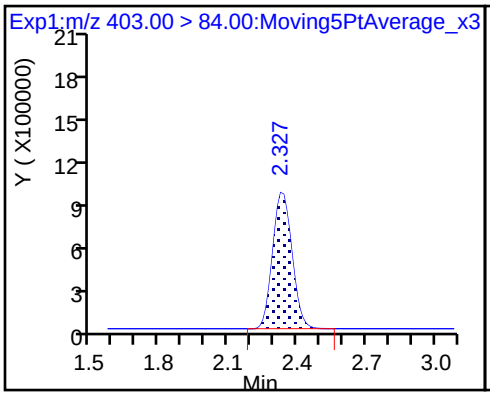
10 Perfluoroheptanoic acid



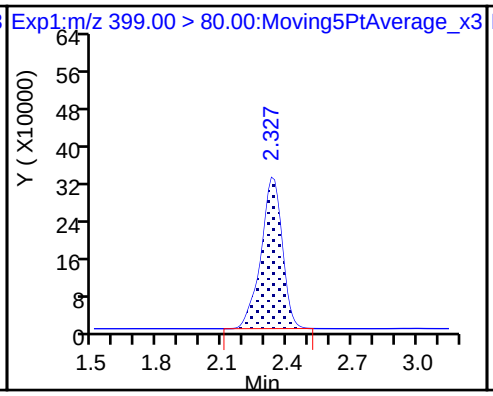
10 Perfluoroheptanoic acid



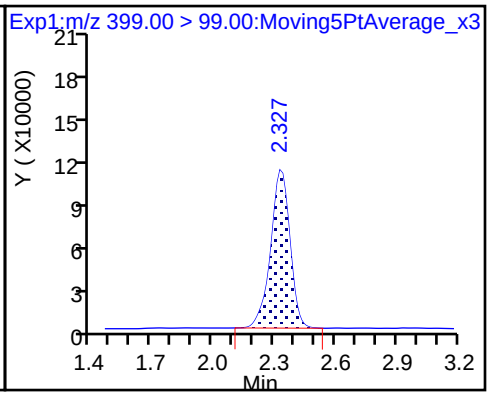
D 11 18O2 PFHxS



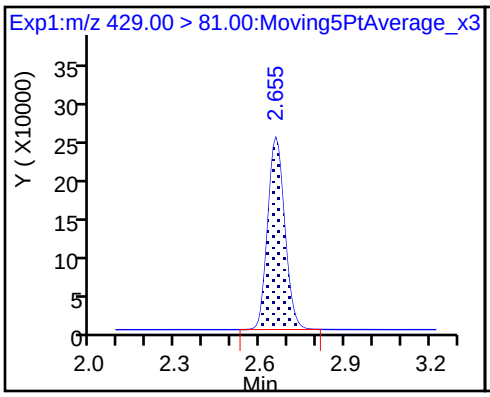
8 Perfluorohexanesulfonic acid



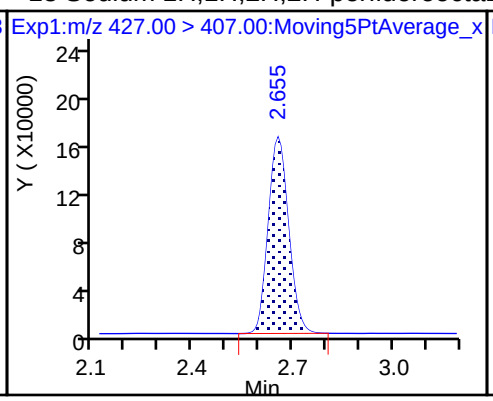
8 Perfluorohexanesulfonic acid



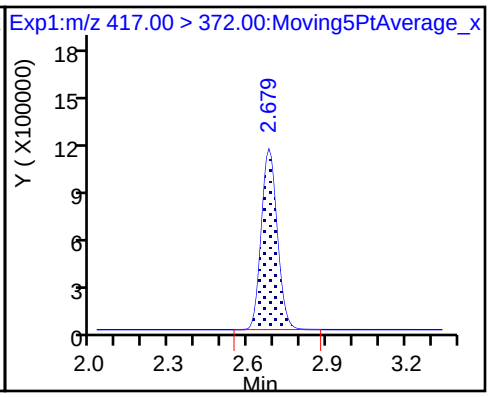
D 12 M2-6:2FTS



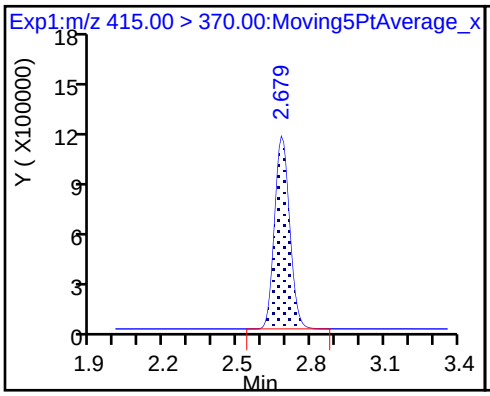
13 Sodium 1H,1H,2H,2H-perfluorooctane



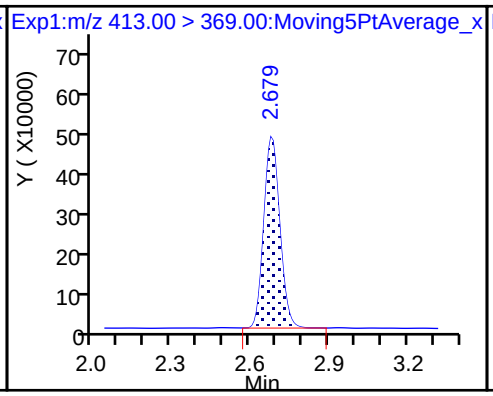
D 14 13C4 PFOA



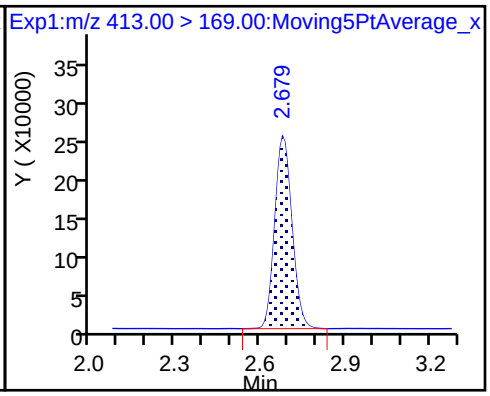
* 62 13C2-PFOA



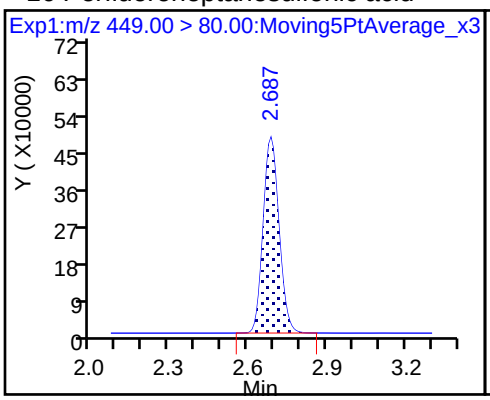
15 Perfluorooctanoic acid



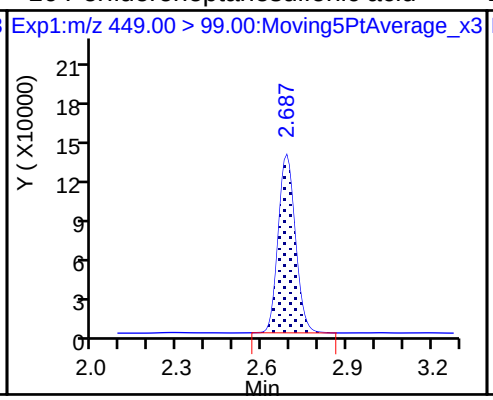
15 Perfluorooctanoic acid



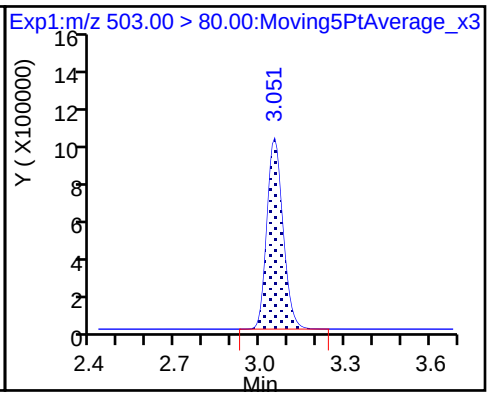
16 Perfluoroheptanesulfonic acid



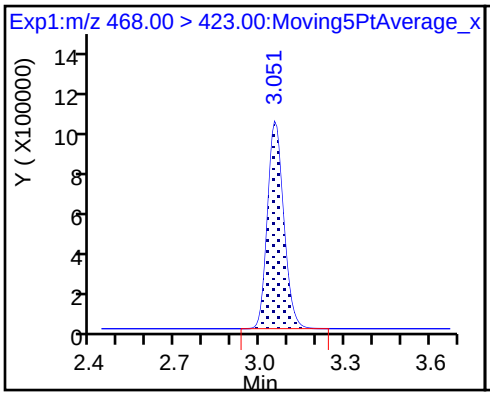
16 Perfluoroheptanesulfonic acid



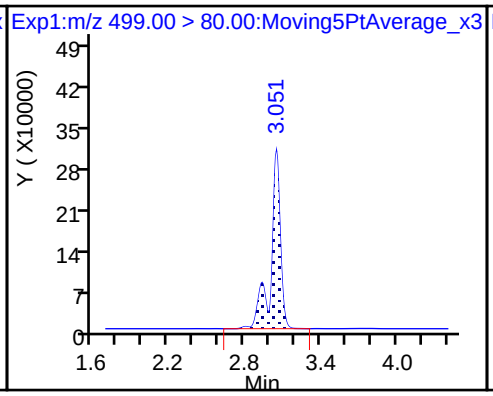
D 18 13C4 PFOS



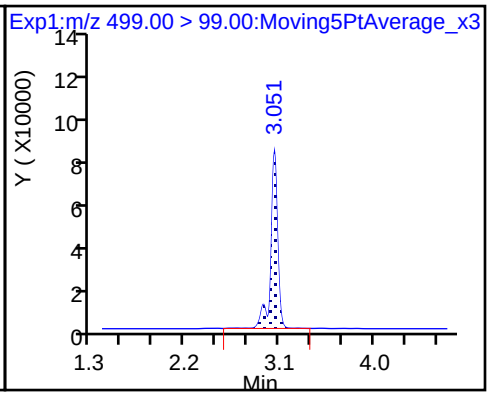
D 19 13C5 PFNA



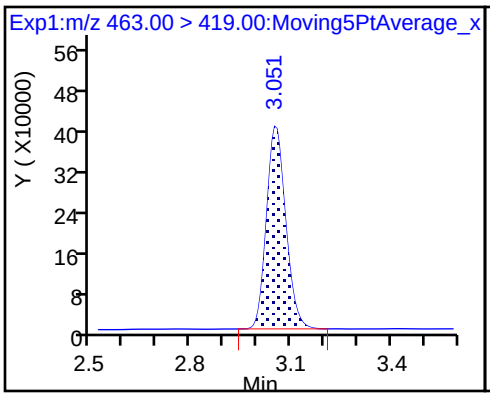
17 Perfluorooctane sulfonic acid



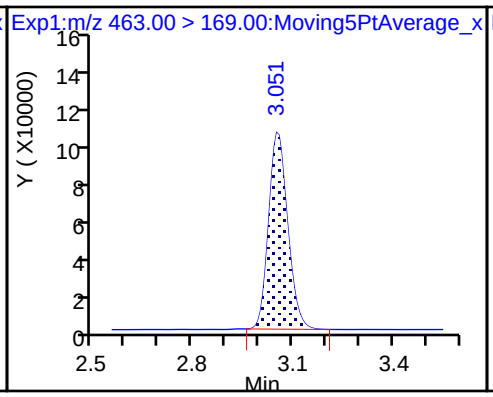
17 Perfluorooctane sulfonic acid



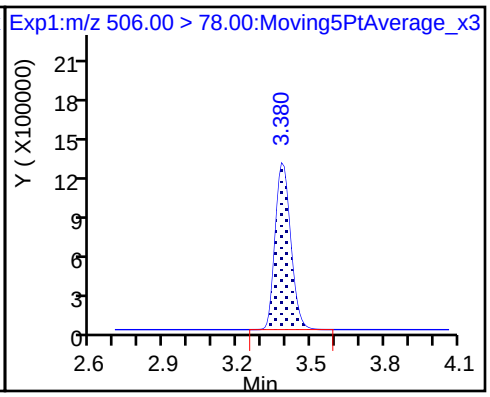
20 Perfluorononanoic acid



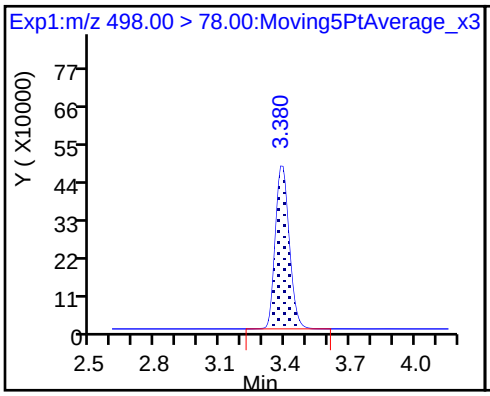
20 Perfluorononanoic acid



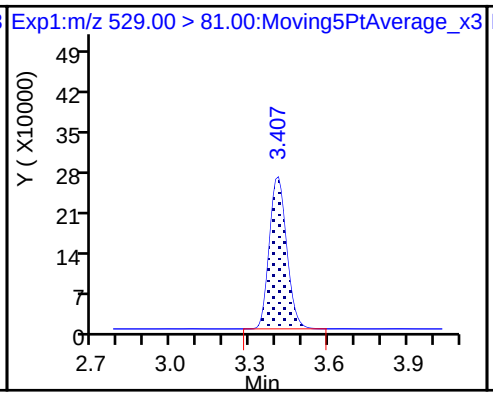
D 21 13C8 FOSA



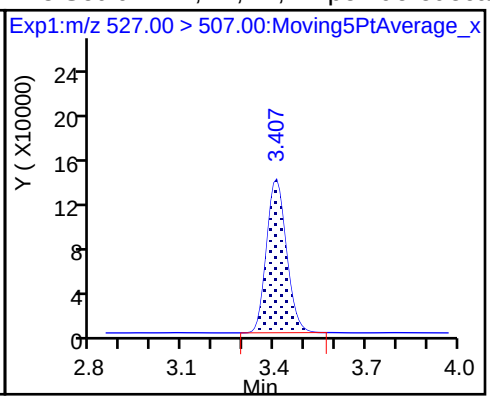
22 Perfluorooctane Sulfonamide



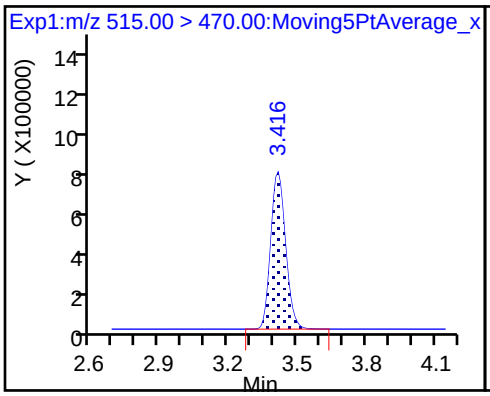
D 26 M2-8:2FTS



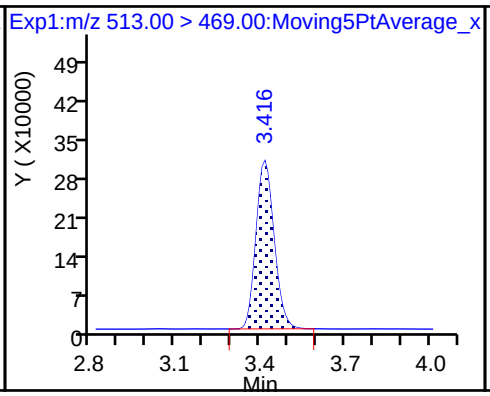
25 Sodium 1H,1H,2H,2H-perfluorodecane



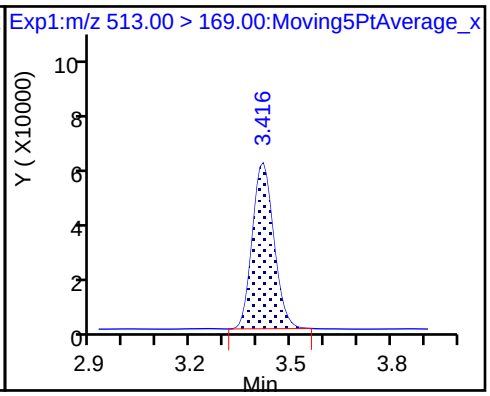
D 23 13C2 PFDA



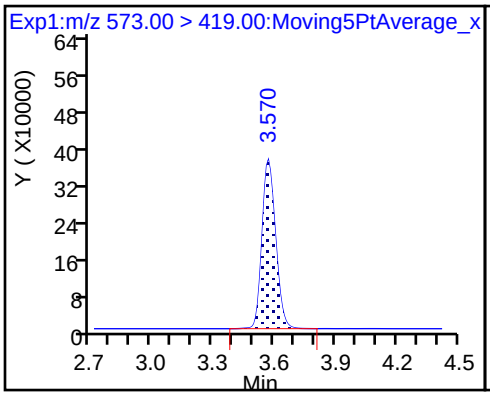
24 Perfluorodecanoic acid



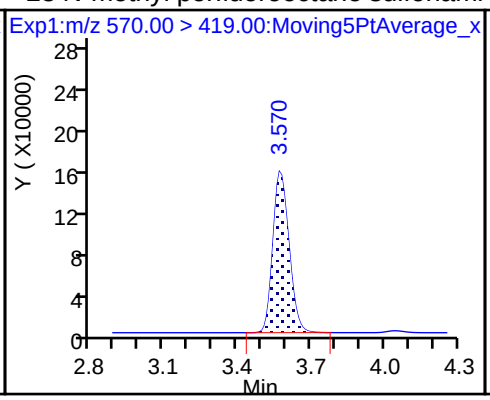
24 Perfluorodecanoic acid



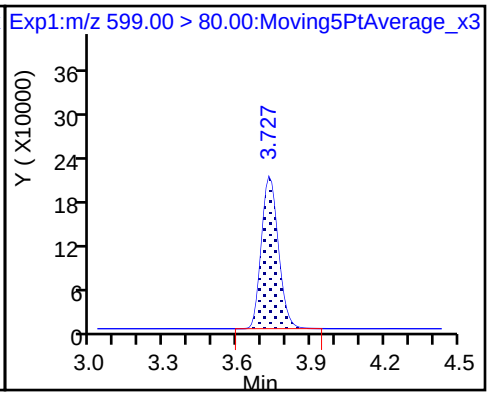
D 27 d3-NMeFOSAA



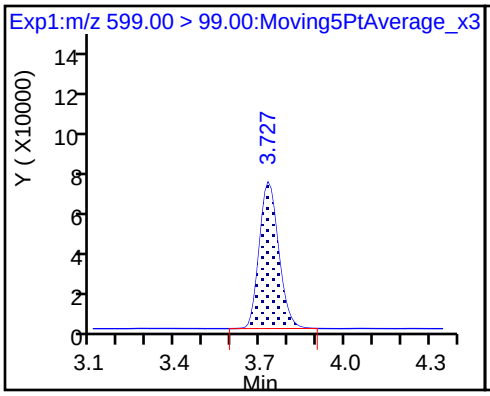
28 N-methyl perfluorooctane sulfonami



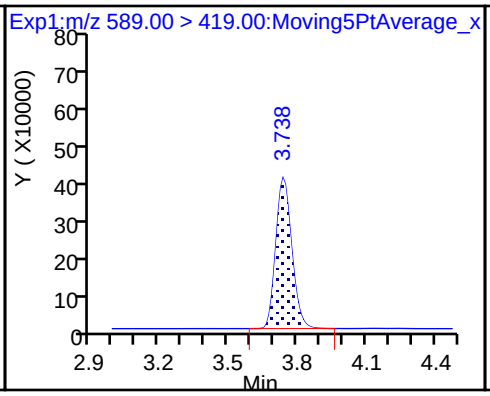
29 Perfluorodecane Sulfonic acid



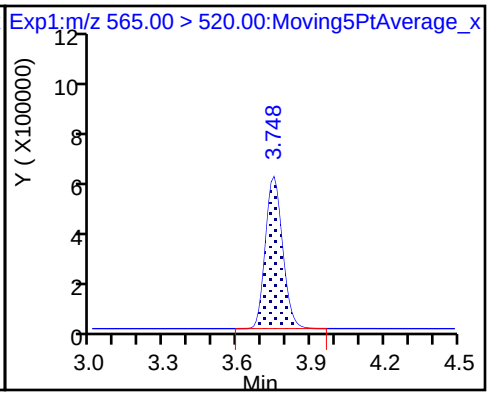
29 Perfluorodecane Sulfonic acid



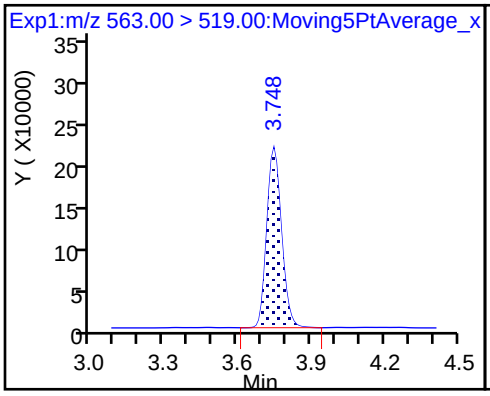
D 32 d5-NEtFOSAA



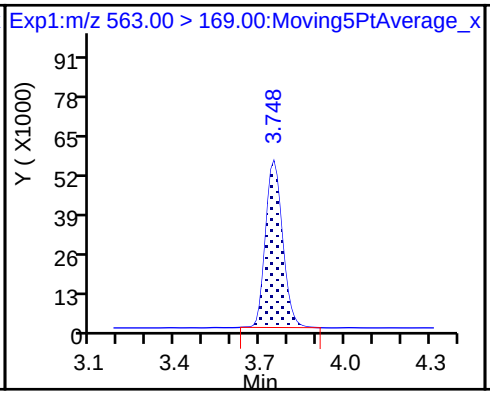
D 30 13C2 PFUnA



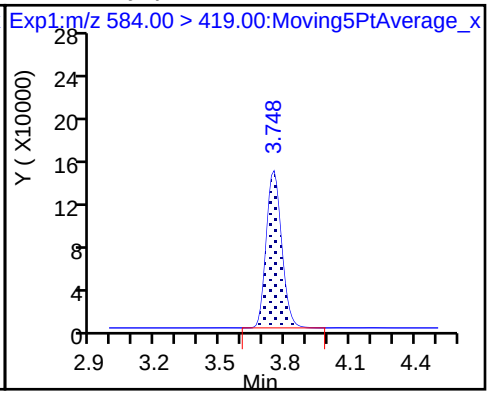
31 Perfluoroundecanoic acid



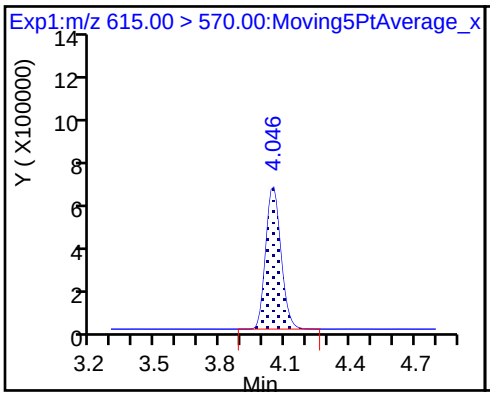
31 Perfluoroundecanoic acid



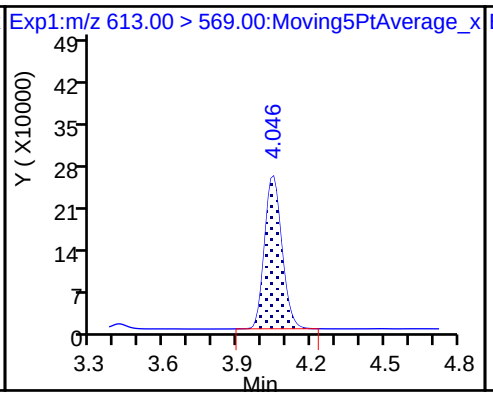
33 N-ethyl perfluorooctane sulfonamid



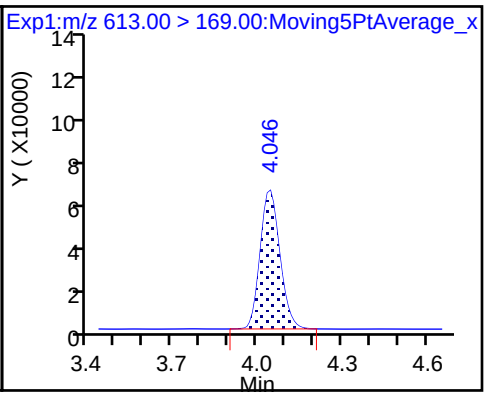
D 36 13C2 PFDoA



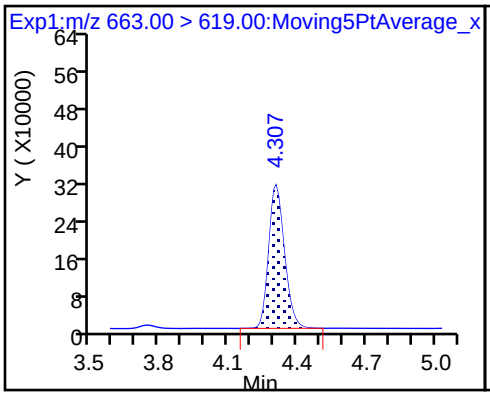
37 Perfluorododecanoic acid



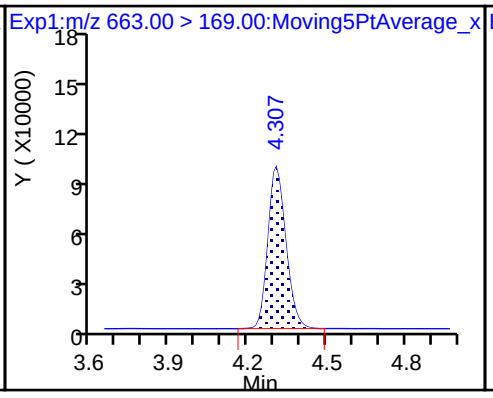
37 Perfluorododecanoic acid



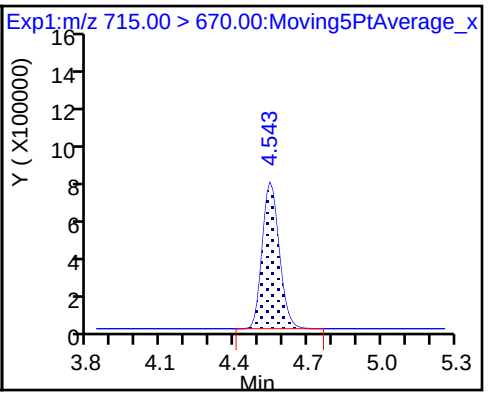
41 Perfluorotridecanoic acid



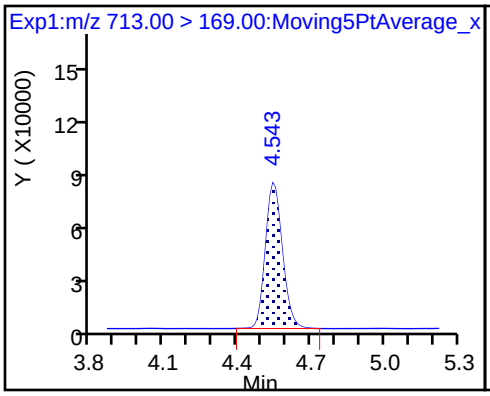
41 Perfluorotridecanoic acid



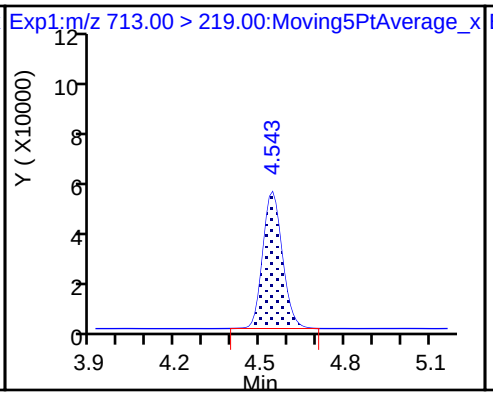
D 43 13C2-PFTeDA



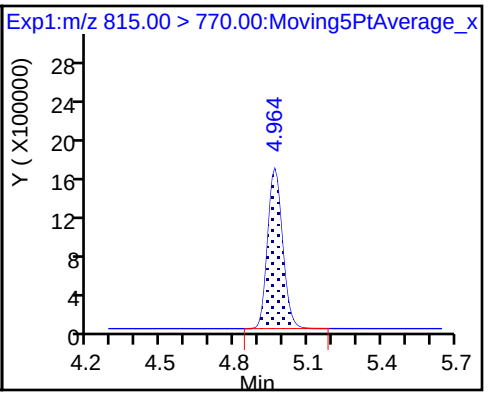
42 Perfluorotetradecanoic acid



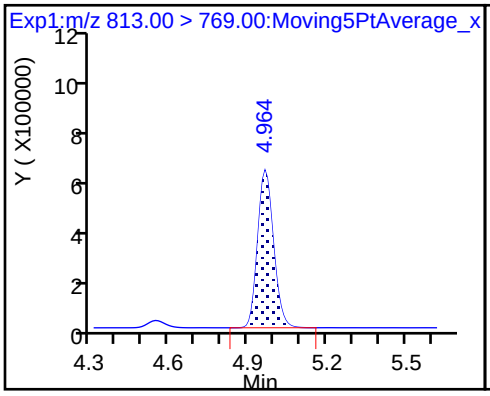
42 Perfluorotetradecanoic acid



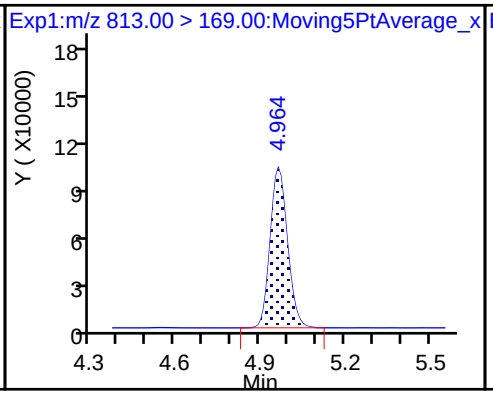
D 44 13C2-PFHxDA



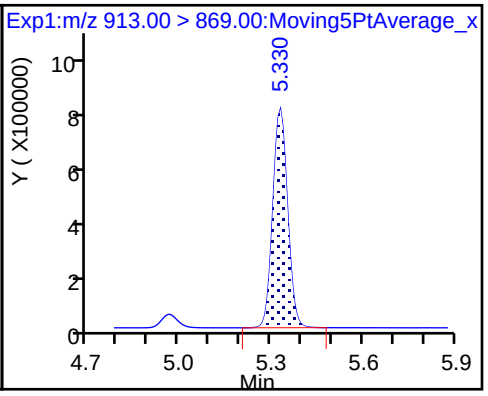
45 Perfluorohexadecanoic acid



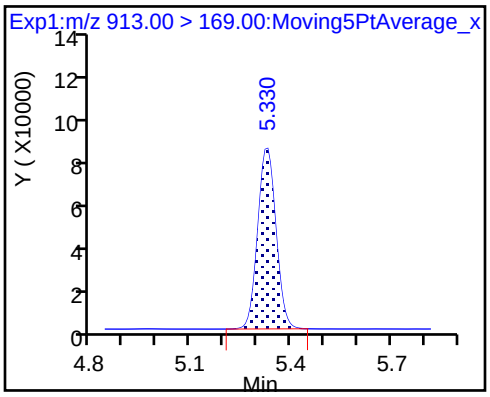
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/28 Calibration Date: 03/27/2018 04:47

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_078.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9690		2.57	2.50	2.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.154		2.56	2.50	2.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.88		2.24	2.21	1.5	50.0
4:2 FTS	AveID	16.15	18.99		2.75	2.34	17.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.014		2.48	2.50	-0.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.070		2.59	2.50	3.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.090		2.23	2.28	-2.1	40.0
6:2FTS	AveID	1.744	1.767		2.40	2.37	1.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.185		2.62	2.50	4.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.308		2.43	2.38	2.1	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.015		2.54	2.50	1.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.109		2.31	2.32	-0.5	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9699		2.46	2.50	-1.6	40.0
8:2FTS	AveID	1.276	1.199		2.25	2.40	-6.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.013		2.56	2.50	2.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.101		2.75	2.50	10.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6713		2.38	2.41	-1.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.015		2.72	2.50	8.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8566		2.48	2.50	-0.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.081		2.58	2.50	3.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.168		2.65	2.50	6.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2608		2.63	2.50	5.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9360		2.55	2.50	2.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9799		2.65	2.50	6.0	50.0
13C4 PFBA	Ave	1.266	1.305		2.58	2.50	3.1	50.0
13C5 PFPeA	Ave	0.8399	0.8721		2.60	2.50	3.8	50.0
13C3-PFBS	Ave	0.0192	0.0204		2.47	2.33	6.2	50.0
M2-4:2FTS	Ave	0.1324	0.1546		2.73	2.34	16.8	50.0
13C2 PFHxA	Ave	0.9288	0.9602		2.58	2.50	3.4	50.0
13C4-PFHpA	Ave	0.9164	0.9122		2.49	2.50	-0.5	50.0
18O2 PFHxS	Ave	1.130	1.166		2.44	2.37	3.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-214957/28 Calibration Date: 03/27/2018 04:47

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_078.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2220		2.78	2.38	16.8	40.0
13C4 PFOA	Ave	0.9374	0.9142		2.44	2.50	-2.5	50.0
13C4 PFOS	Ave	0.8225	0.8379		2.44	2.39	1.9	50.0
13C5 PFNA	Ave	0.8266	0.8571		2.59	2.50	3.7	50.0
13C8 FOSA	Ave	1.109	1.139		2.57	2.50	2.7	50.0
M2-8:2FTS	Ave	0.2565	0.2728		2.55	2.40	6.3	40.0
13C2 PFDA	Ave	0.7245	0.6926		2.39	2.50	-4.4	50.0
d3-NMeFOSAA	Ave	0.3814	0.3327		2.18	2.50	-12.8	50.0
13C2 PFUnA	Ave	0.6482	0.5646		2.18	2.50	-12.9	50.0
d5-NEtFOSAA	Ave	0.4345	0.3703		2.13	2.50	-14.8	50.0
13C2 PFDoA	Ave	0.7355	0.6175		2.10	2.50	-16.0	50.0
13C2-PFTeDA	Ave	0.8983	0.7763		2.16	2.50	-13.6	50.0
13C2-PFHxDA	Ave	1.473	1.408		2.39	2.50	-4.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_078.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 27-Mar-2018 04:47:06 ALS Bottle#: 14 Worklist Smp#: 28
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:44:15 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.441	0.003	0.537	6111775	2.58		103	79549	
2 Perfluorobutyric acid										
212.90 > 169.00	1.450	1.450	0.0	1.004	5922449	2.57		103	2068	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.714	1.714	0.0	1.005	4712763	2.56		102	2205	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.700	0.005	0.634	4082808	2.60		104	161566	
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.736	0.004	0.647	88662	2.47		106	487	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.740	0.0	1.000	6647662	2.24		102	38277	
298.90 > 99.00	1.740	1.740	0.0	1.000	2733640		2.43(1.25-3.74)		11674	
D 60 M2-4:2FTS										
329.00 > 81.00	1.961	1.946	0.015	0.729	676094	2.73		117	6591	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.961	0.0	1.000	1691099	2.75		118	106717	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.992	0.0	1.000	4556919	2.48		99.2	5906	
313.00 > 119.00	1.992	1.992	0.0	1.000	398419		11.44(5.03-15.10)		5235	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.987	0.005	0.740	4495219	2.58		103	104164	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.335	2.335	0.0	1.006	4569308	2.59		103	3932	
363.00 > 169.00	2.335	2.335	0.0	1.006	1805921		2.53(1.13-3.40)		5600	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.315	0.007	0.863	4270640	2.49		99.5	80993	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.348	2.348	0.0	1.000	5411251	2.23		97.9	23746	
399.00 > 99.00	2.335	2.348	-0.013	0.994	1777316		3.04(1.50-4.49)		3733	
D 11 18O2 PFHxS										
403.00 > 84.00	2.348	2.328	0.020	0.873	5162424	2.44		103	99416	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.649	0.018	0.991	987165	2.77		117	29312	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.667	0.0	1.000	1740800	2.40		101	17456	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.691	0.0	1.000	5070070	2.62		105	1599	
413.00 > 169.00	2.691	2.691	0.0	1.000	2672687		1.90(0.84-2.52)		7975	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.691	0.0		4681789	2.50			62212	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.681	0.010	1.000	4279867	2.44		97.5	85427	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.699	0.0	1.000	4883229	2.43		102	72986	
449.00 > 99.00	2.699	2.699	0.0	1.000	1310425		3.73(1.94-5.82)		8754	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.067	0.0	1.000	4071040	2.54		102	5476	
463.00 > 169.00	3.067	3.067	0.0	1.000	983433		4.14(1.90-5.69)		22306	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.067	3.067	0.0	1.002	4035876	2.31		99.5	36294	
499.00 > 99.00	3.060	3.067	-0.007	1.000	863180		4.68(2.31-6.93)		5909	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.051	0.016	1.140	4012664	2.59		104	72742	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.051	0.009	1.137	3750292	2.43		102	36625	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.402	3.402	0.0	1.003	5172227	2.46		98.4	56008	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.389	0.004	1.261	5332514	2.57		103	57938	
D 26 M2-8:2FTS										
529.00 > 81.00	3.420	3.399	0.022	1.271	1223371	2.55		106	19414	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.420	3.420	0.0	1.000	1466365	2.25		93.9	19285	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.429	3.429	0.0	1.000	3283930	2.56		102	14279	
513.00 > 169.00	3.429	3.429	0.0	1.000	596659		5.50(2.36-7.09)		2073	
D 23 13C2 PFDA										
515.00 > 470.00	3.429	3.417	0.012	1.274	3242631	2.39		95.6	38551	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.584	0.0	1.000	1715635	2.75		110	10502	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.571	0.013	1.332	1557719	2.18		87.2	36734	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.744	3.744	0.0	1.000	2538538	2.38		98.7	53550	
599.00 > 99.00	3.744	3.744	0.0	1.000	812099		3.13(1.39-4.16)		12221	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.754	3.738	0.016	1.395	1733698	2.13		85.2	12241	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.754	0.0	1.000	1759613	2.72		109	36099	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.754	3.754	0.0	1.000	2264381	2.48		99.4	12710	
563.00 > 169.00	3.754	3.754	0.0	1.000	568845		3.98(2.12-6.36)		27454	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.748	0.006	1.395	2643418	2.18		87.1	45706	
D 36 13C2 PFDoA										
615.00 > 570.00	4.052	4.036	0.016	1.506	2890939	2.10		84.0	18857	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.052	4.052	0.0	1.000	3124169	2.58		103	3146	
613.00 > 169.00	4.052	4.052	0.0	1.000	770840		4.05(2.13-6.40)		9995	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.314	4.314	0.0	1.000	3376979	2.65		106	2333	
663.00 > 169.00	4.314	4.314	0.0	1.000	1082679		3.12(1.25-3.76)		15109	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.543	0.007	1.691	3634404	2.16		86.4	24346	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.550	0.0	1.000	947765	2.63		105	13173	
713.00 > 219.00	4.550	4.550	0.0	1.000	677579		1.40(0.71-2.13)		12850	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.969	4.955	0.014	1.847	6593129	2.39		95.6	17250	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.969	4.969	0.0	1.000	6171042	2.55		102	2071	
813.00 > 169.00	4.969	4.969	0.0	1.000	1060074		5.82(2.86-8.58)		7438	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.334	5.334	0.0	1.000	6460725	2.65		106	1736	
913.00 > 169.00	5.334	5.334	0.0	1.000	795109		8.13(3.83-11.48)		5863	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Mar-2018 10:44:16 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_078.d

Injection Date: 27-Mar-2018 04:47:06 Instrument ID: A8_N

Lims ID: CCV L5

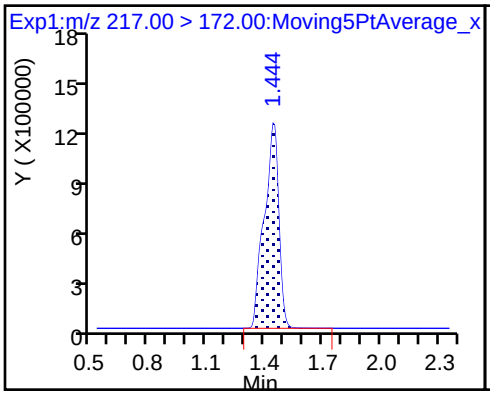
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 28

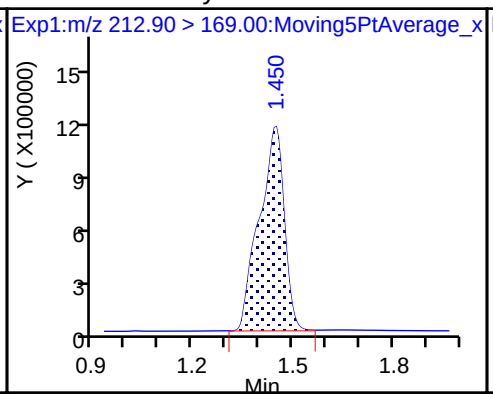
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

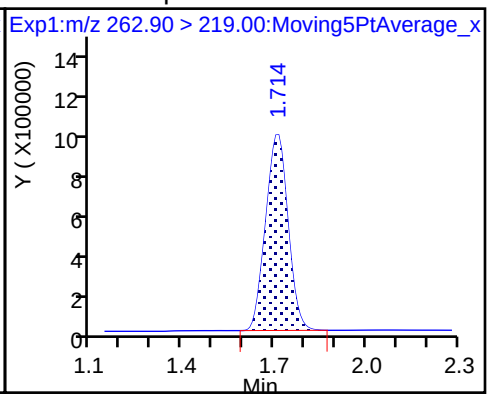
D 1 13C4 PFBA



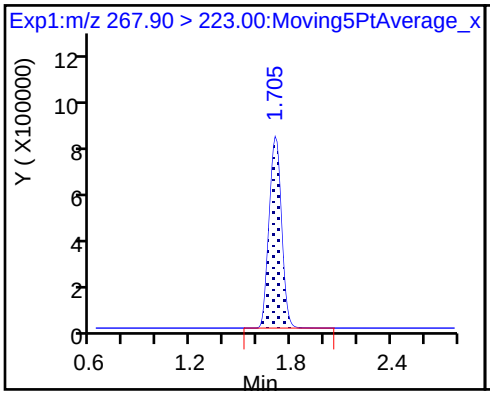
2 Perfluorobutyric acid



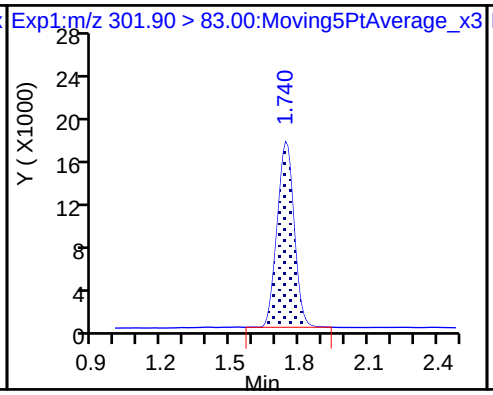
4 Perfluoropentanoic acid



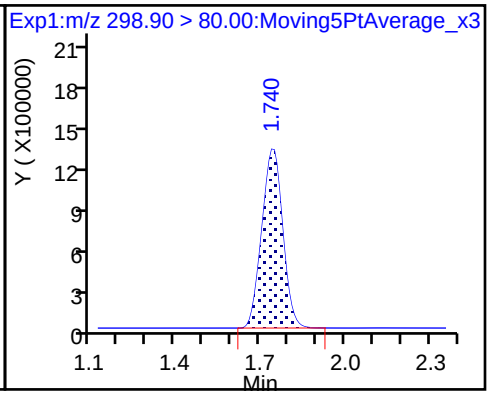
D 3 13C5-PFPeA



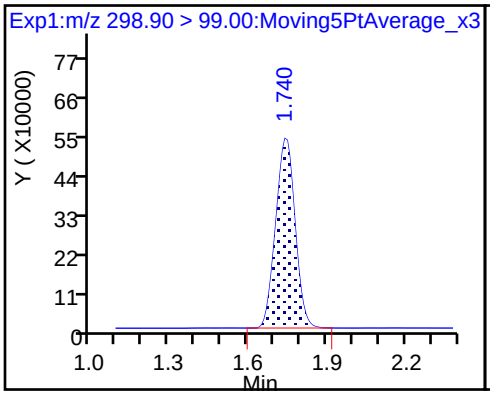
D 47 13C3-PFBS



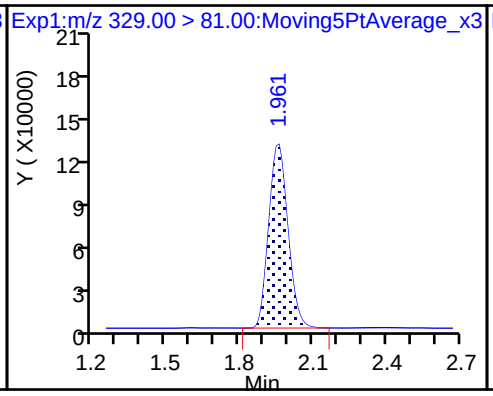
5 Perfluorobutanesulfonic acid



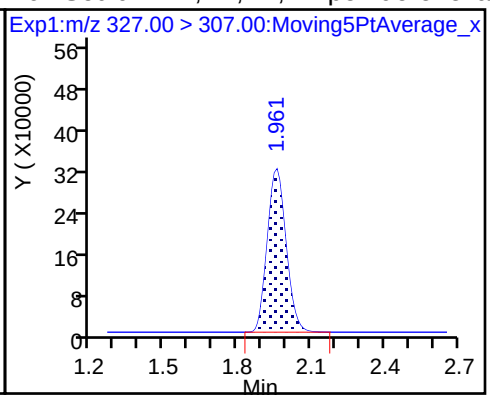
5 Perfluorobutanesulfonic acid



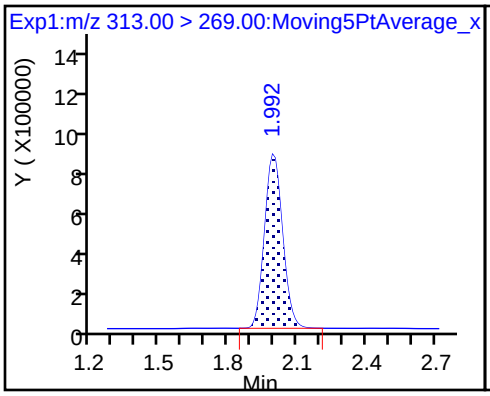
D 60 M2-4:2FTS



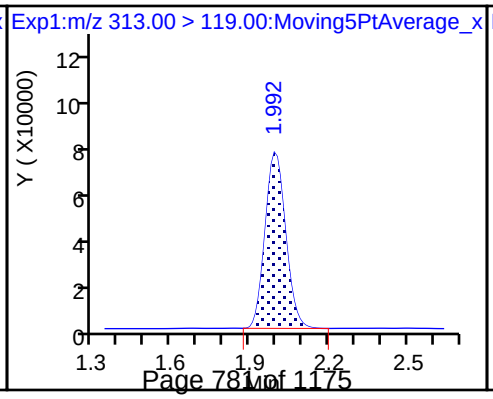
61 Sodium 1H,1H,2H,2H-perfluorohexane



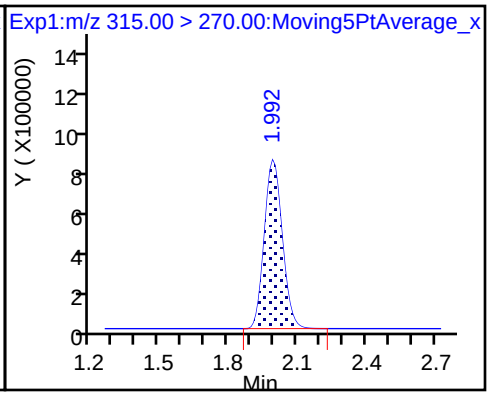
6 Perfluorohexanoic acid



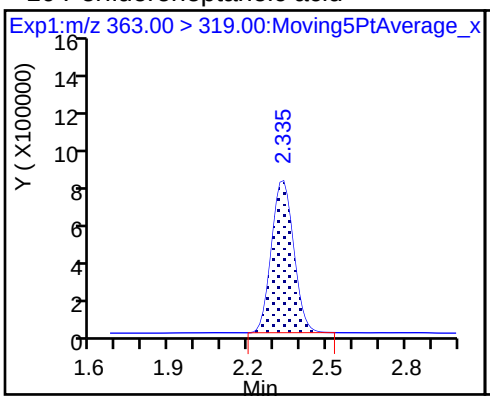
6 Perfluorohexanoic acid



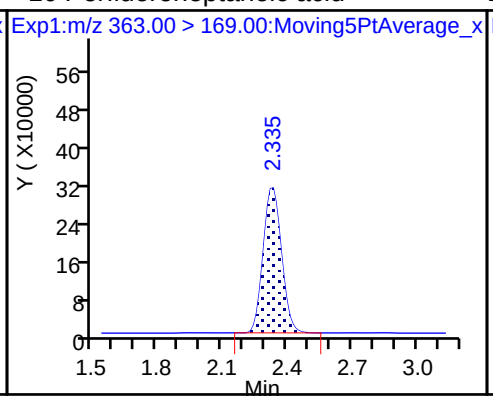
D 7 13C2 PFHxA



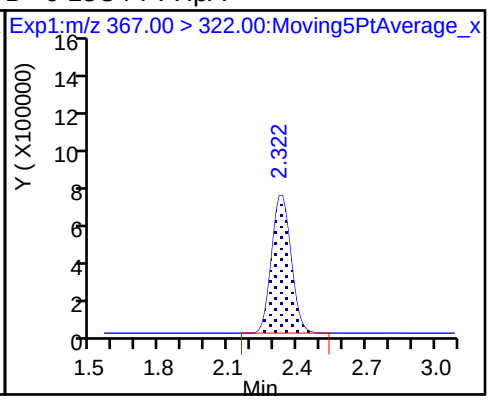
10 Perfluoroheptanoic acid



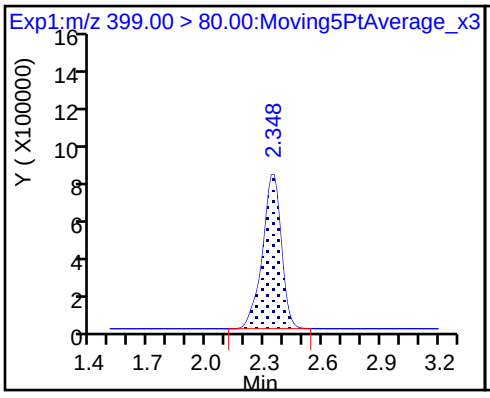
10 Perfluoroheptanoic acid



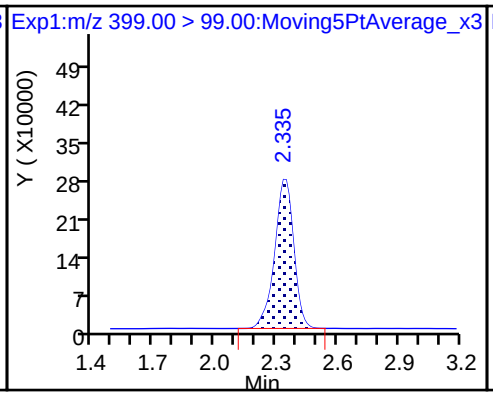
D 9 13C4-PFHpA



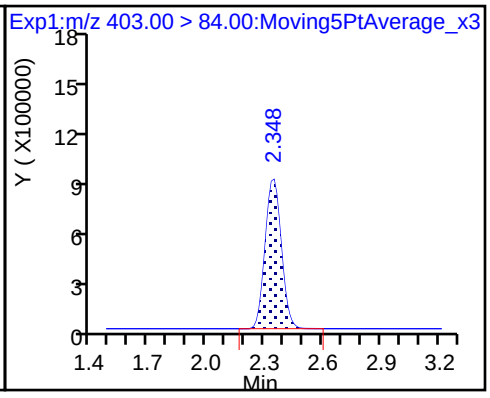
8 Perfluorohexanesulfonic acid



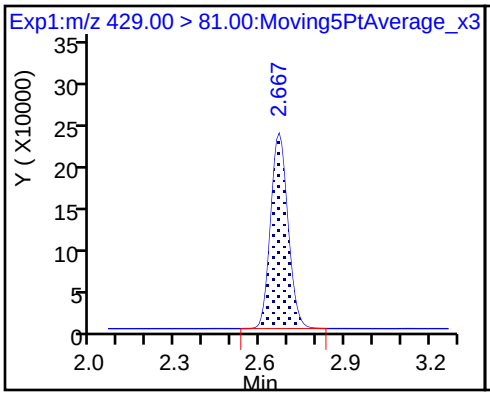
8 Perfluorohexanesulfonic acid



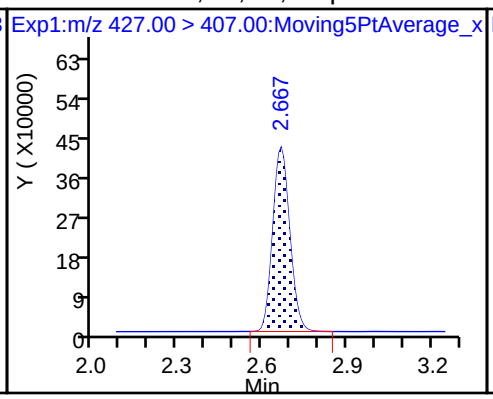
D 11 18O2 PFHxS



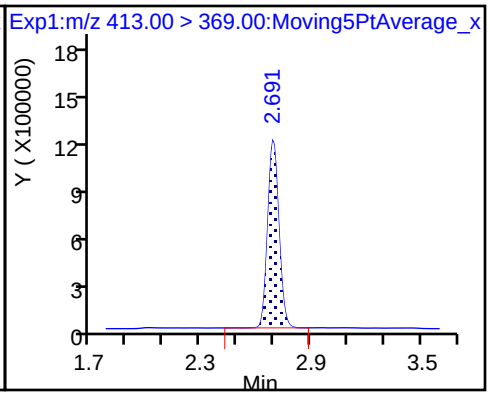
D 12 M2-6:2FTS



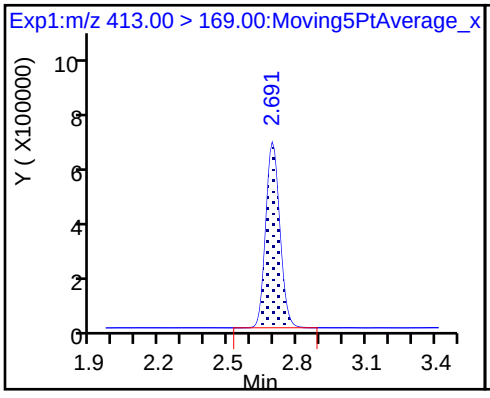
13 Sodium 1H,1H,2H,2H-perfluorooctane



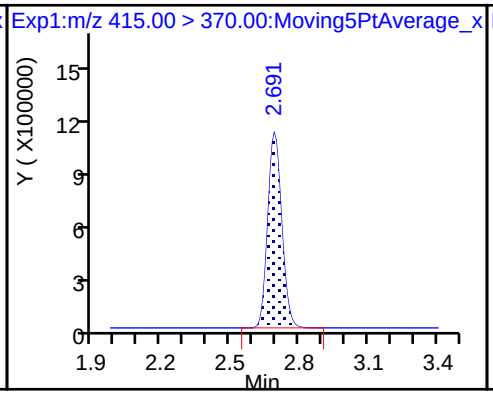
15 Perfluorooctanoic acid



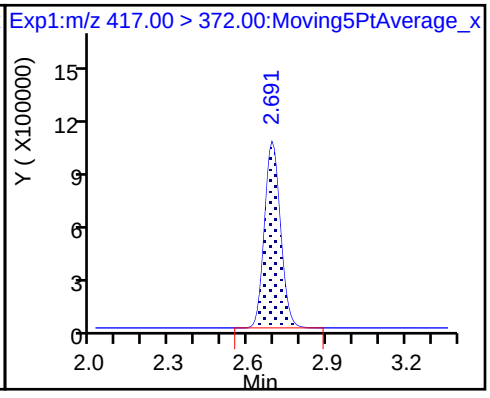
15 Perfluorooctanoic acid



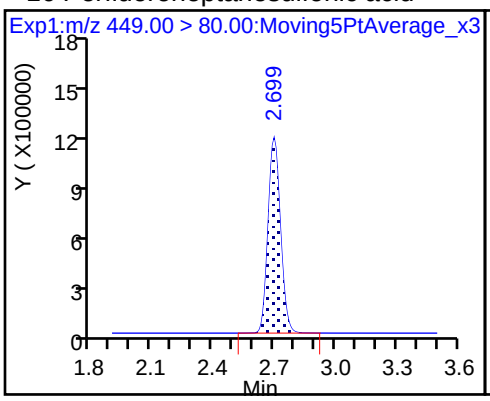
* 62 13C2-PFOA



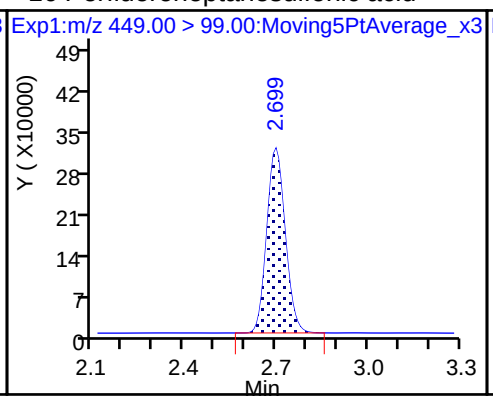
D 14 13C4 PFOA



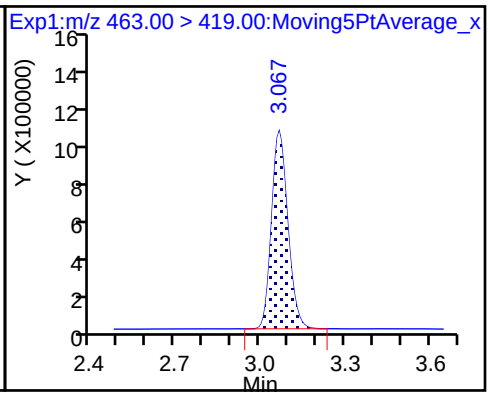
16 Perfluoroheptanesulfonic acid



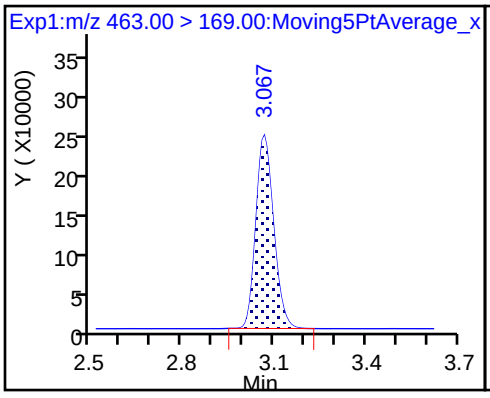
16 Perfluoroheptanesulfonic acid



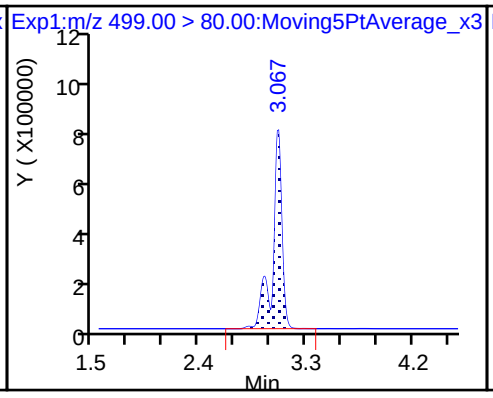
20 Perfluorononanoic acid



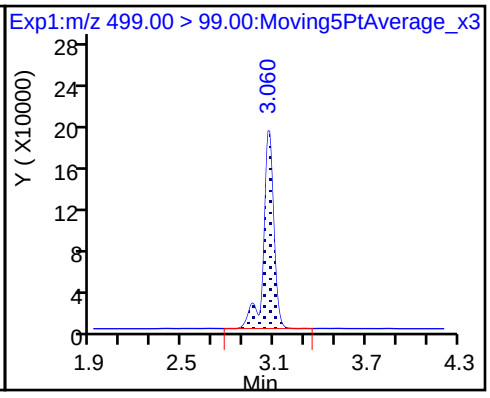
20 Perfluorononanoic acid



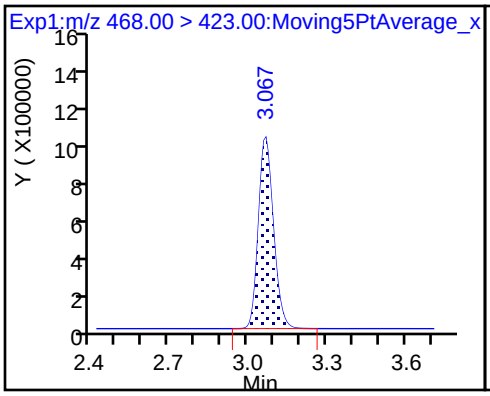
17 Perfluorooctane sulfonic acid



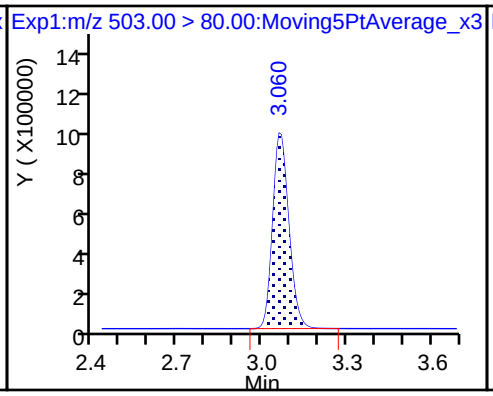
17 Perfluorooctane sulfonic acid



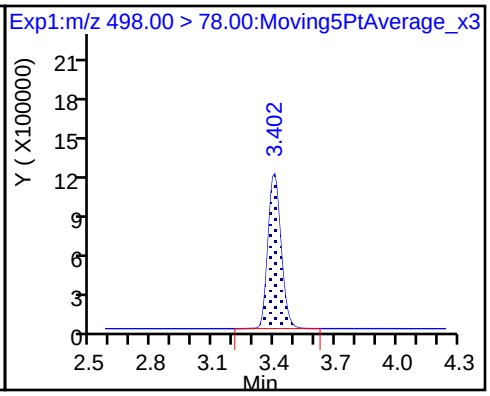
D 19 13C5 PFNA



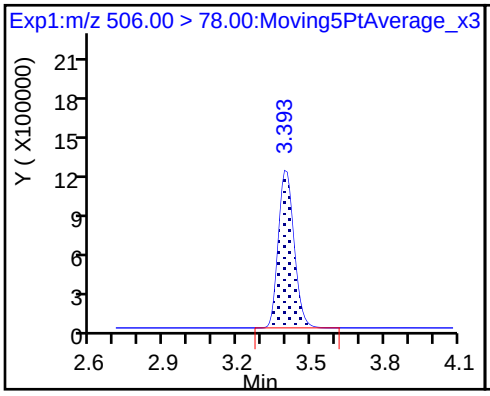
D 18 13C4 PFOS



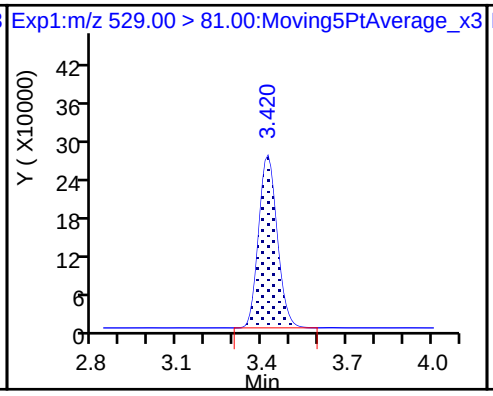
22 Perfluorooctane Sulfonamide



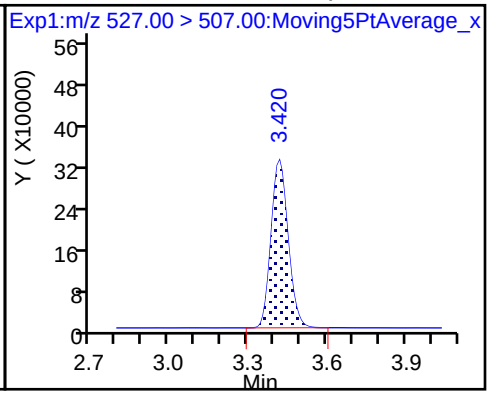
D 21 13C8 FOSA



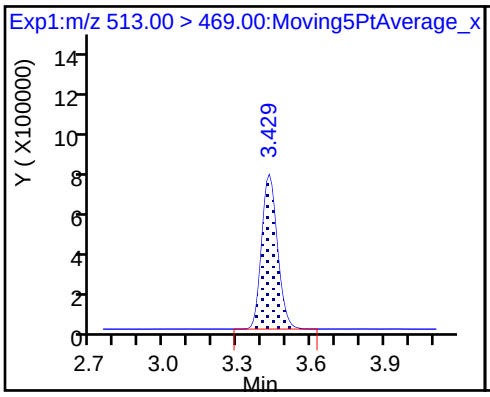
D 26 M2-8:2FTS



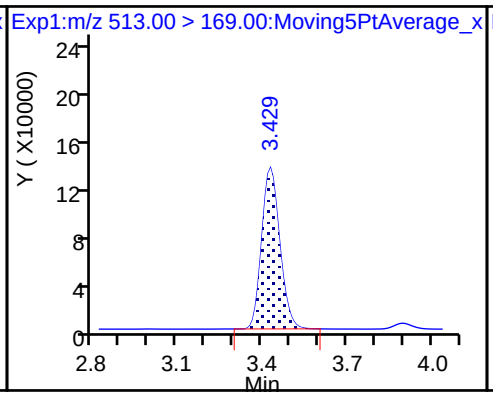
25 Sodium 1H,1H,2H,2H-perfluorodecane



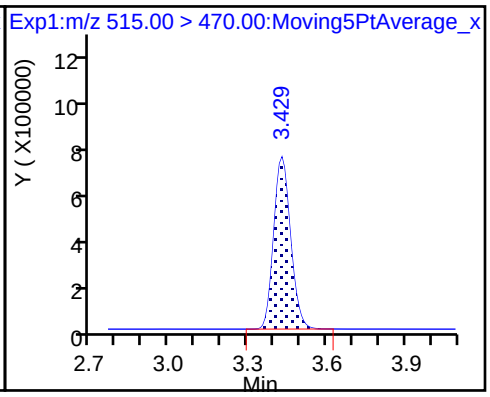
24 Perfluorodecanoic acid



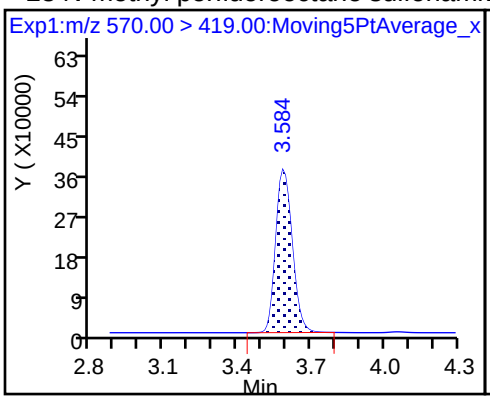
24 Perfluorodecanoic acid



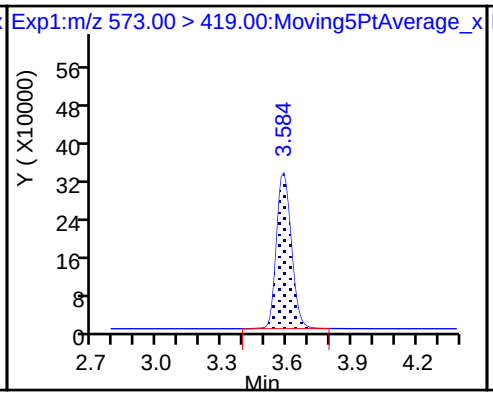
D 23 13C2 PFDA



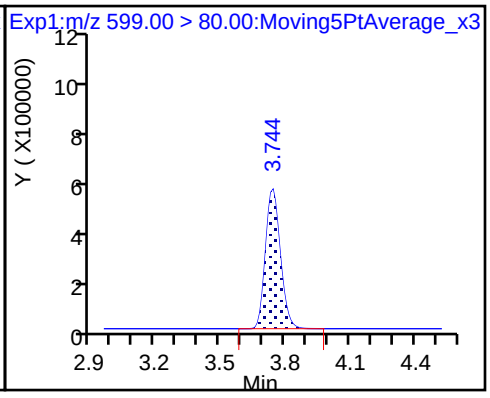
28 N-methyl perfluorooctane sulfonami



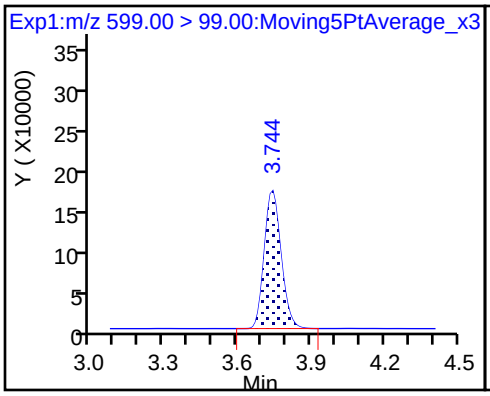
D 27 d3-NMeFOSAA



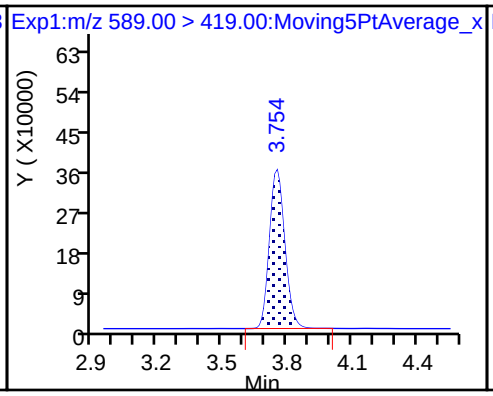
29 Perfluorodecane Sulfonic acid



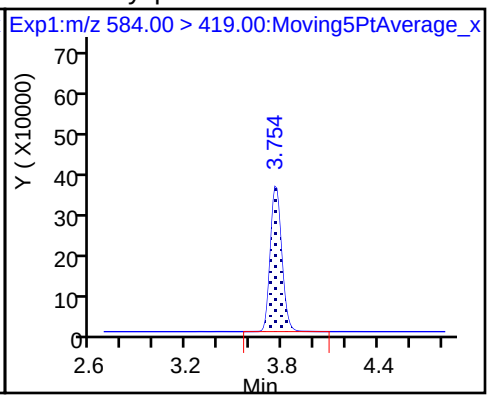
29 Perfluorodecane Sulfonic acid



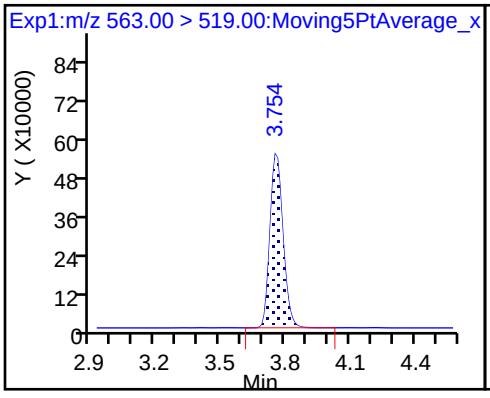
D 32 d5-NEtFOSAA



33 N-ethyl perfluorooctane sulfonamid



31 Perfluoroundecanoic acid



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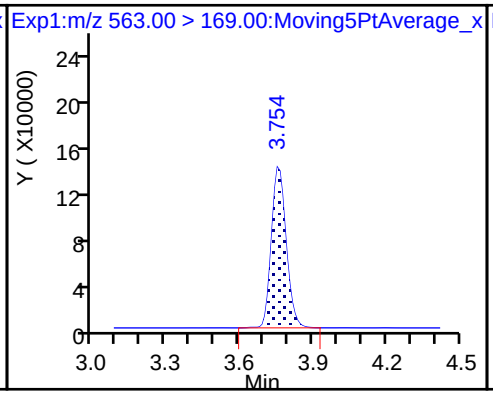
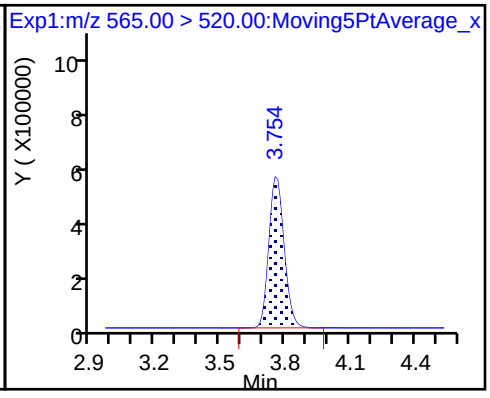


D 30 13C2 PFUnA



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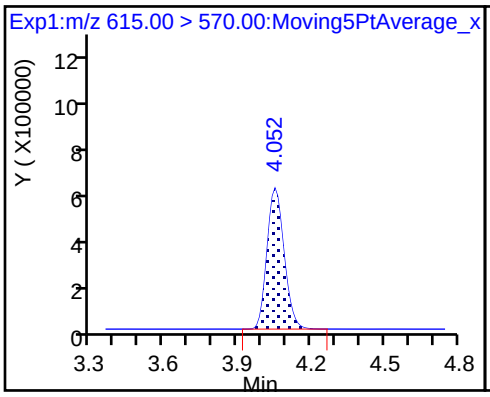
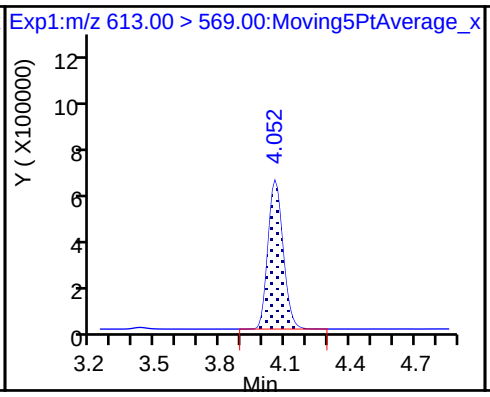
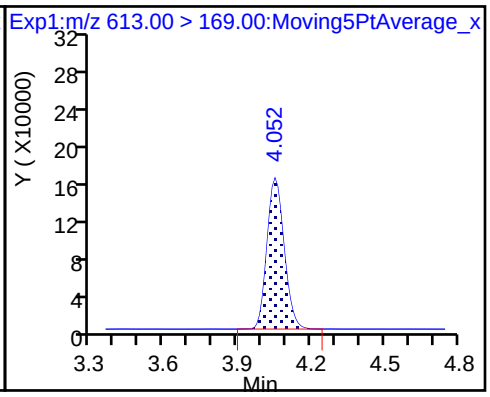


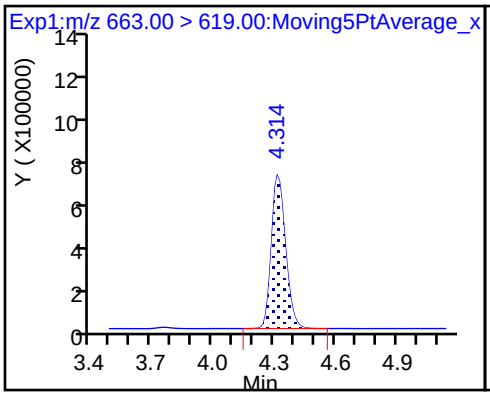
37 Perfluorododecanoic acid



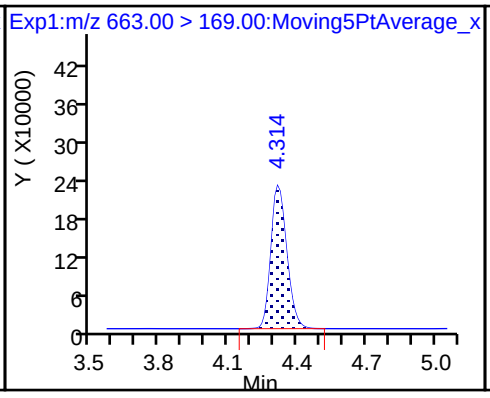
37 Perfluorododecanoic acid



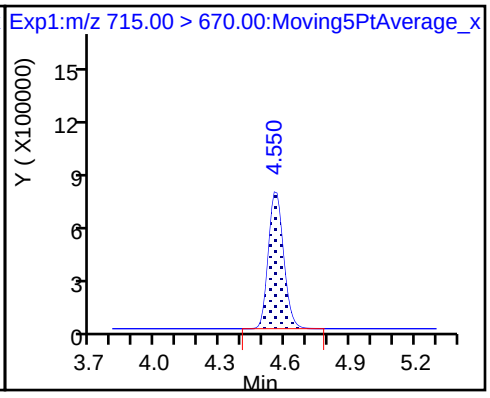
41 Perfluorotridecanoic acid



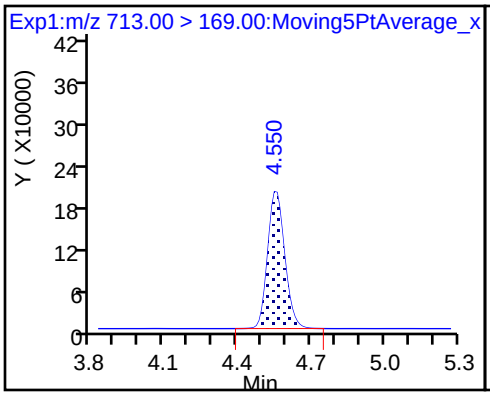
41 Perfluorotridecanoic acid



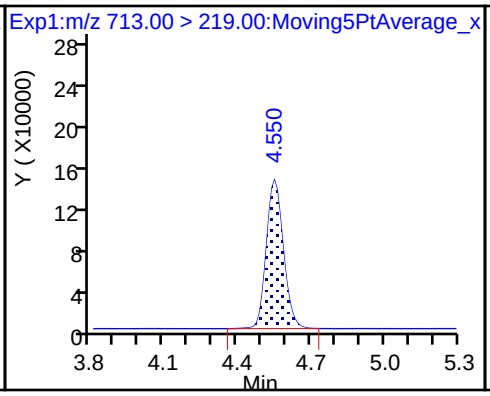
D 43 13C2-PFTeDA



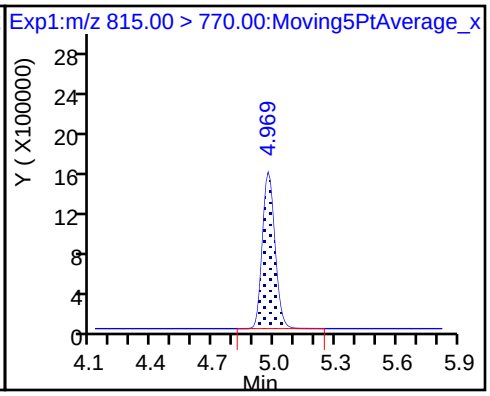
42 Perfluorotetradecanoic acid



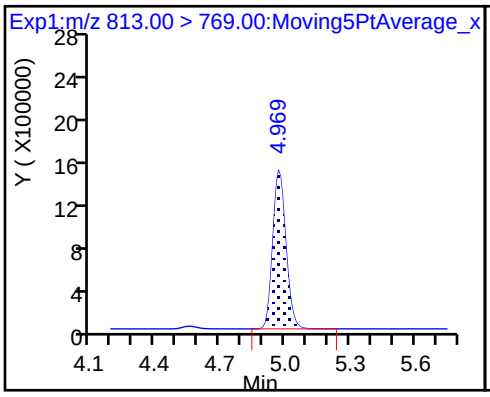
42 Perfluorotetradecanoic acid



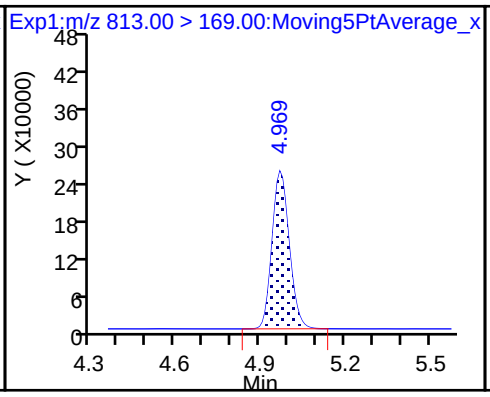
D 44 13C2-PFHxDA



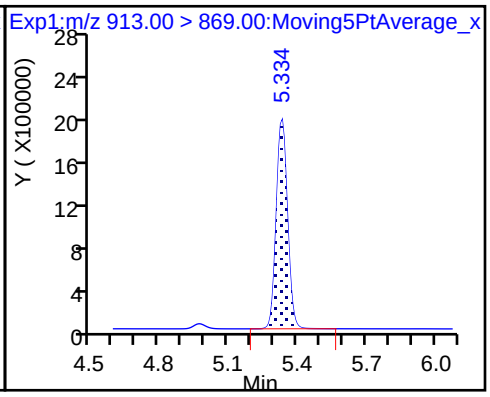
45 Perfluorohexadecanoic acid



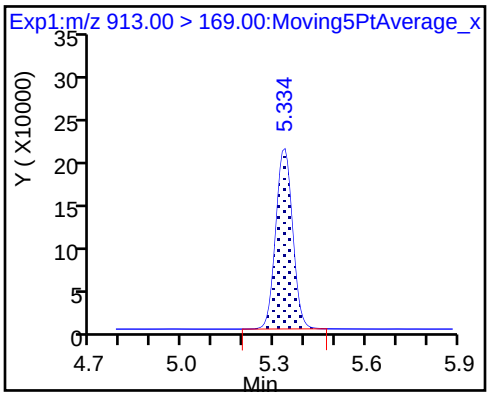
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-215311/2 Calibration Date: 03/28/2018 23:54

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9218		0.0489	0.0500	-2.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.257		0.0557	0.0500	11.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.78		0.0437	0.0442	-1.2	50.0
4:2 FTS	AveID	16.15	15.26		0.130	0.0467	-5.5	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.081		0.0529	0.0500	5.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.190		0.0575	0.0500	15.0	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.195		0.0489	0.0455	7.4	50.0
6:2FTS	AveID	1.744	1.859		0.0505	0.0474	6.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.300		0.0575	0.0500	15.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.291		0.0480	0.0476	0.8	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9524		0.0477	0.0500	-4.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	0.9806		0.0408	0.0464	-12.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9648		0.0489	0.0500	-2.1	50.0
8:2FTS	AveID	1.276	1.376		0.0517	0.0479	7.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.062		0.0537	0.0500	7.5	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9768		0.0780	0.0500	-2.4	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6189		0.0439	0.0482	-9.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.044		0.0559	0.0500	11.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8741		0.0507	0.0500	1.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.061		0.0507	0.0500	1.4	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.191		0.0541	0.0500	8.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2713		0.0548	0.0500	9.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.353		0.0502	0.0500	0.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9188		0.0497	0.0500	-0.6	50.0
13C4 PFBA	Ave	1.266	1.349		2.66	2.50	6.6	50.0
13C5 PFPeA	Ave	0.8399	0.8822		2.63	2.50	5.0	50.0
13C3-PFBS	Ave	0.0192	0.0200		2.43	2.33	4.4	50.0
M2-4:2FTS	Ave	0.1324	0.1360		2.40	2.34	2.7	50.0
13C2 PFHxA	Ave	0.9288	0.9655		2.60	2.50	3.9	50.0
13C4-PFHpA	Ave	0.9164	0.9226		2.52	2.50	0.7	50.0
18O2 PFHxS	Ave	1.130	1.183		2.47	2.37	4.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-215311/2 Calibration Date: 03/28/2018 23:54

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2040		2.55	2.38	7.4	50.0
13C4 PFOA	Ave	0.9374	0.9695		2.59	2.50	3.4	50.0
13C4 PFOS	Ave	0.8225	0.8459		2.46	2.39	2.8	50.0
13C5 PFNA	Ave	0.8266	0.8131		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.180		2.66	2.50	6.4	50.0
M2-8:2FTS	Ave	0.2565	0.2344		2.19	2.40	-8.6	50.0
13C2 PFDA	Ave	0.7245	0.6741		2.33	2.50	-7.0	50.0
d3-NMeFOSAA	Ave	0.3814	0.3382		2.22	2.50	-11.3	50.0
13C2 PFUnA	Ave	0.6482	0.5628		2.17	2.50	-13.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3508		2.02	2.50	-19.3	50.0
13C2 PFDoA	Ave	0.7355	0.6171		2.10	2.50	-16.1	50.0
13C2-PFTeDA	Ave	0.8983	0.7426		2.07	2.50	-17.3	50.0
13C2-PFHxDA	Ave	1.473	1.169		1.98	2.50	-20.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 28-Mar-2018 23:54:44 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:06 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:57:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.532	6451393	2.66		107	93700	
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.446	-0.012	1.000	118940	0.0489		97.8	35.2	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.708	-0.008	1.000	106032	0.0557		111	40.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	4219309	2.63		105	137909	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.644	89013	2.43		104	660	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.005	129929	0.0437		98.8	85.5	
298.90 > 99.00	1.735	1.753	-0.018	1.000	56911		2.28(1.25-3.74)		82.3	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.965	-0.010	1.000	27285	0.0441		94.5	1669	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.966	-0.011	0.726	607499	2.40		103	8723	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	99798	0.0529		106	137	
313.00 > 119.00	1.997	2.008	-0.011	1.000	8523		11.71(5.03-15.10)		89.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	4617404	2.60		104	119647	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.340	-0.012	1.000	105003	0.0575		115	59.3	
363.00 > 169.00	2.328	2.340	-0.012	1.000	42589		2.47(1.13-3.40)		77.5	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.353	-0.012	1.000	123047	0.0489		107	618	
399.00 > 99.00	2.341	2.353	-0.012	1.000	44762		2.75(1.50-4.49)		289	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.864	4412529	2.52		101	82800	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.869	5350380	2.47		105	64600	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.679	-0.008	1.000	34390	0.0505		107	213	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.697	-0.026	0.991	926971	2.55		107	30446	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.710	-0.015		4782622	2.50			99509	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.710	-0.015	1.000	120565	0.0575		115	39.2	
413.00 > 169.00	2.695	2.710	-0.015	1.000	56523		2.13(0.84-2.52)		207	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.710	-0.007	1.000	99464	0.0480		101	4510	
449.00 > 99.00	2.703	2.710	-0.007	1.000	26954		3.69(1.94-5.82)		525	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.721	-0.026	1.000	4636520	2.59		103	89142	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.080	-0.008	1.000	73625	0.0408		88.0	193	
499.00 > 99.00	3.072	3.080	-0.008	1.000	18817		3.91(2.31-6.93)		154	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.080	-0.008	1.000	74069	0.0477		95.5	66.2	
463.00 > 169.00	3.072	3.080	-0.008	1.000	17914		4.13(1.90-5.69)		333	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.140	3888597	2.46		98.4	66984	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.140	3867363	2.46		103	49278	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.415	-0.009	1.000	108923	0.0489		97.9	2370	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.417	-0.011	1.264	5645112	2.66		106	51326	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.433	-0.009	1.000	29562	0.0517		108	410	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.442	-0.009	1.000	68469	0.0537		107	388	
513.00 > 169.00	3.433	3.442	-0.009	1.000	10736		6.38(2.36-7.09)		407	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.453	-0.029	1.271	1073976	2.19		91.4	38319	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.462	-0.029	1.274	3223961	2.33		93.0	49854	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.599	-0.009	1.000	31600	0.0488		97.6	302	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.332	1617597	2.22		88.7	30515	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.758	-0.010	1.000	48267	0.0439		91.0	2487	
599.00 > 99.00	3.748	3.758	-0.010	1.000	22652		2.13(1.39-4.16)		941	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.779	-0.011	1.003	47053	0.0507		101	194	
563.00 > 169.00	3.768	3.779	-0.011	1.003	9256		5.08(2.12-6.36)		436	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.779	-0.021	1.000	35031	0.0559		112	695	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.395	1677578	2.02		80.7	3954	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.790	-0.032	1.395	2691466	2.17		86.8	49209	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.067	-0.011	1.000	62640	0.0507		101	43.0	
613.00 > 169.00	4.056	4.067	-0.011	1.000	14948		4.19(2.13-6.40)		367	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.505	2951529	2.10		83.9	19276	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.329	-0.011	1.000	70296	0.0541		108	30.1	
663.00 > 169.00	4.318	4.329	-0.011	1.000	20757		3.39(1.25-3.76)		425	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.575	-0.021	1.000	19273	0.0548		110	440	
713.00 > 219.00	4.554	4.575	-0.021	1.000	11077		1.74(0.71-2.13)		296	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.585	-0.031	1.690	3551413	2.07		82.7	23976	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.990	-0.018	1.000	151314	0.0502		100	39.2	
813.00 > 169.00	4.972	4.990	-0.018	1.000	25363		5.97(2.86-8.58)		389	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	5.008	-0.036	1.845	5589979	1.98		79.4	18082	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.351	-0.014	1.000	102726	0.0497		99.4	21.4	
913.00 > 169.00	5.330	5.351	-0.021	0.999	12485		8.23(3.83-11.48)		191	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_005.d

Injection Date: 28-Mar-2018 23:54:44 Instrument ID: A8_N

Lims ID: CCVL

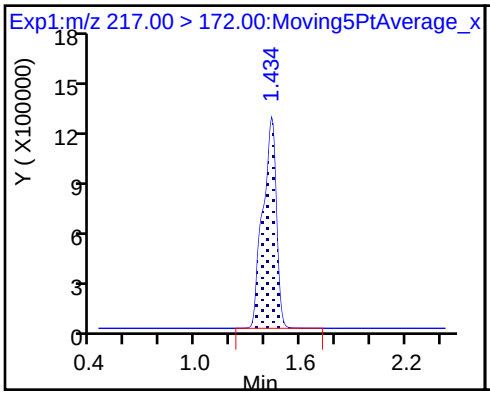
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

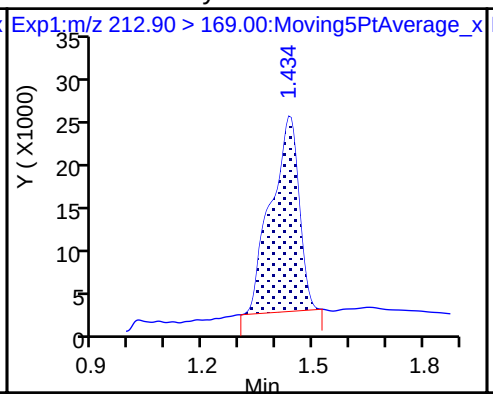
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

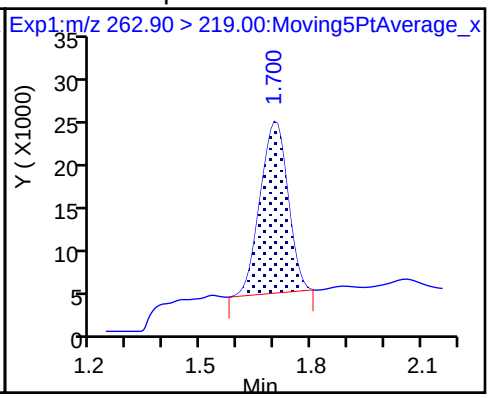
D 1 13C4 PFBA



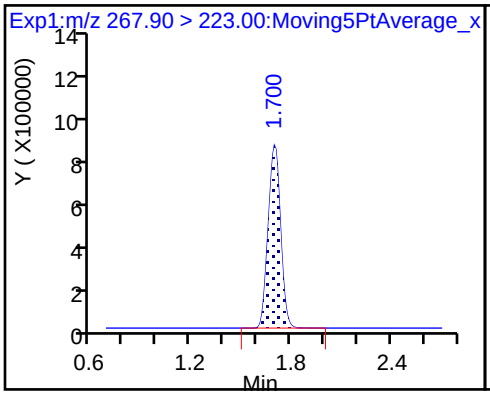
2 Perfluorobutyric acid



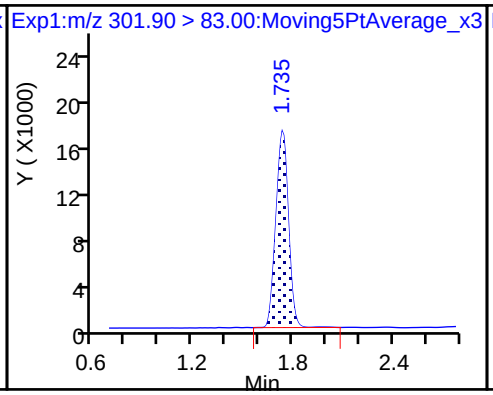
4 Perfluoropentanoic acid



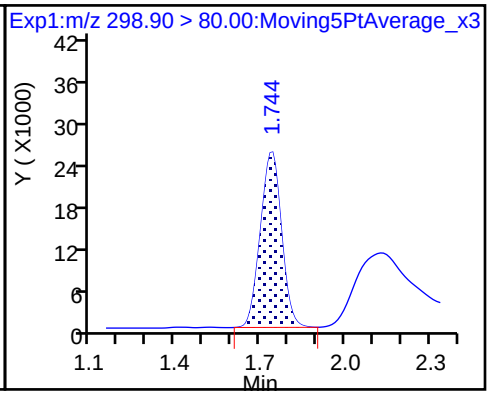
D 3 13C5-PFPeA



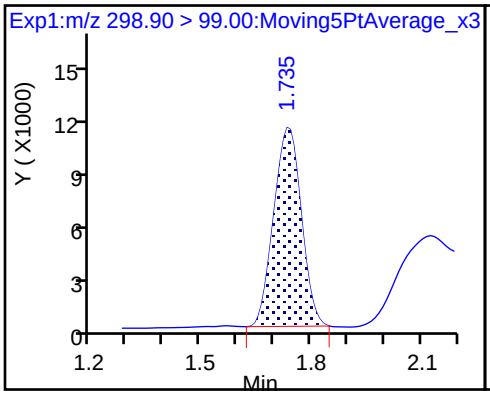
D 47 13C3-PFBS



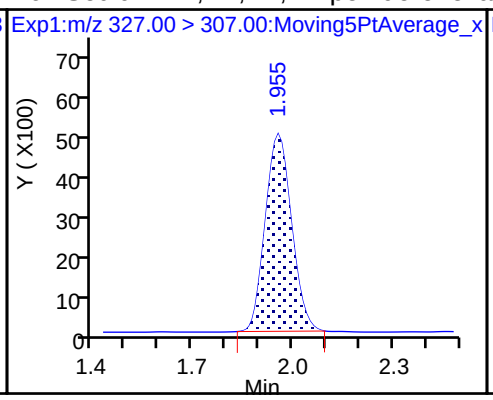
5 Perfluorobutanesulfonic acid



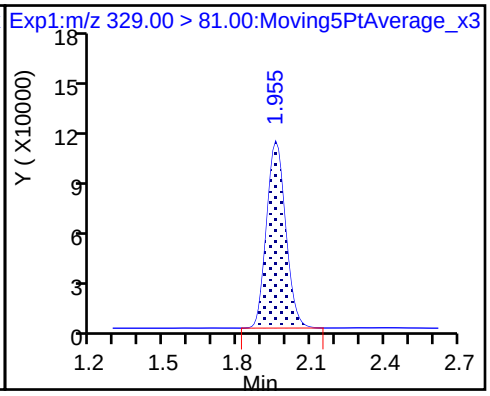
5 Perfluorobutanesulfonic acid



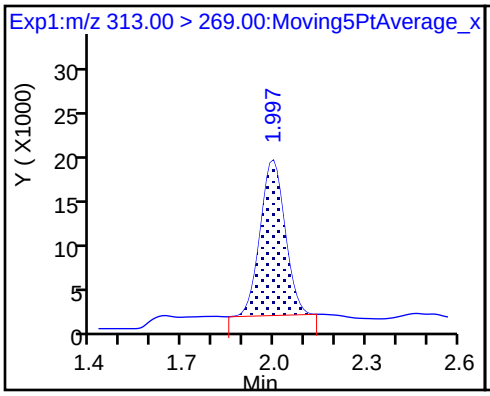
61 Sodium 1H,1H,2H,2H-perfluorohexane



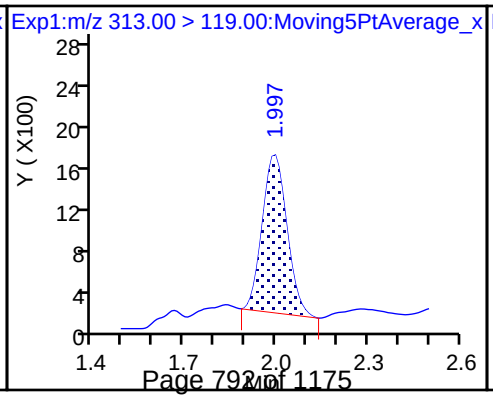
D 60 M2-4:2FTS



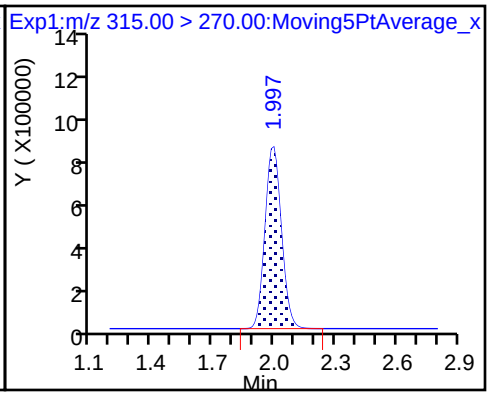
6 Perfluorohexanoic acid



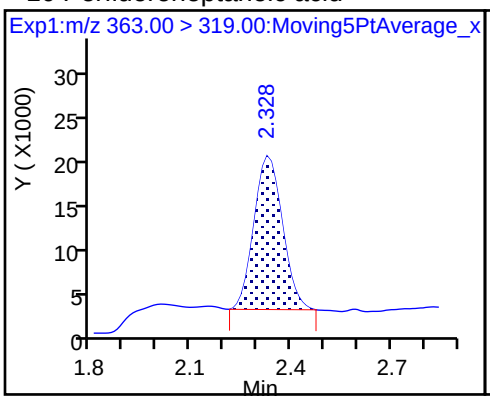
6 Perfluorohexanoic acid



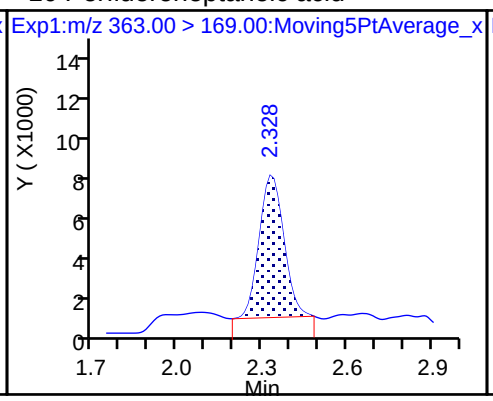
D 7 13C2 PFHxA



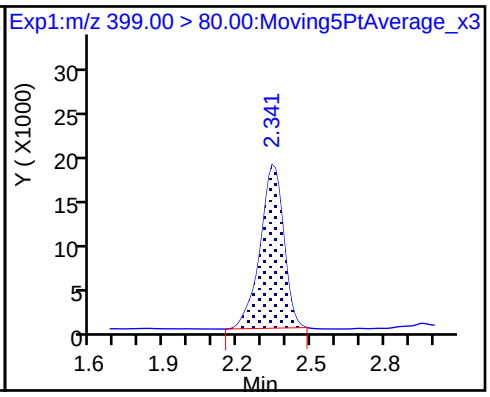
10 Perfluoroheptanoic acid



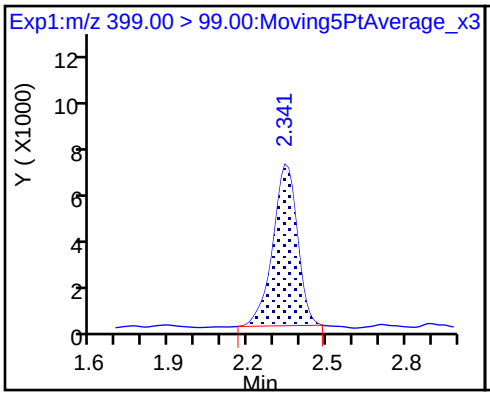
10 Perfluoroheptanoic acid



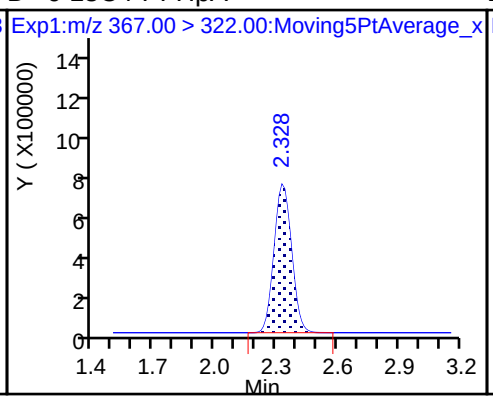
8 Perfluorohexanesulfonic acid



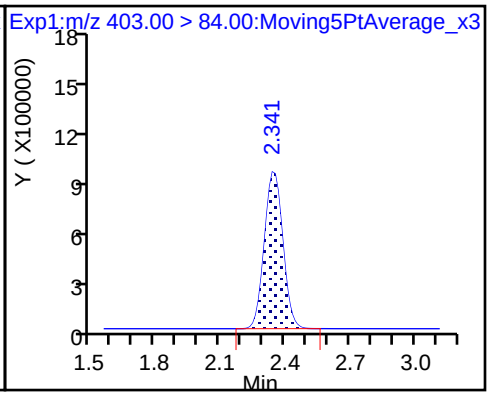
8 Perfluorohexanesulfonic acid



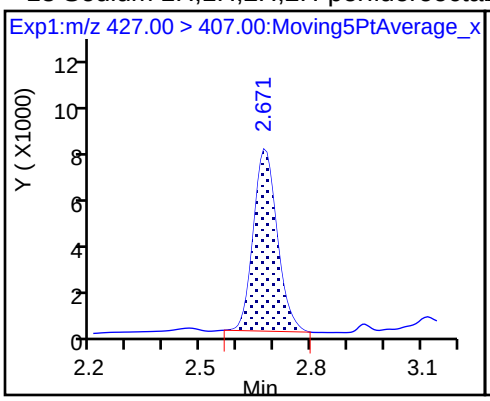
D 9 13C4-PFHpA



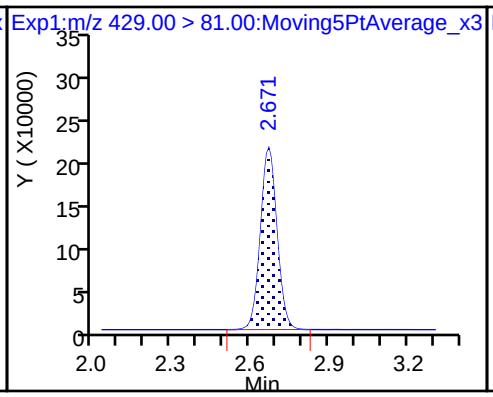
D 11 18O2 PFHxS



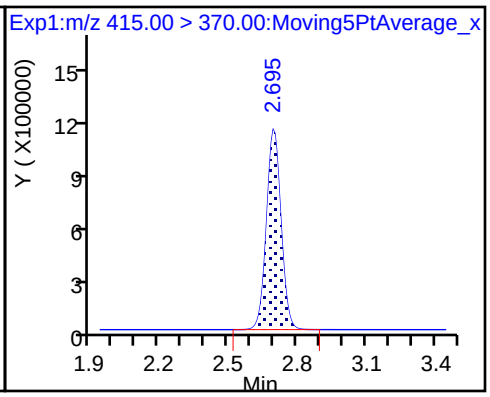
13 Sodium 1H,1H,2H,2H-perfluorooctan



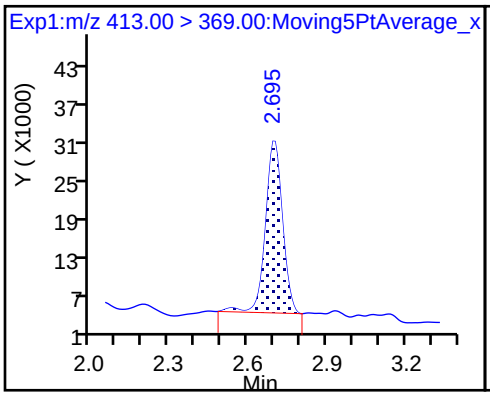
D 12 M2-6:2FTS



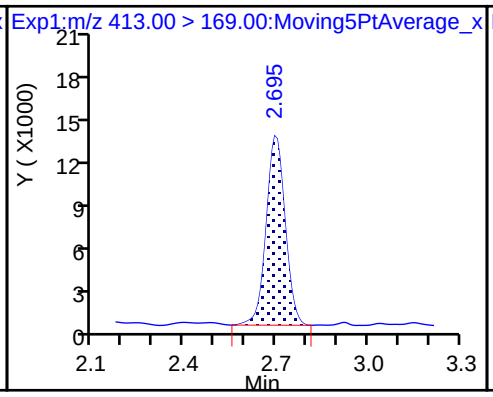
* 62 13C2-PFOA



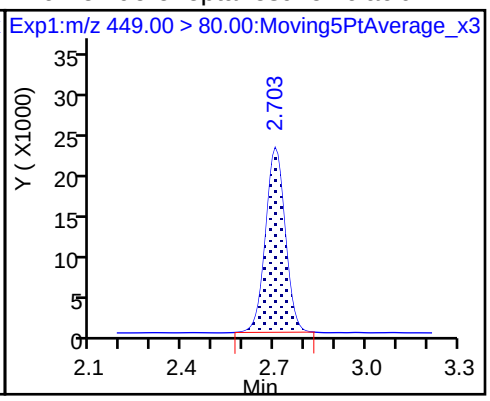
15 Perfluorooctanoic acid



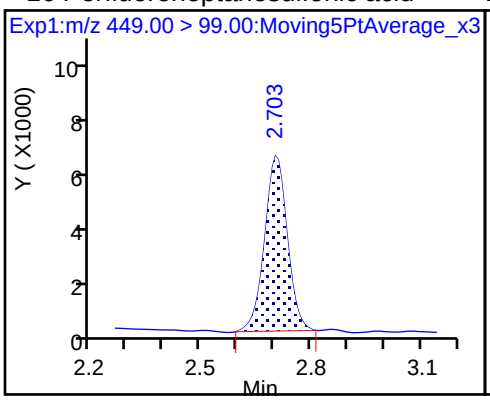
15 Perfluorooctanoic acid



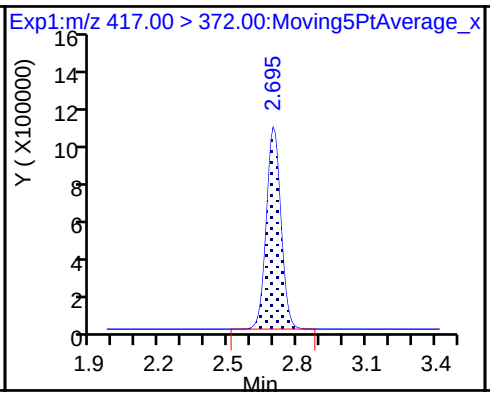
16 Perfluoroheptanesulfonic acid



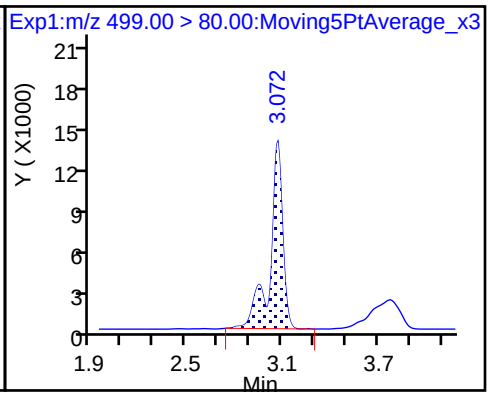
16 Perfluoroheptanesulfonic acid



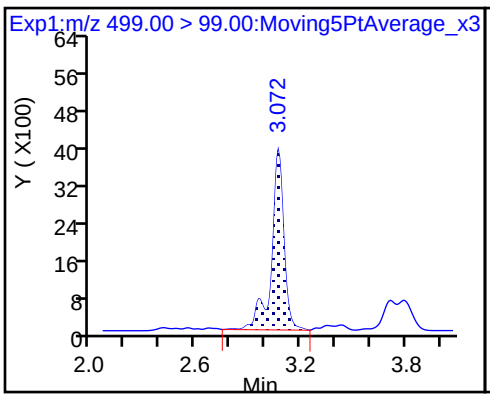
D 14 13C4 PFOA



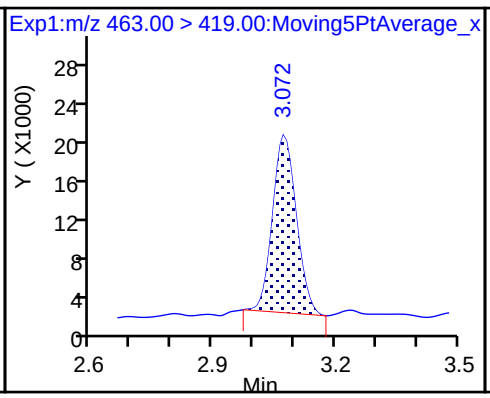
17 Perfluorooctane sulfonic acid



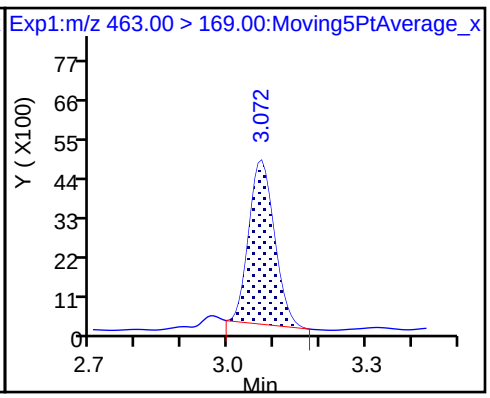
17 Perfluorooctane sulfonic acid



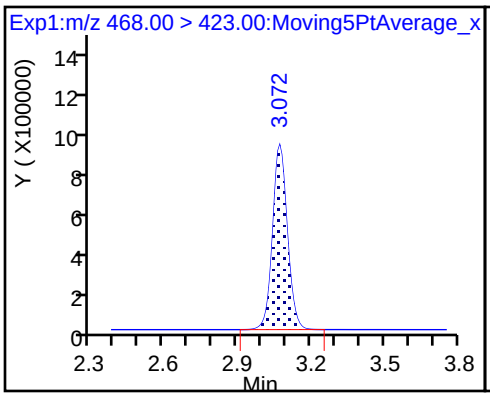
20 Perfluorononanoic acid



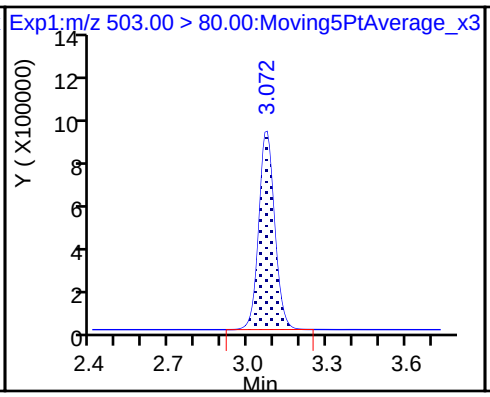
20 Perfluorononanoic acid



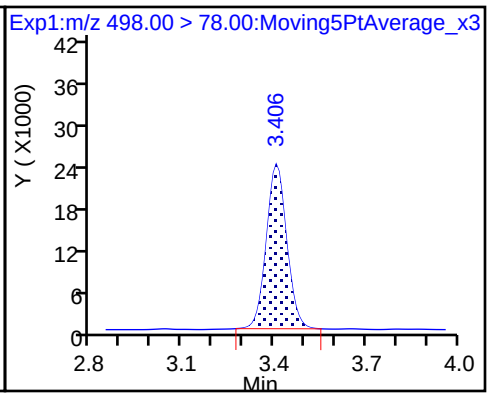
D 19 13C5 PFNA



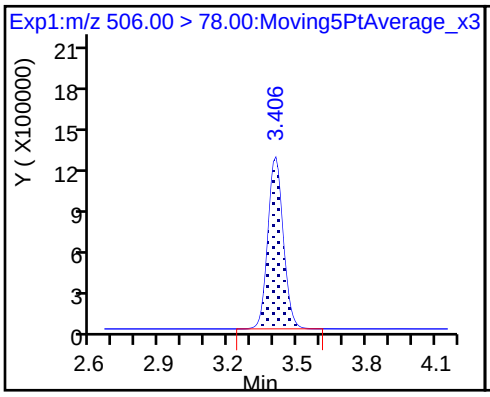
D 18 13C4 PFOS



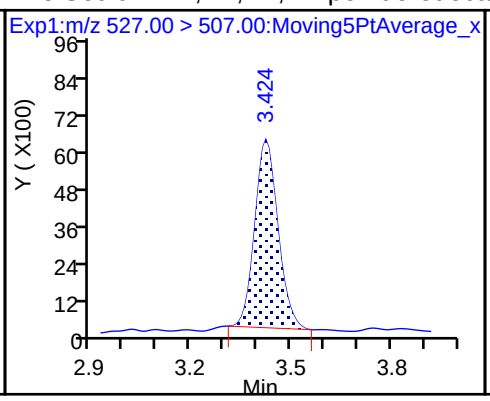
22 Perfluorooctane Sulfonamide



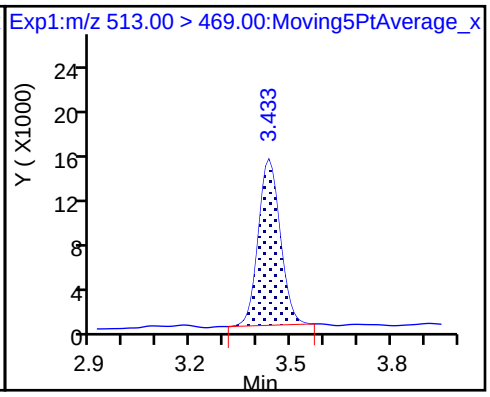
D 21 13C8 FOSA



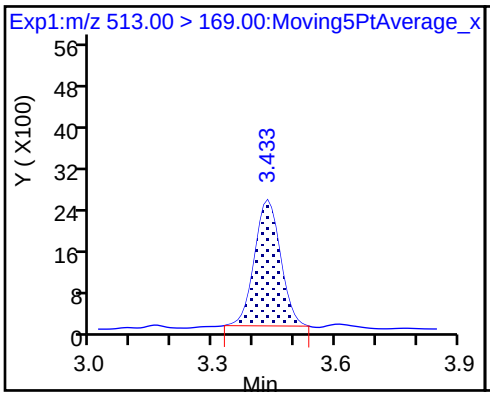
25 Sodium 1H,1H,2H,2H-perfluorodecan



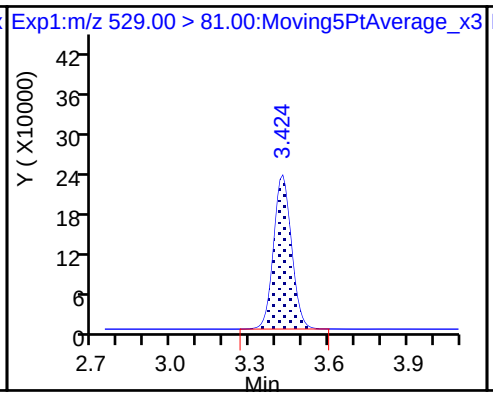
24 Perfluorodecanoic acid



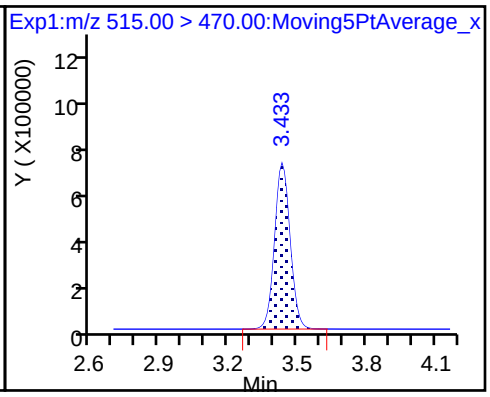
24 Perfluorodecanoic acid



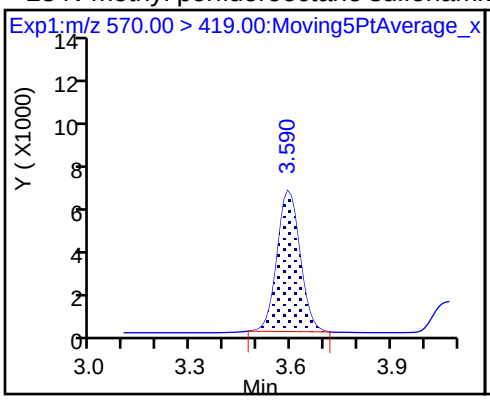
D 26 M2-8:2FTS



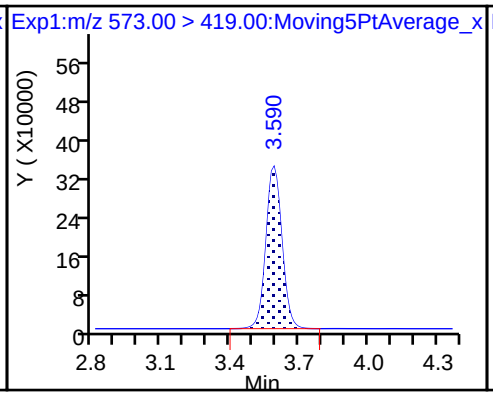
D 23 13C2 PFDA



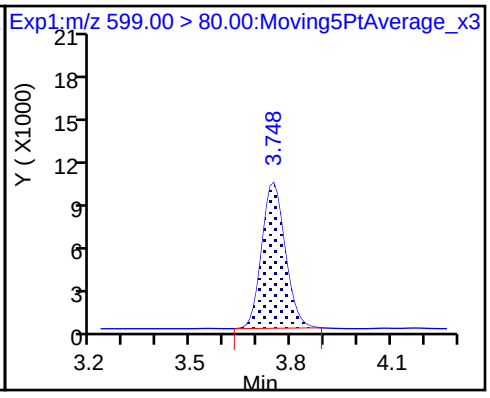
28 N-methyl perfluorooctane sulfonami



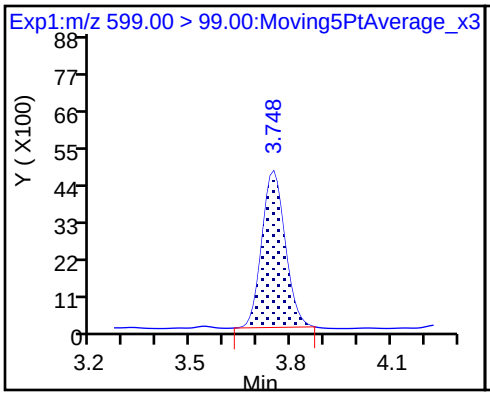
D 27 d3-NMeFOSAA



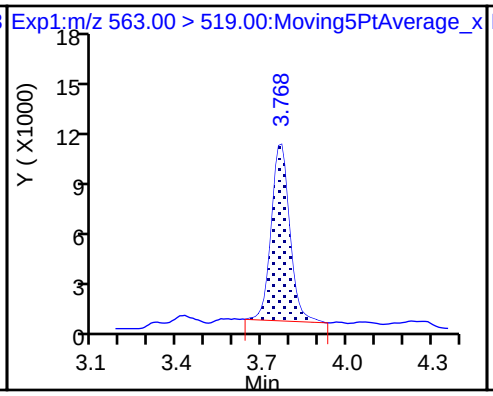
29 Perfluorodecane Sulfonic acid



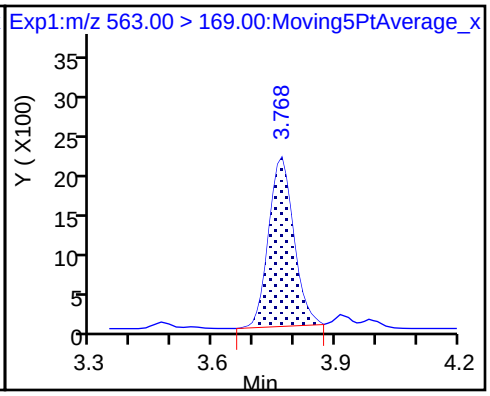
29 Perfluorodecane Sulfonic acid



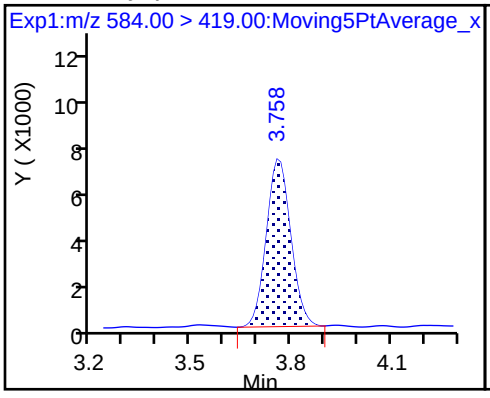
31 Perfluoroundecanoic acid



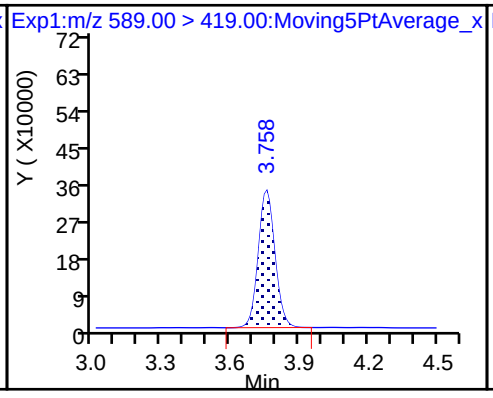
31 Perfluoroundecanoic acid



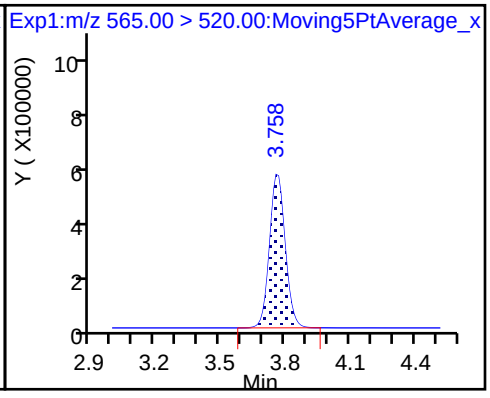
33 N-ethyl perfluorooctane sulfonamid



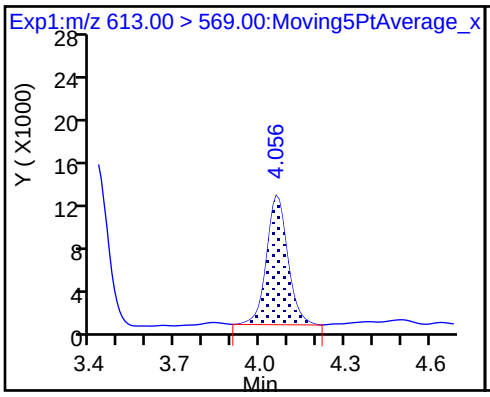
D 32 d5-NEtFOSAA



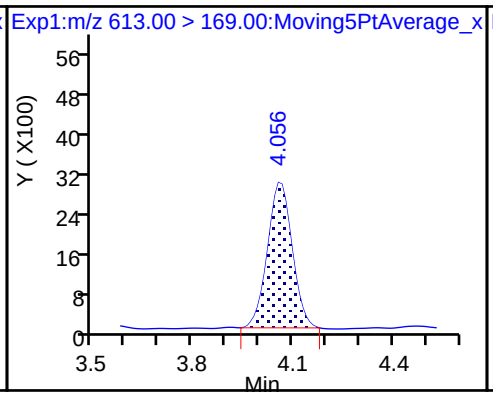
D 30 13C2 PFUnA



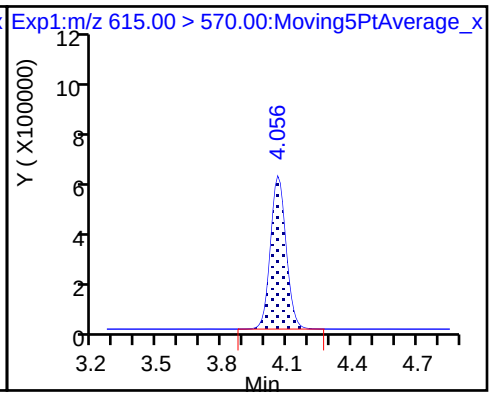
37 Perfluorododecanoic acid



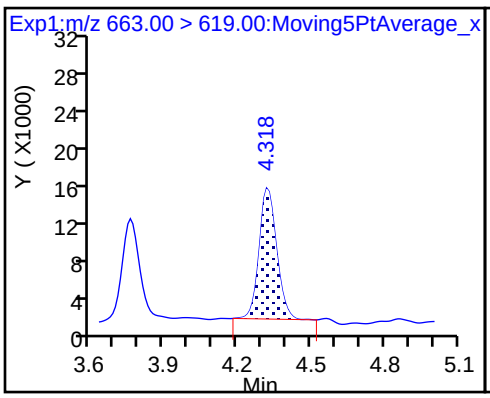
37 Perfluorododecanoic acid



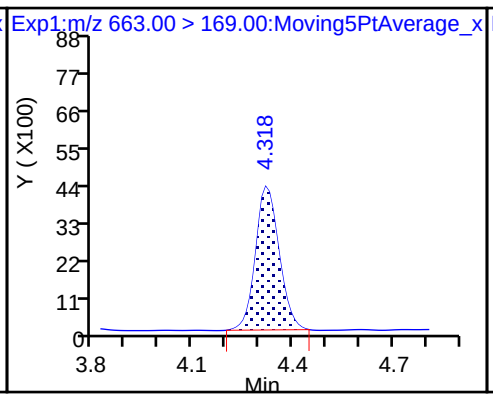
D 36 13C2 PFDoA



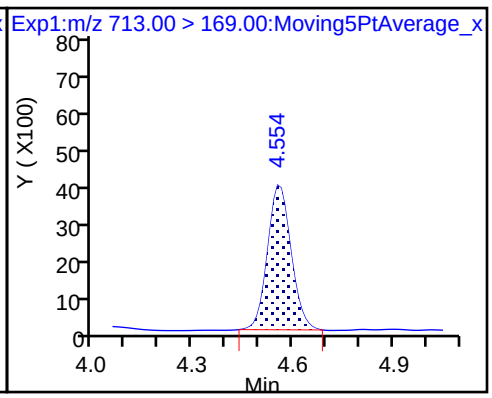
41 Perfluorotridecanoic acid



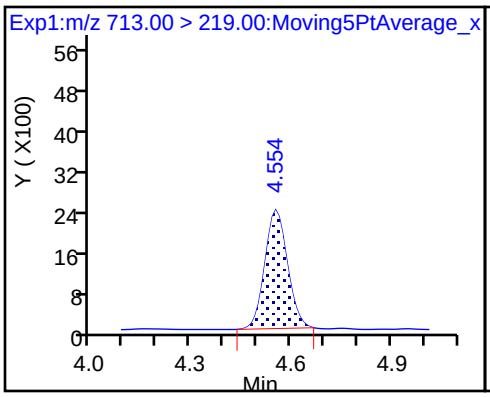
41 Perfluorotridecanoic acid



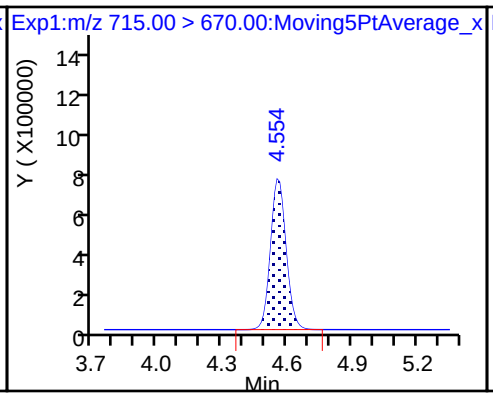
42 Perfluorotetradecanoic acid



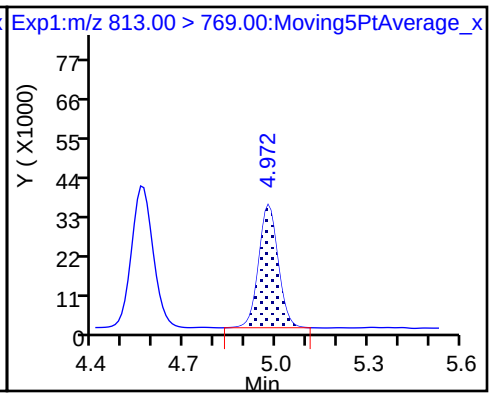
42 Perfluorotetradecanoic acid



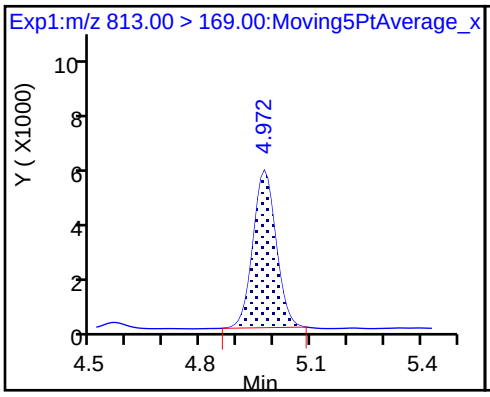
D 43 13C2-PFTeDA



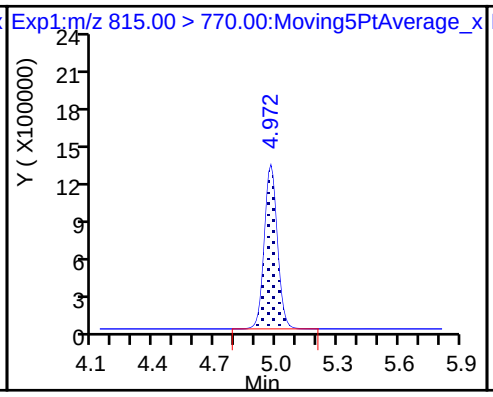
45 Perfluorohexadecanoic acid



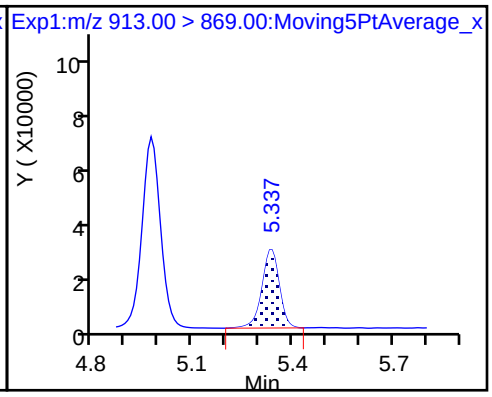
45 Perfluorohexadecanoic acid



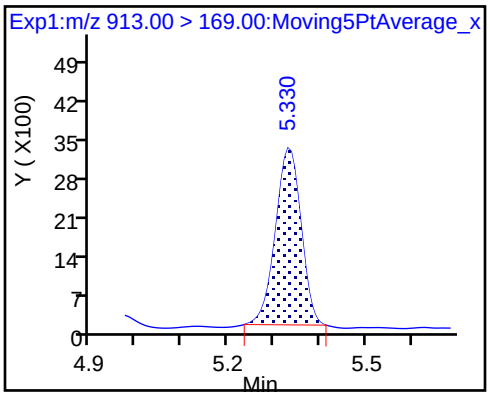
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215311/3 Calibration Date: 03/29/2018 00:02

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8924		0.947	1.00	-5.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.142		1.01	1.00	1.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.57		0.905	0.884	2.4	50.0
4:2 FTS	AveID	16.15	15.53		0.898	0.934	-3.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9667		0.946	1.00	-5.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9790		0.946	1.00	-5.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.031		0.843	0.910	-7.4	40.0
6:2FTS	AveID	1.744	1.592		0.866	0.948	-8.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.098		0.972	1.00	-2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.261		0.937	0.952	-1.6	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.998		1.00	1.00	0.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.042		0.868	0.928	-6.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9739		0.988	1.00	-1.2	40.0
8:2FTS	AveID	1.276	1.182		0.887	0.958	-7.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9371		0.948	1.00	-5.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.079		1.08	1.00	7.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6603		0.936	0.964	-2.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8993		0.963	1.00	-3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7966		0.924	1.00	-7.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.020		0.975	1.00	-2.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.093		0.993	1.00	-0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2455		0.991	1.00	-0.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9714		1.05	1.00	4.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9670		1.05	1.00	4.6	50.0
13C4 PFBA	Ave	1.266	1.367		2.70	2.50	8.0	50.0
13C5 PFPeA	Ave	0.8399	0.8826		2.63	2.50	5.1	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.41	2.33	3.7	50.0
M2-4:2FTS	Ave	0.1324	0.1390		2.45	2.34	5.0	50.0
13C2 PFHxA	Ave	0.9288	0.9780		2.63	2.50	5.3	50.0
13C4-PFHpA	Ave	0.9164	0.9787		2.67	2.50	6.8	50.0
18O2 PFHxS	Ave	1.130	1.225		2.56	2.37	8.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215311/3 Calibration Date: 03/29/2018 00:02

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2113		2.64	2.38	11.2	40.0
13C4 PFOA	Ave	0.9374	0.9331		2.49	2.50	-0.5	50.0
13C4 PFOS	Ave	0.8225	0.8627		2.51	2.39	4.9	50.0
13C5 PFNA	Ave	0.8266	0.8249		2.50	2.50	-0.2	50.0
13C8 FOSA	Ave	1.109	1.202		2.71	2.50	8.3	50.0
M2-8:2FTS	Ave	0.2565	0.2361		2.21	2.40	-8.0	40.0
13C2 PFDA	Ave	0.7245	0.7235		2.50	2.50	-0.1	50.0
d3-NMeFOSAA	Ave	0.3814	0.3315		2.17	2.50	-13.1	50.0
d5-NEtFOSAA	Ave	0.4345	0.3598		2.07	2.50	-17.2	50.0
13C2 PFUnA	Ave	0.6482	0.5665		2.19	2.50	-12.6	50.0
13C2 PFDoA	Ave	0.7355	0.6159		2.09	2.50	-16.3	50.0
13C2-PFTeDA	Ave	0.8983	0.7974		2.22	2.50	-11.2	50.0
13C2-PFHxDA	Ave	1.473	1.192		2.02	2.50	-19.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 29-Mar-2018 00:02:32 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:57:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.441	-0.006	0.532	6491022	2.70		108	87292	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.435	0.0	1.000	2317059	0.9471		94.7	723	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	1914426	1.01		101	799	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	4191640	2.63		105	136388	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.745	-0.009	0.644	87773	2.41		104	611	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.000	2655497	0.9052		102	1719	
298.90 > 99.00	1.736	1.736	0.0	1.000	1101457		2.41(1.25-3.74)		1617	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	547605	0.8980		96.1	34136	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.966	-0.010	0.725	616600	2.45		105	8882	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	1795950	0.9456		94.6	2505	
313.00 > 119.00	1.987	1.998	-0.011	0.995	164172		10.94(5.03-15.10)		1659	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	2.009	-0.011	0.741	4644551	2.63		105	119475	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1820200	0.9464		94.6	1102	
363.00 > 169.00	2.328	2.328	0.0	1.000	731307		2.49(1.13-3.40)		1395	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2183584	0.8430		92.6	9714	
399.00 > 99.00	2.341	2.341	0.0	1.000	757019		2.88(1.50-4.49)		4010	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	4648219	2.67		107	98582	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	5503672	2.56		108	77912	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	605953	0.8656		91.3	6588	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	953489	2.64		111	27123	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		4749284	2.50			83446	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	1946993	0.9723		97.2	848	
413.00 > 169.00	2.697	2.697	0.0	1.000	1009231		1.93(0.84-2.52)		3738	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.705	0.0	1.000	1967259	0.9369		98.4	41446	
449.00 > 99.00	2.705	2.705	0.0	1.000	557648		3.53(1.94-5.82)		11814	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	4431614	2.49		99.5	77967	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	1584932	0.8682		93.6	3950	
499.00 > 99.00	3.072	3.072	0.0	1.000	357363		4.44(2.31-6.93)		3391	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1563364	1.00		100	1765	
463.00 > 169.00	3.072	3.072	0.0	1.000	398934		3.92(1.90-5.69)		11995	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3917807	2.49		99.8	93433	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3916793	2.51		105	49719	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	2223319	0.9879		98.8	34978	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	5707485	2.71		108	54409	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	507733	0.8869		92.6	7311	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1288024	0.9484		94.8	6954	
513.00 > 169.00	3.435	3.435	0.0	1.000	234128		5.50(2.36-7.09)		8582	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	1074334	2.20		92.0	29127	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	3436313	2.50		99.9	50280	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.000	679645	1.08		108	7441	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1574436	2.17		86.9	54626	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1043162	0.9361		97.1	35331	
599.00 > 99.00	3.748	3.748	0.0	1.000	374347		2.79(1.39-4.16)		10996	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	857318	0.9239		92.4	4606	
563.00 > 169.00	3.769	3.769	0.0	1.000	211507		4.05(2.12-6.36)		7867	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.769	0.0	1.003	614753	0.9626		96.3	17120	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1708952	2.07		82.8	5149	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.398	2690556	2.19		87.4	67111	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	1193328	0.9748		97.5	875	
613.00 > 169.00	4.057	4.057	0.0	1.000	302869		3.94(2.13-6.40)		6775	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.089	-0.032	1.505	2924870	2.09		83.7	19649	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1278762	0.99		99.3	533	
663.00 > 169.00	4.318	4.318	0.0	1.000	423159		3.02(1.25-3.76)		6493	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	371953	0.99		99.1	6258	
713.00 > 219.00	4.554	4.564	-0.010	0.998	239337		1.55(0.71-2.13)		6897	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3787135	2.22		88.8	23848	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.972	0.0	1.000	2198939	1.04		104	523	
813.00 > 169.00	4.972	4.972	0.0	1.000	366939		5.99(2.86-8.58)		4396	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	5.008	-0.036	1.844	5659007	2.02		80.9	17559	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2188881	1.05		105	445	
913.00 > 169.00	5.337	5.337	0.0	1.000	272210		8.04(3.83-11.48)		3165	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_006.d

Injection Date: 29-Mar-2018 00:02:32 Instrument ID: A8_N

Lims ID: CCV L4

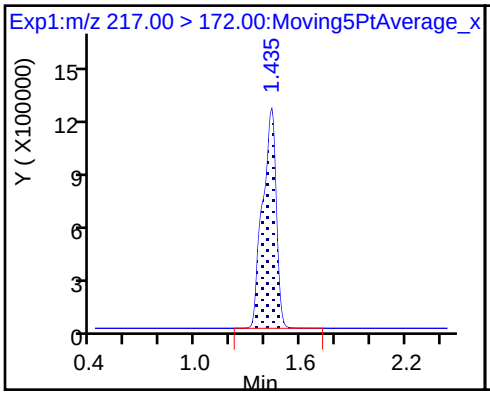
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

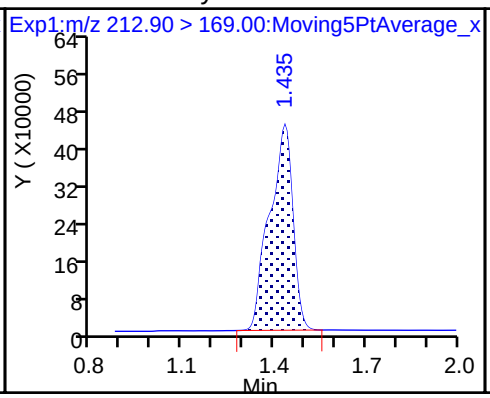
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

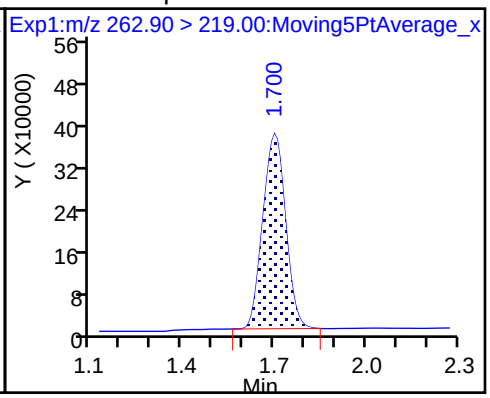
D 1 13C4 PFBA



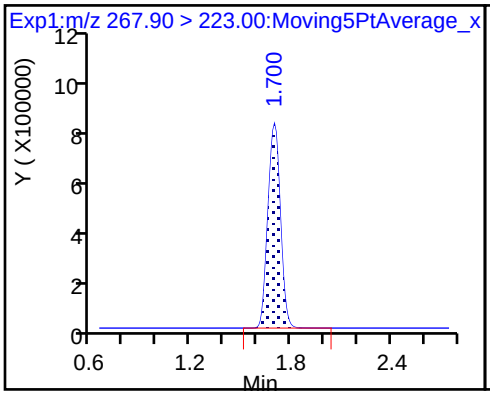
2 Perfluorobutyric acid



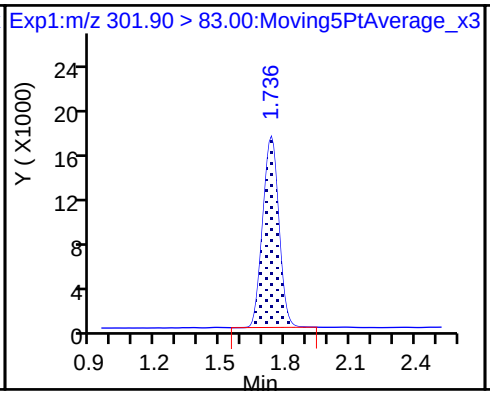
4 Perfluoropentanoic acid



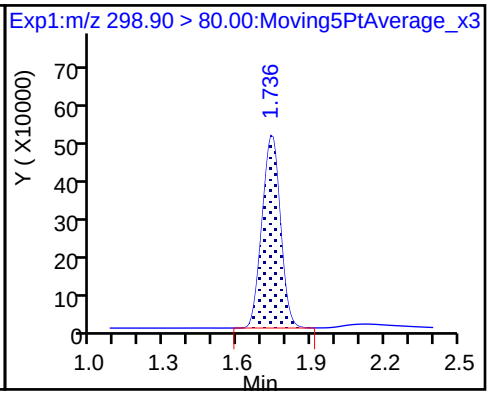
D 3 13C5-PFPeA



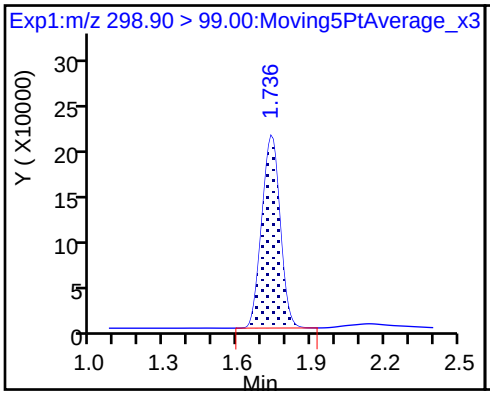
D 47 13C3-PFBS



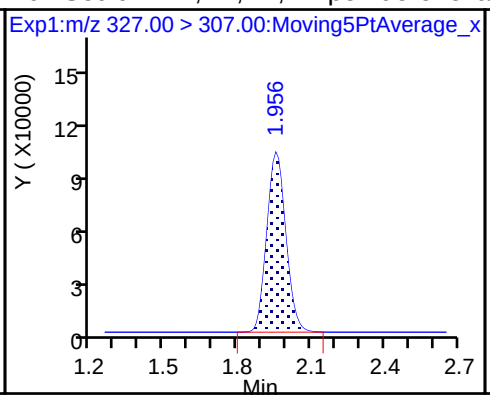
5 Perfluorobutanesulfonic acid



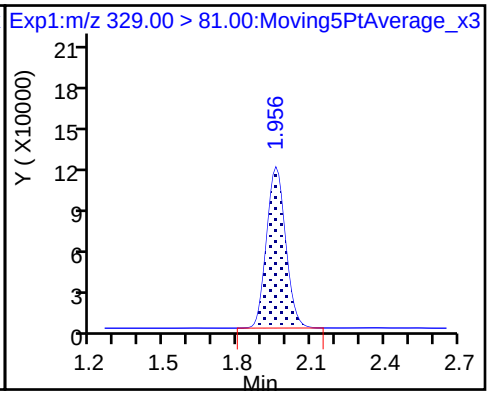
5 Perfluorobutanesulfonic acid



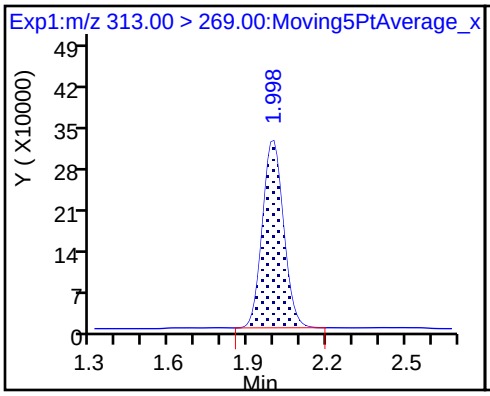
61 Sodium 1H,1H,2H,2H-perfluorohexane



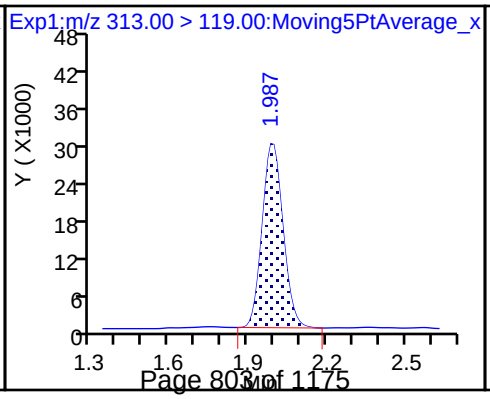
D 60 M2-4:2FTS



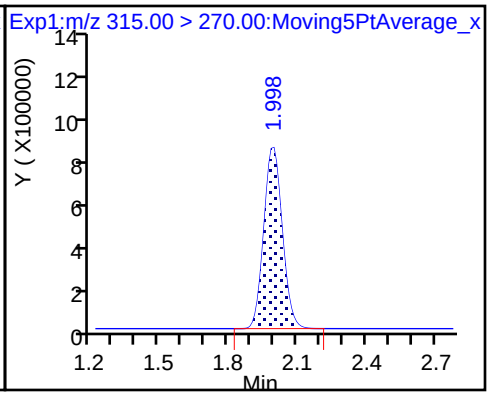
6 Perfluorohexanoic acid



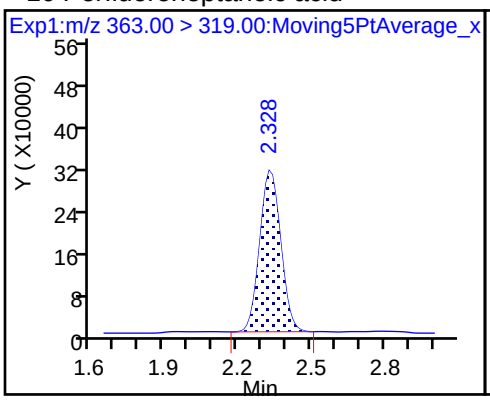
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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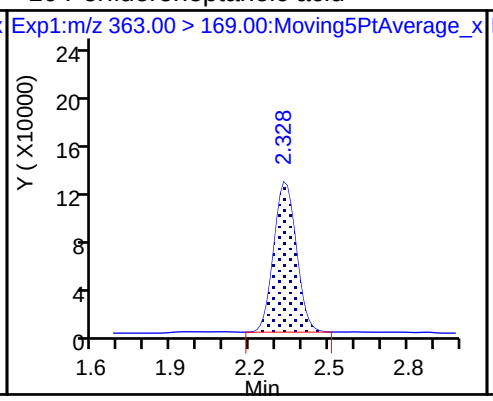
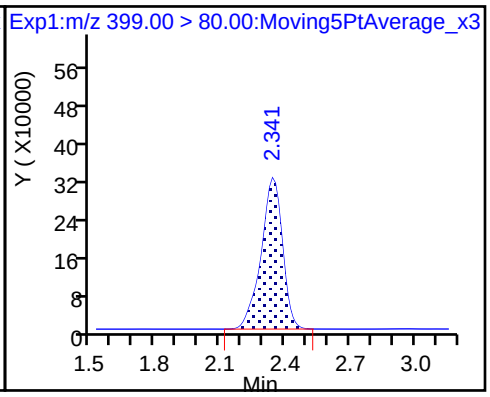
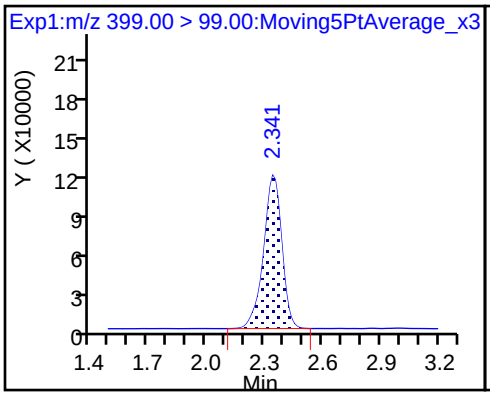


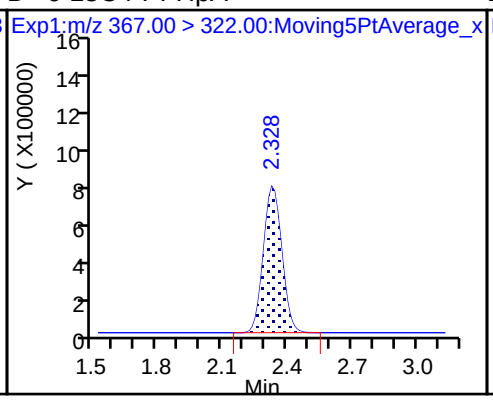
8 Perfluorohexanesulfonic acid



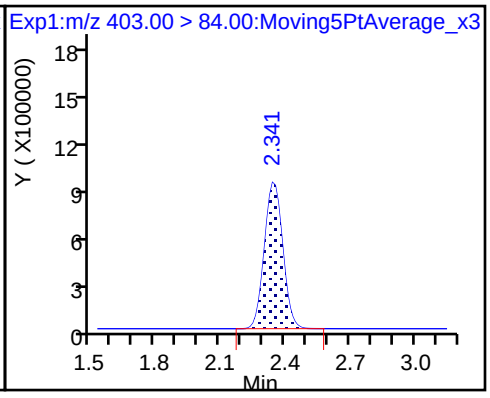
8 Perfluorohexanesulfonic acid



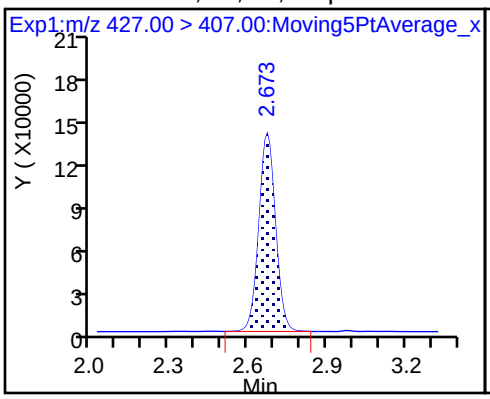
D 9 13C4-PFHpA



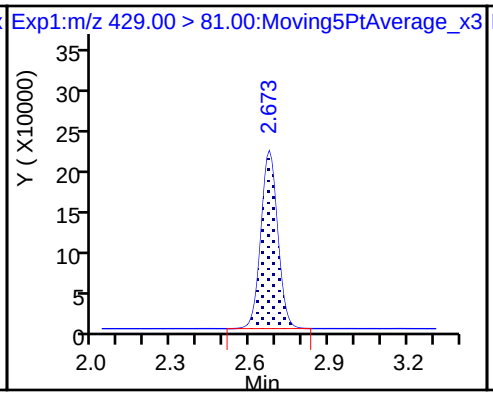
D 11 18O2 PFHxS



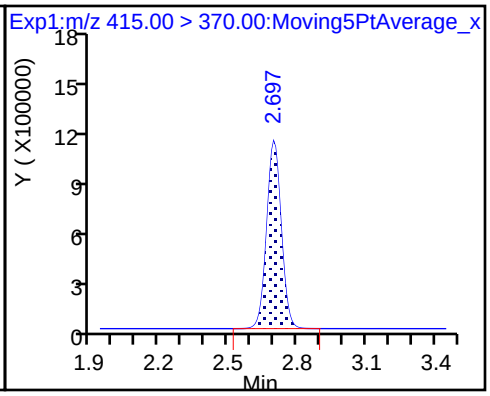
13 Sodium 1H,1H,2H,2H-perfluorooctan



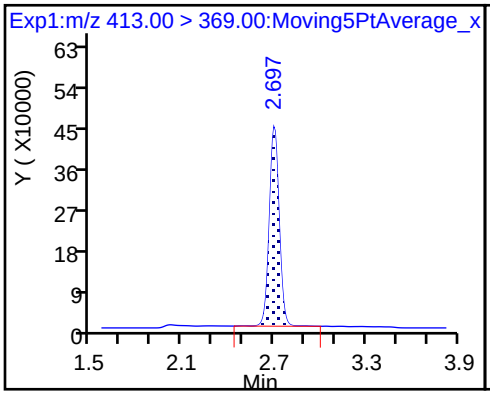
D 12 M2-6:2FTS



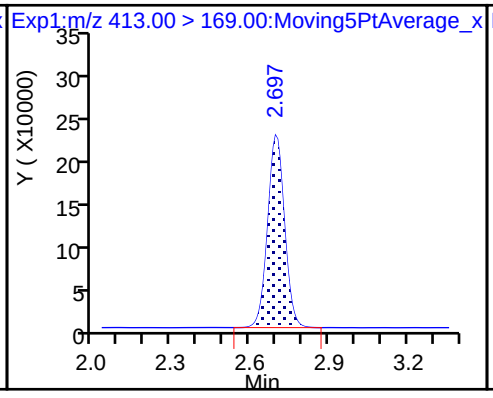
* 62 13C2-PFOA



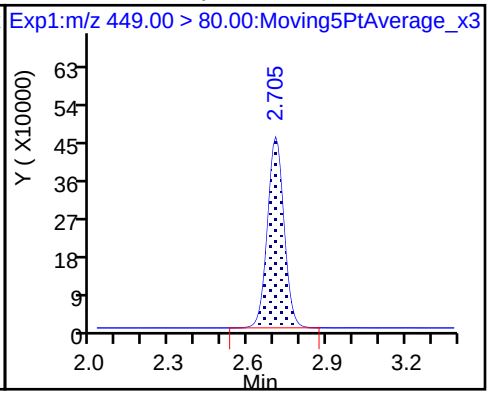
15 Perfluorooctanoic acid



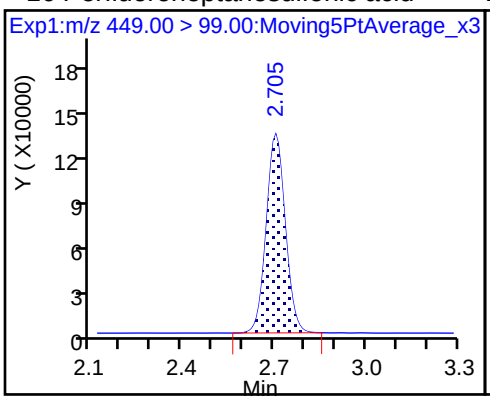
15 Perfluorooctanoic acid



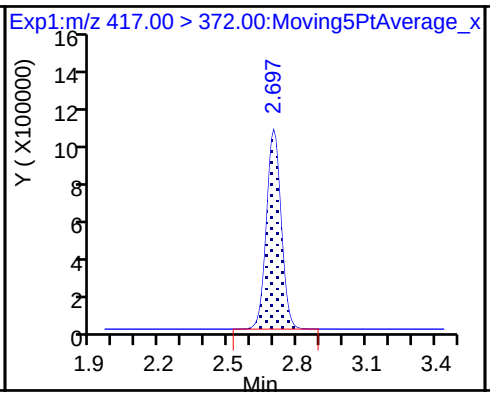
16 Perfluoroheptanesulfonic acid



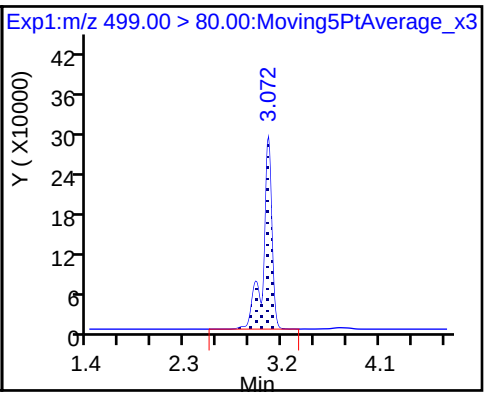
16 Perfluoroheptanesulfonic acid



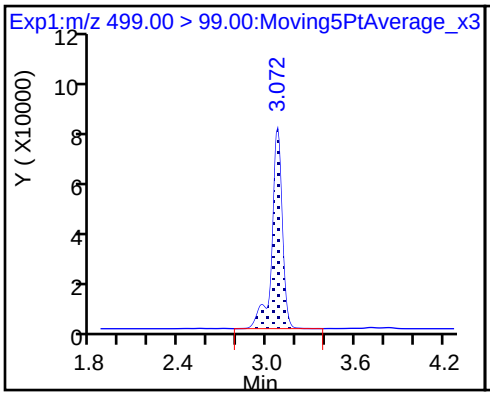
D 14 13C4 PFOA



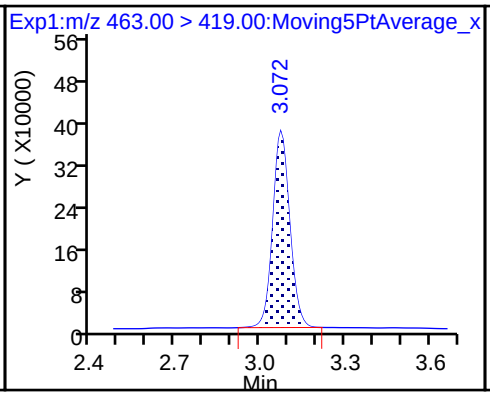
17 Perfluorooctane sulfonic acid



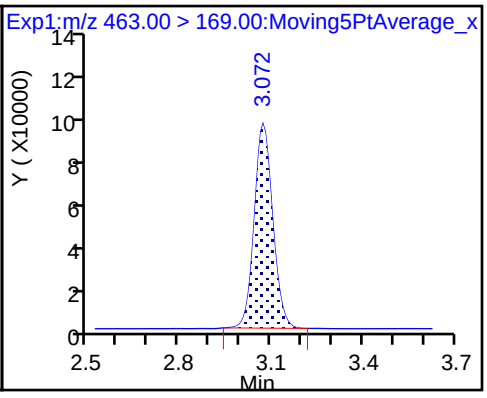
17 Perfluorooctane sulfonic acid



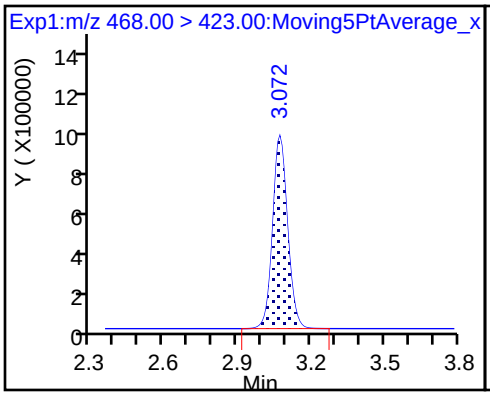
20 Perfluorononanoic acid



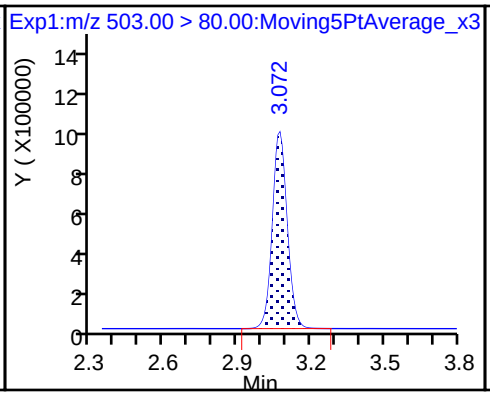
20 Perfluorononanoic acid



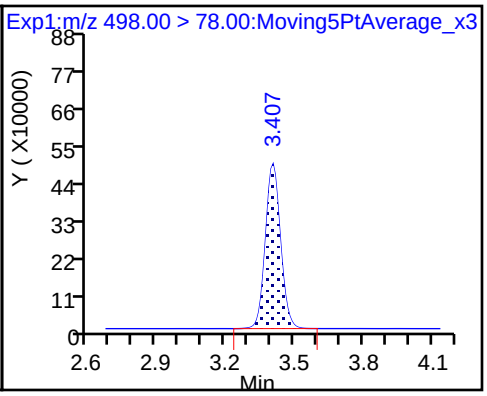
D 19 13C5 PFNA



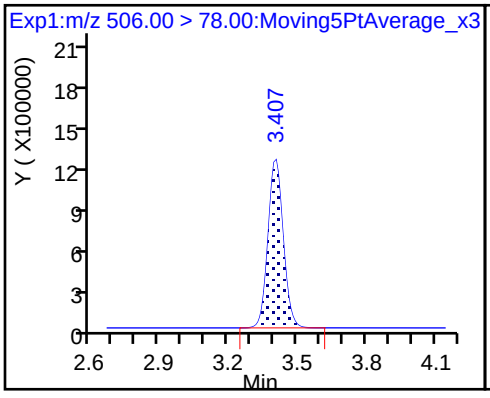
D 18 13C4 PFOS



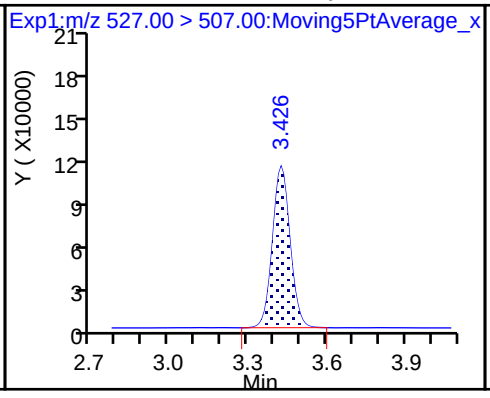
22 Perfluorooctane Sulfonamide



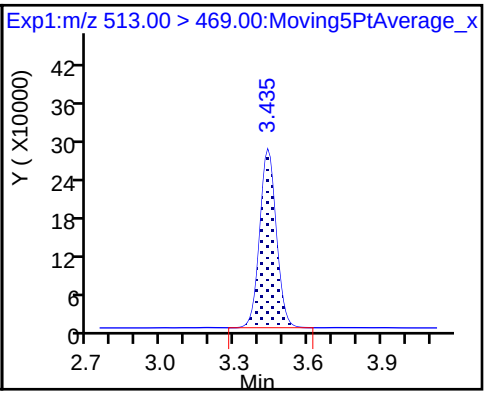
D 21 13C8 FOSA



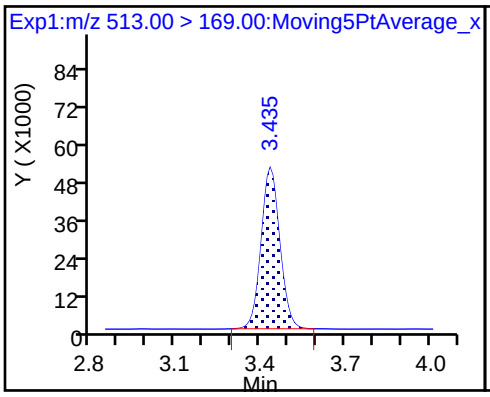
25 Sodium 1H,1H,2H,2H-perfluorodecan



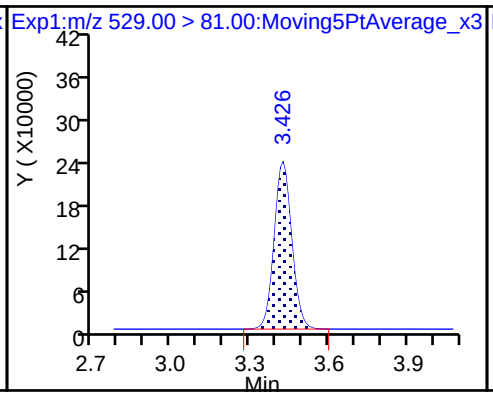
24 Perfluorodecanoic acid



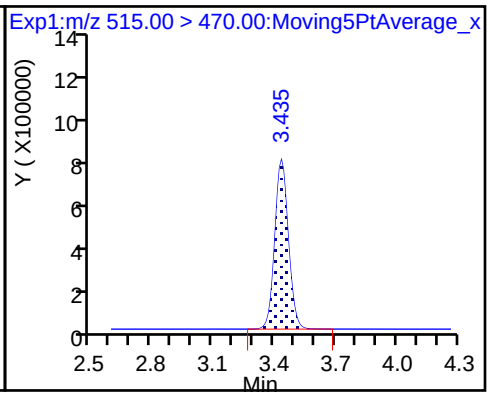
24 Perfluorodecanoic acid



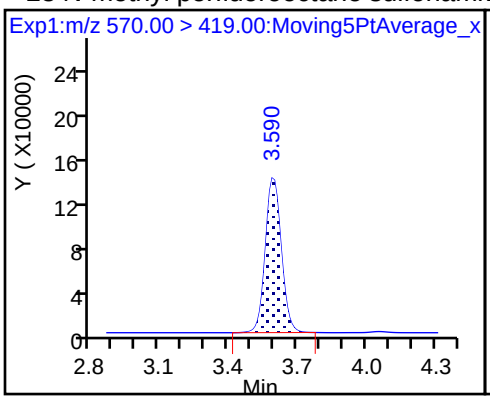
D 26 M2-8:2FTS



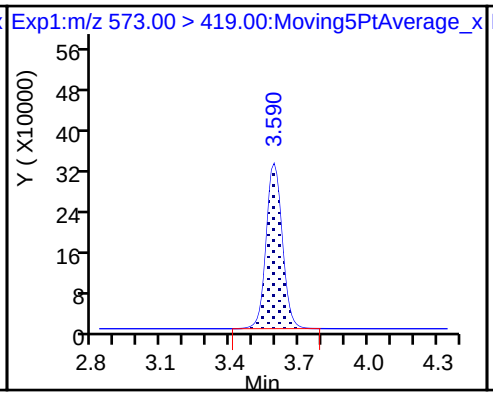
D 23 13C2 PFDA



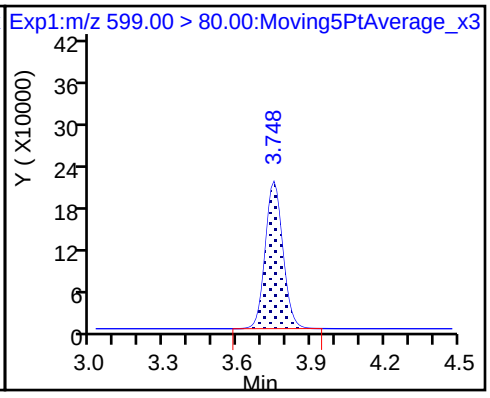
28 N-methyl perfluorooctane sulfonami



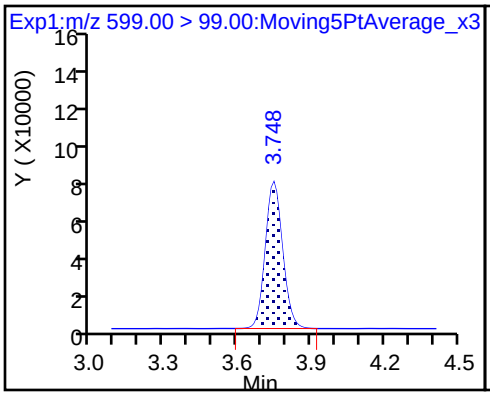
D 27 d3-NMeFOSAA



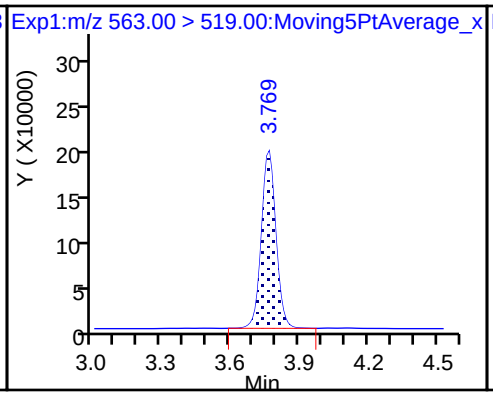
29 Perfluorodecane Sulfonic acid



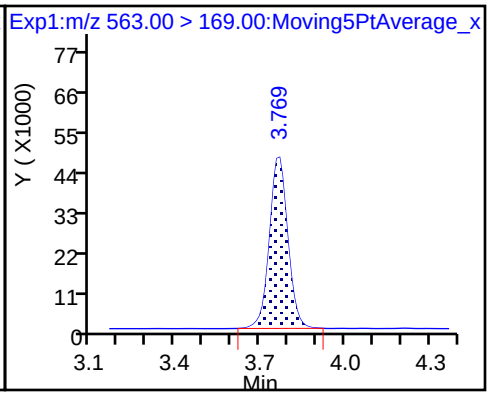
29 Perfluorodecane Sulfonic acid



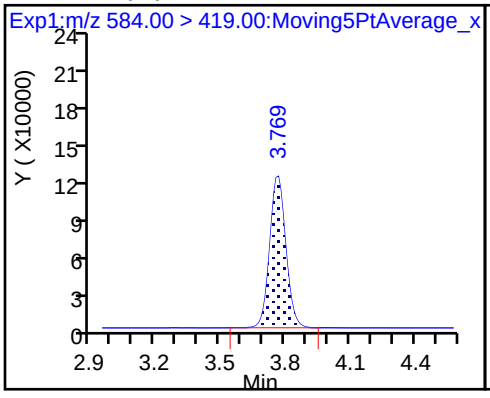
31 Perfluoroundecanoic acid



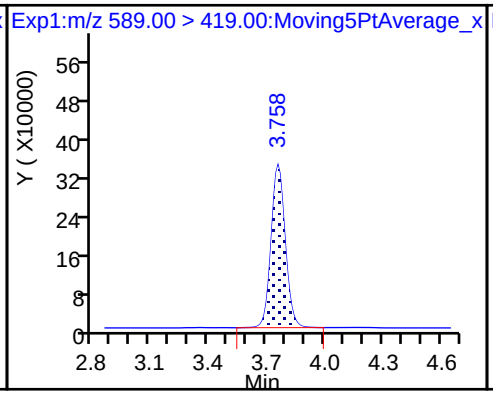
31 Perfluoroundecanoic acid



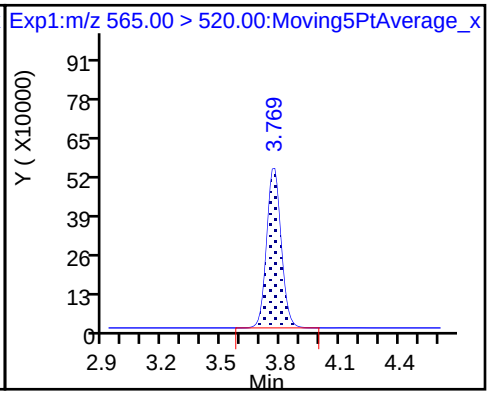
33 N-ethyl perfluorooctane sulfonamid



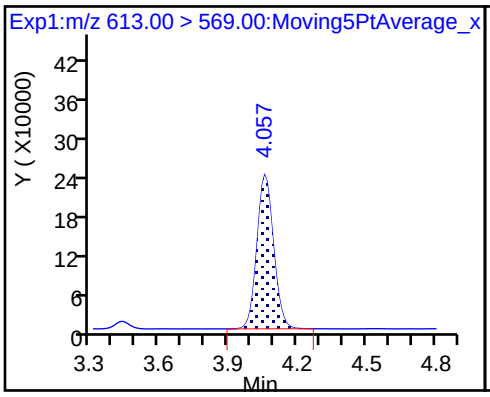
D 32 d5-NEtFOSAA



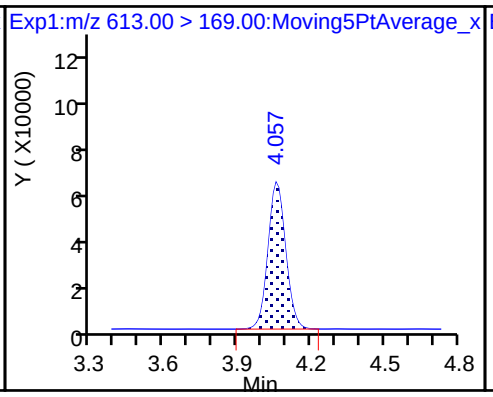
D 30 13C2 PFUnA



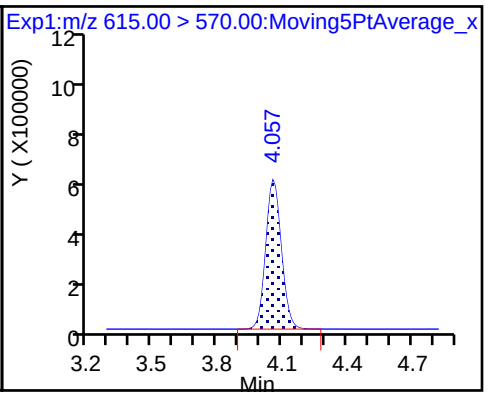
37 Perfluorododecanoic acid



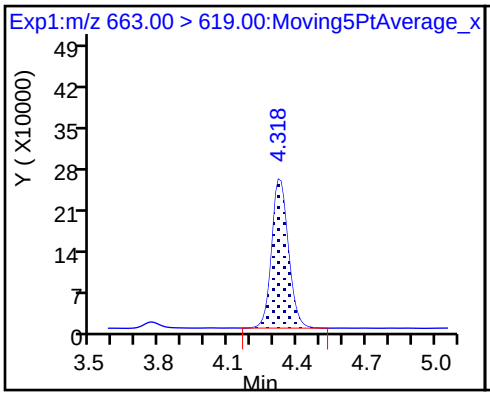
37 Perfluorododecanoic acid



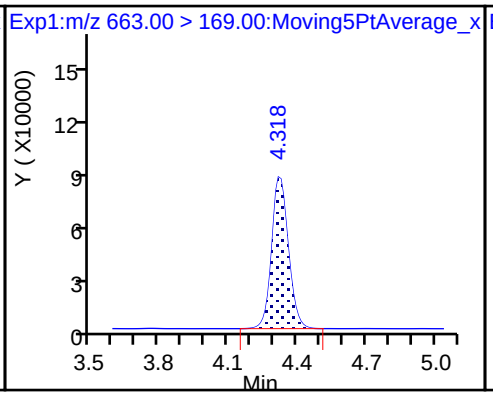
D 36 13C2 PFDoA



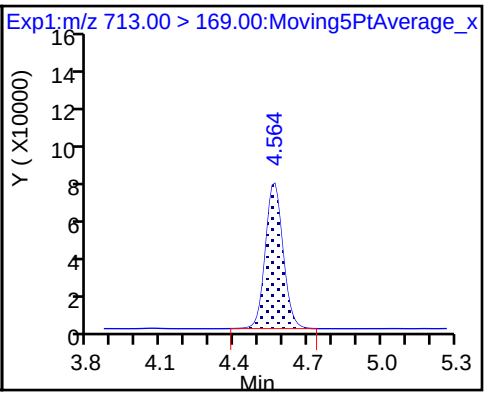
41 Perfluorotridecanoic acid



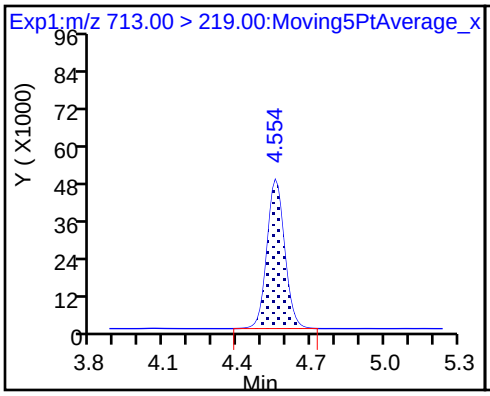
41 Perfluorotridecanoic acid



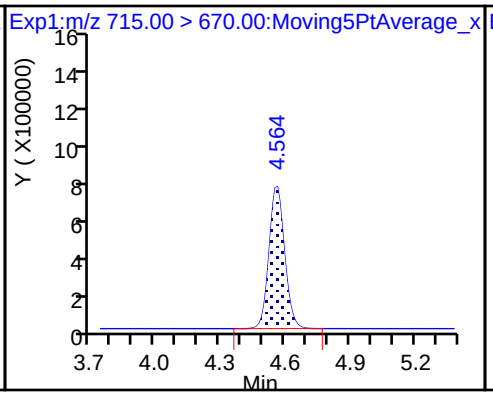
42 Perfluorotetradecanoic acid



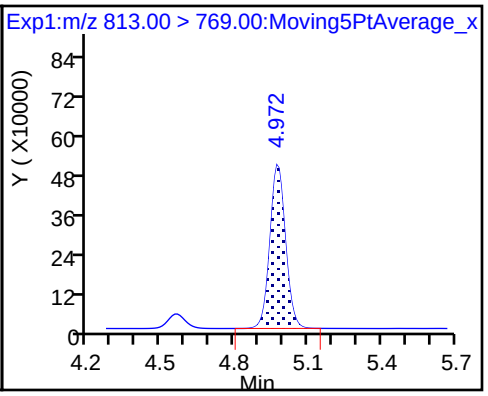
42 Perfluorotetradecanoic acid



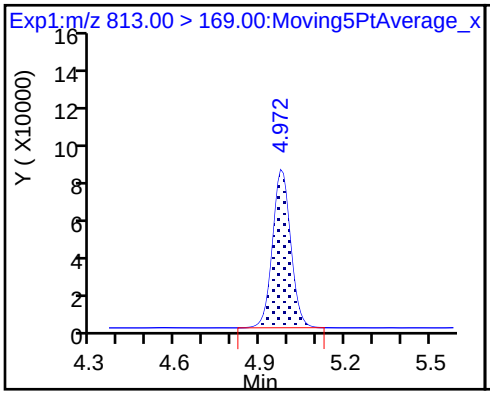
D 43 13C2-PFTeDA



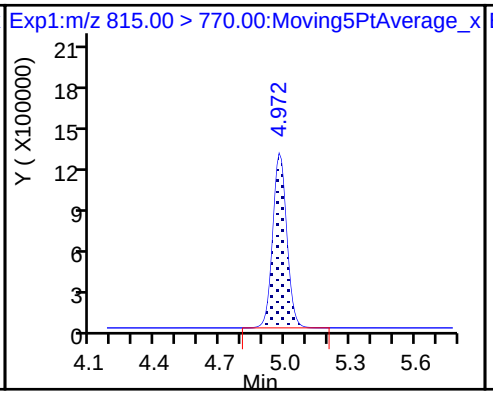
45 Perfluorohexadecanoic acid



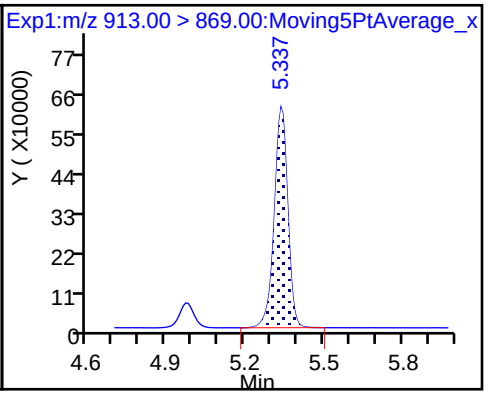
45 Perfluorohexadecanoic acid



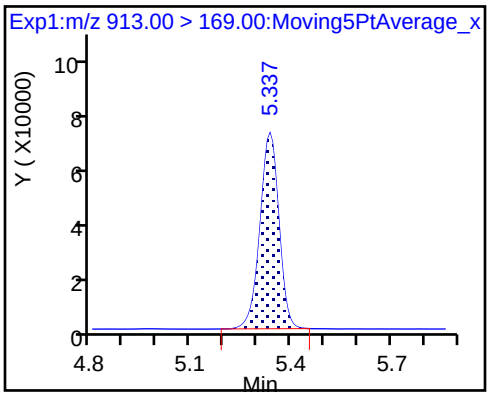
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215311/14 Calibration Date: 03/29/2018 01:28

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9423		2.50	2.50	0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.130		2.51	2.50	0.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.89		2.30	2.21	4.1	50.0
4:2 FTS	AveID	16.15	14.60		2.11	2.34	-9.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.011		2.47	2.50	-1.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.015		2.45	2.50	-1.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.043		2.13	2.28	-6.3	40.0
6:2FTS	AveID	1.744	1.601		2.18	2.37	-8.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.160		2.57	2.50	2.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.336		2.48	2.38	4.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.107		2.31	2.32	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.019		2.55	2.50	2.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9904		2.51	2.50	0.5	40.0
8:2FTS	AveID	1.276	1.263		2.37	2.40	-1.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9797		2.48	2.50	-0.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.053		2.63	2.50	5.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6958		2.47	2.41	2.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9610		2.57	2.50	2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7894		2.29	2.50	-8.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.025		2.45	2.50	-2.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.096		2.49	2.50	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2605		2.63	2.50	5.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9189		2.50	2.50	0.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.004		2.71	2.50	8.6	50.0
13C4 PFBA	Ave	1.266	1.372		2.71	2.50	8.4	50.0
13C5 PFPeA	Ave	0.8399	0.9074		2.70	2.50	8.0	50.0
13C3-PFBS	Ave	0.0192	0.0205		2.48	2.33	6.7	50.0
M2-4:2FTS	Ave	0.1324	0.1363		2.40	2.34	3.0	50.0
13C2 PFHxA	Ave	0.9288	0.9688		2.61	2.50	4.3	50.0
13C4-PFHpA	Ave	0.9164	0.9379		2.56	2.50	2.3	50.0
18O2 PFHxS	Ave	1.130	1.165		2.44	2.37	3.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215311/14 Calibration Date: 03/29/2018 01:28

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1899		2.37	2.38	-0.0	40.0
13C4 PFOA	Ave	0.9374	0.9109		2.43	2.50	-2.8	50.0
13C4 PFOS	Ave	0.8225	0.8168		2.37	2.39	-0.7	50.0
13C5 PFNA	Ave	0.8266	0.7894		2.39	2.50	-4.5	50.0
13C8 FOSA	Ave	1.109	1.194		2.69	2.50	7.6	50.0
M2-8:2FTS	Ave	0.2565	0.2224		2.08	2.40	-13.3	40.0
13C2 PFDA	Ave	0.7245	0.6843		2.36	2.50	-5.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.3225		2.11	2.50	-15.4	50.0
d5-NEtFOSAA	Ave	0.4345	0.3488		2.01	2.50	-19.7	50.0
13C2 PFUnA	Ave	0.6482	0.5468		2.11	2.50	-15.6	50.0
13C2 PFDoA	Ave	0.7355	0.6090		2.07	2.50	-17.2	50.0
13C2-PFTeDA	Ave	0.8983	0.7258		2.02	2.50	-19.2	50.0
13C2-PFHxDA	Ave	1.473	1.208		2.05	2.50	-18.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 01:28:41 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:05:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	5840228	2.50		100	2403	
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.533	6198132	2.71		108	84141	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.005	4634069	2.51		100	1962	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.630	4099654	2.70		108	132636	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	6605911	2.30		104	4356	
298.90 > 99.00	1.753	1.753	0.0	1.005	2673352		2.47(1.25-3.74)		3828	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.643	85915	2.48		107	680	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	1259846	2.11		90.4	58200	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.966	0.0	0.725	575122	2.40		103	8163	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	4424965	2.47		98.9	6664	
313.00 > 119.00	2.008	2.008	0.0	1.000	409381		10.81(5.03-15.10)		4085	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.009	-0.001	0.740	4377236	2.61		104	112699	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	4302228	2.45		98.1	2545	
363.00 > 169.00	2.341	2.341	0.0	1.000	1724510		2.49(1.13-3.40)		3181	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	4995727	2.13		93.7	18869	
399.00 > 99.00	2.354	2.354	0.0	1.000	1736570		2.88(1.50-4.49)		9592	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.863	4237513	2.56		102	89634	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.868	4979665	2.44		103	56840	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.689	2.689	0.0	1.003	1301589	2.18		91.8	7492	
* 62 13C2-PFOA										
415.00 > 370.00	2.712	2.712	0.0		4518281	2.50			57655	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.712	2.712	0.0	1.000	4775923	2.57		103	1918	
413.00 > 169.00	2.712	2.712	0.0	1.000	2458605		1.94(0.84-2.52)		7385	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.697	-0.016	0.988	814942	2.37		99.9	26160	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.720	2.720	0.0	1.000	4693748	2.48		104	59556	
449.00 > 99.00	2.720	2.720	0.0	1.000	1240624		3.78(1.94-5.82)		20216	
D 14 13C4 PFOA										
417.00 > 372.00	2.712	2.721	-0.009	1.000	4115673	2.43		97.2	72512	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.080	0.0	1.000	3789829	2.30		99.3	8407	
499.00 > 99.00	3.080	3.080	0.0	1.000	828400		4.57(2.31-6.93)		8522	
20 Perfluorononanoic acid										
463.00 > 419.00	3.088	3.088	0.0	1.003	3633457	2.55		102	4136	
463.00 > 169.00	3.080	3.088	-0.008	1.000	898576		4.04(1.90-5.69)		26428	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.136	3566813	2.39		95.5	52356	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.136	3528164	2.37		99.3	38249	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	5341022	2.51		100	19262	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.417	-0.001	1.260	5392779	2.69		108	78645	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	1216006	2.37		99.0	17269	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.444	0.0	1.000	3028889	2.48		99.2	13496	
513.00 > 169.00	3.444	3.444	0.0	1.000	535502		5.66(2.36-7.09)		14552	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.266	962442	2.08		86.7	26039	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.270	3091690	2.36		94.5	42089	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.611	3.611	0.0	1.003	1534511	2.63		105	13738	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.327	1457072	2.11		84.6	43057	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.758	0.0	1.000	2475351	2.47		102	38969	
599.00 > 99.00	3.758	3.758	0.0	1.000	835253		2.96(1.39-4.16)		21171	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.000	1950313	2.29		91.6	10296	
563.00 > 169.00	3.779	3.779	0.0	1.000	487414		4.00(2.12-6.36)		14147	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.779	0.0	1.003	1514354	2.57		103	25068	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.779	-0.011	1.389	1575807	2.01		80.3	5810	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.790	-0.011	1.393	2470511	2.11		84.4	62225	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.077	4.077	0.0	1.003	2819148	2.45		97.9	2116	
613.00 > 169.00	4.067	4.077	-0.010	1.000	697683		4.04(2.13-6.40)		8082	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.499	2751682	2.07		82.8	19614	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.339	4.339	0.0	1.000	3014633	2.49		99.5	1254	
663.00 > 169.00	4.339	4.339	0.0	1.000	1007002		2.99(1.25-3.76)		15338	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	854354	2.63		105	10814	
713.00 > 219.00	4.564	4.575	-0.011	0.998	585679		1.46(0.71-2.13)		10626	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.687	3279457	2.02		80.8	18345	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	5013383	2.50		100	1129	
813.00 > 169.00	4.990	4.990	0.0	1.000	869695		5.76(2.86-8.58)		6790	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	5.008	-0.018	1.840	5456177	2.05		82.0	14121	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	5476305	2.71		109	967	
913.00 > 169.00	5.351	5.351	0.0	1.000	699259		7.83(3.83-11.48)		5776	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_017.d

Injection Date: 29-Mar-2018 01:28:41 Instrument ID: A8_N

Lims ID: CCV L5

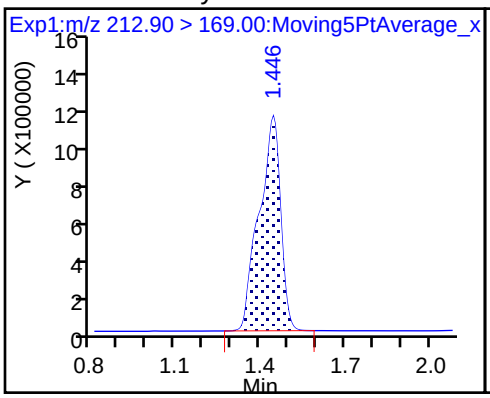
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 14

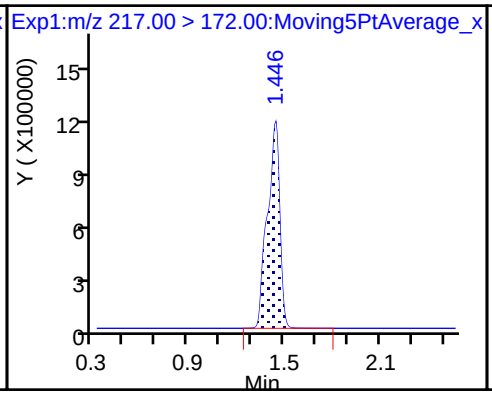
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

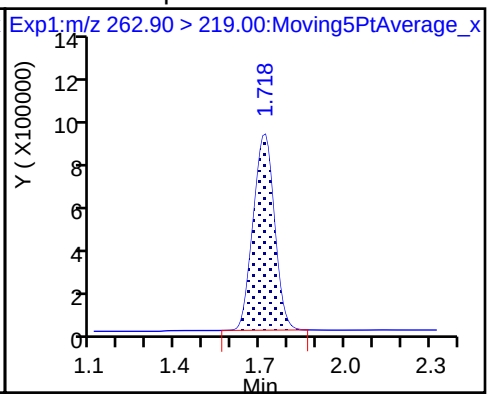
2 Perfluorobutyric acid



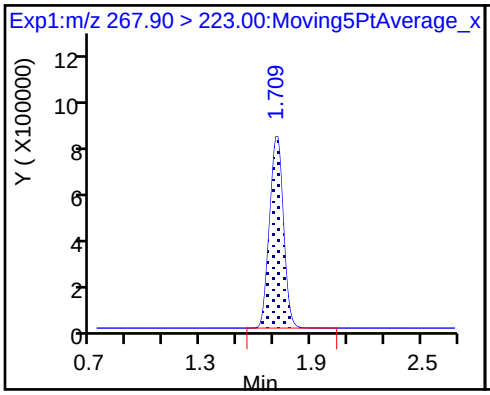
D 1 13C4 PFBA



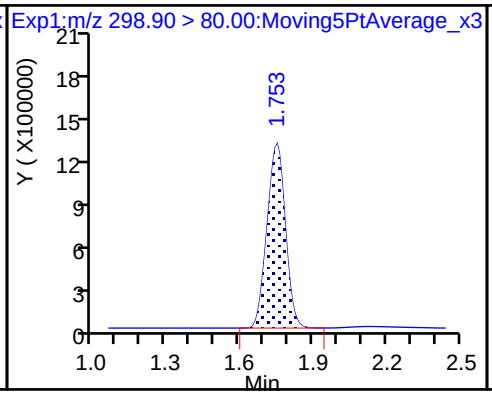
4 Perfluoropentanoic acid



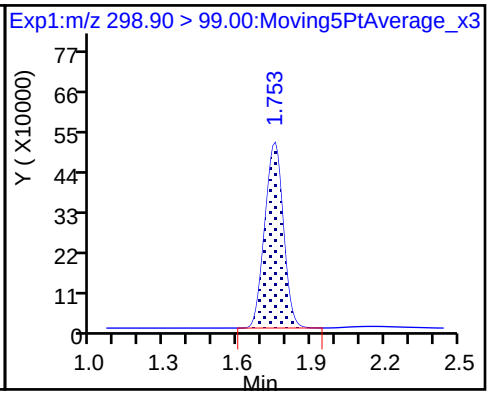
D 3 13C5-PFPeA



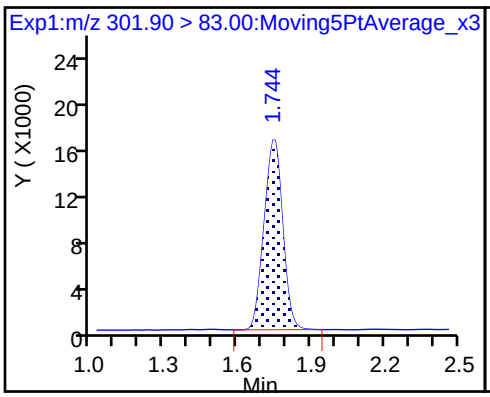
5 Perfluorobutanesulfonic acid



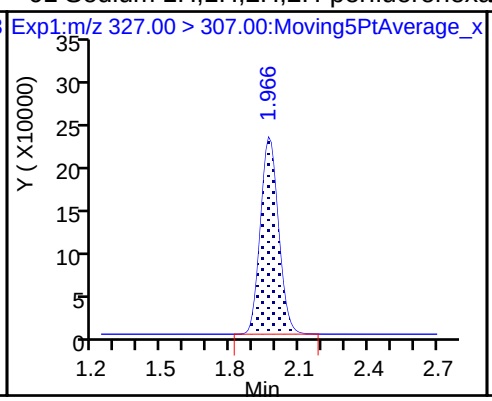
5 Perfluorobutanesulfonic acid



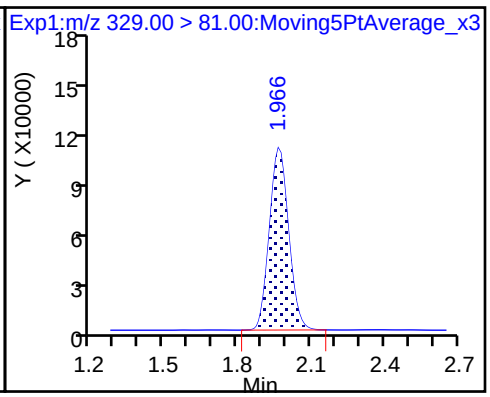
D 47 13C3-PFBS



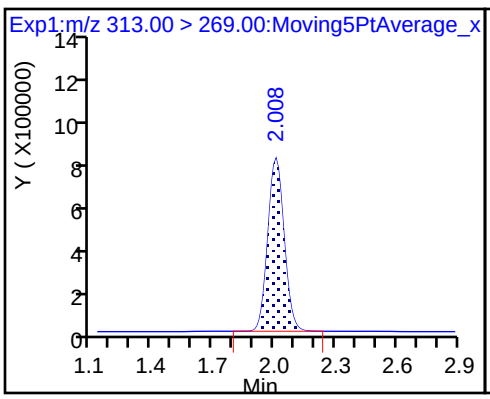
61 Sodium 1H,1H,2H,2H-perfluorohexane



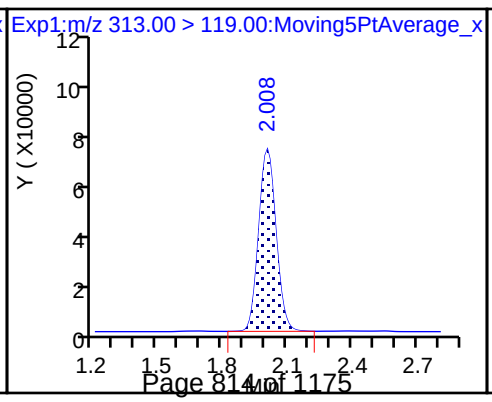
D 60 M2-4:2FTS



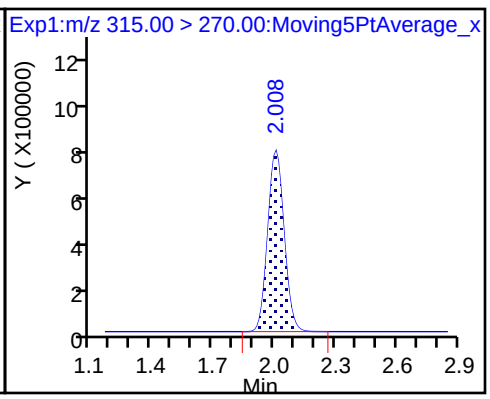
6 Perfluorohexanoic acid



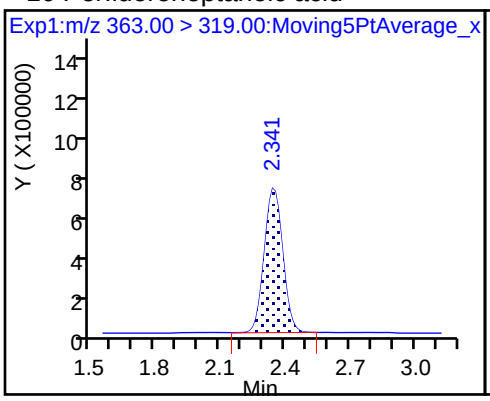
6 Perfluorohexanoic acid



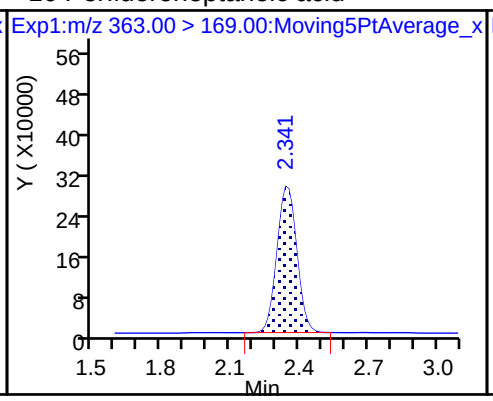
D 7 13C2 PFHxA



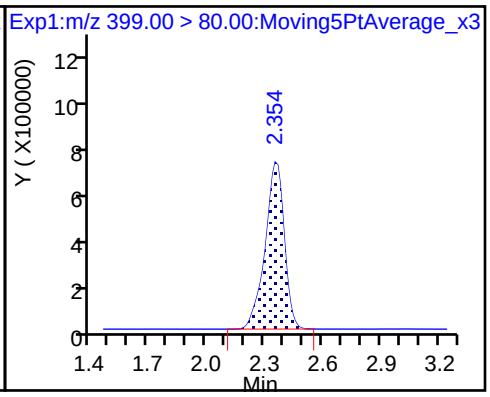
10 Perfluoroheptanoic acid



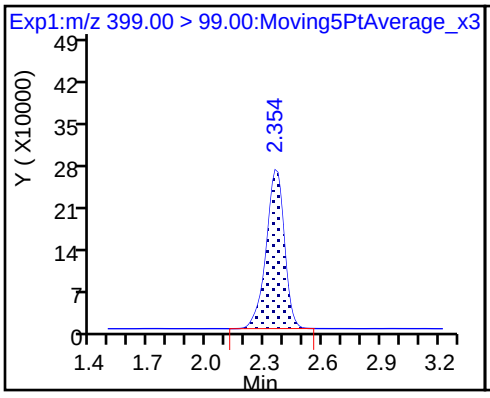
10 Perfluoroheptanoic acid



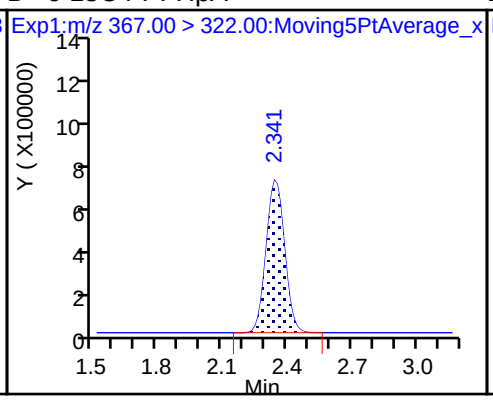
8 Perfluorohexanesulfonic acid



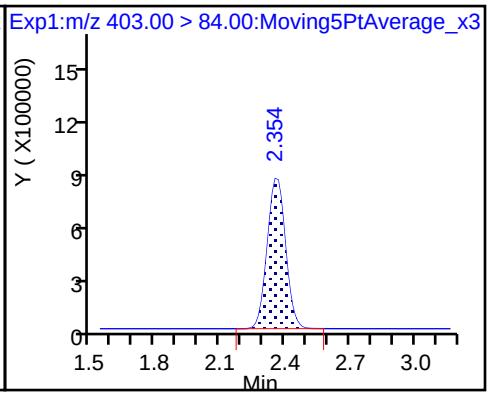
8 Perfluorohexanesulfonic acid



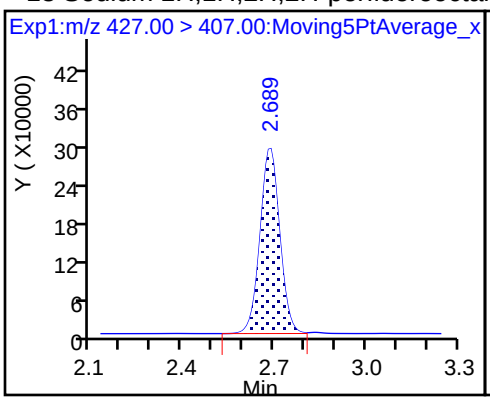
D 9 13C4-PFHpA



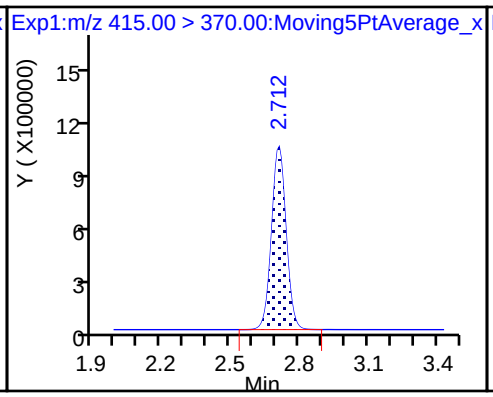
D 11 18O2 PFHxS



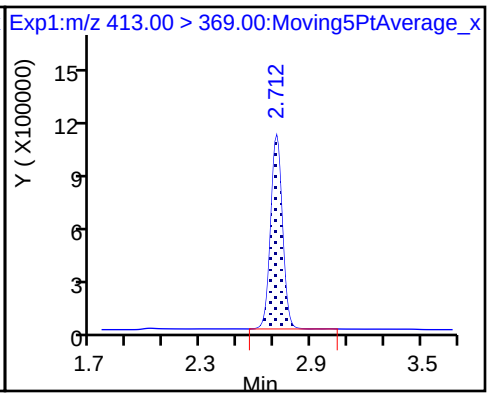
13 Sodium 1H,1H,2H,2H-perfluorooctane



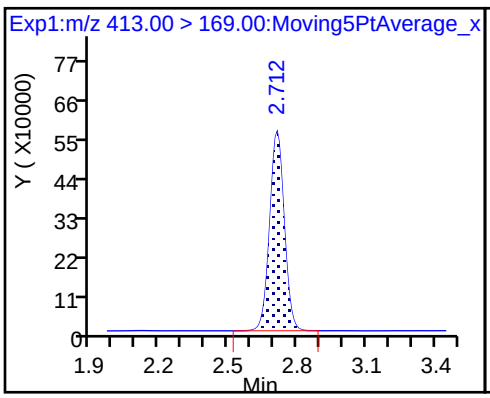
M2 13C2-PFOA



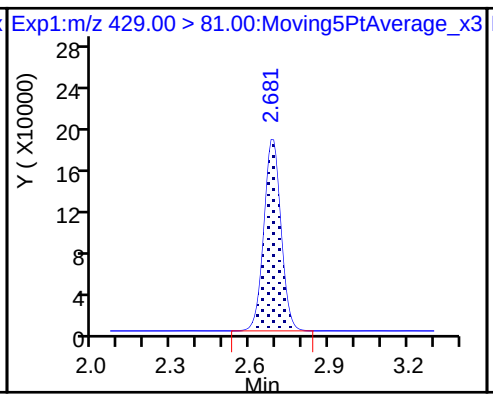
15 Perfluorooctanoic acid



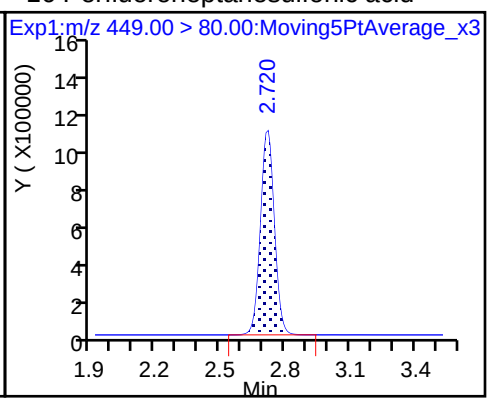
15 Perfluorooctanoic acid



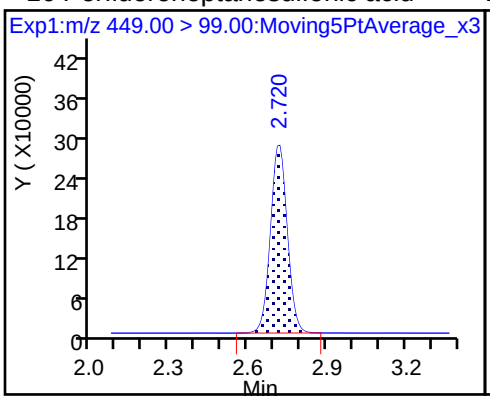
D 12 M2-6:2FTS



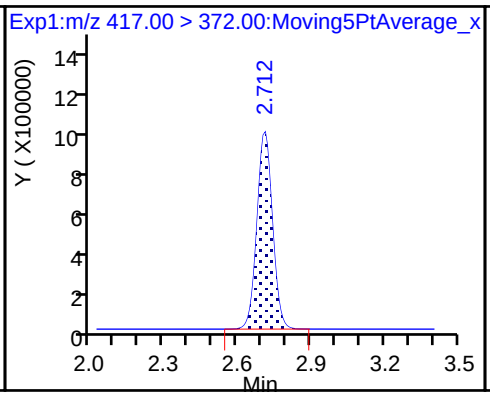
16 Perfluoroheptanesulfonic acid



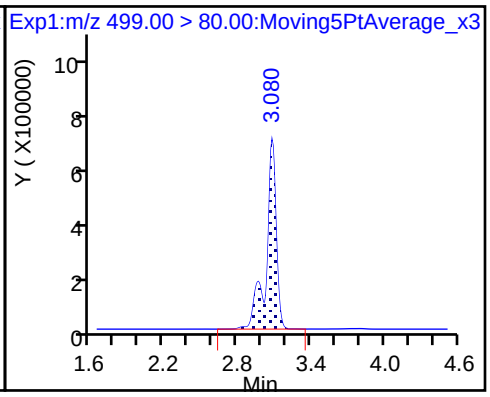
16 Perfluoroheptanesulfonic acid



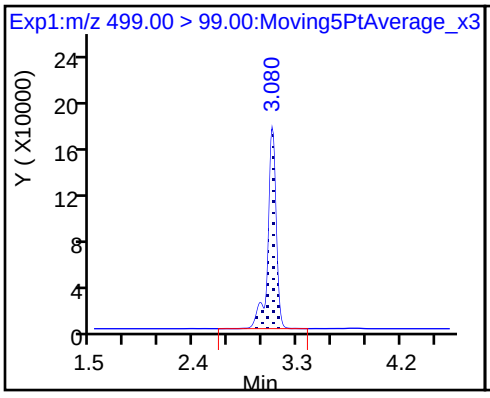
D 14 13C4 PFOA



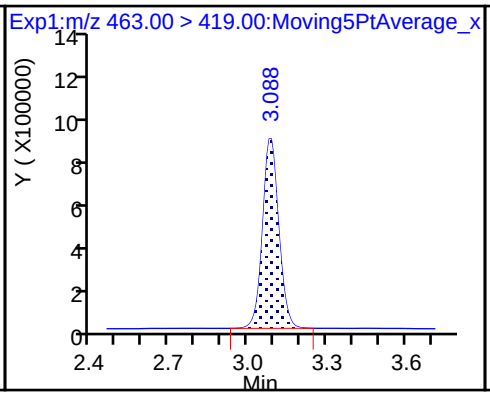
17 Perfluorooctane sulfonic acid



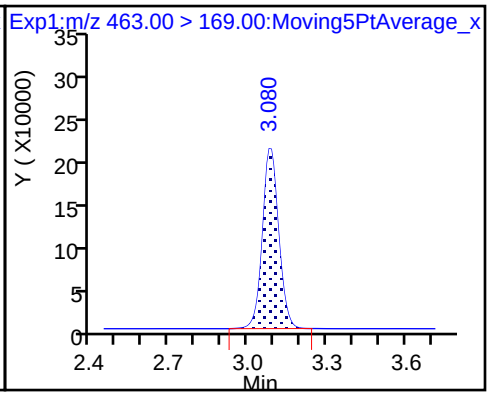
17 Perfluorooctane sulfonic acid



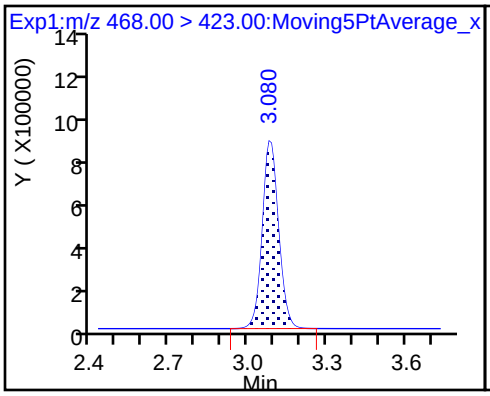
20 Perfluorononanoic acid



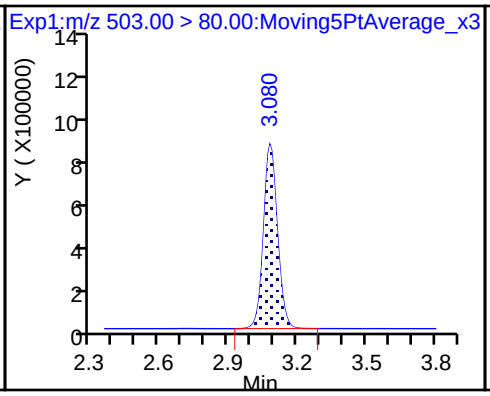
20 Perfluorononanoic acid



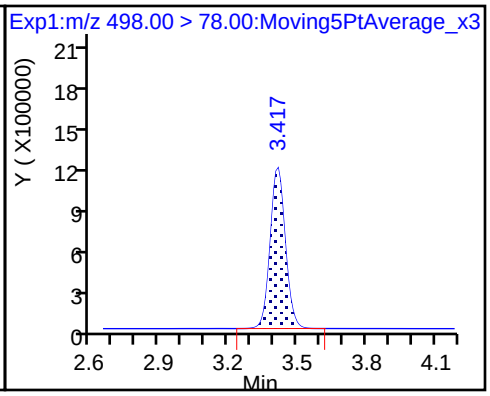
D 19 13C5 PFNA



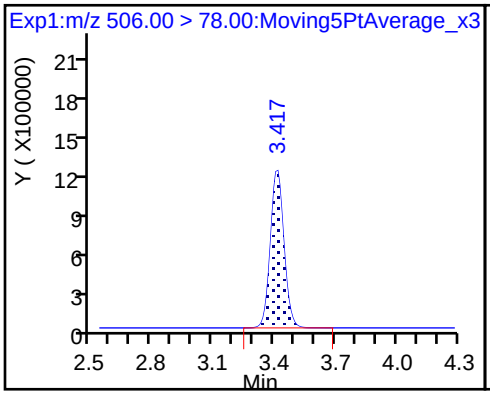
D 18 13C4 PFOS



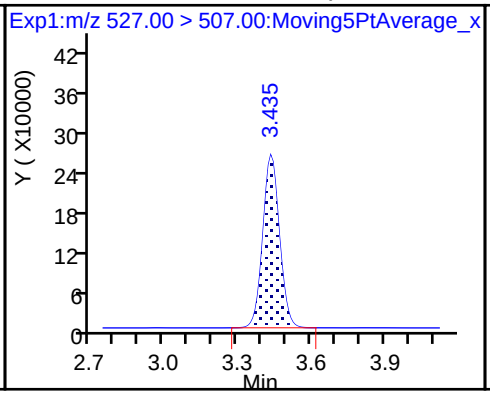
22 Perfluorooctane Sulfonamide



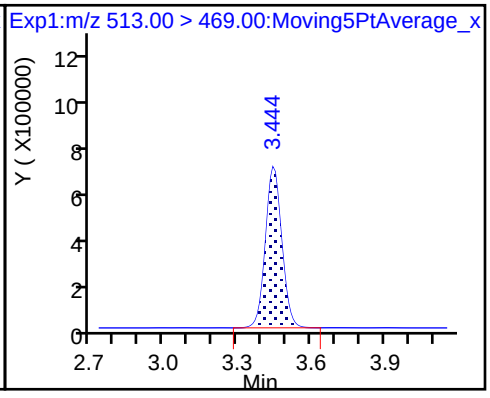
D 21 13C8 FOSA



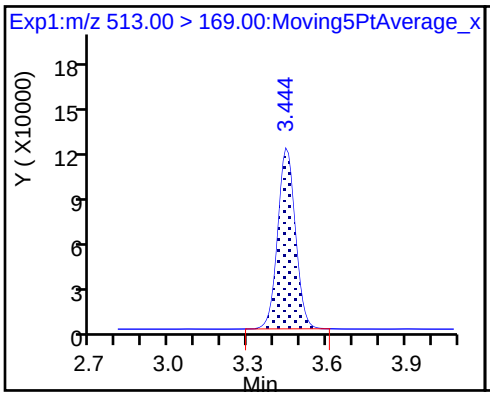
25 Sodium 1H,1H,2H,2H-perfluorodecan



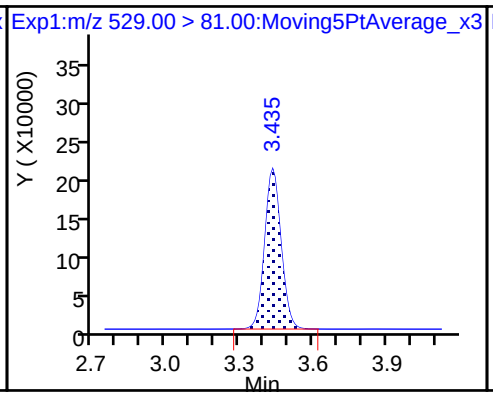
24 Perfluorodecanoic acid



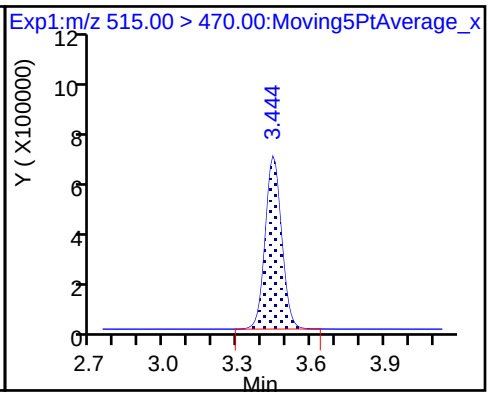
24 Perfluorodecanoic acid



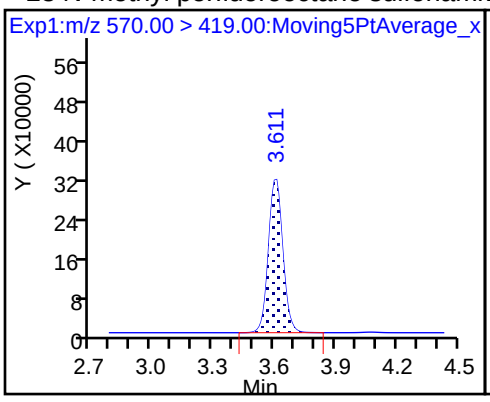
D 26 M2-8:2FTS



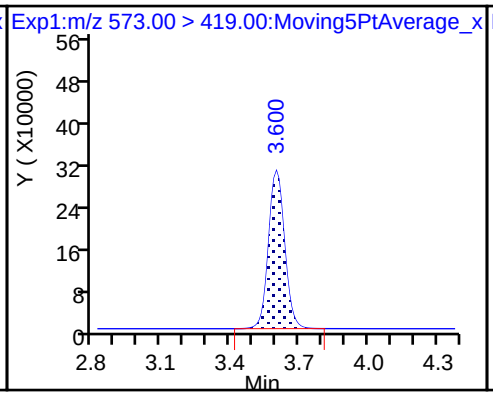
D 23 13C2 PFDA



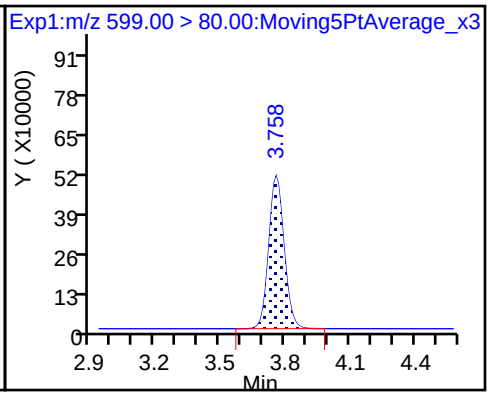
28 N-methyl perfluorooctane sulfonami



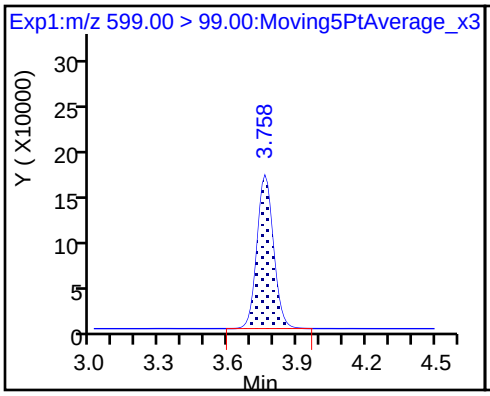
D 27 d3-NMeFOSAA



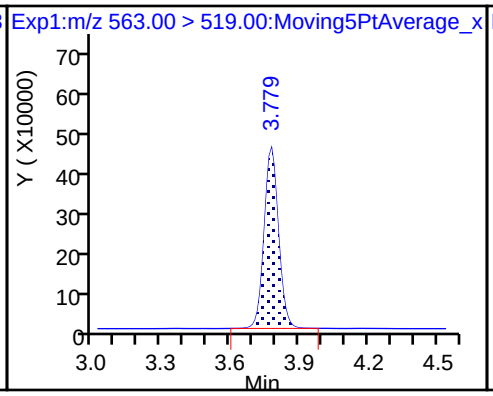
29 Perfluorodecane Sulfonic acid



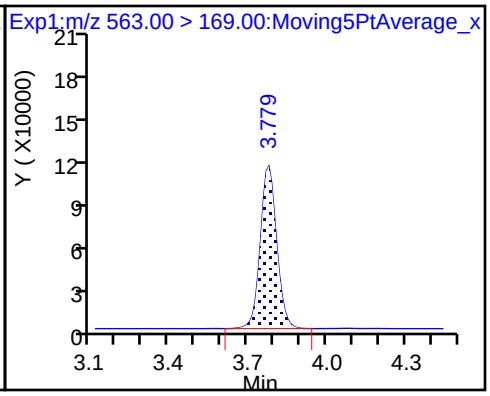
29 Perfluorodecane Sulfonic acid



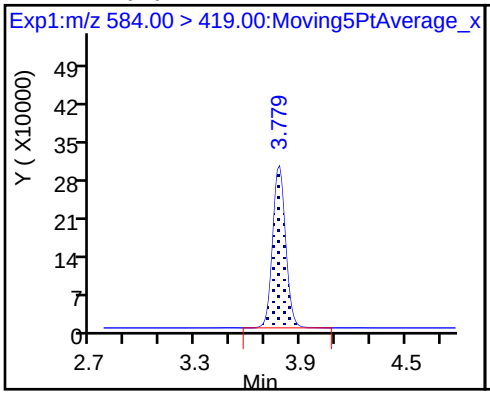
31 Perfluoroundecanoic acid



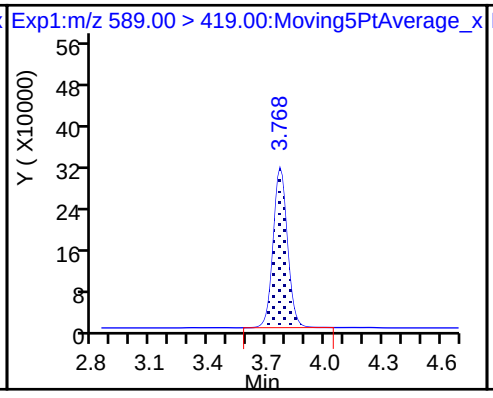
31 Perfluoroundecanoic acid



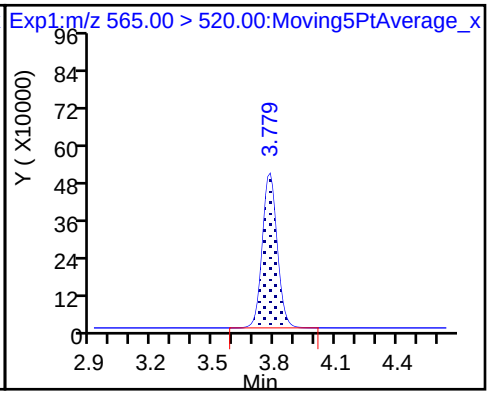
33 N-ethyl perfluorooctane sulfonamid



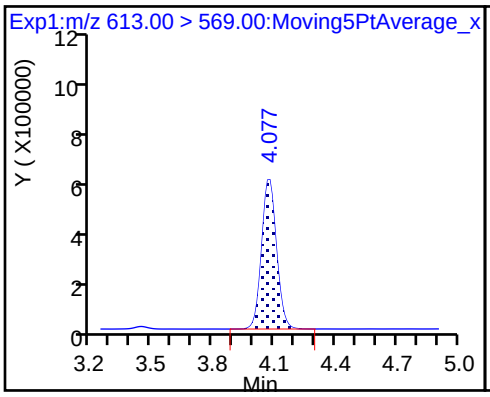
D 32 d5-NEtFOSAA



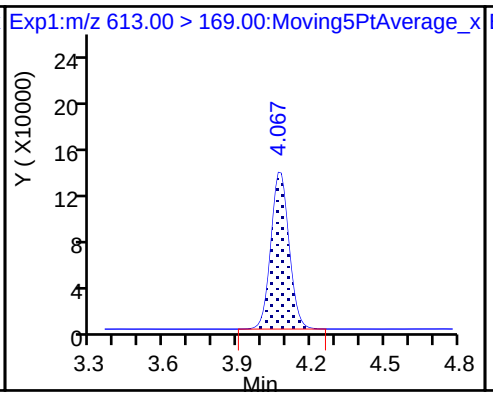
D 30 13C2 PFUnA



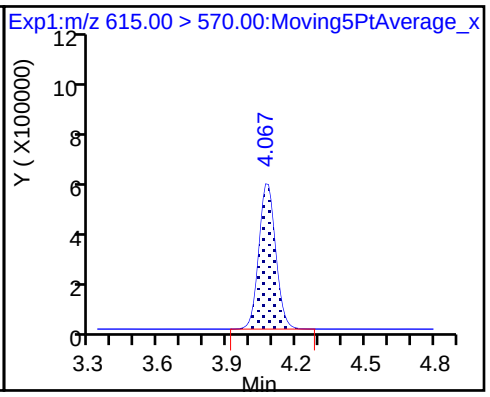
37 Perfluorododecanoic acid



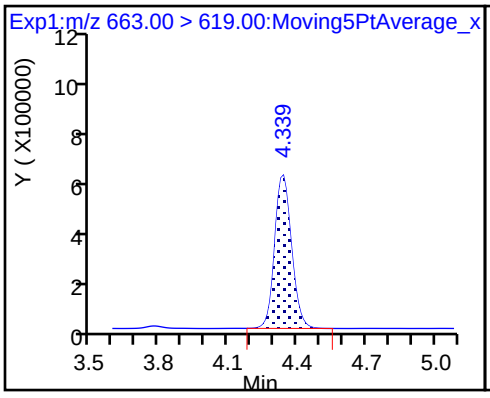
37 Perfluorododecanoic acid



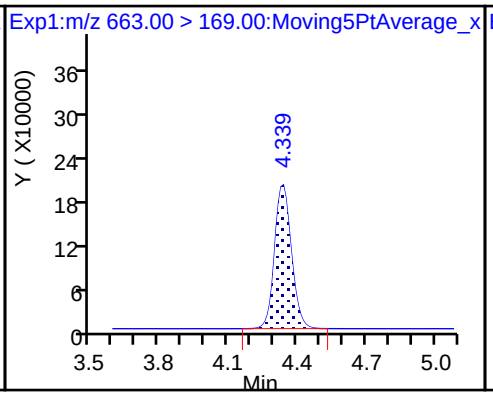
D 36 13C2 PFDoA



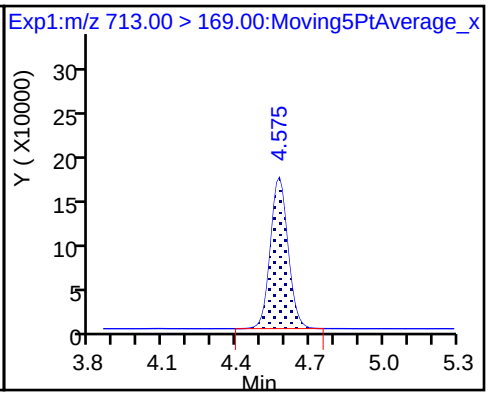
41 Perfluorotridecanoic acid



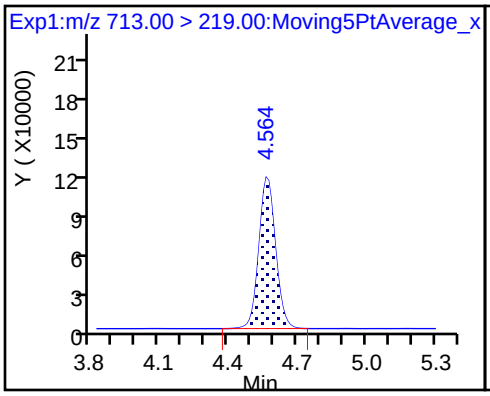
41 Perfluorotridecanoic acid



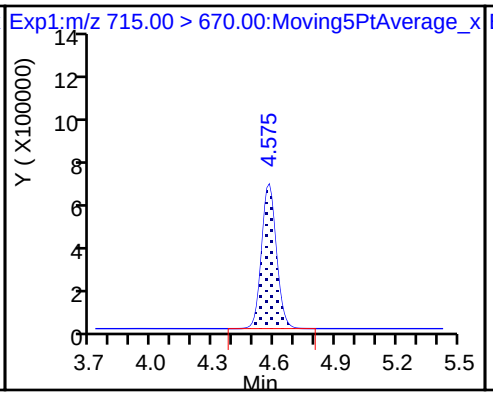
42 Perfluorotetradecanoic acid



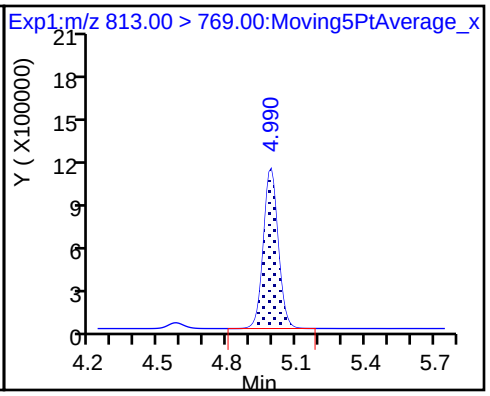
42 Perfluorotetradecanoic acid



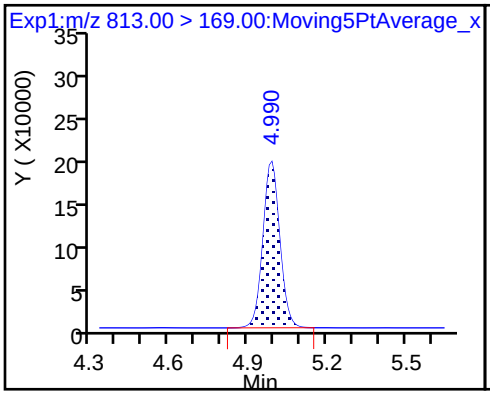
D 43 13C2-PFTeDA



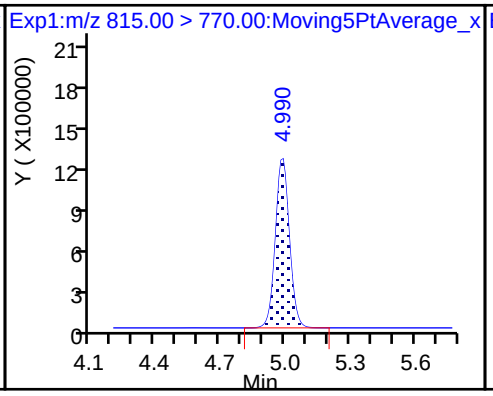
45 Perfluorohexadecanoic acid



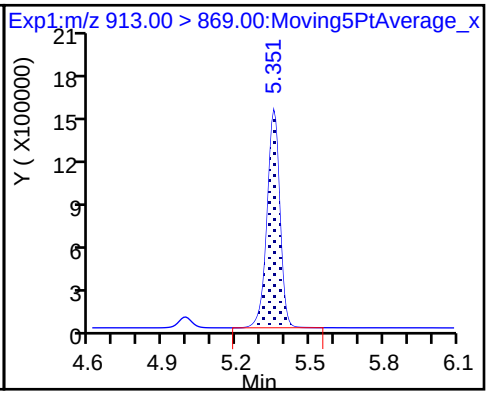
45 Perfluorohexadecanoic acid



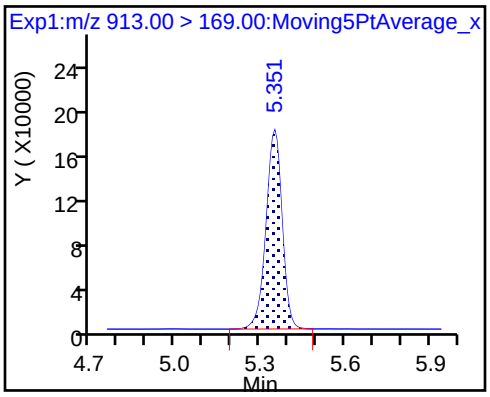
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215311/23 Calibration Date: 03/29/2018 02:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8904		0.945	1.00	-5.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.117		0.991	1.00	-0.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.74		0.907	0.884	2.6	50.0
4:2 FTS	AveID	16.15	15.14		0.875	0.934	-6.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9855		0.964	1.00	-3.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9451		0.914	1.00	-8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.024		0.837	0.910	-8.0	40.0
6:2FTS	AveID	1.744	1.867		1.02	0.948	7.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.327		0.986	0.952	3.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.103		0.976	1.00	-2.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.005		1.01	1.00	0.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.059		0.882	0.928	-4.9	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9746		0.989	1.00	-1.1	40.0
8:2FTS	AveID	1.276	1.198		0.899	0.958	-6.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9845		0.996	1.00	-0.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9467		0.946	1.00	-5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6390		0.906	0.964	-6.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9261		0.991	1.00	-0.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7882		0.914	1.00	-8.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.054		1.01	1.00	0.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.100		0.999	1.00	-0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2443		0.986	1.00	-1.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		1.07	1.00	7.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.015		1.10	1.00	9.8	50.0
13C4 PFBA	Ave	1.266	1.414		2.79	2.50	11.7	50.0
13C5 PFPeA	Ave	0.8399	0.9104		2.71	2.50	8.4	50.0
13C3-PFBS	Ave	0.0192	0.0201		2.44	2.33	4.8	50.0
M2-4:2FTS	Ave	0.1324	0.1386		2.45	2.34	4.7	50.0
13C2 PFHxA	Ave	0.9288	1.019		2.74	2.50	9.7	50.0
13C4-PFHpA	Ave	0.9164	1.020		2.78	2.50	11.3	50.0
18O2 PFHxS	Ave	1.130	1.250		2.62	2.37	10.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215311/23 Calibration Date: 03/29/2018 02:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2062		2.58	2.38	8.5	40.0
13C4 PFOA	Ave	0.9374	0.9699		2.59	2.50	3.5	50.0
13C4 PFOS	Ave	0.8225	0.8395		2.44	2.39	2.1	50.0
13C5 PFNA	Ave	0.8266	0.8215		2.49	2.50	-0.6	50.0
13C8 FOSA	Ave	1.109	1.192		2.69	2.50	7.5	50.0
M2-8:2FTS	Ave	0.2565	0.2321		2.17	2.40	-9.5	40.0
13C2 PFDA	Ave	0.7245	0.6959		2.40	2.50	-3.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3307		2.17	2.50	-13.3	50.0
d5-NEtFOSAA	Ave	0.4345	0.3708		2.13	2.50	-14.7	50.0
13C2 PFUnA	Ave	0.6482	0.5557		2.14	2.50	-14.3	50.0
13C2 PFDoA	Ave	0.7355	0.5989		2.04	2.50	-18.6	50.0
13C2-PFTeDA	Ave	0.8983	0.7676		2.14	2.50	-14.5	50.0
13C2-PFHxDA	Ave	1.473	1.206		2.05	2.50	-18.1	50.0

Report Date: 29-Mar-2018 09:09:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_026.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 02:39:02 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:46 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.531	6548078	2.79		112	89754	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.004	2332048	0.9450		94.5	643	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.709	-0.001	0.630	4217246	2.71		108	138459	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.708	0.0	1.000	1884819	0.99		99.1	808	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.643	86566	2.44		105	670	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2624658	0.9072		103	1676	
298.90 > 99.00	1.744	1.753	-0.009	1.000	1086198		2.42(1.25-3.74)		1606	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.965	1.965	0.0	1.000	526360	0.8752		93.7	33168	
D 60 M2-4:2FTS										
329.00 > 81.00	1.965	1.966	-0.001	0.725	599682	2.44		105	7984	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.005	1860647	0.9640		96.4	2781	
313.00 > 119.00	2.008	2.008	0.0	1.005	177718		10.47(5.03-15.10)		1919	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.737	4720053	2.74		110	122733	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.340	0.0	1.000	1786118	0.9136		91.4	1090	
363.00 > 169.00	2.340	2.340	0.0	1.000	709115		2.52(1.13-3.40)		1360	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.353	0.0	1.000	2158695	0.8374		92.0	10042	
399.00 > 99.00	2.353	2.353	0.0	1.000	736498		2.93(1.50-4.49)		3974	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.354	-0.014	0.864	4724790	2.78		111	81085	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.368	-0.015	0.868	5477237	2.62		111	86550	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.679	0.0	1.000	676139	1.01		107	7339	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.697	-0.018	0.988	907460	2.58		109	22899	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.710	2.710	0.0	1.000	1981654	0.9761		97.6	738	
413.00 > 169.00	2.710	2.710	0.0	1.000	997336		1.99(0.84-2.52)		3351	
* 62 13C2-PFOA										
415.00 > 370.00	2.710	2.710	0.0		4632500	2.50			88894	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.710	0.0	1.000	1965298	0.9860		104	41408	
449.00 > 99.00	2.710	2.710	0.0	1.000	522003		3.76(1.94-5.82)		9350	
D 14 13C4 PFOA										
417.00 > 372.00	2.710	2.721	-0.011	1.000	4492864	2.59		103	68234	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.080	0.0	1.000	1528619	0.8821		95.1	3966	
499.00 > 99.00	3.080	3.080	0.0	1.000	362839		4.21(2.31-6.93)		3476	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.080	0.0	1.000	1530258	1.01		101	1740	
463.00 > 169.00	3.080	3.080	0.0	1.000	369816		4.14(1.90-5.69)		12333	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.136	3805587	2.48		99.4	59685	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.136	3717946	2.44		102	44458	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.415	3.415	0.0	1.000	2152678	0.9886		98.9	33836	
D 21 13C8 FOSA										
506.00 > 78.00	3.415	3.417	-0.002	1.260	5521959	2.69		107	50448	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.433	0.0	1.000	493680	0.8994		93.9	7579	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.442	0.0	1.000	1269531	1.00		99.6	7284	
513.00 > 169.00	3.442	3.442	0.0	1.000	234974		5.40(2.36-7.09)		6383	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.453	-0.020	1.267	1030011	2.17		90.5	31774	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.462	-0.020	1.270	3223915	2.40		96.1	41489	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.599	3.599	0.0	1.000	580048	0.9459		94.6	5887	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.611	-0.012	1.328	1531822	2.17		86.7	34809	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.758	0.0	1.000	958245	0.9059		94.0	24340	
599.00 > 99.00	3.758	3.758	0.0	1.000	328510		2.92(1.39-4.16)		7360	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.000	811629	0.9143		91.4	4613	
563.00 > 169.00	3.779	3.779	0.0	1.000	207336		3.91(2.12-6.36)		9848	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.779	0.0	1.003	636296	0.99		99.1	9771	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.779	-0.011	1.390	1717749	2.13		85.3	4875	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.790	-0.011	1.394	2574169	2.14		85.7	51849	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.067	0.0	1.000	1170037	1.01		101	961	
613.00 > 169.00	4.067	4.067	0.0	1.000	290060		4.03(2.13-6.40)		5834	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.500	2774227	2.04		81.4	19936	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	1220551	1.00		99.9	521	
663.00 > 169.00	4.329	4.329	0.0	1.000	383343		3.18(1.25-3.76)		6321	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	347500	0.9859		98.6	7062	
713.00 > 219.00	4.564	4.575	-0.011	0.998	251562		1.38(0.71-2.13)		5068	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.688	3556086	2.14		85.5	19579	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	2224680	1.07		107	556	
813.00 > 169.00	4.990	4.990	0.0	1.000	360673		6.17(2.86-8.58)		3136	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	5.008	-0.018	1.841	5586314	2.05		81.9	15400	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	2268007	1.10		110	454	
913.00 > 169.00	5.351	5.351	0.0	1.000	292665		7.75(3.83-11.48)		3288	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_026.d

Injection Date: 29-Mar-2018 02:39:02 Instrument ID: A8_N

Lims ID: CCV L4

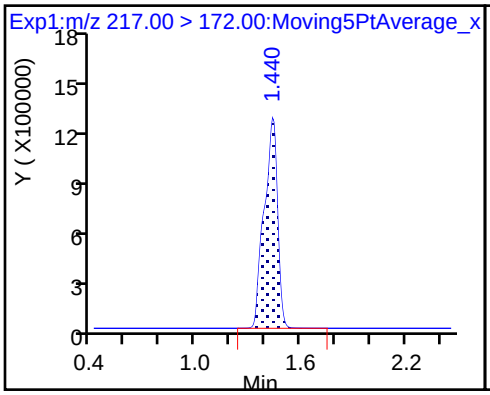
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

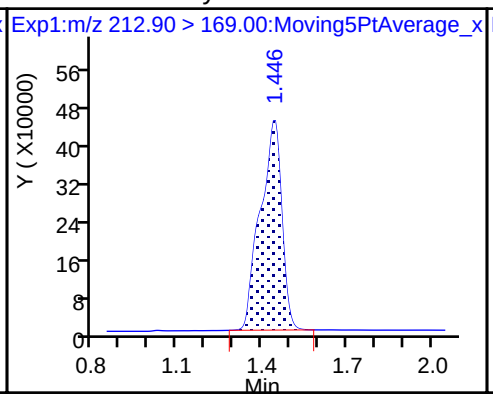
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

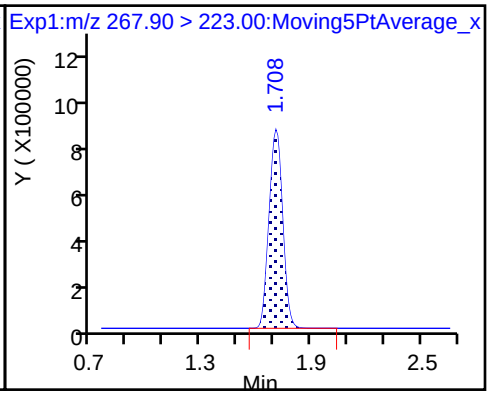
D 1 13C4 PFBA



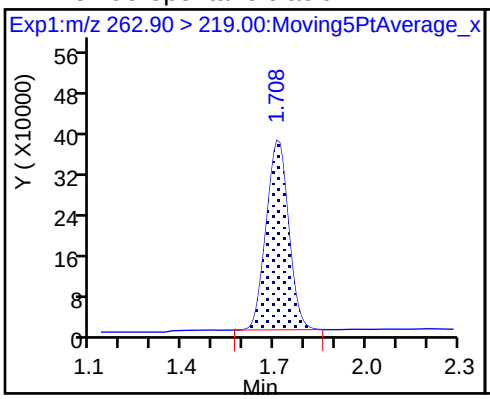
2 Perfluorobutyric acid



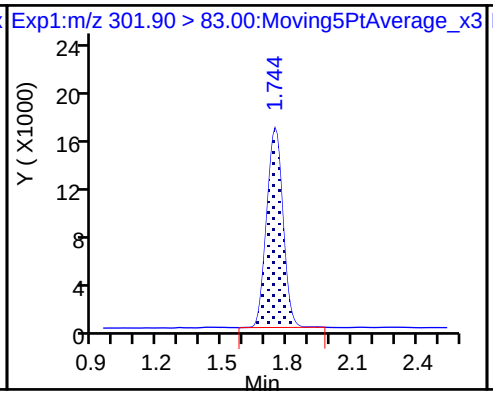
D 3 13C5-PFPeA



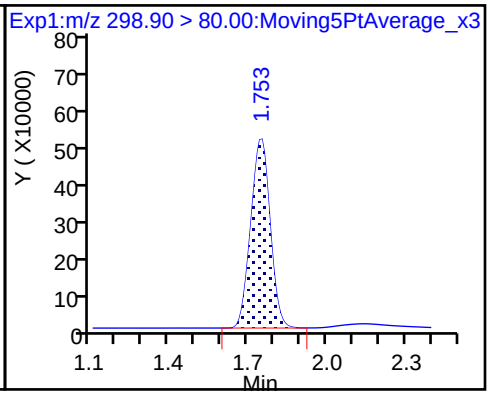
4 Perfluoropentanoic acid



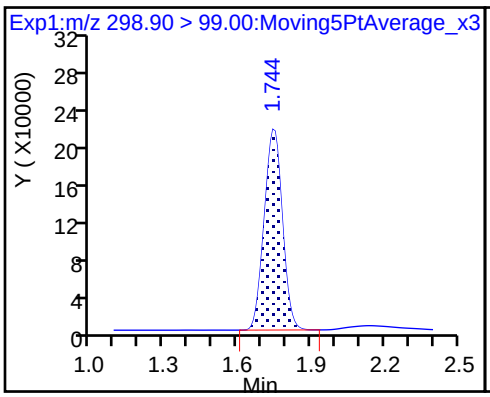
D 47 13C3-PFBS



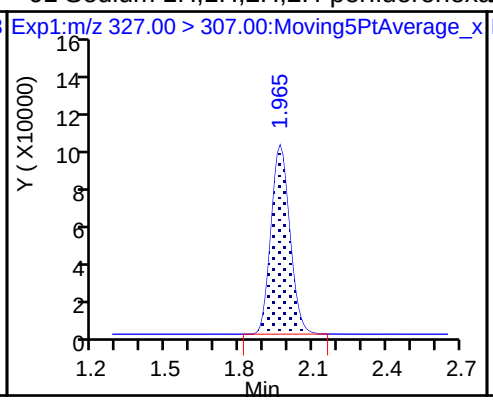
5 Perfluorobutanesulfonic acid



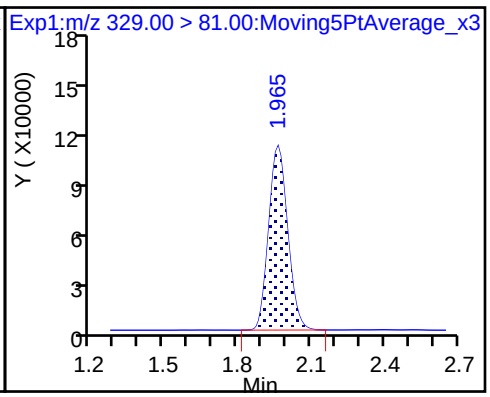
5 Perfluorobutanesulfonic acid



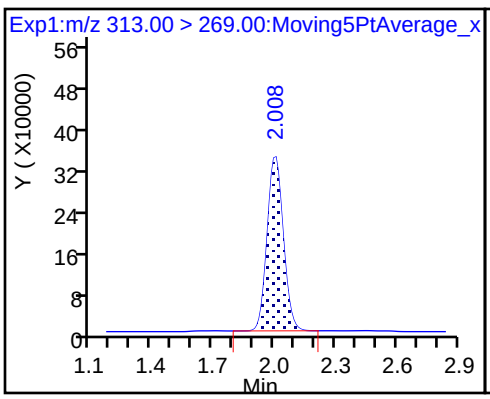
61 Sodium 1H,1H,2H,2H-perfluorohexane



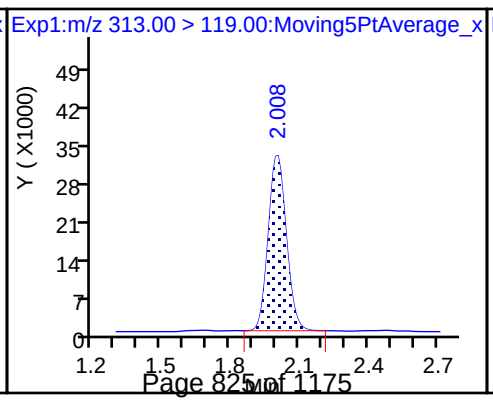
D 60 M2-4:2FTS



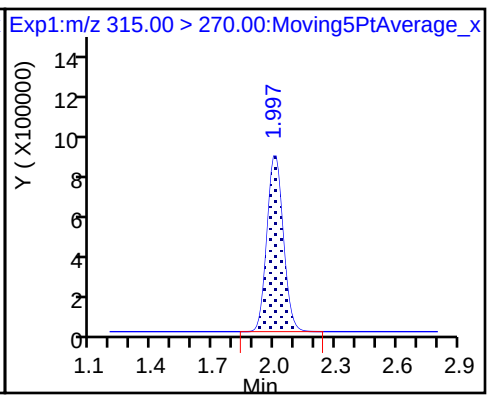
6 Perfluorohexanoic acid



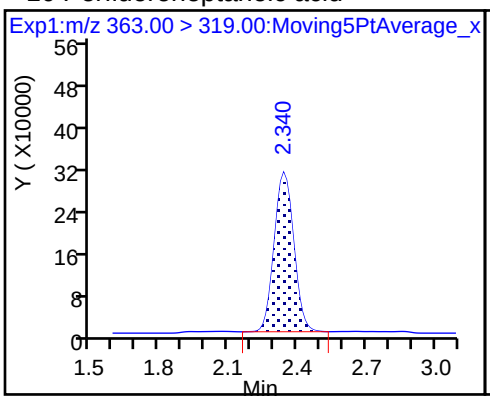
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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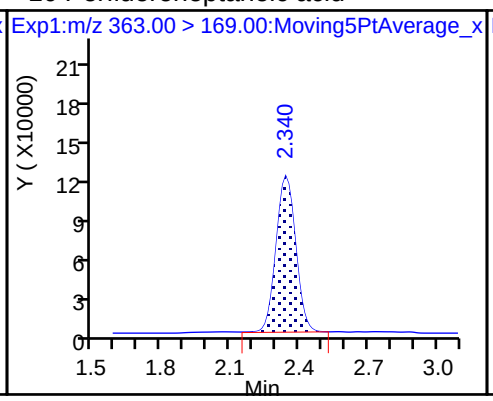
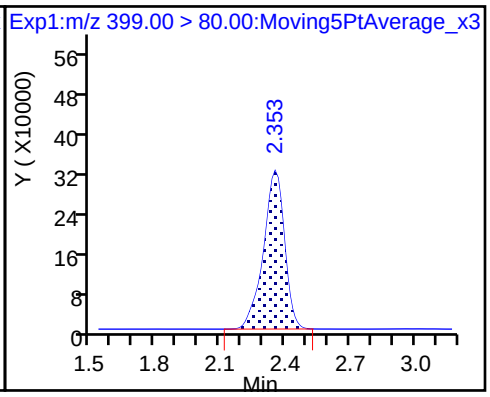


8 Perfluorohexanesulfonic acid



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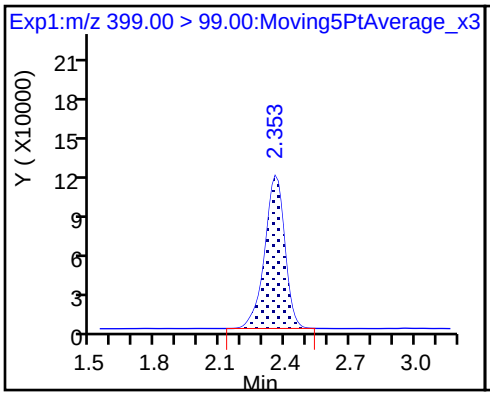
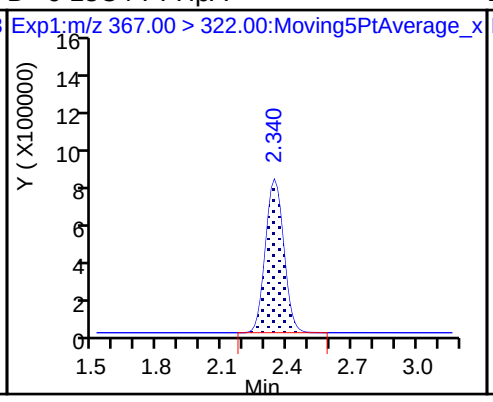
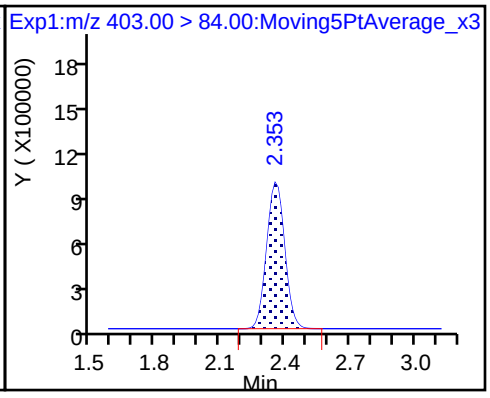


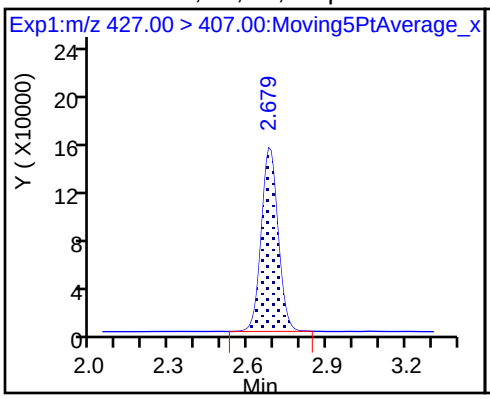
D 9 13C4-PFHpA



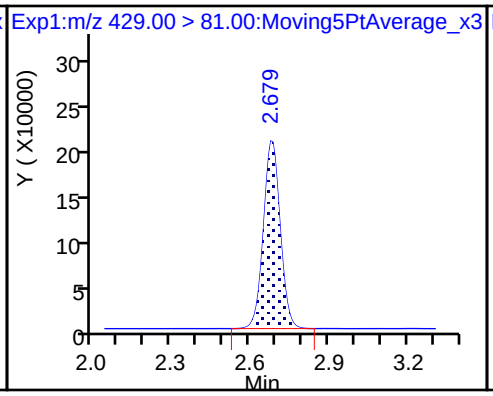
D 11 18O2 PFHxS



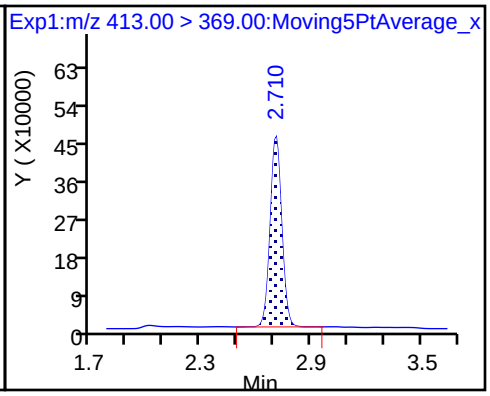
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 12 M2-6:2FTS



15 Perfluorooctanoic acid



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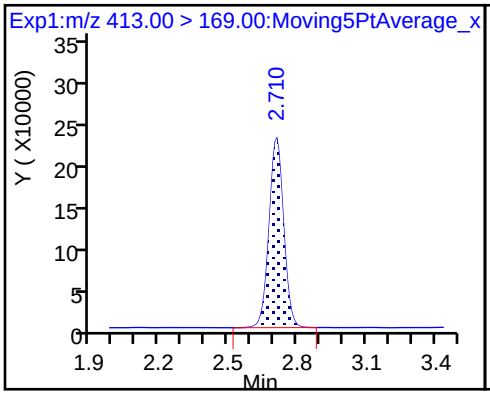
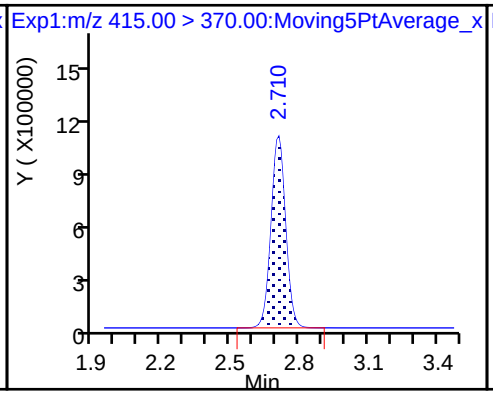
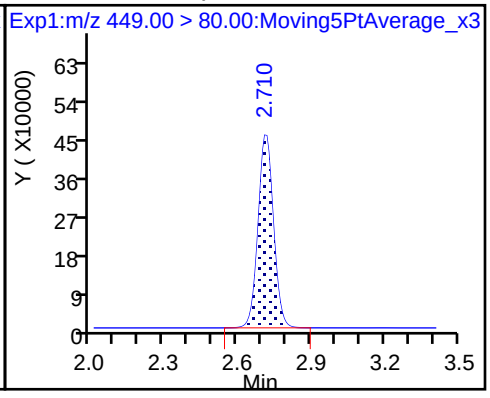


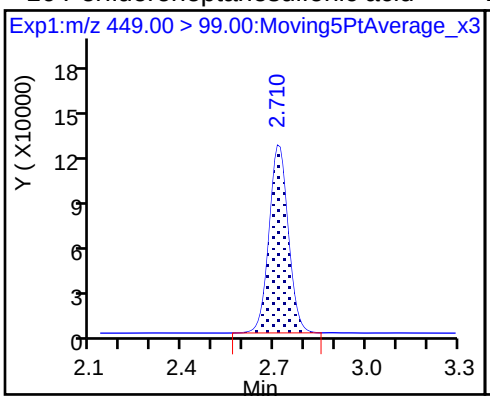
* 62 13C2-PFOA



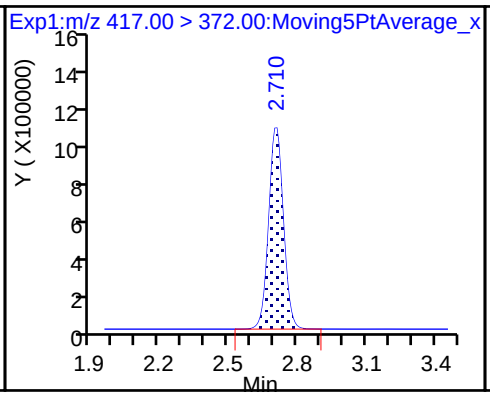
16 Perfluoroheptanesulfonic acid



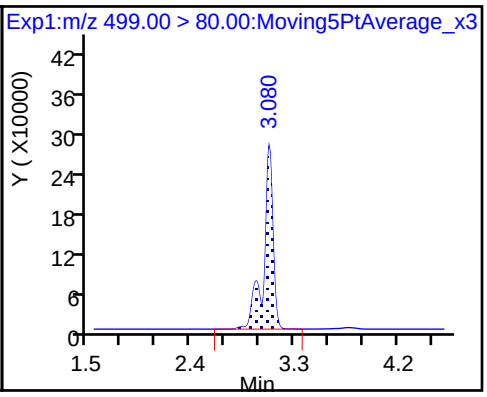
16 Perfluoroheptanesulfonic acid



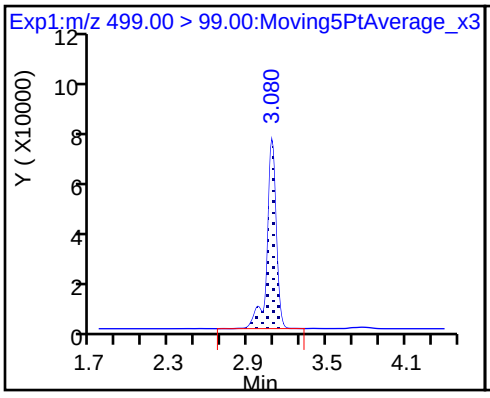
D 14 13C4 PFOA



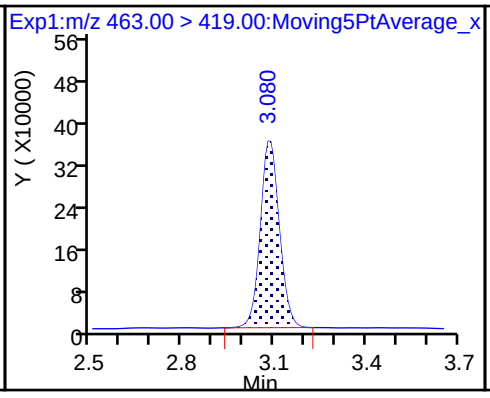
17 Perfluorooctane sulfonic acid



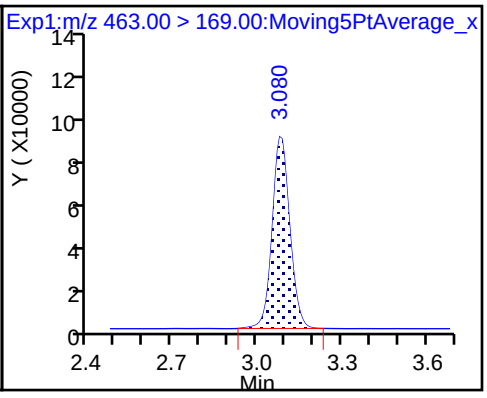
17 Perfluorooctane sulfonic acid



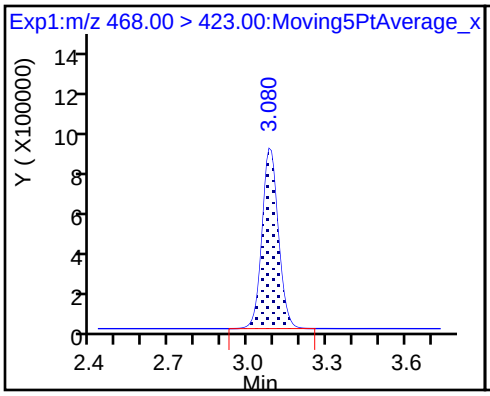
20 Perfluorononanoic acid



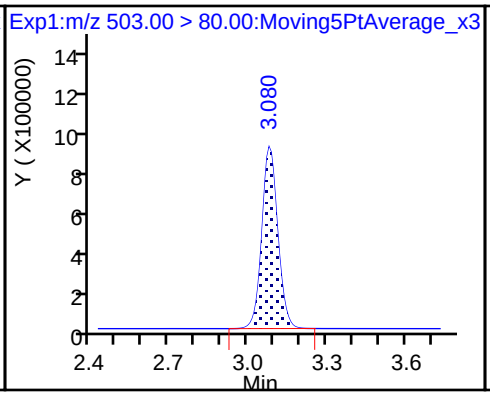
20 Perfluorononanoic acid



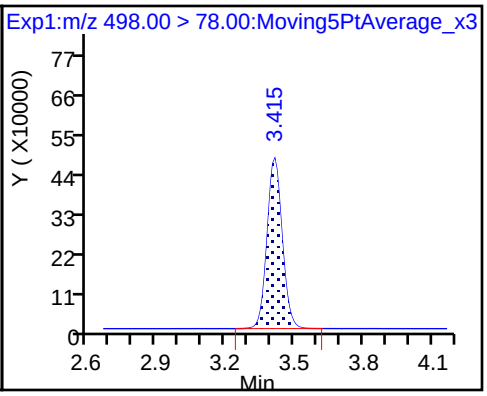
D 19 13C5 PFNA



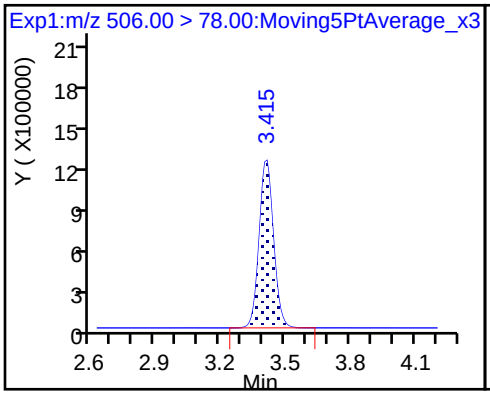
D 18 13C4 PFOS



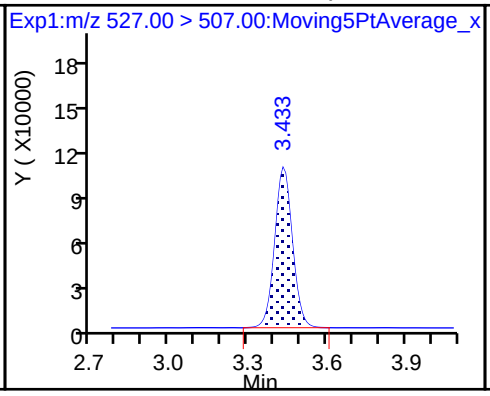
22 Perfluorooctane Sulfonamide



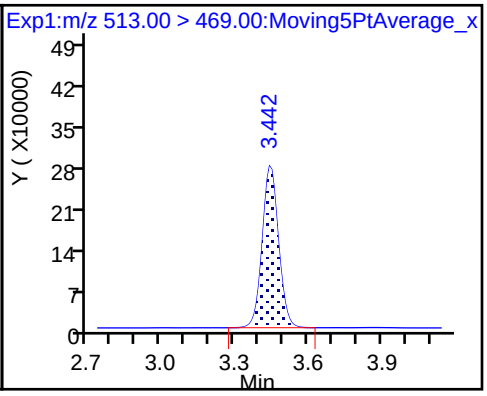
D 21 13C8 FOSA



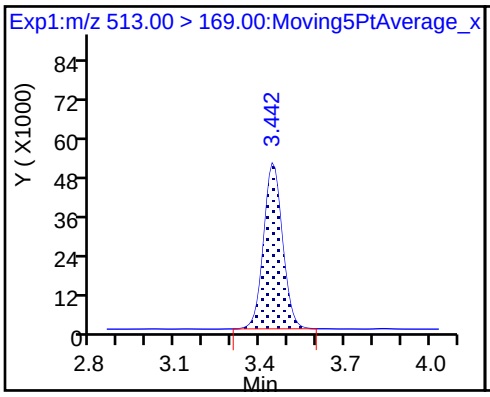
25 Sodium 1H,1H,2H,2H-perfluorodecan



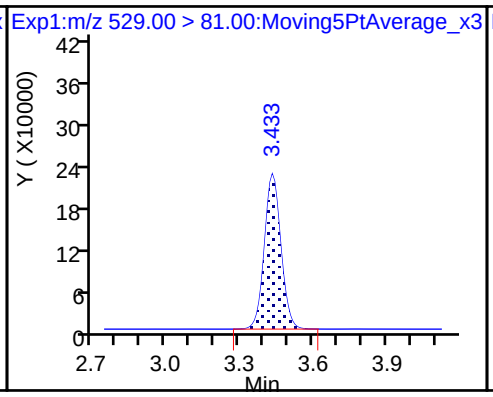
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid



D 26 M2-8:2FTS



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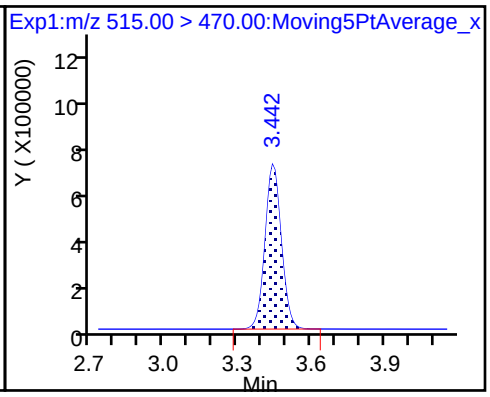
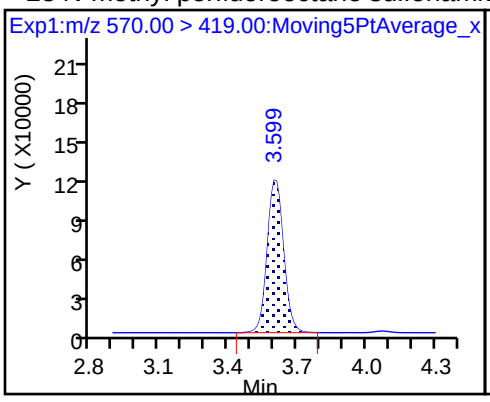
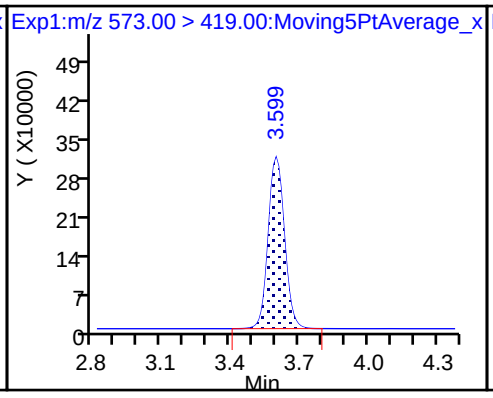


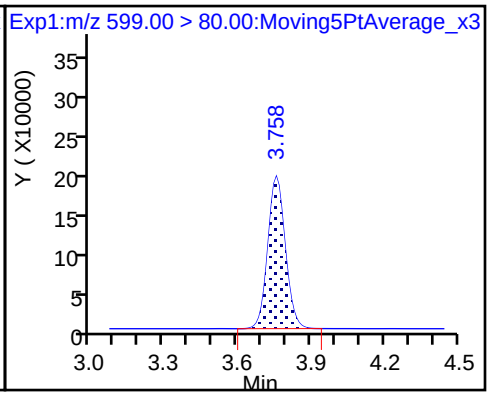
28 N-methyl perfluorooctane sulfonami



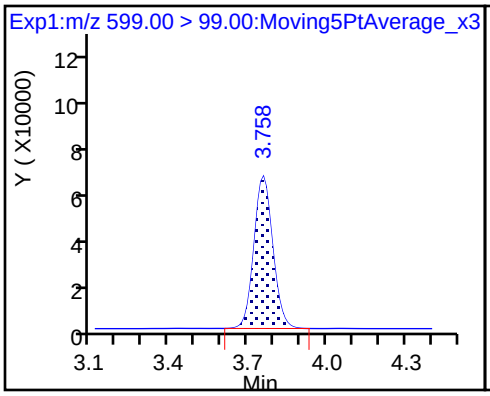
D 27 d3-NMeFOSAA



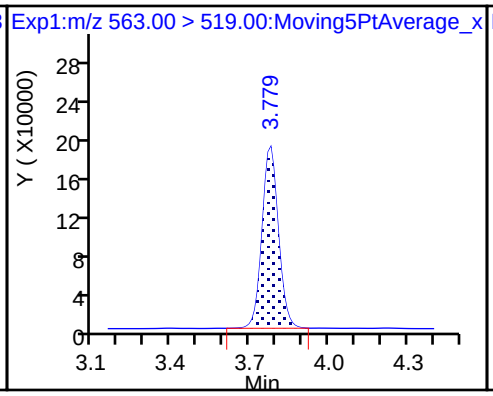
29 Perfluorodecane Sulfonic acid



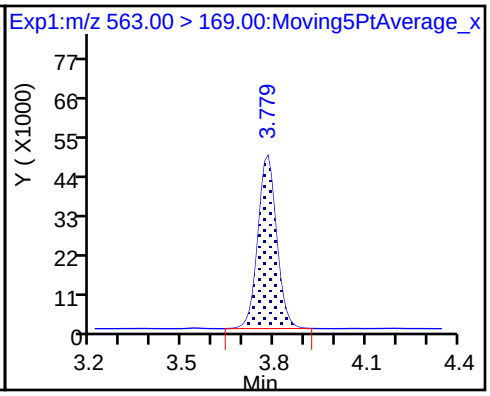
29 Perfluorodecane Sulfonic acid



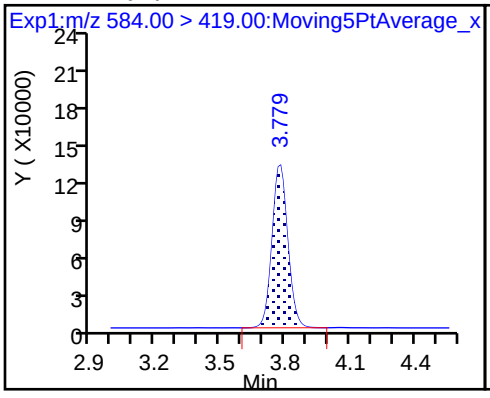
31 Perfluoroundecanoic acid



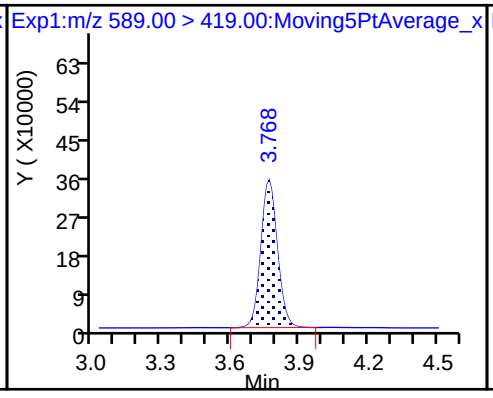
31 Perfluoroundecanoic acid



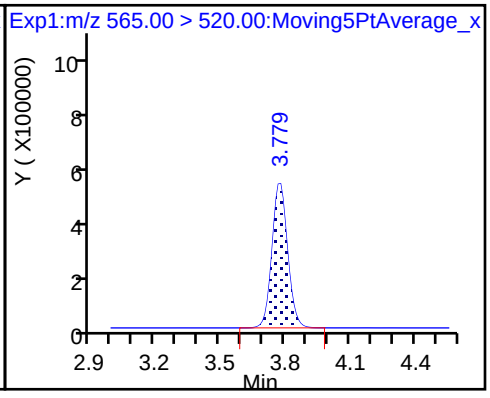
33 N-ethyl perfluorooctane sulfonamid



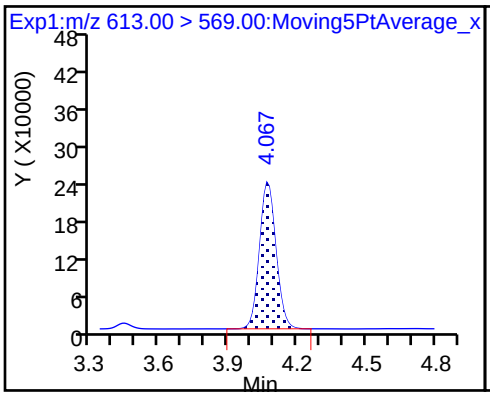
D 32 d5-NEtFOSAA



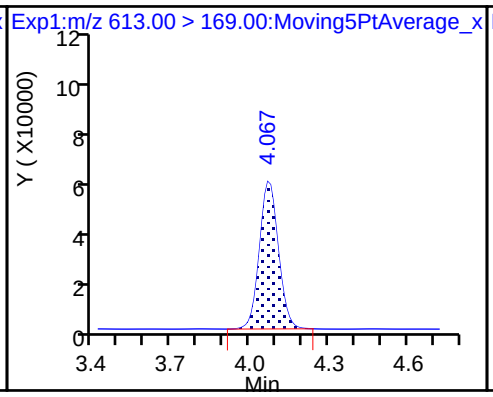
D 30 13C2 PFUnA



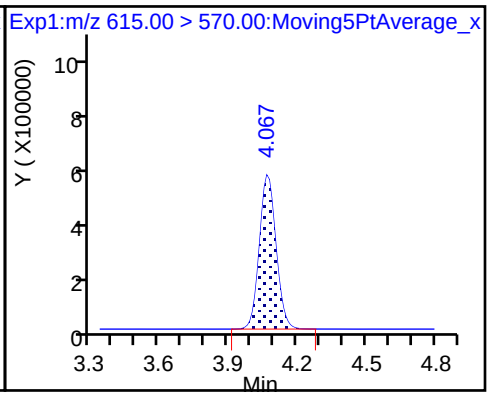
37 Perfluorododecanoic acid



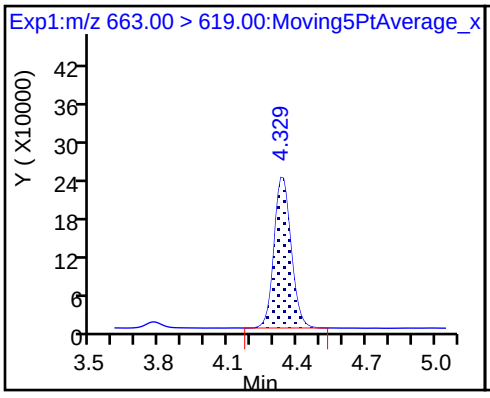
37 Perfluorododecanoic acid



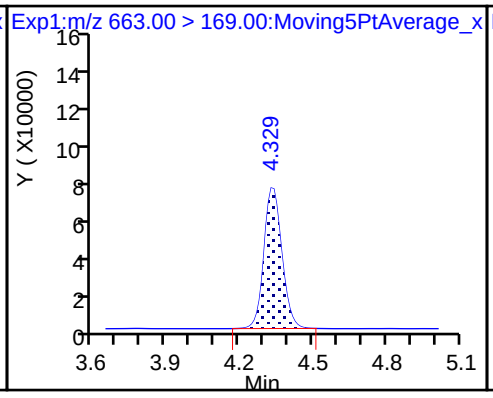
D 36 13C2 PFDoA



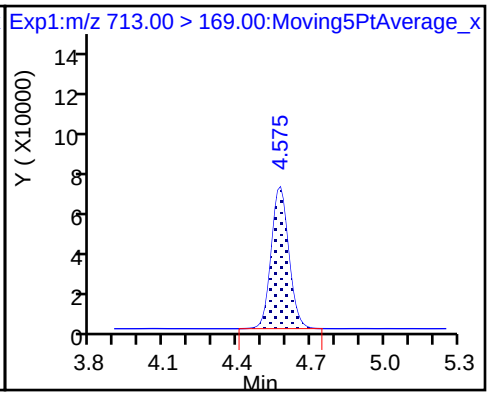
41 Perfluorotridecanoic acid



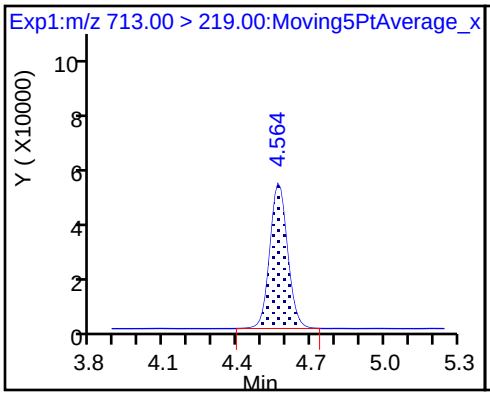
41 Perfluorotridecanoic acid



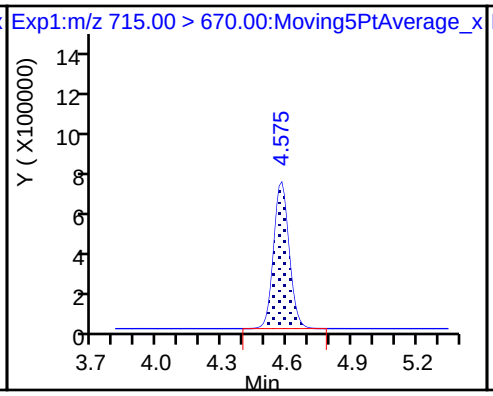
42 Perfluorotetradecanoic acid



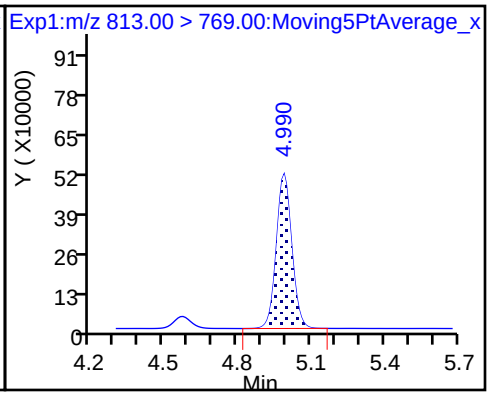
42 Perfluorotetradecanoic acid



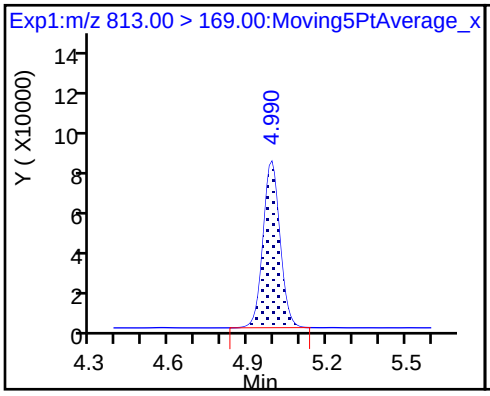
D 43 13C2-PFTeDA



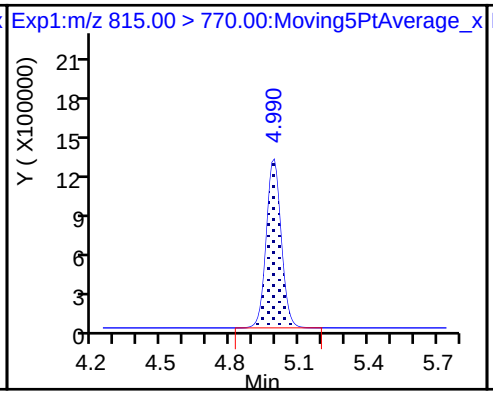
45 Perfluorohexadecanoic acid



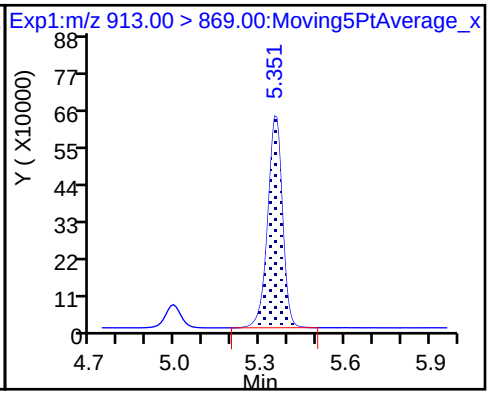
45 Perfluorohexadecanoic acid



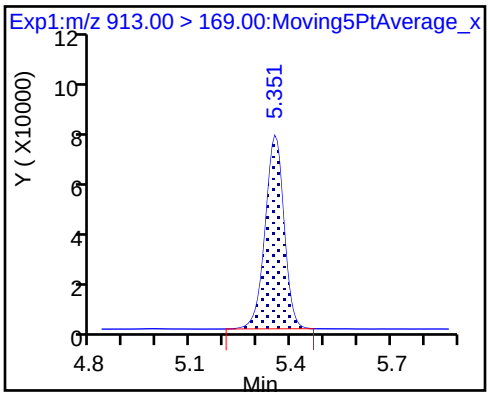
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-215399/2 Calibration Date: 03/29/2018 08:56

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9285		0.0493	0.0500	-1.5	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.165		0.0517	0.0500	3.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.41		0.0457	0.0442	3.5	50.0
4:2 FTS	AveID	16.15	15.99		0.130	0.0467	-1.0	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.004		0.0491	0.0500	-1.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.015		0.0491	0.0500	-1.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.297		0.0530	0.0455	16.5	50.0
6:2FTS	AveID	1.744	1.785		0.0500	0.0474	2.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.216		0.0538	0.0500	7.6	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.297		0.0482	0.0476	1.2	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9903		0.0496	0.0500	-0.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.101		0.0459	0.0464	-1.1	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9624		0.0488	0.0500	-2.4	50.0
8:2FTS	AveID	1.276	1.321		0.0500	0.0479	3.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9780		0.0495	0.0500	-1.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.226		0.0780	0.0500	22.5	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6790		0.0481	0.0482	-0.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9799		0.0524	0.0500	4.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.9895		0.0574	0.0500	14.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.177		0.0563	0.0500	12.5	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.096		0.0498	0.0500	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2905		0.0586	0.0500	17.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.400		0.0528	0.0500	5.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9869		0.0534	0.0500	6.7	50.0
13C4 PFBA	Ave	1.266	1.341		2.65	2.50	5.9	50.0
13C5 PFPeA	Ave	0.8399	0.8930		2.66	2.50	6.3	50.0
13C3-PFBS	Ave	0.0192	0.0201		2.44	2.33	4.9	50.0
M2-4:2FTS	Ave	0.1324	0.1504		2.65	2.34	13.6	50.0
13C2 PFHxA	Ave	0.9288	1.006		2.71	2.50	8.3	50.0
13C4-PFHpA	Ave	0.9164	0.9652		2.63	2.50	5.3	50.0
18O2 PFHxS	Ave	1.130	1.174		2.46	2.37	3.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCVL 320-215399/2 Calibration Date: 03/29/2018 08:56

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2243		2.80	2.38	18.1	50.0
13C4 PFOA	Ave	0.9374	0.9553		2.55	2.50	1.9	50.0
13C4 PFOS	Ave	0.8225	0.8124		2.36	2.39	-1.2	50.0
13C5 PFNA	Ave	0.8266	0.8137		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.137		2.56	2.50	2.5	50.0
M2-8:2FTS	Ave	0.2565	0.2515		2.35	2.40	-1.9	50.0
13C2 PFDA	Ave	0.7245	0.6835		2.36	2.50	-5.7	50.0
d3-NMeFOSAA	Ave	0.3814	0.3462		2.27	2.50	-9.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3834		2.21	2.50	-11.8	50.0
13C2 PFUnA	Ave	0.6482	0.5618		2.17	2.50	-13.3	50.0
13C2 PFDoA	Ave	0.7355	0.5827		1.98	2.50	-20.8	50.0
13C2-PFTeDA	Ave	0.8983	0.7955		2.21	2.50	-11.5	50.0
13C2-PFHxDA	Ave	1.473	1.144		1.94	2.50	-22.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 29-Mar-2018 08:56:06 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:53:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.428	0.006	1.000	117457	0.0493		98.5	43.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	6324809	2.65		106	84704	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.691	0.0	0.995	98190	0.0517		103	35.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.636	4212888	2.66		106	135361	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.726	0.009	1.005	134849	0.0457		103	88.0	
298.90 > 99.00	1.735	1.726	0.009	1.005	54630		2.47(1.25-3.74)		83.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.735	-0.008	0.646	88219	2.44		105	673	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	28329	0.0462		99.0	1704	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.955	-0.010	0.728	662741	2.65		114	12222	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.976	0.010	1.000	95318	0.0491		98.2	154	
313.00 > 119.00	1.986	1.976	0.010	1.000	8421		11.32(5.03-15.10)		95.0	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.986	0.0	0.743	4746836	2.71		108	106945	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.310	0.005	1.000	92486	0.0491		98.2	62.0	
363.00 > 169.00	2.315	2.310	0.005	1.000	38186		2.42(1.13-3.40)		73.2	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.323	0.005	1.000	130735	0.0530		117	705	
399.00 > 99.00	2.328	2.323	0.005	1.000	39692		3.29(1.50-4.49)		260	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.328	-0.013	0.866	4553828	2.63		105	109021	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.871	5239034	2.46		104	67895	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.652	-0.003	1.000	35812	0.0485		102	218	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.663	-0.014	0.991	1005154	2.80		118	38438	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.676	-0.003	1.000	109580	0.0538		108	31.9	
413.00 > 169.00	2.673	2.676	-0.003	1.000	54581		2.01(0.84-2.52)		173	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.676	-0.003		4717799	2.50			89645	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.684	-0.003	1.000	94669	0.0482		101	5463	
449.00 > 99.00	2.681	2.684	-0.003	1.000	24184		3.91(1.94-5.82)		467	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.687	-0.014	1.000	4506729	2.55		102	85138	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.046	-0.002	1.000	78355	0.0459		98.9	168	
499.00 > 99.00	3.051	3.046	0.005	1.002	17708		4.42(2.31-6.93)		145	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.046	-0.002	1.000	76029	0.0496		99.3	73.5	
463.00 > 169.00	3.044	3.046	-0.002	1.000	19949		3.81(1.90-5.69)		480	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.058	-0.014	1.139	3838689	2.46		98.4	72126	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.058	-0.014	1.139	3664245	2.36		98.8	52933	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.383	0.006	1.003	103213	0.0488		97.6	2761	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.388	-0.008	1.265	5362294	2.56		102	53285	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.398	3.402	-0.004	1.000	30041	0.0496		104	247	
D 26 M2-8:2FTS										
529.00 > 81.00	3.398	3.406	-0.008	1.271	1136839	2.35		98.1	35016	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.411	-0.004	1.000	63071	0.0495		99.0	386	
513.00 > 169.00	3.407	3.411	-0.004	1.000	12456		5.06(2.36-7.09)		463	
D 23 13C2 PFDA										
515.00 > 470.00	3.407	3.424	-0.017	1.275	3224388	2.36		94.3	53811	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.561	3.565	-0.004	1.000	40032	0.0612		122	468	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.561	3.569	-0.008	1.333	1633203	2.27		90.8	28537	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.723	-0.006	1.000	50179	0.0481		99.9	1753	
599.00 > 99.00	3.717	3.723	-0.006	1.000	16384		3.06(1.39-4.16)		491	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.727	3.733	-0.006	1.000	35451	0.0524		105	693	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.744	-0.007	1.000	52451	0.0574		115	313	
563.00 > 169.00	3.737	3.744	-0.007	1.000	9698		5.41(2.12-6.36)		389	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.748	-0.021	1.395	1808866	2.21		88.2	4363	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.748	-0.011	1.398	2650407	2.17		86.7	75744	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.025	4.031	-0.006	1.000	64731	0.0563		113	48.7	
613.00 > 169.00	4.035	4.031	0.004	1.003	13170		4.92(2.13-6.40)		374	
D 36 13C2 PFDoA										
615.00 > 570.00	4.025	4.047	-0.022	1.506	2749128	1.98		79.2	22743	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.294	0.004	1.000	60236	0.0498		99.5	24.2	
663.00 > 169.00	4.289	4.294	-0.005	0.998	19633		3.07(1.25-3.76)		420	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.533	4.540	-0.007	1.000	21800	0.0586		117	450	
713.00 > 219.00	4.522	4.540	-0.018	0.998	14587		1.49(0.71-2.13)		377	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.533	4.554	-0.021	1.696	3752803	2.21		88.5	26233	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.946	4.952	-0.006	1.000	151186	0.0528		106	38.4	
813.00 > 169.00	4.946	4.952	-0.006	1.000	25635		5.90(2.86-8.58)		388	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.946	4.973	-0.027	1.851	5397890	1.94		77.7	16593	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.307	5.319	-0.012	1.000	106543	0.0534		107	19.2	
913.00 > 169.00	5.307	5.319	-0.012	1.000	12763		8.35(3.83-11.48)		204	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 10:10:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_005.d

Injection Date: 29-Mar-2018 08:56:06 Instrument ID: A8_N

Lims ID: CCVL

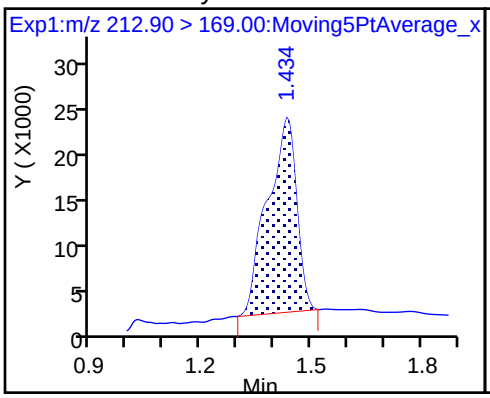
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

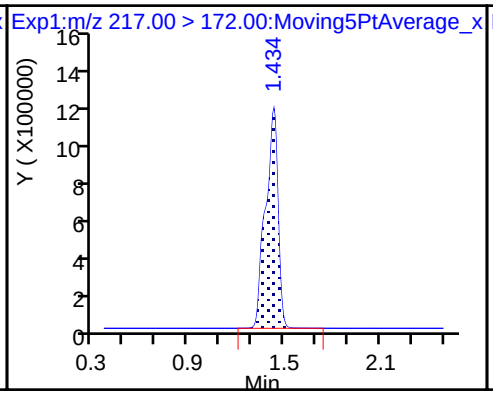
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

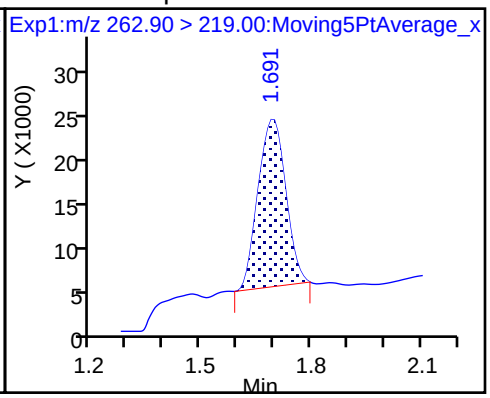
2 Perfluorobutyric acid



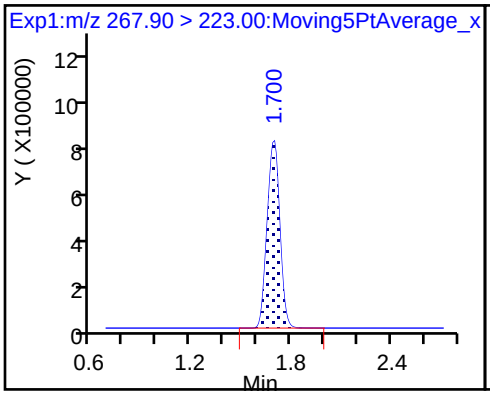
D 1 13C4 PFBA



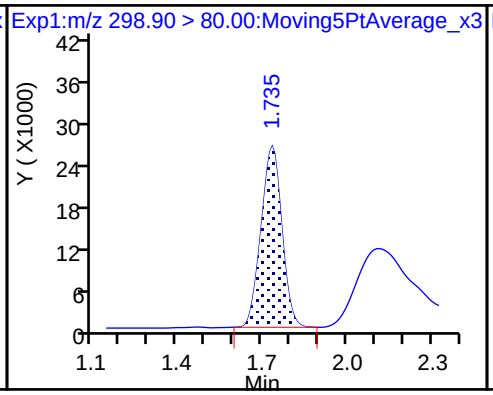
4 Perfluoropentanoic acid



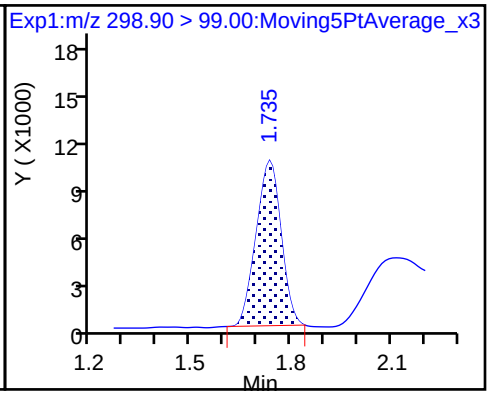
D 3 13C5-PFPeA



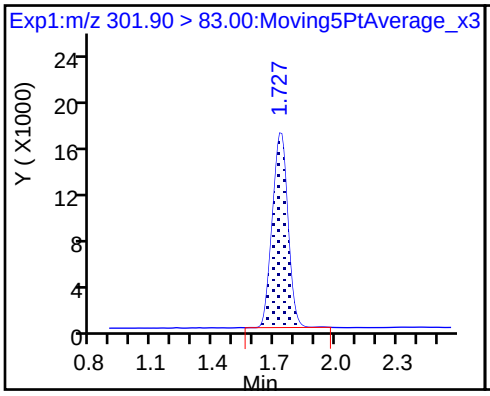
5 Perfluorobutanesulfonic acid



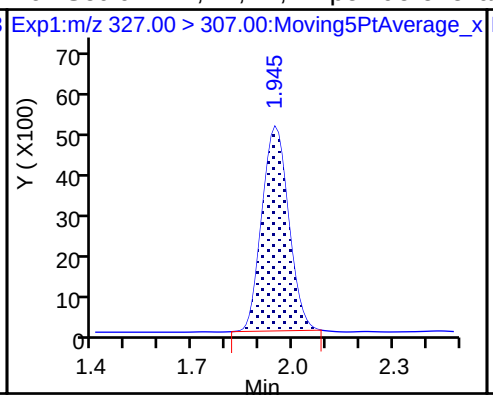
5 Perfluorobutanesulfonic acid



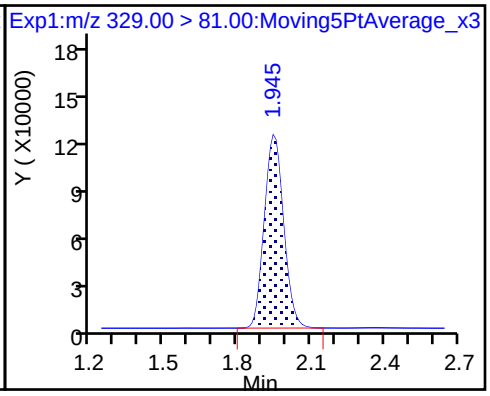
D 47 13C3-PFBS



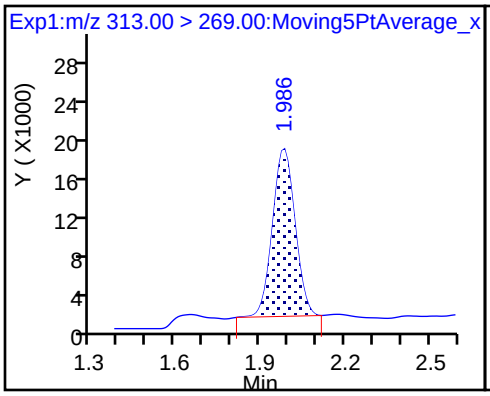
61 Sodium 1H,1H,2H,2H-perfluorohexane



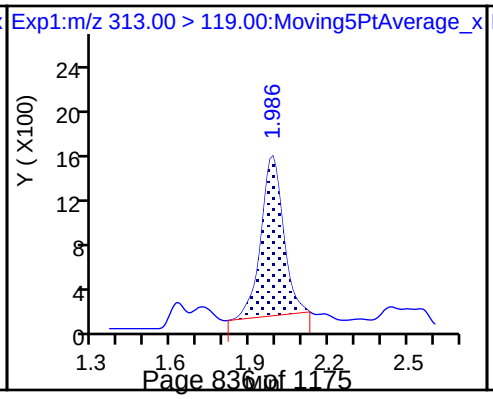
D 60 M2-4:2FTS



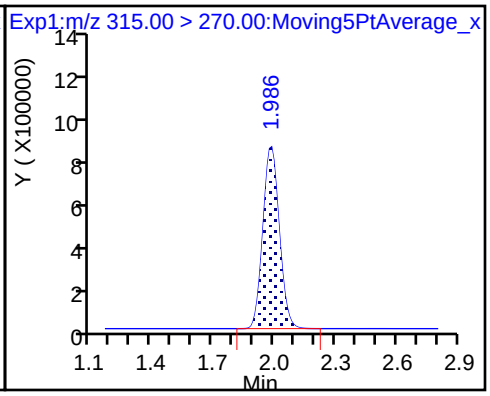
6 Perfluorohexanoic acid



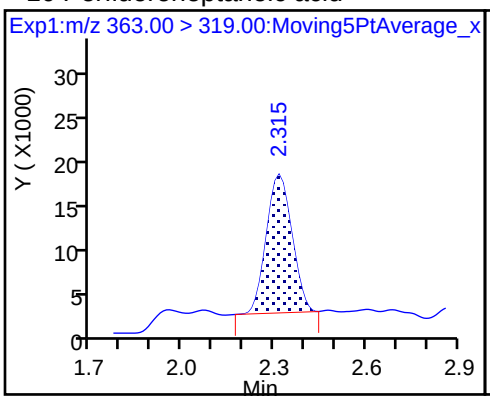
6 Perfluorohexanoic acid



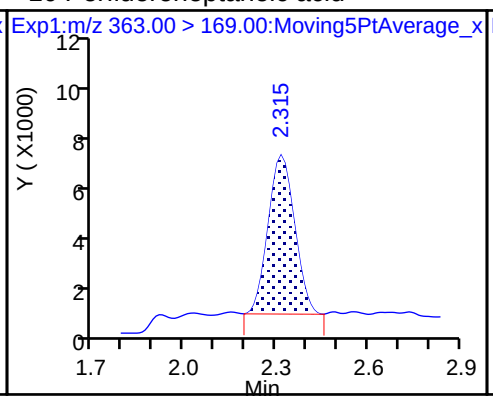
D 7 13C2 PFHxA



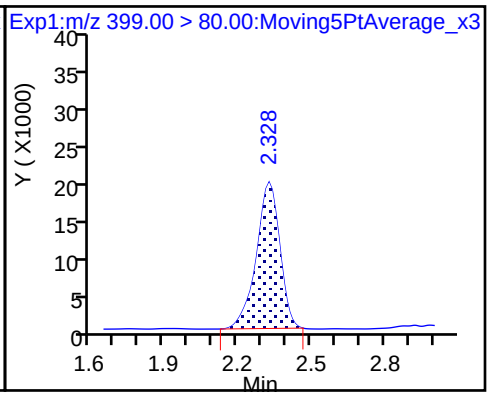
10 Perfluoroheptanoic acid



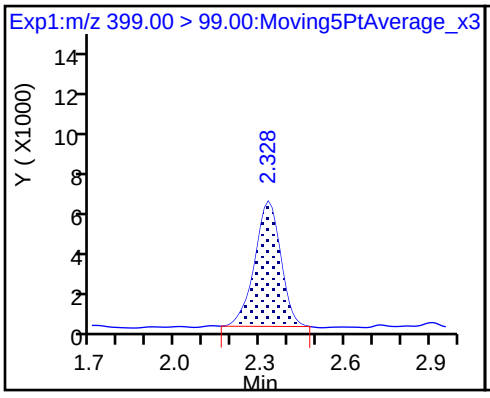
10 Perfluoroheptanoic acid



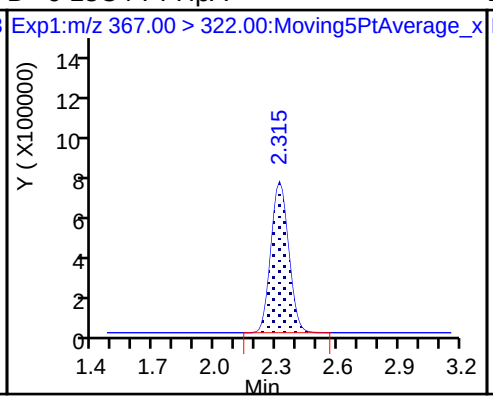
8 Perfluorohexanesulfonic acid



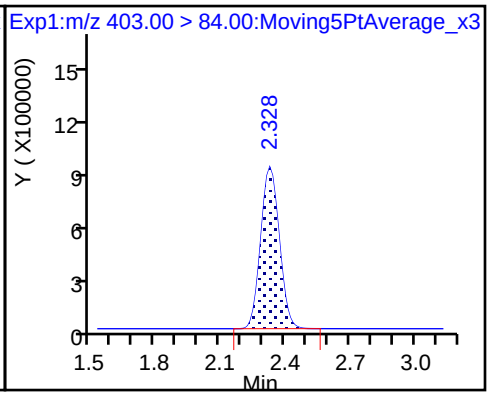
8 Perfluorohexanesulfonic acid



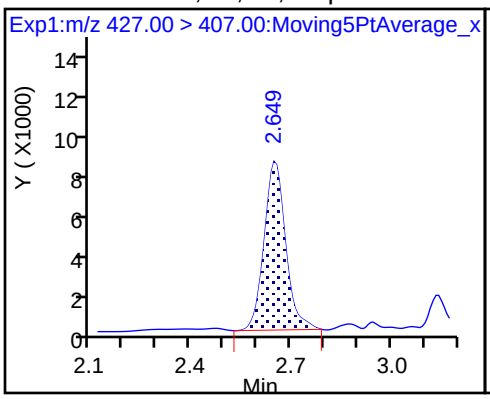
D 9 13C4-PFHpA



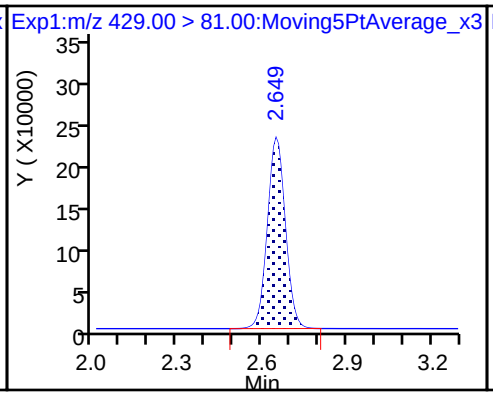
D 11 18O2 PFHxS



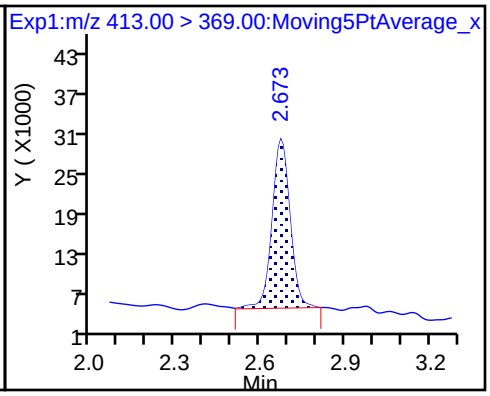
13 Sodium 1H,1H,2H,2H-perfluorooctane



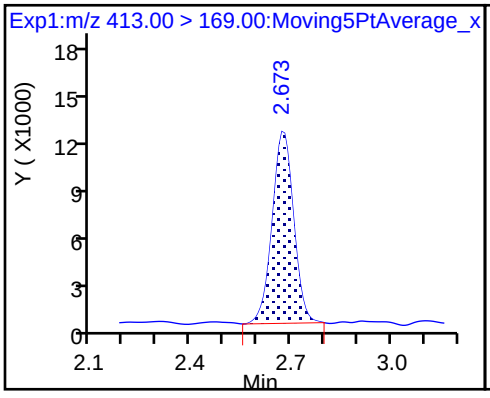
D 12 M2-6:2FTS



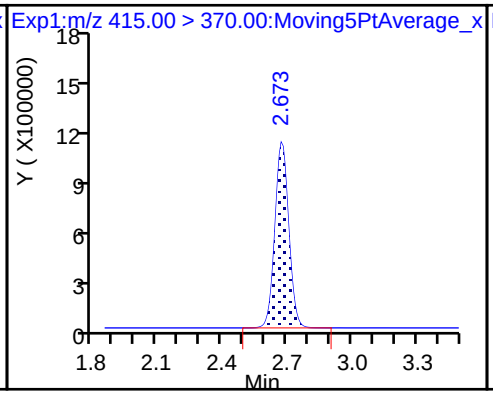
15 Perfluorooctanoic acid



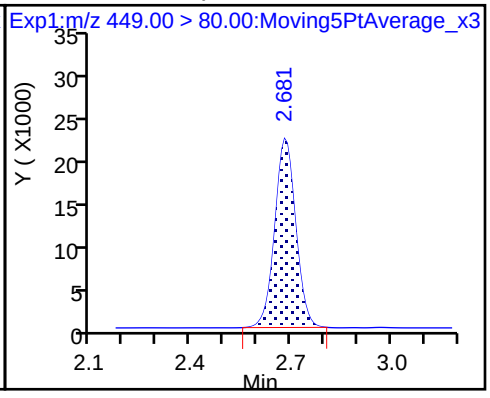
15 Perfluorooctanoic acid



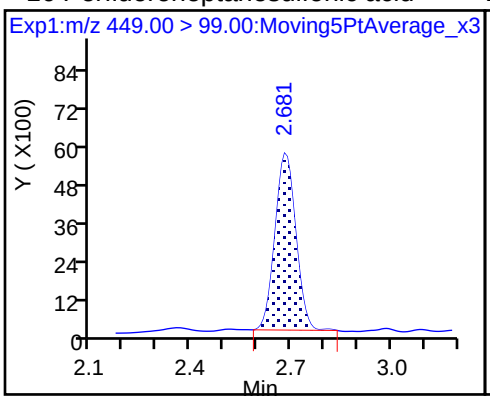
* 62 13C2-PFOA



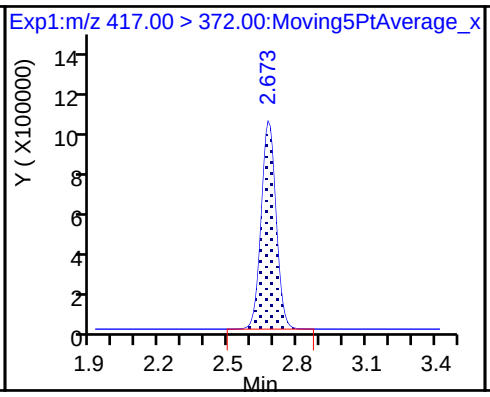
16 Perfluoroheptanesulfonic acid



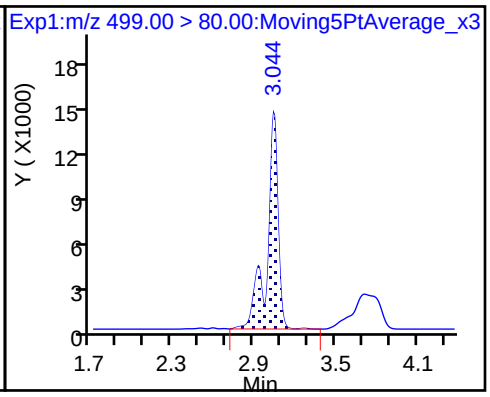
16 Perfluoroheptanesulfonic acid



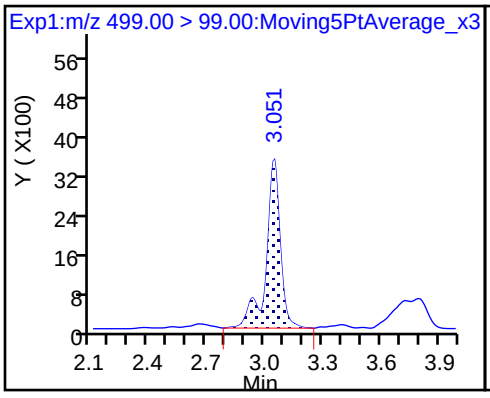
D 14 13C4 PFOA



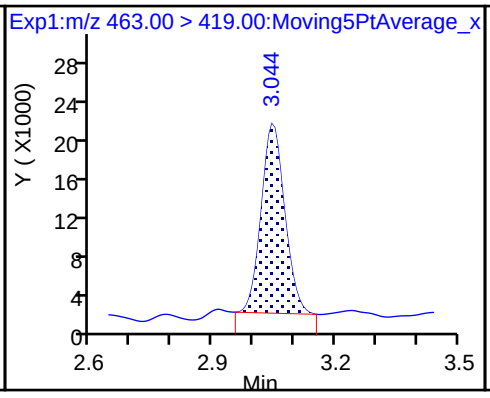
17 Perfluorooctane sulfonic acid



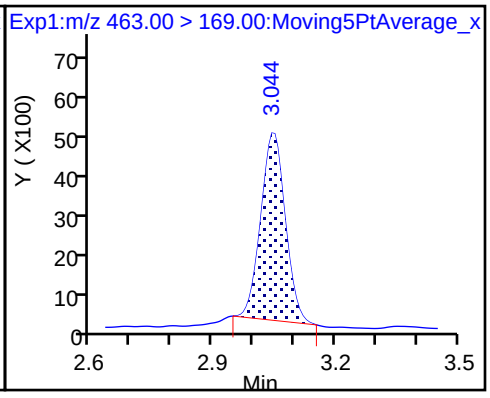
17 Perfluorooctane sulfonic acid



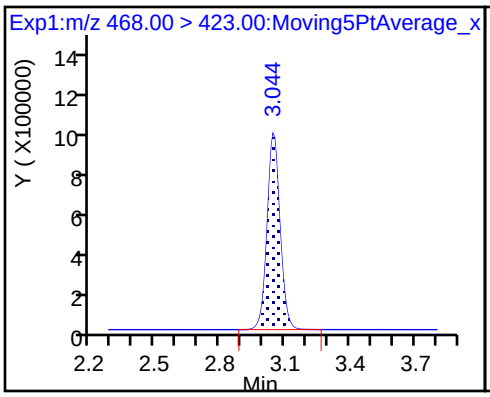
20 Perfluorononanoic acid



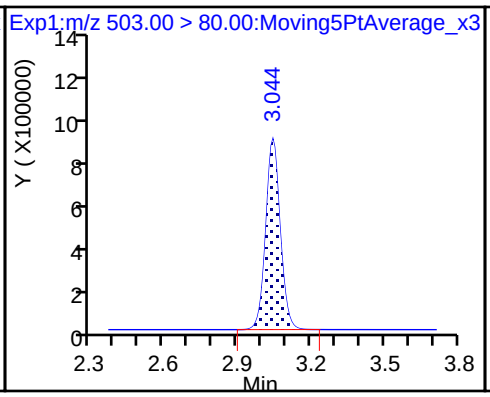
20 Perfluorononanoic acid



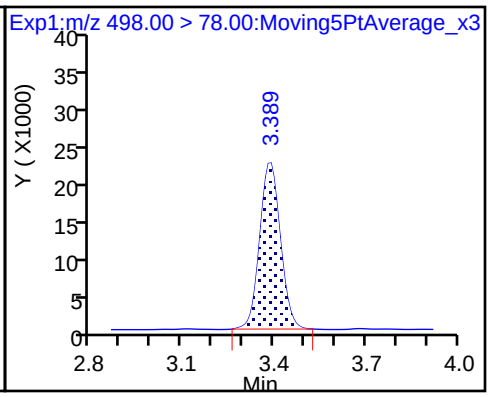
D 19 13C5 PFNA



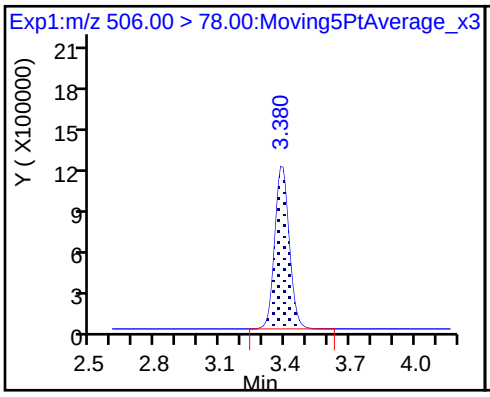
D 18 13C4 PFOS



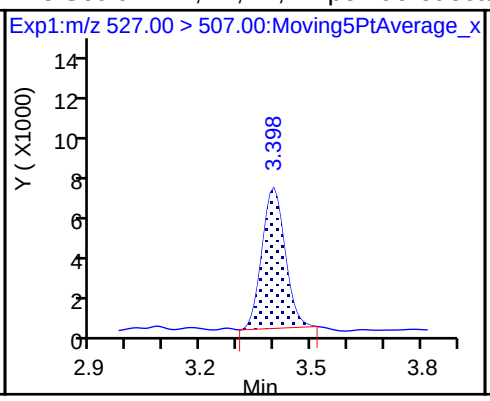
22 Perfluorooctane Sulfonamide



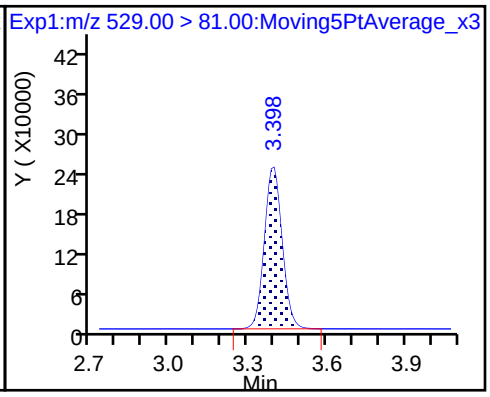
D 21 13C8 FOSA



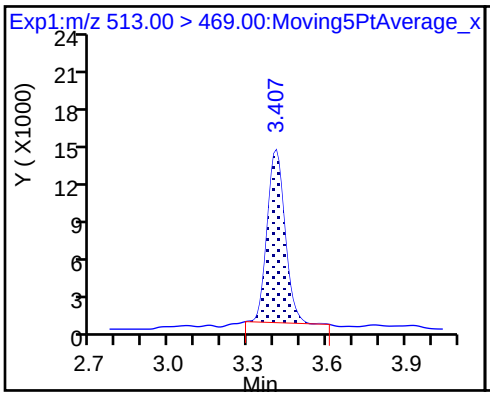
25 Sodium 1H,1H,2H,2H-perfluorodecane



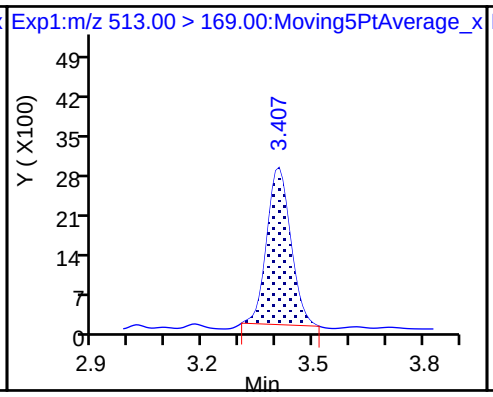
D 26 M2-8:2FTS



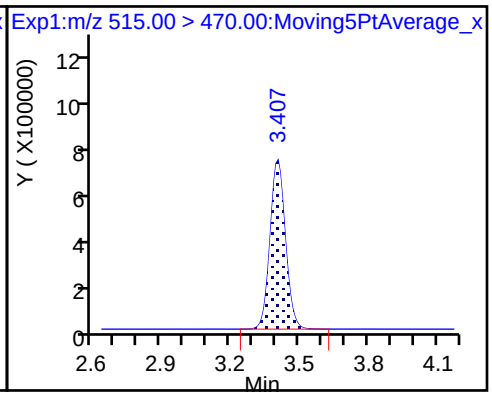
24 Perfluorodecanoic acid



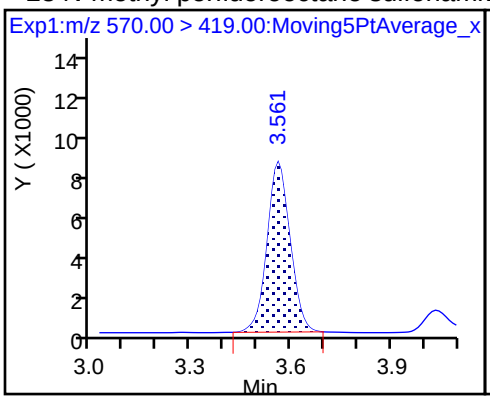
24 Perfluorodecanoic acid



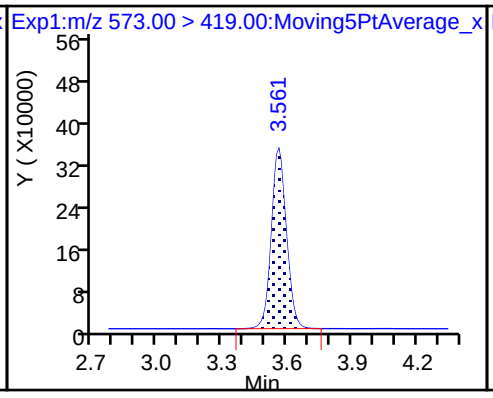
D 23 13C2 PFDA



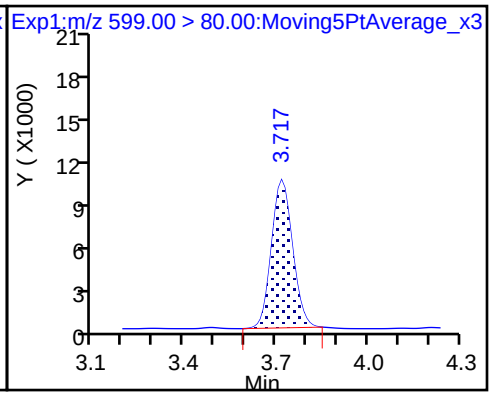
28 N-methyl perfluorooctane sulfonami



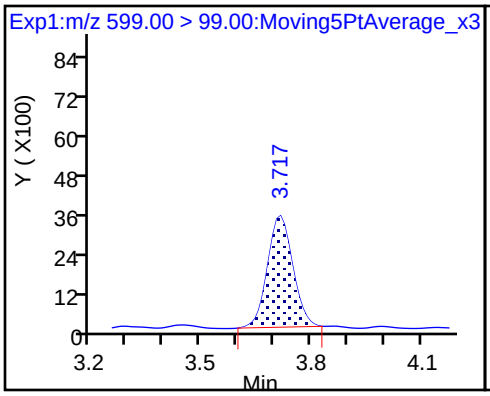
D 27 d3-NMeFOSAA



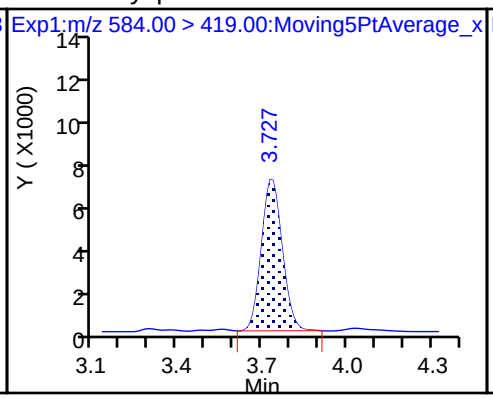
29 Perfluorodecane Sulfonic acid



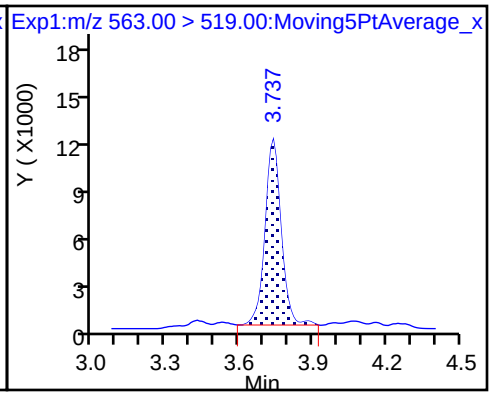
29 Perfluorodecane Sulfonic acid



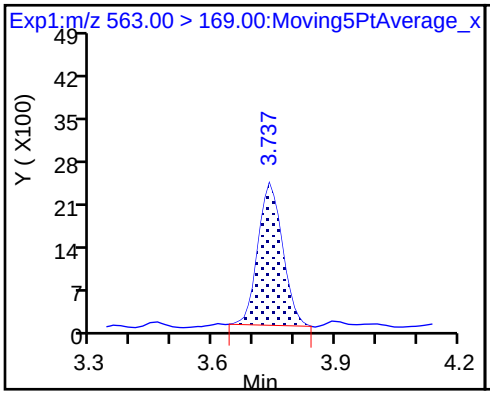
33 N-ethyl perfluorooctane sulfonamid



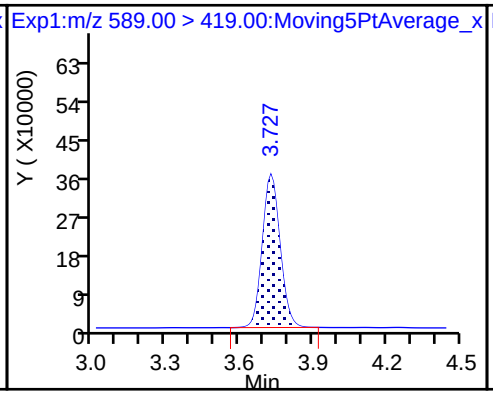
31 Perfluoroundecanoic acid



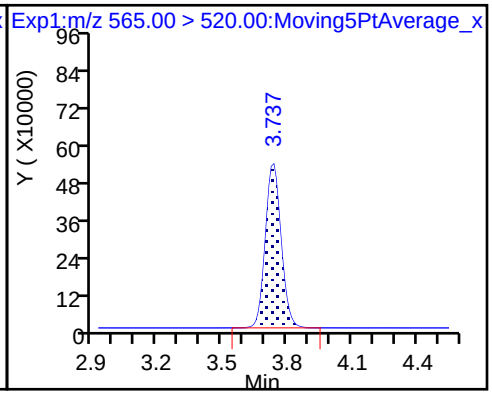
31 Perfluoroundecanoic acid



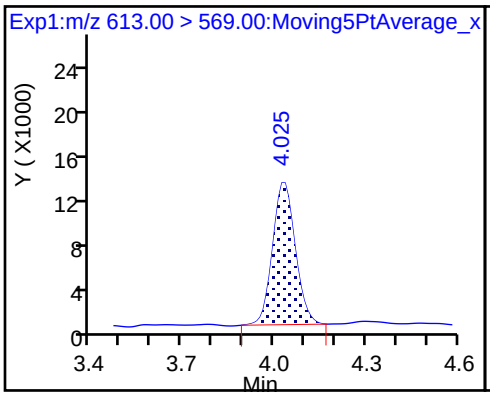
D 32 d5-NEtFOSAA



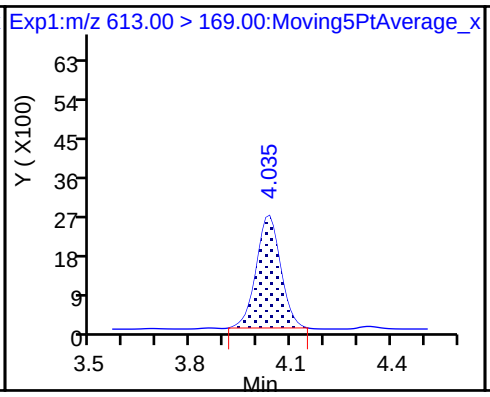
D 30 13C2 PFUnA



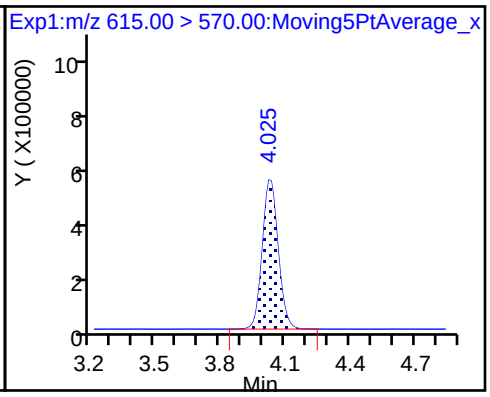
37 Perfluorododecanoic acid



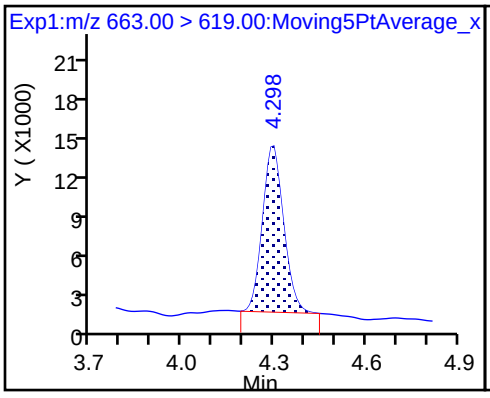
37 Perfluorododecanoic acid



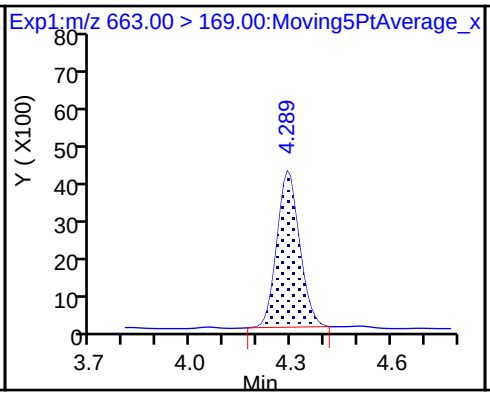
D 36 13C2 PFDoA



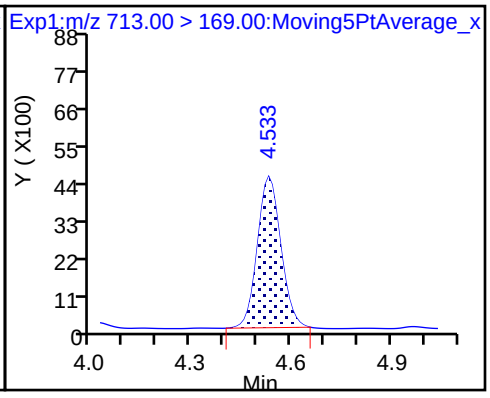
41 Perfluorotridecanoic acid



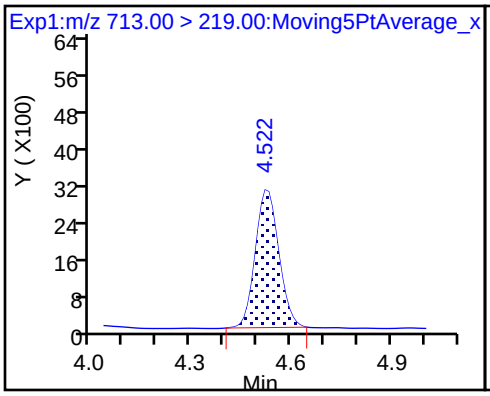
41 Perfluorotridecanoic acid



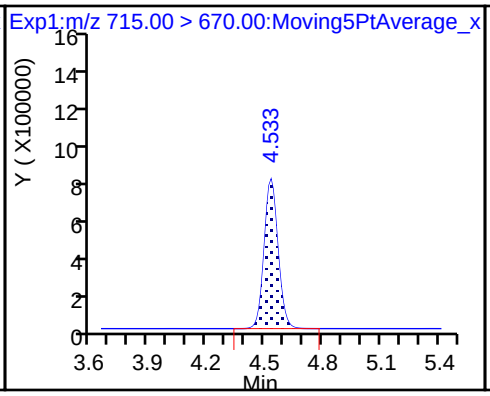
42 Perfluorotetradecanoic acid



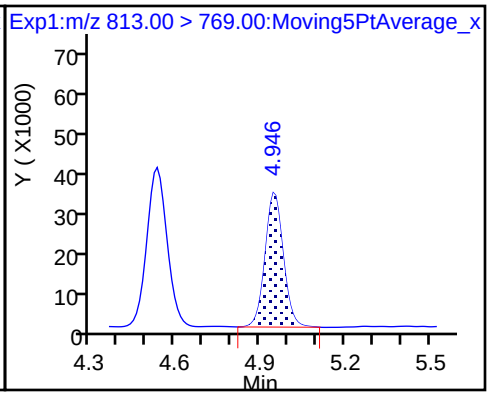
42 Perfluorotetradecanoic acid



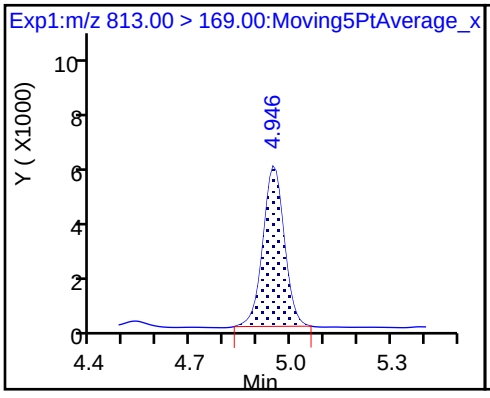
D 43 13C2-PFTeDA



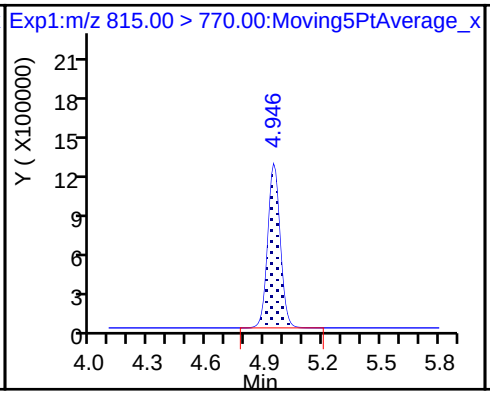
45 Perfluorohexadecanoic acid



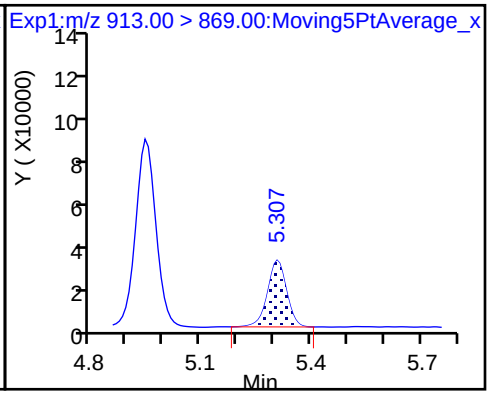
45 Perfluorohexadecanoic acid



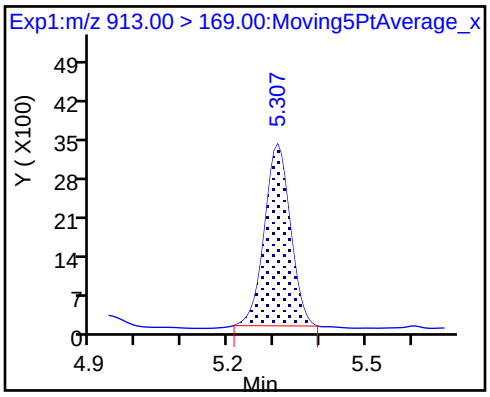
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215399/3 Calibration Date: 03/29/2018 09:03

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8927		0.947	1.00	-5.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.122		0.995	1.00	-0.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.11		0.889	0.884	0.5	50.0
4:2 FTS	AveID	16.15	14.72		0.851	0.934	-8.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9923		0.971	1.00	-2.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.032		0.998	1.00	-0.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.051		0.859	0.910	-5.6	40.0
6:2FTS	AveID	1.744	1.523		0.828	0.948	-12.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.076		0.953	1.00	-4.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.328		0.987	0.952	3.6	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.016		1.02	1.00	1.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.079		0.899	0.928	-3.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.996		1.01	1.00	1.0	40.0
8:2FTS	AveID	1.276	1.235		0.927	0.958	-3.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9831		0.995	1.00	-0.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.999		0.998	1.00	-0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6840		0.970	0.964	0.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9217		0.987	1.00	-1.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7679		0.891	1.00	-10.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.056		1.01	1.00	0.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.212		1.10	1.00	10.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2423		0.978	1.00	-2.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9540		1.03	1.00	2.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.022		1.11	1.00	10.6	50.0
13C4 PFBA	Ave	1.266	1.344		2.65	2.50	6.2	50.0
13C5 PFPeA	Ave	0.8399	0.8826		2.63	2.50	5.1	50.0
13C3-PFBS	Ave	0.0192	0.0197		2.39	2.33	2.6	50.0
M2-4:2FTS	Ave	0.1324	0.1399		2.47	2.34	5.7	50.0
13C2 PFHxA	Ave	0.9288	0.9637		2.59	2.50	3.8	50.0
13C4-PFHpA	Ave	0.9164	0.9343		2.55	2.50	2.0	50.0
18O2 PFHxS	Ave	1.130	1.160		2.43	2.37	2.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215399/3 Calibration Date: 03/29/2018 09:03

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2136		2.67	2.38	12.4	40.0
13C4 PFOA	Ave	0.9374	0.9423		2.51	2.50	0.5	50.0
13C4 PFOS	Ave	0.8225	0.7869		2.29	2.39	-4.3	50.0
13C5 PFNA	Ave	0.8266	0.7810		2.36	2.50	-5.5	50.0
13C8 FOSA	Ave	1.109	1.110		2.50	2.50	0.0	50.0
M2-8:2FTS	Ave	0.2565	0.2361		2.20	2.40	-8.0	40.0
13C2 PFDA	Ave	0.7245	0.6715		2.32	2.50	-7.3	50.0
d3-NMeFOSAA	Ave	0.3814	0.3684		2.42	2.50	-3.4	50.0
13C2 PFUnA	Ave	0.6482	0.5564		2.15	2.50	-14.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3637		2.09	2.50	-16.3	50.0
13C2 PFDoA	Ave	0.7355	0.5681		1.93	2.50	-22.8	50.0
13C2-PFTeDA	Ave	0.8983	0.7283		2.03	2.50	-18.9	50.0
13C2-PFHxDA	Ave	1.473	1.112		1.89	2.50	-24.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 29-Mar-2018 09:03:55 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:35 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:53:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.429	1.429	0.0	1.000	2330631	0.9474		94.7	863	
D 1 13C4 PFBA										
217.00 > 172.00	1.429	1.440	-0.011	0.536	6527097	2.65		106	102442	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.692	0.0	1.000	1924183	1.00		99.5	807	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.700	-0.008	0.635	4286102	2.63		105	167806	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.727	0.0	1.000	2639324	0.8887		101	1687	
298.90 > 99.00	1.727	1.727	0.0	1.000	1104689		2.39(1.25-3.74)		1626	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.735	-0.008	0.648	88865	2.39		103	693	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.935	1.935	0.0	1.000	525372	0.8510		91.1	32602	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.955	-0.009	0.730	634354	2.47		106	8315	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	1857550	0.9706		97.1	3179	
313.00 > 119.00	1.976	1.976	0.0	1.000	168666		11.01(5.03-15.10)		2551	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.742	4680151	2.59		104	143075	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.302	0.0	1.000	1873505	1.00		99.8	1359	
363.00 > 169.00	2.302	2.302	0.0	1.000	701643		2.67(1.13-3.40)		1723	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.315	2.315	0.0	1.000	2153971	0.8591		94.4	9401	
399.00 > 99.00	2.315	2.315	0.0	1.000	718215		3.00(1.50-4.49)		4534	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.328	-0.026	0.864	4537045	2.55		102	83802	
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.341	-0.026	0.869	5327613	2.43		103	63709	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.641	2.641	0.0	1.000	598974	0.8279		87.3	7980	
D 12 M2-6:2FTS										
429.00 > 81.00	2.641	2.663	-0.022	0.991	985473	2.67		112	32620	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.665	2.665	0.0	1.000	1970375	0.9529		95.3	608	
413.00 > 169.00	2.665	2.665	0.0	1.000	1044244		1.89(0.84-2.52)		3663	
* 62 13C2-PFOA										
415.00 > 370.00	2.665	2.665	0.0		4856254	2.50			73966	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.673	2.673	0.0	1.000	1932250	0.9866		104	31869	
449.00 > 99.00	2.673	2.673	0.0	1.000	530985		3.64(1.94-5.82)		11086	
D 14 13C4 PFOA										
417.00 > 372.00	2.665	2.687	-0.022	1.000	4576237	2.51		101	87451	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.037	3.037	0.0	1.000	1531232	0.8992		96.9	3541	
499.00 > 99.00	3.037	3.037	0.0	1.000	346132		4.42(2.31-6.93)		2887	
20 Perfluorononanoic acid										
463.00 > 419.00	3.037	3.037	0.0	1.000	1541431	1.02		102	1777	
463.00 > 169.00	3.037	3.037	0.0	1.000	385417		4.00(1.90-5.69)		10511	
D 19 13C5 PFNA										
468.00 > 423.00	3.037	3.058	-0.021	1.140	3792862	2.36		94.5	58242	
D 18 13C4 PFOS										
503.00 > 80.00	3.037	3.058	-0.021	1.140	3653402	2.29		95.7	44840	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.373	3.373	0.0	1.000	2146158	1.01		101	39365	
D 21 13C8 FOSA										
506.00 > 78.00	3.373	3.388	-0.015	1.266	5389190	2.50		100	62360	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.382	3.382	0.0	1.000	542644	0.9270		96.8	4653	
D 26 M2-8:2FTS										
529.00 > 81.00	3.382	3.406	-0.024	1.269	1098463	2.20		92.0	47077	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.391	3.391	0.0	1.000	1282315	0.99		99.5	7734	
513.00 > 169.00	3.391	3.391	0.0	1.000	243899		5.26(2.36-7.09)		8911	
D 23 13C2 PFDA										
515.00 > 470.00	3.391	3.424	-0.033	1.272	3260861	2.32		92.7	36998	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.554	3.554	0.0	1.003	714684	1.00		99.8	6571	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.545	3.569	-0.024	1.330	1789241	2.42		96.6	53450	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.710	3.710	0.0	1.000	1007982	0.9697		101	29328	
599.00 > 99.00	3.710	3.710	0.0	1.000	334220		3.02(1.39-4.16)		9631	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.720	3.720	0.0	1.000	651146	0.9865		98.7	12993	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.720	3.720	0.0	1.000	829823	0.8906		89.1	5357	
563.00 > 169.00	3.720	3.720	0.0	1.000	202252		4.10(2.12-6.36)		15241	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.720	3.748	-0.028	1.396	1766234	2.09		83.7	4665	
D 30 13C2 PFUnA										
565.00 > 520.00	3.720	3.748	-0.028	1.396	2701756	2.15		85.8	49846	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.018	0.0	1.000	1164791	1.01		101	938	
613.00 > 169.00	4.018	4.018	0.0	1.000	282913		4.12(2.13-6.40)		5610	
D 36 13C2 PFDoA										
615.00 > 570.00	4.018	4.047	-0.029	1.508	2758702	1.93		77.2	21414	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.283	4.283	0.0	1.000	1337257	1.10		110	545	
663.00 > 169.00	4.283	4.283	0.0	1.000	423178		3.16(1.25-3.76)		8053	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.524	4.524	0.0	1.000	342730	0.9777		97.8	5697	
713.00 > 219.00	4.514	4.524	-0.010	0.998	244007		1.40(0.71-2.13)		4845	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.524	4.554	-0.030	1.698	3536613	2.03		81.1	22737	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.938	4.938	0.0	1.000	2060960	1.03		103	504	
813.00 > 169.00	4.938	4.938	0.0	1.000	352800		5.84(2.86-8.58)		4442	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.938	4.973	-0.035	1.853	5400687	1.89		75.5	16185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.301	5.301	0.0	1.000	2208531	1.11		111	373	
913.00 > 169.00	5.294	5.301	-0.007	0.999	275151		8.03(3.83-11.48)		3514	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 10:10:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_006.d

Injection Date: 29-Mar-2018 09:03:55 Instrument ID: A8_N

Lims ID: CCV L4

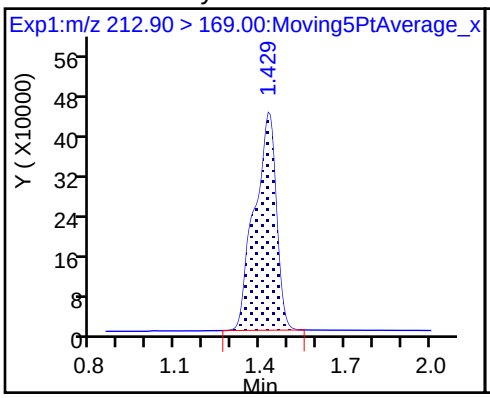
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

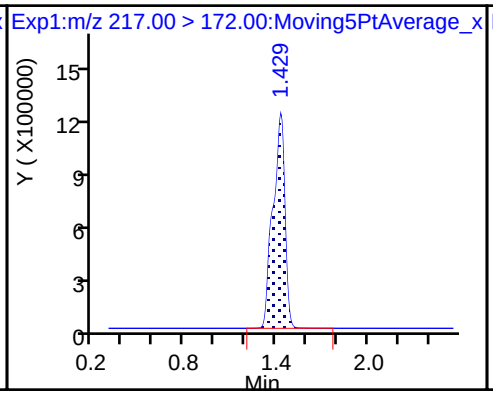
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

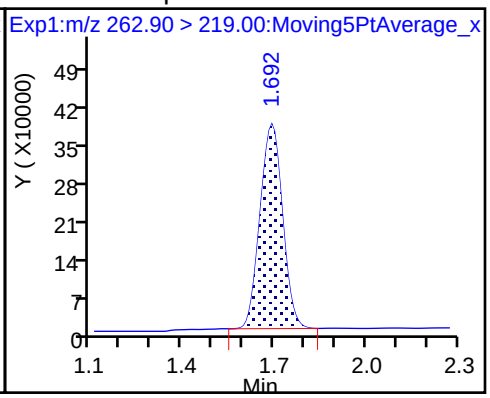
2 Perfluorobutyric acid



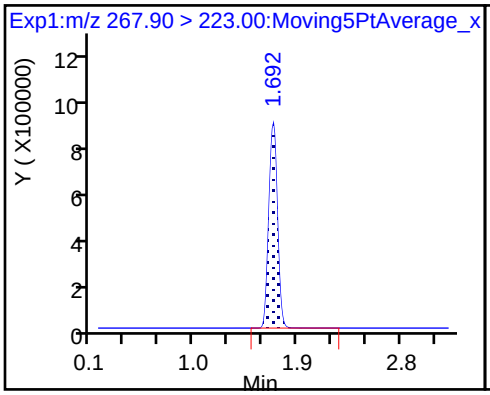
D 1 13C4 PFBA



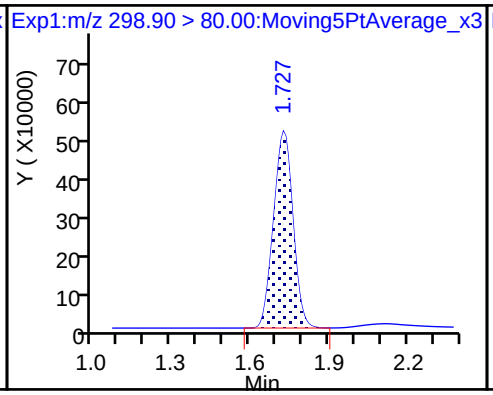
4 Perfluoropentanoic acid



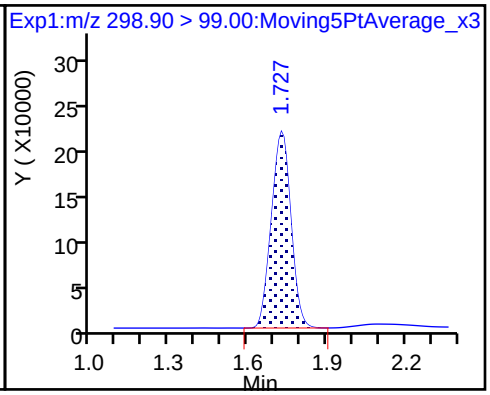
D 3 13C5-PFPeA



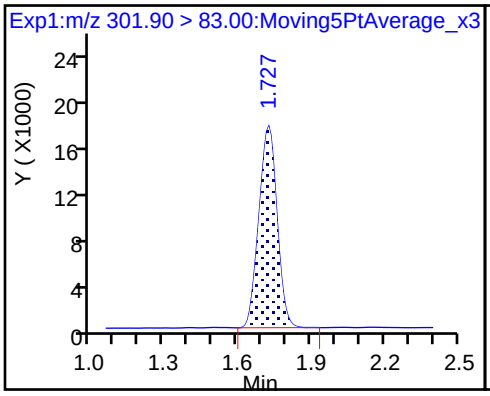
5 Perfluorobutanesulfonic acid



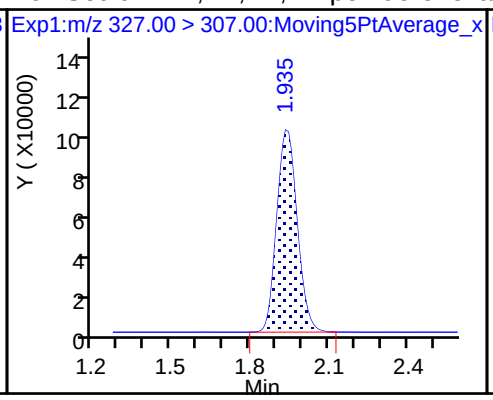
5 Perfluorobutanesulfonic acid



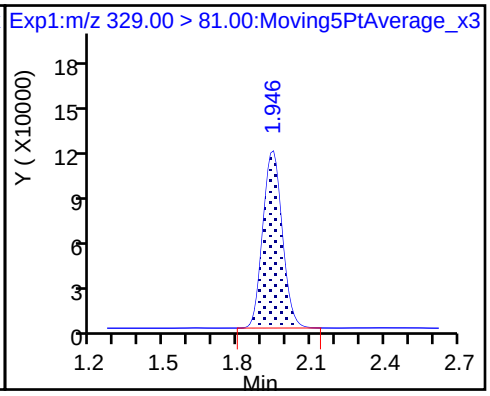
D 47 13C3-PFBS



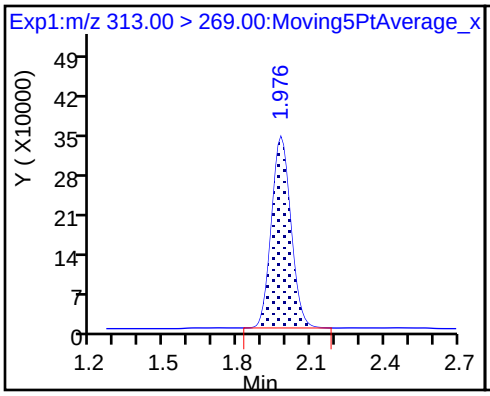
61 Sodium 1H,1H,2H,2H-perfluorohexane



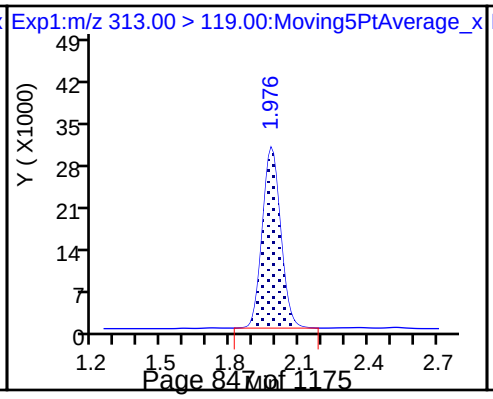
D 60 M2-4:2FTS



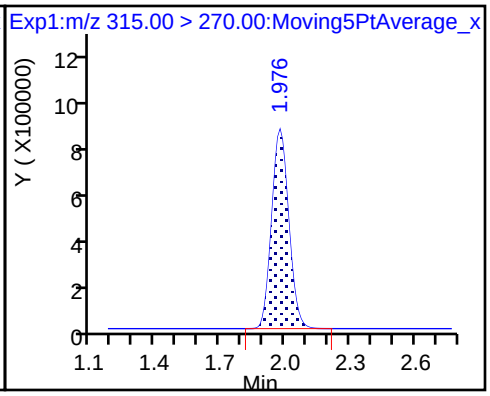
6 Perfluorohexanoic acid



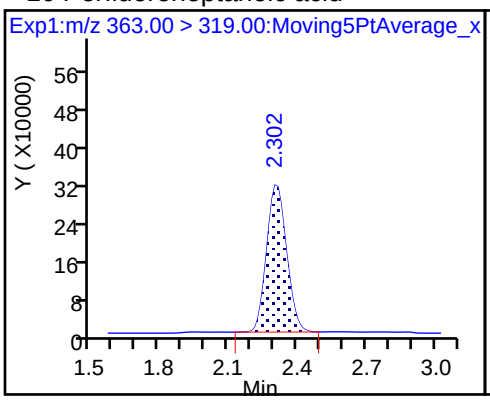
6 Perfluorohexanoic acid



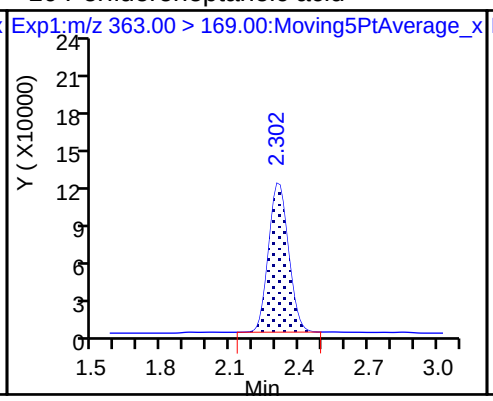
D 7 13C2 PFHxA



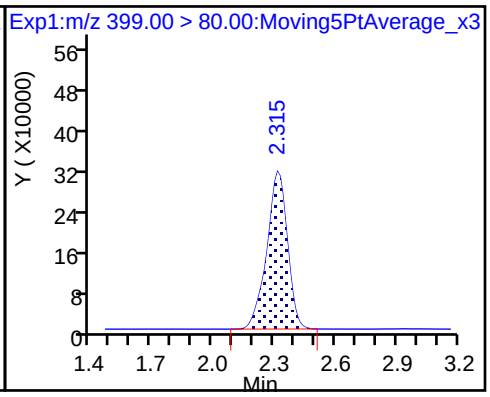
10 Perfluoroheptanoic acid



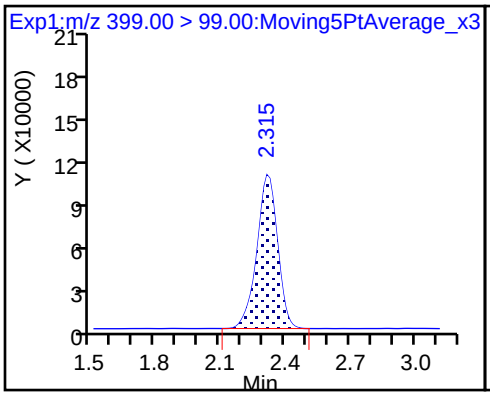
10 Perfluoroheptanoic acid



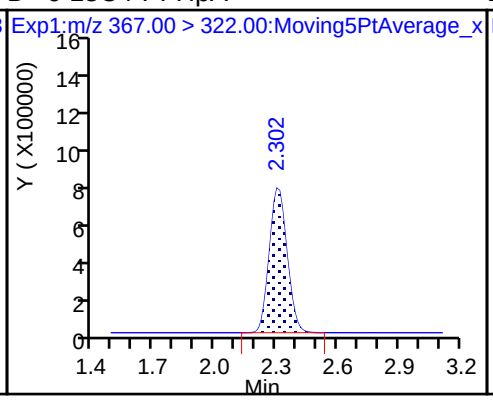
8 Perfluorohexanesulfonic acid



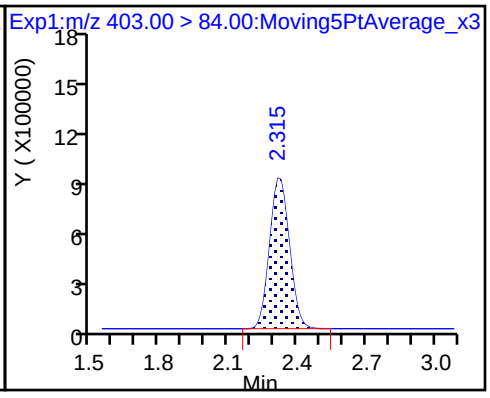
8 Perfluorohexanesulfonic acid



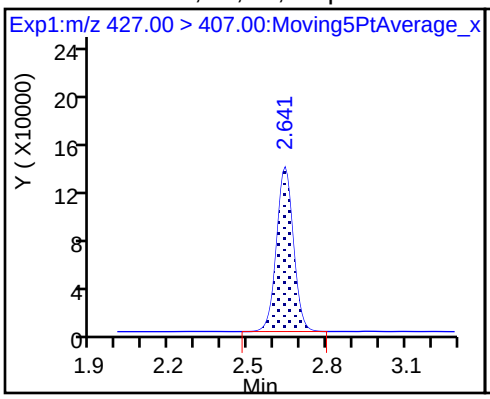
D 9 13C4-PFHpA



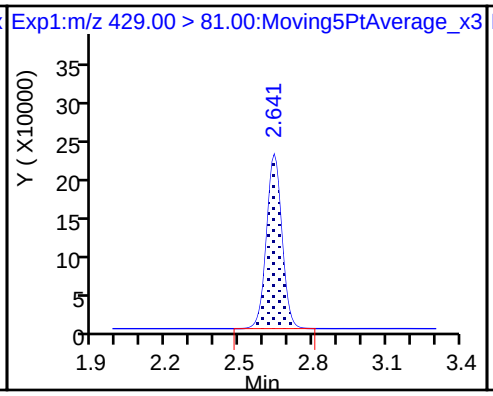
D 11 18O2 PFHxS



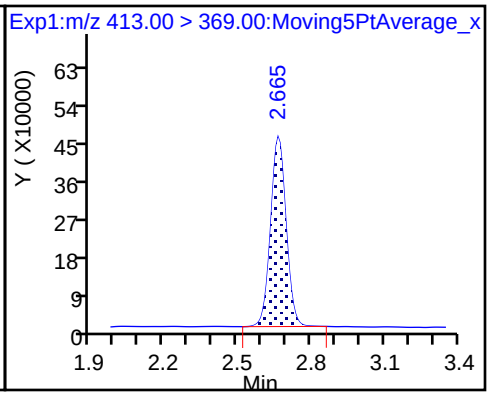
13 Sodium 1H,1H,2H,2H-perfluorooctane



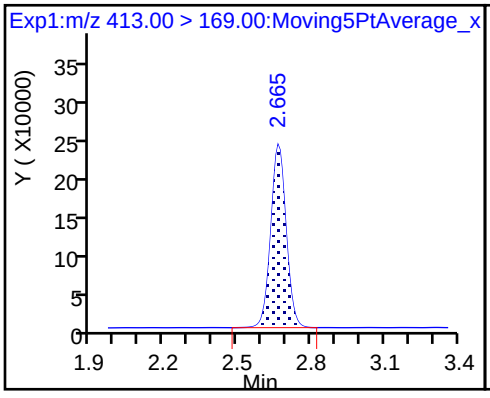
D 12 M2-6:2FTS



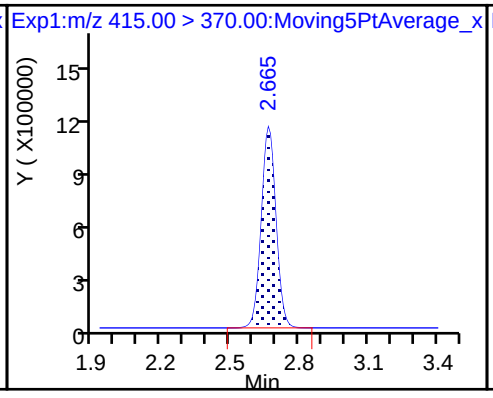
15 Perfluorooctanoic acid



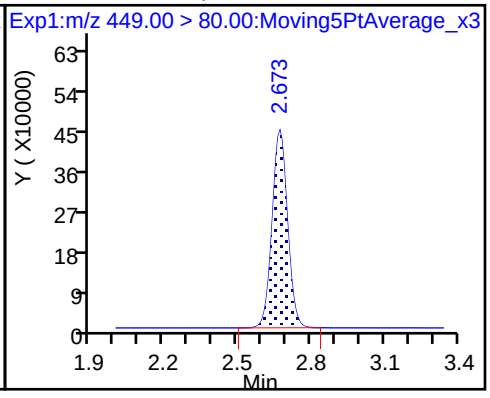
15 Perfluorooctanoic acid



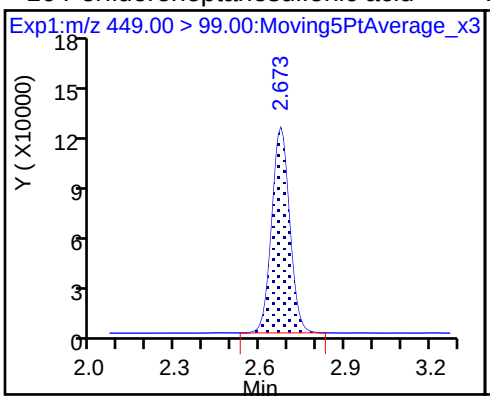
* 62 13C2-PFOA



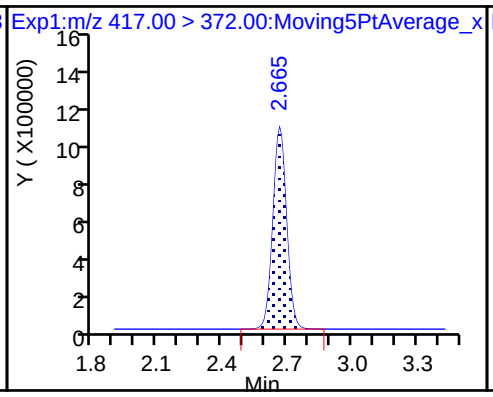
16 Perfluoroheptanesulfonic acid



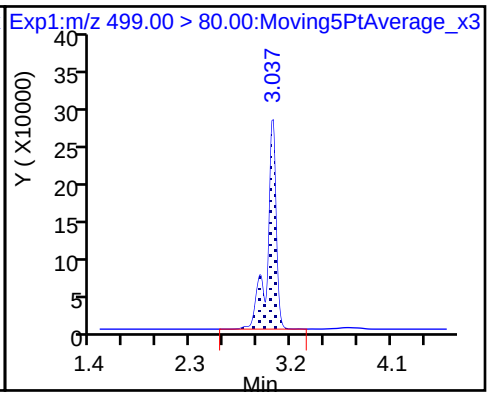
16 Perfluoroheptanesulfonic acid



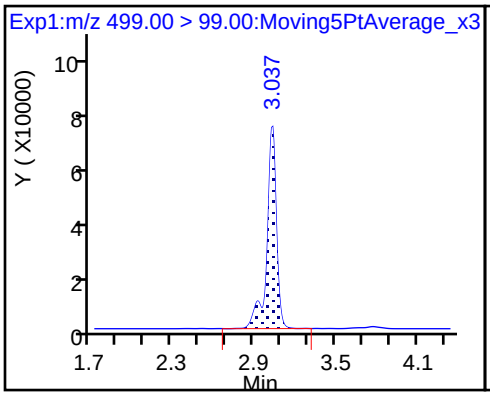
D 14 13C4 PFOA



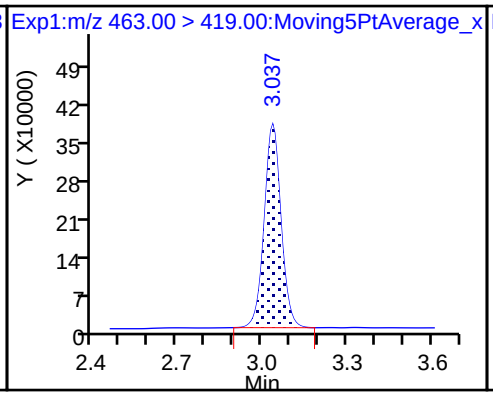
17 Perfluorooctane sulfonic acid



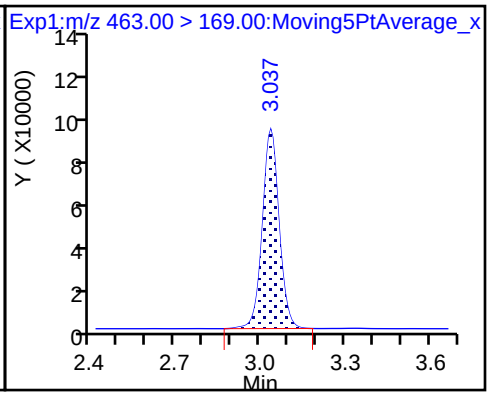
17 Perfluorooctane sulfonic acid



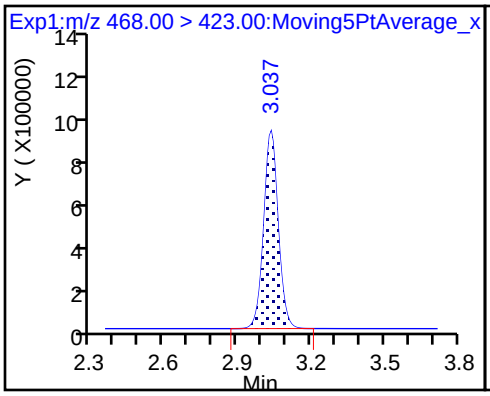
20 Perfluorononanoic acid



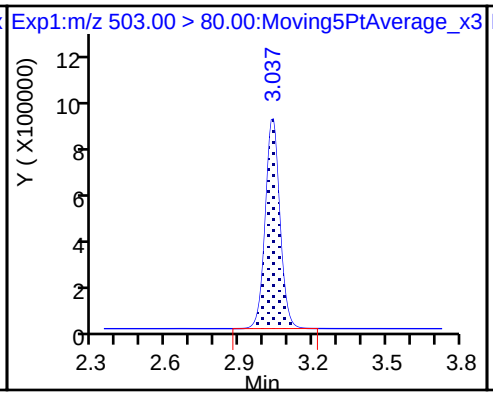
20 Perfluorononanoic acid



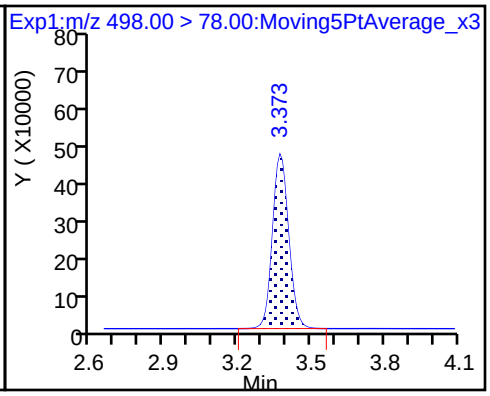
D 19 13C5 PFNA



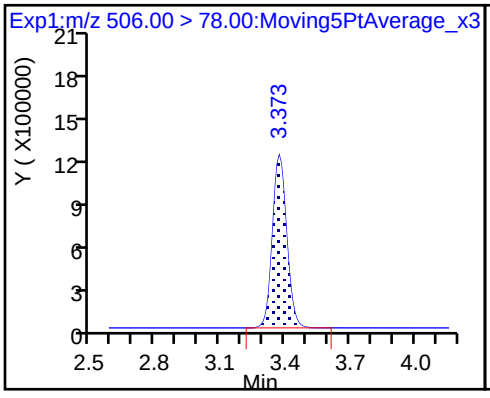
D 18 13C4 PFOS



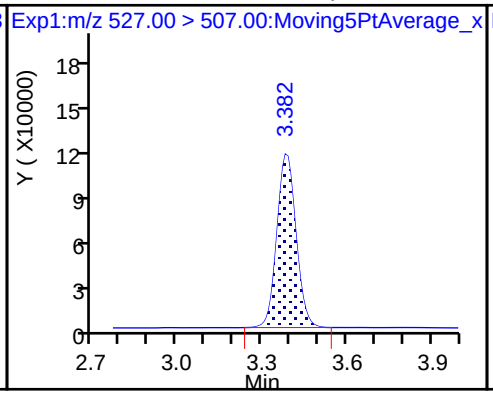
22 Perfluorooctane Sulfonamide



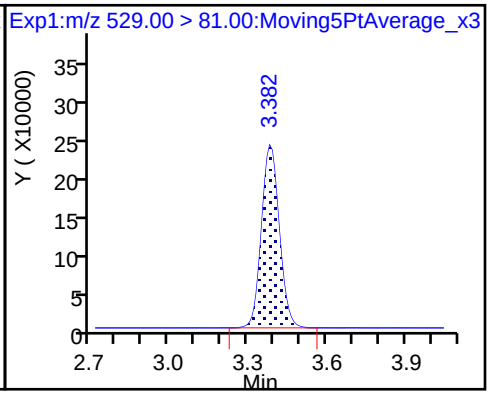
D 21 13C8 FOSA



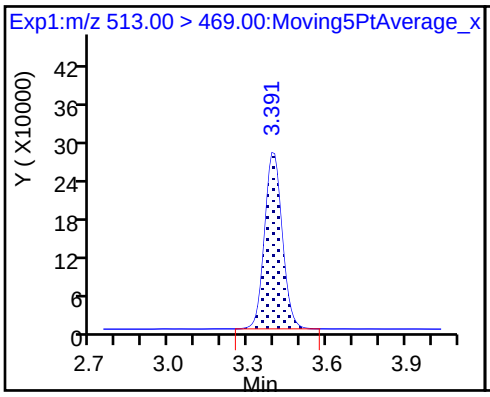
25 Sodium 1H,1H,2H,2H-perfluorodecane



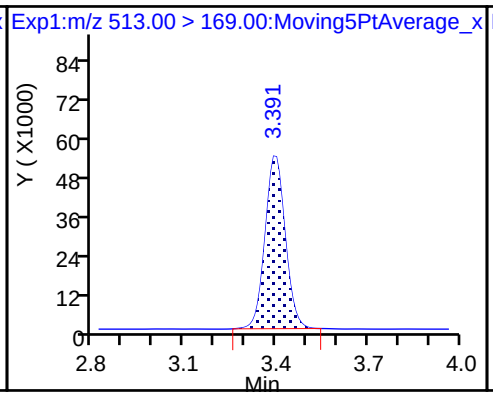
D 26 M2-8:2FTS



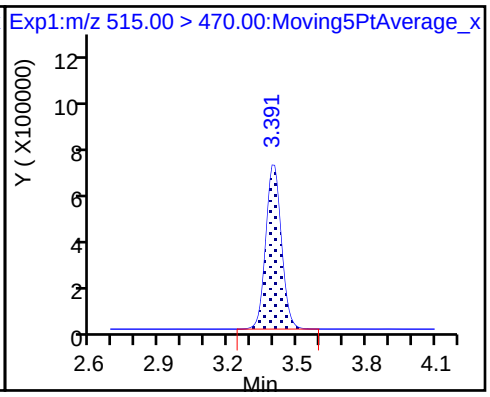
24 Perfluorodecanoic acid



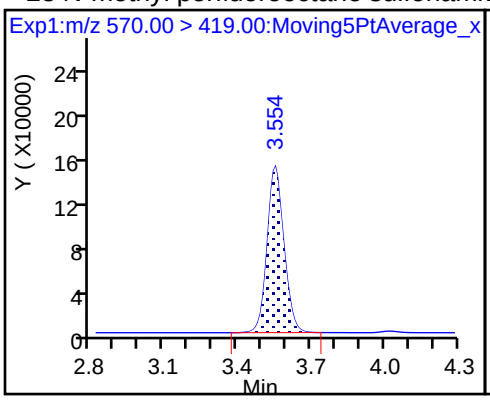
24 Perfluorodecanoic acid



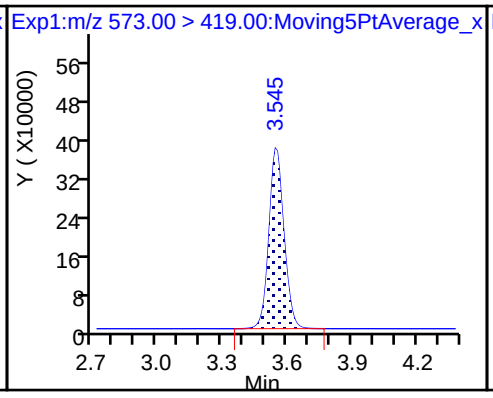
D 23 13C2 PFDA



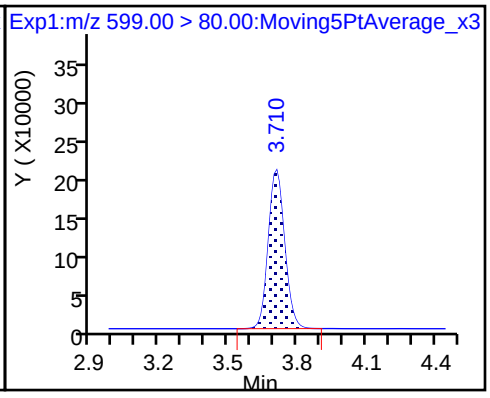
28 N-methyl perfluorooctane sulfonami



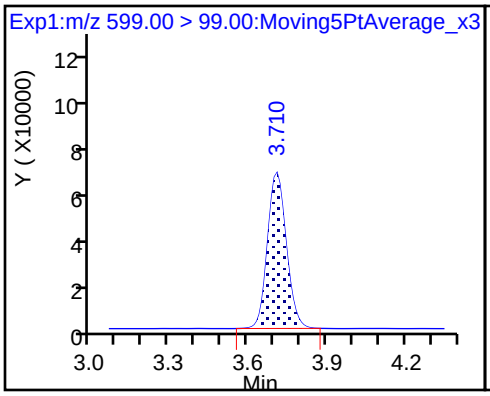
D 27 d3-NMeFOSAA



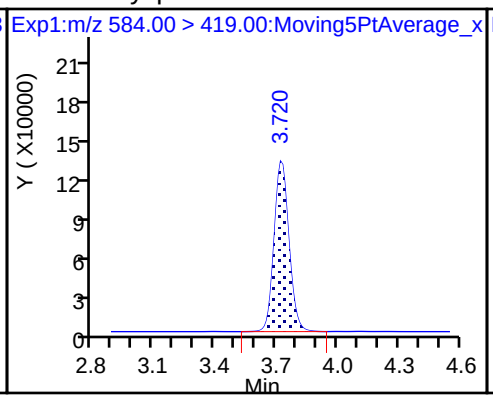
29 Perfluorodecane Sulfonic acid



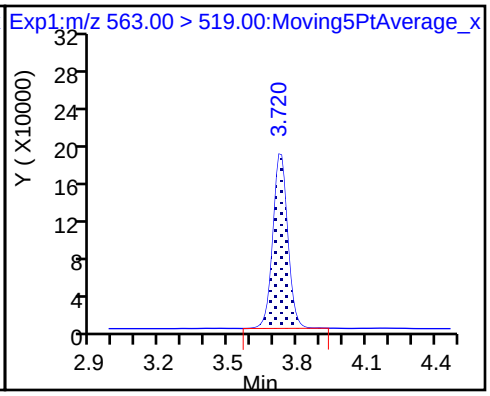
29 Perfluorodecane Sulfonic acid



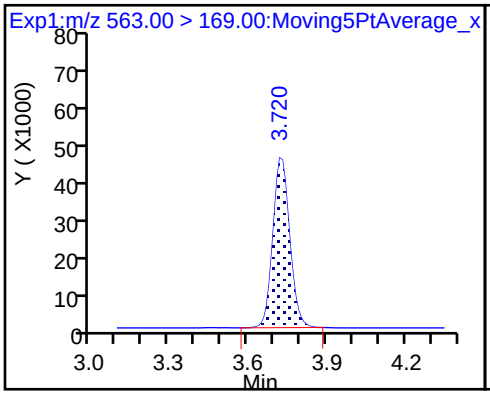
33 N-ethyl perfluorooctane sulfonamid



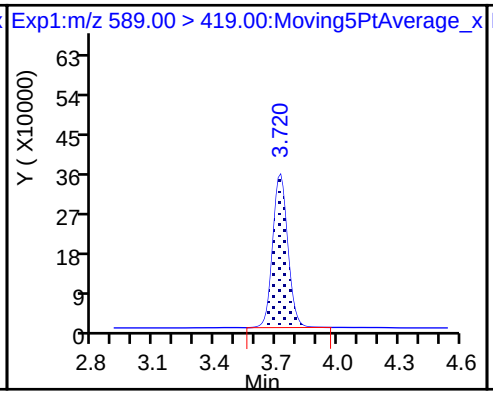
31 Perfluoroundecanoic acid



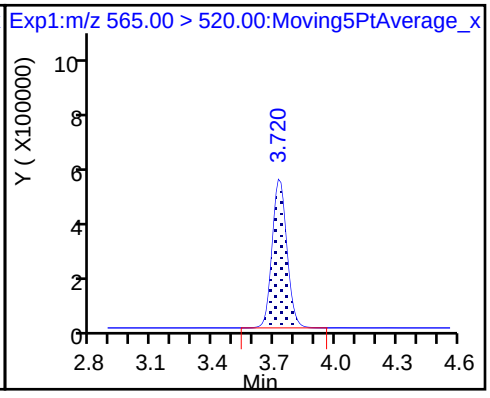
31 Perfluoroundecanoic acid



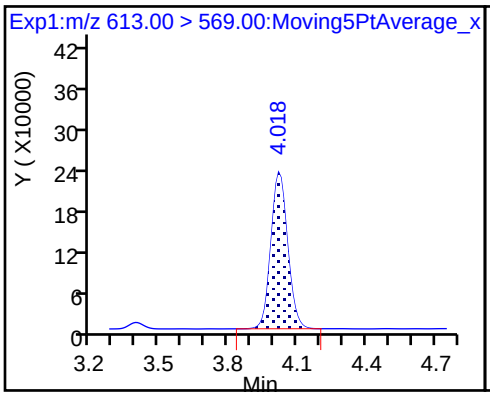
D 32 d5-NEtFOSAA



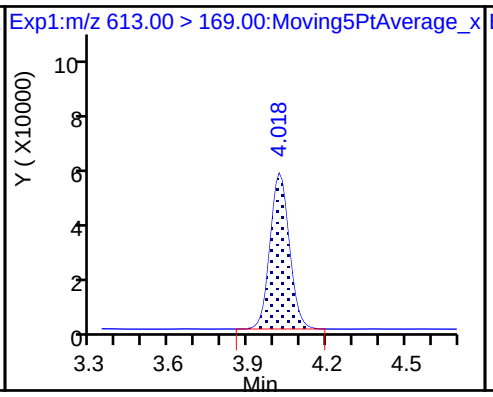
D 30 13C2 PFUnA



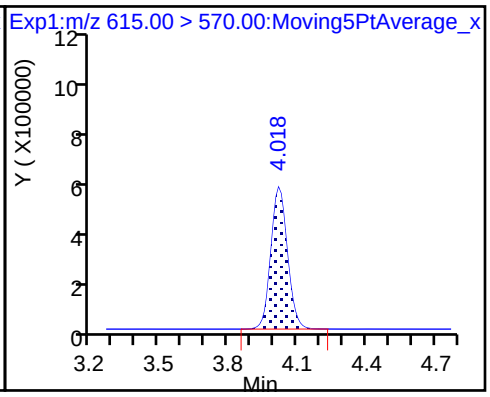
37 Perfluorododecanoic acid



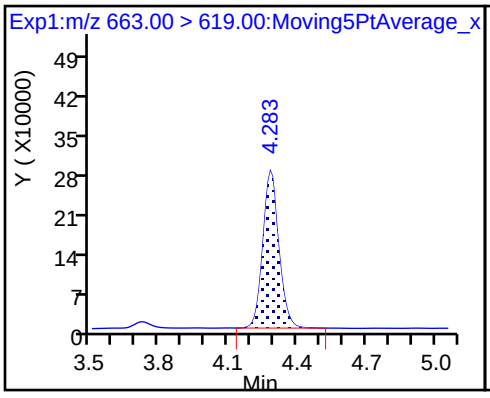
37 Perfluorododecanoic acid



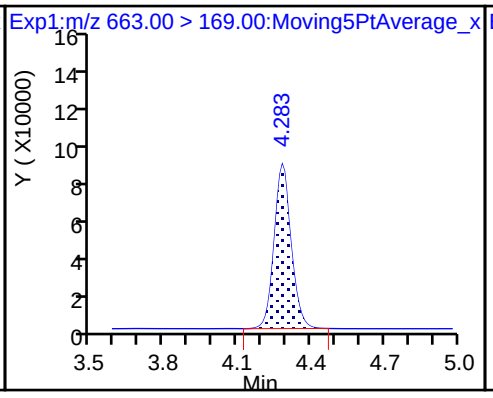
D 36 13C2 PFDoA



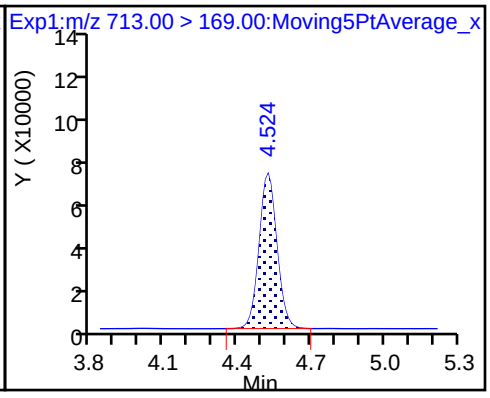
41 Perfluorotridecanoic acid



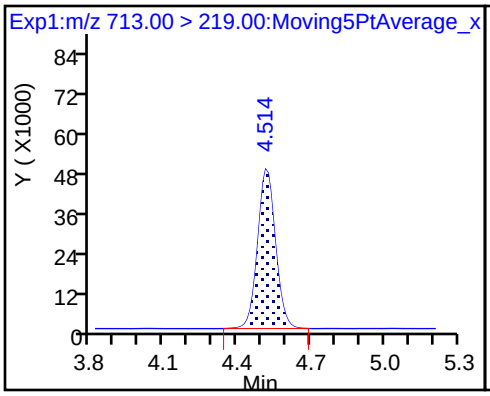
41 Perfluorotridecanoic acid



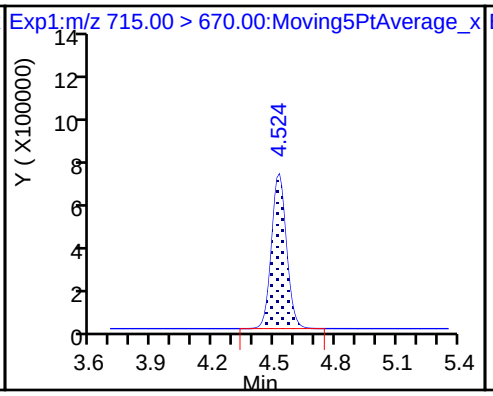
42 Perfluorotetradecanoic acid



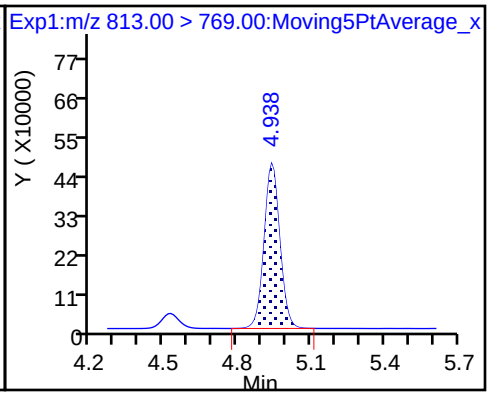
42 Perfluorotetradecanoic acid



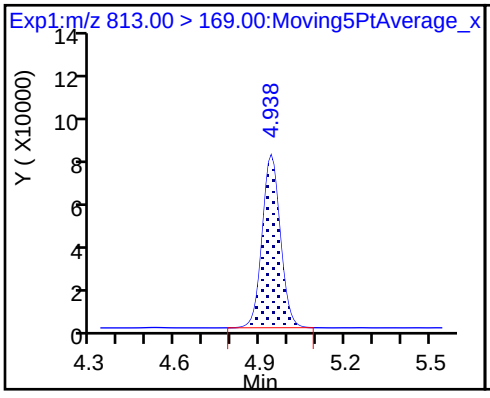
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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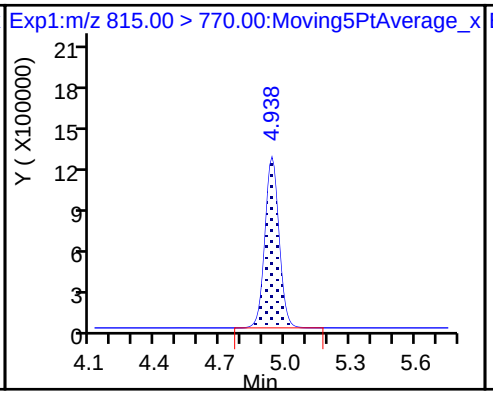
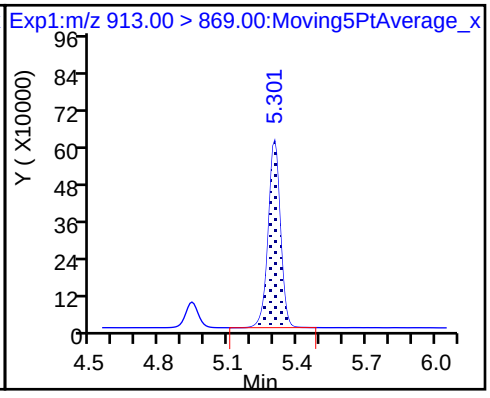
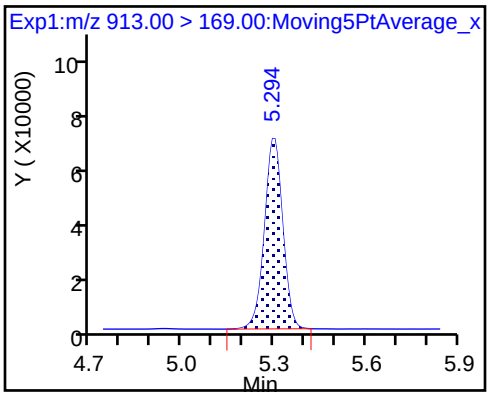


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215399/10 Calibration Date: 03/29/2018 09:58

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9488		2.52	2.50	0.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.139		2.53	2.50	1.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.18		2.22	2.21	0.6	50.0
4:2 FTS	AveID	16.15	15.34		2.22	2.34	-5.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9934		2.43	2.50	-2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.062		2.57	2.50	2.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.099		2.25	2.28	-1.3	40.0
6:2FTS	AveID	1.744	1.722		2.34	2.37	-1.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.153		2.55	2.50	2.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.367		2.54	2.38	6.7	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.027		2.57	2.50	2.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.116		2.33	2.32	0.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.021		2.59	2.50	3.6	40.0
8:2FTS	AveID	1.276	1.233		2.31	2.40	-3.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9765		2.47	2.50	-1.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.027		2.57	2.50	2.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6639		2.35	2.41	-2.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9384		2.51	2.50	0.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8200		2.38	2.50	-4.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.106		2.64	2.50	5.7	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.328		3.02	2.50	20.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2582		2.61	2.50	4.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		2.72	2.50	8.7	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.055		2.85	2.50	14.1	50.0
13C4 PFBA	Ave	1.266	1.350		2.67	2.50	6.6	50.0
13C5 PFPeA	Ave	0.8399	0.9012		2.68	2.50	7.3	50.0
13C3-PFBS	Ave	0.0192	0.0207		2.51	2.33	8.1	50.0
M2-4:2FTS	Ave	0.1324	0.1479		2.61	2.34	11.7	50.0
13C2 PFHxA	Ave	0.9288	0.9631		2.59	2.50	3.7	50.0
13C4-PFHpA	Ave	0.9164	0.8969		2.45	2.50	-2.1	50.0
18O2 PFHxS	Ave	1.130	1.132		2.37	2.37	0.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Lab Sample ID: CCV 320-215399/10 Calibration Date: 03/29/2018 09:58

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2080		2.60	2.38	9.5	40.0
13C4 PFOA	Ave	0.9374	0.9406		2.51	2.50	0.3	50.0
13C4 PFOS	Ave	0.8225	0.8111		2.36	2.39	-1.4	50.0
13C5 PFNA	Ave	0.8266	0.8134		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.137		2.56	2.50	2.5	50.0
M2-8:2FTS	Ave	0.2565	0.2593		2.42	2.40	1.1	40.0
13C2 PFDA	Ave	0.7245	0.6892		2.38	2.50	-4.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3673		2.41	2.50	-3.7	50.0
13C2 PFUnA	Ave	0.6482	0.5393		2.08	2.50	-16.8	50.0
d5-NEtFOSAA	Ave	0.4345	0.3672		2.11	2.50	-15.5	50.0
13C2 PFDoA	Ave	0.7355	0.5634		1.92	2.50	-23.4	50.0
13C2-PFTeDA	Ave	0.8983	0.7497		2.09	2.50	-16.6	50.0
13C2-PFHxDA	Ave	1.473	1.152		1.96	2.50	-21.7	50.0

Report Date: 29-Mar-2018 10:10:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_013.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 09:58:51 ALS Bottle#: 14 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:50 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 10:10:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.428	1.428	0.0	1.000	6029464	2.52		101	2637	
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.440	-0.012	0.534	6354951	2.67		107	91380	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.691	0.0	1.000	4832220	2.52		101	2046	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.632	4243820	2.68		107	102139	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.726	0.0	1.000	6744686	2.22		101	4068	
298.90 > 99.00	1.726	1.726	0.0	1.000	2762450		2.44(1.25-3.74)		4149	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.735	-0.009	0.645	90759	2.51		108	724	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	1398578	2.22		95.0	65260	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.955	-0.010	0.727	650535	2.61		112	10048	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	4505477	2.43		97.2	7967	
313.00 > 119.00	1.976	1.976	0.0	1.000	423797		10.63(5.03-15.10)		6315	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.738	4535357	2.59		104	116633	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.310	0.0	1.000	4484611	2.57		103	3463	
363.00 > 169.00	2.310	2.310	0.0	1.000	1760395		2.55(1.13-3.40)		4540	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.323	0.0	1.000	5330300	2.25		98.7	17743	
399.00 > 99.00	2.323	2.323	0.0	1.000	1805162		2.95(1.50-4.49)		8919	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.310	2.328	-0.018	0.863	4223527	2.45		97.9	84565	
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.341	-0.018	0.868	5042454	2.37		100	74382	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.652	0.0	1.000	1598779	2.34		98.8	15601	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.663	-0.011	0.991	930471	2.60		109	23806	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.676	0.0	1.000	5107084	2.55		102	2123	
413.00 > 169.00	2.676	2.676	0.0	1.000	2627578		1.94(0.84-2.52)		8806	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.676	0.0		4708999	2.50			89622	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.684	2.684	0.0	1.000	4970487	2.54		107	63039	
449.00 > 99.00	2.684	2.684	0.0	1.000	1341397		3.71(1.94-5.82)		23564	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.687	-0.011	1.000	4429132	2.51		100	77687	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.046	3.046	0.0	1.000	3957480	2.33		100	8778	
499.00 > 99.00	3.046	3.046	0.0	1.000	867411		4.56(2.31-6.93)		7680	
20 Perfluorononanoic acid										
463.00 > 419.00	3.046	3.046	0.0	1.000	3932600	2.57		103	4305	
463.00 > 169.00	3.046	3.046	0.0	1.000	986569		3.99(1.90-5.69)		34189	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.058	-0.012	1.138	3830389	2.46		98.4	77213	
D 18 13C4 PFOS										
503.00 > 80.00	3.046	3.058	-0.012	1.138	3651522	2.36		98.6	42516	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.383	3.383	0.0	1.000	5468110	2.59		104	56807	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.402	3.402	0.0	1.000	1442586	2.31		96.6	11530	
D 21 13C8 FOSA										
506.00 > 78.00	3.383	3.388	-0.005	1.264	5354017	2.56		103	65183	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.411	3.411	0.0	1.000	3169144	2.47		98.8	22038	
513.00 > 169.00	3.411	3.411	0.0	1.000	571987		5.54(2.36-7.09)		15508	
D 26 M2-8:2FTS										
529.00 > 81.00	3.402	3.406	-0.004	1.271	1169638	2.42		101	27730	
D 23 13C2 PFDA										
515.00 > 470.00	3.411	3.424	-0.013	1.275	3245332	2.38		95.1	36801	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.565	3.565	0.0	1.000	1776161	2.57		103	14667	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.565	3.569	-0.004	1.332	1729632	2.41		96.3	35968	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.723	3.723	0.0	1.000	2444678	2.35		97.6	70547	
599.00 > 99.00	3.723	3.723	0.0	1.000	879142		2.78(1.39-4.16)		25467	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.733	3.733	0.0	1.000	1622800	2.51		100	26330	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.744	3.744	0.0	1.003	2082268	2.38		95.1	10835	
563.00 > 169.00	3.744	3.744	0.0	1.003	523133		3.98(2.12-6.36)		9913	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.733	3.748	-0.015	1.395	1729296	2.11		84.5	4228	
D 30 13C2 PFUnA										
565.00 > 520.00	3.733	3.748	-0.015	1.395	2539455	2.08		83.2	56503	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.031	4.031	0.0	1.000	2934545	2.64		106	2171	
613.00 > 169.00	4.031	4.031	0.0	1.000	727302		4.03(2.13-6.40)		14522	
D 36 13C2 PFDoA										
615.00 > 570.00	4.031	4.047	-0.016	1.507	2652996	1.91		76.6	20425	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.294	4.294	0.0	1.000	3522368	3.02		121	1454	
663.00 > 169.00	4.294	4.294	0.0	1.000	1124476		3.13(1.25-3.76)		14376	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.540	4.540	0.0	1.000	911614	2.61		104	16473	
713.00 > 219.00	4.529	4.540	-0.011	0.998	626410		1.46(0.71-2.13)		11246	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.540	4.554	-0.014	1.697	3530096	2.09		83.4	22055	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.952	4.952	0.0	1.000	5406962	2.72		109	1350	
813.00 > 169.00	4.952	4.952	0.0	1.000	912917		5.92(2.86-8.58)		7339	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.952	4.973	-0.021	1.851	5426221	1.96		78.3	17621	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.319	0.0	1.000	5726790	2.85		114	932	
913.00 > 169.00	5.312	5.319	-0.007	0.999	719883		7.96(3.83-11.48)		6054	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 10:10:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_013.d

Injection Date: 29-Mar-2018 09:58:51 Instrument ID: A8_N

Lims ID: CCV L5

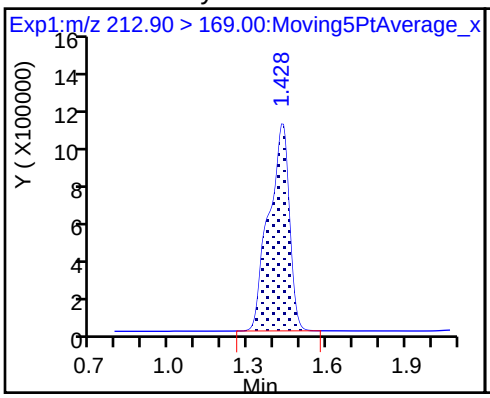
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 10

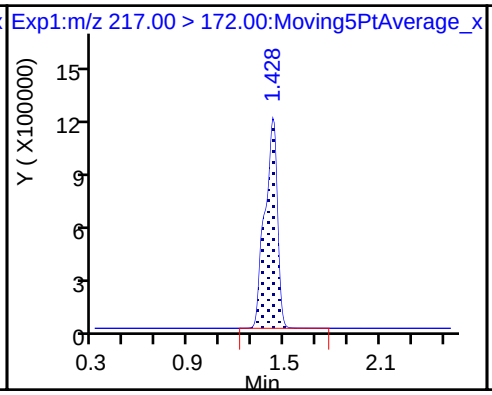
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

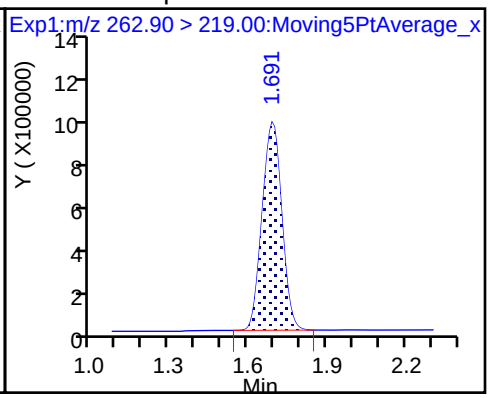
2 Perfluorobutyric acid



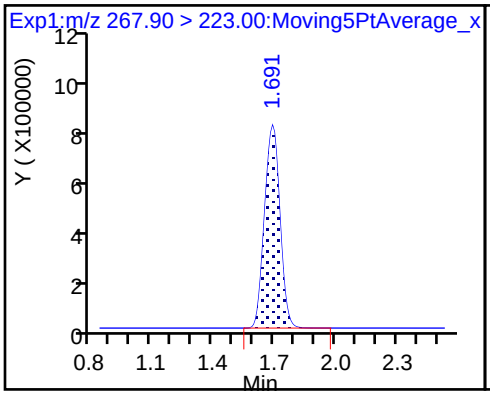
D 1 13C4 PFBA



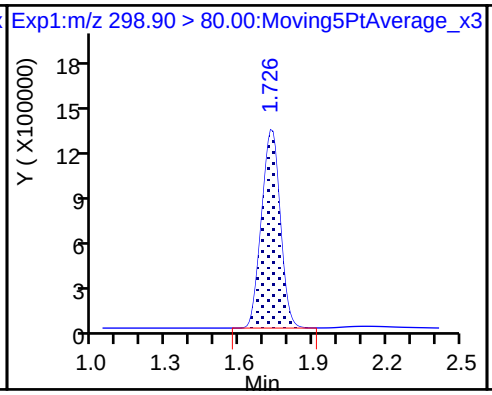
4 Perfluoropentanoic acid



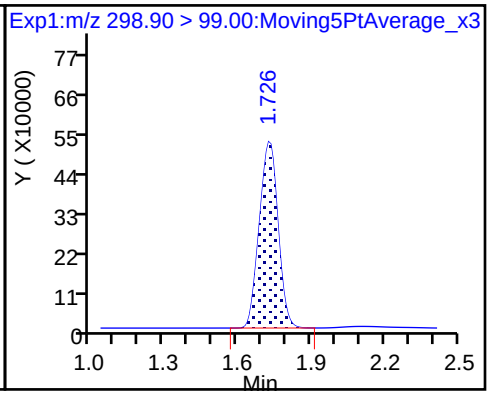
D 3 13C5-PFPeA



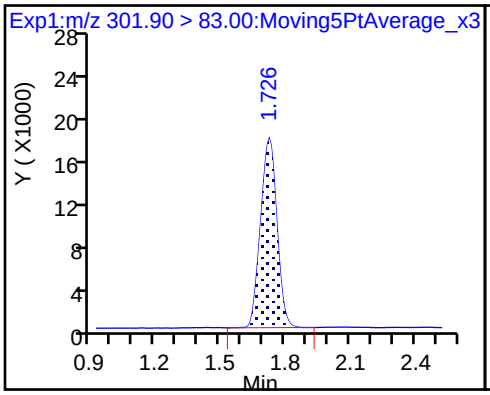
5 Perfluorobutanesulfonic acid



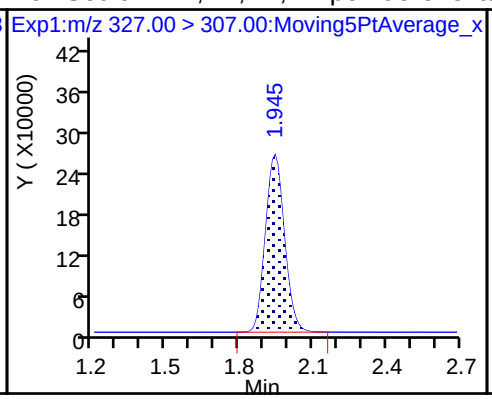
5 Perfluorobutanesulfonic acid



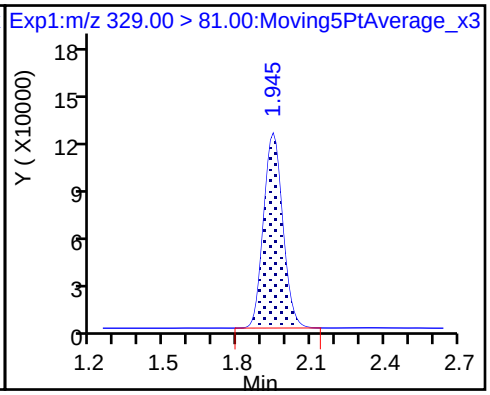
D 47 13C3-PFBS



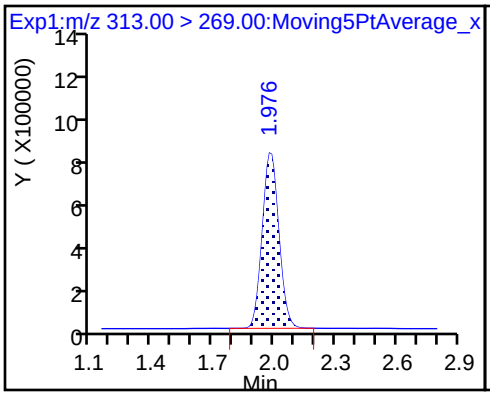
61 Sodium 1H,1H,2H,2H-perfluorohexane



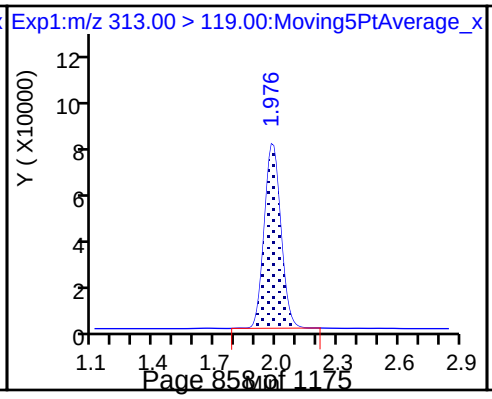
D 60 M2-4:2FTS



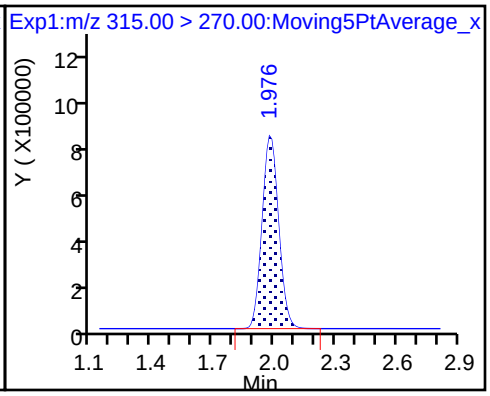
6 Perfluorohexanoic acid



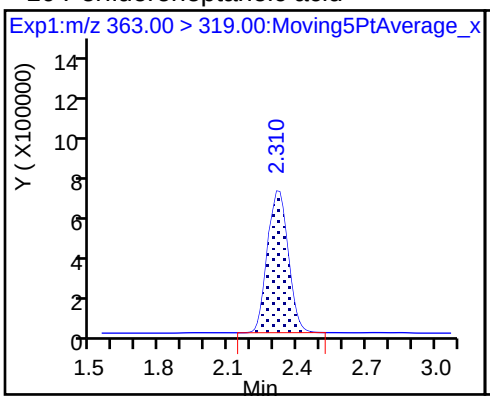
6 Perfluorohexanoic acid



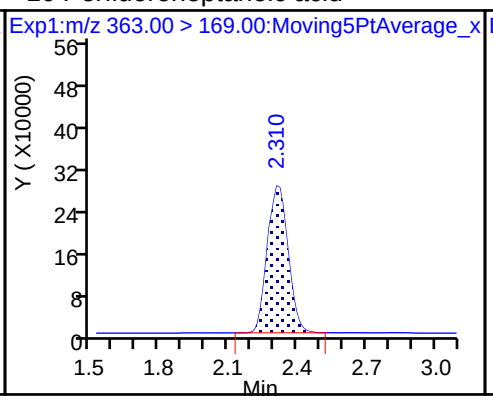
D 7 13C2 PFHxA



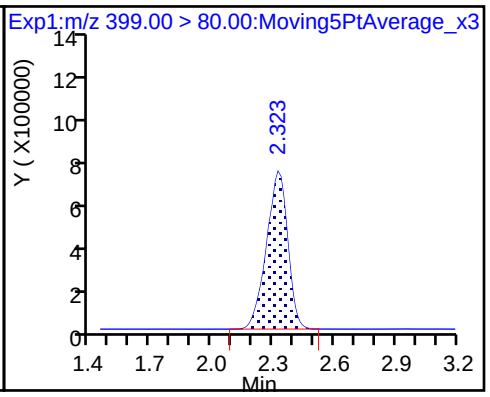
10 Perfluoroheptanoic acid



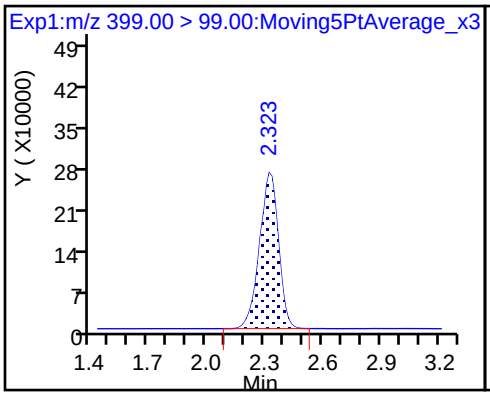
10 Perfluoroheptanoic acid



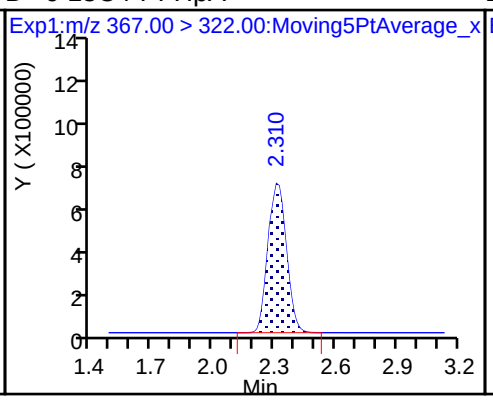
8 Perfluorohexanesulfonic acid



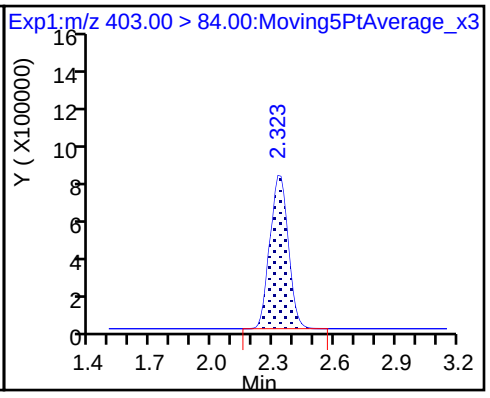
8 Perfluorohexanesulfonic acid



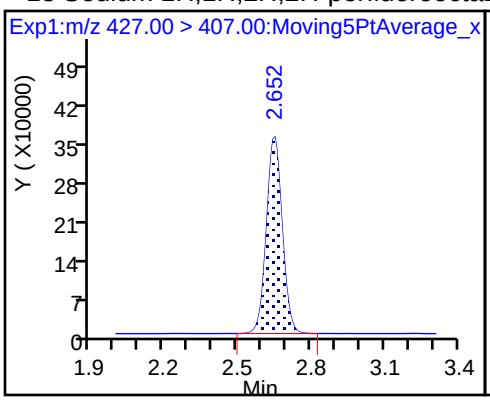
D 9 13C4-PFHpA



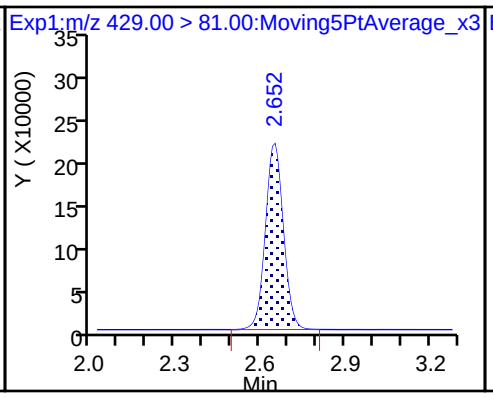
D 11 18O2 PFHxS



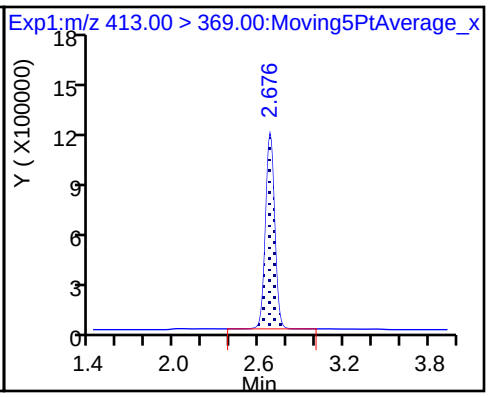
13 Sodium 1H,1H,2H,2H-perfluorooctane



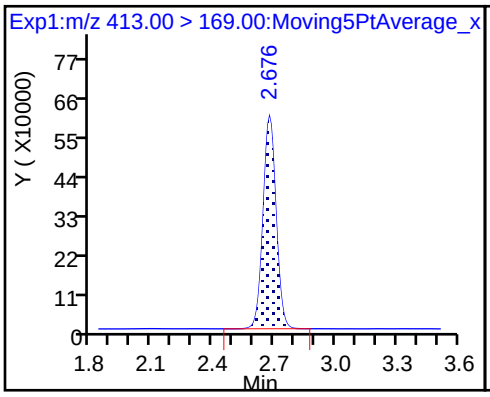
D 12 M2-6:2FTS



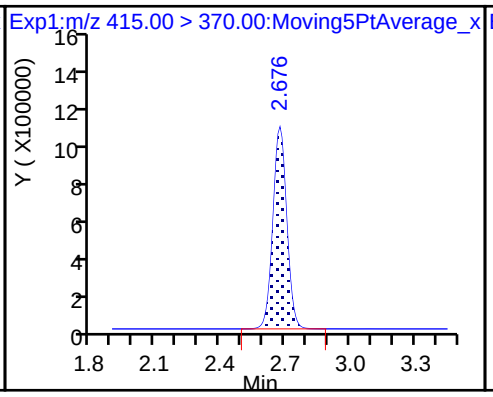
15 Perfluorooctanoic acid



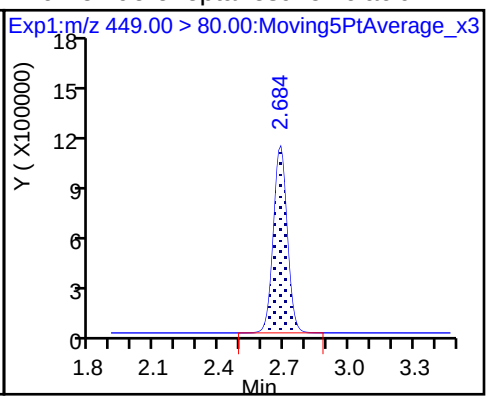
15 Perfluorooctanoic acid



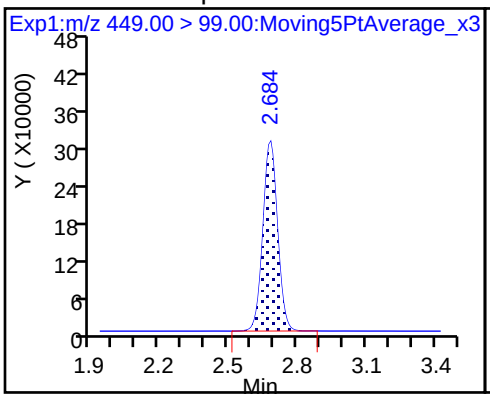
* 62 13C2-PFOA



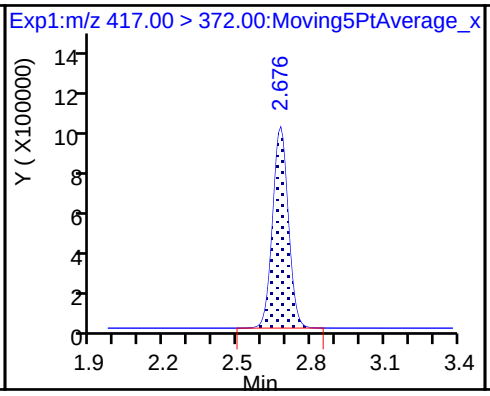
16 Perfluoroheptanesulfonic acid



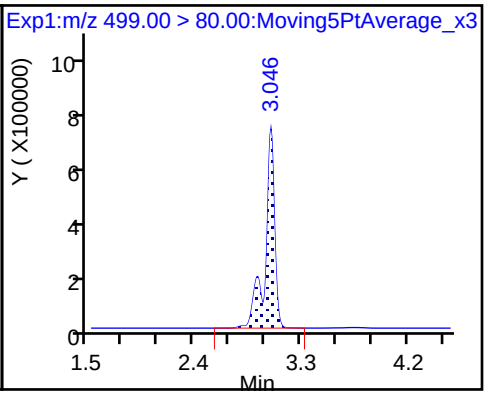
16 Perfluoroheptanesulfonic acid



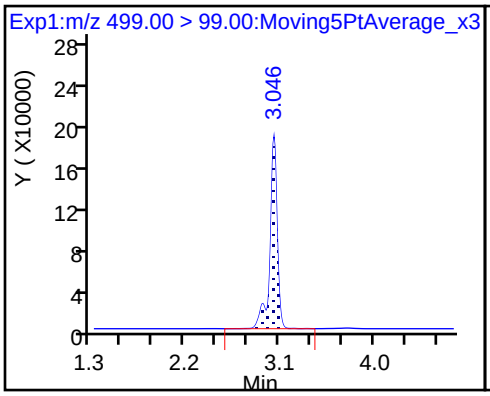
D 14 13C4 PFOA



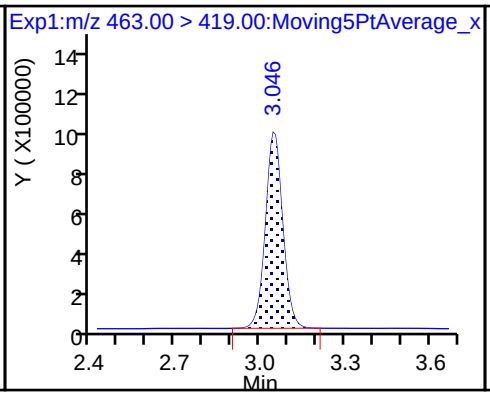
17 Perfluorooctane sulfonic acid



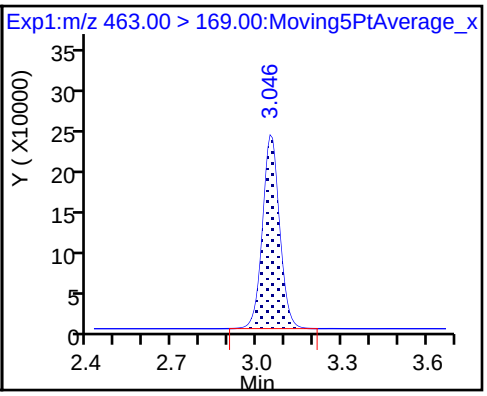
17 Perfluorooctane sulfonic acid



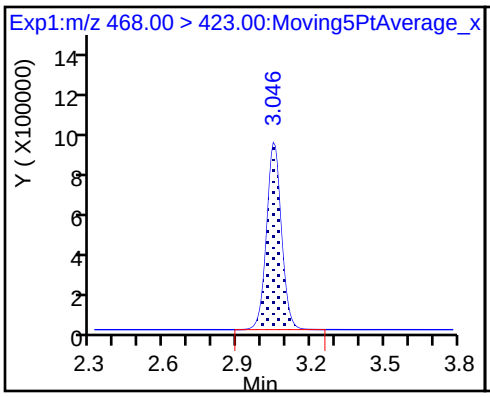
20 Perfluorononanoic acid



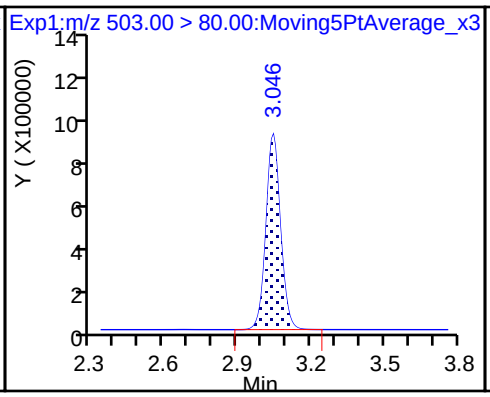
20 Perfluorononanoic acid



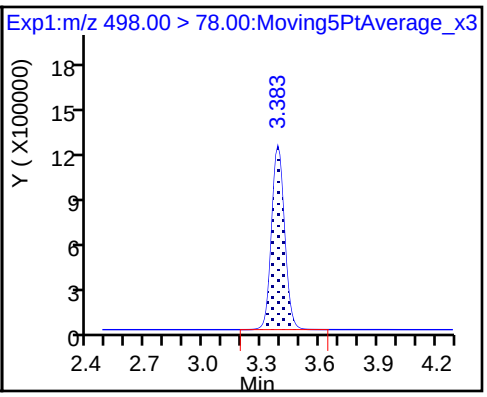
D 19 13C5 PFNA



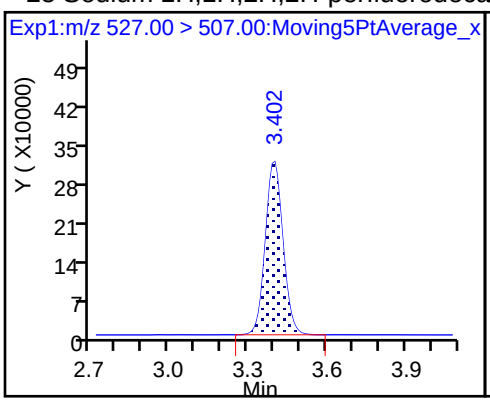
D 18 13C4 PFOS



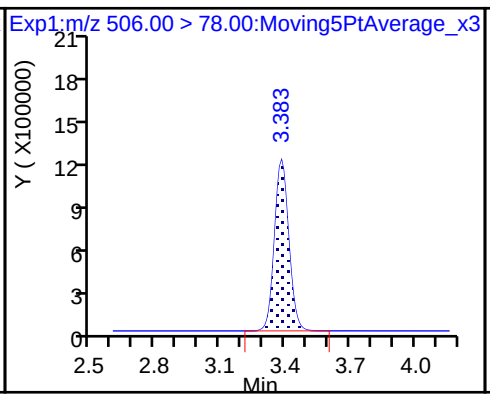
22 Perfluorooctane Sulfonamide



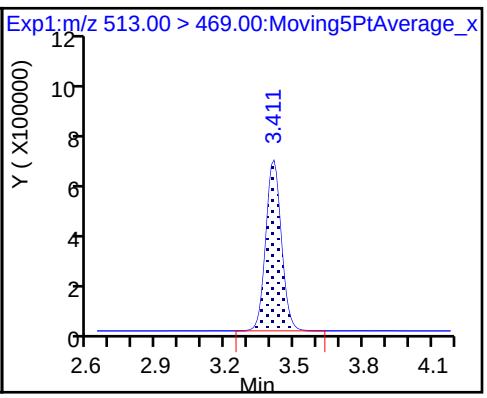
25 Sodium 1H,1H,2H,2H-perfluorodecane



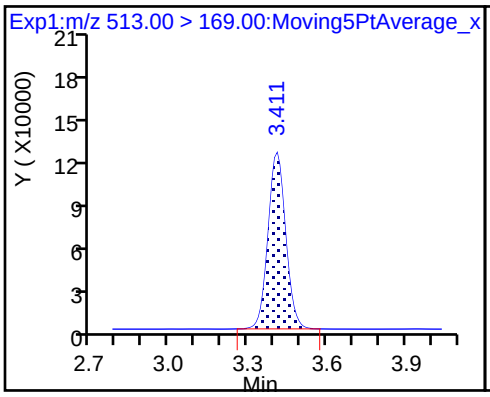
D 21 13C8 FOSA



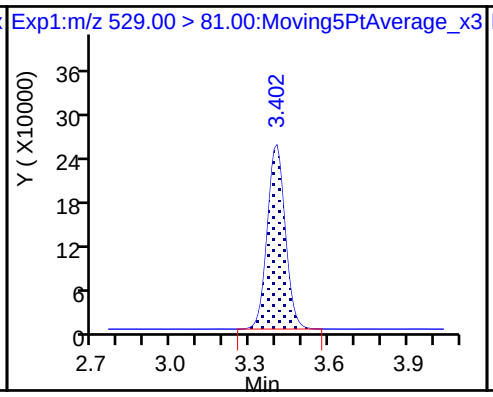
24 Perfluorodecanoic acid



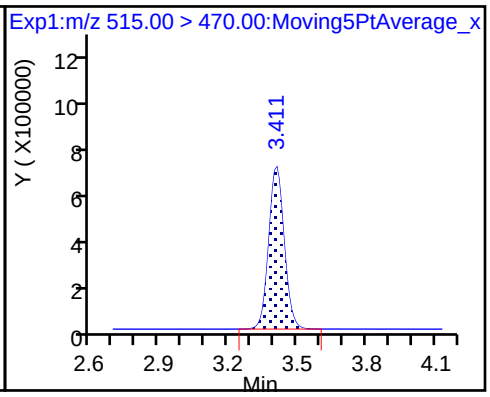
24 Perfluorodecanoic acid



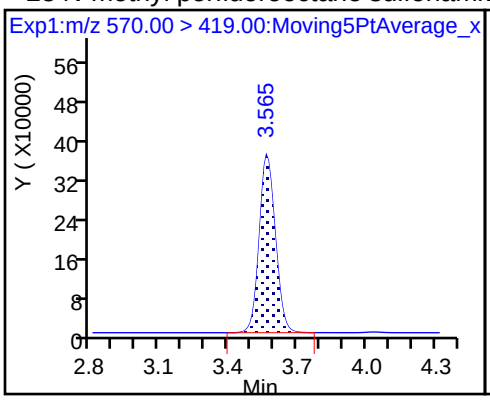
D 26 M2-8:2FTS



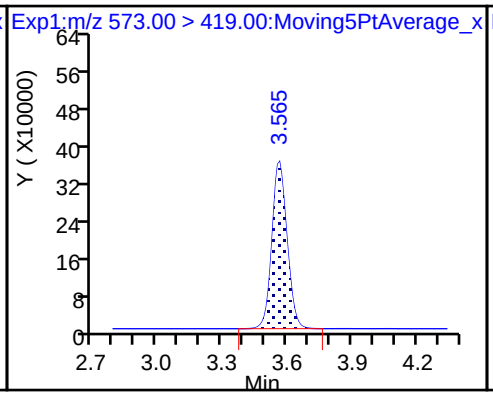
D 23 13C2 PFDA



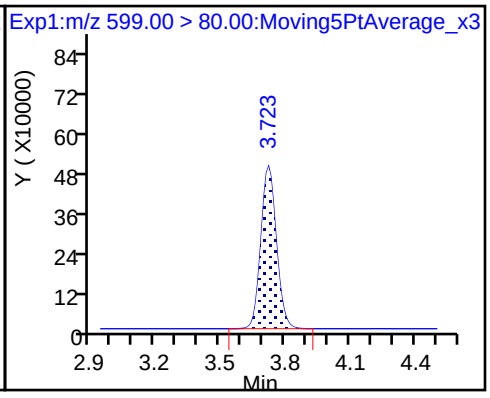
28 N-methyl perfluorooctane sulfonami



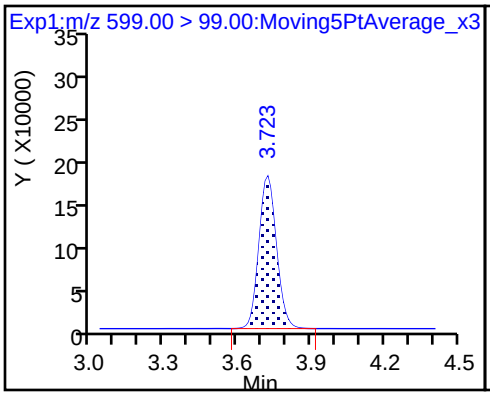
D 27 d3-NMeFOSAA



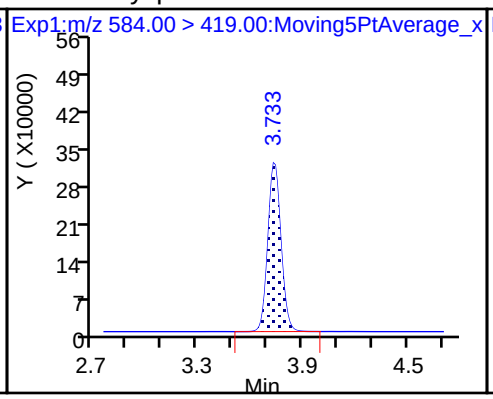
29 Perfluorodecane Sulfonic acid



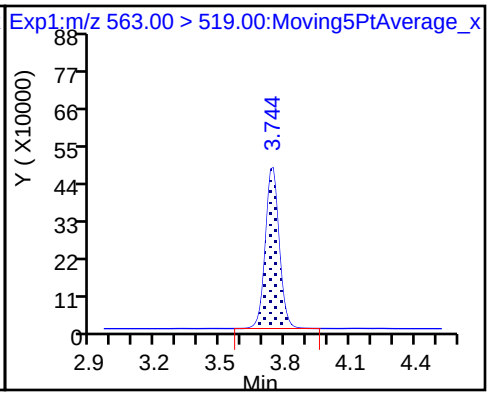
29 Perfluorodecane Sulfonic acid



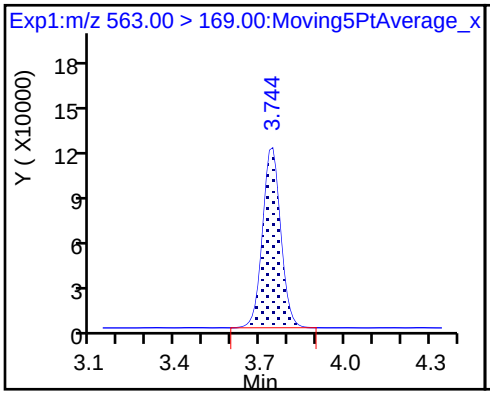
33 N-ethyl perfluorooctane sulfonamid



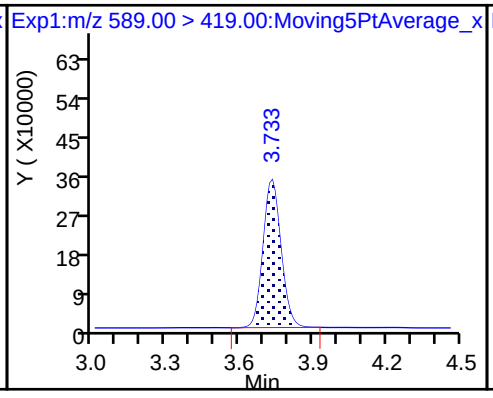
31 Perfluoroundecanoic acid



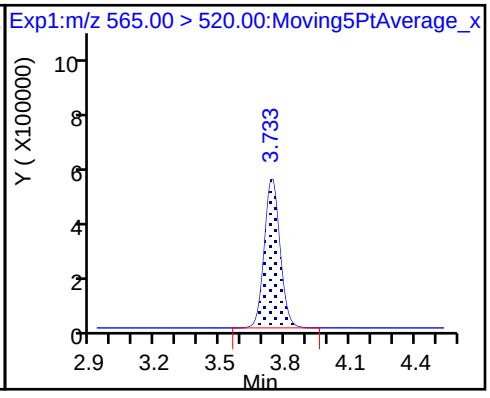
31 Perfluoroundecanoic acid



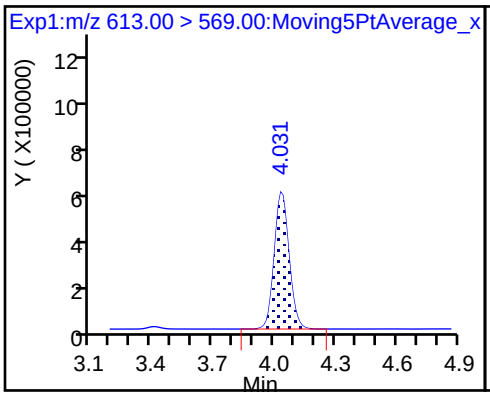
D 32 d5-NEtFOSAA



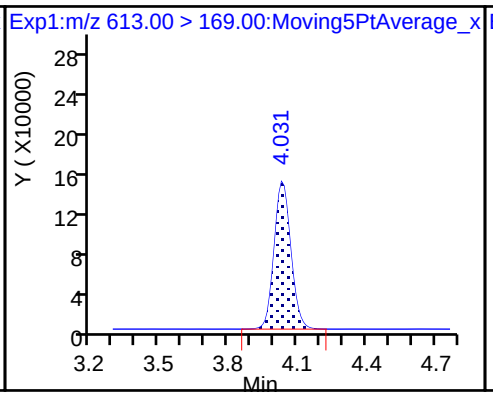
D 30 13C2 PFUnA



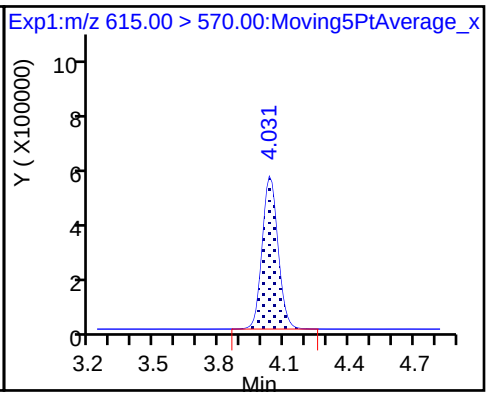
37 Perfluorododecanoic acid



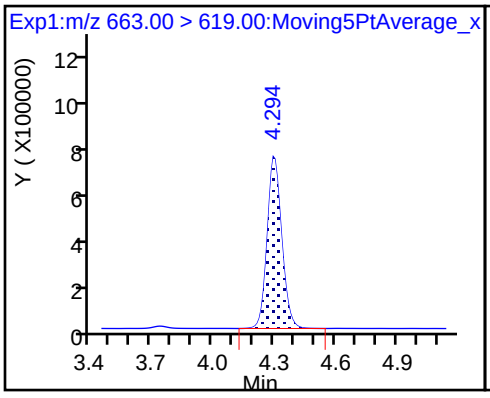
37 Perfluorododecanoic acid



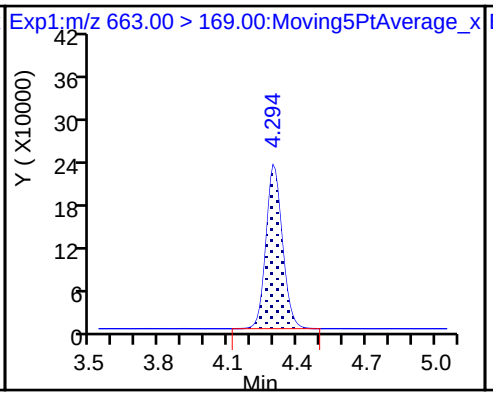
D 36 13C2 PFDoA



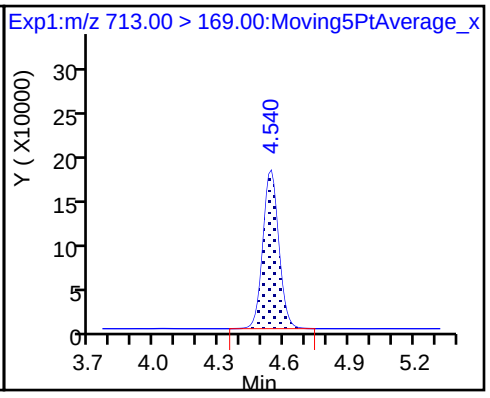
41 Perfluorotridecanoic acid



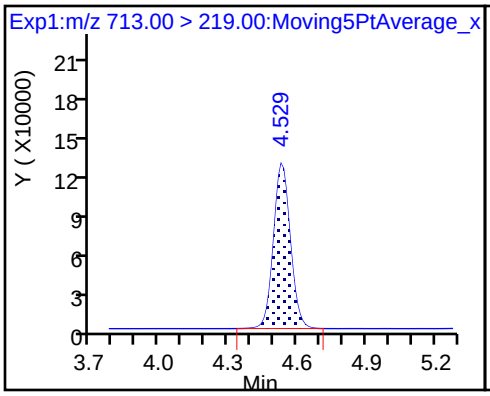
41 Perfluorotridecanoic acid



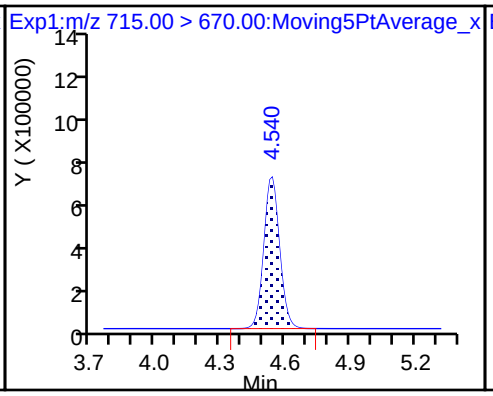
42 Perfluorotetradecanoic acid



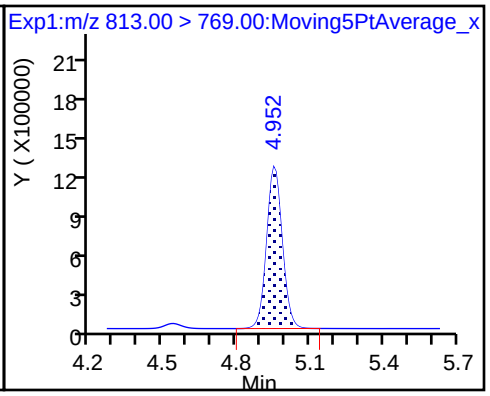
42 Perfluorotetradecanoic acid



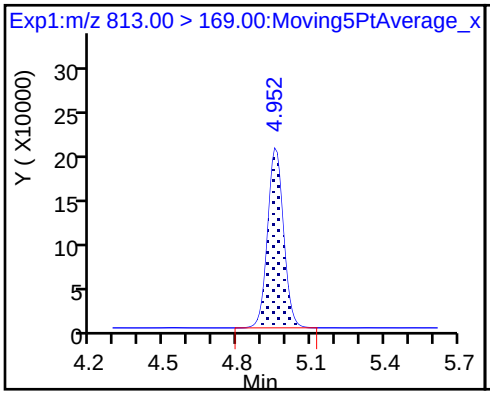
D 43 13C2-PFTeDA



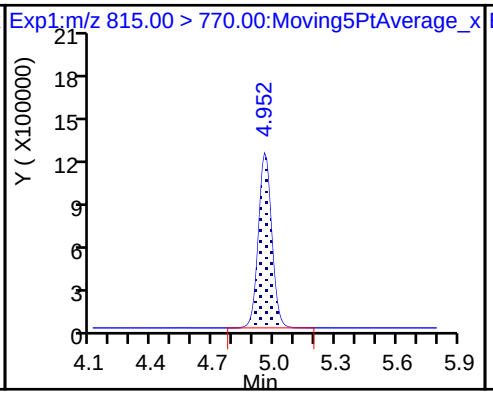
45 Perfluorohexadecanoic acid



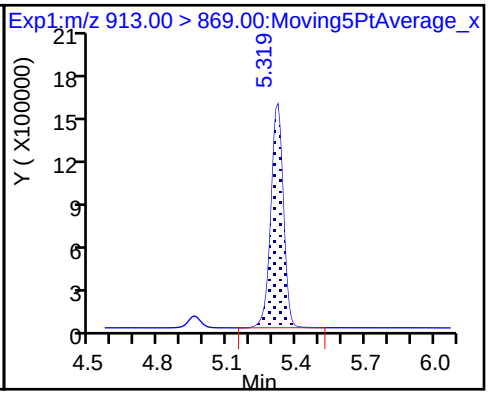
45 Perfluorohexadecanoic acid



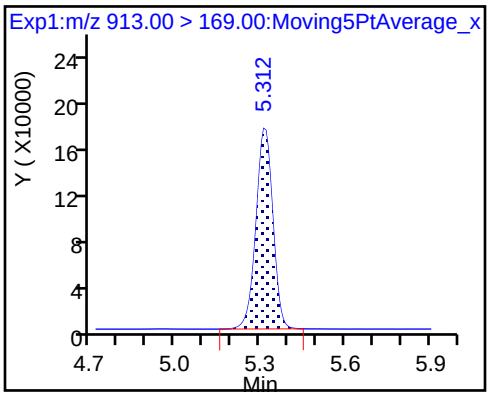
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-212510/1-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_023.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0000394	J	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.000310	J	0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037
27619-97-2	6:2FTS	0.00015	U	0.0020	0.00015
39108-34-4	8:2FTS	0.00025	U	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-212510/1-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_023.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	73		25-150
STL01893	13C5 PFPeA	81		25-150
STL00993	13C2 PFHxA	80		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	83		25-150
STL00995	13C5 PFNA	83		25-150
STL00996	13C2 PFDA	71		25-150
STL00997	13C2 PFUnA	58		25-150
STL00998	13C2 PFDoA	33		25-150
STL02116	13C2-PFTeDA	14	*	25-150
STL02337	13C3-PFBS	81		25-150
STL00994	18O2 PFHxS	80		25-150
STL00991	13C4 PFOS	69		25-150
STL01056	13C8 FOSA	48		25-150
STL02118	d3-NMeFOSAA	33		25-150
STL02117	d5-NEtFOSAA	32		25-150
STL02279	M2-6:2FTS	73		25-150
STL02280	M2-8:2FTS	55		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Lims ID: MB 320-212510/1-A
Client ID:
Sample Type: MB
Inject. Date: 20-Mar-2018 23:09:46 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-212510/1-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:16:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.435	1.441	-0.006	0.535	4320545	1.84		73.5	56872	M
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.446	-0.005	1.004	31582	0.0197			10.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3350087	2.02		80.8	63670	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	76639	1.87		80.5	356	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	3691437	2.00		79.8	77171	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3875189	2.15		86.2	70776	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.315	2.328	-0.013	1.000	12132	0.007551			13.8	R
363.00 > 169.00	2.315	2.328	-0.013	1.000	2773		4.38(1.13-3.40)		38.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4547731	1.89		80.1	94018	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.006	16183	0.007545			32.9	
399.00 > 99.00	2.328	2.341	-0.013	1.000	4717		3.43(1.50-4.49)		12.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	799768	1.74		73.1	30860	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	2175	0.003880			112	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3619906	2.08		83.3	82788	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.681	2.695	-0.014	1.000	23686	0.0147			5.8	M
413.00 > 169.00	2.681	2.695	-0.014	1.000	11215		2.11(0.84-2.52)		35.3	M
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4605601	2.50			75562	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2769098	1.65		69.0	53727	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2877115	2.07		82.8	65138	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.067	-0.016	1.000	194172	0.1548			686	
499.00 > 99.00	3.058	3.067	-0.009	1.002	49774		3.90(2.31-6.93)		344	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.264	2946389	1.21		48.5	50605	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.401	-0.012	1.000	20293	0.0177			101	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.408	-0.001	1.271	568447	1.31		54.8	12779	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.417	0.0	1.274	2048631	1.76		70.6	46082	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.570	0.0	1.332	313830	0.8185		32.7	13622	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	294839	0.8043		32.2	607	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1324558	1.46		58.3	46373	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.509	705950	0.8188		32.8	5451	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.544	0.009	1.699	284093	0.3610		14.4	2715	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.963	4.964	-0.001	1.852	205630	0.1787		7.1	1219	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:55:53 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d

Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N

Lims ID: MB 320-212510/1-A

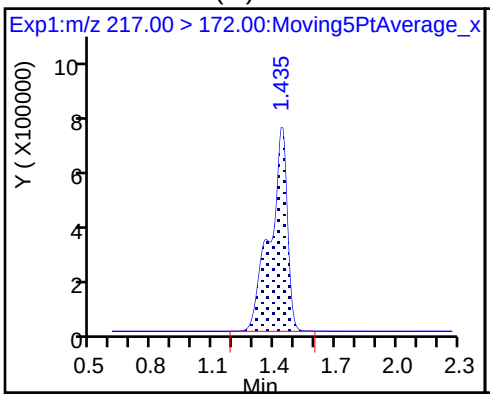
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2

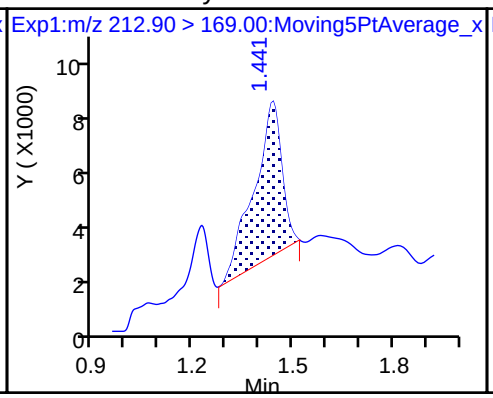
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

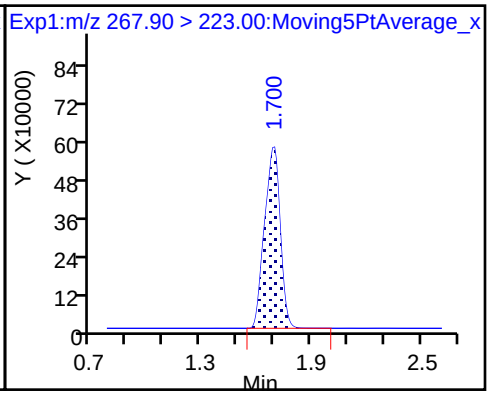
D 1 13C4 PFBA (M)



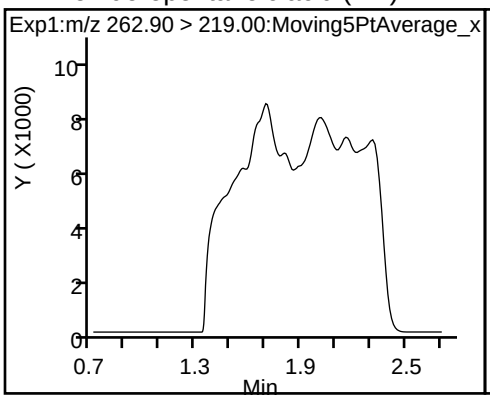
2 Perfluorobutyric acid



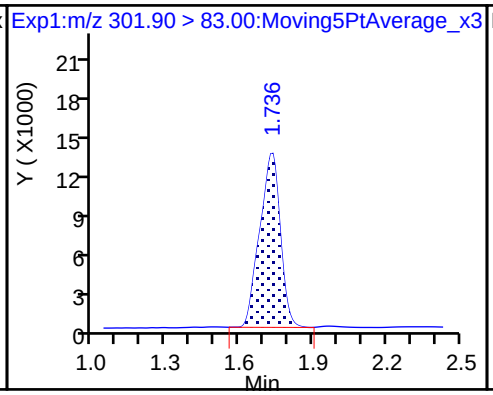
D 3 13C5-PFPeA



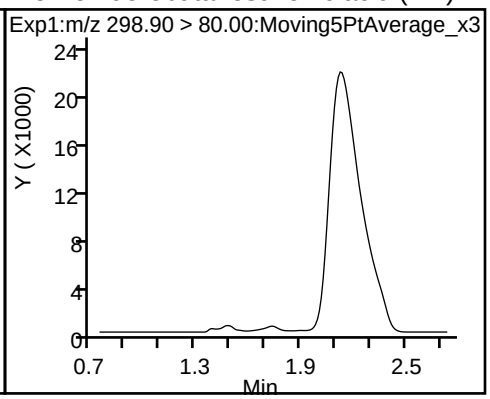
4 Perfluoropentanoic acid (ND)



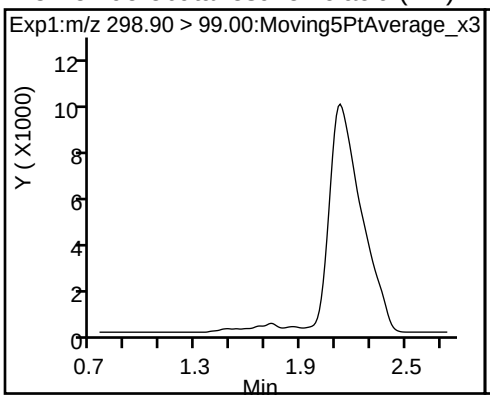
D 47 13C3-PFBS



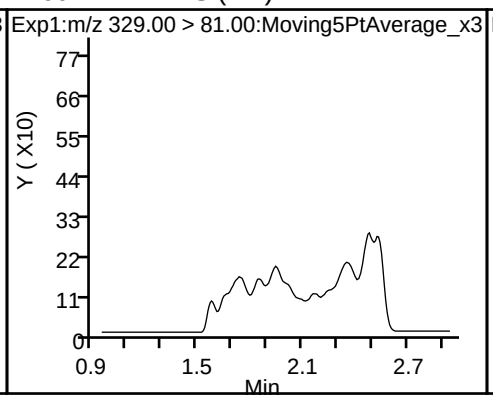
5 Perfluorobutanesulfonic acid (ND)



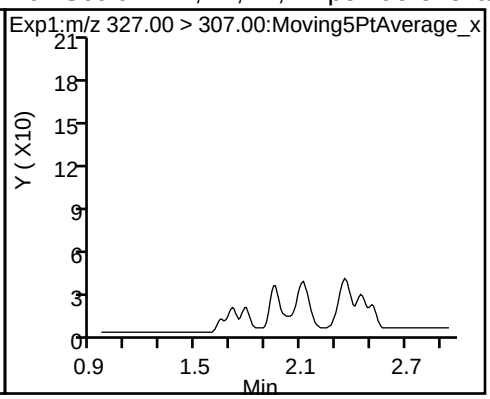
5 Perfluorobutanesulfonic acid (ND)



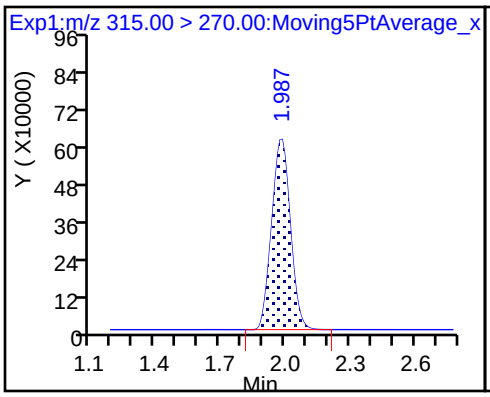
D 60 M2-4:2FTS (ND)



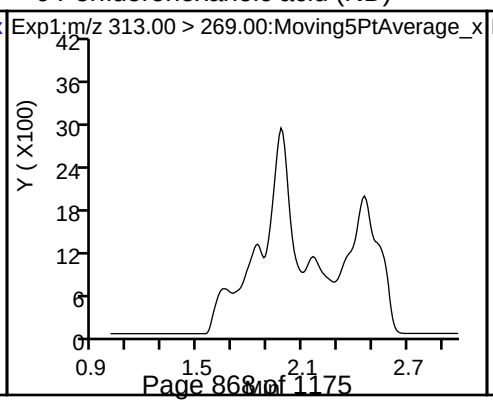
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



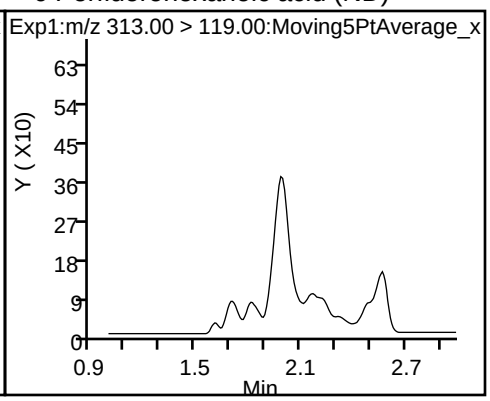
D 7 13C2 PFHxA



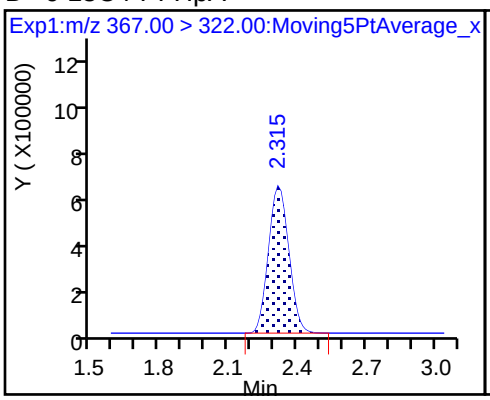
6 Perfluorohexanoic acid (ND)



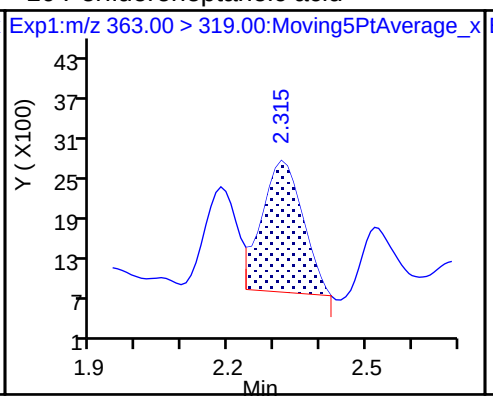
6 Perfluorohexanoic acid (ND)



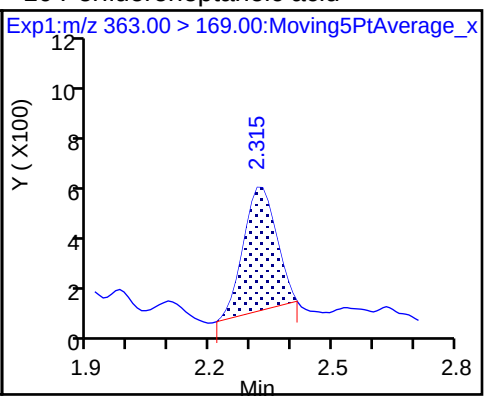
D 9 13C4-PFHpA



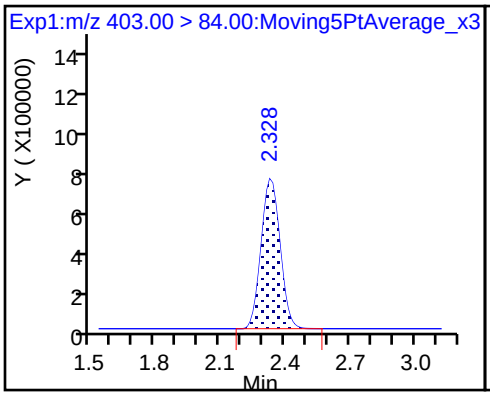
10 Perfluoroheptanoic acid



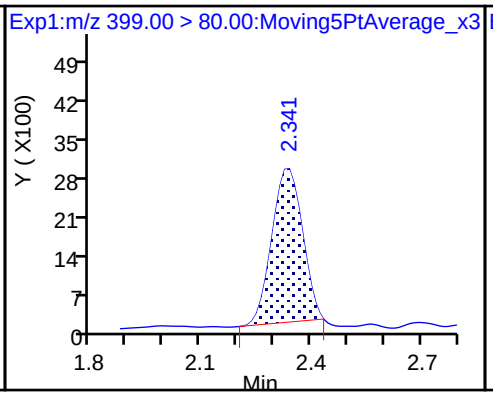
10 Perfluoroheptanoic acid



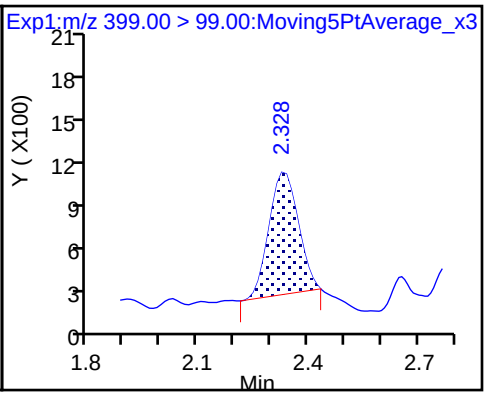
D 11 18O2 PFHxS



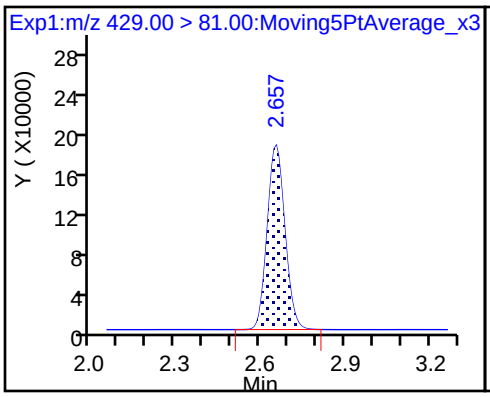
8 Perfluorohexanesulfonic acid



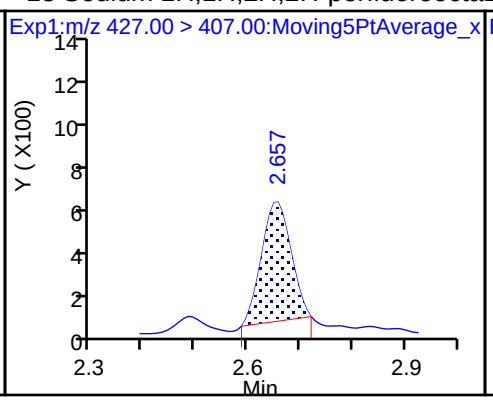
8 Perfluorohexanesulfonic acid



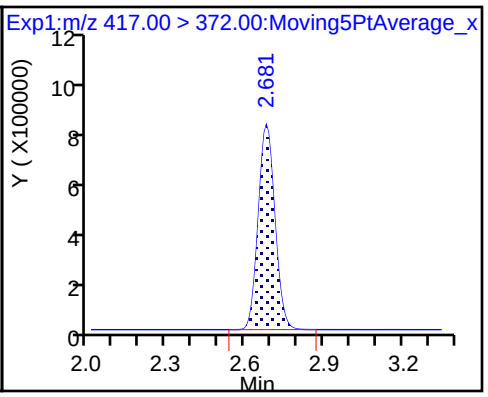
D 12 M2-6:2FTS



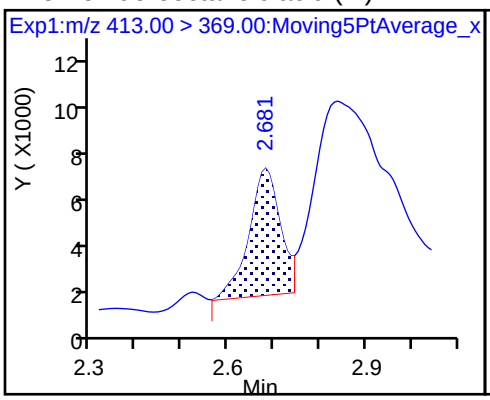
13 Sodium 1H,1H,2H,2H-perfluorooctane



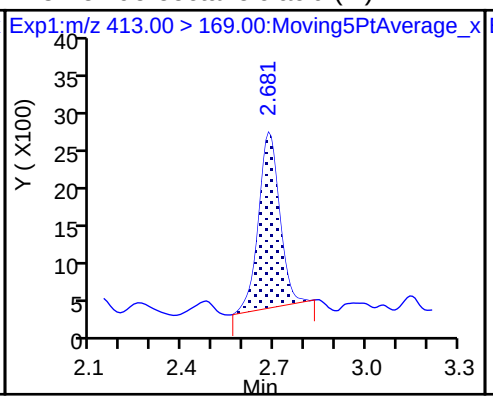
D 14 13C4 PFOA



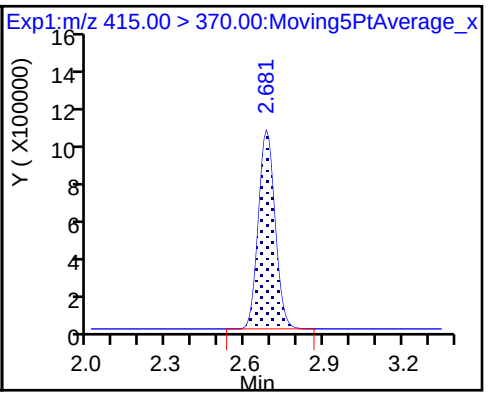
15 Perfluorooctanoic acid (M)



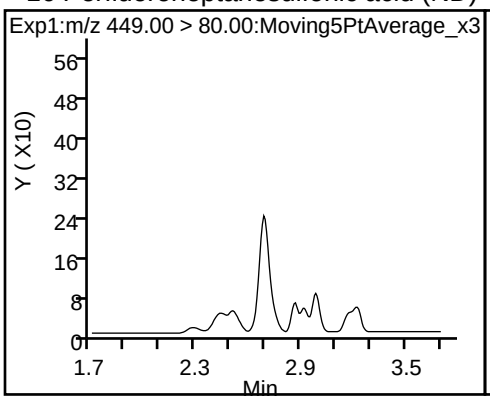
15 Perfluorooctanoic acid (M)



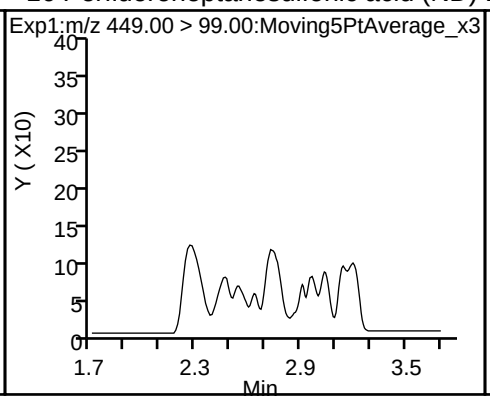
* 62 13C2-PFOA



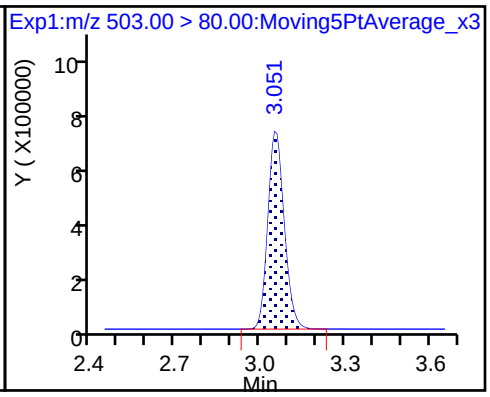
16 Perfluoroheptanesulfonic acid (ND)



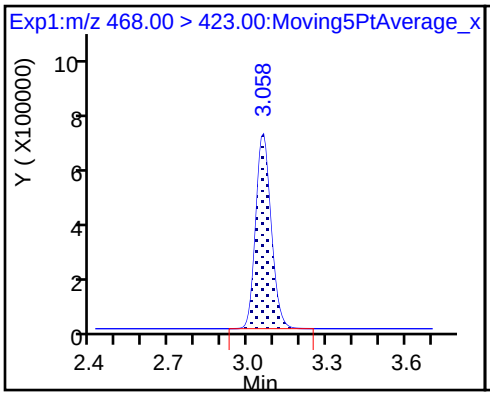
16 Perfluoroheptanesulfonic acid (ND)



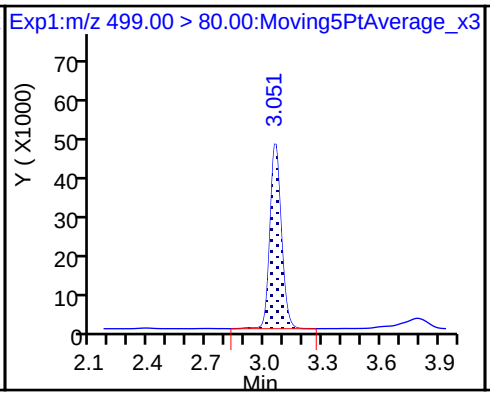
D 18 13C4 PFOS



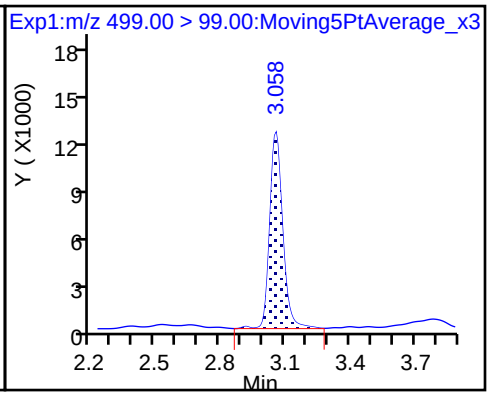
D 19 13C5 PFNA



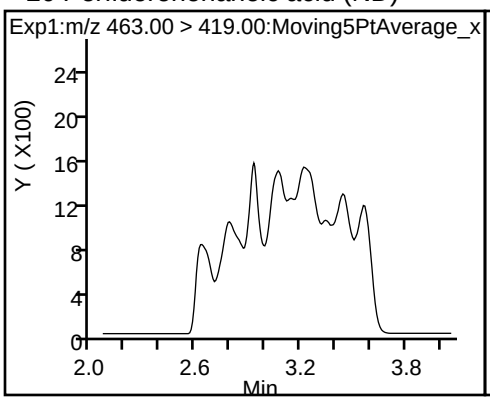
17 Perfluorooctane sulfonic acid



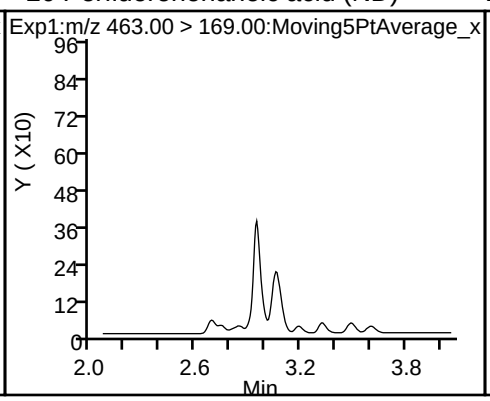
17 Perfluorooctane sulfonic acid



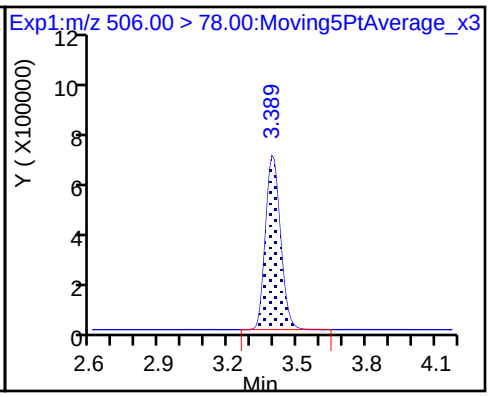
20 Perfluorononanoic acid (ND)



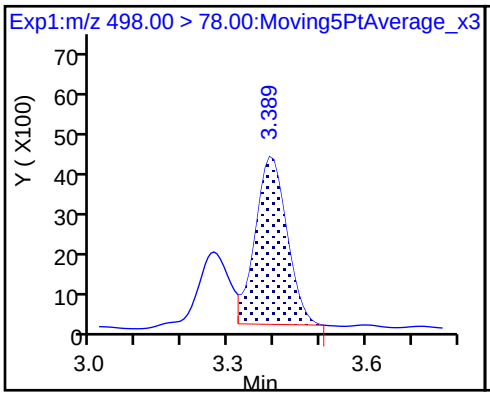
20 Perfluorononanoic acid (ND)



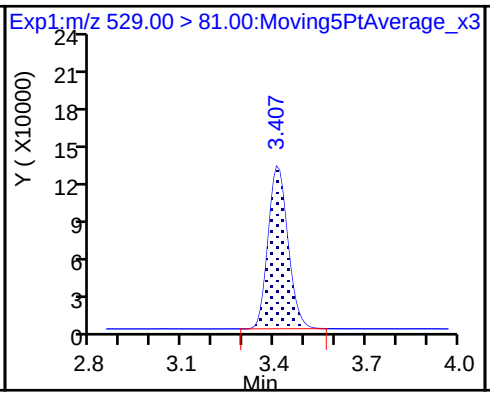
D 21 13C8 FOSA



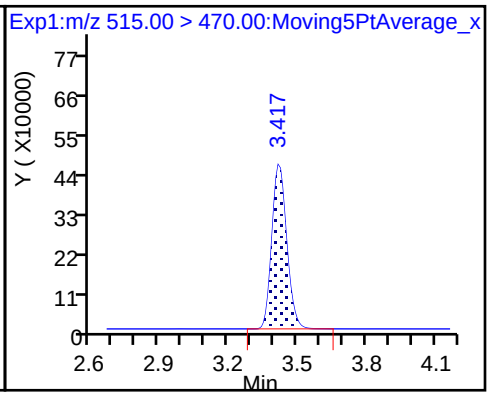
22 Perfluorooctane Sulfonamide



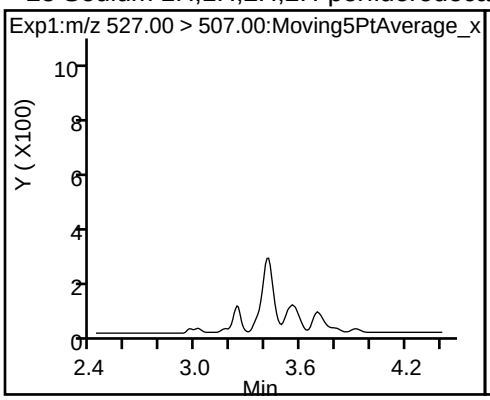
D 26 M2-8:2FTS



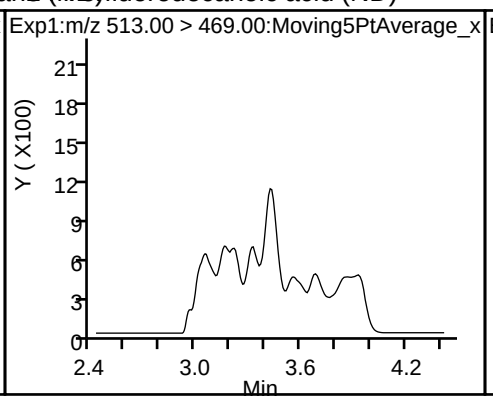
D 23 13C2 PFDA



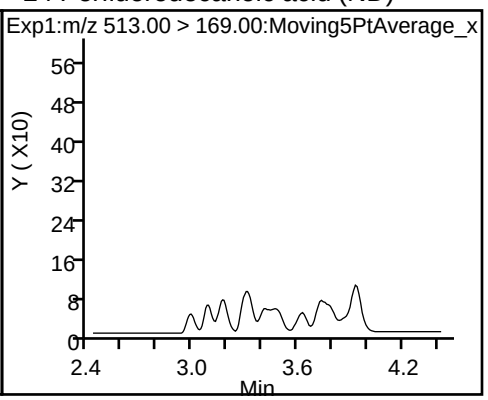
25 Sodium 1H,1H,2H,2H-perfluorodecane (NPE)



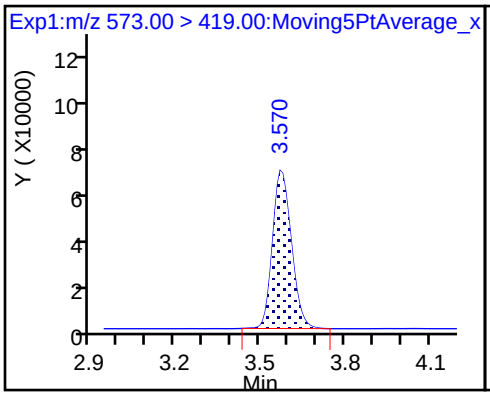
24 Perfluorodecanoic acid (ND)



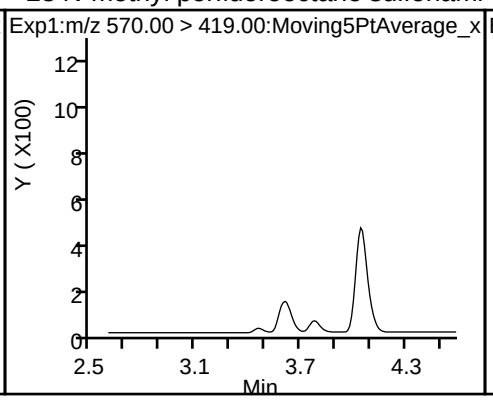
24 Perfluorodecanoic acid (ND)



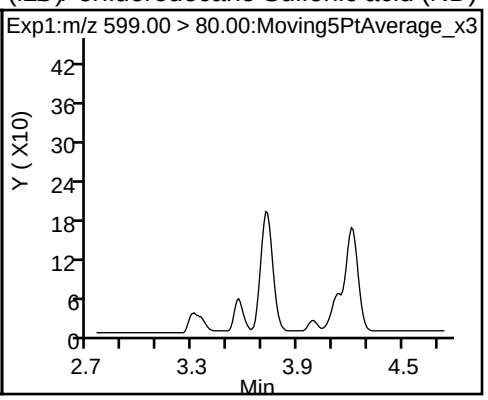
D 27 d3-NMeFOSAA



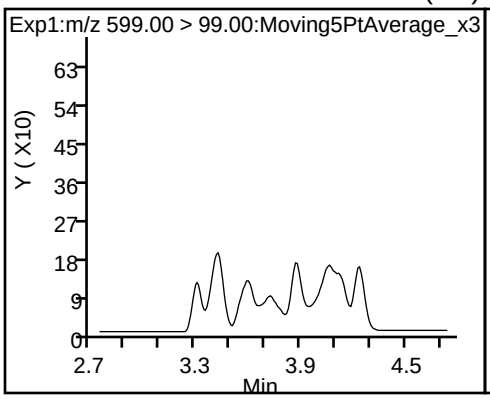
28 N-methyl perfluorooctane sulfonami (ND)



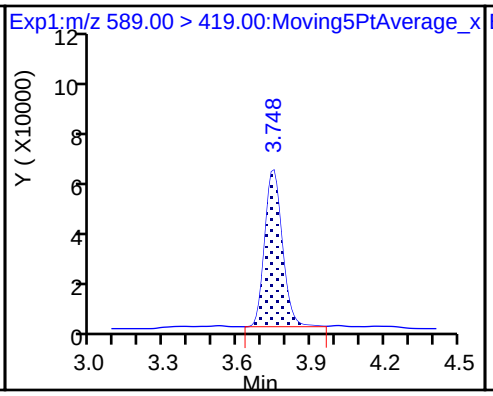
29 Perfluorodecane Sulfonic acid (ND)



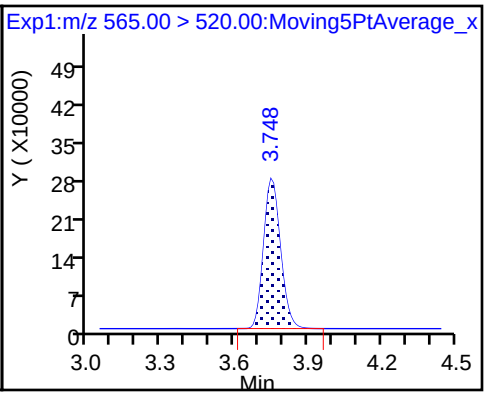
29 Perfluorodecane Sulfonic acid (ND)



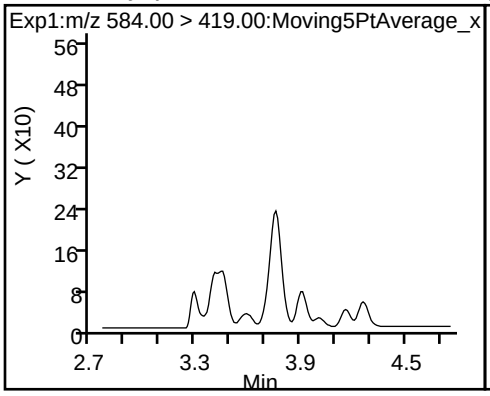
D 32 d5-NEtFOSAA



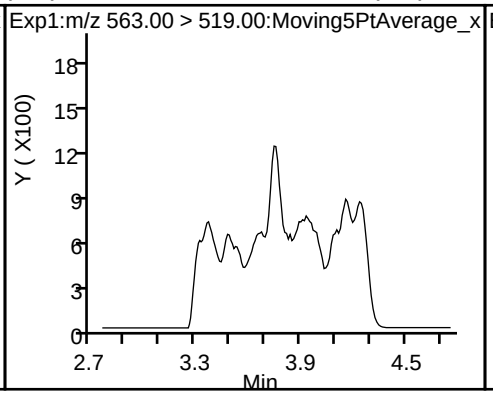
D 30 13C2 PFUnA



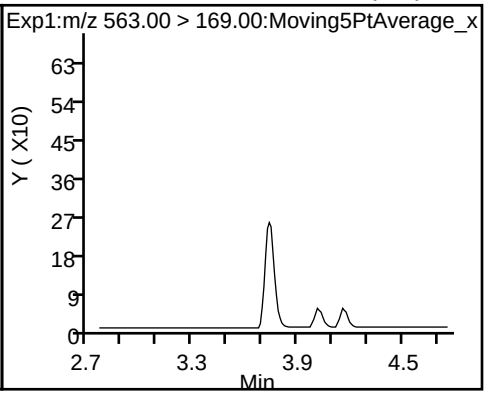
33 N-ethyl perfluorooctane sulfonamid (ND)



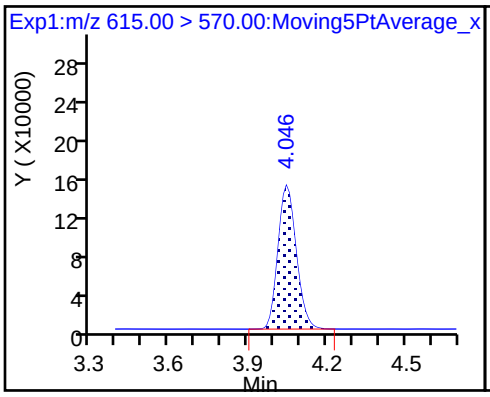
31 Perfluoroundecanoic acid (ND)



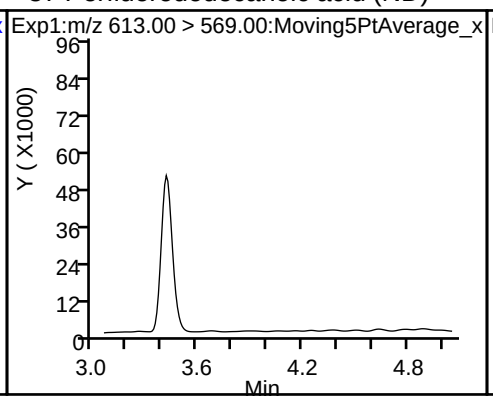
31 Perfluoroundecanoic acid (ND)



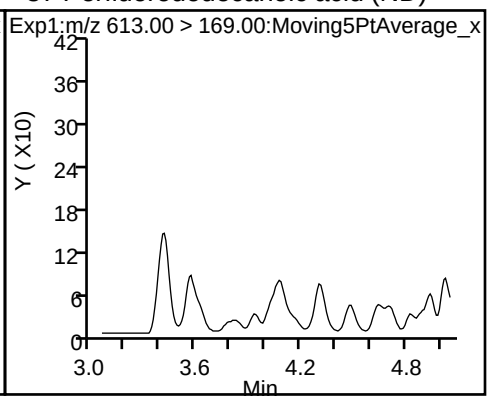
D 36 13C2 PFDoA



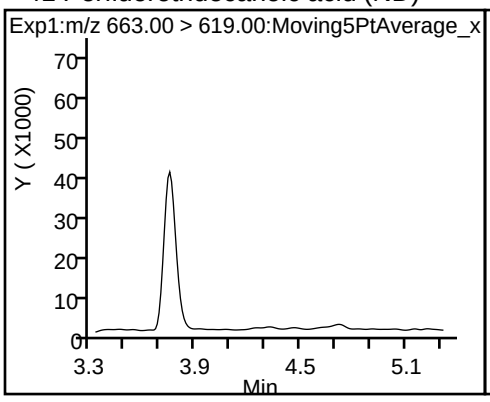
37 Perfluorododecanoic acid (ND)



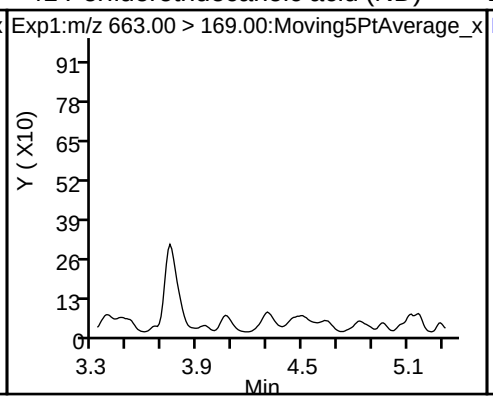
37 Perfluorododecanoic acid (ND)



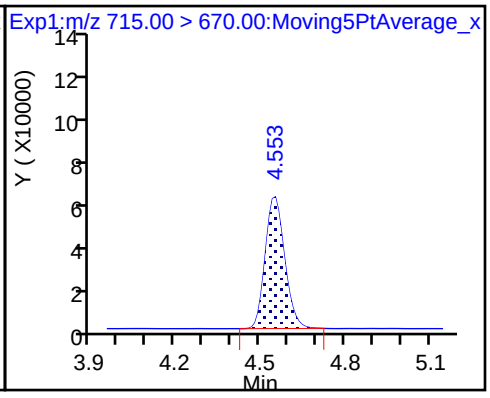
41 Perfluorotridecanoic acid (ND)



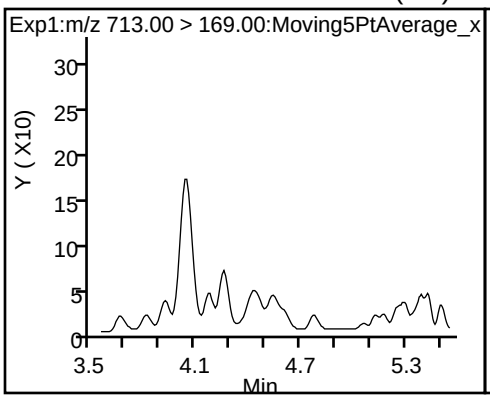
41 Perfluorotridecanoic acid (ND)



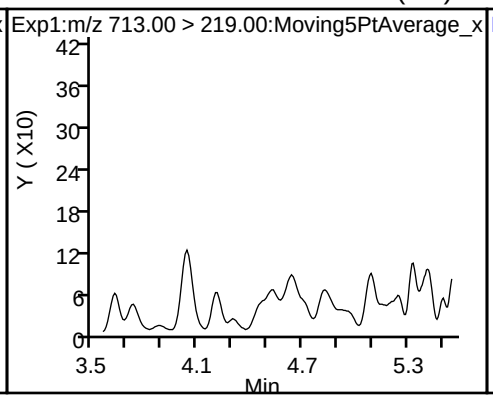
D 43 13C2-PFTeDA



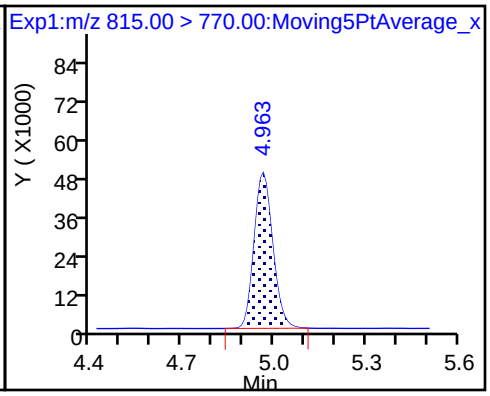
42 Perfluorotetradecanoic acid (ND)



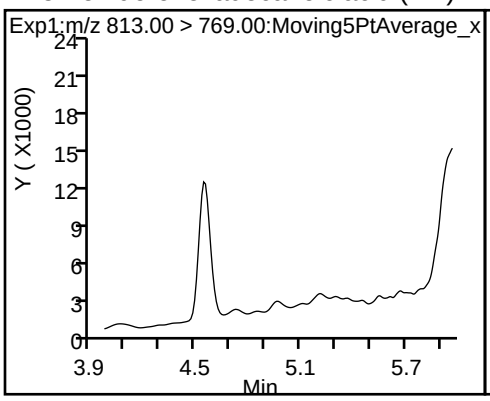
42 Perfluorotetradecanoic acid (ND)



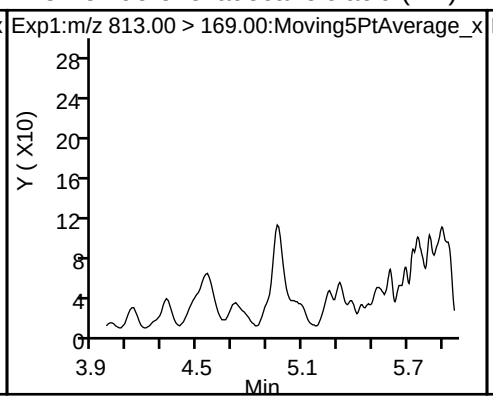
D 44 13C2-PFHxDA



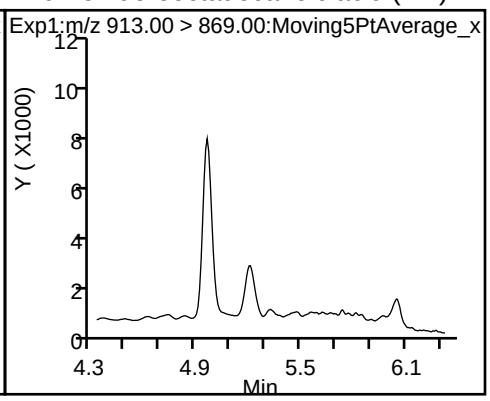
45 Perfluorohexadecanoic acid (ND)



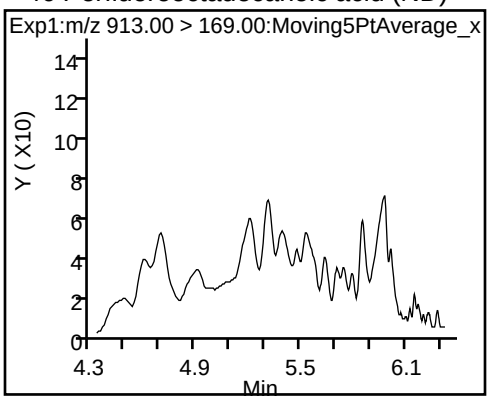
45 Perfluorohexadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

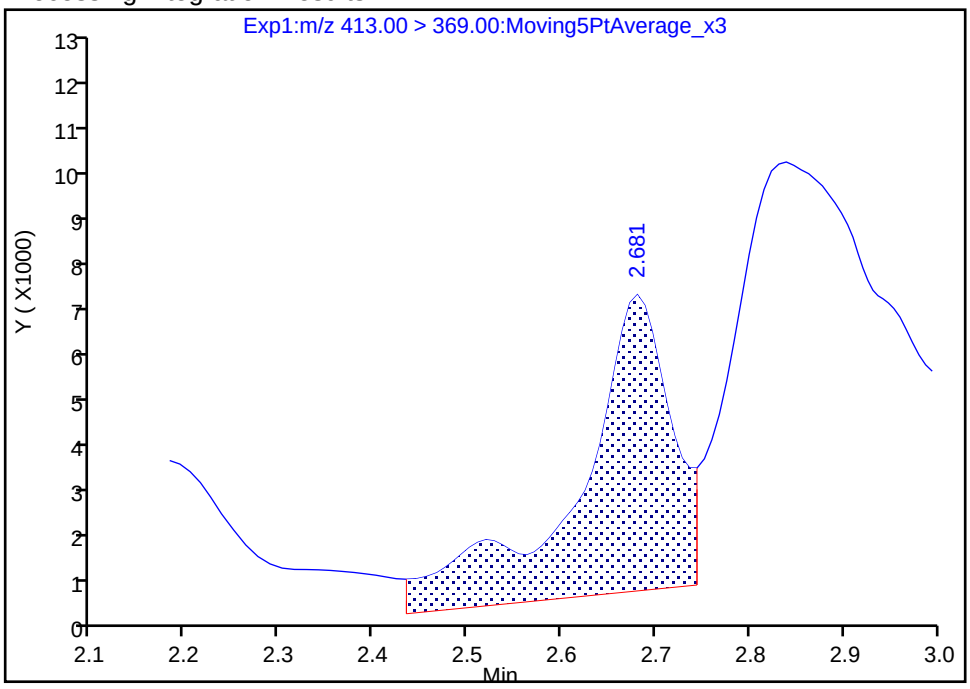
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N
Lims ID: MB 320-212510/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

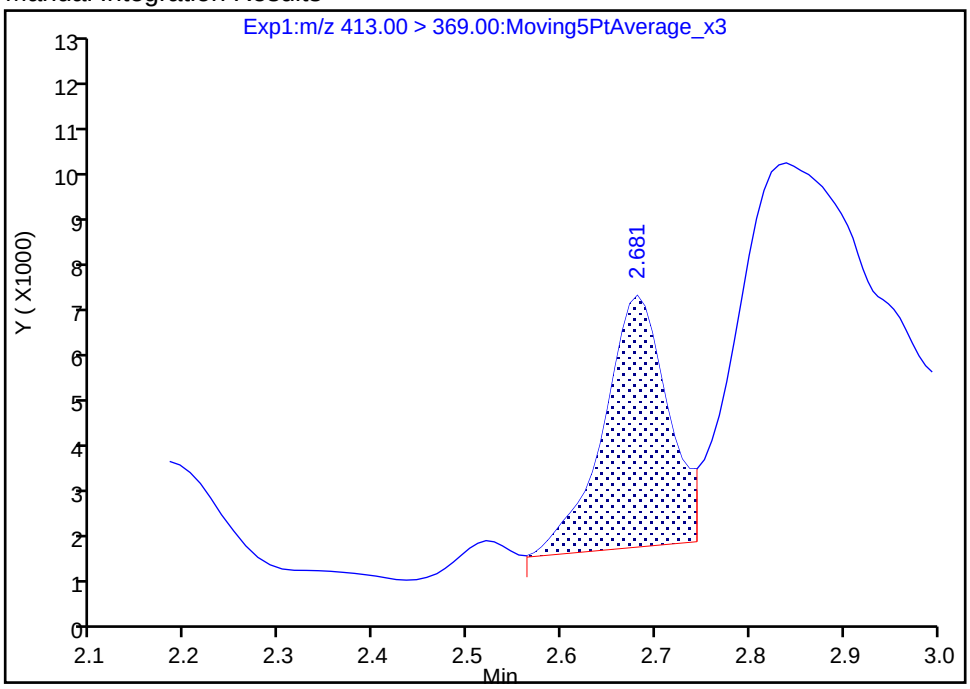
Processing Integration Results

RT: 2.68
Area: 40891
Amount: 0.025297
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 23686
Amount: 0.014653
Amount Units: ng/ml



Reviewer: barnettj, 21-Mar-2018 16:15:37
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

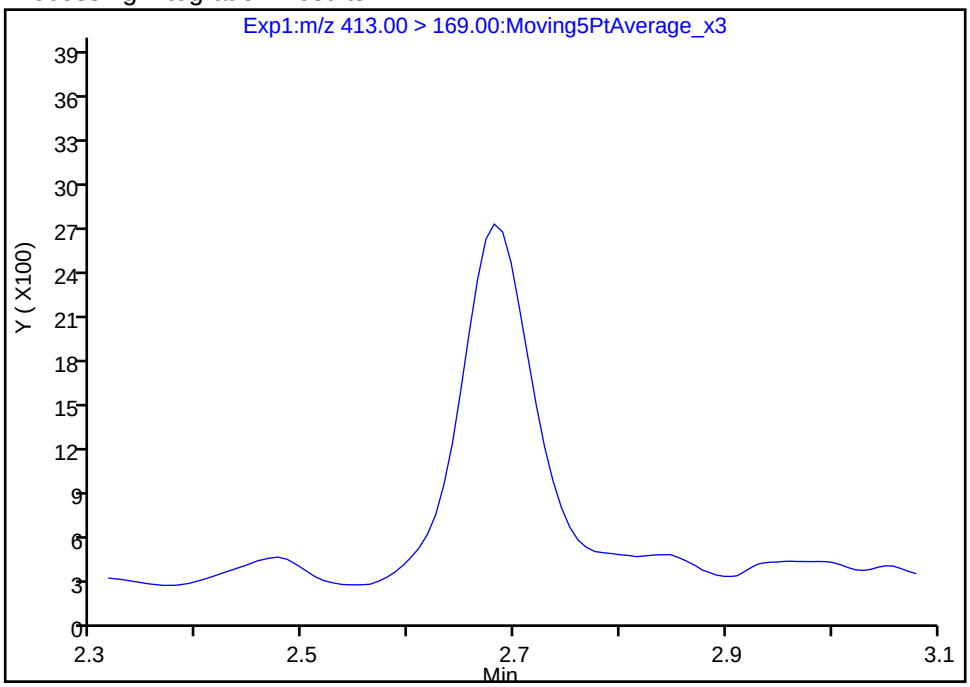
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N
Lims ID: MB 320-212510/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

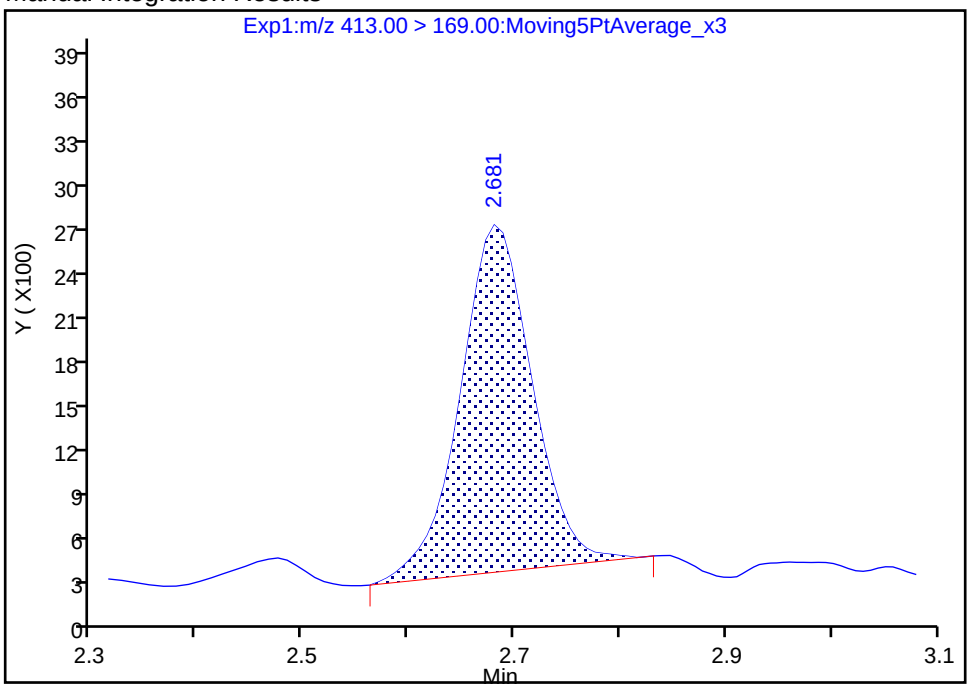
Processing Integration Results

RT: 2.69
Area: 0
Amount: 0.025297
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 11215
Amount: 0.014653
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 09:43:18
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

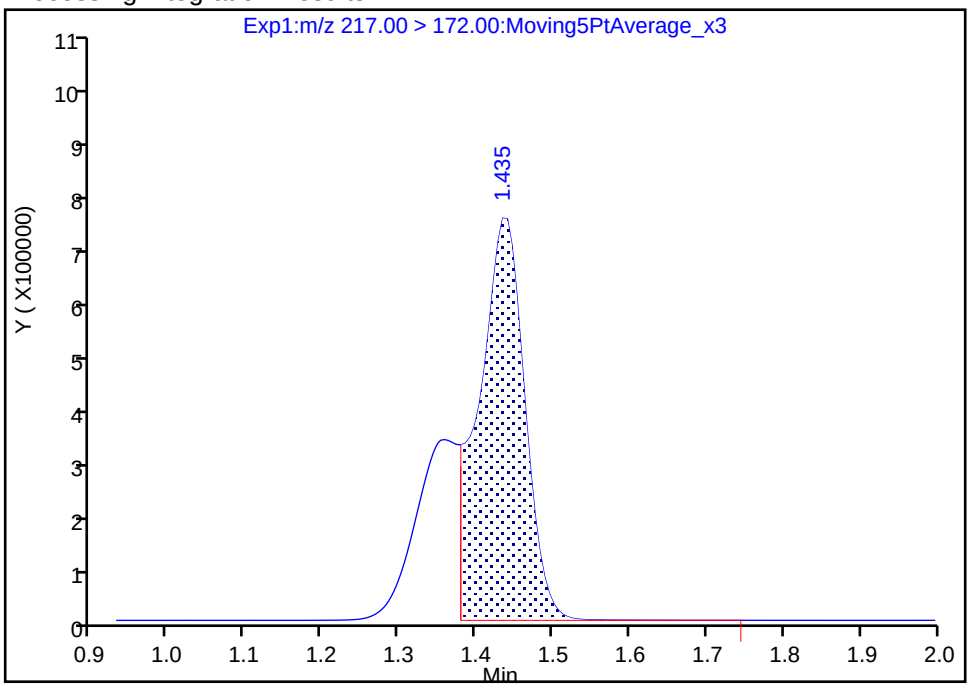
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N
Lims ID: MB 320-212510/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

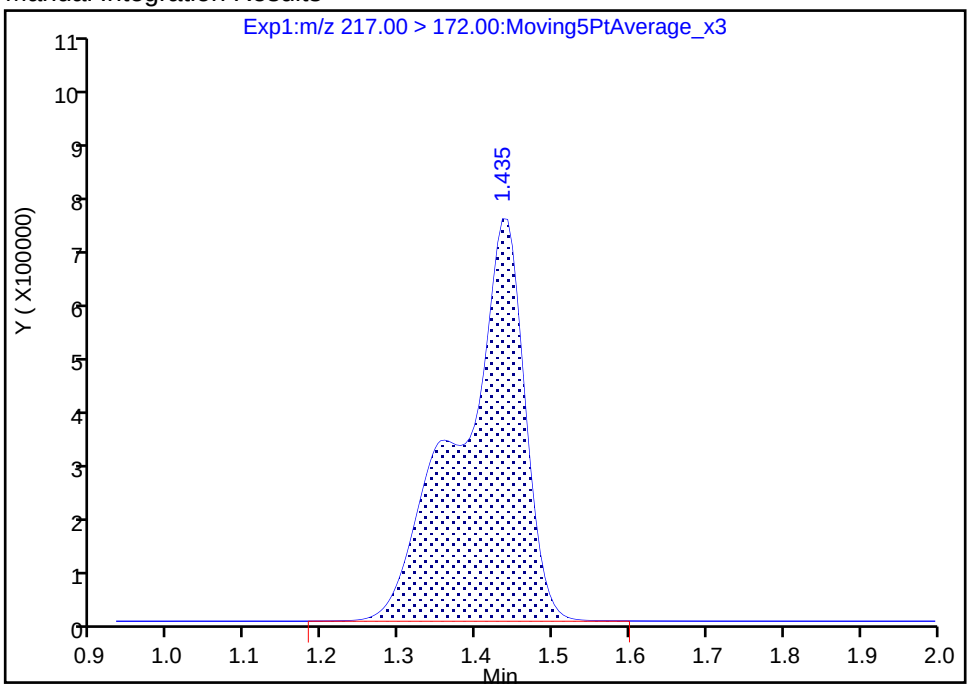
Processing Integration Results

RT: 1.43
Area: 3033218
Amount: 1.289806
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 4320545
Amount: 1.837213
Amount Units: ng/ml



Reviewer: barnettj, 21-Mar-2018 16:15:05
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-212987/1-A

Matrix: Solid | Lab File ID: 2017.03.17LLZA_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 250.00(mL) | Date Analyzed: 03/17/2018 15:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.275	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90
27619-97-2	6:2FTS	2.00	U	20.0	2.00
39108-34-4	8:2FTS	2.00	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-212987/1-A

Matrix: Solid | Lab File ID: 2017.03.17LLZA_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 250.00(mL) | Date Analyzed: 03/17/2018 15:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	73		25-150
STL01893	13C5 PFPeA	74		25-150
STL00993	13C2 PFHxA	74		25-150
STL01892	13C4-PFHpA	77		25-150
STL00990	13C4 PFOA	81		25-150
STL00995	13C5 PFNA	79		25-150
STL00996	13C2 PFDA	78		25-150
STL00997	13C2 PFUnA	75		25-150
STL00998	13C2 PFDoA	72		25-150
STL02116	13C2-PFTeDA	86		25-150
STL02337	13C3-PFBS	70		25-150
STL00994	18O2 PFHxS	76		25-150
STL00991	13C4 PFOS	72		25-150
STL01056	13C8 FOSA	72		25-150
STL02118	d3-NMeFOSAA	70		25-150
STL02117	d5-NEtFOSAA	78		25-150
STL02279	M2-6:2FTS	85		25-150
STL02280	M2-8:2FTS	85		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_024.d
Lims ID: MB 320-212987/1-A
Client ID:
Sample Type: MB
Inject. Date: 17-Mar-2018 15:12:15 ALS Bottle#: 17 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-212987/1-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:48:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.434	0.006	1.000	3420	0.001862			3.7	
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	4951143	1.82		72.8	78640	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.631	3550901	1.85		74.0	90956	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.736	-0.009	0.644	76882	1.62		69.8	514	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	3951394	1.85		73.8	99428	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	4008991	1.93		77.0	111488	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.328	0.013	1.006	16213	0.006872			2.5	
399.00 > 99.00	2.341	2.328	0.013	1.006	4575		3.54(1.50-4.49)		2.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	5002610	1.80		76.2	120198	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.665	-0.008	0.991	1080579	2.03		85.4	31363	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.680	0.001		5328033	2.50			123427	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.689	-0.008	1.000	4075441	2.03		81.1	106227	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.141	3365296	1.73		72.5	71545	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.065	-0.007	1.141	3193074	1.99		79.4	79702	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.398	-0.001	1.267	5052203	1.80		71.9	67112	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.417	-0.002	1.274	1021792	2.04		85.2	28722	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.426	-0.002	1.277	2602882	1.94		77.5	48855	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.579	-0.001	1.335	777883	1.75		70.1	33578	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	827471	1.95		78.0	1699	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.569	3.748	-0.179	0.952	865	0.002669			22.5	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.758	0.0	1.402	1960270	1.86		74.5	51051	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.056	-0.010	1.510	1783926	1.79		71.5	10610	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.699	1960670	2.15		86.1	17156	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.955	0.009	1.000	22080	0.001130			2.3	
813.00 > 169.00	4.964	4.955	0.009	1.000	4006		5.51(2.86-8.58)		53.5	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.973	-0.008	1.852	2394773	1.80		71.9	7904	

Report Date: 20-Mar-2018 13:55:16 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_024.d

Injection Date: 17-Mar-2018 15:12:15 Instrument ID: A8_N

Lims ID: MB 320-212987/1-A

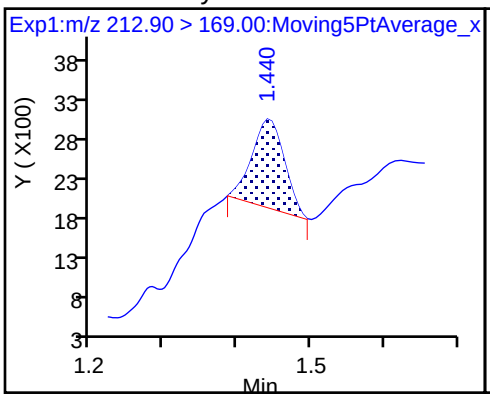
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 2

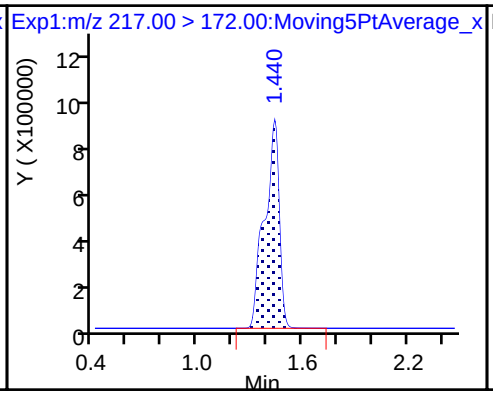
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

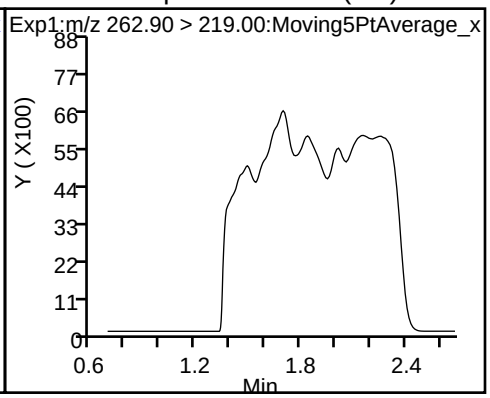
2 Perfluorobutyric acid



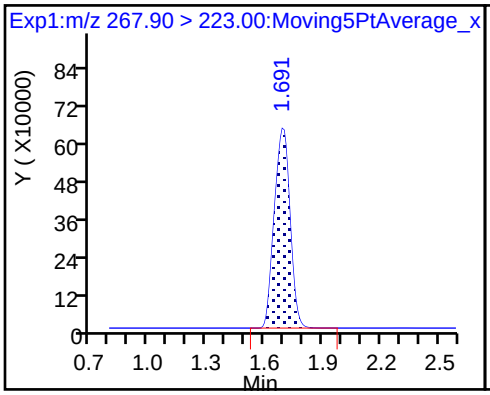
D 1 13C4 PFBA



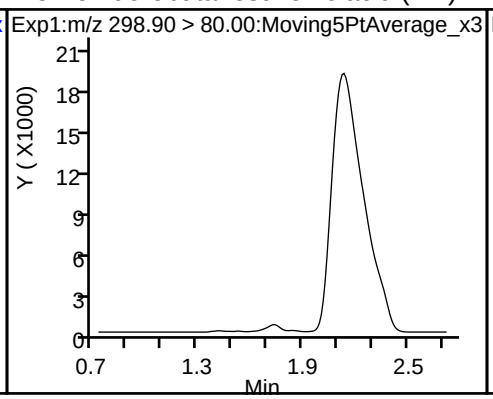
4 Perfluoropentanoic acid (ND)



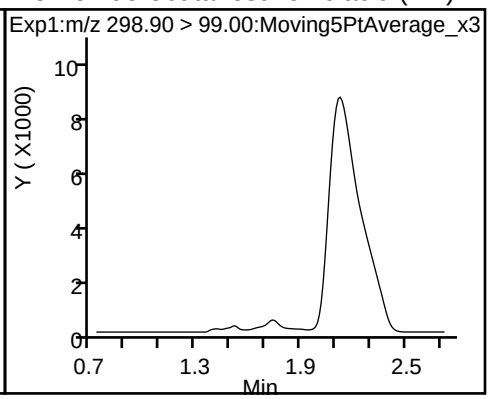
D 3 13C5-PFPeA



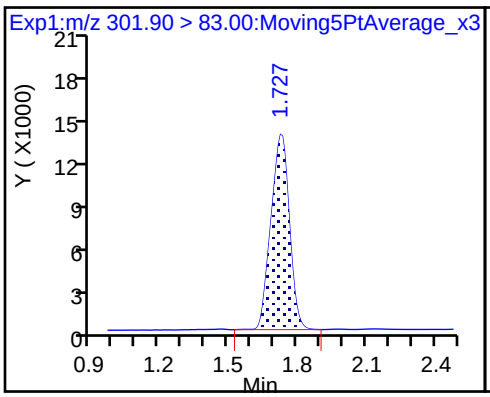
5 Perfluorobutanesulfonic acid (ND)



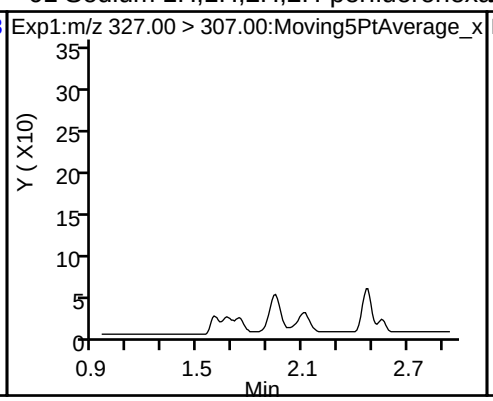
5 Perfluorobutanesulfonic acid (ND)



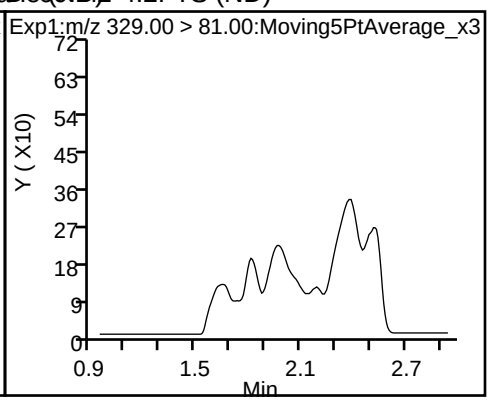
D 47 13C3-PFBS



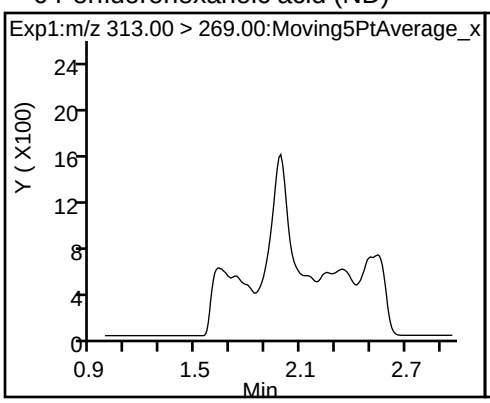
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (ND)



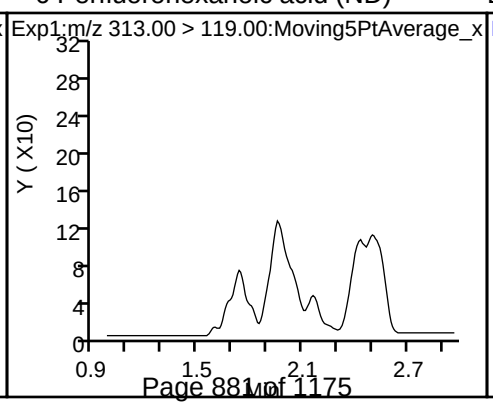
D 60 M2-4:2FTS (ND)



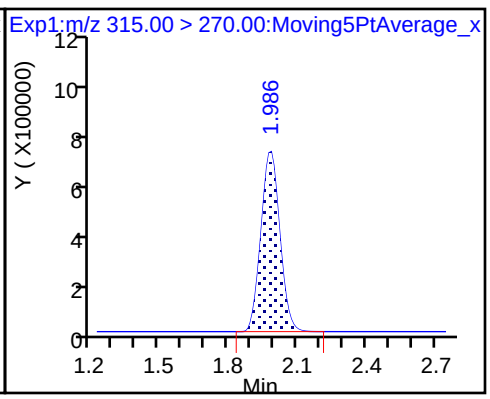
6 Perfluorohexanoic acid (ND)



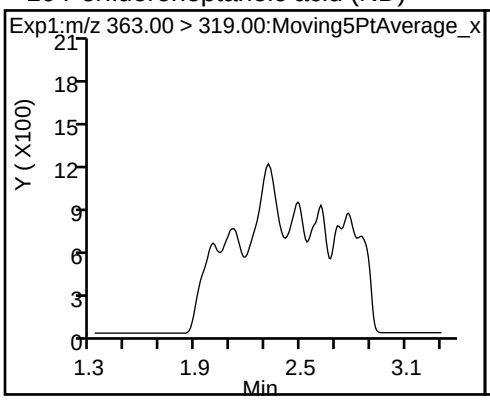
6 Perfluorohexanoic acid (ND)



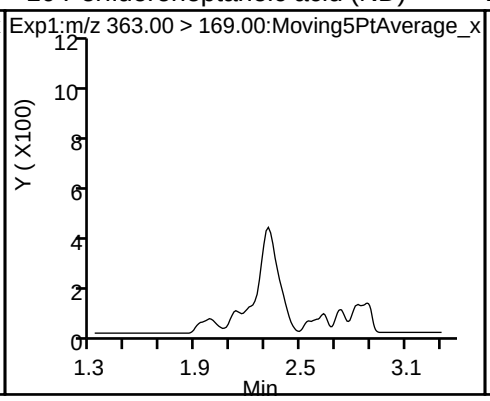
D 7 13C2 PFHxA



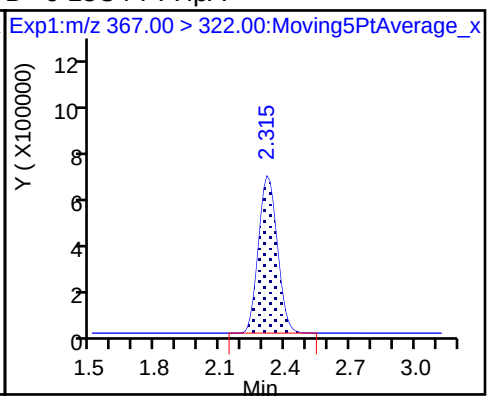
10 Perfluoroheptanoic acid (ND)



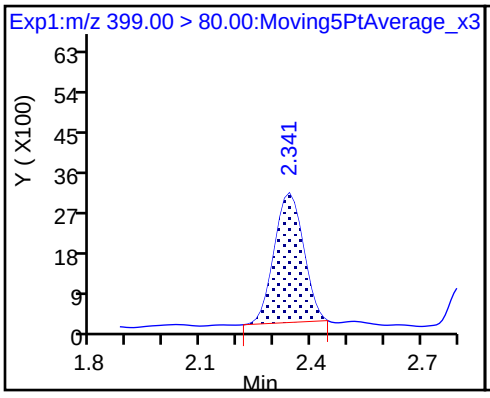
10 Perfluoroheptanoic acid (ND)



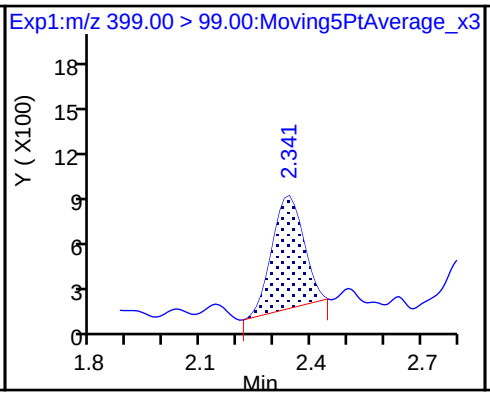
D 9 13C4-PFHpA



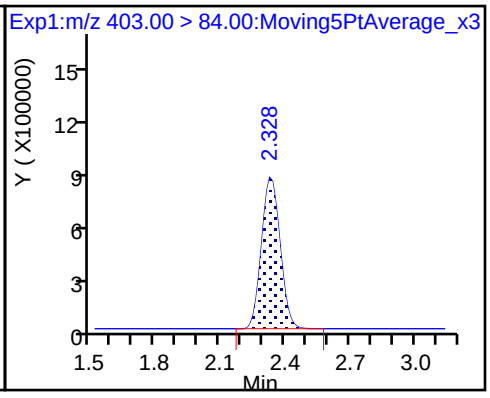
8 Perfluorohexanesulfonic acid



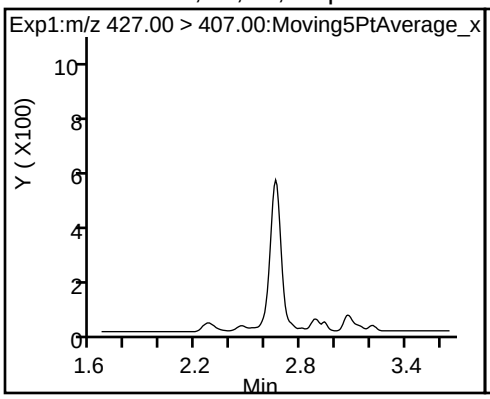
8 Perfluorohexanesulfonic acid



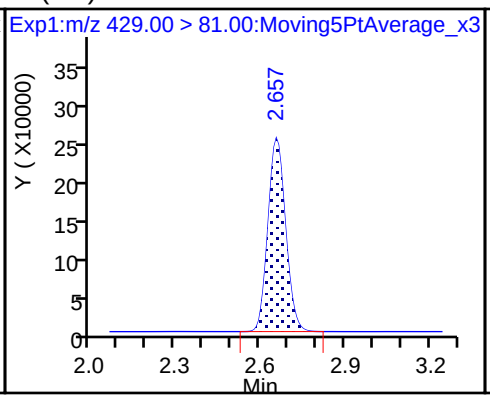
D 11 18O2 PFHxS



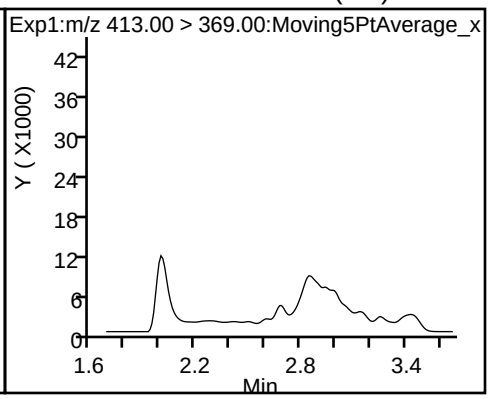
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (8:2)



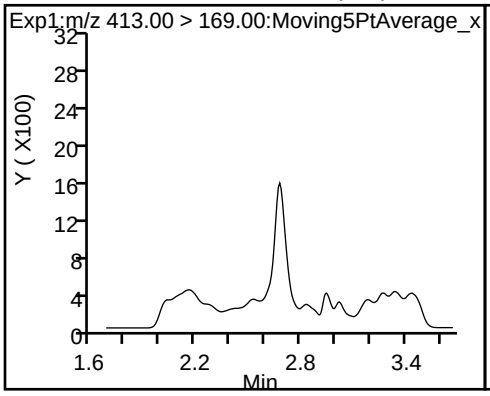
D 12 M2-6:2FTS



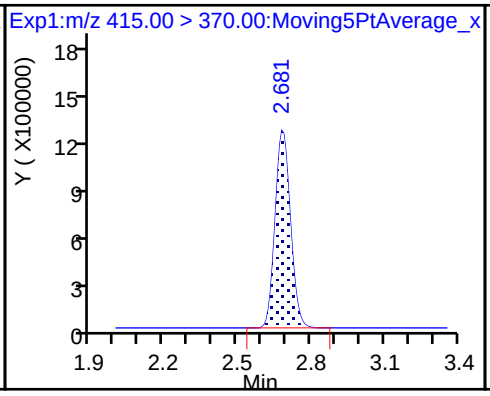
15 Perfluorooctanoic acid (ND)



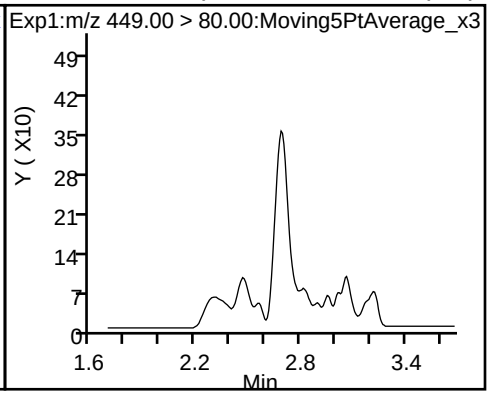
15 Perfluorooctanoic acid (ND)



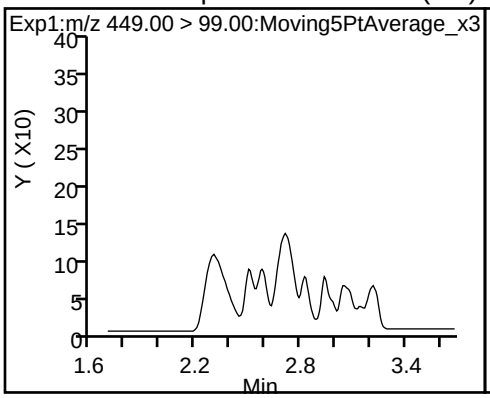
* 62 13C2-PFOA



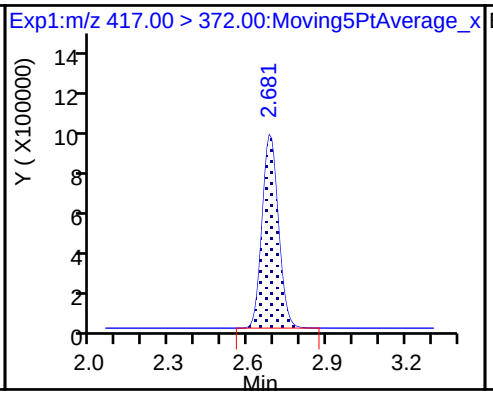
16 Perfluoroheptanesulfonic acid (ND)



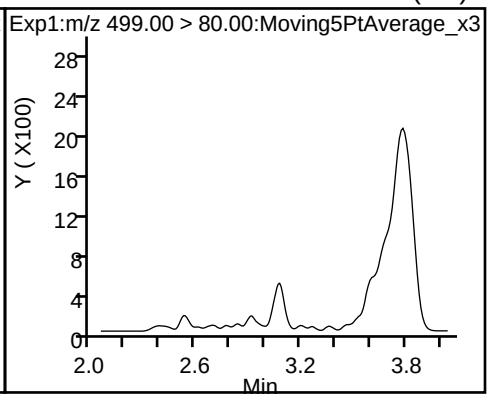
16 Perfluoroheptanesulfonic acid (ND)



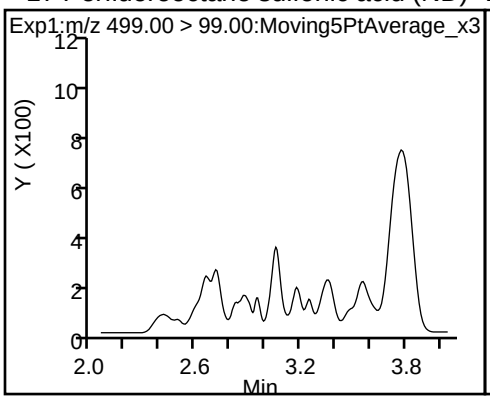
D 14 13C4 PFOA



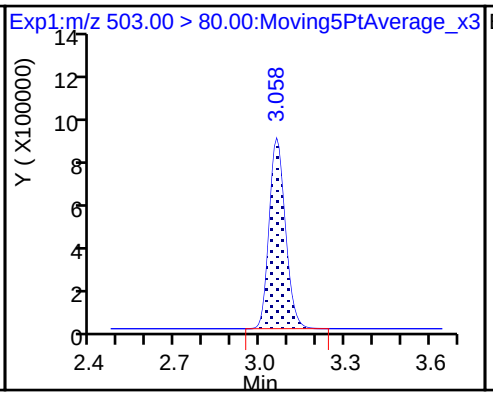
17 Perfluorooctane sulfonic acid (ND)



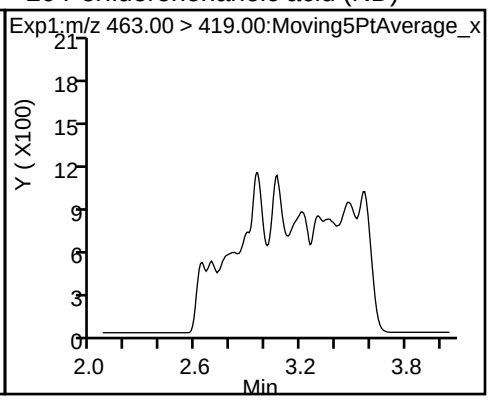
17 Perfluorooctane sulfonic acid (ND)



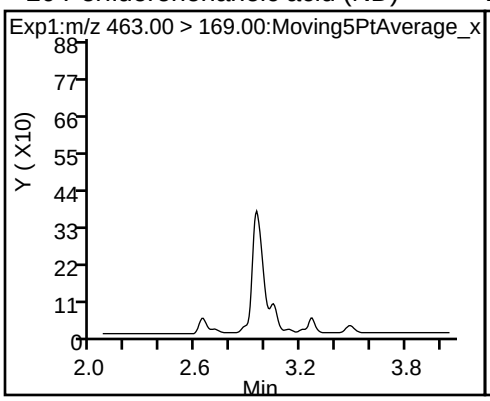
D 18 13C4 PFOS



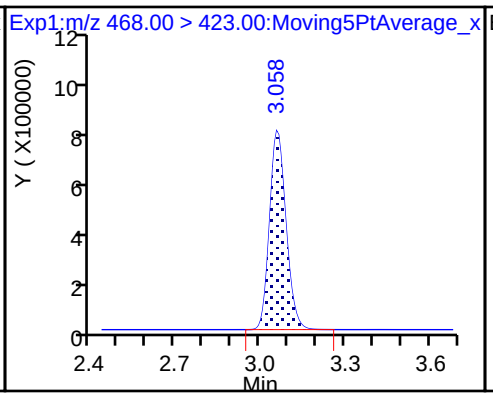
20 Perfluorononanoic acid (ND)



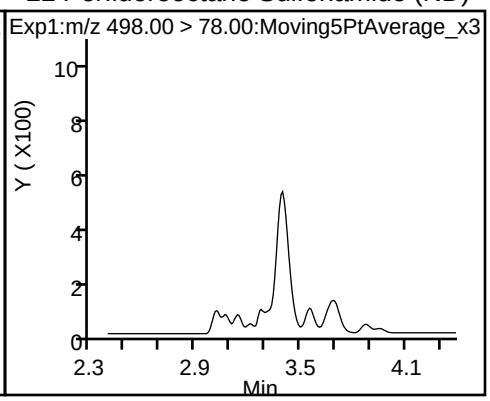
20 Perfluorononanoic acid (ND)



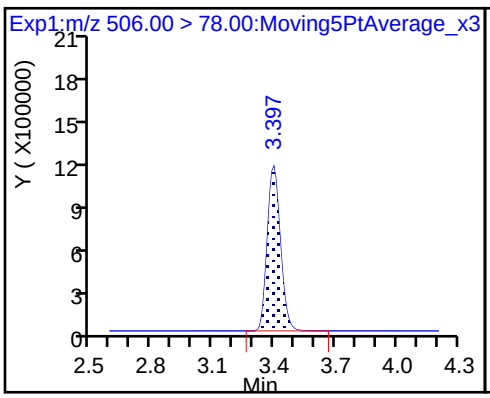
D 19 13C5 PFNA



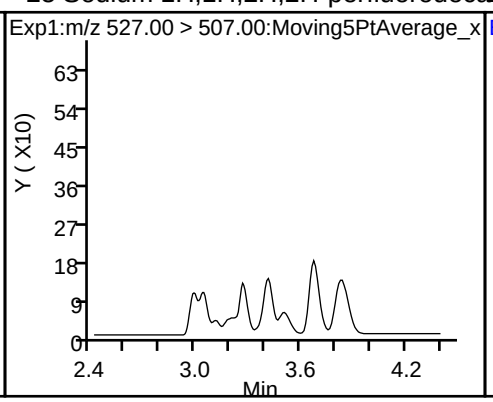
22 Perfluorooctane Sulfonamide (ND)



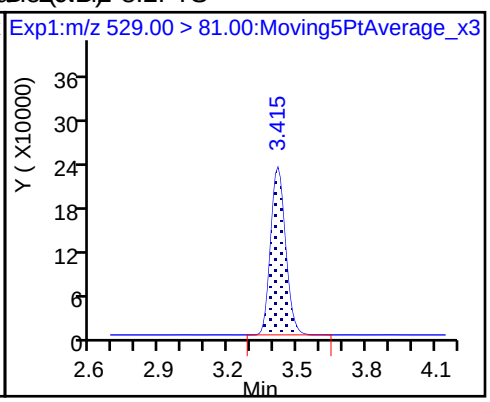
D 21 13C8 FOSA



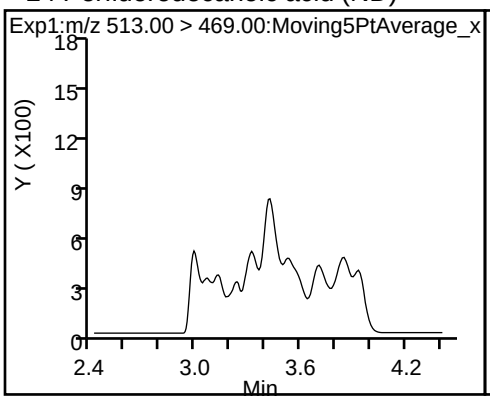
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



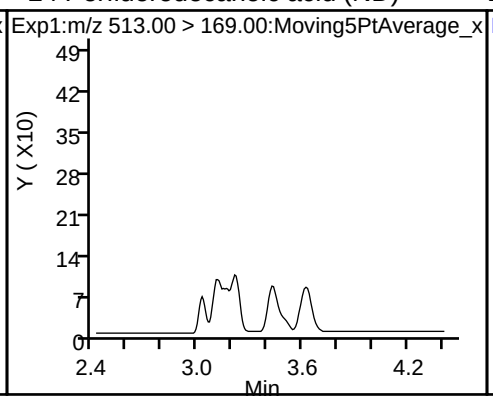
D 26 NM2-8:2FTS



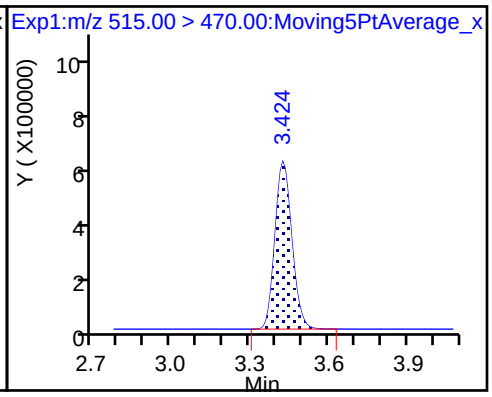
24 Perfluorodecanoic acid (ND)



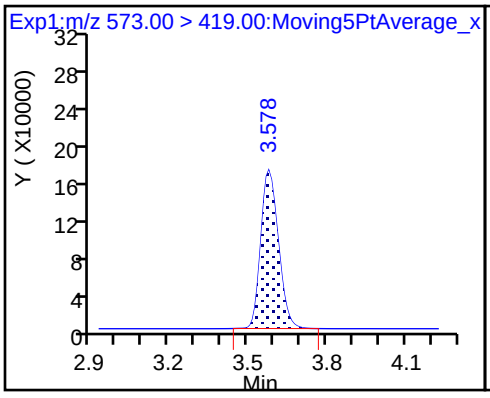
24 Perfluorodecanoic acid (ND)



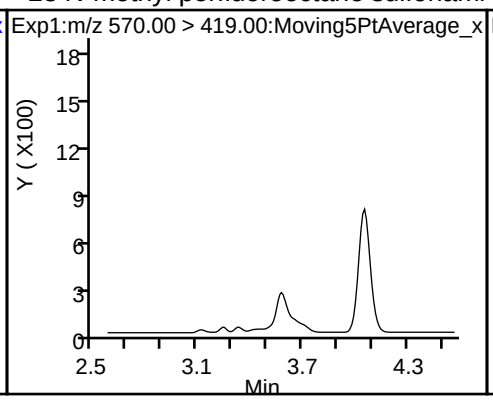
D 23 13C2 PFDA



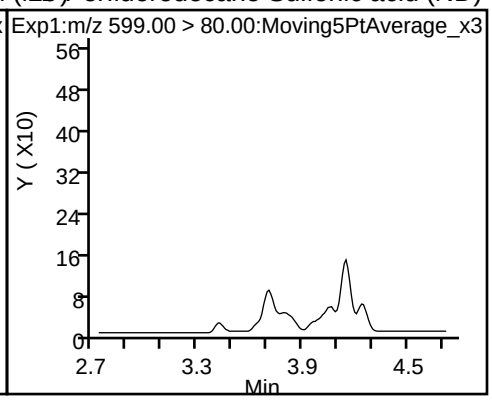
D 27 d3-NMeFOSAA



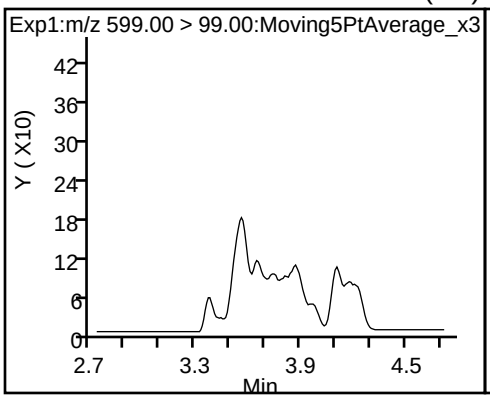
28 N-methyl perfluorooctane sulfonami (ND)



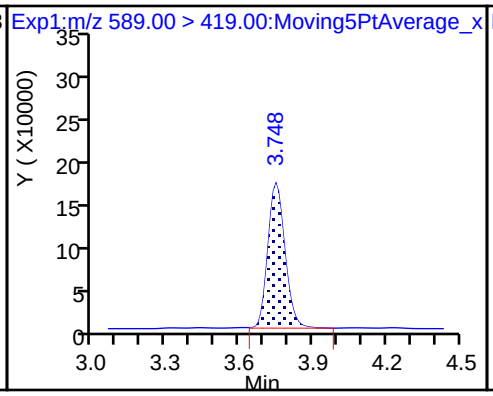
29 Perfluorodecane Sulfonic acid (ND)



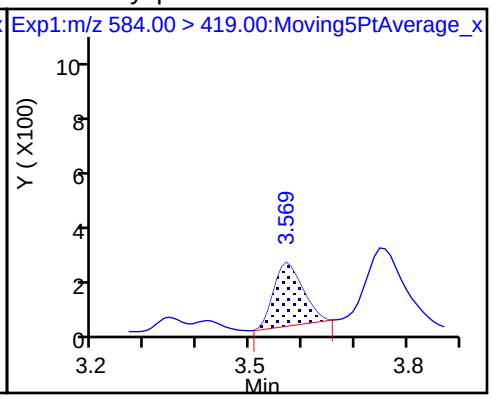
29 Perfluorodecane Sulfonic acid (ND)



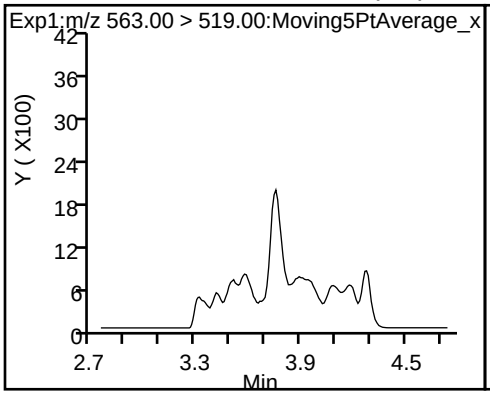
D 32 d5-NEtFOSAA



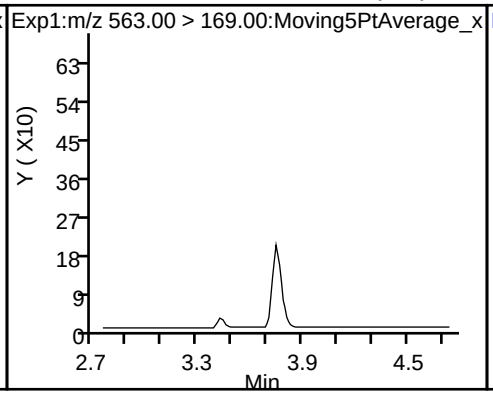
33 N-ethyl perfluorooctane sulfonamid



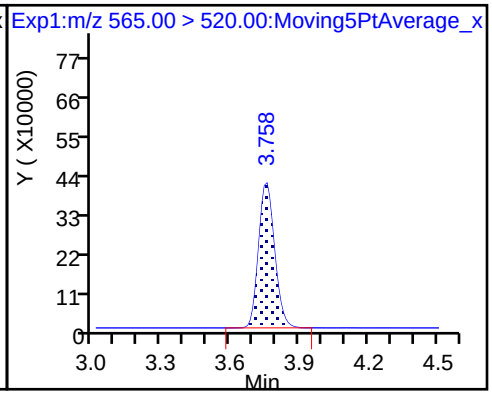
31 Perfluoroundecanoic acid (ND)



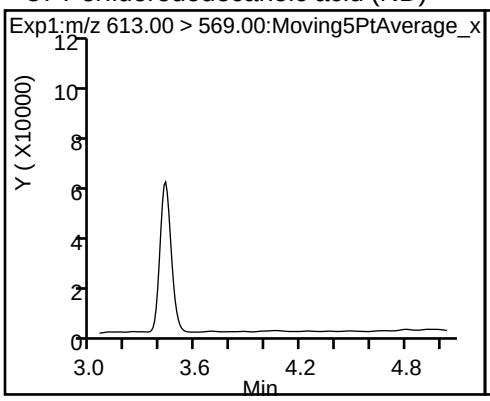
31 Perfluoroundecanoic acid (ND)



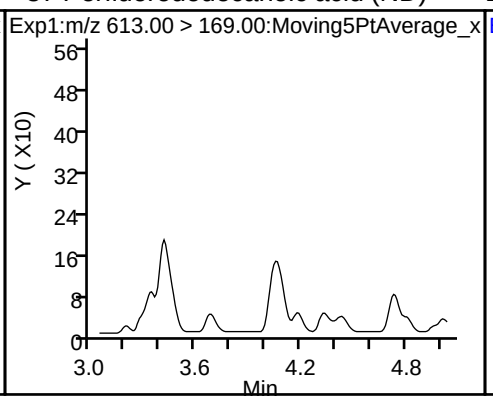
D 30 13C2 PFUnA



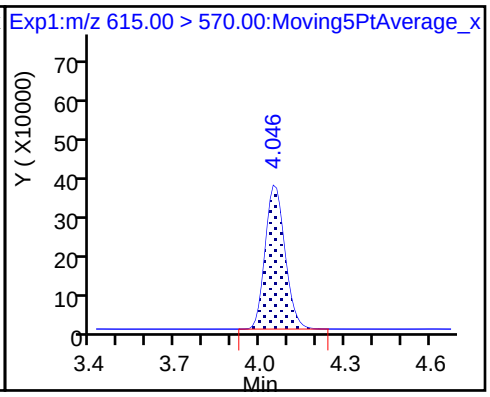
37 Perfluorododecanoic acid (ND)



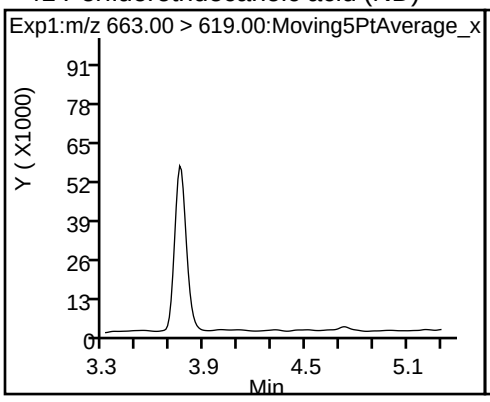
37 Perfluorododecanoic acid (ND)



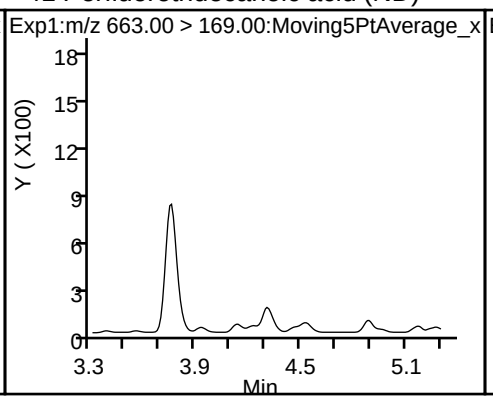
D 36 13C2 PFDoA



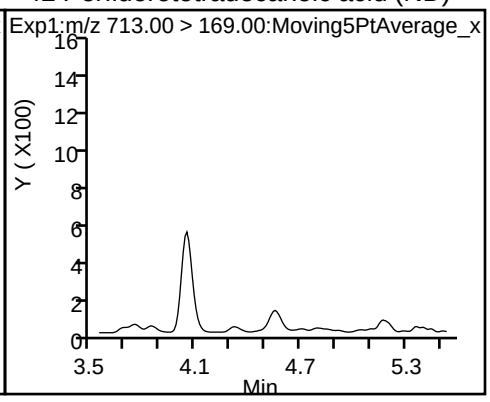
41 Perfluorotridecanoic acid (ND)



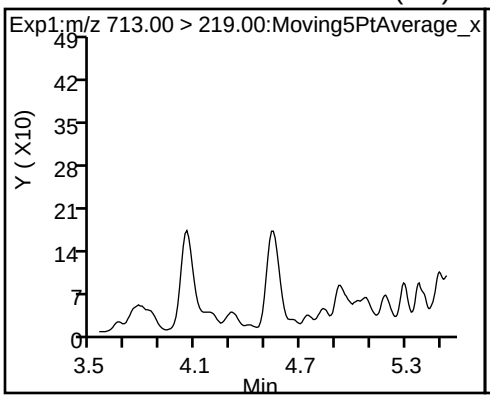
41 Perfluorotridecanoic acid (ND)



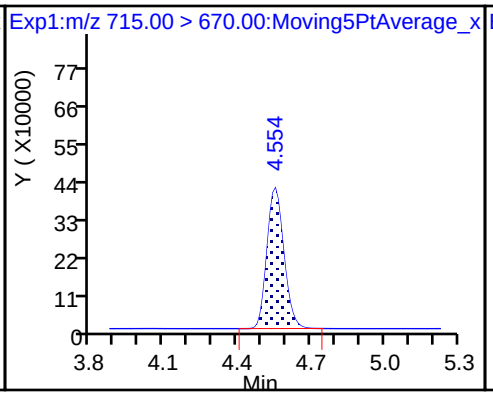
42 Perfluorotetradecanoic acid (ND)



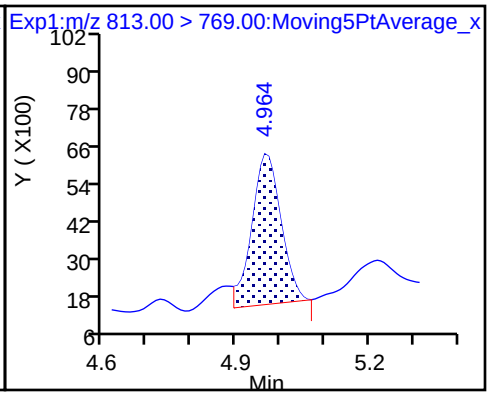
42 Perfluorotetradecanoic acid (ND)



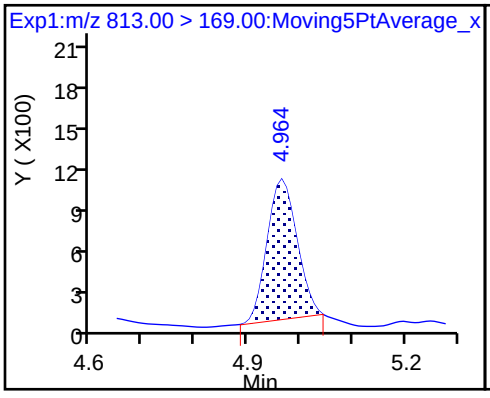
D 43 13C2-PFTeDA



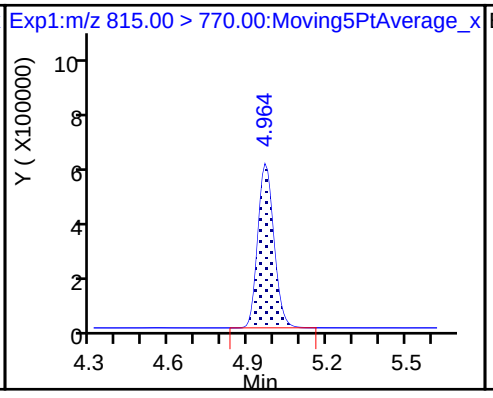
45 Perfluorohexadecanoic acid



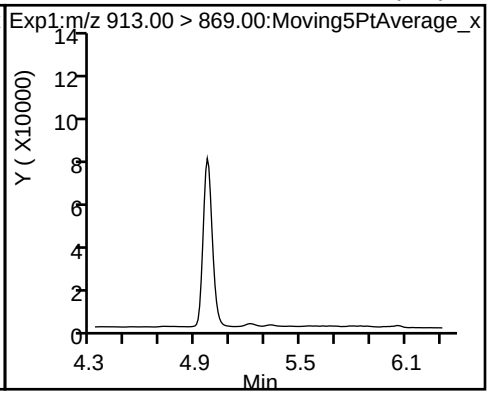
45 Perfluorohexadecanoic acid



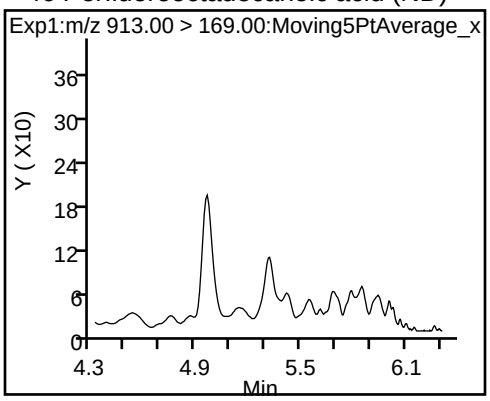
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-214230/1-A

Matrix: Solid | Lab File ID: 2018.03.26LLA_052.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.00(g) | Date Analyzed: 03/27/2018 01:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000039*	*U*	*0.00020*	*0.000039*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	95		25-150

Report Date: 27-Mar-2018 10:42:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_052.d
Lims ID: MB 320-214230/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Mar-2018 01:24:07 ALS Bottle#: 32 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-214230/1-a
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:42:55 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:15:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.536	6595355	2.35		93.8	101888	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.446	0.0	1.004	8284	0.003333			2.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.633	4554590	2.44		97.7	108339	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.646	93209	2.19		94.2	655	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.739	4858120	2.35		94.2	111809	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	18944	0.009536			18.2	
313.00 > 119.00	1.986	1.997	-0.011	1.000	1914		9.90(5.03-15.10)		19.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.861	4765213	2.34		93.7	101154	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.006	12860	0.006522			8.5	
363.00 > 169.00	2.315	2.328	-0.013	1.000	6726		1.91(1.13-3.40)		16.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.340	2.328	0.012	0.871	5808815	2.31		97.8	111039	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.340	2.340	0.0	1.000	22605	0.008269			166	
399.00 > 99.00	2.328	2.340	-0.012	0.994	6693		3.38(1.50-4.49)		15.1	
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.649	0.014	0.991	1170411	2.77		117	25360	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.671	-0.016	0.997	104607	0.1217			975	
D 14 13C4 PFOA										
417.00 > 372.00	2.687	2.681	0.006	1.000	4915734	2.36		94.4	85092	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.687	2.695	-0.008		5552735	2.50			82755	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.687	2.695	-0.008	1.000	31459	0.0142			10.7	
413.00 > 169.00	2.687	2.695	-0.008	1.000	15843		1.99(0.84-2.52)		46.4	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.138	4152899	2.27		95.1	71750	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.051	0.007	1.138	4282537	2.33		93.3	77947	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	157466	0.0814			2264	
499.00 > 99.00	3.058	3.065	-0.007	1.000	40504		3.89(2.31-6.93)		297	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.072	-0.014	1.000	10011	0.005859			15.0	
463.00 > 169.00	3.058	3.072	-0.014	1.000	3093		3.24(1.90-5.69)		65.9	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.261	5296513	2.15		86.0	57582	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	1.000	12326	0.005902			106	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.399	0.018	1.272	1336035	2.34		97.9	29756	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.416	-0.009	0.997	8249	0.0116			108	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.275	3794618	2.36		94.3	66498	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.571	0.008	1.332	1681437	1.99		79.4	46208	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.738	0.010	1.395	1884134	1.95		78.1	13423	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.399	3131112	2.17		87.0	54984	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.758	3.758	0.0	1.000	12784	0.0118			60.2	R
563.00 > 169.00	3.748	3.758	-0.010	0.997	1471		8.69(2.12-6.36)		49.6	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.506	3305329	2.02		80.9	24313	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.543	0.011	1.695	4232387	2.12		84.8	23467	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.955	0.009	1.847	7316388	2.24		89.5	18809	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.973	-0.001	1.002	61410	-0.001199			18.0	
813.00 > 169.00	4.964	4.973	-0.009	1.000	10968		5.60(2.86-8.58)		97.4	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2018 10:42:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_052.d

Injection Date: 27-Mar-2018 01:24:07 Instrument ID: A8_N

Lims ID: MB 320-214230/1-A

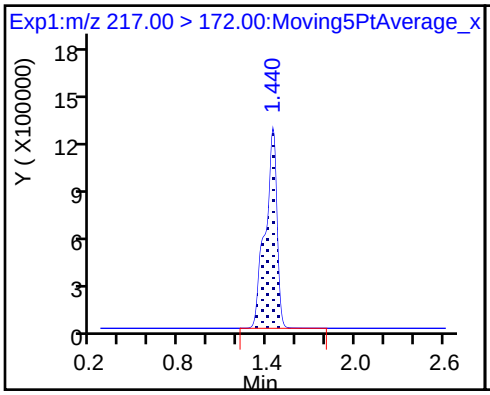
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 32 Worklist Smp#: 2

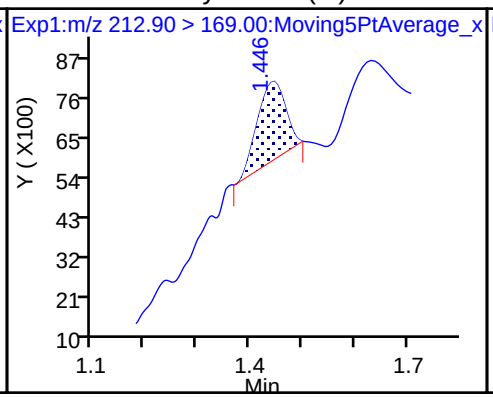
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

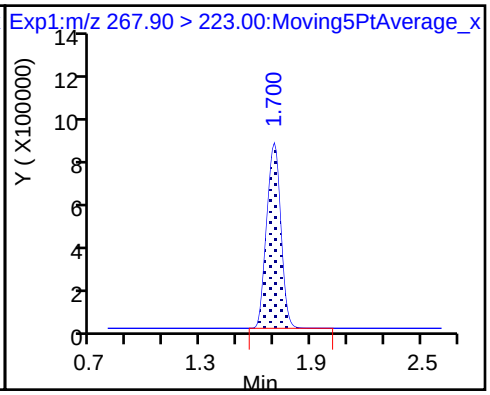
D 1 13C4 PFBA



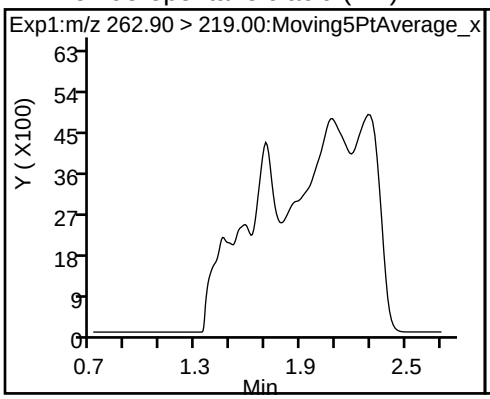
2 Perfluorobutyric acid (M)



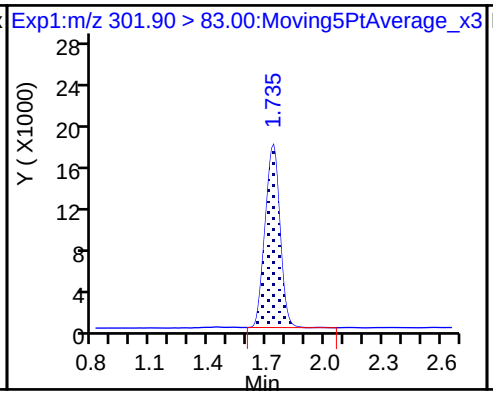
D 3 13C5-PFPeA



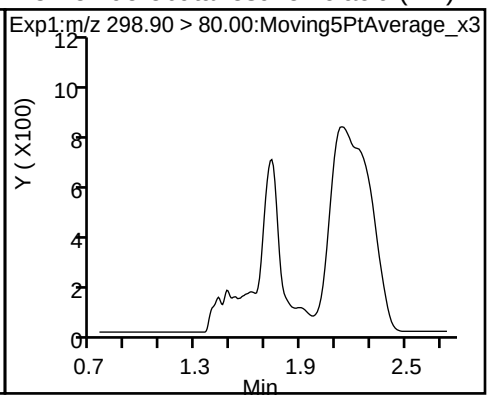
4 Perfluoropentanoic acid (ND)



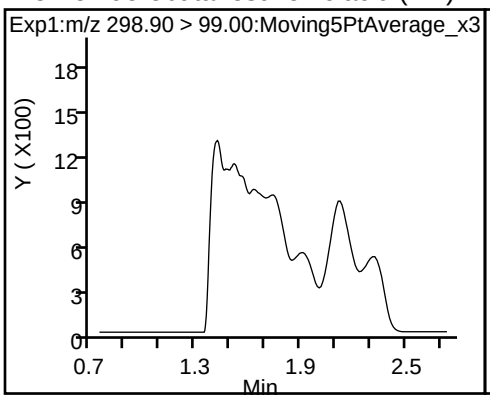
D 47 13C3-PFBS



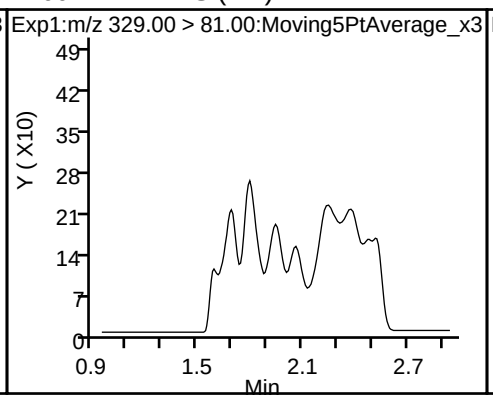
5 Perfluorobutanesulfonic acid (ND)



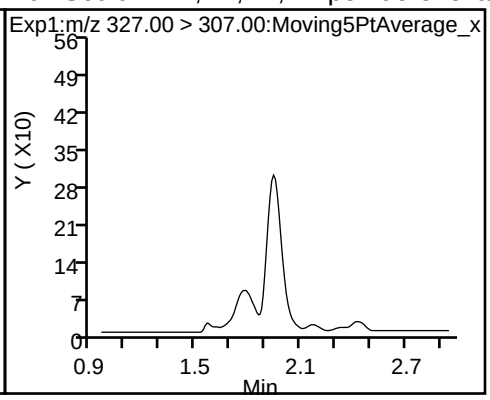
5 Perfluorobutanesulfonic acid (ND)



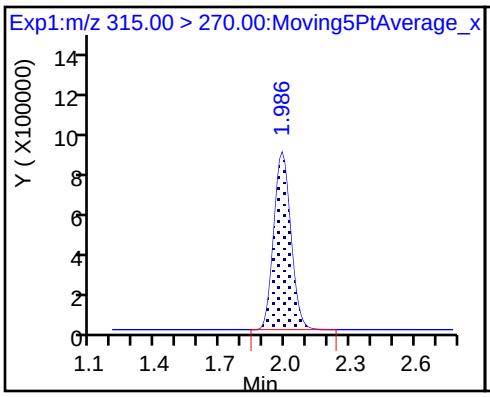
D 60 M2-4:2FTS (ND)



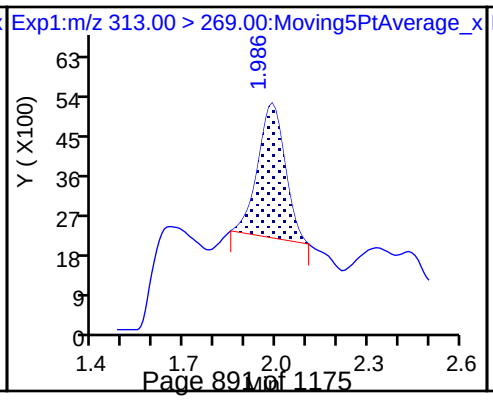
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



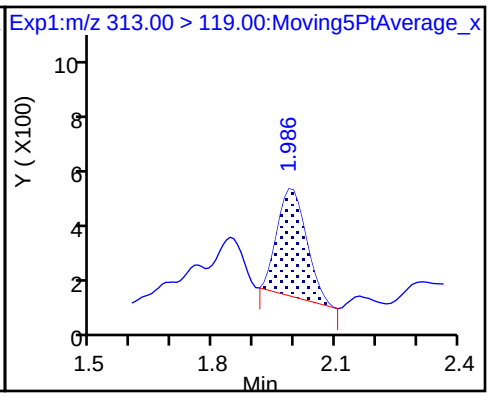
D 7 13C2 PFHxA



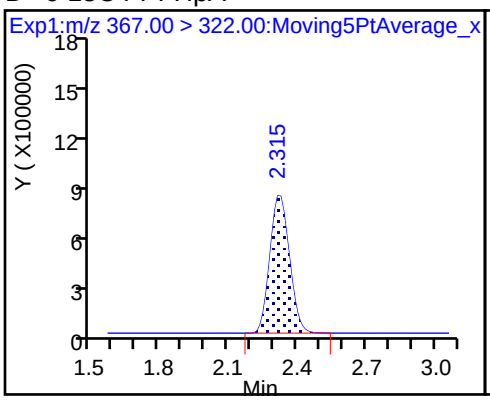
6 Perfluorohexanoic acid



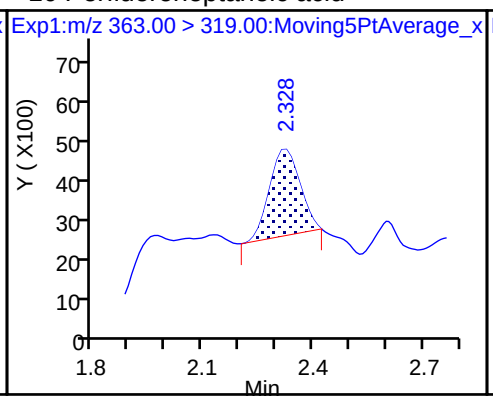
6 Perfluorohexanoic acid



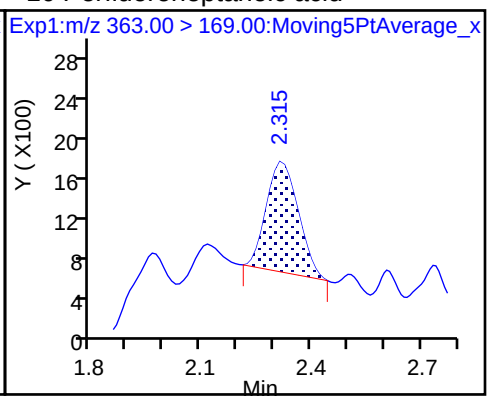
D 9 13C4-PFHpA



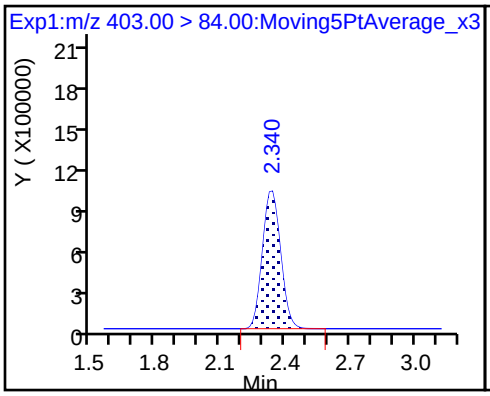
10 Perfluoroheptanoic acid



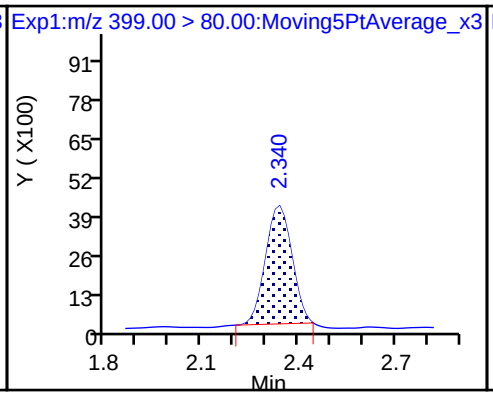
10 Perfluoroheptanoic acid



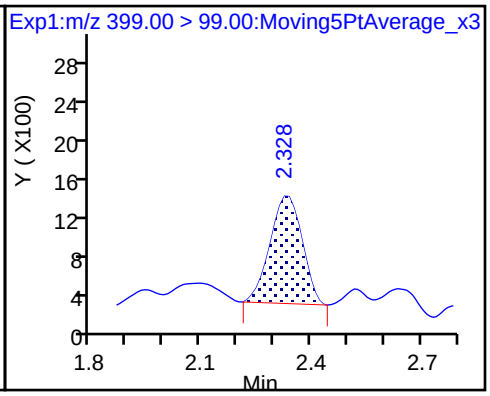
D 11 18O2 PFHxS



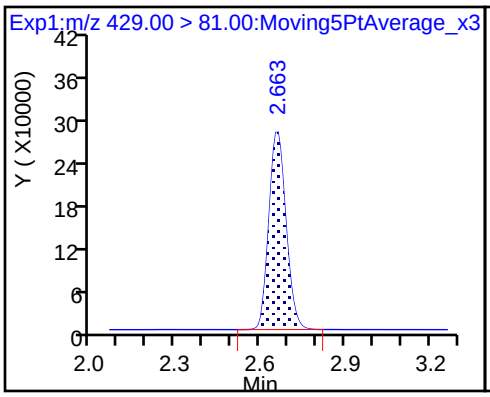
8 Perfluorohexanesulfonic acid



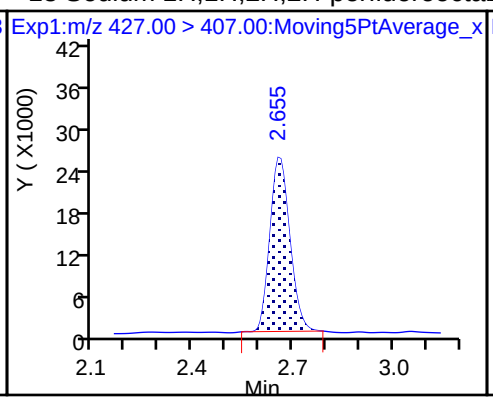
8 Perfluorohexanesulfonic acid



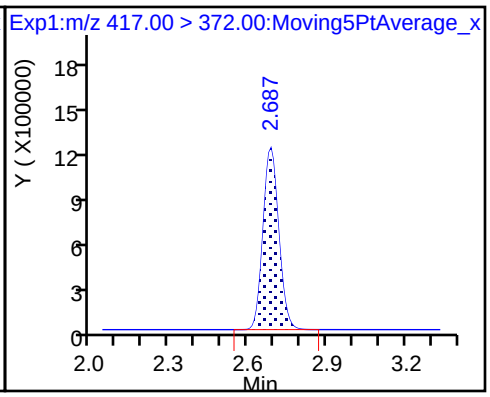
D 12 M2-6:2FTS



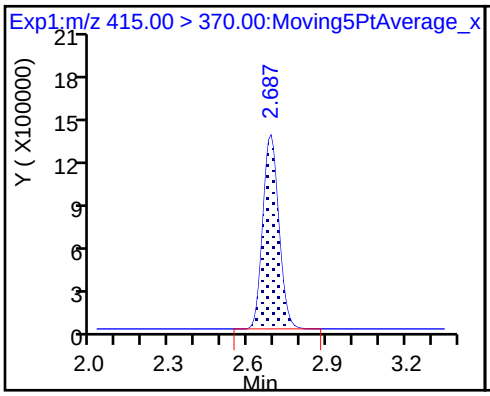
13 Sodium 1H,1H,2H,2H-perfluorooctane



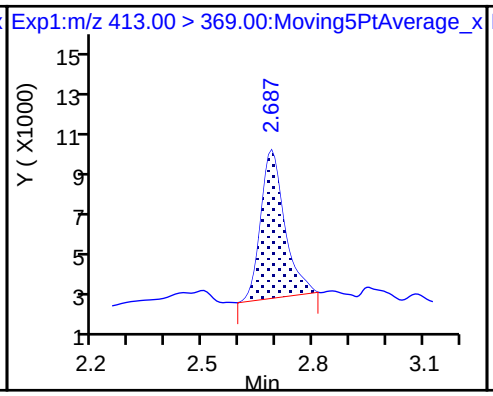
D 14 13C4 PFOA



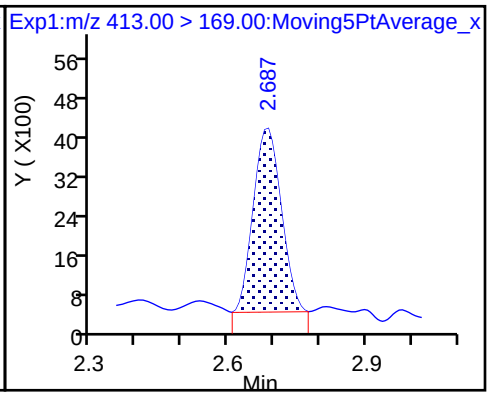
* 62 13C2-PFOA



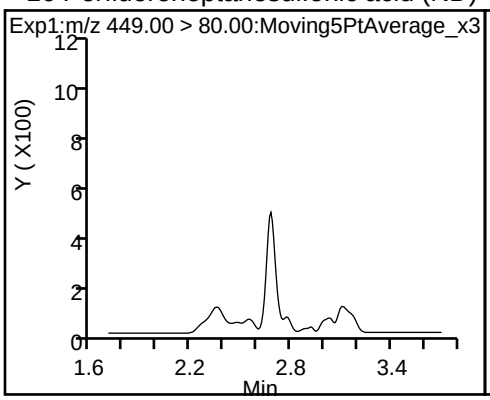
15 Perfluorooctanoic acid



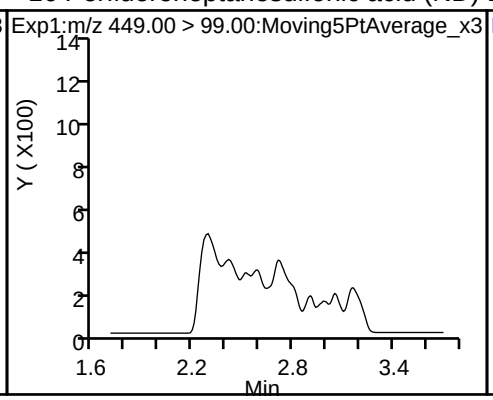
15 Perfluorooctanoic acid



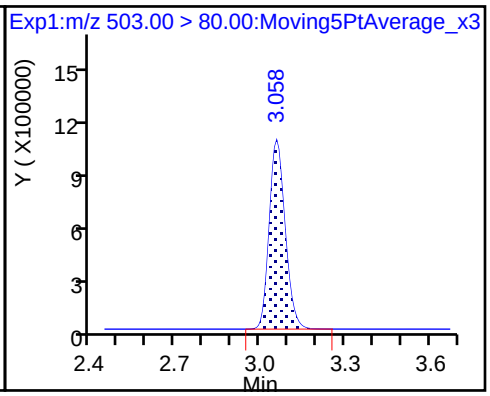
16 Perfluoroheptanesulfonic acid (ND)



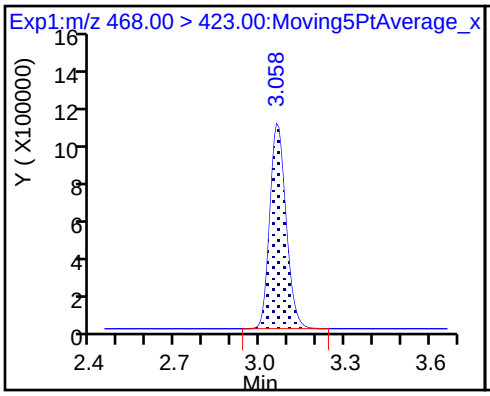
16 Perfluoroheptanesulfonic acid (ND)



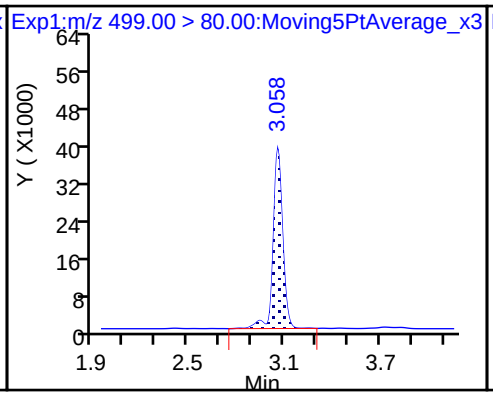
D 18 13C4 PFOS



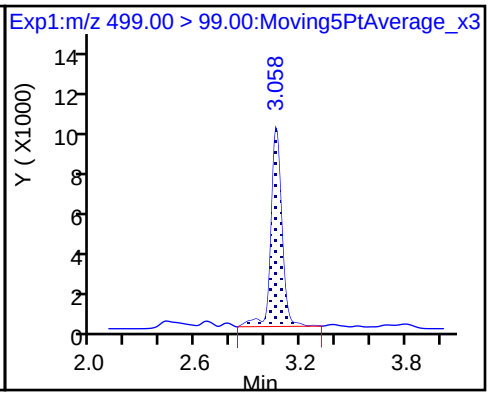
D 19 13C5 PFNA



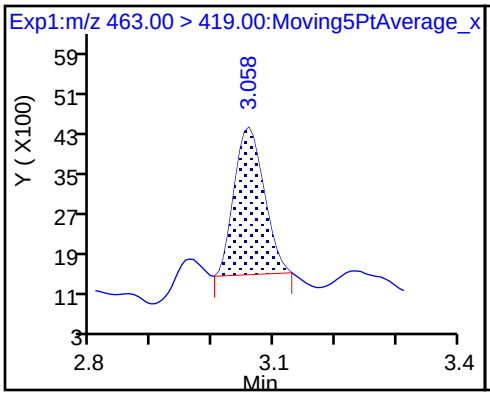
17 Perfluorooctane sulfonic acid



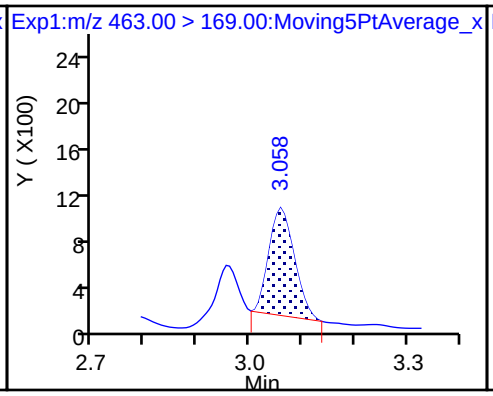
17 Perfluorooctane sulfonic acid



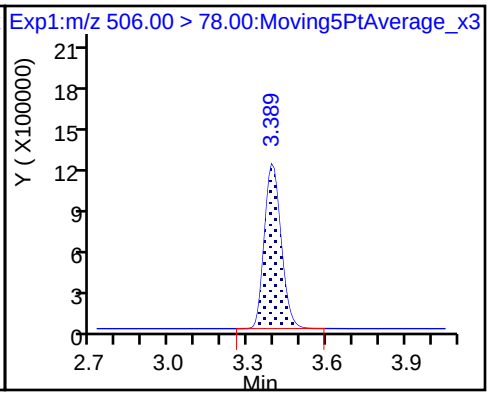
20 Perfluorononanoic acid



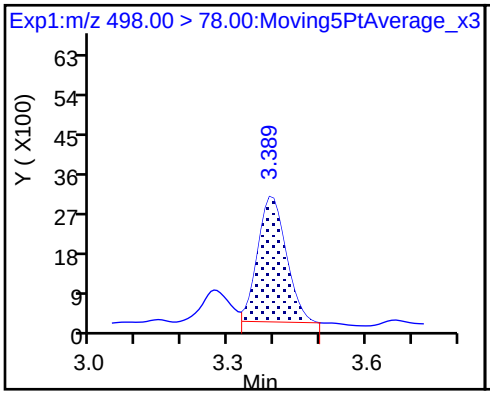
20 Perfluorononanoic acid



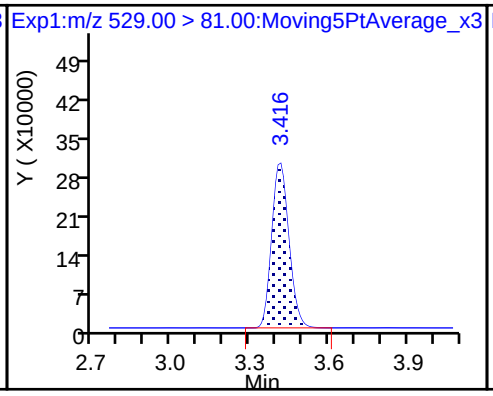
D 21 13C8 FOSA



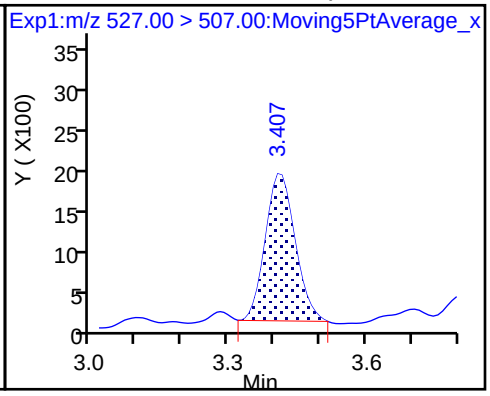
22 Perfluorooctane Sulfonamide



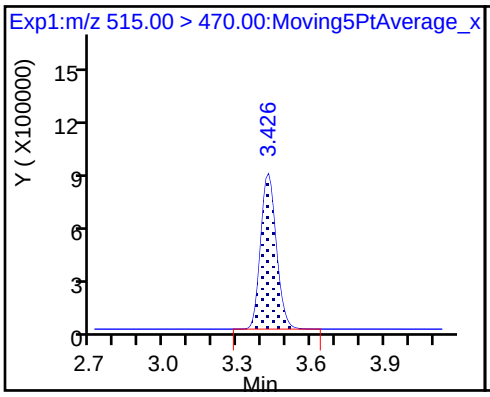
D 26 M2-8:2FTS



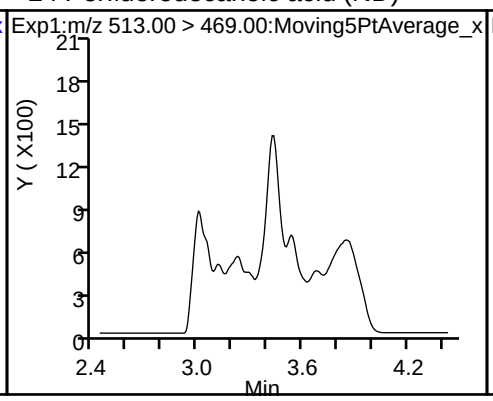
25 Sodium 1H,1H,2H,2H-perfluorodecane



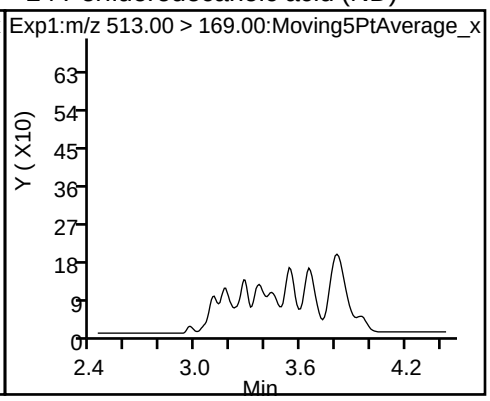
D 23 13C2 PFDA



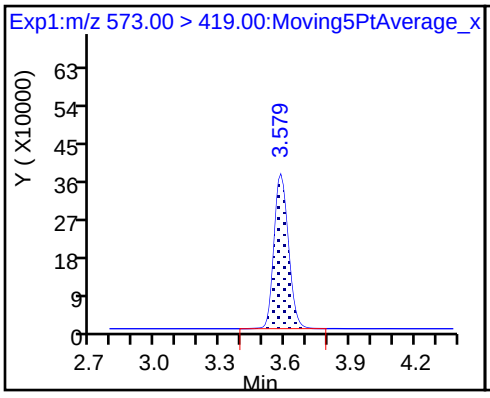
24 Perfluorodecanoic acid (ND)



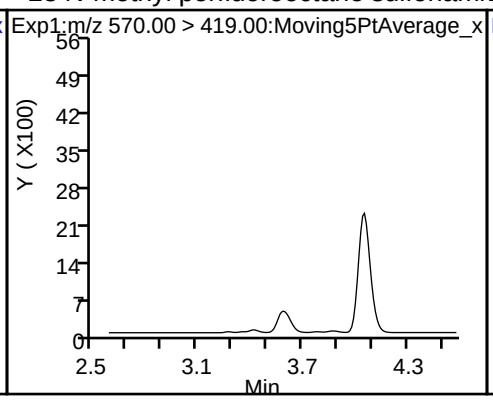
24 Perfluorodecanoic acid (ND)



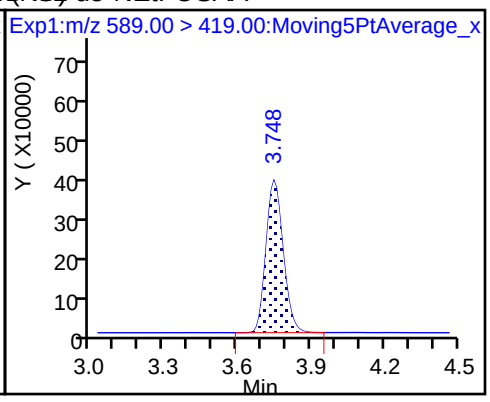
D 27 d3-NMeFOSAA



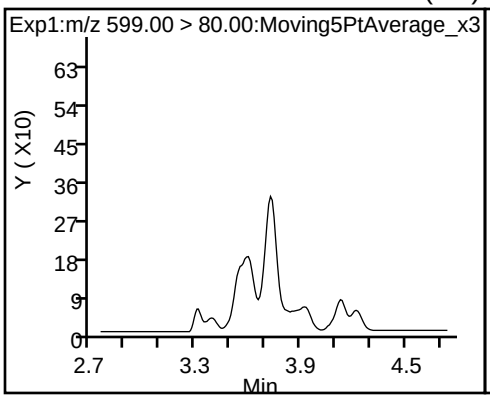
28 N-methyl perfluorooctane sulfonamid (ND)



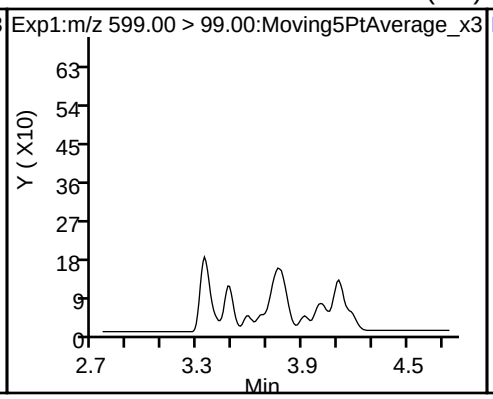
D 32 d5-NEtFOSAA



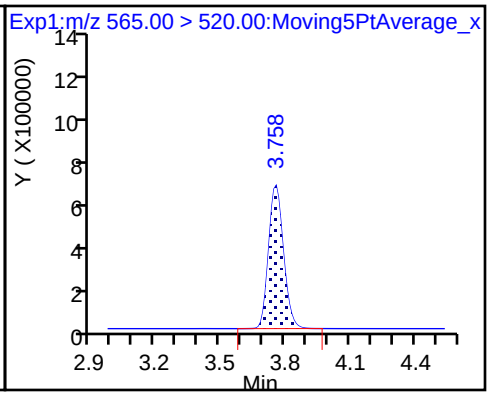
29 Perfluorodecane Sulfonic acid (ND)



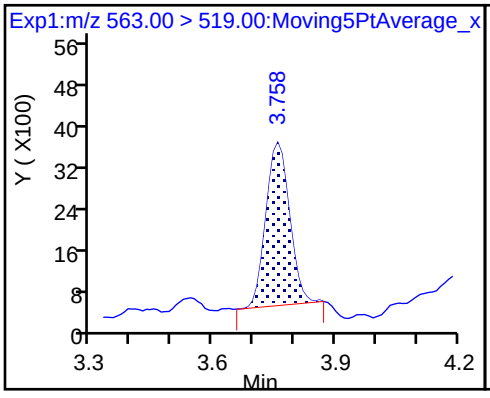
29 Perfluorodecane Sulfonic acid (ND)



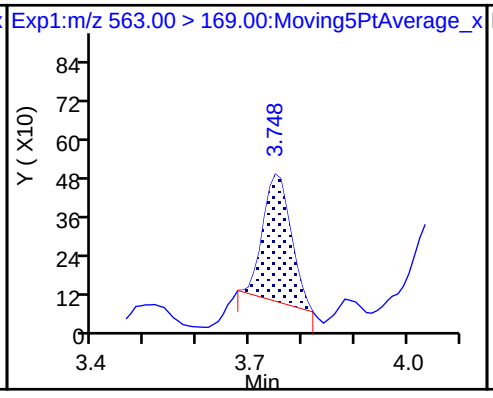
D 30 13C2 PFUnA



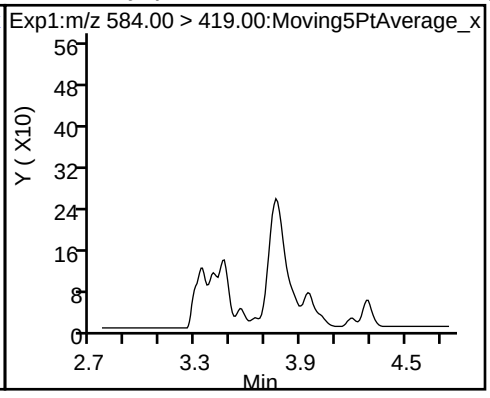
31 Perfluoroundecanoic acid



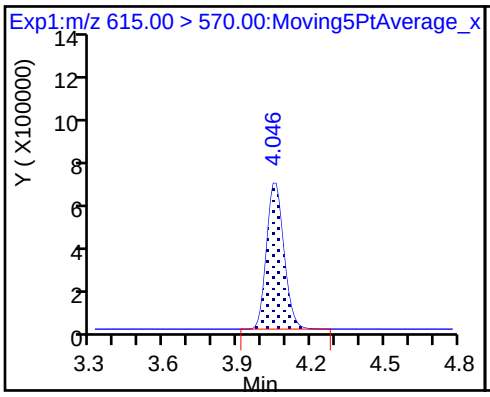
31 Perfluoroundecanoic acid



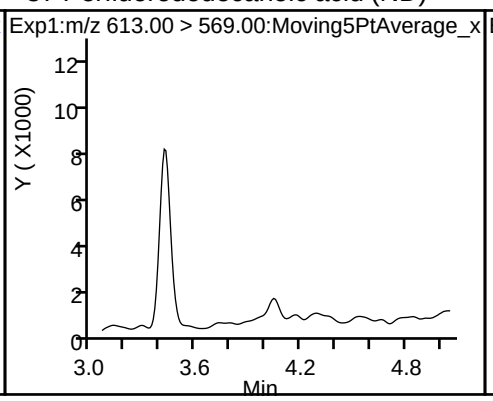
33 N-ethyl perfluorooctane sulfonamid (ND)



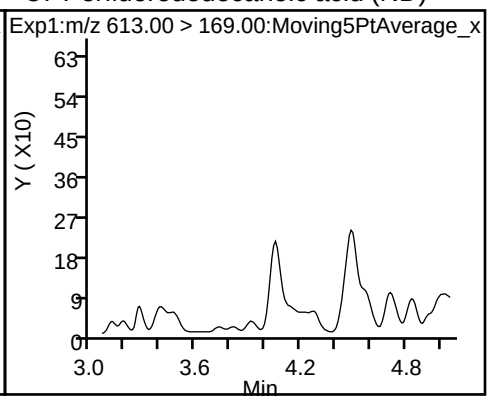
D 36 13C2 PFDoA



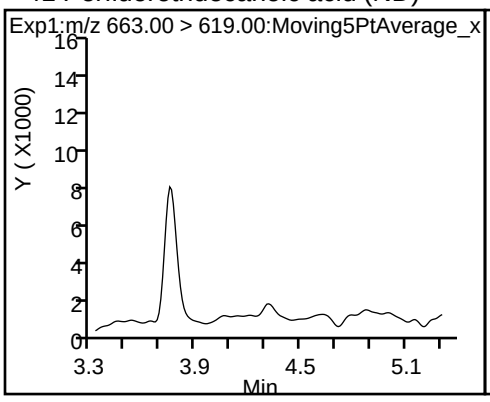
37 Perfluorododecanoic acid (ND)



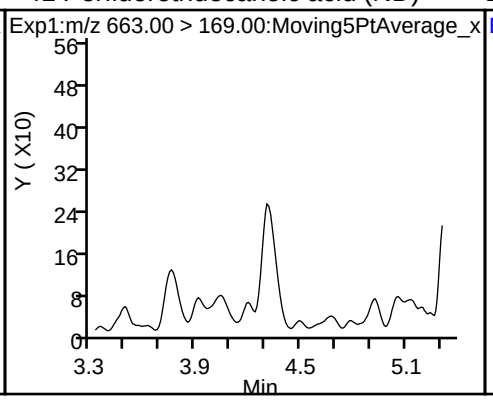
37 Perfluorododecanoic acid (ND)



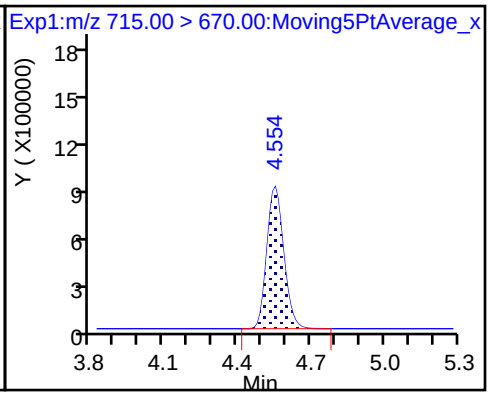
41 Perfluorotridecanoic acid (ND)



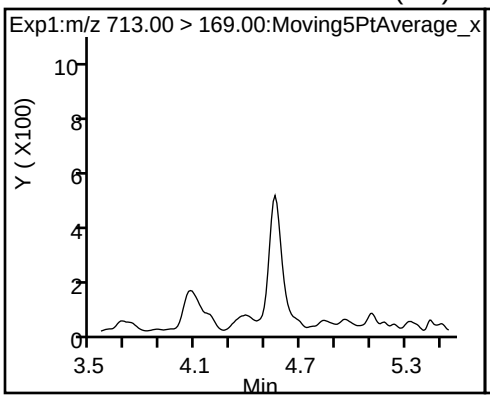
41 Perfluorotridecanoic acid (ND)



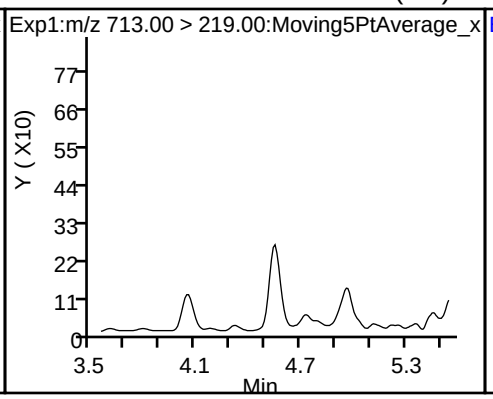
D 43 13C2-PFTeDA



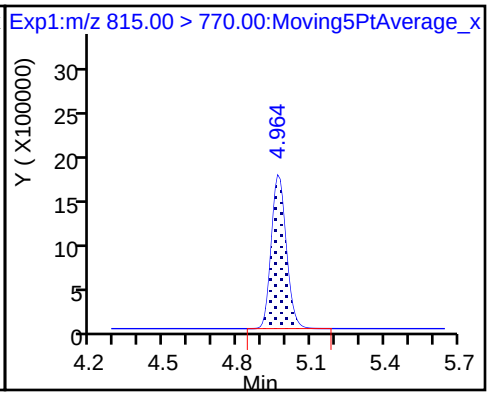
42 Perfluorotetradecanoic acid (ND)



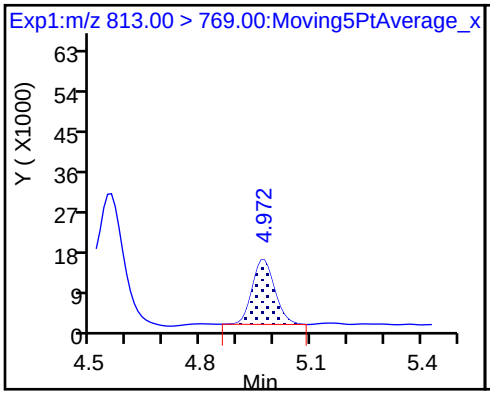
42 Perfluorotetradecanoic acid (ND)



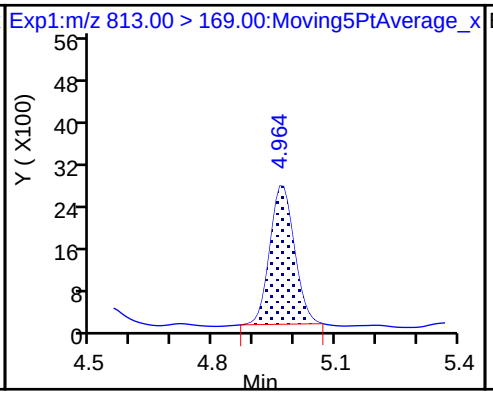
D 44 13C2-PFHxDA



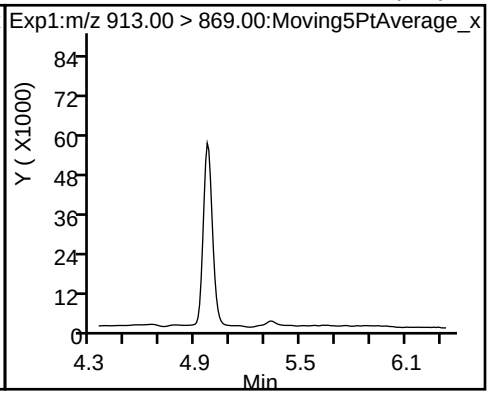
45 Perfluorohexadecanoic acid



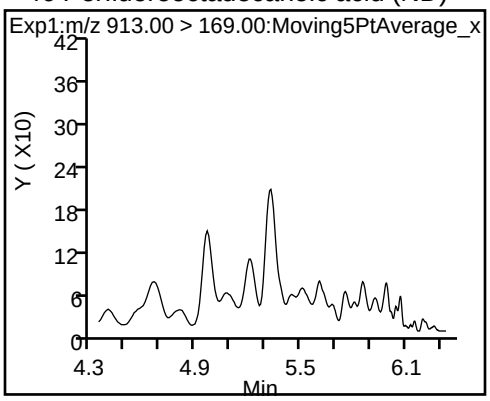
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-214600/1-A

Matrix: Solid Lab File ID: 2018.03.28LLFF_007.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) Date Analyzed: 03/29/2018 00:10

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	80		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d
Lims ID: MB 320-214600/1-A
Client ID:
Sample Type: MB
Inject. Date: 29-Mar-2018 00:10:19 ALS Bottle#: 14 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-214600/1-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: hannigana Date: 29-Mar-2018 08:07:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.435	0.005	1.000	42280	0.0196			8.8	
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5723007	1.98		79.2	139611	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3989907	2.08		83.2	136656	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.647	78649	1.80		77.3	467	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	4341596	2.05		81.9	122109	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.341	0.013	1.006	15209	0.006424			95.8	
399.00 > 99.00	2.341	2.341	0.0	1.000	5871		2.59(1.50-4.49)		30.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	4303232	2.06		82.3	117369	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	5030753	1.95		82.4	117902	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	61377	0.1045			1064	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		5707612	2.50			115471	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	20004	0.0108			6.0	
413.00 > 169.00	2.697	2.697	0.0	1.000	0		0.00(0.84-2.52)			
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	800106	1.84		77.7	22027	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	4101375	1.92		76.7	100970	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	65880	0.0392			207	
499.00 > 99.00	3.072	3.072	0.0	1.000	14697		4.48(2.31-6.93)		146	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3416391	1.81		72.4	72921	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3609706	1.92		80.4	61995	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	4643155	1.83		73.3	53390	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	992178	1.69		70.7	36269	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	3044071	1.84		73.6	51303	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1293693	1.49		59.4	53666	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.748	3.769	-0.021	0.995	2213	0.002655			10.8	R
563.00 > 169.00	3.768	3.769	-0.001	1.000	1143		1.94(2.12-6.36)		121	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.769	-0.001	1.003	2391	0.004501			35.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1421551	1.43		57.3	4127	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.397	2416877	1.63		65.3	40925	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.508	2654925	1.58		63.2	24158	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3491791	1.70		68.1	21597	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.972	0.009	1.000	44461	-0.000211			12.0	
813.00 > 169.00	4.981	4.972	0.009	1.000	7202		6.17(2.86-8.58)		96.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.008	-0.027	1.847	5079767	1.51		60.4	14594	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d

Injection Date: 29-Mar-2018 00:10:19 Instrument ID: A8_N

Lims ID: MB 320-214600/1-A

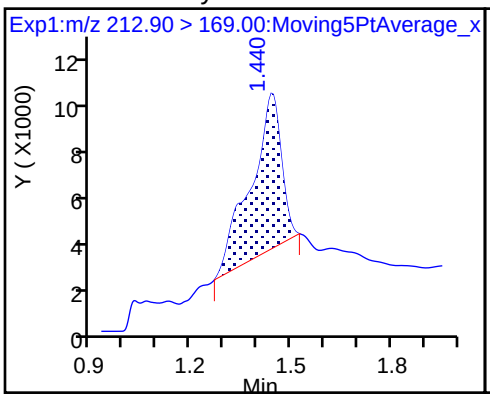
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 4

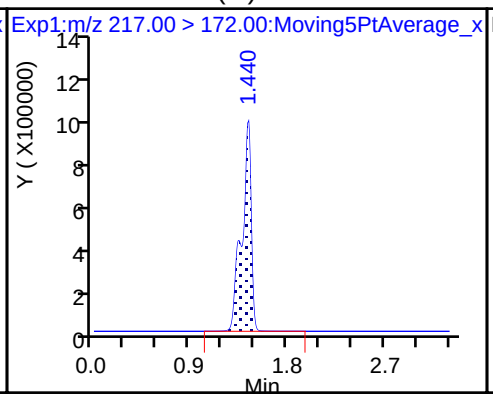
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

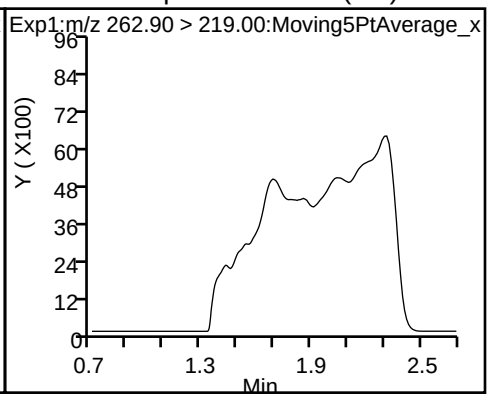
2 Perfluorobutyric acid



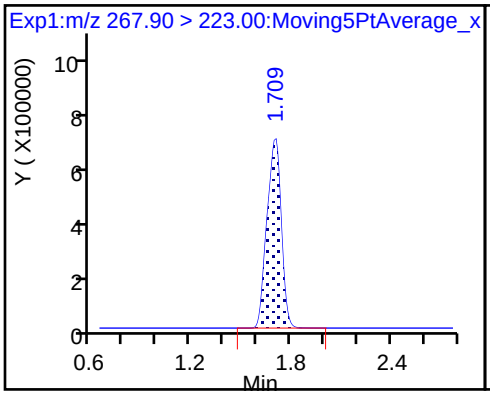
D 1 13C4 PFBA (M)



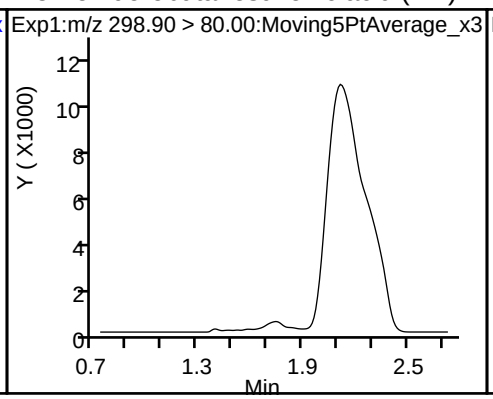
4 Perfluoropentanoic acid (ND)



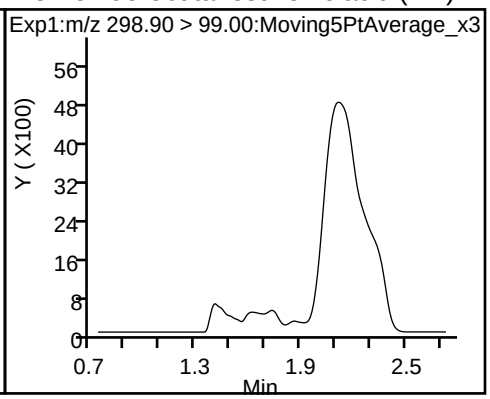
D 3 13C5-PFPeA



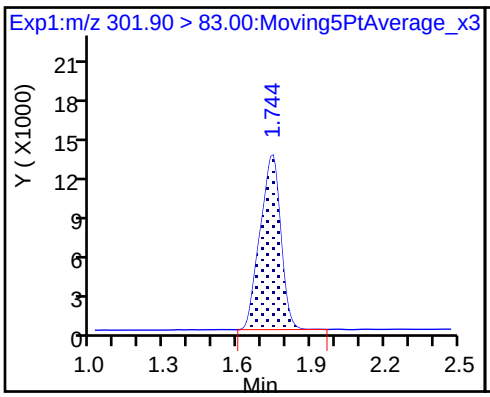
5 Perfluorobutanesulfonic acid (ND)



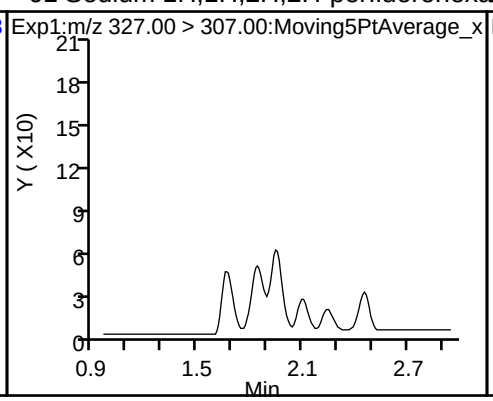
5 Perfluorobutanesulfonic acid (ND)



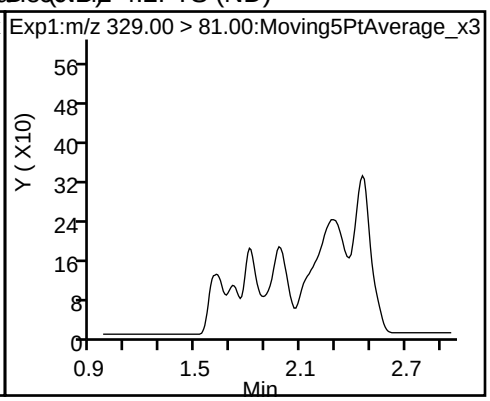
D 47 13C3-PFBS



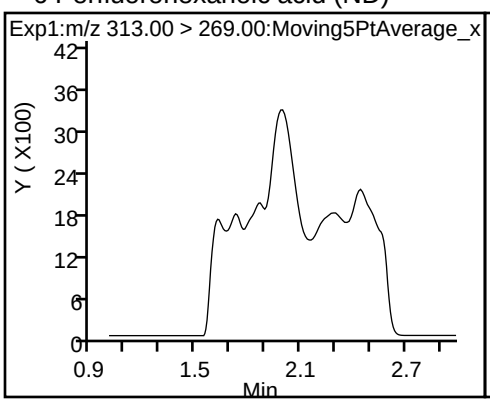
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



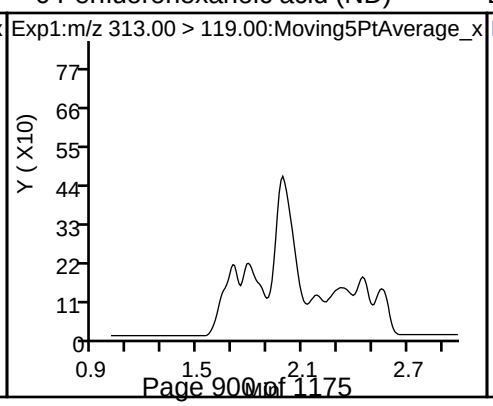
D 60 M2-4:2FTS (ND)



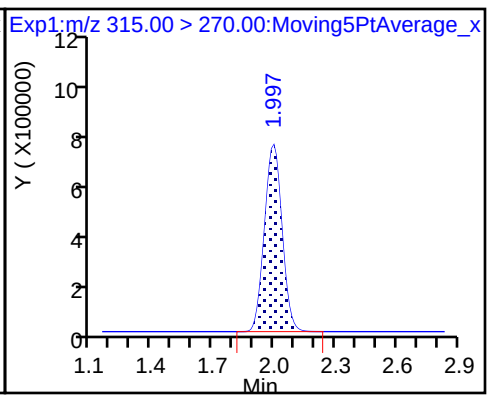
6 Perfluorohexanoic acid (ND)



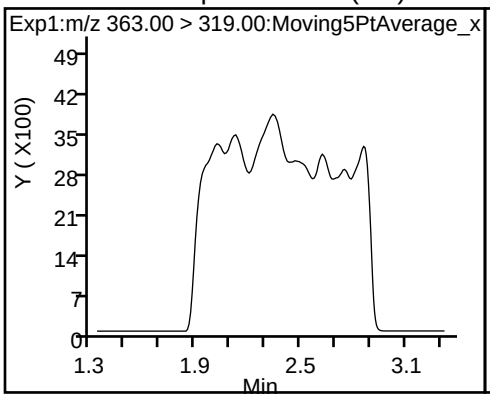
6 Perfluorohexanoic acid (ND)



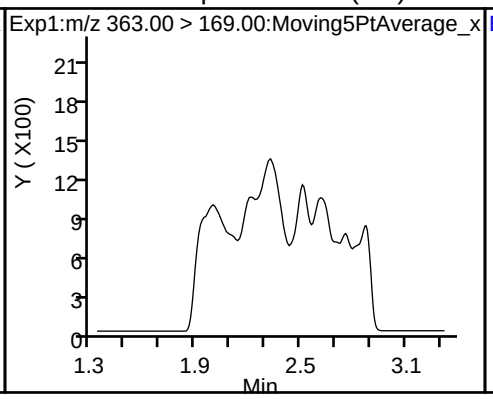
D 7 13C2 PFHxA



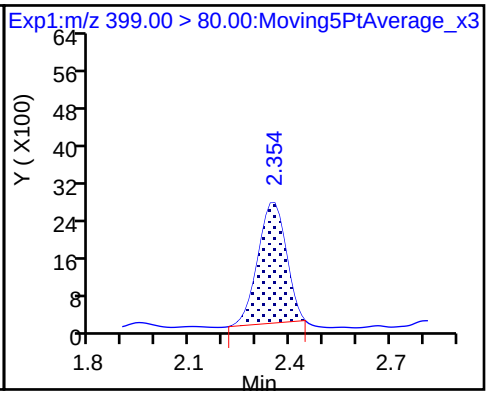
10 Perfluoroheptanoic acid (ND)



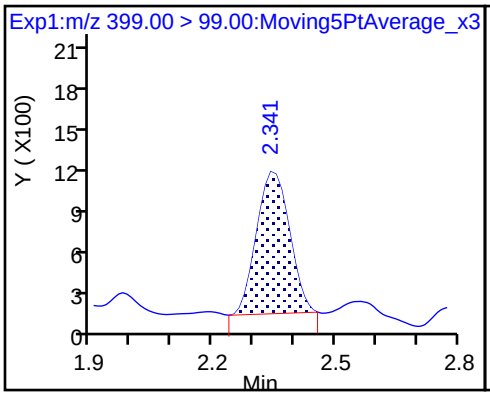
10 Perfluoroheptanoic acid (ND)



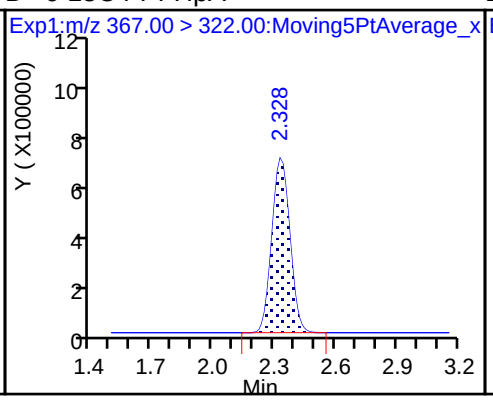
8 Perfluorohexanesulfonic acid



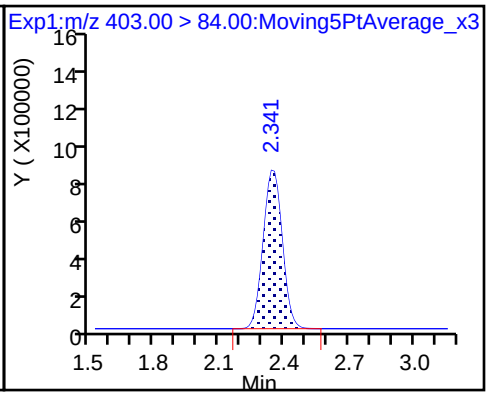
8 Perfluorohexanesulfonic acid



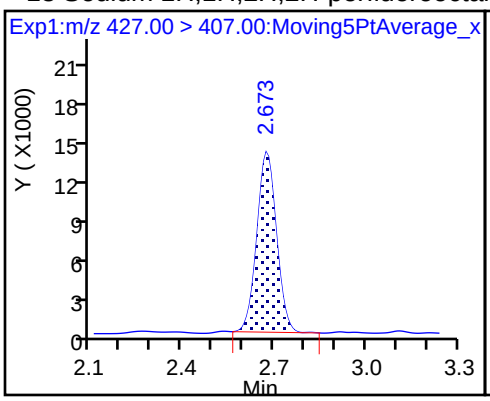
D 9 13C4-PFHpA



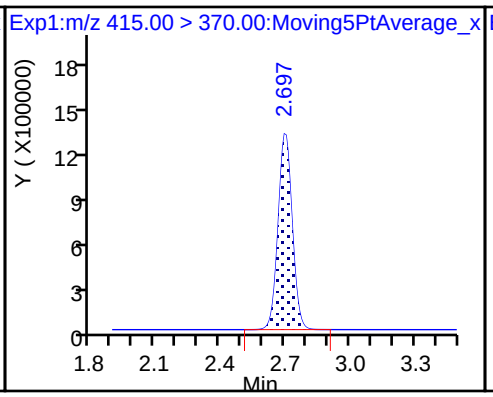
D 11 18O2 PFHxS



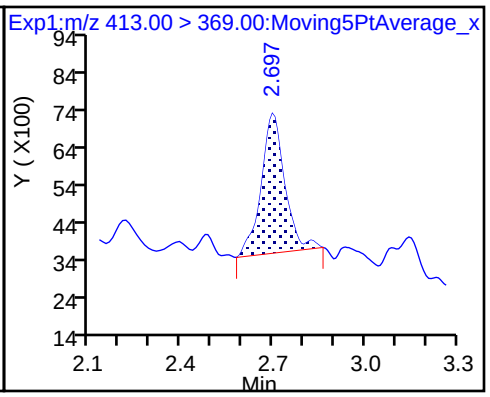
13 Sodium 1H,1H,2H,2H-perfluorooctane



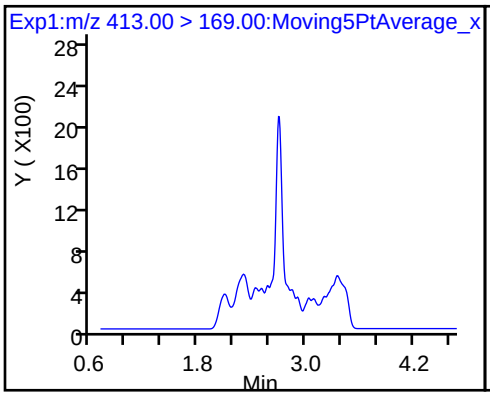
M2 13C2-PFOA



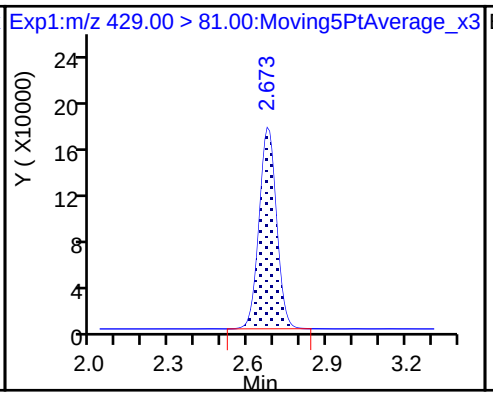
15 Perfluorooctanoic acid



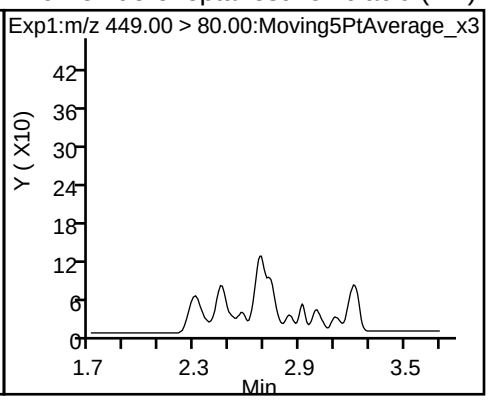
15 Perfluorooctanoic acid



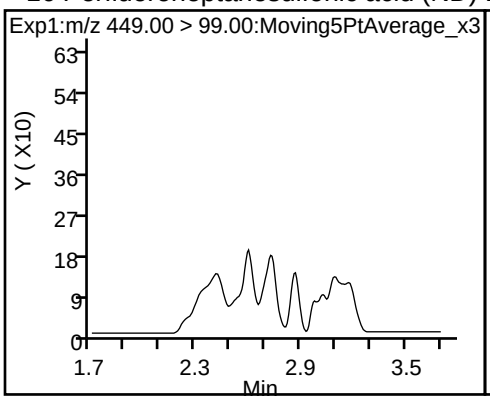
D 12 M2-6:2FTS



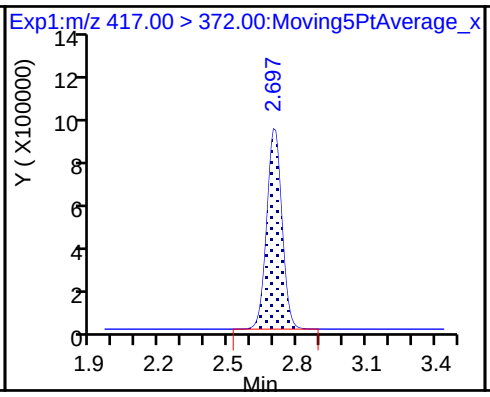
16 Perfluoroheptanesulfonic acid (ND)



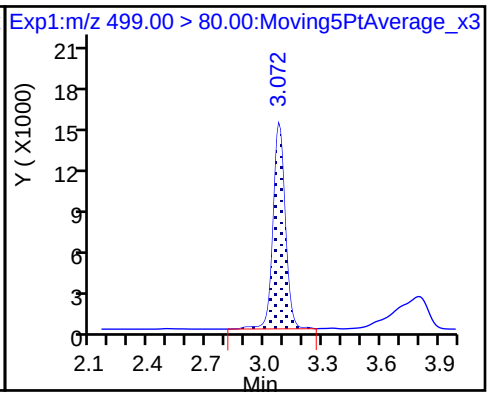
16 Perfluoroheptanesulfonic acid (ND)



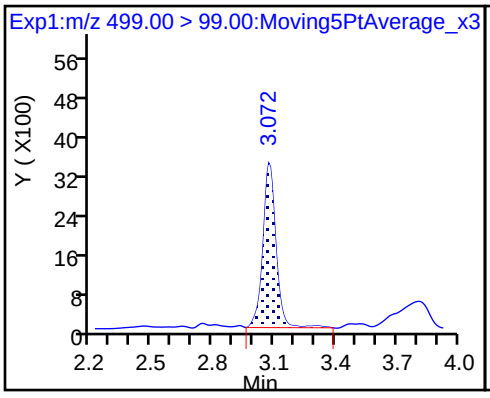
D 14 13C4 PFOA



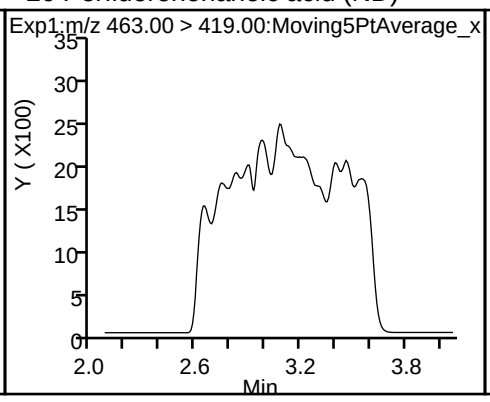
17 Perfluorooctane sulfonic acid



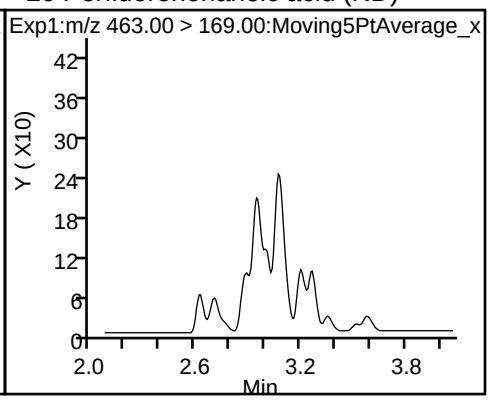
17 Perfluorooctane sulfonic acid



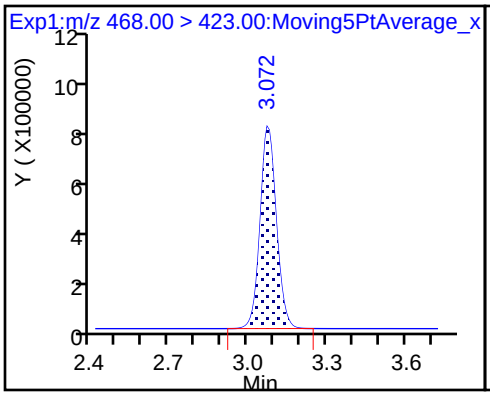
20 Perfluorononanoic acid (ND)



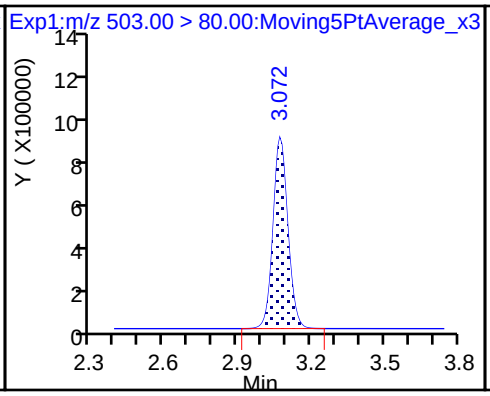
20 Perfluorononanoic acid (ND)



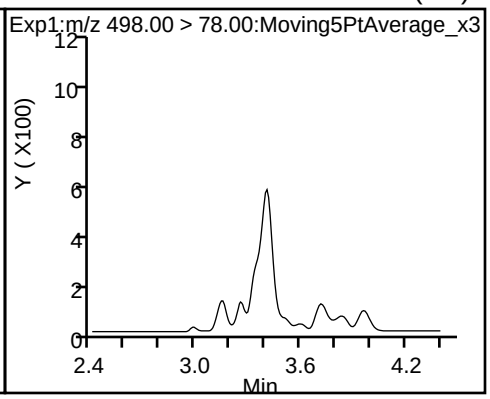
D 19 13C5 PFNA



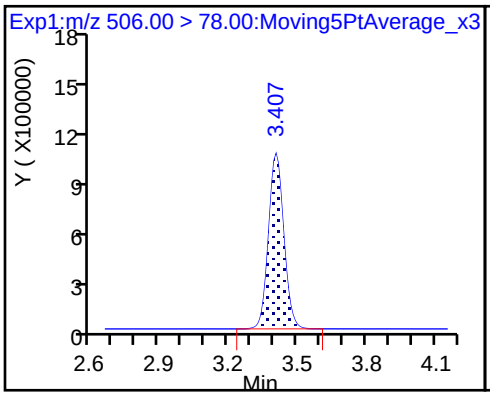
D 18 13C4 PFOS



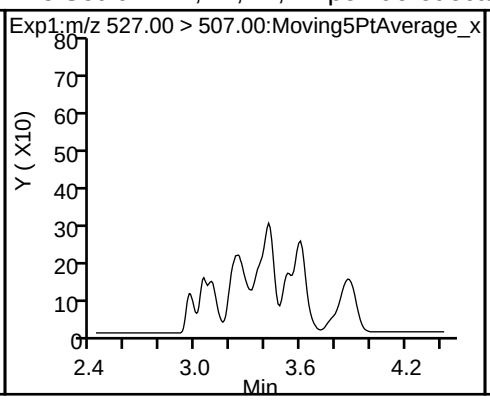
22 Perfluorooctane Sulfonamide (ND)



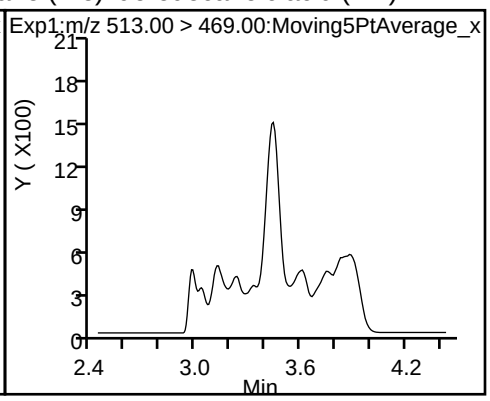
D 21 13C8 FOSA



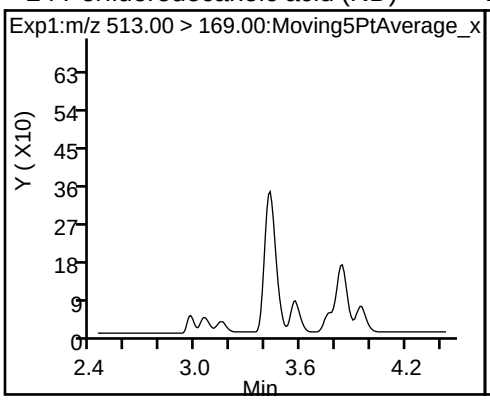
25 Sodium 1H,1H,2H,2H-perfluorodecane2 (ND)



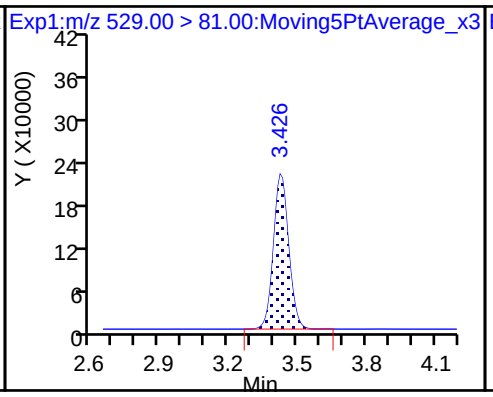
24 Perfluorodecanoic acid (ND)



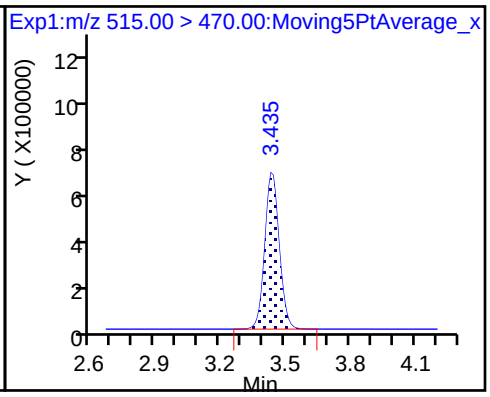
24 Perfluorodecanoic acid (ND)



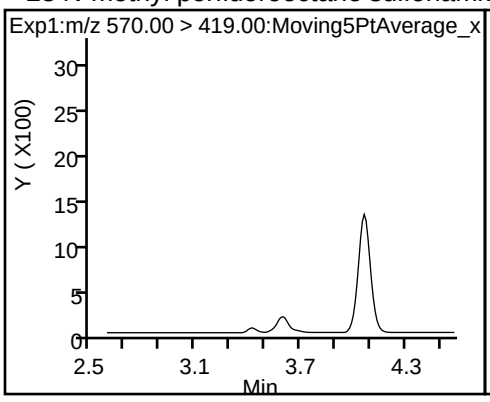
D 26 M2-8:2FTS



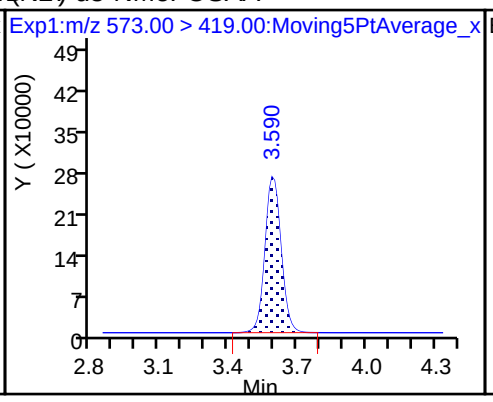
D 23 13C2 PFDA



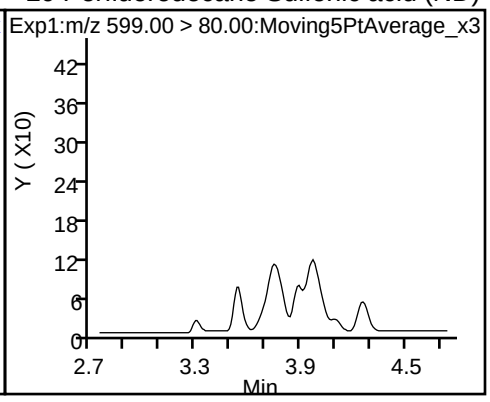
28 N-methyl perfluorooctane sulfonamid (ND)



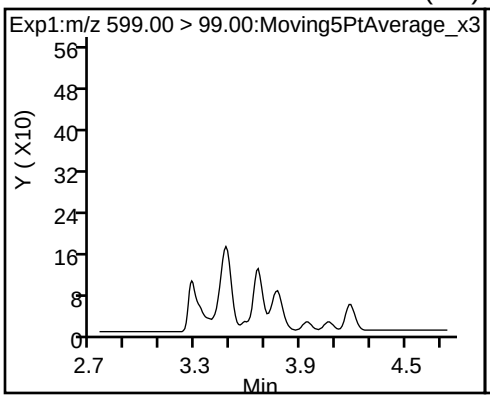
D 27 d3-NMeFOSAA



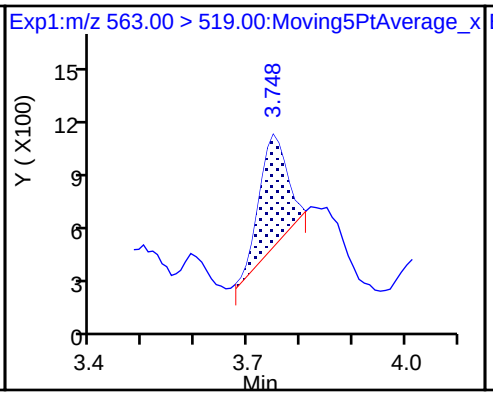
29 Perfluorodecane Sulfonic acid (ND)



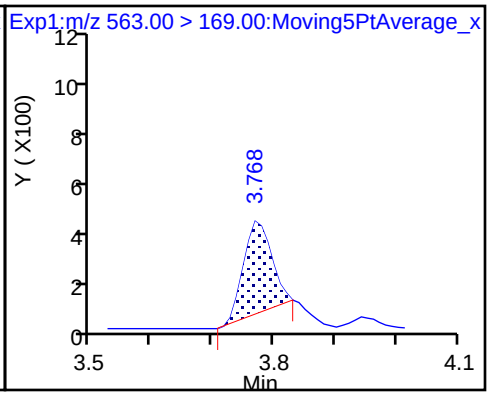
29 Perfluorodecane Sulfonic acid (ND)



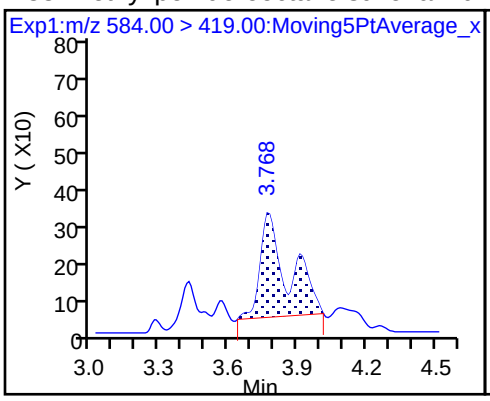
31 Perfluoroundecanoic acid



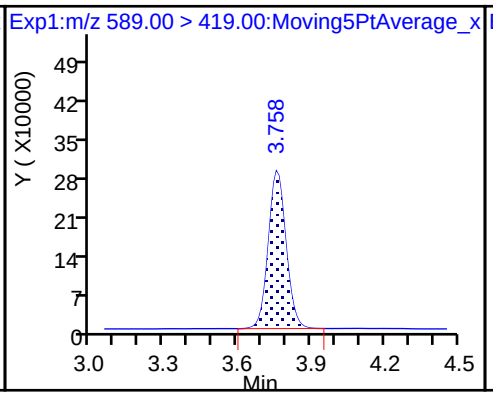
31 Perfluoroundecanoic acid



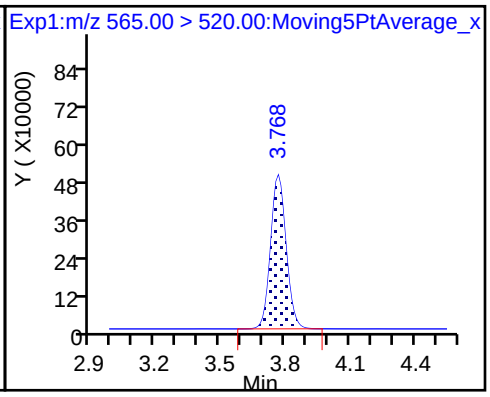
33 N-ethyl perfluorooctane sulfonamid



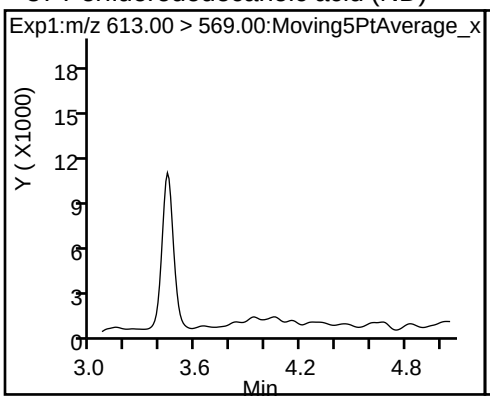
D 32 d5-NEtFOSAA



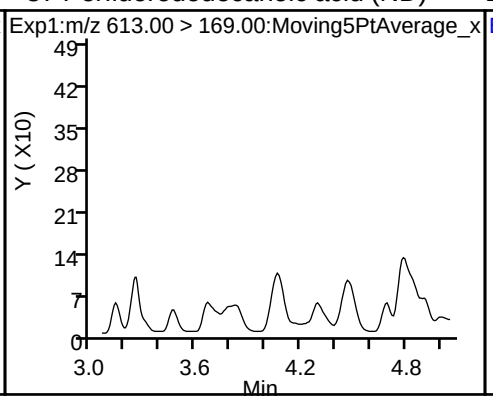
D 30 13C2 PFUnA



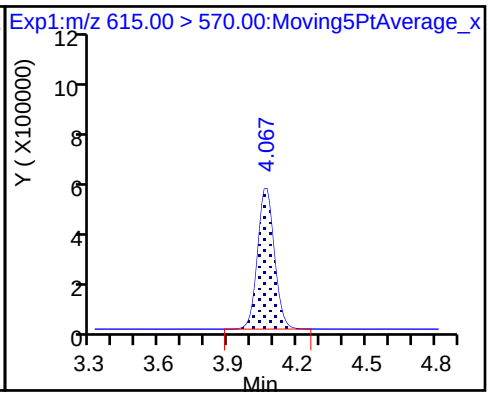
37 Perfluorododecanoic acid (ND)



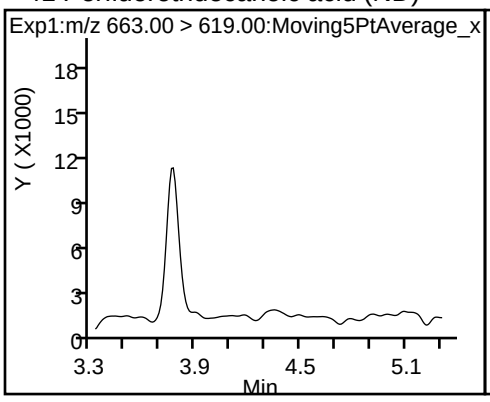
37 Perfluorododecanoic acid (ND)



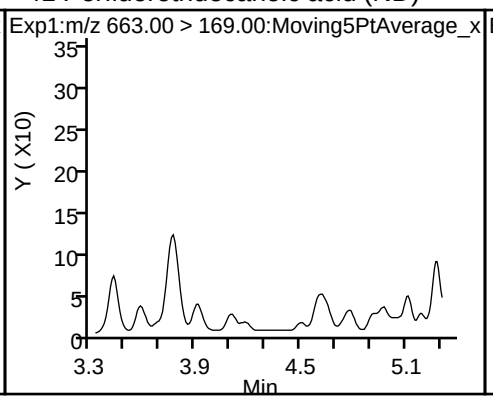
D 36 13C2 PFDoA



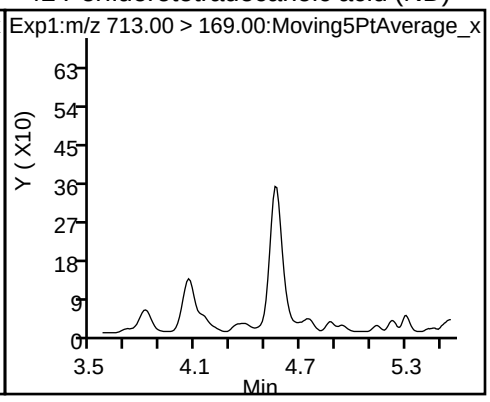
41 Perfluorotridecanoic acid (ND)



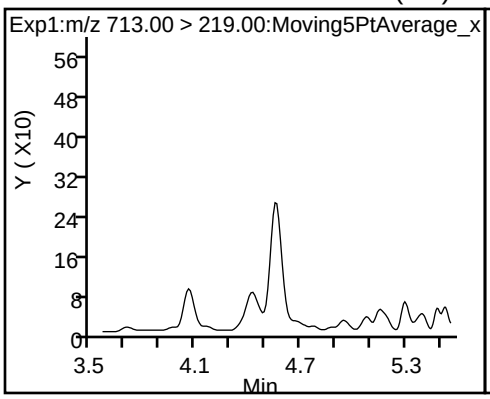
41 Perfluorotridecanoic acid (ND)



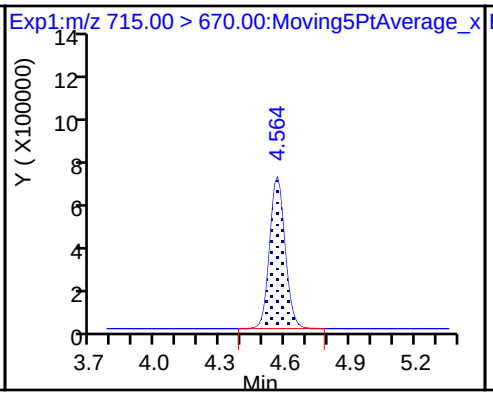
42 Perfluorotetradecanoic acid (ND)



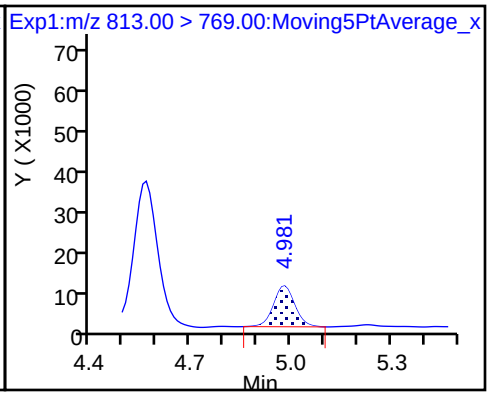
42 Perfluorotetradecanoic acid (ND)



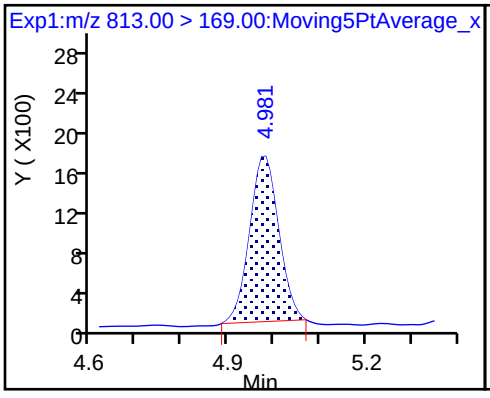
D 43 13C2-PFTeDA



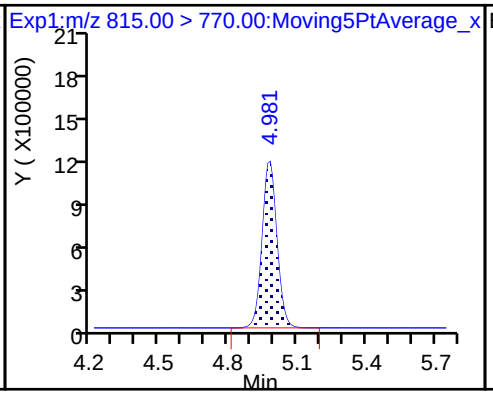
45 Perfluorohexadecanoic acid



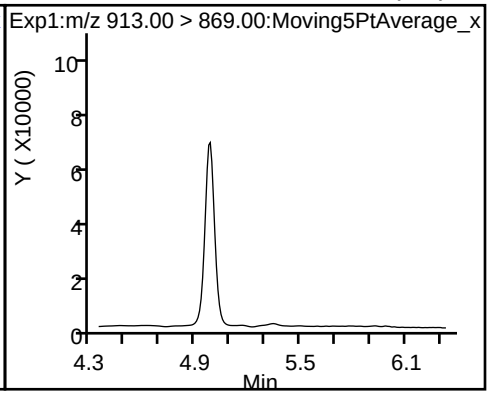
45 Perfluorohexadecanoic acid



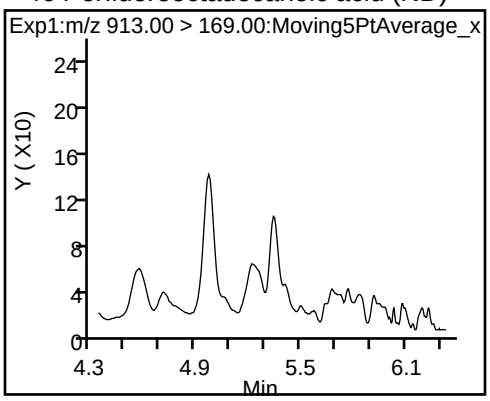
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-211148/1-B

Matrix: Solid (SPLP East) | Lab File ID: 2017.03.17LLZA_026.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 253.9(mL) | Date Analyzed: 03/17/2018 15:27

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.444	J	1.97	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.48	U	1.97	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	0.57	U	1.97	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.25	U	1.97	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.84	U	1.97	0.84
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	1.97	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	1.97	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.08	U	1.97	1.08
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.97	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.252	J	1.97	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.97	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.53	U	1.97	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.97	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.34	U	1.97	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.05	U	19.7	3.05
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87
27619-97-2	6:2FTS	1.97	U	19.7	1.97
39108-34-4	8:2FTS	1.97	U	19.7	1.97

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-211148/1-B

Matrix: Solid (SPLP East) | Lab File ID: 2017.03.17LLZA_026.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 253.9(mL) | Date Analyzed: 03/17/2018 15:27

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	84		25-150
STL01893	13C5 PFPeA	86		25-150
STL00993	13C2 PFHxA	84		25-150
STL01892	13C4-PFHpA	88		25-150
STL00990	13C4 PFOA	89		25-150
STL00995	13C5 PFNA	92		25-150
STL00996	13C2 PFDA	93		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2-PFTeDA	98		25-150
STL02337	13C3-PFBS	84		25-150
STL00994	18O2 PFHxS	86		25-150
STL00991	13C4 PFOS	83		25-150
STL01056	13C8 FOSA	84		25-150
STL02118	d3-NMeFOSAA	84		25-150
STL02117	d5-NEtFOSAA	92		25-150
STL02279	M2-6:2FTS	90		25-150
STL02280	M2-8:2FTS	102		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_026.d
Lims ID: LB 320-211148/1-B
Client ID:
Sample Type: LB
Inject. Date: 17-Mar-2018 15:27:52 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lb 320-211148/1-b
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:49:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.434	0.012	1.004	17566	0.0113			5.0	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.439	1.441	-0.002	0.539	4199186	2.09		83.6	69977	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.636	3038763	2.14		85.8	56222	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.736	-0.010	0.646	68020	1.95		83.7	313	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.987	-0.012	0.740	3299255	2.09		83.5	75250	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.315	-0.001	0.867	3361575	2.19		87.5	87761	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.328	-0.001	1.000	12548	0.006410			1.9	
399.00 > 99.00	2.314	2.328	-0.014	0.994	5567		2.25(1.50-4.49)		1.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.341	-0.014	0.871	4150853	2.02		85.6	81864	
D 12 M2-6:2FTS										
429.00 > 81.00	2.647	2.665	-0.018	0.991	845158	2.15		90.4	15060	
* 62 13C2-PFOA										
415.00 > 370.00	2.670	2.680	-0.010		3932953	2.50			78982	
D 14 13C4 PFOA										
417.00 > 372.00	2.670	2.689	-0.019	1.000	3300405	2.22		89.0	120808	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.058	-0.008	1.142	2856487	1.99		83.4	36829	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.065	-0.015	1.142	2732763	2.30		92.1	54947	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.389	-0.002	1.000	2482	0.001458			60.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.398	-0.011	1.268	4380327	2.11		84.4	51055	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.417	-0.011	1.275	906689	2.45		102	20185	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.426	-0.011	1.279	2296896	2.32		92.7	39817	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.579	-0.010	1.336	691463	2.11		84.5	24937	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.748	-0.011	1.399	718466	2.30		91.8	1468	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.748	-0.001	1.003	1454	0.005168			38.4	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.758	-0.011	1.403	1793412	2.31		92.4	53505	
D 36 13C2 PFDoA										
615.00 > 570.00	4.045	4.056	-0.011	1.515	1646222	2.24		89.4	10726	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.554	-0.011	1.701	1639388	2.44		97.6	13716	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.963	4.955	0.008	1.002	24488	0.007865			2.4	
813.00 > 169.00	4.955	4.955	0.0	1.000	3717		6.59(2.86-8.58)		44.3	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.973	-0.017	1.855	2094313	2.13		85.2	8134	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 13:55:18 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_026.d

Injection Date: 17-Mar-2018 15:27:52 Instrument ID: A8_N

Lims ID: LB 320-211148/1-B

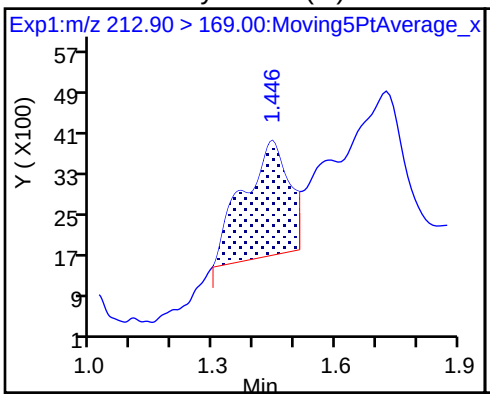
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4

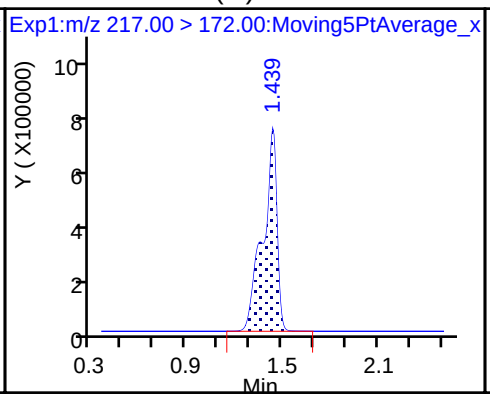
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

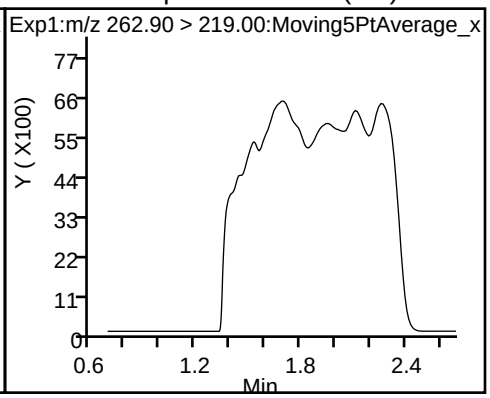
2 Perfluorobutyric acid (M)



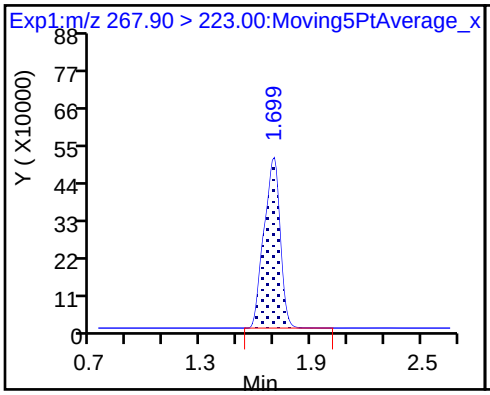
D 1 13C4 PFBA (M)



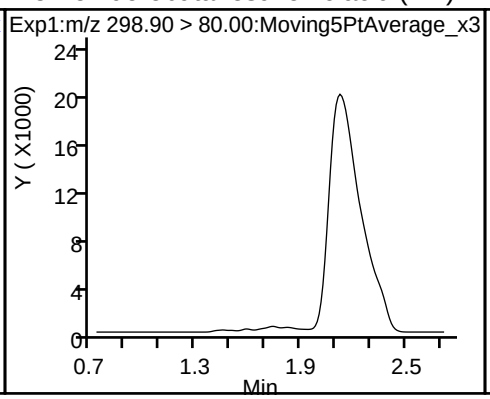
4 Perfluoropentanoic acid (ND)



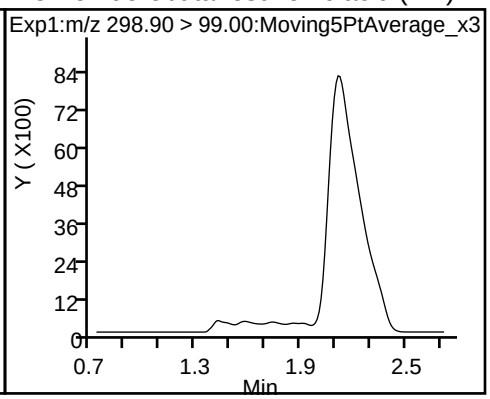
D 3 13C5-PFPeA



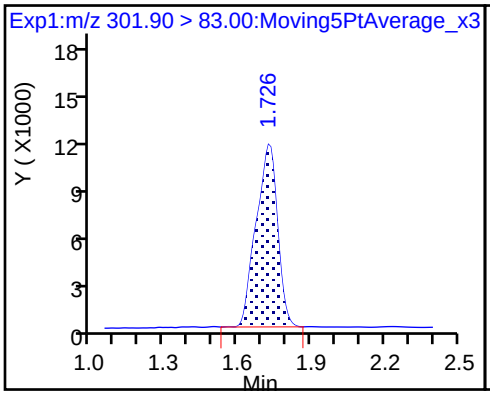
5 Perfluorobutanesulfonic acid (ND)



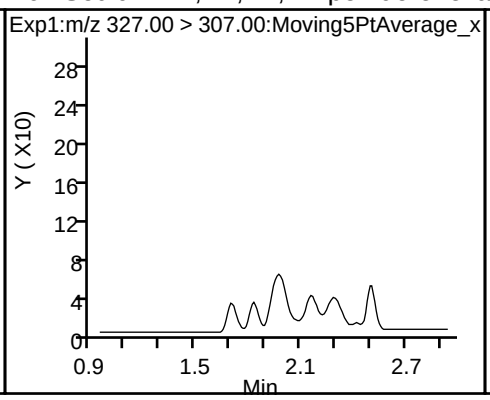
5 Perfluorobutanesulfonic acid (ND)



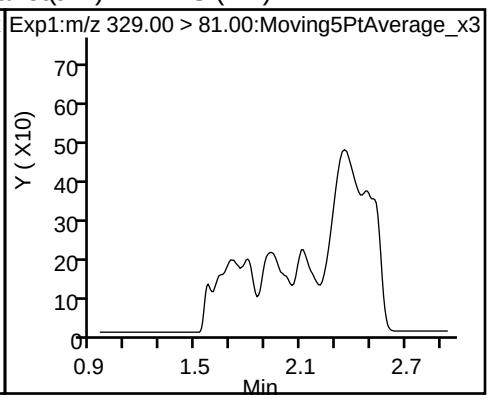
D 47 13C3-PFBS



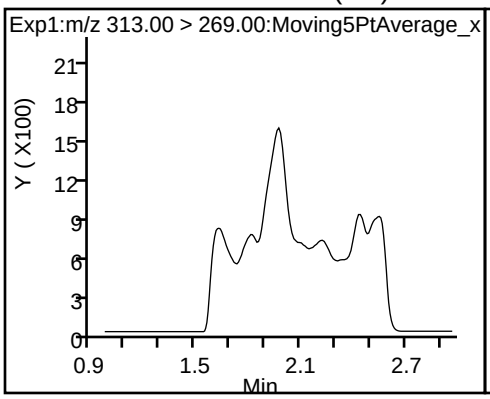
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



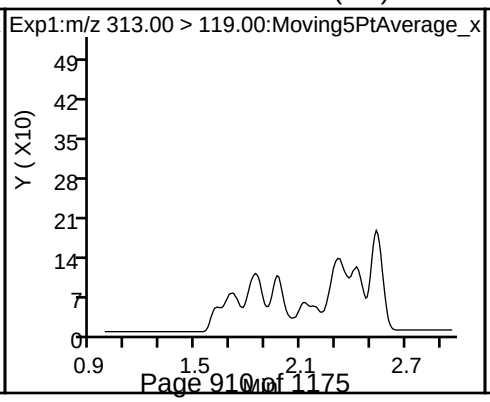
D 60 M2-4:2FTS (ND)



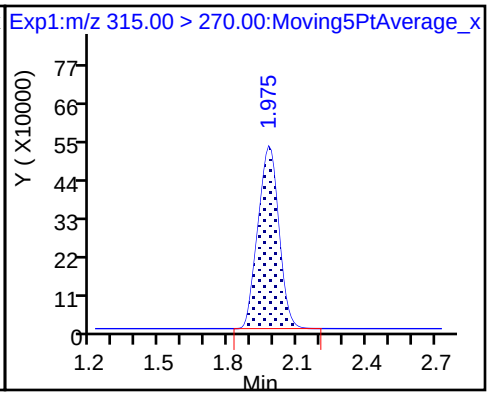
6 Perfluorohexanoic acid (ND)



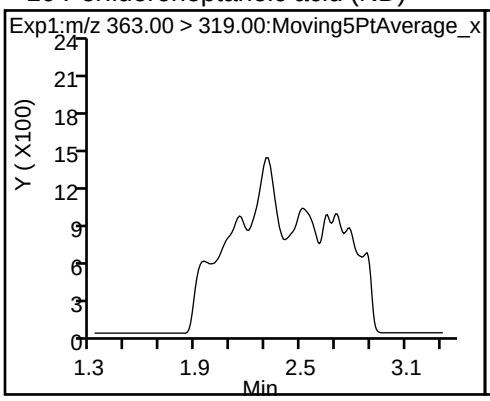
6 Perfluorohexanoic acid (ND)



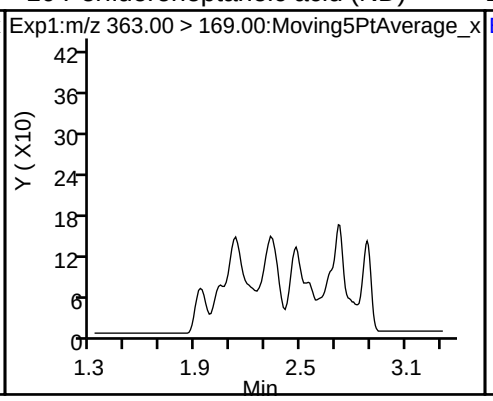
D 7 13C2 PFHxA



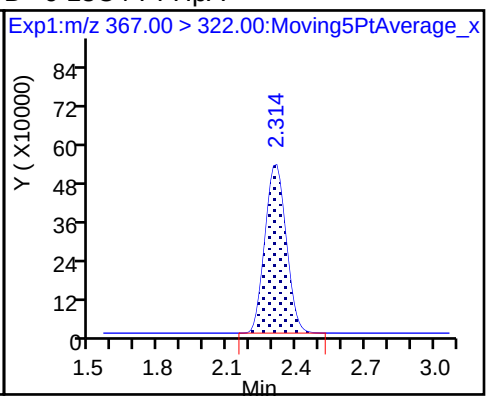
10 Perfluoroheptanoic acid (ND)



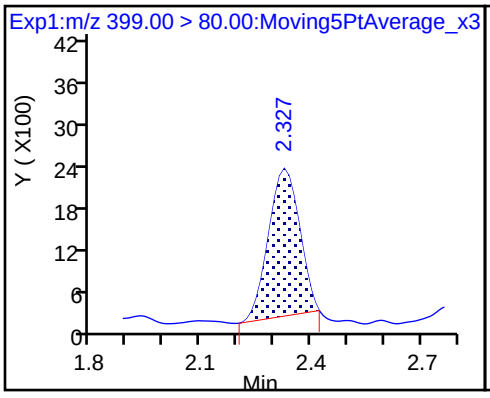
10 Perfluoroheptanoic acid (ND)



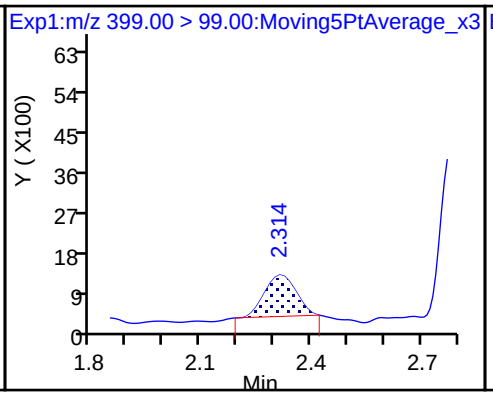
D 9 13C4-PFHpA



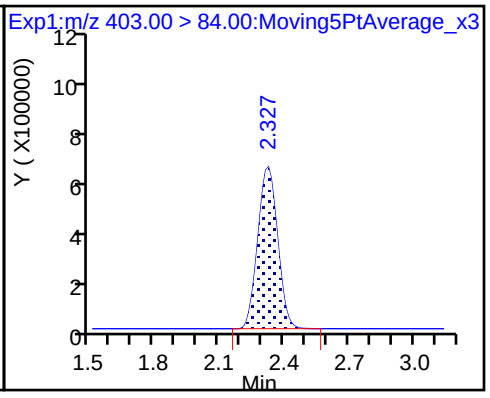
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid

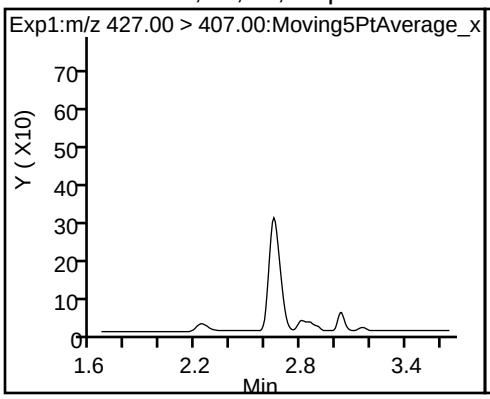


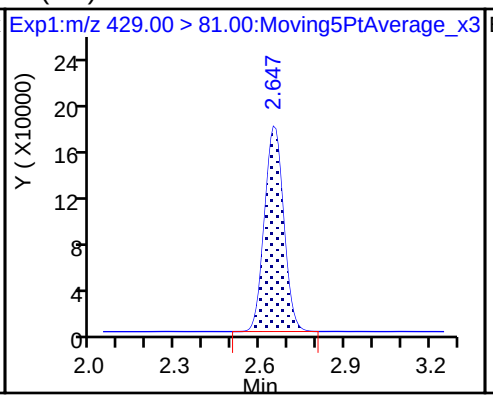
D 11 18O2 PFHxS



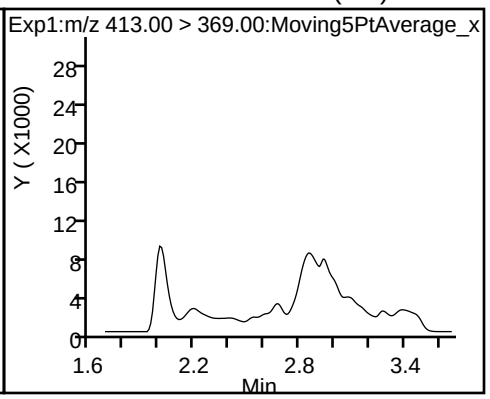
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

D 12 M2-6:2FTS

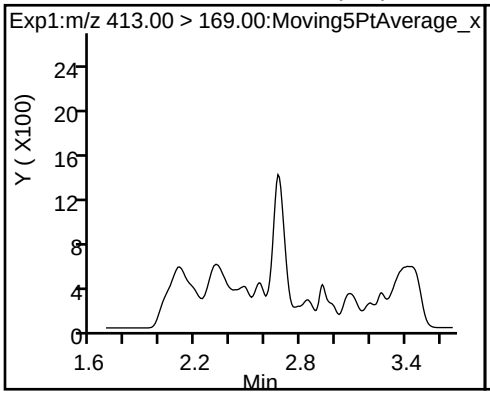




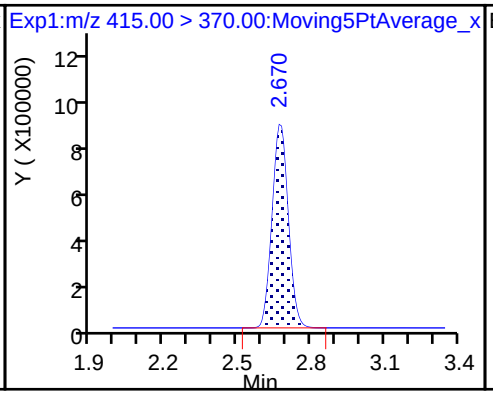
15 Perfluorooctanoic acid (ND)



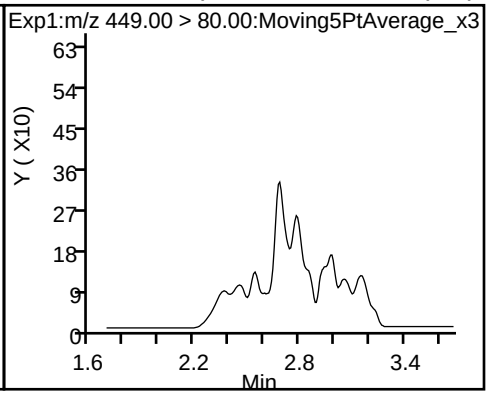
15 Perfluorooctanoic acid (ND)



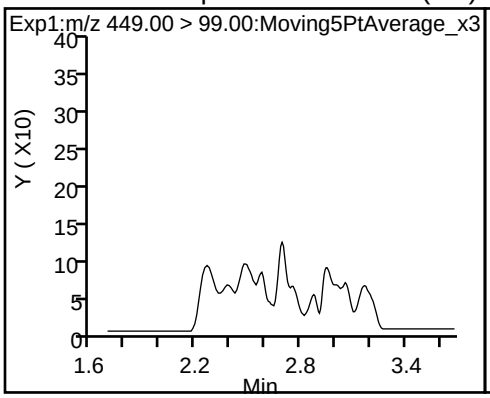
* 62 13C2-PFOA



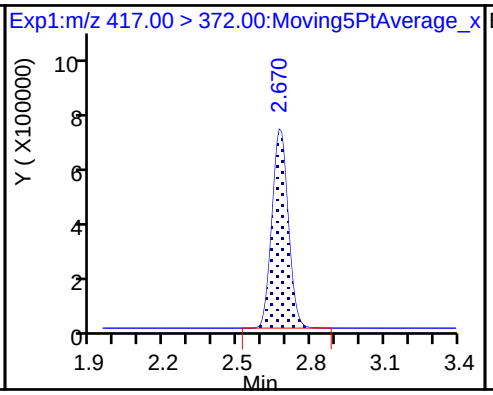
16 Perfluoroheptanesulfonic acid (ND)



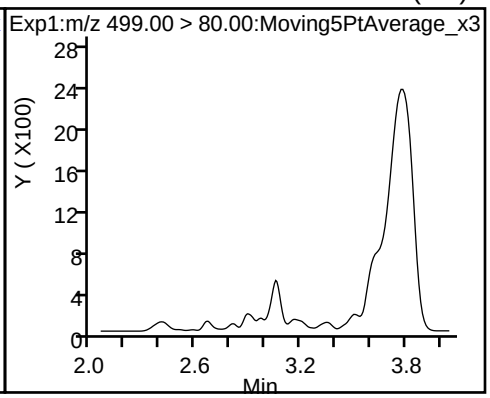
16 Perfluoroheptanesulfonic acid (ND)



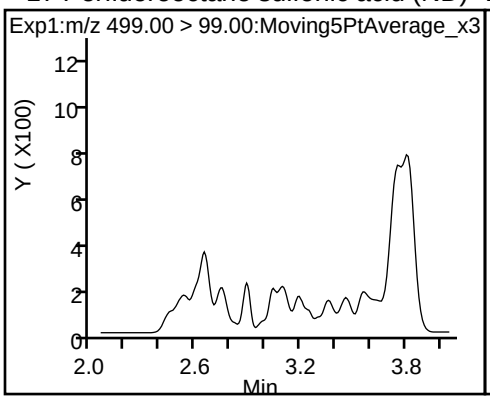
D 14 13C4 PFOA



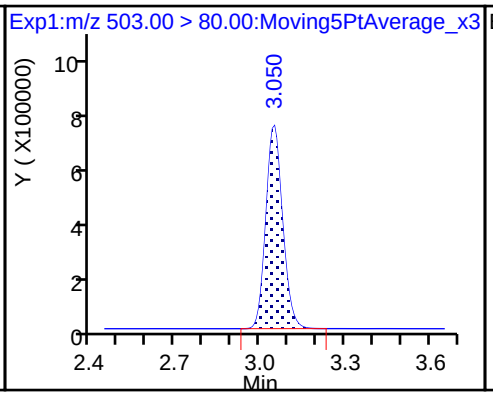
17 Perfluorooctane sulfonic acid (ND)



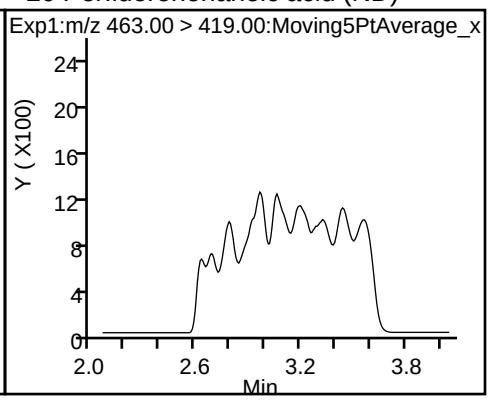
17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



20 Perfluorononanoic acid (ND)



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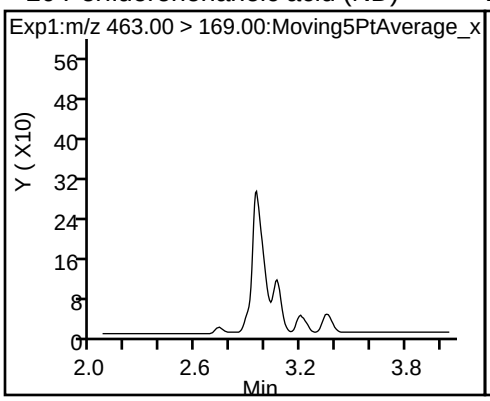
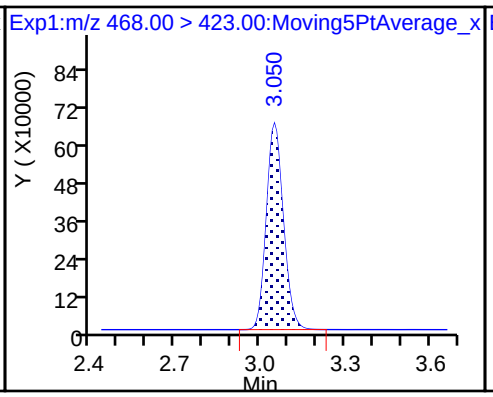
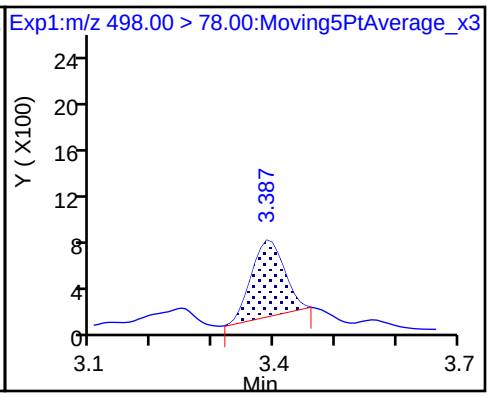


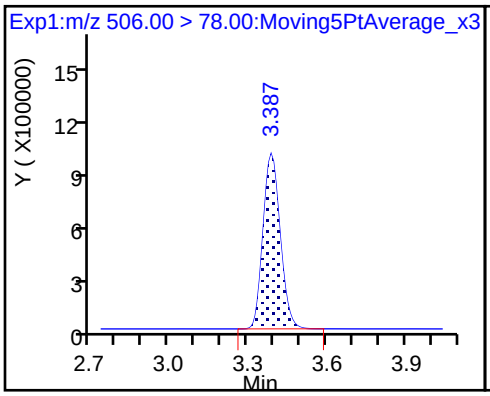
D 19 13C5 PFNA



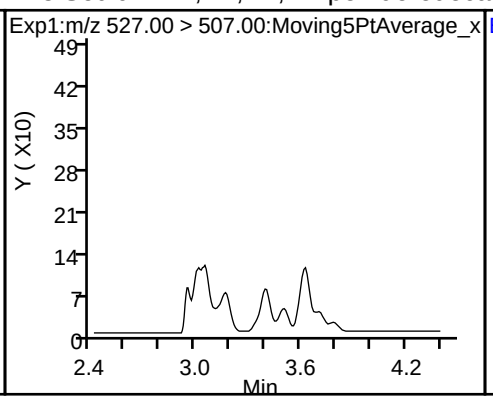
22 Perfluorooctane Sulfonamide



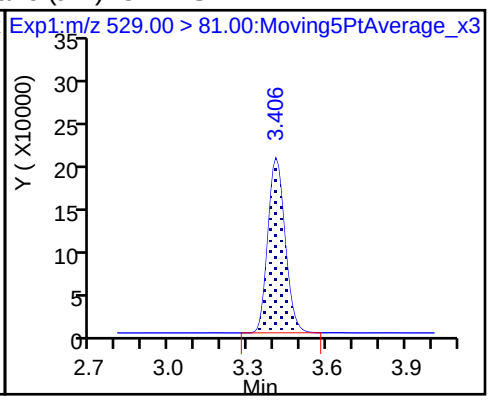
D 21 13C8 FOSA



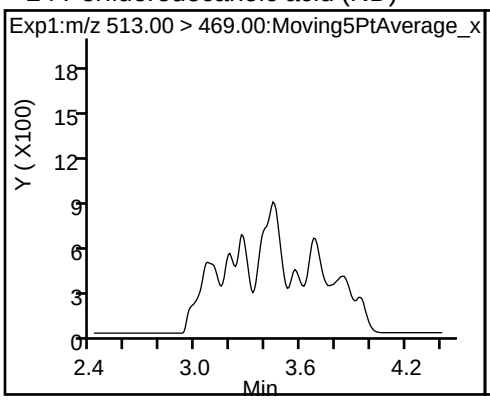
25 Sodium 1H,1H,2H,2H-perfluorodecane (6:2)



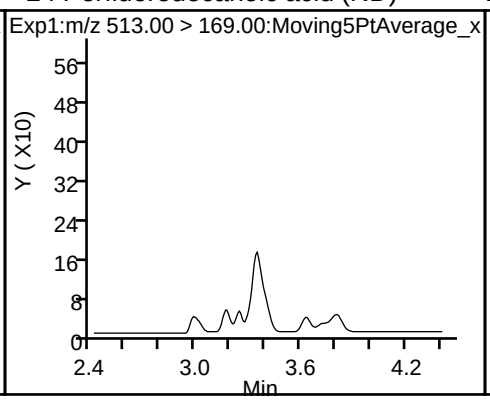
D 26 M2-8:2FTS



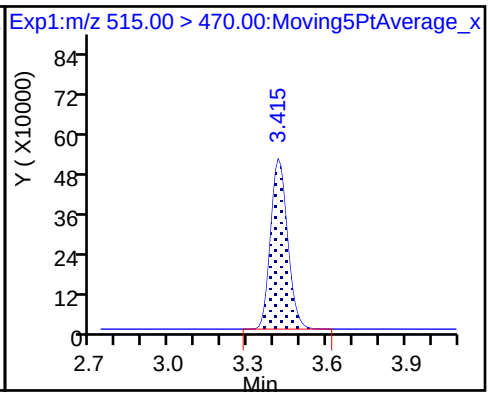
24 Perfluorodecanoic acid (ND)



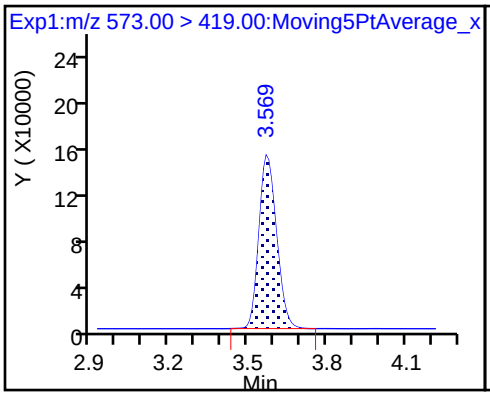
24 Perfluorodecanoic acid (ND)



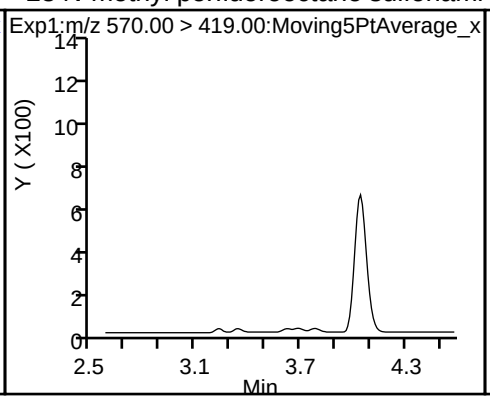
D 23 13C2 PFDA



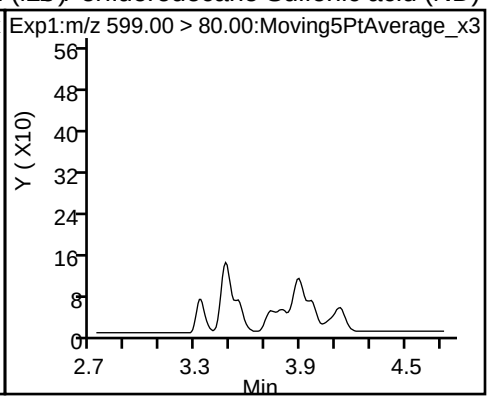
D 27 d3-NMeFOSAA



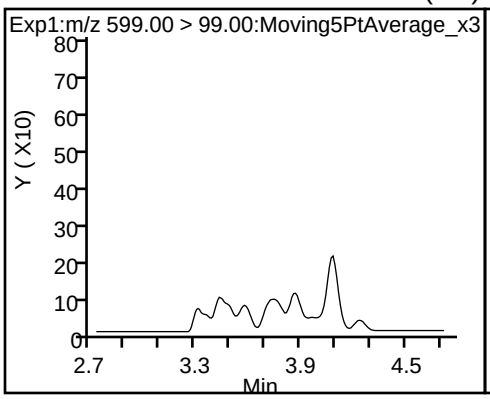
28 N-methyl perfluorooctane sulfonami (ND)



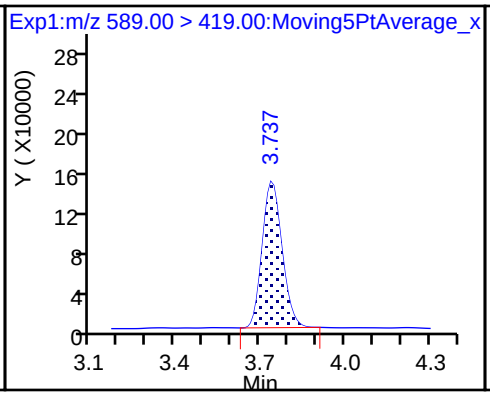
29 Perfluorodecane Sulfonic acid (ND)



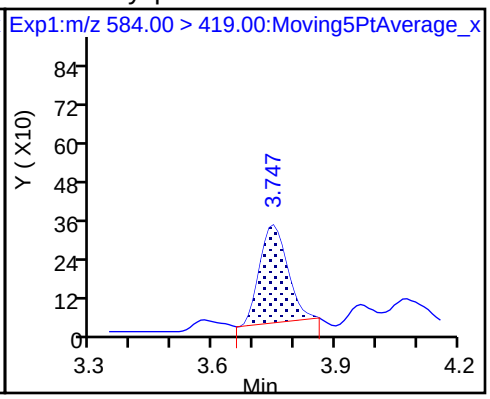
29 Perfluorodecane Sulfonic acid (ND)



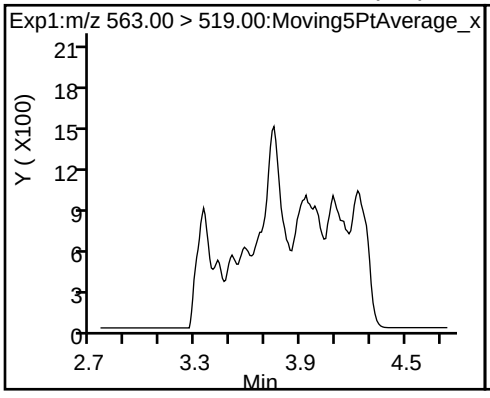
D 32 d5-NEtFOSAA



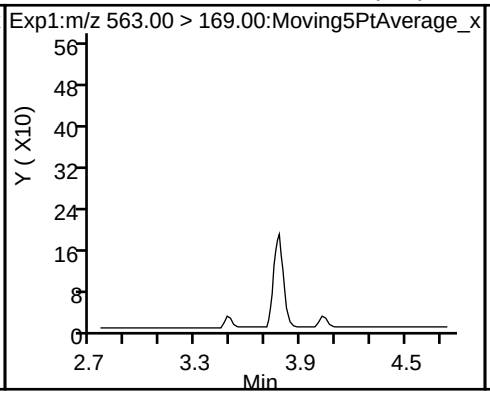
33 N-ethyl perfluorooctane sulfonamid



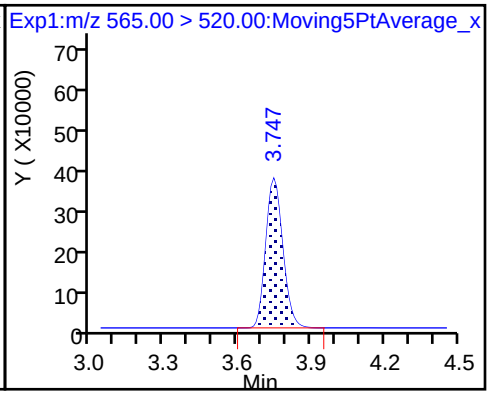
31 Perfluoroundecanoic acid (ND)



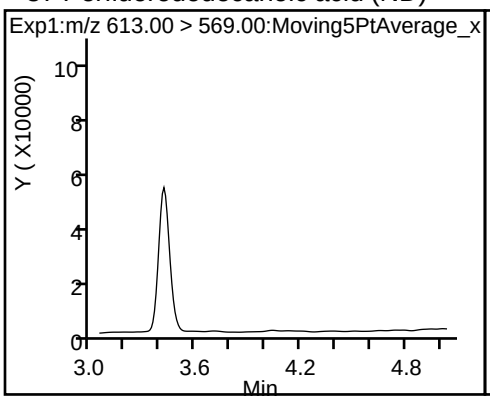
31 Perfluoroundecanoic acid (ND)



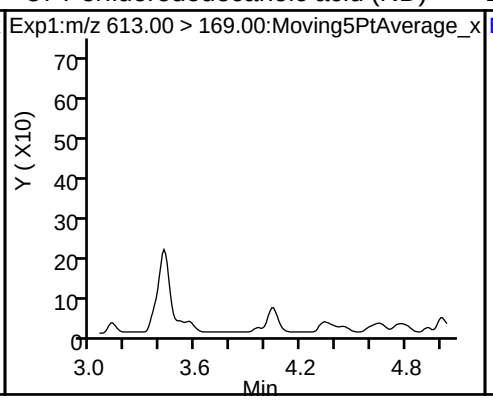
D 30 13C2 PFUnA



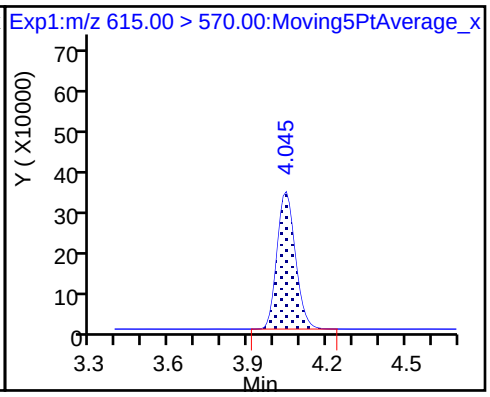
37 Perfluorododecanoic acid (ND)



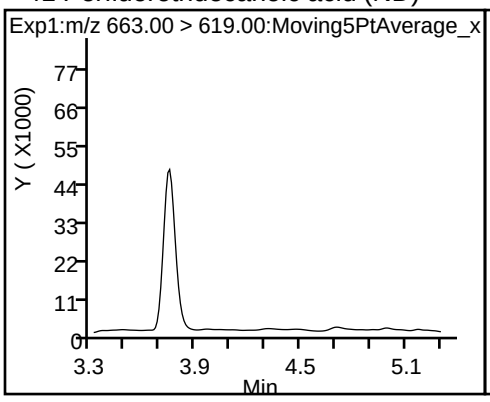
37 Perfluorododecanoic acid (ND)



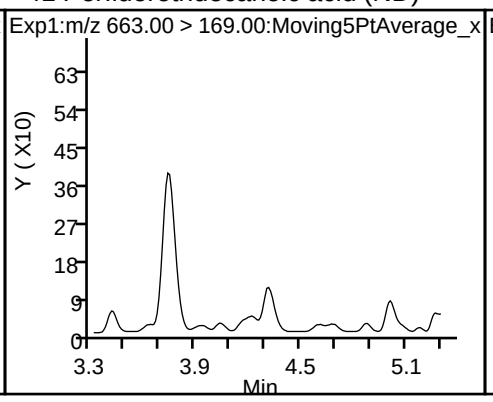
D 36 13C2 PFDoA



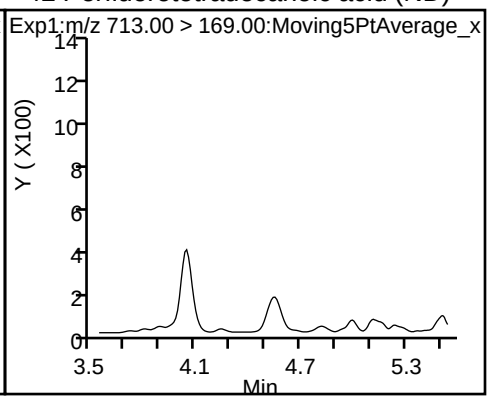
41 Perfluorotridecanoic acid (ND)



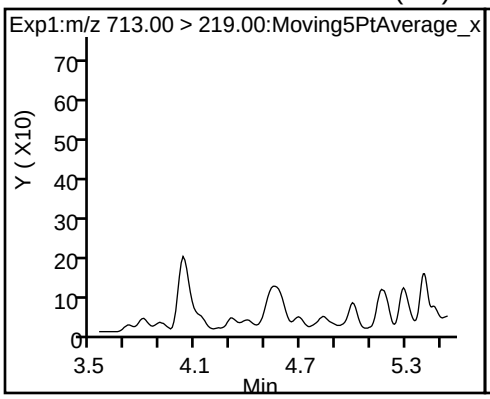
41 Perfluorotridecanoic acid (ND)



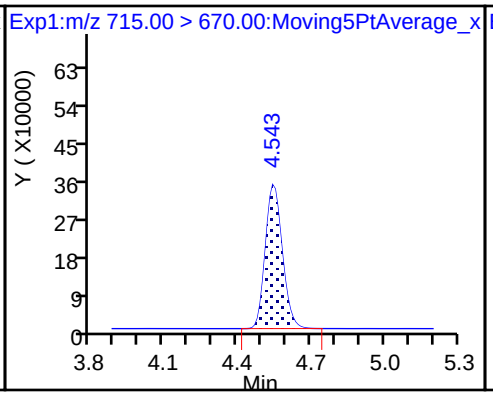
42 Perfluorotetradecanoic acid (ND)



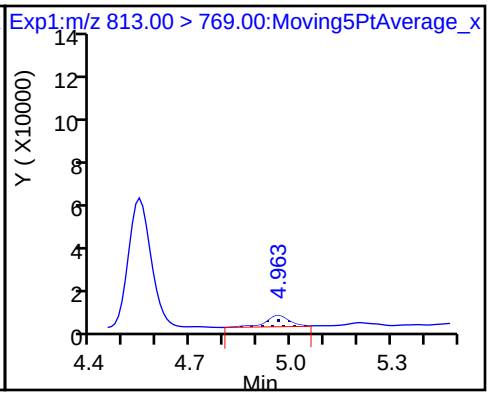
42 Perfluorotetradecanoic acid (ND)



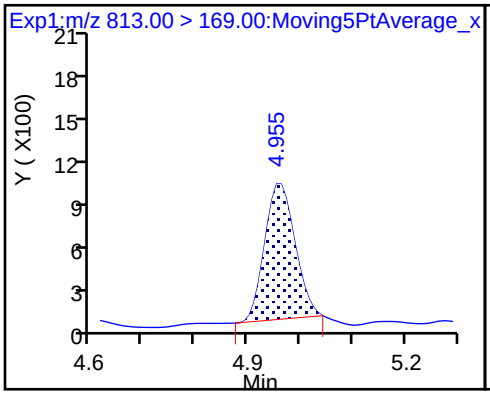
D 43 13C2-PFTeDA



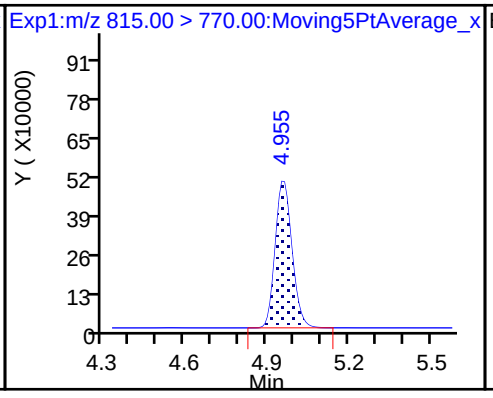
45 Perfluorohexadecanoic acid



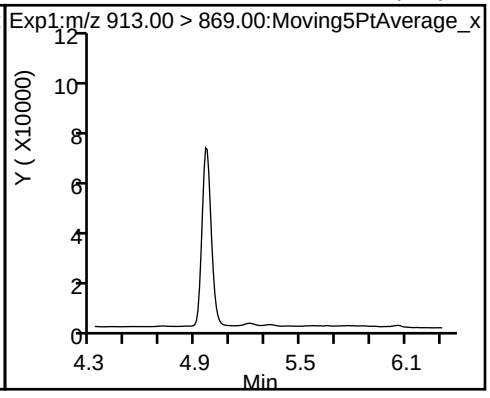
45 Perfluorohexadecanoic acid



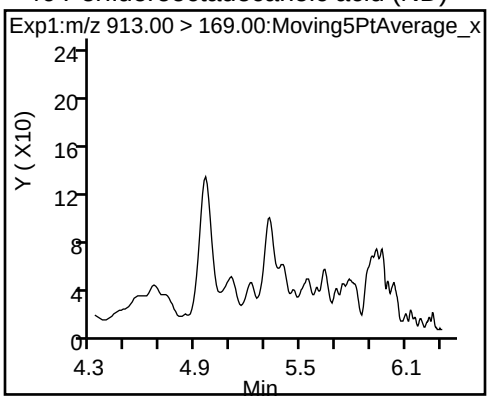
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

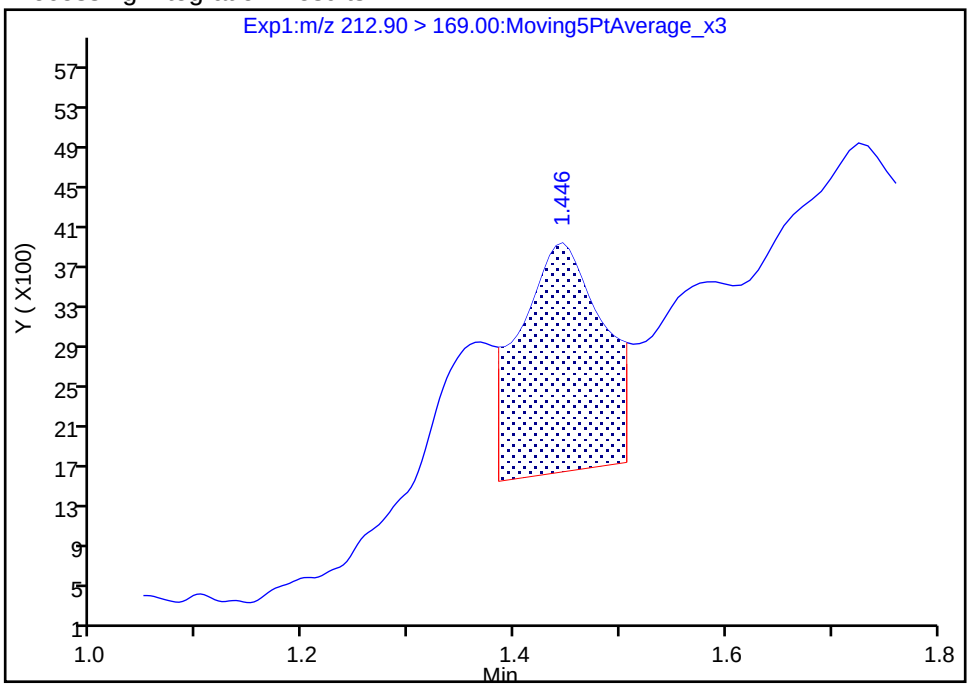
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_026.d
Injection Date: 17-Mar-2018 15:27:52 Instrument ID: A8_N
Lims ID: LB 320-211148/1-B
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

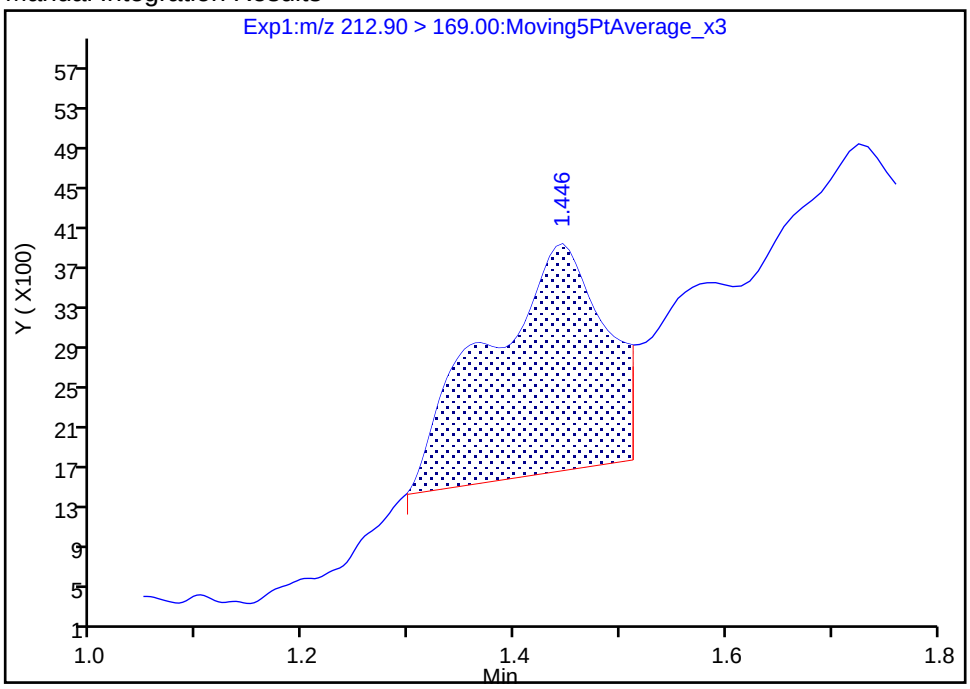
Processing Integration Results

RT: 1.45
Area: 12289
Amount: 0.007889
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 17566
Amount: 0.011276
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 13:49:23
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

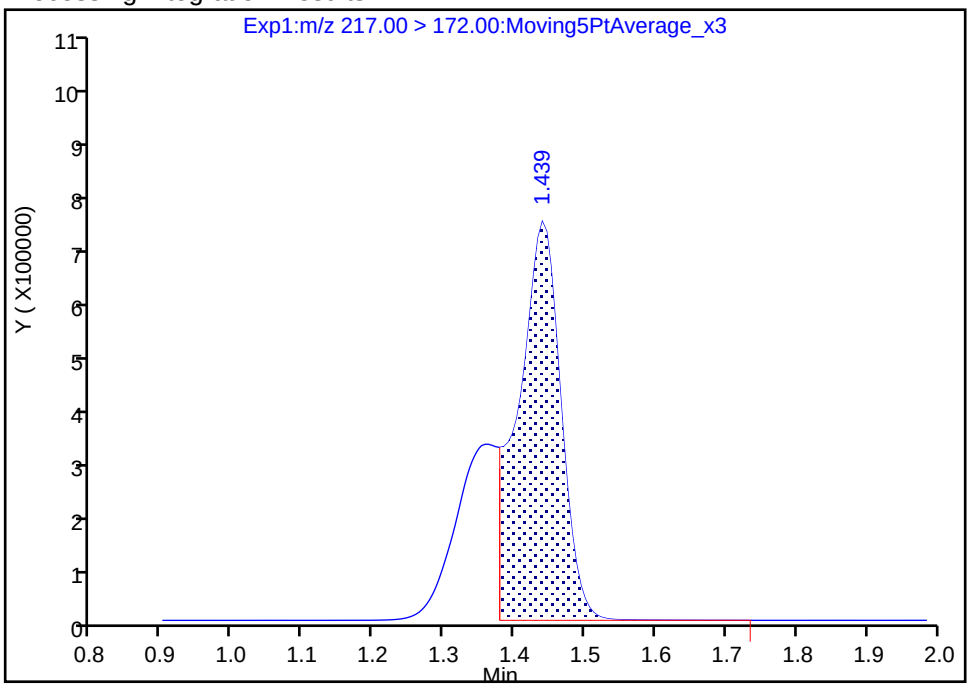
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_026.d
Injection Date: 17-Mar-2018 15:27:52 Instrument ID: A8_N
Lims ID: LB 320-211148/1-B
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

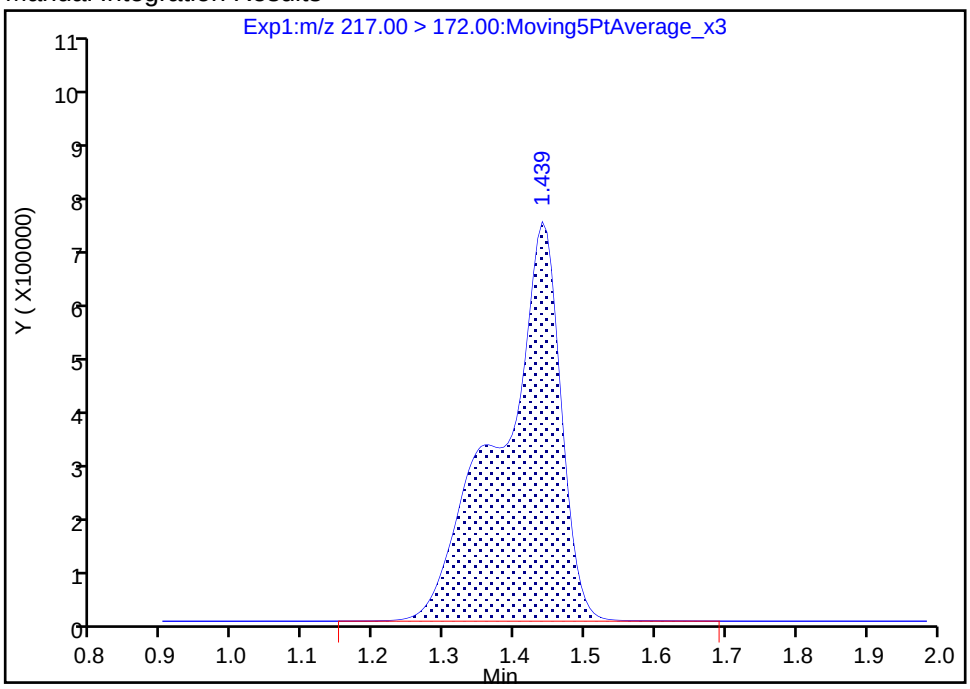
Processing Integration Results

RT: 1.44
Area: 2920750
Amount: 1.454397
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 4199186
Amount: 2.090998
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 13:49:10
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-212510/2-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:17

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00198		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00186		0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00200		0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00203		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00198		0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.00189		0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.00206		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00156		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00198		0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00129		0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00202		0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00172		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00165		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00216		0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00220		0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000908		0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00196		0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00192	J	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00185	J	0.0020	0.00037
27619-97-2	6:2FTS	0.00176	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00188	J	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-212510/2-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:17

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	72		25-150
STL01893	13C5 PFPeA	79		25-150
STL00993	13C2 PFHxA	77		25-150
STL01892	13C4-PFHpA	85		25-150
STL00990	13C4 PFOA	84		25-150
STL00995	13C5 PFNA	85		25-150
STL00996	13C2 PFDA	70		25-150
STL00997	13C2 PFUnA	52		25-150
STL00998	13C2 PFDoA	29		25-150
STL02116	13C2-PFTeDA	13	*	25-150
STL02337	13C3-PFBS	82		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	69		25-150
STL01056	13C8 FOSA	50		25-150
STL02118	d3-NMeFOSAA	37		25-150
STL02117	d5-NEtFOSAA	37		25-150
STL02279	M2-6:2FTS	83		25-150
STL02280	M2-8:2FTS	64		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_024.d
Lims ID: LCS 320-212510/2-A
Client ID:
Sample Type: LCS
Inject. Date: 20-Mar-2018 23:17:37 ALS Bottle#: 15 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-212510/2-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:18:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.537	4091361	1.81		72.5	69926	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.446	-0.005	1.000	1503671	0.99		99.1	536	
D 3 13C5-PFPeA										
267.90 > 223.00	1.701	1.700	0.001	0.634	3160392	1.98		79.4	76049	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.709	-0.008	1.000	1373832	0.9303		93.0	432	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.736	-0.009	0.644	74995	1.91		82.1	306	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.744	-0.008	1.005	2146811	0.8601		97.3	721	
298.90 > 99.00	1.736	1.744	-0.008	1.005	891609		2.41(1.25-3.74)		726	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.955	-0.009	1.000	384914	0.7424		79.5	16557	
D 7 13C2 PFHxA										
315.00 > 270.00	1.977	1.987	-0.011	0.737	3397208	1.91		76.5	95581	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.977	1.997	-0.021	1.000	1373598	1.00		100	2914	
313.00 > 119.00	1.987	1.997	-0.010	1.005	122542		11.21(5.03-15.10)		2269	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.315	0.001	0.864	3662731	2.12		84.8	74650	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.328	-0.012	1.000	1541132	1.01		101	2416	
363.00 > 169.00	2.316	2.328	-0.012	1.000	603096		2.56(1.13-3.40)		9033	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4492467	1.95		82.4	122838	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	1748667	0.8253		90.7	2460	
399.00 > 99.00	2.328	2.341	-0.013	1.000	577437		3.03(1.50-4.49)		1418	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	871739	1.97		83.0	21807	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	538416	0.8812		93.0	29894	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3519269	2.11		84.4	88300	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.695	-0.014	1.000	1552802	0.9881		98.8	636	
413.00 > 169.00	2.681	2.695	-0.014	1.000	799440		1.94(0.84-2.52)		3006	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4421732	2.50			125013	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	1566237	1.08		113	39408	
449.00 > 99.00	2.681	2.703	-0.022	0.997	412397		3.80(1.94-5.82)		7703	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2643326	1.64		68.6	36622	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.058	-0.007	1.138	2827942	2.12		84.8	63029	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.067	-0.016	1.000	1314286	1.10		118	3128	
499.00 > 99.00	3.051	3.067	-0.016	1.000	302766		4.34(2.31-6.93)		1867	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.067	-0.009	1.002	1092614	0.9474		94.7	2063	
463.00 > 169.00	3.051	3.067	-0.016	1.000	261207		4.18(1.90-5.69)		6451	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.389	0.001	1.264	2898975	1.24		49.7	32332	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.390	3.401	-0.011	1.000	1102578	0.9785		97.9	4404	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.408	0.0	1.271	632909	1.52		63.6	17529	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.417	0.0	1.274	1953399	1.75		70.1	33999	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.419	-0.011	1.000	311706	0.9382		97.9	14023	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.428	-0.011	1.000	764138	1.03		103	3366	
513.00 > 169.00	3.417	3.428	-0.011	1.000	148220		5.16(2.36-7.09)		2608	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	335974	0.9127		36.5	14631	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.580	3.594	-0.014	1.003	134490	0.9608		96.1	4182	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	320709	0.4541		47.1	13465	
599.00 > 99.00	3.738	3.741	-0.003	1.000	110312		2.91(1.39-4.16)		2317	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.748	-0.010	1.394	326974	0.9290		37.2	645	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1140627	1.31		52.3	39836	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.762	-0.014	1.003	118399	0.9246		92.5	1874	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	298333	0.7802		78.0	857	
563.00 > 169.00	3.748	3.762	-0.014	1.000	95271		3.13(2.12-6.36)		5852	
35 MeFOSA										
512.00 > 169.00	3.893	3.875	0.018		136268	NC			2200	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.509	604992	0.7309		29.2	5221	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.061	-0.014	1.000	245602	0.99		99.2	56.3	
613.00 > 169.00	4.047	4.061	-0.014	1.000	61736		3.98(2.13-6.40)		1622	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.089	4.066	0.023		94388	NC			2504	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.320	-0.013	1.000	160394	0.6443		64.4	44.9	
663.00 > 169.00	4.307	4.320	-0.013	1.000	47056		3.41(1.25-3.76)		775	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.544	-0.001	1.695	243911	0.3228		12.9	2830	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.556	-0.013	1.000	27240	1.01		101	514	
713.00 > 219.00	4.543	4.556	-0.013	1.000	16072		1.69(0.71-2.13)		227	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.851	173020	0.1566		6.3	1110	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	63748	0.9796		98.0	9.3	
813.00 > 169.00	4.964	4.974	-0.010	1.000	12988		4.91(2.86-8.58)		185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.331	-0.009	1.000	45796	0.6787		67.9	27.6	
913.00 > 169.00	5.315	5.331	-0.016	0.999	5739		7.98(3.83-11.48)		90.2	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 22-Mar-2018 10:55:56 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_024.d

Injection Date: 20-Mar-2018 23:17:37 Instrument ID: A8_N

Lims ID: LCS 320-212510/2-A

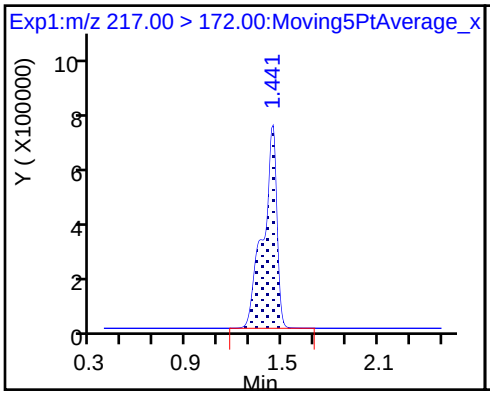
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 3

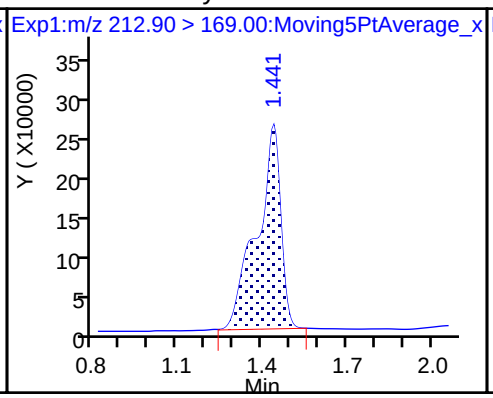
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

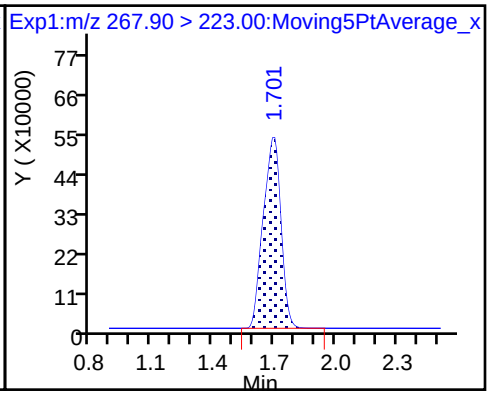
D 1 13C4 PFBA



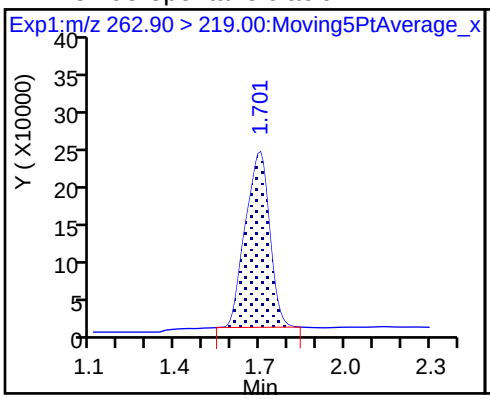
2 Perfluorobutyric acid



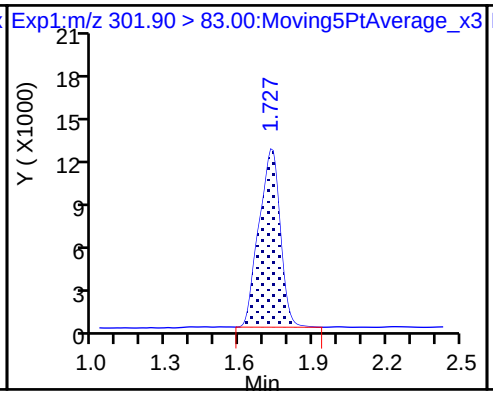
D 3 13C5-PFPeA



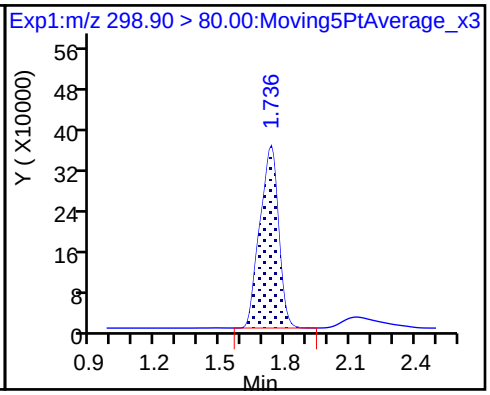
4 Perfluoropentanoic acid



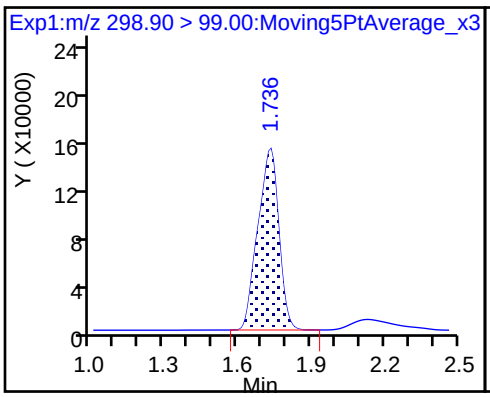
D 47 13C3-PFBS



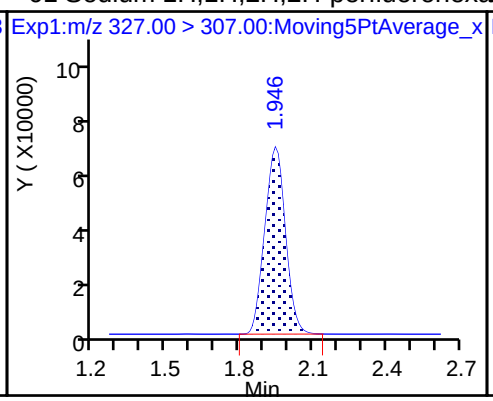
5 Perfluorobutanesulfonic acid



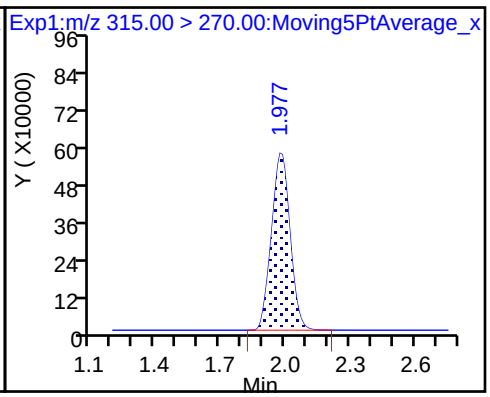
5 Perfluorobutanesulfonic acid



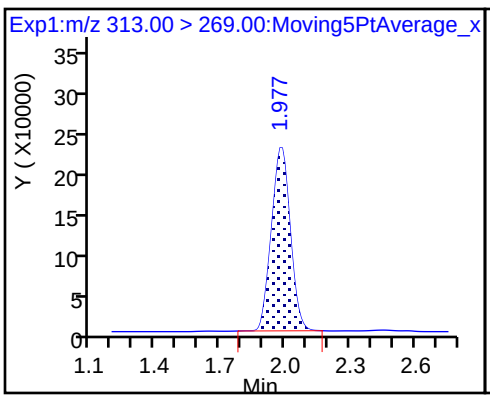
61 Sodium 1H,1H,2H,2H-perfluorohexa



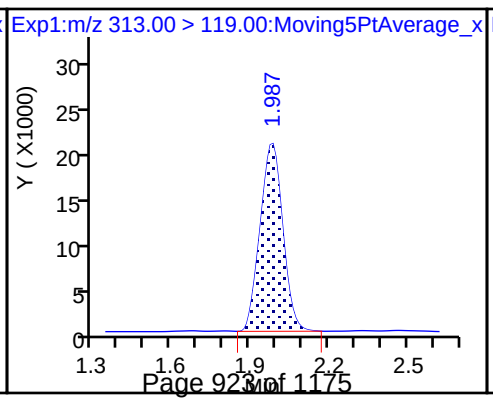
D 7 13C2 PFHxA



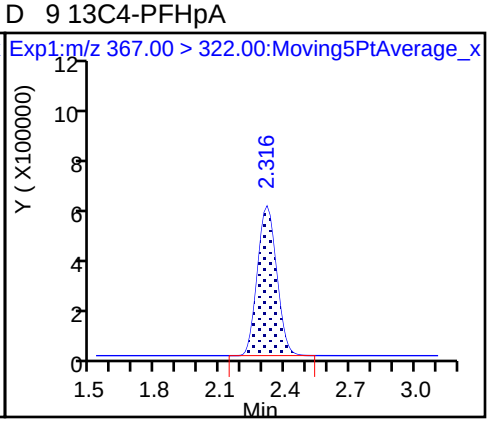
6 Perfluorohexanoic acid



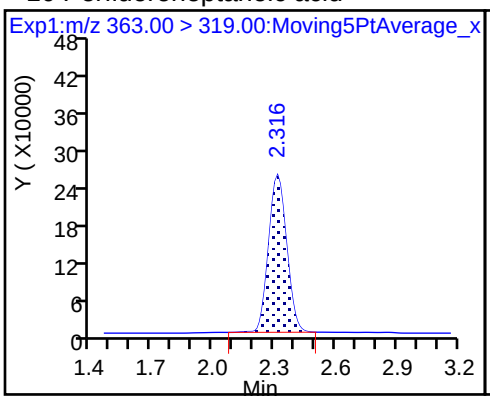
6 Perfluorohexanoic acid



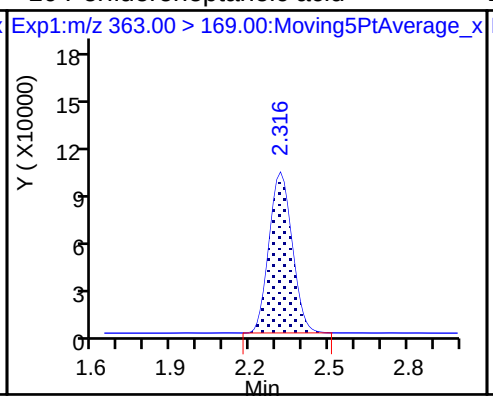
D 9 13C4-PFHpA



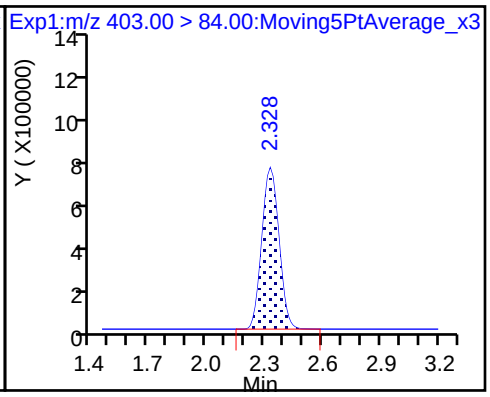
10 Perfluoroheptanoic acid



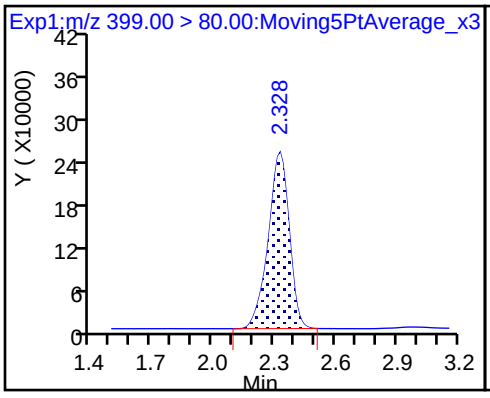
10 Perfluoroheptanoic acid



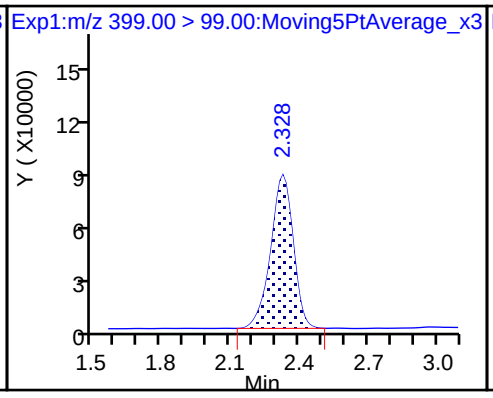
D 11 18O2 PFHxS



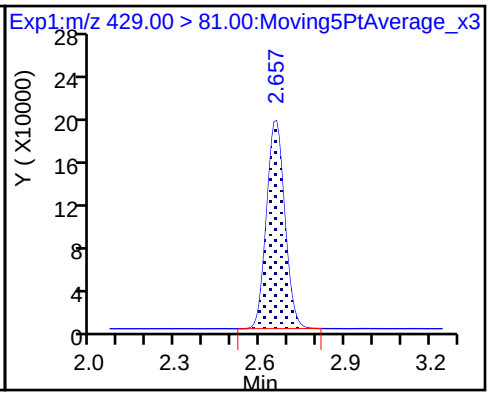
8 Perfluorohexanesulfonic acid



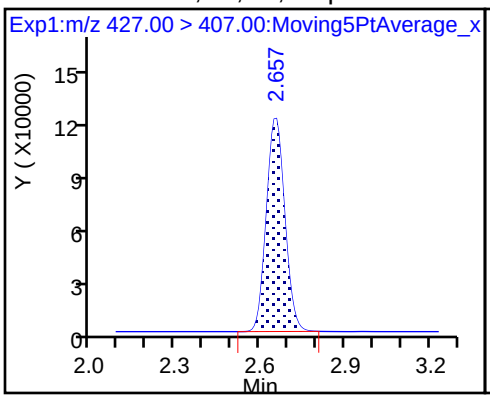
8 Perfluorohexanesulfonic acid



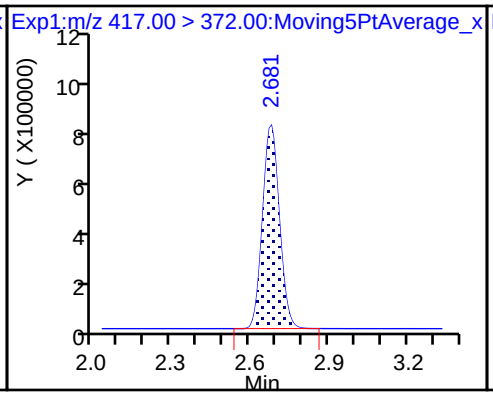
D 12 M2-6:2FTS



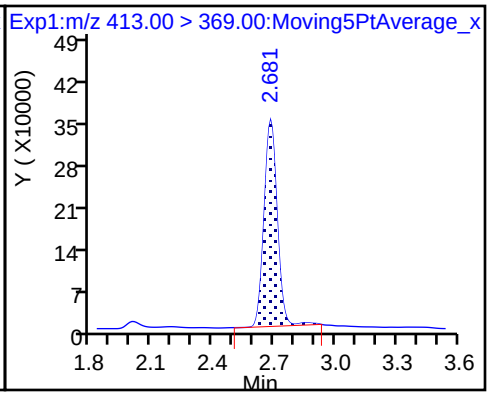
13 Sodium 1H,1H,2H,2H-perfluorooctane



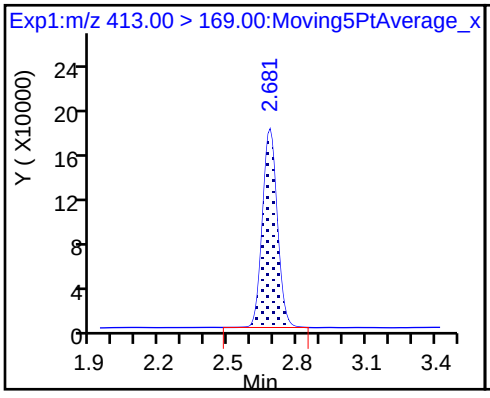
D 14 13C4 PFOA



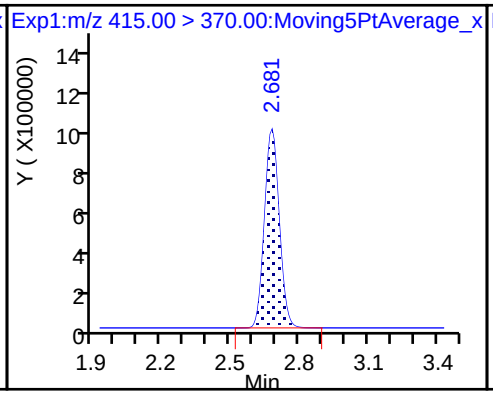
15 Perfluorooctanoic acid



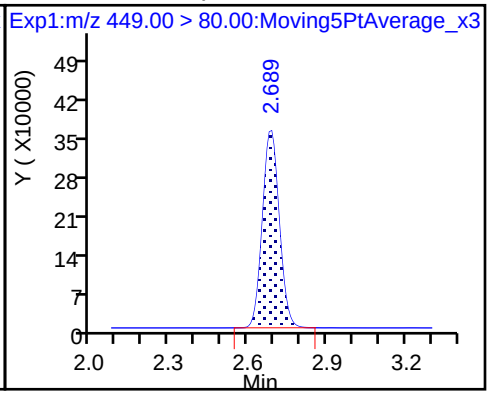
15 Perfluorooctanoic acid



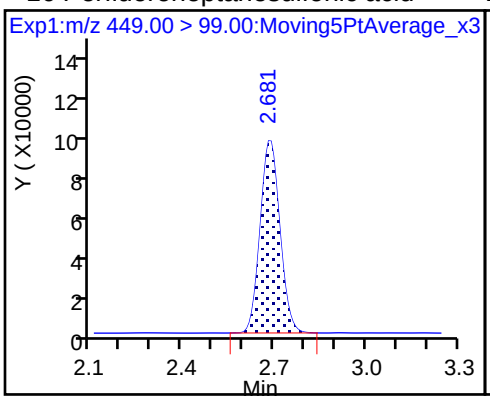
* 62 13C2-PFOA



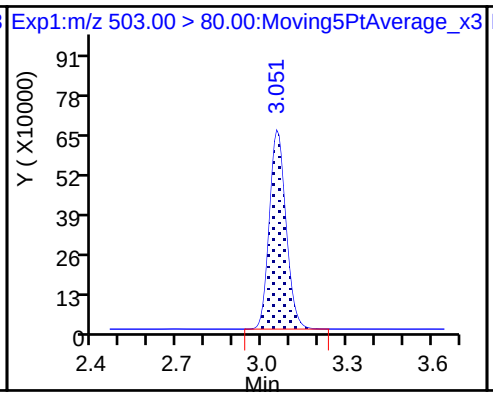
16 Perfluoroheptanesulfonic acid



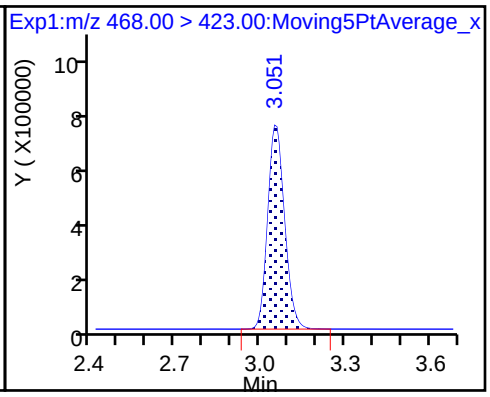
16 Perfluoroheptanesulfonic acid



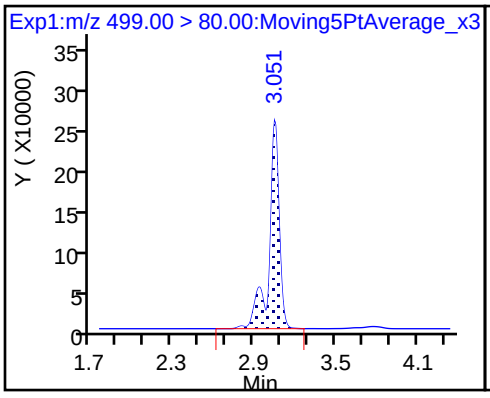
D 18 13C4 PFOS



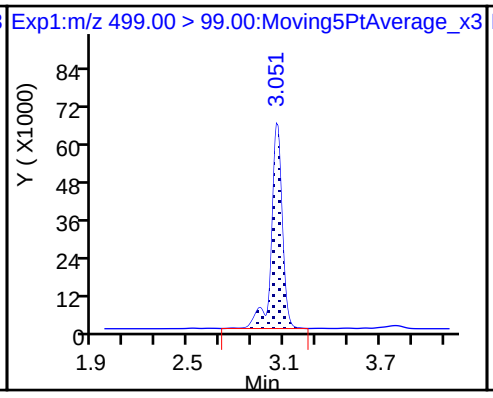
D 19 13C5 PFNA



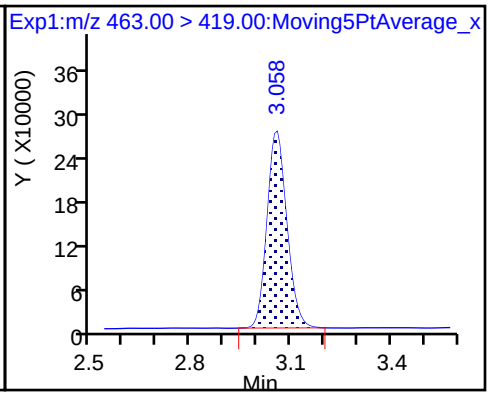
17 Perfluorooctane sulfonic acid



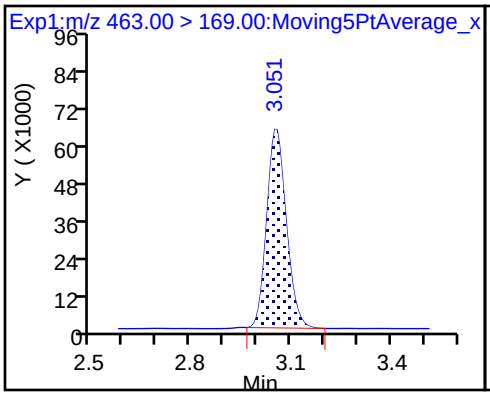
17 Perfluorooctane sulfonic acid



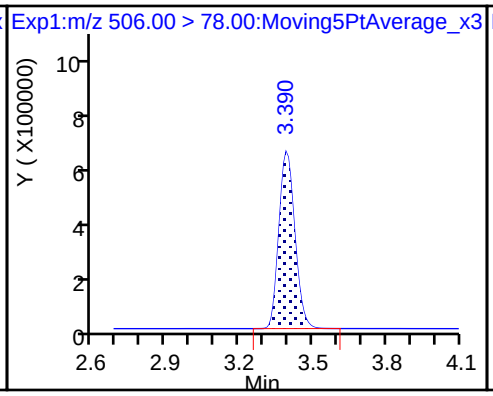
20 Perfluorononanoic acid



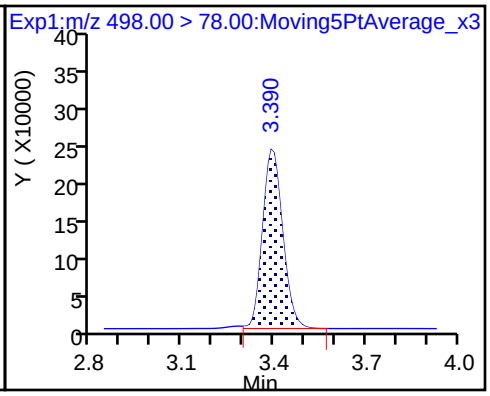
20 Perfluorononanoic acid



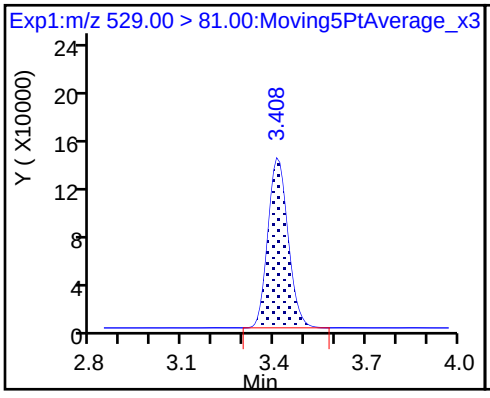
D 21 13C8 FOSA



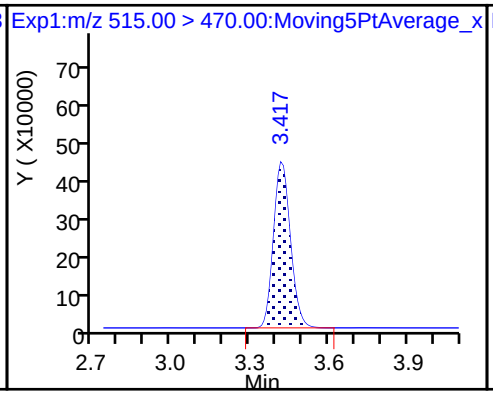
22 Perfluorooctane Sulfonamide



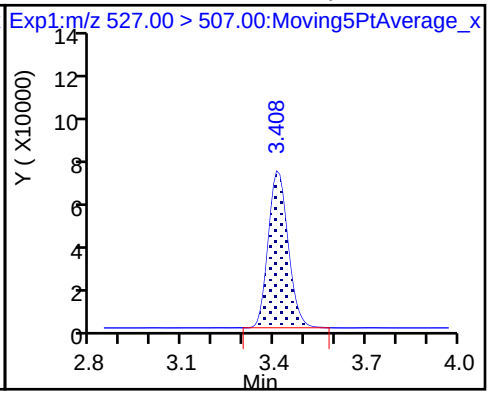
D 26 M2-8:2FTS



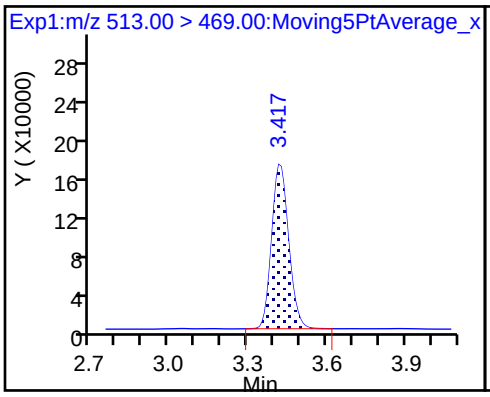
D 23 13C2 PFDA



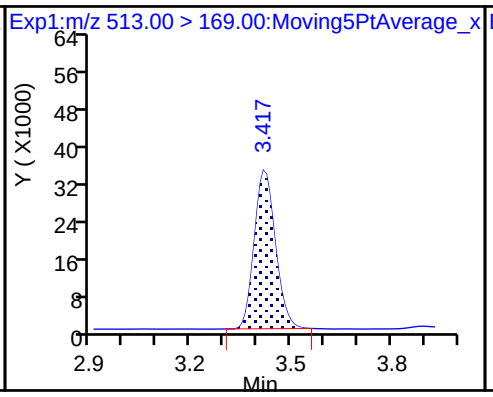
25 Sodium 1H,1H,2H,2H-perfluorodecane



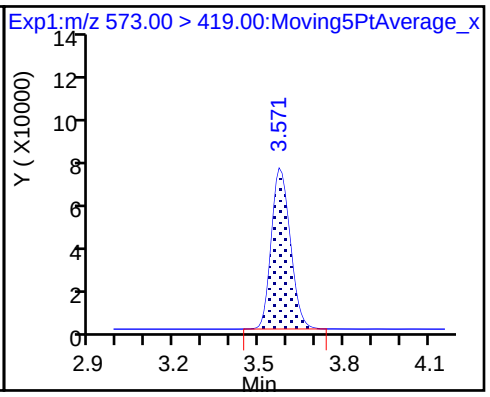
24 Perfluorodecanoic acid



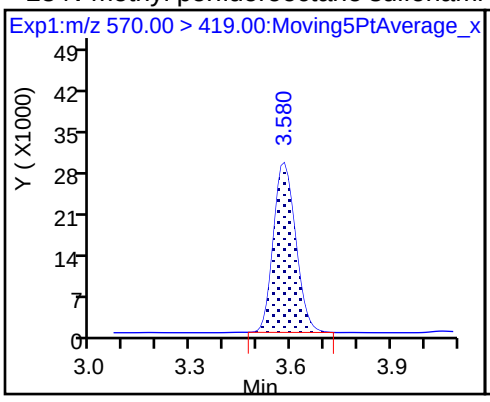
24 Perfluorodecanoic acid



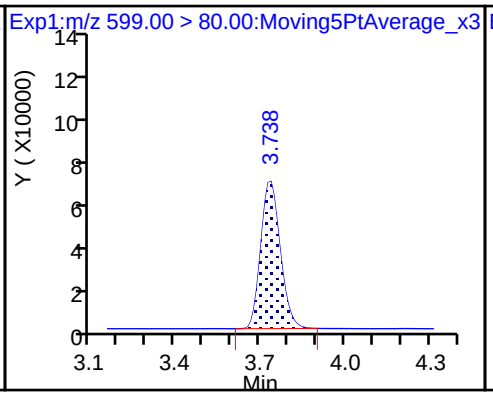
D 27 d3-NMeFOSAA



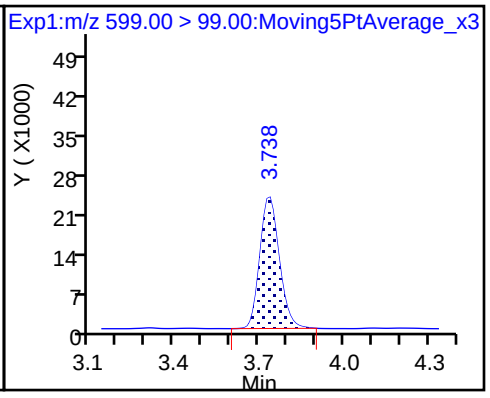
28 N-methyl perfluorooctane sulfonami



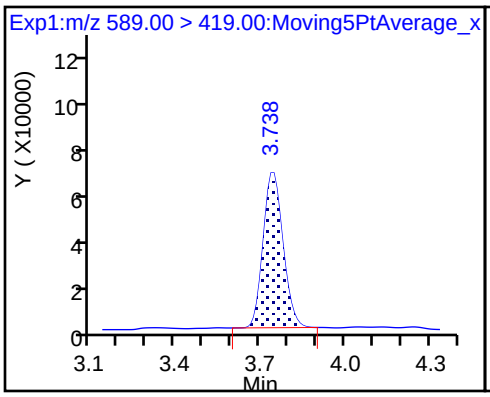
29 Perfluorodecane Sulfonic acid



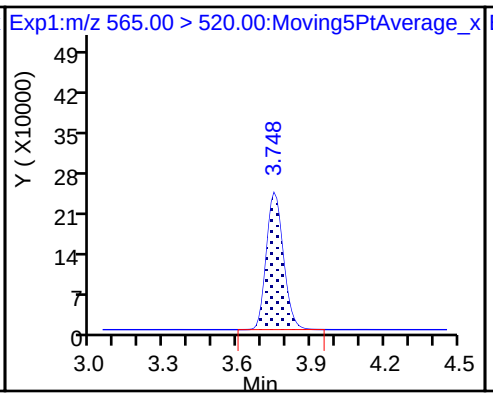
29 Perfluorodecane Sulfonic acid



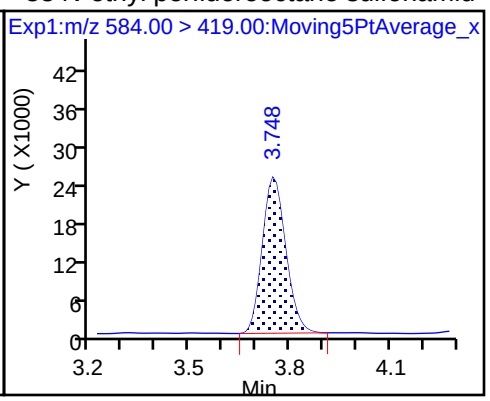
D 32 d5-NEtFOSAA



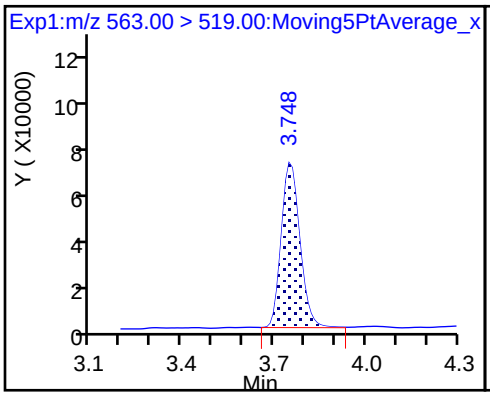
D 30 13C2 PFUnA



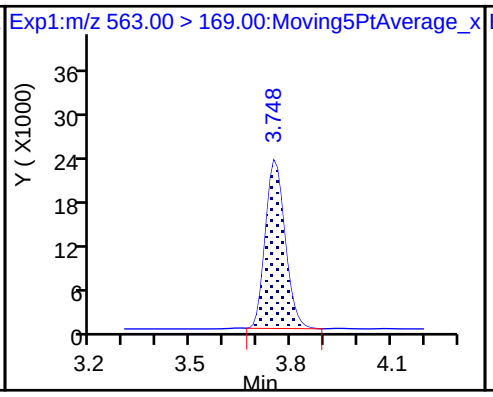
33 N-ethyl perfluorooctane sulfonamid



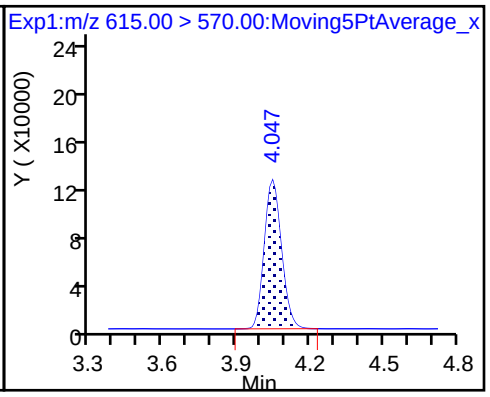
31 Perfluoroundecanoic acid



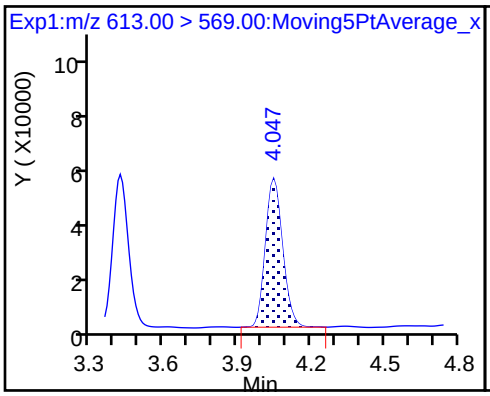
31 Perfluoroundecanoic acid



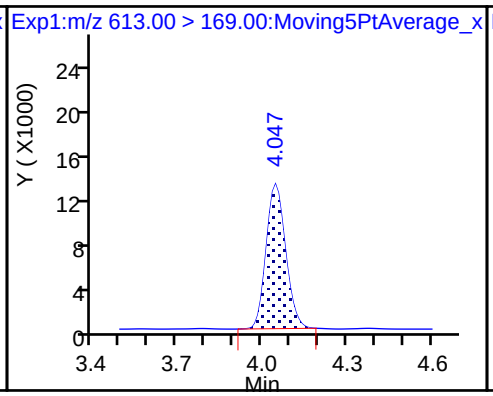
D 36 13C2 PFDoA



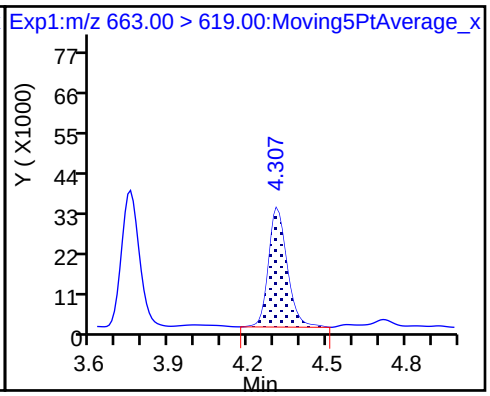
37 Perfluorododecanoic acid



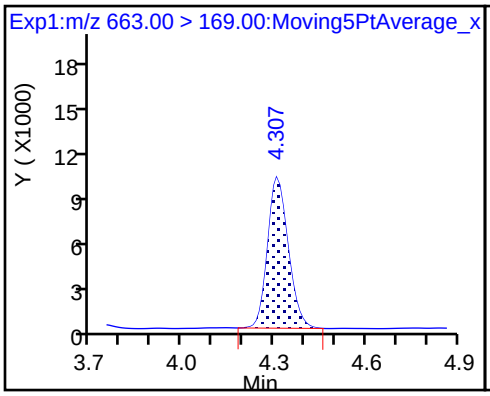
37 Perfluorododecanoic acid



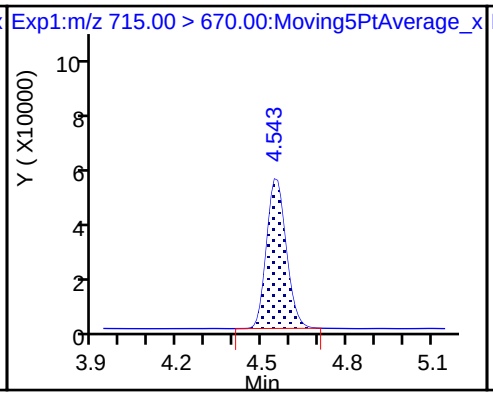
41 Perfluorotridecanoic acid



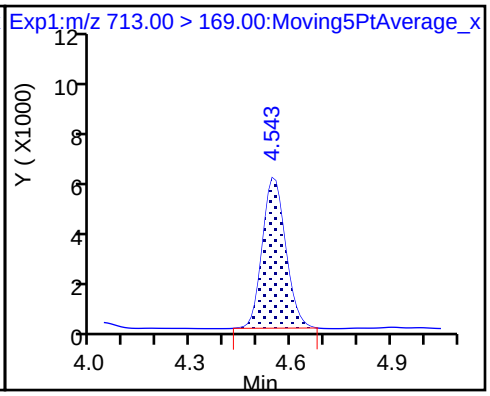
41 Perfluorotridecanoic acid



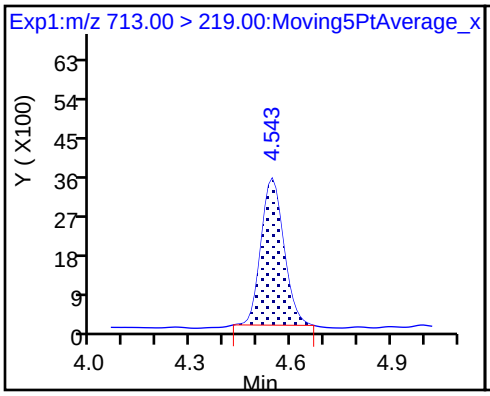
D 43 13C2-PFTeDA



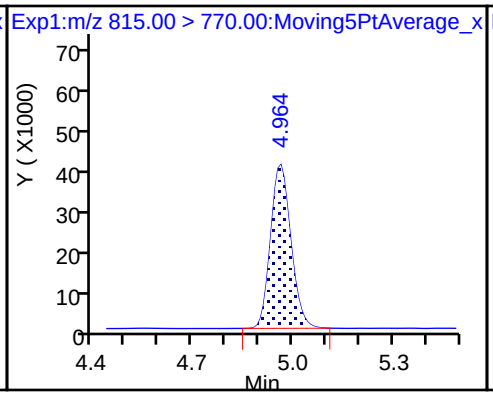
42 Perfluorotetradecanoic acid



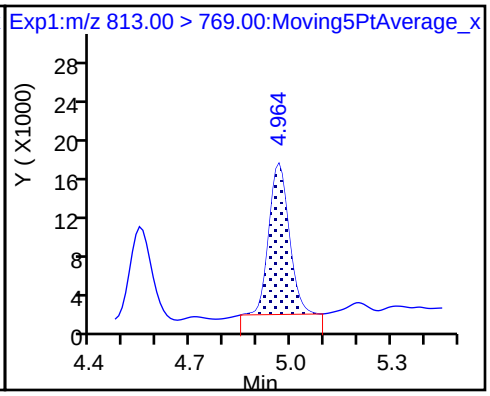
42 Perfluorotetradecanoic acid



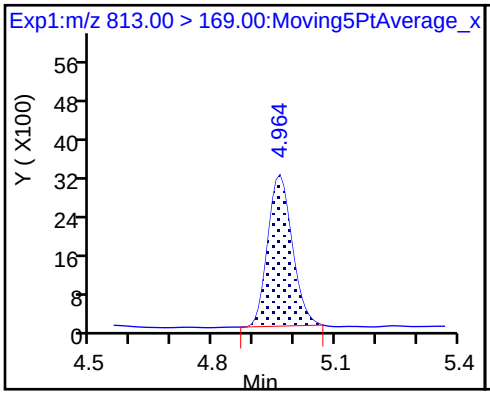
D 44 13C2-PFHxDA



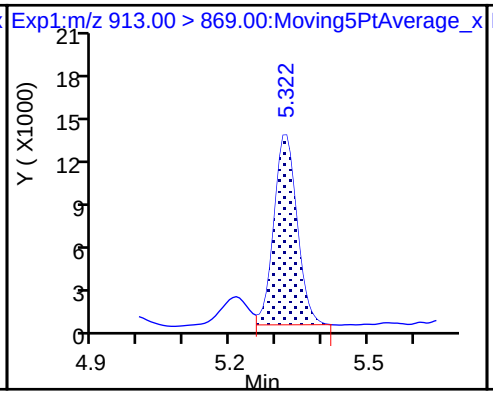
45 Perfluorohexadecanoic acid



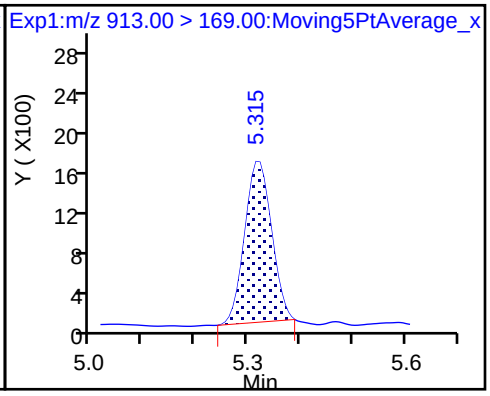
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-212987/2-A

Matrix: Solid | Lab File ID: 2017.03.17LLZA_025.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 250.00(mL) | Date Analyzed: 03/17/2018 15:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	44.68		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	42.28		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	43.93		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	44.57		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	43.74		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	45.99		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	45.22		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	37.48		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	46.48		2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	43.71		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.98		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	42.42		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	36.95		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	42.50		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.78		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	40.79		2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	44.09		2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	45.28		20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	44.25		20.0	1.90
27619-97-2	6:2FTS	41.42		20.0	2.00
39108-34-4	8:2FTS	42.74		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-212987/2-A

Matrix: Solid | Lab File ID: 2017.03.17LLZA_025.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 250.00(mL) | Date Analyzed: 03/17/2018 15:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213581 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	84		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	84		25-150
STL01892	13C4-PFHpA	85		25-150
STL00990	13C4 PFOA	90		25-150
STL00995	13C5 PFNA	88		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	86		25-150
STL00998	13C2 PFDoA	86		25-150
STL02116	13C2-PFTeDA	101		25-150
STL02337	13C3-PFBS	81		25-150
STL00994	18O2 PFHxS	87		25-150
STL00991	13C4 PFOS	87		25-150
STL01056	13C8 FOSA	82		25-150
STL02118	d3-NMeFOSAA	82		25-150
STL02117	d5-NEtFOSAA	84		25-150
STL02279	M2-6:2FTS	95		25-150
STL02280	M2-8:2FTS	99		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_025.d
Lims ID: LCS 320-212987/2-A
Client ID:
Sample Type: LCS
Inject. Date: 17-Mar-2018 15:20:04 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-212987/2-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 13:55:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 13:48:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.438	1.434	0.004	1.000	2091169	1.12		112	1413	
D 1 13C4 PFBA										
217.00 > 172.00	1.438	1.441	-0.003	0.536	5046994	2.09		83.6	99646	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.696	1.691	0.005	1.000	1726656	1.06		106	617	
D 3 13C5-PFPeA										
267.90 > 223.00	1.696	1.700	-0.004	0.632	3495689	2.05		82.1	160693	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.732	1.726	0.006	1.000	2795655	1.06		120	1189	
298.90 > 99.00	1.732	1.726	0.006	1.000	1126845		2.48(1.25-3.74)		1100	
D 47 13C3-PFBS										
301.90 > 83.00	1.732	1.736	-0.004	0.645	79213	1.89		81.1	408	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.940	1.945	-0.005	1.000	584246	1.07		114	35843	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.976	0.005	1.000	1763332	1.10		110	6038	
313.00 > 119.00	1.981	1.976	0.005	1.000	155245		11.36(5.03-15.10)		5551	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.987	-0.006	0.738	3978062	2.09		83.8	100362	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.323	2.315	0.008	1.006	1810551	1.11		111	4210	
363.00 > 169.00	2.310	2.315	-0.005	1.000	722512		2.51(1.13-3.40)		12087	
D 9 13C4-PFHpA										
367.00 > 322.00	2.310	2.315	-0.005	0.861	3918996	2.12		84.9	72568	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.328	-0.005	1.000	2216589	0.9238		102	279	
399.00 > 99.00	2.323	2.328	-0.005	1.000	722426		3.07(1.50-4.49)		274	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.341	-0.018	0.866	5087479	2.06		87.3	122585	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.657	-0.005	1.000	777403	1.04		109	36732	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.665	-0.013	0.988	1071173	2.26		95.4	22769	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.680	0.003	1.000	1949661	1.09		109	853	
413.00 > 169.00	2.683	2.680	0.003	1.000	1075804		1.81(0.84-2.52)		5204	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.680	0.003		4727175	2.50			100260	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.688	0.003	1.000	2103761	1.06		112	41492	
449.00 > 99.00	2.683	2.688	-0.005	0.997	546707		3.85(1.94-5.82)		11622	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.689	-0.006	1.000	3993106	2.24		89.6	92839	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.053	3.051	0.002	1.000	1581386	0.9695		104	4437	
499.00 > 99.00	3.053	3.051	0.002	1.000	352731		4.48(2.31-6.93)		3089	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.058	-0.005	1.138	3601009	2.09		87.4	45359	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.058	0.002	1.000	1479131	1.15		115	3498	
463.00 > 169.00	3.060	3.058	0.002	1.000	361678		4.09(1.90-5.69)		9018	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.065	-0.005	1.140	3154547	2.21		88.4	77703	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.392	3.389	0.003	1.000	2190385	1.10		110	40995	
D 21 13C8 FOSA										
506.00 > 78.00	3.392	3.398	-0.006	1.264	5113159	2.05		82.0	72603	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.408	0.002	1.000	591650	1.07		112	18869	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.417	-0.007	1.271	1054765	2.37		99.1	26292	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.419	3.417	0.002	1.000	1237122	1.13		113	5673	
513.00 > 169.00	3.419	3.417	0.002	1.000	219114		5.65(2.36-7.09)		2601	
D 23 13C2 PFDA										
515.00 > 470.00	3.419	3.426	-0.007	1.274	2883483	2.42		96.8	54413	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.579	-0.006	1.331	804808	2.05		81.8	43325	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.583	3.579	0.004	1.003	379591	1.13		113	5154	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.728	0.013	1.000	981065	1.02		106	25656	
599.00 > 99.00	3.731	3.728	0.003	0.997	355020		2.76(1.39-4.16)		6171	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.748	-0.007	1.394	793758	2.11		84.4	1930	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.752	3.748	0.004	1.003	343909	1.11		111	7129	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.752	3.748	0.004	1.000	629573	0.9370		93.7	1803	
563.00 > 169.00	3.752	3.748	0.004	1.000	174707		3.60(2.12-6.36)		21114	
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.758	-0.006	1.398	2004380	2.15		85.9	83607	
35 MeFOSA										
512.00 > 169.00	3.896	3.875	0.021		383790	NC			4025	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.047	0.003	1.000	900397	1.16		116	193	
613.00 > 169.00	4.050	4.047	0.003	1.000	224628		4.01(2.13-6.40)		4732	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.056	-0.006	1.509	1893442	2.14		85.6	11607	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.092	4.066	0.026		239363	NC			2524	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.312	4.307	0.005	1.000	851516	1.09		109	175	
663.00 > 169.00	4.312	4.307	0.005	1.000	274759		3.10(1.25-3.76)		4818	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.548	4.544	0.004	1.000	229796	1.02		102	3203	
713.00 > 219.00	4.548	4.544	0.004	1.000	170578		1.35(0.71-2.13)		2100	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.548	4.554	-0.006	1.695	2033261	2.52		101	15298	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.955	0.012	1.000	1028830	1.10		110	110	
813.00 > 169.00	4.967	4.955	0.012	1.000	187816		5.48(2.86-8.58)		2004	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.973	-0.005	1.851	2499583	2.12		84.6	8992	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.325	5.315	0.010	1.000	1106071	1.13		113	211	
913.00 > 169.00	5.317	5.315	0.002	0.999	149421		7.40(3.83-11.48)		1594	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 20-Mar-2018 13:55:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b\2017.03.17LLZA_025.d

Injection Date: 17-Mar-2018 15:20:04 Instrument ID: A8_N

Lims ID: LCS 320-212987/2-A

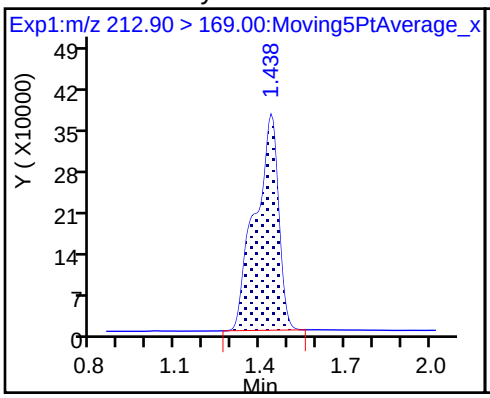
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3

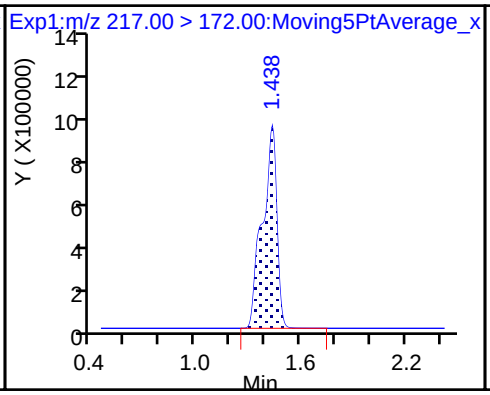
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

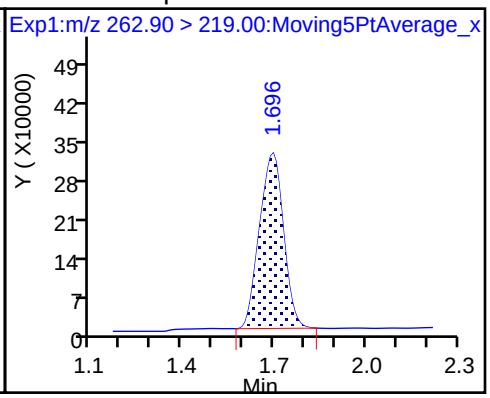
2 Perfluorobutyric acid



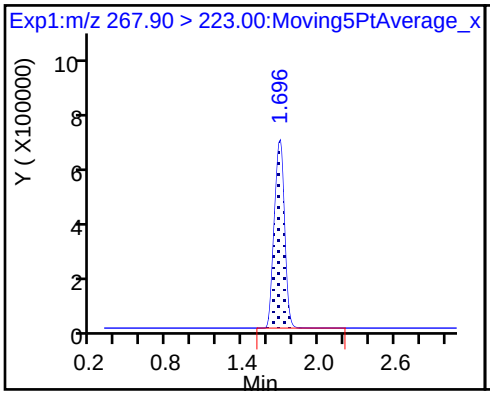
D 1 13C4 PFBA



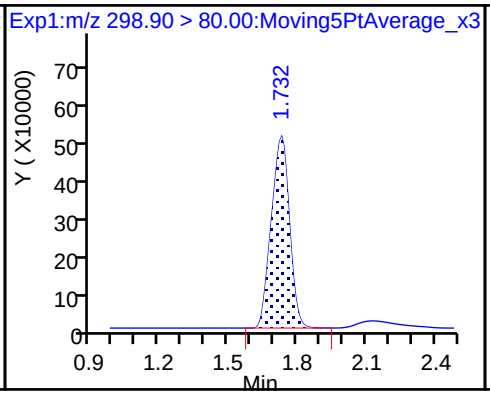
4 Perfluoropentanoic acid



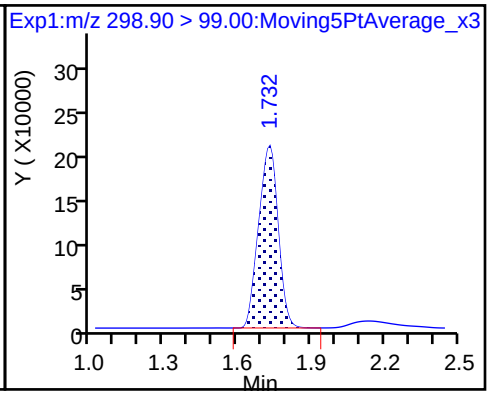
D 3 13C5-PFPeA



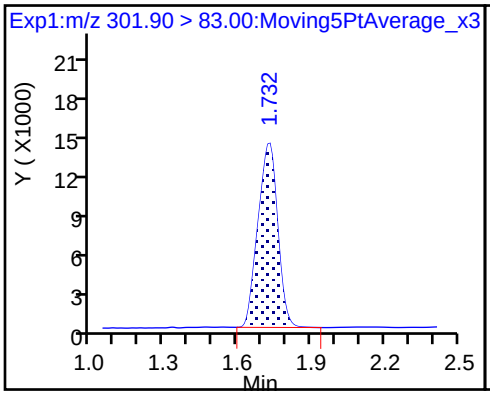
5 Perfluorobutanesulfonic acid



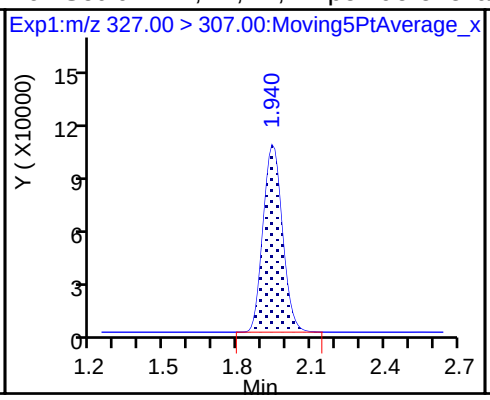
5 Perfluorobutanesulfonic acid



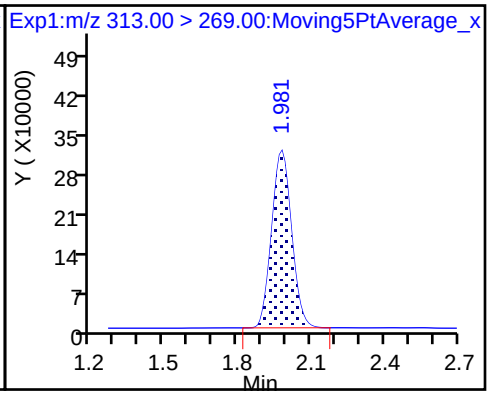
D 47 13C3-PFBS



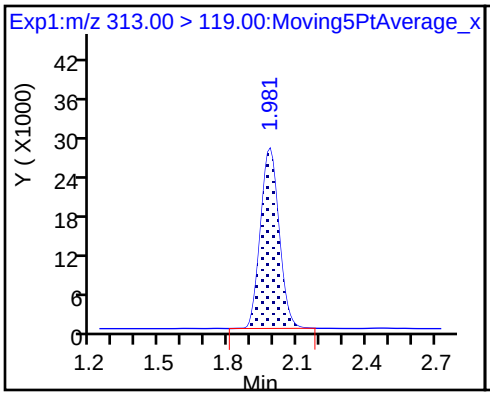
61 Sodium 1H,1H,2H,2H-perfluorohexane



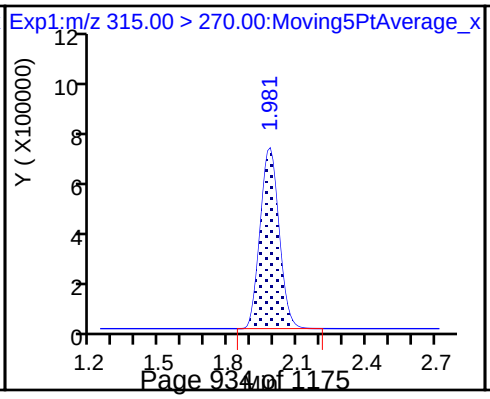
6 Perfluorohexanoic acid



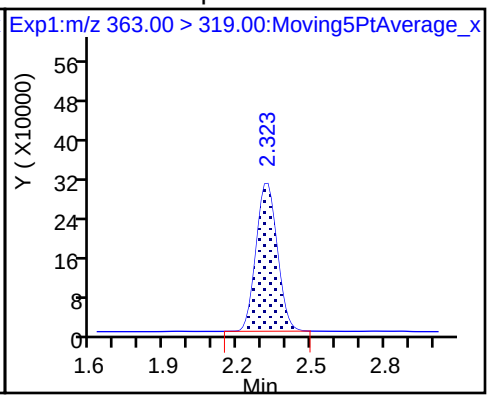
6 Perfluorohexanoic acid



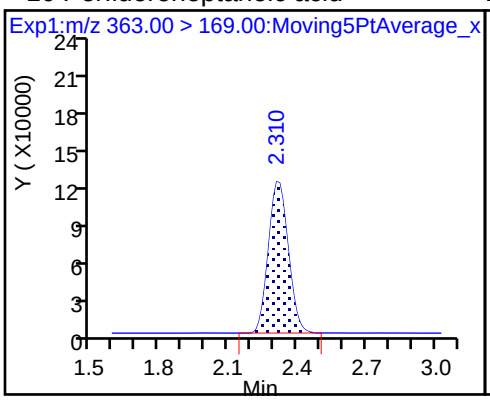
D 7 13C2 PFHxA



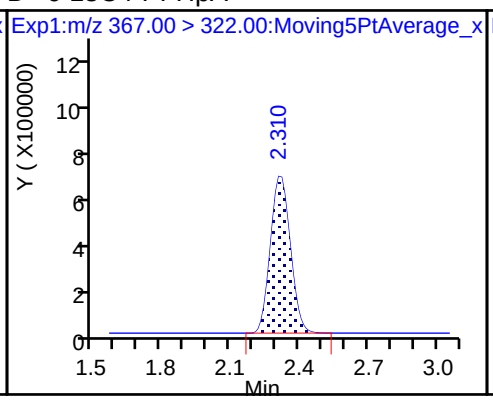
10 Perfluoroheptanoic acid



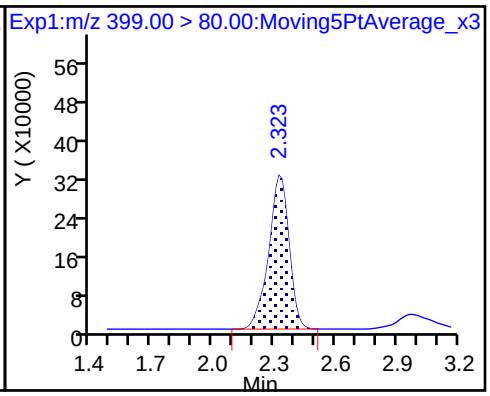
10 Perfluoroheptanoic acid



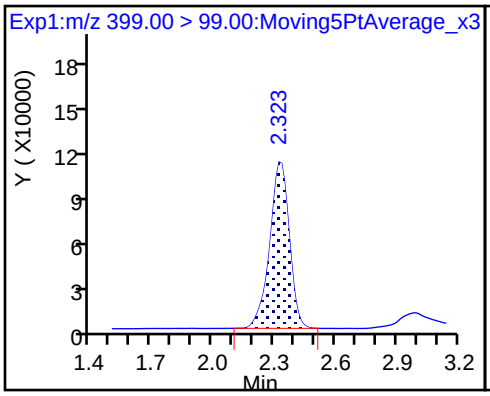
D 9 13C4-PFHpA



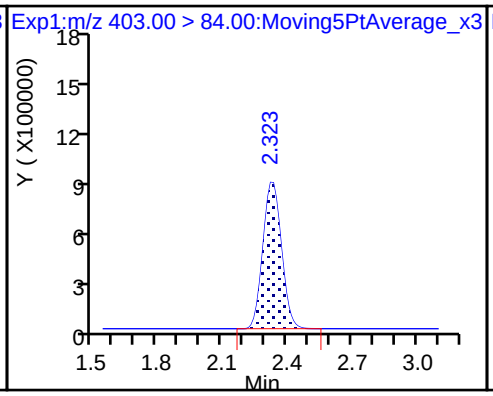
8 Perfluorohexanesulfonic acid



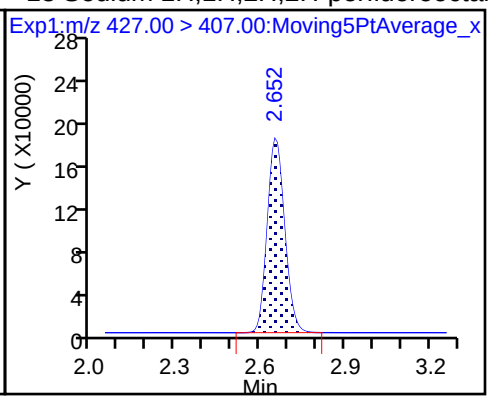
8 Perfluorohexanesulfonic acid



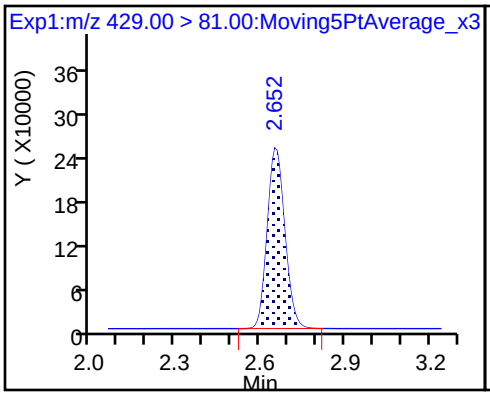
D 11 18O2 PFHxS



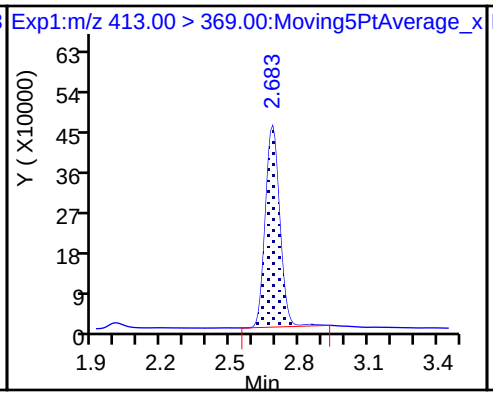
13 Sodium 1H,1H,2H,2H-perfluorooctane



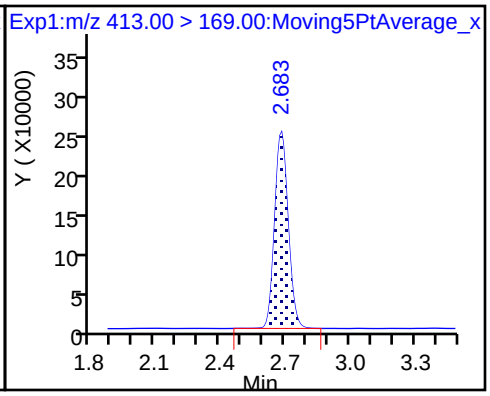
D 12 M2-6:2FTS



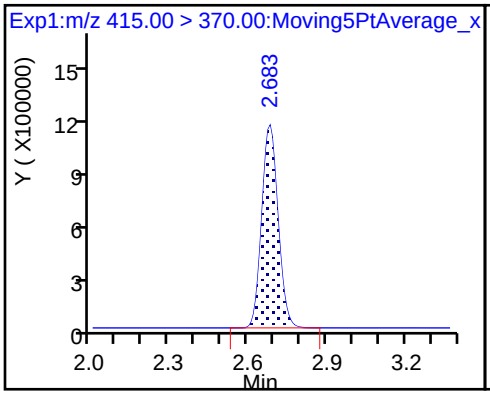
15 Perfluorooctanoic acid



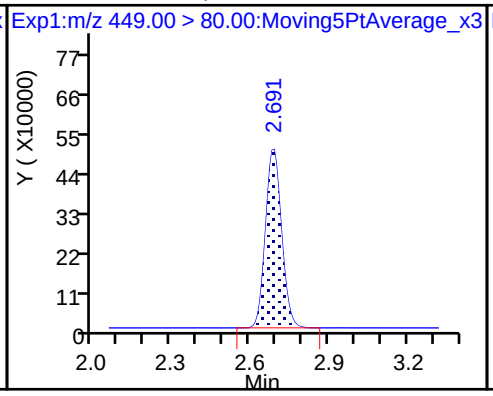
15 Perfluorooctanoic acid



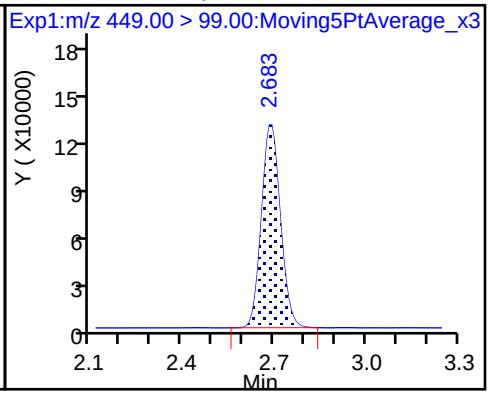
* 62 13C2-PFOA



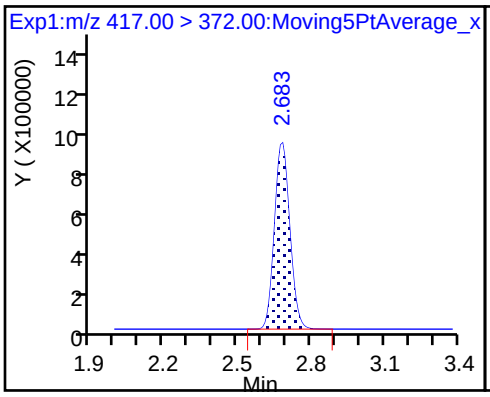
16 Perfluoroheptanesulfonic acid



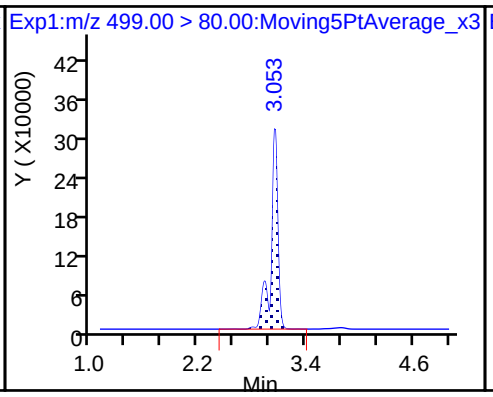
16 Perfluoroheptanesulfonic acid



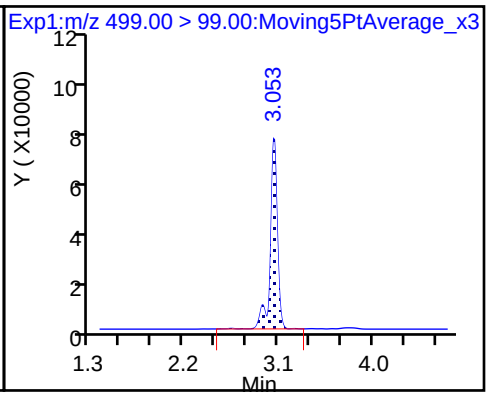
D 14 13C4 PFOA



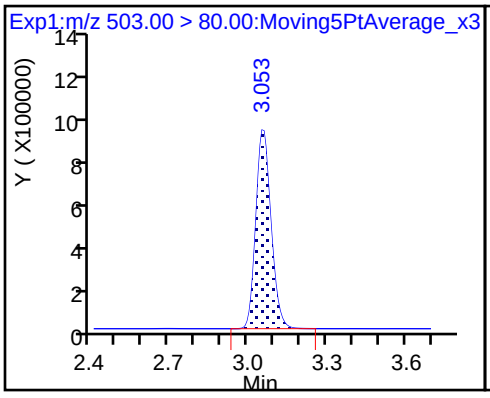
17 Perfluorooctane sulfonic acid



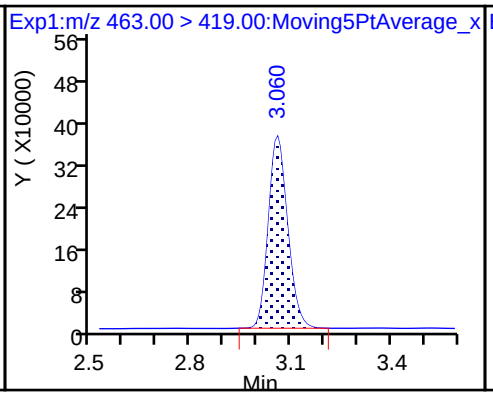
17 Perfluorooctane sulfonic acid



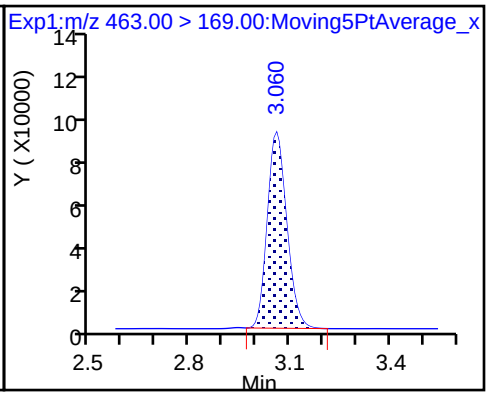
D 18 13C4 PFOS



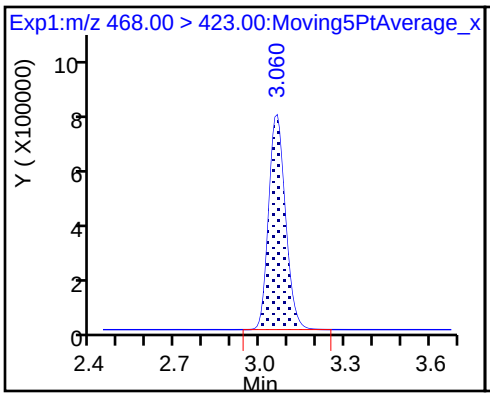
20 Perfluorononanoic acid



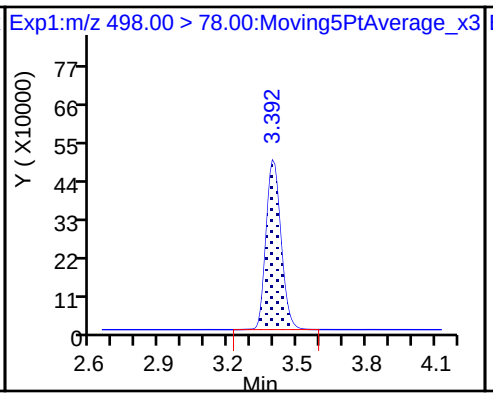
20 Perfluorononanoic acid



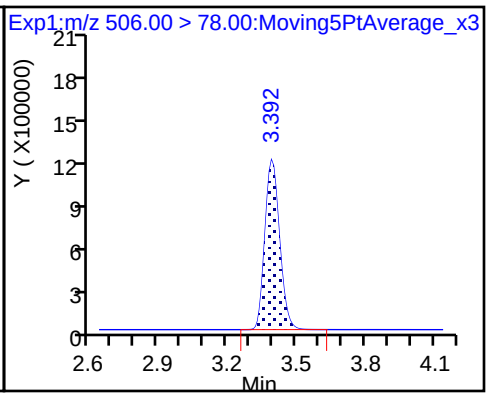
D 19 13C5 PFNA



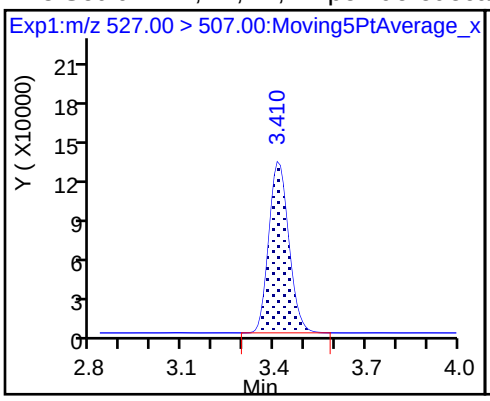
22 Perfluorooctane Sulfonamide



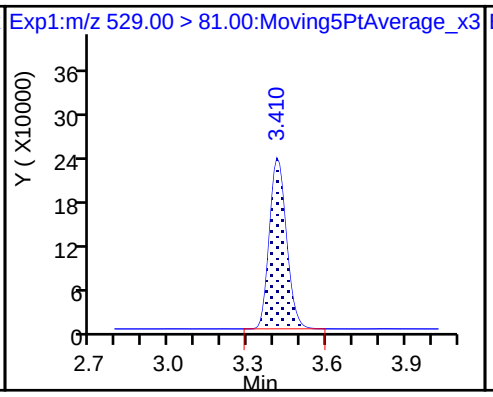
D 21 13C8 FOSA



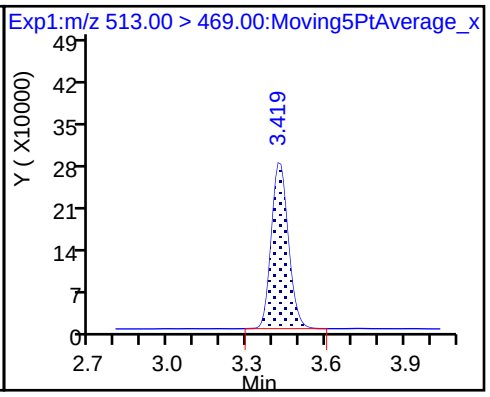
25 Sodium 1H,1H,2H,2H-perfluorodecane



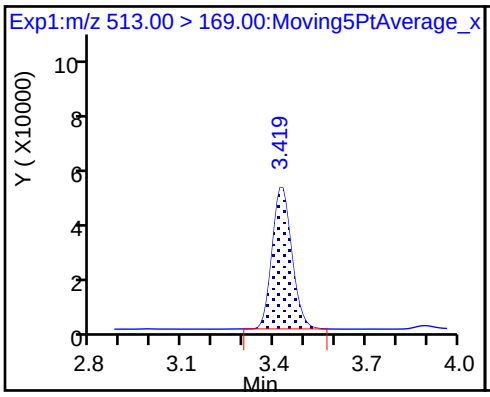
D 26 M2-8:2FTS



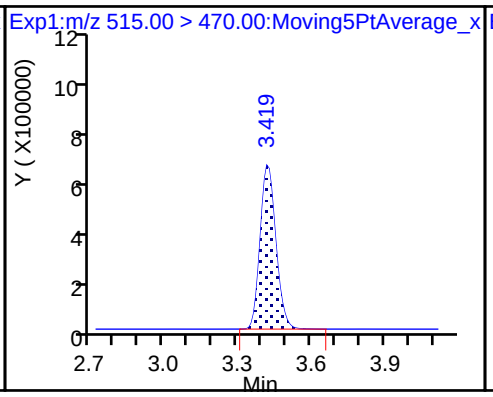
24 Perfluorodecanoic acid



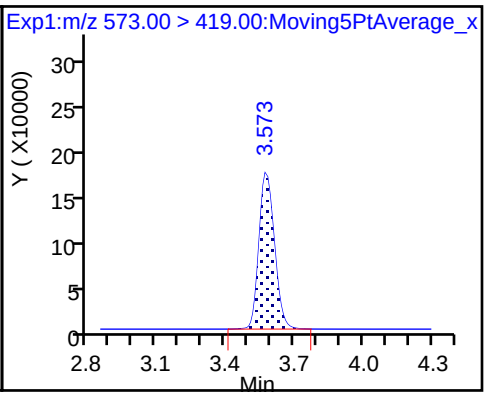
24 Perfluorodecanoic acid



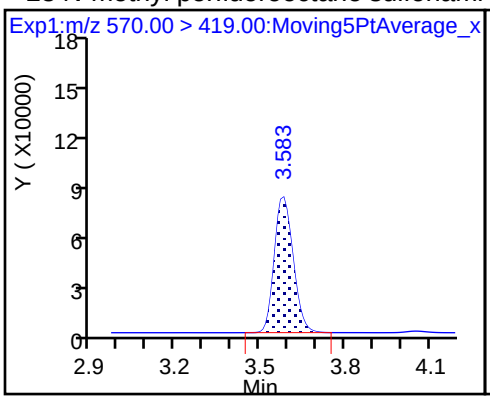
D 23 13C2 PFDA



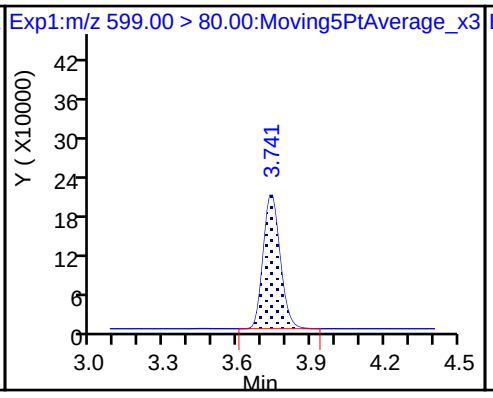
D 27 d3-NMeFOSAA



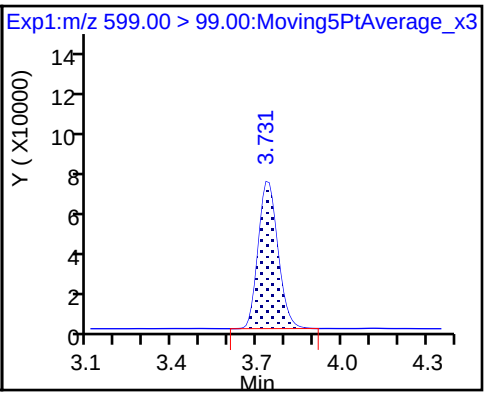
28 N-methyl perfluorooctane sulfonami



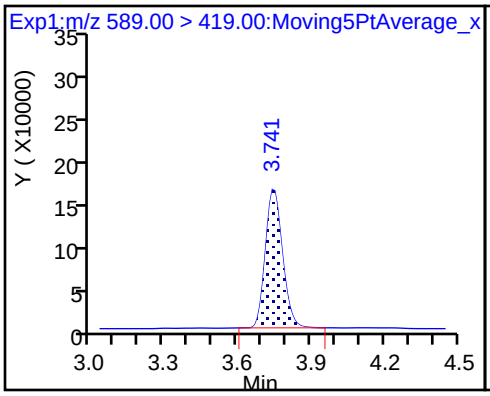
29 Perfluorodecane Sulfonic acid



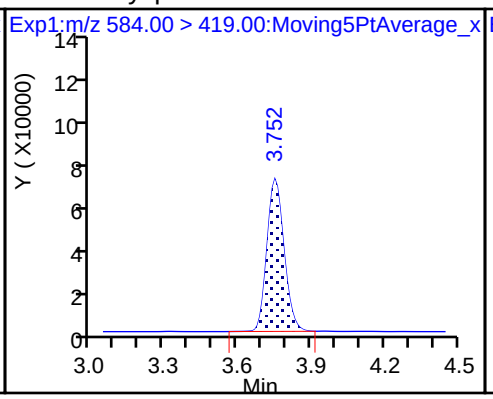
29 Perfluorodecane Sulfonic acid



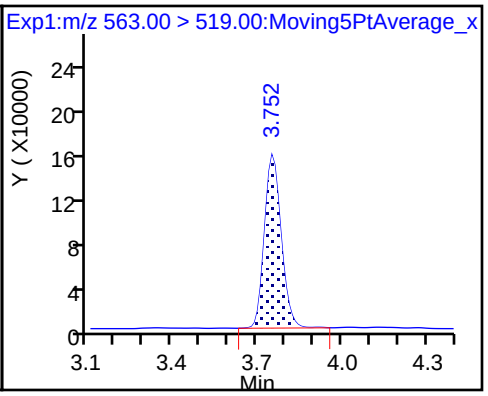
D 32 d5-NEtFOSAA



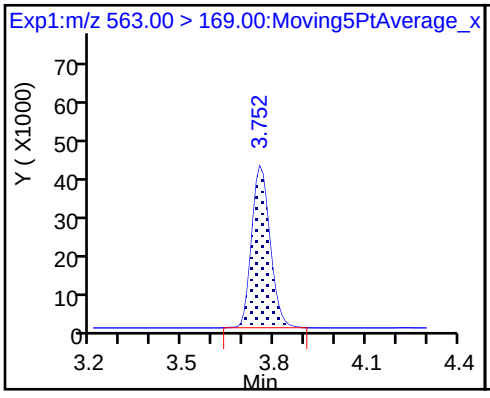
33 N-ethyl perfluorooctane sulfonamid



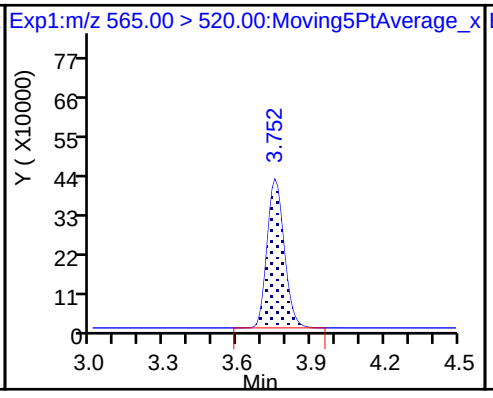
31 Perfluoroundecanoic acid



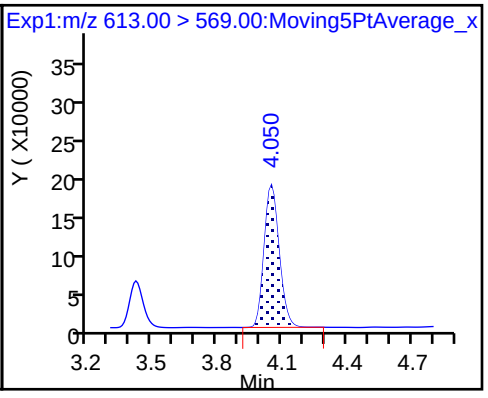
31 Perfluoroundecanoic acid



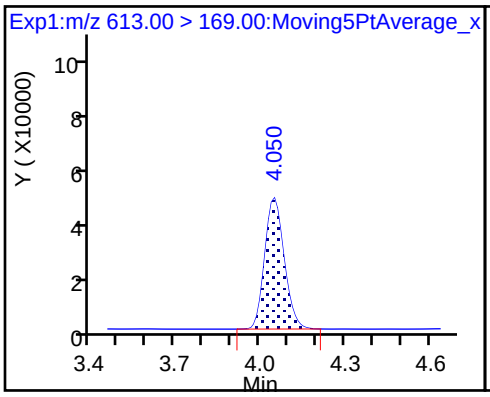
D 30 13C2 PFUnA



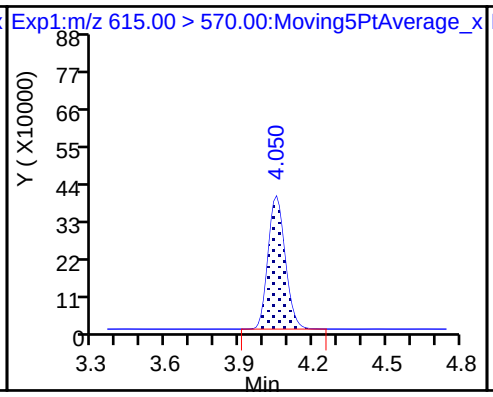
37 Perfluorododecanoic acid



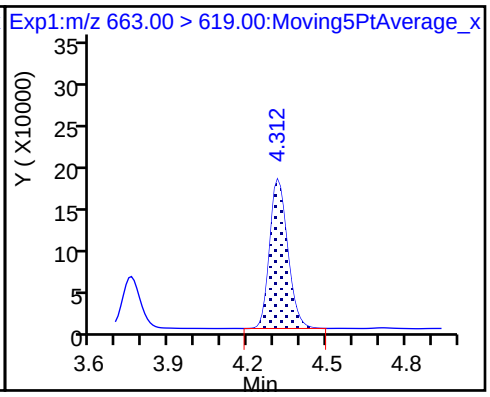
37 Perfluorododecanoic acid



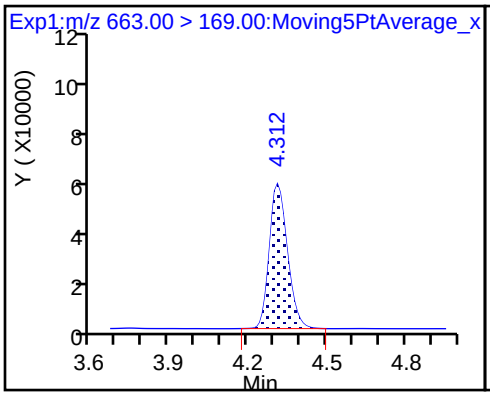
D 36 13C2 PFDoA



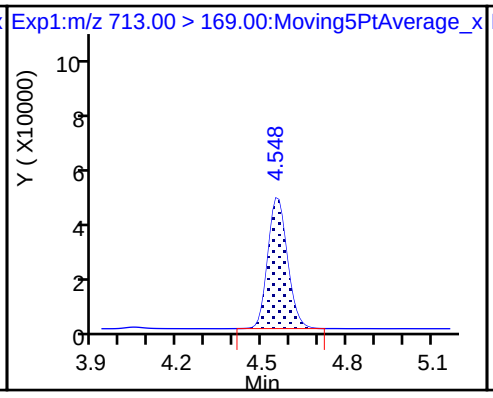
41 Perfluorotridecanoic acid



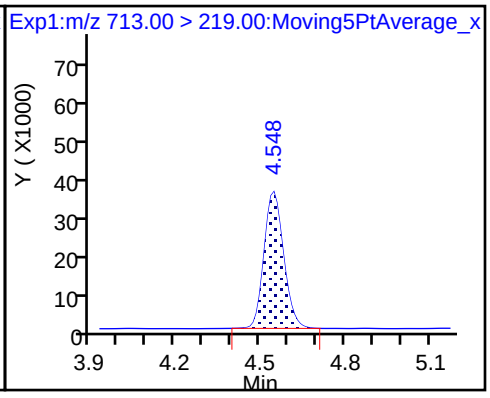
41 Perfluorotridecanoic acid



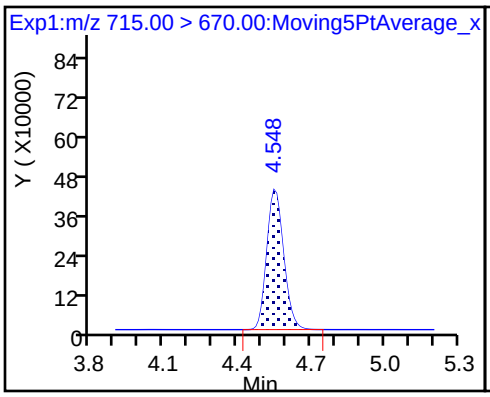
42 Perfluorotetradecanoic acid



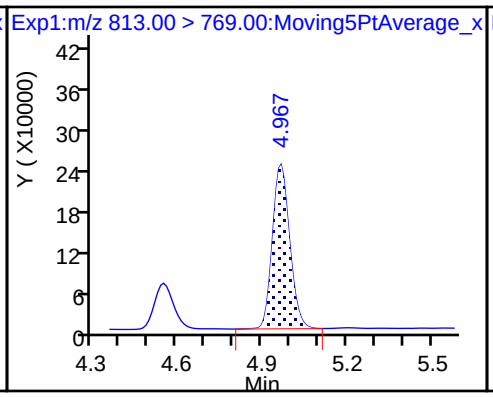
42 Perfluorotetradecanoic acid



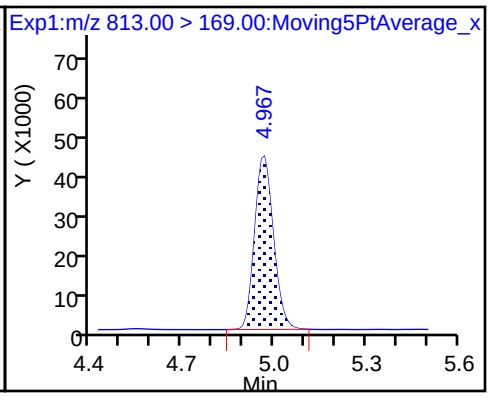
D 43 13C2-PFTeDA



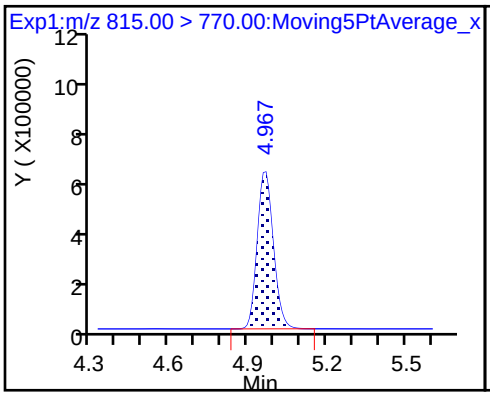
45 Perfluorohexadecanoic acid



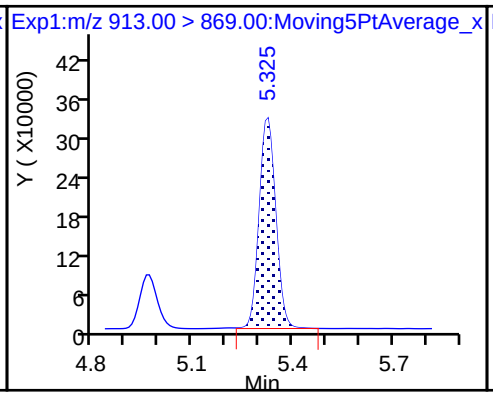
45 Perfluorohexadecanoic acid



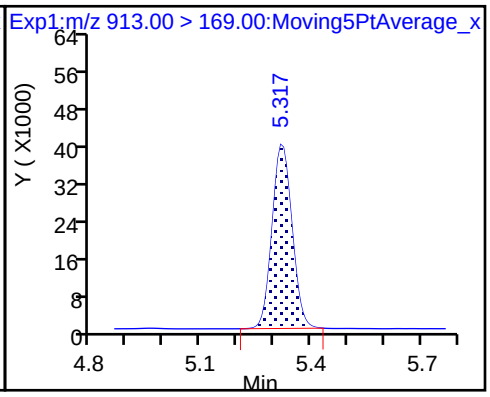
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-214230/2-A

Matrix: Solid | Lab File ID: 2018.03.26LLA_053.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.00(g) | Date Analyzed: 03/27/2018 01:31

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00181*		*0.00020*	*0.000039*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	91		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_053.d
Lims ID: LCS 320-214230/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Mar-2018 01:31:56 ALS Bottle#: 33 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-214230/2-a
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:42:55 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:17:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.538	6225961	2.32		93.0	87372	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	2394280	1.02		102	651	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.700	0.009	0.636	4137743	2.33		93.1	108574	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.708	0.001	1.000	1801792	0.9655		96.6	1126	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.736	0.008	0.649	86082	2.12		91.3	541	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	2595810	0.9023		102	14550	
298.90 > 99.00	1.744	1.744	0.0	1.000	1097615		2.36(1.25-3.74)		3034	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	618814	1.03		111	28037	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.739	4466100	2.27		90.9	99920	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.005	1815320	0.99		99.4	2204	
313.00 > 119.00	1.997	1.997	0.0	1.005	159033		11.41(5.03-15.10)		2021	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.866	4645140	2.40		95.8	87966	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1872964	0.9744		97.4	1570	
363.00 > 169.00	2.328	2.328	0.0	1.000	762069		2.46(1.13-3.40)		2139	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	5348790	2.24		94.6	83616	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.340	0.001	1.000	2203036	0.8752		96.2	13024	
399.00 > 99.00	2.341	2.340	0.001	1.000	715434		3.08(1.50-4.49)		1716	
D 12 M2-6:2FTS										
429.00 > 81.00	2.664	2.649	0.015	0.991	1053514	2.62		110	19291	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.664	2.671	-0.007	1.000	767212	0.99		105	5270	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.681	0.007	1.000	4636646	2.34		93.5	84530	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.695	-0.007		5290396	2.50			96597	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.695	-0.007	1.000	1983116	0.9465		94.7	1001	
413.00 > 169.00	2.688	2.695	-0.007	1.000	1084073		1.83(0.84-2.52)		3017	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.703	-0.007	1.000	1897317	0.9325		98.0	41184	
449.00 > 99.00	2.696	2.703	-0.007	1.000	528139		3.59(1.94-5.82)		4666	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.051	0.014	1.140	3795360	2.18		91.2	48250	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.051	0.014	1.140	4049419	2.31		92.6	86253	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1644571	0.9297		100	16816	
499.00 > 99.00	3.065	3.065	0.0	1.000	378236		4.35(2.31-6.93)		3075	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	1534362	0.9496		95.0	2488	
463.00 > 169.00	3.065	3.072	-0.007	1.000	378242		4.06(1.90-5.69)		7972	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.264	4740321	2.02		80.8	59688	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1826426	0.9771		97.7	26063	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.399	0.018	1.271	1184371	2.18		91.1	20402	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.416	0.0	1.000	626673	0.99		104	10905	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.274	3485439	2.27		90.9	49461	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.434	-0.008	1.000	1331777	0.9668		96.7	5570	
513.00 > 169.00	3.426	3.434	-0.008	1.000	237763		5.60(2.36-7.09)		4486	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.571	0.008	1.331	1711531	2.12		84.8	53369	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	640151	0.9343		93.4	6572	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.738	0.010	1.394	1795649	1.95		78.1	11546	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.748	-0.010	1.000	977078	0.9048		93.9	22717	
599.00 > 99.00	3.738	3.748	-0.010	1.000	333219		2.93(1.39-4.16)		4999	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2864080	2.09		83.5	75505	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	868073	0.8789		87.9	4379	
563.00 > 169.00	3.758	3.758	0.0	1.000	222710		3.90(2.12-6.36)		9006	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.003	704416	1.05		105	16349	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.036	0.021	1.509	2975579	1.91		76.5	21326	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.056	0.001	1.000	1217982	0.9780		97.8	1098	
613.00 > 169.00	4.057	4.056	0.001	1.000	316695		3.85(2.13-6.40)		4752	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1401789	1.07		107	1045	
663.00 > 169.00	4.318	4.318	0.0	1.000	442049		3.17(1.25-3.76)		9259	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.543	0.011	1.694	4087266	2.15		86.0	24039	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	397482	0.9812		98.1	5591	
713.00 > 219.00	4.554	4.554	0.0	1.000	285349		1.39(0.71-2.13)		4005	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.955	0.018	1.850	6938493	2.23		89.1	18213	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.000	2551374	0.9872		98.7	788	
813.00 > 169.00	4.973	4.973	0.0	1.000	418964		6.09(2.86-8.58)		3685	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2634872	1.03		103	692	
913.00 > 169.00	5.330	5.337	-0.007	0.999	337914		7.80(3.83-11.48)		2662	

Report Date: 27-Mar-2018 10:43:02 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_053.d

Injection Date: 27-Mar-2018 01:31:56 Instrument ID: A8_N

Lims ID: LCS 320-214230/2-A

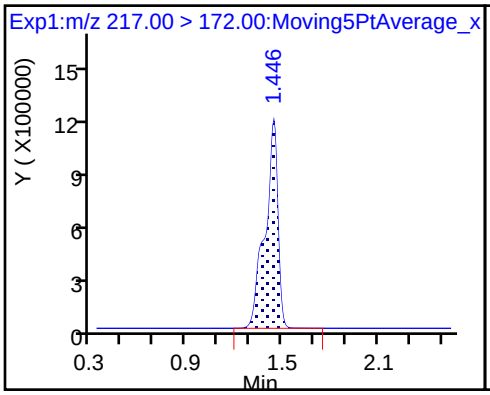
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 33 Worklist Smp#: 3

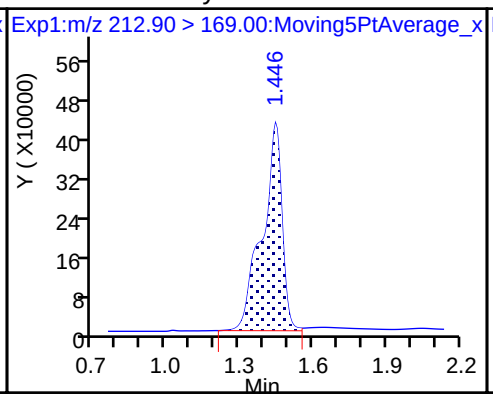
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

D 1 13C4 PFBA



2 Perfluorobutyric acid



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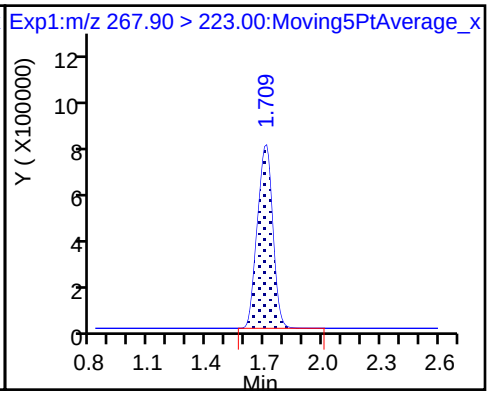
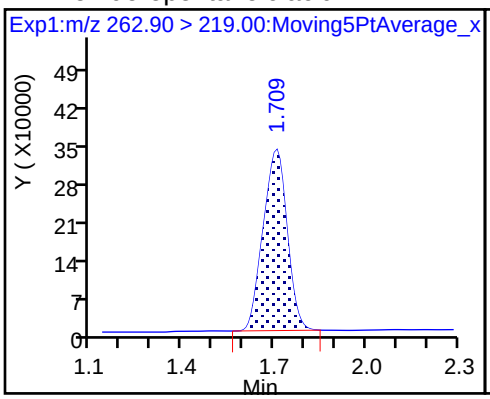
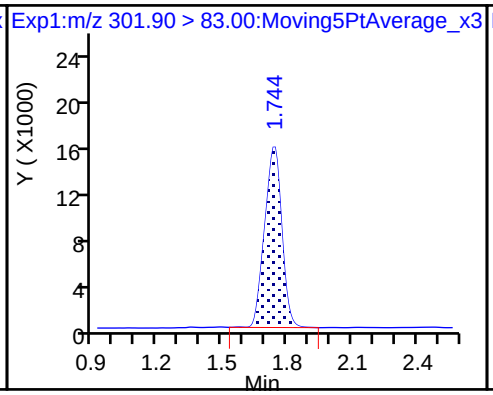


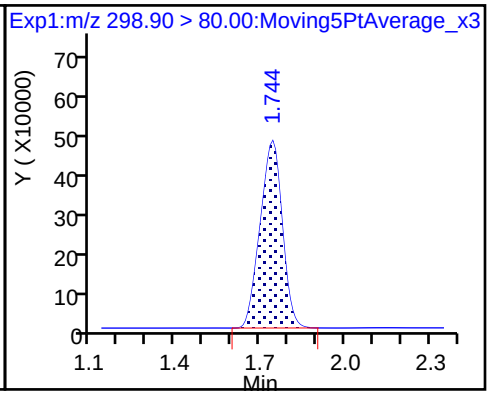
4 Perfluoropentanoic acid



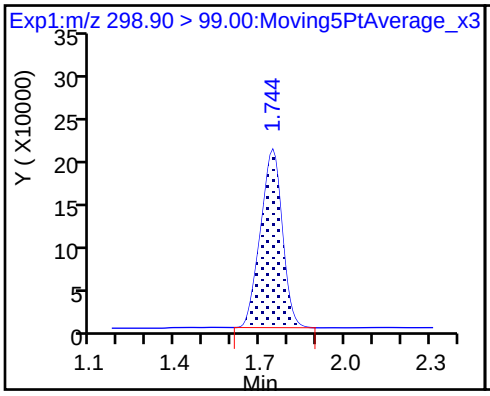
D 47 13C3-PFBS



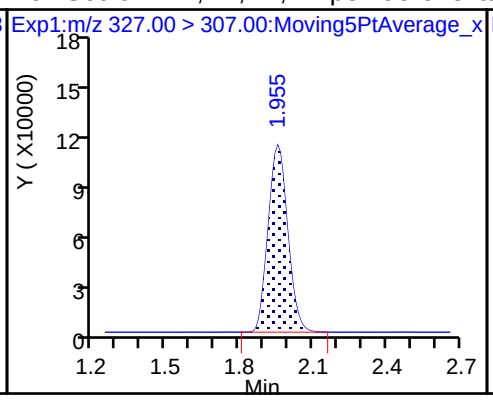
5 Perfluorobutanesulfonic acid



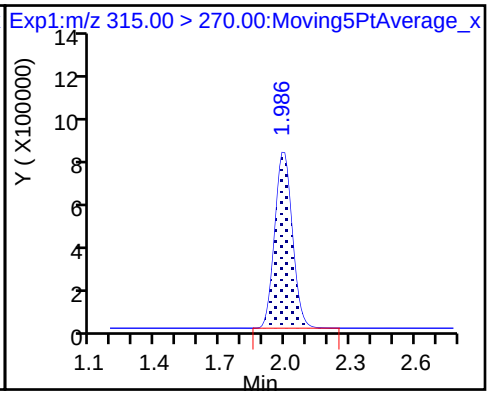
5 Perfluorobutanesulfonic acid



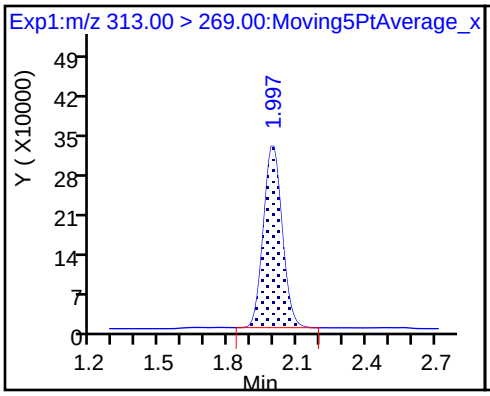
61 Sodium 1H,1H,2H,2H-perfluorohexa



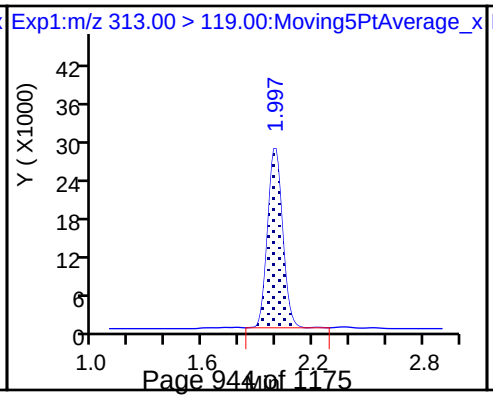
D 7 13C2 PFHxA



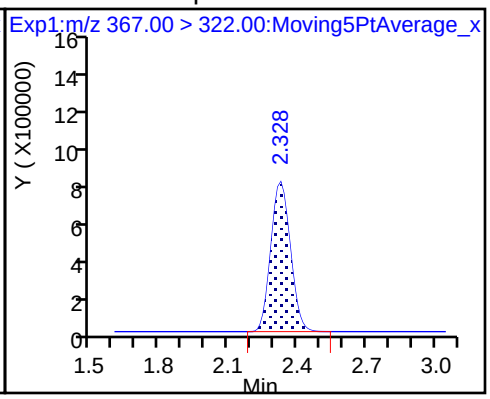
6 Perfluorohexanoic acid



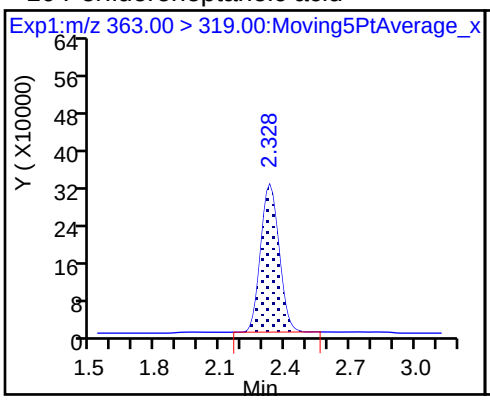
6 Perfluorohexanoic acid



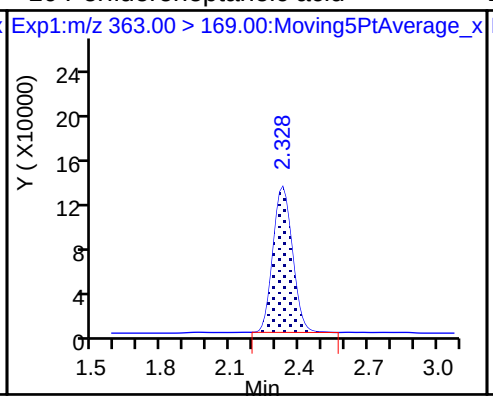
D 9 13C4-PFHpA



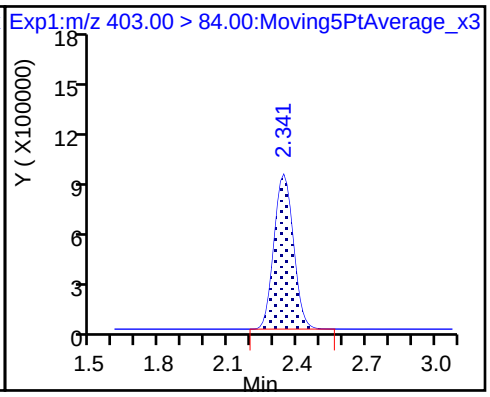
10 Perfluoroheptanoic acid



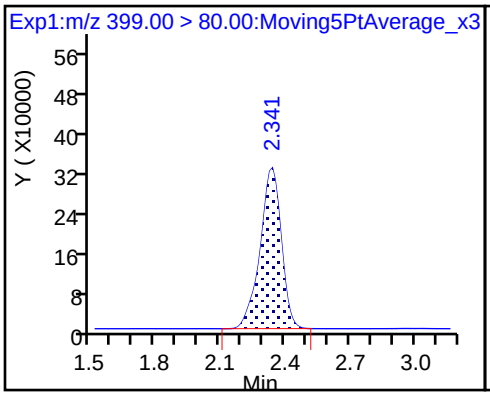
10 Perfluoroheptanoic acid



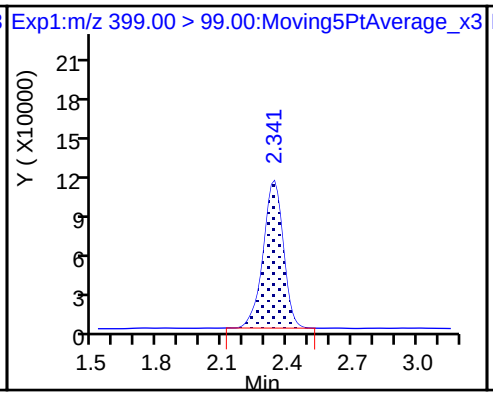
D 11 18O2 PFHxS



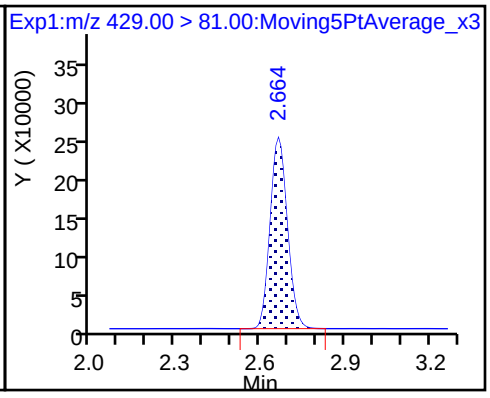
8 Perfluorohexanesulfonic acid



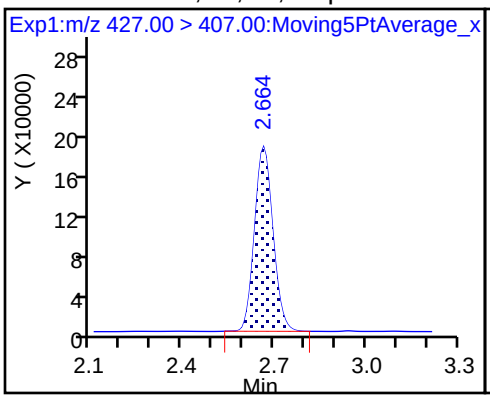
8 Perfluorohexanesulfonic acid



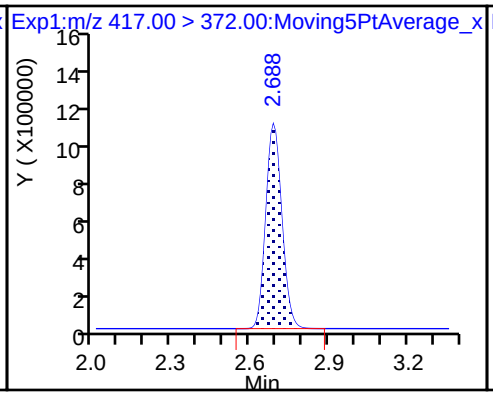
D 12 M2-6:2FTS



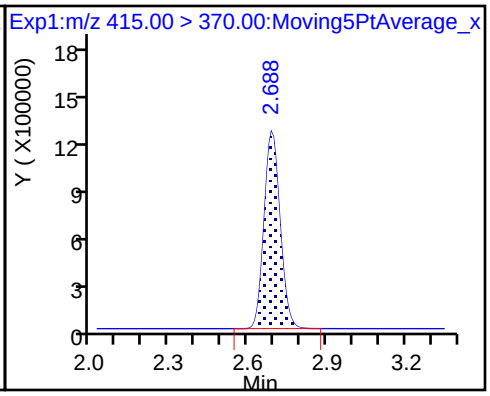
13 Sodium 1H,1H,2H,2H-perfluorooctane



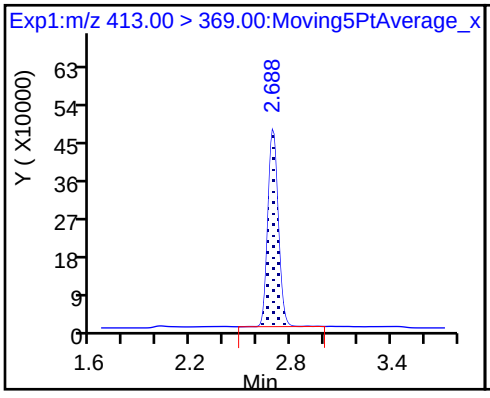
D 14 13C4 PFOA



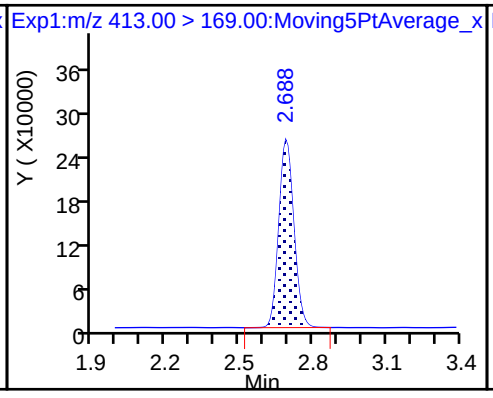
* 62 13C2-PFOA



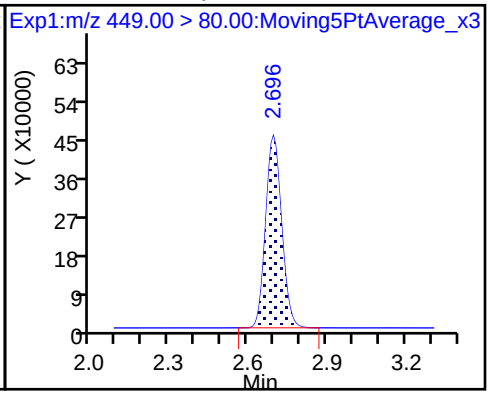
15 Perfluorooctanoic acid



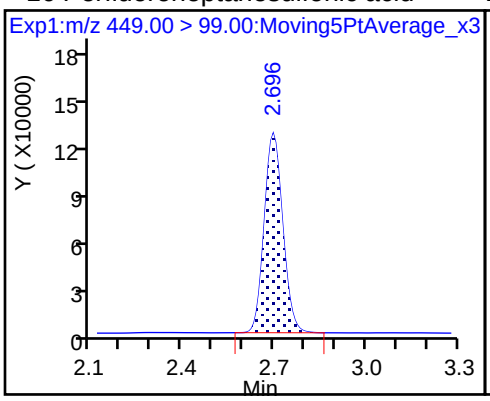
15 Perfluorooctanoic acid



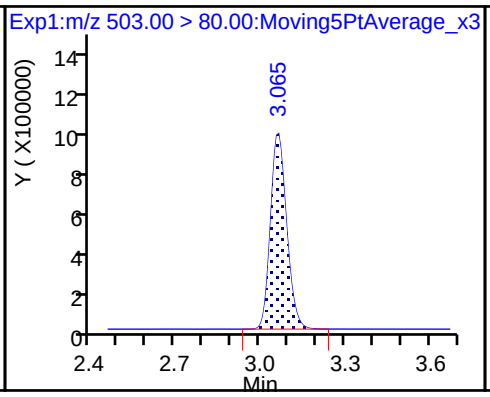
16 Perfluoroheptanesulfonic acid



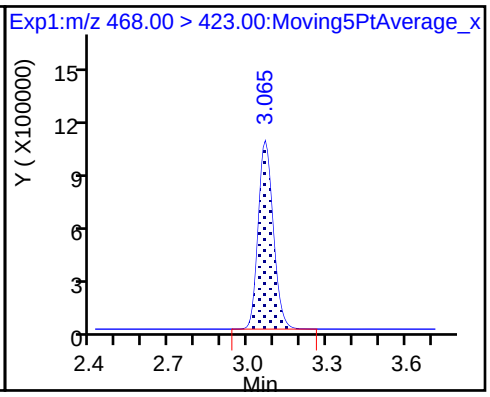
16 Perfluoroheptanesulfonic acid



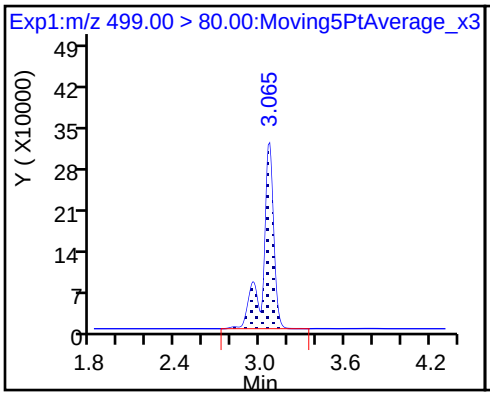
D 18 13C4 PFOS



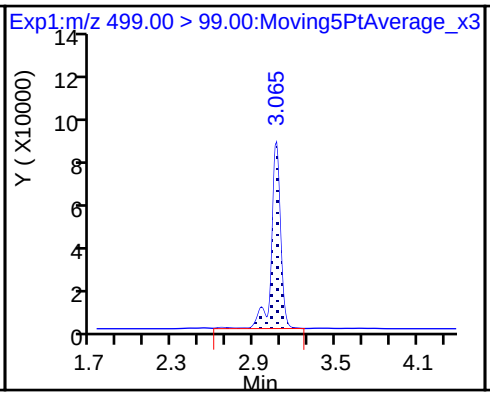
D 19 13C5 PFNA



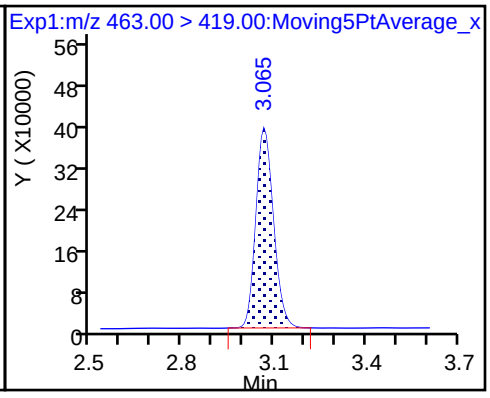
17 Perfluorooctane sulfonic acid



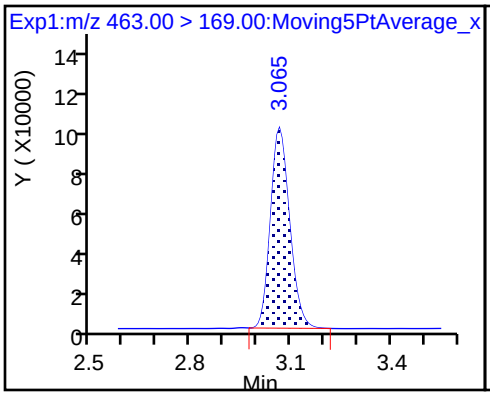
17 Perfluorooctane sulfonic acid



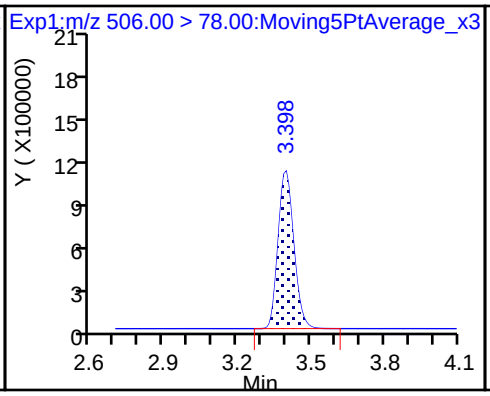
20 Perfluorononanoic acid



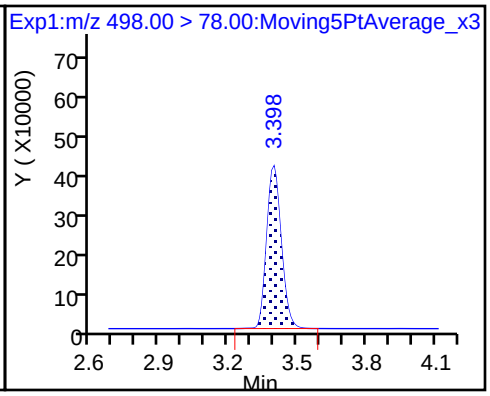
20 Perfluorononanoic acid



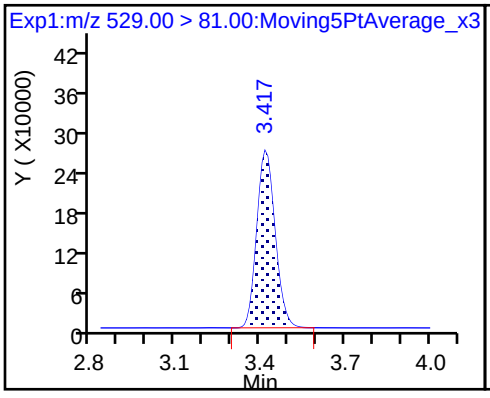
D 21 13C8 FOSA



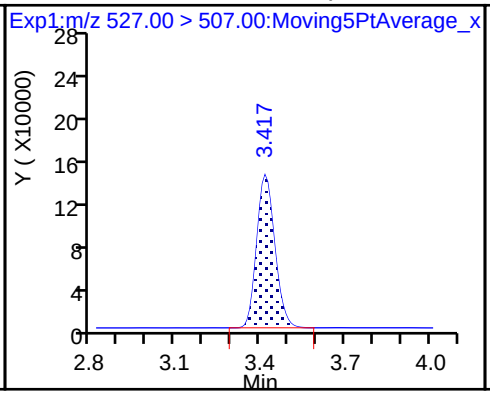
22 Perfluorooctane Sulfonamide



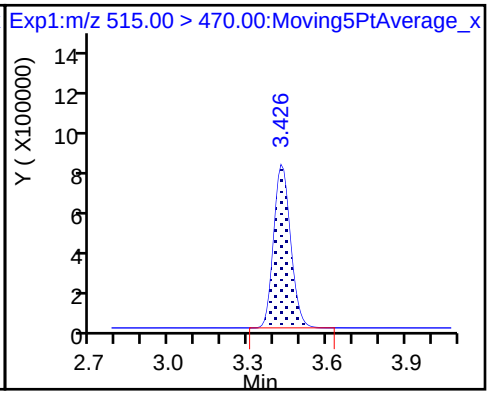
D 26 M2-8:2FTS



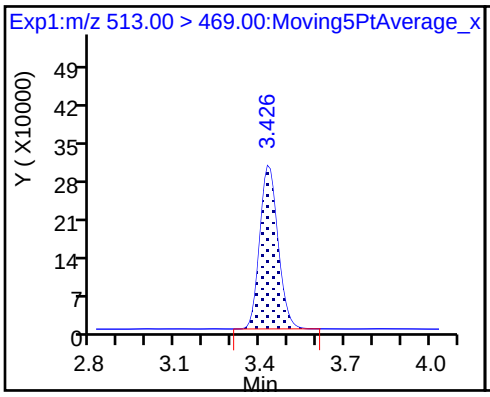
25 Sodium 1H,1H,2H,2H-perfluorodecane



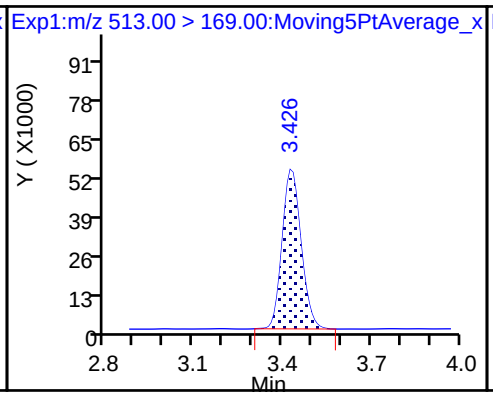
D 23 13C2 PFDA



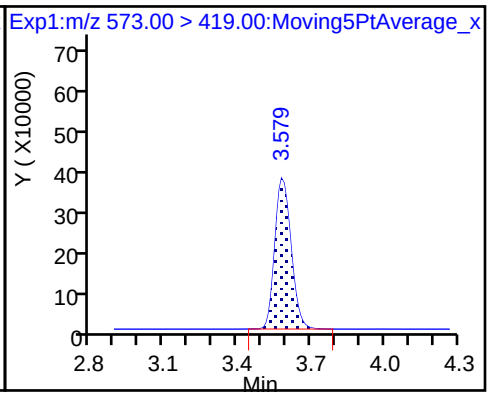
24 Perfluorodecanoic acid



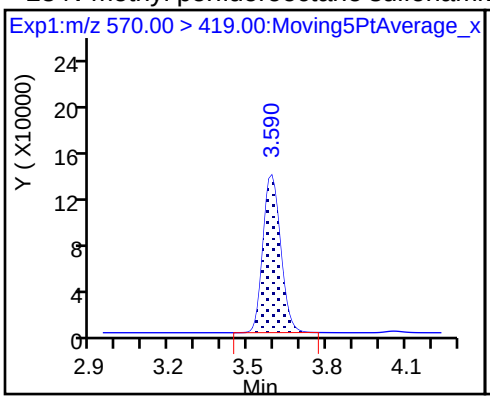
24 Perfluorodecanoic acid



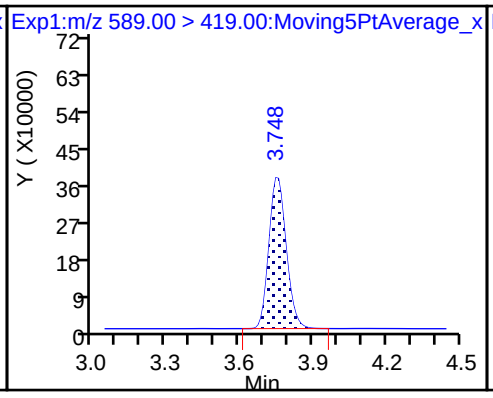
D 27 d3-NMeFOSAA



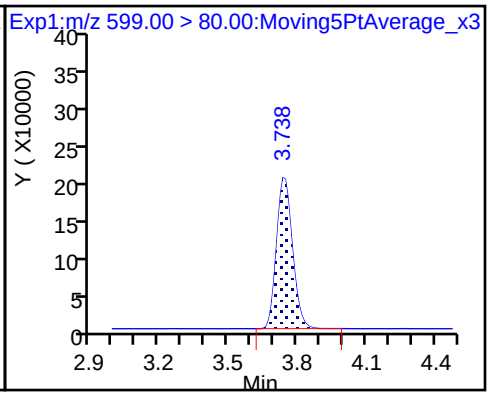
28 N-methyl perfluorooctane sulfonami



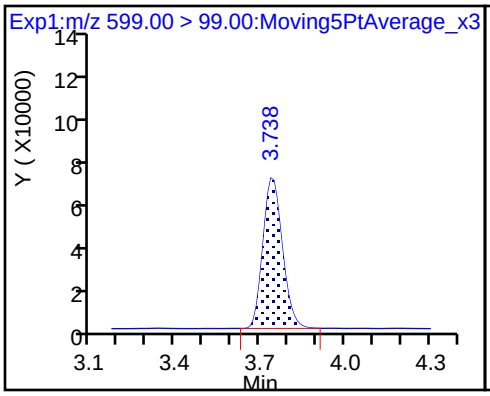
D 32 d5-NEtFOSAA



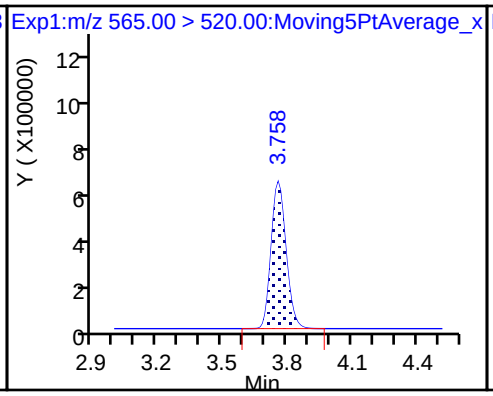
29 Perfluorodecane Sulfonic acid



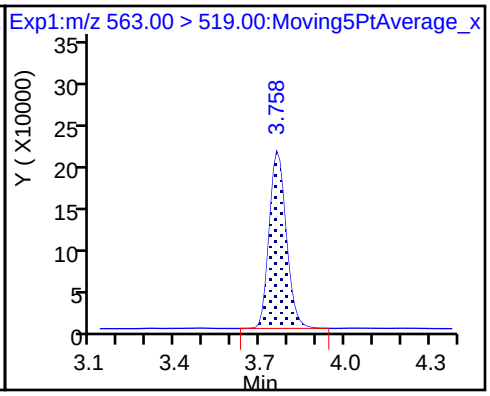
29 Perfluorodecane Sulfonic acid



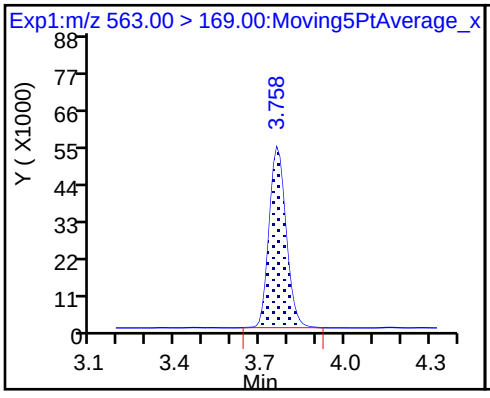
D 30 13C2 PFUnA



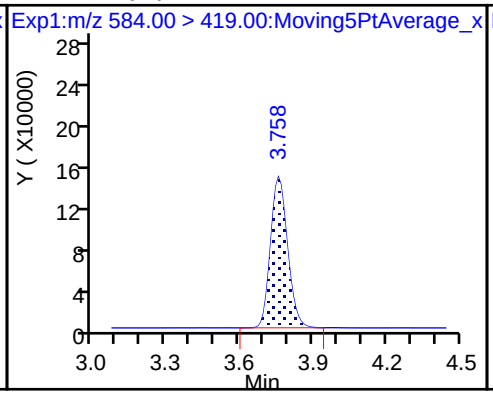
31 Perfluoroundecanoic acid



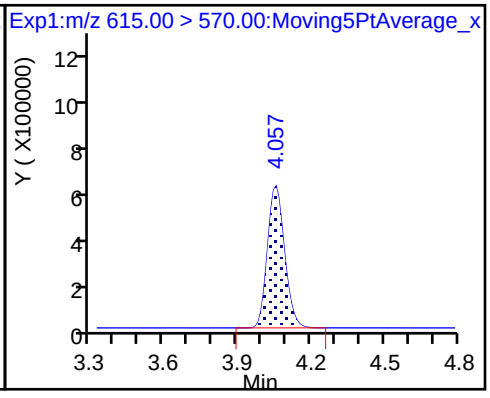
31 Perfluoroundecanoic acid



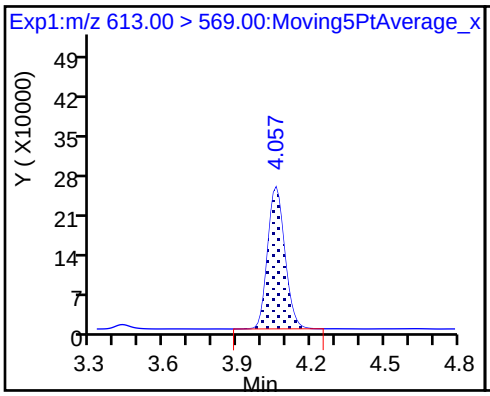
33 N-ethyl perfluorooctane sulfonamid



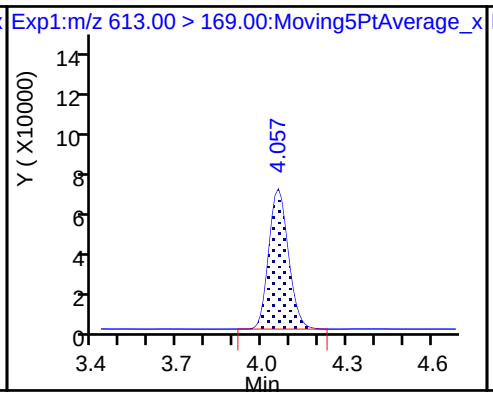
D 36 13C2 PFDoA



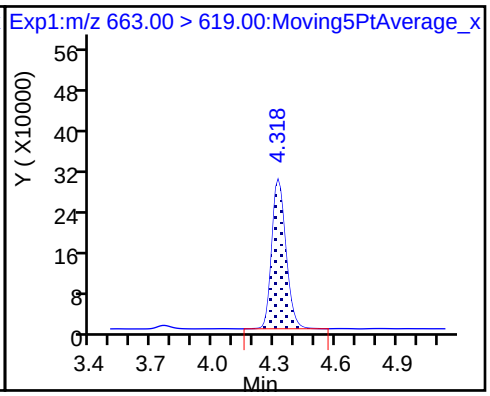
37 Perfluorododecanoic acid



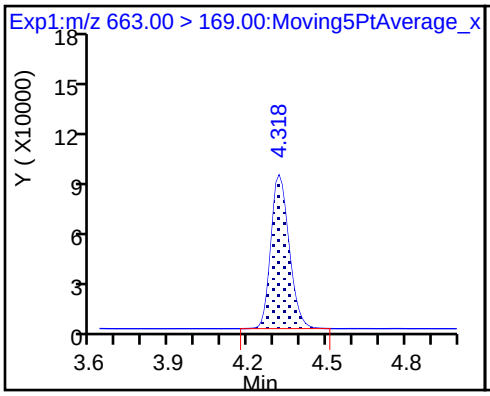
37 Perfluorododecanoic acid



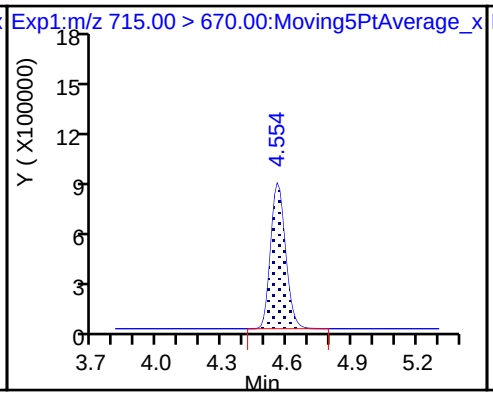
41 Perfluorotridecanoic acid



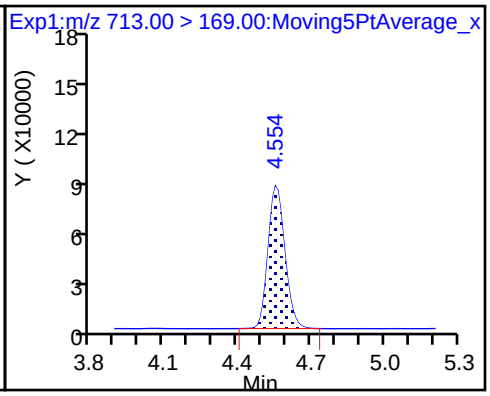
41 Perfluorotridecanoic acid



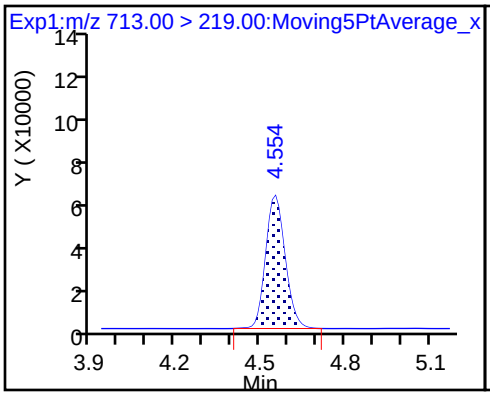
D 43 13C2-PFTeDA



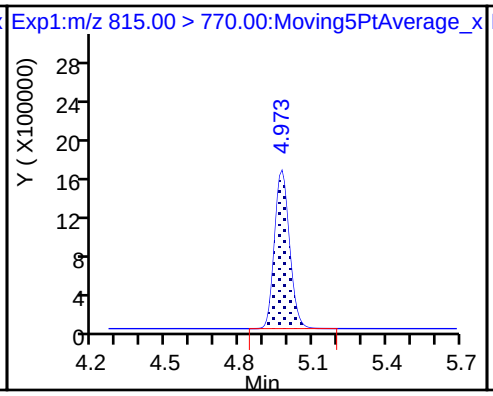
42 Perfluorotetradecanoic acid



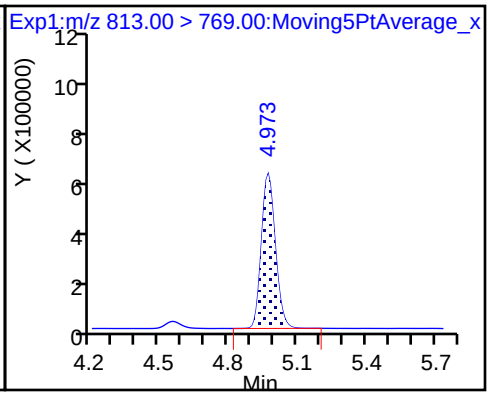
42 Perfluorotetradecanoic acid



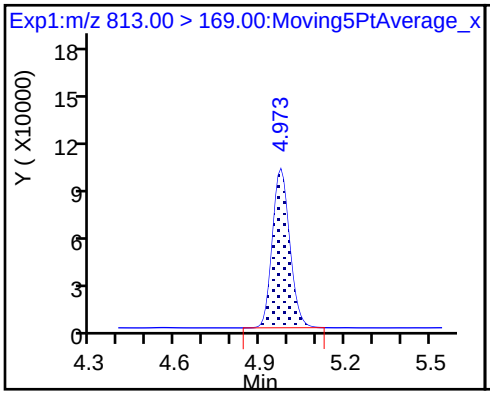
D 44 13C2-PFHxDA



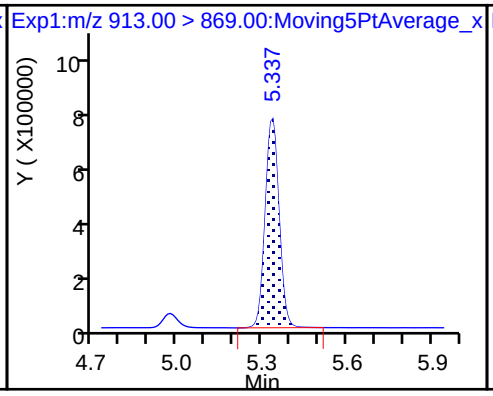
45 Perfluorohexadecanoic acid



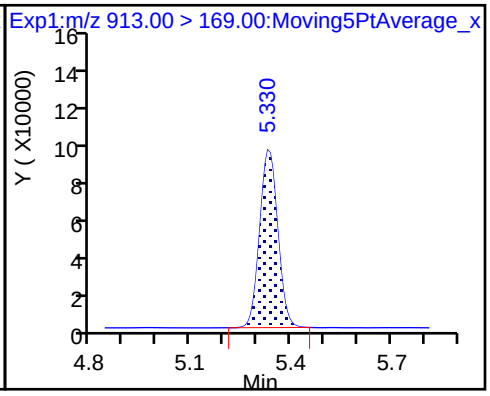
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-214600/2-A

Matrix: Solid Lab File ID: 2018.03.28LLFF_008.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) Date Analyzed: 03/29/2018 00:18

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00169		0.00020	0.000039

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	82		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d
Lims ID: LCS 320-214600/2-A
Client ID:
Sample Type: LCS
Inject. Date: 29-Mar-2018 00:18:08 ALS Bottle#: 15 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-214600/2-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:58:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.000	1922942	0.9601		96.0	473	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5314173	2.07		82.9	82247	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.009	1.000	1499447	0.9195		91.9	706	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3615733	2.13		85.0	86398	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.736	0.008	1.005	2057201	0.8043		91.0	1190	
298.90 > 99.00	1.744	1.736	0.008	1.005	857728		2.40(1.25-3.74)		939	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.644	76530	1.97		84.8	476	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.956	-0.001	1.000	398446	0.7494		80.2	16894	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	1422900	0.9114		91.1	1755	
313.00 > 119.00	1.997	1.998	-0.001	1.000	131403		10.83(5.03-15.10)		1643	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	3817872	2.03		81.2	105962	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1513616	0.9200		92.0	836	
363.00 > 169.00	2.328	2.328	0.0	1.000	594180		2.55(1.13-3.40)		945	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	1719033	0.7826		86.0	7573	
399.00 > 99.00	2.341	2.341	0.0	1.000	593372		2.90(1.50-4.49)		3146	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	3976034	2.14		85.7	92617	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	4667373	2.04		86.2	95324	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.673	-0.001	1.000	506072	0.9063		95.6	6383	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		5062517	2.50			86207	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	1620851	0.9520		95.2	598	
413.00 > 169.00	2.696	2.697	-0.001	1.000	799754		2.03(0.84-2.52)		2928	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.697	-0.025	0.991	760569	1.98		83.2	20745	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.705	0.0	1.000	1491471	0.8508		89.4	36869	
449.00 > 99.00	2.704	2.705	0.0	1.000	404428		3.69(1.94-5.82)		9934	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.721	-0.025	1.000	3767716	1.98		79.4	76025	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	1378238	0.9043		97.5	3740	
499.00 > 99.00	3.072	3.072	0.0	1.000	313864		4.39(2.31-6.93)		3441	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1275089	0.9738		97.4	1343	
463.00 > 169.00	3.072	3.072	0.0	1.000	297894		4.28(1.90-5.69)		8692	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3281808	1.96		78.4	85229	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3269841	1.96		82.1	52043	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	1646148	0.8910		89.1	35333	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	4685404	2.09		83.4	50912	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.426	-0.001	1.000	441521	0.9528		99.5	7253	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.434	3.435	-0.001	1.000	1045654	1.01		101	5723	
513.00 > 169.00	3.434	3.435	-0.001	1.000	171796		6.09(2.36-7.09)		7353	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.453	-0.028	1.271	869560	1.67		69.9	23706	
D 23 13C2 PFDA										
515.00 > 470.00	3.434	3.462	-0.028	1.274	2608168	1.78		71.1	30973	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.590	0.010	1.003	455355	1.00		99.8	4135	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1139433	1.48		59.0	23562	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	785212	0.8440		87.6	20001	
599.00 > 99.00	3.748	3.748	0.0	1.000	289023		2.72(1.39-4.16)		8490	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.769	-0.001	1.000	651861	0.8327		83.3	3823	
563.00 > 169.00	3.768	3.769	-0.001	1.000	172283		3.78(2.12-6.36)		10082	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.769	-0.001	1.003	431808	0.9812		98.1	10798	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1177642	1.34		53.5	3338	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.398	2269882	1.73		69.2	57478	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.057	-0.001	1.000	1008631	0.9734		97.3	725	
613.00 > 169.00	4.056	4.057	-0.001	1.000	241465		4.18(2.13-6.40)		4825	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.504	2475713	1.66		66.5	24841	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.318	0.010	1.000	1016514	0.9326		93.3	493	
663.00 > 169.00	4.317	4.318	-0.001	0.997	319295		3.18(1.25-3.76)		7862	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	288698	0.9206		92.1	4845	
713.00 > 219.00	4.554	4.564	-0.010	0.998	207070		1.39(0.71-2.13)		4203	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3163929	1.74		69.6	21467	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.972	0.009	1.000	1686805	0.9820		98.2	480	
813.00 > 169.00	4.981	4.972	0.009	1.000	274888		6.14(2.86-8.58)		3286	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.008	-0.027	1.848	4610984	1.55		61.9	15104	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.337	0.007	1.000	1634551	0.9585		95.8	368	
913.00 > 169.00	5.344	5.337	0.007	1.000	201902		8.10(3.83-11.48)		2597	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d

Injection Date: 29-Mar-2018 00:18:08 Instrument ID: A8_N

Lims ID: LCS 320-214600/2-A

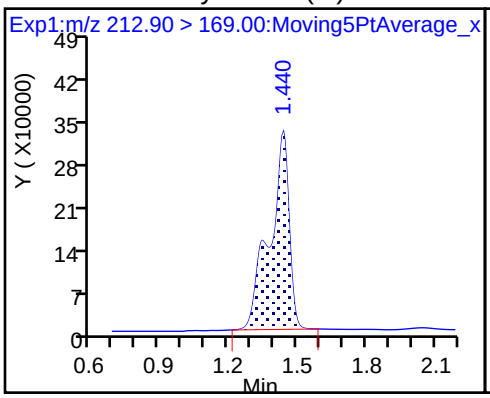
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 5

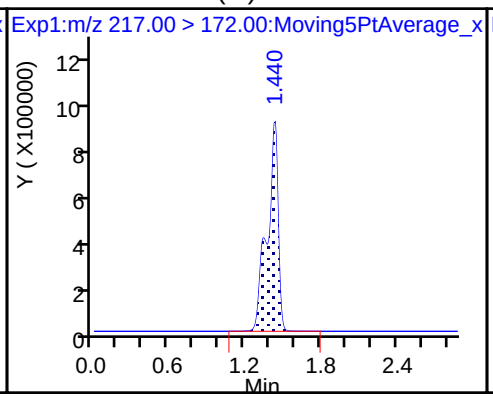
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

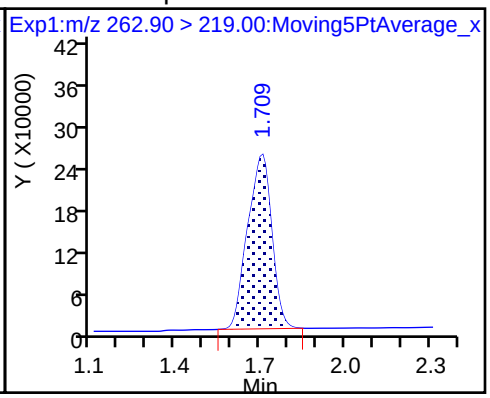
2 Perfluorobutyric acid (M)



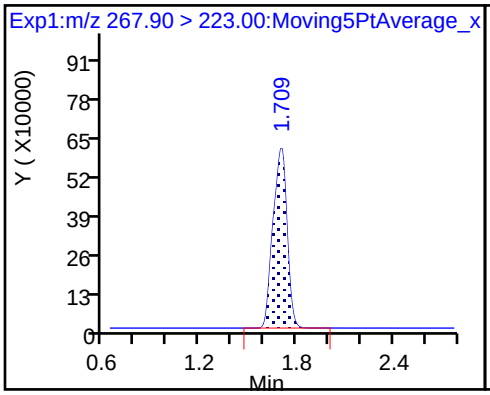
D 1 13C4 PFBA (M)



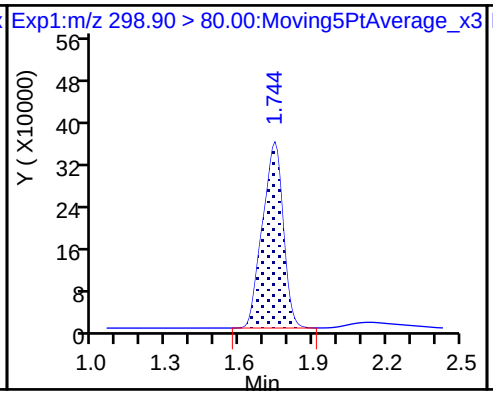
4 Perfluoropentanoic acid



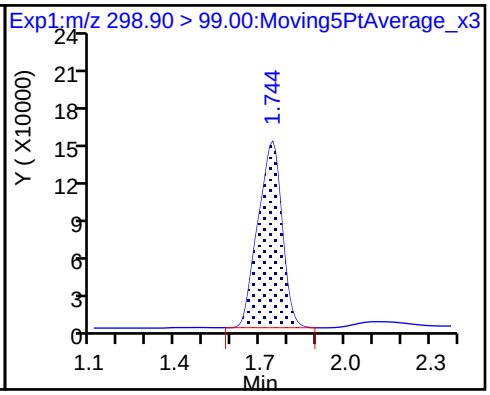
D 3 13C5-PFPeA



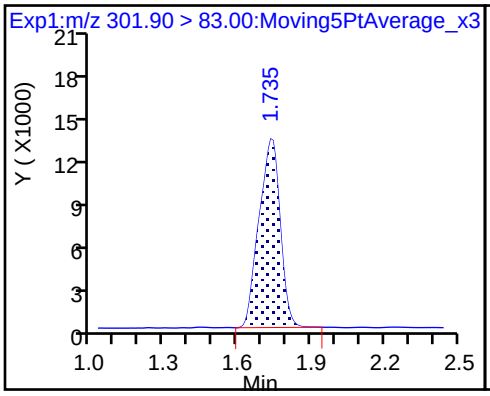
5 Perfluorobutanesulfonic acid



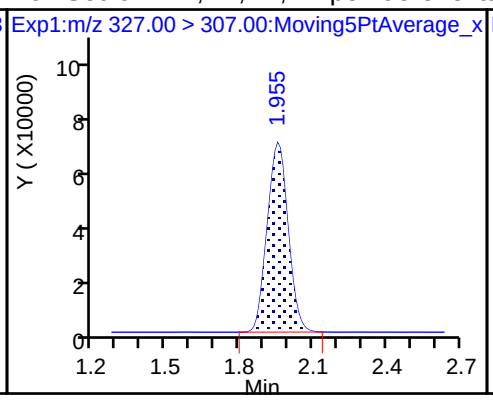
5 Perfluorobutanesulfonic acid



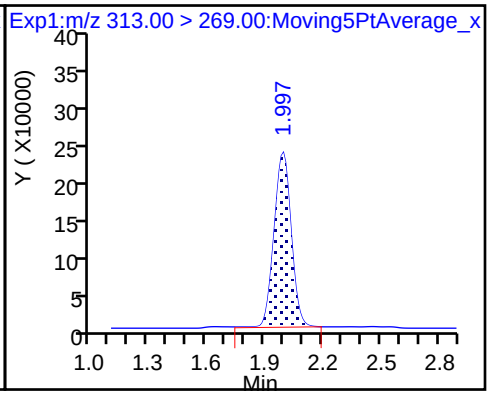
D 47 13C3-PFBS



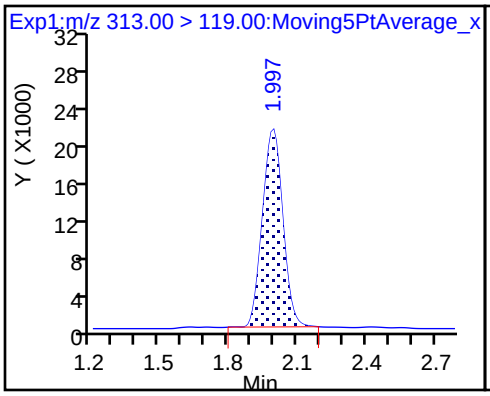
61 Sodium 1H,1H,2H,2H-perfluorohexane



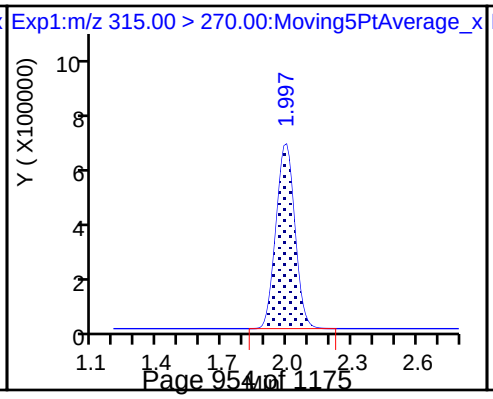
6 Perfluorohexanoic acid



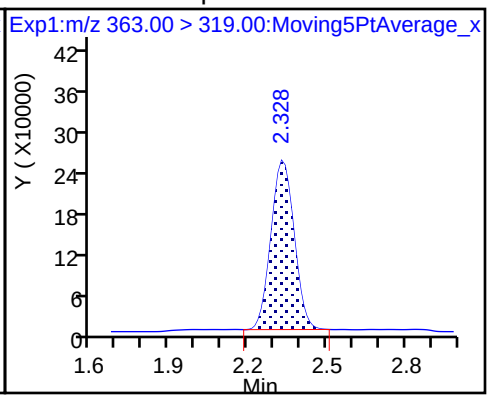
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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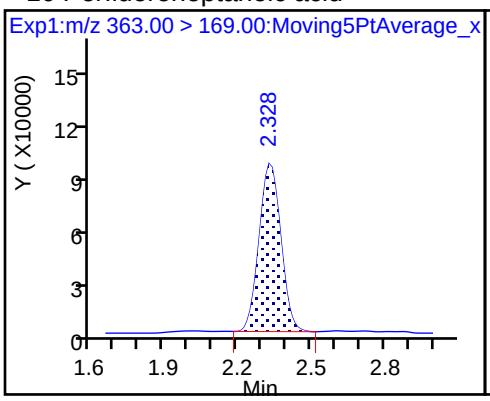
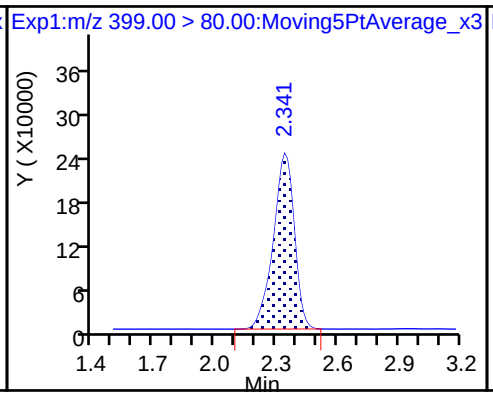
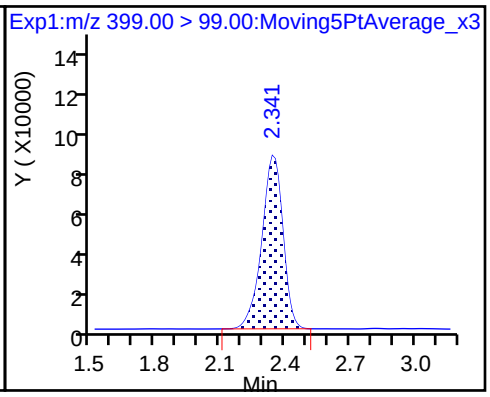


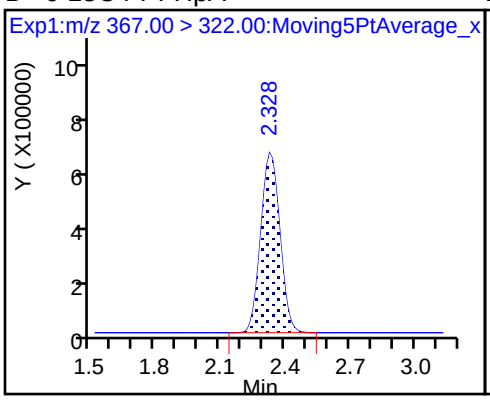
8 Perfluorohexanesulfonic acid



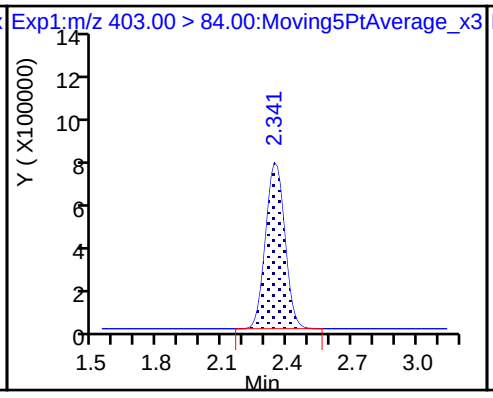
8 Perfluorohexanesulfonic acid



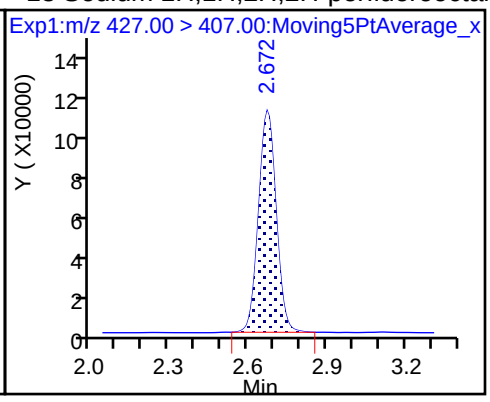
D 9 13C4-PFHpA



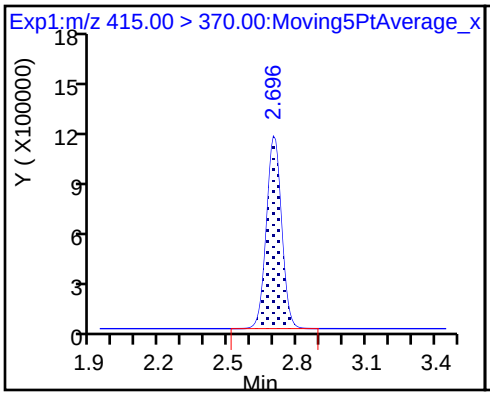
D 11 18O2 PFHxS



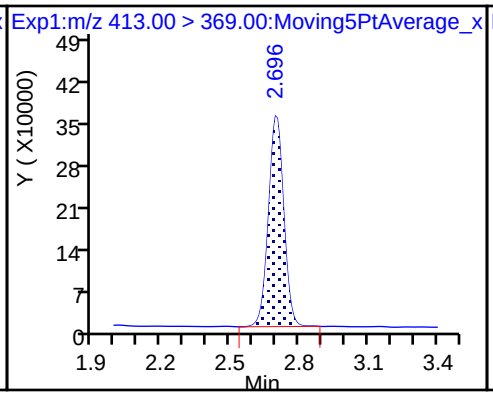
13 Sodium 1H,1H,2H,2H-perfluorooctane



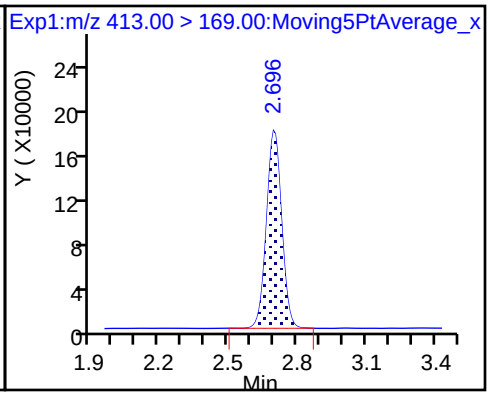
* 62 13C2-PFOA



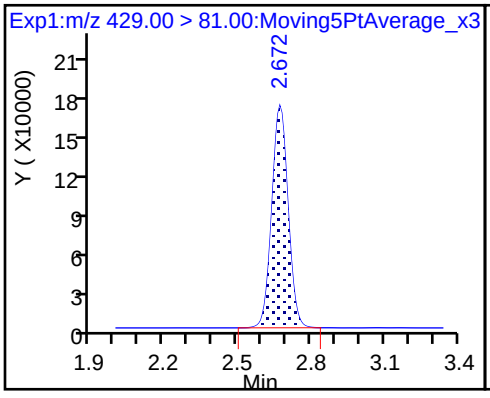
15 Perfluorooctanoic acid



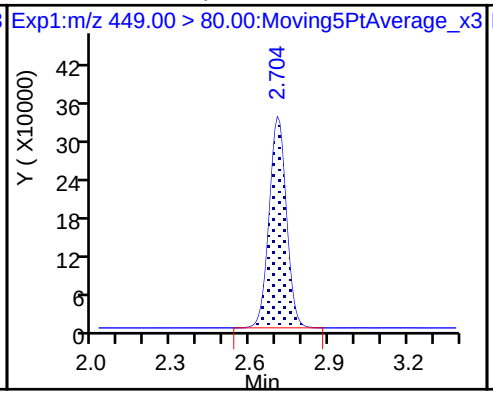
15 Perfluorooctanoic acid



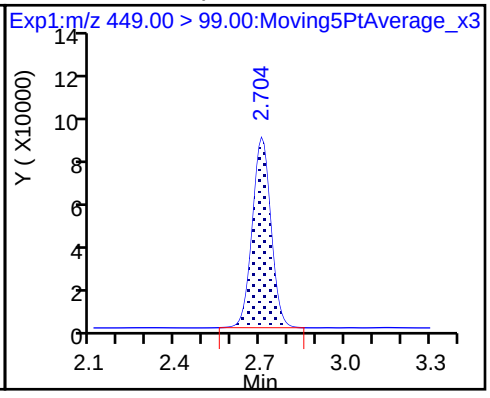
D 12 M2-6:2FTS



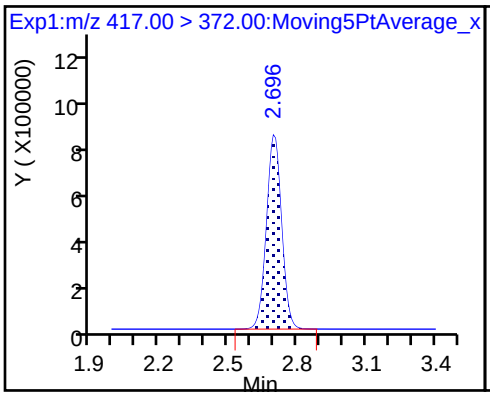
16 Perfluoroheptanesulfonic acid



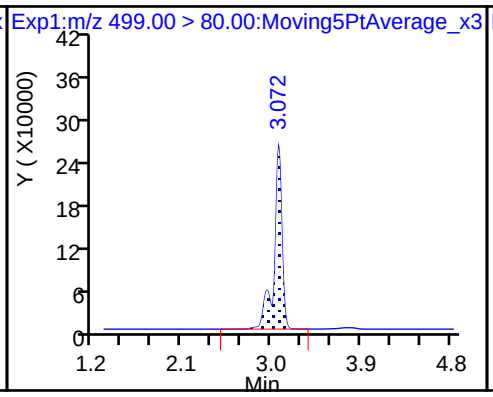
16 Perfluoroheptanesulfonic acid



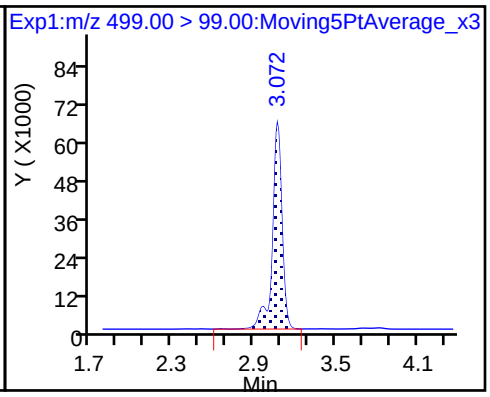
D 14 13C4 PFOA



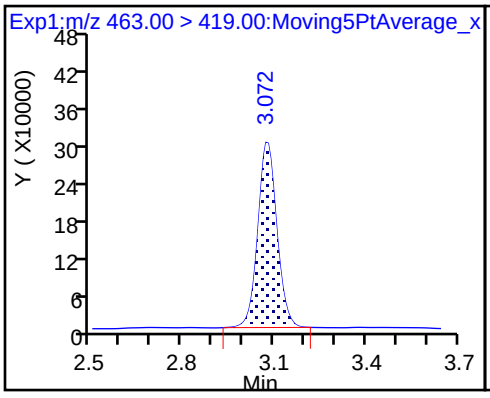
17 Perfluorooctane sulfonic acid



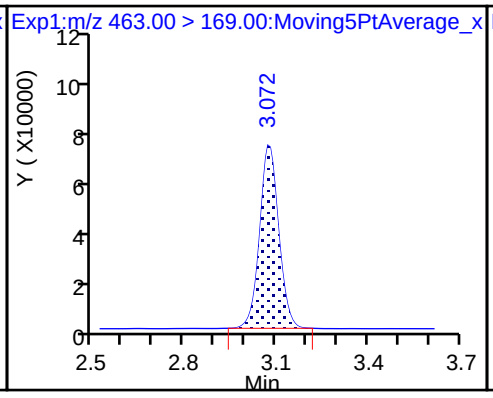
17 Perfluorooctane sulfonic acid



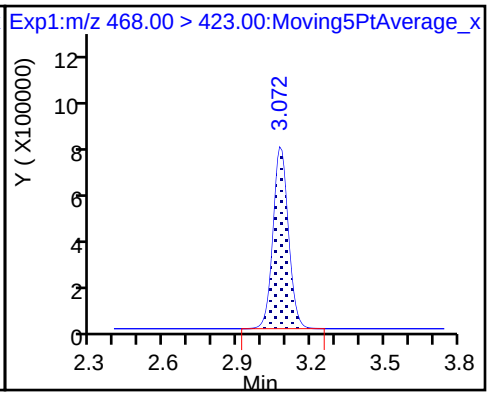
20 Perfluorononanoic acid



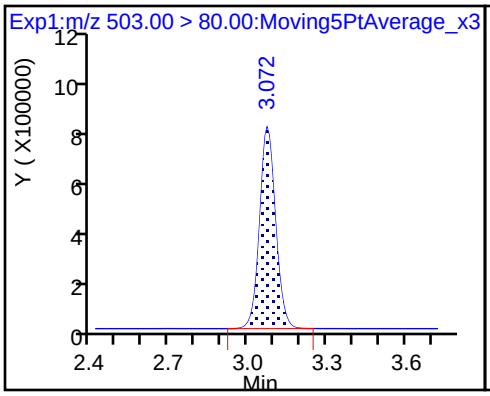
20 Perfluorononanoic acid



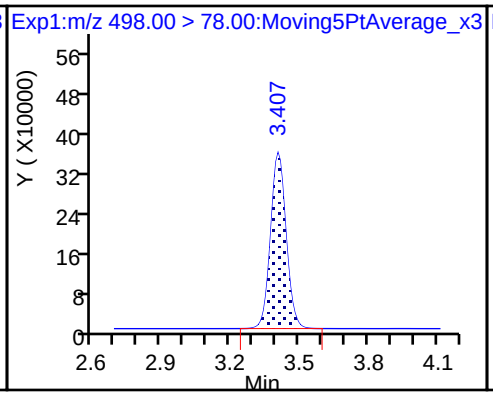
D 19 13C5 PFNA



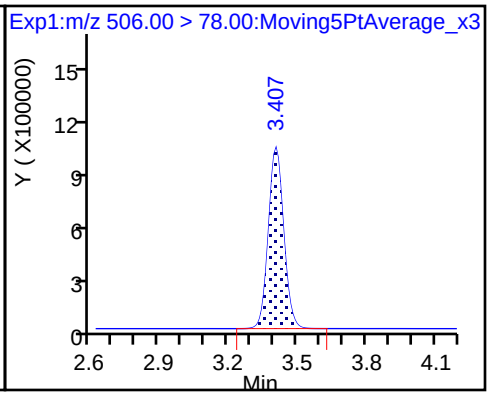
D 18 13C4 PFOS



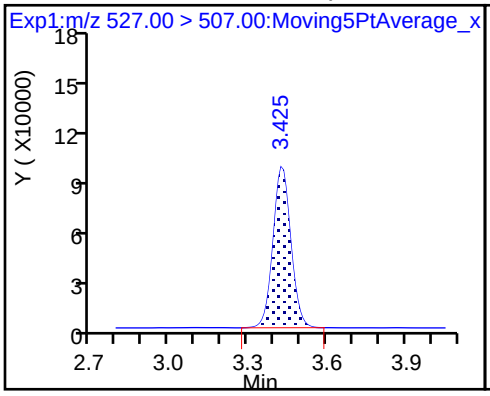
22 Perfluorooctane Sulfonamide



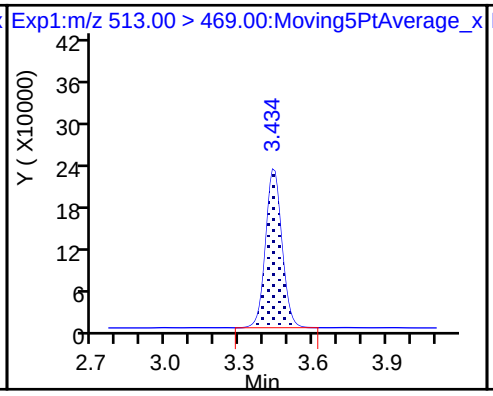
D 21 13C8 FOSA



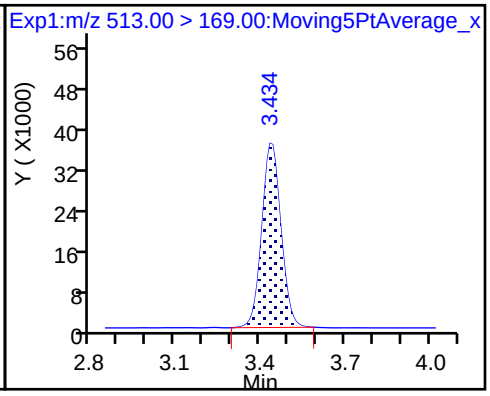
25 Sodium 1H,1H,2H,2H-perfluorodecane



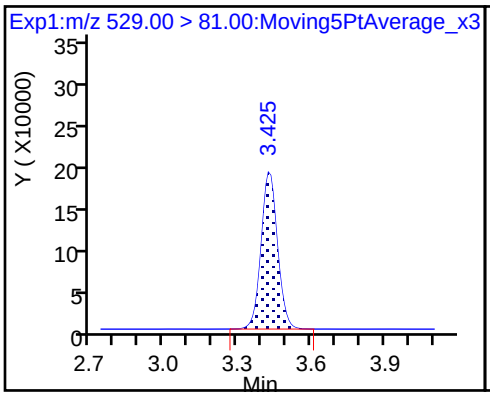
24 Perfluorodecanoic acid



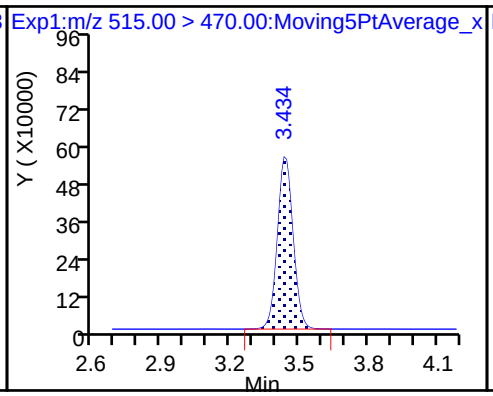
24 Perfluorodecanoic acid



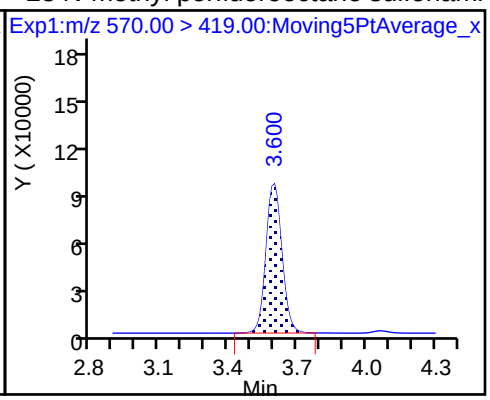
D 26 M2-8:2FTS



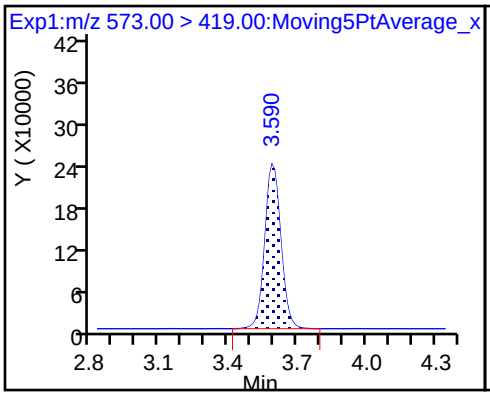
D 23 13C2 PFDA



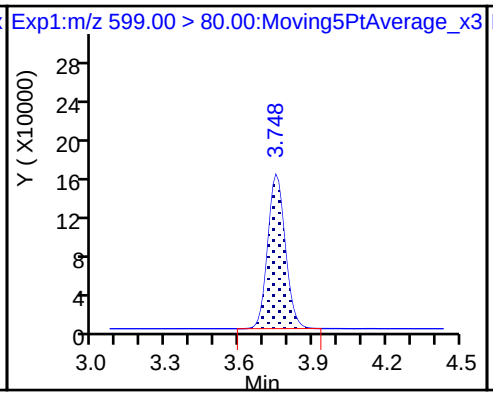
28 N-methyl perfluorooctane sulfonami



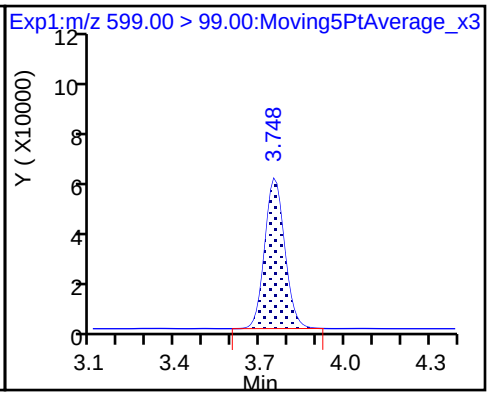
D 27 d3-NMeFOSAA



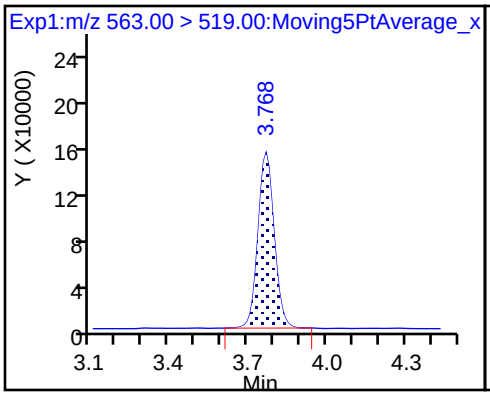
29 Perfluorodecane Sulfonic acid



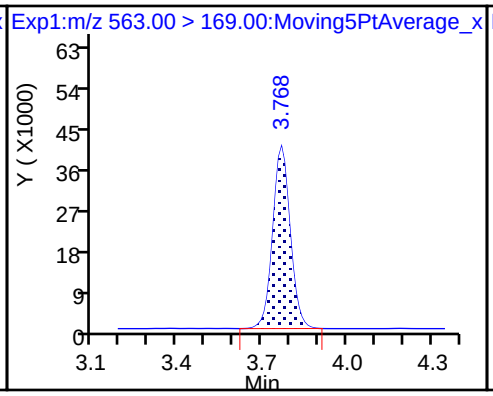
29 Perfluorodecane Sulfonic acid



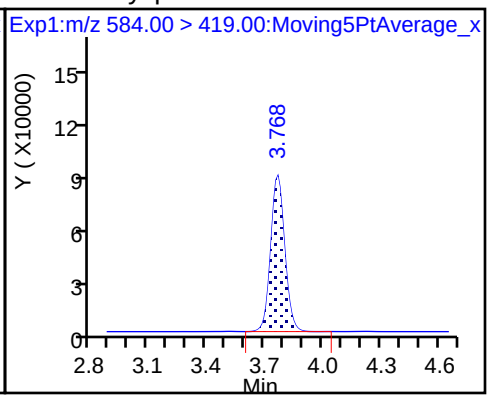
31 Perfluoroundecanoic acid



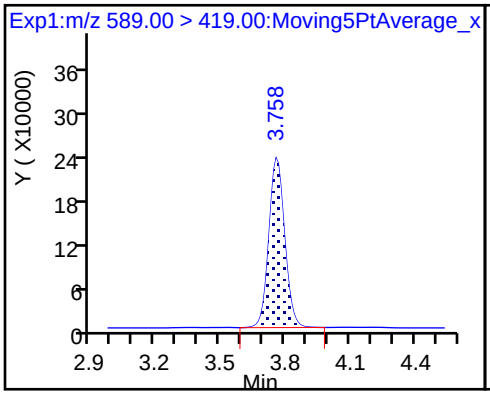
31 Perfluoroundecanoic acid



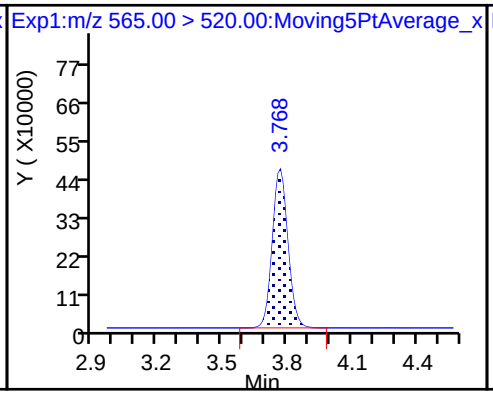
33 N-ethyl perfluorooctane sulfonamid



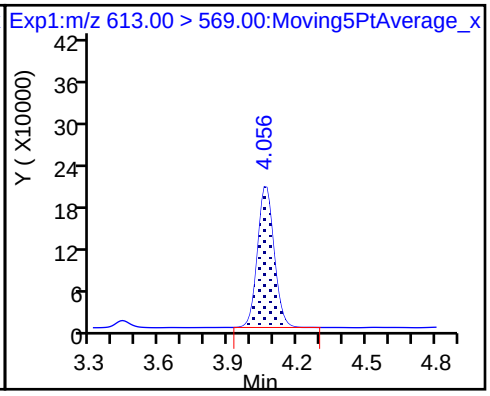
D 32 d5-NEtFOSAA



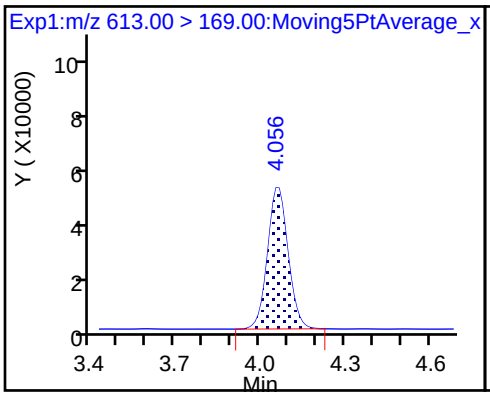
D 30 13C2 PFUnA



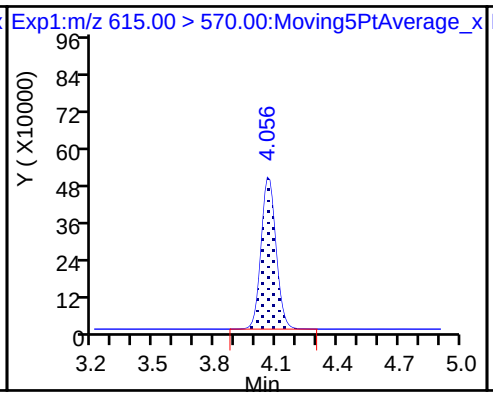
37 Perfluorododecanoic acid



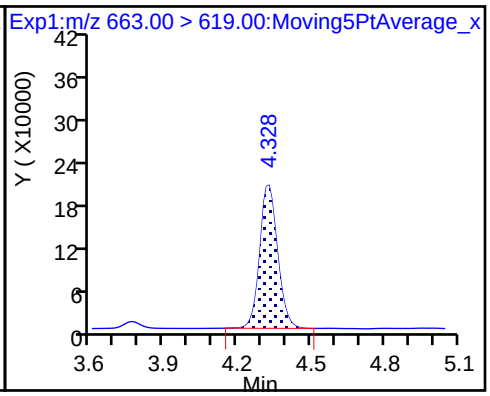
37 Perfluorododecanoic acid



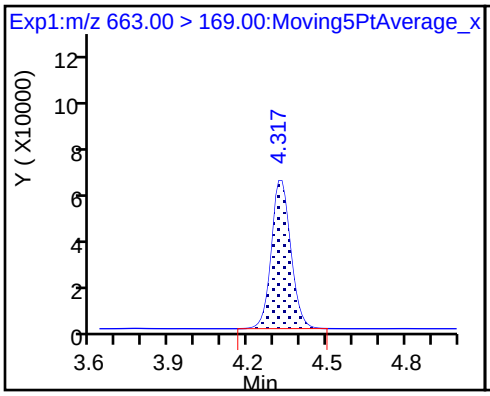
D 36 13C2 PFDoA



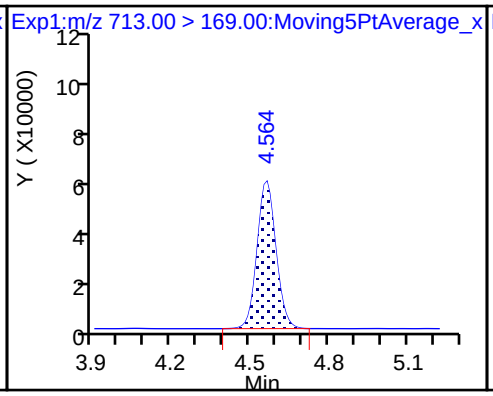
41 Perfluorotridecanoic acid



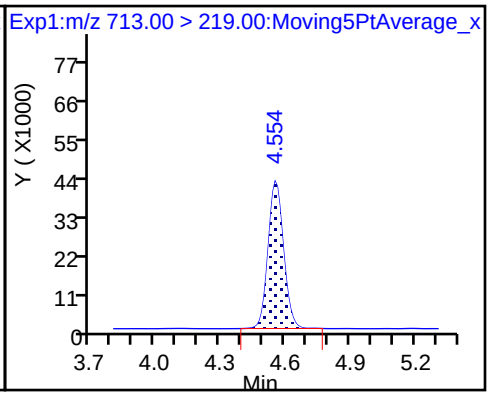
41 Perfluorotridecanoic acid



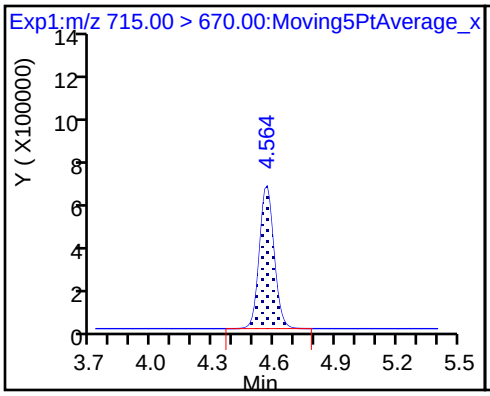
42 Perfluorotetradecanoic acid



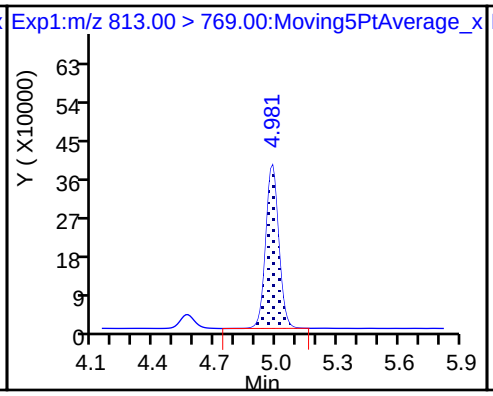
42 Perfluorotetradecanoic acid



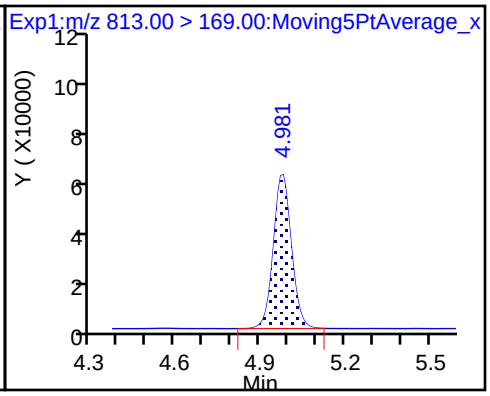
D 43 13C2-PFTeDA



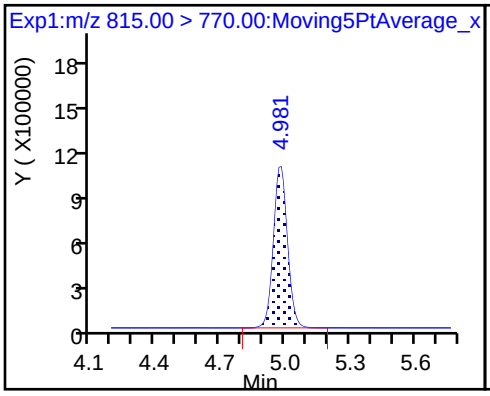
45 Perfluorohexadecanoic acid



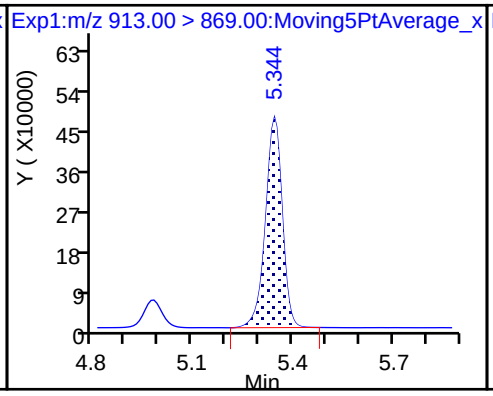
45 Perfluorohexadecanoic acid



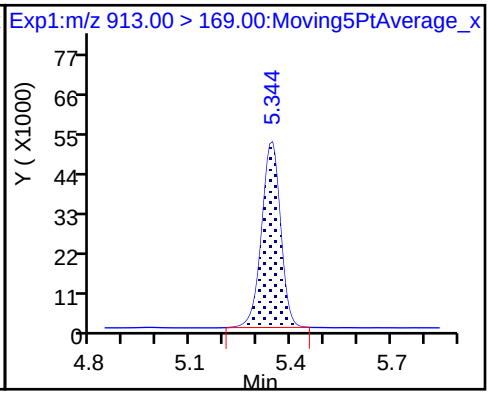
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') MS | Lab Sample ID: 320-36683-9 MS

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_018.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 251.2(mL) | Date Analyzed: 03/19/2018 18:39

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	88.81		1.99	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	76.77		1.99	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	150.4		1.99	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	68.59		1.99	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	138.8		1.99	0.85
375-95-1	Perfluorononanoic acid (PFNA)	165.3		1.99	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	300.4		1.99	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	214.6		1.99	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	49.89		1.99	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	56.04		1.99	1.29
376-06-7	Perfluorotetradecanoic acid (PFTeA)	39.18		1.99	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	75.83		1.99	0.20
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	142.7		1.99	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	103.1		1.99	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	109.6		1.99	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	43.34		19.9	3.09
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	45.53		19.9	1.89
27619-97-2	6:2FTS	53.55		19.9	1.99
39108-34-4	8:2FTS	68.40		19.9	1.99

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') MS | Lab Sample ID: 320-36683-9 MS

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_018.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 251.2(mL) | Date Analyzed: 03/19/2018 18:39

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	63		25-150
STL01893	13C5 PFPeA	74		25-150
STL00993	13C2 PFHxA	71		25-150
STL01892	13C4-PFHpA	64		25-150
STL00990	13C4 PFOA	76		25-150
STL00995	13C5 PFNA	31		25-150
STL00996	13C2 PFDA	82		25-150
STL00997	13C2 PFUnA	79		25-150
STL00998	13C2 PFDoA	70		25-150
STL02116	13C2-PFTeDA	85		25-150
STL02337	13C3-PFBS	86		25-150
STL00994	18O2 PFHxS	75		25-150
STL00991	13C4 PFOS	35		25-150
STL01056	13C8 FOSA	84		25-150
STL02118	d3-NMeFOSAA	60		25-150
STL02117	d5-NEtFOSAA	65		25-150
STL02279	M2-6:2FTS	82		25-150
STL02280	M2-8:2FTS	104		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_018.d
Lims ID: 320-36683-B-9-E MS
Client ID: SB012-SPLP(2'-4')
Sample Type: MS
Inject. Date: 19-Mar-2018 18:39:02 ALS Bottle#: 11 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-b-9-e ms
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:18 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:10:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.444	-0.004	0.536	3537718	1.57		62.7	42515	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.444	-0.004	1.000	2927801	2.23		223	108	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.633	2947307	1.85		74.0	13950	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.705	-0.005	1.000	2655667	1.93		193	69.8	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.740	-0.005	0.646	78355	1.99		85.7	196	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.740	-0.005	1.000	4966940	1.90		215	1286	
298.90 > 99.00	1.735	1.740	-0.005	1.000	1981123		2.51(1.25-3.74)		1206	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.960	-0.015	1.000	625033	1.15		124	3830	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.992	-0.006	1.000	4812810	3.78		378	829	
313.00 > 119.00	1.986	1.992	-0.006	1.000	413218		11.65(5.03-15.10)		2475	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.992	-0.006	0.739	3155458	1.78		71.1	53733	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.335	-0.020	0.862	2777389	1.61		64.3	52346	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.006	1983902	1.72		172	413	
363.00 > 169.00	2.328	2.335	-0.007	1.006	772031		2.57(1.13-3.40)		5856	
8 Perfluorohexanesulfonic acid										E
399.00 > 80.00	2.328	2.348	-0.020	0.994	29962683	15.5		1700	17148	E
399.00 > 99.00	2.328	2.348	-0.020	0.994	10654359		2.81(1.50-4.49)		12644	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	4105991	1.78		75.3	78165	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.663	2.675	-0.012	1.000	815443	1.35		142	9441	
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.675	-0.012	0.991	864866	1.96		82.3	4485	
D 14 13C4 PFOA										
417.00 > 372.00	2.687	2.706	-0.019	1.000	3172850	1.90		76.1	86299	
* 62 13C2-PFOA										
415.00 > 370.00	2.687	2.706	-0.019		4421533	2.50			97455	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.687	2.706	-0.019	1.000	4940226	3.49		349	1007	M
413.00 > 169.00	2.687	2.706	-0.019	1.000	2819066		1.75(0.84-2.52)		6883	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.695	2.706	-0.011	1.000	2656791	3.59		377	1945	
449.00 > 99.00	2.695	2.706	-0.011	1.000	688098		3.86(1.94-5.82)		3098	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.083	-0.025	1.138	1347499	0.8360		35.0	3577	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.065	3.083	-0.018	1.002	189643587	310.7		33481	21188	E
499.00 > 99.00	3.058	3.083	-0.025	1.000	64419212		2.94(2.31-6.93)		49587	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.083	-0.018	1.000	1770525	4.15		415	962	
463.00 > 169.00	3.065	3.083	-0.018	1.000	453312		3.91(1.90-5.69)		2207	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.083	-0.018	1.141	1045757	0.7837		31.3	16034	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.403	-0.014	1.261	4891300	2.10		83.8	41085	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.412	-0.023	1.000	5234789	2.75		275	133	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.439	-0.023	1.272	1037783	2.50		104	3161	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.439	-0.023	1.000	936066	1.72		179	17500	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.448	-0.022	1.000	6559525	7.55		755	7925	
513.00 > 169.00	3.426	3.448	-0.022	1.000	1232582		5.32(2.36-7.09)		1915	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.448	-0.022	1.275	2290217	2.05		82.2	51838	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.606	-0.027	1.332	554841	1.51		60.3	15026	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.617	-0.027	1.003	251652	1.09		109	2061	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.765	-0.027	1.000	932625	2.59		269	224	
599.00 > 99.00	3.738	3.765	-0.027	1.000	312073		2.99(1.39-4.16)		925	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.775	-0.027	1.395	569731	1.62		64.8	1502	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.786	-0.028	1.399	1713286	1.96		78.5	39984	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.786	-0.028	1.000	3095568	5.39		539	1410	
563.00 > 169.00	3.758	3.786	-0.028	1.000	818456		3.78(2.12-6.36)		547	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.786	-0.028	1.003	255169	1.14		114	4361	
35 MeFOSA										
512.00 > 169.00	3.893	3.875	0.018		367430	NC			4067	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.089	4.066	0.023		292332	NC			4056	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.084	-0.027	1.000	738868	1.25		125	196	
613.00 > 169.00	4.057	4.084	-0.027	1.000	177093		4.17(2.13-6.40)		1975	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.084	-0.027	1.510	1440920	1.74		69.6	9087	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.346	-0.028	1.000	834763	1.41		141	244	
663.00 > 169.00	4.318	4.346	-0.028	1.000	264693		3.15(1.25-3.76)		3141	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.581	-0.027	1.000	174312	0.9842		98.4	2616	
713.00 > 219.00	4.554	4.581	-0.027	1.000	133012		1.31(0.71-2.13)		1213	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.581	-0.027	1.695	1605586	2.13		85.0	16239	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	5.004	-0.031	1.000	620320	1.20		120	46.0	
813.00 > 169.00	4.973	5.004	-0.031	1.000	107933		5.75(2.86-8.58)		1429	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	5.004	-0.031	1.851	1383803	1.25		50.1	6213	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.374	-0.037	1.000	548130	1.02		102	184	
913.00 > 169.00	5.330	5.374	-0.044	0.999	70340		7.79(3.83-11.48)		854	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_018.d

Injection Date: 19-Mar-2018 18:39:02 Instrument ID: A8_N

Lims ID: 320-36683-B-9-E MS

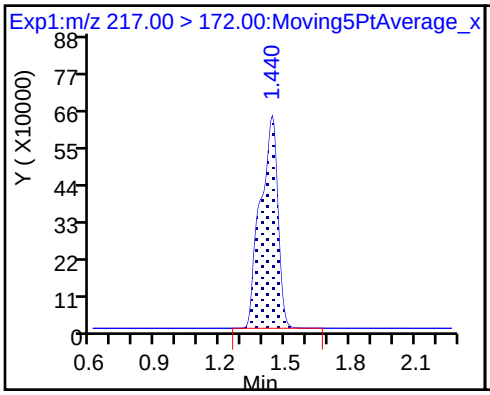
Client ID: SB012-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14

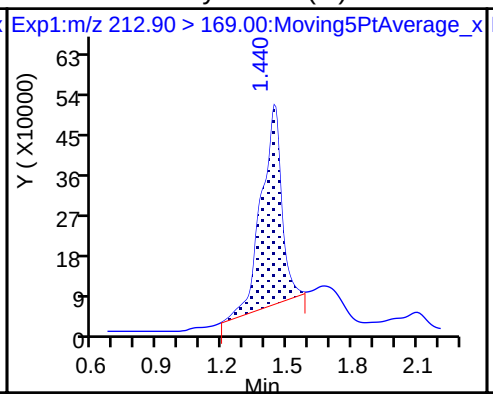
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

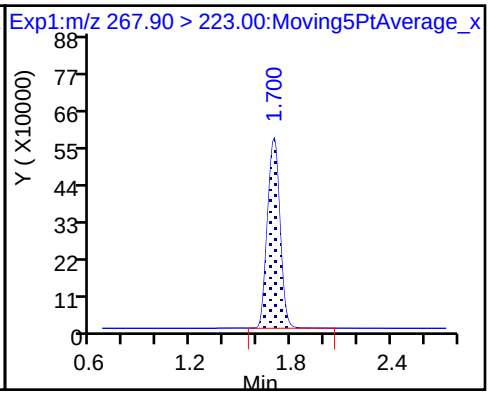
D 1 13C4 PFBA



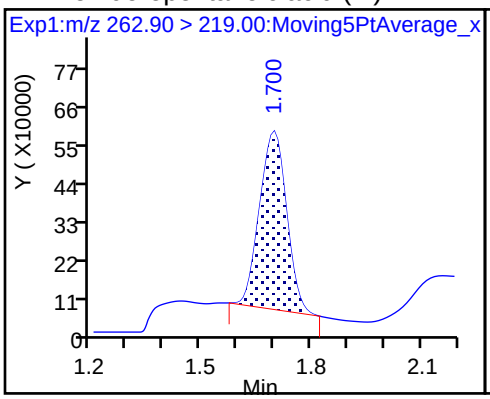
2 Perfluorobutyric acid (M)



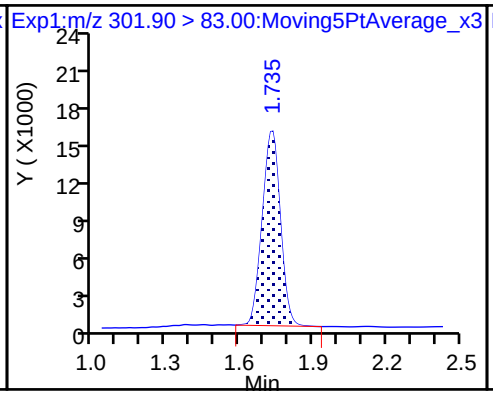
D 3 13C5-PFPeA



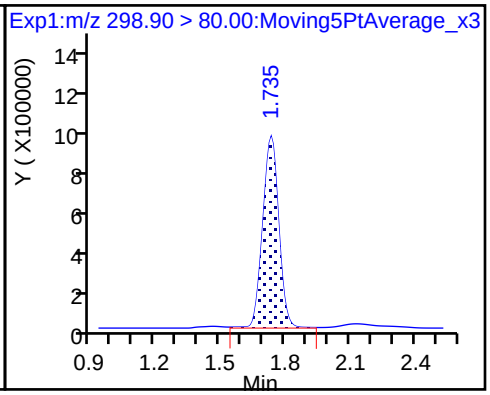
4 Perfluoropentanoic acid (M)



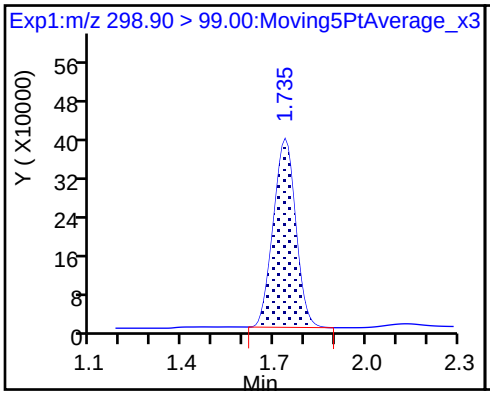
D 47 13C3-PFBS



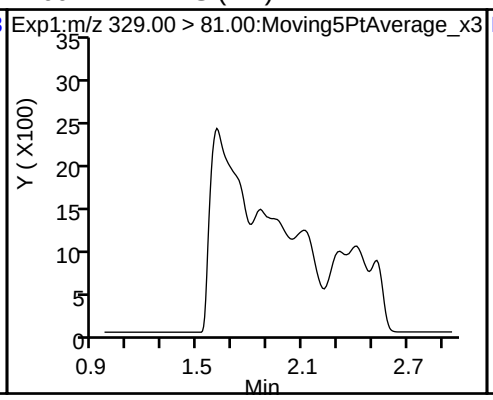
5 Perfluorobutanesulfonic acid



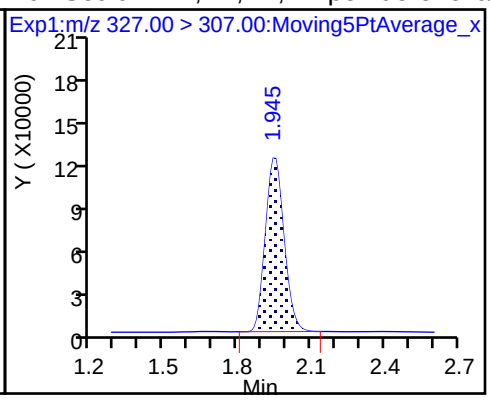
5 Perfluorobutanesulfonic acid



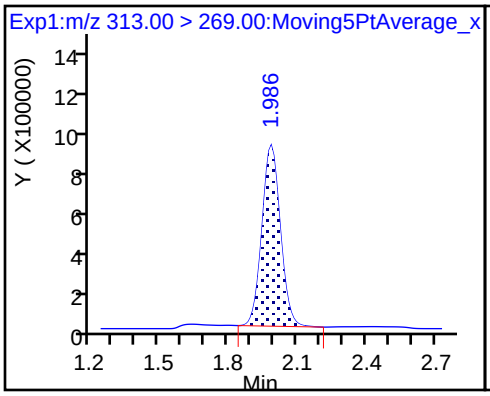
D 60 M2-4:2FTS (ND)



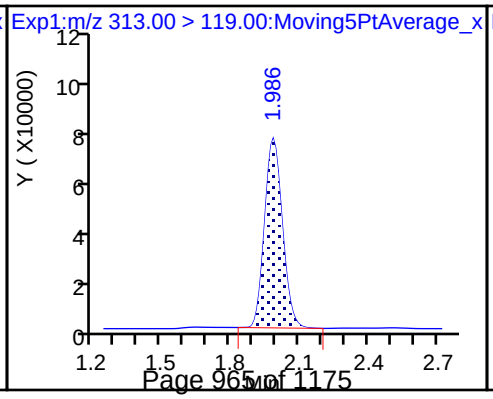
61 Sodium 1H,1H,2H,2H-perfluorohexane



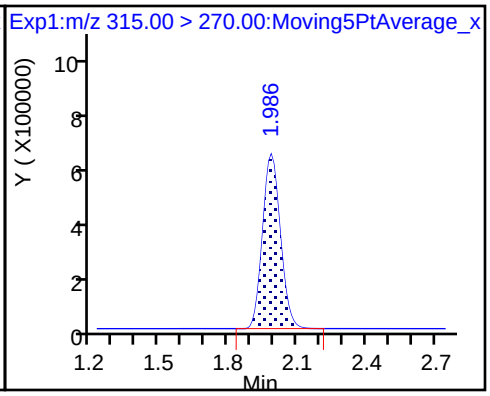
6 Perfluorohexanoic acid



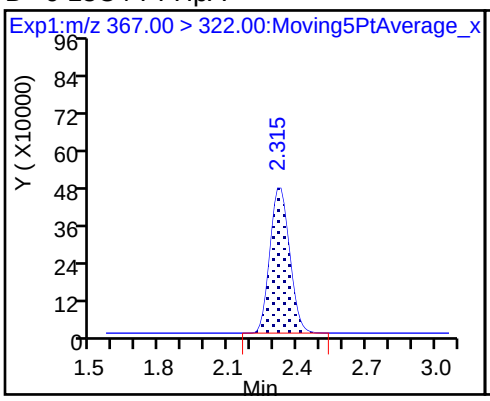
6 Perfluorohexanoic acid



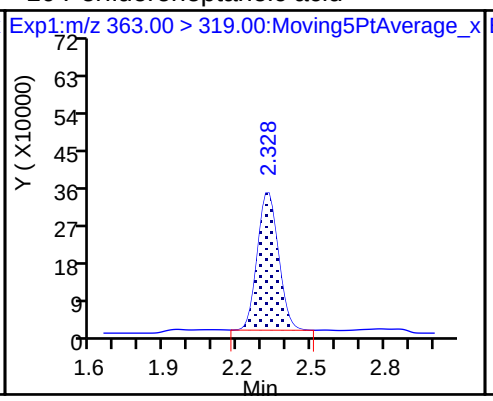
D 7 13C2 PFHxA



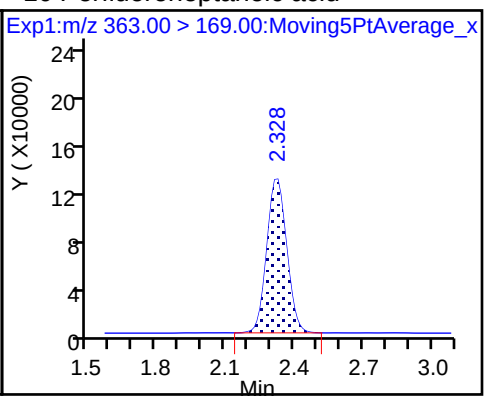
D 9 13C4-PFHpA



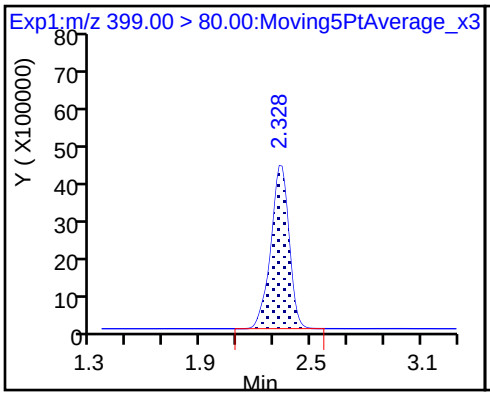
10 Perfluoroheptanoic acid



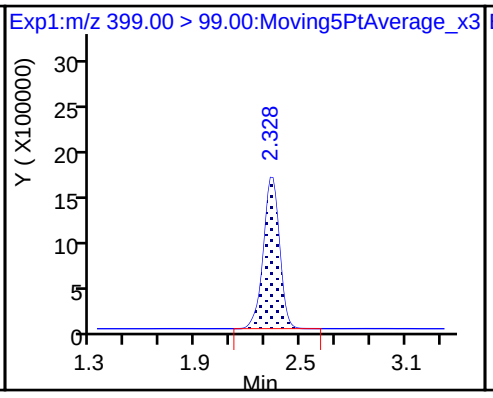
10 Perfluoroheptanoic acid



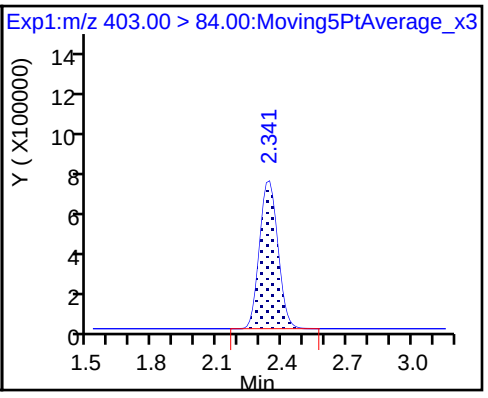
8 Perfluorohexanesulfonic acid



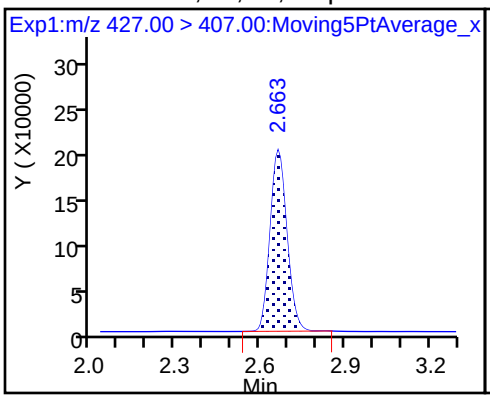
8 Perfluorohexanesulfonic acid



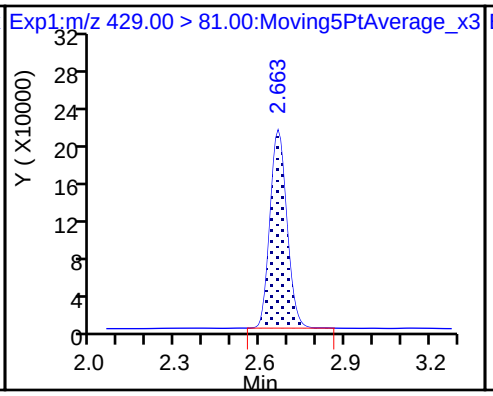
D 11 18O2 PFHxS



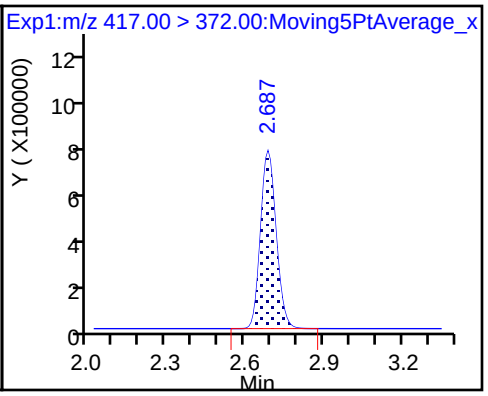
13 Sodium 1H,1H,2H,2H-perfluorooctane



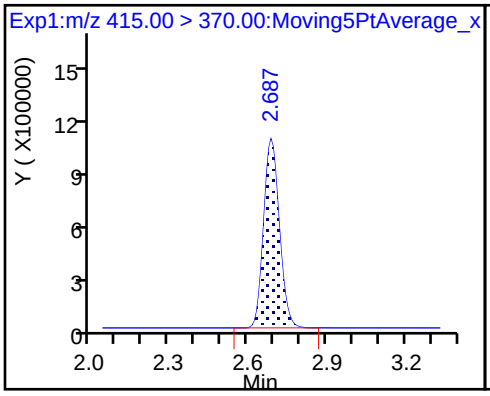
D 12 M2-6:2FTS



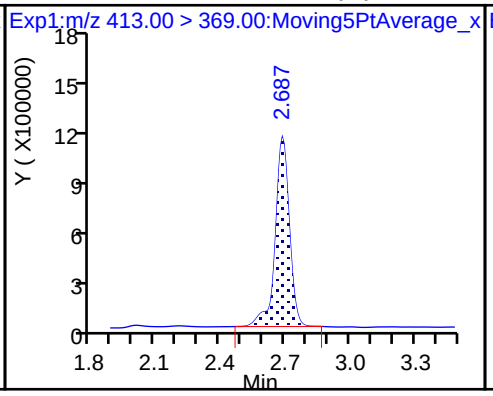
D 14 13C4 PFOA



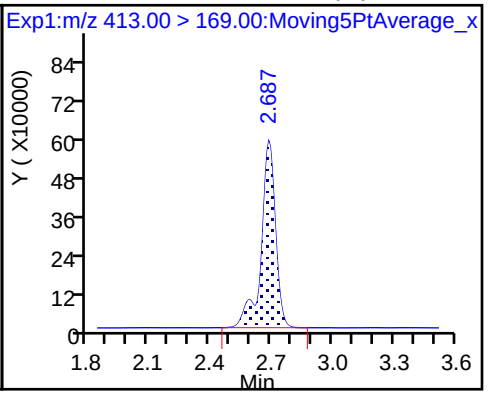
* 62 13C2-PFOA



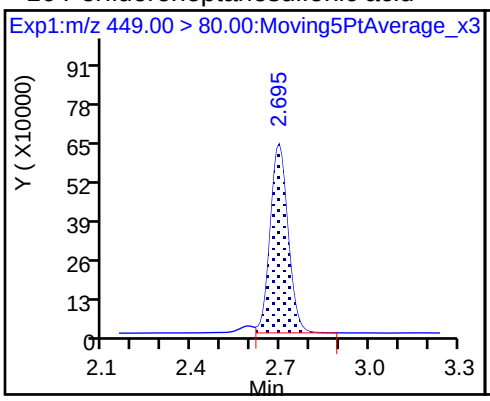
15 Perfluorooctanoic acid (M)



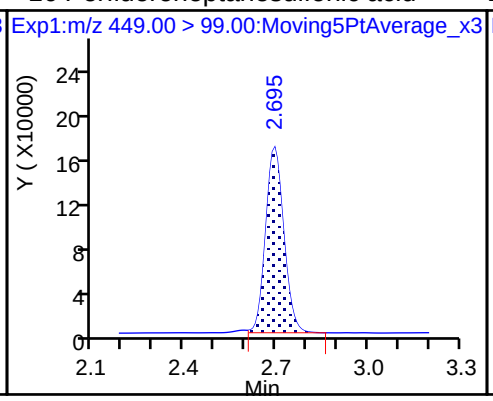
15 Perfluorooctanoic acid (M)



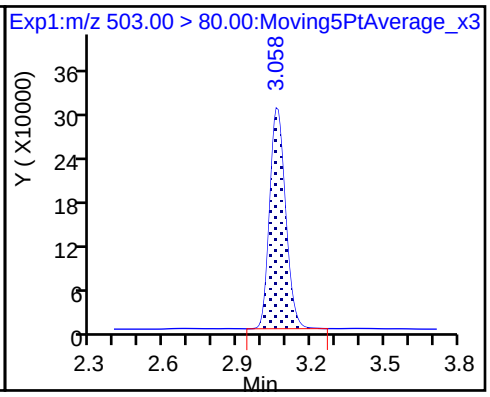
16 Perfluoroheptanesulfonic acid



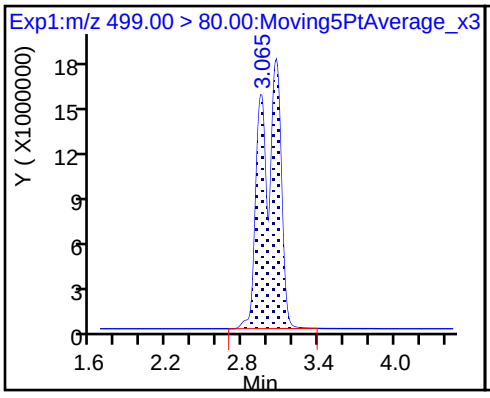
16 Perfluoroheptanesulfonic acid



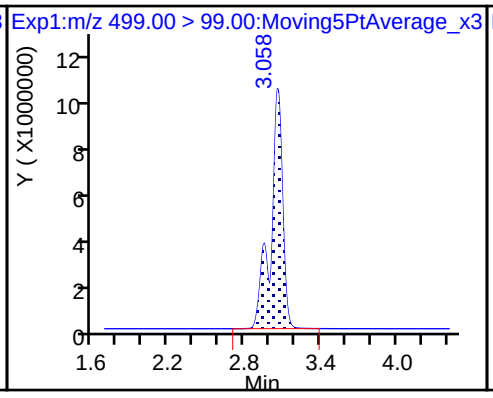
D 18 13C4 PFOS



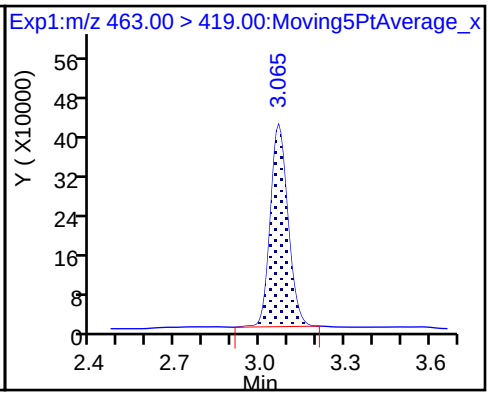
17 Perfluorooctane sulfonic acid



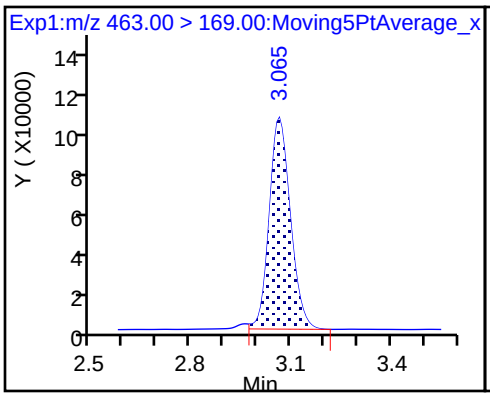
17 Perfluorooctane sulfonic acid



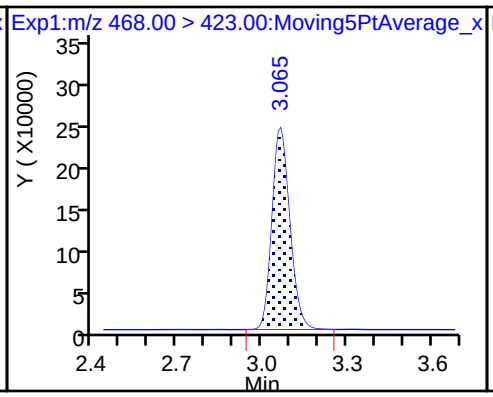
20 Perfluorononanoic acid



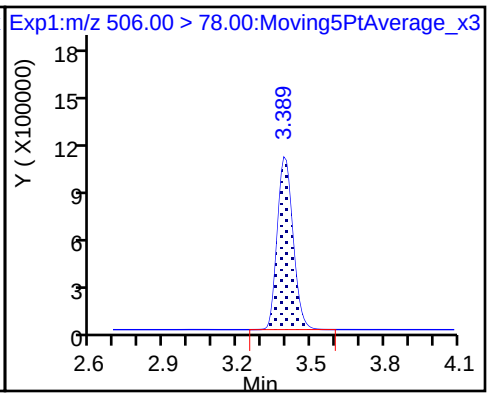
20 Perfluorononanoic acid



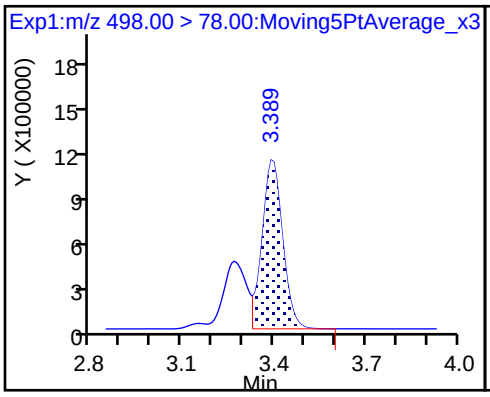
D 19 13C5 PFNA



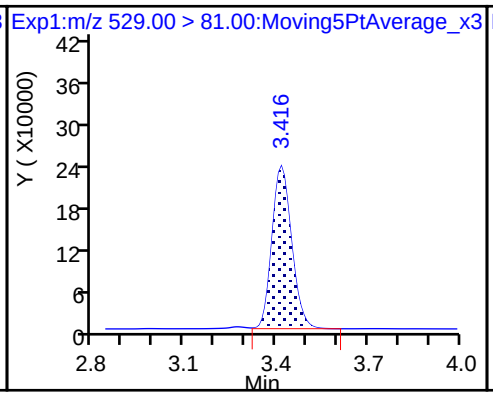
D 21 13C8 FOSA



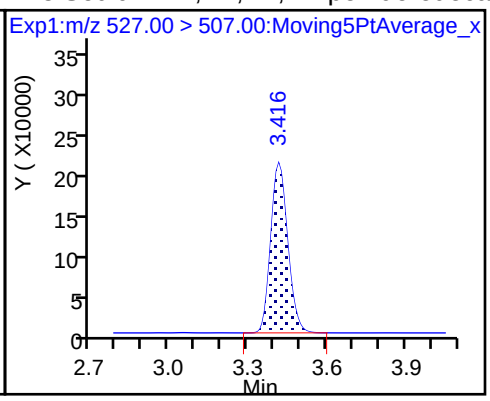
22 Perfluorooctane Sulfonamide



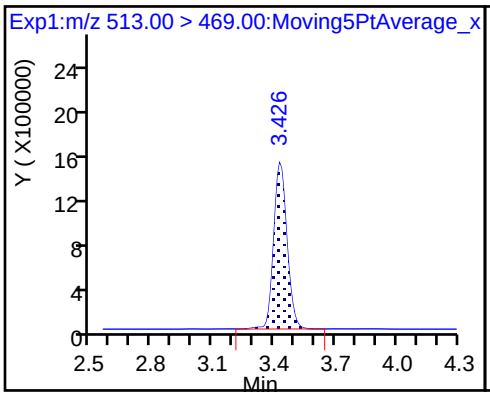
D 26 M2-8:2FTS



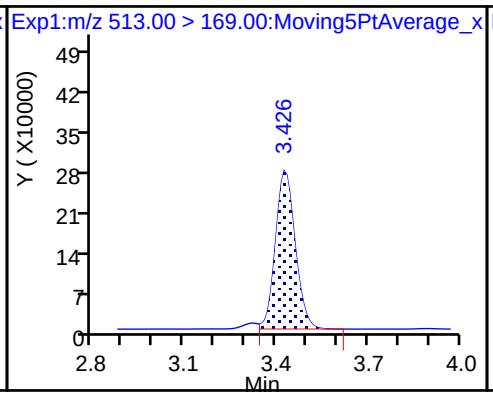
25 Sodium 1H,1H,2H,2H-perfluorodecane



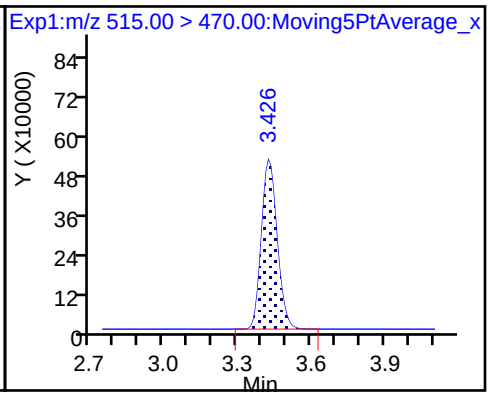
24 Perfluorodecanoic acid



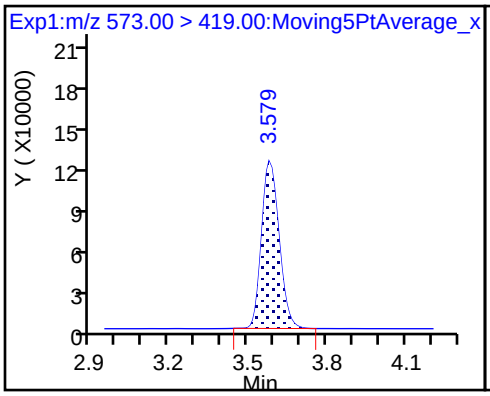
24 Perfluorodecanoic acid



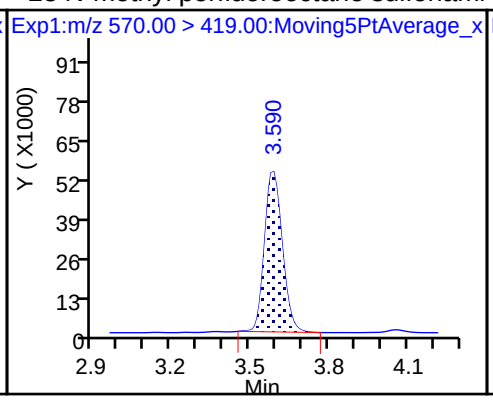
D 23 13C2 PFDA



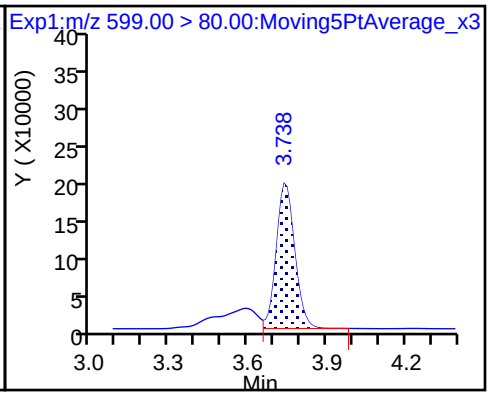
D 27 d3-NMeFOSAA



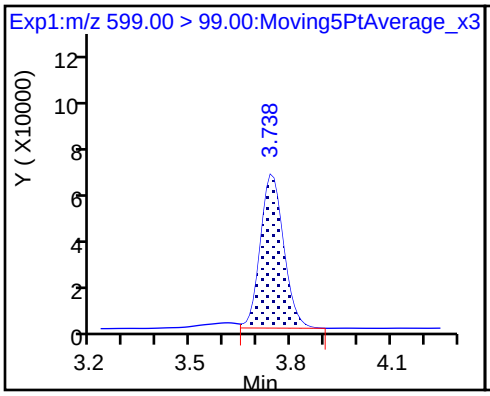
28 N-methyl perfluorooctane sulfonami



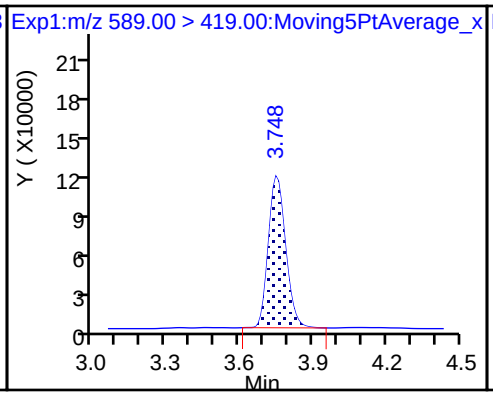
29 Perfluorodecane Sulfonic acid



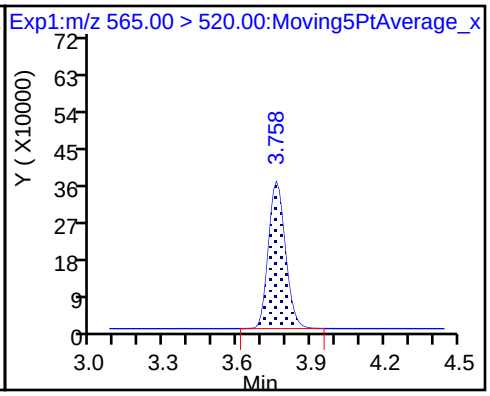
29 Perfluorodecane Sulfonic acid



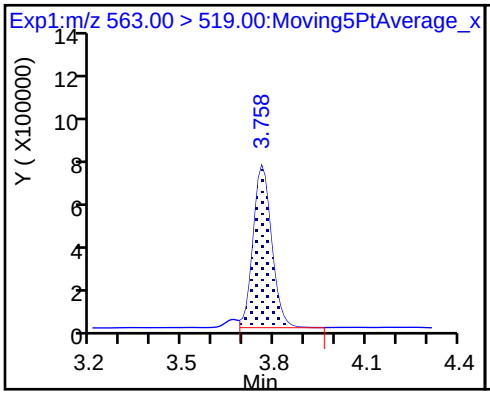
D 32 d5-NEtFOSAA



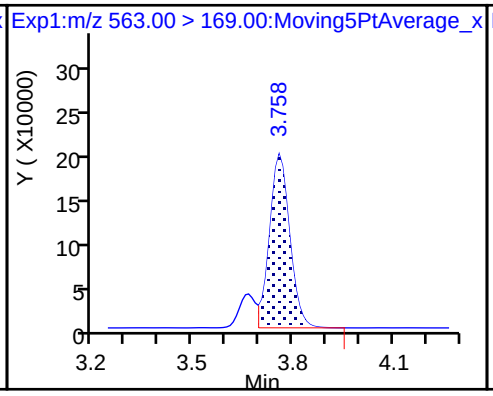
D 30 13C2 PFUnA



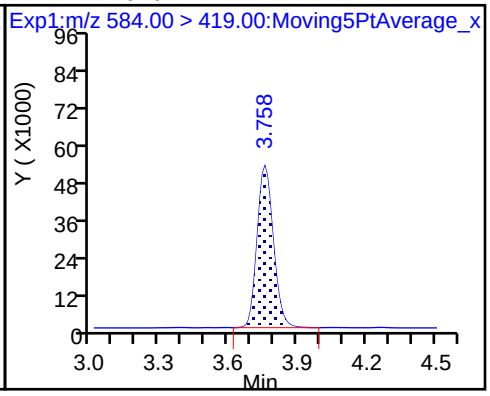
31 Perfluoroundecanoic acid



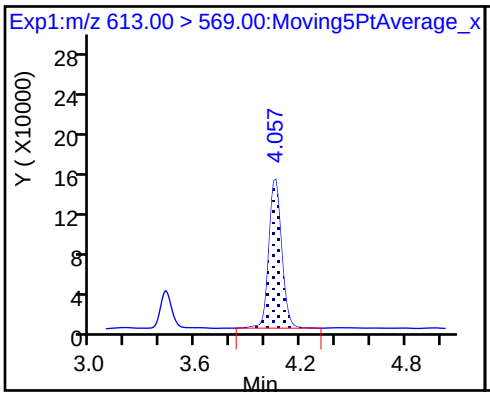
31 Perfluoroundecanoic acid



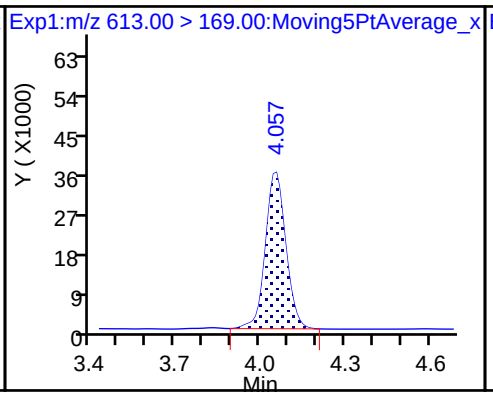
33 N-ethyl perfluorooctane sulfonamid



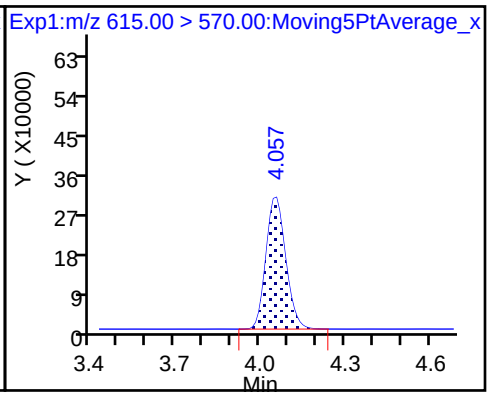
37 Perfluorododecanoic acid



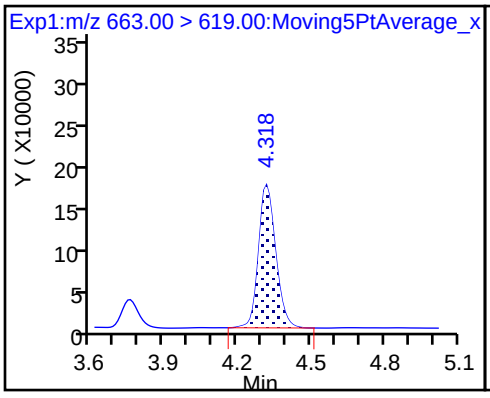
37 Perfluorododecanoic acid



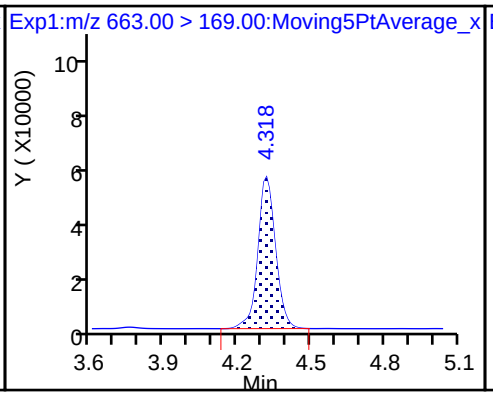
D 36 13C2 PFDoA



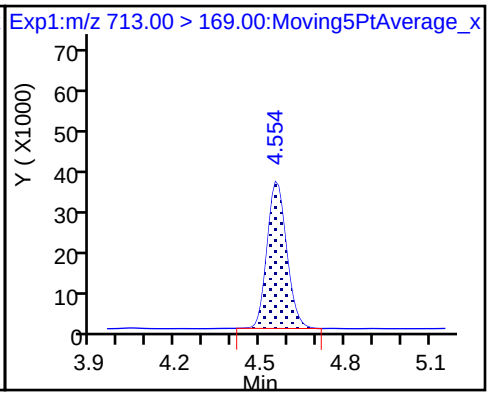
41 Perfluorotridecanoic acid



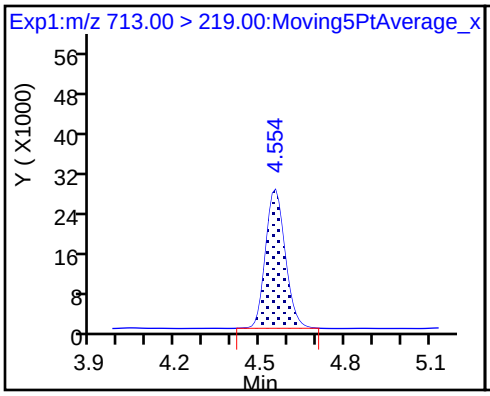
41 Perfluorotridecanoic acid



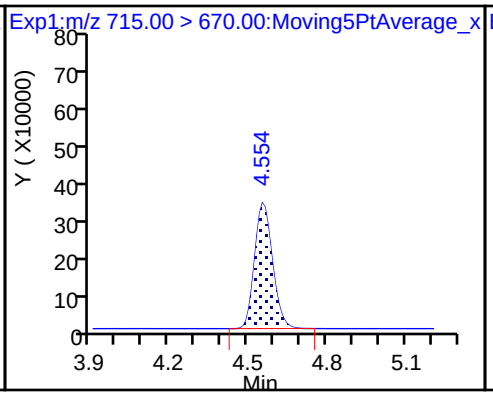
42 Perfluorotetradecanoic acid



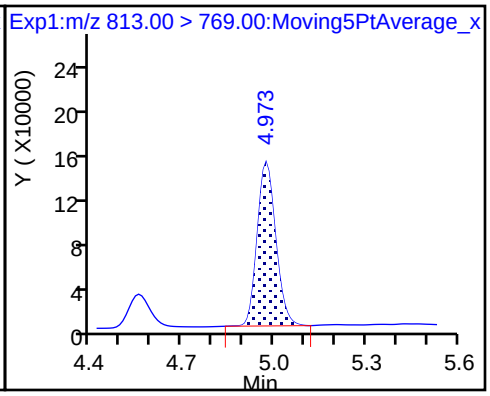
42 Perfluorotetradecanoic acid



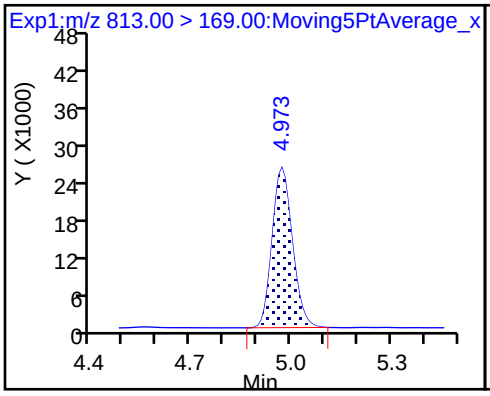
D 43 13C2-PFTeDA



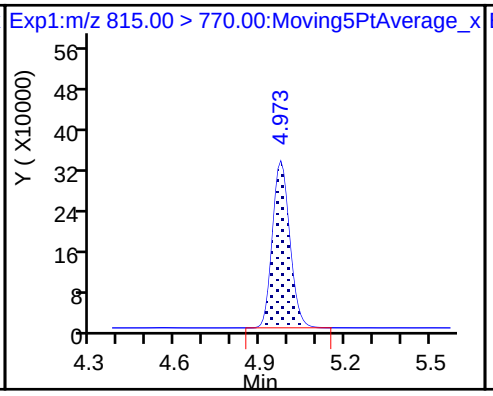
45 Perfluorohexadecanoic acid



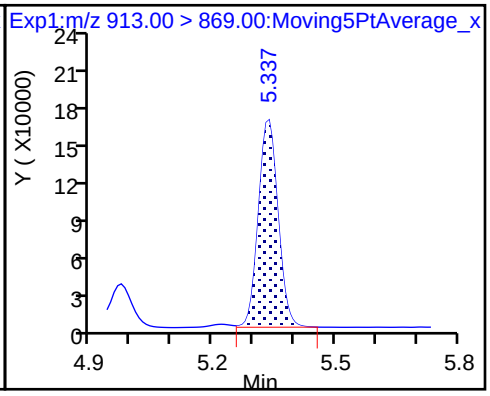
45 Perfluorohexadecanoic acid



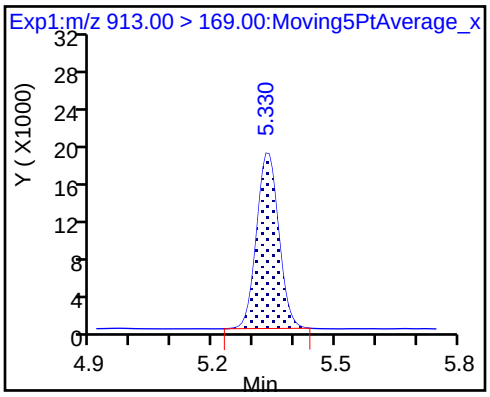
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

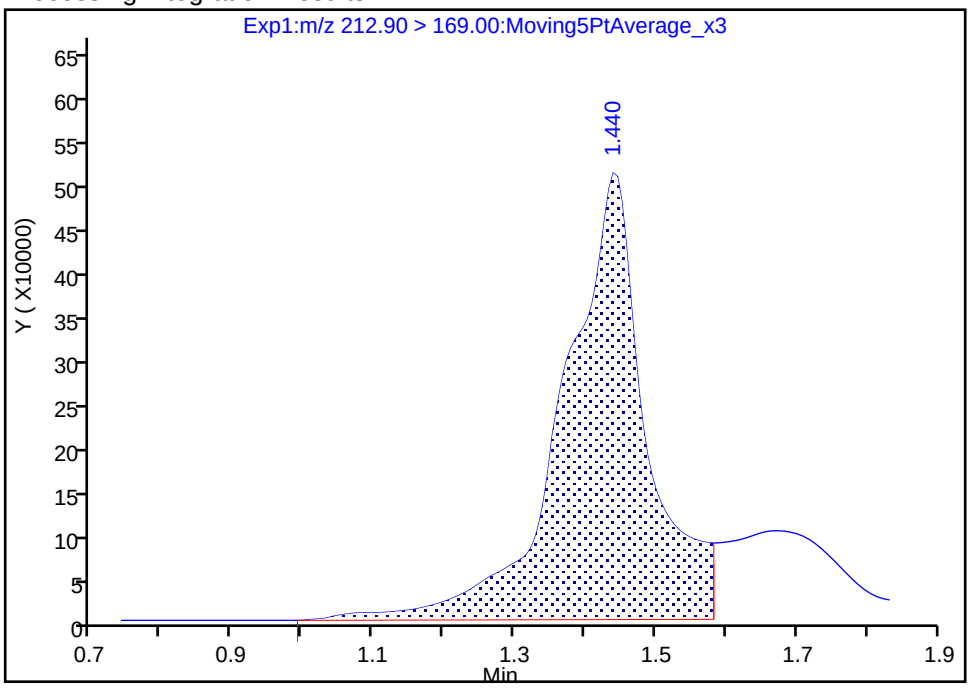
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_018.d				
Injection Date:	19-Mar-2018 18:39:02	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-E MS				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

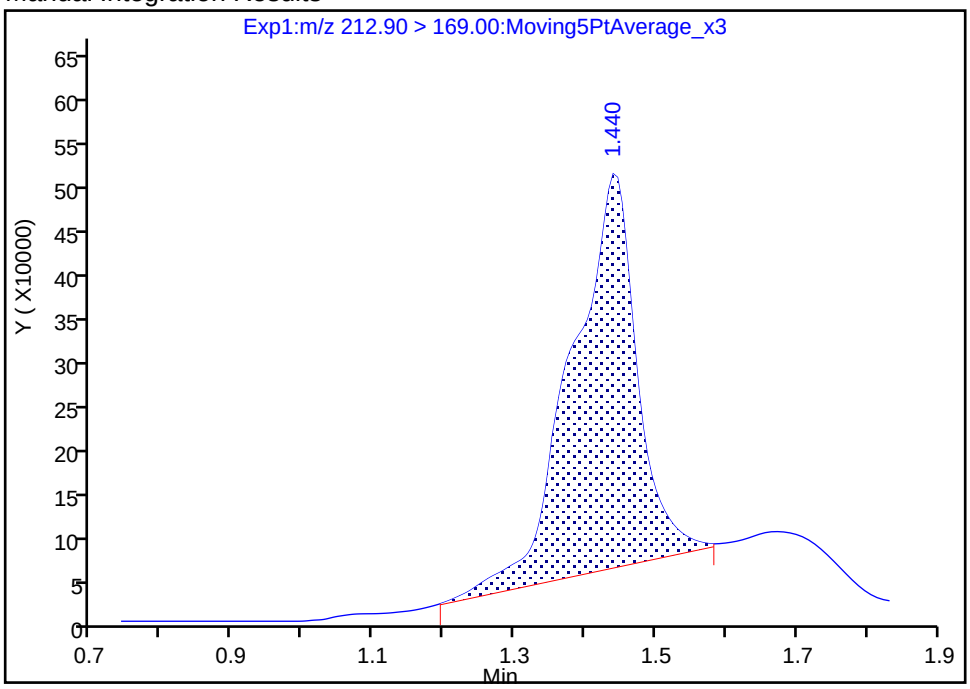
Processing Integration Results

RT: 1.44
Area: 4222759
Amount: 3.217556
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 2927801
Amount: 2.230855
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:09:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

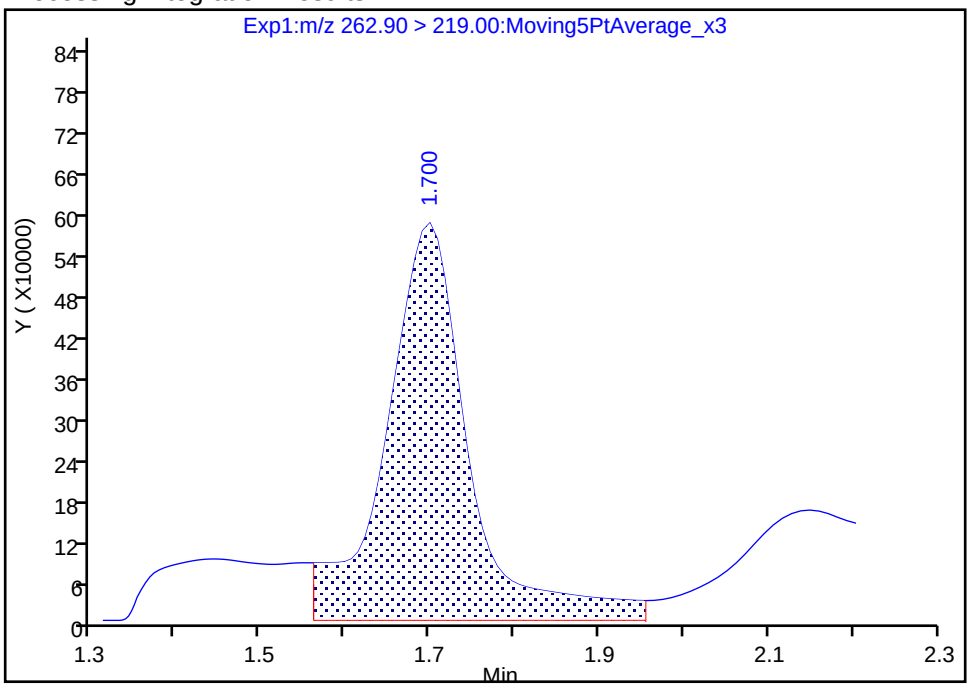
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_018.d				
Injection Date:	19-Mar-2018 18:39:02	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-E MS				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

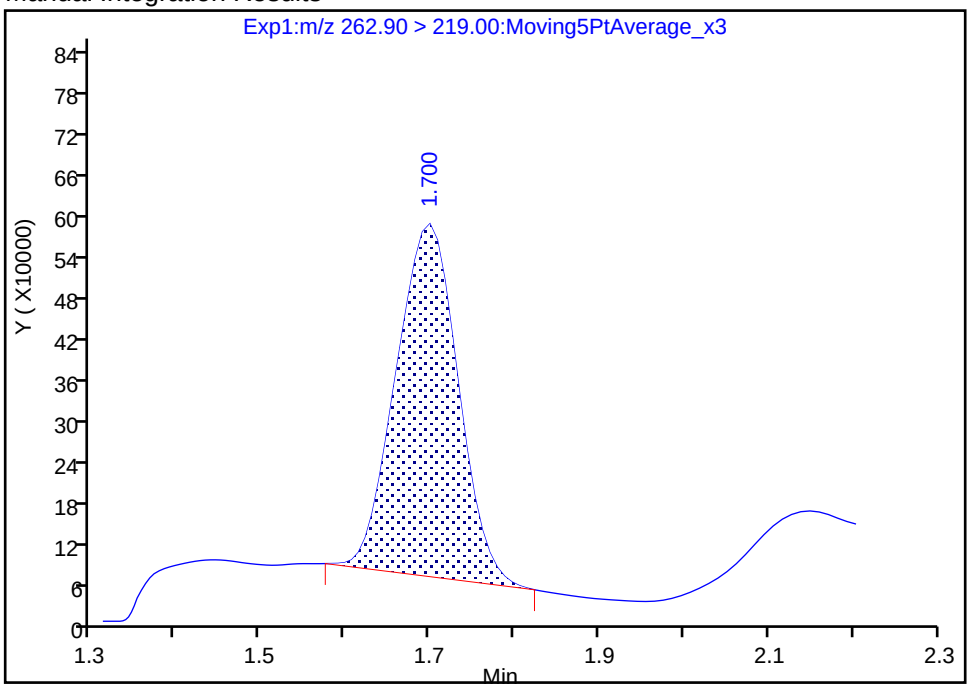
Processing Integration Results

RT: 1.70
Area: 3980999
Amount: 2.890781
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 2655667
Amount: 1.928398
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:10:04

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

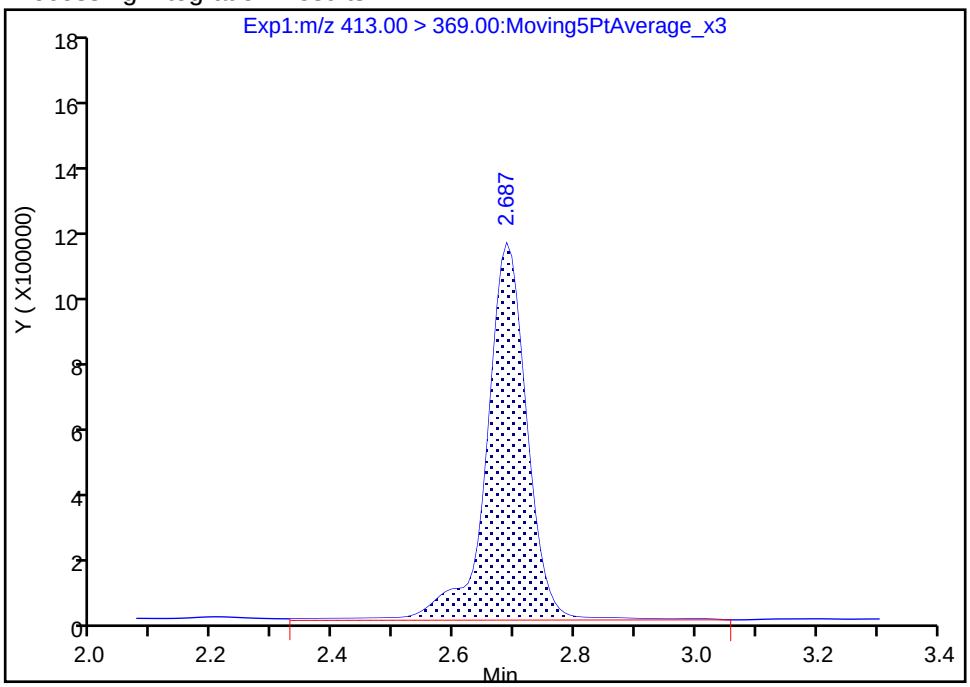
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_018.d
Injection Date: 19-Mar-2018 18:39:02 Instrument ID: A8_N
Lims ID: 320-36683-B-9-E MS
Client ID: SB012-SPLP(2'-4')
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

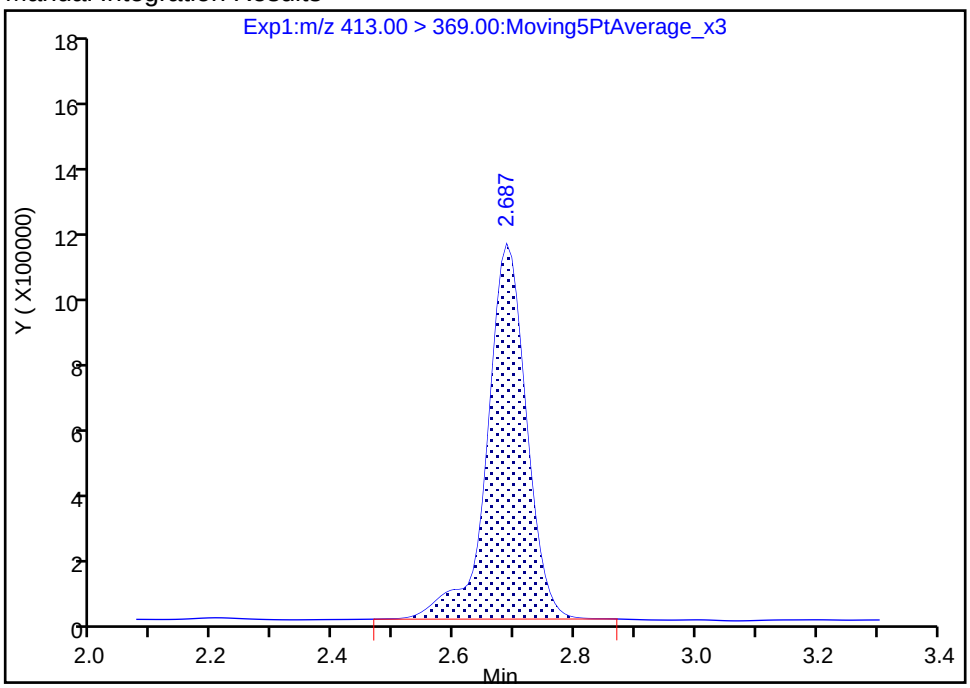
Processing Integration Results

RT: 2.69
Area: 5158891
Amount: 3.641139
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 4940226
Amount: 3.486805
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:10:12
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

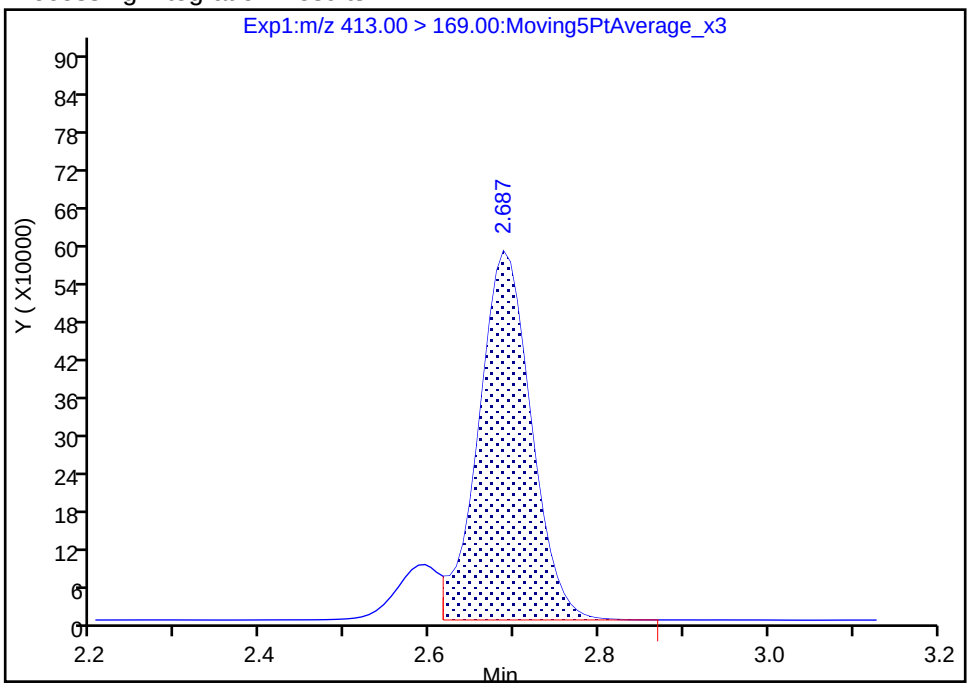
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_018.d				
Injection Date:	19-Mar-2018 18:39:02	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-E MS				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	14
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

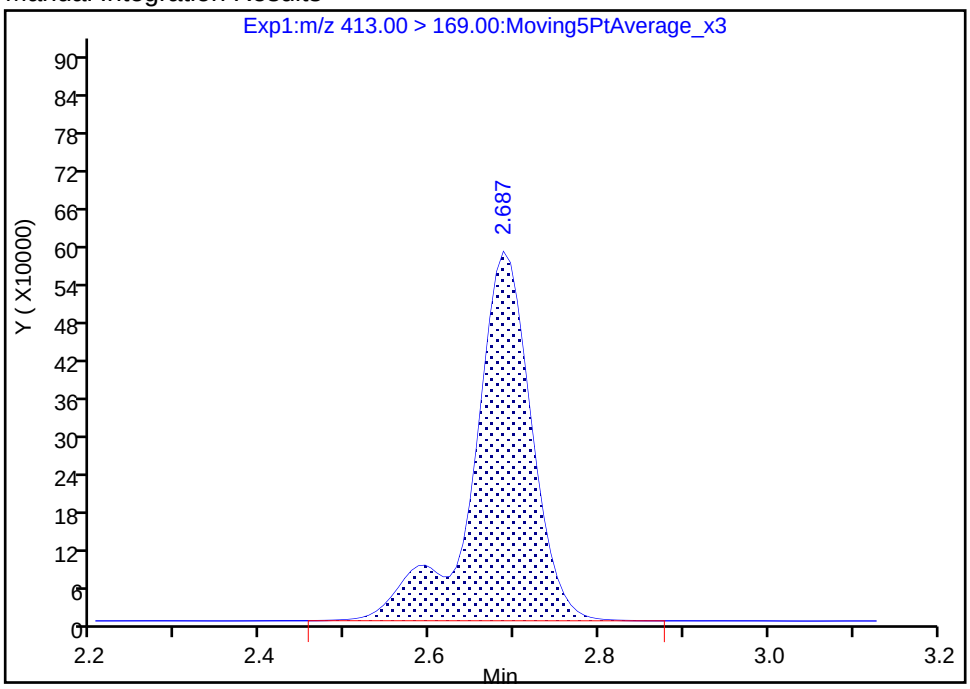
Processing Integration Results

RT: 2.69
Area: 2512442
Amount: 3.641139
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 2819066
Amount: 3.486805
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:10:16

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') MS DL | Lab Sample ID: 320-36683-9 MS DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_012.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 251.2(mL) | Date Analyzed: 03/19/2018 17:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	787.9		199	16.9
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	22520		199	53.7

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	55	*	25-150
STL00991	13C4 PFOS	53	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_012.d
Lims ID: 320-36683-B-9-E MS
Client ID: SB012-SPLP(2'-4')
Sample Type: MS
Inject. Date: 19-Mar-2018 17:51:57 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-b-9-e ms 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:05:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.444	-0.004	0.536	48657	0.0155		62.1	943	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.444	-0.004	1.000	50996	0.0283		283	20.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.632	32341	0.0146		58.5	1084	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.705	-0.005	1.000	29524	0.0195		195	7.1	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.740	-0.005	1.000	53156	NR		0.0	22.0	
298.90 > 99.00	1.735	1.740	-0.005	1.000	23977		2.22(1.25-3.74)		22.8	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.960	-0.004	1.000	6355	NR		0.0	314	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.992	-0.006	1.000	53301	0.0341		341	136	
313.00 > 119.00	1.986	1.992	-0.006	1.000	5457		9.77(5.03-15.10)		96.6	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.992	-0.006	0.739	38721	0.0157		62.8	1411	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.866	31686	0.0132		52.8	1356	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	25617	0.0195		195	39.8	
363.00 > 169.00	2.315	2.335	-0.020	0.994	12109		2.12(1.13-3.40)		189	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	391354	0.1979		2175	670	
399.00 > 99.00	2.341	2.348	-0.007	1.000	120195		3.26(1.50-4.49)		264	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	41927	0.0131		55.4	2434	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.675	-0.003	1.000	18457	0.0192		202	856	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.675	-0.003	0.994	13730	0.0223		94.1	462	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.706	-0.018	1.000	40341	0.0174		69.6	3313	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.706	-0.018		61427	0.0250			2943	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.706	-0.010	1.003	44673	0.0248		248	16.8	
413.00 > 169.00	2.688	2.706	-0.018	1.000	36713		1.22(0.84-2.52)		168	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.706	-0.010	1.000	26435	0.0171		180	824	
449.00 > 99.00	2.696	2.706	-0.010	1.000	7555		3.50(1.94-5.82)		178	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.083	-0.011	1.143	28124	0.0126		52.6	1031	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.083	-0.011	1.000	7206149	5.66		60955	15986	
499.00 > 99.00	3.072	3.083	-0.011	1.000	1574697		4.58(2.31-6.93)		6869	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.083	-0.011	1.000	37250	0.0416		416	67.7	
463.00 > 169.00	3.072	3.083	-0.011	1.000	10723		3.47(1.90-5.69)		392	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.083	-0.011	1.143	21971	0.0119		47.4	662	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.403	-0.014	1.261	47556	0.0147		58.7	1097	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.412	-0.014	1.003	49648	0.0269		269	119	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.439	-0.014	1.274	8878	0.0154		64.2	329	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.439	-0.014	1.000	6569	0.0141		147	306	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.448	-0.023	1.000	63427	0.0622		622	277	
513.00 > 169.00	3.425	3.448	-0.023	1.000	11611		5.46(2.36-7.09)		432	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.448	-0.023	1.274	26861	0.0173		69.4	678	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.606	-0.027	1.331	4854	0.009492		38.0	250	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.617	-0.038	1.000	3190	0.0158		158	187	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.765	-0.027	1.000	7640	0.0102		105	148	
599.00 > 99.00	3.748	3.765	-0.017	1.003	4395		1.74(1.39-4.16)		40.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.775	-0.037	1.390	7022	0.0144		57.4	14.4	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.786	-0.028	1.398	18087	0.0149		59.7	629	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.786	-0.028	1.000	26672	0.0440		440	40.0	
563.00 > 169.00	3.758	3.786	-0.028	1.000	7297		3.66(2.12-6.36)		229	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.786	-0.018	1.008	2126	0.007731		77.3	58.0	
35 MeFOSA										
512.00 > 169.00	3.892	3.875	0.017		4405	NC			157	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.077	4.066	0.011		3492	NC			269	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.084	-0.028	1.000	11360	0.0204		204	12.8	
613.00 > 169.00	4.056	4.084	-0.028	1.000	2012		5.65(2.13-6.40)		74.3	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.084	-0.028	1.509	13603	0.0118		47.3	80.6	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.318	4.346	-0.028	1.000	8173	0.0146		146	9.7	R
663.00 > 169.00	4.318	4.346	-0.028	1.000	1872		4.37(1.25-3.76)		77.2	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.581	-0.027	1.694	12878	0.0123		49.1	214	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	5.004	-0.031	1.850	14588	0.009503		38.0	112	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard
NC - Not Calibrated
R - Failed Signal Ratio Test

Report Date: 20-Mar-2018 14:13:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_012.d

Injection Date: 19-Mar-2018 17:51:57 Instrument ID: A8_N

Lims ID: 320-36683-B-9-E MS

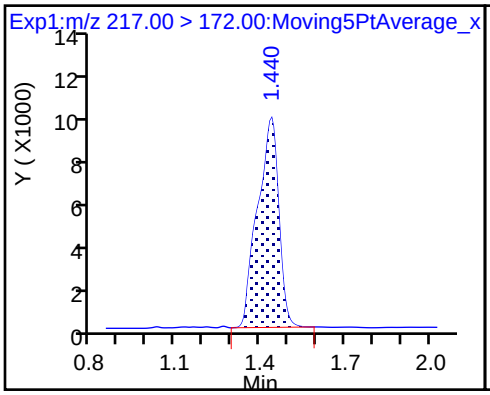
Client ID: SB012-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 7 Worklist Smp#: 8

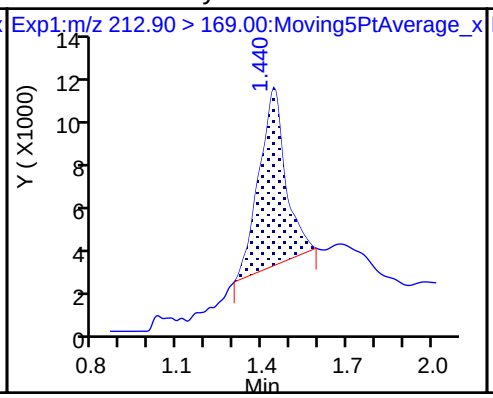
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

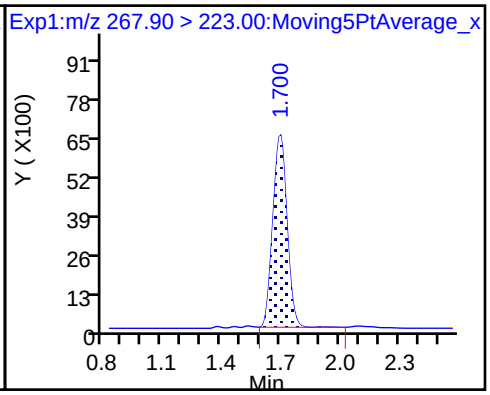
D 1 13C4 PFBA



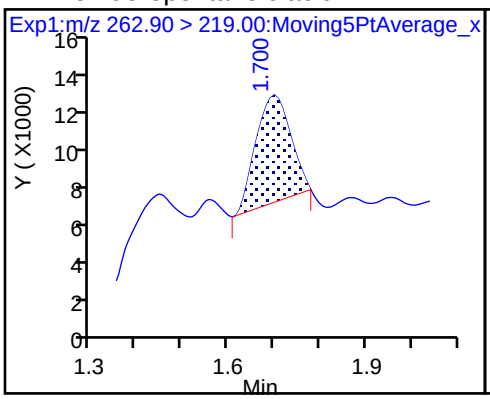
2 Perfluorobutyric acid



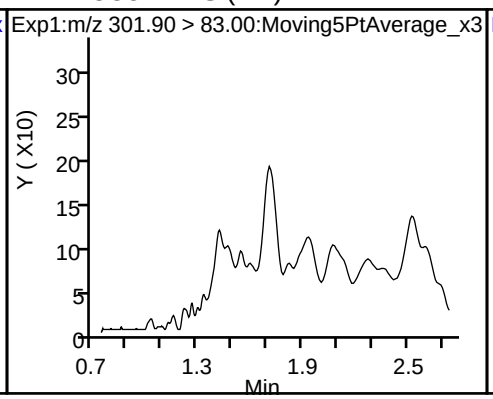
D 3 13C5-PFPeA



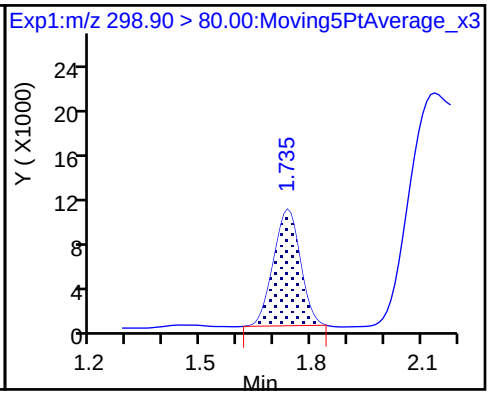
4 Perfluoropentanoic acid



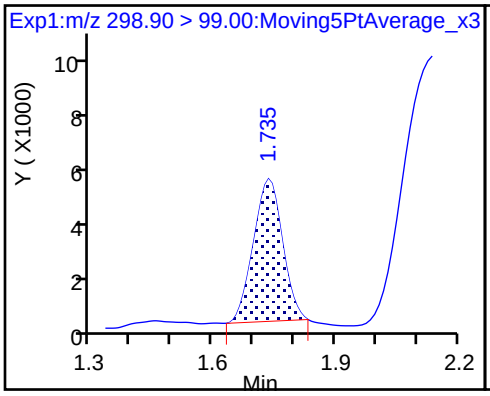
D 47 13C3-PFBS (ND)



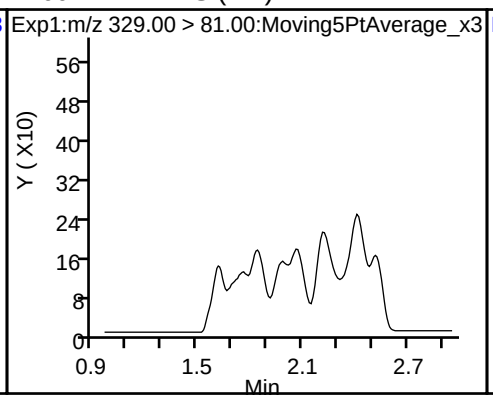
5 Perfluorobutanesulfonic acid



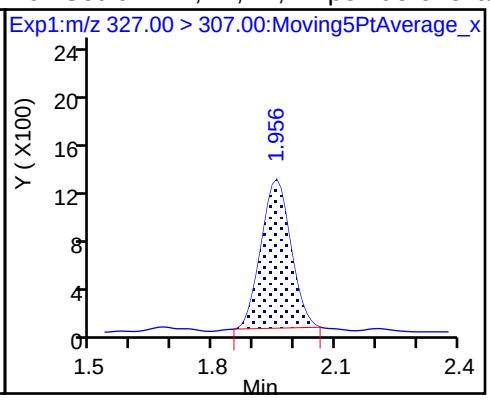
5 Perfluorobutanesulfonic acid



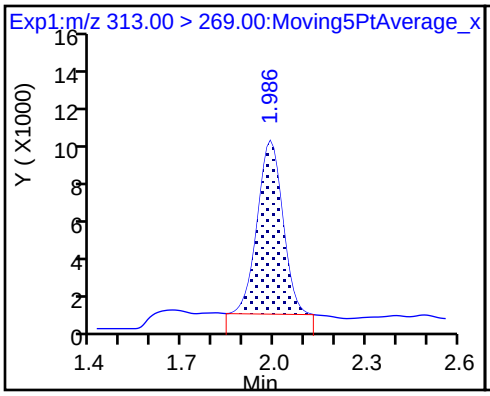
D 60 M2-4:2FTS (ND)



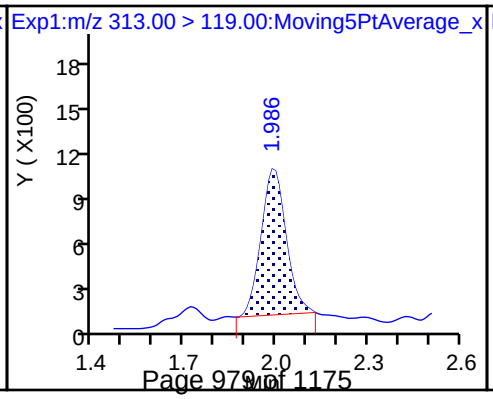
61 Sodium 1H,1H,2H,2H-perfluorohexane



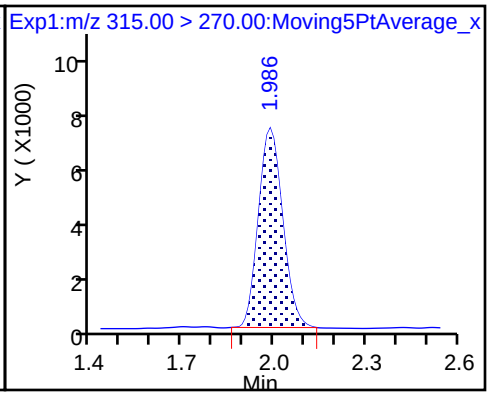
6 Perfluorohexanoic acid



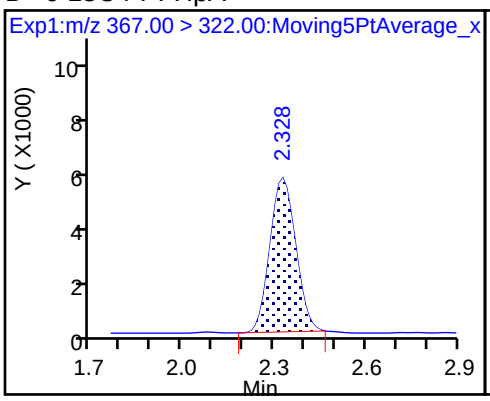
6 Perfluorohexanoic acid



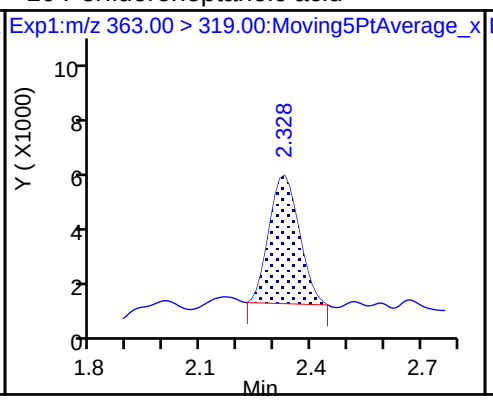
D 7 13C2 PFHxA



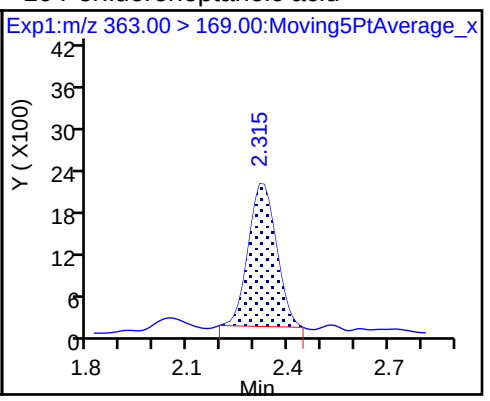
D 9 13C4-PFHpA



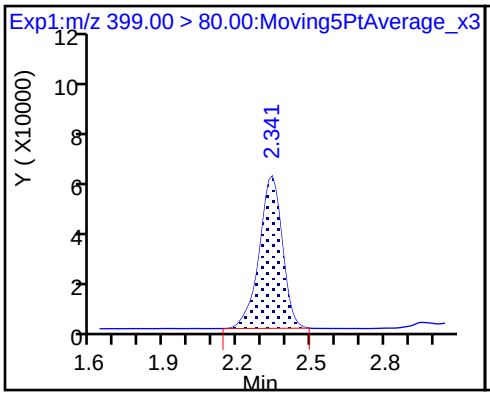
10 Perfluoroheptanoic acid



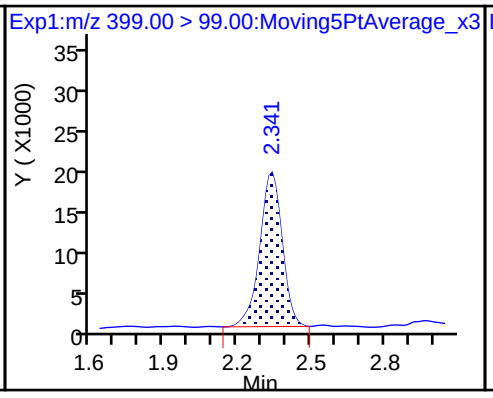
10 Perfluoroheptanoic acid



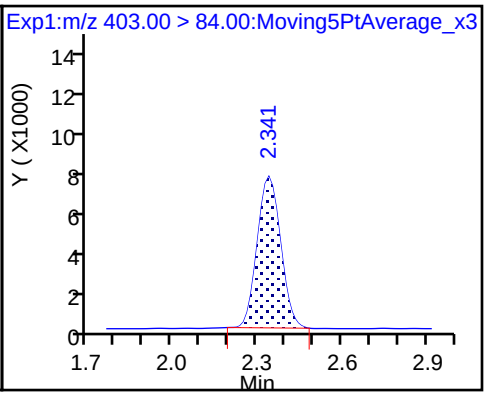
8 Perfluorohexanesulfonic acid



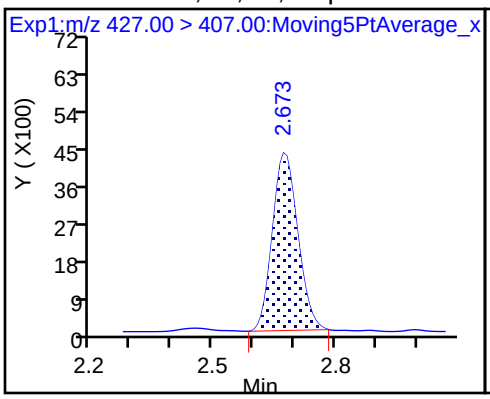
8 Perfluorohexanesulfonic acid



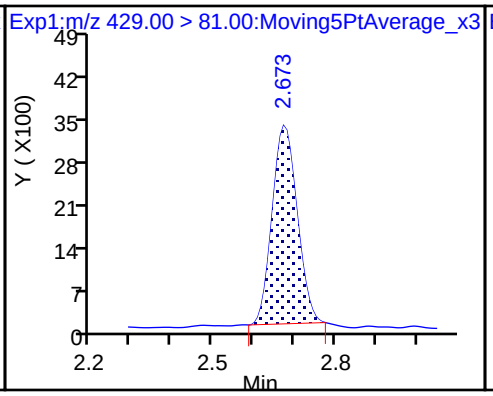
D 11 18O2 PFHxS



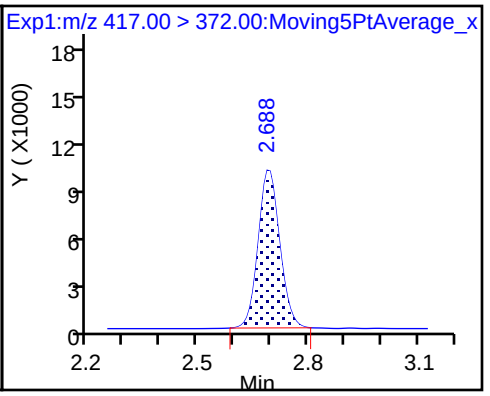
13 Sodium 1H,1H,2H,2H-perfluorooctane



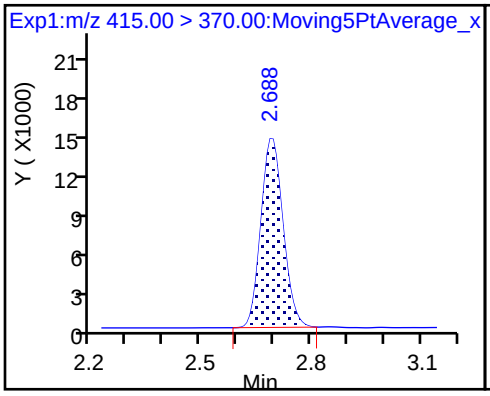
D 12 M2-6:2FTS



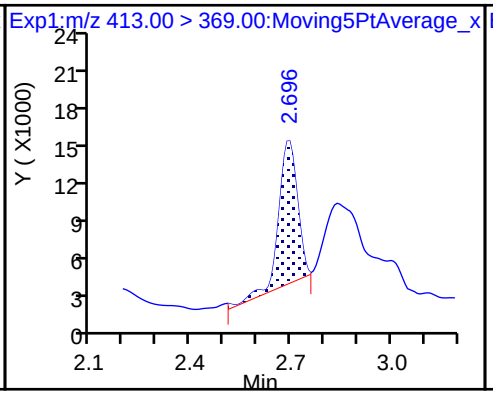
D 14 13C4 PFOA



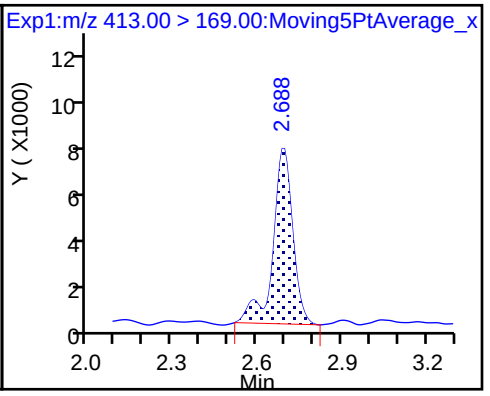
* 62 13C2-PFOA



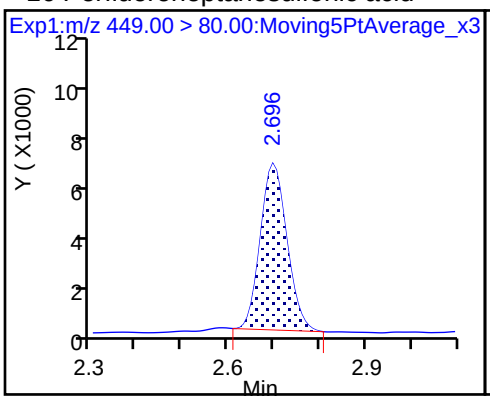
15 Perfluorooctanoic acid



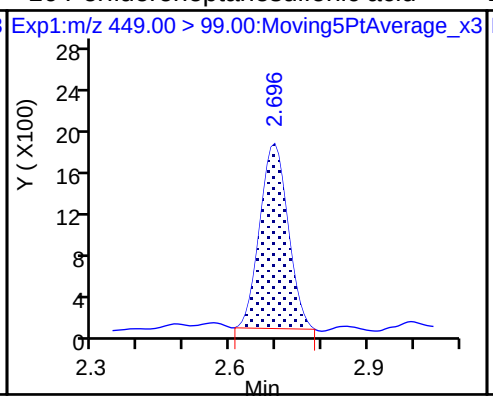
15 Perfluorooctanoic acid



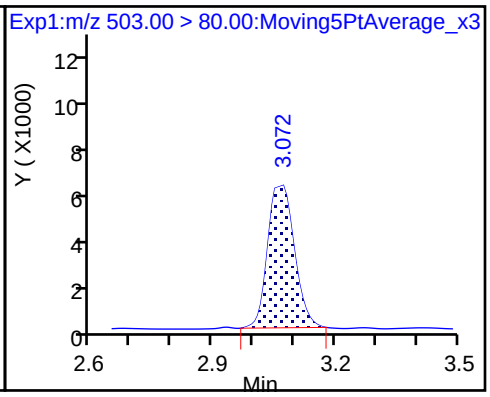
16 Perfluoroheptanesulfonic acid



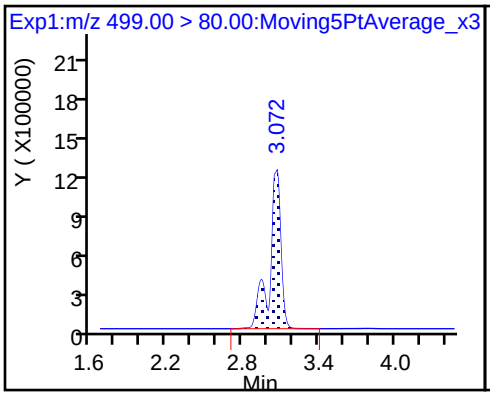
16 Perfluoroheptanesulfonic acid



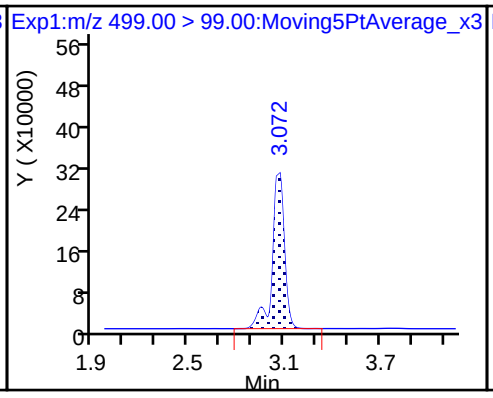
D 18 13C4 PFOS



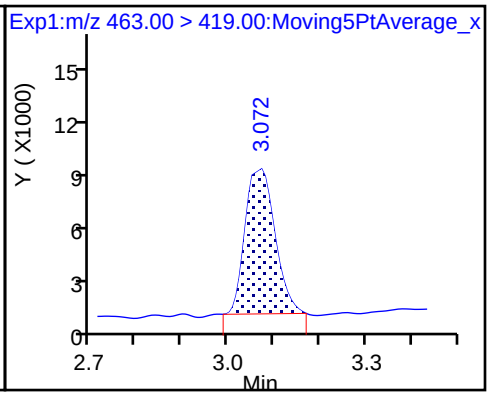
17 Perfluorooctane sulfonic acid



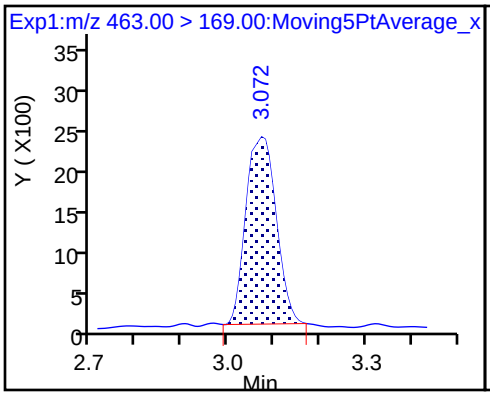
17 Perfluorooctane sulfonic acid



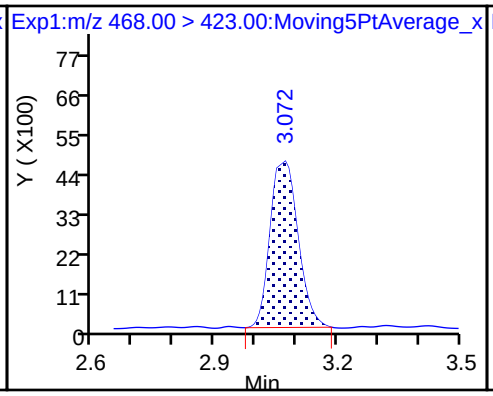
20 Perfluorononanoic acid



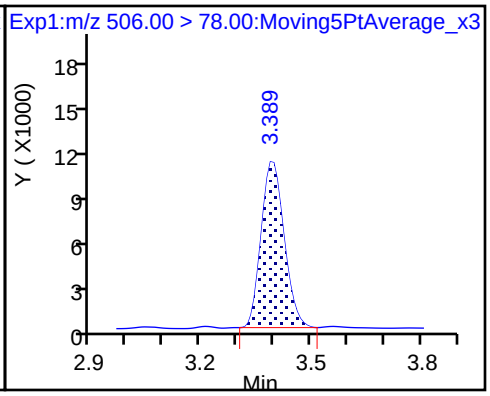
20 Perfluorononanoic acid



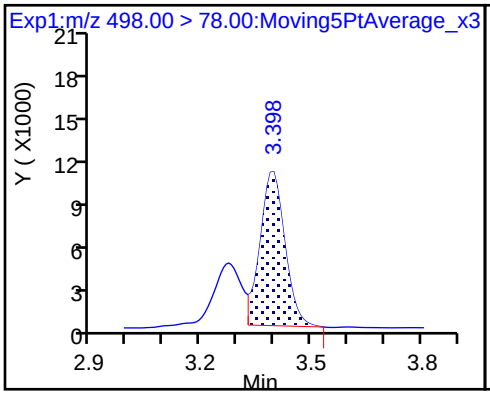
D 19 13C5 PFNA



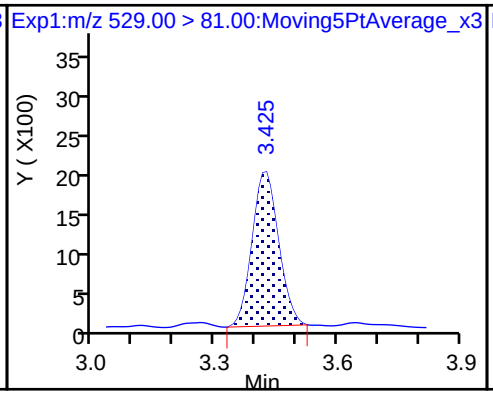
D 21 13C8 FOSA



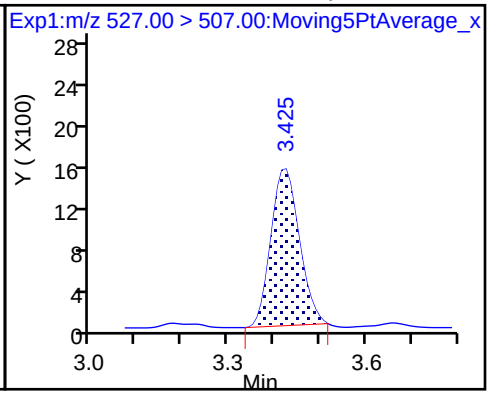
22 Perfluorooctane Sulfonamide



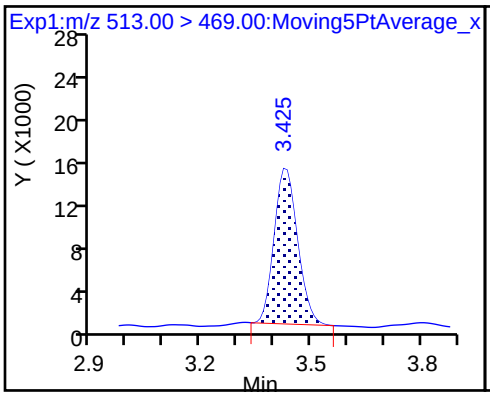
D 26 M2-8:2FTS



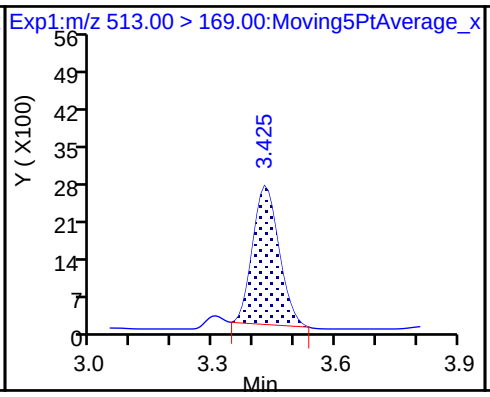
25 Sodium 1H,1H,2H,2H-perfluorodecane



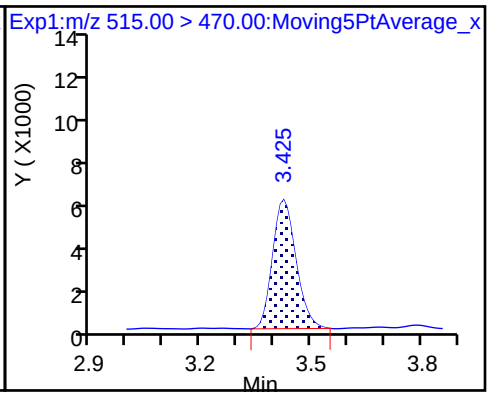
24 Perfluorodecanoic acid



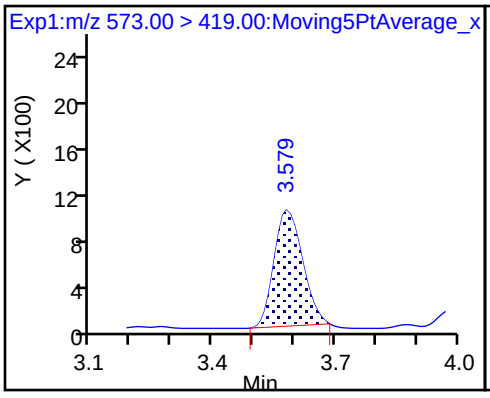
24 Perfluorodecanoic acid



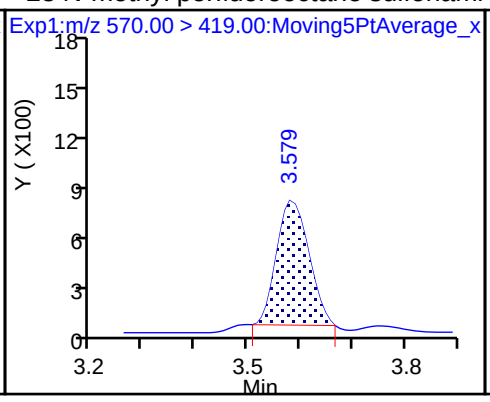
D 23 13C2 PFDA



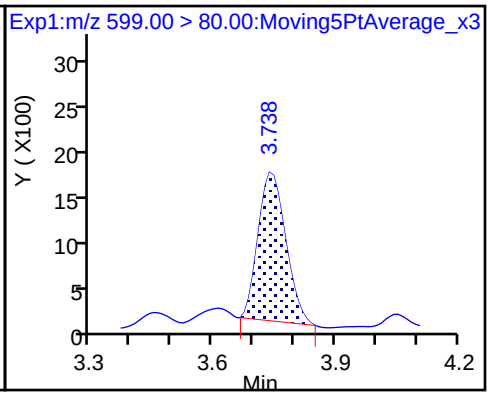
D 27 d3-NMeFOSAA



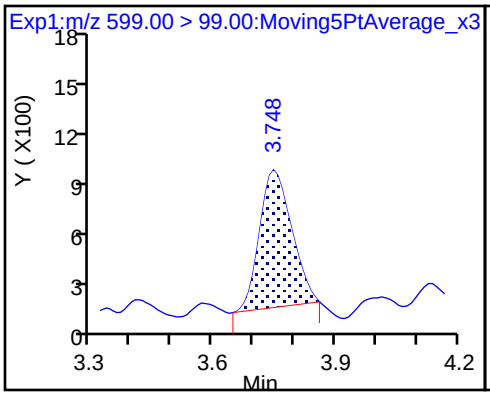
28 N-methyl perfluorooctane sulfonami



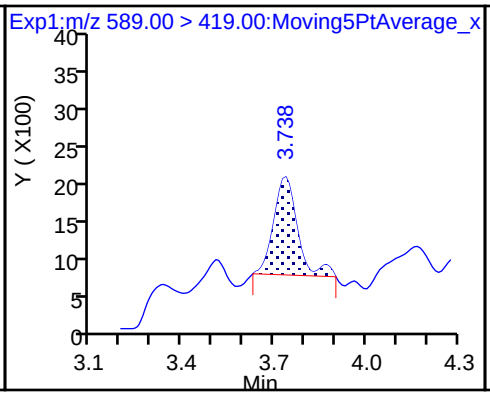
29 Perfluorodecane Sulfonic acid



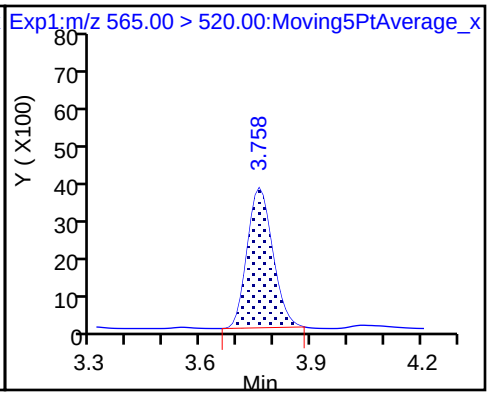
29 Perfluorodecane Sulfonic acid



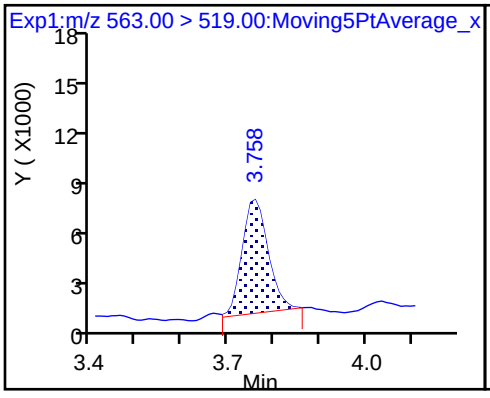
D 32 d5-NEtFOSAA



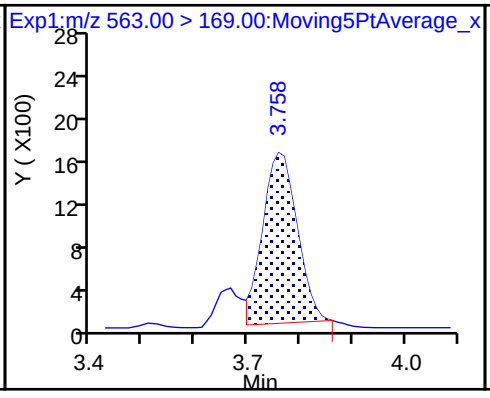
D 30 13C2 PFUnA



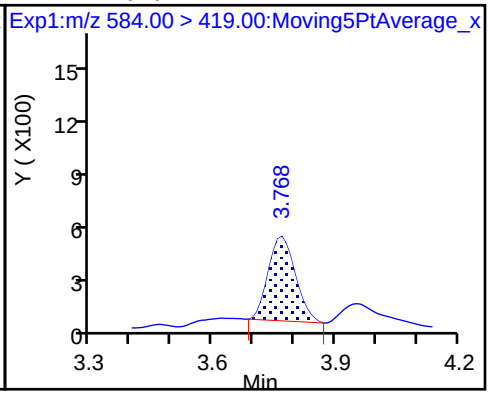
31 Perfluoroundecanoic acid



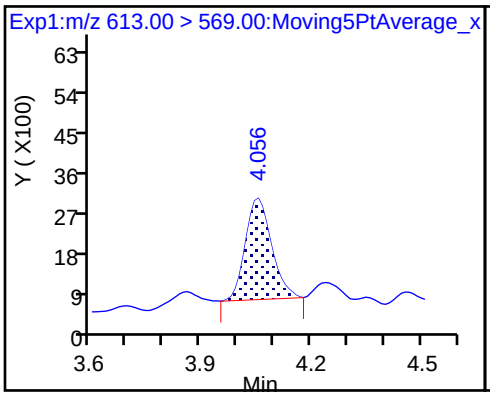
31 Perfluoroundecanoic acid



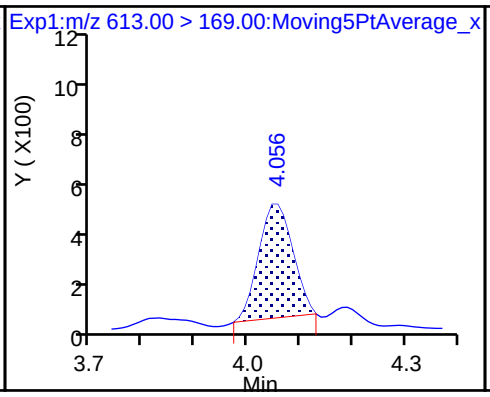
33 N-ethyl perfluorooctane sulfonamid



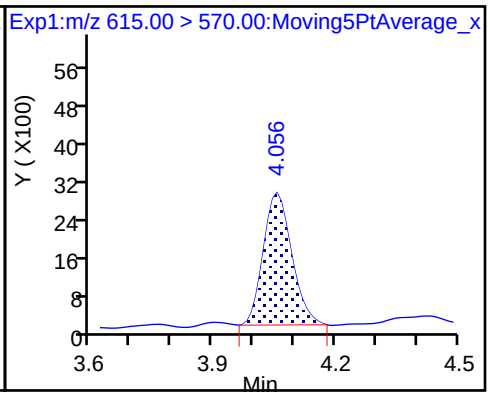
37 Perfluorododecanoic acid



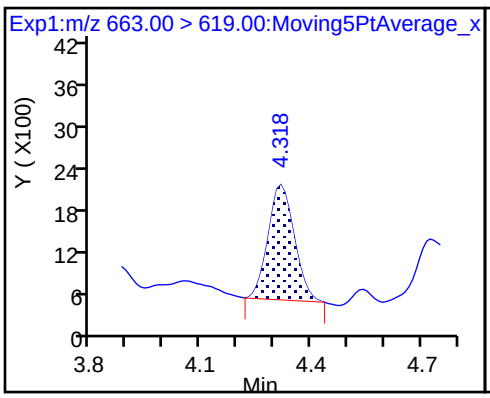
37 Perfluorododecanoic acid



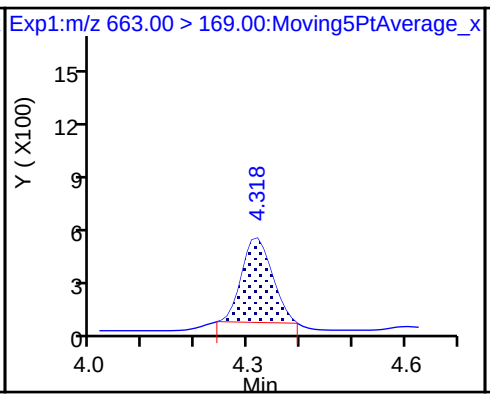
D 36 13C2 PFDoA



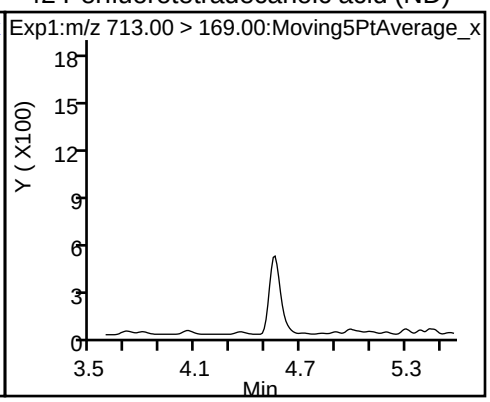
41 Perfluorotridecanoic acid



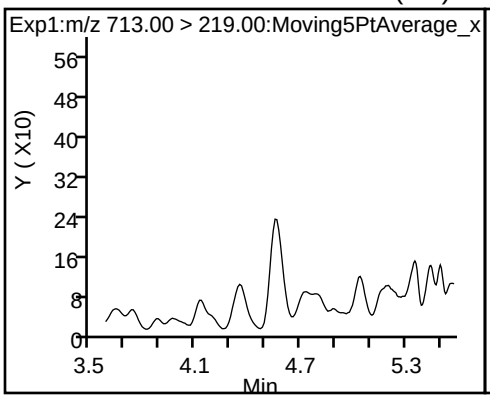
41 Perfluorotridecanoic acid



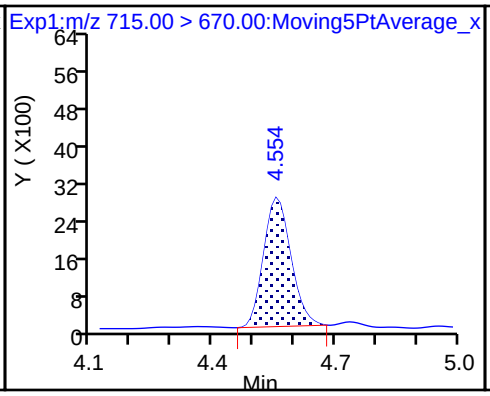
42 Perfluorotetradecanoic acid (ND)



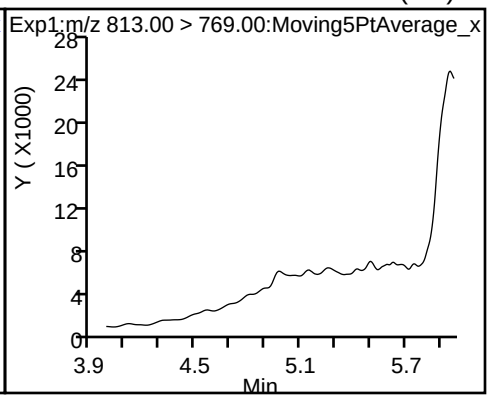
42 Perfluorotetradecanoic acid (ND)



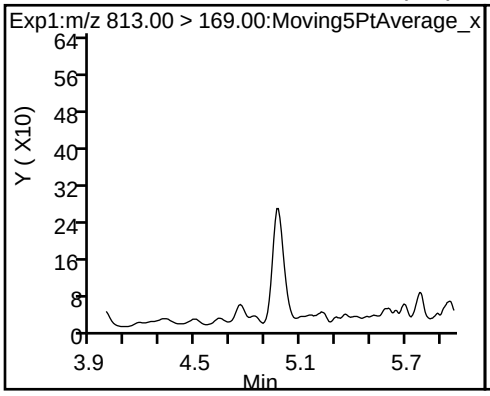
D 43 13C2-PFTeDA



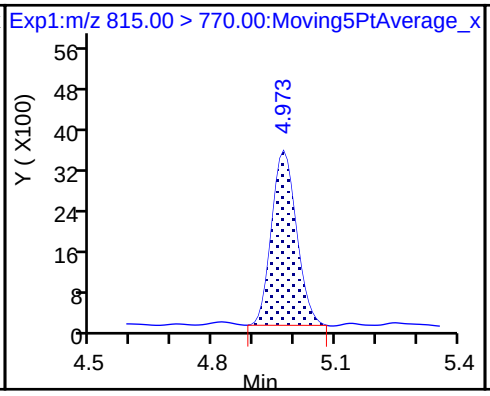
45 Perfluorohexadecanoic acid (ND)



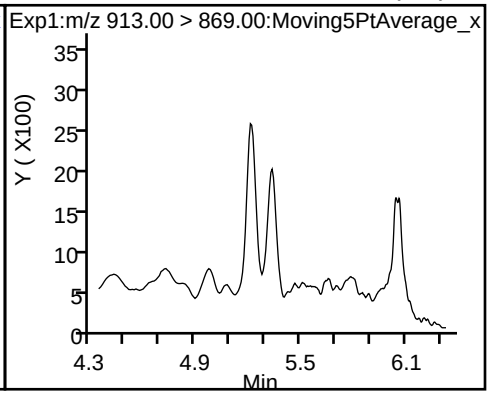
45 Perfluorohexadecanoic acid (ND)



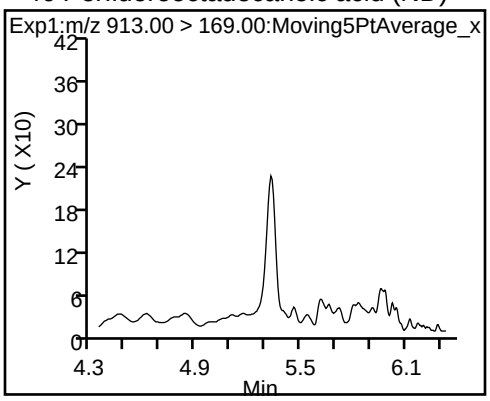
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MS | Lab Sample ID: 320-36683-10 MS

Matrix: Solid | Lab File ID: 2018.03.20LLA_038.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.05(g) | Date Analyzed: 03/21/2018 01:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00218		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00211		0.00020	0.000078
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00258		0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00217		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00341		0.00020	0.000087
375-95-1	Perfluorononanoic acid (PFNA)	0.0183		0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00243		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00181		0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00210		0.00020	0.000068
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00194		0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00189		0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00203		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00907		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00820		0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00139		0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00219		0.00020	0.000083
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00202		0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00212		0.0020	0.00038
27619-97-2	6:2FTS	0.00713		0.0020	0.00015
39108-34-4	8:2FTS	0.00240		0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MS | Lab Sample ID: 320-36683-10 MS

Matrix: Solid | Lab File ID: 2018.03.20LLA_038.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.05(g) | Date Analyzed: 03/21/2018 01:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	82		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	83		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	83		25-150
STL00995	13C5 PFNA	50		25-150
STL00996	13C2 PFDA	60		25-150
STL00997	13C2 PFUnA	44		25-150
STL00998	13C2 PFDoA	28		25-150
STL02116	13C2-PFTeDA	30		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	56		25-150
STL01056	13C8 FOSA	46		25-150
STL02118	d3-NMeFOSAA	24	*	25-150
STL02117	d5-NEtFOSAA	23	*	25-150
STL02279	M2-6:2FTS	77		25-150
STL02280	M2-8:2FTS	63		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d
Lims ID: 320-36683-A-10-B MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 21-Mar-2018 01:07:20 ALS Bottle#: 28 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-10-b ms
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:39:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	4655375	2.05		81.9	66355	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.446	-0.006	1.000	1847258	1.07		107	665	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.634	3290993	2.05		82.0	69795	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.699	1.709	-0.010	1.000	1597771	1.04		104	424	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.648	77850	1.97		84.6	370	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.744	-0.009	1.000	2579543	1.00		113	871	
298.90 > 99.00	1.735	1.744	-0.009	1.000	1091386		2.36(1.25-3.74)		887	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	471519	0.8761		93.8	20471	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	3704236	2.07		82.8	89875	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	1898970	1.27		127	2604	
313.00 > 119.00	1.986	1.997	-0.011	1.000	179272		10.59(5.03-15.10)		3051	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.315	-0.001	0.864	3736909	2.15		85.9	88132	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.328	-0.014	1.000	1650667	1.07		107	1804	
363.00 > 169.00	2.314	2.328	-0.014	1.000	660139		2.50(1.13-3.40)		12140	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.328	-0.001	0.869	4546039	1.96		82.8	106881	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.341	-0.014	1.000	9558488	4.46		490	15780	
399.00 > 99.00	2.327	2.341	-0.014	1.000	2953908		3.24(1.50-4.49)		7667	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.657	-0.002	0.991	813297	1.82		76.8	13252	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.663	-0.008	1.000	1996772	3.50		370	76383	
D 14 13C4 PFOA										
417.00 > 372.00	2.678	2.681	-0.003	1.000	3501523	2.08		83.4	114527	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.678	2.695	-0.017	1.000	2619706	1.68		168	916	M
413.00 > 169.00	2.678	2.695	-0.017	1.000	1391887		1.88(0.84-2.52)		3889	
* 62 13C2-PFOA										
415.00 > 370.00	2.678	2.695	-0.017		4454486	2.50			127030	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.686	2.703	-0.017	1.000	4790527	4.03		423	1165	
449.00 > 99.00	2.686	2.703	-0.017	1.000	1283582		3.73(1.94-5.82)		2405	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.051	0.006	1.141	2161020	1.33		55.7	15155	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.058	-0.001	1.141	1667868	1.24		49.6	35072	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.057	3.067	-0.010	1.000	118241873	120.8		13017	46054	E
499.00 > 99.00	3.050	3.067	-0.017	0.998	34250081		3.45(2.31-6.93)		82252	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.067	-0.010	1.000	6131680	9.01		901	9488	
463.00 > 169.00	3.057	3.067	-0.010	1.000	1540383		3.98(1.90-5.69)		7047	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.389	0.008	1.268	2675542	1.14		45.5	34945	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.401	-0.004	1.000	1120997	1.08		108	1670	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.408	0.007	1.275	634662	1.52		63.3	12859	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.417	0.007	1.278	1677670	1.49		59.8	31367	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.419	-0.004	1.000	392529	1.18		123	8781	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.428	-0.004	1.000	760060	1.19		119	3078	
513.00 > 169.00	3.424	3.428	-0.004	1.000	135871		5.59(2.36-7.09)		992	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.570	0.008	1.336	224152	0.6044		24.2	9689	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.578	3.594	-0.016	1.000	92941	1.00		99.5	2901	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.741	-0.004	1.000	394773	0.6838		70.9	7576	
599.00 > 99.00	3.737	3.741	-0.004	1.000	125081		3.16(1.39-4.16)		2615	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.399	201110	0.5672		22.7	400	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.399	966690	1.10		44.0	33695	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.762	-0.014	1.000	81921	1.04		104	2070	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	288474	0.8902		89.0	743	
563.00 > 169.00	3.748	3.762	-0.014	1.000	77756		3.71(2.12-6.36)		3162	
35 MeFOSA										
512.00 > 169.00	3.902	3.875	0.027		68480	NC			2409	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.510	584930	0.7015		28.1	4515	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.061	-0.015	1.000	247153	1.03		103	68.1	
613.00 > 169.00	4.046	4.061	-0.015	1.000	60544		4.08(2.13-6.40)		1792	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.088	4.066	0.022		45645	NC			1616	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.320	-0.013	1.000	229510	0.9535		95.4	78.5	
663.00 > 169.00	4.307	4.320	-0.013	1.000	73631		3.12(1.25-3.76)		1735	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.700	571478	0.7509		30.0	7396	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.556	-0.002	1.000	58615	0.9298		93.0	1374	
713.00 > 219.00	4.543	4.556	-0.013	0.998	43685		1.34(0.71-2.13)		443	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.853	523312	0.4701		18.8	3008	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	209555	1.07		107	28.7	
813.00 > 169.00	4.964	4.974	-0.010	1.000	35338		5.93(2.86-8.58)		448	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.331	-0.009	1.000	158717	0.7777		77.8	76.7	
913.00 > 169.00	5.322	5.331	-0.009	1.000	18184		8.73(3.83-11.48)		246	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:22 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d

Injection Date: 21-Mar-2018 01:07:20 Instrument ID: A8_N

Lims ID: 320-36683-A-10-B MS

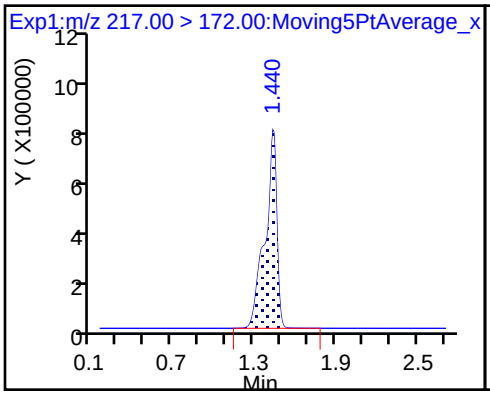
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 17

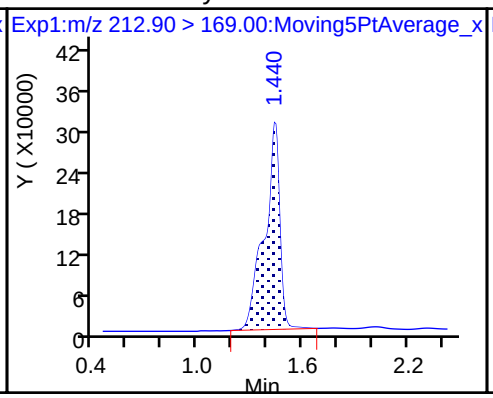
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

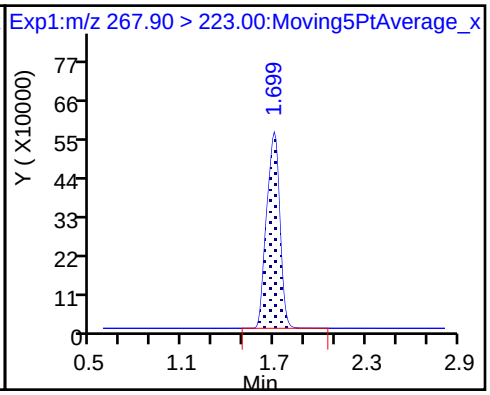
D 1 13C4 PFBA



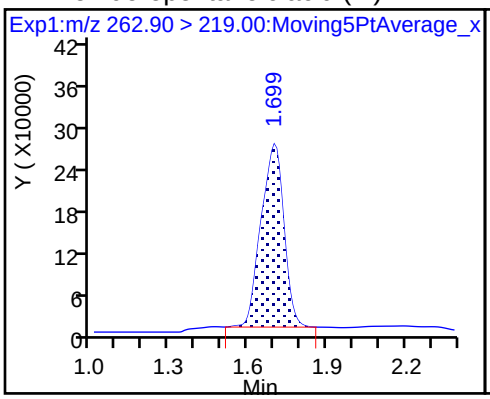
2 Perfluorobutyric acid



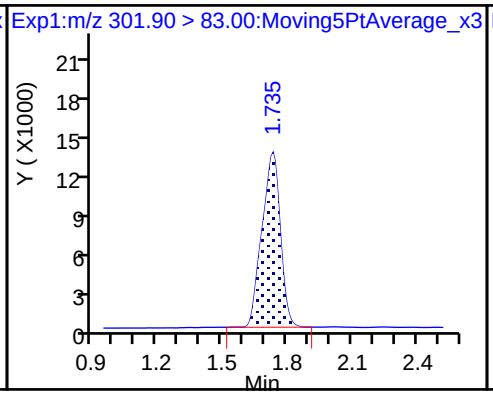
D 3 13C5-PFPeA



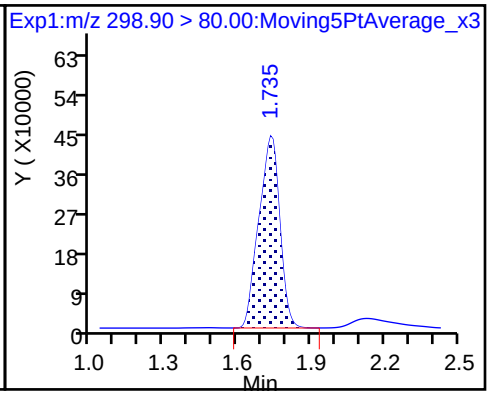
4 Perfluoropentanoic acid (M)



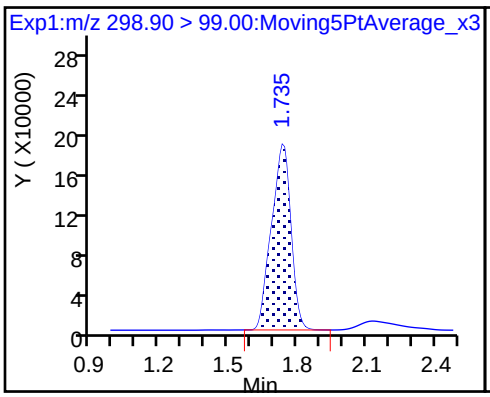
D 47 13C3-PFBS



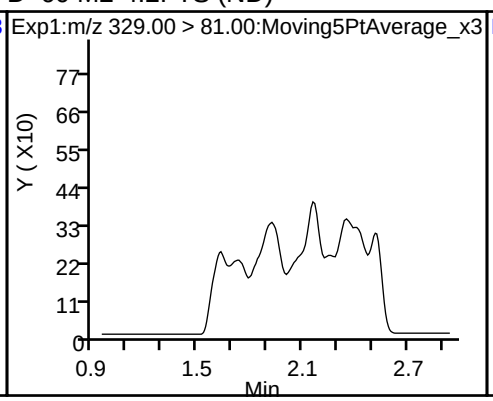
5 Perfluorobutanesulfonic acid



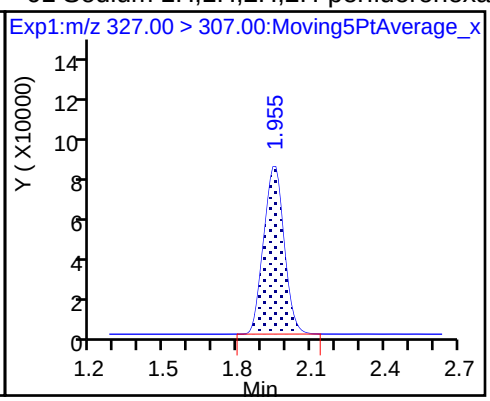
5 Perfluorobutanesulfonic acid



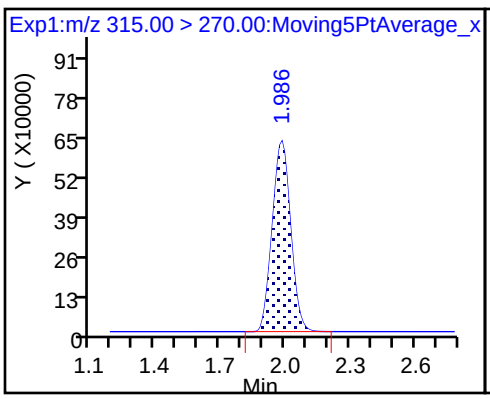
D 60 M2-4:2FTS (ND)



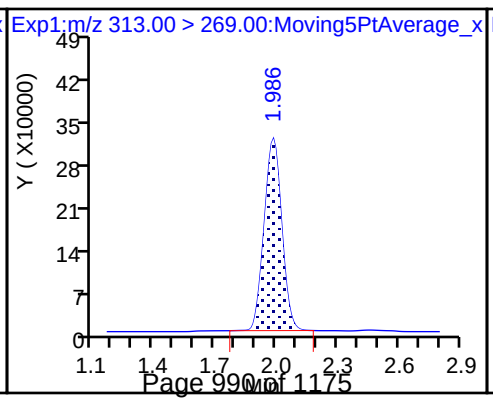
61 Sodium 1H,1H,2H,2H-perfluorohexane



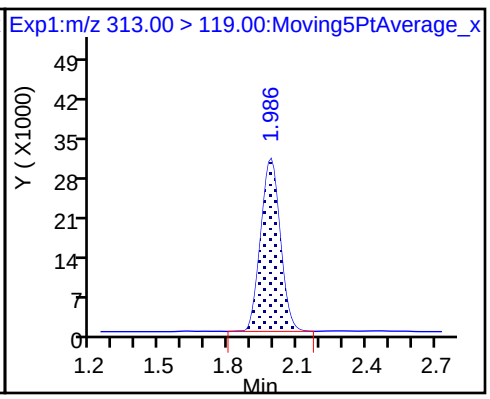
D 7 13C2 PFHxA



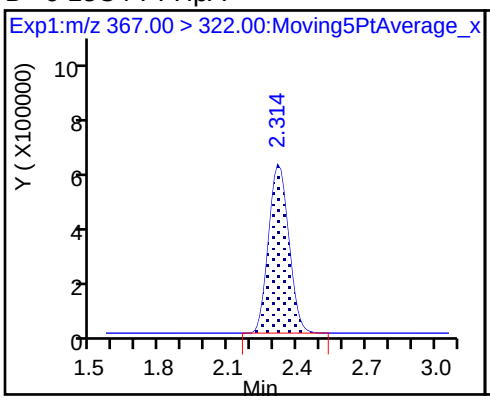
6 Perfluorohexanoic acid



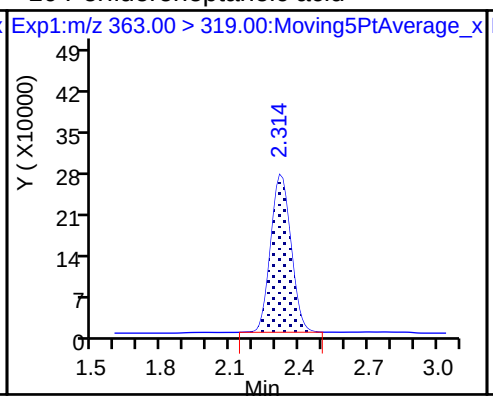
6 Perfluorohexanoic acid



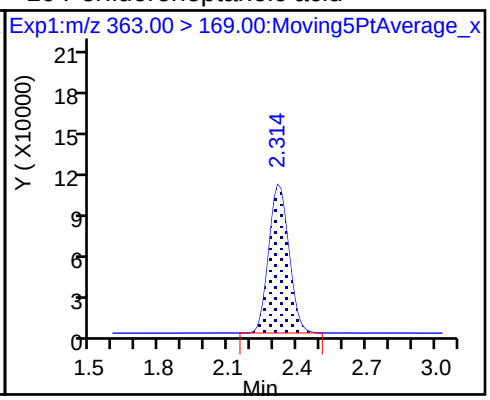
D 9 13C4-PFHpA



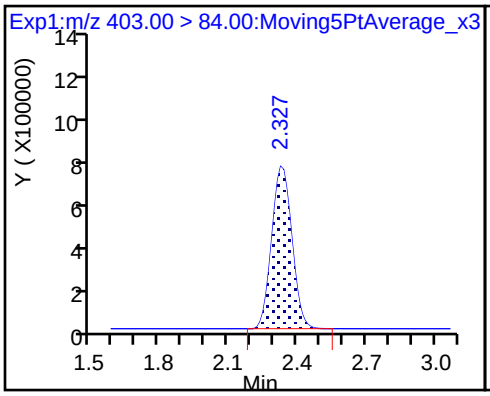
10 Perfluoroheptanoic acid



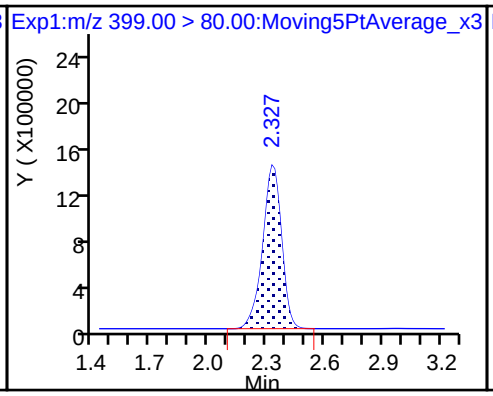
10 Perfluoroheptanoic acid



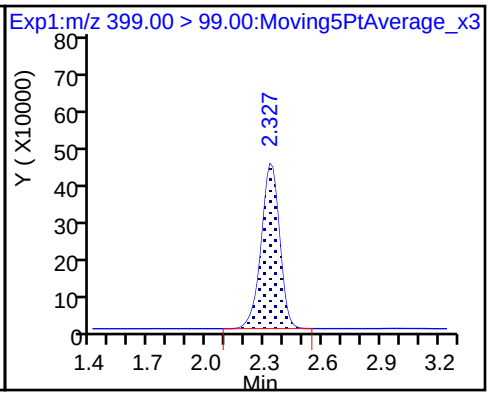
D 11 18O2 PFHxS



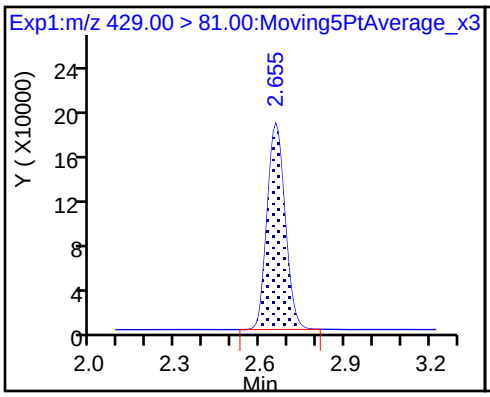
8 Perfluorohexanesulfonic acid



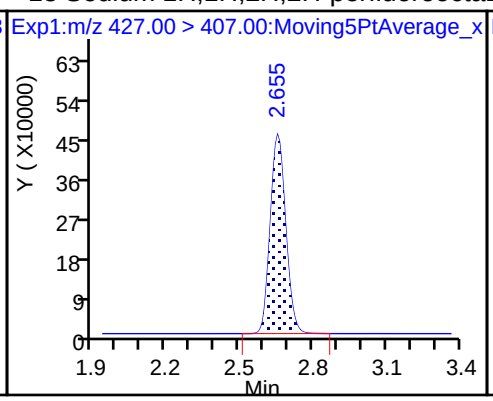
8 Perfluorohexanesulfonic acid



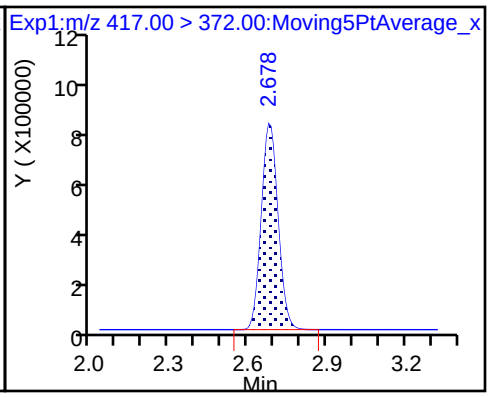
D 12 M2-6:2FTS



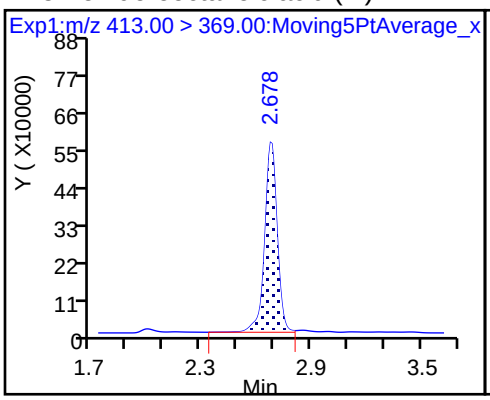
13 Sodium 1H,1H,2H,2H-perfluorooctane



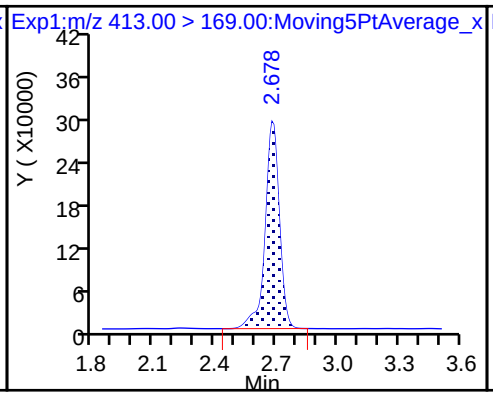
D 14 13C4 PFOA



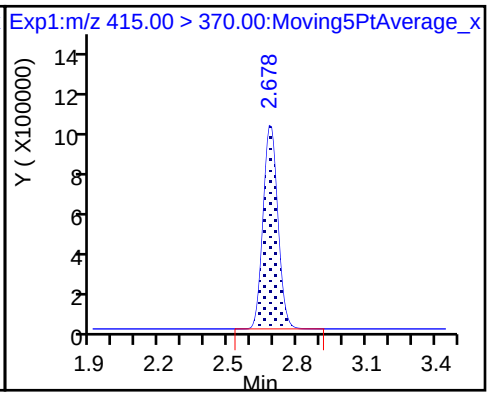
15 Perfluorooctanoic acid (M)



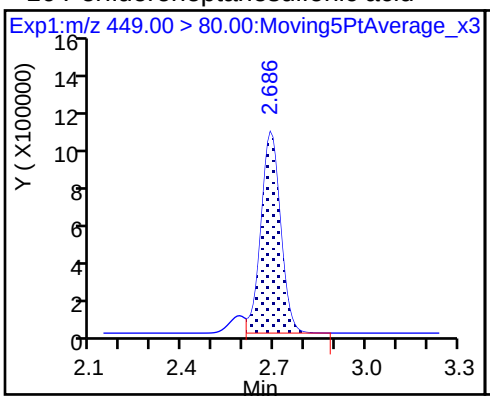
15 Perfluorooctanoic acid



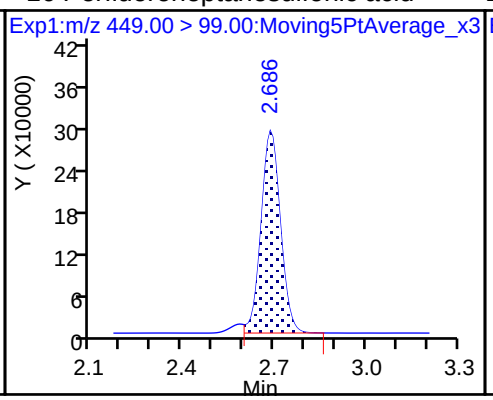
* 62 13C2-PFOA



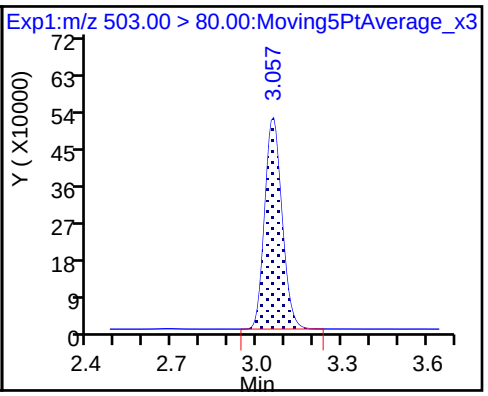
16 Perfluoroheptanesulfonic acid



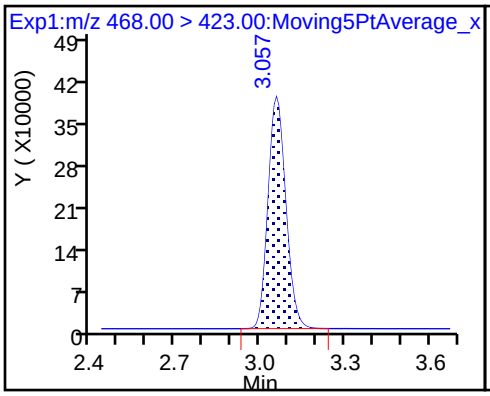
16 Perfluoroheptanesulfonic acid



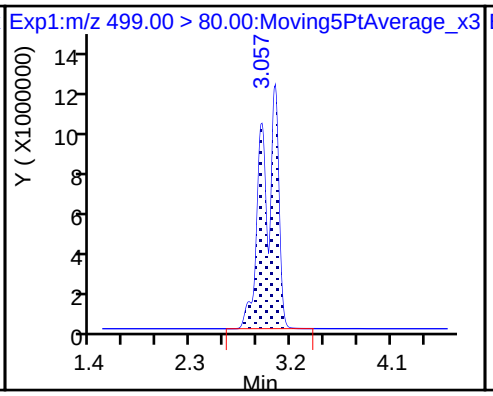
D 18 13C4 PFOS



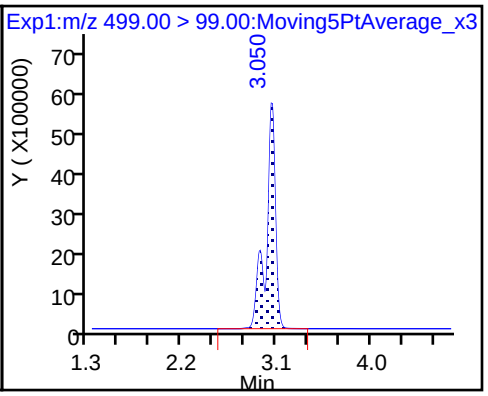
D 19 13C5 PFNA



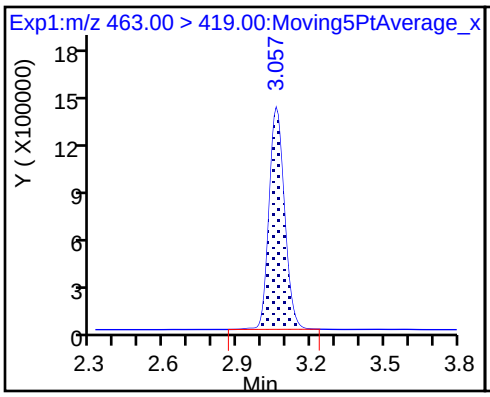
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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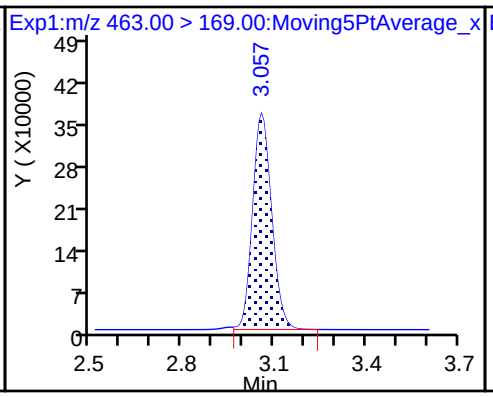
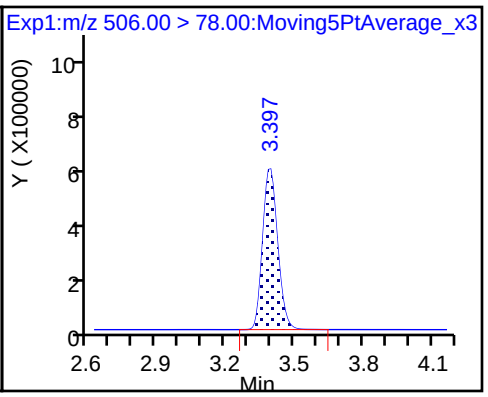
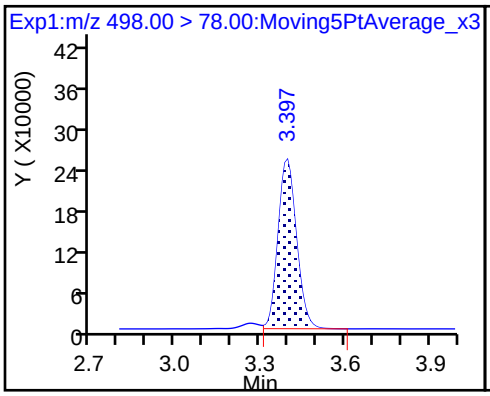


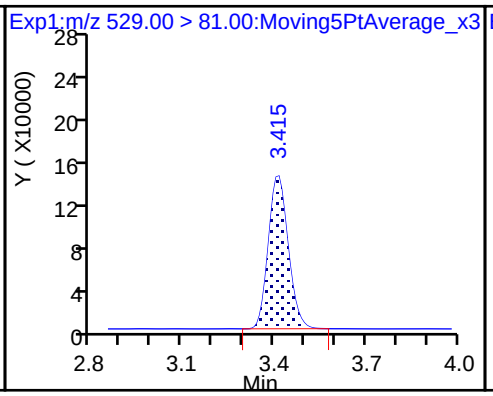
D 21 13C8 FOSA



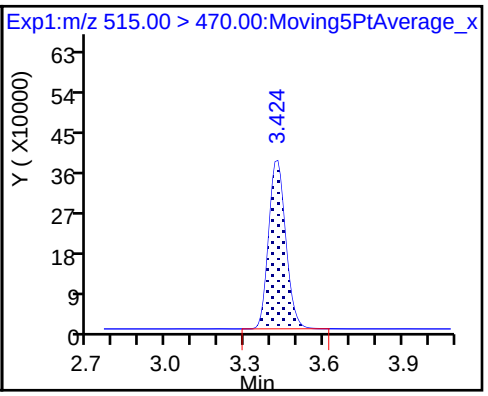
22 Perfluorooctane Sulfonamide



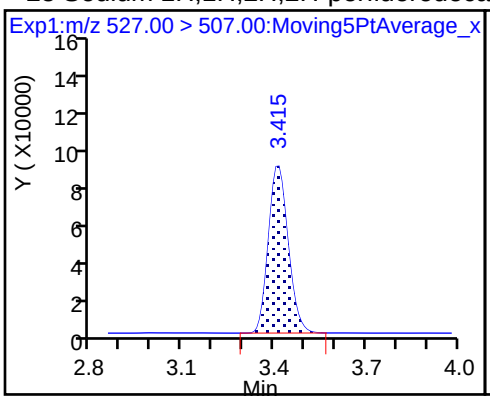
D 26 M2-8:2FTS



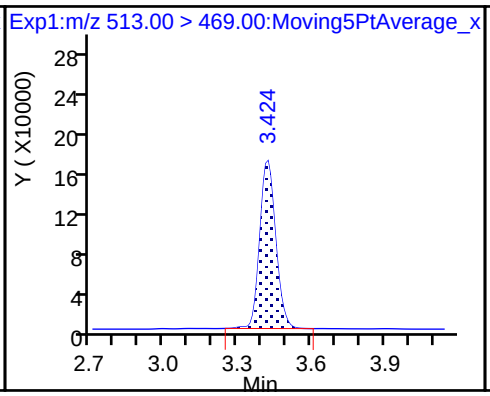
D 23 13C2 PFDA



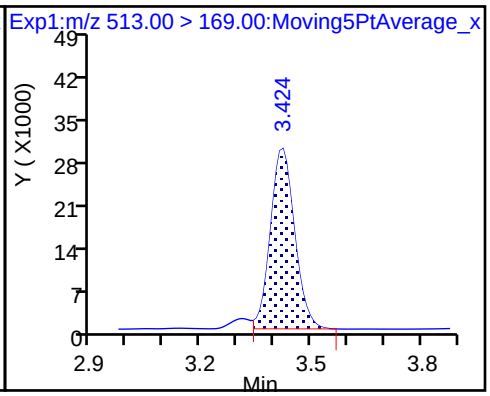
25 Sodium 1H,1H,2H,2H-perfluorodecan



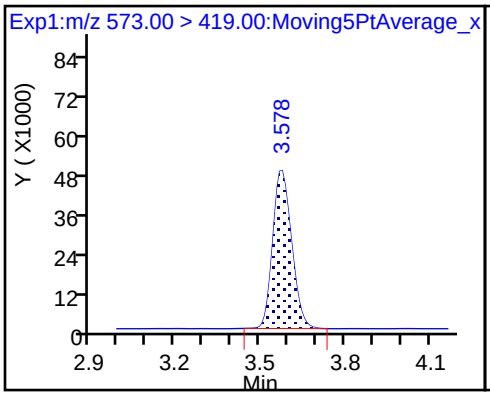
24 Perfluorodecanoic acid



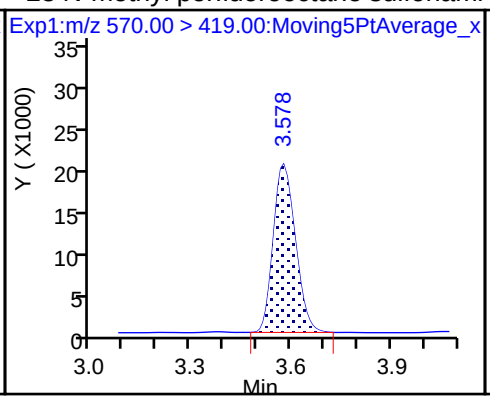
24 Perfluorodecanoic acid



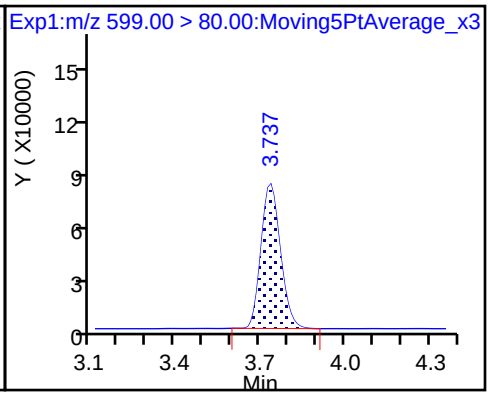
D 27 d3-NMeFOSAA



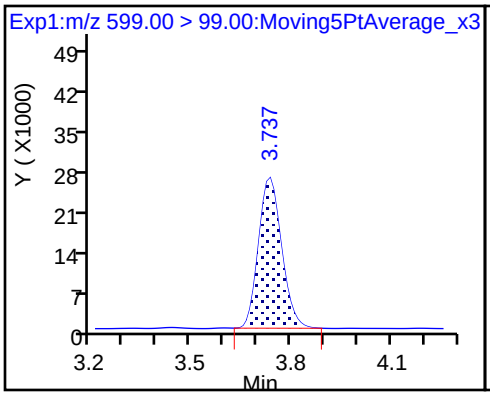
28 N-methyl perfluorooctane sulfonami



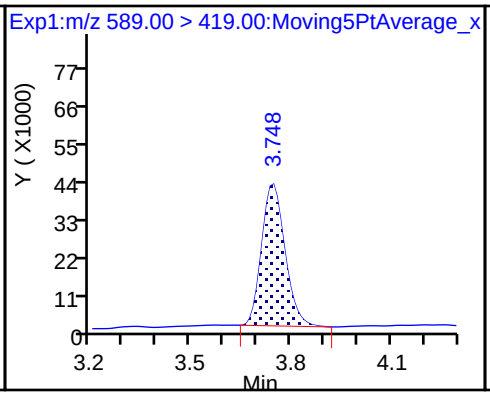
29 Perfluorodecane Sulfonic acid



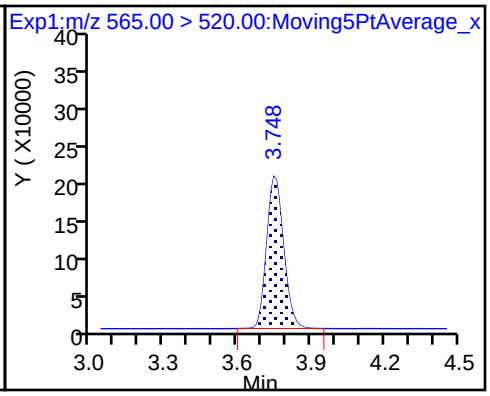
29 Perfluorodecane Sulfonic acid



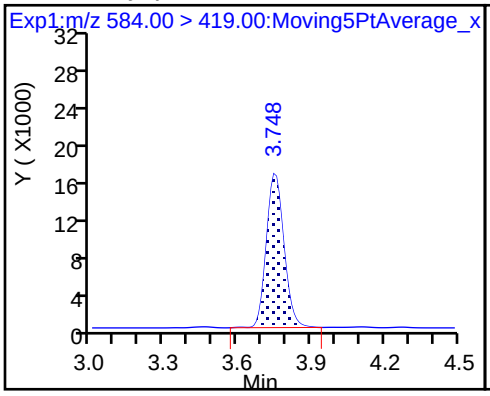
D 32 d5-NEtFOSAA



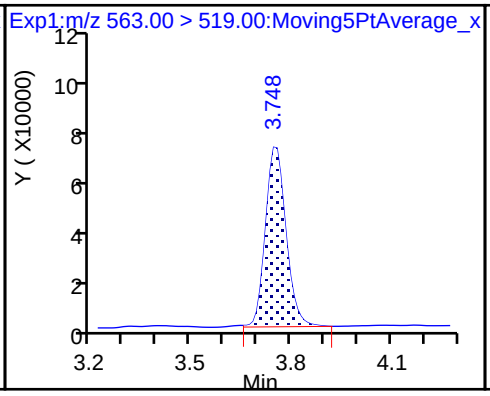
D 30 13C2 PFUnA



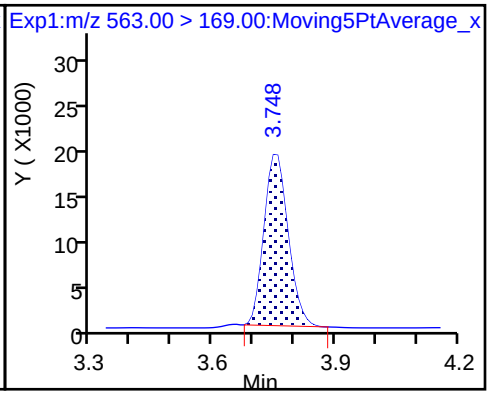
33 N-ethyl perfluorooctane sulfonamid



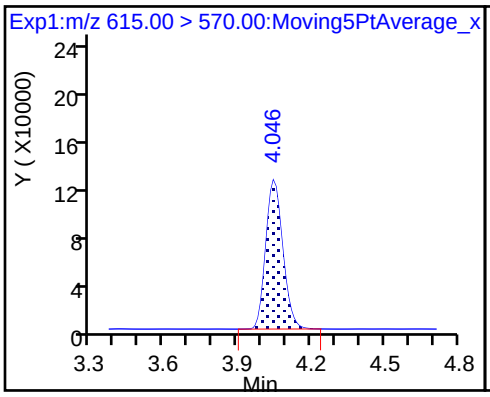
31 Perfluoroundecanoic acid



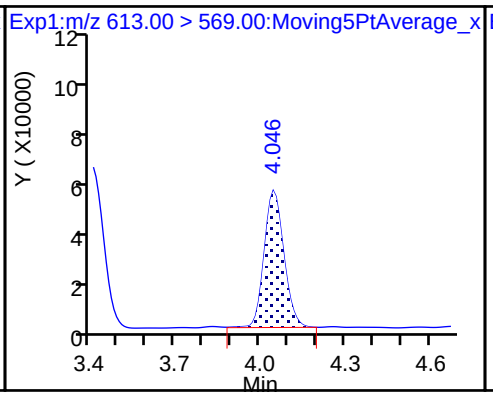
31 Perfluoroundecanoic acid



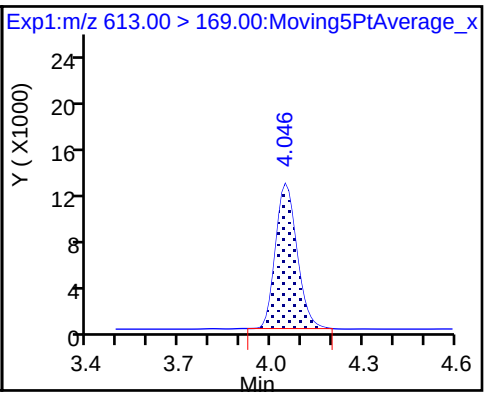
D 36 13C2 PFDoA



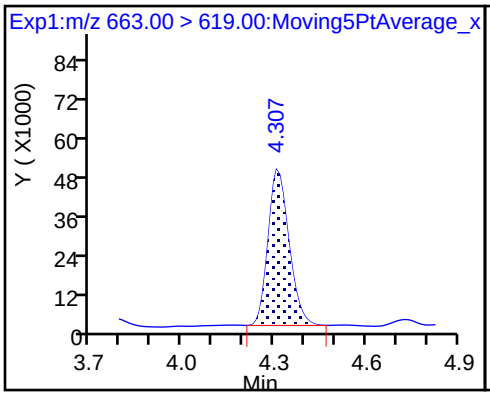
37 Perfluorododecanoic acid



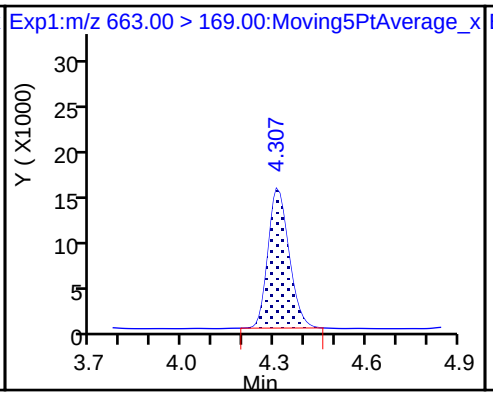
37 Perfluorododecanoic acid



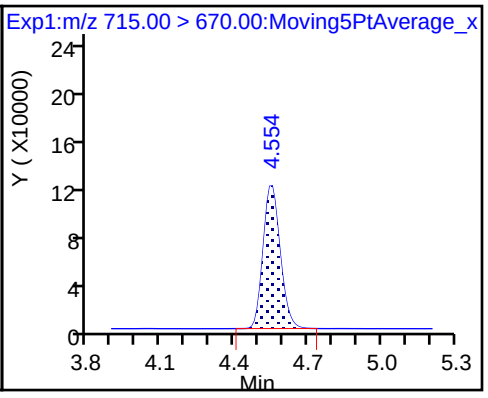
41 Perfluorotridecanoic acid



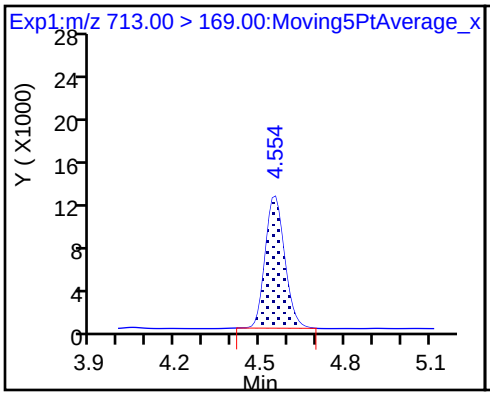
41 Perfluorotridecanoic acid



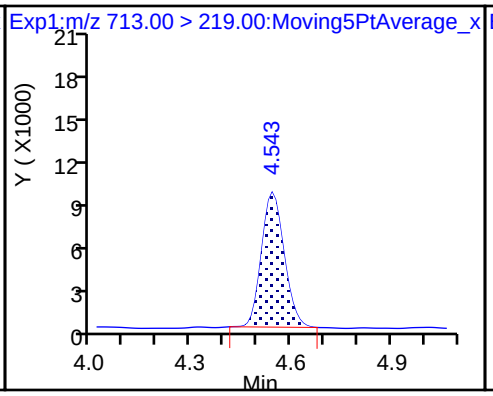
D 43 13C2-PFTeDA



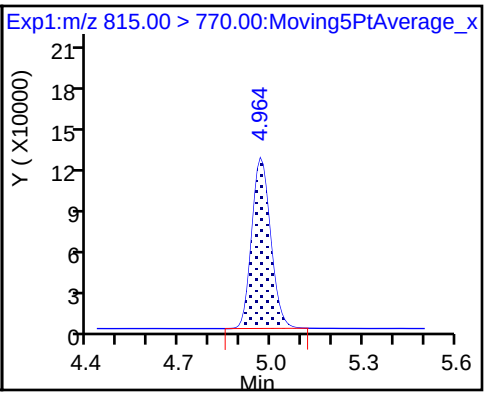
42 Perfluorotetradecanoic acid



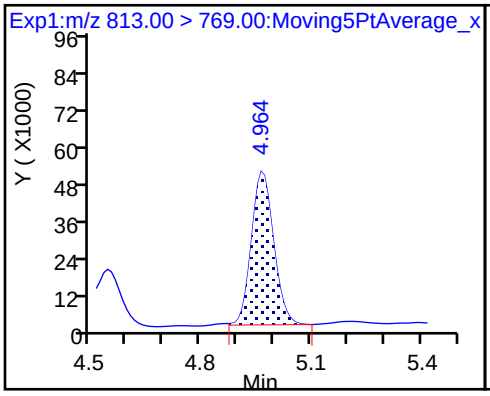
42 Perfluorotetradecanoic acid



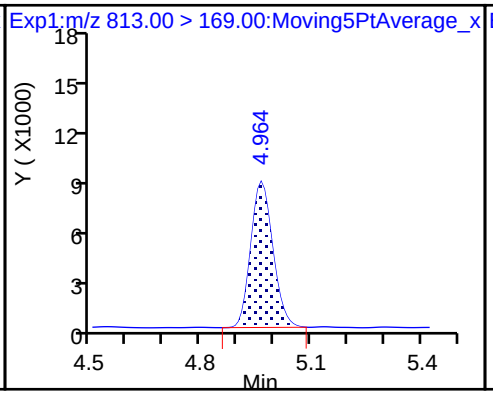
D 44 13C2-PFHxDA



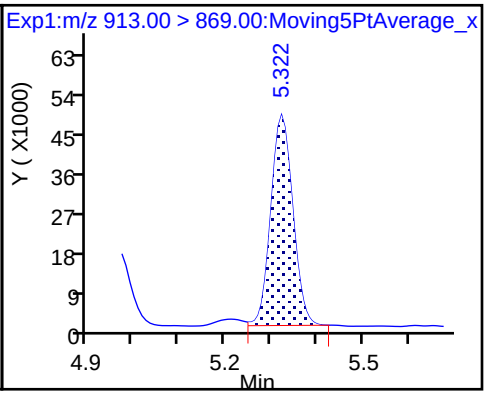
45 Perfluorohexadecanoic acid



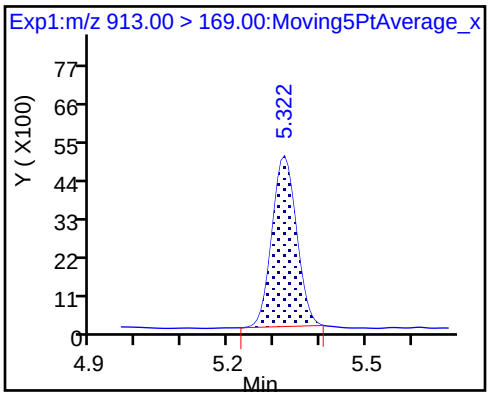
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

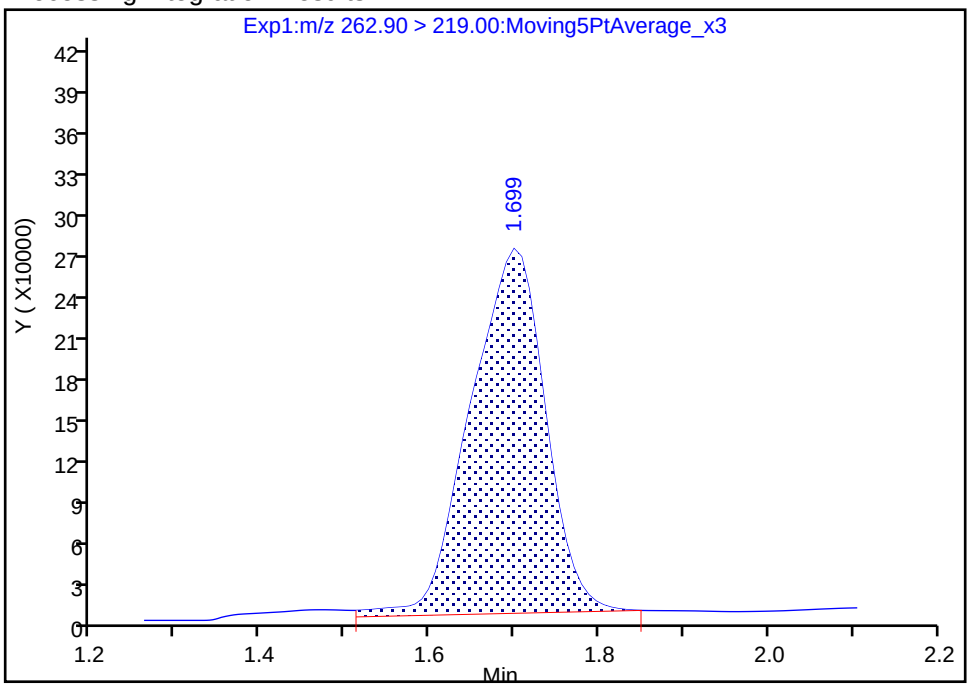
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d				
Injection Date:	21-Mar-2018 01:07:20	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-B MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	28	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

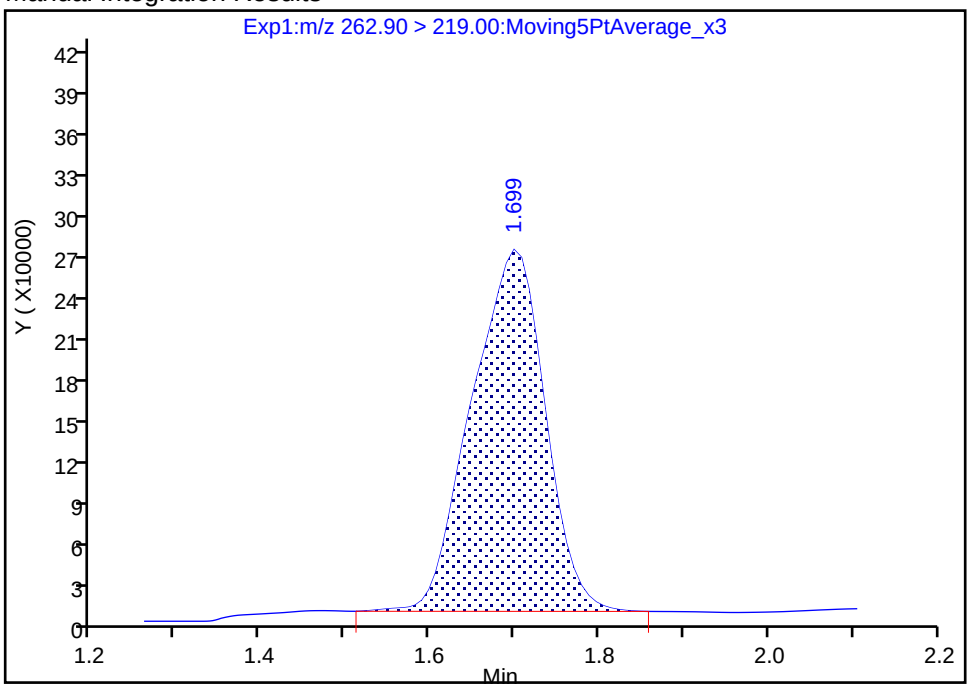
Processing Integration Results

RT: 1.70
Area: 1645140
Amount: 1.069854
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 1597771
Amount: 1.039049
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:38:15

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

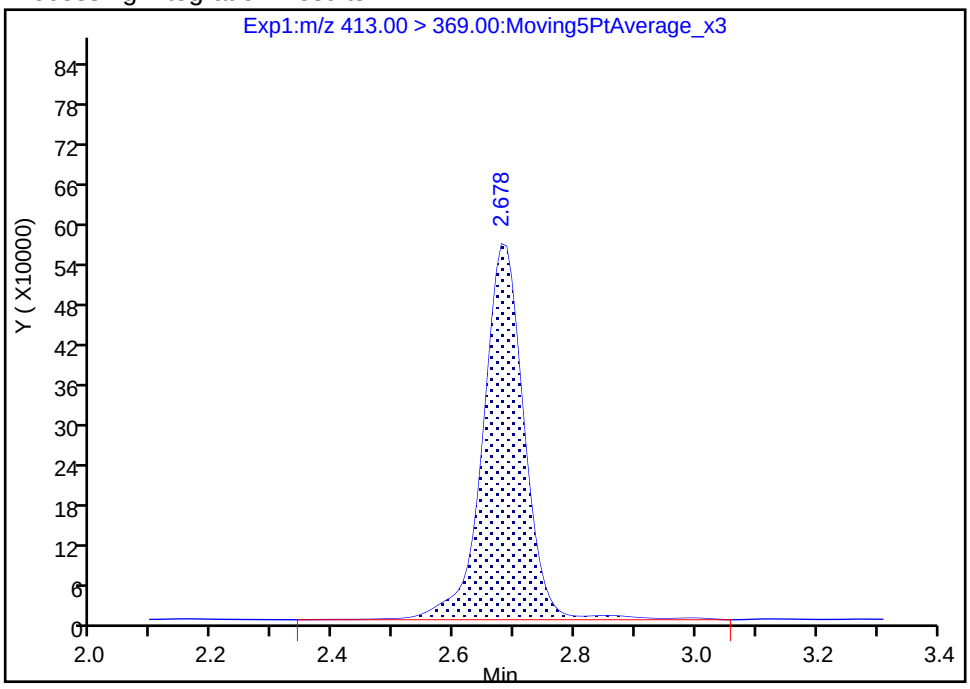
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d				
Injection Date:	21-Mar-2018 01:07:20	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-B MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	28	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

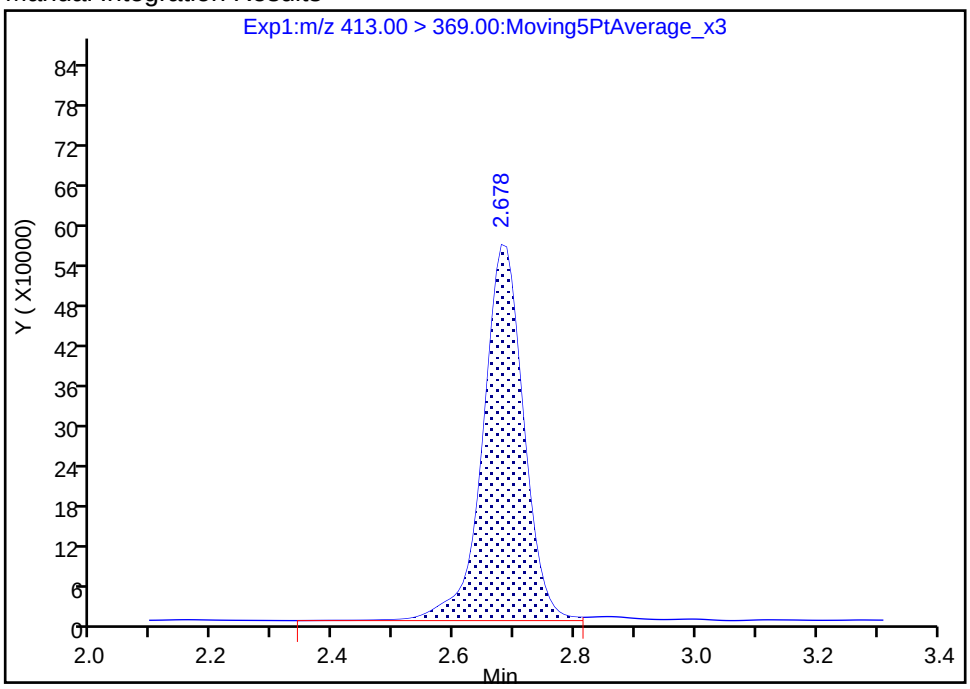
Processing Integration Results

RT: 2.68
Area: 2662573
Amount: 1.702844
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 2619706
Amount: 1.675429
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:38:43

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MS RE | Lab Sample ID: 320-36683-10 MS RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_022.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 02:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00239*		*0.00021*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	61		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d
Lims ID: 320-36683-A-10-E MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 29-Mar-2018 02:07:40 ALS Bottle#: 25 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-E MS
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.533	5355696	2.17		86.7	90432	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.446	0.001	1.004	2029687	1.01		101	393	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.632	3642346	2.22		88.8	53416	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.709	1.718	-0.009	1.000	1632656	0.99		99.4	597	M
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	75967	2.03		87.3	491	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2262754	0.8912		101	1087	
298.90 > 99.00	1.753	1.753	0.0	1.005	938212		2.41(1.25-3.74)		941	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	442838	0.8391		89.8	14713	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	1784407	1.17		117	1441	
313.00 > 119.00	1.997	2.008	-0.011	1.000	169524		10.53(5.03-15.10)		1649	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3722239	2.05		82.1	85246	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	1598591	0.9794		97.9	793	
363.00 > 169.00	2.341	2.341	0.0	1.000	679861		2.35(1.13-3.40)		1132	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	8235617	4.03		443	34086	
399.00 > 99.00	2.354	2.354	0.0	1.000	2504109		3.29(1.50-4.49)		11737	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.866	3944538	2.20		88.2	79216	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.870	4343250	1.97		83.2	100097	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.689	-0.009	1.000	1601665	2.78		293	28039	
D 12 M2-6:2FTS										
429.00 > 81.00	2.680	2.697	-0.017	0.991	785758	2.12		89.2	18564	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.704	2.712	-0.008	1.000	2406231	1.44		144	924	
413.00 > 169.00	2.704	2.712	-0.008	1.000	1349034		1.78(0.84-2.52)		3562	
* 62 13C2-PFOA										
415.00 > 370.00	2.704	2.712	-0.008		4882236	2.50			113799	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.712	2.720	-0.008	1.000	4253231	3.37		354	1077	
449.00 > 99.00	2.704	2.720	-0.016	0.997	1110925		3.83(1.94-5.82)		1859	M
D 14 13C4 PFOA										
417.00 > 372.00	2.704	2.721	-0.017	1.000	3686683	2.01		80.6	59039	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.080	3.080	0.0	1.000	116622442	106.3		11451	53072	E
499.00 > 99.00	3.080	3.080	0.0	1.000	34023955		3.43(2.31-6.93)		119593	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.088	-0.008	1.000	8187088	8.56		856	8283	
463.00 > 169.00	3.080	3.088	-0.008	1.000	2055468		3.98(1.90-5.69)		37280	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.139	2397623	1.49		59.4	52930	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.139	2354591	1.47		61.3	25952	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.416	3.417	0.0	1.003	1562701	0.9766		97.7	13796	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.260	4058001	1.87		74.9	54268	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	522540	1.10		115	9440	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.444	0.0	1.000	1101900	1.03		103	5256	
513.00 > 169.00	3.444	3.444	0.0	1.000	208641		5.28(2.36-7.09)		4021	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.270	893467	1.78		74.5	17678	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.273	2694728	1.90		76.2	44842	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.611	-0.011	1.000	524564	0.9672		96.7	4891	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.331	1354810	1.82		72.8	28102	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.759	3.758	0.001	1.000	778380	1.16		121	6596	
599.00 > 99.00	3.759	3.758	0.001	1.000	276648		2.81(1.39-4.16)		6961	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.003	678453	0.9396		94.0	3367	
563.00 > 169.00	3.779	3.779	0.0	1.003	186467		3.64(2.12-6.36)		14006	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.779	-0.010	1.000	475560	1.00		99.6	13471	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.769	3.779	-0.010	1.394	1278195	1.51		60.3	5317	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.394	2093692	1.65		66.2	46331	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.077	-0.008	1.000	938278	0.9741		97.4	728	
613.00 > 169.00	4.069	4.077	-0.008	1.000	239511		3.92(2.13-6.40)		4817	
D 36 13C2 PFDoA										
615.00 > 570.00	4.069	4.089	-0.020	1.504	2301389	1.60		64.1	20078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.339	-0.010	1.000	1027279	1.01		101	542	
663.00 > 169.00	4.329	4.339	-0.010	1.000	358566		2.86(1.25-3.76)		5973	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	303579	1.00		99.8	5068	
713.00 > 219.00	4.565	4.575	-0.010	0.998	215031		1.41(0.71-2.13)		5403	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.692	3069028	1.75		70.0	22014	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.990	0.001	1.002	1670899	0.99		99.4	464	
813.00 > 169.00	4.991	4.990	0.001	1.002	274670		6.08(2.86-8.58)		2586	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	5.008	-0.026	1.842	4515540	1.57		62.8	13789	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	1565846	0.9376		93.8	347	
913.00 > 169.00	5.351	5.351	0.0	1.000	202966		7.71(3.83-11.48)		2502	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d

Injection Date: 29-Mar-2018 02:07:40 Instrument ID: A8_N

Lims ID: 320-36683-A-10-E MS

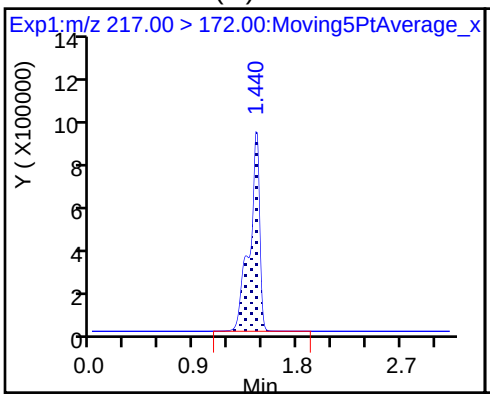
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 19

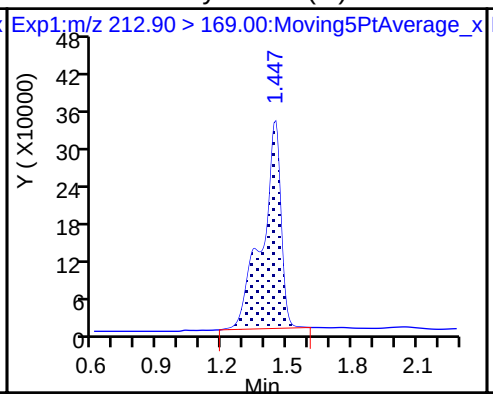
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

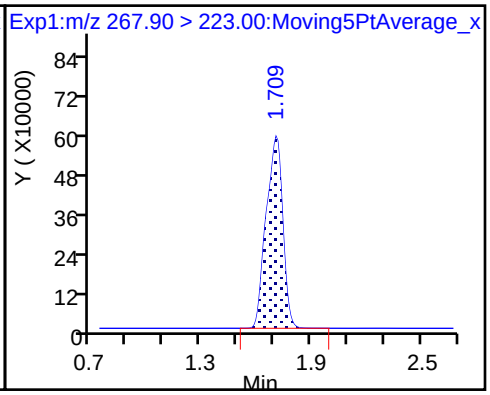
D 1 13C4 PFBA (M)



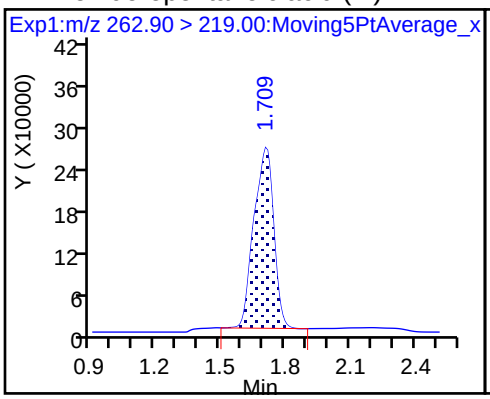
2 Perfluorobutyric acid (M)



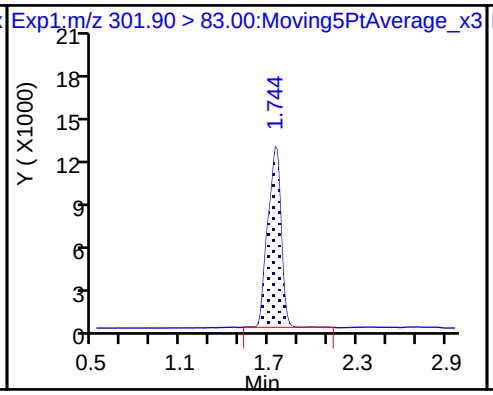
D 3 13C5-PFPeA



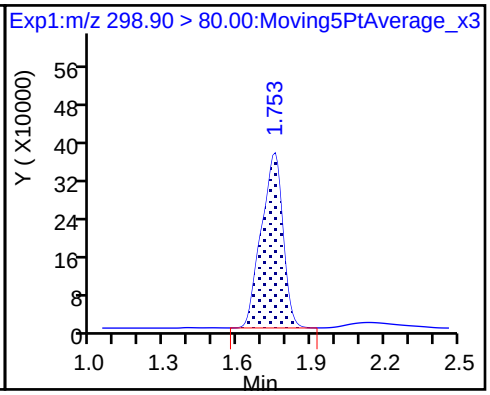
4 Perfluoropentanoic acid (M)



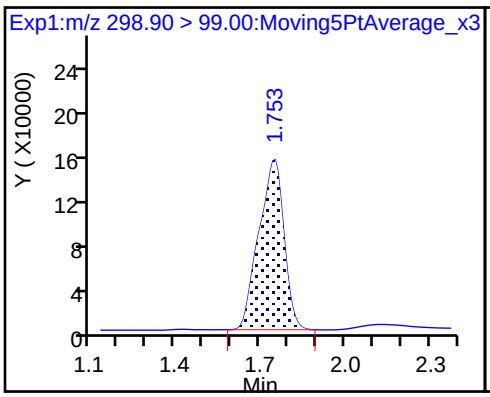
D 47 13C3-PFBS



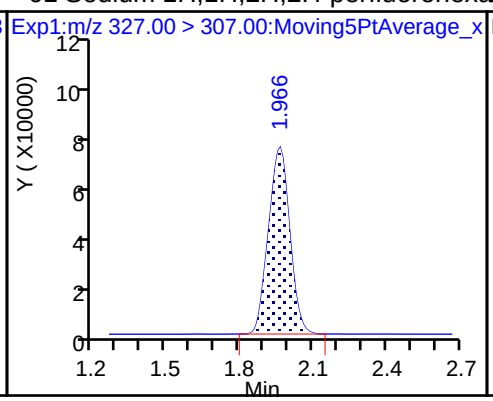
5 Perfluorobutanesulfonic acid



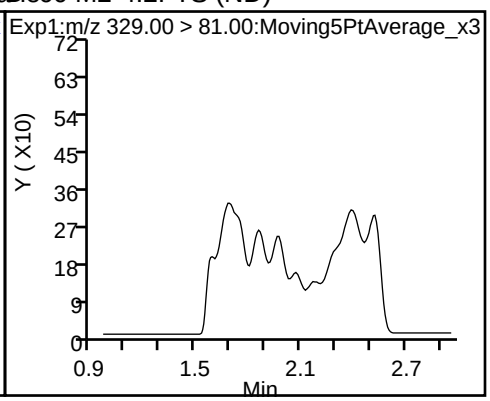
5 Perfluorobutanesulfonic acid



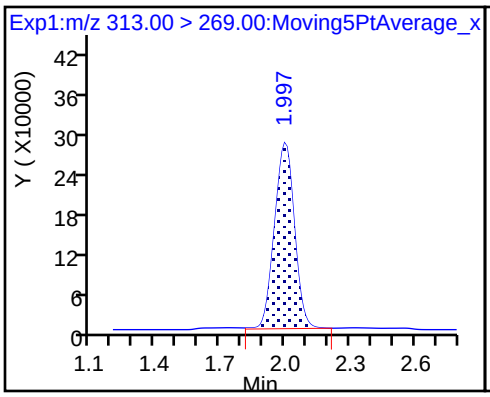
61 Sodium 1H,1H,2H,2H-perfluorohexane



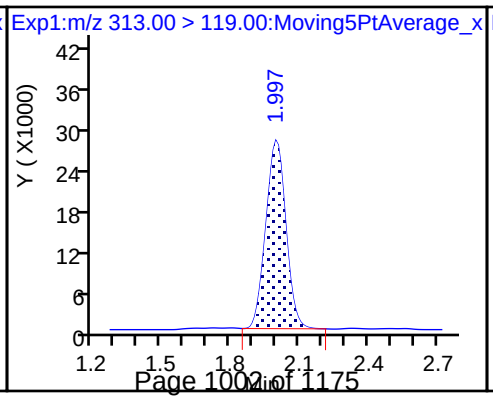
D 60 M2-4:2FTS (ND)



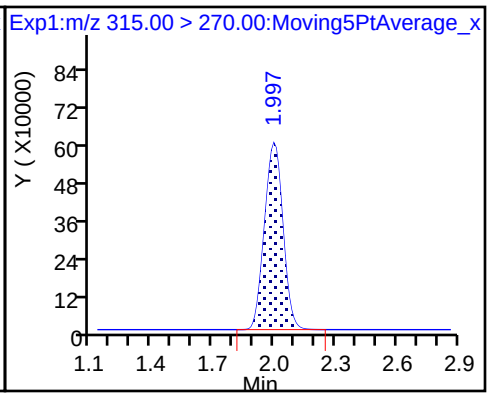
6 Perfluorohexanoic acid



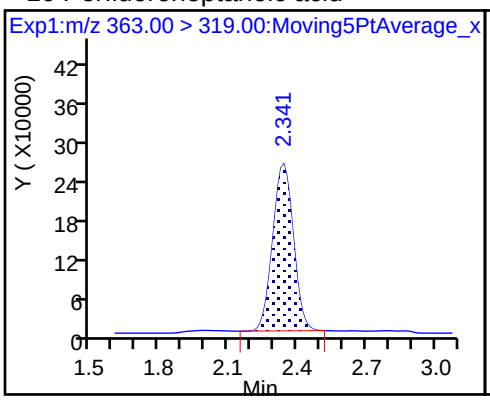
6 Perfluorohexanoic acid



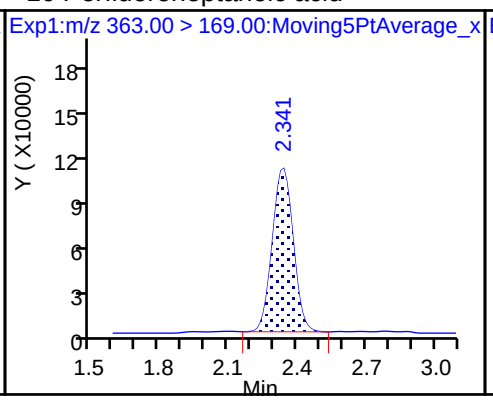
D 7 13C2 PFHxA



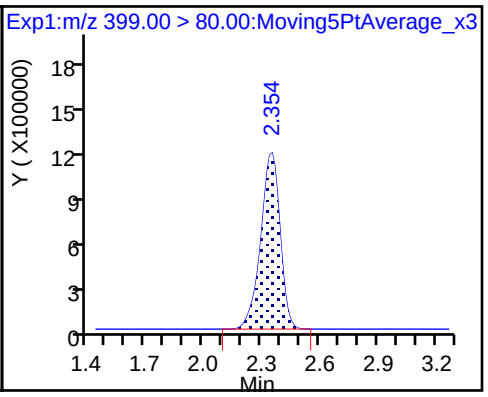
10 Perfluoroheptanoic acid



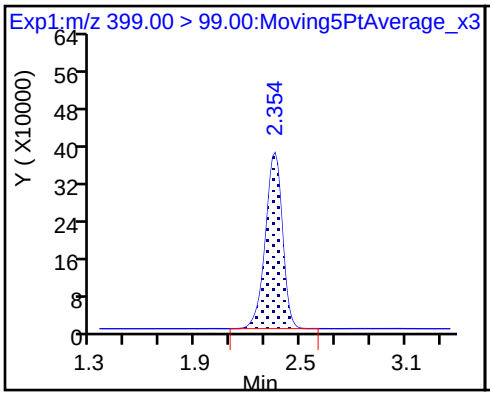
10 Perfluoroheptanoic acid



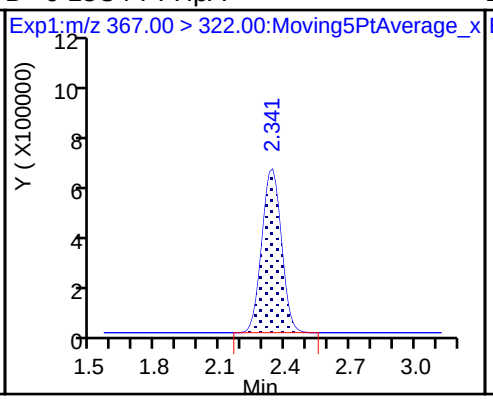
8 Perfluorohexanesulfonic acid



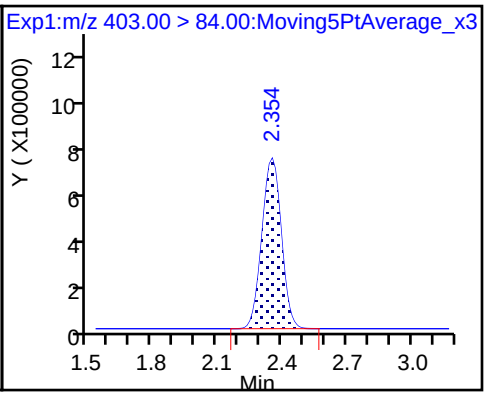
8 Perfluorohexanesulfonic acid



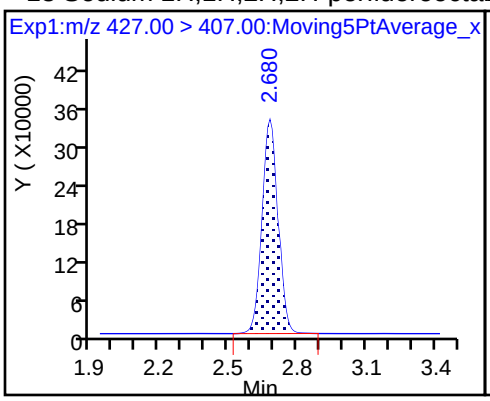
D 9 13C4-PFHpA



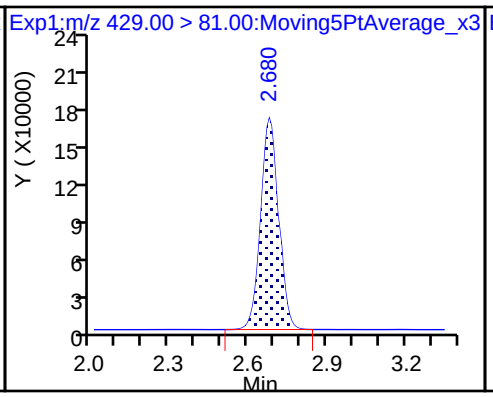
D 11 18O2 PFHxS



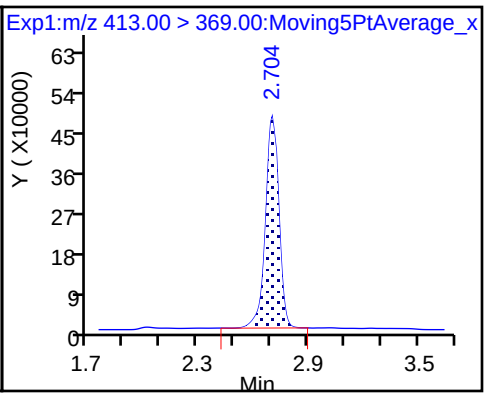
13 Sodium 1H,1H,2H,2H-perfluorooctane



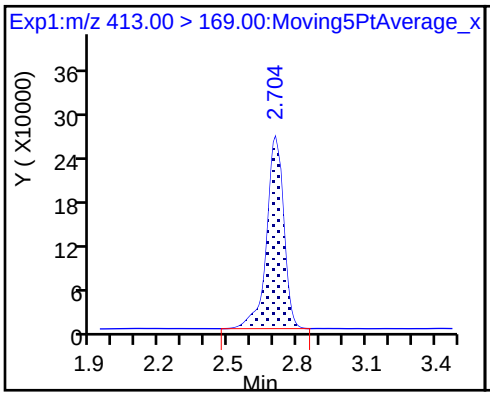
D 12 M2-6:2FTS



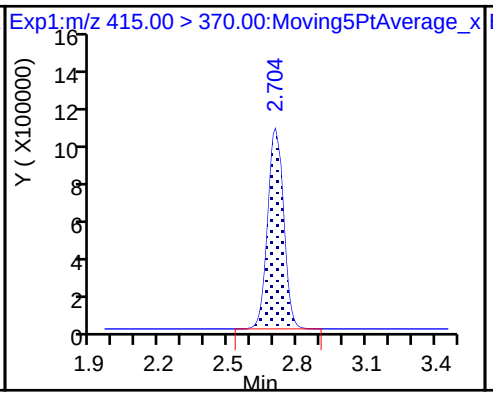
15 Perfluorooctanoic acid



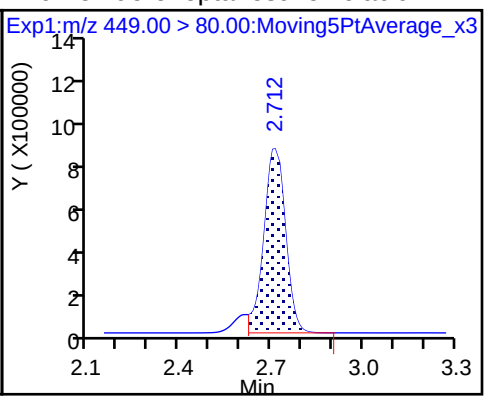
15 Perfluorooctanoic acid



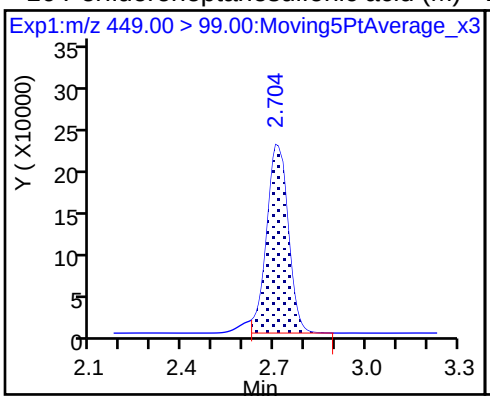
* 62 13C2-PFOA



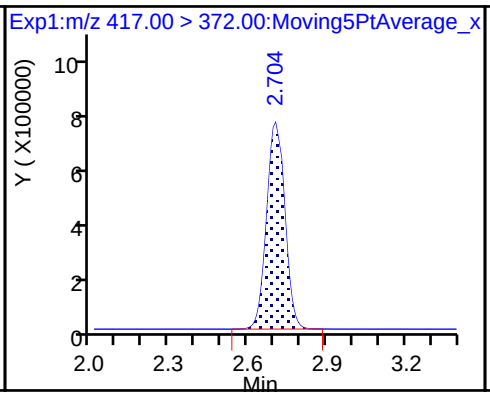
16 Perfluoroheptanesulfonic acid



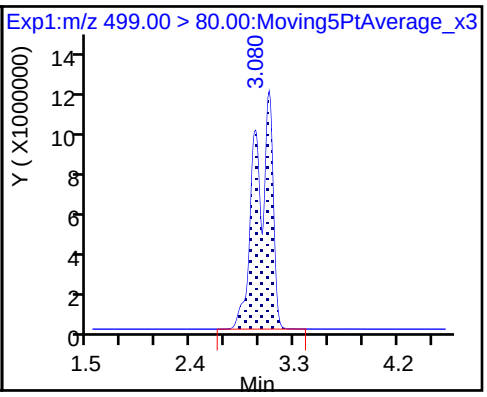
16 Perfluoroheptanesulfonic acid (M)



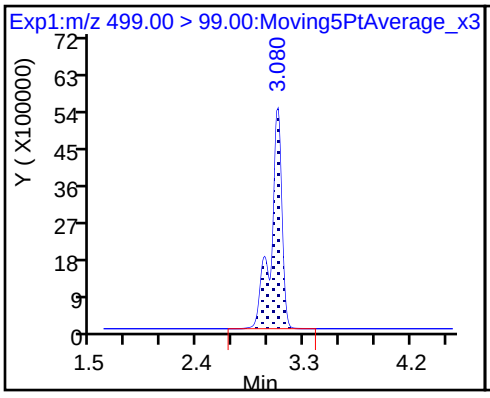
D 14 13C4 PFOA



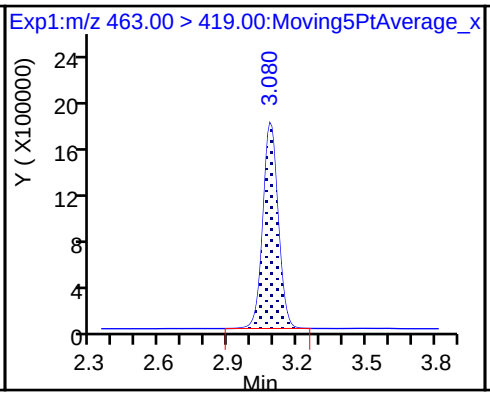
17 Perfluorooctane sulfonic acid



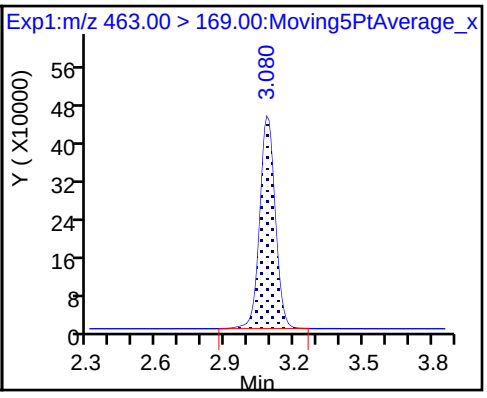
17 Perfluorooctane sulfonic acid



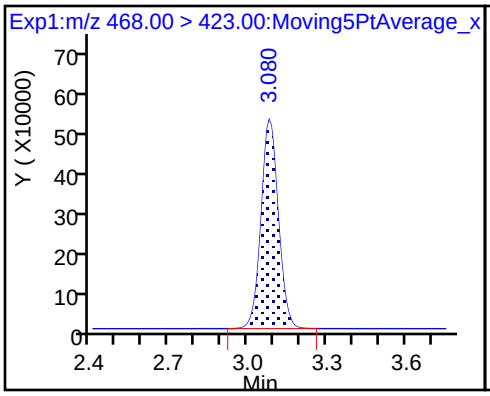
20 Perfluorononanoic acid



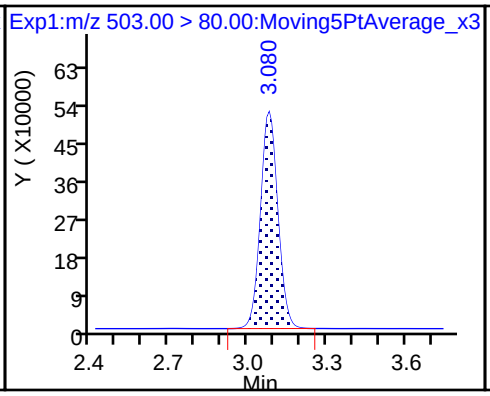
20 Perfluorononanoic acid



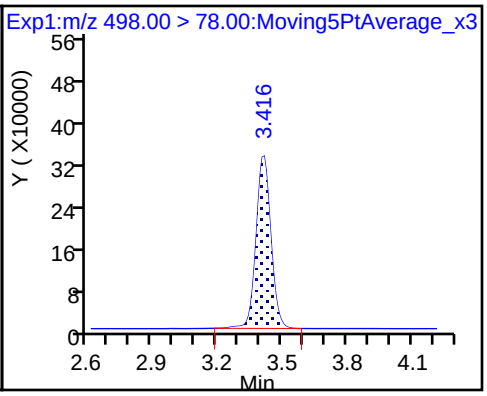
D 19 13C5 PFNA



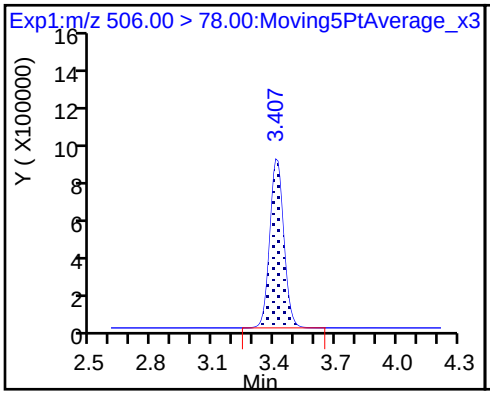
D 18 13C4 PFOS



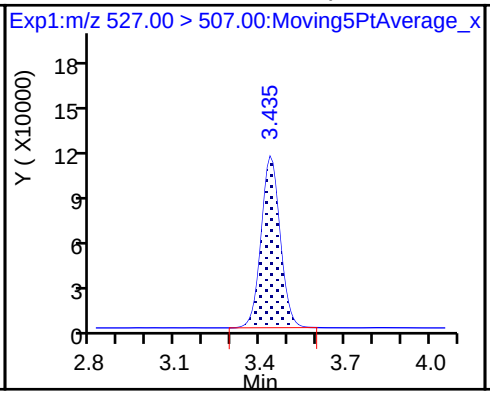
22 Perfluorooctane Sulfonamide



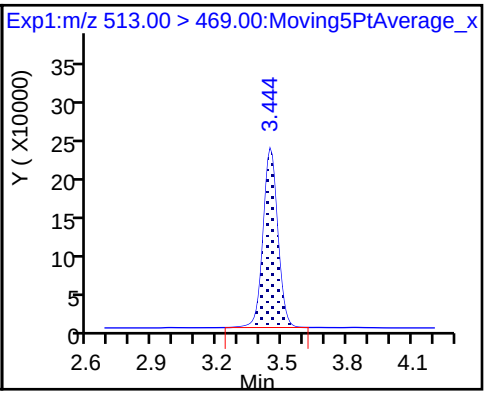
D 21 13C8 FOSA



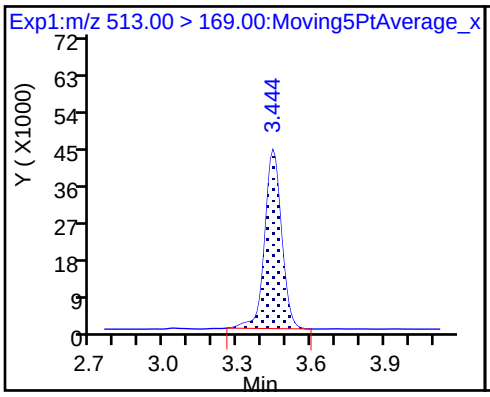
25 Sodium 1H,1H,2H,2H-perfluorodecan



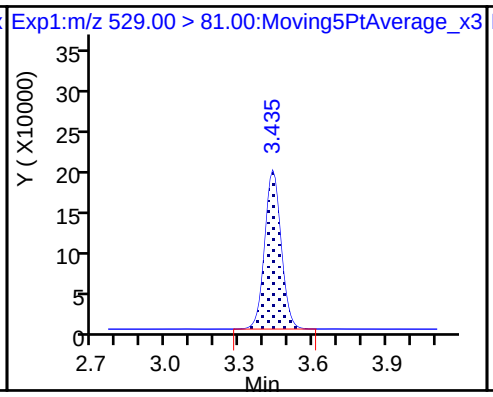
24 Perfluorodecanoic acid



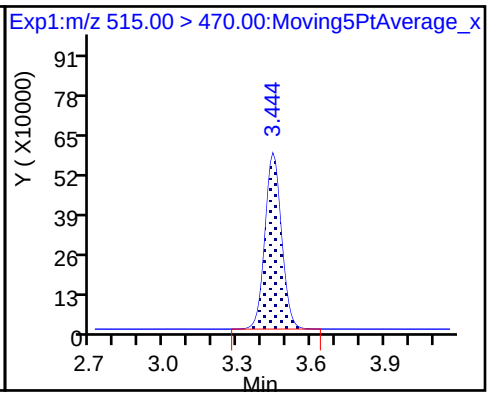
24 Perfluorodecanoic acid



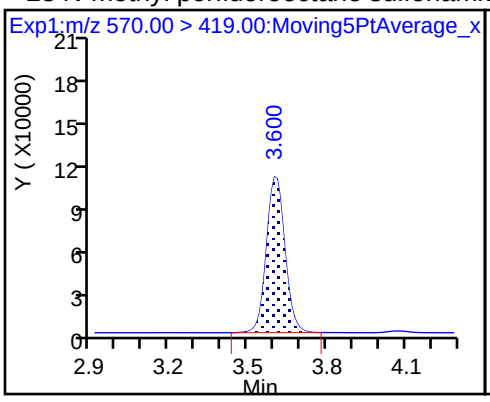
D 26 M2-8:2FTS



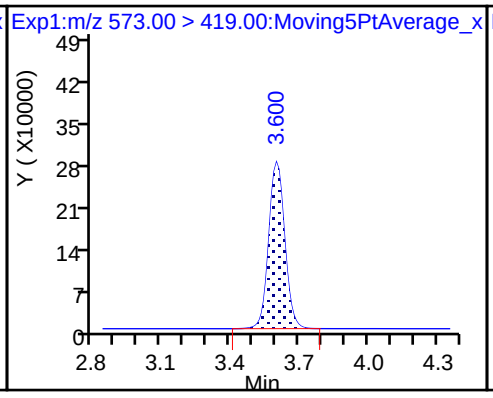
D 23 13C2 PFDA



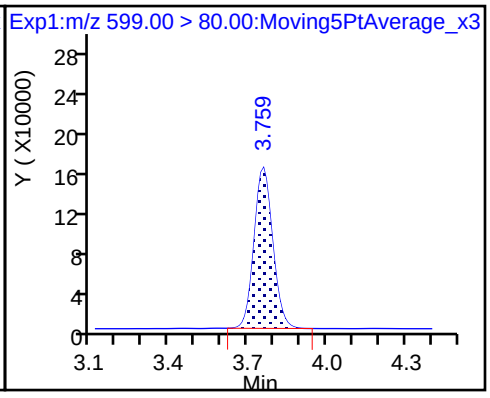
28 N-methyl perfluorooctane sulfonami



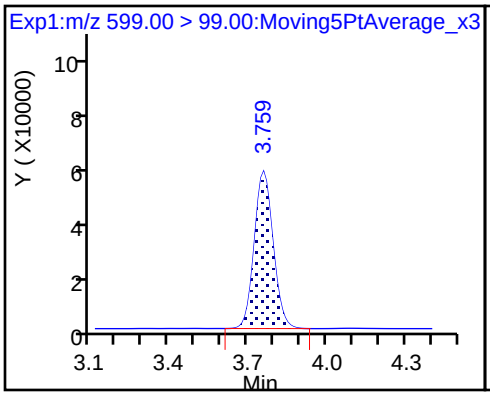
D 27 d3-NMeFOSAA



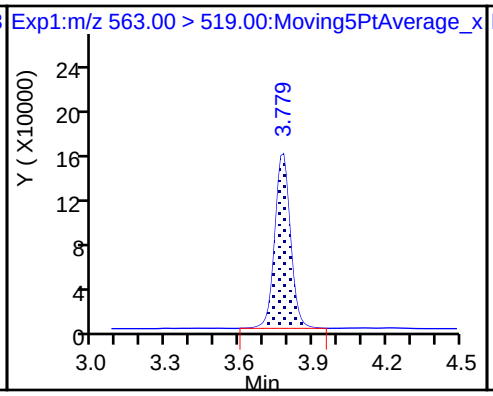
29 Perfluorodecane Sulfonic acid



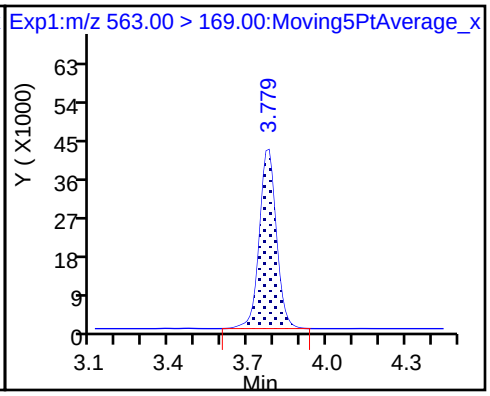
29 Perfluorodecane Sulfonic acid



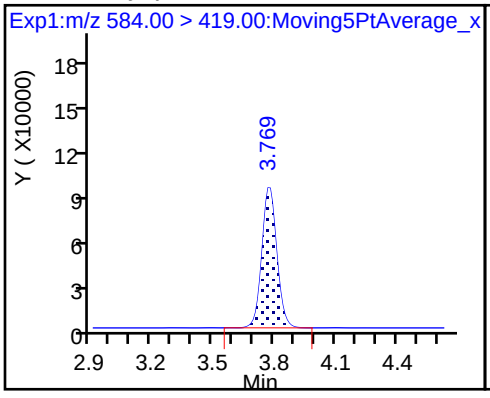
31 Perfluoroundecanoic acid



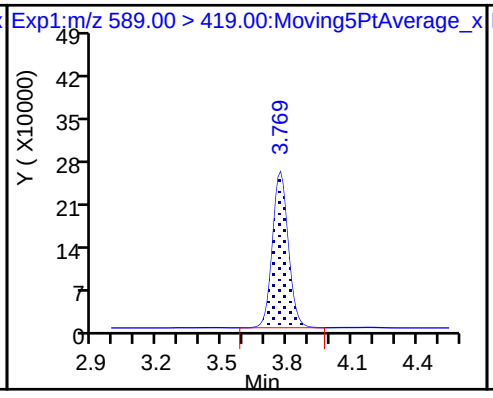
31 Perfluoroundecanoic acid



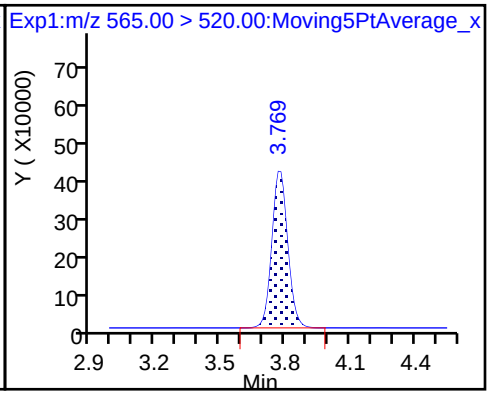
33 N-ethyl perfluorooctane sulfonamid



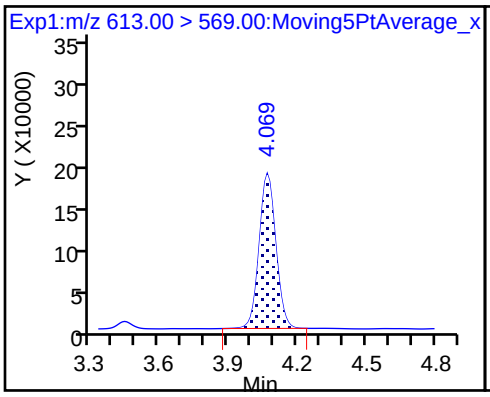
D 32 d5-NEtFOSAA



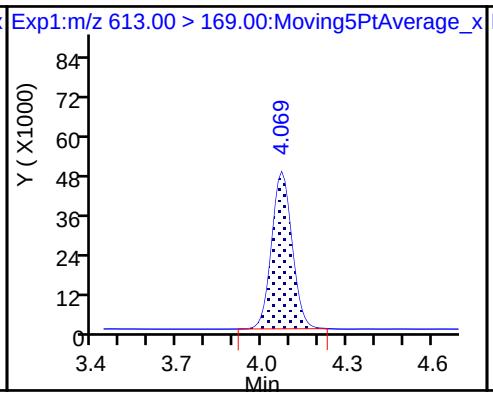
D 30 13C2 PFUnA



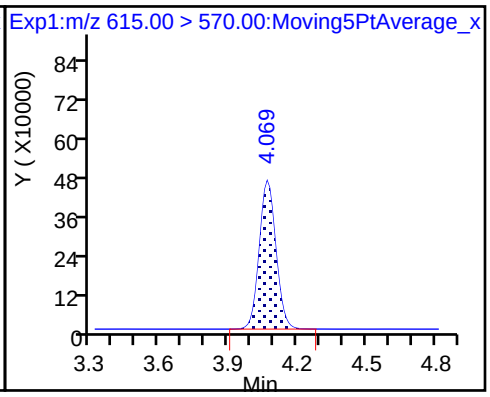
37 Perfluorododecanoic acid



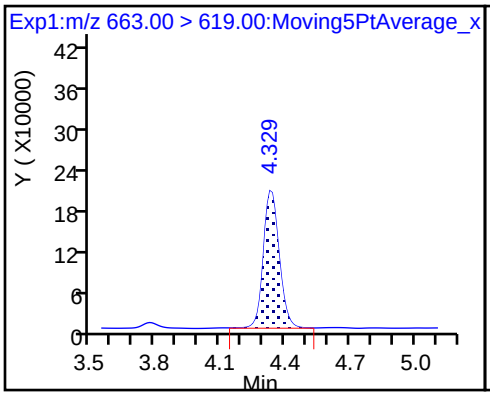
37 Perfluorododecanoic acid



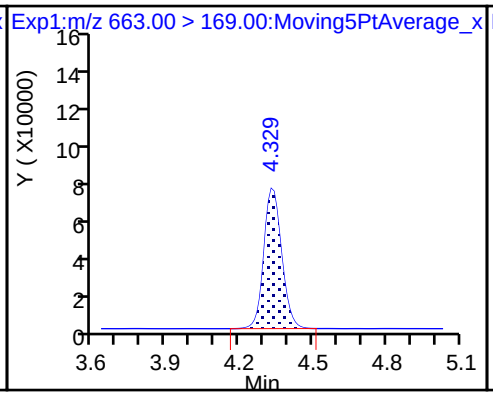
D 36 13C2 PFDoA



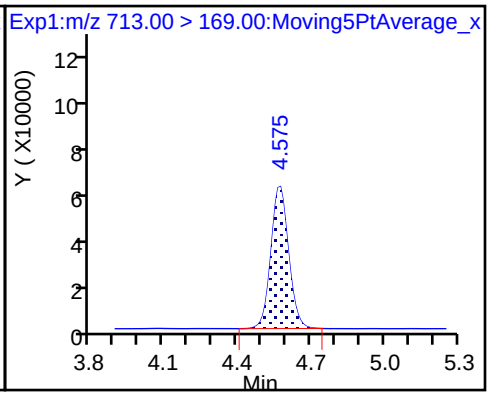
41 Perfluorotridecanoic acid



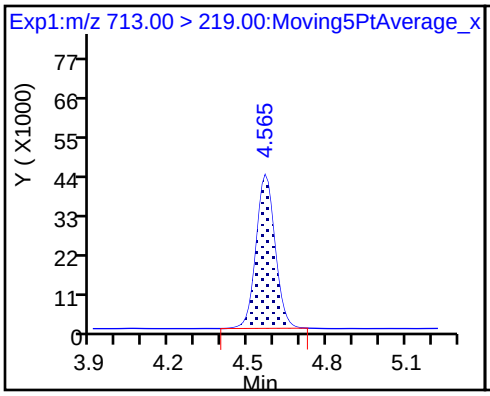
41 Perfluorotridecanoic acid



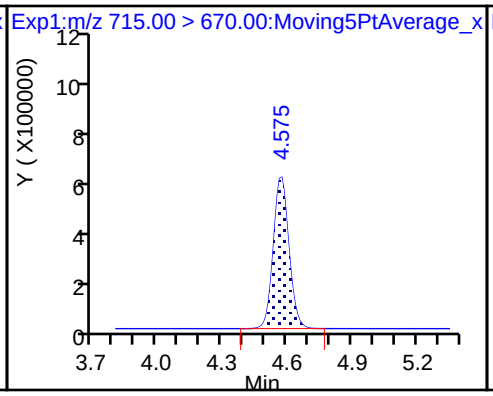
42 Perfluorotetradecanoic acid



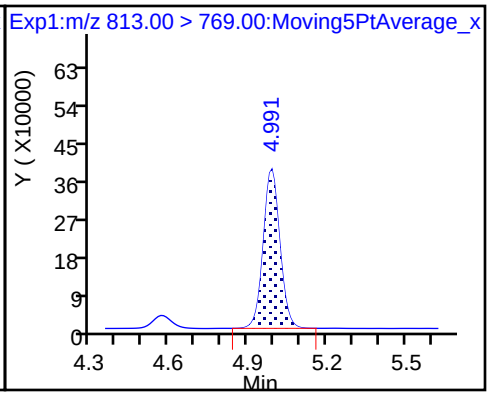
42 Perfluorotetradecanoic acid



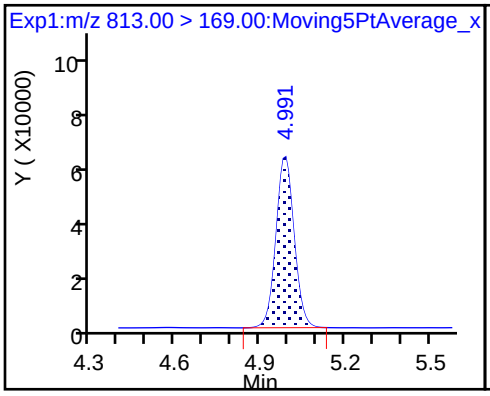
D 43 13C2-PFTeDA



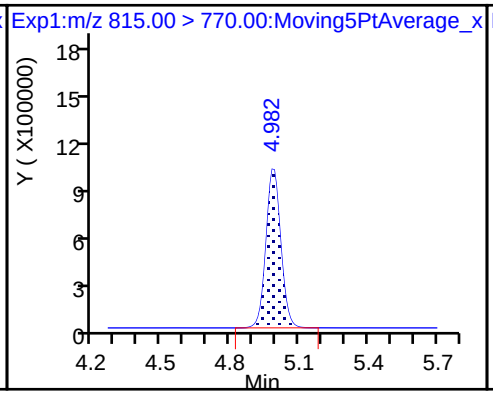
45 Perfluorohexadecanoic acid



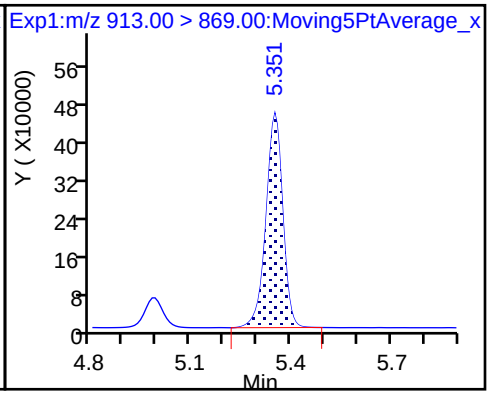
45 Perfluorohexadecanoic acid



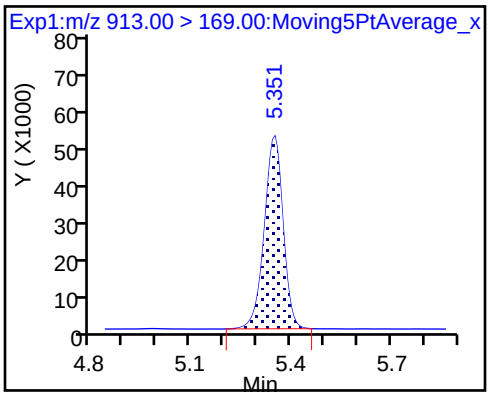
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MS DL | Lab Sample ID: 320-36683-10 MS DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_022.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.05(g) | Date Analyzed: 03/22/2018 00:01

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.323		0.025	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	67		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_022.d
Lims ID: 320-36683-A-10-B MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 22-Mar-2018 00:01:17 ALS Bottle#: 24 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-a-10-b ms 50X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:37:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.538	114698	0.0390		78.0	1457	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.453	-0.006	1.000	44126	0.0204		102	19.8	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	78275	0.0401		80.3	2495	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.718	-0.018	0.995	44504	0.0252		126	25.2	M
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.735	0.001	0.646	1858	0.0417		89.8	13.8	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.005	55010	0.0177		100	302	
298.90 > 99.00	1.744	1.753	-0.009	1.005	21593		2.55(1.25-3.74)		136	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.966	-0.010	1.000	9333	0.0145		77.4	577	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.997	-0.011	0.739	83912	0.0389		77.8	3084	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.005	43308	0.0252		126	109	
313.00 > 119.00	1.986	1.997	-0.011	1.000	3332		13.00(5.03-15.10)		78.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	79441	0.0373		74.7	3417	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	41668	0.0254		127	76.2	
363.00 > 169.00	2.328	2.328	0.0	1.000	14041		2.97(1.13-3.40)		172	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	93454	0.0356		75.3	4066	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	201833	0.0918		504	2090	
399.00 > 99.00	2.341	2.341	0.0	1.000	63981		3.15(1.50-4.49)		271	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.665	0.016	0.997	38720	0.0878		185	1315	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.681	2.673	0.008	1.000	108021	0.0760		401	6535	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.688	0.001	1.000	99599	0.0458		91.5	3941	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.697	-0.008		116122	0.0500			3907	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.003	82091	0.0365		182	26.5	
413.00 > 169.00	2.697	2.697	0.0	1.003	40097		2.05(0.84-2.52)		105	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.704	-0.007	1.000	109888	0.0674		354	960	
449.00 > 99.00	2.697	2.704	-0.007	1.000	26685		4.12(1.94-5.82)		313	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.140	60848	0.0319		66.6	1179	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	66852	0.0348		69.6	3354	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4499144	3.17		17095	13347	
499.00 > 99.00	3.065	3.065	0.0	1.000	1016280		4.43(2.31-6.93)		12879	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	266711	0.2000		1000	401	
463.00 > 169.00	3.065	3.072	-0.007	1.000	61025		4.37(1.90-5.69)		2249	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.011	1.264	49235	0.0191		38.2	1625	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.398	0.001	1.000	21923	0.0226		113	400	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.271	16372	0.0275		57.4	401	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.274	52445	0.0312		62.3	1301	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.426	-0.009	1.000	10791	0.0247		129	246	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.435	-0.009	1.000	20612	0.0199		99.4	90.1	
513.00 > 169.00	3.435	3.435	0.0	1.003	3494		5.90(2.36-7.09)		89.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	11319	0.0128		25.6	305	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	5107	0.0225		113	288	
29 Perfluorodecane Sulfonic acid										RM
599.00 > 80.00	3.748	3.748	0.0	1.000	10396	0.0120		62.3	359	R
599.00 > 99.00	3.748	3.748	0.0	1.000	2461		4.22(1.39-4.16)		58.3	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	27667	0.0184		36.8	837	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	11157	0.0111		22.1	76.6	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.768	-0.010	1.003	4671	0.0224		112	94.0	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.003	10489	0.0220		110	51.5	
563.00 > 169.00	3.758	3.768	-0.010	1.000	2602		4.03(2.12-6.36)		137	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.509	26714	0.0156		31.3	296	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	10342	0.0185		92.5	15.8	
613.00 > 169.00	4.057	4.057	0.0	1.000	1993		5.19(2.13-6.40)		37.4	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.328	0.0	1.000	9424	0.0160		80.1	8.2	
663.00 > 169.00	4.318	4.328	-0.010	0.997	2938		3.21(1.25-3.76)		66.0	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	23461	0.0112		22.5	185	
42 Perfluorotetradecanoic acid										M
713.00 > 169.00	4.554	4.564	-0.010	1.000	2189	0.0188		94.1	37.6	M
713.00 > 219.00	4.554	4.564	-0.010	1.000	2031		1.08(0.71-2.13)		56.1	M
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.972	0.001	1.850	34342	0.0100		20.1	207	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.981	-0.008	1.000	11886	-0.005246		-26.2	7.4	
813.00 > 169.00	4.973	4.981	-0.008	1.000	2294		5.18(2.86-8.58)		30.7	
46 Perfluorooctadecanoic acid										M
913.00 > 869.00	5.337	5.344	-0.007	1.000	9594	0.0151		75.5	8.4	
913.00 > 169.00	5.330	5.344	-0.014	0.999	855		11.22(3.83-11.48)		12.7	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

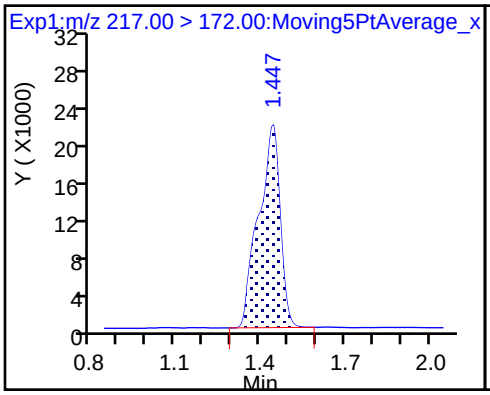
M - Manually Integrated

Report Date: 22-Mar-2018 12:53:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

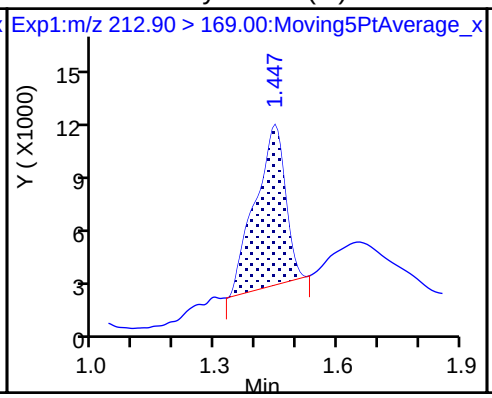
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_022.d
Injection Date: 22-Mar-2018 00:01:17 Instrument ID: A8_N
Lims ID: 320-36683-A-10-B MS
Client ID: SB012(10'-12')
Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Method: A8_N Limit Group: LC PFC ICAL

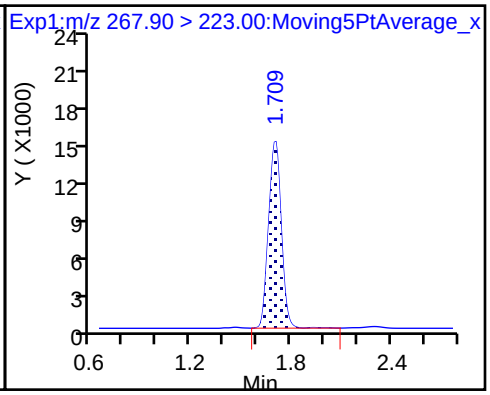
D 1 13C4 PFBA



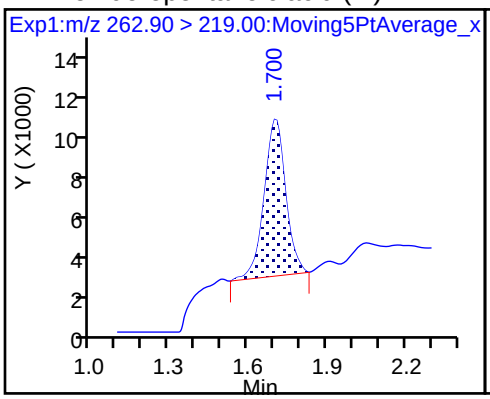
2 Perfluorobutyric acid (M)



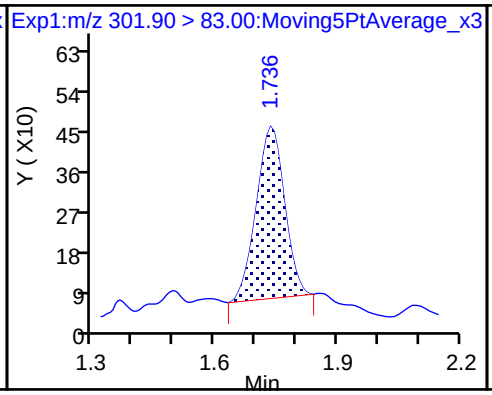
D 3 13C5-PFPeA



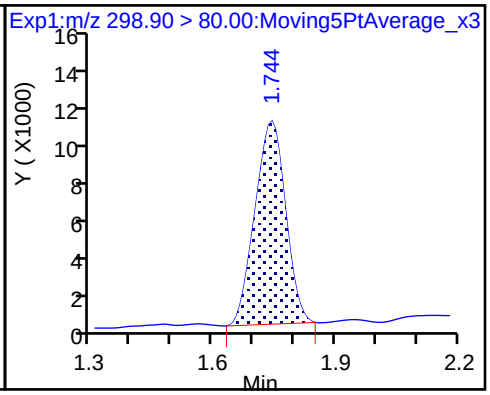
4 Perfluoropentanoic acid (M)



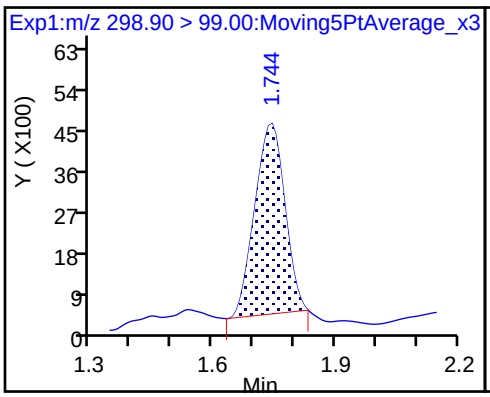
D 47 13C3-PFBS



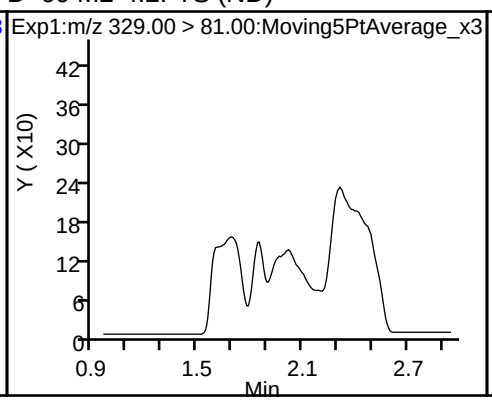
5 Perfluorobutanesulfonic acid



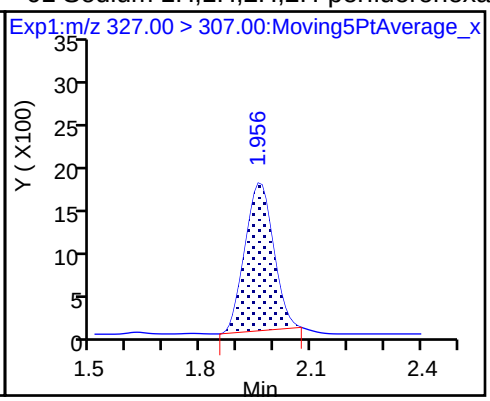
5 Perfluorobutanesulfonic acid



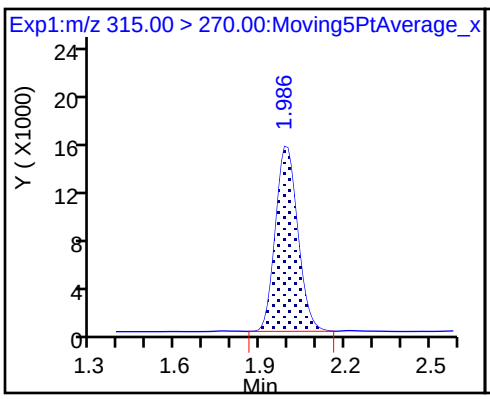
D 60 M2-4:2FTS (ND)



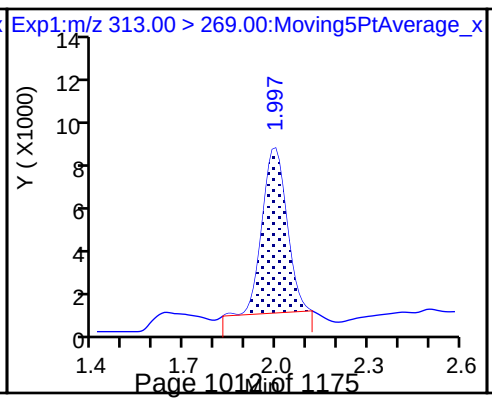
61 Sodium 1H,1H,2H,2H-perfluorohexane



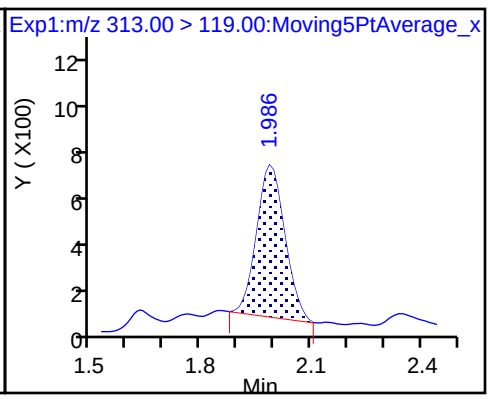
D 7 13C2 PFHxA



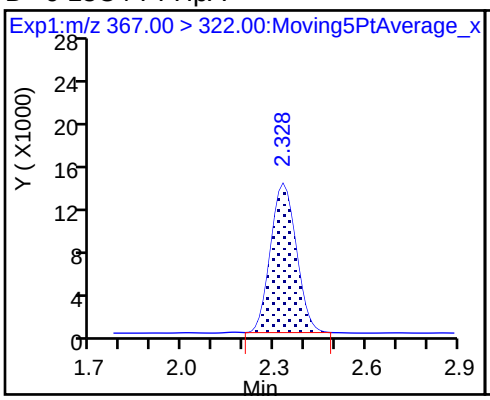
6 Perfluorohexanoic acid



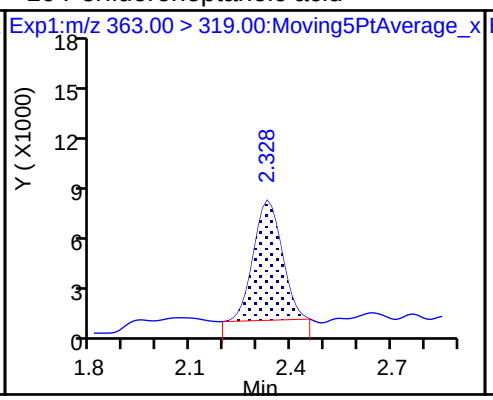
6 Perfluorohexanoic acid



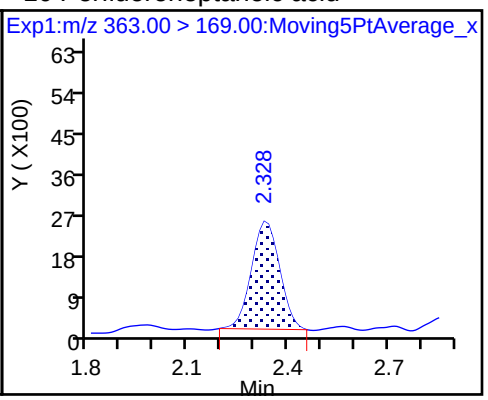
D 9 13C4-PFHpA



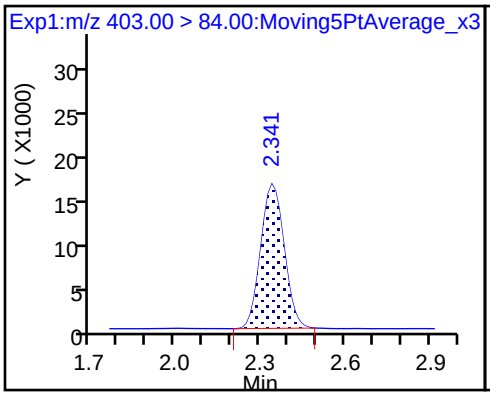
10 Perfluoroheptanoic acid



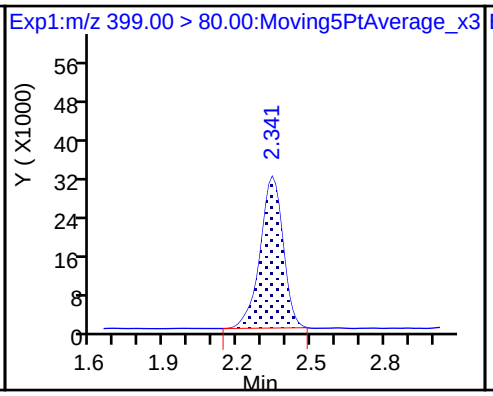
10 Perfluoroheptanoic acid



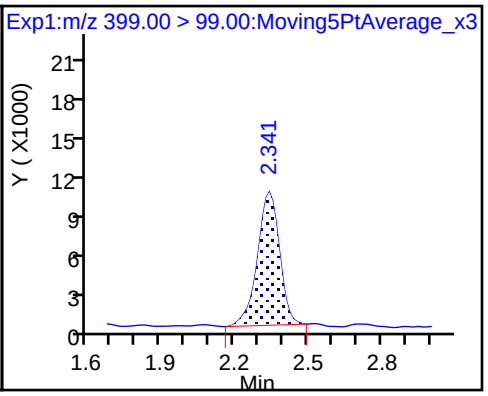
D 11 18O2 PFHxS



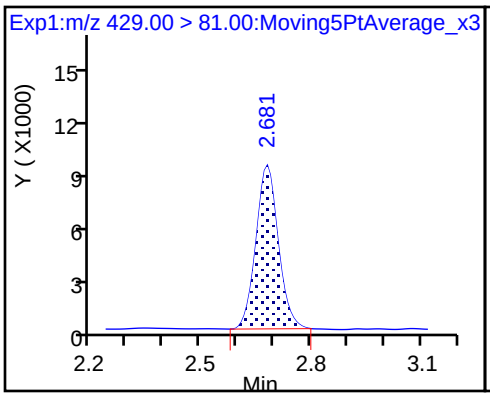
8 Perfluorohexanesulfonic acid



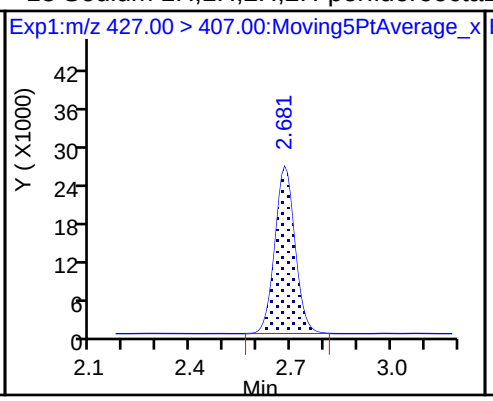
8 Perfluorohexanesulfonic acid



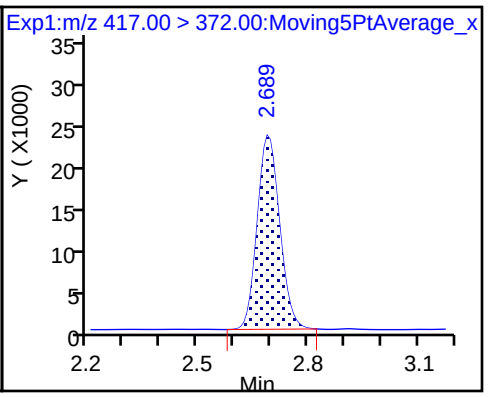
D 12 M2-6:2FTS



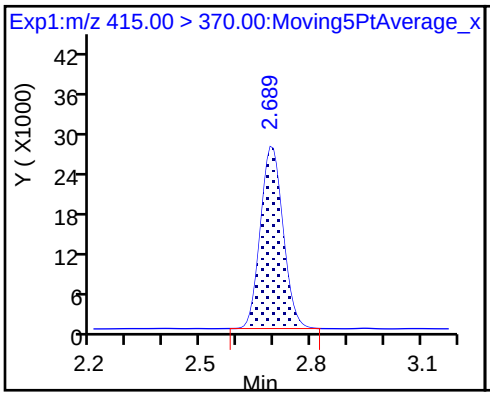
13 Sodium 1H,1H,2H,2H-perfluorooctane



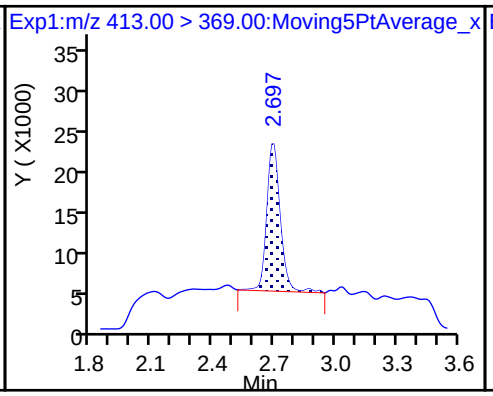
D 14 13C4 PFOA



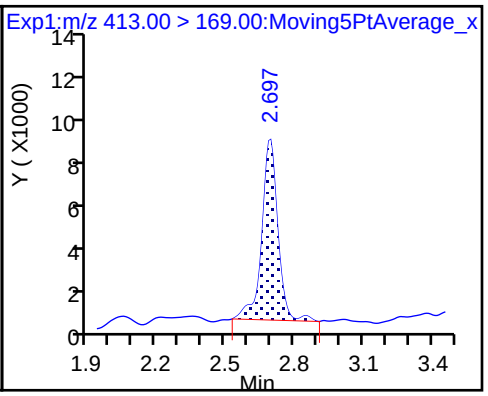
* 62 13C2-PFOA



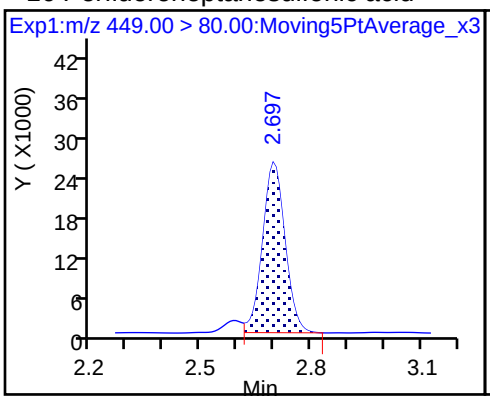
15 Perfluorooctanoic acid



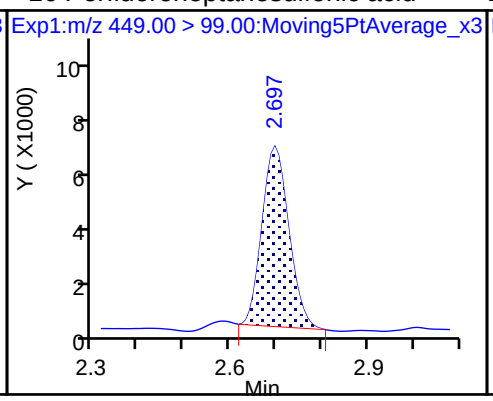
15 Perfluorooctanoic acid



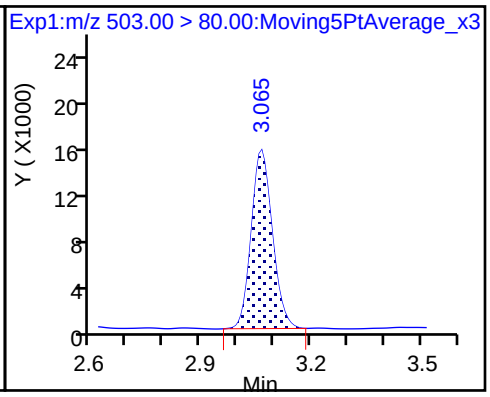
16 Perfluoroheptanesulfonic acid



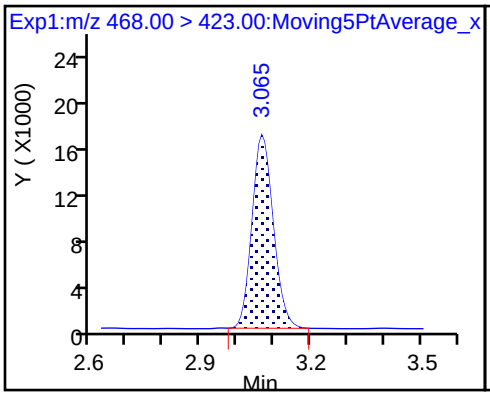
16 Perfluoroheptanesulfonic acid



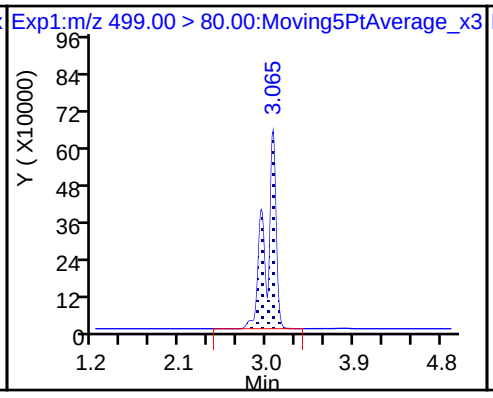
D 18 13C4 PFOS



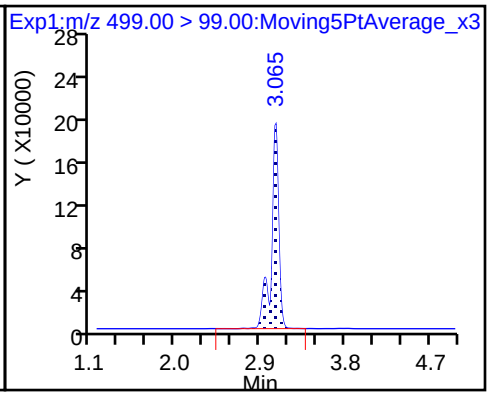
D 19 13C5 PFNA



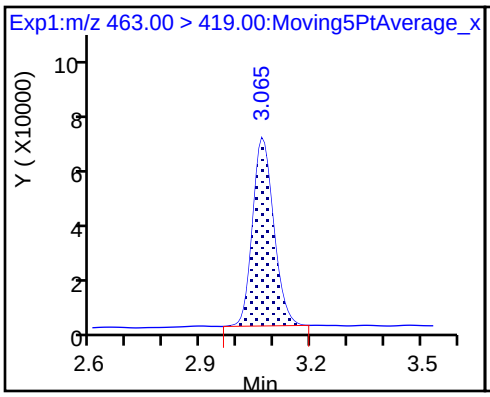
17 Perfluorooctane sulfonic acid



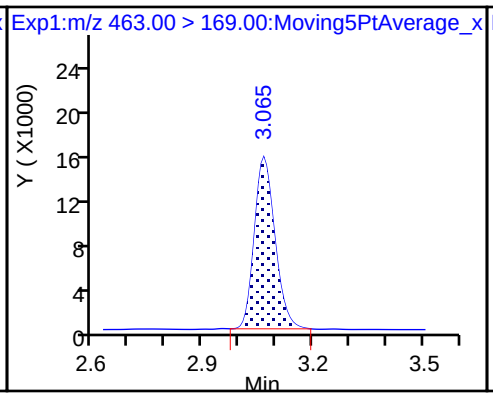
17 Perfluorooctane sulfonic acid



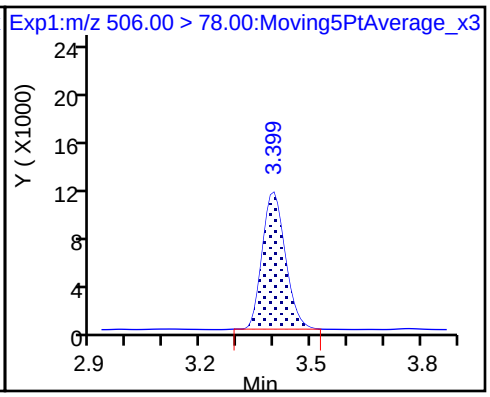
20 Perfluorononanoic acid



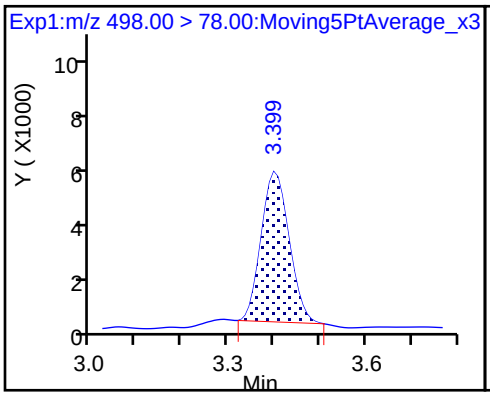
20 Perfluorononanoic acid



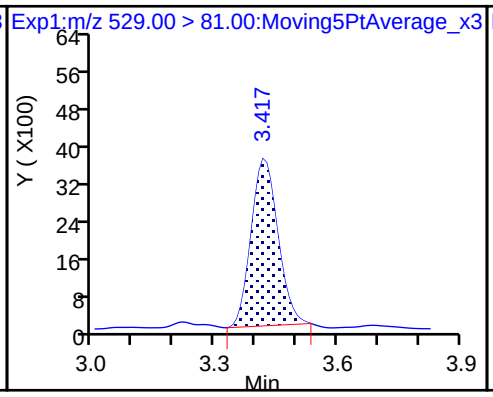
D 21 13C8 FOSA



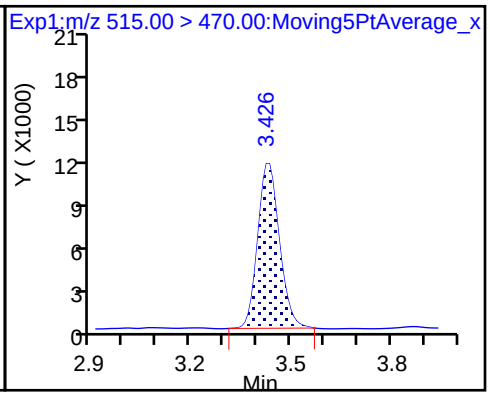
22 Perfluorooctane Sulfonamide



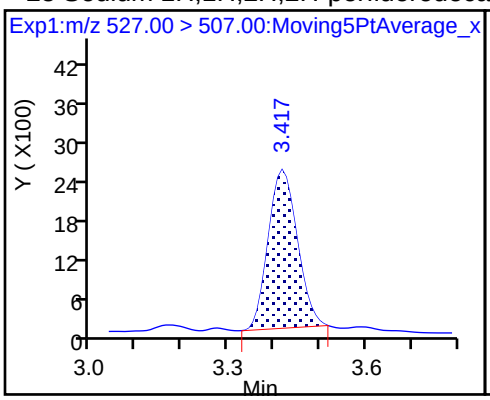
D 26 M2-8:2FTS



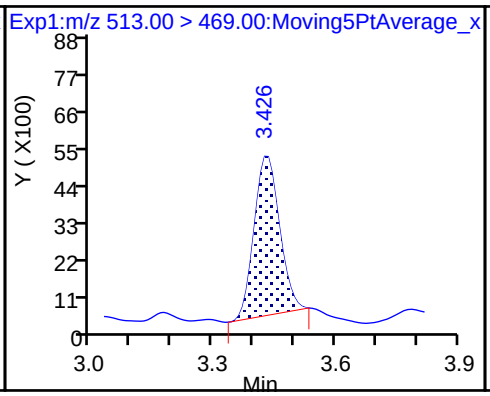
D 23 13C2 PFDA



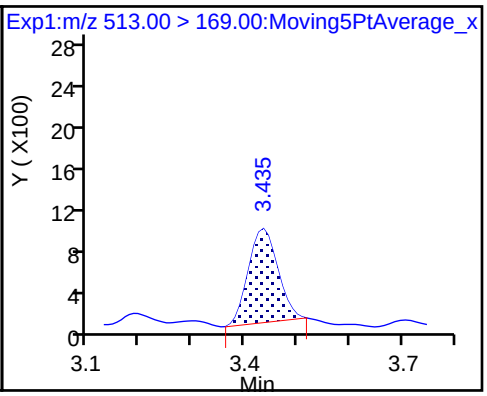
25 Sodium 1H,1H,2H,2H-perfluorodecane



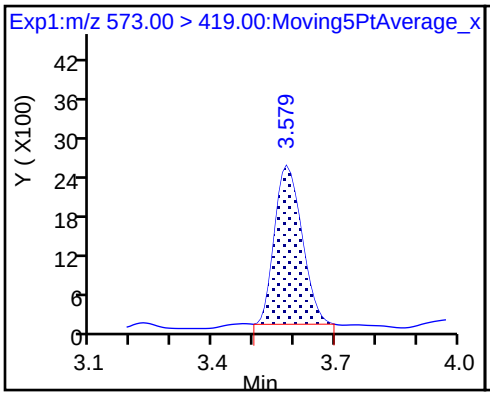
24 Perfluorodecanoic acid



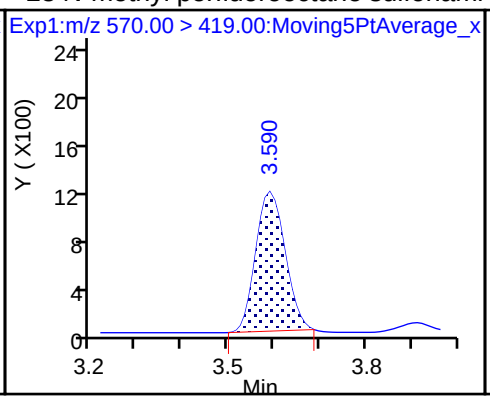
24 Perfluorodecanoic acid



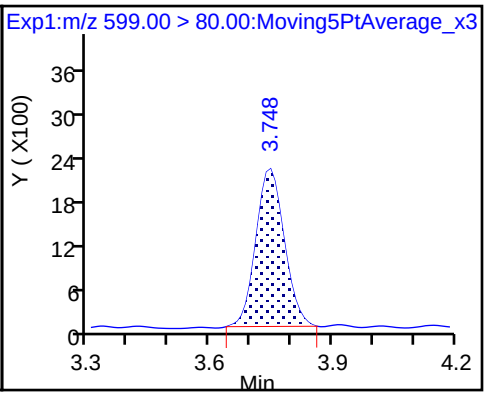
D 27 d3-NMeFOSAA



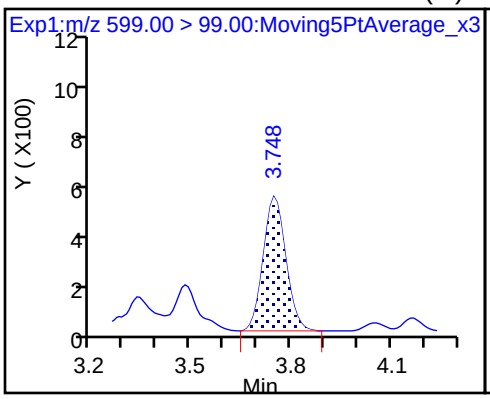
28 N-methyl perfluorooctane sulfonami



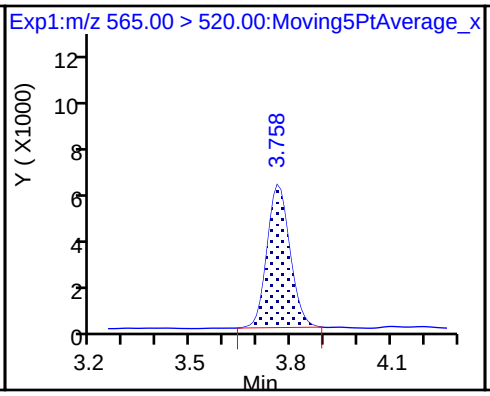
29 Perfluorodecane Sulfonic acid



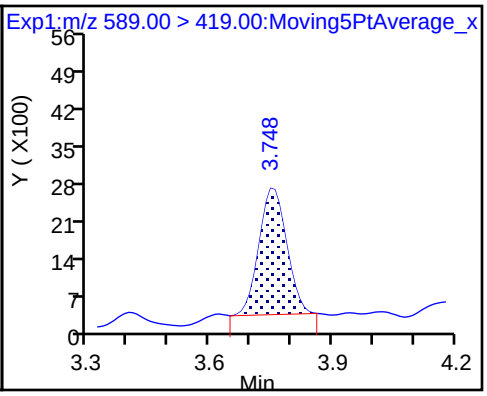
29 Perfluorodecane Sulfonic acid (M)



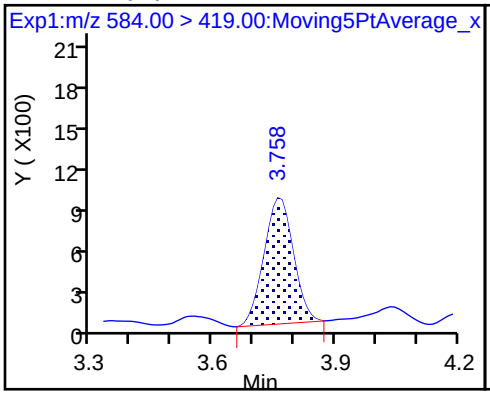
D 30 13C2 PFUnA



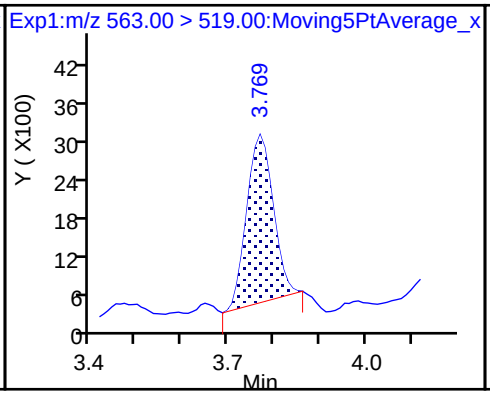
D 32 d5-NEtFOSAA



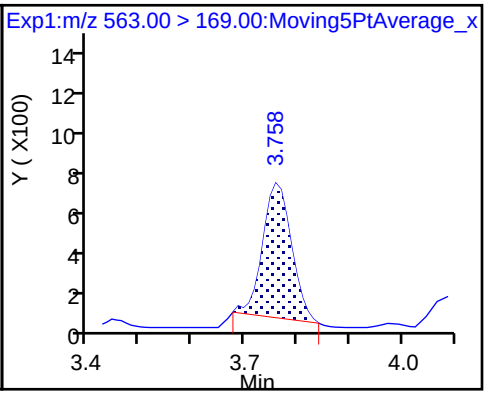
33 N-ethyl perfluorooctane sulfonamid



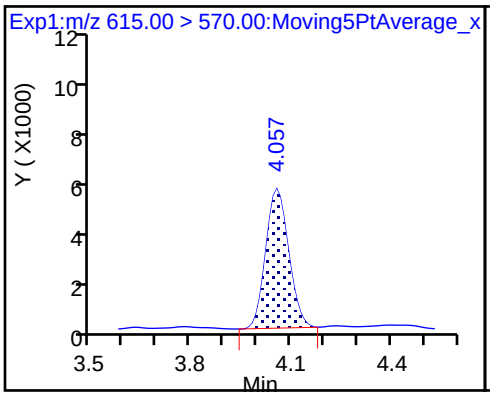
31 Perfluoroundecanoic acid



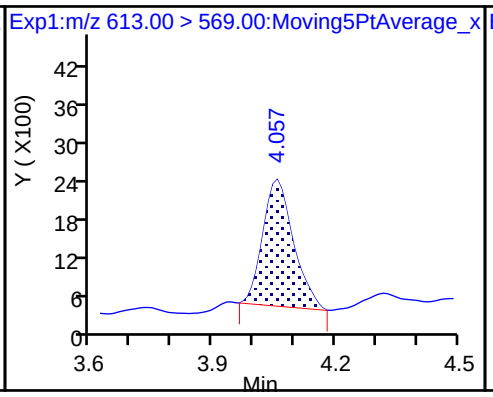
31 Perfluoroundecanoic acid



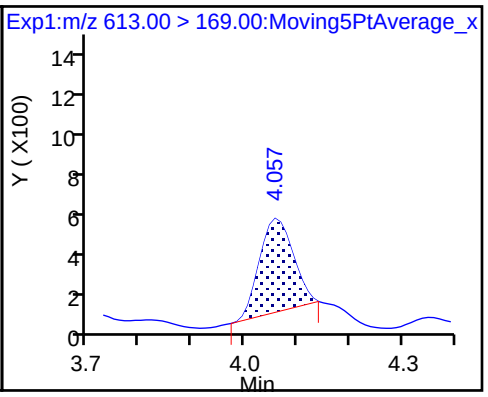
D 36 13C2 PFDoA



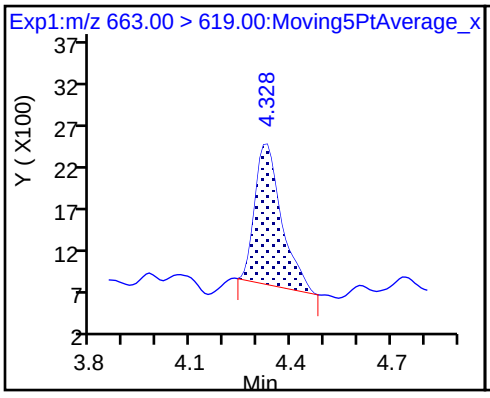
37 Perfluorododecanoic acid



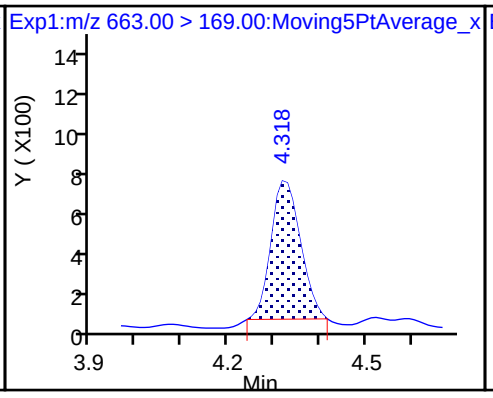
37 Perfluorododecanoic acid



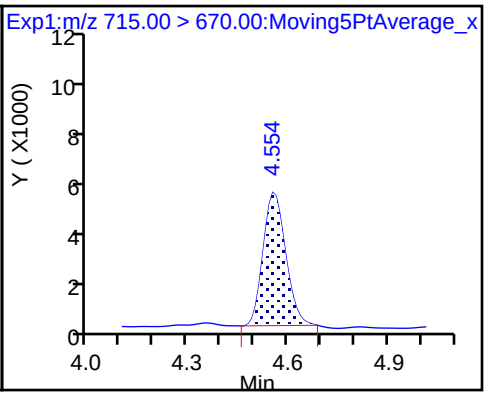
41 Perfluorotridecanoic acid



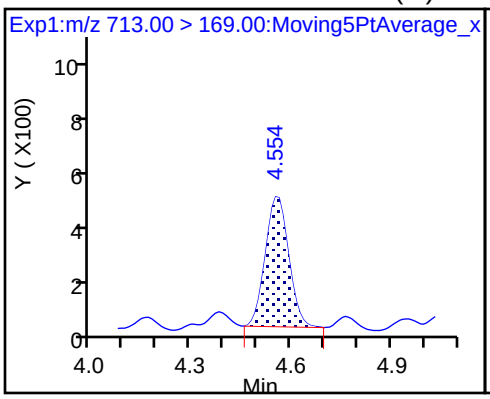
41 Perfluorotridecanoic acid



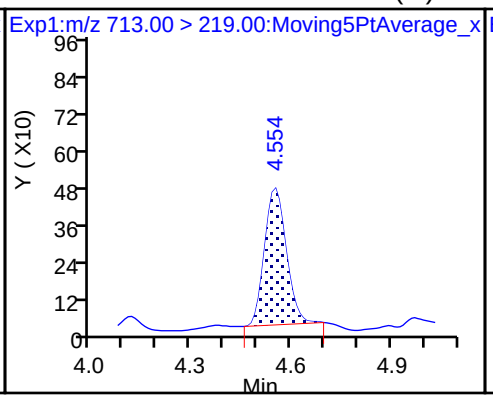
D 43 13C2-PFTeDA



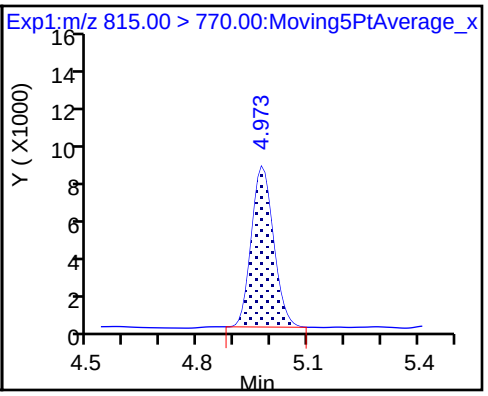
42 Perfluorotetradecanoic acid (M)



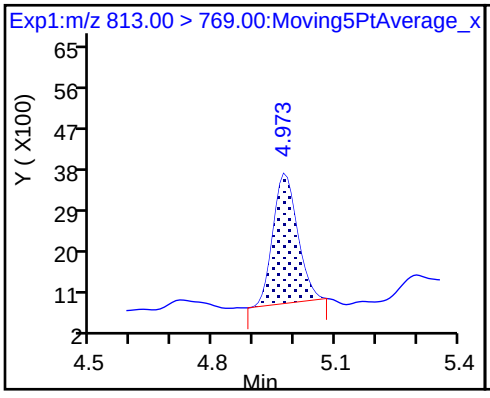
42 Perfluorotetradecanoic acid (M)



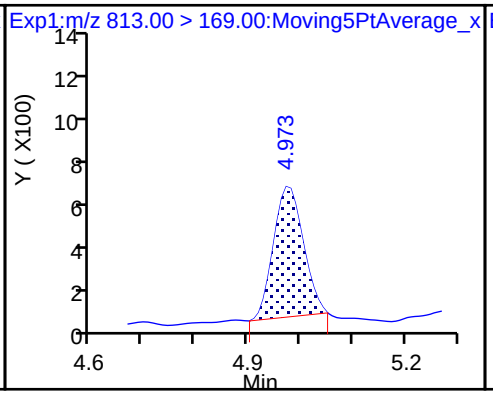
D 44 13C2-PFHxDA



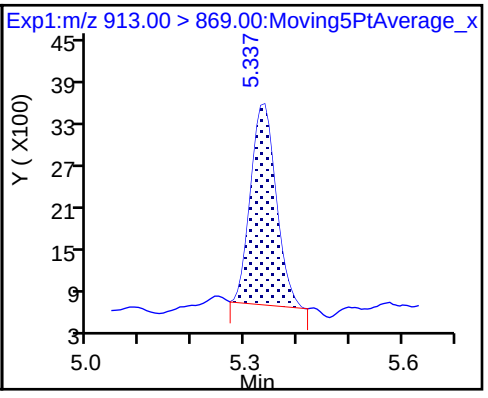
45 Perfluorohexadecanoic acid



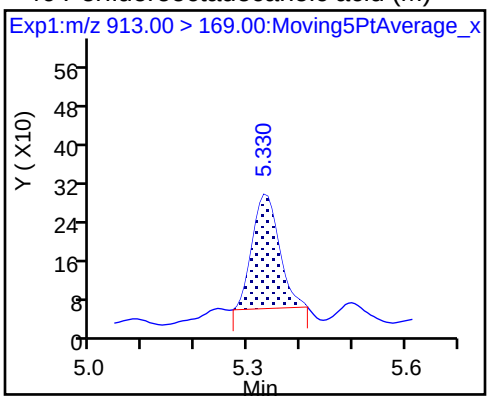
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid (M)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36631-A-1-C MS RE

Matrix: Solid | Lab File ID: 2018.03.26LLA_055.d

Analysis Method: 537 (modified) | Date Collected: 02/28/2018 09:00

Extraction Method: SHAKE | Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.09(g) | Date Analyzed: 03/27/2018 01:47

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 1.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00164*		*0.00020*	*0.000039*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	90		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_055.d
Lims ID: 320-36631-A-1-C MS
Client ID:
Sample Type: MS
Inject. Date: 27-Mar-2018 01:47:31 ALS Bottle#: 35 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36631-a-1-c ms
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:42:55 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:10:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.540	6065342	2.26		90.3	90174	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.446	0.001	1.000	2194391	0.9600		96.0	504	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	4166834	2.34		93.5	124795	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.708	0.001	1.005	1713866	0.9120		91.2	1097	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	88422	2.17		93.5	553	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.744	0.0	1.005	2441439	0.8262		93.5	14421	
298.90 > 99.00	1.745	1.744	0.0	1.005	997015		2.45(1.25-3.74)		2194	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.955	0.001	1.000	1097103	1.79		191	29131	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	4302465	2.18		87.3	109582	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	1585931	0.9014		90.1	1966	
313.00 > 119.00	1.987	1.997	-0.010	1.000	146555		10.82(5.03-15.10)		1713	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	4419944	2.27		90.9	106311	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.006	1718307	0.9395		94.0	1420	
363.00 > 169.00	2.315	2.328	-0.013	1.000	705040		2.44(1.13-3.40)		1903	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.873	5420554	2.26		95.5	102153	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.340	-0.012	0.994	2086059	0.8177		89.9	10480	
399.00 > 99.00	2.328	2.340	-0.012	0.994	711828		2.93(1.50-4.49)		1338	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.649	0.008	0.991	1018919	2.53		106	16294	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.671	-0.014	1.000	657004	0.8783		92.6	3326	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	4390800	2.21		88.3	94798	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		5307272	2.50			89805	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.695	-0.014	1.000	2005158	1.01		101	1008	
413.00 > 169.00	2.681	2.695	-0.014	1.000	1069124		1.88(0.84-2.52)		3269	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	1795214	0.8882		93.3	42566	
449.00 > 99.00	2.689	2.703	-0.014	1.000	479538		3.74(1.94-5.82)		3684	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	3769994	2.16		90.3	59888	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.051	0.007	1.141	3943711	2.25		89.9	55323	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.051	3.065	-0.014	1.000	2143626	1.22		131	19652	M
499.00 > 99.00	3.051	3.065	-0.014	1.000	467438		4.59(2.31-6.93)		3755	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.072	-0.014	1.000	1611664	1.02		102	2397	
463.00 > 169.00	3.058	3.072	-0.014	1.000	392449		4.11(1.90-5.69)		3388	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.264	4588318	1.95		77.9	65173	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	1.000	1733114	0.9579		95.8	28227	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.399	0.009	1.271	1103938	2.03		84.6	19010	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.416	-0.009	1.000	518069	0.8806		91.9	8286	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.417	0.0	1.274	3204255	2.08		83.3	51598	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.434	-0.017	1.000	1211277	0.9565		95.6	4969	
513.00 > 169.00	3.417	3.434	-0.017	1.000	225552		5.37(2.36-7.09)		4195	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.571	-0.001	1.332	1517289	1.87		75.0	41519	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.590	-0.011	1.002	557526	0.9179		91.8	5000	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.738	0.0	1.394	1538685	1.67		66.7	10443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.748	-0.021	1.000	879673	0.8201		85.1	22879	
599.00 > 99.00	3.738	3.748	-0.010	1.003	294379		2.99(1.39-4.16)		3635	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	2635636	1.92		76.6	69431	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.758	-0.010	1.000	813639	0.8951		89.5	4197	
563.00 > 169.00	3.748	3.758	-0.010	1.000	209025		3.89(2.12-6.36)		5723	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.758	-0.010	1.003	560971	0.9756		97.6	10585	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.509	3009903	1.93		77.1	22505	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.056	-0.010	1.000	1166932	0.9263		92.6	992	
613.00 > 169.00	4.046	4.056	-0.010	1.000	286430		4.07(2.13-6.40)		3721	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.318	-0.011	1.000	1335201	1.01		101	1007	
663.00 > 169.00	4.307	4.318	-0.011	1.000	410308		3.25(1.25-3.76)		6679	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.543	0.0	1.695	4053755	2.13		85.0	22797	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.002	381856	0.9504		95.0	3997	
713.00 > 219.00	4.543	4.554	-0.011	1.000	276006		1.38(0.71-2.13)		4476	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.955	0.009	1.852	6396562	2.05		81.8	16423	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.973	-0.009	1.000	2308583	0.9685		96.8	691	
813.00 > 169.00	4.964	4.973	-0.009	1.000	385244		5.99(2.86-8.58)		3826	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.337	-0.007	1.000	2460233	1.04		104	633	
913.00 > 169.00	5.322	5.337	-0.015	0.999	315411		7.80(3.83-11.48)		2517	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Mar-2018 10:43:10 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_055.d

Injection Date: 27-Mar-2018 01:47:31 Instrument ID: A8_N

Lims ID: 320-36631-A-1-C MS

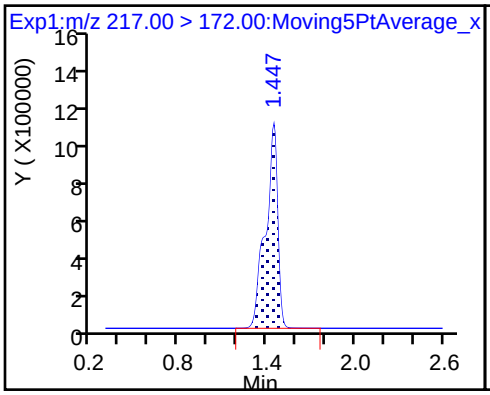
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 5

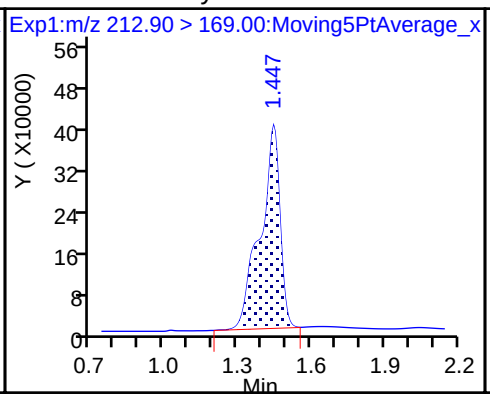
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

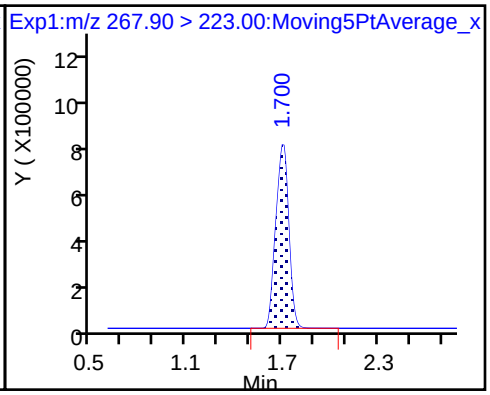
D 1 13C4 PFBA



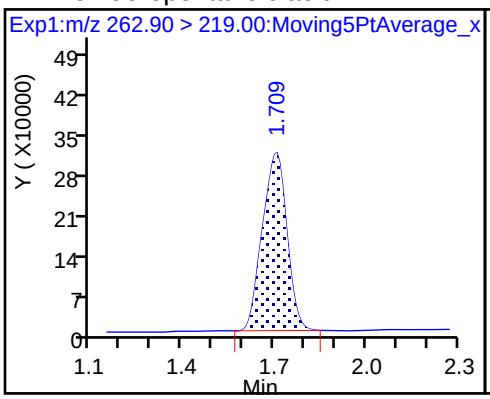
2 Perfluorobutyric acid



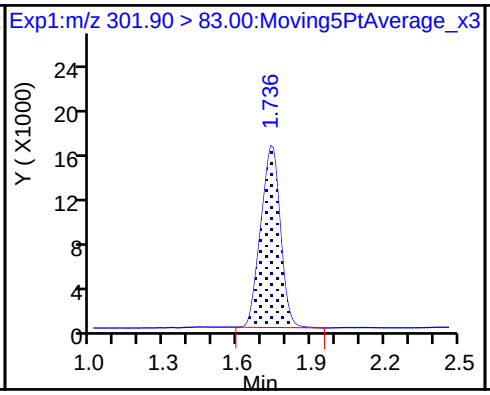
D 3 13C5-PFPeA



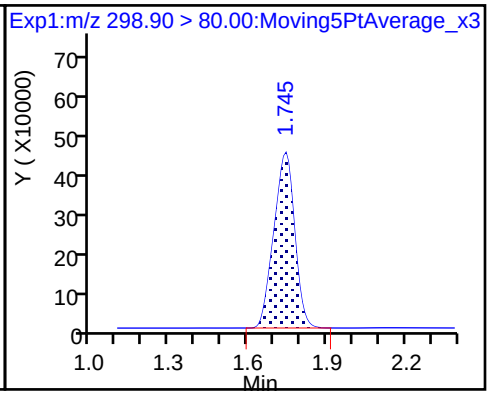
4 Perfluoropentanoic acid



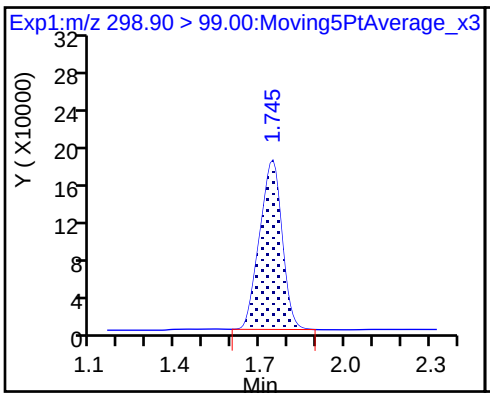
D 47 13C3-PFBS



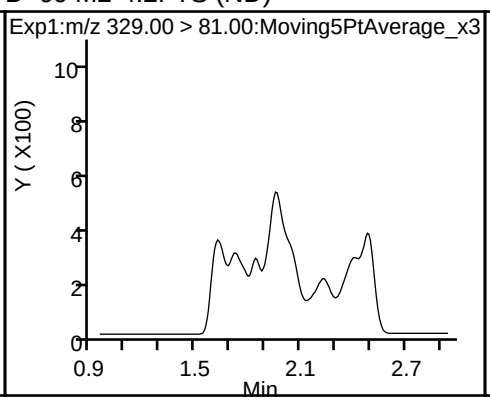
5 Perfluorobutanesulfonic acid



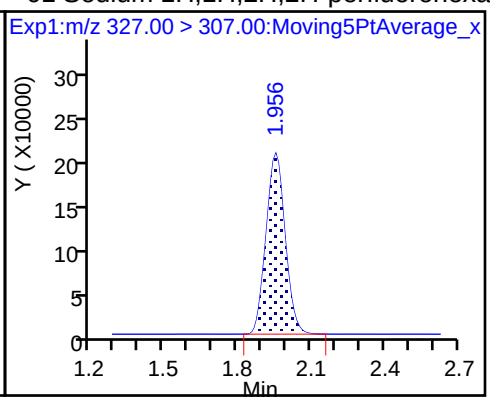
5 Perfluorobutanesulfonic acid



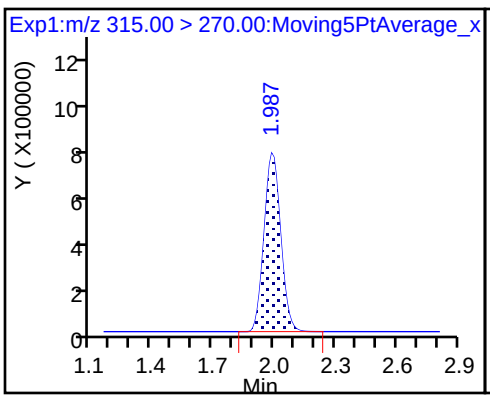
D 60 M2-4:2FTS (ND)



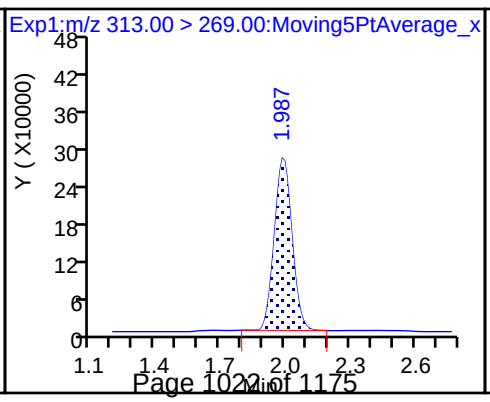
61 Sodium 1H,1H,2H,2H-perfluorohexane



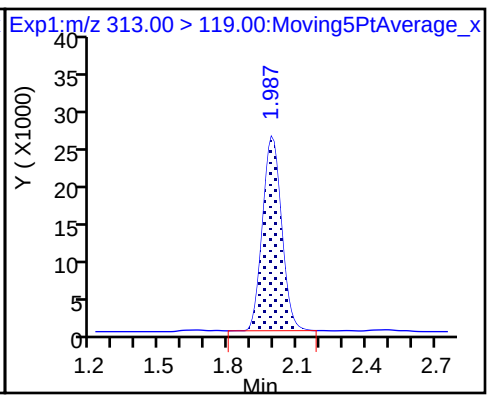
D 7 13C2 PFHxA



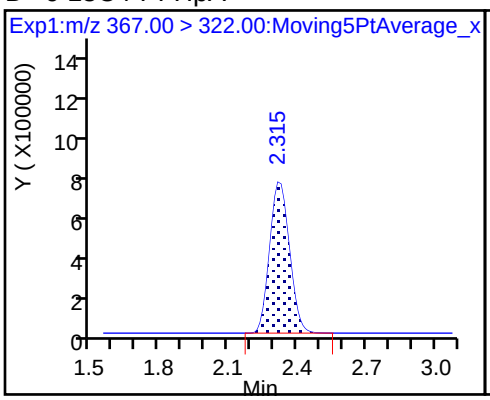
6 Perfluorohexanoic acid



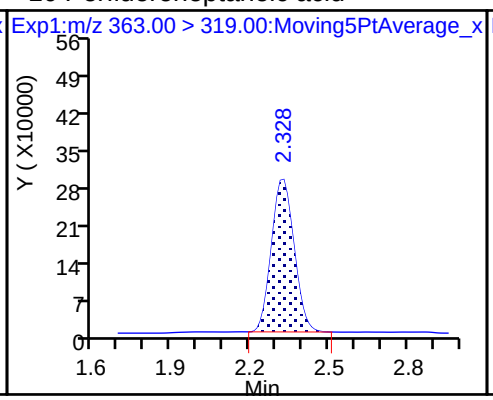
6 Perfluorohexanoic acid



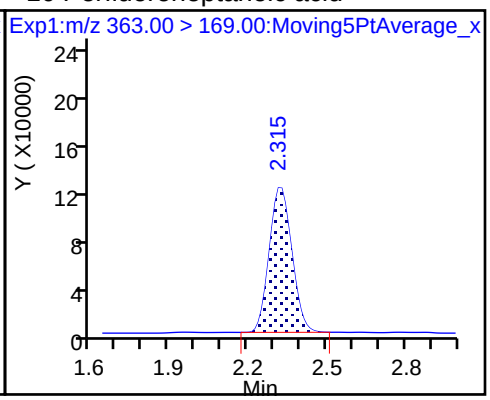
D 9 13C4-PFHpA



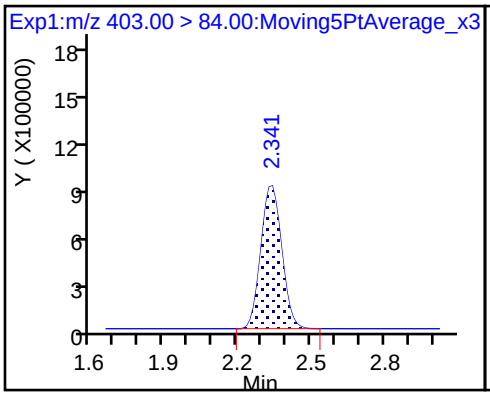
10 Perfluoroheptanoic acid



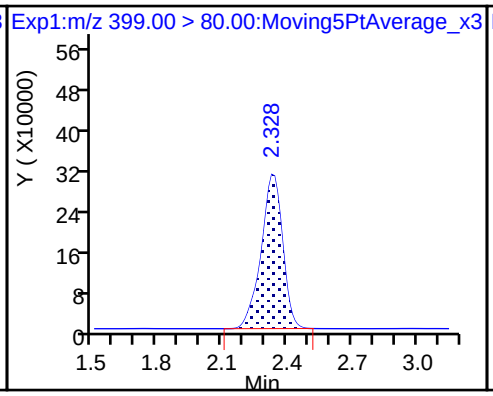
10 Perfluoroheptanoic acid



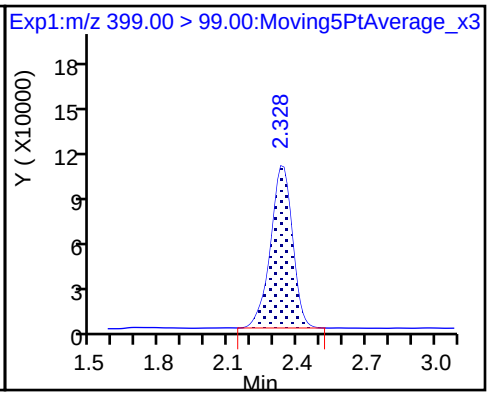
D 11 18O2 PFHxS



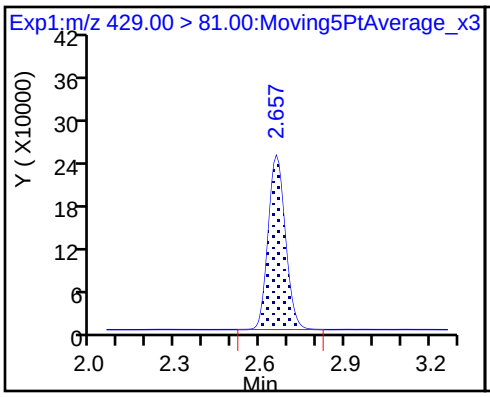
8 Perfluorohexanesulfonic acid



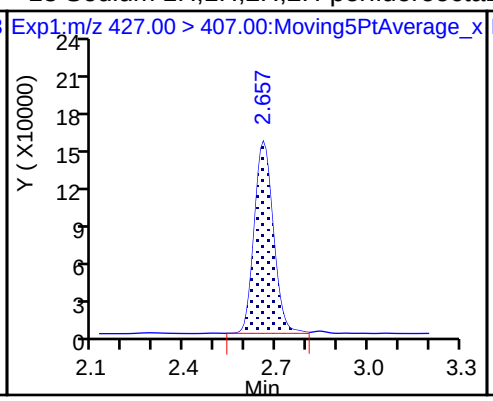
8 Perfluorohexanesulfonic acid



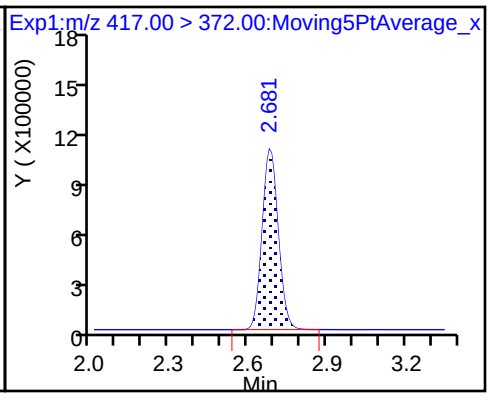
D 12 M2-6:2FTS



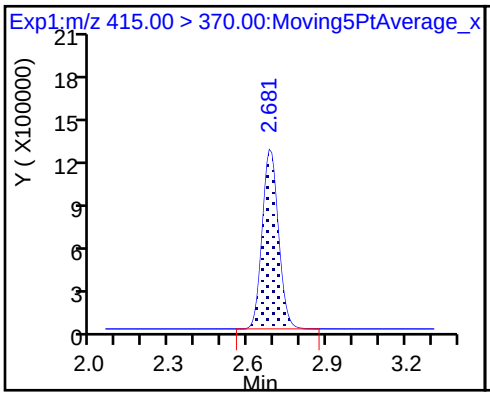
13 Sodium 1H,1H,2H,2H-perfluorooctane



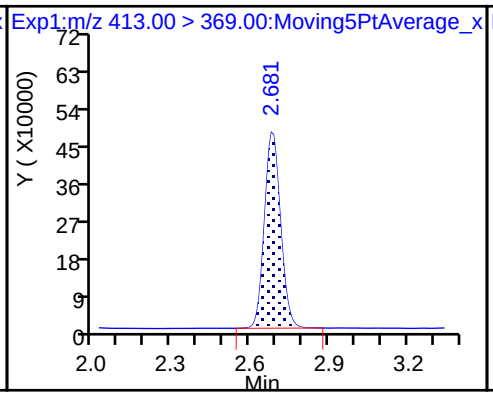
D 14 13C4 PFOA



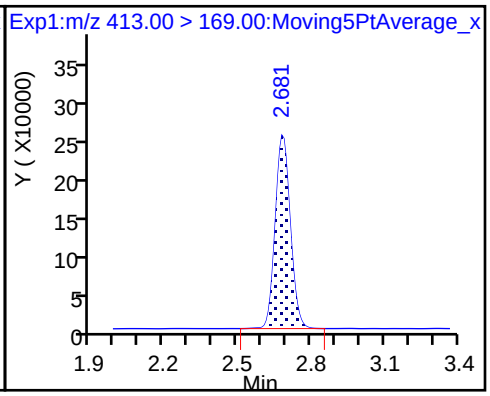
* 62 13C2-PFOA



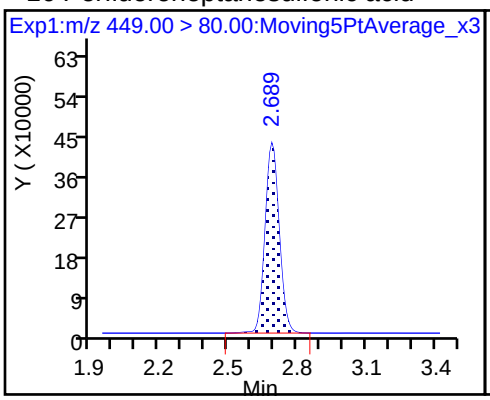
15 Perfluorooctanoic acid



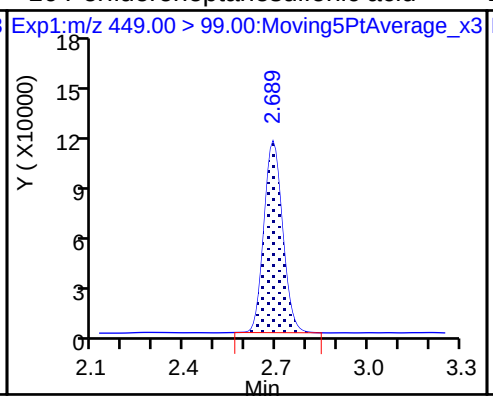
15 Perfluorooctanoic acid



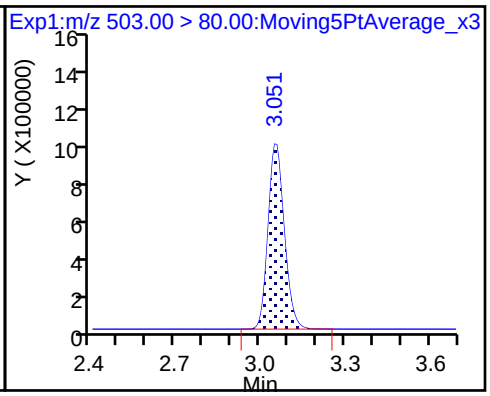
16 Perfluoroheptanesulfonic acid



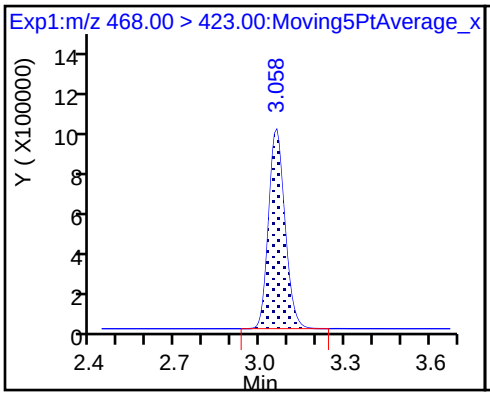
16 Perfluoroheptanesulfonic acid



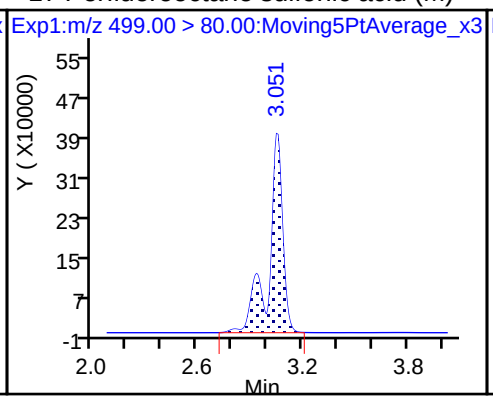
D 18 13C4 PFOS



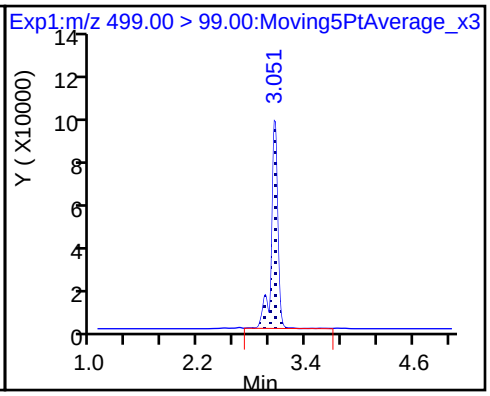
D 19 13C5 PFNA



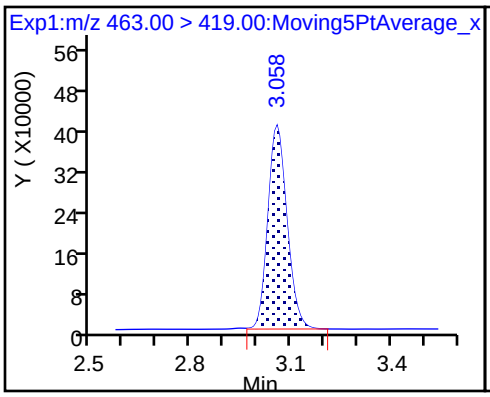
17 Perfluorooctane sulfonic acid (M)



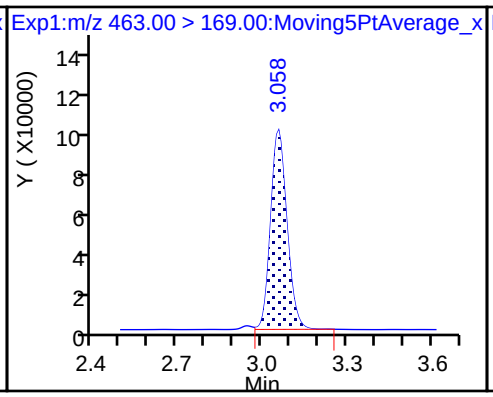
17 Perfluorooctane sulfonic acid



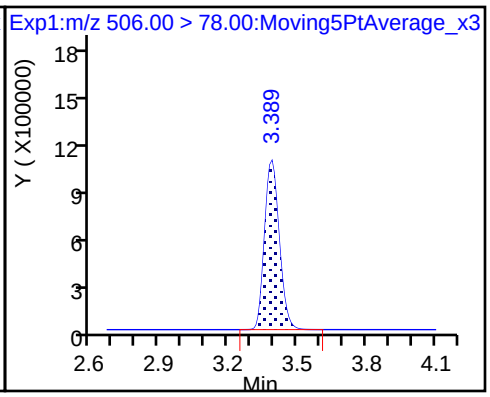
20 Perfluorononanoic acid



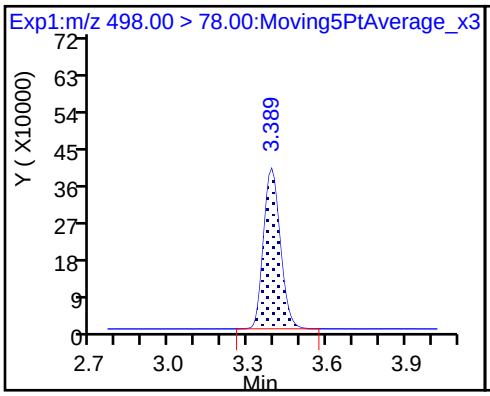
20 Perfluorononanoic acid



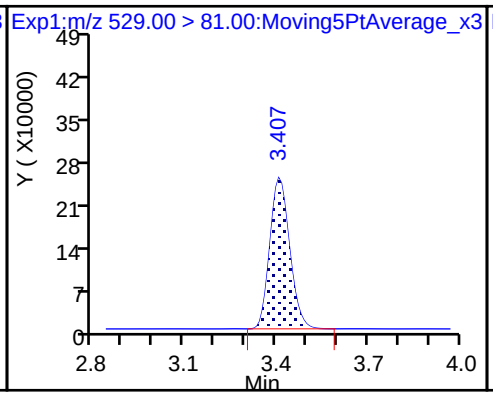
D 21 13C8 FOSA



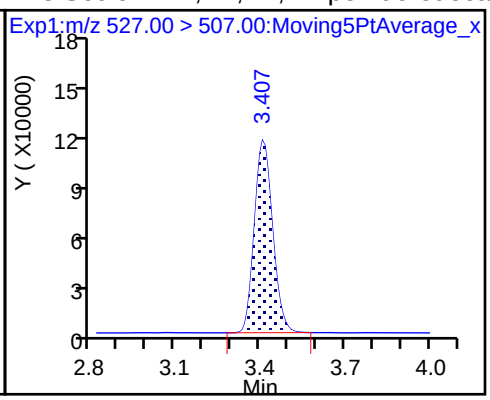
22 Perfluorooctane Sulfonamide



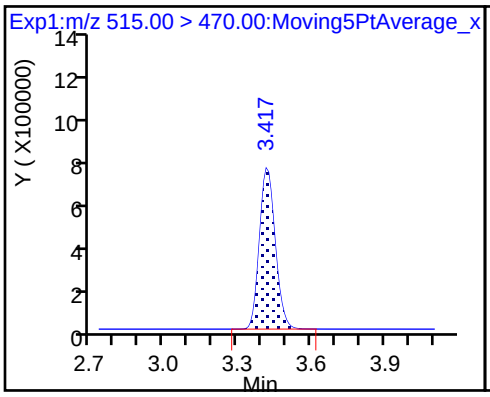
D 26 M2-8:2FTS



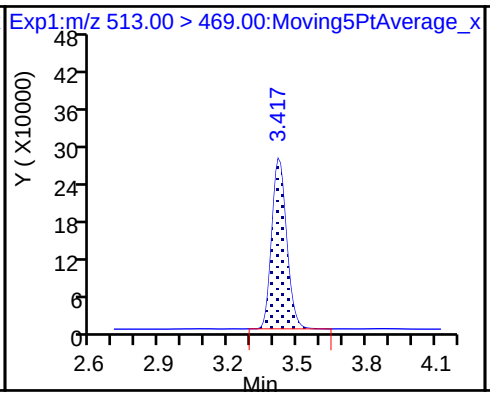
25 Sodium 1H,1H,2H,2H-perfluorodecane



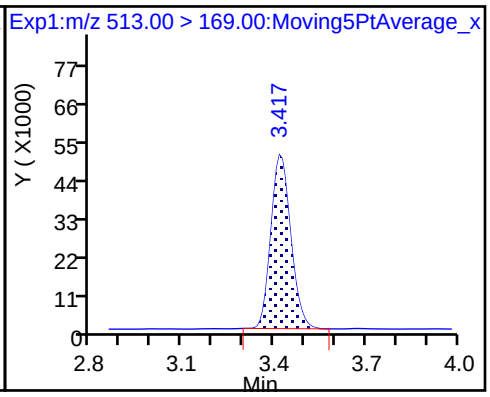
D 23 13C2 PFDA



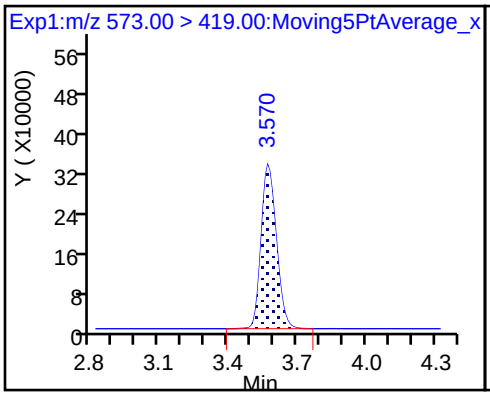
24 Perfluorodecanoic acid



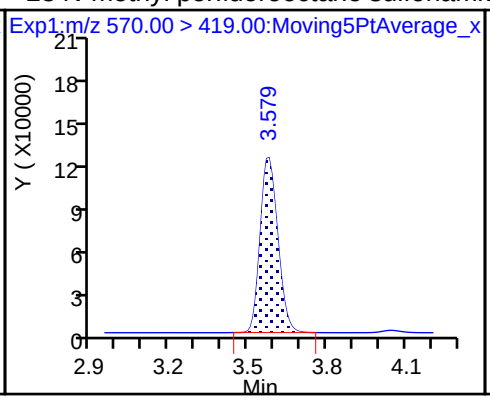
24 Perfluorodecanoic acid



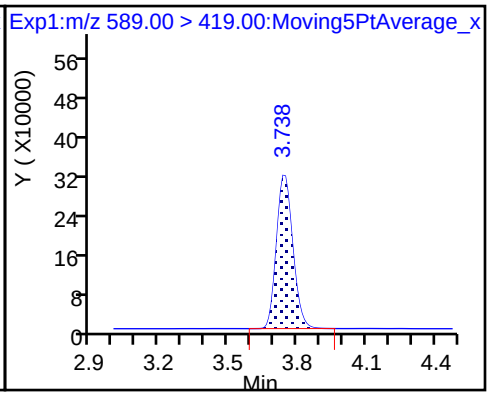
D 27 d3-NMeFOSAA



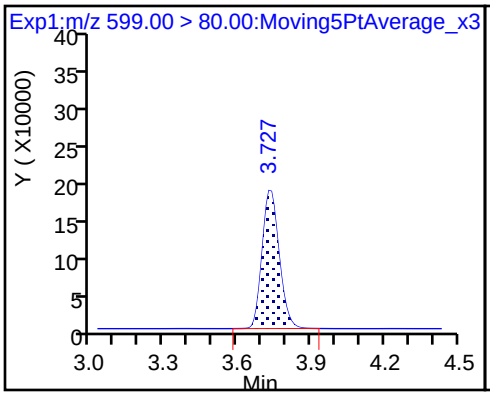
28 N-methyl perfluorooctane sulfonami



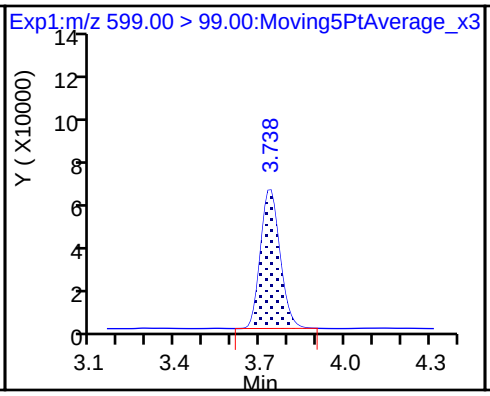
D 32 d5-NEtFOSAA



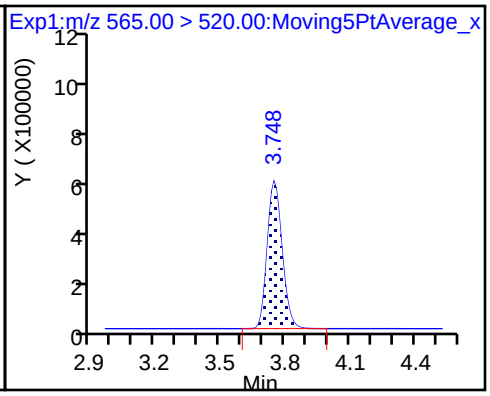
29 Perfluorodecane Sulfonic acid



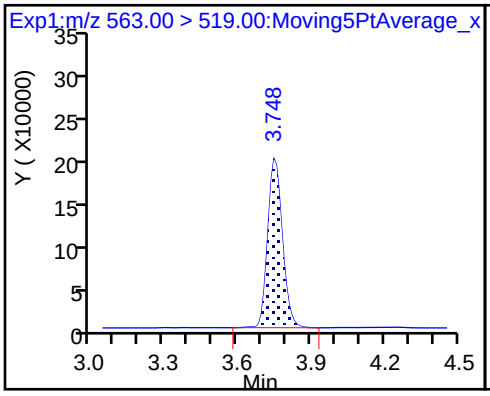
29 Perfluorodecane Sulfonic acid



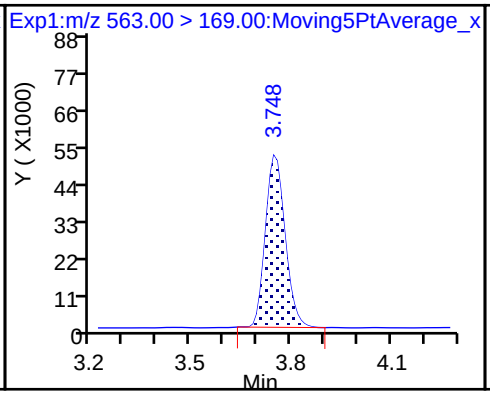
D 30 13C2 PFUnA



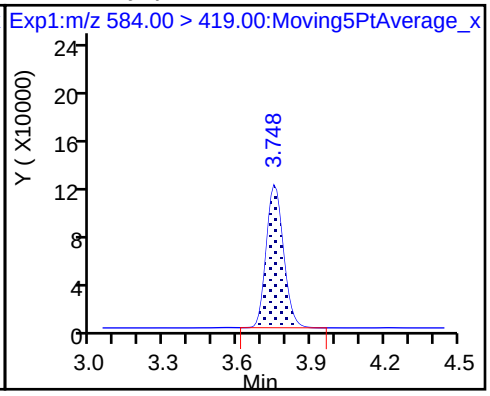
31 Perfluoroundecanoic acid



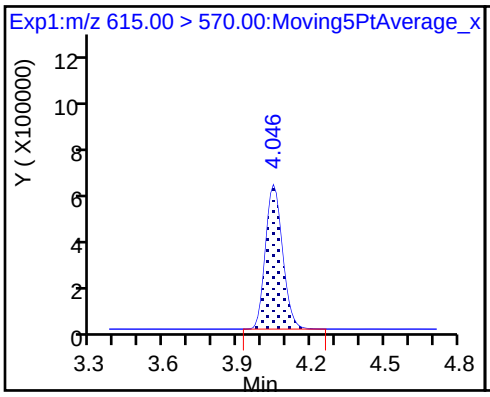
31 Perfluoroundecanoic acid



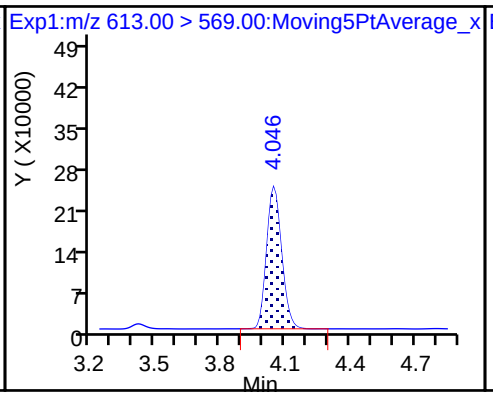
33 N-ethyl perfluorooctane sulfonamid



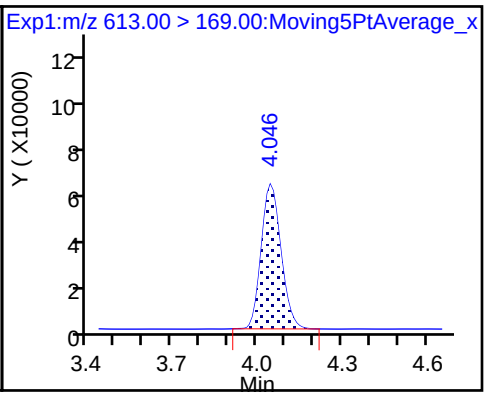
D 36 13C2 PFDoA



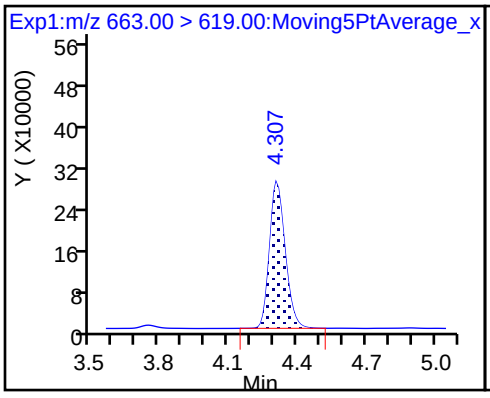
37 Perfluorododecanoic acid



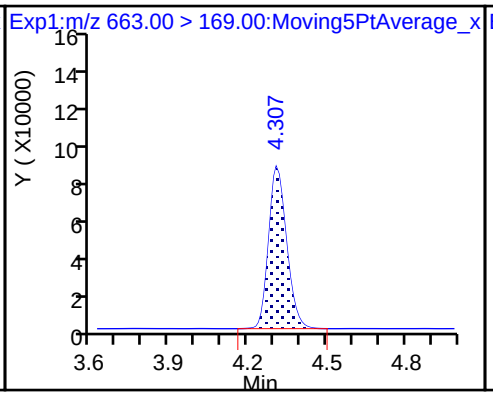
37 Perfluorododecanoic acid



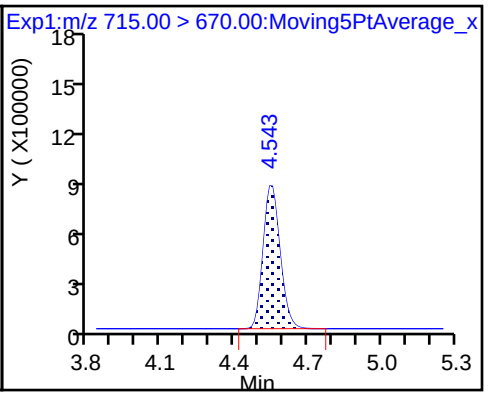
41 Perfluorotridecanoic acid



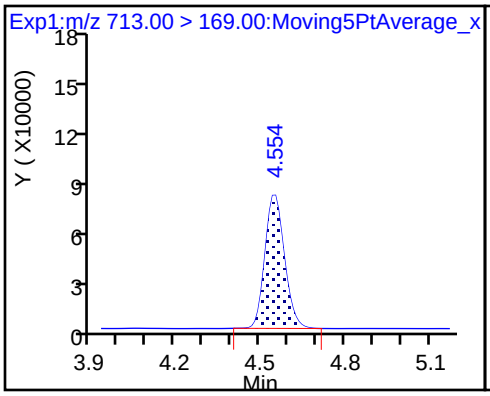
41 Perfluorotridecanoic acid



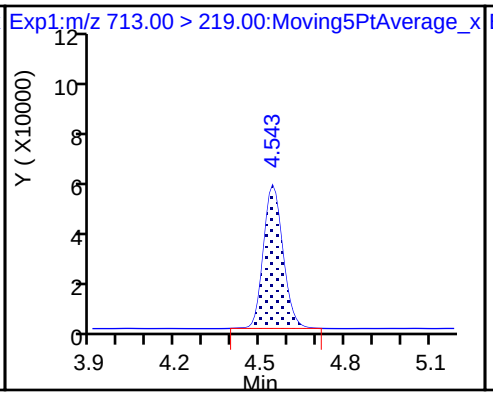
D 43 13C2-PFTeDA



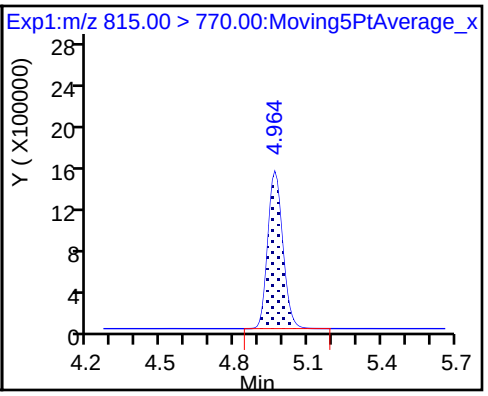
42 Perfluorotetradecanoic acid



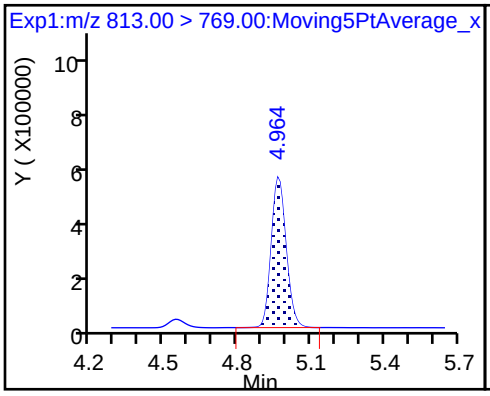
42 Perfluorotetradecanoic acid



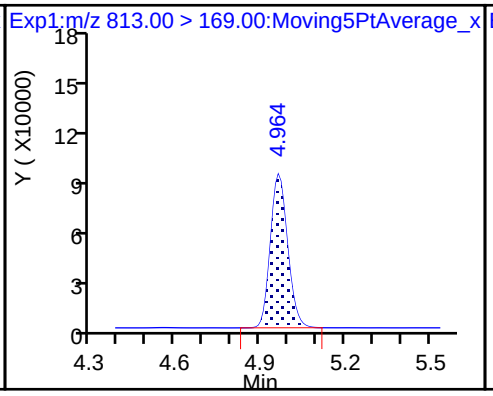
D 44 13C2-PFHxDA



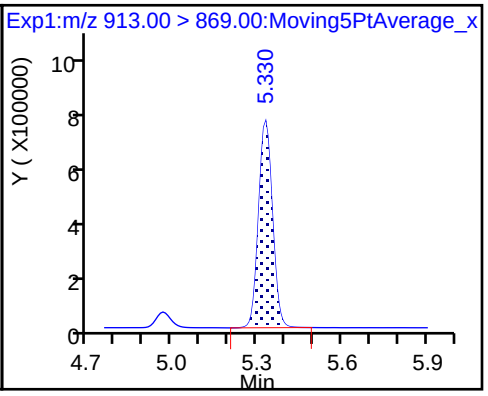
45 Perfluorohexadecanoic acid



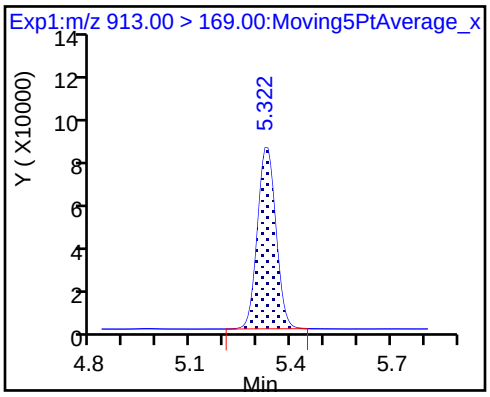
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') MSD | Lab Sample ID: 320-36683-9 MSD

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_019.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 265.2(mL) | Date Analyzed: 03/19/2018 18:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	77.76		1.89	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	74.67		1.89	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	155.9		1.89	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	67.10		1.89	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	136.0		1.89	0.80
375-95-1	Perfluorononanoic acid (PFNA)	156.1		1.89	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	309.1		1.89	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	235.4		1.89	1.04
307-55-1	Perfluorododecanoic acid (PFDoA)	48.52		1.89	0.52
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	56.38		1.89	1.23
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.12		1.89	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	78.57		1.89	0.19
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	138.1		1.89	0.18
335-77-3	Perfluorodecanesulfonic acid (PFDS)	107.4		1.89	0.30
754-91-6	Perfluorooctane Sulfonamide (FOSA)	109.9		1.89	0.33
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	46.27		18.9	2.92
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	42.10		18.9	1.79
27619-97-2	6:2FTS	53.95		18.9	1.89
39108-34-4	8:2FTS	66.69		18.9	1.89

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') MSD | Lab Sample ID: 320-36683-9 MSD

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_019.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 265.2(mL) | Date Analyzed: 03/19/2018 18:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	59		25-150
STL01893	13C5 PFPeA	69		25-150
STL00993	13C2 PFHxA	66		25-150
STL01892	13C4-PFHpA	61		25-150
STL00990	13C4 PFOA	74		25-150
STL00995	13C5 PFNA	31		25-150
STL00996	13C2 PFDA	79		25-150
STL00997	13C2 PFUnA	77		25-150
STL00998	13C2 PFDoA	68		25-150
STL02116	13C2-PFTeDA	81		25-150
STL02337	13C3-PFBS	78		25-150
STL00994	18O2 PFHxS	73		25-150
STL00991	13C4 PFOS	34		25-150
STL01056	13C8 FOSA	81		25-150
STL02118	d3-NMeFOSAA	56		25-150
STL02117	d5-NEtFOSAA	64		25-150
STL02279	M2-6:2FTS	83		25-150
STL02280	M2-8:2FTS	100		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_019.d
Lims ID: 320-36683-B-9-F MSD
Client ID: SB012-SPLP(2'-4')
Sample Type: MSD
Inject. Date: 19-Mar-2018 18:46:53 ALS Bottle#: 12 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-b-9-f msd
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:18 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:11:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.444	-0.003	0.536	3261497	1.47		58.7	35247	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.444	-0.003	1.000	2495284	2.06		206	78.6	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.632	2697118	1.72		68.8	32554	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.705	-0.005	1.000	2495690	1.98		198	60.1	M
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.740	-0.004	0.646	69785	1.80		77.6	183	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.740	-0.004	1.000	4839573	2.08		236	1200	
298.90 > 99.00	1.736	1.740	-0.004	1.000	2037087		2.38(1.25-3.74)		1272	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.960	-0.004	1.000	589954	1.22		131	3608	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.992	-0.005	1.000	4808401	4.13		413	764	
313.00 > 119.00	1.987	1.992	-0.005	1.000	422268		11.39(5.03-15.10)		2879	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.992	-0.005	0.739	2881096	1.65		65.9	53808	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.866	2577693	1.52		60.6	54843	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	1901908	1.78		178	397	
363.00 > 169.00	2.328	2.335	-0.007	1.000	756504		2.51(1.13-3.40)		5087	
8 Perfluorohexanesulfonic acid										E
399.00 > 80.00	2.341	2.348	-0.007	1.000	30447868	16.5		1818	16423	E
399.00 > 99.00	2.341	2.348	-0.007	1.000	10897302		2.79(1.50-4.49)		12192	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	3902780	1.72		72.7	61339	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.675	-0.010	1.000	864018	1.43		151	7468	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.675	-0.010	0.991	861531	1.98		83.3	3710	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.706	-0.017	1.000	3048598	1.86		74.3	91718	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.706	-0.017		4352613	2.50			81227	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.689	2.706	-0.017	1.000	4909737	3.61		361	902	M
413.00 > 169.00	2.689	2.706	-0.017	1.000	2892616		1.70(0.84-2.52)		8186	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.706	-0.009	1.000	2606120	3.66		385	1987	
449.00 > 99.00	2.697	2.706	-0.009	1.000	672535		3.88(1.94-5.82)		2730	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.083	-0.018	1.140	1294273	0.8157		34.1	3040	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.065	3.083	-0.018	1.000	188177221	321.0		34588	21316	E
499.00 > 99.00	3.065	3.083	-0.018	1.000	64329485		2.93(2.31-6.93)		48896	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.083	-0.018	1.000	1730300	4.14		414	828	
463.00 > 169.00	3.065	3.083	-0.018	1.000	437321		3.96(1.90-5.69)		1832	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.083	-0.018	1.140	1024997	0.7803		31.2	15003	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.403	-0.014	1.261	4640364	2.02		80.8	37732	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.412	-0.023	1.000	5258591	2.92		292	138	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.439	-0.022	1.271	980761	2.40		100	2700	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.439	-0.022	1.000	910588	1.77		185	15643	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.448	-0.022	1.000	6741425	8.20		820	3929	
513.00 > 169.00	3.426	3.448	-0.022	1.000	1172531		5.75(2.36-7.09)		1614	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.448	-0.022	1.274	2167006	1.97		79.0	54654	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.581	3.606	-0.025	1.332	503867	1.39		55.6	10837	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.592	3.617	-0.025	1.003	257606	1.23		123	4150	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.765	-0.025	1.000	984479	2.85		295	210	
599.00 > 99.00	3.740	3.765	-0.025	1.000	350568		2.81(1.39-4.16)		804	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.775	-0.025	1.395	550443	1.59		63.6	1451	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.786	-0.026	1.398	1646319	1.92		76.6	49352	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.760	3.786	-0.026	1.000	3444707	6.24		624	1595	
563.00 > 169.00	3.760	3.786	-0.026	1.000	890378		3.87(2.12-6.36)		543	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.786	-0.026	1.003	240675	1.12		112	4484	
35 MeFOSA										
512.00 > 169.00	3.895	3.875	0.020		362011	NC			3473	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.091	4.066	0.025		298410	NC			4174	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.059	4.084	-0.025	1.000	728301	1.29		129	209	
613.00 > 169.00	4.059	4.084	-0.025	1.000	186478		3.91(2.13-6.40)		2486	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.084	-0.025	1.510	1383276	1.70		67.9	8368	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.346	-0.027	1.000	851093	1.50		150	252	
663.00 > 169.00	4.319	4.346	-0.027	1.000	285515		2.98(1.25-3.76)		4125	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.555	4.581	-0.026	1.000	176227	1.06		106	2859	
713.00 > 219.00	4.555	4.581	-0.026	1.000	127562		1.38(0.71-2.13)		1041	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.555	4.581	-0.026	1.694	1501636	2.02		80.8	13845	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	5.004	-0.030	1.000	598791	1.26		126	45.5	
813.00 > 169.00	4.974	5.004	-0.030	1.000	97806		6.12(2.86-8.58)		1374	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	5.004	-0.030	1.850	1274642	1.17		46.9	6085	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.331	5.374	-0.043	1.000	463535	0.9325		93.3	156	
913.00 > 169.00	5.331	5.374	-0.043	1.000	58419		7.93(3.83-11.48)		744	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:28 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_019.d

Injection Date: 19-Mar-2018 18:46:53 Instrument ID: A8_N

Lims ID: 320-36683-B-9-F MSD

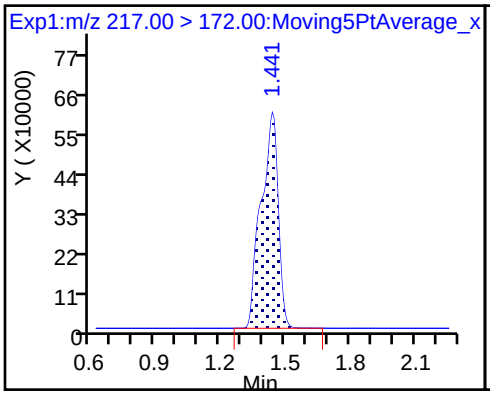
Client ID: SB012-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 15

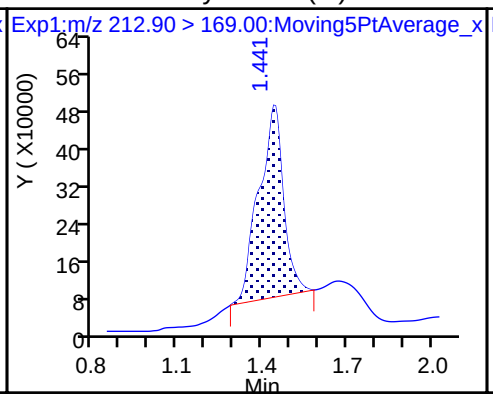
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

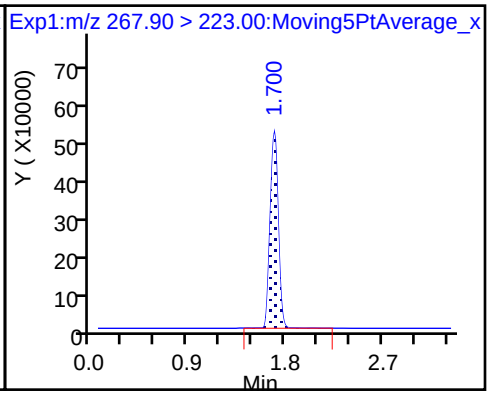
D 1 13C4 PFBA



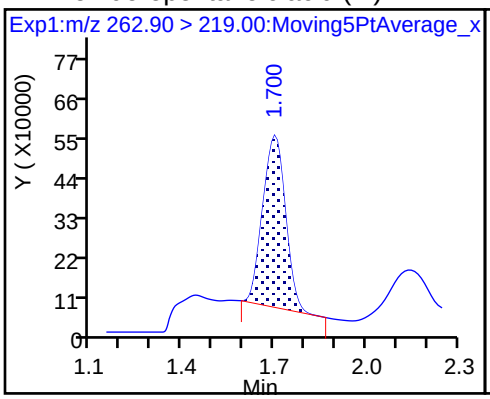
2 Perfluorobutyric acid (M)



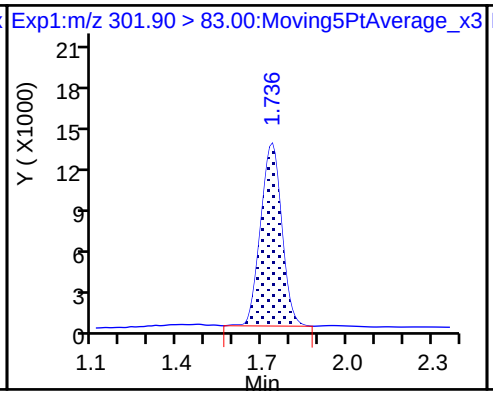
D 3 13C5-PFPeA



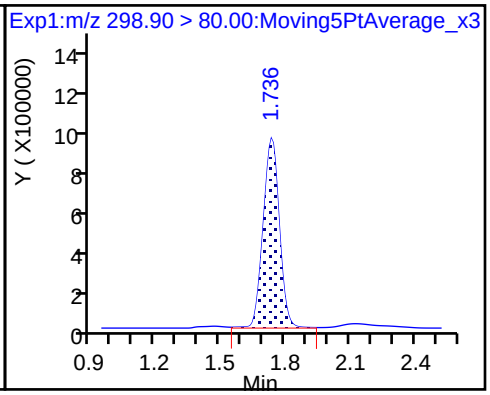
4 Perfluoropentanoic acid (M)



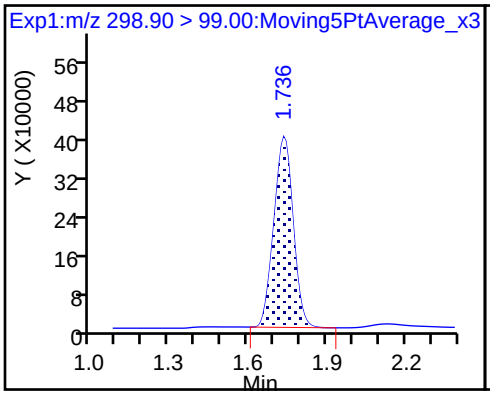
D 47 13C3-PFBS



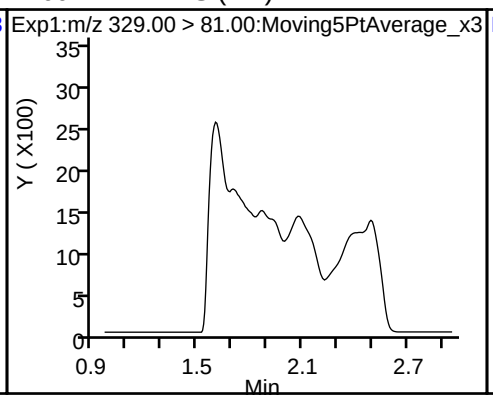
5 Perfluorobutanesulfonic acid



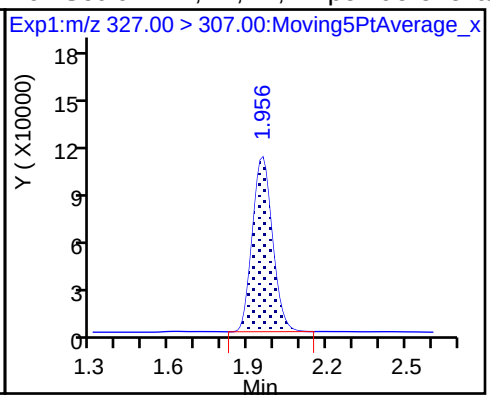
5 Perfluorobutanesulfonic acid



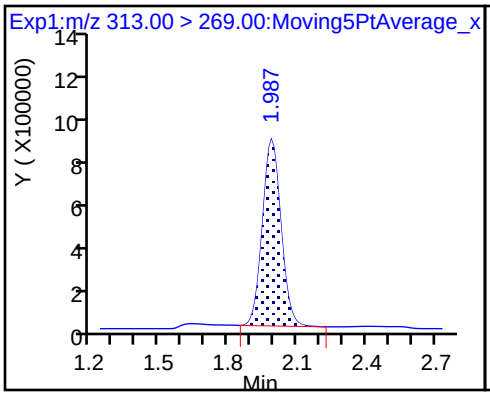
D 60 M2-4:2FTS (ND)



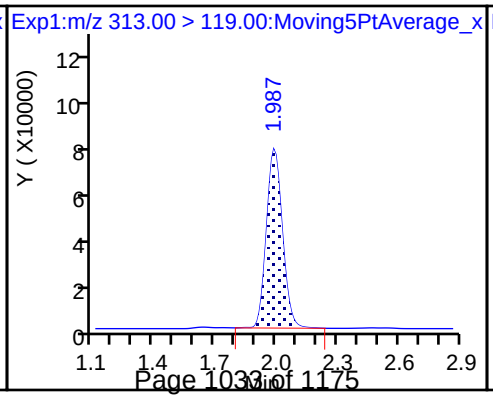
61 Sodium 1H,1H,2H,2H-perfluorohexane



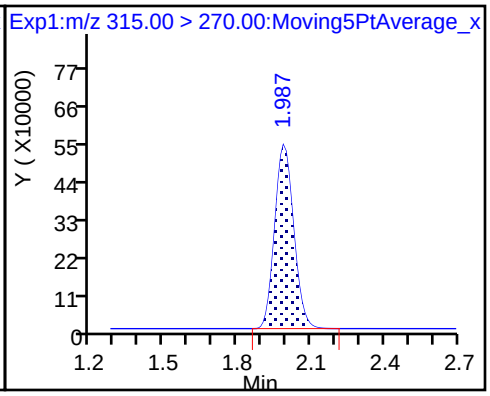
6 Perfluorohexanoic acid



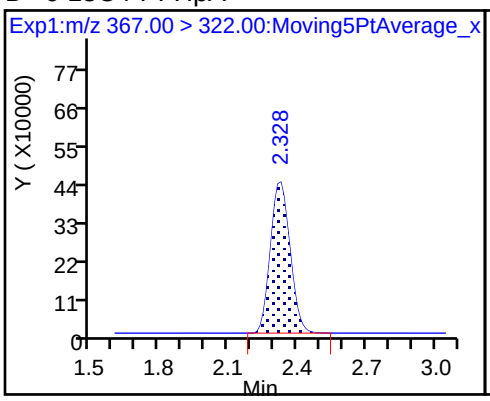
6 Perfluorohexanoic acid



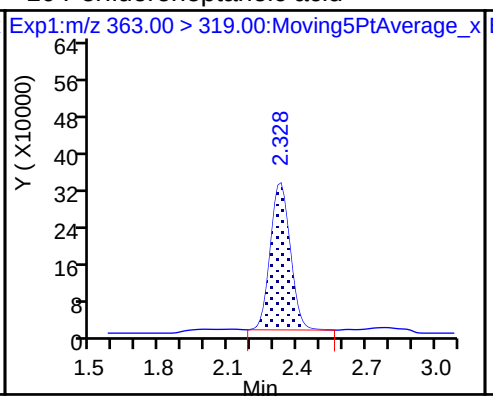
D 7 13C2 PFHxA



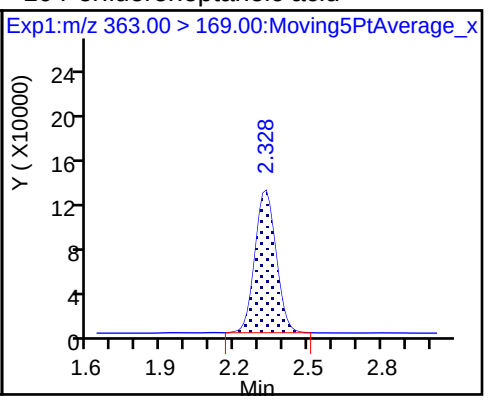
D 9 13C4-PFHpA



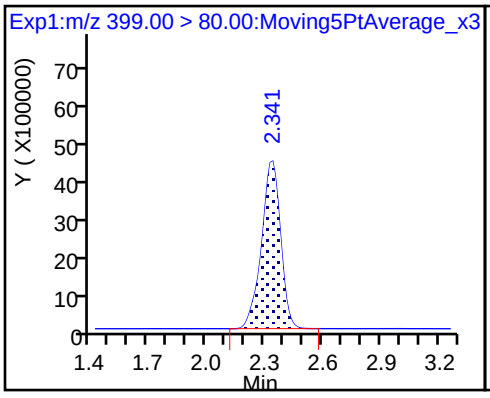
10 Perfluoroheptanoic acid



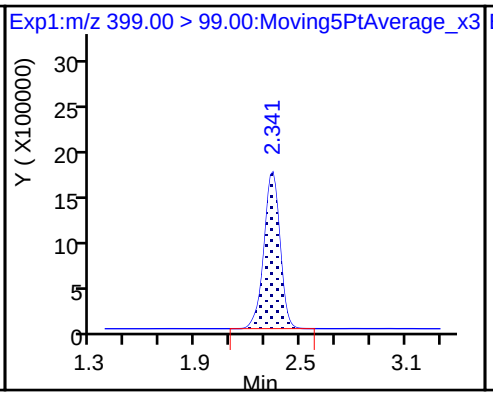
10 Perfluoroheptanoic acid



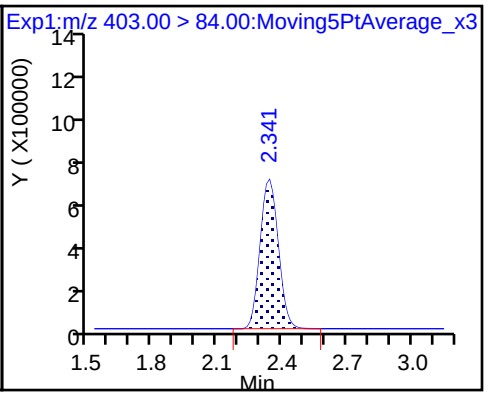
8 Perfluorohexanesulfonic acid



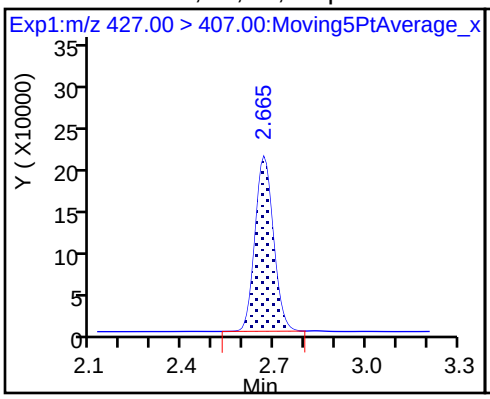
8 Perfluorohexanesulfonic acid



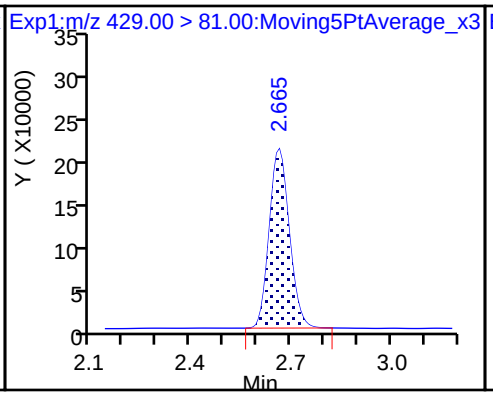
D 11 18O2 PFHxS



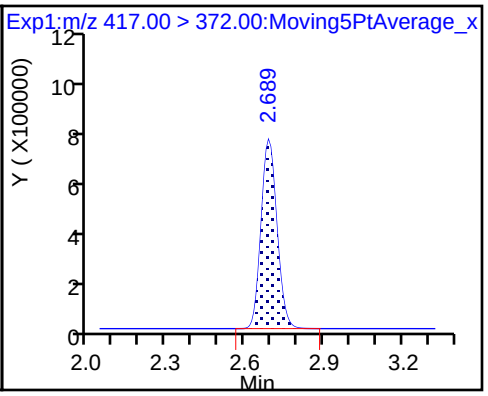
13 Sodium 1H,1H,2H,2H-perfluorooctane



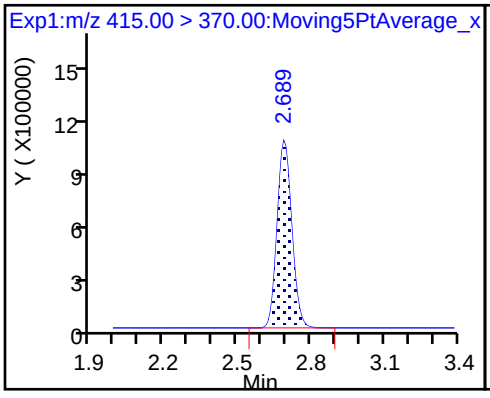
D 12 M2-6:2FTS



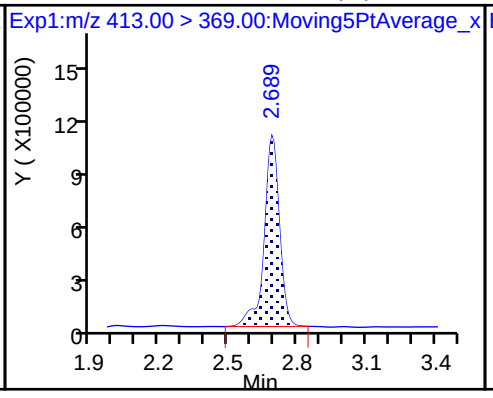
D 14 13C4 PFOA



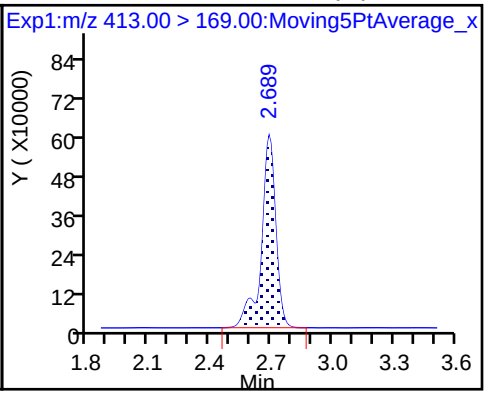
* 62 13C2-PFOA



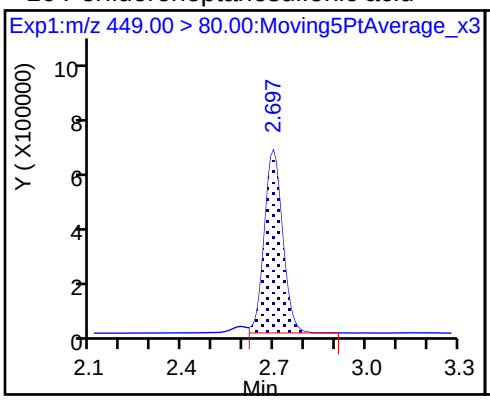
15 Perfluorooctanoic acid (M)



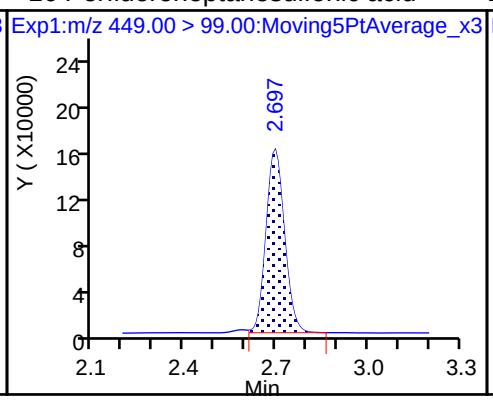
15 Perfluorooctanoic acid (M)



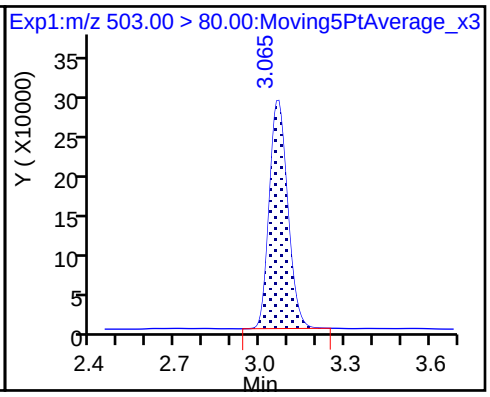
16 Perfluoroheptanesulfonic acid



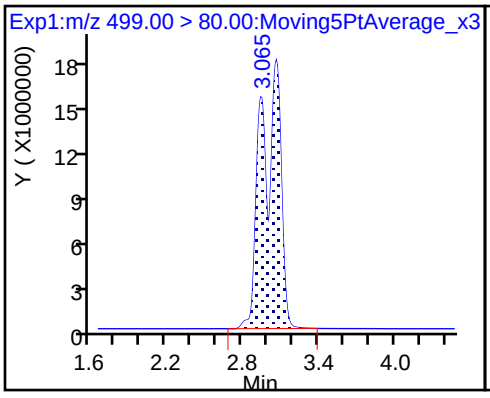
16 Perfluoroheptanesulfonic acid



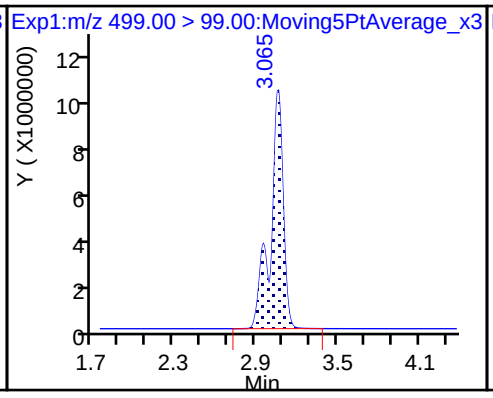
D 18 13C4 PFOS



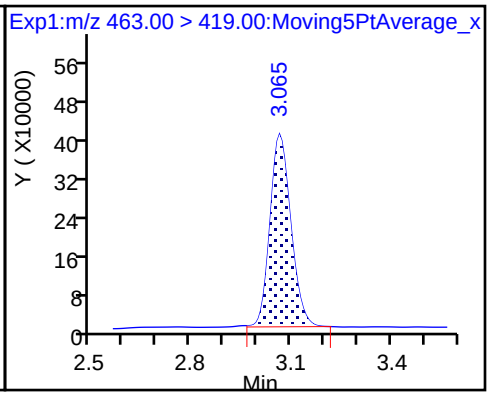
17 Perfluorooctane sulfonic acid



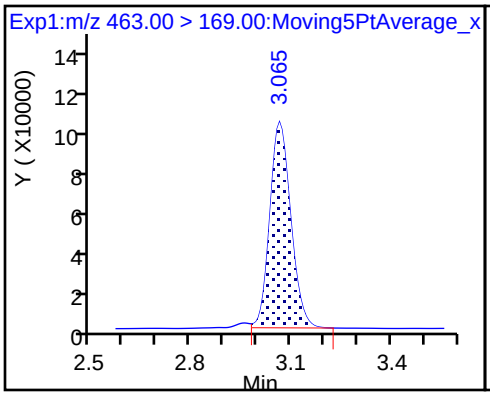
17 Perfluorooctane sulfonic acid



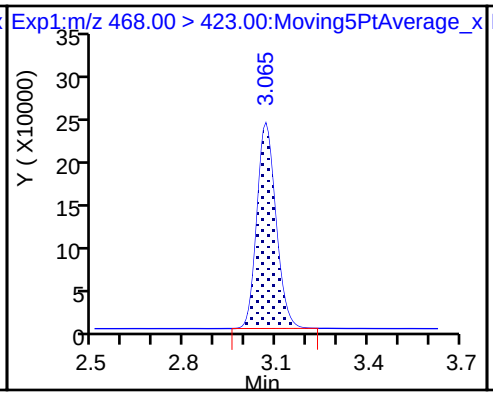
20 Perfluorononanoic acid



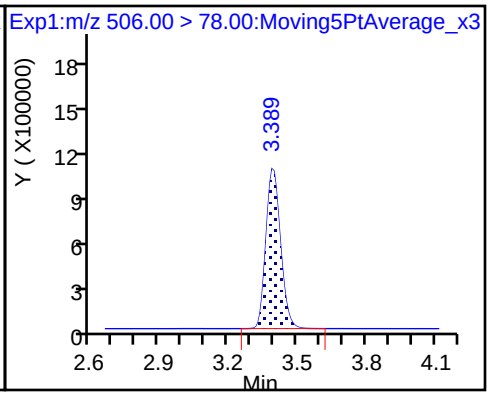
20 Perfluorononanoic acid



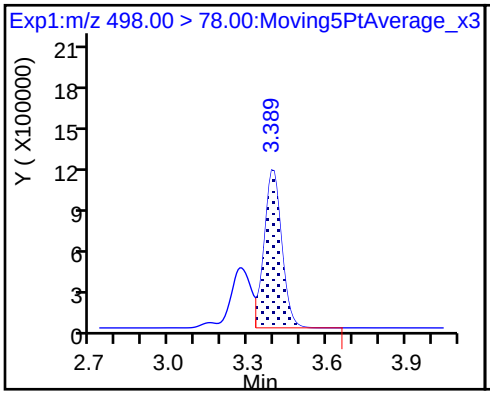
D 19 13C5 PFNA



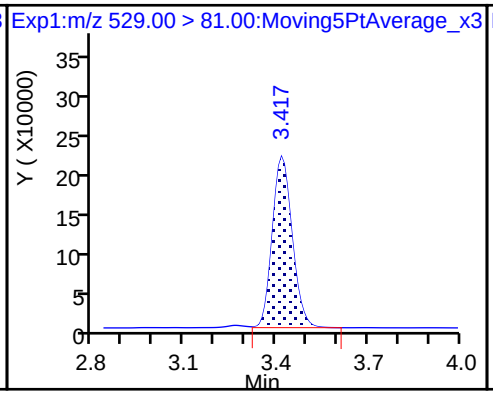
D 21 13C8 FOSA



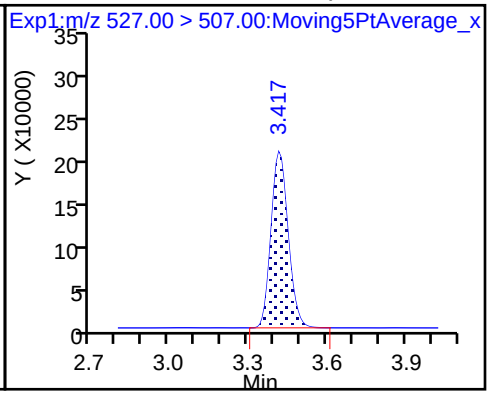
22 Perfluorooctane Sulfonamide



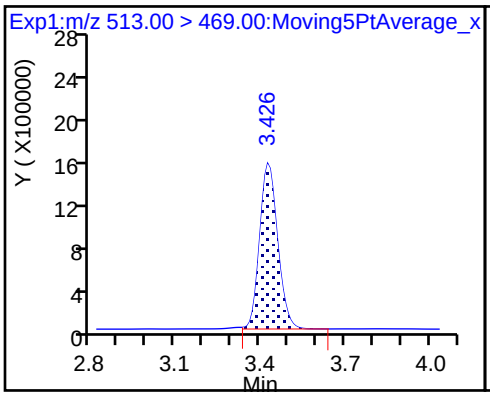
D 26 M2-8:2FTS



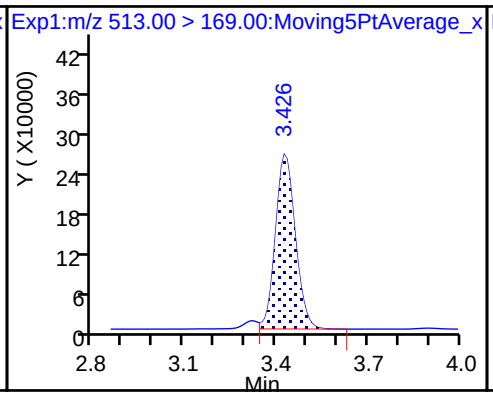
25 Sodium 1H,1H,2H,2H-perfluorodecane



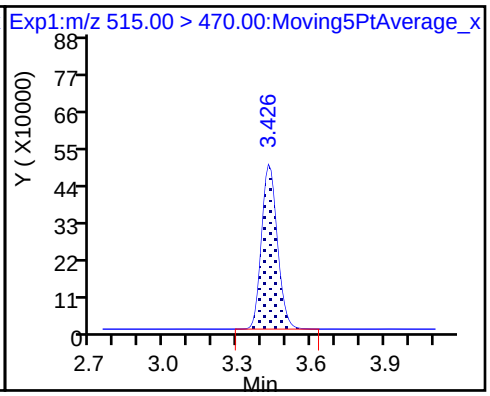
24 Perfluorodecanoic acid



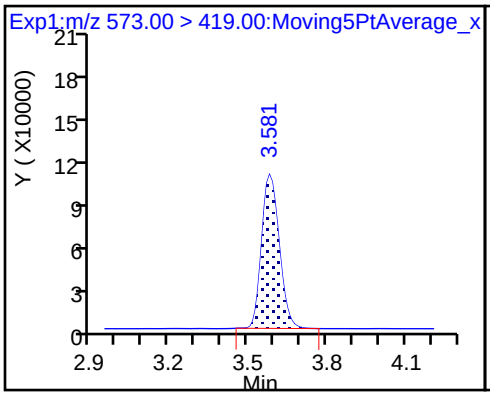
24 Perfluorodecanoic acid



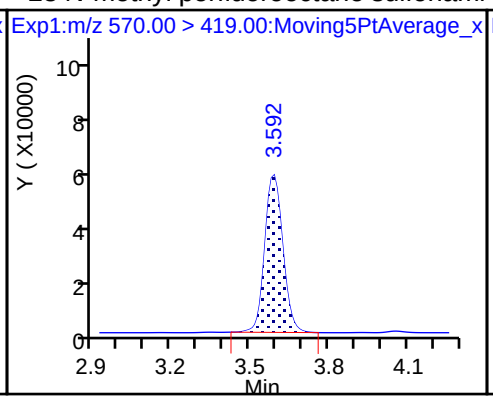
D 23 13C2 PFDA



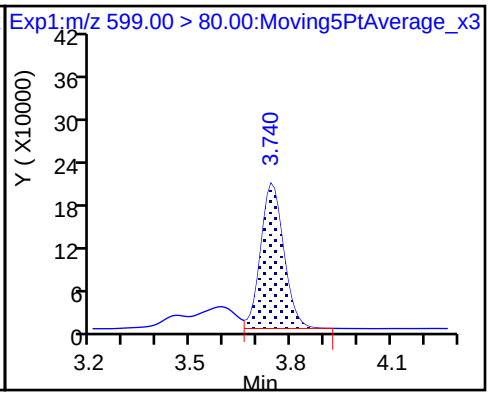
D 27 d3-NMeFOSAA



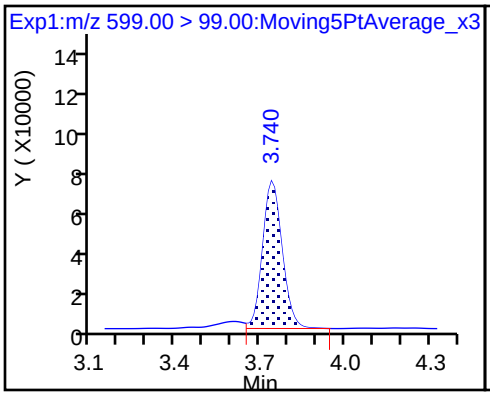
28 N-methyl perfluorooctane sulfonami



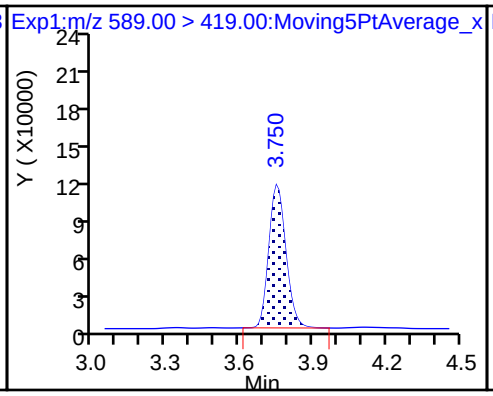
29 Perfluorodecane Sulfonic acid



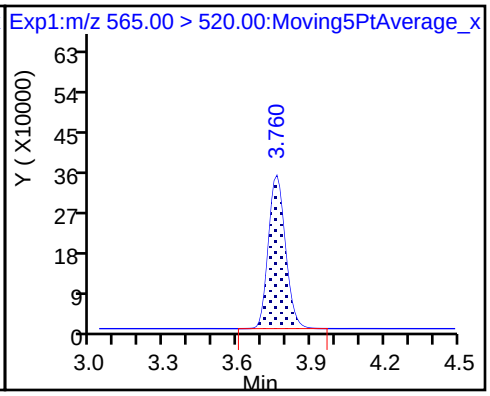
29 Perfluorodecane Sulfonic acid



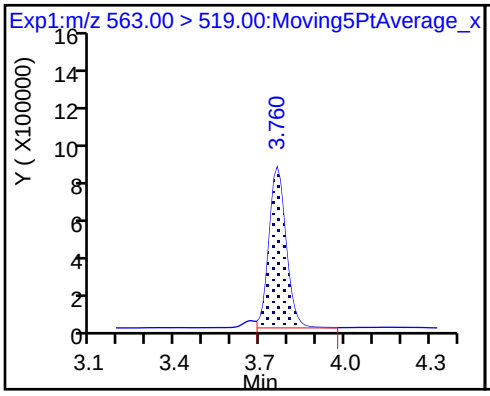
D 32 d5-NEtFOSAA



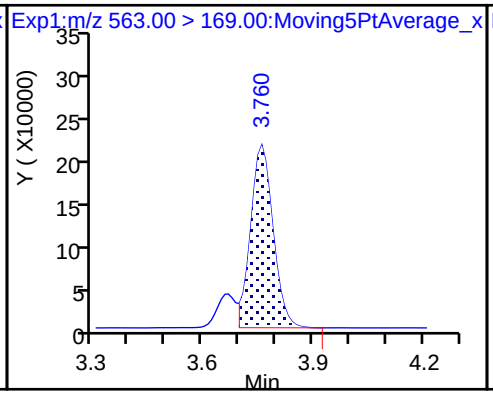
D 30 13C2 PFUnA



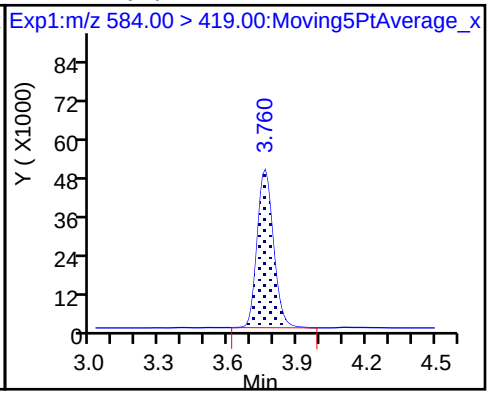
31 Perfluoroundecanoic acid



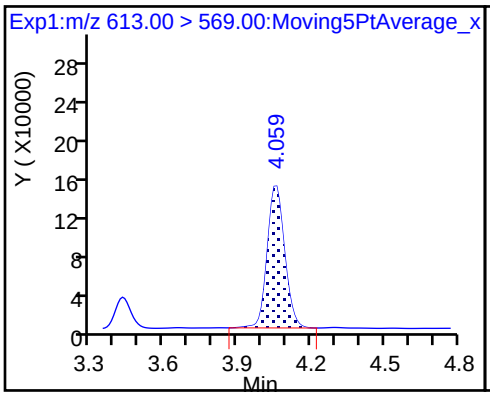
31 Perfluoroundecanoic acid



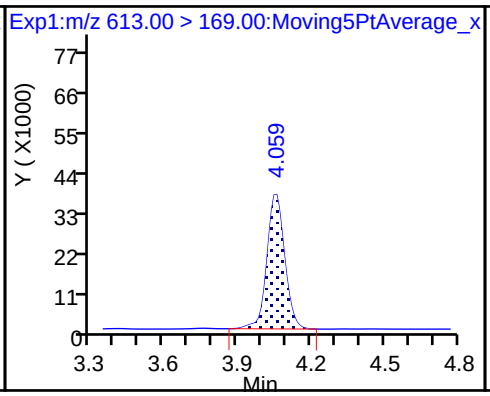
33 N-ethyl perfluorooctane sulfonamid



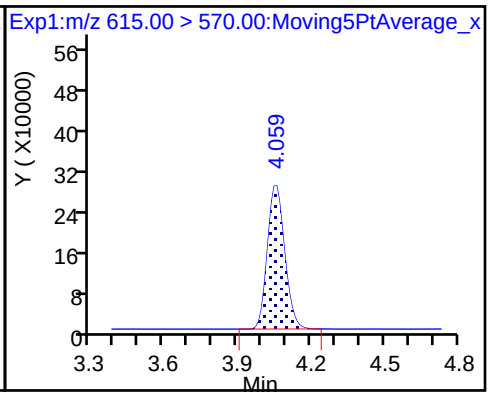
37 Perfluorododecanoic acid



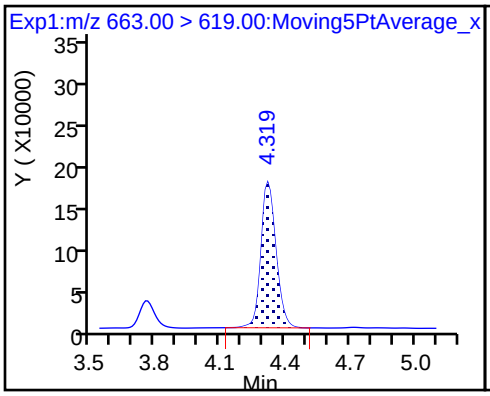
37 Perfluorododecanoic acid



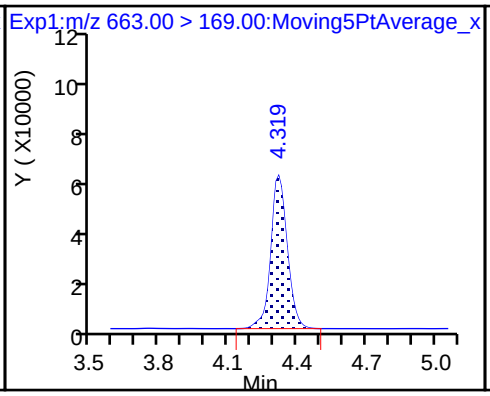
D 36 13C2 PFDoA



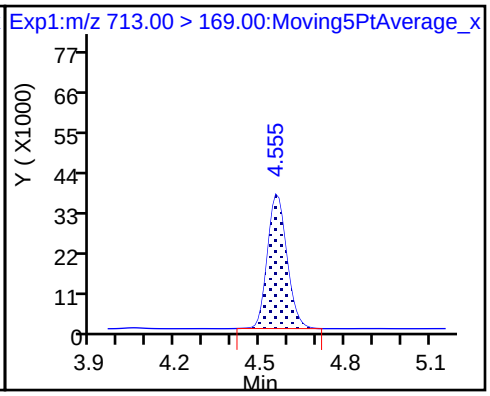
41 Perfluorotridecanoic acid



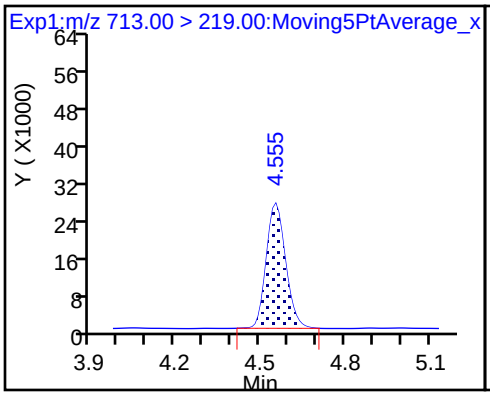
41 Perfluorotridecanoic acid



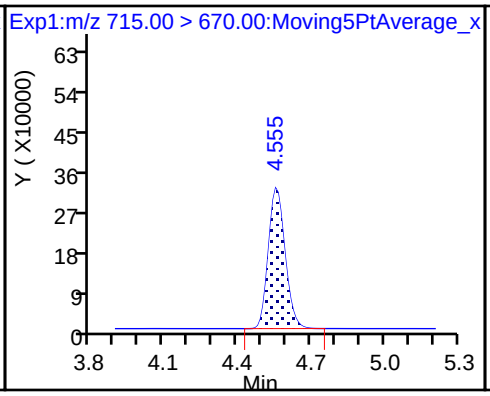
42 Perfluorotetradecanoic acid



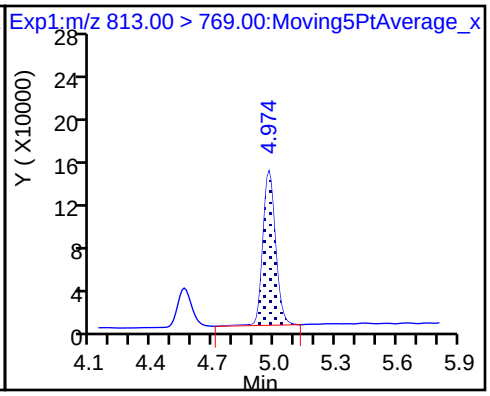
42 Perfluorotetradecanoic acid



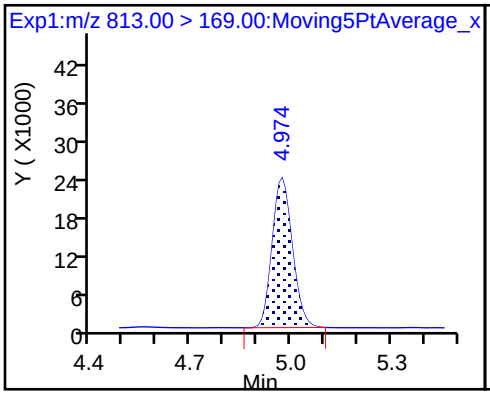
D 43 13C2-PFTeDA



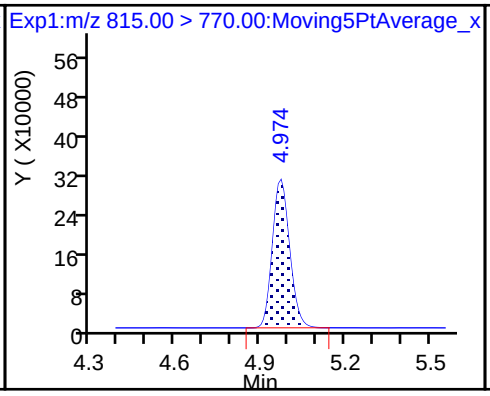
45 Perfluorohexadecanoic acid



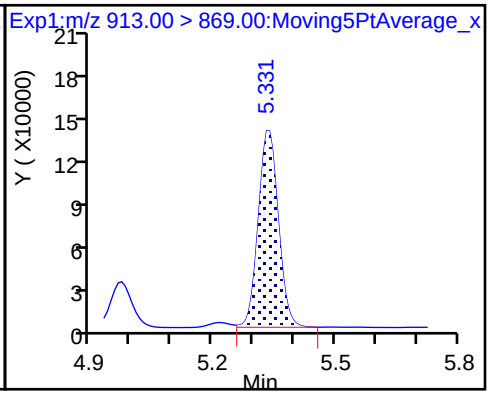
45 Perfluorohexadecanoic acid



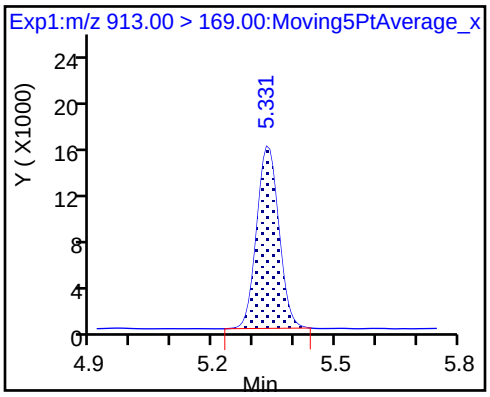
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

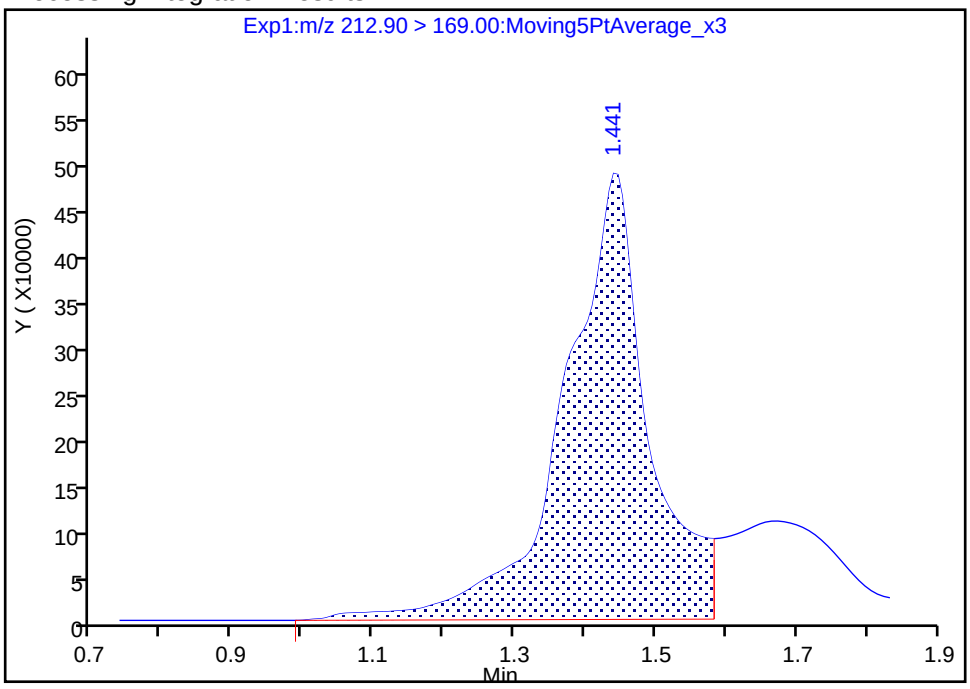
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_019.d				
Injection Date:	19-Mar-2018 18:46:53	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-F MSD				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

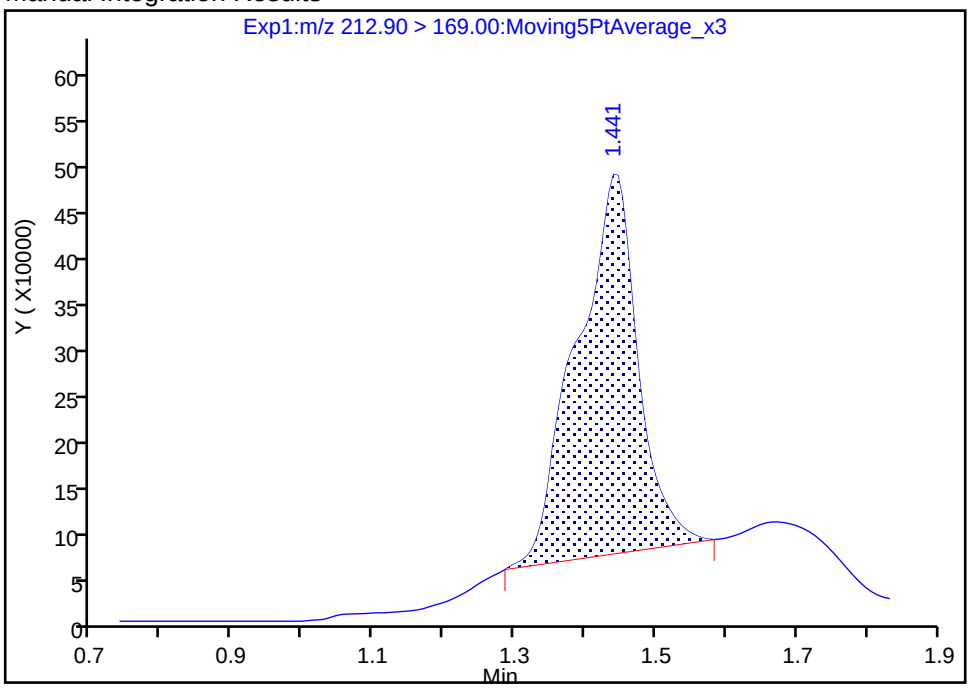
Processing Integration Results

RT: 1.44
Area: 4071960
Amount: 3.365422
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 2495284
Amount: 2.062320
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:10:42

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

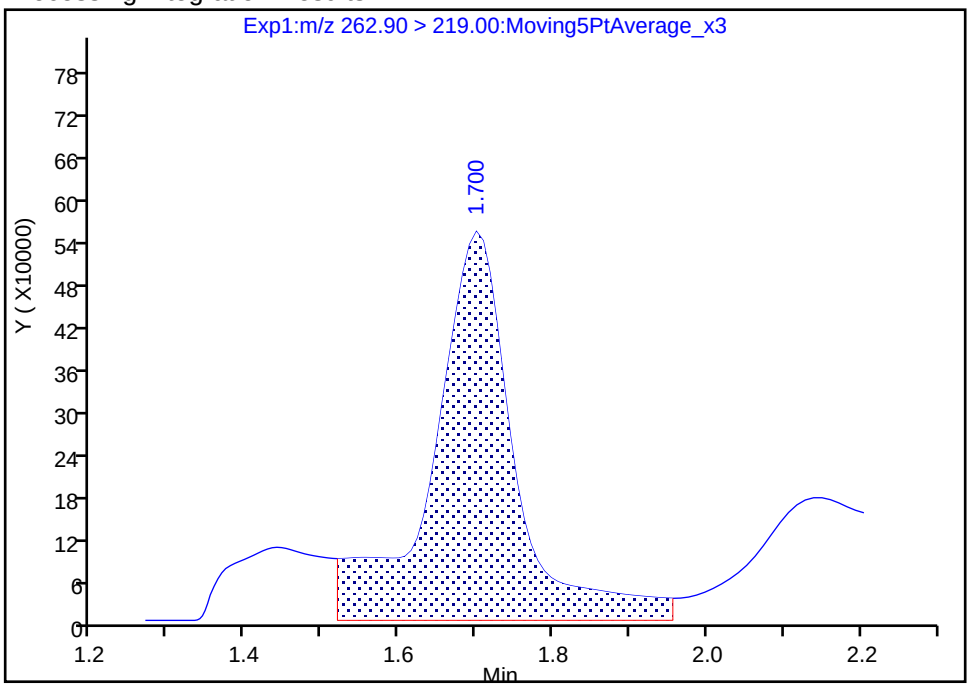
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_019.d				
Injection Date:	19-Mar-2018 18:46:53	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-F MSD				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

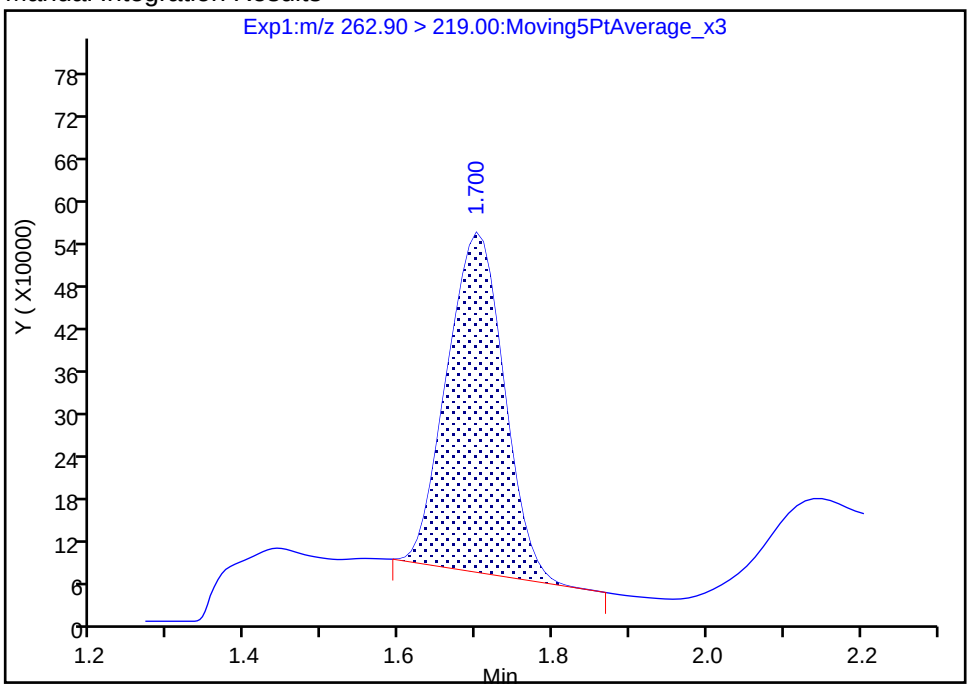
Processing Integration Results

RT: 1.70
Area: 4136687
Amount: 3.282473
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 2495690
Amount: 1.980337
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:10:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

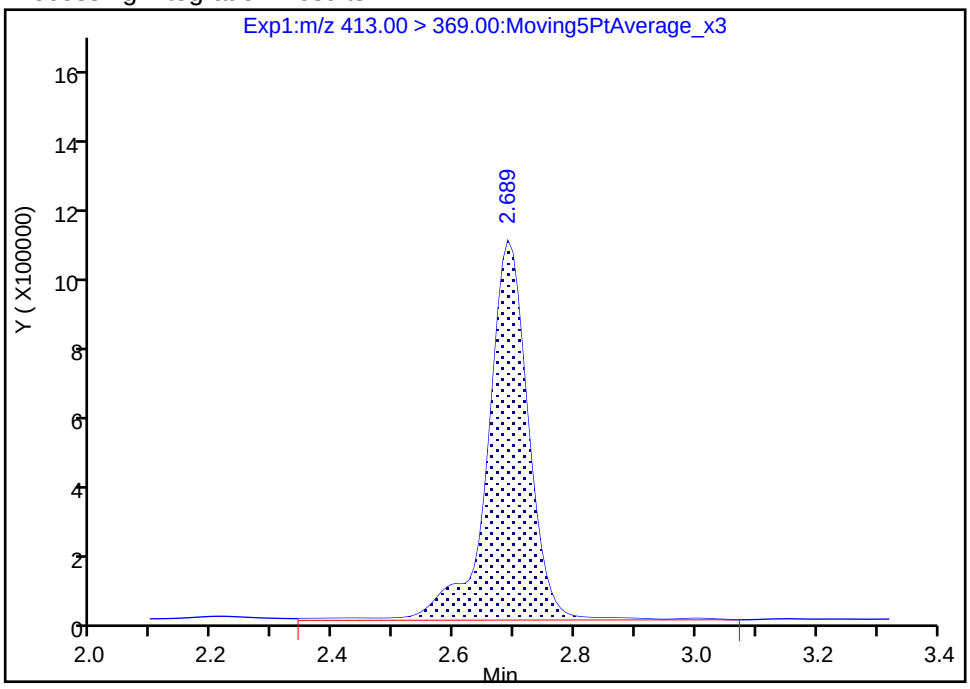
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_019.d				
Injection Date:	19-Mar-2018 18:46:53	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-F MSD				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

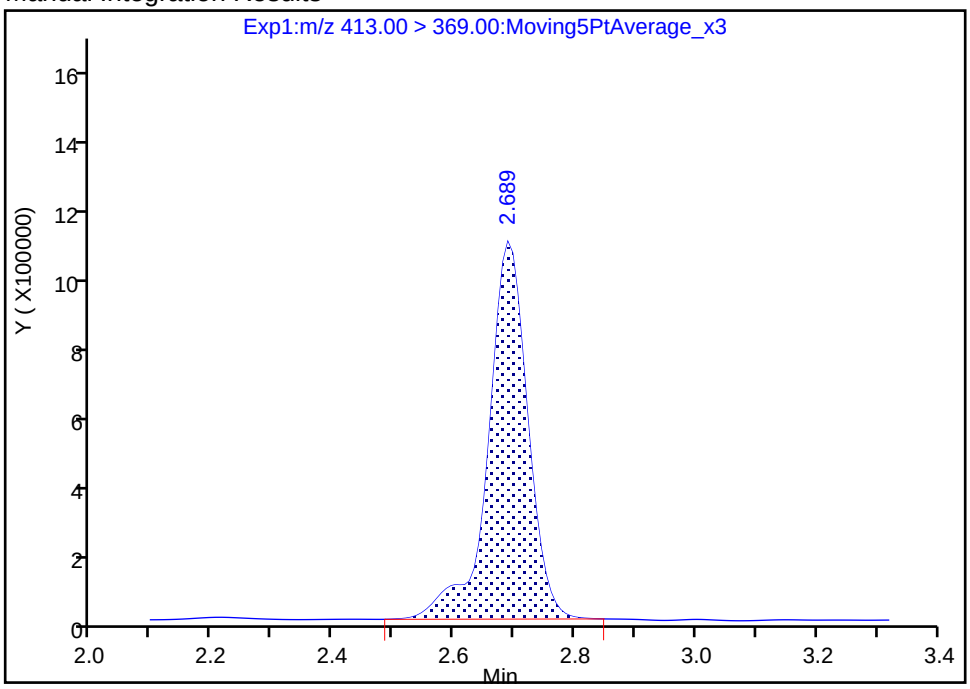
Processing Integration Results

RT: 2.69
Area: 5120501
Amount: 3.761341
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 4909737
Amount: 3.606521
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:10:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

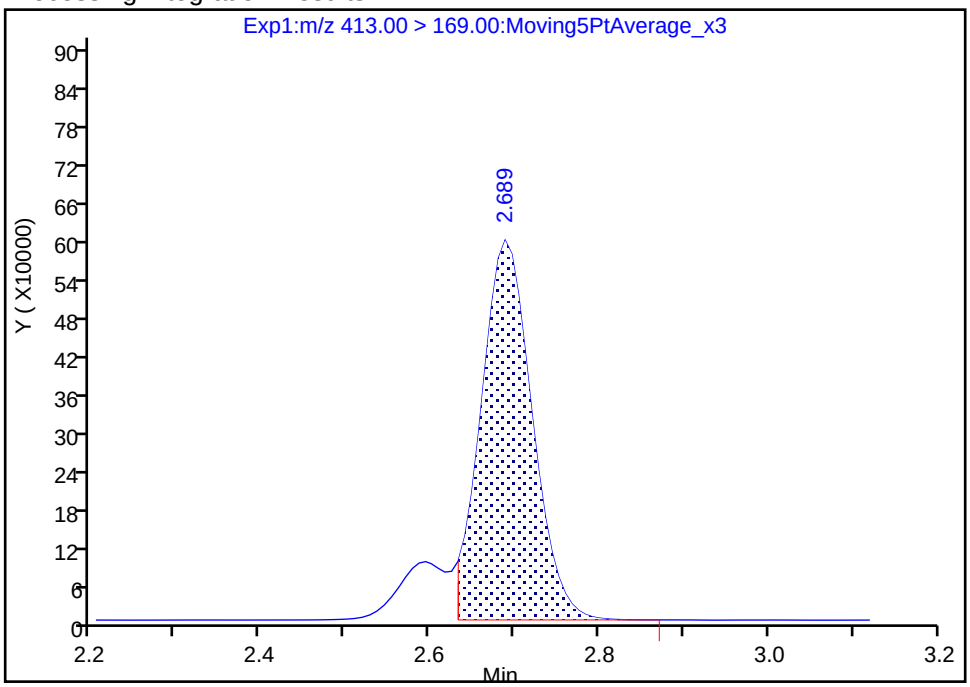
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_019.d				
Injection Date:	19-Mar-2018 18:46:53	Instrument ID:	A8_N		
Lims ID:	320-36683-B-9-F MSD				
Client ID:	SB012-SPLP(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

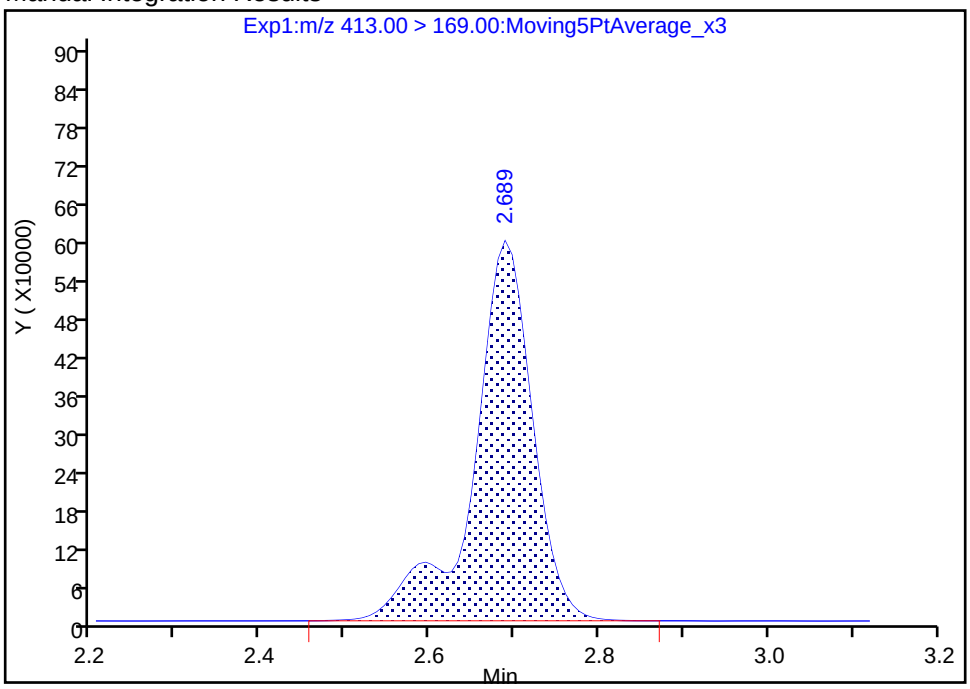
Processing Integration Results

RT: 2.69
Area: 2494663
Amount: 3.761341
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 2892616
Amount: 3.606521
Amount Units: ng/ml



Reviewer: westendorfc, 20-Mar-2018 14:11:00

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012-SPLP(2'-4') MSD DL | Lab Sample ID: 320-36683-9 MSD DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.19LLAX_013.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 11:45

Extraction Method: 3535 | Date Extracted: 03/14/2018 20:27

Sample wt/vol: 265.2(mL) | Date Analyzed: 03/19/2018 17:59

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 213785 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	773.6		189	16.0
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	23050		189	50.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	66	*	25-150
STL00991	13C4 PFOS	66	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_013.d
Lims ID: 320-36683-B-9-F MSD
Client ID: SB012-SPLP(2'-4')
Sample Type: MSD
Inject. Date: 19-Mar-2018 17:59:46 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36683-b-9-f msd 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 20-Mar-2018 14:13:03 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 20-Mar-2018 14:07:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.444	0.003	0.537	47368	0.0169		67.7	1028	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.444	0.003	1.000	48596	0.0277		277	18.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.705	0.004	0.634	31837	0.0161		64.5	1247	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.705	0.004	1.000	31323	0.0211		211	7.7	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.740	0.005	1.000	55480	NR		0.0	23.1	
298.90 > 99.00	1.745	1.740	0.005	1.000	20264		2.74(1.25-3.74)		19.5	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.960	-0.004	1.000	7171	NR		0.0	333	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.992	0.006	1.000	57347	0.0382		382	144	
313.00 > 119.00	1.998	1.992	0.006	1.000	6129		9.36(5.03-15.10)		103	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.992	0.006	0.741	37195	0.0169		67.5	1743	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.335	-0.007	0.863	37552	0.0175		70.1	1306	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	26467	0.0170		170	44.6	
363.00 > 169.00	2.328	2.335	-0.007	1.000	10018		2.64(1.13-3.40)		198	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.348	-0.007	1.000	429509	0.2052		2255	804	
399.00 > 99.00	2.341	2.348	-0.007	1.000	125355		3.43(1.50-4.49)		277	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	44390	0.0155		65.7	1927	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.675	-0.002	1.000	11636	0.0138		146	568	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.675	-0.002	0.991	12017	0.0219		92.2	347	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.706	-0.009	1.000	35868	0.0173		69.4	2834	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.706	-0.009		54841	0.0250			2603	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.697	2.706	-0.009	1.000	67793	0.0423		423	24.3	M
413.00 > 169.00	2.697	2.706	-0.009	1.000	38311		1.77(0.84-2.52)		193	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.706	-0.001	1.000	22724	0.0130		137	585	
449.00 > 99.00	2.705	2.706	-0.001	1.000	6563		3.46(1.94-5.82)		156	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.083	-0.011	1.139	31720	0.0159		66.4	958	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.083	-0.011	1.000	8782364	6.11		65866	22030	
499.00 > 99.00	3.072	3.083	-0.011	1.000	1932925		4.54(2.31-6.93)		10080	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.083	-0.011	1.000	47756	0.0467		467	104	
463.00 > 169.00	3.072	3.083	-0.011	1.000	11993		3.98(1.90-5.69)		502	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.083	-0.011	1.139	25098	0.0152		60.7	1254	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.403	-0.004	1.260	47274	0.0163		65.3	981	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.412	-0.013	1.000	53635	0.0292		292	136	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.439	-0.013	1.270	8741	0.0170		70.8	252	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.439	-0.013	1.000	7635	0.0166		174	321	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.448	-0.013	1.000	64948	0.0823		823	314	
513.00 > 169.00	3.435	3.448	-0.013	1.000	11820		5.49(2.36-7.09)		567	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.448	-0.013	1.274	20790	0.0150		60.1	482	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.606	-0.016	1.331	5365	0.0118		47.0	376	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.617	-0.027	1.000	2155	0.009641		96.4	138	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.759	3.765	-0.006	1.000	8825	0.0104		108	236	
599.00 > 99.00	3.748	3.765	-0.017	0.997	2541		3.47(1.39-4.16)		29.4	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.759	3.775	-0.016	1.394	5978	0.0137		54.8	13.7	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.786	-0.017	1.398	15169	0.0140		56.0	614	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.786	-0.017	1.000	31597	0.0621		621	51.7	
563.00 > 169.00	3.769	3.786	-0.017	1.000	8160		3.87(2.12-6.36)		331	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.786	-0.027	1.000	3393	0.0145		145	74.1	
35 MeFOSA										
512.00 > 169.00	3.903	3.875	0.028		2314	NC			101	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.089	4.066	0.023		2335	NC			138	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.068	4.084	-0.016	1.003	12061	0.0224		224	11.3	
613.00 > 169.00	4.057	4.084	-0.027	1.000	2433		4.96(2.13-6.40)		74.5	M
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.084	-0.027	1.505	13145	0.0128		51.2	70.1	
41 Perfluorotridecanoic acid										RM
663.00 > 619.00	4.329	4.346	-0.017	1.000	7630	0.0141		141	9.3	R
663.00 > 169.00	4.329	4.346	-0.017	1.000	1544		4.94(1.25-3.76)		52.2	M
42 Perfluorotetradecanoic acid										M
713.00 > 169.00	4.575	4.581	-0.006	1.002	1583	0.0126		126	49.1	M
713.00 > 219.00	4.554	4.581	-0.027	0.998	1520		1.04(0.71-2.13)		15.9	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.581	-0.017	1.693	11417	0.0122		48.7	148	
45 Perfluorohexadecanoic acid										M
813.00 > 769.00	4.990	5.004	-0.014	1.002	3735	-0.0159		-159.1	0.4	M
813.00 > 169.00	4.982	5.004	-0.022	1.000	929		4.02(2.86-8.58)		17.8	M
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	5.004	-0.022	1.847	12607	0.009198		36.8	86.1	
46 Perfluorooctadecanoic acid										M
913.00 > 869.00	5.345	5.374	-0.029	1.000	4676	0.009511		95.1	3.9	
913.00 > 169.00	5.337	5.374	-0.037	0.999	626		7.47(3.83-11.48)		9.2	M

QC Flag Legend

Processing Flags

NR - Missing Quant Standard
NC - Not Calibrated
R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 20-Mar-2018 14:13:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b\2018.03.19LLAX_013.d

Injection Date: 19-Mar-2018 17:59:46 Instrument ID: A8_N

Lims ID: 320-36683-B-9-F MSD

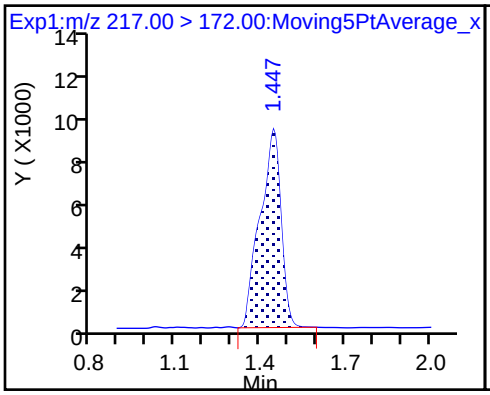
Client ID: SB012-SPLP(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 8 Worklist Smp#: 9

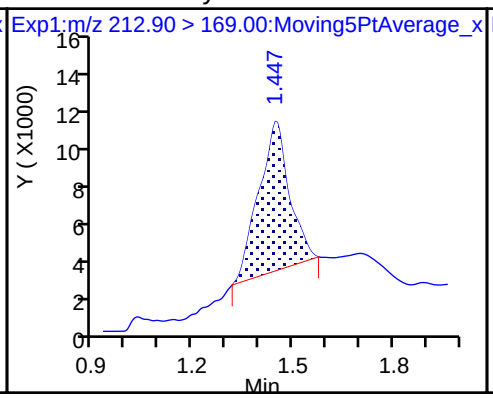
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

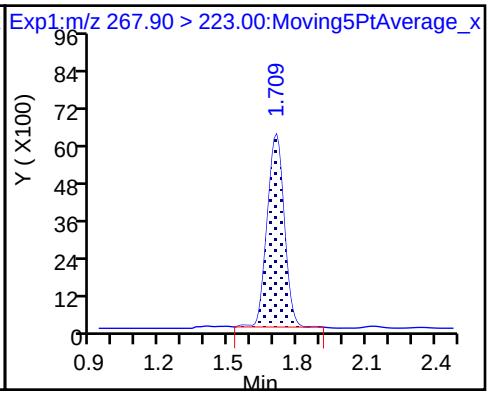
D 1 13C4 PFBA



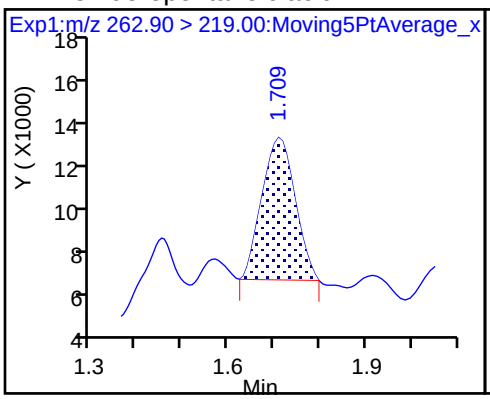
2 Perfluorobutyric acid



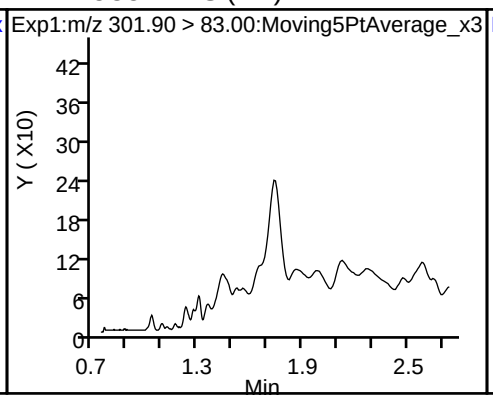
D 3 13C5-PFPeA



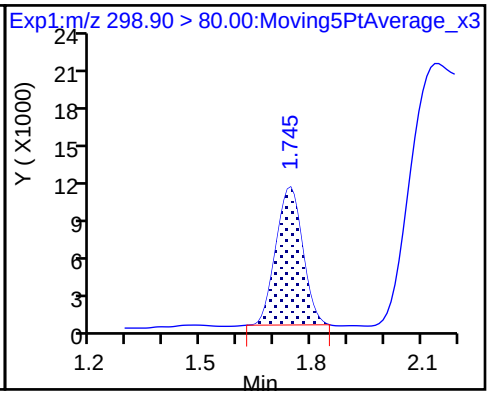
4 Perfluoropentanoic acid



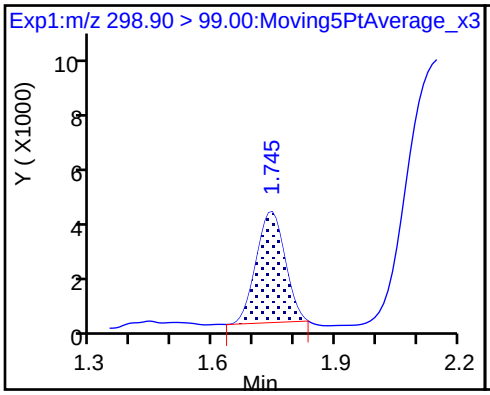
D 47 13C3-PFBS (ND)



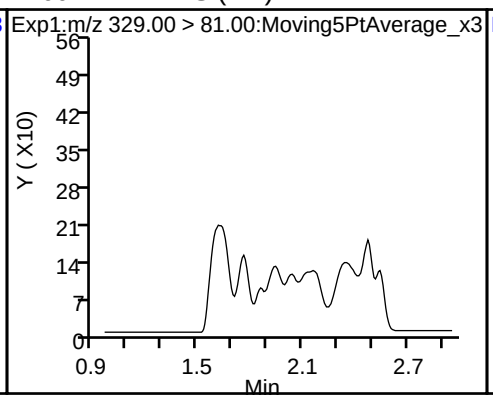
5 Perfluorobutanesulfonic acid



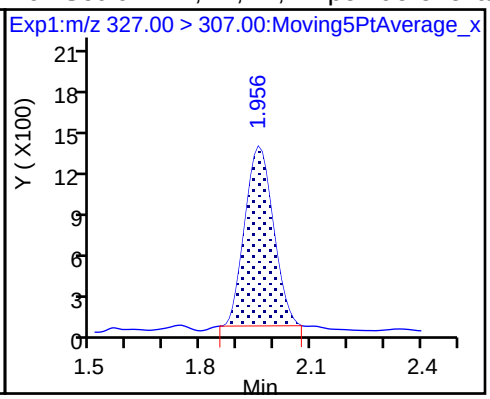
5 Perfluorobutanesulfonic acid



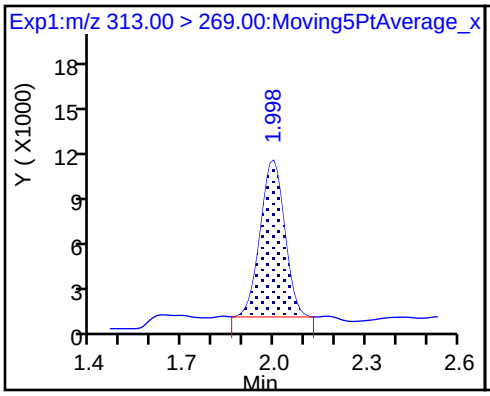
D 60 M2-4:2FTS (ND)



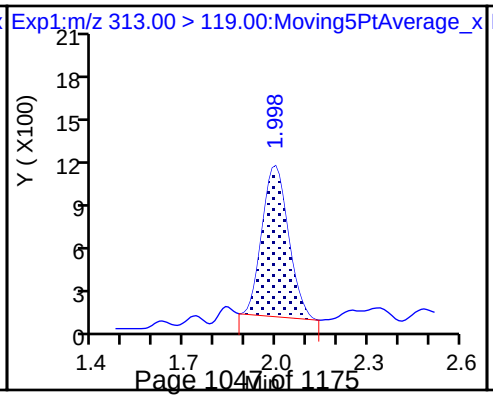
61 Sodium 1H,1H,2H,2H-perfluorohexane



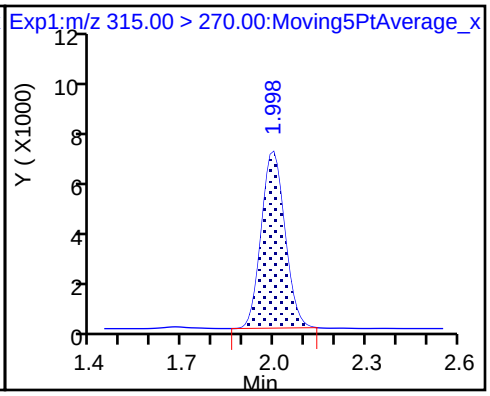
6 Perfluorohexanoic acid



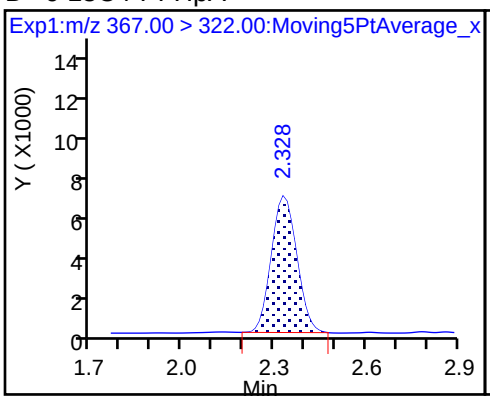
6 Perfluorohexanoic acid



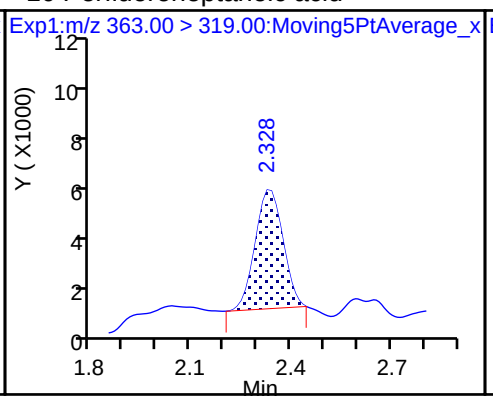
D 7 13C2 PFHxA



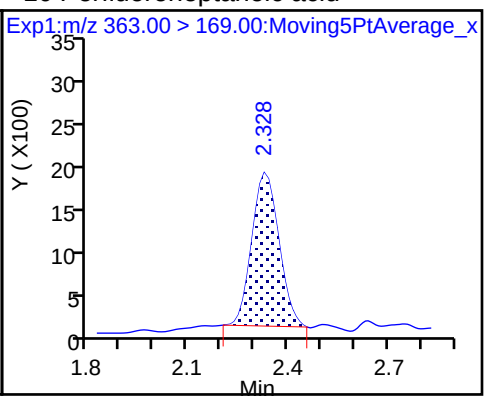
D 9 13C4-PFHpA



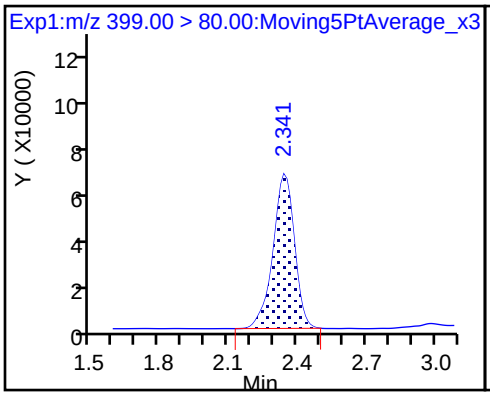
10 Perfluoroheptanoic acid



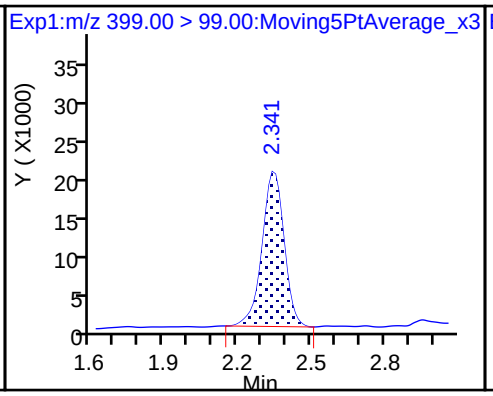
10 Perfluoroheptanoic acid



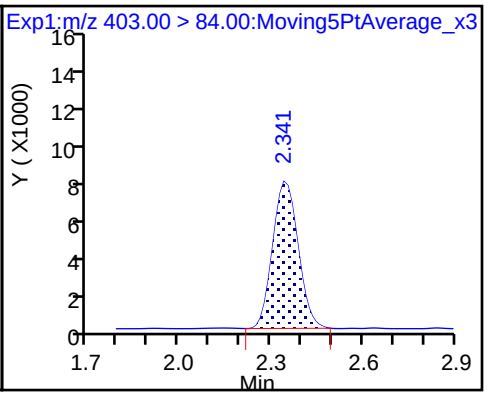
8 Perfluorohexanesulfonic acid



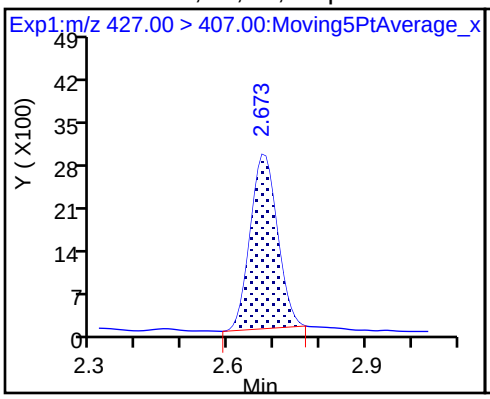
8 Perfluorohexanesulfonic acid



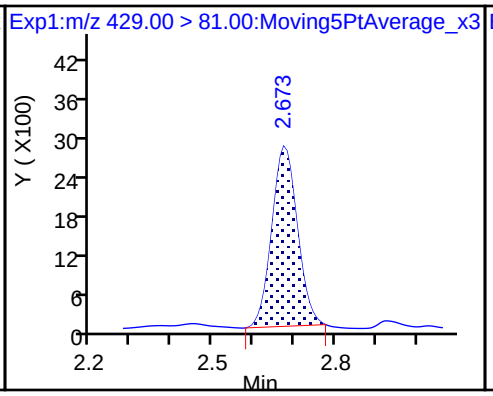
D 11 18O2 PFHxS



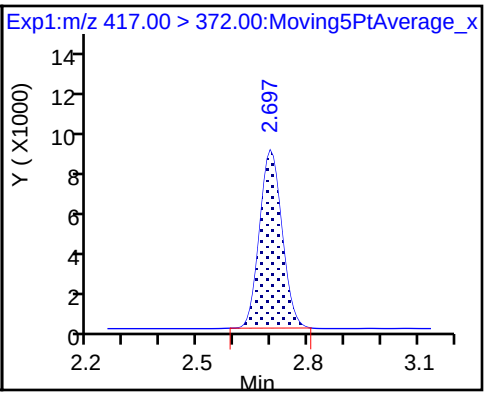
13 Sodium 1H,1H,2H,2H-perfluorooctane



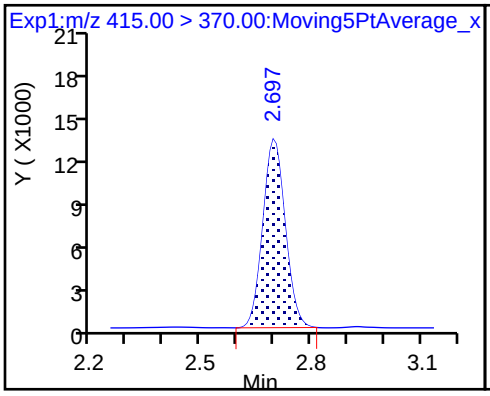
D 12 M2-6:2FTS



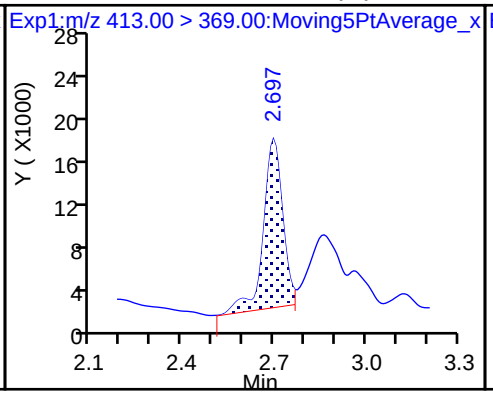
D 14 13C4 PFOA



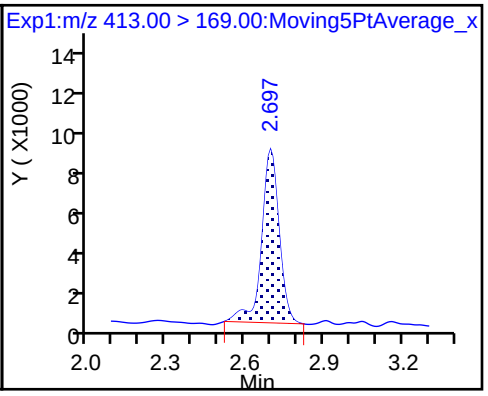
* 62 13C2-PFOA



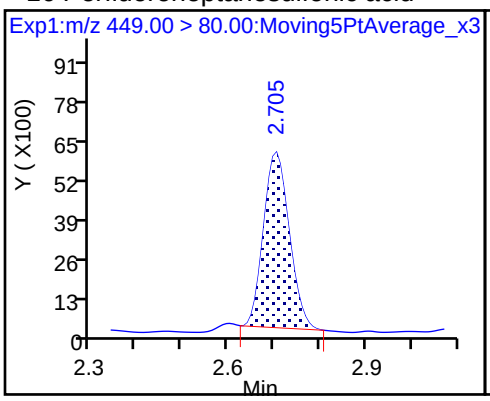
15 Perfluorooctanoic acid (M)



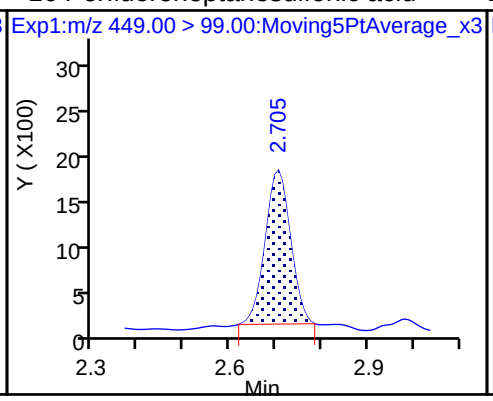
15 Perfluorooctanoic acid



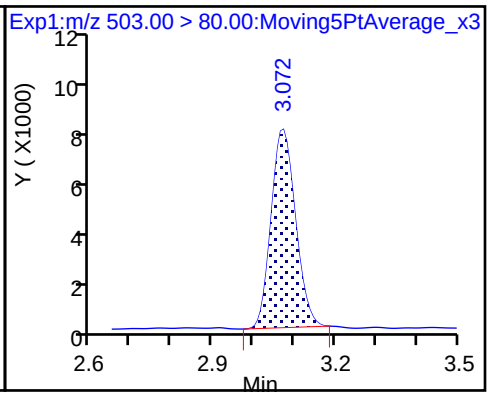
16 Perfluoroheptanesulfonic acid



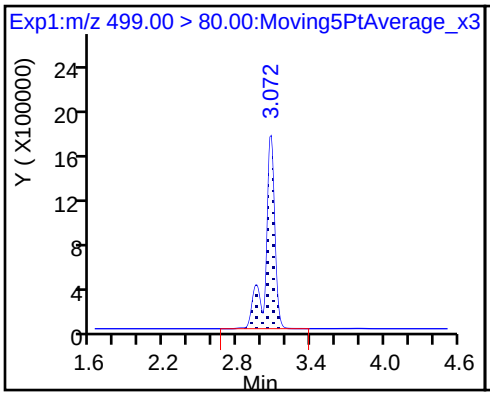
16 Perfluoroheptanesulfonic acid



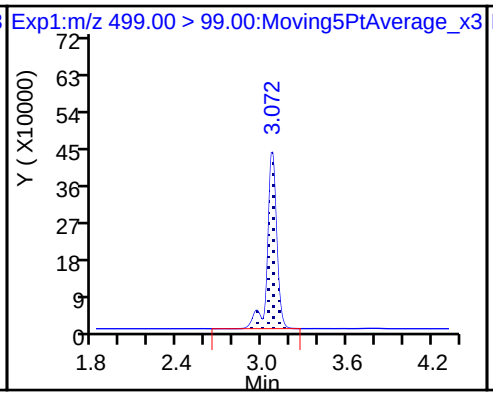
D 18 13C4 PFOS



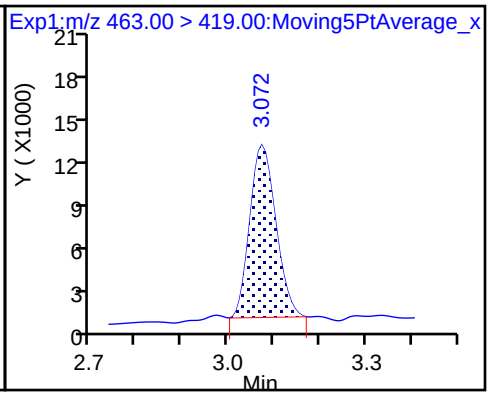
17 Perfluorooctane sulfonic acid



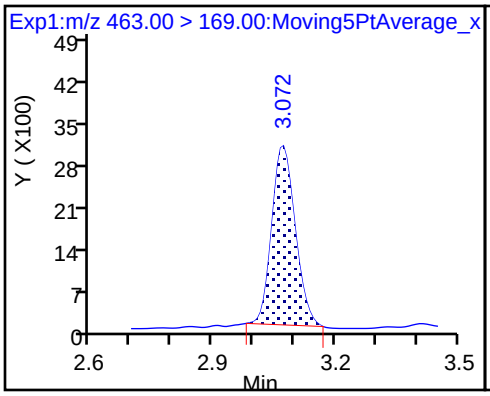
17 Perfluorooctane sulfonic acid



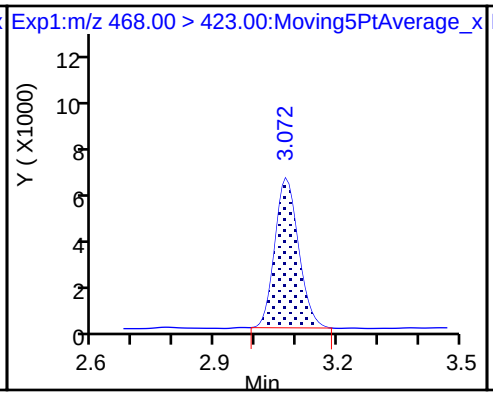
20 Perfluorononanoic acid



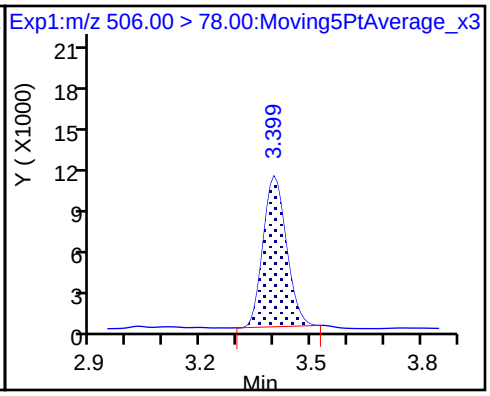
20 Perfluorononanoic acid



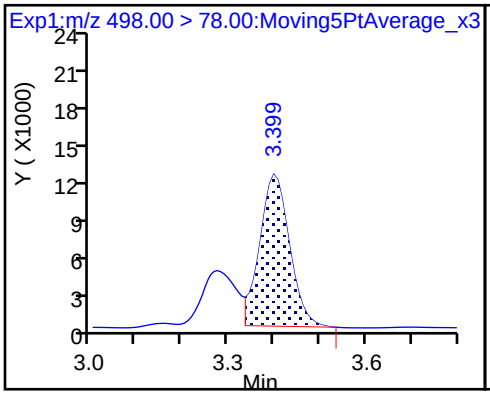
D 19 13C5 PFNA



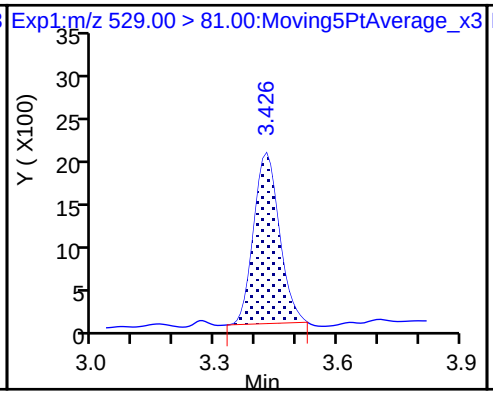
D 21 13C8 FOSA



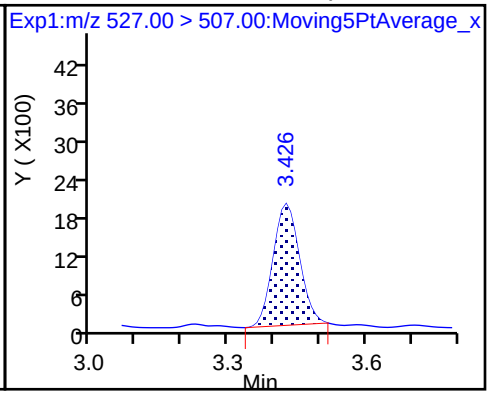
22 Perfluorooctane Sulfonamide



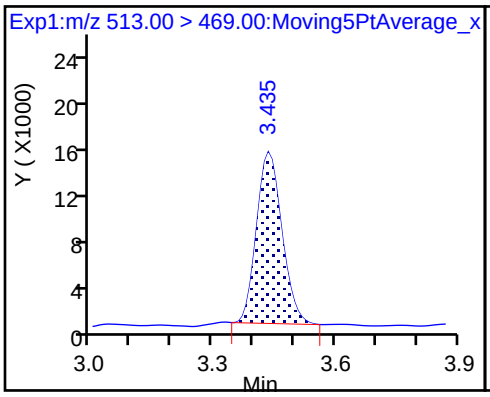
D 26 M2-8:2FTS



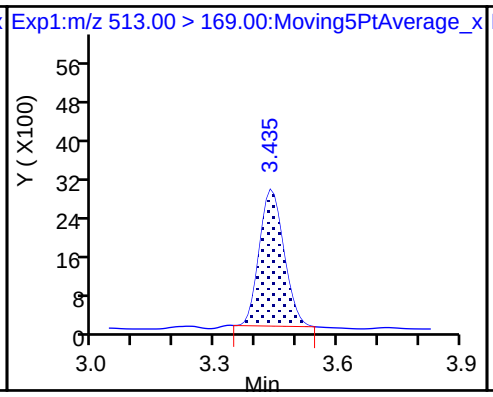
25 Sodium 1H,1H,2H,2H-perfluorodecane



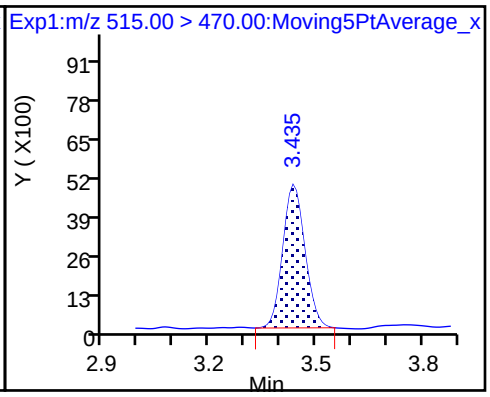
24 Perfluorodecanoic acid



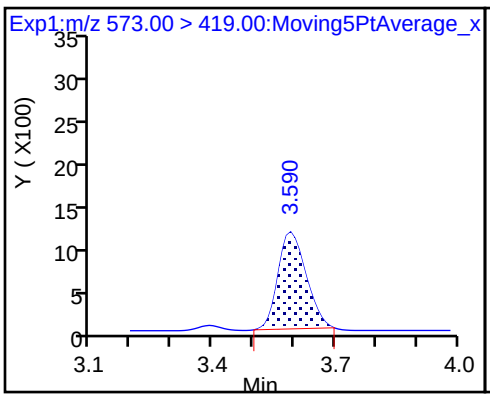
24 Perfluorodecanoic acid



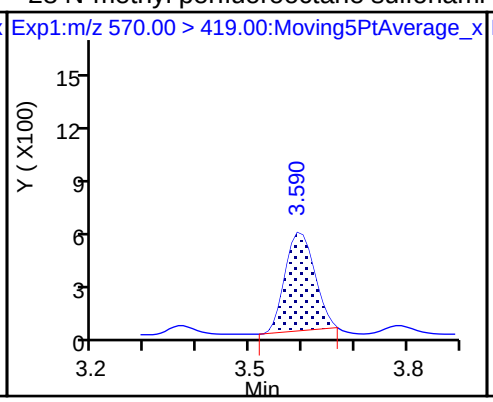
D 23 13C2 PFDA



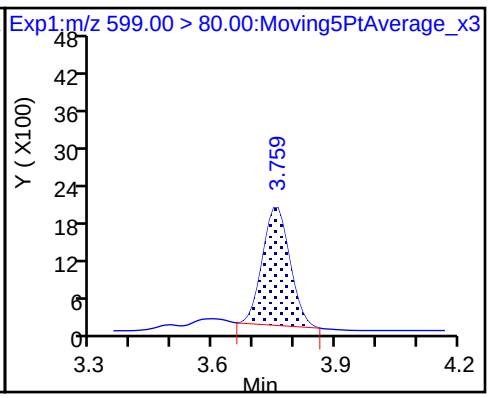
D 27 d3-NMeFOSAA



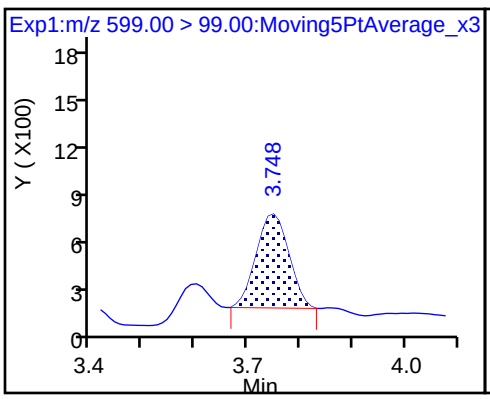
28 N-methyl perfluorooctane sulfonami



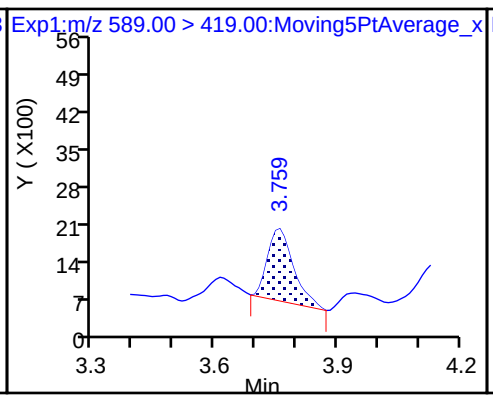
29 Perfluorodecane Sulfonic acid



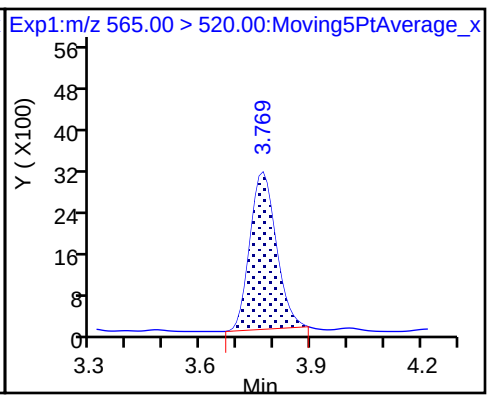
29 Perfluorodecane Sulfonic acid



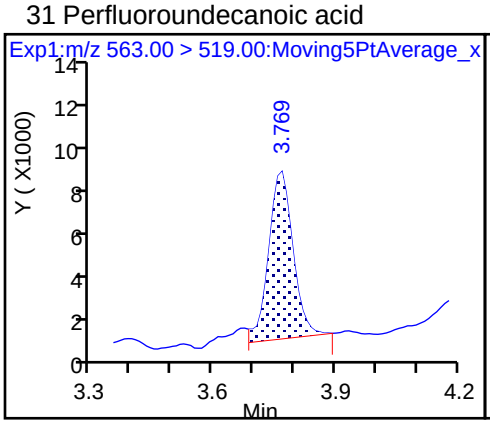
D 32 d5-NEtFOSAA



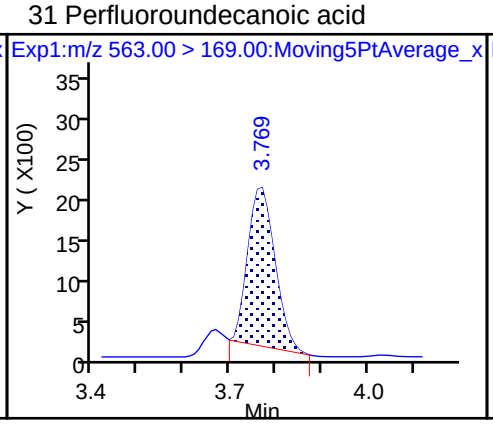
D 30 13C2 PFUnA



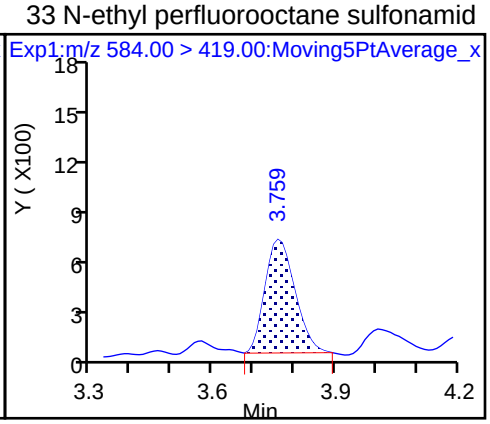
31 Perfluoroundecanoic acid



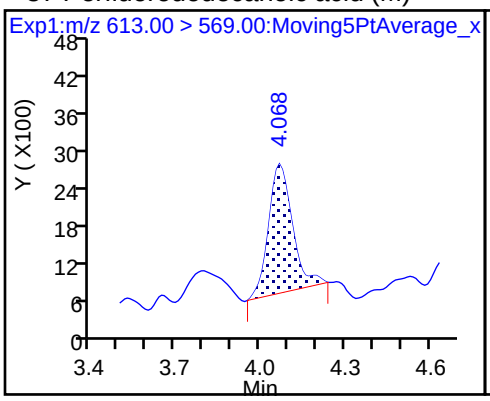
31 Perfluoroundecanoic acid



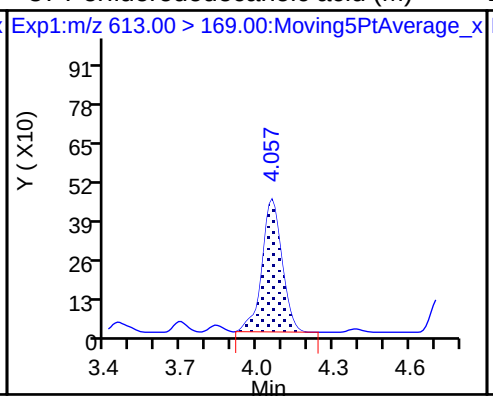
33 N-ethyl perfluorooctane sulfonamid



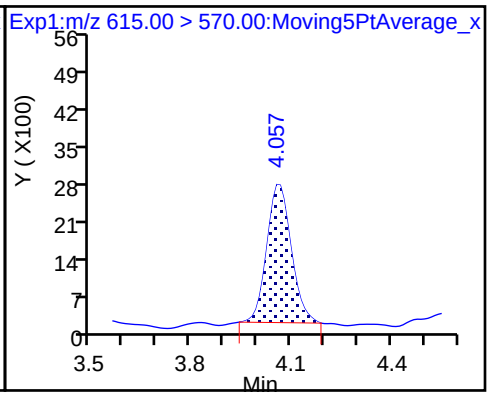
37 Perfluorododecanoic acid (M)



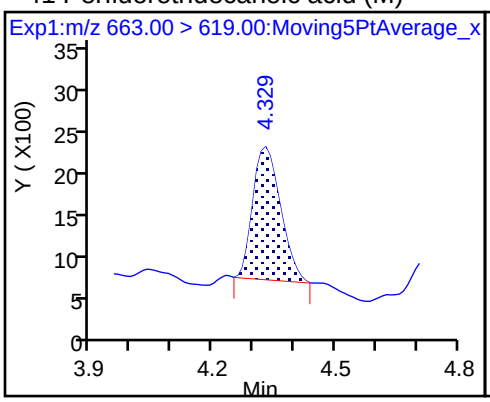
37 Perfluorododecanoic acid (M)



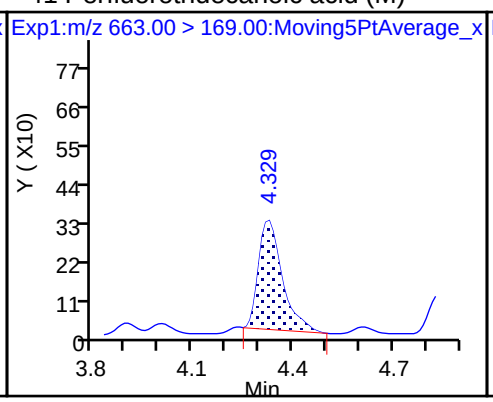
D 36 13C2 PFDoA



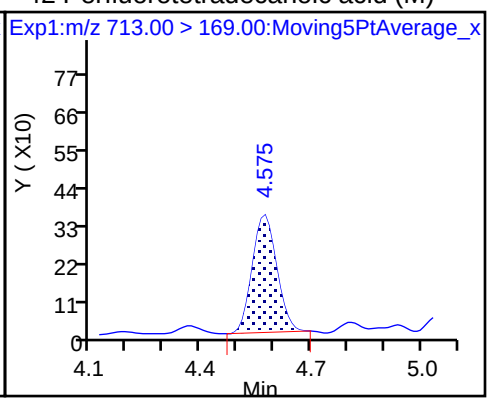
41 Perfluorotridecanoic acid (M)



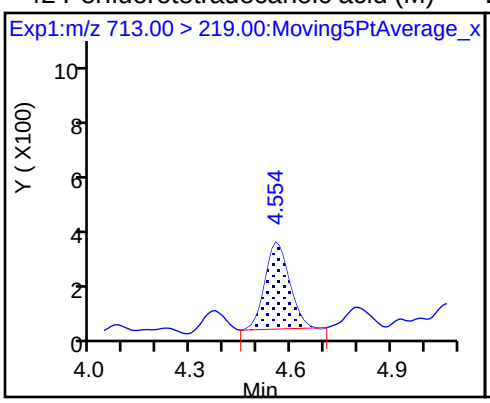
41 Perfluorotridecanoic acid (M)



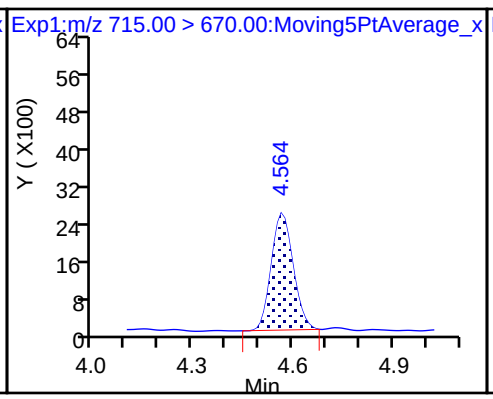
42 Perfluorotetradecanoic acid (M)



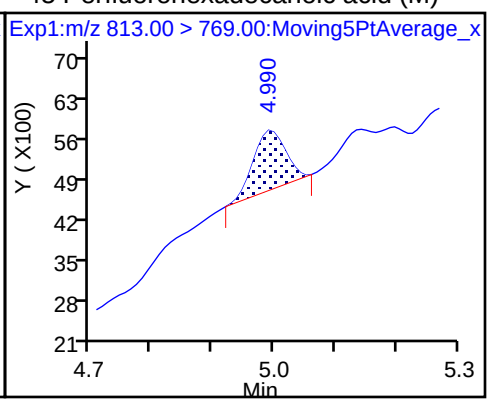
42 Perfluorotetradecanoic acid (M)



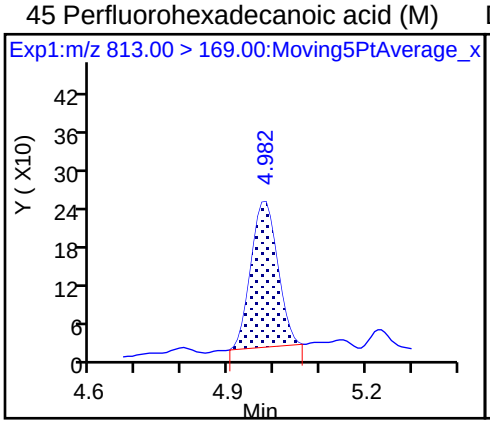
D 43 13C2-PFTeDA



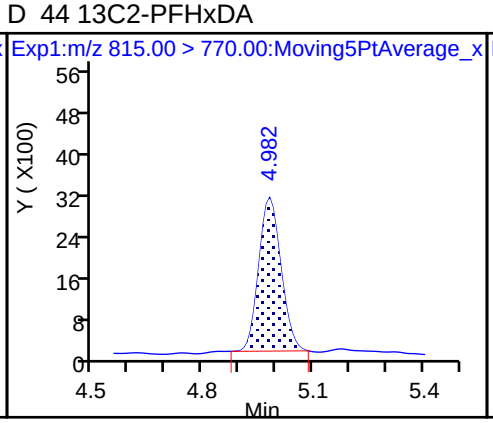
45 Perfluorohexadecanoic acid (M)



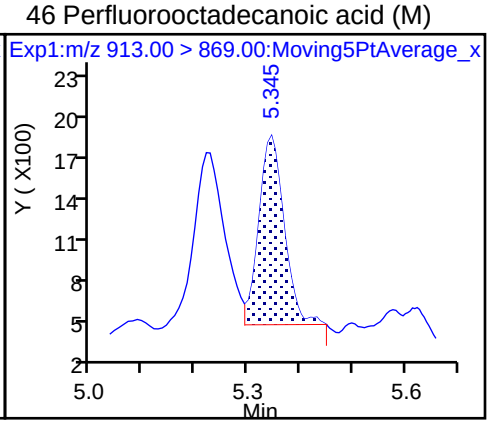
45 Perfluorohexadecanoic acid (M)



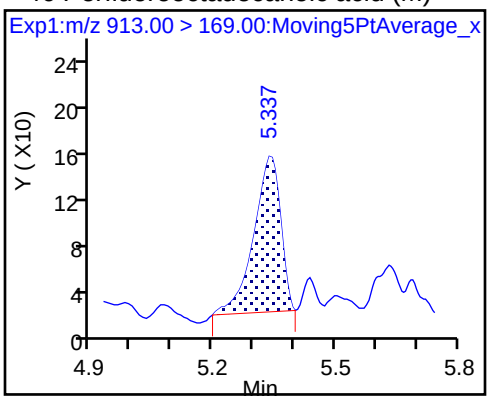
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (M)



46 Perfluorooctadecanoic acid (M)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MSD | Lab Sample ID: 320-36683-10 MSD

Matrix: Solid | Lab File ID: 2018.03.20LLA_039.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 01:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00217		0.00020	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00214		0.00020	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00236		0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00220		0.00020	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00286		0.00020	0.000088
375-95-1	Perfluorononanoic acid (PFNA)	0.0138		0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00238		0.00020	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00185		0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00210		0.00020	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00254		0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00199		0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00206		0.00020	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00596		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00584		0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00154		0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00222		0.00020	0.000084
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00212		0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00204		0.0020	0.00038
27619-97-2	6:2FTS	0.00422		0.0020	0.00015
39108-34-4	8:2FTS	0.00230		0.0020	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MSD | Lab Sample ID: 320-36683-10 MSD

Matrix: Solid | Lab File ID: 2018.03.20LLA_039.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 01:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	77		25-150
STL01893	13C5 PFPeA	77		25-150
STL00993	13C2 PFHxA	79		25-150
STL01892	13C4-PFHpA	82		25-150
STL00990	13C4 PFOA	82		25-150
STL00995	13C5 PFNA	53		25-150
STL00996	13C2 PFDA	64		25-150
STL00997	13C2 PFUnA	48		25-150
STL00998	13C2 PFDoA	41		25-150
STL02116	13C2-PFTeDA	55		25-150
STL02337	13C3-PFBS	78		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	61		25-150
STL01056	13C8 FOSA	45		25-150
STL02118	d3-NMeFOSAA	33		25-150
STL02117	d5-NEtFOSAA	33		25-150
STL02279	M2-6:2FTS	75		25-150
STL02280	M2-8:2FTS	65		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_039.d
Lims ID: 320-36683-A-10-C MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 21-Mar-2018 01:15:09 ALS Bottle#: 29 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-10-c msd
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:40:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.538	4651590	1.93		77.1	71542	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.446	0.001	1.000	1832965	1.06		106	598	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.632	3281010	1.93		77.1	69521	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.005	1604665	1.05		105	417	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.646	75892	1.81		77.7	409	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.744	0.0	1.005	2544776	1.01		114	864	
298.90 > 99.00	1.745	1.744	0.0	1.005	1047383		2.43(1.25-3.74)		851	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.955	0.001	1.000	485993	0.9263		99.2	20903	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.739	3747814	1.97		79.0	90037	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	1741176	1.15		115	2597	
313.00 > 119.00	1.987	1.997	-0.010	1.000	161098		10.81(5.03-15.10)		3006	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.861	3783831	2.05		82.0	88503	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	1687322	1.08		108	2108	
363.00 > 169.00	2.328	2.328	0.0	1.006	664755		2.54(1.13-3.40)		7683	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	4767789	1.94		81.8	87527	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	0.994	6547671	2.91		320	10225	
399.00 > 99.00	2.341	2.341	0.0	1.000	2027227		3.23(1.50-4.49)		5138	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.988	846289	1.79		75.3	21421	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	1224490	2.06		218	55637	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.681	0.008	1.000	3646258	2.04		81.8	83820	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.689	2.695	-0.006	1.000	2274532	1.40		140	729	M
413.00 > 169.00	2.689	2.695	-0.006	1.000	1248927		1.82(0.84-2.52)		4265	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.695	-0.006		4726713	2.50			98807	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	3944994	2.85		300	1547	
449.00 > 99.00	2.689	2.703	-0.014	1.000	1033068		3.82(1.94-5.82)		2790	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.137	2515726	1.46		61.1	24413	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.137	1896829	1.33		53.2	40090	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.000	98324725	86.3		9298	51777	E
499.00 > 99.00	3.058	3.067	-0.009	1.000	27566930		3.57(2.31-6.93)		83277	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.067	-0.002	1.002	5223942	6.75		675	8072	
463.00 > 169.00	3.058	3.067	-0.009	1.000	1319112		3.96(1.90-5.69)		30323	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.264	2803337	1.12		44.9	37166	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.401	-0.003	1.000	1180730	1.08		108	2666	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.408	0.009	1.271	693881	1.56		65.2	14093	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.274	1909072	1.60		64.1	30837	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.419	-0.002	1.000	408613	1.12		117	13042	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.428	-0.002	1.000	843669	1.16		116	3721	
513.00 > 169.00	3.426	3.428	-0.002	1.000	153177		5.51(2.36-7.09)		1244	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.331	320078	0.8134		32.5	17421	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.594	-0.015	1.000	138106	1.04		104	3006	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	505937	0.7528		78.1	7608	
599.00 > 99.00	3.738	3.741	-0.003	1.000	185343		2.73(1.39-4.16)		4332	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	309488	0.8226		32.9	716	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	1129982	1.21		48.4	46953	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.762	-0.004	1.003	120542	0.99		99.5	3089	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.762	-0.004	1.000	342155	0.9033		90.3	1038	
563.00 > 169.00	3.758	3.762	-0.004	1.000	95641		3.58(2.12-6.36)		11466	
35 MeFOSA										
512.00 > 169.00	3.903	3.875	0.028		89740	NC			2112	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.505	904037	1.02		40.9	6266	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.061	-0.014	1.000	380034	1.03		103	92.5	
613.00 > 169.00	4.047	4.061	-0.014	1.000	97415		3.90(2.13-6.40)		2019	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.089	4.066	0.023		67736	NC			1219	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.320	-0.002	1.000	462158	1.24		124	138	
663.00 > 169.00	4.318	4.320	-0.002	1.000	150724		3.07(1.25-3.76)		2265	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.694	1108401	1.37		54.9	13576	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.556	-0.002	1.000	118920	0.9726		97.3	2272	
713.00 > 219.00	4.543	4.556	-0.013	0.998	88665		1.34(0.71-2.13)		1172	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.846	1053141	0.8915		35.7	4956	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	401224	1.01		101	48.8	
813.00 > 169.00	4.964	4.974	-0.010	1.000	68193		5.88(2.86-8.58)		735	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.331	-0.009	1.000	268618	0.6541		65.4	99.3	
913.00 > 169.00	5.322	5.331	-0.009	1.000	34109		7.88(3.83-11.48)		481	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_039.d

Injection Date: 21-Mar-2018 01:15:09 Instrument ID: A8_N

Lims ID: 320-36683-A-10-C MSD

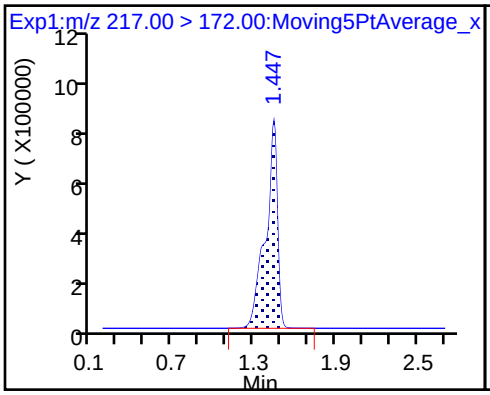
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 18

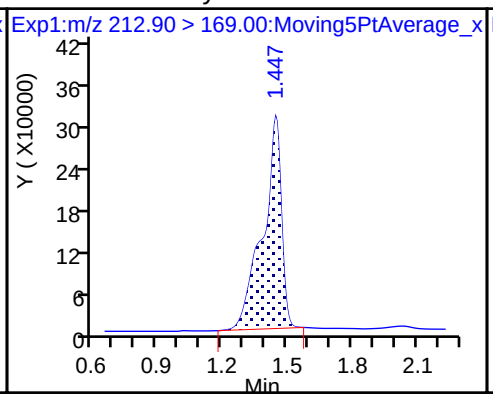
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

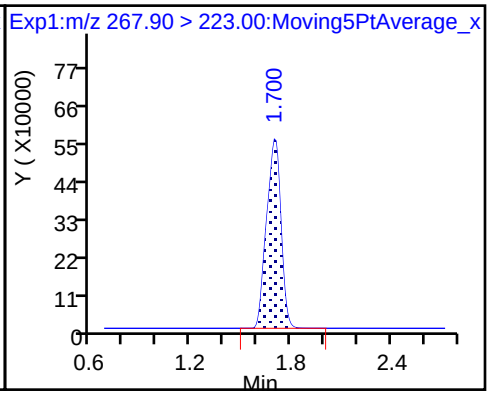
D 1 13C4 PFBA



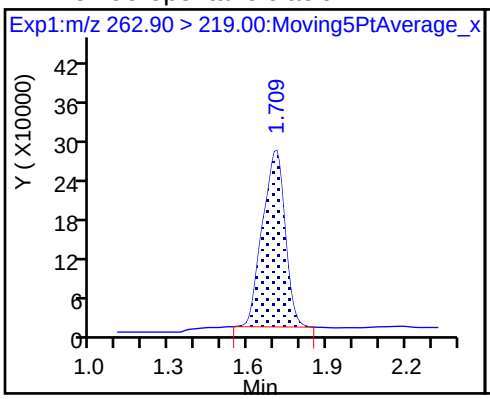
2 Perfluorobutyric acid



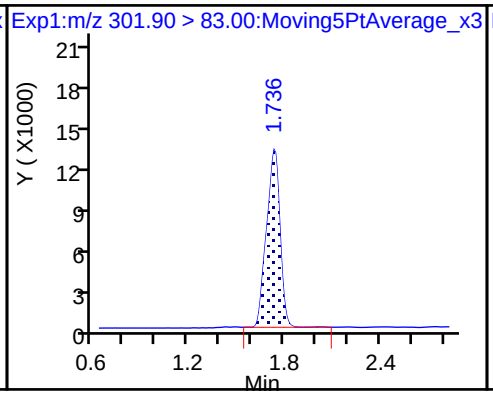
D 3 13C5-PFPeA



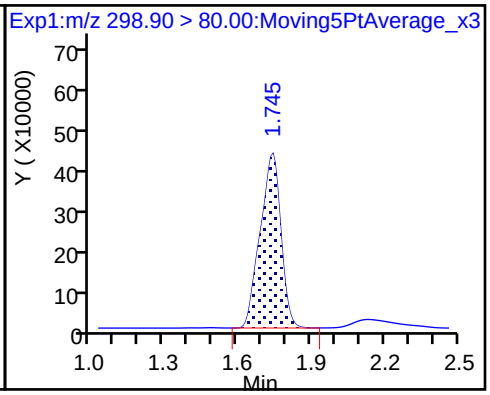
4 Perfluoropentanoic acid



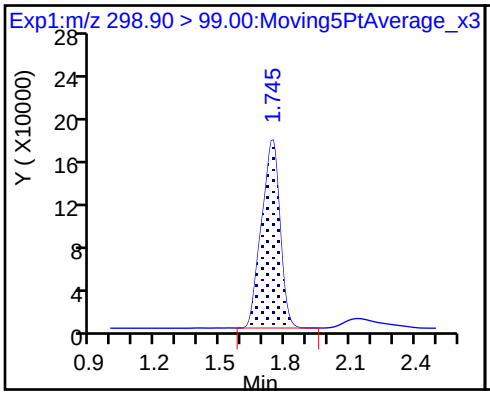
D 47 13C3-PFBS



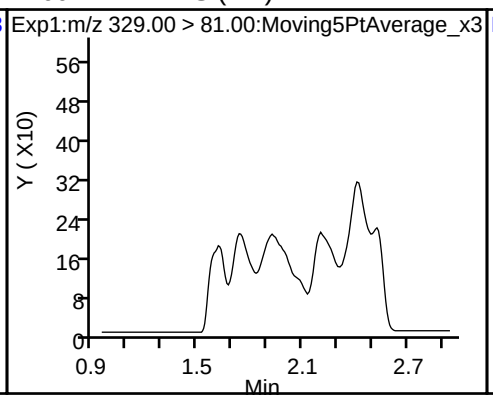
5 Perfluorobutanesulfonic acid



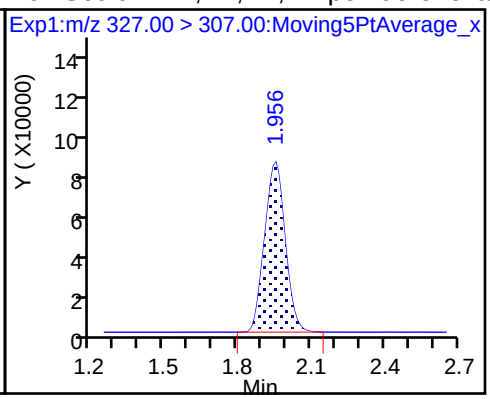
5 Perfluorobutanesulfonic acid



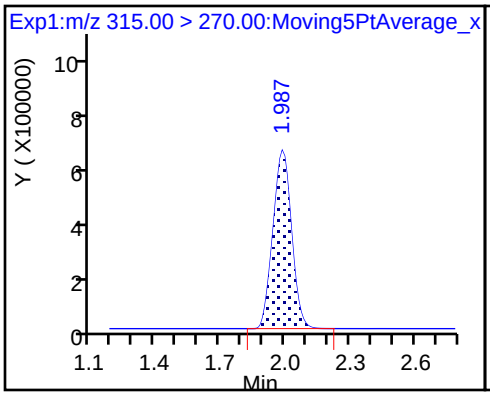
D 60 M2-4:2FTS (ND)



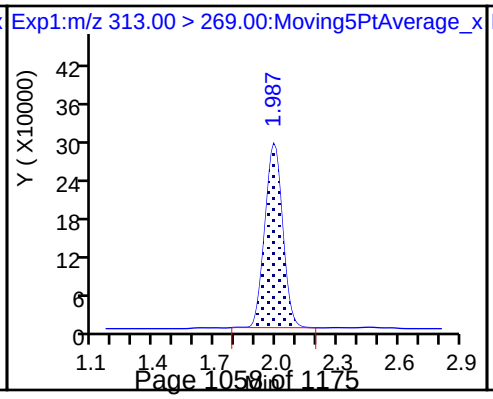
61 Sodium 1H,1H,2H,2H-perfluorohexane



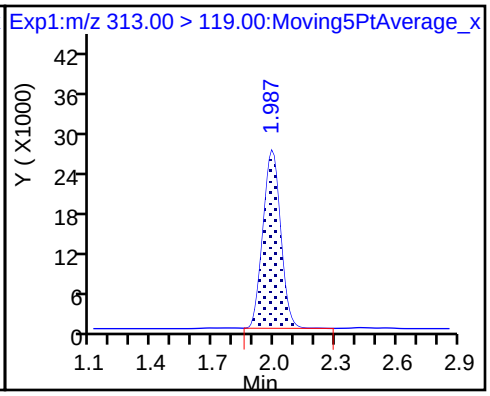
D 7 13C2 PFHxA



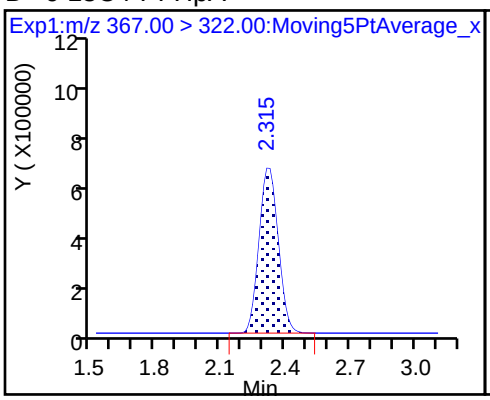
6 Perfluorohexanoic acid



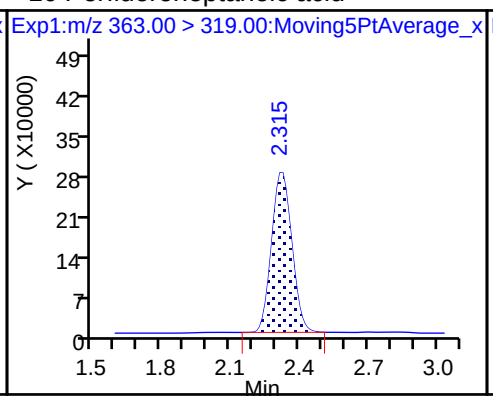
6 Perfluorohexanoic acid



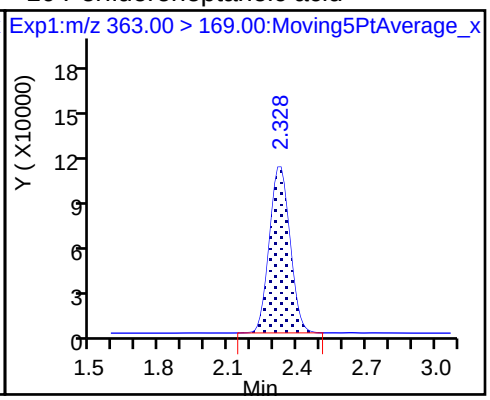
D 9 13C4-PFHpA



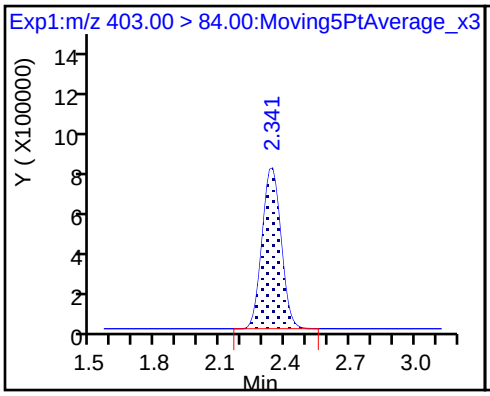
10 Perfluoroheptanoic acid



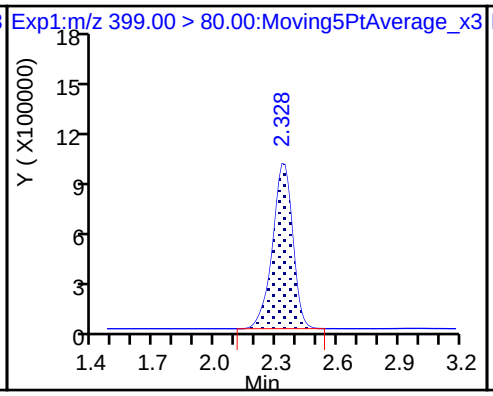
10 Perfluoroheptanoic acid



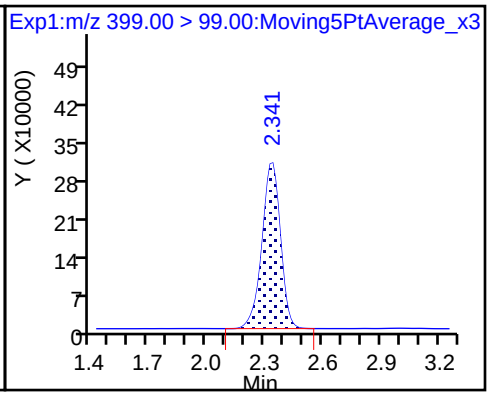
D 11 18O2 PFHxS



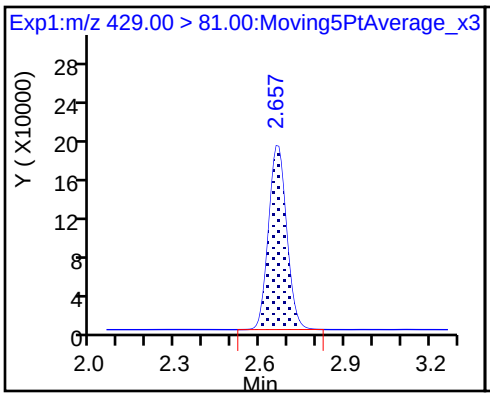
8 Perfluorohexanesulfonic acid



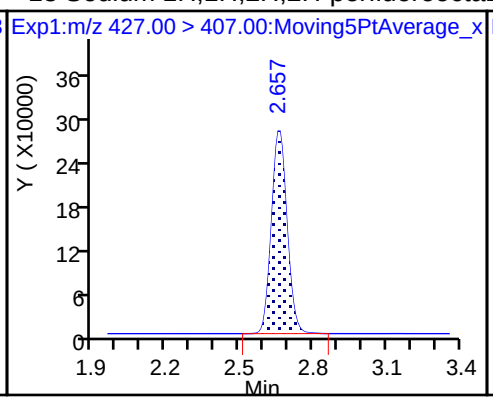
8 Perfluorohexanesulfonic acid



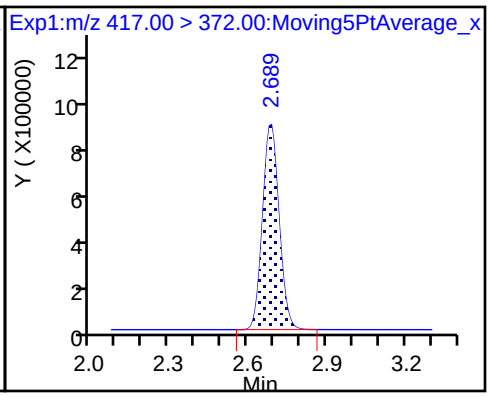
D 12 M2-6:2FTS



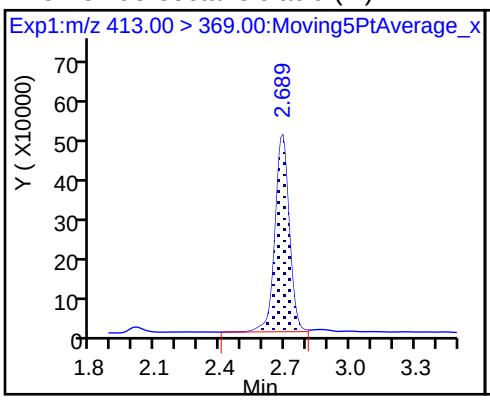
13 Sodium 1H,1H,2H,2H-perfluorooctane



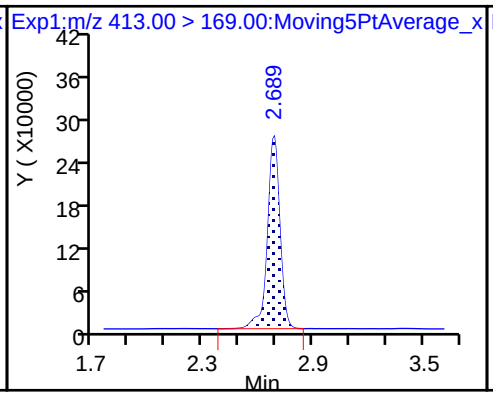
D 14 13C4 PFOA



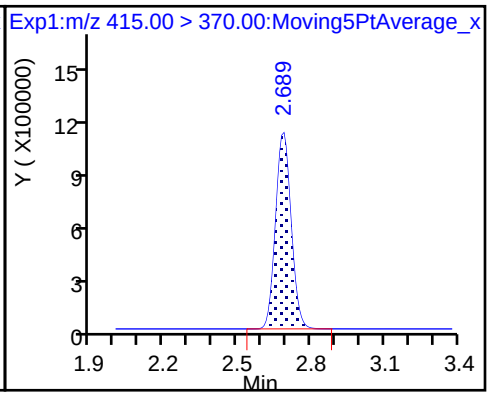
15 Perfluorooctanoic acid (M)



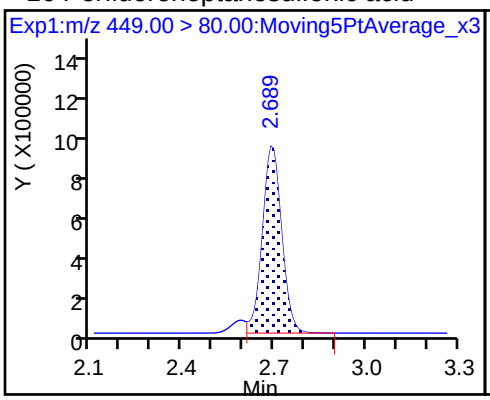
15 Perfluorooctanoic acid



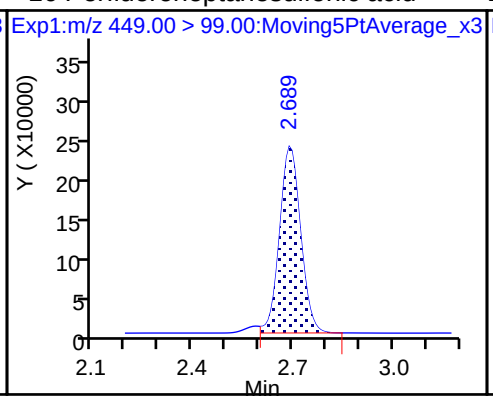
* 62 13C2-PFOA



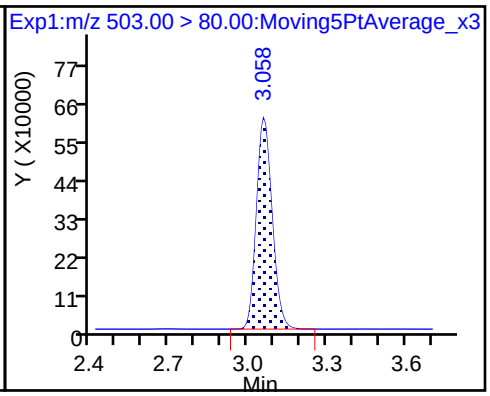
16 Perfluoroheptanesulfonic acid



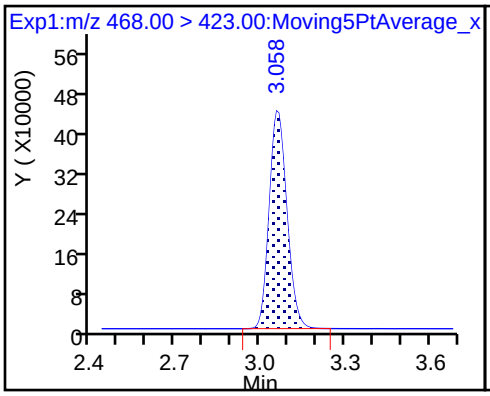
16 Perfluoroheptanesulfonic acid



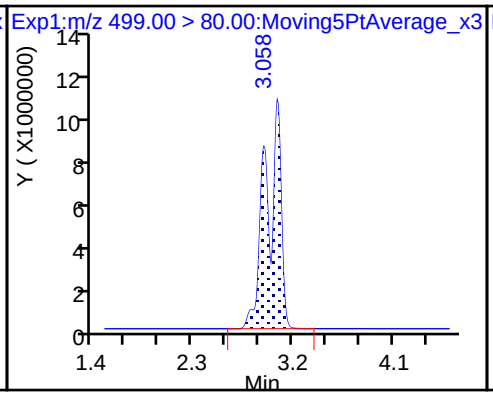
D 18 13C4 PFOS



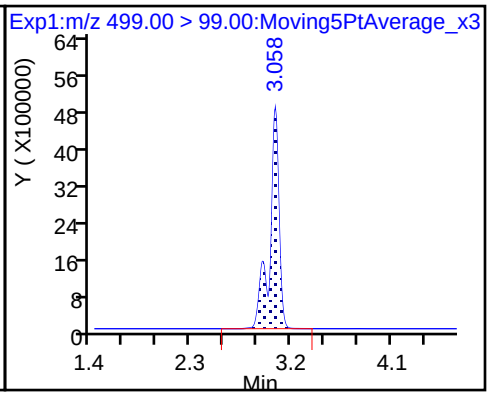
D 19 13C5 PFNA



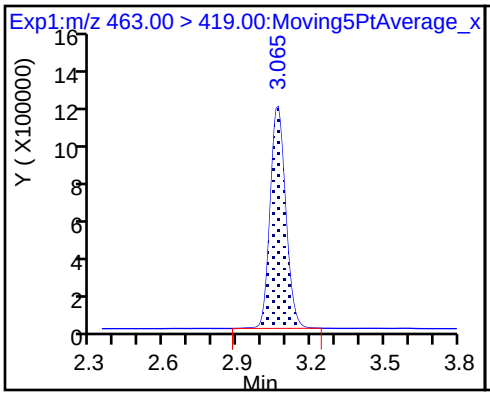
17 Perfluorooctane sulfonic acid



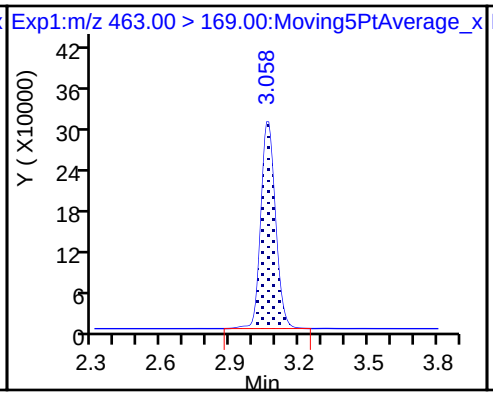
17 Perfluorooctane sulfonic acid



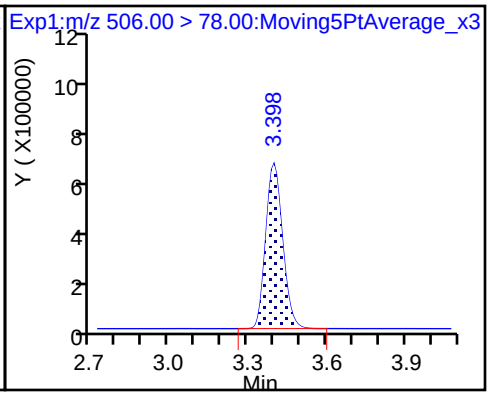
20 Perfluorononanoic acid



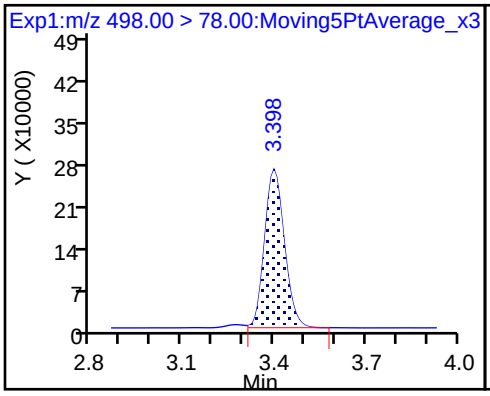
20 Perfluorononanoic acid



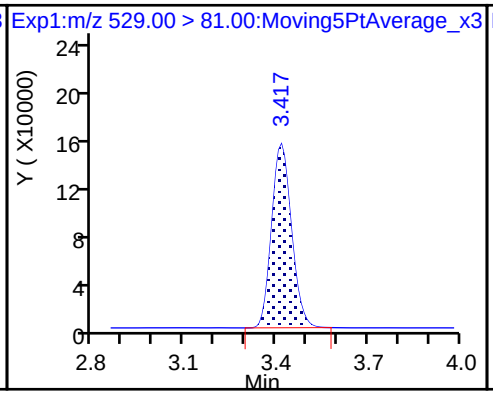
D 21 13C8 FOSA



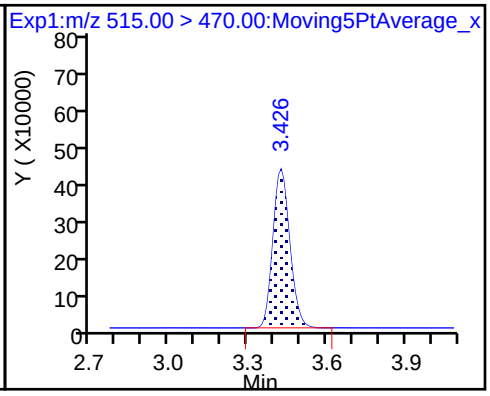
22 Perfluorooctane Sulfonamide



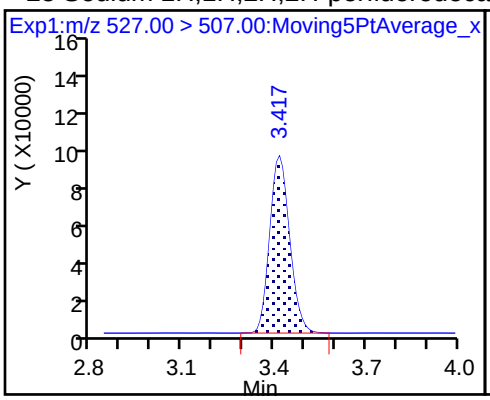
D 26 M2-8:2FTS



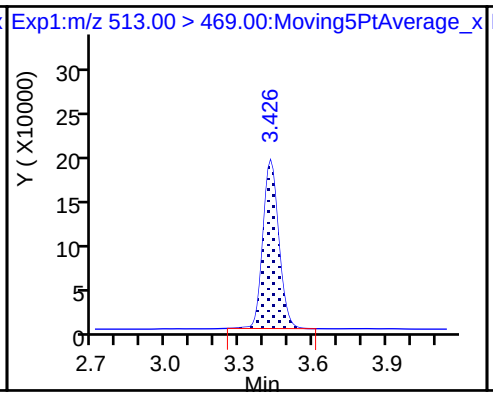
D 23 13C2 PFDA



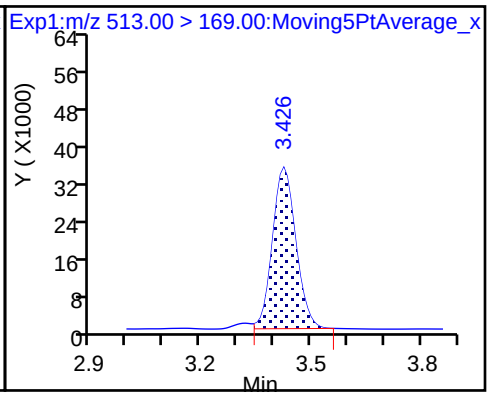
25 Sodium 1H,1H,2H,2H-perfluorodecan



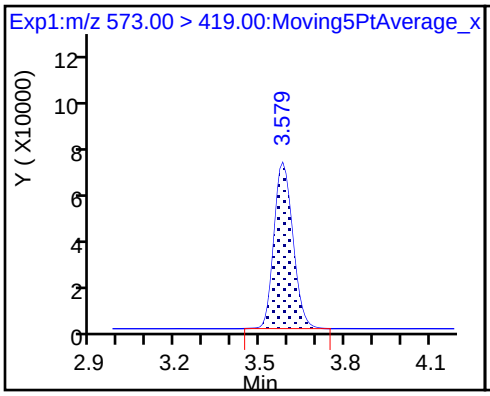
24 Perfluorodecanoic acid



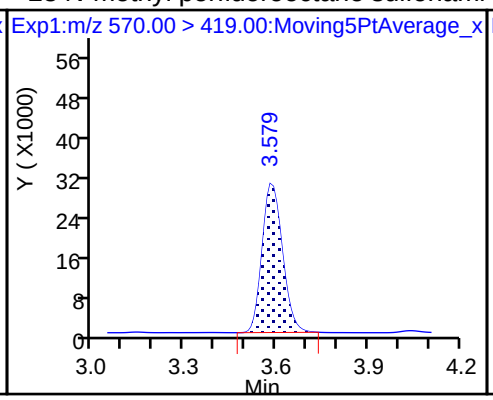
24 Perfluorodecanoic acid



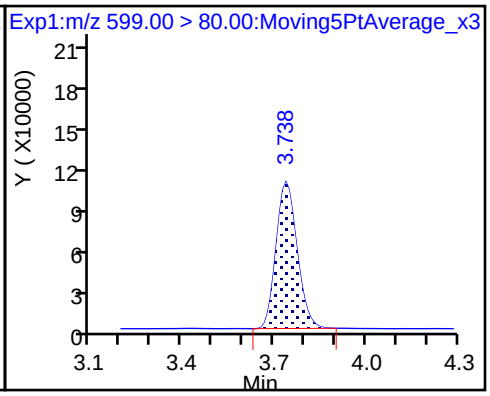
D 27 d3-NMeFOSAA



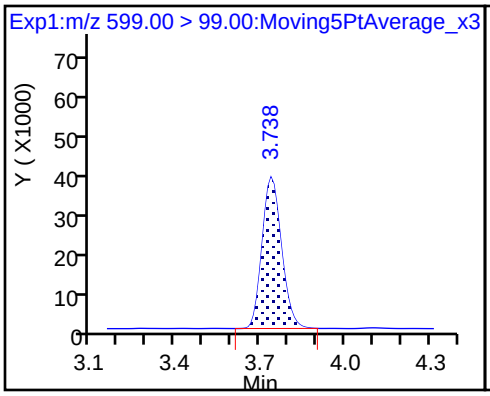
28 N-methyl perfluorooctane sulfonami



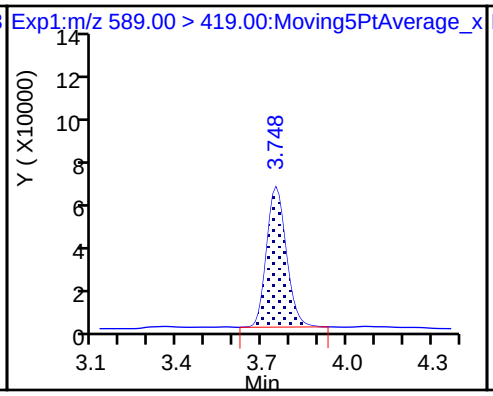
29 Perfluorodecane Sulfonic acid



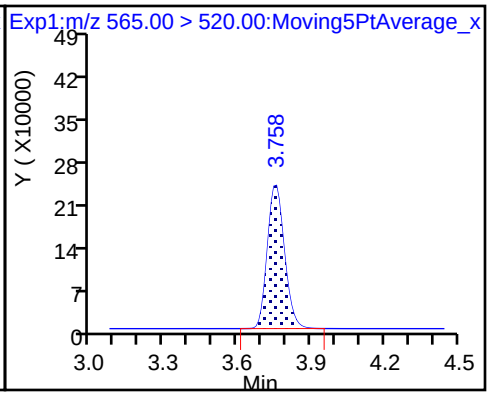
29 Perfluorodecane Sulfonic acid



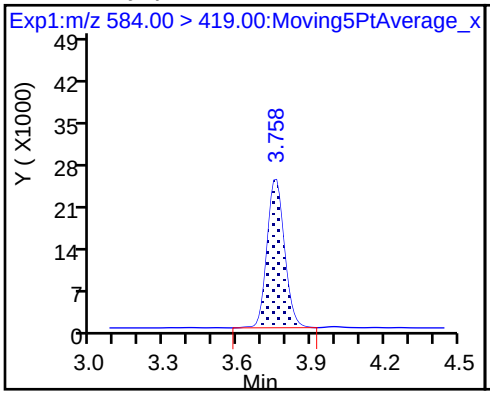
D 32 d5-NEtFOSAA



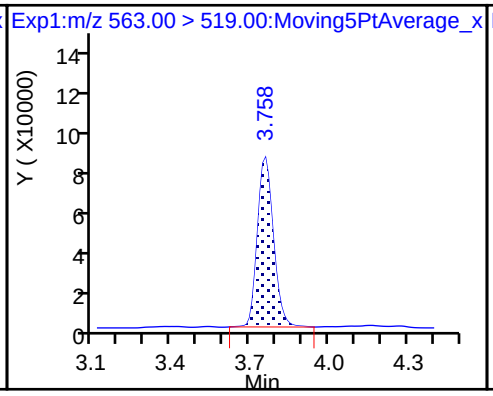
D 30 13C2 PFUnA



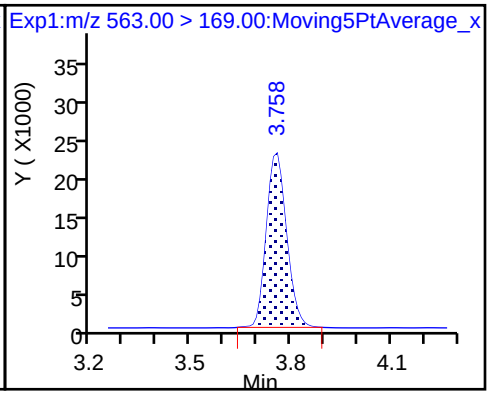
33 N-ethyl perfluorooctane sulfonamid



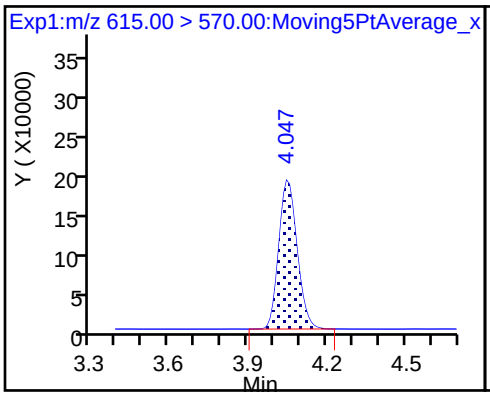
31 Perfluoroundecanoic acid



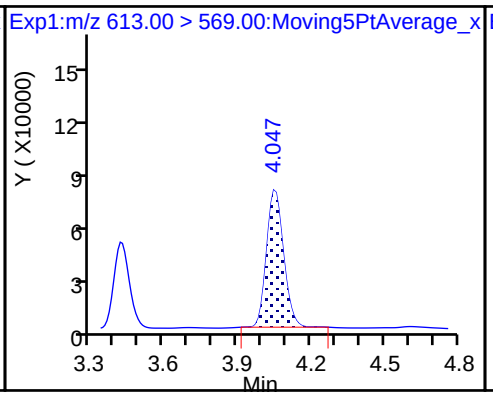
31 Perfluoroundecanoic acid



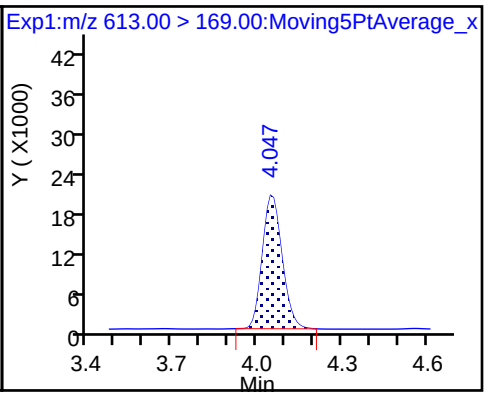
D 36 13C2 PFDoA



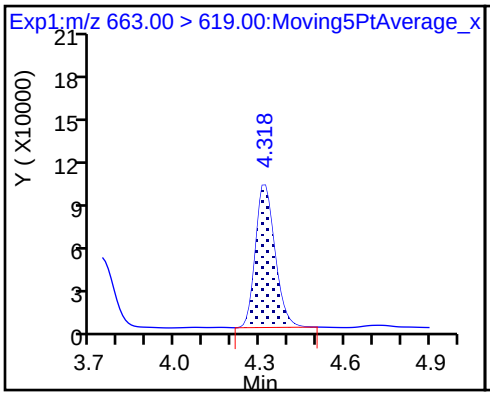
37 Perfluorododecanoic acid



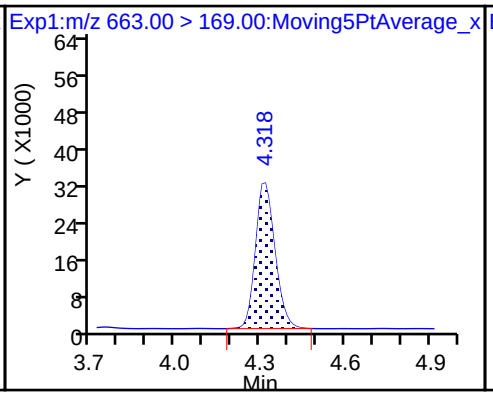
37 Perfluorododecanoic acid



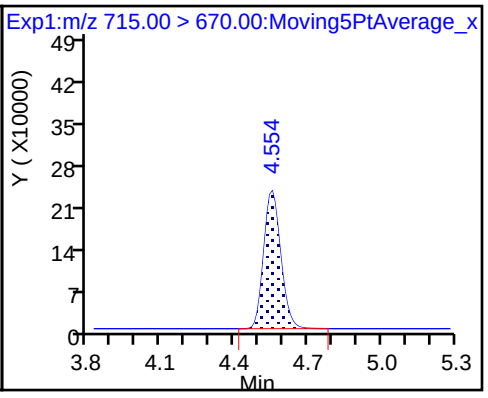
41 Perfluorotridecanoic acid



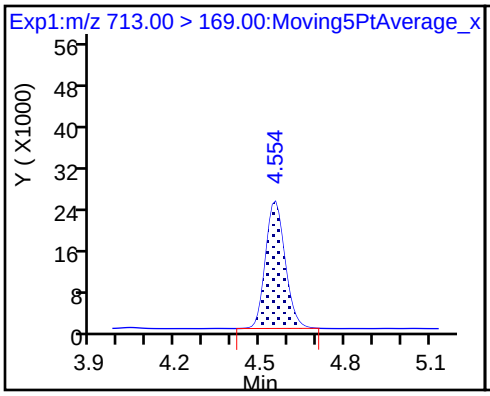
41 Perfluorotridecanoic acid



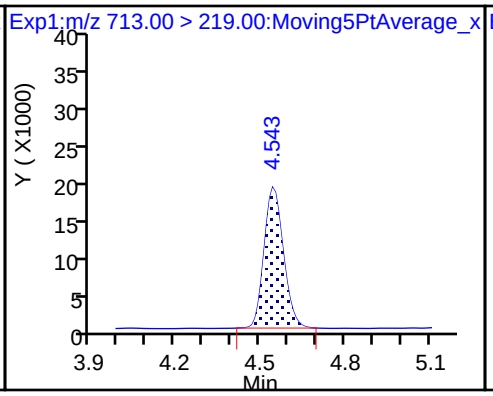
D 43 13C2-PFTeDA



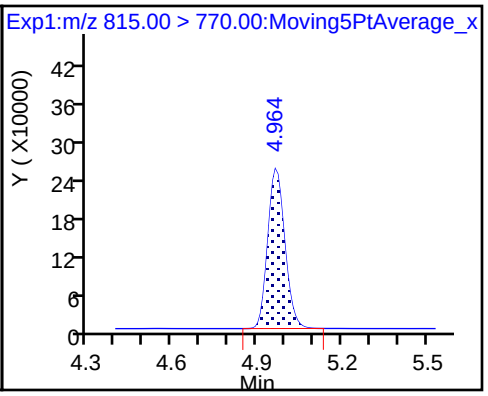
42 Perfluorotetradecanoic acid



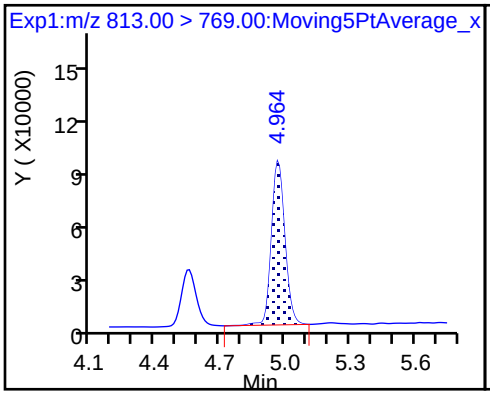
42 Perfluorotetradecanoic acid



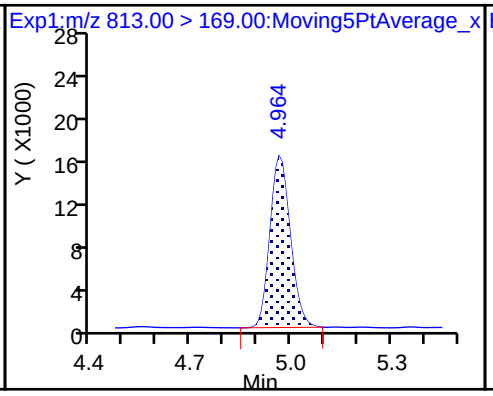
D 44 13C2-PFHxDA



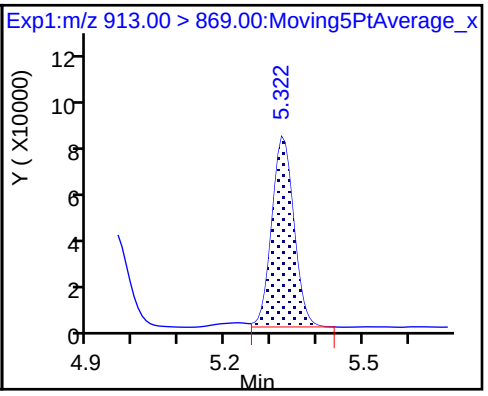
45 Perfluorohexadecanoic acid



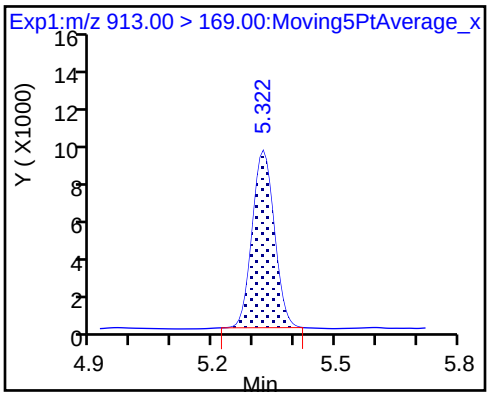
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

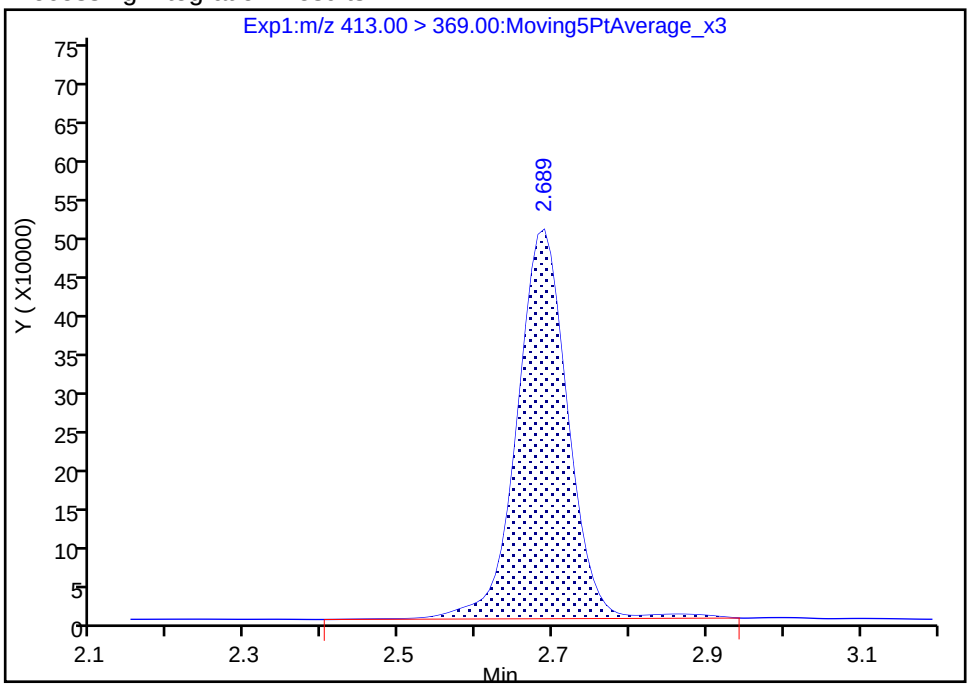
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_039.d				
Injection Date:	21-Mar-2018 01:15:09	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-C MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	29	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

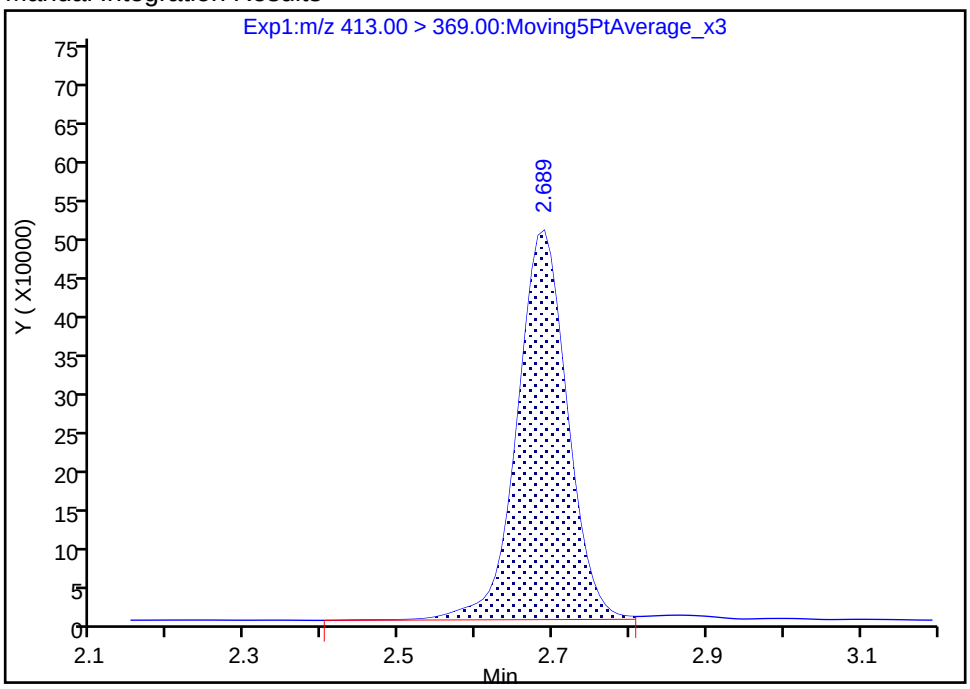
Processing Integration Results

RT: 2.69
Area: 2303571
Amount: 1.414766
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 2274532
Amount: 1.396931
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:39:54

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MSD RE Lab Sample ID: 320-36683-10 MSD RE

Matrix: Solid Lab File ID: 2018.03.28LLFF_023.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) Date Analyzed: 03/29/2018 02:15

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00220*		*0.00020*	*0.000039*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	58		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d
Lims ID: 320-36683-A-10-F MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 29-Mar-2018 02:15:31 ALS Bottle#: 26 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-F MSD
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.438	1.441	-0.003	0.533	5343461	1.94		77.7	181725	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.438	1.446	-0.008	1.000	1936612	0.9616		96.2	466	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.709	-0.004	0.632	3560312	1.95		78.1	113466	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.705	1.718	-0.013	1.000	1524477	0.9494		94.9	525	M
D 47 13C3-PFBS										
301.90 > 83.00	1.741	1.745	-0.004	0.645	73500	1.77		75.9	535	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.749	1.753	-0.004	1.005	2091972	0.8516		96.3	1053	
298.90 > 99.00	1.741	1.753	-0.012	1.000	862932		2.42(1.25-3.74)		914	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.966	-0.005	1.000	414565	0.8119		86.9	13389	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	2.008	-0.016	1.000	1655593	1.12		112	1597	
313.00 > 119.00	1.992	2.008	-0.016	1.000	148383		11.16(5.03-15.10)		1784	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	2.009	-0.017	0.738	3623267	1.80		71.9	94966	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.336	2.341	-0.005	1.000	1583204	0.9817		98.2	804	
363.00 > 169.00	2.336	2.341	-0.005	1.000	624426		2.54(1.13-3.40)		1027	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.349	2.354	-0.005	1.000	6140964	2.94		323	22890	
399.00 > 99.00	2.349	2.354	-0.005	1.000	1939795		3.17(1.50-4.49)		8038	
D 9 13C4-PFHpA										
367.00 > 322.00	2.336	2.354	-0.018	0.865	3897242	1.96		78.3	103091	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.349	2.368	-0.019	0.870	4437937	1.81		76.4	101460	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.689	-0.021	1.000	1316249	2.42		255	14033	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.697	-0.029	0.988	741880	1.80		75.7	19842	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.699	2.712	-0.013	1.000	2223686	1.30		130	905	
413.00 > 169.00	2.699	2.712	-0.013	1.000	1141975		1.95(0.84-2.52)		3703	
* 62 13C2-PFOA										
415.00 > 370.00	2.699	2.712	-0.013		5429069	2.50			106315	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.707	2.720	-0.013	1.000	3724302	2.79		294	1236	M
449.00 > 99.00	2.699	2.720	-0.021	0.997	957548		3.89(1.94-5.82)		2036	M
D 14 13C4 PFOA										
417.00 > 372.00	2.699	2.721	-0.022	1.000	3778970	1.86		74.3	116312	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.067	3.080	-0.013	1.000	102792210	88.7		9559	48367	E
499.00 > 99.00	3.067	3.080	-0.013	1.000	28993701		3.55(2.31-6.93)		1578094	
20 Perfluorononanoic acid										
463.00 > 419.00	3.074	3.088	-0.014	1.000	7075815	7.14		714	8114	
463.00 > 169.00	3.074	3.088	-0.014	1.000	1780621		3.97(1.90-5.69)		43844	
D 19 13C5 PFNA										
468.00 > 423.00	3.074	3.096	-0.022	1.139	2484525	1.38		55.4	50190	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.096	-0.029	1.136	2486089	1.39		58.2	26479	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.417	-0.015	1.000	1489868	0.9205		92.0	16050	
D 21 13C8 FOSA										
506.00 > 78.00	3.401	3.417	-0.016	1.260	4104632	1.70		68.2	42163	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.428	3.435	-0.007	1.000	496992	1.08		113	10620	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.437	3.444	-0.007	1.000	1088389	1.04		104	5580	
513.00 > 169.00	3.437	3.444	-0.007	1.000	182695		5.96(2.36-7.09)		3797	
D 26 M2-8:2FTS										
529.00 > 81.00	3.428	3.453	-0.025	1.270	861216	1.55		64.5	18463	
D 23 13C2 PFDA										
515.00 > 470.00	3.437	3.462	-0.025	1.273	2641853	1.68		67.2	37913	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.594	3.611	-0.017	1.000	492961	0.9003		90.0	5037	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.594	3.611	-0.017	1.331	1367741	1.65		66.1	31073	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.758	-0.017	1.000	769554	1.09		113	9086	
599.00 > 99.00	3.741	3.758	-0.017	1.000	261826		2.94(1.39-4.16)		5944	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.779	-0.017	1.000	628685	0.8260		82.6	3581	
563.00 > 169.00	3.762	3.779	-0.017	1.000	164706		3.82(2.12-6.36)		7580	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.779	-0.017	1.003	442635	0.9070		90.7	14352	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.779	-0.027	1.390	1305868	1.38		55.4	5038	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.790	-0.028	1.394	2206985	1.57		62.7	89363	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.077	-0.016	1.000	896893	0.9045		90.5	633	
613.00 > 169.00	4.061	4.077	-0.016	1.000	217323		4.13(2.13-6.40)		4327	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.089	-0.028	1.504	2369029	1.48		59.3	22511	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.323	4.339	-0.016	1.000	1012842	0.9710		97.1	552	
663.00 > 169.00	4.323	4.339	-0.016	1.000	313073		3.24(1.25-3.76)		6938	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.559	4.575	-0.016	1.000	277086	0.8728		87.3	6253	
713.00 > 219.00	4.559	4.575	-0.016	1.000	197381		1.40(0.71-2.13)		5665	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.559	4.585	-0.026	1.689	3203002	1.64		65.7	20941	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.985	4.990	-0.005	1.002	1535014	0.8955		89.6	418	
813.00 > 169.00	4.976	4.990	-0.014	1.000	266848		5.75(2.86-8.58)		2415	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	5.008	-0.032	1.843	4590658	1.44		57.4	14659	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.347	5.351	-0.004	1.000	1349521	0.7948		79.5	298	
913.00 > 169.00	5.347	5.351	-0.004	1.000	167302		8.07(3.83-11.48)		2027	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:43 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d

Injection Date: 29-Mar-2018 02:15:31 Instrument ID: A8_N

Lims ID: 320-36683-A-10-F MSD

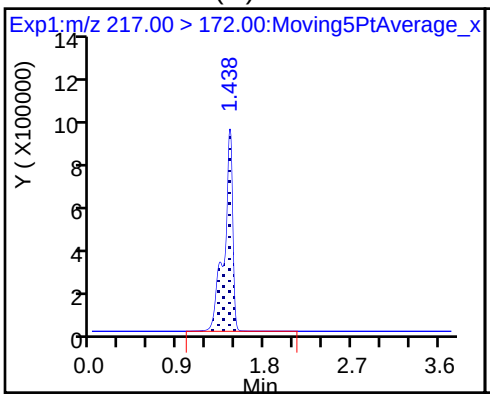
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 20

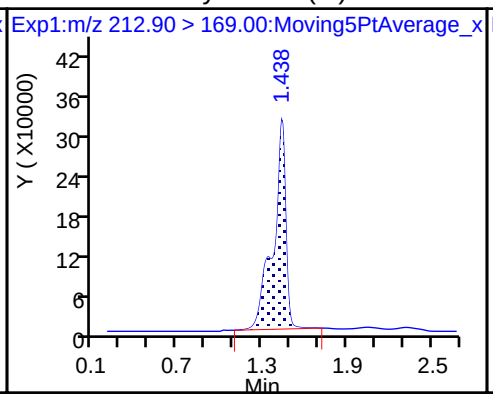
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

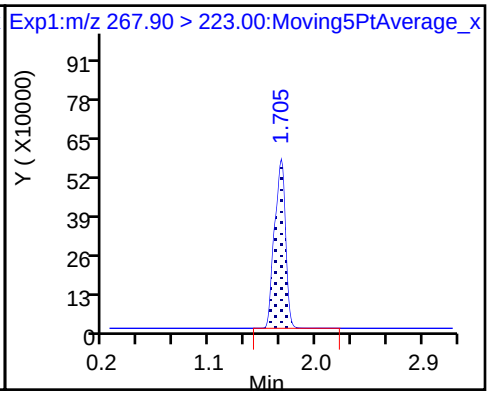
D 1 13C4 PFBA (M)



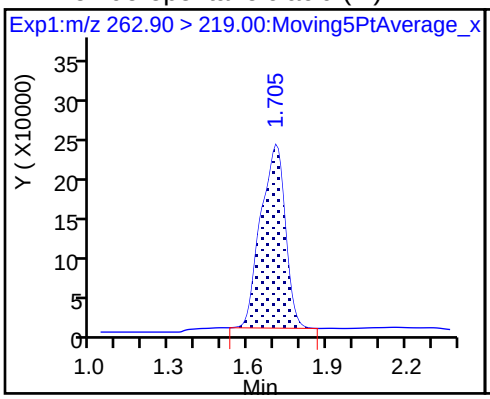
2 Perfluorobutyric acid (M)



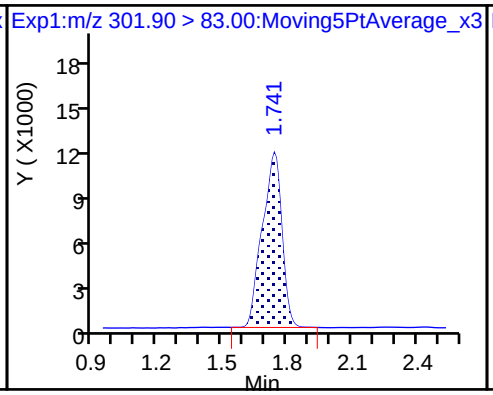
D 3 13C5-PFPeA



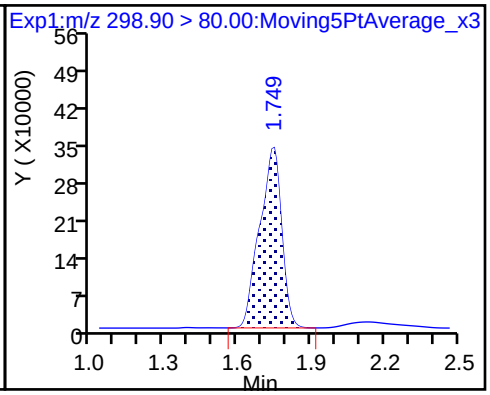
4 Perfluoropentanoic acid (M)



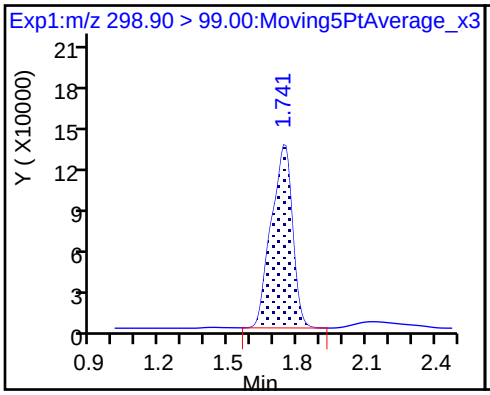
D 47 13C3-PFBS



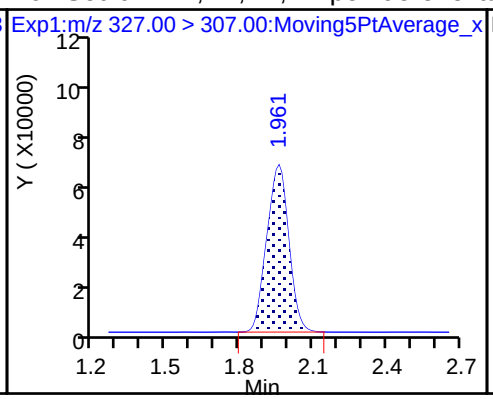
5 Perfluorobutanesulfonic acid



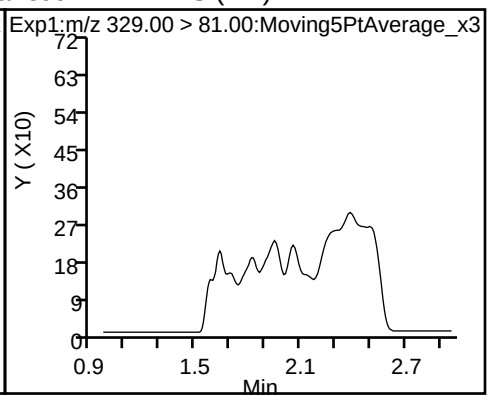
5 Perfluorobutanesulfonic acid



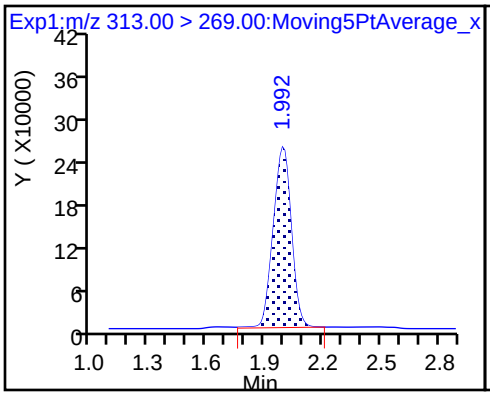
61 Sodium 1H,1H,2H,2H-perfluorohexane



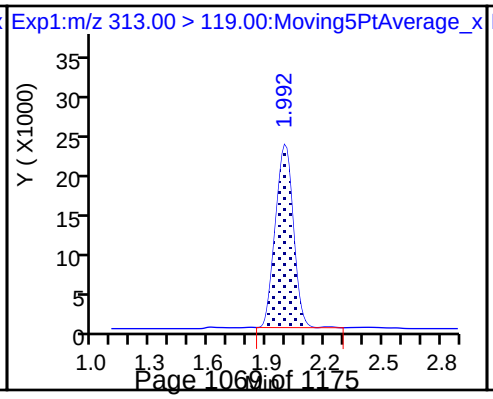
D 60 M2-4:2FTS (ND)



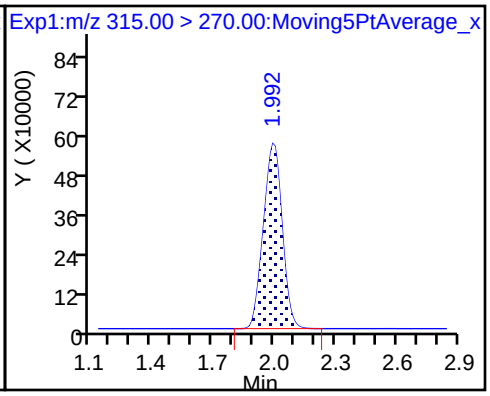
6 Perfluorohexanoic acid



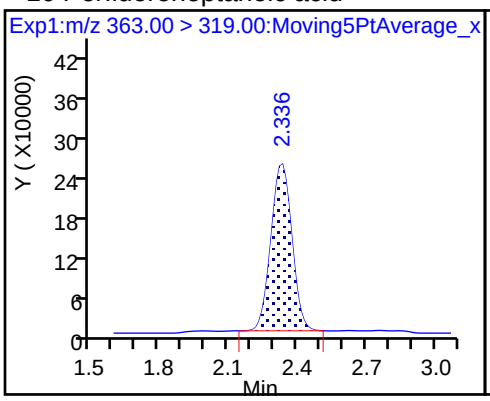
6 Perfluorohexanoic acid



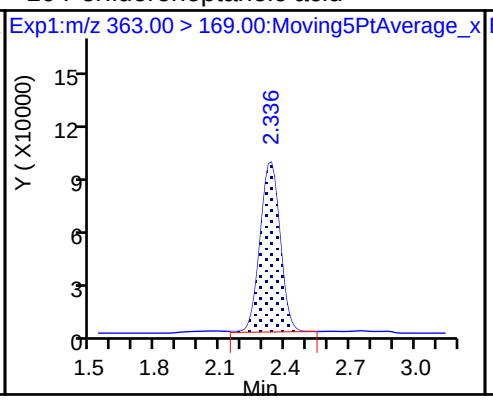
D 7 13C2 PFHxA



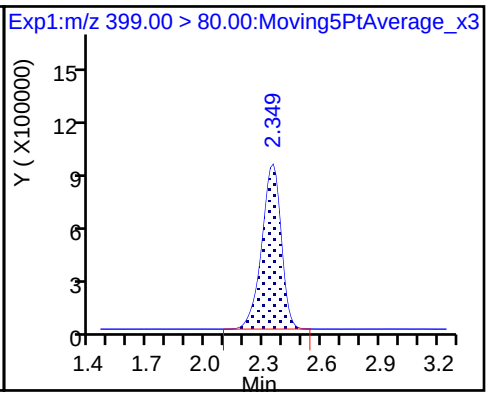
10 Perfluoroheptanoic acid



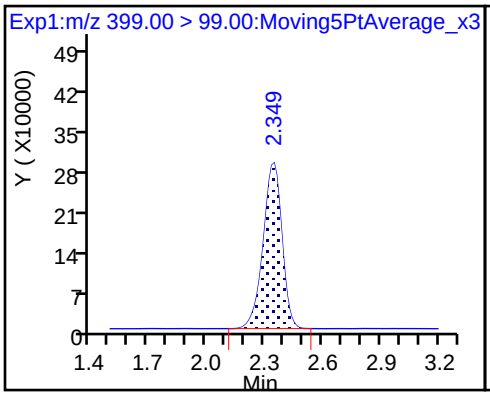
10 Perfluoroheptanoic acid



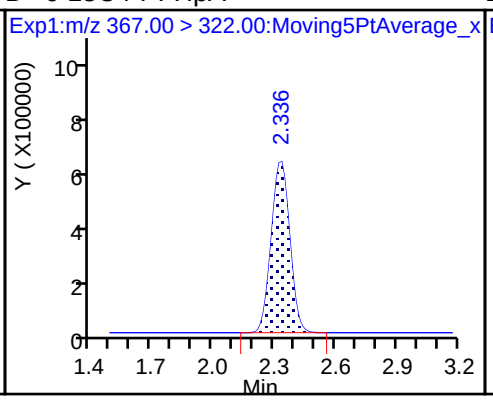
8 Perfluorohexanesulfonic acid



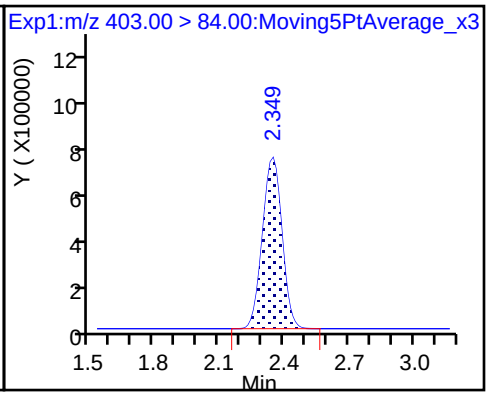
8 Perfluorohexanesulfonic acid



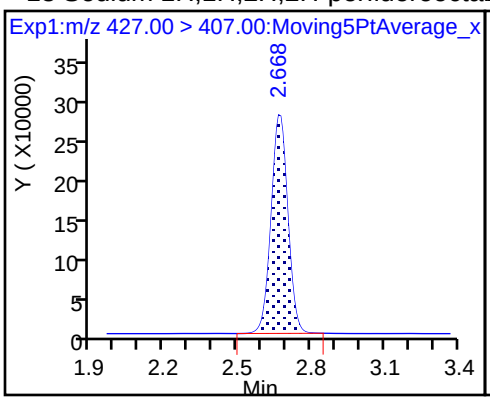
D 9 13C4-PFHpA



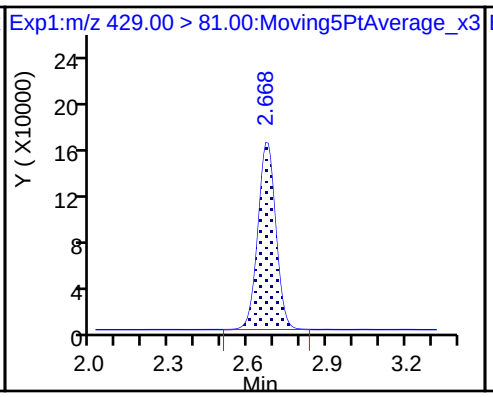
D 11 18O2 PFHxS



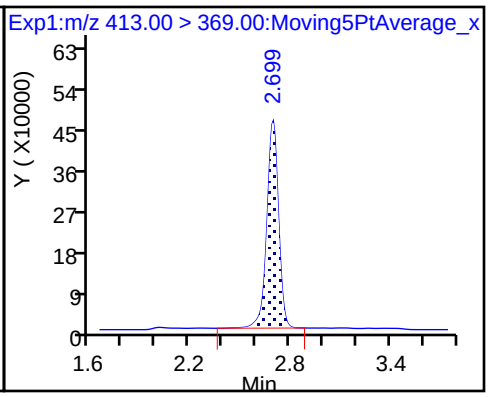
13 Sodium 1H,1H,2H,2H-perfluorooctane



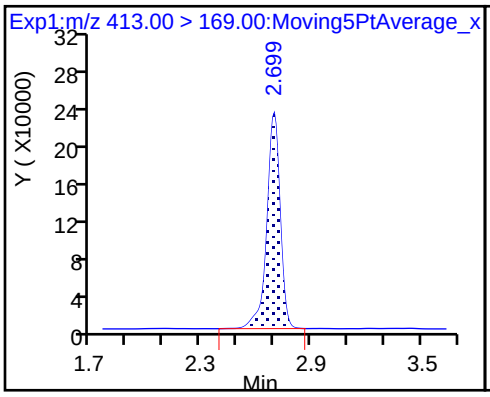
D 12 M2-6:2FTS



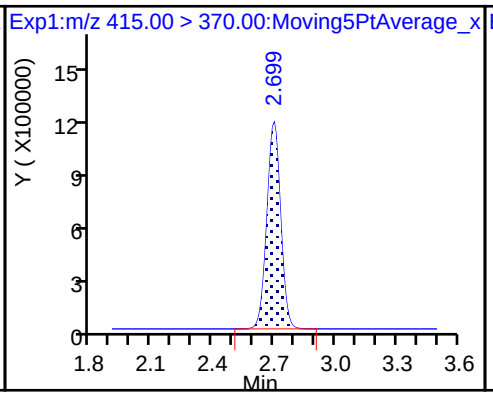
15 Perfluorooctanoic acid



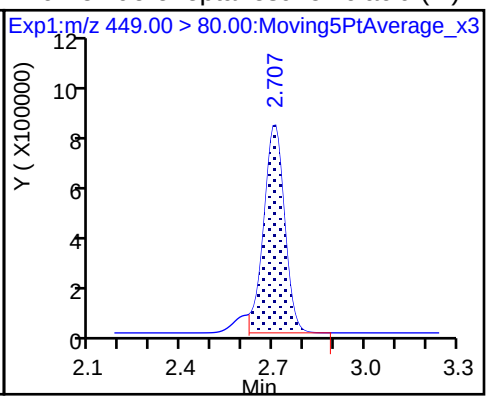
15 Perfluorooctanoic acid



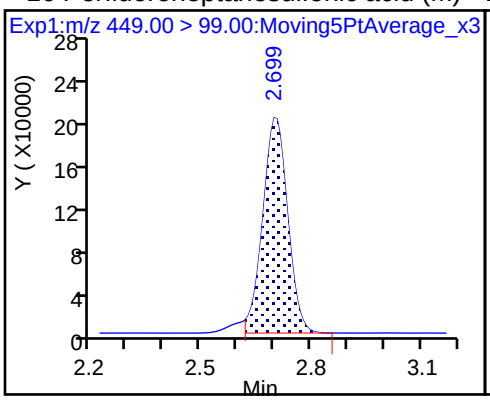
* 62 13C2-PFOA



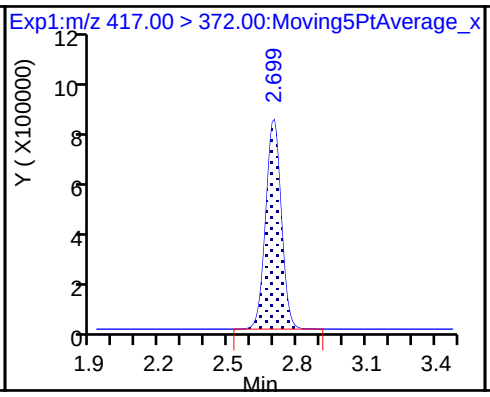
16 Perfluoroheptanesulfonic acid (M)



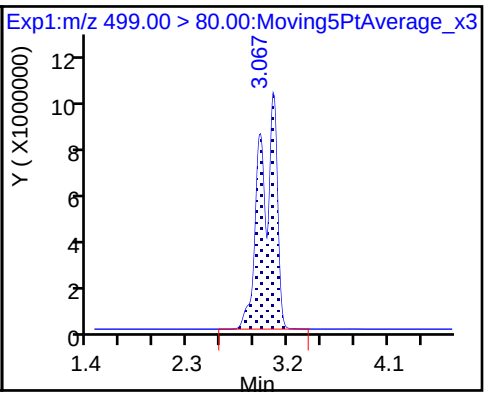
16 Perfluoroheptanesulfonic acid (M)



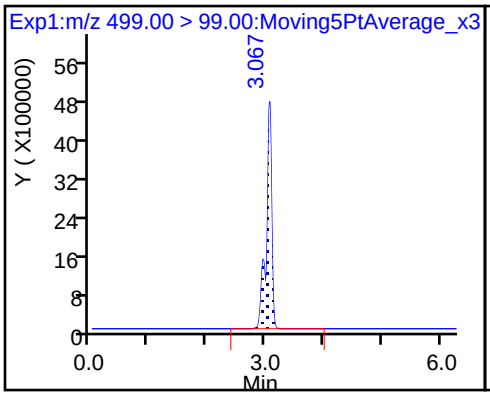
D 14 13C4 PFOA



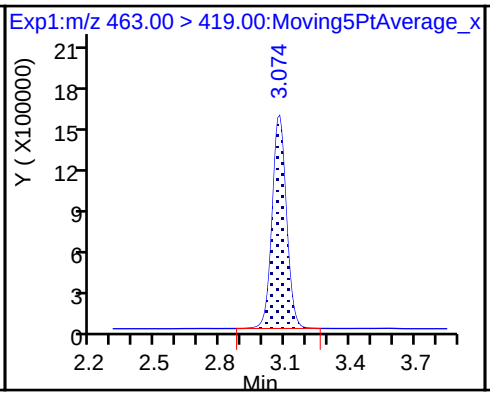
17 Perfluorooctane sulfonic acid



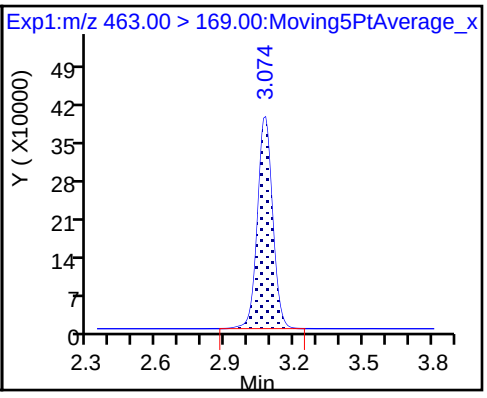
17 Perfluorooctane sulfonic acid



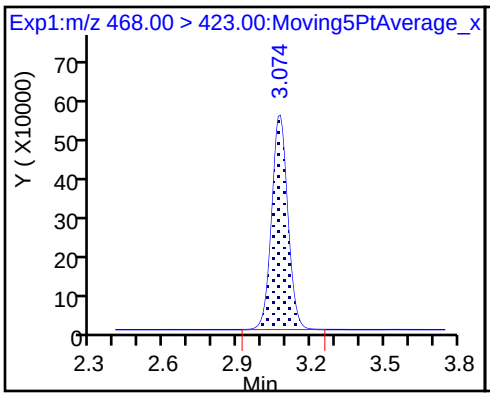
20 Perfluorononanoic acid



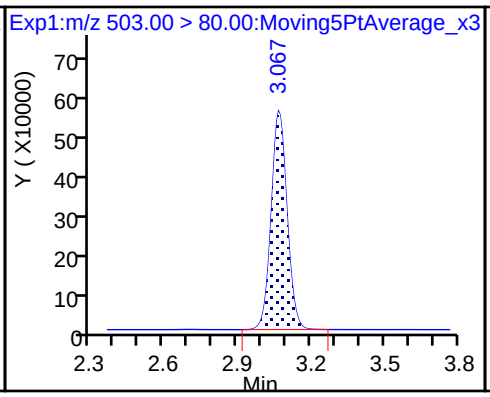
20 Perfluorononanoic acid



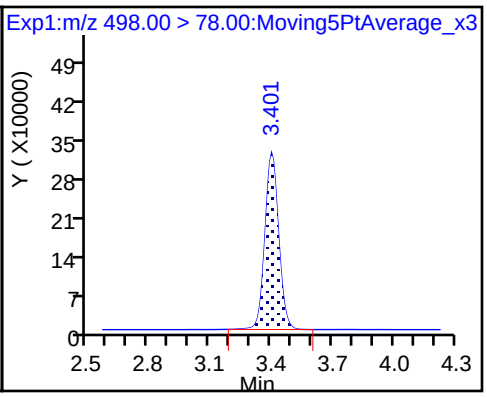
D 19 13C5 PFNA



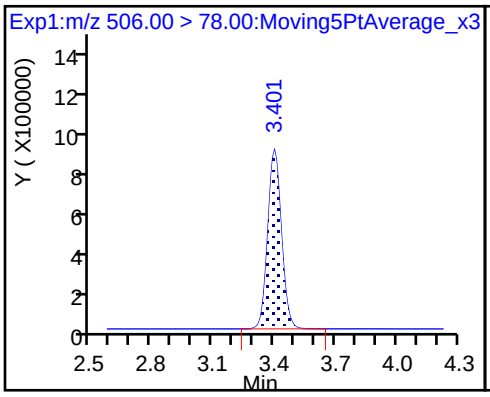
D 18 13C4 PFOS



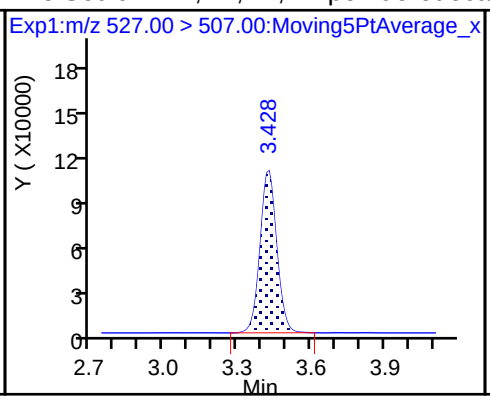
22 Perfluorooctane Sulfonamide



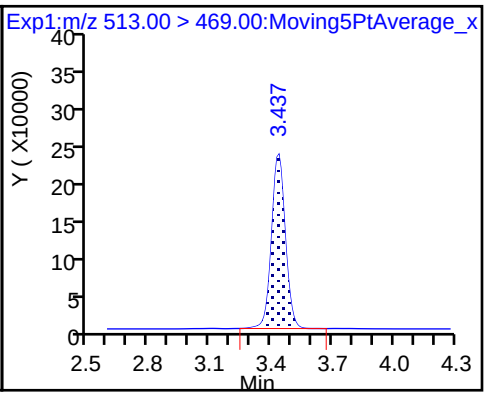
D 21 13C8 FOSA



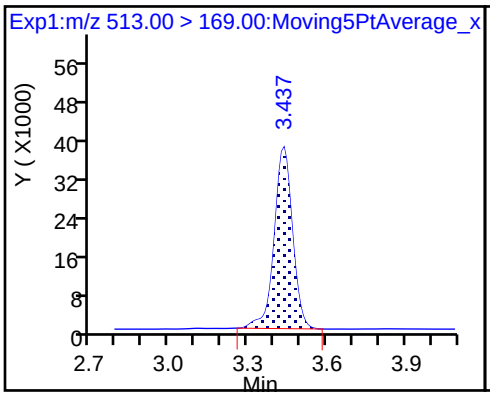
25 Sodium 1H,1H,2H,2H-perfluorodecan



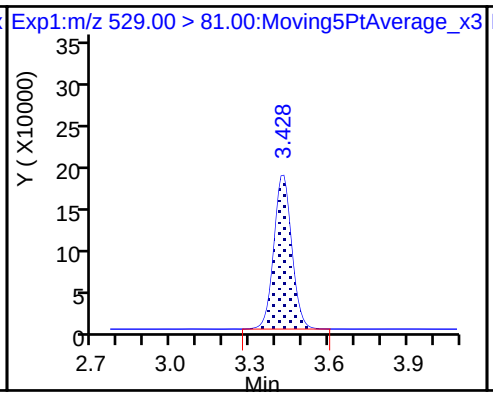
24 Perfluorodecanoic acid



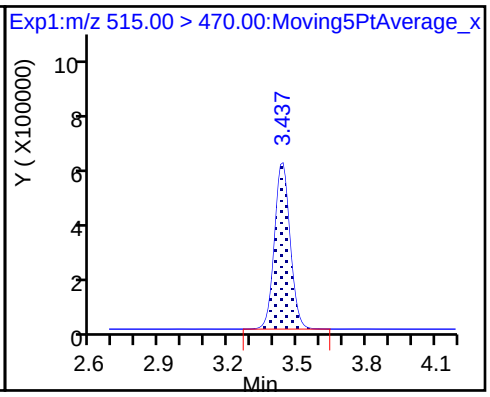
24 Perfluorodecanoic acid



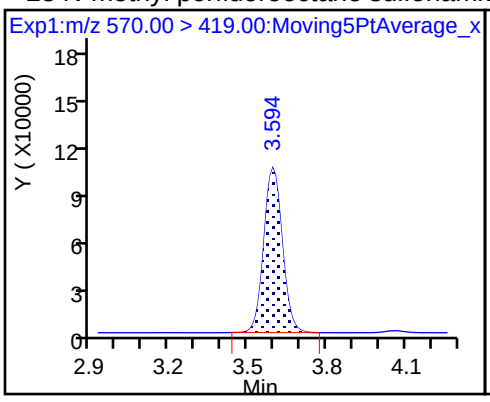
D 26 M2-8:2FTS



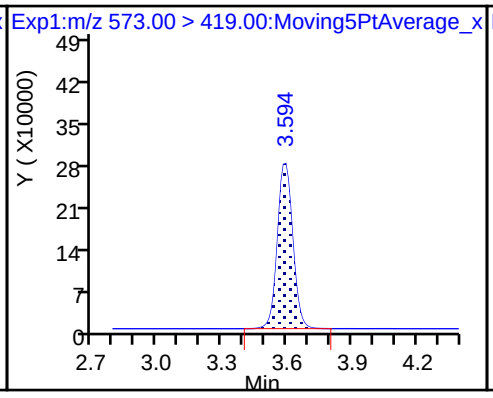
D 23 13C2 PFDA



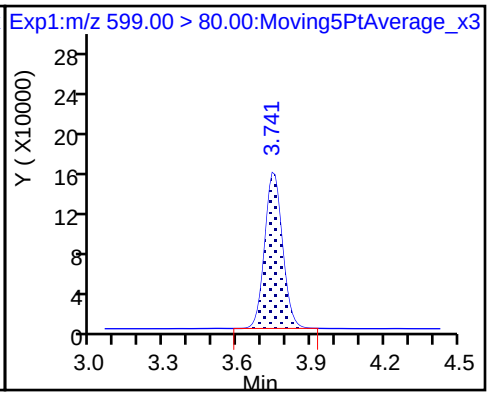
28 N-methyl perfluorooctane sulfonami



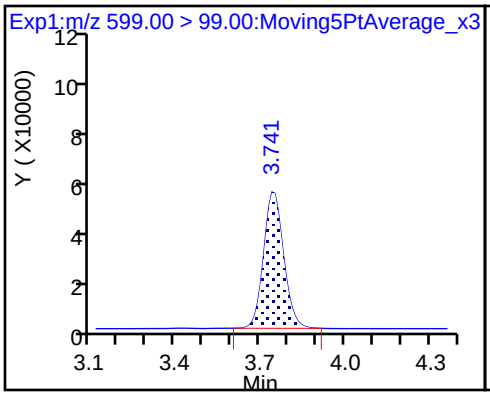
D 27 d3-NMeFOSAA



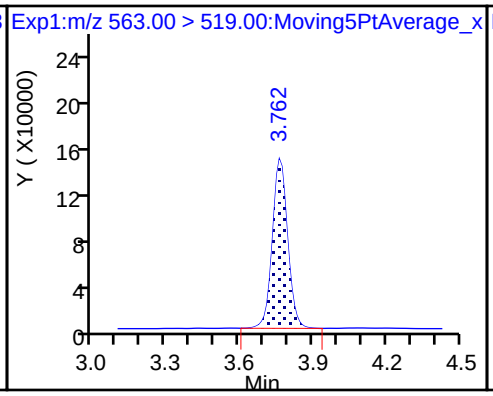
29 Perfluorodecane Sulfonic acid



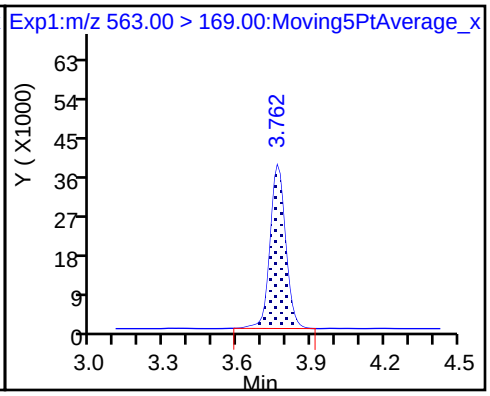
29 Perfluorodecane Sulfonic acid



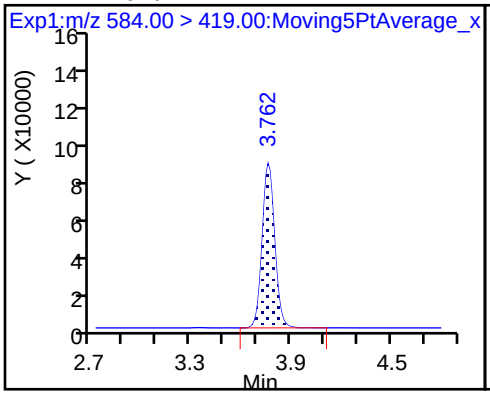
31 Perfluoroundecanoic acid



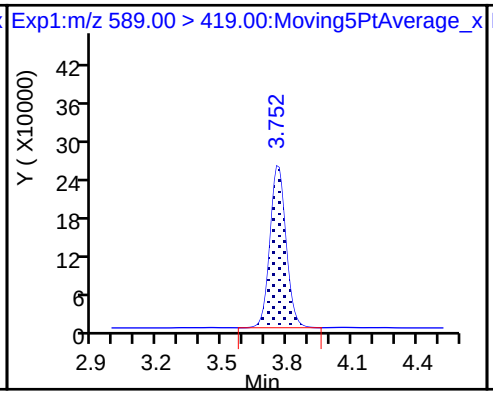
31 Perfluoroundecanoic acid



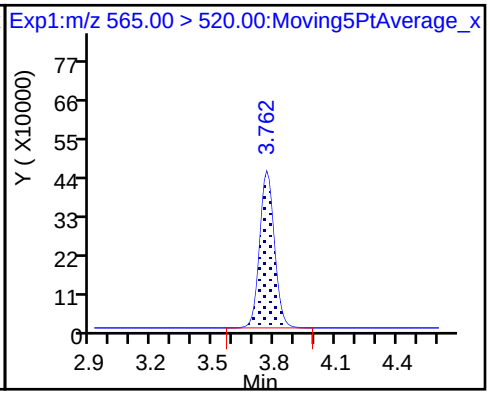
33 N-ethyl perfluorooctane sulfonamid



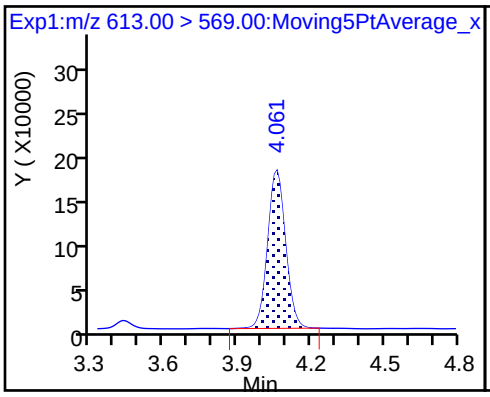
D 32 d5-NEtFOSAA



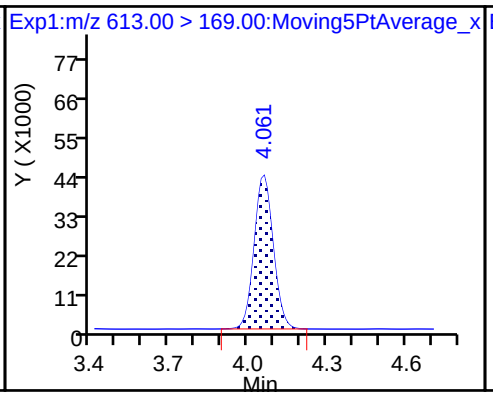
D 30 13C2 PFUnA



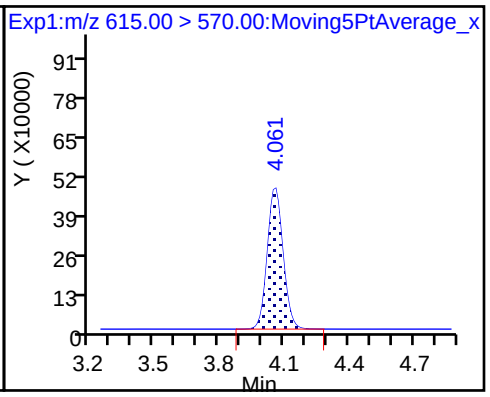
37 Perfluorododecanoic acid



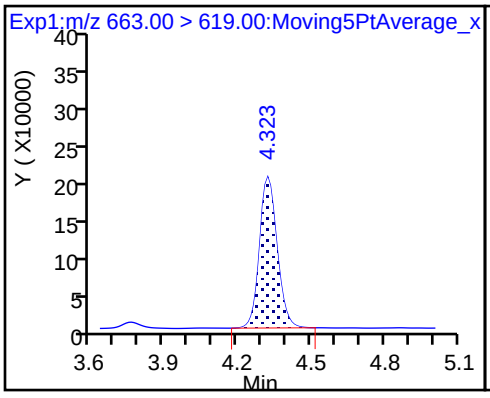
37 Perfluorododecanoic acid



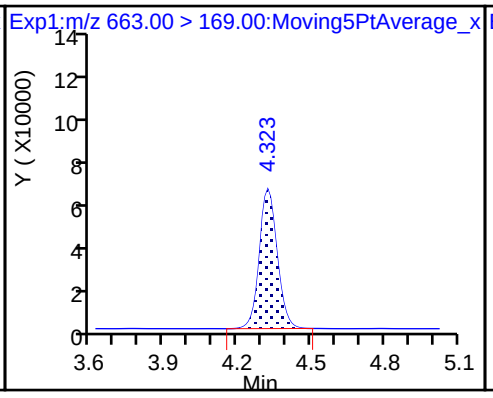
D 36 13C2 PFDoA



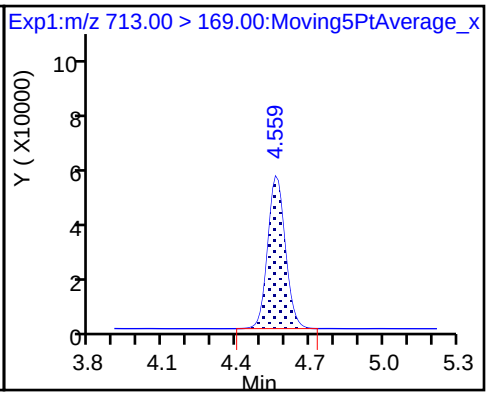
41 Perfluorotridecanoic acid



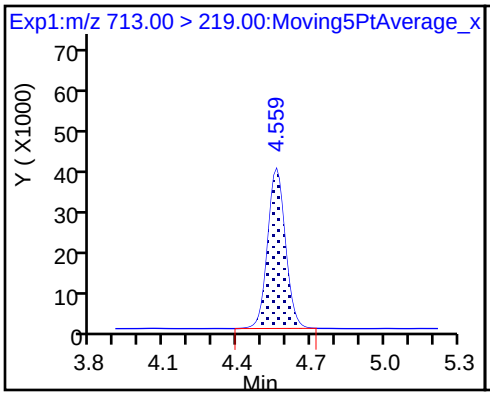
41 Perfluorotridecanoic acid



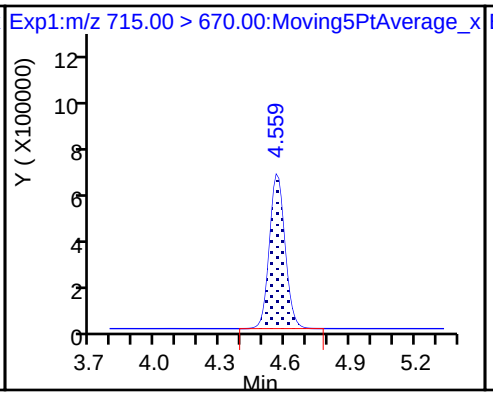
42 Perfluorotetradecanoic acid



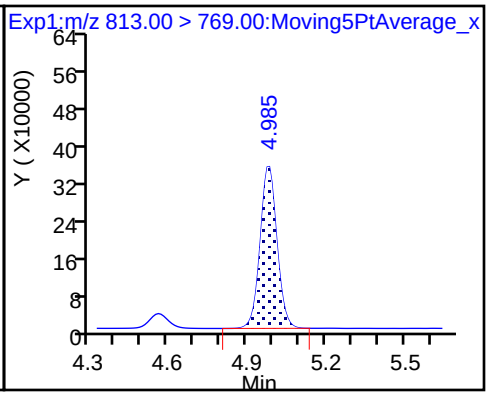
42 Perfluorotetradecanoic acid



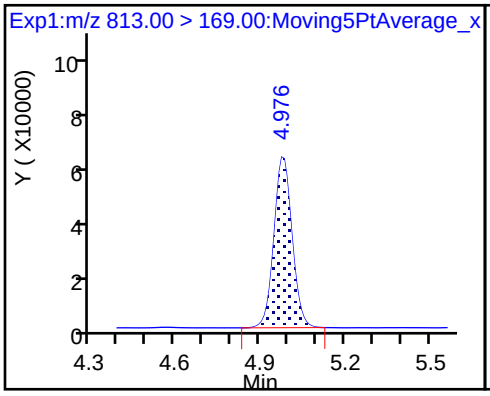
D 43 13C2-PFTeDA



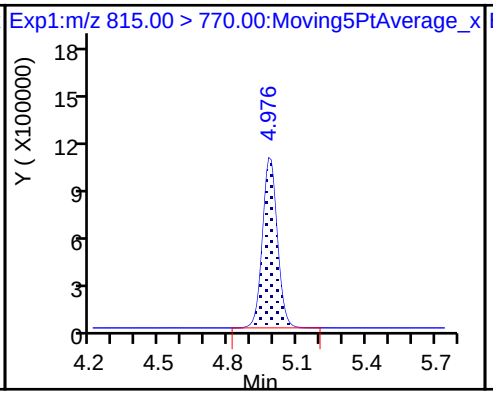
45 Perfluorohexadecanoic acid



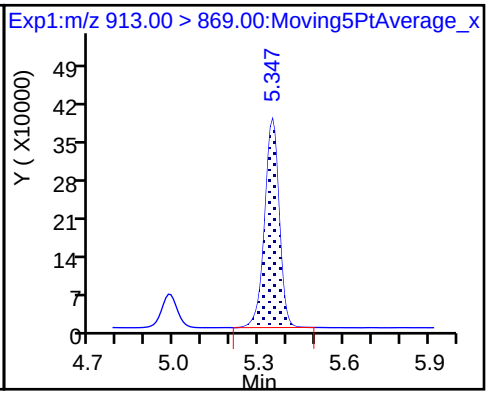
45 Perfluorohexadecanoic acid



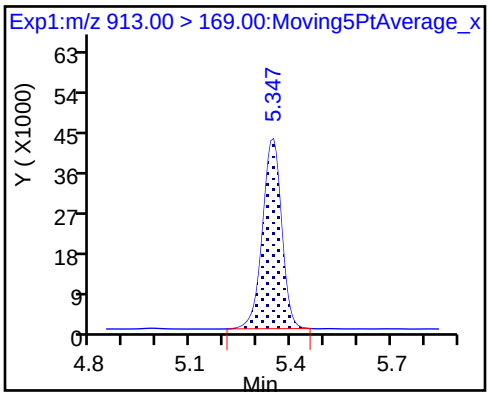
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: SB012(10'-12') MSD DL Lab Sample ID: 320-36683-10 MSD DL

Matrix: Solid Lab File ID: 2018.03.21LLC_023.d

Analysis Method: 537 (modified) Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) Date Analyzed: 03/22/2018 00:09

Con. Extract Vol.: 10.00(mL) Dilution Factor: 50

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.216		0.026	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	69		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_023.d
Lims ID: 320-36683-A-10-C MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 22-Mar-2018 00:09:06 ALS Bottle#: 25 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-a-10-c msd 50X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:38:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.446	0.0	0.538	117191	0.0377		75.4	1434	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.453	-0.007	1.000	50079	0.0227		113	22.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	84373	0.0409		81.8	3252	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	34082	0.0179		89.6	18.5	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.649	1726	0.0367		78.8	12.9	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.000	55794	0.0193		109	330	
298.90 > 99.00	1.744	1.753	-0.009	1.000	24712		2.26(1.25-3.74)		163	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.966	-0.011	1.000	9327	0.0156		83.3	605	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.743	89593	0.0393		78.5	3198	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	40871	0.0223		112	109	
313.00 > 119.00	1.997	1.997	0.0	1.000	3641		11.23(5.03-15.10)		67.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	88686	0.0394		78.8	3029	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	38008	0.0207		104	74.3	
363.00 > 169.00	2.328	2.328	0.0	1.000	14591		2.60(1.13-3.40)		172	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	103559	0.0373		78.9	4415	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	137522	0.0564		310	1514	
399.00 > 99.00	2.341	2.341	0.0	1.000	44857		3.07(1.50-4.49)		108	
D 12 M2-6:2FTS										
429.00 > 81.00	2.680	2.665	0.015	0.997	35642	0.0764		161	1198	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.673	0.007	1.000	66106	0.0505		266	3158	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.688	0.0	1.000	96298	0.0418		83.6	3803	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.697	-0.009		122812	0.0500			4915	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.003	75082	0.0345		173	20.4	
413.00 > 169.00	2.688	2.697	-0.009	1.000	33818		2.22(0.84-2.52)		88.3	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.704	-0.008	1.000	82787	0.0463		243	979	
449.00 > 99.00	2.696	2.704	-0.008	1.000	23188		3.57(1.94-5.82)		336	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.138	66778	0.0331		69.2	1207	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.138	70475	0.0347		69.4	2955	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	3282901	2.11		11366	10603	
499.00 > 99.00	3.058	3.065	-0.007	1.000	747509		4.39(2.31-6.93)		8104	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.002	206292	0.1467		734	295	
463.00 > 169.00	3.065	3.072	-0.007	1.002	51397		4.01(1.90-5.69)		1449	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.264	56802	0.0208		41.7	2158	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	0.997	20299	0.0181		90.6	336	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.271	20482	0.0325		67.9	498	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.274	47057	0.0264		52.9	1550	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.426	-0.009	1.000	13704	0.0251		131	341	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.435	-0.009	1.000	20689	0.0222		111	89.4	
513.00 > 169.00	3.426	3.435	-0.009	1.000	4209		4.92(2.36-7.09)		109	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	15549	0.0166		33.2	499	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.590	-0.011	1.000	8989	0.0289		144	483	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	10120	0.0107		55.3	306	
599.00 > 99.00	3.738	3.748	-0.010	0.997	5227		1.94(1.39-4.16)		94.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	38096	0.0239		47.9	1607	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	16515	0.0155		30.9	136	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.768	-0.020	1.000	6758	0.0219		110	158	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.768	-0.010	1.000	10749	0.0164		81.8	50.5	
563.00 > 169.00	3.758	3.768	-0.010	1.000	2518		4.27(2.12-6.36)		286	
35 MeFOSA										
512.00 > 169.00	3.903	3.875	0.028		2193	NC			66.0	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.047	0.0	1.505	33707	0.0187		37.3	328	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.057	-0.010	1.000	14139	0.0200		100	21.4	
613.00 > 169.00	4.057	4.057	0.0	1.003	3029		4.67(2.13-6.40)		65.7	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.088	4.066	0.022		1997	NC			70.4	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.328	-0.011	1.000	16698	0.0225		113	19.4	
663.00 > 169.00	4.317	4.328	-0.011	1.000	5472		3.05(1.25-3.76)		126	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	47114	0.0214		42.7	444	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.564	-0.010	1.000	6011	0.0257		129	115	
713.00 > 219.00	4.554	4.564	-0.010	1.000	2882		2.09(0.71-2.13)		63.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	4.972	0.0	1.850	60919	0.0168		33.7	400	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.981	-0.009	1.000	22467	-0.003998		-20.0	13.6	
813.00 > 169.00	4.972	4.981	-0.009	1.000	3710		6.06(2.86-8.58)		41.0	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.344	-0.015	1.000	16435	0.0146		72.9	14.4	
913.00 > 169.00	5.329	5.344	-0.015	1.000	1815		9.06(3.83-11.48)		30.2	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 22-Mar-2018 12:53:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_023.d

Injection Date: 22-Mar-2018 00:09:06 Instrument ID: A8_N

Lims ID: 320-36683-A-10-C MSD

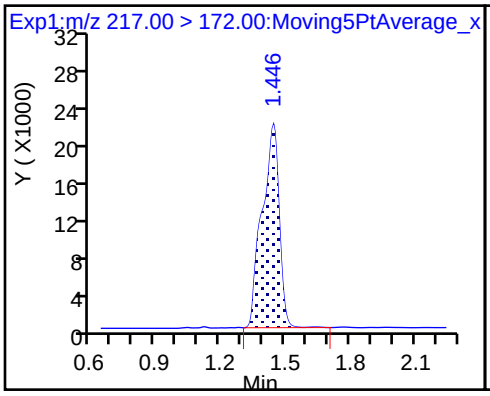
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 18

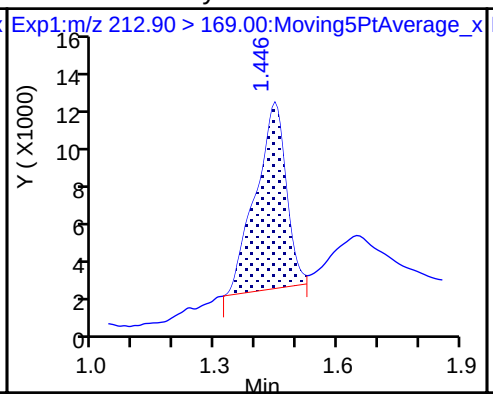
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

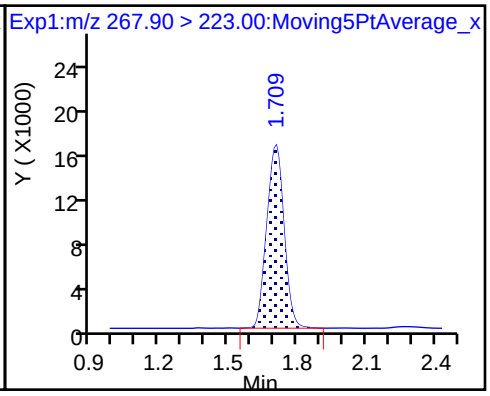
D 1 13C4 PFBA



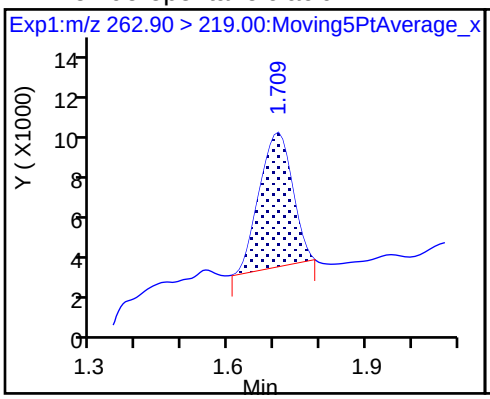
2 Perfluorobutyric acid



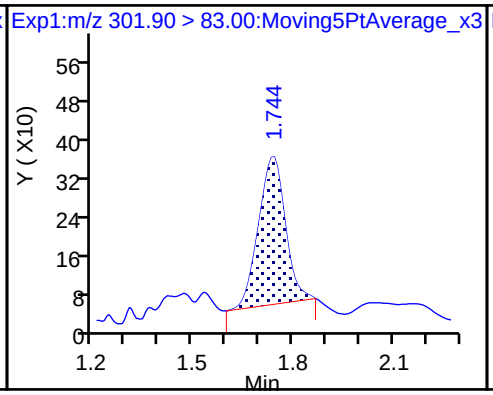
D 3 13C5-PFPeA



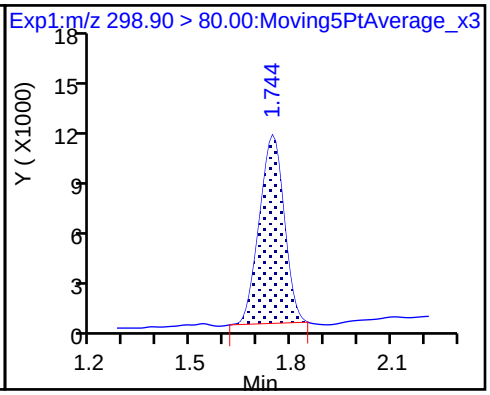
4 Perfluoropentanoic acid



D 47 13C3-PFBS



5 Perfluorobutanesulfonic acid



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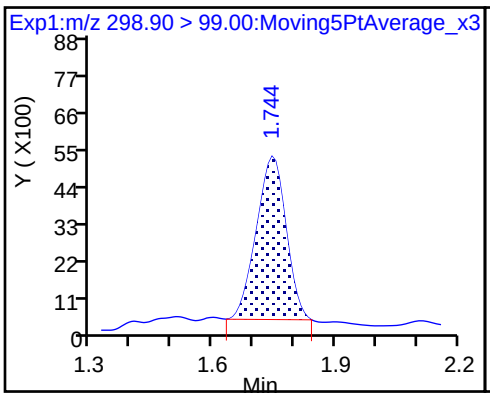
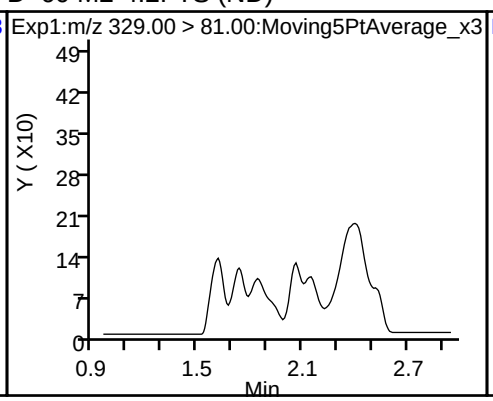
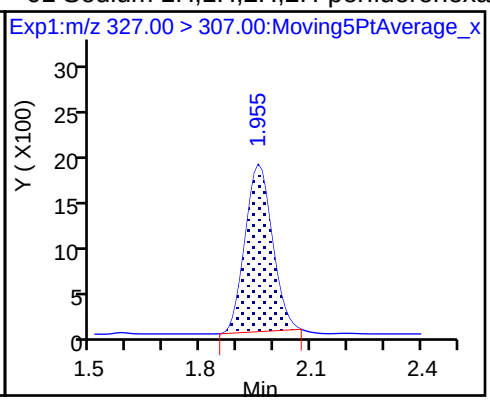


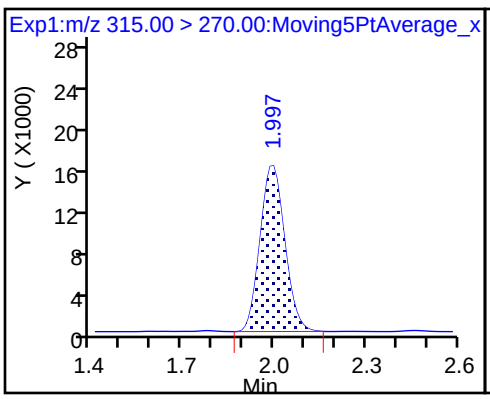
D 60 M2-4:2FTS (ND)



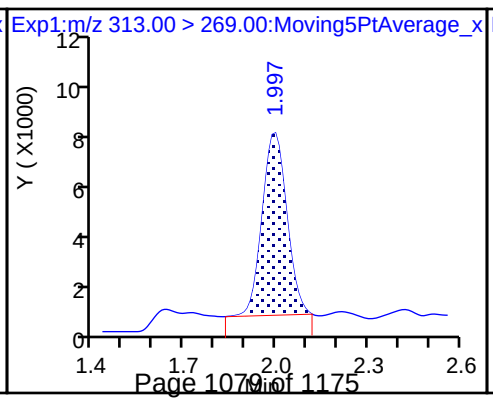
61 Sodium 1H,1H,2H,2H-perfluorohexane



D 7 13C2 PFHxA



6 Perfluorohexanoic acid



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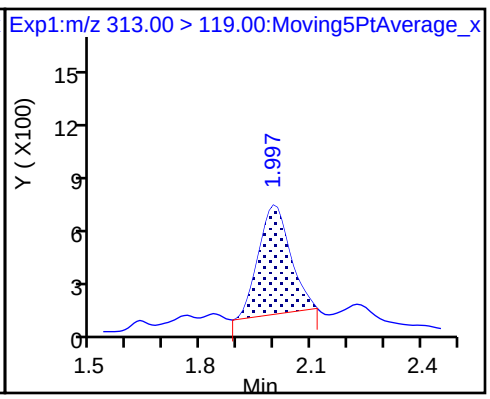
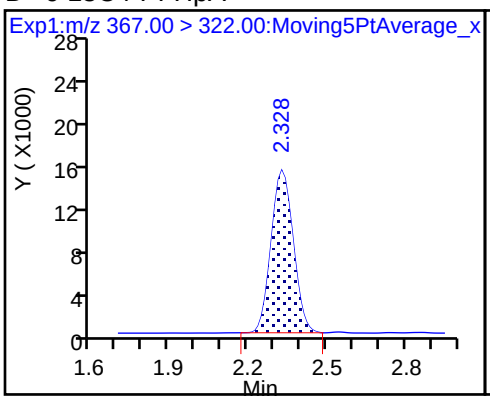
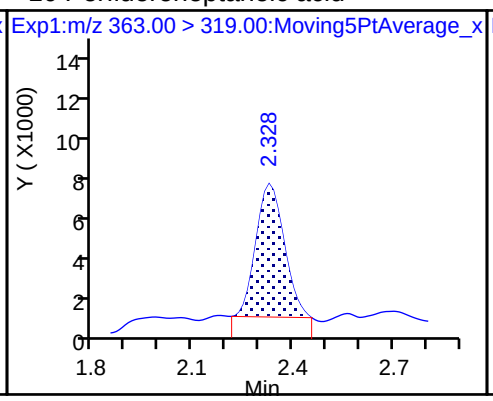


D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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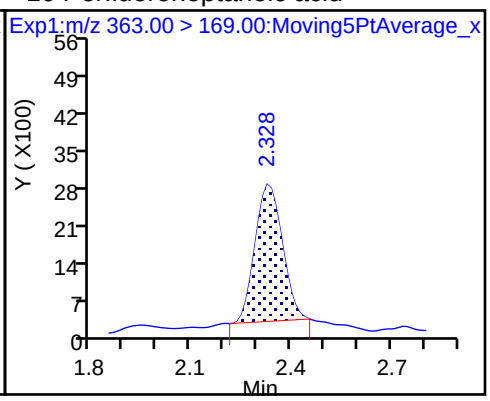
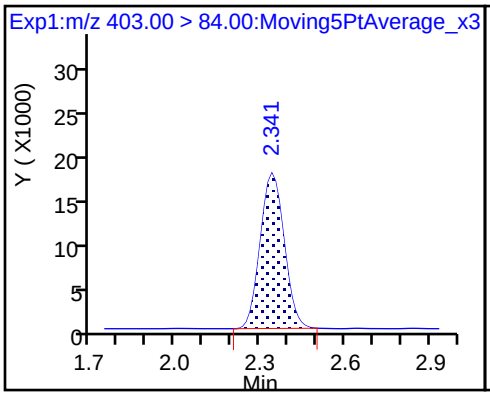
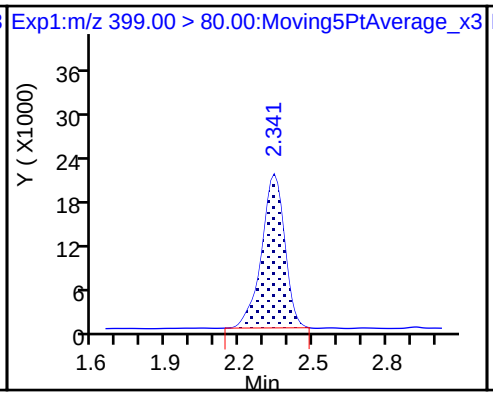


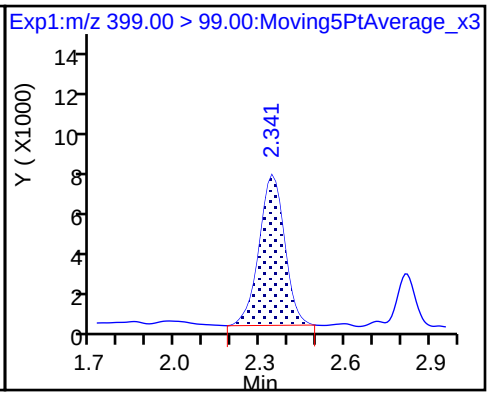
D 11 18O2 PFHxS



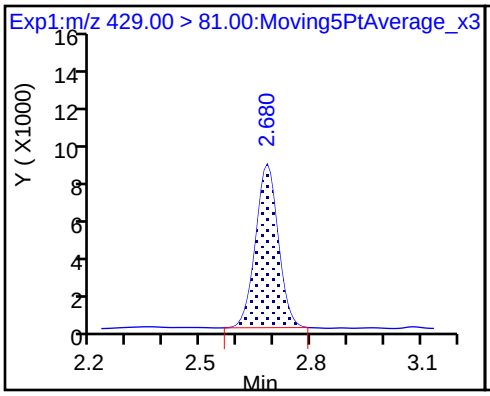
8 Perfluorohexanesulfonic acid



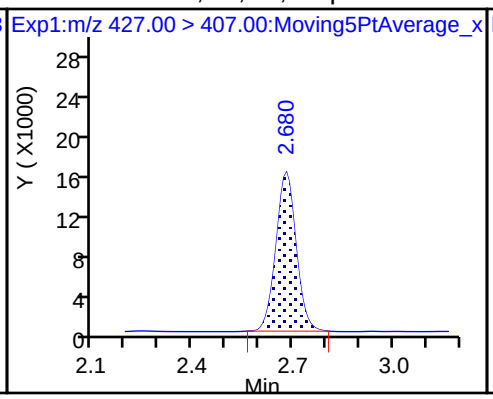
8 Perfluorohexanesulfonic acid



D 12 M2-6:2FTS



13 Sodium 1H,1H,2H,2H-perfluorooctane



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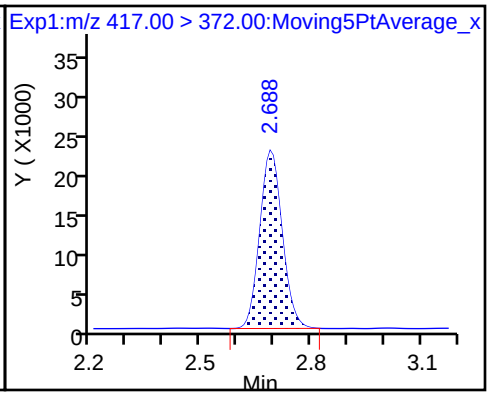
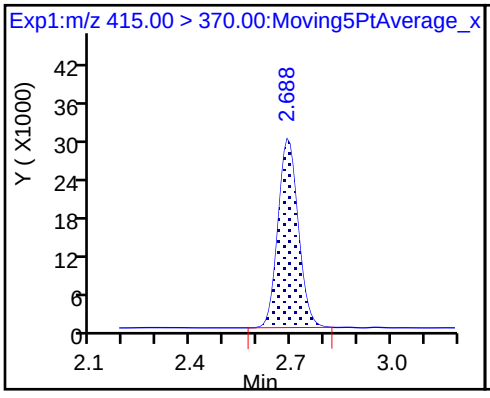
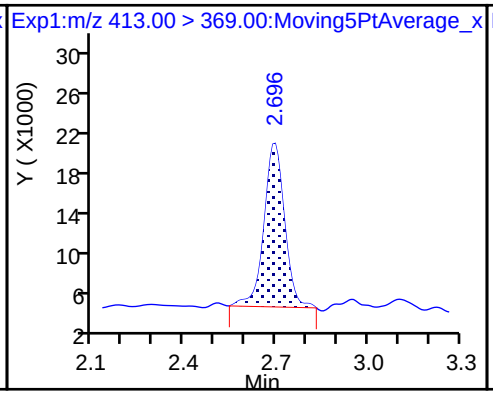


* 62 13C2-PFOA



15 Perfluorooctanoic acid



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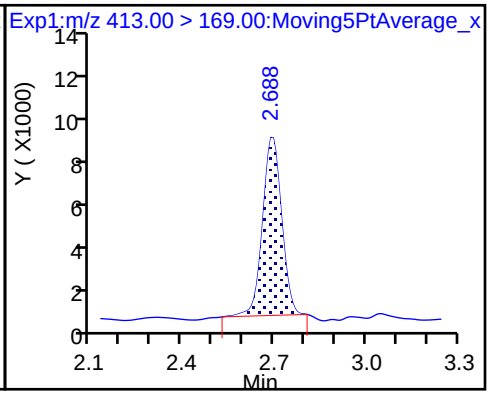
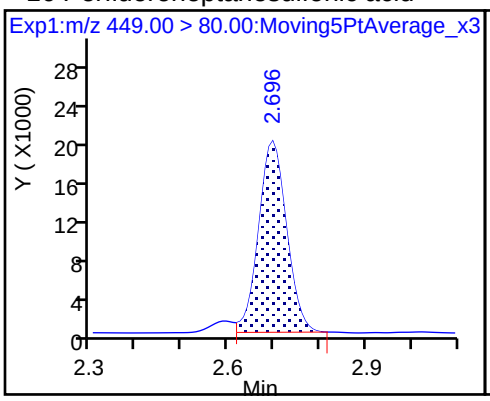
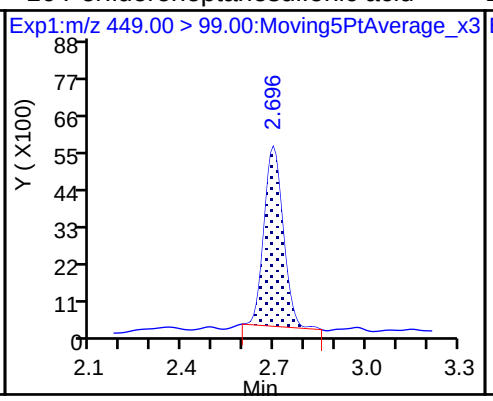


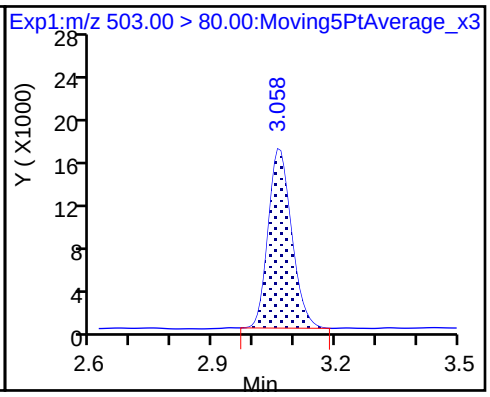
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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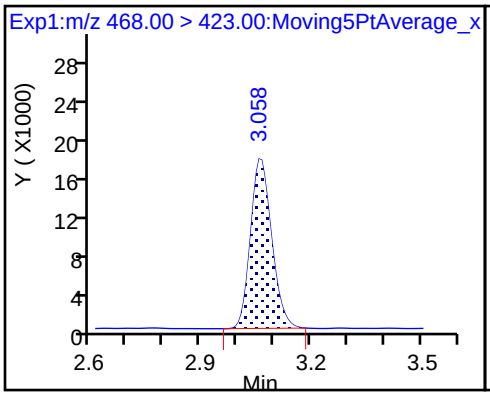
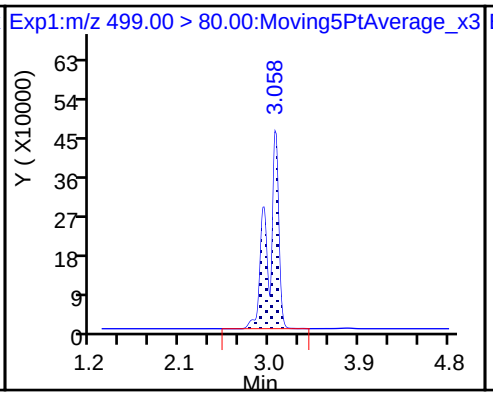


17 Perfluorooctane sulfonic acid



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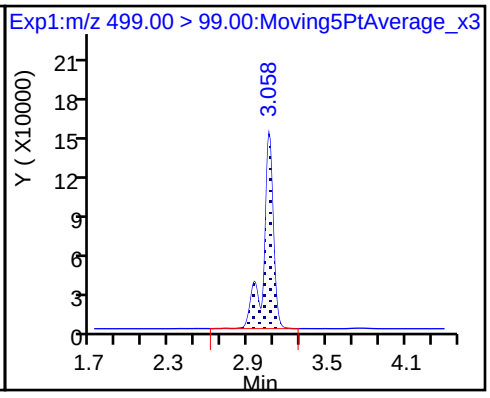
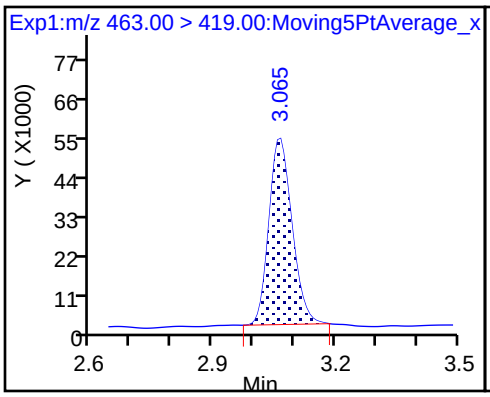
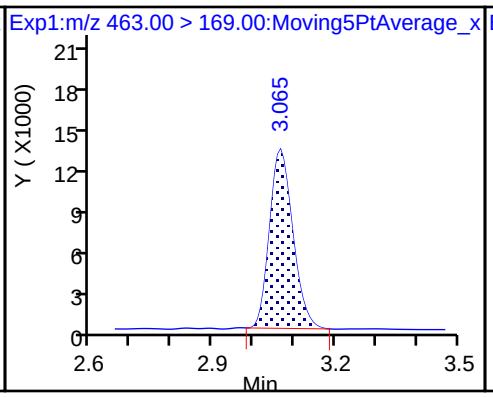


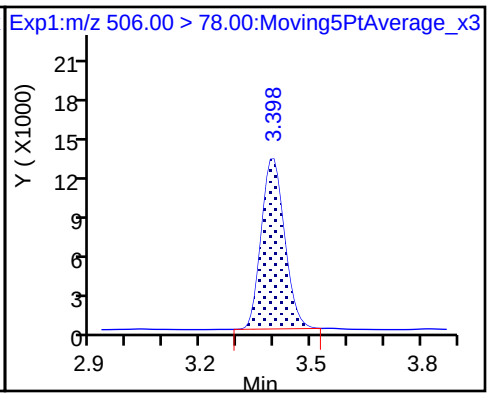
20 Perfluorononanoic acid



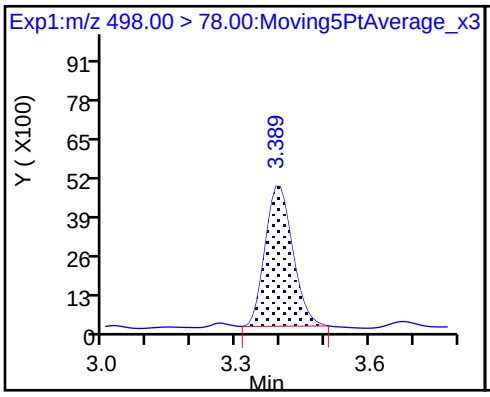
20 Perfluorononanoic acid



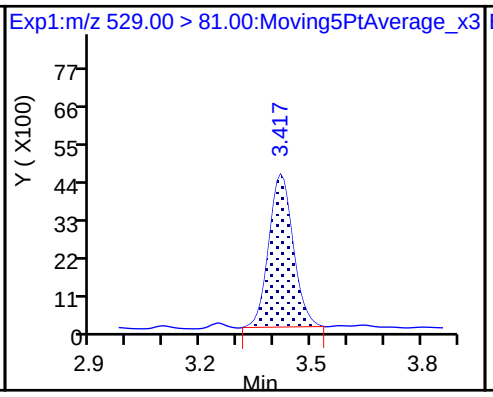
D 21 13C8 FOSA



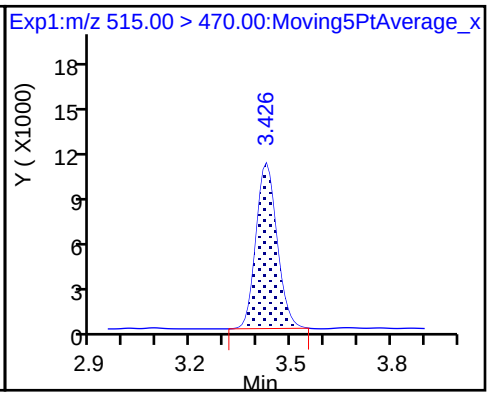
22 Perfluorooctane Sulfonamide



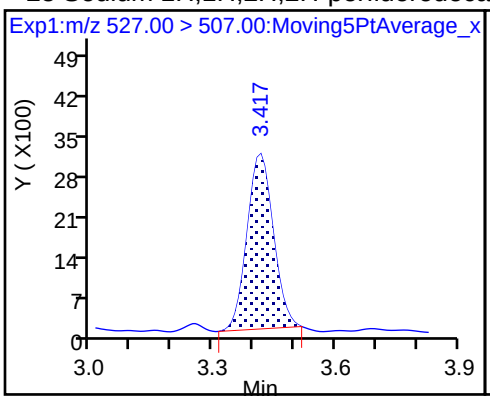
D 26 M2-8:2FTS



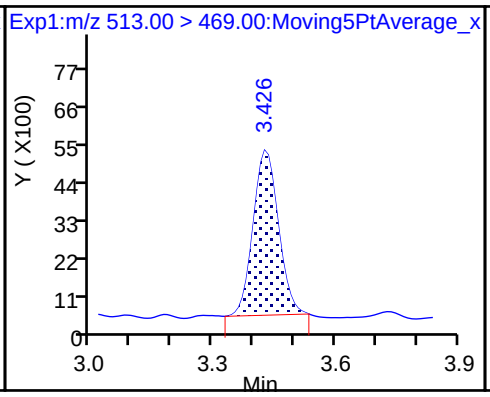
D 23 13C2 PFDA



25 Sodium 1H,1H,2H,2H-perfluorodecan



24 Perfluorodecanoic acid



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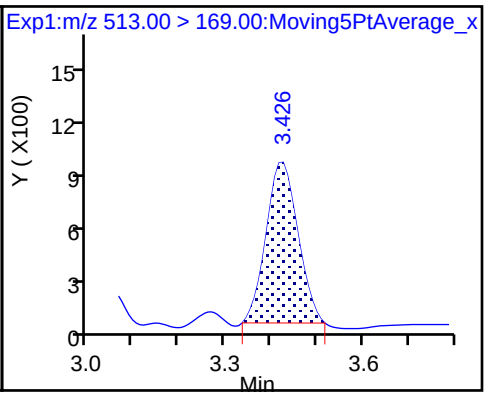
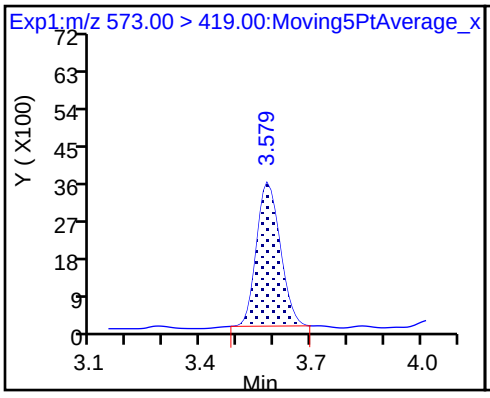
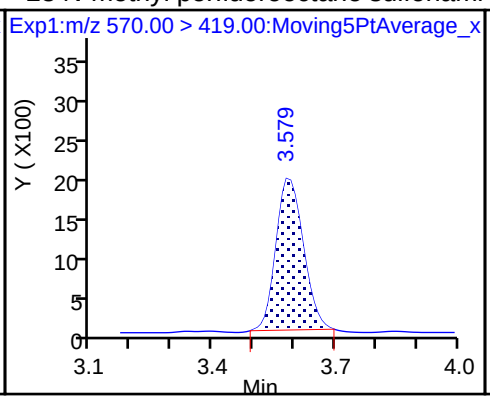


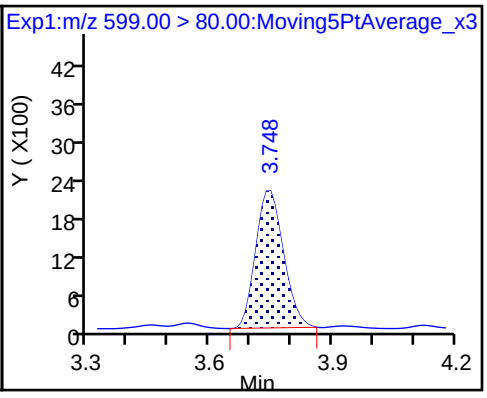
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid



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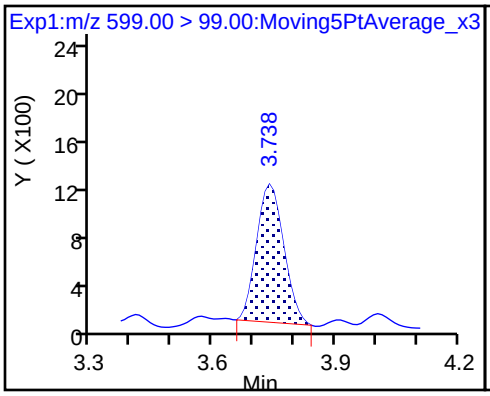
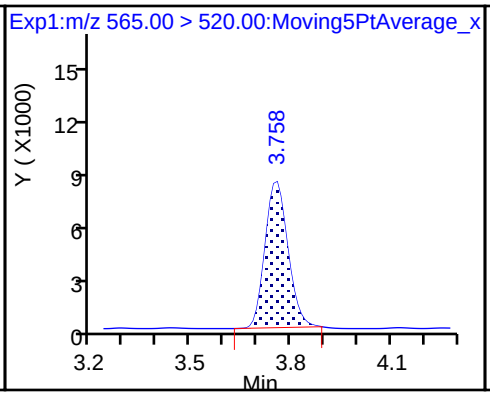
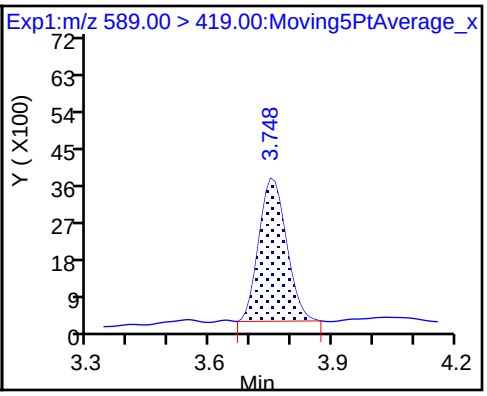


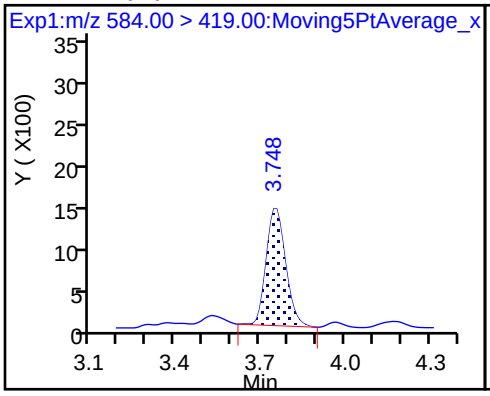
D 30 13C2 PFUnA



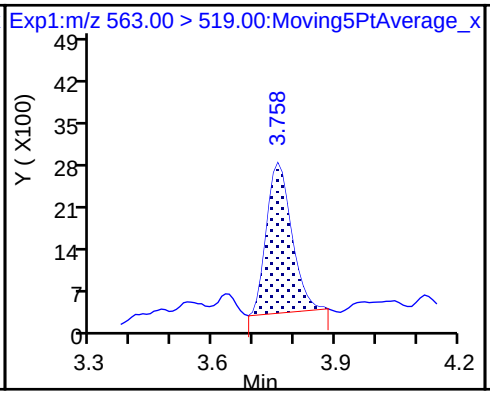
D 32 d5-NEtFOSAA



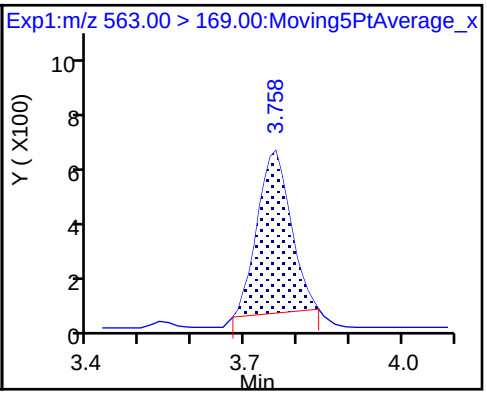
33 N-ethyl perfluorooctane sulfonamid



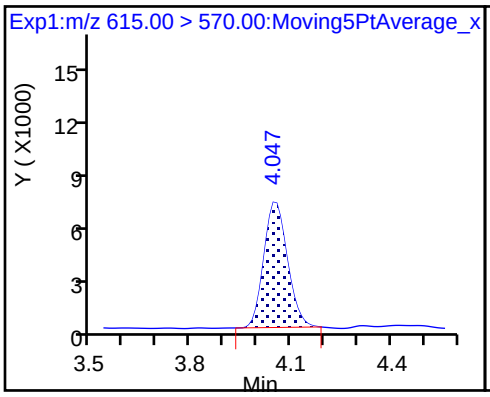
31 Perfluoroundecanoic acid



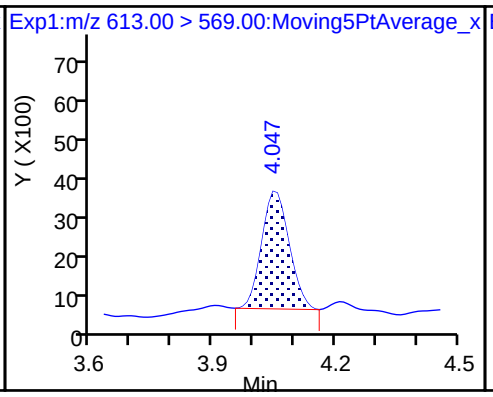
31 Perfluoroundecanoic acid



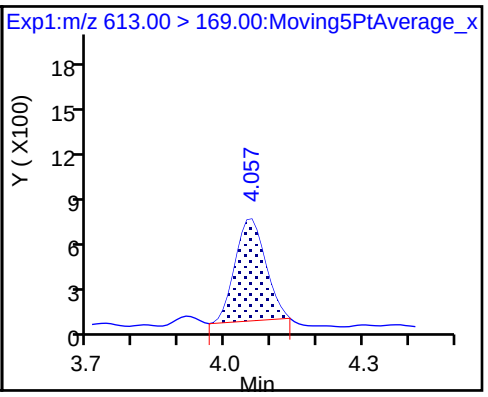
D 36 13C2 PFDoA



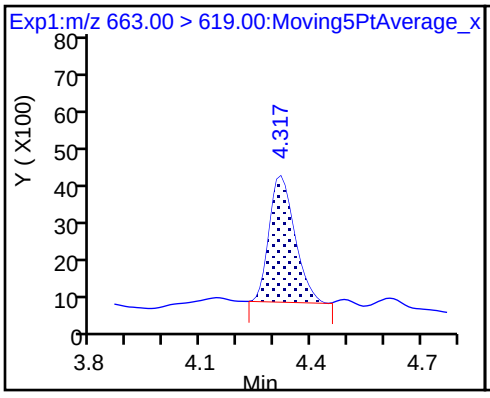
37 Perfluorododecanoic acid



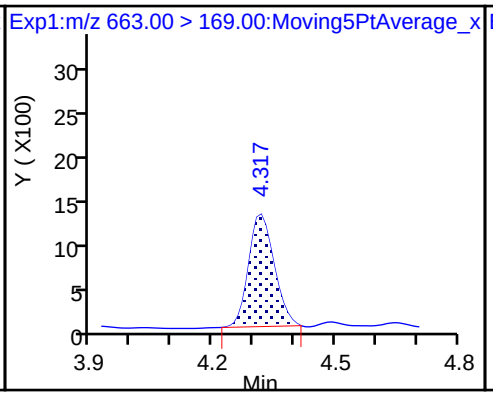
37 Perfluorododecanoic acid



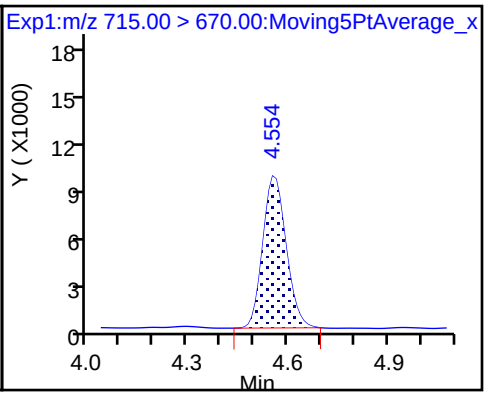
41 Perfluorotridecanoic acid



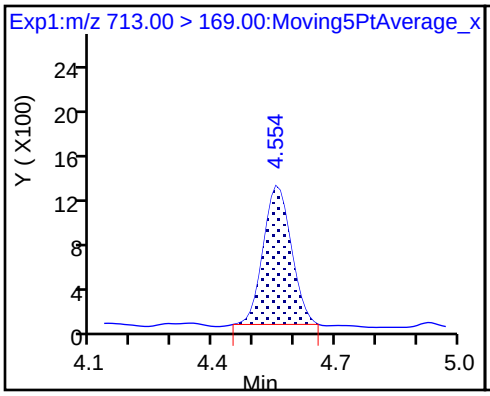
41 Perfluorotridecanoic acid



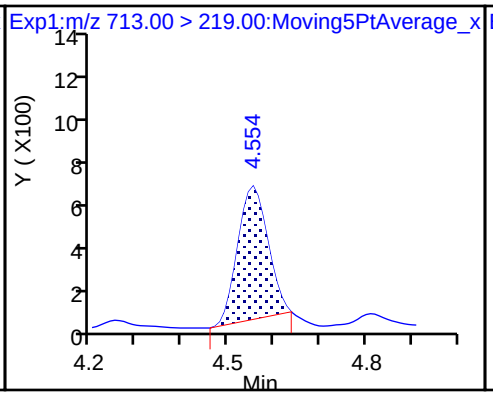
D 43 13C2-PFTeDA



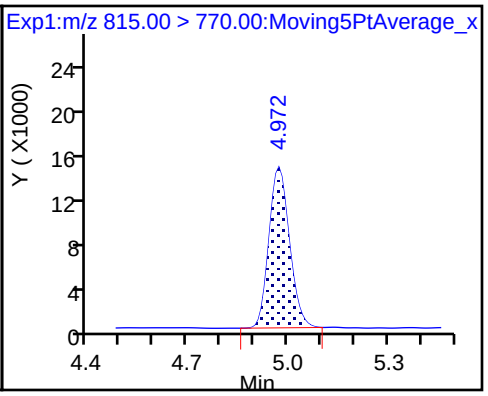
42 Perfluorotetradecanoic acid



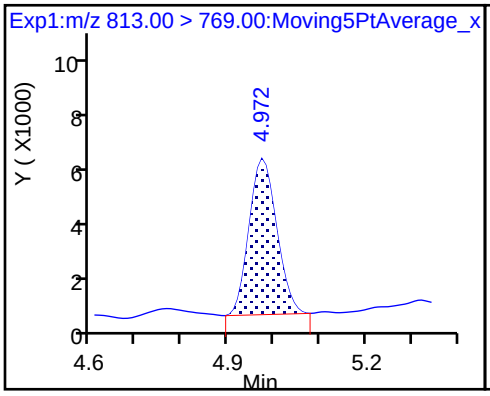
42 Perfluorotetradecanoic acid



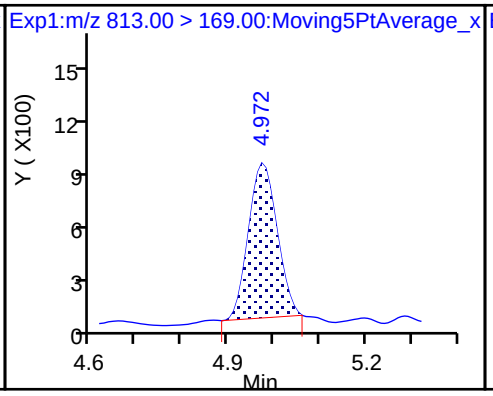
D 44 13C2-PFHxDA



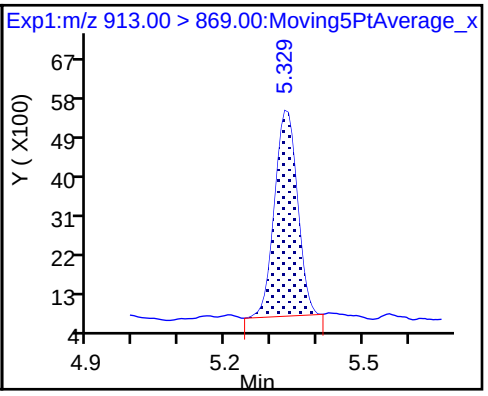
45 Perfluorohexadecanoic acid



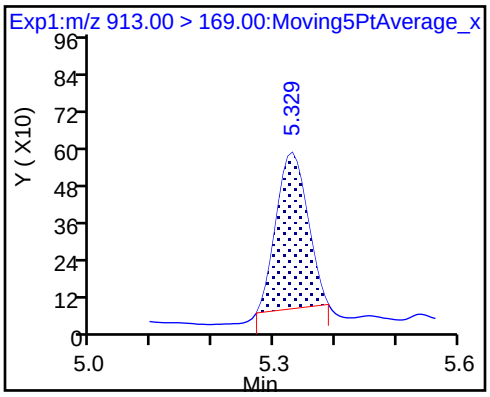
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Client Sample ID: Lab Sample ID: 320-36631-A-1-D MSD RE

Matrix: Solid Lab File ID: 2018.03.26LLA_056.d

Analysis Method: 537 (modified) Date Collected: 02/28/2018 09:00

Extraction Method: SHAKE Date Extracted: 03/21/2018 18:54

Sample wt/vol: 5.00(g) Date Analyzed: 03/27/2018 01:55

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 1.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 214957 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00166*		*0.00020*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	78		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_056.d
Lims ID: 320-36631-A-1-D MSD
Client ID:
Sample Type: MSD
Inject. Date: 27-Mar-2018 01:55:19 ALS Bottle#: 36 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36631-a-1-d msd
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Mar-2018 10:42:55 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK020

First Level Reviewer: barnettj Date: 27-Mar-2018 10:11:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	5949264	1.94		77.5	83069	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.446	-0.006	1.000	2186409	0.9751		97.5	507	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	4098773	2.01		80.5	183080	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.708	-0.008	1.000	1674108	0.9056		90.6	1112	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.647	82853	1.78		76.7	475	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.744	-0.009	1.000	2347321	0.8477		95.9	11213	
298.90 > 99.00	1.735	1.744	-0.009	1.000	978127		2.40(1.25-3.74)		2252	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.955	-0.010	1.000	1082080	1.88		201	26044	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	4179084	1.86		74.2	106055	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	1575330	0.9218		92.2	2108	
313.00 > 119.00	1.986	1.997	-0.011	1.000	142033		11.09(5.03-15.10)		1793	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	4365032	1.96		78.6	92043	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	1708722	0.9460		94.6	1304	
363.00 > 169.00	2.315	2.328	-0.013	1.000	697782		2.45(1.13-3.40)		2040	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.868	5310095	1.94		81.9	113045	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.340	-0.012	1.000	2126626	0.8510		93.5	10335	
399.00 > 99.00	2.328	2.340	-0.012	1.000	708728		3.00(1.50-4.49)		1502	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.649	0.0	0.988	1017256	2.21		93.0	19978	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.671	-0.014	1.003	574650	0.7695		81.2	3533	
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.681	-0.001	1.000	4268640	1.88		75.1	111721	
* 62 13C2-PFOA										
415.00 > 370.00	2.680	2.695	-0.015		6061355	2.50			120705	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.680	2.695	-0.015	1.000	2006648	1.04		104	961	
413.00 > 169.00	2.680	2.695	-0.015	1.000	1051432		1.91(0.84-2.52)		3084	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.703	-0.015	1.000	1735889	0.8712		91.5	12762	
449.00 > 99.00	2.680	2.703	-0.023	0.997	474091		3.66(1.94-5.82)		3163	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	3716656	1.86		78.0	56126	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.051	0.0	1.138	3800929	1.90		75.9	80222	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.065	-0.014	1.000	2120671	1.22		132	27501	
499.00 > 99.00	3.051	3.065	-0.014	1.000	461104		4.60(2.31-6.93)		4214	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.072	-0.021	1.000	1538370	1.01		101	2158	
463.00 > 169.00	3.051	3.072	-0.021	1.000	392563		3.92(1.90-5.69)		3200	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.389	-0.009	1.261	4766314	1.77		70.9	51301	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	1.003	1649408	0.8776		87.8	26570	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.399	0.009	1.271	1118348	1.80		75.1	19188	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.416	-0.009	1.000	547726	0.9191		95.9	12148	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.417	-0.001	1.275	3287476	1.87		74.9	53617	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.434	-0.018	1.000	1243552	0.9571		95.7	5539	
513.00 > 169.00	3.416	3.434	-0.018	1.000	222005		5.60(2.36-7.09)		4646	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.571	-0.001	1.332	1455495	1.57		63.0	40175	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.570	3.590	-0.020	1.000	565667	0.9708		97.1	5135	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.738	-0.001	1.394	1561597	1.48		59.3	11909	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.748	-0.021	1.000	860349	0.8136		84.4	26030	
599.00 > 99.00	3.727	3.748	-0.021	1.000	314315		2.74(1.39-4.16)		3697	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	2668098	1.70		67.9	56163	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.758	-0.010	1.000	798130	0.8674		86.7	4379	
563.00 > 169.00	3.748	3.758	-0.010	1.000	199017		4.01(2.12-6.36)		5919	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.758	-0.010	1.003	575711	0.9865		98.7	12070	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.036	0.010	1.509	3008514	1.69		67.5	25020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.056	-0.010	1.000	1092729	0.8678		86.8	975	
613.00 > 169.00	4.046	4.056	-0.010	1.000	293080		3.73(2.13-6.40)		3192	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.318	-0.012	1.000	1260674	0.9517		95.2	925	
663.00 > 169.00	4.306	4.318	-0.012	1.000	421117		2.99(1.25-3.76)		6389	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.543	0.0	1.695	3900493	1.79		71.6	24283	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.554	-0.011	1.000	372300	0.9630		96.3	5200	
713.00 > 219.00	4.543	4.554	-0.011	1.000	242641		1.53(0.71-2.13)		5052	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.963	4.955	0.008	1.852	6516568	1.83		73.0	17409	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.963	4.973	-0.010	1.000	2264222	0.9315		93.1	724	
813.00 > 169.00	4.963	4.973	-0.010	1.000	388680		5.83(2.86-8.58)		3180	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.337	-0.015	1.000	2305789	0.9567		95.7	590	
913.00 > 169.00	5.322	5.337	-0.015	1.000	298980		7.71(3.83-11.48)		2841	

Report Date: 27-Mar-2018 10:43:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b\2018.03.26LLA_056.d

Injection Date: 27-Mar-2018 01:55:19 Instrument ID: A8_N

Lims ID: 320-36631-A-1-D MSD

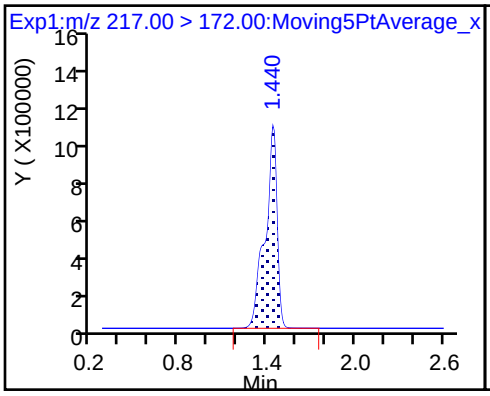
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 6

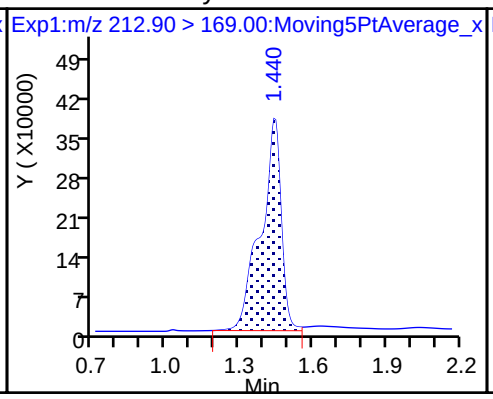
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

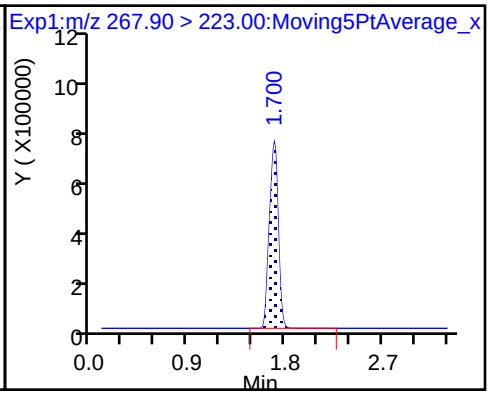
D 1 13C4 PFBA



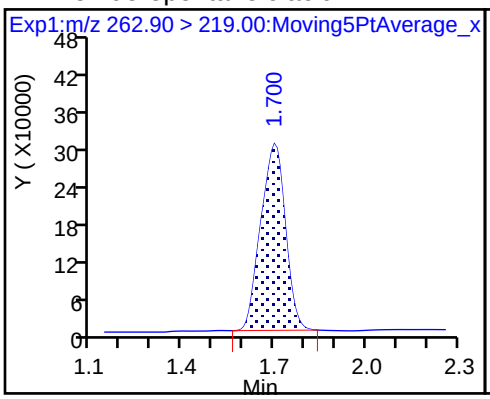
2 Perfluorobutyric acid



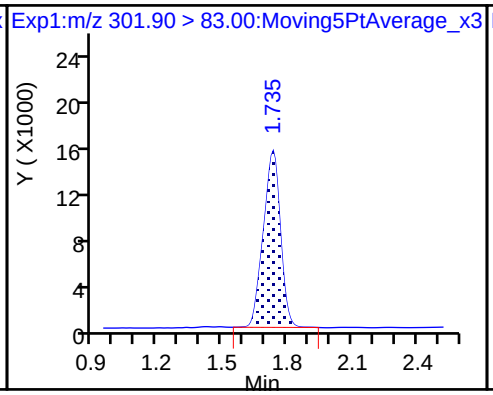
D 3 13C5-PFPeA



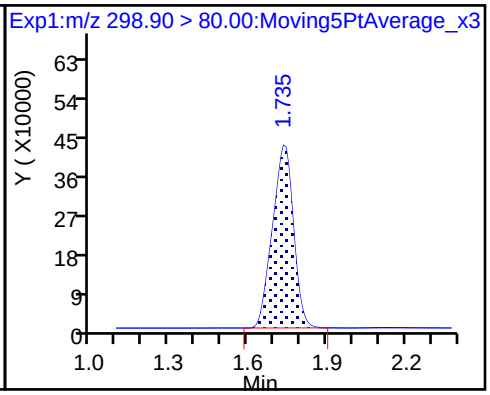
4 Perfluoropentanoic acid



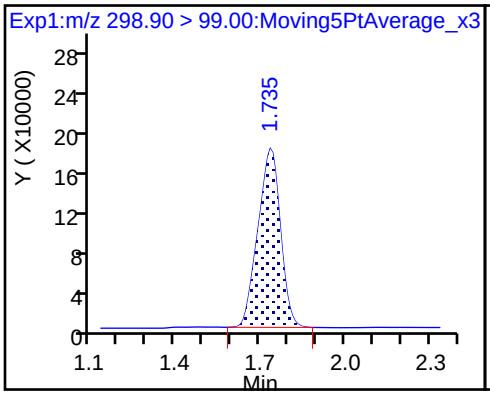
D 47 13C3-PFBS



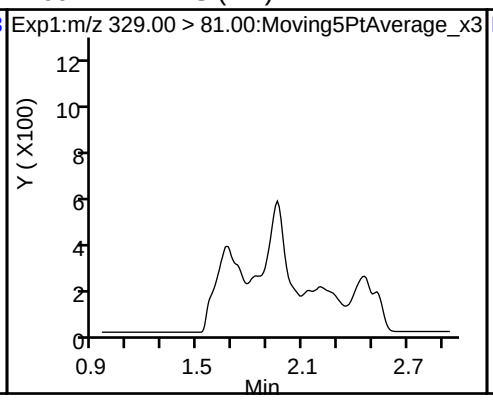
5 Perfluorobutanesulfonic acid



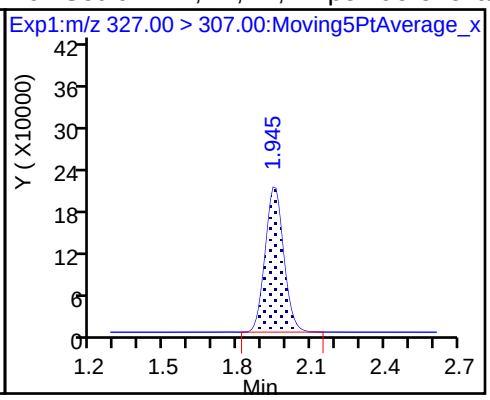
5 Perfluorobutanesulfonic acid



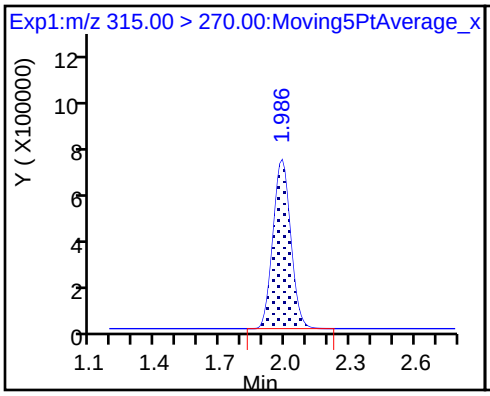
D 60 M2-4:2FTS (ND)



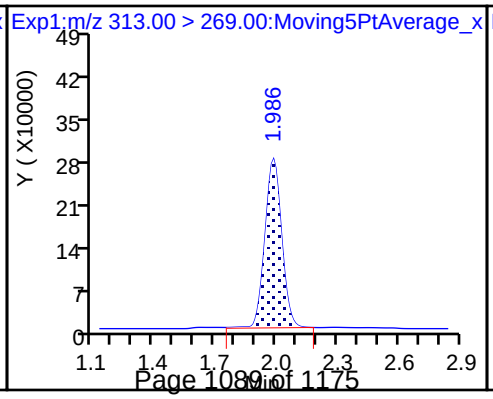
61 Sodium 1H,1H,2H,2H-perfluorohexane



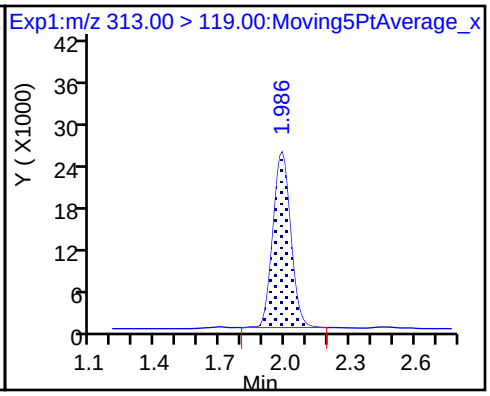
D 7 13C2 PFHxA



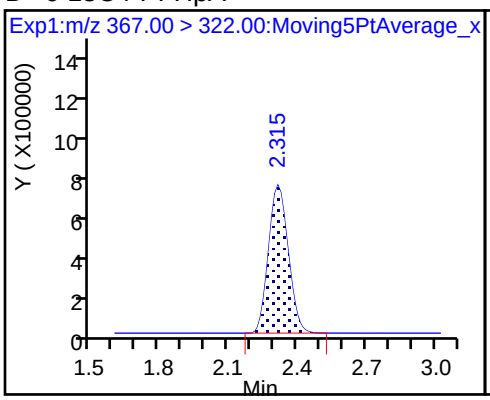
6 Perfluorohexanoic acid



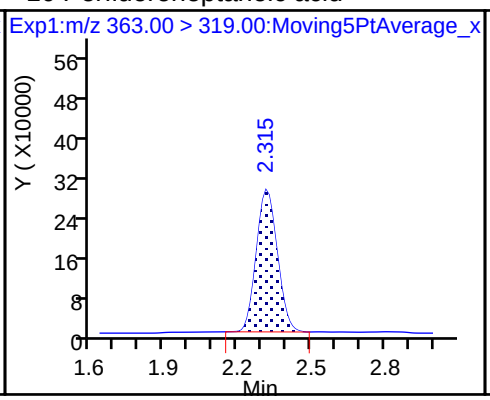
6 Perfluorohexanoic acid



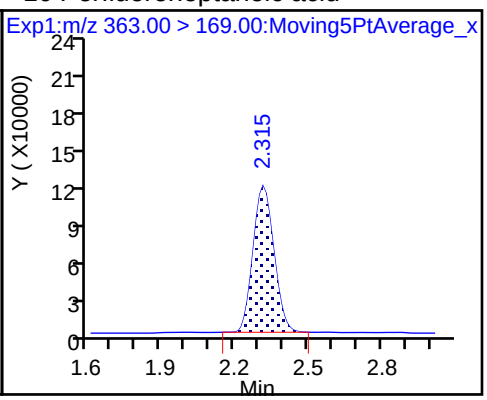
D 9 13C4-PFHpA



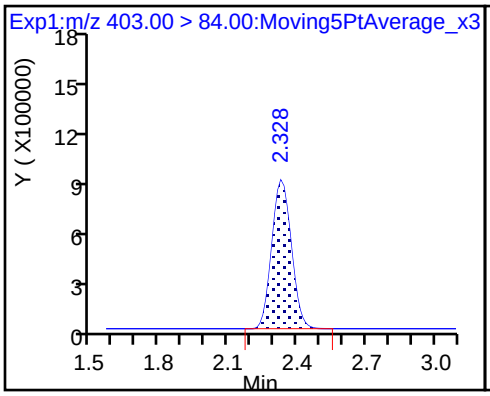
10 Perfluoroheptanoic acid



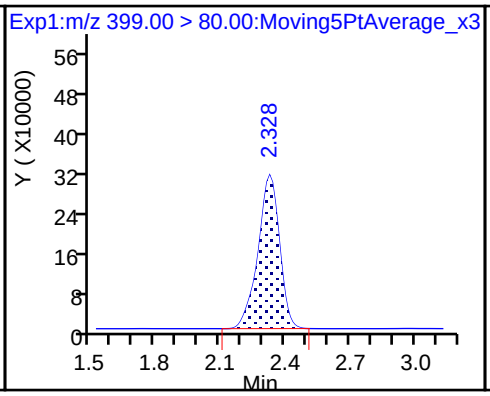
10 Perfluoroheptanoic acid



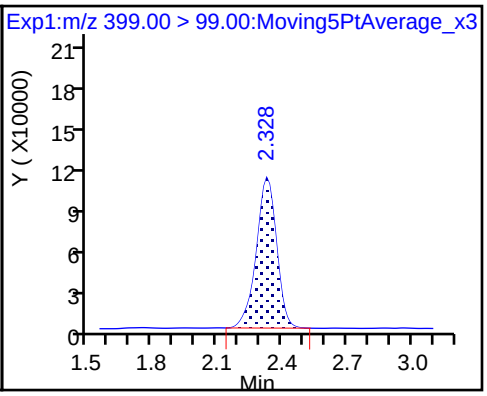
D 11 18O2 PFHxS



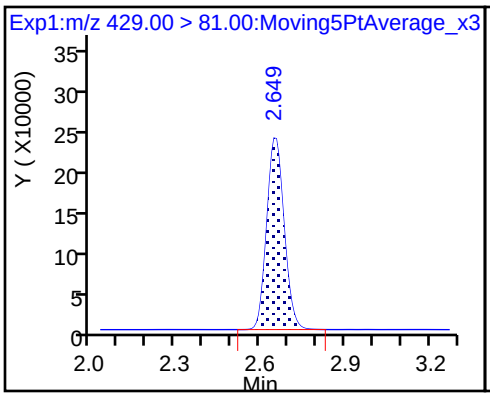
8 Perfluorohexanesulfonic acid



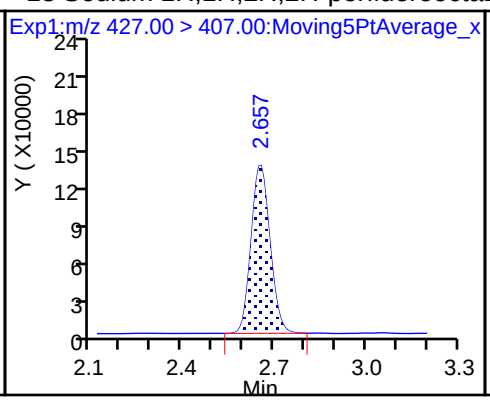
8 Perfluorohexanesulfonic acid



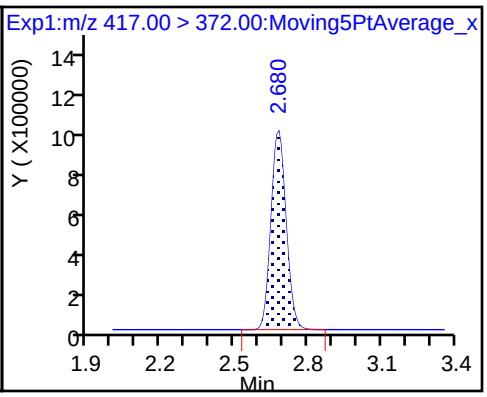
D 12 M2-6:2FTS



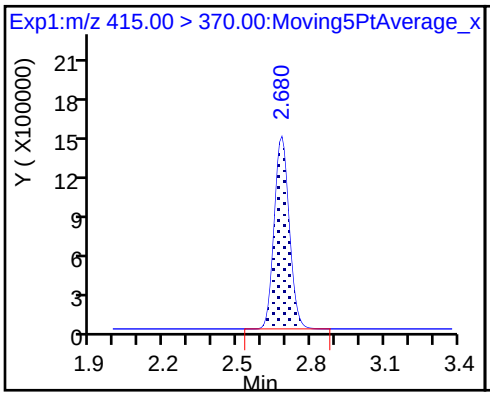
13 Sodium 1H,1H,2H,2H-perfluorooctane



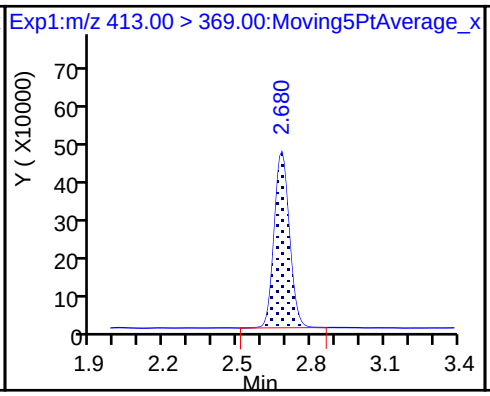
D 14 13C4 PFOA



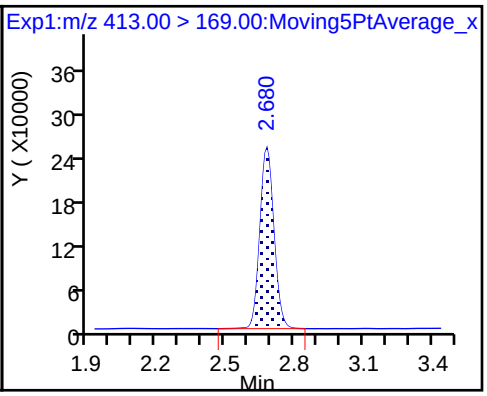
* 62 13C2-PFOA



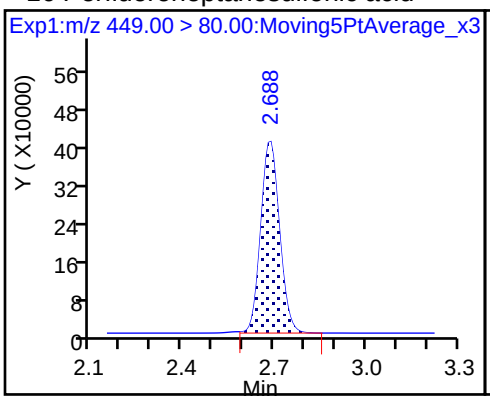
15 Perfluorooctanoic acid



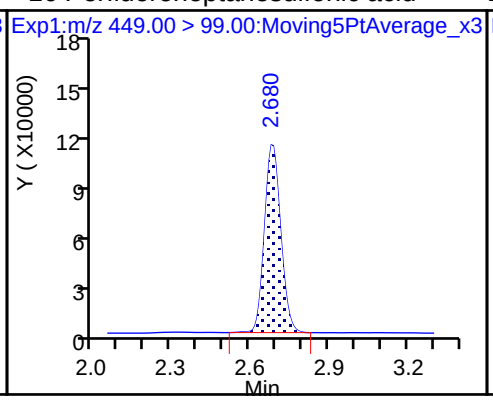
15 Perfluorooctanoic acid



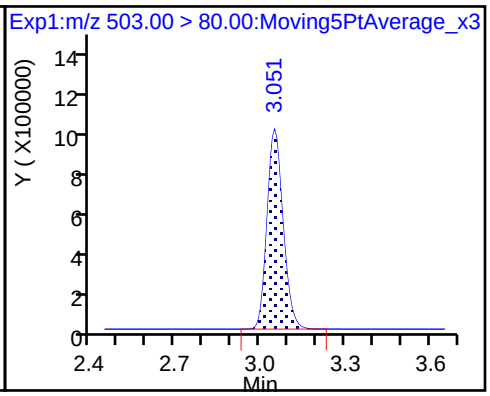
16 Perfluoroheptanesulfonic acid



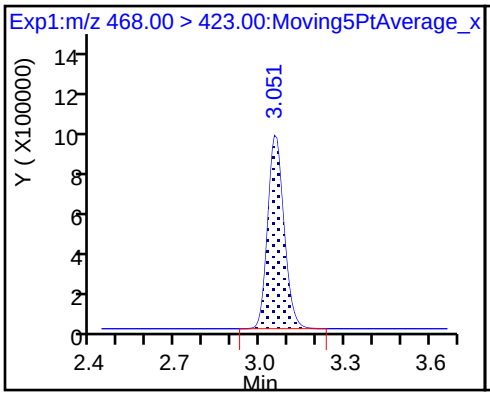
16 Perfluoroheptanesulfonic acid



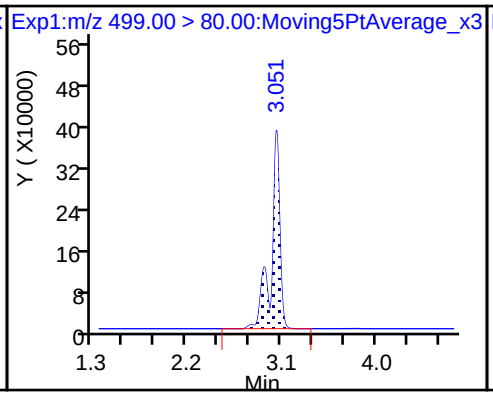
D 18 13C4 PFOS



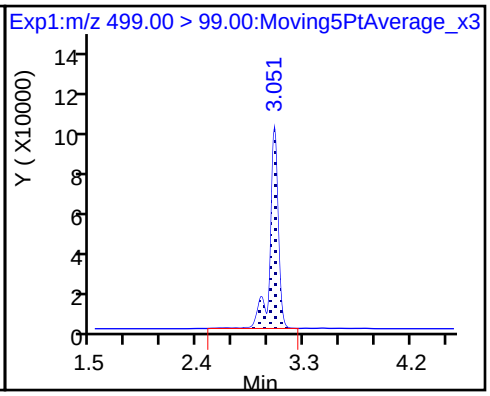
D 19 13C5 PFNA



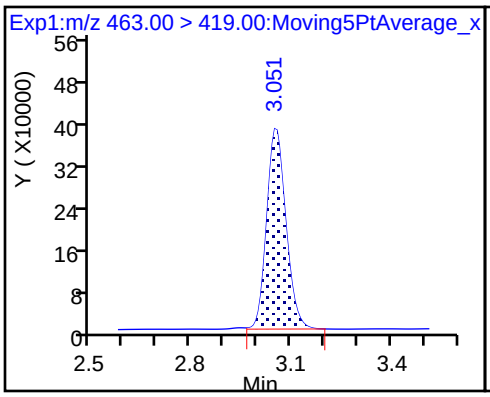
17 Perfluorooctane sulfonic acid



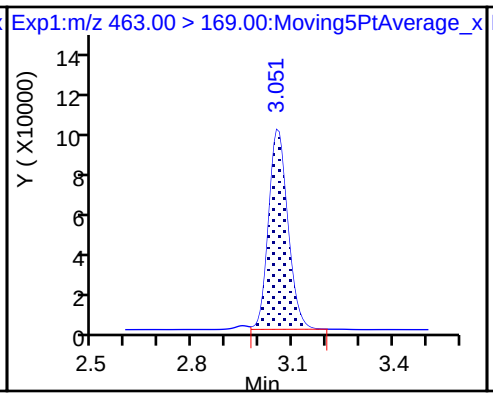
17 Perfluorooctane sulfonic acid



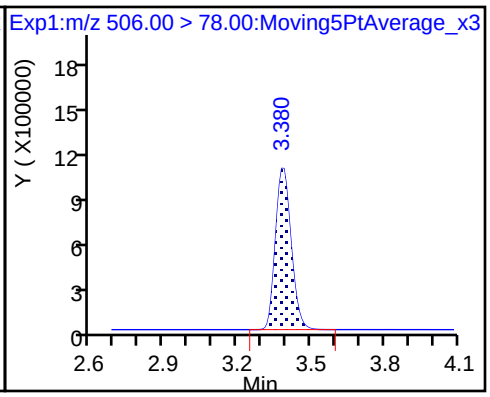
20 Perfluorononanoic acid



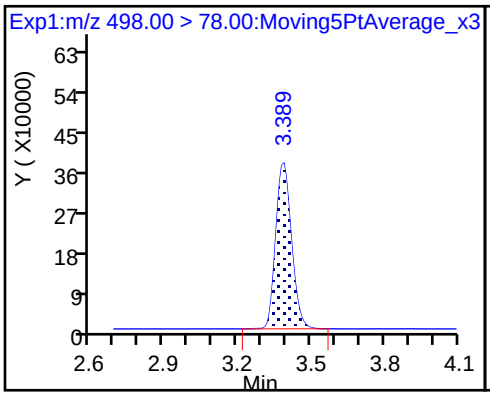
20 Perfluorononanoic acid



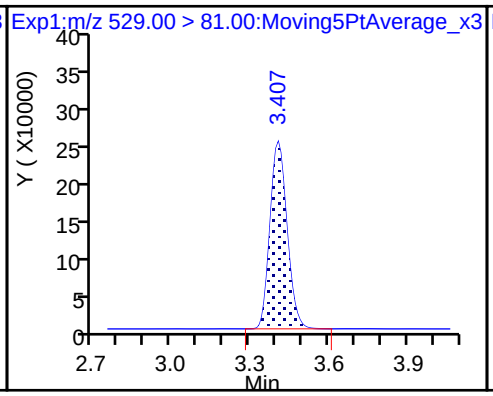
D 21 13C8 FOSA



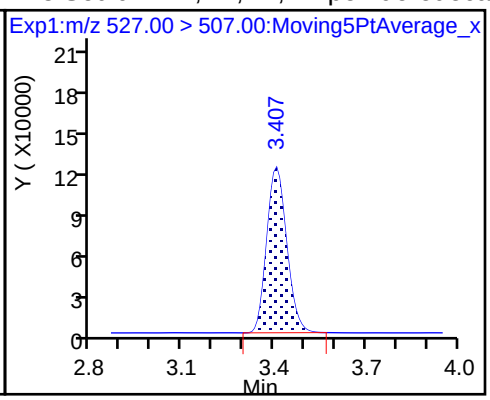
22 Perfluorooctane Sulfonamide



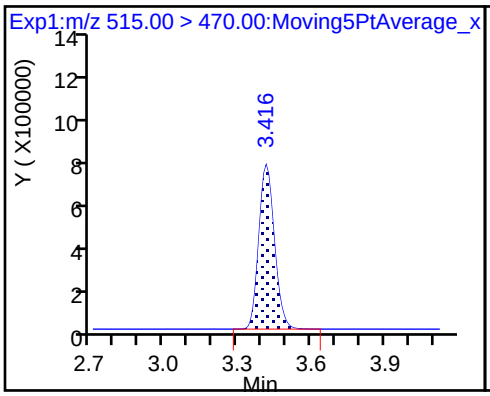
D 26 M2-8:2FTS



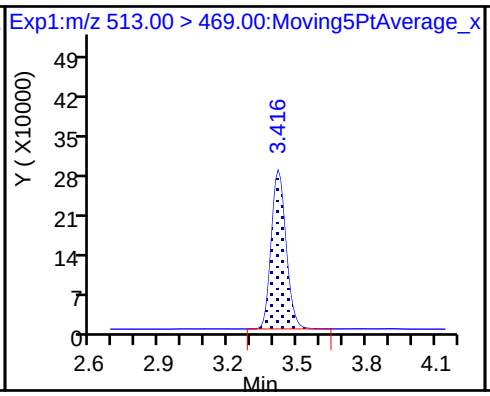
25 Sodium 1H,1H,2H,2H-perfluorodecane



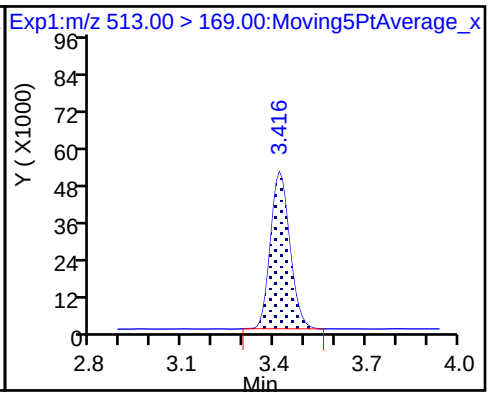
D 23 13C2 PFDA



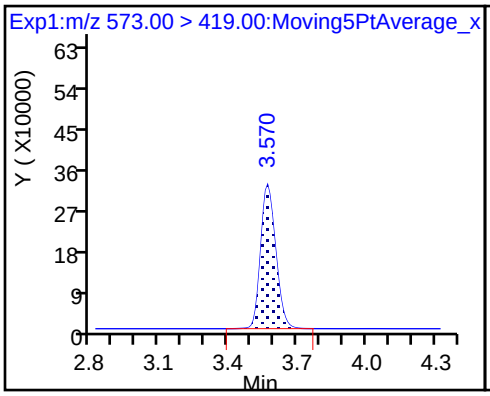
24 Perfluorodecanoic acid



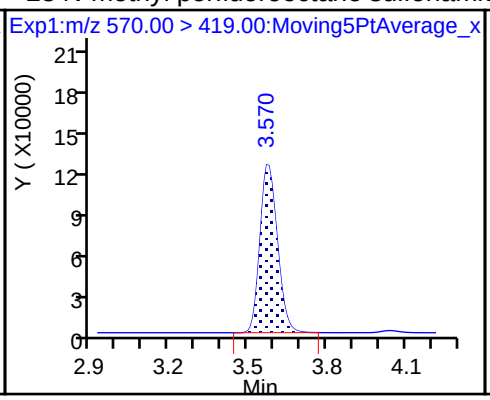
24 Perfluorodecanoic acid



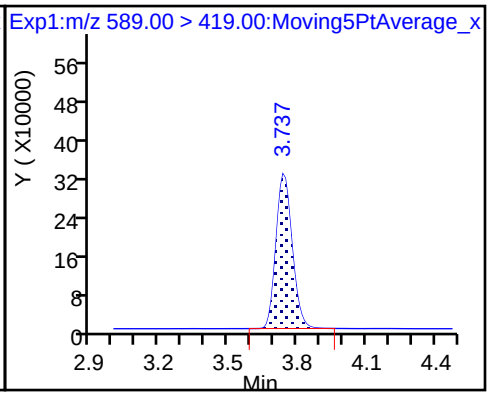
D 27 d3-NMeFOSAA



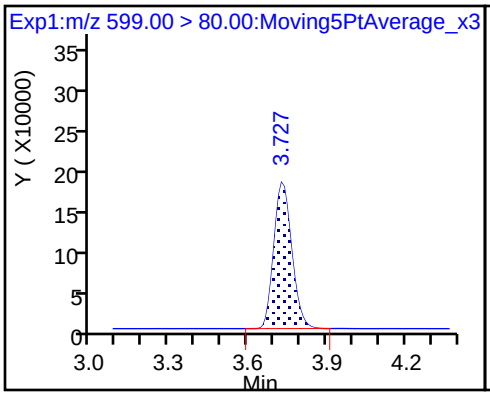
28 N-methyl perfluorooctane sulfonami



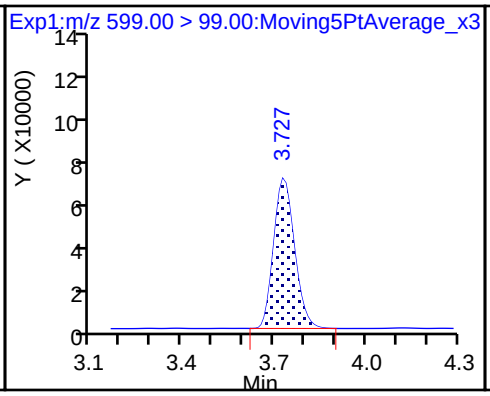
D 32 d5-NEtFOSAA



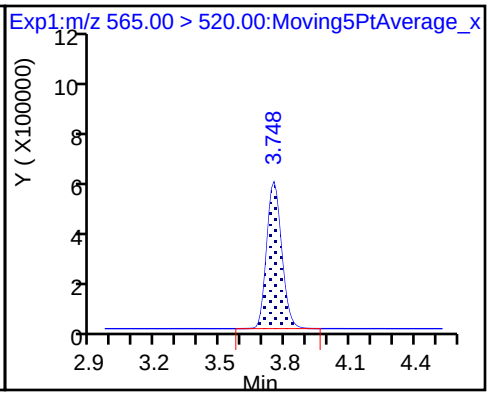
29 Perfluorodecane Sulfonic acid



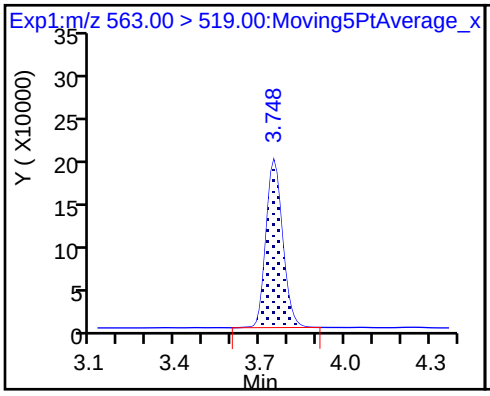
29 Perfluorodecane Sulfonic acid



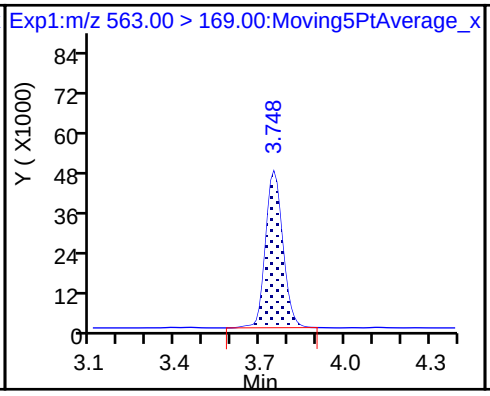
D 30 13C2 PFUnA



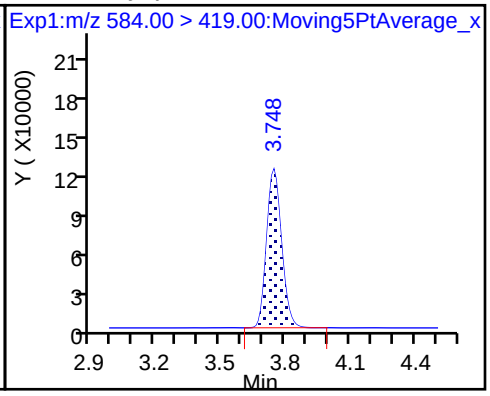
31 Perfluoroundecanoic acid



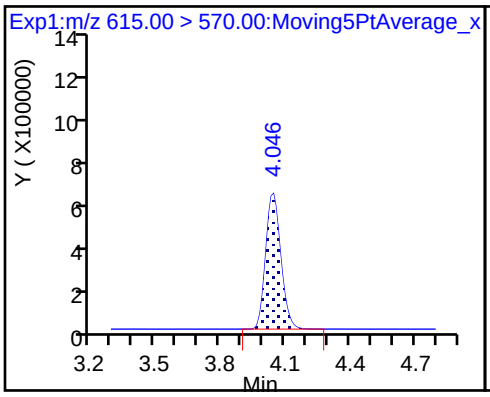
31 Perfluoroundecanoic acid



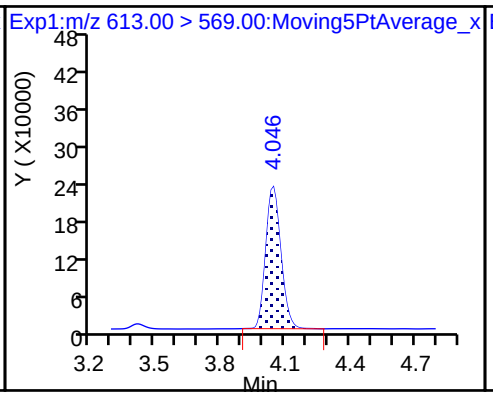
33 N-ethyl perfluorooctane sulfonamid



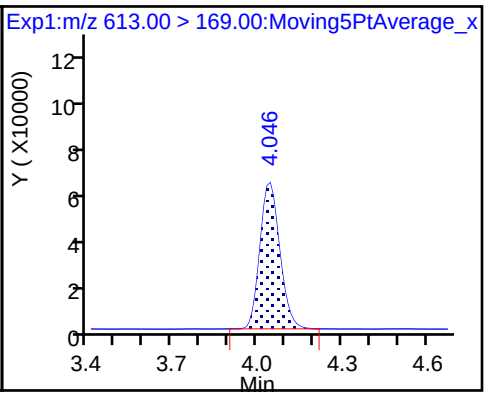
D 36 13C2 PFDoA



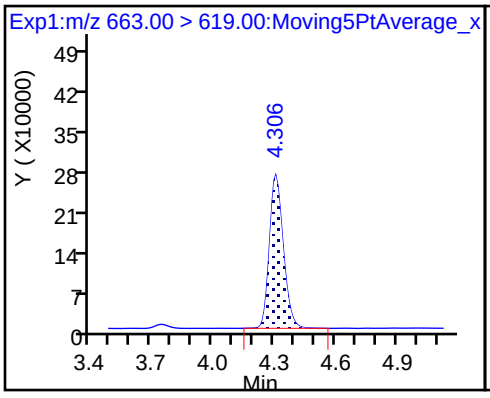
37 Perfluorododecanoic acid



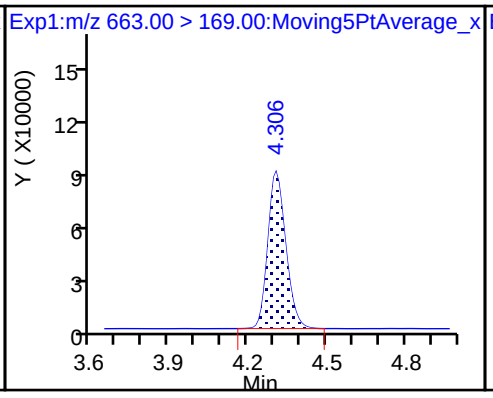
37 Perfluorododecanoic acid



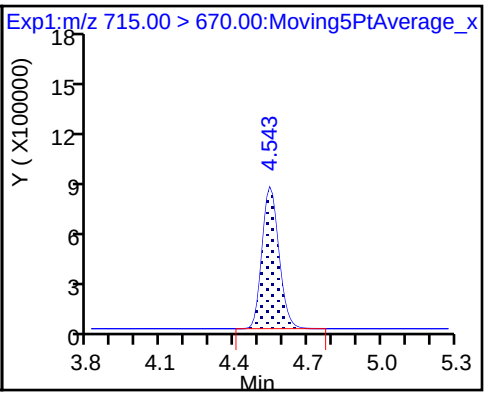
41 Perfluorotridecanoic acid



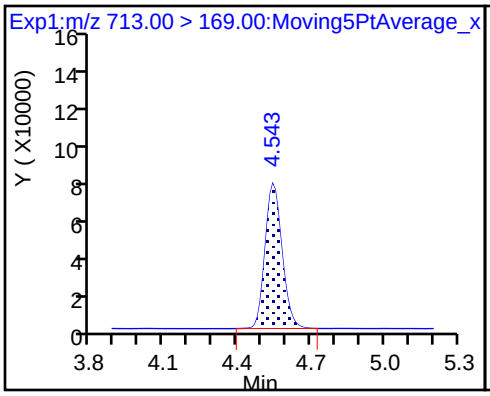
41 Perfluorotridecanoic acid



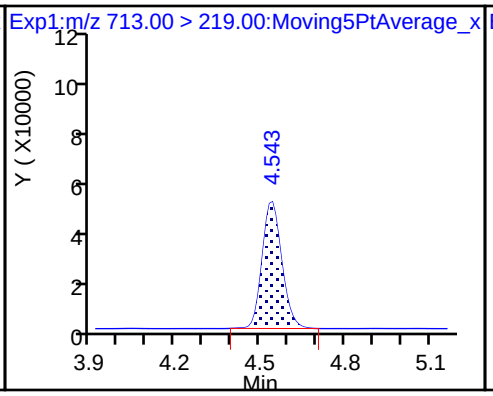
D 43 13C2-PFTeDA



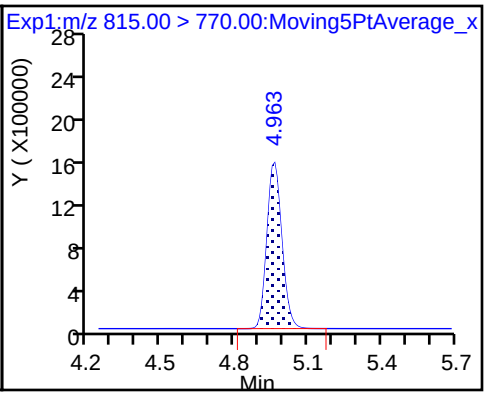
42 Perfluorotetradecanoic acid



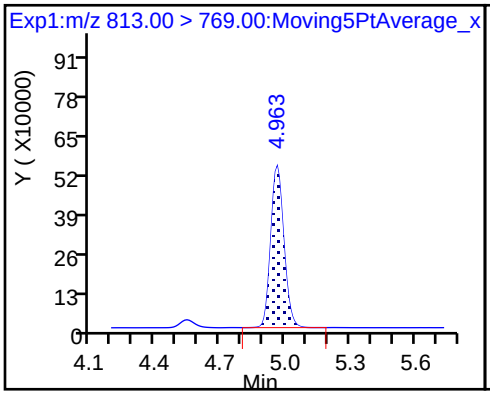
42 Perfluorotetradecanoic acid



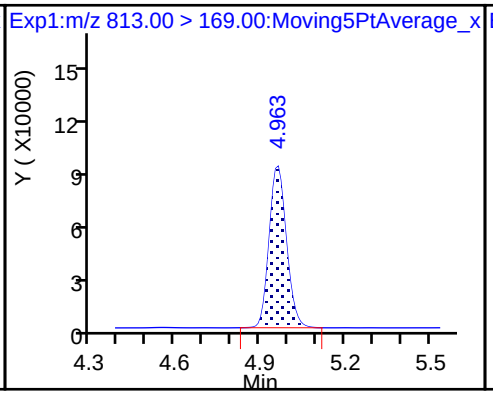
D 44 13C2-PFHxDA



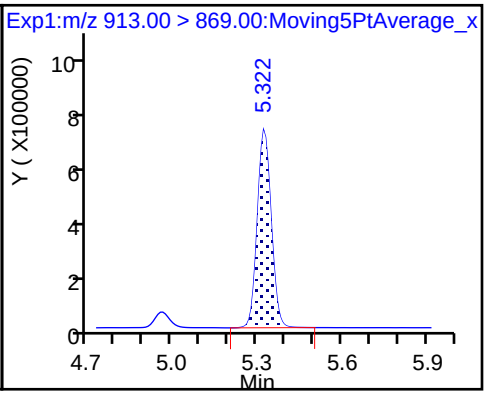
45 Perfluorohexadecanoic acid



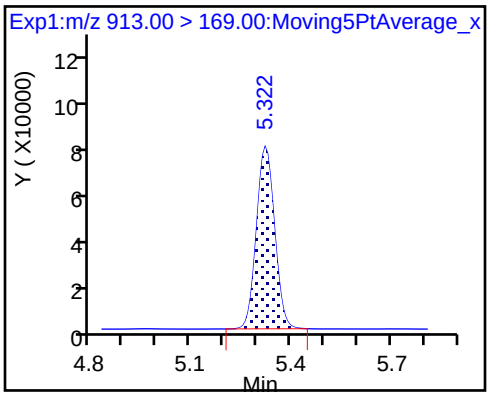
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/16/2018 23:01

Analysis Batch Number: 213554 End Date: 03/17/2018 00:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		03/16/2018 23:01	1		GeminiC18 3x100 3(mm)
IC 320-213554/2		03/16/2018 23:09	1	2018.03.16ICAL_002.d	GeminiC18 3x100 3(mm)
IC 320-213554/3		03/16/2018 23:17	1	2018.03.16ICAL_003.d	GeminiC18 3x100 3(mm)
IC 320-213554/4		03/16/2018 23:25	1	2018.03.16ICAL_004.d	GeminiC18 3x100 3(mm)
IC 320-213554/5 ICIS		03/16/2018 23:33	1	2018.03.16ICAL_005.d	GeminiC18 3x100 3(mm)
IC 320-213554/6		03/16/2018 23:41	1	2018.03.16ICAL_006.d	GeminiC18 3x100 3(mm)
IC 320-213554/7		03/16/2018 23:48	1	2018.03.16ICAL_007.d	GeminiC18 3x100 3(mm)
IC 320-213554/8		03/16/2018 23:56	1	2018.03.16ICAL_008.d	GeminiC18 3x100 3(mm)
ICB 320-213554/9		03/17/2018 00:04	1	2018.03.16ICAL_010.d	GeminiC18 3x100 3(mm)
ICV 320-213554/10		03/17/2018 00:12	1	2018.03.16ICAL_011.d	GeminiC18 3x100 3(mm)
CCB 320-213554/11		03/17/2018 00:20	1		GeminiC18 3x100 3(mm)
CCVL 320-213554/12		03/17/2018 00:27	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/17/2018 12:12

Analysis Batch Number: 213578 End Date: 03/17/2018 14:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-213578/1		03/17/2018 12:12	1	2017.03.17LLZA_001.d	GeminiC18 3x100 3(mm)
CCVL 320-213578/2		03/17/2018 12:20	1	2017.03.17LLZA_002.d	GeminiC18 3x100 3(mm)
CCVIS 320-213578/3		03/17/2018 12:28	1	2017.03.17LLZA_003.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 12:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 12:43	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 12:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 12:59	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:07	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:22	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:30	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:46	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 13:54	1		GeminiC18 3x100 3(mm)
CCV 320-213578/15		03/17/2018 14:01	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 14:09	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 14:17	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 14:25	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 14:33	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 14:41	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 14:48	100		GeminiC18 3x100 3(mm)
CCV 320-213578/22		03/17/2018 14:56	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/17/2018 15:04

Analysis Batch Number: 213581 End Date: 03/17/2018 16:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-213581/1		03/17/2018 15:04	1	2017.03.17LLZA_023.d	GeminiC18 3x100 3(mm)
MB 320-212987/1-A		03/17/2018 15:12	1	2017.03.17LLZA_024.d	GeminiC18 3x100 3(mm)
LCS 320-212987/2-A		03/17/2018 15:20	1	2017.03.17LLZA_025.d	GeminiC18 3x100 3(mm)
LB 320-211148/1-B		03/17/2018 15:27	1	2017.03.17LLZA_026.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 15:35	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 15:43	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 15:51	100		GeminiC18 3x100 3(mm)
320-36683-1 DL		03/17/2018 15:59	100	2017.03.17LLZA_030.d	GeminiC18 3x100 3(mm)
320-36683-2 DL		03/17/2018 16:07	100	2017.03.17LLZA_031.d	GeminiC18 3x100 3(mm)
320-36683-6 DL		03/17/2018 16:15	100	2017.03.17LLZA_032.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 16:22	100		GeminiC18 3x100 3(mm)
CCV 320-213581/12		03/17/2018 16:30	1	2017.03.17LLZA_034.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 16:38	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/17/2018 16:46	100		GeminiC18 3x100 3(mm)
CCV 320-213581/15		03/17/2018 16:54	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/19/2018 10:10

Analysis Batch Number: 213657 End Date: 03/19/2018 10:41

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-213657/1		03/19/2018 10:10	1	2018.03.19LLA_003.d	GeminiC18 3x100 3(mm)
CCVL 320-213657/2		03/19/2018 10:18	1	2018.03.19LLA_004.d	GeminiC18 3x100 3(mm)
CCV 320-213657/3 CCVIS		03/19/2018 10:26	1	2018.03.19LLA_005.d	GeminiC18 3x100 3(mm)
CCV 320-213657/5		03/19/2018 10:41	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/19/2018 16:57

Analysis Batch Number: 213785 End Date: 03/19/2018 19:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-213785/1		03/19/2018 16:57	1	2018.03.19LLAX_005.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/19/2018 17:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/19/2018 17:12	1		GeminiC18 3x100 3(mm)
320-36683-1		03/19/2018 17:20	1	2018.03.19LLAX_008.d	GeminiC18 3x100 3(mm)
320-36683-2		03/19/2018 17:28	1	2018.03.19LLAX_009.d	GeminiC18 3x100 3(mm)
320-36683-6		03/19/2018 17:36	1	2018.03.19LLAX_010.d	GeminiC18 3x100 3(mm)
320-36683-9 DL		03/19/2018 17:44	100	2018.03.19LLAX_011.d	GeminiC18 3x100 3(mm)
320-36683-9 MS DL		03/19/2018 17:51	100	2018.03.19LLAX_012.d	GeminiC18 3x100 3(mm)
320-36683-9 MSD DL		03/19/2018 17:59	100	2018.03.19LLAX_013.d	GeminiC18 3x100 3(mm)
CCV 320-213785/10		03/19/2018 18:07	1	2018.03.19LLAX_014.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/19/2018 18:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/19/2018 18:23	1		GeminiC18 3x100 3(mm)
320-36683-9		03/19/2018 18:31	1	2018.03.19LLAX_017.d	GeminiC18 3x100 3(mm)
320-36683-9 MS		03/19/2018 18:39	1	2018.03.19LLAX_018.d	GeminiC18 3x100 3(mm)
320-36683-9 MSD		03/19/2018 18:46	1	2018.03.19LLAX_019.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/19/2018 18:54	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/19/2018 19:02	1		GeminiC18 3x100 3(mm)
CCV 320-213785/18		03/19/2018 19:10	1	2018.03.19LLAX_022.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/20/2018 19:14

Analysis Batch Number: 214045 End Date: 03/20/2018 19:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-214045/1		03/20/2018 19:14	1	2018.03.20LLB_001.d	GeminiC18 3x100 3(mm)
CCVL 320-214045/2		03/20/2018 19:22	1	2018.03.20LLB_002.d	GeminiC18 3x100 3(mm)
CCV 320-214045/3 CCVIS		03/20/2018 19:30	1	2018.03.20LLB_003.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/20/2018 23:01

Analysis Batch Number: 214053 End Date: 03/21/2018 02:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-214053/1		03/20/2018 23:01	1	2018.03.20LLA_022.d	GeminiC18 3x100 3(mm)
MB 320-212510/1-A		03/20/2018 23:09	1	2018.03.20LLA_023.d	GeminiC18 3x100 3(mm)
LCS 320-212510/2-A		03/20/2018 23:17	1	2018.03.20LLA_024.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:25	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:04	1		GeminiC18 3x100 3(mm)
320-36683-3		03/21/2018 00:12	1	2018.03.20LLA_031.d	GeminiC18 3x100 3(mm)
320-36683-4		03/21/2018 00:20	1	2018.03.20LLA_032.d	GeminiC18 3x100 3(mm)
CCV 320-214053/12		03/21/2018 00:28	1	2018.03.20LLA_033.d	GeminiC18 3x100 3(mm)
320-36683-5		03/21/2018 00:36	1	2018.03.20LLA_034.d	GeminiC18 3x100 3(mm)
320-36683-7		03/21/2018 00:43	1	2018.03.20LLA_035.d	GeminiC18 3x100 3(mm)
320-36683-8		03/21/2018 00:51	1	2018.03.20LLA_036.d	GeminiC18 3x100 3(mm)
320-36683-10		03/21/2018 00:59	1	2018.03.20LLA_037.d	GeminiC18 3x100 3(mm)
320-36683-10 MS		03/21/2018 01:07	1	2018.03.20LLA_038.d	GeminiC18 3x100 3(mm)
320-36683-10 MSD		03/21/2018 01:15	1	2018.03.20LLA_039.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 01:22	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 01:30	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 01:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 01:46	1		GeminiC18 3x100 3(mm)
CCV 320-214053/23		03/21/2018 01:54	1	2018.03.20LLA_044.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 02:02	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 02:09	1		GeminiC18 3x100 3(mm)
CCV 320-214053/26		03/21/2018 02:17	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/21/2018 18:16

Analysis Batch Number: 214175 End Date: 03/21/2018 19:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		03/21/2018 18:16	1		GeminiC18 3x100 3(mm)
IC 320-214175/2		03/21/2018 18:24	1	2018.03.21LLICA LAX 002.d	GeminiC18 3x100 3(mm)
IC 320-214175/3		03/21/2018 18:32	1	2018.03.21LLICA LAX 003.d	GeminiC18 3x100 3(mm)
IC 320-214175/4		03/21/2018 18:39	1	2018.03.21LLICA LAX 004.d	GeminiC18 3x100 3(mm)
IC 320-214175/5 ICIS		03/21/2018 18:47	1	2018.03.21LLICA LAX 005.d	GeminiC18 3x100 3(mm)
IC 320-214175/6		03/21/2018 18:55	1	2018.03.21LLICA LAX 006.d	GeminiC18 3x100 3(mm)
IC 320-214175/7		03/21/2018 19:03	1	2018.03.21LLICA LAX 007.d	GeminiC18 3x100 3(mm)
IC 320-214175/8		03/21/2018 19:11	1	2018.03.21LLICA LAX 008.d	GeminiC18 3x100 3(mm)
ICB 320-214175/9		03/21/2018 19:19	1	2018.03.21LLICA LAX 009.d	GeminiC18 3x100 3(mm)
ICV 320-214175/10		03/21/2018 19:26	1	2018.03.21LLICA LAX 010.d	GeminiC18 3x100 3(mm)
CCB 320-214175/11		03/21/2018 19:34	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/21/2018 21:55

Analysis Batch Number: 214277 End Date: 03/22/2018 01:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-214277/1		03/21/2018 21:55	1	2018.03.21LLC_006.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:03	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:34	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:58	1		GeminiC18 3x100 3(mm)
320-36683-3 DL		03/21/2018 23:06	5	2018.03.21LLC_015.d	GeminiC18 3x100 3(mm)
320-36683-4 DL		03/21/2018 23:14	5	2018.03.21LLC_016.d	GeminiC18 3x100 3(mm)
CCV 320-214277/12		03/21/2018 23:21	1	2018.03.21LLC_017.d	GeminiC18 3x100 3(mm)
320-36683-5 DL		03/21/2018 23:29	20	2018.03.21LLC_018.d	GeminiC18 3x100 3(mm)
320-36683-7 DL		03/21/2018 23:37	10	2018.03.21LLC_019.d	GeminiC18 3x100 3(mm)
320-36683-8 DL		03/21/2018 23:45	100	2018.03.21LLC_020.d	GeminiC18 3x100 3(mm)
320-36683-10 DL		03/21/2018 23:53	50	2018.03.21LLC_021.d	GeminiC18 3x100 3(mm)
320-36683-10 MS DL		03/22/2018 00:01	50	2018.03.21LLC_022.d	GeminiC18 3x100 3(mm)
320-36683-10 MSD DL		03/22/2018 00:09	50	2018.03.21LLC_023.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 00:16	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 00:24	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 00:32	50		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 00:40	1		GeminiC18 3x100 3(mm)
CCV 320-214277/23		03/22/2018 00:48	1	2018.03.21LLC_028.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 00:56	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:35	1		GeminiC18 3x100 3(mm)
CCV 320-214277/30		03/22/2018 01:43	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/26/2018 21:05

Analysis Batch Number: 214954 End Date: 03/27/2018 01:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-214954/1		03/26/2018 21:05	1	2018.03.26LLB_003.d	GeminiC18 3x100 3(mm)
CCVL 320-214954/2		03/26/2018 21:13	1	2018.03.26LLB_004.d	GeminiC18 3x100 3(mm)
CCV 320-214954/3 CCVIS		03/26/2018 21:21	1	2018.03.26LLB_005.d	GeminiC18 3x100 3(mm)
CCV 320-214954/14		03/26/2018 22:47	1		GeminiC18 3x100 3(mm)
CCV 320-214954/25		03/27/2018 00:13	1		GeminiC18 3x100 3(mm)
CCV 320-214954/32		03/27/2018 01:08	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/27/2018 01:16

Analysis Batch Number: 214957 End Date: 03/27/2018 04:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-214957/1		03/27/2018 01:16	1	2018.03.26LLA_051.d	GeminiC18 3x100 3(mm)
MB 320-214230/1-A		03/27/2018 01:24	1	2018.03.26LLA_052.d	GeminiC18 3x100 3(mm)
LCS 320-214230/2-A		03/27/2018 01:31	1	2018.03.26LLA_053.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 01:39	1		GeminiC18 3x100 3(mm)
320-36631-A-1-C MS RE		03/27/2018 01:47	1	2018.03.26LLA_055.d	GeminiC18 3x100 3(mm)
320-36631-A-1-D MSD RE		03/27/2018 01:55	1	2018.03.26LLA_056.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:03	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:10	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:18	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:26	1		GeminiC18 3x100 3(mm)
CCV 320-214957/11		03/27/2018 02:34	1	2018.03.26LLA_061.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:49	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 02:57	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 03:05	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 03:13	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 03:21	1		GeminiC18 3x100 3(mm)
320-36683-3 RE		03/27/2018 03:28	1	2018.03.26LLA_068.d	GeminiC18 3x100 3(mm)
320-36683-4 RE		03/27/2018 03:36	1	2018.03.26LLA_069.d	GeminiC18 3x100 3(mm)
320-36683-5 RE		03/27/2018 03:44	1	2018.03.26LLA_070.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/27/2018 03:52	1		GeminiC18 3x100 3(mm)
CCV 320-214957/22		03/27/2018 04:00	1	2018.03.26LLA_072.d	GeminiC18 3x100 3(mm)
320-36683-7 RE		03/27/2018 04:08	1	2018.03.26LLA_073.d	GeminiC18 3x100 3(mm)
CCV 320-214957/28		03/27/2018 04:47	1	2018.03.26LLA_078.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/28/2018 23:46

Analysis Batch Number: 215311 End Date: 03/29/2018 02:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-215311/1		03/28/2018 23:46	1	2018.03.28LLFF_004.d	GeminiC18 3x100 3(mm)
CCVL 320-215311/2		03/28/2018 23:54	1	2018.03.28LLFF_005.d	GeminiC18 3x100 3(mm)
CCV 320-215311/3 CCVIS		03/29/2018 00:02	1	2018.03.28LLFF_006.d	GeminiC18 3x100 3(mm)
MB 320-214600/1-A		03/29/2018 00:10	1	2018.03.28LLFF_007.d	GeminiC18 3x100 3(mm)
LCS 320-214600/2-A		03/29/2018 00:18	1	2018.03.28LLFF_008.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:25	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:13	1		GeminiC18 3x100 3(mm)
CCV 320-215311/14		03/29/2018 01:28	1	2018.03.28LLFF_017.d	GeminiC18 3x100 3(mm)
320-36683-8 RE		03/29/2018 01:36	1	2018.03.28LLFF_018.d	GeminiC18 3x100 3(mm)
320-36683-10 RE		03/29/2018 01:59	1	2018.03.28LLFF_021.d	GeminiC18 3x100 3(mm)
320-36683-10 MS RE		03/29/2018 02:07	1	2018.03.28LLFF_022.d	GeminiC18 3x100 3(mm)
320-36683-10 MSD RE		03/29/2018 02:15	1	2018.03.28LLFF_023.d	GeminiC18 3x100 3(mm)
CCV 320-215311/23		03/29/2018 02:39	1	2018.03.28LLFF_026.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: A8_N Start Date: 03/29/2018 08:48

Analysis Batch Number: 215399 End Date: 03/29/2018 09:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-215399/1		03/29/2018 08:48	1	2018.03.29LLA_004.d	GeminiC18 3x100 3(mm)
CCVL 320-215399/2		03/29/2018 08:56	1	2018.03.29LLA_005.d	GeminiC18 3x100 3(mm)
CCV 320-215399/3 CCVIS		03/29/2018 09:03	1	2018.03.29LLA_006.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 09:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 09:19	1		GeminiC18 3x100 3(mm)
320-36683-10		03/29/2018 09:27	50	2018.03.29LLA_009.d	GeminiC18 3x100 3(mm)
320-36683-10 MS		03/29/2018 09:35	50	2018.03.29LLA_010.d	GeminiC18 3x100 3(mm)
320-36683-10 MSD		03/29/2018 09:43	50	2018.03.29LLA_011.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 09:51	100		GeminiC18 3x100 3(mm)
CCV 320-215399/10		03/29/2018 09:58	1	2018.03.29LLA_013.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 211148 Batch Start Date: 03/05/18 14:10 Batch Analyst: Merritt, Nataliya

Batch Method: 1312 Batch End Date: 03/06/18 06:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LB 320-211148/1		1312, 3535, 537 (modified)		100.00 g	2000 mL				
320-36683-A-1	SB008-SPLP(2'-4')	1312, 3535, 537 (modified)	E	100.05 g	2000 mL				
320-36683-A-2	DUPE007	1312, 3535, 537 (modified)	E	100.00 g	2000 mL				
320-36683-B-6	SB013-SPLP(8'-10')	1312, 3535, 537 (modified)	E	100.05 g	2000 mL				
320-36683-B-9	SB012-SPLP(2'-4')	1312, 3535, 537 (modified)	E	100.01 g	2000 mL				
320-36683-B-9 MS	SB012-SPLP(2'-4')	1312, 3535, 537 (modified)	E	100.00 g	2000 mL				
320-36683-B-9 MSD	SB012-SPLP(2'-4')	1312, 3535, 537 (modified)	E	100.00 g	2000 mL				

Batch Notes	

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 212510 Batch Start Date: 03/12/18 15:34 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/19/18 16:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00043	LCPFC-IS 00030	LCPFCSP 00119	
MB 320-212510/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-212510/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-3	SB008(5'-7')	SHAKE, 537 (modified)	T	5.07 g	10.00 mL	500 uL	500 uL		
320-36683-A-4	DUPE006	SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL		
320-36683-A-5	SB013(5'-7')	SHAKE, 537 (modified)	T	5.03 g	10.00 mL	500 uL	500 uL		
320-36683-A-7	SB002(5'-7')	SHAKE, 537 (modified)	T	5.04 g	10.00 mL	500 uL	500 uL		
320-36683-A-8	SB012(5'-7')	SHAKE, 537 (modified)	T	5.01 g	10.00 mL	500 uL	500 uL		
320-36683-A-10	SB012(10'-12')	SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL		
320-36683-A-10 MS	SB012(10'-12')	SHAKE, 537 (modified)	T	5.05 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MSD	SB012(10'-12')	SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL	500 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 212510 Batch Start Date: 03/12/18 15:34 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/19/18 16:30

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	KMK
Balance ID	QA-070
Batch Comment	Sample labels match client IDs TWL 3/12/18 ENVI carb lot # 96014
Analyst ID - Concentration	KMK
Analyst ID - Final Volume Step	KMK
Hexane ID	1134418
Internal Standard ID#	1178672
Manifold ID	5
Methanol ID	1175201
Methanolic Potassium Hydroxide ID	1188472
Millipore Water Dispense Date	3-16-18
Sodium Hydroxide ID	1178465
Ammonium Hydroxide/MeOH ID	1170748
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	VPM
Analyst ID - IS Reagent Drop	KMK
Analyst ID - IS Reagent Drop Witness	JER
Blank Sand Lot #	162639
SPE Cartridge Lot ID	01763748A
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 212987 Batch Start Date: 03/14/18 20:27 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/15/18 19:44

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00042	LCPFC-IS 00030
MB 320-212987/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-212987/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LB 320-211148/1-A		3535, 537 (modified)		281.23 g	27.38 g	253.9 mL	10.00 mL	500 uL	500 uL
320-36683-A-1-A	SB008-SPLP(2'-4')	3535, 537 (modified)	E	282.62 g	28.56 g	254.1 mL	10.00 mL	500 uL	500 uL
320-36683-A-2-A	DUPE007	3535, 537 (modified)	E	281.05 g	28.46 g	252.6 mL	10.00 mL	500 uL	500 uL
320-36683-B-6-A	SB013-SPLP(8'-10')	3535, 537 (modified)	E	293.14 g	27.61 g	265.5 mL	10.00 mL	500 uL	500 uL
320-36683-B-9-A	SB012-SPLP(2'-4')	3535, 537 (modified)	E	283.56 g	28.17 g	255.4 mL	10.00 mL	500 uL	500 uL
320-36683-B-9-B MS	SB012-SPLP(2'-4')	3535, 537 (modified)	E	278.40 g	27.20 g	251.2 mL	10.00 mL	500 uL	500 uL
320-36683-B-9-C MSD	SB012-SPLP(2'-4')	3535, 537 (modified)	E	293.78 g	28.55 g	265.2 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00118					
MB 320-212987/1		3535, 537 (modified)							
LCS 320-212987/2		3535, 537 (modified)		500 uL					
LB 320-211148/1-A		3535, 537 (modified)							
320-36683-A-1-A	SB008-SPLP(2'-4')	3535, 537 (modified)	E						
320-36683-A-2-A	DUPE007	3535, 537 (modified)	E						
320-36683-B-6-A	SB013-SPLP(8'-10')	3535, 537 (modified)	E						
320-36683-B-9-A	SB012-SPLP(2'-4')	3535, 537 (modified)	E						
320-36683-B-9-B MS	SB012-SPLP(2'-4')	3535, 537 (modified)	E	500 uL					
320-36683-B-9-C MSD	SB012-SPLP(2'-4')	3535, 537 (modified)	E	500 uL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 212987 Batch Start Date: 03/14/18 20:27 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/15/18 19:44

Batch Notes	
Analyst ID - Aliquot Step	VPM
Balance ID	QA-070
Batch Comment	Sample labels match client IDs JER 3/14/18
Analyst ID - Final Volume Step	VPM
H2O ID	030818
Hexane ID	1175188
Internal Standard ID#	1178672
Manifold ID	11, 2
Methanol ID	1175199
Sodium Hydroxide ID	1178464
Pipette ID	N32728F
Analyst ID - Reagent Drop	JER
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	GXL
Solvent Lot #	1181200
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003237137A

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 214230 Batch Start Date: 03/21/18 18:54 Batch Analyst: Reed, Jonathan E

Batch Method: SHAKE Batch End Date: 03/26/18 15:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00044	LCPFC-IS 00031	LCPFCSP 00139	
MB 320-214230/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-214230/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36631-A-1 MS		SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL	500 uL	
320-36631-A-1 MSD		SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-3	SB008(5'-7')	SHAKE, 537 (modified)	T	5.08 g	10.00 mL	500 uL	500 uL		
320-36683-A-4	DUPE006	SHAKE, 537 (modified)	T	4.97 g	10.00 mL	500 uL	500 uL		
320-36683-A-5	SB013(5'-7')	SHAKE, 537 (modified)	T	5.07 g	10.00 mL	500 uL	500 uL		
320-36683-A-7	SB002(5'-7')	SHAKE, 537 (modified)	T	5.01 g	10.00 mL	500 uL	500 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 214230 Batch Start Date: 03/21/18 18:54 Batch Analyst: Reed, Jonathan E

Batch Method: SHAKE Batch End Date: 03/26/18 15:30

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	SKD
Balance ID	QA-070
Batch Comment	Sample labels match client IDs JER 032118
Analyst ID - Final Volume Step	SKD
Hexane ID	1175189
Internal Standard ID#	1178673
Manifold ID	5, 6
Methanol ID	1190468
Methanolic Potassium Hydroxide ID	1188475
Millipore Water Dispense Date	031618
Sodium Hydroxide ID	1178465
Ammonium Hydroxide/MeOH ID	1186517
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	VPM
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	SKD
Blank Sand Lot #	162639
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 214600 Batch Start Date: 03/23/18 15:01 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/28/18 19:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00044	LCPFC-IS 00024	LCPFCSP 00138	
MB 320-214600/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-214600/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-8	SB012(5'-7')	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-36683-A-10	SB012(10'-12')	SHAKE, 537 (modified)	T	5.07 g	10.00 mL	500 uL	500 uL		
320-36683-A-10 MS	SB012(10'-12')	SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MSD	SB012(10'-12')	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL	500 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 214600 Batch Start Date: 03/23/18 15:01 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/28/18 19:45

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	JER
Balance ID	QA-078
Batch Comment	Sample labels match client IDs TWL/Envi Carb 97221 Supelco
Analyst ID - Final Volume Step	JER
Hexane ID	1175189
Internal Standard ID#	1140898
Manifold ID	5
Methanol ID	1197667
Methanolic Potassium Hydroxide ID	1188475
Millipore Water Dispense Date	031618
Sodium Hydroxide ID	1178465
Ammonium Hydroxide/MeOH ID	1186517
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	VPM
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	VPM
Blank Sand Lot #	162639
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 36631, 36683 Work List ID(s): 55478, 55537

Extraction Batch: 212987 Analysis Batch(es): 213581, 213785

Delivery Rank 4 Due Date: ———

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 213554	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓	✓	
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): CBW Date: 3/20/18

2nd Level Reviewer: [signature] Date: 3/22/2018

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 17MAR2018NCA_PFC Worklist Num: 55477
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55477.b
Anaylysis Type: SemiVOA Creator: Phomsopha, Thep
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055477-001	CCB	17-Mar-2018 12:12:27	2017.03.17LLZA_001.d	20	1.0		sv
CCVL	320-0055477-002	CCVL	17-Mar-2018 12:20:16	2017.03.17LLZA_002.d	21	1.0		sv
CCVIS	320-0055477-003	CCVIS	17-Mar-2018 12:28:05	2017.03.17LLZA_003.d	28	1.0		sv
RB	320-0055477-004	RB	17-Mar-2018 12:35:55	2017.03.17LLZA_004.d	20	1.0		sv
MB 320-212787/1-A	320-0055477-005	MB	17-Mar-2018 12:43:45	2017.03.17LLZA_005.d	1	1.0		sv
LCS 320-212787/2-A	320-0055477-006	LCS	17-Mar-2018 12:51:38	2017.03.17LLZA_006.d	2	1.0		sv
480-132153-R-1-A	320-0055477-007	Client	17-Mar-2018 12:59:27	2017.03.17LLZA_007.d	3	1.0	MW-3 (SOURCE) 030518	sv
480-132153-K-1-A MS	320-0055477-008	MS	17-Mar-2018 13:07:16	2017.03.17LLZA_008.d	4	1.0	MW-3 (SOURCE) 030518	sv
480-132153-R-1-B MSD	320-0055477-009	MSD	17-Mar-2018 13:15:05	2017.03.17LLZA_009.d	5	1.0	MW-3 (SOURCE) 030518	sv
480-132153-R-2-A	320-0055477-010	Client	17-Mar-2018 13:22:54	2017.03.17LLZA_010.d	6	1.0	MW-4 (SOURCE) 030518	sv
480-132153-J-2-A MS	320-0055477-011	MS	17-Mar-2018 13:30:42	2017.03.17LLZA_011.d	7	1.0	MW-4 (SOURCE) 030518	sv
480-132153-R-2-B MSD	320-0055477-012	MSD	17-Mar-2018 13:38:30	2017.03.17LLZA_012.d	8	1.0	MW-4 (SOURCE) 030518	sv
480-132153-R-3-A	320-0055477-013	Client	17-Mar-2018 13:46:19	2017.03.17LLZA_013.d	9	1.0	DUP 030518	sv
480-132153-A-4-A	320-0055477-014	Client	17-Mar-2018 13:54:07	2017.03.17LLZA_014.d	10	1.0	FIELD BLANK 030518	sv
CCV L5	320-0055477-015	CCV	17-Mar-2018 14:01:57	2017.03.17LLZA_015.d	29	1.0		sv
480-132147-A-1-A	320-0055477-016	Client	17-Mar-2018 14:09:44	2017.03.17LLZA_016.d	11	100.	R9030518-P3S1	sv
480-132147-A-2-A	320-0055477-017	Client	17-Mar-2018 14:17:34	2017.03.17LLZA_017.d	12	100.	R9030518-P1VE	sv
480-132147-B-3-A	320-0055477-018	Client	17-Mar-2018 14:25:23	2017.03.17LLZA_018.d	13	100.	R9030518-P2C	sv
480-132202-C-1-A	320-0055477-019	Client	17-Mar-2018 14:33:12	2017.03.17LLZA_019.d	14	100.	R9-030618-LST	sv
480-132202-C-2-A	320-0055477-020	Client	17-Mar-2018 14:41:01	2017.03.17LLZA_020.d	15	100.	R9-030618-S3A1	sv
480-132202-C-3-A	320-0055477-021	Client	17-Mar-2018 14:48:50	2017.03.17LLZA_021.d	16	100.	R9-030618-S4A2A	sv
CCV L4	320-0055477-022	CCV	17-Mar-2018 14:56:38	2017.03.17LLZA_022.d	28	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 17MAR2018NCB_PFC Worklist Num: 55478
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b
Anaylysis Type: SemiVOA Creator: Phomsopha, Thep
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0055478-001	CCV	17-Mar-2018 15:04:26	2017.03.17LLZA_023.d	28	1.0		sv
MB 320-212987/1-A	320-0055478-002	MB	17-Mar-2018 15:12:15	2017.03.17LLZA_024.d	17	1.0		sv
LCS 320-212987/2-A	320-0055478-003	LCS	17-Mar-2018 15:20:04	2017.03.17LLZA_025.d	18	1.0		sv
LB 320-211148/1-B	320-0055478-004	LB	17-Mar-2018 15:27:52	2017.03.17LLZA_026.d	19	1.0		sv
320-36631-B-3-B	320-0055478-005	Client	17-Mar-2018 15:35:45	2017.03.17LLZA_027.d	20	100.	SB031-SPLP(0-2')	sv
320-36631-A-5-B	320-0055478-006	Client	17-Mar-2018 15:43:37	2017.03.17LLZA_028.d	21	100.	SB006-SPLP(5'-7')	sv
320-36631-B-8-B	320-0055478-007	Client	17-Mar-2018 15:51:31	2017.03.17LLZA_029.d	22	100.	SB021-SPLP(5'-7')	sv
320-36683-A-1-B	320-0055478-008	Client	17-Mar-2018 15:59:23	2017.03.17LLZA_030.d	23	100.	SB008-SPLP(2'-4')	sv
320-36683-A-2-B	320-0055478-009	Client	17-Mar-2018 16:07:13	2017.03.17LLZA_031.d	24	100.	DUPE007	sv
320-36683-B-6-B	320-0055478-010	Client	17-Mar-2018 16:15:00	2017.03.17LLZA_032.d	25	100.	SB013-SPLP(8'-10')	sv
320-36683-B-9-D	320-0055478-011	Client	17-Mar-2018 16:22:49	2017.03.17LLZA_033.d	26	100.	SB012-SPLP(2'-4')	sv
CCV L5	320-0055478-012	CCV	17-Mar-2018 16:30:37	2017.03.17LLZA_034.d	29	1.0		sv
320-36683-B-9-E MS	320-0055478-013	MS	17-Mar-2018 16:38:25	2017.03.17LLZA_035.d	27	100.	SB012-SPLP(2'-4')	sv
320-36683-B-9-F MSD	320-0055478-014	MSD	17-Mar-2018 16:46:14	2017.03.17LLZA_036.d	28	100.	SB012-SPLP(2'-4')	sv
CCV L4	320-0055478-015	CCV	17-Mar-2018 16:54:04	2017.03.17LLZA_037.d	28	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 19MAR2018NCA_PFC Worklist Num: 55502
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55502.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055502-001	CCB	19-Mar-2018 10:10:32	2018.03.19LLA_003.d	20	1.0		sv
CCVL	320-0055502-002	CCVL	19-Mar-2018 10:18:23	2018.03.19LLA_004.d	21	1.0		sv
CCV L4	320-0055502-003	CCVIS	19-Mar-2018 10:26:10	2018.03.19LLA_005.d	13	1.0		sv
320-37017-A-9-A	320-0055502-004	Client	19-Mar-2018 10:33:59	2018.03.19LLA_024.d	13	10.0	18EIE378SW21	sv
CCV L5	320-0055502-005	CCV	19-Mar-2018 10:41:48	2018.03.19LLA_025.d	14	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 19MAR2018NCJ_PFC Worklist Num: 55537
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0055537-001	CCV	19-Mar-2018 16:57:05	2018.03.19LLAX_005.d	13	1.0		sv
320-36631-B-3-B	320-0055537-002	Client	19-Mar-2018 17:04:53	2018.03.19LLAX_006.d	1	1.0	SB031-SPLP(0-2')	sv
320-36631-B-8-B	320-0055537-003	Client	19-Mar-2018 17:12:43	2018.03.19LLAX_007.d	2	1.0	SB021-SPLP(5'-7')	sv
320-36683-A-1-B	320-0055537-004	Client	19-Mar-2018 17:20:32	2018.03.19LLAX_008.d	3	1.0	SB008-SPLP(2'-4')	sv
320-36683-A-2-B	320-0055537-005	Client	19-Mar-2018 17:28:20	2018.03.19LLAX_009.d	4	1.0	DUPE007	sv
320-36683-B-6-B	320-0055537-006	Client	19-Mar-2018 17:36:12	2018.03.19LLAX_010.d	5	1.0	SB013-SPLP(8'-10')	sv
320-36683-B-9-D	320-0055537-007	Client	19-Mar-2018 17:44:04	2018.03.19LLAX_011.d	6	100.	SB012-SPLP(2'-4')	sv
320-36683-B-9-E MS	320-0055537-008	MS	19-Mar-2018 17:51:57	2018.03.19LLAX_012.d	7	100.	SB012-SPLP(2'-4')	sv
320-36683-B-9-F MSD	320-0055537-009	MSD	19-Mar-2018 17:59:46	2018.03.19LLAX_013.d	8	100.	SB012-SPLP(2'-4')	sv
CCV L5	320-0055537-010	CCV	19-Mar-2018 18:07:36	2018.03.19LLAX_014.d	14	1.0		sv
320-36631-A-5-B	320-0055537-011	Client	19-Mar-2018 18:15:29	2018.03.19LLAX_015.d	9	1.0	SB006-SPLP(5'-7')	sv
RB	320-0055537-012	RB	19-Mar-2018 18:23:20	2018.03.19LLAX_016.d	54	1.0		sv
320-36683-B-9-D	320-0055537-013	Client	19-Mar-2018 18:31:10	2018.03.19LLAX_017.d	10	1.0	SB012-SPLP(2'-4')	sv
320-36683-B-9-E MS	320-0055537-014	MS	19-Mar-2018 18:39:02	2018.03.19LLAX_018.d	11	1.0	SB012-SPLP(2'-4')	sv
320-36683-B-9-F MSD	320-0055537-015	MSD	19-Mar-2018 18:46:53	2018.03.19LLAX_019.d	12	1.0	SB012-SPLP(2'-4')	sv
RB	320-0055537-016	RB	19-Mar-2018 18:54:42	2018.03.19LLAX_020.d	54	1.0		sv
RB	320-0055537-017	RB	19-Mar-2018 19:02:32	2018.03.19LLAX_021.d	54	1.0		sv
CCV L4	320-0055537-018	CCV	19-Mar-2018 19:10:23	2018.03.19LLAX_022.d	13	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 17MAR2018NCB_PFC Worklist Number: 55478
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55478.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 213580	LC PFC ICAL Raw Batch: 213581	LC PFC_QSM5-1 ICAL Raw Batch: 213582
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 MB 320-212987/1-A		# 2 MB 320-212987/1-A	
# 3 LCS 320-212987/2-A		# 3 LCS 320-212987/2-A	
# 4 LB 320-211148/1-B		# 4 LB 320-211148/1-B	
# 5 320-36631-B-3-B		# 5 320-36631-B-3-B	
# 6 320-36631-A-5-B		# 6 320-36631-A-5-B	
# 7 320-36631-B-8-B		# 7 320-36631-B-8-B	
# 8 320-36683-A-1-B		# 8 320-36683-A-1-B	
# 9 320-36683-A-2-B		# 9 320-36683-A-2-B	
#10 320-36683-B-6-B		#10 320-36683-B-6-B	
#11 320-36683-B-9-D		#11 320-36683-B-9-D	
#12 CCV L5	#12 CCV L5	#12 CCV L5	#12 CCV L5
#13 320-36683-B-9-E MS		#13 320-36683-B-9-E MS	
#14 320-36683-B-9-F MSD		#14 320-36683-B-9-F MSD	
#15 CCV L4	#15 CCV L4	#15 CCV L4	#15 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 19MAR2018NCJ_PFC Worklist Number: 55537
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180319-55537.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch 1	LC PFC_DOD ICAL Raw Batch 213784	LC PFC ICAL Raw Batch 213785	LC PFC_QSM5-1 ICAL Raw Batch 213786
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 320-36631-B-3-B		# 2 320-36631-B-3-B	
# 3 320-36631-B-8-B		# 3 320-36631-B-8-B	
# 4 320-36683-A-1-B		# 4 320-36683-A-1-B	
# 5 320-36683-A-2-B		# 5 320-36683-A-2-B	
# 6 320-36683-B-6-B		# 6 320-36683-B-6-B	
# 7 320-36683-B-9-D		# 7 320-36683-B-9-D	
# 8 320-36683-B-9-E MS		# 8 320-36683-B-9-E MS	
# 9 320-36683-B-9-F MSD		# 9 320-36683-B-9-F MSD	
#10 CCV L5	#10 CCV L5	#10 CCV L5	#10 CCV L5
#11 320-36631-A-5-B		#11 320-36631-A-5-B	
#12 RB		#12 RB	
#13 320-36683-B-9-D		#13 320-36683-B-9-D	
#14 320-36683-B-9-E MS		#14 320-36683-B-9-E MS	
#15 320-36683-B-9-F MSD		#15 320-36683-B-9-F MSD	
#16 RB		#16 RB	
#17 RB		#17 RB	
#18 CCV L4	#18 CCV L4	#18 CCV L4	#18 CCV L4

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

18

AS 3/17/18
AS 3/19/18

Batch Number: 320-212987 ✓

Method Code: 320-3535_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Batch End: 3/15/2018 7:44:00PM

Solid-Phase Extraction (SPE)

3/21

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-212987/1 N/A	N/A		250.00 mL				N/A	N/A	N/A		MB 320-212987/1-A
				10.00 mL								
2	LCS~320-212987/2 N/A	N/A		250.00 mL				N/A	N/A	N/A		LCS 320-212987/2-A
				10.00 mL								
3	LB~320-211148/1-A N/A	N/A	281.23 g	253.9 mL				N/A	N/A	N/A		LB 320-211148/1-B
			27.38 g	10.00 mL								
4	320-36631-B-3-A (PFC_IDA)	N/A (320-36631-1)	284.37 g	256 mL				3/19/18	12_Days	4	Screen 100x 1X	320-36631-B-3-B
			28.42 g	10.00 mL								
5	320-36631-A-5-A (PFC_IDA)	N/A (320-36631-1)	284.27 g	256.4 mL				3/19/18	12_Days	4	1X, RB	320-36631-A-5-B
			27.87 g	10.00 mL								
6	320-36631-B-8-A (PFC_IDA)	N/A (320-36631-1)	287.78 g	260.2 mL				3/19/18	12_Days	4	1X	320-36631-B-8-B
			27.57 g	10.00 mL								
7	320-36683-A-1-A (PFC_IDA)	N/A (320-36683-1)	282.62 g	254.1 mL				3/20/18	12_Days	4	1X	320-36683-A-1-B
			28.56 g	10.00 mL								
8	320-36683-A-2-A (PFC_IDA)	N/A (320-36683-1)	281.05 g	252.6 mL				3/20/18	12_Days	4	1X	320-36683-A-2-B
			28.46 g	10.00 mL								
9	320-36683-B-6-A (PFC_IDA)	N/A (320-36683-1)	293.14 g	265.5 mL				3/20/18	12_Days	4	1X	320-36683-B-6-B
			27.61 g	10.00 mL								
10	320-36683-B-9-A (PFC_IDA)	N/A (320-36683-1)	283.56 g	255.4 mL				3/20/18	12_Days	4	RI 100% 1X RB	320-36683-B-9-D
			28.17 g	10.00 mL								

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Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Method Code: 320-3535_PFC-320

Batch End: 3/15/2018 7:44:00PM

11	320-36683-B-9-B~MS (PFC_IDA)	N/A (320-36683-1)	278.40 g 27.20 g	251.2 mL 10.00 mL				3/20/18	12_Days	4	Screen 100x RI 100X 1XRB
12	320-36683-B-9-C~MSD (PFC_IDA)	N/A (320-36683-1)	293.78 g 28.55 g	265.2 mL 10.00 mL				3/20/18	12_Days	4	RI 100X 1X RB
13	N/A	N/A						N/A	N/A	N/A	

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Method Code: 320-3535_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Batch End: 3/15/2018 7:44:00PM

Batch Notes

Manifold ID	11, 2
Methanol ID	1175199
Hexane ID	1175188
Sodium Hydroxide ID	1178464
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003237137A
Balance ID	QA-070
H2O ID	030818
Pipette ID	N32728F
Solvent Name	0.3% NH4OH/MeOH
Solvent Lot #	1181200
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	GXL
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
Analyst ID - IS Reagent Drop	VPM

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Method Code: 320-3535_PFC-320

Batch End: 3/15/2018 7:44:00PM

Analyst ID - IS Reagent Drop	JER
Witness	
Internal Standard ID#	1178672
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	VPM
Analyst ID - Final Volume Step	VPM
SOP Number	WS-LC-0025
Batch Comment	Sample labels match client IDs JER 3/14/18

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Method Code: 320-3535_PFC-320

Batch End:

Batch Notes

Manifold ID	11, 2
Methanol ID	1175199
Hexane ID	1175188
Sodium Hydroxide ID	1178464
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003237137A
Balance ID	QA-070
H2O ID	030818
Pipette ID	N32728F
Solvent Name	0.3% NH4OH/MeOH
Solvent Lot #	1181200
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	GXL
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
Analyst ID - IS Reagent Drop	VPM

Page 1128 of 1175

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Method Code: 320-3535_PFC-320

Batch End:

Analyst ID - IS Reagent Drop Witness	JER
Internal Standard ID#	1178672
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	VPM
Analyst ID - Final Volume Step	VPM
SOP Number	WS-LC-0025
Batch Comment	Sample labels match client IDs JER 3/14/18

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Method Code: 320-3535_PFC-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-212987/1	LCMPFC_ALL_SU_00042	500 uL	10.00 mL	3/14/18	GXL 3/14/18
LCS 320-212987/2	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
LCS 320-212987/2	LCPFCSP_00118	500 uL	10.00 mL		
LB 320-211148/1-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36631-B-3-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36631-A-5-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36631-B-8-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-A-1-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-A-2-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-B-6-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-B-9-A	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-B-9-B MS	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-B-9-B MS	LCPFCSP_00118	500 uL	10.00 mL		
320-36683-B-9-C MSD	LCMPFC_ALL_SU_00042	500 uL	10.00 mL		
320-36683-B-9-C MSD	LCPFCSP_00118	500 uL	10.00 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212987

Analyst: Reed, Jonathan E

Batch Open: 3/14/2018 8:27:00PM

Method Code: 320-3535_PFC-320

Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 212987 Test PFC-IDA (4)

Earliest Holding Time 3/14/18 0800

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	NA	NA
Method/sample/login/QAS checked and correct	NA	~~NA~~ ✓ acar 3/16/18
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: VPM Date: 3-15-18

2nd Level Reviewer: acar Date: 3/16/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC_1DA

Analyst (Print Name) Amani Royce **Reagent ID** 1168592

Date 3/16/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-36631	3	10,000	15	1500	100 K
↓	5	↓	↓	↓	↓
	8				
320-36683	1				
↓	2				
	6				
	9				
	9MS				
↓	9MSD	↓	↓	↓	↓

AMR 3/16/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 320-36031, -36083, -36761 Work List ID(s): 55606, 55672

Extraction Batch: 262510 Analysis Batch(es): 214053, 214277

Delivery Rank: 4 Due Date:

A Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 213554, 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).			✓
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?			✓
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	①	✓	
4. Are MS/MSD recoveries and RPD within control limits?	②	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	② ④	✓	
C Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D Documentation			
1. Are all non-conformances documented/attached? NCM# See below	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	DRC	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): [signature] Date: 3/23/18

2nd Level Reviewer: CBW Date: 3/27/18

① 119932 ② 119937 ③ 119940 ④ 120027

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 20MAR2018NCAC_PFC Worklist Number: 55606
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch 1	LC PFC ICAL Raw Batch: 214053
# 1 CCV L4	# 1 CCV L4
# 2 MB 320-212510/1-A	# 2 MB 320-212510/1-A
# 3 LCS 320-212510/2-A	# 3 LCS 320-212510/2-A
# 4 320-36631-A-1-A	# 4 320-36631-A-1-A
# 5 320-36631-A-2-A	# 5 320-36631-A-2-A
# 6 320-36631-A-4-A	# 6 320-36631-A-4-A
# 7 320-36631-A-6-A	# 7 320-36631-A-6-A
# 8 320-36631-A-7-A	# 8 320-36631-A-7-A
# 9 320-36631-A-9-A	# 9 320-36631-A-9-A
#10 320-36683-A-3-A	#10 320-36683-A-3-A
#11 320-36683-A-4-A	#11 320-36683-A-4-A
#12 CCV L5	#12 CCV L5
#13 320-36683-A-5-A	#13 320-36683-A-5-A
#14 320-36683-A-7-A	#14 320-36683-A-7-A
#15 320-36683-A-8-A	#15 320-36683-A-8-A
#16 320-36683-A-10-A	#16 320-36683-A-10-A
#17 320-36683-A-10-B MS	#17 320-36683-A-10-B MS
#18 320-36683-A-10-C MSD	#18 320-36683-A-10-C MSD
#19 320-36761-A-1-A	#19 320-36761-A-1-A
#20 320-36761-A-4-A	#20 320-36761-A-4-A
#21 320-36761-A-5-A	#21 320-36761-A-5-A
#22 320-36761-A-6-A	#22 320-36761-A-6-A
#23 CCV L4	#23 CCV L4
#24 320-36761-A-8-A	#24 320-36761-A-8-A
#25 320-36761-A-9-A	#25 320-36761-A-9-A
#26 CCV L5	#26 CCV L5

CCVL - 214045

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 20MAR2018NCAC_PFC Worklist Num: 55606
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CV L4	320-0055606-001	CCV	20-Mar-2018 23:01:55	2018.03.20LLA_022.d	13	1.0		sv
B 320-212510/1-A	320-0055606-002	MB	20-Mar-2018 23:09:46	2018.03.20LLA_023.d	14	1.0		sv
CS 320-212510/2-A	320-0055606-003	LCS	20-Mar-2018 23:17:37	2018.03.20LLA_024.d	15	1.0		sv
20-36631-A-1-A	320-0055606-004	Client	20-Mar-2018 23:25:29	2018.03.20LLA_025.d	16	1.0	SB031(5'-7')	sv
20-36631-A-2-A	320-0055606-005	Client	20-Mar-2018 23:33:19	2018.03.20LLA_026.d	17	1.0	SB031(10'-12')	sv
20-36631-A-4-A	320-0055606-006	Client	20-Mar-2018 23:41:12	2018.03.20LLA_027.d	18	1.0	SB006(5'-7')	sv
20-36631-A-6-A	320-0055606-007	Client	20-Mar-2018 23:49:05	2018.03.20LLA_028.d	19	1.0	SB021(5'-7')	sv
20-36631-A-7-A	320-0055606-008	Client	20-Mar-2018 23:56:55	2018.03.20LLA_029.d	20	1.0	SB021(10'-12')	sv
20-36631-A-9-A	320-0055606-009	Client	21-Mar-2018 00:04:44	2018.03.20LLA_030.d	21	1.0	SB024(5'-7')	sv
20-36683-A-3-A	320-0055606-010	Client	21-Mar-2018 00:12:34	2018.03.20LLA_031.d	22	1.0	SB008(5'-7')	sv
20-36683-A-4-A	320-0055606-011	Client	21-Mar-2018 00:20:22	2018.03.20LLA_032.d	23	1.0	DUPE006	sv
CV L5	320-0055606-012	CCV	21-Mar-2018 00:28:13	2018.03.20LLA_033.d	14	1.0		sv
20-36683-A-5-A	320-0055606-013	Client	21-Mar-2018 00:36:00	2018.03.20LLA_034.d	24	1.0	SB013(5'-7')	sv
20-36683-A-7-A	320-0055606-014	Client	21-Mar-2018 00:43:51	2018.03.20LLA_035.d	25	1.0	SB002(5'-7')	sv
20-36683-A-8-A	320-0055606-015	Client	21-Mar-2018 00:51:41	2018.03.20LLA_036.d	26	1.0	SB012(5'-7')	sv
20-36683-A-10-A	320-0055606-016	Client	21-Mar-2018 00:59:30	2018.03.20LLA_037.d	27	1.0	SB012(10'-12')	sv
20-36683-A-10-B MS	320-0055606-017	MS	21-Mar-2018 01:07:20	2018.03.20LLA_038.d	28	1.0	SB012(10'-12')	sv
20-36683-A-10-C MSD	320-0055606-018	MSD	21-Mar-2018 01:15:09	2018.03.20LLA_039.d	29	1.0	SB012(10'-12')	sv
20-36761-A-1-A	320-0055606-019	Client	21-Mar-2018 01:22:58	2018.03.20LLA_040.d	30	1.0	SB004 (5'-7')	sv
20-36761-A-4-A	320-0055606-020	Client	21-Mar-2018 01:30:47	2018.03.20LLA_041.d	31	1.0	SB003(5'-7')	sv
20-36761-A-5-A	320-0055606-021	Client	21-Mar-2018 01:38:36	2018.03.20LLA_042.d	32	1.0	SB003(10'-12')	sv
20-36761-A-6-A	320-0055606-022	Client	21-Mar-2018 01:46:25	2018.03.20LLA_043.d	33	1.0	SB007(2'-4')	sv
CV L4	320-0055606-023	CCV	21-Mar-2018 01:54:15	2018.03.20LLA_044.d	13	1.0		sv
20-36761-A-8-A	320-0055606-024	Client	21-Mar-2018 02:02:05	2018.03.20LLA_045.d	34	1.0	SB007(4-5')	sv
20-36761-A-9-A	320-0055606-025	Client	21-Mar-2018 02:09:55	2018.03.20LLA_046.d	35	1.0	SB030(2'-4')	sv
CV L5	320-0055606-026	CCV	21-Mar-2018 02:17:43	2018.03.20LLA_047.d	14	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 21MAR2018NCCC_PFC Worklist Number: 55672
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 214276	LC PFC ICAL Raw Batch: 214277	LC PFC_QSM5-1 ICAL Raw Batch: 214278
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 MB 320-212510/1-A		# 2 MB 320-212510/1-A	
# 3 LCS 320-212510/2-A		# 3 LCS 320-212510/2-A	
# 4 320-36631-A-1-A		# 4 320-36631-A-1-A	
# 5 320-36631-A-2-A		# 5 320-36631-A-2-A	
# 6 320-36631-A-4-A		# 6 320-36631-A-4-A	
# 7 320-36631-A-6-A		# 7 320-36631-A-6-A	
# 8 320-36631-A-7-A		# 8 320-36631-A-7-A	
# 9 320-36631-A-9-A		# 9 320-36631-A-9-A	
#10 320-36683-A-3-A		#10 320-36683-A-3-A	
#11 320-36683-A-4-A		#11 320-36683-A-4-A	
#12 CCV L5	#12 CCV L5	#12 CCV L5	#12 CCV L5
#13 320-36683-A-5-A		#13 320-36683-A-5-A	
#14 320-36683-A-7-A		#14 320-36683-A-7-A	
#15 320-36683-A-8-A		#15 320-36683-A-8-A	
#16 320-36683-A-10-A		#16 320-36683-A-10-A	
#17 320-36683-A-10-B MS		#17 320-36683-A-10-B MS	
#18 320-36683-A-10-C MSD		#18 320-36683-A-10-C MSD	
#19 320-36761-A-1-A		#19 320-36761-A-1-A	
#20 320-36761-A-4-A		#20 320-36761-A-4-A	
#21 320-36761-A-5-A		#21 320-36761-A-5-A	
#22 320-36761-A-6-A		#22 320-36761-A-6-A	
#23 CCV L4	#23 CCV L4	#23 CCV L4	#23 CCV L4
#24 320-36761-A-9-A		#24 320-36761-A-9-A	
#25 320-36631-A-4-A		#25 320-36631-A-4-A	
#26 320-36683-A-3-A		#26 320-36683-A-3-A	
#27 320-36683-A-4-A		#27 320-36683-A-4-A	
#28 320-36683-A-5-A		#28 320-36683-A-5-A	
#29 320-36683-A-7-A		#29 320-36683-A-7-A	
#30 CCV L5	#30 CCV L5	#30 CCV L5	#30 CCV L5

after 1cm

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 21MAR2018NCCC_PFC Worklist Num: 55672
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CV L4	320-0055672-001	CCV	21-Mar-2018 21:55:54	2018.03.21LLC_006.d	13	1.0		sv
B 320-212510/1-A	320-0055672-002	MB	21-Mar-2018 22:03:43	2018.03.21LLC_007.d	10	1.0		sv
CS 320-212510/2-A	320-0055672-003	LCS	21-Mar-2018 22:11:33	2018.03.21LLC_008.d	11	1.0		sv
20-36631-A-1-A	320-0055672-004	Client	21-Mar-2018 22:19:22	2018.03.21LLC_009.d	12	1.0	SB031(5'-7')	sv
20-36631-A-2-A	320-0055672-005	Client	21-Mar-2018 22:27:10	2018.03.21LLC_010.d	13	1.0	SB031(10'-12')	sv
20-36631-A-4-A	320-0055672-006	Client	21-Mar-2018 22:34:59	2018.03.21LLC_011.d	14	20.0	SB006(5'-7')	sv
20-36631-A-6-A	320-0055672-007	Client	21-Mar-2018 22:42:49	2018.03.21LLC_012.d	15	1.0	SB021(5'-7')	sv
20-36631-A-7-A	320-0055672-008	Client	21-Mar-2018 22:50:38	2018.03.21LLC_013.d	16	1.0	SB021(10'-12')	sv
20-36631-A-9-A	320-0055672-009	Client	21-Mar-2018 22:58:26	2018.03.21LLC_014.d	17	1.0	SB024(5'-7')	sv
20-36683-A-3-A	320-0055672-010	Client	21-Mar-2018 23:06:17	2018.03.21LLC_015.d	18	5.0	SB008(5'-7')	sv
20-36683-A-4-A	320-0055672-011	Client	21-Mar-2018 23:14:07	2018.03.21LLC_016.d	19	5.0	DUPE006	sv
CV L5	320-0055672-012	CCV	21-Mar-2018 23:21:58	2018.03.21LLC_017.d	14	1.0		sv
20-36683-A-5-A	320-0055672-013	Client	21-Mar-2018 23:29:50	2018.03.21LLC_018.d	20	20.0	SB013(5'-7')	sv
20-36683-A-7-A	320-0055672-014	Client	21-Mar-2018 23:37:39	2018.03.21LLC_019.d	21	10.0	SB002(5'-7')	sv
20-36683-A-8-A	320-0055672-015	Client	21-Mar-2018 23:45:31	2018.03.21LLC_020.d	22	100.	SB012(5'-7')	sv
20-36683-A-10-A	320-0055672-016	Client	21-Mar-2018 23:53:24	2018.03.21LLC_021.d	23	50.0	SB012(10'-12')	sv
20-36683-A-10-B MS	320-0055672-017	MS	22-Mar-2018 00:01:17	2018.03.21LLC_022.d	24	50.0	SB012(10'-12')	sv
20-36683-A-10-C MSD	320-0055672-018	MSD	22-Mar-2018 00:09:06	2018.03.21LLC_023.d	25	50.0	SB012(10'-12')	sv
20-36761-A-1-A	320-0055672-019	Client	22-Mar-2018 00:16:54	2018.03.21LLC_024.d	26	5.0	SB004 (5'-7')	sv
20-36761-A-4-A	320-0055672-020	Client	22-Mar-2018 00:24:41	2018.03.21LLC_025.d	27	10.0	SB003(5'-7')	sv
20-36761-A-5-A	320-0055672-021	Client	22-Mar-2018 00:32:33	2018.03.21LLC_026.d	28	50.0	SB003(10'-12')	sv
20-36761-A-6-A	320-0055672-022	Client	22-Mar-2018 00:40:26	2018.03.21LLC_027.d	29	1.0	SB007(2'-4')	sv
CV L4	320-0055672-023	CCV	22-Mar-2018 00:48:18	2018.03.21LLC_028.d	13	1.0		sv
20-36761-A-9-A	320-0055672-024	Client	22-Mar-2018 00:56:11	2018.03.21LLC_029.d	30	10.0	SB030(2'-4')	sv
20-36631-A-4-A	320-0055672-025	Client	22-Mar-2018 01:04:04	2018.03.21LLC_030.d	31	1.0	SB006(5'-7')	sv
20-36683-A-3-A	320-0055672-026	Client	22-Mar-2018 01:11:56	2018.03.21LLC_031.d	32	1.0	SB008(5'-7')	sv
20-36683-A-4-A	320-0055672-027	Client	22-Mar-2018 01:19:49	2018.03.21LLC_032.d	33	1.0	DUPE006	sv
20-36683-A-5-A	320-0055672-028	Client	22-Mar-2018 01:27:40	2018.03.21LLC_033.d	34	1.0	SB013(5'-7')	sv
20-36683-A-7-A	320-0055672-029	Client	22-Mar-2018 01:35:32	2018.03.21LLC_034.d	35	1.0	SB002(5'-7')	sv
CV L5	320-0055672-030	CCV	22-Mar-2018 01:43:21	2018.03.21LLC_035.d	14	1.0		sv

21

AF 3/20/18
AS 3/21/18

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Batch End: 3/19/2018 4:30:00PM

Shake Extraction with Ultrasonic Bath Extraction

3/22

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-212510/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A	R1	MB 320-212510/1-A
2	LCS-320-212510/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-212510/2-A
3	320-36631-A-1 (PFC_IDA)	N/A (320-36631-1)	5.06 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-1-A
4	320-36631-A-2 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-2-A
5	320-36631-A-4 (PFC_IDA)	N/A (320-36631-1)	5.07 g	10.00 mL	3/7/18	12_Days	4	20x	320-36631-A-4-A
6	320-36631-A-6 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-6-A
7	320-36631-A-7 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-7-A
8	320-36631-A-9 (PFC_IDA)	N/A (320-36631-1)	5.00 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-9-A
9	320-36683-A-3 (PFC_IDA)	N/A (320-36683-1)	5.07 g	10.00 mL	3/8/18	12_Days	4	5x	320-36683-A-3-A
10	320-36683-A-4 (PFC_IDA)	N/A (320-36683-1)	5.00 g	10.00 mL	3/8/18	12_Days	4	5x	320-36683-A-4-A
11	320-36683-A-5 (PFC_IDA)	N/A (320-36683-1)	5.03 g	10.00 mL	3/8/18	12_Days	4	20x	320-36683-A-5-A
12	320-36683-A-7 (PFC_IDA)	N/A (320-36683-1)	5.04 g	10.00 mL	3/8/18	12_Days	4	10x	320-36683-A-7-A
13	320-36683-A-8 (PFC_IDA)	N/A (320-36683-1)	5.01 g	10.00 mL	3/8/18	12_Days	4	100x	320-36683-A-8-A
14	320-36683-A-10 (PFC_IDA)	N/A (320-36683-1)	5.02 g	10.00 mL	3/8/18	12_Days	4	50x	320-36683-A-10-A
15	320-36683-A-10-MS (PFC_IDA)	N/A (320-36683-1)	5.05 g	10.00 mL	3/8/18	12_Days	4	50x	320-36683-A-10-B MS

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/19/2018 4:30:00PM

16	320-36683-A-10~MSD (PFC_IDA)	N/A (320-36683-1)	5.02 g	10.00 mL	3/8/18	12_Days	4	50x
17	320-36761-A-1 (PFC_IDA)	N/A (320-36761-1)	5.03 g	10.00 mL	3/12/18	12_Days	4	5x
18	320-36761-A-4 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4	10X
19	320-36761-A-5 (PFC_IDA)	N/A (320-36761-1)	5.08 g	10.00 mL	3/12/18	12_Days	4	50x
20	320-36761-A-6 (PFC_IDA)	N/A (320-36761-1)	5.01 g	10.00 mL	3/12/18	12_Days	4	R1
21	320-36761-A-8 (PFC_IDA)	N/A (320-36761-1)	5.00 g	10.00 mL	3/12/18	12_Days	4	
22	320-36761-A-9 (PFC_IDA)	N/A (320-36761-1)	5.03 g	10.00 mL	3/12/18	12_Days	4	10X

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Batch End: 3/19/2018 4:30:00PM

Batch Notes

Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	3-16-18
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	01763748A
SPE Cartridge Type	WAX 150mg
Hexane ID	1134418
Methanol ID	1175201
Ammonium Hydroxide/MeOH ID	1170748
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188472
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	KMK
Analyst ID - IS Reagent Drop Witness	JER
Internal Standard ID#	1178672
Analyst ID - Concentration	KMK
Analyst ID - Aliquot Step	KMK

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/19/2018 4:30:00PM

Analyst ID - Final Volume Step KMK

Batch Comment Sample labels match client IDs TWL 3/12/18 1 Envi-Carb #96214

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-212510/1	LCMPFC_ALL_SU_00043	500 uL	10.00 mL	3/13/18	VPM 3-13-18
LCS 320-212510/2	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
LCS 320-212510/2	LCPFCSP_00119	500 uL	10.00 mL		
320-36631-A-1	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-2	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-4	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-6	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-7	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-9	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-3	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-4	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-5	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-7	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-8	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-10	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-10 MS	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-10 MS	LCPFCSP_00119	500 uL	10.00 mL		
320-36683-A-10 MSD	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

320-36683-A-10 MSD	LCPFCSP_00119	500 uL	10.00 mL	3/13/18	VPM 3-13-18
320-36761-A-1	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-4	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-5	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-6	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-8	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-9	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 212510 Test Shake-Bath_14D(Soil)

Earliest Holding Time 3/14/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	NA	NA
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	NA	NA
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: NSH Date: 3/20/18

2nd Level Reviewer: VPM Date: 3/20/18

Comments:

TestAmerica
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Test America – Sacramento

Sample Dilution Record

Method ID PFC - 1DA

Analyst (Print Name) Amani Royce **Reagent ID** 1168592

Date 3/21/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
480-132210	4	10,000	15 ~~to~~ aar 3/21/18	300	20 X
480-132260	1	↓	↓	↓	20X
↓	3				20X
	4				20X
	4 MS				20X
	4 MSD		↓		20X
↓	5		30		10X
190-15745	2		15		20X
320-366631	4		↓		20X
320-366683	3		60		5X
↓	4		↓		5X
	5		15		20X
	7		30	↓	10X
	8		15 ~~+500~~ aar 3/21/18	1500	100X
	10		30	↓	50X
	10MS		↓		50X
	10 MSD		↓	↓	50X
320-367061	1		60	300	5X
↓	4		30	↓	10X
	5		30 ~~1500~~ aar 3/21/18	1500	50X
	9	↓	↓	300	10X
			30		
		aar 3/21/18			

Comments:

Q:\Document-Management\Forms\QA-747 SampleDilutionRecord.doc 1/29/20187 RE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 36631, 36683 Work List ID(s): 55856

Extraction Batch: 214230 Analysis Batch(es): 214957

Delivery Rank 4 Due Date: 3-7-18

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).			✓
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?			✓
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical. Ncm	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?			✓
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation			
1. Are all non-conformances documented/attached? NCM# 120314	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): JRB Date: 3-27-18

2nd Level Reviewer: CBW Date: 3-27-18

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26MAR2018NCBB_PFC Worklist Number: 55856
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch: 214957
# 1 CCV L4	# 1 CCV L4
# 2 MB 320-214230/1-A	# 2 MB 320-214230/1-A
# 3 LCS 320-214230/2-A	# 3 LCS 320-214230/2-A
# 4 320-36631-A-1-B	# 4 320-36631-A-1-B
# 5 320-36631-A-1-C MS	# 5 320-36631-A-1-C MS
# 6 320-36631-A-1-D MSD	# 6 320-36631-A-1-D MSD
# 7 320-36631-A-2-B	# 7 320-36631-A-2-B
# 8 320-36631-A-4-B	# 8 320-36631-A-4-B
# 9 320-36631-A-6-B	# 9 320-36631-A-6-B
#10 320-36631-A-7-B	#10 320-36631-A-7-B
#11 CCV L5	#11 CCV L5
#12 320-36631-A-9-B	#12 320-36631-A-9-B
#13 320-36683-A-3-B	#13 320-36683-A-3-B
#14 320-36683-A-4-B	#14 320-36683-A-4-B
#15 320-36683-A-5-B	#15 320-36683-A-5-B
#16 320-36683-A-7-B	#16 320-36683-A-7-B
#17 320-36631-A-4-B	#17 320-36631-A-4-B
#18 320-36683-A-3-B	#18 320-36683-A-3-B
#19 320-36683-A-4-B	#19 320-36683-A-4-B
#20 320-36683-A-5-B	#20 320-36683-A-5-B
#21 RB	#21 RB
#22 CCV L4	#22 CCV L4
#23 320-36683-A-7-B	#23 320-36683-A-7-B
#24 RB	#24 RB
#25 MANIFOLD QC 15-5	#25 MANIFOLD QC 15-5
#26 MANIFOLD QC 15-7	#26 MANIFOLD QC 15-7
#27 MANIFOLD 15-11	#27 MANIFOLD 15-11
#28 CCV L5	#28 CCV L5

CCVL in AB ~~214825~~ 214954 JRB 3-27-18

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26MAR2018NCBB_PFC Worklist Num: 55856
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180327-55856.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0055856-001	CCV	27-Mar-2018 01:16:16	2018.03.26LLA_051.d	13	1.0		sv
MB 320-214230/1-A	320-0055856-002	MB	27-Mar-2018 01:24:07	2018.03.26LLA_052.d	32	1.0		sv
LCS 320-214230/2-A	320-0055856-003	LCS	27-Mar-2018 01:31:56	2018.03.26LLA_053.d	33	1.0		sv
320-36631-A-1-B	320-0055856-004	Client	27-Mar-2018 01:39:44	2018.03.26LLA_054.d	34	1.0	SB031(5'-7')	sv
320-36631-A-1-C MS	320-0055856-005	MS	27-Mar-2018 01:47:31	2018.03.26LLA_055.d	35	1.0		sv
320-36631-A-1-D MSD	320-0055856-006	MSD	27-Mar-2018 01:55:19	2018.03.26LLA_056.d	36	1.0		sv
320-36631-A-2-B	320-0055856-007	Client	27-Mar-2018 02:03:07	2018.03.26LLA_057.d	37	1.0	SB031(10'-12')	sv
320-36631-A-4-B	320-0055856-008	Client	27-Mar-2018 02:10:56	2018.03.26LLA_058.d	38	20.0	SB006(5'-7')	sv
320-36631-A-6-B	320-0055856-009	Client	27-Mar-2018 02:18:45	2018.03.26LLA_059.d	39	1.0	SB021(5'-7')	sv
320-36631-A-7-B	320-0055856-010	Client	27-Mar-2018 02:26:34	2018.03.26LLA_060.d	40	1.0	SB021(10'-12')	sv
CCV L5	320-0055856-011	CCV	27-Mar-2018 02:34:21	2018.03.26LLA_061.d	14	1.0		sv
320-36631-A-9-B	320-0055856-012	Client	27-Mar-2018 02:42:10	2018.03.26LLA_062.d	41	1.0	SB024(5'-7')	sv
320-36683-A-3-B	320-0055856-013	Client	27-Mar-2018 02:49:57	2018.03.26LLA_063.d	42	5.0	SB008(5'-7')	sv
320-36683-A-4-B	320-0055856-014	Client	27-Mar-2018 02:57:44	2018.03.26LLA_064.d	43	5.0	DUPE006	sv
320-36683-A-5-B	320-0055856-015	Client	27-Mar-2018 03:05:32	2018.03.26LLA_065.d	44	20.0	SB013(5'-7')	sv
320-36683-A-7-B	320-0055856-016	Client	27-Mar-2018 03:13:20	2018.03.26LLA_066.d	45	10.0	SB002(5'-7')	sv
320-36631-A-4-B	320-0055856-017	Client	27-Mar-2018 03:21:08	2018.03.26LLA_067.d	46	1.0	SB006(5'-7')	sv
320-36683-A-3-B	320-0055856-018	Client	27-Mar-2018 03:28:57	2018.03.26LLA_068.d	47	1.0	SB008(5'-7')	sv
320-36683-A-4-B	320-0055856-019	Client	27-Mar-2018 03:36:45	2018.03.26LLA_069.d	48	1.0	DUPE006	sv
320-36683-A-5-B	320-0055856-020	Client	27-Mar-2018 03:44:34	2018.03.26LLA_070.d	49	1.0	SB013(5'-7')	sv
RB	320-0055856-021	RB	27-Mar-2018 03:52:21	2018.03.26LLA_071.d	54	1.0		sv
CCV L4	320-0055856-022	CCV	27-Mar-2018 04:00:11	2018.03.26LLA_072.d	13	1.0		sv
320-36683-A-7-B	320-0055856-023	Client	27-Mar-2018 04:08:02	2018.03.26LLA_073.d	50	1.0	SB002(5'-7')	sv
RB	320-0055856-024	RB	27-Mar-2018 04:15:53	2018.03.26LLA_074.d	54	1.0		sv
MANIFOLD QC 15-5	320-0055856-025	Client	27-Mar-2018 04:23:40	2018.03.26LLA_075.d	51	1.0		sv
MANIFOLD QC 15-7	320-0055856-026	Client	27-Mar-2018 04:31:28	2018.03.26LLA_076.d	52	1.0		sv
MANIFOLD 15-11	320-0055856-027	Client	27-Mar-2018 04:39:17	2018.03.26LLA_077.d	53	1.0		sv
CCV L5	320-0055856-028	CCV	27-Mar-2018 04:47:06	2018.03.26LLA_078.d	14	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26MAR2018NCA_PFC Worklist Num: 55826
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055826-001	CCB	26-Mar-2018 12:24:15	2018.03.26LLA_005.d	20	1.0		sv
CCVL	320-0055826-002	CCVL	26-Mar-2018 12:32:05	2018.03.26LLA_006.d	21	1.0		sv
CCV L4	320-0055826-003	CCVIS	26-Mar-2018 12:39:57	2018.03.26LLA_021.d	13	1.0		sv
320-37021-A-1-A	320-0055826-004	Client	26-Mar-2018 12:47:45	2018.03.26LLA_022.d	13	1.0	18EIE388SB02SS01	sv
320-37026-B-3-A	320-0055826-005	Client	26-Mar-2018 12:55:35	2018.03.26LLA_023.d	14	1.0	18EIE378SB03SS01	sv
CCV L5	320-0055826-006	CCV	26-Mar-2018 13:03:25	2018.03.26LLA_024.d	14	1.0		sv

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

29
KB 3/26/18

Batch Number: 320-214230

Analyst: Reed, Jonathan E

Batch Open: 3/21/2018 6:54:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/26/2018 3:30:00PM

Shake Extraction with Ultrasonic Bath Extraction

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-214230/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-214230/1-A
2	LCS-320-214230/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-214230/2-A
3	320-36631-A-1 (PFC_IDA)	N/A (320-36631-1)	5.00 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-1-B
4	320-36631-A-1-MS (PFC_IDA)	N/A (320-36631-1)	5.09 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-1-C MS
5	320-36631-A-1-MSD (PFC_IDA)	N/A (320-36631-1)	5.00 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-1-D MSD
6	320-36631-A-2 (PFC_IDA)	N/A (320-36631-1)	5.02 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-2-B
7	320-36631-A-4 (PFC_IDA)	N/A (320-36631-1)	5.02 g	10.00 mL	3/7/18	12_Days	4	20X	320-36631-A-4-B
8	320-36631-A-6 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-6-B
9	320-36631-A-7 (PFC_IDA)	N/A (320-36631-1)	5.06 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-7-B
10	320-36631-A-9 (PFC_IDA)	N/A (320-36631-1)	5.09 g	10.00 mL	3/7/18	12_Days	4	~~5X~~ aar 3/26/18	320-36631-A-9-B
11	320-36683-A-3 (PFC_IDA)	N/A (320-36683-1)	5.08 g	10.00 mL	3/8/18	12_Days	4	5X	320-36683-A-3-B
12	320-36683-A-4 (PFC_IDA)	N/A (320-36683-1)	4.97 g	10.00 mL	3/8/18	12_Days	4	5X ~~20X~~ aar 3/26/18	320-36683-A-4-B
13	320-36683-A-5 (PFC_IDA)	N/A (320-36683-1)	5.07 g	10.00 mL	3/8/18	12_Days	4	20X	320-36683-A-5-B
14	320-36683-A-7 (PFC_IDA)	N/A (320-36683-1)	5.01 g	10.00 mL	3/8/18	12_Days	4	10X	320-36683-A-7-B

Page 1151 of 1175

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214230

Analyst: Reed, Jonathan E

Batch Open: 3/21/2018 6:54:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/26/2018 3:30:00PM

Batch Notes

Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	031618
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	1190468
Ammonium Hydroxide/MeOH ID	1186517
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188475
Manifold ID	5, 6
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	SKD
Internal Standard ID#	1178673
Analyst ID - Concentration	NA

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214230 Analyst: Reed, Jonathan E Batch Open: 3/21/2018 6:54:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End: 3/26/2018 3:30:00PM

Analyst ID - Aliquot Step	SKD
Analyst ID - Final Volume Step	SKD
Batch Comment	Sample labels match client IDs JER 032118

Comments

320-36631-A-1	Rework Comments: low IDA recovery
320-36631-A-1~MS	Rework Comments: low IDA recovery
320-36631-A-1~MSD	Rework Comments: low IDA recovery
320-36631-A-2	Rework Comments: low IDA recovery
320-36631-A-4	Rework Comments: low IDA recovery
320-36631-A-6	Rework Comments: low IDA recovery
320-36631-A-7	Rework Comments: low IDA recovery
320-36631-A-9	Rework Comments: low IDA recovery
320-36683-A-3	Rework Comments: low IDA recovery
320-36683-A-4	Rework Comments: low IDA recovery
320-36683-A-5	Rework Comments: low IDA recovery
320-36683-A-7	Rework Comments: low IDA recovery

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214230 Analyst: Reed, Jonathan E Batch Open: 3/21/2018 6:54:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-214230/1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL	3/14/18	VPM 3/21/18
LCS 320-214230/2	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
LCS 320-214230/2	LCPFCSP_00139	500 uL	10.00 mL		
320-36631-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-1 MS	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-1 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-36631-A-1 MSD	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-1 MSD	LCPFCSP_00139	500 uL	10.00 mL		
320-36631-A-2	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-4	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-6	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-7	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36631-A-9	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-3	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-4	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-5	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-7	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214230 Analyst: Reed, Jonathan E Batch Open: 3/21/2018 6:54:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 214230 Test Shake_Bath_14D-320

Earliest Holding Time 3/14/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	✓	✓
MS/MSD or MS/DU NCM filed	N/A	NA
NCM for any anomalies filed	N/A	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	1st Level Reviewer	2nd Level Reviewer
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	1st Level Reviewer	2nd Level Reviewer
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: SKD Date: 3/26/18

2nd Level Reviewer: JRB Date: 3-27-18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 36761, 36956, 36683 Work List ID(s): 55955, 55978

Extraction Batch: 214600 Analysis Batch(es): 215311, 215399

Delivery Rank 4 Due Date: ———

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓	✓	
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): CBW Date: 3/29/18

2nd Level Reviewer: MW Date: 3/29/2018

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 28MAR2018NCAB_PFC Worklist Num: 55955
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055955-001	CCB	28-Mar-2018 23:46:56	2018.03.28LLFF_004.d	20	1.0		sv
CCVL	320-0055955-002	CCVL	28-Mar-2018 23:54:44	2018.03.28LLFF_005.d	21	1.0		sv
CCV L4	320-0055955-003	CCVIS	29-Mar-2018 00:02:32	2018.03.28LLFF_006.d	13	1.0		sv
MB 320-214600/1-A	320-0055955-004	MB	29-Mar-2018 00:10:19	2018.03.28LLFF_007.d	14	1.0		sv
LCS 320-214600/2-A	320-0055955-005	LCS	29-Mar-2018 00:18:08	2018.03.28LLFF_008.d	15	1.0		sv
320-36761-A-1-B	320-0055955-006	Client	29-Mar-2018 00:25:58	2018.03.28LLFF_009.d	16	1.0	SB004 (5'-7')	sv
320-36761-A-4-B	320-0055955-007	Client	29-Mar-2018 00:33:50	2018.03.28LLFF_010.d	17	1.0	SB003(5'-7')	sv
320-36761-A-5-B	320-0055955-008	Client	29-Mar-2018 00:41:40	2018.03.28LLFF_011.d	18	1.0	SB003(10'-12')	sv
320-36761-A-6-B	320-0055955-009	Client	29-Mar-2018 00:49:32	2018.03.28LLFF_012.d	19	1.0	SB007(2'-4')	sv
320-36761-A-8-B	320-0055955-010	Client	29-Mar-2018 00:57:23	2018.03.28LLFF_013.d	20	1.0	SB007(4-5')	sv
320-36761-A-9-B	320-0055955-011	Client	29-Mar-2018 01:05:16	2018.03.28LLFF_014.d	21	1.0	SB030(2'-4')	sv
320-36956-A-1-A	320-0055955-012	Client	29-Mar-2018 01:13:04	2018.03.28LLFF_015.d	22	1.0	SB042 (0-2")	sv
Rinse	320-0055955-013	Client	29-Mar-2018 01:20:53	2018.03.28LLFF_016.d	54	1.0		sv
CCV L5	320-0055955-014	CCV	29-Mar-2018 01:28:41	2018.03.28LLFF_017.d	14	1.0		sv
320-36683-A-8-B	320-0055955-015	Client	29-Mar-2018 01:36:29	2018.03.28LLFF_018.d	23	1.0	SB012(5'-7')	sv
Rinse	320-0055955-016	Client	29-Mar-2018 01:44:18	2018.03.28LLFF_019.d	54	1.0		sv
Rinse	320-0055955-017	Client	29-Mar-2018 01:52:06	2018.03.28LLFF_020.d	54	1.0		sv
320-36683-A-10-D	320-0055955-018	Client	29-Mar-2018 01:59:53	2018.03.28LLFF_021.d	24	1.0	SB012(10'-12')	sv
320-36683-A-10-E MS	320-0055955-019	MS	29-Mar-2018 02:07:40	2018.03.28LLFF_022.d	25	1.0	SB012(10'-12')	sv
320-36683-A-10-F MSD	320-0055955-020	MSD	29-Mar-2018 02:15:31	2018.03.28LLFF_023.d	26	1.0	SB012(10'-12')	sv
Rinse	320-0055955-021	Client	29-Mar-2018 02:23:23	2018.03.28LLFF_024.d	54	1.0		sv
Rinse	320-0055955-022	Client	29-Mar-2018 02:31:13	2018.03.28LLFF_025.d	54	1.0		sv
CCV L4	320-0055955-023	CCV	29-Mar-2018 02:39:02	2018.03.28LLFF_026.d	13	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 28MAR2018NCAB_PFC Worklist Number: 55955
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215310	LC PFC ICAL Raw Batch: 215311	LC PFC_QSM5-1 ICAL Raw Batch: 215312
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 MB 320-214600/1-A		# 4 MB 320-214600/1-A	
# 5 LCS 320-214600/2-A		# 5 LCS 320-214600/2-A	
# 6 320-36761-A-1-B		# 6 320-36761-A-1-B	
# 7 320-36761-A-4-B		# 7 320-36761-A-4-B	
# 8 320-36761-A-5-B		# 8 320-36761-A-5-B	
# 9 320-36761-A-6-B		# 9 320-36761-A-6-B	
#10 320-36761-A-8-B		#10 320-36761-A-8-B	
#11 320-36761-A-9-B		#11 320-36761-A-9-B	
#12 320-36956-A-1-A		#12 320-36956-A-1-A	
#13 Rinse	#13 Rinse	#13 Rinse	#13 Rinse
#14 CCV L5	#14 CCV L5	#14 CCV L5	#14 CCV L5
#15 320-36683-A-8-B		#15 320-36683-A-8-B	
#16 Rinse	#16 Rinse	#16 Rinse	#16 Rinse
#17 Rinse	#17 Rinse	#17 Rinse	#17 Rinse
#18 320-36683-A-10-D		#18 320-36683-A-10-D	
#19 320-36683-A-10-E MS		#19 320-36683-A-10-E MS	
#20 320-36683-A-10-F MSD		#20 320-36683-A-10-F MSD	
#21 Rinse	#21 Rinse	#21 Rinse	#21 Rinse
#22 Rinse	#22 Rinse	#22 Rinse	#22 Rinse
#23 CCV L4	#23 CCV L4	#23 CCV L4	#23 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 29MAR2018NCA_PFC Worklist Number: 55978
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215398	LC PFC ICAL Raw Batch: 215399	LC PFC_QSM5-1 ICAL Raw Batch: 215400
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 320-36761-A-6-B		# 4 320-36761-A-6-B	
# 5 320-36761-A-8-B		# 5 320-36761-A-8-B	
# 6 320-36683-A-10-D		# 6 320-36683-A-10-D	
# 7 320-36683-A-10-E MS		# 7 320-36683-A-10-E MS	
# 8 320-36683-A-10-F MSD		# 8 320-36683-A-10-F MSD	
# 9 320-36956-A-1-A		# 9 320-36956-A-1-A	
#10 CCV L5	#10 CCV L5	#10 CCV L5	#10 CCV L5

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

A 8 3/28/18

Batch Number: 320-214600

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Batch End: 3/28/2018 7:45:00PM

Shake Extraction with Ultrasonic Bath Extraction

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-214600/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-214600/1-A
2	LCS~320-214600/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-214600/2-A
3	320-36683-A-8 (PFC_IDA)	N/A (320-36683-1)	5.09 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-8-B
4	320-36683-A-10 (PFC_IDA)	N/A (320-36683-1)	5.07 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-D
5	320-36683-A-10~MS (PFC_IDA)	N/A (320-36683-1)	5.00 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-E MS
6	320-36683-A-10~MSD (PFC_IDA)	N/A (320-36683-1)	5.09 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-F MSD
7	320-36761-A-1 (PFC_IDA)	N/A (320-36761-1)	5.05 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-1-B
8	320-36761-A-4 (PFC_IDA)	N/A (320-36761-1)	5.06 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-4-B
9	320-36761-A-5 (PFC_IDA)	N/A (320-36761-1)	5.02 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-5-B
10	320-36761-A-6 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-6-B
11	320-36761-A-8 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-8-B
12	320-36761-A-9 (PFC_IDA)	N/A (320-36761-1)	5.02 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-9-B
13	320-36956-A-1 (PFC_IDA)	N/A (320-36956-1)	5.06 g	10.00 mL	3/16/18	12_Days	4		320-36956-A-1-A

Page 11 of 115

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Batch End: 3/28/2018 7:45:00PM

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	031618
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	1197667
Ammonium Hydroxide/MeOH ID	1186517
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188475
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	VPM
Internal Standard ID#	1140898
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JER

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600 Analyst: Long, Tyrel W Batch Open: 3/23/2018 3:01:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End: 3/28/2018 7:45:00PM

Analyst ID - Final Volume Step JER

Batch Comment Sample labels match client IDs TWL/Envi Carb 97221 Supelco

Comments

320-36683-A-8	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10~MS	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10~MSD	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-1	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-4	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-5	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-6	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-8	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-9	Rework Comments: Please RX due to LCS failing low for PFDoA

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-214600/1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL	3/23/18	VPM 3/23/18
LCS 320-214600/2	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
LCS 320-214600/2	LCPFCSP_00138	500 uL	10.00 mL		
320-36683-A-8	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MS	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MS	LCPFCSP_00138	500 uL	10.00 mL		
320-36683-A-10 MSD	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MSD	LCPFCSP_00138	500 uL	10.00 mL		
320-36761-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-4	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-5	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-6	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-8	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-9	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36956-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 214600 Test PFC

Earliest Holding Time 3/12/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	✓	✓
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: [signature] Date: 3/28/18

2nd Level Reviewer: CBW Date: 3/29/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC. IDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** 1168592

Date 3/29/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-36761	1	10,000	30	300	10
	4		30	300	10
	5		30	1500	50
	9		30	300	10
320-36956	1		15	1500	100X
320-36683	8		15		100
	10 ms		30		50
	10 msd		30		50
	10		30		50

Comments:

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36683-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB008(5'-7')	320-36683-3
DUPE006	320-36683-4
SB013(5'-7')	320-36683-5
SB002(5'-7')	320-36683-7
SB012(5'-7')	320-36683-8
SB012(10'-12')	320-36683-10

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36683-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36683-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 03/05/2018 13:40 End Date: 03/05/2018 13:40

Lab Sample ID	D / F	Type	Time	Analytes																			
				% Sol	Moist																		
ZZZZZZ			13:40																				
ZZZZZZ			13:40																				
320-36683-3	1	T	13:40	X	X																		
320-36683-4	1	T	13:40	X	X																		
320-36683-5	1	T	13:40	X	X																		
ZZZZZZ			13:40																				
320-36683-7	1	T	13:40	X	X																		
320-36683-8	1	T	13:40	X	X																		
ZZZZZZ			13:40																				
320-36683-10	1	T	13:40	X	X																		
320-36683-10 DU	1	T	13:40	X	X																		
ZZZZZZ			13:40																				

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36683-1

SDG No.:

Batch Number: 211192 Batch Start Date: 03/05/18 13:40 Batch Analyst: Saechao, Tammy C

Batch Method: D 2216 Batch End Date: 03/06/18 08:48

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-36683-A-3	SB008(5'-7')	D 2216	T	3	1.06 g	8.15 g	7.89 g		
320-36683-A-4	DUPE006	D 2216	T	4	1.02 g	10.42 g	10.11 g		
320-36683-A-5	SB013(5'-7')	D 2216	T	5	1.05 g	11.06 g	9.56 g		
320-36683-A-7	SB002(5'-7')	D 2216	T	7	1.03 g	9.99 g	9.37 g		
320-36683-A-8	SB012(5'-7')	D 2216	T	8	1.05 g	12.06 g	11.56 g		
320-36683-A-10	SB012(10'-12')	D 2216	T	10	1.08 g	8.61 g	8.41 g		
320-36683-A-10 DU	SB012(10'-12')	D 2216	T	11	1.03 g	9.52 g	9.24 g		

Batch Notes	
Balance ID	QA-068
Date and Time Samples in Desiccator	03/06/2018 07:45
Date and Time Samples out of Desiccator	03/06/2018 08:48
Date samples were placed in the oven	03/05/2018
Oven Temp In	115 Degrees C
Time samples were place in the oven	13:40
Date samples were removed from oven	03/06/2018
Oven Temp Out	119 Degrees C
Time Samples were removed from oven	07:45
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Janelle Cooley	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-432-6717	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:

Address: 630 Johnson Ave Suite 7	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Bohemia	TAT Requested (days): 15 days		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA EDTA W - pH 4-5 EDA Z - other (specify) Other:
State, Zip: NY, 11716			
Phone: 631-589-6353(Tel)	PO #: SHDI801		
Email: andyl@pwgrosser.com	WO #: SHDI801		
Project Name: Suffolk County Firematics Site	Project #: 46024260		
Site:	SSOW#:		

320-36683 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	SPLP PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N			
SB008-SPLP (2'-4')	3/1/18	915	C	S				X	2	
DUPE007	3/1/18		C	S				X	2	
SB008 (5'-7')	3/1/18	930	C	S			X		1	
DUPE006	3/1/18		C	S			X		1	
SB013 (5'-7')	3/1/18	1010	C	S			X		1	
SB013-SPLP (8'-10')	3/1/18	1020	C	S				X	2	
SB002 (5'-7')	3/1/18	1115	C	S			X		1	
SB012 (5'-7')	3/1/18	1200	C	S			X		1	
SB012-SLPL (2'-4')	3/1/18	1145	C	S		Y		X	~~3~~ 2	MS/MSD * (6)
SB012 (10'-12')	3/1/18	1230	C	S		Y	X		~~3~~ 2	MS/MSD *

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3/1/18 1400	3/1/18 1350	PW		3/1/18 1350	FA
Relinquished by:	Date/Time: 3/1/18 1538	Company FA	Received by:	Date/Time: 3/2/18 915	Company FA-Sac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.1

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-36683-1

Login Number: 36683
List Number: 1
Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-36761-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
630 Johnson Ave
Suite 7
Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Approved for release.
Thomas A Chupela
Project Management Assistant I
3/29/2018 4:05 PM

Designee for
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03/29/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 320-36761-1

Job Description: Suffolk County Firematics Site

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Approved for release.
Thomas A Chupela
Project Management Assistant I
3/29/2018 4:05 PM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-36761-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 3/6/2018 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5º C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED HYDROCARBONS (PFC)
Samples SB004 (5'-7') (320-36761-1), SB003(5'-7') (320-36761-4), SB003(10'-12') (320-36761-5), SB007(2'-4') (320-36761-6), SB007(4-5') (320-36761-8) and SB030(2'-4') (320-36761-9) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 03/12/2018 and 03/23/2018 and analyzed on 03/21/2018, 03/22/2018 and 03/29/2018.

The laboratory control sample (LCS) for 320-212510 recovered outside control limits for Perfluorodecane Sulfonic acid (PFDS). The associated samples were re-prepared outside holding time with LCS recoveries in control for PFDS. Both sets of data have been reported.

Various Isotope Dilution Analyte (IDA) recoveries associated with the following samples are below the method recommended limit: (LCS 320-212510/2-A), (MB 320-212510/1-A) and (320-36683-A-10-B MS). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 320-212510 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recoveries were within acceptance limits.

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2FTS in the following sample: SB003(10'-12') (320-36761-5). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The matrix spike (MS) recovery for preparation batch 320-214600 and analytical batch 320-215311 was outside control limits for Perfluorodecanesulfonic acid (PFDS). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The following samples were re-prepared outside of preparation holding time due to laboratory control sample failing for PFDS: SB004 (5'-7') (320-36761-1), SB003(5'-7') (320-36761-4), SB003(10'-12') (320-36761-5), SB007(2'-4') (320-36761-6), SB007(4-5') (320-36761-8) and SB030(2'-4') (320-36761-9).

Perfluorobutanoic acid (PFBA) and Perfluorooctanesulfonic acid (PFOS) were detected in method blank MB 320-212510/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Perfluoroheptanesulfonic Acid (PFHpS), Perfluorononanoic acid (PFNA) and Perfluorooctanesulfonic acid (PFOS) failed the recovery criteria high for the MS of sample 320-36683-10 in batch 320-214277.

For the MSD of sample 320-36683-10 in batch 320-214277, Several analytes failed the recovery criteria low. Perfluorotridecanoic Acid

(PFTriA) failed the recovery criteria high. Also, 6:2FTS, Perfluoroheptanesulfonic Acid (PFHpS), Perfluorohexanesulfonic acid (PFHxS) and Perfluorooctanesulfonic acid (PFOS) exceeded the RPD limit.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Results for samples SB004 (5'-7') (320-36761-1), SB003(5'-7') (320-36761-4), SB003(10'-12') (320-36761-5), SB030(2'-4') (320-36761-9), (320-36683-A-10-A), (320-36683-A-10-B MS) and (320-36683-A-10-C MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

No other difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All other quality control parameters were within the acceptance limits.

PERFLUORINATED ALKYL SUBSTANCES (PFAS)

Samples SB004-SPLP(8'-10') (320-36761-2), SB003-SPLP(0-2') (320-36761-3) and SB007-SPLP(0-2') (320-36761-7) were analyzed for Perfluorinated Alkyl Substances (PFAS) in accordance with PFC. The samples were leached on 03/08/2018, prepared on 03/21/2018 and 03/27/2018 and analyzed on 03/23/2018, 03/26/2018 and 03/28/2018.

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 320-214126 and analytical batch 320-214657 recovered outside control limits for the following analyte: 6:2FTS. The samples were re-prepped outside of holding time. The LCS and LCSD recoveries for 6:2FTS in the re-analysis were within control limits and both sets of data have been reported.

The leachate blank for preparation batch 320-212127 and 320-214126 contained 6:2FTS above the reporting limit (RL). The samples were re-extracted outside of holding tim and the leachate blank in the re-analysis showed no detection for 6:2FTS. Both sets of data have been reported.

Results for samples SB007-SPLP(0-2') (320-36761-7) were reported from the analysis of a diluted extract due to high concentration of target analytes in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2FTS in the following sample: SB007-SPLP(0-2') (320-36761-7). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Results for sample SB004-SPLP(8'-10') (320-36761-2) were reported from the analysis of a diluted extract due to high concentration of 6:2FTS in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Internal standard (ISTD) response for the following samples was outside control limits: SB004-SPLP(8'-10') (320-36761-2) and SB003-SPLP(0-2') (320-36761-3). Matrix interference is suspected because the ISTD response in the undiluted extract was within control limits.

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2FTS in the following sample: SB003-SPLP(0-2') (320-36761-3). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The following samples were re-extracted due to high recoveries of 6:2FTS in the laboratory control sample and the laboratory control sample duplicate (LCS/LCSD). Therefore, the data for these samples may be biased high for 6:2FTS in the original extraction: SB003-SPLP(0-2') (320-36761-3) and SB007-SPLP(0-2') (320-36761-7)

The following samples: SB003-SPLP(0-2') (320-36761-3) in preparation batch 320-212127 and 320-214126 were observed to be a light yellow color prior to extraction.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-212127 and 320-214126.

The following samples were re-prepared outside of preparation holding time because the LCS and LCSD failed for 6:2FTS: SB004-SPLP(8'-10') (320-36761-2), SB003-SPLP(0-2') (320-36761-3) and SB007-SPLP(0-2') (320-36761-7).

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 310-215106.

6:2FTS, Perfluorohexanesulfonic acid (PFHxS), Perfluorooctanesulfonic acid (PFOS) and Perfluorotetradecanoic acid (PFTeA) were detected in method blank LB 320-212127/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Refer to the QC report for details.

Samples SB004-SPLP(8'-10') (320-36761-2)[10X], SB003-SPLP(0-2') (320-36761-3)[20X] and SB007-SPLP(0-2') (320-36761-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the PFCs analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples SB004 (5'-7') (320-36761-1), SB003(5'-7') (320-36761-4), SB003(10'-12') (320-36761-5), SB007(2'-4') (320-36761-6), SB007(4-5') (320-36761-8) and SB030(2'-4') (320-36761-9) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 03/12/2018.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-36761-1	SB004 (5'-7')	Solid	03/05/18 09:00	03/06/18 09:40
320-36761-2	SB004-SPLP(8'-10')	Solid	03/05/18 09:15	03/06/18 09:40
320-36761-3	SB003-SPLP(0-2')	Solid	03/05/18 10:00	03/06/18 09:40
320-36761-4	SB003(5'-7')	Solid	03/05/18 10:15	03/06/18 09:40
320-36761-5	SB003(10'-12')	Solid	03/05/18 10:30	03/06/18 09:40
320-36761-6	SB007(2'-4')	Solid	03/05/18 09:35	03/06/18 09:40
320-36761-7	SB007-SPLP(0-2')	Solid	03/05/18 09:32	03/06/18 09:40
320-36761-8	SB007(4-5')	Solid	03/05/18 09:40	03/06/18 09:40
320-36761-9	SB030(2'-4')	Solid	03/05/18 10:05	03/06/18 09:40

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Client Sample ID: SB004 (5'-7')

Lab Sample ID: 320-36761-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00017	J B	0.00022	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00025		0.00022	0.000083	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00022		0.00022	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00024		0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0028		0.00022	0.000093	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00014	J	0.00022	0.000024	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00029		0.00022	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.000087	J	0.00022	0.000055	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00066		0.00022	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.00082		0.00022	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.0019	J	0.0022	0.00027	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA) - DL	0.039	D	0.0011	0.00019	mg/Kg	5	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.030	B D	0.0027	0.0011	mg/Kg	5	☼	537 (modified)	Total/NA
6:2FTS - DL	0.031	D	0.011	0.00081	mg/Kg	5	☼	537 (modified)	Total/NA

Client Sample ID: SB004-SPLP(8'-10')

Lab Sample ID: 320-36761-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.03		1.98	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	13.3		1.98	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	9.04		1.98	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	8.18	B	1.98	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	127		1.98	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	6.27		1.98	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	2.19		1.98	1.09	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	24.7	B	1.98	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	12.9		1.98	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	0.45	J	1.98	0.35	ng/L	1		537 (modified)	SPLP East
8:2FTS	42.0		19.8	1.98	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA) - DL	953	D	19.8	2.67	ng/L	10		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	1160	D	19.8	5.34	ng/L	10		537 (modified)	SPLP East
6:2FTS - DL	1130	B D	198	19.8	ng/L	10		537 (modified)	SPLP East
6:2FTS - RE	1040	H	196	19.6	ng/L	10		537 (modified)	SPLP East

Client Sample ID: SB003-SPLP(0-2')

Lab Sample ID: 320-36761-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	9.21		1.97	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	13.6		1.97	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	18.8		1.97	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	12.2	B	1.97	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	31.8		1.97	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	174		1.97	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorododecanoic acid (PFDoA)	14.2		1.97	0.54	ng/L	1		537 (modified)	SPLP East
Perfluorotridecanoic Acid (PFTriA)	36.7		1.97	1.28	ng/L	1		537 (modified)	SPLP East
Perfluorotetradecanoic acid (PFTeA)	2.72	B	1.97	0.29	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	0.71	J	1.97	0.20	ng/L	1		537 (modified)	SPLP East

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB003-SPLP(0-2') (Continued) — Lab Sample ID: 320-36761-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	21.6	B	1.97	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	3.38		1.97	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorodecanesulfonic acid (PFDS)	3.75		1.97	0.32	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	253		1.97	0.35	ng/L	1		537 (modified)	SPLP East
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	6.29	J	19.7	1.87	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA) - DL	445	D	39.4	6.11	ng/L	20		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA) - DL	1190	D	39.4	21.7	ng/L	20		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	3040	D	39.4	10.6	ng/L	20		537 (modified)	SPLP East
6:2FTS - DL	370	J B D	394	39.4	ng/L	20		537 (modified)	SPLP East
8:2FTS - DL	5880	D	394	39.4	ng/L	20		537 (modified)	SPLP East
6:2FTS - RE	262	H	19.9	1.99	ng/L	1		537 (modified)	SPLP East

Client Sample ID: SB003(5'-7') — Lab Sample ID: 320-36761-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00011	J B	0.00020	0.000028	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.000083	J	0.00020	0.000078	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00016	J	0.00020	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00025		0.00020	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0038		0.00020	0.000087	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.0024		0.00020	0.000022	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0060		0.00020	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00015	J	0.00020	0.000068	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00060		0.00020	0.000052	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0073		0.00020	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.00084		0.00020	0.000035	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.0011		0.00020	0.000083	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA) - DL	0.050	D	0.0020	0.00036	mg/Kg	10	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.052	B D	0.0051	0.0020	mg/Kg	10	☼	537 (modified)	Total/NA
6:2FTS - DL	0.081	D	0.020	0.0015	mg/Kg	10	☼	537 (modified)	Total/NA
8:2FTS - DL	0.039	D	0.020	0.0025	mg/Kg	10	☼	537 (modified)	Total/NA

Client Sample ID: SB003(10'-12') — Lab Sample ID: 320-36761-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00035	B	0.00020	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00045		0.00020	0.000079	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.0013		0.00020	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.0015		0.00020	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0059		0.00020	0.000088	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.0011		0.00020	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0033		0.00020	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00012	J	0.00020	0.000069	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00071		0.00020	0.000052	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.000088	J	0.00020	0.000026	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0056		0.00020	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB003(10'-12') (Continued) — Lab Sample ID: 320-36761-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanesulfonic Acid (PFHpS)	0.00094		0.00020	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00042		0.00020	0.000084	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA) - DL	0.041	D	0.010	0.0018	mg/Kg	50	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.10	B D	0.026	0.010	mg/Kg	50	☼	537 (modified)	Total/NA
6:2FTS - DL	0.20	D	0.10	0.0077	mg/Kg	50	☼	537 (modified)	Total/NA
8:2FTS - DL	0.026	J D	0.10	0.013	mg/Kg	50	☼	537 (modified)	Total/NA

Client Sample ID: SB007(2'-4') — Lab Sample ID: 320-36761-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00018	J B	0.00021	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00022		0.00021	0.000044	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000050	J	0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00014	J	0.00021	0.000090	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.000081	J	0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00021	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00011	J	0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00032		0.00021	0.000070	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.012		0.00021	0.000053	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.00050		0.00021	0.000056	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00015	J	0.00021	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.00032	J B	0.00052	0.00021	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00051		0.00021	0.000086	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.0054		0.0021	0.00016	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.0085		0.0021	0.00026	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB007-SPLP(0-2') — Lab Sample ID: 320-36761-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.26	J	1.98	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	2.28		1.98	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	1.73	J	1.98	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.91	J B	1.98	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	5.05		1.98	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	4.05		1.98	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	5.71		1.98	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	4.81		1.98	1.09	ng/L	1		537 (modified)	SPLP East
Perfluorododecanoic acid (PFDoA)	3.60		1.98	0.54	ng/L	1		537 (modified)	SPLP East
Perfluorotridecanoic Acid (PFTriA)	27.5		1.98	1.29	ng/L	1		537 (modified)	SPLP East
Perfluorotetradecanoic acid (PFTeA)	0.70	J B	1.98	0.29	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	2.02	B	1.98	0.17	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	6.68	B	1.98	0.53	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	15.0		1.98	0.35	ng/L	1		537 (modified)	SPLP East
8:2FTS	23.6		19.8	1.98	ng/L	1		537 (modified)	SPLP East
6:2FTS - DL	1020	B D	198	19.8	ng/L	10		537 (modified)	SPLP East
6:2FTS - RE	10.6	J H	19.8	1.98	ng/L	1		537 (modified)	SPLP East

Client Sample ID: SB007(4-5') — Lab Sample ID: 320-36761-8

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB007(4-5') (Continued) — Lab Sample ID: 320-36761-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00026	B	0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.000095	J	0.00022	0.000085	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00024		0.00022	0.000046	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00010	J	0.00022	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00015	J	0.00022	0.000095	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.000092	J	0.00022	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00014	J	0.00022	0.000024	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00027		0.00022	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00086		0.00022	0.000074	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.011		0.00022	0.000056	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.00022		0.00022	0.000060	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.000078	J	0.00022	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.00036	J B	0.00055	0.00022	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00098		0.00022	0.000091	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.0048		0.0022	0.00017	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.012		0.0022	0.00028	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS) - RE	0.000055	J H	0.00022	0.000042	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB030(2'-4') — Lab Sample ID: 320-36761-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00064	B	0.00024	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00020	J	0.00024	0.000093	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00059		0.00024	0.000051	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00024	0.000035	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00092		0.00024	0.00010	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00042		0.00024	0.000044	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00071		0.00024	0.000027	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0046		0.00024	0.000044	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.0026		0.00024	0.000081	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.022		0.00024	0.000062	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.00081		0.00024	0.000065	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.000096	J	0.00024	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.00068	B	0.00060	0.00024	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.000087	J *	0.00024	0.000047	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.0046		0.00024	0.000099	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.021		0.0024	0.00018	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS - DL	0.051	D	0.024	0.0030	mg/Kg	10	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS) - RE	0.00012	J H	0.00024	0.000047	mg/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB004 (5'-7')

Date Collected: 03/05/18 09:00
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-1

Matrix: Solid
Percent Solids: 92.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00017**	**J B**	0.00022	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluoropentanoic acid (PFPeA)	**0.00025**		0.00022	0.000083	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorohexanoic acid (PFHxA)	**0.00022**		0.00022	0.000045	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluoroheptanoic acid (PFHpA)	**0.00024**		0.00022	0.000031	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorooctanoic acid (PFOA)	**0.0028**		0.00022	0.000093	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorodecanoic acid (PFDA)	**0.00014**	**J**	0.00022	0.000024	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluoroundecanoic acid (PFUnA)	**0.00029**		0.00022	0.000039	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorododecanoic acid (PFDoA)	0.000072	U	0.00022	0.000072	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorotridecanoic Acid (PFTriA)	**0.000087**	**J**	0.00022	0.000055	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00022	0.000058	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00022	0.000027	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00066**		0.00022	0.000033	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.00082**		0.00022	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorodecanesulfonic acid (PFDS)	0.000042	U *	0.00022	0.000042	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
Perfluorooctane Sulfonamide (FOSA)	0.000088	U	0.00022	0.000088	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0022	0.00042	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00040	U	0.0022	0.00040	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1
8:2FTS	**0.0019**	**J**	0.0022	0.00027	mg/Kg	☼	03/12/18 15:35	03/21/18 01:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C5 PFPeA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C2 PFHxA	*79*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C4-PFHpA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C4 PFOA	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C2 PFDA	*61*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C2 PFUnA	*50*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C2 PFDoA	*43*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C2-PFTeDA	*40*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C3-PFBS	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
18O2 PFHxS	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C4 PFOS	*62*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
13C8 FOSA	*49*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
d3-NMeFOSAA	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
d5-NEtFOSAA	*38*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*
M2-8:2FTS	*58*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:22*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**0.039**	**D**	0.0011	0.00019	mg/Kg	☼	03/12/18 15:35	03/22/18 00:16	5
Perfluorooctanesulfonic acid (PFOS)	**0.030**	**B D**	0.0027	0.0011	mg/Kg	☼	03/12/18 15:35	03/22/18 00:16	5
6:2FTS	**0.031**	**D**	0.011	0.00081	mg/Kg	☼	03/12/18 15:35	03/22/18 00:16	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*69*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:16*	*5*
13C4 PFOS	*63*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:16*	*5*

Client Sample ID: SB004 (5'-7')

Lab Sample ID: 320-36761-1
Date Collected: 03/05/18 09:00
Matrix: Solid
Date Received: 03/06/18 09:40
Percent Solids: 92.3

Method: 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2FTS	76		25 - 150	03/12/18 15:35	03/22/18 00:16	5

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000042	U H	0.00021	0.000042	mg/Kg	☼	03/23/18 15:02	03/29/18 00:25	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	68		25 - 150	03/23/18 15:02	03/29/18 00:25	1

Client Sample ID: SB004-SPLP(8'-10')

Lab Sample ID: 320-36761-2
Date Collected: 03/05/18 09:15
Matrix: Solid
Date Received: 03/06/18 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.03**		1.98	0.35	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluoropentanoic acid (PFPeA)	**13.3**		1.98	0.48	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorohexanoic acid (PFHxA)	**9.04**		1.98	0.57	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluoroheptanoic acid (PFHpA)	**8.18**	**B**	1.98	0.25	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorooctanoic acid (PFOA)	**127**		1.98	0.84	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorodecanoic acid (PFDA)	**6.27**		1.98	0.31	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluoroundecanoic acid (PFUnA)	**2.19**		1.98	1.09	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.98	0.54	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorotridecanoic Acid (PFTriA)	1.29	U	1.98	1.29	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.98	0.29	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.98	0.20	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorohexanesulfonic acid (PFHxS)	**24.7**	**B**	1.98	0.17	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	**12.9**		1.98	0.19	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32	ng/L		03/21/18 12:31	03/23/18 19:34	1
Perfluorooctane Sulfonamide (FOSA)	**0.45**	**J**	1.98	0.35	ng/L		03/21/18 12:31	03/23/18 19:34	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.06	U	19.8	3.06	ng/L		03/21/18 12:31	03/23/18 19:34	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88	ng/L		03/21/18 12:31	03/23/18 19:34	1
8:2FTS	**42.0**		19.8	1.98	ng/L		03/21/18 12:31	03/23/18 19:34	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	93		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C5 PFPeA	92		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C2 PFHxA	89		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C4-PFHpA	91		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C4 PFOA	89		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C2 PFDA	94		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C2 PFUnA	84		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C2 PFDoA	81		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C2-PFTeDA	88		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C3-PFBS	92		25 - 150	03/21/18 12:31	03/23/18 19:34	1
18O2 PFHxS	95		25 - 150	03/21/18 12:31	03/23/18 19:34	1
13C4 PFOS	78		25 - 150	03/21/18 12:31	03/23/18 19:34	1

Client Sample ID: SB004-SPLP(8'-10')

Lab Sample ID: 320-36761-2
Date Collected: 03/05/18 09:15
Matrix: Solid
Date Received: 03/06/18 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*86*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:34*	*1*
d3-NMeFOSAA	*100*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:34*	*1*
d5-NEtFOSAA	*90*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:34*	*1*
M2-8:2FTS	*104*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:34*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**953**	**D**	19.8	2.67	ng/L		03/21/18 12:31	03/26/18 16:42	10
Perfluorooctanesulfonic acid (PFOS)	**1160**	**D**	19.8	5.34	ng/L		03/21/18 12:31	03/26/18 16:42	10
6:2FTS	**1130**	**B D**	198	19.8	ng/L		03/21/18 12:31	03/26/18 16:42	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*97*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:42*	*10*
13C4 PFOS	*99*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:42*	*10*
M2-6:2FTS	*135*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:42*	*10*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	**1040**	**H**	196	19.6	ng/L		03/27/18 20:41	03/28/18 19:23	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*126*	*	*25 - 150*	*03/27/18 20:41*	*03/28/18 19:23*	*10*

Client Sample ID: SB003-SPLP(0-2')

Lab Sample ID: 320-36761-3
Date Collected: 03/05/18 10:00
Matrix: Solid
Date Received: 03/06/18 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**9.21**		1.97	0.35	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluoropentanoic acid (PFPeA)	**13.6**		1.97	0.48	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorohexanoic acid (PFHxA)	**18.8**		1.97	0.57	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluoroheptanoic acid (PFHpA)	**12.2**	**B**	1.97	0.25	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorooctanoic acid (PFOA)	**31.8**		1.97	0.84	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorononanoic acid (PFNA)	**174**		1.97	0.27	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorododecanoic acid (PFDoA)	**14.2**		1.97	0.54	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorotridecanoic Acid (PFTriA)	**36.7**		1.97	1.28	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorotetradecanoic acid (PFTeA)	**2.72**	**B**	1.97	0.29	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorobutanesulfonic acid (PFBS)	**0.71**	**J**	1.97	0.20	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorohexanesulfonic acid (PFHxS)	**21.6**	**B**	1.97	0.17	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	**3.38**		1.97	0.19	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorodecanesulfonic acid (PFDS)	**3.75**		1.97	0.32	ng/L		03/21/18 12:31	03/23/18 19:42	1
Perfluorooctane Sulfonamide (FOSA)	**253**		1.97	0.35	ng/L		03/21/18 12:31	03/23/18 19:42	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.06	U	19.7	3.06	ng/L		03/21/18 12:31	03/23/18 19:42	1

Client Sample ID: SB003-SPLP(0-2')

Lab Sample ID: 320-36761-3

Date Collected: 03/05/18 10:00
Matrix: Solid
Date Received: 03/06/18 09:40

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	6.29	J	19.7	1.87	ng/L		03/21/18 12:31	03/23/18 19:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C5 PFPeA	*81*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C2 PFHxA	*81*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C4-PFHpA	*80*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C4 PFOA	*72*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C5 PFNA	*56*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C2 PFDoA	*60*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C2-PFTeDA	*33*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C3-PFBS	*82*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
18O2 PFHxS	*83*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C4 PFOS	*54*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
13C8 FOSA	*55*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
d3-NMeFOSAA	*77*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*
d5-NEtFOSAA	*59*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:42*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	445	D	39.4	6.11	ng/L		03/21/18 12:31	03/26/18 16:50	20
Perfluoroundecanoic acid (PFUnA)	1190	D	39.4	21.7	ng/L		03/21/18 12:31	03/26/18 16:50	20
Perfluorooctanesulfonic acid (PFOS)	3040	D	39.4	10.6	ng/L		03/21/18 12:31	03/26/18 16:50	20
6:2FTS	370	J B D	394	39.4	ng/L		03/21/18 12:31	03/26/18 16:50	20
8:2FTS	5880	D	394	39.4	ng/L		03/21/18 12:31	03/26/18 16:50	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*88*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:50*	*20*
13C2 PFUnA	*87*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:50*	*20*
13C4 PFOS	*91*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:50*	*20*
M2-6:2FTS	*133*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:50*	*20*
M2-8:2FTS	*152*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:50*	*20*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	262	H	19.9	1.99	ng/L		03/27/18 20:41	03/28/18 20:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*116*		*25 - 150*	*03/27/18 20:41*	*03/28/18 20:33*	*1*

Client Sample ID: SB003(5'-7')

Lab Sample ID: 320-36761-4

Date Collected: 03/05/18 10:15
Matrix: Solid
Date Received: 03/06/18 09:40
Percent Solids: 96.9

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.00011	J B	0.00020	0.000028	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluoropentanoic acid (PFPeA)	0.000083	J	0.00020	0.000078	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorohexanoic acid (PFHxA)	0.00016	J	0.00020	0.000043	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1

Client Sample ID: SB003(5'-7')
Date Collected: 03/05/18 10:15
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-4
Matrix: Solid
Percent Solids: 96.9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	**0.00025**		0.00020	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorooctanoic acid (PFOA)	**0.0038**		0.00020	0.000087	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorodecanoic acid (PFDA)	**0.0024**		0.00020	0.000022	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluoroundecanoic acid (PFUnA)	**0.0060**		0.00020	0.000036	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorododecanoic acid (PFDoA)	**0.00015**	**J**	0.00020	0.000068	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorotridecanoic Acid (PFTriA)	**0.00060**		0.00020	0.000052	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0073**		0.00020	0.000031	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.00084**		0.00020	0.000035	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
Perfluorooctane Sulfonamide (FOSA)	**0.0011**		0.00020	0.000083	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037	mg/Kg	☼	03/12/18 15:35	03/21/18 01:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C5 PFPeA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C2 PFHxA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C4-PFHpA	*89*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C4 PFOA	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C2 PFDA	*61*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C2 PFUnA	*47*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C2 PFDoA	*35*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C2-PFTeDA	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C3-PFBS	*85*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
18O2 PFHxS	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C4 PFOS	*59*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
13C8 FOSA	*51*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
d3-NMeFOSAA	*35*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*
d5-NEtFOSAA	*39*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:30*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**0.050**	**D**	0.0020	0.00036	mg/Kg	☼	03/12/18 15:35	03/22/18 00:24	10
Perfluorooctanesulfonic acid (PFOS)	**0.052**	**B D**	0.0051	0.0020	mg/Kg	☼	03/12/18 15:35	03/22/18 00:24	10
6:2FTS	**0.081**	**D**	0.020	0.0015	mg/Kg	☼	03/12/18 15:35	03/22/18 00:24	10
8:2FTS	**0.039**	**D**	0.020	0.0025	mg/Kg	☼	03/12/18 15:35	03/22/18 00:24	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*72*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:24*	*10*
13C4 PFOS	*61*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:24*	*10*
M2-6:2FTS	*86*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:24*	*10*
M2-8:2FTS	*61*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:24*	*10*

Client Sample ID: SB003(5'-7')

Lab Sample ID: 320-36761-4
Date Collected: 03/05/18 10:15
Matrix: Solid
Date Received: 03/06/18 09:40
Percent Solids: 96.9

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000040	U H	0.00020	0.000040	mg/Kg	☼	03/23/18 15:02	03/29/18 00:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*61*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:33*	*1*

Client Sample ID: SB003(10'-12')

Lab Sample ID: 320-36761-5
Date Collected: 03/05/18 10:30
Matrix: Solid
Date Received: 03/06/18 09:40
Percent Solids: 96.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00035**	**B**	0.00020	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluoropentanoic acid (PFPeA)	**0.00045**		0.00020	0.000079	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorohexanoic acid (PFHxA)	**0.0013**		0.00020	0.000043	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluoroheptanoic acid (PFHpA)	**0.0015**		0.00020	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorooctanoic acid (PFOA)	**0.0059**		0.00020	0.000088	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorodecanoic acid (PFDA)	**0.0011**		0.00020	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluoroundecanoic acid (PFUnA)	**0.0033**		0.00020	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorododecanoic acid (PFDoA)	**0.00012**	**J**	0.00020	0.000069	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorotridecanoic Acid (PFTriA)	**0.00071**		0.00020	0.000052	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorobutanesulfonic acid (PFBS)	**0.000088**	**J**	0.00020	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0056**		0.00020	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.00094**		0.00020	0.000036	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
Perfluorooctane Sulfonamide (FOSA)	**0.00042**		0.00020	0.000084	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038	mg/Kg	☼	03/12/18 15:35	03/21/18 01:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C5 PFPeA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C2 PFHxA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C4-PFHpA	*87*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C4 PFOA	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C2 PFDA	*57*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C2 PFUnA	*43*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C2 PFDoA	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C2-PFTeDA	*49*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C3-PFBS	*85*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
18O2 PFHxS	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C4 PFOS	*56*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
13C8 FOSA	*46*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*
d3-NMeFOSAA	*33*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*

Client Sample ID: SB003(10'-12')

Date Collected: 03/05/18 10:30
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-5

Matrix: Solid
Percent Solids: 96.2

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	*34*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:38*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**0.041**	**D**	0.010	0.0018	mg/Kg	☼	03/12/18 15:35	03/22/18 00:32	50
Perfluorooctanesulfonic acid (PFOS)	**0.10**	**B D**	0.026	0.010	mg/Kg	☼	03/12/18 15:35	03/22/18 00:32	50
6:2FTS	**0.20**	**D**	0.10	0.0077	mg/Kg	☼	03/12/18 15:35	03/22/18 00:32	50
8:2FTS	**0.026**	**J D**	0.10	0.013	mg/Kg	☼	03/12/18 15:35	03/22/18 00:32	50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	*62*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:32*	*50*
13C4 PFOS	*53*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:32*	*50*
M2-6:2FTS	*195*	*	*25 - 150*	*03/12/18 15:35*	*03/22/18 00:32*	*50*
M2-8:2FTS	*49*		*25 - 150*	*03/12/18 15:35*	*03/22/18 00:32*	*50*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000040	U H	0.00021	0.000040	mg/Kg	☼	03/23/18 15:02	03/29/18 00:41	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	*75*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:41*	*1*

Client Sample ID: SB007(2'-4')

Date Collected: 03/05/18 09:35
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-6

Matrix: Solid
Percent Solids: 95.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00018**	**J B**	0.00021	0.000029	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluoropentanoic acid (PFPeA)	0.000080	U	0.00021	0.000080	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorohexanoic acid (PFHxA)	**0.00022**		0.00021	0.000044	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluoroheptanoic acid (PFHpA)	**0.000050**	**J**	0.00021	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorooctanoic acid (PFOA)	**0.00014**	**J**	0.00021	0.000090	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorononanoic acid (PFNA)	**0.000081**	**J**	0.00021	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorodecanoic acid (PFDA)	**0.00010**	**J**	0.00021	0.000023	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluoroundecanoic acid (PFUnA)	**0.00011**	**J**	0.00021	0.000038	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorododecanoic acid (PFDoA)	**0.00032**		0.00021	0.000070	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorotridecanoic Acid (PFTriA)	**0.012**		0.00021	0.000053	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorotetradecanoic acid (PFTeA)	**0.00050**		0.00021	0.000056	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00021	0.000026	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00015**	**J**	0.00021	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000037	U	0.00021	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorooctanesulfonic acid (PFOS)	**0.00032**	**J B**	0.00052	0.00021	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorodecanesulfonic acid (PFDS)	0.000041	U *	0.00021	0.000041	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
Perfluorooctane Sulfonamide (FOSA)	**0.00051**		0.00021	0.000086	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1

Client Sample ID: SB007(2'-4')

Date Collected: 03/05/18 09:35
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-6

Matrix: Solid
Percent Solids: 95.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.0021	0.00041	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
6:2FTS	**0.0054**		0.0021	0.00016	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1
8:2FTS	**0.0085**		0.0021	0.00026	mg/Kg	☼	03/12/18 15:35	03/21/18 01:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C5 PFPeA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C2 PFHxA	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C4-PFHpA	*86*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C4 PFOA	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C5 PFNA	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C2 PFDA	*59*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C2 PFUnA	*49*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C2 PFDoA	*41*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C2-PFTeDA	*45*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C3-PFBS	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
18O2 PFHxS	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C4 PFOS	*65*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
13C8 FOSA	*43*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
d3-NMeFOSAA	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
d5-NEtFOSAA	*39*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
M2-6:2FTS	*77*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*
M2-8:2FTS	*55*		*25 - 150*	*03/12/18 15:35*	*03/21/18 01:46*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000040	U H	0.00021	0.000040	mg/Kg	☼	03/23/18 15:02	03/29/18 00:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*79*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:49*	*1*

Client Sample ID: SB007-SPLP(0-2')

Date Collected: 03/05/18 09:32
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-7

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1.26**	**J**	1.98	0.35	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluoropentanoic acid (PFPeA)	**2.28**		1.98	0.48	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorohexanoic acid (PFHxA)	**1.73**	**J**	1.98	0.57	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluoroheptanoic acid (PFHpA)	**0.91**	**J B**	1.98	0.25	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorooctanoic acid (PFOA)	**5.05**		1.98	0.84	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorononanoic acid (PFNA)	**4.05**		1.98	0.27	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorodecanoic acid (PFDA)	**5.71**		1.98	0.31	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluoroundecanoic acid (PFUnA)	**4.81**		1.98	1.09	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorododecanoic acid (PFDoA)	**3.60**		1.98	0.54	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorotridecanoic Acid (PFTriA)	**27.5**		1.98	1.29	ng/L		03/21/18 12:31	03/23/18 19:50	1

Client Sample ID: SB007-SPLP(0-2')

Date Collected: 03/05/18 09:32
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-7
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	**0.70**	**J B**	1.98	0.29	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.98	0.20	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorohexanesulfonic acid (PFHxS)	**2.02**	**B**	1.98	0.17	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.98	0.19	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorooctanesulfonic acid (PFOS)	**6.68**	**B**	1.98	0.53	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32	ng/L		03/21/18 12:31	03/23/18 19:50	1
Perfluorooctane Sulfonamide (FOSA)	**15.0**		1.98	0.35	ng/L		03/21/18 12:31	03/23/18 19:50	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.07	U	19.8	3.07	ng/L		03/21/18 12:31	03/23/18 19:50	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88	ng/L		03/21/18 12:31	03/23/18 19:50	1
8:2FTS	**23.6**		19.8	1.98	ng/L		03/21/18 12:31	03/23/18 19:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*93*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C5 PFPeA	*96*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C2 PFHxA	*94*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C4-PFHpA	*94*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C4 PFOA	*94*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C5 PFNA	*95*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C2 PFDA	*102*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C2 PFUnA	*91*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C2 PFDoA	*89*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C2-PFTeDA	*76*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C3-PFBS	*94*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
18O2 PFHxS	*100*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C4 PFOS	*98*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
13C8 FOSA	*93*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
d3-NMeFOSAA	*73*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
d5-NEtFOSAA	*111*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*
M2-8:2FTS	*165*	*	*25 - 150*	*03/21/18 12:31*	*03/23/18 19:50*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	**1020**	**B D**	198	19.8	ng/L		03/21/18 12:31	03/26/18 16:58	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*134*	*	*25 - 150*	*03/21/18 12:31*	*03/26/18 16:58*	*10*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	**10.6**	**J H**	19.8	1.98	ng/L		03/27/18 20:41	03/28/18 20:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*126*		*25 - 150*	*03/27/18 20:41*	*03/28/18 20:41*	*1*

Client Sample ID: SB007(4-5')

Date Collected: 03/05/18 09:40
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-8

Matrix: Solid
Percent Solids: 90.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00026**	**B**	0.00022	0.000031	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluoropentanoic acid (PFPeA)	**0.000095**	**J**	0.00022	0.000085	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorohexanoic acid (PFHxA)	**0.00024**		0.00022	0.000046	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluoroheptanoic acid (PFHpA)	**0.00010**	**J**	0.00022	0.000032	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorooctanoic acid (PFOA)	**0.00015**	**J**	0.00022	0.000095	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorononanoic acid (PFNA)	**0.000092**	**J**	0.00022	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorodecanoic acid (PFDA)	**0.00014**	**J**	0.00022	0.000024	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluoroundecanoic acid (PFUnA)	**0.00027**		0.00022	0.000040	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorododecanoic acid (PFDoA)	**0.00086**		0.00022	0.000074	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorotridecanoic Acid (PFTriA)	**0.011**		0.00022	0.000056	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorotetradecanoic acid (PFTeA)	**0.00022**		0.00022	0.000060	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorobutanesulfonic acid (PFBS)	0.000028	U	0.00022	0.000028	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorohexanesulfonic acid (PFHxS)	**0.000078**	**J**	0.00022	0.000034	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000039	U	0.00022	0.000039	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorooctanesulfonic acid (PFOS)	**0.00036**	**J B**	0.00055	0.00022	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorodecanesulfonic acid (PFDS)	0.000043	U *	0.00022	0.000043	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
Perfluorooctane Sulfonamide (FOSA)	**0.00098**		0.00022	0.000091	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00043	U	0.0022	0.00043	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00041	U	0.0022	0.00041	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
6:2FTS	**0.0048**		0.0022	0.00017	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1
8:2FTS	**0.012**		0.0022	0.00028	mg/Kg	☼	03/12/18 15:35	03/21/18 02:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C5 PFPeA	*84*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C2 PFHxA	*80*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C4-PFHpA	*93*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C4 PFOA	*83*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C5 PFNA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C2 PFDA	*60*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C2 PFUnA	*50*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C2 PFDoA	*50*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C2-PFTeDA	*62*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C3-PFBS	*85*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
18O2 PFHxS	*85*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C4 PFOS	*63*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
13C8 FOSA	*50*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
d3-NMeFOSAA	*34*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
d5-NEtFOSAA	*37*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
M2-6:2FTS	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*
M2-8:2FTS	*54*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:02*	*1*

Client Sample ID: SB007(4-5')

Lab Sample ID: 320-36761-8
Date Collected: 03/05/18 09:40
Matrix: Solid
Date Received: 03/06/18 09:40
Percent Solids: 90.4

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000055	J H	0.00022	0.000042	mg/Kg	☼	03/23/18 15:02	03/29/18 00:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*64*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:57*	*1*

Client Sample ID: SB030(2'-4')

Lab Sample ID: 320-36761-9
Date Collected: 03/05/18 10:05
Matrix: Solid
Date Received: 03/06/18 09:40
Percent Solids: 82.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.00064	B	0.00024	0.000034	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluoropentanoic acid (PFPeA)	0.00020	J	0.00024	0.000093	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorohexanoic acid (PFHxA)	0.00059		0.00024	0.000051	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00024	0.000035	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorooctanoic acid (PFOA)	0.00092		0.00024	0.00010	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorononanoic acid (PFNA)	0.00042		0.00024	0.000044	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorodecanoic acid (PFDA)	0.00071		0.00024	0.000027	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluoroundecanoic acid (PFUnA)	0.0046		0.00024	0.000044	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorododecanoic acid (PFDoA)	0.0026		0.00024	0.000081	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorotridecanoic Acid (PFTriA)	0.022		0.00024	0.000062	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorotetradecanoic acid (PFTeA)	0.00081		0.00024	0.000065	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorobutanesulfonic acid (PFBS)	0.000030	U	0.00024	0.000030	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorohexanesulfonic acid (PFHxS)	0.000096	J	0.00024	0.000037	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000042	U	0.00024	0.000042	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorooctanesulfonic acid (PFOS)	0.00068	B	0.00060	0.00024	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorodecanesulfonic acid (PFDS)	0.000087	J *	0.00024	0.000047	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
Perfluorooctane Sulfonamide (FOSA)	0.0046		0.00024	0.000099	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00047	U	0.0024	0.00047	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00045	U	0.0024	0.00045	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1
6:2FTS	0.021		0.0024	0.00018	mg/Kg	☼	03/12/18 15:35	03/21/18 02:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*76*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C5 PFPeA	*81*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C2 PFHxA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C4-PFHpA	*82*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C4 PFOA	*78*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C5 PFNA	*71*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C2 PFDA	*54*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C2 PFUnA	*46*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*
13C2 PFDoA	*48*		*25 - 150*	*03/12/18 15:35*	*03/21/18 02:09*	*1*

Client Sample ID: SB030(2'-4') — **Lab Sample ID: 320-36761-9**
Date Collected: 03/05/18 10:05 — **Matrix: Solid**
Date Received: 03/06/18 09:40 — **Percent Solids: 82.2**

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-PFTeDA	43		25 - 150	03/12/18 15:35	03/21/18 02:09	1
13C3-PFBS	85		25 - 150	03/12/18 15:35	03/21/18 02:09	1
18O2 PFHxS	83		25 - 150	03/12/18 15:35	03/21/18 02:09	1
13C4 PFOS	54		25 - 150	03/12/18 15:35	03/21/18 02:09	1
13C8 FOSA	44		25 - 150	03/12/18 15:35	03/21/18 02:09	1
d3-NMeFOSAA	38		25 - 150	03/12/18 15:35	03/21/18 02:09	1
d5-NEtFOSAA	45		25 - 150	03/12/18 15:35	03/21/18 02:09	1
M2-6:2FTS	72		25 - 150	03/12/18 15:35	03/21/18 02:09	1

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
8:2FTS	0.051	D	0.024	0.0030	mg/Kg	☼	03/12/18 15:35	03/22/18 00:56	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2FTS	64		25 - 150	03/12/18 15:35	03/22/18 00:56	10

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.00012	J H	0.00024	0.000047	mg/Kg	☼	03/23/18 15:02	03/29/18 01:05	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	75		25 - 150	03/23/18 15:02	03/29/18 01:05	1

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-36683-A-10-B MS	Matrix Spike	82	82	83	86	83	50	60	44
320-36683-A-10-B MS - DL	Matrix Spike								
320-36683-A-10-C MSD	Matrix Spike Duplicate	77	77	79	82	82	53	64	48
320-36683-A-10-C MSD - DL	Matrix Spike Duplicate								
320-36683-A-10-E MS - RE	Matrix Spike								
320-36683-A-10-F MSD - RE	Matrix Spike Duplicate								
320-36761-1	SB004 (5'-7')	81	82	79	84	80		61	50
320-36761-1 - DL	SB004 (5'-7')						69		
320-36761-1 - RE	SB004 (5'-7')								
320-36761-4	SB003(5'-7')	80	84	84	89	81		61	47
320-36761-4 - DL	SB003(5'-7')						72		
320-36761-4 - RE	SB003(5'-7')								
320-36761-5	SB003(10'-12')	82	84	84	87	77		57	43
320-36761-5 - DL	SB003(10'-12')						62		
320-36761-5 - RE	SB003(10'-12')								
320-36761-6	SB007(2'-4')	79	82	80	86	81	76	59	49
320-36761-6 - RE	SB007(2'-4')								
320-36761-8	SB007(4-5')	81	84	80	93	83	78	60	50
320-36761-8 - RE	SB007(4-5')								
320-36761-9	SB030(2'-4')	76	81	78	82	78	71	54	46
320-36761-9 - DL	SB030(2'-4')								
320-36761-9 - RE	SB030(2'-4')								
LCS 320-212510/2-A	Lab Control Sample	72	79	77	85	84	85	70	52
LCS 320-214126/2-A	Lab Control Sample	97	98	101	99	101	96	95	79
LCS 320-214600/2-A	Lab Control Sample								
LCS 320-215106/2-A	Lab Control Sample								
LCSD 320-214126/3-A	Lab Control Sample Dup	101	100	100	98	99	96	100	84
LCSD 320-215106/3-A	Lab Control Sample Dup								
MB 320-212510/1-A	Method Blank	73	81	80	86	83	83	71	58
MB 320-214126/1-A	Method Blank	88	89	90	90	89	86	88	77
MB 320-214600/1-A	Method Blank								
MB 320-215106/1-A	Method Blank								

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
320-36683-A-10-B MS	Matrix Spike	28	30	85	83	56	46	24 *	23 *
320-36683-A-10-B MS - DL	Matrix Spike					67			
320-36683-A-10-C MSD	Matrix Spike Duplicate	41	55	78	82	61	45	33	33
320-36683-A-10-C MSD - DL	Matrix Spike Duplicate					69			
320-36683-A-10-E MS - RE	Matrix Spike					61			
320-36683-A-10-F MSD - RE	Matrix Spike Duplicate					58			
320-36761-1	SB004 (5'-7')	43	40	82	80	62	49	37	38
320-36761-1 - DL	SB004 (5'-7')					63			
320-36761-1 - RE	SB004 (5'-7')					68			
320-36761-4	SB003(5'-7')	35	37	85	82	59	51	35	39
320-36761-4 - DL	SB003(5'-7')					61			

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
320-36761-4 - RE	SB003(5'-7')					61			
320-36761-5	SB003(10'-12')	37	49	85	82	56	46	33	34
320-36761-5 - DL	SB003(10'-12')					53			
320-36761-5 - RE	SB003(10'-12')					75			
320-36761-6	SB007(2'-4')	41	45	82	81	65	43	37	39
320-36761-6 - RE	SB007(2'-4')					79			
320-36761-8	SB007(4-5')	50	62	85	85	63	50	34	37
320-36761-8 - RE	SB007(4-5')					64			
320-36761-9	SB030(2'-4')	48	43	85	83	54	44	38	45
320-36761-9 - DL	SB030(2'-4')								
320-36761-9 - RE	SB030(2'-4')					75			
LCS 320-212510/2-A	Lab Control Sample	29	13 *	82	82	69	50	37	37
LCS 320-214126/2-A	Lab Control Sample	77	81	98	100	96	94	91	85
LCS 320-214600/2-A	Lab Control Sample					82			
LCS 320-215106/2-A	Lab Control Sample								
LCSD 320-214126/3-A	Lab Control Sample Dup	79	82	101	104	97	94	92	85
LCSD 320-215106/3-A	Lab Control Sample Dup								
MB 320-212510/1-A	Method Blank	33	14 *	81	80	69	48	33	32
MB 320-214126/1-A	Method Blank	75	78	90	95	92	86	90	78
MB 320-214600/1-A	Method Blank					80			
MB 320-215106/1-A	Method Blank								

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)						
320-36683-A-10-B MS	Matrix Spike	77	63						
320-36683-A-10-B MS - DL	Matrix Spike								
320-36683-A-10-C MSD	Matrix Spike Duplicate	75	65						
320-36683-A-10-C MSD - DL	Matrix Spike Duplicate								
320-36683-A-10-E MS - RE	Matrix Spike								
320-36683-A-10-F MSD - RE	Matrix Spike Duplicate								
320-36761-1	SB004 (5'-7')		58						
320-36761-1 - DL	SB004 (5'-7')	76							
320-36761-1 - RE	SB004 (5'-7')								
320-36761-4	SB003(5'-7')								
320-36761-4 - DL	SB003(5'-7')	86	61						
320-36761-4 - RE	SB003(5'-7')								
320-36761-5	SB003(10'-12')								
320-36761-5 - DL	SB003(10'-12')	195 *	49						
320-36761-5 - RE	SB003(10'-12')								
320-36761-6	SB007(2'-4')	77	55						
320-36761-6 - RE	SB007(2'-4')								
320-36761-8	SB007(4-5')	76	54						
320-36761-8 - RE	SB007(4-5')								
320-36761-9	SB030(2'-4')	72							
320-36761-9 - DL	SB030(2'-4')		64						
320-36761-9 - RE	SB030(2'-4')								
LCS 320-212510/2-A	Lab Control Sample	83	64						

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
LCS 320-214126/2-A	Lab Control Sample	115	101						
LCS 320-214600/2-A	Lab Control Sample								
LCS 320-215106/2-A	Lab Control Sample	115							
LCSD 320-214126/3-A	Lab Control Sample Dup	121	104						
LCSD 320-215106/3-A	Lab Control Sample Dup	119							
MB 320-212510/1-A	Method Blank	73	55						
MB 320-214126/1-A	Method Blank	111	93						
MB 320-214600/1-A	Method Blank								
MB 320-215106/1-A	Method Blank	112							

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-36761-2	SB004-SPLP(8'-10')	93	92	89	91	89		94	84
320-36761-3	SB003-SPLP(0-2')	79	81	81	80	72	56		

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOSA	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-36761-2	SB004-SPLP(8'-10')	81	88	92	95	78	86	100	90
320-36761-3	SB003-SPLP(0-2')	60	33	82	83	54	55	77	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M282FTS							
Lab Sample ID	Client Sample ID	(25-150)							
320-36761-2	SB004-SPLP(8'-10')	104							
320-36761-3	SB003-SPLP(0-2')								

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)								
		PFNA	PFOS	M262FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)						
320-36761-2 - DL	SB004-SPLP(8'-10')	97 *	99 *	135 *						

Surrogate Legend

PFNA = 13C5 PFNA
PFOS = 13C4 PFOS
M262FTS = M2-6:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)								
		M262FTS								
Lab Sample ID	Client Sample ID	(25-150)								
320-36761-2 - RE	SB004-SPLP(8'-10')	126 *								
320-36761-3 - RE	SB003-SPLP(0-2')	116								
320-36761-7 - DL	SB007-SPLP(0-2')	134 *								
320-36761-7 - RE	SB007-SPLP(0-2')	126								
LB 320-212127/1-C	Method Blank	112								

Surrogate Legend

M262FTS = M2-6:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)								
		PFDA	PFUnA	PFOS	M262FTS	M282FTS				
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)				
320-36761-3 - DL	SB003-SPLP(0-2')	88 *	87 *	91 *	133 *	152 *				

Surrogate Legend

Isotope Dilution Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-36761-1
Project/Site: Suffolk County Firematics Site

PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFOS = 13C4 PFOS
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-36761-7	SB007-SPLP(0-2')	93	96	94	94	94	95	102	91
LB 320-212127/1-B	Method Blank	92	92	92	93	91	89	94	85

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOS/	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-36761-7	SB007-SPLP(0-2')	89	76	94	100	98	93	73	111
LB 320-212127/1-B	Method Blank	87	95	91	98	96	93	96	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
320-36761-7	SB007-SPLP(0-2')		165 *						
LB 320-212127/1-B	Method Blank	112	116						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-212510/1-A
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 212510

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0000394	J	0.00020	0.000028	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorooctanesulfonic acid (PFOS)	0.000310	J	0.00050	0.00020	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
6:2FTS	0.00015	U	0.0020	0.00015	mg/Kg		03/12/18 15:35	03/20/18 23:09	1
8:2FTS	0.00025	U	0.0020	0.00025	mg/Kg		03/12/18 15:35	03/20/18 23:09	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C5 PFPeA	*81*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFHxA	*80*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C4-PFHpA	*86*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C4 PFOA	*83*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C5 PFNA	*83*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFDA	*71*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFUnA	*58*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2 PFDoA	*33*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C2-PFTeDA	*14*	*	*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C3-PFBS	*81*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
18O2 PFHxS	*80*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C4 PFOS	*69*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
13C8 FOSA	*48*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
d3-NMeFOSAA	*33*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
d5-NEtFOSAA	*32*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
M2-6:2FTS	*73*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*
M2-8:2FTS	*55*		*25 - 150*	*03/12/18 15:35*	*03/20/18 23:09*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-212510/2-A
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00200	0.00198		mg/Kg		99	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00200	0.00186		mg/Kg		93	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00200	0.00200		mg/Kg		100	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00203		mg/Kg		101	76 - 124
Perfluorooctanoic acid (PFOA)	0.00200	0.00198		mg/Kg		99	76 - 121
Perfluorononanoic acid (PFNA)	0.00200	0.00189		mg/Kg		95	74 - 126
Perfluorodecanoic acid (PFDA)	0.00200	0.00206		mg/Kg		103	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00156		mg/Kg		78	74 - 114
Perfluorododecanoic acid (PFDoA)	0.00200	0.00198		mg/Kg		99	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00129		mg/Kg		64	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00202		mg/Kg		101	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00172		mg/Kg		97	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00165		mg/Kg		91	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00216		mg/Kg		113	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00220		mg/Kg		118	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.000908	*	mg/Kg		47	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00196		mg/Kg		98	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00192	J	mg/Kg		96	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00185	J	mg/Kg		92	65 - 135
6:2FTS	0.00190	0.00176	J	mg/Kg		93	65 - 135
8:2FTS	0.00192	0.00188	J	mg/Kg		98	65 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*72*		*25 - 150*
13C5 PFPeA	*79*		*25 - 150*
13C2 PFHxA	*77*		*25 - 150*
13C4-PFHpA	*85*		*25 - 150*
13C4 PFOA	*84*		*25 - 150*
13C5 PFNA	*85*		*25 - 150*
13C2 PFDA	*70*		*25 - 150*
13C2 PFUnA	*52*		*25 - 150*
13C2 PFDoA	*29*		*25 - 150*
13C2-PFTeDA	*13*	*	*25 - 150*
13C3-PFBS	*82*		*25 - 150*
18O2 PFHxS	*82*		*25 - 150*
13C4 PFOS	*69*		*25 - 150*
13C8 FOSA	*50*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-212510/2-A
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212510

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	37		25 - 150
d5-NEtFOSAA	37		25 - 150
M2-6:2FTS	83		25 - 150
M2-8:2FTS	64		25 - 150

Lab Sample ID: 320-36683-A-10-B MS
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.000066	J B	0.00203	0.00218		mg/Kg	☼	104	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00203	0.00211		mg/Kg	☼	96	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00054		0.00203	0.00258		mg/Kg	☼	100	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00203	0.00217		mg/Kg	☼	98	76 - 124
Perfluorooctanoic acid (PFOA)	0.0013		0.00203	0.00341		mg/Kg	☼	103	76 - 121
Perfluorononanoic acid (PFNA)	0.015		0.00203	0.0183	4	mg/Kg	☼	150	74 - 126
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00203	0.00243		mg/Kg	☼	114	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.000083	J	0.00203	0.00181		mg/Kg	☼	85	74 - 114
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00203	0.00210		mg/Kg	☼	103	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.000052	U F1	0.00203	0.00194		mg/Kg	☼	95	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00203	0.00189		mg/Kg	☼	93	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00019	J	0.00180	0.00203		mg/Kg	☼	102	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.0074	F2 F1	0.00185	0.00907	4	mg/Kg	☼	89	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.0048	F2 F1	0.00194	0.00820	F1	mg/Kg	☼	173	78 - 146
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00196	0.00139		mg/Kg	☼	71	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00015	J	0.00203	0.00219		mg/Kg	☼	100	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.00203	0.00202		mg/Kg	☼	100	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.00203	0.00212		mg/Kg	☼	104	65 - 135
6:2FTS	0.0053	F2 F1	0.00193	0.00713		mg/Kg	☼	96	65 - 135
8:2FTS	0.00071	J	0.00195	0.00240		mg/Kg	☼	86	65 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	82		25 - 150
13C5 PFPeA	82		25 - 150
13C2 PFHxA	83		25 - 150
13C4-PFHpA	86		25 - 150
13C4 PFOA	83		25 - 150
13C5 PFNA	50		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-36683-A-10-B MS
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 212510

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFDA	*60*		*25 - 150*
13C2 PFUnA	*44*		*25 - 150*
13C2 PFDoA	*28*		*25 - 150*
13C2-PFTeDA	*30*		*25 - 150*
13C3-PFBS	*85*		*25 - 150*
18O2 PFHxS	*83*		*25 - 150*
13C4 PFOS	*56*		*25 - 150*
13C8 FOSA	*46*		*25 - 150*
d3-NMeFOSAA	*24*	*	*25 - 150*
d5-NEtFOSAA	*23*	*	*25 - 150*
M2-6:2FTS	*77*		*25 - 150*
M2-8:2FTS	*63*		*25 - 150*

Lab Sample ID: 320-36683-A-10-C MSD
Matrix: Solid
Analysis Batch: 214053

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.000066	J B	0.00205	0.00217		mg/Kg	☼	103	81 - 133	0	30
Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00205	0.00214		mg/Kg	☼	97	79 - 120	1	30
Perfluorohexanoic acid (PFHxA)	0.00054		0.00205	0.00236		mg/Kg	☼	89	75 - 125	9	30
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00205	0.00220		mg/Kg	☼	99	76 - 124	2	30
Perfluorooctanoic acid (PFOA)	0.0013		0.00205	0.00286		mg/Kg	☼	76	76 - 121	18	30
Perfluorononanoic acid (PFNA)	0.015		0.00205	0.0138	4	mg/Kg	☼	-72	74 - 126	28	30
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00205	0.00238		mg/Kg	☼	111	74 - 124	2	30
Perfluoroundecanoic acid (PFUnA)	0.000083	J	0.00205	0.00185		mg/Kg	☼	86	74 - 114	2	30
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00205	0.00210		mg/Kg	☼	103	75 - 123	0	30
Perfluorotridecanoic Acid (PFTriA)	0.000052	U F1	0.00205	0.00254	F1	mg/Kg	☼	124	43 - 116	27	30
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00205	0.00199		mg/Kg	☼	97	22 - 129	5	30
Perfluorobutanesulfonic acid (PFBS)	0.00019	J	0.00181	0.00206		mg/Kg	☼	104	73 - 142	2	30
Perfluorohexanesulfonic acid (PFHxS)	0.0074	F2 F1	0.00186	0.00596	F2 F1	mg/Kg	☼	-79	75 - 121	41	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.0048	F2 F1	0.00195	0.00584	F2 F1	mg/Kg	☼	51	78 - 146	34	30
Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00197	0.00154		mg/Kg	☼	78	54 - 113	10	30
Perfluorooctane Sulfonamide (FOSA)	0.00015	J	0.00205	0.00222		mg/Kg	☼	101	62 - 135	1	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.00205	0.00212		mg/Kg	☼	104	65 - 135	5	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.00205	0.00204		mg/Kg	☼	99	65 - 135	4	30
6:2FTS	0.0053	F2 F1	0.00194	0.00422	F2 F1	mg/Kg	☼	-54	65 - 135	51	30
8:2FTS	0.00071	J	0.00196	0.00230		mg/Kg	☼	81	65 - 135	4	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	77		25 - 150
13C5 PFPeA	77		25 - 150
13C2 PFHxA	79		25 - 150
13C4-PFHpA	82		25 - 150
13C4 PFOA	82		25 - 150
13C5 PFNA	53		25 - 150
13C2 PFDA	64		25 - 150
13C2 PFUnA	48		25 - 150
13C2 PFDoA	41		25 - 150
13C2-PFTeDA	55		25 - 150
13C3-PFBS	78		25 - 150
18O2 PFHxS	82		25 - 150
13C4 PFOS	61		25 - 150
13C8 FOSA	45		25 - 150
d3-NMeFOSAA	33		25 - 150
d5-NEtFOSAA	33		25 - 150
M2-6:2FTS	75		25 - 150
M2-8:2FTS	65		25 - 150

Lab Sample ID: MB 320-214126/1-A
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214126

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluoroheptanoic acid (PFHpA)	0.277	J	2.00	0.25	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorohexanesulfonic acid (PFHxS)	0.331	J	2.00	0.17	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32	ng/L		03/21/18 12:31	03/23/18 18:47	1
Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35	ng/L		03/21/18 12:31	03/23/18 18:47	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10	ng/L		03/21/18 12:31	03/23/18 18:47	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90	ng/L		03/21/18 12:31	03/23/18 18:47	1
6:2FTS	4.687	J	20.0	2.00	ng/L		03/21/18 12:31	03/23/18 18:47	1
8:2FTS	2.00	U	20.0	2.00	ng/L		03/21/18 12:31	03/23/18 18:47	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	88		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C5 PFPeA	89		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C2 PFHxA	90		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C4-PFHpA	90		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C4 PFOA	89		25 - 150	03/21/18 12:31	03/23/18 18:47	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-214126/1-A
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214126

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	86		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C2 PFDA	88		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C2 PFUnA	77		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C2 PFDoA	75		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C2-PFTeDA	78		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C3-PFBS	90		25 - 150	03/21/18 12:31	03/23/18 18:47	1
18O2 PFHxS	95		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C4 PFOS	92		25 - 150	03/21/18 12:31	03/23/18 18:47	1
13C8 FOSA	86		25 - 150	03/21/18 12:31	03/23/18 18:47	1
d3-NMeFOSAA	90		25 - 150	03/21/18 12:31	03/23/18 18:47	1
d5-NEtFOSAA	78		25 - 150	03/21/18 12:31	03/23/18 18:47	1
M2-6:2FTS	111		25 - 150	03/21/18 12:31	03/23/18 18:47	1
M2-8:2FTS	93		25 - 150	03/21/18 12:31	03/23/18 18:47	1

Lab Sample ID: LCS 320-214126/2-A
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	43.00		ng/L		107	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	42.68		ng/L		107	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	41.22		ng/L		103	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	44.05		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	41.16		ng/L		103	64 - 124
Perfluorononanoic acid (PFNA)	40.0	43.70		ng/L		109	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	43.80		ng/L		110	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	40.64		ng/L		102	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	43.64		ng/L		109	71 - 131
Perfluorotridecanoic Acid (PFTriA)	40.0	46.04		ng/L		115	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	44.47		ng/L		111	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	39.75		ng/L		112	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.30		ng/L		102	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.73		ng/L		115	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	39.97		ng/L		108	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	41.05		ng/L		106	68 - 128
Perfluorooctane Sulfonamide (FOSA)	40.0	41.47		ng/L		104	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	43.65		ng/L		109	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	44.14		ng/L		110	65 - 125

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-214126/2-A
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214126

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
6:2FTS			37.9	48.43	*	ng/L		128	66 - 126		
8:2FTS			38.3	40.19		ng/L		105	67 - 127		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*97*		*25 - 150*
13C5 PFPeA	*98*		*25 - 150*
13C2 PFHxA	*101*		*25 - 150*
13C4-PFHpA	*99*		*25 - 150*
13C4 PFOA	*101*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*95*		*25 - 150*
13C2 PFUnA	*79*		*25 - 150*
13C2 PFDoA	*77*		*25 - 150*
13C2-PFTeDA	*81*		*25 - 150*
13C3-PFBS	*98*		*25 - 150*
18O2 PFHxS	*100*		*25 - 150*
13C4 PFOS	*96*		*25 - 150*
13C8 FOSA	*94*		*25 - 150*
d3-NMeFOSAA	*91*		*25 - 150*
d5-NEtFOSAA	*85*		*25 - 150*
M2-6:2FTS	*115*		*25 - 150*
M2-8:2FTS	*101*		*25 - 150*

Lab Sample ID: LCSD 320-214126/3-A
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214126

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	42.06		ng/L		105	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)			40.0	42.49		ng/L		106	66 - 126	0	30
Perfluorohexanoic acid (PFHxA)			40.0	41.74		ng/L		104	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	45.32		ng/L		113	66 - 126	3	30
Perfluorooctanoic acid (PFOA)			40.0	42.03		ng/L		105	64 - 124	2	30
Perfluorononanoic acid (PFNA)			40.0	44.41		ng/L		111	68 - 128	2	30
Perfluorodecanoic acid (PFDA)			40.0	41.34		ng/L		103	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)			40.0	36.67		ng/L		92	60 - 120	10	30
Perfluorododecanoic acid (PFDoA)			40.0	42.29		ng/L		106	71 - 131	3	30
Perfluorotridecanoic Acid (PFTriA)			40.0	50.11		ng/L		125	72 - 132	8	30
Perfluorotetradecanoic acid (PFTeA)			40.0	45.47		ng/L		114	68 - 128	2	30
Perfluorobutanesulfonic acid (PFBS)			35.4	38.21		ng/L		108	73 - 133	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	35.20		ng/L		97	63 - 123	6	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	42.96		ng/L		113	68 - 128	2	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-214126/3-A
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214126

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS)			37.1	38.64		ng/L		104	67 - 127	3	30
Perfluorodecanesulfonic acid (PFDS)			38.6	41.28		ng/L		107	68 - 128	1	30
Perfluorooctane Sulfonamide (FOSA)			40.0	42.30		ng/L		106	70 - 130	2	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)			40.0	45.24		ng/L		113	67 - 127	4	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)			40.0	43.35		ng/L		108	65 - 125	2	30
6:2FTS			37.9	89.86	*	ng/L		237	66 - 126	60	30
8:2FTS			38.3	39.42		ng/L		103	67 - 127	2	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*101*		*25 - 150*
13C5 PFPeA	*100*		*25 - 150*
13C2 PFHxA	*100*		*25 - 150*
13C4-PFHpA	*98*		*25 - 150*
13C4 PFOA	*99*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*100*		*25 - 150*
13C2 PFUnA	*84*		*25 - 150*
13C2 PFDoA	*79*		*25 - 150*
13C2-PFTeDA	*82*		*25 - 150*
13C3-PFBS	*101*		*25 - 150*
18O2 PFHxS	*104*		*25 - 150*
13C4 PFOS	*97*		*25 - 150*
13C8 FOSA	*94*		*25 - 150*
d3-NMeFOSAA	*92*		*25 - 150*
d5-NEtFOSAA	*85*		*25 - 150*
M2-6:2FTS	*121*		*25 - 150*
M2-8:2FTS	*104*		*25 - 150*

Lab Sample ID: MB 320-214600/1-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214600

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		03/23/18 15:02	03/29/18 00:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*80*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-214600/2-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214600

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorodecanesulfonic acid (PFDS)			0.00193	0.00169		mg/Kg		88	54 - 113		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFOS	*82*		*25 - 150*

Lab Sample ID: MB 320-215106/1-A
Matrix: Solid
Analysis Batch: 215294

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 215106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	2.00	U	20.0	2.00	ng/L		03/27/18 20:41	03/28/18 18:59	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*112*		*25 - 150*	*03/27/18 20:41*	*03/28/18 18:59*	*1*

Lab Sample ID: LCS 320-215106/2-A
Matrix: Solid
Analysis Batch: 215294

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 215106

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
6:2FTS			37.9	41.48		ng/L		109	66 - 126		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-6:2FTS	*115*		*25 - 150*

Lab Sample ID: LCSD 320-215106/3-A
Matrix: Solid
Analysis Batch: 215294

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 215106

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
6:2FTS			37.9	33.87		ng/L		89	66 - 126	20	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-6:2FTS	*119*		*25 - 150*

Lab Sample ID: LB 320-212127/1-B
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 214126

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10	ng/L		03/21/18 12:31	03/23/18 19:26	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LB 320-212127/1-B
Matrix: Solid
Analysis Batch: 214657

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 214126

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorotetradecanoic acid (PFTeA)	0.496	J	2.00	0.29	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorohexanesulfonic acid (PFHxS)	0.244	J	2.00	0.17	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorooctanesulfonic acid (PFOS)	1.360	J	2.00	0.54	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32	ng/L		03/21/18 12:31	03/23/18 19:26	1
Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35	ng/L		03/21/18 12:31	03/23/18 19:26	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.09	U	20.0	3.09	ng/L		03/21/18 12:31	03/23/18 19:26	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90	ng/L		03/21/18 12:31	03/23/18 19:26	1
6:2FTS	136.2		20.0	2.00	ng/L		03/21/18 12:31	03/23/18 19:26	1
8:2FTS	2.00	U	20.0	2.00	ng/L		03/21/18 12:31	03/23/18 19:26	1

Isotope Dilution	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C5 PFPeA	*92*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C2 PFHxA	*92*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C4-PFHpA	*93*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C4 PFOA	*91*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C5 PFNA	*89*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C2 PFDA	*94*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C2 PFUnA	*85*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C2 PFDoA	*87*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C2-PFTeDA	*95*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C3-PFBS	*91*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
18O2 PFHxS	*98*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C4 PFOS	*96*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
13C8 FOSA	*93*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
d3-NMeFOSAA	*96*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
d5-NEtFOSAA	*88*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
M2-6:2FTS	*112*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*
M2-8:2FTS	*116*		*25 - 150*	*03/21/18 12:31*	*03/23/18 19:26*	*1*

Lab Sample ID: LB 320-212127/1-C
Matrix: Solid
Analysis Batch: 215294

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 215106

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	1.98	U	19.8	1.98	ng/L		03/27/18 20:41	03/28/18 18:51	1

Isotope Dilution	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*112*		*25 - 150*	*03/27/18 20:41*	*03/28/18 18:51*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Lab Sample ID: 320-36683-A-10-B MS
Matrix: Solid
Analysis Batch: 214277

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	F2 B D	0.00189	0.323	4	mg/Kg	☼	186	69 - 131

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFOS - DL	*67*		*25 - 150*

Lab Sample ID: 320-36683-A-10-C MSD
Matrix: Solid
Analysis Batch: 214277

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 212510

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	F2 B D	0.00190	0.216	4 F2	mg/Kg	☼	-5443	69 - 131	40	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFOS - DL	*69*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - RE

Lab Sample ID: 320-36683-A-10-E MS
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanesulfonic acid (PFDS) - RE	0.000040	U F1	0.00198	0.00239	F1	mg/Kg	☼	121	54 - 113

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFOS - RE	*61*		*25 - 150*

Lab Sample ID: 320-36683-A-10-F MSD
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorodecanesulfonic acid (PFDS) - RE	0.000040	U F1	0.00195	0.00220		mg/Kg	☼	113	54 - 113	8	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFOS - RE	*58*		*25 - 150*

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
*	LCS or LCSD is outside acceptance limits.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
H	Sample was prepped or analyzed beyond the specified holding time
*	ISTD response or retention time outside acceptable limits
*	RPD of the LCS and LCSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Leach Batch: 212127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-2	SB004-SPLP(8'-10')	SPLP East	Solid	1312	
320-36761-2 - DL	SB004-SPLP(8'-10')	SPLP East	Solid	1312	
320-36761-2 - RE	SB004-SPLP(8'-10')	SPLP East	Solid	1312	
320-36761-3 - DL	SB003-SPLP(0-2')	SPLP East	Solid	1312	
320-36761-3	SB003-SPLP(0-2')	SPLP East	Solid	1312	
320-36761-3 - RE	SB003-SPLP(0-2')	SPLP East	Solid	1312	
320-36761-7 - RE	SB007-SPLP(0-2')	SPLP East	Solid	1312	
320-36761-7	SB007-SPLP(0-2')	SPLP East	Solid	1312	
320-36761-7 - DL	SB007-SPLP(0-2')	SPLP East	Solid	1312	
LB 320-212127/1-B	Method Blank	SPLP East	Solid	1312	
LB 320-212127/1-C	Method Blank	SPLP East	Solid	1312	

Prep Batch: 212510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-1 - DL	SB004 (5'-7')	Total/NA	Solid	SHAKE	
320-36761-1	SB004 (5'-7')	Total/NA	Solid	SHAKE	
320-36761-4 - DL	SB003(5'-7')	Total/NA	Solid	SHAKE	
320-36761-4	SB003(5'-7')	Total/NA	Solid	SHAKE	
320-36761-5 - DL	SB003(10'-12')	Total/NA	Solid	SHAKE	
320-36761-5	SB003(10'-12')	Total/NA	Solid	SHAKE	
320-36761-6	SB007(2'-4')	Total/NA	Solid	SHAKE	
320-36761-8	SB007(4-5')	Total/NA	Solid	SHAKE	
320-36761-9	SB030(2'-4')	Total/NA	Solid	SHAKE	
320-36761-9 - DL	SB030(2'-4')	Total/NA	Solid	SHAKE	
MB 320-212510/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-212510/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-36683-A-10-B MS	Matrix Spike	Total/NA	Solid	SHAKE	
320-36683-A-10-B MS - DL	Matrix Spike	Total/NA	Solid	SHAKE	
320-36683-A-10-C MSD - DL	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	
320-36683-A-10-C MSD	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	

Analysis Batch: 214053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-1	SB004 (5'-7')	Total/NA	Solid	537 (modified)	212510
320-36761-4	SB003(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36761-5	SB003(10'-12')	Total/NA	Solid	537 (modified)	212510
320-36761-6	SB007(2'-4')	Total/NA	Solid	537 (modified)	212510
320-36761-8	SB007(4-5')	Total/NA	Solid	537 (modified)	212510
320-36761-9	SB030(2'-4')	Total/NA	Solid	537 (modified)	212510
MB 320-212510/1-A	Method Blank	Total/NA	Solid	537 (modified)	212510
LCS 320-212510/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	212510
320-36683-A-10-B MS	Matrix Spike	Total/NA	Solid	537 (modified)	212510
320-36683-A-10-C MSD	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	212510

Prep Batch: 214126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-2	SB004-SPLP(8'-10')	SPLP East	Solid	3535	212127
320-36761-2 - DL	SB004-SPLP(8'-10')	SPLP East	Solid	3535	212127
320-36761-3	SB003-SPLP(0-2')	SPLP East	Solid	3535	212127
320-36761-3 - DL	SB003-SPLP(0-2')	SPLP East	Solid	3535	212127
320-36761-7	SB007-SPLP(0-2')	SPLP East	Solid	3535	212127

LCMS (Continued)

Prep Batch: 214126 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-7 - DL	SB007-SPLP(0-2')	SPLP East	Solid	3535	212127
LB 320-212127/1-B	Method Blank	SPLP East	Solid	3535	212127
MB 320-214126/1-A	Method Blank	Total/NA	Solid	3535	
LCS 320-214126/2-A	Lab Control Sample	Total/NA	Solid	3535	
LCSD 320-214126/3-A	Lab Control Sample Dup	Total/NA	Solid	3535	

Analysis Batch: 214277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-1 - DL	SB004 (5'-7')	Total/NA	Solid	537 (modified)	212510
320-36761-4 - DL	SB003(5'-7')	Total/NA	Solid	537 (modified)	212510
320-36761-5 - DL	SB003(10'-12')	Total/NA	Solid	537 (modified)	212510
320-36761-9 - DL	SB030(2'-4')	Total/NA	Solid	537 (modified)	212510
320-36683-A-10-B MS - DL	Matrix Spike	Total/NA	Solid	537 (modified)	212510
320-36683-A-10-C MSD - DL	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	212510

Prep Batch: 214600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-1 - RE	SB004 (5'-7')	Total/NA	Solid	SHAKE	
320-36761-4 - RE	SB003(5'-7')	Total/NA	Solid	SHAKE	
320-36761-5 - RE	SB003(10'-12')	Total/NA	Solid	SHAKE	
320-36761-6 - RE	SB007(2'-4')	Total/NA	Solid	SHAKE	
320-36761-8 - RE	SB007(4-5')	Total/NA	Solid	SHAKE	
320-36761-9 - RE	SB030(2'-4')	Total/NA	Solid	SHAKE	
MB 320-214600/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-214600/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-36683-A-10-E MS - RE	Matrix Spike	Total/NA	Solid	SHAKE	
320-36683-A-10-F MSD - RE	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	

Analysis Batch: 214657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-2	SB004-SPLP(8'-10')	SPLP East	Solid	537 (modified)	214126
320-36761-3	SB003-SPLP(0-2')	SPLP East	Solid	537 (modified)	214126
320-36761-7	SB007-SPLP(0-2')	SPLP East	Solid	537 (modified)	214126
LB 320-212127/1-B	Method Blank	SPLP East	Solid	537 (modified)	214126
MB 320-214126/1-A	Method Blank	Total/NA	Solid	537 (modified)	214126
LCS 320-214126/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	214126
LCSD 320-214126/3-A	Lab Control Sample Dup	Total/NA	Solid	537 (modified)	214126

Analysis Batch: 214885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-2 - DL	SB004-SPLP(8'-10')	SPLP East	Solid	537 (modified)	214126
320-36761-3 - DL	SB003-SPLP(0-2')	SPLP East	Solid	537 (modified)	214126
320-36761-7 - DL	SB007-SPLP(0-2')	SPLP East	Solid	537 (modified)	214126

Prep Batch: 215106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-2 - RE	SB004-SPLP(8'-10')	SPLP East	Solid	3535	212127
320-36761-3 - RE	SB003-SPLP(0-2')	SPLP East	Solid	3535	212127
320-36761-7 - RE	SB007-SPLP(0-2')	SPLP East	Solid	3535	212127
LB 320-212127/1-C	Method Blank	SPLP East	Solid	3535	212127
MB 320-215106/1-A	Method Blank	Total/NA	Solid	3535	

LCMS (Continued)

Prep Batch: 215106 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-215106/2-A	Lab Control Sample	Total/NA	Solid	3535	
LCSD 320-215106/3-A	Lab Control Sample Dup	Total/NA	Solid	3535	

Analysis Batch: 215294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-2 - RE	SB004-SPLP(8'-10')	SPLP East	Solid	537 (modified)	215106
320-36761-3 - RE	SB003-SPLP(0-2')	SPLP East	Solid	537 (modified)	215106
320-36761-7 - RE	SB007-SPLP(0-2')	SPLP East	Solid	537 (modified)	215106
LB 320-212127/1-C	Method Blank	SPLP East	Solid	537 (modified)	215106
MB 320-215106/1-A	Method Blank	Total/NA	Solid	537 (modified)	215106
LCS 320-215106/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	215106
LCSD 320-215106/3-A	Lab Control Sample Dup	Total/NA	Solid	537 (modified)	215106

Analysis Batch: 215311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-1 - RE	SB004 (5'-7')	Total/NA	Solid	537 (modified)	214600
320-36761-4 - RE	SB003(5'-7')	Total/NA	Solid	537 (modified)	214600
320-36761-5 - RE	SB003(10'-12')	Total/NA	Solid	537 (modified)	214600
320-36761-6 - RE	SB007(2'-4')	Total/NA	Solid	537 (modified)	214600
320-36761-8 - RE	SB007(4-5')	Total/NA	Solid	537 (modified)	214600
320-36761-9 - RE	SB030(2'-4')	Total/NA	Solid	537 (modified)	214600
MB 320-214600/1-A	Method Blank	Total/NA	Solid	537 (modified)	214600
LCS 320-214600/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	214600
320-36683-A-10-E MS - RE	Matrix Spike	Total/NA	Solid	537 (modified)	214600
320-36683-A-10-F MSD - RE	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	214600

General Chemistry

Analysis Batch: 212480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36761-1	SB004 (5'-7')	Total/NA	Solid	D 2216	
320-36761-4	SB003(5'-7')	Total/NA	Solid	D 2216	
320-36761-5	SB003(10'-12')	Total/NA	Solid	D 2216	
320-36761-6	SB007(2'-4')	Total/NA	Solid	D 2216	
320-36761-8	SB007(4-5')	Total/NA	Solid	D 2216	
320-36761-9	SB030(2'-4')	Total/NA	Solid	D 2216	
320-36761-9 DU	SB030(2'-4')	Total/NA	Solid	D 2216	

Client Sample ID: SB004 (5'-7')
Date Collected: 03/05/18 09:00
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	212480	03/12/18 14:27	TCS	TAL SAC

Client Sample ID: SB004 (5'-7')
Date Collected: 03/05/18 09:00
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-1
Matrix: Solid
Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 01:22	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	214277	03/22/18 00:16	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 00:25	CBW	TAL SAC

Client Sample ID: SB004-SPLP(8'-10')
Date Collected: 03/05/18 09:15
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535			214126	03/21/18 12:31	SK	TAL SAC
SPLP East	Analysis	537 (modified)		1	214657	03/23/18 19:34	ABH	TAL SAC
SPLP East	Leach	1312	DL		212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		214126	03/21/18 12:31	SK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	10	214885	03/26/18 16:42	ABH	TAL SAC
SPLP East	Leach	1312	RE		212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535	RE		215106	03/27/18 20:41	JER	TAL SAC
SPLP East	Analysis	537 (modified)	RE	10	215294	03/28/18 19:23	ABH	TAL SAC

Client Sample ID: SB003-SPLP(0-2')
Date Collected: 03/05/18 10:00
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535			214126	03/21/18 12:31	SK	TAL SAC
SPLP East	Analysis	537 (modified)		1	214657	03/23/18 19:42	ABH	TAL SAC
SPLP East	Leach	1312	DL		212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		214126	03/21/18 12:31	SK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	20	214885	03/26/18 16:50	ABH	TAL SAC
SPLP East	Leach	1312	RE		212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535	RE		215106	03/27/18 20:41	JER	TAL SAC
SPLP East	Analysis	537 (modified)	RE	1	215294	03/28/18 20:33	ABH	TAL SAC

Lab Chronicle

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Client Sample ID: SB003(5'-7')
Date Collected: 03/05/18 10:15
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	212480	03/12/18 14:27	TCS	TAL SAC

Client Sample ID: SB003(5'-7')
Date Collected: 03/05/18 10:15
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-4
Matrix: Solid
Percent Solids: 96.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 01:30	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	214277	03/22/18 00:24	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 00:33	CBW	TAL SAC

Client Sample ID: SB003(10'-12')
Date Collected: 03/05/18 10:30
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	212480	03/12/18 14:27	TCS	TAL SAC

Client Sample ID: SB003(10'-12')
Date Collected: 03/05/18 10:30
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-5
Matrix: Solid
Percent Solids: 96.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 01:38	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50	214277	03/22/18 00:32	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 00:41	CBW	TAL SAC

Client Sample ID: SB007(2'-4')
Date Collected: 03/05/18 09:35
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	212480	03/12/18 14:27	TCS	TAL SAC

Client Sample ID: SB007(2'-4')
Date Collected: 03/05/18 09:35
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-6
Matrix: Solid
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 01:46	AAR	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 00:49	CBW	TAL SAC

Client Sample ID: SB007-SPLP(0-2')
Date Collected: 03/05/18 09:32
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535			214126	03/21/18 12:31	SK	TAL SAC
SPLP East	Analysis	537 (modified)		1	214657	03/23/18 19:50	ABH	TAL SAC
SPLP East	Leach	1312	DL		212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535	DL		214126	03/21/18 12:31	SK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	10	214885	03/26/18 16:58	ABH	TAL SAC
SPLP East	Leach	1312	RE		212127	03/08/18 16:10	NIM	TAL SAC
SPLP East	Prep	3535	RE		215106	03/27/18 20:41	JER	TAL SAC
SPLP East	Analysis	537 (modified)	RE	1	215294	03/28/18 20:41	ABH	TAL SAC

Client Sample ID: SB007(4-5')
Date Collected: 03/05/18 09:40
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	212480	03/12/18 14:27	TCS	TAL SAC

Client Sample ID: SB007(4-5')
Date Collected: 03/05/18 09:40
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-8
Matrix: Solid
Percent Solids: 90.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 02:02	AAR	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 00:57	CBW	TAL SAC

Client Sample ID: SB030(2'-4')
Date Collected: 03/05/18 10:05
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	212480	03/12/18 14:27	TCS	TAL SAC

Lab Chronicle

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36761-1

Client Sample ID: SB030(2'-4')
Date Collected: 03/05/18 10:05
Date Received: 03/06/18 09:40

Lab Sample ID: 320-36761-9
Matrix: Solid
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	214053	03/21/18 02:09	AAR	TAL SAC
Total/NA	Prep	SHAKE	DL		212510	03/12/18 15:35	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	214277	03/22/18 00:56	SHK	TAL SAC
Total/NA	Prep	SHAKE	RE		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1	215311	03/29/18 01:05	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-36761-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
Arizona	State Program	9	AZ0708	08-11-18
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-18
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-18 *
Kansas	NELAP	7	E-10375	10-31-18
L-A-B	DoD ELAP		L2468	01-20-21
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-14-18
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-18
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	04-01-18
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-18 *
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	07-31-18
USDA	Federal		P330-11-00436	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
New York	NELAP	2	11452	04-01-18
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	PFOS #	PFNA #
SB004 (5'-7') DL	320-36761-1 DL	76	63	69

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	PFOS #	PFNA #	M282FTS #
SB003(5'-7') DL	320-36761-4 DL	86	61	72	61
SB003(10'-12') DL	320-36761-5 DL	195 *	53	62	49

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
M282FTS = M2-8:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M282FTS #
SB030(2'-4') DL	320-36761-9 DL	64

	QC LIMITS
M282FTS = M2-8:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB007(2'-4')	320-36761-6	79	82	82	80	86	81	77	81
SB007(4-5')	320-36761-8	81	84	85	80	93	85	76	83
	MB 320-212510/1-A	73	81	81	80	86	80	73	83
	LCS 320-212510/2-A	72	79	82	77	85	82	83	84
	320-36683-A-10-B MS	82	82	85	83	86	83	77	83
	320-36683-A-10-C MSD	77	77	78	79	82	82	75	82

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
SB007(2'-4')	320-36761-6	65	76	43	55	59	37	39	49
SB007(4-5')	320-36761-8	63	78	50	54	60	34	37	50
	MB 320-212510/1-A	69	83	48	55	71	33	32	58
	LCS 320-212510/2-A	69	85	50	64	70	37	37	52
	320-36683-A-10-B MS	56	50	46	63	60	24 *	23 *	44
	320-36683-A-10-C MSD	61	53	45	65	64	33	33	48

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
SB007(2'-4')	320-36761-6	41	45
SB007(4-5')	320-36761-8	50	62
	MB 320-212510/1-A	33	14 *
	LCS 320-212510/2-A	29	13 *
	320-36683-A-10-B MS	28	30
	320-36683-A-10-C MSD	41	55

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB030(2'-4')	320-36761-9	76	81	85	78	82	83	72	78

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #
SB030(2'-4')	320-36761-9	54	71	44	54	38	45	46	48

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFTDA #
SB030(2'-4')	320-36761-9	43

	QC LIMITS
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB004 (5'-7')	320-36761-1	81	82	82	79	84	80	80	62

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
SB004 (5'-7')	320-36761-1	49	58	61	37	38	50	43	40

	QC LIMITS
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB003(5'-7')	320-36761-4	80	84	85	84	89	82	81	59
SB003(10'-12')	320-36761-5	82	84	85	84	87	82	77	56

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOSA #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
SB003(5'-7')	320-36761-4	51	61	35	39	47	35	37
SB003(10'-12')	320-36761-5	46	57	33	34	43	37	49

	QC LIMITS
PFOSA = 13C8 FOSA	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #
SB004 (5'-7') RE	320-36761-1 RE	68
SB003(5'-7') RE	320-36761-4 RE	61
SB003(10'-12') RE	320-36761-5 RE	75
SB007(2'-4') RE	320-36761-6 RE	79
SB007(4-5') RE	320-36761-8 RE	64
SB030(2'-4') RE	320-36761-9 RE	75
	MB 320-214600/1-A	80
	LCS 320-214600/2-A	82
	320-36683-A-10-B MS DL	67
	320-36683-A-10-E MS RE	61
	320-36683-A-10-C MSD DL	69
	320-36683-A-10-F MSD RE	58

	QC LIMITS
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS	#
SB004-SPLP(8'-10') RE	320-36761-2 RE	126	*
SB003-SPLP(0-2') RE	320-36761-3 RE	116	
SB007-SPLP(0-2') DL	320-36761-7 DL	134	*
SB007-SPLP(0-2') RE	320-36761-7 RE	126	
	MB 320-215106/1-A	112	
	LB 320-212127/1-C	112	
	LCS 320-215106/2-A	115	
	LCSD 320-215106/3-A	119	

	QC LIMITS
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS	#	PFNA	#	PFOS	#
SB004-SPLP(8'-10') DL	320-36761-2 DL	135	*	97	*	99	*

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS	#	PFOS	#	M282FTS	#	PFDA	#	PFUnA	#
SB003-SPLP(0-2') DL	320-36761-3 DL	133	*	91	*	152	*	88	*	87	*

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFOS = 13C4 PFOS	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
	MB 320-214126/1-A	88	89	90	90	90	95	111	89
	LCS 320-214126/2-A	97	98	98	101	99	100	115	101
	LCSD 320-214126/3-A	101	100	101	100	98	104	121	99

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
	MB 320-214126/1-A	86	92	86	93	88	90	78	77
	LCS 320-214126/2-A	96	96	94	101	95	91	85	79
	LCSD 320-214126/3-A	96	97	94	104	100	92	85	84

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
	MB 320-214126/1-A	75	78
	LCS 320-214126/2-A	77	81
	LCSD 320-214126/3-A	79	82

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
	LB 320-212127/1-B	92	92	91	92	93	98	112	91

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
	LB 320-212127/1-B	96	89	93	116	94	96	88	85

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
	LB 320-212127/1-B	87	95

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFNA #
SB003-SPLP(0-2')	320-36761-3	79	81	82	81	80	83	72	56

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFOSA #	d3NMFOS #	d5NEFOS #	PFDoA #	PFTDA #
SB003-SPLP(0-2')	320-36761-3	54	55	77	59	60	33

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFNA #
SB007-SPLP(0-2')	320-36761-7	93	96	94	94	94	100	94	95

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #
SB007-SPLP(0-2')	320-36761-7	98	93	165 *	102	73	111	91	89

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFTDA #
SB007-SPLP(0-2')	320-36761-7	76

	QC LIMITS
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB004-SPLP(8'-10')	320-36761-2	93	92	92	89	91	95	89	78

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
SB004-SPLP(8'-10')	320-36761-2	86	104	94	100	90	84	81	88

	QC LIMITS
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_024.d

Lab ID: LCS 320-212510/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00200	0.00198	99	81-133	
Perfluoropentanoic acid (PFPeA)	0.00200	0.00186	93	79-120	
Perfluorohexanoic acid (PFHxA)	0.00200	0.00200	100	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00203	101	76-124	
Perfluorooctanoic acid (PFOA)	0.00200	0.00198	99	76-121	
Perfluorononanoic acid (PFNA)	0.00200	0.00189	95	74-126	
Perfluorodecanoic acid (PFDA)	0.00200	0.00206	103	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00156	78	74-114	
Perfluorododecanoic acid (PFDoA)	0.00200	0.00198	99	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00129	64	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00202	101	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00172	97	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00165	91	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00216	113	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00220	118	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.000908	47	54-113	*
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00196	98	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00192 J	96	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00185 J	92	65-135	
6:2FTS	0.00190	0.00176 J	93	65-135	
8:2FTS	0.00192	0.00188 J	98	65-135	
13C4 PFBA	0.00500	0.00362	72	25-150	
13C5 PFPeA	0.00500	0.00397	79	25-150	
13C2 PFHxA	0.00500	0.00383	77	25-150	
13C4-PFHpA	0.00500	0.00424	85	25-150	
13C4 PFOA	0.00500	0.00422	84	25-150	
13C5 PFNA	0.00500	0.00424	85	25-150	
13C2 PFDA	0.00500	0.00350	70	25-150	
13C2 PFUnA	0.00500	0.00261	52	25-150	
13C2 PFDoA	0.00500	0.00146	29	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_024.d

Lab ID: LCS 320-212510/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00500	0.000646	13	25-150	*
13C3-PFBS	0.00465	0.00382	82	25-150	
18O2 PFHxS	0.00473	0.00390	82	25-150	
13C4 PFOS	0.00478	0.00328	69	25-150	
13C8 FOSA	0.00500	0.00248	50	25-150	
d3-NMeFOSAA	0.00500	0.00183	37	25-150	
d5-NEtFOSAA	0.00500	0.00186	37	25-150	
M2-6:2FTS	0.00475	0.00394	83	25-150	
M2-8:2FTS	0.00479	0.00305	64	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.03.23LLAA_055.d

Lab ID: LCS 320-214126/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	43.00	107	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	42.68	107	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	41.22	103	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	44.05	110	66-126	
Perfluorooctanoic acid (PFOA)	40.0	41.16	103	64-124	
Perfluorononanoic acid (PFNA)	40.0	43.70	109	68-128	
Perfluorodecanoic acid (PFDA)	40.0	43.80	110	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	40.64	102	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	43.64	109	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	46.04	115	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	44.47	111	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	39.75	112	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.30	102	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	43.73	115	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	39.97	108	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	41.05	106	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	41.47	104	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	43.65	109	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	44.14	110	65-125	
6:2FTS	37.9	48.43	128	66-126	*
8:2FTS	38.3	40.19	105	67-127	
13C4 PFBA	100	96.59	97	25-150	
13C5 PFPeA	100	97.91	98	25-150	
13C2 PFHxA	100	101.0	101	25-150	
13C4-PFHpA	100	99.23	99	25-150	
13C4 PFOA	100	100.7	101	25-150	
13C5 PFNA	100	95.99	96	25-150	
13C2 PFDA	100	95.17	95	25-150	
13C2 PFUnA	100	79.20	79	25-150	
13C2 PFDoA	100	77.03	77	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.03.23LLAA_055.d

Lab ID: LCS 320-214126/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	100	80.61	81	25-150	
13C3-PFBS	93.0	91.27	98	25-150	
18O2 PFHxS	94.6	94.99	100	25-150	
13C4 PFOS	95.6	92.07	96	25-150	
13C8 FOSA	100	94.24	94	25-150	
d3-NMeFOSAA	100	91.09	91	25-150	
d5-NEtFOSAA	100	85.05	85	25-150	
M2-6:2FTS	95.0	109.0	115	25-150	
M2-8:2FTS	95.8	96.90	101	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_008.d

Lab ID: LCS 320-214600/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00169	88	54-113	
13C4 PFOS	0.00478	0.00393	82	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.03.28LLDXD_009.d

Lab ID: LCS 320-215106/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
6:2FTS	37.9	41.48	109	66-126	
M2-6:2FTS	95.0	109.0	115	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.03.23LLAA_056.d

Lab ID: LCSD 320-214126/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	42.06	105	2	30	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	42.49	106	0	30	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	41.74	104	1	30	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	45.32	113	3	30	66-126	
Perfluorooctanoic acid (PFOA)	40.0	42.03	105	2	30	64-124	
Perfluorononanoic acid (PFNA)	40.0	44.41	111	2	30	68-128	
Perfluorodecanoic acid (PFDA)	40.0	41.34	103	6	30	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	36.67	92	10	30	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	42.29	106	3	30	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	50.11	125	8	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	45.47	114	2	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	38.21	108	4	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.20	97	6	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.96	113	2	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.64	104	3	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	41.28	107	1	30	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	42.30	106	2	30	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	45.24	113	4	30	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	43.35	108	2	30	65-125	
6:2FTS	37.9	89.86	237	60	30	66-126	*
8:2FTS	38.3	39.42	103	2	30	67-127	
13C4 PFBA	100	100.7	101			25-150	
13C5 PFPeA	100	99.57	100			25-150	
13C2 PFHxA	100	100.5	100			25-150	
13C4-PFHpA	100	98.10	98			25-150	
13C4 PFOA	100	99.20	99			25-150	
13C5 PFNA	100	96.21	96			25-150	
13C2 PFDA	100	100.1	100			25-150	
13C2 PFUnA	100	83.52	84			25-150	
13C2 PFDoA	100	78.90	79			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.03.23LLAA_056.d

Lab ID: LCSD 320-214126/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C2-PFTeDA	100	82.10	82			25-150	
13C3-PFBS	93.0	94.30	101			25-150	
18O2 PFHxS	94.6	98.19	104			25-150	
13C4 PFOS	95.6	92.77	97			25-150	
13C8 FOSA	100	93.59	94			25-150	
d3-NMeFOSAA	100	92.41	92			25-150	
d5-NEtFOSAA	100	84.62	85			25-150	
M2-6:2FTS	95.0	115.0	121			25-150	
M2-8:2FTS	95.8	99.48	104			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.03.28LLDXD_010.d

Lab ID: LCSD 320-215106/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
6:2FTS	37.9	33.87	89	20	30	66-126	
M2-6:2FTS	95.0	113.3	119			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_038.d

Lab ID: 320-36683-A-10-B MS Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00203	0.000066 J	0.00218	104	81-133	
Perfluoropentanoic acid (PFPeA)	0.00203	0.00015 J	0.00211	96	79-120	
Perfluorohexanoic acid (PFHxA)	0.00203	0.00054	0.00258	100	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00203	0.00018 J	0.00217	98	76-124	
Perfluorooctanoic acid (PFOA)	0.00203	0.0013	0.00341	103	76-121	
Perfluorononanoic acid (PFNA)	0.00203	0.015	0.0183	150	74-126	4
Perfluorodecanoic acid (PFDA)	0.00203	0.00010 J	0.00243	114	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00203	0.000083 J	0.00181	85	74-114	
Perfluorododecanoic acid (PFDoA)	0.00203	0.000069 U	0.00210	103	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00203	0.000052 U	0.00194	95	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00203	0.000055 U	0.00189	93	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00180	0.00019 J	0.00203	102	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00185	0.0074	0.00907	89	75-121	4
Perfluoroheptanesulfonic Acid (PFHpS)	0.00194	0.0048	0.00820	173	78-146	F1
Perfluorodecanesulfonic acid (PFDS)	0.00196	0.000040 U	0.00139	71	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00203	0.00015 J	0.00219	100	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00203	0.00040 U	0.00202	100	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00203	0.00038 U	0.00212	104	65-135	
6:2FTS	0.00193	0.0053	0.00713	96	65-135	
8:2FTS	0.00195	0.00071 J	0.00240	86	65-135	
13C4 PFBA	0.00509	0.0042	0.00416	82	25-150	
13C5 PFPeA	0.00509	0.0043	0.00417	82	25-150	
13C2 PFHxA	0.00509	0.0042	0.00421	83	25-150	
13C4-PFHpA	0.00509	0.0047	0.00437	86	25-150	
13C4 PFOA	0.00509	0.0043	0.00424	83	25-150	
13C5 PFNA	0.00509	0.0026	0.00252	50	25-150	
13C2 PFDA	0.00509	0.0035	0.00304	60	25-150	
13C2 PFUnA	0.00509	0.0026	0.00224	44	25-150	
13C2 PFDoA	0.00509	0.0022	0.00143	28	25-150	
13C2-PFTeDA	0.00509	0.0026	0.00153	30	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_038.d

Lab ID: 320-36683-A-10-B MS Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
13C3-PFBS	0.00473	0.0041	0.00400	85	25-150	
18O2 PFHxS	0.00481	0.0041	0.00398	83	25-150	
13C4 PFOS	0.00486	0.0029	0.00271	56	25-150	
13C8 FOSA	0.00509	0.0025	0.00231	46	25-150	
d3-NMeFOSAA	0.00509	0.0018	0.00123	24	25-150	*
d5-NEtFOSAA	0.00509	0.0018	0.00115	23	25-150	*
M2-6:2FTS	0.00483	0.0037	0.00371	77	25-150	
M2-8:2FTS	0.00487	0.0032	0.00308	63	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.21LLC_022.d

Lab ID: 320-36683-A-10-B MS DL Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.00189	0.32	0.323	186	69-131	4
13C4 PFOS	0.00486	0.0032	0.00324	67	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_022.d

Lab ID: 320-36683-A-10-E MS RE Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00198	0.000040 U	0.00239	121	54-113	F1
13C4 PFOS	0.00491	0.0022	0.00301	61	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_039.d

Lab ID: 320-36683-A-10-C MSD Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00205	0.00217	103	0	30	81-133	
Perfluoropentanoic acid (PFPeA)	0.00205	0.00214	97	1	30	79-120	
Perfluorohexanoic acid (PFHxA)	0.00205	0.00236	89	9	30	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00205	0.00220	99	2	30	76-124	
Perfluorooctanoic acid (PFOA)	0.00205	0.00286	76	18	30	76-121	
Perfluorononanoic acid (PFNA)	0.00205	0.0138	-72	28	30	74-126	4
Perfluorodecanoic acid (PFDA)	0.00205	0.00238	111	2	30	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00205	0.00185	86	2	30	74-114	
Perfluorododecanoic acid (PFDoA)	0.00205	0.00210	103	0	30	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00205	0.00254	124	27	30	43-116	F1
Perfluorotetradecanoic acid (PFTeA)	0.00205	0.00199	97	5	30	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00181	0.00206	104	2	30	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00186	0.00596	-79	41	30	75-121	F2 F1
Perfluoroheptanesulfonic Acid (PFHpS)	0.00195	0.00584	51	34	30	78-146	F2 F1
Perfluorodecanesulfonic acid (PFDS)	0.00197	0.00154	78	10	30	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00205	0.00222	101	1	30	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00205	0.00212	104	5	30	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00205	0.00204	99	4	30	65-135	
6:2FTS	0.00194	0.00422	-54	51	30	65-135	F2 F1
8:2FTS	0.00196	0.00230	81	4	30	65-135	
13C4 PFBA	0.00512	0.00394	77			25-150	
13C5 PFPeA	0.00512	0.00394	77			25-150	
13C2 PFHxA	0.00512	0.00404	79			25-150	
13C4-PFHpA	0.00512	0.00419	82			25-150	
13C4 PFOA	0.00512	0.00418	82			25-150	
13C5 PFNA	0.00512	0.00272	53			25-150	
13C2 PFDA	0.00512	0.00328	64			25-150	
13C2 PFUnA	0.00512	0.00248	48			25-150	
13C2 PFDoA	0.00512	0.00209	41			25-150	
13C2-PFTeDA	0.00512	0.00281	55			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.20LLA_039.d

Lab ID: 320-36683-A-10-C MSD Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C3-PFBS	0.00476	0.00370	78			25-150	
18O2 PFHxS	0.00484	0.00396	82			25-150	
13C4 PFOS	0.00489	0.00299	61			25-150	
13C8 FOSA	0.00512	0.00230	45			25-150	
d3-NMeFOSAA	0.00512	0.00166	33			25-150	
d5-NEtFOSAA	0.00512	0.00168	33			25-150	
M2-6:2FTS	0.00486	0.00366	75			25-150	
M2-8:2FTS	0.00490	0.00320	65			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.21LLC_023.d

Lab ID: 320-36683-A-10-C MSD DL Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.00190	0.216	-5443	40	30	69-131	4 F2
13C4 PFOS	0.00489	0.00338	69			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_023.d

Lab ID: 320-36683-A-10-F MSD RE Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorodecanesulfonic acid (PFDS)	0.00195	0.00220	113	8	30	54-113	
13C4 PFOS	0.00482	0.00281	58			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab File ID: 2018.03.20LLA_023.d Lab Sample ID: MB 320-212510/1-A

Matrix: Solid Date Extracted: 03/12/2018 15:35

Instrument ID: A8_N Date Analyzed: 03/20/2018 23:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-212510/2-A	2018.03.20LLA_024.d	03/20/2018 23:17
	320-36683-A-10-B MS	2018.03.20LLA_038.d	03/21/2018 01:07
	320-36683-A-10-C MSD	2018.03.20LLA_039.d	03/21/2018 01:15
SB004 (5'-7')	320-36761-1	2018.03.20LLA_040.d	03/21/2018 01:22
SB003(5'-7')	320-36761-4	2018.03.20LLA_041.d	03/21/2018 01:30
SB003(10'-12')	320-36761-5	2018.03.20LLA_042.d	03/21/2018 01:38
SB007(2'-4')	320-36761-6	2018.03.20LLA_043.d	03/21/2018 01:46
SB007(4-5')	320-36761-8	2018.03.20LLA_045.d	03/21/2018 02:02
SB030(2'-4')	320-36761-9	2018.03.20LLA_046.d	03/21/2018 02:09
	320-36683-A-10-B MS DL	2018.03.21LLC_022.d	03/22/2018 00:01
	320-36683-A-10-C MSD DL	2018.03.21LLC_023.d	03/22/2018 00:09
SB004 (5'-7') DL	320-36761-1 DL	2018.03.21LLC_024.d	03/22/2018 00:16
SB003(5'-7') DL	320-36761-4 DL	2018.03.21LLC_025.d	03/22/2018 00:24
SB003(10'-12') DL	320-36761-5 DL	2018.03.21LLC_026.d	03/22/2018 00:32
SB030(2'-4') DL	320-36761-9 DL	2018.03.21LLC_029.d	03/22/2018 00:56

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab File ID: 2018.03.23LLAA_054.d Lab Sample ID: MB 320-214126/1-A

Matrix: Water Date Extracted: 03/21/2018 12:31

Instrument ID: A8_N Date Analyzed: 03/23/2018 18:47

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-214126/2-A	2018.03.23LLAA_055.d	03/23/2018 18:55
	LCSD 320-214126/3-A	2018.03.23LLAA_056.d	03/23/2018 19:03
	LB 320-212127/1-B	2018.03.23LLAA_059.d	03/23/2018 19:26
SB004-SPLP(8'-10')	320-36761-2	2018.03.23LLAA_060.d	03/23/2018 19:34
SB003-SPLP(0-2')	320-36761-3	2018.03.23LLAA_061.d	03/23/2018 19:42
SB007-SPLP(0-2')	320-36761-7	2018.03.23LLAA_062.d	03/23/2018 19:50
SB004-SPLP(8'-10') DL	320-36761-2 DL	2018.03.26LLA_035.d	03/26/2018 16:42
SB003-SPLP(0-2') DL	320-36761-3 DL	2018.03.26LLA_036.d	03/26/2018 16:50
SB007-SPLP(0-2') DL	320-36761-7 DL	2018.03.26LLA_037.d	03/26/2018 16:58

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab File ID: 2018.03.28LLFF_007.d Lab Sample ID: MB 320-214600/1-A

Matrix: Solid Date Extracted: 03/23/2018 15:02

Instrument ID: A8_N Date Analyzed: 03/29/2018 00:10

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-214600/2-A	2018.03.28LLFF_008.d	03/29/2018 00:18
SB004 (5'-7') RE	320-36761-1 RE	2018.03.28LLFF_009.d	03/29/2018 00:25
SB003(5'-7') RE	320-36761-4 RE	2018.03.28LLFF_010.d	03/29/2018 00:33
SB003(10'-12') RE	320-36761-5 RE	2018.03.28LLFF_011.d	03/29/2018 00:41
SB007(2'-4') RE	320-36761-6 RE	2018.03.28LLFF_012.d	03/29/2018 00:49
SB007(4-5') RE	320-36761-8 RE	2018.03.28LLFF_013.d	03/29/2018 00:57
SB030(2'-4') RE	320-36761-9 RE	2018.03.28LLFF_014.d	03/29/2018 01:05
	320-36683-A-10-E MS RE	2018.03.28LLFF_022.d	03/29/2018 02:07
	320-36683-A-10-F MSD RE	2018.03.28LLFF_023.d	03/29/2018 02:15

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab File ID: 2018.03.28LLDXD_008.d Lab Sample ID: MB 320-215106/1-A

Matrix: Water Date Extracted: 03/27/2018 20:41

Instrument ID: A8_N Date Analyzed: 03/28/2018 18:59

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LB 320-212127/1-C	2018.03.28LLDXD_007.d	03/28/2018 18:51
	LCS 320-215106/2-A	2018.03.28LLDXD_009.d	03/28/2018 19:07
	LCSD 320-215106/3-A	2018.03.28LLDXD_010.d	03/28/2018 19:15
SB004-SPLP(8'-10') RE	320-36761-2 RE	2018.03.28LLDXD_011.d	03/28/2018 19:23
SB003-SPLP(0-2') RE	320-36761-3 RE	2018.03.28LLDXD_020.d	03/28/2018 20:33
SB007-SPLP(0-2') RE	320-36761-7 RE	2018.03.28LLDXD_021.d	03/28/2018 20:41

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: IC 320-213554/5 Date Analyzed: 03/16/2018 23:33

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.16ICAL_005. Heated Purge: (Y/N) N

Calibration ID: 38193

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4548538	2.68				
UPPER LIMIT		6822807	2.88				
LOWER LIMIT		2274269	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-213554/9		4410810	2.68				
ICV 320-213554/10		4328656	2.67				
CCV 320-214045/3 CCVIS		4239672	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: CCV 320-214045/3 Date Analyzed: 03/20/2018 19:30

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.20LLB_003.d Heated Purge: (Y/N) N

Calibration ID: 38193

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4239672	2.68				
UPPER LIMIT		6359508	2.88				
LOWER LIMIT		2119836	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-214045/1		4183960	2.69				
CCVL 320-214045/2		4478615	2.69				
CCV 320-214053/1		4680397	2.70				
MB 320-212510/1-A		4605601	2.68				
LCS 320-212510/2-A		4421732	2.68				
CCV 320-214053/12		4306135	2.68				
320-36683-A-10-B MS		4454486	2.68				
320-36683-A-10-C MSD		4726713	2.69				
320-36761-1	SB004 (5'-7')	4410610	2.68				
320-36761-4	SB003(5'-7')	4307299	2.68				
320-36761-5	SB003(10'-12')	4168672	2.68				
320-36761-6	SB007(2'-4')	4453079	2.68				
CCV 320-214053/23		4753634	2.69				
320-36761-8	SB007(4-5')	4439440	2.69				
320-36761-9	SB030(2'-4')	4525433	2.68				
CCV 320-214053/26		4202051	2.69				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: IC 320-214175/5 Date Analyzed: 03/21/2018 18:47

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.21LLICALAX_ Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		5311138	2.70				
UPPER LIMIT		7966707	2.90				
LOWER LIMIT		2655569	2.50				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-214175/9		5094636	2.69				
ICV 320-214175/10		5042269	2.70				
CCV 320-214277/12		5290619	2.69				
320-36683-A-10-B MS DL		116122*	2.69				
320-36683-A-10-C MSD DL		122812*	2.69				
320-36761-1 DL	SB004 (5'-7') DL	1162796*	2.69				
320-36761-4 DL	SB003(5'-7') DL	552831*	2.70				
320-36761-5 DL	SB003(10'-12') DL	115389*	2.70				
CCV 320-214277/23		5242214	2.70				
320-36761-9 DL	SB030(2'-4') DL	546554*	2.70				
CCV 320-214277/30		5157902	2.69				
CCV 320-214657/3 CCVIS		4894601	2.69				
CCV 320-214825/3 CCVIS		5055137	2.71				
CCV 320-215294/3 CCVIS		4737298	2.73				
CCV 320-215311/3 CCVIS		4749284	2.70				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: CCV 320-214657/3 Date Analyzed: 03/23/2018 18:39

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.23LLAA_006. Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4894601	2.69				
UPPER LIMIT		7341902	2.89				
LOWER LIMIT		2447301	2.49				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-214126/1-A		5929071	2.70				
LCS 320-214126/2-A		5122606	2.70				
LCSD 320-214126/3-A		5026420	2.70				
LB 320-212127/1-B		5509806	2.70				
320-36761-2	SB004-SPLP(8'-10')	4921420	2.70				
320-36761-3	SB003-SPLP(0-2')	5928869	2.70				
320-36761-7	SB007-SPLP(0-2')	5550390	2.70				
CCV 320-214657/15		4915458	2.70				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: CCV 320-214825/3 Date Analyzed: 03/26/2018 12:39

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.26LLA_021.d Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		5055137	2.71				
UPPER LIMIT		7582706	2.91				
LOWER LIMIT		2527569	2.51				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-214825/1		4957732	2.71				
CCVL 320-214825/2		5067774	2.71				
CCV 320-214885/1		4833317	2.70				
320-36761-2 DL	SB004-SPLP(8'-10') DL	798028*	2.70				
320-36761-3 DL	SB003-SPLP(0-2') DL	509131*	2.71				
320-36761-7 DL	SB007-SPLP(0-2') DL	734694*	2.70				
CCV 320-214885/12		4876494	2.70				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: CCV 320-215294/3 Date Analyzed: 03/28/2018 18:44

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.28LLDXD_006 Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4737298	2.73				
UPPER LIMIT		7105947	2.93				
LOWER LIMIT		2368649	2.53				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-215294/1		4695695	2.74				
CCVL 320-215294/2		4788672	2.74				
CCV 320-215294/14		4582531	2.73				
CCV 320-215294/21		4669445	2.72				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Sample No.: CCV 320-215311/3 Date Analyzed: 03/29/2018 00:02

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.28LLFF_006. Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4749284	2.70				
UPPER LIMIT		7123926	2.90				
LOWER LIMIT		2374642	2.50				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-215311/1		4759356	2.70				
CCVL 320-215311/2		4782622	2.70				
MB 320-214600/1-A		5707612	2.70				
LCS 320-214600/2-A		5062517	2.70				
320-36761-1 RE	SB004 (5'-7') RE	4690047	2.70				
320-36761-4 RE	SB003(5'-7') RE	5411252	2.70				
320-36761-5 RE	SB003(10'-12') RE	4569700	2.70				
320-36761-6 RE	SB007(2'-4') RE	4698998	2.70				
320-36761-8 RE	SB007(4-5') RE	5717273	2.70				
320-36761-9 RE	SB030(2'-4') RE	4920889	2.70				
CCV 320-215311/14		4518281	2.71				
320-36683-A-10-E MS RE		4882236	2.70				
320-36683-A-10-F MSD RE		5429069	2.70				
CCV 320-215311/23		4632500	2.71				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004 (5'-7') | Lab Sample ID: 320-36761-1

Matrix: Solid | Lab File ID: 2018.03.20LLA_040.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/21/2018 01:22

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00017	J B	0.00022	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00025		0.00022	0.000083
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00022		0.00022	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00024		0.00022	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.0028		0.00022	0.000093
335-76-2	Perfluorodecanoic acid (PFDA)	0.00014	J	0.00022	0.000024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00029		0.00022	0.000039
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000072	U	0.00022	0.000072
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000087	J	0.00022	0.000055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00022	0.000058
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00022	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00066		0.00022	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00082		0.00022	0.000038
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000042	U *	0.00022	0.000042
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000088	U	0.00022	0.000088
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0022	0.00042
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00040	U	0.0022	0.00040
39108-34-4	8:2FTS	0.0019	J	0.0022	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004 (5'-7') | Lab Sample ID: 320-36761-1

Matrix: Solid | Lab File ID: 2018.03.20LLA_040.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/21/2018 01:22

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	81		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	79		25-150
STL01892	13C4-PFHpA	84		25-150
STL00990	13C4 PFOA	80		25-150
STL00996	13C2 PFDA	61		25-150
STL00997	13C2 PFUnA	50		25-150
STL00998	13C2 PFDoA	43		25-150
STL02116	13C2-PFTeDA	40		25-150
STL02337	13C3-PFBS	82		25-150
STL00994	18O2 PFHxS	80		25-150
STL00991	13C4 PFOS	62		25-150
STL01056	13C8 FOSA	49		25-150
STL02118	d3-NMeFOSAA	37		25-150
STL02117	d5-NEtFOSAA	38		25-150
STL02280	M2-8:2FTS	58		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d
Lims ID: 320-36761-A-1-A
Client ID: SB004 (5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 01:22:58 ALS Bottle#: 30 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-1-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:14:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.441	0.003	0.538	4579262	2.03		81.3	56626	
2 Perfluorobutyric acid										
212.90 > 169.00	1.444	1.446	-0.002	1.000	136111	0.0801			52.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.700	0.005	0.636	3274414	2.06		82.4	71048	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.705	1.709	-0.004	1.000	178070	0.1164			53.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.731	1.736	-0.005	0.645	74405	1.90		81.6	373	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.987	-0.006	0.738	3505827	1.98		79.1	85552	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.997	-0.005	1.006	146545	0.1036			230	
313.00 > 119.00	1.981	1.997	-0.016	1.000	14391		10.18(5.03-15.10)		268	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.315	0.007	0.866	3604295	2.09		83.7	65913	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.328	-0.006	1.000	167151	0.1119			271	
363.00 > 169.00	2.322	2.328	-0.006	1.000	69130		2.42(1.13-3.40)		869	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.328	0.007	0.870	4355028	1.89		80.1	81203	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.341	-0.006	1.000	633949	0.3087			1161	
399.00 > 99.00	2.335	2.341	-0.006	1.000	200862		3.16(1.50-4.49)		498	
D 12 M2-6:2FTS										
429.00 > 81.00	2.651	2.657	-0.006	0.988	754328	1.71		72.0	10697	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.659	2.663	-0.004	1.003	8275075	15.7			48305	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.681	0.002	1.000	3341548	2.01		80.3	96560	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.683	2.695	-0.012	1.000	1944064	1.30			604	M
413.00 > 169.00	2.683	2.695	-0.012	1.000	1042507		1.86(0.84-2.52)		3405	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.695	-0.012		4410610	2.50			101948	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.703	-0.012	1.000	499275	0.3800			9129	
449.00 > 99.00	2.691	2.703	-0.012	1.000	126753		3.94(1.94-5.82)		1741	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.051	0.002	1.138	2389391	1.49		62.2	37588	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.058	-0.005	1.138	2205833	1.66		66.3	41273	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.053	3.067	-0.014	1.000	15934425	14.7			26042	E
499.00 > 99.00	3.053	3.067	-0.014	1.000	4238873		3.76(2.31-6.93)		23785	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.060	3.067	-0.007	1.002	15148453	16.8			24612	E
463.00 > 169.00	3.060	3.067	-0.007	1.002	3828048		3.96(1.90-5.69)		71723	
D 21 13C8 FOSA										
506.00 > 78.00	3.392	3.389	0.003	1.264	2824889	1.21		48.5	6708	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.392	3.401	-0.009	1.000	35776	0.0326			98.3	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.408	0.002	1.271	579105	1.40		58.3	13154	
D 23 13C2 PFDA										
515.00 > 470.00	3.419	3.417	0.002	1.275	1690654	1.52		60.8	29632	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.419	-0.009	1.000	268540	0.8834			10276	
24 Perfluorodecanoic acid										Ma
513.00 > 469.00	3.419	3.428	-0.009	1.000	41368	0.0645			45.4	a
513.00 > 169.00	3.419	3.428	-0.009	1.000	7607		5.44(2.36-7.09)		17.5	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.570	0.003	1.332	341610	0.9303		37.2	10533	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.748	-0.005	1.395	337666	0.9618		38.5	674	
D 30 13C2 PFUnA										
565.00 > 520.00	3.753	3.748	0.005	1.399	1079110	1.24		49.6	45085	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.753	3.762	-0.009	1.000	48681	0.1346			117	
563.00 > 169.00	3.753	3.762	-0.009	1.000	12151		4.01(2.12-6.36)		118	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.046	-0.005	1.506	889914	1.08		43.1	7028	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.313	4.320	-0.007	1.000	14755	0.0403			4.6	M
663.00 > 169.00	4.302	4.320	-0.018	0.997	3919		3.76(1.25-3.76)		57.6	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.544	0.006	1.696	755986	1.00		40.1	7877	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 22-Mar-2018 10:56:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d

Injection Date: 21-Mar-2018 01:22:58 Instrument ID: A8_N

Lims ID: 320-36761-A-1-A Lab Sample ID: 320-36761-1

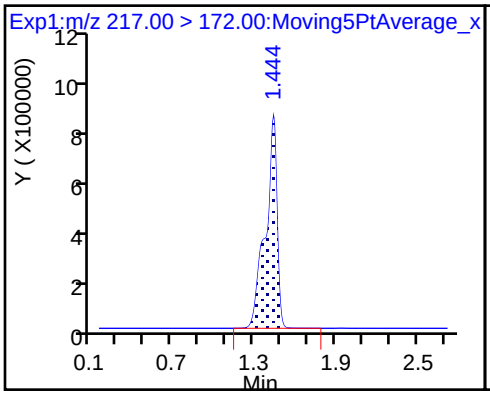
Client ID: SB004 (5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 30 Worklist Smp#: 19

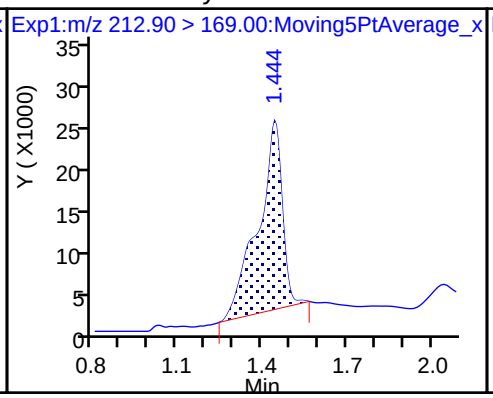
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

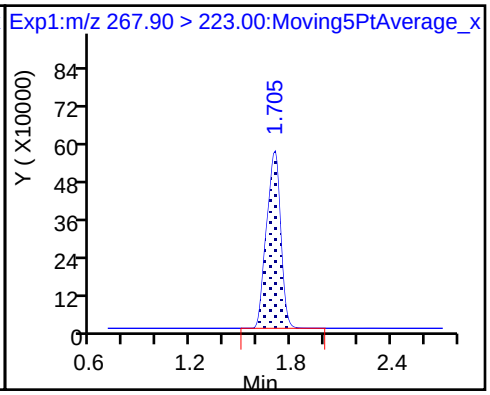
D 1 13C4 PFBA



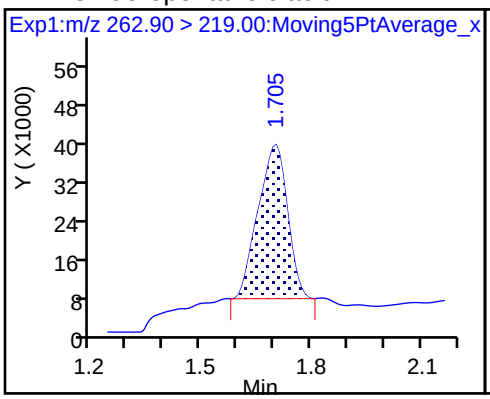
2 Perfluorobutyric acid



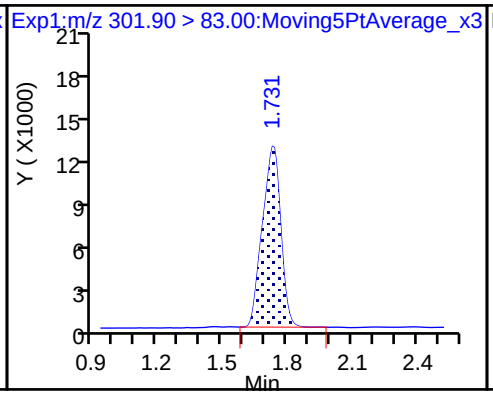
D 3 13C5-PFPeA



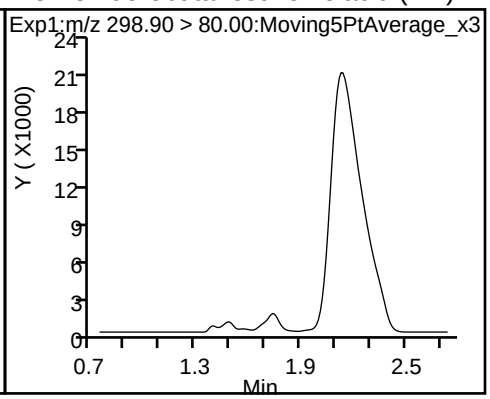
4 Perfluoropentanoic acid



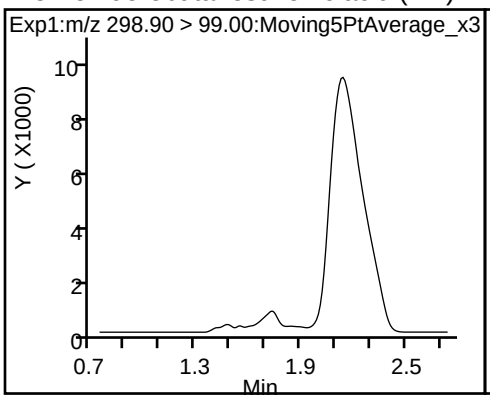
D 47 13C3-PFBS



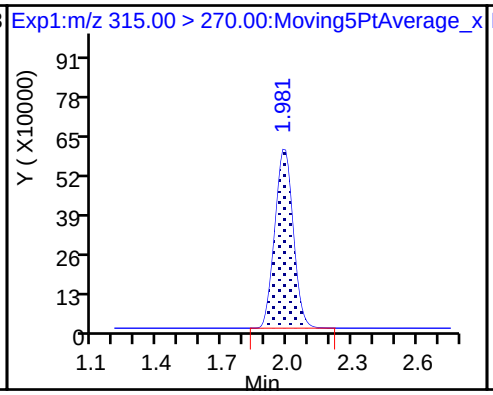
5 Perfluorobutanesulfonic acid (ND)



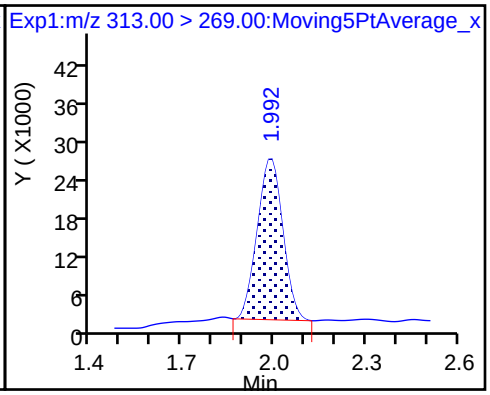
5 Perfluorobutanesulfonic acid (ND)



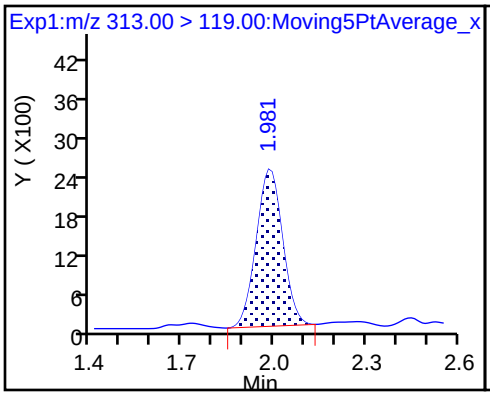
D 7 13C2 PFHxA



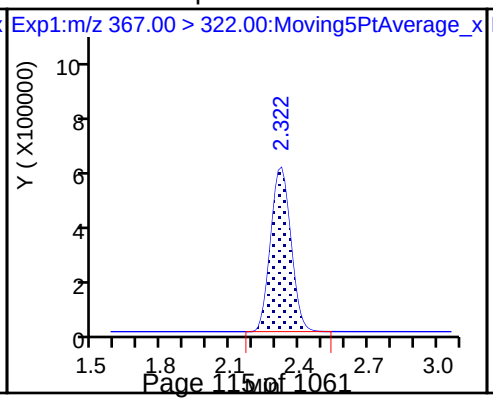
6 Perfluorohexanoic acid



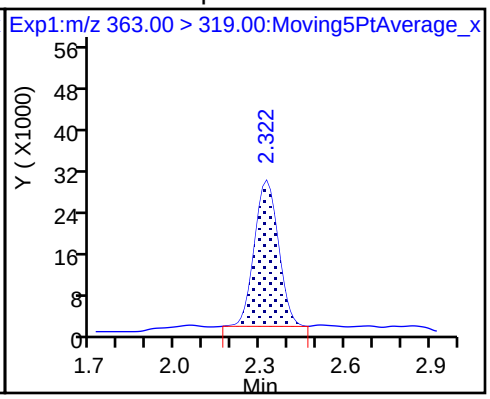
6 Perfluorohexanoic acid



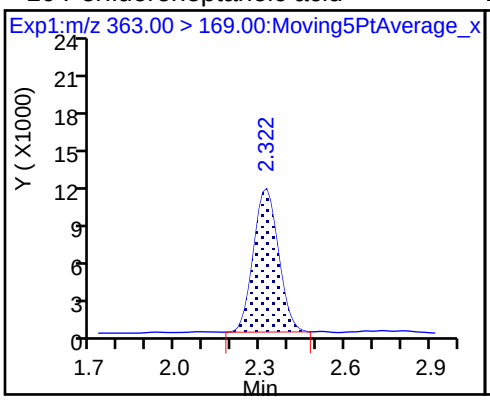
D 9 13C4-PFHpA



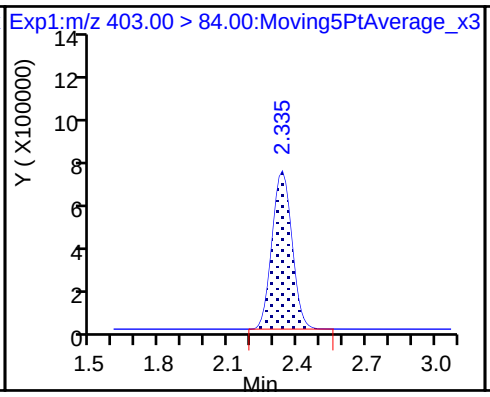
10 Perfluoroheptanoic acid



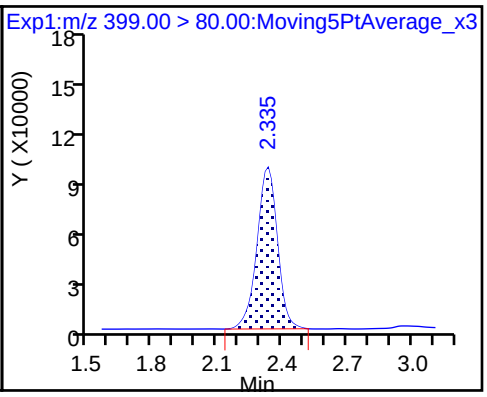
10 Perfluoroheptanoic acid



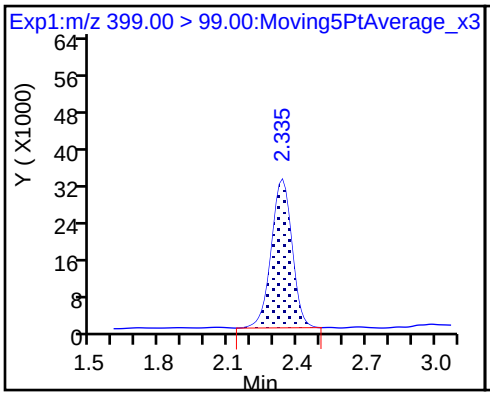
D 11 18O2 PFHxS



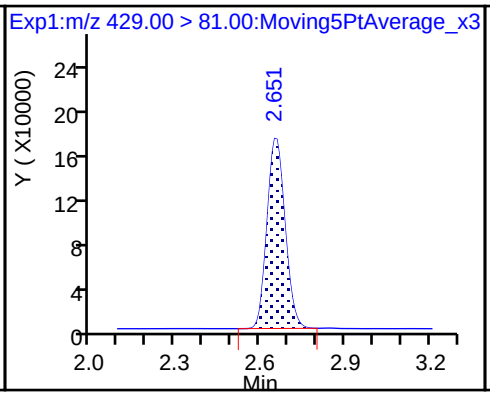
8 Perfluorohexanesulfonic acid



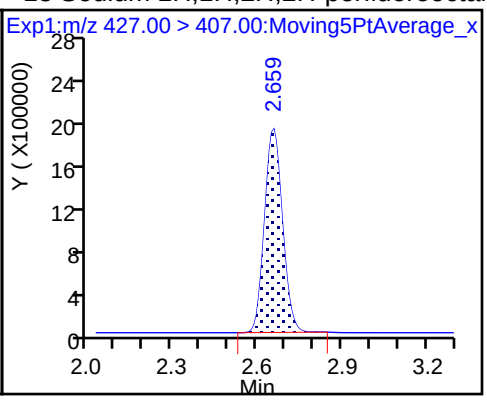
8 Perfluorohexanesulfonic acid



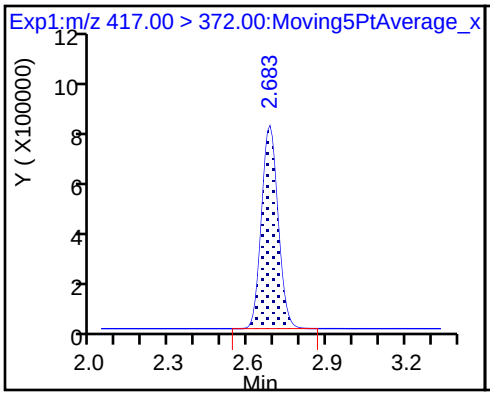
D 12 M2-6:2FTS



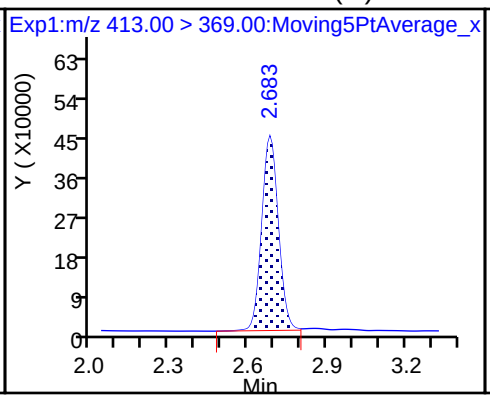
13 Sodium 1H,1H,2H,2H-perfluorooctane



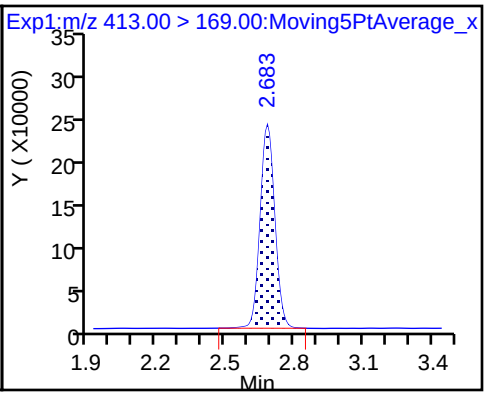
D 14 13C4 PFOA



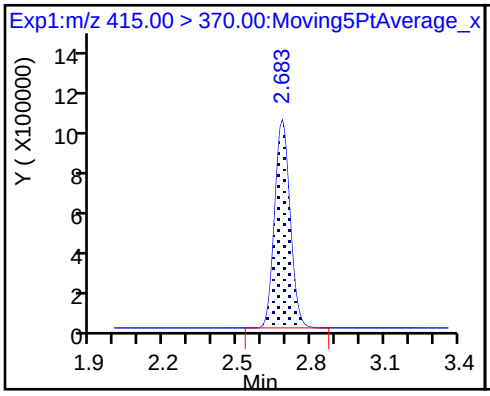
15 Perfluorooctanoic acid (M)



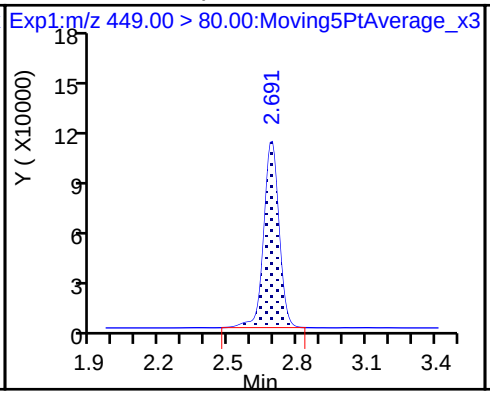
15 Perfluorooctanoic acid



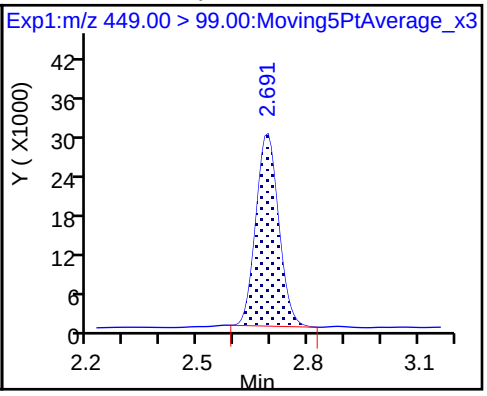
* 62 13C2-PFOA



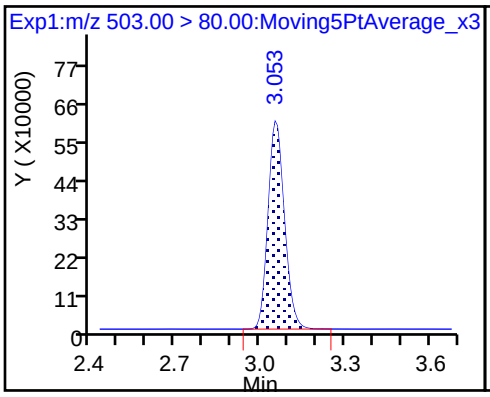
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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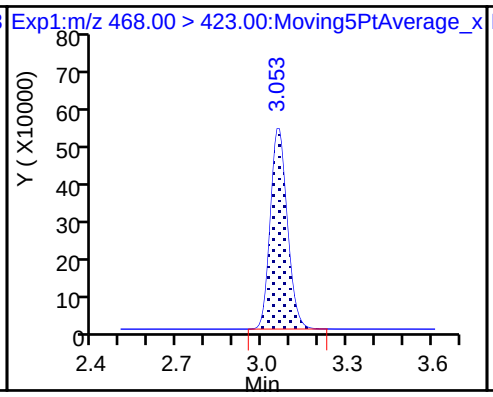
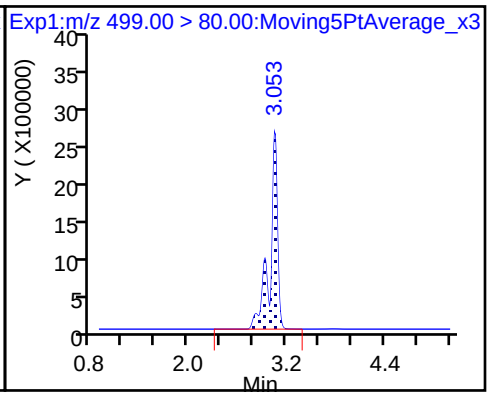
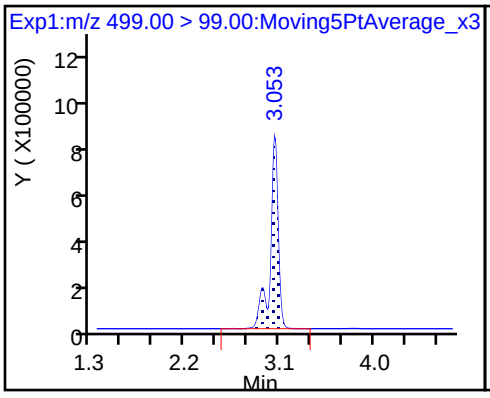


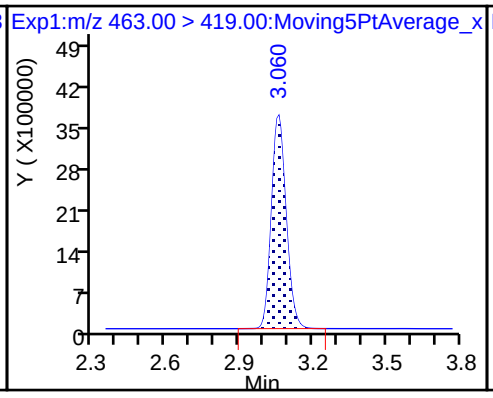
17 Perfluorooctane sulfonic acid



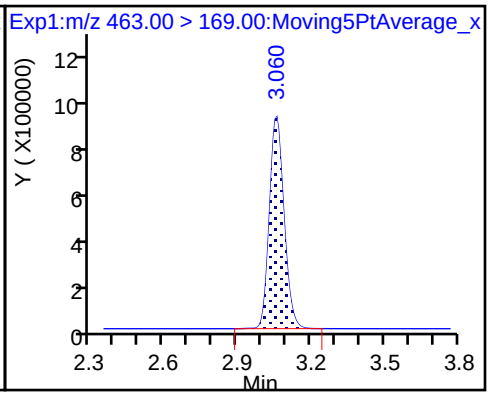
17 Perfluorooctane sulfonic acid



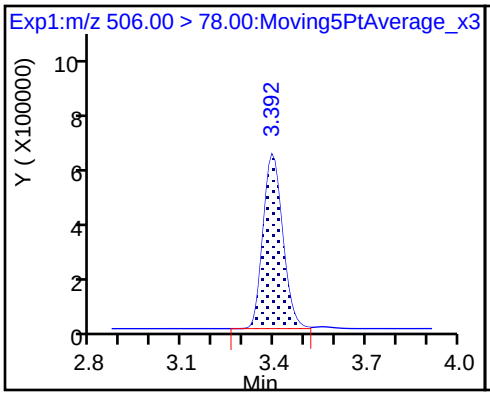
20 Perfluorononanoic acid



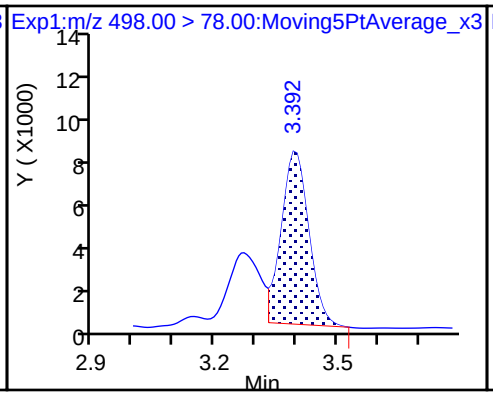
20 Perfluorononanoic acid



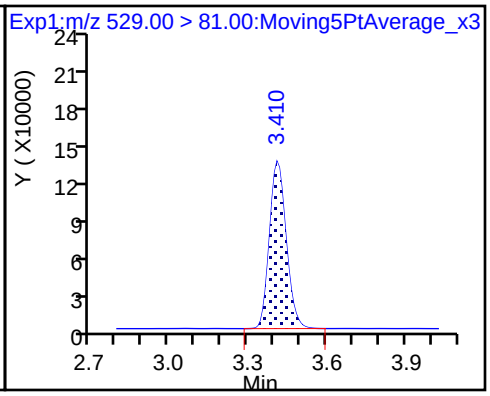
D 21 13C8 FOSA



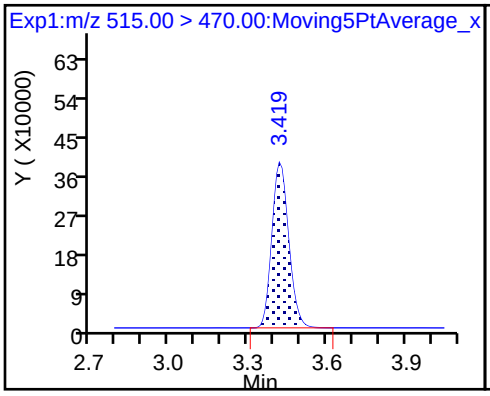
22 Perfluorooctane Sulfonamide



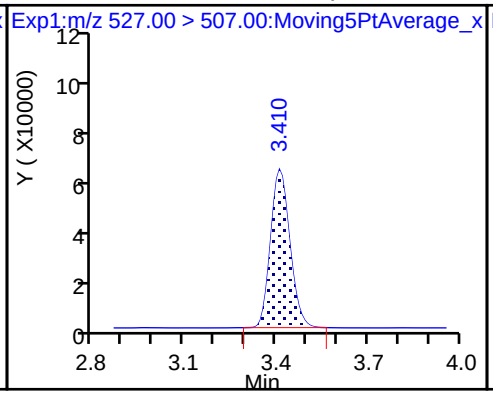
D 26 M2-8:2FTS



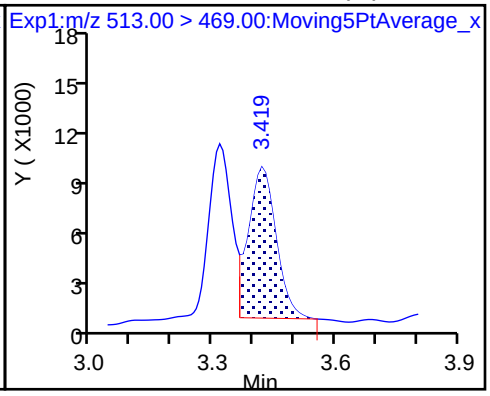
D 23 13C2 PFDA



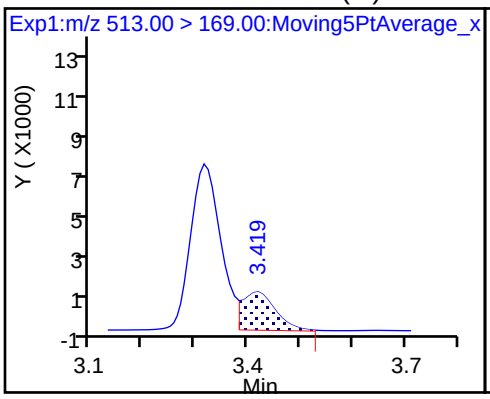
25 Sodium 1H,1H,2H,2H-perfluorodecan



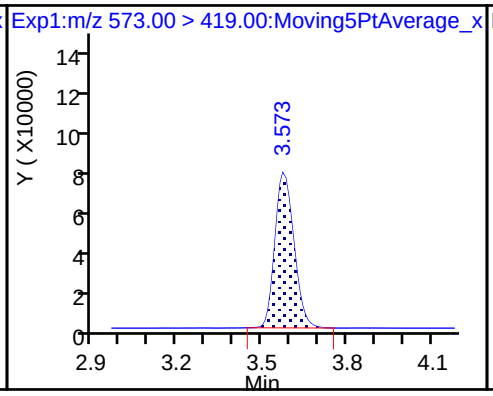
24 Perfluorodecanoic acid (M)



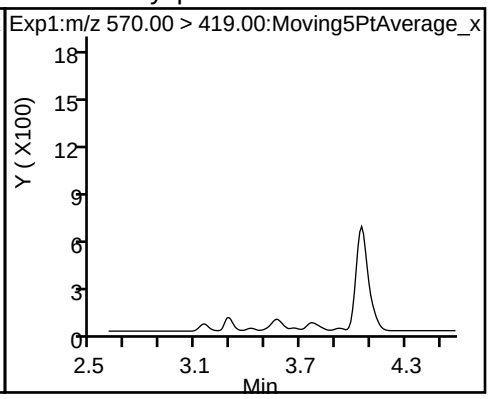
24 Perfluorodecanoic acid (M)



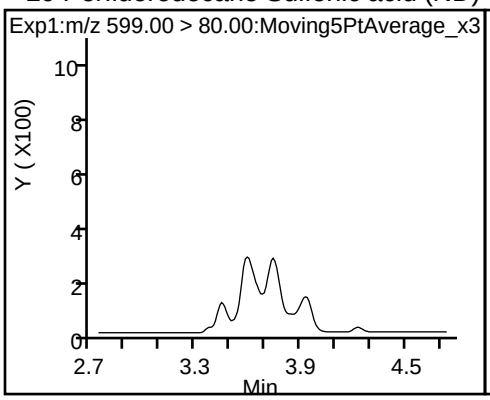
D 27 d3-NMeFOSAA



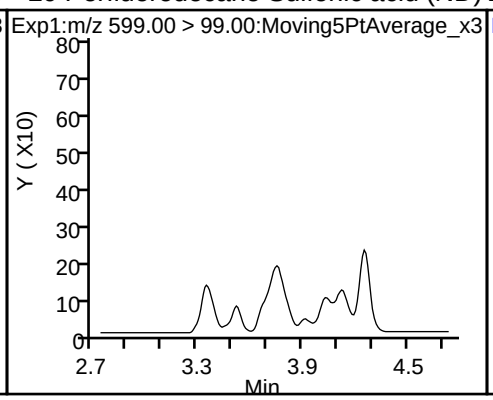
28 N-methyl perfluorooctane sulfonami (ND)



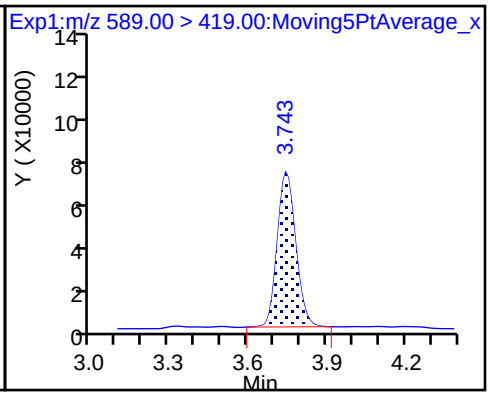
29 Perfluorodecane Sulfonic acid (ND)



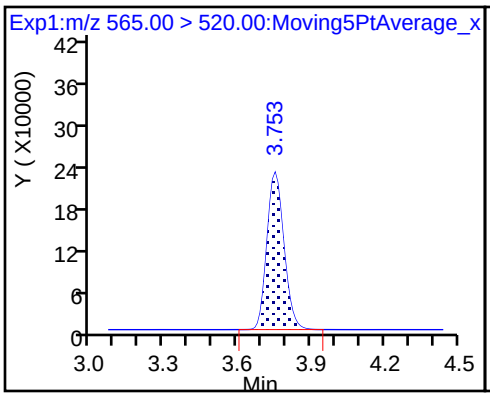
29 Perfluorodecane Sulfonic acid (ND)



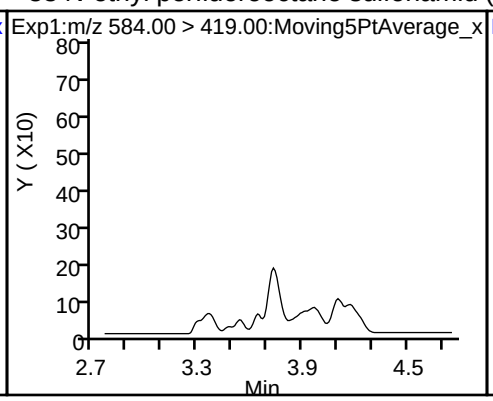
D 32 d5-NEtFOSAA



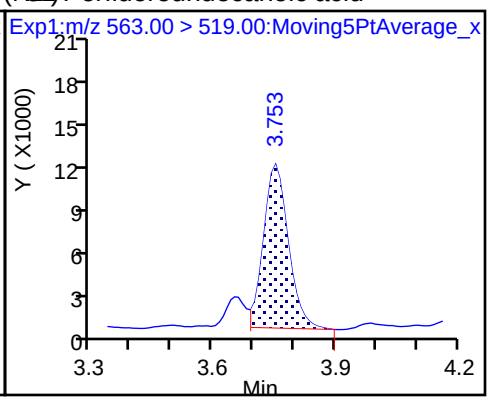
D 30 13C2 PFUnA



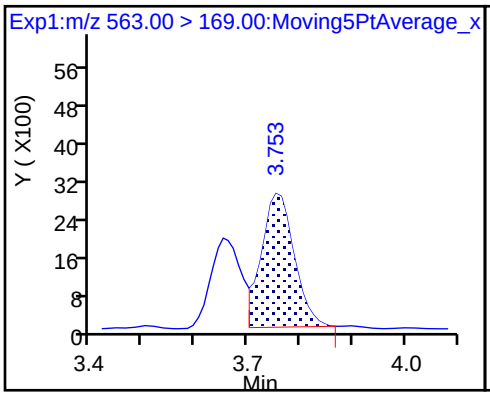
33 N-ethyl perfluorooctane sulfonamid (ND)



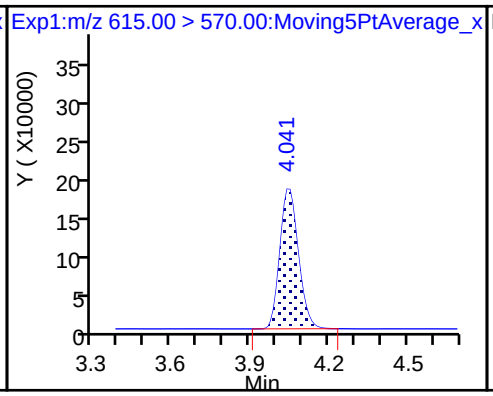
31 Perfluoroundecanoic acid



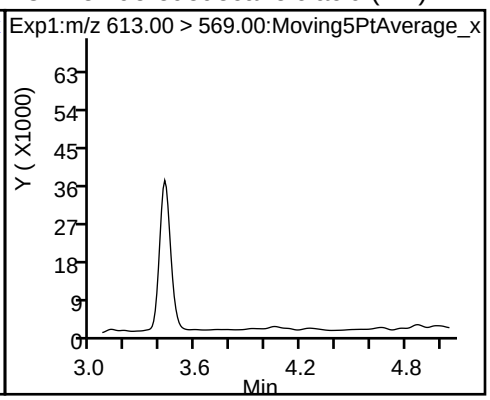
31 Perfluoroundecanoic acid



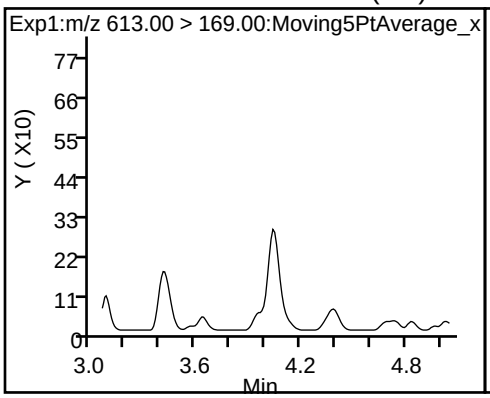
D 36 13C2 PFDoA



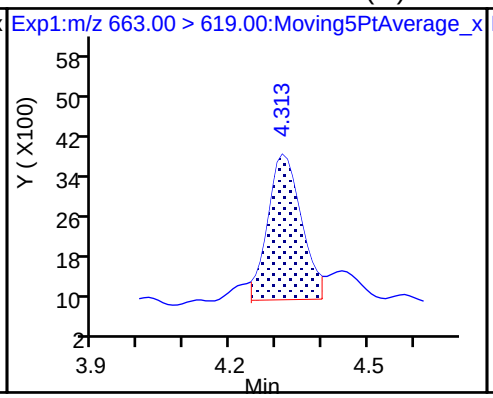
37 Perfluorododecanoic acid (ND)



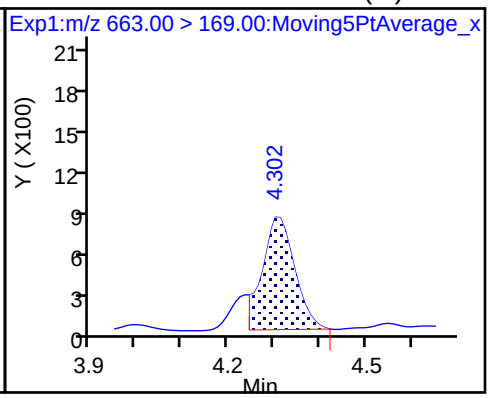
37 Perfluorododecanoic acid (ND)



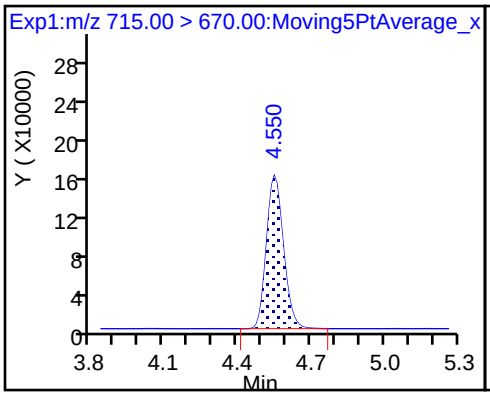
41 Perfluorotridecanoic acid (M)



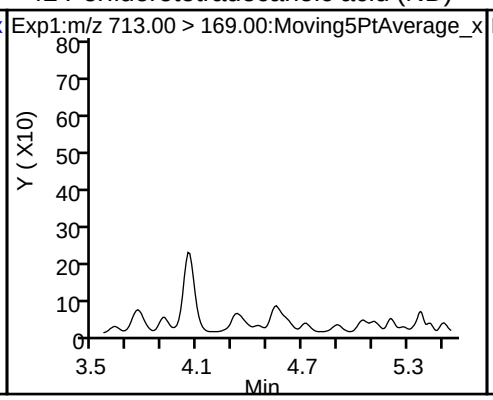
41 Perfluorotridecanoic acid (M)



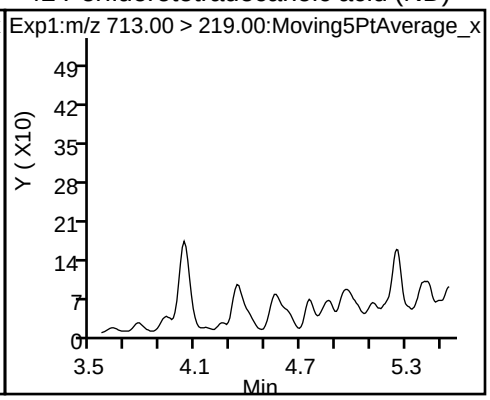
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

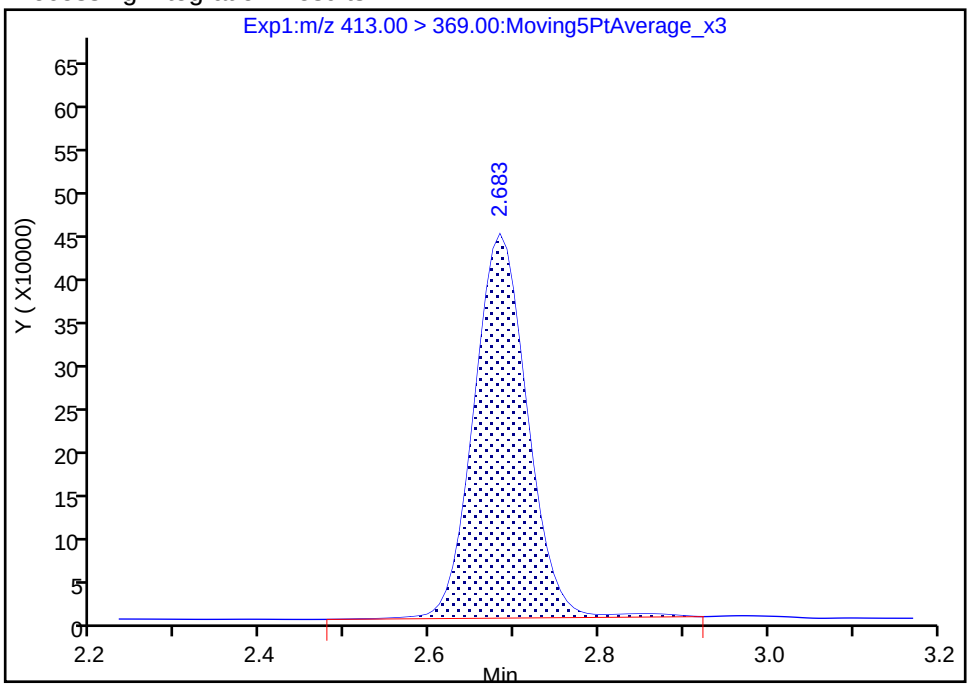
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d				
Injection Date:	21-Mar-2018 01:22:58	Instrument ID:	A8_N		
Lims ID:	320-36761-A-1-A	Lab Sample ID:	320-36761-1		
Client ID:	SB004 (5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

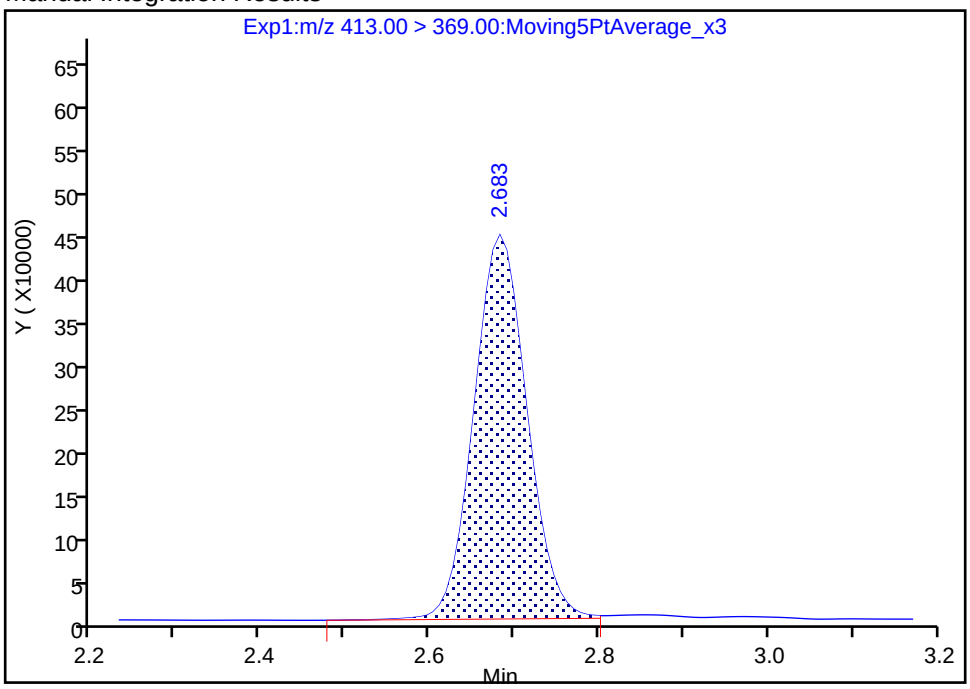
Processing Integration Results

RT: 2.68
Area: 1962659
Amount: 1.315308
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 1944064
Amount: 1.302847
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:41:03

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

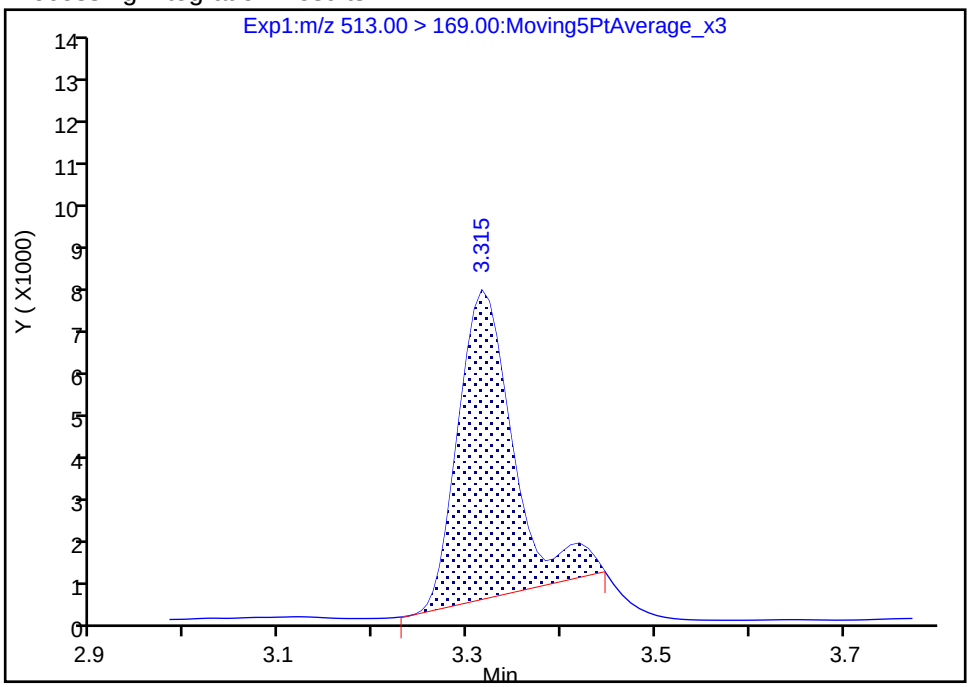
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d				
Injection Date:	21-Mar-2018 01:22:58	Instrument ID:	A8_N		
Lims ID:	320-36761-A-1-A	Lab Sample ID:	320-36761-1		
Client ID:	SB004 (5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 2

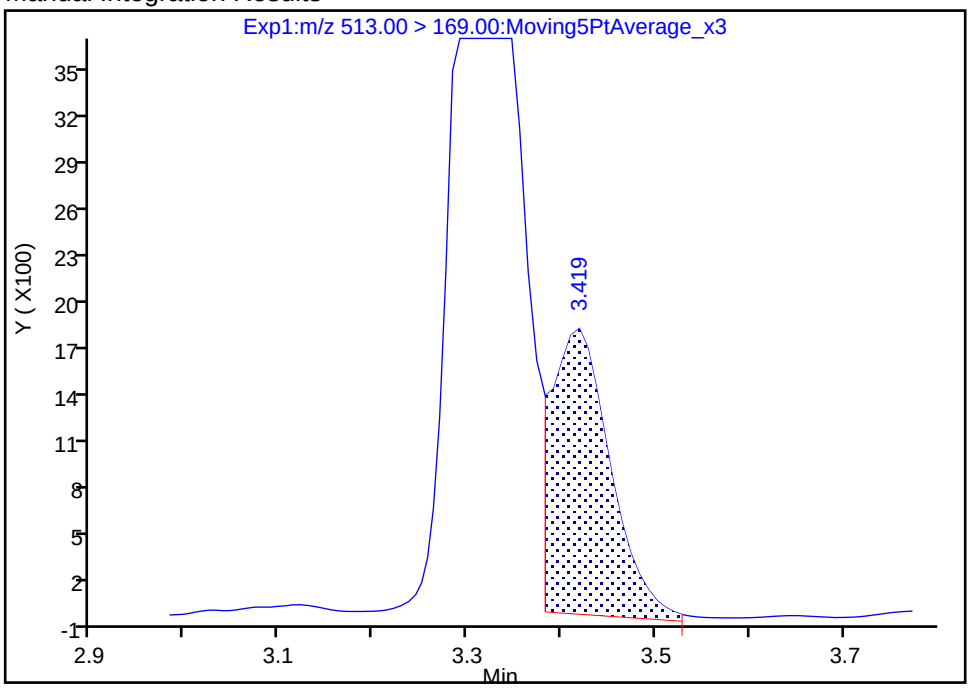
Processing Integration Results

RT: 3.32
Area: 29385
Amount: 0.061170
Amount Units: ng/ml



Manual Integration Results

RT: 3.42
Area: 7607
Amount: 0.064469
Amount Units: ng/ml



Reviewer: barnettj, 21-Mar-2018 16:13:27

Audit Action: Manually Integrated Audit Reason: Wrong peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d

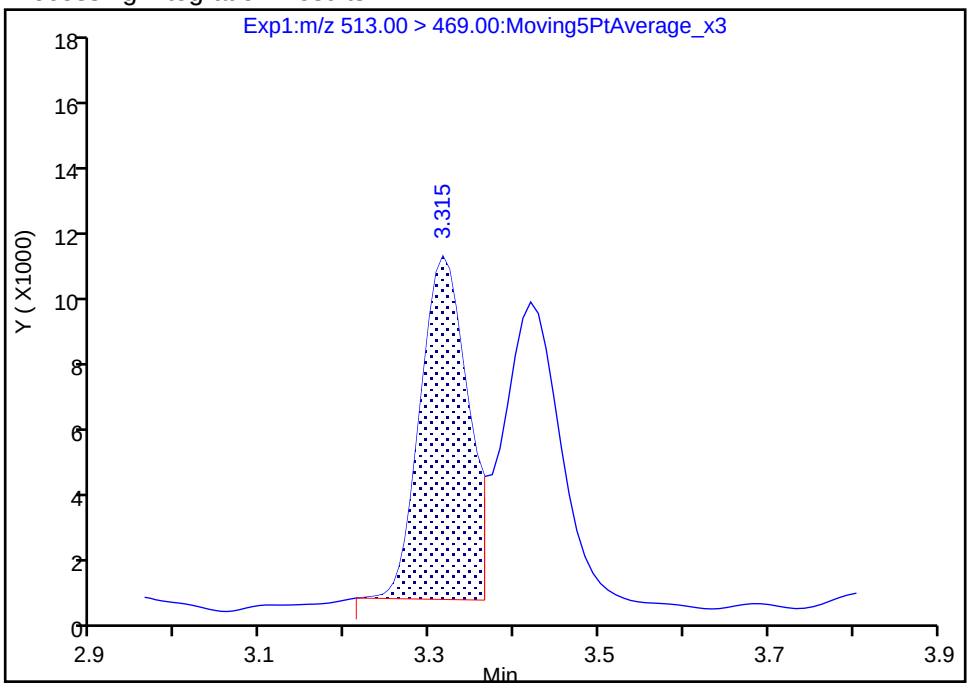
Injection Date:	21-Mar-2018 01:22:58	Instrument ID:	A8_N		
Lims ID:	320-36761-A-1-A	Lab Sample ID:	320-36761-1		
Client ID:	SB004 (5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

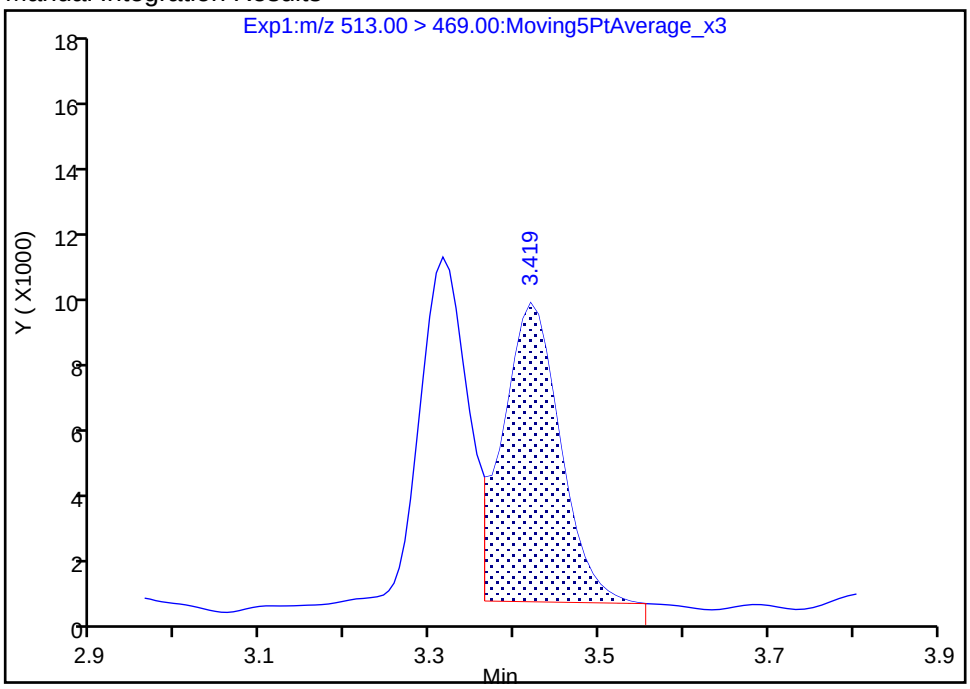
Processing Integration Results

RT: 3.32
Area: 39251
Amount: 0.061170
Amount Units: ng/ml



Manual Integration Results

RT: 3.42
Area: 41368
Amount: 0.064469
Amount Units: ng/ml



Reviewer: barnettj, 21-Mar-2018 16:13:35

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Wrong peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

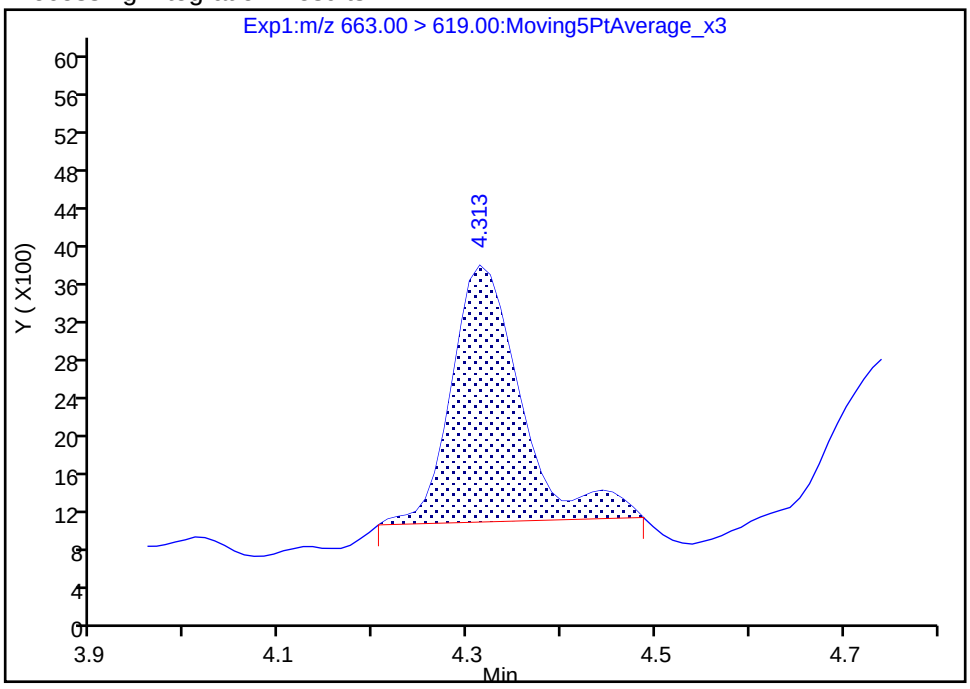
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d				
Injection Date:	21-Mar-2018 01:22:58	Instrument ID:	A8_N		
Lims ID:	320-36761-A-1-A	Lab Sample ID:	320-36761-1		
Client ID:	SB004 (5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

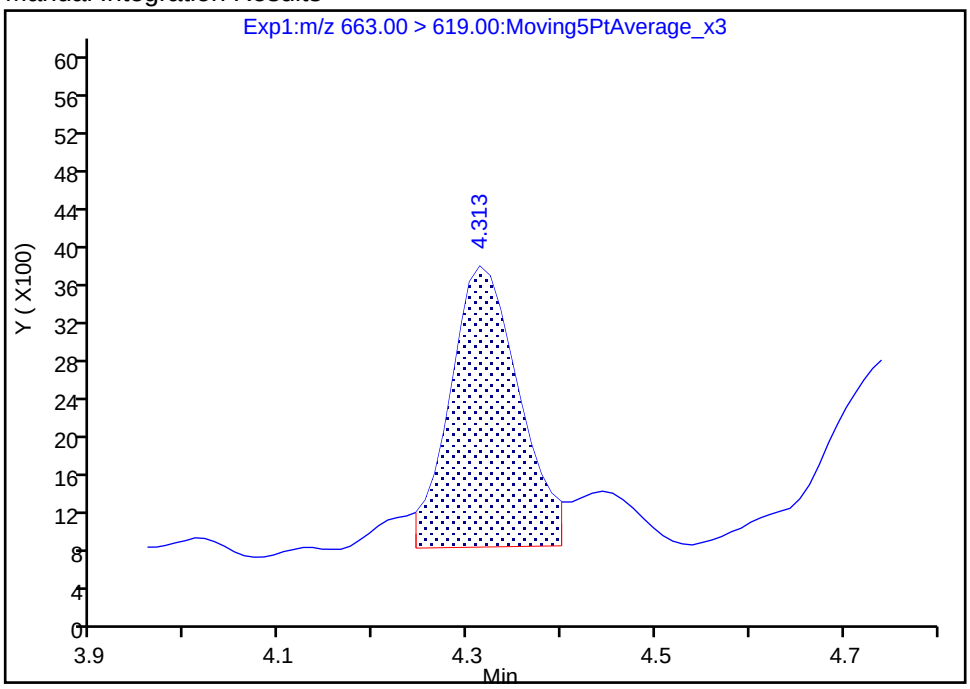
Processing Integration Results

RT: 4.31
Area: 13677
Amount: 0.037348
Amount Units: ng/ml



Manual Integration Results

RT: 4.31
Area: 14755
Amount: 0.040292
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:42:47

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

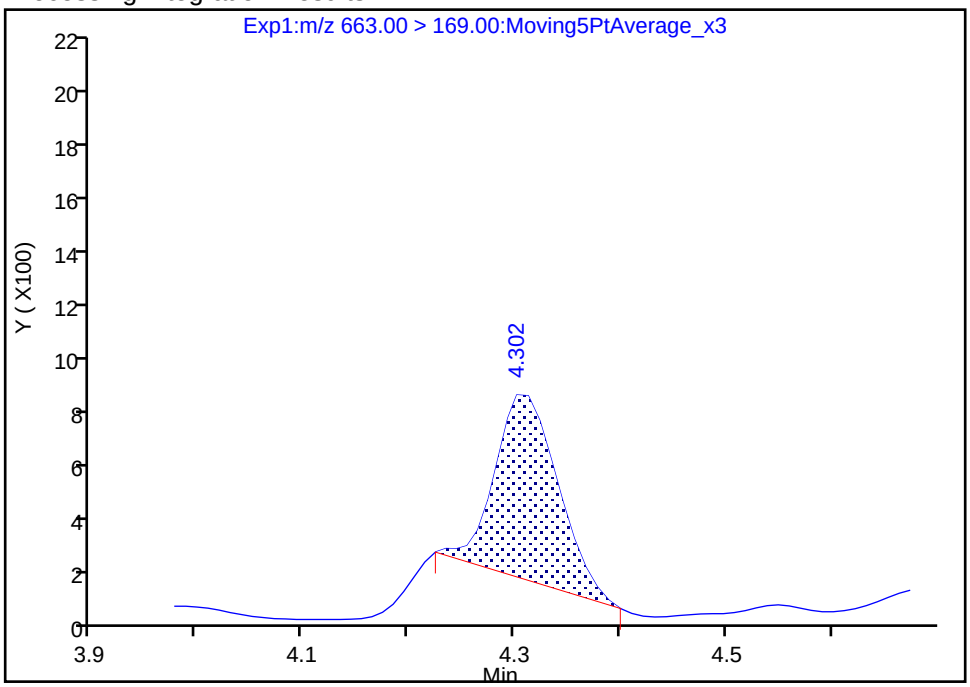
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_040.d				
Injection Date:	21-Mar-2018 01:22:58	Instrument ID:	A8_N		
Lims ID:	320-36761-A-1-A	Lab Sample ID:	320-36761-1		
Client ID:	SB004 (5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 2

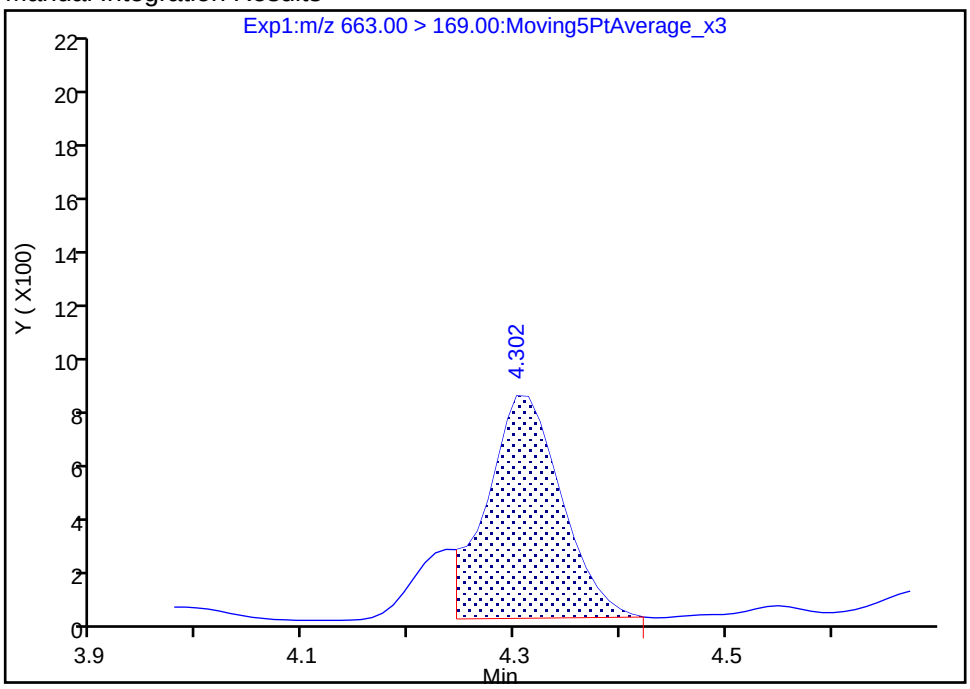
Processing Integration Results

RT: 4.30
Area: 2791
Amount: 0.037348
Amount Units: ng/ml



Manual Integration Results

RT: 4.30
Area: 3919
Amount: 0.040292
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:42:50

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004 (5'-7') RE Lab Sample ID: 320-36761-1 RE

Matrix: Solid Lab File ID: 2018.03.28LLFF_009.d

Analysis Method: 537 (modified) Date Collected: 03/05/2018 09:00

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.05(g) Date Analyzed: 03/29/2018 00:25

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000042*	*U H*	*0.00021*	*0.000042*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	68		25-150

Report Date: 29-Mar-2018 09:09:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_009.d
Lims ID: 320-36761-A-1-B
Client ID: SB004 (5'-7')
Sample Type: Client
Inject. Date: 29-Mar-2018 00:25:58 ALS Bottle#: 16 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-A-1-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:59:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.000	148910	0.0838			35.9	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.533	4713390	1.98		79.4	35283	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.009	1.000	188561	0.1330			85.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.632	3143883	2.00		79.8	86453	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	66084	1.84		79.0	373	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	145127	0.1066			153	
313.00 > 119.00	1.986	1.998	-0.012	0.995	15640		9.28(5.03-15.10)		153	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3328622	1.91		76.4	77452	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	157283	0.1086			80.2	
363.00 > 169.00	2.328	2.328	0.0	1.000	71784		2.19(1.13-3.40)		136	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	434527	0.2330			1999	
399.00 > 99.00	2.341	2.341	0.0	1.000	132356		3.28(1.50-4.49)		725	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.861	3501157	2.04		81.5	94445	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.866	3962606	1.87		79.0	70385	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.671	2.673	-0.002	1.000	9668836	21.0			74007	E
* 62 13C2-PFOA										
415.00 > 370.00	2.703	2.697	0.006		4690047	2.50			94007	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.703	2.697	0.006	1.003	2191321	1.44			880	
413.00 > 169.00	2.703	2.697	0.006	1.003	1148902		1.91(0.84-2.52)		3931	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.697	-0.026	0.988	625955	1.76		74.0	9661	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.705	-0.001	1.000	515772	0.3832			18210	
449.00 > 99.00	2.703	2.705	-0.001	1.000	130581		3.95(1.94-5.82)		2928	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.721	-0.026	0.997	3364731	1.91		76.5	74467	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.072	3.072	0.0	1.000	18308003	15.6			29686	E
499.00 > 99.00	3.072	3.072	0.0	1.000	4876293		3.75(2.31-6.93)		39014	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.072	3.072	0.0	1.000	19165674	19.1			20647	E
463.00 > 169.00	3.072	3.072	0.0	1.000	5006888		3.83(1.90-5.69)		82169	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.137	2512848	1.62		64.8	44290	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.137	2510532	1.63		68.1	45287	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.407	0.001	1.000	21788	0.0147			84.4	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.417	-0.009	1.261	3759758	1.81		72.3	5676	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	271136	0.6742			4889	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	68707	0.0717			66.7	
513.00 > 169.00	3.435	3.435	0.0	1.000	11804		5.82(2.36-7.09)		20.0	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.268	754700	1.57		65.5	20781	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.271	2425343	1.78		71.4	37669	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.328	1067315	1.49		59.7	31716	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	95100	0.1438			288	
563.00 > 169.00	3.769	3.769	0.0	1.000	25669		3.70(2.12-6.36)		143	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.759	3.779	-0.020	1.391	1139474	1.40		55.9	3169	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.395	1917490	1.58		63.1	64407	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.089	-0.032	1.501	2012746	1.46		58.3	19202	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.318	0.011	1.000	16819	0.0190			7.5	
663.00 > 169.00	4.318	4.318	0.0	0.997	8296		2.03(1.25-3.76)		107	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.689	2522379	1.50		59.9	16679	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_009.d

Injection Date: 29-Mar-2018 00:25:58 Instrument ID: A8_N

Lims ID: 320-36761-A-1-B Lab Sample ID: 320-36761-1

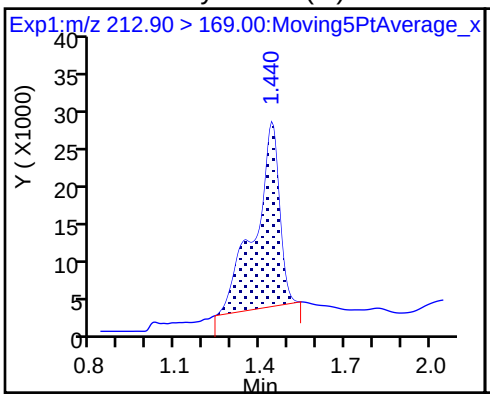
Client ID: SB004 (5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 6

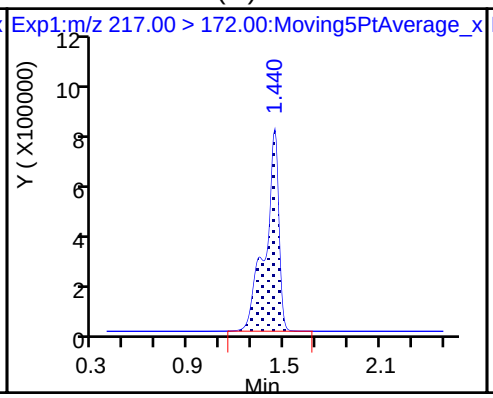
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

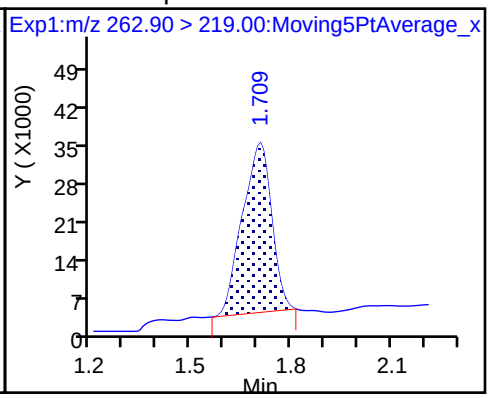
2 Perfluorobutyric acid (M)



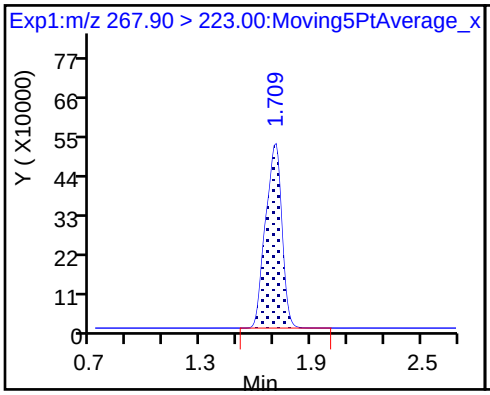
D 1 13C4 PFBA (M)



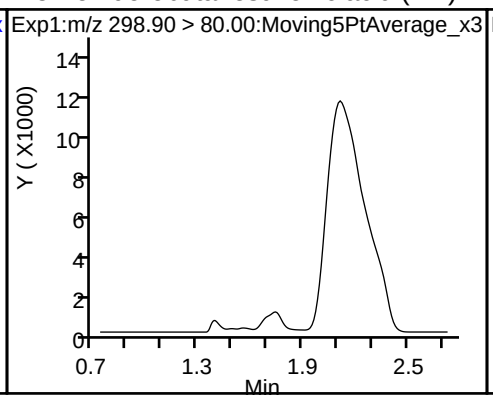
4 Perfluoropentanoic acid



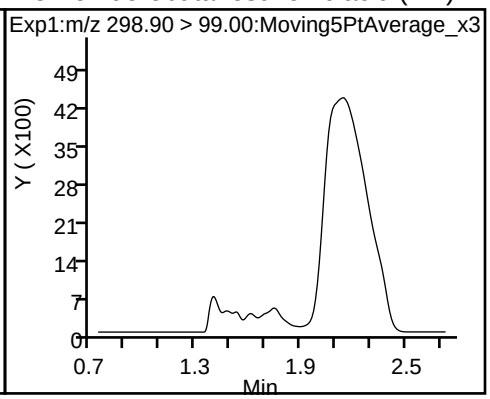
D 3 13C5-PFPeA



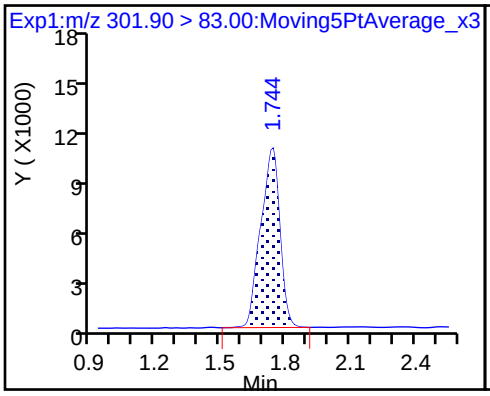
5 Perfluorobutanesulfonic acid (ND)



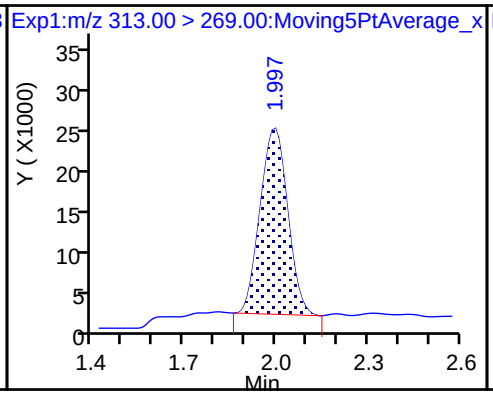
5 Perfluorobutanesulfonic acid (ND)



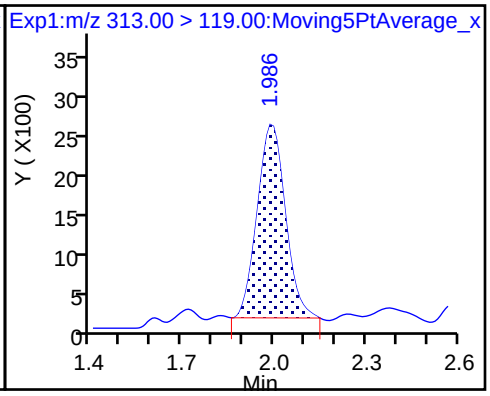
D 47 13C3-PFBS



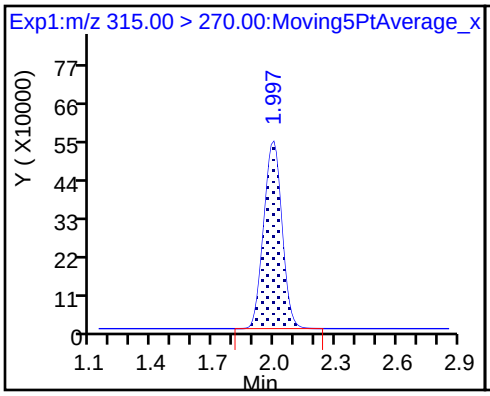
6 Perfluorohexanoic acid



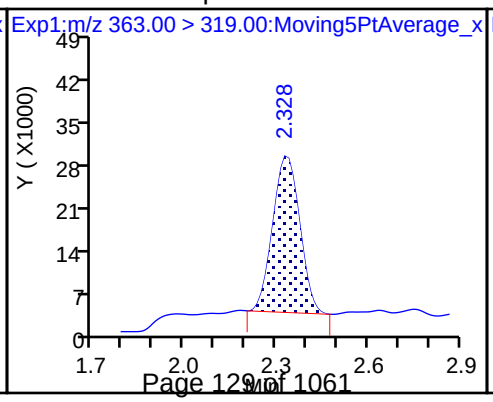
6 Perfluorohexanoic acid



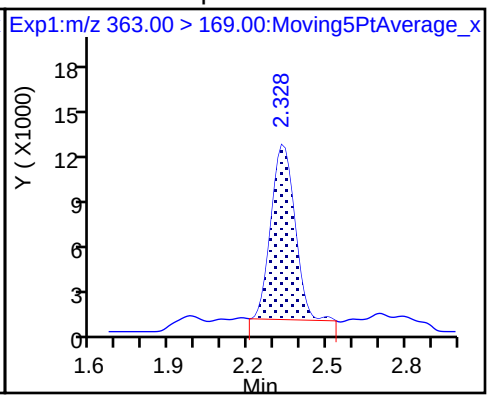
D 7 13C2 PFHxA



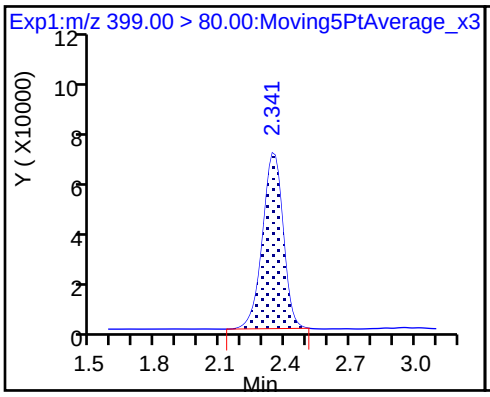
10 Perfluoroheptanoic acid



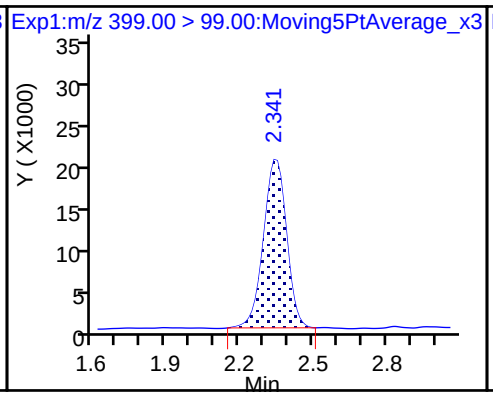
10 Perfluoroheptanoic acid



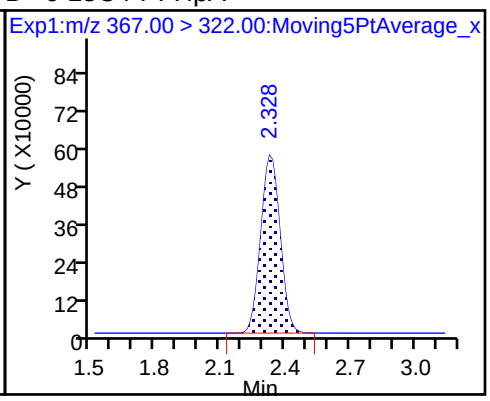
8 Perfluorohexanesulfonic acid



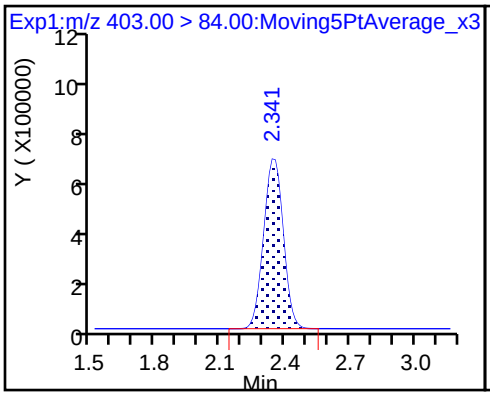
8 Perfluorohexanesulfonic acid



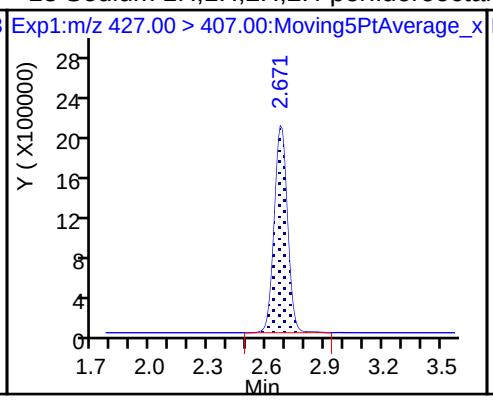
D 9 13C4-PFHpA



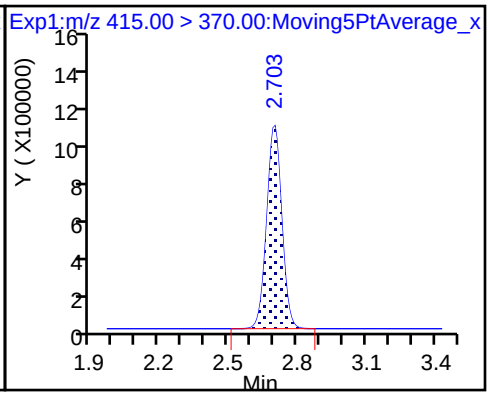
D 11 18O2 PFHxS



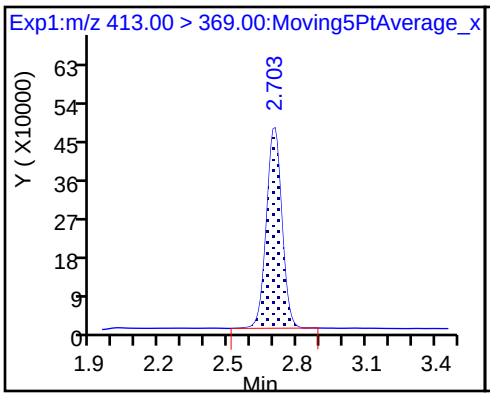
13 Sodium 1H,1H,2H,2H-perfluorooctane



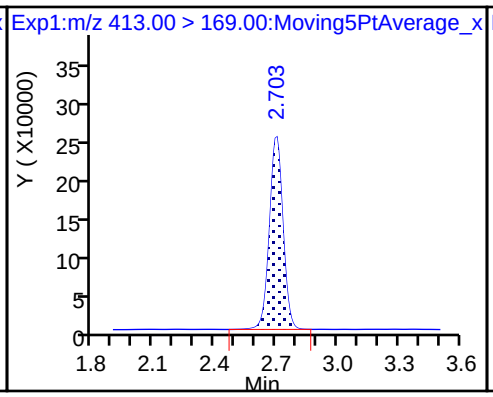
M2 6:2 13C2-PFOA



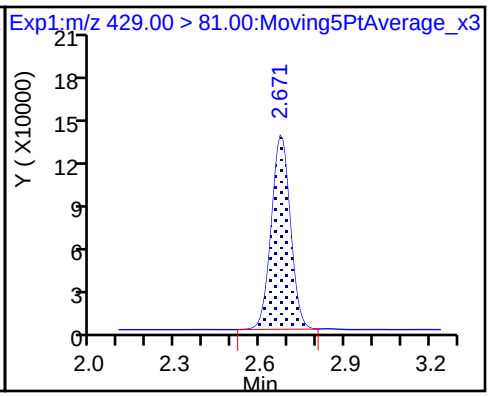
15 Perfluorooctanoic acid



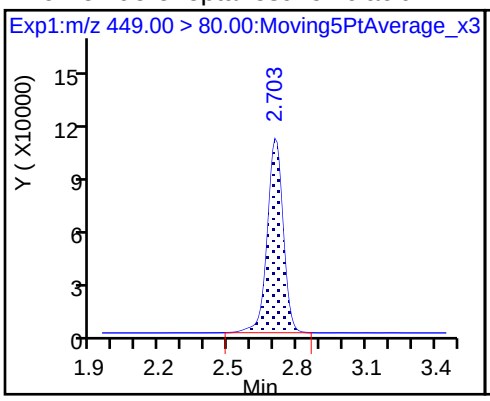
15 Perfluorooctanoic acid



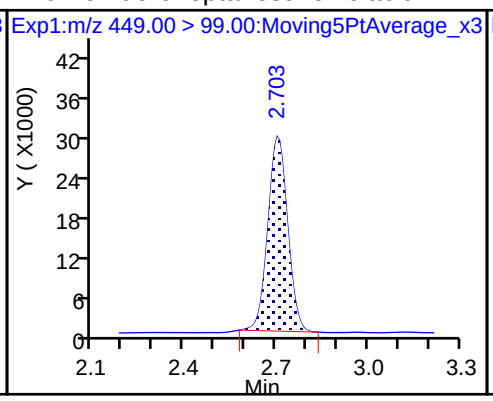
D 12 M2-6:2FTS



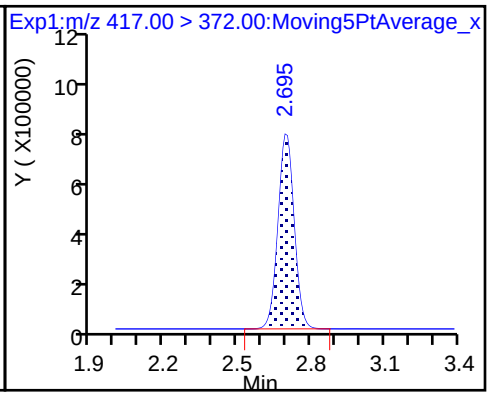
16 Perfluoroheptanesulfonic acid



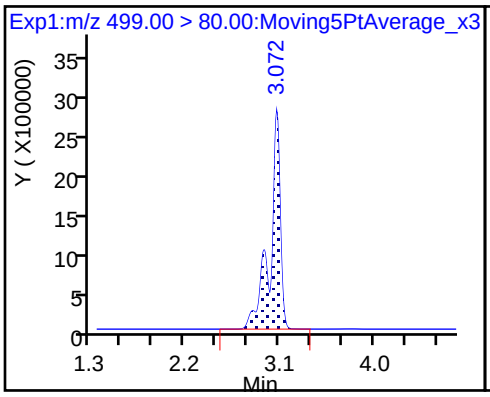
16 Perfluoroheptanesulfonic acid



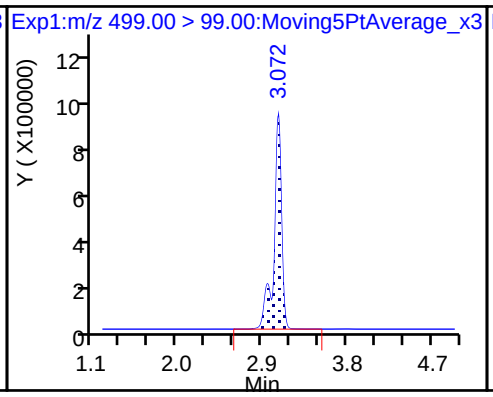
D 14 13C4 PFOA



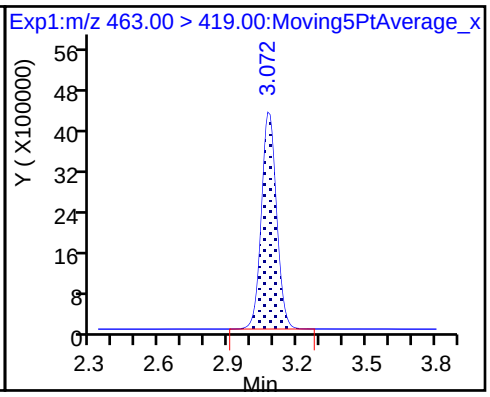
17 Perfluorooctane sulfonic acid



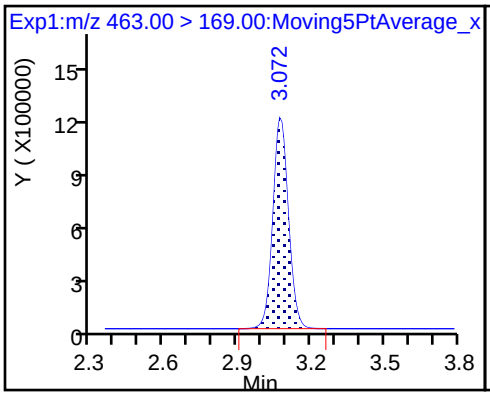
17 Perfluorooctane sulfonic acid



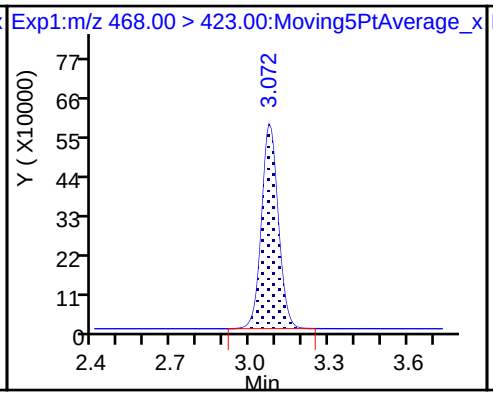
20 Perfluorononanoic acid



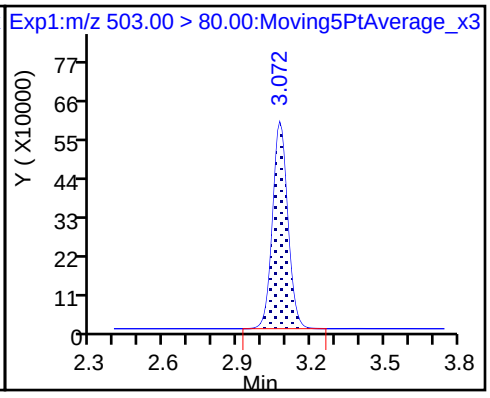
20 Perfluorononanoic acid



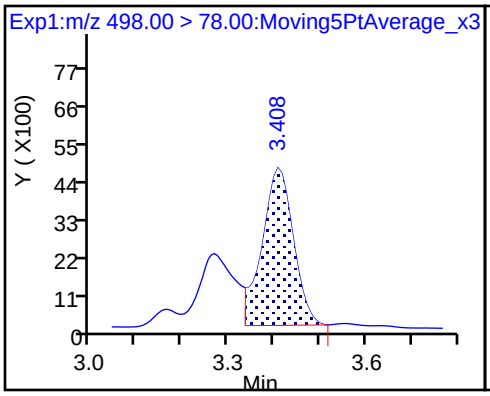
D 19 13C5 PFNA



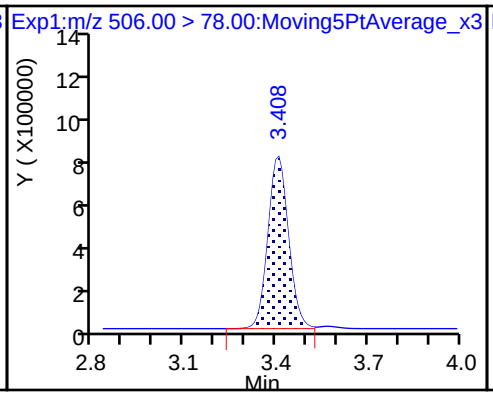
D 18 13C4 PFOS



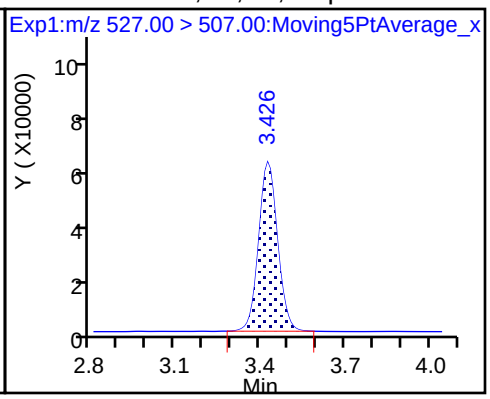
22 Perfluorooctane Sulfonamide



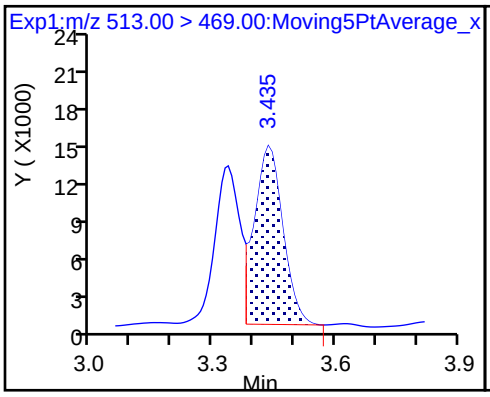
D 21 13C8 FOSA



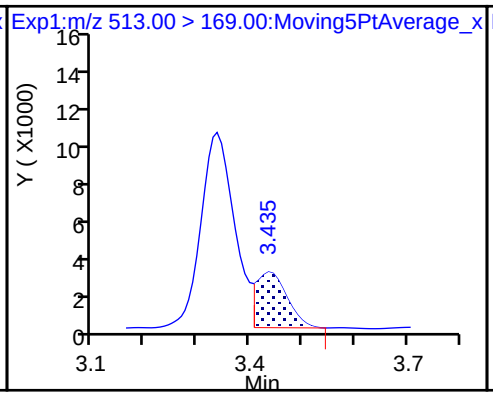
25 Sodium 1H,1H,2H,2H-perfluorodecane



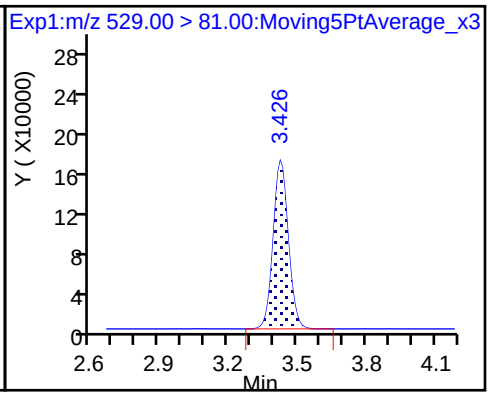
24 Perfluorodecanoic acid



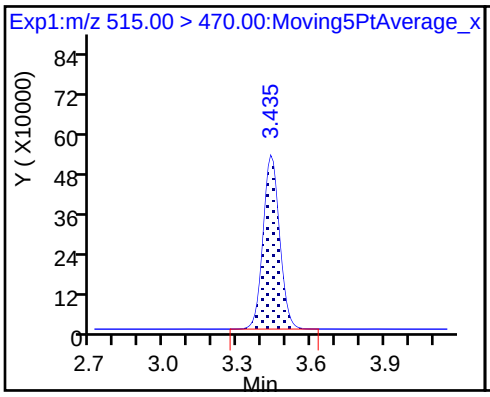
24 Perfluorodecanoic acid



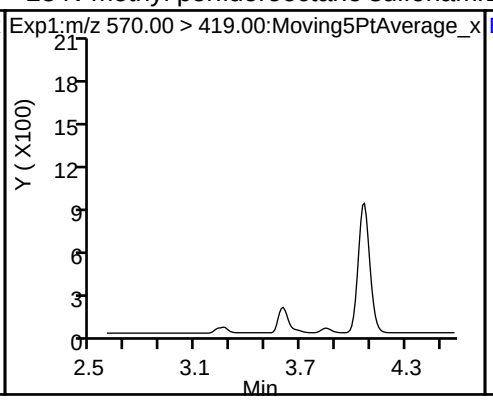
D 26 M2-8:2FTS



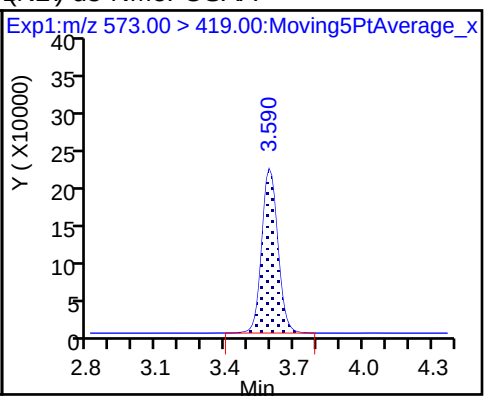
D 23 13C2 PFDA



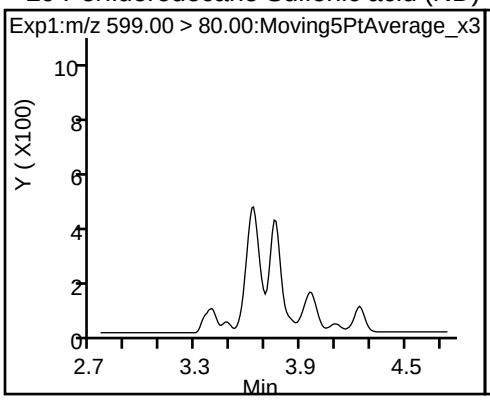
28 N-methyl perfluorooctane sulfonamid (ND)



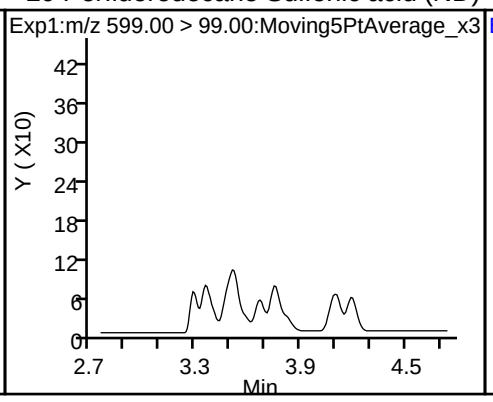
D 27 d3-NMeFOSAA



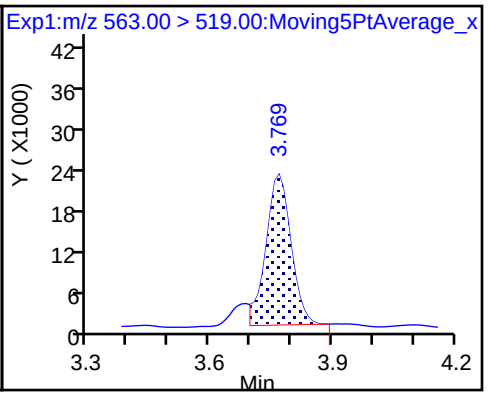
29 Perfluorodecane Sulfonic acid (ND)



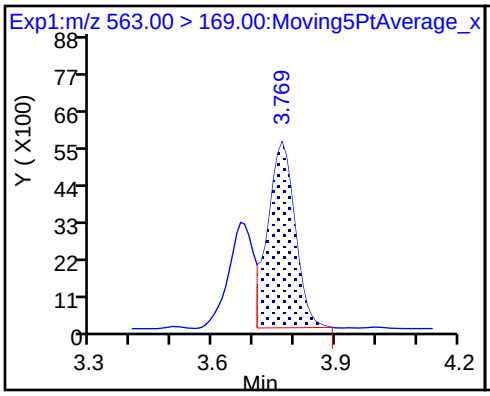
29 Perfluorodecane Sulfonic acid (ND)



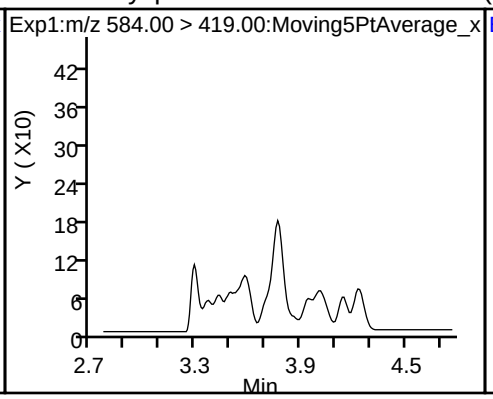
31 Perfluoroundecanoic acid



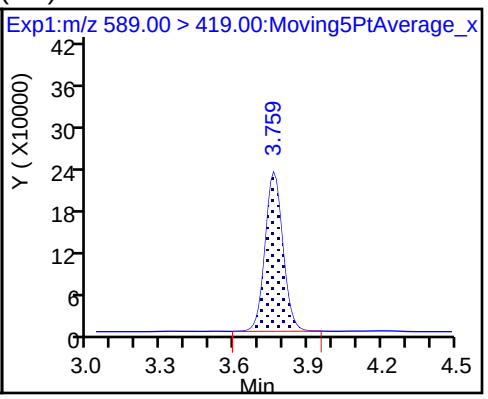
31 Perfluoroundecanoic acid



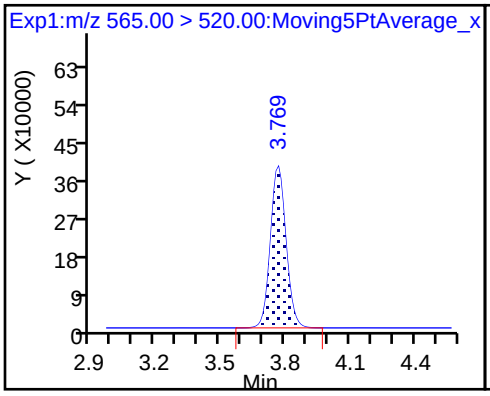
33 N-ethyl perfluorooctane sulfonamid (ND)



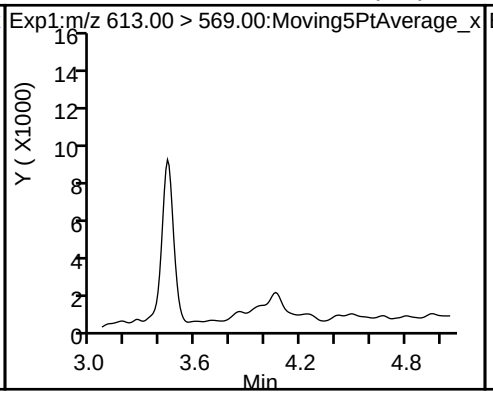
D 32 d5-NEtFOSAA



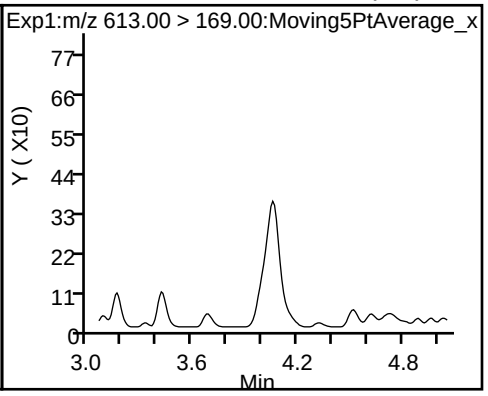
D 30 13C2 PFUnA



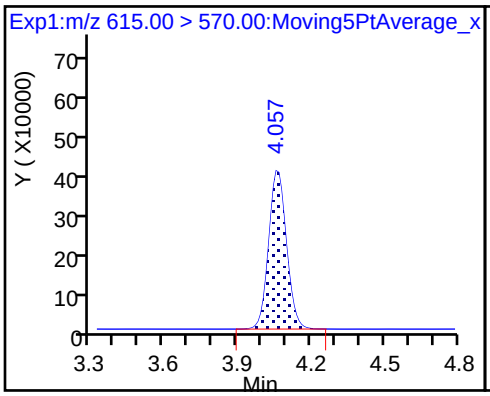
37 Perfluorododecanoic acid (ND)



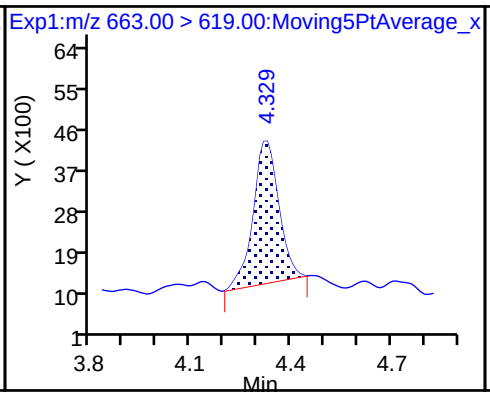
37 Perfluorododecanoic acid (ND)



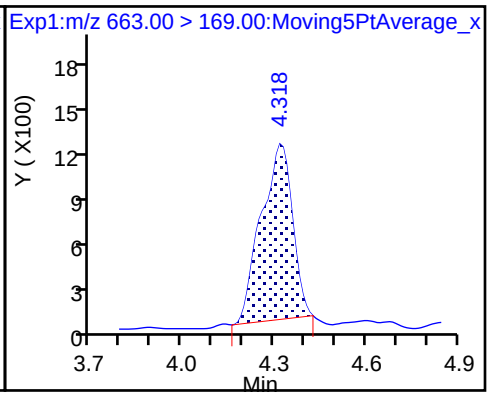
D 36 13C2 PFDoA



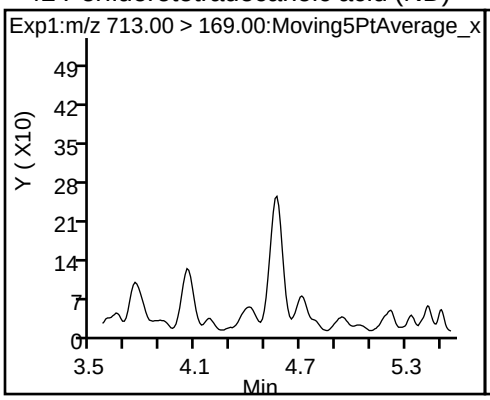
41 Perfluorotridecanoic acid



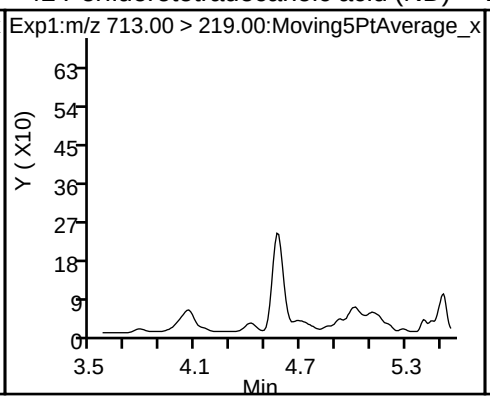
41 Perfluorotridecanoic acid



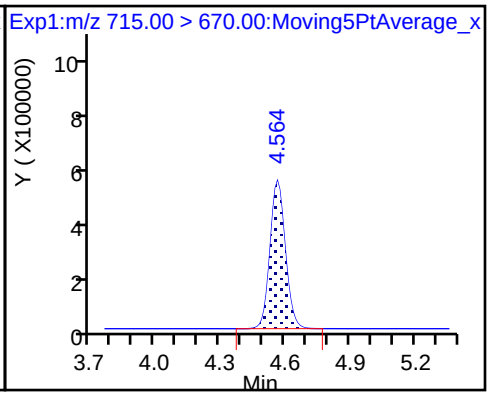
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004 (5'-7') DL | Lab Sample ID: 320-36761-1 DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_024.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:00

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/22/2018 00:16

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 5

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	0.039	D	0.0011	0.00019
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.030	B D	0.0027	0.0011
27619-97-2	6:2FTS	0.031	D	0.011	0.00081

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	69		25-150
STL00991	13C4 PFOS	63		25-150
STL02279	M2-6:2FTS	76		25-150

Report Date: 22-Mar-2018 12:53:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_024.d
Lims ID: 320-36761-A-1-A
Client ID: SB004 (5'-7')
Sample Type: Client
Inject. Date: 22-Mar-2018 00:16:54 ALS Bottle#: 26 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-36761-a-1-a 5X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:39:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.446	0.0	0.538	1220026	0.4144		82.9	13631	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.453	-0.007	1.000	36864	0.0160			14.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.633	829558	0.4247		84.9	21527	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.718	-0.018	1.000	47734	0.0255			29.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.735	0.0	0.646	17678	0.3966		85.3	136	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.997	-0.011	0.739	893162	0.4135		82.7	26055	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.005	38418	0.0210			95.2	
313.00 > 119.00	1.997	1.997	0.0	1.005	3286		11.69(5.03-15.10)		64.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	875199	0.4107		82.1	24600	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	41924	0.0232			80.7	
363.00 > 169.00	2.328	2.328	0.0	1.000	15128		2.77(1.13-3.40)		206	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	1049909	0.3994		84.4	35476	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	157966	0.0639			1958	
399.00 > 99.00	2.341	2.341	0.0	1.000	49130		3.22(1.50-4.49)		205	
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.665	-0.002	0.991	158705	0.3592		75.6	4038	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.663	2.673	-0.010	1.000	1659737	2.85			47704	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.687	2.688	-0.001	1.000	860733	0.3948		79.0	22262	
* 62 13C2-PFOA										
415.00 > 370.00	2.687	2.697	-0.010		1162796	0.5000			27246	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.687	2.697	-0.010	1.000	515714	0.2652			157	
413.00 > 169.00	2.687	2.697	-0.010	1.000	263184		1.96(0.84-2.52)		687	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.695	2.704	-0.009	1.000	110639	0.0717			1692	
449.00 > 99.00	2.695	2.704	-0.009	1.000	28192		3.92(1.94-5.82)		321	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.141	575666	0.3010		63.0	8938	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.141	663750	0.3453		69.1	27525	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	3783203	2.82			15028	
499.00 > 99.00	3.058	3.065	-0.007	0.998	1013175		3.73(2.31-6.93)		10114	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	4852317	3.66			6922	
463.00 > 169.00	3.065	3.072	-0.007	1.000	1148502		4.22(1.90-5.69)		35675	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.388	0.009	1.264	589852	0.2287		45.7	4556	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.398	-0.010	0.997	7289	0.006268			54.5	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.415	0.0	1.271	167388	0.2806		58.6	5338	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.424	0.0	1.274	488620	0.2900		58.0	10941	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.426	-0.011	1.000	75301	0.1688			2386	
24 Perfluorodecanoic acid										Ma
513.00 > 469.00	3.424	3.435	-0.011	1.000	10952	0.0113			27.5	a
513.00 > 169.00	3.379	3.435	-0.056	0.987	2588		4.23(2.36-7.09)		13.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.578	0.0	1.332	180343	0.2033		40.7	6462	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.399	352672	0.2340		46.8	10516	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.395	213171	0.2110		42.2	1754	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.768	-0.010	1.000	21101	0.0347			92.8	
563.00 > 169.00	3.758	3.768	-0.010	1.000	5565		3.79(2.12-6.36)		108	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.510	340841	0.1993		39.9	4399	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.695	352310	0.1686		33.7	2961	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 22-Mar-2018 12:53:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_024.d

Injection Date: 22-Mar-2018 00:16:54 Instrument ID: A8_N

Lims ID: 320-36761-A-1-A Lab Sample ID: 320-36761-1

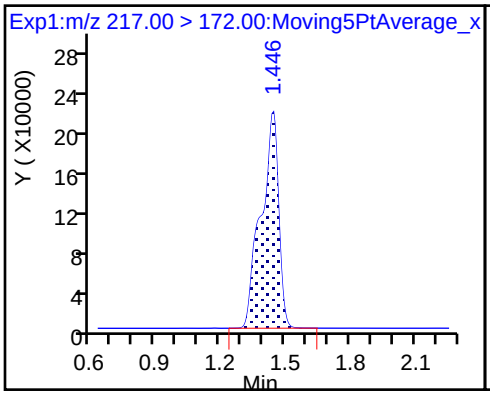
Client ID: SB004 (5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 19

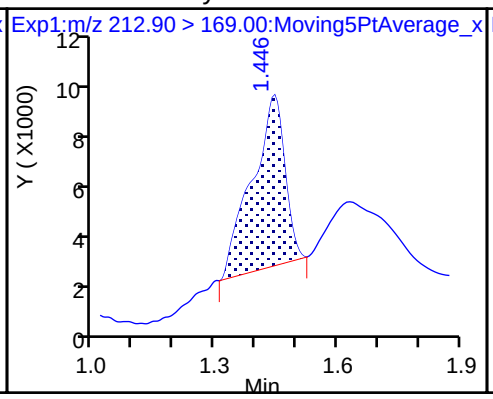
Injection Vol: 2.0 ul Dil. Factor: 5.0000

Method: A8_N Limit Group: LC PFC ICAL

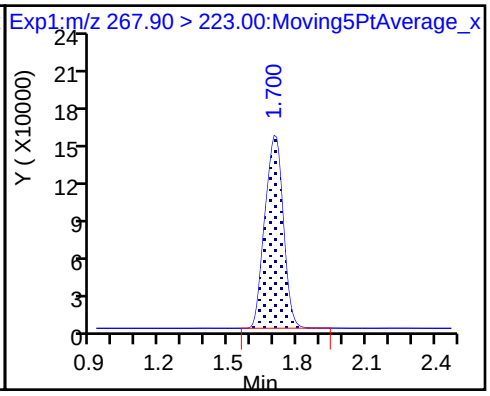
D 1 13C4 PFBA



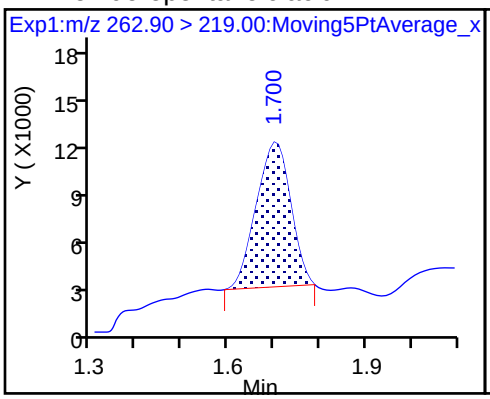
2 Perfluorobutyric acid



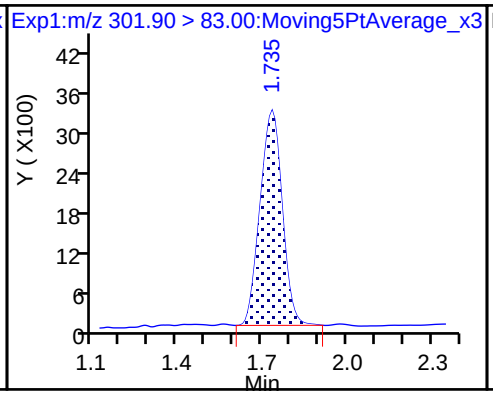
D 3 13C5-PFPeA



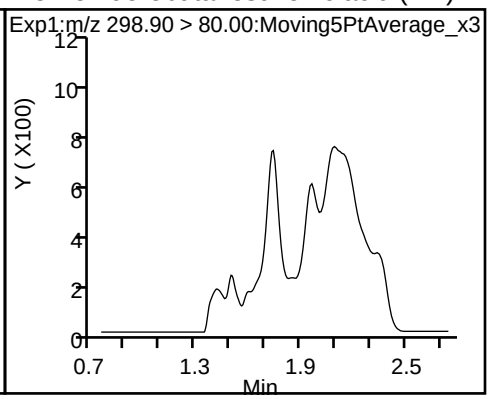
4 Perfluoropentanoic acid



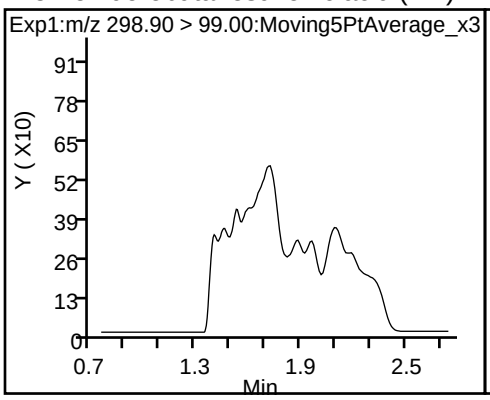
D 47 13C3-PFBS



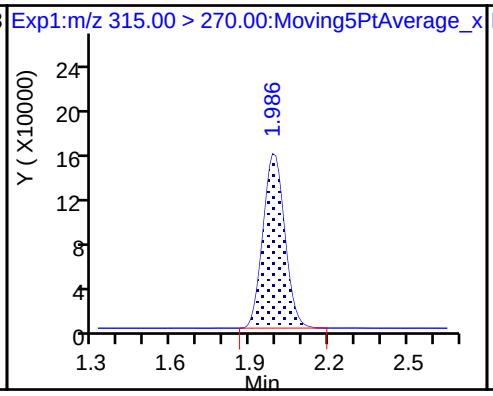
5 Perfluorobutanesulfonic acid (ND)



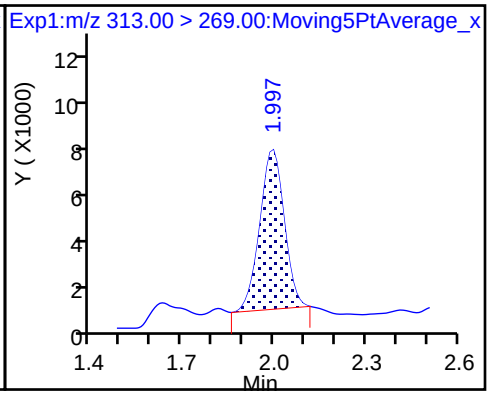
5 Perfluorobutanesulfonic acid (ND)



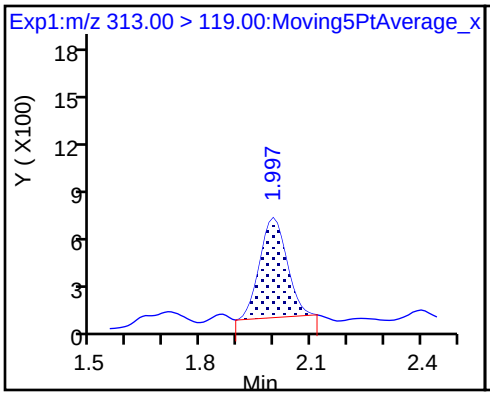
D 7 13C2 PFHxA



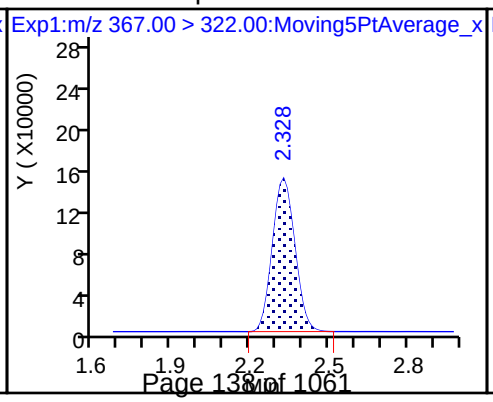
6 Perfluorohexanoic acid



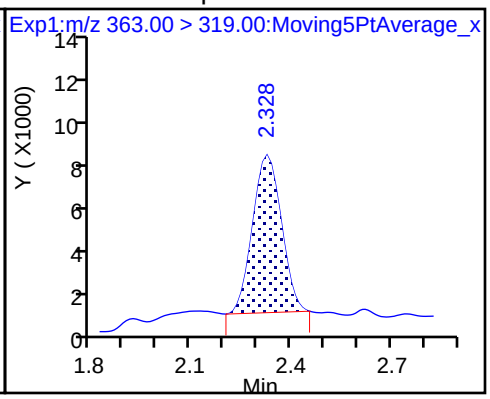
6 Perfluorohexanoic acid



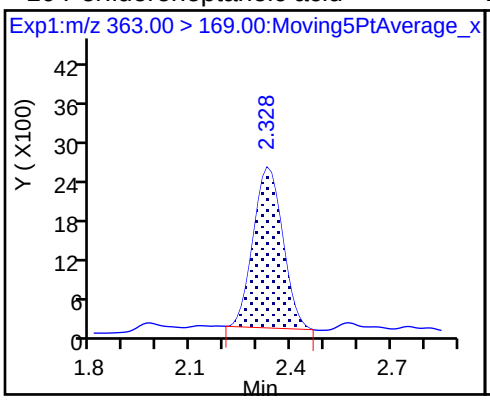
D 9 13C4-PFHpA



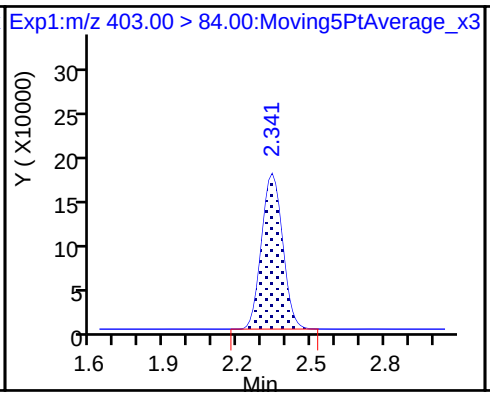
10 Perfluoroheptanoic acid



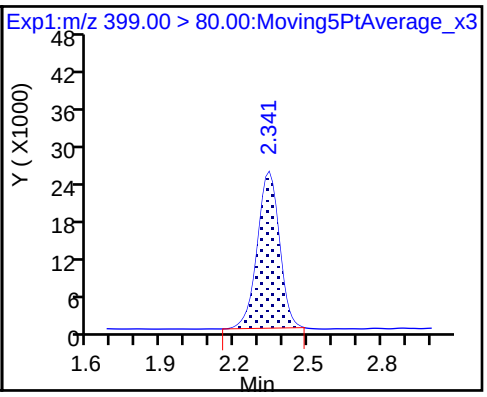
10 Perfluoroheptanoic acid



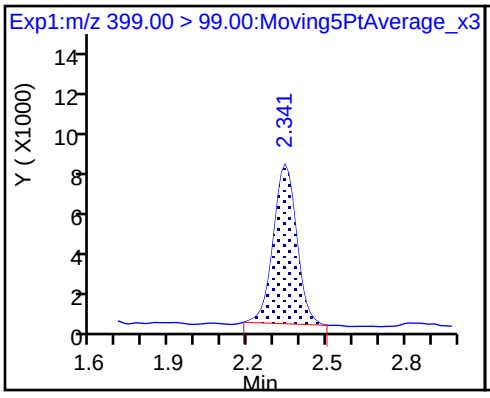
D 11 18O2 PFHxS



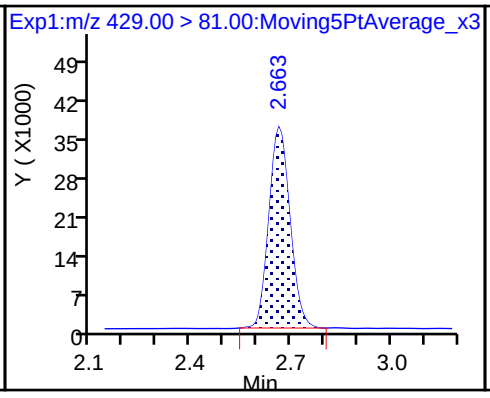
8 Perfluorohexanesulfonic acid



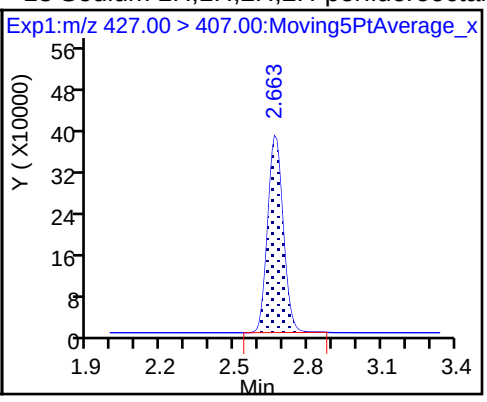
8 Perfluorohexanesulfonic acid



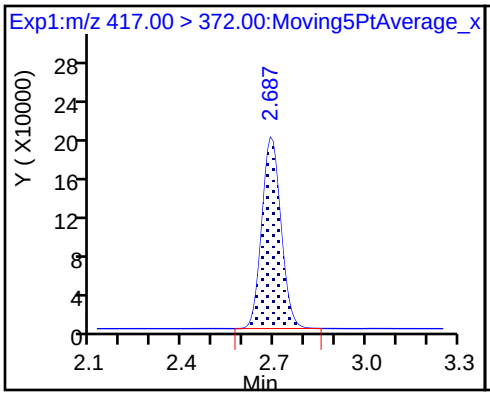
D 12 M2-6:2FTS



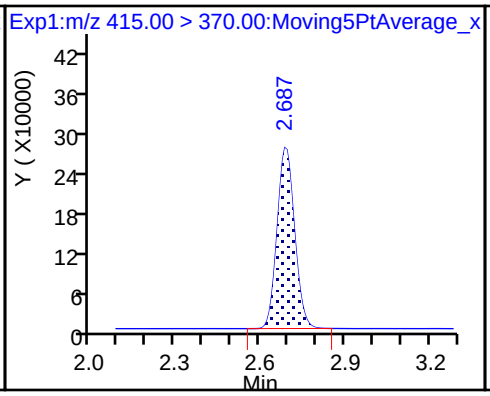
13 Sodium 1H,1H,2H,2H-perfluorooctane



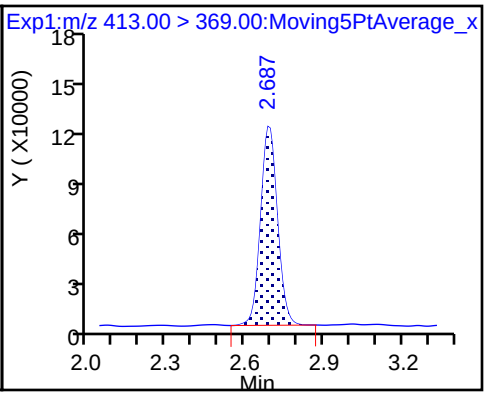
D 14 13C4 PFOA



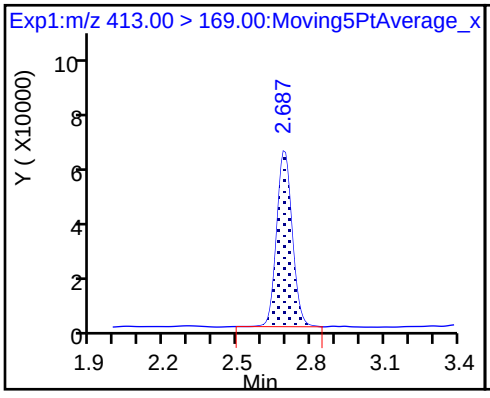
* 62 13C2-PFOA



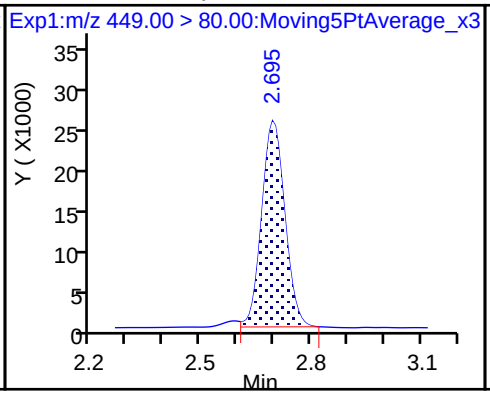
15 Perfluorooctanoic acid



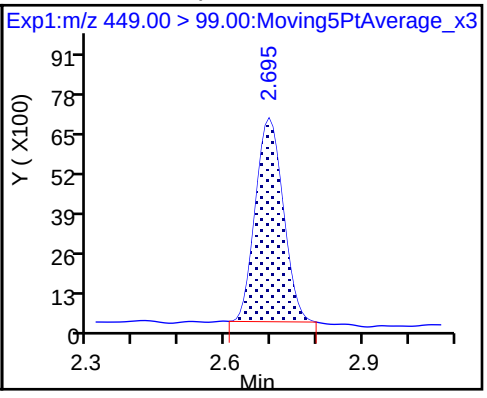
15 Perfluorooctanoic acid



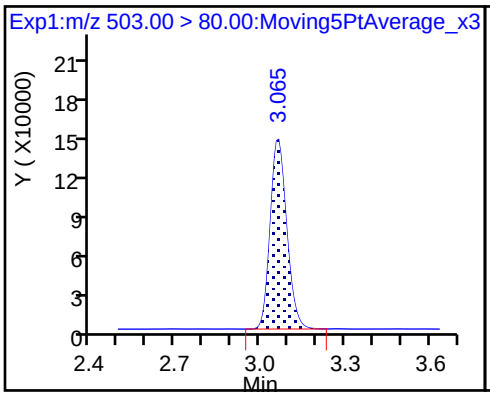
16 Perfluoroheptanesulfonic acid



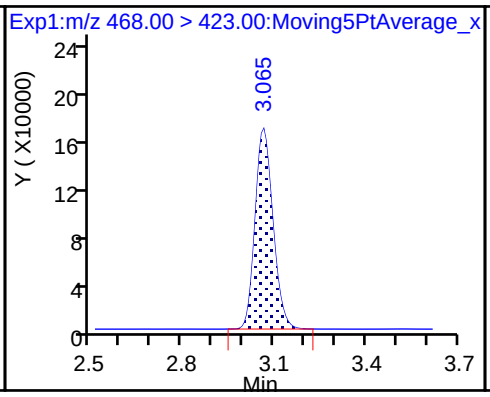
16 Perfluoroheptanesulfonic acid



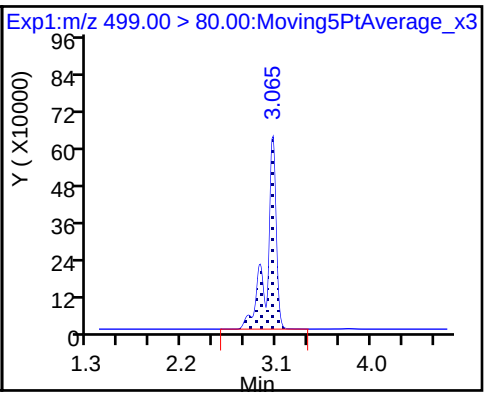
D 18 13C4 PFOS



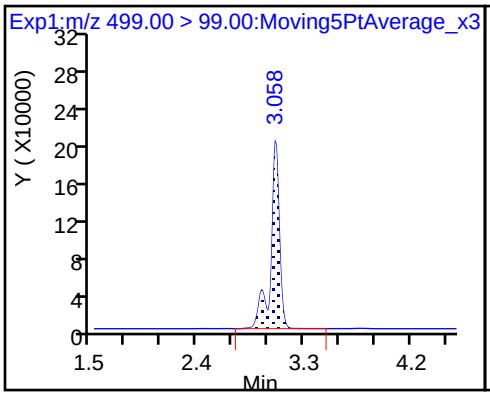
D 19 13C5 PFNA



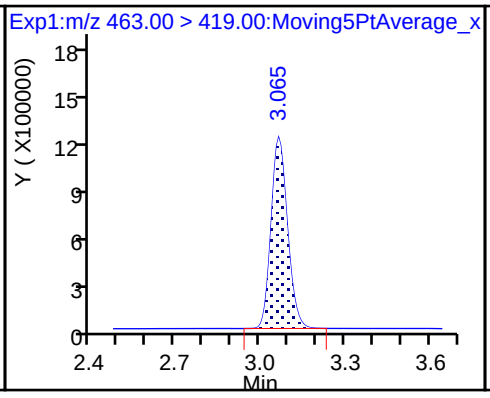
17 Perfluorooctane sulfonic acid



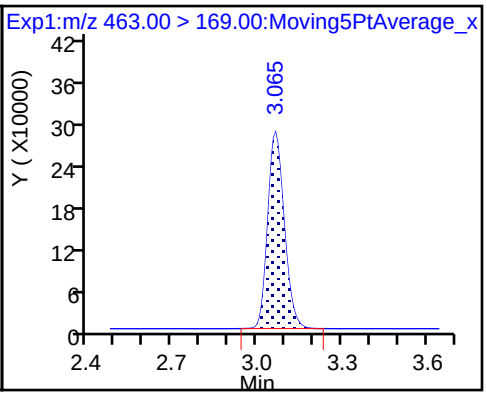
17 Perfluorooctane sulfonic acid



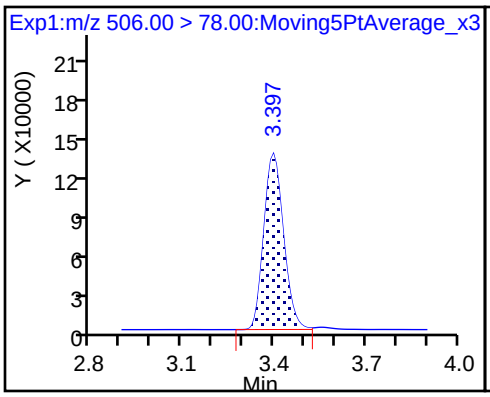
20 Perfluorononanoic acid



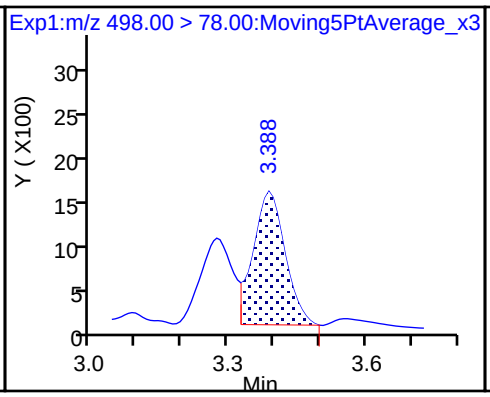
20 Perfluorononanoic acid



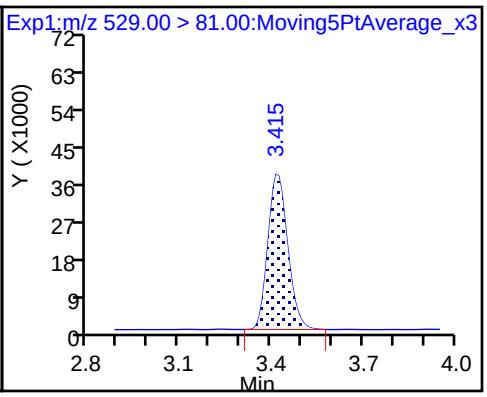
D 21 13C8 FOSA



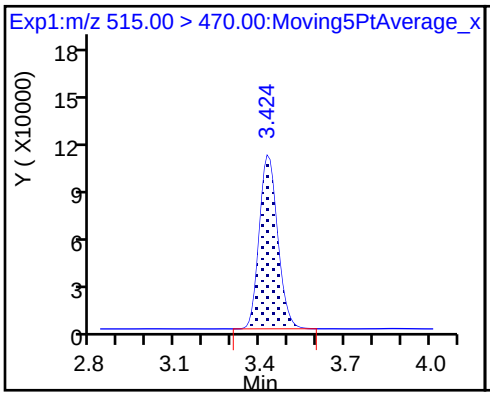
22 Perfluorooctane Sulfonamide



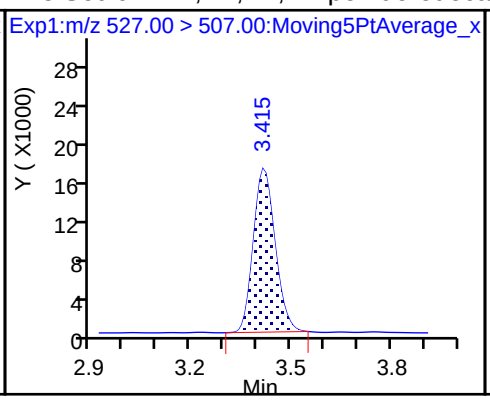
D 26 M2-8:2FTS



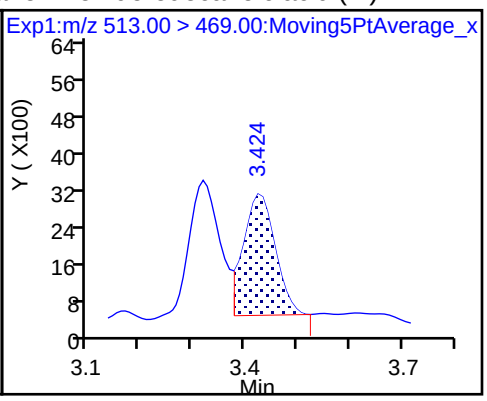
D 23 13C2 PFDA



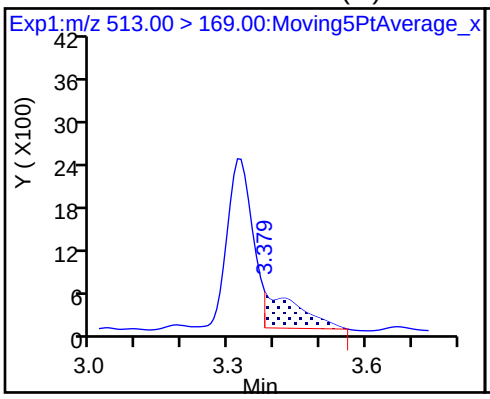
25 Sodium 1H,1H,2H,2H-perfluorodecan



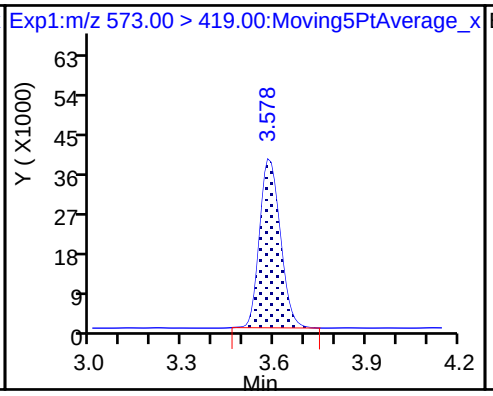
24 Perfluorodecanoic acid (M)



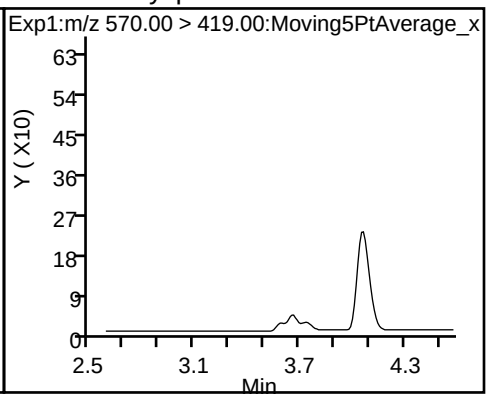
24 Perfluorodecanoic acid (M)



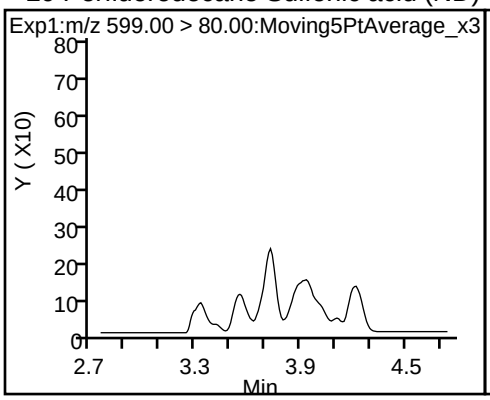
D 27 d3-NMeFOSAA



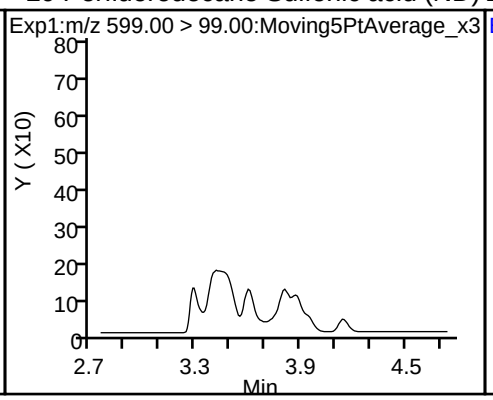
28 N-methyl perfluorooctane sulfonami (ND)



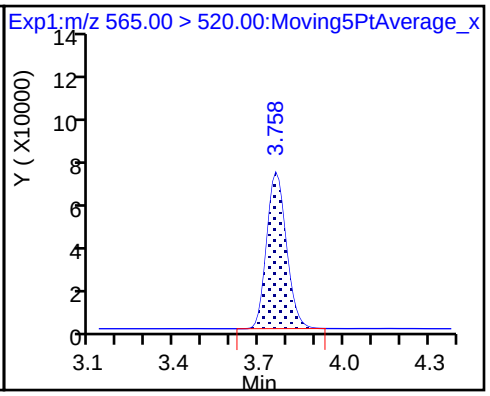
29 Perfluorodecane Sulfonic acid (ND)



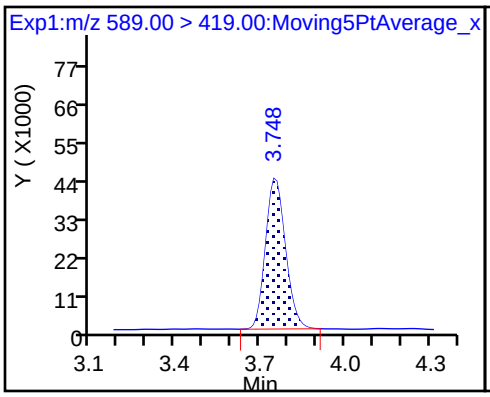
29 Perfluorodecane Sulfonic acid (ND)



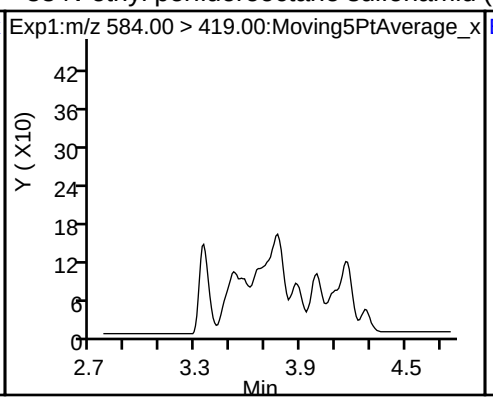
D 30 13C2 PFUnA



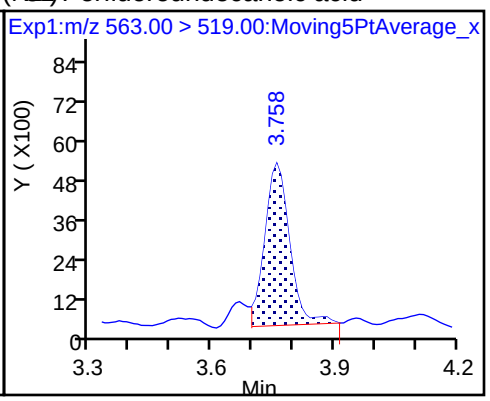
D 32 d5-NEtFOSAA



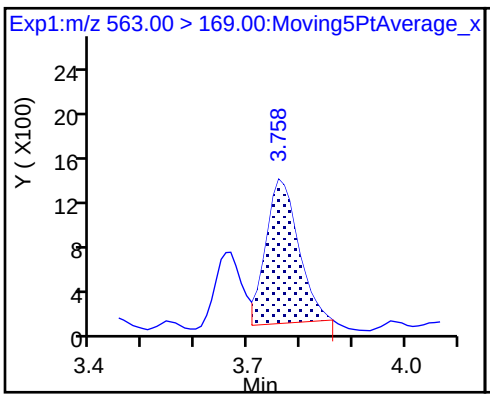
33 N-ethyl perfluorooctane sulfonamid (N



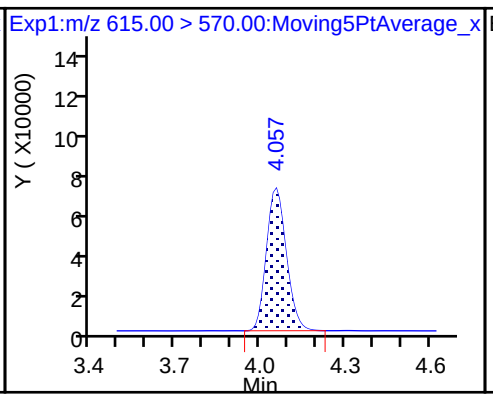
31 Perfluoroundecanoic acid



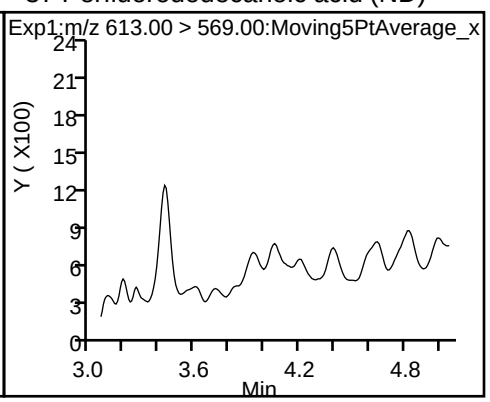
31 Perfluoroundecanoic acid



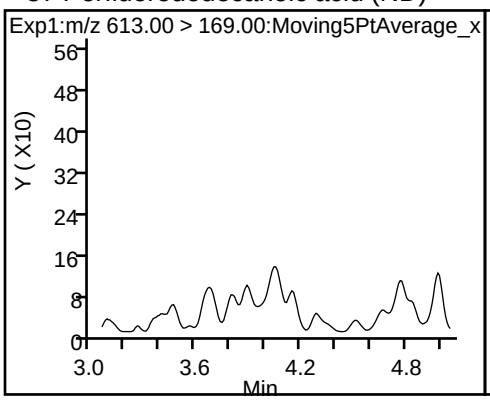
D 36 13C2 PFDoA



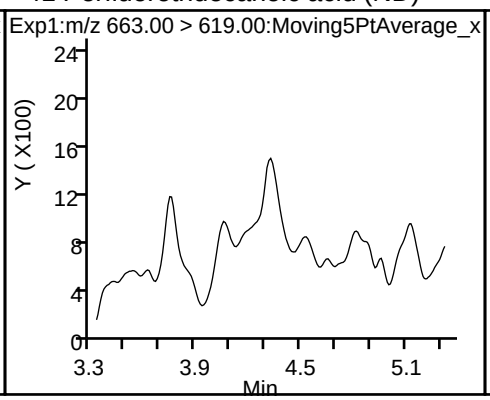
37 Perfluorododecanoic acid (ND)



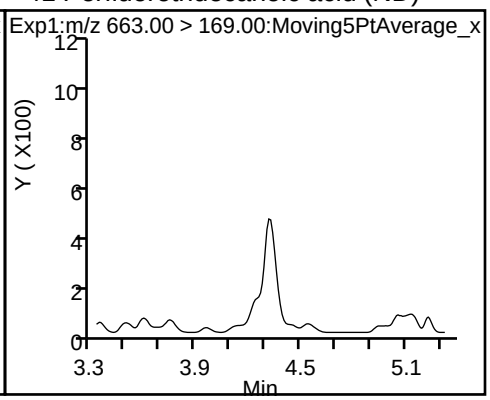
37 Perfluorododecanoic acid (ND)



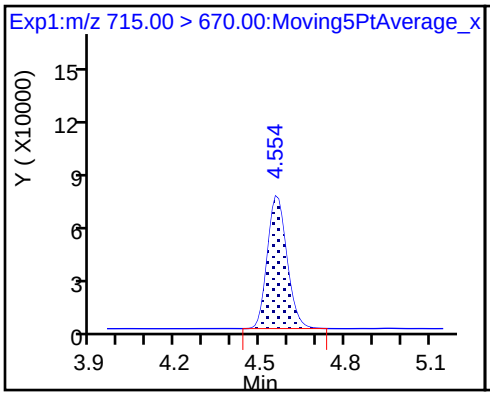
41 Perfluorotridecanoic acid (ND)



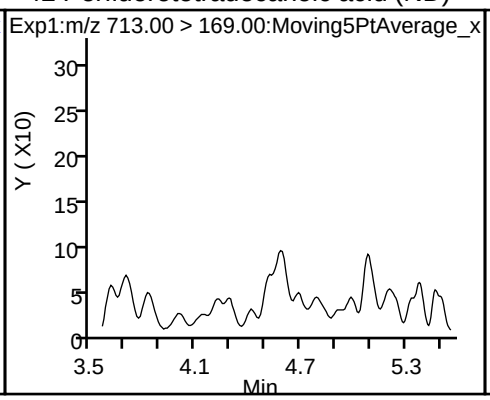
41 Perfluorotridecanoic acid (ND)



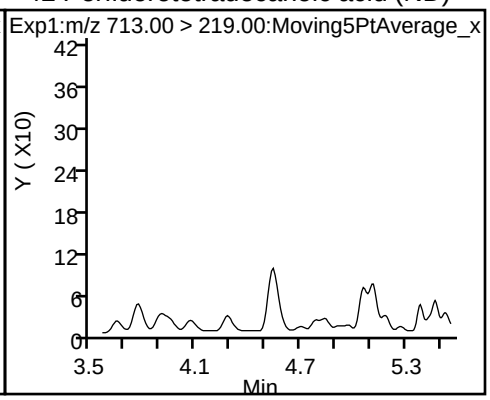
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004-SPLP(8'-10') | Lab Sample ID: 320-36761-2

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_060.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:15

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 252.9(mL) | Date Analyzed: 03/23/2018 19:34

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	6.03		1.98	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	13.3		1.98	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	9.04		1.98	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	8.18	B	1.98	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	127		1.98	0.84
335-76-2	Perfluorodecanoic acid (PFDA)	6.27		1.98	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.19		1.98	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.98	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.29	U	1.98	1.29
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.98	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.98	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	24.7	B	1.98	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	12.9		1.98	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.45	J	1.98	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.06	U	19.8	3.06
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88
39108-34-4	8:2FTS	42.0		19.8	1.98

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004-SPLP(8'-10') | Lab Sample ID: 320-36761-2

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_060.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:15

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 252.9(mL) | Date Analyzed: 03/23/2018 19:34

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	93		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	89		25-150
STL01892	13C4-PFHpA	91		25-150
STL00990	13C4 PFOA	89		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	84		25-150
STL00998	13C2 PFDoA	81		25-150
STL02116	13C2-PFTeDA	88		25-150
STL02337	13C3-PFBS	92		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	78		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	100		25-150
STL02117	d5-NEtFOSAA	90		25-150
STL02280	M2-8:2FTS	104		25-150

Report Date: 29-Mar-2018 09:31:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_060.d
Lims ID: 320-36761-A-2-B
Client ID: SB004-SPLP(8'-10')
Sample Type: Client
Inject. Date: 23-Mar-2018 19:34:41 ALS Bottle#: 42 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-2-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: barnettj Date: 28-Mar-2018 15:50:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.458	1.453	0.005	1.000	332678	0.1525			146	M
D 1 13C4 PFBA										
217.00 > 172.00	1.458	1.458	0.0	0.539	5788107	2.32		92.9	86035	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.717	0.0	0.635	3803500	2.30		92.0	97844	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.718	-0.001	1.000	578211	0.3371			269	
D 47 13C3-PFBS										
301.90 > 83.00	1.752	1.753	-0.001	0.648	80926	2.14		92.2	384	
D 7 13C2 PFHxA										
315.00 > 270.00	2.007	2.008	-0.001	0.743	4064350	2.22		88.9	118495	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.007	2.008	-0.001	1.000	379801	0.2285			583	
313.00 > 119.00	2.007	2.008	-0.001	1.000	36766		10.33(5.03-15.10)		631	
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.341	-0.001	0.866	4082025	2.26		90.5	68829	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.341	-0.001	1.000	349329	0.2068			716	
363.00 > 169.00	2.340	2.341	-0.001	1.000	134011		2.61(1.13-3.40)		1618	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.353	0.0	0.871	5018537	2.26		95.4	86369	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.354	-0.001	1.000	1473504	0.6239			4989	
399.00 > 99.00	2.353	2.354	-0.001	1.000	461595		3.19(1.50-4.49)		1376	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.679	-0.008	0.988	964260	2.58		109	6586	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.671	2.681	-0.010	1.000	19424327	27.4			20683	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.702	2.703	-0.001	1.000	4106356	2.23		89.0	79181	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.702	2.704	-0.002	1.000	5976173	3.22			2337	
413.00 > 169.00	2.702	2.704	-0.002	1.000	3219778		1.86(0.84-2.52)		8138	
* 62 13C2-PFOA										
415.00 > 370.00	2.702	2.704	-0.002		4921420	2.50			103208	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.712	-0.002	1.000	527050	0.3265			6118	
449.00 > 99.00	2.702	2.712	-0.010	0.997	138888		3.79(1.94-5.82)		1120	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.072	3.072	0.0	1.000	37507874	26.7			42273	E
499.00 > 99.00	3.072	3.072	0.0	1.000	10549619		3.56(2.31-6.93)		65844	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.072	3.072	0.0	1.000	25355687	21.1			15129	E
463.00 > 169.00	3.072	3.072	0.0	1.000	7143225		3.55(1.90-5.69)		100518	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.080	-0.008	1.137	3012999	1.85		74.1	59929	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.080	-0.008	1.137	3010991	1.86		77.8	25264	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.415	3.408	0.007	1.000	20889	0.0113			46.3	
D 21 13C8 FOSA										
506.00 > 78.00	3.415	3.416	-0.001	1.264	4681048	2.14		85.8	69562	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.427	-0.003	1.000	711613	1.06			9995	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.434	-0.010	1.267	1258131	2.49		104	20253	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.433	3.436	-0.003	1.000	210996	0.1586			76.5	R
513.00 > 169.00	3.433	3.436	-0.003	1.000	28046		7.52(2.36-7.09)		13.7	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.444	-0.011	1.270	3365984	2.36		94.4	85139	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.588	3.602	-0.014	1.328	1875862	2.50		99.9	36589	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.761	-0.003	1.000	51127	0.0554			110	
563.00 > 169.00	3.758	3.761	-0.003	1.000	12114		4.22(2.12-6.36)		26.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.771	-0.013	1.391	1921931	2.25		89.9	15783	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.771	-0.013	1.391	2675999	2.10		83.9	93373	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.069	-0.012	1.501	2929609	2.02		80.9	27674	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.565	-0.011	1.685	3898124	2.20		88.2	29388	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

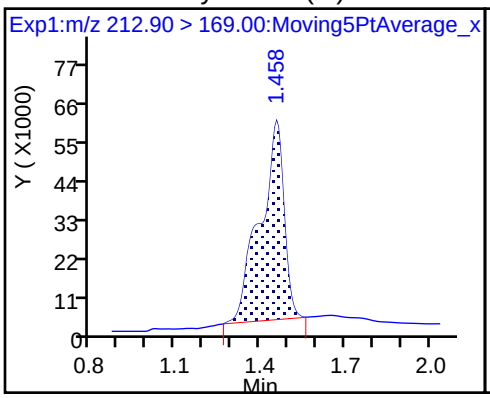
Report Date: 29-Mar-2018 09:31:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

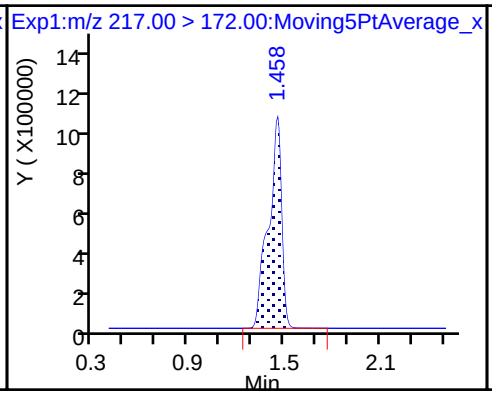
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_060.d

Injection Date:	23-Mar-2018 19:34:41	Instrument ID:	A8_N		
Lims ID:	320-36761-A-2-B	Lab Sample ID:	320-36761-2		
Client ID:	SB004-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	42	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

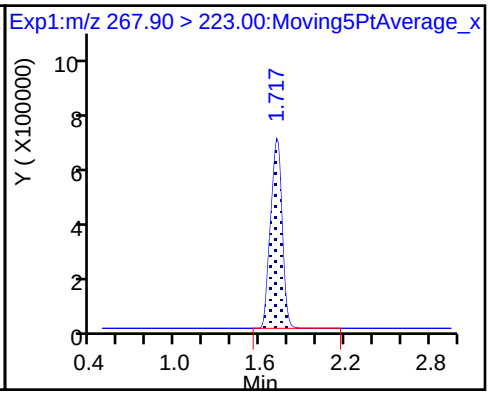
2 Perfluorobutyric acid (M)



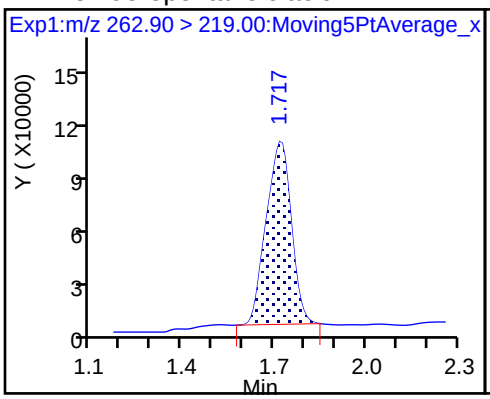
D 1 13C4 PFBA



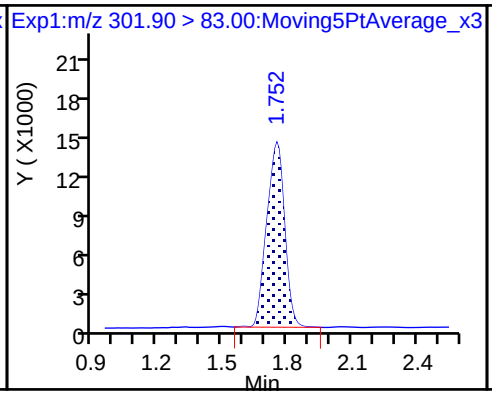
D 3 13C5-PFPeA



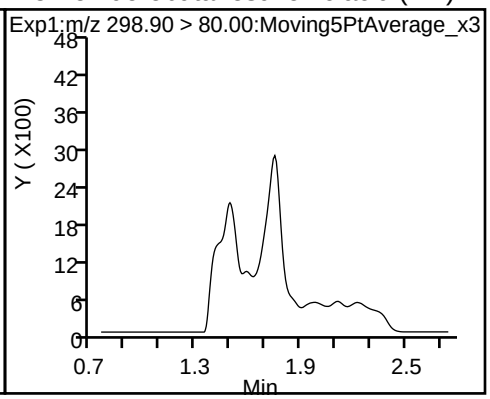
4 Perfluoropentanoic acid



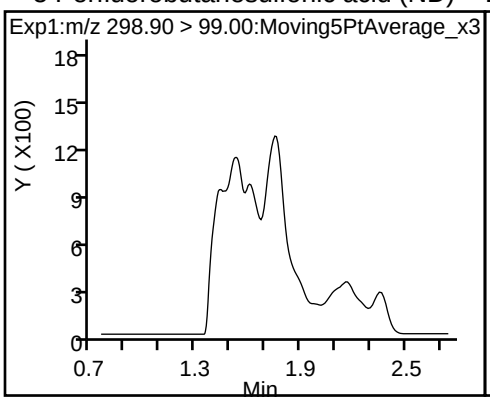
D 47 13C3-PFBS



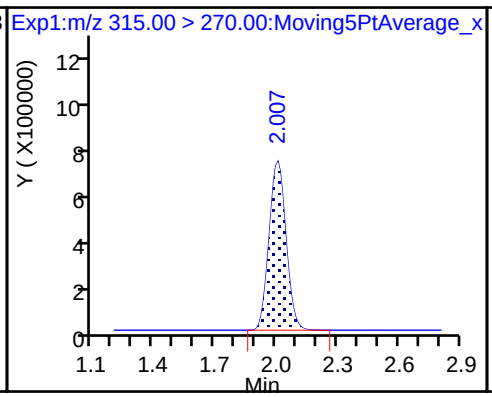
5 Perfluorobutanesulfonic acid (ND)



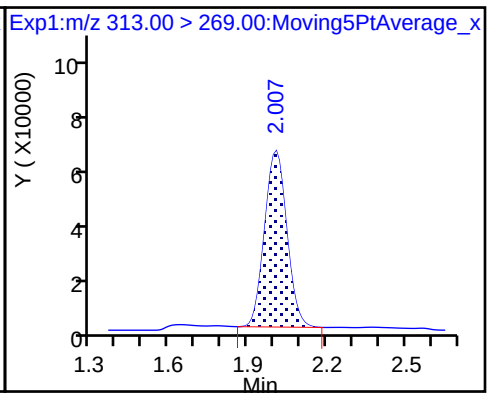
5 Perfluorobutanesulfonic acid (ND)



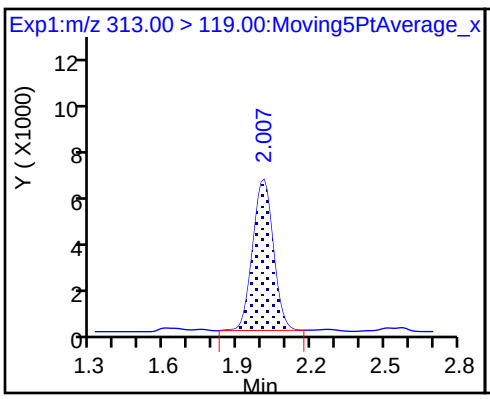
D 7 13C2 PFHxA



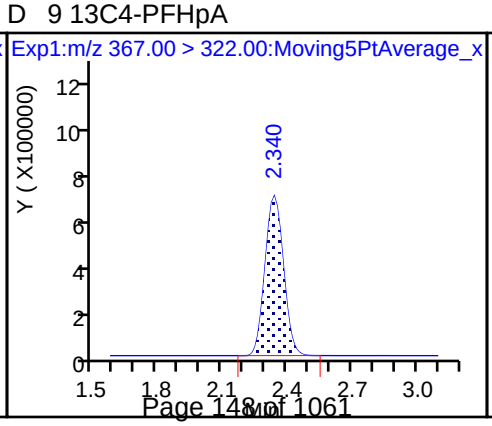
6 Perfluorohexanoic acid



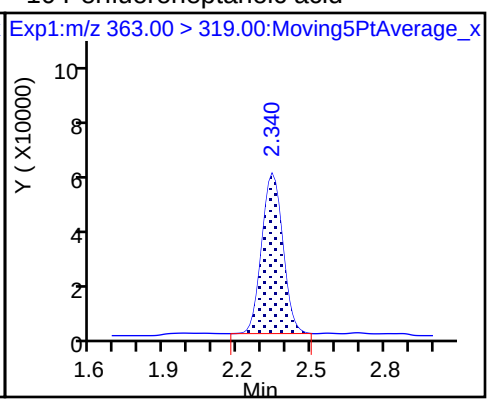
6 Perfluorohexanoic acid



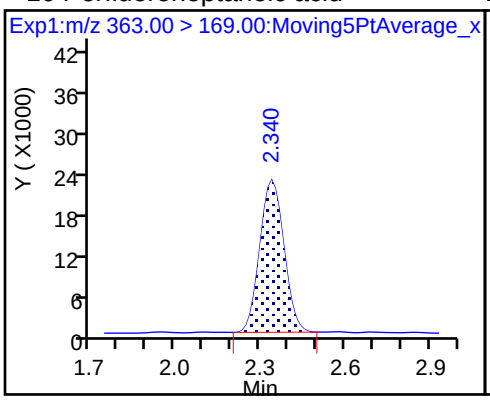
D 9 13C4-PFHpA



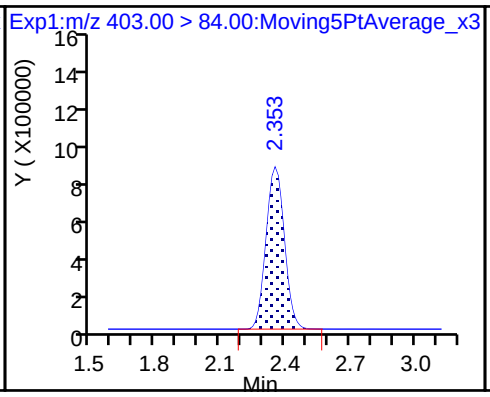
10 Perfluoroheptanoic acid



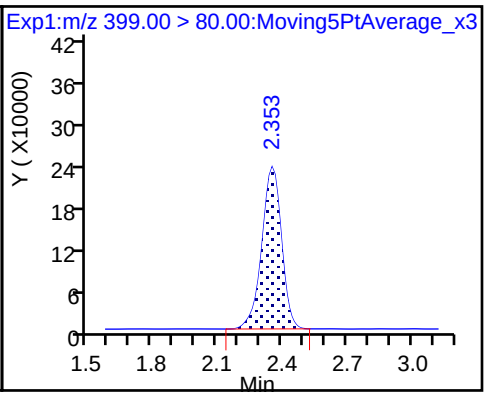
10 Perfluoroheptanoic acid



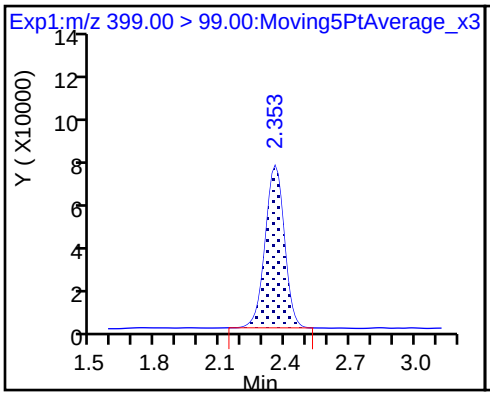
D 11 18O2 PFHxS



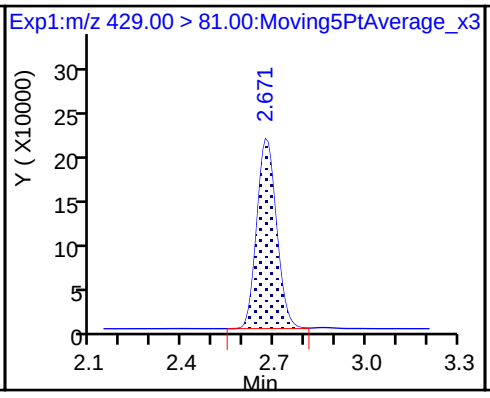
8 Perfluorohexanesulfonic acid



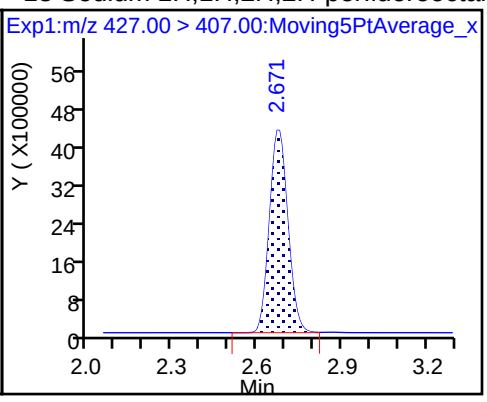
8 Perfluorohexanesulfonic acid



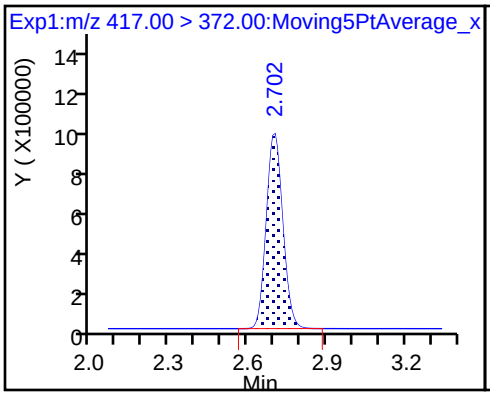
D 12 M2-6:2FTS



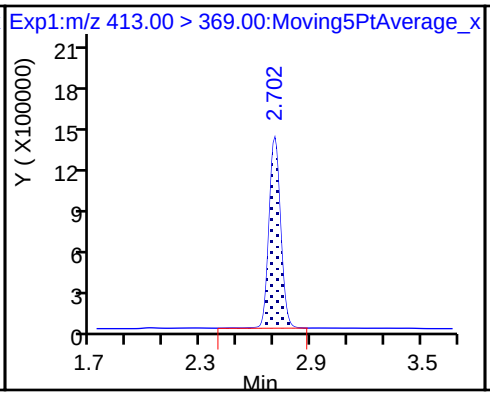
13 Sodium 1H,1H,2H,2H-perfluorooctane



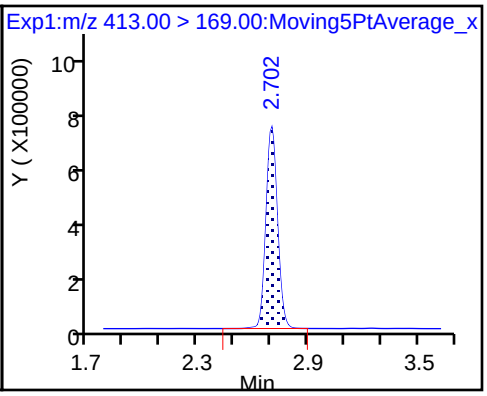
D 14 13C4 PFOA



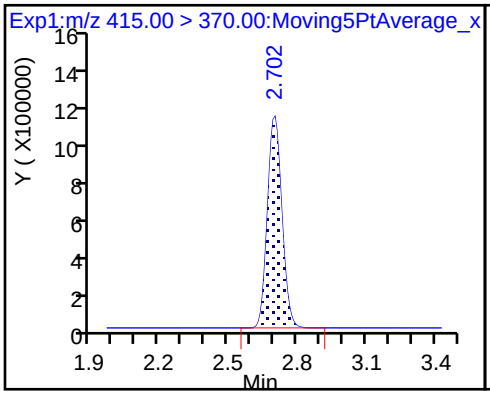
15 Perfluorooctanoic acid



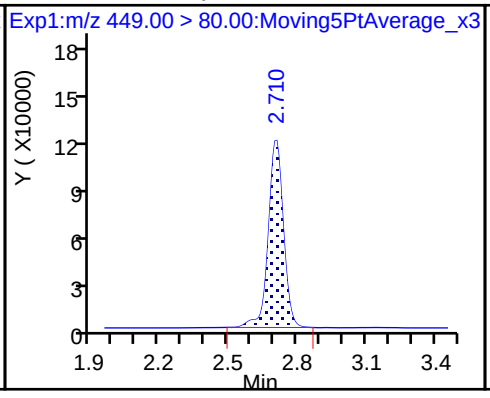
15 Perfluorooctanoic acid



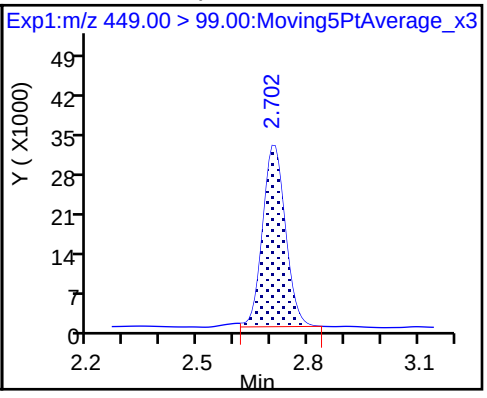
* 62 13C2-PFOA



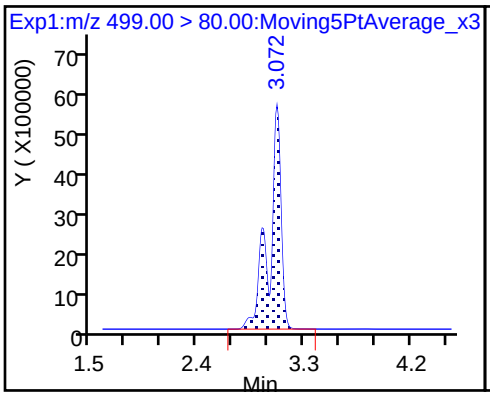
16 Perfluoroheptanesulfonic acid



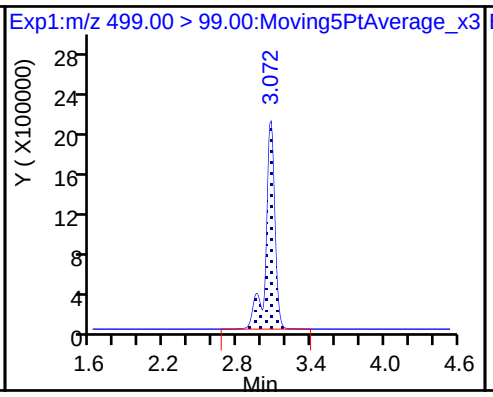
16 Perfluoroheptanesulfonic acid



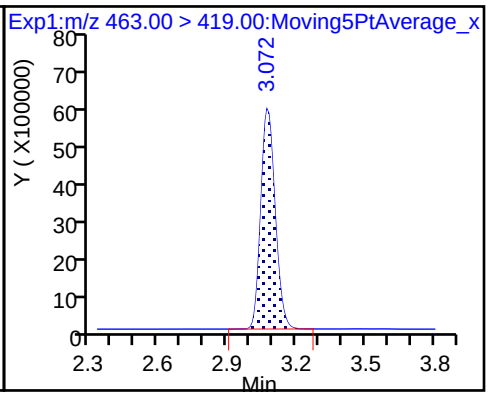
17 Perfluorooctane sulfonic acid



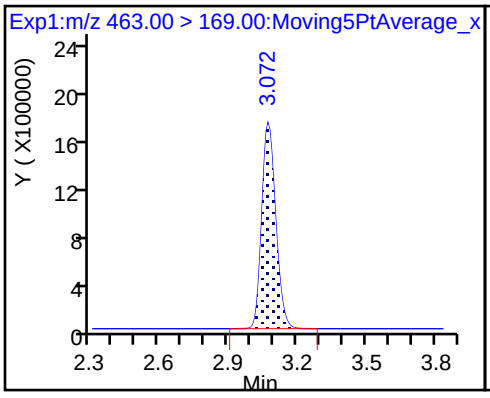
17 Perfluorooctane sulfonic acid



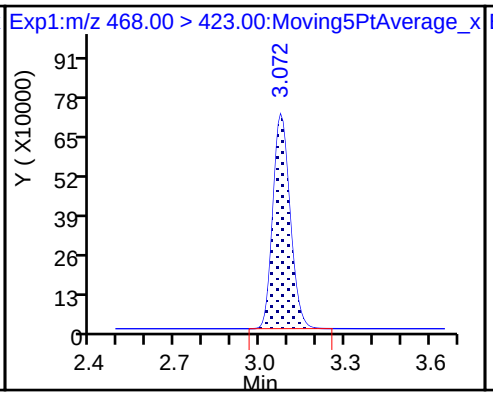
20 Perfluorononanoic acid



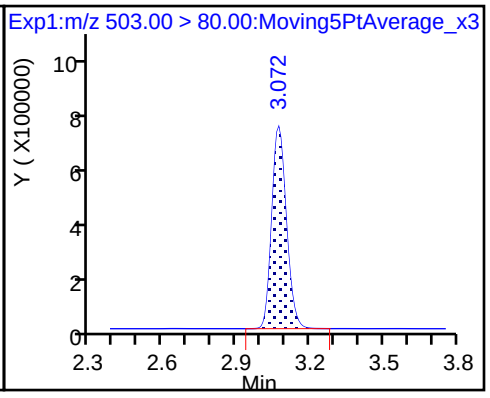
20 Perfluorononanoic acid



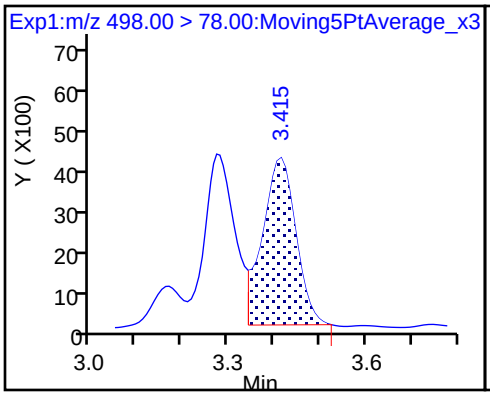
D 19 13C5 PFNA



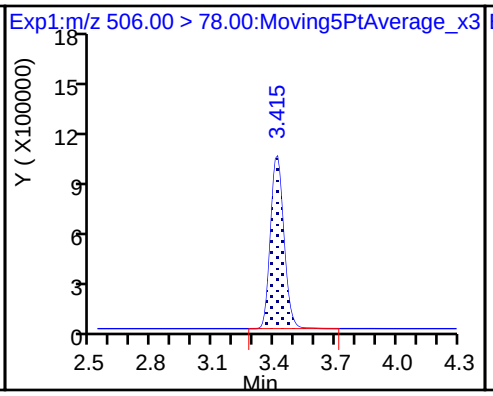
D 18 13C4 PFOS



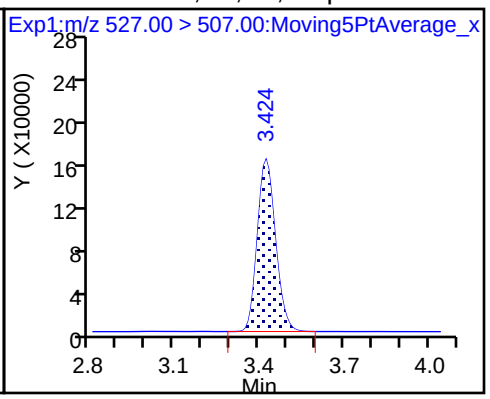
22 Perfluorooctane Sulfonamide



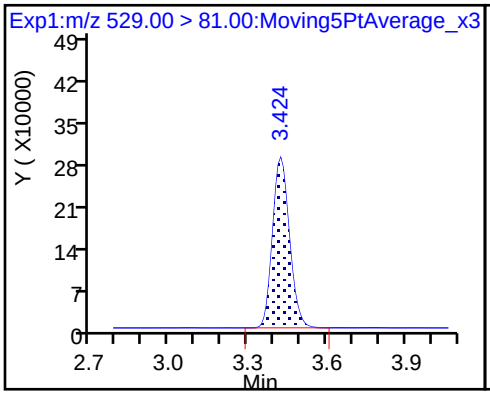
D 21 13C8 FOSA



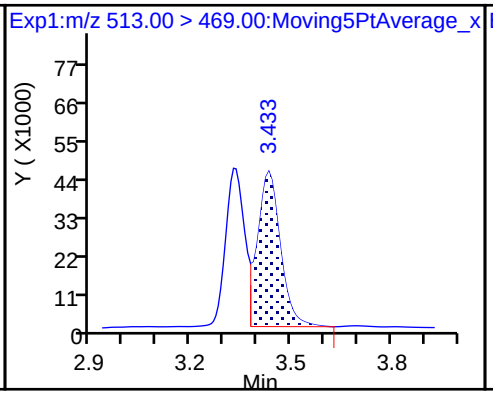
25 Sodium 1H,1H,2H,2H-perfluorodecane



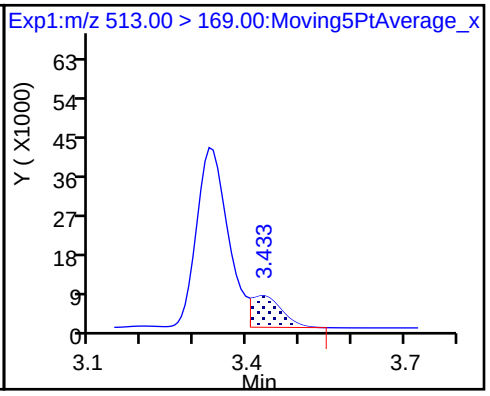
D 26 M2-8:2FTS



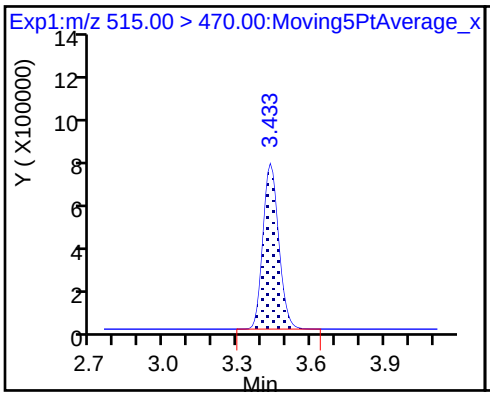
24 Perfluorodecanoic acid



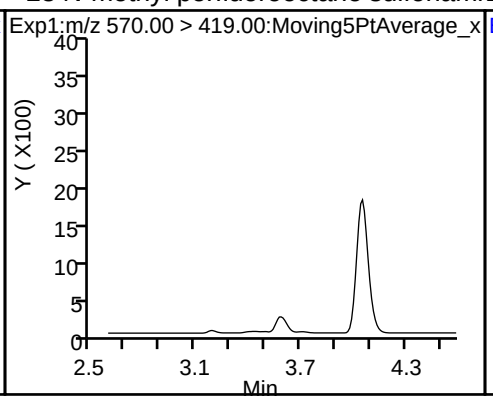
24 Perfluorodecanoic acid



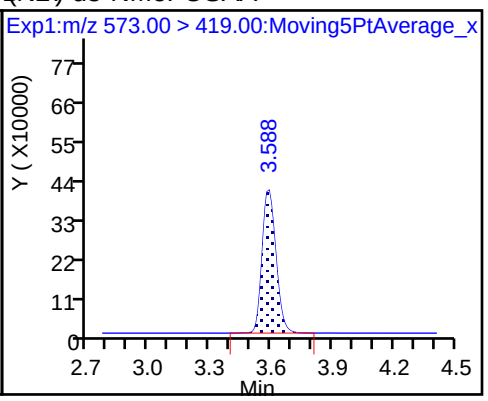
D 23 13C2 PFDA



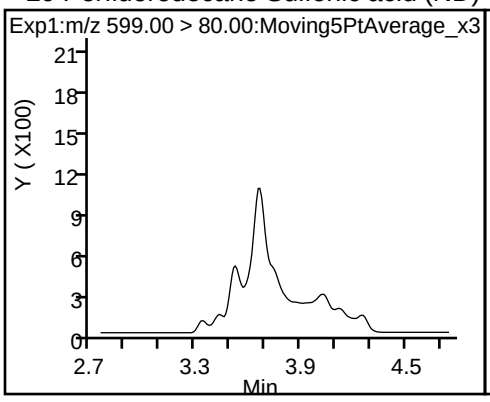
28 N-methyl perfluorooctane sulfonamid (ND)



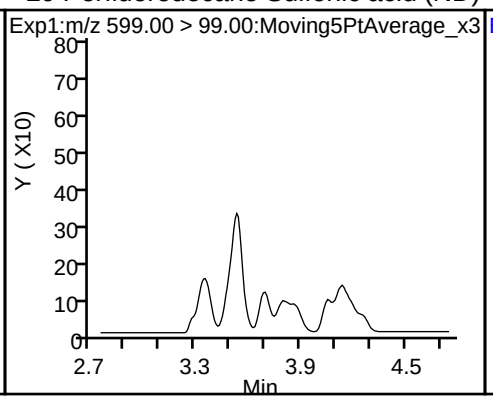
D 27 d3-NMeFOSAA



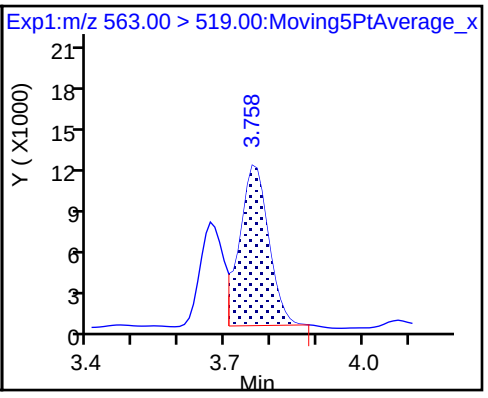
29 Perfluorodecane Sulfonic acid (ND)



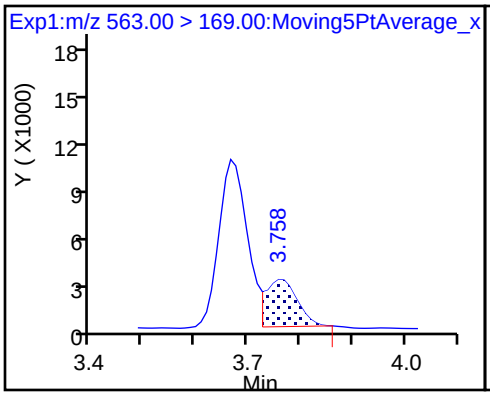
29 Perfluorodecane Sulfonic acid (ND)



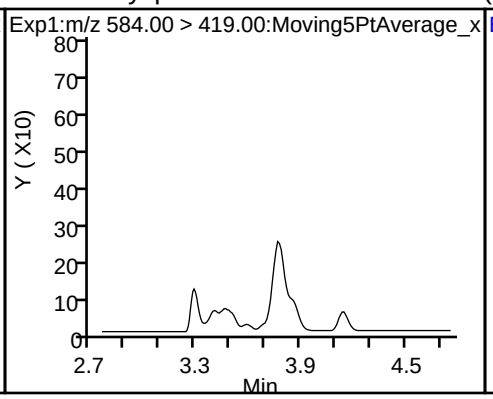
31 Perfluoroundecanoic acid



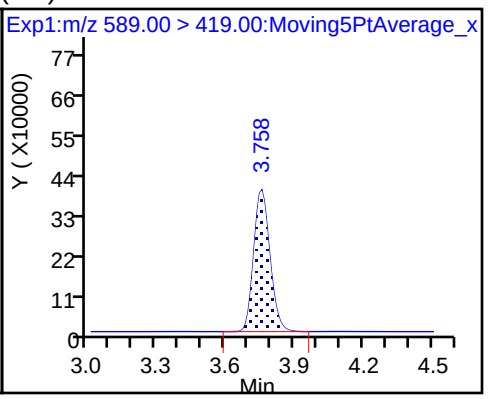
31 Perfluoroundecanoic acid



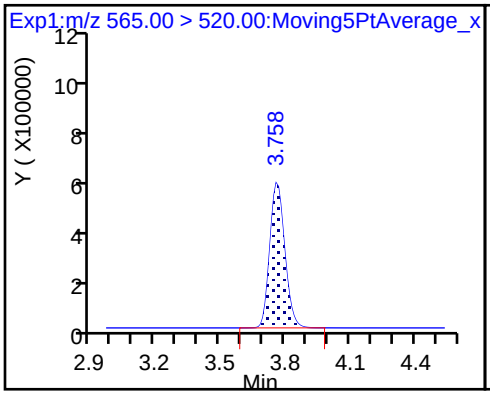
33 N-ethyl perfluorooctane sulfonamid (ND)



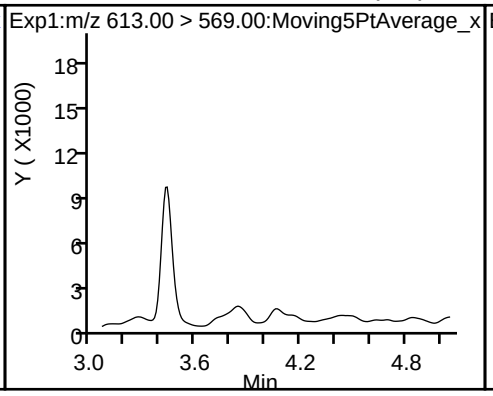
D 32 d5-NEtFOSAA



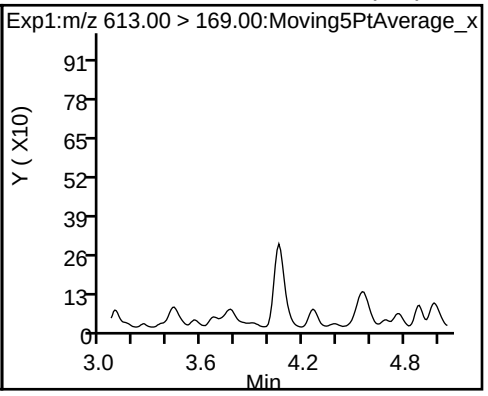
D 30 13C2 PFUnA



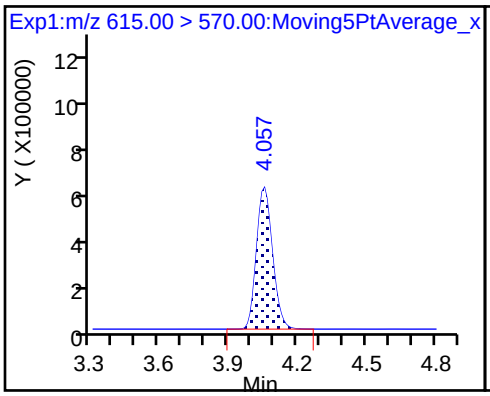
37 Perfluorododecanoic acid (ND)



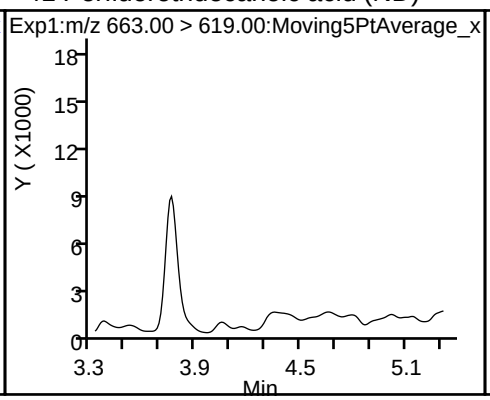
37 Perfluorododecanoic acid (ND)



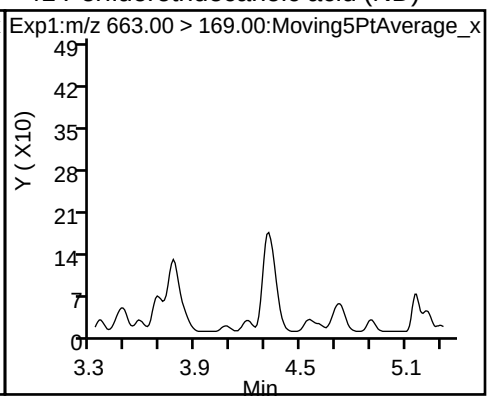
D 36 13C2 PFDoA



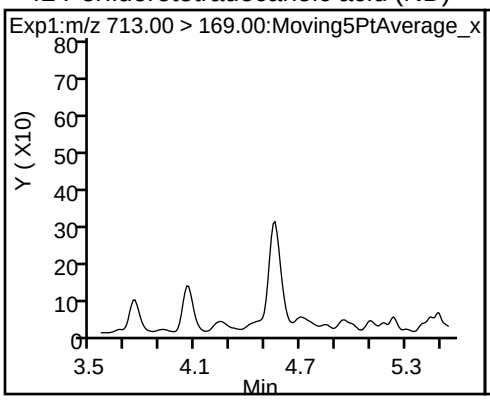
41 Perfluorotridecanoic acid (ND)



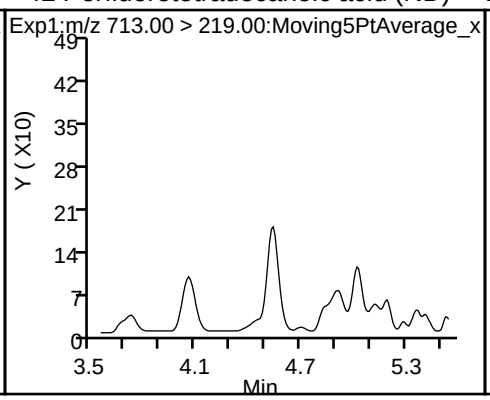
41 Perfluorotridecanoic acid (ND)



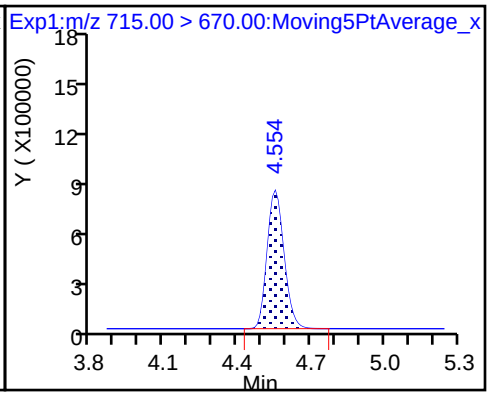
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

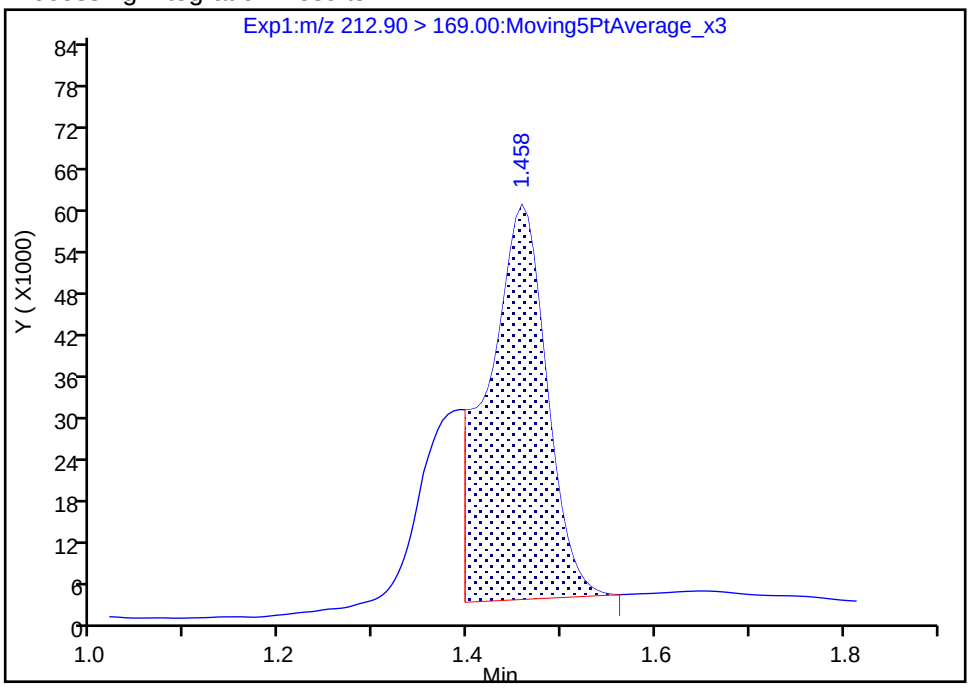
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_060.d				
Injection Date:	23-Mar-2018 19:34:41	Instrument ID:	A8_N		
Lims ID:	320-36761-A-2-B	Lab Sample ID:	320-36761-2		
Client ID:	SB004-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	42	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

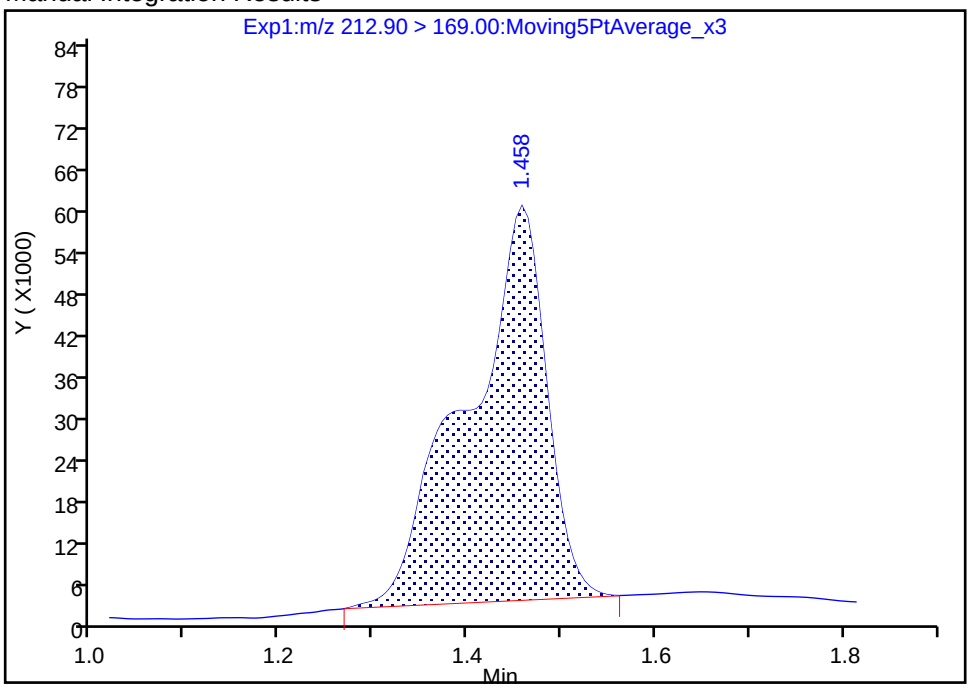
Processing Integration Results

RT: 1.46
Area: 243504
Amount: 0.111625
Amount Units: ng/ml



Manual Integration Results

RT: 1.46
Area: 332678
Amount: 0.152503
Amount Units: ng/ml



Reviewer: hannigana, 29-Mar-2018 09:24:06

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004-SPLP(8'-10') DL | Lab Sample ID: 320-36761-2 DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.26LLA_035.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:15

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 252.9(mL) | Date Analyzed: 03/26/2018 16:42

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214885 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	953	D	19.8	2.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1160	D	19.8	5.34
27619-97-2	6:2FTS	1130	B D	198	19.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	97	*	25-150
STL00991	13C4 PFOS	99	*	25-150
STL02279	M2-6:2FTS	135	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_035.d
Lims ID: 320-36761-A-2-B
Client ID: SB004-SPLP(8'-10')
Sample Type: Client
Inject. Date: 26-Mar-2018 16:42:34 ALS Bottle#: 22 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-36761-a-2-b 10X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:46:11 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 27-Mar-2018 09:21:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.452	1.439	0.013	1.004	58449	0.0158			15.9	M
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.439	0.007	0.535	978922	0.2422		96.9	17244	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.699	0.018	0.635	665961	0.2484		99.4	26403	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.708	0.009	1.000	96639	0.0322			48.5	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.734	0.010	0.645	13796	0.2255		97.0	88.0	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.996	1.996	0.0	1.000	71786	0.0248			80.9	
313.00 > 119.00	2.007	1.996	0.011	1.005	7080		10.14(5.03-15.10)		75.5	
D 7 13C2 PFHxA										
315.00 > 270.00	1.996	1.996	0.0	0.739	709254	0.2392		95.7	26144	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.327	0.013	1.000	63938	0.0213			57.4	
363.00 > 169.00	2.340	2.327	0.013	1.000	21596		2.96(1.13-3.40)		72.5	
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.327	0.013	0.866	727029	0.2485		99.4	18140	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.340	0.013	1.000	278087	0.0669			1493	
399.00 > 99.00	2.353	2.340	0.013	1.000	83929		3.31(1.50-4.49)		222	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.340	0.013	0.871	882790	0.2447		103	38927	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.670	0.009	1.000	4088091	2.86			24099	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.670	0.009	0.991	194853	0.3213		135	5192	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.710	2.694	0.016	1.003	1089516	0.3294			509	
413.00 > 169.00	2.702	2.694	0.008	1.000	570629		1.91(0.84-2.52)		1960	
* 62 13C2-PFOA										s
415.00 > 370.00	2.702	2.694	0.008		798028	0.2500			21132	
D 14 13C4 PFOA										
417.00 > 372.00	2.702	2.694	0.008	1.000	731964	0.2446		97.8	21829	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.702	0.008	1.000	93361	0.0280			1316	
449.00 > 99.00	2.710	2.702	0.008	1.000	24294		3.84(1.94-5.82)		192	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.080	3.071	0.009	1.000	8490213	2.92			31562	M
499.00 > 99.00	3.080	3.071	0.009	1.000	2154550		3.94(2.31-6.93)		22757	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.071	0.009	1.000	6133287	2.41			5998	
463.00 > 169.00	3.080	3.071	0.009	1.000	1553785		3.95(1.90-5.69)		34501	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.071	0.009	1.140	637792	0.2417		96.7	25885	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.071	0.009	1.140	623034	0.2373		99.3	10443	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.395	0.011	1.000	2769	0.000878			38.0	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.395	0.011	1.260	799718	0.2259		90.3	11420	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.442	3.431	0.011	1.003	125540	0.1045			3081	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.431	0.002	1.270	225392	0.2752		115	4238	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.451	3.440	0.011	1.003	32343	0.0138			49.2	M
513.00 > 169.00	3.442	3.440	0.002	1.000	7287		4.44(2.36-7.09)		15.4	M
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.440	0.002	1.274	592801	0.2563		103	11163	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.610	3.597	0.013	1.336	321429	0.2640		106	11261	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.767	0.012	1.398	486829	0.2353		94.1	11286	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.769	3.767	0.002	1.395	341986	0.2466		98.6	2429	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.769	3.777	-0.008	0.997	7246	0.004316			29.7	R
563.00 > 169.00	3.779	3.777	0.002	1.000	3658		1.98(2.12-6.36)		36.9	
D 36 13C2 PFDoA										
615.00 > 570.00	4.078	4.064	0.014	1.509	522171	0.2224		89.0	4337	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.574	4.572	0.002	1.693	673610	0.2349		94.0	5623	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

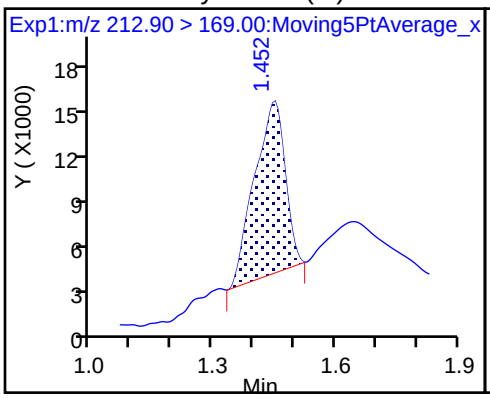
Report Date: 29-Mar-2018 09:46:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

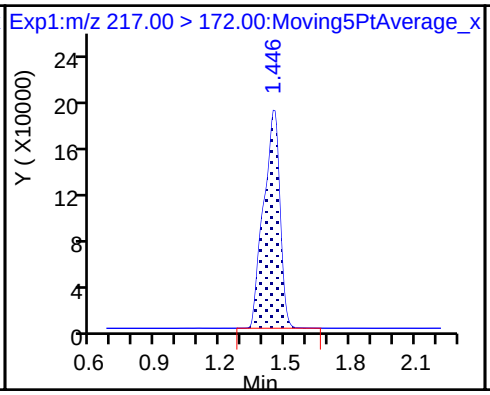
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_035.d

Injection Date:	26-Mar-2018 16:42:34	Instrument ID:	A8_N		
Lims ID:	320-36761-A-2-B	Lab Sample ID:	320-36761-2		
Client ID:	SB004-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

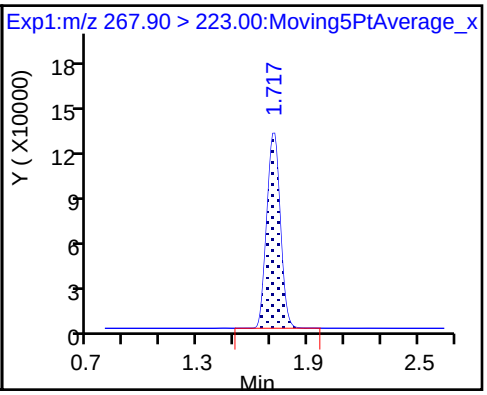
2 Perfluorobutyric acid (M)



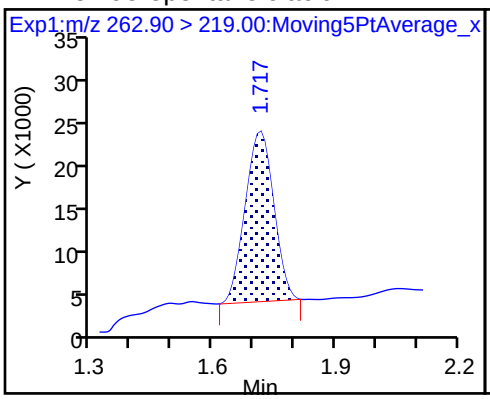
D 1 13C4 PFBA



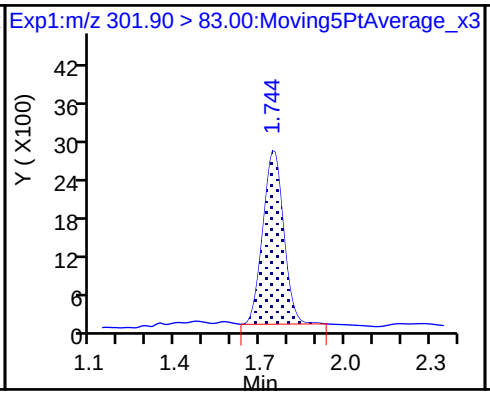
D 3 13C5-PFPeA



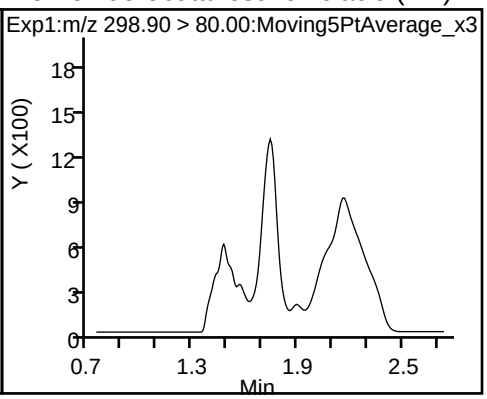
4 Perfluoropentanoic acid



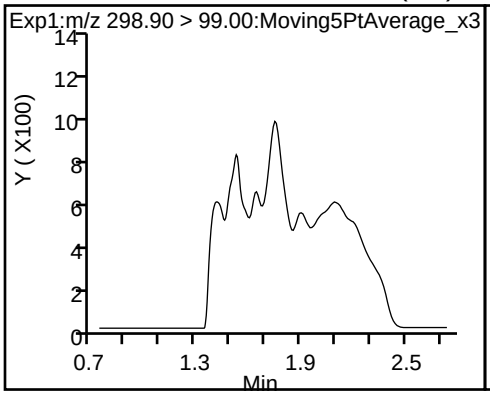
D 47 13C3-PFBS



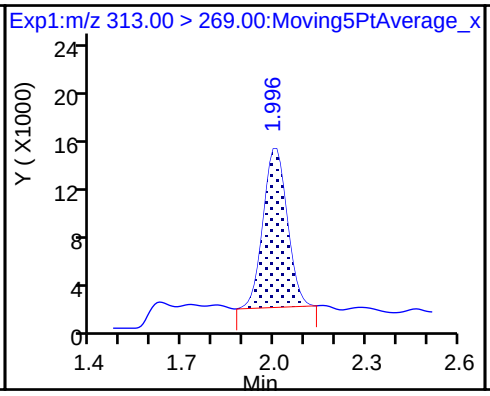
5 Perfluorobutanesulfonic acid (ND)



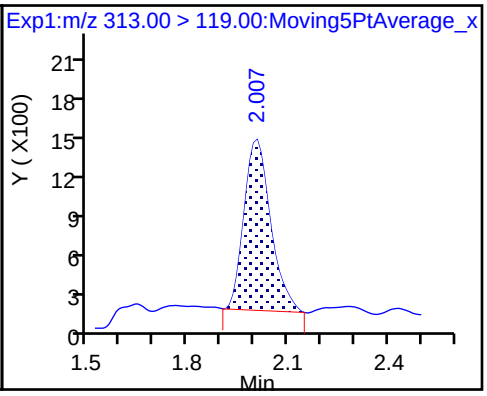
5 Perfluorobutanesulfonic acid (ND)



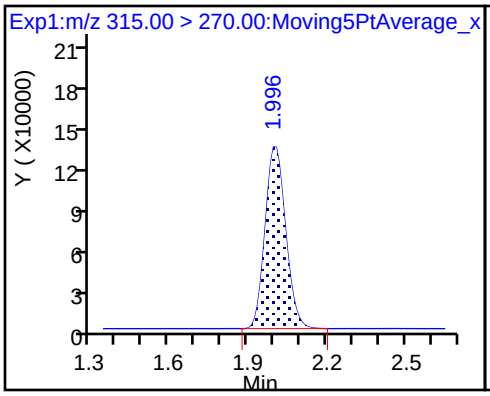
6 Perfluorohexanoic acid



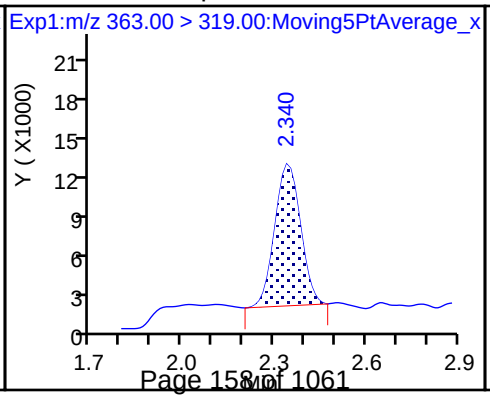
6 Perfluorohexanoic acid



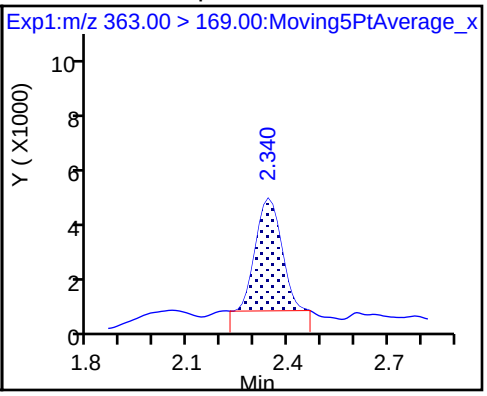
D 7 13C2 PFHxA



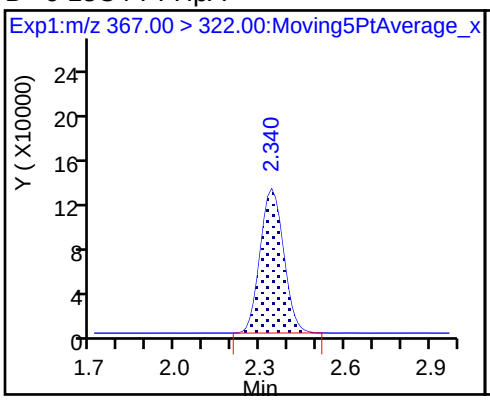
10 Perfluoroheptanoic acid



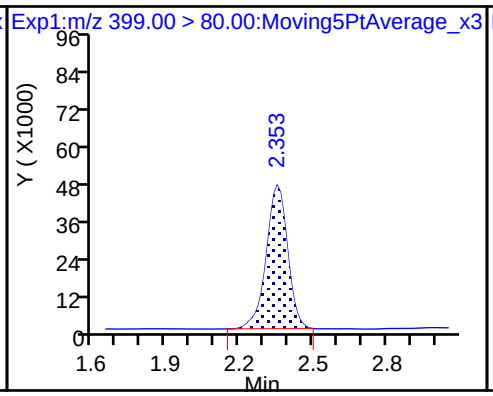
10 Perfluoroheptanoic acid



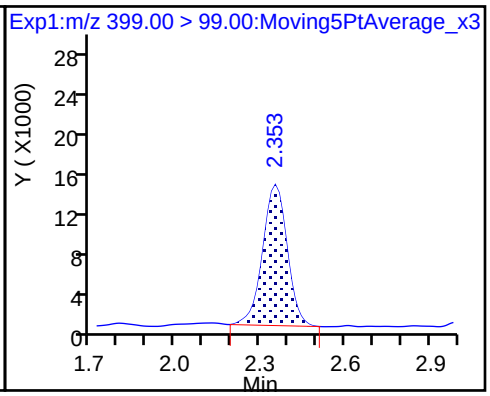
D 9 13C4-PFHpA



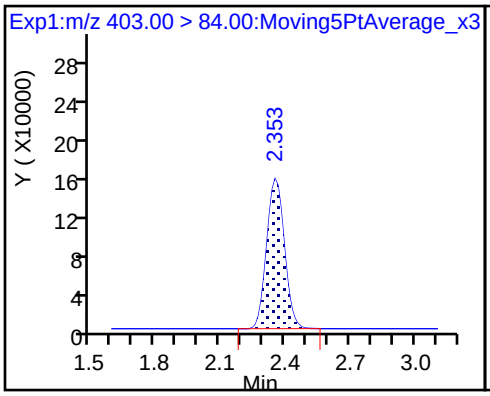
8 Perfluorohexanesulfonic acid



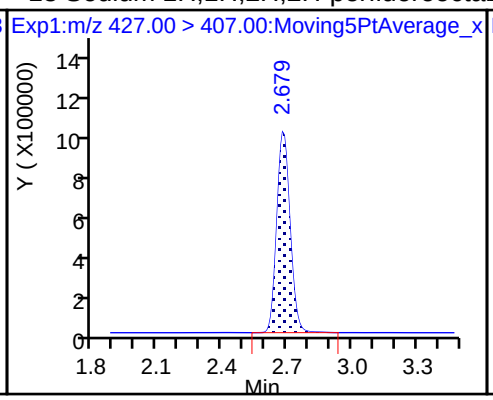
8 Perfluorohexanesulfonic acid



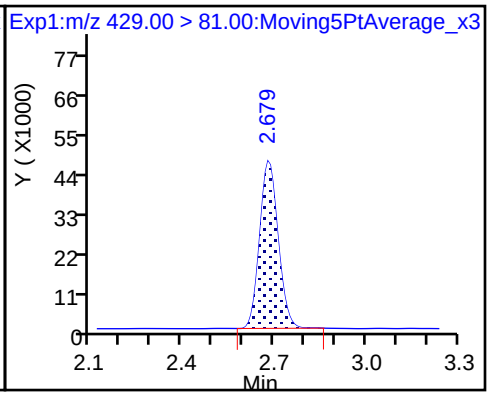
D 11 18O2 PFHxS



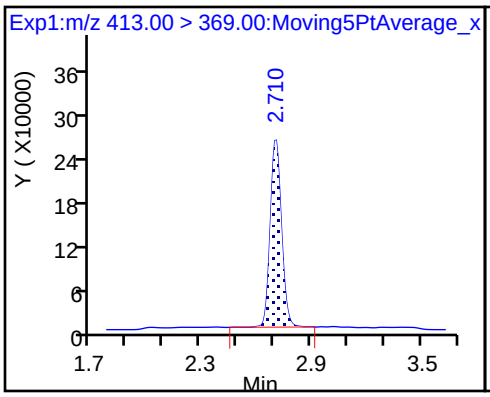
13 Sodium 1H,1H,2H,2H-perfluorooctane



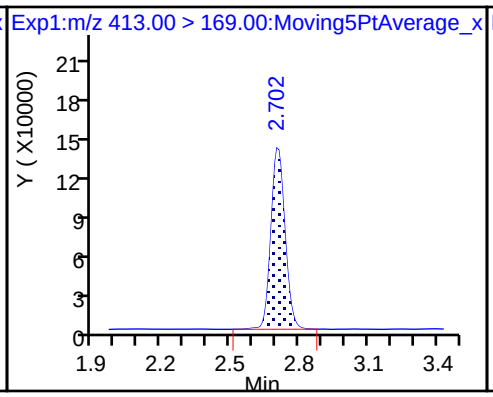
D 12 M2-6:2FTS



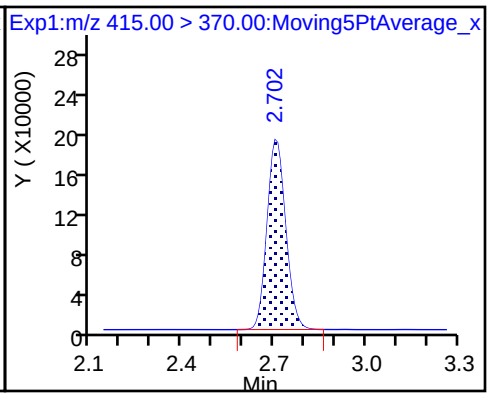
15 Perfluorooctanoic acid



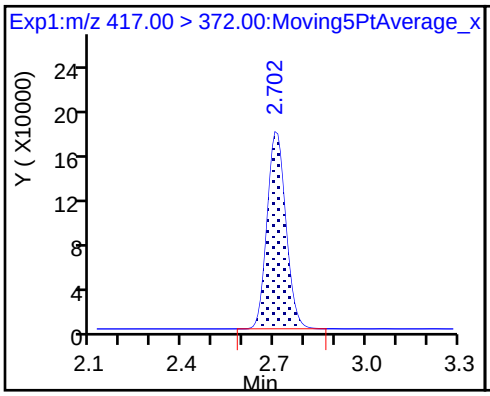
15 Perfluorooctanoic acid



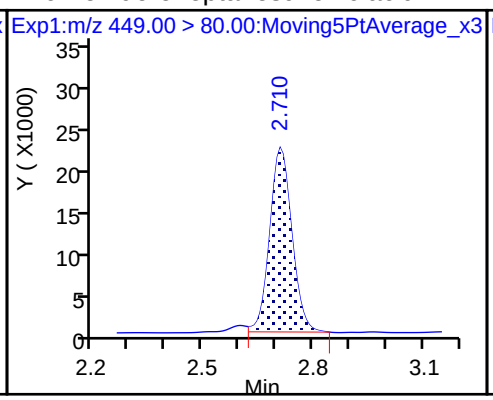
* 62 13C2-PFOA



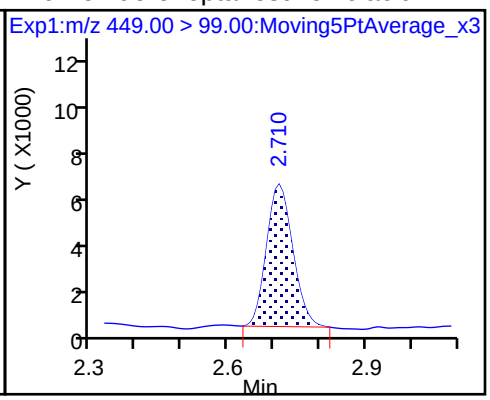
D 14 13C4 PFOA



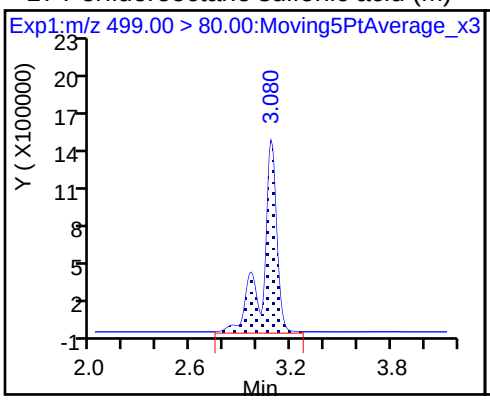
16 Perfluoroheptanesulfonic acid



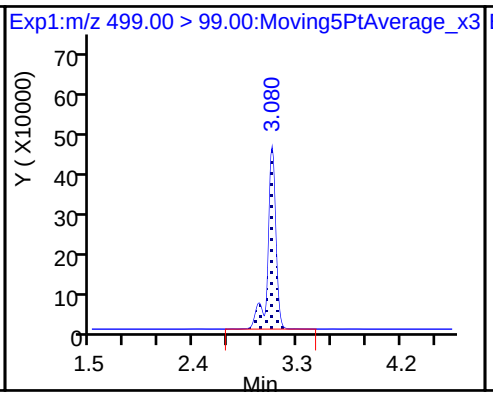
16 Perfluoroheptanesulfonic acid



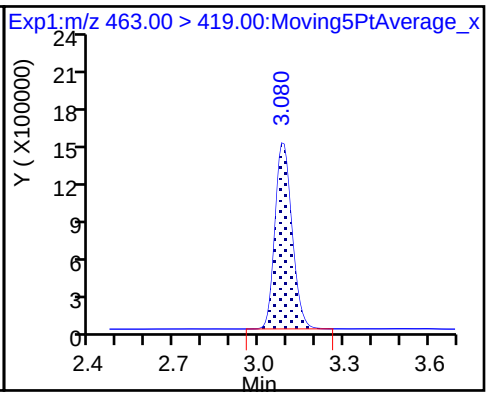
17 Perfluorooctane sulfonic acid (M)



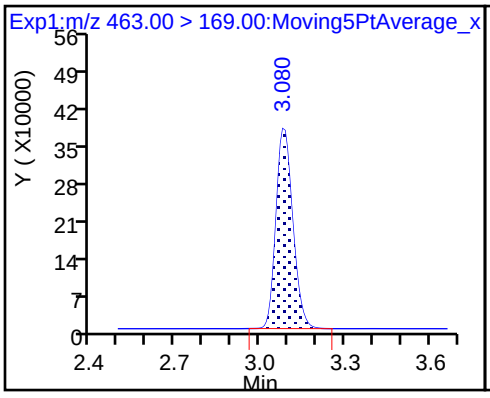
17 Perfluorooctane sulfonic acid



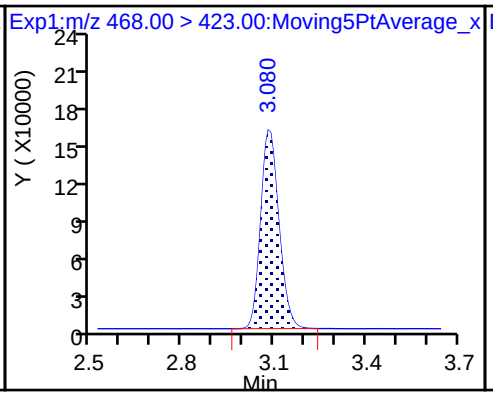
20 Perfluorononanoic acid



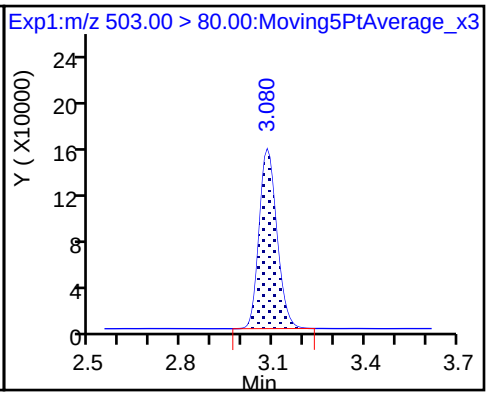
20 Perfluorononanoic acid



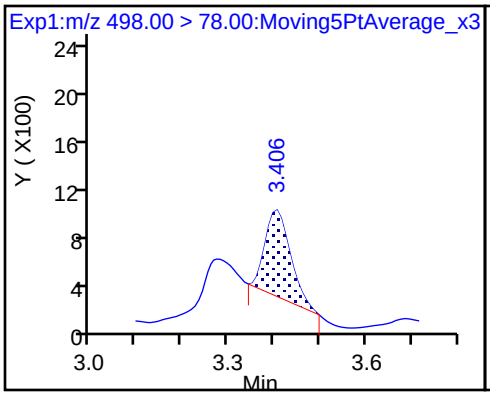
D 19 13C5 PFNA



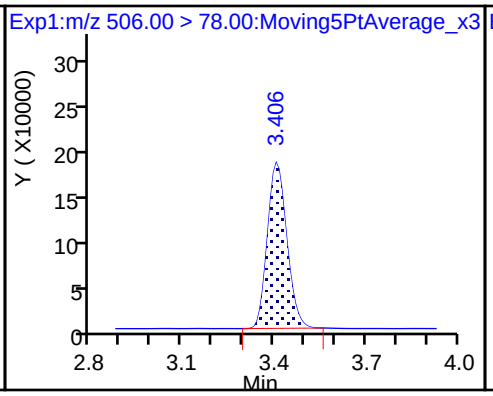
D 18 13C4 PFOS



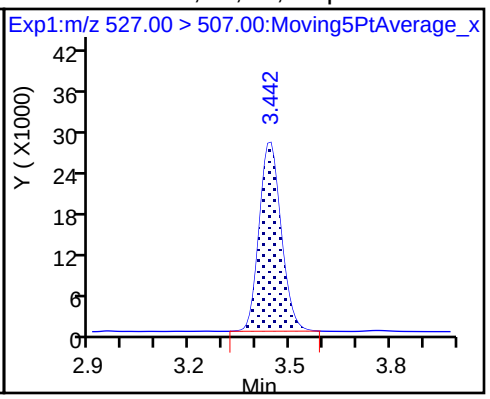
22 Perfluorooctane Sulfonamide



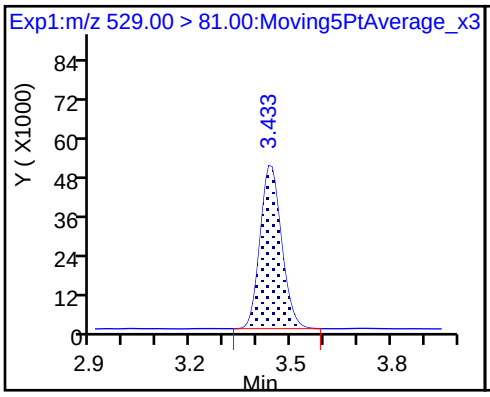
D 21 13C8 FOSA



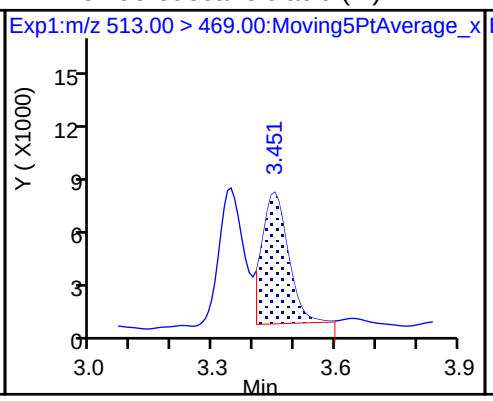
25 Sodium 1H,1H,2H,2H-perfluorodecane



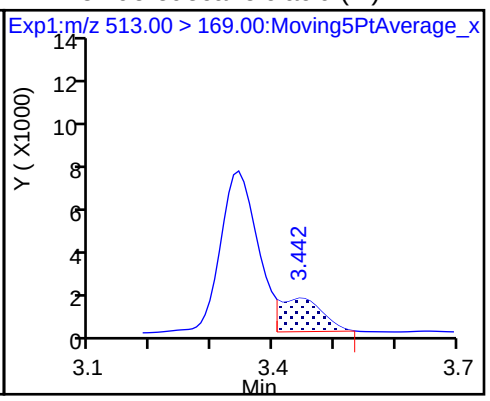
D 26 M2-8:2FTS



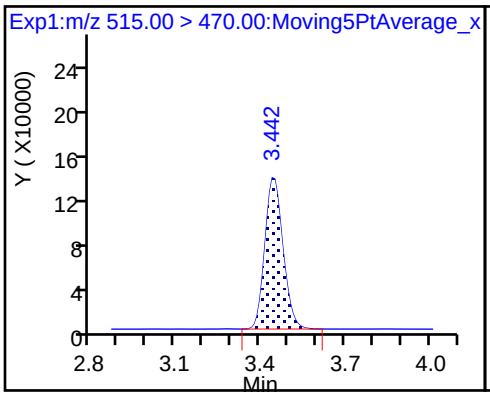
24 Perfluorodecanoic acid (M)



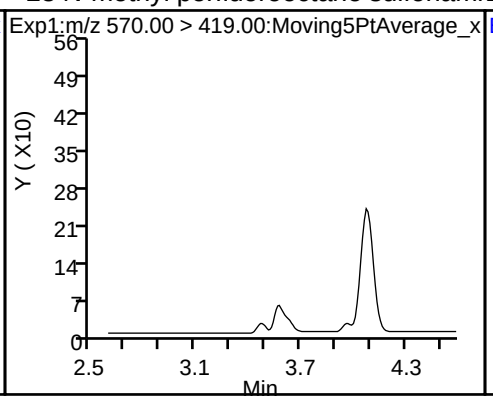
24 Perfluorodecanoic acid (M)



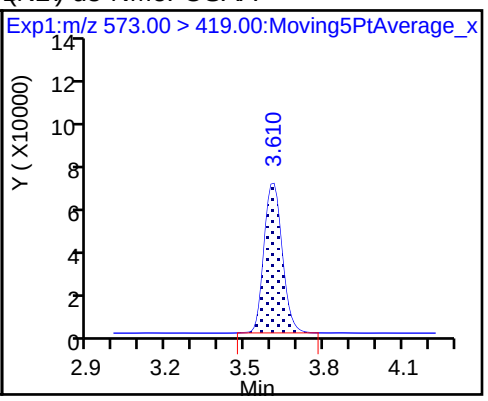
D 23 13C2 PFDA



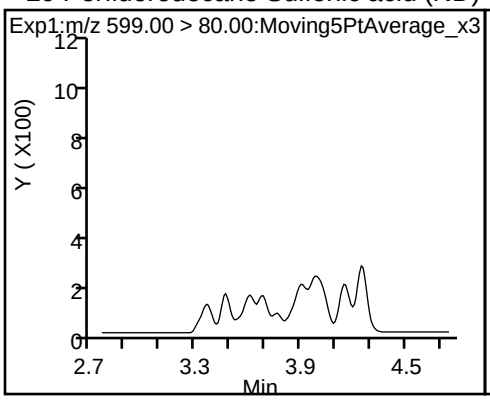
28 N-methyl perfluorooctane sulfonamid (ND)



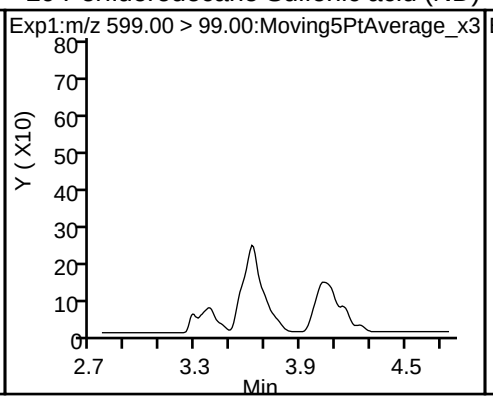
D 27 d3-NMeFOSAA



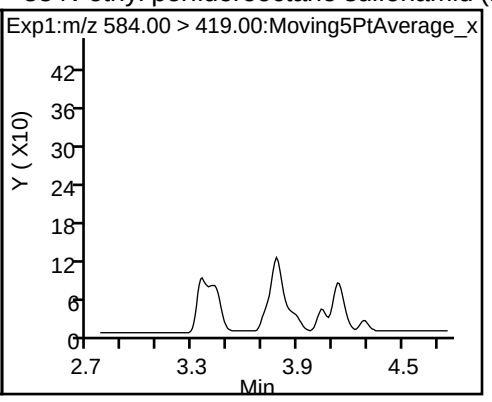
29 Perfluorodecane Sulfonic acid (ND)



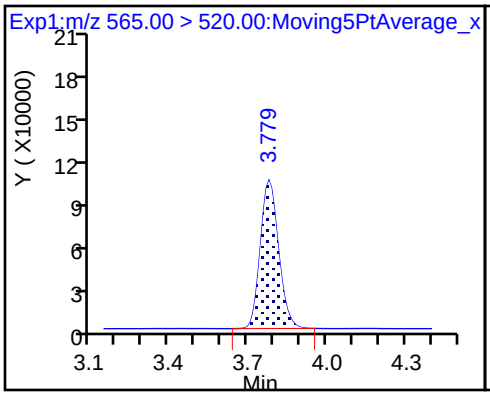
29 Perfluorodecane Sulfonic acid (ND)



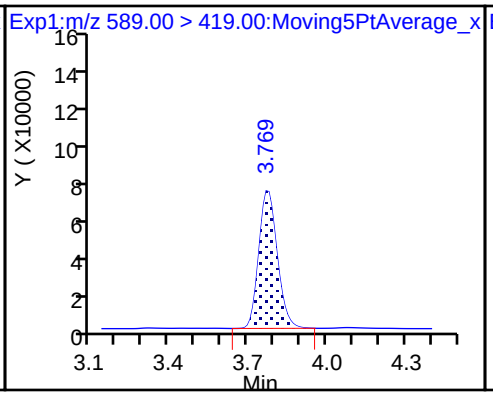
33 N-ethyl perfluorooctane sulfonamid (ND)



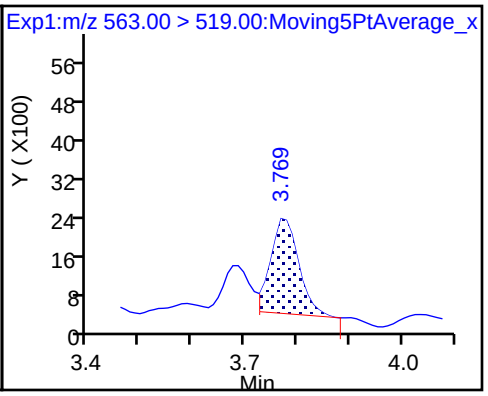
D 30 13C2 PFUnA



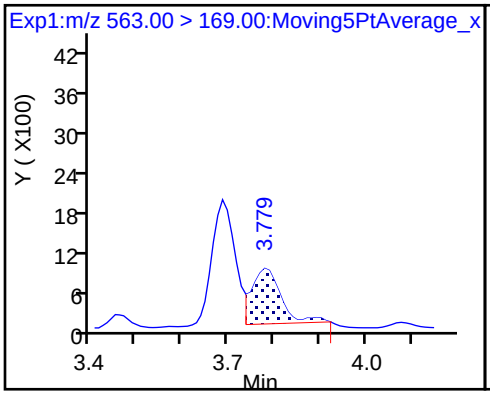
D 32 d5-NEtFOSAA



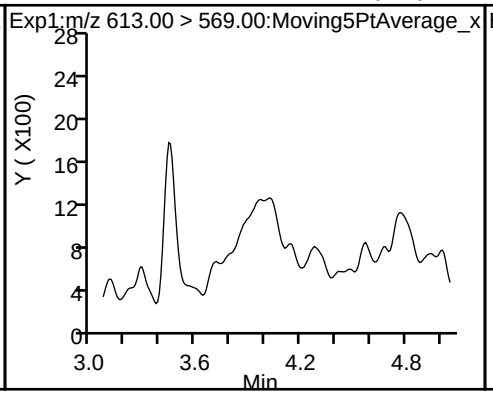
31 Perfluoroundecanoic acid



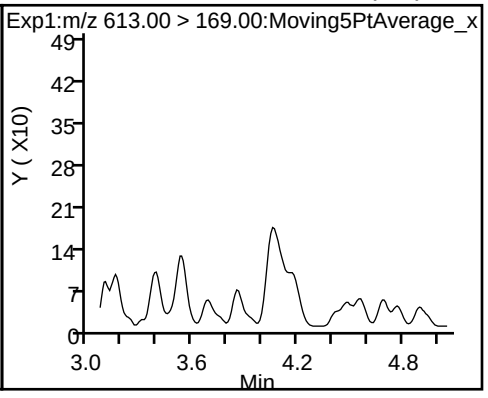
31 Perfluoroundecanoic acid



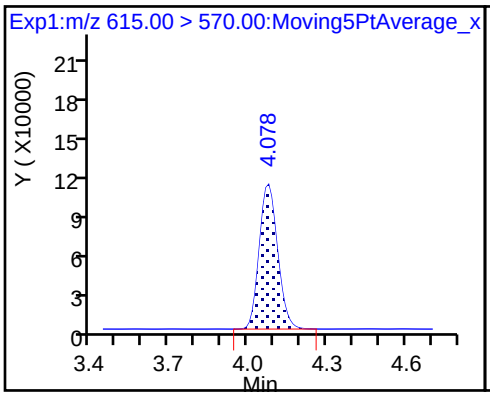
37 Perfluorododecanoic acid (ND)



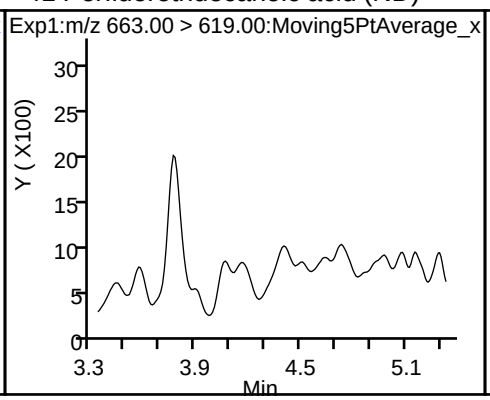
37 Perfluorododecanoic acid (ND)



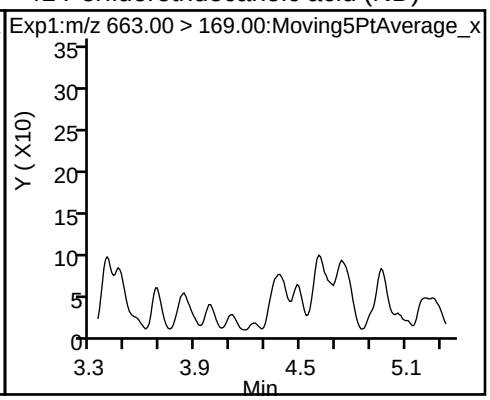
D 36 13C2 PFDoA



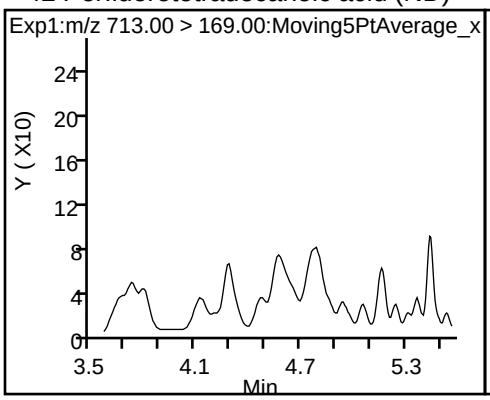
41 Perfluorotridecanoic acid (ND)



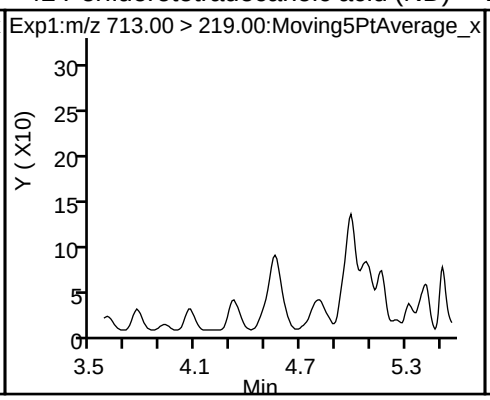
41 Perfluorotridecanoic acid (ND)



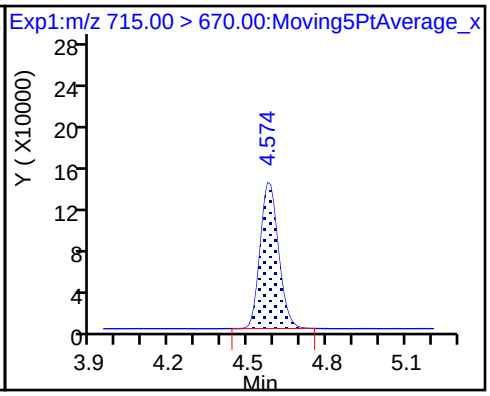
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

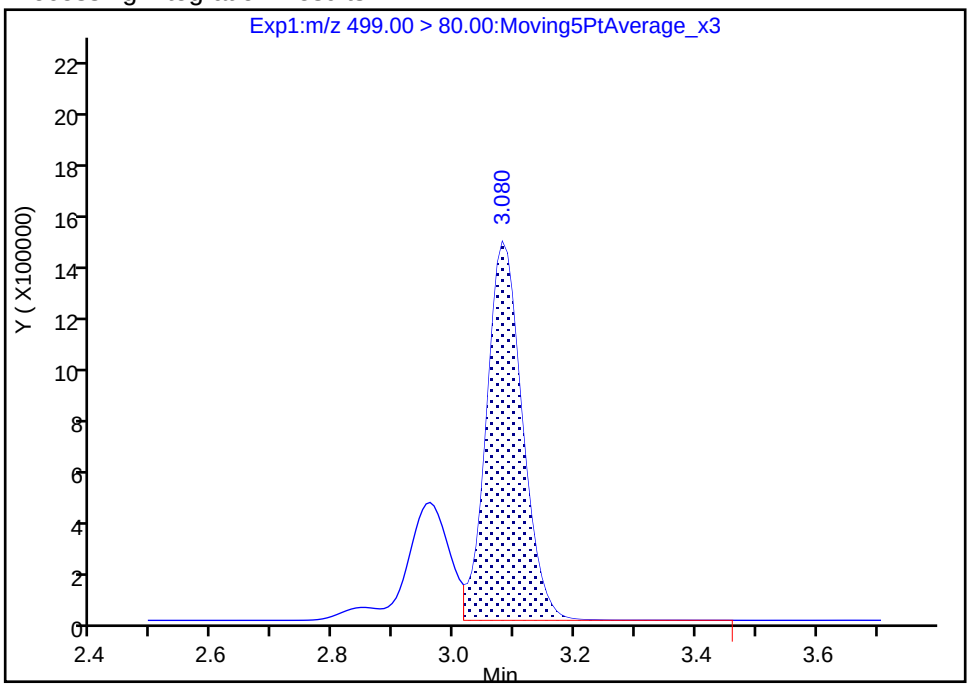
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_035.d				
Injection Date:	26-Mar-2018 16:42:34	Instrument ID:	A8_N		
Lims ID:	320-36761-A-2-B	Lab Sample ID:	320-36761-2		
Client ID:	SB004-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

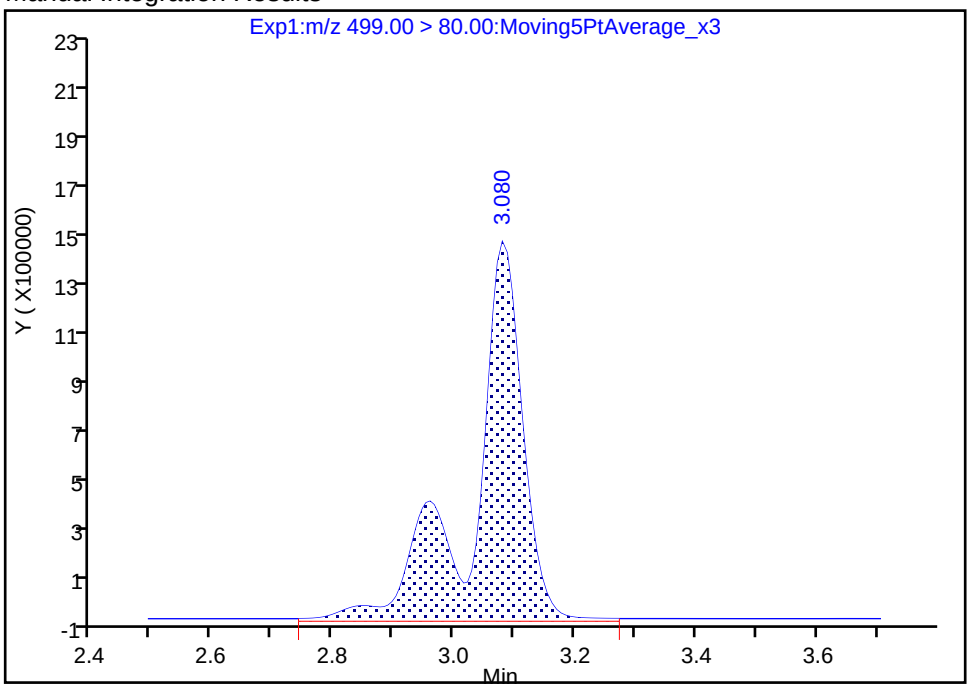
Processing Integration Results

RT: 3.08
Area: 5916395
Amount: 2.037412
Amount Units: ng/ml



Manual Integration Results

RT: 3.08
Area: 8490213
Amount: 2.923750
Amount Units: ng/ml



Reviewer: hannigana, 29-Mar-2018 09:38:08

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB004-SPLP(8'-10') RE | Lab Sample ID: 320-36761-2 RE

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.28LLDXD_011.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:15

Extraction Method: 3535 | Date Extracted: 03/27/2018 20:41

Sample wt/vol: 254.6(mL) | Date Analyzed: 03/28/2018 19:23

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	*6:2FTS*	*1040*	*H*	*196*	*19.6*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	126	*	25-150

Report Date: 29-Mar-2018 07:50:03 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_011.d
Lims ID: 320-36761-A-2-C
Client ID: SB004-SPLP(8'-10')
Sample Type: Client
Inject. Date: 28-Mar-2018 19:23:05 ALS Bottle#: 5 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-36761-a-2-c 10X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:49:47 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:41:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.530	604504	0.2458		98.3	8817	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	33456	0.0147			12.6	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.000	55943	0.0309			20.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.718	-0.001	0.630	401731	0.2462		98.5	15999	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.643	8981	0.2411		104	62.0	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.019	2.008	0.011	1.000	41526	0.0236			54.3	
313.00 > 119.00	2.019	2.008	0.011	1.000	5032		8.25(5.03-15.10)		48.1	
D 7 13C2 PFHxA										
315.00 > 270.00	2.019	2.019	0.0	0.740	431154	0.2389		95.6	15651	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.353	2.353	0.0	1.000	33887	0.0190			21.3	
363.00 > 169.00	2.353	2.353	0.0	1.000	13651		2.48(1.13-3.40)		25.0	
D 9 13C4-PFHpA										
367.00 > 322.00	2.353	2.354	-0.001	0.863	431703	0.2425		97.0	18655	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.367	2.367	0.0	1.000	166473	0.0635			1096	
399.00 > 99.00	2.379	2.367	0.012	1.005	54613		3.05(1.50-4.49)		323	
D 11 18O2 PFHxS										
403.00 > 84.00	2.367	2.368	-0.001	0.868	557108	0.2537		107	24517	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.703	2.695	0.008	1.000	2144735	2.64			17186	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.705	-0.002	0.991	110496	0.2994		126	3257	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.726	0.008	1.000	57713	0.0292			1689	
449.00 > 99.00	2.734	2.726	0.008	1.000	14178		4.07(1.94-5.82)		297	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.726	2.726	0.0	1.000	637711	0.3295			238	
413.00 > 169.00	2.726	2.726	0.0	1.000	332905		1.92(0.84-2.52)		1336	
* 62 13C2-PFOA										
415.00 > 370.00	2.726	2.726	0.0		485715	0.2500			16367	
D 14 13C4 PFOA										
417.00 > 372.00	2.726	2.728	-0.002	1.000	428320	0.2352		94.1	19959	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.103	3.095	0.008	1.000	4703381	2.74			10768	
499.00 > 99.00	3.103	3.095	0.008	1.000	1230493		3.82(2.31-6.93)		12150	
20 Perfluorononanoic acid										
463.00 > 419.00	3.103	3.103	0.0	1.000	3612103	2.57			2926	
463.00 > 169.00	3.103	3.103	0.0	1.000	862708		4.19(1.90-5.69)		20217	
D 19 13C5 PFNA										
468.00 > 423.00	3.103	3.112	-0.009	1.138	352570	0.2195		87.8	11720	
D 18 13C4 PFOS										
503.00 > 80.00	3.103	3.112	-0.009	1.138	368243	0.2304		96.4	9594	
D 21 13C8 FOSA										
506.00 > 78.00	3.415	3.418	-0.003	1.253	524127	0.2432		97.3	7713	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.460	3.454	0.006	1.000	58616	0.0954			968	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.470	3.463	0.007	1.000	16502	0.0137			35.4	M
513.00 > 169.00	3.460	3.463	-0.003	0.997	2936		5.62(2.36-7.09)		16.3	M
D 26 M2-8:2FTS										
529.00 > 81.00	3.460	3.464	-0.004	1.269	115275	0.2313		96.6	4183	
D 23 13C2 PFDA										
515.00 > 470.00	3.470	3.473	-0.003	1.273	304674	0.2165		86.6	6053	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.629	3.633	-0.004	1.331	148016	0.1998		79.9	3755	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.799	3.802	-0.003	1.000	6273	0.006551			23.6	M
563.00 > 169.00	3.799	3.802	-0.003	1.000	2531		2.48(2.12-6.36)		36.5	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.789	3.804	-0.015	1.390	182001	0.2156		86.2	492	
D 30 13C2 PFUnA										
565.00 > 520.00	3.799	3.804	-0.005	1.393	277679	0.2205		88.2	9552	
D 36 13C2 PFDoA										
615.00 > 570.00	4.098	4.105	-0.007	1.503	309004	0.2162		86.5	3277	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.606	4.613	-0.007	1.689	370921	0.2125		85.0	2790	

QC Flag Legend

Review Flags

M - Manually Integrated

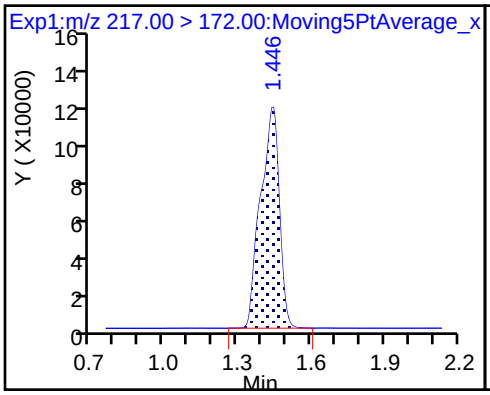
Report Date: 29-Mar-2018 07:50:03 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

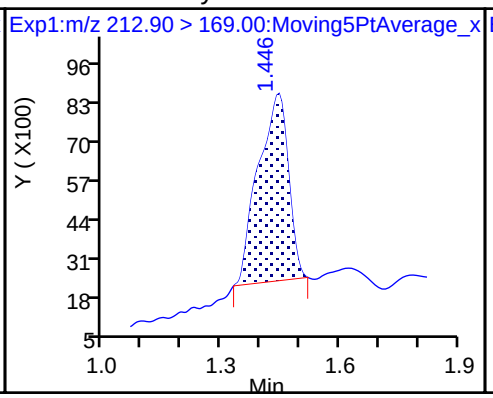
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_011.d

Injection Date:	28-Mar-2018 19:23:05	Instrument ID:	A8_N		
Lims ID:	320-36761-A-2-C	Lab Sample ID:	320-36761-2		
Client ID:	SB004-SPLP(8'-10')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	5	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

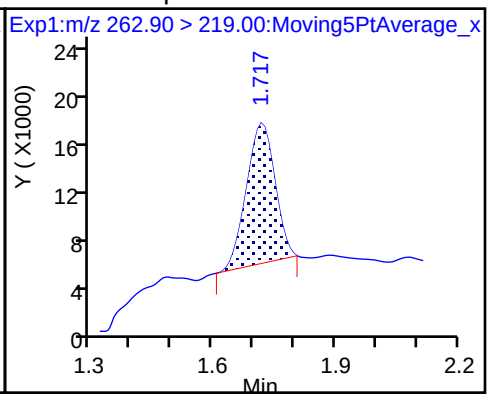
D 1 13C4 PFBA



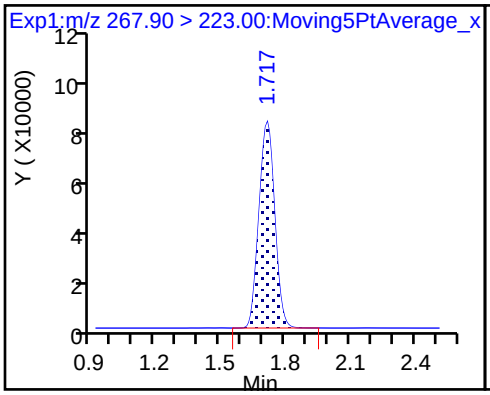
2 Perfluorobutyric acid



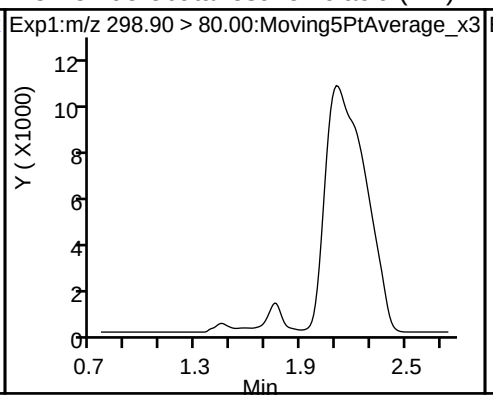
4 Perfluoropentanoic acid



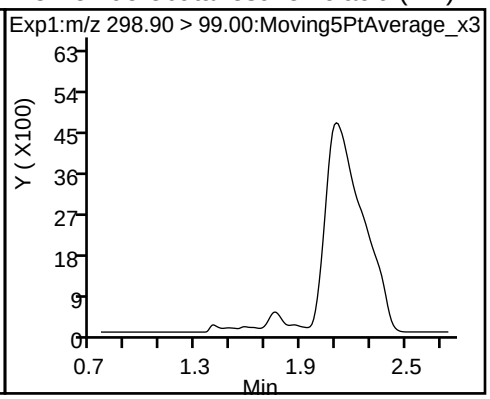
D 3 13C5-PFPeA



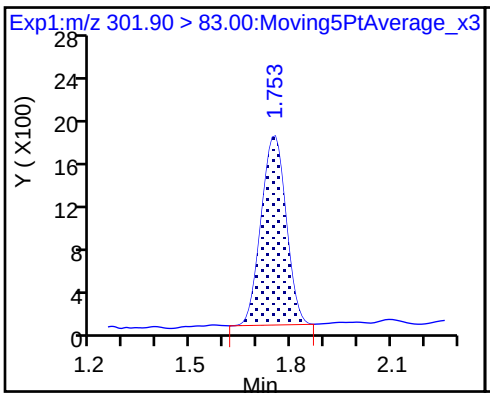
5 Perfluorobutanesulfonic acid (ND)



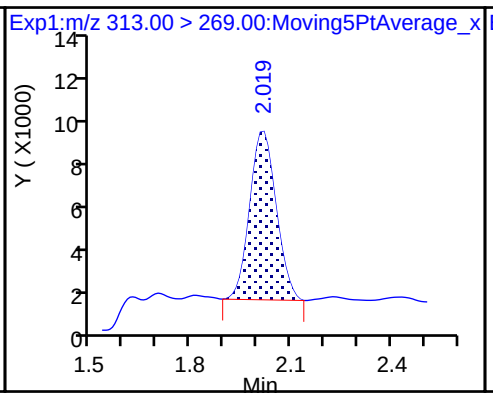
5 Perfluorobutanesulfonic acid (ND)



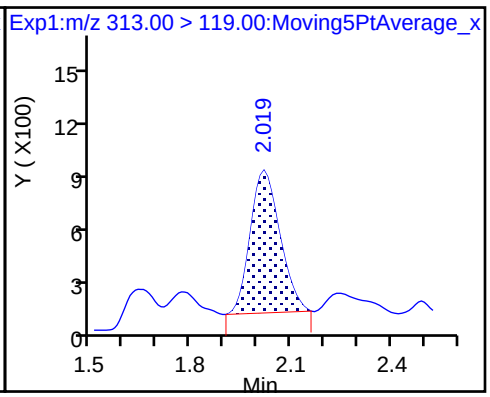
D 47 13C3-PFBS



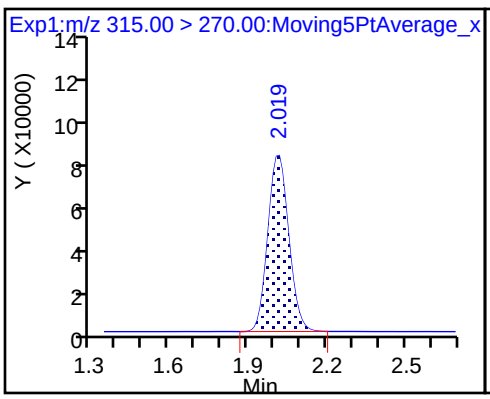
6 Perfluorohexanoic acid



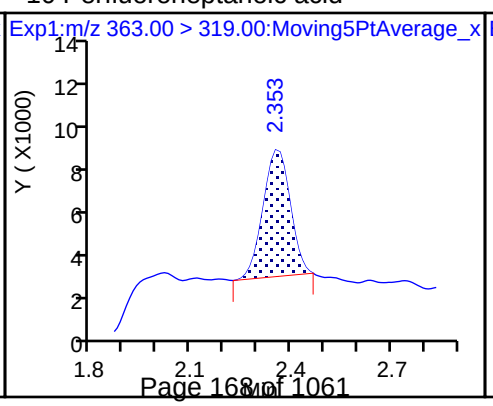
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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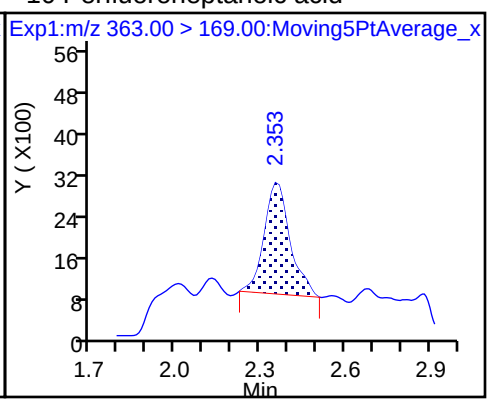
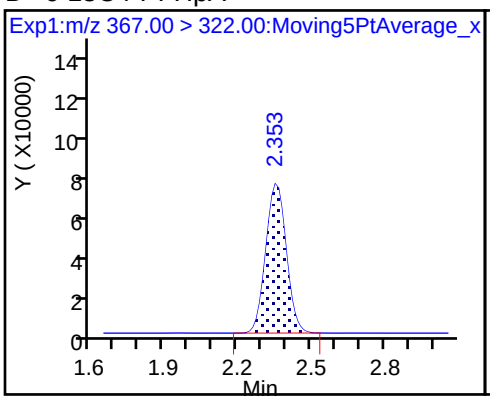
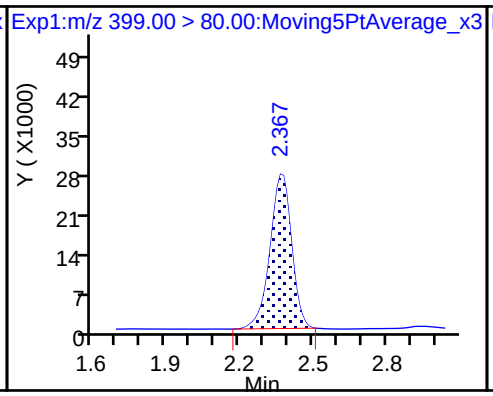


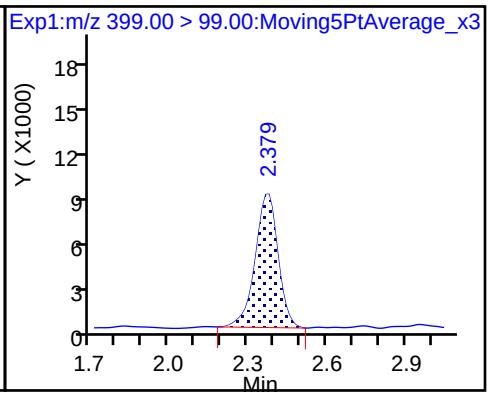
D 9 13C4-PFHpA



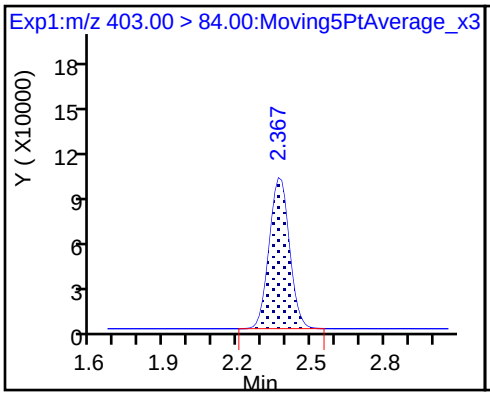
8 Perfluorohexanesulfonic acid



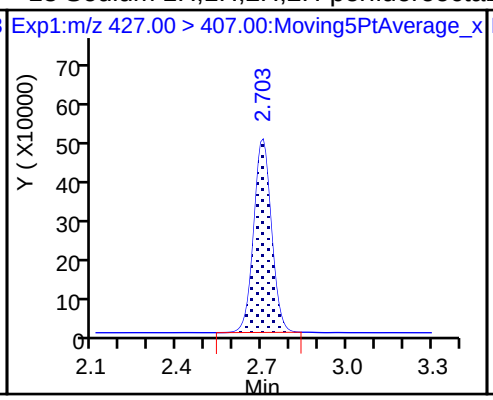
8 Perfluorohexanesulfonic acid



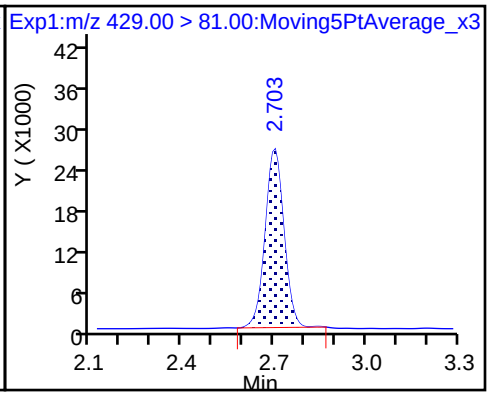
D 11 18O2 PFHxS



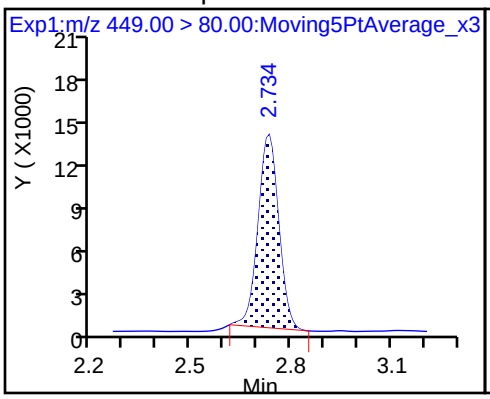
13 Sodium 1H,1H,2H,2H-perfluorooctane



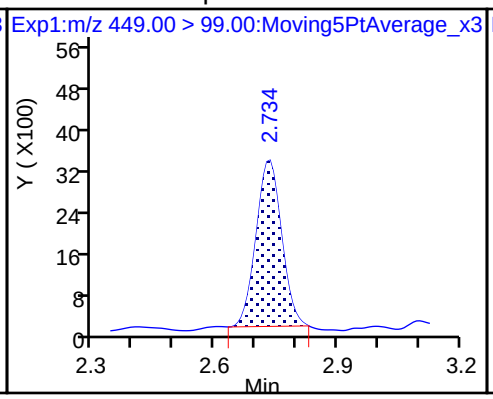
D 12 M2-6:2FTS



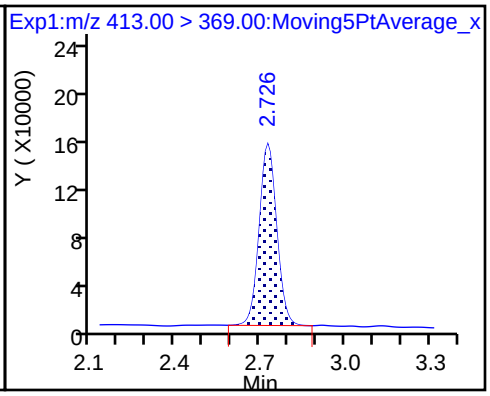
16 Perfluoroheptanesulfonic acid



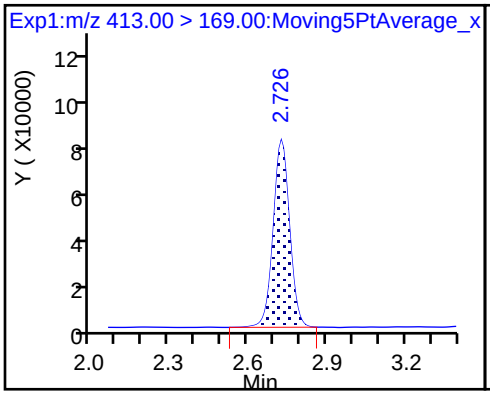
16 Perfluoroheptanesulfonic acid



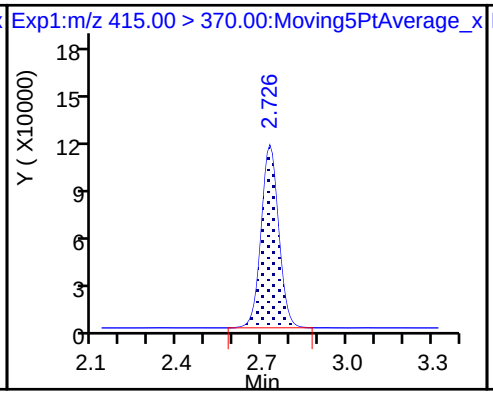
15 Perfluorooctanoic acid



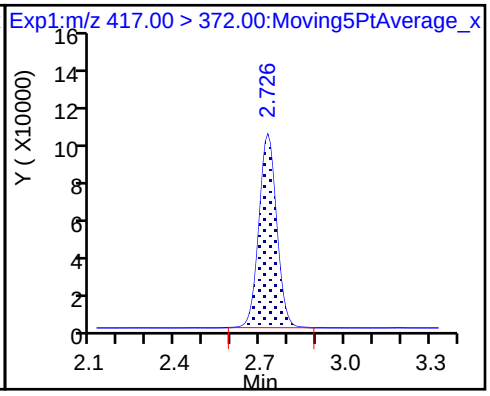
15 Perfluorooctanoic acid



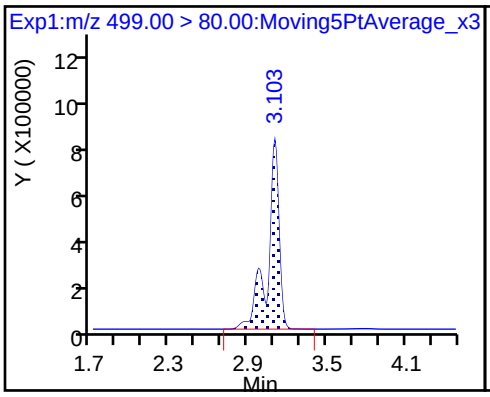
* 62 13C2-PFOA



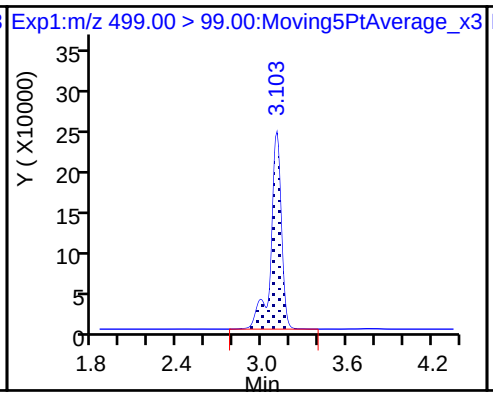
D 14 13C4 PFOA



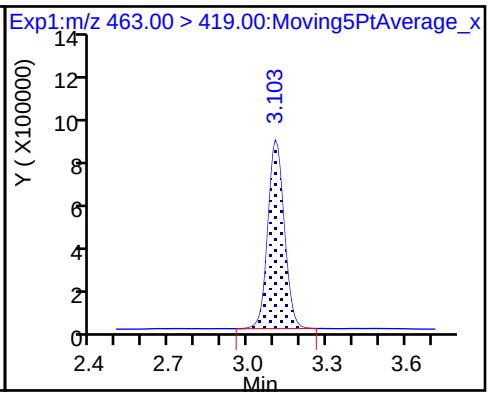
17 Perfluorooctane sulfonic acid



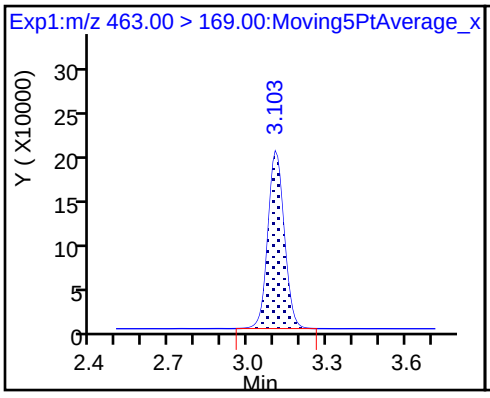
17 Perfluorooctane sulfonic acid



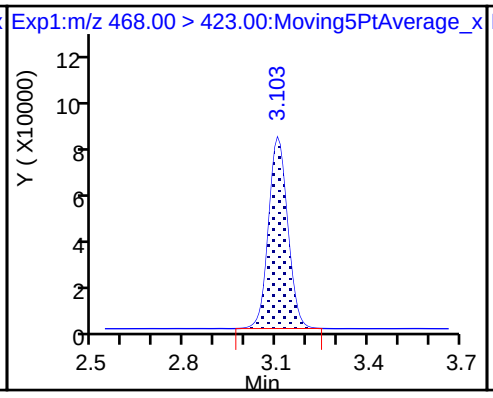
20 Perfluorononanoic acid



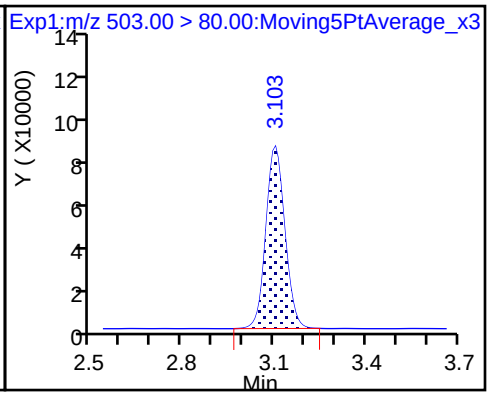
20 Perfluorononanoic acid



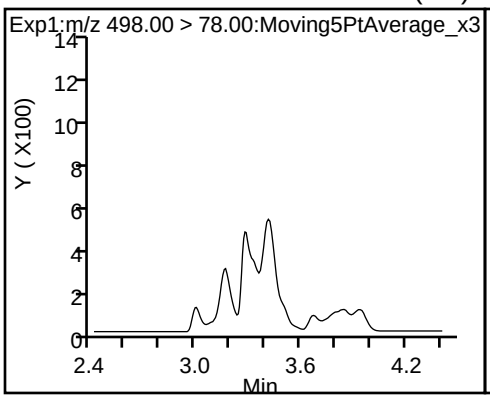
D 19 13C5 PFNA



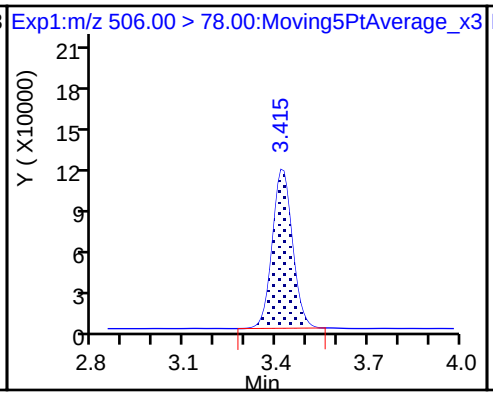
D 18 13C4 PFOS



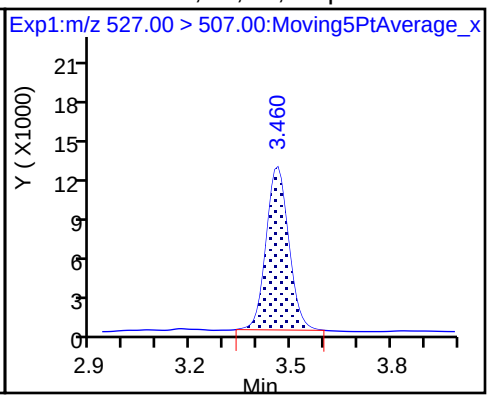
22 Perfluorooctane Sulfonamide (ND)



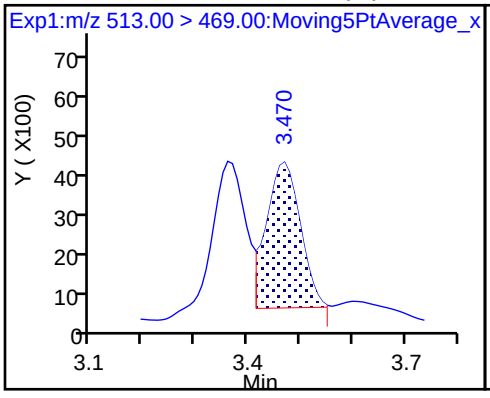
D 21 13C8 FOSA



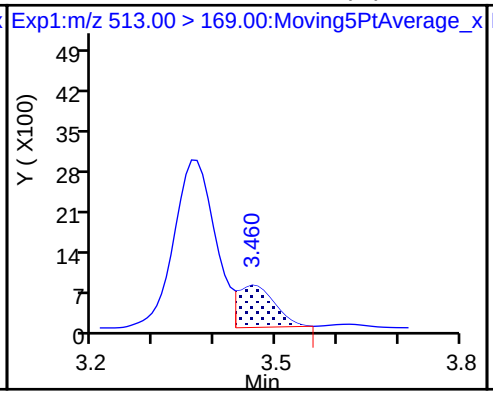
25 Sodium 1H,1H,2H,2H-perfluorodecane



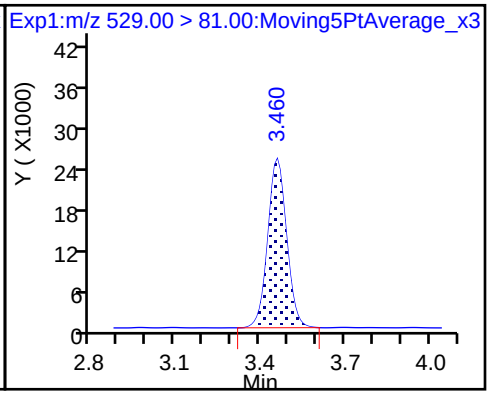
24 Perfluorodecanoic acid (M)



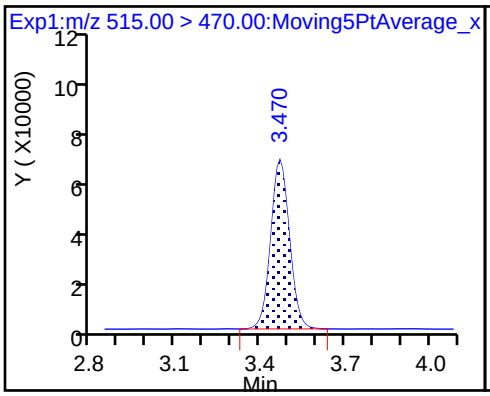
24 Perfluorodecanoic acid (M)



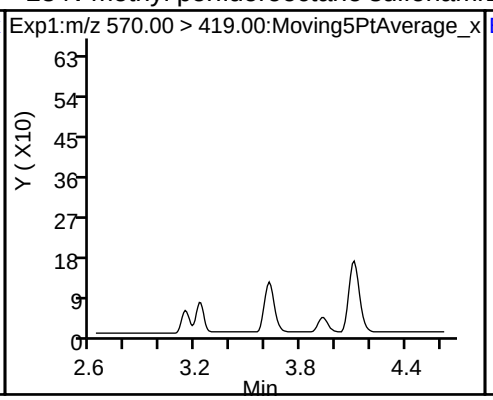
D 26 M2-8:2FTS



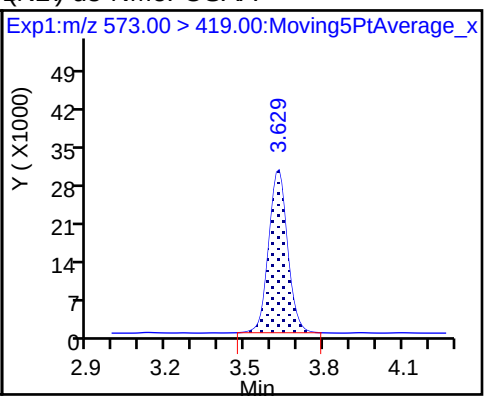
D 23 13C2 PFDA



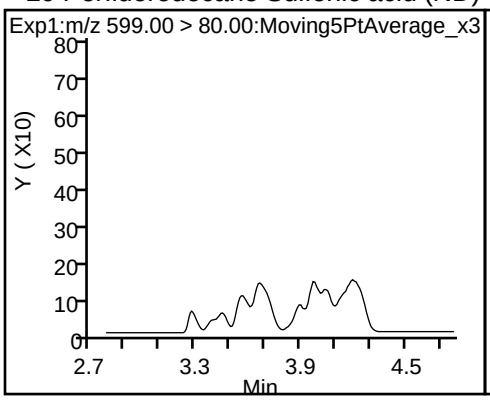
28 N-methyl perfluorooctane sulfonamid (ND)



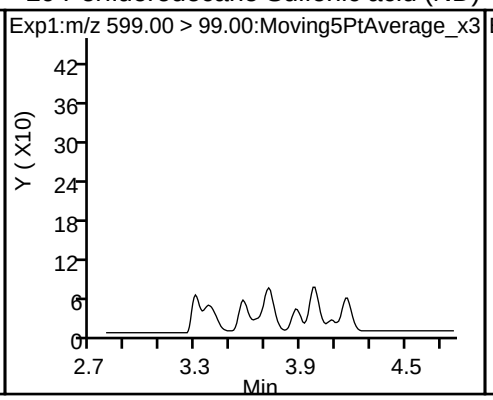
D 27 d3-NMeFOSAA



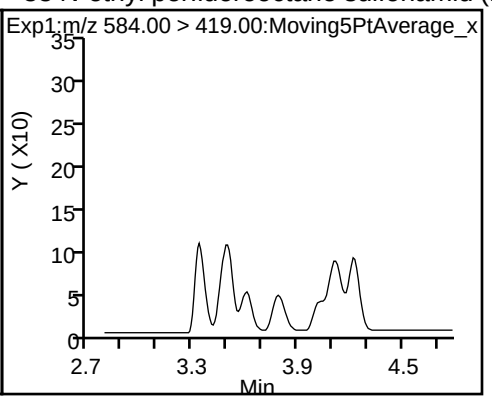
29 Perfluorodecane Sulfonic acid (ND)



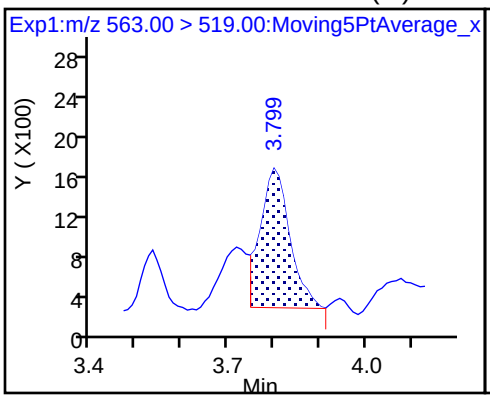
29 Perfluorodecane Sulfonic acid (ND)



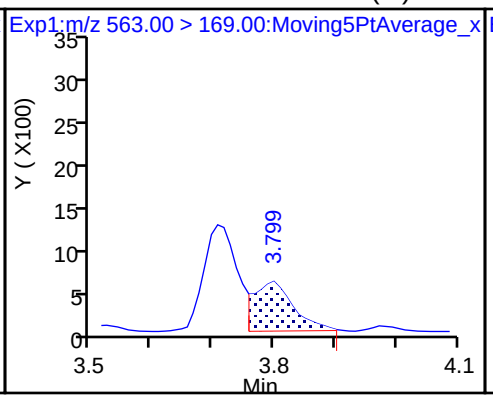
33 N-ethyl perfluorooctane sulfonamid (ND)



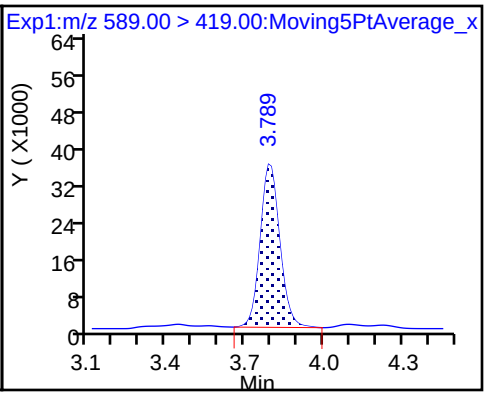
31 Perfluoroundecanoic acid (M)



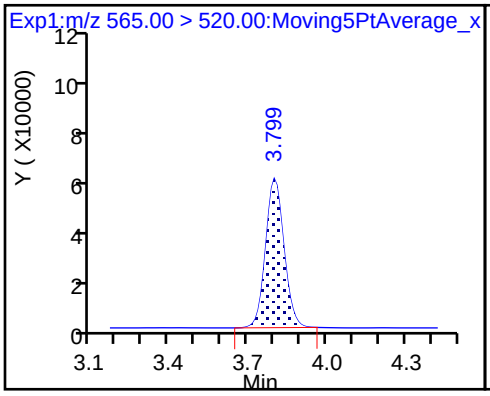
31 Perfluoroundecanoic acid (M)



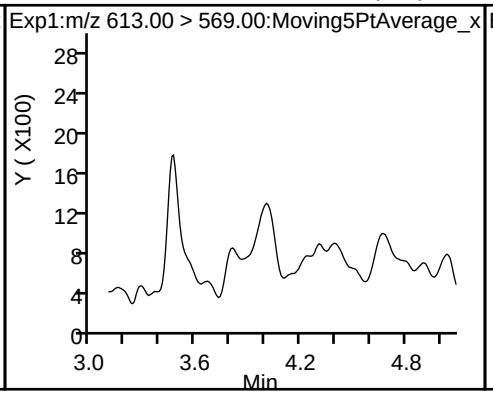
D 32 d5-NEtFOSAA



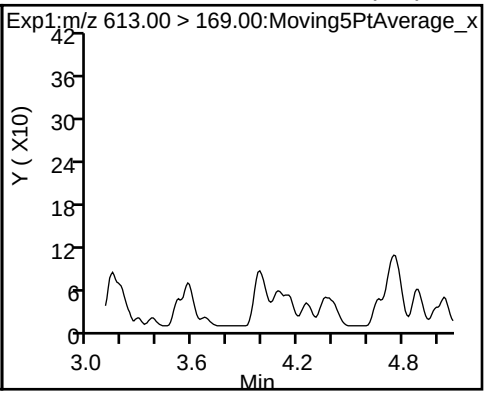
D 30 13C2 PFUnA



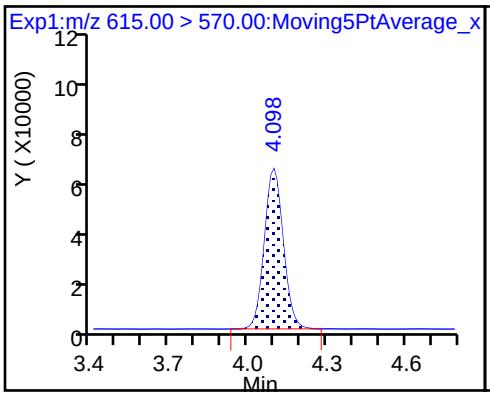
37 Perfluorododecanoic acid (ND)



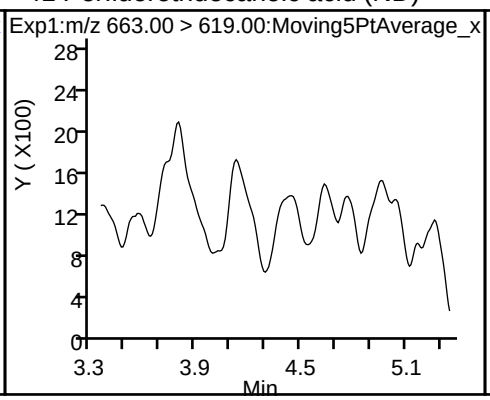
37 Perfluorododecanoic acid (ND)



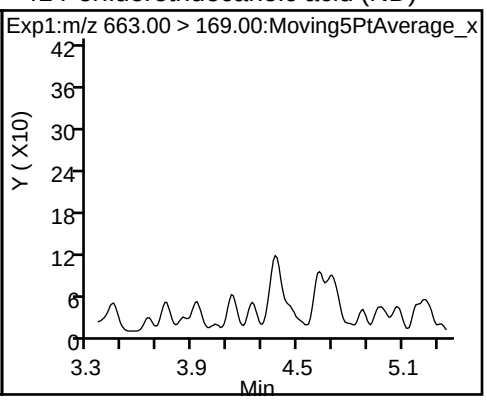
D 36 13C2 PFDoA



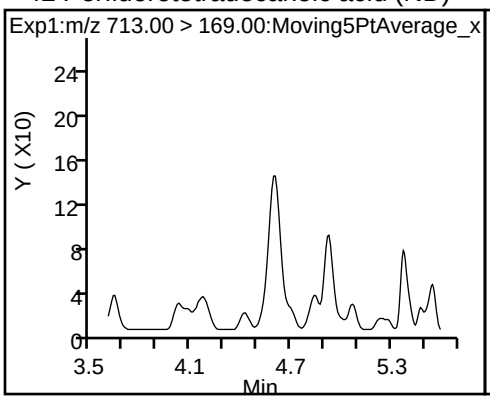
41 Perfluorotridecanoic acid (ND)



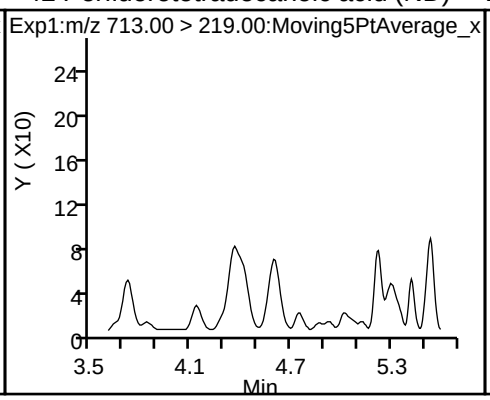
41 Perfluorotridecanoic acid (ND)



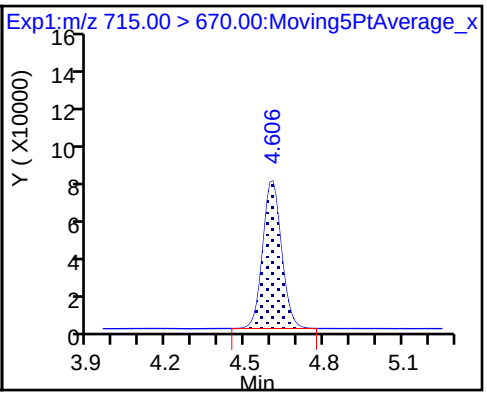
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003-SPLP(0-2') | Lab Sample ID: 320-36761-3

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_061.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:00

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 253.6(mL) | Date Analyzed: 03/23/2018 19:42

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	9.21		1.97	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	13.6		1.97	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	18.8		1.97	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	12.2	B	1.97	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	31.8		1.97	0.84
375-95-1	Perfluorononanoic acid (PFNA)	174		1.97	0.27
307-55-1	Perfluorododecanoic acid (PFDoA)	14.2		1.97	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	36.7		1.97	1.28
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.72	B	1.97	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.71	J	1.97	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	21.6	B	1.97	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	3.38		1.97	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	3.75		1.97	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	253		1.97	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.06	U	19.7	3.06
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	6.29	J	19.7	1.87

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003-SPLP(0-2') | Lab Sample ID: 320-36761-3

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_061.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:00

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 253.6(mL) | Date Analyzed: 03/23/2018 19:42

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	79		25-150
STL01893	13C5 PFPeA	81		25-150
STL00993	13C2 PFHxA	81		25-150
STL01892	13C4-PFHpA	80		25-150
STL00990	13C4 PFOA	72		25-150
STL00995	13C5 PFNA	56		25-150
STL00998	13C2 PFDoA	60		25-150
STL02116	13C2-PFTeDA	33		25-150
STL02337	13C3-PFBS	82		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	54		25-150
STL01056	13C8 FOSA	55		25-150
STL02118	d3-NMeFOSAA	77		25-150
STL02117	d5-NEtFOSAA	59		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_061.d
Lims ID: 320-36761-A-3-B
Client ID: SB003-SPLP(0-2')
Sample Type: Client
Inject. Date: 23-Mar-2018 19:42:28 ALS Bottle#: 43 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-3-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: barnettj Date: 28-Mar-2018 15:58:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.453	1.453	0.0	1.000	520854	0.2337			170	M
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.458	-0.005	0.539	5913781	1.97		78.8	81173	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.717	-0.008	0.634	4057737	2.04		81.5	63005	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.005	632717	0.3457			135	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.753	-0.008	0.647	86433	1.90		81.8	331	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	51839	0.0179			32.9	
298.90 > 99.00	1.753	1.753	0.0	1.005	21297		2.43(1.25-3.74)		66.3	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	2.008	-0.010	0.741	4443667	2.02		80.7	99965	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	2.008	-0.010	1.000	865195	0.4761			987	
313.00 > 119.00	1.998	2.008	-0.010	1.000	75137		11.51(5.03-15.10)		1041	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.341	-0.013	0.863	4362228	2.01		80.3	105522	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.006	557762	0.3090			836	
363.00 > 169.00	2.341	2.341	0.0	1.006	227721		2.45(1.13-3.40)		3217	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.353	0.001	0.873	5241515	1.96		82.7	81586	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	1353473	0.5487			3966	
399.00 > 99.00	2.341	2.354	-0.013	0.995	412184		3.28(1.50-4.49)		908	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.679	-0.006	0.991	996887	2.21		93.2	3925	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.673	2.681	-0.008	1.000	7739133	10.6			4878	E
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.703	-0.006	1.000	3992989	1.80		71.8	119596	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.704	-0.007	1.000	1455432	0.8066			558	
413.00 > 169.00	2.697	2.704	-0.007	1.000	782846		1.86(0.84-2.52)		2040	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.704	-0.007		5928869	2.50			101879	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.712	-0.015	1.000	115371	0.0858			547	
449.00 > 99.00	2.705	2.712	-0.007	1.003	29571		3.90(1.94-5.82)		251	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.065	3.072	-0.007	1.000	61126431	52.3			46953	E
499.00 > 99.00	3.065	3.072	-0.007	1.000	21718840		2.81(2.31-6.93)		134500	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.002	4804232	4.41			3319	
463.00 > 169.00	3.072	3.072	0.0	1.002	1175328		4.09(1.90-5.69)		13196	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.080	-0.015	1.137	2729335	1.39		55.7	73004	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.080	-0.015	1.137	2507195	1.29		53.8	21686	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.408	0.0	1.000	9154659	6.41			56.6	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.416	-0.008	1.264	3623547	1.38		55.1	439	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.417	3.427	-0.010	1.000	62440893	86.9			109502	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.434	-0.017	1.267	1348443	2.22		92.5	18311	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.435	3.436	-0.001	1.000	10272087	10.3			41812	E
513.00 > 169.00	3.435	3.436	-0.001	1.000	1953245		5.26(2.36-7.09)		33211	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.444	-0.009	1.274	2516175	1.46		58.6	55241	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.581	3.592	-0.011	1.000	17532	0.0253			10.3	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.581	3.602	-0.021	1.328	1731106	1.91		76.6	26692	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.750	-0.010	1.000	67785	0.0950			7.8	
599.00 > 99.00	3.729	3.750	-0.021	0.997	30202		2.24(1.39-4.16)		44.6	
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.760	3.761	-0.001	1.000	23550276	28.5			3571	E
563.00 > 169.00	3.760	3.761	-0.001	1.000	6630683		3.55(2.12-6.36)		705	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.761	-0.001	1.003	90569	0.1596			270	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.771	-0.021	1.390	1518241	1.47		58.9	19190	
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.771	-0.011	1.394	2398004	1.56		62.4	61787	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.059	-0.010	1.000	393605	0.3600			296	
613.00 > 169.00	4.049	4.059	-0.010	1.000	114173		3.45(2.13-6.40)		1175	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.069	-0.020	1.501	2612342	1.50		59.9	24749	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.319	-0.011	1.000	1070324	0.9306			746	
663.00 > 169.00	4.308	4.319	-0.011	1.000	371123		2.88(1.25-3.76)		4029	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.545	4.555	-0.010	1.000	11933	0.0690			160	
713.00 > 219.00	4.545	4.555	-0.010	1.000	7747		1.54(0.71-2.13)		129	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.545	4.565	-0.020	1.685	1745028	0.8191		32.8	15104	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:31:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_061.d

Injection Date: 23-Mar-2018 19:42:28 Instrument ID: A8_N

Lims ID: 320-36761-A-3-B Lab Sample ID: 320-36761-3

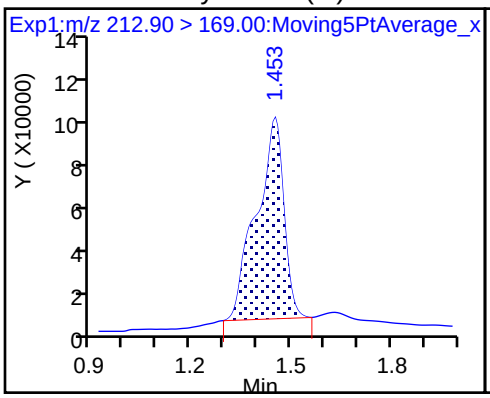
Client ID: SB003-SPLP(0-2')

Operator ID: SACINSTLCMS01 ALS Bottle#: 43 Worklist Smp#: 11

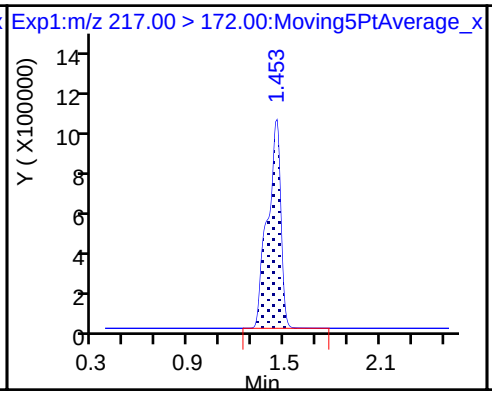
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

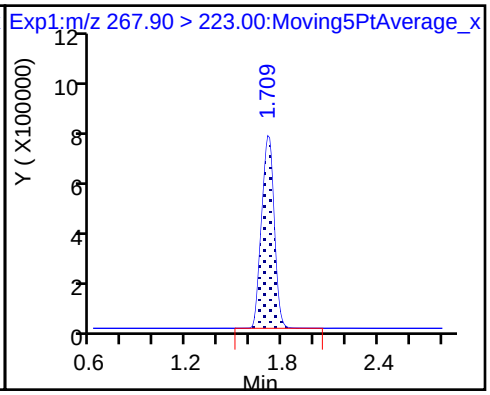
2 Perfluorobutyric acid (M)



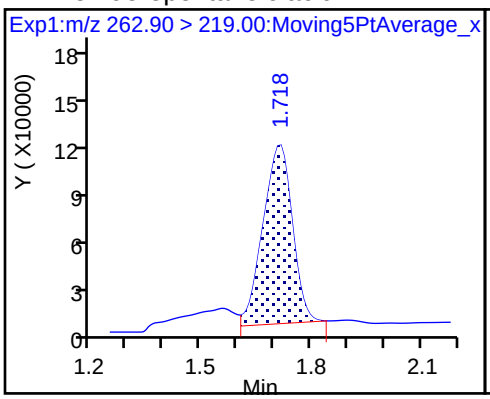
D 1 13C4 PFBA



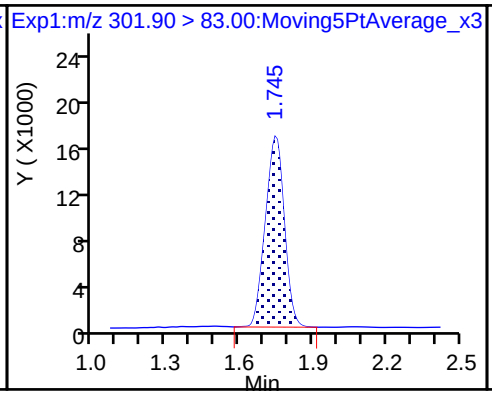
D 3 13C5-PFPeA



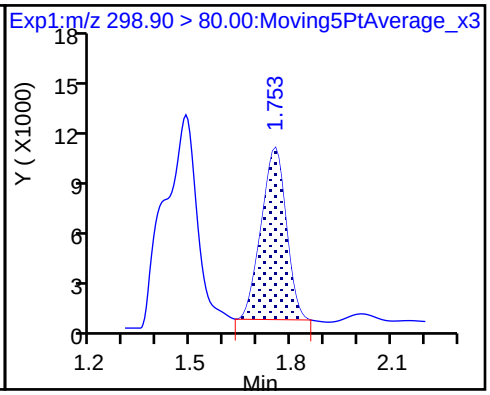
4 Perfluoropentanoic acid



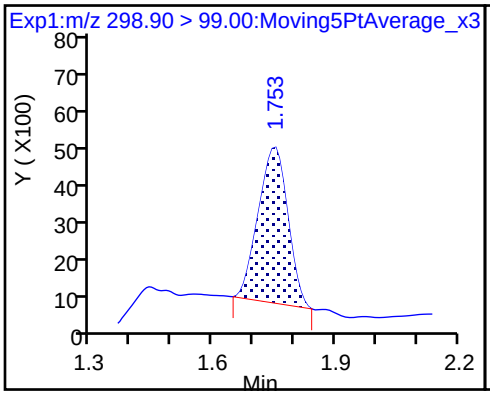
D 47 13C3-PFBS



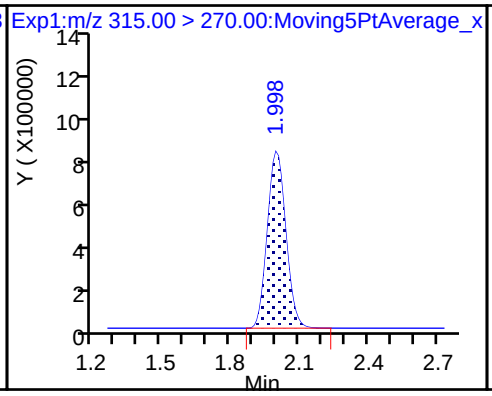
5 Perfluorobutanesulfonic acid



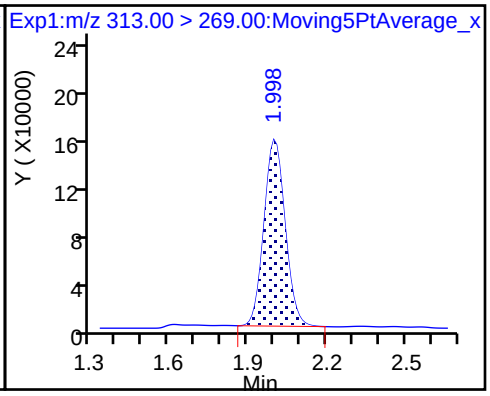
5 Perfluorobutanesulfonic acid



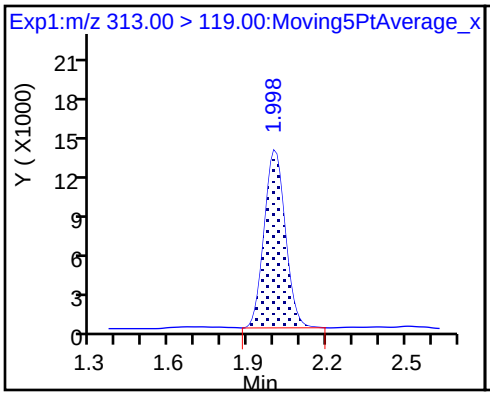
D 7 13C2 PFHxA



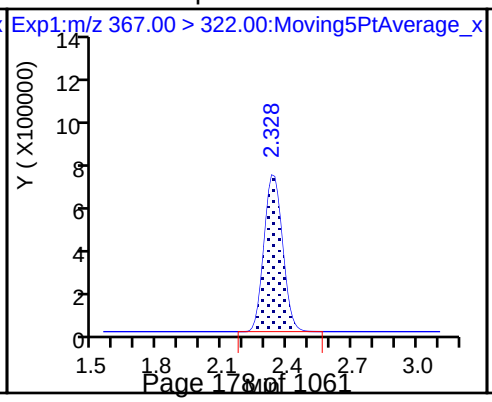
6 Perfluorohexanoic acid



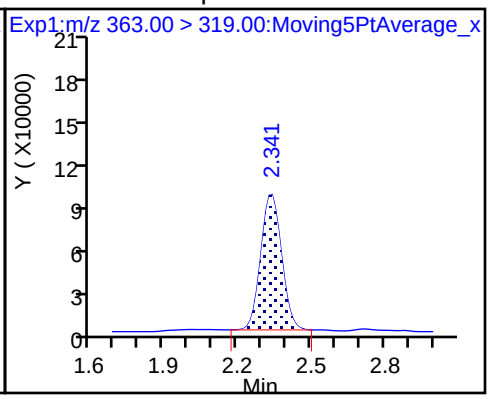
6 Perfluorohexanoic acid



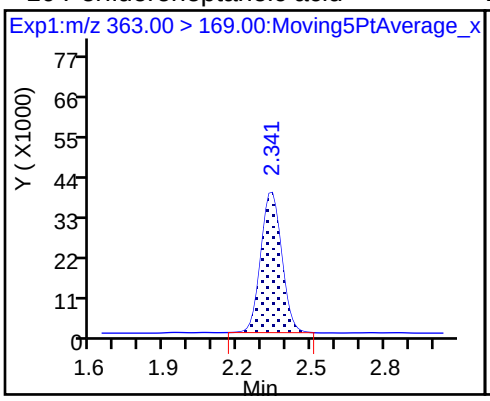
D 9 13C4-PFHpA



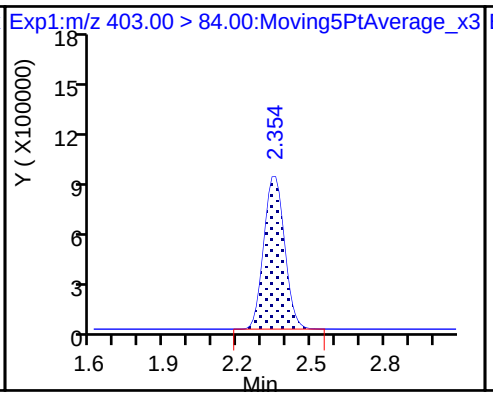
10 Perfluoroheptanoic acid



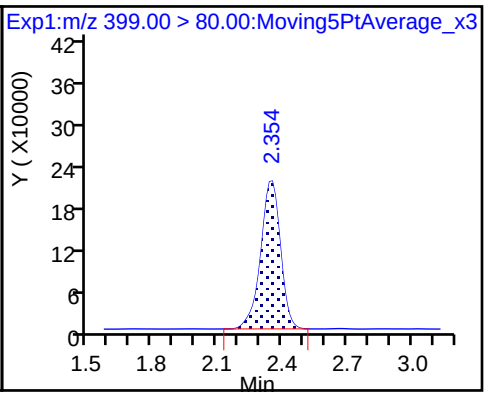
10 Perfluoroheptanoic acid



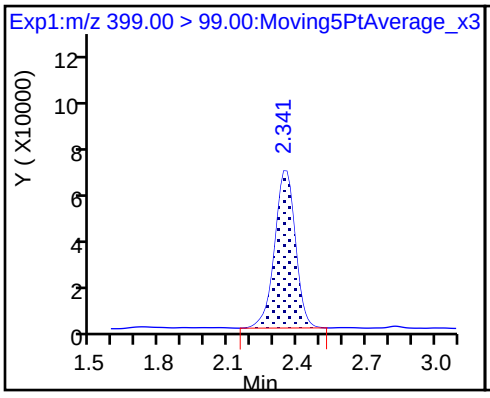
D 11 18O2 PFHxS



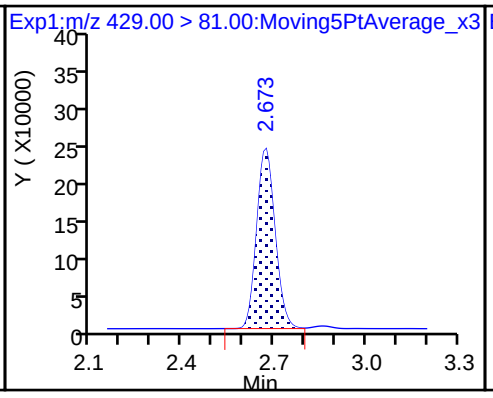
8 Perfluorohexanesulfonic acid



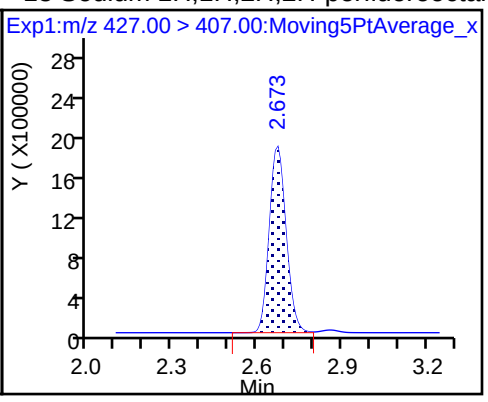
8 Perfluorohexanesulfonic acid



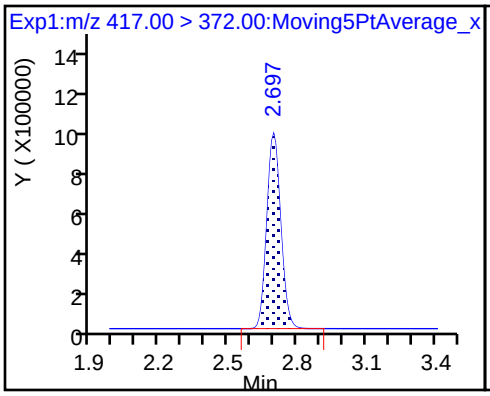
D 12 M2-6:2FTS



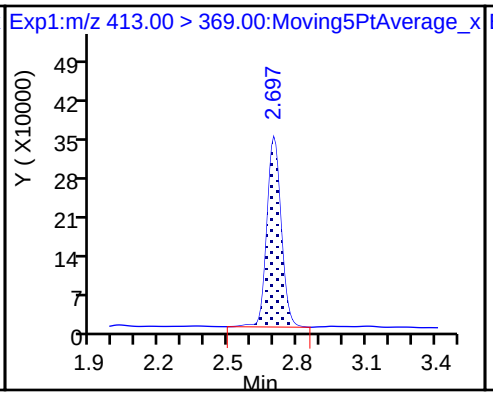
13 Sodium 1H,1H,2H,2H-perfluorooctane



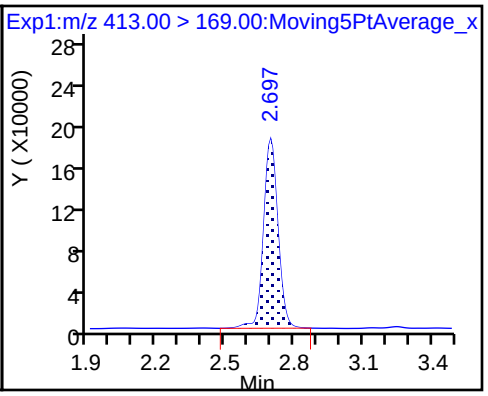
D 14 13C4 PFOA



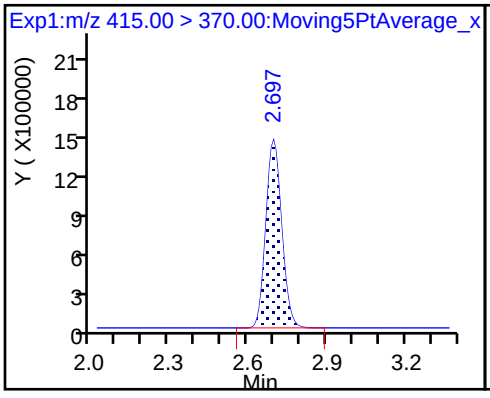
15 Perfluorooctanoic acid



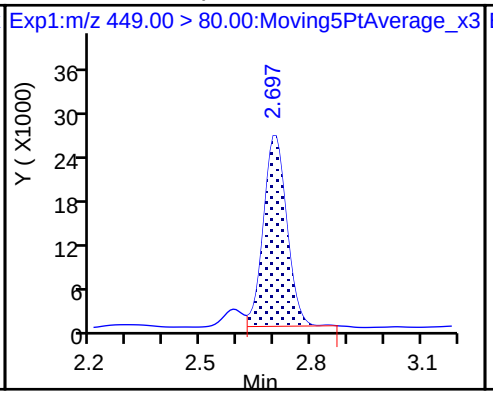
15 Perfluorooctanoic acid



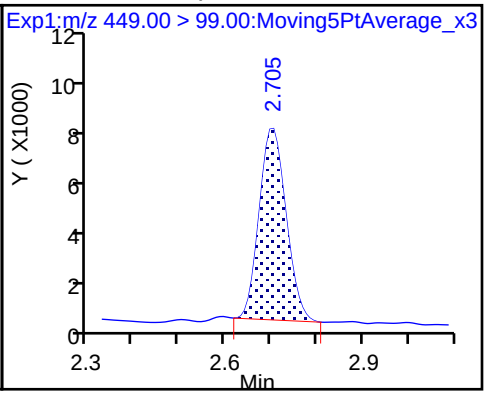
* 62 13C2-PFOA



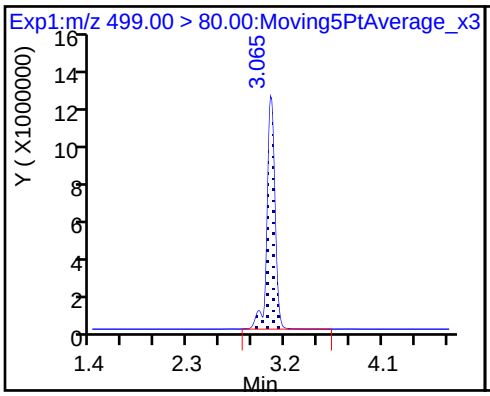
16 Perfluoroheptanesulfonic acid



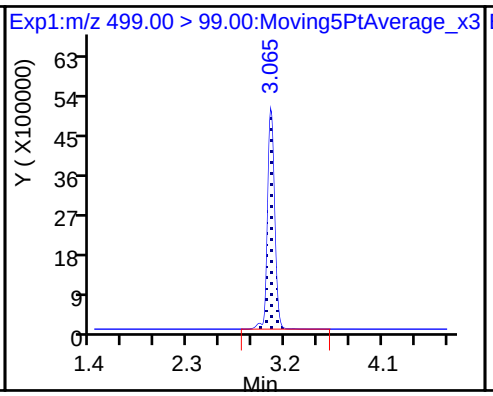
16 Perfluoroheptanesulfonic acid



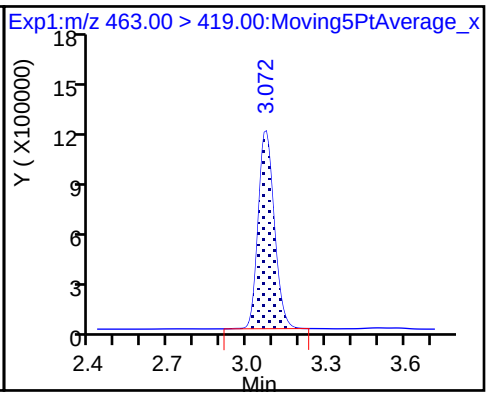
17 Perfluorooctane sulfonic acid



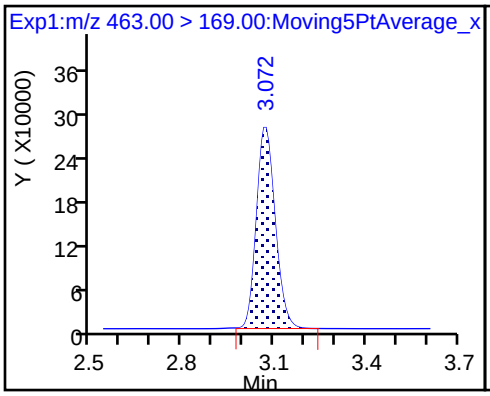
17 Perfluorooctane sulfonic acid



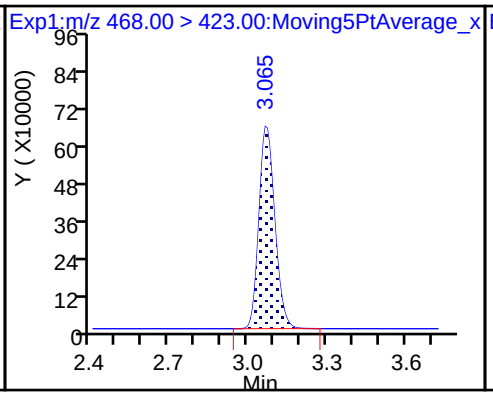
20 Perfluorononanoic acid



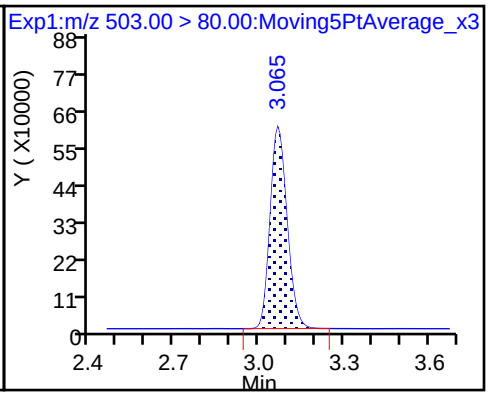
20 Perfluorononanoic acid



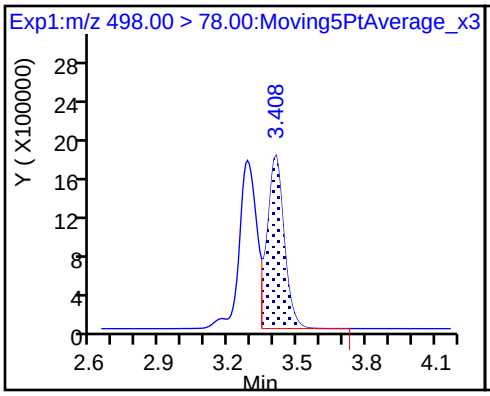
D 19 13C5 PFNA



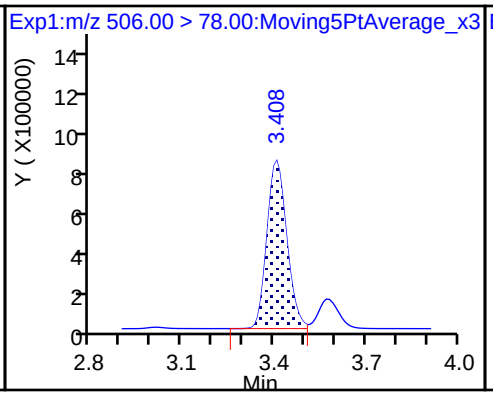
D 18 13C4 PFOS



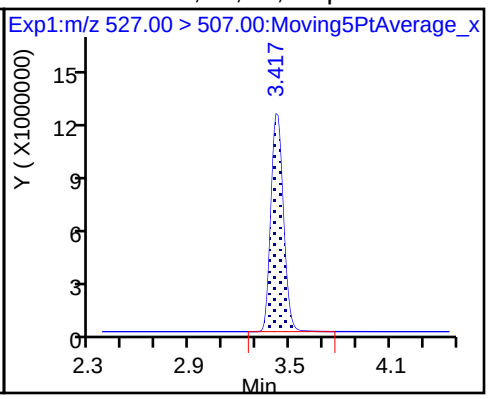
22 Perfluorooctane Sulfonamide



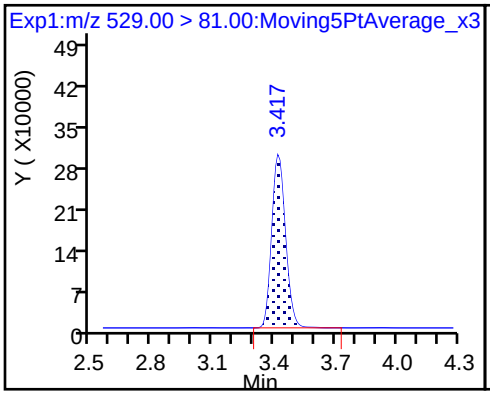
D 21 13C8 FOSA



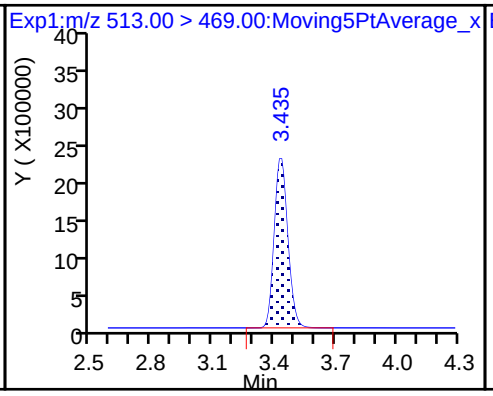
25 Sodium 1H,1H,2H,2H-perfluorodecane



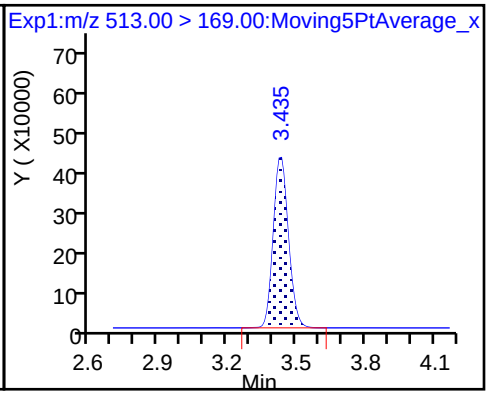
D 26 M2-8:2FTS



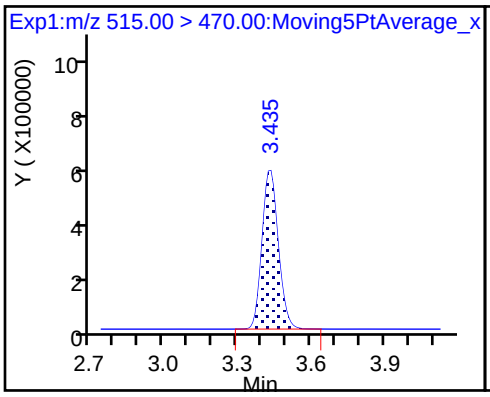
24 Perfluorodecanoic acid



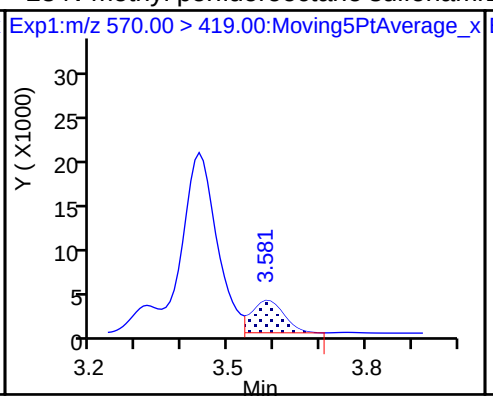
24 Perfluorodecanoic acid



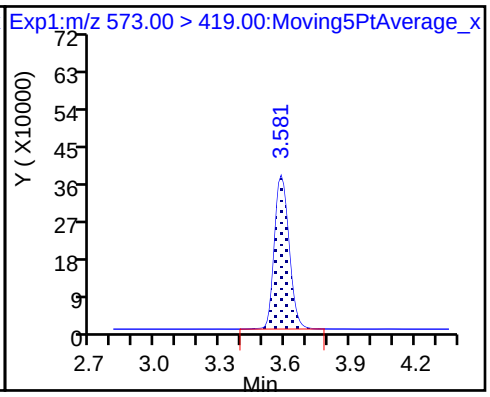
D 23 13C2 PFDA



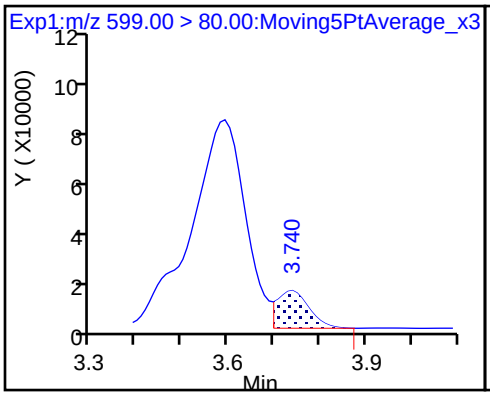
28 N-methyl perfluorooctane sulfonami



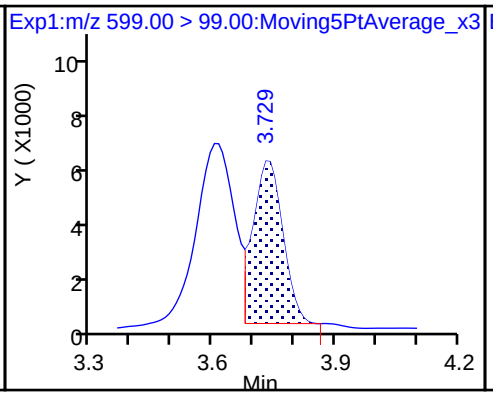
D 27 d3-NMeFOSAA



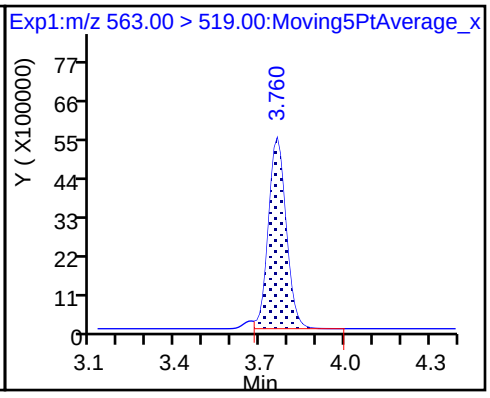
29 Perfluorodecane Sulfonic acid



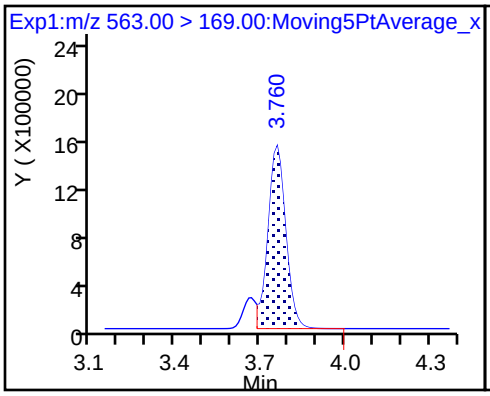
29 Perfluorodecane Sulfonic acid



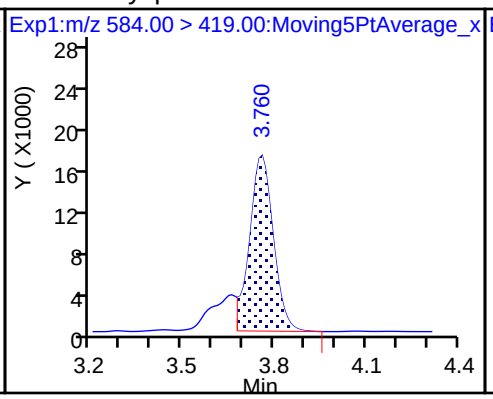
31 Perfluoroundecanoic acid



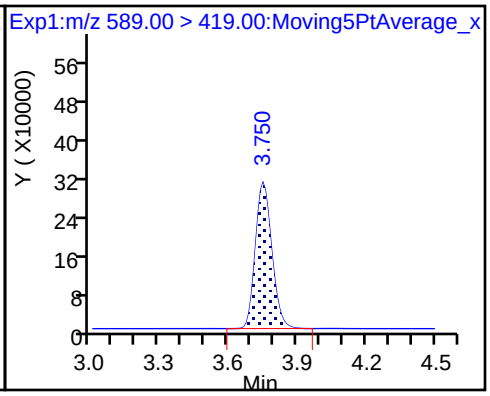
31 Perfluoroundecanoic acid



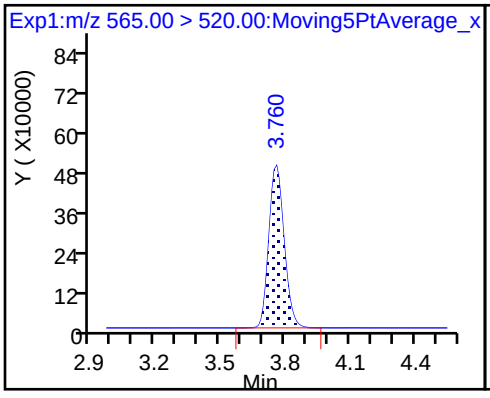
33 N-ethyl perfluorooctane sulfonamid



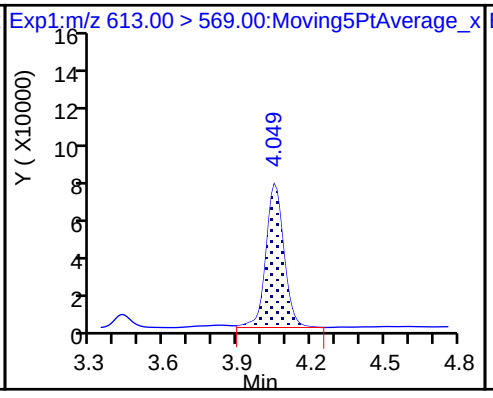
D 32 d5-NEtFOSAA



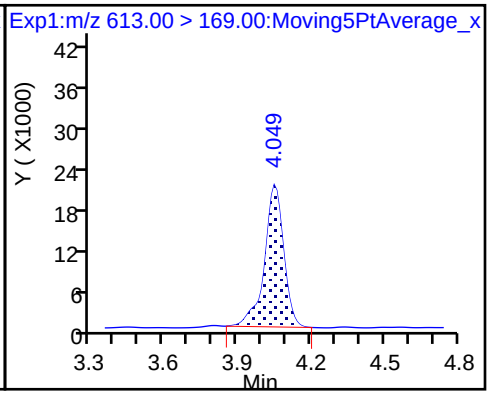
D 30 13C2 PFUnA



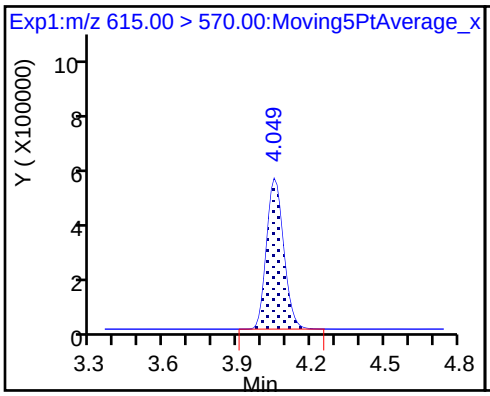
37 Perfluorododecanoic acid



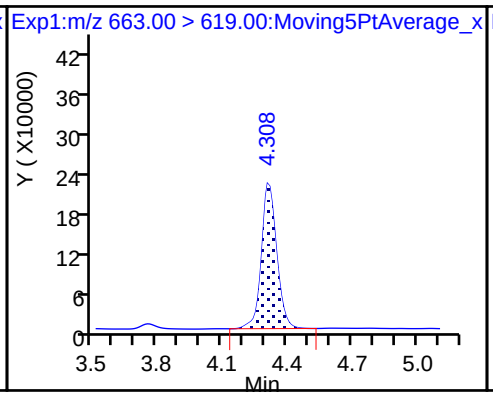
37 Perfluorododecanoic acid



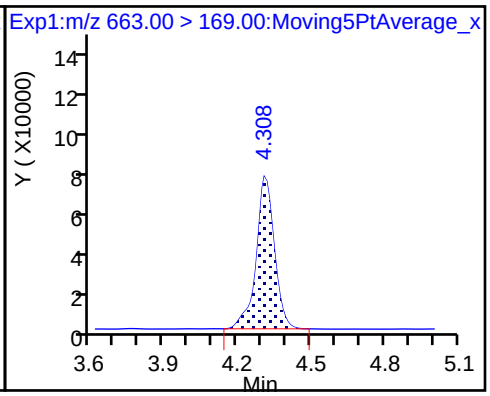
D 36 13C2 PFDoA



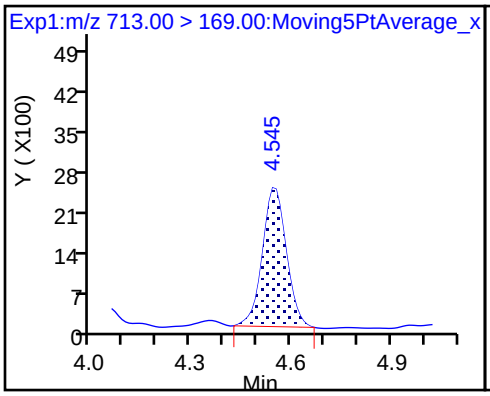
41 Perfluorotridecanoic acid



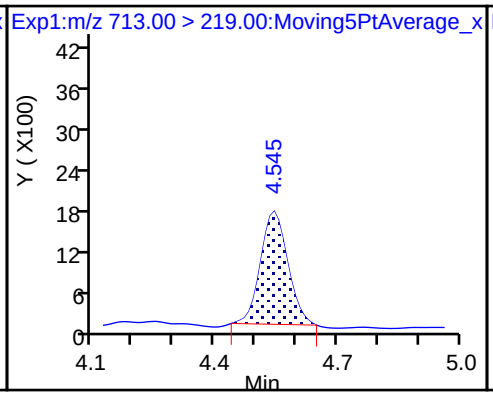
41 Perfluorotridecanoic acid



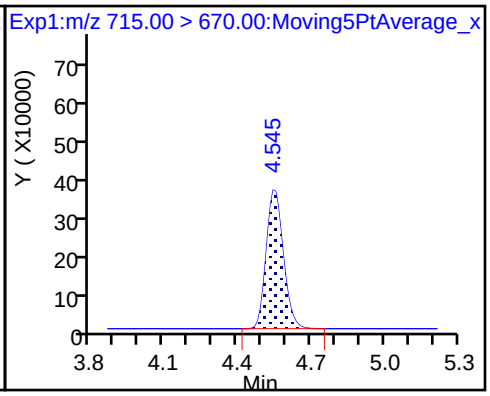
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

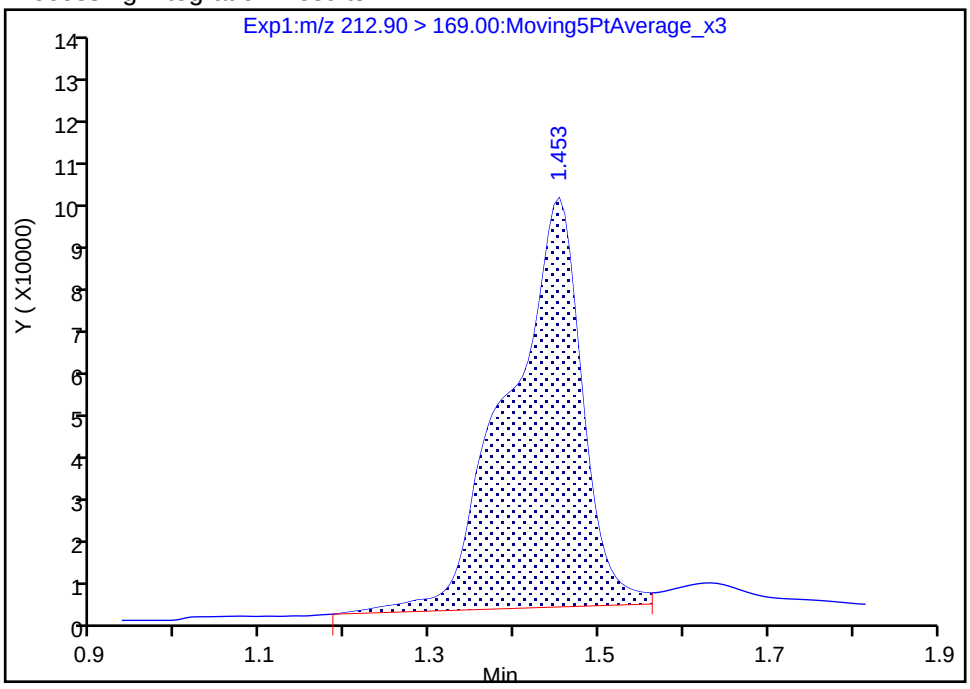
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_061.d				
Injection Date:	23-Mar-2018 19:42:28	Instrument ID:	A8_N		
Lims ID:	320-36761-A-3-B	Lab Sample ID:	320-36761-3		
Client ID:	SB003-SPLP(0-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	43	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

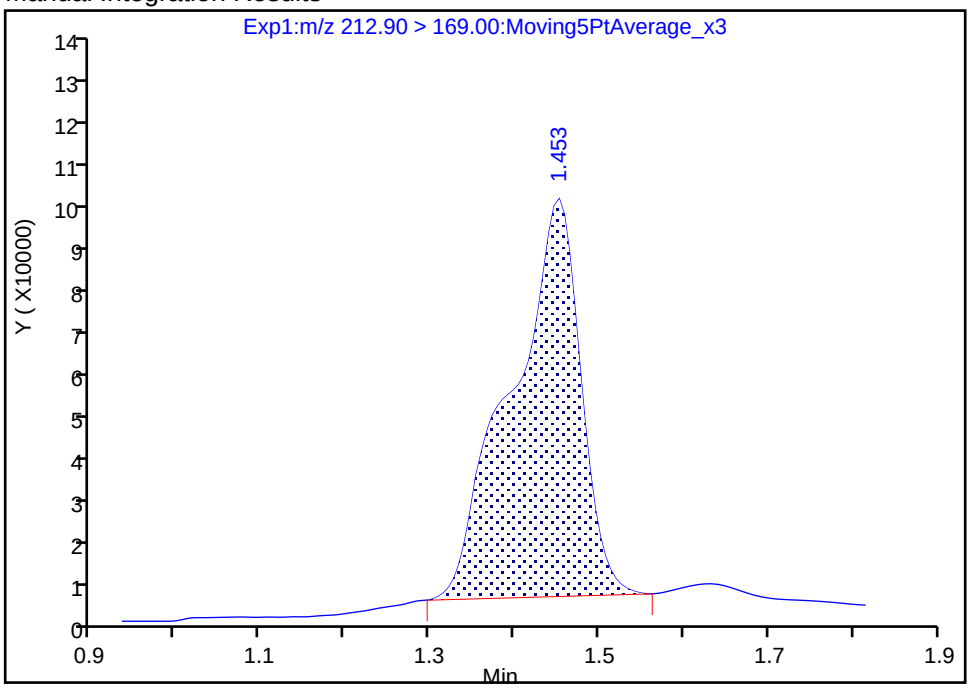
Processing Integration Results

RT: 1.45
Area: 571439
Amount: 0.256387
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 520854
Amount: 0.233691
Amount Units: ng/ml



Reviewer: hannigana, 29-Mar-2018 09:24:48

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003-SPLP(0-2') RE | Lab Sample ID: 320-36761-3 RE

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.28LLDXD_020.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:00

Extraction Method: 3535 | Date Extracted: 03/27/2018 20:41

Sample wt/vol: 251.2(mL) | Date Analyzed: 03/28/2018 20:33

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	*6:2FTS*	*262*	*H*	*19.9*	*1.99*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	116		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_020.d
Lims ID: 320-36761-A-3-C
Client ID: SB003-SPLP(0-2')
Sample Type: Client
Inject. Date: 28-Mar-2018 20:33:40 ALS Bottle#: 12 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-3-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:54:36 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:53:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.530	6624817	2.55		102	104218	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.446	0.001	1.000	474718	0.1901			107	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.717	0.001	1.000	649874	0.3361			135	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.718	0.0	0.630	4287433	2.48		99.4	76990	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.753	0.009	1.005	59671	0.0187			20.4	
298.90 > 99.00	1.753	1.753	0.0	1.000	23720		2.52(1.25-3.74)		29.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.643	95409	2.42		104	374	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.019	2.008	0.011	1.000	872542	0.4453			663	
313.00 > 119.00	2.019	2.008	0.011	1.000	81799		10.67(5.03-15.10)		726	
D 7 13C2 PFHxA										
315.00 > 270.00	2.019	2.019	0.0	0.740	4791823	2.51		100	133273	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.354	2.353	0.001	1.000	567201	0.2945			331	
363.00 > 169.00	2.354	2.353	0.001	1.000	221872		2.56(1.13-3.40)		542	
D 9 13C4-PFHpA										
367.00 > 322.00	2.354	2.354	0.0	0.863	4653994	2.47		98.8	103767	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.368	2.367	0.001	1.000	1415631	0.5089			3213	
399.00 > 99.00	2.368	2.367	0.001	1.000	452998		3.13(1.50-4.49)		1519	
D 11 18O2 PFHxS										
403.00 > 84.00	2.368	2.368	0.0	0.868	5910748	2.54		108	178609	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.697	2.695	0.002	1.000	5193392	6.57			3157	
D 12 M2-6:2FTS										
429.00 > 81.00	2.697	2.705	-0.008	0.988	1076142	2.76		116	5051	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.728	2.726	0.002	1.000	120553	0.0772			618	
449.00 > 99.00	2.728	2.726	0.002	1.000	31293		3.85(1.94-5.82)		482	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.728	2.726	0.002	1.000	1550484	0.7255			601	
413.00 > 169.00	2.728	2.726	0.002	1.000	840731		1.84(0.84-2.52)		2635	
* 62 13C2-PFOA										
415.00 > 370.00	2.728	2.726	0.002		5138146	2.50			112925	
D 14 13C4 PFOA										
417.00 > 372.00	2.728	2.728	0.0	1.000	4729329	2.45		98.2	126589	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.104	3.095	0.009	1.003	63021113	46.4			85145	E
499.00 > 99.00	3.104	3.095	0.009	1.003	21279048		2.96(2.31-6.93)		142749	
20 Perfluorononanoic acid										
463.00 > 419.00	3.104	3.103	0.001	1.000	4743912	4.16			3510	
463.00 > 169.00	3.104	3.103	0.001	1.000	1153623		4.11(1.90-5.69)		18554	
D 19 13C5 PFNA										
468.00 > 423.00	3.104	3.112	-0.008	1.138	2857053	1.68		67.3	71274	
D 18 13C4 PFOS										
503.00 > 80.00	3.096	3.112	-0.016	1.135	2911489	1.72		72.1	22629	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	6574006	3.56			66.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.418	-0.001	1.253	4678979	2.05		82.1	622	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.454	3.454	0.0	1.000	64267327	85.2			107266	E
24 Perfluorodecanoic acid										
513.00 > 469.00	3.463	3.463	0.0	1.000	10526166	9.92			36043	
513.00 > 169.00	3.463	3.463	0.0	1.000	1829307		5.75(2.36-7.09)		27762	
D 26 M2-8:2FTS										
529.00 > 81.00	3.454	3.464	-0.010	1.266	1415568	2.68		112	23036	
D 23 13C2 PFDA										
515.00 > 470.00	3.463	3.473	-0.010	1.269	2684756	1.80		72.1	56634	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.613	3.623	-0.010	0.997	9306	0.0121			5.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.623	3.633	-0.010	1.328	1925816	2.46		98.3	34113	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.781	3.781	0.0	1.000	56998	0.0688			11.0	
599.00 > 99.00	3.771	3.781	-0.010	0.997	25449		2.24(1.39-4.16)		56.5	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.792	3.792	0.0	1.000	47576	0.0801			241	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.792	3.802	-0.010	1.000	19254293	21.7			72456	E
563.00 > 169.00	3.792	3.802	-0.010	1.000	5000306		3.85(2.12-6.36)		755	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.804	-0.012	1.390	1588534	1.78		71.2	7330	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.804	-0.012	1.390	2575383	1.93		77.3	73166	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.085	4.092	-0.007	0.997	338364	0.2760			225	
613.00 > 169.00	4.085	4.092	-0.007	0.997	85537		3.96(2.13-6.40)		993	
D 36 13C2 PFDoA										
615.00 > 570.00	4.096	4.105	-0.009	1.501	2929526	1.94		77.5	32834	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.360	4.356	0.004	1.000	948904	0.7357			478	
663.00 > 169.00	4.360	4.356	0.004	1.000	340401		2.79(1.25-3.76)		5350	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.595	4.601	-0.006	1.000	10737	0.0576			154	
713.00 > 219.00	4.595	4.601	-0.006	1.000	8772		1.22(0.71-2.13)		220	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.595	4.613	-0.018	1.684	1880550	1.02		40.7	14083	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

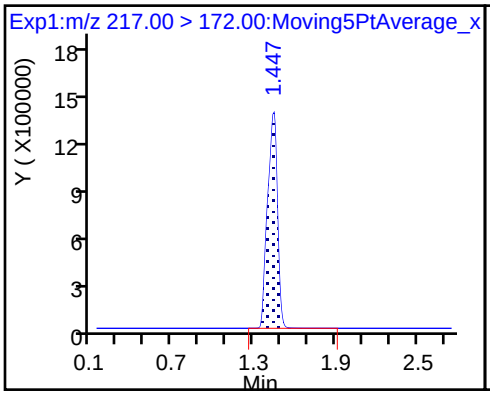
Report Date: 29-Mar-2018 07:54:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

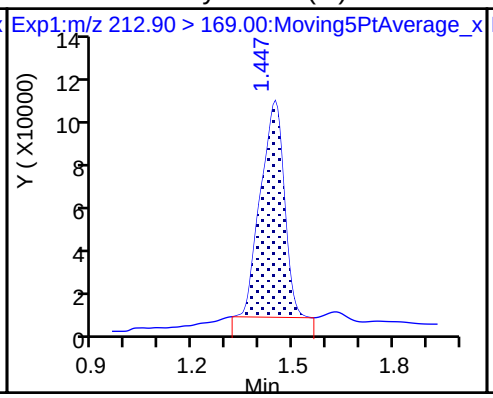
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_020.d

Injection Date:	28-Mar-2018 20:33:40	Instrument ID:	A8_N		
Lims ID:	320-36761-A-3-C	Lab Sample ID:	320-36761-3		
Client ID:	SB003-SPLP(0-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

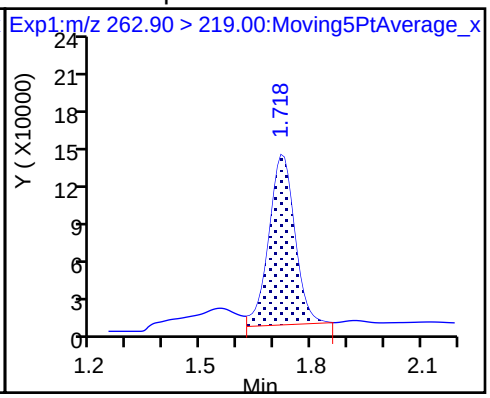
D 1 13C4 PFBA



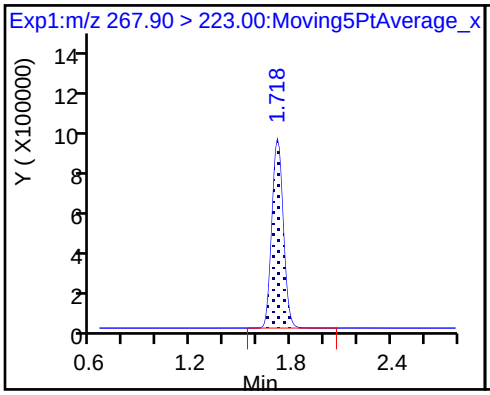
2 Perfluorobutyric acid (M)



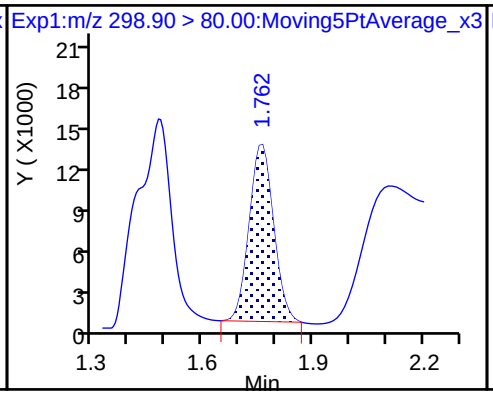
4 Perfluoropentanoic acid



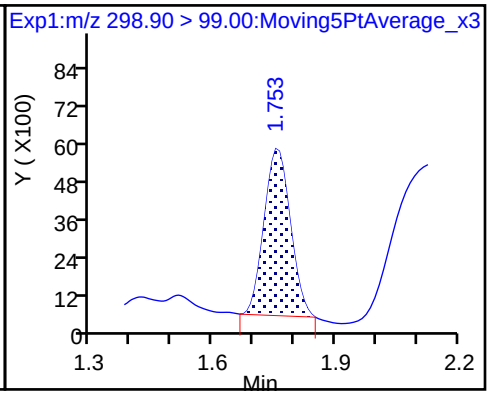
D 3 13C5-PFPeA



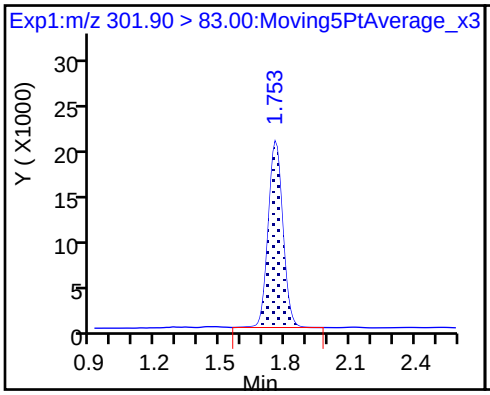
5 Perfluorobutanesulfonic acid



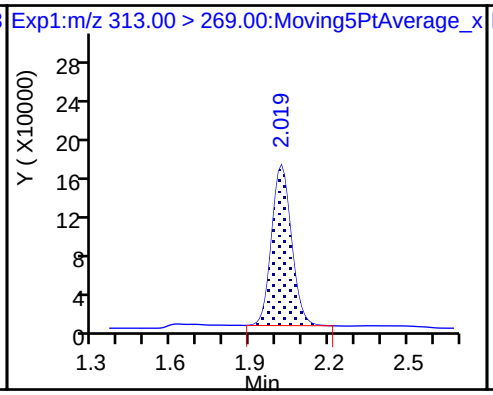
5 Perfluorobutanesulfonic acid



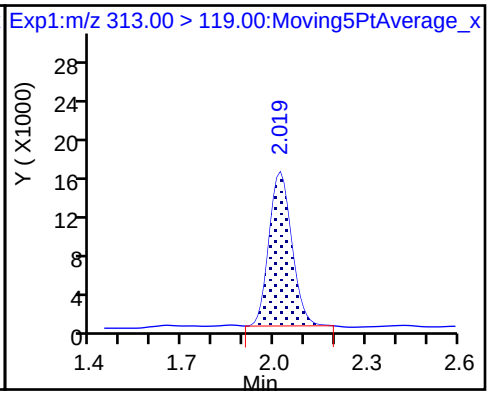
D 47 13C3-PFBS



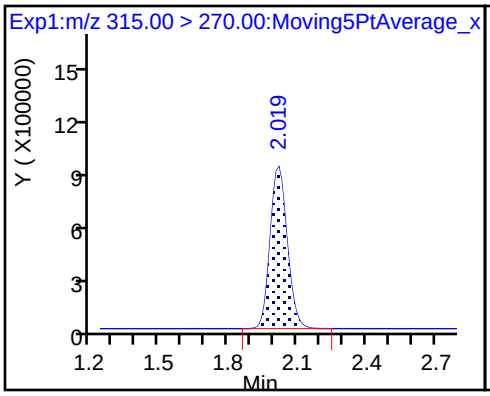
6 Perfluorohexanoic acid



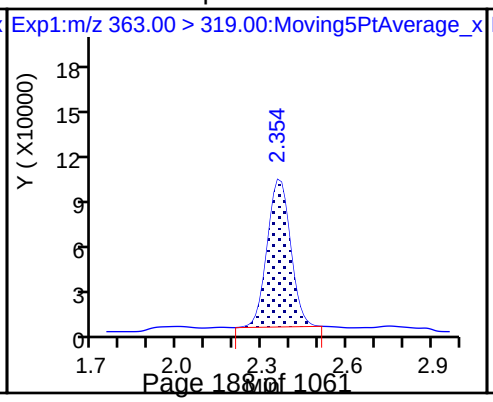
6 Perfluorohexanoic acid



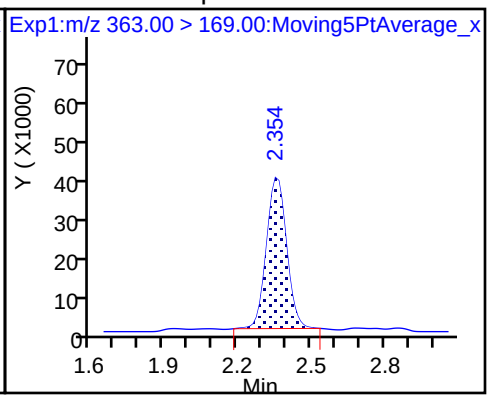
D 7 13C2 PFHxA



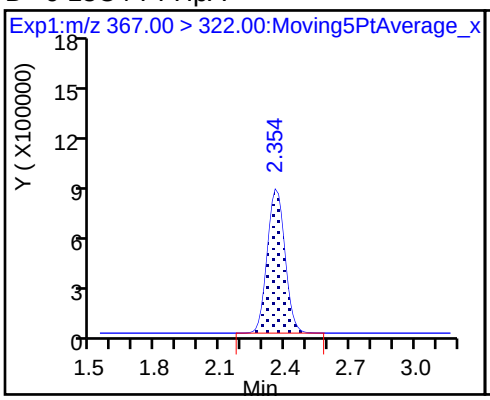
10 Perfluoroheptanoic acid



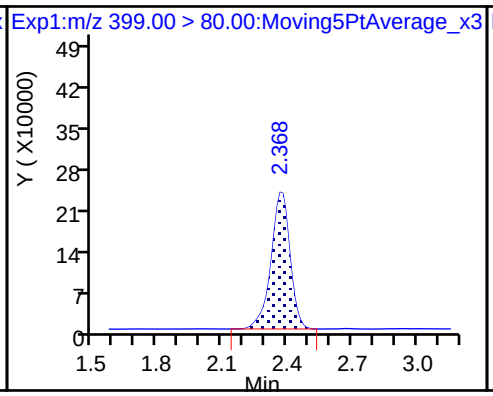
10 Perfluoroheptanoic acid



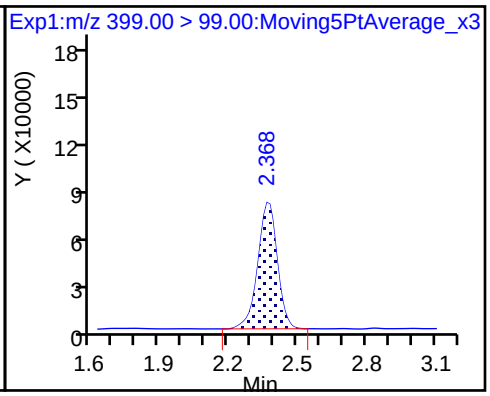
D 9 13C4-PFHpA



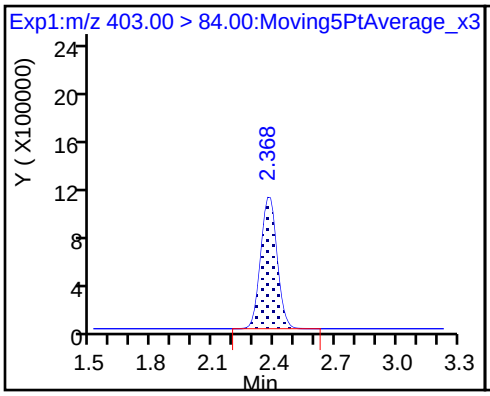
8 Perfluorohexanesulfonic acid



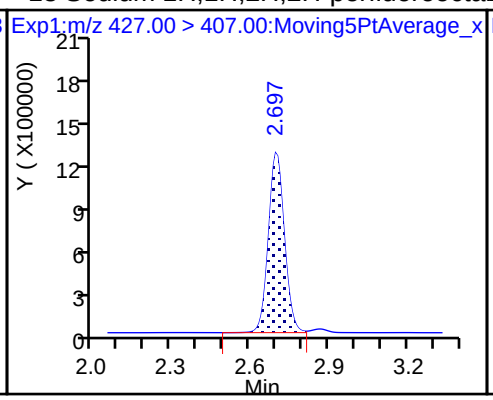
8 Perfluorohexanesulfonic acid



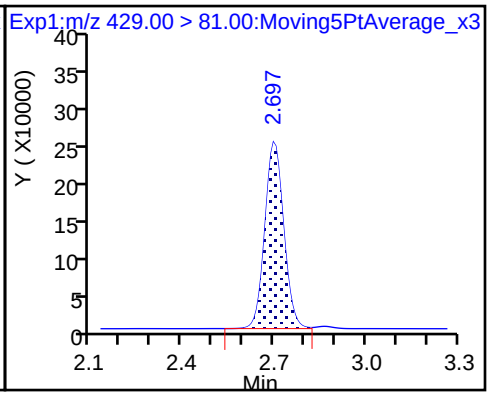
D 11 18O2 PFHxS



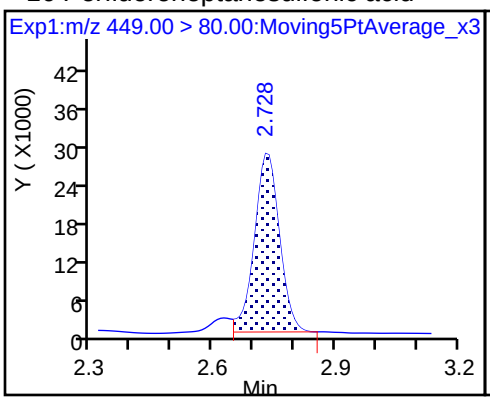
13 Sodium 1H,1H,2H,2H-perfluorooctane



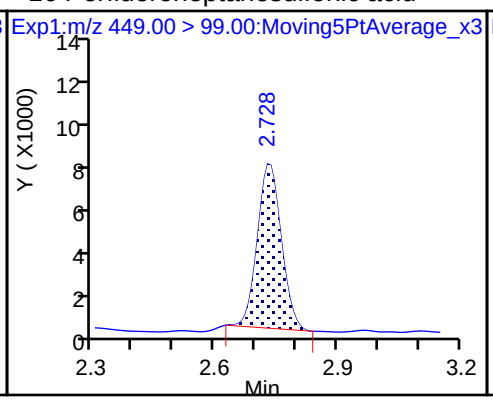
D 12 M2-6:2FTS



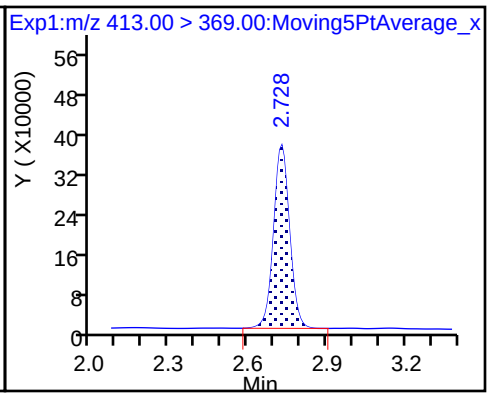
16 Perfluoroheptanesulfonic acid



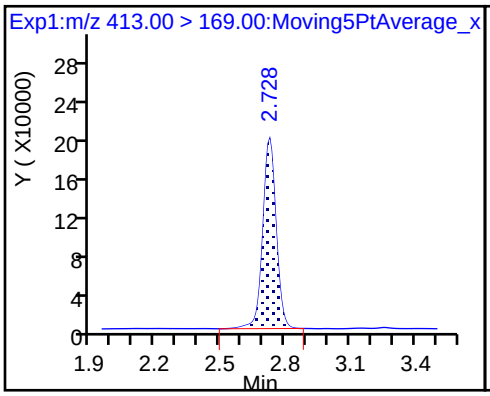
16 Perfluoroheptanesulfonic acid



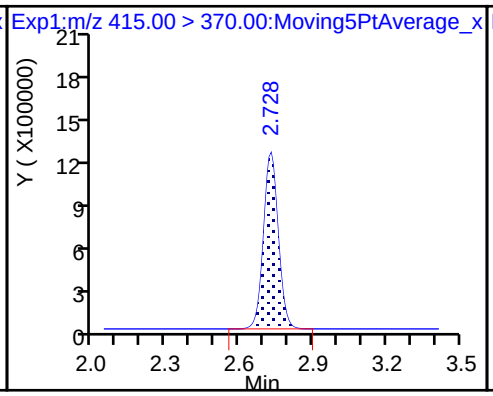
15 Perfluorooctanoic acid



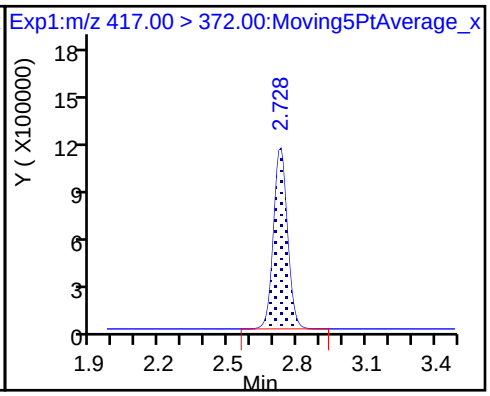
15 Perfluorooctanoic acid



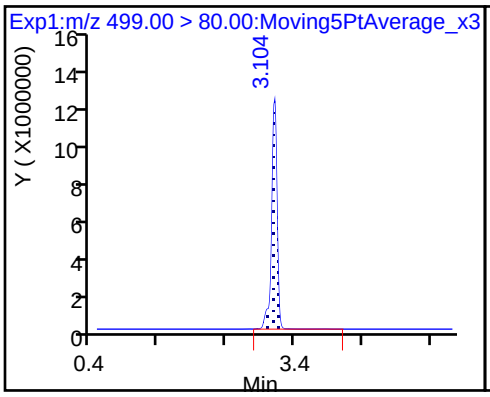
* 62 13C2-PFOA



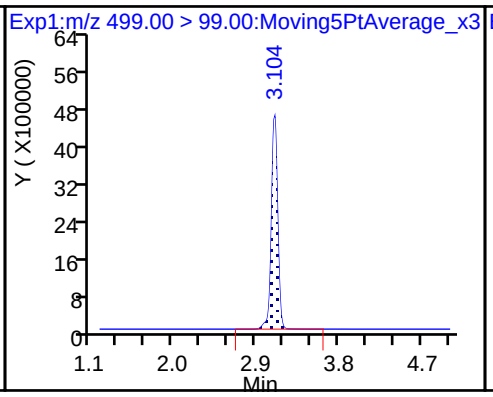
D 14 13C4 PFOA



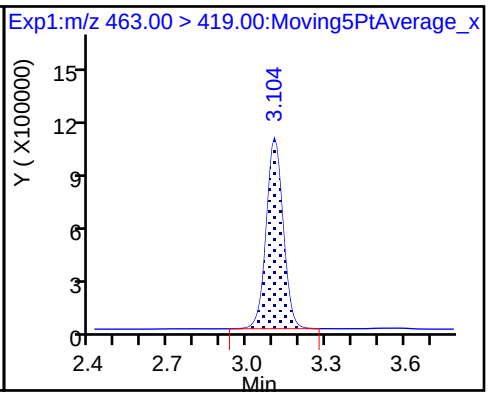
17 Perfluorooctane sulfonic acid



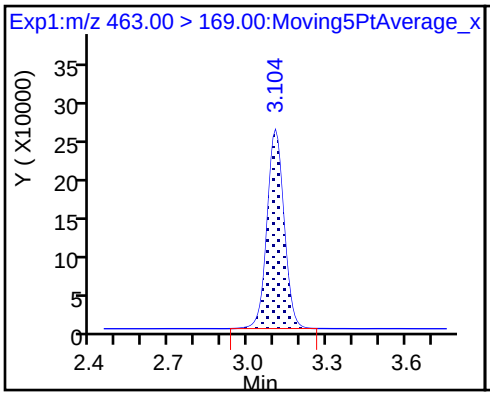
17 Perfluorooctane sulfonic acid



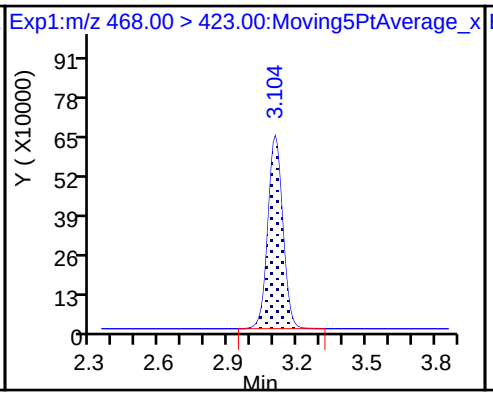
20 Perfluorononanoic acid



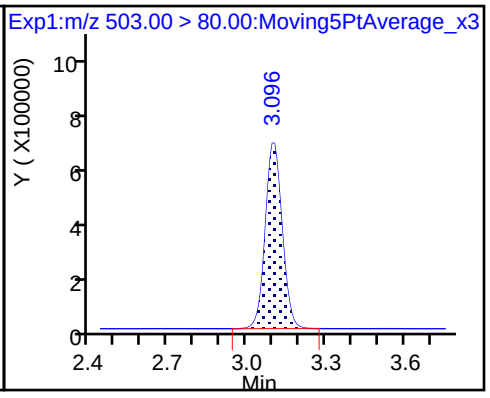
20 Perfluorononanoic acid



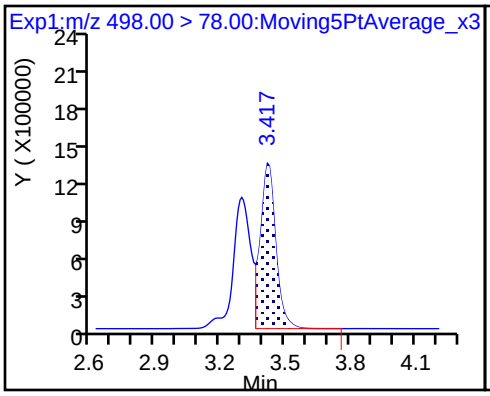
D 19 13C5 PFNA



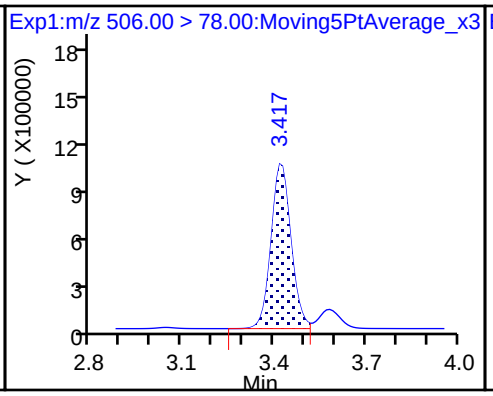
D 18 13C4 PFOS



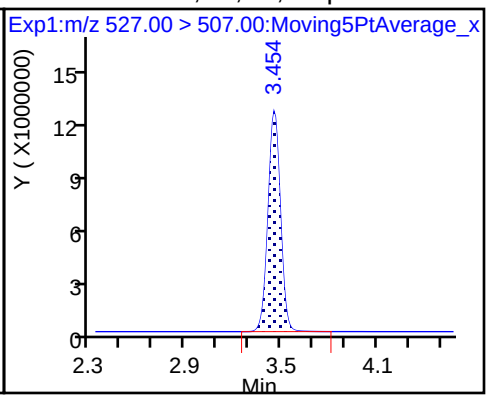
22 Perfluorooctane Sulfonamide



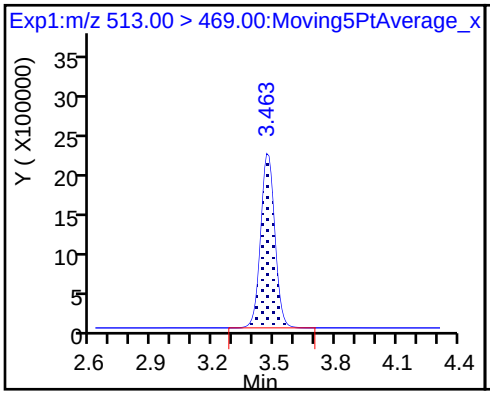
D 21 13C8 FOSA



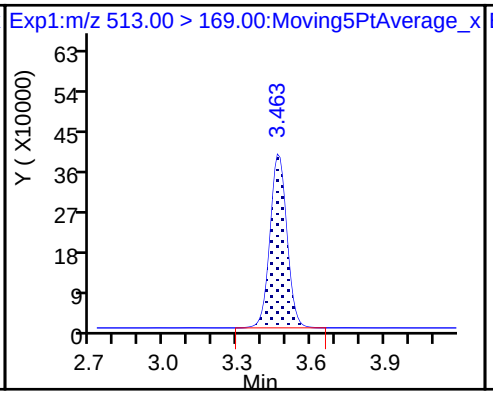
25 Sodium 1H,1H,2H,2H-perfluorodecane



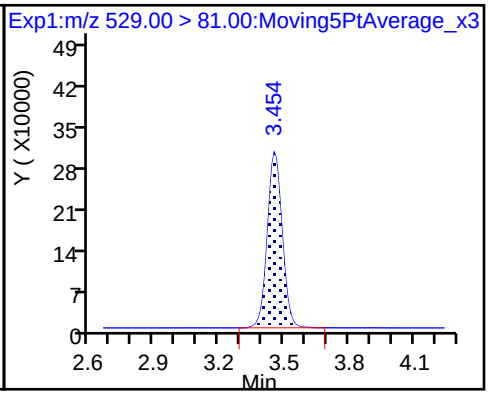
24 Perfluorodecanoic acid



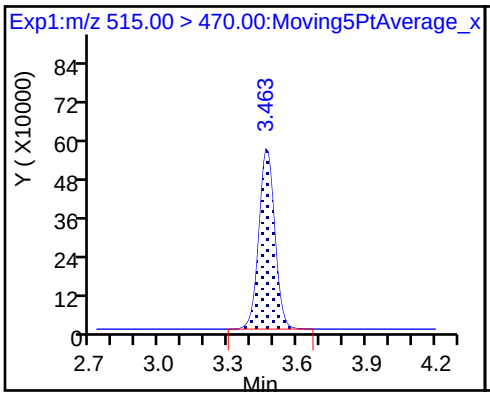
24 Perfluorodecanoic acid



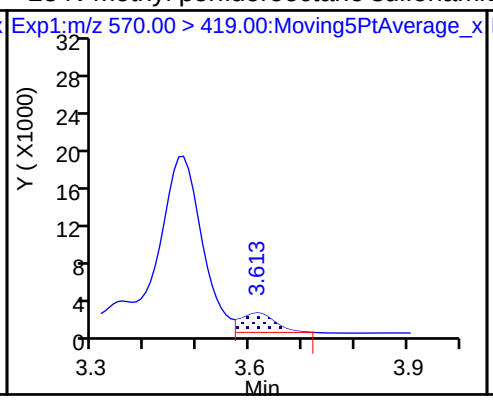
D 26 M2-8:2FTS



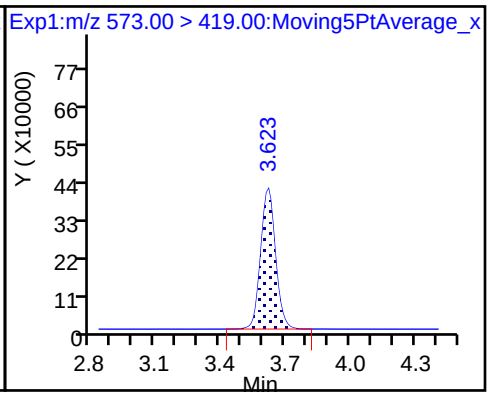
D 23 13C2 PFDA



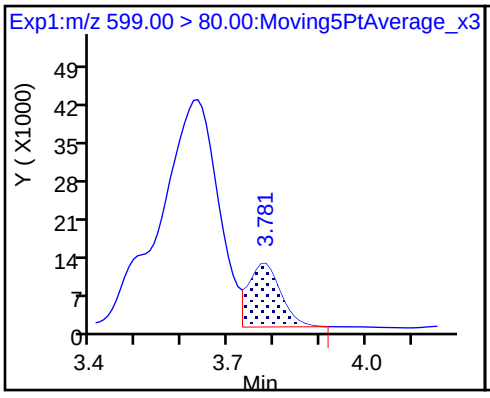
28 N-methyl perfluorooctane sulfonami



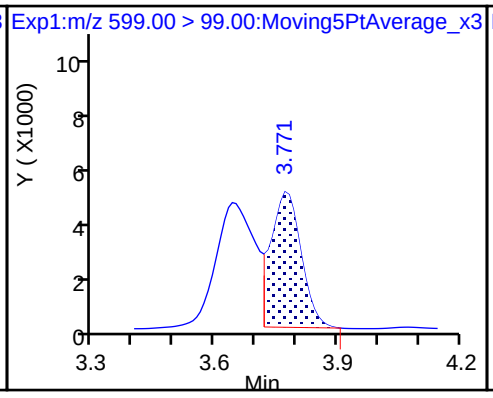
D 27 d3-NMeFOSAA



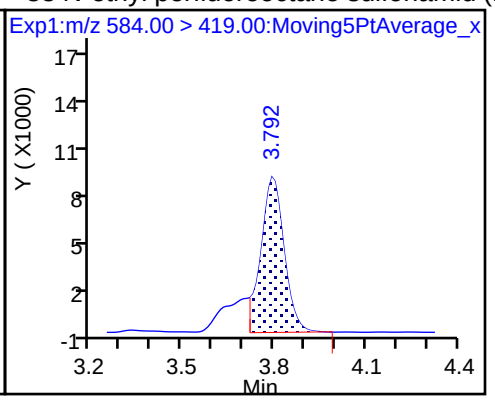
29 Perfluorodecane Sulfonic acid



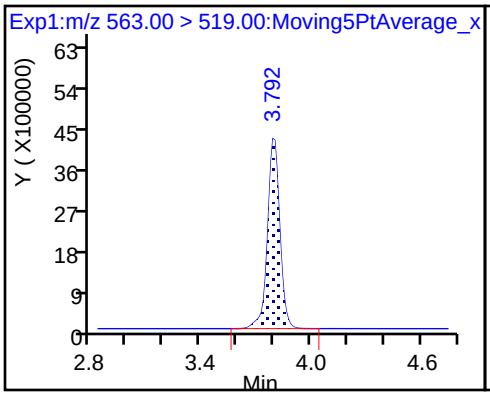
29 Perfluorodecane Sulfonic acid



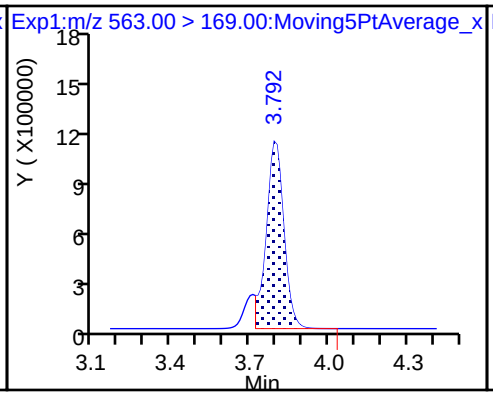
33 N-ethyl perfluorooctane sulfonamid (M)



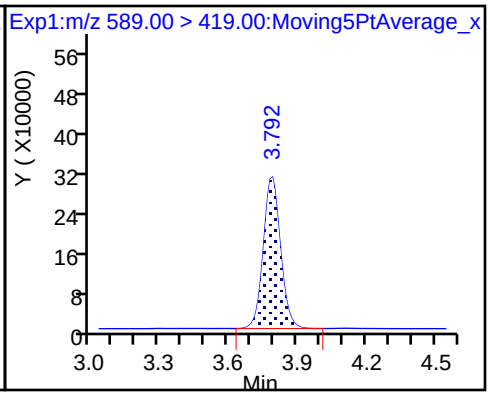
31 Perfluoroundecanoic acid



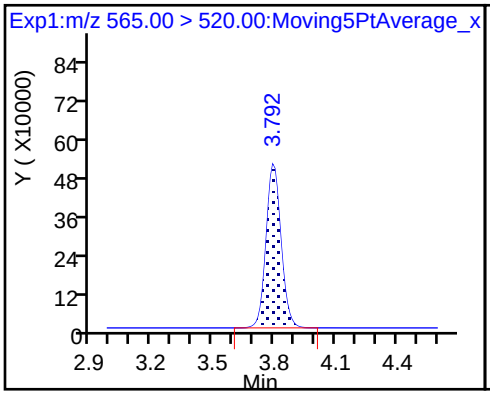
31 Perfluoroundecanoic acid



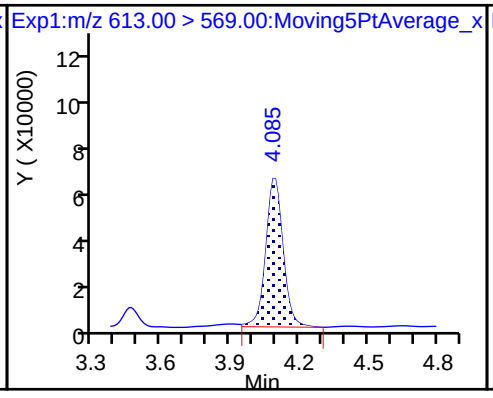
D 32 d5-NEtFOSAA



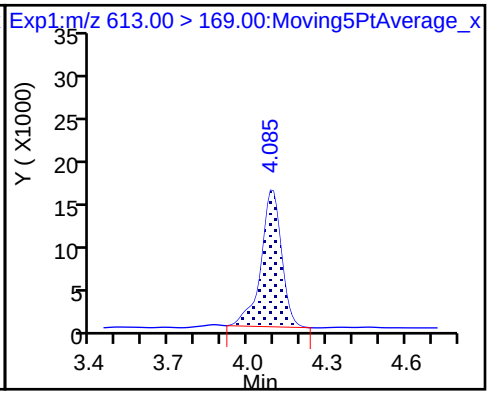
D 30 13C2 PFUnA



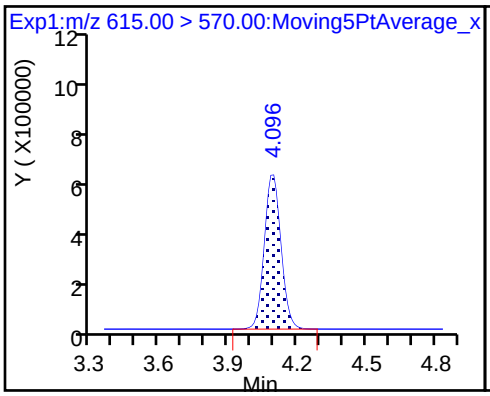
37 Perfluorododecanoic acid



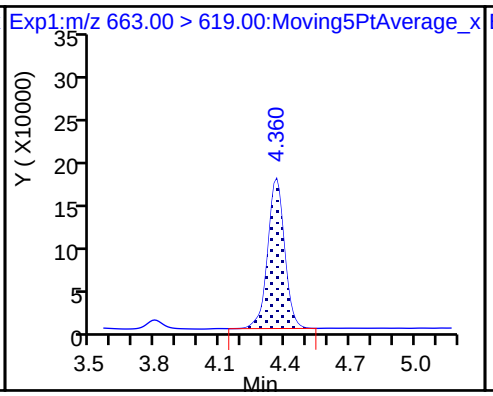
37 Perfluorododecanoic acid



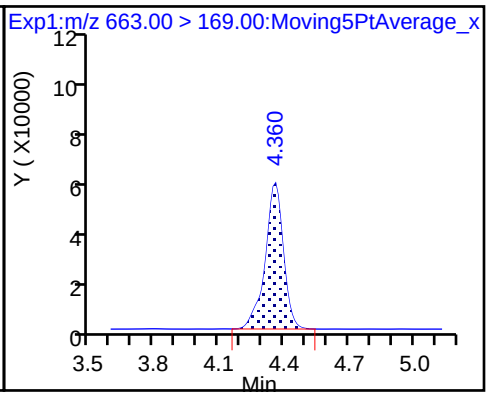
D 36 13C2 PFDoA



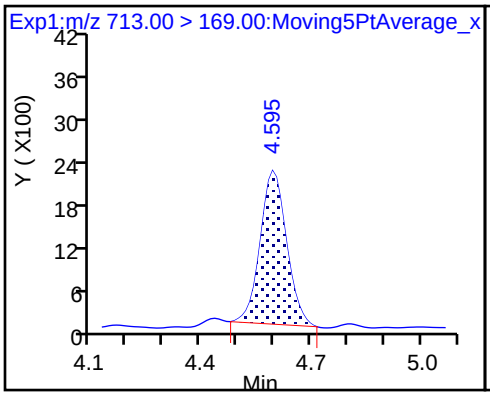
41 Perfluorotridecanoic acid



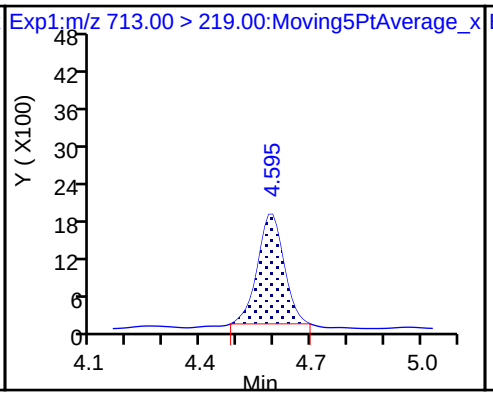
41 Perfluorotridecanoic acid



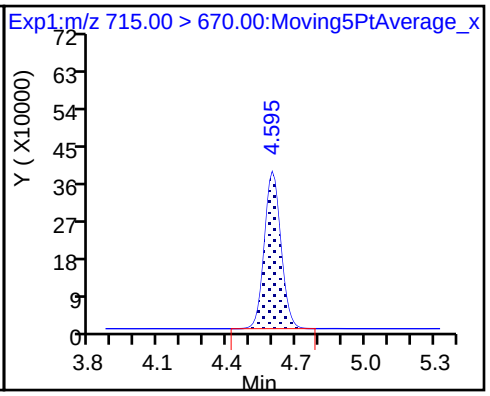
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003-SPLP(0-2') DL | Lab Sample ID: 320-36761-3 DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.26LLA_036.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:00

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 253.6(mL) | Date Analyzed: 03/26/2018 16:50

Con. Extract Vol.: 10(mL) | Dilution Factor: 20

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214885 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-76-2	Perfluorodecanoic acid (PFDA)	445	D	39.4	6.11
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1190	D	39.4	21.7
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3040	D	39.4	10.6
27619-97-2	6:2FTS	370	J B D	394	39.4
39108-34-4	8:2FTS	5880	D	394	39.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00996	13C2 PFDA	88	*	25-150
STL00997	13C2 PFUnA	87	*	25-150
STL00991	13C4 PFOS	91	*	25-150
STL02279	M2-6:2FTS	133	*	25-150
STL02280	M2-8:2FTS	152	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_036.d
Lims ID: 320-36761-A-3-B
Client ID: SB003-SPLP(0-2')
Sample Type: Client
Inject. Date: 26-Mar-2018 16:50:24 ALS Bottle#: 23 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 20.0000
Sample Info: 320-36761-a-3-b 20X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:46:11 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: phomsophat Date: 28-Mar-2018 19:11:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.439	0.008	1.000	66398	0.0151			16.8	
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.439	0.008	0.535	584852	0.1134		90.7	11523	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.699	0.010	0.632	391376	0.1144		91.5	11281	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.708	0.001	1.000	59884	0.0170			26.9	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.734	0.010	0.645	8967	0.1148		98.8	54.5	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.996	0.001	1.000	84626	0.0244			98.4	
313.00 > 119.00	1.997	1.996	0.001	1.000	7621		11.10(5.03-15.10)		74.7	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.996	0.001	0.739	423648	0.1120		89.6	15841	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.327	0.014	1.000	57943	0.0161			53.4	
363.00 > 169.00	2.328	2.327	0.001	0.994	20391		2.84(1.13-3.40)		61.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.327	0.014	0.866	435953	0.1168		93.4	15018	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.340	0.014	1.000	146079	0.0300			844	
399.00 > 99.00	2.354	2.340	0.014	1.000	47235		3.09(1.50-4.49)		115	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.340	0.014	0.870	517677	0.1124		95.1	22545	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.681	2.670	0.011	1.003	841518	0.4698			1983	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.670	0.003	0.988	121996	0.1577		133	2100	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.705	2.694	0.011	1.000	165240	0.0408			61.7	
413.00 > 169.00	2.705	2.694	0.011	1.000	87261		1.89(0.84-2.52)		264	
* 62 13C2-PFOA										s
415.00 > 370.00	2.705	2.694	0.011		509131	0.1250			17499	
D 14 13C4 PFOA										
417.00 > 372.00	2.705	2.694	0.011	1.000	447754	0.1173		93.8	17815	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.713	2.702	0.011	1.000	11035	0.002834			251	
449.00 > 99.00	2.705	2.702	0.003	0.997	2355		4.69(1.94-5.82)		20.1	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.071	0.009	1.000	13051212	3.86			79128	
499.00 > 99.00	3.080	3.071	0.009	1.000	3423583		3.81(2.31-6.93)		25455	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.071	0.009	1.000	633946	0.2095			713	
463.00 > 169.00	3.080	3.071	0.009	1.000	168515		3.76(1.90-5.69)		5115	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.071	0.009	1.139	379242	0.1126		90.1	11596	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.071	0.009	1.139	363179	0.1084		90.7	6955	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.395	0.013	1.000	1186537	0.3224			75.3	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.395	0.013	1.260	466717	0.1033		82.6	481	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.431	0.004	1.000	15156275	7.46			175446	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.431	0.004	1.270	190705	0.1825		152	4751	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.440	0.004	1.000	1445963	0.5641			6939	
513.00 > 169.00	3.444	3.440	0.004	1.000	267889		5.40(2.36-7.09)		4684	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.440	0.004	1.273	324307	0.1099		87.9	8174	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.601	3.597	0.004	1.331	186711	0.1202		96.2	8147	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.767	0.012	1.003	11806	0.008111			158	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.767	0.012	1.397	286100	0.1084		86.7	8502	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.769	3.767	0.002	1.393	194755	0.1100		88.0	1485	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.777	0.002	1.000	2978814	1.51			3638	
563.00 > 169.00	3.779	3.777	0.002	1.000	787128		3.78(2.12-6.36)		906	
37 Perfluorododecanoic acid										R
613.00 > 569.00	4.069	4.064	0.005	1.000	42817	0.0197			46.8	R
613.00 > 169.00	4.069	4.064	0.005	1.000	6444		6.64(2.13-6.40)		84.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.069	4.064	0.005	1.504	259274	0.0865		69.2	2451	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.340	4.337	0.003	1.000	111222	0.0487			91.0	
663.00 > 169.00	4.340	4.337	0.003	1.000	39388		2.82(1.25-3.76)		530	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.572	0.003	1.692	185425	0.0507		40.5	1451	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

s - Failed ISTD Recovery Test

Report Date: 29-Mar-2018 09:46:29 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_036.d

Injection Date: 26-Mar-2018 16:50:24 Instrument ID: A8_N

Lims ID: 320-36761-A-3-B Lab Sample ID: 320-36761-3

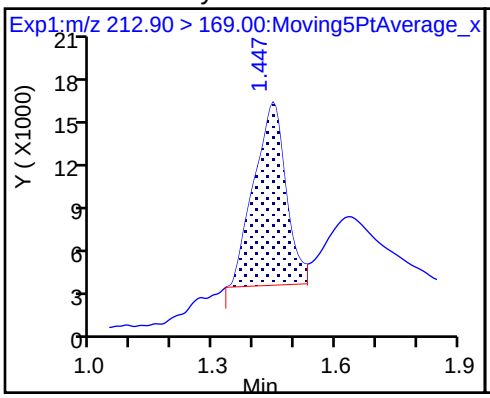
Client ID: SB003-SPLP(0-2')

Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 7

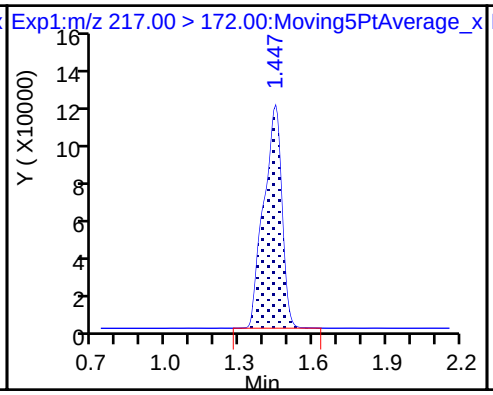
Injection Vol: 2.0 ul Dil. Factor: 20.0000

Method: A8_N Limit Group: LC PFC ICAL

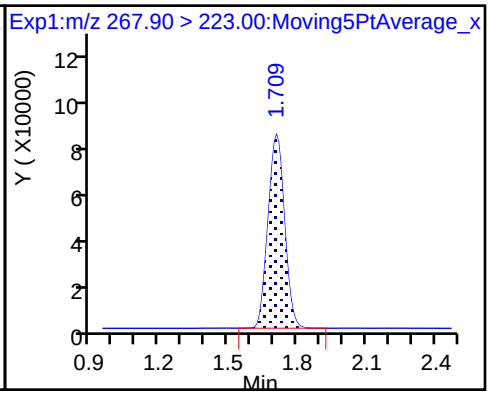
2 Perfluorobutyric acid



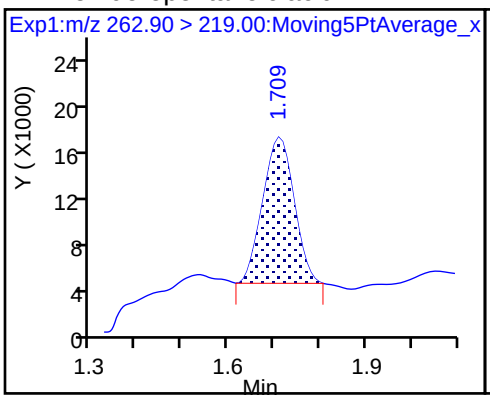
D 1 13C4 PFBA



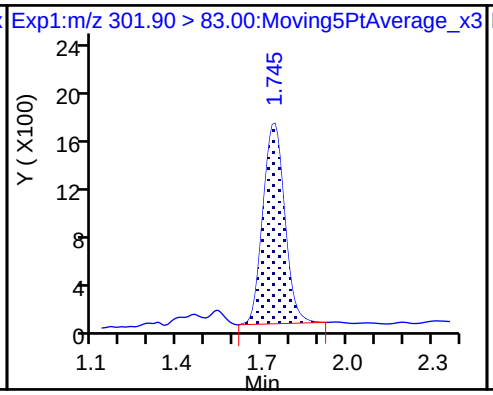
D 3 13C5-PFPeA



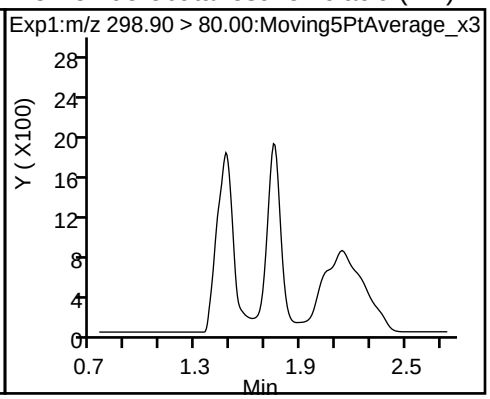
4 Perfluoropentanoic acid



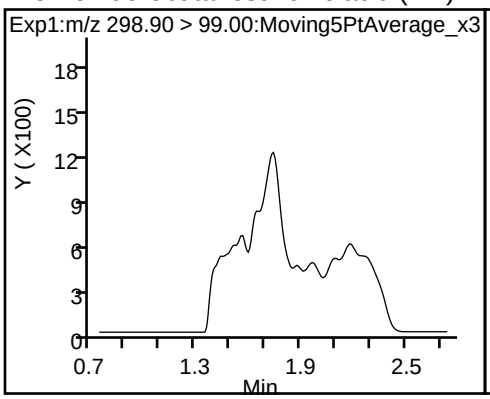
D 47 13C3-PFBS



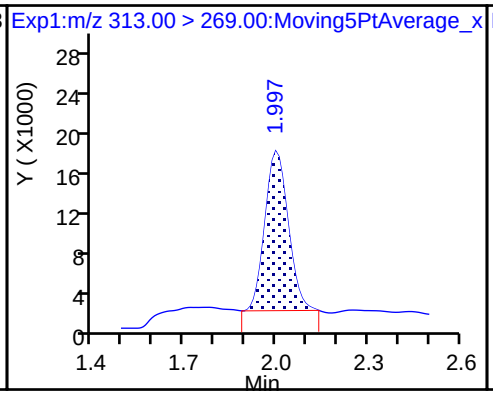
5 Perfluorobutanesulfonic acid (ND)



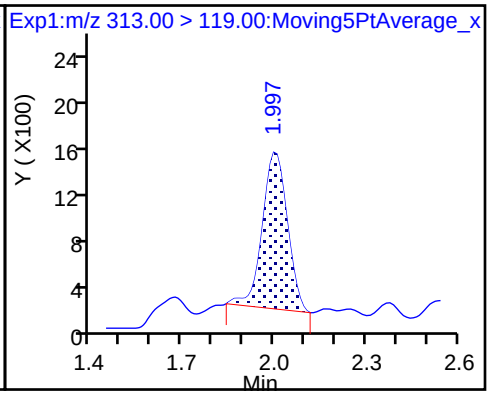
5 Perfluorobutanesulfonic acid (ND)



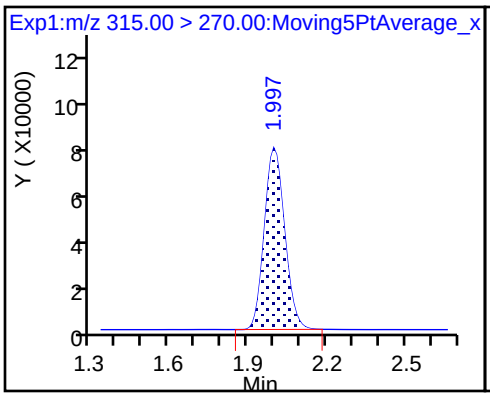
6 Perfluorohexanoic acid



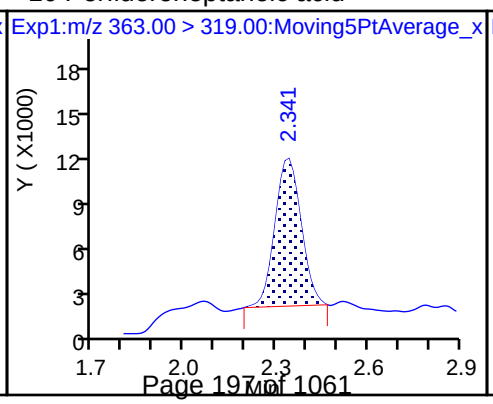
6 Perfluorohexanoic acid



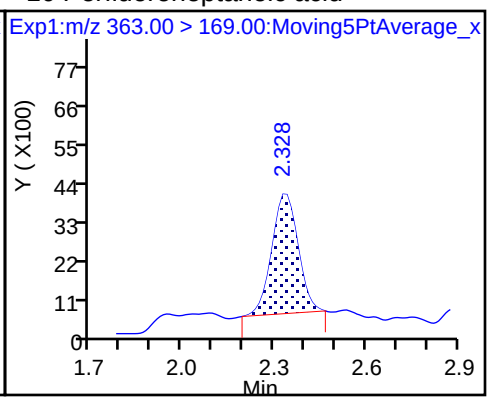
D 7 13C2 PFHxA



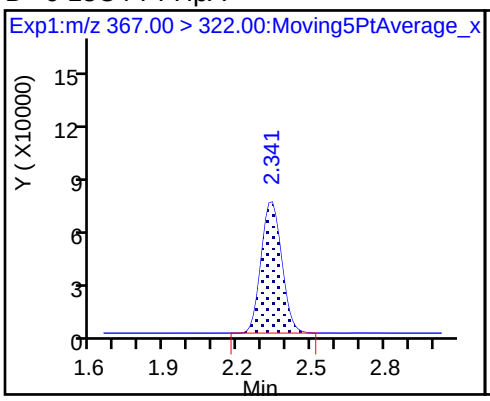
10 Perfluoroheptanoic acid



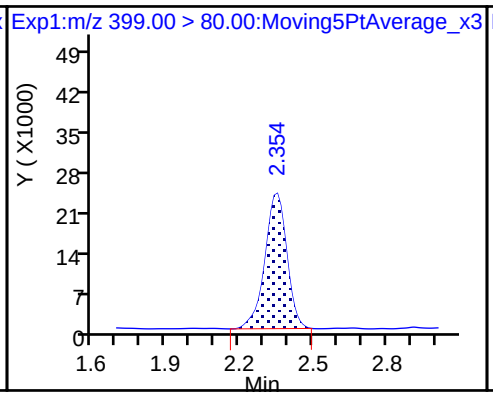
10 Perfluoroheptanoic acid



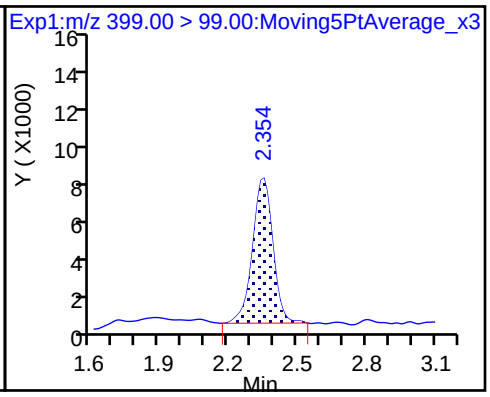
D 9 13C4-PFHpA



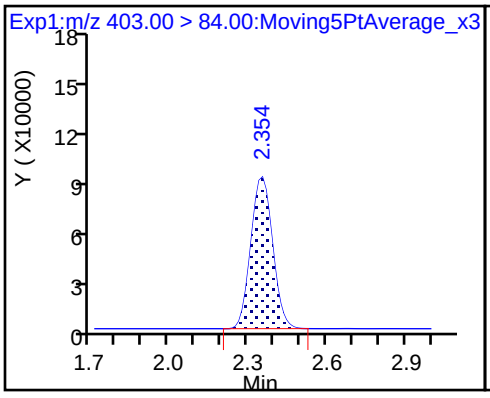
8 Perfluorohexanesulfonic acid



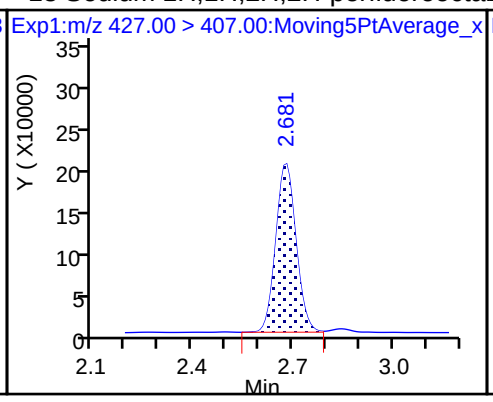
8 Perfluorohexanesulfonic acid



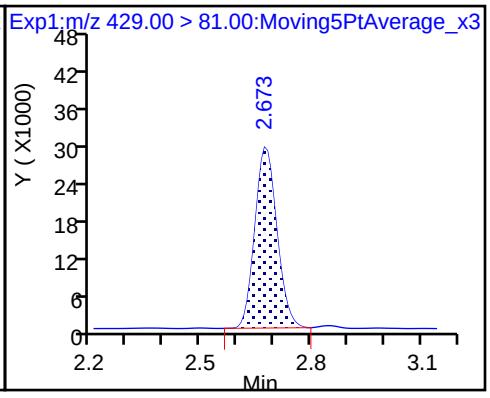
D 11 18O2 PFHxS



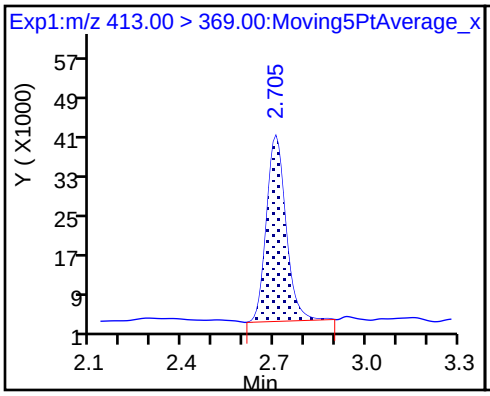
13 Sodium 1H,1H,2H,2H-perfluorooctane



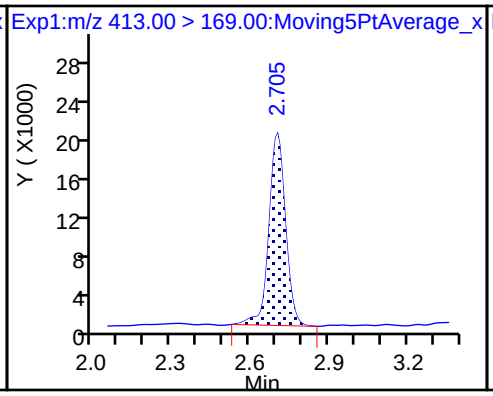
D 12 M2-6:2FTS



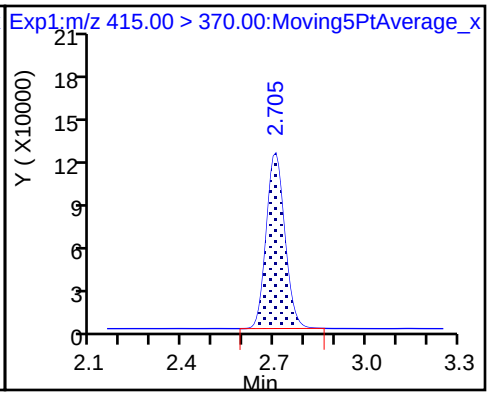
15 Perfluorooctanoic acid



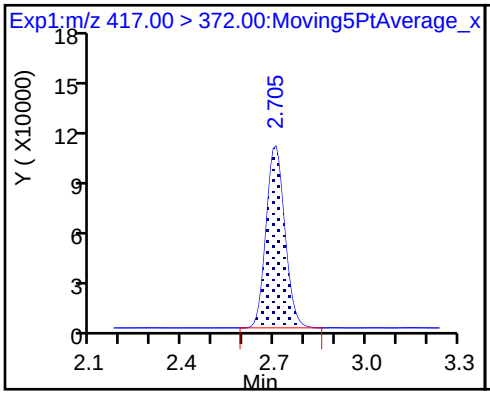
15 Perfluorooctanoic acid



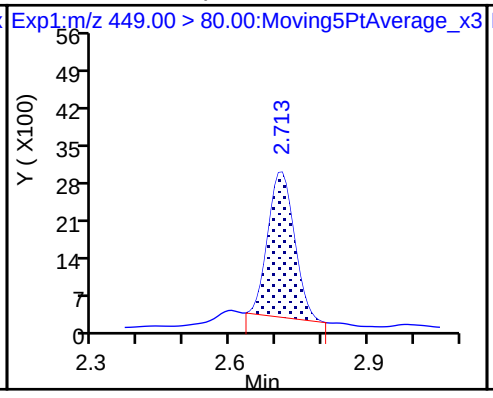
* 62 13C2-PFOA



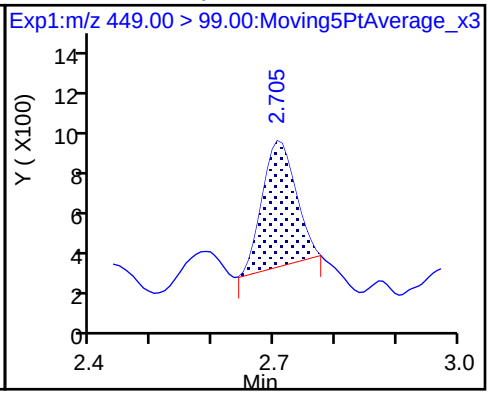
D 14 13C4 PFOA



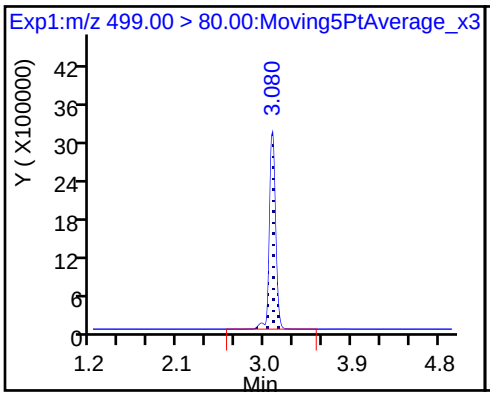
16 Perfluoroheptanesulfonic acid



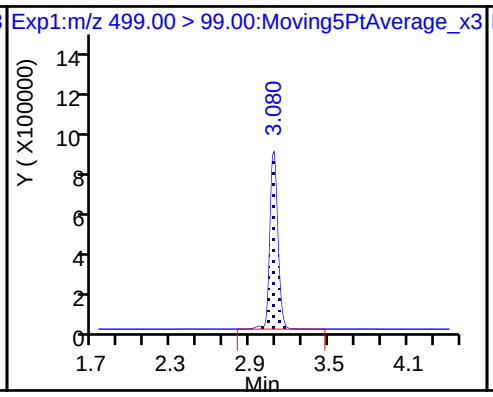
16 Perfluoroheptanesulfonic acid



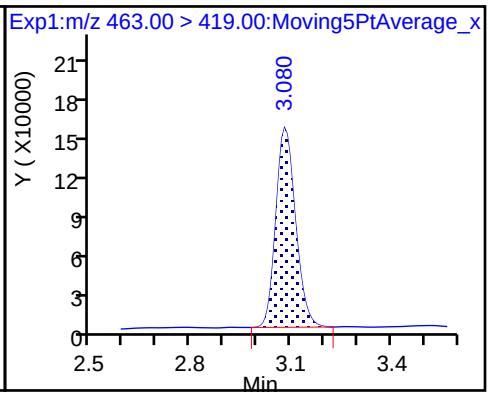
17 Perfluorooctane sulfonic acid



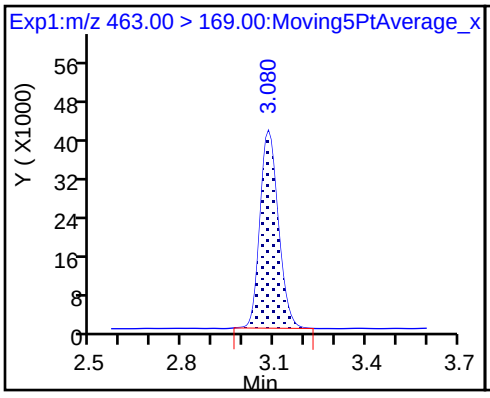
17 Perfluorooctane sulfonic acid



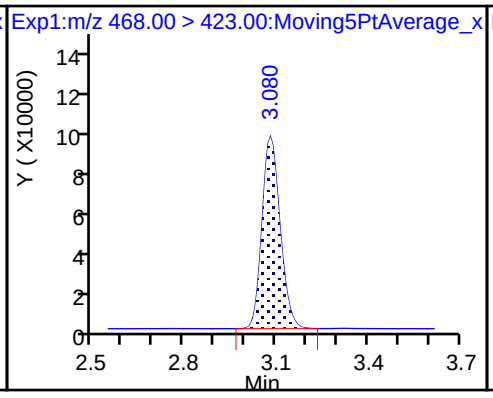
20 Perfluorononanoic acid



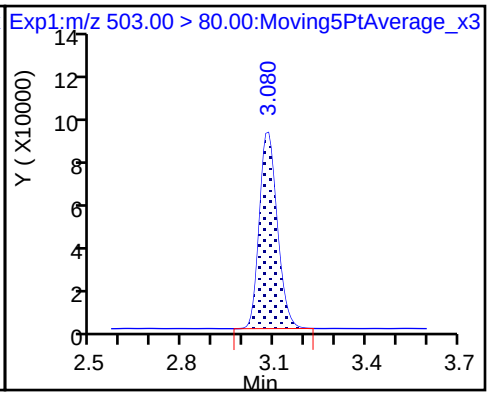
20 Perfluorononanoic acid



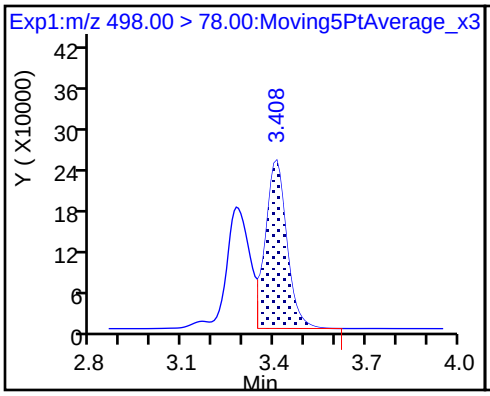
D 19 13C5 PFNA



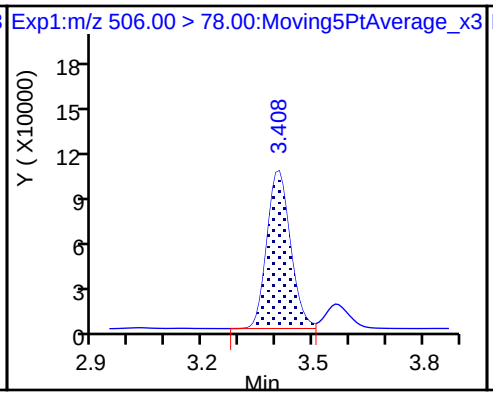
D 18 13C4 PFOS



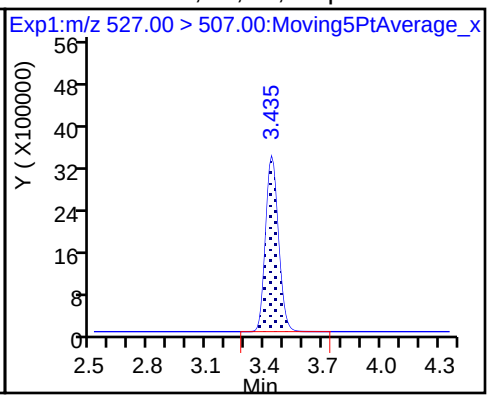
22 Perfluorooctane Sulfonamide



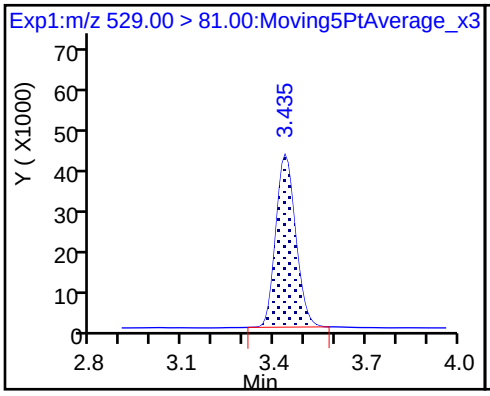
D 21 13C8 FOSA



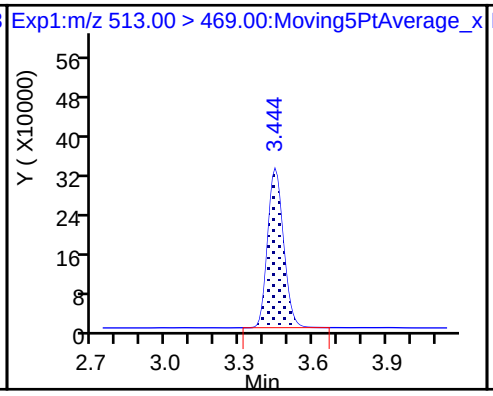
25 Sodium 1H,1H,2H,2H-perfluorodecane



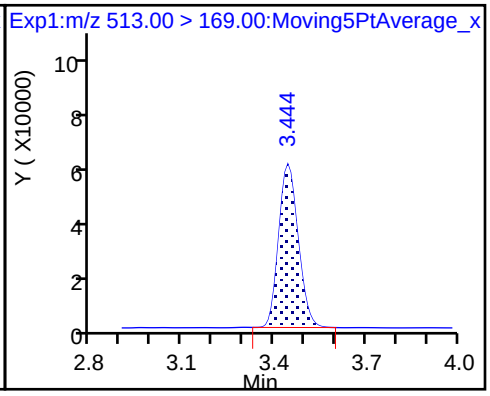
D 26 M2-8:2FTS



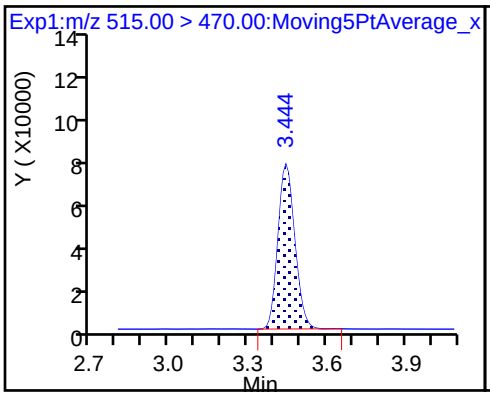
24 Perfluorodecanoic acid



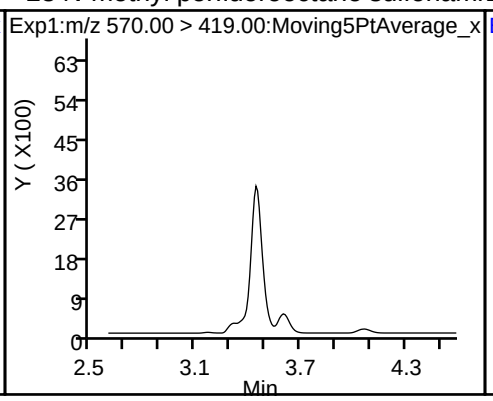
24 Perfluorodecanoic acid



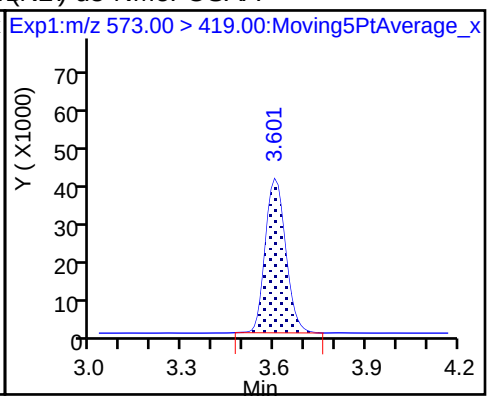
D 23 13C2 PFDA



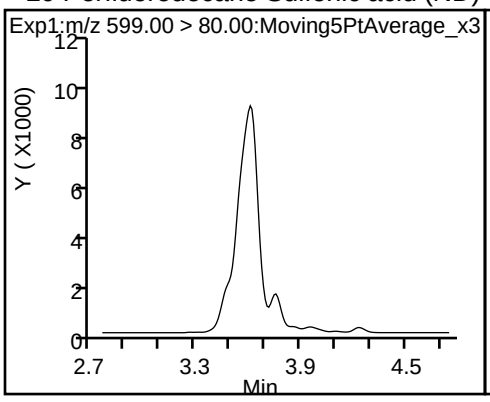
28 N-methyl perfluorooctane sulfonamid (ND)



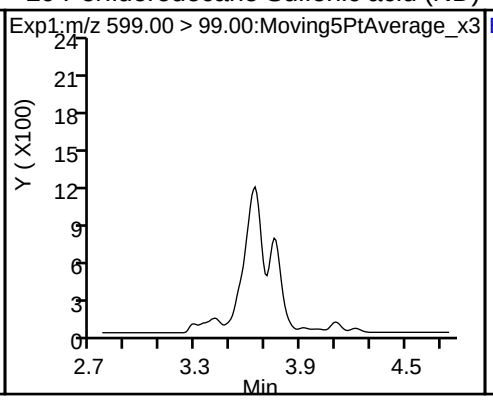
D 27 d3-NMeFOSAA



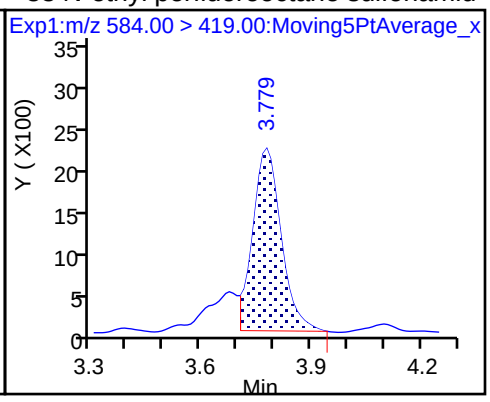
29 Perfluorodecane Sulfonic acid (ND)



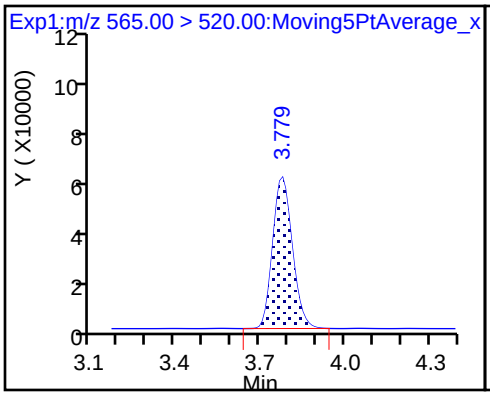
29 Perfluorodecane Sulfonic acid (ND)



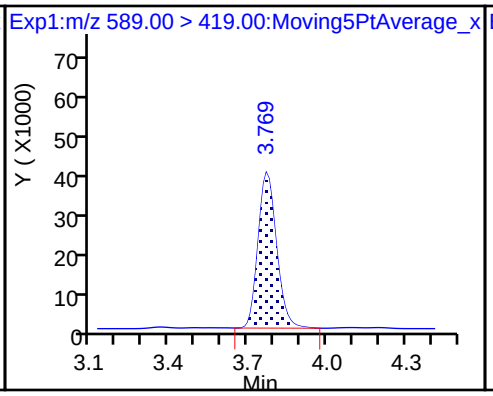
33 N-ethyl perfluorooctane sulfonamid



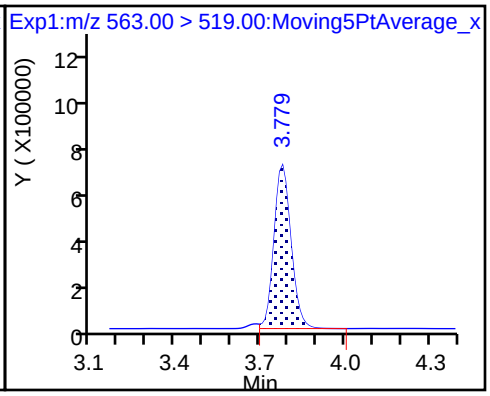
D 30 13C2 PFUnA



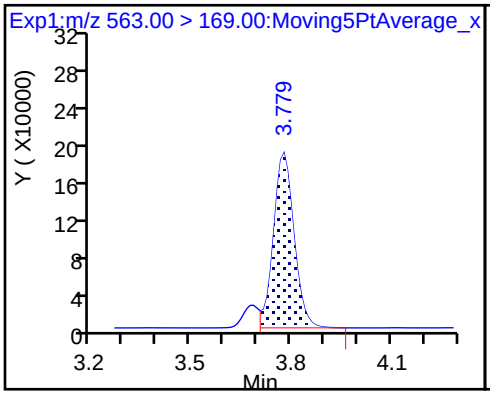
D 32 d5-NEtFOSAA



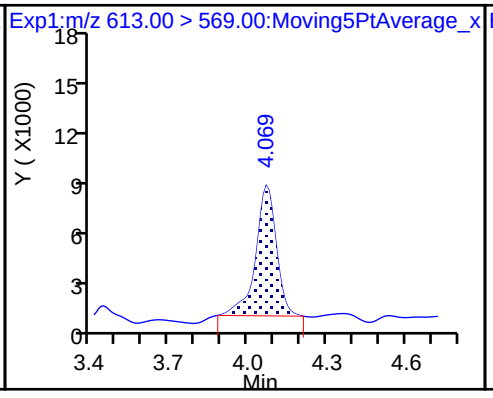
31 Perfluoroundecanoic acid



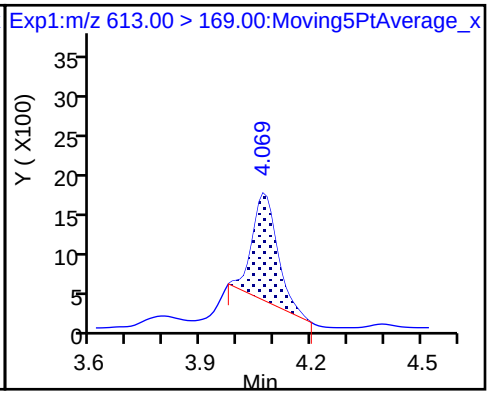
31 Perfluoroundecanoic acid



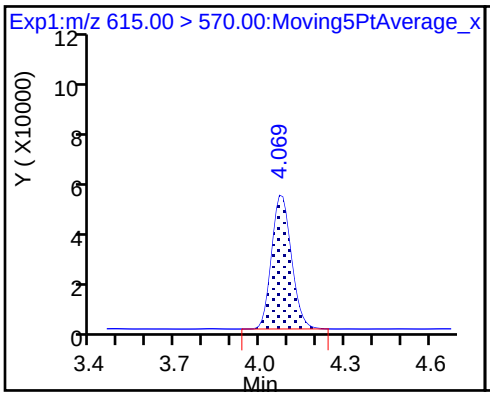
37 Perfluorododecanoic acid



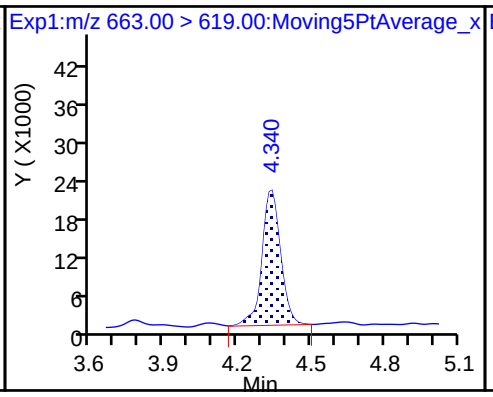
37 Perfluorododecanoic acid



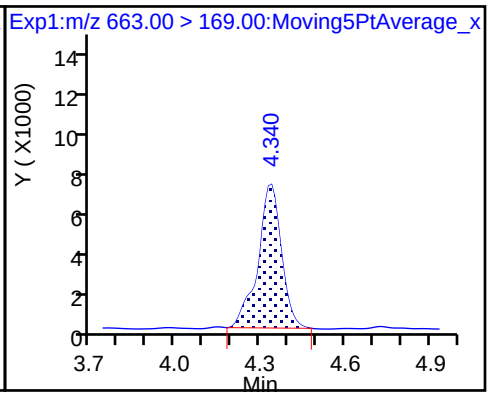
D 36 13C2 PFDoA



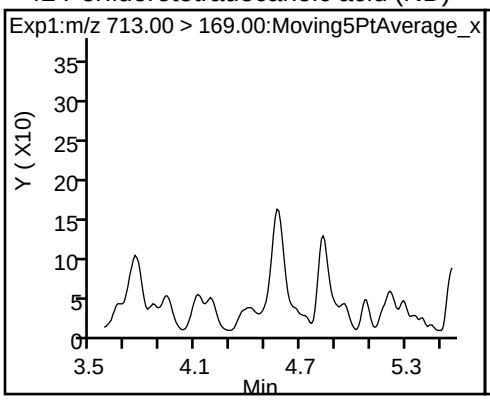
41 Perfluorotridecanoic acid



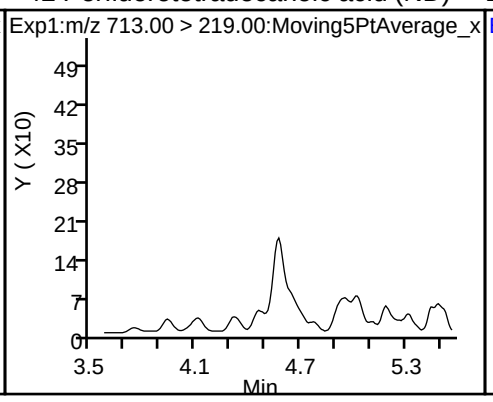
41 Perfluorotridecanoic acid



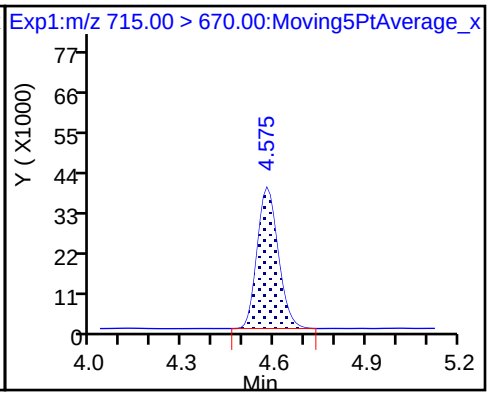
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(5'-7') | Lab Sample ID: 320-36761-4

Matrix: Solid | Lab File ID: 2018.03.20LLA_041.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:15

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.09(g) | Date Analyzed: 03/21/2018 01:30

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00011	J B	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000083	J	0.00020	0.000078
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00016	J	0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00025		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.0038		0.00020	0.000087
335-76-2	Perfluorodecanoic acid (PFDA)	0.0024		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0060		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00015	J	0.00020	0.000068
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00060		0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0073		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00084		0.00020	0.000035
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.0011		0.00020	0.000083
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(5'-7') | Lab Sample ID: 320-36761-4

Matrix: Solid | Lab File ID: 2018.03.20LLA_041.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:15

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.09(g) | Date Analyzed: 03/21/2018 01:30

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	80		25-150
STL01893	13C5 PFPeA	84		25-150
STL00993	13C2 PFHxA	84		25-150
STL01892	13C4-PFHpA	89		25-150
STL00990	13C4 PFOA	81		25-150
STL00996	13C2 PFDA	61		25-150
STL00997	13C2 PFUnA	47		25-150
STL00998	13C2 PFDoA	35		25-150
STL02116	13C2-PFTeDA	37		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	59		25-150
STL01056	13C8 FOSA	51		25-150
STL02118	d3-NMeFOSAA	35		25-150
STL02117	d5-NEtFOSAA	39		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_041.d
Lims ID: 320-36761-A-4-A
Client ID: SB003(5'-7')
Sample Type: Client
Inject. Date: 21-Mar-2018 01:30:47 ALS Bottle#: 31 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-4-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:45:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.540	4402366	2.00		80.1	59189	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.446	0.001	1.000	85603	0.0524			32.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.701	1.700	0.001	0.634	3255188	2.10		83.9	61150	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.709	-0.008	1.000	62622	0.0412			18.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	75529	1.97		84.8	402	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	3627005	2.10		83.8	86887	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	114242	0.0780			281	
313.00 > 119.00	1.998	1.997	0.001	1.005	10958		10.43(5.03-15.10)		198	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.315	0.001	0.864	3724530	2.21		88.5	87193	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.328	-0.012	1.000	192807	0.1249			319	
363.00 > 169.00	2.329	2.328	0.0	1.006	74289		2.60(1.13-3.40)		1010	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.873	4357898	1.94		82.1	89615	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.341	-0.013	0.994	7385501	3.59			11565	
399.00 > 99.00	2.329	2.341	-0.013	0.994	2169305		3.40(1.50-4.49)		4873	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	762455	1.77		74.5	8630	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.657	2.663	-0.006	1.000	20031361	37.5			29567	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3293955	2.03		81.1	95010	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.695	-0.006	1.003	2742749	1.86			1216	
413.00 > 169.00	2.681	2.695	-0.014	1.000	1499586		1.83(0.84-2.52)		4596	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4307299	2.50			90049	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	505743	0.4148			506	
449.00 > 99.00	2.689	2.703	-0.014	1.000	120828		4.19(1.94-5.82)		1410	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2217608	1.41		59.1	34118	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2135876	1.64		65.7	46725	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.002	25218106	25.1			39002	E
499.00 > 99.00	3.051	3.067	-0.016	1.000	5981342		4.22(2.31-6.93)		35855	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.058	3.067	-0.009	1.000	19316950	22.2			36970	E
463.00 > 169.00	3.058	3.067	-0.009	1.000	5057310		3.82(1.90-5.69)		76722	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.389	0.001	1.264	2893229	1.27		50.9	3387	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.390	3.401	-0.011	1.000	594685	0.5288			78.6	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.408	0.0	1.271	579515	1.43		59.8	14451	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.417	0.0	1.274	1653059	1.52		60.9	37087	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.408	3.419	-0.011	1.000	5789170	19.0			76996	E
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.428	-0.011	1.000	744005	1.19			2749	
513.00 > 169.00	3.417	3.428	-0.011	1.000	124771		5.96(2.36-7.09)		2620	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	313150	0.8733		34.9	11438	
29 Perfluorodecane Sulfonic acid										Ma
599.00 > 80.00	3.728	3.741	-0.013	1.000	6521	0.0110			3.2	M
599.00 > 99.00	3.717	3.741	-0.024	0.997	3218		2.03(1.39-4.16)		17.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.748	-0.010	1.394	336447	0.9814		39.3	651	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1004002	1.18		47.2	52603	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.762	-0.004	1.005	1749	0.0133			30.3	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	992259	2.95			250	
563.00 > 169.00	3.748	3.762	-0.014	1.000	272978		3.63(2.12-6.36)		67.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.509	715153	0.8870		35.5	5679	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.061	-0.015	1.000	21925	0.0749			6.0	
613.00 > 169.00	4.036	4.061	-0.025	0.997	4263		5.14(2.13-6.40)		81.5	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.307	4.320	-0.013	1.000	87392	0.2970			29.5	M
663.00 > 169.00	4.307	4.320	-0.013	1.000	29461		2.97(1.25-3.76)		315	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.699	674789	0.9169		36.7	6666	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 22-Mar-2018 10:56:28 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_041.d

Injection Date: 21-Mar-2018 01:30:47 Instrument ID: A8_N

Lims ID: 320-36761-A-4-A Lab Sample ID: 320-36761-4

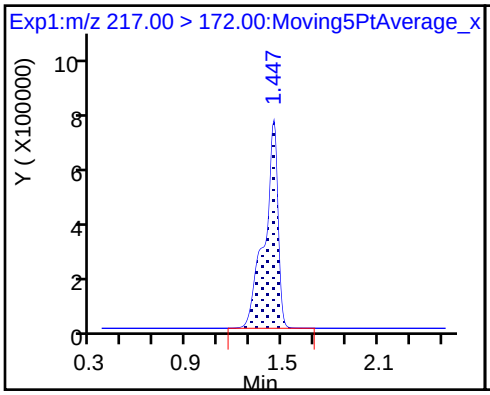
Client ID: SB003(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 31 Worklist Smp#: 20

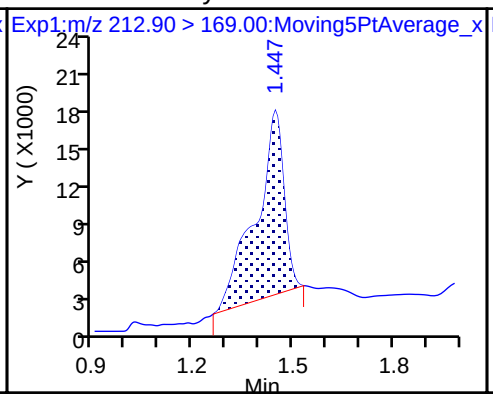
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

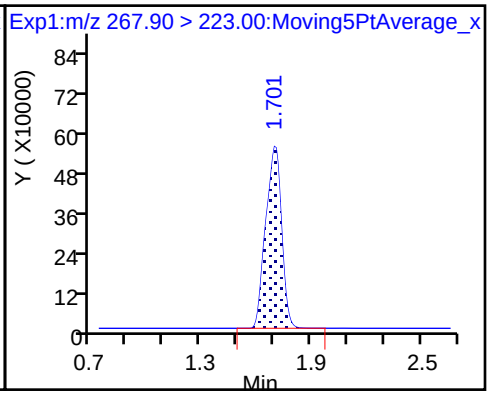
D 1 13C4 PFBA



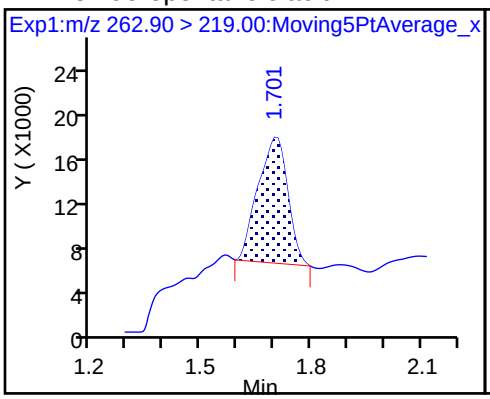
2 Perfluorobutyric acid



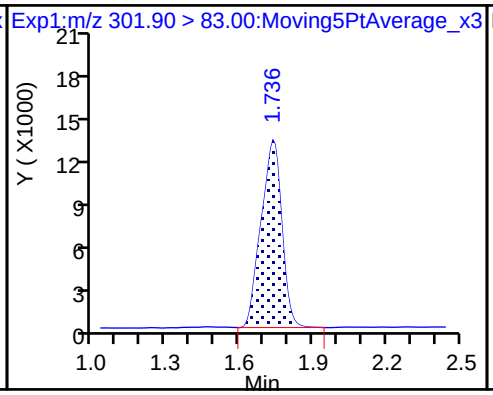
D 3 13C5-PFPeA



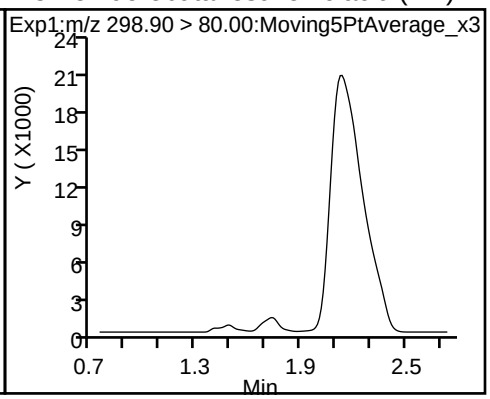
4 Perfluoropentanoic acid



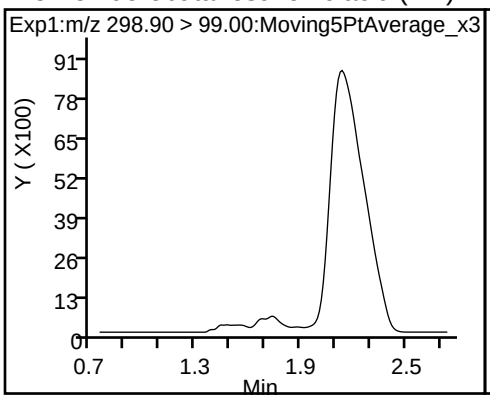
D 47 13C3-PFBS



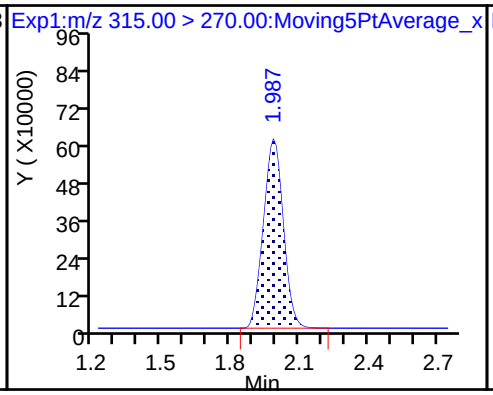
5 Perfluorobutanesulfonic acid (ND)



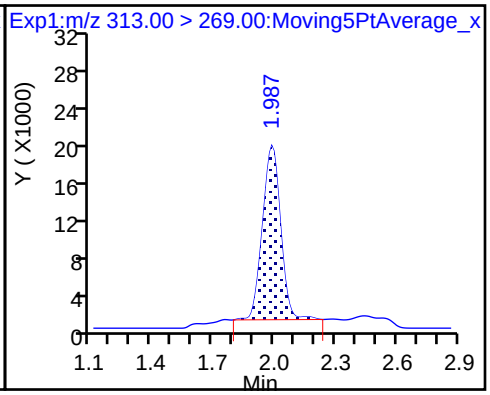
5 Perfluorobutanesulfonic acid (ND)



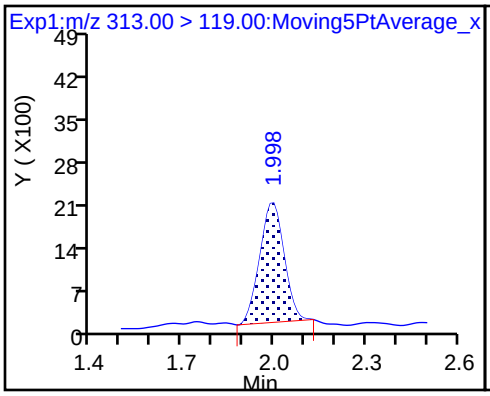
D 7 13C2 PFHxA



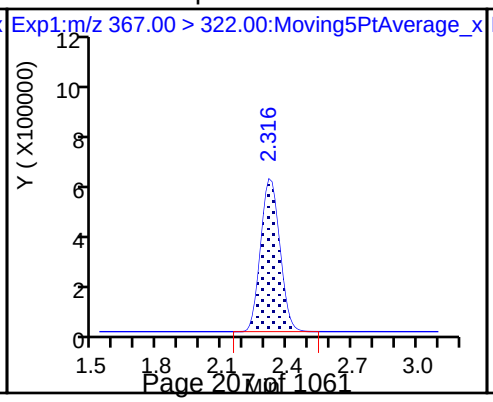
6 Perfluorohexanoic acid



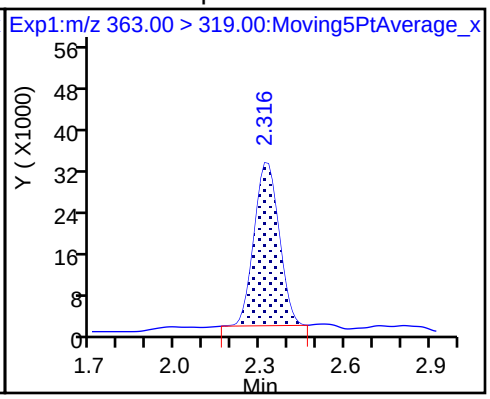
6 Perfluorohexanoic acid



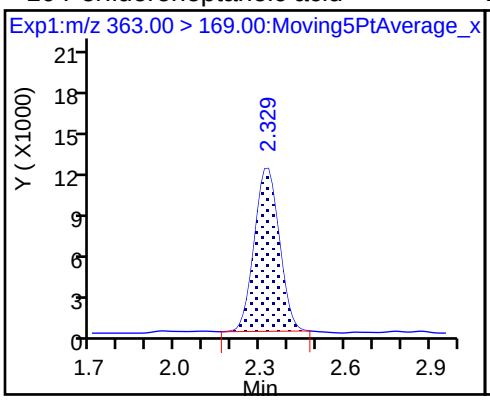
D 9 13C4-PFHpA



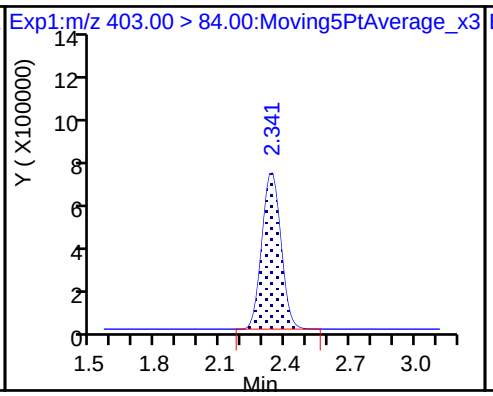
10 Perfluoroheptanoic acid



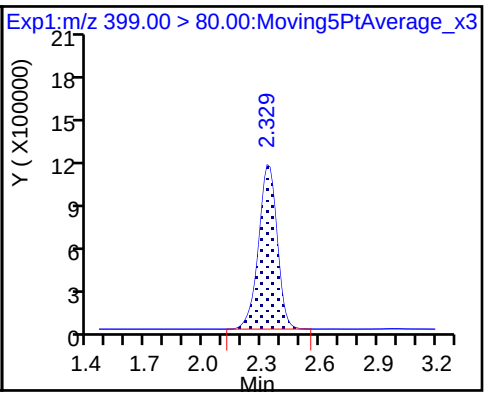
10 Perfluoroheptanoic acid



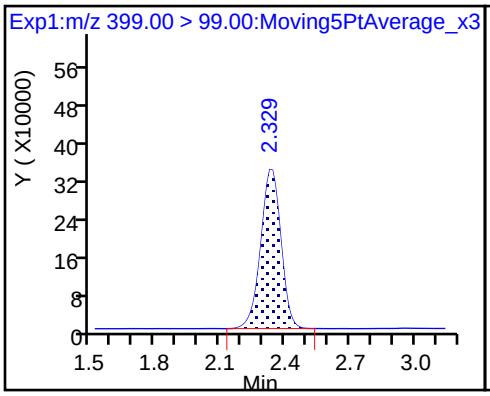
D 11 18O2 PFHxS



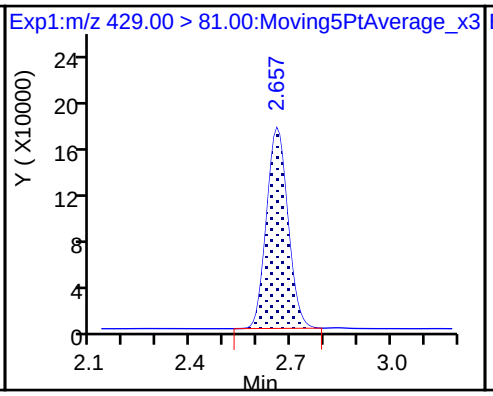
8 Perfluorohexanesulfonic acid



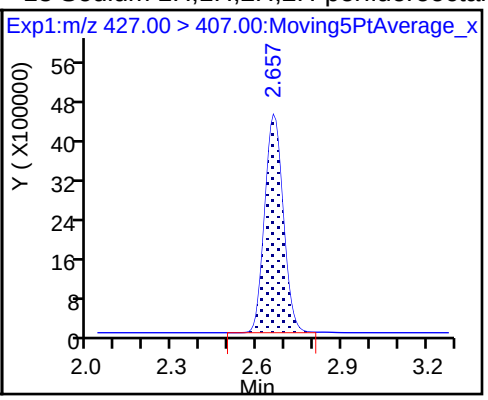
8 Perfluorohexanesulfonic acid



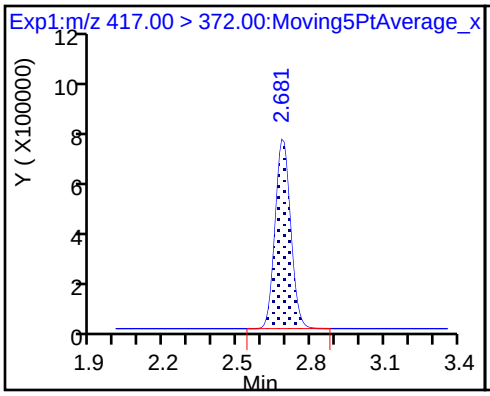
D 12 M2-6:2FTS



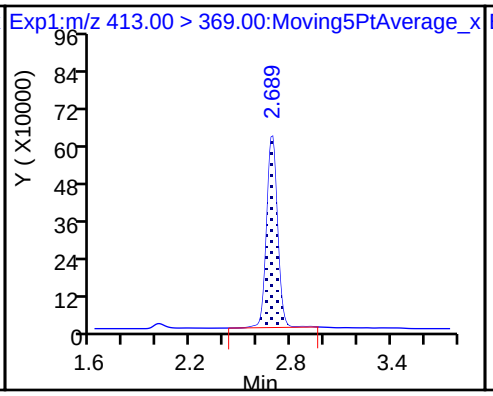
13 Sodium 1H,1H,2H,2H-perfluorooctane



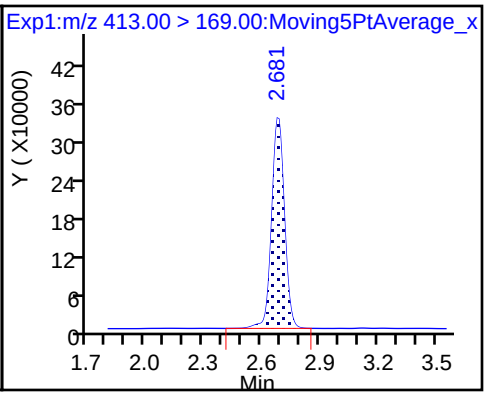
D 14 13C4 PFOA



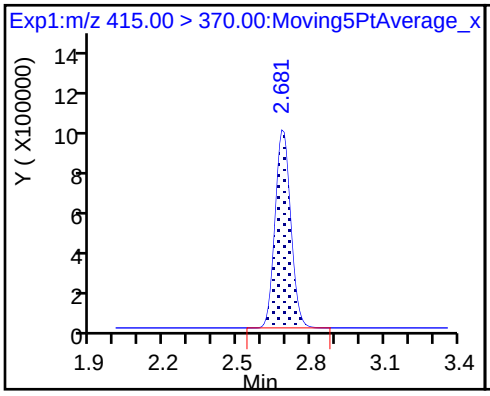
15 Perfluorooctanoic acid



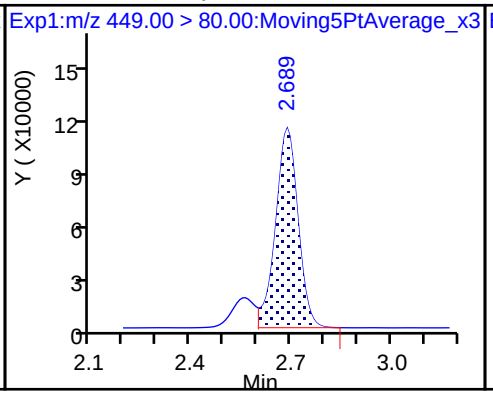
15 Perfluorooctanoic acid



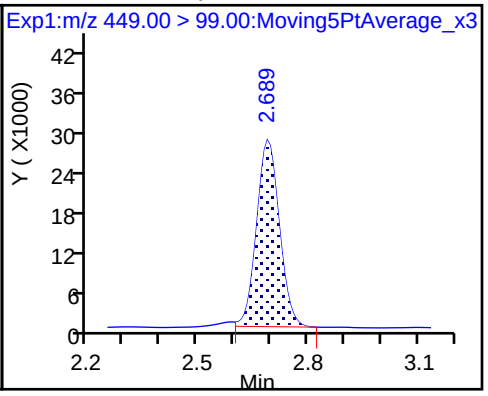
* 62 13C2-PFOA



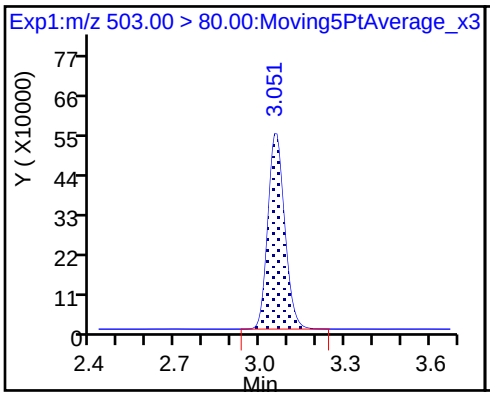
16 Perfluoroheptanesulfonic acid



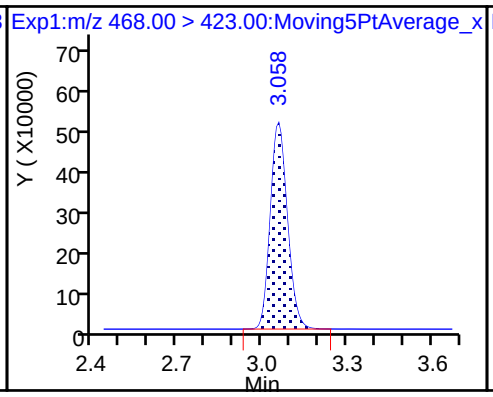
16 Perfluoroheptanesulfonic acid



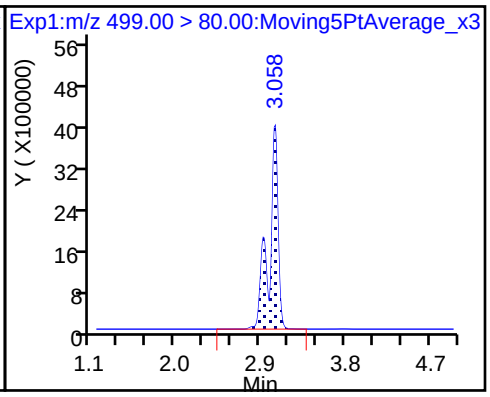
D 18 13C4 PFOS



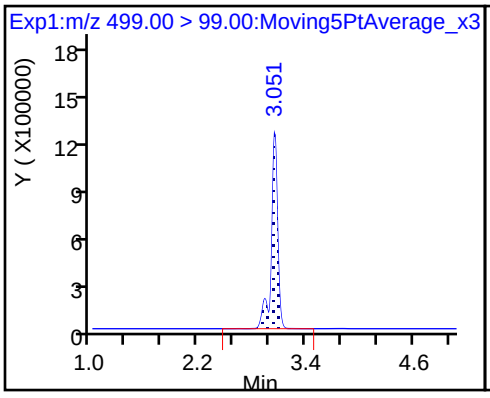
D 19 13C5 PFNA



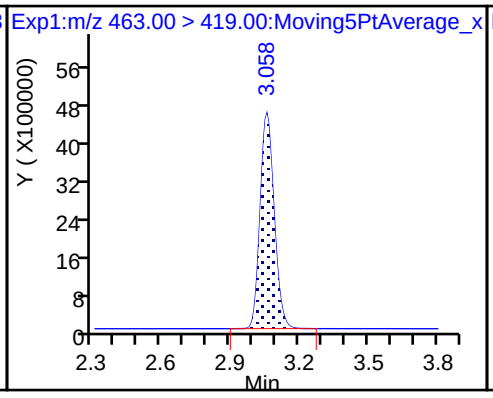
17 Perfluorooctane sulfonic acid



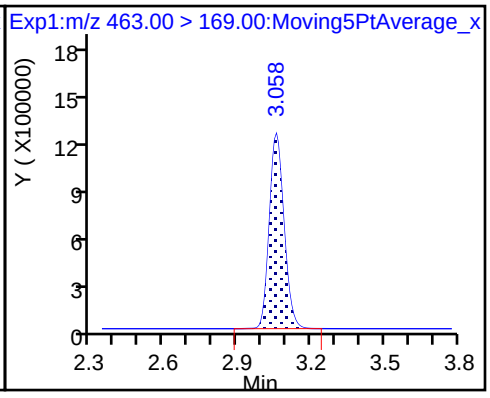
17 Perfluorooctane sulfonic acid



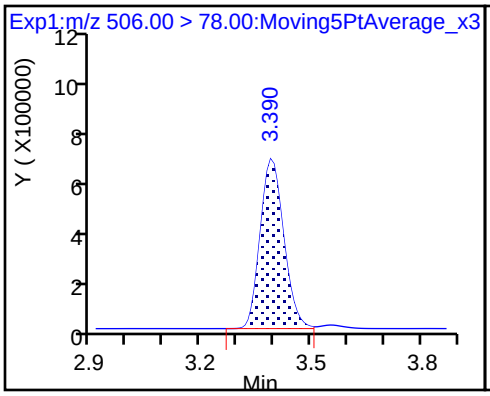
20 Perfluorononanoic acid



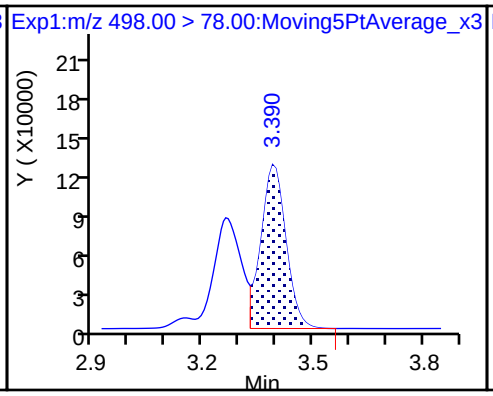
20 Perfluorononanoic acid



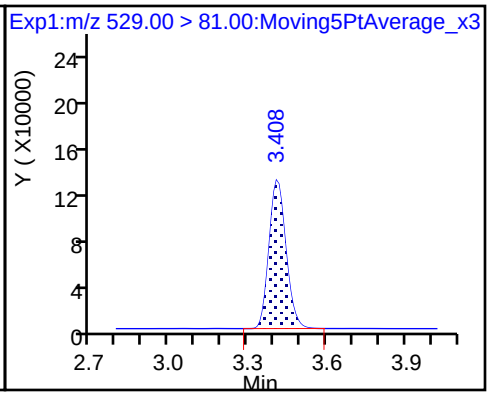
D 21 13C8 FOSA



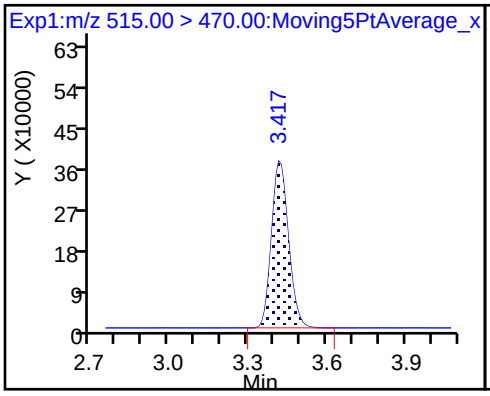
22 Perfluorooctane Sulfonamide



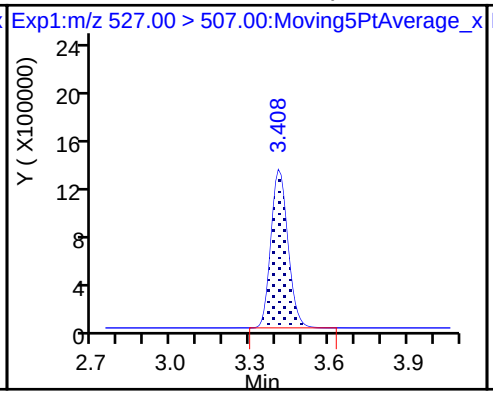
D 26 M2-8:2FTS



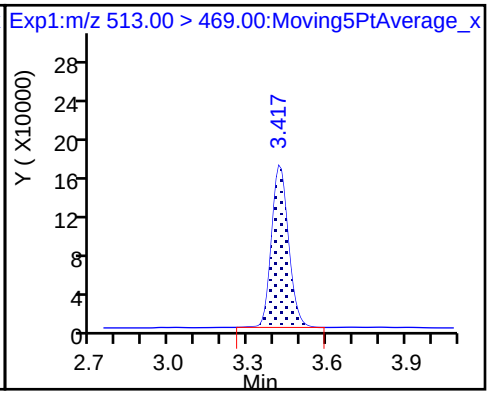
D 23 13C2 PFDA



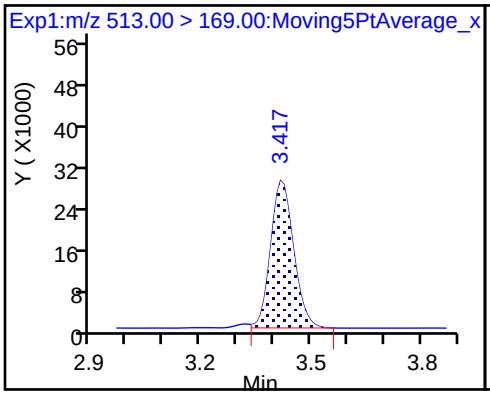
25 Sodium 1H,1H,2H,2H-perfluorodecan



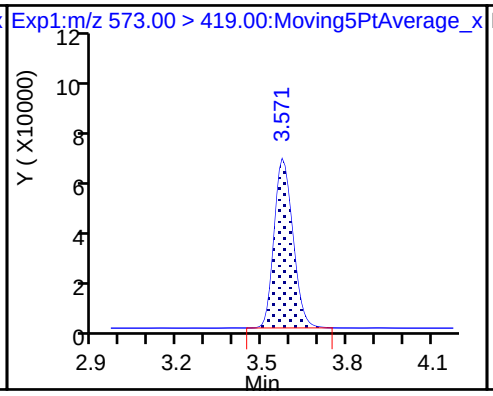
24 Perfluorodecanoic acid



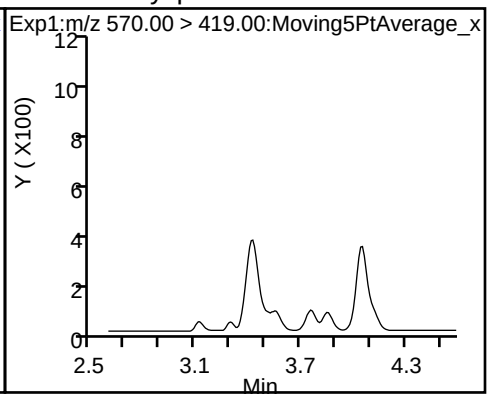
24 Perfluorodecanoic acid



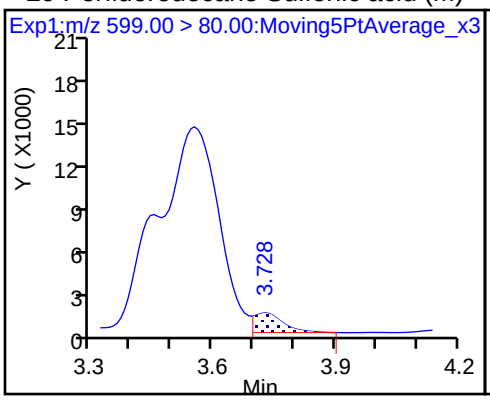
D 27 d3-NMeFOSAA



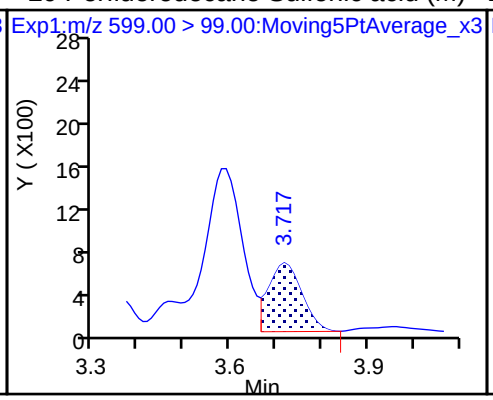
28 N-methyl perfluorooctane sulfonami (ND)



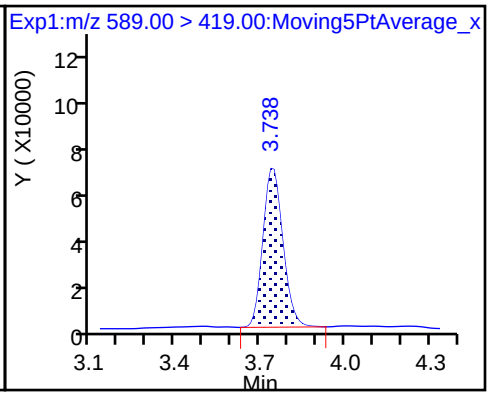
29 Perfluorodecane Sulfonic acid (M)



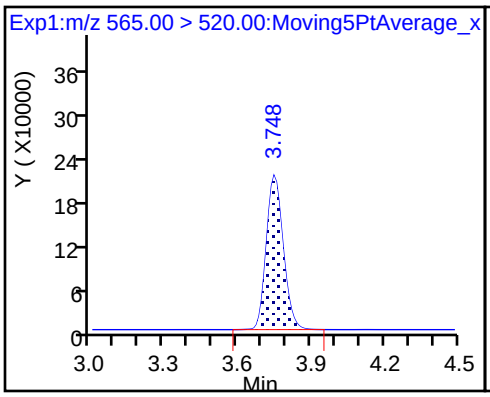
29 Perfluorodecane Sulfonic acid (M)



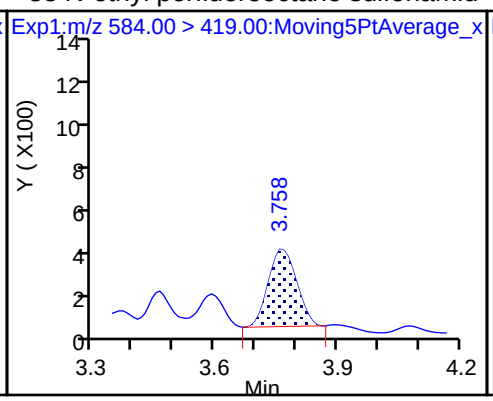
D 32 d5-NEtFOSAA



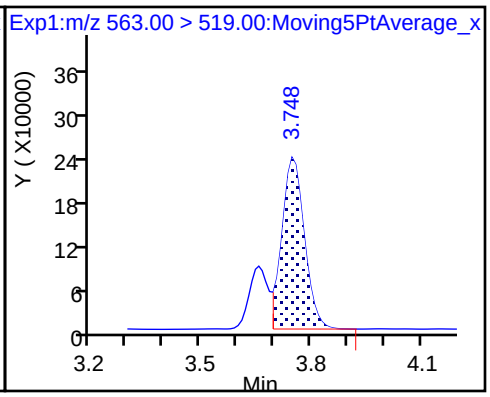
D 30 13C2 PFUnA



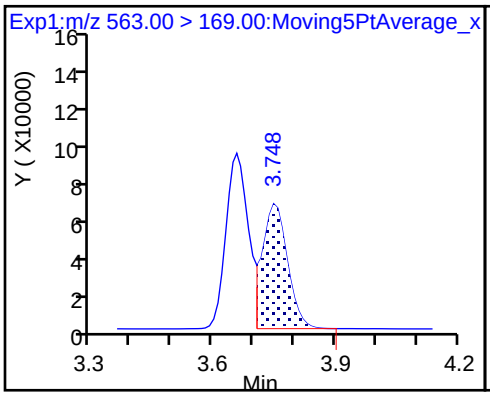
33 N-ethyl perfluorooctane sulfonamid



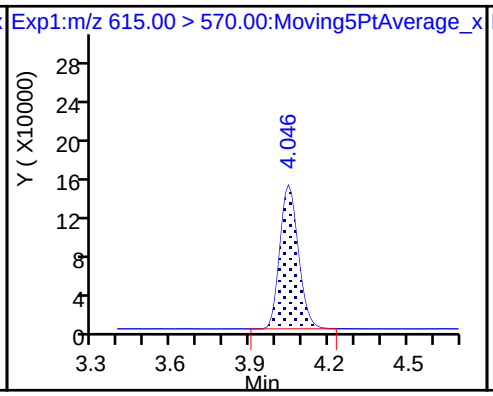
31 Perfluoroundecanoic acid



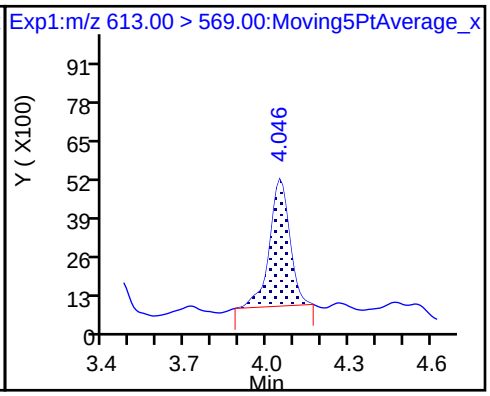
31 Perfluoroundecanoic acid



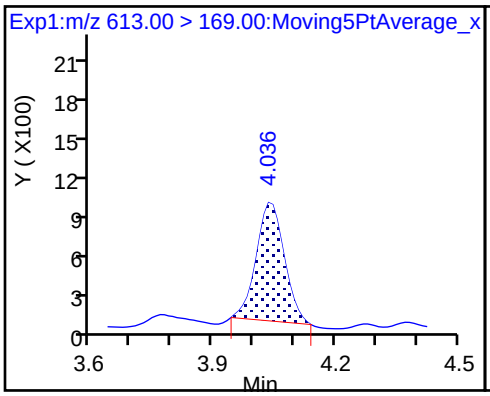
D 36 13C2 PFDoA



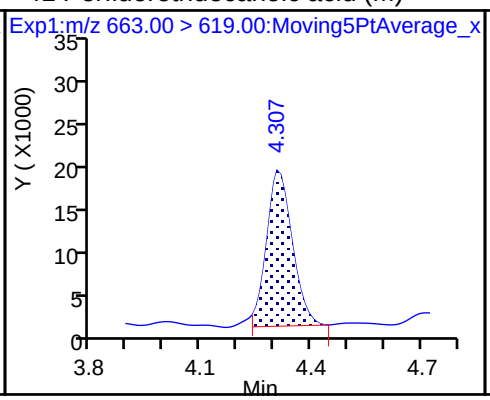
37 Perfluorododecanoic acid



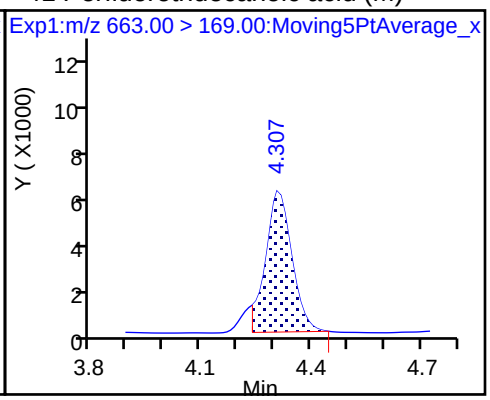
37 Perfluorododecanoic acid



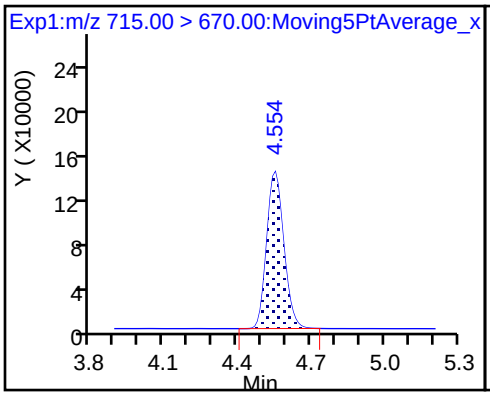
41 Perfluorotridecanoic acid (M)



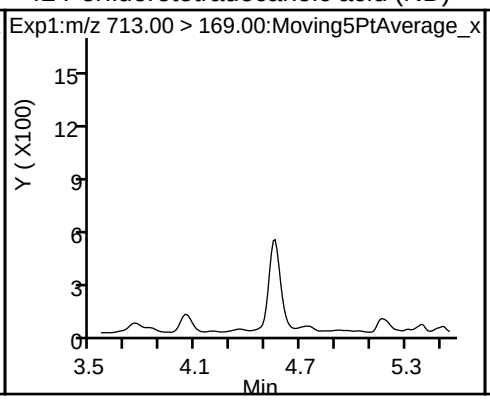
41 Perfluorotridecanoic acid (M)



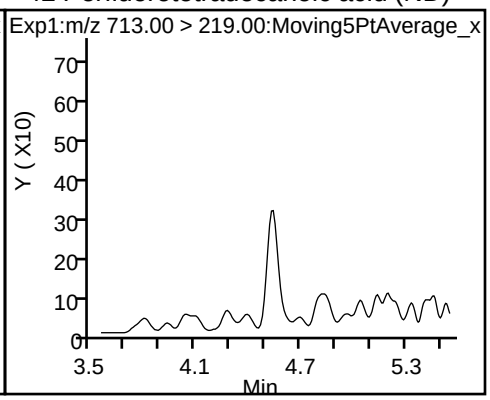
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

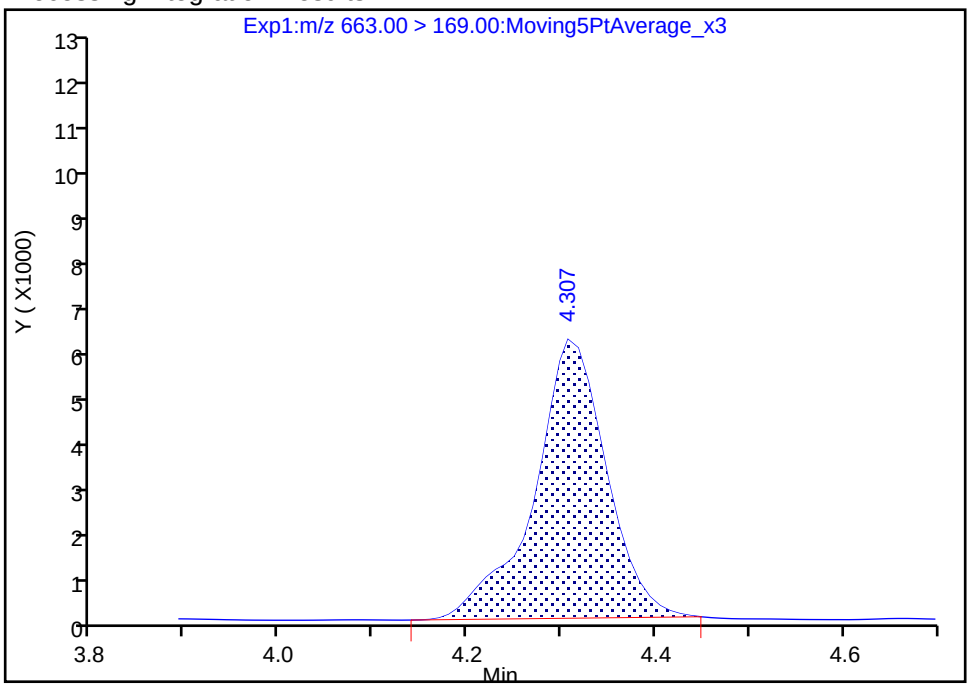
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_041.d				
Injection Date:	21-Mar-2018 01:30:47	Instrument ID:	A8_N		
Lims ID:	320-36761-A-4-A	Lab Sample ID:	320-36761-4		
Client ID:	SB003(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 2

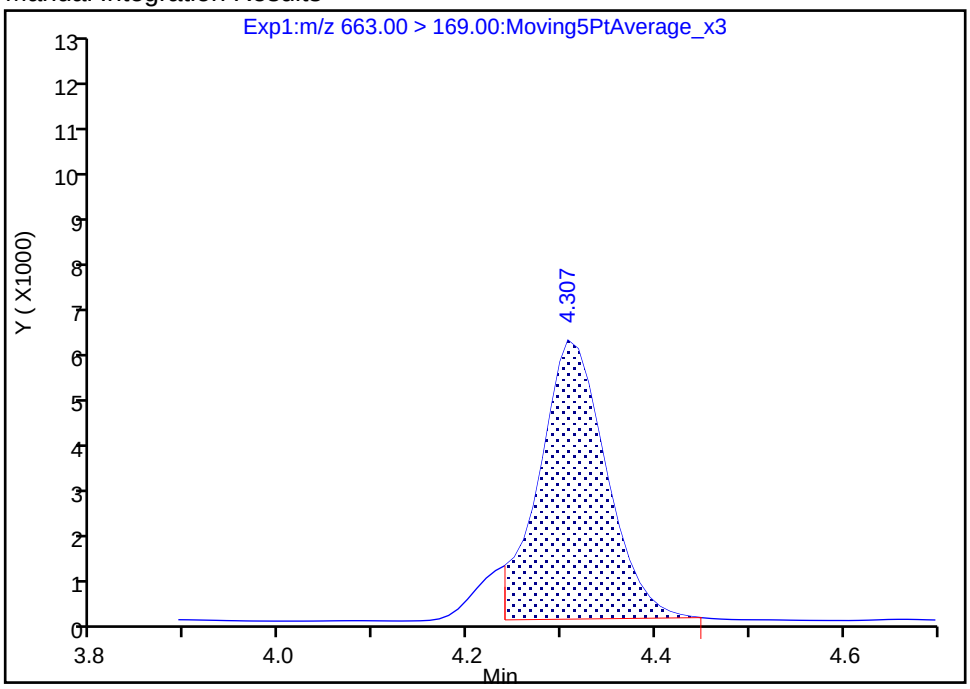
Processing Integration Results

RT: 4.31
Area: 31901
Amount: 0.304213
Amount Units: ng/ml



Manual Integration Results

RT: 4.31
Area: 29461
Amount: 0.296961
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:48:14

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

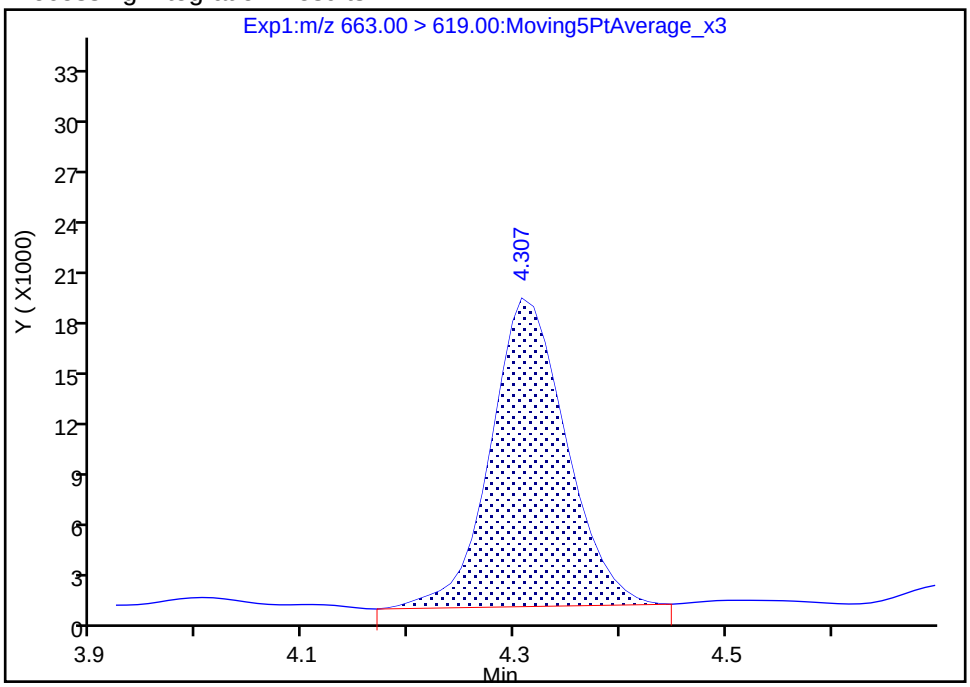
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_041.d				
Injection Date:	21-Mar-2018 01:30:47	Instrument ID:	A8_N		
Lims ID:	320-36761-A-4-A	Lab Sample ID:	320-36761-4		
Client ID:	SB003(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

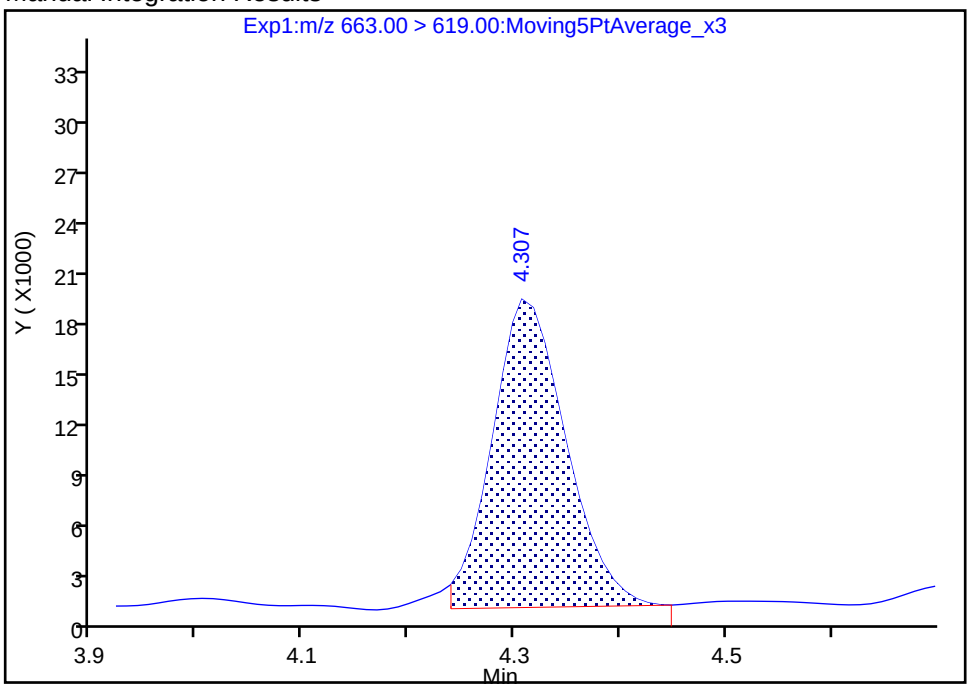
Processing Integration Results

RT: 4.31
Area: 89526
Amount: 0.304213
Amount Units: ng/ml



Manual Integration Results

RT: 4.31
Area: 87392
Amount: 0.296961
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:48:16

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

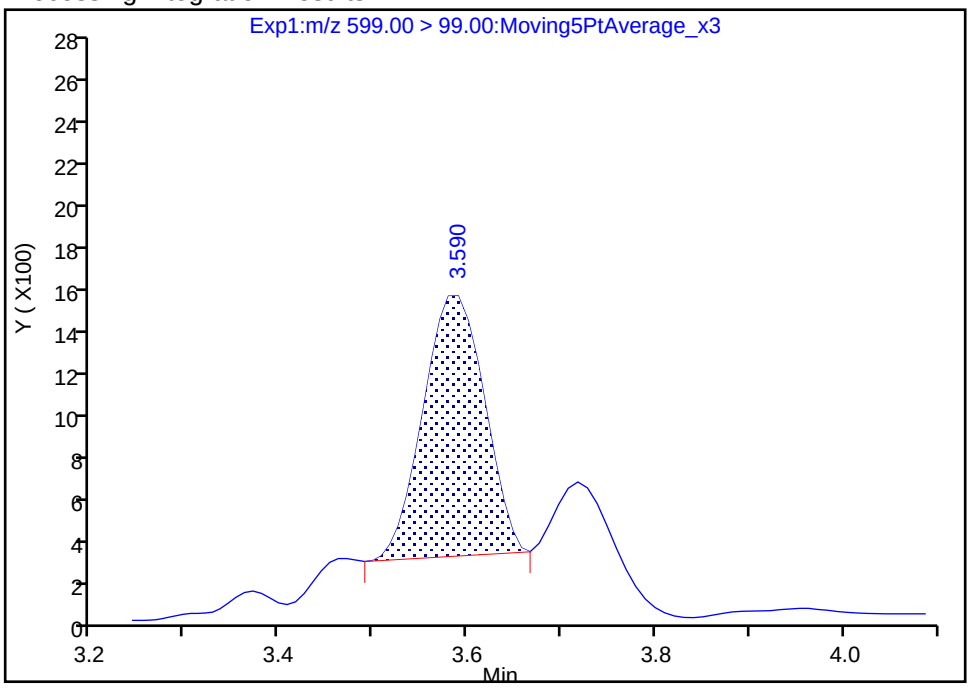
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_041.d				
Injection Date:	21-Mar-2018 01:30:47	Instrument ID:	A8_N		
Lims ID:	320-36761-A-4-A	Lab Sample ID:	320-36761-4		
Client ID:	SB003(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 2

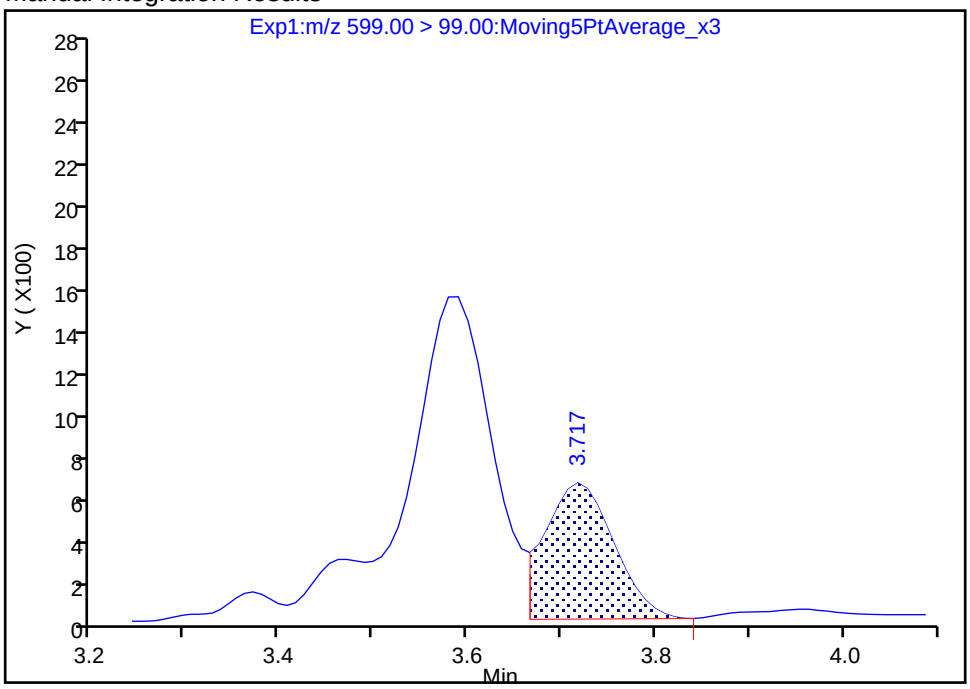
Processing Integration Results

RT: 3.59
Area: 5608
Amount: 0.183295
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 3218
Amount: 0.011007
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:45:06

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

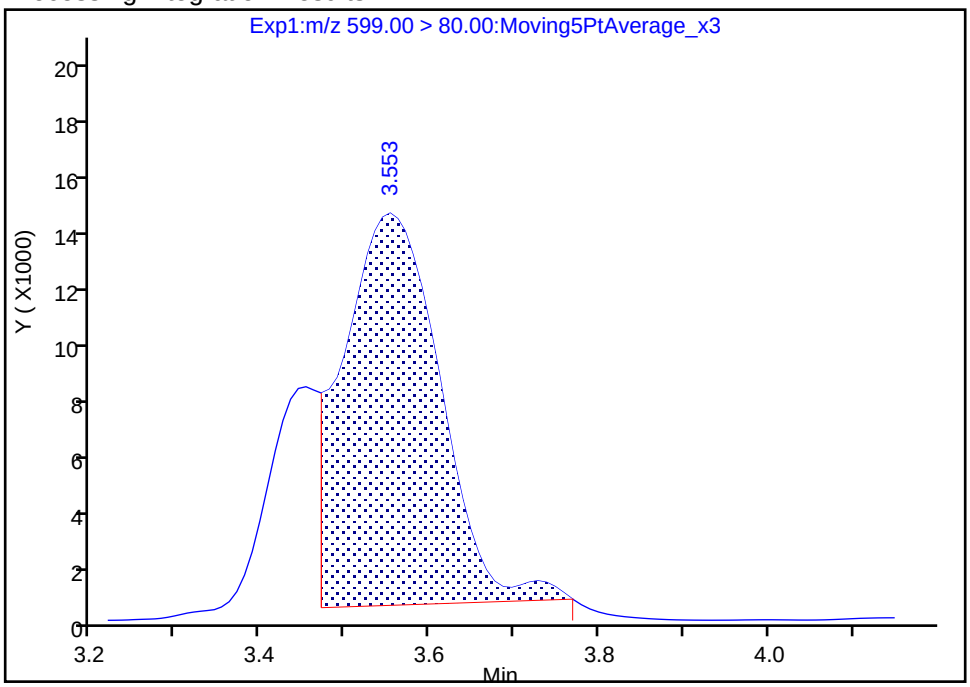
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_041.d				
Injection Date:	21-Mar-2018 01:30:47	Instrument ID:	A8_N		
Lims ID:	320-36761-A-4-A	Lab Sample ID:	320-36761-4		
Client ID:	SB003(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

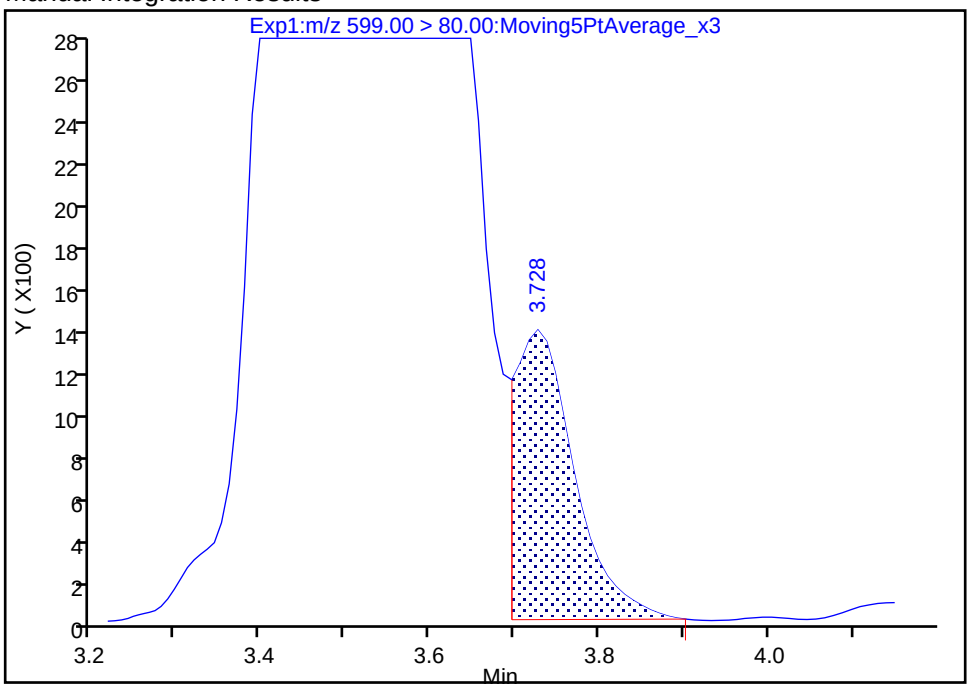
Processing Integration Results

RT: 3.55
Area: 108594
Amount: 0.183295
Amount Units: ng/ml



Manual Integration Results

RT: 3.73
Area: 6521
Amount: 0.011007
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:47:28

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(5'-7') RE | Lab Sample ID: 320-36761-4 RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_010.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:15

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.06(g) | Date Analyzed: 03/29/2018 00:33

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000040*	*U H*	*0.00020*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	61		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_010.d
Lims ID: 320-36761-A-4-B
Client ID: SB003(5'-7')
Sample Type: Client
Inject. Date: 29-Mar-2018 00:33:50 ALS Bottle#: 17 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-A-4-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:00:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.000	123428	0.0647			28.5	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5065075	1.85		73.9	54500	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	0.995	48356	0.0306			20.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3500348	1.93		77.0	71527	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.647	71445	1.72		74.1	532	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	104824	0.0696			106	
313.00 > 119.00	1.986	1.998	-0.012	0.995	9257		11.32(5.03-15.10)		90.1	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	3680347	1.83		73.2	85309	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	159223	0.1056			86.8	
363.00 > 169.00	2.328	2.328	0.0	1.000	62211		2.56(1.13-3.40)		109	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	6509564	3.16			24186	
399.00 > 99.00	2.341	2.341	0.0	1.000	2053055		3.17(1.50-4.49)		11278	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	3642981	1.84		73.5	117019	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	4380851	1.79		75.7	117879	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.673	2.673	0.0	1.000	18071471	31.9			23739	E
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		5411252	2.50			100318	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	2617920	1.71			1100	
413.00 > 169.00	2.696	2.697	-0.001	1.000	1420715		1.84(0.84-2.52)		4497	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	771624	1.88		79.0	6650	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.705	0.0	1.000	444554	0.3170			461	
449.00 > 99.00	2.704	2.705	0.0	1.000	110260		4.03(1.94-5.82)		1883	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.721	-0.025	1.000	3384395	1.67		66.7	83321	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.072	3.072	0.0	1.000	28440426	23.3			41415	E
499.00 > 99.00	3.072	3.072	0.0	1.000	6750018		4.21(2.31-6.93)		66523	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.072	3.072	0.0	1.000	22694045	21.1			28125	E
463.00 > 169.00	3.072	3.072	0.0	1.000	6109978		3.71(1.90-5.69)		140247	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	2694701	1.51		60.2	77560	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	2615877	1.47		61.5	40318	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.407	0.001	1.000	795341	0.4935			88.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.417	-0.009	1.264	4086809	1.70		68.1	2934	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.426	3.426	0.0	1.000	7929092	17.6			67196	E
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1102941	1.10			5660	
513.00 > 169.00	3.435	3.435	0.0	1.000	190733		5.78(2.36-7.09)		4405	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	843981	1.52		63.5	20321	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	2533984	1.62		64.6	36940	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1143389	1.39		55.4	21426	
29 Perfluorodecane Sulfonic acid										RM
599.00 > 80.00	3.748	3.748	0.0	1.000	6727	0.009038			2.4	RM
599.00 > 99.00	3.738	3.748	-0.010	0.997	7716		0.87(1.39-4.16)		26.2	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	2183966	3.13			387	
563.00 > 169.00	3.769	3.769	0.0	1.000	577730		3.78(2.12-6.36)		79.0	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.769	0.0	1.003	11426	0.0246			149	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.759	3.779	-0.020	1.394	1240923	1.32		52.8	3998	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.398	2024428	1.44		57.7	58003	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	53483	0.0574			39.3	
613.00 > 169.00	4.057	4.057	0.0	1.000	14434		3.71(2.13-6.40)		201	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.089	-0.032	1.505	2224491	1.40		55.9	17238	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.318	0.011	1.000	317726	0.3244			146	
663.00 > 169.00	4.329	4.318	0.011	1.000	106907		2.97(1.25-3.76)		1740	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	6693	0.0235			129	
713.00 > 219.00	4.564	4.564	0.0	1.000	5388		1.24(0.71-2.13)		116	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	2871645	1.48		59.1	18317	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:19 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_010.d

Injection Date: 29-Mar-2018 00:33:50 Instrument ID: A8_N

Lims ID: 320-36761-A-4-B Lab Sample ID: 320-36761-4

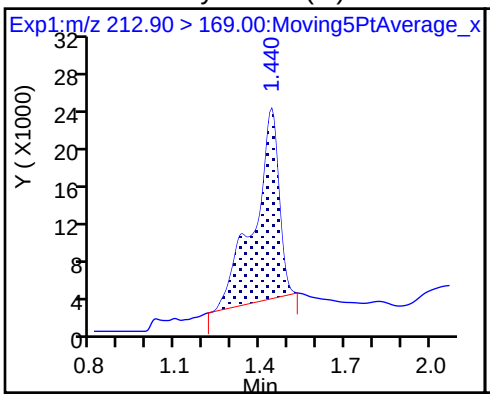
Client ID: SB003(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 7

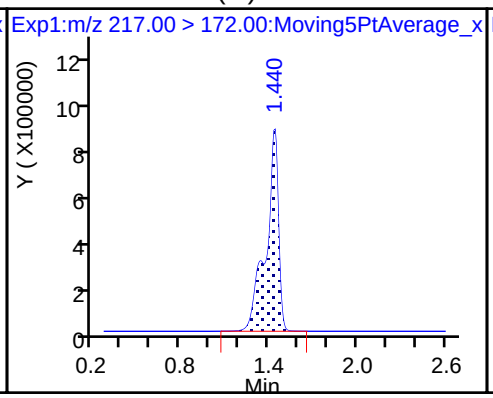
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

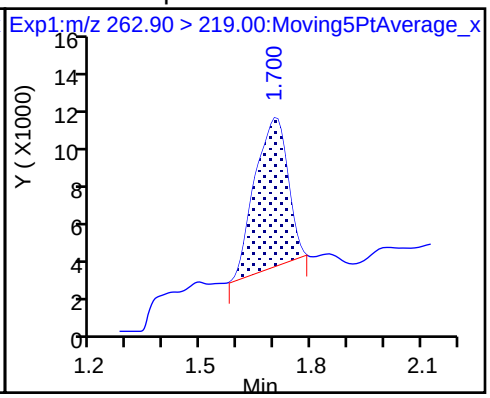
2 Perfluorobutyric acid (M)



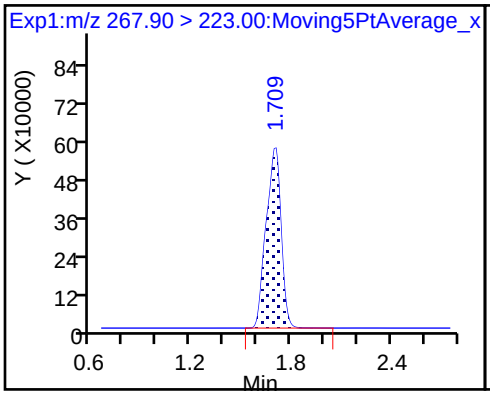
D 1 13C4 PFBA (M)



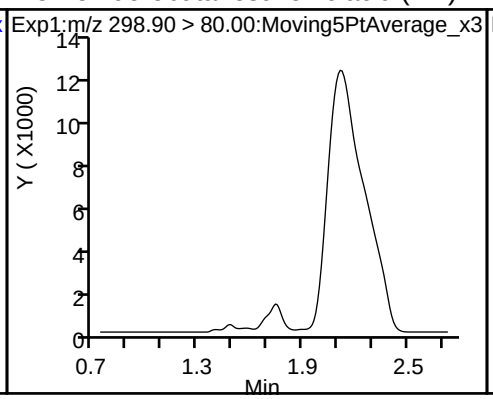
4 Perfluoropentanoic acid



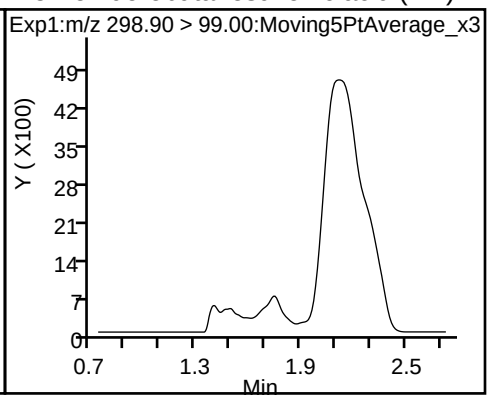
D 3 13C5-PFPeA



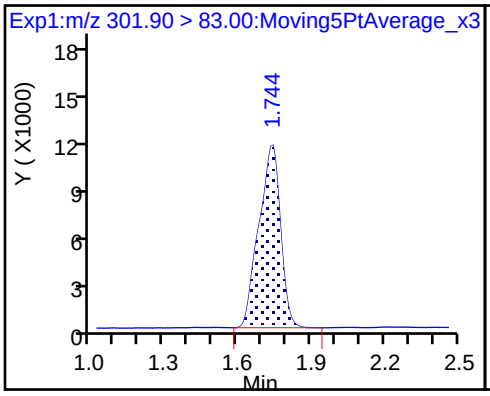
5 Perfluorobutanesulfonic acid (ND)



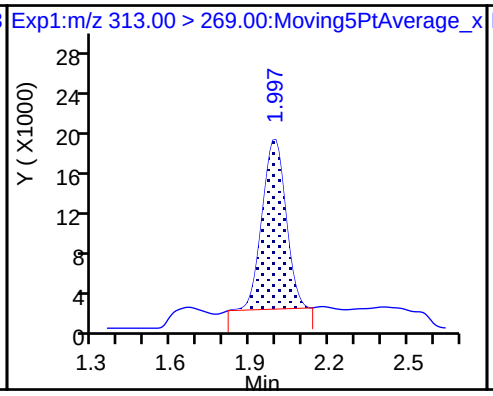
5 Perfluorobutanesulfonic acid (ND)



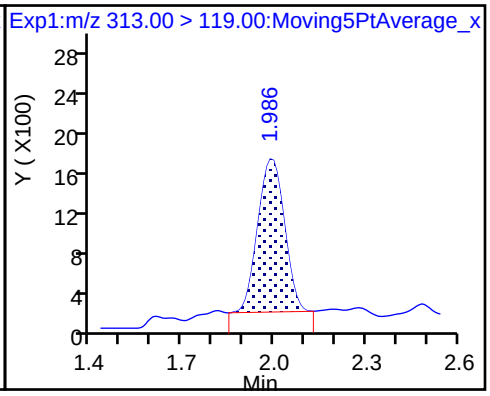
D 47 13C3-PFBS



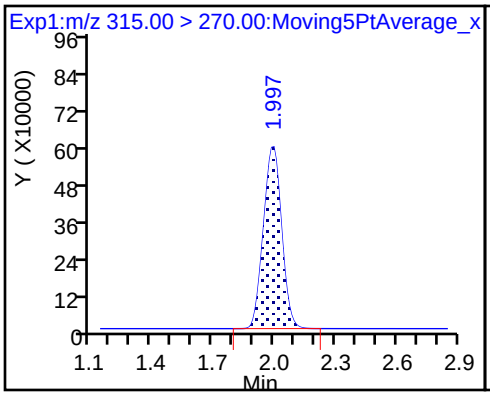
6 Perfluorohexanoic acid



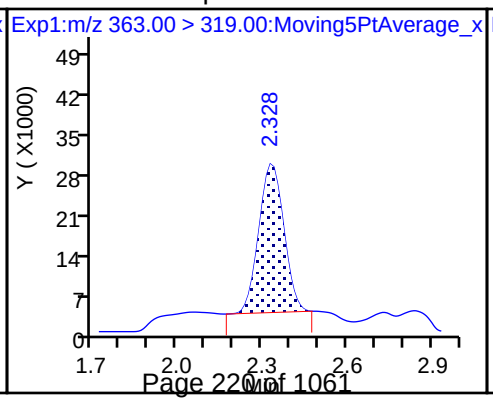
6 Perfluorohexanoic acid



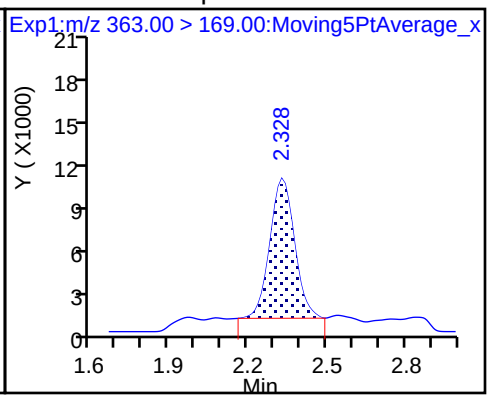
D 7 13C2 PFHxA



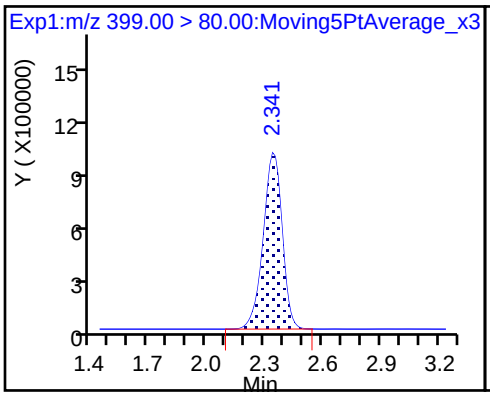
10 Perfluoroheptanoic acid



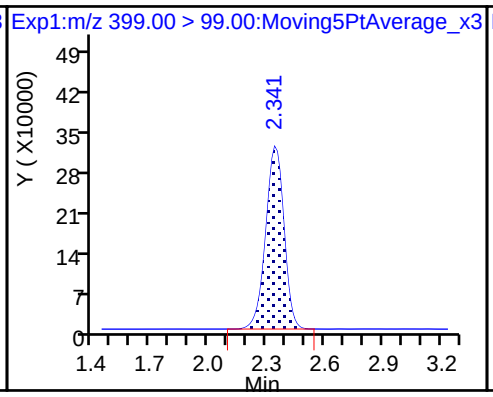
10 Perfluoroheptanoic acid



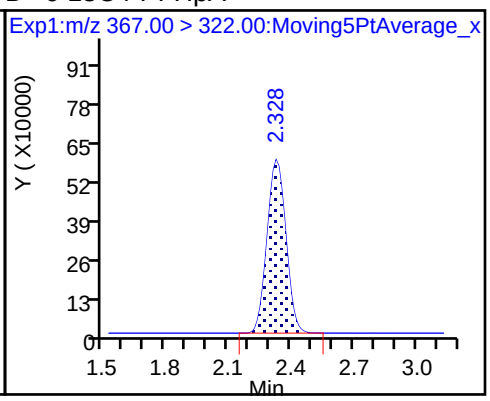
8 Perfluorohexanesulfonic acid



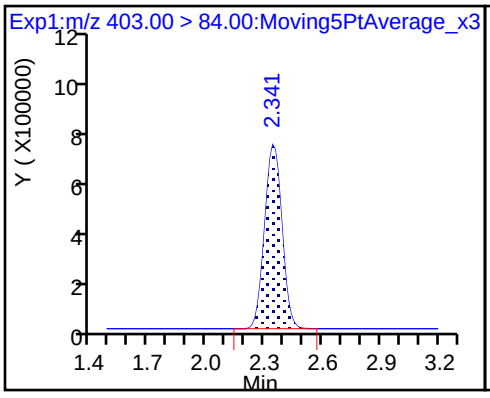
8 Perfluorohexanesulfonic acid



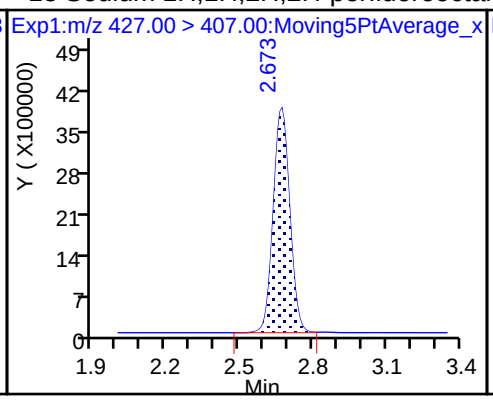
D 9 13C4-PFHpA



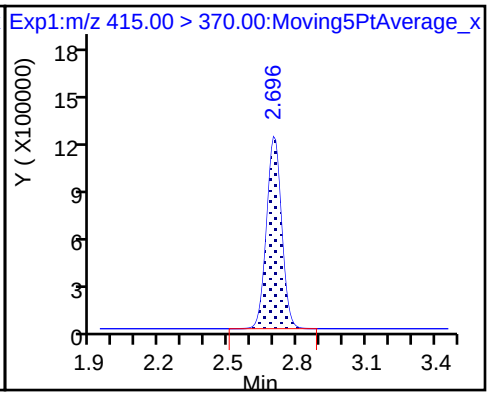
D 11 18O2 PFHxS



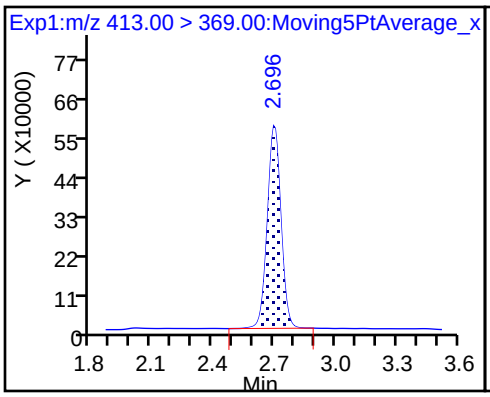
13 Sodium 1H,1H,2H,2H-perfluorooctane



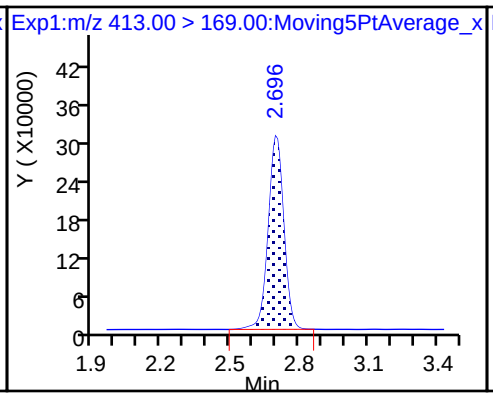
M2 6:2 13C2-PFOA



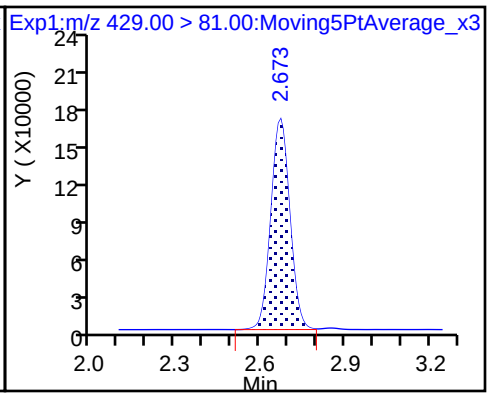
15 Perfluorooctanoic acid



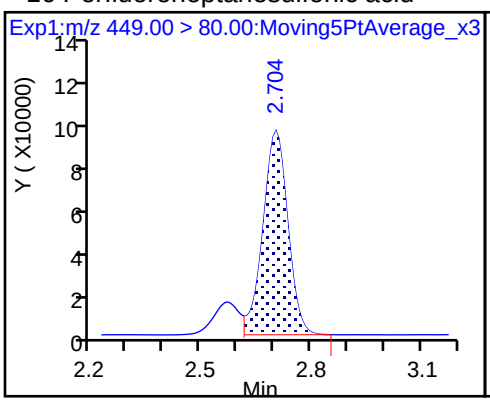
15 Perfluorooctanoic acid



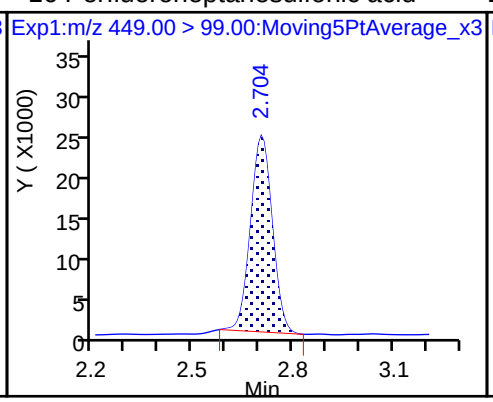
D 12 M2-6:2FTS



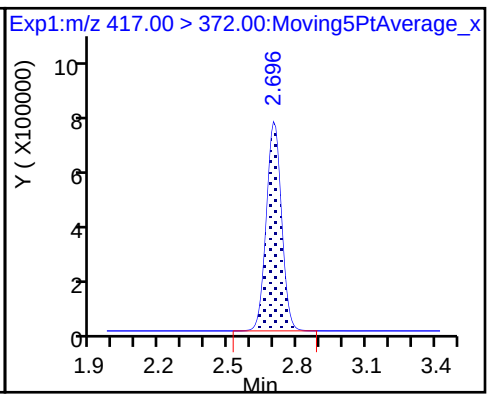
16 Perfluoroheptanesulfonic acid



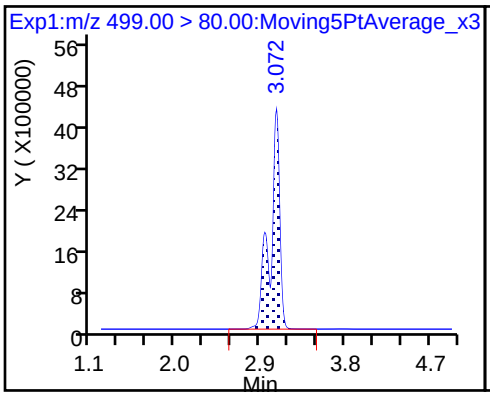
16 Perfluoroheptanesulfonic acid



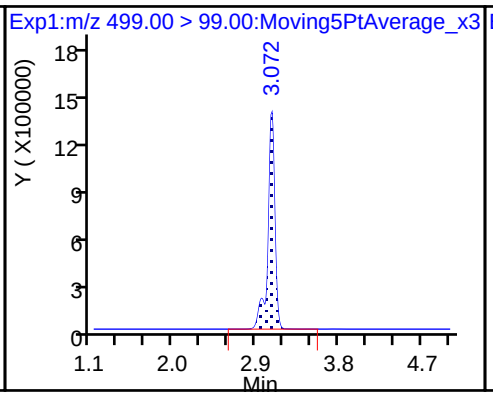
D 14 13C4 PFOA



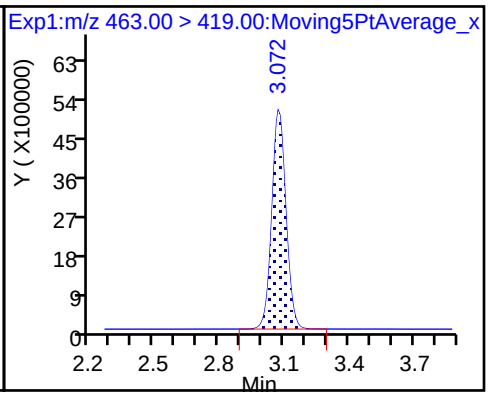
17 Perfluorooctane sulfonic acid



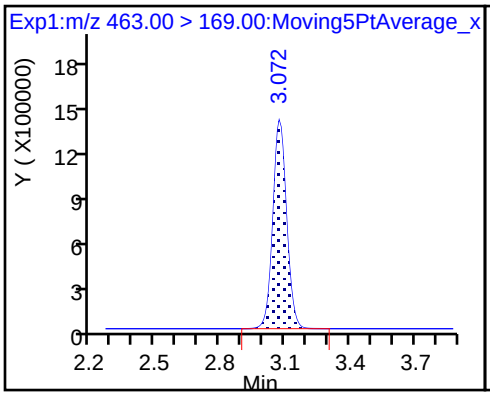
17 Perfluorooctane sulfonic acid



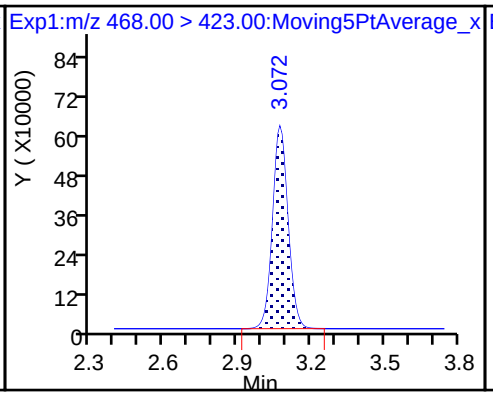
20 Perfluorononanoic acid



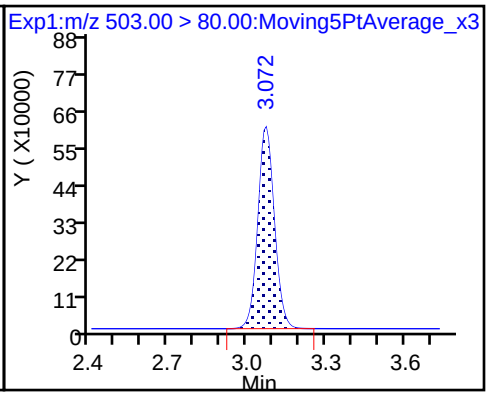
20 Perfluorononanoic acid



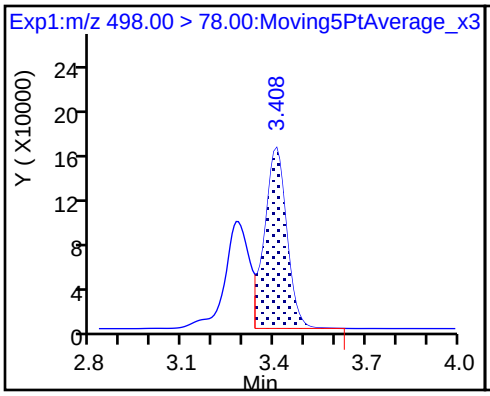
D 19 13C5 PFNA



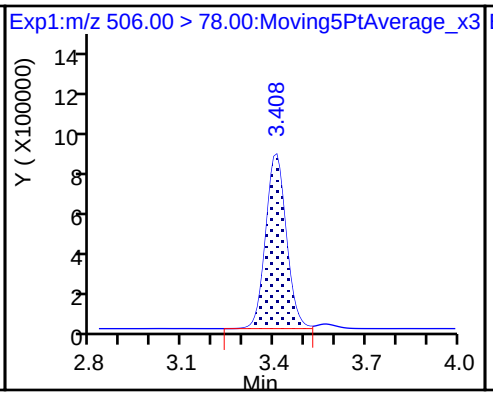
D 18 13C4 PFOS



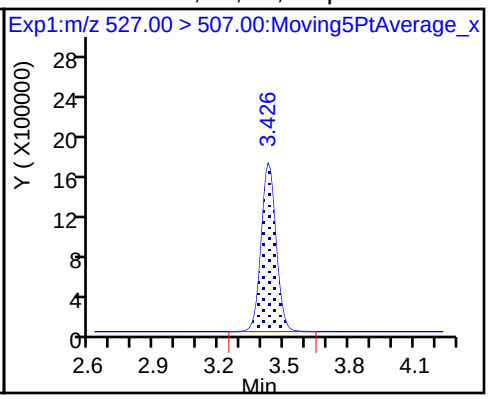
22 Perfluorooctane Sulfonamide



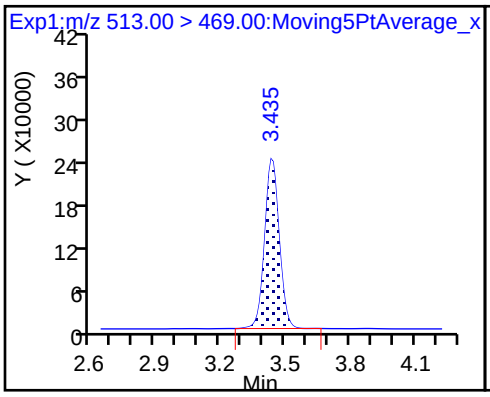
D 21 13C8 FOSA



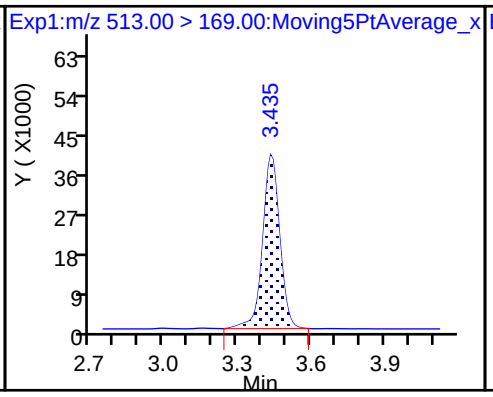
25 Sodium 1H,1H,2H,2H-perfluorodecane



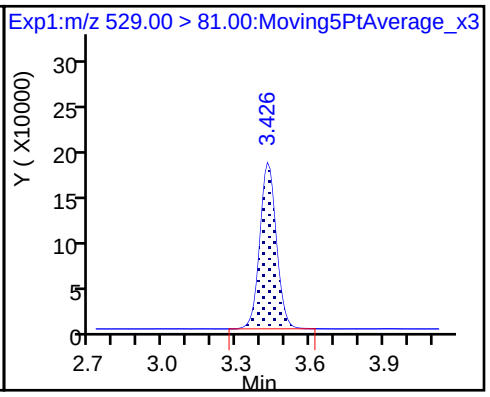
24 Perfluorodecanoic acid



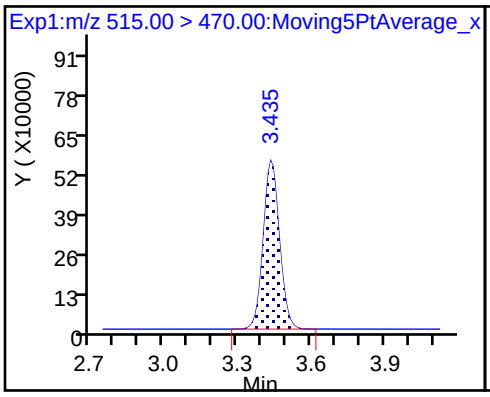
24 Perfluorodecanoic acid



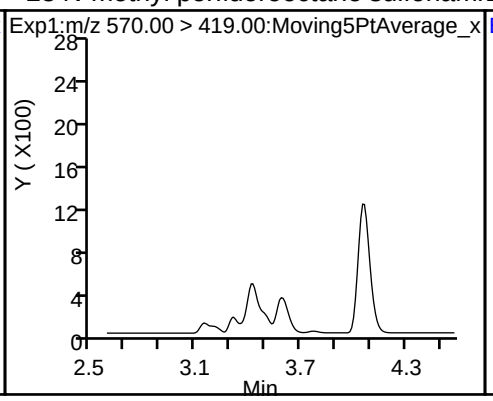
D 26 M2-8:2FTS



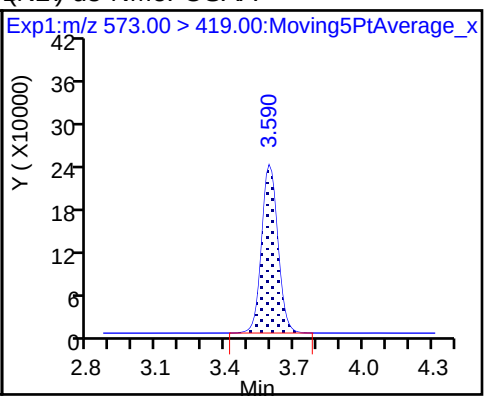
D 23 13C2 PFDA



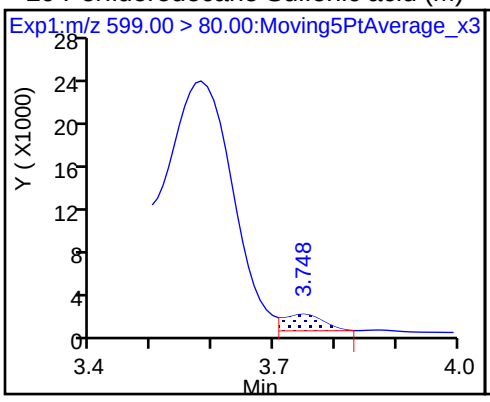
28 N-methyl perfluorooctane sulfonamid



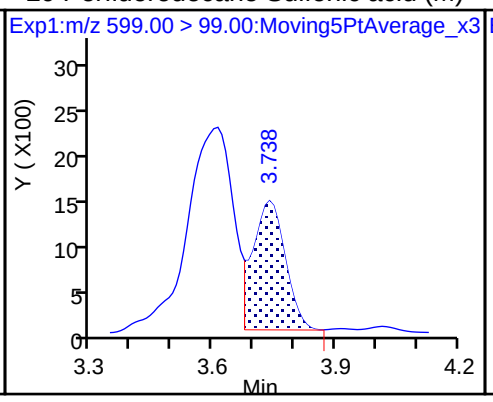
D 27 d3-NMeFOSAA



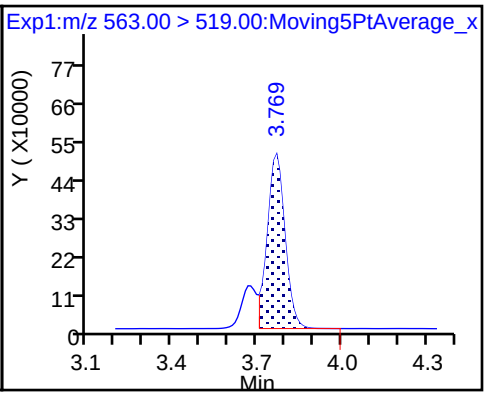
29 Perfluorodecane Sulfonic acid (M)



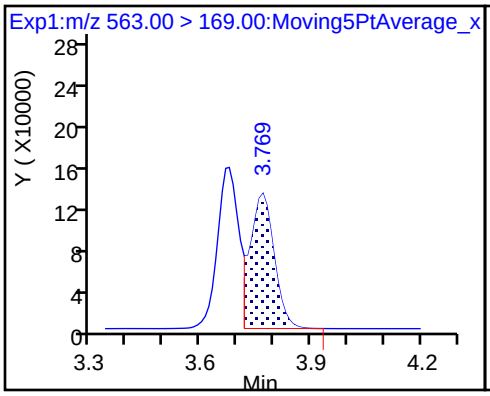
29 Perfluorodecane Sulfonic acid (M)



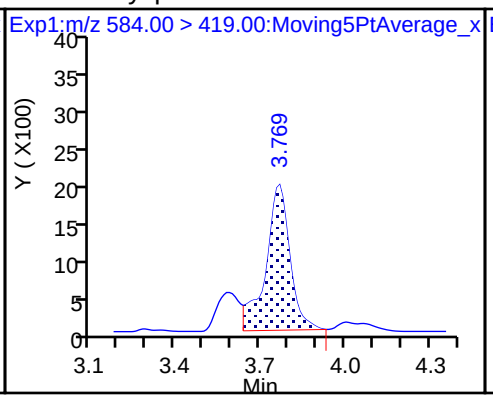
31 Perfluoroundecanoic acid



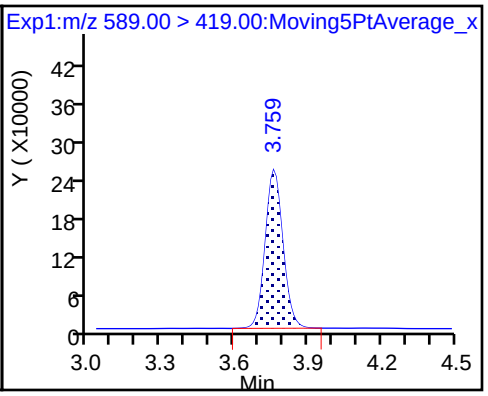
31 Perfluoroundecanoic acid



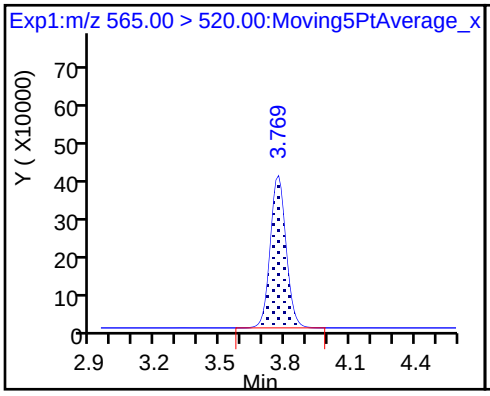
33 N-ethyl perfluorooctane sulfonamid



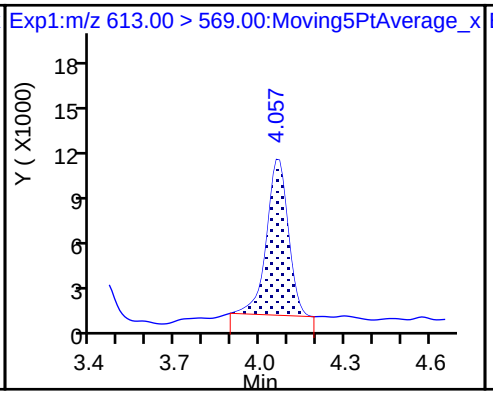
D 32 d5-NEtFOSAA



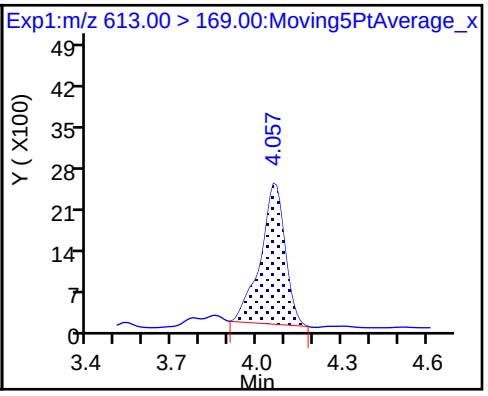
D 30 13C2 PFUnA



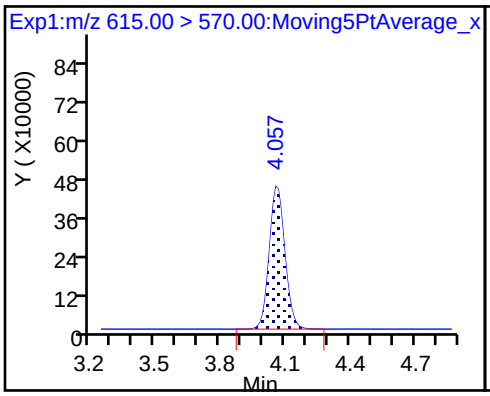
37 Perfluorododecanoic acid



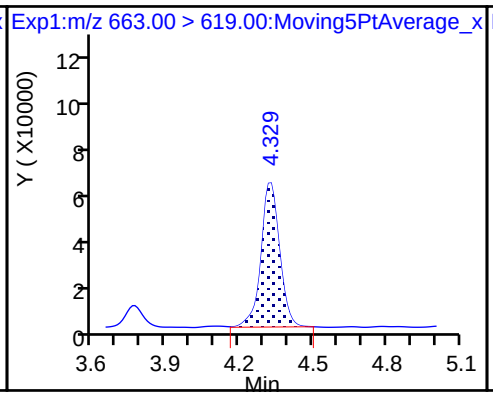
37 Perfluorododecanoic acid



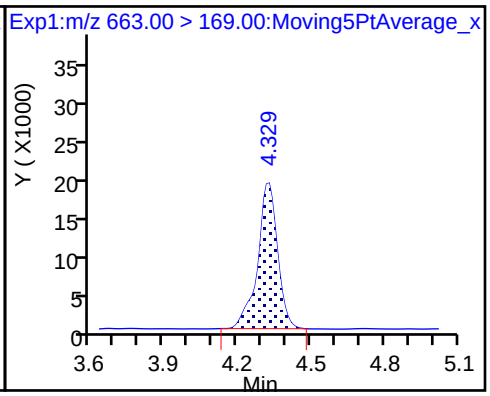
D 36 13C2 PFDoA



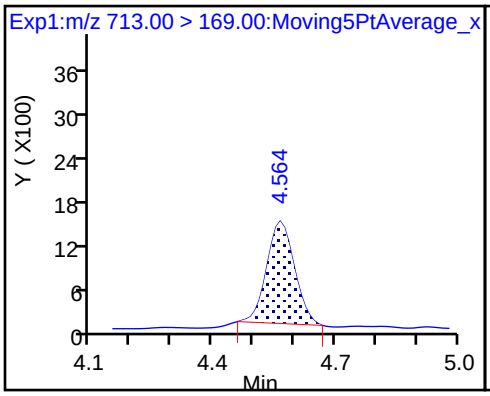
41 Perfluorotridecanoic acid



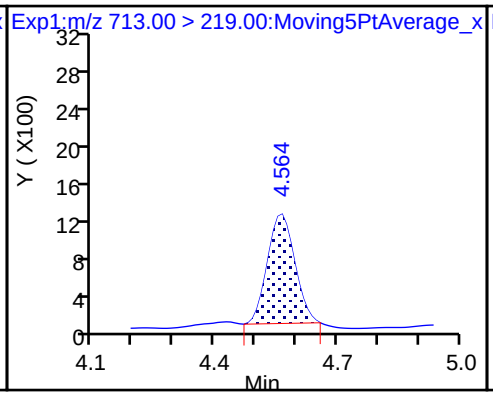
41 Perfluorotridecanoic acid



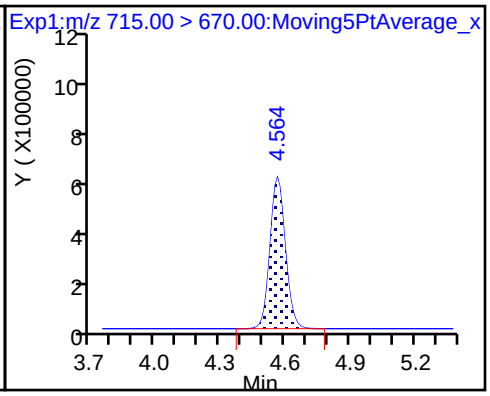
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

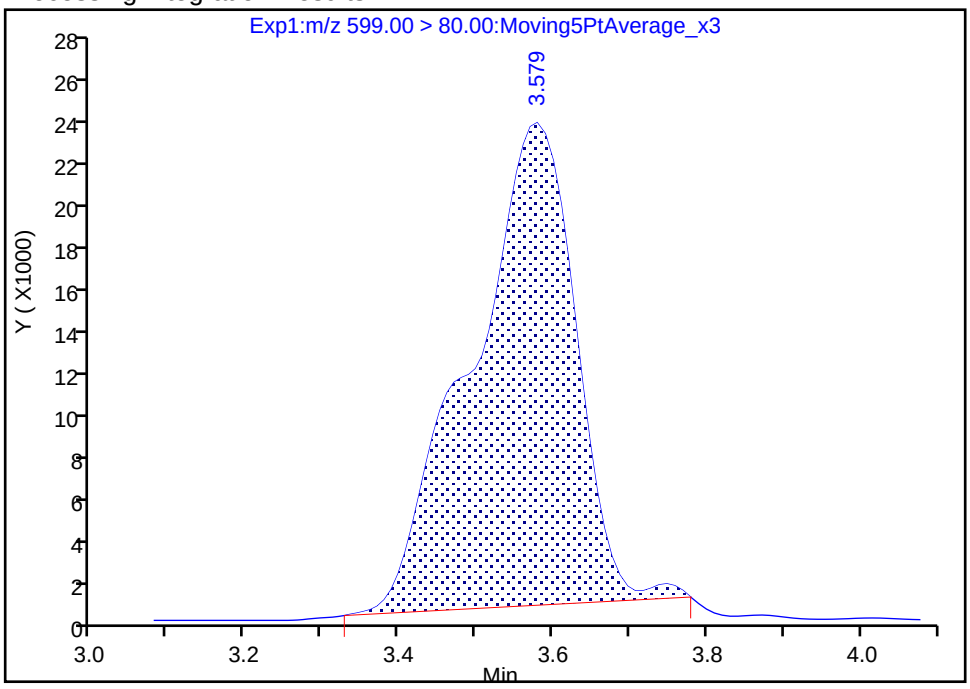
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_010.d				
Injection Date:	29-Mar-2018 00:33:50	Instrument ID:	A8_N		
Lims ID:	320-36761-A-4-B	Lab Sample ID:	320-36761-4		
Client ID:	SB003(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

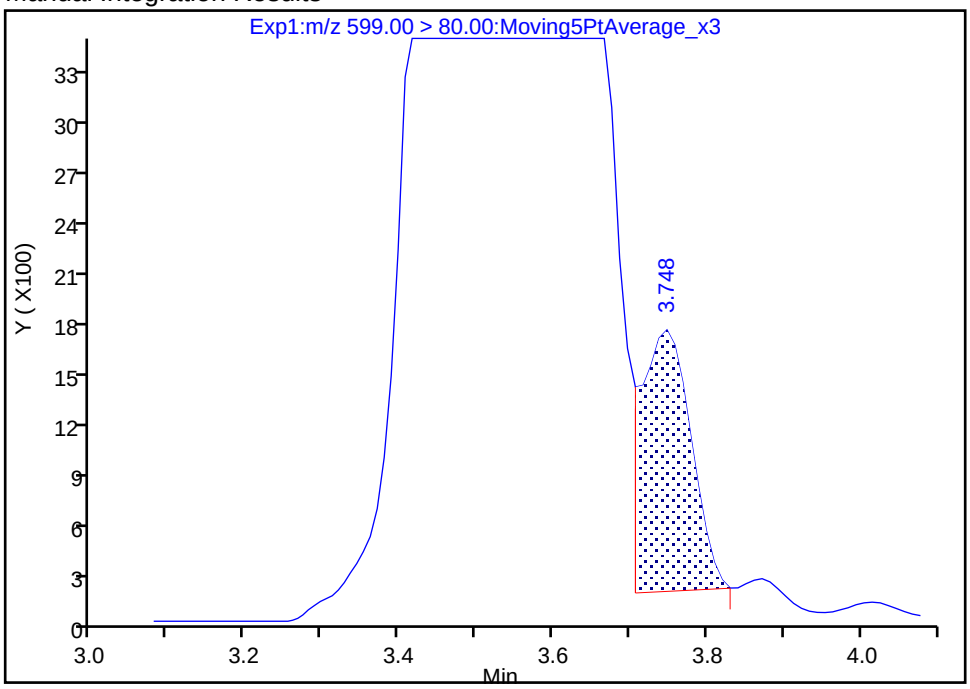
Processing Integration Results

RT: 3.58
Area: 213552
Amount: 0.286931
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 6727
Amount: 0.009038
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:00:02

Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

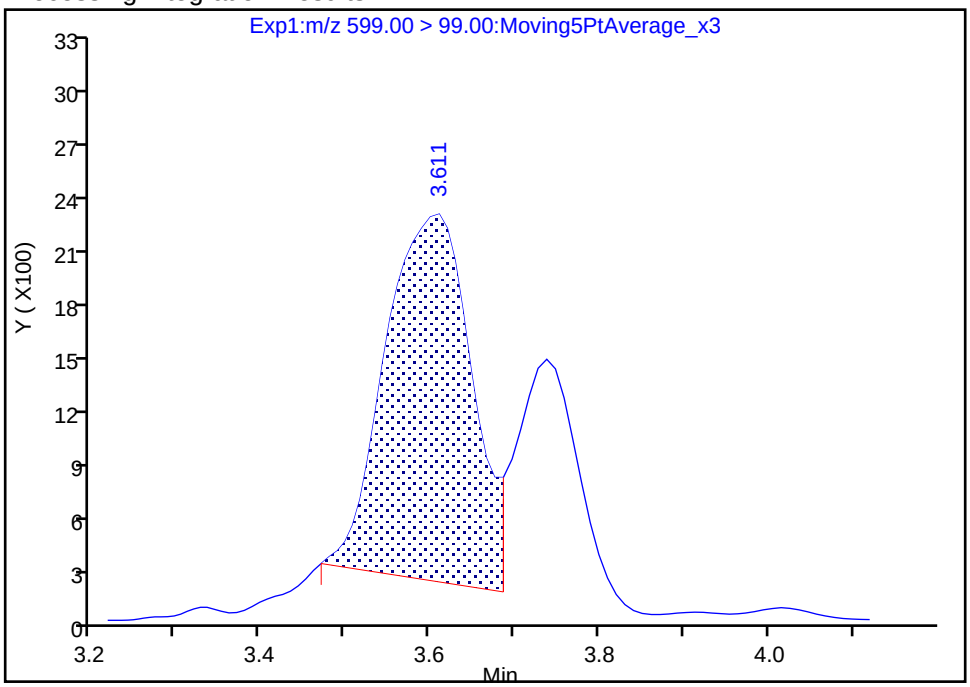
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_010.d				
Injection Date:	29-Mar-2018 00:33:50	Instrument ID:	A8_N		
Lims ID:	320-36761-A-4-B	Lab Sample ID:	320-36761-4		
Client ID:	SB003(5'-7')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 2

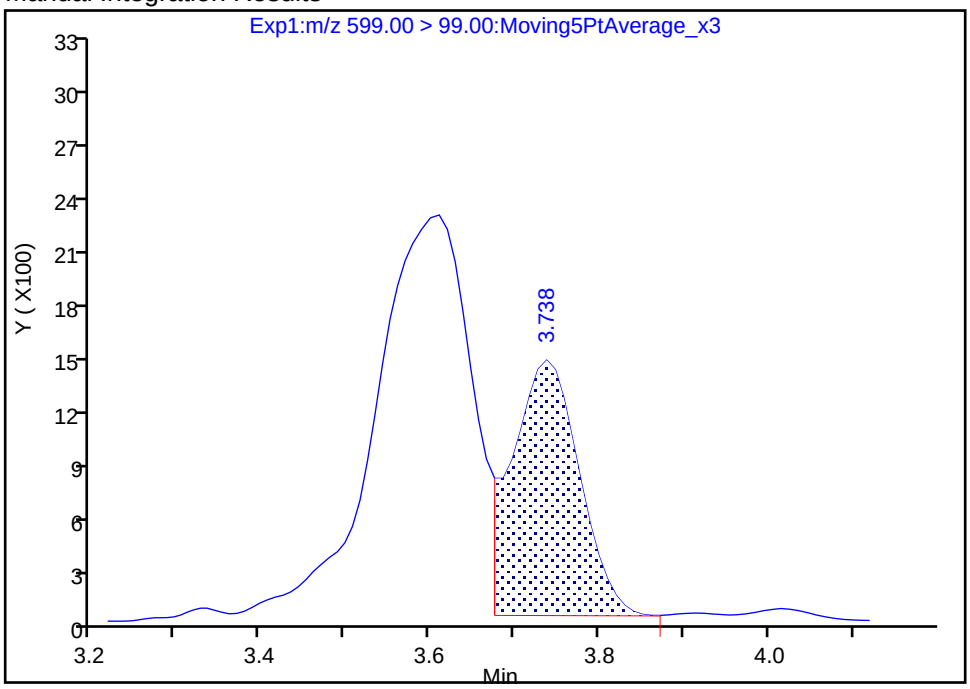
Processing Integration Results

RT: 3.61
Area: 14363
Amount: 0.286931
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 7716
Amount: 0.009038
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:00:02

Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(5'-7') DL | Lab Sample ID: 320-36761-4 DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_025.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:15

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.09(g) | Date Analyzed: 03/22/2018 00:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	0.050	D	0.0020	0.00036
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.052	B D	0.0051	0.0020
27619-97-2	6:2FTS	0.081	D	0.020	0.0015
39108-34-4	8:2FTS	0.039	D	0.020	0.0025

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	72		25-150
STL00991	13C4 PFOS	61		25-150
STL02279	M2-6:2FTS	86		25-150
STL02280	M2-8:2FTS	61		25-150

Report Date: 22-Mar-2018 12:53:27 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_025.d
Lims ID: 320-36761-A-4-A
Client ID: SB003(5'-7')
Sample Type: Client
Inject. Date: 22-Mar-2018 00:24:41 ALS Bottle#: 27 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-36761-a-4-a 10X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:40:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.446	0.0	0.536	572538	0.2045		81.8	8236	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.453	-0.001	1.004	13961	0.006470			5.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.709	-0.001	0.634	395266	0.2128		85.1	12546	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	9784	0.2308		99.3	70.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	431041	0.2099		83.9	15576	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	15067	0.008548			40.8	
313.00 > 119.00	1.997	1.997	0.0	1.000	1725		8.73(5.03-15.10)		33.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	430243	0.2123		84.9	18103	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	22092	0.0124			48.2	
363.00 > 169.00	2.328	2.328	0.0	1.000	9248		2.39(1.13-3.40)		117	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	497989	0.1992		84.2	14134	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	804959	0.3435			8490	
399.00 > 99.00	2.341	2.341	0.0	1.000	256256		3.14(1.50-4.49)		948	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.665	0.007	0.991	85894	0.2045		86.1	2028	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.673	-0.008	0.997	2511580	3.98			24539	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.688	0.0	0.997	413463	0.1995		79.8	12142	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		552831	0.2500			21773	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.696	2.697	-0.001	1.003	394479	0.2111			120	M
413.00 > 169.00	2.696	2.697	-0.001	1.003	178731		2.21(0.84-2.52)		467	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.704	-0.008	1.000	52401	0.0368			351	
449.00 > 99.00	2.696	2.704	-0.008	1.000	12792		4.10(1.94-5.82)		154	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	265543	0.1460		61.1	4816	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.137	331197	0.1812		72.5	13865	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	3202016	2.59			16305	
499.00 > 99.00	3.065	3.065	0.0	1.000	729356		4.39(2.31-6.93)		6811	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	3289976	2.49			4698	
463.00 > 169.00	3.065	3.072	-0.007	1.000	784728		4.19(1.90-5.69)		21929	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.260	290409	0.1184		47.4	2853	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	63635	0.0556			74.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.415	0.001	1.267	82422	0.1453		60.7	2706	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.424	0.001	1.270	242868	0.1516		60.6	7831	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.426	-0.010	1.000	846152	1.93			19017	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.425	3.435	-0.010	1.000	110361	0.1150			543	R
513.00 > 169.00	3.425	3.435	-0.010	1.000	14844		7.43(2.36-7.09)		393	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.327	80715	0.0957		38.3	3518	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.394	166224	0.1160		46.4	8877	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	87852	0.0914		36.6	767	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.768	-0.010	1.000	175395	0.3060			254	
563.00 > 169.00	3.758	3.768	-0.010	1.000	43303		4.05(2.12-6.36)		77.9	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.504	155774	0.0958		38.3	1535	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.328	-0.011	1.000	18617	0.0271			18.5	
663.00 > 169.00	4.317	4.328	-0.011	1.000	5532		3.37(1.25-3.76)		105	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.693	167167	0.0842		33.7	1590	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:27 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_025.d

Injection Date: 22-Mar-2018 00:24:41 Instrument ID: A8_N

Lims ID: 320-36761-A-4-A Lab Sample ID: 320-36761-4

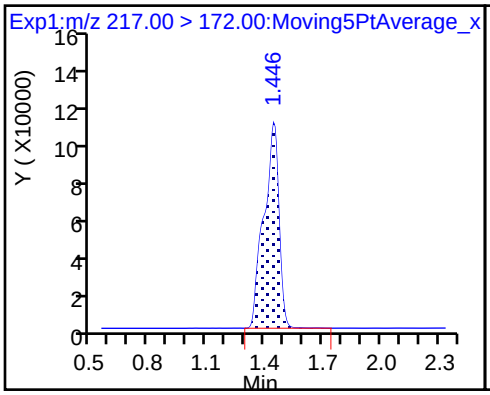
Client ID: SB003(5'-7')

Operator ID: SACINSTLCMS01 ALS Bottle#: 27 Worklist Smp#: 20

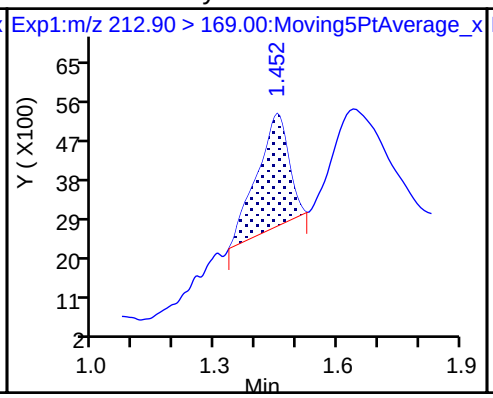
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

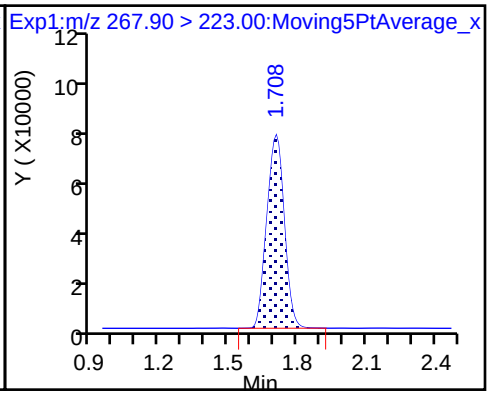
D 1 13C4 PFBA



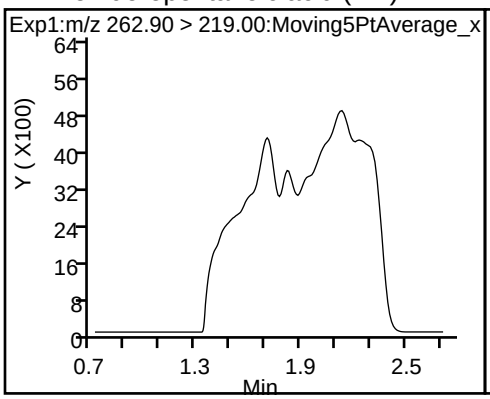
2 Perfluorobutyric acid



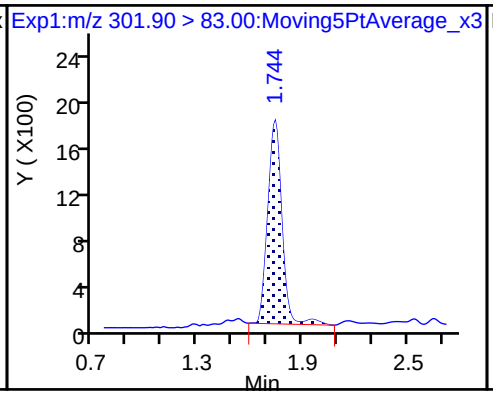
D 3 13C5-PFPeA



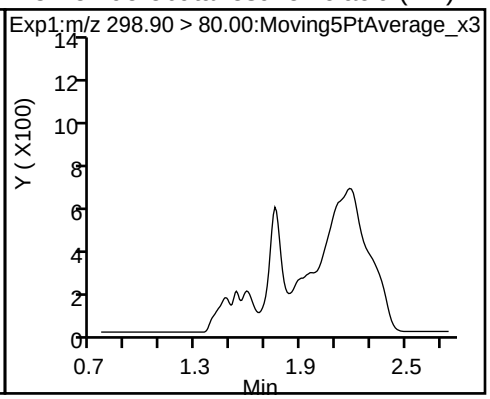
4 Perfluoropentanoic acid (ND)



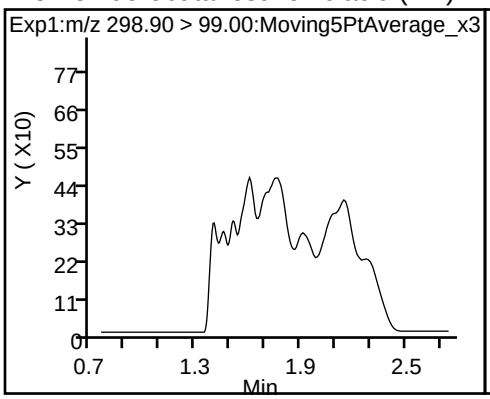
D 47 13C3-PFBS



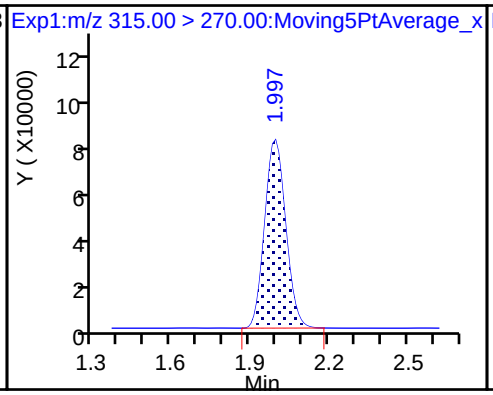
5 Perfluorobutanesulfonic acid (ND)



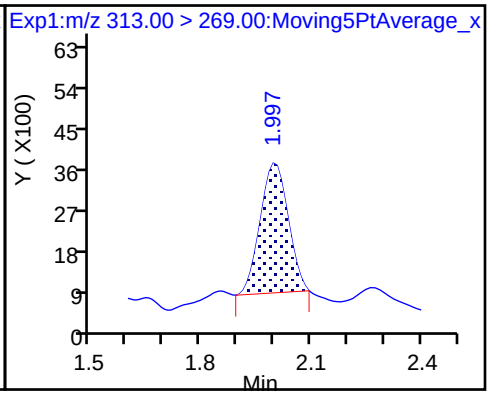
5 Perfluorobutanesulfonic acid (ND)



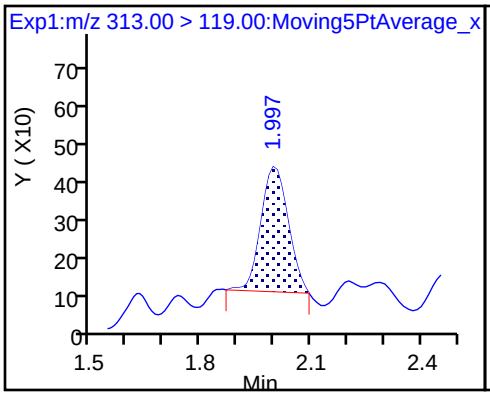
D 7 13C2 PFHxA



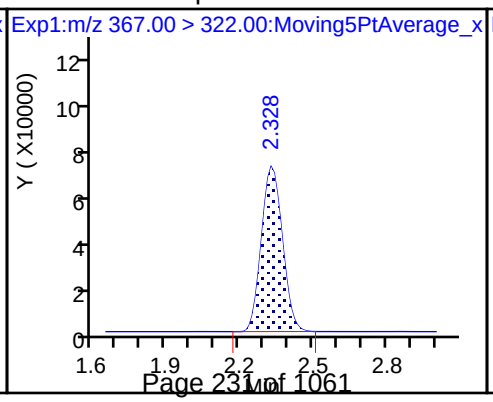
6 Perfluorohexanoic acid



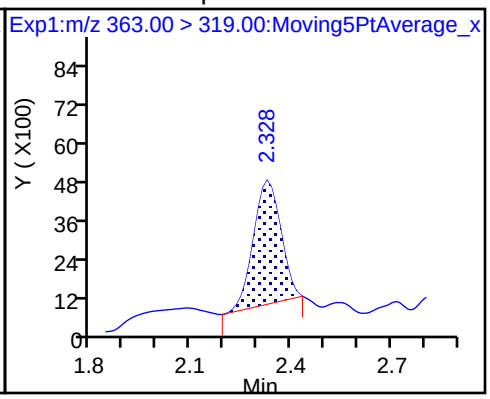
6 Perfluorohexanoic acid



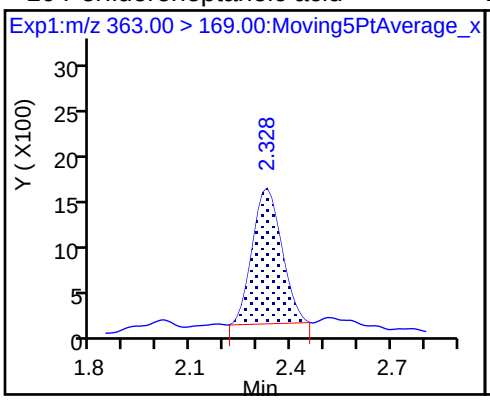
D 9 13C4-PFHpA



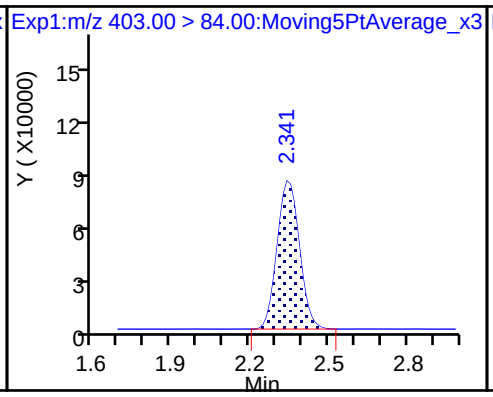
10 Perfluoroheptanoic acid



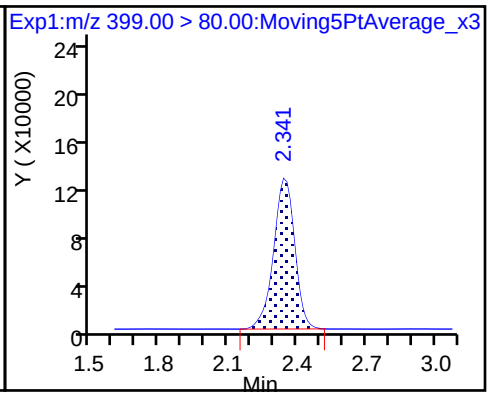
10 Perfluoroheptanoic acid



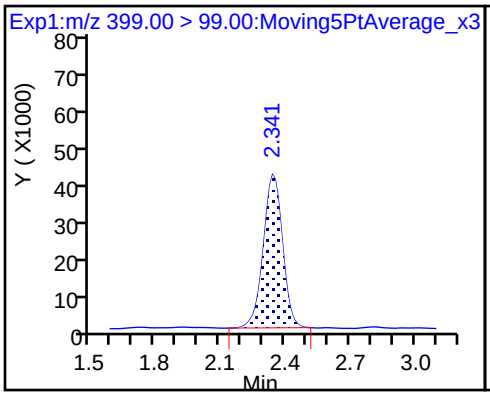
D 11 18O2 PFHxS



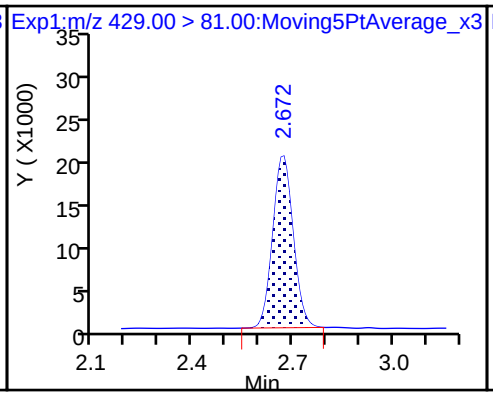
8 Perfluorohexanesulfonic acid



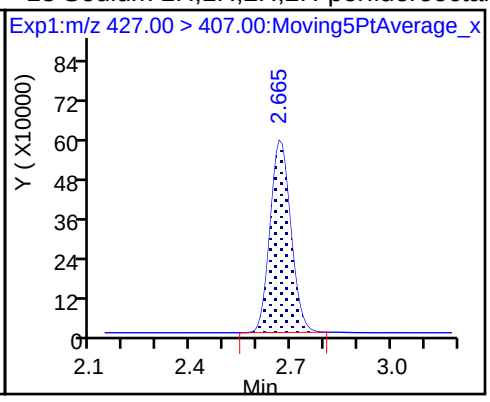
8 Perfluorohexanesulfonic acid



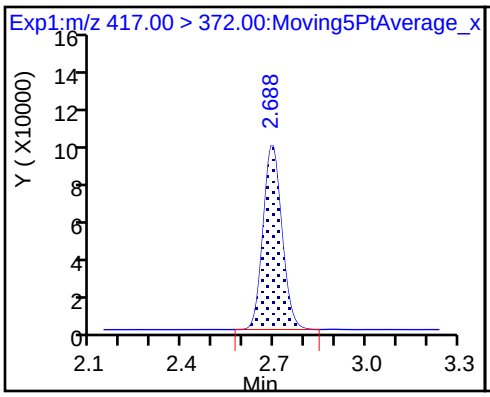
D 12 M2-6:2FTS



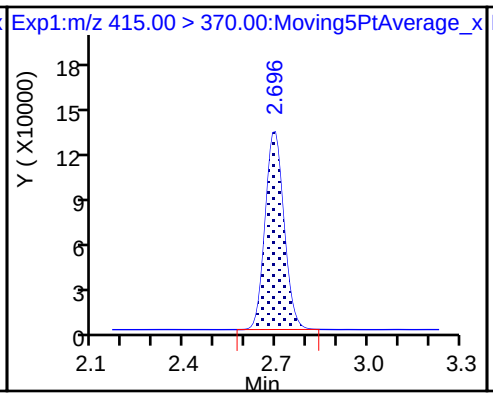
13 Sodium 1H,1H,2H,2H-perfluorooctane



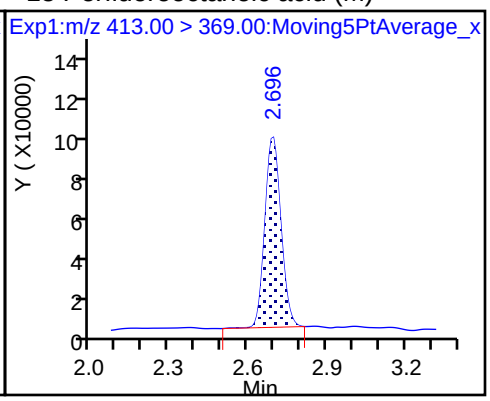
D 14 13C4 PFOA



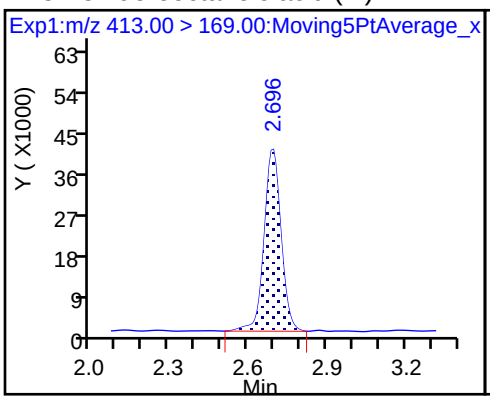
* 62 13C2-PFOA



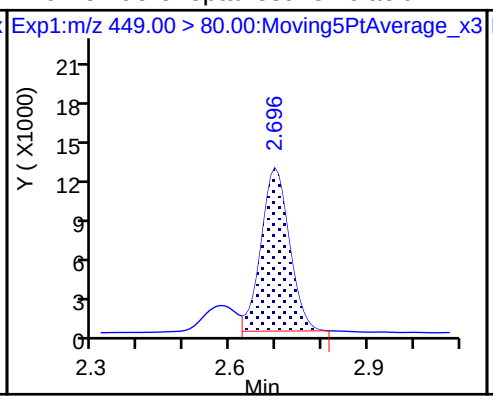
15 Perfluorooctanoic acid (M)



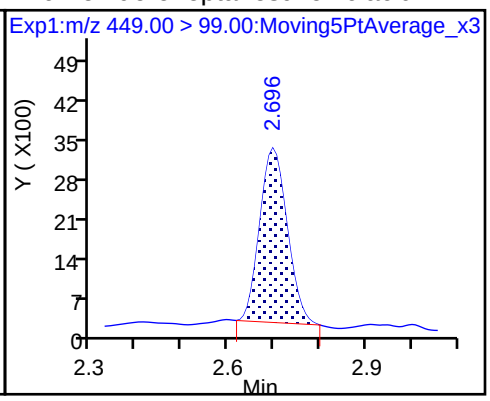
15 Perfluorooctanoic acid (M)



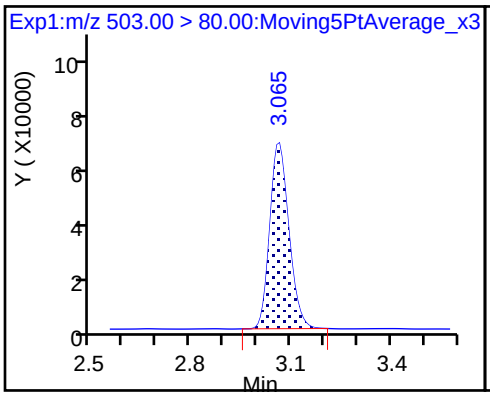
16 Perfluoroheptanesulfonic acid



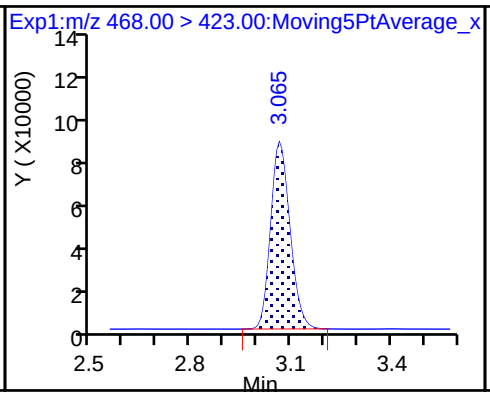
16 Perfluoroheptanesulfonic acid



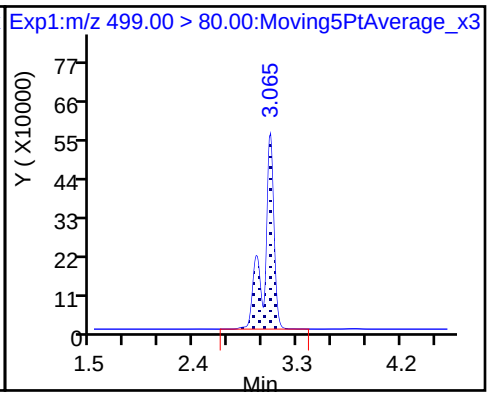
D 18 13C4 PFOS



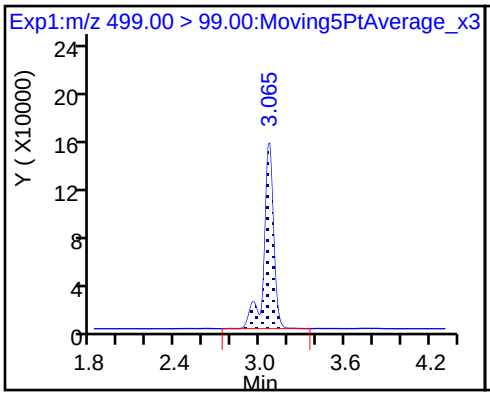
D 19 13C5 PFNA



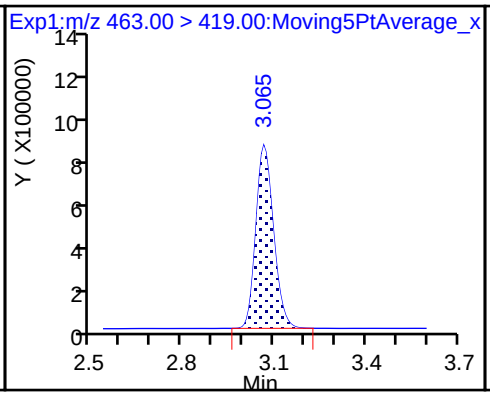
17 Perfluorooctane sulfonic acid



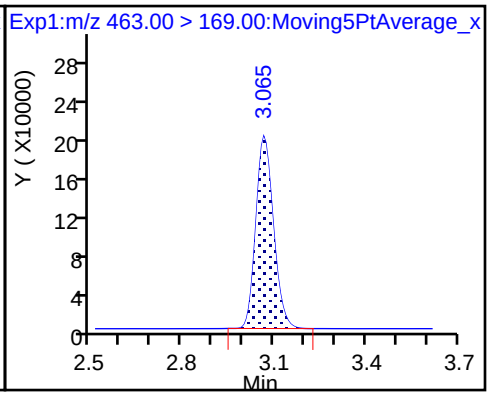
17 Perfluorooctane sulfonic acid



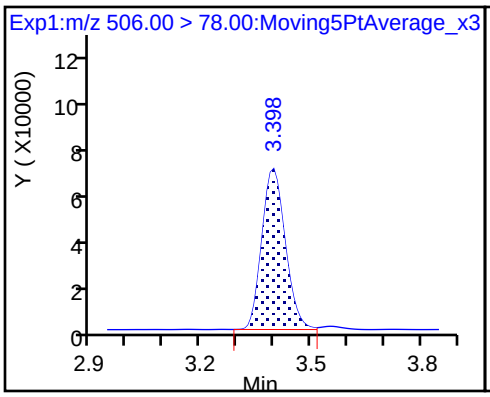
20 Perfluorononanoic acid



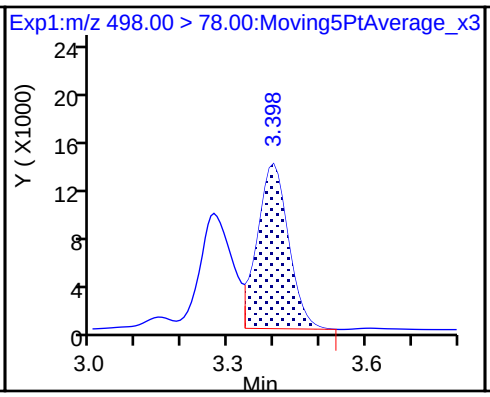
20 Perfluorononanoic acid



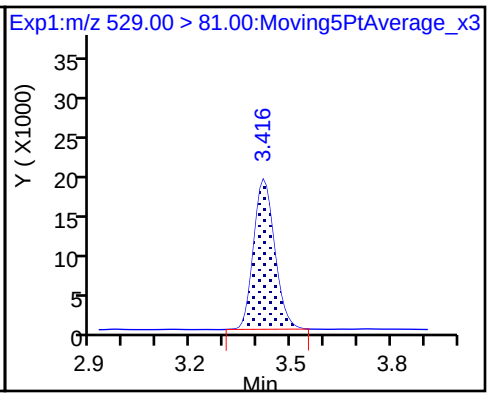
D 21 13C8 FOSA



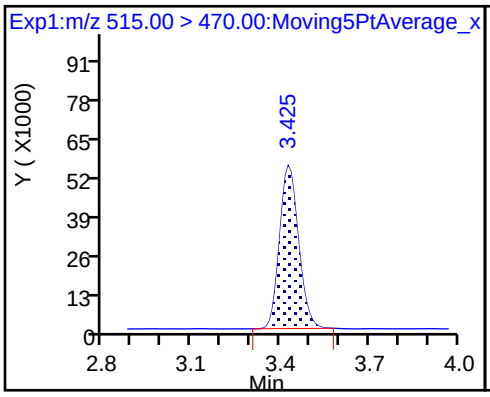
22 Perfluorooctane Sulfonamide



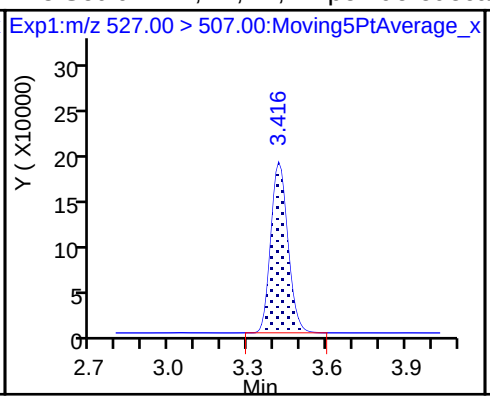
D 26 M2-8:2FTS



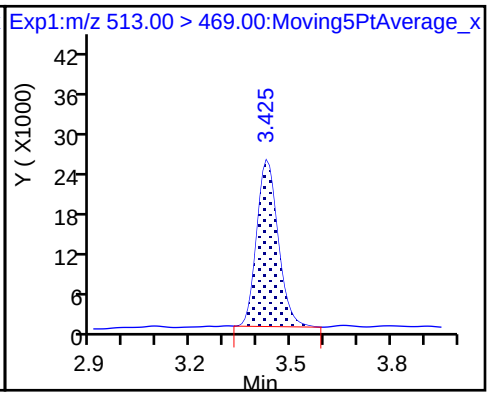
D 23 13C2 PFDA



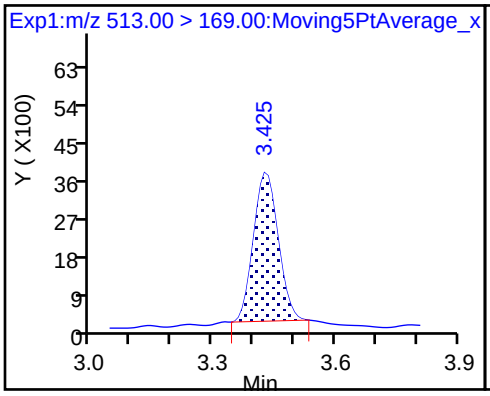
25 Sodium 1H,1H,2H,2H-perfluorodecan



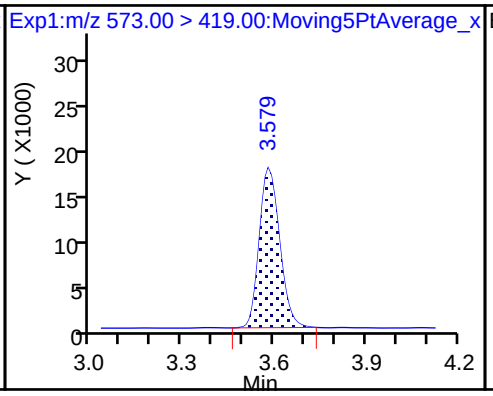
24 Perfluorodecanoic acid



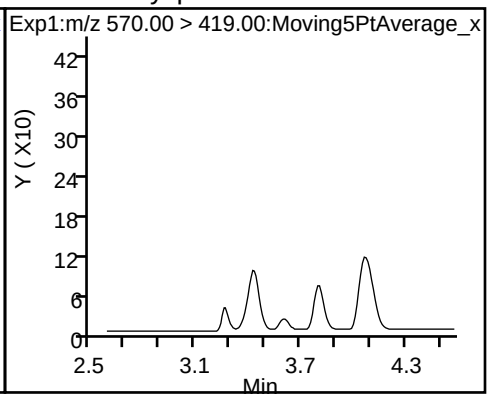
24 Perfluorodecanoic acid



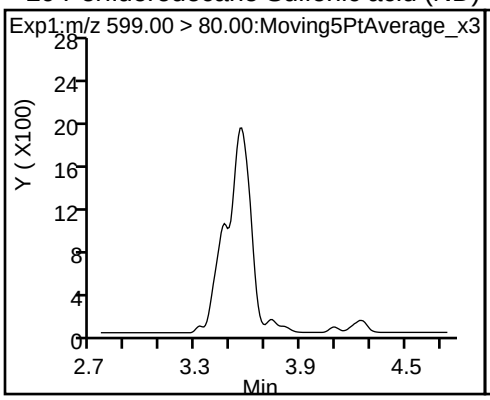
D 27 d3-NMeFOSAA



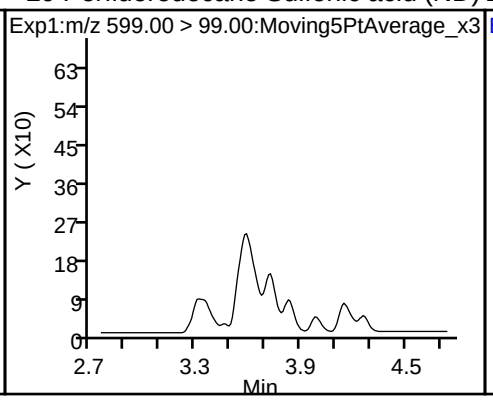
28 N-methyl perfluorooctane sulfonami (ND)



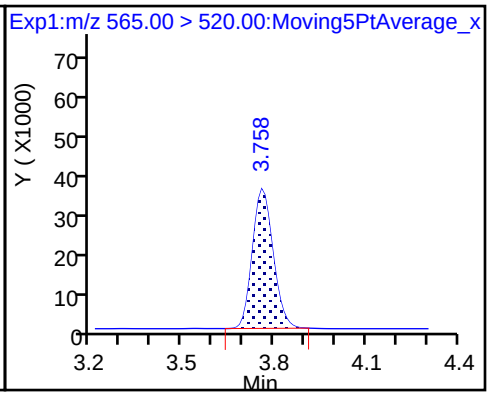
29 Perfluorodecane Sulfonic acid (ND)



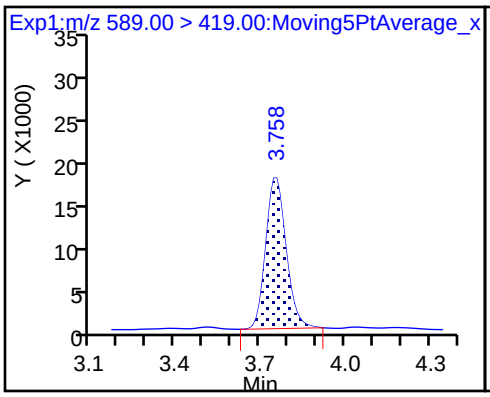
29 Perfluorodecane Sulfonic acid (ND)



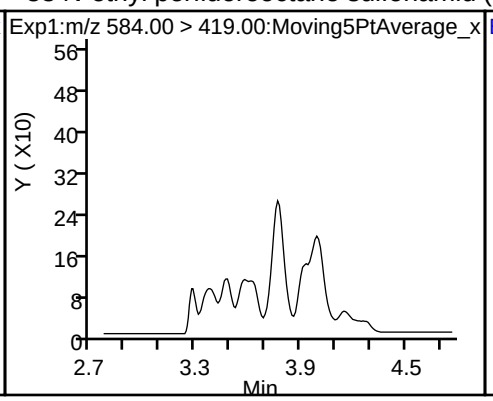
D 30 13C2 PFUnA



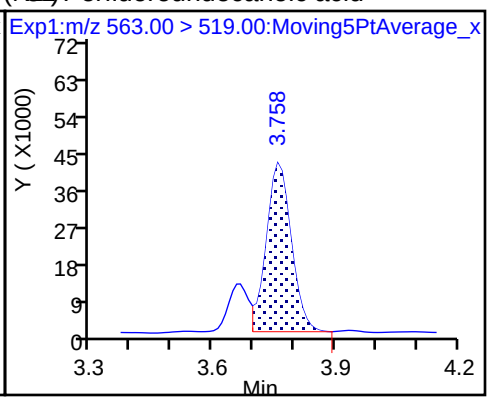
D 32 d5-NEtFOSAA



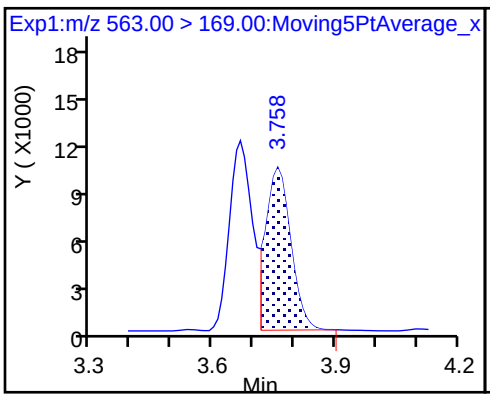
33 N-ethyl perfluorooctane sulfonamid (ND)



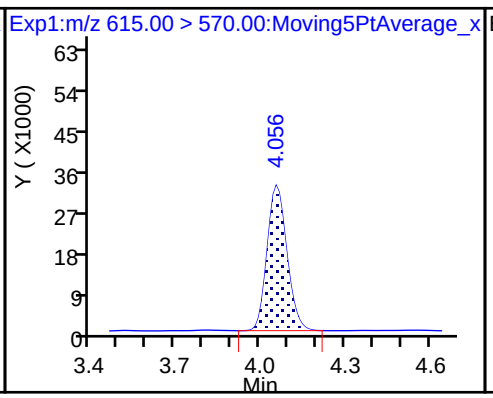
31 Perfluoroundecanoic acid



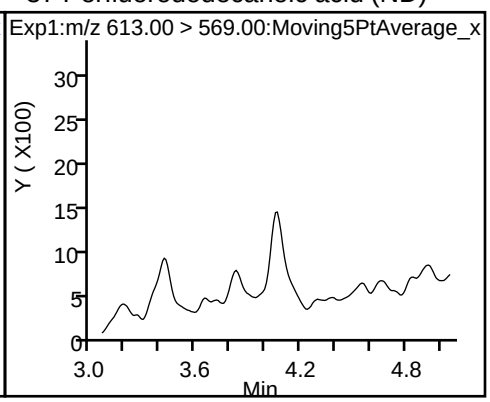
31 Perfluoroundecanoic acid



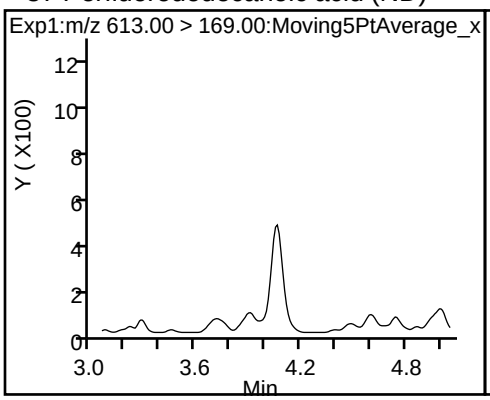
D 36 13C2 PFDoA



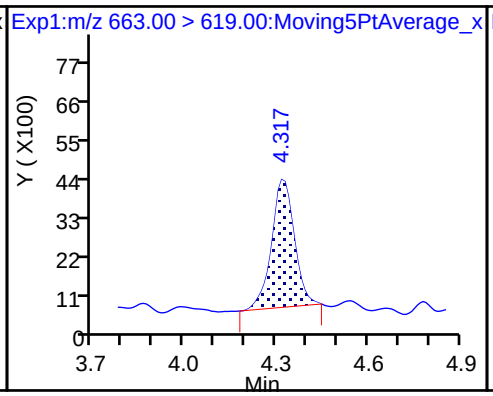
37 Perfluorododecanoic acid (ND)



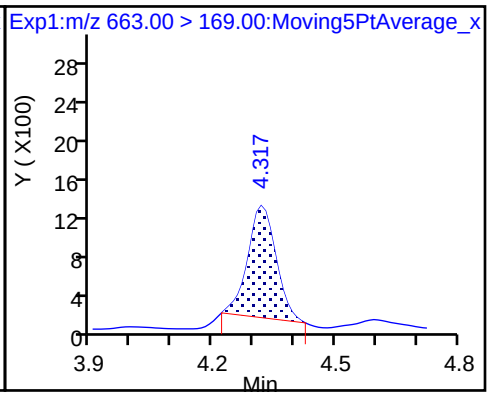
37 Perfluorododecanoic acid (ND)



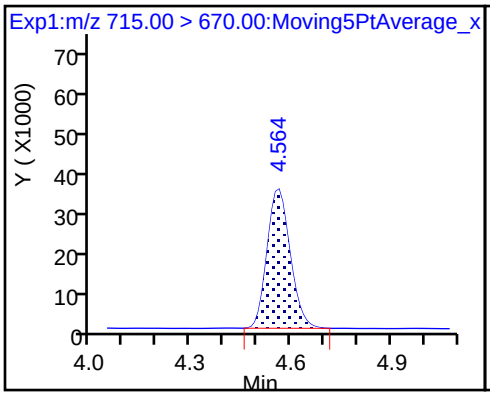
41 Perfluorotridecanoic acid



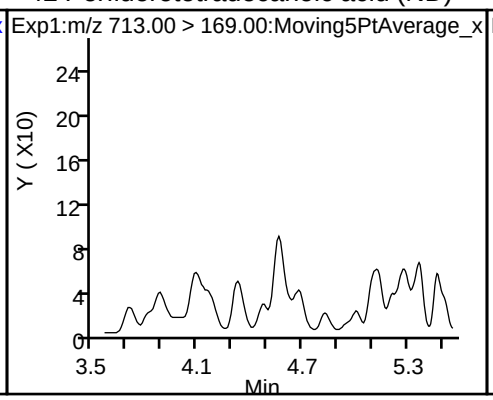
41 Perfluorotridecanoic acid



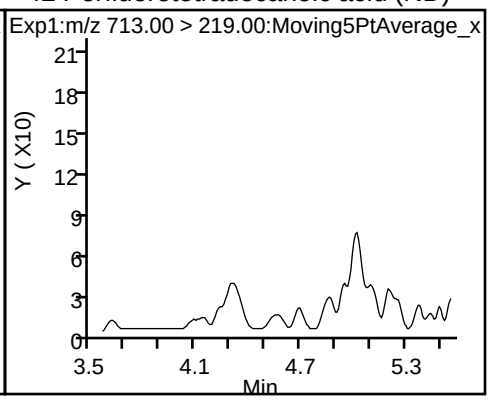
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(10'-12') | Lab Sample ID: 320-36761-5

Matrix: Solid | Lab File ID: 2018.03.20LLA_042.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.08(g) | Date Analyzed: 03/21/2018 01:38

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00035	B	0.00020	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00045		0.00020	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0013		0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.0015		0.00020	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.0059		0.00020	0.000088
335-76-2	Perfluorodecanoic acid (PFDA)	0.0011		0.00020	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0033		0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00012	J	0.00020	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00071		0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000088	J	0.00020	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0056		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00094		0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U *	0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00042		0.00020	0.000084
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(10'-12') | Lab Sample ID: 320-36761-5

Matrix: Solid | Lab File ID: 2018.03.20LLA_042.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.08(g) | Date Analyzed: 03/21/2018 01:38

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	82		25-150
STL01893	13C5 PFPeA	84		25-150
STL00993	13C2 PFHxA	84		25-150
STL01892	13C4-PFHpA	87		25-150
STL00990	13C4 PFOA	77		25-150
STL00996	13C2 PFDA	57		25-150
STL00997	13C2 PFUnA	43		25-150
STL00998	13C2 PFDoA	37		25-150
STL02116	13C2-PFTeDA	49		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	56		25-150
STL01056	13C8 FOSA	46		25-150
STL02118	d3-NMeFOSAA	33		25-150
STL02117	d5-NEtFOSAA	34		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_042.d
Lims ID: 320-36761-A-5-A
Client ID: SB003(10'-12')
Sample Type: Client
Inject. Date: 21-Mar-2018 01:38:36 ALS Bottle#: 32 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-5-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:49:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	-0.001	0.537	4382987	2.06		82.4	69111	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.446	-0.006	1.000	274616	0.1689			106	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3154873	2.10		84.0	67722	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.709	-0.009	1.000	323462	0.2194			97.9	M
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	73309	1.98		85.1	385	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.744	-0.008	1.000	105441	0.0432			37.3	
298.90 > 99.00	1.736	1.744	-0.008	1.000	43922		2.40(1.25-3.74)		35.4	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	3523394	2.10		84.2	100349	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	921358	0.6479			2091	
313.00 > 119.00	1.986	1.997	-0.011	1.000	79174		11.64(5.03-15.10)		1309	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3536133	2.17		86.9	72845	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	1043536	0.7118			1705	
363.00 > 169.00	2.315	2.328	-0.013	1.000	403338		2.59(1.13-3.40)		5998	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4224569	1.94		82.2	70113	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	5465304	2.74			8162	
399.00 > 99.00	2.328	2.341	-0.013	1.000	1640049		3.33(1.50-4.49)		3802	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	735248	1.76		74.2	7415	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.657	2.663	-0.006	1.000	41114448	79.8			197969	E
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.681	-0.001	1.000	3011534	1.92		76.6	69558	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.680	2.695	-0.015	1.000	3867406	2.88			1475	
413.00 > 169.00	2.680	2.695	-0.015	1.000	2015325		1.92(0.84-2.52)		6915	
* 62 13C2-PFOA										
415.00 > 370.00	2.680	2.695	-0.015		4168672	2.50			96369	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.680	2.703	-0.023	1.000	511766	0.4603			169	
449.00 > 99.00	2.688	2.703	-0.015	1.003	114222		4.48(1.94-5.82)		556	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2022020	1.33		55.7	29159	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	1836890	1.46		58.4	33595	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.002	44801167	48.9			46459	E
499.00 > 99.00	3.051	3.067	-0.016	1.000	11068594		4.05(2.31-6.93)		57551	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.058	3.067	-0.009	1.000	14094350	18.8			10410	E
463.00 > 169.00	3.058	3.067	-0.009	1.000	3603837		3.91(1.90-5.69)		6155	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.389	-0.001	1.264	2547073	1.16		46.3	2904	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.401	-0.013	1.000	201394	0.2034			130	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.408	-0.002	1.271	508046	1.30		54.1	9540	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.417	-0.002	1.274	1499050	1.43		57.1	27931	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.406	3.419	-0.013	1.000	3354288	12.6			62582	E
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.428	-0.013	1.000	307061	0.5397			578	
513.00 > 169.00	3.424	3.428	-0.004	1.003	54224		5.66(2.36-7.09)		211	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.332	289144	0.8331		33.3	15527	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.748	-0.010	1.394	281118	0.8472		33.9	543	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	879349	1.07		42.7	61325	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	479783	1.63			645	
563.00 > 169.00	3.748	3.762	-0.014	1.000	128643		3.73(2.12-6.36)		228	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.509	716573	0.9183		36.7	5141	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.061	-0.015	1.000	17501	0.0597			5.5	
613.00 > 169.00	4.046	4.061	-0.015	1.000	3345		5.23(2.13-6.40)		94.5	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.320	-0.013	1.000	101841	0.3454			33.2	
663.00 > 169.00	4.307	4.320	-0.013	1.000	34436		2.96(1.25-3.76)		732	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.544	-0.001	1.695	874178	1.23		49.1	8363	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:30 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_042.d

Injection Date: 21-Mar-2018 01:38:36 Instrument ID: A8_N

Lims ID: 320-36761-A-5-A Lab Sample ID: 320-36761-5

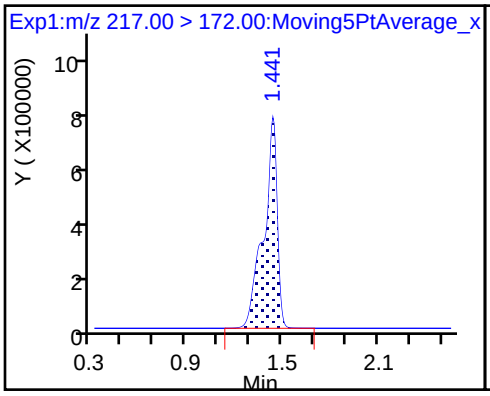
Client ID: SB003(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 32 Worklist Smp#: 21

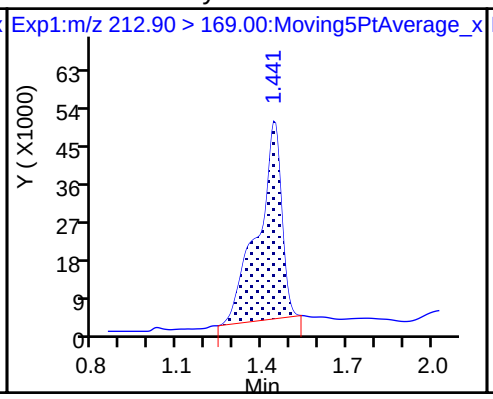
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

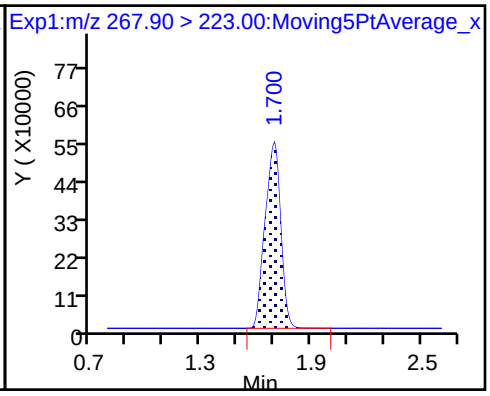
D 1 13C4 PFBA



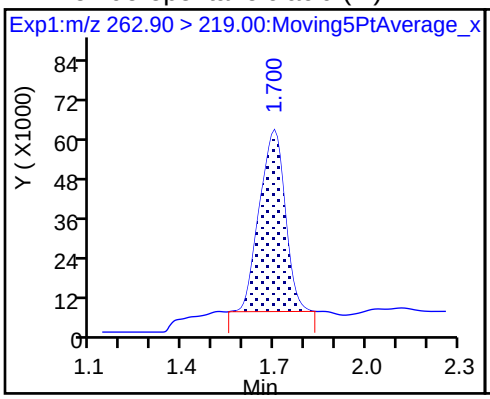
2 Perfluorobutyric acid



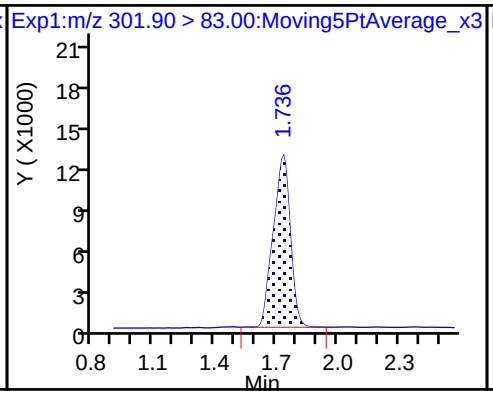
D 3 13C5-PFPeA



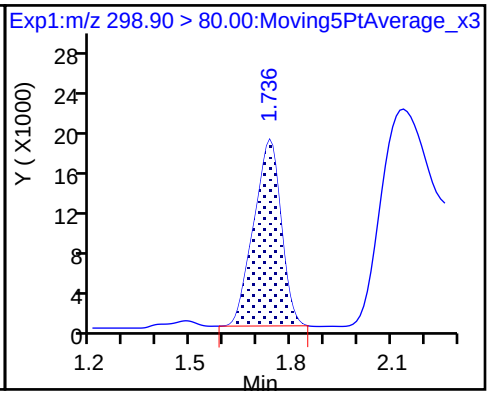
4 Perfluoropentanoic acid (M)



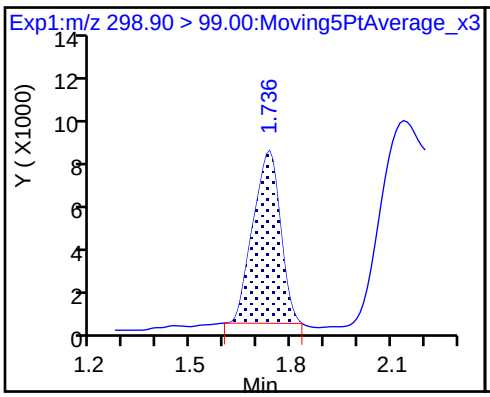
D 47 13C3-PFBS



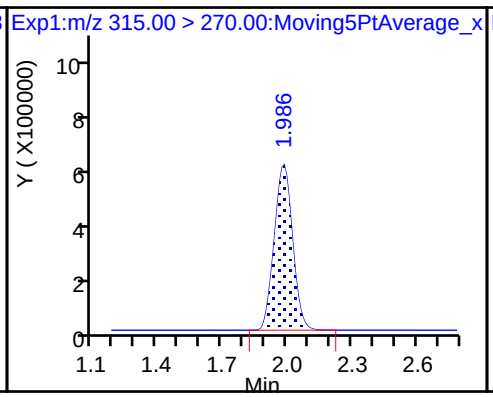
5 Perfluorobutanesulfonic acid



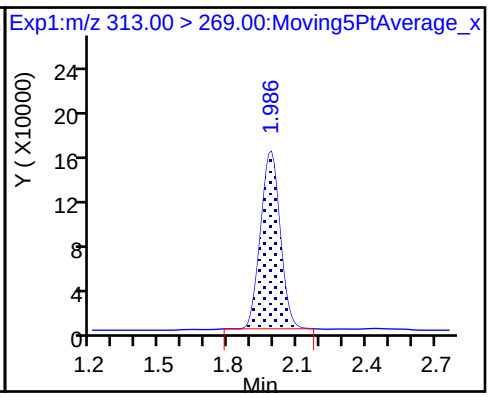
5 Perfluorobutanesulfonic acid



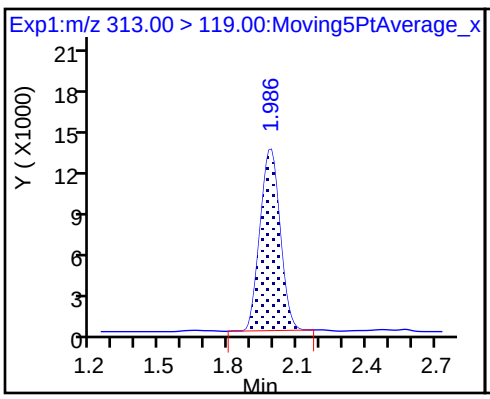
D 7 13C2 PFHxA



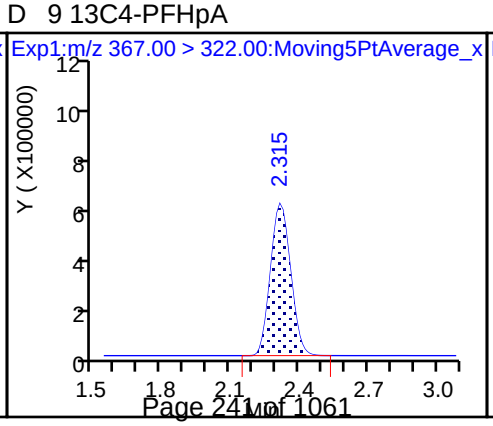
6 Perfluorohexanoic acid



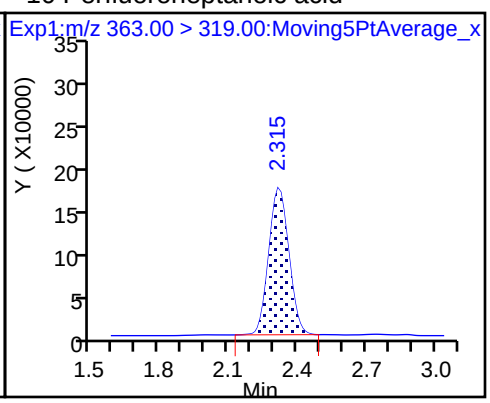
6 Perfluorohexanoic acid



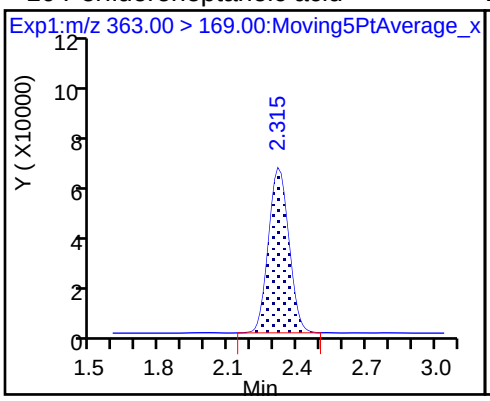
D 9 13C4-PFHpA



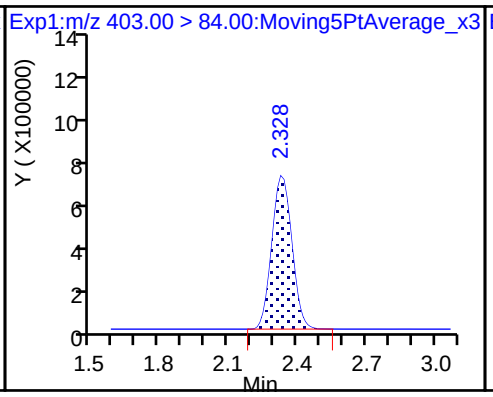
10 Perfluoroheptanoic acid



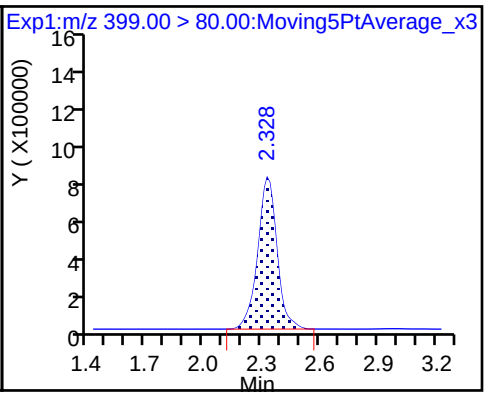
10 Perfluoroheptanoic acid



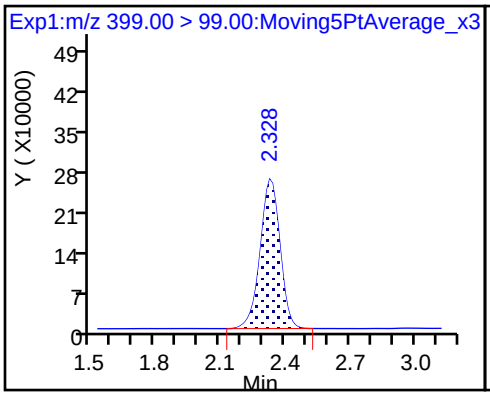
D 11 18O2 PFHxS



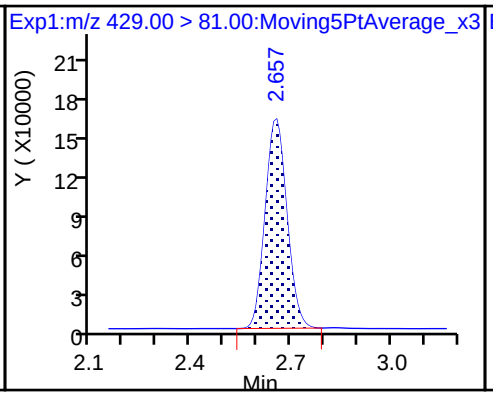
8 Perfluorohexanesulfonic acid



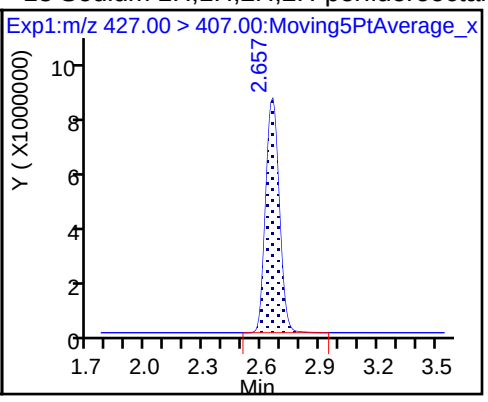
8 Perfluorohexanesulfonic acid



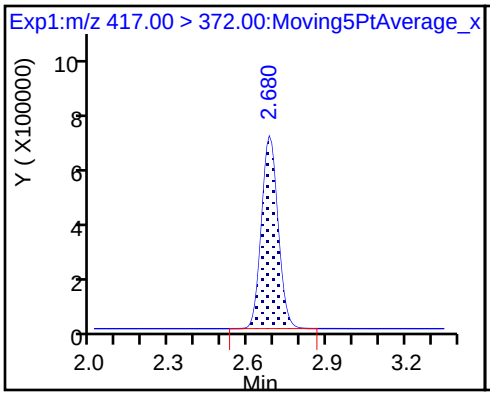
D 12 M2-6:2FTS



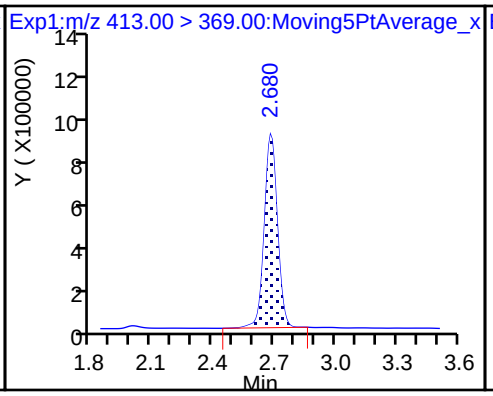
13 Sodium 1H,1H,2H,2H-perfluorooctane



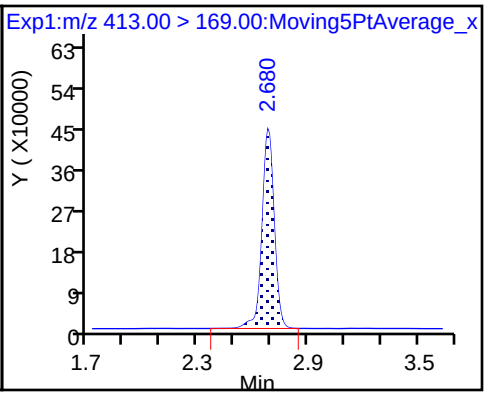
D 14 13C4 PFOA



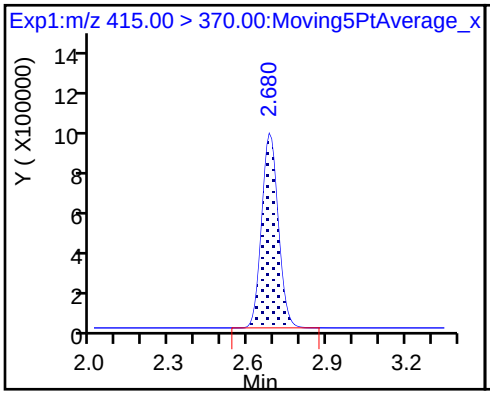
15 Perfluorooctanoic acid



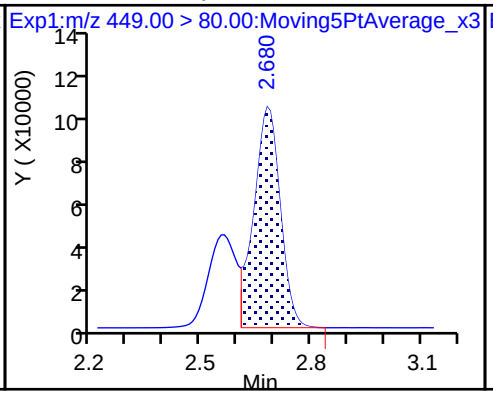
15 Perfluorooctanoic acid



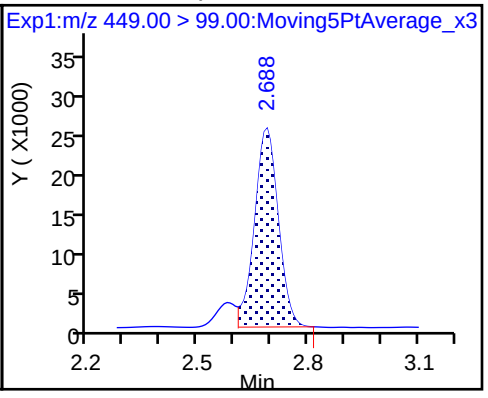
* 62 13C2-PFOA



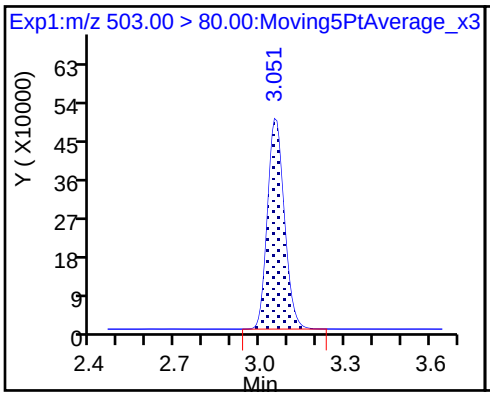
16 Perfluoroheptanesulfonic acid



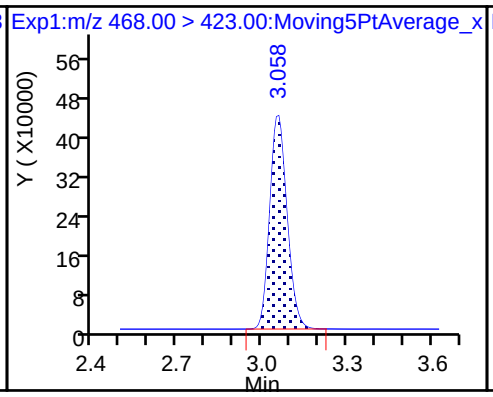
16 Perfluoroheptanesulfonic acid



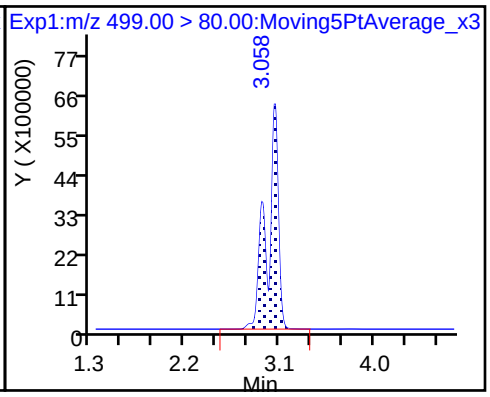
D 18 13C4 PFOS



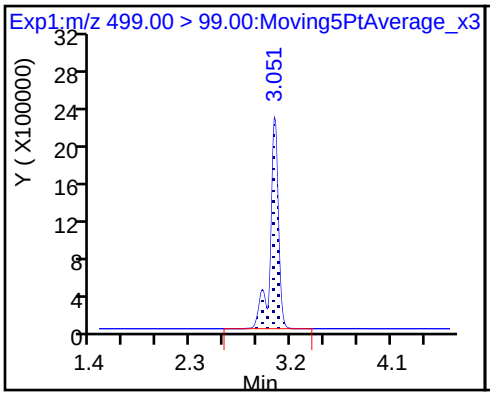
D 19 13C5 PFNA



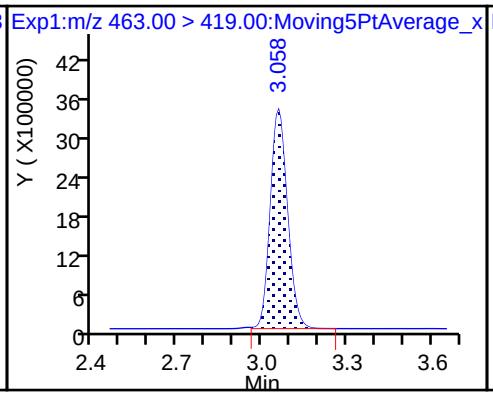
17 Perfluorooctane sulfonic acid



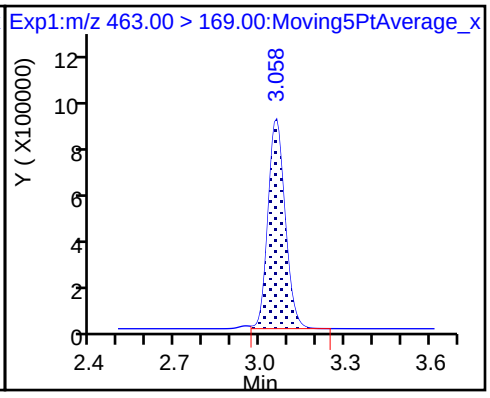
17 Perfluorooctane sulfonic acid



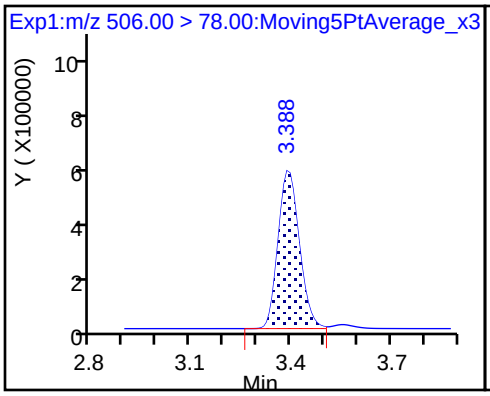
20 Perfluorononanoic acid



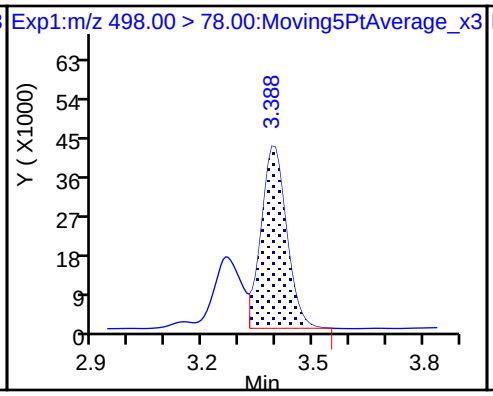
20 Perfluorononanoic acid



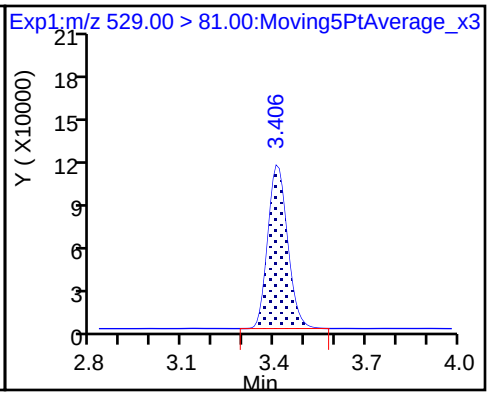
D 21 13C8 FOSA



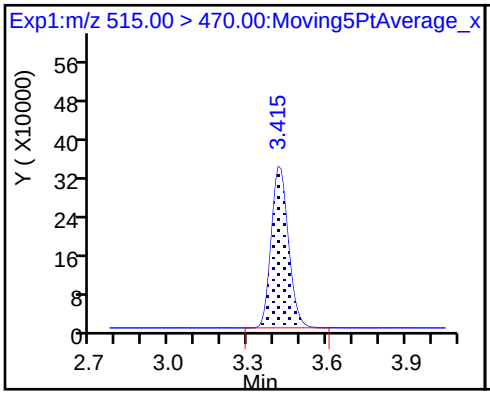
22 Perfluorooctane Sulfonamide



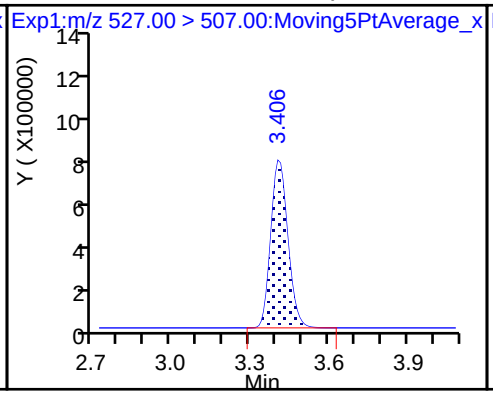
D 26 M2-8:2FTS



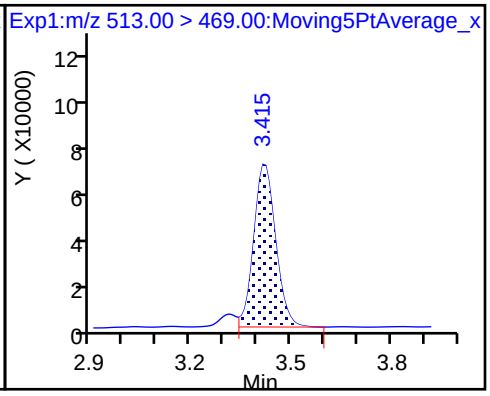
D 23 13C2 PFDA



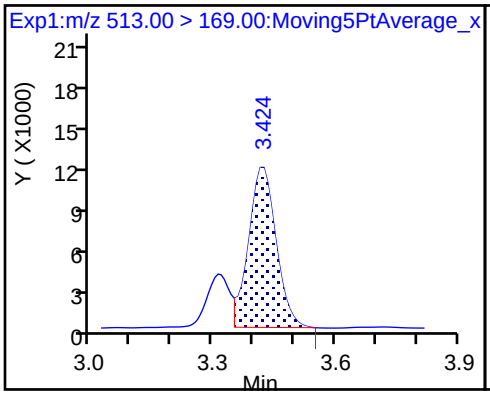
25 Sodium 1H,1H,2H,2H-perfluorodecan



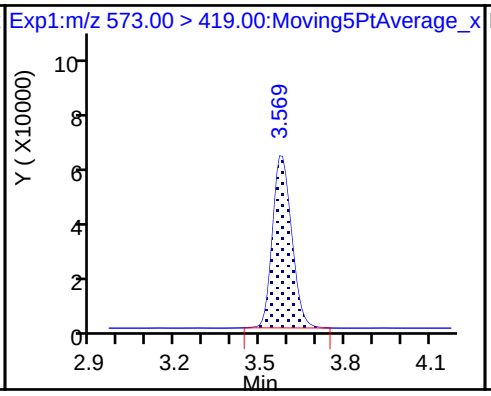
24 Perfluorodecanoic acid



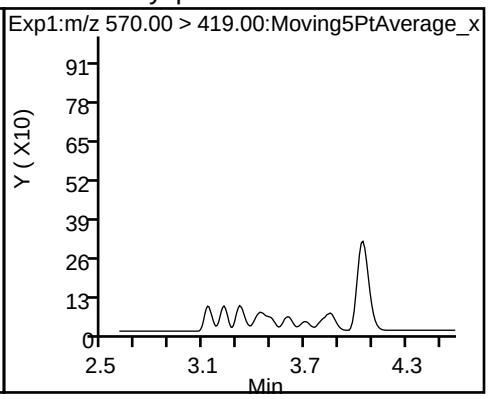
24 Perfluorodecanoic acid



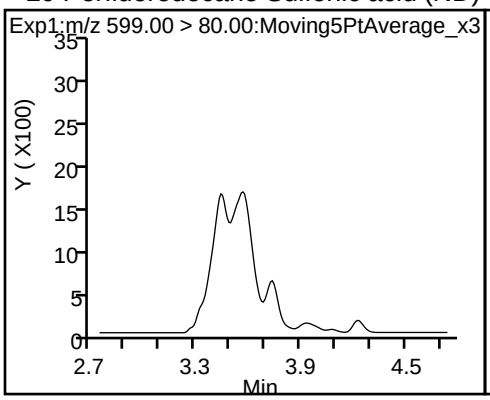
D 27 d3-NMeFOSAA



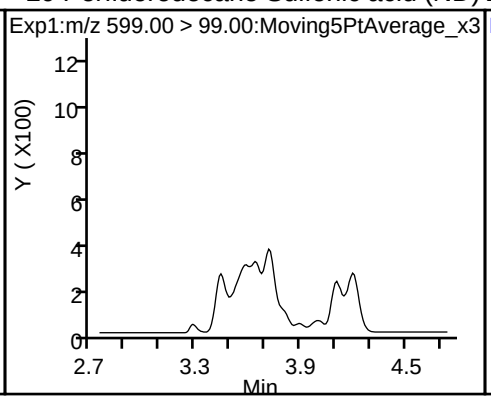
28 N-methyl perfluorooctane sulfonami (ND)



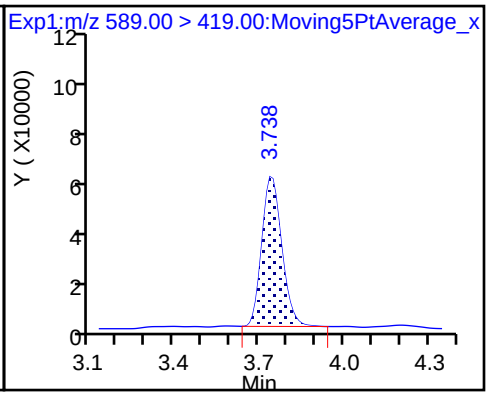
29 Perfluorodecane Sulfonic acid (ND)



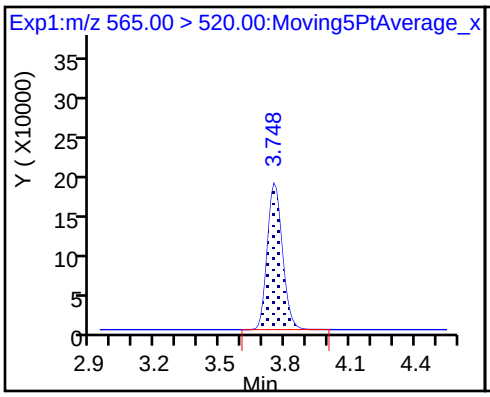
29 Perfluorodecane Sulfonic acid (ND)



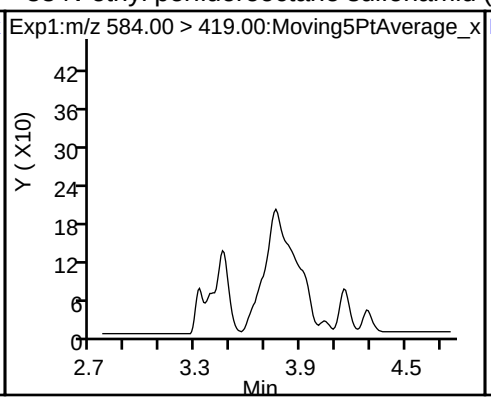
D 32 d5-NEtFOSAA



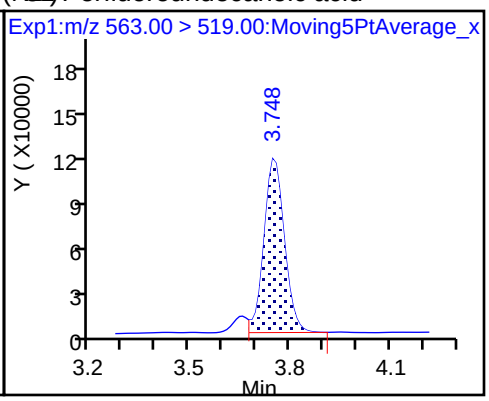
D 30 13C2 PFUnA



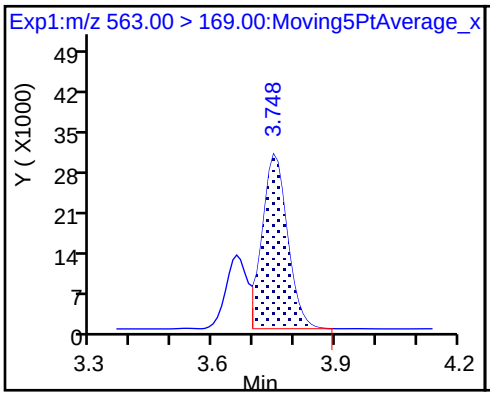
33 N-ethyl perfluorooctane sulfonamid (ND)



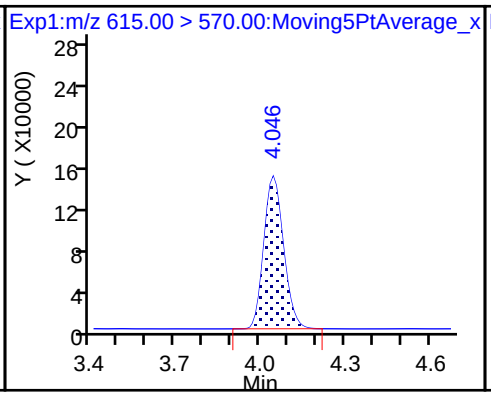
31 Perfluoroundecanoic acid



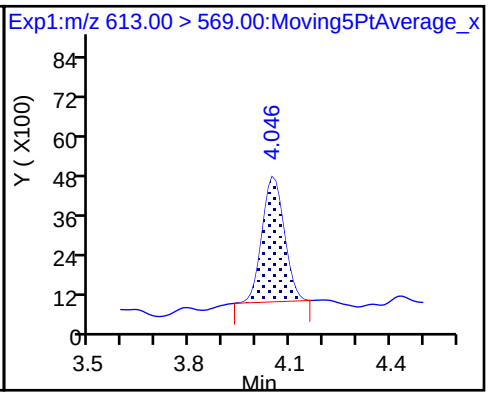
31 Perfluoroundecanoic acid



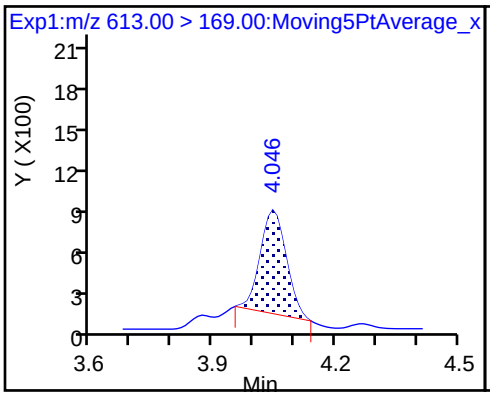
D 36 13C2 PFDoA



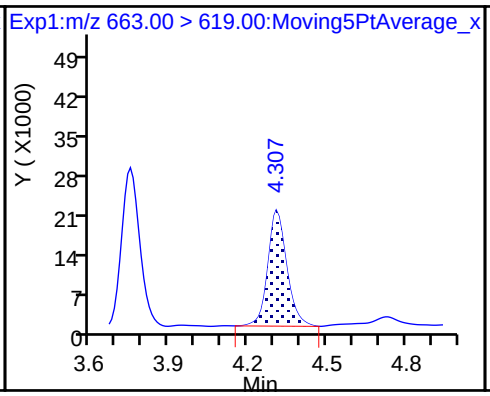
37 Perfluorododecanoic acid



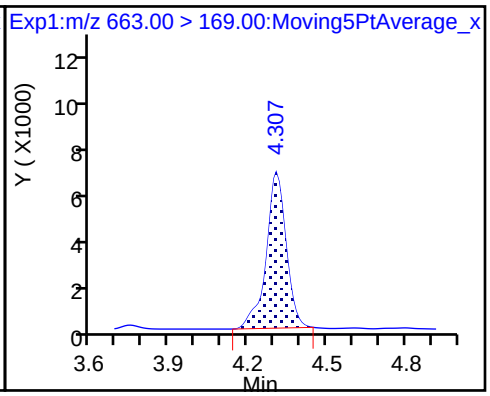
37 Perfluorododecanoic acid



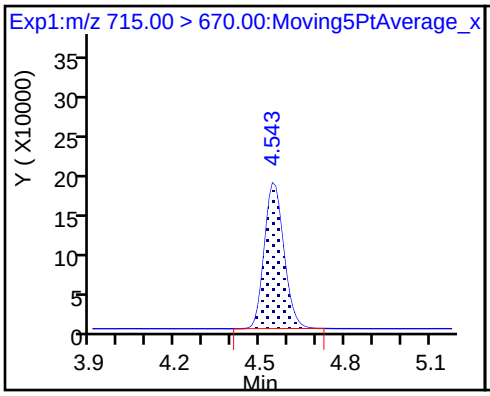
41 Perfluorotridecanoic acid



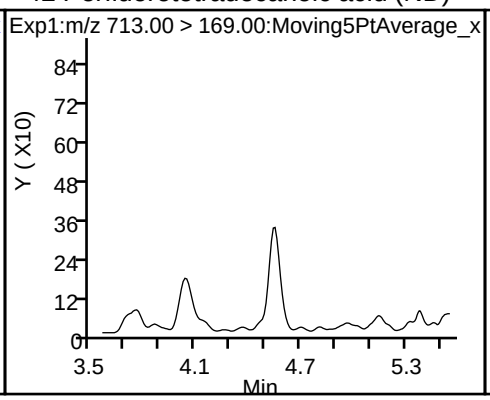
41 Perfluorotridecanoic acid



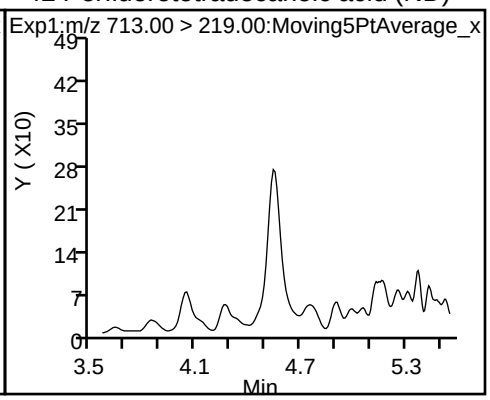
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

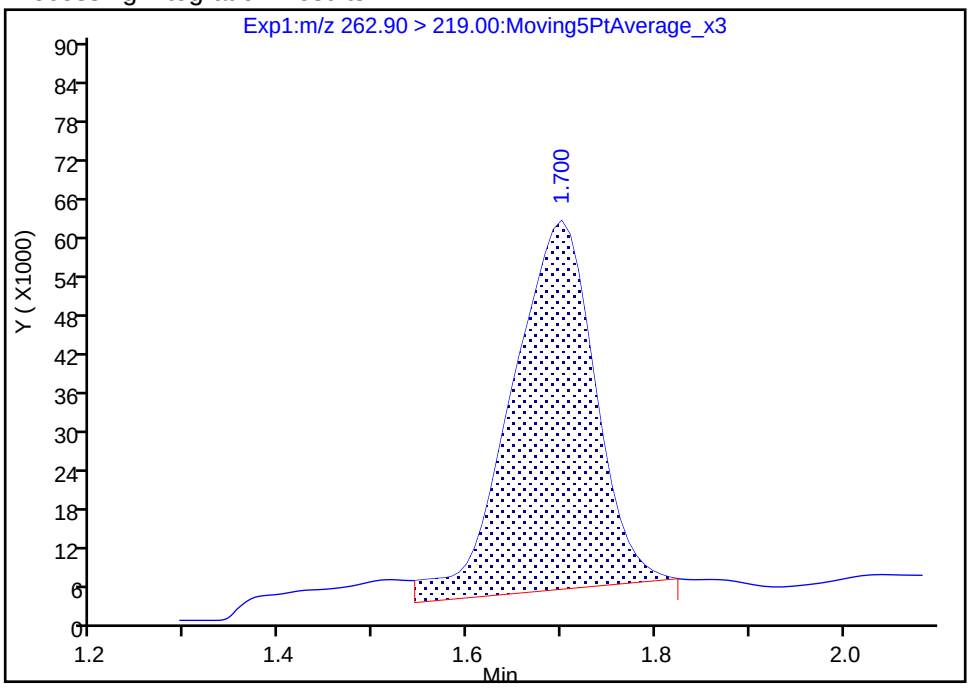
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_042.d				
Injection Date:	21-Mar-2018 01:38:36	Instrument ID:	A8_N		
Lims ID:	320-36761-A-5-A	Lab Sample ID:	320-36761-5		
Client ID:	SB003(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	32	Worklist Smp#:	21
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

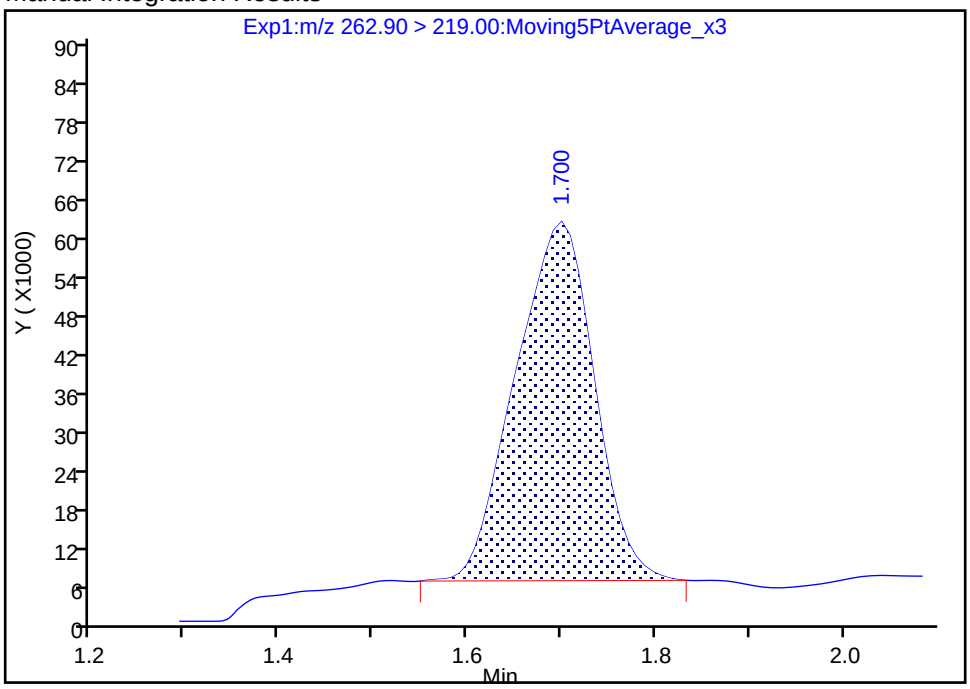
Processing Integration Results

RT: 1.70
Area: 351615
Amount: 0.238525
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 323462
Amount: 0.219427
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:48:41

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(10'-12') RE | Lab Sample ID: 320-36761-5 RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_011.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.02(g) | Date Analyzed: 03/29/2018 00:41

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000040*	*U H*	*0.00021*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	75		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_011.d
Lims ID: 320-36761-A-5-B
Client ID: SB003(10'-12')
Sample Type: Client
Inject. Date: 29-Mar-2018 00:41:40 ALS Bottle#: 18 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-A-5-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:01:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.004	276721	0.1433			61.4	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.434	1.441	-0.007	0.531	5122152	2.21		88.5	122225	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.008	1.005	340049	0.2077			153	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.629	3630104	2.36		94.6	73942	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.736	0.008	1.005	95408	0.0400			48.9	
298.90 > 99.00	1.735	1.736	-0.001	1.000	39517		2.41(1.25-3.74)		44.5	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.642	71318	2.04		87.5	536	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	942347	0.6088			1053	
313.00 > 119.00	1.997	1.998	-0.001	1.000	91426		10.31(5.03-15.10)		936	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3784792	2.23		89.2	103204	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1001173	0.6343			542	
363.00 > 169.00	2.328	2.328	0.0	1.000	419258		2.39(1.13-3.40)		661	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	4702594	2.20			15992	
399.00 > 99.00	2.341	2.341	0.0	1.000	1482680		3.17(1.50-4.49)		7862	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.861	3814255	2.28		91.1	77100	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.866	4534817	2.19		92.8	123128	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.671	2.673	-0.002	1.000	44451044	75.0			166517	E
* 62 13C2-PFOA										
415.00 > 370.00	2.703	2.697	0.006		4569700	2.50			83851	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.703	2.697	0.006	1.003	3858418	2.34			1675	
413.00 > 169.00	2.703	2.697	0.006	1.003	2015614		1.91(0.84-2.52)		6876	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.697	-0.026	0.988	807748	2.33		97.9	13192	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.705	-0.001	1.000	391039	0.2710			127	
449.00 > 99.00	2.703	2.705	-0.001	1.000	102726		3.81(1.94-5.82)		607	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.721	-0.026	0.997	3654590	2.13		85.3	81247	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.072	3.072	0.0	1.000	48893617	39.0			51297	E
499.00 > 99.00	3.072	3.072	0.0	1.000	12407387		3.94(2.31-6.93)		791097	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.072	3.072	0.0	1.000	17154229	16.0			21342	E
463.00 > 169.00	3.072	3.072	0.0	1.000	4465439		3.84(1.90-5.69)		77452	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.137	2692676	1.78		71.3	61503	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.137	2691629	1.79		74.9	38854	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.407	-0.001	1.000	480697	0.2997			191	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.417	-0.011	1.260	4067718	2.01		80.3	1496	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.424	3.426	-0.002	1.000	5342361	11.1			67059	E
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.435	0.007	1.003	557499	0.5178			2670	
513.00 > 169.00	3.433	3.435	-0.002	1.000	92048		6.06(2.36-7.09)		271	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.453	-0.029	1.267	900604	1.92		80.2	19774	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.462	-0.029	1.270	2724065	2.06		82.3	59317	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.589	3.611	-0.022	1.328	1166782	1.67		67.0	39647	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.748	3.748	0.0	1.000	13180	0.0172			18.5	
599.00 > 99.00	3.738	3.748	-0.010	0.997	4945		2.67(1.39-4.16)		51.9	M
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.769	3.769	0.0	1.000	1492338	2.02			1550	M
563.00 > 169.00	3.769	3.769	0.0	1.000	368853		4.05(2.12-6.36)		317	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.769	-0.011	1.000	4795	0.0100			83.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.391	1289334	1.62		64.9	4540	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.394	2137906	1.80		72.2	71703	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	83031	0.0867			53.8	
613.00 > 169.00	4.057	4.057	0.0	1.000	19920		4.17(2.13-6.40)		303	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.089	-0.032	1.501	2287071	1.70		68.0	17572	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	477003	0.4737			231	
663.00 > 169.00	4.318	4.318	0.0	1.000	157565		3.03(1.25-3.76)		2803	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	10494	0.0355			200	
713.00 > 219.00	4.554	4.564	-0.010	0.998	6682		1.57(0.71-2.13)		156	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.689	2985931	1.82		72.7	23117	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

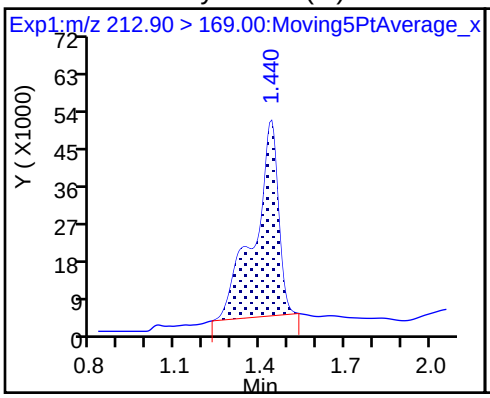
Report Date: 29-Mar-2018 09:09:21 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

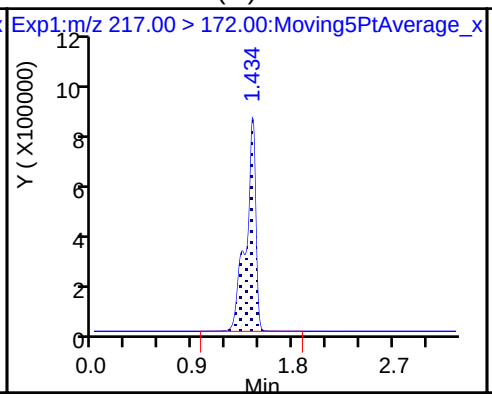
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_011.d

Injection Date:	29-Mar-2018 00:41:40	Instrument ID:	A8_N		
Lims ID:	320-36761-A-5-B	Lab Sample ID:	320-36761-5		
Client ID:	SB003(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

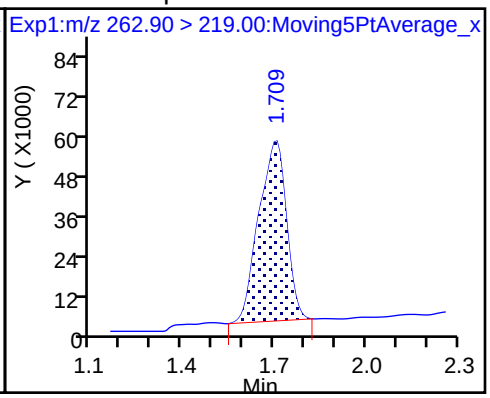
2 Perfluorobutyric acid (M)



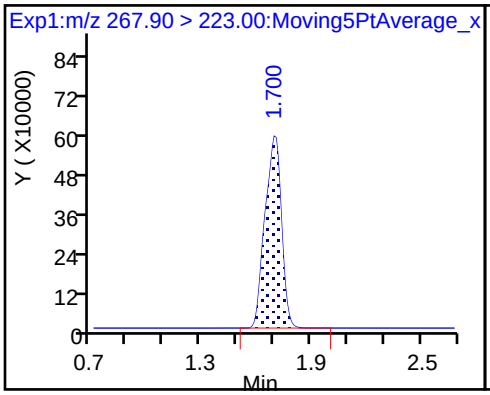
D 1 13C4 PFBA (M)



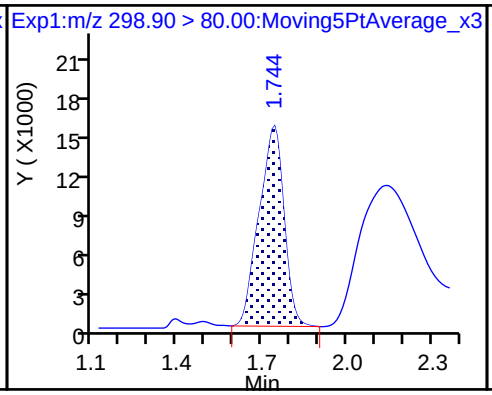
4 Perfluoropentanoic acid



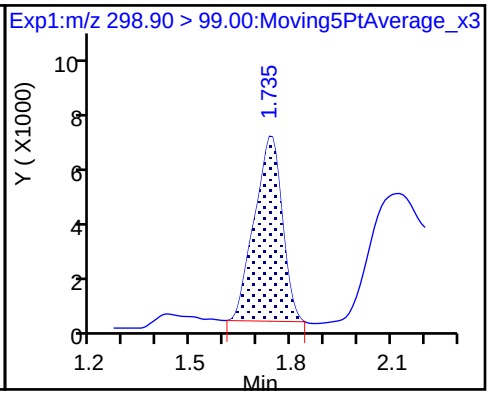
D 3 13C5-PFPeA



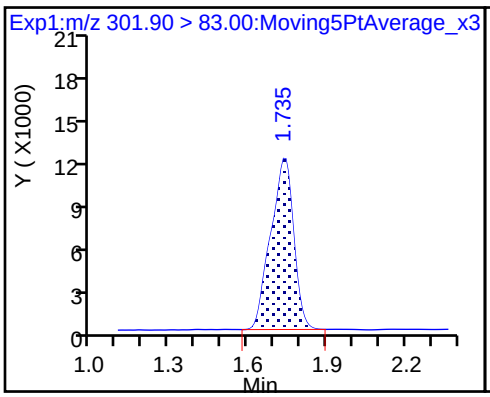
5 Perfluorobutanesulfonic acid



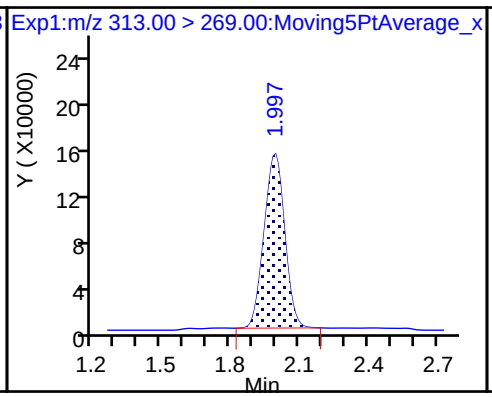
5 Perfluorobutanesulfonic acid



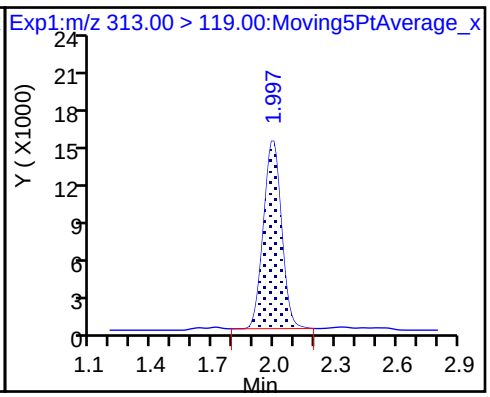
D 47 13C3-PFBS



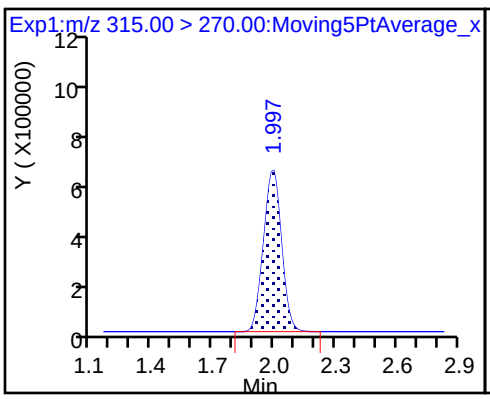
6 Perfluorohexanoic acid



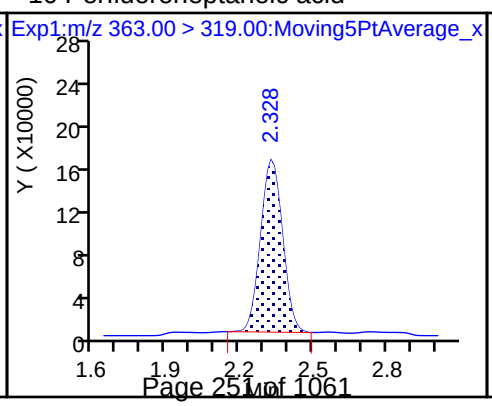
6 Perfluorohexanoic acid



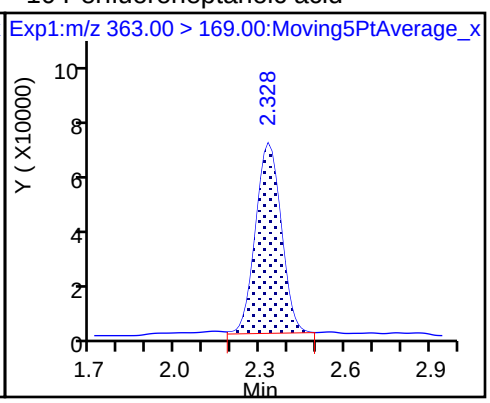
D 7 13C2 PFHxA



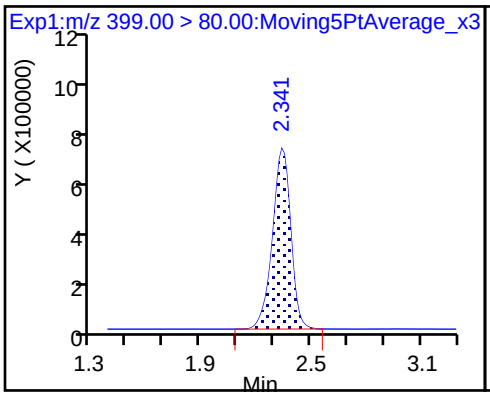
10 Perfluoroheptanoic acid



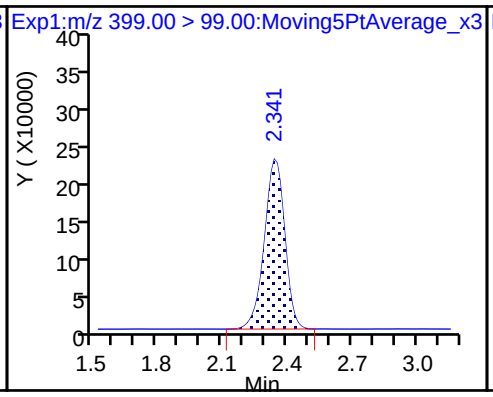
10 Perfluoroheptanoic acid



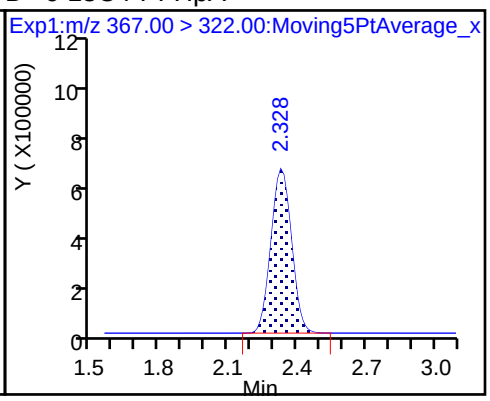
8 Perfluorohexanesulfonic acid



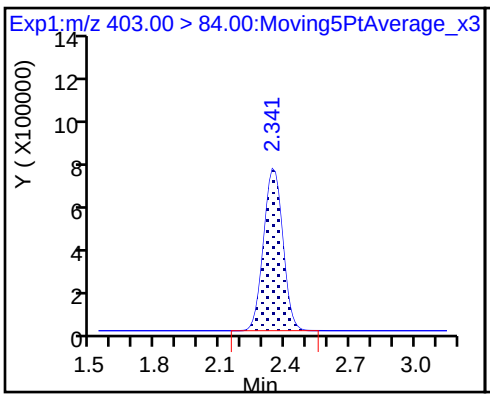
8 Perfluorohexanesulfonic acid



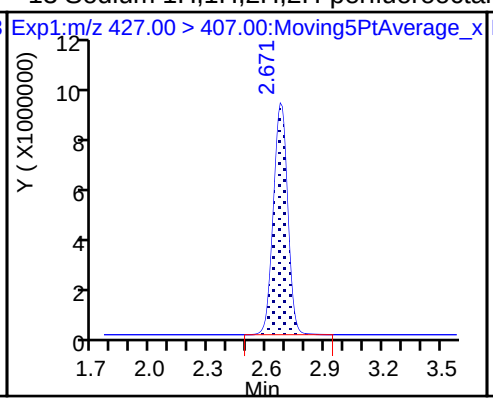
D 9 13C4-PFHpA



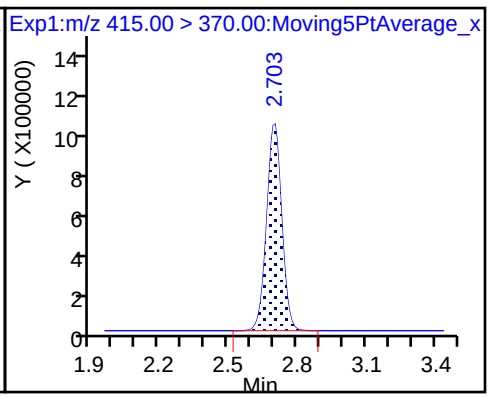
D 11 18O2 PFHxS



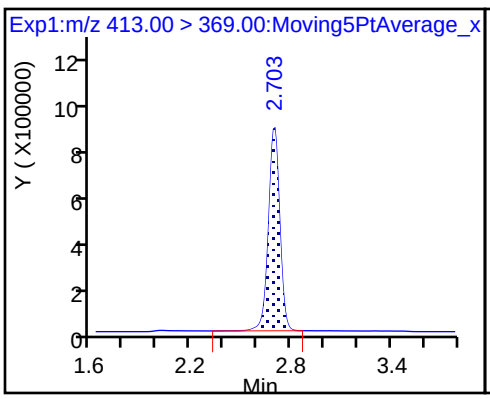
13 Sodium 1H,1H,2H,2H-perfluorooctane



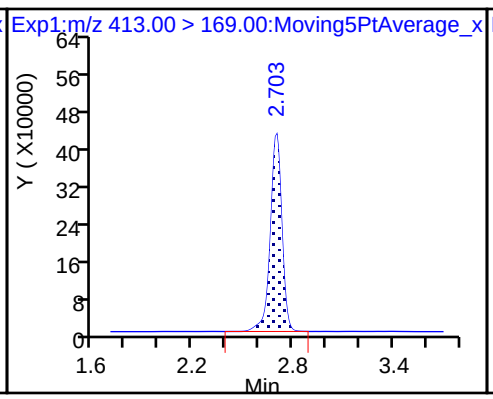
M2 6:2 13C2-PFOA



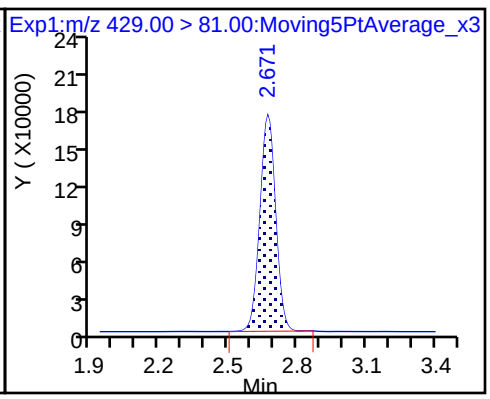
15 Perfluorooctanoic acid



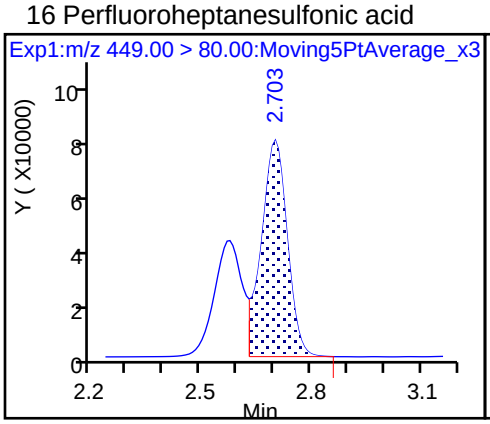
15 Perfluorooctanoic acid



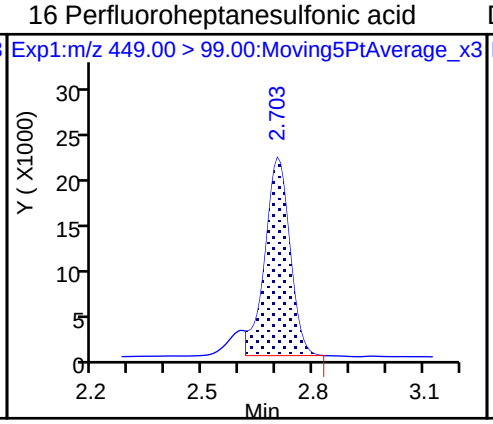
D 12 M2-6:2FTS



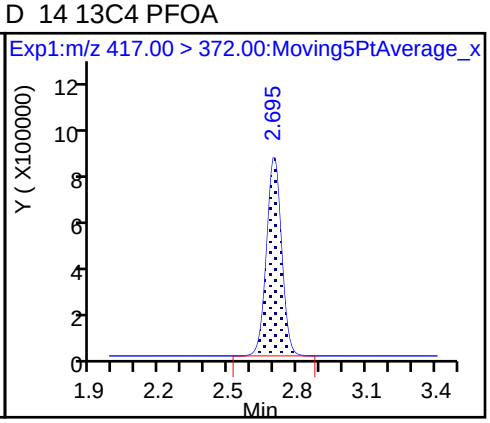
16 Perfluoroheptanesulfonic acid



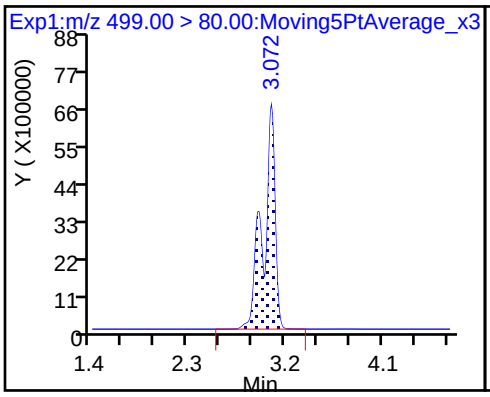
16 Perfluoroheptanesulfonic acid



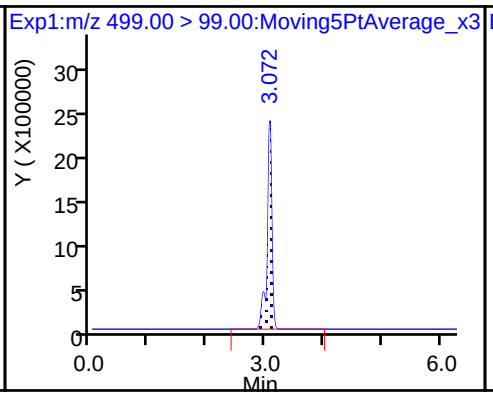
D 14 13C4 PFOA



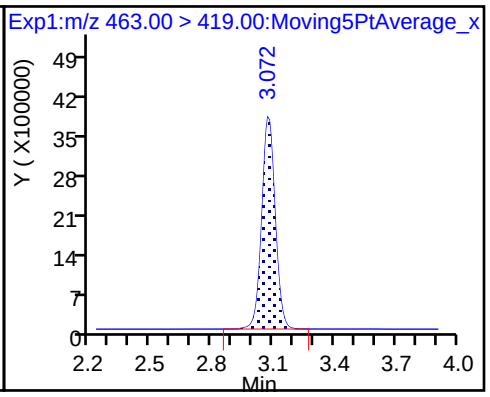
17 Perfluorooctane sulfonic acid



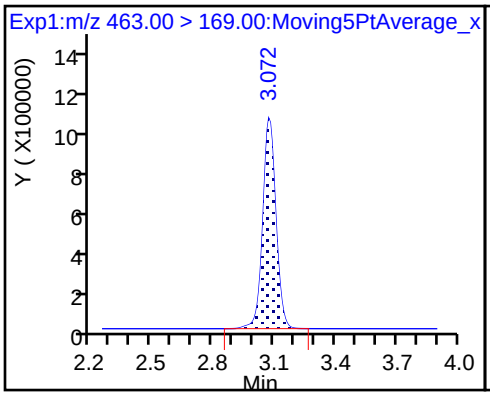
17 Perfluorooctane sulfonic acid



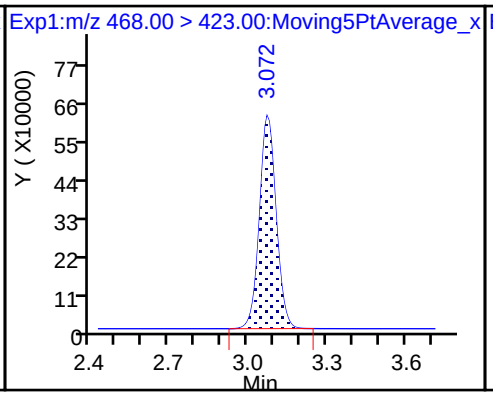
20 Perfluorononanoic acid



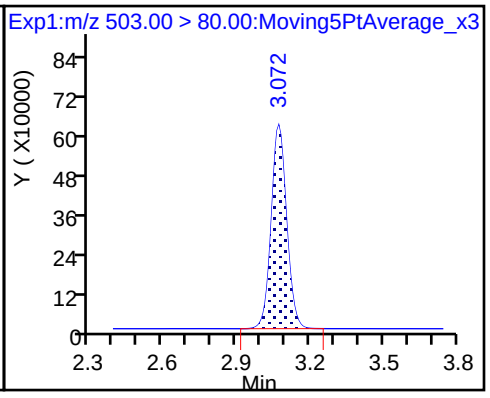
20 Perfluorononanoic acid



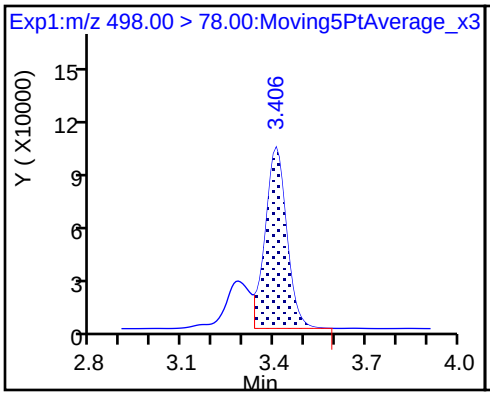
D 19 13C5 PFNA



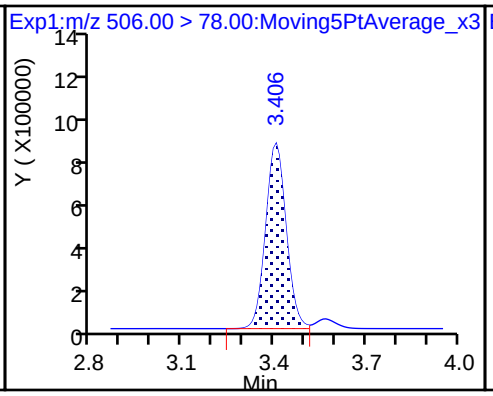
D 18 13C4 PFOS



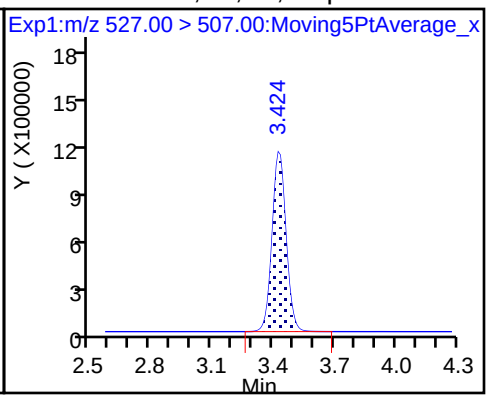
22 Perfluorooctane Sulfonamide



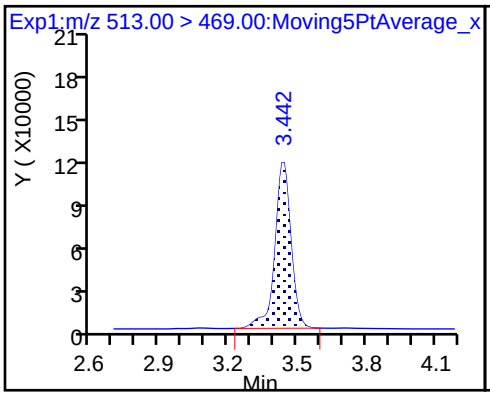
D 21 13C8 FOSA



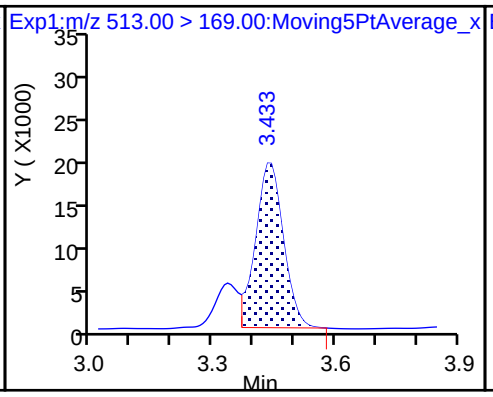
25 Sodium 1H,1H,2H,2H-perfluorodecane



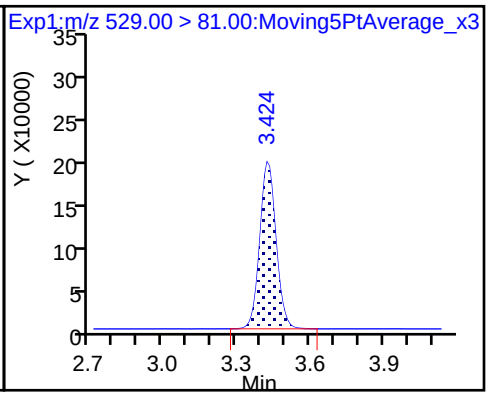
24 Perfluorodecanoic acid



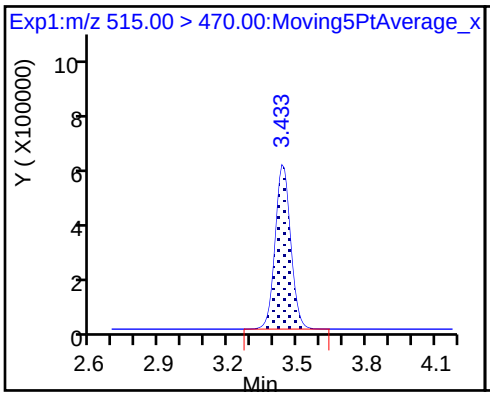
24 Perfluorodecanoic acid



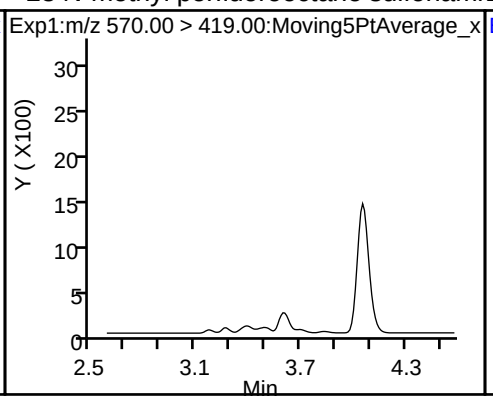
D 26 M2-8:2FTS



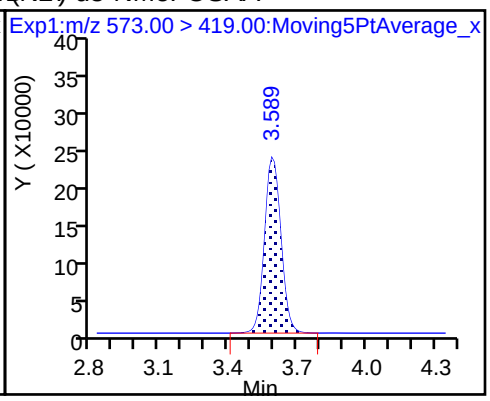
D 23 13C2 PFDA



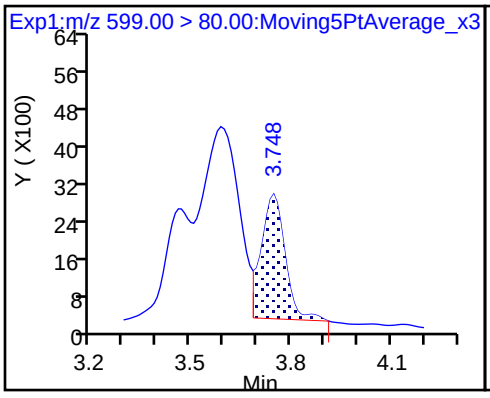
28 N-methyl perfluorooctane sulfonamid



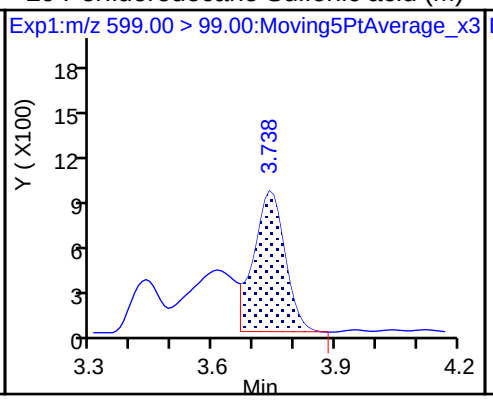
D 27 d3-NMeFOSAA



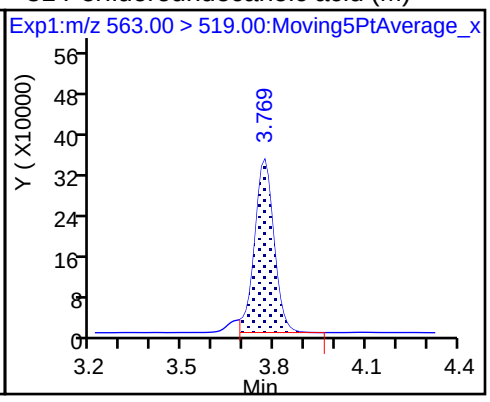
29 Perfluorodecane Sulfonic acid



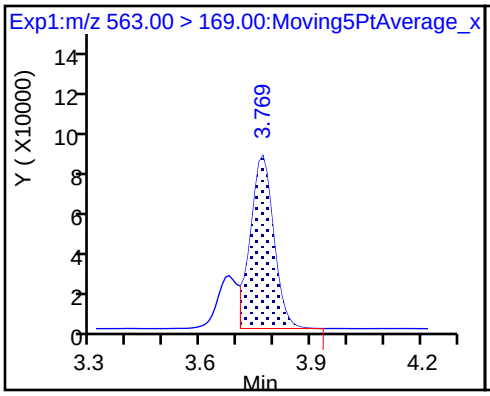
29 Perfluorodecane Sulfonic acid (M)



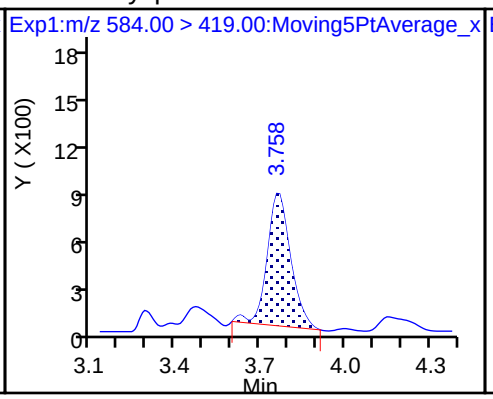
31 Perfluoroundecanoic acid (M)



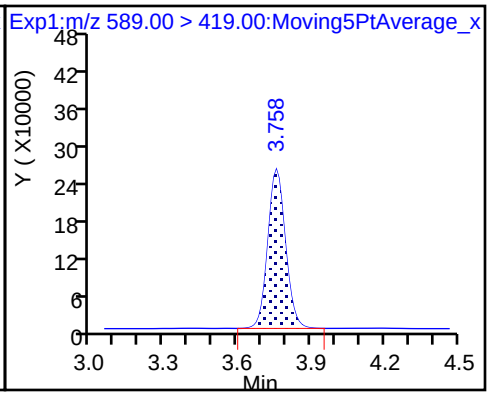
31 Perfluoroundecanoic acid



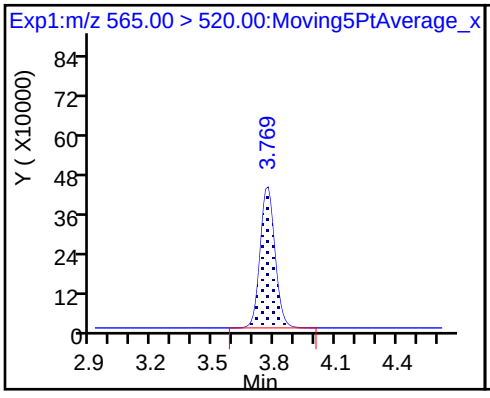
33 N-ethyl perfluorooctane sulfonamid



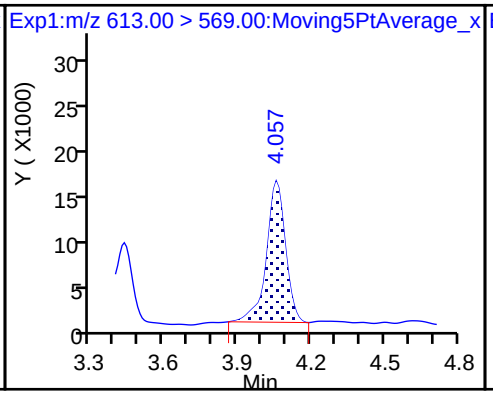
D 32 d5-NEtFOSAA



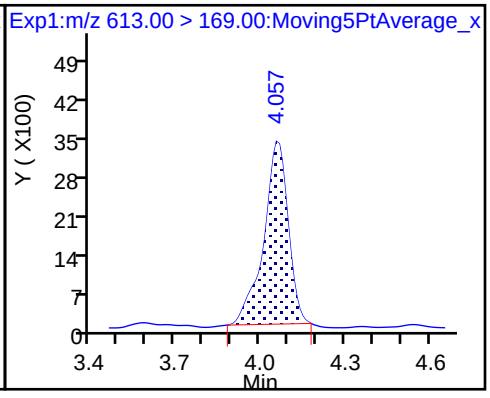
D 30 13C2 PFUnA



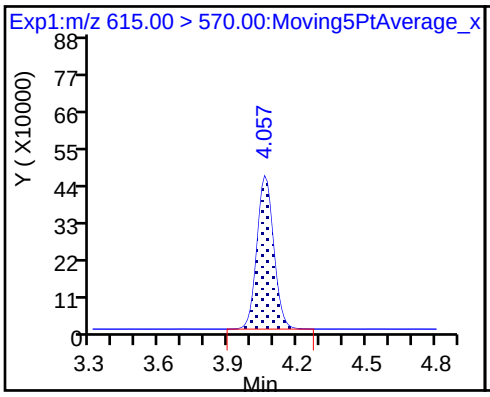
37 Perfluorododecanoic acid



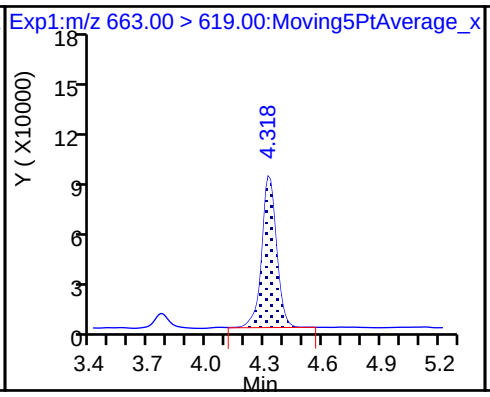
37 Perfluorododecanoic acid



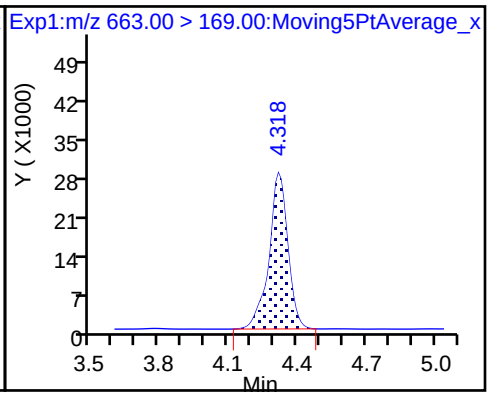
D 36 13C2 PFDoA



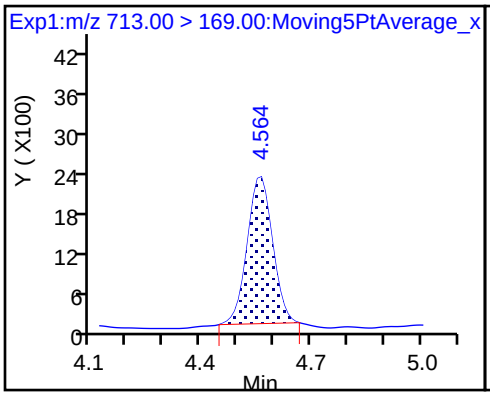
41 Perfluorotridecanoic acid



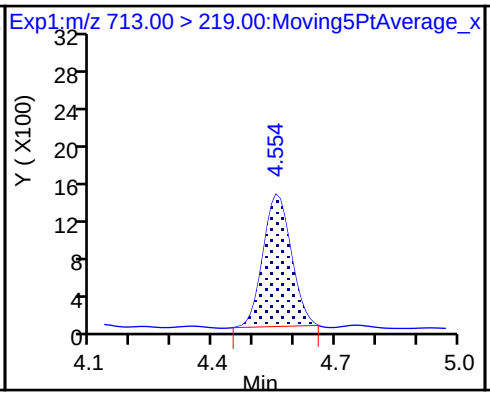
41 Perfluorotridecanoic acid



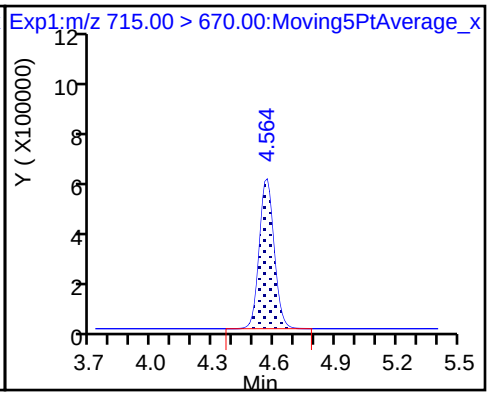
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

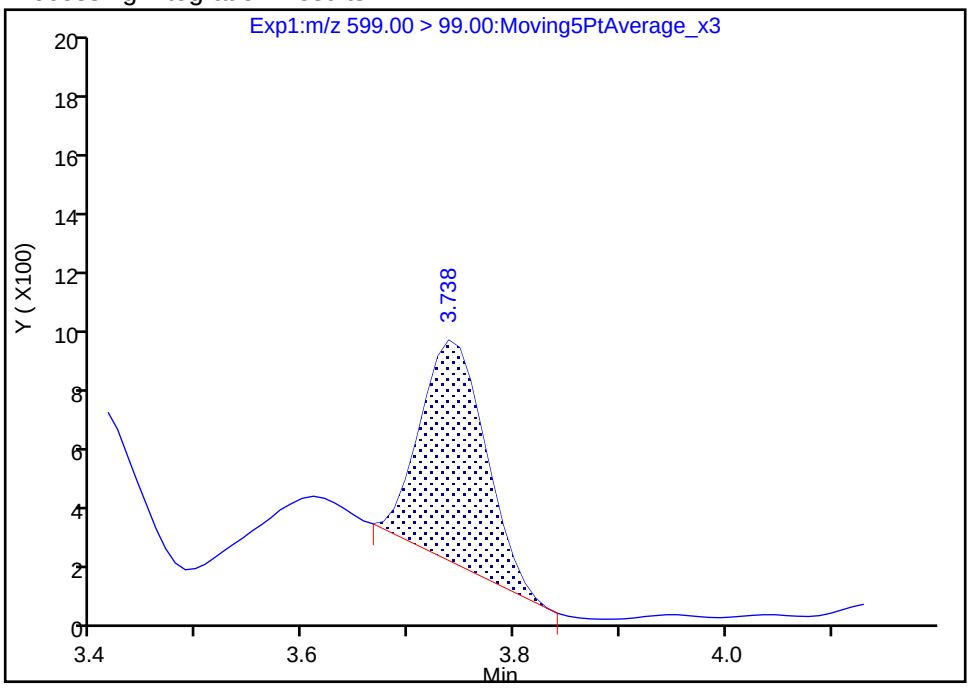
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_011.d				
Injection Date:	29-Mar-2018 00:41:40	Instrument ID:	A8_N		
Lims ID:	320-36761-A-5-B	Lab Sample ID:	320-36761-5		
Client ID:	SB003(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 2

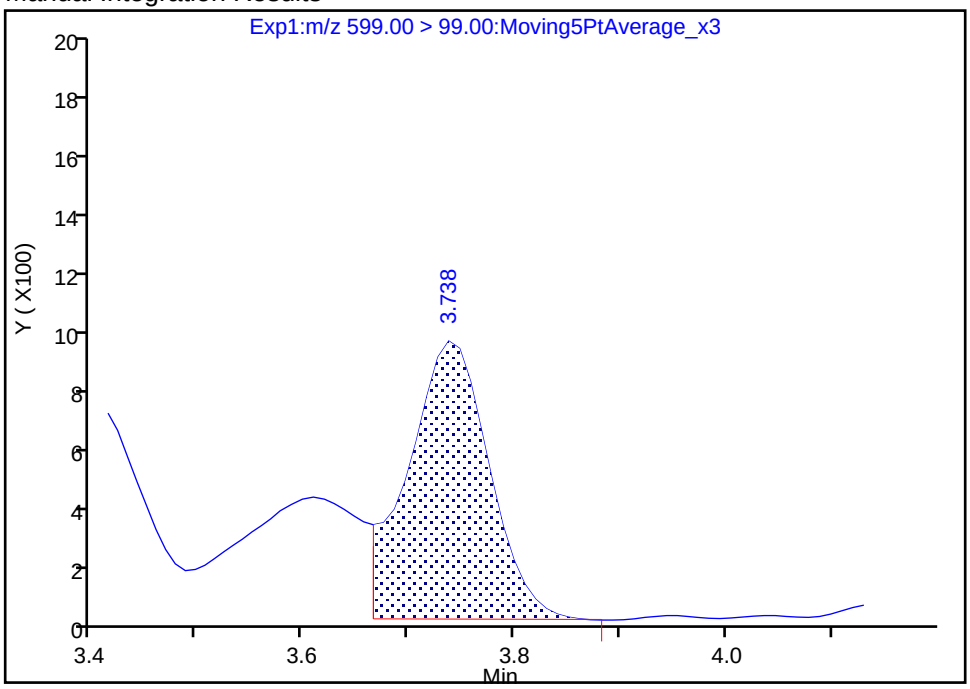
Processing Integration Results

RT: 3.74
Area: 3195
Amount: 0.017210
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 4945
Amount: 0.017210
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:00:59

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB003(10'-12') DL | Lab Sample ID: 320-36761-5 DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_026.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.08(g) | Date Analyzed: 03/22/2018 00:32

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	0.041	D	0.010	0.0018
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.10	B D	0.026	0.010
27619-97-2	6:2FTS	0.20	D	0.10	0.0077
39108-34-4	8:2FTS	0.026	J D	0.10	0.013

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	62		25-150
STL00991	13C4 PFOS	53		25-150
STL02279	M2-6:2FTS	195	*	25-150
STL02280	M2-8:2FTS	49		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_026.d
Lims ID: 320-36761-A-5-A
Client ID: SB003(10'-12')
Sample Type: Client
Inject. Date: 22-Mar-2018 00:32:33 ALS Bottle#: 28 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36761-a-5-a 50X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:42:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.536	107966	0.0370		73.9	1431	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.004	11186	0.005498			5.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	74373	0.0384		76.7	2387	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	75408	0.0352		70.4	2337	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.997	1.997	0.0	1.000	21912	0.0142			59.9	
313.00 > 119.00	1.986	1.997	-0.011	0.995	2231		9.82(5.03-15.10)		42.6	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	78254	0.0370		74.0	3377	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	24421	0.0151			48.0	
363.00 > 169.00	2.328	2.328	0.0	1.000	7506		3.25(1.13-3.40)		100	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	89262	0.0342		72.3	5155	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	108926	0.0519			960	
399.00 > 99.00	2.354	2.341	0.013	1.006	34827		3.13(1.50-4.49)		94.5	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.665	0.016	0.994	40675	0.0928		195	1018	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.689	2.673	0.016	1.003	2874584	1.93			134441	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.688	0.009	1.000	86091	0.0398		79.6	2911	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		115389	0.0500			3109	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	112989	0.0581			33.9	
413.00 > 169.00	2.697	2.697	0.0	1.000	61035		1.85(0.84-2.52)		174	
16 Perfluoroheptanesulfonic acid										R
449.00 > 80.00	2.697	2.704	-0.007	1.000	10869	0.008354			124	R
449.00 > 99.00	2.704	2.704	0.0	1.003	606		17.94(1.94-5.82)		9.4	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	48540	0.0256		53.5	968	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.137	59088	0.0310		61.9	2439	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1158443	1.02			4818	
499.00 > 99.00	3.065	3.065	0.0	1.000	259573		4.46(2.31-6.93)		3566	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.002	473642	0.4018			706	
463.00 > 169.00	3.072	3.072	0.0	1.002	112309		4.22(1.90-5.69)		2755	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.388	0.018	1.263	47358	0.0185		37.0	1450	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.398	0.008	1.000	2653	0.002841			42.1	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.415	0.009	1.270	14026	0.0237		49.5	408	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.424	0.009	1.273	42329	0.0253		50.6	792	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.426	-0.002	1.000	95741	0.2562			2062	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.588	3.578	0.010	1.331	15128	0.0172		34.4	470	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.748	0.020	1.397	31973	0.0214		42.7	959	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	22704	0.0226		45.3	193	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.768	-0.010	0.997	17051	0.0309			67.3	
563.00 > 169.00	3.758	3.768	-0.010	0.997	4008		4.25(2.12-6.36)		164	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.504	27644	0.0163		32.6	322	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.554	-0.001	1.689	40520	0.0195		39.1	352	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:28 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_026.d

Injection Date: 22-Mar-2018 00:32:33 Instrument ID: A8_N

Lims ID: 320-36761-A-5-A Lab Sample ID: 320-36761-5

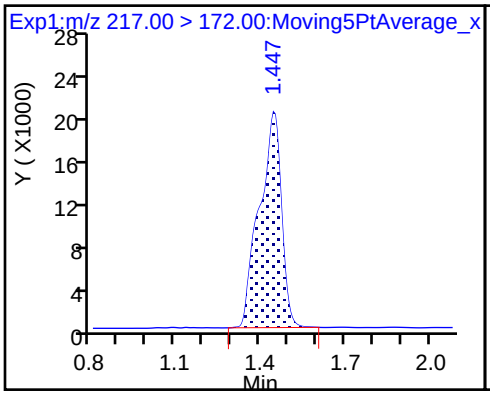
Client ID: SB003(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 21

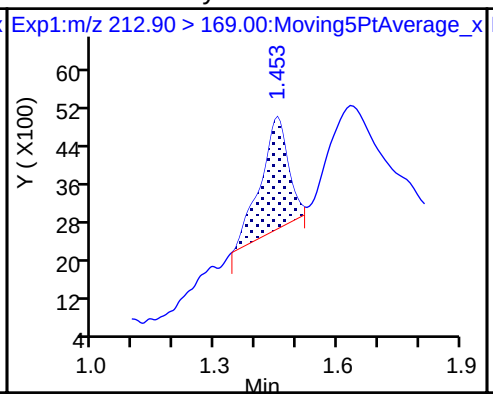
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

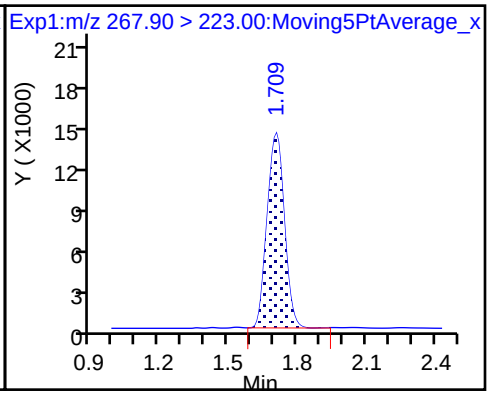
D 1 13C4 PFBA



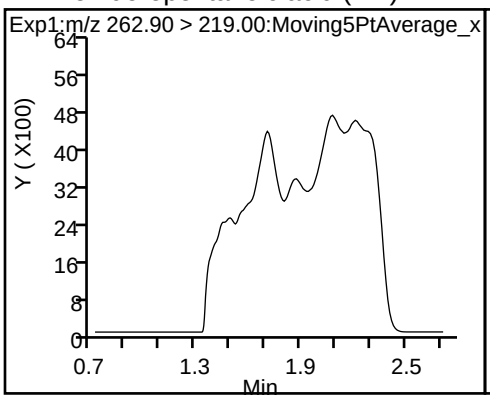
2 Perfluorobutyric acid



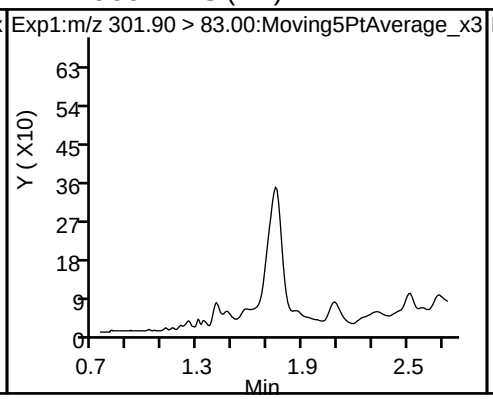
D 3 13C5-PFPeA



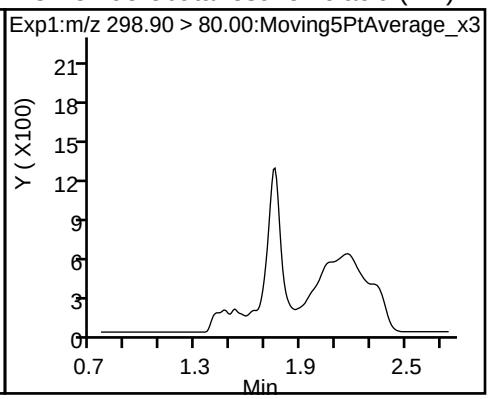
4 Perfluoropentanoic acid (ND)



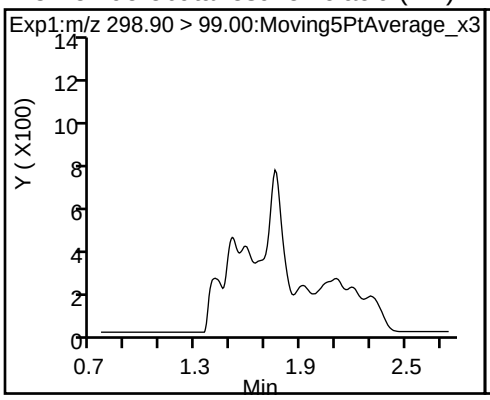
D 47 13C3-PFBS (ND)



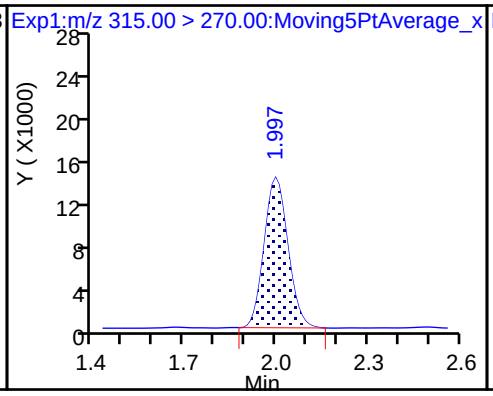
5 Perfluorobutanesulfonic acid (ND)



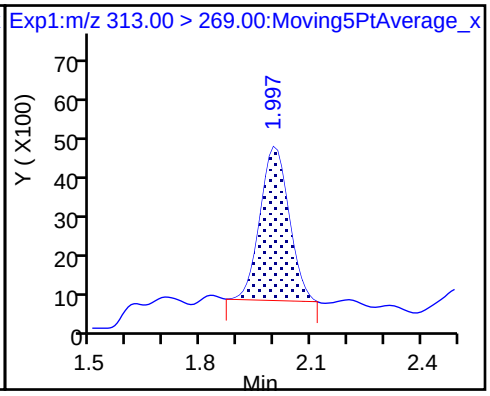
5 Perfluorobutanesulfonic acid (ND)



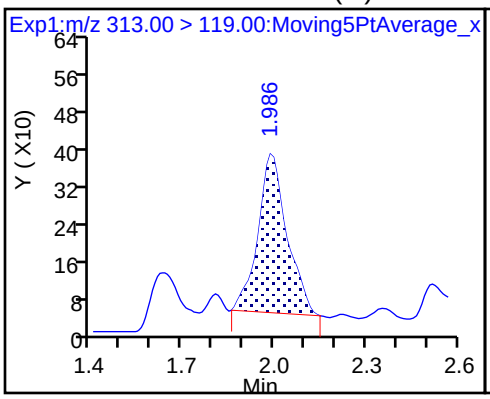
D 7 13C2 PFHxA



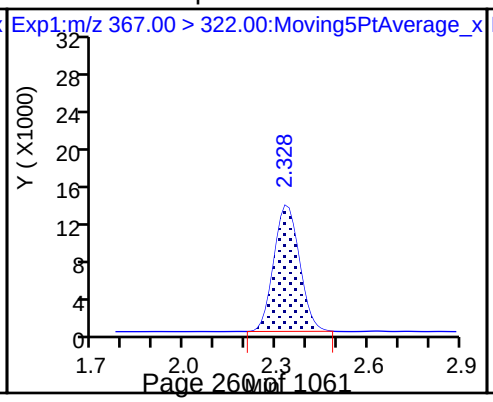
6 Perfluorohexanoic acid



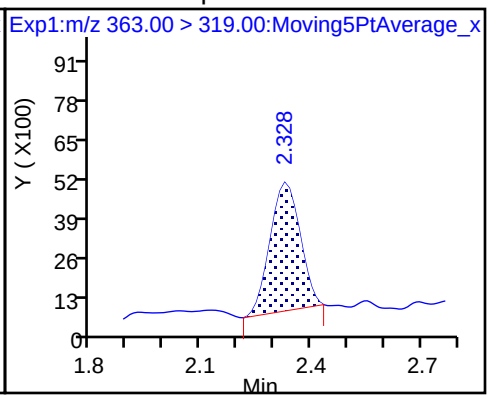
6 Perfluorohexanoic acid (M)



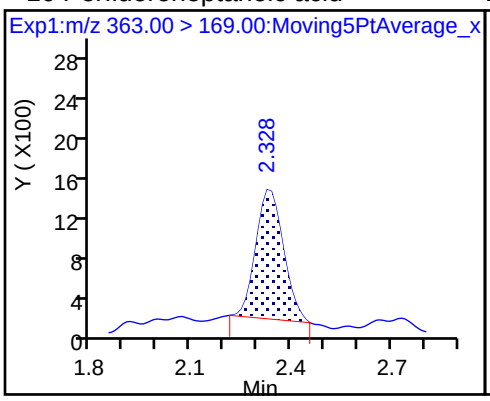
D 9 13C4-PFHpA



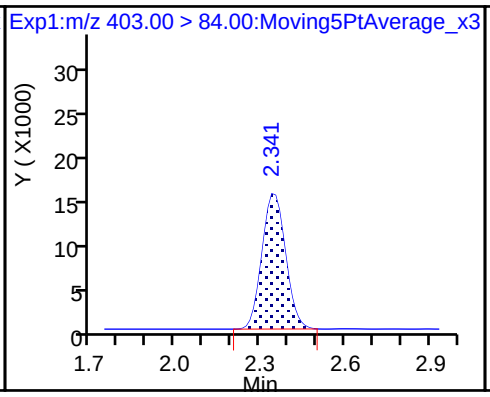
10 Perfluoroheptanoic acid



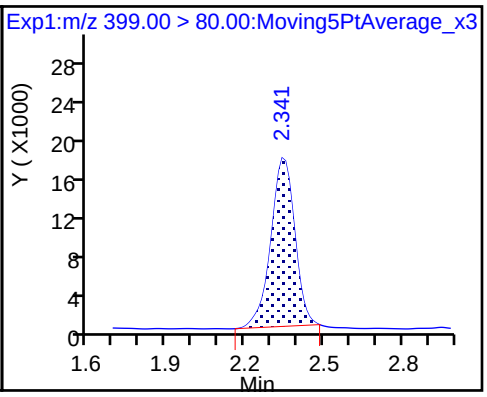
10 Perfluoroheptanoic acid



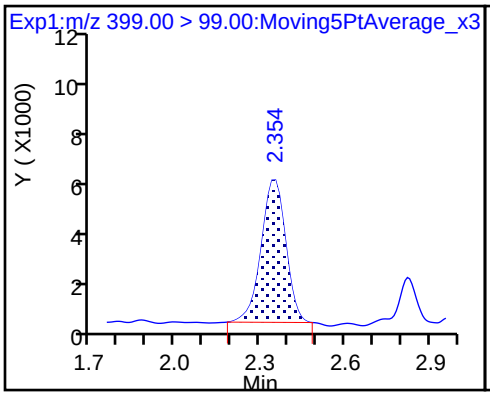
D 11 18O2 PFHxS



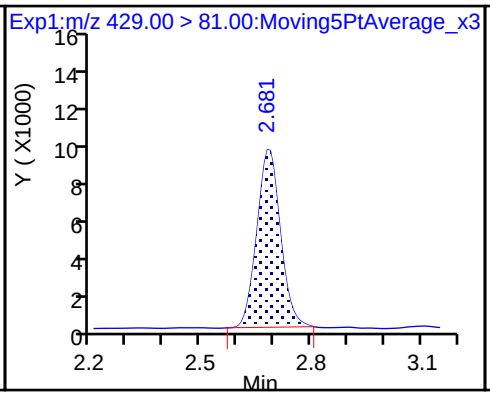
8 Perfluorohexanesulfonic acid



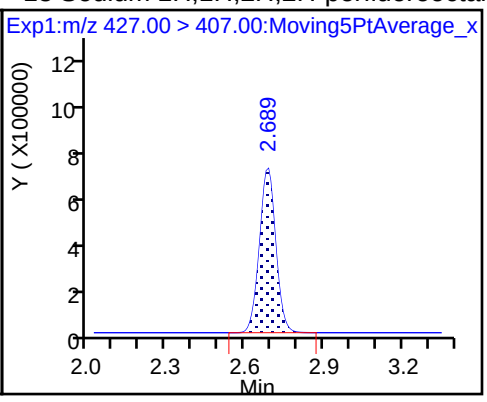
8 Perfluorohexanesulfonic acid



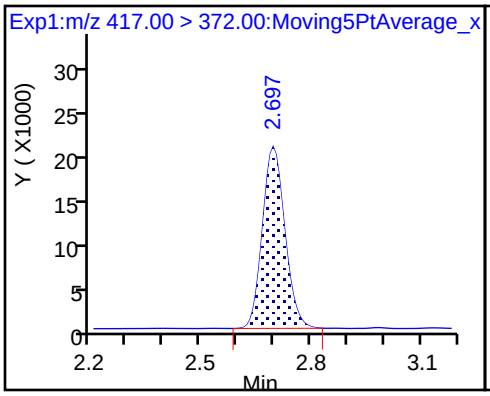
D 12 M2-6:2FTS



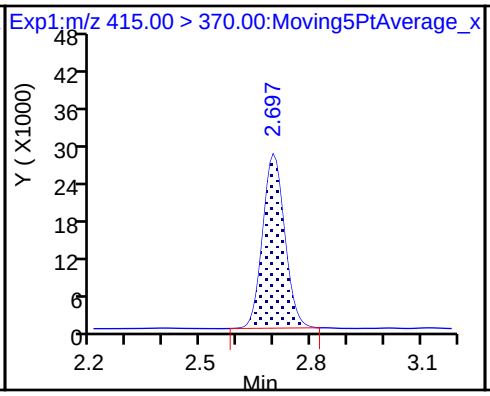
13 Sodium 1H,1H,2H,2H-perfluorooctane



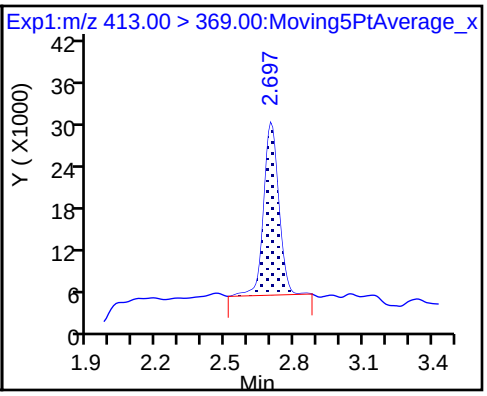
D 14 13C4 PFOA



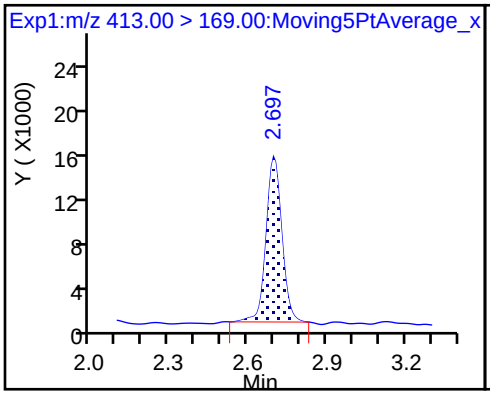
* 62 13C2-PFOA



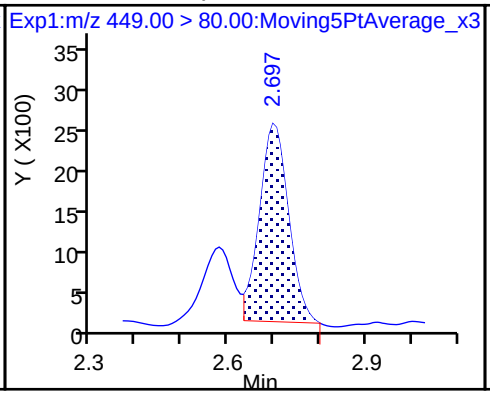
15 Perfluorooctanoic acid



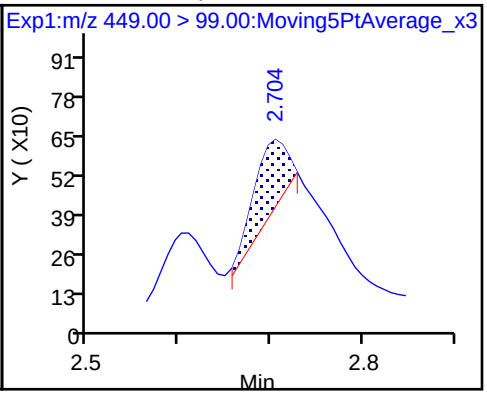
15 Perfluorooctanoic acid



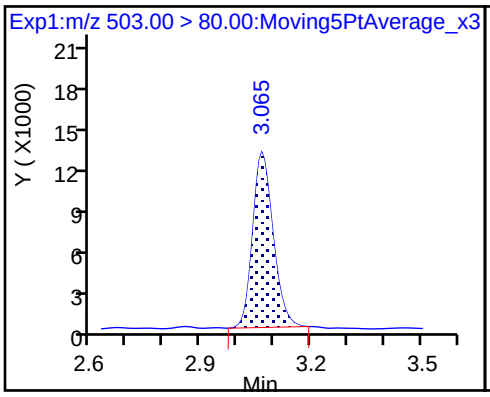
16 Perfluoroheptanesulfonic acid



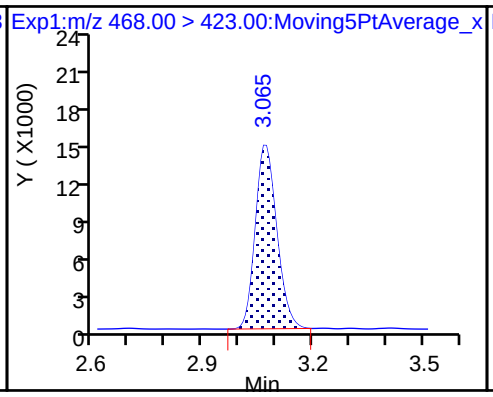
16 Perfluoroheptanesulfonic acid



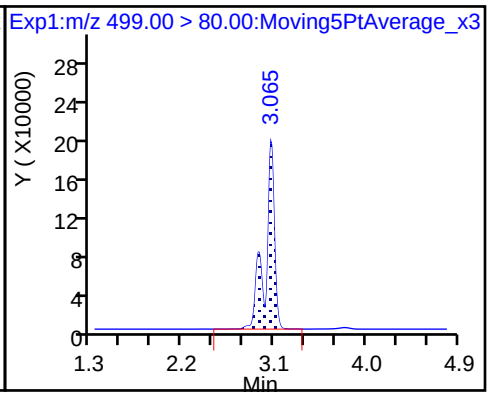
D 18 13C4 PFOS



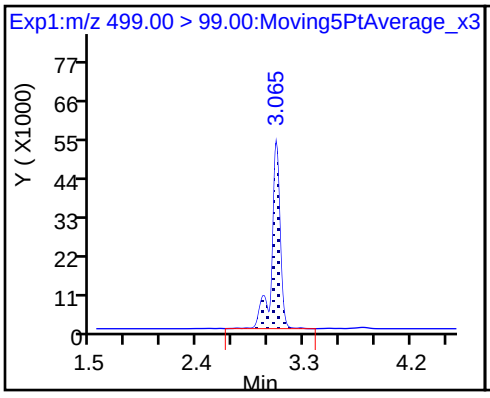
D 19 13C5 PFNA



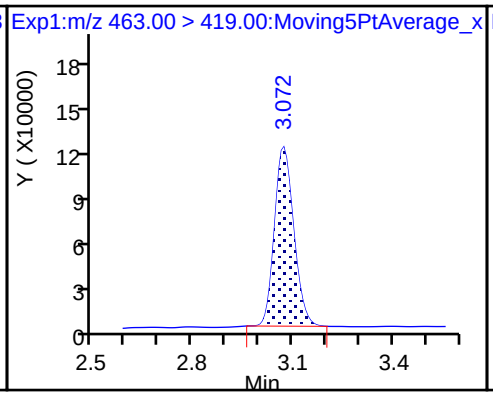
17 Perfluorooctane sulfonic acid



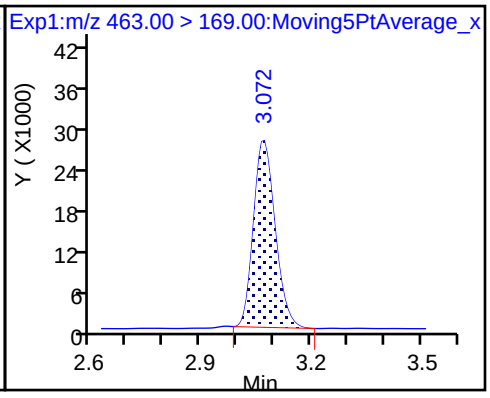
17 Perfluorooctane sulfonic acid



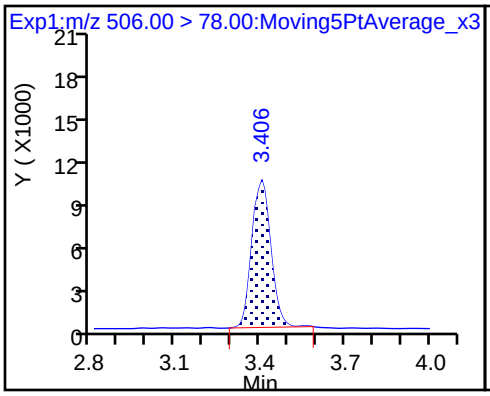
20 Perfluorononanoic acid



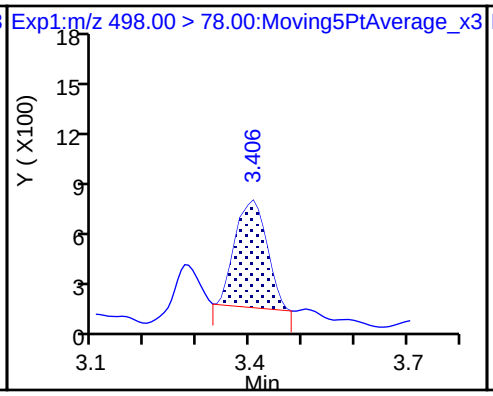
20 Perfluorononanoic acid



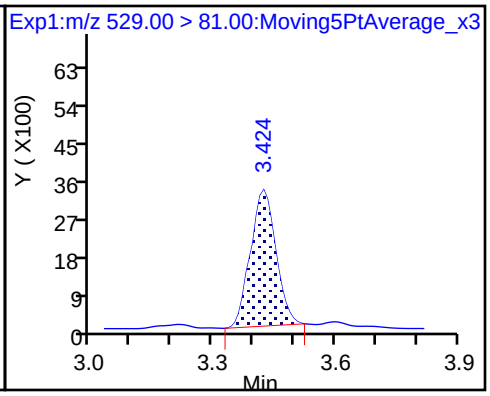
D 21 13C8 FOSA



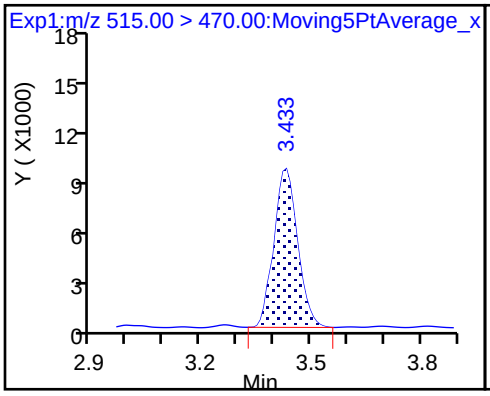
22 Perfluorooctane Sulfonamide



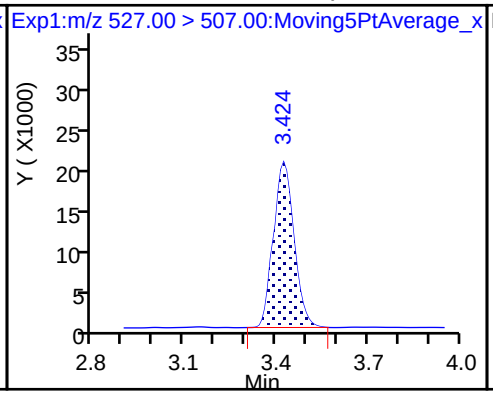
D 26 M2-8:2FTS



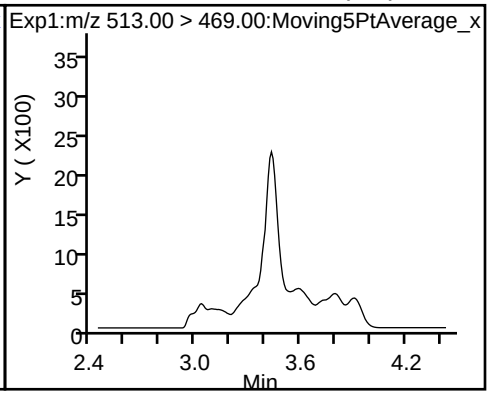
D 23 13C2 PFDA



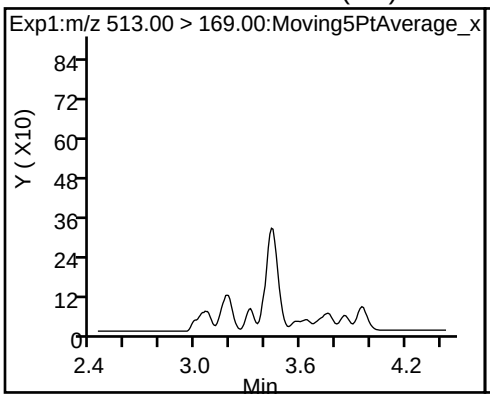
25 Sodium 1H,1H,2H,2H-perfluorodecan



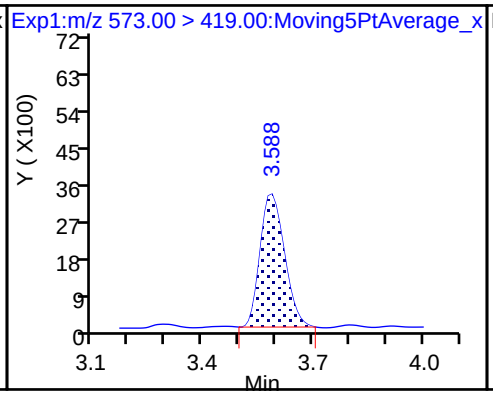
24 Perfluorodecanoic acid (ND)



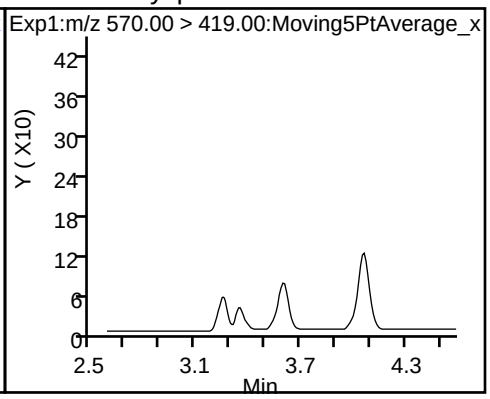
24 Perfluorodecanoic acid (ND)



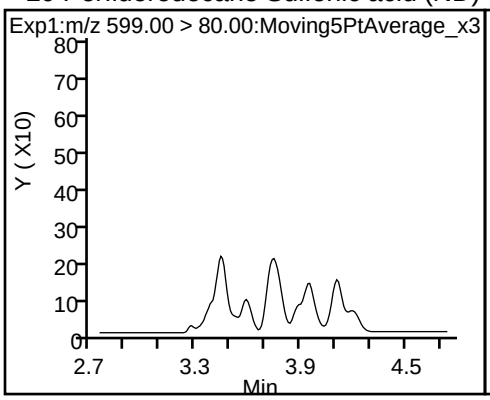
D 27 d3-NMeFOSAA



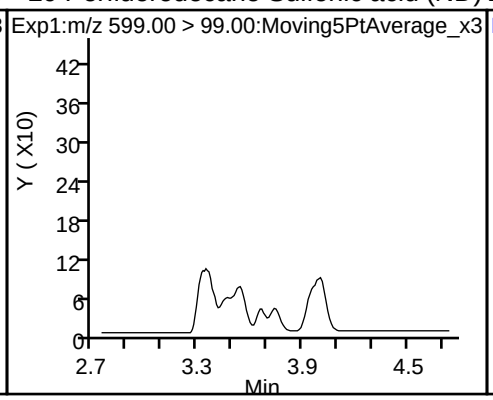
28 N-methyl perfluorooctane sulfonami (ND)



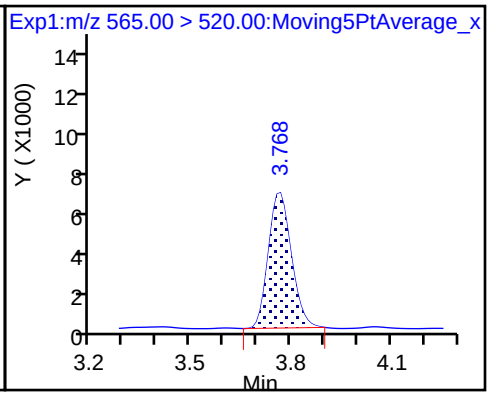
29 Perfluorodecane Sulfonic acid (ND)



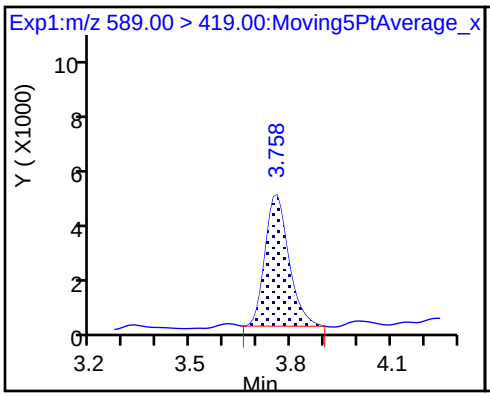
29 Perfluorodecane Sulfonic acid (ND)



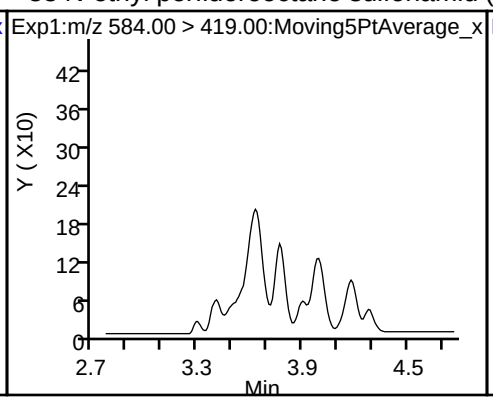
D 30 13C2 PFUnA



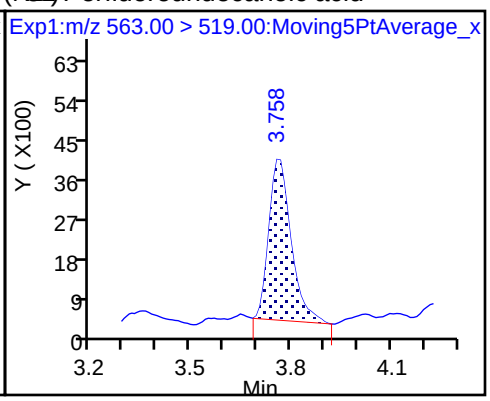
D 32 d5-NEtFOSAA



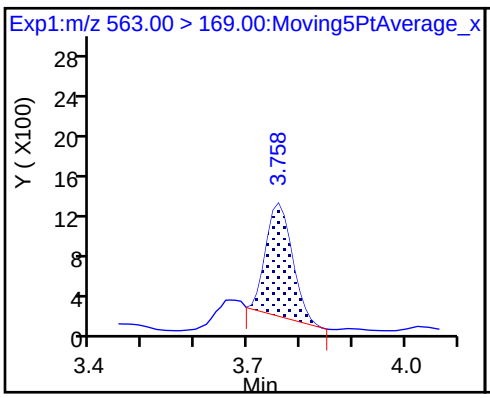
33 N-ethyl perfluorooctane sulfonamid (N



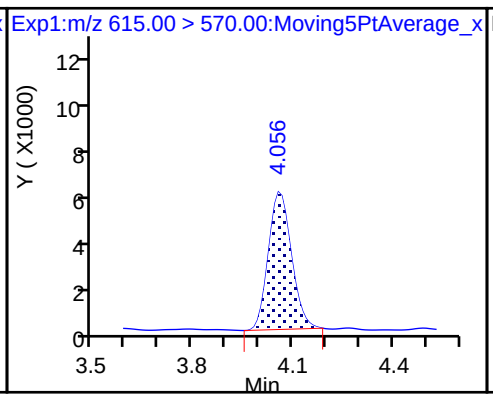
31 Perfluoroundecanoic acid



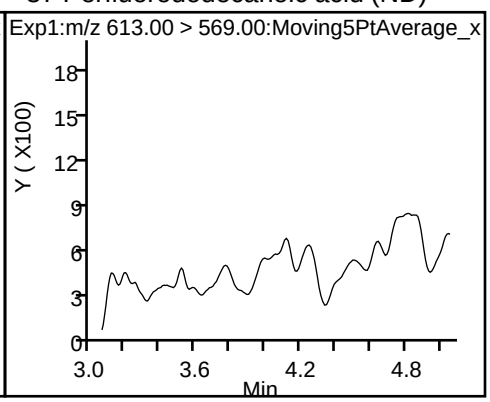
31 Perfluoroundecanoic acid



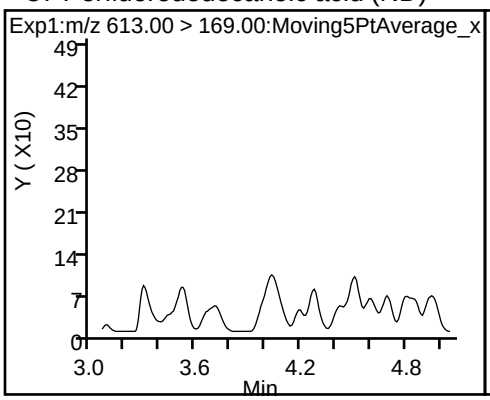
D 36 13C2 PFDoA



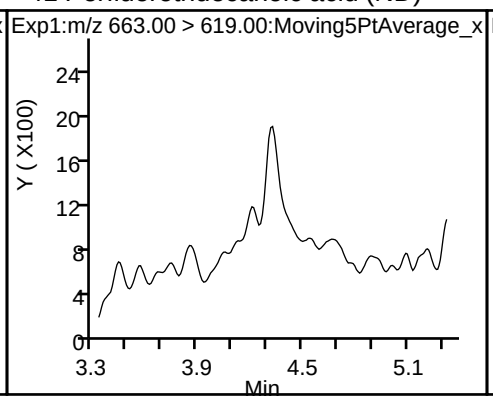
37 Perfluorododecanoic acid (ND)



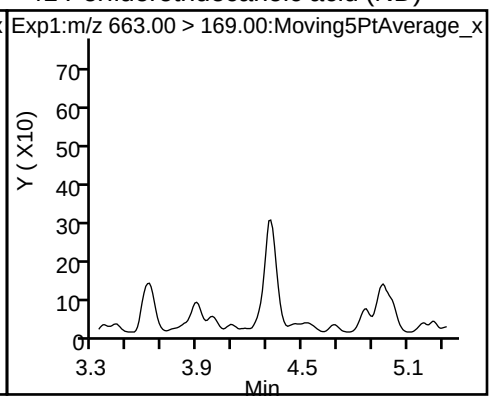
37 Perfluorododecanoic acid (ND)



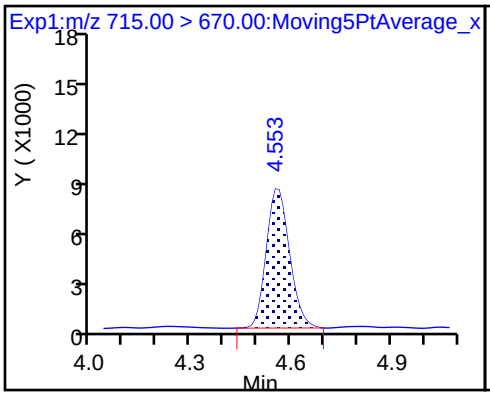
41 Perfluorotridecanoic acid (ND)



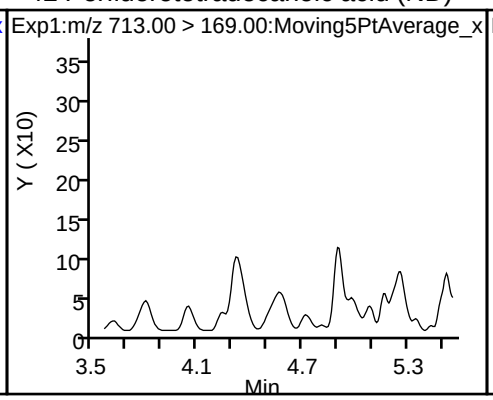
41 Perfluorotridecanoic acid (ND)



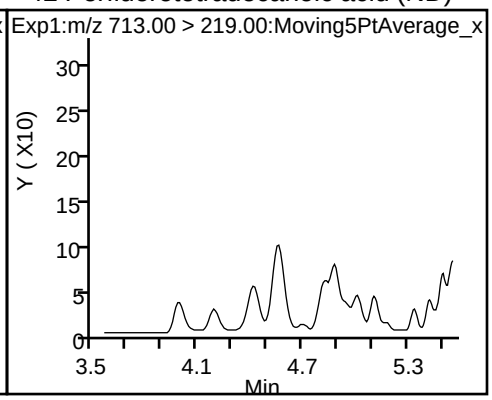
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007(2'-4') | Lab Sample ID: 320-36761-6

Matrix: Solid | Lab File ID: 2018.03.20LLA_043.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:35

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.01(g) | Date Analyzed: 03/21/2018 01:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00018	J B	0.00021	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000080	U	0.00021	0.000080
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00022		0.00021	0.000044
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000050	J	0.00021	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00014	J	0.00021	0.000090
375-95-1	Perfluorononanoic acid (PFNA)	0.000081	J	0.00021	0.000038
335-76-2	Perfluorodecanoic acid (PFDA)	0.00010	J	0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00011	J	0.00021	0.000038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00032		0.00021	0.000070
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.012		0.00021	0.000053
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00050		0.00021	0.000056
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00021	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00015	J	0.00021	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000037	U	0.00021	0.000037
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00032	J B	0.00052	0.00021
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000041	U *	0.00021	0.000041
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00051		0.00021	0.000086
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.0021	0.00041
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039
27619-97-2	6:2FTS	0.0054		0.0021	0.00016
39108-34-4	8:2FTS	0.0085		0.0021	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007(2'-4') | Lab Sample ID: 320-36761-6

Matrix: Solid | Lab File ID: 2018.03.20LLA_043.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:35

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.01(g) | Date Analyzed: 03/21/2018 01:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	79		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	80		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	81		25-150
STL00995	13C5 PFNA	76		25-150
STL00996	13C2 PFDA	59		25-150
STL00997	13C2 PFUnA	49		25-150
STL00998	13C2 PFDoA	41		25-150
STL02116	13C2-PFTeDA	45		25-150
STL02337	13C3-PFBS	82		25-150
STL00994	18O2 PFHxS	81		25-150
STL00991	13C4 PFOS	65		25-150
STL01056	13C8 FOSA	43		25-150
STL02118	d3-NMeFOSAA	37		25-150
STL02117	d5-NEtFOSAA	39		25-150
STL02279	M2-6:2FTS	77		25-150
STL02280	M2-8:2FTS	55		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_043.d
Lims ID: 320-36761-A-6-A
Client ID: SB007(2'-4')
Sample Type: Client
Inject. Date: 21-Mar-2018 01:46:25 ALS Bottle#: 33 Worklist Smp#: 22
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-6-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:51:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	4510346	1.98		79.3	78538	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.446	-0.006	1.000	146441	0.0875			46.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.634	3280030	2.04		81.8	70011	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.691	1.709	-0.018	0.995	47971	0.0313			13.1	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.648	75494	1.91		82.0	348	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.987	-0.011	0.737	3579204	2.00		80.0	75899	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.997	-0.021	1.000	149238	0.1033			261	
313.00 > 119.00	1.986	1.997	-0.011	1.005	13062		11.43(5.03-15.10)		197	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3748517	2.15		86.2	77884	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	37129	0.0239			47.2	
363.00 > 169.00	2.315	2.328	-0.013	1.000	18371		2.02(1.13-3.40)		291	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4452085	1.92		81.1	91998	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	149098	0.0710			184	
399.00 > 99.00	2.328	2.341	-0.013	1.000	39992		3.73(1.50-4.49)		104	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.657	-0.002	0.991	811881	1.82		76.7	16954	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.663	-0.008	1.000	1470239	2.58			37089	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.681	-0.002	1.000	3416910	2.03		81.4	78731	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.679	2.695	-0.016	1.000	105414	0.0691			33.0	
413.00 > 169.00	2.679	2.695	-0.016	1.000	61153		1.72(0.84-2.52)		185	
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.695	-0.016		4453079	2.50			79052	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.139	2525596	1.56		65.1	31779	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.058	-0.007	1.139	2569641	1.91		76.5	79404	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.067	-0.016	1.000	175597	0.1535			331	
499.00 > 99.00	3.051	3.067	-0.016	1.000	39822		4.41(2.31-6.93)		215	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.067	-0.009	1.002	40909	0.0390			69.1	
463.00 > 169.00	3.058	3.067	-0.009	1.002	11142		3.67(1.90-5.69)		328	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.389	-0.001	1.265	2512704	1.07		42.8	2498	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.401	-0.013	1.000	238101	0.2438			202	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.408	-0.002	1.271	553101	1.32		55.2	11087	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.417	-0.002	1.275	1655683	1.47		59.0	37344	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.419	-0.013	1.000	1182308	4.07			52699	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.428	-0.013	1.000	31111	0.0495			115	
513.00 > 169.00	3.415	3.428	-0.013	1.000	4706		6.61(2.36-7.09)		141	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.332	344747	0.9299		37.2	15055	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.399	341195	0.9626		38.5	673	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.399	1068358	1.22		48.6	44597	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	18314	0.0511			48.2	
563.00 > 169.00	3.748	3.762	-0.014	1.000	5132		3.57(2.12-6.36)		312	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.510	852791	1.02		40.9	5532	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.061	-0.015	1.000	53859	0.1543			13.7	
613.00 > 169.00	4.046	4.061	-0.015	1.000	12330		4.37(2.13-6.40)		258	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.320	-0.013	1.000	1971555	5.62			646	
663.00 > 169.00	4.307	4.320	-0.013	1.000	656898		3.00(1.25-3.76)		10705	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.544	-0.001	1.696	858712	1.13		45.1	7738	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.556	-0.013	1.000	22549	0.2380			417	
713.00 > 219.00	4.543	4.556	-0.013	1.000	12638		1.78(0.71-2.13)		143	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:32 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_043.d

Injection Date: 21-Mar-2018 01:46:25 Instrument ID: A8_N

Lims ID: 320-36761-A-6-A Lab Sample ID: 320-36761-6

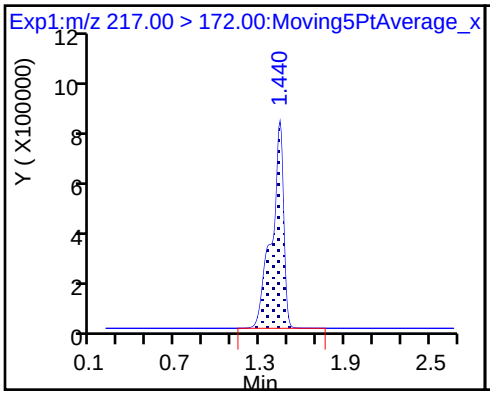
Client ID: SB007(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 33 Worklist Smp#: 22

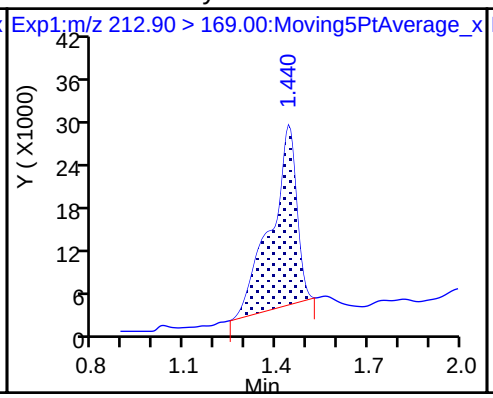
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

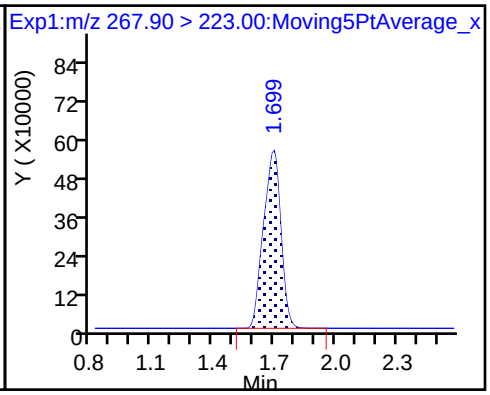
D 1 13C4 PFBA



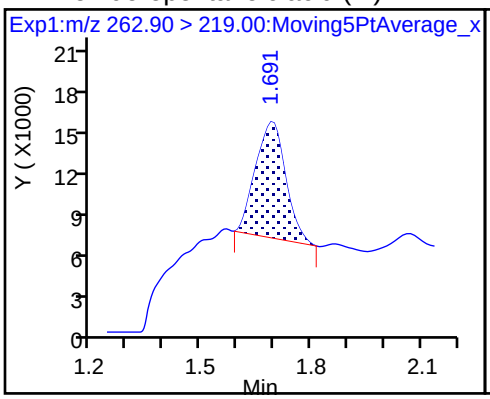
2 Perfluorobutyric acid



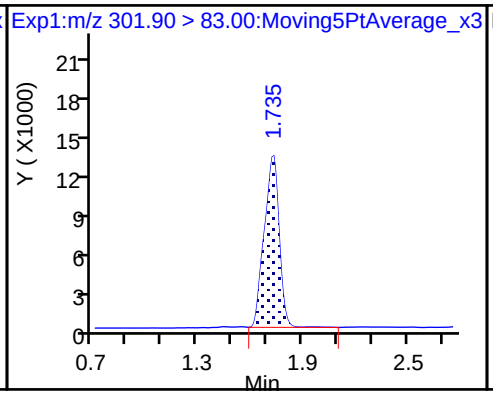
D 3 13C5-PFPeA



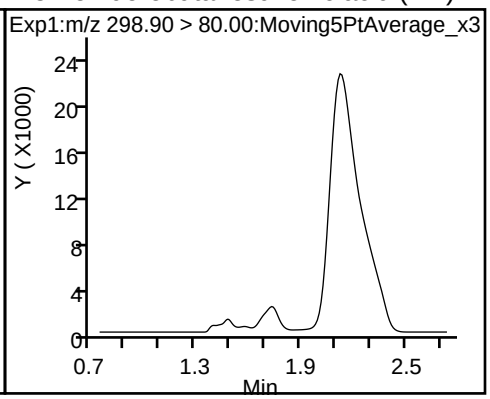
4 Perfluoropentanoic acid (M)



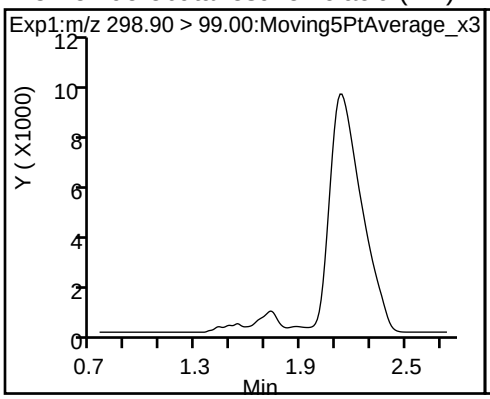
D 47 13C3-PFBS



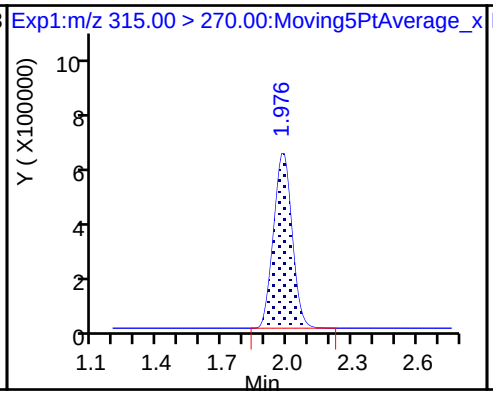
5 Perfluorobutanesulfonic acid (ND)



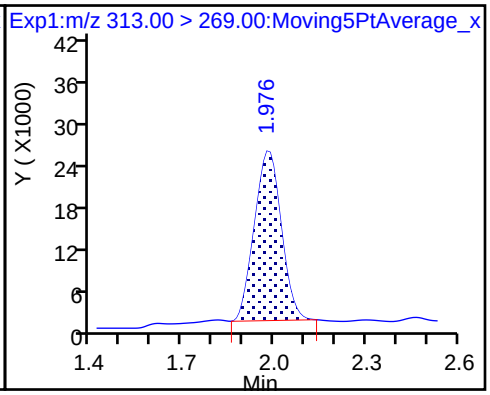
5 Perfluorobutanesulfonic acid (ND)



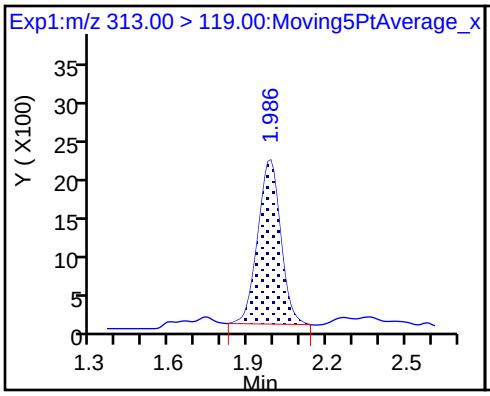
D 7 13C2 PFHxA



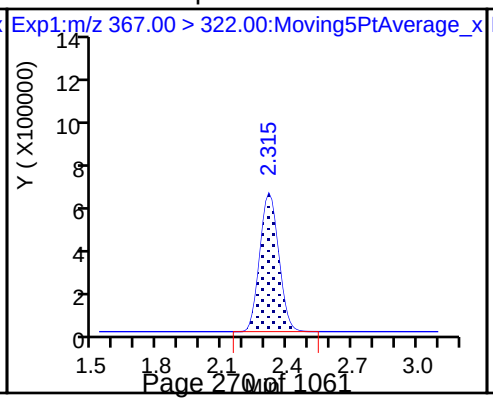
6 Perfluorohexanoic acid



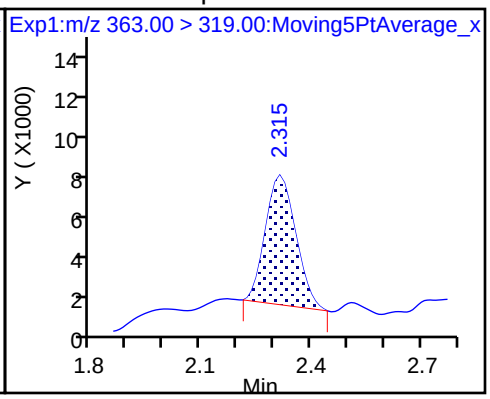
6 Perfluorohexanoic acid



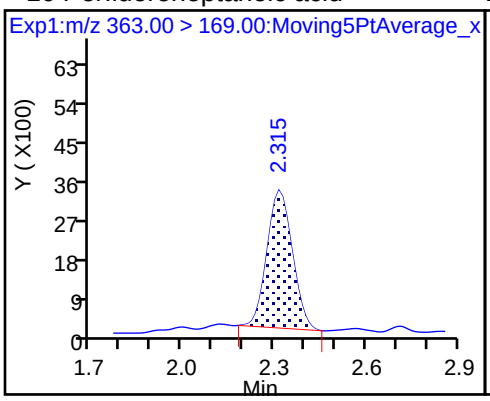
D 9 13C4-PFHpA



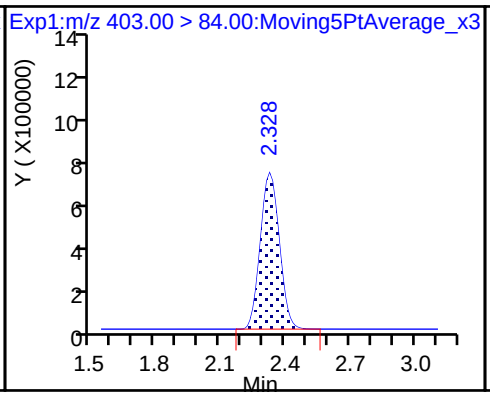
10 Perfluoroheptanoic acid



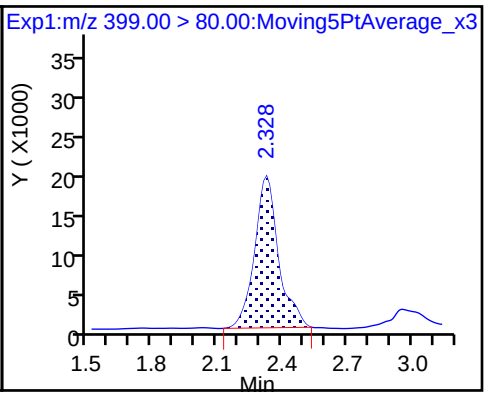
10 Perfluoroheptanoic acid



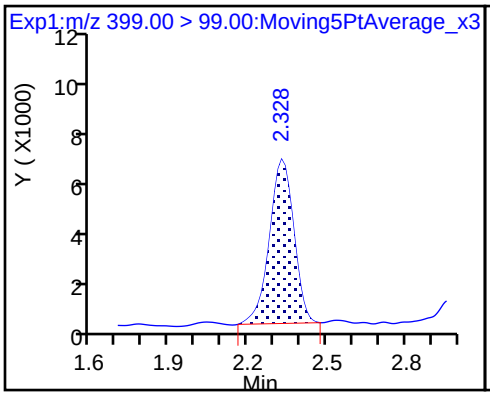
D 11 18O2 PFHxS



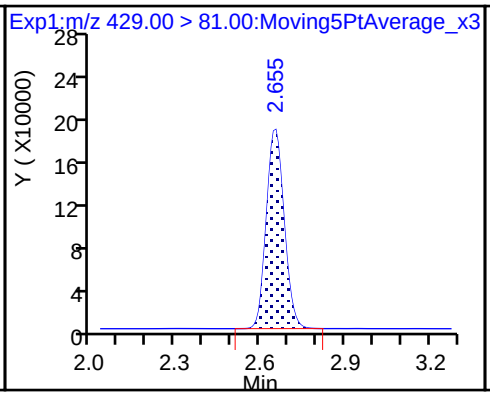
8 Perfluorohexanesulfonic acid



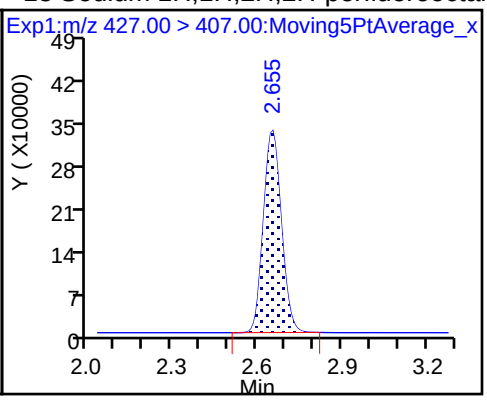
8 Perfluorohexanesulfonic acid



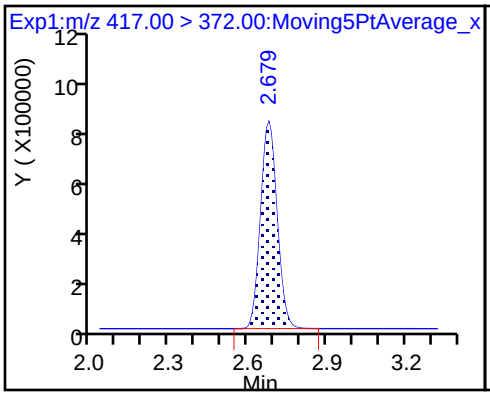
D 12 M2-6:2FTS



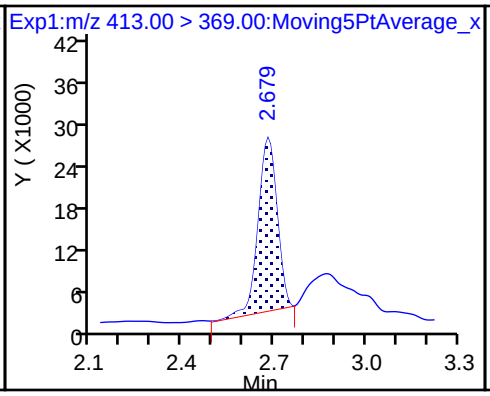
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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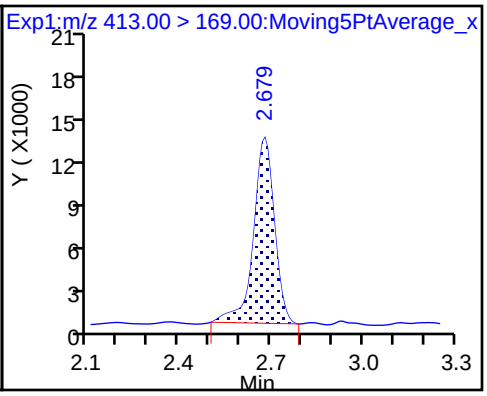
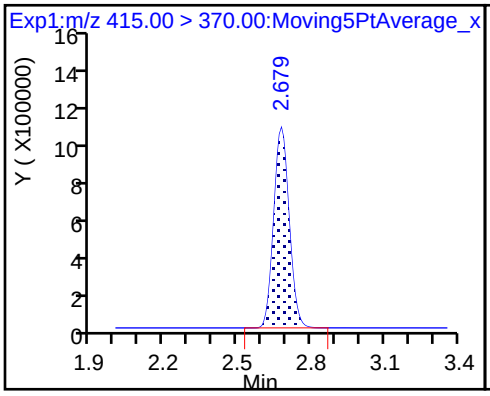
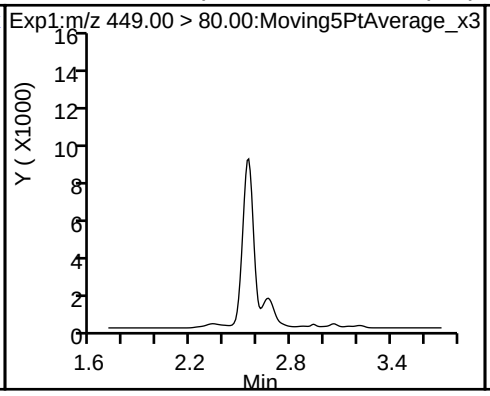


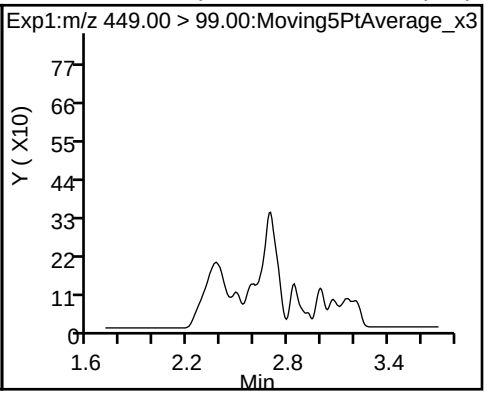
* 62 13C2-PFOA



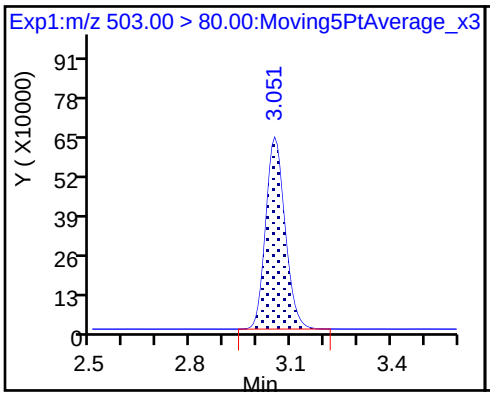
16 Perfluoroheptanesulfonic acid (ND)



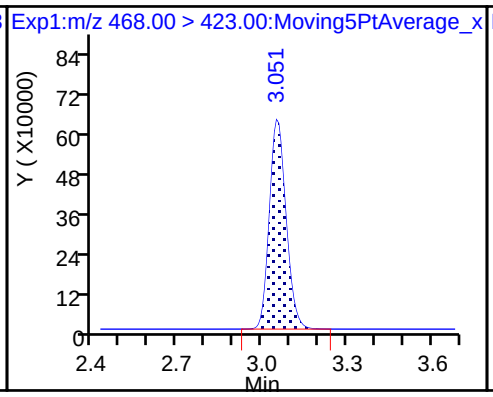
16 Perfluoroheptanesulfonic acid (ND)



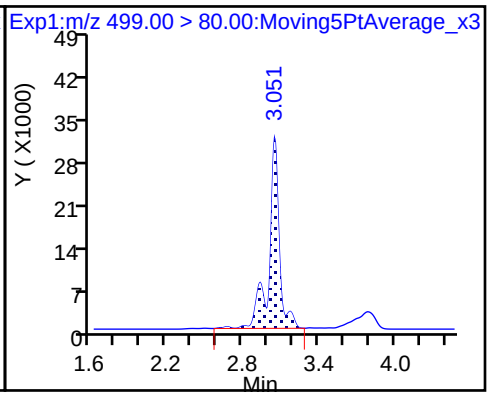
D 18 13C4 PFOS



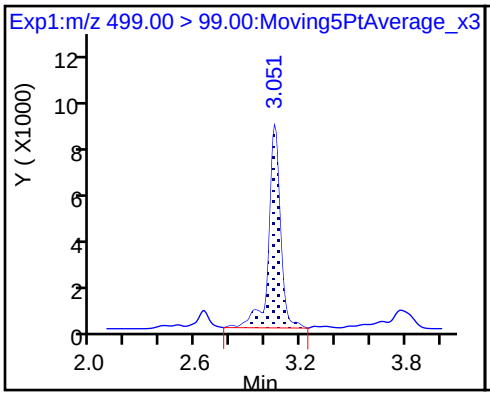
D 19 13C5 PFNA



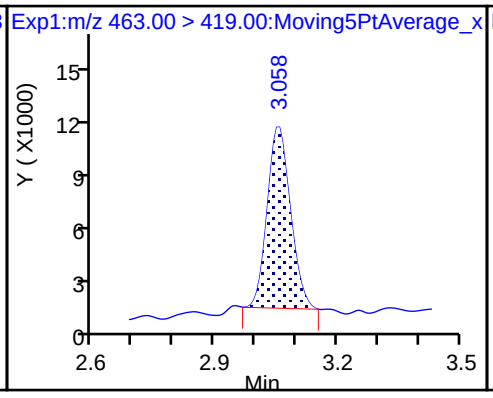
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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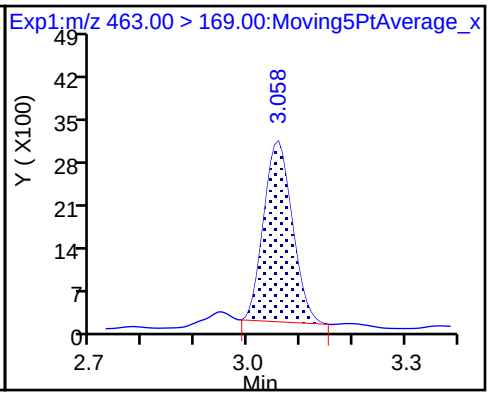
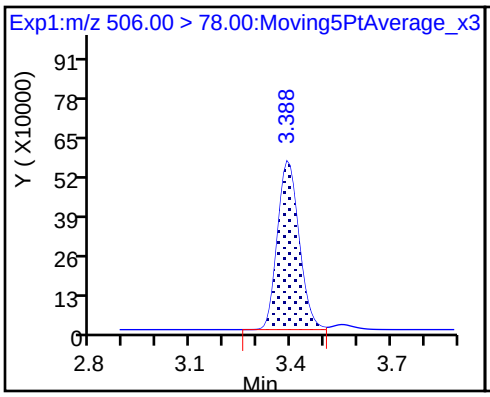
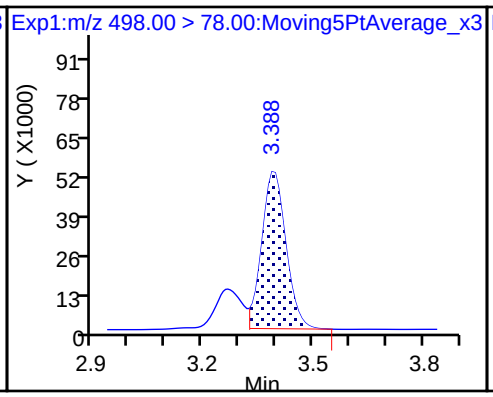


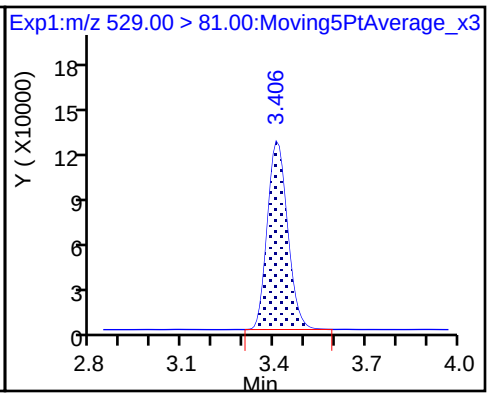
D 21 13C8 FOSA



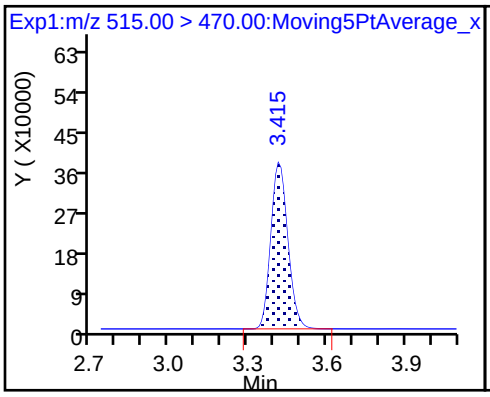
22 Perfluorooctane Sulfonamide



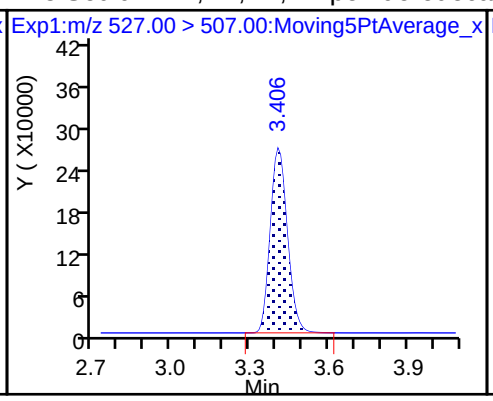
D 26 M2-8:2FTS



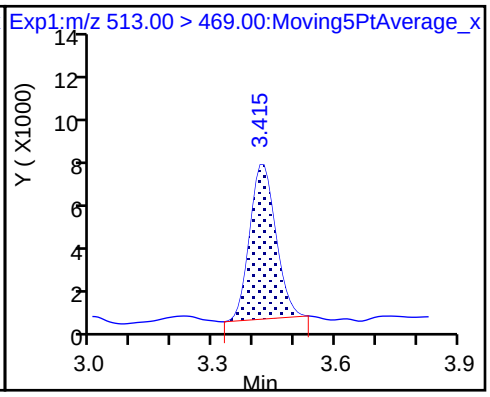
D 23 13C2 PFDA



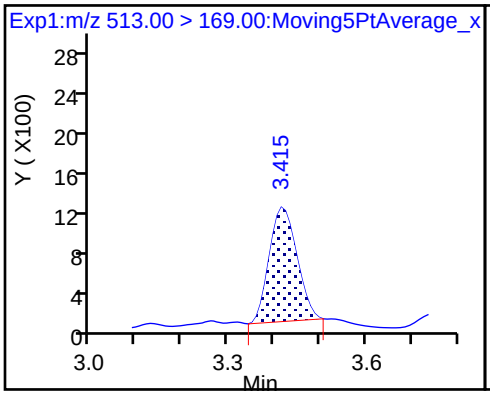
25 Sodium 1H,1H,2H,2H-perfluorodecan



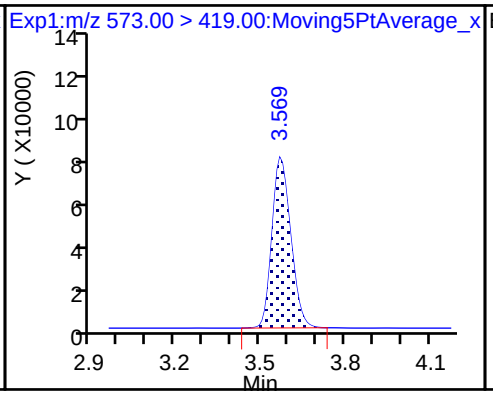
24 Perfluorodecanoic acid



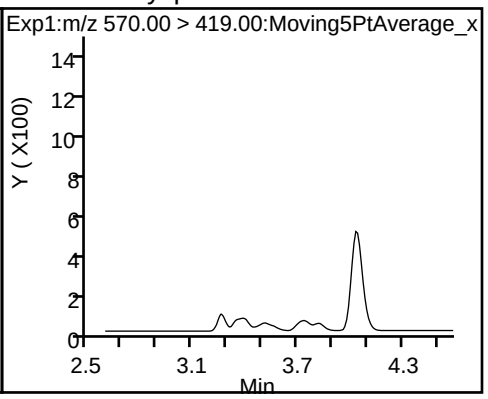
24 Perfluorodecanoic acid



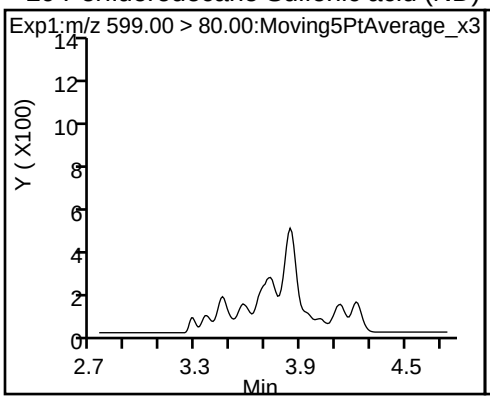
D 27 d3-NMeFOSAA



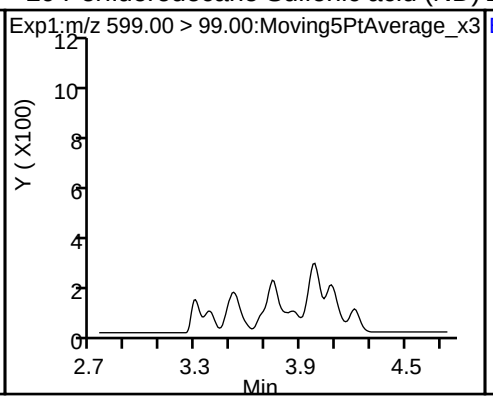
28 N-methyl perfluorooctane sulfonami (ND)



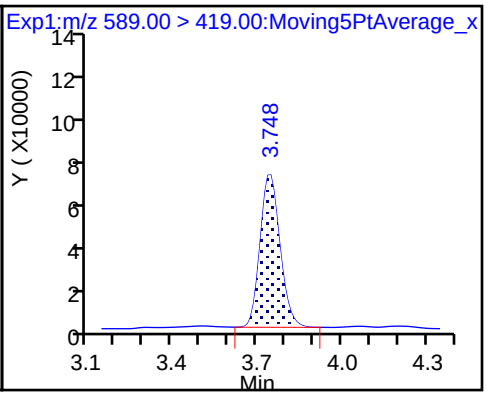
29 Perfluorodecane Sulfonic acid (ND)



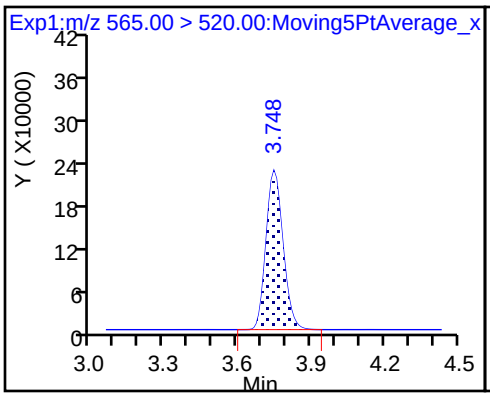
29 Perfluorodecane Sulfonic acid (ND)



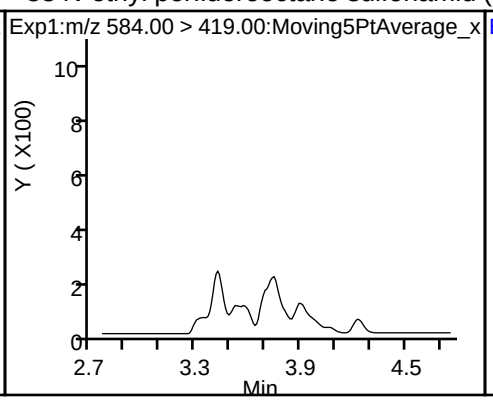
D 32 d5-NEtFOSAA



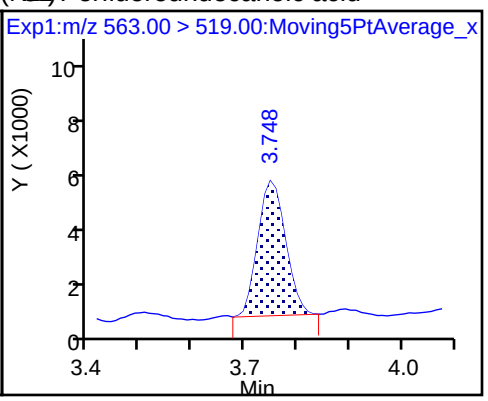
D 30 13C2 PFUnA



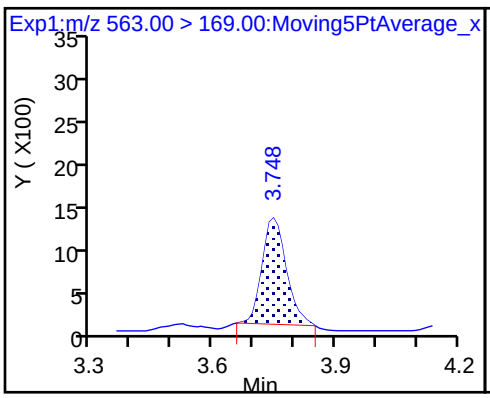
33 N-ethyl perfluorooctane sulfonamid (ND)



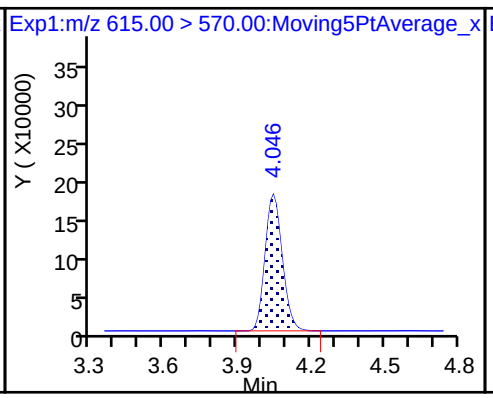
31 Perfluoroundecanoic acid



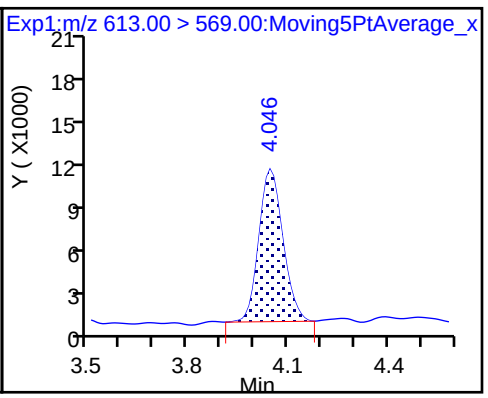
31 Perfluoroundecanoic acid



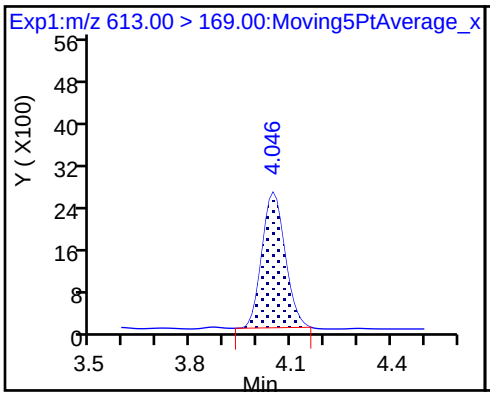
D 36 13C2 PFDoA



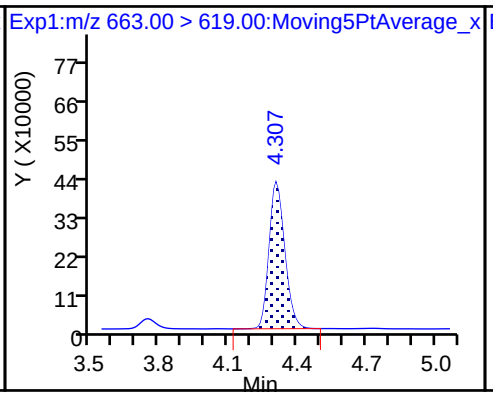
37 Perfluorododecanoic acid



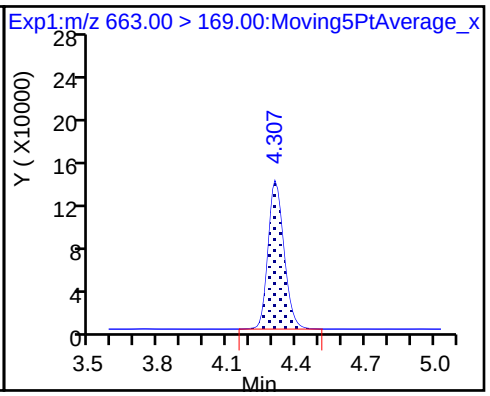
37 Perfluorododecanoic acid



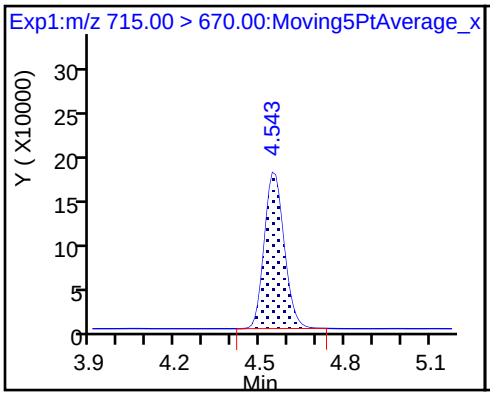
41 Perfluorotridecanoic acid



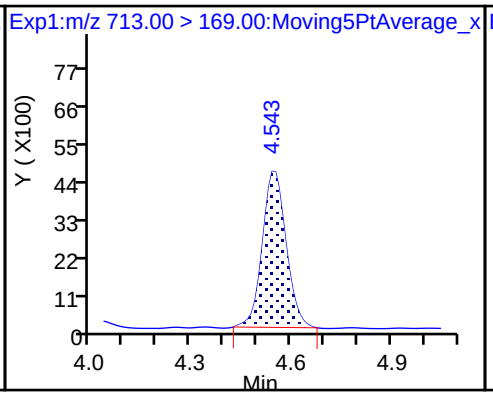
41 Perfluorotridecanoic acid



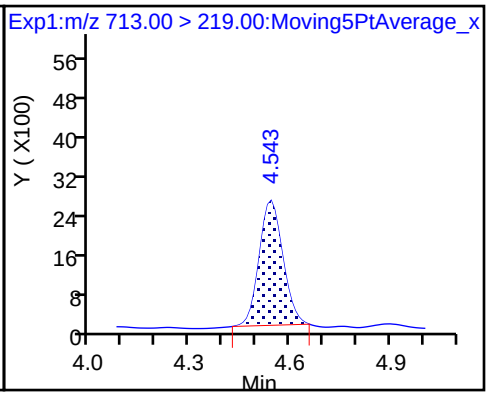
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

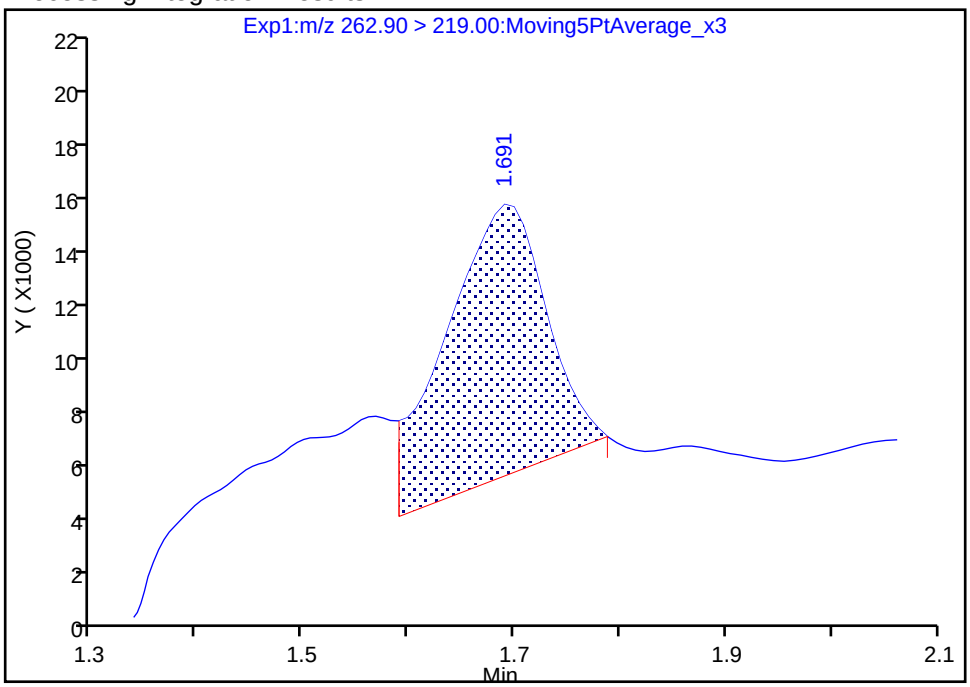
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_043.d				
Injection Date:	21-Mar-2018 01:46:25	Instrument ID:	A8_N		
Lims ID:	320-36761-A-6-A	Lab Sample ID:	320-36761-6		
Client ID:	SB007(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	33	Worklist Smp#:	22
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

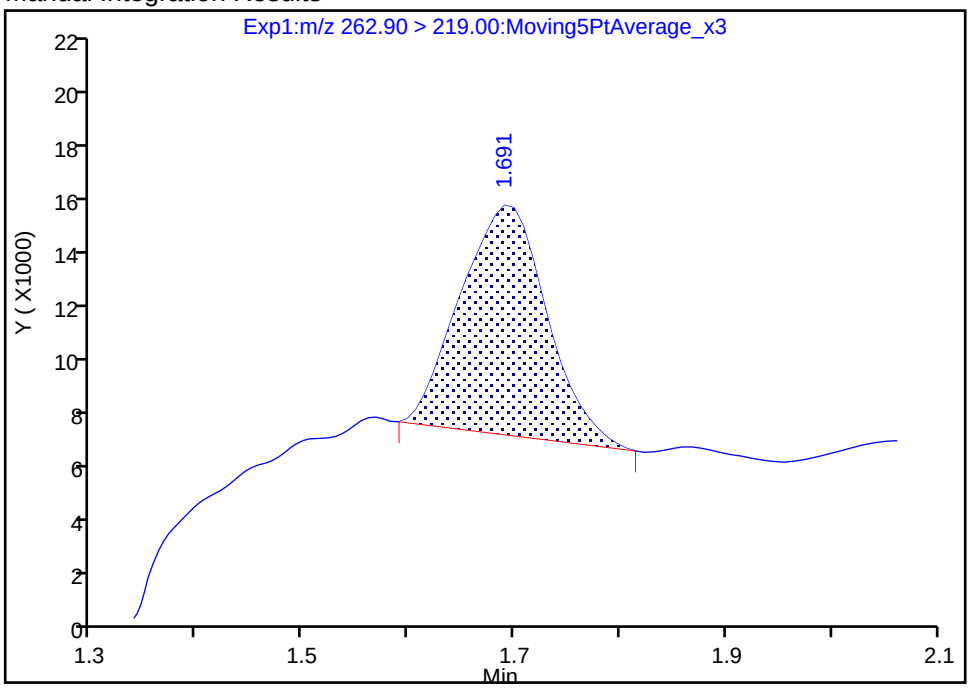
Processing Integration Results

RT: 1.69
Area: 66333
Amount: 0.043281
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 47971
Amount: 0.031300
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:50:13

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007(2'-4') RE | Lab Sample ID: 320-36761-6 RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_012.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:35

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) | Date Analyzed: 03/29/2018 00:49

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 4.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000040*	*U H*	*0.00021*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	79		25-150

Report Date: 29-Mar-2018 09:09:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_012.d
Lims ID: 320-36761-A-6-B
Client ID: SB007(2'-4')
Sample Type: Client
Inject. Date: 29-Mar-2018 00:49:32 ALS Bottle#: 19 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-A-6-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: hannigana Date: 29-Mar-2018 08:08:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.000	107580	0.0581			22.0	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	4911799	2.06		82.6	29749	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.009	1.005	17790	0.0119			9.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	3318785	2.10		84.1	59454	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.745	-0.009	0.644	66705	1.85		79.6	411	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	136479	0.0951			131	
313.00 > 119.00	1.997	1.998	-0.001	1.000	13770		9.91(5.03-15.10)		123	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	3507529	2.01		80.4	93605	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	26764	0.0179			11.8	
363.00 > 169.00	2.328	2.328	0.0	1.000	13846		1.93(1.13-3.40)		22.4	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	123666	0.0597			497	
399.00 > 99.00	2.341	2.341	0.0	1.000	39891		3.10(1.50-4.49)		207	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	3620024	2.10		84.1	96794	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	4404786	2.07		87.7	88539	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	1319228	2.48			6166	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		4698998	2.50			79396	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	113105	0.0710			40.7	
413.00 > 169.00	2.697	2.697	0.0	1.000	63892		1.77(0.84-2.52)		202	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	724050	2.03		85.4	19690	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	3525005	2.00		80.0	111891	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	132478	0.0976			289	
499.00 > 99.00	3.072	3.072	0.0	1.000	29218		4.53(2.31-6.93)		235	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	39200	0.0321			42.0	
463.00 > 169.00	3.072	3.072	0.0	1.000	8992		4.36(1.90-5.69)		265	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3057744	1.97		78.7	54896	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	2913110	1.88		78.8	42992	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.003	354362	0.2372			279	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.417	-0.019	1.260	3788248	1.82		72.7	1355	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	1481693	3.49			24652	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.435	3.435	0.0	1.000	41560	0.0417			184	R
513.00 > 169.00	3.435	3.435	0.0	1.000	5713		7.27(2.36-7.09)		140	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	796373	1.65		69.0	17184	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	2522581	1.85		74.1	39460	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1143207	1.59		63.8	33739	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.769	-0.001	1.000	39034	0.0580			160	
563.00 > 169.00	3.758	3.769	-0.011	0.997	9750		4.00(2.12-6.36)		339	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.769	-0.011	1.000	3001	0.006783			45.2	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1183848	1.45		58.0	3967	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.397	1953022	1.60		64.1	56329	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.057	-0.001	1.000	141169	0.1614			113	
613.00 > 169.00	4.056	4.057	-0.001	1.000	36834		3.83(2.13-6.40)		755	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.504	2089470	1.51		60.5	19882	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	5849068	6.36			2803	
663.00 > 169.00	4.328	4.318	0.010	1.003	1802074		3.25(1.25-3.76)		23623	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	68070	0.2583			1251	
713.00 > 219.00	4.554	4.564	-0.010	0.998	45643		1.49(0.71-2.13)		1008	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	2658836	1.57		63.0	19889	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

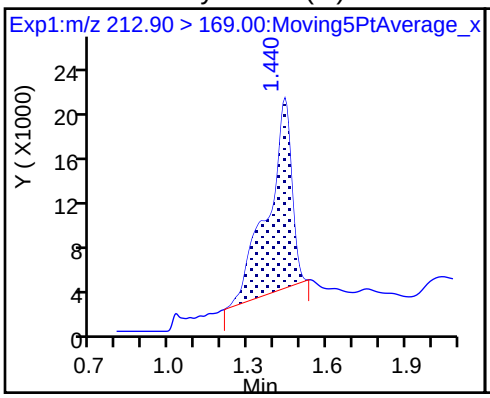
Report Date: 29-Mar-2018 09:09:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

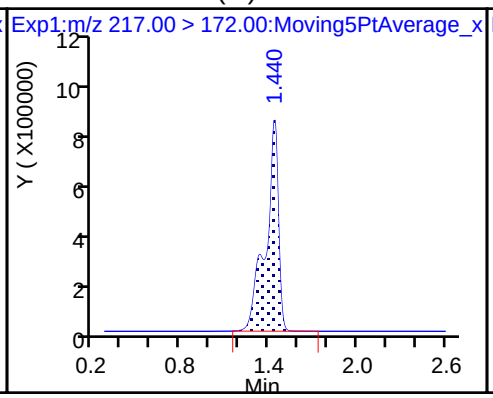
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_012.d

Injection Date:	29-Mar-2018 00:49:32	Instrument ID:	A8_N		
Lims ID:	320-36761-A-6-B	Lab Sample ID:	320-36761-6		
Client ID:	SB007(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

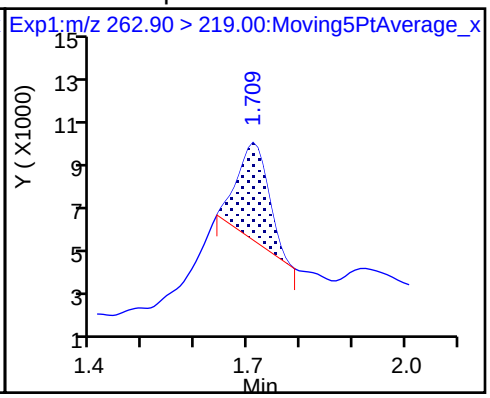
2 Perfluorobutyric acid (M)



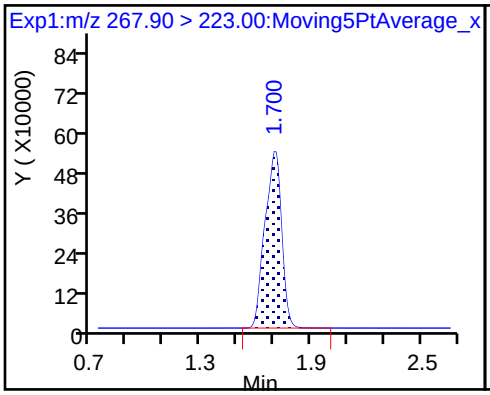
D 1 13C4 PFBA (M)



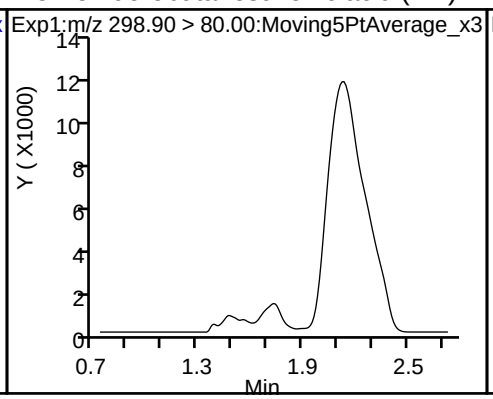
4 Perfluoropentanoic acid



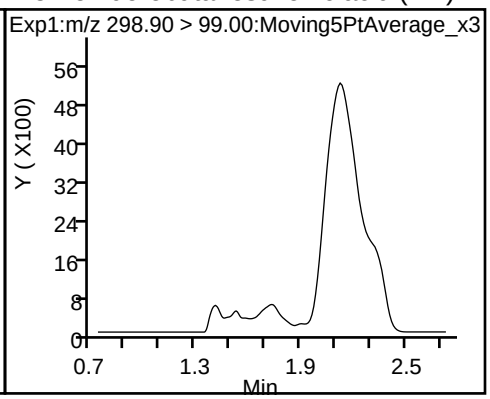
D 3 13C5-PFPeA



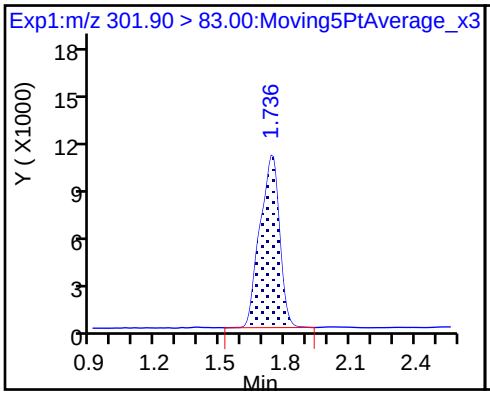
5 Perfluorobutanesulfonic acid (ND)



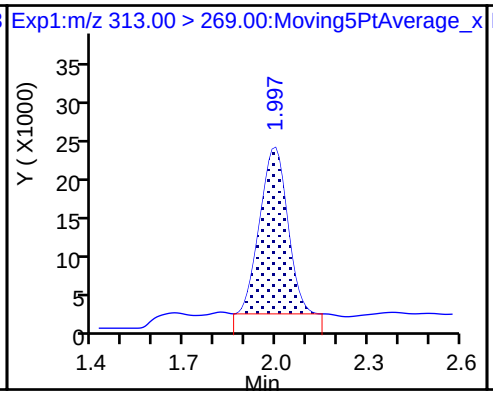
5 Perfluorobutanesulfonic acid (ND)



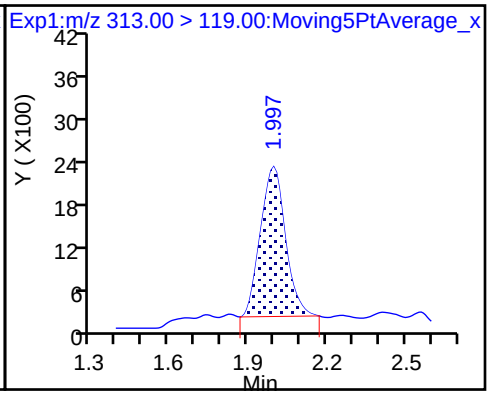
D 47 13C3-PFBS



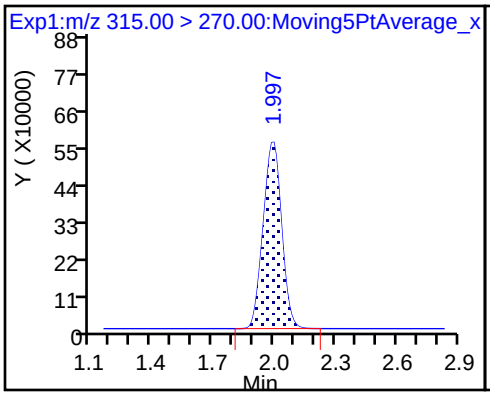
6 Perfluorohexanoic acid



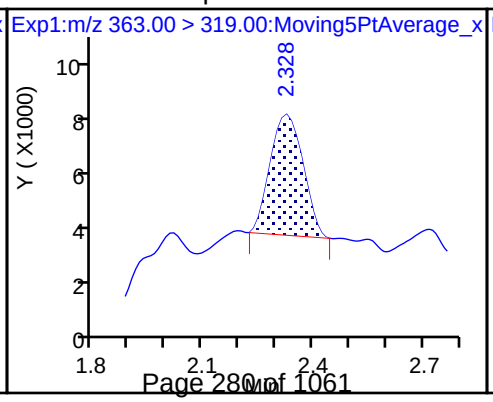
6 Perfluorohexanoic acid



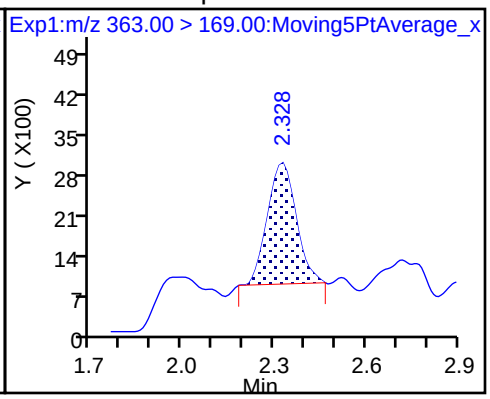
D 7 13C2 PFHxA



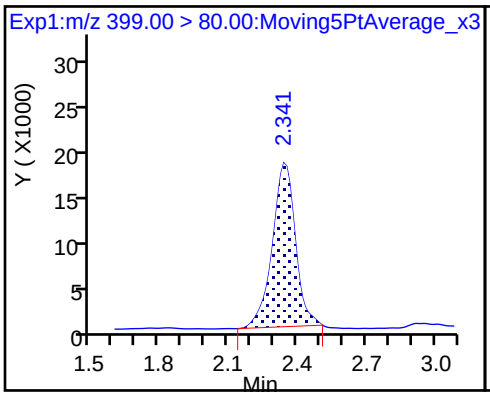
10 Perfluoroheptanoic acid



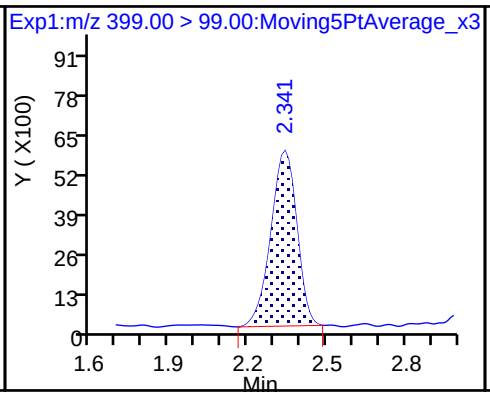
10 Perfluoroheptanoic acid



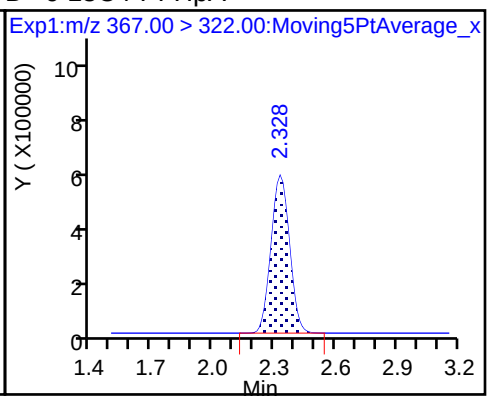
8 Perfluorohexanesulfonic acid



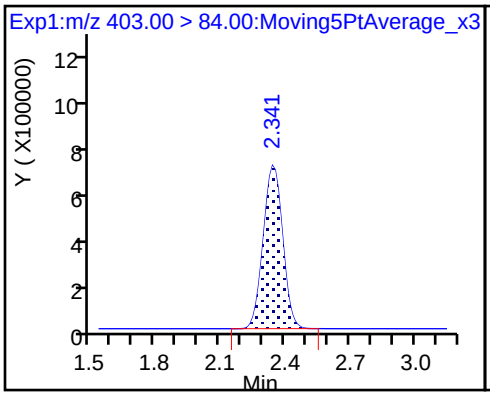
8 Perfluorohexanesulfonic acid



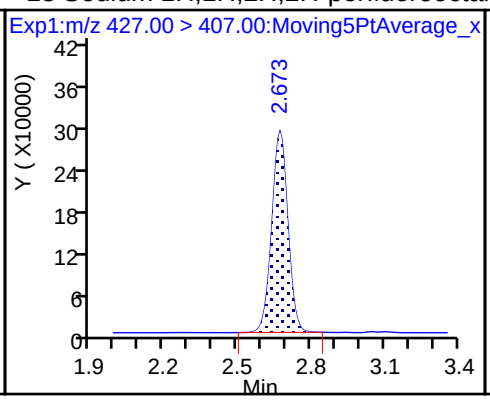
D 9 13C4-PFHpA



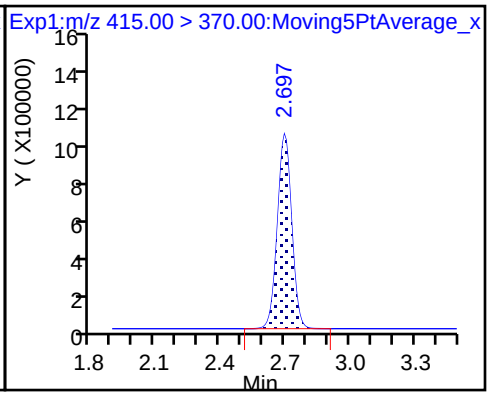
D 11 18O2 PFHxS



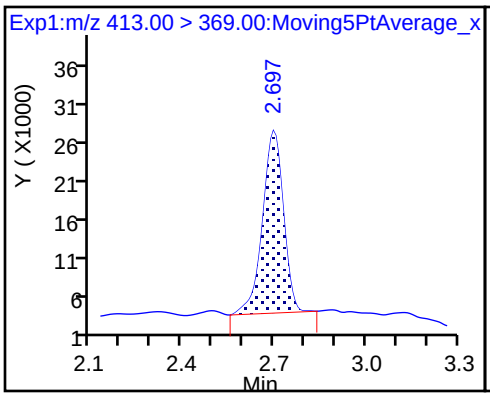
13 Sodium 1H,1H,2H,2H-perfluorooctane



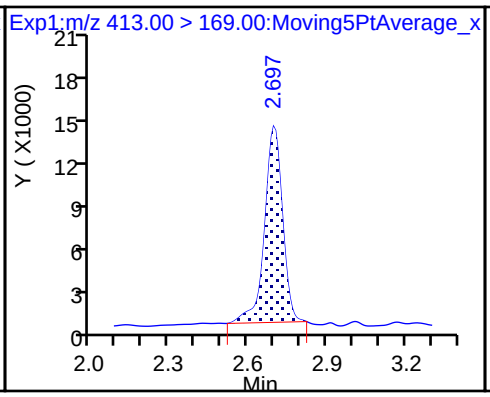
M2 6:2 13C2-PFOA



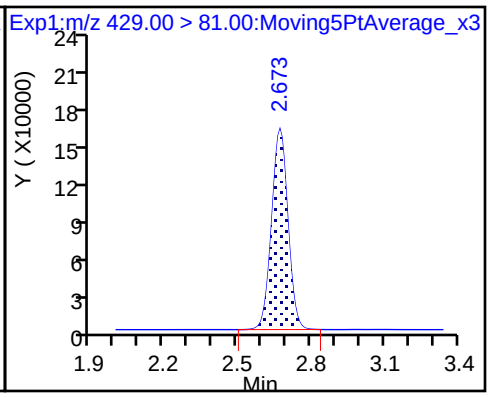
15 Perfluorooctanoic acid



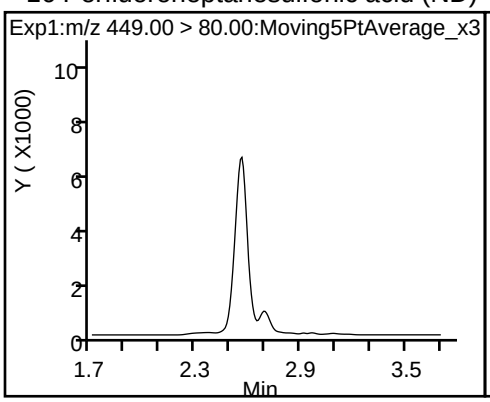
15 Perfluorooctanoic acid



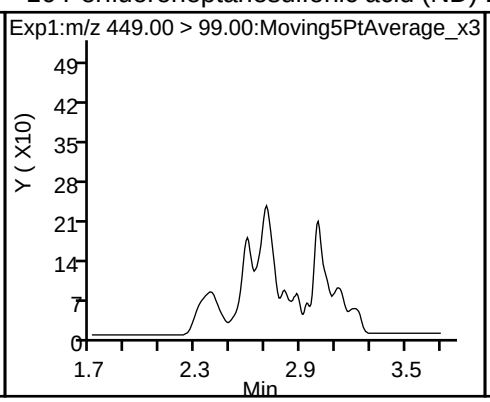
D 12 M2-6:2FTS



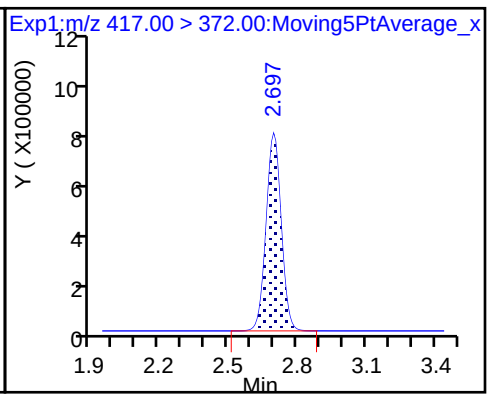
16 Perfluoroheptanesulfonic acid (ND)



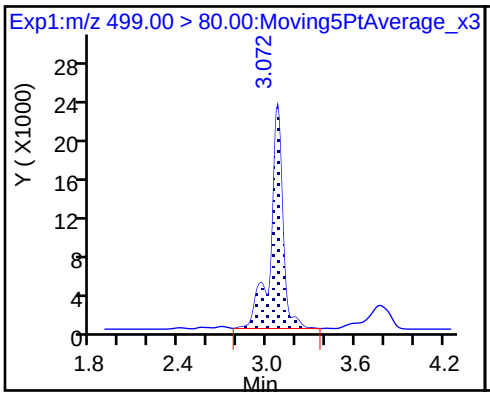
16 Perfluoroheptanesulfonic acid (ND)



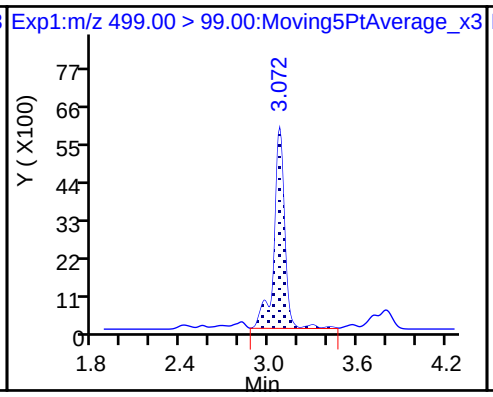
D 14 13C4 PFOA



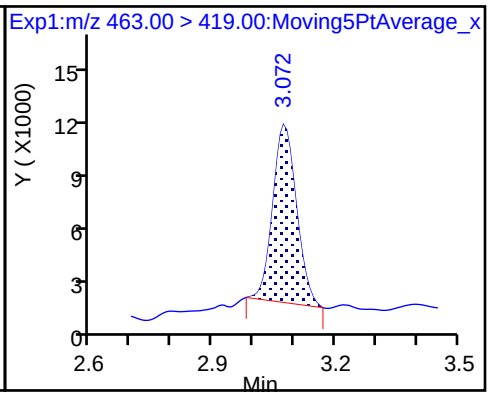
17 Perfluorooctane sulfonic acid



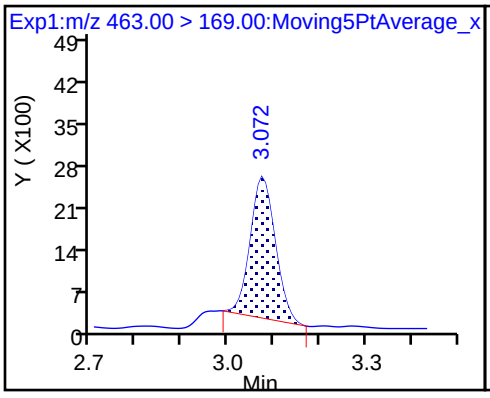
17 Perfluorooctane sulfonic acid



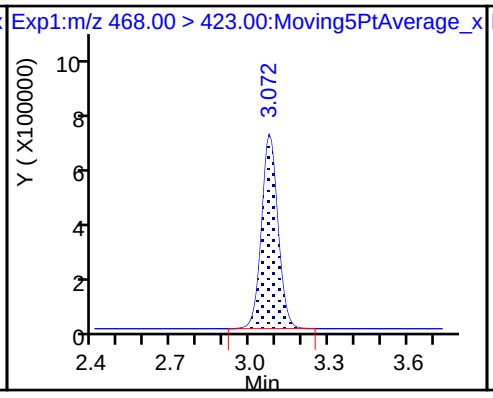
20 Perfluorononanoic acid



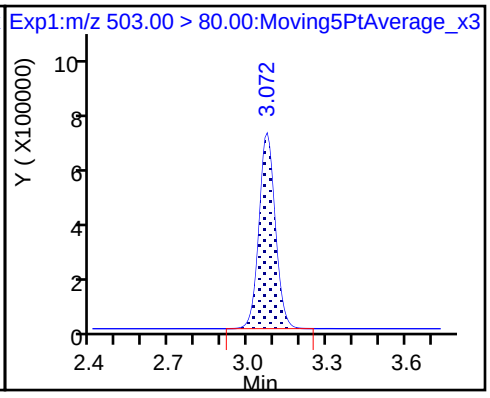
20 Perfluorononanoic acid



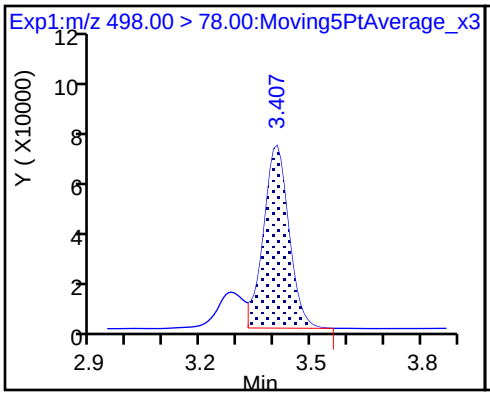
D 19 13C5 PFNA



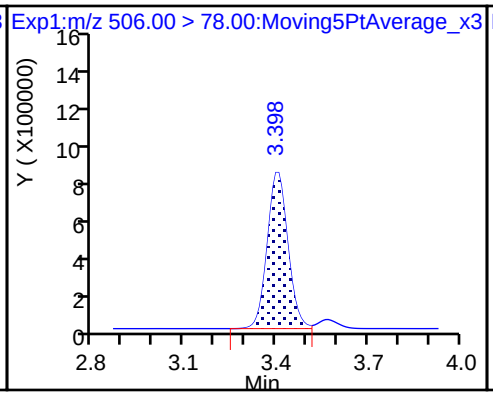
D 18 13C4 PFOS



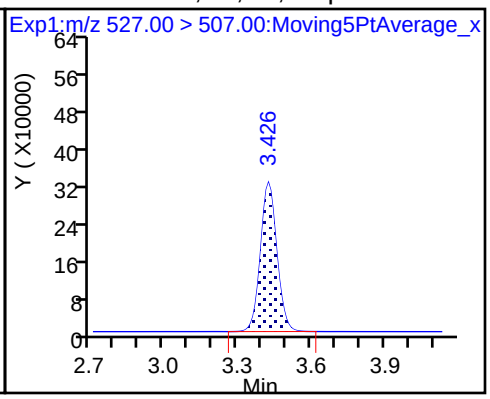
22 Perfluorooctane Sulfonamide



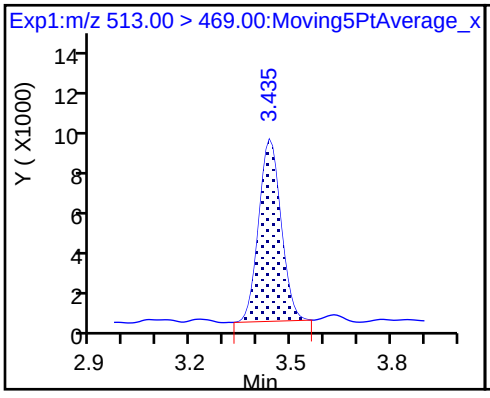
D 21 13C8 FOSA



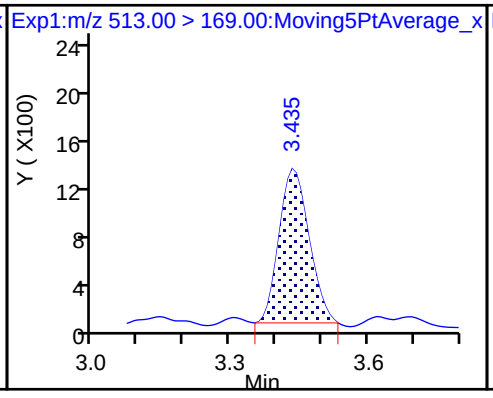
25 Sodium 1H,1H,2H,2H-perfluorodecane



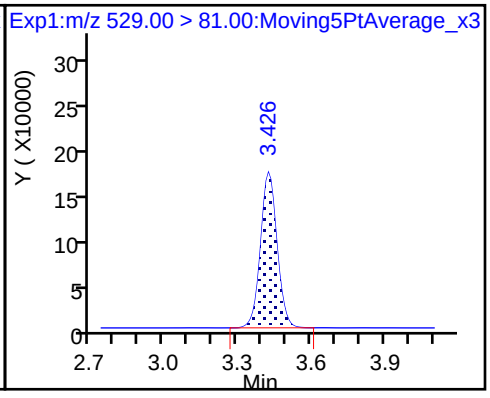
24 Perfluorodecanoic acid



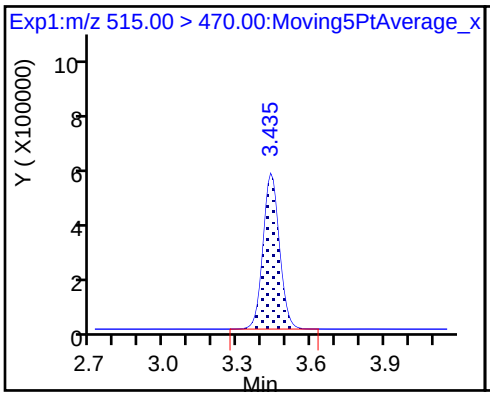
24 Perfluorodecanoic acid



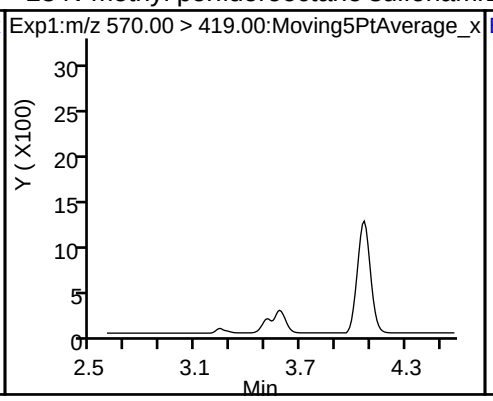
D 26 M2-8:2FTS



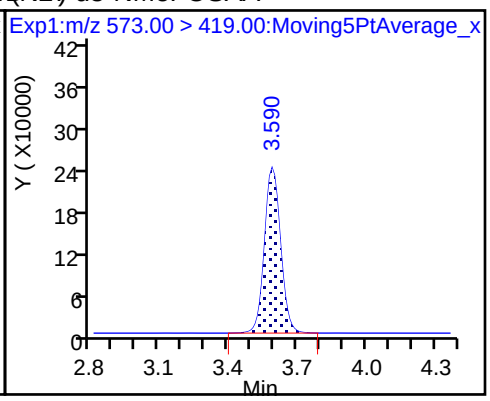
D 23 13C2 PFDA



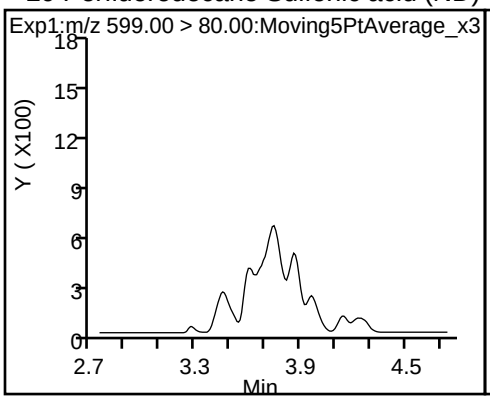
28 N-methyl perfluorooctane sulfonamid



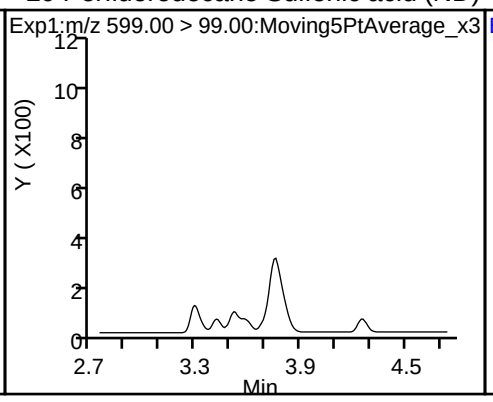
D 27 d3-NMeFOSAA



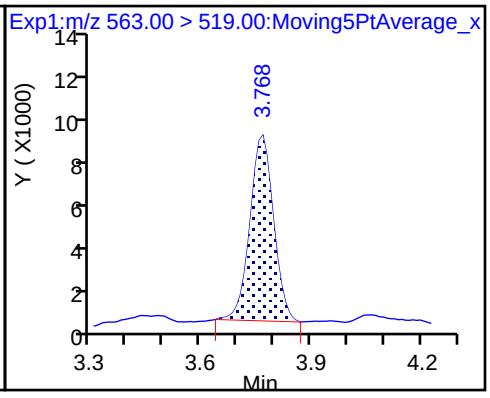
29 Perfluorodecane Sulfonic acid (ND)



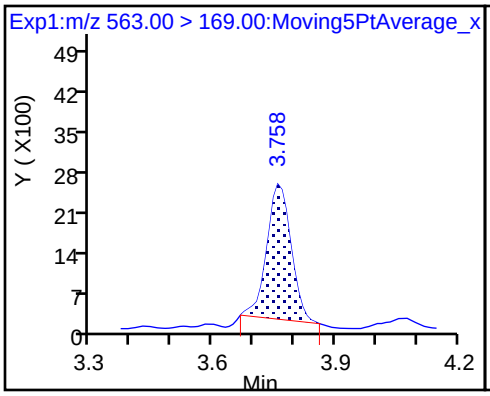
29 Perfluorodecane Sulfonic acid (ND)



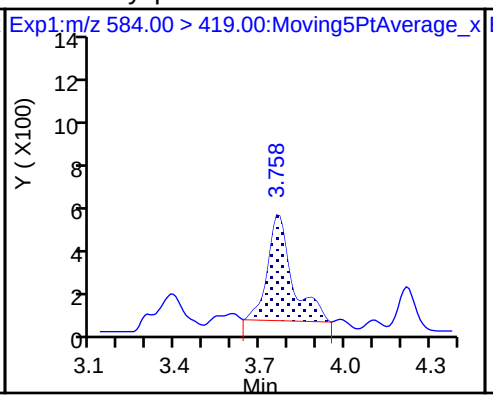
31 Perfluoroundecanoic acid



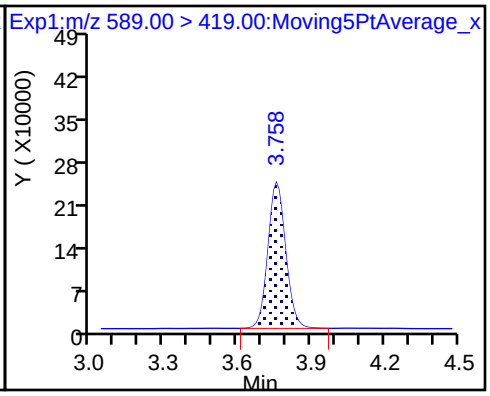
31 Perfluoroundecanoic acid



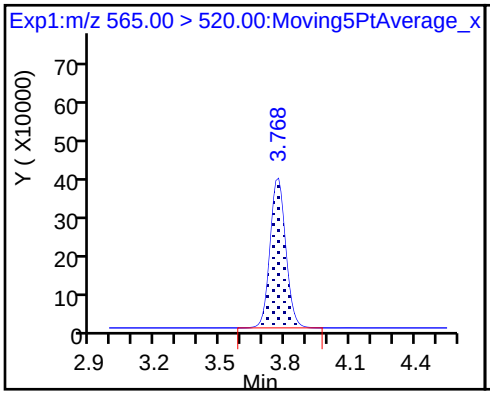
33 N-ethyl perfluorooctane sulfonamid



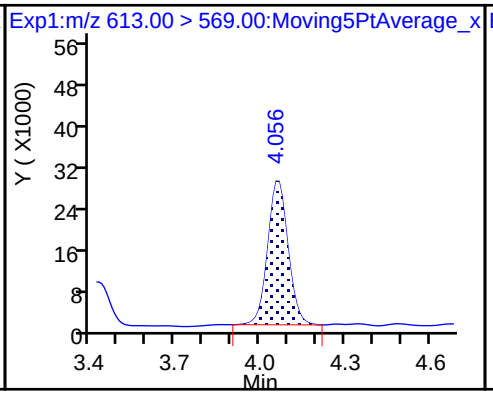
D 32 d5-NEtFOSAA



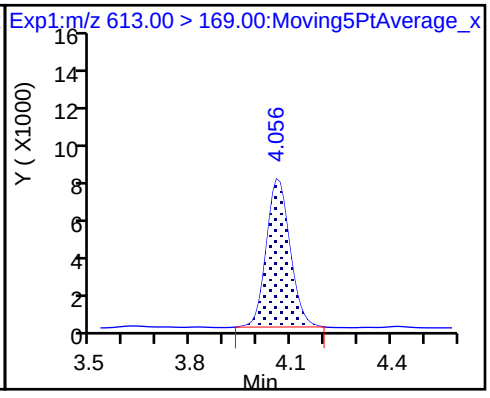
D 30 13C2 PFUnA



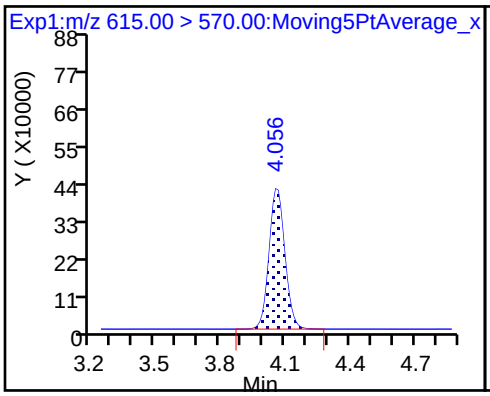
37 Perfluorododecanoic acid



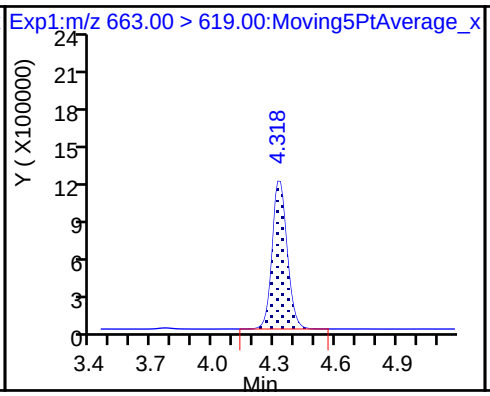
37 Perfluorododecanoic acid



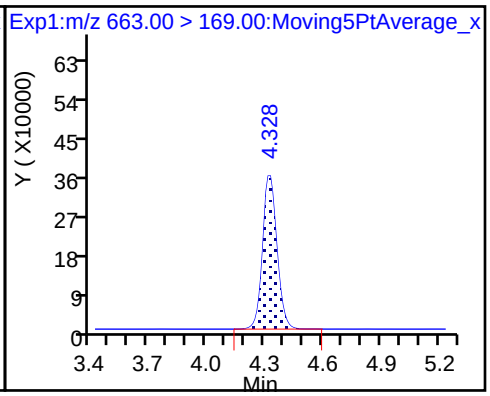
D 36 13C2 PFDoA



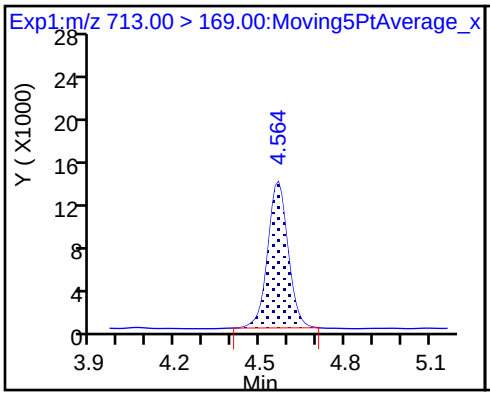
41 Perfluorotridecanoic acid



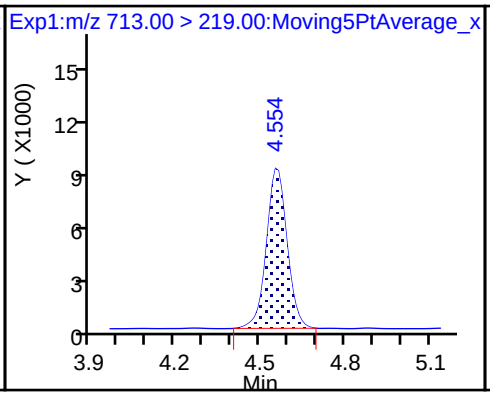
41 Perfluorotridecanoic acid



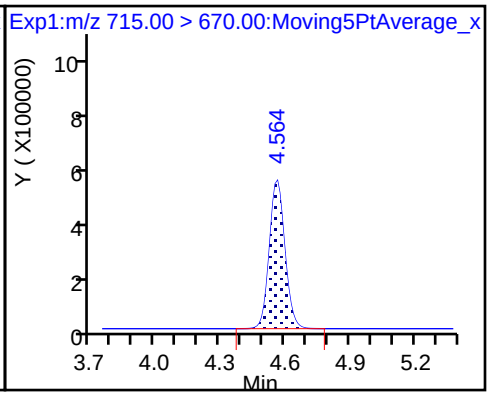
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007-SPLP(0-2') | Lab Sample ID: 320-36761-7

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_062.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:32

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 252.6(mL) | Date Analyzed: 03/23/2018 19:50

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.26	J	1.98	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.28		1.98	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	1.73	J	1.98	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.91	J B	1.98	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	5.05		1.98	0.84
375-95-1	Perfluorononanoic acid (PFNA)	4.05		1.98	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	5.71		1.98	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	4.81		1.98	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	3.60		1.98	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	27.5		1.98	1.29
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.70	J B	1.98	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.98	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.02	B	1.98	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.98	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	6.68	B	1.98	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	15.0		1.98	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.07	U	19.8	3.07
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88
39108-34-4	8:2FTS	23.6		19.8	1.98

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007-SPLP(0-2') | Lab Sample ID: 320-36761-7

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_062.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:32

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 252.6(mL) | Date Analyzed: 03/23/2018 19:50

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	93		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4-PFHpA	94		25-150
STL00990	13C4 PFOA	94		25-150
STL00995	13C5 PFNA	95		25-150
STL00996	13C2 PFDA	102		25-150
STL00997	13C2 PFUnA	91		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2-PFTeDA	76		25-150
STL02337	13C3-PFBS	94		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	98		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	73		25-150
STL02117	d5-NEtFOSAA	111		25-150
STL02280	M2-8:2FTS	165	*	25-150

Report Date: 29-Mar-2018 09:31:28 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_062.d
Lims ID: 320-36761-A-7-B
Client ID: SB007-SPLP(0-2')
Sample Type: Client
Inject. Date: 23-Mar-2018 19:50:19 ALS Bottle#: 44 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-7-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:25:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.453	-0.001	1.000	78649	0.0319			22.3	
D 1 13C4 PFBA										
217.00 > 172.00	1.452	1.458	-0.006	0.539	6546160	2.33		93.2	81332	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.717	-0.008	0.634	4481044	2.40		96.1	97924	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	116467	0.0576			40.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.753	-0.009	0.647	92870	2.18		93.9	443	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.008	-0.011	0.741	4823699	2.34		93.6	129504	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	86206	0.0437			115	
313.00 > 119.00	1.997	2.008	-0.011	1.000	7235		11.92(5.03-15.10)		113	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.341	0.0	0.868	4790774	2.35		94.2	91618	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	45586	0.0230			61.5	
363.00 > 169.00	2.328	2.341	-0.013	0.994	18071		2.52(1.13-3.40)		260	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.353	0.001	0.873	5918963	2.36		99.7	115578	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	141964	0.0510			386	
399.00 > 99.00	2.354	2.354	0.0	1.000	41853		3.39(1.50-4.49)		107	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.679	-0.006	0.991	1215315	2.88		121	10718	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.673	2.681	-0.008	1.000	21533707	24.1			202228	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.703	-0.007	1.000	4897762	2.35		94.1	118579	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.704	-0.008	1.000	282215	0.1275			101	
413.00 > 169.00	2.696	2.704	-0.008	1.000	145828		1.94(0.84-2.52)		438	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.704	-0.008		5550390	2.50			103180	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.072	-0.007	1.000	335281	0.1688			575	
499.00 > 99.00	3.065	3.072	-0.007	1.000	71333		4.70(2.31-6.93)		475	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	176978	0.1022			77.5	
463.00 > 169.00	3.065	3.072	-0.007	1.000	39357		4.50(1.90-5.69)		671	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.080	-0.015	1.137	4339971	2.36		94.6	84151	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.080	-0.015	1.137	4260435	2.33		97.6	23361	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.408	-0.002	1.000	856702	0.3798			221	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.416	-0.010	1.263	5720730	2.32		92.9	4727	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.427	-0.012	1.000	713513	0.5950			9774	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.434	-0.019	1.267	2250188	3.95		165	27573	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.436	-0.012	1.000	234595	0.1443			1057	
513.00 > 169.00	3.424	3.436	-0.012	1.000	37981		6.18(2.36-7.09)		797	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.444	-0.020	1.270	4112399	2.56		102	93379	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.602	-0.033	1.324	1536636	1.81		72.6	47500	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.761	-0.003	1.003	137595	0.1214			1115	
563.00 > 169.00	3.758	3.761	-0.003	1.003	35021		3.93(2.12-6.36)		2098	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.761	-0.013	1.000	14331	0.0143			225	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.771	-0.023	1.390	2675443	2.77		111	43100	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.771	-0.023	1.390	3286563	2.28		91.4	115125	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.059	-0.012	1.000	138533	0.0911			102	
613.00 > 169.00	4.047	4.059	-0.012	1.000	36197		3.83(2.13-6.40)		577	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.069	-0.022	1.501	3634806	2.23		89.0	36433	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	1112665	0.6953			729	
663.00 > 169.00	4.307	4.319	-0.012	0.997	348520		3.19(1.25-3.76)		6060	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.555	-0.001	1.002	6633	0.0176			120	
713.00 > 219.00	4.544	4.555	-0.011	1.000	4911		1.35(0.71-2.13)		84.5	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.565	-0.021	1.685	3805412	1.91		76.3	30632	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Report Date: 29-Mar-2018 09:31:28 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_062.d

Injection Date: 23-Mar-2018 19:50:19 Instrument ID: A8_N

Lims ID: 320-36761-A-7-B Lab Sample ID: 320-36761-7

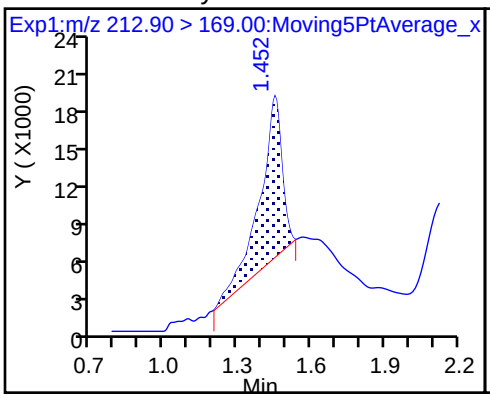
Client ID: SB007-SPLP(0-2')

Operator ID: SACINSTLCMS01 ALS Bottle#: 44 Worklist Smp#: 12

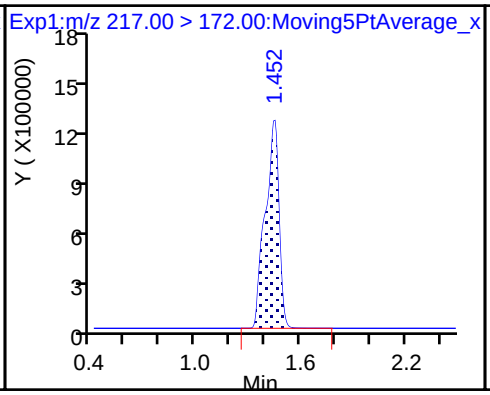
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

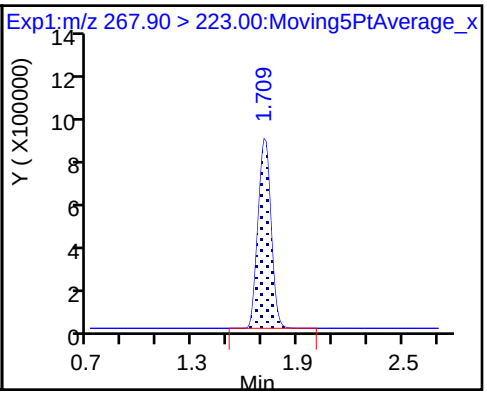
2 Perfluorobutyric acid



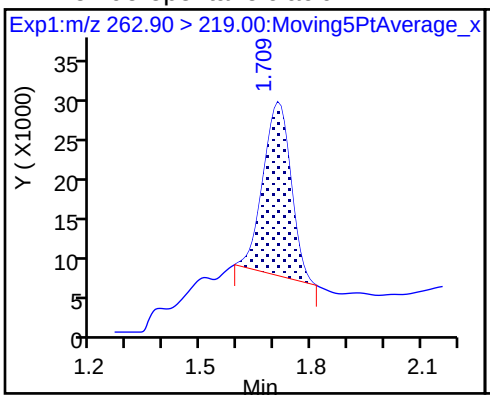
D 1 13C4 PFBA



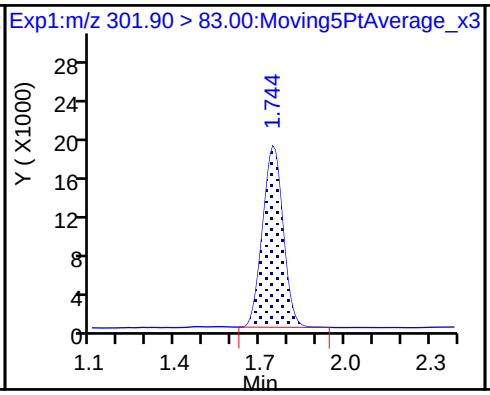
D 3 13C5-PFPeA



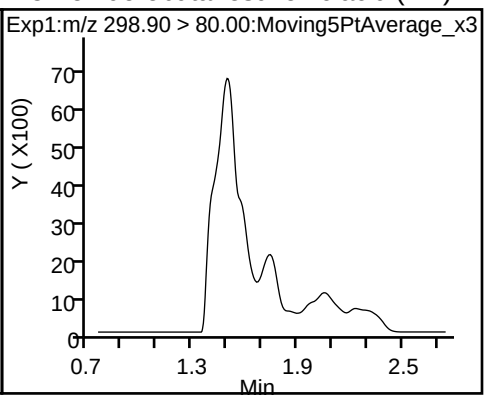
4 Perfluoropentanoic acid



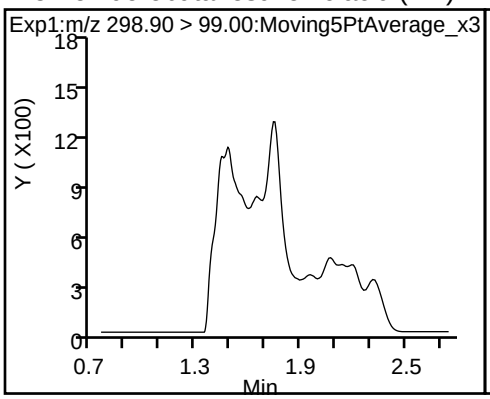
D 47 13C3-PFBS



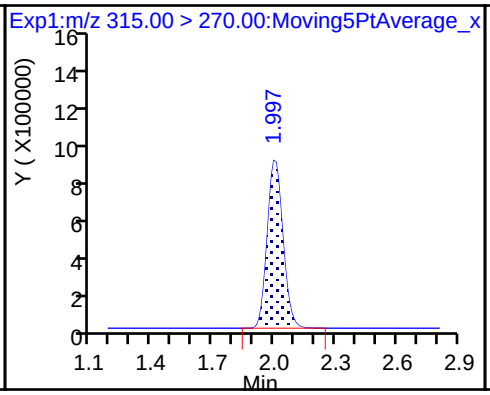
5 Perfluorobutanesulfonic acid (ND)



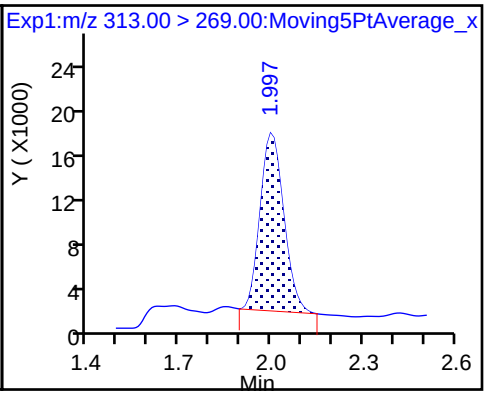
5 Perfluorobutanesulfonic acid (ND)



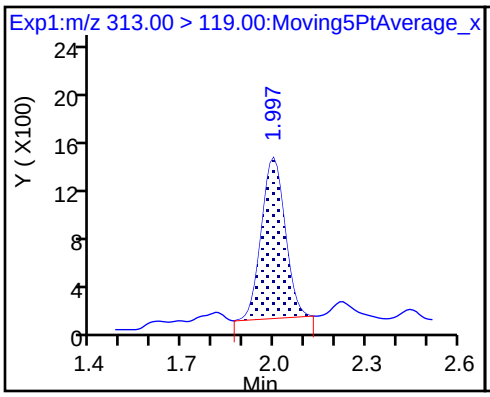
D 7 13C2 PFHxA



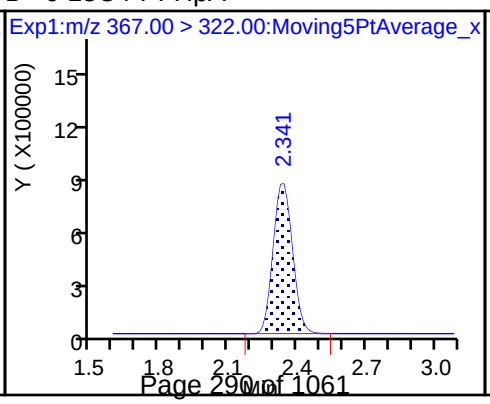
6 Perfluorohexanoic acid



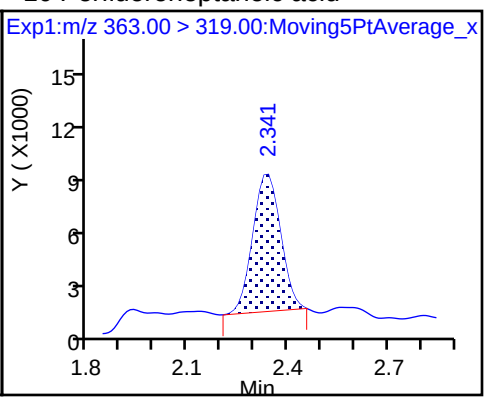
6 Perfluorohexanoic acid



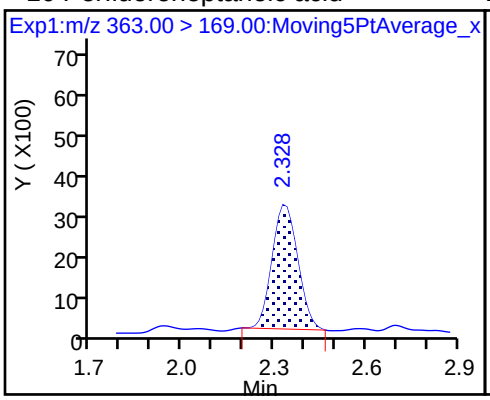
D 9 13C4-PFHpA



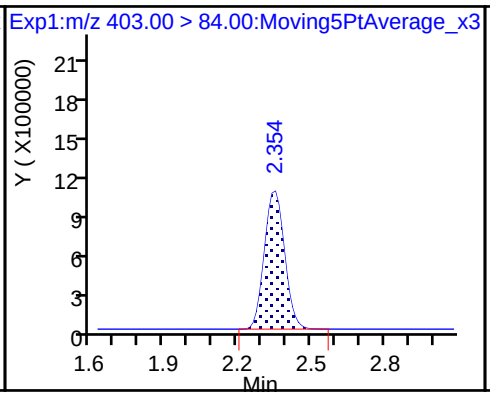
10 Perfluoroheptanoic acid



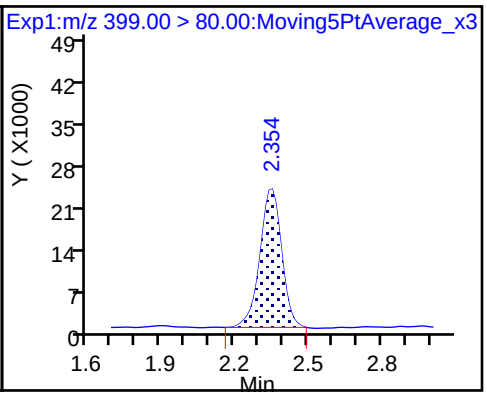
10 Perfluoroheptanoic acid



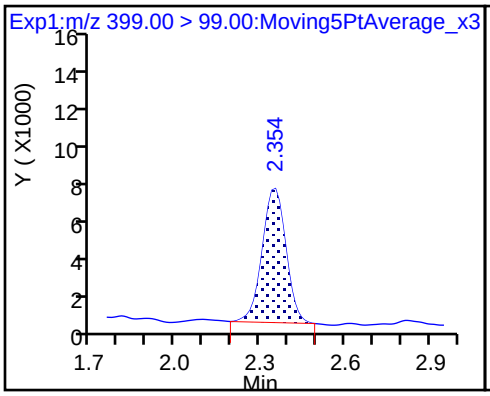
D 11 18O2 PFHxS



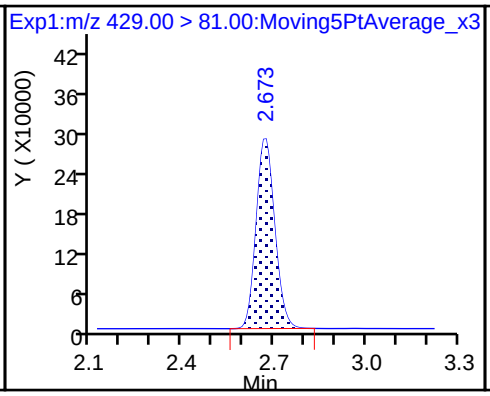
8 Perfluorohexanesulfonic acid



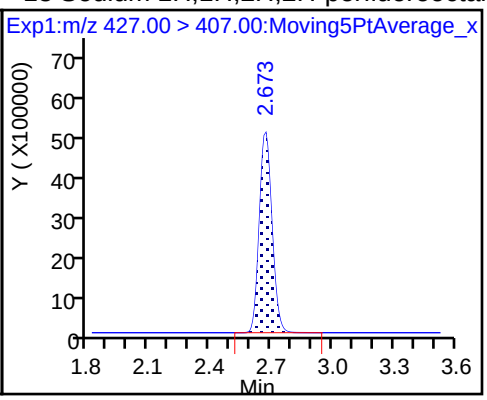
8 Perfluorohexanesulfonic acid



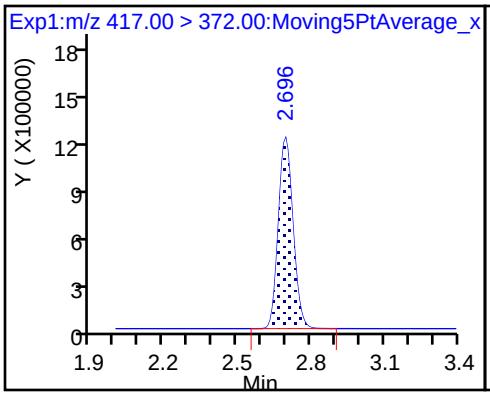
D 12 M2-6:2FTS



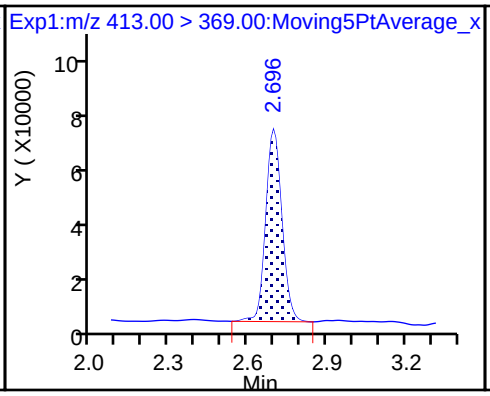
13 Sodium 1H,1H,2H,2H-perfluorooctane



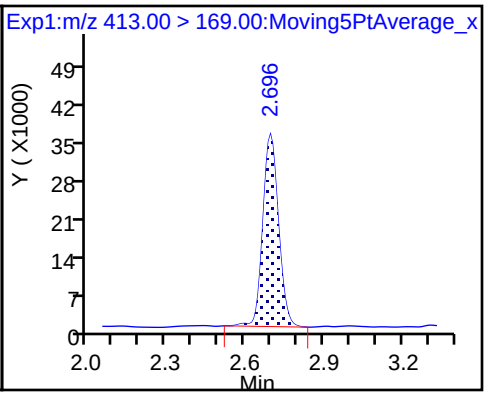
D 14 13C4 PFOA



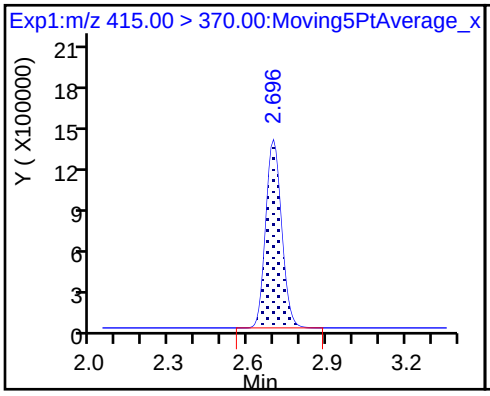
15 Perfluorooctanoic acid



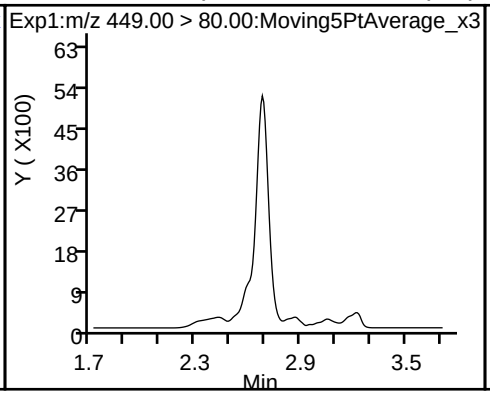
15 Perfluorooctanoic acid



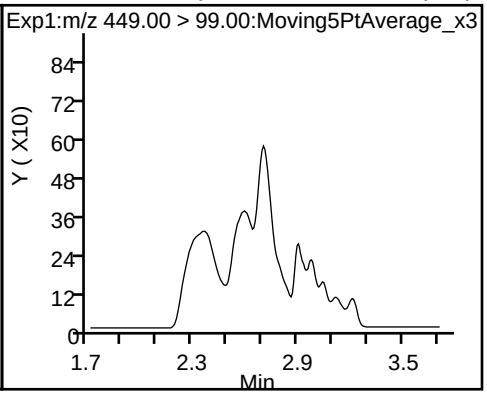
* 62 13C2-PFOA



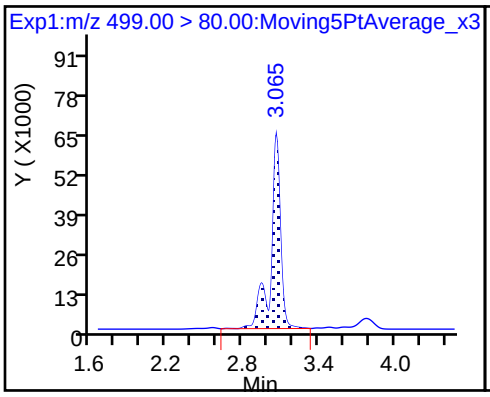
16 Perfluoroheptanesulfonic acid (ND)



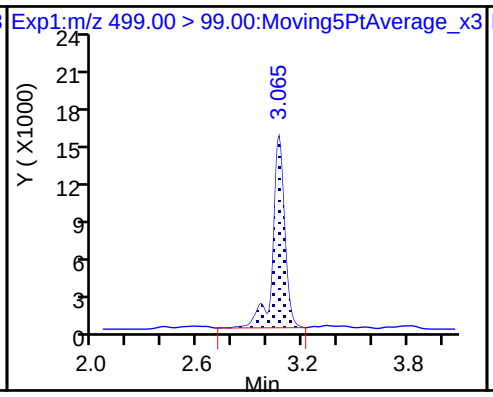
16 Perfluoroheptanesulfonic acid (ND)



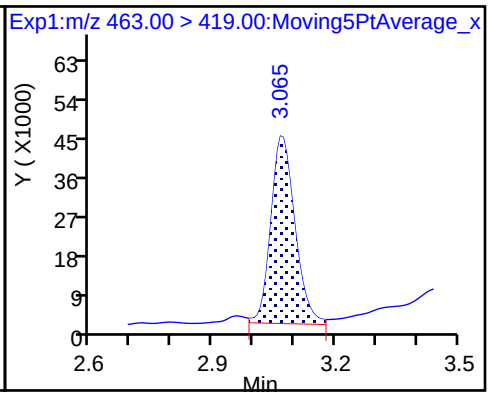
17 Perfluorooctane sulfonic acid



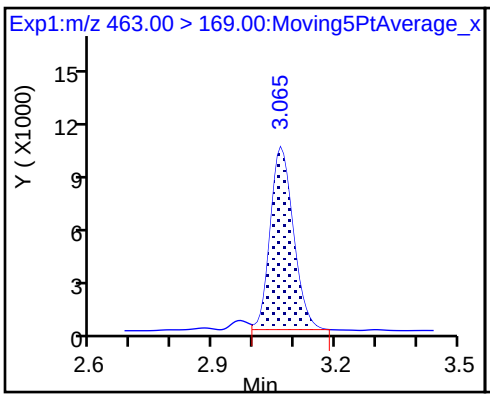
17 Perfluorooctane sulfonic acid



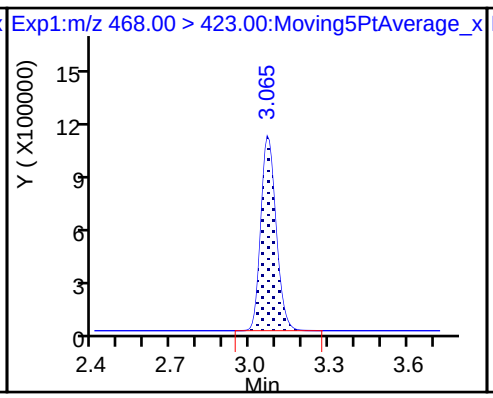
20 Perfluorononanoic acid



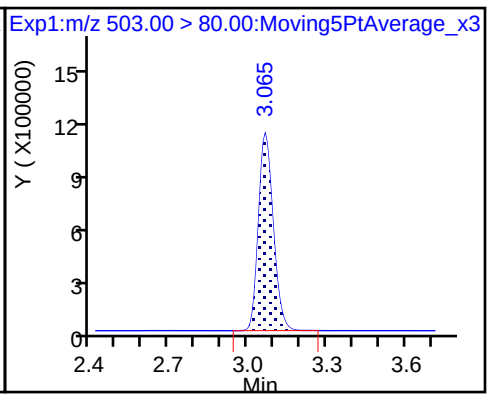
20 Perfluorononanoic acid



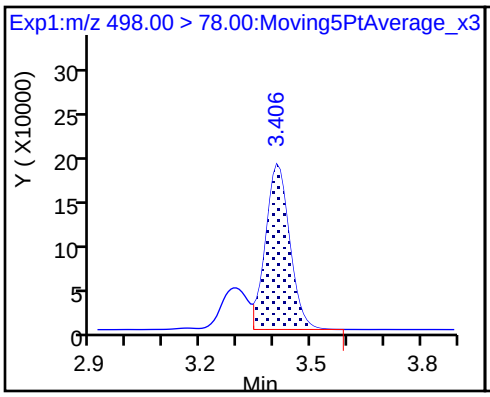
D 19 13C5 PFNA



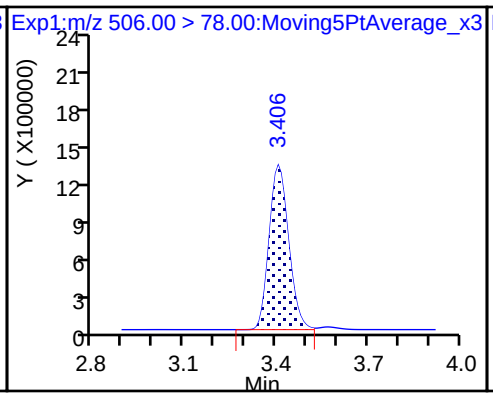
D 18 13C4 PFOS



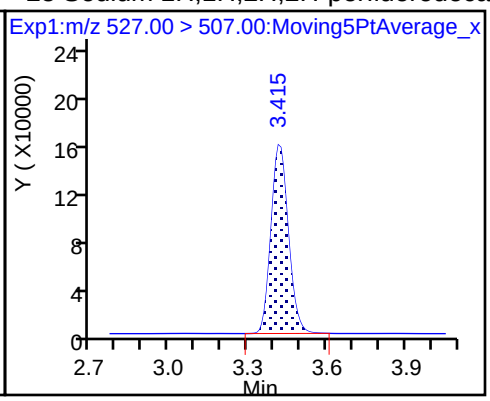
22 Perfluorooctane Sulfonamide



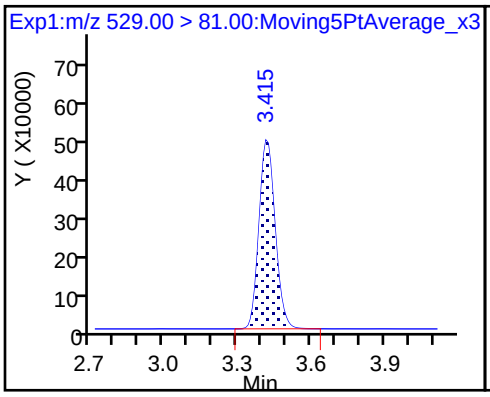
D 21 13C8 FOSA



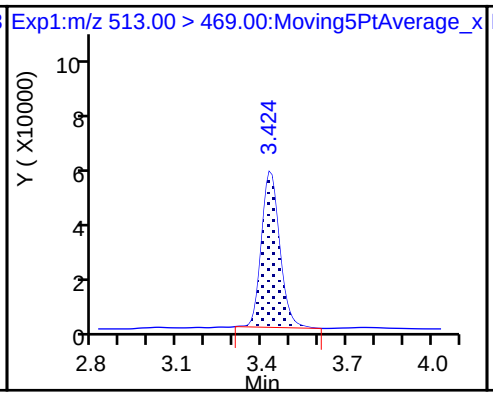
25 Sodium 1H,1H,2H,2H-perfluorodecane



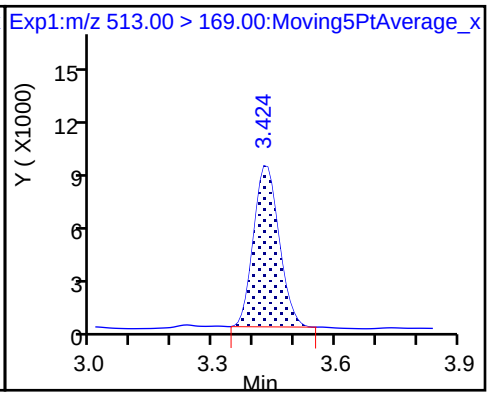
D 26 M2-8:2FTS



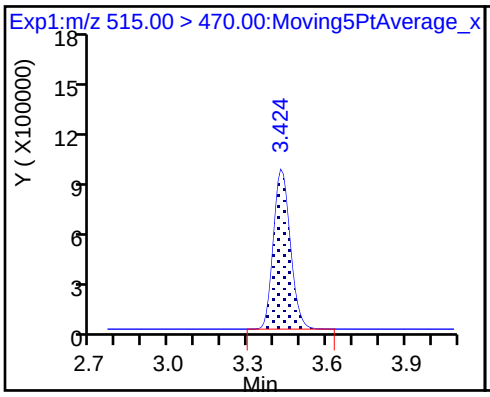
24 Perfluorodecanoic acid



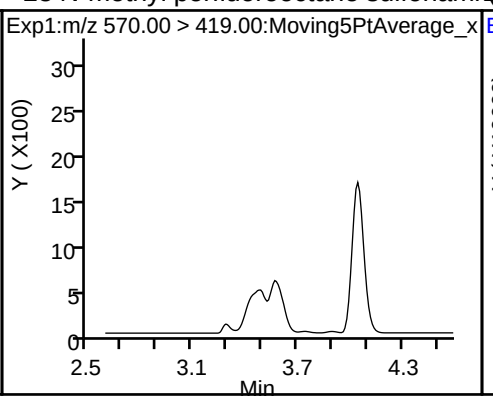
24 Perfluorodecanoic acid



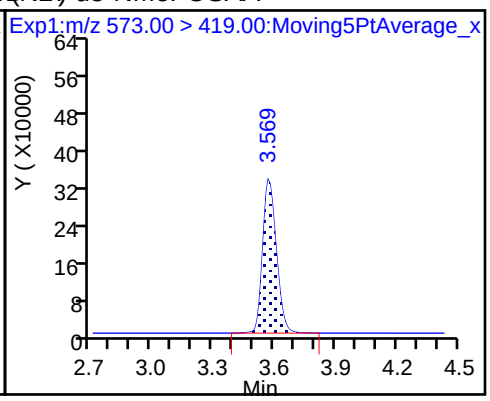
D 23 13C2 PFDA



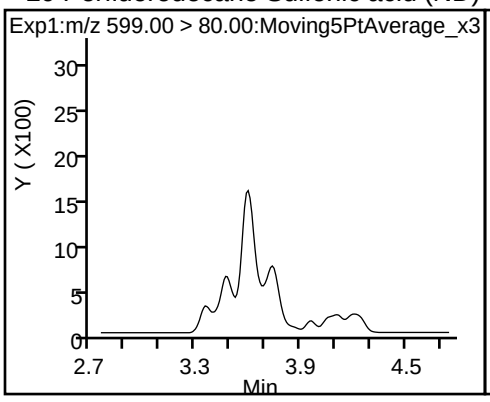
28 N-methyl perfluorooctane sulfonamid



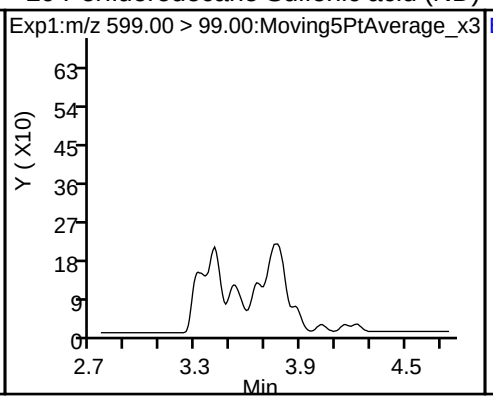
D 27 d3-NMeFOSAA



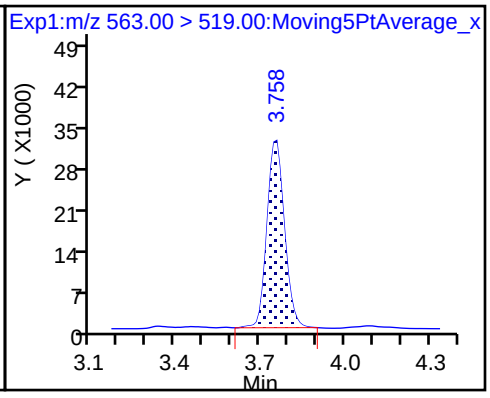
29 Perfluorodecane Sulfonic acid (ND)



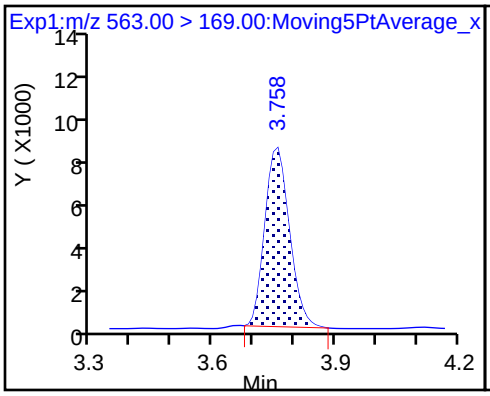
29 Perfluorodecane Sulfonic acid (ND)



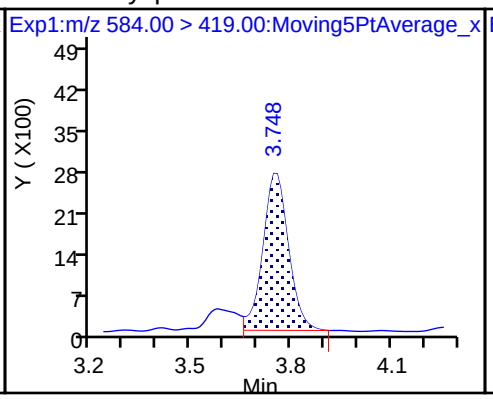
31 Perfluoroundecanoic acid



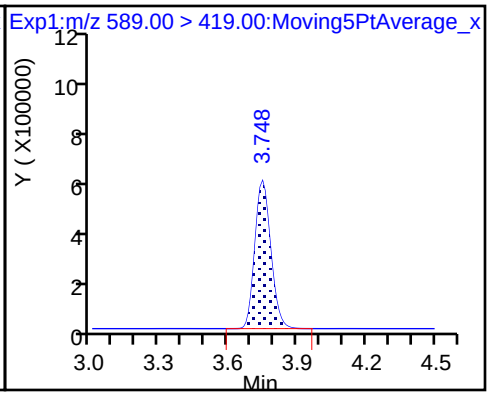
31 Perfluoroundecanoic acid



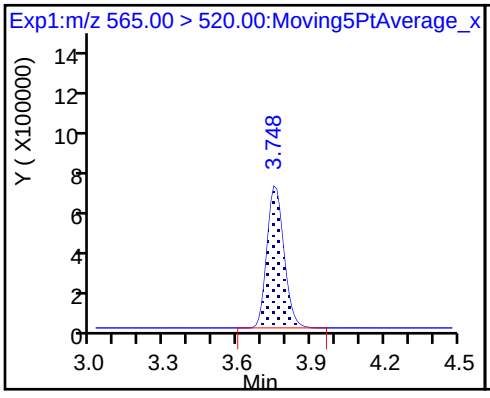
33 N-ethyl perfluorooctane sulfonamid



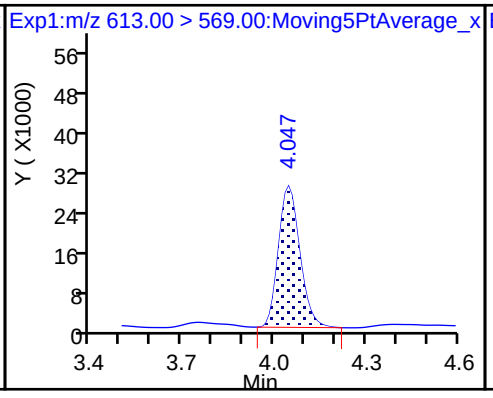
D 32 d5-NEtFOSAA



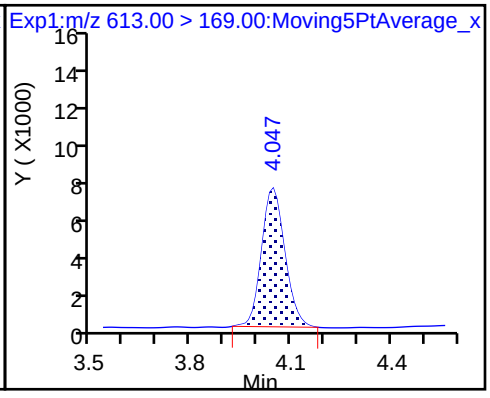
D 30 13C2 PFUnA



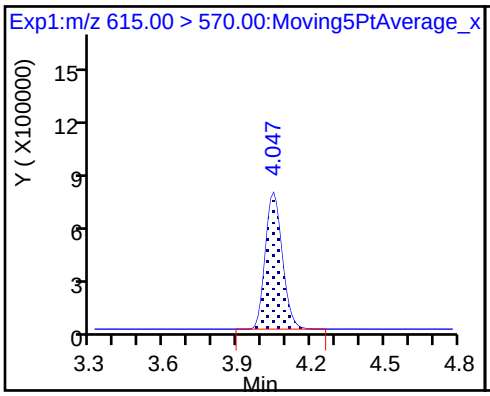
37 Perfluorododecanoic acid



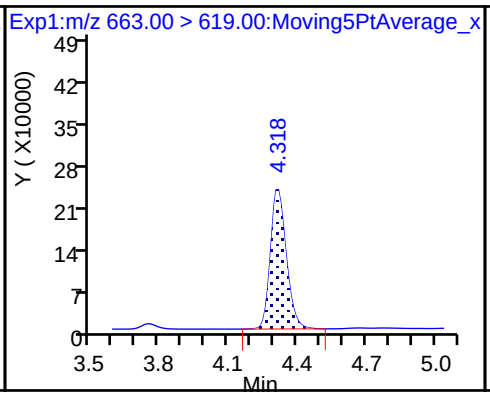
37 Perfluorododecanoic acid



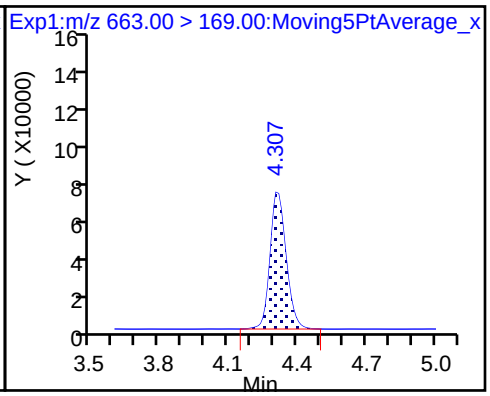
D 36 13C2 PFDoA



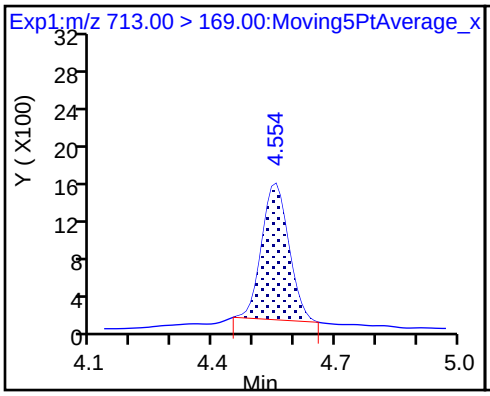
41 Perfluorotridecanoic acid



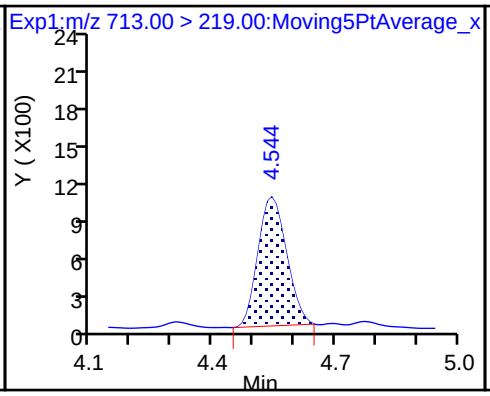
41 Perfluorotridecanoic acid



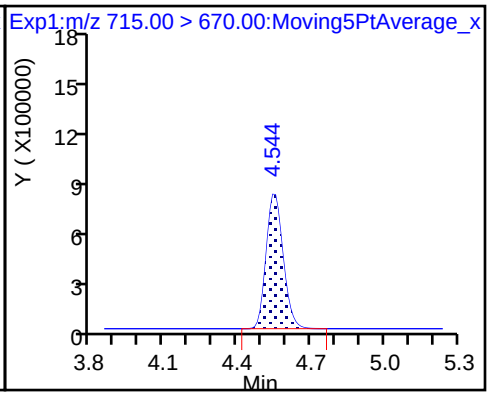
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007-SPLP(0-2') RE | Lab Sample ID: 320-36761-7 RE

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.28LLDXD_021.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:32

Extraction Method: 3535 | Date Extracted: 03/27/2018 20:41

Sample wt/vol: 253(mL) | Date Analyzed: 03/28/2018 20:41

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	*6:2FTS*	*10.6*	*J H*	*19.8*	*1.98*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	126		25-150

Report Date: 29-Mar-2018 07:54:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_021.d
Lims ID: 320-36761-A-7-C
Client ID: SB007-SPLP(0-2')
Sample Type: Client
Inject. Date: 28-Mar-2018 20:41:32 ALS Bottle#: 13 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-7-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:54:36 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:54:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.529	6816984	2.52		101	89763	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.446	0.001	1.004	72154	0.0281			15.1	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.717	-0.008	0.995	134341	0.0695			39.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.718	0.0	0.630	4287599	2.39		95.6	127371	
D 47 13C3-PFBS										
301.90 > 83.00	1.754	1.754	0.0	0.643	90849	2.22		95.4	485	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.009	2.008	0.001	1.000	80189	0.0411			66.7	
313.00 > 119.00	2.009	2.008	0.001	1.000	8624		9.30(5.03-15.10)		81.0	
D 7 13C2 PFHxA										
315.00 > 270.00	2.009	2.019	-0.010	0.737	4776269	2.41		96.3	100872	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.355	2.353	0.002	1.000	42844	0.0210			22.8	
363.00 > 169.00	2.355	2.353	0.002	1.000	17912		2.39(1.13-3.40)		37.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.355	2.354	0.001	0.864	4935224	2.52		101	97183	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.368	2.367	0.001	1.000	128104	0.0454			292	
399.00 > 99.00	2.368	2.367	0.001	1.000	41839		3.06(1.50-4.49)		173	
D 11 18O2 PFHxS										
403.00 > 84.00	2.368	2.368	0.0	0.869	5991523	2.48		105	135511	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.694	2.695	-0.001	1.000	238916	0.2679			1505	
D 12 M2-6:2FTS										
429.00 > 81.00	2.694	2.705	-0.011	0.988	1214617	2.99		126	12922	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.726	2.726	0.0	1.000	8563	0.003792			70.6	
449.00 > 99.00	2.734	2.726	0.008	1.003	1926		4.45(1.94-5.82)		31.7	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.726	2.726	0.0	1.000	259990	0.1191			102	
413.00 > 169.00	2.726	2.726	0.0	1.000	139314		1.87(0.84-2.52)		496	
* 62 13C2-PFOA										
415.00 > 370.00	2.726	2.726	0.0		5341175	2.50			105533	
D 14 13C4 PFOA										
417.00 > 372.00	2.726	2.728	-0.002	1.000	4830339	2.41		96.5	113794	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.095	3.095	0.0	1.000	296209	0.1509			354	
499.00 > 99.00	3.095	3.095	0.0	1.000	67217		4.41(2.31-6.93)		684	
20 Perfluorononanoic acid										
463.00 > 419.00	3.103	3.103	0.0	1.000	159770	0.0959			76.9	
463.00 > 169.00	3.103	3.103	0.0	1.000	38983		4.10(1.90-5.69)		731	
D 19 13C5 PFNA										
468.00 > 423.00	3.103	3.112	-0.009	1.138	4174995	2.36		94.6	70700	
D 18 13C4 PFOS										
503.00 > 80.00	3.095	3.112	-0.017	1.135	4212357	2.40		100	24750	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.423	3.417	0.006	1.000	811223	0.3549			209	
D 21 13C8 FOSA										
506.00 > 78.00	3.423	3.418	0.005	1.256	5796596	2.45		97.8	6240	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.450	3.454	-0.004	1.000	448778	0.4373			6893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.459	3.463	-0.004	1.000	208523	0.1377			768	
513.00 > 169.00	3.459	3.463	-0.004	1.000	34162		6.10(2.36-7.09)		747	
D 26 M2-8:2FTS										
529.00 > 81.00	3.450	3.464	-0.014	1.266	1925744	3.51		147	41591	
D 23 13C2 PFDA										
515.00 > 470.00	3.459	3.473	-0.014	1.269	3832684	2.48		99.0	76573	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.608	3.633	-0.025	1.324	1518617	1.86		74.6	44235	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.788	3.792	-0.004	1.003	10045	0.0119			317	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.788	3.802	-0.014	1.000	130765	0.1151			802	
563.00 > 169.00	3.788	3.802	-0.014	1.000	36166		3.62(2.12-6.36)		2842	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.777	3.804	-0.027	1.386	2250172	2.42		97.0	17941	
D 30 13C2 PFUnA										
565.00 > 520.00	3.788	3.804	-0.016	1.390	3293068	2.38		95.1	113055	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.088	4.092	-0.004	1.000	119277	0.0860			72.6	
613.00 > 169.00	4.088	4.092	-0.004	1.000	24139		4.94(2.13-6.40)		413	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.088	4.105	-0.017	1.500	3313526	2.11		84.3	39756	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.350	4.356	-0.006	1.000	799924	0.5483			436	
663.00 > 169.00	4.350	4.356	-0.006	1.000	259003		3.09(1.25-3.76)		5101	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.595	4.601	-0.006	1.000	7345	0.0206			142	
713.00 > 219.00	4.585	4.601	-0.016	0.998	6050		1.21(0.71-2.13)		112	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.595	4.613	-0.018	1.686	3605666	1.88		75.1	28203	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 07:54:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_021.d

Injection Date: 28-Mar-2018 20:41:32 Instrument ID: A8_N

Lims ID: 320-36761-A-7-C Lab Sample ID: 320-36761-7

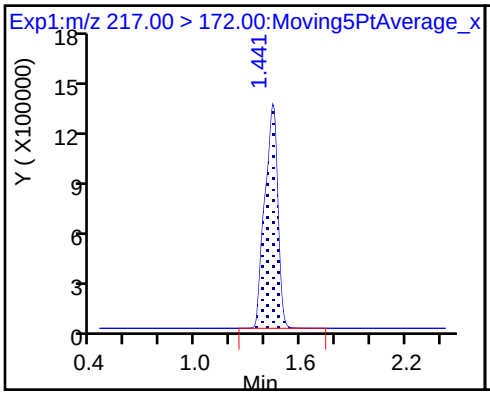
Client ID: SB007-SPLP(0-2')

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 18

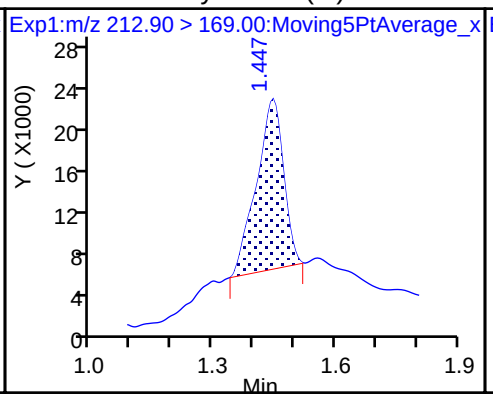
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

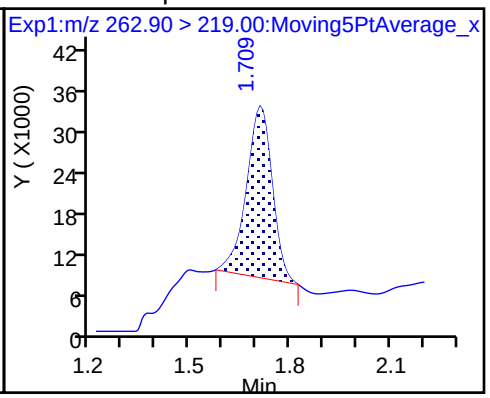
D 1 13C4 PFBA



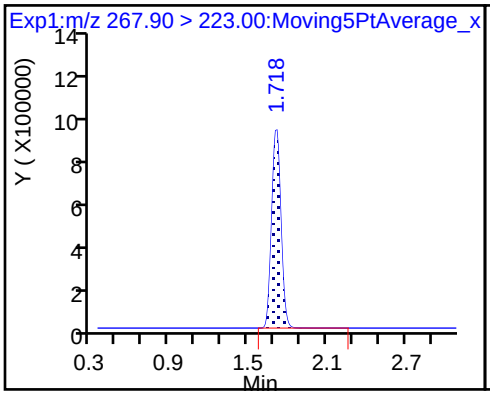
2 Perfluorobutyric acid (M)



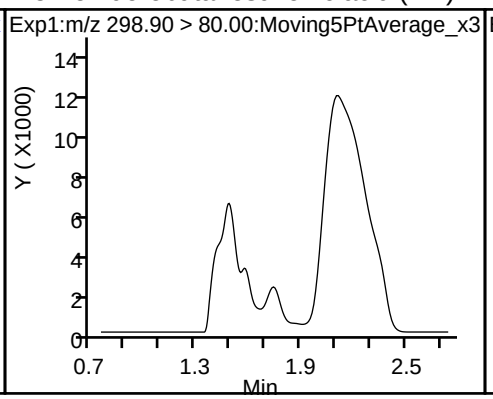
4 Perfluoropentanoic acid



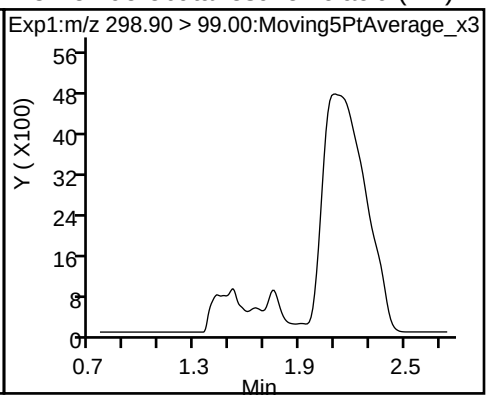
D 3 13C5-PFPeA



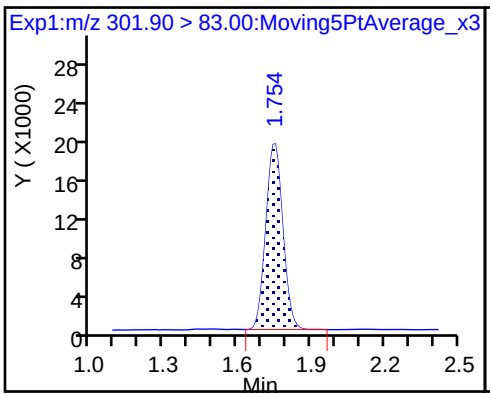
5 Perfluorobutanesulfonic acid (ND)



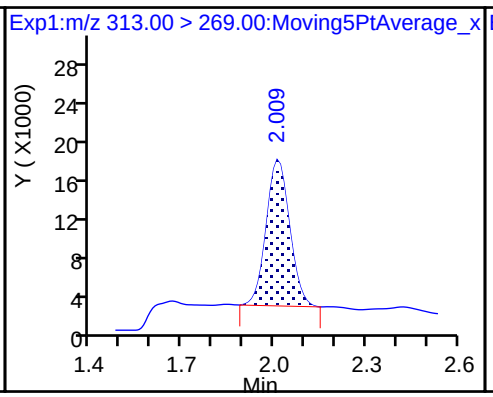
5 Perfluorobutanesulfonic acid (ND)



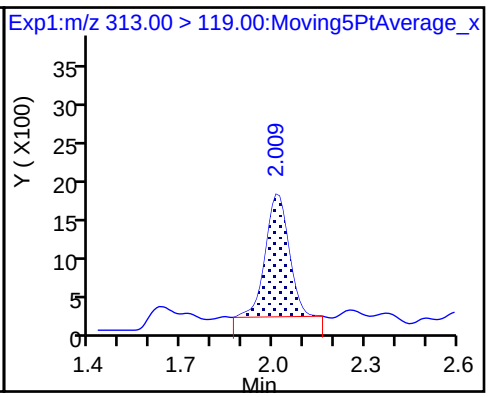
D 47 13C3-PFBS



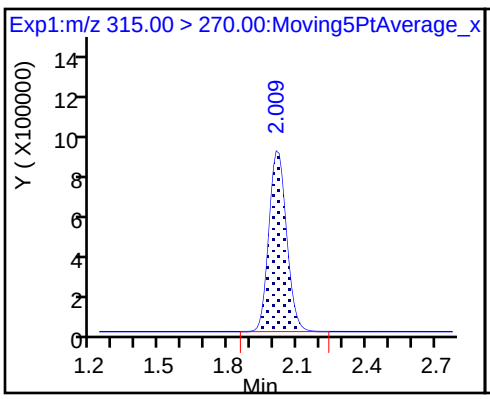
6 Perfluorohexanoic acid



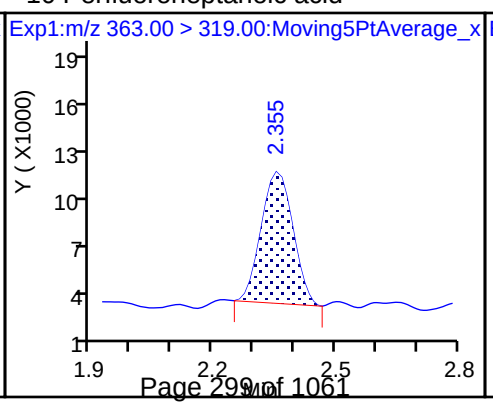
6 Perfluorohexanoic acid



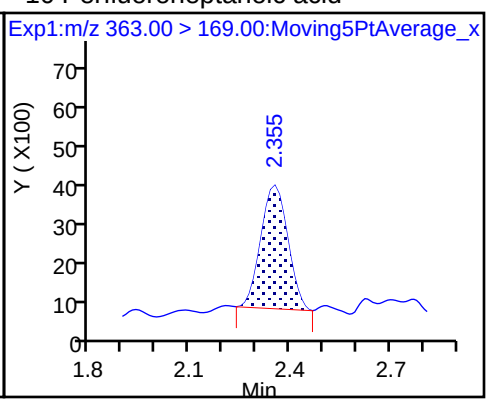
D 7 13C2 PFHxA



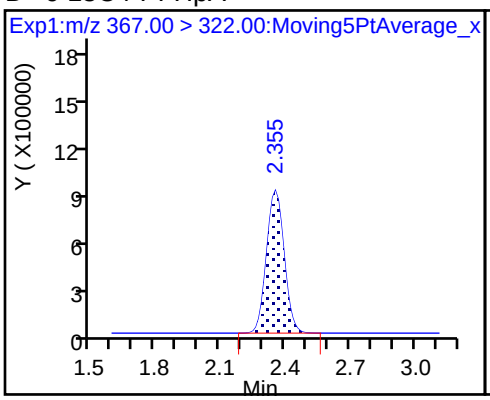
10 Perfluoroheptanoic acid



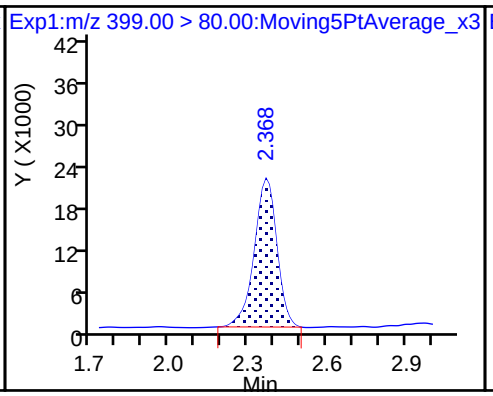
10 Perfluoroheptanoic acid



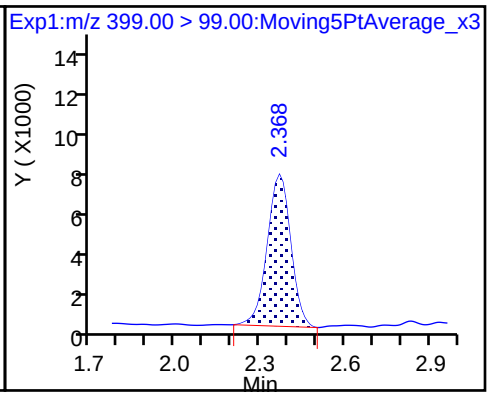
D 9 13C4-PFHpA



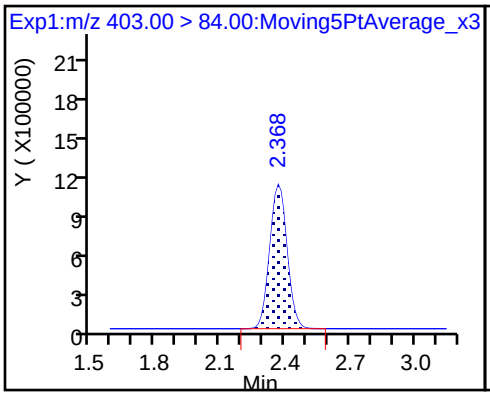
8 Perfluorohexanesulfonic acid



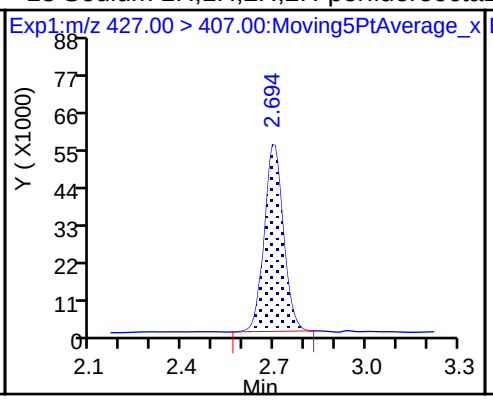
8 Perfluorohexanesulfonic acid



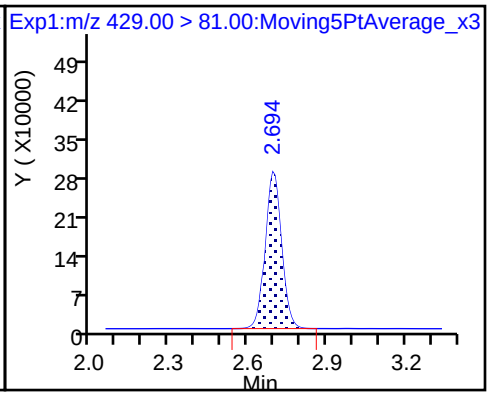
D 11 18O2 PFHxS



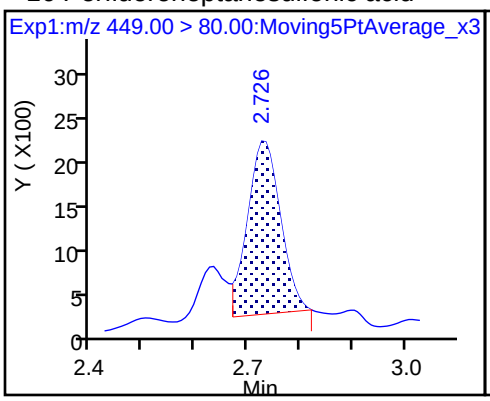
13 Sodium 1H,1H,2H,2H-perfluorooctane



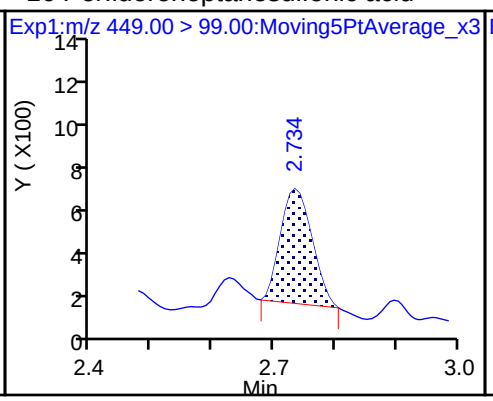
D 12 M2-6:2FTS



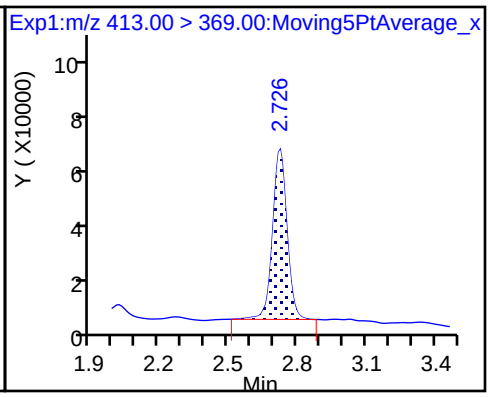
16 Perfluoroheptanesulfonic acid



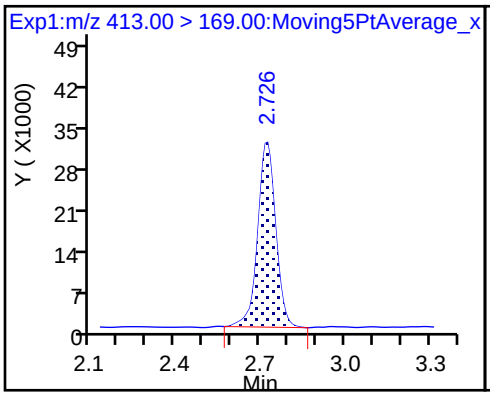
16 Perfluoroheptanesulfonic acid



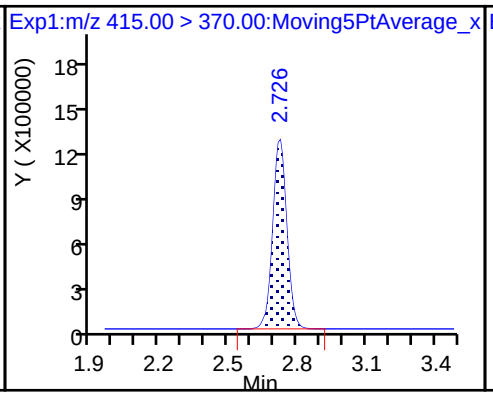
15 Perfluorooctanoic acid



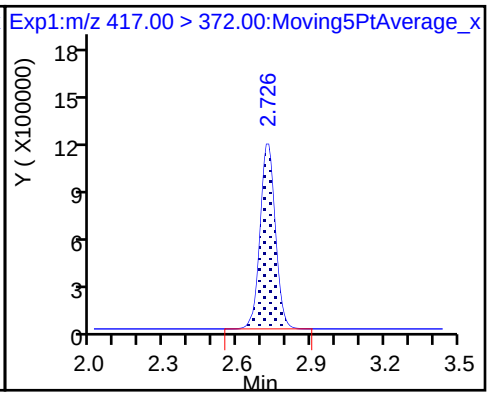
15 Perfluorooctanoic acid



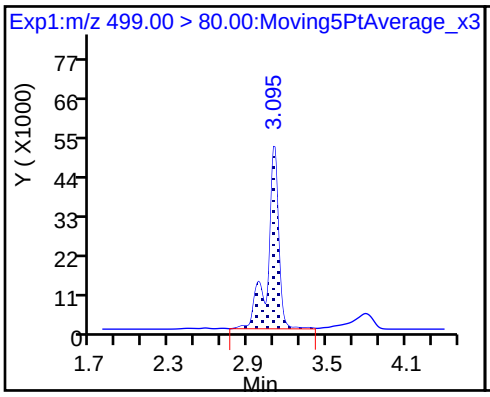
* 62 13C2-PFOA



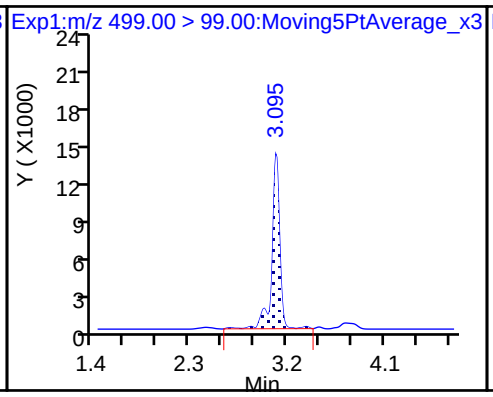
D 14 13C4 PFOA



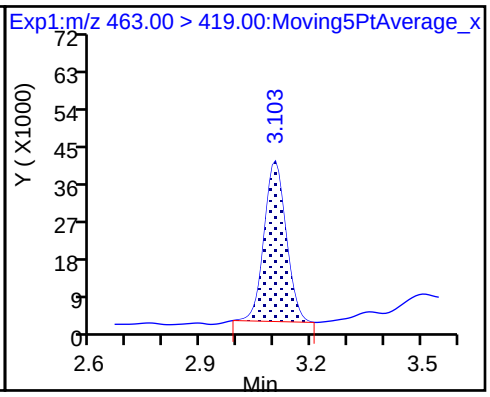
17 Perfluorooctane sulfonic acid



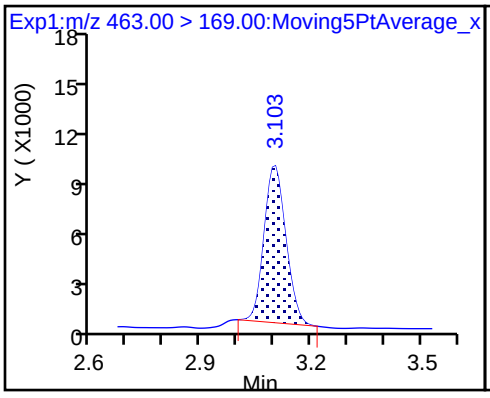
17 Perfluorooctane sulfonic acid



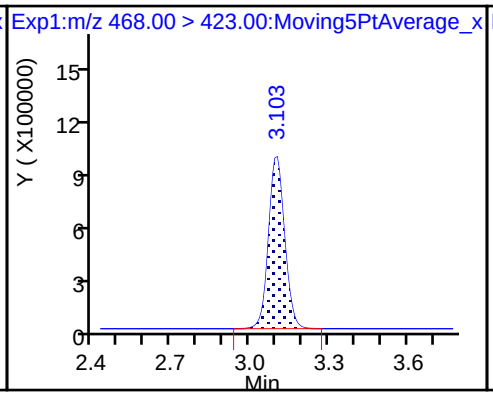
20 Perfluorononanoic acid



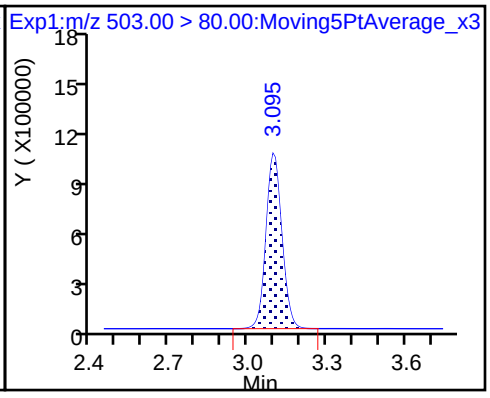
20 Perfluorononanoic acid



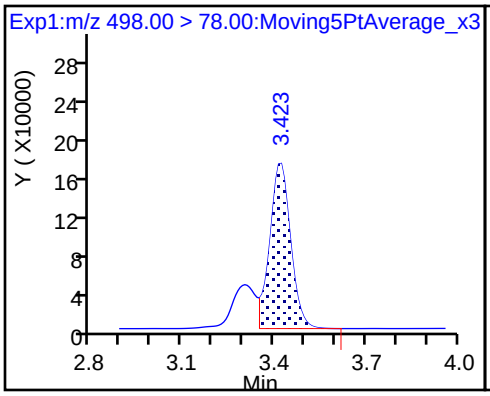
D 19 13C5 PFNA



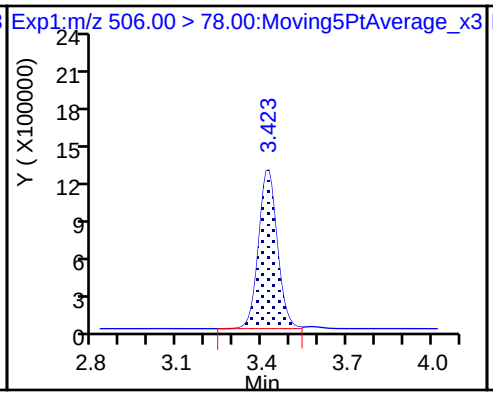
D 18 13C4 PFOS



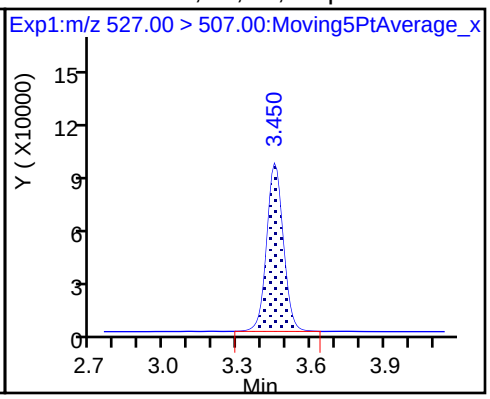
22 Perfluorooctane Sulfonamide



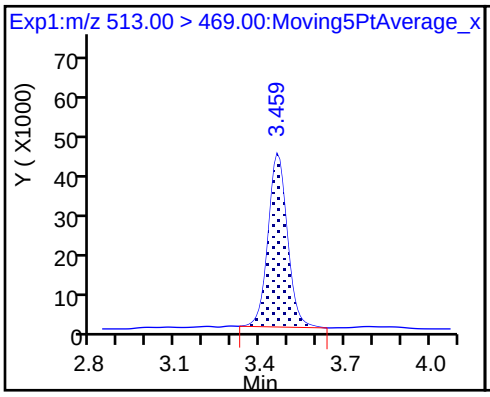
D 21 13C8 FOSA



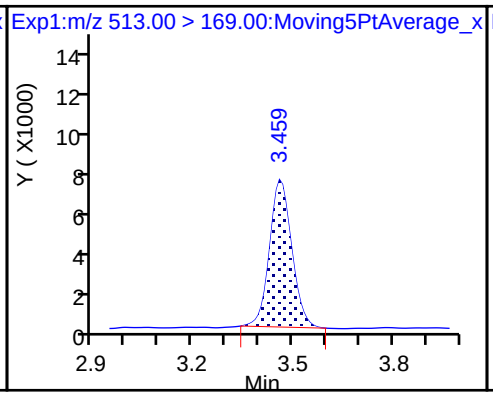
25 Sodium 1H,1H,2H,2H-perfluorodecane



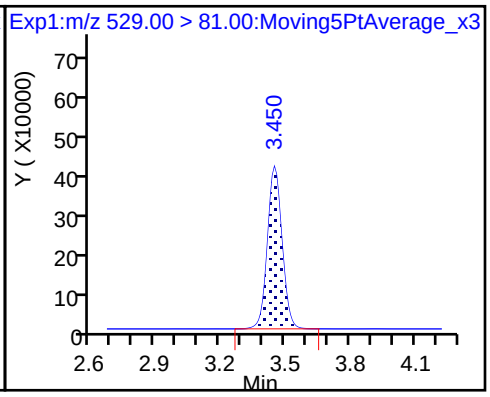
24 Perfluorodecanoic acid



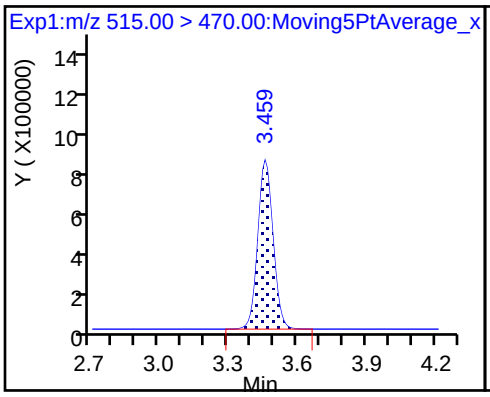
24 Perfluorodecanoic acid



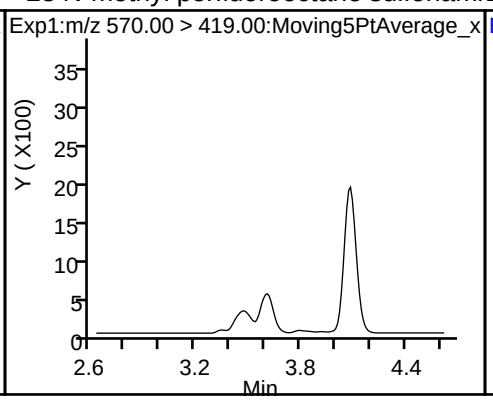
D 26 M2-8:2FTS



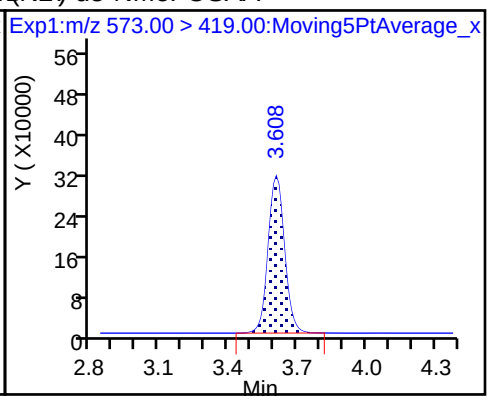
D 23 13C2 PFDA



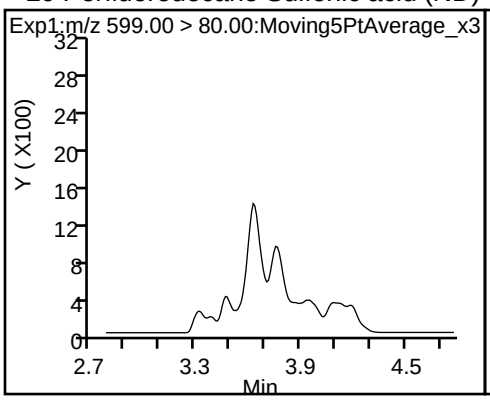
28 N-methyl perfluorooctane sulfonamid (ND)



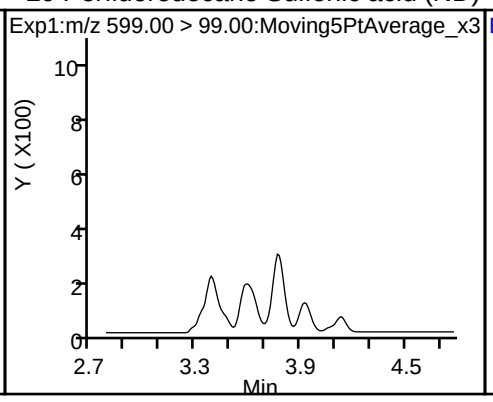
D 27 d3-NMeFOSAA



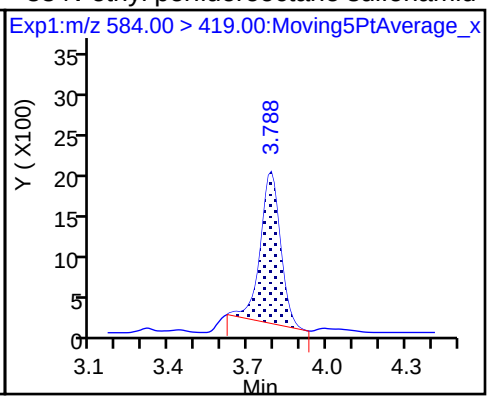
29 Perfluorodecane Sulfonic acid (ND)



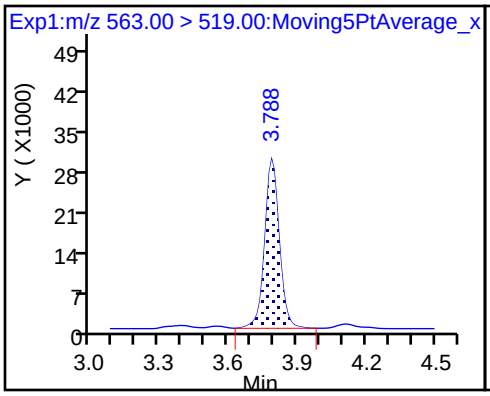
29 Perfluorodecane Sulfonic acid (ND)



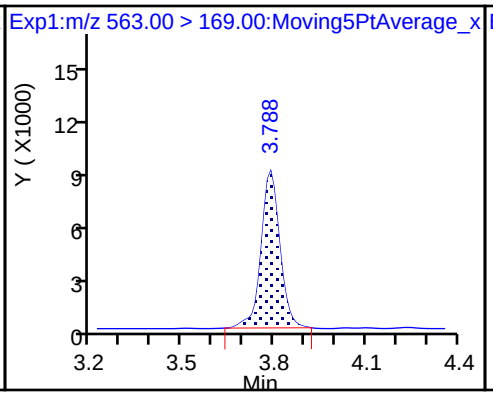
33 N-ethyl perfluorooctane sulfonamid



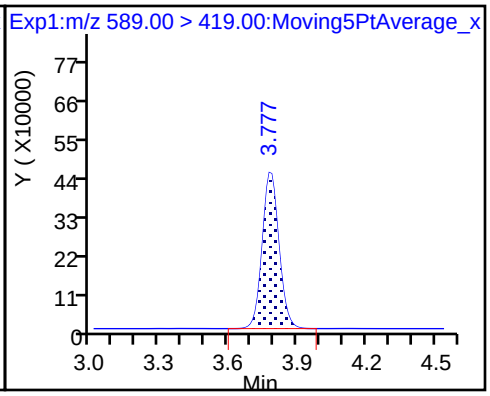
31 Perfluoroundecanoic acid



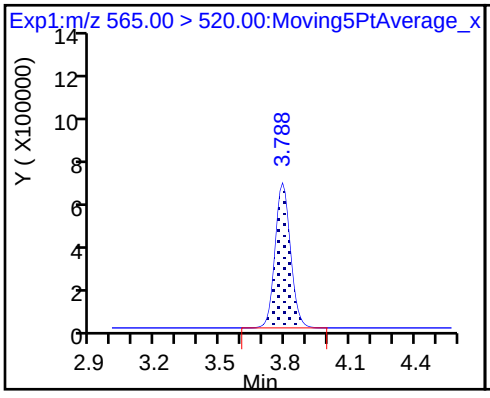
31 Perfluoroundecanoic acid



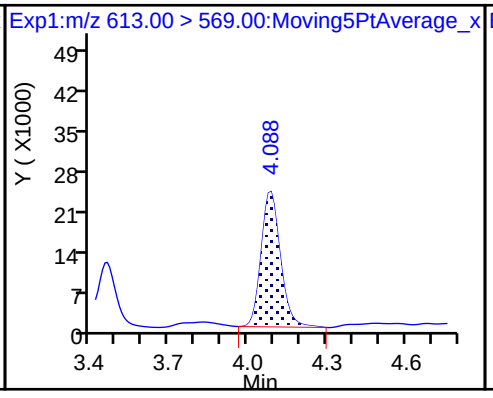
D 32 d5-NEtFOSAA



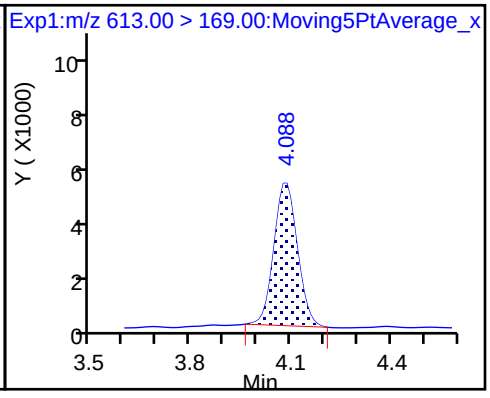
D 30 13C2 PFUnA



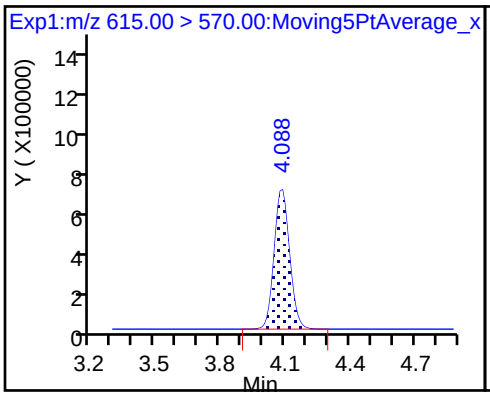
37 Perfluorododecanoic acid



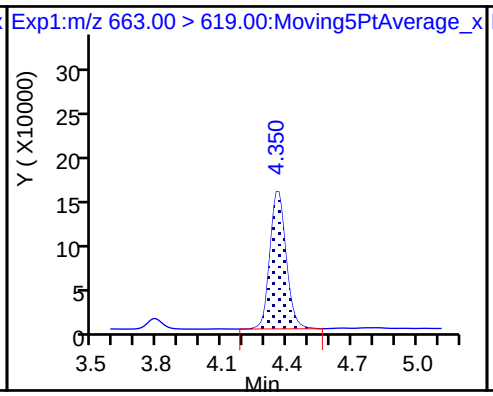
37 Perfluorododecanoic acid



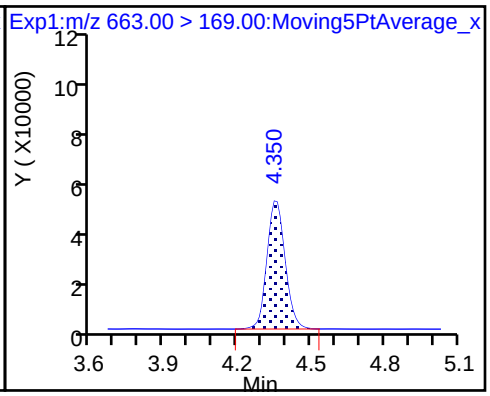
D 36 13C2 PFDoA



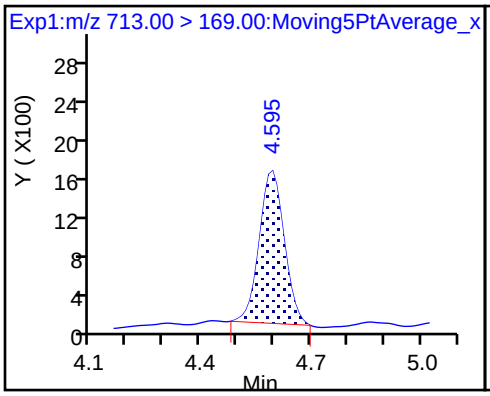
41 Perfluorotridecanoic acid



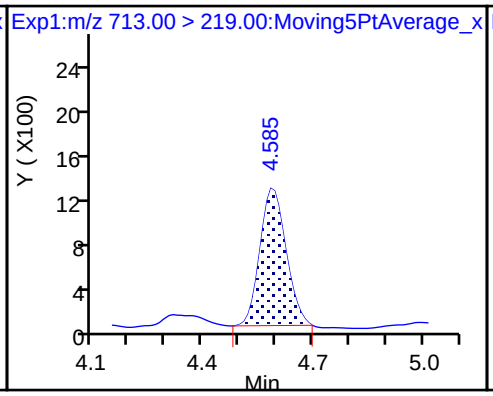
41 Perfluorotridecanoic acid



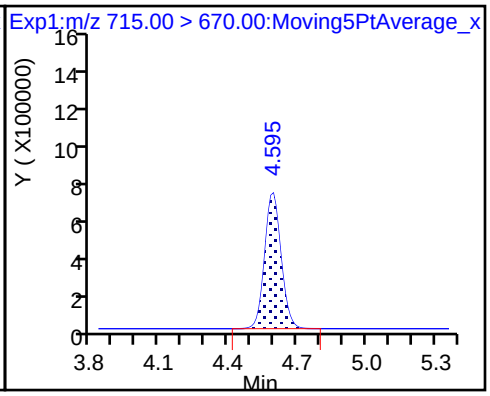
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007-SPLP(0-2') DL | Lab Sample ID: 320-36761-7 DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.26LLA_037.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:32

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 252.6(mL) | Date Analyzed: 03/26/2018 16:58

Con. Extract Vol.: 10(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214885 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	1020	B D	198	19.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	134	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_037.d
Lims ID: 320-36761-A-7-B
Client ID: SB007-SPLP(0-2')
Sample Type: Client
Inject. Date: 26-Mar-2018 16:58:13 ALS Bottle#: 24 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-36761-a-7-b 10X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:46:11 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:40:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.439	0.013	1.004	26265	0.007476			5.3	
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.439	0.007	0.535	932220	0.2506		100	16655	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.699	0.010	0.632	621820	0.2519		101	20751	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.734	0.010	0.645	13145	0.2333		100	89.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.996	0.001	0.739	662517	0.2427		97.1	20572	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.327	0.014	1.000	6597	0.002385			5.7	
363.00 > 169.00	2.341	2.327	0.014	1.000	2749		2.40(1.13-3.40)		8.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.327	0.014	0.866	668460	0.2482		99.3	28952	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.340	0.014	1.000	21780	0.005612			120	
399.00 > 99.00	2.354	2.340	0.014	1.000	7664		2.84(1.50-4.49)		19.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.340	0.014	0.871	824678	0.2483		105	28989	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.670	0.002	1.000	3352097	2.58			20442	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.670	0.002	0.988	177055	0.3171		134	4018	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.704	2.694	0.010	1.000	44683	0.0143			13.5	M
413.00 > 169.00	2.704	2.694	0.010	1.000	20434		2.19(0.84-2.52)		61.1	
* 62 13C2-PFOA										
415.00 > 370.00	2.704	2.694	0.010		734694	0.2500			18677	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.704	2.694	0.010	1.000	691120	0.2509		100	19703	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.080	3.071	0.009	1.000	49096	0.0175			201	
499.00 > 99.00	3.080	3.071	0.009	1.000	9036		5.43(2.31-6.93)		49.0	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.071	0.009	1.000	23080	0.009302			18.4	
463.00 > 169.00	3.080	3.071	0.009	1.000	6101		3.78(1.90-5.69)		180	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.071	0.009	1.139	621874	0.2560		102	21845	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.071	0.009	1.139	602813	0.2494		104	10149	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.395	0.011	1.000	120551	0.0388			227	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.395	0.011	1.260	787509	0.2416		96.6	3513	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.431	0.002	1.000	69748	0.0582			2220	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.431	0.002	1.270	224890	0.2983		125	4228	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.440	0.002	1.000	33858	0.0151			137	
513.00 > 169.00	3.442	3.440	0.002	1.000	5052		6.70(2.36-7.09)		110	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.440	0.002	1.273	566540	0.2661		106	9884	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.597	0.002	1.331	325035	0.2900		116	17269	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.767	0.012	1.003	2025	0.001545			64.0	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.767	0.012	1.398	486542	0.2554		102	25501	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.767	0.001	1.394	350662	0.2746		110	3760	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.777	0.002	1.000	22761	0.0136			118	
563.00 > 169.00	3.779	3.777	0.002	1.000	6027		3.78(2.12-6.36)		188	
37 Perfluorododecanoic acid										R
613.00 > 569.00	4.078	4.064	0.014	1.000	30709	0.0137			29.1	R
613.00 > 169.00	4.067	4.064	0.003	0.997	4153		7.39(2.13-6.40)		93.1	
D 36 13C2 PFDoA										
615.00 > 570.00	4.078	4.064	0.014	1.508	535180	0.2476		99.0	4629	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.339	4.337	0.002	1.000	166005	0.0705			172	
663.00 > 169.00	4.339	4.337	0.002	1.000	49584		3.35(1.25-3.76)		859	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.572	0.003	1.692	548501	0.2078		83.1	4300	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

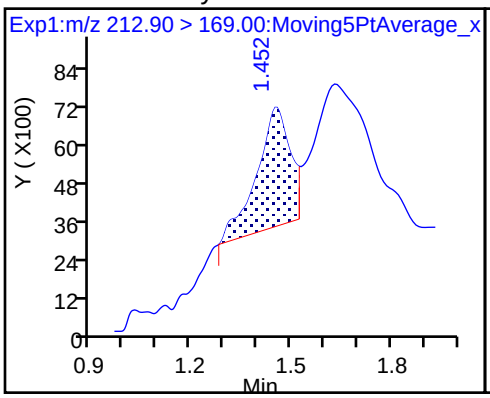
Report Date: 29-Mar-2018 09:46:32 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

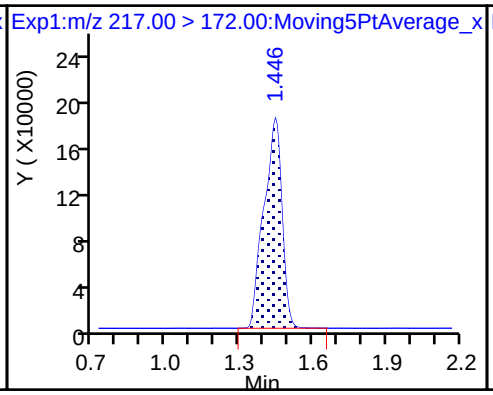
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_037.d

Injection Date:	26-Mar-2018 16:58:13	Instrument ID:	A8_N		
Lims ID:	320-36761-A-7-B	Lab Sample ID:	320-36761-7		
Client ID:	SB007-SPLP(0-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

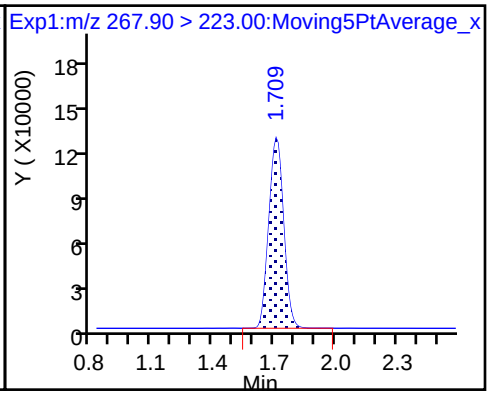
2 Perfluorobutyric acid



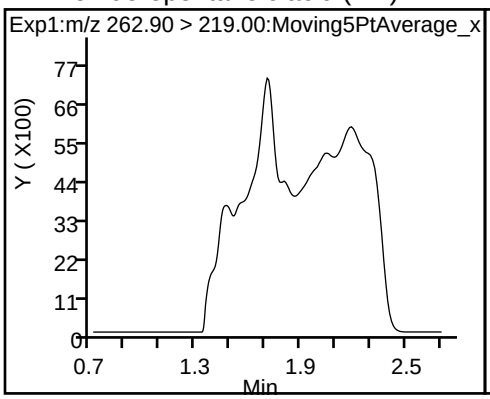
D 1 13C4 PFBA



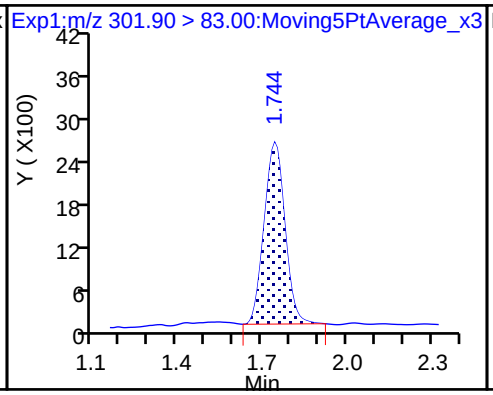
D 3 13C5-PFPeA



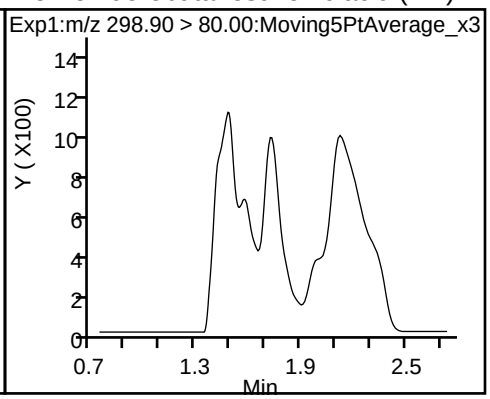
4 Perfluoropentanoic acid (ND)



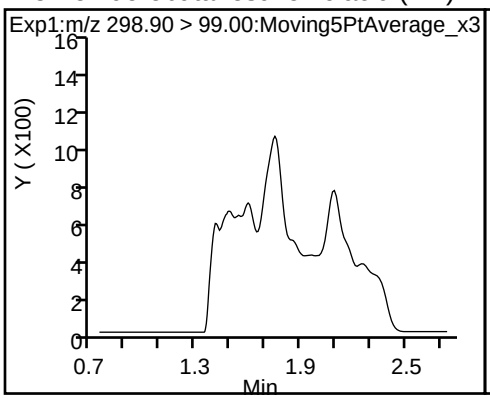
D 47 13C3-PFBS



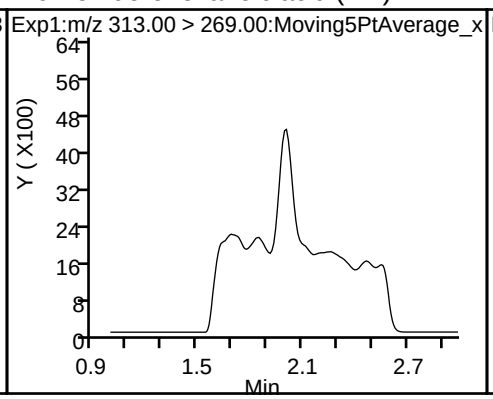
5 Perfluorobutanesulfonic acid (ND)



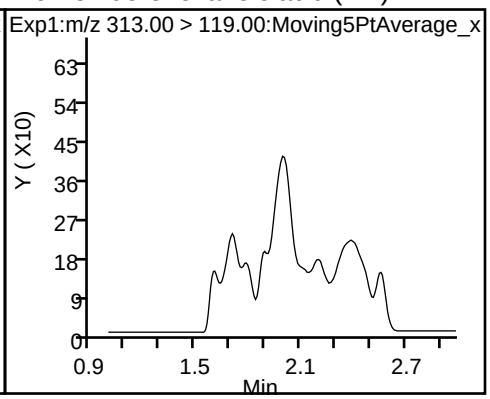
5 Perfluorobutanesulfonic acid (ND)



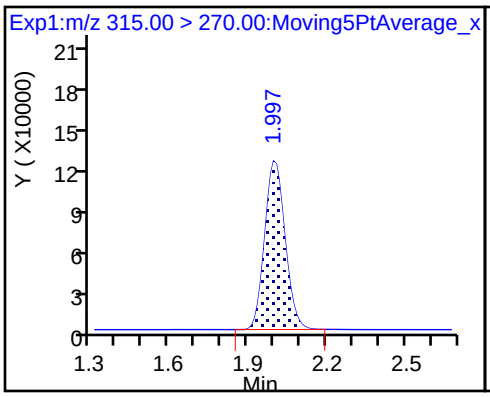
6 Perfluorohexanoic acid (ND)



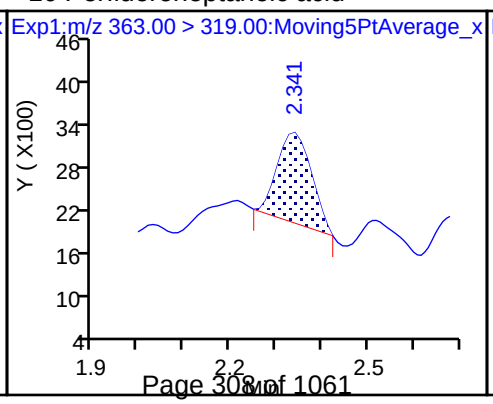
6 Perfluorohexanoic acid (ND)



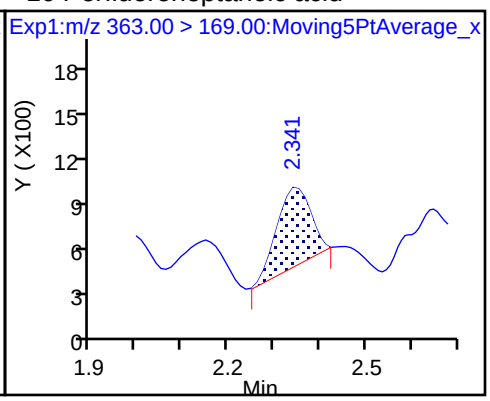
D 7 13C2 PFHxA



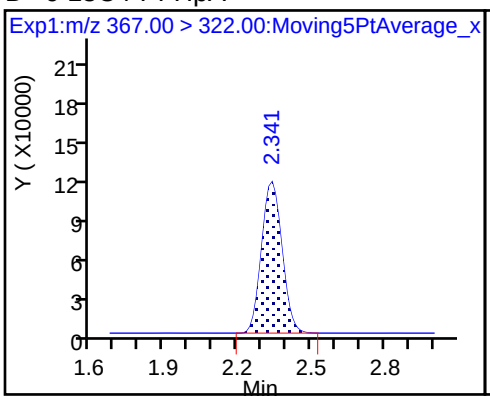
10 Perfluoroheptanoic acid



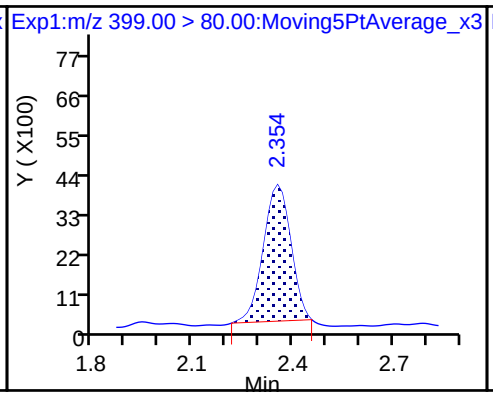
10 Perfluoroheptanoic acid



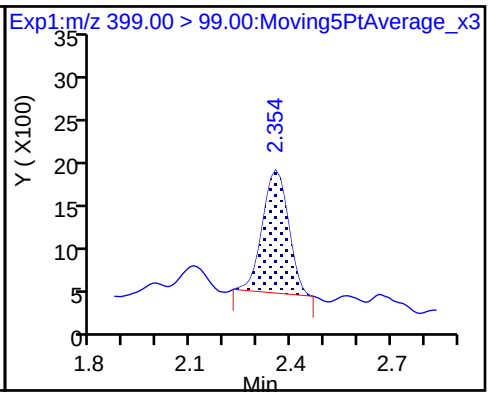
D 9 13C4-PFHpA



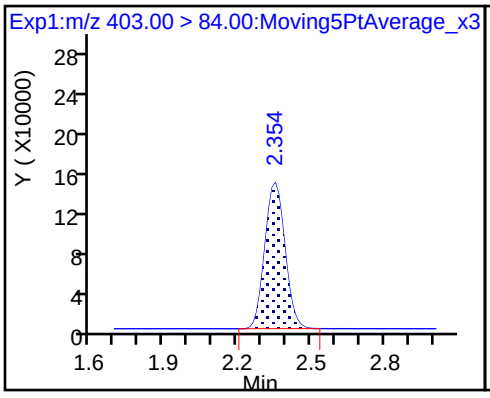
8 Perfluorohexanesulfonic acid



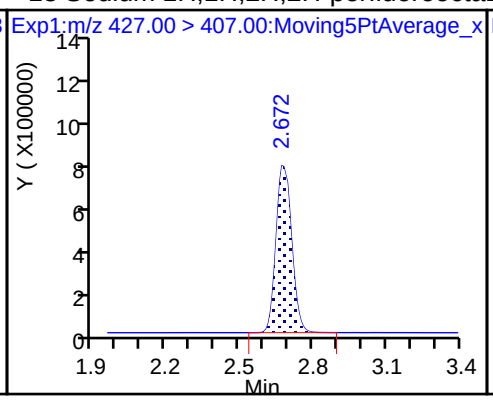
8 Perfluorohexanesulfonic acid



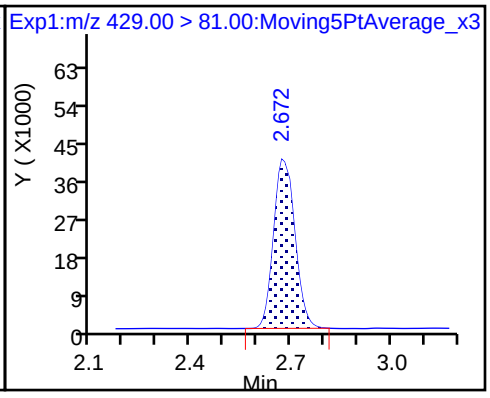
D 11 18O2 PFHxS



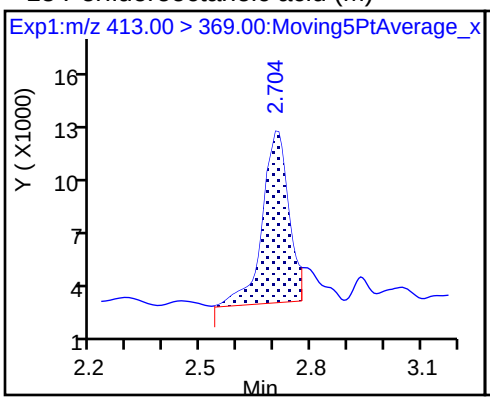
13 Sodium 1H,1H,2H,2H-perfluorooctane



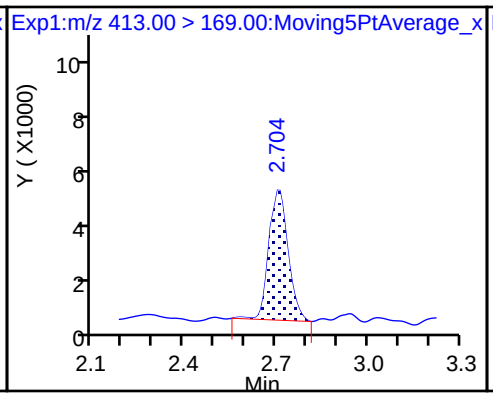
D 12 M2-6:2FTS



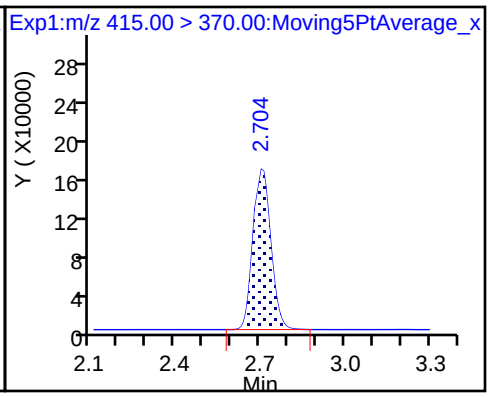
15 Perfluorooctanoic acid (M)



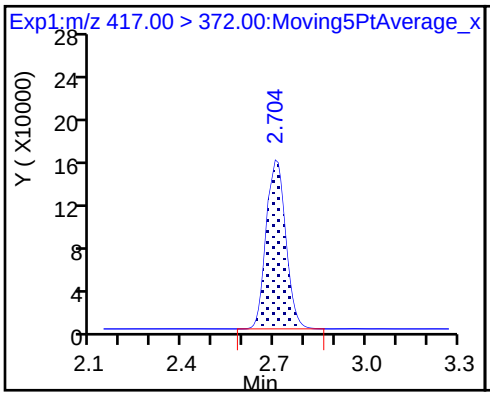
15 Perfluorooctanoic acid



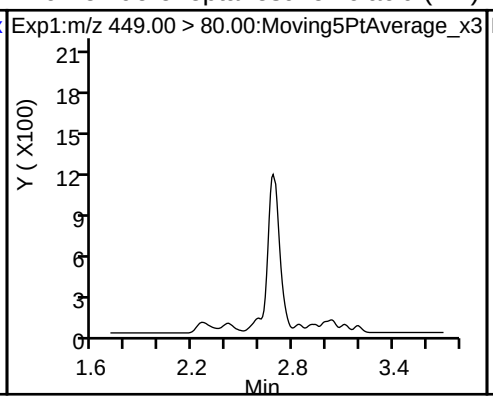
* 62 13C2-PFOA



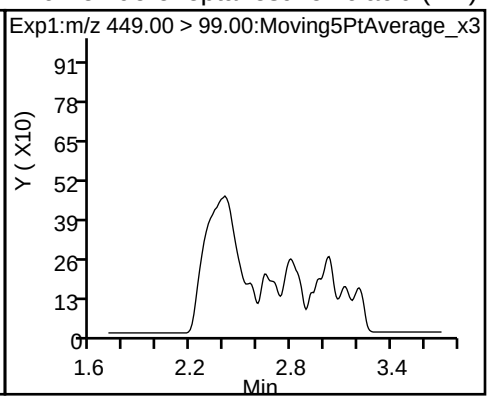
D 14 13C4 PFOA



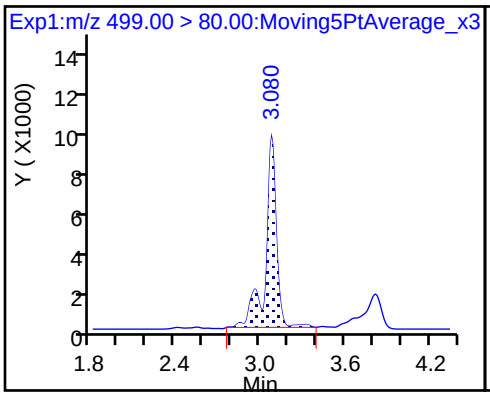
16 Perfluoroheptanesulfonic acid (ND)



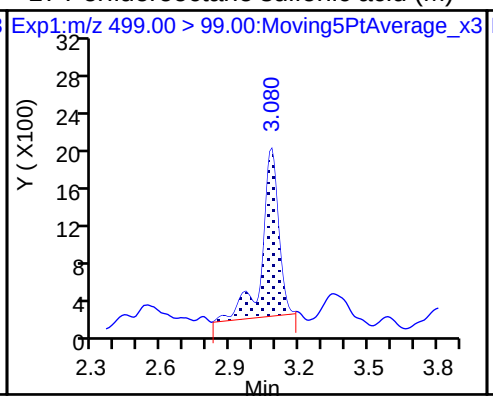
16 Perfluoroheptanesulfonic acid (ND)



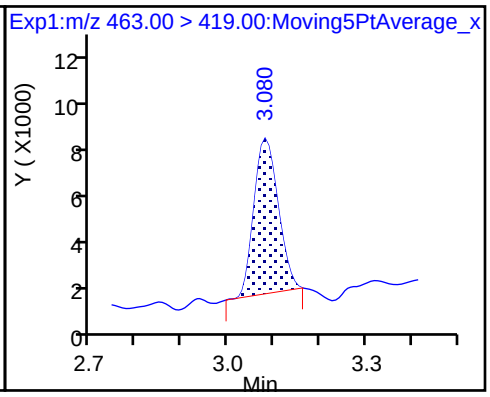
17 Perfluorooctane sulfonic acid



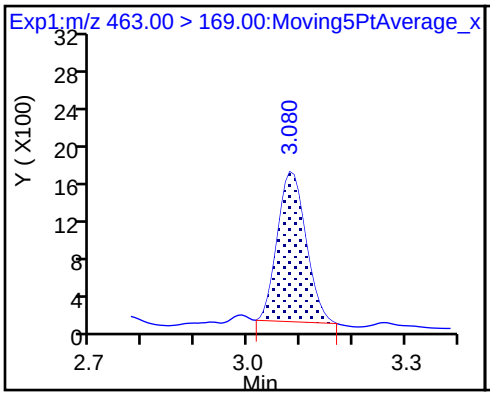
17 Perfluorooctane sulfonic acid (M)



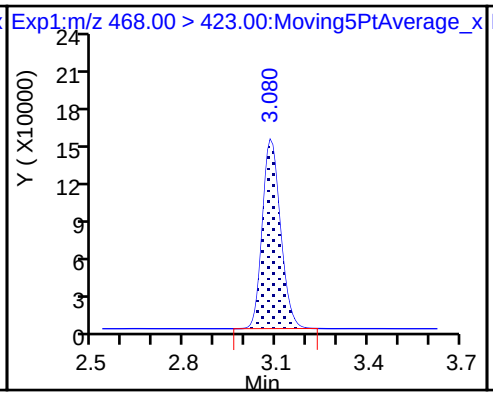
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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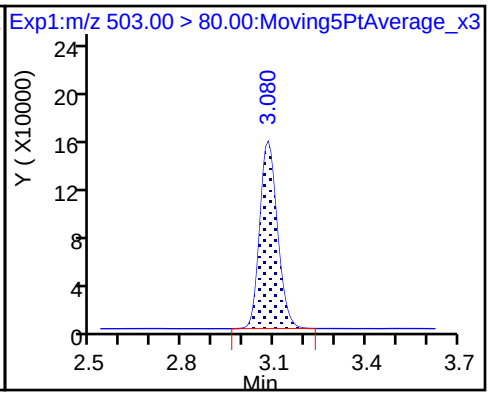
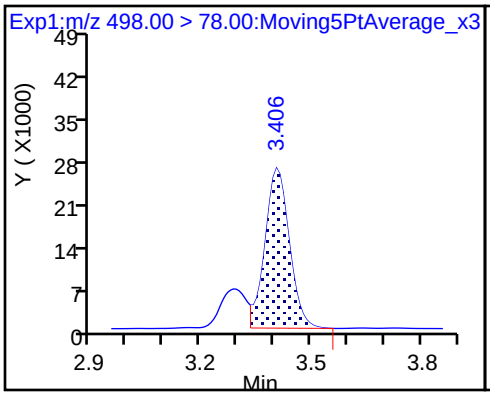
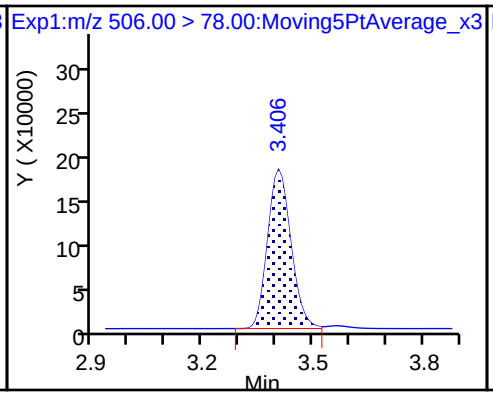


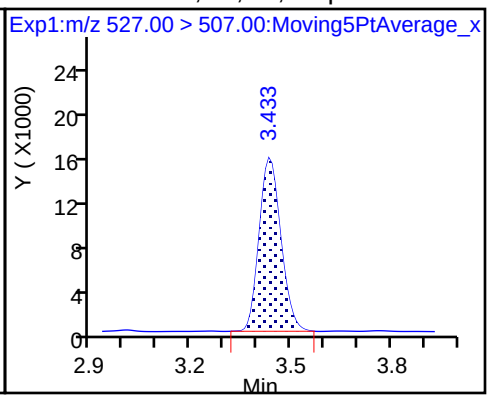
22 Perfluorooctane Sulfonamide



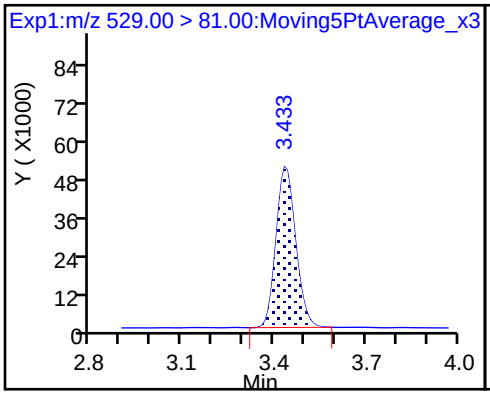
D 21 13C8 FOSA



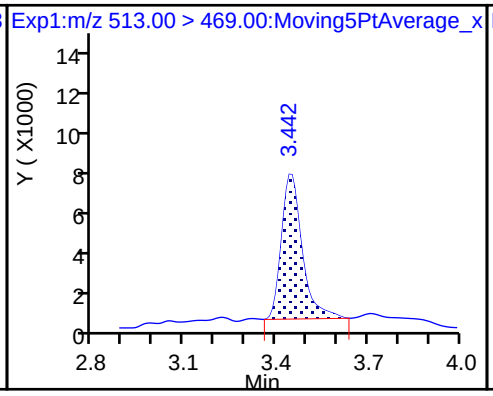
25 Sodium 1H,1H,2H,2H-perfluorodecane



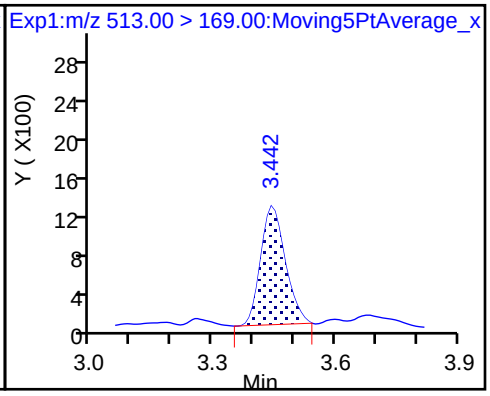
D 26 M2-8:2FTS



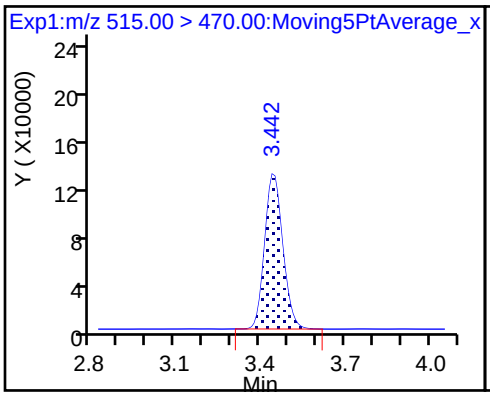
24 Perfluorodecanoic acid



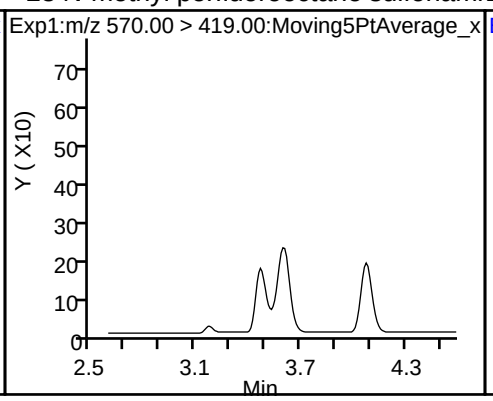
24 Perfluorodecanoic acid



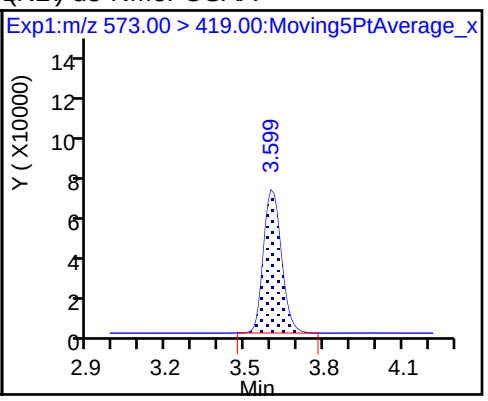
D 23 13C2 PFDA



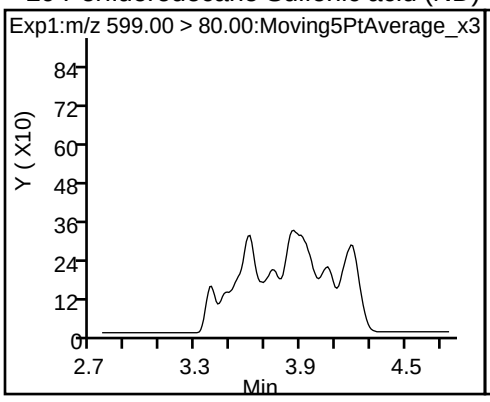
28 N-methyl perfluorooctane sulfonamid (ND)



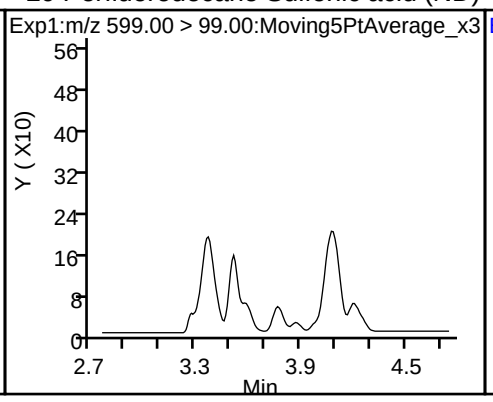
D 27 d3-NMeFOSAA



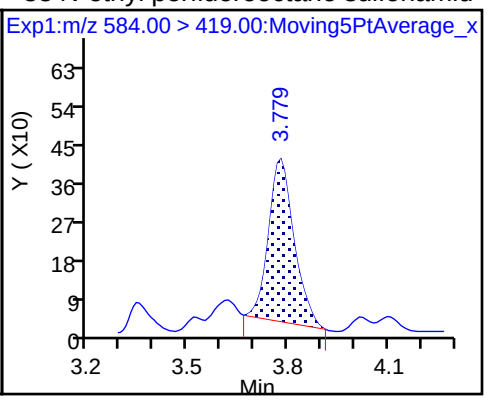
29 Perfluorodecane Sulfonic acid (ND)



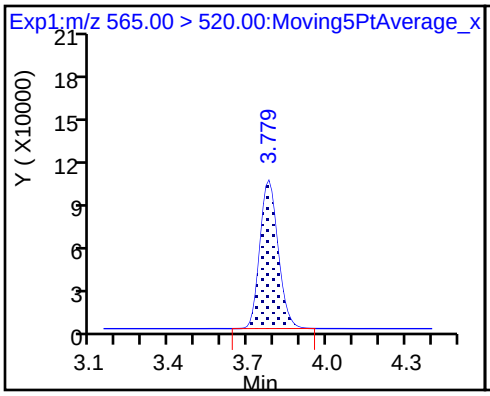
29 Perfluorodecane Sulfonic acid (ND)



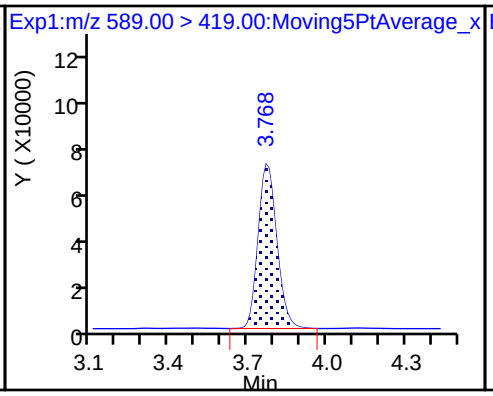
33 N-ethyl perfluorooctane sulfonamid



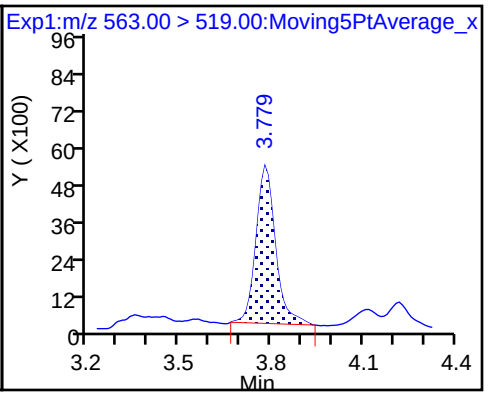
D 30 13C2 PFUnA



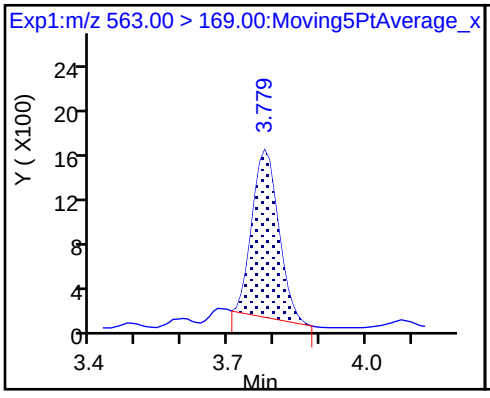
D 32 d5-NEtFOSAA



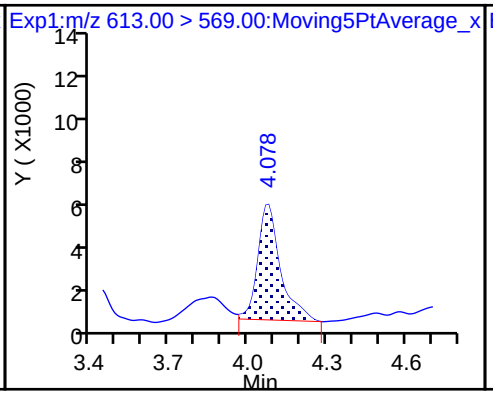
31 Perfluoroundecanoic acid



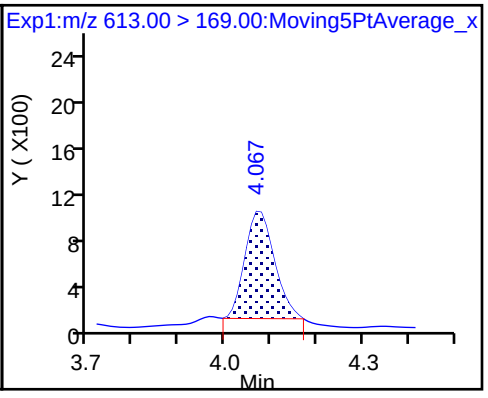
31 Perfluoroundecanoic acid



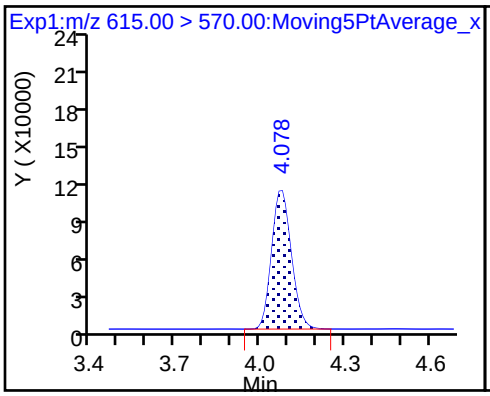
37 Perfluorododecanoic acid



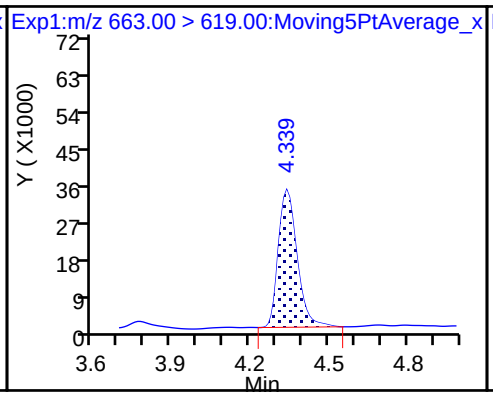
37 Perfluorododecanoic acid



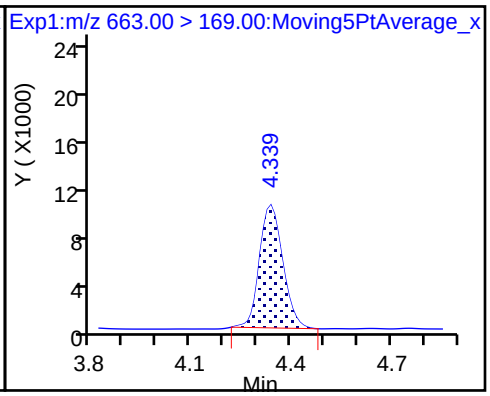
D 36 13C2 PFDoA



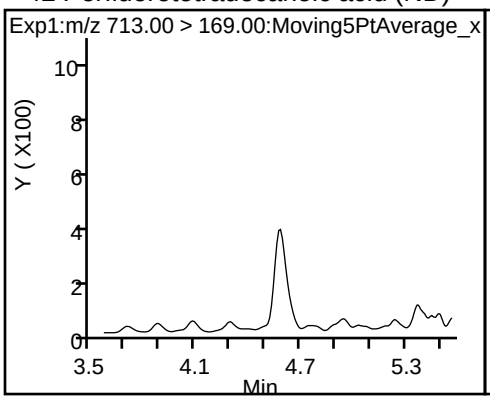
41 Perfluorotridecanoic acid



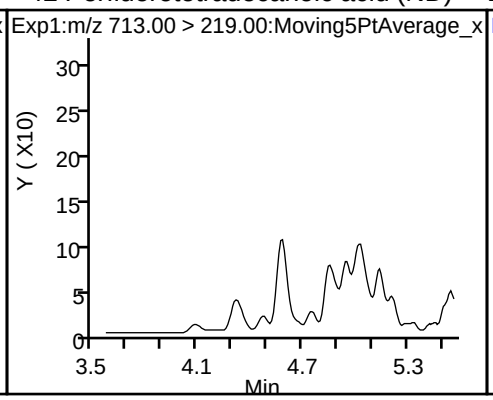
41 Perfluorotridecanoic acid



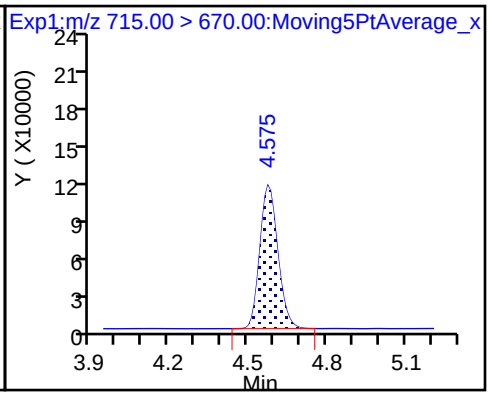
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007(4-5') | Lab Sample ID: 320-36761-8

Matrix: Solid | Lab File ID: 2018.03.20LLA_045.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:40

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/21/2018 02:02

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00026	B	0.00022	0.000031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000095	J	0.00022	0.000085
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00024		0.00022	0.000046
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00010	J	0.00022	0.000032
335-67-1	Perfluorooctanoic acid (PFOA)	0.00015	J	0.00022	0.000095
375-95-1	Perfluorononanoic acid (PFNA)	0.000092	J	0.00022	0.000040
335-76-2	Perfluorodecanoic acid (PFDA)	0.00014	J	0.00022	0.000024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00027		0.00022	0.000040
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00086		0.00022	0.000074
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.011		0.00022	0.000056
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00022		0.00022	0.000060
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000028	U	0.00022	0.000028
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000078	J	0.00022	0.000034
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000039	U	0.00022	0.000039
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00036	J B	0.00055	0.00022
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000043	U *	0.00022	0.000043
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00098		0.00022	0.000091
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00043	U	0.0022	0.00043
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00041	U	0.0022	0.00041
27619-97-2	6:2FTS	0.0048		0.0022	0.00017
39108-34-4	8:2FTS	0.012		0.0022	0.00028

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007(4-5') | Lab Sample ID: 320-36761-8

Matrix: Solid | Lab File ID: 2018.03.20LLA_045.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 09:40

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/21/2018 02:02

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	81		25-150
STL01893	13C5 PFPeA	84		25-150
STL00993	13C2 PFHxA	80		25-150
STL01892	13C4-PFHpA	93		25-150
STL00990	13C4 PFOA	83		25-150
STL00995	13C5 PFNA	78		25-150
STL00996	13C2 PFDA	60		25-150
STL00997	13C2 PFUnA	50		25-150
STL00998	13C2 PFDoA	50		25-150
STL02116	13C2-PFTeDA	62		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	85		25-150
STL00991	13C4 PFOS	63		25-150
STL01056	13C8 FOSA	50		25-150
STL02118	d3-NMeFOSAA	34		25-150
STL02117	d5-NEtFOSAA	37		25-150
STL02279	M2-6:2FTS	76		25-150
STL02280	M2-8:2FTS	54		25-150

Report Date: 22-Mar-2018 10:56:49 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_045.d
Lims ID: 320-36761-A-8-A
Client ID: SB007(4-5')
Sample Type: Client
Inject. Date: 21-Mar-2018 02:02:05 ALS Bottle#: 34 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-8-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:42 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:53:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.539	4591678	2.03		81.0	78802	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.447	-0.001	1.000	198944	0.1168			66.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.633	3373499	2.11		84.4	115664	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.709	-0.009	1.000	67745	0.0430			19.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.646	78213	1.98		85.2	399	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.740	3567140	2.00		80.0	75859	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	155642	0.1081			313	
313.00 > 119.00	1.986	1.997	-0.011	1.000	14008		11.11(5.03-15.10)		290	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.862	4041197	2.33		93.2	82720	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.006	76049	0.0454			96.2	
363.00 > 169.00	2.315	2.328	-0.013	1.000	27322		2.78(1.13-3.40)		356	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.867	4642370	2.01		84.8	76493	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	76939	0.0351			122	
399.00 > 99.00	2.328	2.341	-0.013	1.000	28531		2.70(1.50-4.49)		72.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.656	2.657	-0.001	0.989	801353	1.80		76.0	19794	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.656	2.665	-0.009	1.000	1220483	2.17			44672	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.685	2.681	0.004	1.000	3462079	2.07		82.7	97587	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.685	2.689	-0.003	1.000	104005	0.0673			30.3	
413.00 > 169.00	2.685	2.689	-0.003	1.000	60076		1.73(0.84-2.52)		186	
* 62 13C2-PFOA										
415.00 > 370.00	2.685	2.689	-0.003		4439440	2.50			91862	
D 18 13C4 PFOS										
503.00 > 80.00	3.055	3.051	0.004	1.138	2448586	1.51		63.3	47495	
D 19 13C5 PFNA										
468.00 > 423.00	3.062	3.058	0.004	1.141	2600013	1.94		77.6	64817	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.062	3.065	-0.003	1.002	182699	0.1647			409	
499.00 > 99.00	3.062	3.065	-0.003	1.002	37563		4.86(2.31-6.93)		197	
20 Perfluorononanoic acid										
463.00 > 419.00	3.062	3.065	-0.003	1.000	44081	0.0416			75.7	
463.00 > 169.00	3.055	3.065	-0.010	0.998	10525		4.19(1.90-5.69)		295	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.389	0.006	1.264	2923340	1.25		49.9	1145	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.398	-0.003	1.000	501135	0.4410			391	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.408	0.005	1.271	541386	1.30		54.2	10127	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.416	-0.003	1.000	1549316	5.45			34813	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.417	0.005	1.275	1670566	1.49		59.7	37553	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.425	-0.003	1.000	39500	0.0623			148	
513.00 > 169.00	3.431	3.425	0.006	1.003	5755		6.86(2.36-7.09)		324	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.570	0.006	1.332	313848	0.8492		34.0	16860	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.735	3.748	-0.013	1.000	9141	0.0140			110	M
599.00 > 99.00	3.735	3.748	-0.013	1.000	3175		2.88(1.39-4.16)		66.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.746	3.748	-0.002	1.395	330594	0.9356		37.4	835	
D 30 13C2 PFUnA										
565.00 > 520.00	3.756	3.748	0.008	1.399	1102924	1.26		50.3	57515	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.746	3.758	-0.012	1.000	1509	0.0117			39.2	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.756	3.758	-0.002	1.000	44299	0.1198			123	
563.00 > 169.00	3.756	3.758	-0.002	1.000	13522		3.28(2.12-6.36)		1091	
D 36 13C2 PFDoA										
615.00 > 570.00	4.053	4.046	0.007	1.510	1034226	1.24		49.8	7438	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.053	4.056	-0.003	1.000	164143	0.3879			40.1	
613.00 > 169.00	4.053	4.056	-0.003	1.000	40742		4.03(2.13-6.40)		772	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.314	4.317	-0.003	1.000	2191015	5.15			663	
663.00 > 169.00	4.314	4.317	-0.003	1.000	684367		3.20(1.25-3.76)		9512	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.544	0.007	1.695	1171393	1.54		61.8	10227	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.554	-0.003	1.000	13082	0.1012			238	
713.00 > 219.00	4.551	4.554	-0.003	1.000	9737		1.34(0.71-2.13)		126	

QC Flag Legend

Review Flags

M - Manually Integrated

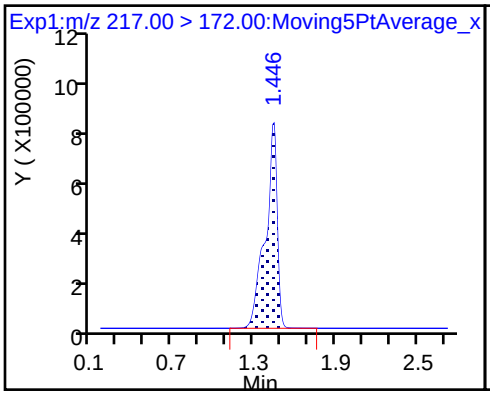
Report Date: 22-Mar-2018 10:56:49 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

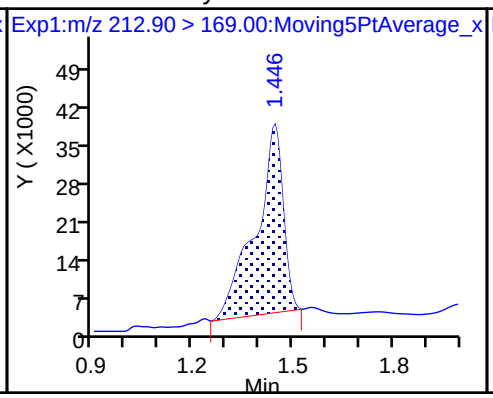
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_045.d

Injection Date:	21-Mar-2018 02:02:05	Instrument ID:	A8_N		
Lims ID:	320-36761-A-8-A	Lab Sample ID:	320-36761-8		
Client ID:	SB007(4-5')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

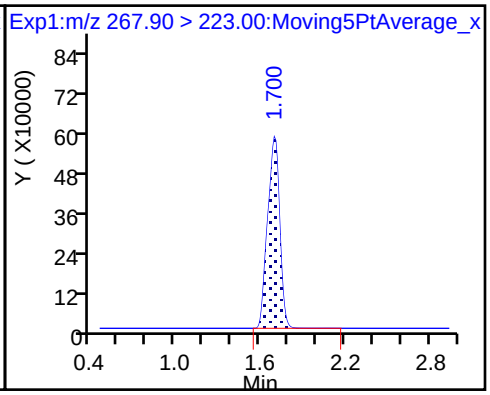
D 1 13C4 PFBA



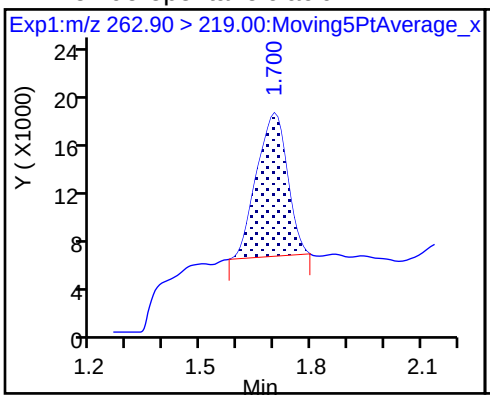
2 Perfluorobutyric acid



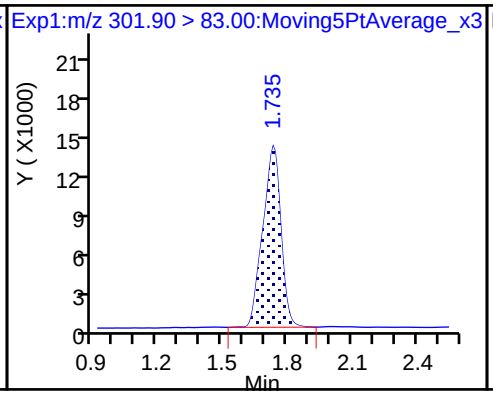
D 3 13C5-PFPeA



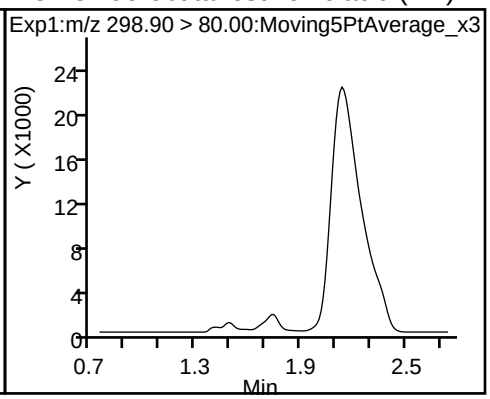
4 Perfluoropentanoic acid



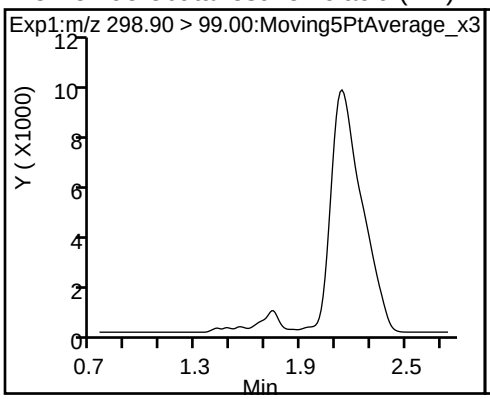
D 47 13C3-PFBS



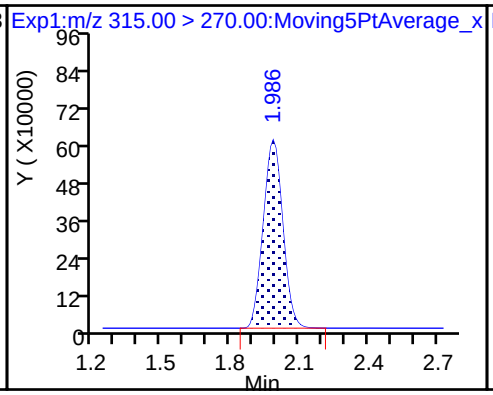
5 Perfluorobutanesulfonic acid (ND)



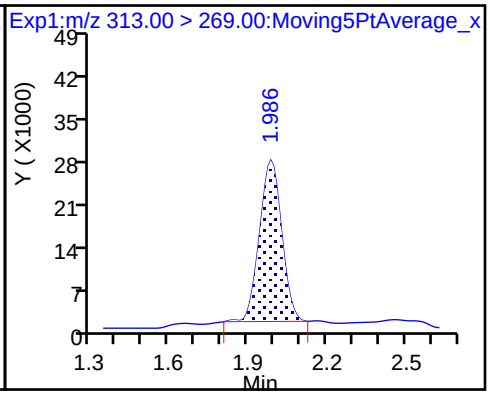
5 Perfluorobutanesulfonic acid (ND)



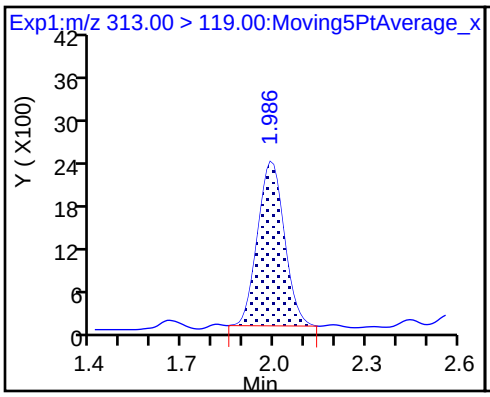
D 7 13C2 PFHxA



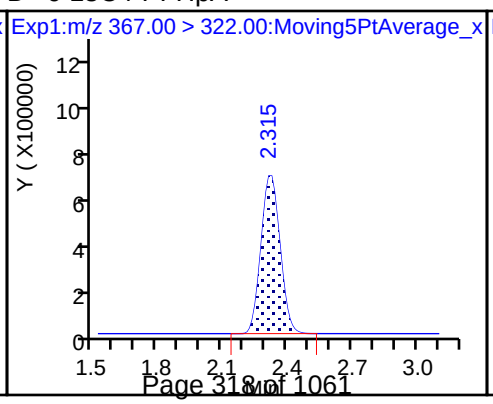
6 Perfluorohexanoic acid



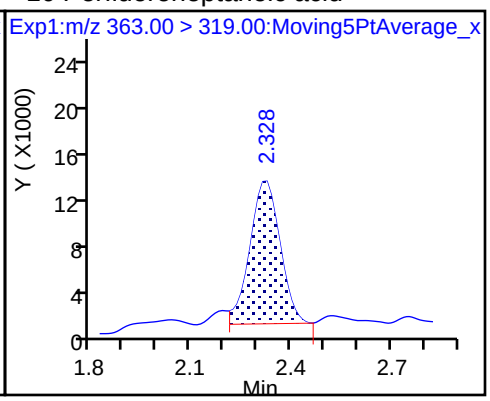
6 Perfluorohexanoic acid



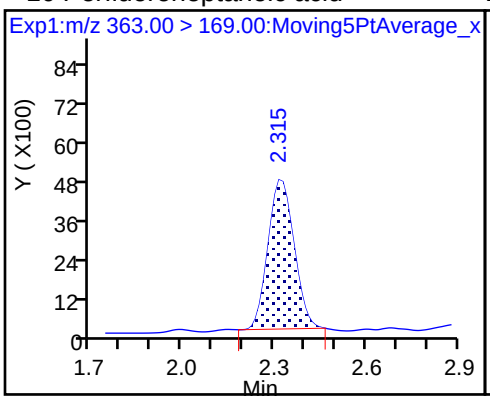
D 9 13C4-PFHpA



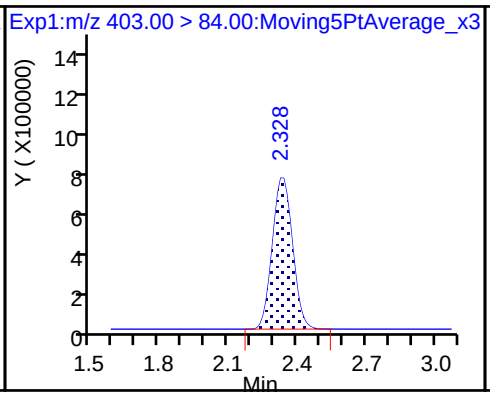
10 Perfluoroheptanoic acid



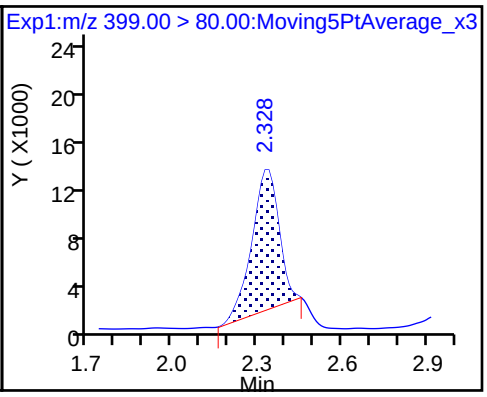
10 Perfluoroheptanoic acid



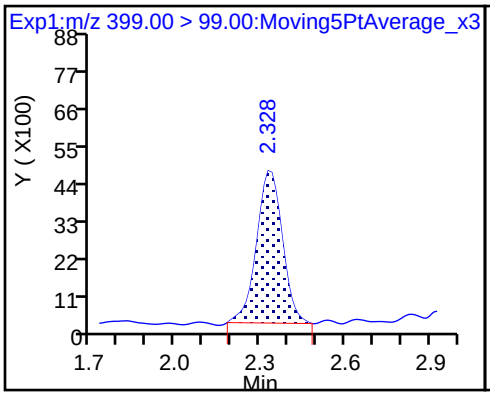
D 11 18O2 PFHxS



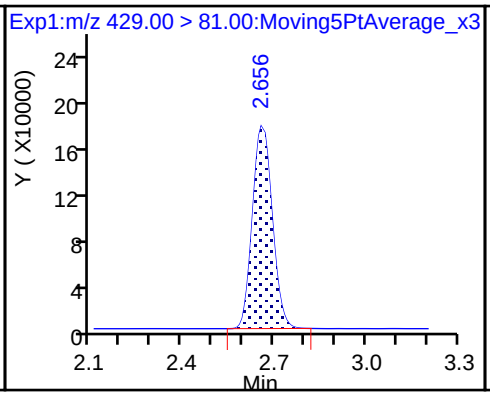
8 Perfluorohexanesulfonic acid



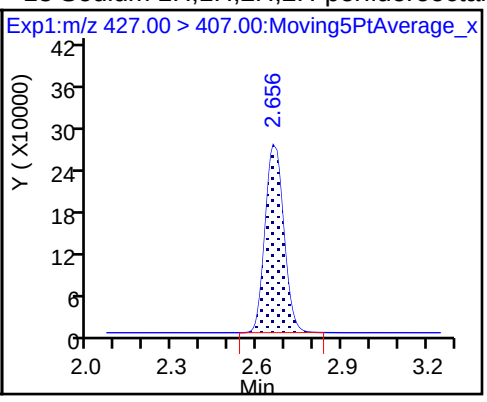
8 Perfluorohexanesulfonic acid



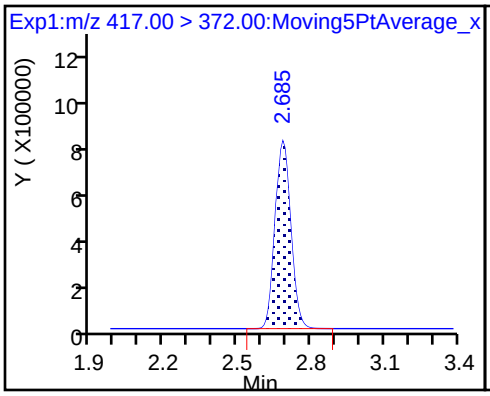
D 12 M2-6:2FTS



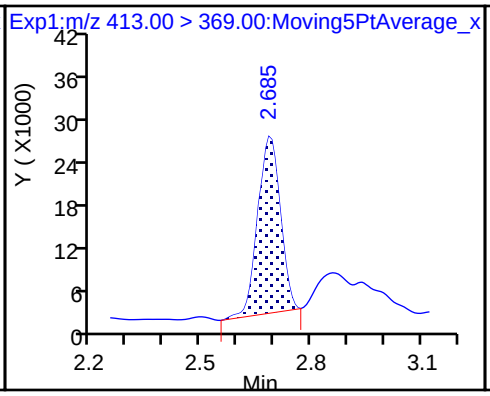
13 Sodium 1H,1H,2H,2H-perfluorooctane



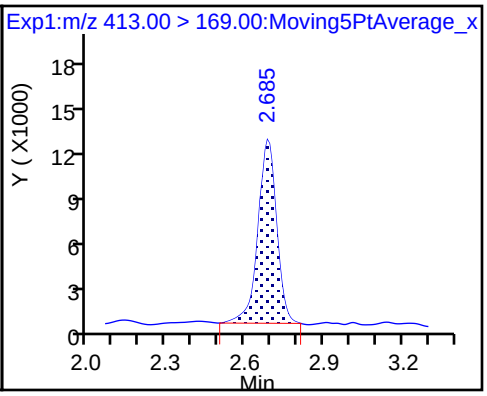
D 14 13C4 PFOA



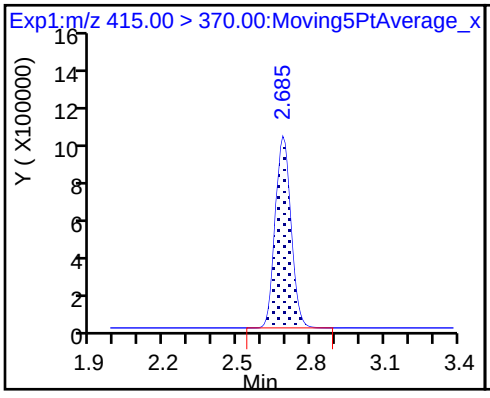
15 Perfluorooctanoic acid



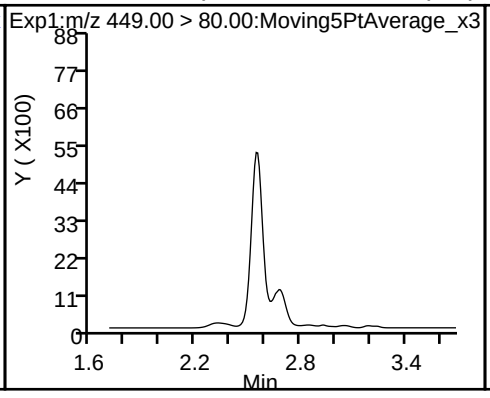
15 Perfluorooctanoic acid



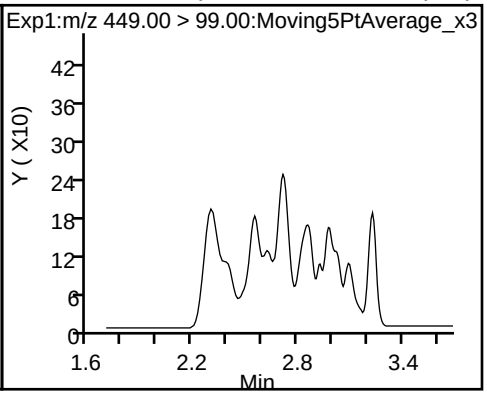
* 62 13C2-PFOA



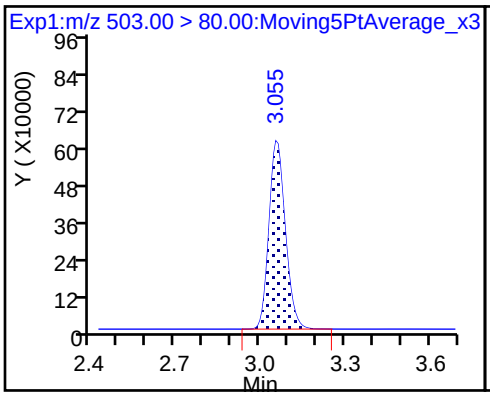
16 Perfluoroheptanesulfonic acid (ND)



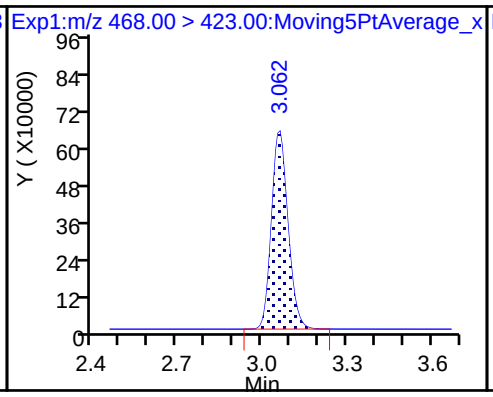
16 Perfluoroheptanesulfonic acid (ND)



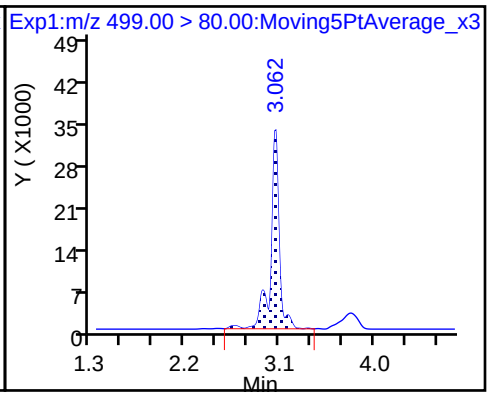
D 18 13C4 PFOS



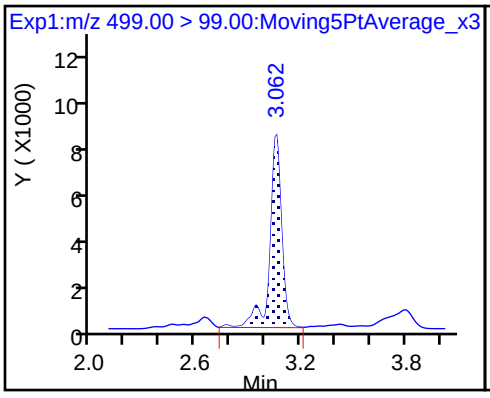
D 19 13C5 PFNA



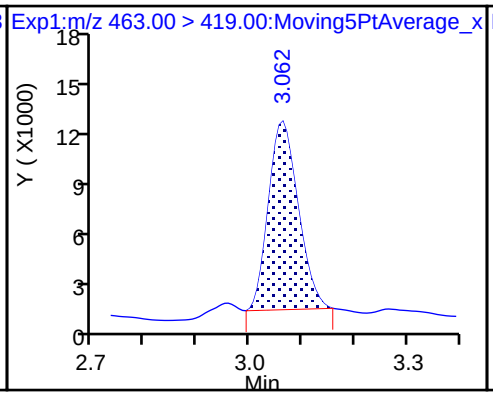
17 Perfluorooctane sulfonic acid



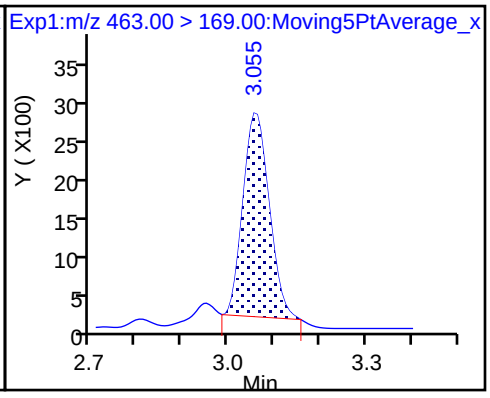
17 Perfluorooctane sulfonic acid



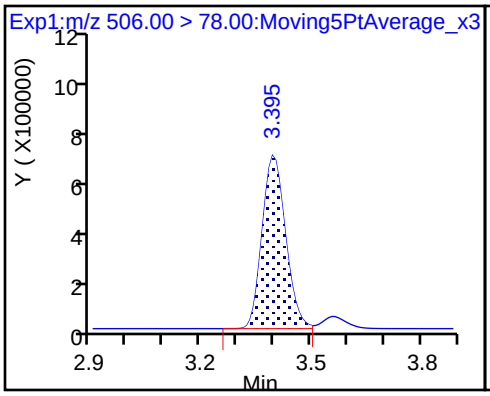
20 Perfluorononanoic acid



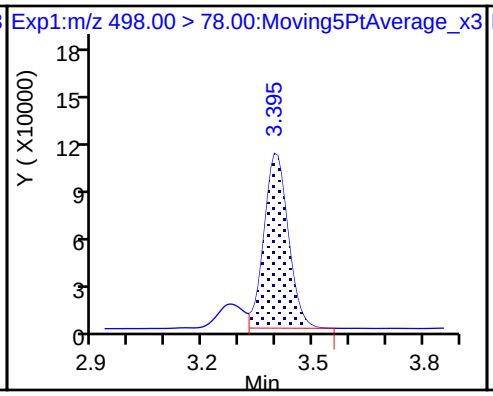
20 Perfluorononanoic acid



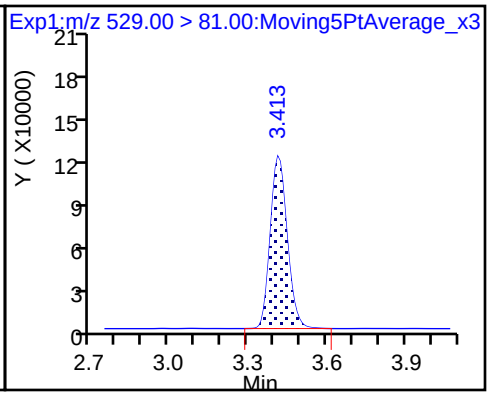
D 21 13C8 FOSA



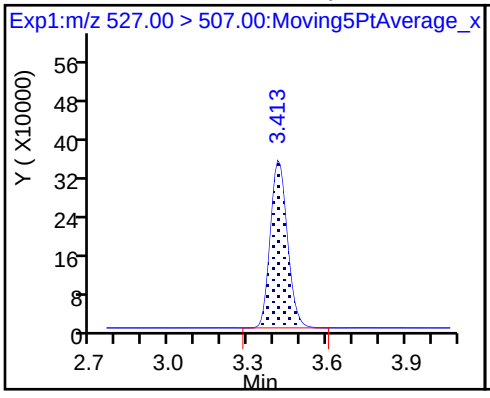
22 Perfluorooctane Sulfonamide



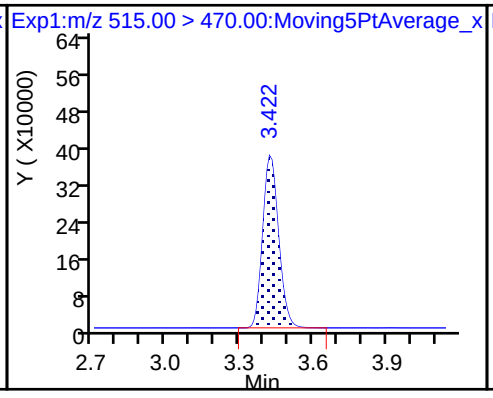
D 26 M2-8:2FTS



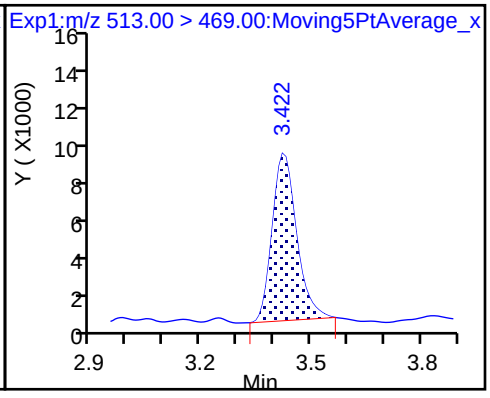
25 Sodium 1H,1H,2H,2H-perfluorodecane



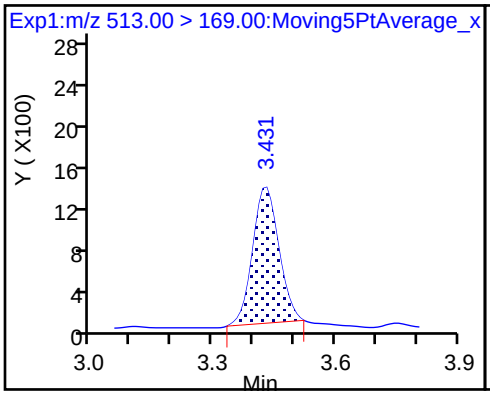
D 23 13C2 PFDA



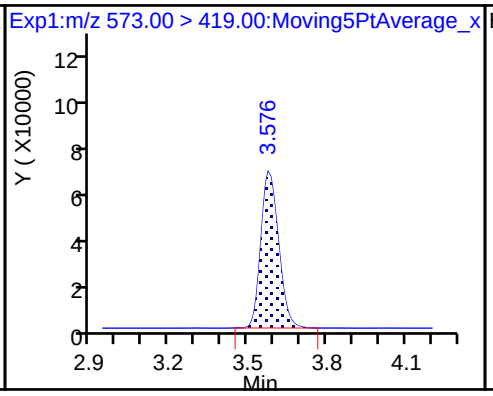
24 Perfluorodecanoic acid



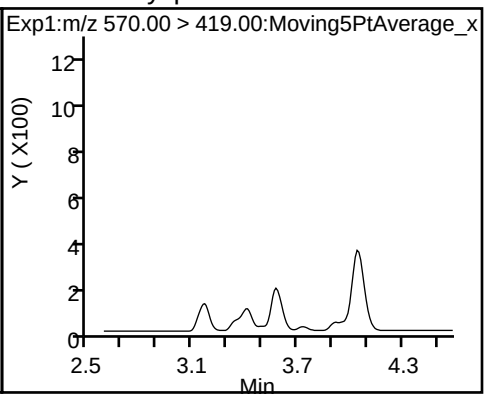
24 Perfluorodecanoic acid



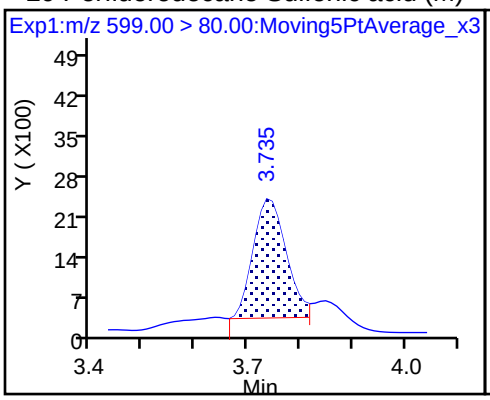
D 27 d3-NMeFOSAA



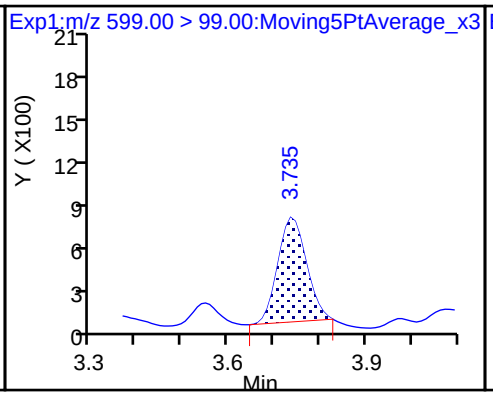
28 N-methyl perfluorooctane sulfonami (ND)



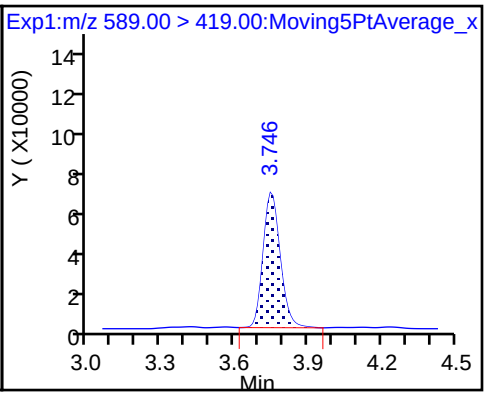
29 Perfluorodecane Sulfonic acid (M)



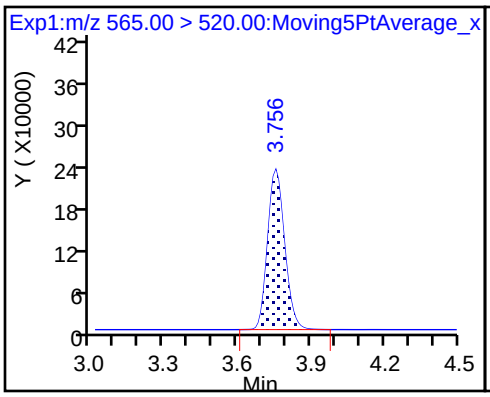
29 Perfluorodecane Sulfonic acid



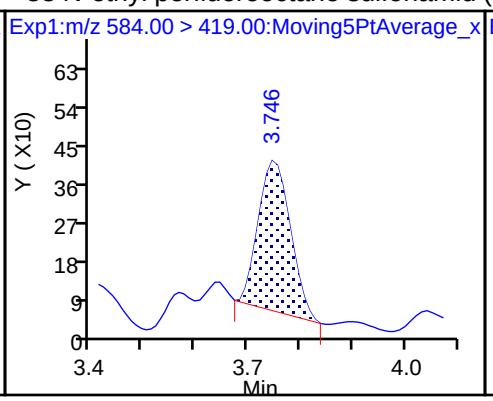
D 32 d5-NEtFOSAA



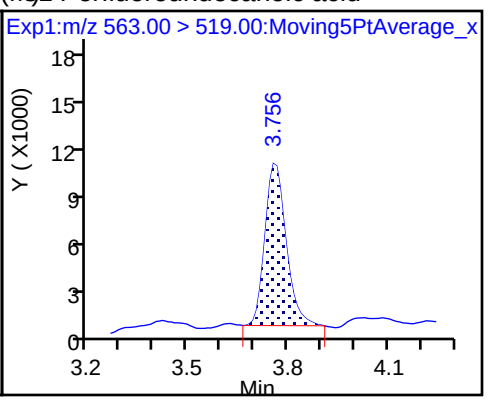
D 30 13C2 PFUnA



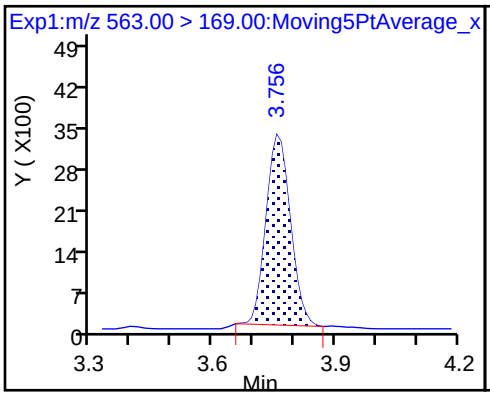
33 N-ethyl perfluorooctane sulfonamid (M)



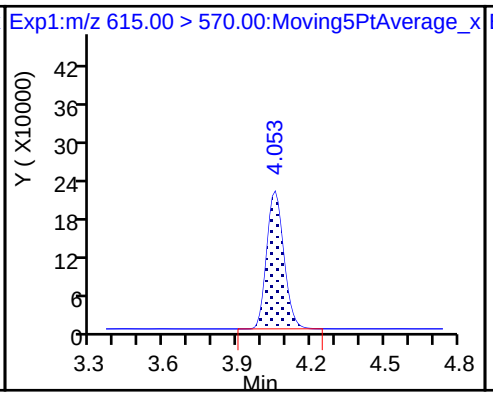
31 Perfluoroundecanoic acid



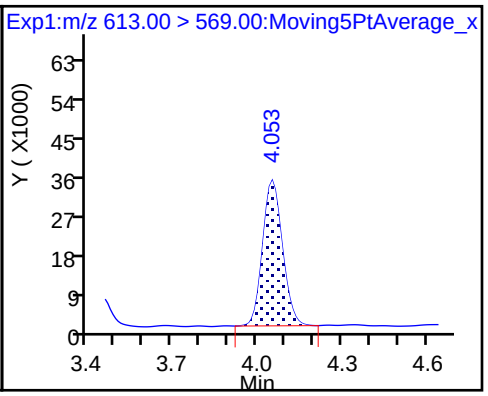
31 Perfluoroundecanoic acid



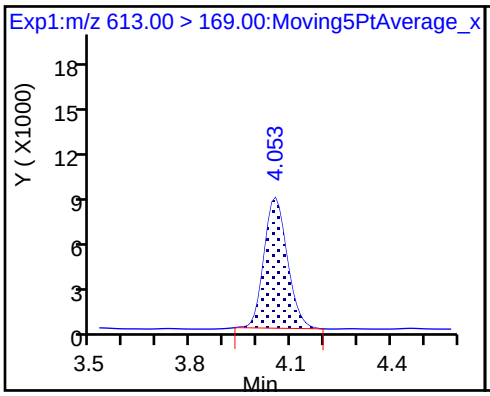
D 36 13C2 PFDoA



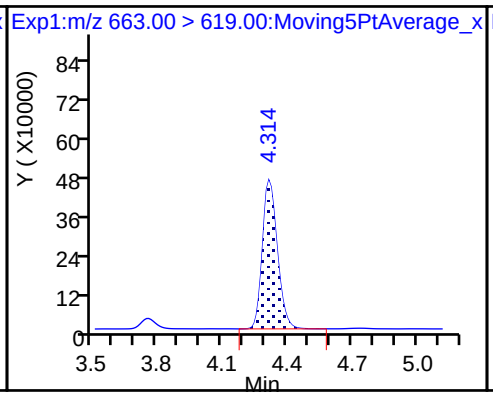
37 Perfluorododecanoic acid



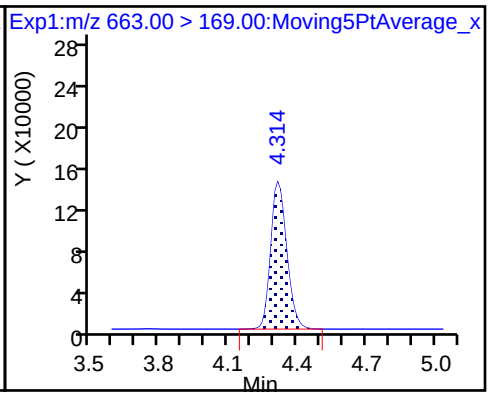
37 Perfluorododecanoic acid



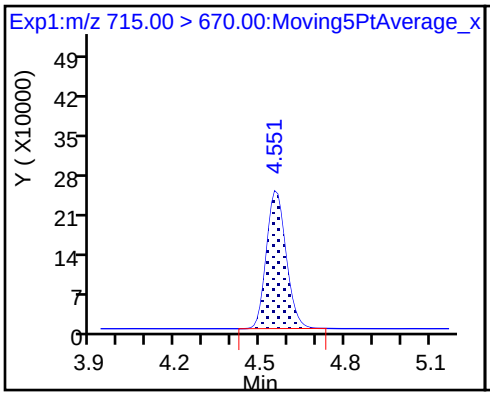
41 Perfluorotridecanoic acid



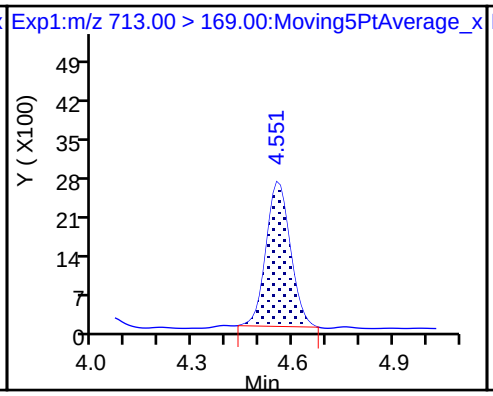
41 Perfluorotridecanoic acid



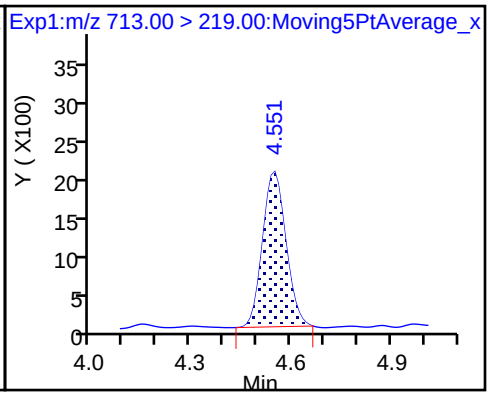
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

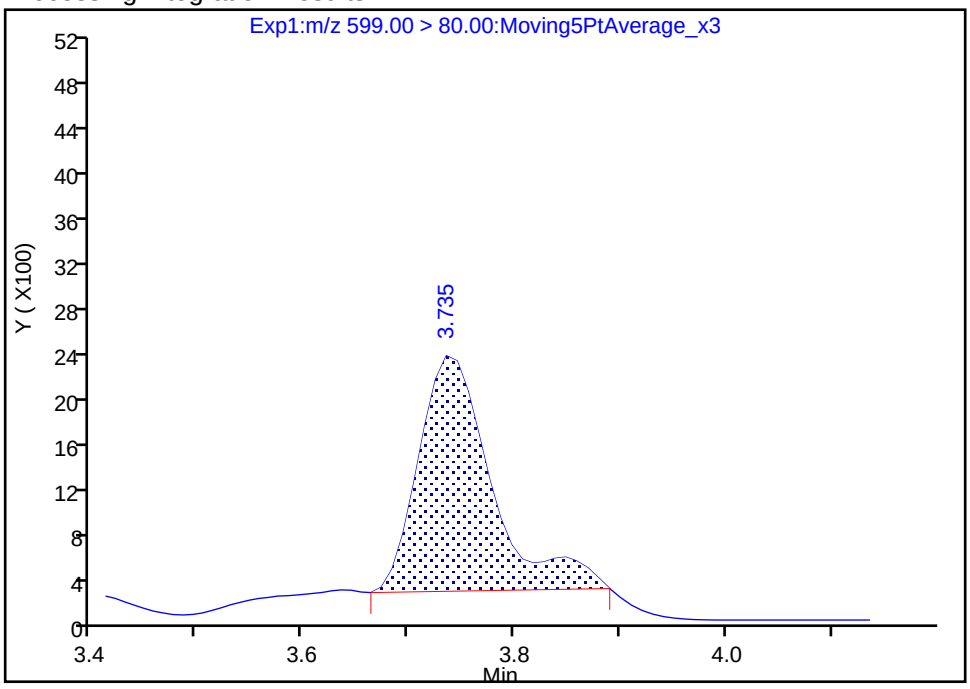
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_045.d				
Injection Date:	21-Mar-2018 02:02:05	Instrument ID:	A8_N		
Lims ID:	320-36761-A-8-A	Lab Sample ID:	320-36761-8		
Client ID:	SB007(4-5')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

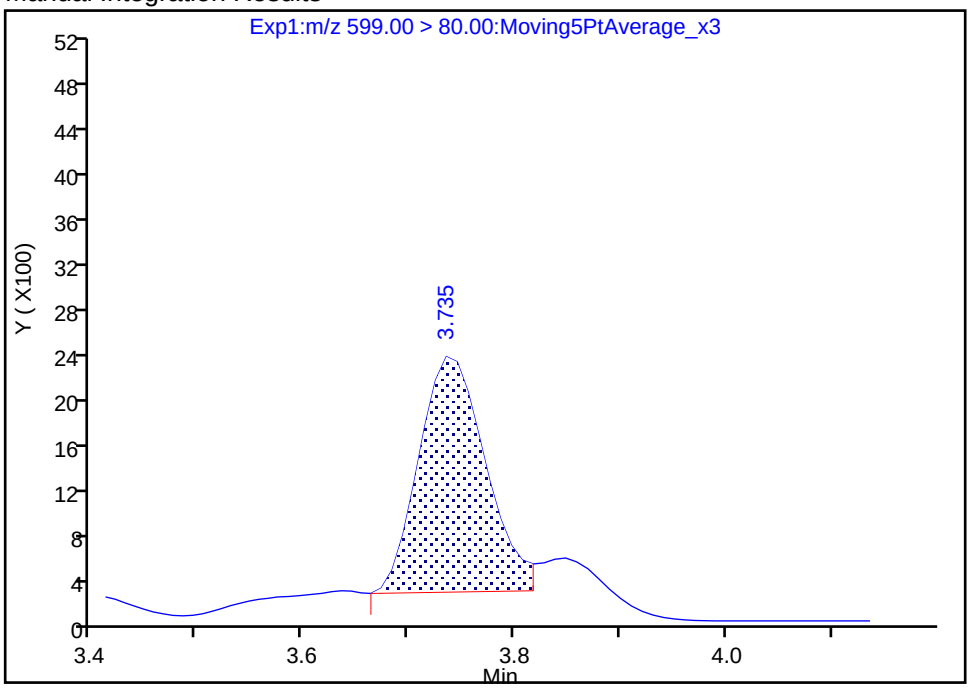
Processing Integration Results

RT: 3.74
Area: 10044
Amount: 0.015354
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 9141
Amount: 0.013974
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:52:37

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

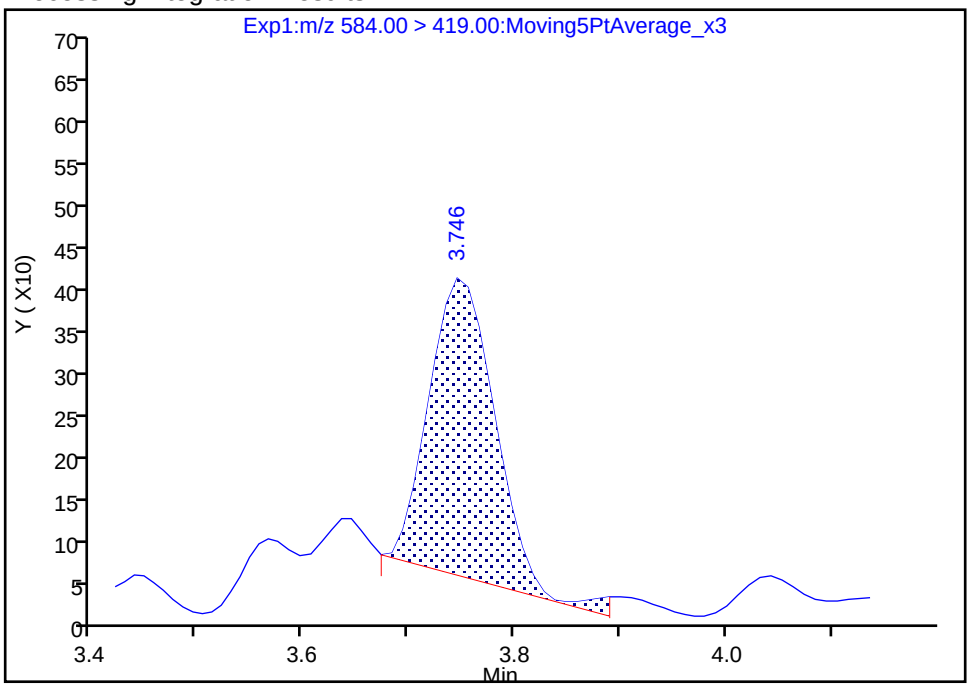
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_045.d				
Injection Date:	21-Mar-2018 02:02:05	Instrument ID:	A8_N		
Lims ID:	320-36761-A-8-A	Lab Sample ID:	320-36761-8		
Client ID:	SB007(4-5')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	24
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

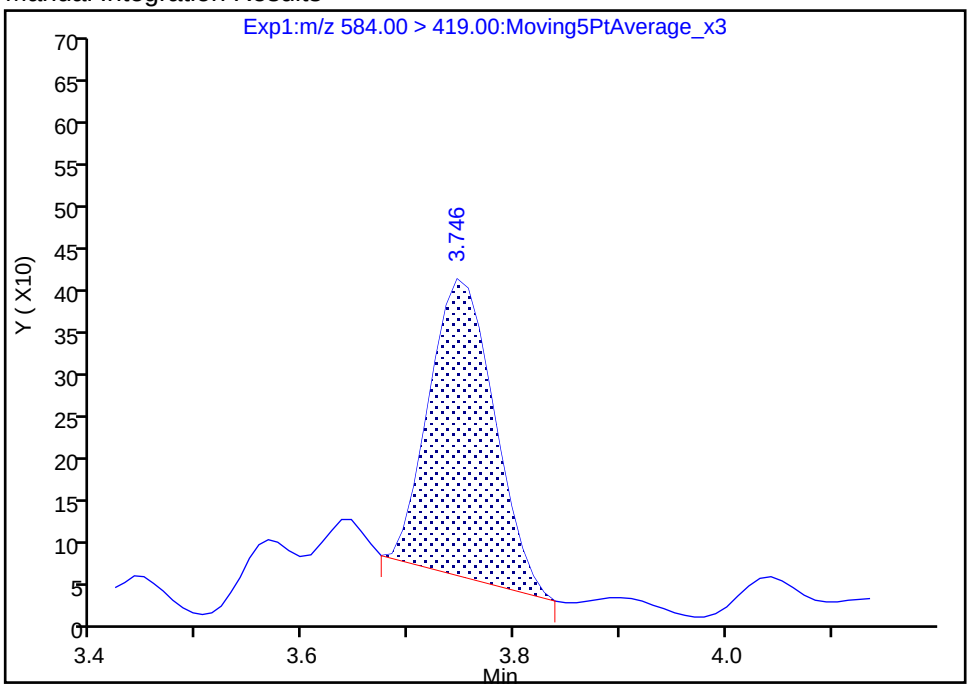
Processing Integration Results

RT: 3.75
Area: 1548
Amount: 0.011956
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 1509
Amount: 0.011655
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:52:58

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB007(4-5') RE Lab Sample ID: 320-36761-8 RE

Matrix: Solid Lab File ID: 2018.03.28LLFF_013.d

Analysis Method: 537 (modified) Date Collected: 03/05/2018 09:40

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) Date Analyzed: 03/29/2018 00:57

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.000055*	*J H*	*0.00022*	*0.000042*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	64		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_013.d
Lims ID: 320-36761-A-8-B
Client ID: SB007(4-5')
Sample Type: Client
Inject. Date: 29-Mar-2018 00:57:23 ALS Bottle#: 20 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-A-8-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:02:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.435	0.011	1.004	74433	0.0404			15.8	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.533	4885834	1.69		67.5	118880	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.709	-0.001	0.632	3380169	1.76		70.4	61844	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	69390	1.58		68.1	480	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	63166	0.0438			64.0	
313.00 > 119.00	1.997	1.998	-0.001	1.000	6508		9.71(5.03-15.10)		50.4	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3522951	1.66		66.3	82652	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.328	0.012	1.006	17722	0.0111			8.9	
363.00 > 169.00	2.341	2.328	0.012	1.006	7215		2.46(1.13-3.40)		10.7	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	-0.001	0.995	55694	0.0272			275	
399.00 > 99.00	2.353	2.341	0.012	1.000	21568		2.58(1.50-4.49)		113	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.861	3856303	1.84		73.6	77534	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.368	-0.015	0.871	4348019	1.68		71.1	116505	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.673	0.006	1.000	458216	0.8593			4667	
* 62 13C2-PFOA										
415.00 > 370.00	2.703	2.697	0.006		5717273	2.50			113778	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.703	2.697	0.006	1.000	65209	0.0422			24.8	
413.00 > 169.00	2.703	2.697	0.006	1.000	32532		2.00(0.84-2.52)		98.5	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.697	-0.018	0.991	726314	1.67		70.4	22512	
D 14 13C4 PFOA										
417.00 > 372.00	2.703	2.721	-0.018	1.000	3417028	1.59		63.8	105520	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	126881	0.0948			316	
499.00 > 99.00	3.072	3.072	0.0	1.000	31198		4.07(2.31-6.93)		284	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	29370	0.0246			28.0	
463.00 > 169.00	3.072	3.072	0.0	1.000	6351		4.62(1.90-5.69)		124	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.137	2992524	1.58		63.3	69419	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.137	2872548	1.53		63.9	52105	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.407	-0.001	1.000	745652	0.4875			455	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.417	-0.011	1.260	3878796	1.53		61.2	831	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.426	-0.002	0.997	1457871	3.35			20923	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.435	0.007	1.003	37740	0.0373			154	
513.00 > 169.00	3.442	3.435	0.007	1.003	7113		5.31(2.36-7.09)		237	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.453	-0.020	1.270	816848	1.39		58.1	17411	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.462	-0.029	1.270	2562050	1.55		61.9	46311	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.589	3.611	-0.022	1.328	1101284	1.26		50.5	32012	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.748	3.748	0.0	1.000	20543	0.0251			185	M
599.00 > 99.00	3.748	3.748	0.0	1.000	6646		3.09(1.39-4.16)		205	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	90063	0.1299			467	
563.00 > 169.00	3.769	3.769	0.0	1.000	20924		4.30(2.12-6.36)		1253	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.769	3.769	0.0	1.003	3539	0.007898			47.9	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.391	1199028	1.21		48.3	3882	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.394	2011033	1.36		54.3	67820	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.057	0.011	1.000	386389	0.4183			313	
613.00 > 169.00	4.068	4.057	0.011	1.000	109544		3.53(2.13-6.40)		2178	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.089	-0.021	1.505	2206794	1.31		52.5	18521	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.318	0.011	1.000	5786353	5.96			2964	
663.00 > 169.00	4.329	4.318	0.011	1.000	1777866		3.25(1.25-3.76)		27336	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	38495	0.1375			694	
713.00 > 219.00	4.554	4.564	-0.010	0.998	27497		1.40(0.71-2.13)		553	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.689	2824177	1.37		55.0	17571	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_013.d

Injection Date: 29-Mar-2018 00:57:23 Instrument ID: A8_N

Lims ID: 320-36761-A-8-B Lab Sample ID: 320-36761-8

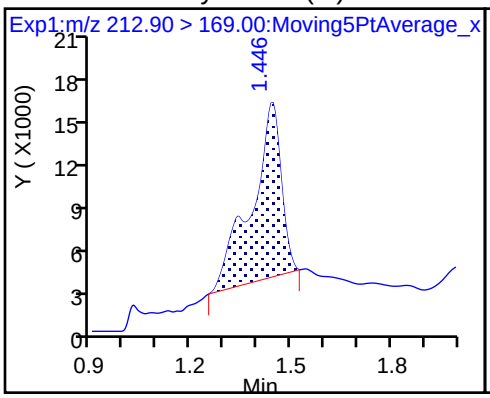
Client ID: SB007(4-5')

Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 10

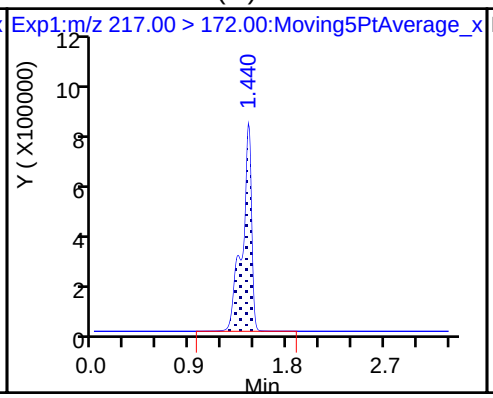
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

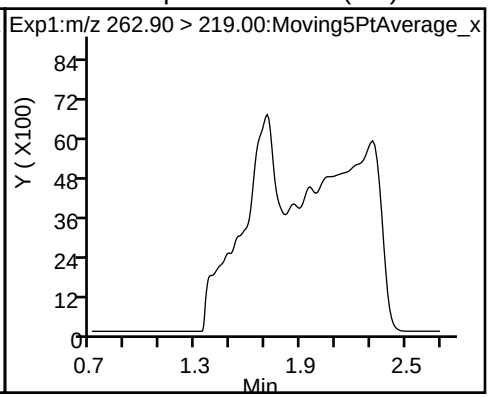
2 Perfluorobutyric acid (M)



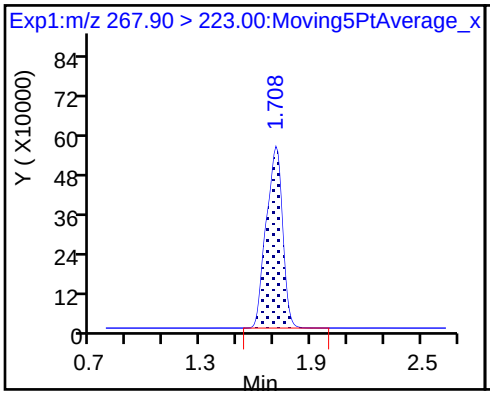
D 1 13C4 PFBA (M)



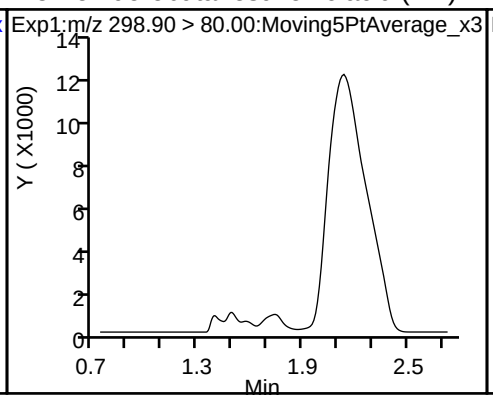
4 Perfluoropentanoic acid (ND)



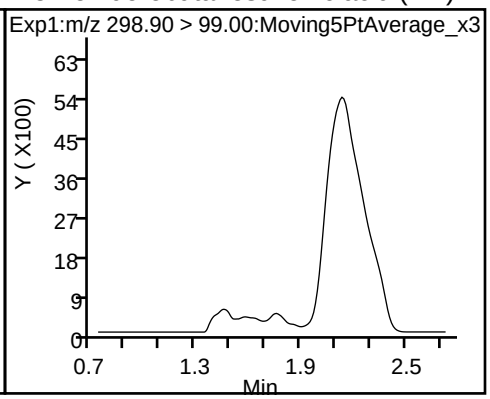
D 3 13C5-PFPeA



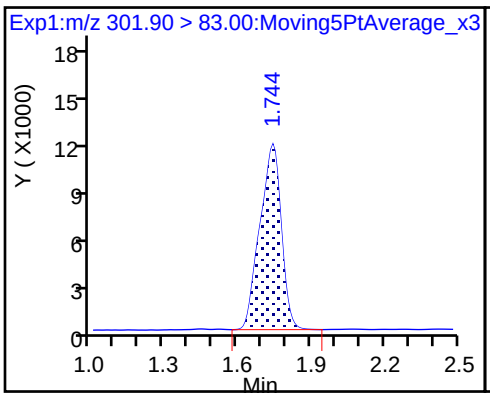
5 Perfluorobutanesulfonic acid (ND)



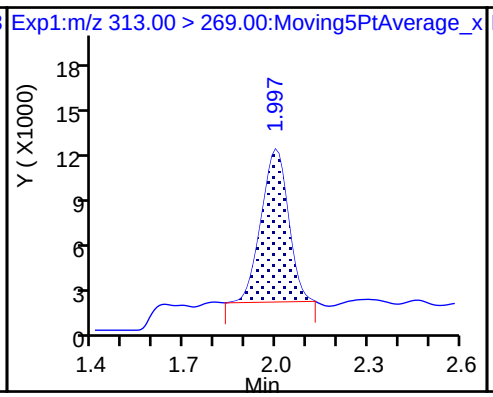
5 Perfluorobutanesulfonic acid (ND)



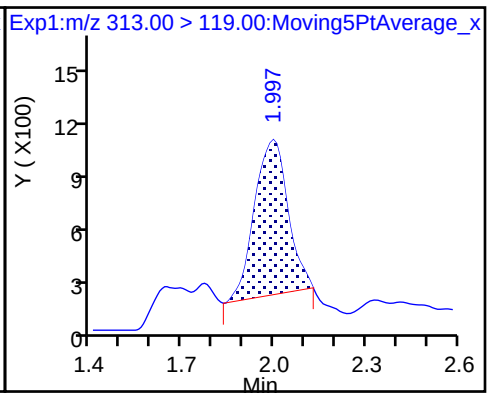
D 47 13C3-PFBS



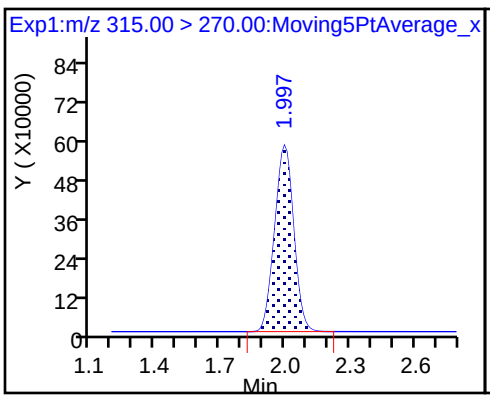
6 Perfluorohexanoic acid



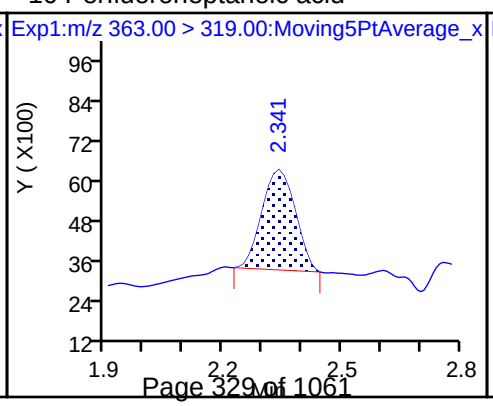
6 Perfluorohexanoic acid



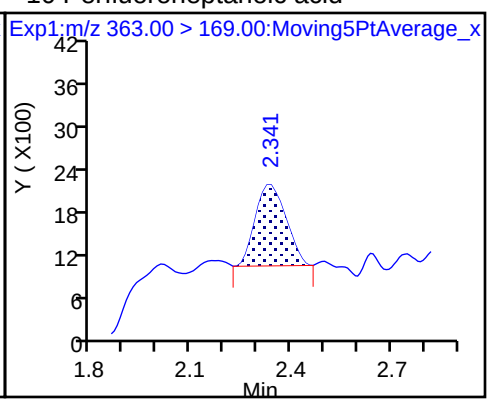
D 7 13C2 PFHxA



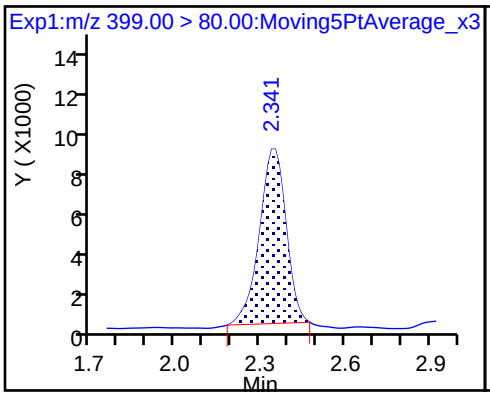
10 Perfluoroheptanoic acid



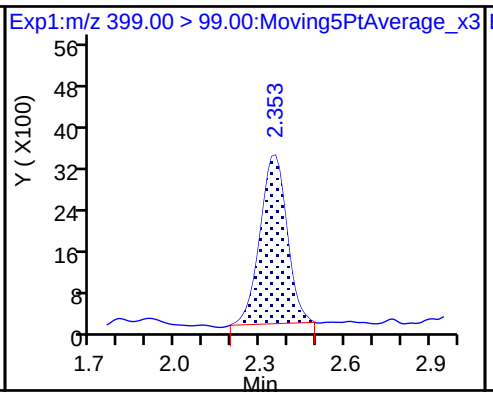
10 Perfluoroheptanoic acid



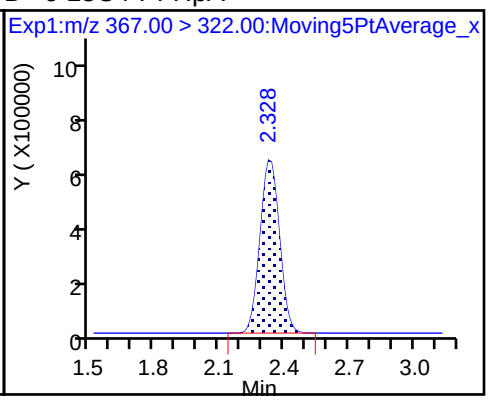
8 Perfluorohexanesulfonic acid



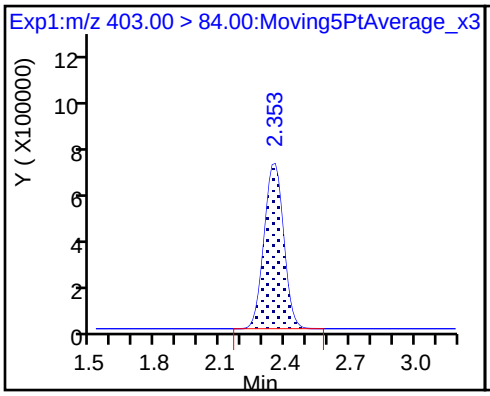
8 Perfluorohexanesulfonic acid



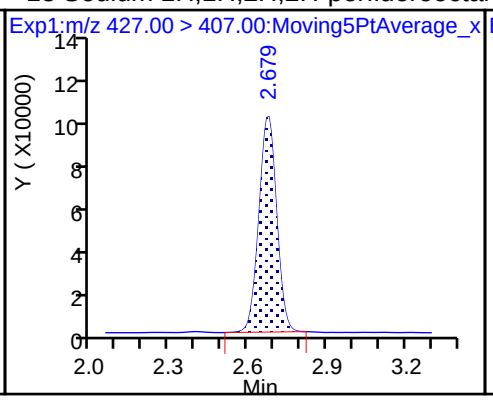
D 9 13C4-PFHpA



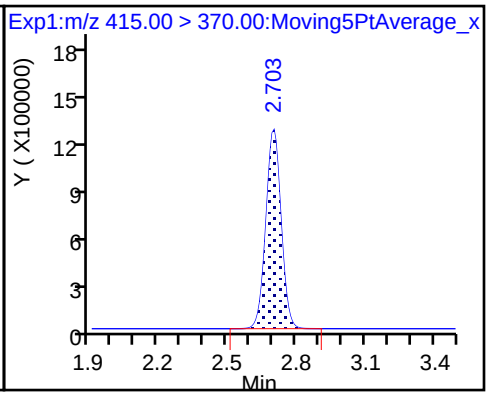
D 11 18O2 PFHxS



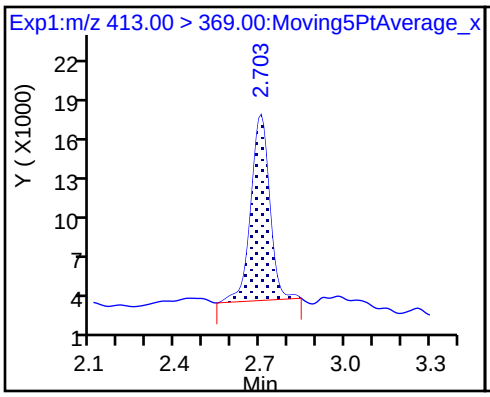
13 Sodium 1H,1H,2H,2H-perfluorooctane



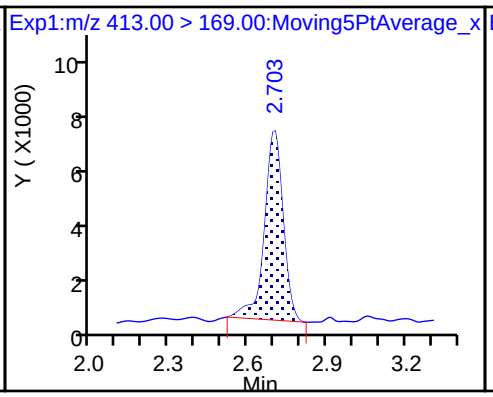
M2 6:2 13C2-PFOA



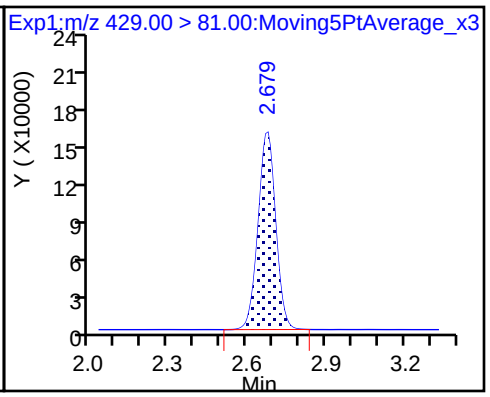
15 Perfluorooctanoic acid



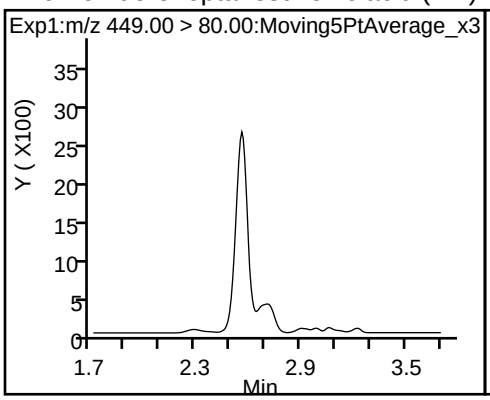
15 Perfluorooctanoic acid



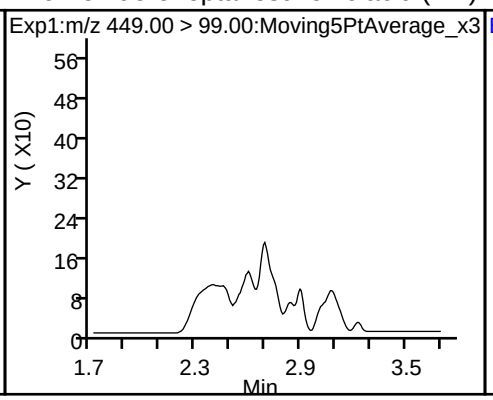
D 12 M2-6:2FTS



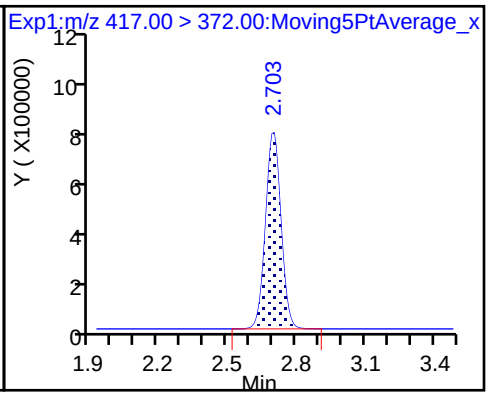
16 Perfluoroheptanesulfonic acid (ND)



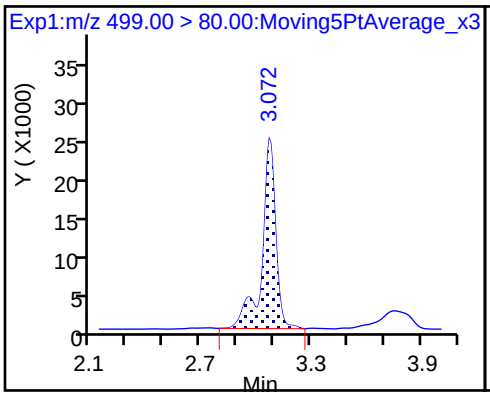
16 Perfluoroheptanesulfonic acid (ND)



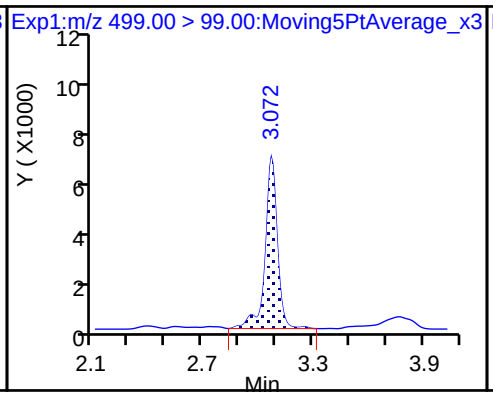
D 14 13C4 PFOA



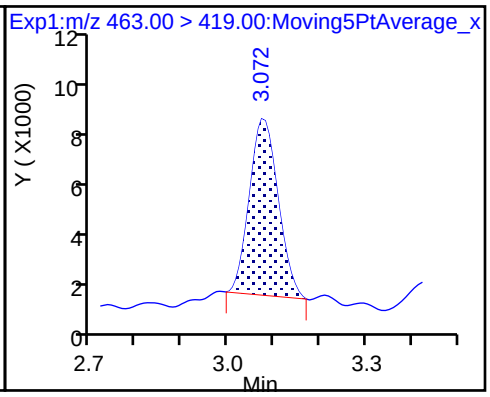
17 Perfluorooctane sulfonic acid



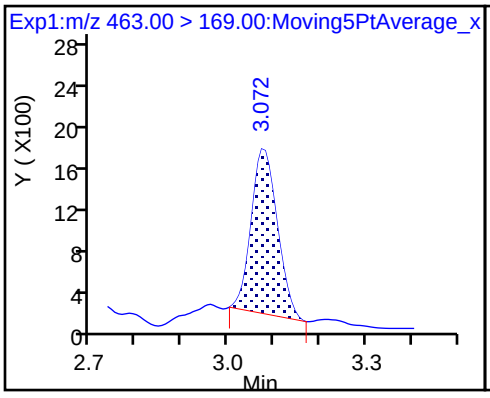
17 Perfluorooctane sulfonic acid



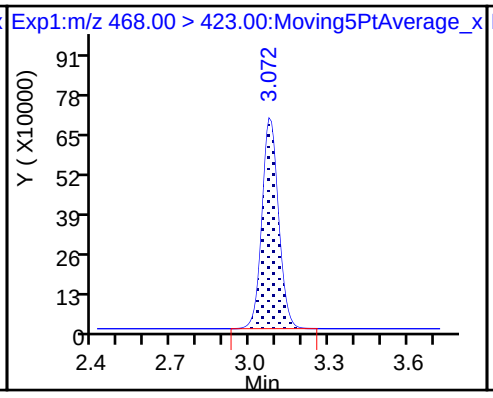
20 Perfluorononanoic acid



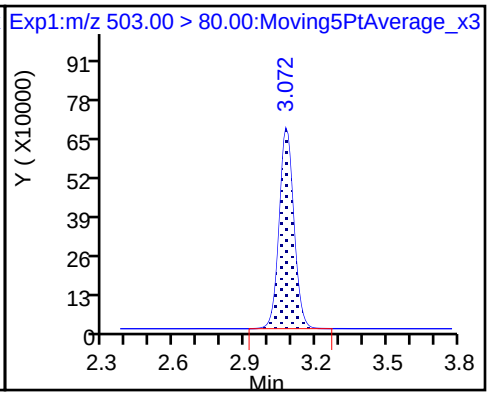
20 Perfluorononanoic acid



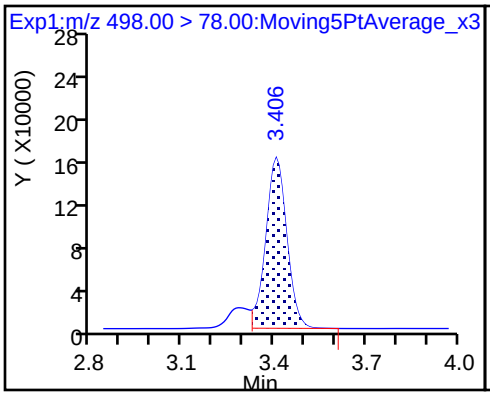
D 19 13C5 PFNA



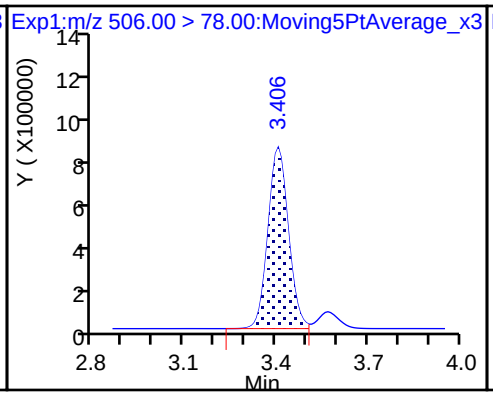
D 18 13C4 PFOS



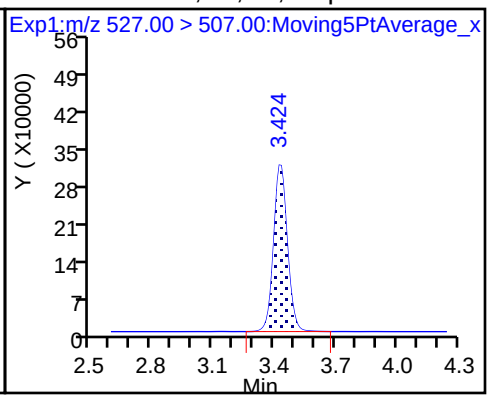
22 Perfluorooctane Sulfonamide



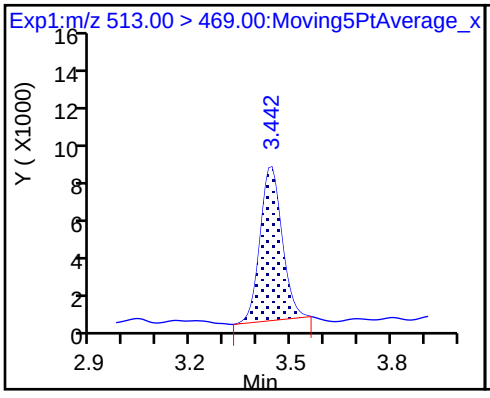
D 21 13C8 FOSA



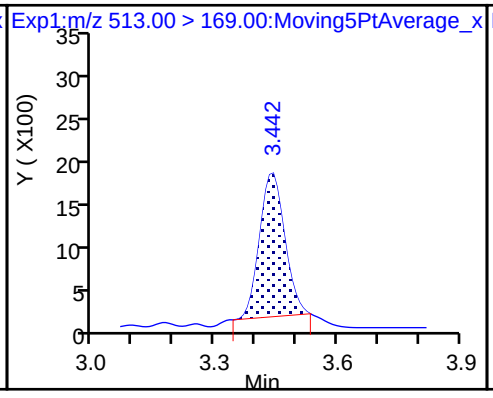
25 Sodium 1H,1H,2H,2H-perfluorodecane



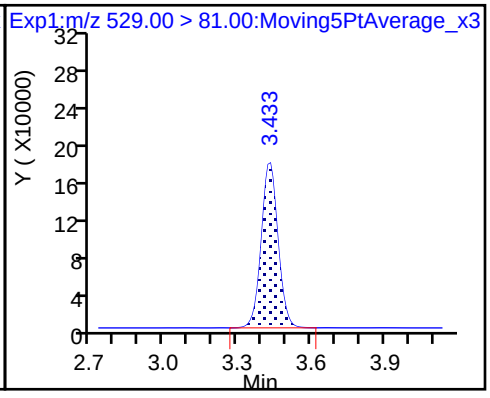
24 Perfluorodecanoic acid



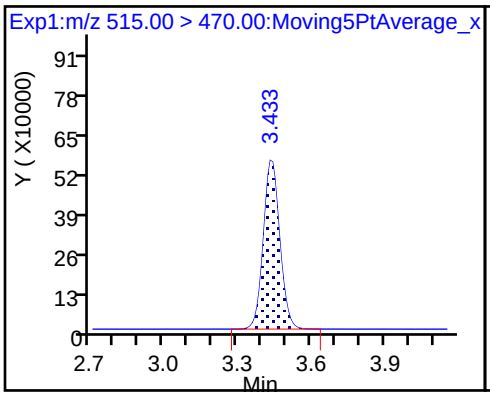
24 Perfluorodecanoic acid



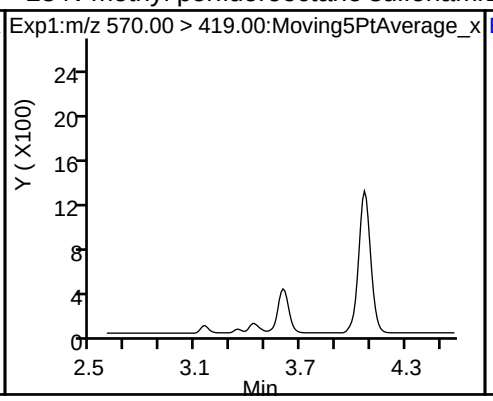
D 26 M2-8:2FTS



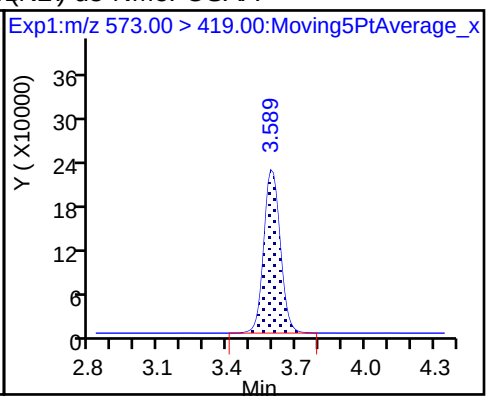
D 23 13C2 PFDA



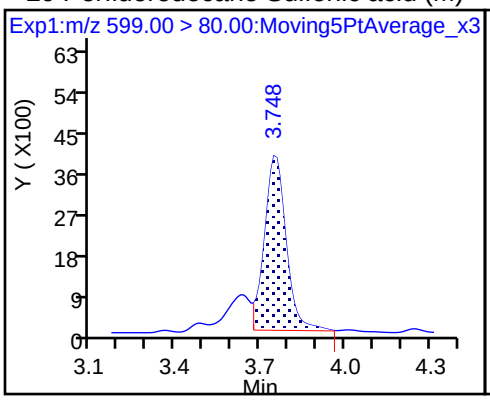
28 N-methyl perfluorooctane sulfonamid (M)



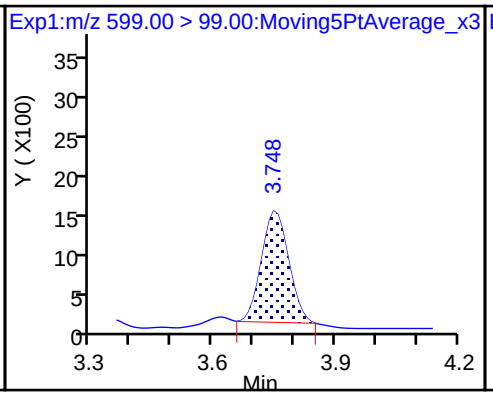
D 27 d3-NMeFOSAA



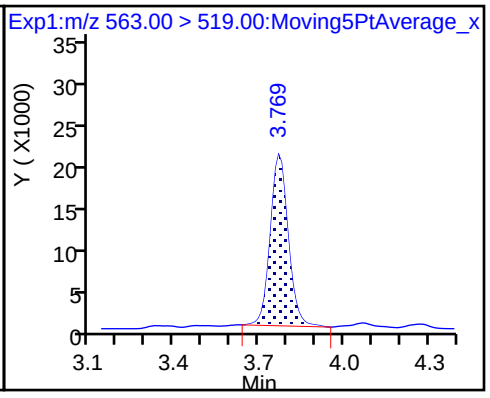
29 Perfluorodecane Sulfonic acid (M)



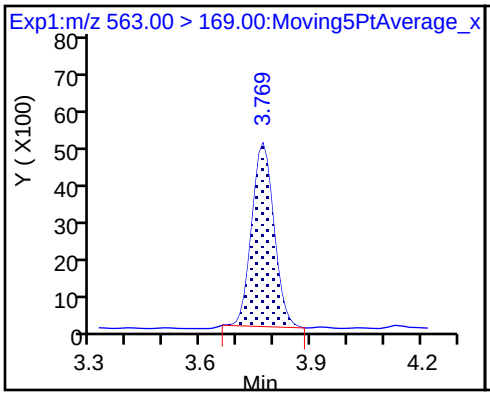
29 Perfluorodecane Sulfonic acid



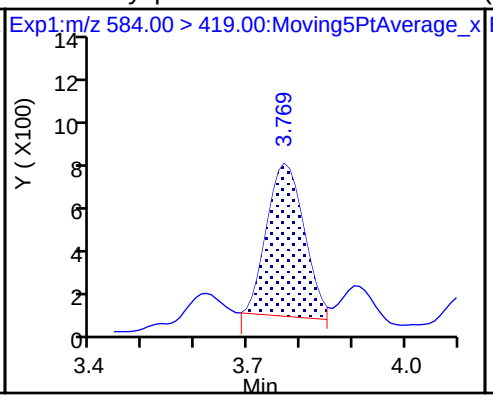
31 Perfluoroundecanoic acid



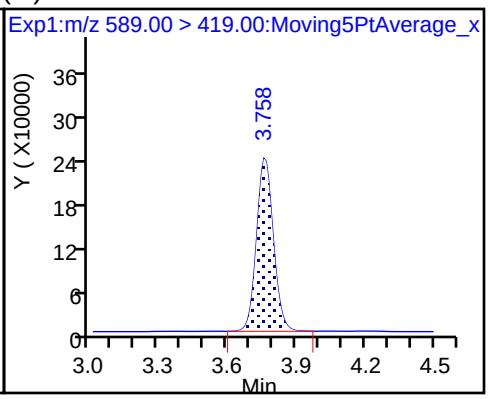
31 Perfluoroundecanoic acid



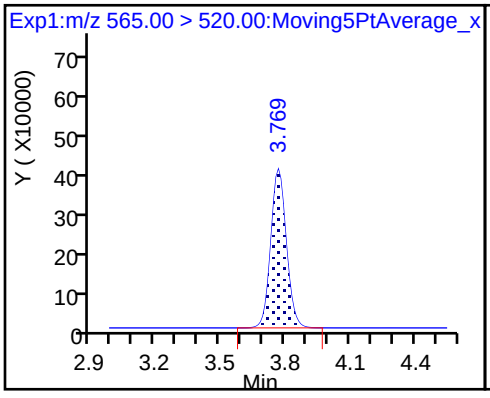
33 N-ethyl perfluorooctane sulfonamid (M)



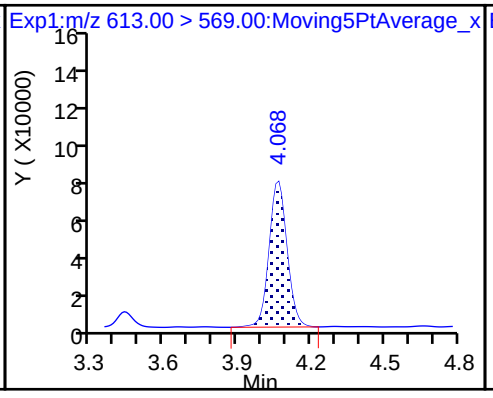
D 32 d5-NEtFOSAA



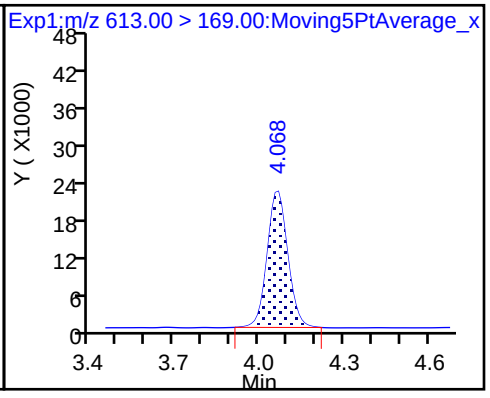
D 30 13C2 PFUnA



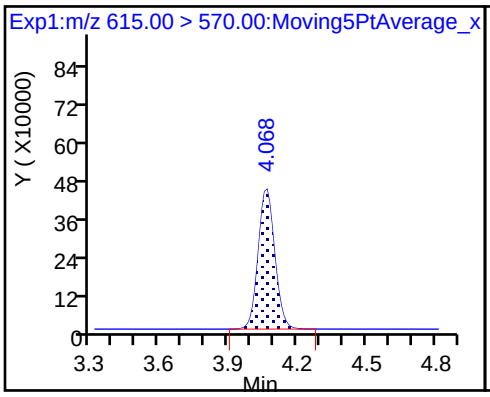
37 Perfluorododecanoic acid



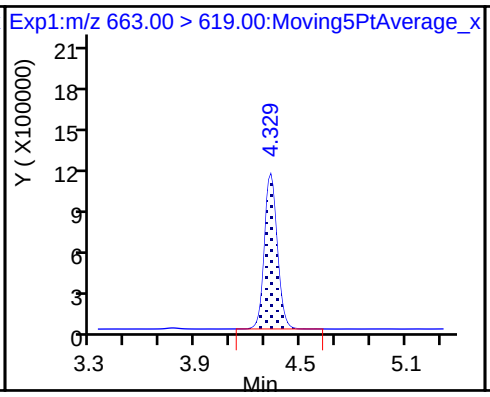
37 Perfluorododecanoic acid



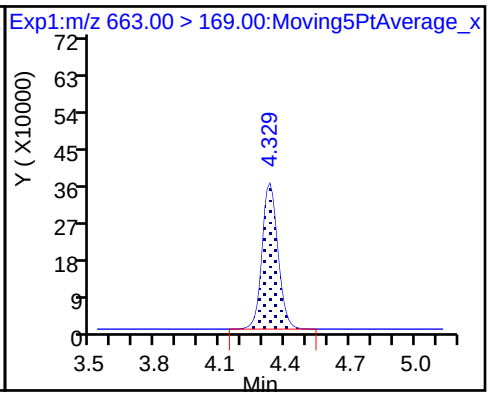
D 36 13C2 PFDoA



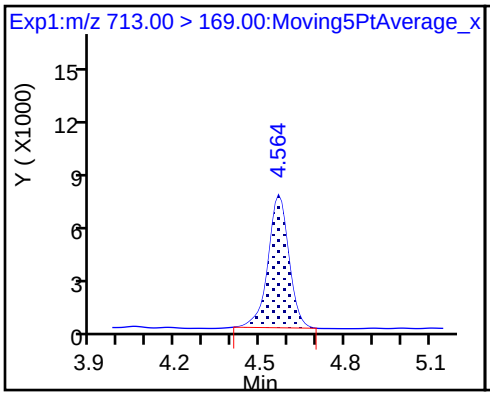
41 Perfluorotridecanoic acid



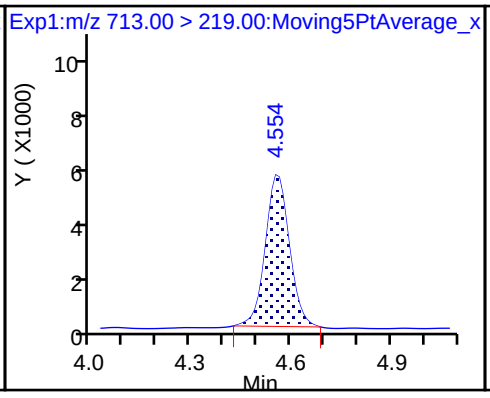
41 Perfluorotridecanoic acid



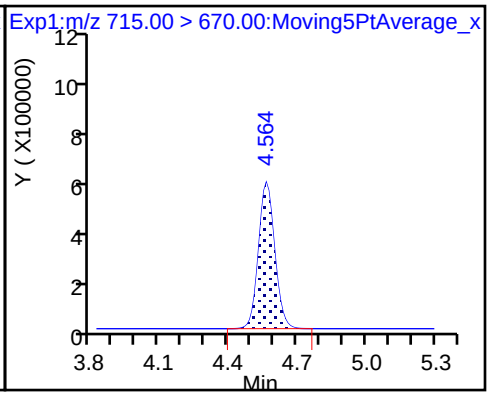
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

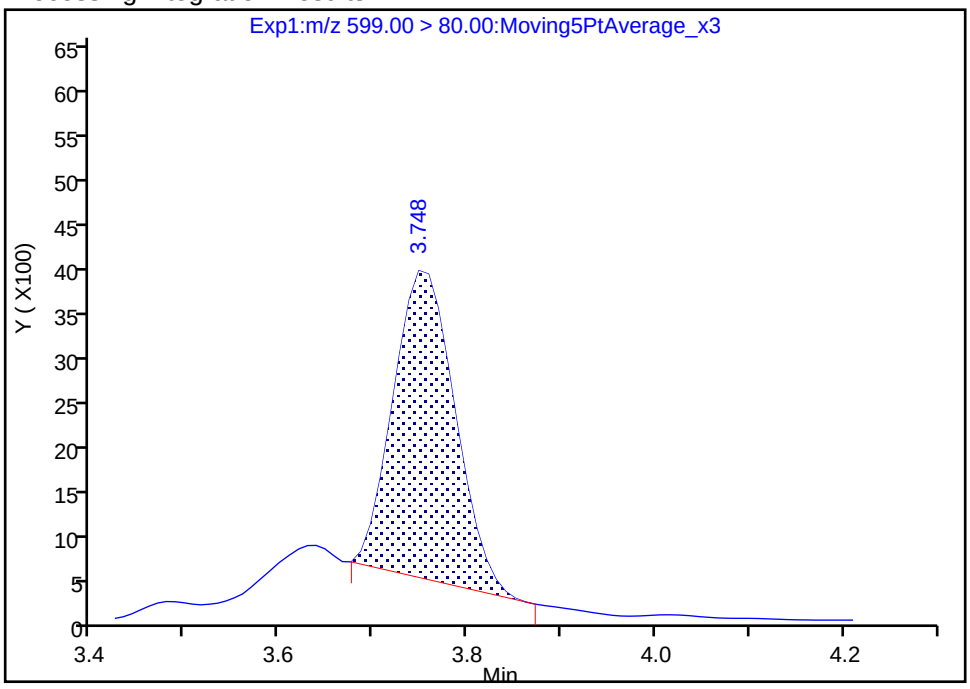
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_013.d				
Injection Date:	29-Mar-2018 00:57:23	Instrument ID:	A8_N		
Lims ID:	320-36761-A-8-B	Lab Sample ID:	320-36761-8		
Client ID:	SB007(4-5')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

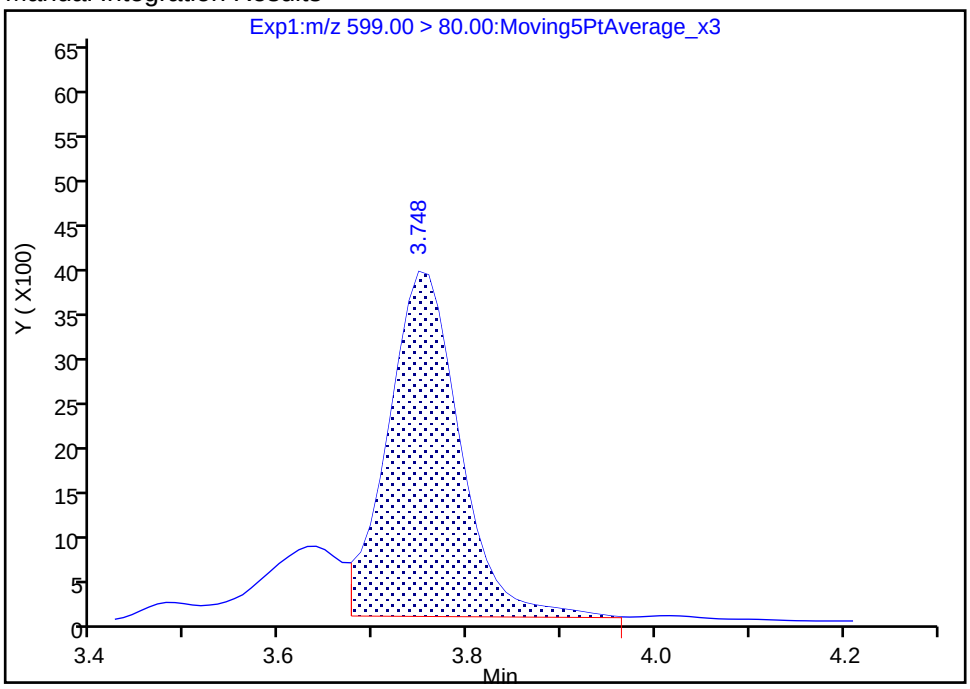
Processing Integration Results

RT: 3.75
Area: 15839
Amount: 0.019380
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 20543
Amount: 0.025136
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:02:35

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB030(2'-4') | Lab Sample ID: 320-36761-9

Matrix: Solid | Lab File ID: 2018.03.20LLA_046.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:05

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/21/2018 02:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 17.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00064	B	0.00024	0.000034
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00020	J	0.00024	0.000093
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00059		0.00024	0.000051
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00024	0.000035
335-67-1	Perfluorooctanoic acid (PFOA)	0.00092		0.00024	0.00010
375-95-1	Perfluorononanoic acid (PFNA)	0.00042		0.00024	0.000044
335-76-2	Perfluorodecanoic acid (PFDA)	0.00071		0.00024	0.000027
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0046		0.00024	0.000044
307-55-1	Perfluorododecanoic acid (PFDoA)	0.0026		0.00024	0.000081
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.022		0.00024	0.000062
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00081		0.00024	0.000065
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000030	U	0.00024	0.000030
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000096	J	0.00024	0.000037
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000042	U	0.00024	0.000042
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00068	B	0.00060	0.00024
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000087	J *	0.00024	0.000047
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.0046		0.00024	0.000099
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00047	U	0.0024	0.00047
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00045	U	0.0024	0.00045
27619-97-2	6:2FTS	0.021		0.0024	0.00018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB030(2'-4') | Lab Sample ID: 320-36761-9

Matrix: Solid | Lab File ID: 2018.03.20LLA_046.d

Analysis Method: 537 (modified) | Date Collected: 03/05/2018 10:05

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) | Date Analyzed: 03/21/2018 02:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 17.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	76		25-150
STL01893	13C5 PFPeA	81		25-150
STL00993	13C2 PFHxA	78		25-150
STL01892	13C4-PFHpA	82		25-150
STL00990	13C4 PFOA	78		25-150
STL00995	13C5 PFNA	71		25-150
STL00996	13C2 PFDA	54		25-150
STL00997	13C2 PFUnA	46		25-150
STL00998	13C2 PFDoA	48		25-150
STL02116	13C2-PFTeDA	43		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	54		25-150
STL01056	13C8 FOSA	44		25-150
STL02118	d3-NMeFOSAA	38		25-150
STL02117	d5-NEtFOSAA	45		25-150
STL02279	M2-6:2FTS	72		25-150

Report Date: 22-Mar-2018 10:56:50 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_046.d
Lims ID: 320-36761-A-9-A
Client ID: SB030(2'-4')
Sample Type: Client
Inject. Date: 21-Mar-2018 02:09:55 ALS Bottle#: 35 Worklist Smp#: 25
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-a-9-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:42 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:55:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.537	4390865	1.90		76.0	83731	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.447	0.0	1.004	430360	0.2642			105	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3290187	2.02		80.7	62565	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.709	-0.009	1.000	124165	0.0808			29.9	M
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	79732	1.98		85.2	466	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	3562549	1.96		78.4	86232	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	349104	0.2428			502	
313.00 > 119.00	1.987	1.997	-0.010	1.000	32537		10.73(5.03-15.10)		478	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3634373	2.06		82.2	74058	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	113498	0.0753			130	
363.00 > 169.00	2.315	2.328	-0.013	1.000	42005		2.70(1.13-3.40)		624	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4608384	1.95		82.6	75717	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	86447	0.0398			96.4	
399.00 > 99.00	2.328	2.341	-0.013	1.000	32306		2.68(1.50-4.49)		73.0	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	773626	1.71		71.9	9649	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.665	-0.008	1.000	4712572	8.69			131443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3344985	1.96		78.4	109197	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.689	2.689	0.001	1.003	570609	0.3820			180	M
413.00 > 169.00	2.681	2.689	-0.007	1.000	316623		1.80(0.84-2.52)		1078	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.689	-0.007		4525433	2.50			85849	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.141	2138427	1.30		54.2	21410	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2413759	1.77		70.7	54888	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	274117	0.2830			558	
499.00 > 99.00	3.058	3.065	-0.007	1.000	50886		5.39(2.31-6.93)		339	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.065	-0.007	1.000	170534	0.1732			271	
463.00 > 169.00	3.058	3.065	-0.007	1.000	40021		4.26(1.90-5.69)		1236	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.264	2654481	1.11		44.5	480	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.003	1958781	1.90			630	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.408	0.0	1.271	533430	1.25		52.4	6965	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.417	3.416	0.001	1.003	6536245	23.3			119894	E
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.278	1550956	1.36		54.4	38446	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.425	0.001	1.000	172205	0.2925			581	
513.00 > 169.00	3.426	3.425	0.001	1.000	28560		6.03(2.36-7.09)		918	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.335	355029	0.9423		37.7	11037	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.738	3.748	-0.010	1.000	20462	0.0358			74.3	M
599.00 > 99.00	3.738	3.748	-0.010	1.000	9885		2.07(1.39-4.16)		97.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	403279	1.12		44.8	782	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1025061	1.15		45.9	35862	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.758	-0.010	1.000	6234	0.0395			45.0	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.758	-0.010	1.000	653566	1.90			1737	
563.00 > 169.00	3.748	3.758	-0.010	1.000	189875		3.44(2.12-6.36)		15132	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.509	1006270	1.19		47.5	6971	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.056	-0.010	1.000	443704	1.08			136	
613.00 > 169.00	4.046	4.056	-0.010	1.000	113524		3.91(2.13-6.40)		2194	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.317	-0.010	1.000	3835870	9.26			1139	
663.00 > 169.00	4.307	4.317	-0.010	1.000	1228706		3.12(1.25-3.76)		21675	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.544	0.0	1.695	833869	1.08		43.1	9632	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.554	-0.010	1.000	30631	0.3330			488	
713.00 > 219.00	4.544	4.554	-0.010	1.000	25662		1.19(0.71-2.13)		268	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:51 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_046.d

Injection Date: 21-Mar-2018 02:09:55 Instrument ID: A8_N

Lims ID: 320-36761-A-9-A Lab Sample ID: 320-36761-9

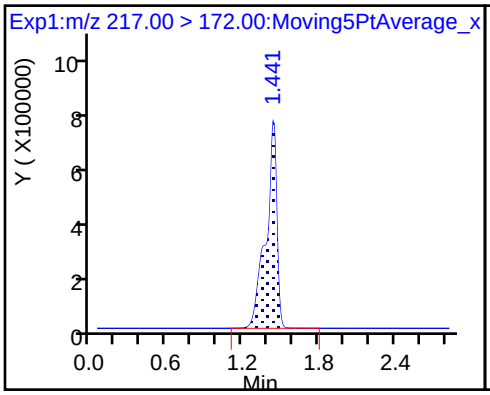
Client ID: SB030(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 25

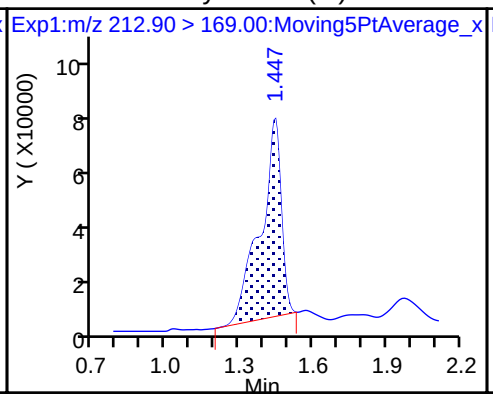
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

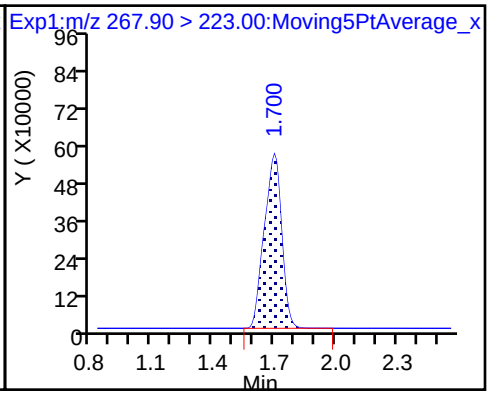
D 1 13C4 PFBA



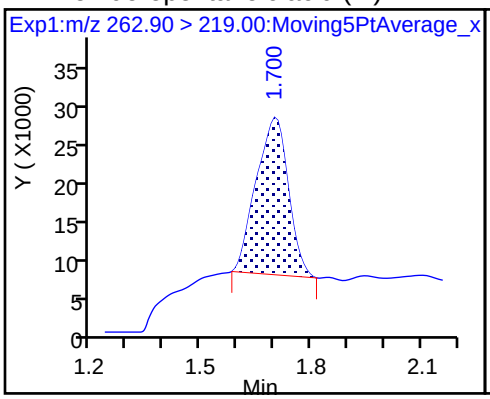
2 Perfluorobutyric acid (M)



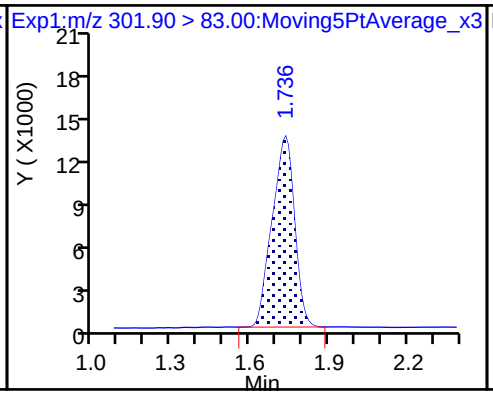
D 3 13C5-PFPeA



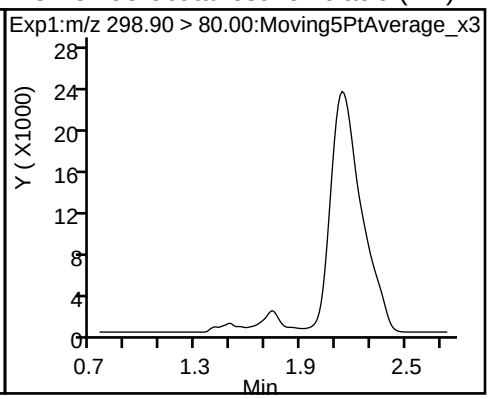
4 Perfluoropentanoic acid (M)



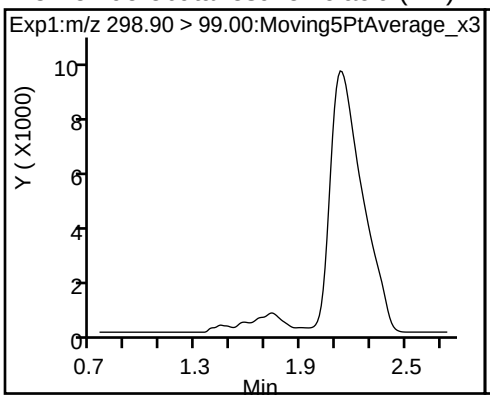
D 47 13C3-PFBS



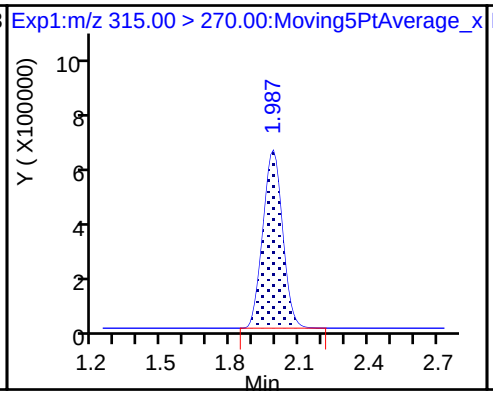
5 Perfluorobutanesulfonic acid (ND)



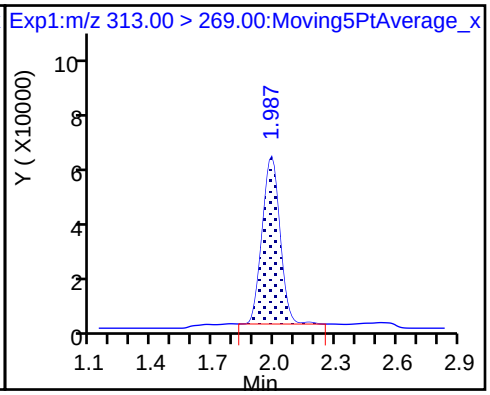
5 Perfluorobutanesulfonic acid (ND)



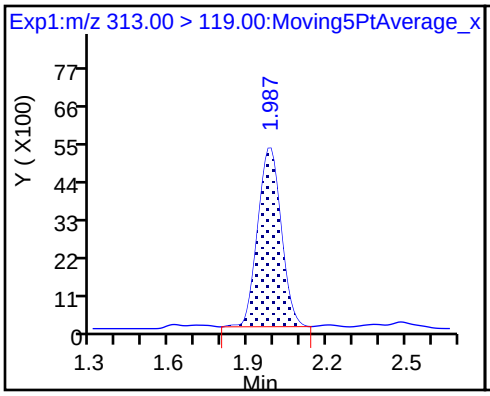
D 7 13C2 PFHxA



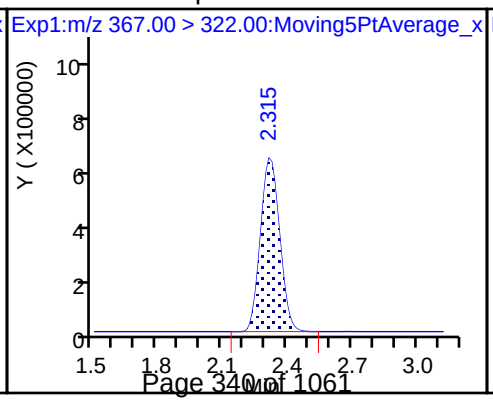
6 Perfluorohexanoic acid



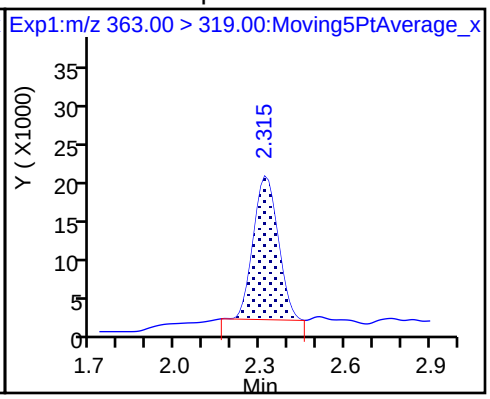
6 Perfluorohexanoic acid



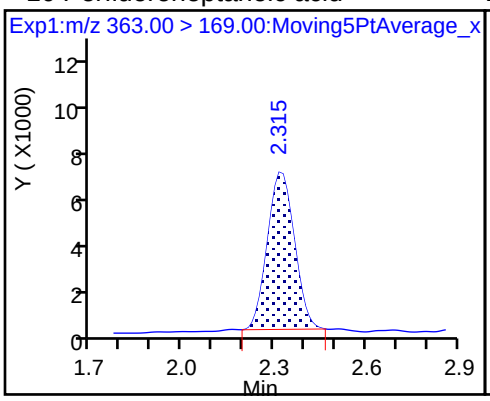
D 9 13C4-PFHpA



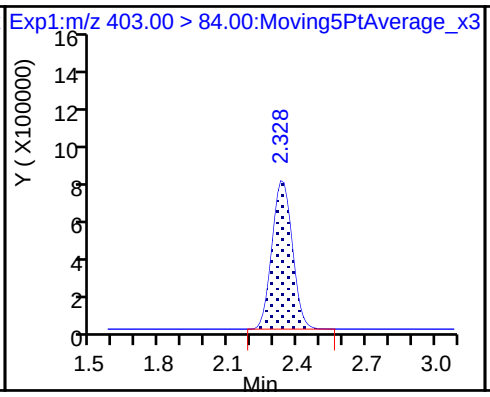
10 Perfluoroheptanoic acid



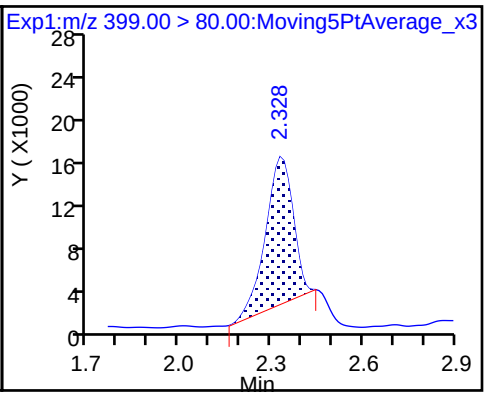
10 Perfluoroheptanoic acid



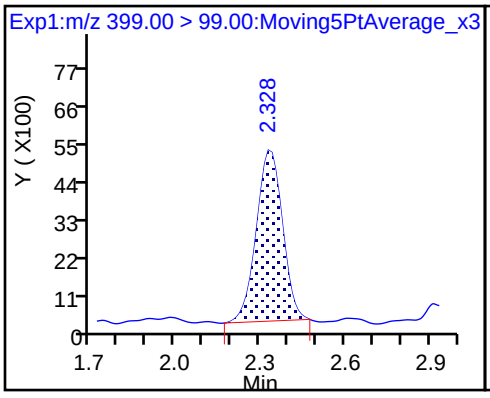
D 11 18O2 PFHxS



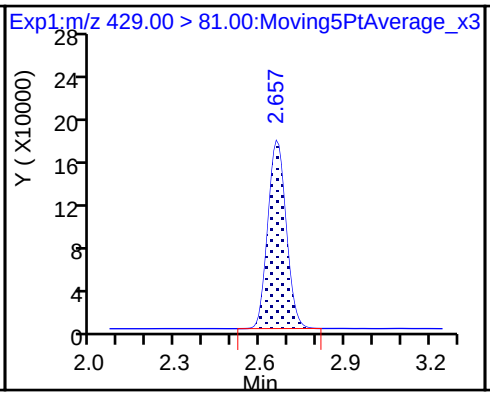
8 Perfluorohexanesulfonic acid



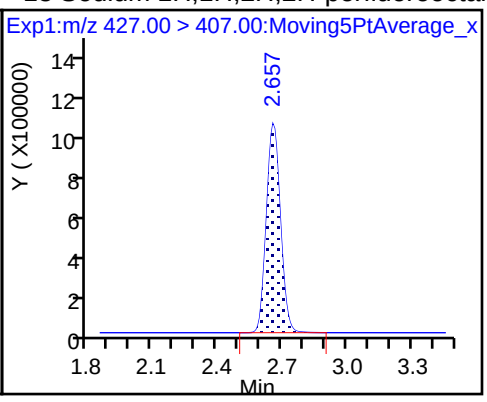
8 Perfluorohexanesulfonic acid



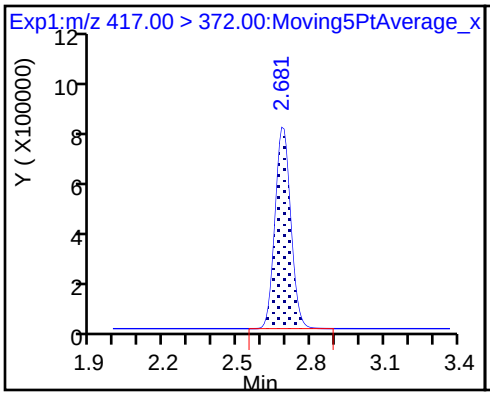
D 12 M2-6:2FTS



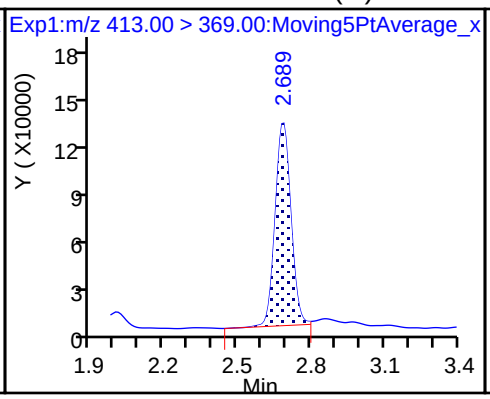
13 Sodium 1H,1H,2H,2H-perfluorooctane



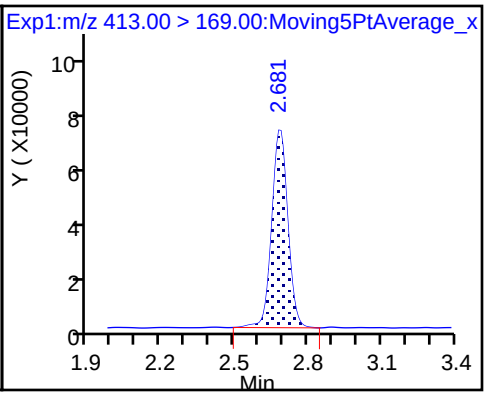
D 14 13C4 PFOA



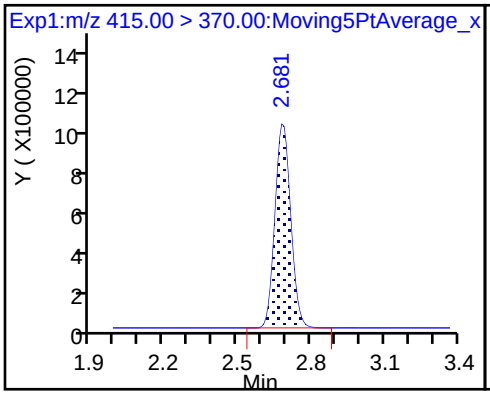
15 Perfluorooctanoic acid (M)



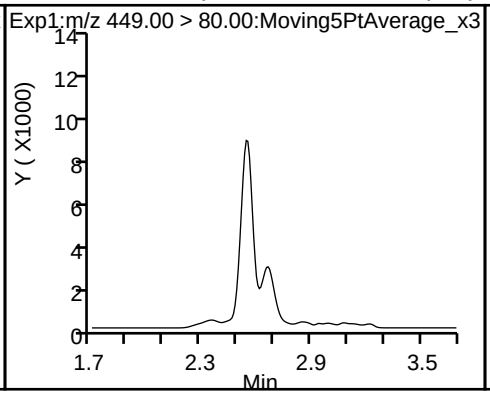
15 Perfluorooctanoic acid



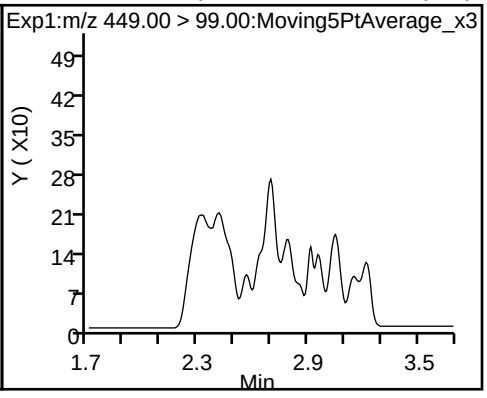
* 62 13C2-PFOA



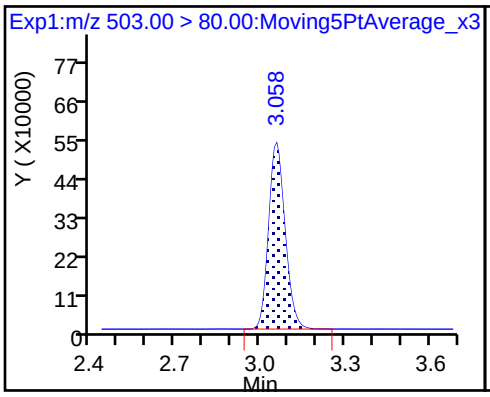
16 Perfluoroheptanesulfonic acid (ND)



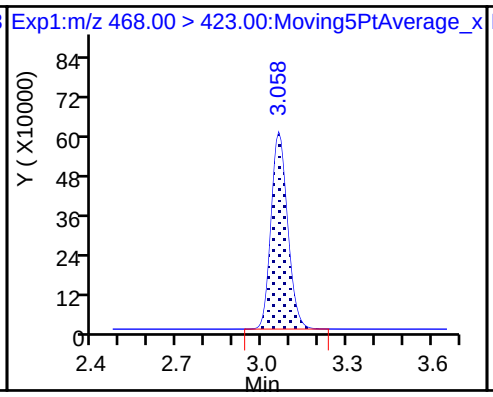
16 Perfluoroheptanesulfonic acid (ND)



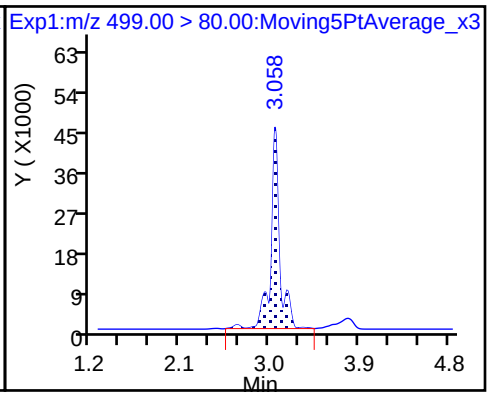
D 18 13C4 PFOS



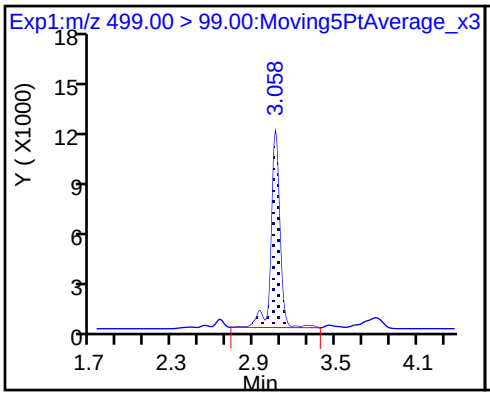
D 19 13C5 PFNA



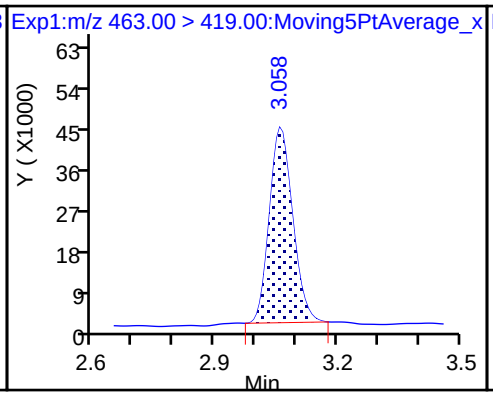
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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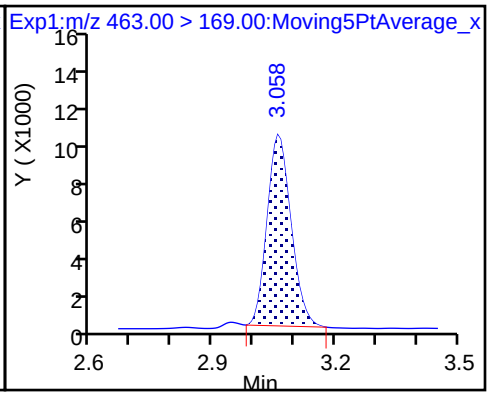
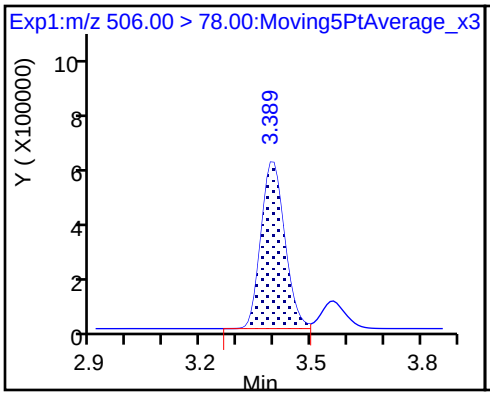
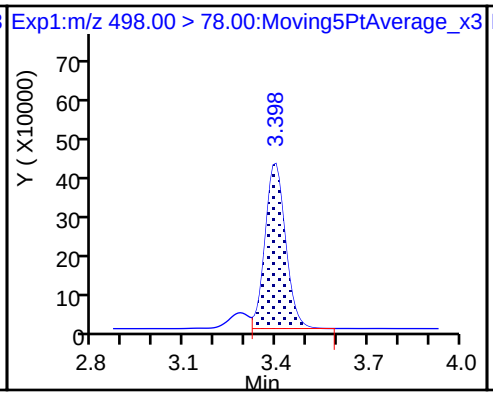


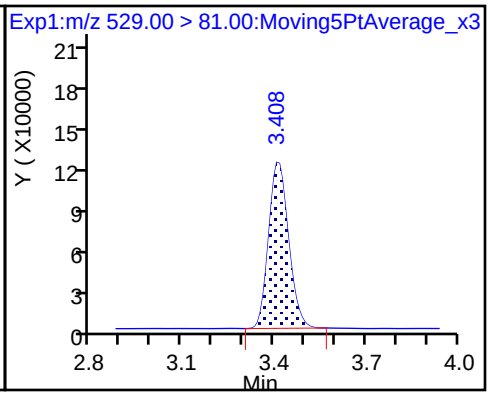
D 21 13C8 FOSA



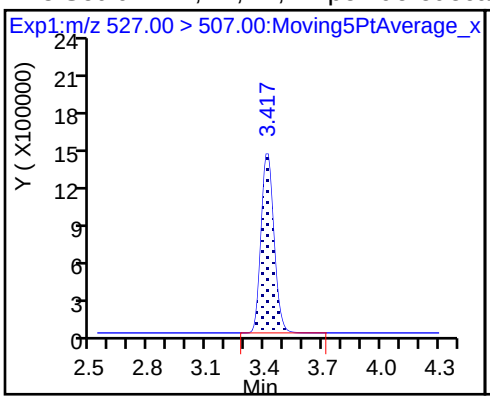
22 Perfluorooctane Sulfonamide



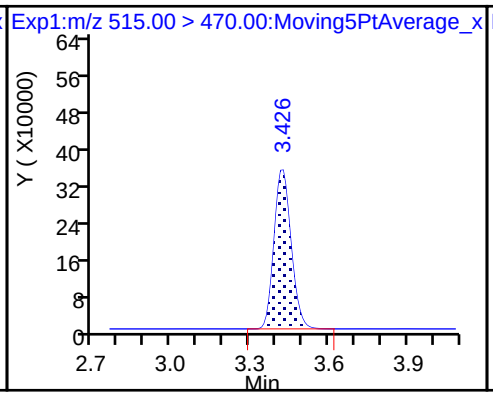
D 26 M2-8:2FTS



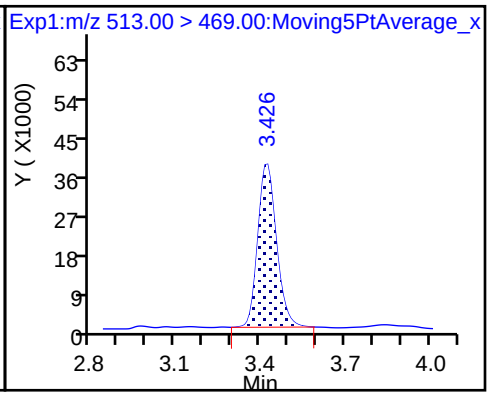
25 Sodium 1H,1H,2H,2H-perfluorodecane



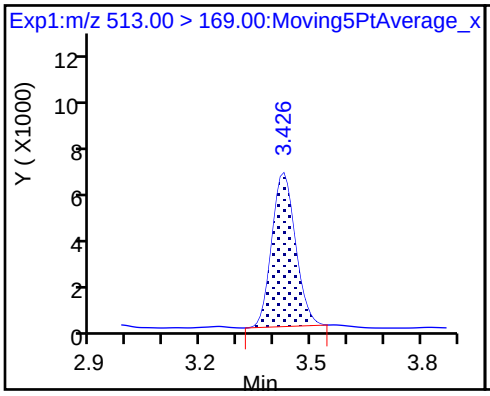
D 23 13C2 PFDA



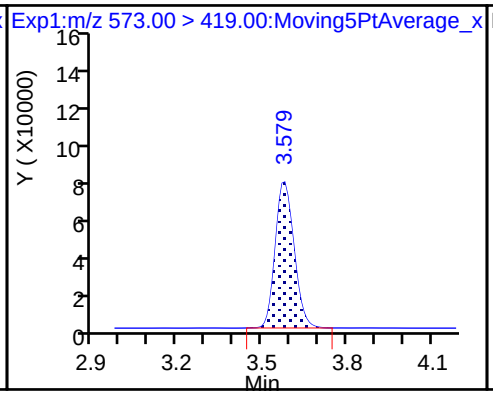
24 Perfluorodecanoic acid



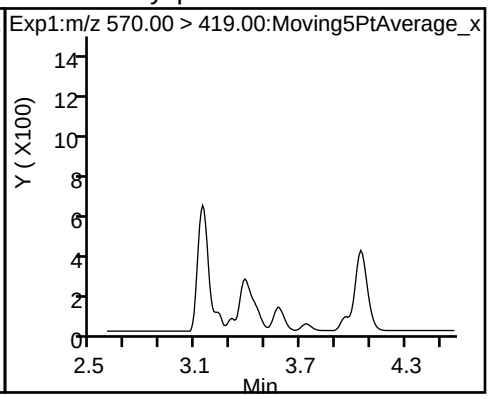
24 Perfluorodecanoic acid



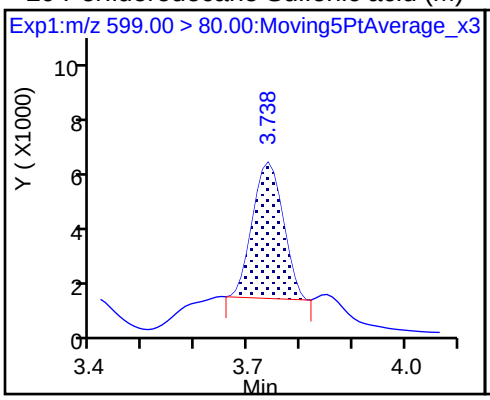
D 27 d3-NMeFOSAA



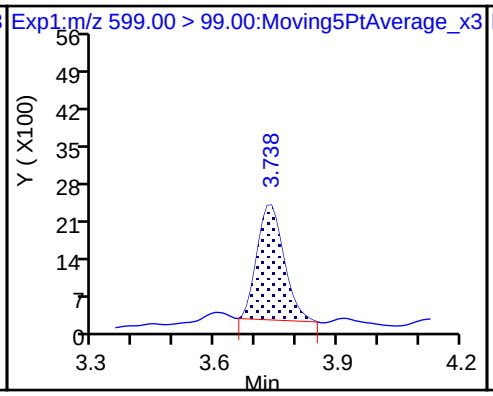
28 N-methyl perfluorooctane sulfonami (ND)



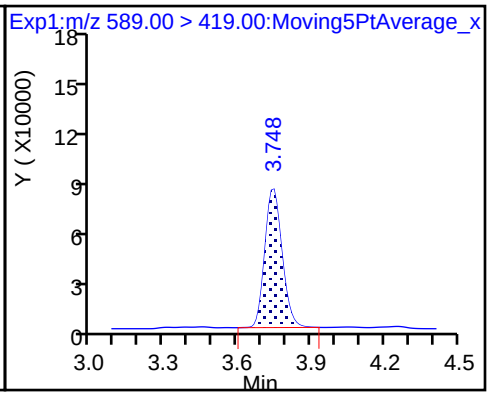
29 Perfluorodecane Sulfonic acid (M)



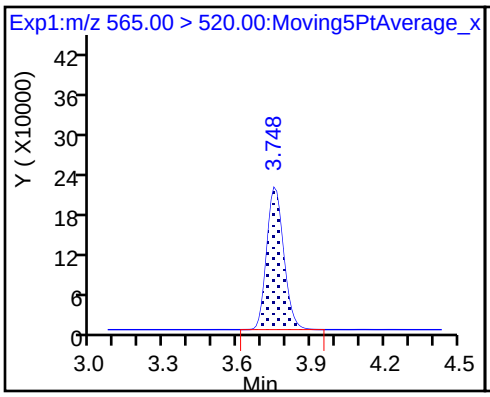
29 Perfluorodecane Sulfonic acid



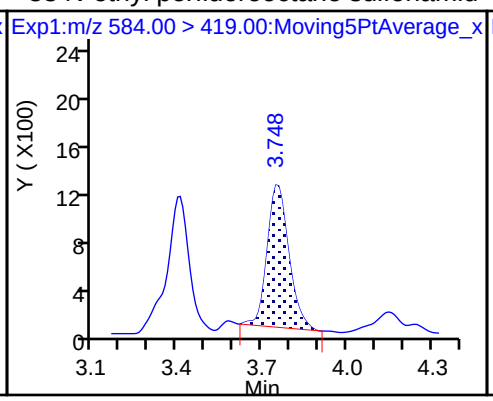
D 32 d5-NEtFOSAA



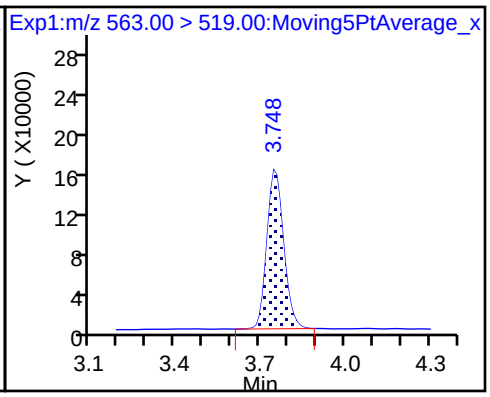
D 30 13C2 PFUnA



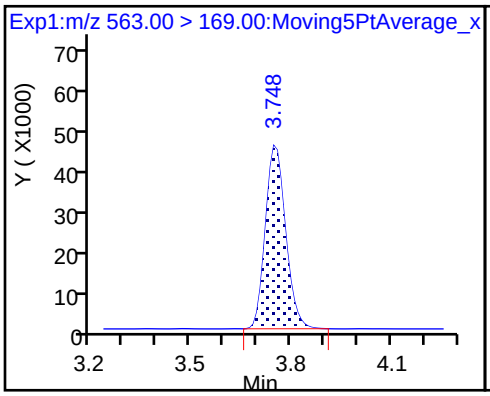
33 N-ethyl perfluorooctane sulfonamid



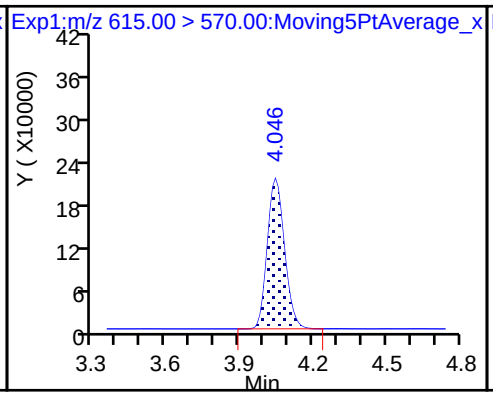
31 Perfluoroundecanoic acid



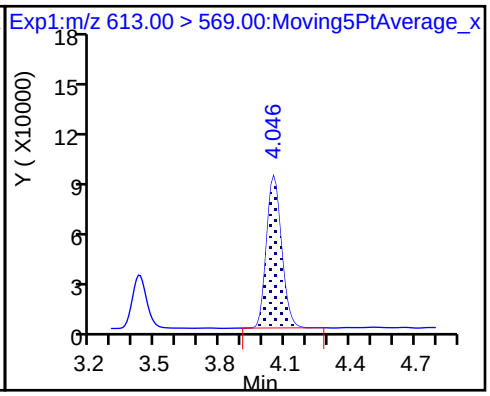
31 Perfluoroundecanoic acid



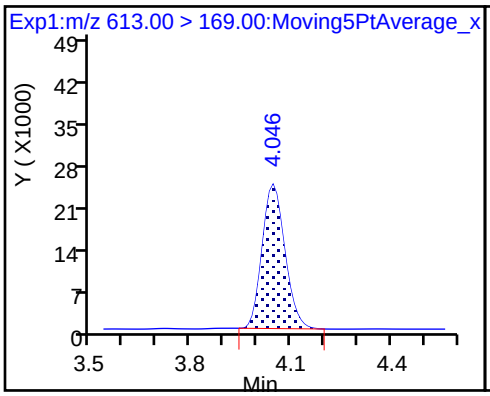
D 36 13C2 PFDoA



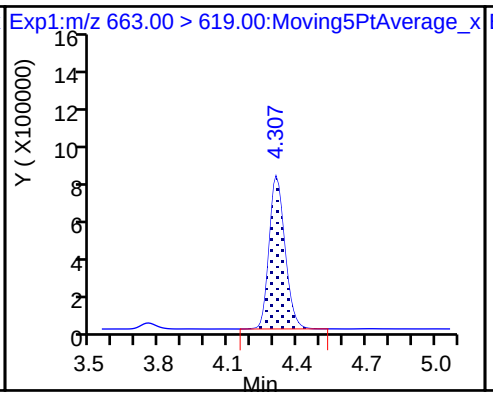
37 Perfluorododecanoic acid



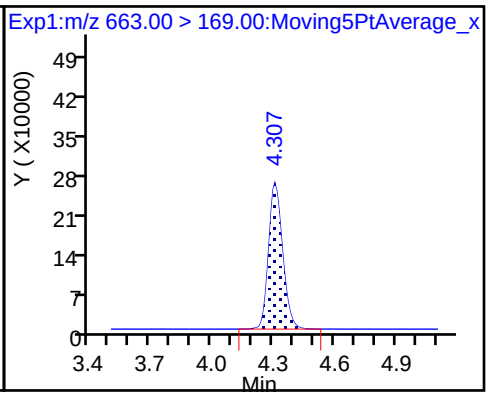
37 Perfluorododecanoic acid



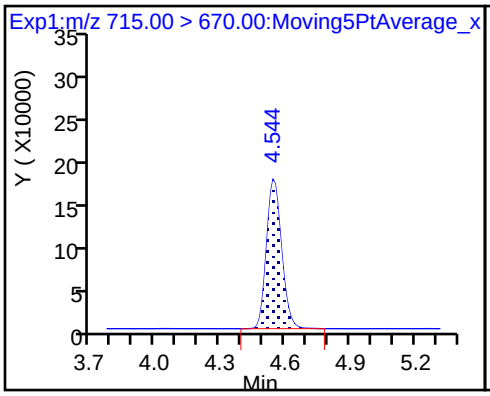
41 Perfluorotridecanoic acid



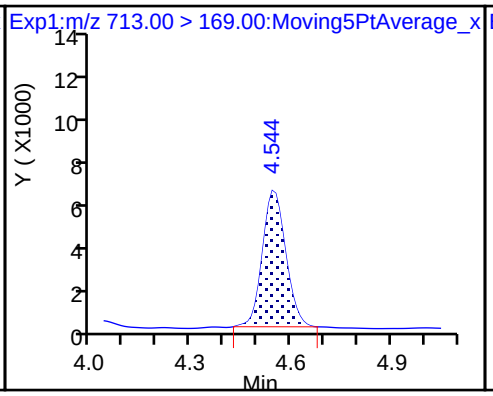
41 Perfluorotridecanoic acid



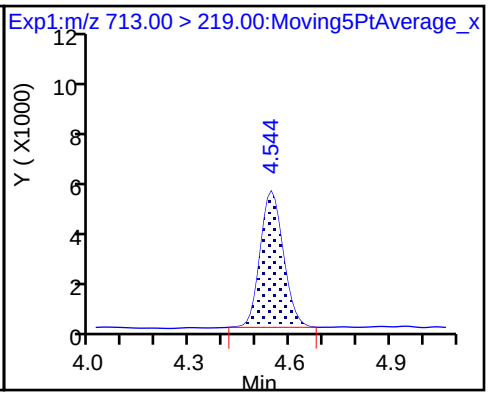
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

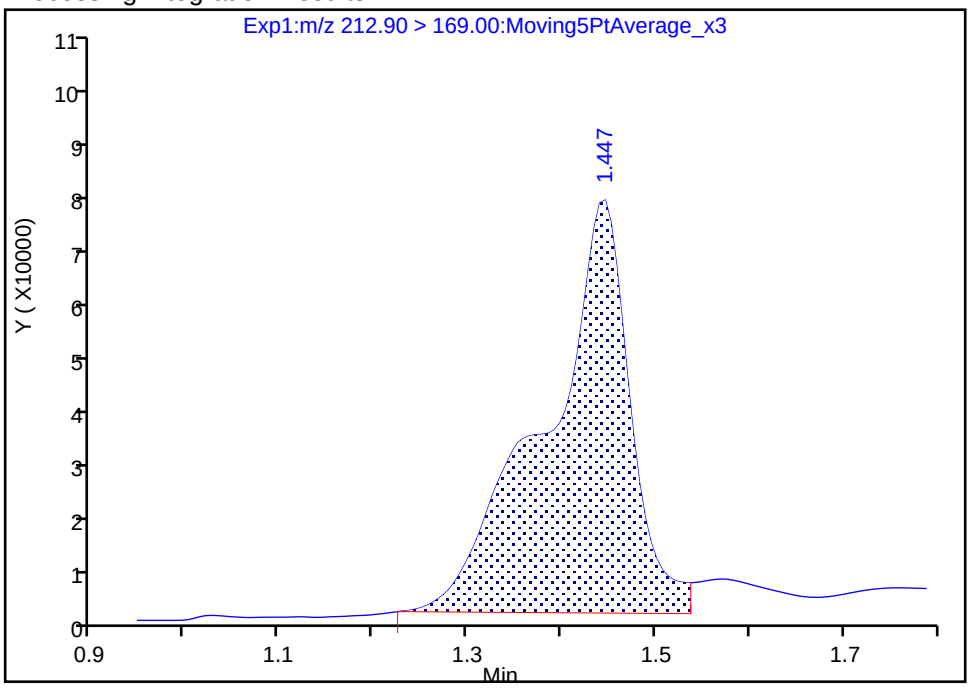
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_046.d				
Injection Date:	21-Mar-2018 02:09:55	Instrument ID:	A8_N		
Lims ID:	320-36761-A-9-A	Lab Sample ID:	320-36761-9		
Client ID:	SB030(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	25
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

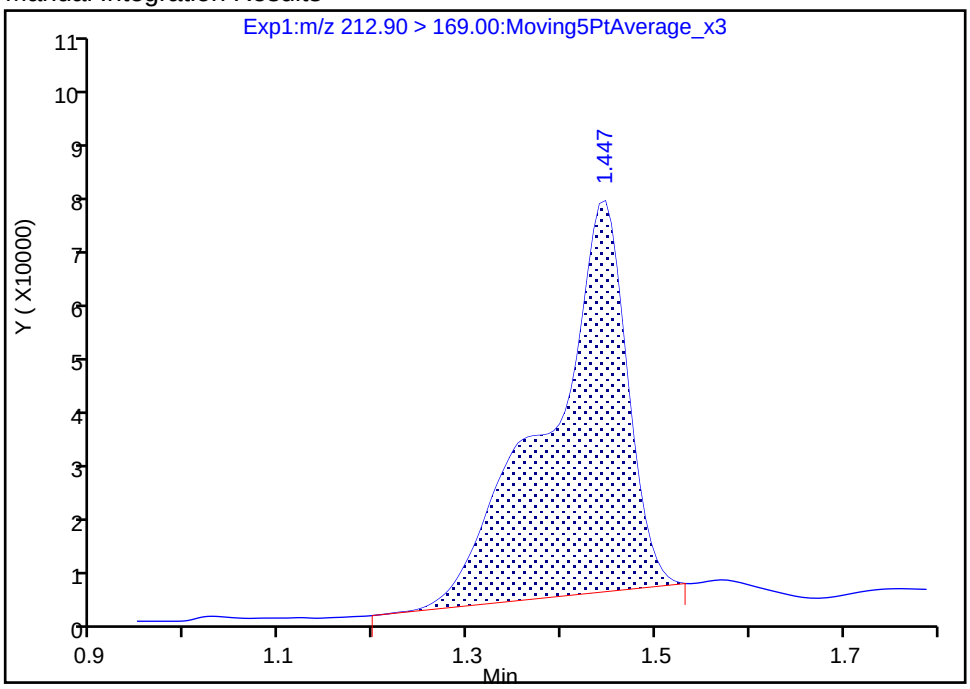
Processing Integration Results

RT: 1.45
Area: 484796
Amount: 0.297620
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 430360
Amount: 0.264201
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:53:40

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

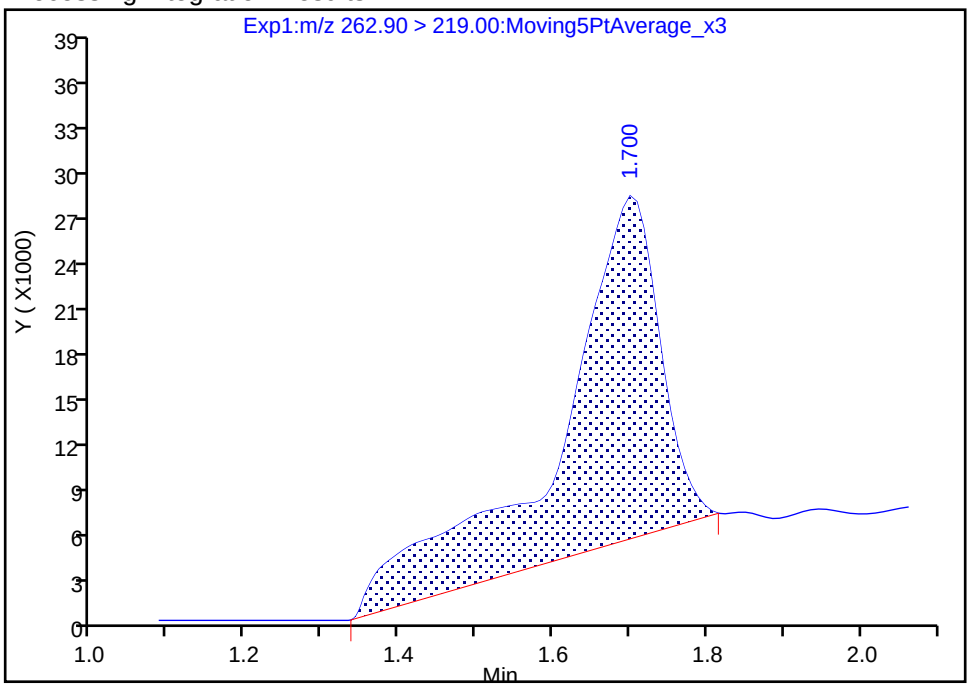
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_046.d				
Injection Date:	21-Mar-2018 02:09:55	Instrument ID:	A8_N		
Lims ID:	320-36761-A-9-A	Lab Sample ID:	320-36761-9		
Client ID:	SB030(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	25
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

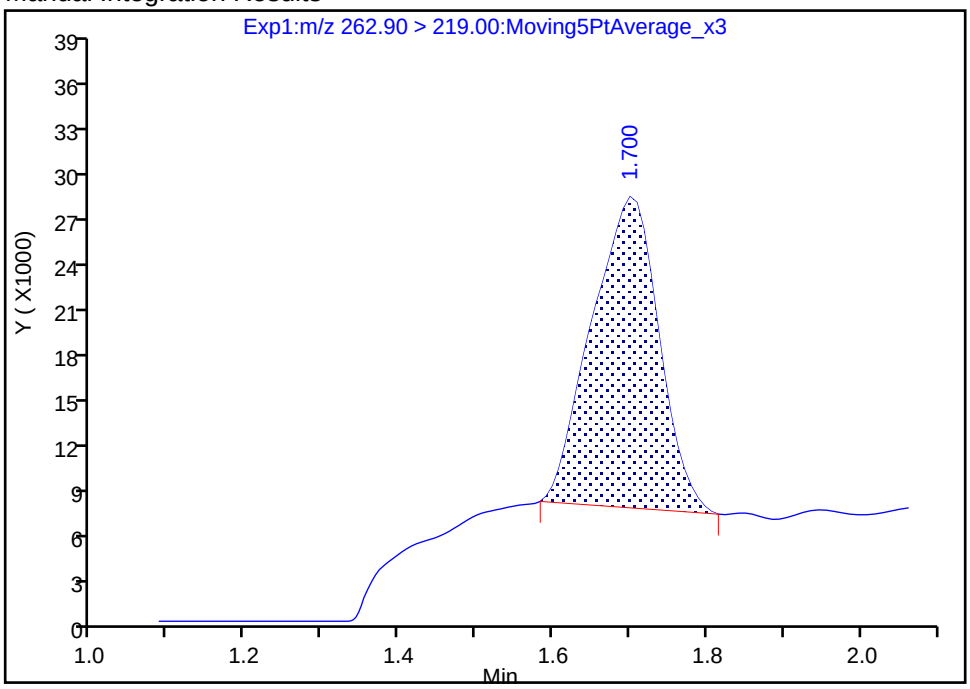
Processing Integration Results

RT: 1.70
Area: 207823
Amount: 0.135183
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 124165
Amount: 0.080766
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:53:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

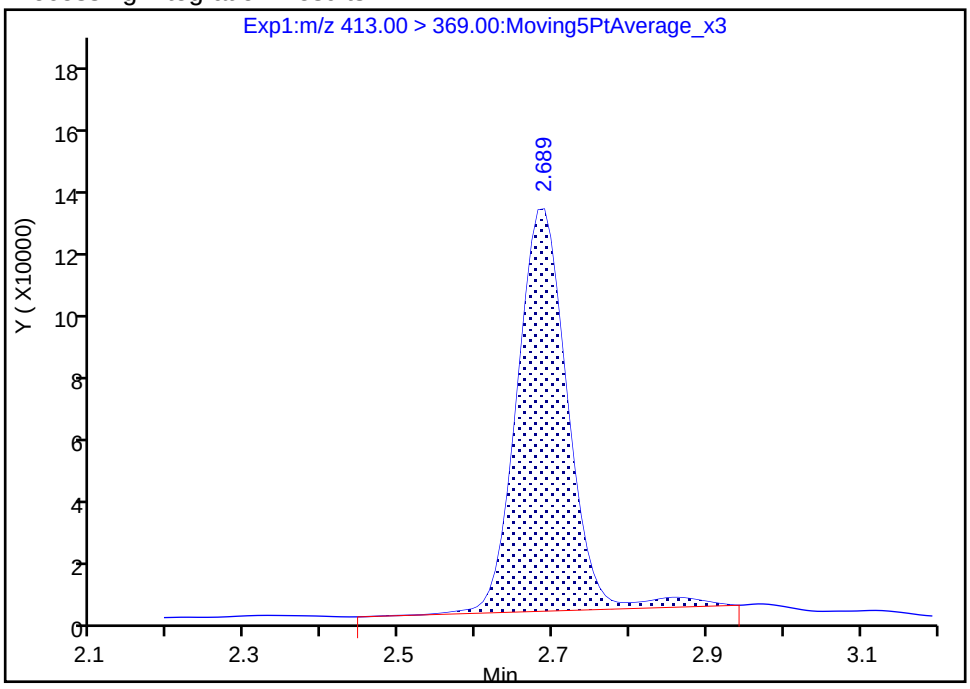
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_046.d				
Injection Date:	21-Mar-2018 02:09:55	Instrument ID:	A8_N		
Lims ID:	320-36761-A-9-A	Lab Sample ID:	320-36761-9		
Client ID:	SB030(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	25
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

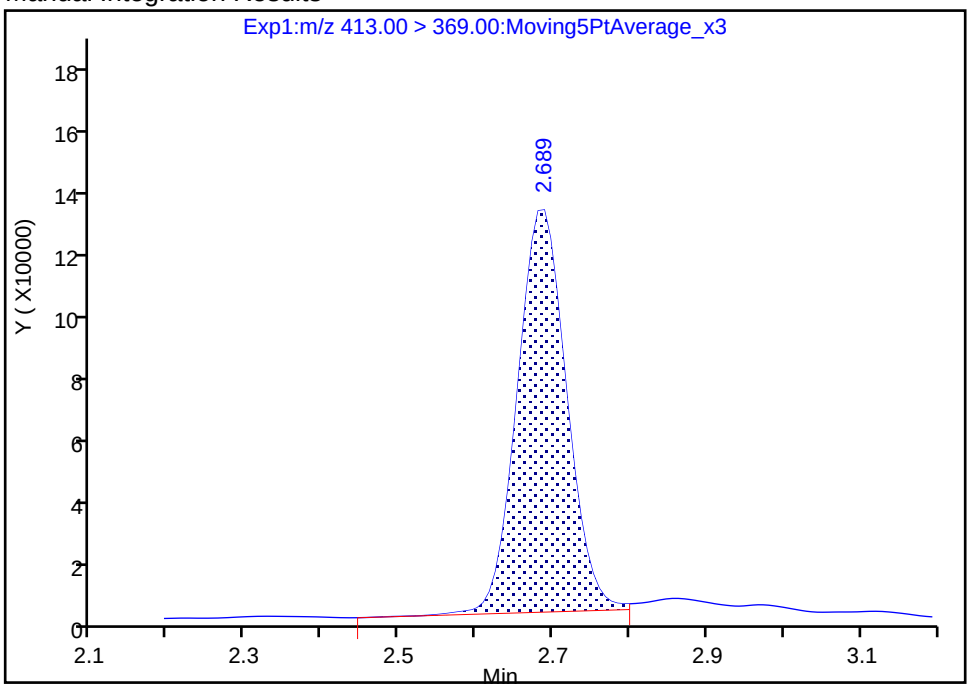
Processing Integration Results

RT: 2.69
Area: 586645
Amount: 0.392746
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 570609
Amount: 0.382010
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:54:13

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

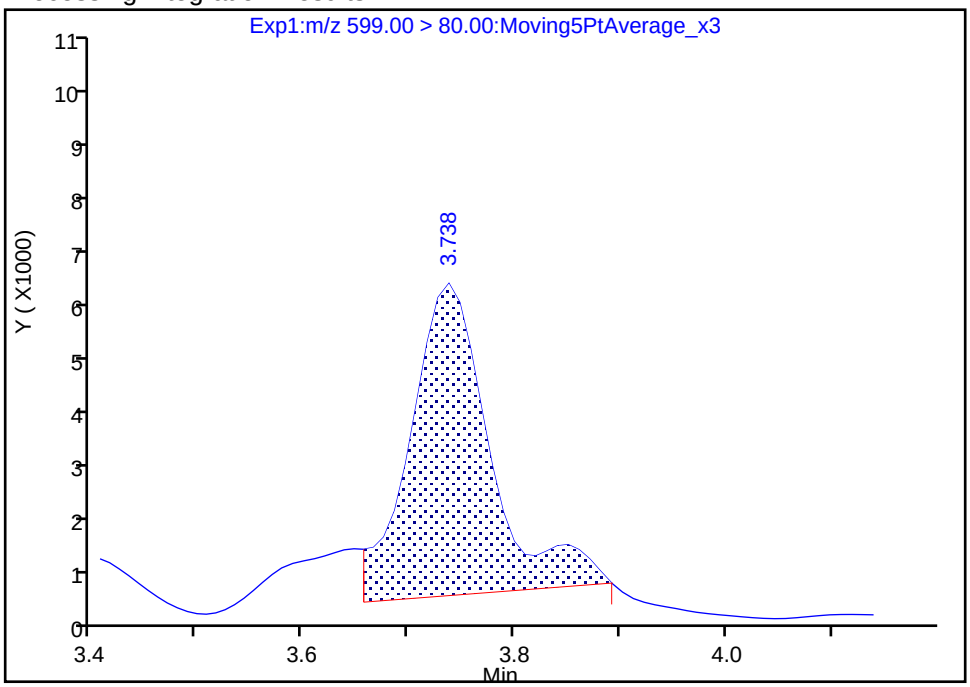
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_046.d				
Injection Date:	21-Mar-2018 02:09:55	Instrument ID:	A8_N		
Lims ID:	320-36761-A-9-A	Lab Sample ID:	320-36761-9		
Client ID:	SB030(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	25
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

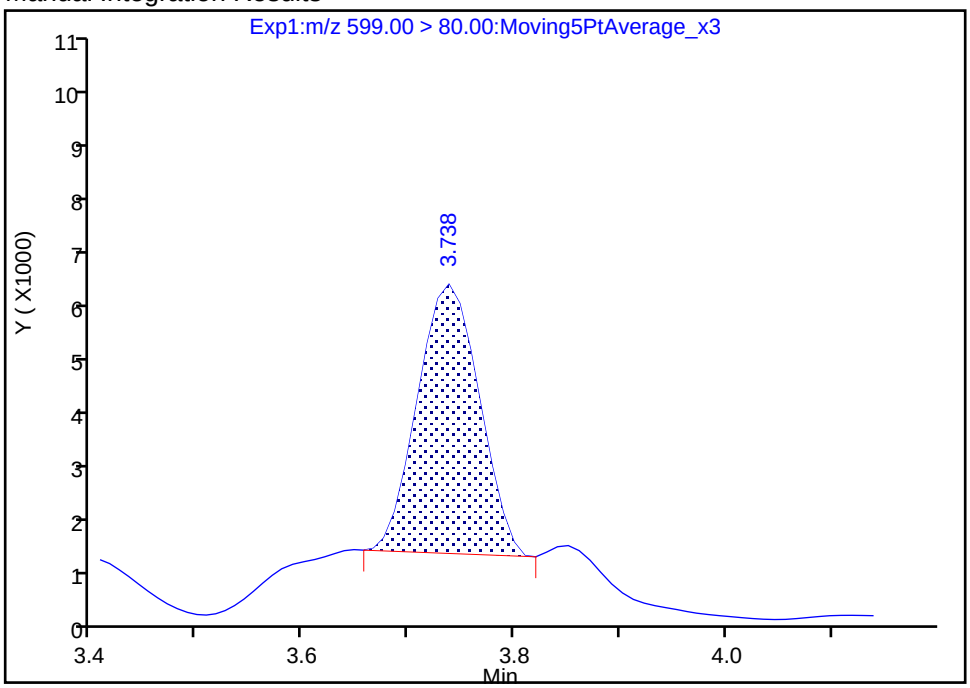
Processing Integration Results

RT: 3.74
Area: 30758
Amount: 0.053839
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 20462
Amount: 0.035817
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:54:53

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB030(2'-4') RE Lab Sample ID: 320-36761-9 RE

Matrix: Solid Lab File ID: 2018.03.28LLFF_014.d

Analysis Method: 537 (modified) Date Collected: 03/05/2018 10:05

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.02(g) Date Analyzed: 03/29/2018 01:05

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 17.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00012*	*J H*	*0.00024*	*0.000047*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	75		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_014.d
Lims ID: 320-36761-A-9-B
Client ID: SB030(2'-4')
Sample Type: Client
Inject. Date: 29-Mar-2018 01:05:16 ALS Bottle#: 21 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36761-A-9-B
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: hannigana Date: 29-Mar-2018 08:09:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.435	0.011	1.000	158125	0.0820			32.3	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.447	1.441	0.005	0.535	5116293	2.05		82.1	87298	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.009	1.000	76486	0.0502			30.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.632	3379668	2.04		81.8	69210	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	71434	1.89		81.4	480	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	227840	0.1552			222	
313.00 > 119.00	1.997	1.998	-0.001	1.000	21069		10.81(5.03-15.10)		222	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3590385	1.96		78.6	66033	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	70259	0.0455			32.5	
363.00 > 169.00	2.328	2.328	0.0	1.000	24688		2.85(1.13-3.40)		37.4	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.341	0.013	1.000	61586	0.0299			223	
399.00 > 99.00	2.354	2.341	0.013	1.000	20442		3.01(1.50-4.49)		104	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.861	3731794	2.07		82.8	60352	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.870	4369359	1.96		83.0	102049	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.681	2.673	0.008	1.000	2901345	5.15			35487	
* 62 13C2-PFOA										
415.00 > 370.00	2.704	2.697	0.007		4920889	2.50			98300	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.704	2.697	0.007	1.000	413298	0.2585			185	
413.00 > 169.00	2.704	2.697	0.007	1.000	217280		1.90(0.84-2.52)		641	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.697	-0.016	0.991	767118	2.05		86.4	21266	
D 14 13C4 PFOA										
417.00 > 372.00	2.704	2.721	-0.017	1.000	3538044	1.92		76.7	70191	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.072	0.008	1.000	239747	0.1768			671	
499.00 > 99.00	3.080	3.072	0.008	1.000	55850		4.29(2.31-6.93)		518	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.072	0.008	1.000	143558	0.1209			165	
463.00 > 169.00	3.080	3.072	0.008	1.000	33196		4.32(1.90-5.69)		618	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.139	2976005	1.83		73.2	75940	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.139	2908855	1.80		75.2	56035	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	3058049	2.00			922	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.260	3884753	1.78		71.2	390	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.434	3.426	0.008	1.000	7338116	15.6			97106	E
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.435	0.009	1.000	175635	0.1708			773	
513.00 > 169.00	3.444	3.435	0.009	1.000	25241		6.96(2.36-7.09)		565	
D 26 M2-8:2FTS										
529.00 > 81.00	3.434	3.453	-0.019	1.270	881862	1.75		72.9	17003	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.273	2601739	1.82		73.0	37750	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.602	3.590	0.012	1.003	2213	0.005276			22.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.611	-0.019	1.328	1047762	1.40		55.8	26652	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.750	3.748	0.002	1.000	39394	0.0476			139	
599.00 > 99.00	3.750	3.748	0.002	1.000	13603		2.90(1.39-4.16)		254	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.770	3.769	0.001	1.000	1430458	2.06			6887	
563.00 > 169.00	3.770	3.769	0.001	1.000	397079		3.60(2.12-6.36)		23172	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.770	3.769	0.001	1.003	15819	0.0352			135	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.779	-0.019	1.390	1201371	1.40		56.2	3682	
D 30 13C2 PFUnA										
565.00 > 520.00	3.770	3.790	-0.020	1.394	2009033	1.57		63.0	50728	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.057	0.012	1.000	839905	0.8965			706	
613.00 > 169.00	4.069	4.057	0.012	1.000	204008		4.12(2.13-6.40)		2554	
D 36 13C2 PFDoA										
615.00 > 570.00	4.069	4.089	-0.020	1.505	2238294	1.55		61.8	20442	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.318	0.011	1.000	6950633	7.05			3583	
663.00 > 169.00	4.329	4.318	0.011	1.000	2260916		3.07(1.25-3.76)		28173	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.565	4.564	0.001	1.000	69369	0.2343			1022	
713.00 > 219.00	4.565	4.564	0.001	1.000	49363		1.41(0.71-2.13)		766	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.585	-0.020	1.688	2986926	1.69		67.6	21064	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_014.d

Injection Date: 29-Mar-2018 01:05:16 Instrument ID: A8_N

Lims ID: 320-36761-A-9-B Lab Sample ID: 320-36761-9

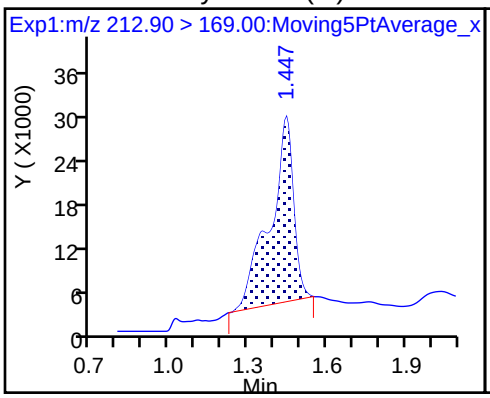
Client ID: SB030(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 11

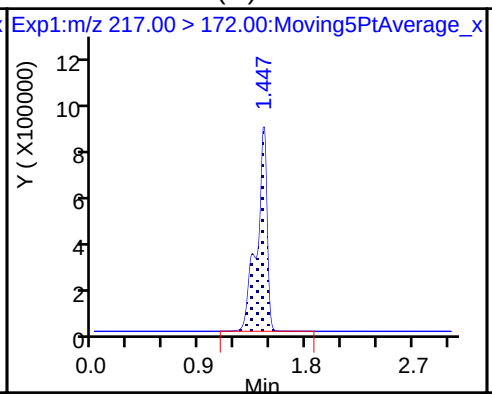
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

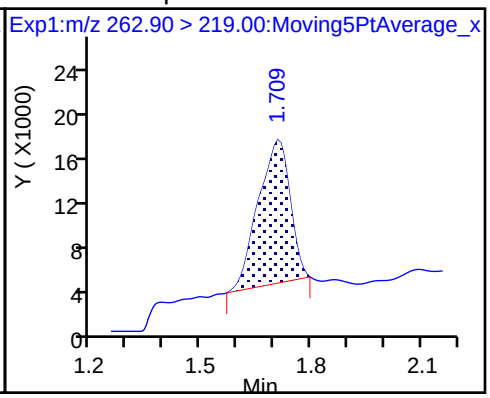
2 Perfluorobutyric acid (M)



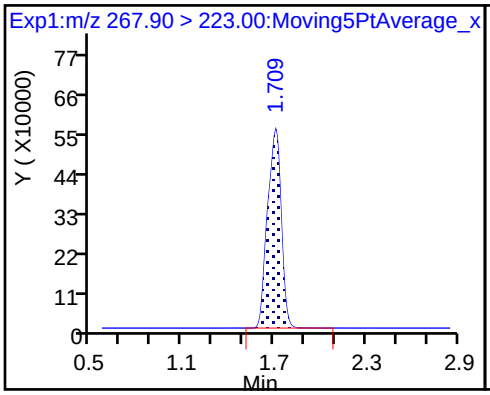
D 1 13C4 PFBA (M)



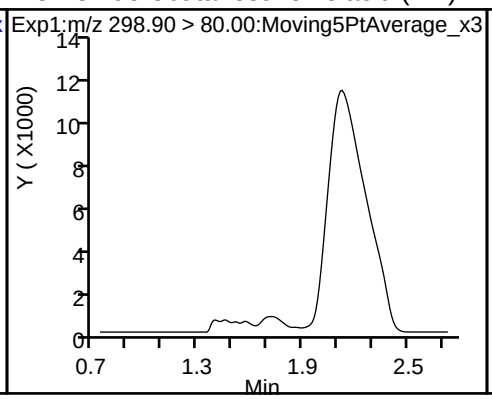
4 Perfluoropentanoic acid



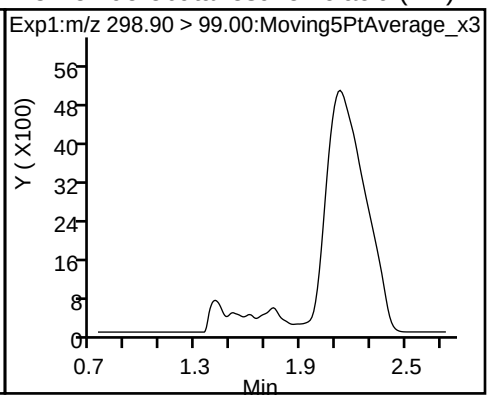
D 3 13C5-PFPeA



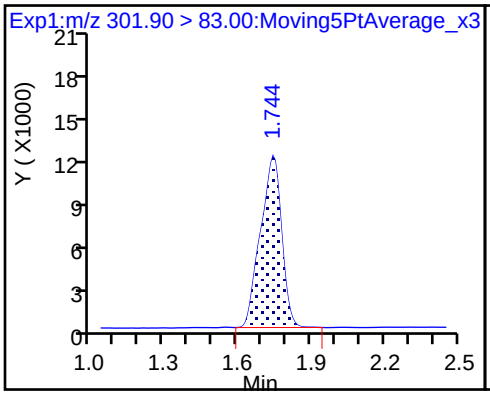
5 Perfluorobutanesulfonic acid (ND)



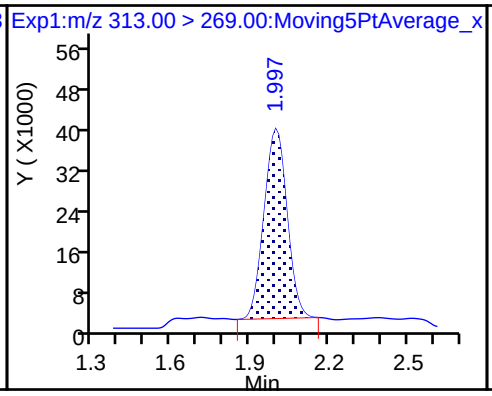
5 Perfluorobutanesulfonic acid (ND)



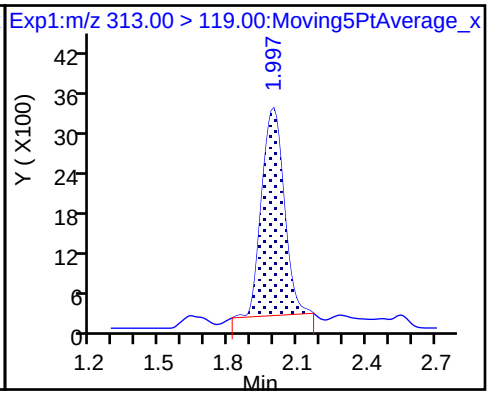
D 47 13C3-PFBS



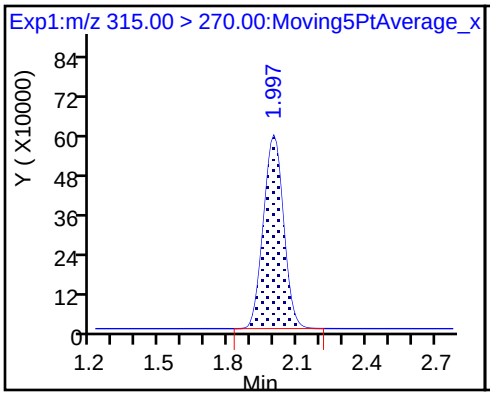
6 Perfluorohexanoic acid



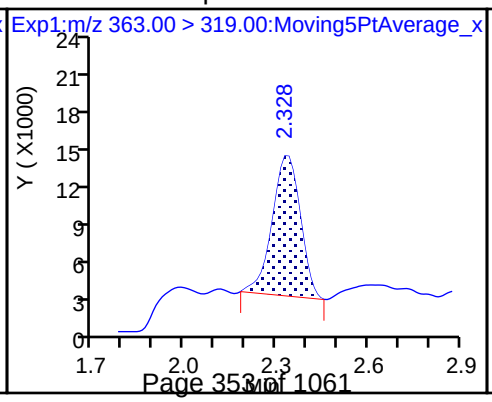
6 Perfluorohexanoic acid



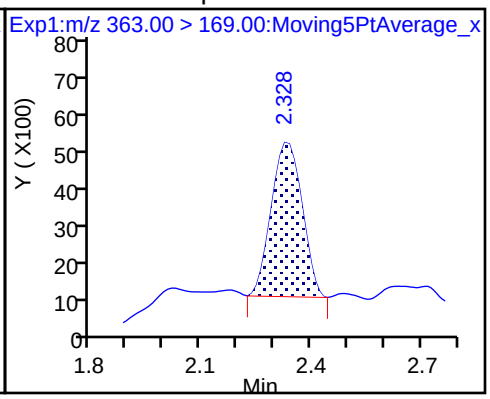
D 7 13C2 PFHxA



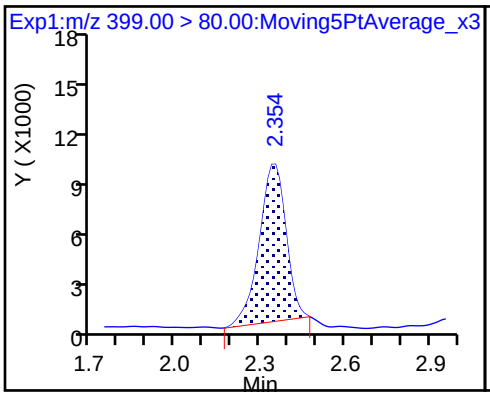
10 Perfluoroheptanoic acid



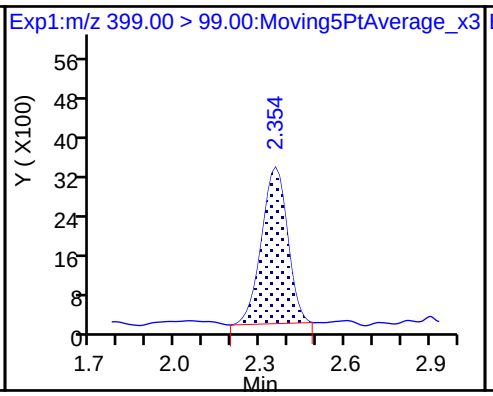
10 Perfluoroheptanoic acid



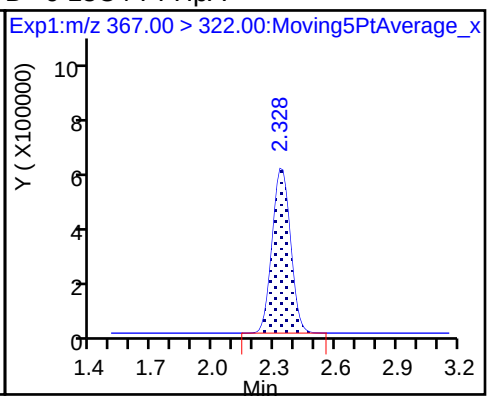
8 Perfluorohexanesulfonic acid



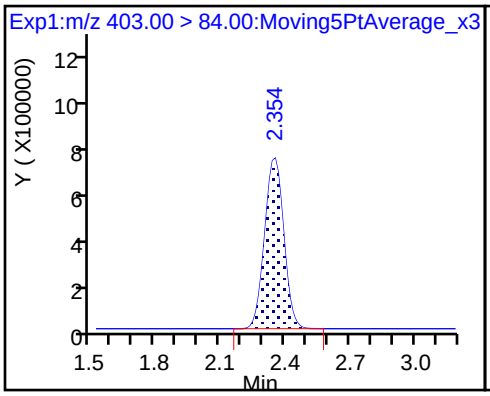
8 Perfluorohexanesulfonic acid



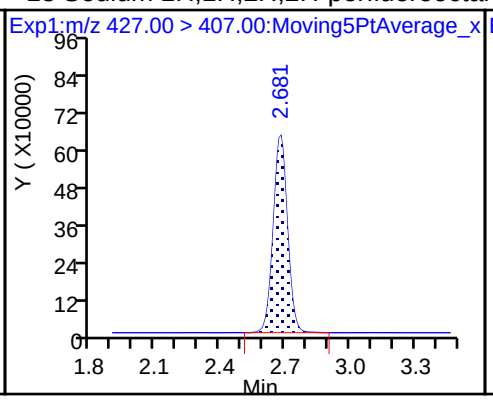
D 9 13C4-PFHpA



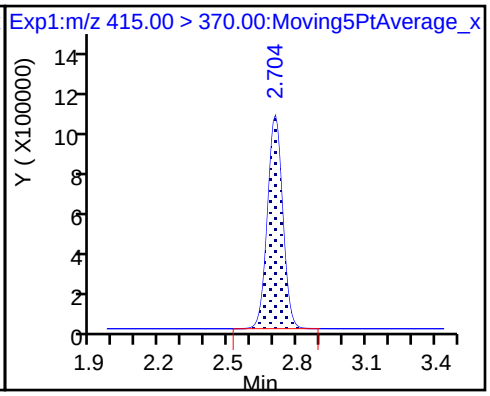
D 11 18O2 PFHxS



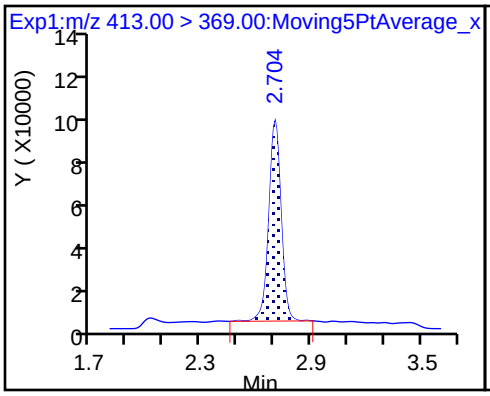
13 Sodium 1H,1H,2H,2H-perfluorooctane



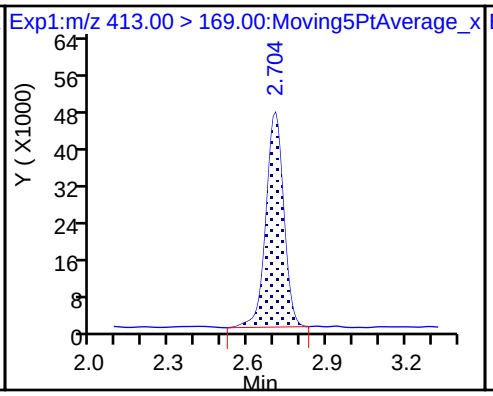
M2 6:2 13C2-PFOA



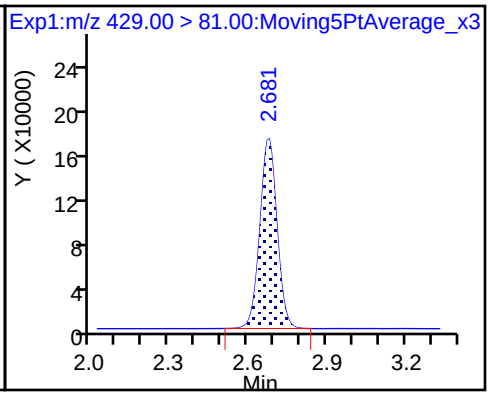
15 Perfluorooctanoic acid



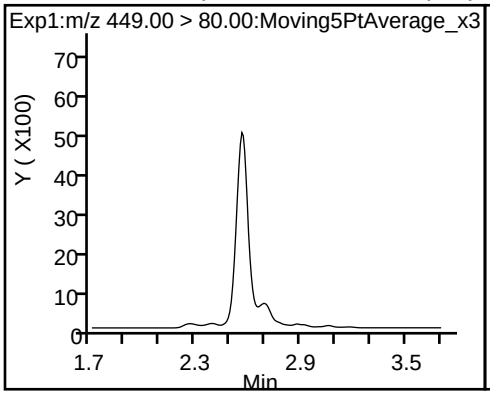
15 Perfluorooctanoic acid



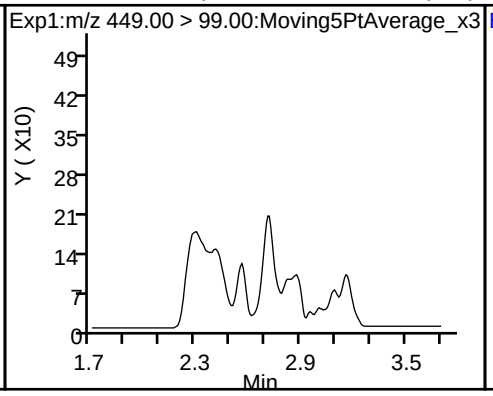
D 12 M2-6:2FTS



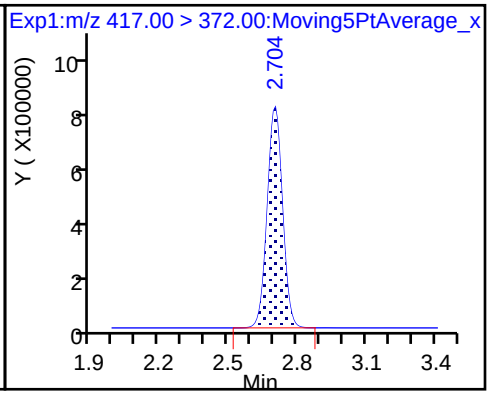
16 Perfluoroheptanesulfonic acid (ND)



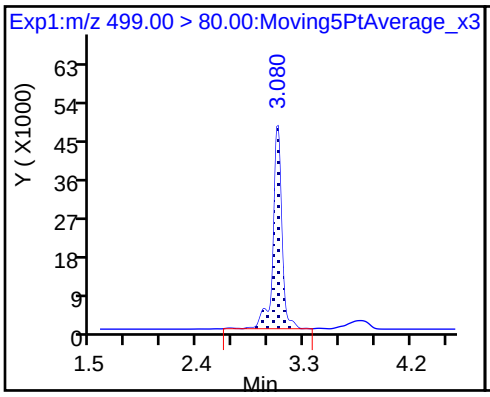
16 Perfluoroheptanesulfonic acid (ND)



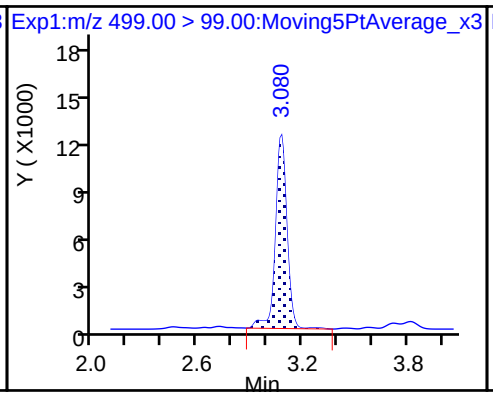
D 14 13C4 PFOA



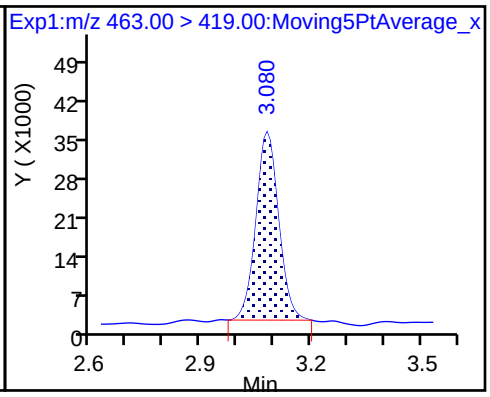
17 Perfluorooctane sulfonic acid



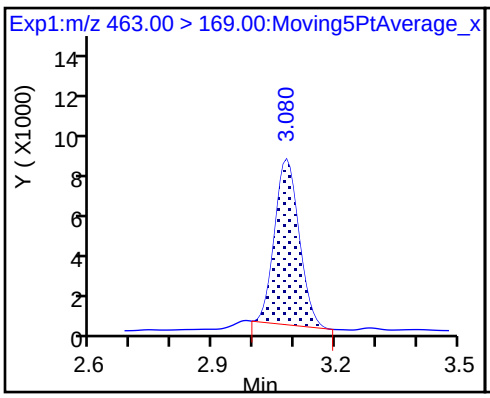
17 Perfluorooctane sulfonic acid



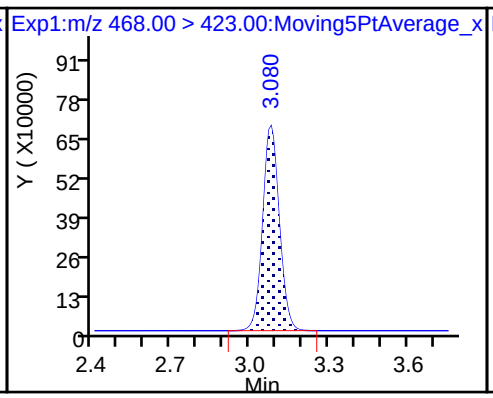
20 Perfluorononanoic acid



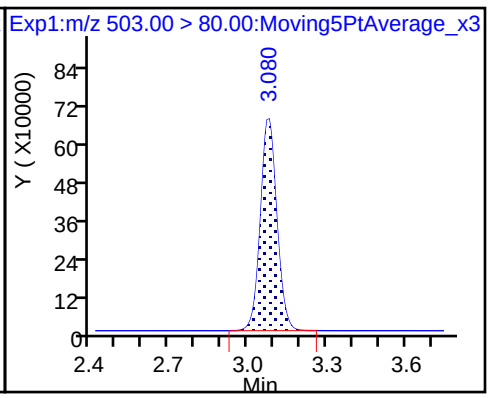
20 Perfluorononanoic acid



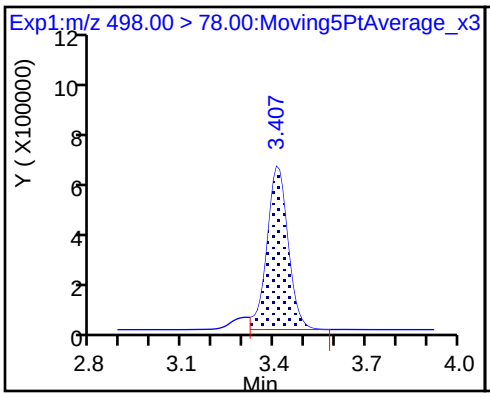
D 19 13C5 PFNA



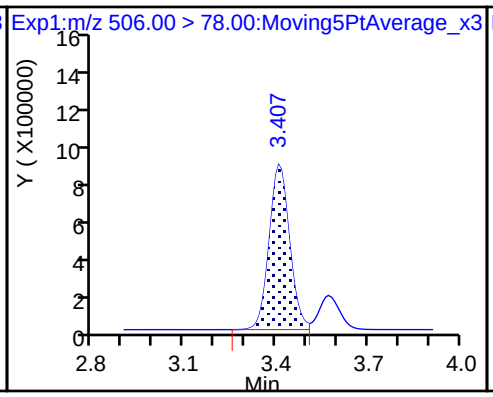
D 18 13C4 PFOS



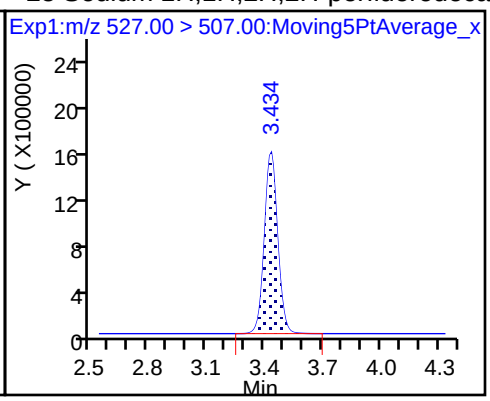
22 Perfluorooctane Sulfonamide



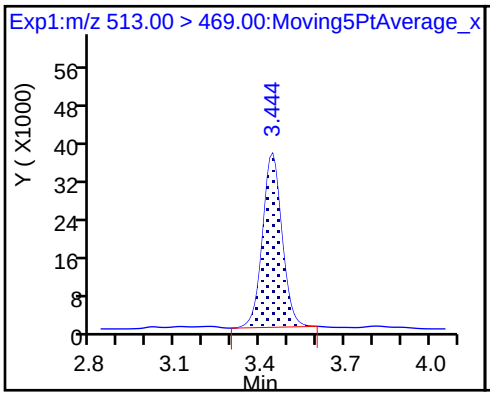
D 21 13C8 FOSA



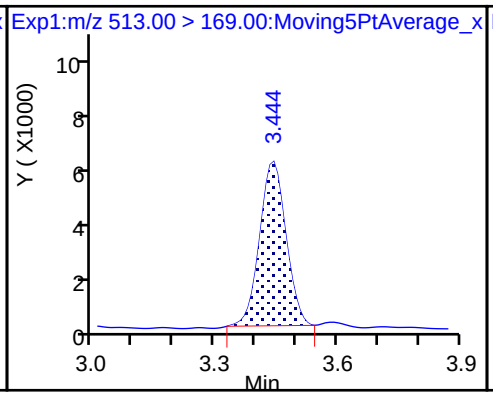
25 Sodium 1H,1H,2H,2H-perfluorodecane



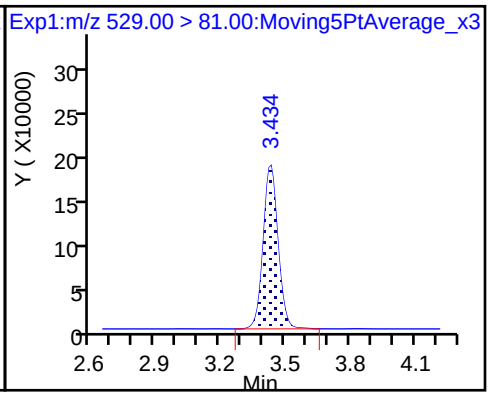
24 Perfluorodecanoic acid



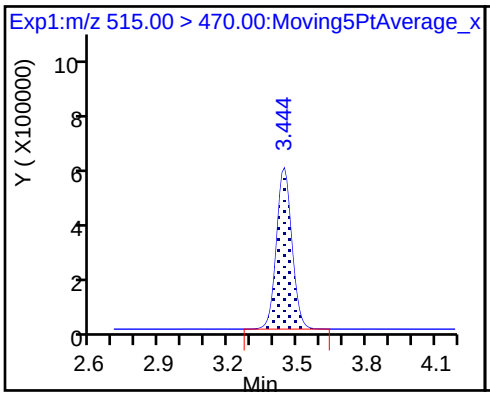
24 Perfluorodecanoic acid



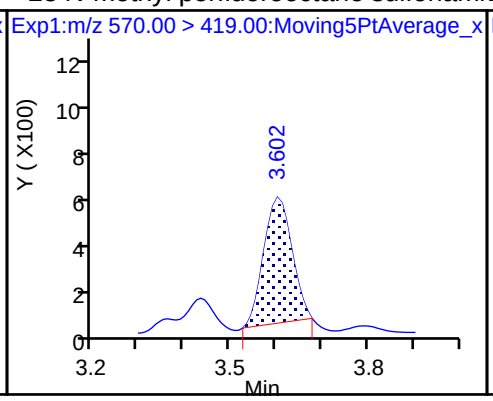
D 26 M2-8:2FTS



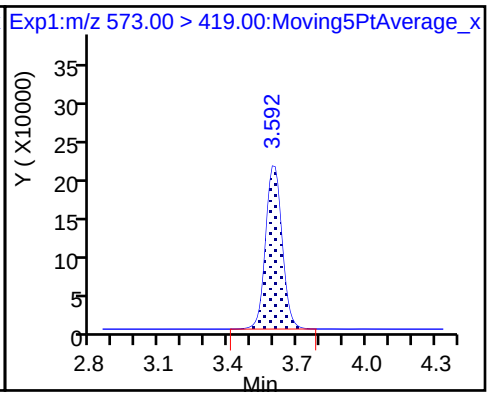
D 23 13C2 PFDA



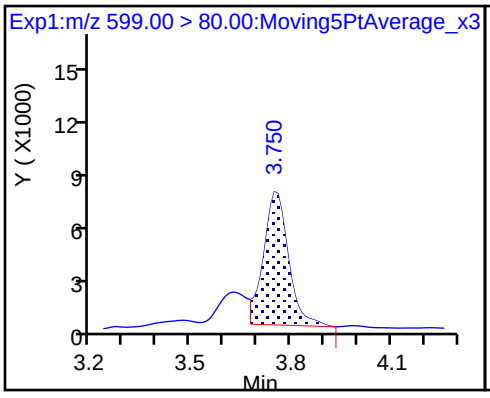
28 N-methyl perfluorooctane sulfonami



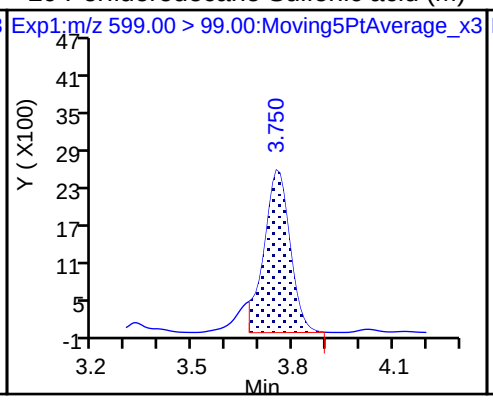
D 27 d3-NMeFOSAA



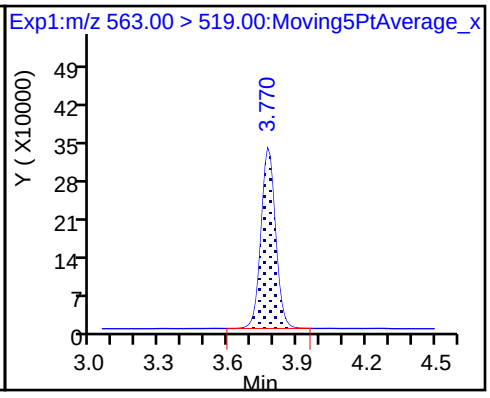
29 Perfluorodecane Sulfonic acid



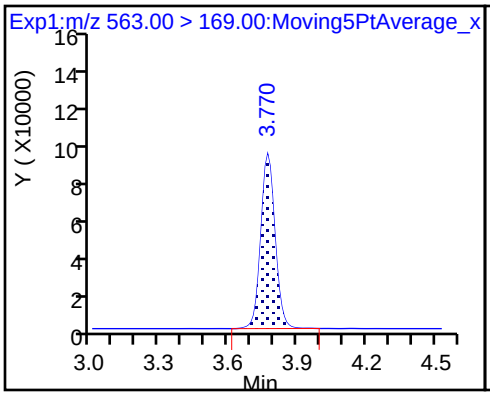
29 Perfluorodecane Sulfonic acid (M)



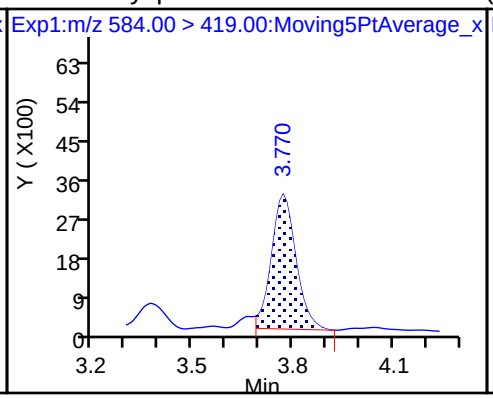
31 Perfluoroundecanoic acid



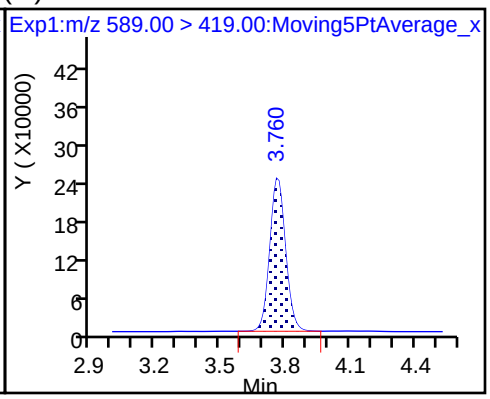
31 Perfluoroundecanoic acid



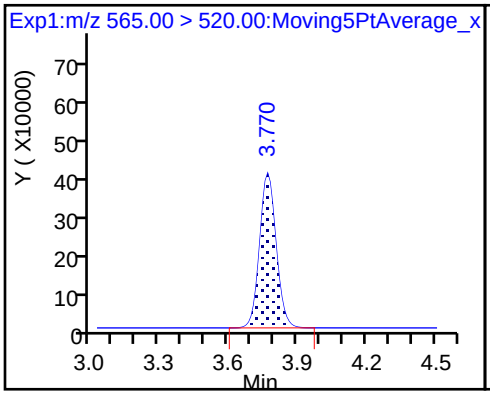
33 N-ethyl perfluorooctane sulfonamid



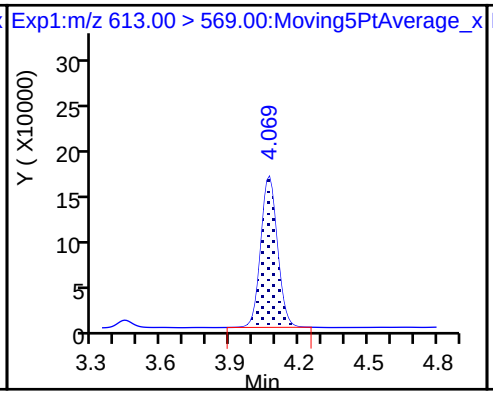
(M) 32 d5-NEtFOSAA



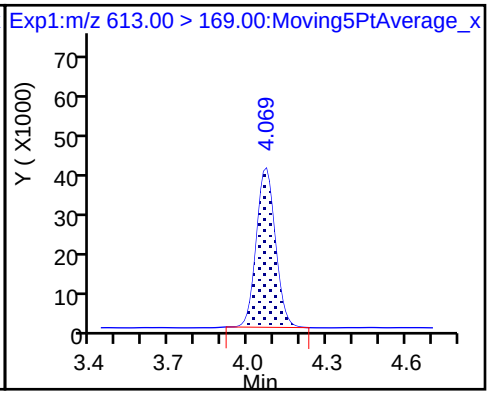
D 30 13C2 PFUnA



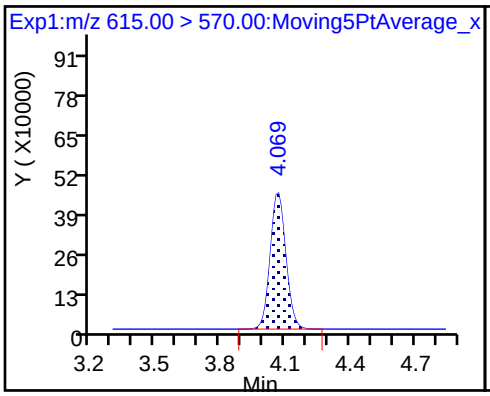
37 Perfluorododecanoic acid



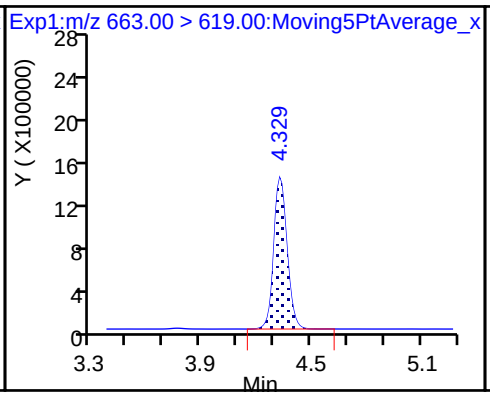
37 Perfluorododecanoic acid



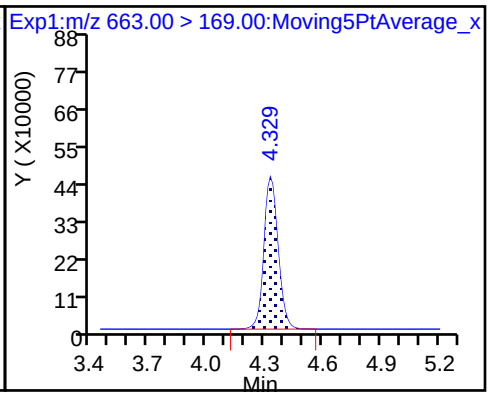
D 36 13C2 PFDoA



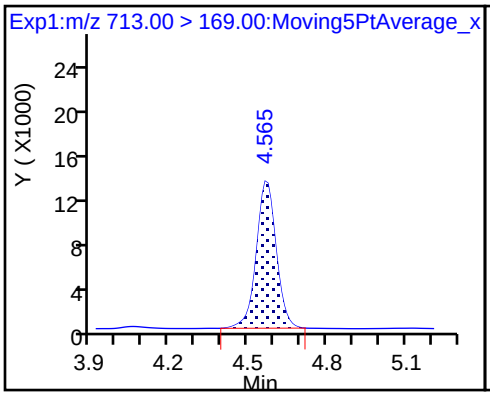
41 Perfluorotridecanoic acid



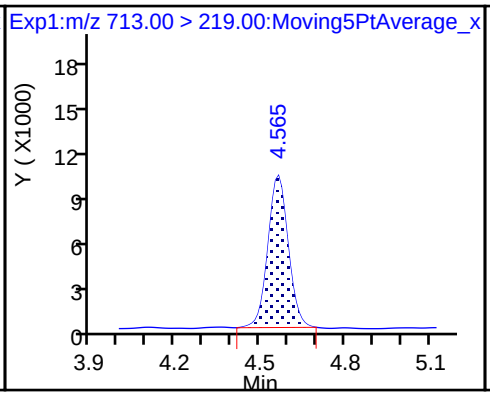
41 Perfluorotridecanoic acid



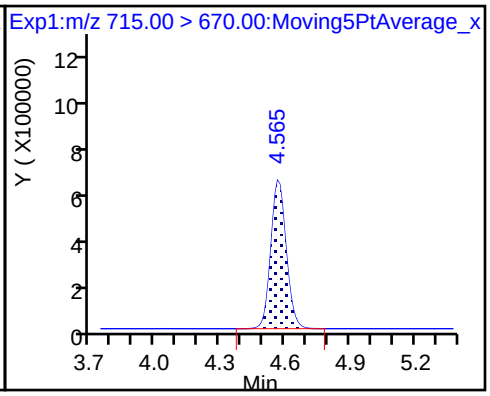
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

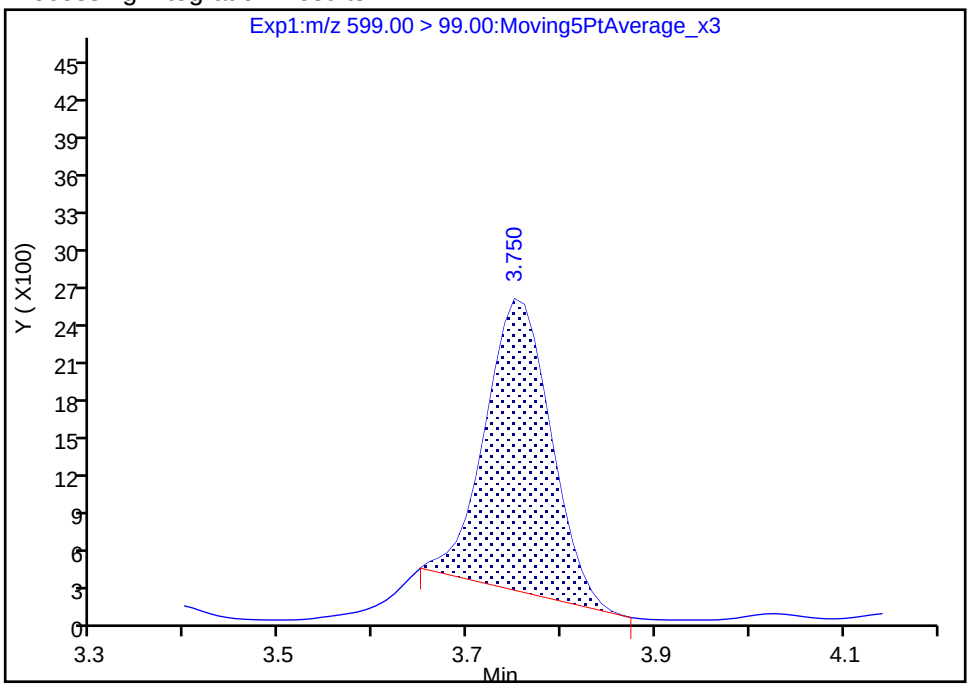
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_014.d				
Injection Date:	29-Mar-2018 01:05:16	Instrument ID:	A8_N		
Lims ID:	320-36761-A-9-B	Lab Sample ID:	320-36761-9		
Client ID:	SB030(2'-4')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 2

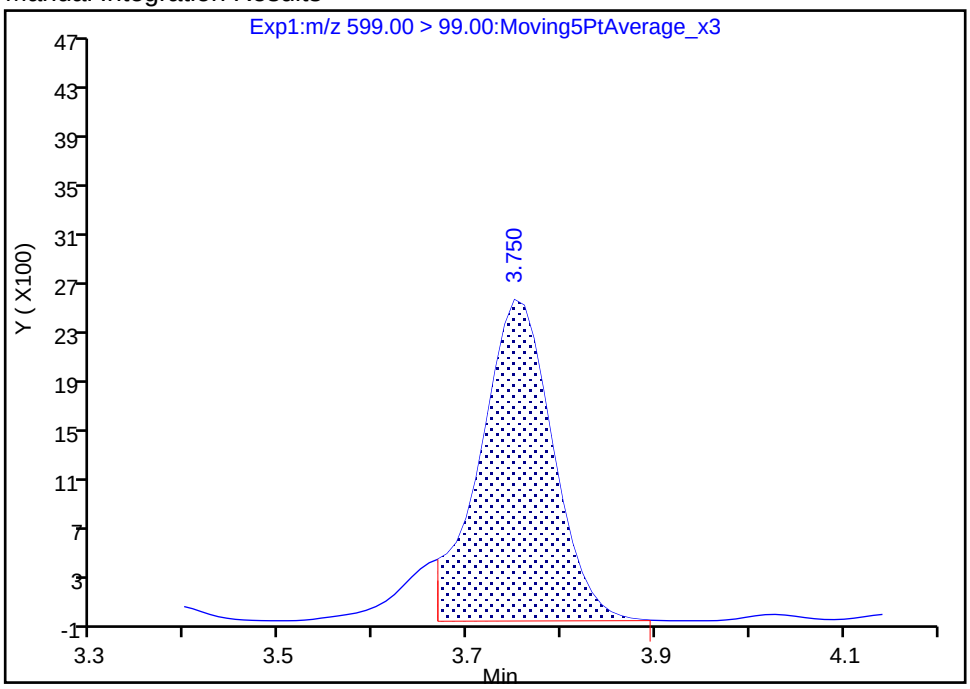
Processing Integration Results

RT: 3.75
Area: 11193
Amount: 0.047599
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 13603
Amount: 0.047599
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:03:44

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: SB030(2'-4') DL Lab Sample ID: 320-36761-9 DL

Matrix: Solid Lab File ID: 2018.03.21LLC_029.d

Analysis Method: 537 (modified) Date Collected: 03/05/2018 10:05

Extraction Method: SHAKE Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.03(g) Date Analyzed: 03/22/2018 00:56

Con. Extract Vol.: 10.00(mL) Dilution Factor: 10

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 17.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
39108-34-4	8:2FTS	0.051	D	0.024	0.0030

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02280	M2-8:2FTS	64		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_029.d
Lims ID: 320-36761-A-9-A
Client ID: SB030(2'-4')
Sample Type: Client
Inject. Date: 22-Mar-2018 00:56:11 ALS Bottle#: 30 Worklist Smp#: 24
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-36761-a-9-a 10X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:32 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:45:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.446	0.007	0.539	571101	0.2063		82.5	7625	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.000	60079	0.0279			24.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	392768	0.2139		85.6	10740	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.735	0.010	0.647	9043	0.2158		92.8	62.5	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.997	0.001	0.741	436492	0.2150		86.0	19705	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.997	0.001	1.000	42884	0.0240			115	
313.00 > 119.00	1.998	1.997	0.001	1.000	2985		14.37(5.03-15.10)		50.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	413511	0.2064		82.6	11625	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.328	0.013	1.006	16066	0.009389			30.4	
363.00 > 169.00	2.341	2.328	0.013	1.006	6750		2.38(1.13-3.40)		102	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.341	0.013	0.873	509261	0.2061		87.1	17476	
8 Perfluorohexanesulfonic acid										R
399.00 > 80.00	2.341	2.341	0.0	0.995	13994	0.005839			122	R
399.00 > 99.00	2.354	2.341	0.013	1.000	2590		5.40(1.50-4.49)		13.4	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.665	0.008	0.991	86592	0.2085		87.8	2058	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	493213	0.7758			16600	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.688	0.009	1.000	416846	0.2034		81.4	16509	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		546554	0.2500			18438	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	75042	0.0398			21.8	
413.00 > 169.00	2.697	2.697	0.0	1.000	35733		2.10(0.84-2.52)		92.0	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	252903	0.1406		58.8	4918	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	314320	0.1739		69.6	15516	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	34048	0.0289			159	
499.00 > 99.00	3.072	3.065	0.007	1.002	9181		3.71(2.31-6.93)		91.8	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	21720	0.0173			30.9	
463.00 > 169.00	3.072	3.072	0.0	1.000	6229		3.49(1.90-5.69)		225	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.011	1.260	272709	0.1125		45.0	404	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.407	-0.008	1.000	210614	0.1959			592	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.415	0.011	1.270	86599	0.1544		64.5	2132	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.424	0.011	1.274	224461	0.1417		56.7	6339	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	970407	2.10			19833	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.435	3.435	0.0	1.000	26180	0.0295			120	
513.00 > 169.00	3.435	3.435	0.0	1.000	3769		6.95(2.36-7.09)		86.0	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	101123	0.1213		48.5	4429	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	128101	0.1349		53.9	1116	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.748	0.021	1.398	168585	0.1190		47.6	4346	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.769	-0.011	1.000	2096	0.004378			35.4	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	120704	0.2076			543	
563.00 > 169.00	3.769	3.769	0.0	1.000	33215		3.63(2.12-6.36)		1325	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.505	192927	0.1200		48.0	2349	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	84494	0.1046			122	
613.00 > 169.00	4.057	4.057	0.0	1.000	21111		4.00(2.13-6.40)		487	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.318	0.010	1.000	841898	0.99			923	
663.00 > 169.00	4.328	4.318	0.010	1.000	257328		3.27(1.25-3.76)		5259	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.693	211009	0.1074		43.0	1918	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	9316	0.0445			153	
713.00 > 219.00	4.554	4.564	-0.010	0.998	5507		1.69(0.71-2.13)		163	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 12:53:58 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_029.d

Injection Date: 22-Mar-2018 00:56:11 Instrument ID: A8_N

Lims ID: 320-36761-A-9-A Lab Sample ID: 320-36761-9

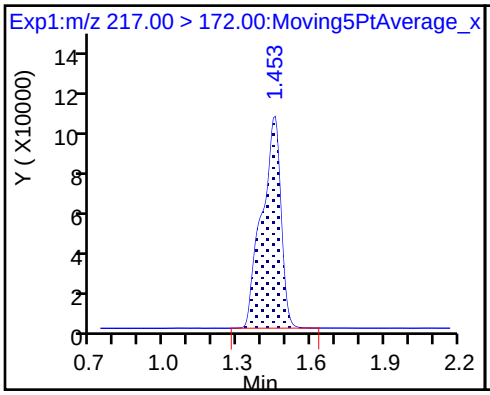
Client ID: SB030(2'-4')

Operator ID: SACINSTLCMS01 ALS Bottle#: 30 Worklist Smp#: 24

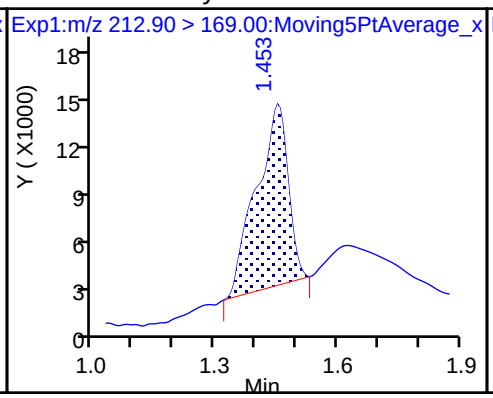
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

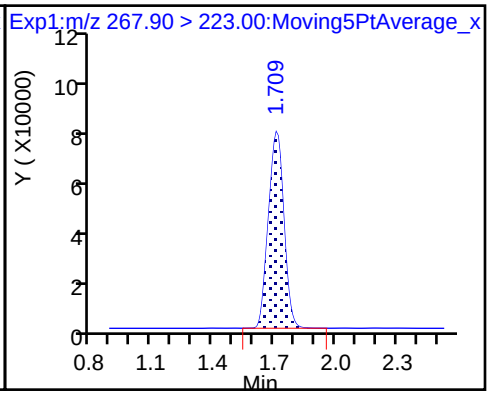
D 1 13C4 PFBA



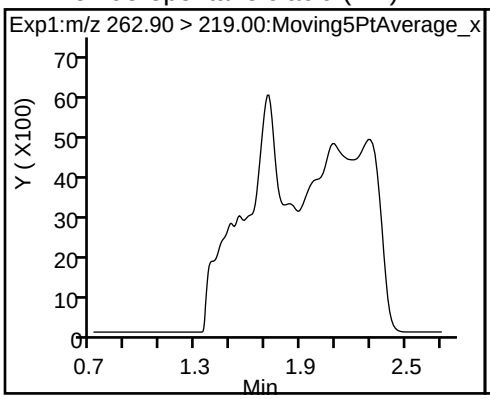
2 Perfluorobutyric acid



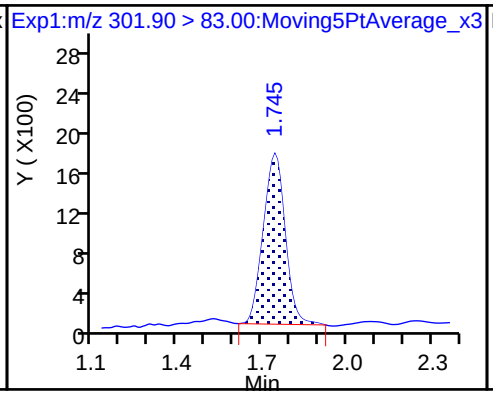
D 3 13C5-PFPeA



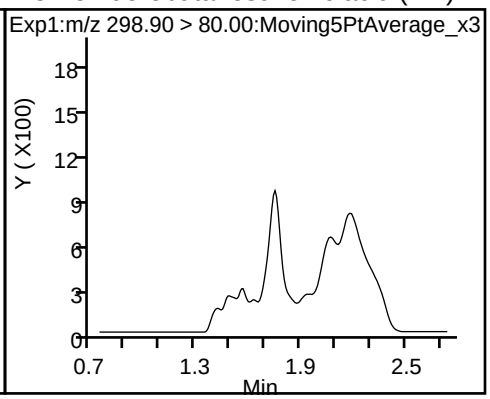
4 Perfluoropentanoic acid (ND)



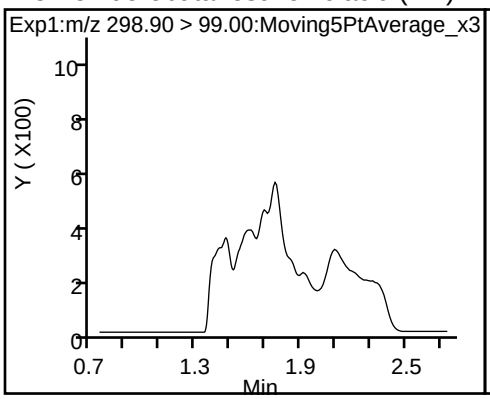
D 47 13C3-PFBS



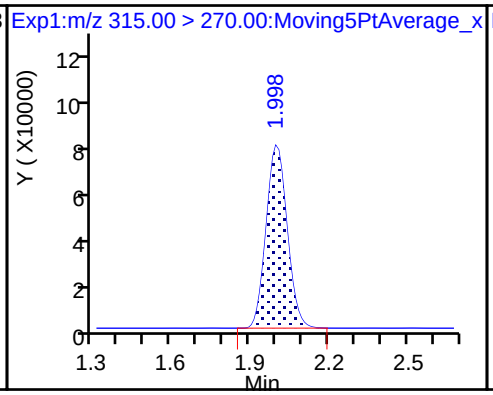
5 Perfluorobutanesulfonic acid (ND)



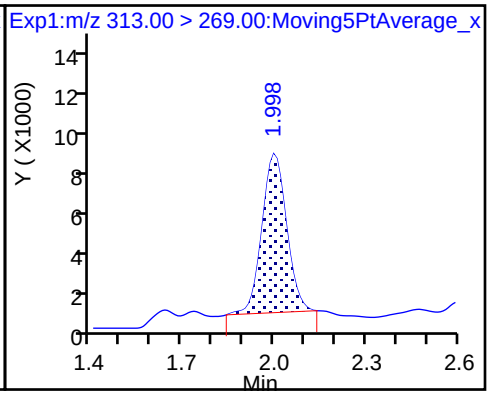
5 Perfluorobutanesulfonic acid (ND)



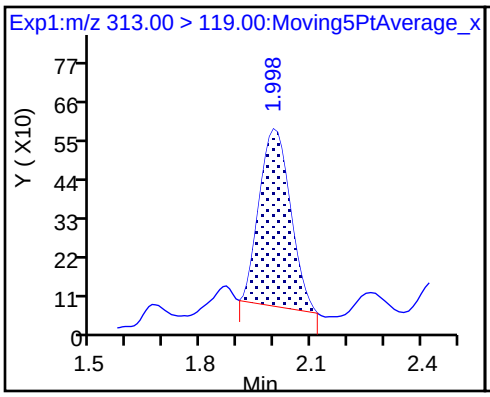
D 7 13C2 PFHxA



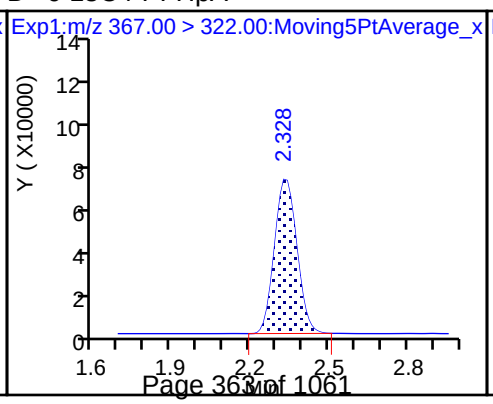
6 Perfluorohexanoic acid



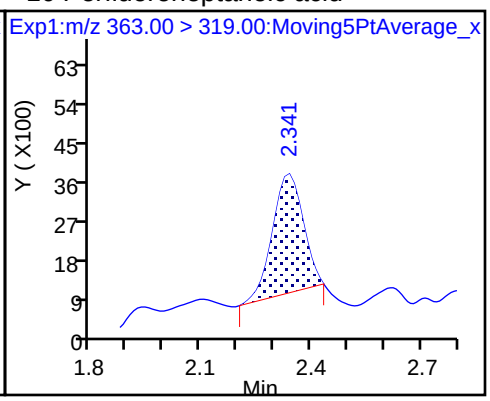
6 Perfluorohexanoic acid



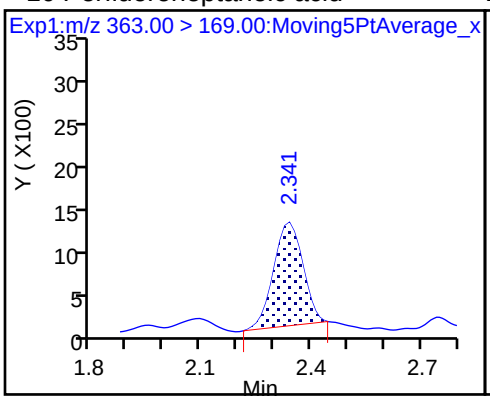
D 9 13C4-PFHpA



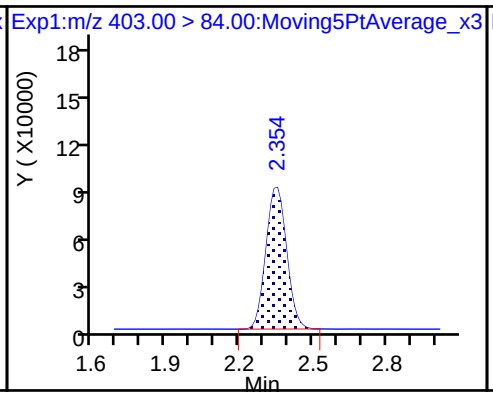
10 Perfluoroheptanoic acid



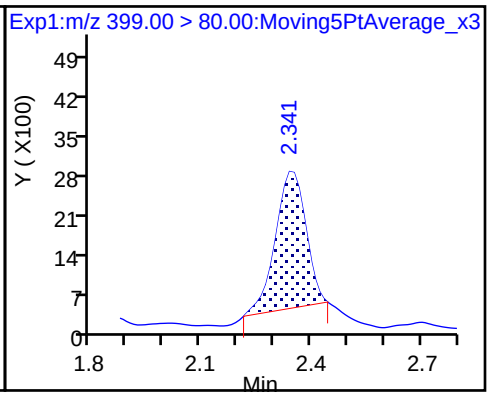
10 Perfluoroheptanoic acid



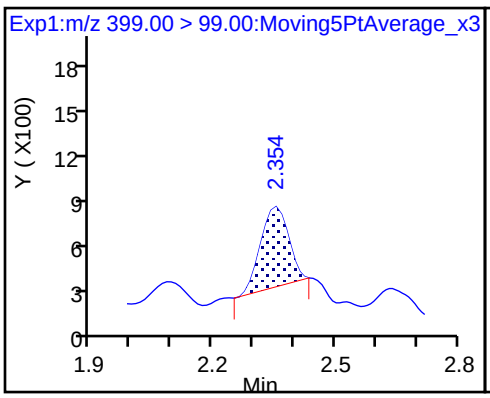
D 11 18O2 PFHxS



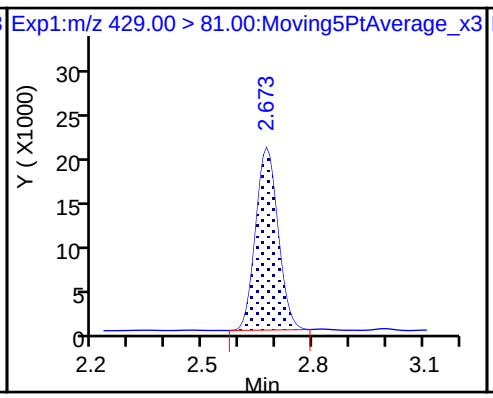
8 Perfluorohexanesulfonic acid



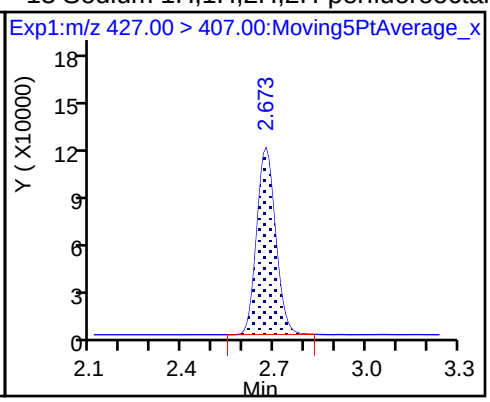
8 Perfluorohexanesulfonic acid



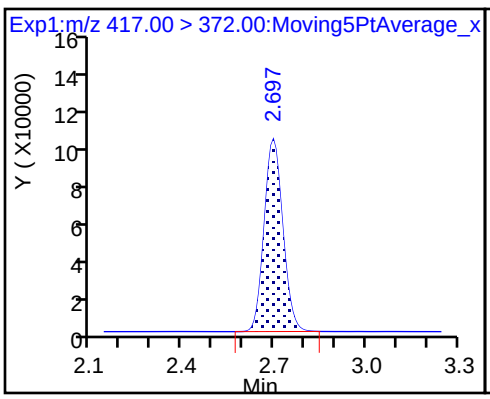
D 12 M2-6:2FTS



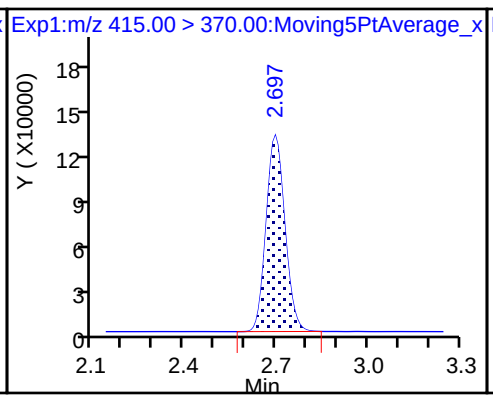
13 Sodium 1H,1H,2H,2H-perfluorooctane



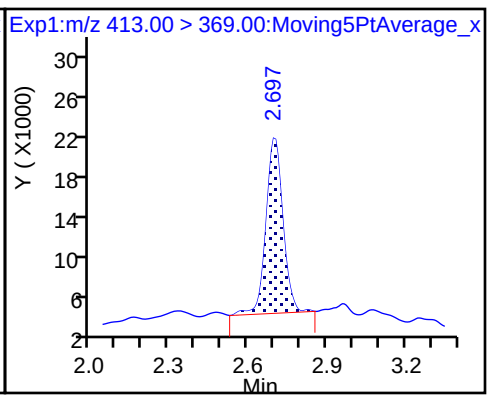
D 14 13C4 PFOA



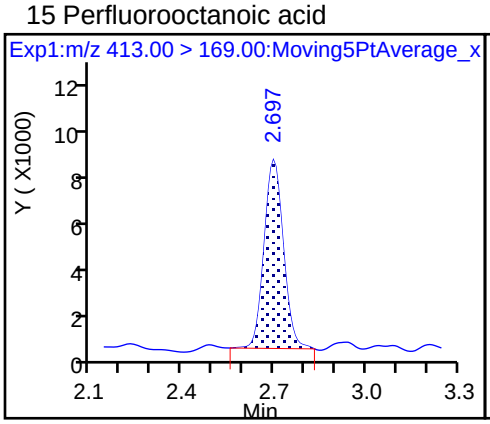
* 62 13C2-PFOA



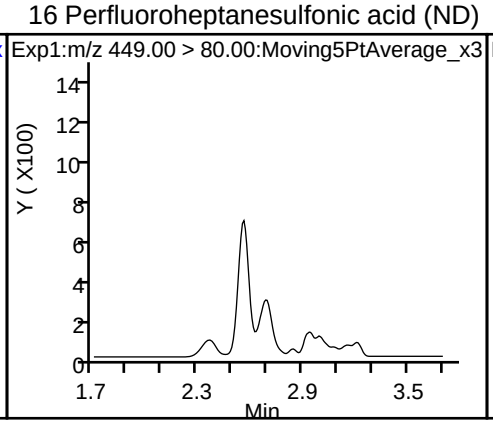
15 Perfluorooctanoic acid



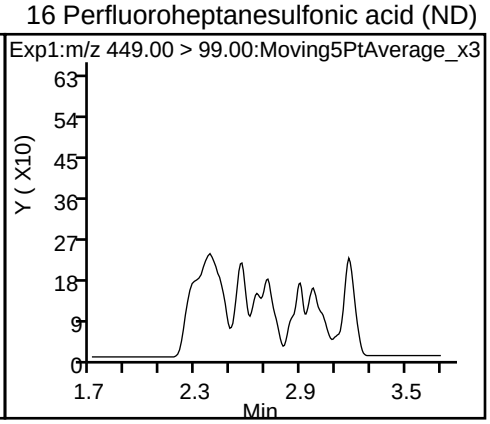
15 Perfluorooctanoic acid



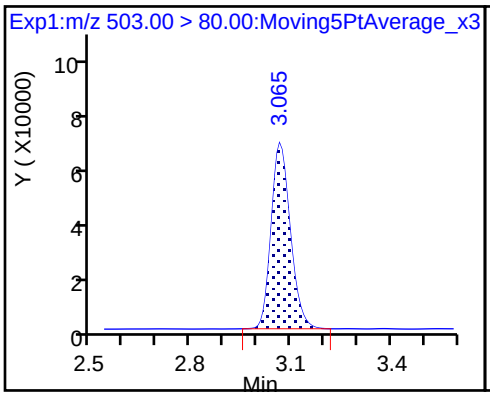
16 Perfluoroheptanesulfonic acid (ND)



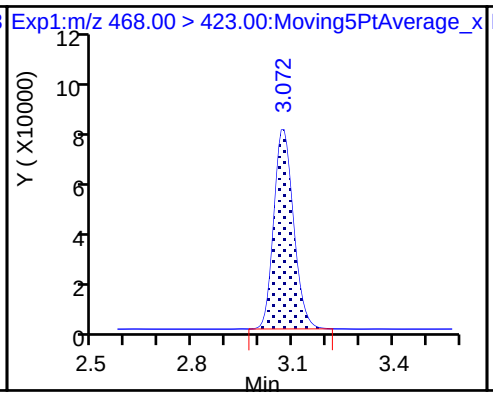
16 Perfluoroheptanesulfonic acid (ND)



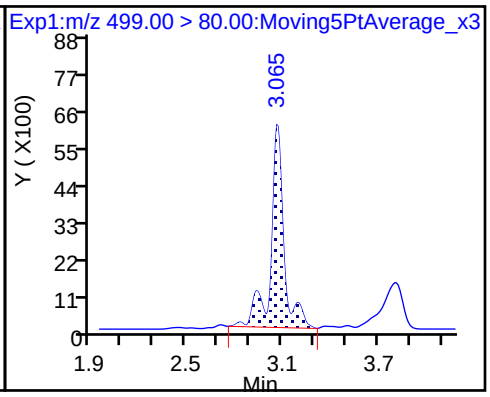
D 18 13C4 PFOS



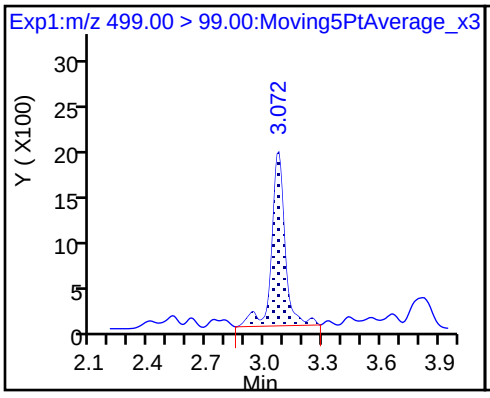
D 19 13C5 PFNA



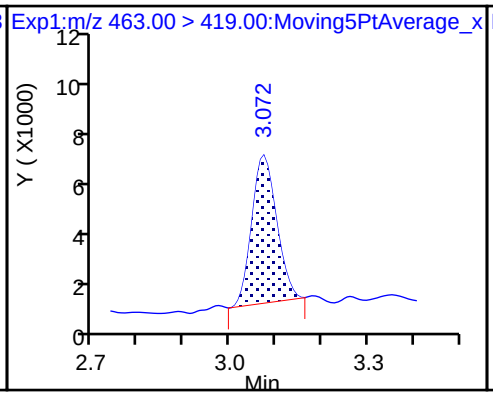
17 Perfluorooctane sulfonic acid



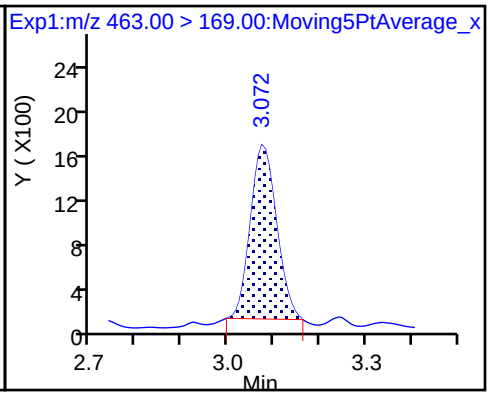
17 Perfluorooctane sulfonic acid



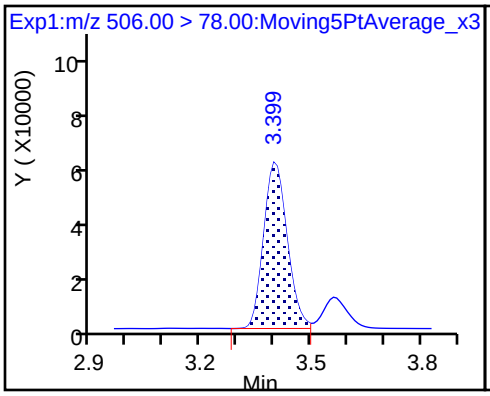
20 Perfluorononanoic acid



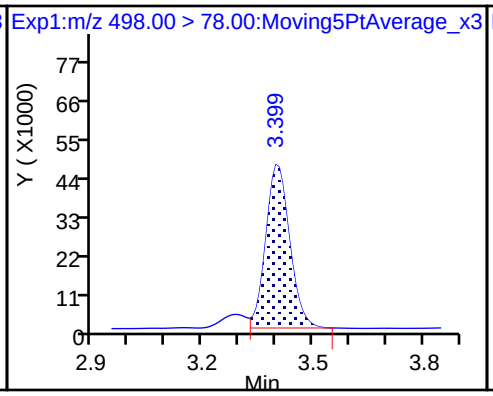
20 Perfluorononanoic acid



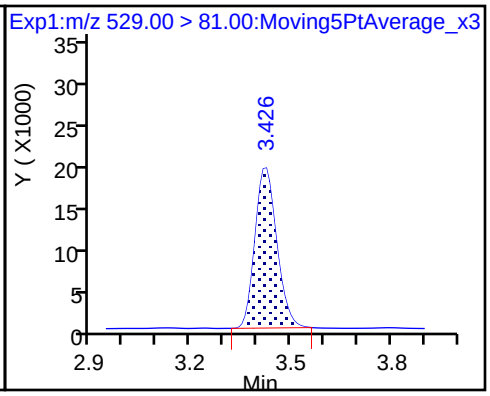
D 21 13C8 FOSA



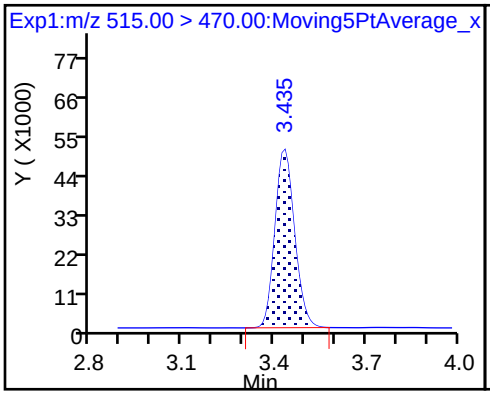
22 Perfluorooctane Sulfonamide



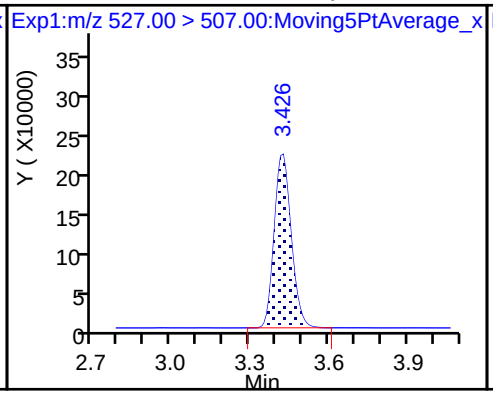
D 26 M2-8:2FTS



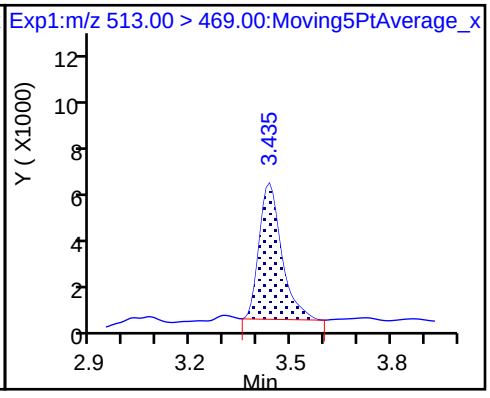
D 23 13C2 PFDA



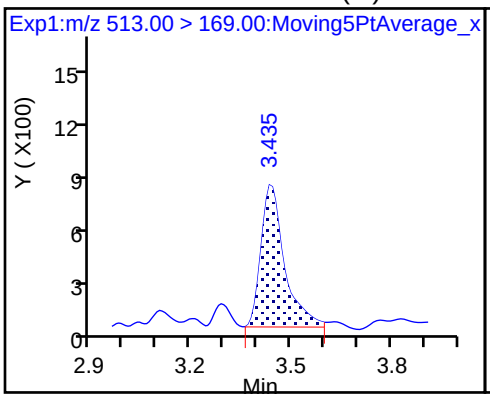
25 Sodium 1H,1H,2H,2H-perfluorodecan



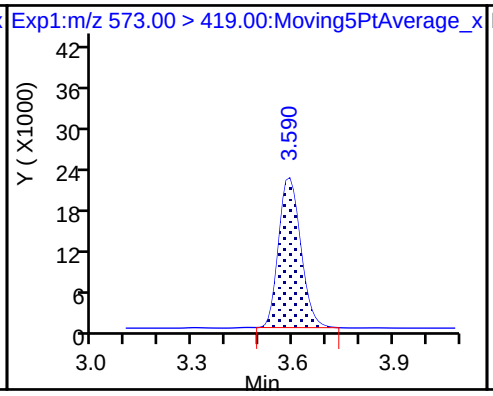
24 Perfluorodecanoic acid



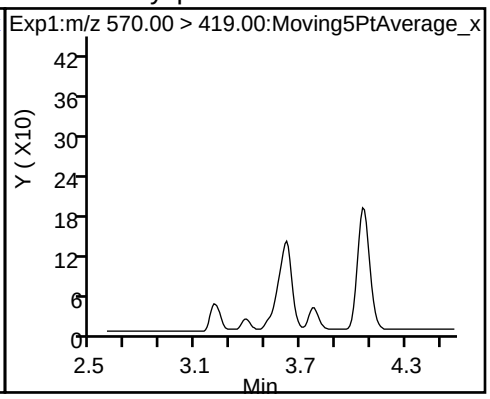
24 Perfluorodecanoic acid (M)



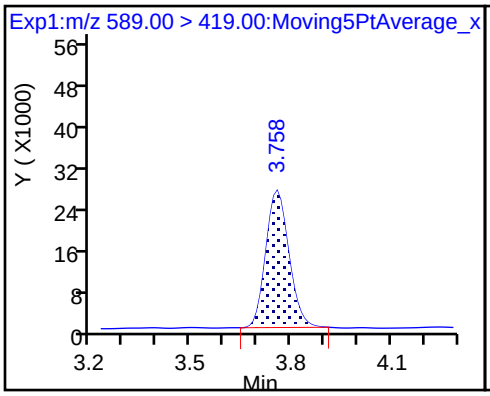
D 27 d3-NMeFOSAA



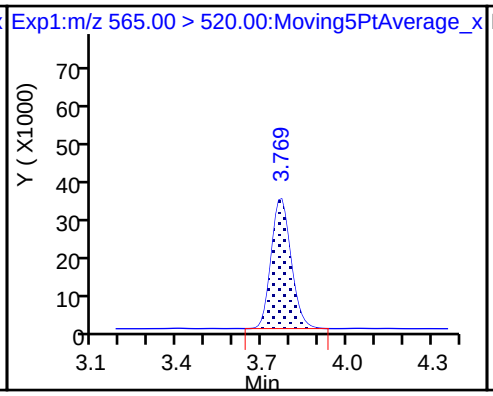
28 N-methyl perfluorooctane sulfonami (ND)



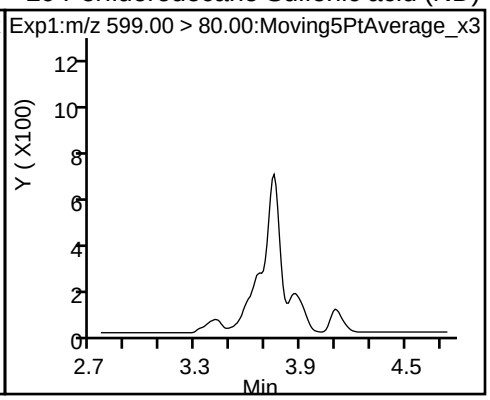
D 32 d5-NEtFOSAA



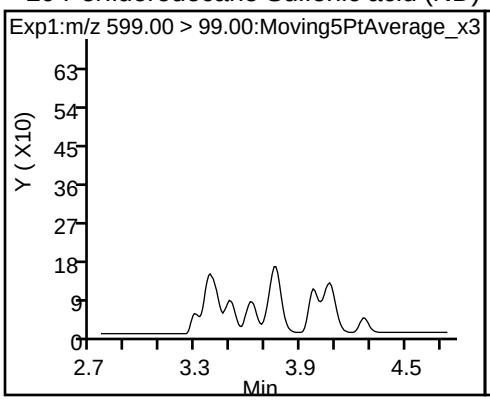
D 30 13C2 PFUnA



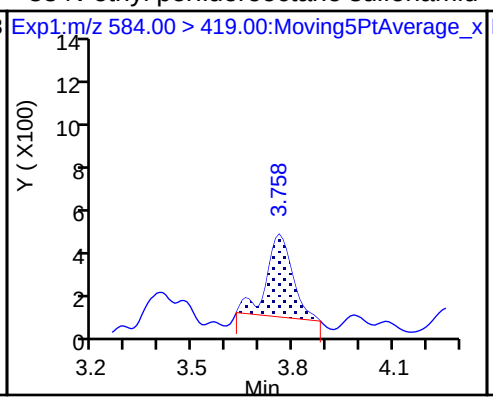
29 Perfluorodecane Sulfonic acid (ND)



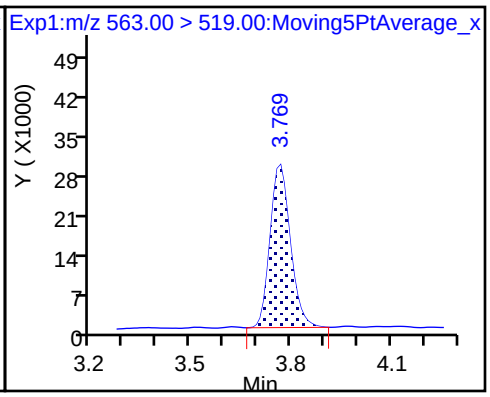
29 Perfluorodecane Sulfonic acid (ND)



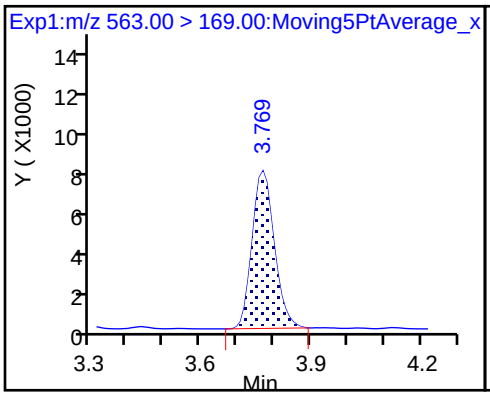
33 N-ethyl perfluorooctane sulfonamid



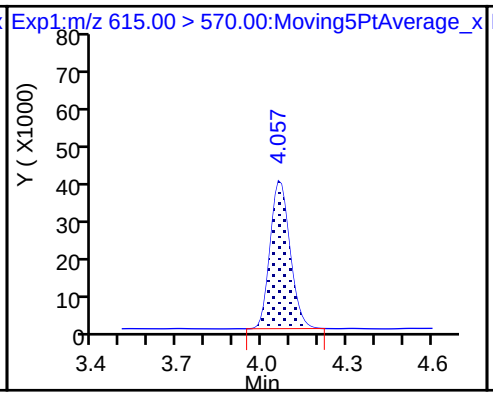
31 Perfluoroundecanoic acid



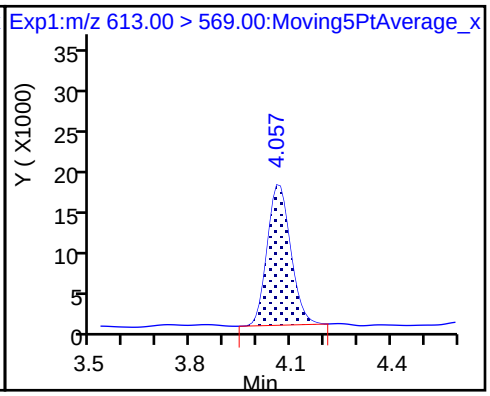
31 Perfluoroundecanoic acid



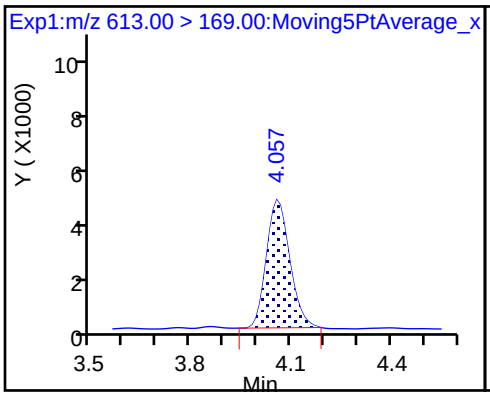
D 36 13C2 PFDoA



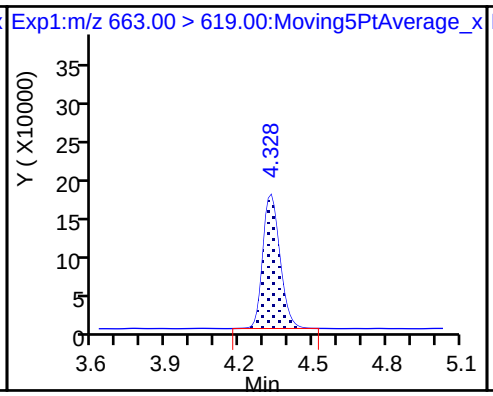
37 Perfluorododecanoic acid



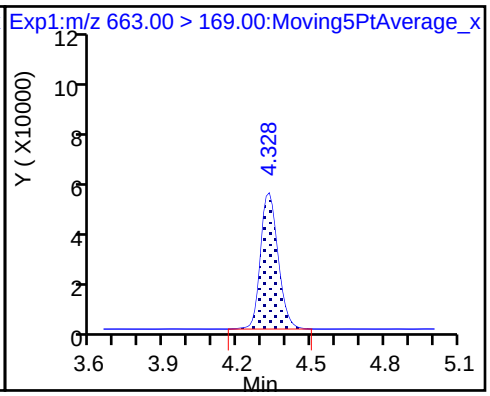
37 Perfluorododecanoic acid



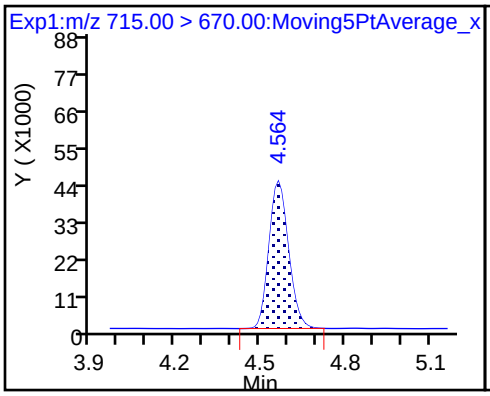
41 Perfluorotridecanoic acid



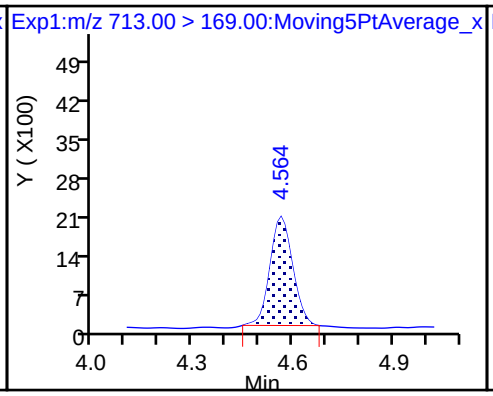
41 Perfluorotridecanoic acid



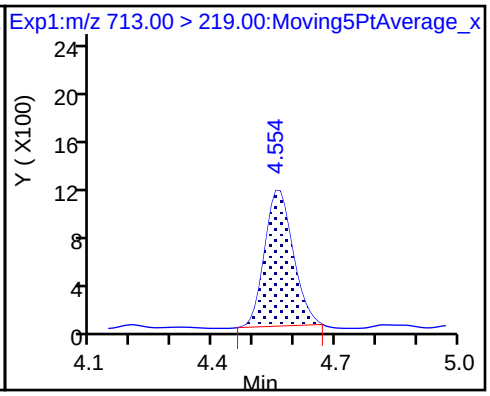
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-213554/2	2018.03.16ICAL_002.d
Level 2	IC 320-213554/3	2018.03.16ICAL_003.d
Level 3	IC 320-213554/4	2018.03.16ICAL_004.d
Level 4	IC 320-213554/5	2018.03.16ICAL_005.d
Level 5	IC 320-213554/6	2018.03.16ICAL_006.d
Level 6	IC 320-213554/7	2018.03.16ICAL_007.d
Level 7	IC 320-213554/8	2018.03.16ICAL_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9031 0.9533	0.9199 0.9384	0.9308	0.8987	0.9480	AveID		0.9274				2.3		35.0			
Perfluoropentanoic acid (PFPeA)	1.2009 1.1519	1.2167 1.1599	1.1152	1.1407	1.1917	AveID		1.1681				3.1		35.0			
Perfluorobutanesulfonic acid (PFBS)	78.227 81.199	75.406 70.304	75.634	77.520	83.350	AveID		77.377				5.5		50.0			
4:2 FTS	16.857 15.350	17.089 14.717	16.180	16.069	16.257	AveID		16.074				5.1		50.0			
Perfluorohexanoic acid (PFHxA)	1.0350 1.0221	1.0062 1.0289	0.9979	0.9561	1.0171	AveID		1.0090				2.6		35.0			
Perfluoroheptanoic acid (PFHpA)	1.0914 1.0923	0.9748 1.0133	1.0620	1.0062	1.0155	AveID		1.0365				4.4		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3314 1.0433	1.1983 1.0665	1.0904	0.9939	1.0839	AveID		1.1154				10.2		35.0			
6:2FTS	1.4578 1.7282	1.6726 1.7536	1.7189	1.5984	1.7228	AveID		1.6646				6.3		35.0			
Perfluorooctanoic acid (PFOA)	1.2771 1.1667	1.0727 1.1183	1.0176	1.0536	1.1087	AveID		1.1164				7.7		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2442 1.3776	1.3119 1.2616	1.2979	1.3309	1.3750	AveID		1.3142				3.9		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.1186 1.1281	1.0756 1.0976	1.0125	1.0497	1.0960	AveID		1.0826				3.7		35.0			
Perfluorononanoic acid (PFNA)	0.9418 1.1047	1.0637 1.0209	0.9751	0.9774	1.0532	AveID		1.0196				5.7		35.0			
Perfluorooctane Sulfonamide (FOSA)	0.9443 1.0041	0.9582 0.9184	0.9707	0.9921	1.0142	AveID		0.9717				3.5		35.0			
8:2FTS	1.1650 1.3410	1.2889 1.1925	1.2506	1.2474	1.3153	AveID		1.2573				5.1		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	0.8359 1.0050	0.9109 0.9765	0.9435	0.9911	0.9791	AveID		0.9489				6.2		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9706 1.0514	1.1969 1.0691	0.9778	0.9880	1.0369	AveID		1.0415				7.5		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6130 0.6489	0.6312 0.6417	0.6325	0.6589	0.6434	AveID		0.6385				2.3		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.0125 1.0565	1.0388 0.9572	0.9286	0.9109	0.9491	AveID		0.9791				5.8		35.0			
Perfluoroundecanoic acid (PFUnA)	1.0505 0.8162	0.9268 0.8167	0.7463	0.7128	0.7970	AveID		0.8380				13.8		35.0			
Perfluorododecanoic acid (PFDoA)	0.9632 1.0357	0.9788 1.0559	1.0311	1.0661	1.0300	AveID		1.0230				3.7		35.0			
Perfluorotridecanoic Acid (PFTriA)	0.8910 1.0818	1.0005 1.0734	1.0473	1.0432	1.0643	AveID		1.0288				6.4		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.3265 0.2648	0.3171 0.2554	0.2524	0.2568	0.2575	AveID		0.2758				11.5		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	+++++ 0.9115	1.3587 0.9795	1.0139	0.8995	0.9099	L2ID	0.0220	0.9179							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.0308 1.0048	0.9673 0.9799	0.9247	0.9147	1.0022	AveID		0.9749				4.4		50.0			
13C4 PFBA	1.2265 1.3466	1.2477 1.3727	1.2117	1.2531	1.2775	Ave		1.2765				4.8		50.0			
13C5 PFPeA	0.8872 0.9351	0.9058 0.9286	0.8843	0.8735	0.8895	Ave		0.9006				2.6		50.0			
13C3-PFBS	0.0208 0.0233	0.0220 0.0255	0.0212	0.0213	0.0216	Ave		0.0222				7.4		50.0			
M2-4:2FTS	0.1551 0.1601	0.1641 0.1564	0.1525	0.1597	0.1651	Ave		0.1590				2.9		50.0			
13C2 PFHxA	0.9862 1.0374	1.0207 1.0115	0.9703	1.0040	0.9998	Ave		1.0043				2.2		50.0			
13C4-PFHpA	0.9921 0.9834	1.0180 0.9949	0.9154	0.9647	0.9683	Ave		0.9767				3.3		50.0			
18O2 PFHxS	1.2954 1.3719	1.2605 1.3987	1.2062	1.3166	1.2722	Ave		1.3031				5.1		50.0			
M2-6:2FTS	0.2545 0.2618	0.2468 0.2527	0.2417	0.2487	0.2447	Ave		0.2501				2.7		50.0			
13C4 PFOA	0.9512 0.9322	0.9573 0.9523	0.9243	0.9466	0.9377	Ave		0.9431				1.3		50.0			
13C4 PFOS	0.8639 0.9586	0.8770 1.0055	0.8622	0.8952	0.9169	Ave		0.9113				5.9		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C5 PFNA	0.7492 0.7662	0.7527 0.7694	0.7279	0.7580	0.7581	Ave		0.7545				1.8		50.0			
13C8 FOSA	1.2871 1.3566	1.3145 1.3871	1.2648	1.3058	1.3205	Ave		1.3195				3.1		50.0			
M2-8:2FTS	0.2435 0.2384	0.2372 0.2331	0.2312	0.2322	0.2292	Ave		0.2350				2.1		50.0			
13C2 PFDA	0.6263 0.6332	0.6245 0.6212	0.6276	0.6404	0.6390	Ave		0.6303				1.2		50.0			
d3-NMeFOSAA	0.2079 0.2129	0.1974 0.2312	0.1977	0.2031	0.2066	Ave		0.2081				5.6		50.0			
d5-NEtFOSAA	0.1986 0.1928	0.1988 0.2089	0.1891	0.2048	0.2000	Ave		0.1990				3.4		50.0			
13C2 PFUnA	0.4833 0.5045	0.4984 0.4965	0.4885	0.4973	0.4862	Ave		0.4935				1.6		50.0			
13C2 PFDoA	0.4493 0.4968	0.4705 0.5082	0.4480	0.4436	0.4594	Ave		0.4680				5.4		50.0			
13C2-PFTeDA	0.3906 0.4640	0.4021 0.4788	0.4082	0.4159	0.4304	Ave		0.4272				7.7		50.0			
13C2-PFHxDA	0.5746 0.6782	0.5826 0.6550	0.6045	0.6305	0.6481	Ave		0.6248				6.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-213554/2	2018.03.16ICAL_002.d
Level 2	IC 320-213554/3	2018.03.16ICAL_003.d
Level 3	IC 320-213554/4	2018.03.16ICAL_004.d
Level 4	IC 320-213554/5	2018.03.16ICAL_005.d
Level 5	IC 320-213554/6	2018.03.16ICAL_006.d
Level 6	IC 320-213554/7	2018.03.16ICAL_007.d
Level 7	IC 320-213554/8	2018.03.16ICAL_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	50796 10415661	102112 19640198	528325	2048994	5293287	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	48859 8739905	98047 16422736	461977	1812805	4633188	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	65826 13581651	130200 24136015	662611	2653315	6966452	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	14987 2712672	31176 5338400	149763	581100	1435640	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	46811 8603151	91368 15868989	453548	1746371	4444832	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	49656 8715974	88286 15371232	455401	1765971	4297988	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	71975 10568253	122279 20699070	560663	2166532	5484826	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
6:2FTS		AveID	16131 3480117	34810 6406487	184494	685622	1746834	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	55709 8824823	91352 16238419	440615	1814577	4544060	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	46925 10200411	97440 18413921	499055	2063678	5246040	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	41124 8142540	77874 15616435	379502	1586675	4076350	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	32357 6868229	71226 11976618	332490	1348017	3490132	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctane Sulfonamide (FOSA)		AveID	55737 11053457	112048 19424864	575124	2356961	5854030	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2FTS		AveID	12463 2485319	26051 4059707	129787	504855	1262293	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	24009 5163613	50605 9249996	277398	1154786	2734556	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	9255 1816591	21013 3769629	90574	365056	936613	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	23409 4865112	47472 9484295	246261	1034588	2485881	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	9219 1652592	18367 3048852	82250	339482	829764	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	23282 3341411	41093 6182513	170791	644915	1693687	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	19846 4174943	40972 8183198	216392	860515	2068374	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	18358 4360483	41880 8318181	219791	842010	2137089	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	5848 997084	11344 1864512	48261	194321	484453	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	+++++ 5015728	70421 9782635	287100	1031926	2577679	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	27160 5529461	50136 9786600	261856	1049380	2839194	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	5624795 5463195	5550000 5232633	5676105	5699617	5583889	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4068590 3793612	4029181 3539835	4142560	3973031	3888024	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	88526 87984	90825 90294	92166	90021	87930	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	664416 606545	681561 556890	667108	678619	674169	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4522587 4208738	4540073 3855910	4545197	4566628	4369955	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4-PFHpA	13PFOA	Ave	4549638 3989677	4528336 3792427	4288080	4387932	4232279	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PFOA	Ave	5619871 5265275	5304007 5044040	5345110	5665272	5260610	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PFOA	Ave	1108827 1008963	1042798 915248	1075617	1074637	1016091	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PFOA	Ave	4362221 3782089	4258090 3630259	4329764	4305669	4098618	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PFOA	Ave	3787315 3717789	3729283 3664287	3861206	3892764	3831418	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PFOA	Ave	3435835 3108543	3347940 2932926	3409796	3447867	3313741	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PFOA	Ave	5902761 5503896	5846985 5287574	5924910	5939465	5771845	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 213554

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/16/2018 23:09 Calibration End Date: 03/16/2018 23:56 Calibration ID: 38193

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
M2-8:2FTS	13PF OA	Ave	1069796 926664	1010561 851096	1037774	1011812	959683	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	2872260 2569062	2777841 2368082	2940123	2912792	2792979	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	953572 863871	877839 881475	926313	923680	903252	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	910554 782136	884068 796299	885725	931709	874289	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2216285 2046915	2216867 1892487	2288527	2262020	2125072	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2060387 2015472	2093019 1937420	2098644	2017899	2008069	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	1791304 1882383	1788676 1825202	1912234	1891848	1881480	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	2634864 2751498	2591496 2496909	2831717	2868070	2832854	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 16-Mar-2018 23:09:38 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:23 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:22:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.440	0.0	0.537	5624795	2.40		96.1	97481	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.440	0.0	1.000	50796	0.0243		97.4	35.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.696	0.003	0.634	4068590	2.46		98.5	158093	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.698	0.001	1.000	48859	0.0257		103	18.2	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.730	-0.004	0.644	88526	2.17		93.4	449	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.733	0.002	1.005	65826	0.0223		101	30.6	
298.90 > 99.00	1.735	1.733	0.002	1.005	26391		2.49(1.25-3.74)	101	27.7	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.942	0.002	0.726	664416	2.28		97.6	6383	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.944	0.0	1.000	14987	0.0245		105	963	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.979	-0.004	0.737	4522587	2.46		98.2	135381	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.982	0.003	1.005	46811	0.0256		103	114	
313.00 > 119.00	1.985	1.982	0.003	1.005	3650		12.82(5.03-15.10)	103	71.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.311	0.003	0.864	4549638	2.54		102	109297	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.311	0.003	1.000	49656	0.0263		105	111	
363.00 > 169.00	2.314	2.311	0.003	1.000	17084		2.91(1.13-3.40)	105	311	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.326	0.001	0.869	5619871	2.35		99.4	87133	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.326	0.001	1.000	71975	0.0272		119	9.7	
399.00 > 99.00	2.327	2.326	0.001	1.000	21084		3.41(1.50-4.49)	119	8.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.647	2.651	-0.004	0.988	1108827	2.42		102	28430	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.652	0.003	1.003	16131	0.0208		87.6	934	
D 14 13C4 PFOA										
417.00 > 372.00	2.678	2.678	0.0	1.000	4362221	2.52		101	92087	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.678	2.678	0.0	1.000	55709	0.0286		114	16.3	
413.00 > 169.00	2.678	2.678	0.0	1.000	27729		2.01(0.84-2.52)	114	123	
* 62 13C2-PFOA										
415.00 > 370.00	2.678	2.678	0.0		4585960	2.50			82370	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.678	2.684	-0.006	1.000	46925	0.0225		94.7	1370	
449.00 > 99.00	2.678	2.684	-0.006	1.000	12121		3.87(1.94-5.82)	94.7	305	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.050	0.0	1.139	3787315	2.27		94.8	64073	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.050	0.0	1.000	41124	0.0240		103	182	
499.00 > 99.00	3.050	3.050	0.0	1.000	9710		4.24(2.31-6.93)	103	77.0	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.052	-0.002	1.139	3435835	2.48		99.3	78094	
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.052	-0.002	1.000	32357	0.0231		92.4	77.4	
463.00 > 169.00	3.050	3.052	-0.002	1.000	7238		4.47(1.90-5.69)	92.4	195	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.388	-0.001	1.265	5902761	2.44		97.5	58949	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.388	-0.001	1.000	55737	0.0243		97.2	2105	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.406	0.0	1.271	1069796	2.48		104	23969	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.406	0.0	1.000	12463	0.0222		92.7	395	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.416	-0.001	1.275	2872260	2.48		99.4	53902	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.416	-0.001	1.000	24009	0.0220		88.1	136	
513.00 > 169.00	3.415	3.416	-0.001	1.000	4159		5.77(2.36-7.09)	88.1	203	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.332	953572	2.50		99.9	25950	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.569	3.571	-0.002	1.000	9255	0.0233		93.2	129	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.729	-0.002	1.000	23409	0.0231		96.0	834	
599.00 > 99.00	3.727	3.729	-0.002	1.000	8746		2.68(1.39-4.16)	96.0	198	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.740	-0.003	1.395	910554	2.49		99.8	2200	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.746	0.001	1.003	9219	0.0259		103	186	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.747	0.0	1.399	2216285	2.45		97.9	57806	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.747	3.750	-0.003	1.000	23282	0.0313		125	69.0	
563.00 > 169.00	3.747	3.750	-0.003	1.000	6053		3.85(2.12-6.36)	125	769	
D 36 13C2 PFDoA										
615.00 > 570.00	4.045	4.041	0.004	1.510	2060387	2.40		96.0	12314	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.045	4.042	0.003	1.000	19846	0.0235		94.2	3.5	
613.00 > 169.00	4.045	4.042	0.003	1.000	6752		2.94(2.13-6.40)	94.2	239	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.304	0.002	1.000	18358	0.0217		86.6	3.9	
663.00 > 169.00	4.306	4.304	0.002	1.000	6063		3.03(1.25-3.76)	86.6	75.3	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.696	1791304	2.29		91.4	12132	
42 Perfluorotetradecanoic acid										RM
713.00 > 169.00	4.553	4.545	0.008	1.002	5848	0.0296		118	85.1	R
713.00 > 219.00	4.543	4.545	-0.002	1.000	2605		2.24(0.71-2.13)	118	29.1	M
D 44 13C2-PFHxDA										
815.00 > 770.00	4.954	4.956	-0.002	1.850	2634864	2.30		92.0	9891	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.954	4.960	-0.006	1.000	51807	0.0296		118	4.6	
813.00 > 169.00	4.954	4.960	-0.006	1.000	6716		7.71(2.86-8.58)	118	95.1	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.320	0.002	1.000	27160	0.0264		106	4.9	
913.00 > 169.00	5.322	5.320	0.002	1.000	3181		8.54(3.83-11.48)	106	48.6	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:24 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_002.d

Injection Date: 16-Mar-2018 23:09:38 Instrument ID: A8_N

Lims ID: IC L1 Full

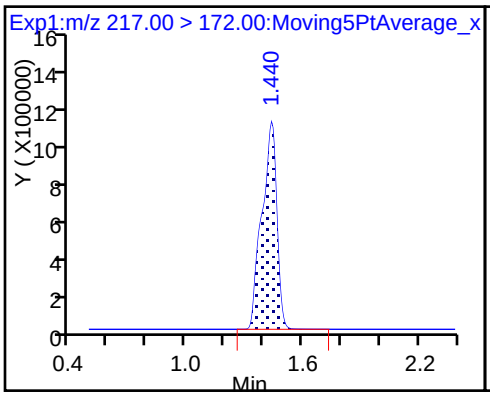
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

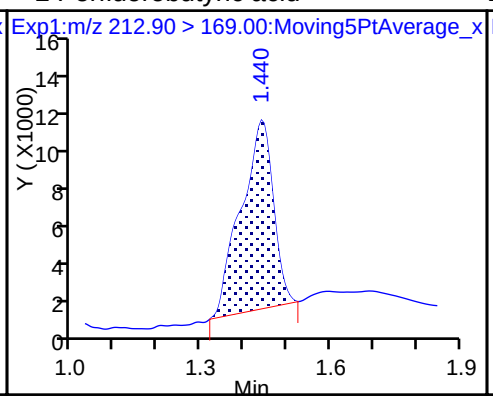
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

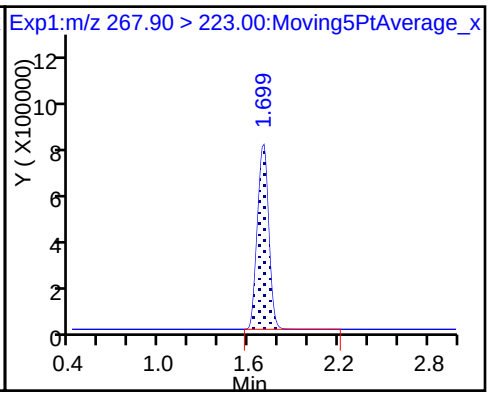
D 1 13C4 PFBA



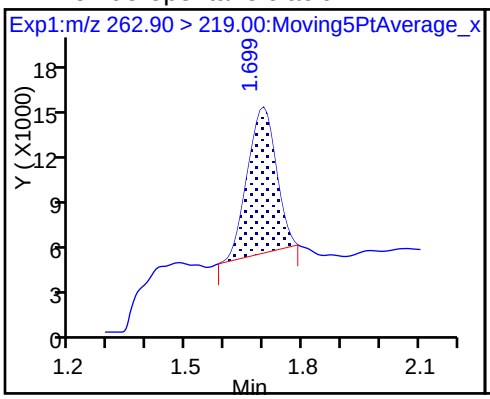
2 Perfluorobutyric acid



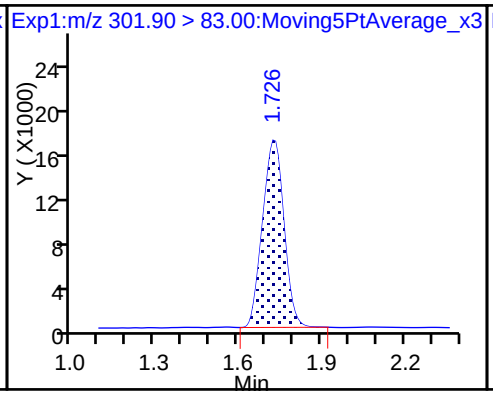
D 3 13C5-PFPeA



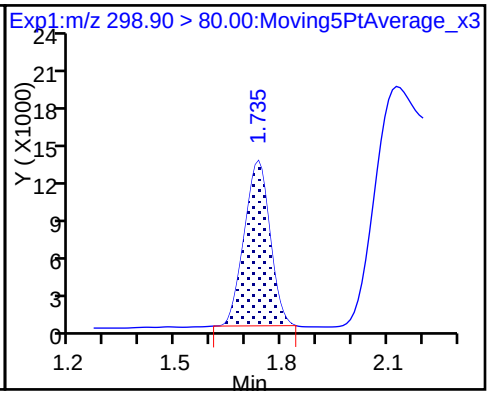
4 Perfluoropentanoic acid



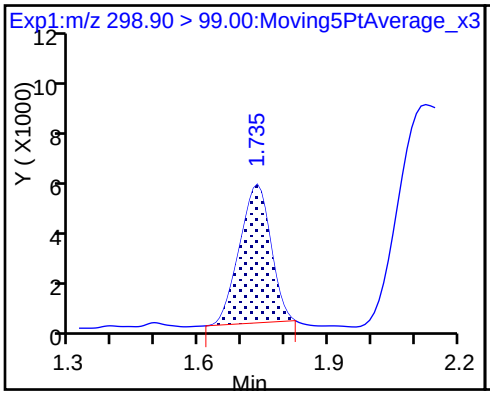
D 47 13C3-PFBS



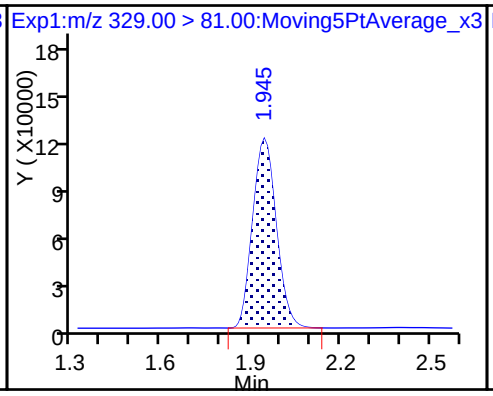
5 Perfluorobutanesulfonic acid



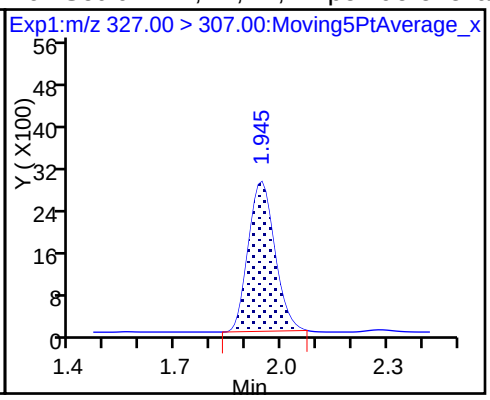
5 Perfluorobutanesulfonic acid



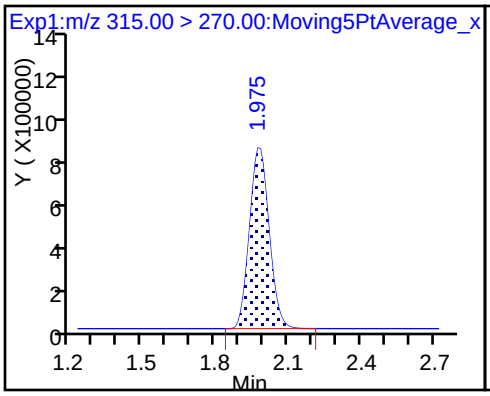
D 60 M2-4:2FTS



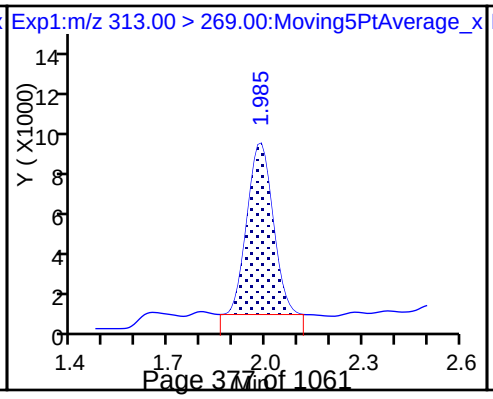
61 Sodium 1H,1H,2H,2H-perfluorohexane



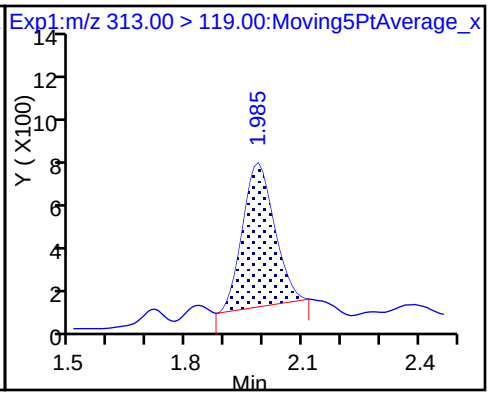
D 7 13C2 PFHxA



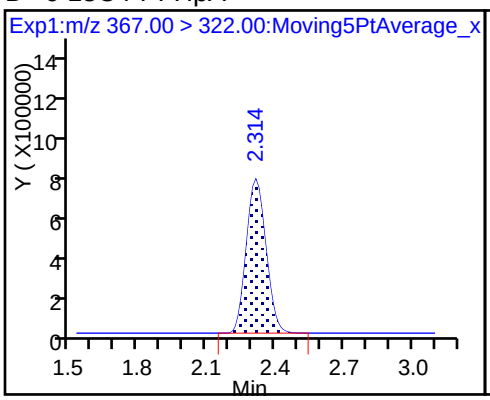
6 Perfluorohexanoic acid



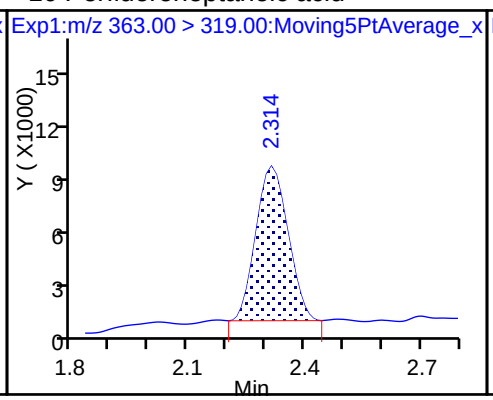
6 Perfluorohexanoic acid



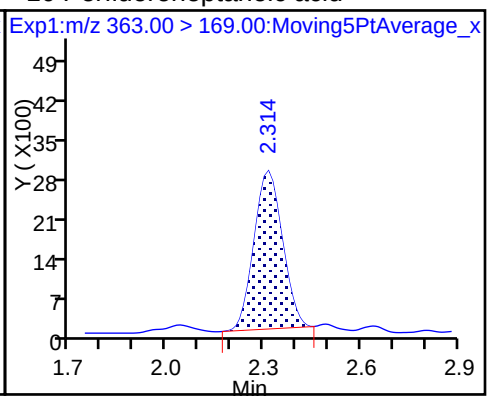
D 9 13C4-PFHpA



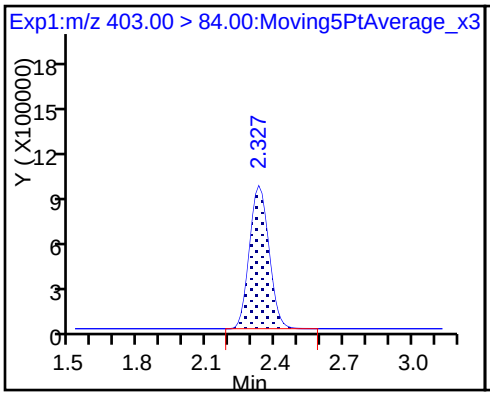
10 Perfluoroheptanoic acid



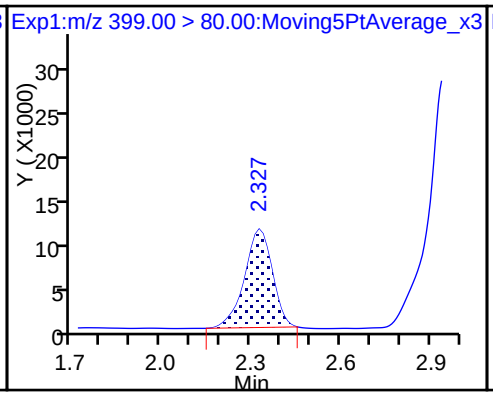
10 Perfluoroheptanoic acid



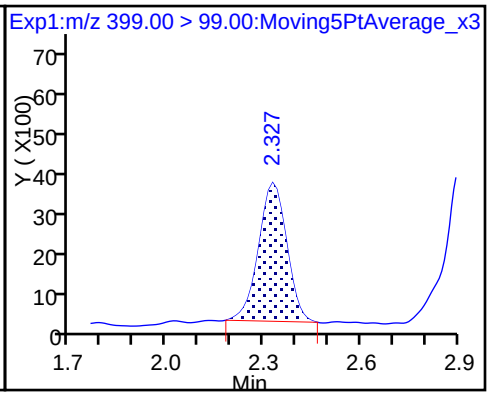
D 11 18O2 PFHxS



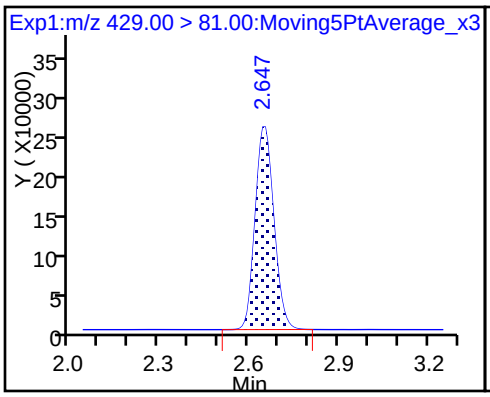
8 Perfluorohexanesulfonic acid



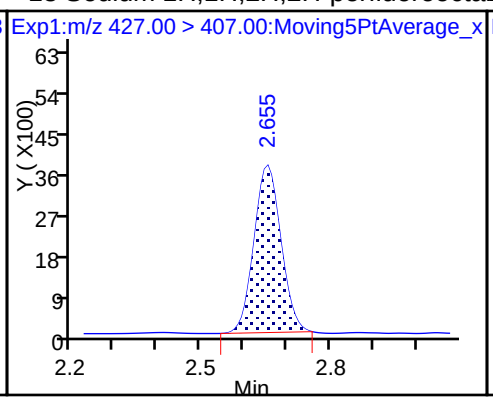
8 Perfluorohexanesulfonic acid



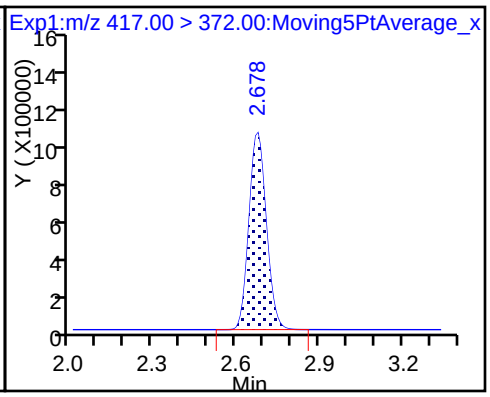
D 12 M2-6:2FTS



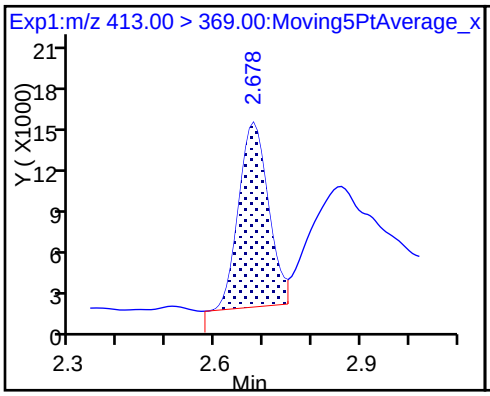
13 Sodium 1H,1H,2H,2H-perfluorooctane



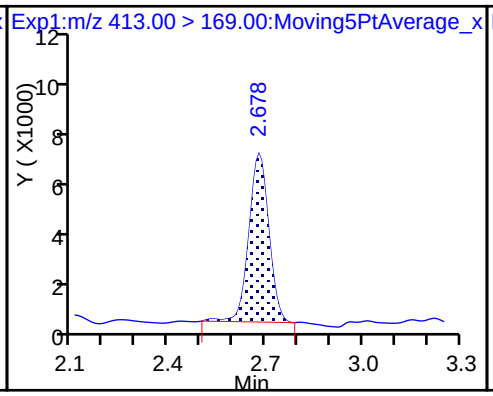
D 14 13C4 PFOA



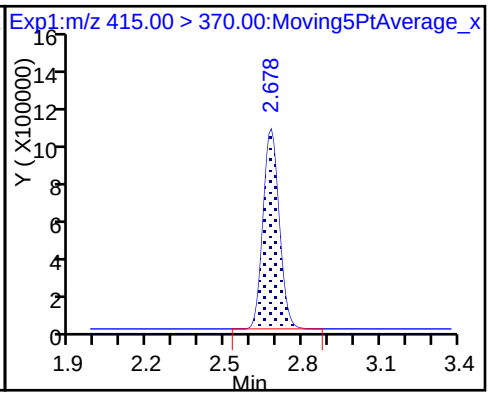
15 Perfluorooctanoic acid



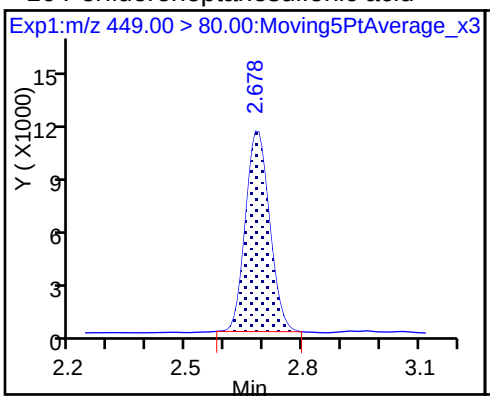
15 Perfluorooctanoic acid



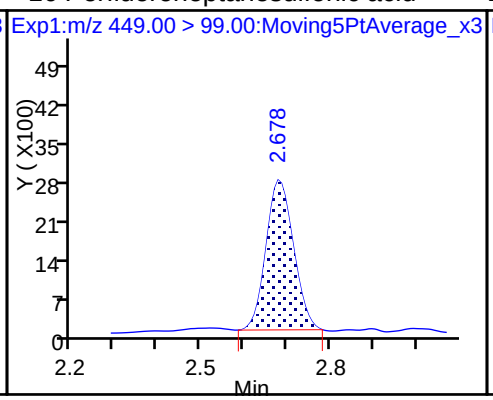
* 62 13C2-PFOA



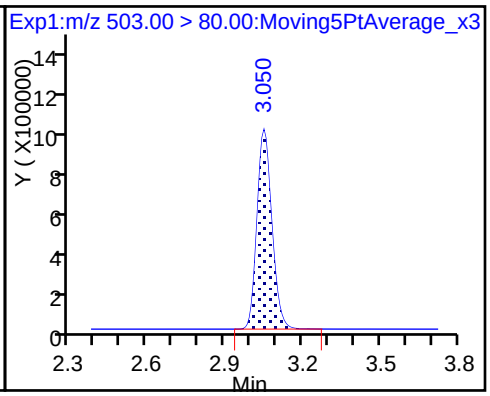
16 Perfluoroheptanesulfonic acid



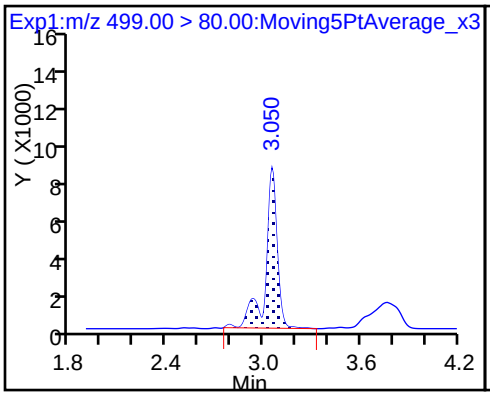
16 Perfluoroheptanesulfonic acid



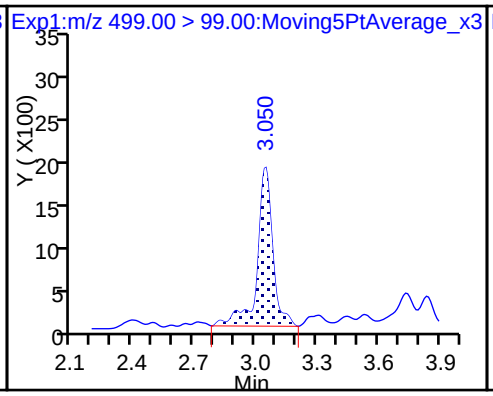
D 18 13C4 PFOS



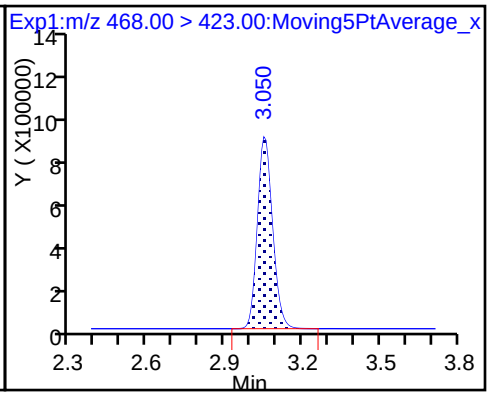
17 Perfluorooctane sulfonic acid



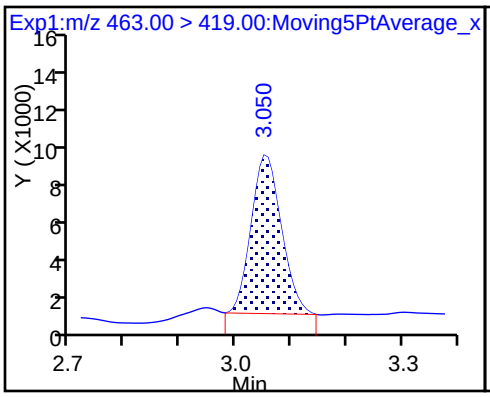
17 Perfluorooctane sulfonic acid



D 19 13C5 PFNA



20 Perfluorononanoic acid



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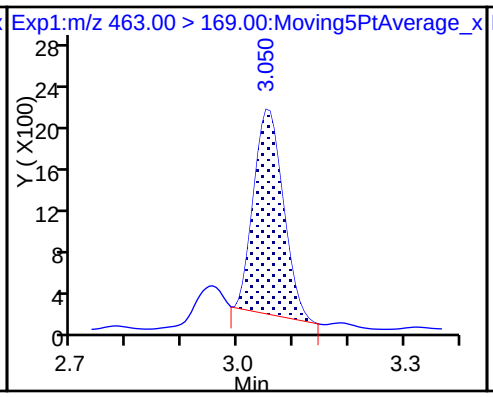
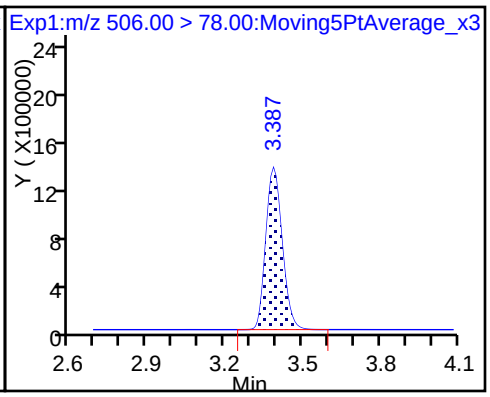
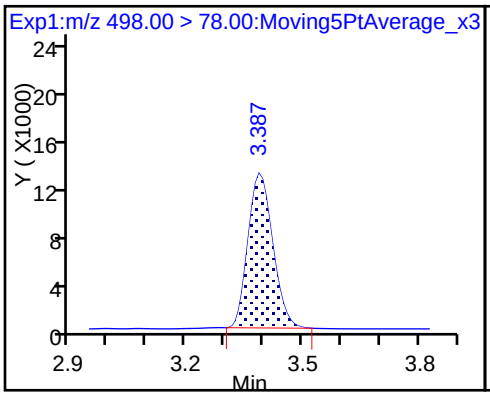


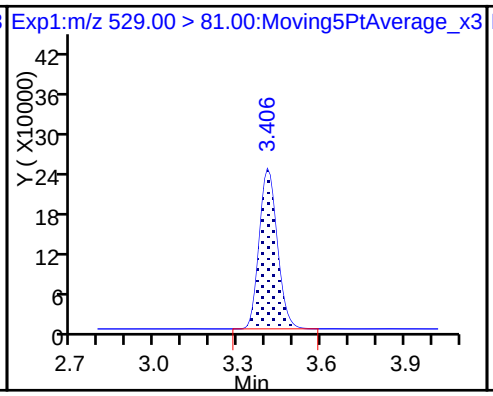
D 21 13C8 FOSA



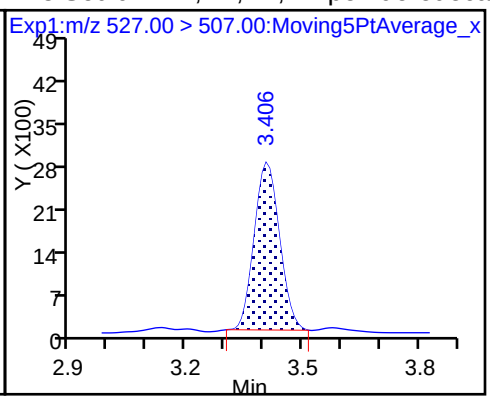
22 Perfluorooctane Sulfonamide



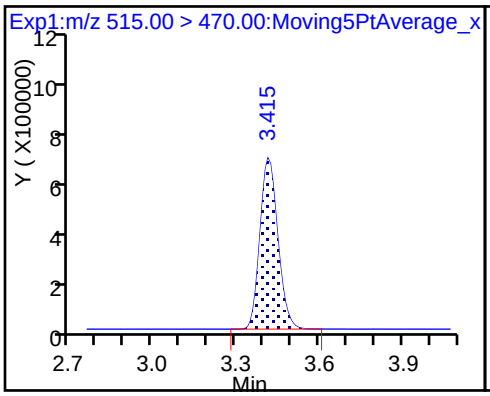
D 26 M2-8:2FTS



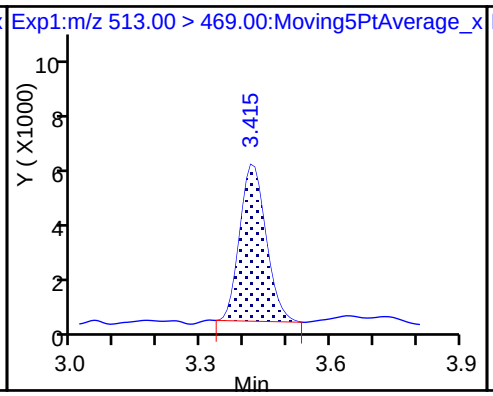
25 Sodium 1H,1H,2H,2H-perfluorodecane



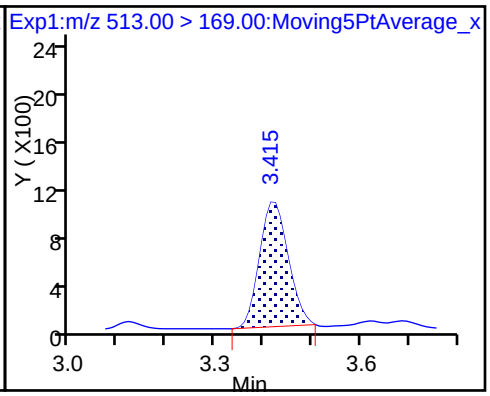
D 23 13C2 PFDA



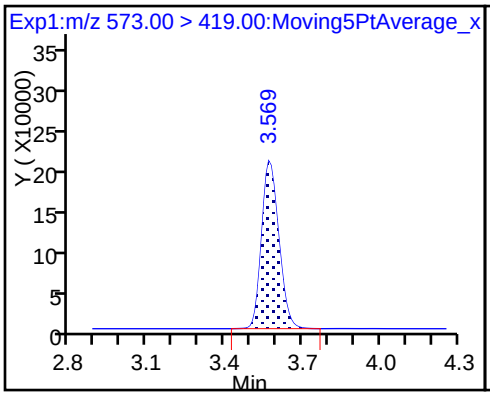
24 Perfluorodecanoic acid



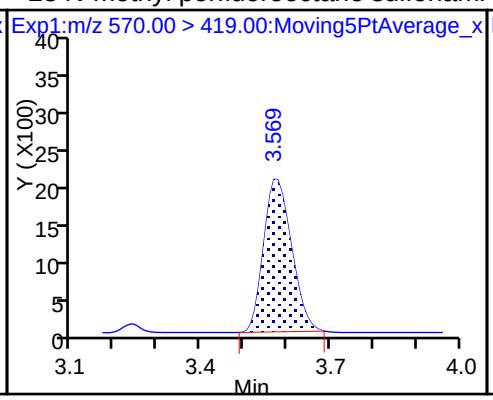
24 Perfluorodecanoic acid



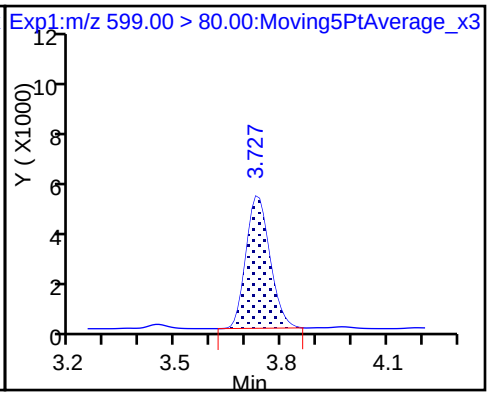
D 27 d3-NMeFOSAA



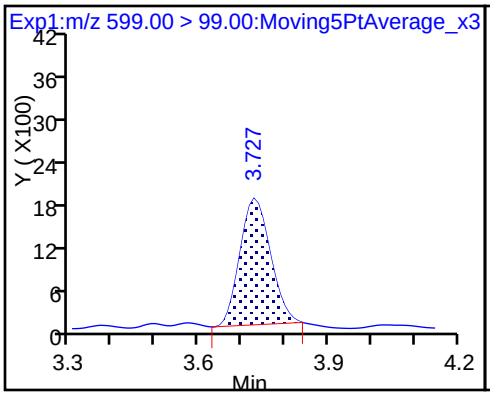
28 N-methyl perfluorooctane sulfonami



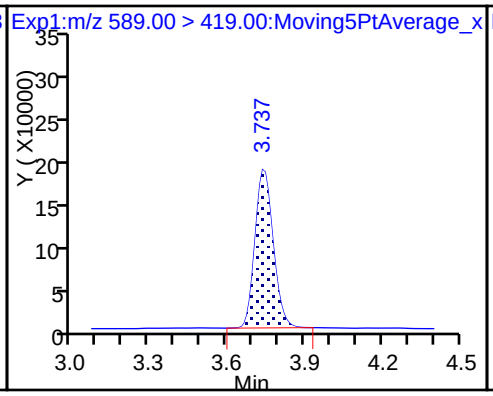
29 Perfluorodecane Sulfonic acid



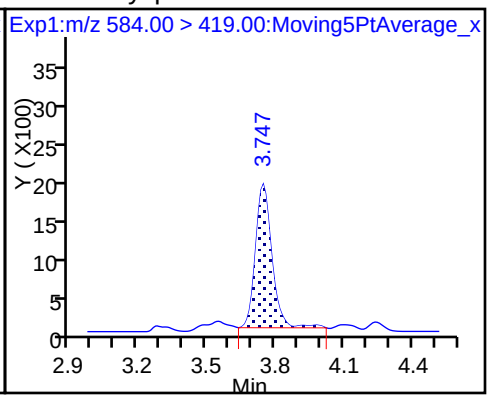
29 Perfluorodecane Sulfonic acid



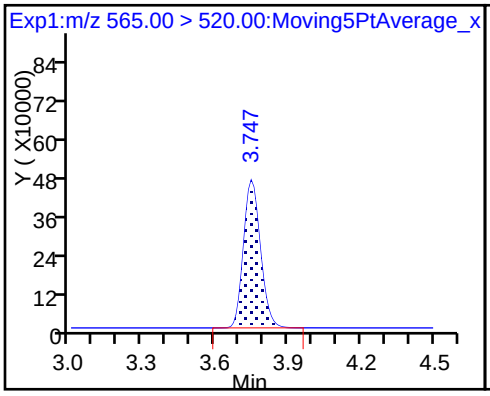
D 32 d5-NEtFOSAA



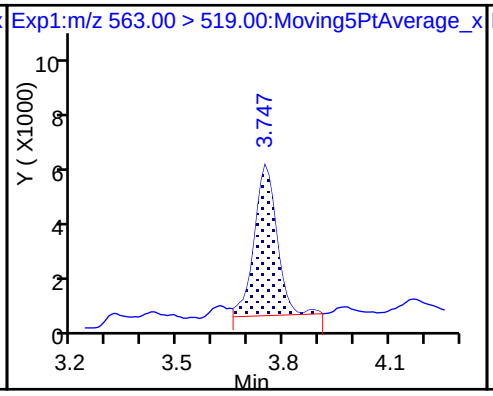
33 N-ethyl perfluorooctane sulfonamid



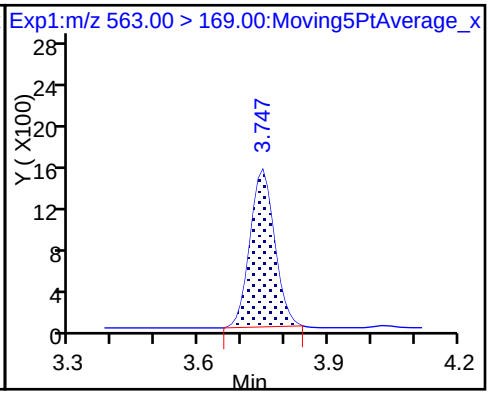
D 30 13C2 PFUnA



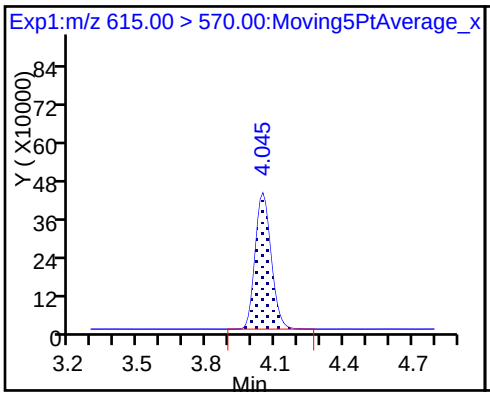
31 Perfluoroundecanoic acid



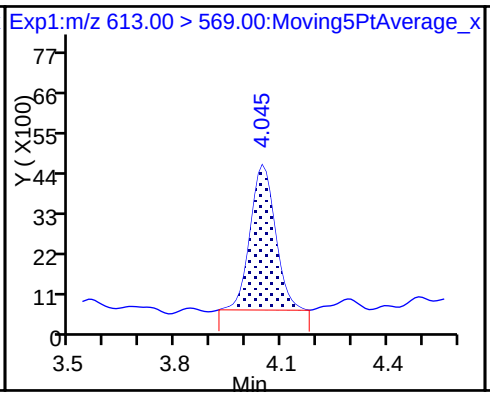
31 Perfluoroundecanoic acid



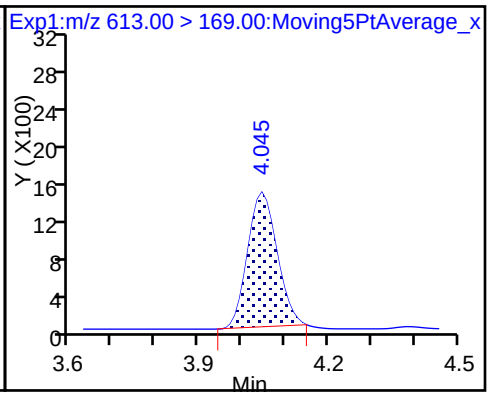
D 36 13C2 PFDoA



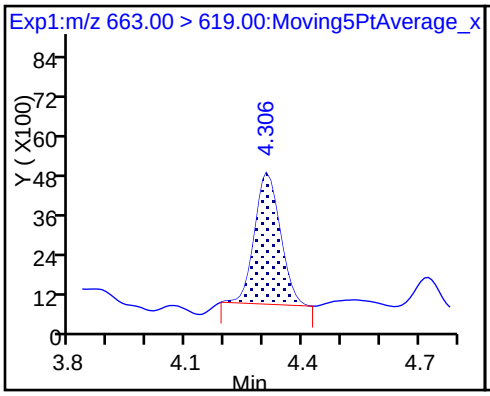
37 Perfluorododecanoic acid



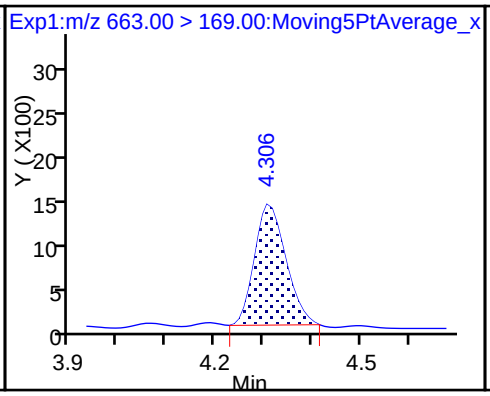
37 Perfluorododecanoic acid



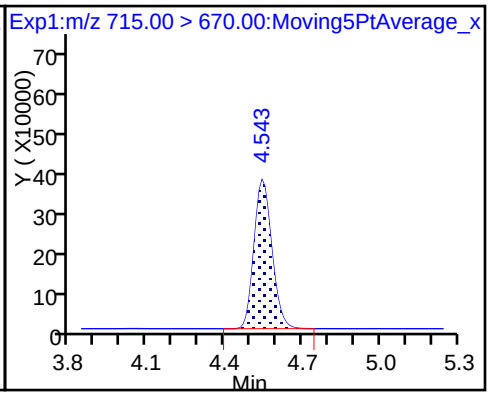
41 Perfluorotridecanoic acid



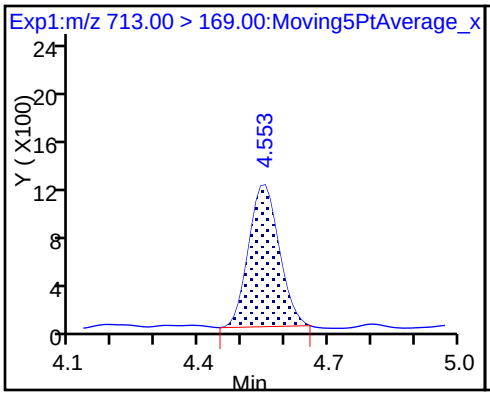
41 Perfluorotridecanoic acid



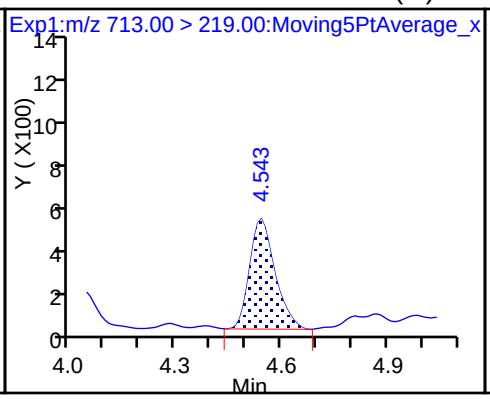
D 43 13C2-PFTeDA



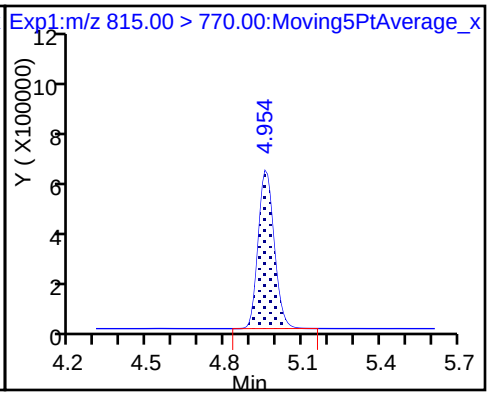
42 Perfluorotetradecanoic acid



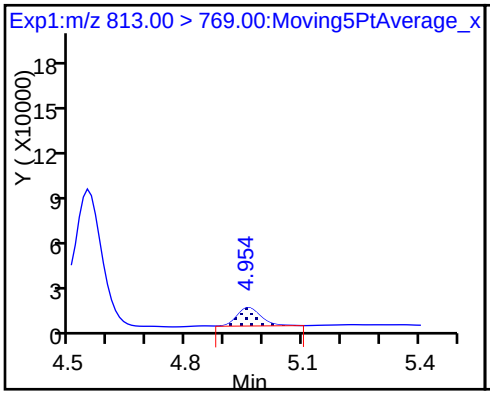
42 Perfluorotetradecanoic acid (M)



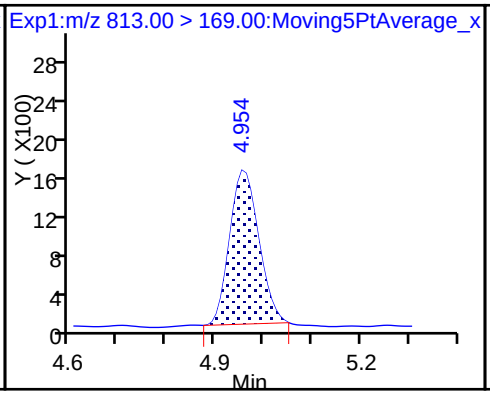
D 44 13C2-PFHxDA



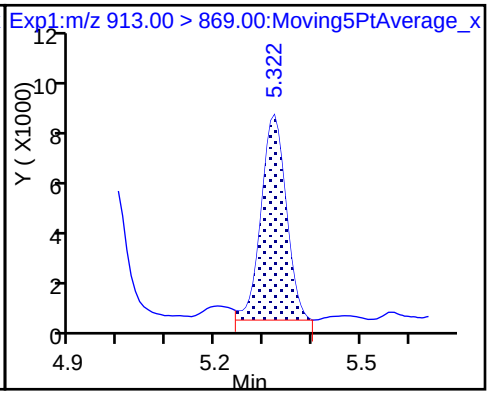
45 Perfluorohexadecanoic acid



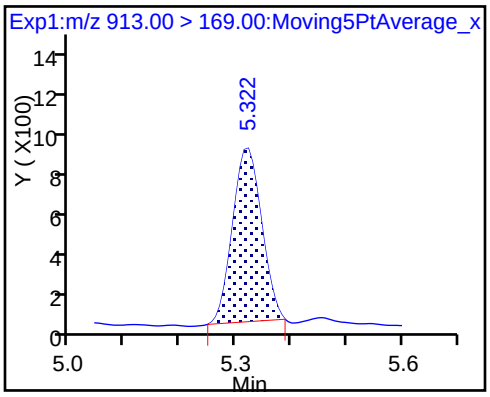
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

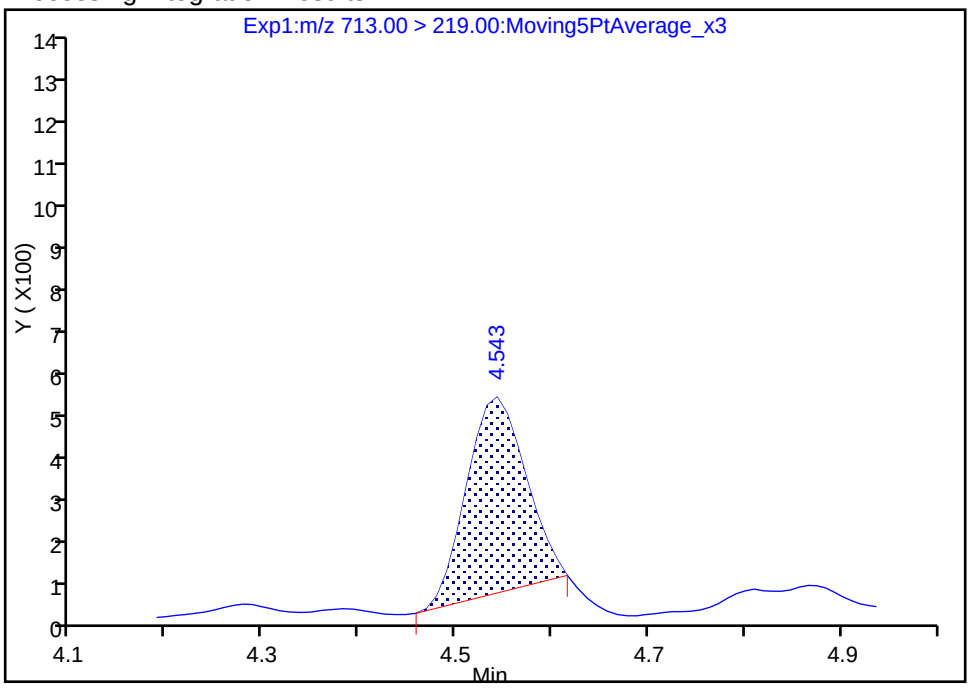
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_002.d
Injection Date: 16-Mar-2018 23:09:38 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

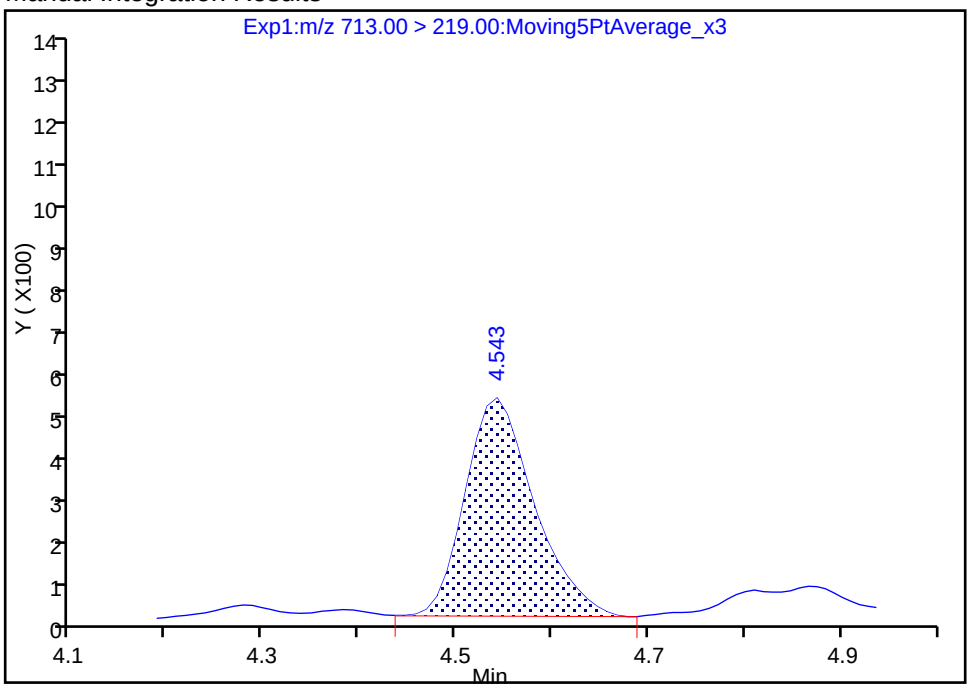
Processing Integration Results

RT: 4.54
Area: 2007
Amount: 0.029595
Amount Units: ng/ml



Manual Integration Results

RT: 4.54
Area: 2605
Amount: 0.029595
Amount Units: ng/ml



Reviewer: phomsophat, 18-Mar-2018 12:21:46
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 16-Mar-2018 23:17:30 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:26 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:26:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.440	-0.006	1.000	102112	0.0496		99.2	71.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	5550000	2.44		97.7	117440	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.696	-0.005	0.633	4029181	2.51		101	110520	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.691	1.698	-0.007	1.000	98047	0.0521		104	37.0	M
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.730	-0.003	0.646	90825	2.30		98.8	600	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.733	-0.006	1.000	130200	0.0431		97.5	57.1	
298.90 > 99.00	1.727	1.733	-0.006	1.000	54547		2.39(1.25-3.74)	97.5	56.6	
D 60 M2-4:2FTS										
329.00 > 81.00	1.935	1.942	-0.007	0.724	681561	2.41		103	7423	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.944	0.001	1.000	31176	0.0496		106	1916	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.739	4540073	2.54		102	165466	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.982	-0.006	1.000	91368	0.0499		99.7	279	
313.00 > 119.00	1.976	1.982	-0.006	1.000	9865		9.26(5.03-15.10)	99.7	215	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.311	-0.009	1.000	88286	0.0470		94.0	203	
363.00 > 169.00	2.315	2.311	0.004	1.006	35361		2.50(1.13-3.40)	94.0	603	
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.311	-0.009	0.861	4528336	2.61		104	107667	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	122279	0.0489		107	15.0	
399.00 > 99.00	2.315	2.326	-0.011	0.994	38807		3.15(1.50-4.49)	107	15.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.871	5304007	2.29		96.7	74003	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.651	-0.002	0.991	1042798	2.34		98.7	24434	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.652	-0.003	1.000	34810	0.0476		100	2049	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.678	-0.005		4448085	2.50			94177	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.678	-0.005	1.000	91352	0.0480		96.1	29.6	
413.00 > 169.00	2.673	2.678	-0.005	1.000	58410		1.56(0.84-2.52)	96.1	259	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.678	-0.005	1.000	4258090	2.54		102	99222	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.684	-0.003	1.000	97440	0.0475		99.8	3317	
449.00 > 99.00	2.681	2.684	-0.003	1.000	26688		3.65(1.94-5.82)	99.8	771	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.050	-0.006	1.000	77874	0.0461		99.4	286	
499.00 > 99.00	3.044	3.050	-0.006	1.000	17535		4.44(2.31-6.93)	99.4	155	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.050	-0.006	1.139	3729283	2.30		96.2	62938	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.052	-0.001	1.000	71226	0.0522		104	158	
463.00 > 169.00	3.051	3.052	-0.001	1.000	15976		4.46(1.90-5.69)	104	477	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.052	-0.001	1.142	3347940	2.49		99.8	65056	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.388	0.0	1.000	112048	0.0493		98.6	3219	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.388	0.0	1.268	5846985	2.49		99.6	50840	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.406	0.0	1.000	26051	0.0491		103	818	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.406	0.0	1.274	1010561	2.42		101	20290	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.416	-0.001	1.000	50605	0.0480		96.0	236	
513.00 > 169.00	3.415	3.416	-0.001	1.000	11137		4.54(2.36-7.09)	96.0	853	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.416	-0.001	1.278	2777841	2.48		99.1	52102	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.570	-0.001	1.335	877839	2.37		94.8	37604	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.569	3.571	-0.002	1.000	21013	0.0575		115	312	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.729	-0.001	1.000	47472	0.0476		98.9	3260	
599.00 > 99.00	3.728	3.729	-0.001	1.000	17973		2.64(1.39-4.16)	98.9	382	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.399	884068	2.50		99.9	1895	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.738	3.746	-0.008	1.000	18367	0.0530		106	607	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.747	0.001	1.402	2216867	2.52		101	57832	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.750	-0.002	1.000	41093	0.0553		111	118	
563.00 > 169.00	3.748	3.750	-0.002	1.000	9481		4.33(2.12-6.36)	111	797	
D 36 13C2 PFDoA										
615.00 > 570.00	4.036	4.041	-0.005	1.510	2093019	2.51		101	12512	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.036	4.042	-0.006	1.000	40972	0.0478		95.7	8.3	
613.00 > 169.00	4.036	4.042	-0.006	1.000	10185		4.02(2.13-6.40)	95.7	283	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.299	4.304	-0.005	1.000	41880	0.0486		97.3	8.6	
663.00 > 169.00	4.299	4.304	-0.005	1.000	13756		3.04(1.25-3.76)	97.3	197	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.545	-0.001	1.700	1788676	2.35		94.1	13285	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.533	4.545	-0.012	0.998	11344	0.0575		115	184	
713.00 > 219.00	4.533	4.545	-0.012	0.998	6523		1.74(0.71-2.13)	115	75.7	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.854	2591496	2.33		93.2	9208	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.960	-0.005	1.000	70421	0.0500		100	6.2	
813.00 > 169.00	4.955	4.960	-0.005	1.000	12531		5.62(2.86-8.58)	100	156	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.320	-0.005	1.000	50136	0.0496		99.2	9.6	
913.00 > 169.00	5.315	5.320	-0.005	1.000	6133		8.17(3.83-11.48)	99.2	92.0	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:27 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_003.d

Injection Date: 16-Mar-2018 23:17:30 Instrument ID: A8_N

Lims ID: IC L2 Full

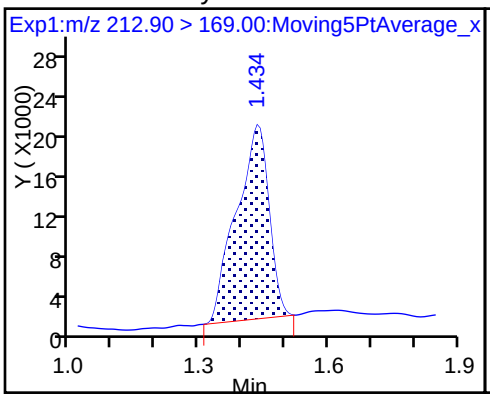
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

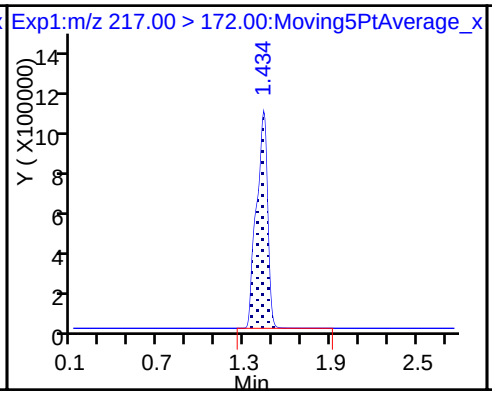
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

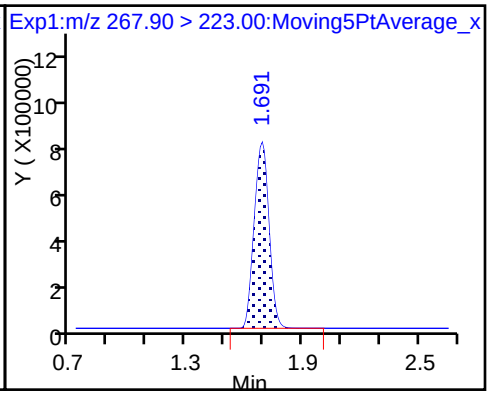
2 Perfluorobutyric acid



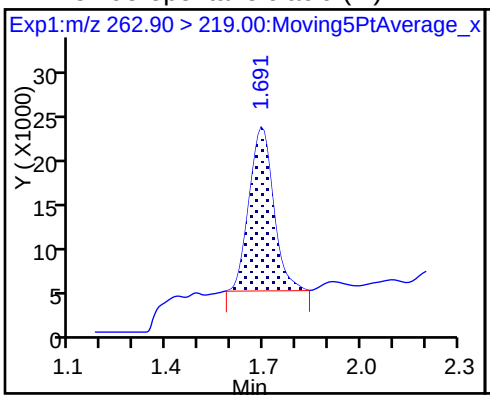
D 1 13C4 PFBA



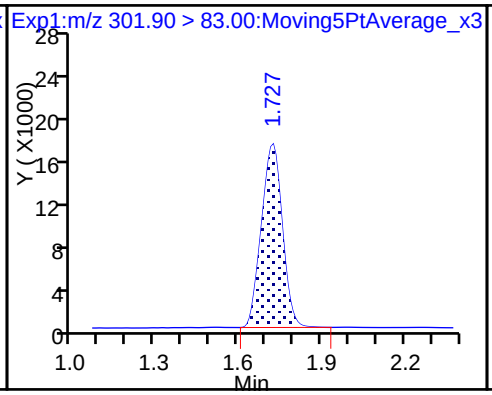
D 3 13C5-PFPeA



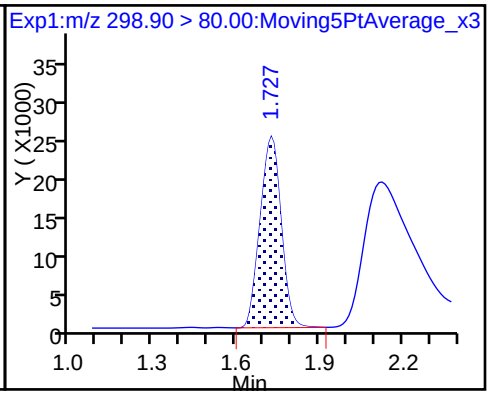
4 Perfluoropentanoic acid (M)



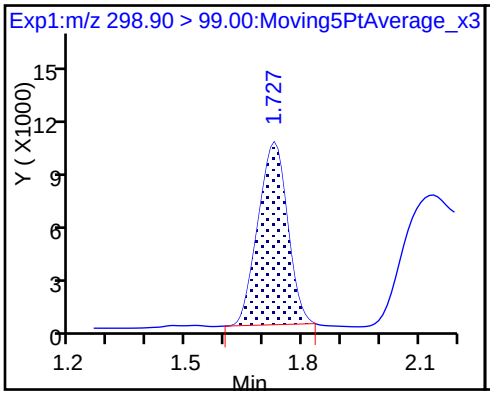
D 47 13C3-PFBS



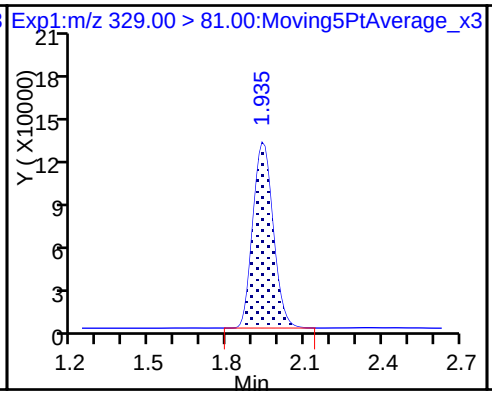
5 Perfluorobutanesulfonic acid



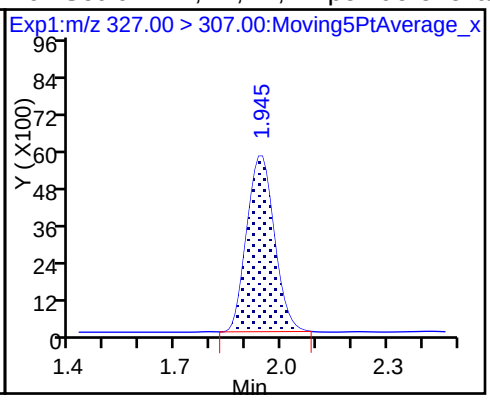
5 Perfluorobutanesulfonic acid



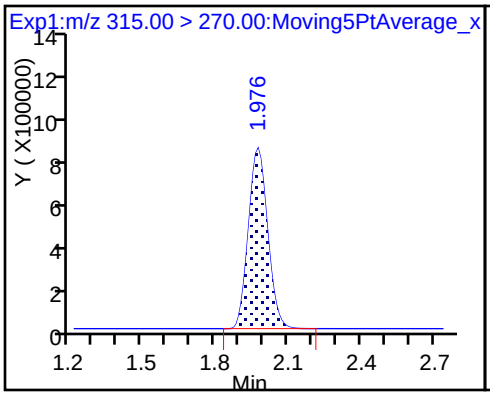
D 60 M2-4:2FTS



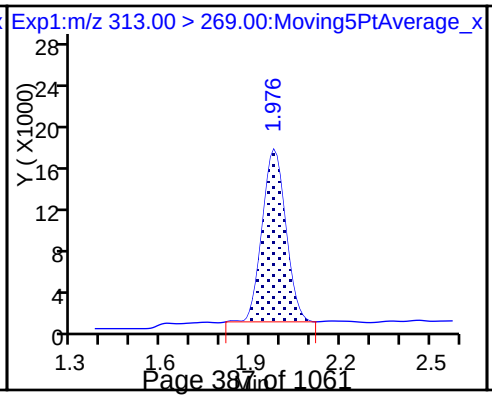
61 Sodium 1H,1H,2H,2H-perfluorohexane



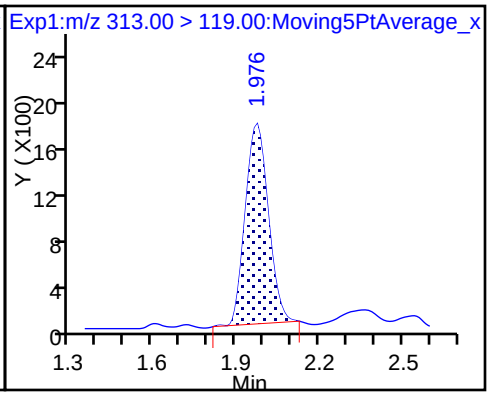
D 7 13C2 PFHxA



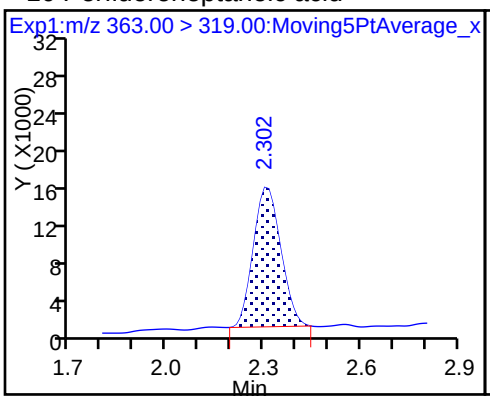
6 Perfluorohexanoic acid



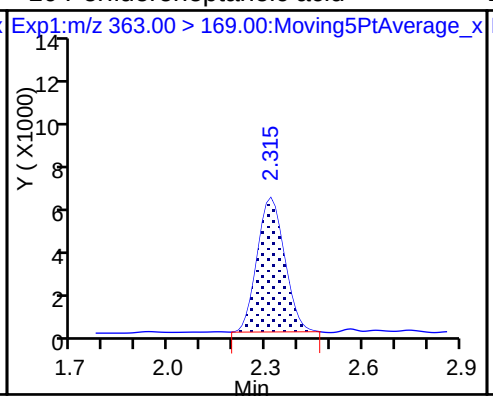
6 Perfluorohexanoic acid



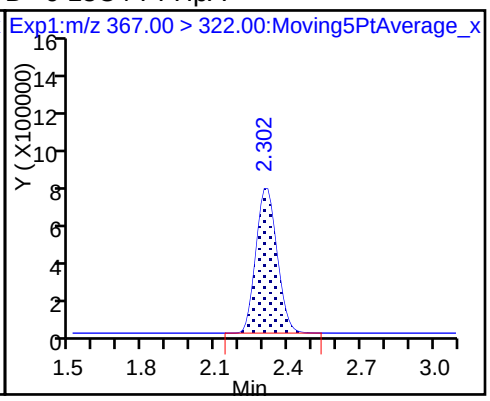
10 Perfluoroheptanoic acid



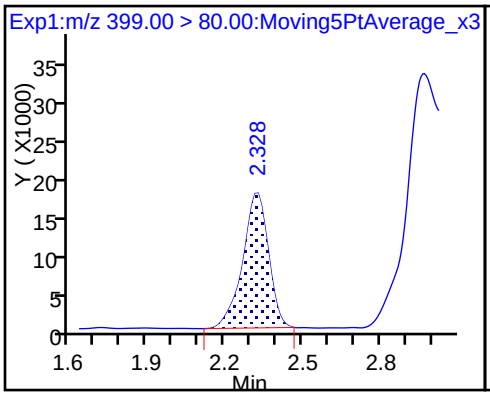
10 Perfluoroheptanoic acid



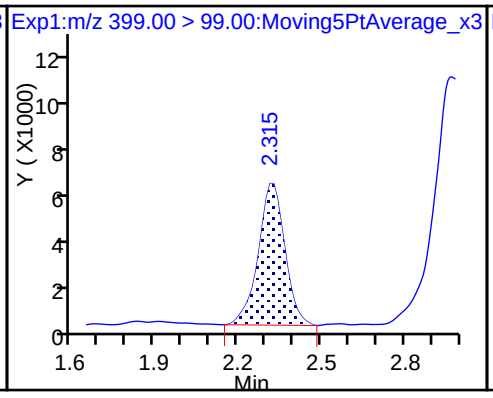
D 9 13C4-PFHpA



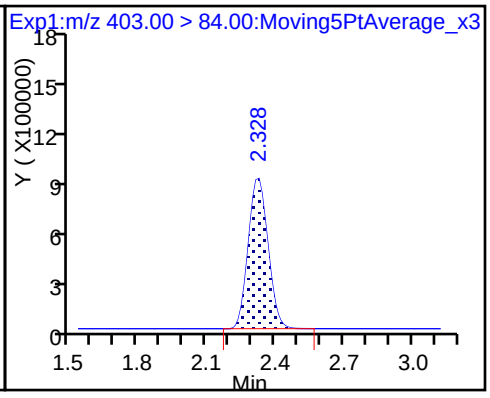
8 Perfluorohexanesulfonic acid



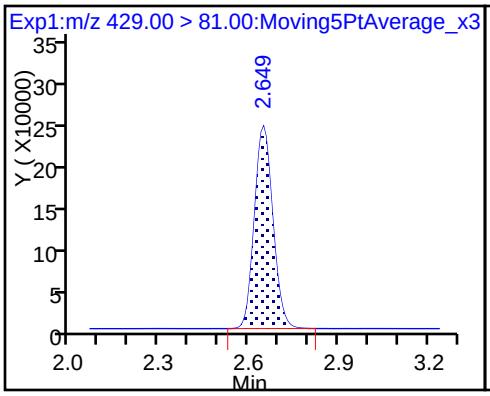
8 Perfluorohexanesulfonic acid



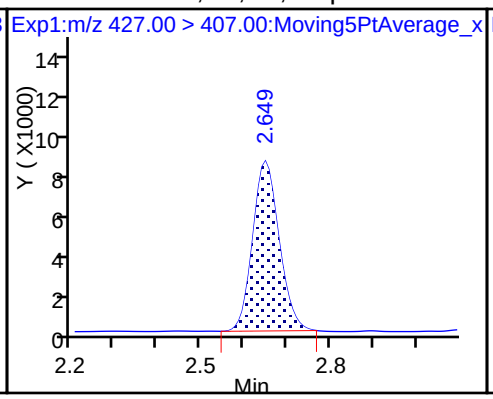
D 11 18O2 PFHxS



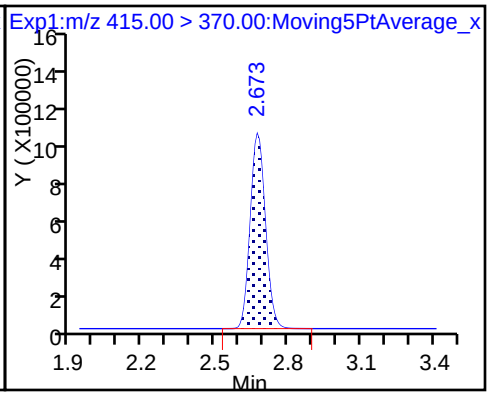
D 12 M2-6:2FTS



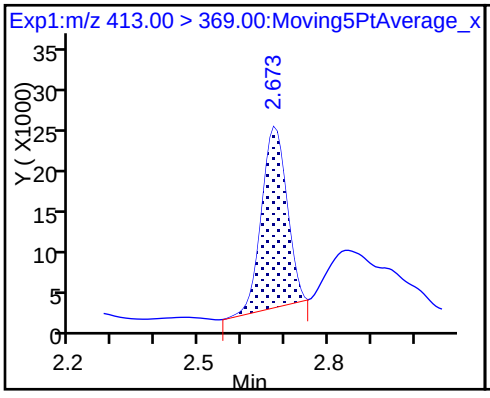
13 Sodium 1H,1H,2H,2H-perfluorooctane



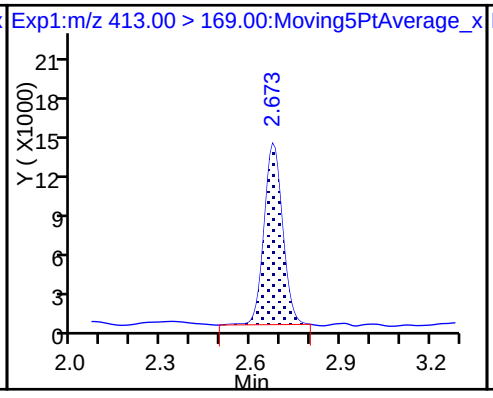
M62 13C2-PFOA



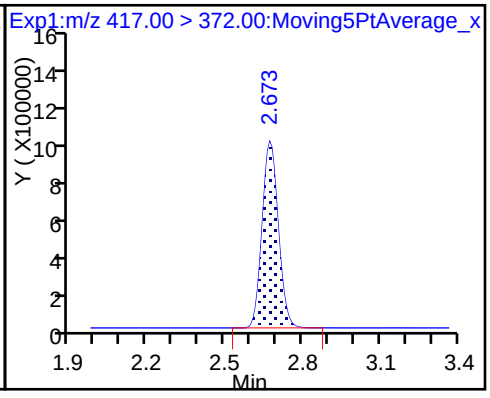
15 Perfluorooctanoic acid



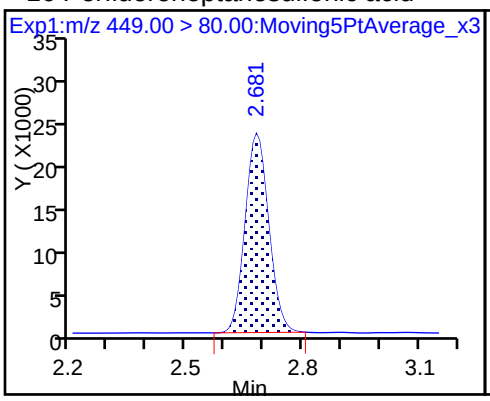
15 Perfluorooctanoic acid



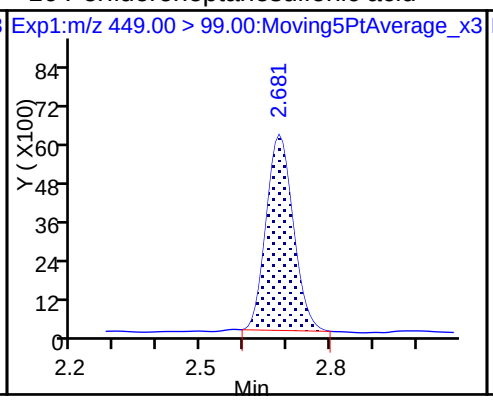
D 14 13C4 PFOA



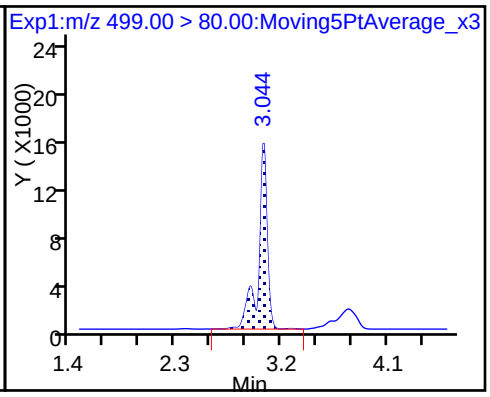
16 Perfluoroheptanesulfonic acid



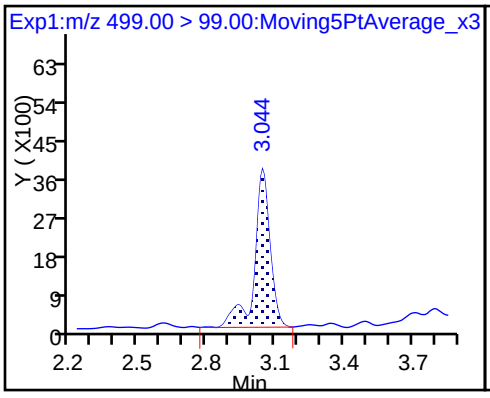
16 Perfluoroheptanesulfonic acid



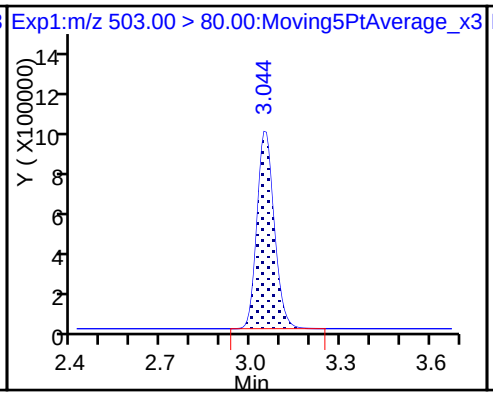
17 Perfluorooctane sulfonic acid



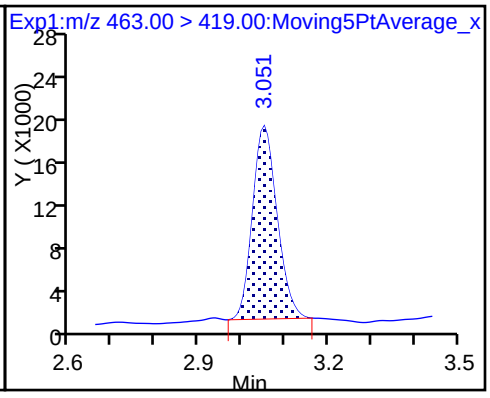
17 Perfluorooctane sulfonic acid



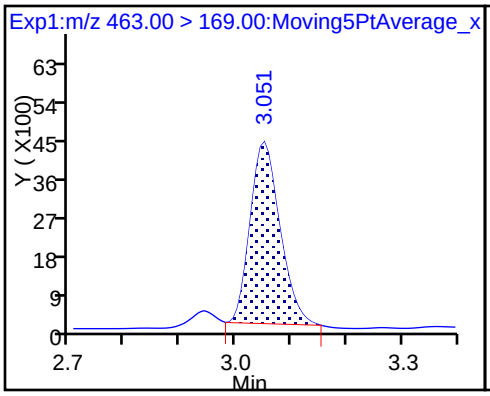
D 18 13C4 PFOS



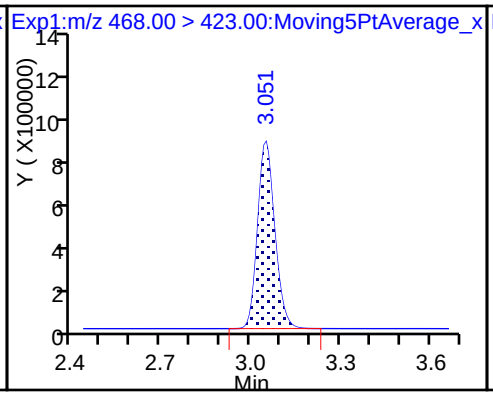
20 Perfluorononanoic acid



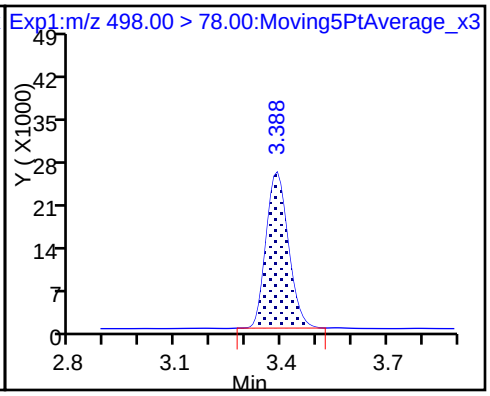
20 Perfluorononanoic acid



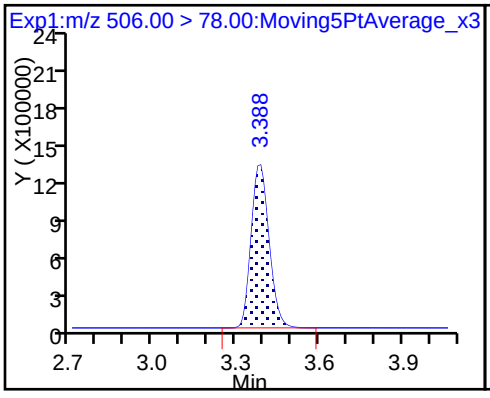
D 19 13C5 PFNA



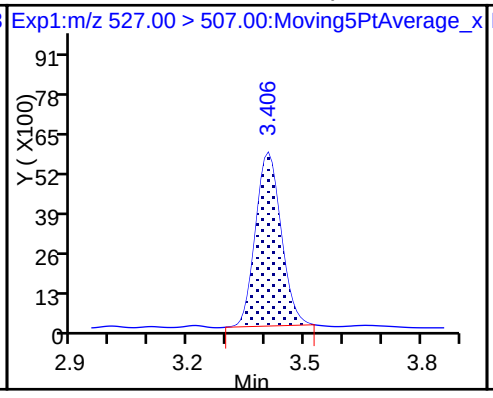
22 Perfluorooctane Sulfonamide



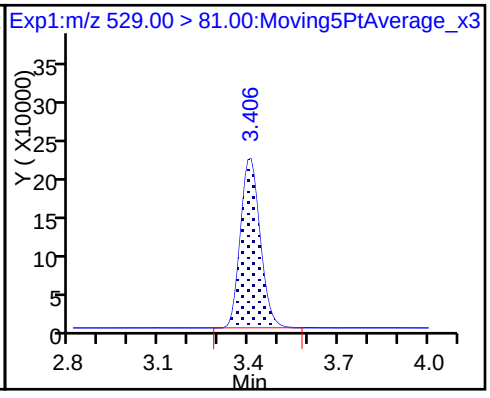
D 21 13C8 FOSA



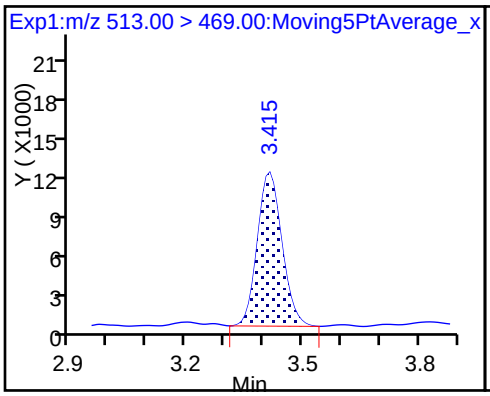
25 Sodium 1H,1H,2H,2H-perfluorodecane



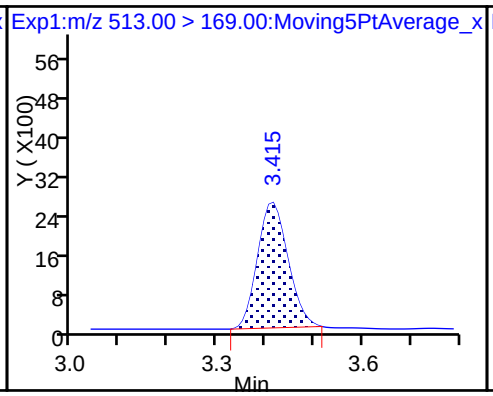
D 26 M2-8:2FTS



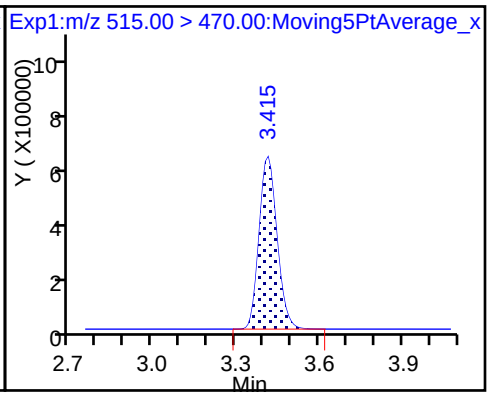
24 Perfluorodecanoic acid



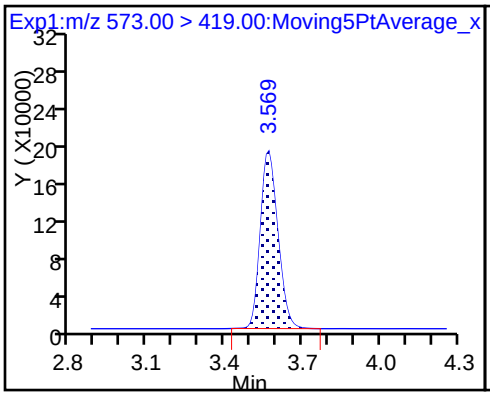
24 Perfluorodecanoic acid



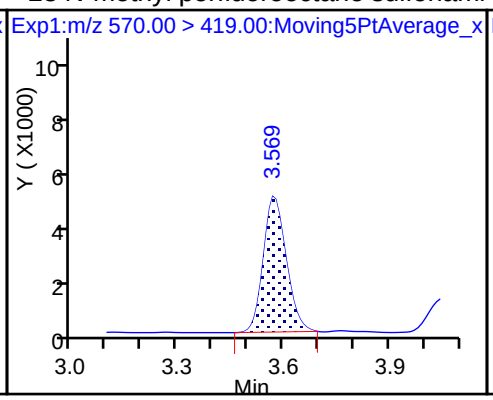
D 23 13C2 PFDA



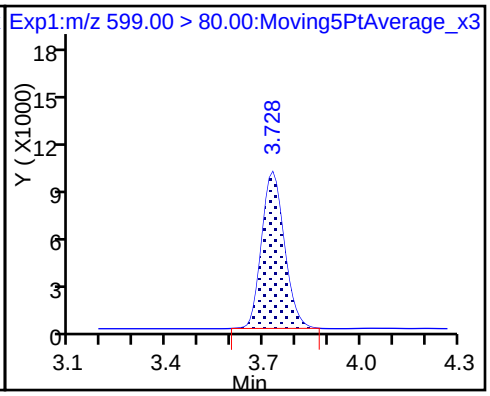
D 27 d3-NMeFOSAA



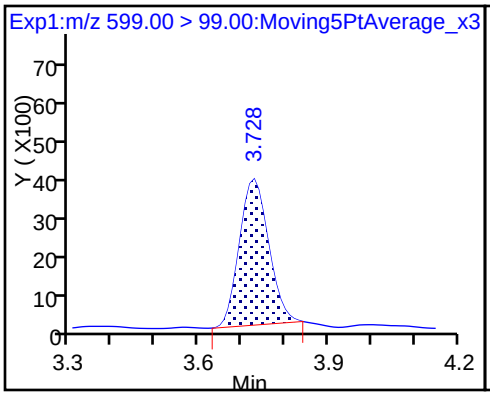
28 N-methyl perfluorooctane sulfonami



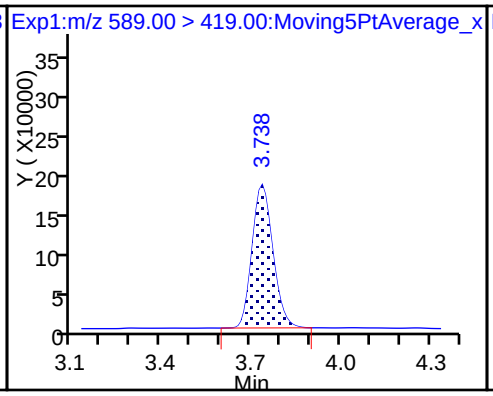
29 Perfluorodecane Sulfonic acid



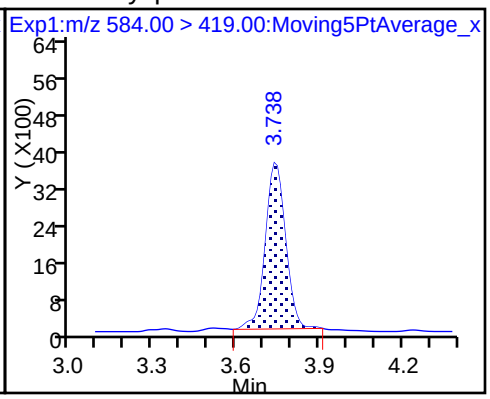
29 Perfluorodecane Sulfonic acid



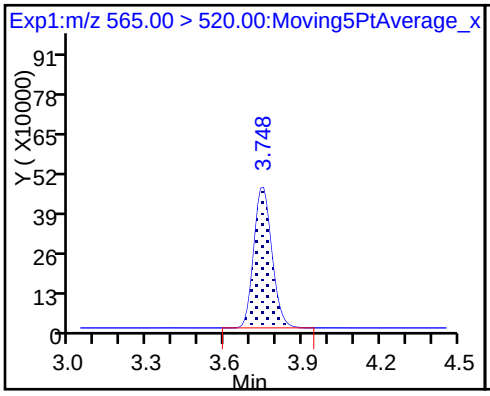
D 32 d5-NEtFOSAA



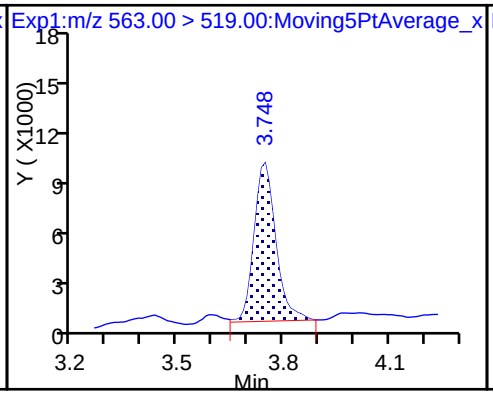
33 N-ethyl perfluorooctane sulfonamid



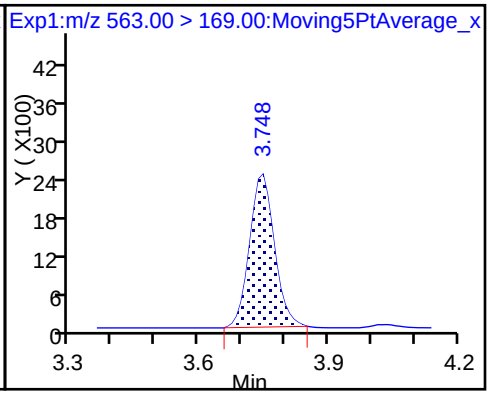
D 30 13C2 PFUnA



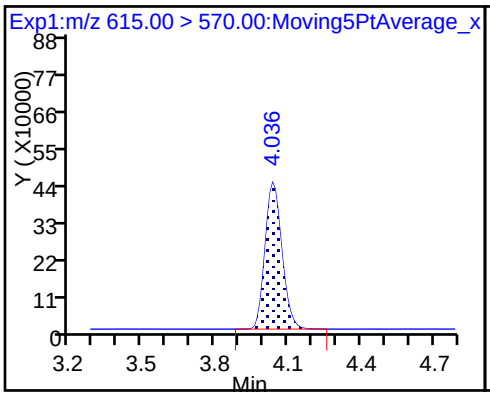
31 Perfluoroundecanoic acid



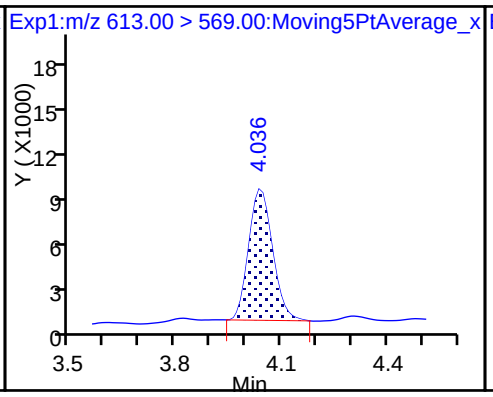
31 Perfluoroundecanoic acid



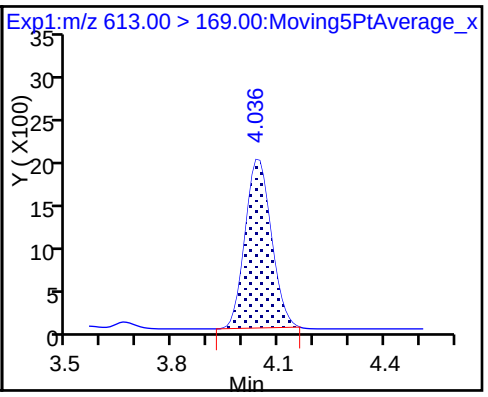
D 36 13C2 PFDoA



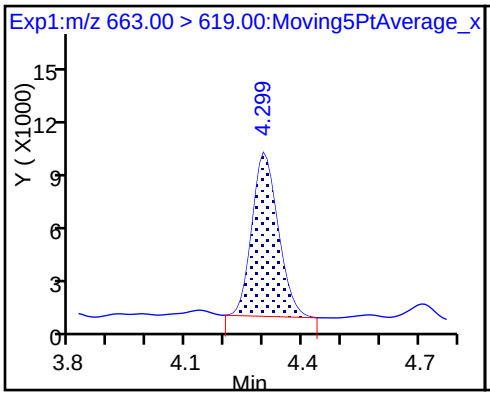
37 Perfluorododecanoic acid



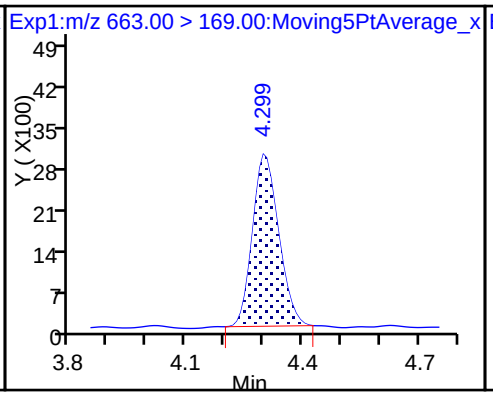
37 Perfluorododecanoic acid



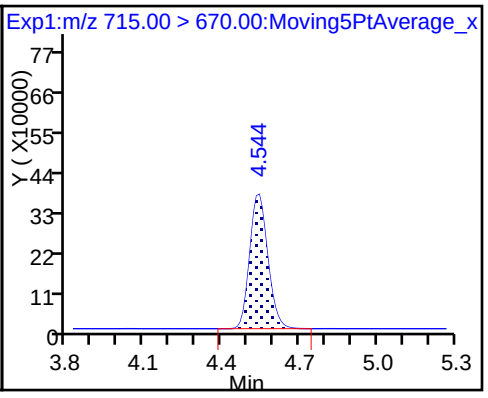
41 Perfluorotridecanoic acid



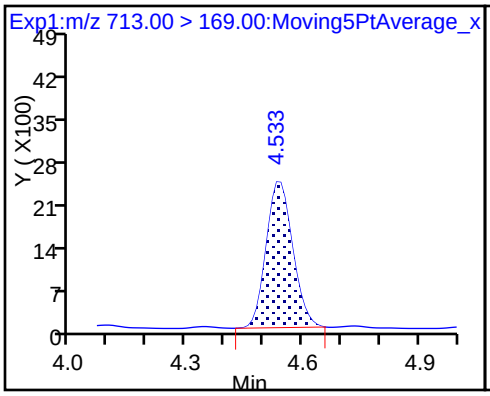
41 Perfluorotridecanoic acid



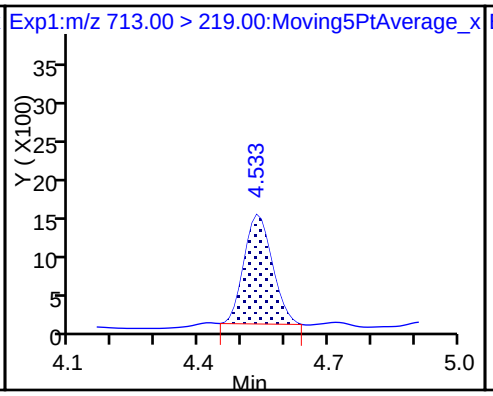
D 43 13C2-PFTeDA



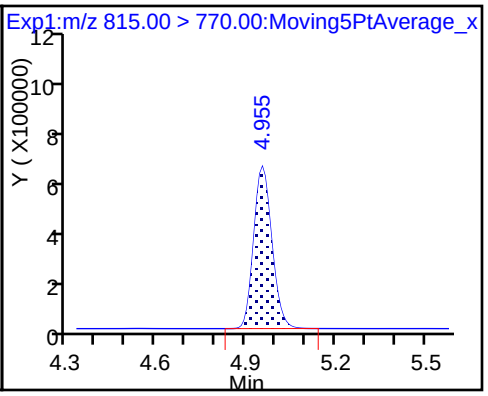
42 Perfluorotetradecanoic acid



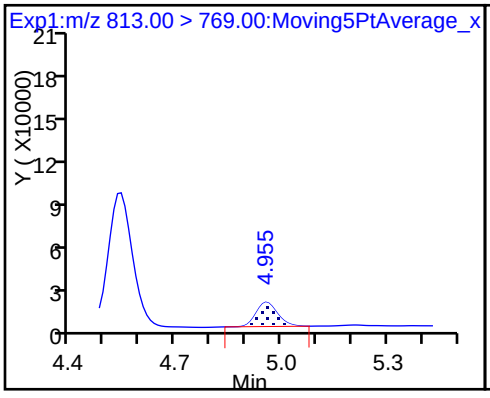
42 Perfluorotetradecanoic acid



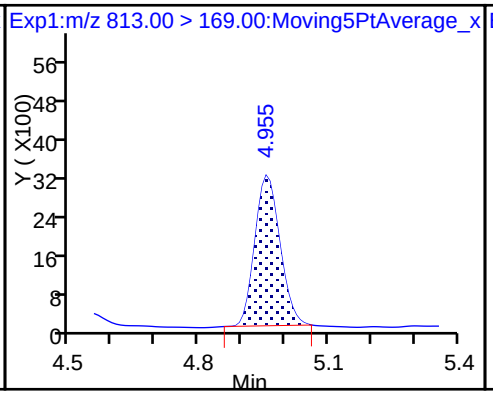
D 44 13C2-PFHxDA



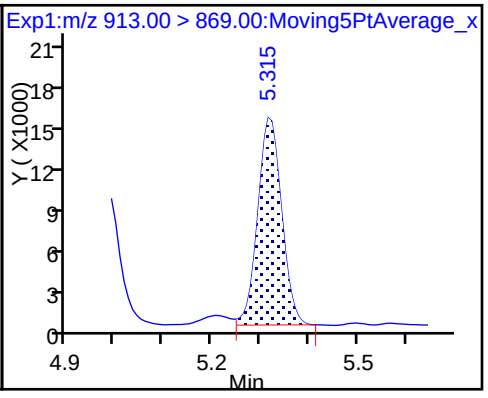
45 Perfluorohexadecanoic acid



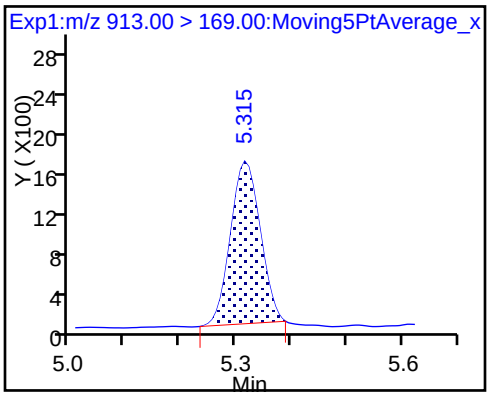
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

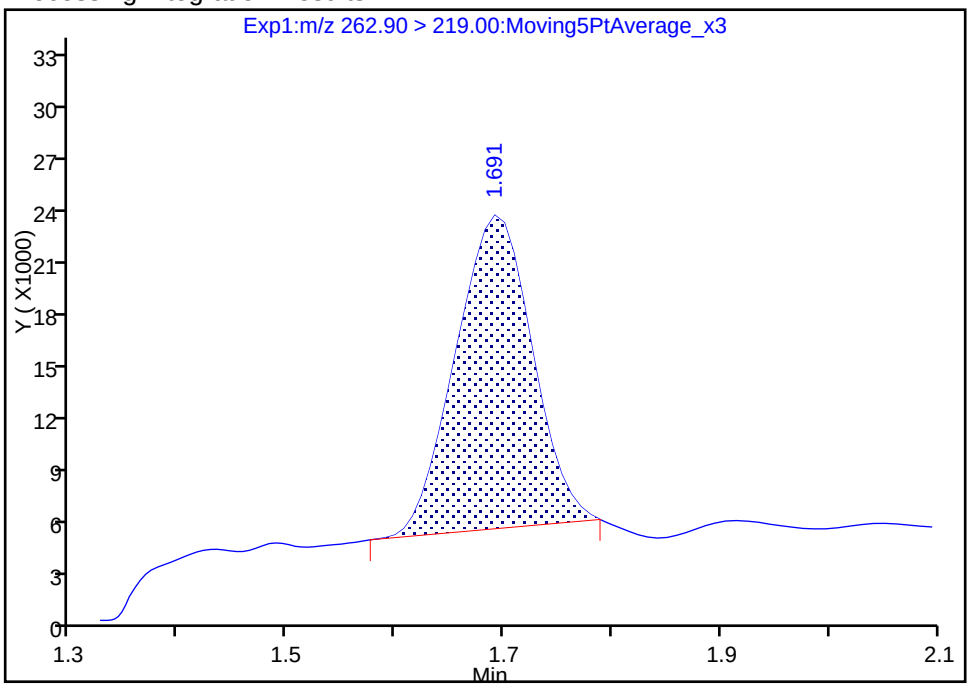
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_003.d				
Injection Date:	16-Mar-2018 23:17:30	Instrument ID:	A8_N		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

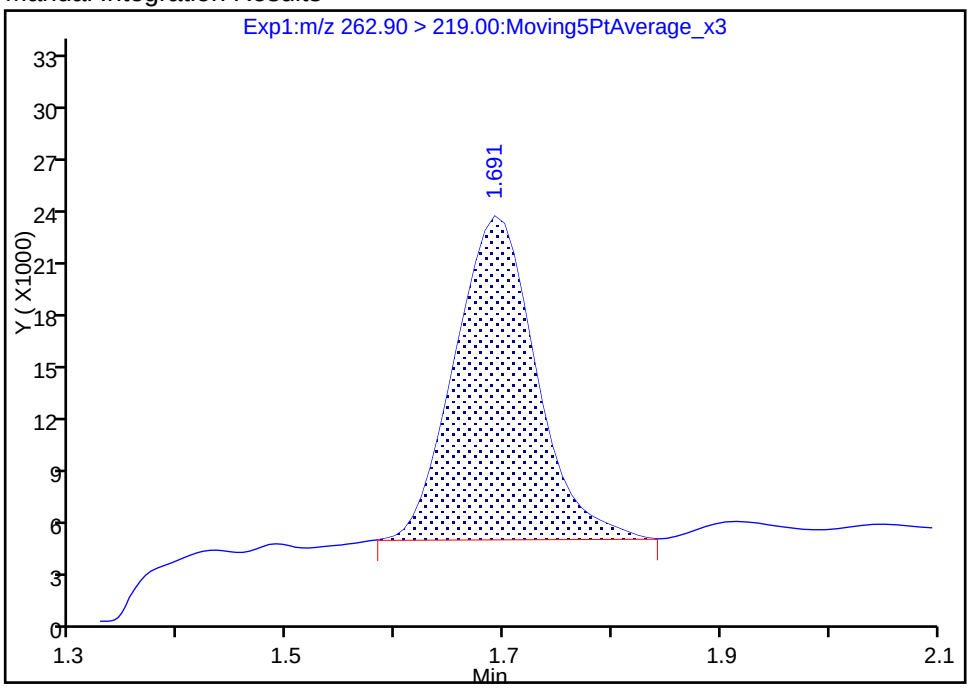
Processing Integration Results

RT: 1.69
Area: 89608
Amount: 0.048214
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 98047
Amount: 0.052079
Amount Units: ng/ml



Reviewer: phomsophat, 18-Mar-2018 12:24:49

Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 16-Mar-2018 23:25:20 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:29 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:26:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	5676105	2.37		94.9	109752	
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.440	-0.006	1.000	528325	0.2509		100	384	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.696	-0.005	0.633	4142560	2.45		98.2	134338	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.698	-0.007	1.000	461977	0.2387		95.5	175	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.730	-0.003	0.646	92166	2.21		95.2	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.733	-0.006	1.000	662611	0.2160		97.7	292	
298.90 > 99.00	1.727	1.733	-0.006	1.000	285306		2.32(1.25-3.74)	97.7	291	
D 60 M2-4:2FTS										
329.00 > 81.00	1.935	1.942	-0.007	0.724	667108	2.24		95.9	6920	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.935	1.944	-0.009	1.000	149763	0.2350		101	9381	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.739	4545197	2.42		96.6	103442	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.982	-0.006	1.000	453548	0.2472		98.9	1336	
313.00 > 119.00	1.976	1.982	-0.006	1.000	39826		11.39(5.03-15.10)	98.9	879	
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.311	-0.009	0.861	4288080	2.34		93.7	102910	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.311	-0.009	1.000	455401	0.2562		102	989	
363.00 > 169.00	2.302	2.311	-0.009	1.000	171167		2.66(1.13-3.40)	102	3577	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.326	-0.011	0.866	5345110	2.19		92.6	52778	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.315	2.326	-0.011	1.000	560663	0.2224		97.8	68.7	
399.00 > 99.00	2.315	2.326	-0.011	1.000	186807		3.00(1.50-4.49)	97.8	69.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.641	2.651	-0.010	0.988	1075617	2.29		96.6	22683	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.641	2.652	-0.011	1.000	184494	0.2447		103	10820	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.678	-0.005	1.000	4329764	2.45		98.0	91608	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.678	-0.005	1.000	440615	0.2279		91.2	139	
413.00 > 169.00	2.673	2.678	-0.005	1.000	250016		1.76(0.84-2.52)	91.2	1020	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.678	-0.005		4684467	2.50			99324	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.673	2.684	-0.011	1.000	499055	0.2351		98.8	11674	
449.00 > 99.00	2.673	2.684	-0.011	1.000	131789		3.79(1.94-5.82)	98.8	3882	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.050	-0.006	1.139	3861206	2.26		94.6	55017	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.050	-0.006	1.000	379502	0.2170		93.5	1600	
499.00 > 99.00	3.044	3.050	-0.006	1.000	84823		4.47(2.31-6.93)	93.5	1099	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.052	-0.008	1.139	3409796	2.41		96.5	78236	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.052	-0.008	1.000	332490	0.2391		95.6	758	
463.00 > 169.00	3.044	3.052	-0.008	1.000	79660		4.17(1.90-5.69)	95.6	2508	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.388	-0.008	1.265	5924910	2.40		95.9	50173	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.388	-0.008	1.000	575124	0.2497		99.9	21834	
D 26 M2-8:2FTS										
529.00 > 81.00	3.398	3.406	-0.008	1.272	1037774	2.36		98.4	19457	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.398	3.406	-0.008	1.000	129787	0.2382		99.5	5835	
D 23 13C2 PFDA										
515.00 > 470.00	3.407	3.416	-0.009	1.275	2940123	2.49		99.6	50957	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.416	-0.009	1.000	277398	0.2486		99.4	1278	
513.00 > 169.00	3.407	3.416	-0.009	1.000	47991		5.78(2.36-7.09)	99.4	2723	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.561	3.570	-0.009	1.333	926313	2.38		95.0	22741	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.570	3.571	-0.001	1.002	90574	0.2347		93.9	1811	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.729	-0.002	1.000	246261	0.2387		99.1	7488	
599.00 > 99.00	3.727	3.729	-0.002	1.000	83238		2.96(1.39-4.16)	99.1	1772	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.398	885725	2.38		95.0	2102	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.738	3.746	-0.008	1.000	82250	0.2371		94.8	2411	
D 30 13C2 PFUnA										
565.00 > 520.00	3.738	3.747	-0.009	1.398	2288527	2.47		99.0	47946	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.750	-0.002	1.003	170791	0.2226		89.1	579	
563.00 > 169.00	3.738	3.750	-0.012	1.000	47832		3.57(2.12-6.36)	89.1	3804	
D 36 13C2 PFDoA										
615.00 > 570.00	4.035	4.041	-0.006	1.510	2098644	2.39		95.7	12400	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.035	4.042	-0.007	1.000	216392	0.2520		101	42.4	
613.00 > 169.00	4.035	4.042	-0.007	1.000	56005		3.86(2.13-6.40)	101	1660	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.304	-0.006	1.000	219791	0.2545		102	46.0	
663.00 > 169.00	4.298	4.304	-0.006	1.000	71054		3.09(1.25-3.76)	102	1089	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.700	1912234	2.39		95.6	14787	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.545	-0.002	1.000	48261	0.2288		91.5	592	
713.00 > 219.00	4.533	4.545	-0.012	0.998	37105		1.30(0.71-2.13)	91.5	412	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.854	2831717	2.42		96.8	9806	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.960	0.004	1.002	287100	0.2522		101	24.5	
813.00 > 169.00	4.964	4.960	0.004	1.002	51630		5.56(2.86-8.58)	101	604	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.324	5.320	0.004	1.000	261856	0.2371		94.9	47.1	
913.00 > 169.00	5.316	5.320	-0.004	0.999	33024		7.93(3.83-11.48)	94.9	438	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:30 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_004.d

Injection Date: 16-Mar-2018 23:25:20 Instrument ID: A8_N

Lims ID: IC L3 Full

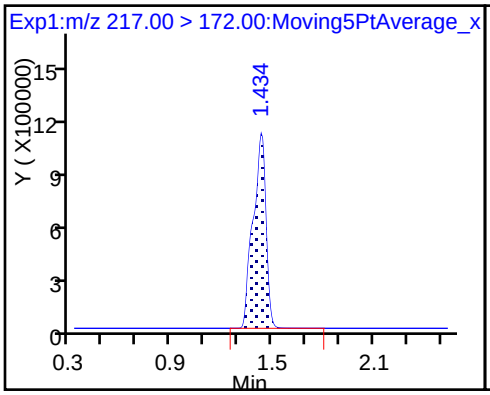
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

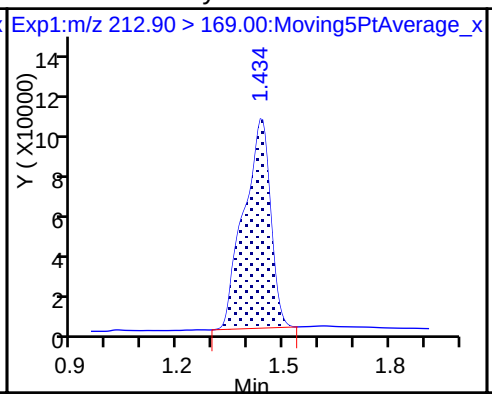
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

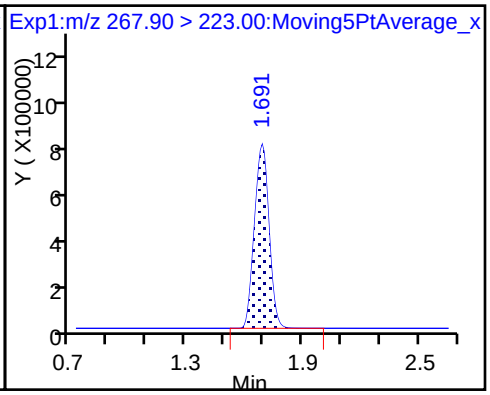
D 1 13C4 PFBA



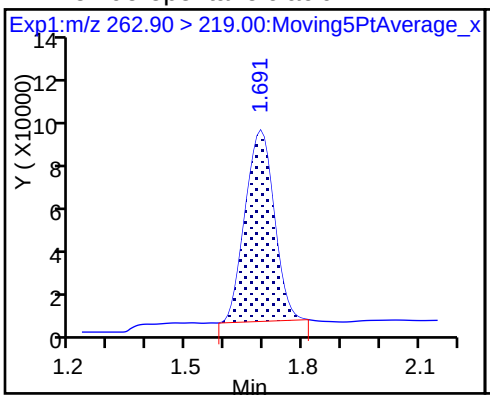
2 Perfluorobutyric acid



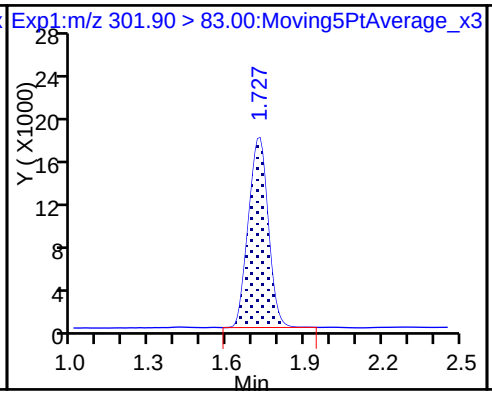
D 3 13C5-PFPeA



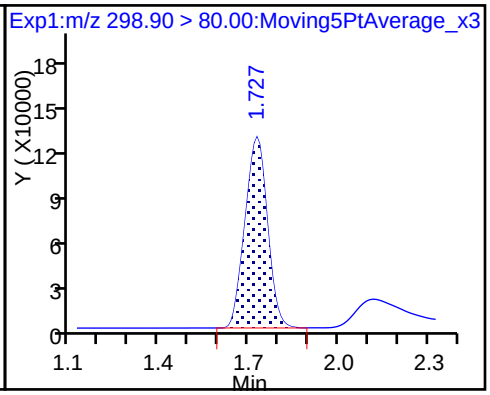
4 Perfluoropentanoic acid



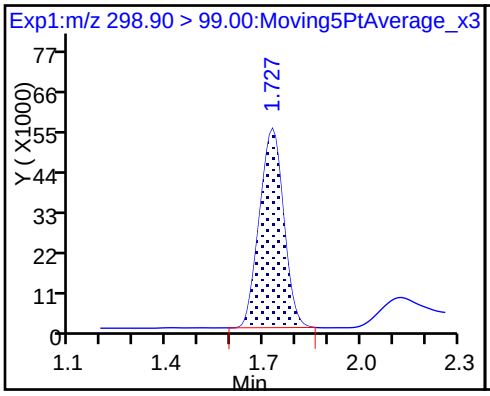
D 47 13C3-PFBS



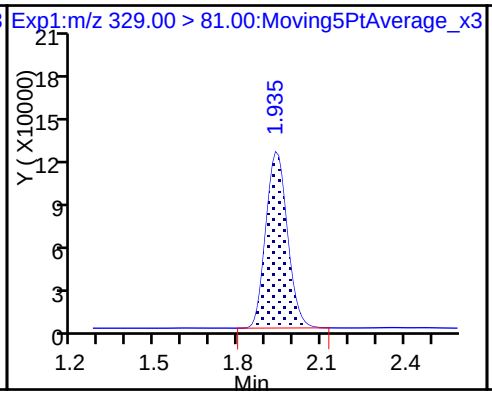
5 Perfluorobutanesulfonic acid



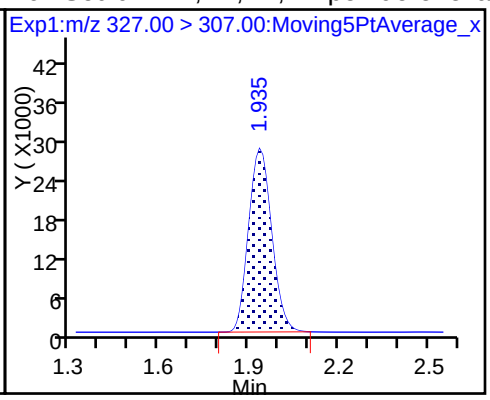
5 Perfluorobutanesulfonic acid



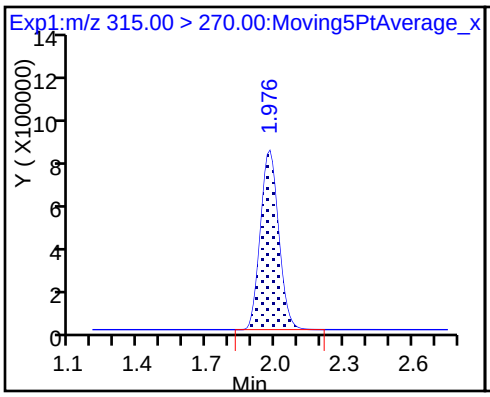
D 60 M2-4:2FTS



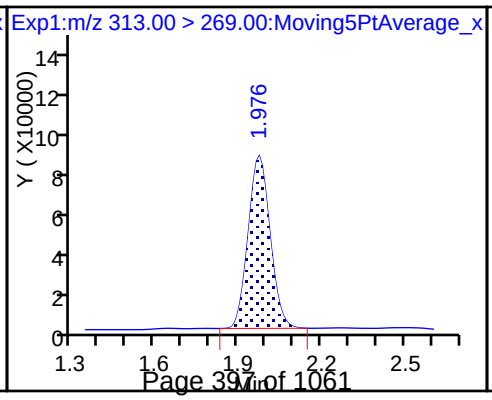
61 Sodium 1H,1H,2H,2H-perfluorohexane



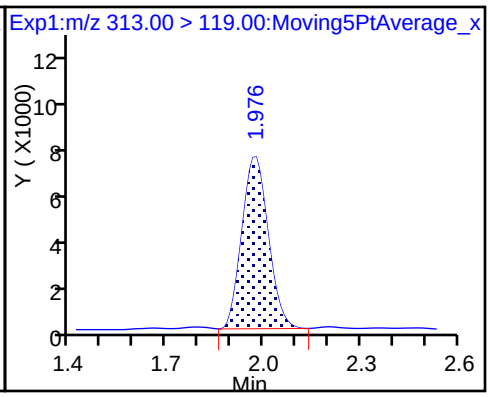
D 7 13C2 PFHxA



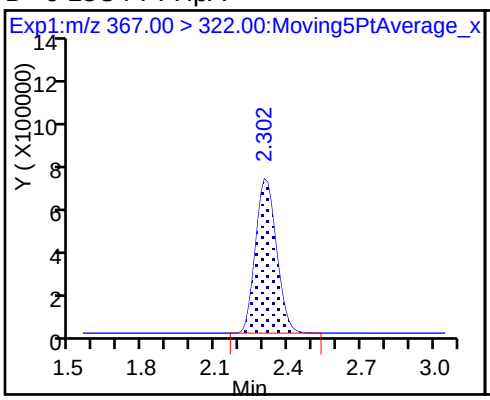
6 Perfluorohexanoic acid



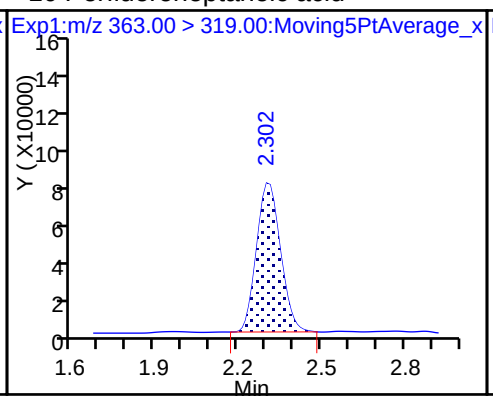
6 Perfluorohexanoic acid



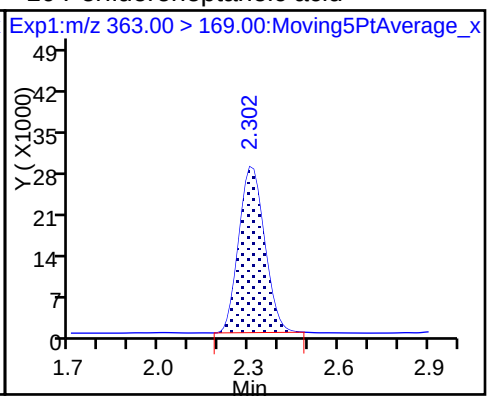
D 9 13C4-PFHpA



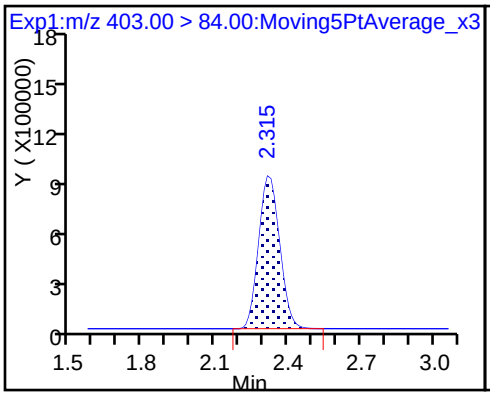
10 Perfluoroheptanoic acid



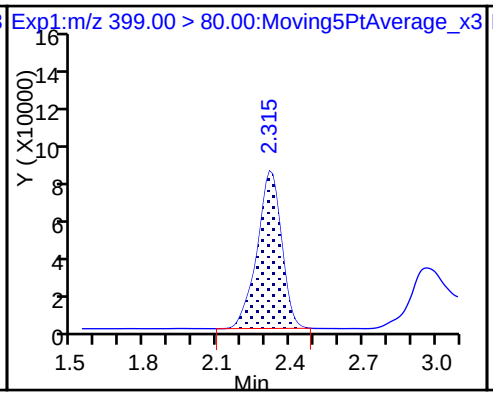
10 Perfluoroheptanoic acid



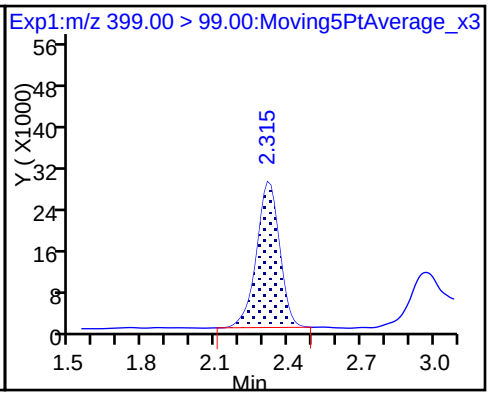
D 11 18O2 PFHxS



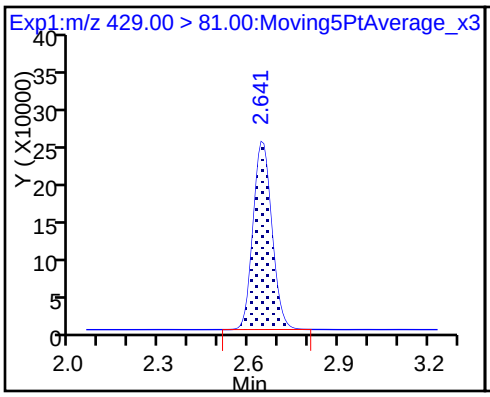
8 Perfluorohexanesulfonic acid



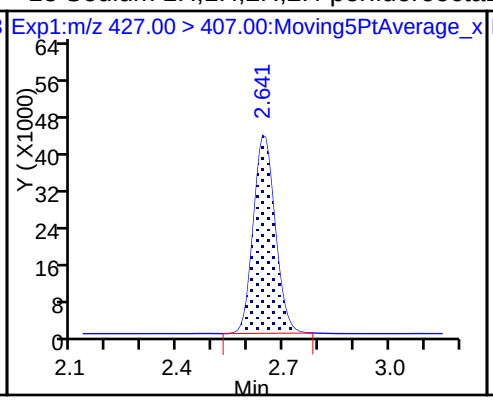
8 Perfluorohexanesulfonic acid



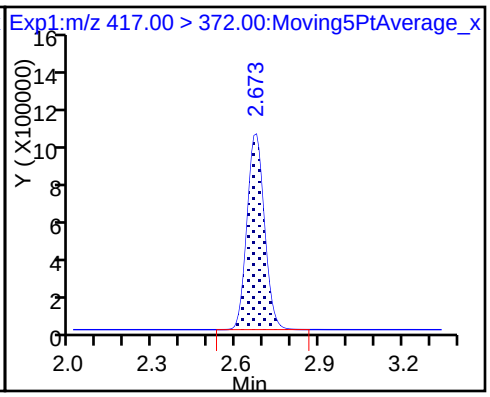
D 12 M2-6:2FTS



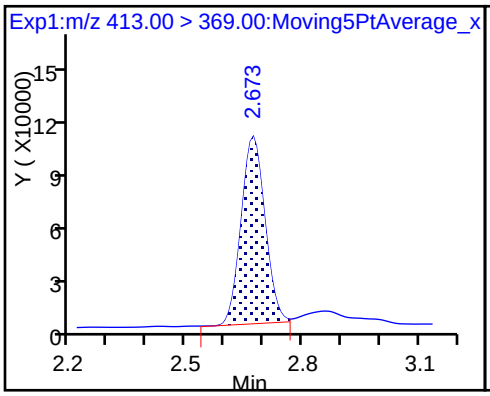
13 Sodium 1H,1H,2H,2H-perfluorooctane



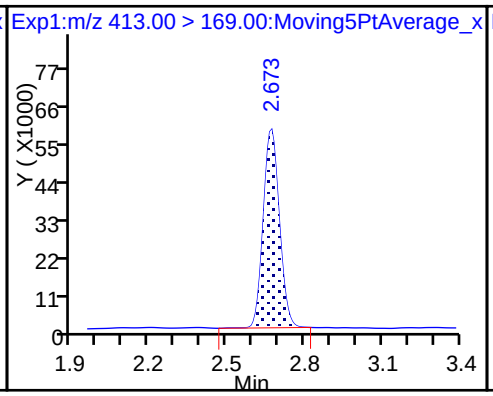
D 14 13C4 PFOA



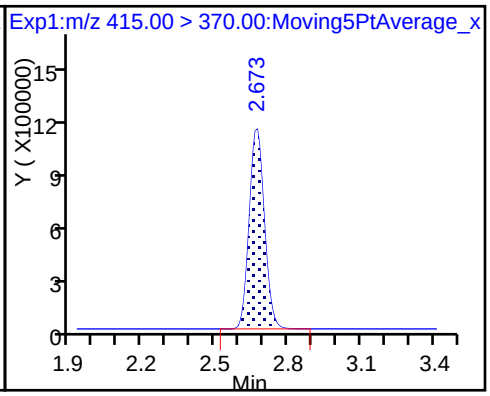
15 Perfluorooctanoic acid



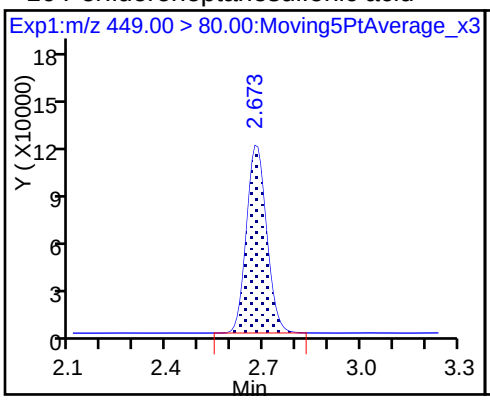
15 Perfluorooctanoic acid



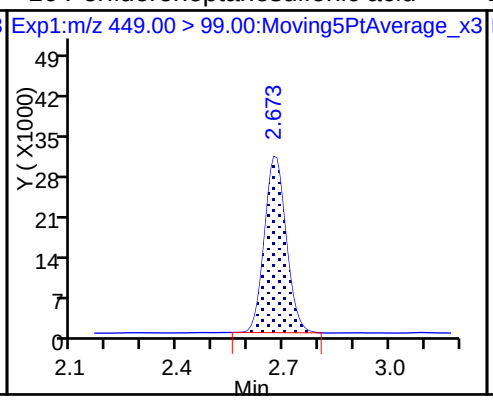
* 62 13C2-PFOA



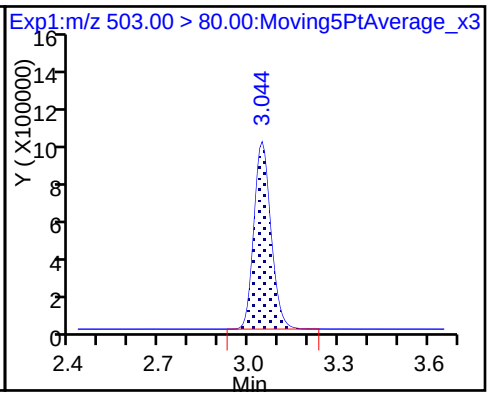
16 Perfluoroheptanesulfonic acid



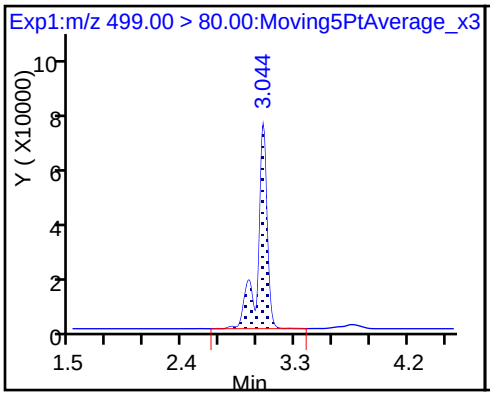
16 Perfluoroheptanesulfonic acid



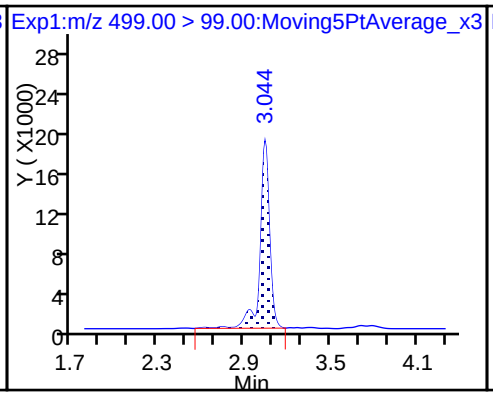
D 18 13C4 PFOS



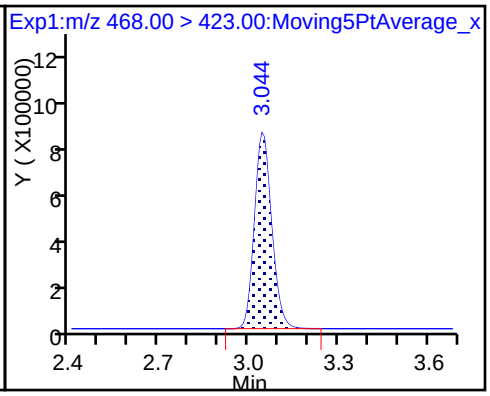
17 Perfluorooctane sulfonic acid



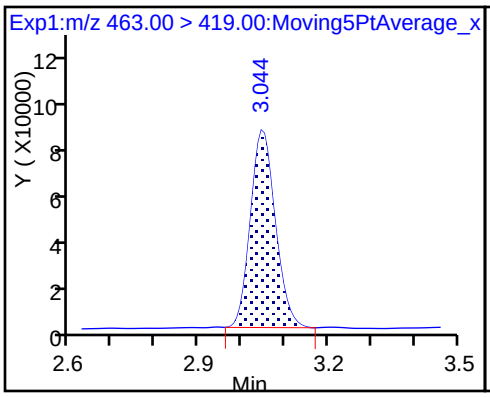
17 Perfluorooctane sulfonic acid



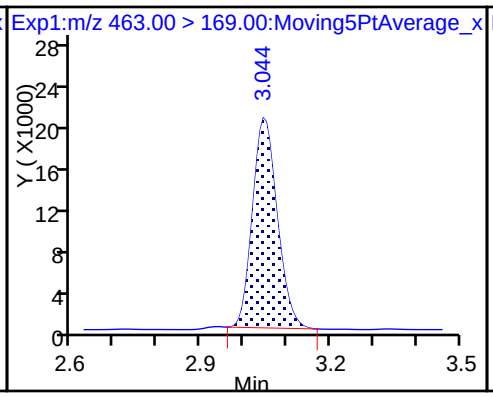
D 19 13C5 PFNA



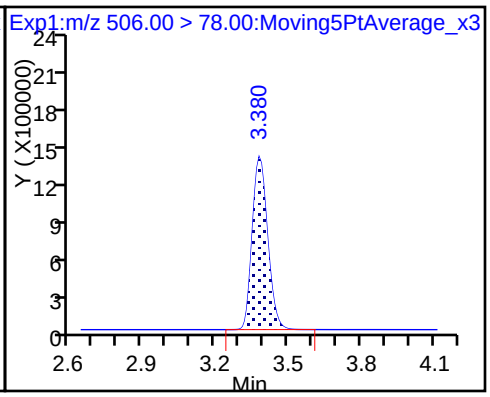
20 Perfluorononanoic acid



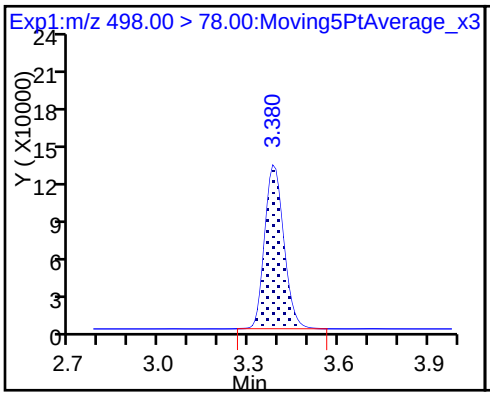
20 Perfluorononanoic acid



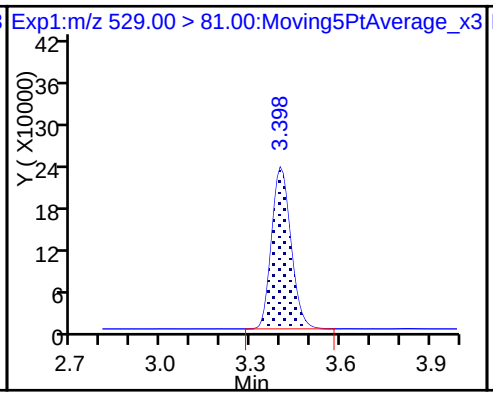
D 21 13C8 FOSA



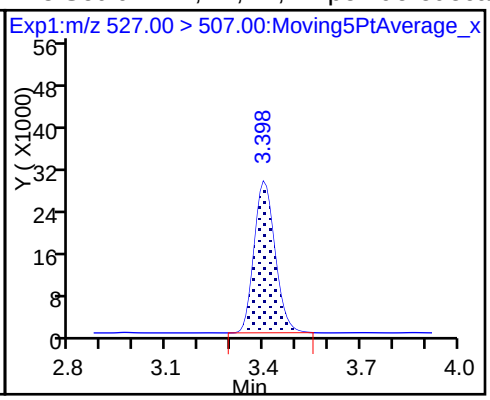
22 Perfluorooctane Sulfonamide



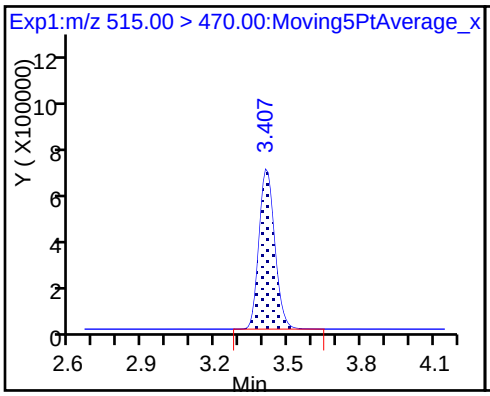
D 26 M2-8:2FTS



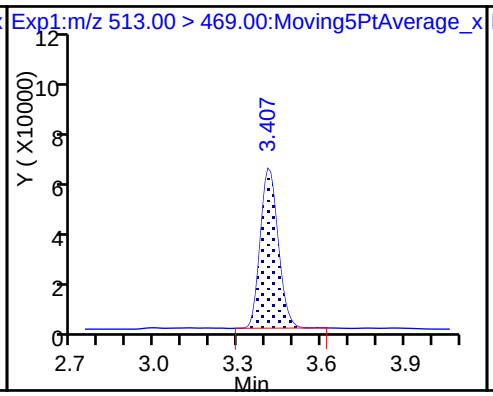
25 Sodium 1H,1H,2H,2H-perfluorodecane



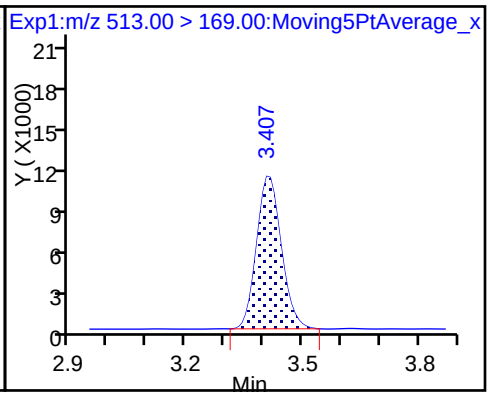
D 23 13C2 PFDA



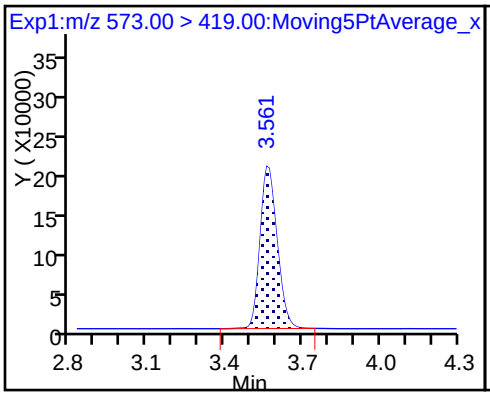
24 Perfluorodecanoic acid



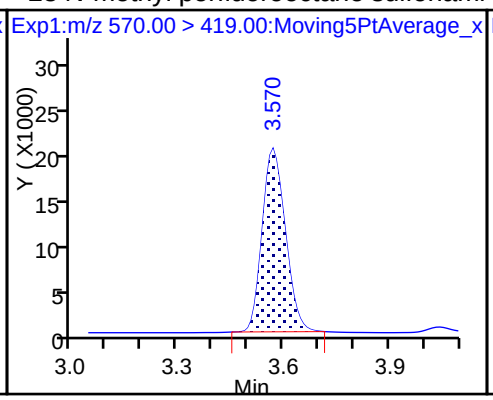
24 Perfluorodecanoic acid



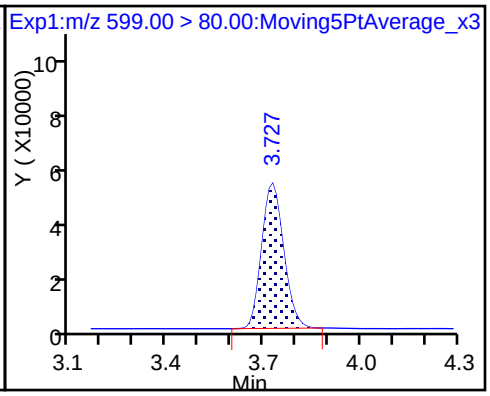
D 27 d3-NMeFOSAA



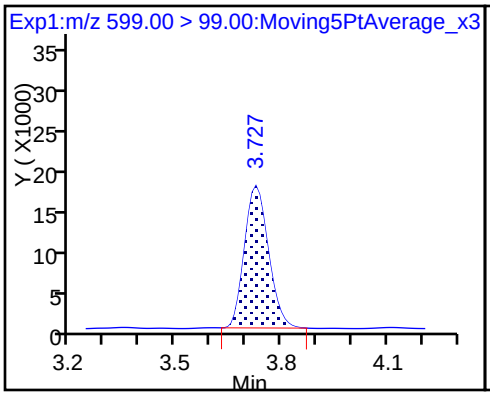
28 N-methyl perfluorooctane sulfonami



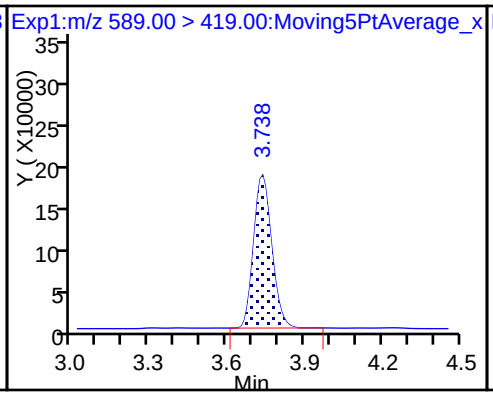
29 Perfluorodecane Sulfonic acid



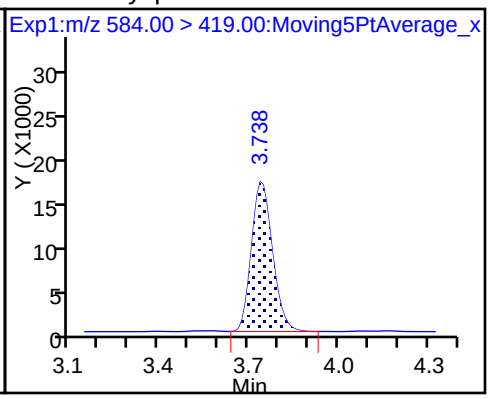
29 Perfluorodecane Sulfonic acid



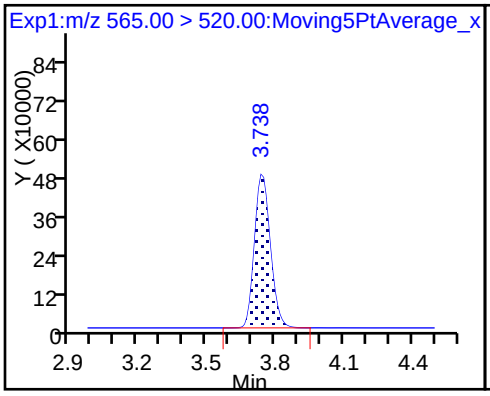
D 32 d5-NEtFOSAA



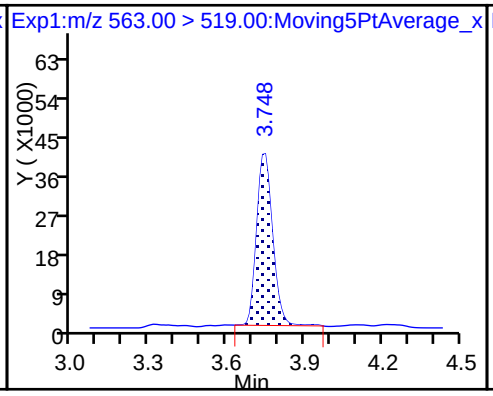
33 N-ethyl perfluorooctane sulfonamid



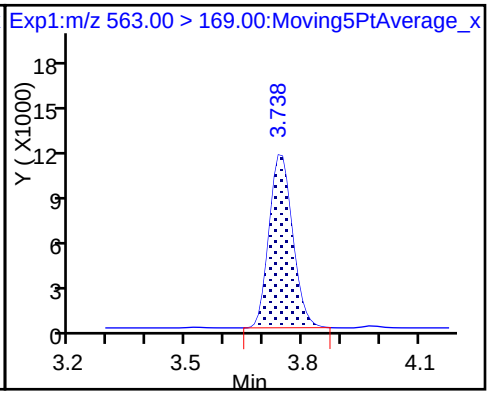
D 30 13C2 PFUnA



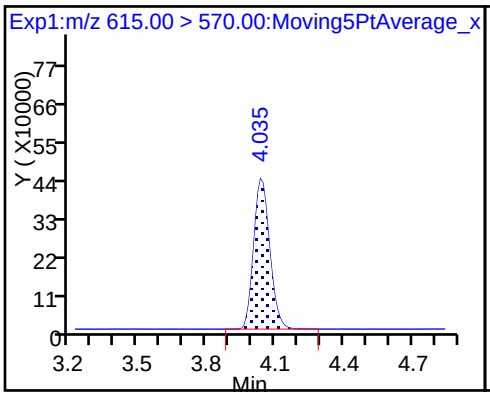
31 Perfluoroundecanoic acid



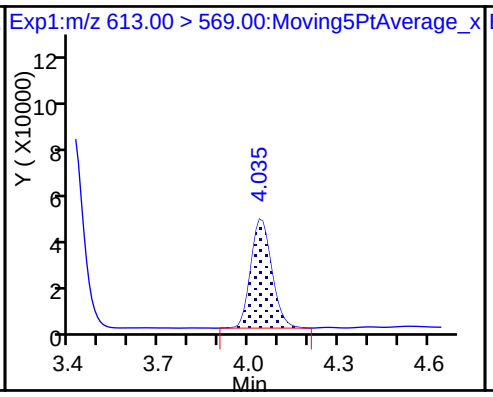
31 Perfluoroundecanoic acid



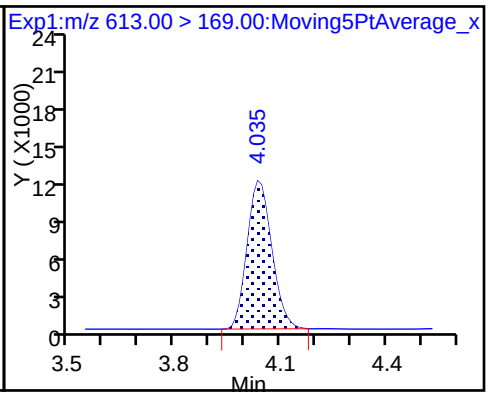
D 36 13C2 PFDoA



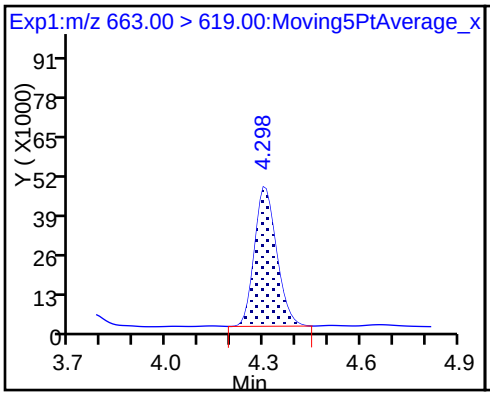
37 Perfluorododecanoic acid



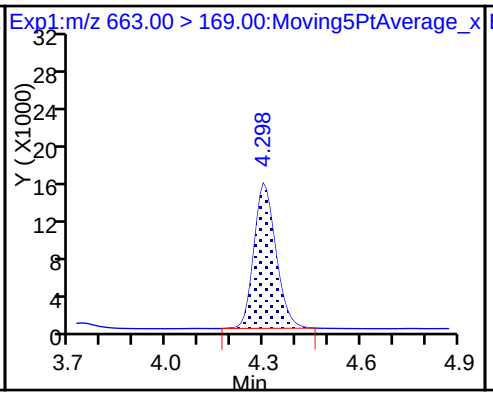
37 Perfluorododecanoic acid



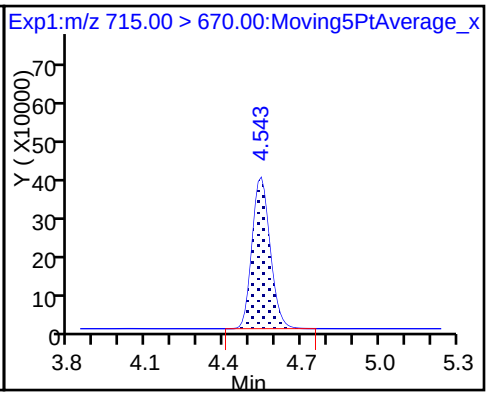
41 Perfluorotridecanoic acid



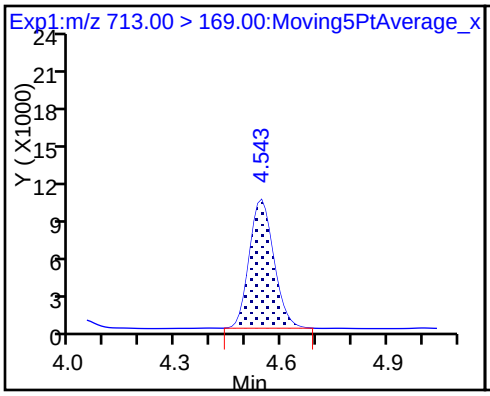
41 Perfluorotridecanoic acid



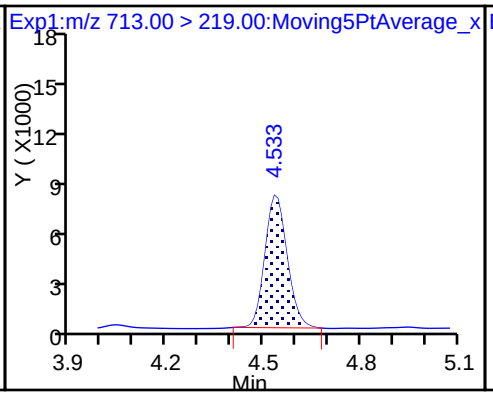
D 43 13C2-PFTeDA



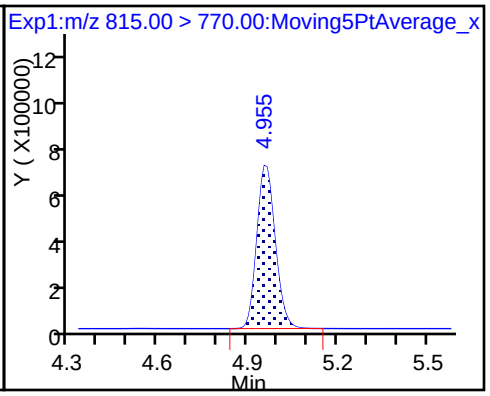
42 Perfluorotetradecanoic acid



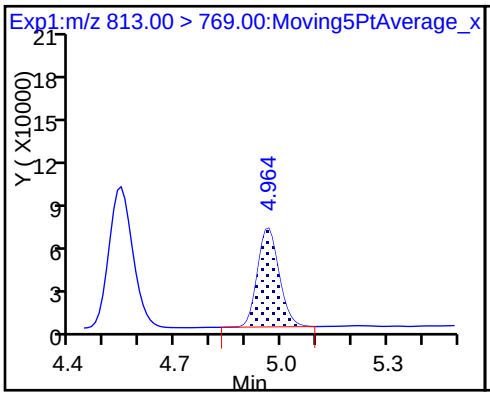
42 Perfluorotetradecanoic acid



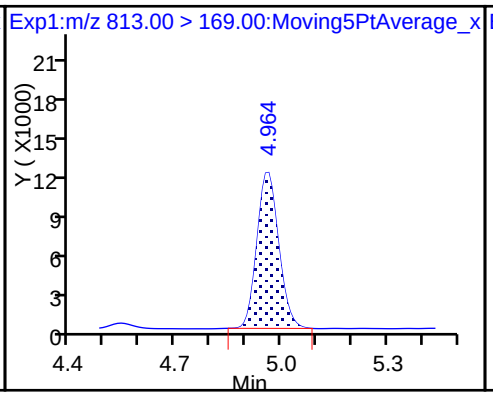
D 44 13C2-PFHxDA



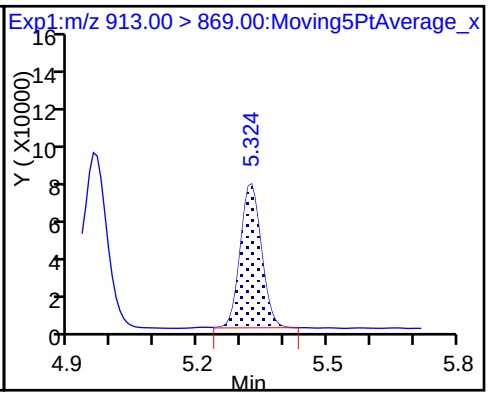
45 Perfluorohexadecanoic acid



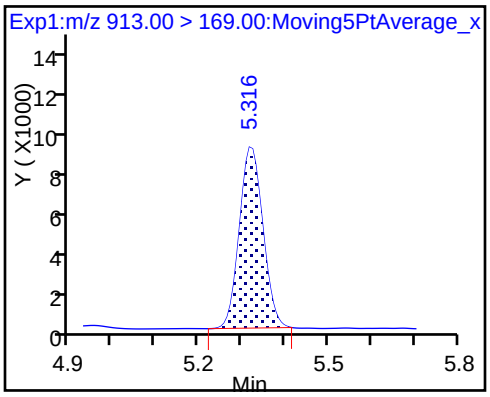
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 16-Mar-2018 23:33:12 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:31 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:27:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.440	0.006	1.000	2048994	0.9691		96.9	1463	
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.440	0.006	0.540	5699617	2.45		98.2	108848	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.696	0.004	0.635	3973031	2.42		97.0	96403	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.698	0.002	1.000	1812805	0.9765		97.7	700	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.730	0.005	0.648	90021	2.23		95.8	613	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.733	0.002	1.000	2653315	0.8856		100	1187	
298.90 > 99.00	1.735	1.733	0.002	1.000	1107170		2.40(1.25-3.74)	100	1201	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.942	0.003	0.726	678619	2.35		100	8368	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.944	0.001	1.000	581100	0.9337		100.0	36050	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.979	0.007	0.741	4566628	2.50		100.0	103809	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.982	0.004	1.000	1746371	0.9475		94.7	4897	
313.00 > 119.00	1.986	1.982	0.004	1.000	160043		10.91(5.03-15.10)	94.7	4154	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	1765971	0.9707		97.1	4174	
363.00 > 169.00	2.315	2.311	0.004	1.000	712366		2.48(1.13-3.40)	97.1	9197	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.864	4387932	2.47		98.8	105925	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	2166532	0.8109		89.1	266	
399.00 > 99.00	2.328	2.326	0.002	1.000	727892		2.98(1.50-4.49)	89.1	289	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.869	5665272	2.39		101	73746	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.651	0.004	0.991	1074637	2.36		99.4	20843	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.652	0.003	1.000	685622	0.9103		96.0	32328	
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.678	0.001		4548538	2.50			66870	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.679	2.678	0.001	1.000	1814577	0.9438		94.4	537	
413.00 > 169.00	2.679	2.678	0.001	1.000	996715		1.82(0.84-2.52)	94.4	4229	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.678	0.001	1.000	4305669	2.51		100	84376	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.687	2.684	0.003	1.000	2063678	0.9641		101	34981	
449.00 > 99.00	2.687	2.684	0.003	1.000	531695		3.88(1.94-5.82)	101	12416	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.050	0.001	1.000	1586675	0.8998		97.0	5561	
499.00 > 99.00	3.051	3.050	0.001	1.000	346297		4.58(2.31-6.93)	97.0	3419	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.050	0.001	1.139	3892764	2.35		98.2	39597	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.052	-0.001	1.000	1348017	0.9587		95.9	3480	
463.00 > 169.00	3.051	3.052	-0.001	1.000	327207		4.12(1.90-5.69)	95.9	13777	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.052	-0.001	1.139	3447867	2.51		100	54153	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.388	0.001	1.000	2356961	1.02		102	67255	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.265	5939465	2.47		99.0	44890	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.406	0.001	1.000	504855	0.9505		99.2	16199	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.406	0.001	1.272	1011812	2.37		98.8	22738	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.416	0.0	1.000	1154786	1.04		104	7234	
513.00 > 169.00	3.417	3.416	0.0	1.000	206837		5.58(2.36-7.09)	104	11727	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.416	0.0	1.275	2912792	2.54		102	59751	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.333	923680	2.44		97.6	28465	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	365056	0.9486		94.9	4565	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.729	0.001	1.000	1034588	0.99		103	36475	
599.00 > 99.00	3.730	3.729	0.001	1.000	336956		3.07(1.39-4.16)	103	6525	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.740	0.0	1.396	931709	2.57		103	2248	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.746	0.004	1.003	339482	0.9304		93.0	8733	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.747	0.003	1.400	2262020	2.52		101	67227	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.750	0.0	1.000	644915	0.8505		85.1	1928	
563.00 > 169.00	3.750	3.750	0.0	1.000	168712		3.82(2.12-6.36)	85.1	13449	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.041	-0.003	1.507	2017899	2.37		94.8	12596	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.042	0.007	1.003	860515	1.04		104	177	
613.00 > 169.00	4.049	4.042	0.007	1.003	216685		3.97(2.13-6.40)	104	5598	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.304	0.003	1.000	842010	1.01		101	177	
663.00 > 169.00	4.307	4.304	0.003	1.000	259137		3.25(1.25-3.76)	101	3693	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.545	-0.001	1.696	1891848	2.43		97.4	14773	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.545	-0.001	1.000	194321	0.9311		93.1	2372	
713.00 > 219.00	4.544	4.545	-0.001	1.000	138985		1.40(0.71-2.13)	93.1	1610	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.956	4.956	0.0	1.850	2868070	2.52		101	11418	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.960	0.004	1.002	1031926	0.9560		95.6	89.6	
813.00 > 169.00	4.964	4.960	0.004	1.002	177707		5.81(2.86-8.58)	95.6	2206	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.323	5.320	0.003	1.000	1049380	0.9382		93.8	201	
913.00 > 169.00	5.316	5.320	-0.004	0.999	136421		7.69(3.83-11.48)	93.8	1641	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:32 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_005.d

Injection Date: 16-Mar-2018 23:33:12 Instrument ID: A8_N

Lims ID: IC L4 Full

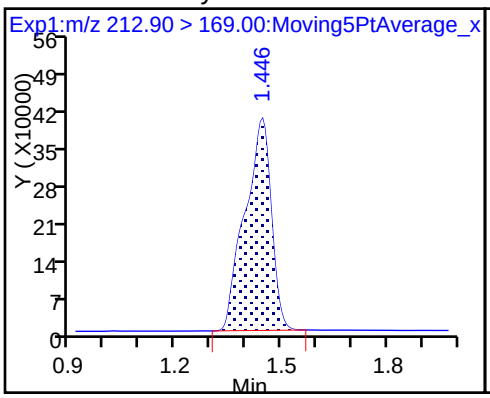
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

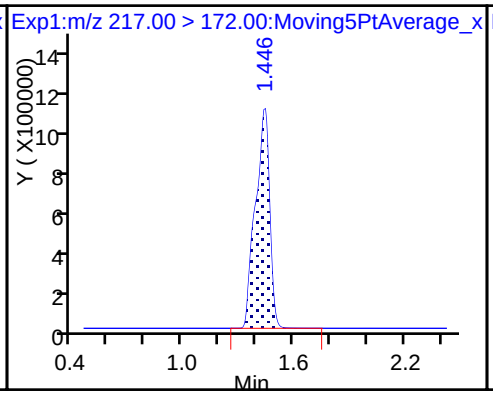
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

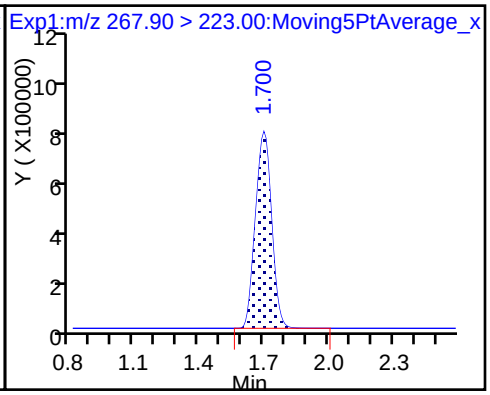
2 Perfluorobutyric acid



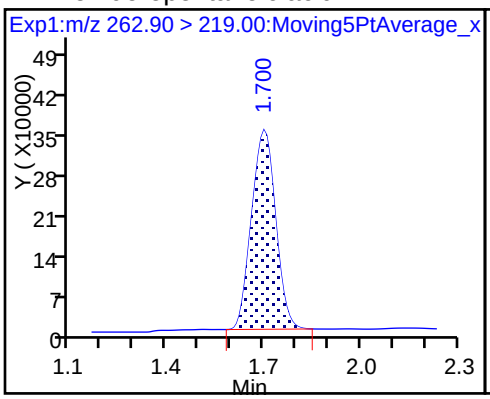
D 1 13C4 PFBA



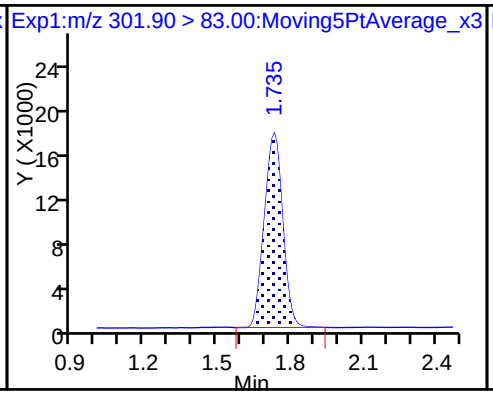
D 3 13C5-PFPeA



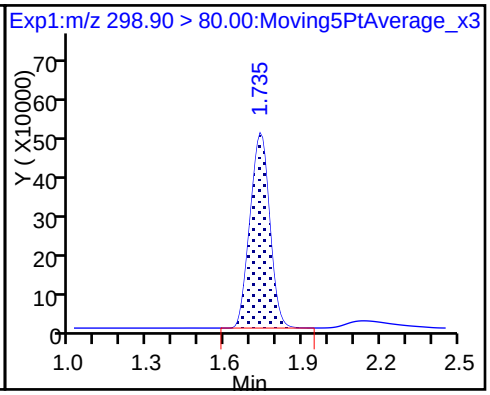
4 Perfluoropentanoic acid



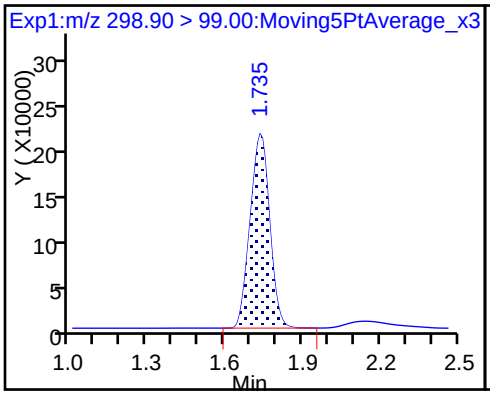
D 47 13C3-PFBS



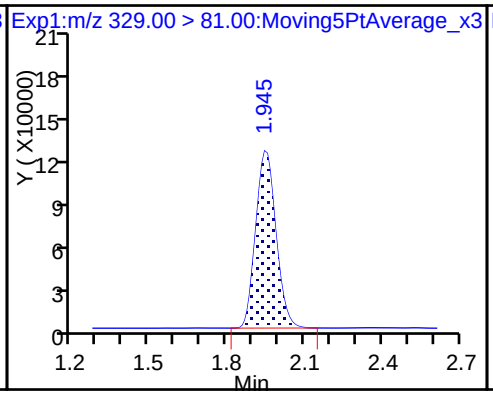
5 Perfluorobutanesulfonic acid



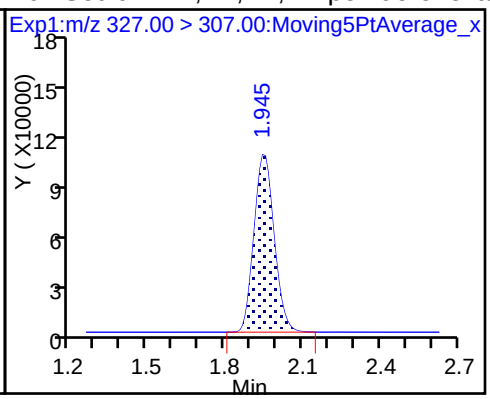
5 Perfluorobutanesulfonic acid



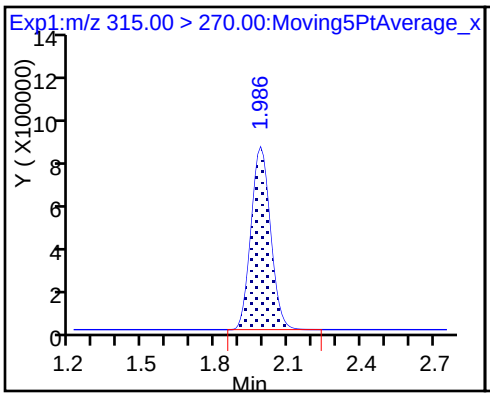
D 60 M2-4:2FTS



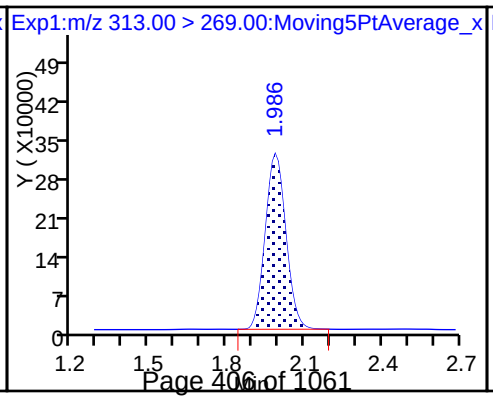
61 Sodium 1H,1H,2H,2H-perfluorohexane



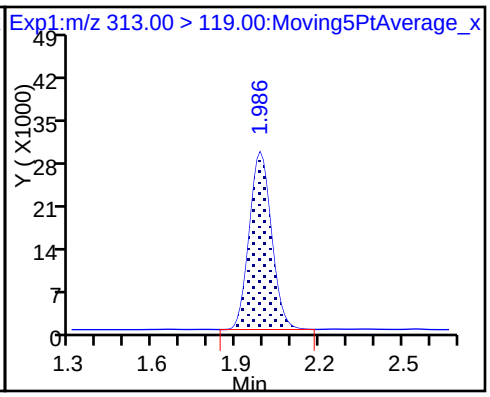
D 7 13C2 PFHxA



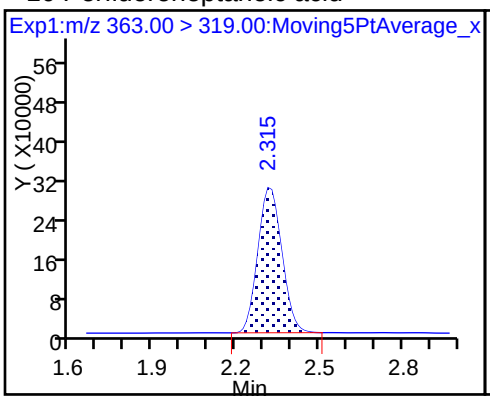
6 Perfluorohexanoic acid



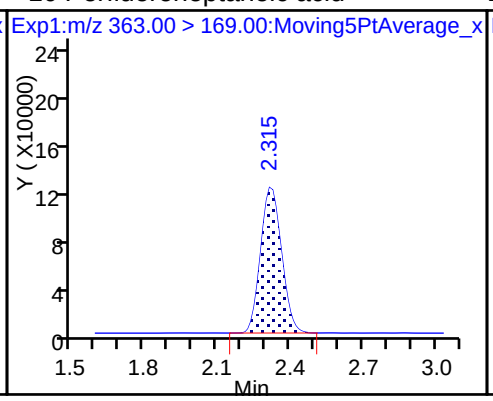
6 Perfluorohexanoic acid



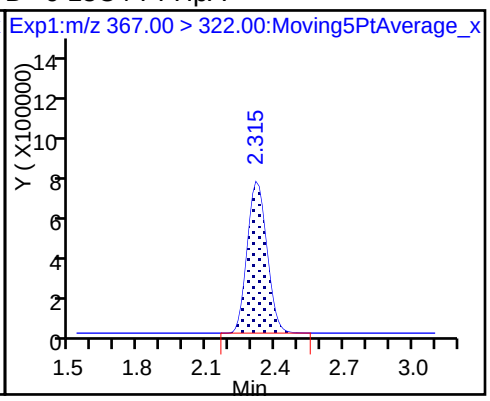
10 Perfluoroheptanoic acid



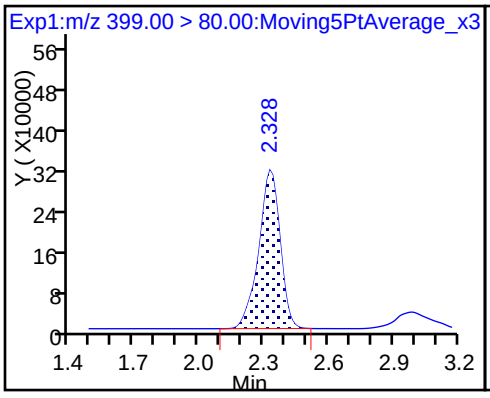
10 Perfluoroheptanoic acid



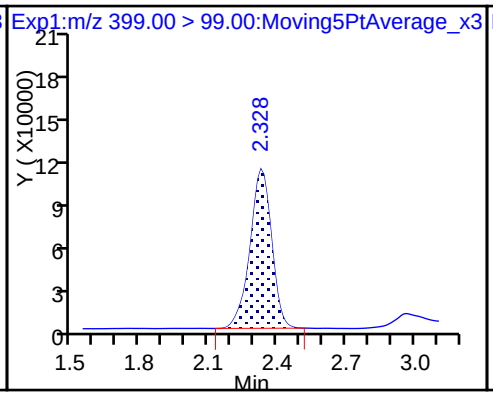
D 9 13C4-PFHpA



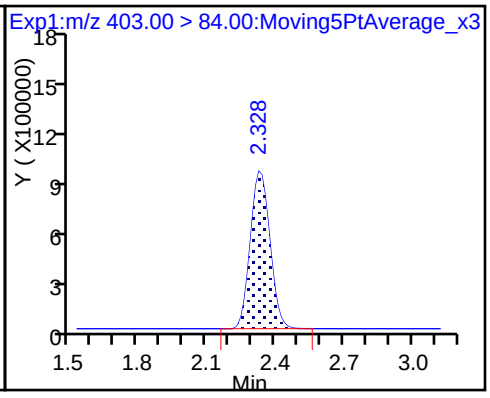
8 Perfluorohexanesulfonic acid



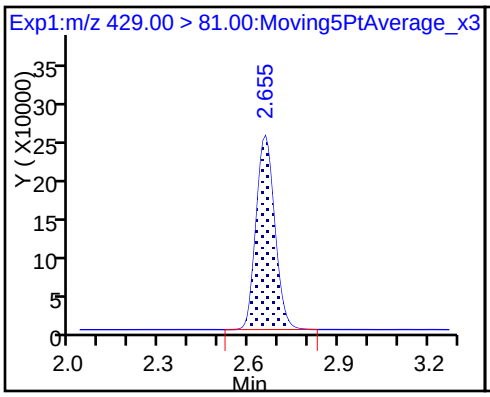
8 Perfluorohexanesulfonic acid



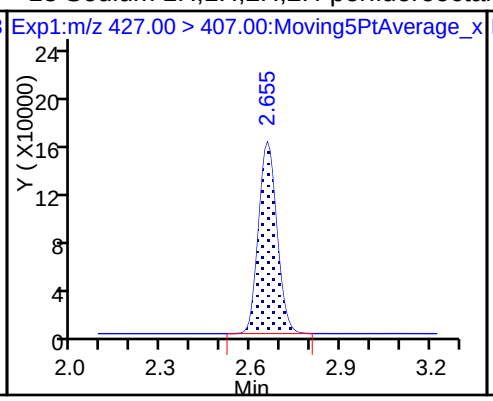
D 11 18O2 PFHxS



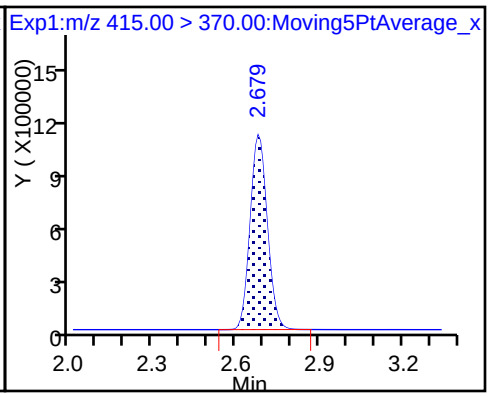
D 12 M2-6:2FTS



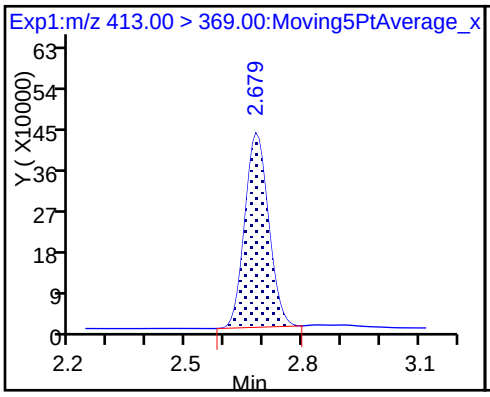
13 Sodium 1H,1H,2H,2H-perfluorooctane



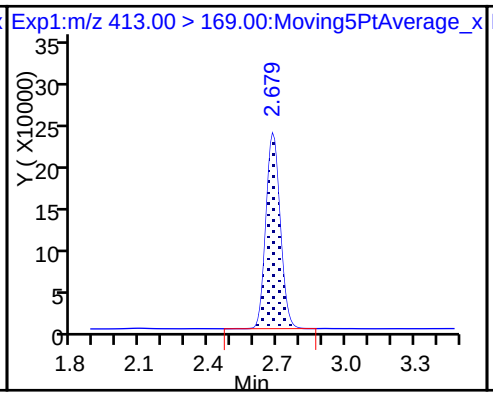
M62 13C2-PFOA



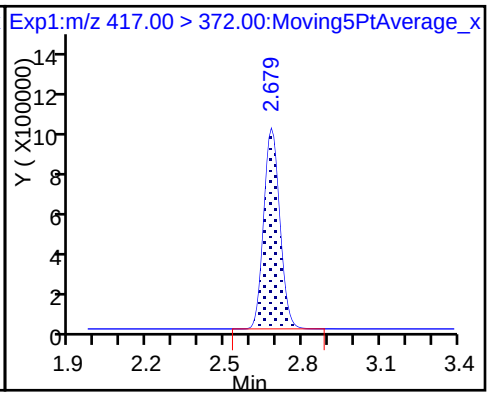
15 Perfluorooctanoic acid



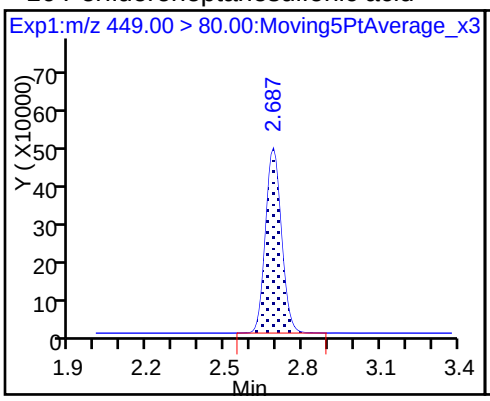
15 Perfluorooctanoic acid



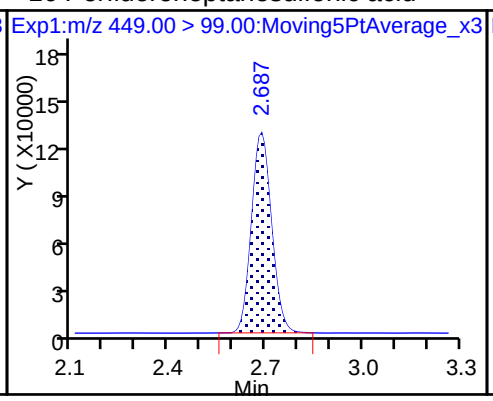
D 14 13C4 PFOA



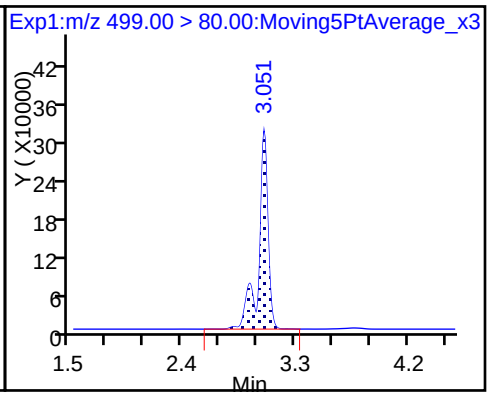
16 Perfluoroheptanesulfonic acid



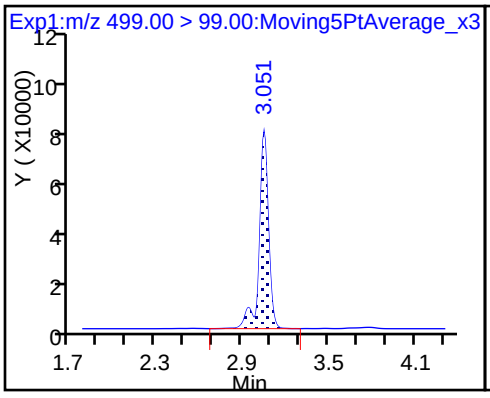
16 Perfluoroheptanesulfonic acid



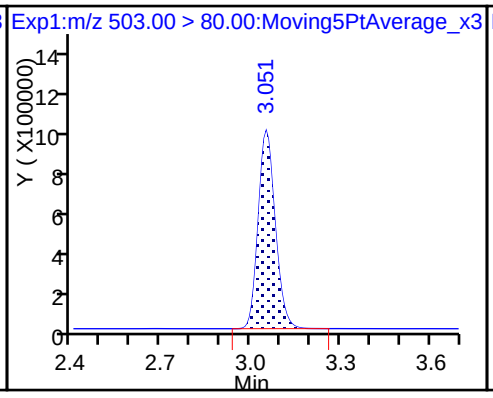
17 Perfluorooctane sulfonic acid



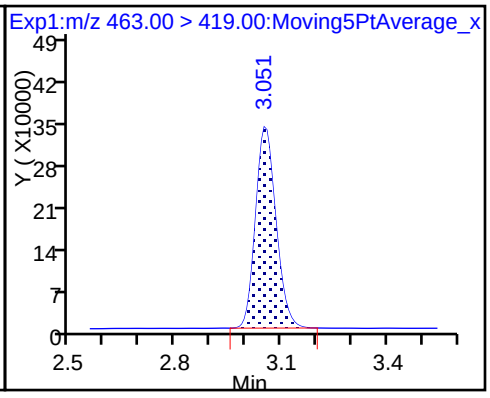
17 Perfluorooctane sulfonic acid



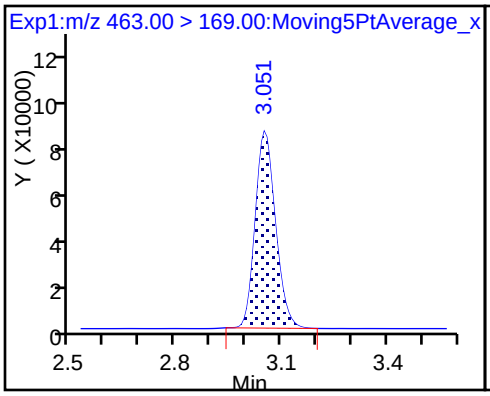
D 18 13C4 PFOS



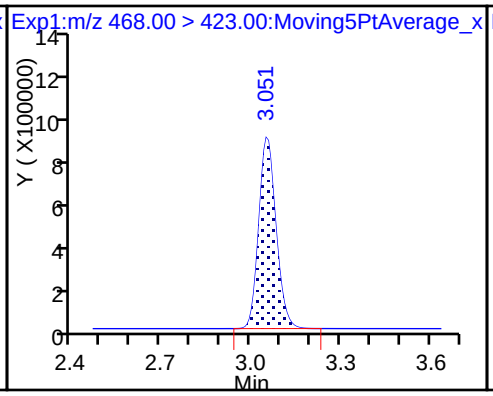
20 Perfluorononanoic acid



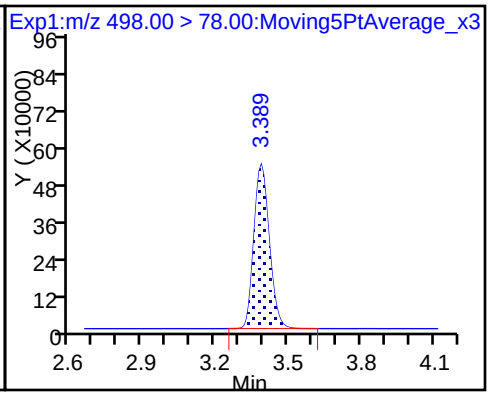
20 Perfluorononanoic acid



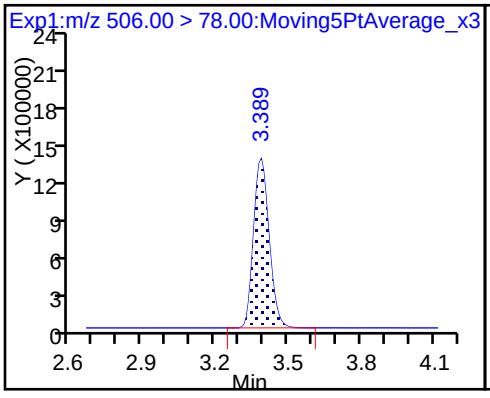
D 19 13C5 PFNA



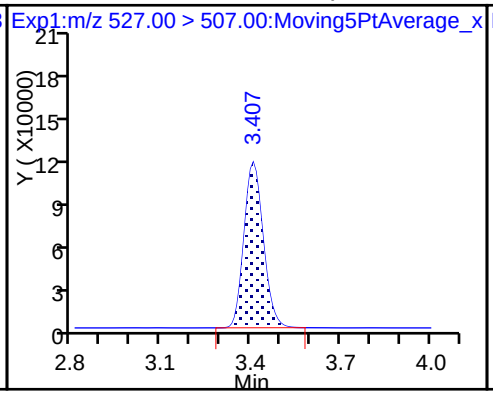
22 Perfluorooctane Sulfonamide



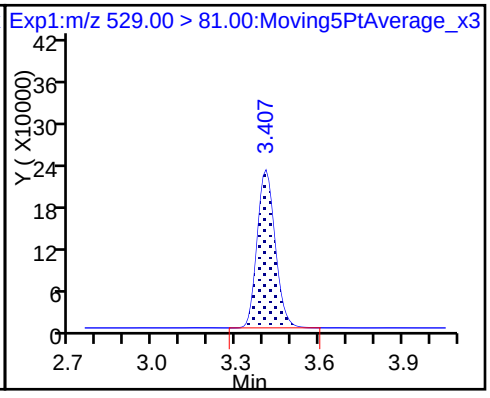
D 21 13C8 FOSA



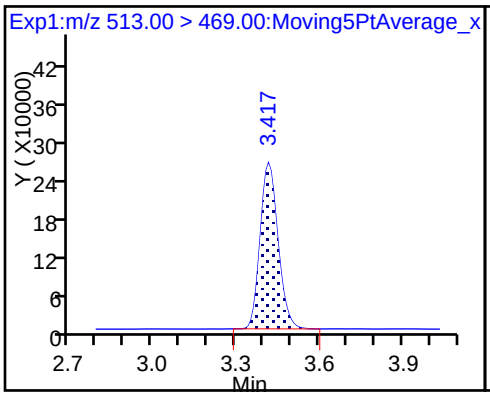
25 Sodium 1H,1H,2H,2H-perfluorodecane



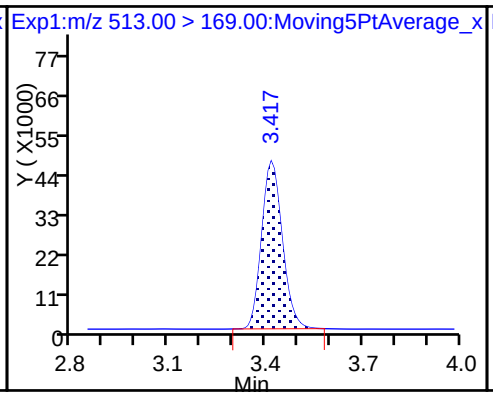
D 26 M2-8:2FTS



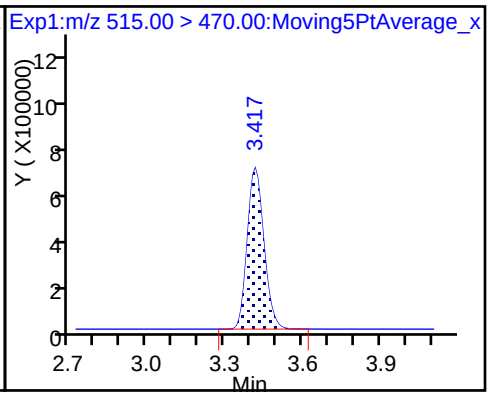
24 Perfluorodecanoic acid



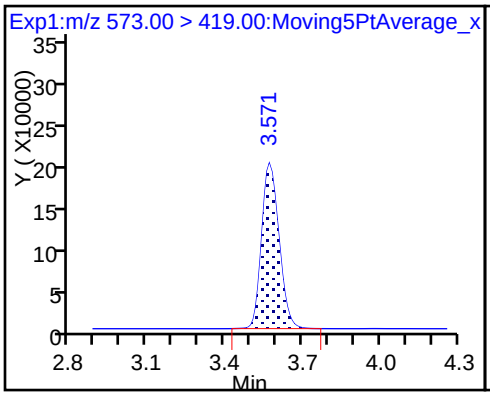
24 Perfluorodecanoic acid



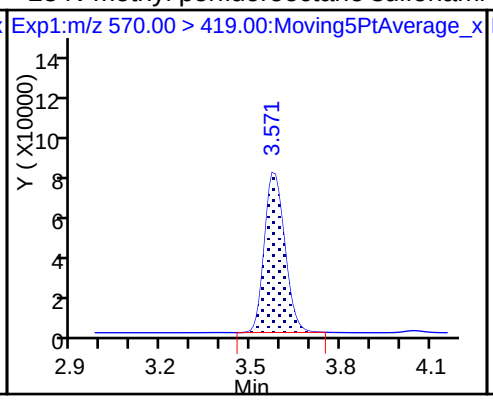
D 23 13C2 PFDA



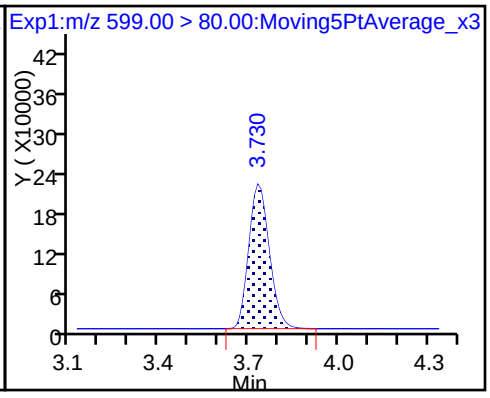
D 27 d3-NMeFOSAA



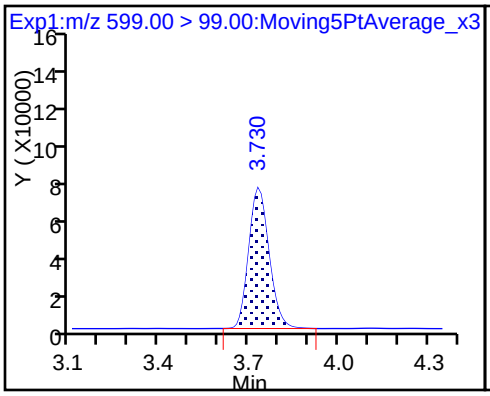
28 N-methyl perfluorooctane sulfonami



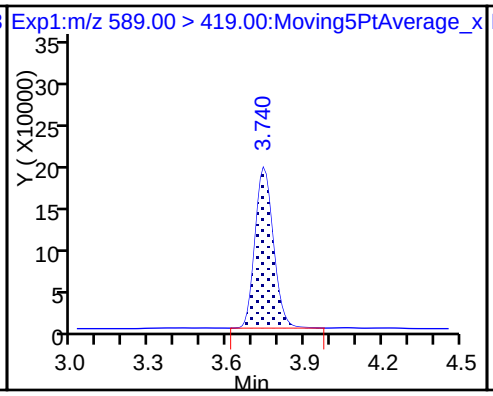
29 Perfluorodecane Sulfonic acid



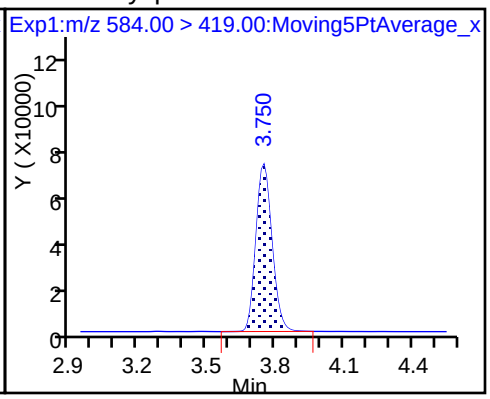
29 Perfluorodecane Sulfonic acid



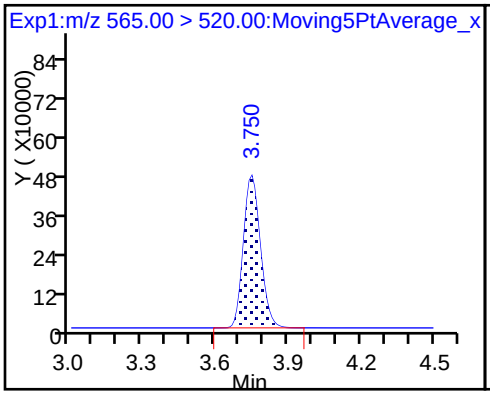
D 32 d5-NEtFOSAA



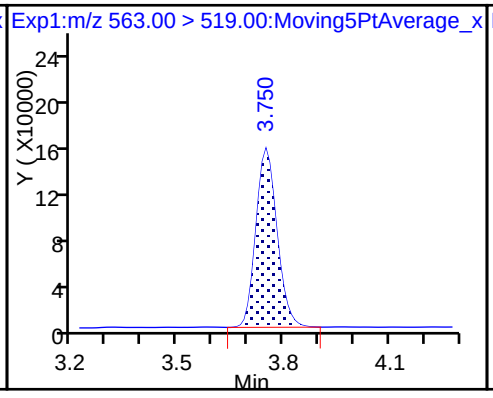
33 N-ethyl perfluorooctane sulfonamid



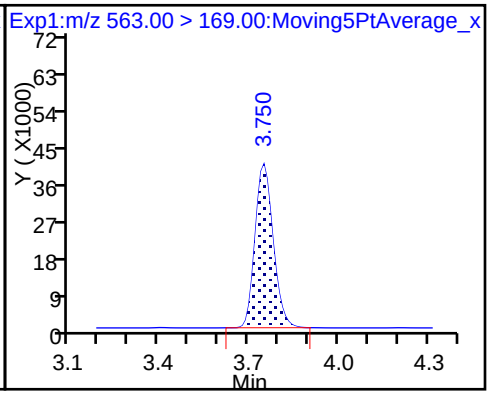
D 30 13C2 PFUnA



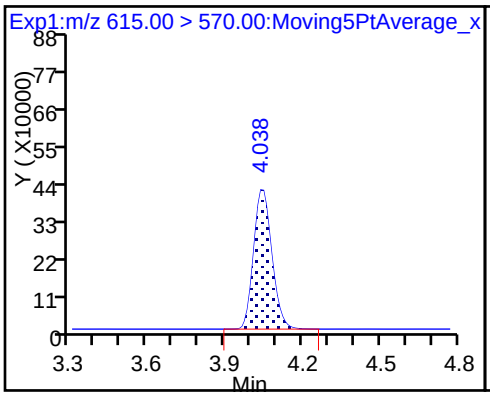
31 Perfluoroundecanoic acid



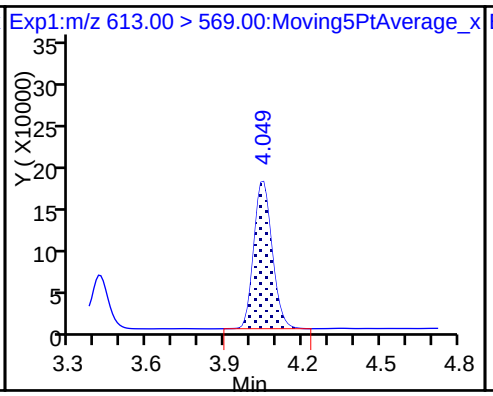
31 Perfluoroundecanoic acid



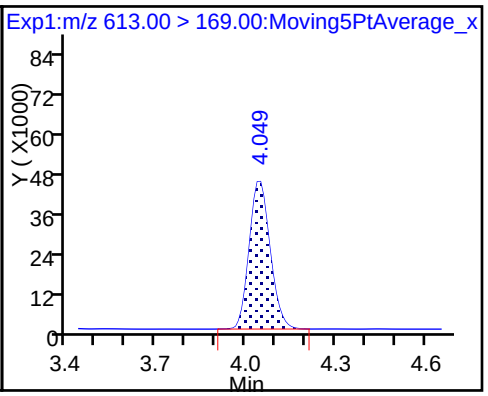
D 36 13C2 PFDoA



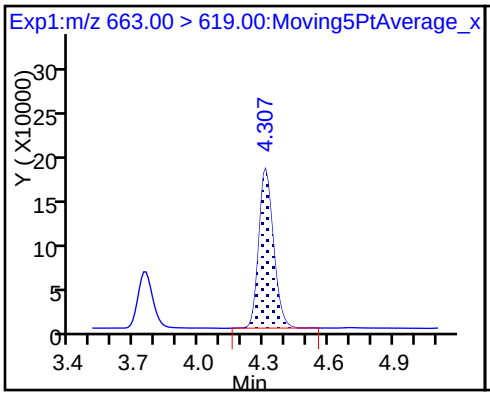
37 Perfluorododecanoic acid



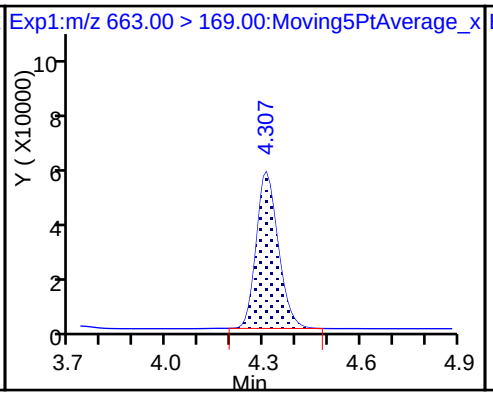
37 Perfluorododecanoic acid



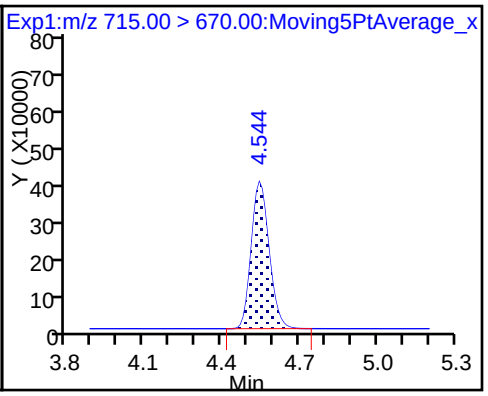
41 Perfluorotridecanoic acid



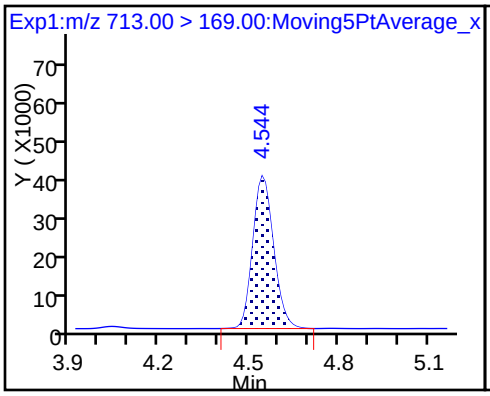
41 Perfluorotridecanoic acid



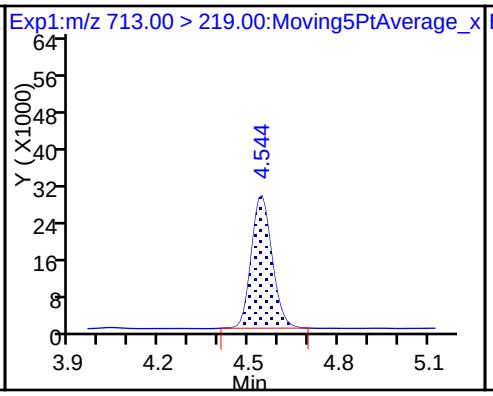
D 43 13C2-PFTeDA



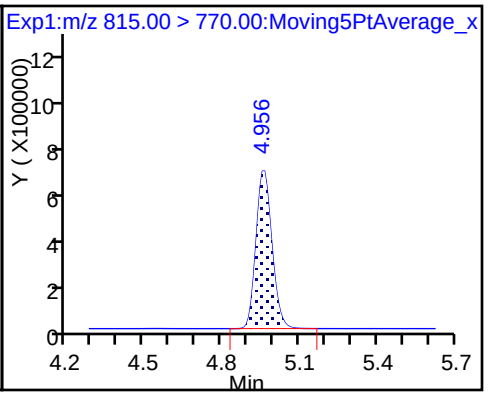
42 Perfluorotetradecanoic acid



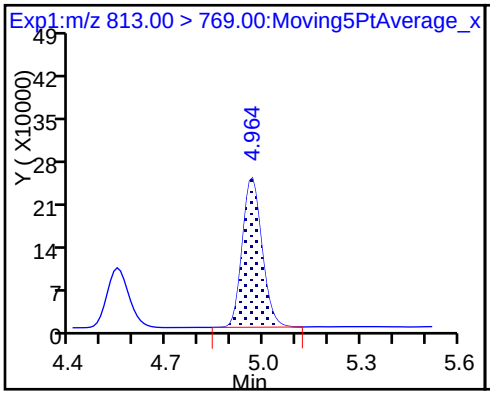
42 Perfluorotetradecanoic acid



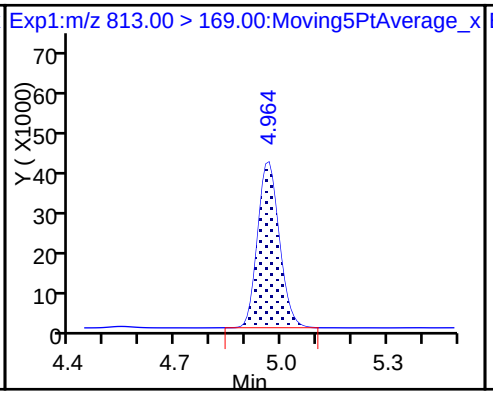
D 44 13C2-PFHxDA



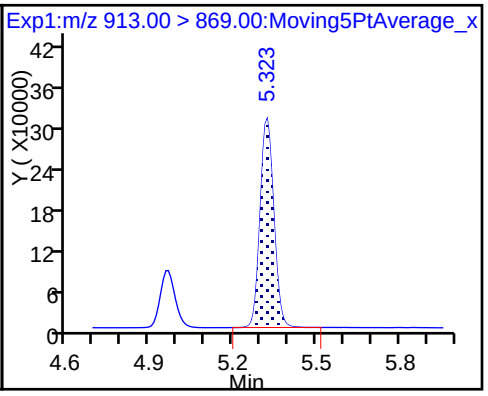
45 Perfluorohexadecanoic acid



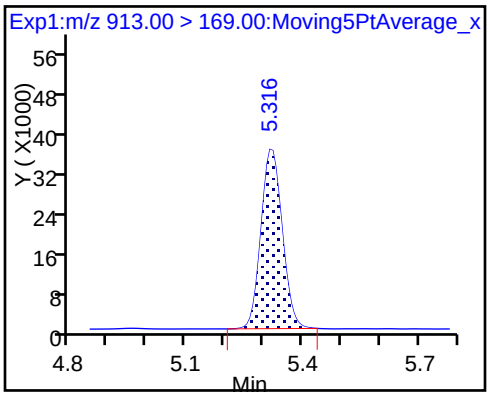
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 16-Mar-2018 23:41:00 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:34 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:27:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.440	0.001	0.537	5583889	2.50		100	97262	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.440	0.001	1.000	5293287	2.56		102	3727	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.696	0.004	0.634	3888024	2.47		98.8	122892	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.698	0.002	1.000	4633188	2.55		102	1776	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.730	-0.003	0.644	87930	2.26		97.3	430	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.733	0.003	1.005	6966452	2.38		108	3077	
298.90 > 99.00	1.736	1.733	0.003	1.005	2830396		2.46(1.25-3.74)	108	2805	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.942	0.004	0.726	674169	2.43		104	7621	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.944	0.002	1.000	1435640	2.36		101	52474	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.979	0.008	0.741	4369955	2.49		99.6	129893	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.982	0.005	1.000	4444832	2.52		101	13990	
313.00 > 119.00	1.987	1.982	0.005	1.000	418029		10.63(5.03-15.10)	101	9309	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.864	4232279	2.48		99.1	100489	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	4297988	2.45		98.0	8927	
363.00 > 169.00	2.315	2.311	0.004	1.000	1767362		2.43(1.13-3.40)	98.0	24587	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.869	5260610	2.31		97.6	73562	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	5484826	2.21		97.2	681	
399.00 > 99.00	2.328	2.326	0.002	1.000	1779244		3.08(1.50-4.49)	97.2	678	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.651	0.006	0.991	1016091	2.32		97.8	21630	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.652	0.005	1.000	1746834	2.45		103	50845	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.678	0.003	1.000	4098618	2.49		99.4	95002	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.678	0.003	1.000	4544060	2.48		99.3	1326	
413.00 > 169.00	2.681	2.678	0.003	1.000	2512882		1.81(0.84-2.52)	99.3	9876	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.678	0.003		4371024	2.50			78442	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.684	0.005	1.000	5246040	2.49		105	56295	
449.00 > 99.00	2.689	2.684	0.005	1.000	1380173		3.80(1.94-5.82)	105	21498	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.050	0.001	1.138	3831418	2.40		101	26391	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.050	0.001	1.000	4076350	2.35		101	13303	
499.00 > 99.00	3.051	3.050	0.001	1.000	872560		4.67(2.31-6.93)	101	7654	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.052	0.006	1.141	3313741	2.51		100	68947	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.052	0.006	1.000	3490132	2.58		103	8593	
463.00 > 169.00	3.058	3.052	0.006	1.000	871364		4.01(1.90-5.69)	103	27131	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.264	5771845	2.50		100	52306	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.388	0.001	1.000	5854030	2.61		104	55097	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.406	0.001	1.271	959683	2.34		97.5	23723	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.406	0.001	1.000	1262293	2.51		105	40259	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.416	0.001	1.275	2792979	2.53		101	45181	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.416	0.001	1.000	2734556	2.58		103	14321	
513.00 > 169.00	3.417	3.416	0.001	1.000	464662		5.89(2.36-7.09)	103	15026	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	903252	2.48		99.3	32461	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	936613	2.49		99.6	10122	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.729	0.001	1.000	2485881	2.43		101	74404	
599.00 > 99.00	3.730	3.729	0.001	1.000	853763		2.91(1.39-4.16)	101	20150	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.740	0.0	1.395	874289	2.51		101	1957	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.746	0.004	1.003	829764	2.42		96.9	24200	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.747	0.003	1.399	2125072	2.46		98.5	88600	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.750	0.0	1.000	1693687	2.38		95.1	6339	
563.00 > 169.00	3.750	3.750	0.0	1.000	443503		3.82(2.12-6.36)	95.1	34848	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.041	-0.003	1.506	2008069	2.45		98.2	11583	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.038	4.042	-0.004	1.000	2068374	2.52		101	393	
613.00 > 169.00	4.038	4.042	-0.004	1.000	574695		3.60(2.13-6.40)	101	11882	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.304	0.003	1.000	2137089	2.59		103	451	
663.00 > 169.00	4.307	4.304	0.003	1.000	681261		3.14(1.25-3.76)	103	10326	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.544	4.545	-0.001	1.695	1881480	2.52		101	16479	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.544	4.545	-0.001	1.000	484453	2.33		93.4	7772	
713.00 > 219.00	4.544	4.545	-0.001	1.000	341862		1.42(0.71-2.13)	93.4	3917	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.956	4.956	0.0	1.849	2832854	2.59		104	11035	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.956	4.960	-0.004	1.000	2577679	2.45		98.2	239	
813.00 > 169.00	4.956	4.960	-0.004	1.000	464123		5.55(2.86-8.58)	98.2	5007	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.316	5.320	-0.004	1.000	2839194	2.57		103	547	
913.00 > 169.00	5.316	5.320	-0.004	1.000	355131		7.99(3.83-11.48)	103	3172	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:35 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_006.d

Injection Date: 16-Mar-2018 23:41:00 Instrument ID: A8_N

Lims ID: IC L5 Full

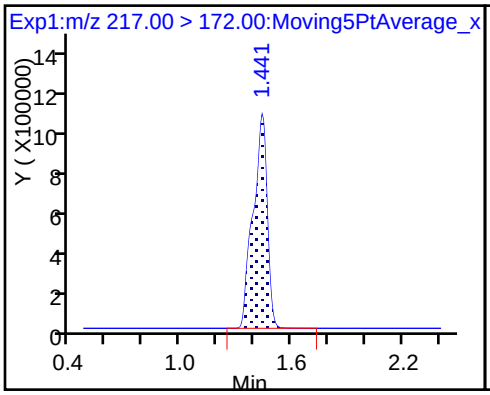
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

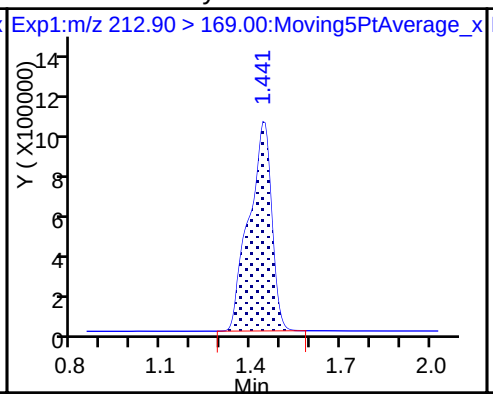
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

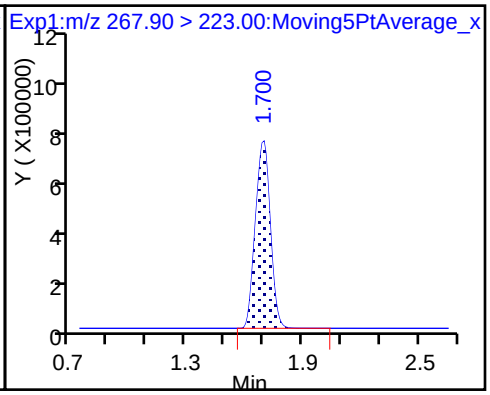
D 1 13C4 PFBA



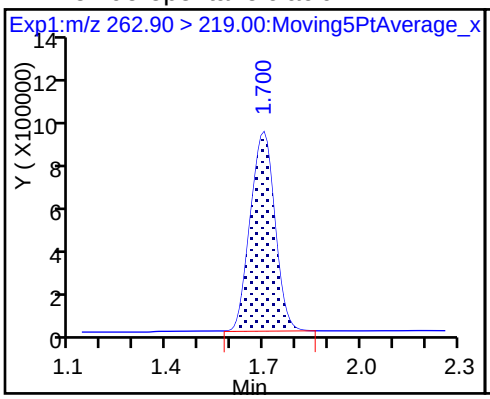
2 Perfluorobutyric acid



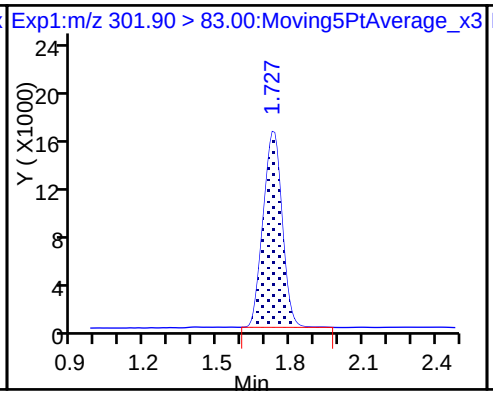
D 3 13C5-PFPeA



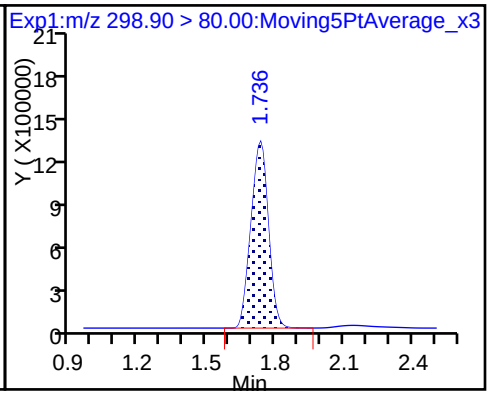
4 Perfluoropentanoic acid



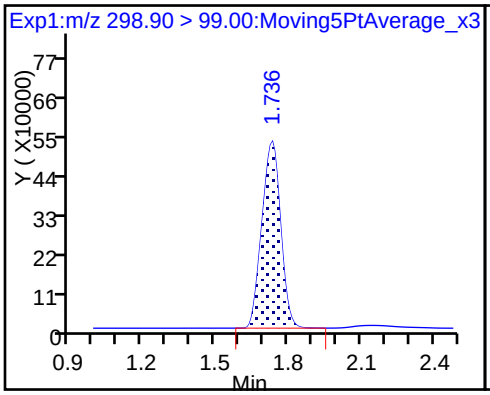
D 47 13C3-PFBS



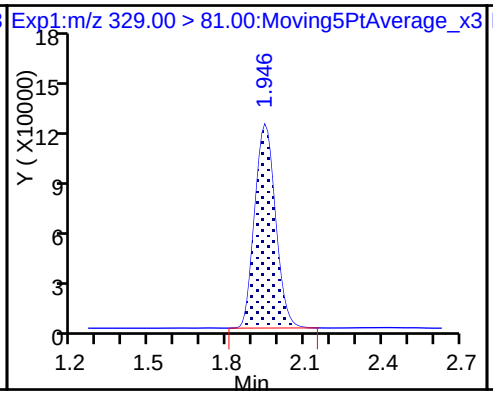
5 Perfluorobutanesulfonic acid



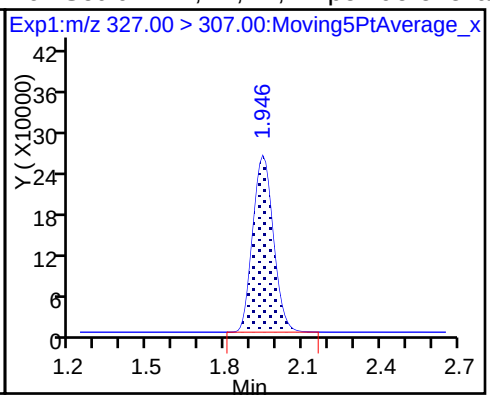
5 Perfluorobutanesulfonic acid



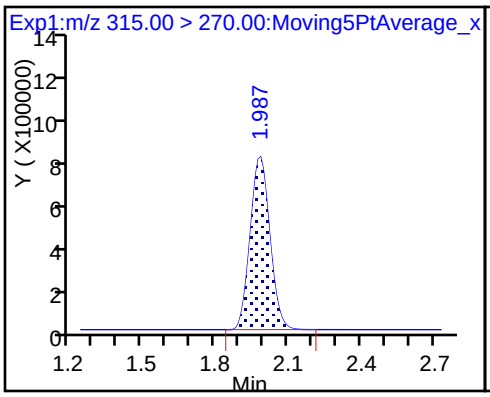
D 60 M2-4:2FTS



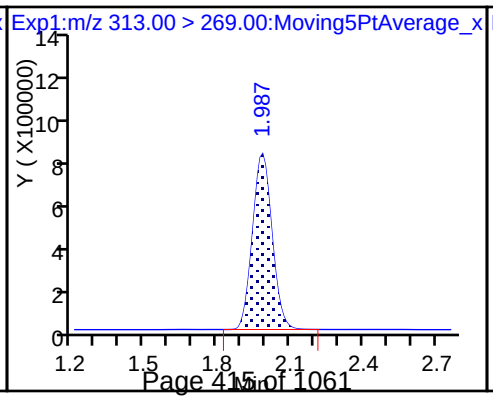
61 Sodium 1H,1H,2H,2H-perfluorohexane



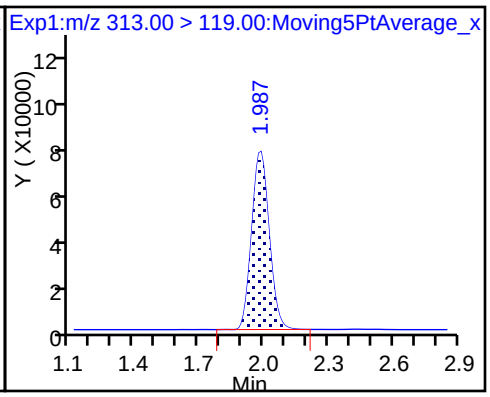
D 7 13C2 PFHxA



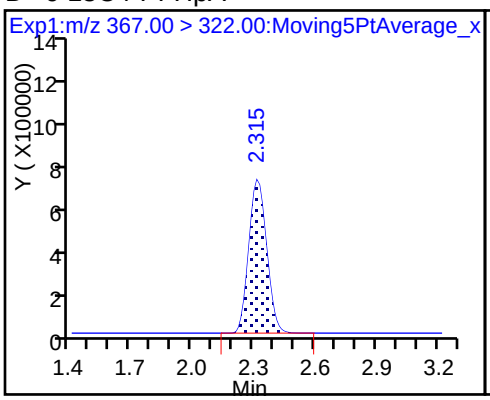
6 Perfluorohexanoic acid



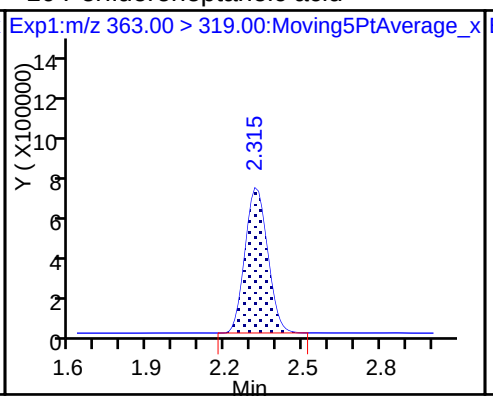
6 Perfluorohexanoic acid



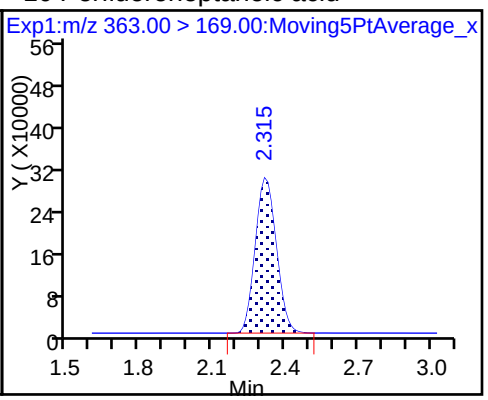
D 9 13C4-PFHpA



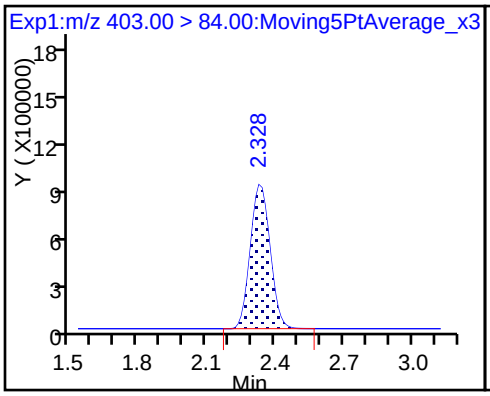
10 Perfluoroheptanoic acid



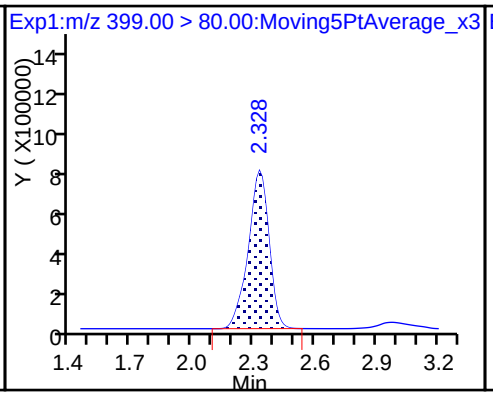
10 Perfluoroheptanoic acid



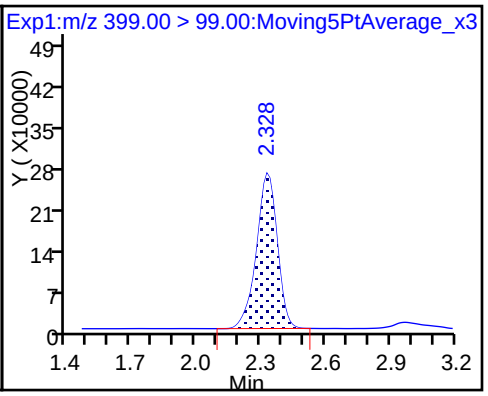
D 11 18O2 PFHxS



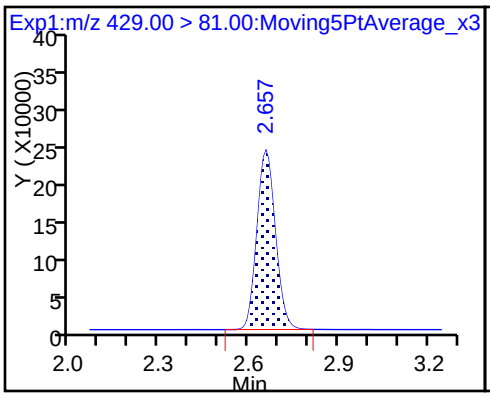
8 Perfluorohexanesulfonic acid



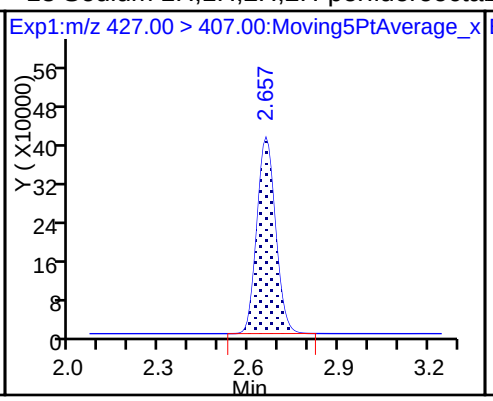
8 Perfluorohexanesulfonic acid



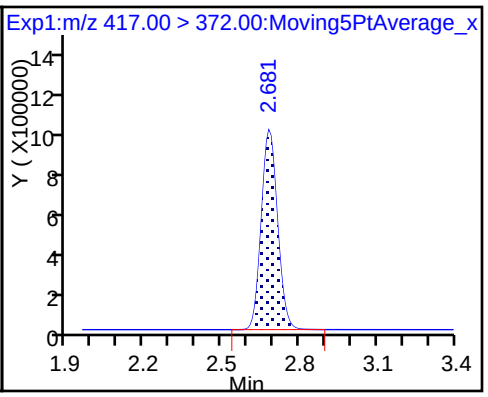
D 12 M2-6:2FTS



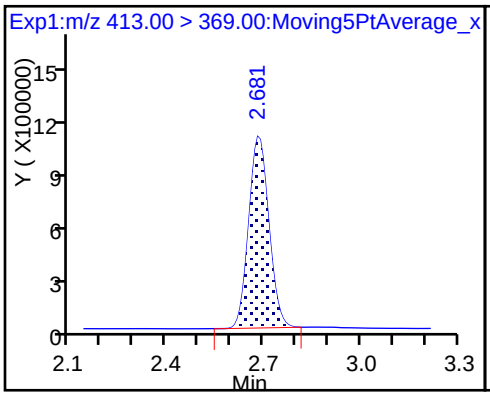
13 Sodium 1H,1H,2H,2H-perfluorooctane



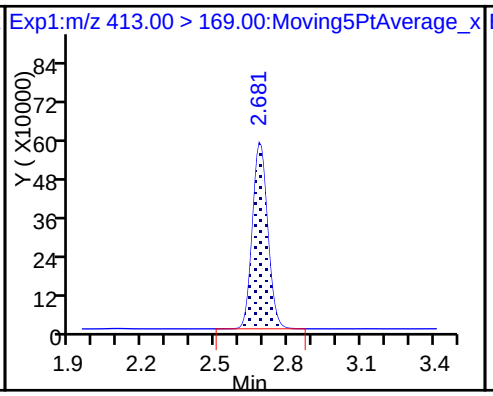
D 14 13C4 PFOA



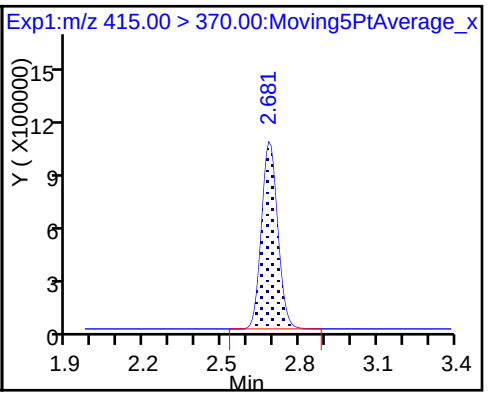
15 Perfluorooctanoic acid



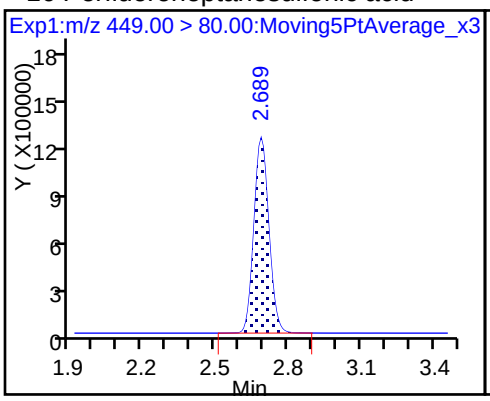
15 Perfluorooctanoic acid



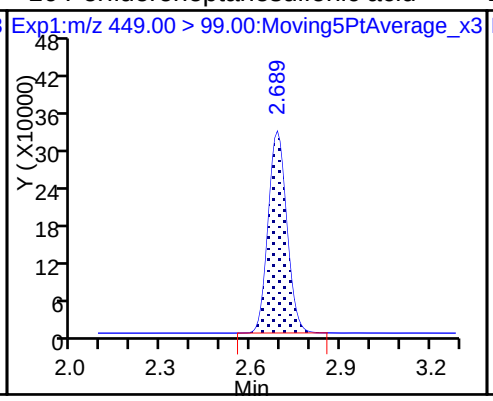
* 62 13C2-PFOA



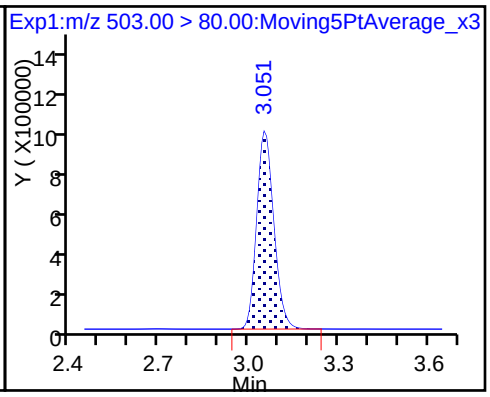
16 Perfluoroheptanesulfonic acid



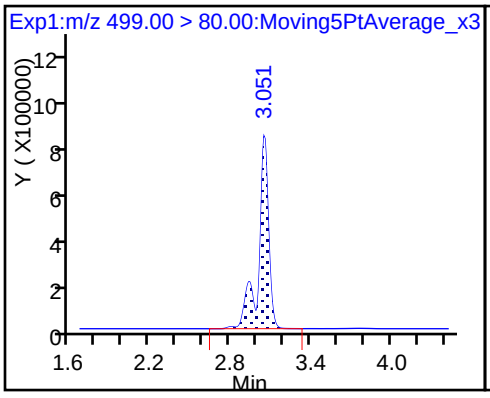
16 Perfluoroheptanesulfonic acid



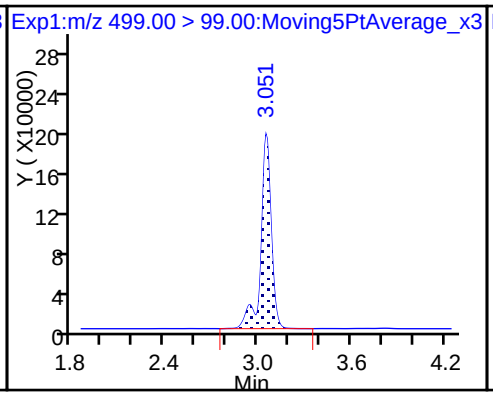
D 18 13C4 PFOS



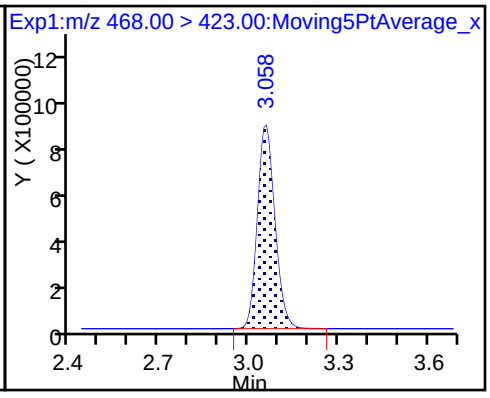
17 Perfluorooctane sulfonic acid



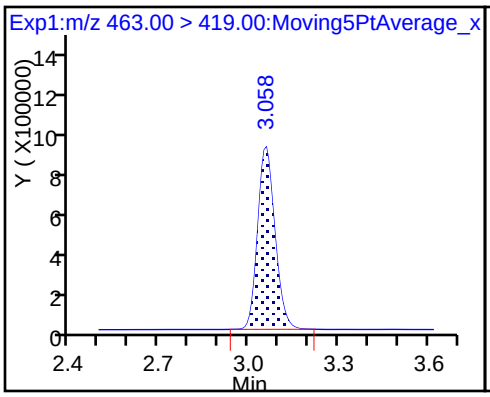
17 Perfluorooctane sulfonic acid



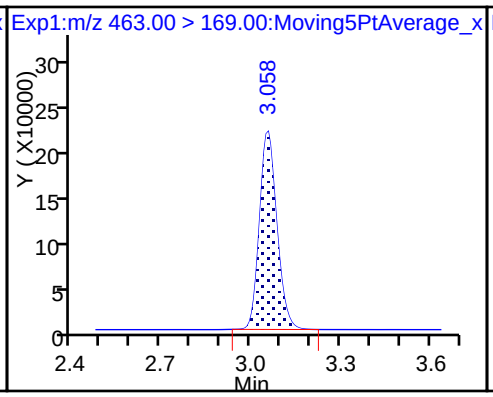
D 19 13C5 PFNA



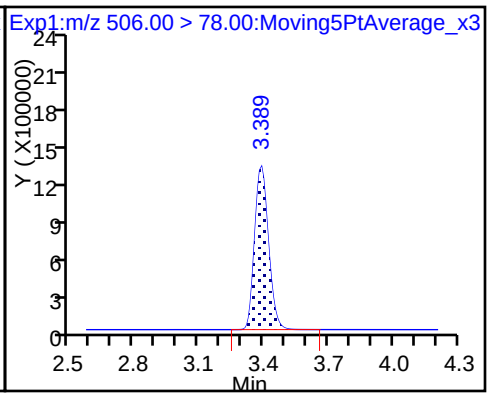
20 Perfluorononanoic acid



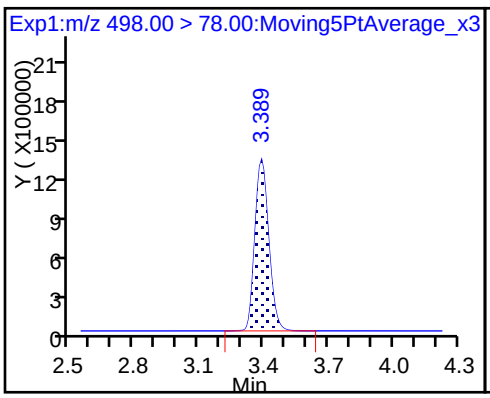
20 Perfluorononanoic acid



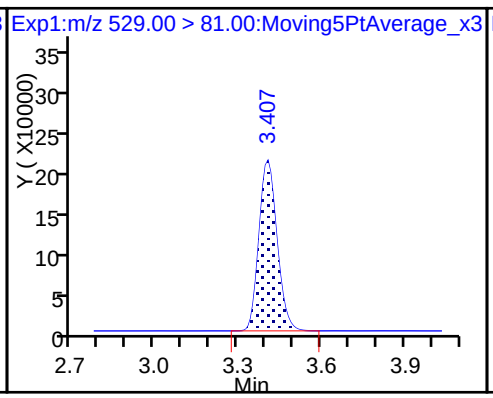
D 21 13C8 FOSA



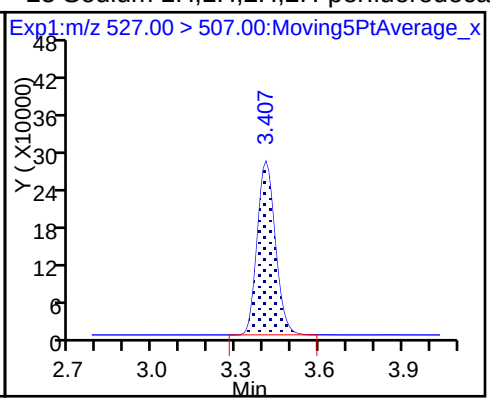
22 Perfluorooctane Sulfonamide



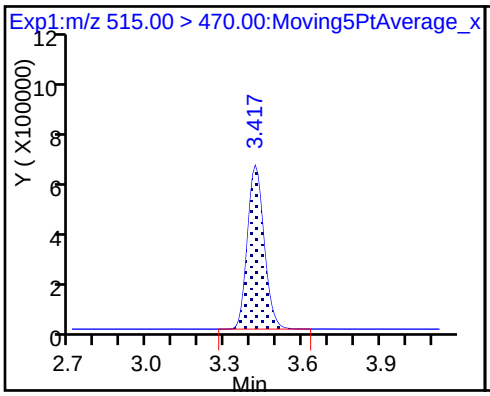
D 26 M2-8:2FTS



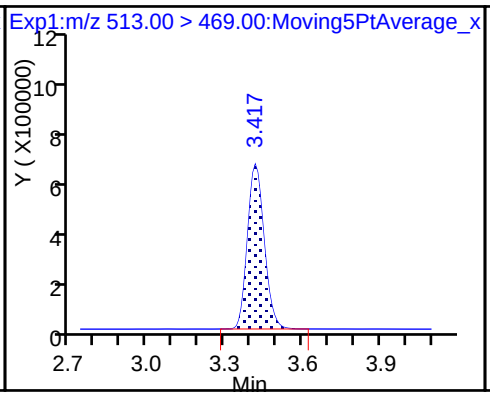
25 Sodium 1H,1H,2H,2H-perfluorodecane



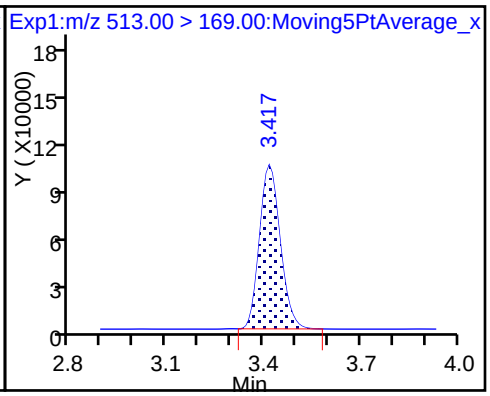
D 23 13C2 PFDA



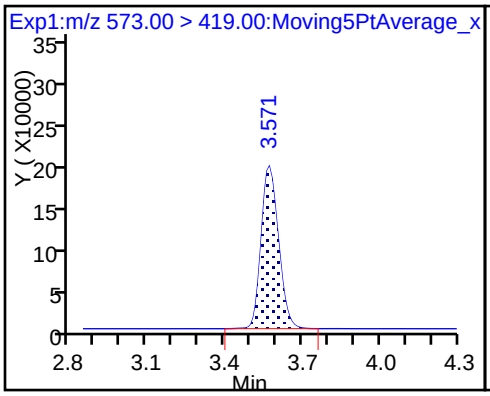
24 Perfluorodecanoic acid



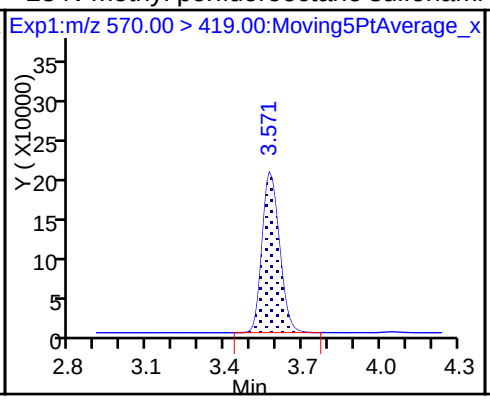
24 Perfluorodecanoic acid



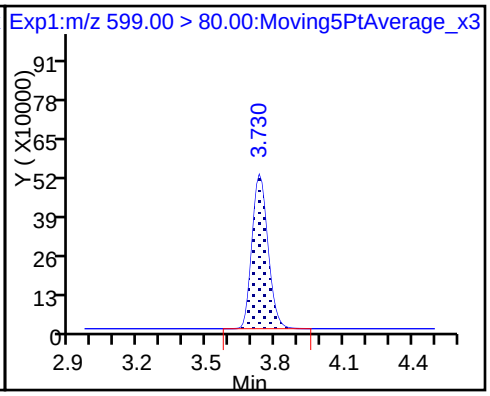
D 27 d3-NMeFOSAA



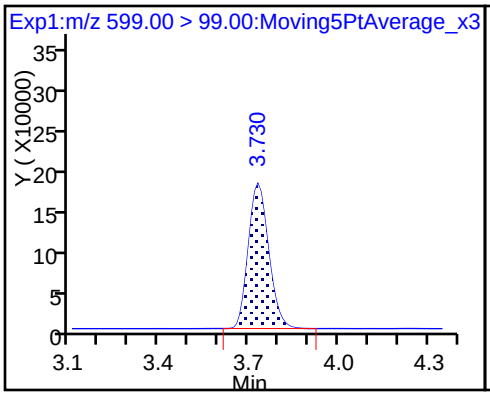
28 N-methyl perfluorooctane sulfonami



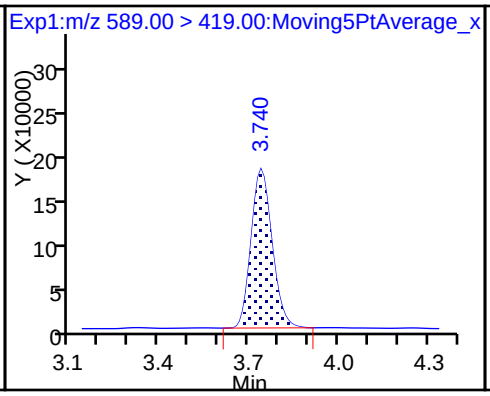
29 Perfluorodecane Sulfonic acid



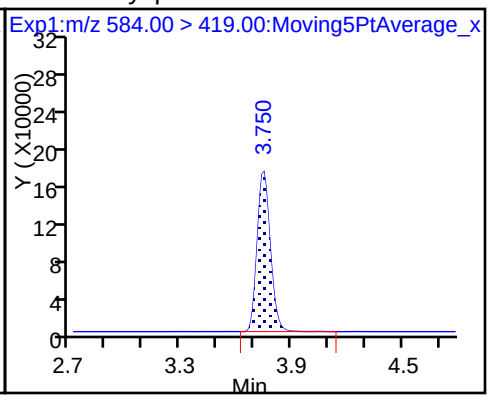
29 Perfluorodecane Sulfonic acid



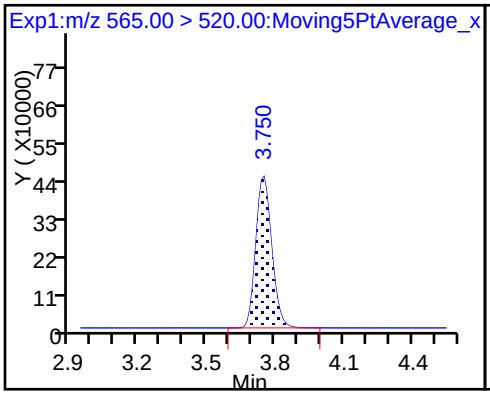
D 32 d5-NEtFOSAA



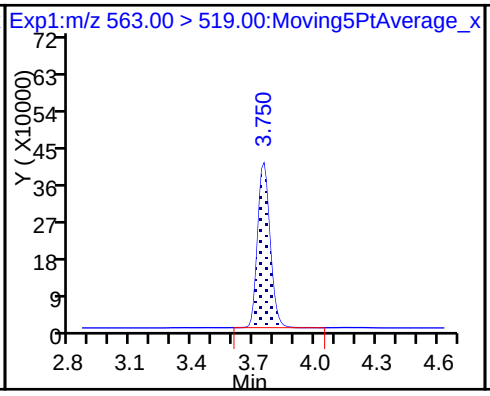
33 N-ethyl perfluorooctane sulfonamid



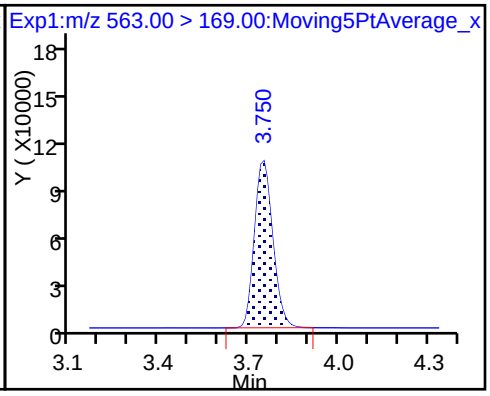
D 30 13C2 PFUnA



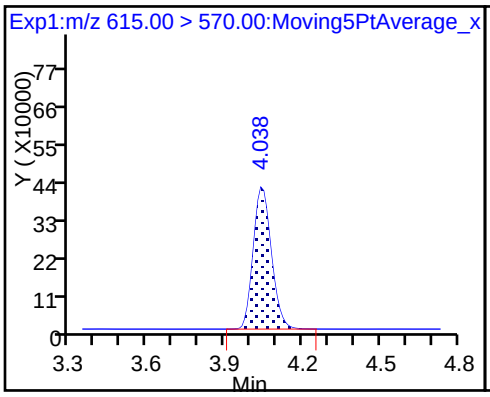
31 Perfluoroundecanoic acid



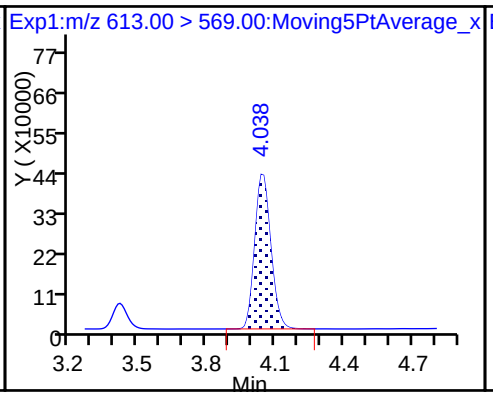
31 Perfluoroundecanoic acid



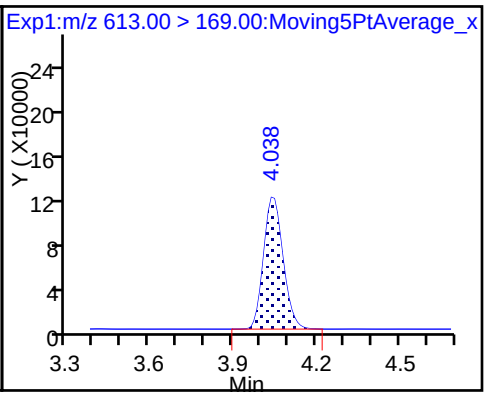
D 36 13C2 PFDoA



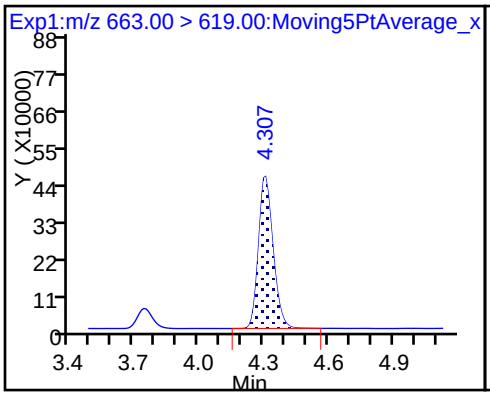
37 Perfluorododecanoic acid



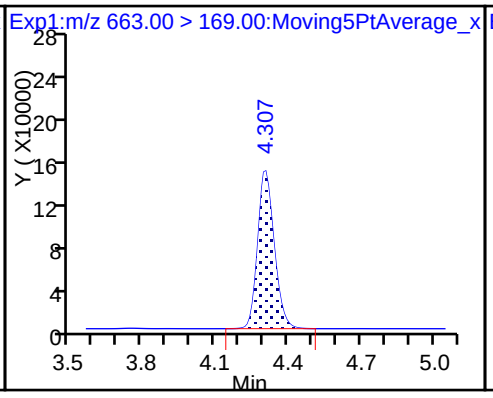
37 Perfluorododecanoic acid



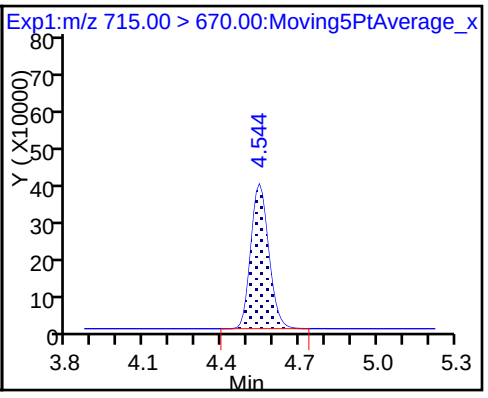
41 Perfluorotridecanoic acid



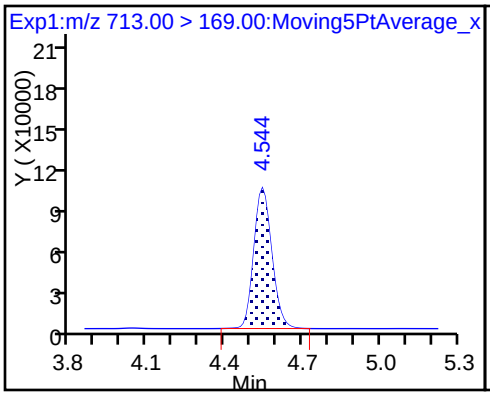
41 Perfluorotridecanoic acid



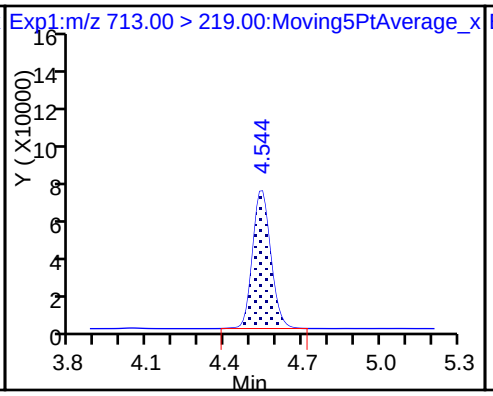
D 43 13C2-PFTeDA



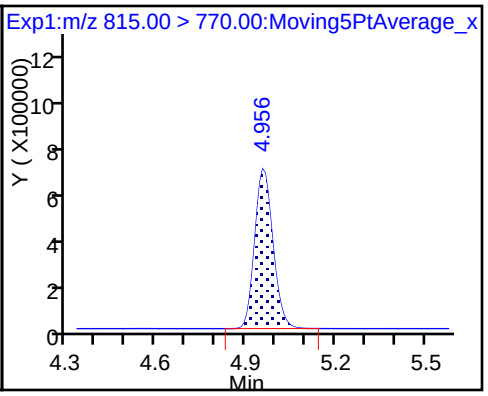
42 Perfluorotetradecanoic acid



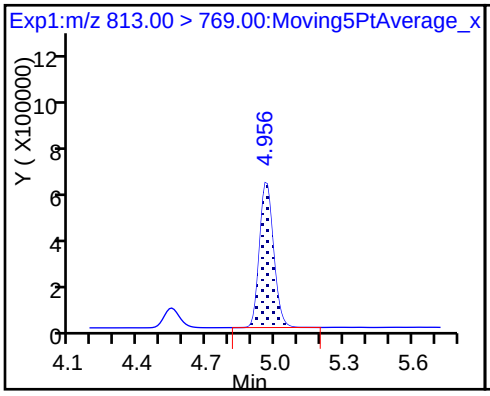
42 Perfluorotetradecanoic acid



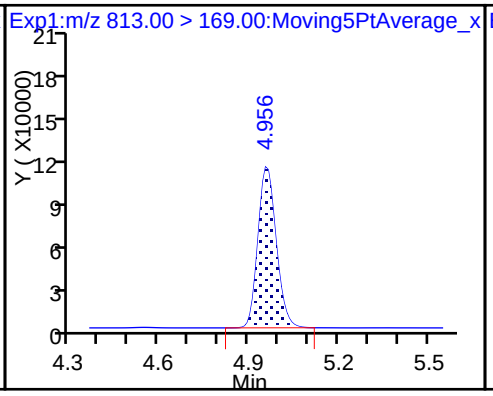
D 44 13C2-PFHxDA



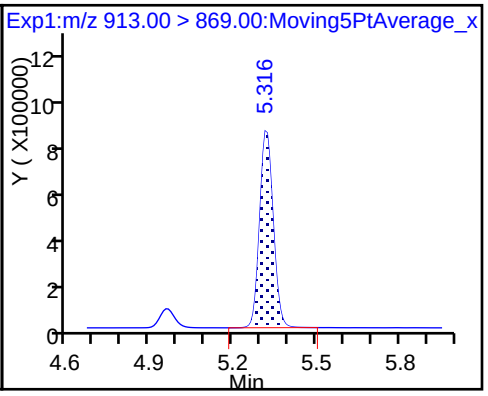
45 Perfluorohexadecanoic acid



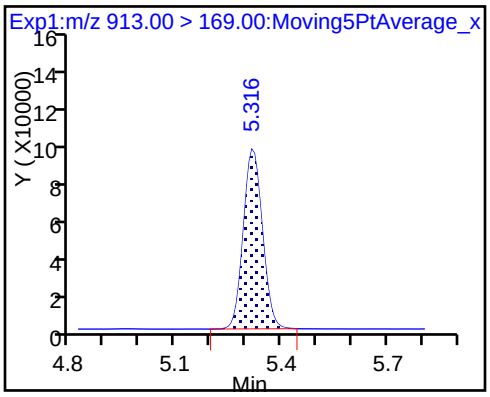
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 16-Mar-2018 23:48:48 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:36 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:28:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.440	0.001	1.000	10415661	5.14		103	6969	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.440	0.001	0.537	5463195	2.64		105	103496	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.696	-0.004	0.631	3793612	2.60		104	182073	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.698	0.003	1.005	8739905	4.93		98.6	3539	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.730	0.006	0.647	87984	2.44		105	391	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.733	0.003	1.000	13581651	4.64		105	5968	
298.90 > 99.00	1.736	1.733	0.003	1.000	5754978		2.36(1.25-3.74)	105	5892	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.942	0.004	0.726	606545	2.35		101	7956	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.944	0.002	1.000	2712672	4.46		95.5	125275	
D 7 13C2 PFHxA										
315.00 > 270.00	1.977	1.979	-0.002	0.737	4208738	2.58		103	125674	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.977	1.982	-0.005	1.000	8603151	5.06		101	27161	
313.00 > 119.00	1.977	1.982	-0.005	1.000	784941		10.96(5.03-15.10)	101	15567	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.311	0.005	1.000	8715974	5.27		105	20309	
363.00 > 169.00	2.316	2.311	0.005	1.000	3434804		2.54(1.13-3.40)	105	52445	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.311	0.005	0.864	3989677	2.52		101	83904	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.326	0.003	1.000	10568253	4.26		93.5	1292	
399.00 > 99.00	2.329	2.326	0.003	1.000	3624727		2.92(1.50-4.49)	93.5	1385	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.326	0.003	0.869	5265275	2.49		105	74528	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.651	-0.002	0.988	1008963	2.49		105	25787	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.652	-0.003	1.000	3480117	4.92		104	101458	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.678	0.003		4057033	2.50			85493	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.678	0.003	1.000	8824823	5.23		105	4529	
413.00 > 169.00	2.681	2.678	0.003	1.000	4743138		1.86(0.84-2.52)	105	14953	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.678	0.003	1.000	3782089	2.47		98.8	66618	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.684	0.005	1.000	10200411	4.99		105	90746	
449.00 > 99.00	2.689	2.684	0.005	1.000	2708022		3.77(1.94-5.82)	105	34891	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.050	0.001	1.000	8142540	4.84		104	22835	
499.00 > 99.00	3.051	3.050	0.001	1.000	1769376		4.60(2.31-6.93)	104	19465	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.050	0.001	1.138	3717789	2.51		105	20437	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.052	-0.001	1.000	6868229	5.42		108	15321	
463.00 > 169.00	3.058	3.052	0.006	1.002	1674670		4.10(1.90-5.69)	108	45917	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.052	-0.001	1.138	3108543	2.54		102	54931	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.390	3.388	0.002	1.000	11053457	5.17		103	95702	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.388	0.002	1.264	5503896	2.57		103	50171	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.406	0.002	1.000	2485319	5.11		107	69206	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.406	0.002	1.271	926664	2.43		101	29544	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.416	0.001	1.000	5163613	5.30		106	23997	
513.00 > 169.00	3.417	3.416	0.001	1.000	953909		5.41(2.36-7.09)	106	30588	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.416	0.001	1.274	2569062	2.51		100	38614	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	863871	2.56		102	31262	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.571	0.0	1.000	1816591	5.05		101	14472	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.729	-0.001	1.000	4865112	4.90		102	78838	
599.00 > 99.00	3.728	3.729	-0.001	1.000	1681464		2.89(1.39-4.16)	102	44020	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.394	782136	2.42		96.9	1528	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.746	0.002	1.003	1652592	5.40		108	26349	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.747	0.001	1.398	2046915	2.56		102	71430	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.750	-0.002	1.000	3341411	4.87		97.4	10669	
563.00 > 169.00	3.748	3.750	-0.002	1.000	911410		3.67(2.12-6.36)	97.4	73504	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.041	0.005	1.509	2015472	2.65		106	11968	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.042	0.004	1.000	4174943	5.06		101	931	
613.00 > 169.00	4.046	4.042	0.004	1.000	1007116		4.15(2.13-6.40)	101	25827	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.304	0.002	1.000	4360483	5.26		105	1014	
663.00 > 169.00	4.306	4.304	0.002	1.000	1390861		3.14(1.25-3.76)	105	22943	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.695	1882383	2.72		109	15198	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.545	-0.002	1.000	997084	4.80		96.0	13070	
713.00 > 219.00	4.543	4.545	-0.002	1.000	701265		1.42(0.71-2.13)	96.0	8580	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.848	2751498	2.71		109	10851	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.963	4.960	0.003	1.002	5015728	4.94		98.8	457	
813.00 > 169.00	4.955	4.960	-0.005	1.000	891008		5.63(2.86-8.58)	98.8	7241	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.320	0.002	1.000	5529461	5.15		103	954	
913.00 > 169.00	5.315	5.320	-0.005	0.999	707340		7.82(3.83-11.48)	103	5678	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:37 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_007.d

Injection Date: 16-Mar-2018 23:48:48 Instrument ID: A8_N

Lims ID: IC L6 Full

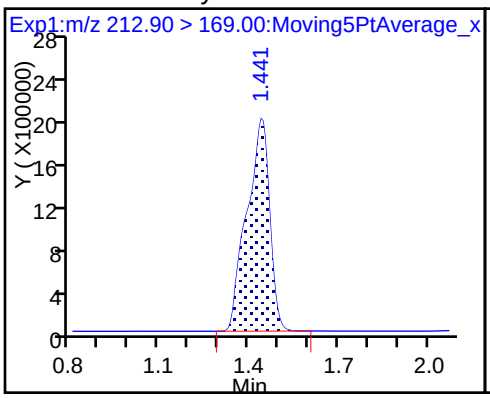
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

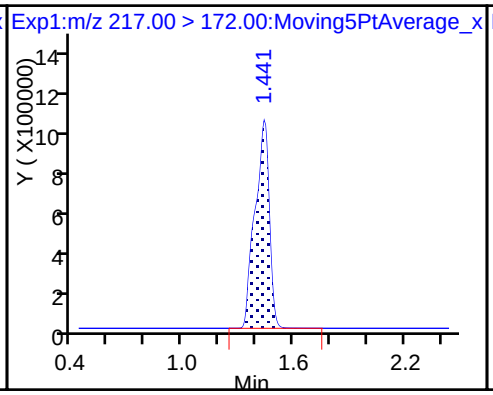
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

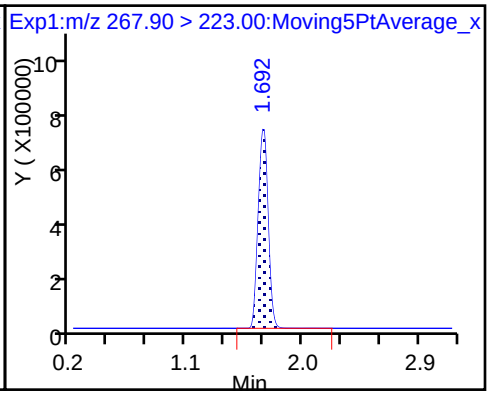
2 Perfluorobutyric acid



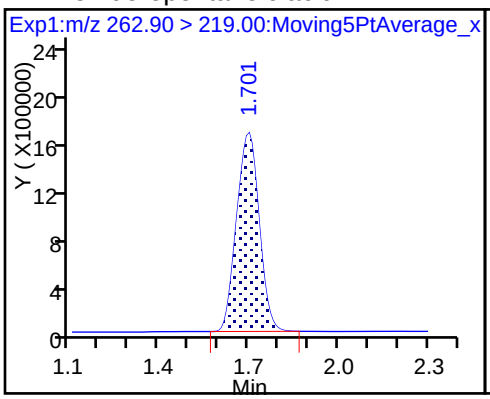
D 1 13C4 PFBA



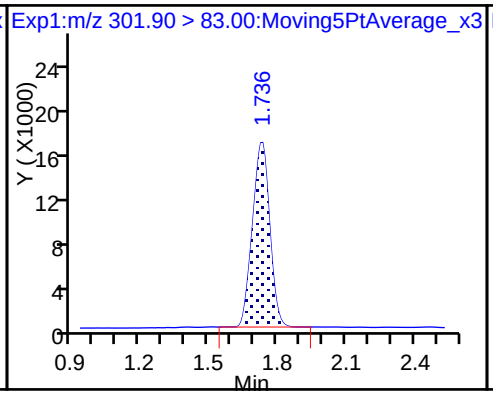
D 3 13C5-PFPeA



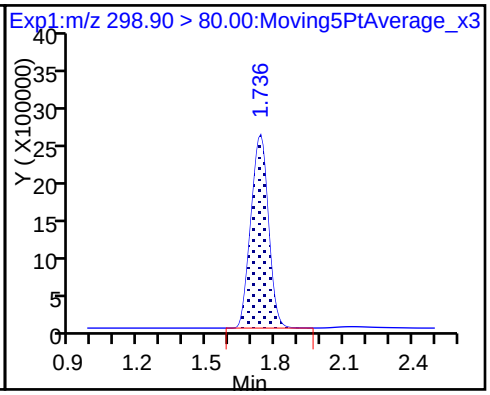
4 Perfluoropentanoic acid



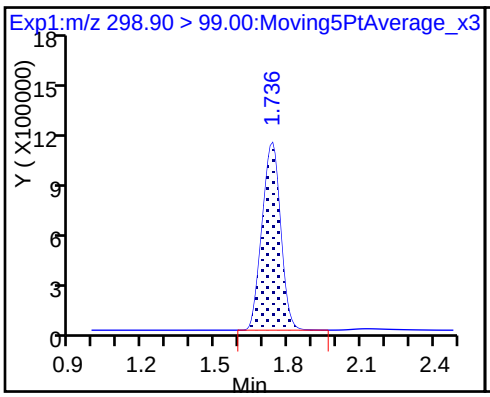
D 47 13C3-PFBS



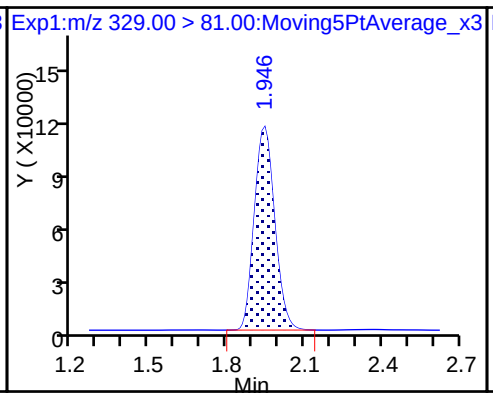
5 Perfluorobutanesulfonic acid



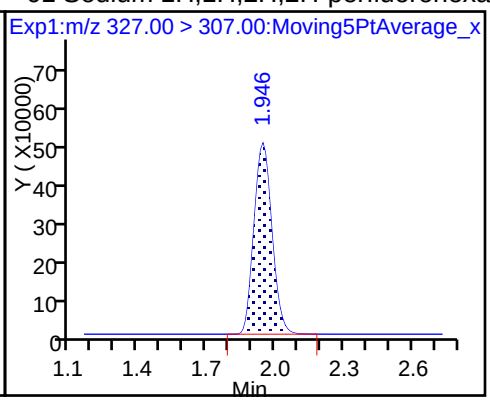
5 Perfluorobutanesulfonic acid



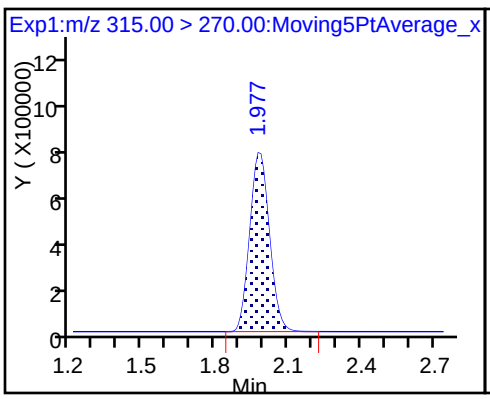
D 60 M2-4:2FTS



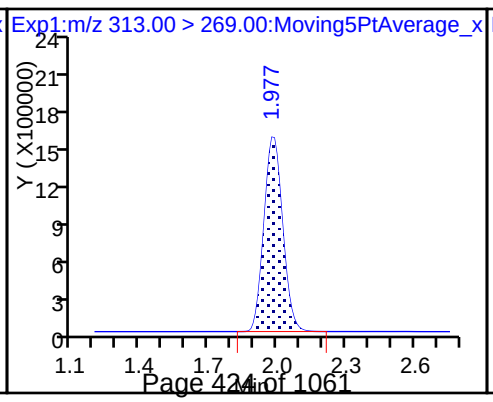
61 Sodium 1H,1H,2H,2H-perfluorohexane



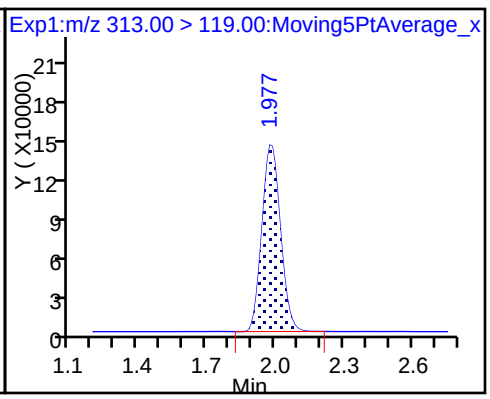
D 7 13C2 PFHxA



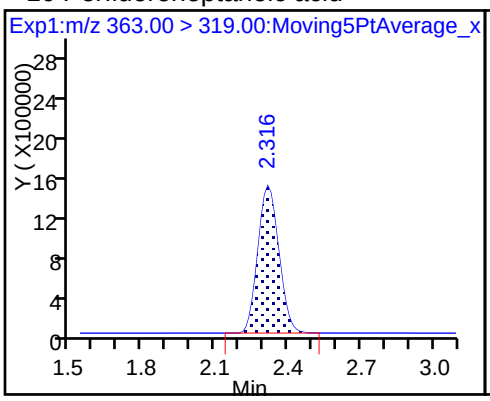
6 Perfluorohexanoic acid



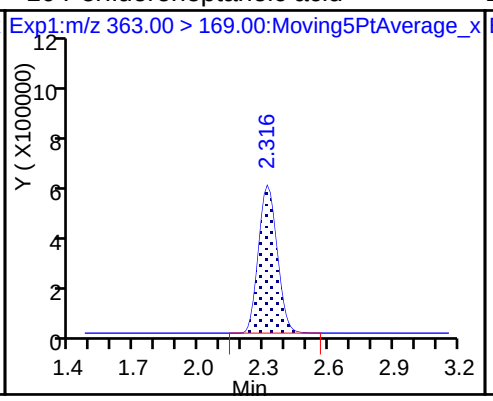
6 Perfluorohexanoic acid



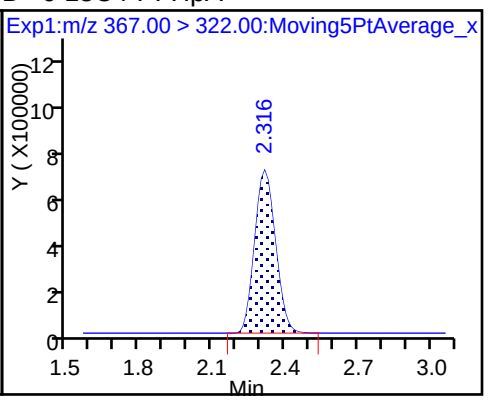
10 Perfluoroheptanoic acid



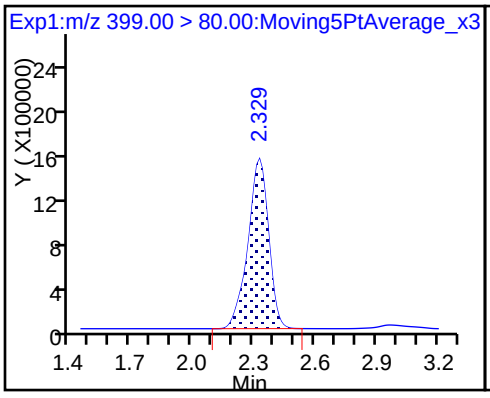
10 Perfluoroheptanoic acid



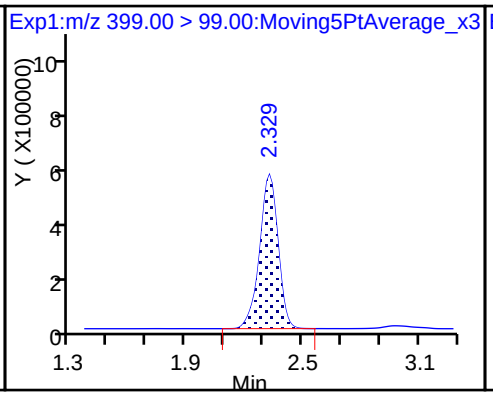
D 9 13C4-PFHpA



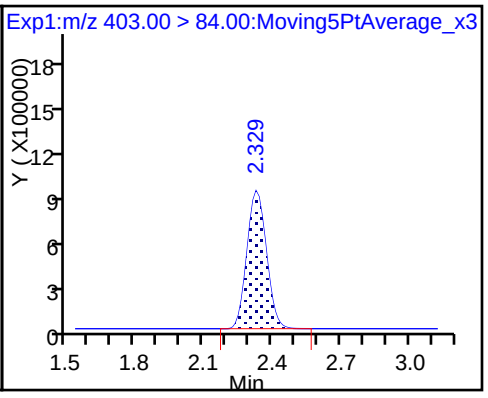
8 Perfluorohexanesulfonic acid



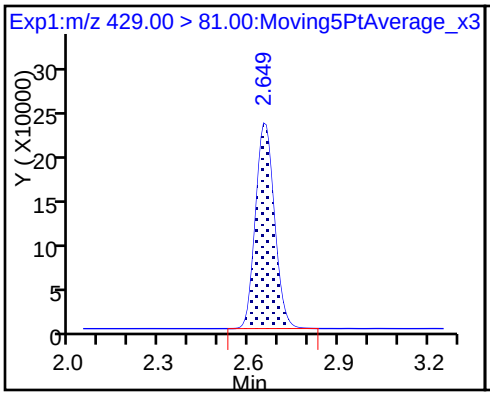
8 Perfluorohexanesulfonic acid



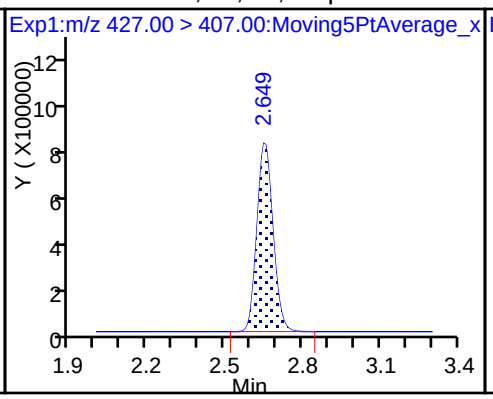
D 11 18O2 PFHxS



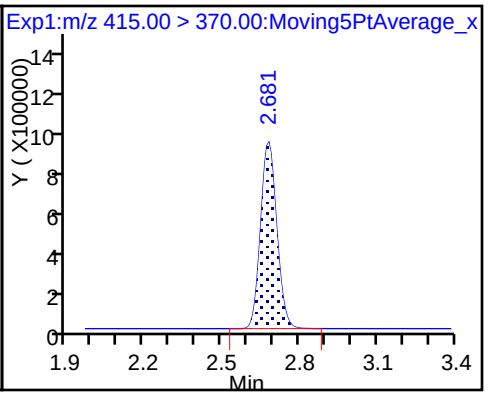
D 12 M2-6:2FTS



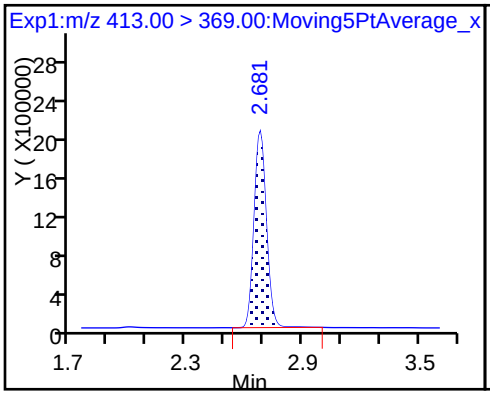
13 Sodium 1H,1H,2H,2H-perfluorooctane



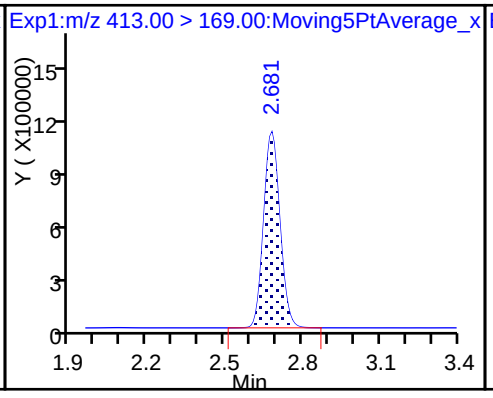
M62 13C2-PFOA



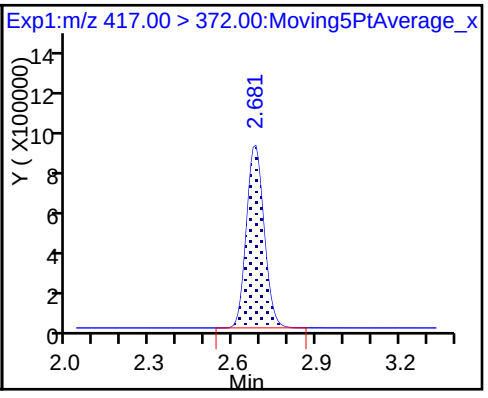
15 Perfluorooctanoic acid



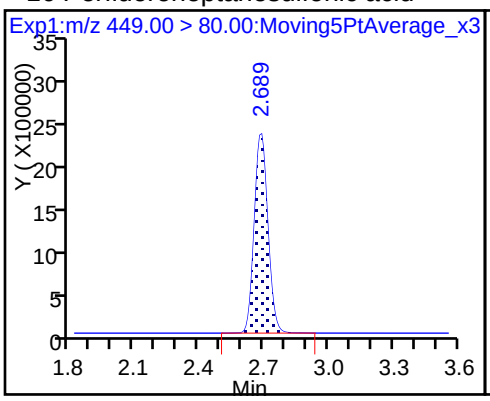
15 Perfluorooctanoic acid



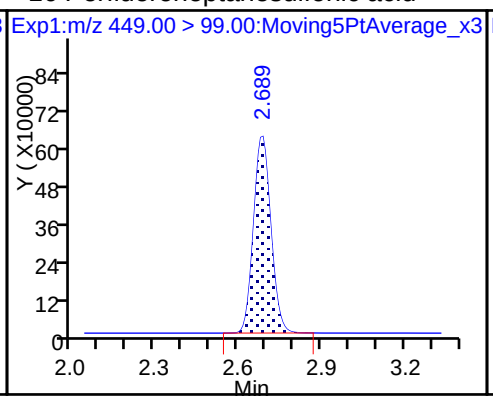
D 14 13C4 PFOA



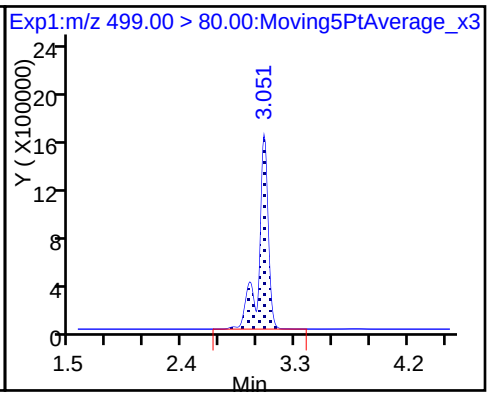
16 Perfluoroheptanesulfonic acid



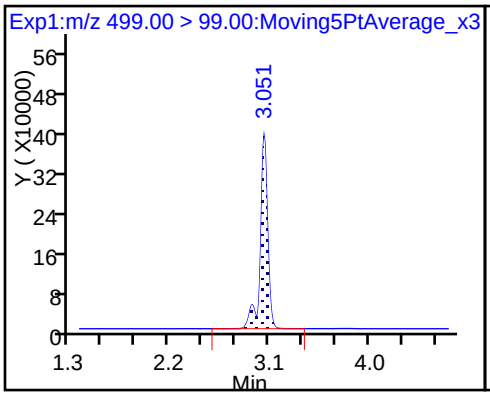
16 Perfluoroheptanesulfonic acid



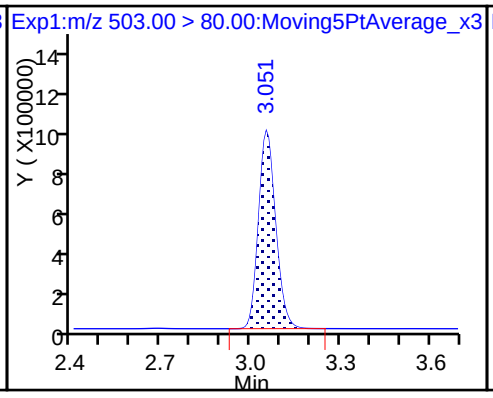
17 Perfluorooctane sulfonic acid



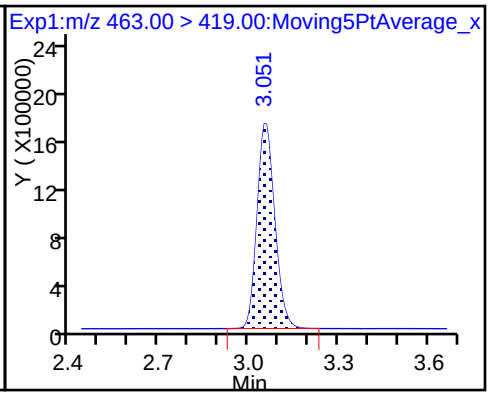
17 Perfluorooctane sulfonic acid



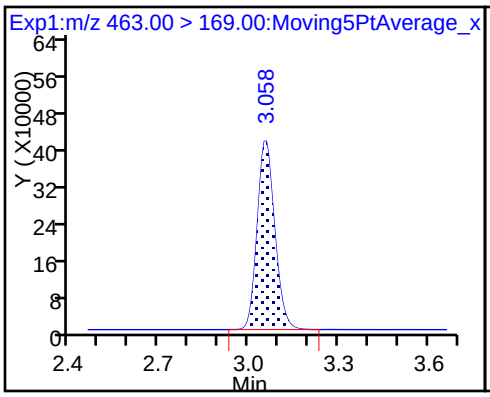
D 18 13C4 PFOS



20 Perfluorononanoic acid



20 Perfluorononanoic acid



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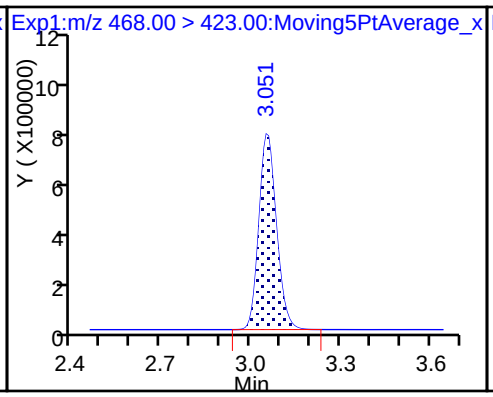
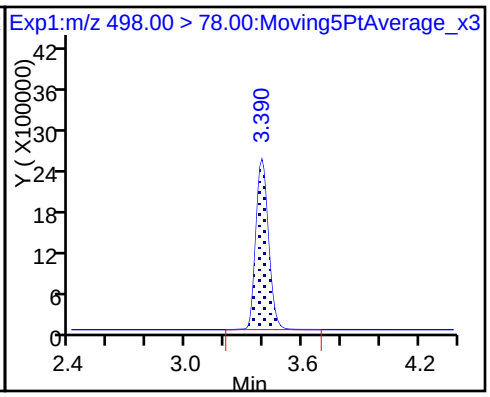
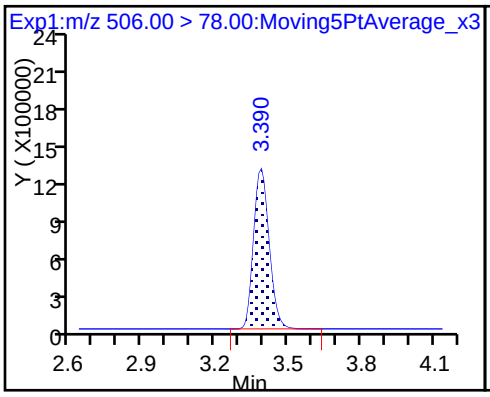


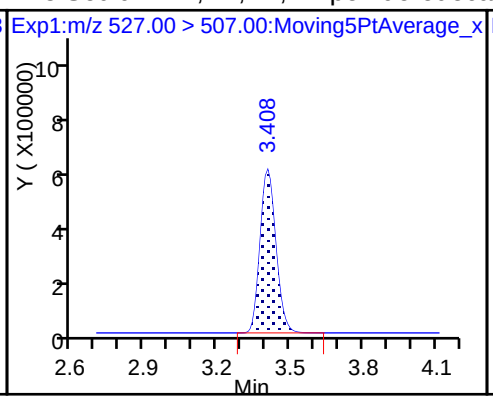
22 Perfluorooctane Sulfonamide



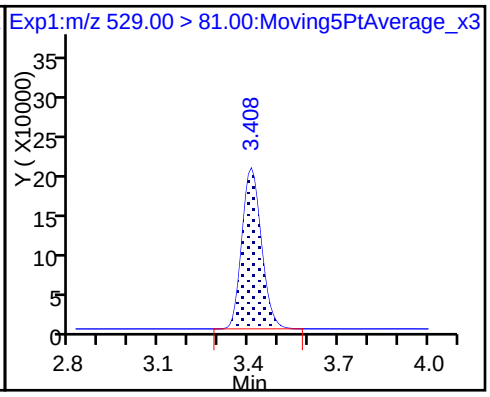
D 21 13C8 FOSA



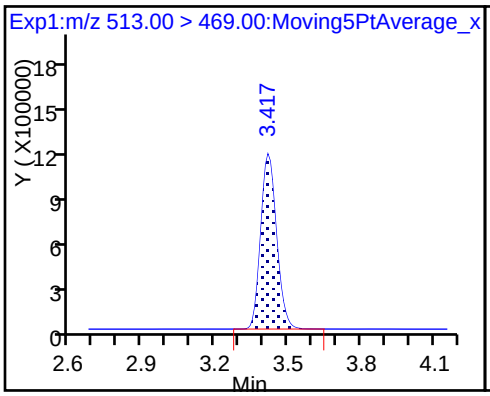
25 Sodium 1H,1H,2H,2H-perfluorodecane



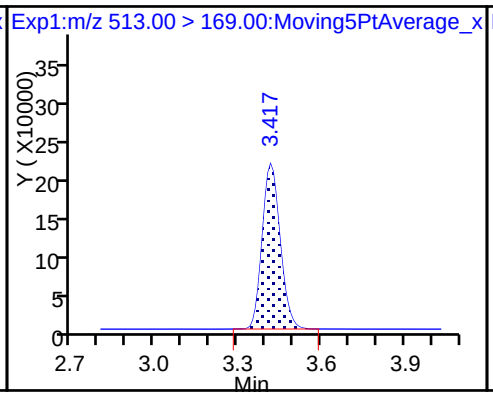
D 26 M2-8:2FTS



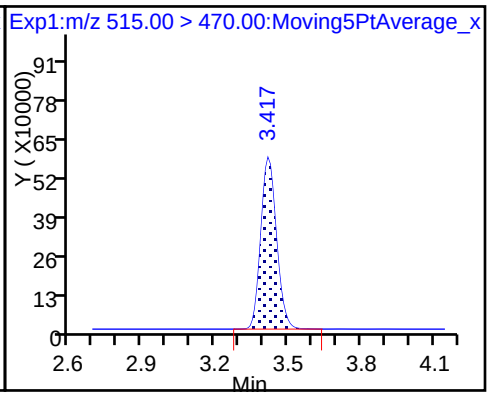
24 Perfluorodecanoic acid



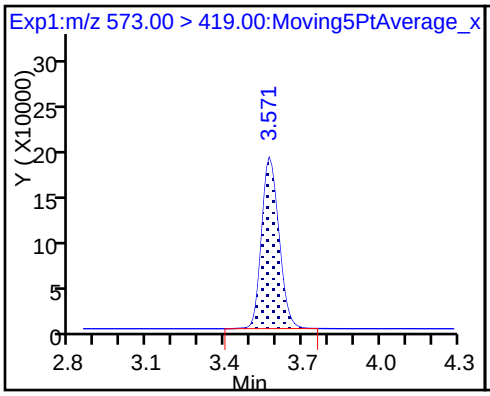
24 Perfluorodecanoic acid



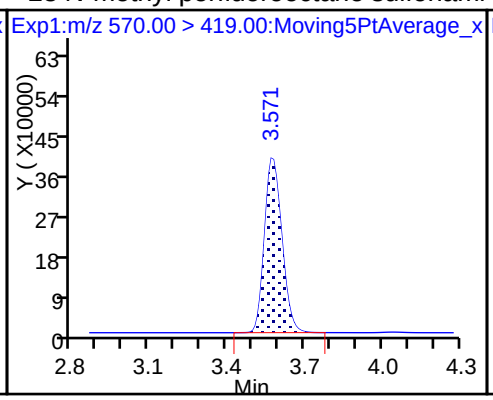
D 23 13C2 PFDA



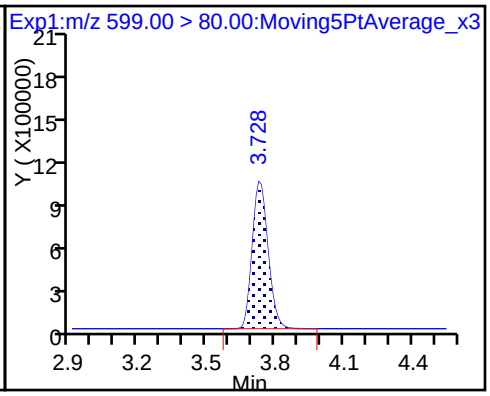
D 27 d3-NMeFOSAA



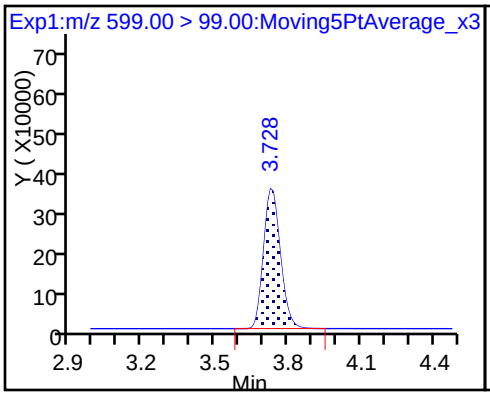
28 N-methyl perfluorooctane sulfonami



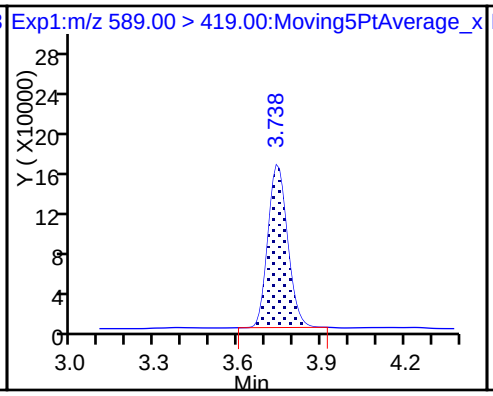
29 Perfluorodecane Sulfonic acid



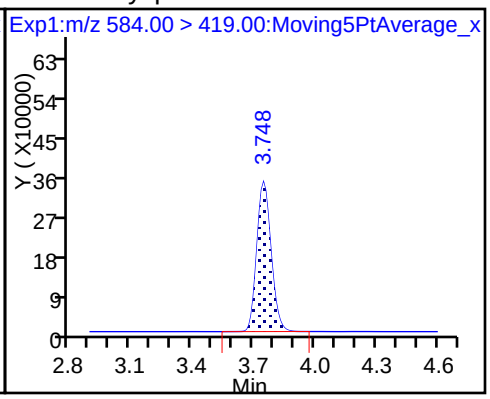
29 Perfluorodecane Sulfonic acid



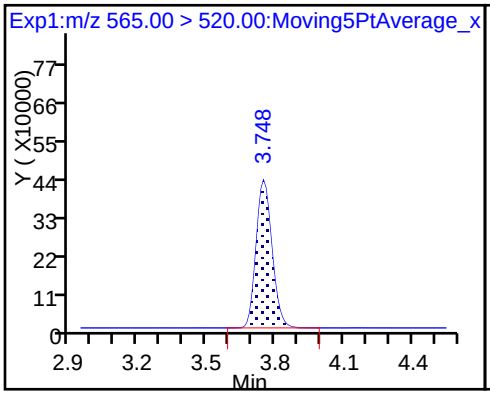
D 32 d5-NEtFOSAA



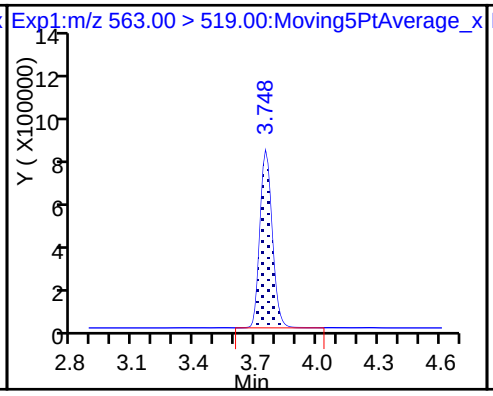
33 N-ethyl perfluorooctane sulfonamid



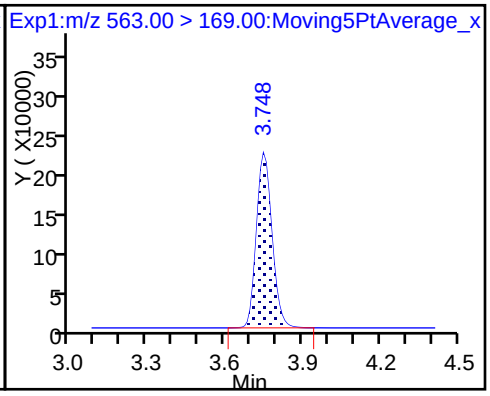
D 30 13C2 PFUnA



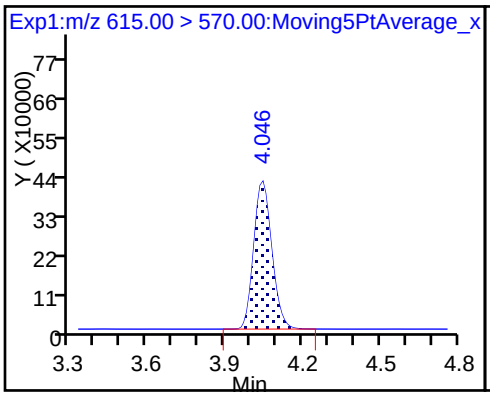
31 Perfluoroundecanoic acid



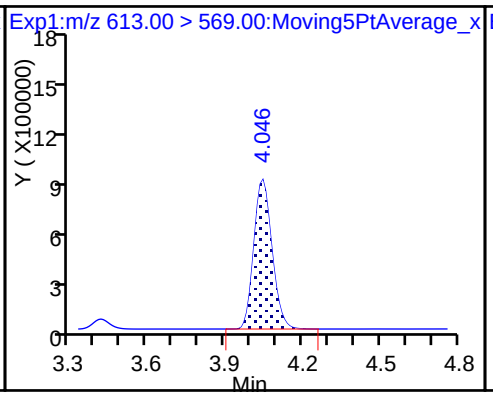
31 Perfluoroundecanoic acid



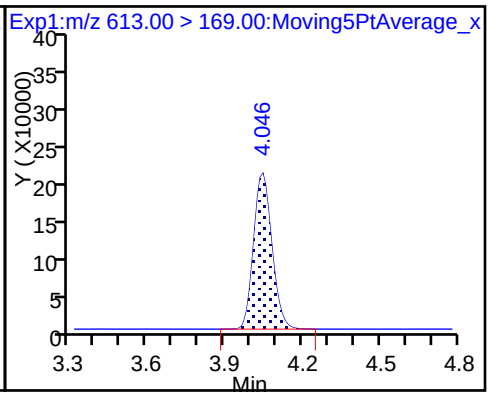
D 36 13C2 PFDoA



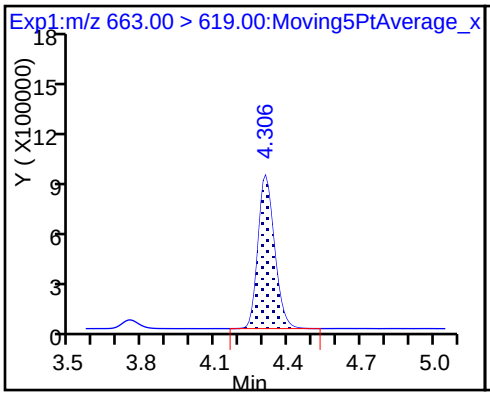
37 Perfluorododecanoic acid



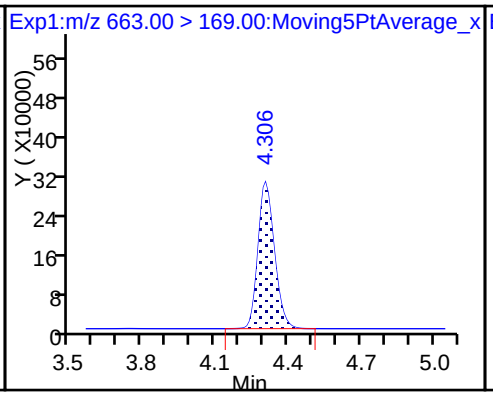
37 Perfluorododecanoic acid



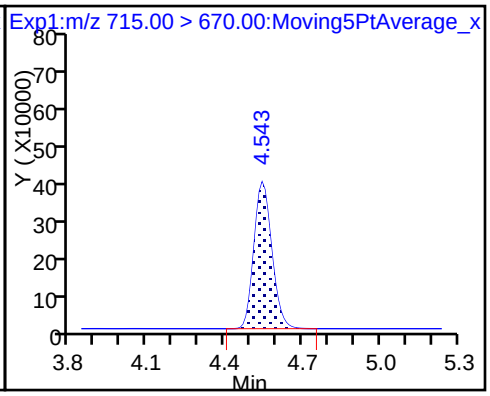
41 Perfluorotridecanoic acid



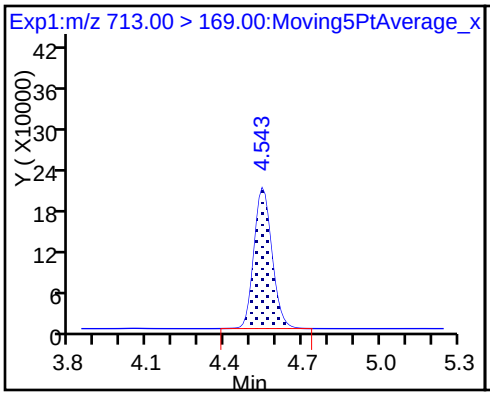
41 Perfluorotridecanoic acid



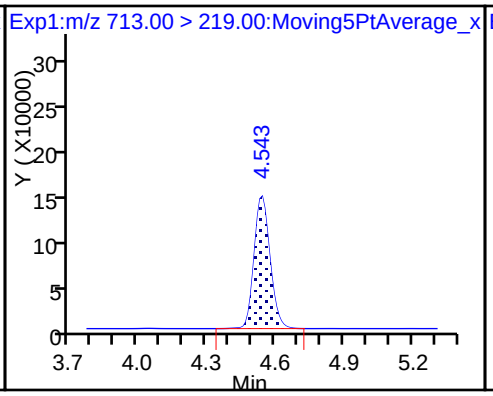
D 43 13C2-PFTeDA



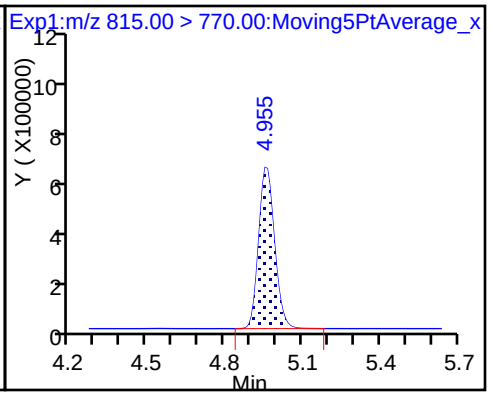
42 Perfluorotetradecanoic acid



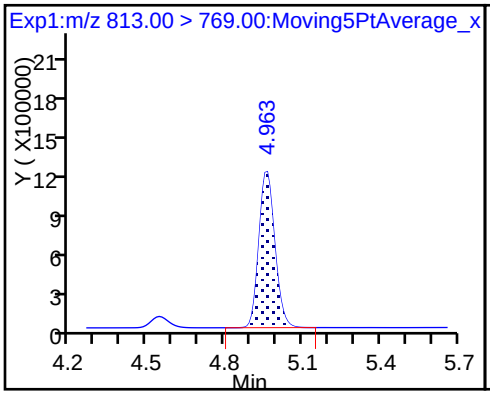
42 Perfluorotetradecanoic acid



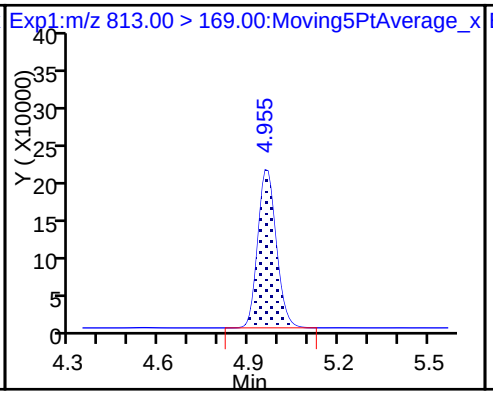
D 44 13C2-PFHxDA



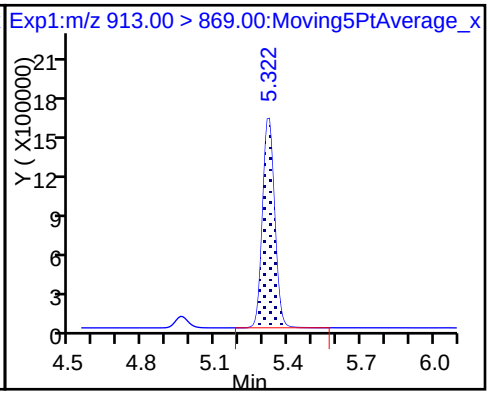
45 Perfluorohexadecanoic acid



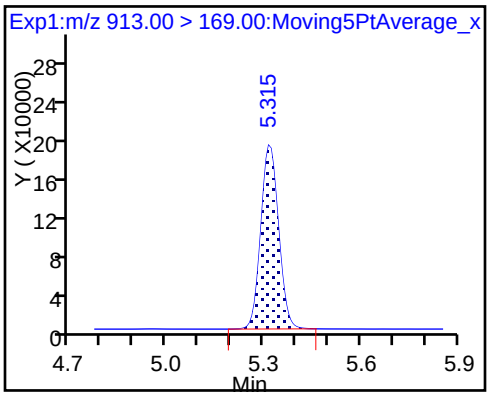
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 16-Mar-2018 23:56:35 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:40:39 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:28:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.440	0.001	0.537	5232633	2.69		108	82309	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.440	0.001	1.000	19640198	10.1		101	12323	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.696	0.004	0.634	3539835	2.58		103	134420	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.698	0.002	1.000	16422736	9.93		99.3	6981	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.730	0.006	0.647	90294	2.66		115	493	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.733	0.003	1.000	24136015	8.03		90.9	10324	
298.90 > 99.00	1.736	1.733	0.003	1.000	10904597		2.21(1.25-3.74)	90.9	11290	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.942	0.004	0.726	556890	2.30		98.4	5405	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.944	0.002	1.000	5338400	8.55		91.6	141725	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.737	3855910	2.52		101	136520	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.982	0.005	1.005	15868989	10.2		102	57308	
313.00 > 119.00	1.987	1.982	0.005	1.005	1454246		10.91(5.03-15.10)	102	37142	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.864	3792427	2.55		102	79264	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	15371232	9.78		97.8	34467	
363.00 > 169.00	2.315	2.311	0.004	1.000	6374993		2.41(1.13-3.40)	97.8	76069	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.869	5044040	2.54		107	56616	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	20699070	8.70		95.6	2537	
399.00 > 99.00	2.328	2.326	0.002	1.000	7211194		2.87(1.50-4.49)	95.6	2748	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.651	0.006	0.991	915248	2.40		101	23462	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.652	0.005	1.000	6406487	9.99		105	124176	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.678	0.003	1.000	3630259	2.52		101	75171	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.678	0.003	1.000	16238419	10.0		100	9944	
413.00 > 169.00	2.681	2.678	0.003	1.000	8853138		1.83(0.84-2.52)	100	22165	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.678	0.003		3812028	2.50			66649	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.684	0.005	1.000	18413921	9.14		96.0	110339	
449.00 > 99.00	2.689	2.684	0.005	1.000	5292149		3.48(1.94-5.82)	96.0	61394	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.050	0.008	1.141	3664287	2.64		110	13294	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.050	0.008	1.000	15616435	9.41		101	43524	
499.00 > 99.00	3.058	3.050	0.008	1.000	3487558		4.48(2.31-6.93)	101	28558	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.052	0.006	1.141	2932926	2.55		102	55102	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.052	0.006	1.000	11976618	10.0		100	25729	
463.00 > 169.00	3.058	3.052	0.006	1.000	3098902		3.86(1.90-5.69)	100	63947	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.264	5287574	2.63		105	52245	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.388	0.001	1.000	19424864	9.45		94.5	152749	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.406	0.002	1.271	851096	2.38		99.2	18761	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.406	0.002	1.000	4059707	9.09		94.8	88539	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.416	0.010	1.278	2368082	2.46		98.6	32884	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.416	0.010	1.000	9249996	10.3		103	52454	
513.00 > 169.00	3.426	3.416	0.010	1.000	1762214		5.25(2.36-7.09)	103	39146	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.335	881475	2.78		111	31541	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.571	0.008	1.000	3769629	10.3		103	31554	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.729	0.009	1.000	9484295	9.69		101	141067	
599.00 > 99.00	3.738	3.729	0.009	1.000	3276453		2.89(1.39-4.16)	101	62459	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.740	0.008	1.398	796299	2.62		105	1800	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.746	0.002	1.000	3048852	9.78		97.8	124025	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.747	0.001	1.398	1892487	2.51		101	55785	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.750	0.008	1.003	6182513	9.75		97.5	20684	
563.00 > 169.00	3.748	3.750	-0.002	1.000	1594060		3.88(2.12-6.36)	97.5	47801	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.041	0.006	1.509	1937420	2.72		109	11175	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.042	0.005	1.000	8183198	10.3		103	1805	
613.00 > 169.00	4.047	4.042	0.005	1.000	2137875		3.83(2.13-6.40)	103	36830	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.304	0.003	1.000	8318181	10.4		104	1942	
663.00 > 169.00	4.307	4.304	0.003	1.000	2521670		3.30(1.25-3.76)	104	26552	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.545	0.009	1.699	1825202	2.80		112	11851	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.545	0.009	1.000	1864512	9.26		92.6	22768	
713.00 > 219.00	4.543	4.545	-0.002	0.998	1299349		1.43(0.71-2.13)	92.6	12775	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.956	0.008	1.852	2496909	2.62		105	9297	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.960	0.004	1.000	9782635	10.6		106	843	
813.00 > 169.00	4.964	4.960	0.004	1.000	1695189		5.77(2.86-8.58)	106	12082	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.320	0.002	1.000	9786600	10.1		101	1689	
913.00 > 169.00	5.322	5.320	0.002	1.000	1244402		7.86(3.83-11.48)	101	7790	

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:40:40 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Injection Date: 16-Mar-2018 23:56:35 Instrument ID: A8_N

Lims ID: IC L7 Full

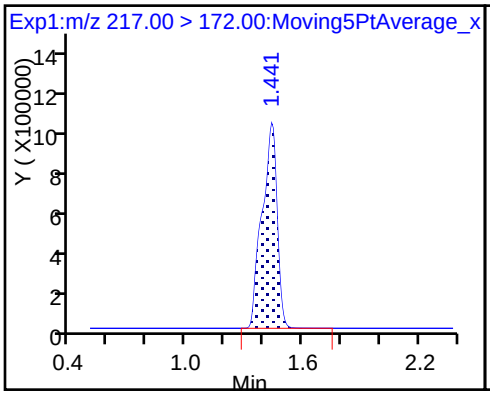
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

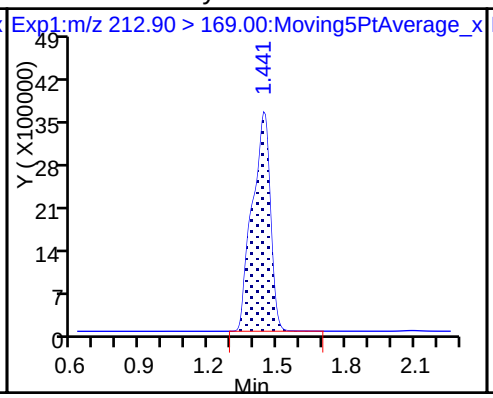
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

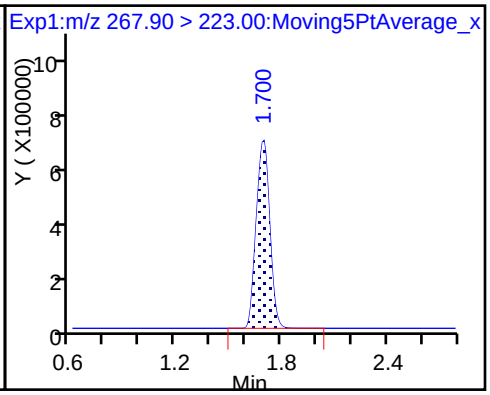
D 1 13C4 PFBA



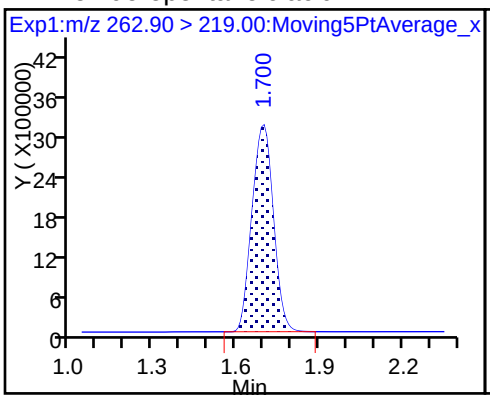
2 Perfluorobutyric acid



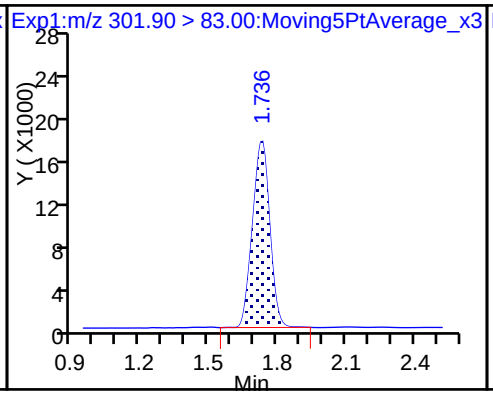
D 3 13C5-PFPeA



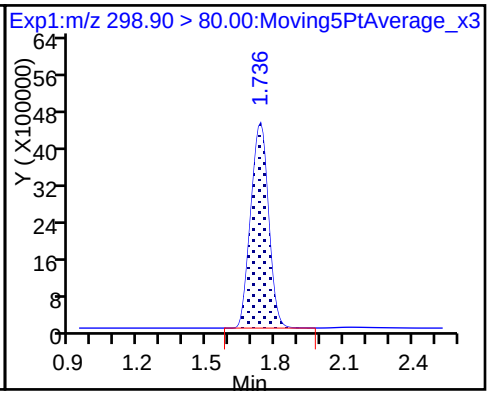
4 Perfluoropentanoic acid



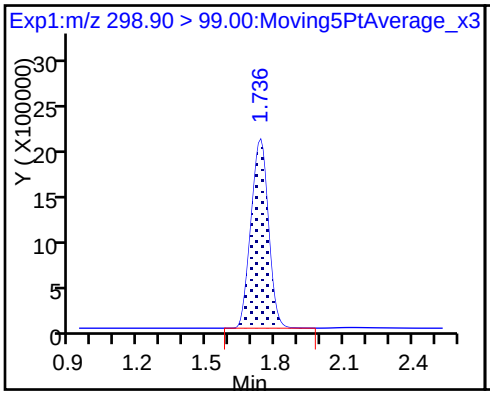
D 47 13C3-PFBS



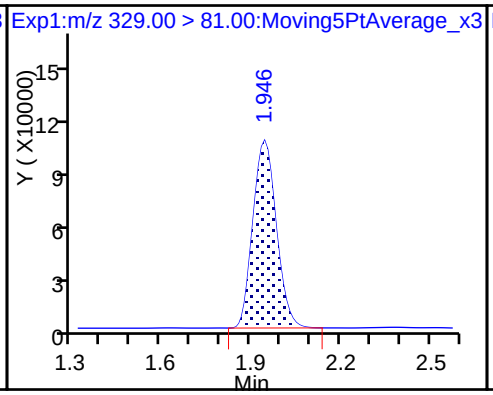
5 Perfluorobutanesulfonic acid



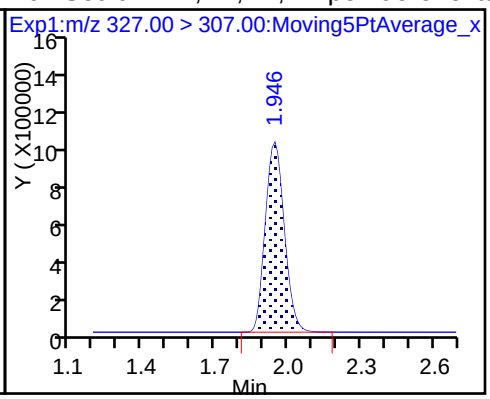
5 Perfluorobutanesulfonic acid



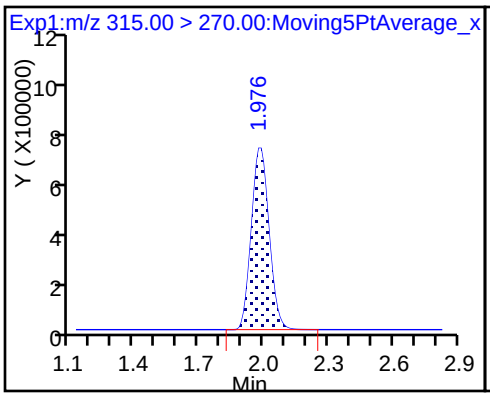
D 60 M2-4:2FTS



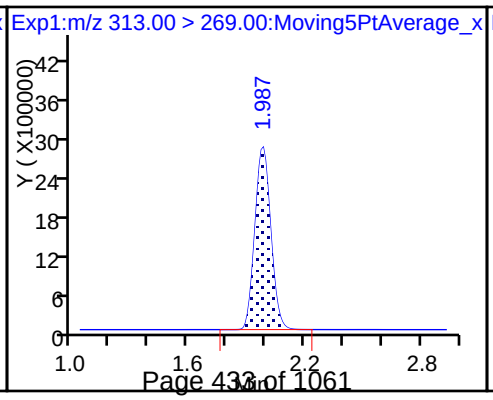
61 Sodium 1H,1H,2H,2H-perfluorohexane



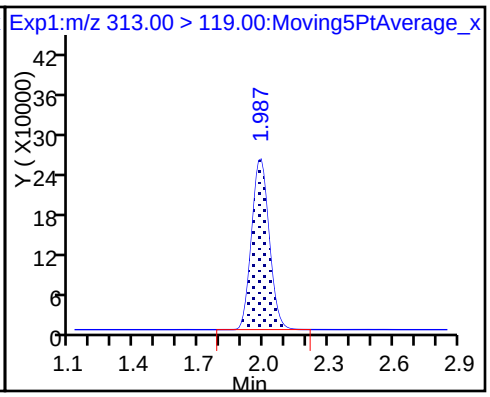
D 7 13C2 PFHxA



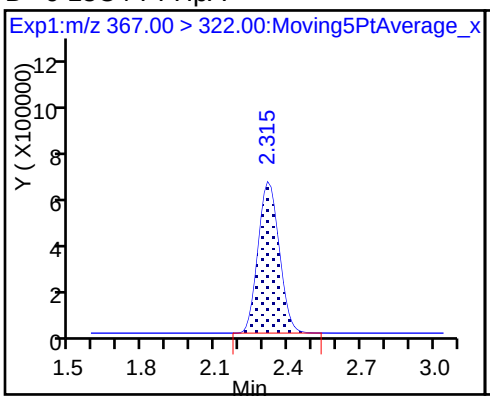
6 Perfluorohexanoic acid



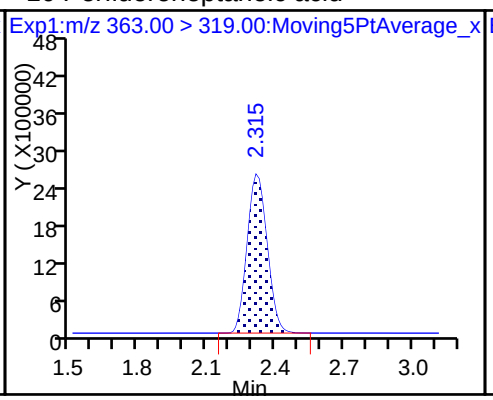
6 Perfluorohexanoic acid



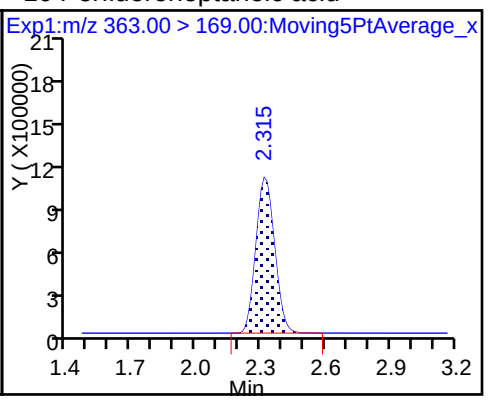
D 9 13C4-PFHpA



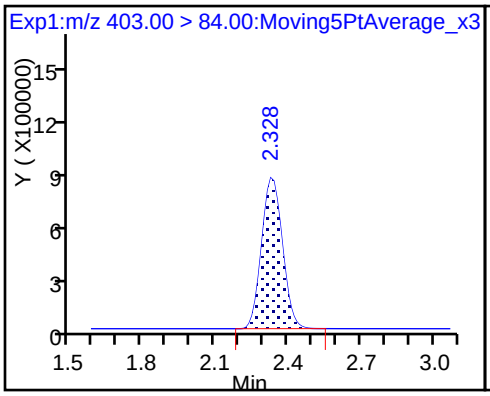
10 Perfluoroheptanoic acid



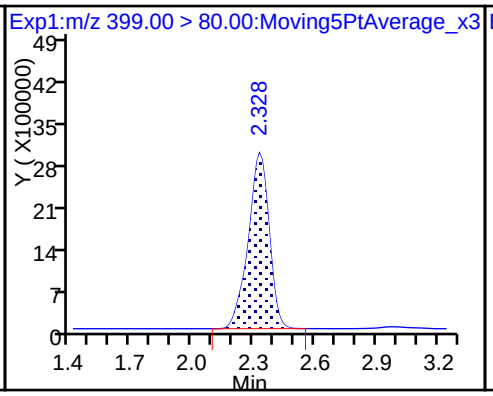
10 Perfluoroheptanoic acid



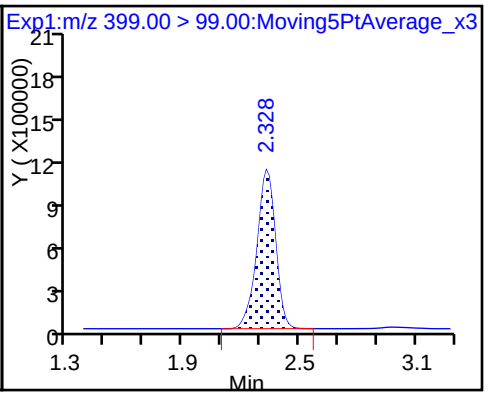
D 11 18O2 PFHxS



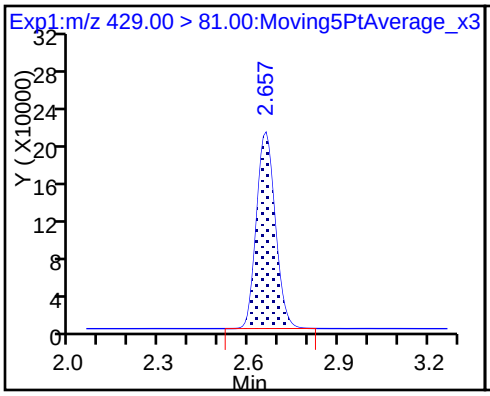
8 Perfluorohexanesulfonic acid



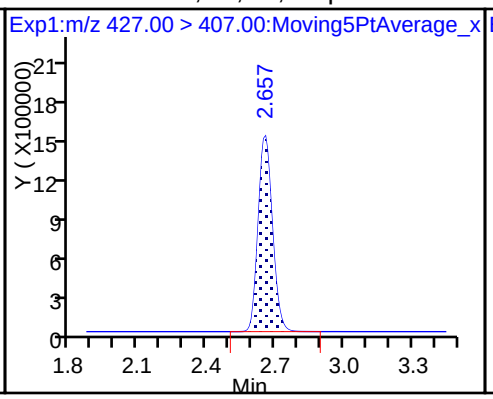
8 Perfluorohexanesulfonic acid



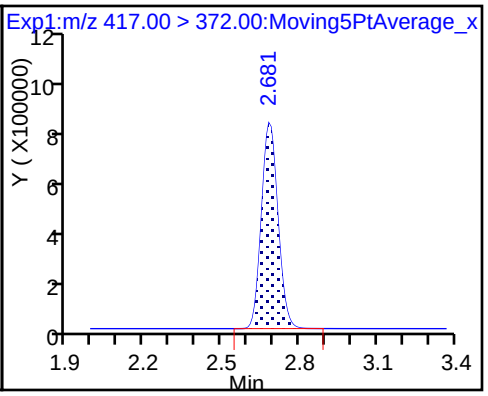
D 12 M2-6:2FTS



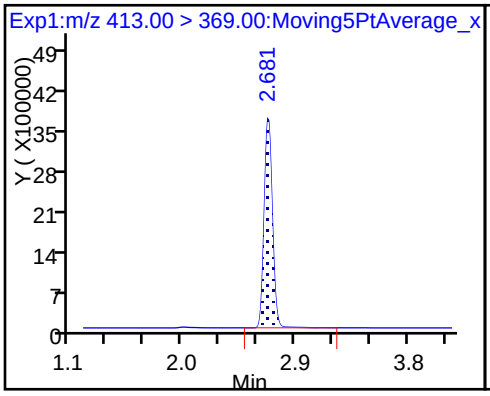
13 Sodium 1H,1H,2H,2H-perfluorooctane



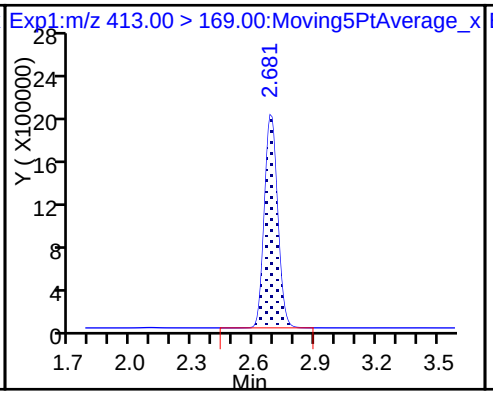
D 14 13C4 PFOA



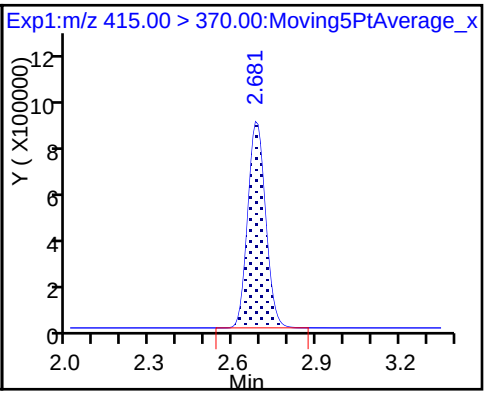
15 Perfluorooctanoic acid



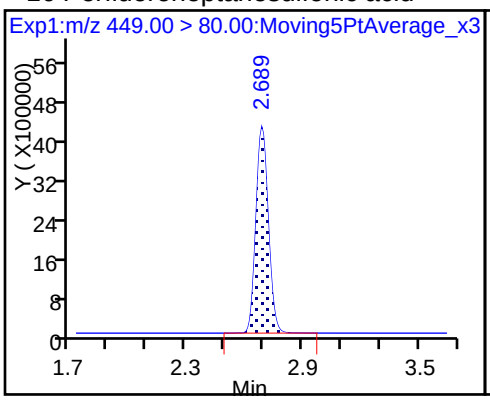
15 Perfluorooctanoic acid



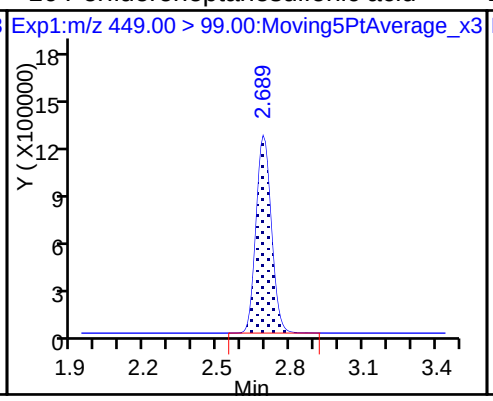
* 62 13C2-PFOA



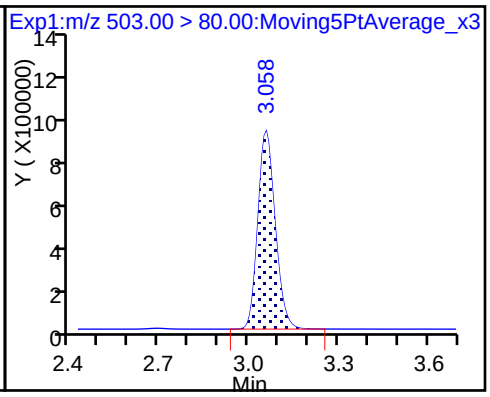
16 Perfluoroheptanesulfonic acid



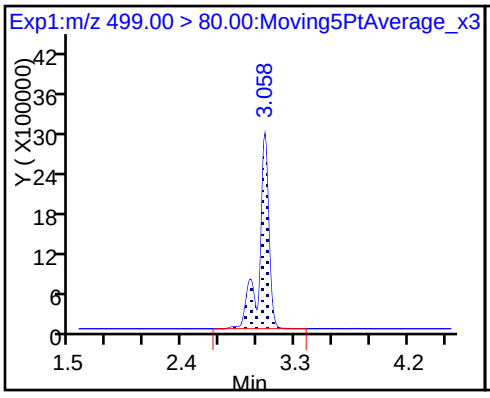
16 Perfluoroheptanesulfonic acid



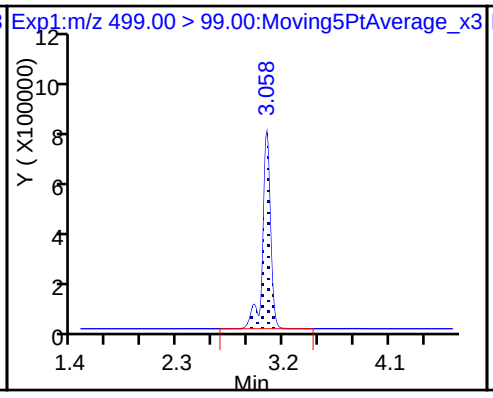
D 18 13C4 PFOS



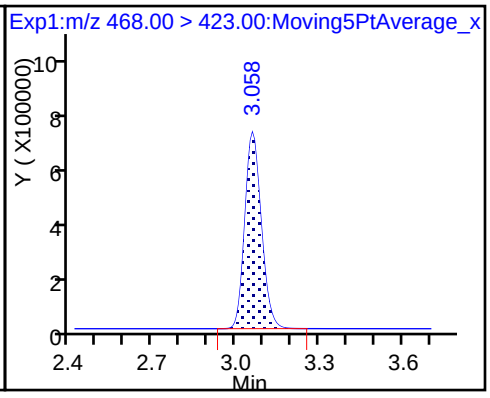
17 Perfluorooctane sulfonic acid



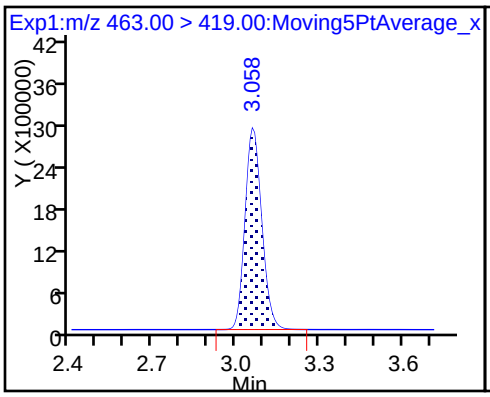
17 Perfluorooctane sulfonic acid



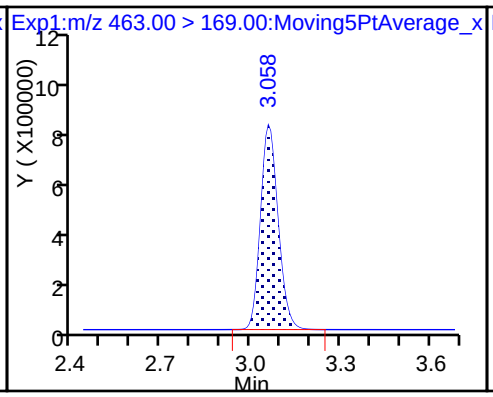
D 19 13C5 PFNA



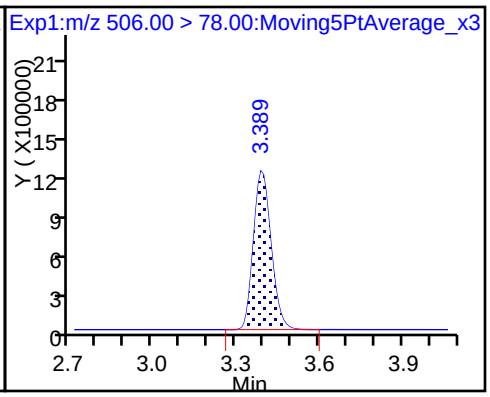
20 Perfluorononanoic acid



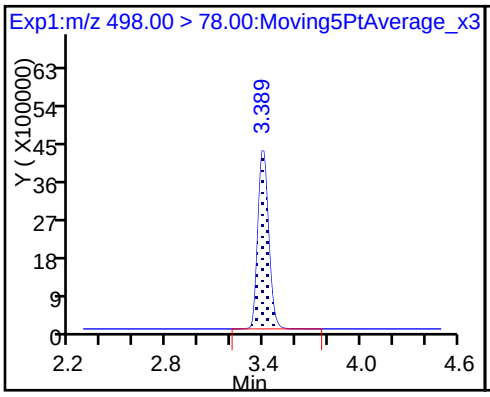
20 Perfluorononanoic acid



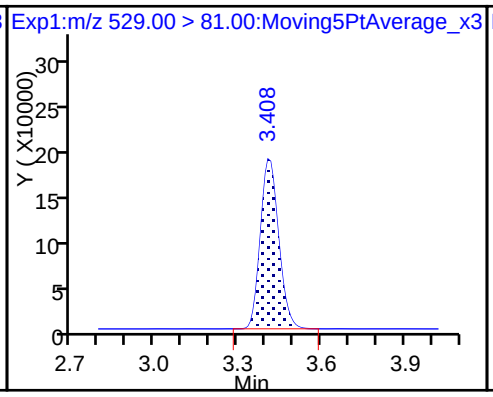
D 21 13C8 FOSA



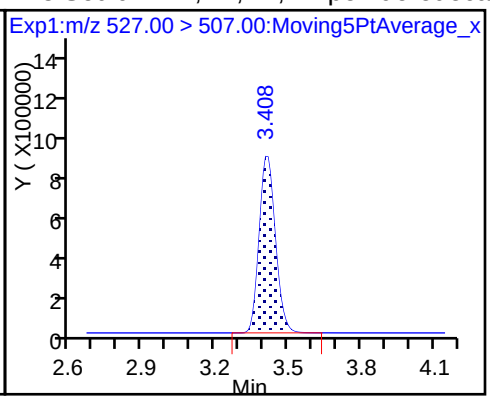
22 Perfluorooctane Sulfonamide



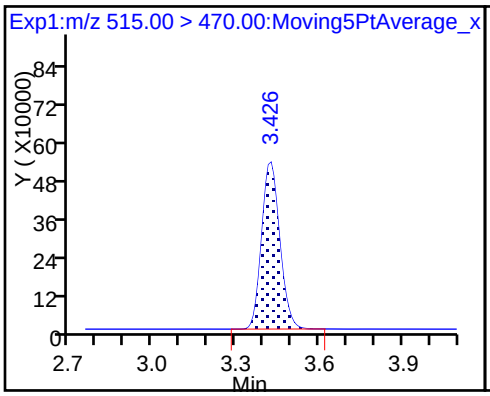
D 26 M2-8:2FTS



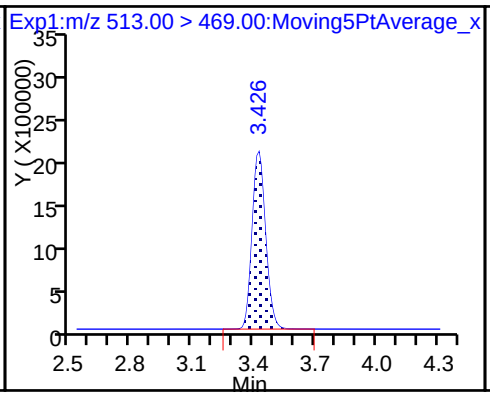
25 Sodium 1H,1H,2H,2H-perfluorodecane



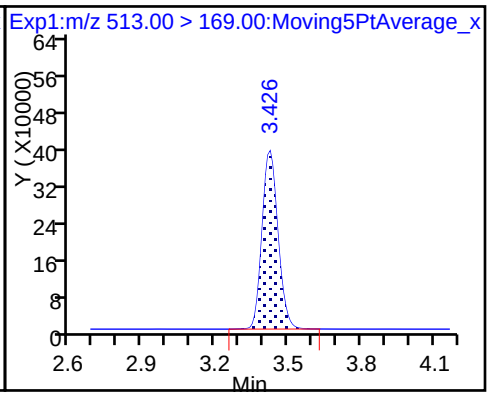
D 23 13C2 PFDA



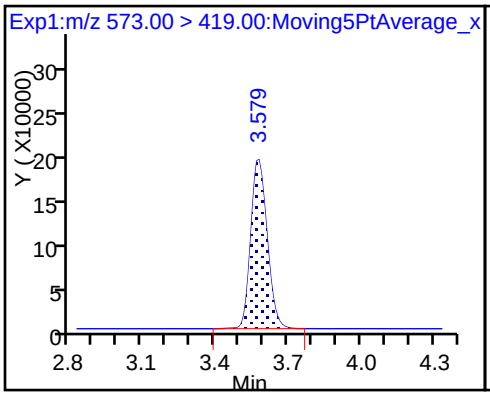
24 Perfluorodecanoic acid



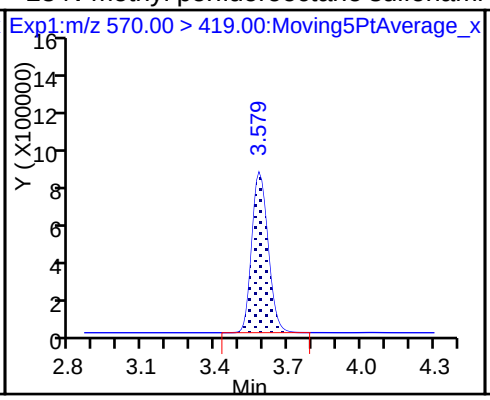
24 Perfluorodecanoic acid



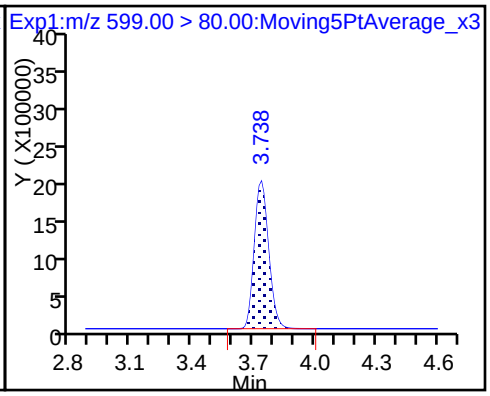
D 27 d3-NMeFOSAA



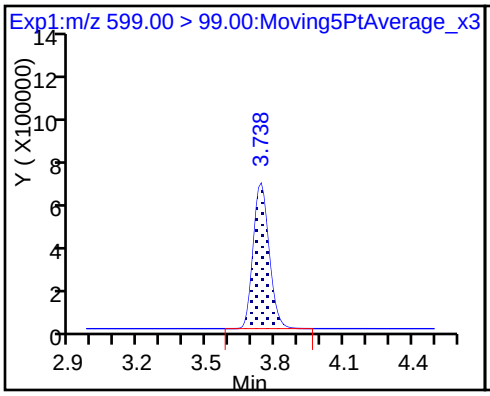
28 N-methyl perfluorooctane sulfonami



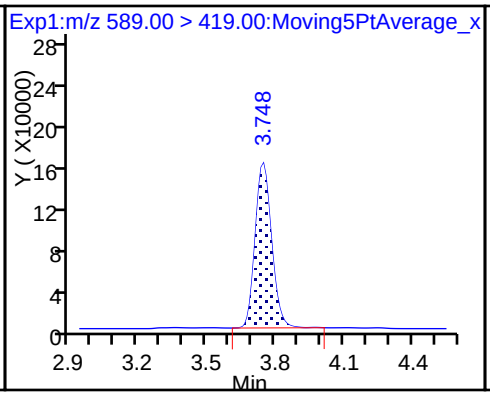
29 Perfluorodecane Sulfonic acid



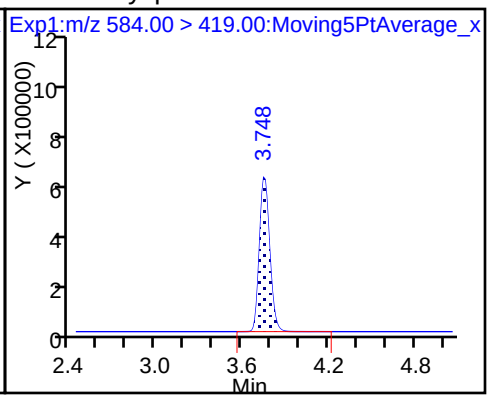
29 Perfluorodecane Sulfonic acid



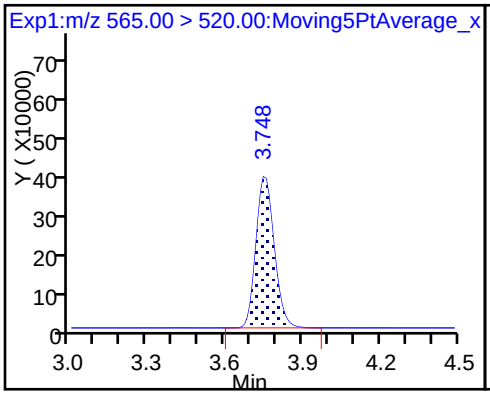
D 32 d5-NEtFOSAA



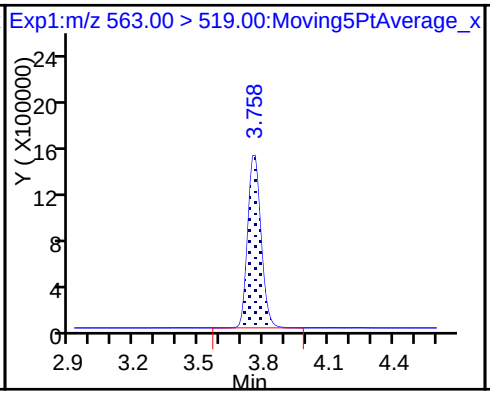
33 N-ethyl perfluorooctane sulfonamid



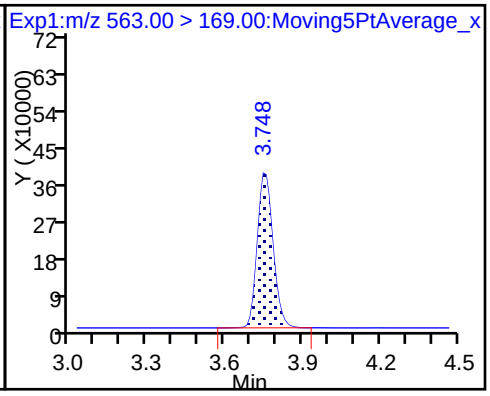
D 30 13C2 PFUnA



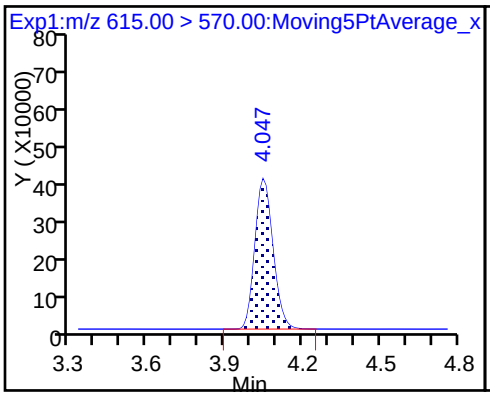
31 Perfluoroundecanoic acid



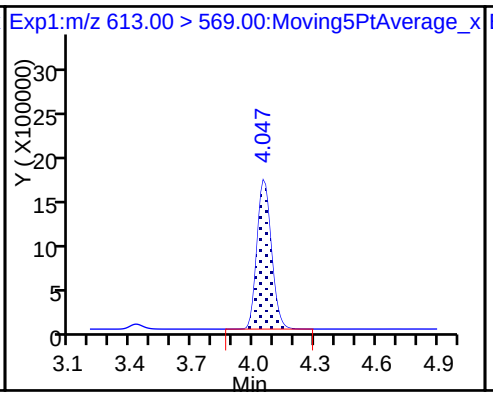
31 Perfluoroundecanoic acid



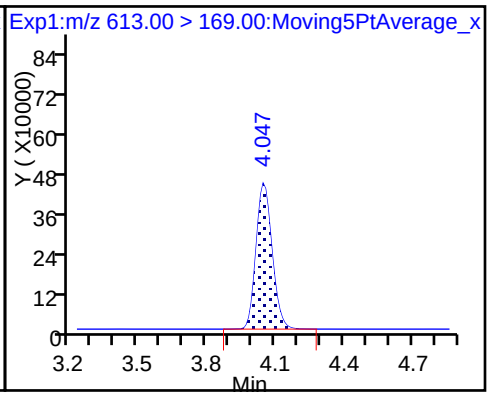
D 36 13C2 PFDoA



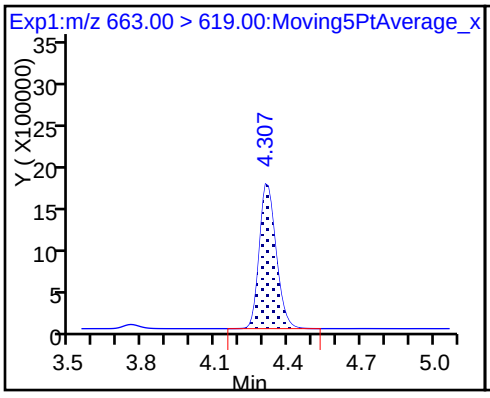
37 Perfluorododecanoic acid



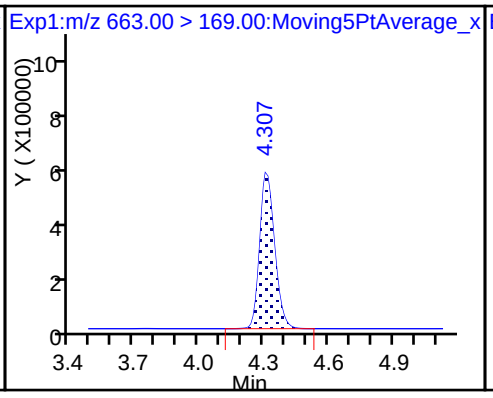
37 Perfluorododecanoic acid



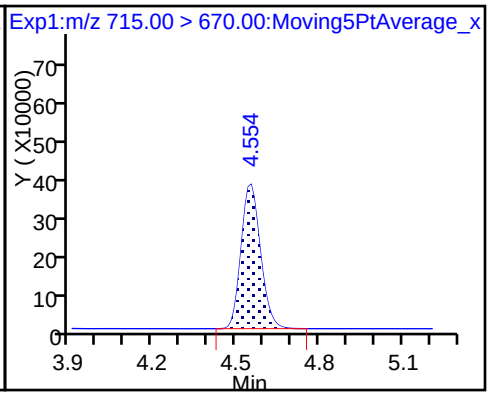
41 Perfluorotridecanoic acid



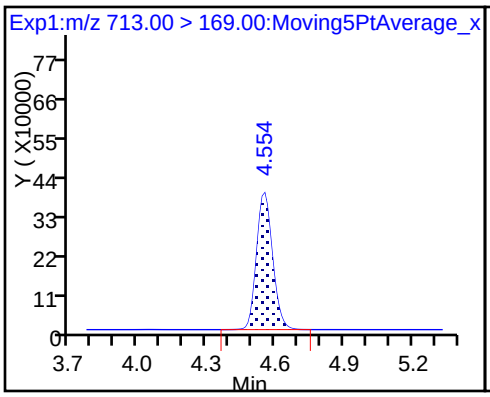
41 Perfluorotridecanoic acid



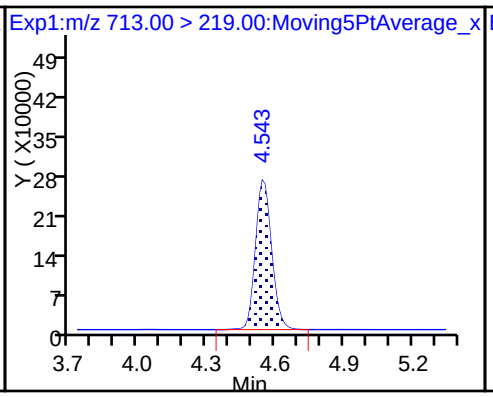
D 43 13C2-PFTeDA



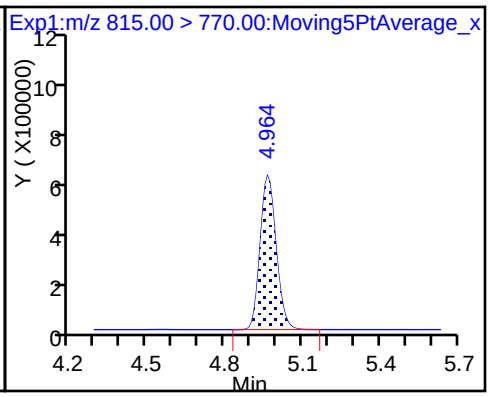
42 Perfluorotetradecanoic acid



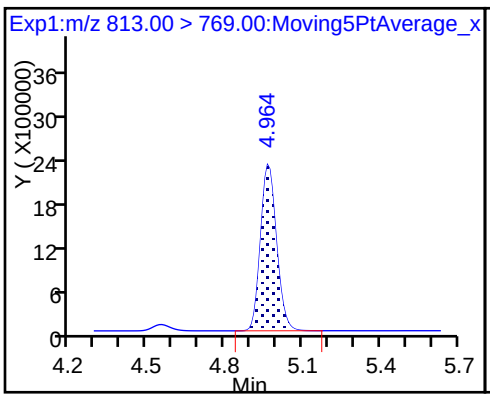
42 Perfluorotetradecanoic acid



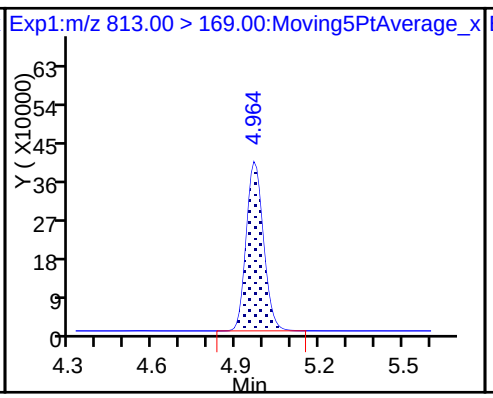
D 44 13C2-PFHxDA



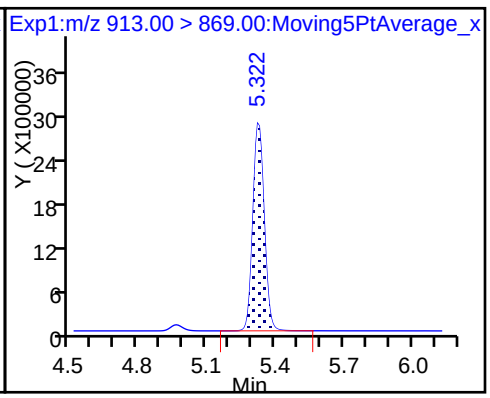
45 Perfluorohexadecanoic acid



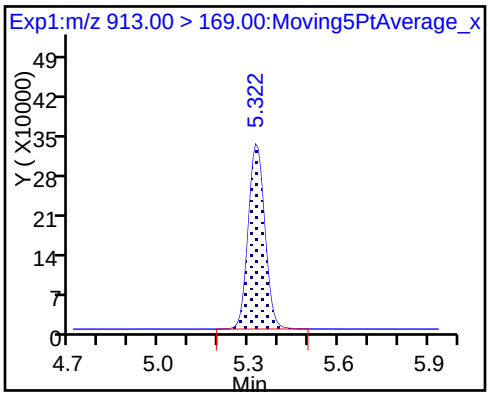
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-214175/2	2018.03.21LLICALAX_002.d
Level 2	IC 320-214175/3	2018.03.21LLICALAX_003.d
Level 3	IC 320-214175/4	2018.03.21LLICALAX_004.d
Level 4	IC 320-214175/5	2018.03.21LLICALAX_005.d
Level 5	IC 320-214175/6	2018.03.21LLICALAX_006.d
Level 6	IC 320-214175/7	2018.03.21LLICALAX_007.d
Level 7	IC 320-214175/8	2018.03.21LLICALAX_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9770 0.9654	0.9782 0.9163	0.9137	0.9039	0.9410	AveID		0.9422				3.4		35.0			
Perfluoropentanoic acid (PFPeA)	1.0398 1.1898	1.1118 1.1431	1.1414	1.1024	1.1643	AveID		1.1275				4.3		35.0			
Perfluorobutanesulfonic acid (PFBS)	77.286 78.553	78.814 75.366	76.480	76.225	81.199	AveID		77.703				2.5		50.0			
4:2 FTS	16.804 16.788	16.170 15.667	16.310	15.390	15.941	AveID		16.153				3.3		50.0			
Perfluorohexanoic acid (PFHxA)	1.0196 1.0524	1.0518 1.0118	1.0085	0.9645	1.0478	AveID		1.0223				3.1		35.0			
Perfluoroheptanoic acid (PFHpA)	0.9689 1.0612	1.0927 1.0383	0.9816	0.9771	1.1215	AveID		1.0345				5.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3404 1.1223	1.1639 1.0409	1.0385	1.0319	1.0535	AveID		1.1130				10.1		35.0			
6:2FTS	1.5576 1.7957	1.8911 1.7717	1.7412	1.6933	1.7547	AveID		1.7436				5.9		35.0			
Perfluorooctanoic acid (PFOA)	1.2278 1.1265	1.2535 1.0919	1.0964	1.0565	1.0550	AveID		1.1297				7.1		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.3002 1.3237	1.2934 1.2343	1.2772	1.2479	1.2922	AveID		1.2813				2.4		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.1788 1.1274	1.0854 1.1317	1.0974	1.0467	1.1303	AveID		1.1139				3.8		35.0			
Perfluorononanoic acid (PFNA)	0.9610 1.0030	0.9765 1.0457	0.9865	0.9543	1.0556	AveID		0.9975				4.0		35.0			
Perfluorooctane Sulfonamide (FOSA)	1.0217 1.0333	0.9663 0.9452	0.9546	0.9908	0.9888	AveID		0.9858				3.4		35.0			
8:2FTS	1.3252 1.2619	1.1418 1.3311	1.2543	1.2466	1.3731	AveID		1.2763				5.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	1.0098 1.0266	0.8873 0.9840	1.0025	0.9567	1.0497	AveID		0.9881				5.4		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.8624 1.0715	0.9123 1.0518	1.0465	0.9523	1.1088	AveID		1.0008				9.2		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6016 0.7415	0.6694 0.7211	0.6530	0.6412	0.7322	AveID		0.6800				7.8		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.9224 0.9962	0.8646 0.9417	0.9112	0.8903	1.0134	AveID		0.9342				5.8		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9695 0.8449	0.8967 0.9028	0.7661	0.8243	0.8309	AveID		0.8622				7.7		35.0			
Perfluorododecanoic acid (PFDoA)	1.0503 1.1100	1.0998 1.0309	1.0210	0.9776	1.0349	AveID		1.0464				4.4		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.0242 1.2189	1.0806 1.0484	1.0979	1.1164	1.1188	AveID		1.1007				5.7		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2400 0.2554	0.2594 0.2499	0.2475	0.2303	0.2521	AveID		0.2478				4.0		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7892 0.9151	1.3570 0.8645	0.9897	0.9038	0.9928	L2ID	0.0221	0.9088							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.9497 0.9330	0.9448 0.8894	0.9065	0.8854	0.9637	AveID		0.9246				3.3		50.0			
13C4 PFBA	1.2518 1.2929	1.2583 1.3406	1.2790	1.2572	1.1820	Ave		1.2660				3.8		50.0			
13C5 PFPeA	0.8327 0.8439	0.8366 0.8891	0.8605	0.8349	0.7813	Ave		0.8399				3.9		50.0			
13C3-PFBS	0.0186 0.0196	0.0192 0.0199	0.0198	0.0192	0.0180	Ave		0.0192				3.4		50.0			
M2-4:2FTS	0.1314 0.1321	0.1400 0.1255	0.1372	0.1358	0.1246	Ave		0.1324				4.4		50.0			
13C2 PFHxA	0.9295 0.9198	0.9713 0.9356	0.9418	0.9249	0.8788	Ave		0.9288				3.0		50.0			
13C4-PFHpA	0.9506 0.9047	0.8936 0.9073	0.9677	0.9239	0.8667	Ave		0.9164				3.7		50.0			
18O2 PFHxS	1.1127 1.0890	1.1664 1.1449	1.1850	1.1305	1.0840	Ave		1.1303				3.4		50.0			
M2-6:2FTS	0.1884 0.1805	0.1973 0.1957	0.1922	0.1932	0.1826	Ave		0.1900				3.4		50.0			
13C4 PFOA	0.9424 0.9146	0.9504 0.9162	0.9605	0.9718	0.9058	Ave		0.9374				2.7		50.0			
13C4 PFOS	0.8084 0.8115	0.8346 0.8334	0.8459	0.8297	0.7939	Ave		0.8225				2.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C5 PFNA	0.8159 0.8363	0.8387 0.8194	0.8535	0.8423	0.7801	Ave		0.8266				2.9		50.0			
13C8 FOSA	1.0958 1.1026	1.0947 1.0892	1.1838	1.1159	1.0823	Ave		1.1092				3.1		50.0			
M2-8:2FTS	0.2677 0.2568	0.2739 0.2387	0.2803	0.2476	0.2307	Ave		0.2565				7.2		50.0			
13C2 PFDA	0.7397 0.7226	0.7599 0.7138	0.7506	0.7132	0.6715	Ave		0.7245				4.1		50.0			
d3-NMeFOSAA	0.3775 0.3991	0.3624 0.3991	0.4007	0.3777	0.3530	Ave		0.3814				5.0		50.0			
d5-NEtFOSAA	0.4563 0.4090	0.4567 0.4048	0.4709	0.4518	0.3919	Ave		0.4345				7.2		50.0			
13C2 PFUnA	0.6503 0.6562	0.6561 0.6125	0.7132	0.6358	0.6130	Ave		0.6482				5.3		50.0			
13C2 PFDoA	0.7369 0.7139	0.7087 0.7752	0.7608	0.7433	0.7097	Ave		0.7355				3.6		50.0			
13C2-PFTeDA	0.9180 0.8827	0.8229 0.9495	0.9129	0.9482	0.8540	Ave		0.8983				5.3		50.0			
13C2-PFHxDA	1.4911 1.5654	1.2829 1.5109	1.5999	1.5088	1.3493	Ave		1.4726				7.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-214175/2	2018.03.21LLICALAX_002.d
Level 2	IC 320-214175/3	2018.03.21LLICALAX_003.d
Level 3	IC 320-214175/4	2018.03.21LLICALAX_004.d
Level 4	IC 320-214175/5	2018.03.21LLICALAX_005.d
Level 5	IC 320-214175/6	2018.03.21LLICALAX_006.d
Level 6	IC 320-214175/7	2018.03.21LLICALAX_007.d
Level 7	IC 320-214175/8	2018.03.21LLICALAX_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	64128 12506996	131334 22360079	612393	2414180	5823834	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	45401 10061856	99242 18500324	514727	1955236	4762694	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	66644 13614957	142407 24100878	700112	2745542	6781882	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	15310 3074271	30869 5293270	157752	585674	1406742	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	49694 9699799	109004 17232401	497709	1895160	4820853	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	48297 9620973	104181 17149506	497784	1917800	5088526	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	71171 11144344	131804 19742275	586824	2255246	5440694	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
6:2FTS		AveID	14587 3079977	37735 5982174	166250	658727	1590173	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	60671 10325028	127108 18212815	551855	2181038	5003450	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	52467 10247281	109652 17826274	539007	2094073	5113485	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	46371 8507880	89694 15932478	451427	1712110	4360129	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	41117 8405623	87380 15598692	441188	1707633	4311504	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctane Sulfonamide (FOSA)		AveID	58708 11417156	112857 18741888	592188	2348890	5602803	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2FTS		AveID	17824 3110907	31966 5541846	176483	628171	1588740	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	39168 7434177	71937 12786299	394276	1449524	3690292	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	17070 4285891	35274 7642171	219720	764025	2049489	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	24583 5812987	57466 10545265	279040	1089522	2934010	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	22073 4082815	42131 6938724	224858	854457	2079318	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	33058 5555779	62776 10065814	286311	1113457	2666750	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	40586 7940975	83165 14548343	407079	1543700	3845398	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	39576 8719608	81708 14795343	437729	1762916	4156865	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	11552 2258774	22776 4319552	118401	463840	1127193	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	139895 14354924	185745 23776796	829775	2896964	7013285	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	74253 14635504	129317 24460507	760025	2837993	6807875	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6564034 6477851	6712910 6100844	6702182	6677108	6188661	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4366350 4228437	4463093 4046135	4509425	4434133	4090438	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	90718 91170	95045 84106	96305	94733	87868	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	643318 618185	697680 533647	671337	673891	609343	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4874041 4608558	5181558 4257747	4935175	4912134	4600880	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4-PFHpA	13PFOA	Ave	4984623 4533044	4767222 4129064	5071076	4906862	4537445	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PFOA	Ave	5519750 5161589	5886251 4928998	5874354	5679886	5368855	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PFOA	Ave	938472 859398	999800 845912	956838	974611	908164	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PFOA	Ave	4941609 4582778	5069957 4169807	5033130	5161114	4742395	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PFOA	Ave	4052357 3887079	4256604 3625826	4237867	4212796	3973858	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PFOA	Ave	4278627 4190429	4474026 3729104	4472333	4473666	4084349	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PFOA	Ave	5746202 5524474	5839734 4957065	6203337	5926892	5666432	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
M2-8:2FTS	13PF OA	Ave	1345013 1232595	1399775 1040808	1407067	1259787	1157021	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	3878963 3620699	4053733 3248595	3933118	3787833	3515629	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1979468 1999896	1933236 1816501	2099631	2005802	1848322	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2392883 2049207	2436559 1842170	2467789	2399407	2051910	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	3409956 3287781	3500228 2787354	3737470	3376806	3209638	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	3864207 3576857	3780852 3528118	3986883	3947765	3715622	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	4813878 4422729	4389855 4321269	4783571	5036200	4471429	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	7818840 7843306	6843963 6875940	8384119	8013194	7064103	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 21-Mar-2018 18:24:14 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:19 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:00:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.536	6564034	2.47		98.9	83431	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	64128	0.0259		104	24.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4366350	2.48		99.1	93154	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	45401	0.0231		92.2	23.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	90718	2.26		97.0	614	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	66644	0.0220		99.5	376	
298.90 > 99.00	1.745	1.745	0.0	1.000	28118		2.37(1.25-3.74)	99.5	171	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	643318	2.32		99.2	7775	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	15310	0.0243		104	941	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4874041	2.50		100	145438	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	49694	0.0249		99.7	127	
313.00 > 119.00	1.998	1.998	0.0	1.000	4724		10.52(5.03-15.10)	99.7	94.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.333	0.008	0.868	4984623	2.59		104	93288	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.000	48297	0.0234		93.7	96.7	
363.00 > 169.00	2.341	2.335	0.006	1.000	20477		2.36(1.13-3.40)	93.7	268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.346	0.008	1.000	71171	0.0274		120	609	
399.00 > 99.00	2.354	2.346	0.008	1.000	22990		3.10(1.50-4.49)	120	94.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.873	5519750	2.33		98.4	62536	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	938472	2.36		99.2	21899	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	14587	0.0212		89.3	1143	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	4941609	2.51		101	82002	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5243768	2.50			67801	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.705	2.697	0.008	1.003	60671	0.0272		109	17.7	
413.00 > 169.00	2.697	2.697	0.0	1.000	32946		1.84(0.84-2.52)	109	87.6	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	52467	0.0242		101	1533	
449.00 > 99.00	2.705	2.703	0.002	1.000	13197		3.98(1.94-5.82)	101	181	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.139	4052357	2.35		98.3	50838	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.072	3.070	0.002	1.000	46371	0.0246		106	171	
499.00 > 99.00	3.072	3.070	0.002	1.000	11047		4.20(2.31-6.93)	106	85.3	M
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4278627	2.47		98.7	81507	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	41117	0.0241		96.3	48.9	
463.00 > 169.00	3.072	3.072	0.0	1.000	9349		4.40(1.90-5.69)	96.3	229	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	5746202	2.47		98.8	46543	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	58708	0.0259		104	1350	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1345013	2.50		104	42755	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	17824	0.0249		104	503	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3878963	2.55		102	72834	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	39168	0.0255		102	160	
513.00 > 169.00	3.435	3.435	0.0	1.000	6534		5.99(2.36-7.09)	102	158	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	1979468	2.47		99.0	38616	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	17070	0.0215		86.2	131	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	24583	0.0213		88.5	853	
599.00 > 99.00	3.748	3.749	-0.001	1.000	8435		2.91(1.39-4.16)	88.5	305	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2392883	2.63		105	11372	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.000	33058	0.0281		112	146	
563.00 > 169.00	3.769	3.768	0.001	1.000	10108		3.27(2.12-6.36)	112	319	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.768	0.001	1.003	22073	0.0247		98.7	505	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.768	0.001	1.398	3409956	2.51		100	42217	
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.066	0.002	1.508	3864207	2.50		100	26731	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.068	0.0	1.000	40586	0.0251		100	34.7	
613.00 > 169.00	4.068	4.068	0.0	1.000	8184		4.96(2.13-6.40)	100	145	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.329	-0.001	1.000	39576	0.0233		93.0	27.3	
663.00 > 169.00	4.328	4.329	-0.001	1.000	13312		2.97(1.25-3.76)	93.0	278	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.568	0.006	1.696	4813878	2.55		102	33813	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.003	1.000	11552	0.0242		96.8	204	
713.00 > 219.00	4.564	4.571	-0.007	0.998	8925		1.29(0.71-2.13)	96.8	192	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.851	7818840	2.53		101	18128	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	139895	0.0249		99.7	45.6	
813.00 > 169.00	4.990	4.989	0.001	1.000	24399		5.73(2.86-8.58)	99.7	287	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.358	5.354	0.004	1.000	74253	0.0257		103	25.7	
913.00 > 169.00	5.351	5.354	-0.003	0.999	8840		8.40(3.83-11.48)	103	123	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d

Injection Date: 21-Mar-2018 18:24:14 Instrument ID: A8_N

Lims ID: IC L1 Full

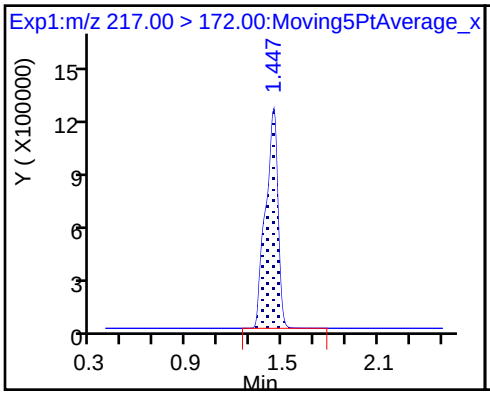
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

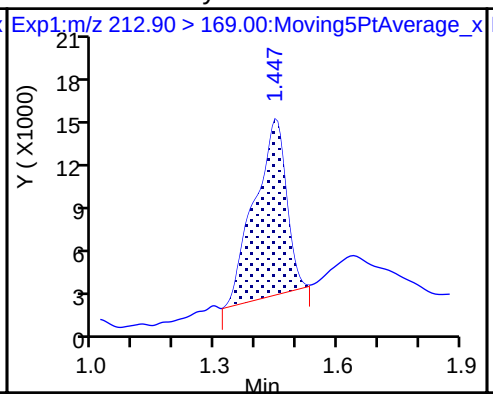
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

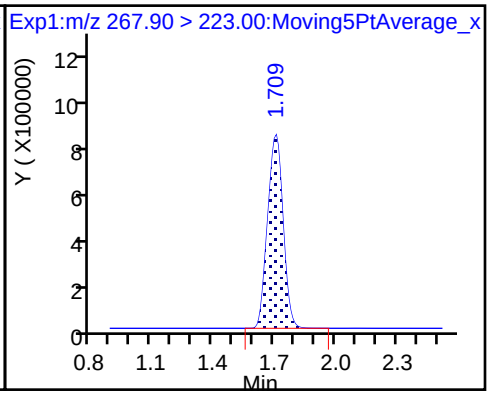
D 1 13C4 PFBA



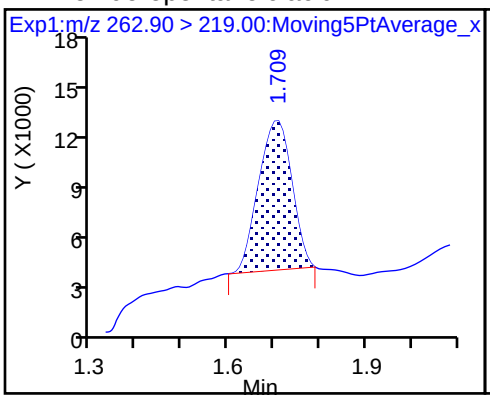
2 Perfluorobutyric acid



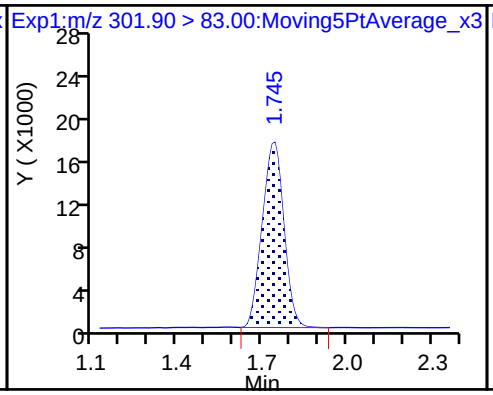
D 3 13C5-PFPeA



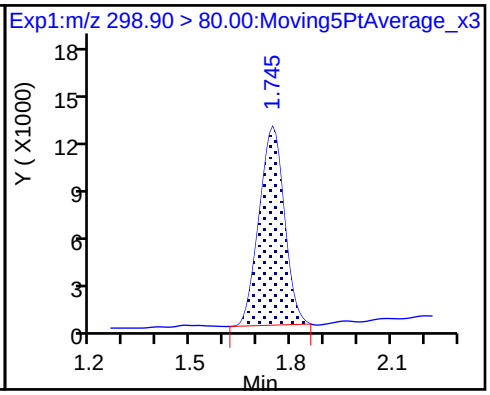
4 Perfluoropentanoic acid



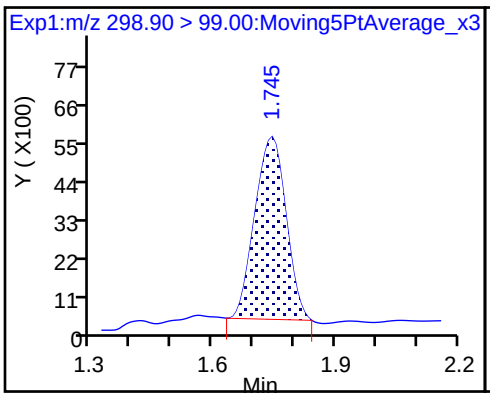
D 47 13C3-PFBS



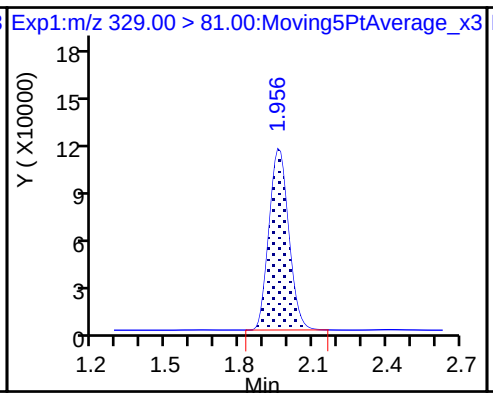
5 Perfluorobutanesulfonic acid



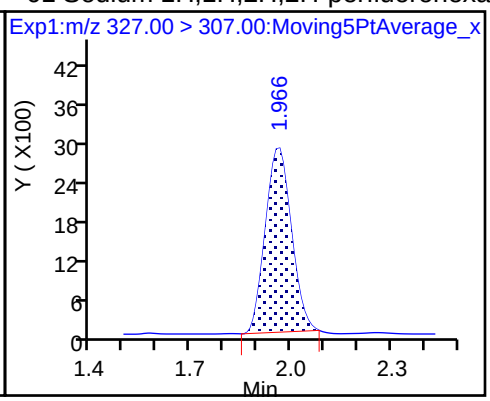
5 Perfluorobutanesulfonic acid



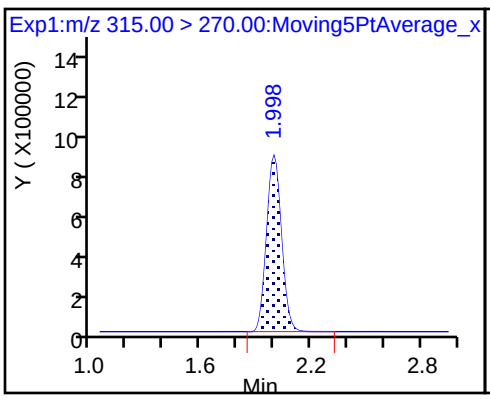
D 60 M2-4:2FTS



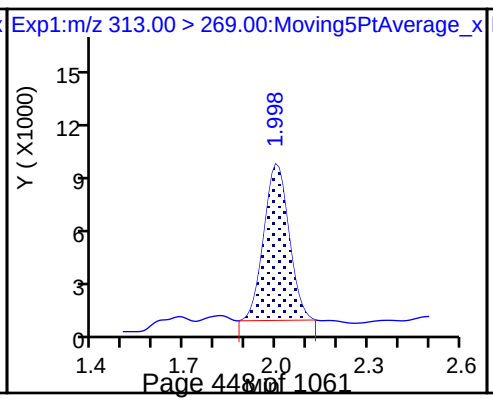
61 Sodium 1H,1H,2H,2H-perfluorohexane



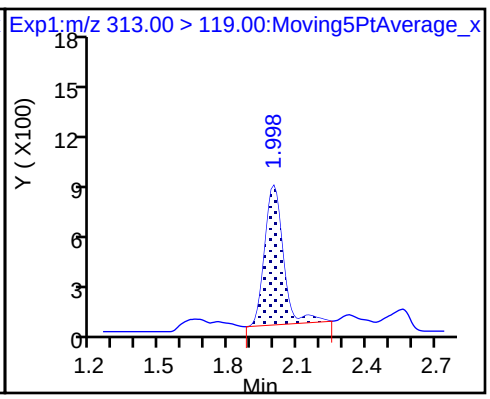
D 7 13C2 PFHxA



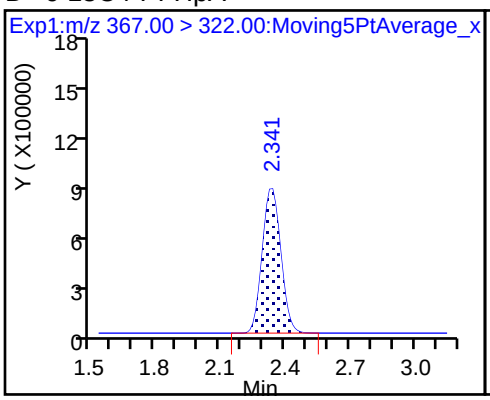
6 Perfluorohexanoic acid



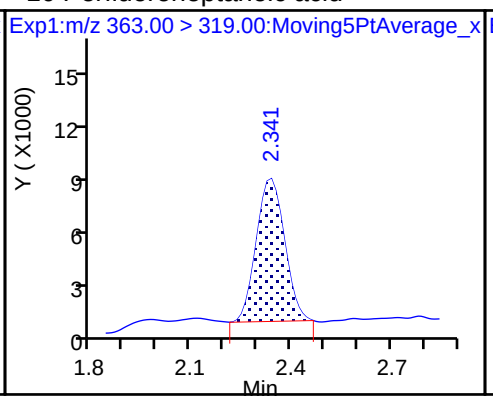
6 Perfluorohexanoic acid



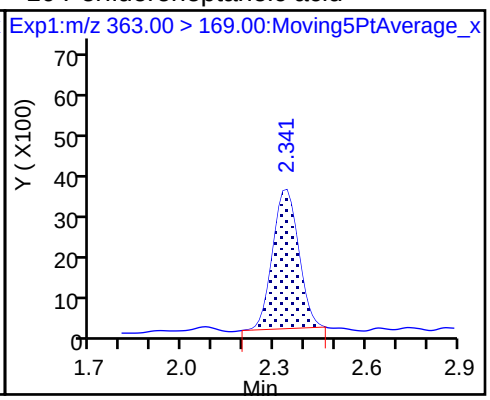
D 9 13C4-PFHpA



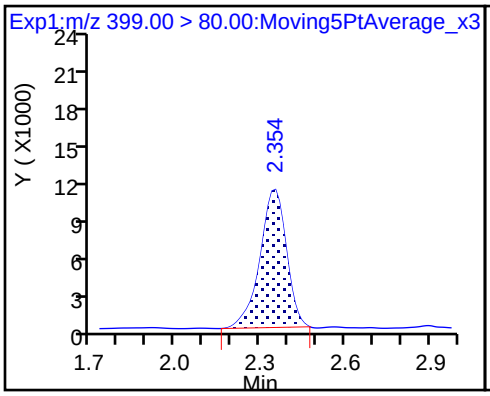
10 Perfluoroheptanoic acid



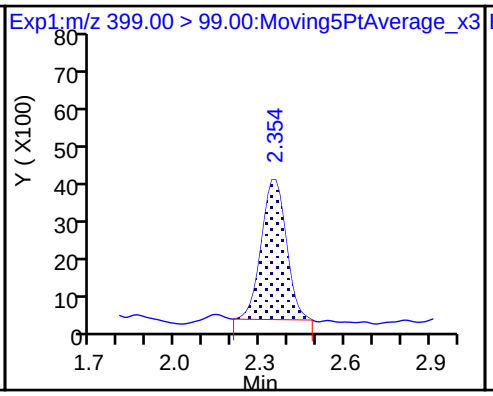
10 Perfluoroheptanoic acid



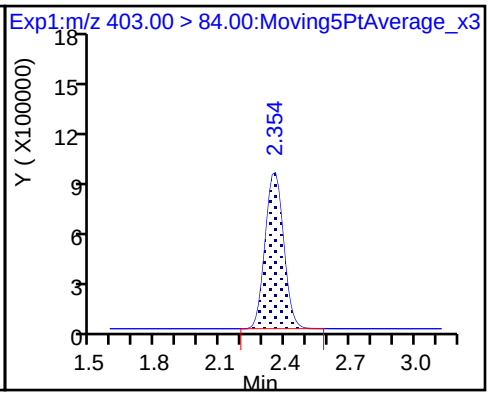
8 Perfluorohexanesulfonic acid



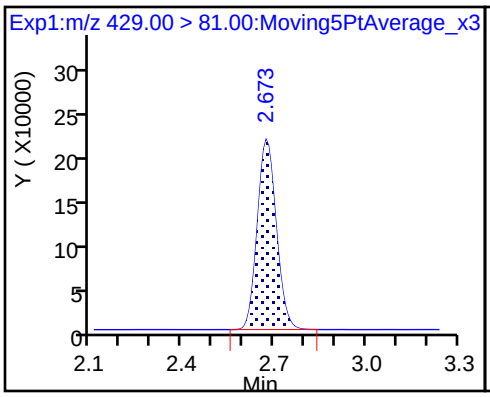
8 Perfluorohexanesulfonic acid



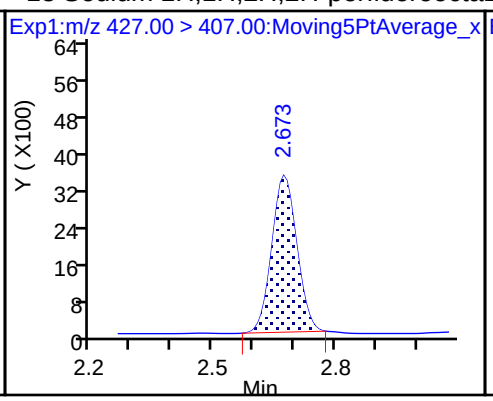
D 11 18O2 PFHxS



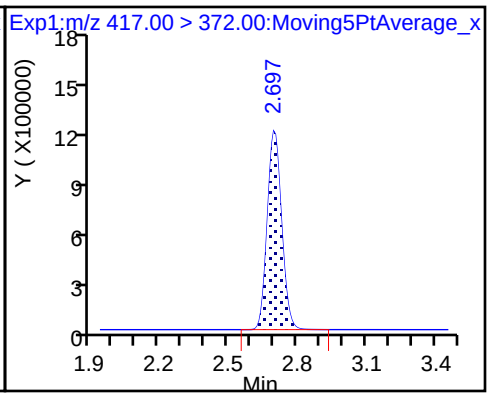
D 12 M2-6:2FTS



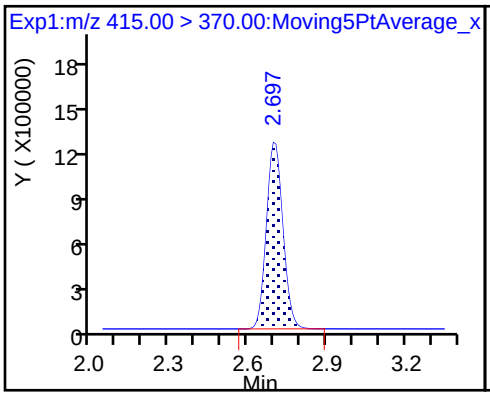
13 Sodium 1H,1H,2H,2H-perfluorooctane



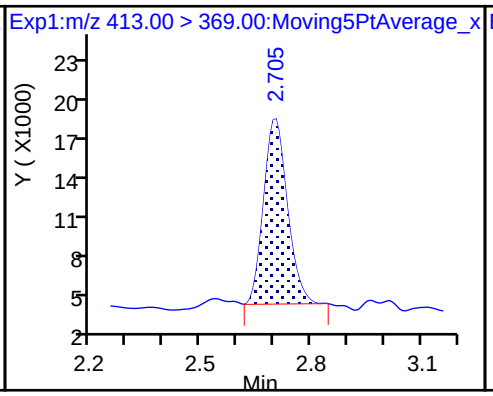
D 14 13C4 PFOA



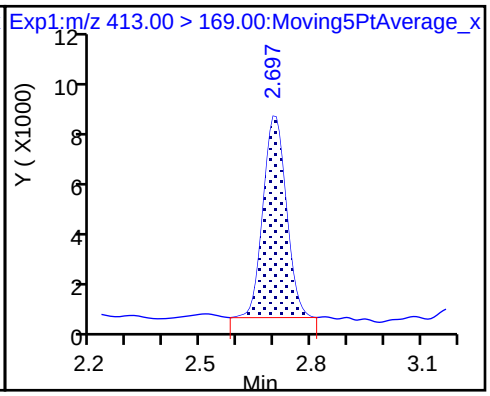
* 62 13C2-PFOA



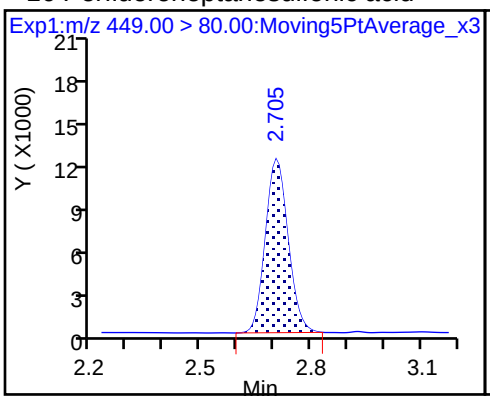
15 Perfluorooctanoic acid



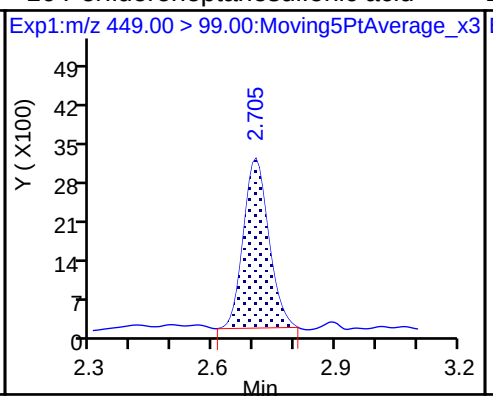
15 Perfluorooctanoic acid



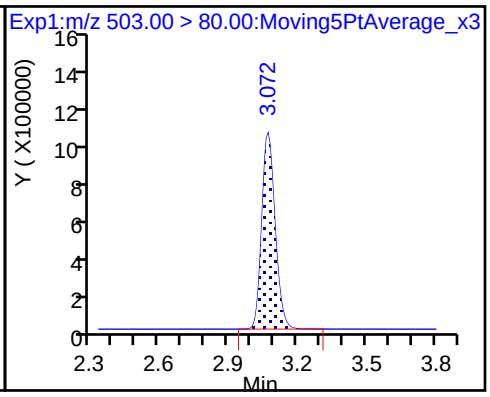
16 Perfluoroheptanesulfonic acid



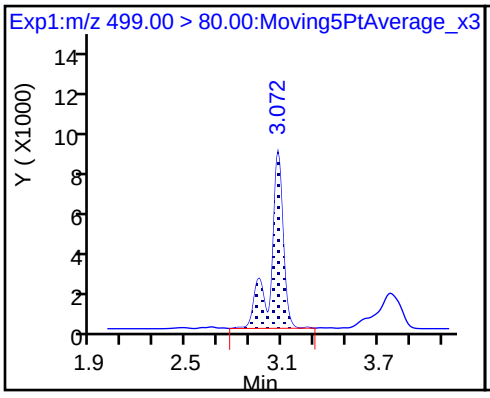
16 Perfluoroheptanesulfonic acid



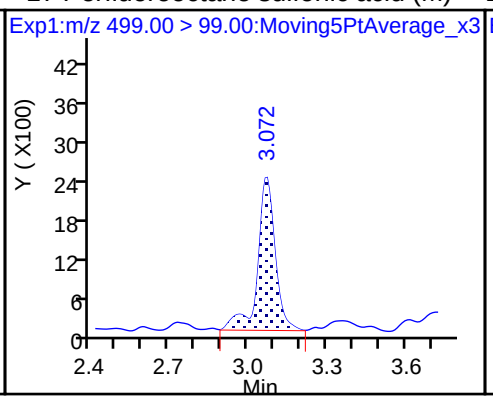
D 18 13C4 PFOS



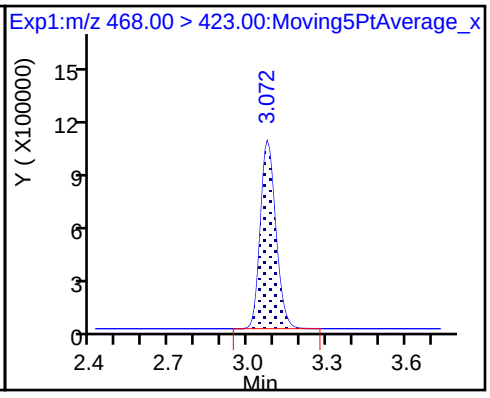
17 Perfluorooctane sulfonic acid



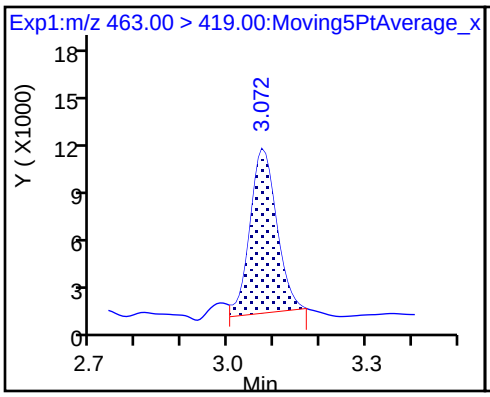
17 Perfluorooctane sulfonic acid (M)



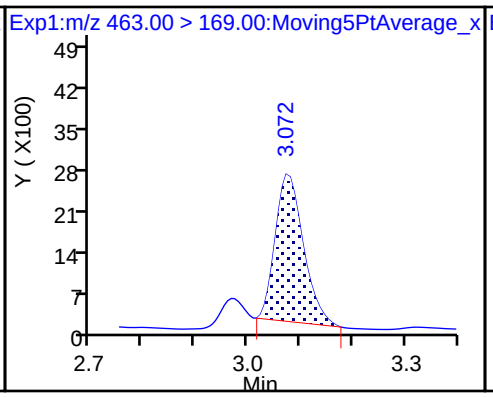
D 19 13C5 PFNA



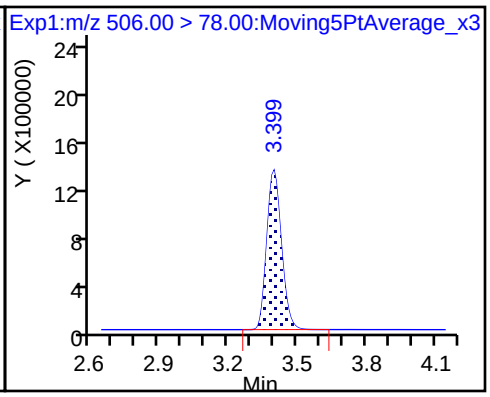
20 Perfluorononanoic acid



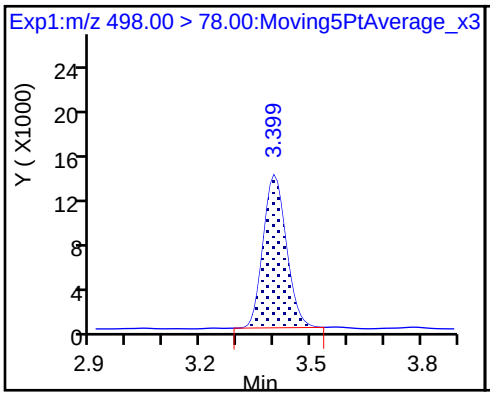
20 Perfluorononanoic acid



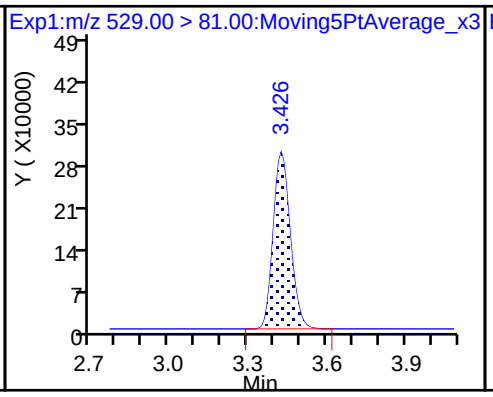
D 21 13C8 FOSA



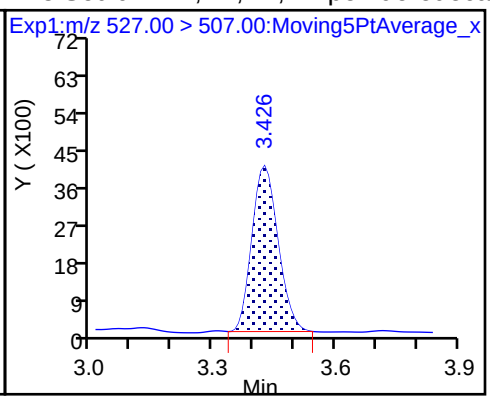
22 Perfluorooctane Sulfonamide



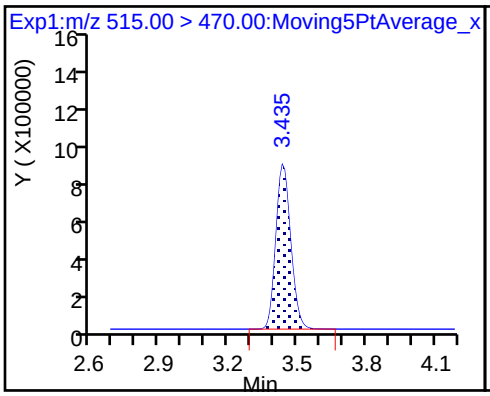
D 26 M2-8:2FTS



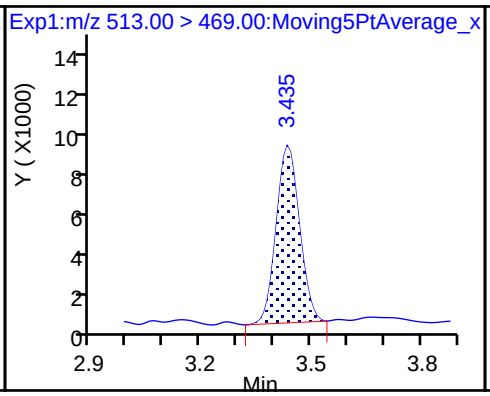
25 Sodium 1H,1H,2H,2H-perfluorodecane



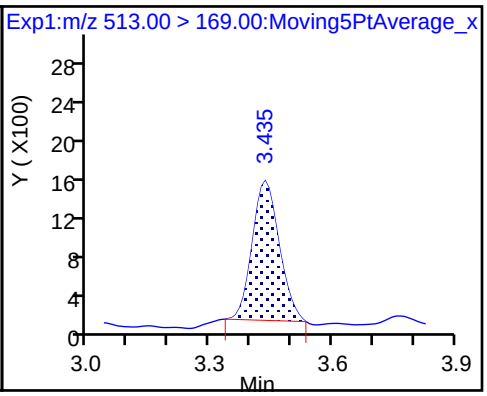
D 23 13C2 PFDA



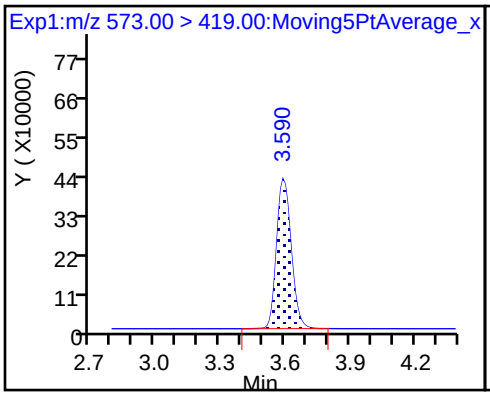
24 Perfluorodecanoic acid



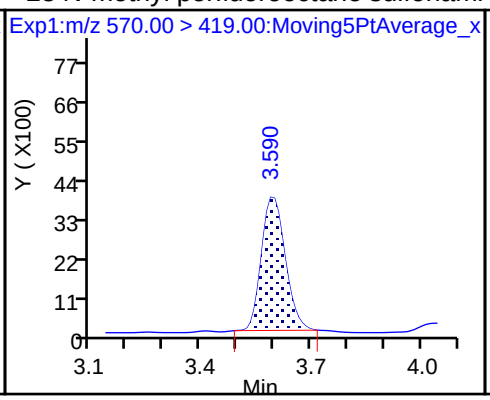
24 Perfluorodecanoic acid



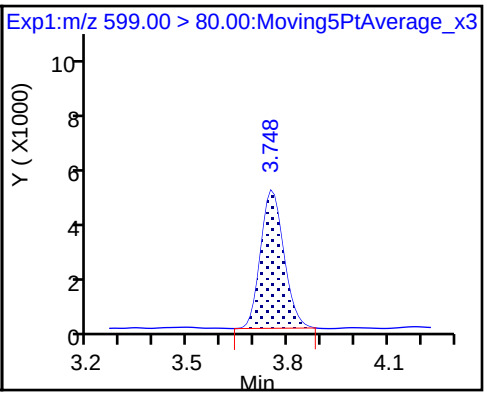
D 27 d3-NMeFOSAA



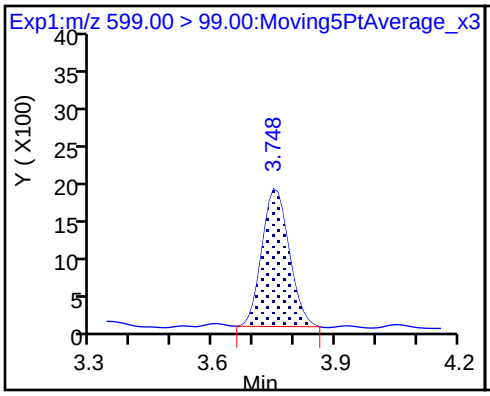
28 N-methyl perfluorooctane sulfonami



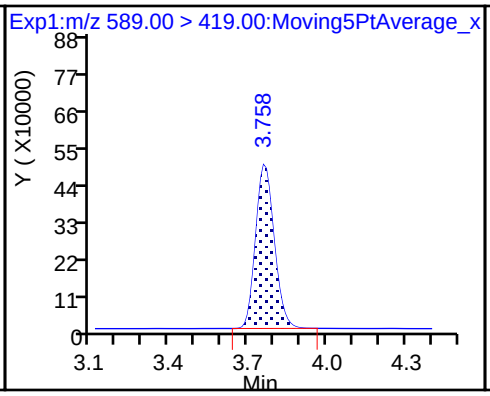
29 Perfluorodecane Sulfonic acid



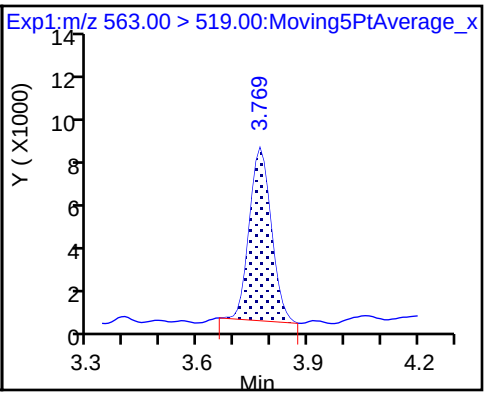
29 Perfluorodecane Sulfonic acid



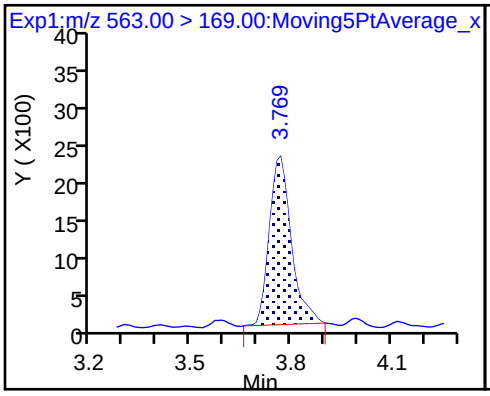
D 32 d5-NEtFOSAA



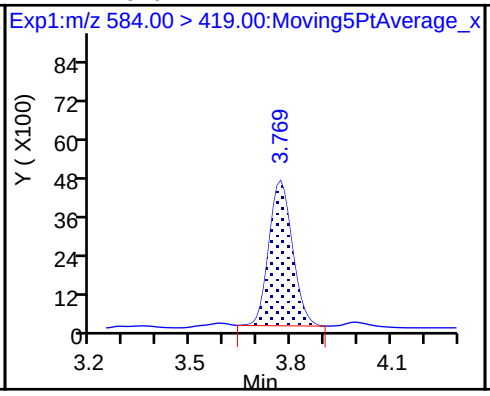
31 Perfluoroundecanoic acid



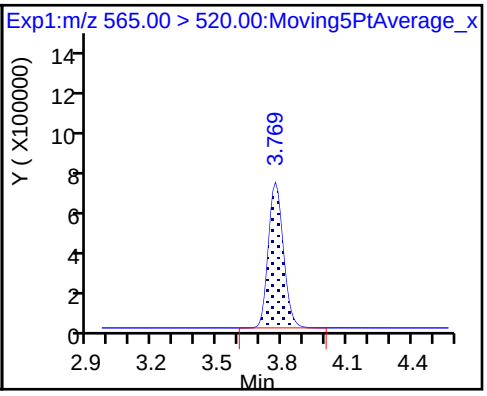
31 Perfluoroundecanoic acid



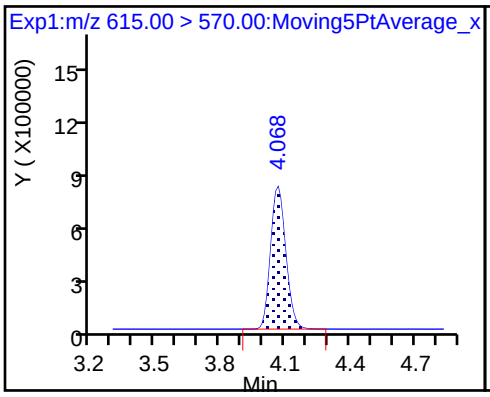
33 N-ethyl perfluorooctane sulfonamid



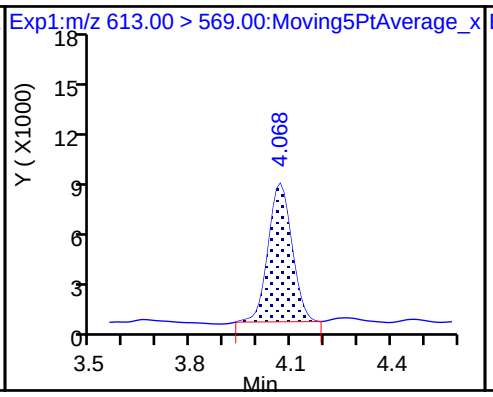
D 30 13C2 PFUnA



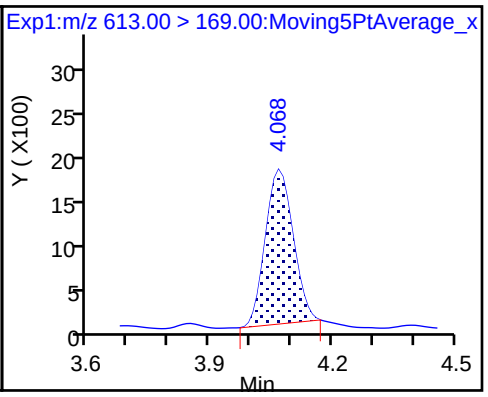
D 36 13C2 PFDoA



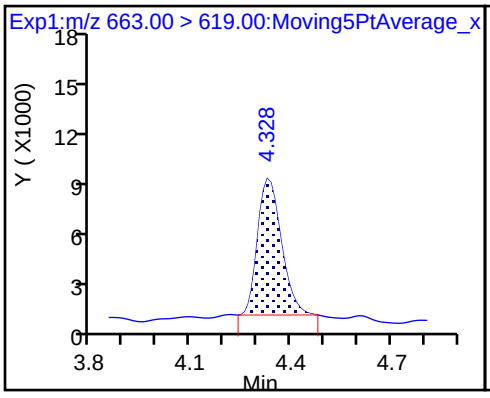
37 Perfluorododecanoic acid



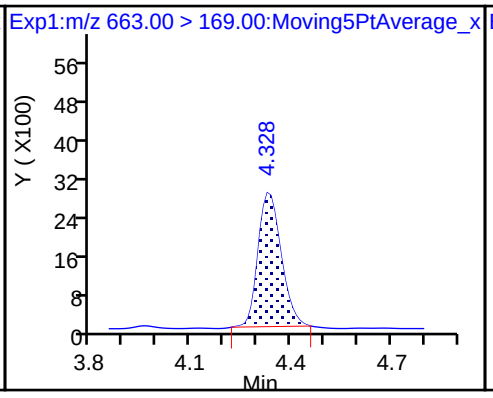
37 Perfluorododecanoic acid



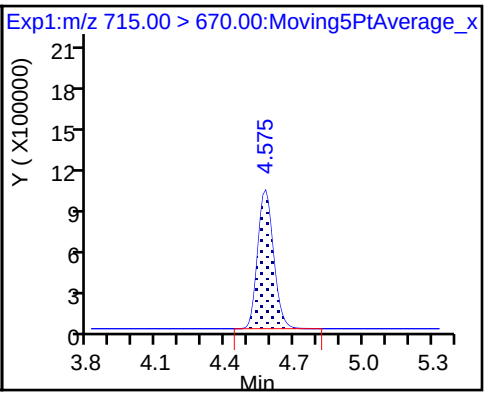
41 Perfluorotridecanoic acid



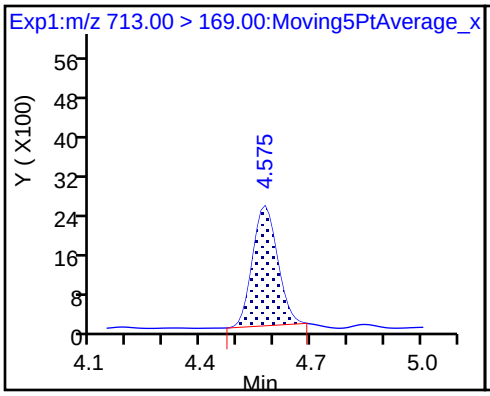
41 Perfluorotridecanoic acid



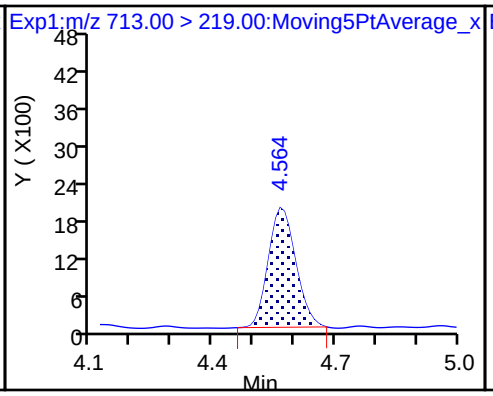
D 43 13C2-PFTeDA



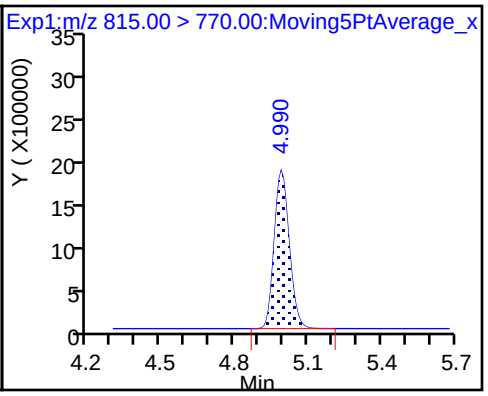
42 Perfluorotetradecanoic acid



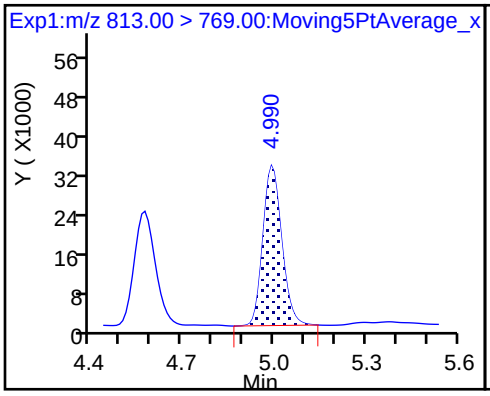
42 Perfluorotetradecanoic acid



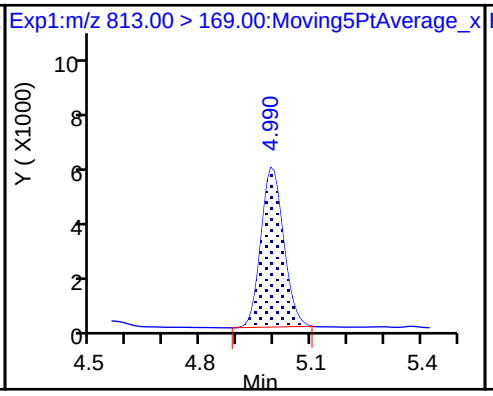
D 44 13C2-PFHxDA



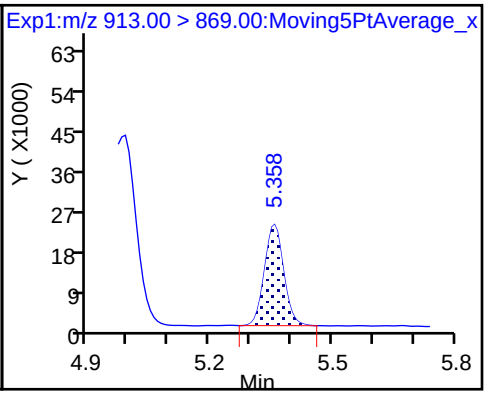
45 Perfluorohexadecanoic acid



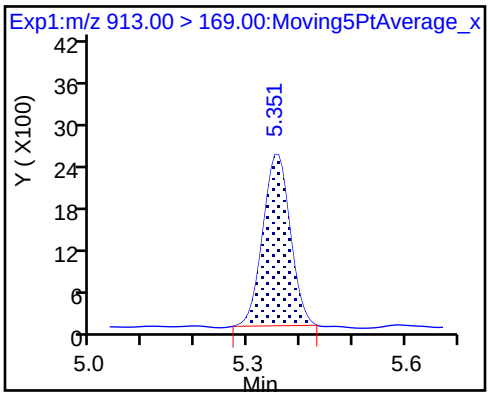
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

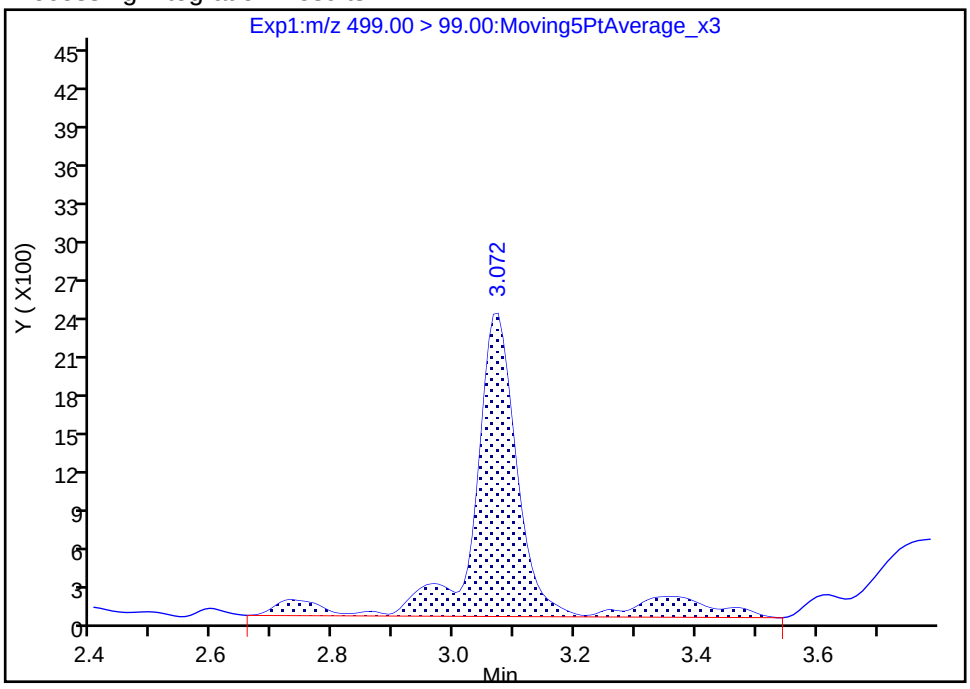
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d				
Injection Date:	21-Mar-2018 18:24:14	Instrument ID:	A8_N		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

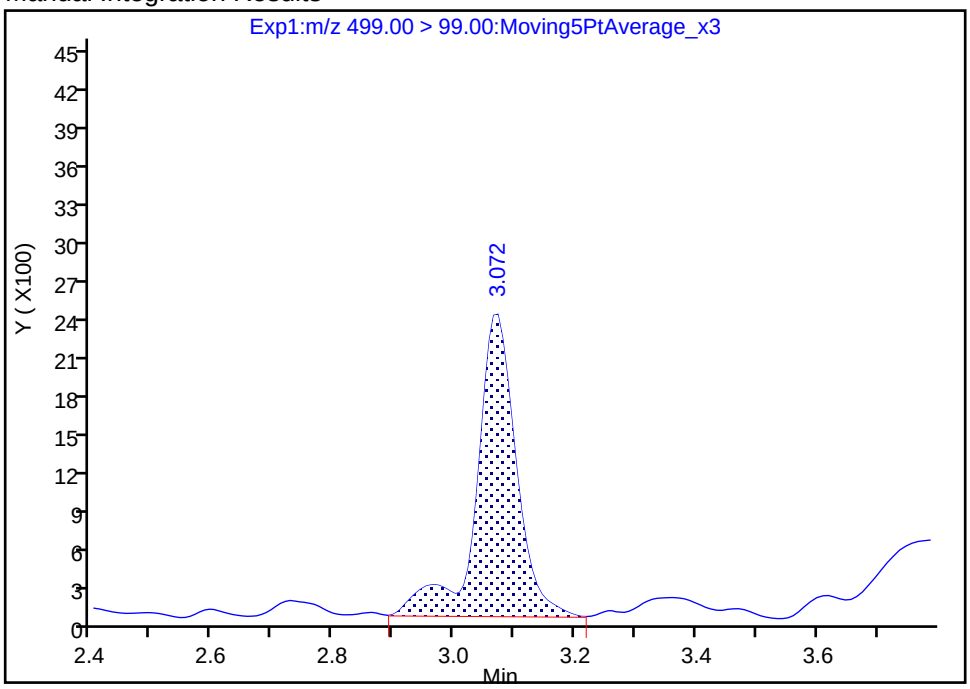
Processing Integration Results

RT: 3.07
Area: 13417
Amount: 0.025454
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 11047
Amount: 0.024551
Amount Units: ng/ml



Reviewer: phomsophat, 21-Mar-2018 19:22:35

Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 21-Mar-2018 18:32:06 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:24 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:01:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.447	0.006	0.538	6712910	2.48		99.4	74780	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.449	0.004	1.000	131334	0.0519		104	51.1	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.710	0.008	1.000	99242	0.0493		98.6	52.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.710	0.008	0.636	4463093	2.49		99.6	170407	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.646	95045	2.32		99.9	742	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.754	1.745	0.009	1.005	142407	0.0448		101	854	
298.90 > 99.00	1.754	1.745	0.009	1.005	60865		2.34(1.25-3.74)	101	355	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.959	0.007	0.728	697680	2.47		106	9203	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	30869	0.0467		100	1890	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.009	1.998	0.011	1.000	109004	0.0514		103	280	
313.00 > 119.00	1.998	1.998	0.0	0.995	10400		10.48(5.03-15.10)	103	241	
D 7 13C2 PFHxA										
315.00 > 270.00	2.009	1.998	0.011	0.743	5181558	2.61		105	132505	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.333	0.008	0.866	4767222	2.44		97.5	90402	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.000	104181	0.0528		106	196	
363.00 > 169.00	2.341	2.335	0.006	1.000	41833		2.49(1.13-3.40)	106	451	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.346	0.008	1.000	131804	0.0476		105	1325	
399.00 > 99.00	2.354	2.346	0.008	1.000	47613		2.77(1.50-4.49)	105	223	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.871	5886251	2.44		103	63857	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.672	0.007	1.000	37735	0.0514		108	2241	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.672	0.007	0.991	999800	2.47		104	23113	
* 62 13C2-PFOA										
415.00 > 370.00	2.702	2.695	0.007		5334725	2.50			83817	
D 14 13C4 PFOA										
417.00 > 372.00	2.702	2.695	0.007	1.000	5069957	2.53		101	74355	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.702	2.697	0.005	1.000	127108	0.0555		111	40.5	
413.00 > 169.00	2.702	2.697	0.005	1.000	59408		2.14(0.84-2.52)	111	145	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.703	0.007	1.000	109652	0.0481		101	2629	
449.00 > 99.00	2.710	2.703	0.007	1.000	29467		3.72(1.94-5.82)	101	328	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.137	4256604	2.43		101	42340	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.137	4474026	2.54		101	84326	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.000	89694	0.0452		97.4	274	
499.00 > 99.00	3.072	3.070	0.002	1.000	22534		3.98(2.31-6.93)	97.4	162	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.072	0.008	1.003	87380	0.0489		97.9	102	
463.00 > 169.00	3.080	3.072	0.008	1.003	21332		4.10(1.90-5.69)	97.9	528	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.396	0.001	1.257	5839734	2.47		98.7	42573	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	112857	0.0490		98.0	1944	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.426	0.007	1.000	31966	0.0429		89.5	895	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.426	0.007	1.270	1399775	2.56		107	26042	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.435	0.007	1.000	71937	0.0449		89.8	349	
513.00 > 169.00	3.442	3.435	0.007	1.000	15536		4.63(2.36-7.09)	89.8	510	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.435	0.007	1.274	4053733	2.62		105	70301	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.591	0.008	1.332	1933236	2.38		95.0	40929	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.599	3.594	0.005	1.000	35274	0.0456		91.2	272	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.749	0.009	1.000	57466	0.0475		98.4	1493	
599.00 > 99.00	3.758	3.749	0.009	1.000	18714		3.07(1.39-4.16)	98.4	448	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.759	0.009	1.394	2436559	2.63		105	12783	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.394	3500228	2.53		101	72445	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.000	42131	0.0463		92.5	1086	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	62776	0.0520		104	262	
563.00 > 169.00	3.768	3.768	0.0	1.000	16020		3.92(2.12-6.36)	104	775	
D 36 13C2 PFDoA										
615.00 > 570.00	4.073	4.066	0.007	1.507	3780852	2.41		96.4	28974	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.068	0.005	1.000	83165	0.0526		105	73.8	
613.00 > 169.00	4.073	4.068	0.005	1.000	18963		4.39(2.13-6.40)	105	336	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.335	4.329	0.006	1.000	81708	0.0491		98.2	55.2	
663.00 > 169.00	4.335	4.329	0.006	1.000	28392		2.88(1.25-3.76)	98.2	490	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.571	4.568	0.002	1.691	4389855	2.29		91.6	28506	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.581	4.571	0.010	1.002	22776	0.0523		105	394	
713.00 > 219.00	4.571	4.571	-0.001	1.000	16546		1.38(0.71-2.13)	105	443	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.995	4.987	0.008	1.848	6843963	2.18		87.1	16591	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.995	4.989	0.006	1.000	185745	0.0504		101	64.9	
813.00 > 169.00	4.995	4.989	0.006	1.000	27597		6.73(2.86-8.58)	101	326	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.361	5.354	0.007	1.000	129317	0.0511		102	50.9	
913.00 > 169.00	5.361	5.354	0.007	1.000	15542		8.32(3.83-11.48)	102	221	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_003.d

Injection Date: 21-Mar-2018 18:32:06 Instrument ID: A8_N

Lims ID: IC L2 Full

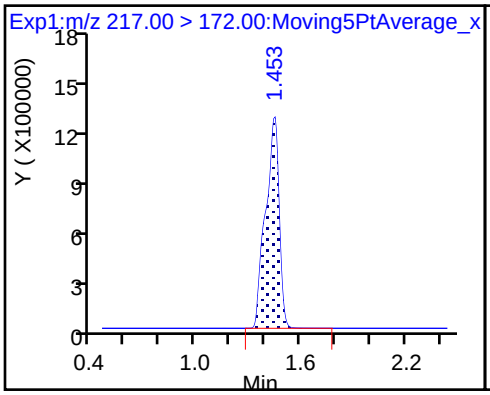
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

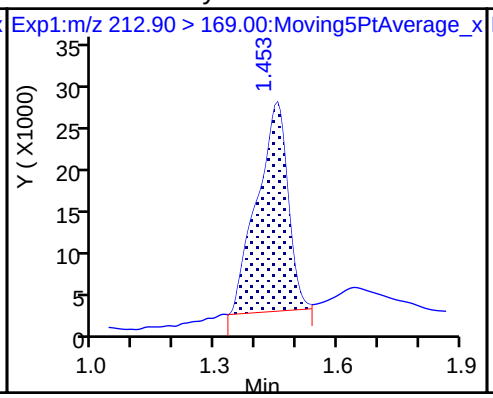
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

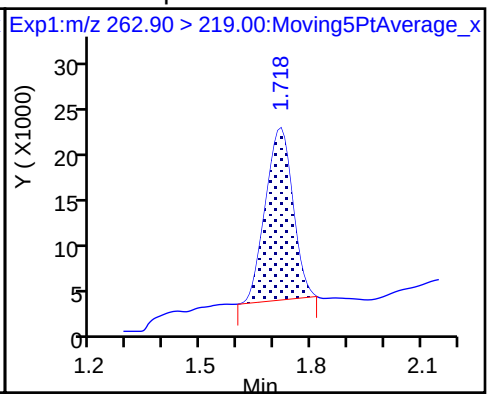
D 1 13C4 PFBA



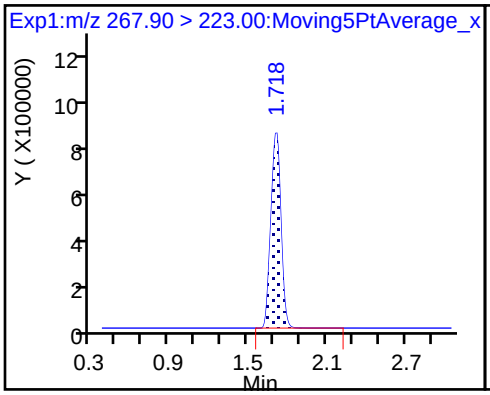
2 Perfluorobutyric acid



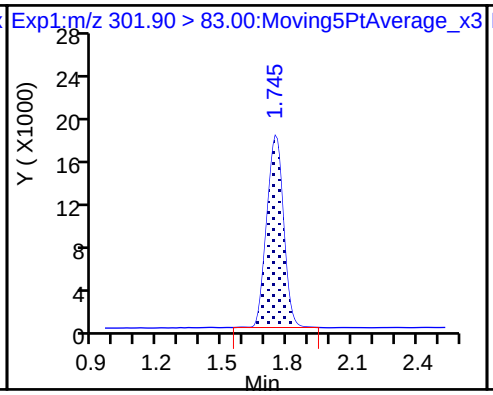
4 Perfluoropentanoic acid



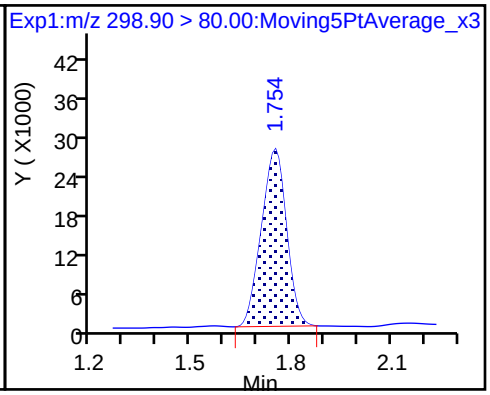
D 3 13C5-PFPeA



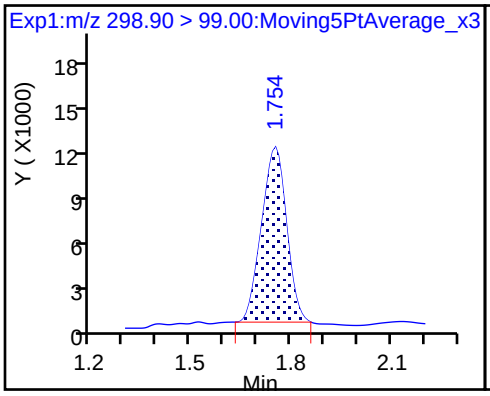
D 47 13C3-PFBS



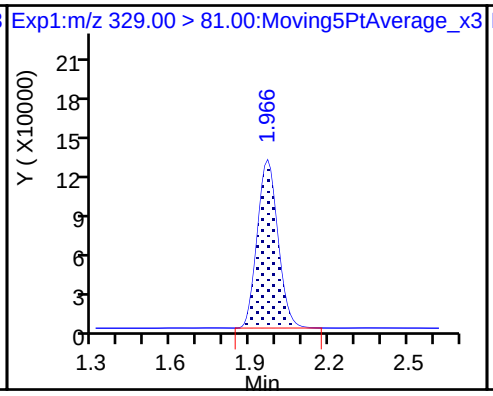
5 Perfluorobutanesulfonic acid



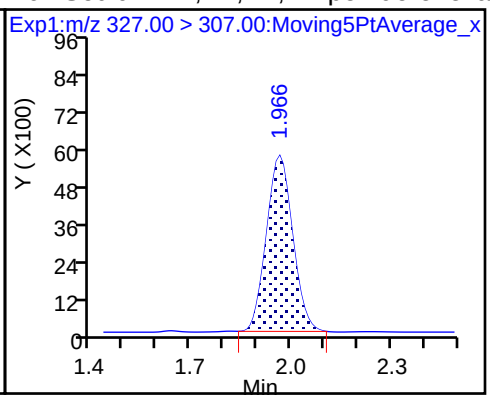
5 Perfluorobutanesulfonic acid



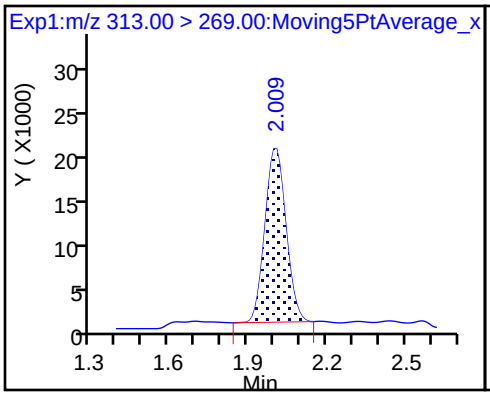
D 60 M2-4:2FTS



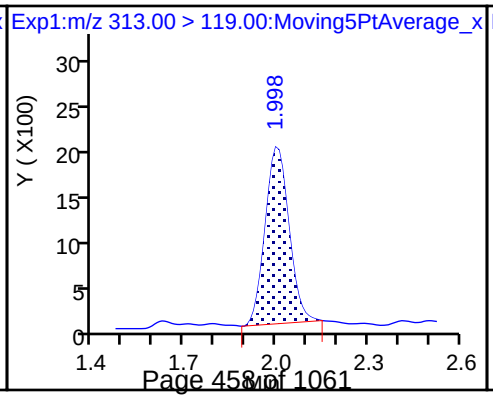
61 Sodium 1H,1H,2H,2H-perfluorohexane



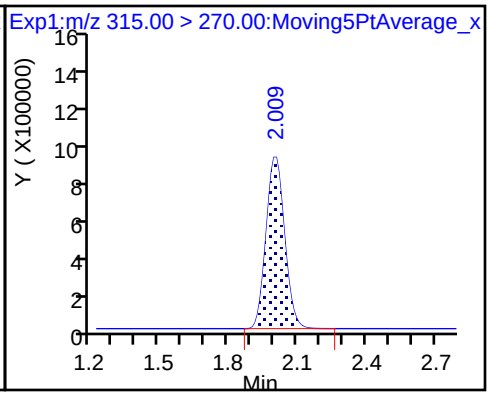
6 Perfluorohexanoic acid



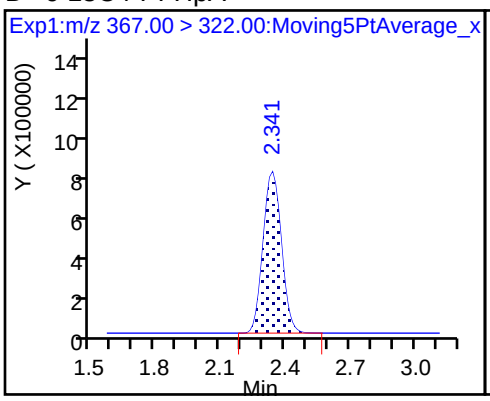
6 Perfluorohexanoic acid



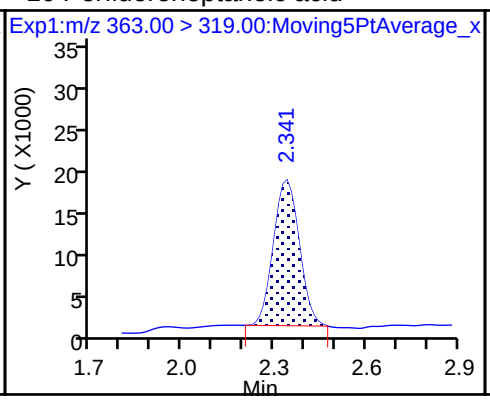
D 7 13C2 PFHxA



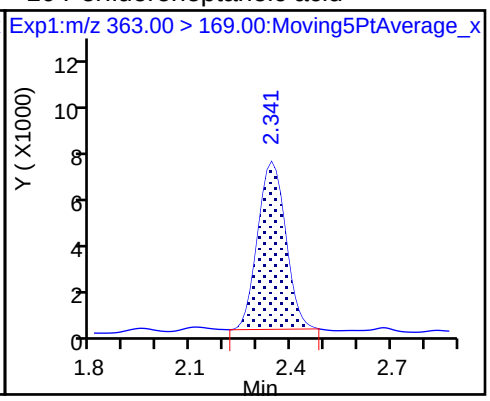
D 9 13C4-PFHpA



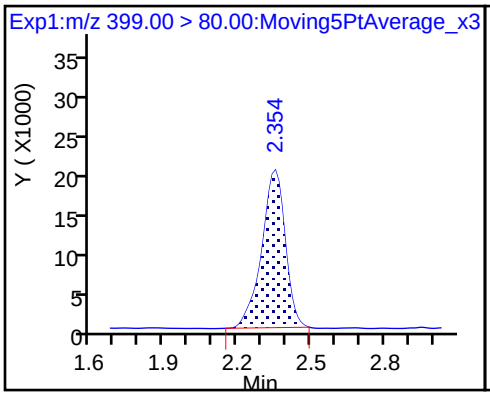
10 Perfluoroheptanoic acid



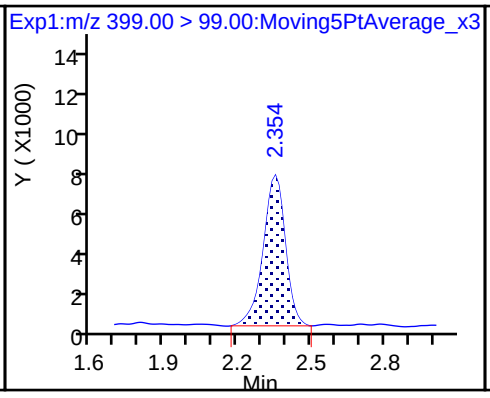
10 Perfluoroheptanoic acid



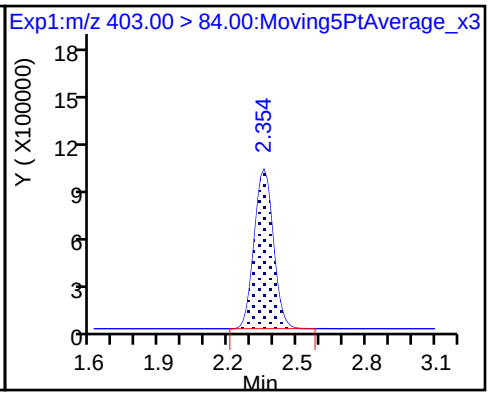
8 Perfluorohexanesulfonic acid



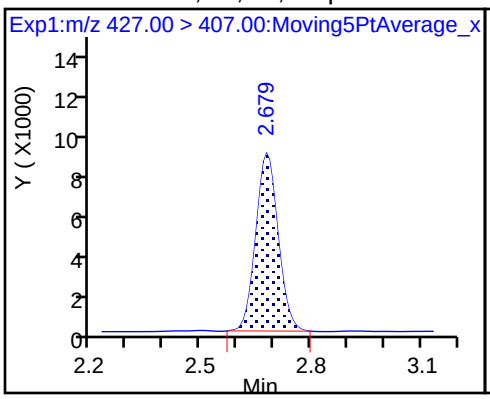
8 Perfluorohexanesulfonic acid



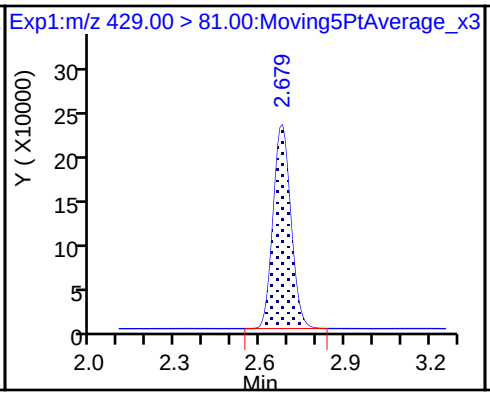
D 11 18O2 PFHxS



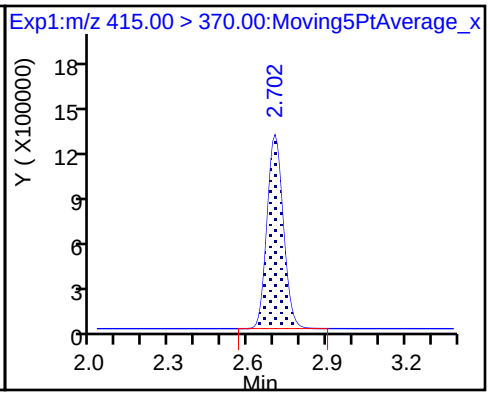
13 Sodium 1H,1H,2H,2H-perfluorooctan



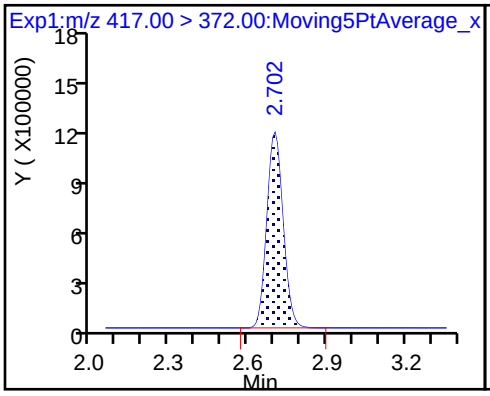
D 12 M2-6:2FTS



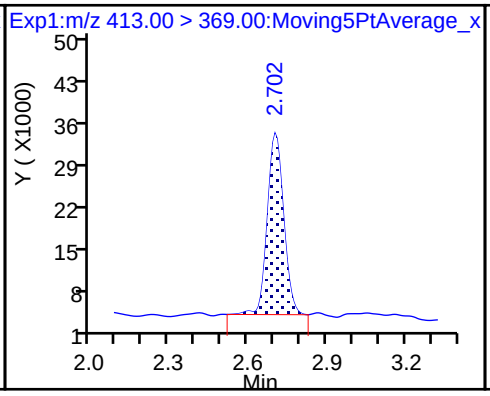
* 62 13C2-PFOA



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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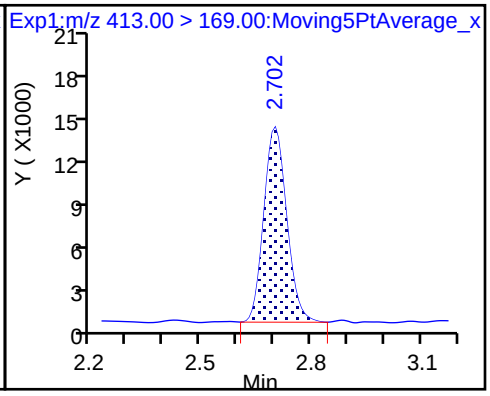
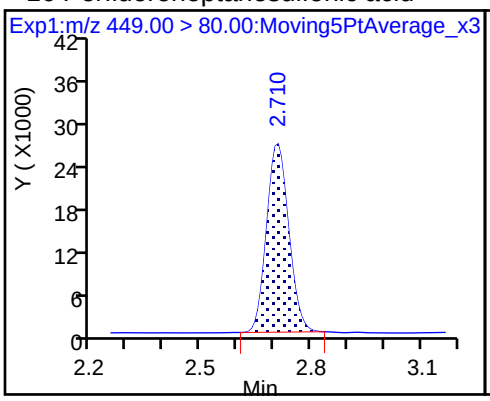
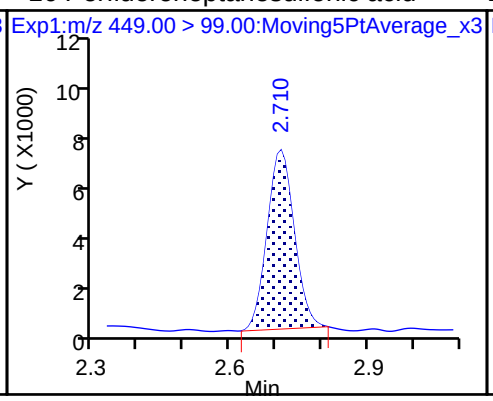


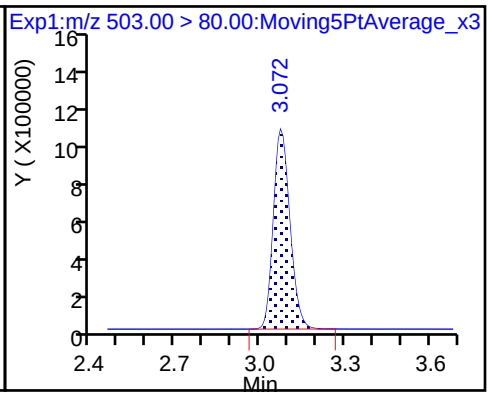
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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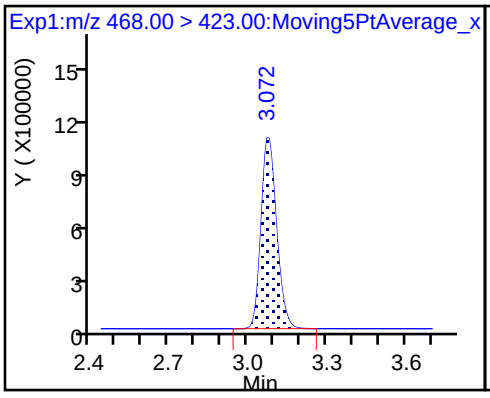
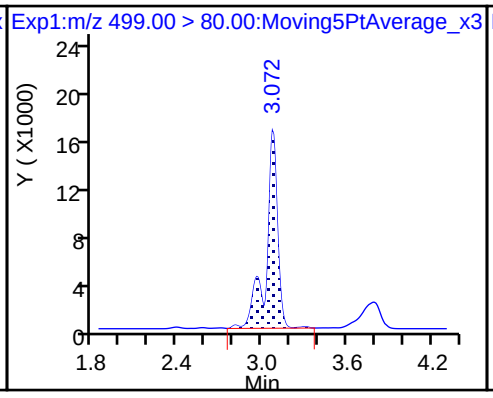
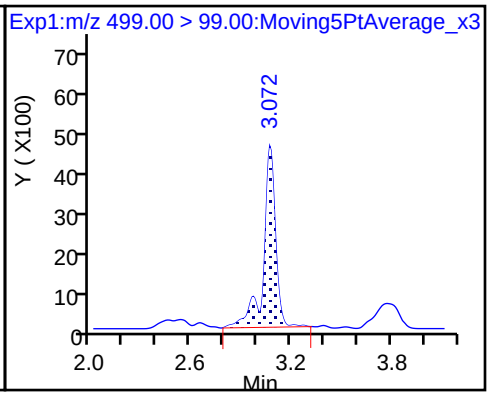


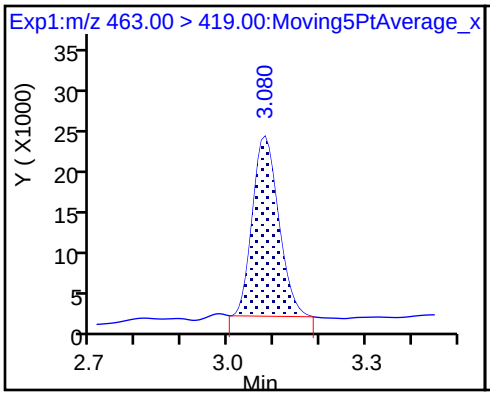
17 Perfluorooctane sulfonic acid



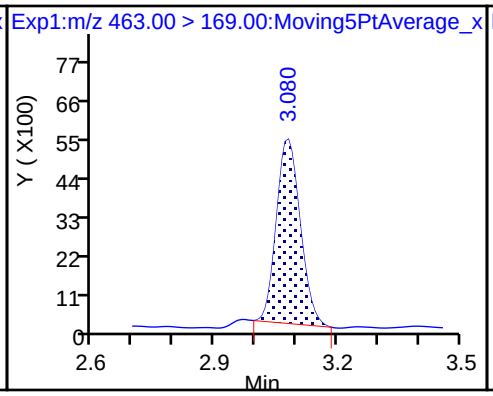
17 Perfluorooctane sulfonic acid



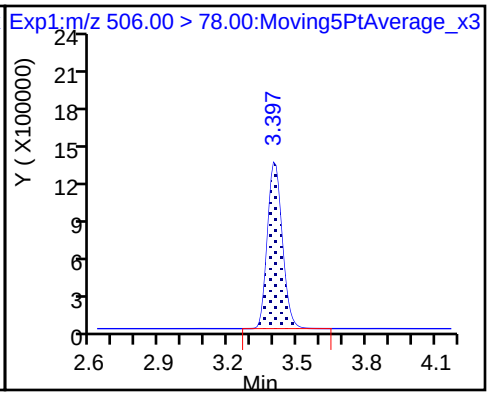
20 Perfluorononanoic acid



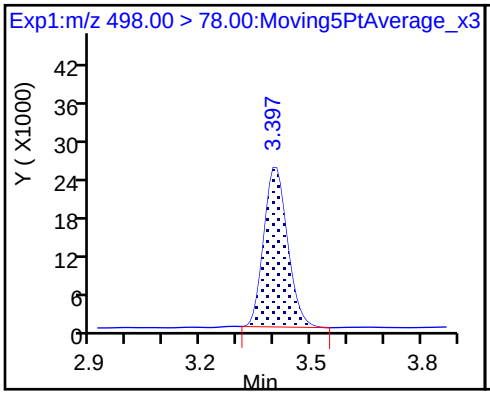
20 Perfluorononanoic acid



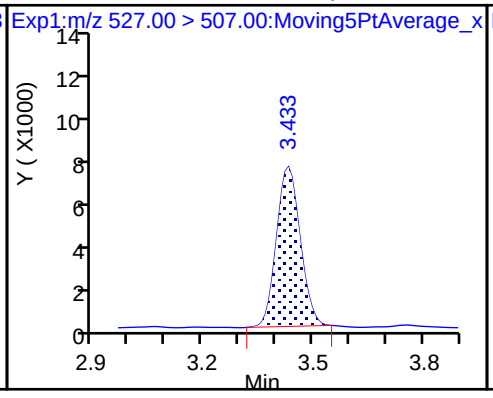
D 21 13C8 FOSA



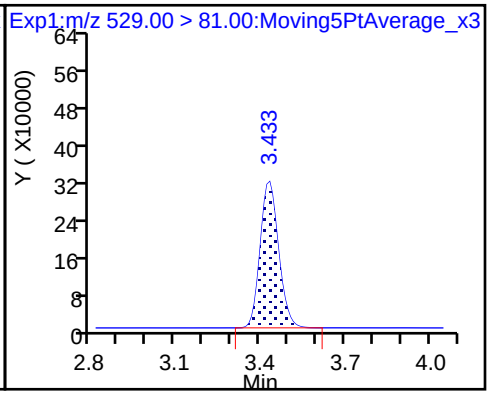
22 Perfluorooctane Sulfonamide



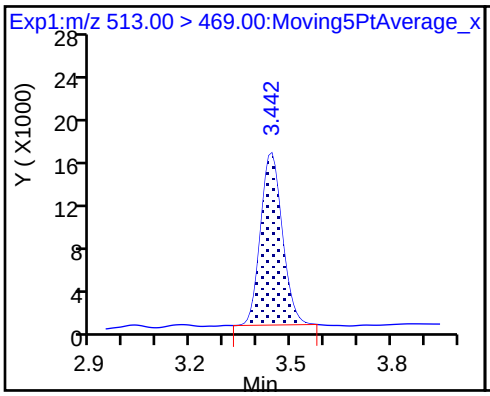
25 Sodium 1H,1H,2H,2H-perfluorodecane



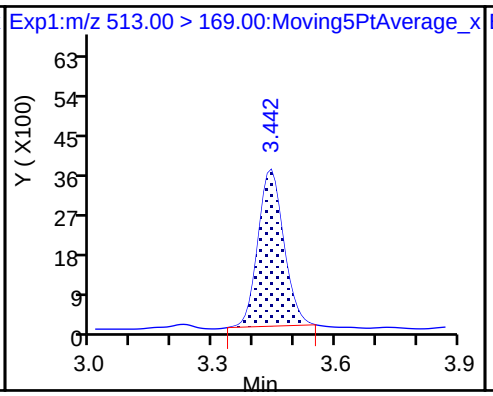
D 26 M2-8:2FTS



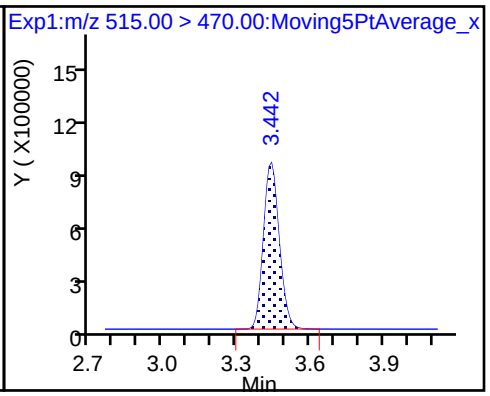
24 Perfluorodecanoic acid



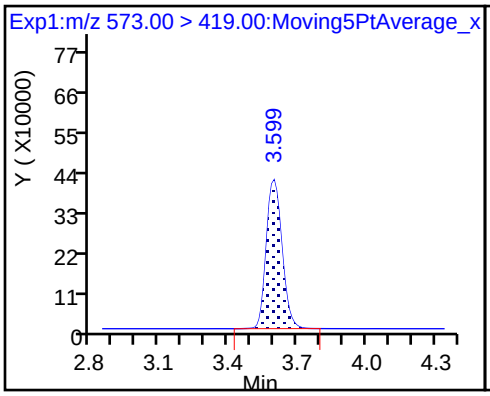
24 Perfluorodecanoic acid



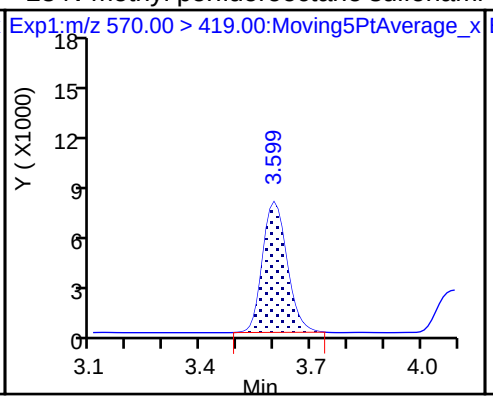
D 23 13C2 PFDA



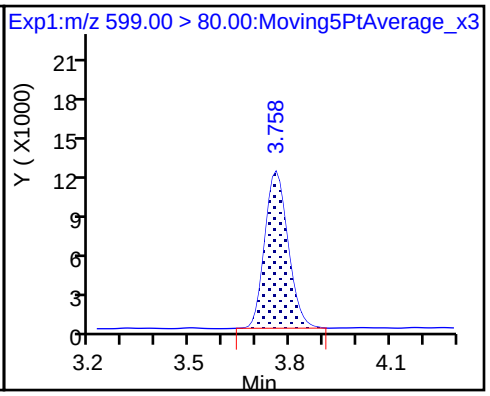
D 27 d3-NMeFOSAA



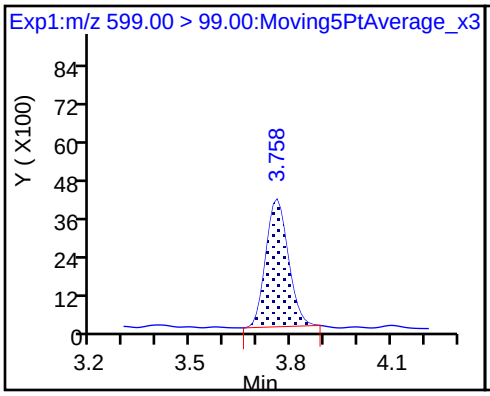
28 N-methyl perfluorooctane sulfonami



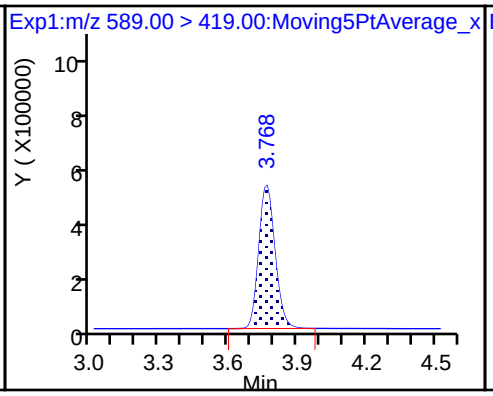
29 Perfluorodecane Sulfonic acid



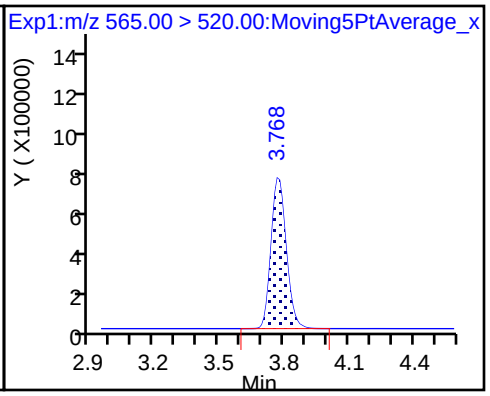
29 Perfluorodecane Sulfonic acid



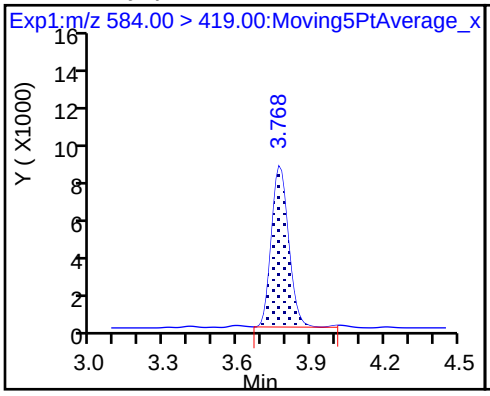
D 32 d5-NEtFOSAA



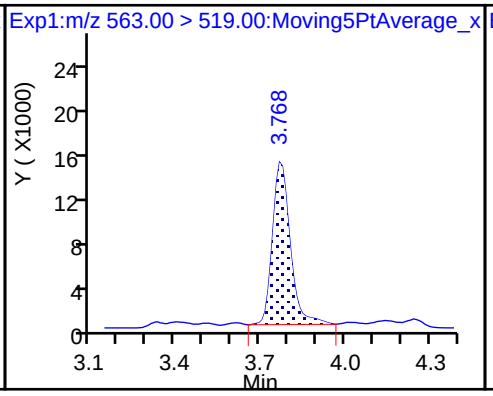
D 30 13C2 PFUnA



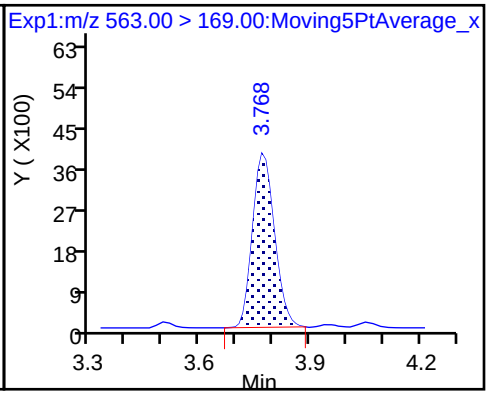
33 N-ethyl perfluorooctane sulfonamid



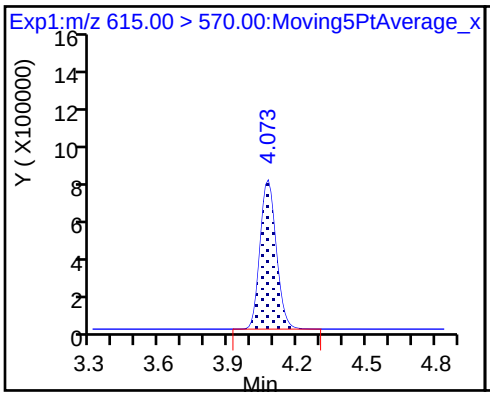
31 Perfluoroundecanoic acid



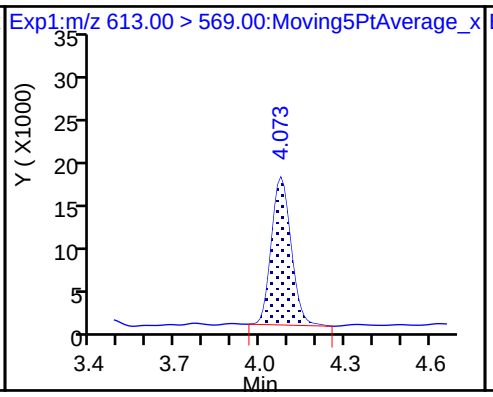
31 Perfluoroundecanoic acid



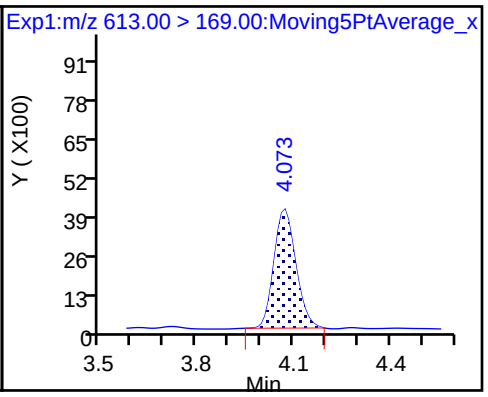
D 36 13C2 PFDoA



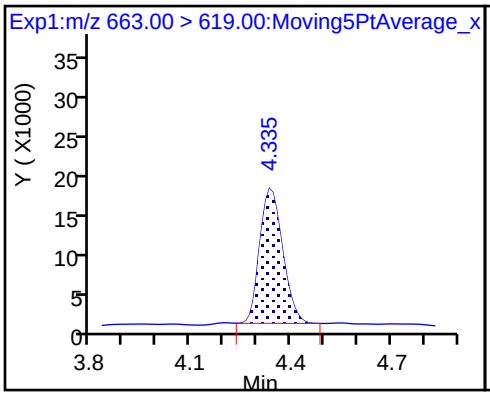
37 Perfluorododecanoic acid



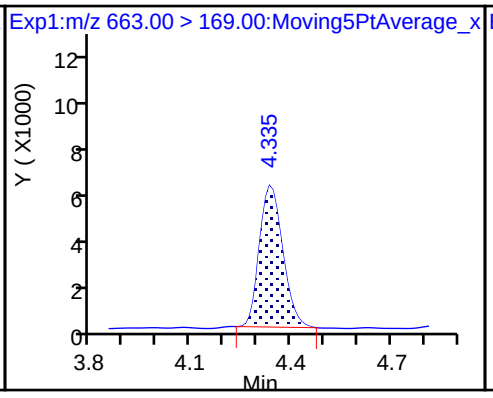
37 Perfluorododecanoic acid



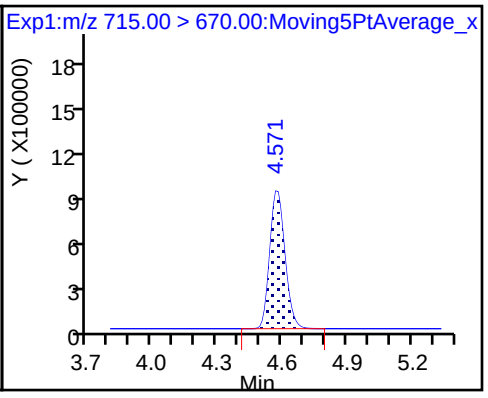
41 Perfluorotridecanoic acid



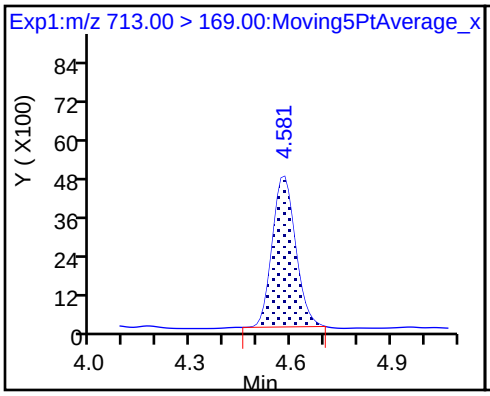
41 Perfluorotridecanoic acid



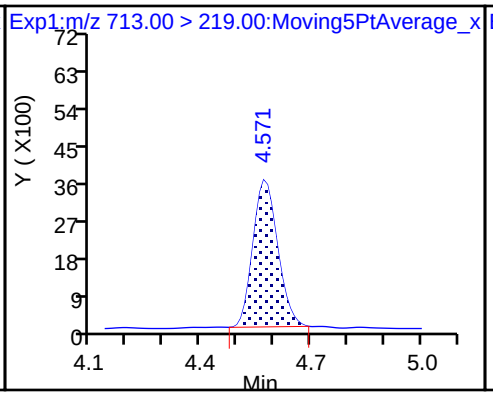
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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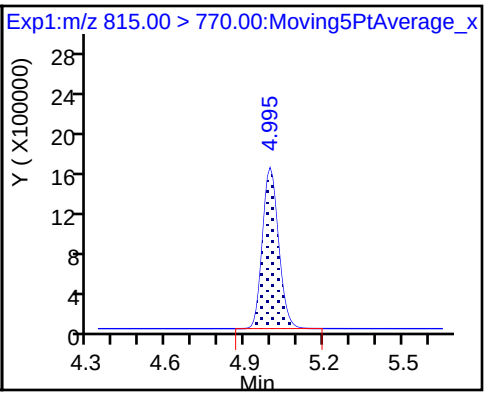
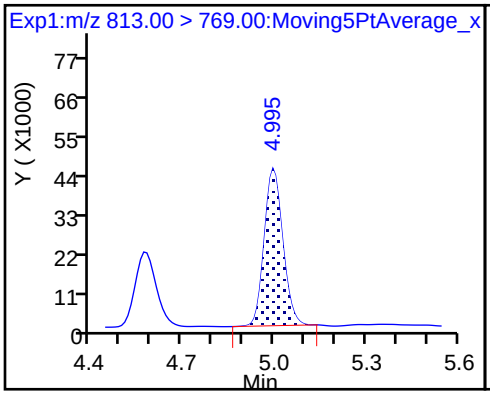


45 Perfluorohexadecanoic acid



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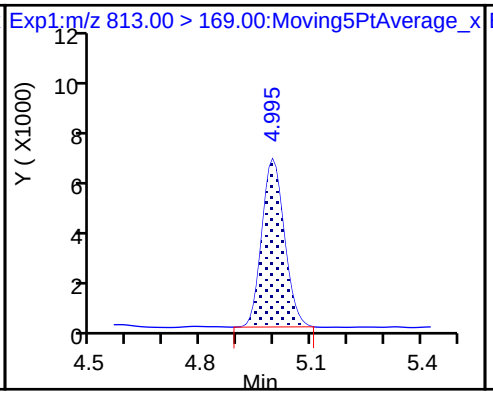
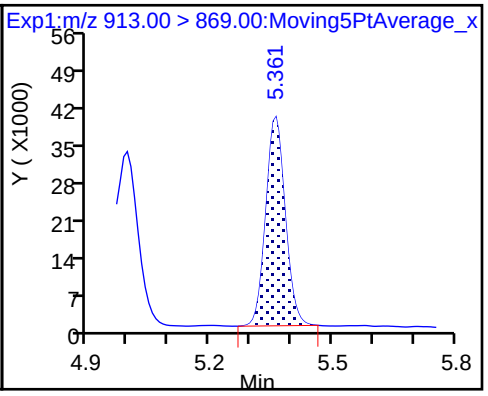
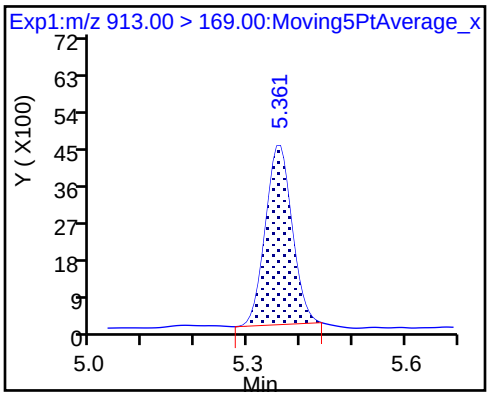


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 21-Mar-2018 18:39:58 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:23:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.536	6702182	2.53		101	75015	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	612393	0.2424		97.0	243	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4509425	2.56		102	109848	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	514727	0.2531		101	294	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	96305	2.40		103	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	700112	0.2175		98.4	3860	
298.90 > 99.00	1.745	1.745	0.0	1.000	305236		2.29(1.25-3.74)	98.4	1868	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	671337	2.42		104	8849	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	157752	0.2358		101	9759	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4935175	2.53		101	100521	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	497709	0.2466		98.6	1488	
313.00 > 119.00	1.998	1.998	0.0	1.000	45082		11.04(5.03-15.10)	98.6	905	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	5071076	2.64		106	96377	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	497784	0.2372		94.9	1108	
363.00 > 169.00	2.328	2.335	-0.007	1.000	196215		2.54(1.13-3.40)	94.9	2375	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	586824	0.2123		93.3	5073	
399.00 > 99.00	2.341	2.346	-0.005	1.000	193855		3.03(1.50-4.49)	93.3	806	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5874354	2.48		105	67207	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	956838	2.40		101	20351	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	166250	0.2367		99.9	7823	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	5033130	2.56		102	66085	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5240249	2.50			72893	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	551855	0.2426		97.1	186	
413.00 > 169.00	2.697	2.697	0.0	1.000	289099		1.91(0.84-2.52)	97.1	792	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	539007	0.2372		99.7	10606	
449.00 > 99.00	2.705	2.703	0.002	1.000	146271		3.68(1.94-5.82)	99.7	2312	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	4237867	2.46		103	39217	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.002	451427	0.2285		98.5	1564	
499.00 > 99.00	3.072	3.070	0.002	1.002	100623		4.49(2.31-6.93)	98.5	894	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4472333	2.58		103	73916	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	441188	0.2472		98.9	582	
463.00 > 169.00	3.072	3.072	0.0	1.000	113267		3.90(1.90-5.69)	98.9	1929	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	6203337	2.67		107	61203	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	592188	0.2421		96.8	13446	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1407067	2.62		109	26205	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	176483	0.2354		98.3	7854	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3933118	2.59		104	68284	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	394276	0.2536		101	1808	
513.00 > 169.00	3.435	3.435	0.0	1.000	66021		5.97(2.36-7.09)	101	3009	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	2099631	2.63		105	32210	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	219720	0.2614		105	1753	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	279040	0.2314		96.0	7395	
599.00 > 99.00	3.748	3.749	-0.001	1.000	91540		3.05(1.39-4.16)	96.0	3261	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2467789	2.71		108	15339	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.000	286311	0.2221		88.9	1276	
563.00 > 169.00	3.769	3.768	0.001	1.000	74133		3.86(2.12-6.36)	88.9	2992	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.768	0.001	1.003	224858	0.2438		97.5	5777	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.768	0.001	1.397	3737470	2.75		110	87838	
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.066	0.002	1.508	3986883	2.59		103	35715	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.068	0.0	1.000	407079	0.2439		97.6	349	
613.00 > 169.00	4.068	4.068	0.0	1.000	100267		4.06(2.13-6.40)	97.6	2078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	-0.001	1.000	437729	0.2494		99.7	324	
663.00 > 169.00	4.329	4.329	-0.001	1.000	138849		3.15(1.25-3.76)	99.7	2090	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.692	4783571	2.54		102	32092	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.004	1.002	118401	0.2497		99.9	1652	
713.00 > 219.00	4.564	4.571	-0.007	1.000	85338		1.39(0.71-2.13)	99.9	2012	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.850	8384119	2.72		109	19806	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	829775	0.2480		99.2	259	
813.00 > 169.00	4.990	4.989	0.001	1.000	141643		5.86(2.86-8.58)	99.2	1896	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.355	5.354	0.001	1.000	760025	0.2451		98.0	259	
913.00 > 169.00	5.355	5.354	0.001	1.000	94500		8.04(3.83-11.48)	98.0	1322	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_004.d

Injection Date: 21-Mar-2018 18:39:58 Instrument ID: A8_N

Lims ID: IC L3 Full

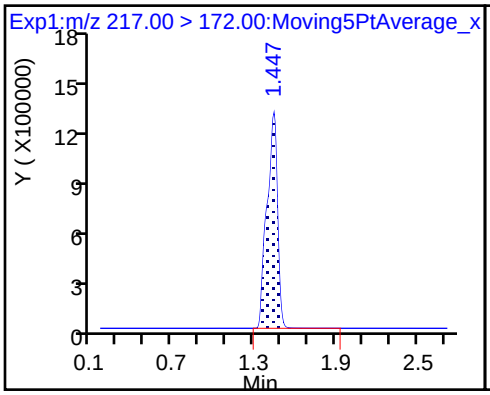
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

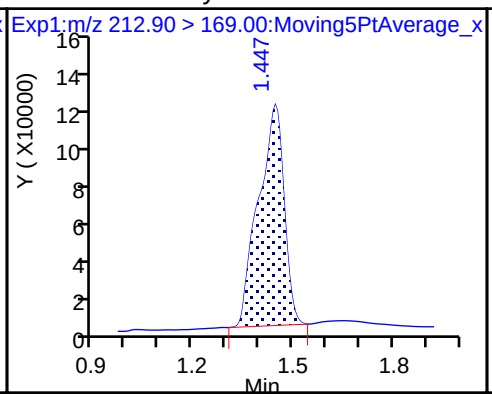
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

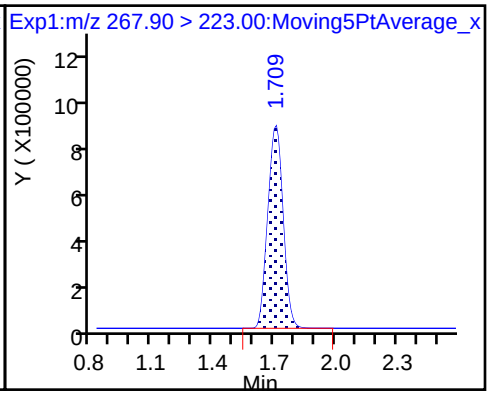
D 1 13C4 PFBA



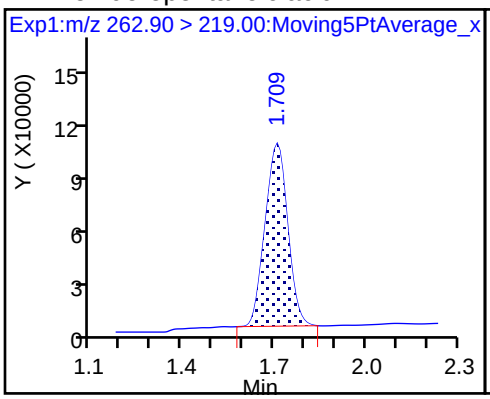
2 Perfluorobutyric acid



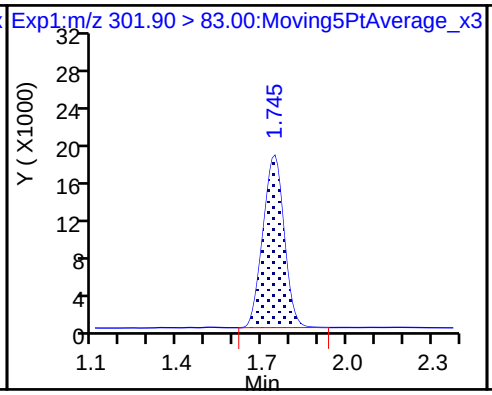
D 3 13C5-PFPeA



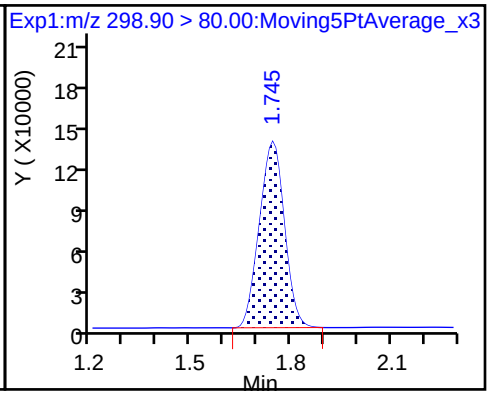
4 Perfluoropentanoic acid



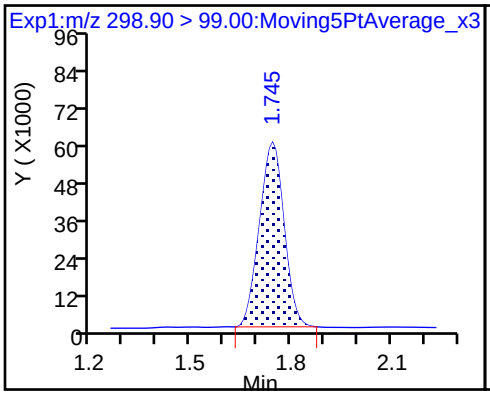
D 47 13C3-PFBS



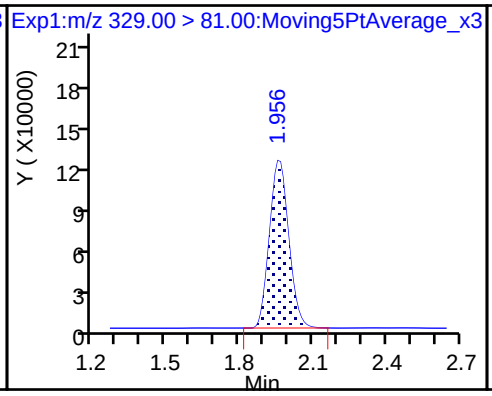
5 Perfluorobutanesulfonic acid



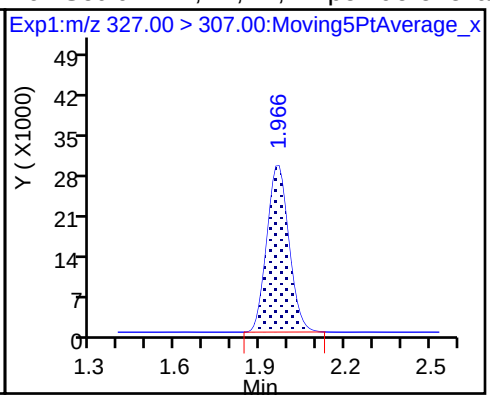
5 Perfluorobutanesulfonic acid



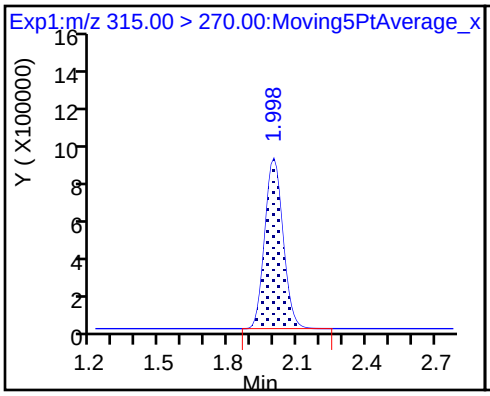
D 60 M2-4:2FTS



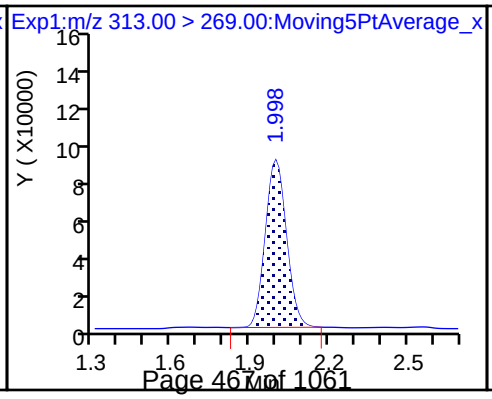
61 Sodium 1H,1H,2H,2H-perfluorohexane



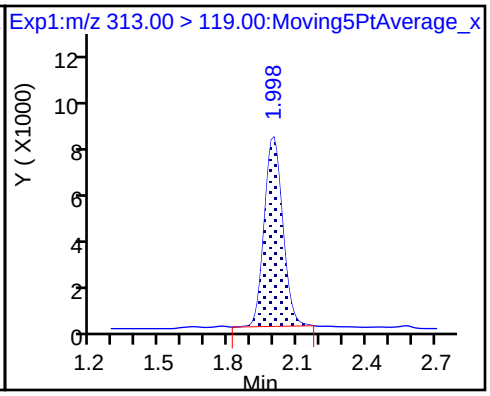
D 7 13C2 PFHxA



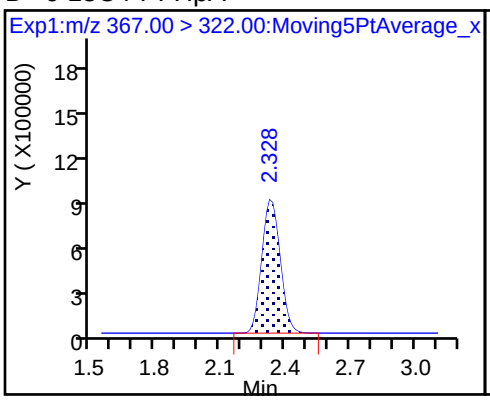
6 Perfluorohexanoic acid



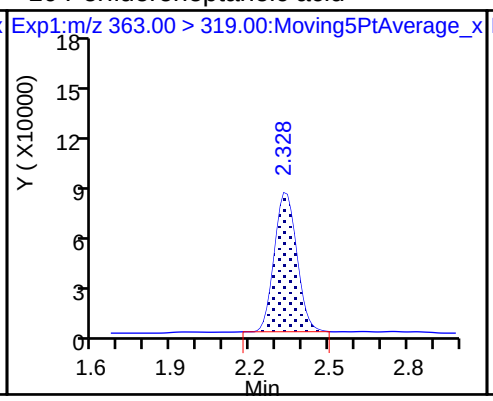
6 Perfluorohexanoic acid



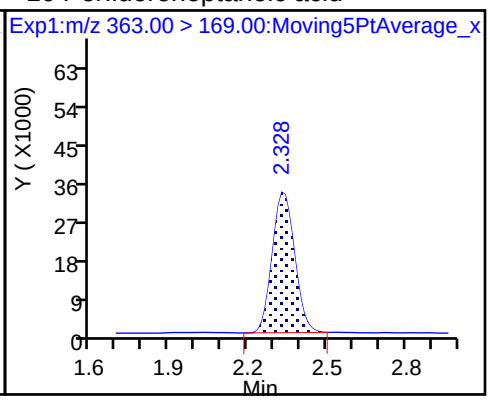
D 9 13C4-PFHpA



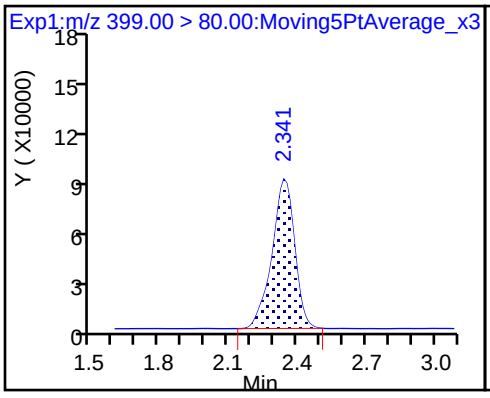
10 Perfluoroheptanoic acid



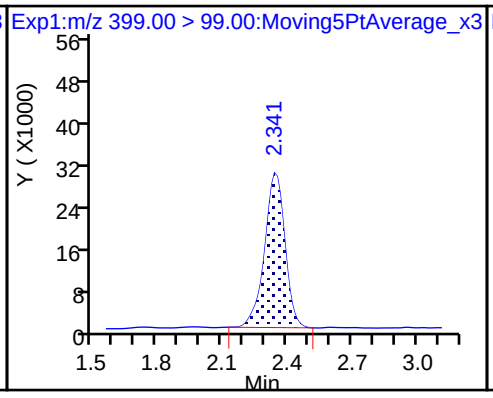
10 Perfluoroheptanoic acid



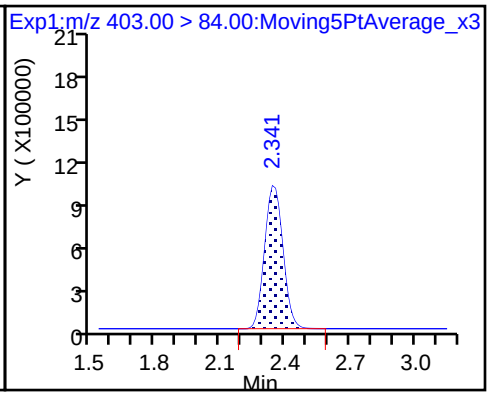
8 Perfluorohexanesulfonic acid



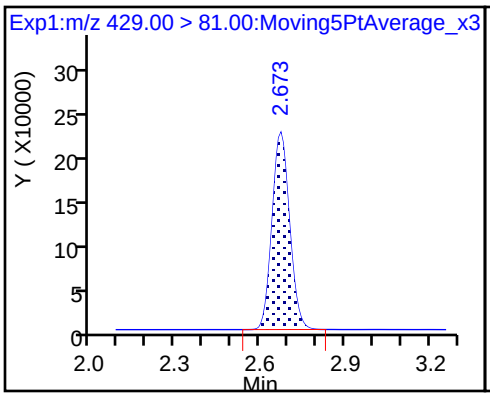
8 Perfluorohexanesulfonic acid



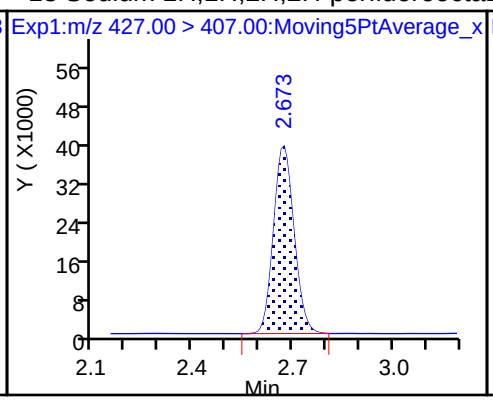
D 11 18O2 PFHxS



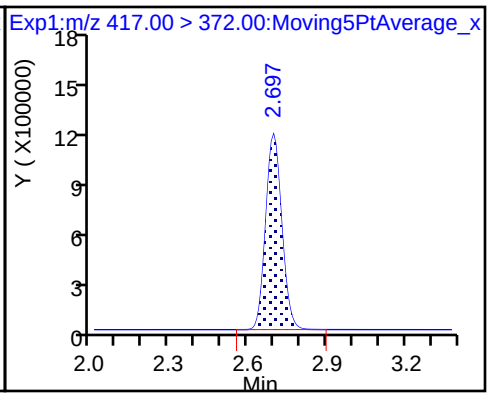
D 12 M2-6:2FTS



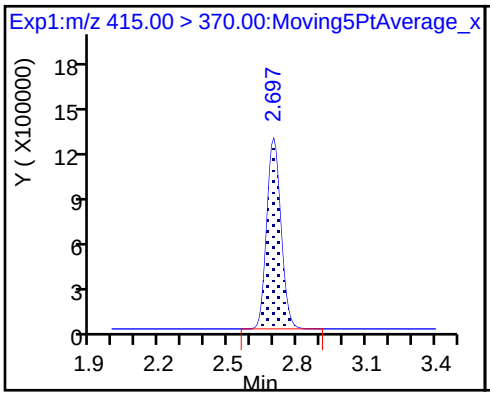
13 Sodium 1H,1H,2H,2H-perfluorooctane



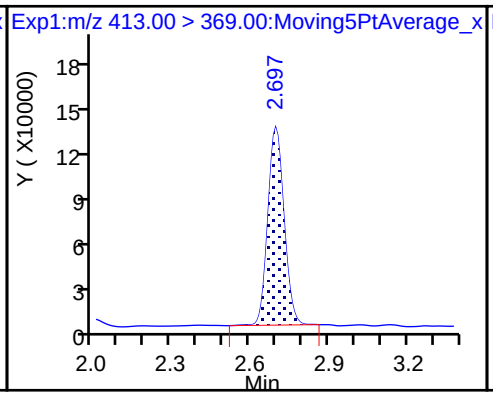
D 14 13C4 PFOA



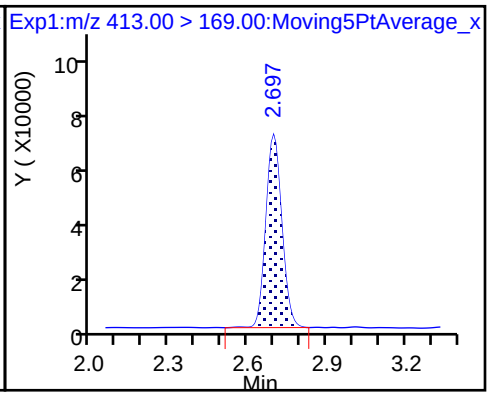
* 62 13C2-PFOA



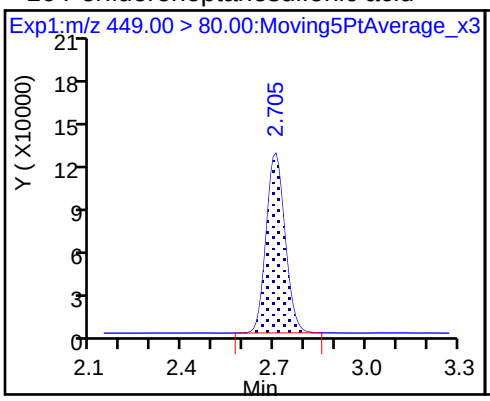
15 Perfluorooctanoic acid



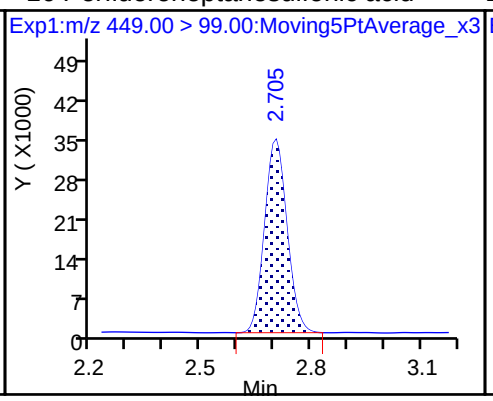
15 Perfluorooctanoic acid



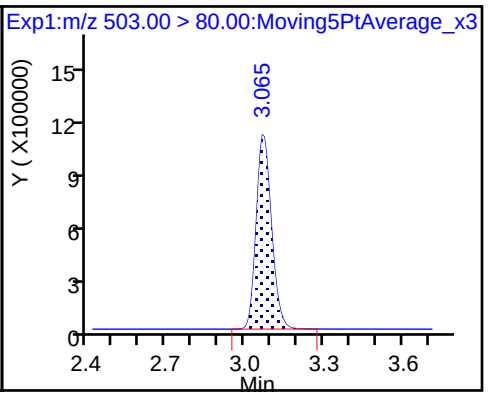
16 Perfluoroheptanesulfonic acid



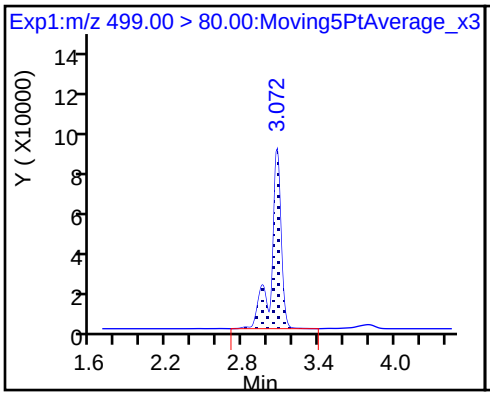
16 Perfluoroheptanesulfonic acid



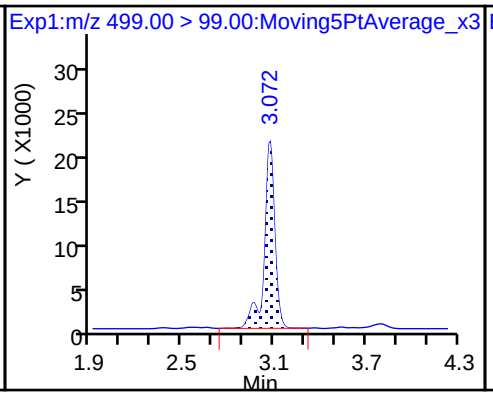
D 18 13C4 PFOS



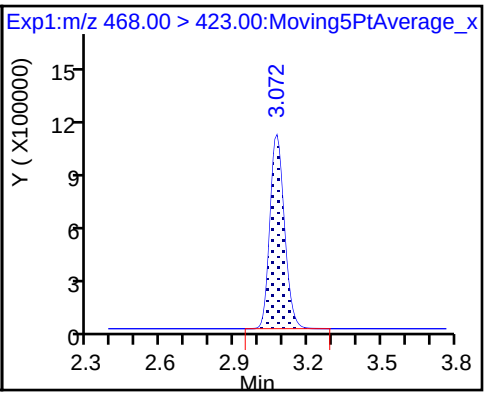
17 Perfluorooctane sulfonic acid



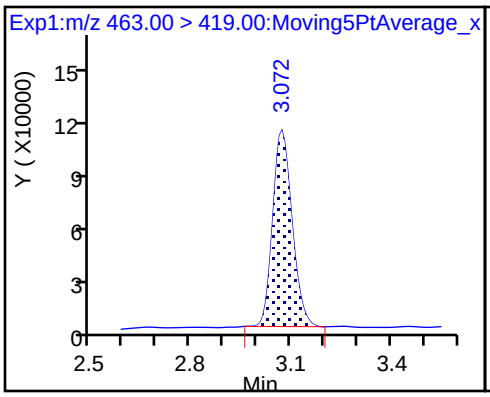
17 Perfluorooctane sulfonic acid



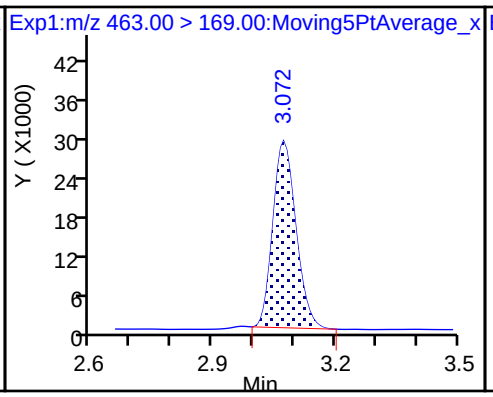
D 19 13C5 PFNA



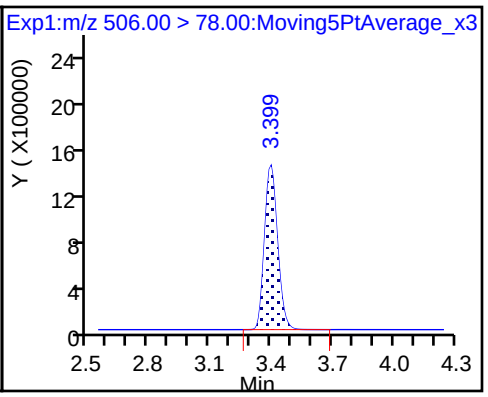
20 Perfluorononanoic acid



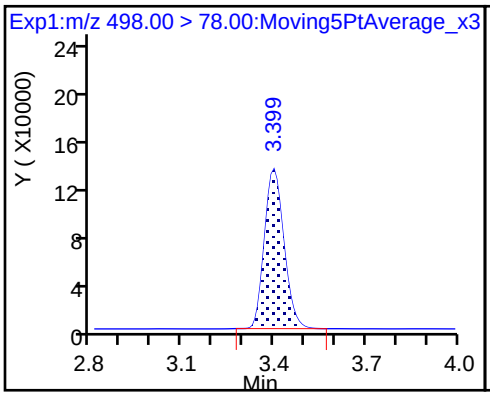
20 Perfluorononanoic acid



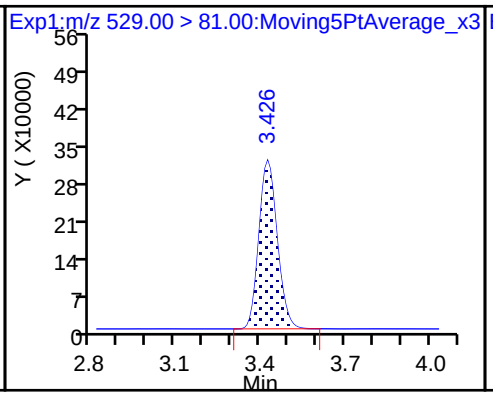
D 21 13C8 FOSA



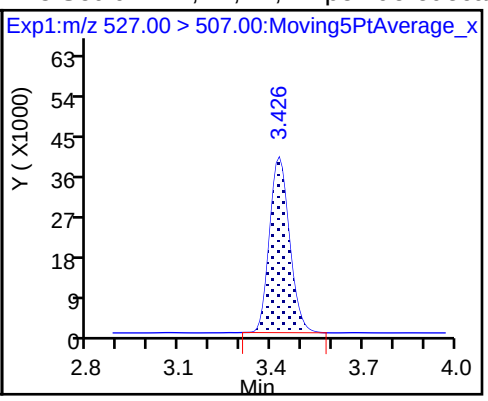
22 Perfluorooctane Sulfonamide



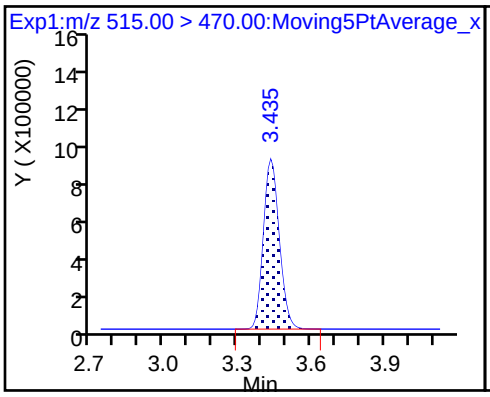
D 26 M2-8:2FTS



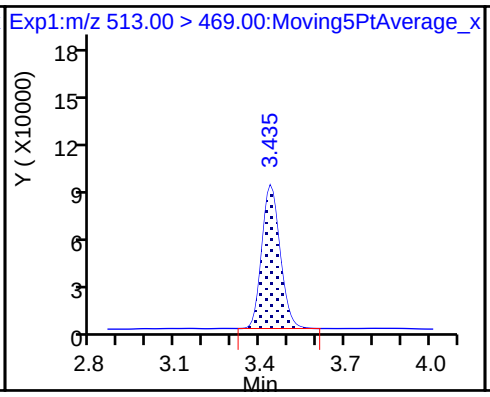
25 Sodium 1H,1H,2H,2H-perfluorodecane



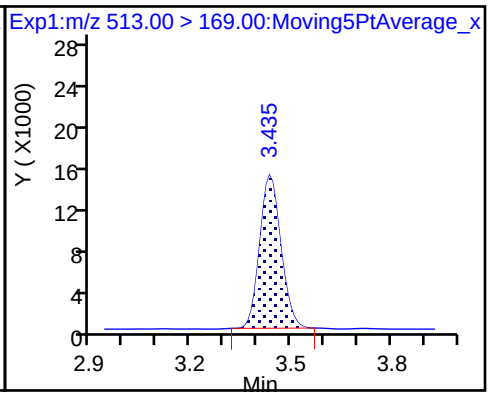
D 23 13C2 PFDA



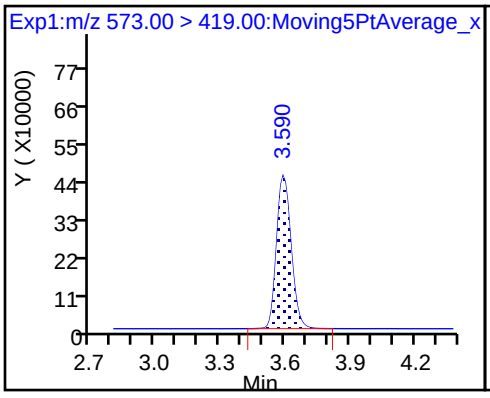
24 Perfluorodecanoic acid



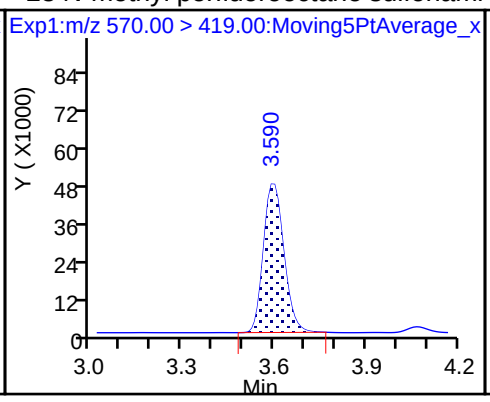
24 Perfluorodecanoic acid



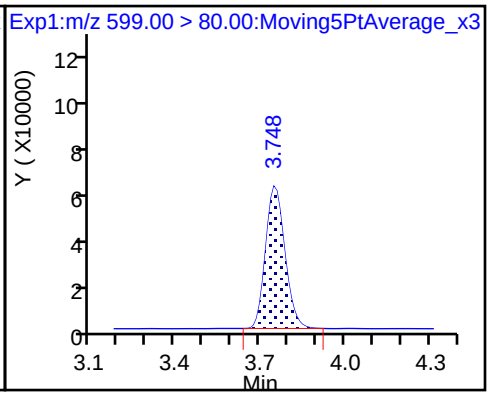
D 27 d3-NMeFOSAA



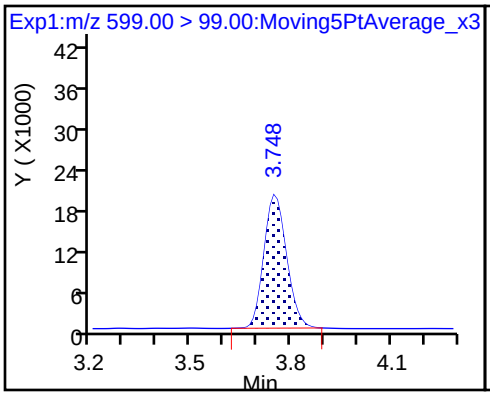
28 N-methyl perfluorooctane sulfonami



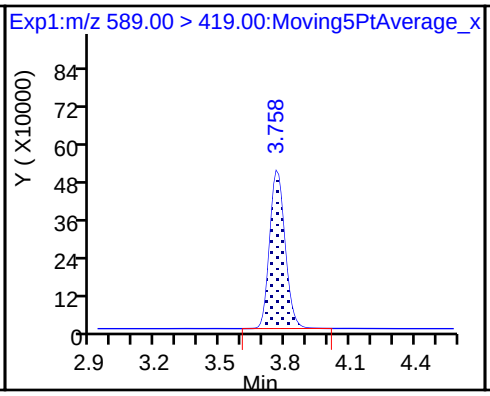
29 Perfluorodecane Sulfonic acid



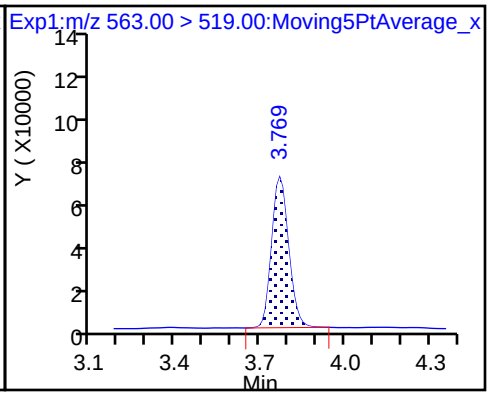
29 Perfluorodecane Sulfonic acid



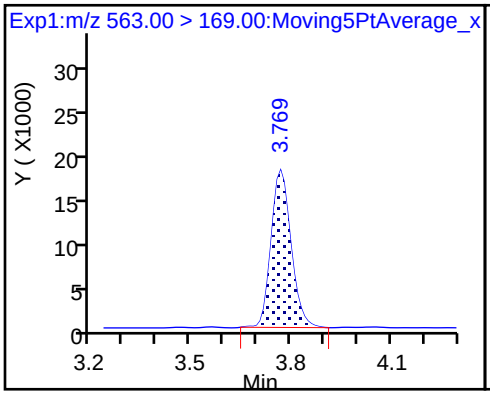
D 32 d5-NEtFOSAA



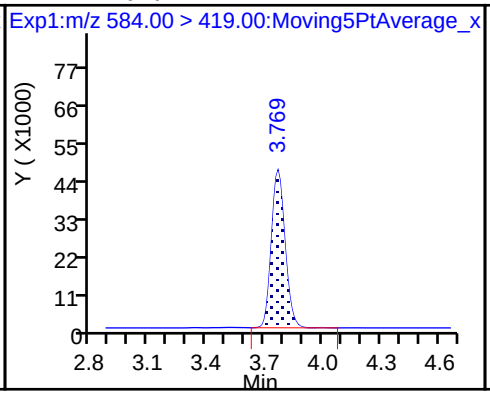
31 Perfluoroundecanoic acid



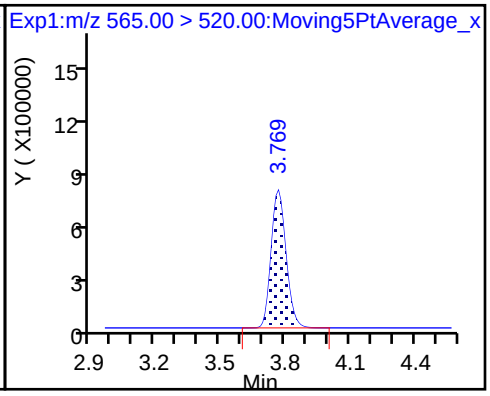
31 Perfluoroundecanoic acid



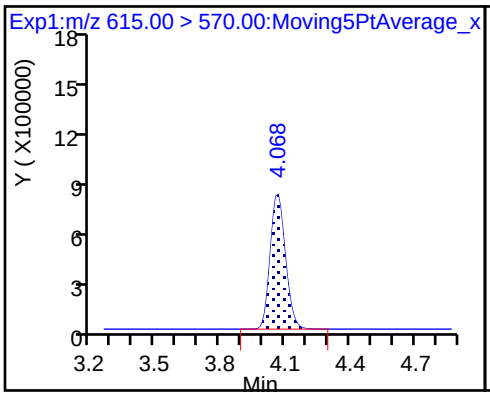
33 N-ethyl perfluorooctane sulfonamid



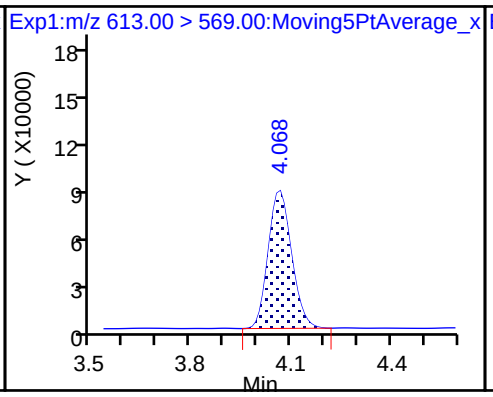
D 30 13C2 PFUnA



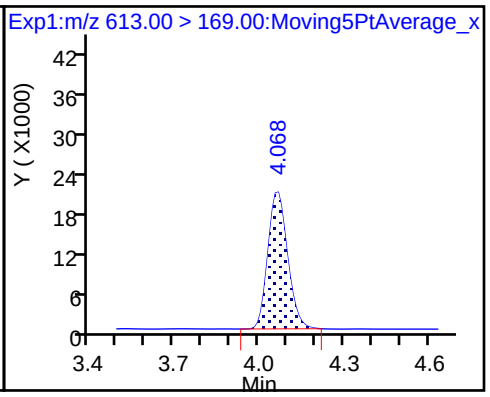
D 36 13C2 PFDoA



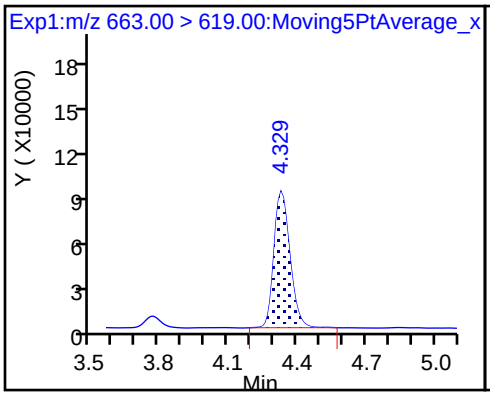
37 Perfluorododecanoic acid



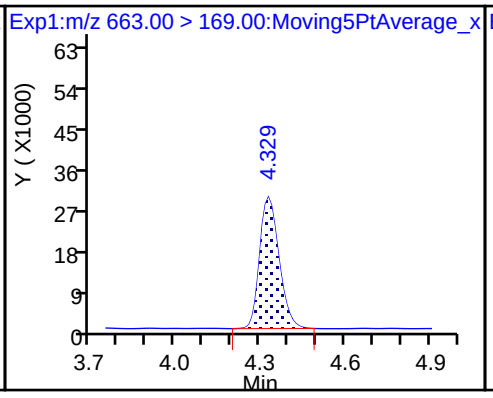
37 Perfluorododecanoic acid



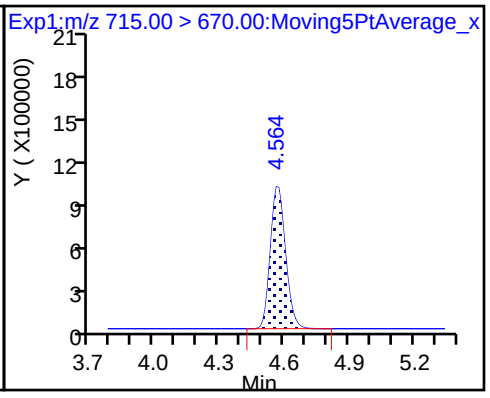
41 Perfluorotridecanoic acid



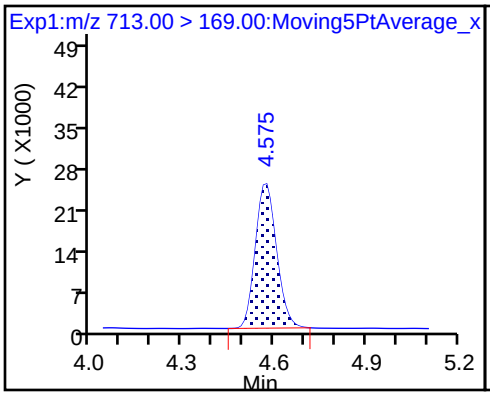
41 Perfluorotridecanoic acid



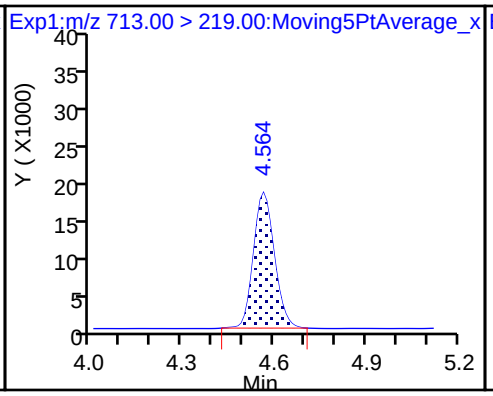
D 43 13C2-PFTeDA



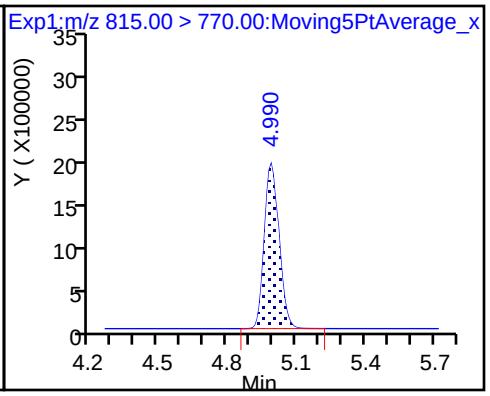
42 Perfluorotetradecanoic acid



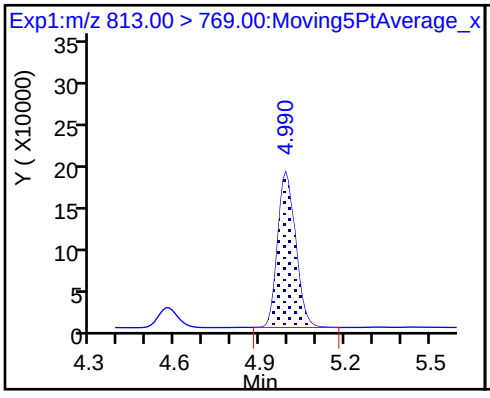
42 Perfluorotetradecanoic acid



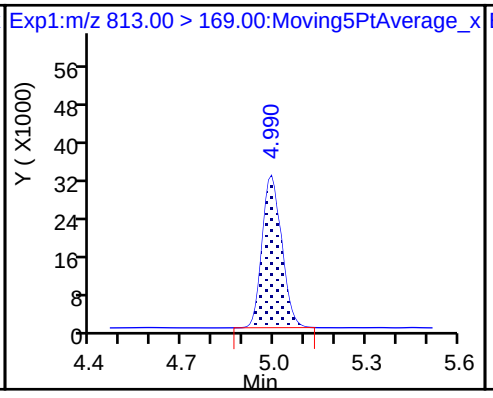
D 44 13C2-PFHxDA



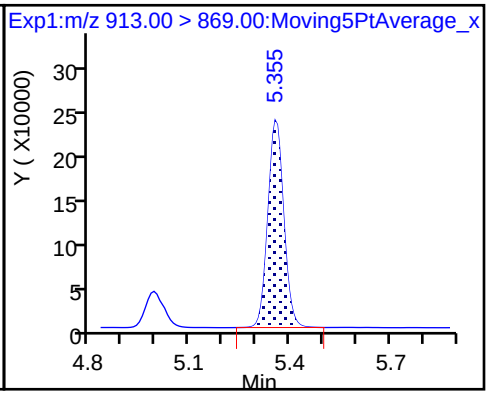
45 Perfluorohexadecanoic acid



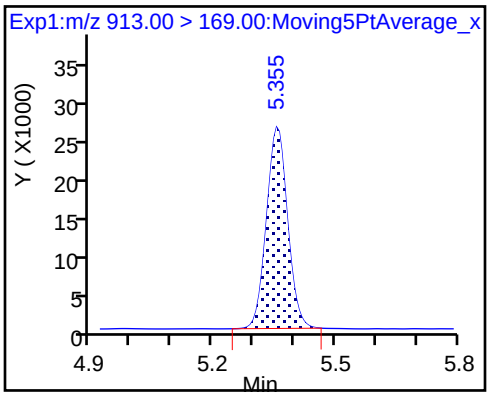
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 21-Mar-2018 18:47:49 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:36 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:24:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.537	6677108	2.48		99.3	91884	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	2414180	0.9593		95.9	1039	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	1955236	0.9777		97.8	1101	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4434133	2.49		99.4	122232	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	94733	2.33		100	728	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	2745542	0.8672		98.1	15073	
298.90 > 99.00	1.745	1.745	0.0	1.000	1158456		2.37(1.25-3.74)	98.1	8636	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	673891	2.40		103	7759	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.962	-0.006	1.000	585674	0.8899		95.3	36020	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	1895160	0.9434		94.3	5502	
313.00 > 119.00	1.998	1.998	0.0	1.000	171177		11.07(5.03-15.10)	94.3	5106	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4912134	2.49		99.6	148634	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	4906862	2.52		101	91934	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	1917800	0.9445		94.5	4030	
363.00 > 169.00	2.328	2.335	-0.007	1.000	781323		2.45(1.13-3.40)	94.5	11000	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	2255246	0.8437		92.7	14407	
399.00 > 99.00	2.341	2.346	-0.005	1.000	758154		2.97(1.50-4.49)	92.7	2920	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5679886	2.37		100	64479	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	658727	0.9206		97.1	39075	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	974611	2.41		102	32347	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5311138	2.50			78253	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	5161114	2.59		104	75890	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	2181038	0.9352		93.5	739	
413.00 > 169.00	2.697	2.697	0.0	1.000	1079898		2.02(0.84-2.52)	93.5	2905	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	2094073	0.9272		97.4	32757	
449.00 > 99.00	2.705	2.703	0.002	1.000	562149		3.73(1.94-5.82)	97.4	7735	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	4212796	2.41		101	38767	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4473666	2.55		102	61714	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.002	1712110	0.8720		94.0	5345	
499.00 > 99.00	3.065	3.070	-0.005	1.000	388300		4.41(2.31-6.93)	94.0	3489	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1707633	0.9567		95.7	2306	
463.00 > 169.00	3.072	3.072	0.0	1.000	412933		4.14(1.90-5.69)	95.7	8555	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	5926892	2.52		101	51859	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	2348890	1.01		101	35724	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	628171	0.9357		97.7	12703	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1259787	2.31		96.5	25503	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1449524	0.9682		96.8	7703	
513.00 > 169.00	3.435	3.435	0.0	1.000	250563		5.79(2.36-7.09)	96.8	5629	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3787833	2.46		98.4	60985	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.591	0.001	1.332	2005802	2.48		99.0	38757	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.592	3.594	-0.002	1.000	764025	0.9515		95.2	5524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.750	3.749	0.001	1.000	1089522	0.9090		94.3	25437	
599.00 > 99.00	3.750	3.749	0.001	1.000	401224		2.72(1.39-4.16)	94.3	7593	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.759	0.001	1.394	2399407	2.60		104	12942	
D 30 13C2 PFUnA										
565.00 > 520.00	3.770	3.768	0.002	1.398	3376806	2.45		98.1	53912	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.770	3.768	0.002	1.003	854457	0.9529		95.3	15864	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.770	3.768	0.002	1.000	1113457	0.9561		95.6	5076	
563.00 > 169.00	3.770	3.768	0.002	1.000	264745		4.21(2.12-6.36)	95.6	9089	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.066	-0.007	1.505	3947765	2.53		101	38697	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.068	0.001	1.003	1543700	0.9343		93.4	1390	
613.00 > 169.00	4.069	4.068	0.001	1.003	381642		4.04(2.13-6.40)	93.4	5997	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	1762916	1.01		101	1166	
663.00 > 169.00	4.329	4.329	0.0	1.000	525318		3.36(1.25-3.76)	101	9931	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.568	-0.003	1.693	5036200	2.64		106	31784	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.565	4.571	-0.006	1.000	463840	0.9292		92.9	6420	
713.00 > 219.00	4.565	4.571	-0.006	1.000	332536		1.39(0.71-2.13)	92.9	6906	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.987	-0.005	1.847	8013194	2.56		102	20349	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.989	0.002	1.002	2896964	0.9702		97.0	883	
813.00 > 169.00	4.991	4.989	0.002	1.002	467916		6.19(2.86-8.58)	97.0	4401	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	2837993	0.9576		95.8	899	
913.00 > 169.00	5.352	5.354	-0.002	1.000	349894		8.11(3.83-11.48)	95.8	3684	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:38 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_005.d

Injection Date: 21-Mar-2018 18:47:49 Instrument ID: A8_N

Lims ID: IC L4 Full

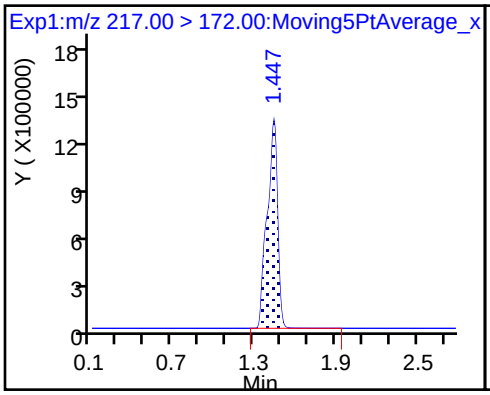
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

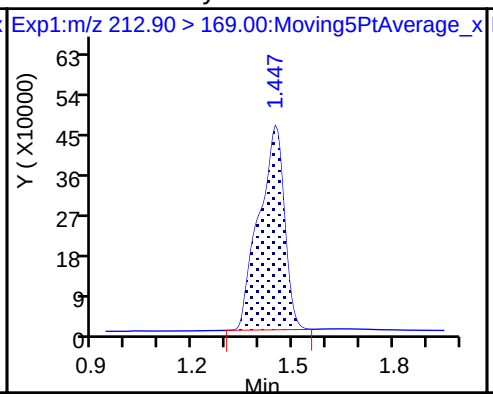
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

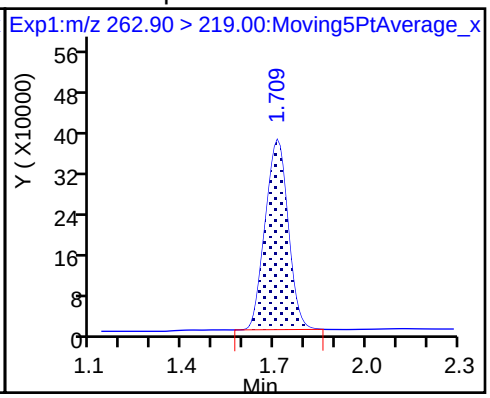
D 1 13C4 PFBA



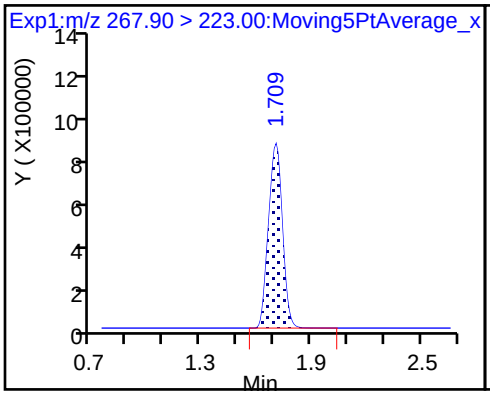
2 Perfluorobutyric acid



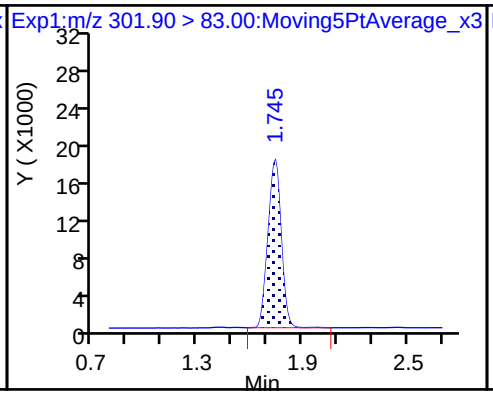
4 Perfluoropentanoic acid



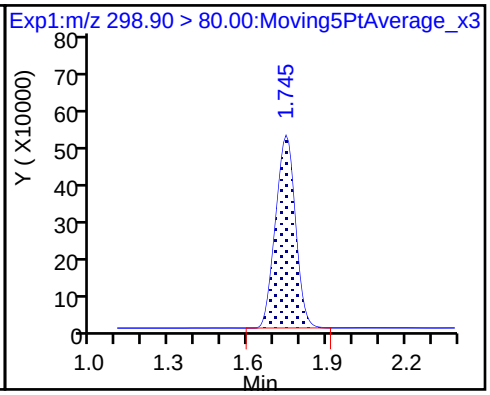
D 3 13C5-PFPeA



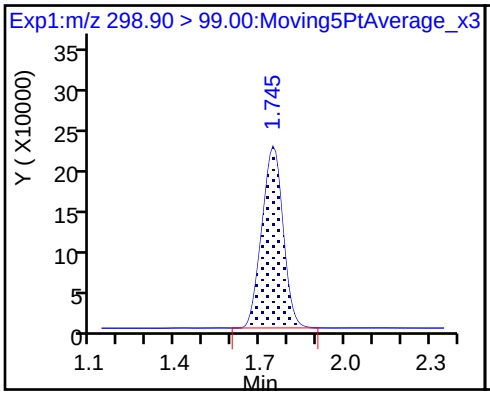
D 47 13C3-PFBS



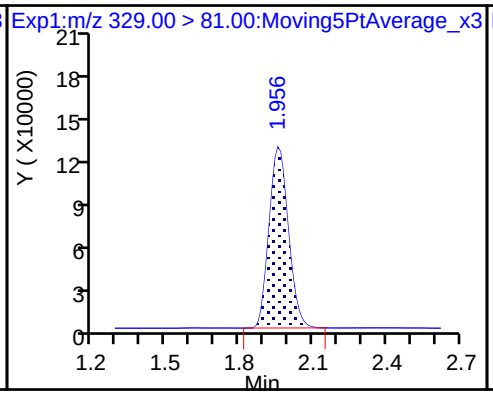
5 Perfluorobutanesulfonic acid



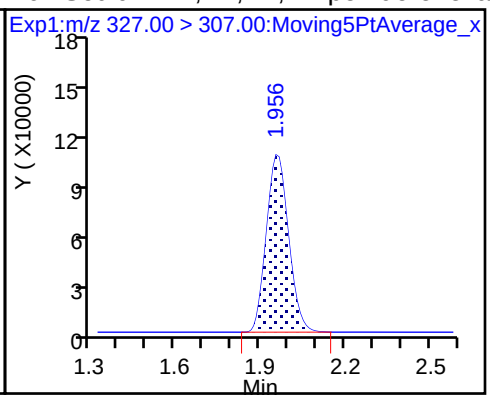
5 Perfluorobutanesulfonic acid



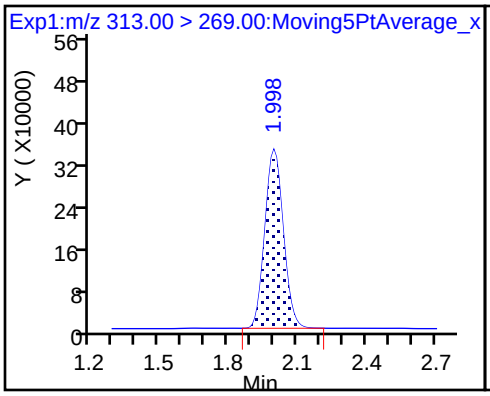
D 60 M2-4:2FTS



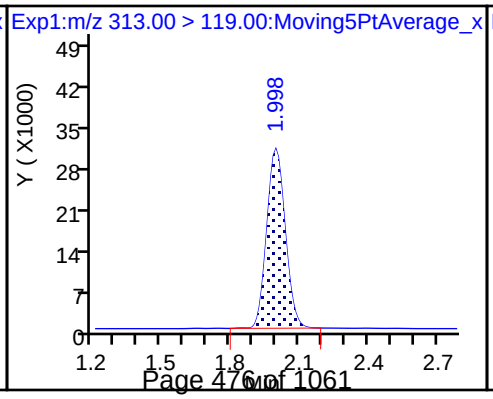
61 Sodium 1H,1H,2H,2H-perfluorohexane



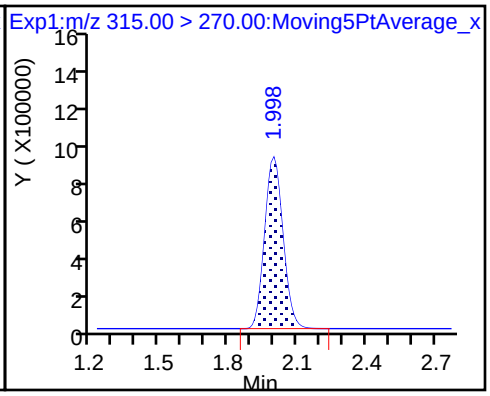
6 Perfluorohexanoic acid



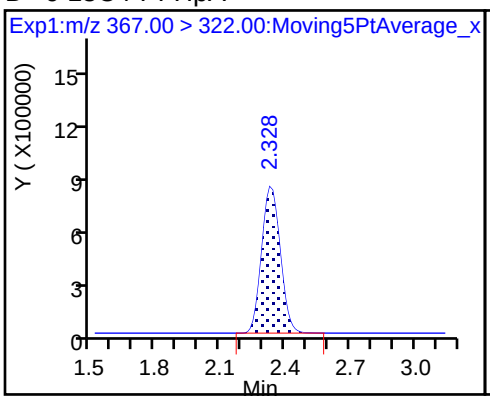
6 Perfluorohexanoic acid



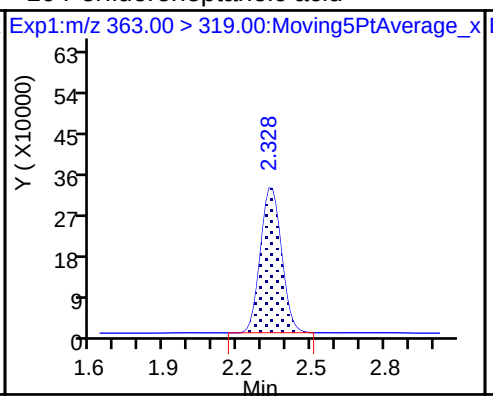
D 7 13C2 PFHxA



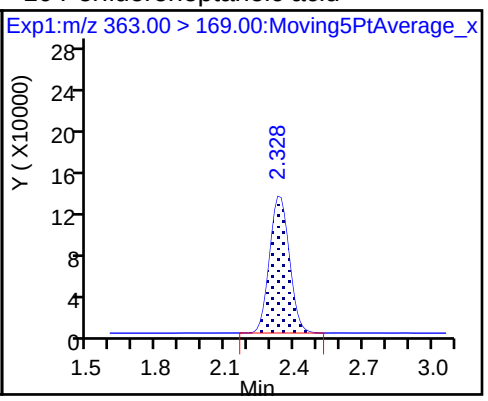
D 9 13C4-PFHpA



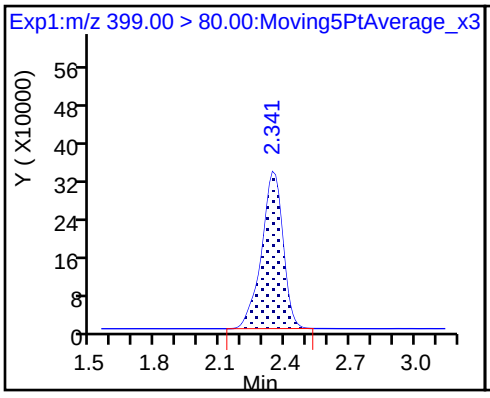
10 Perfluoroheptanoic acid



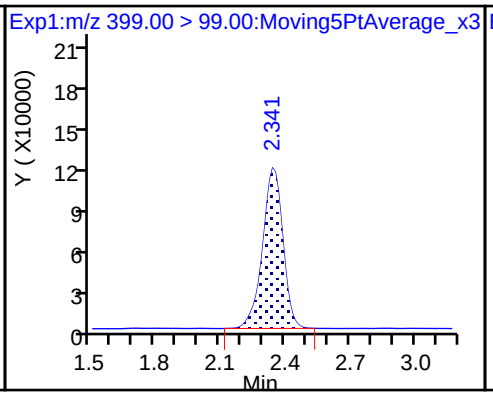
10 Perfluoroheptanoic acid



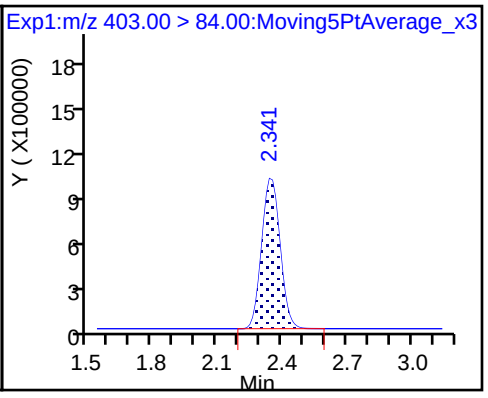
8 Perfluorohexanesulfonic acid



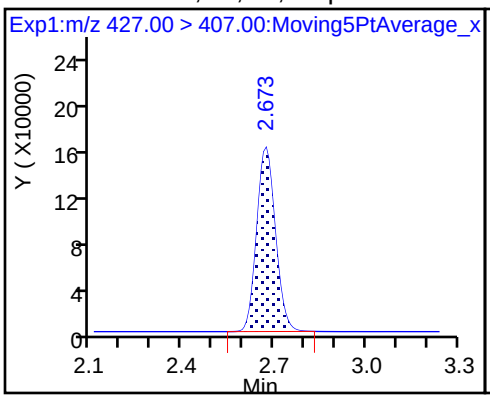
8 Perfluorohexanesulfonic acid



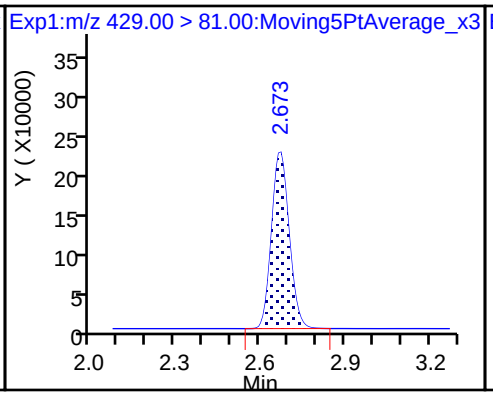
D 11 18O2 PFHxS



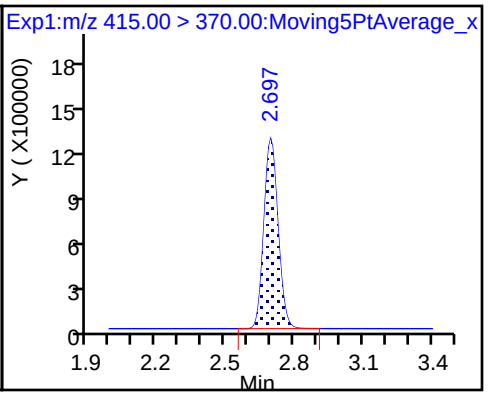
13 Sodium 1H,1H,2H,2H-perfluorooctan



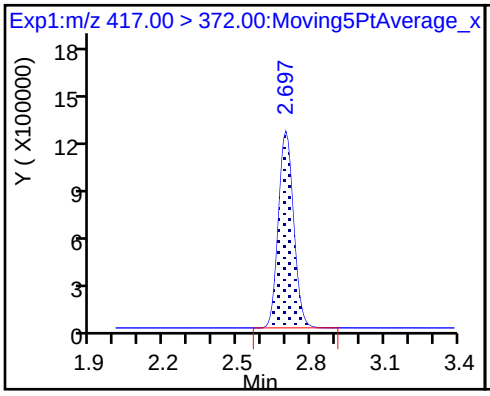
D 12 M2-6:2FTS



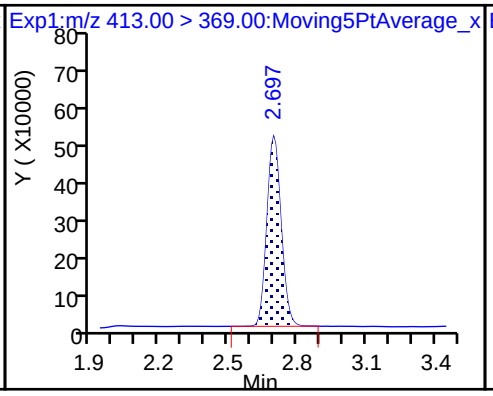
* 62 13C2-PFOA



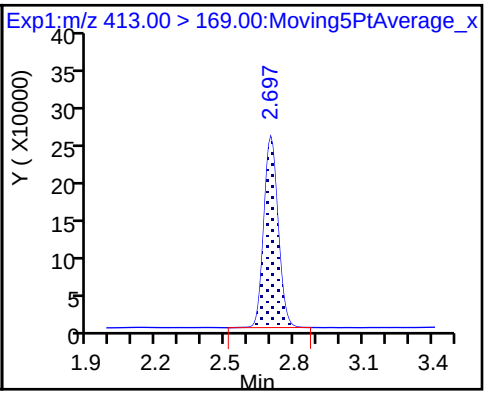
D 14 13C4 PFOA



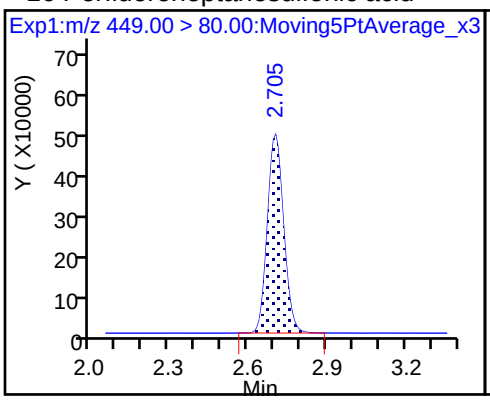
15 Perfluorooctanoic acid



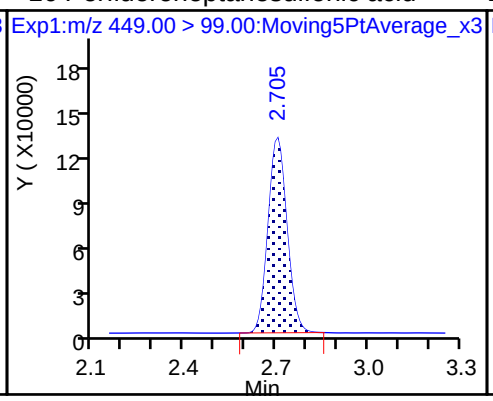
15 Perfluorooctanoic acid



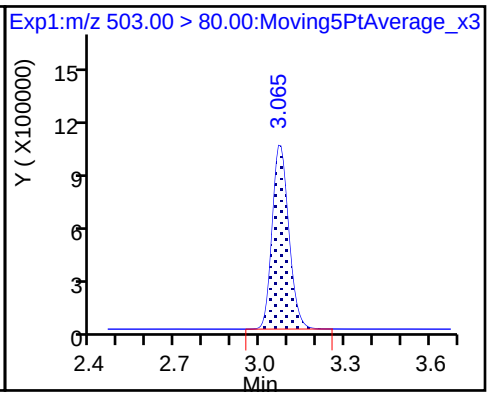
16 Perfluoroheptanesulfonic acid



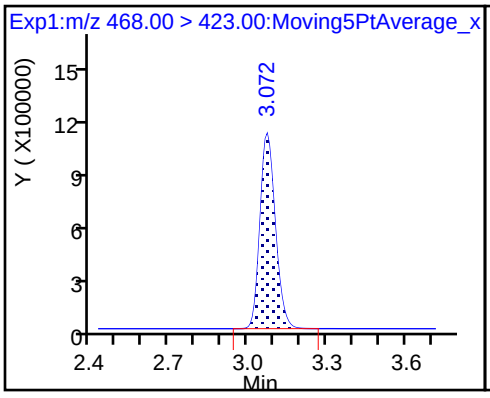
16 Perfluoroheptanesulfonic acid



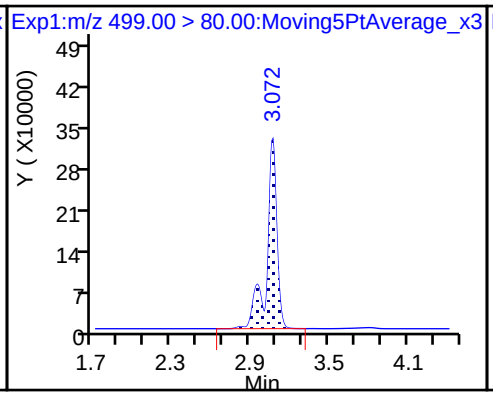
D 18 13C4 PFOS



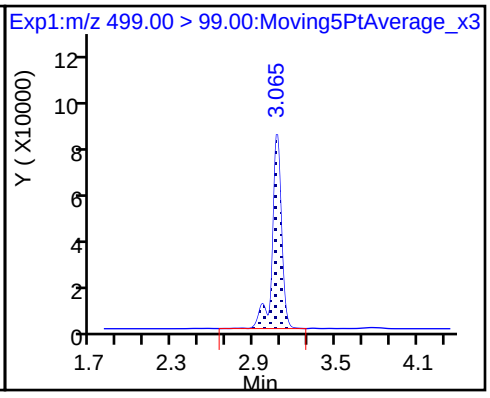
D 19 13C5 PFNA



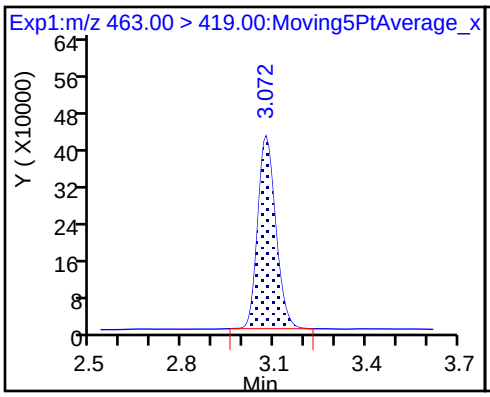
17 Perfluorooctane sulfonic acid



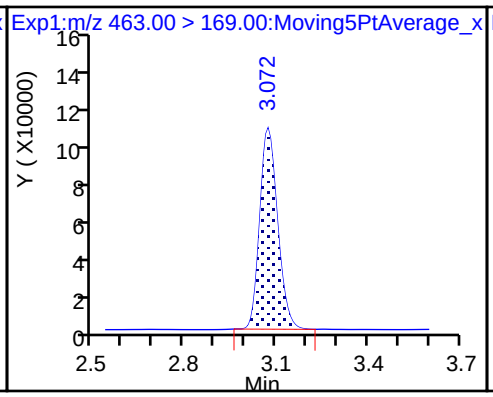
17 Perfluorooctane sulfonic acid



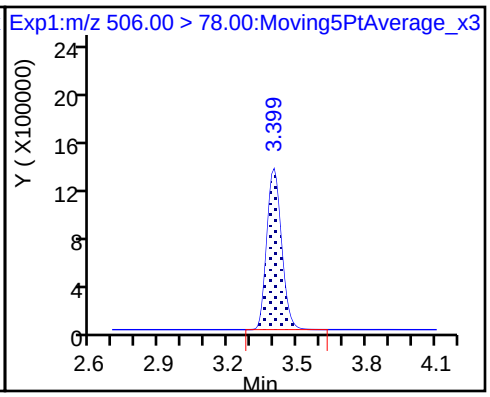
20 Perfluorononanoic acid



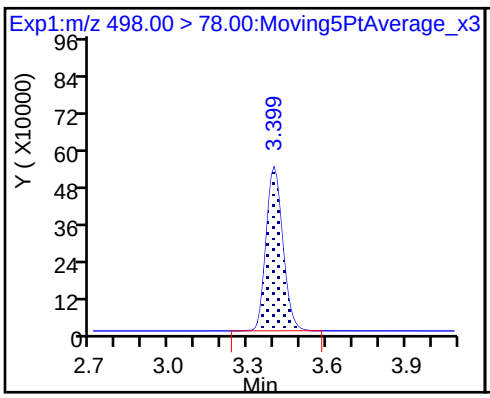
20 Perfluorononanoic acid



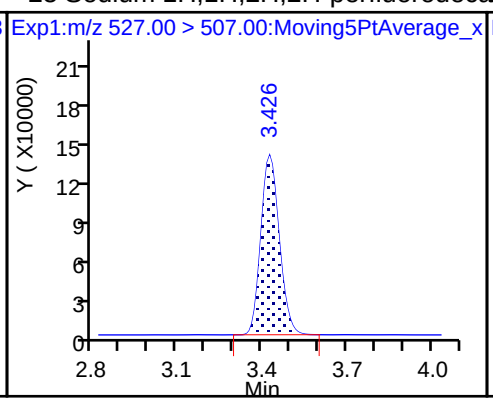
D 21 13C8 FOSA



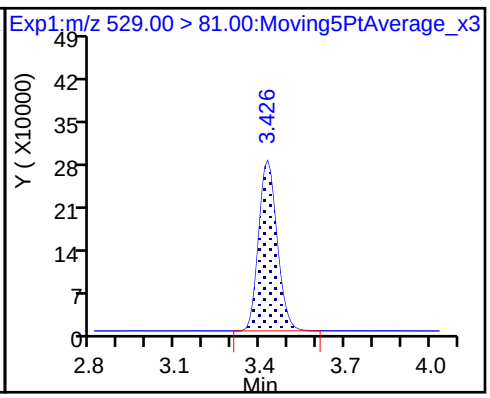
22 Perfluorooctane Sulfonamide



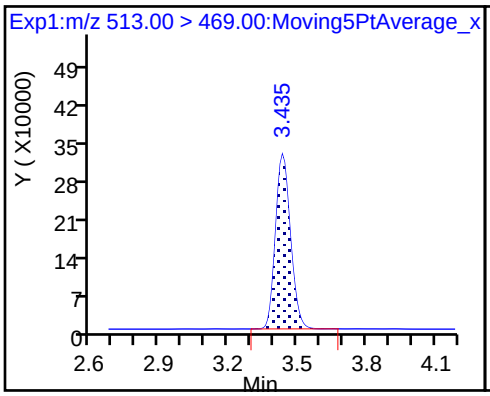
25 Sodium 1H,1H,2H,2H-perfluorodecane



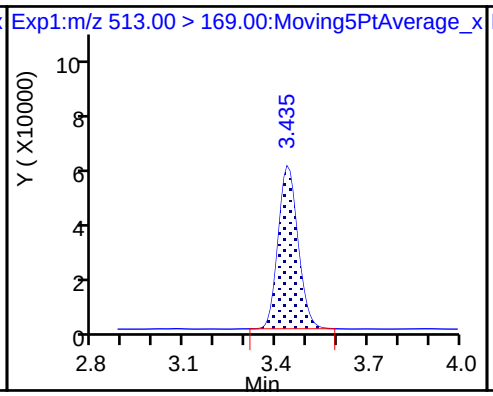
D 26 M2-8:2FTS



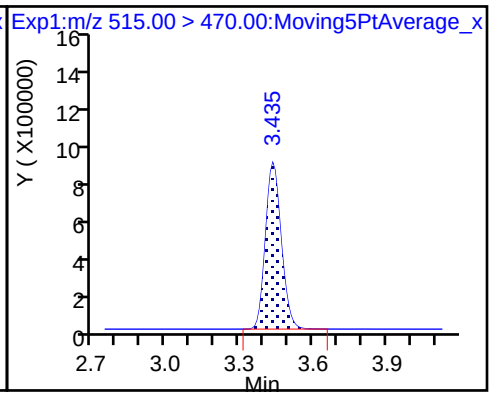
24 Perfluorodecanoic acid



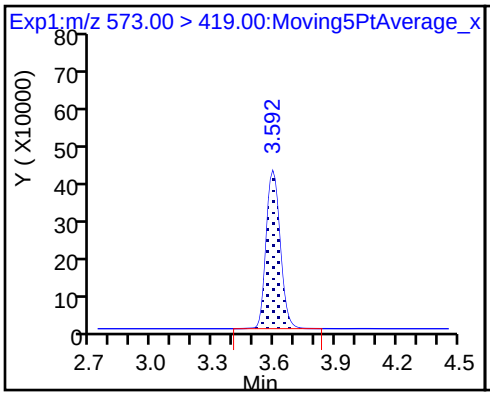
24 Perfluorodecanoic acid



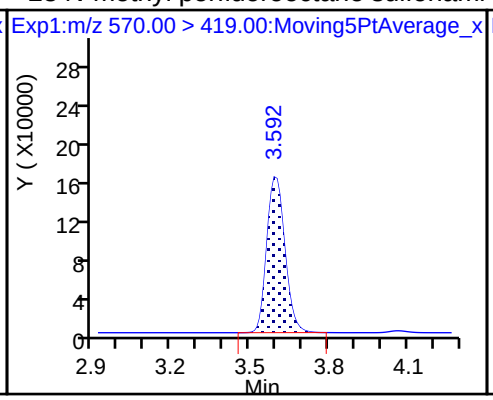
D 23 13C2 PFDA



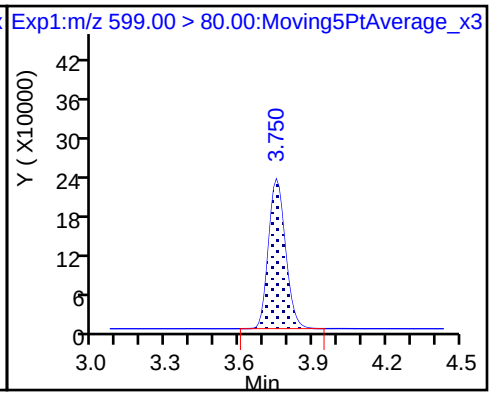
D 27 d3-NMeFOSAA



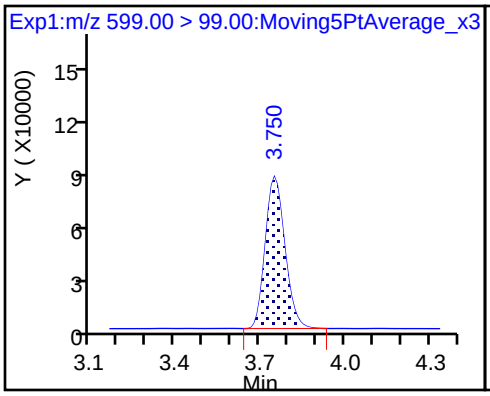
28 N-methyl perfluorooctane sulfonami



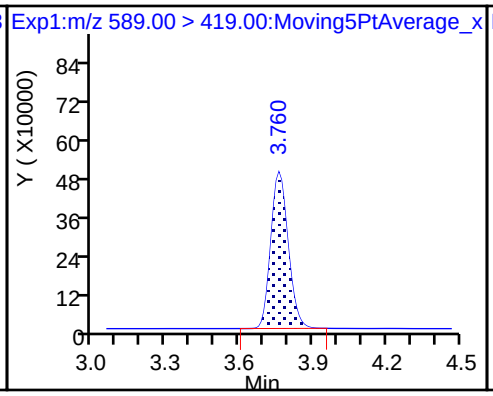
29 Perfluorodecane Sulfonic acid



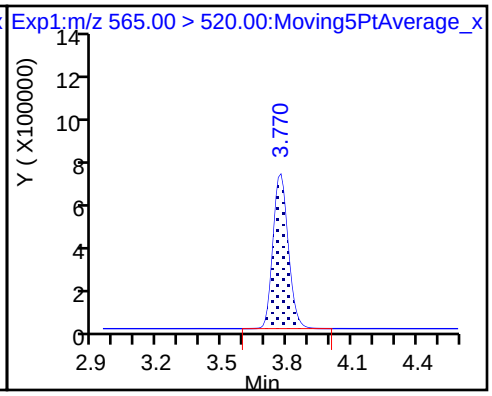
29 Perfluorodecane Sulfonic acid



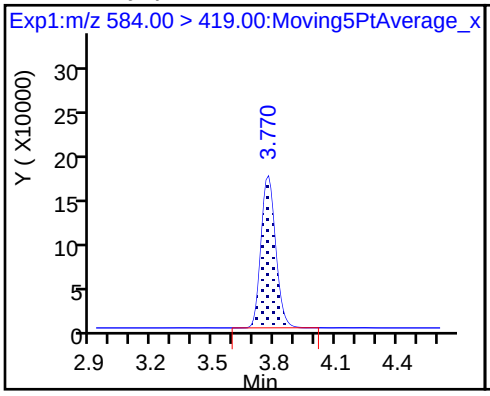
D 32 d5-NEtFOSAA



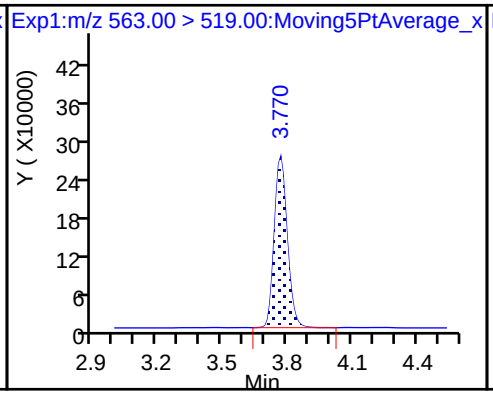
D 30 13C2 PFUnA



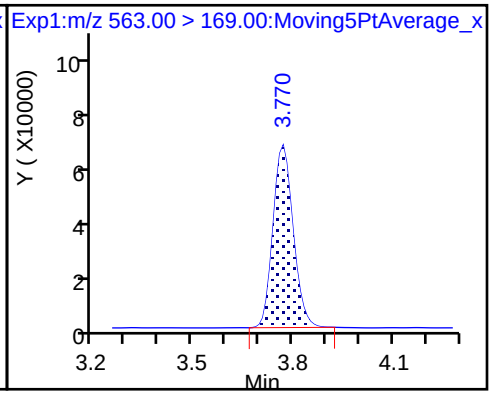
33 N-ethyl perfluorooctane sulfonamid



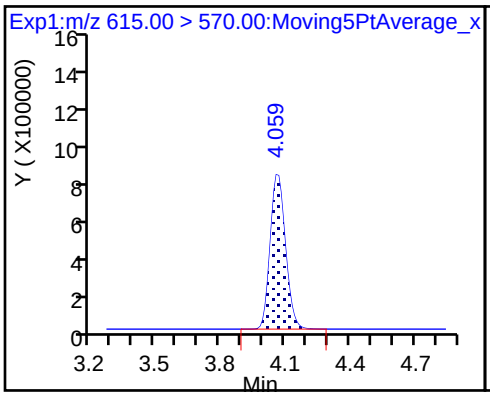
31 Perfluoroundecanoic acid



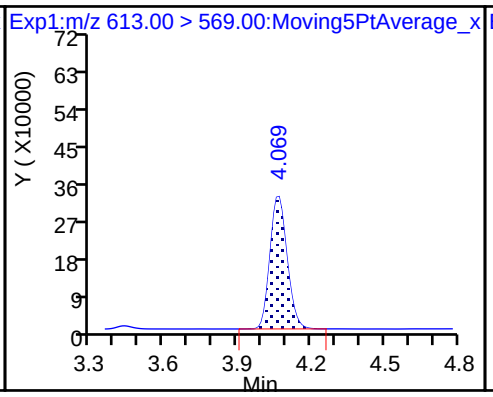
31 Perfluoroundecanoic acid



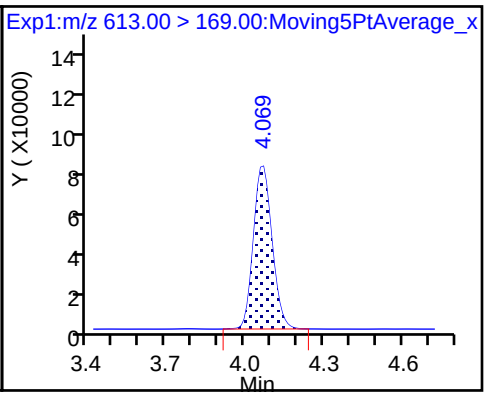
D 36 13C2 PFDoA



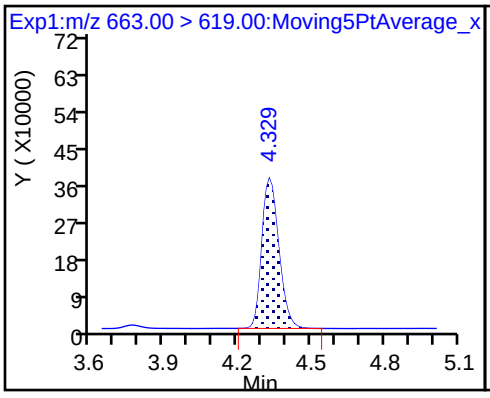
37 Perfluorododecanoic acid



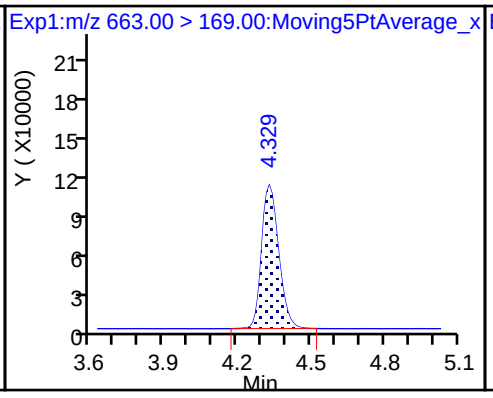
37 Perfluorododecanoic acid



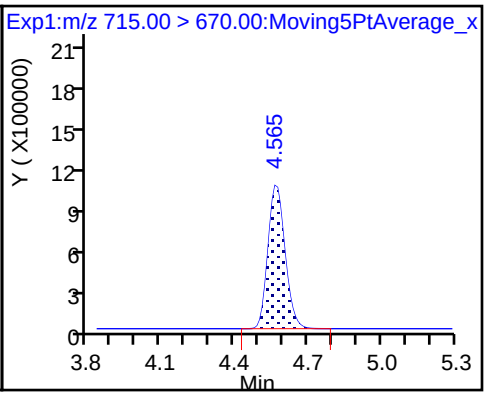
41 Perfluorotridecanoic acid



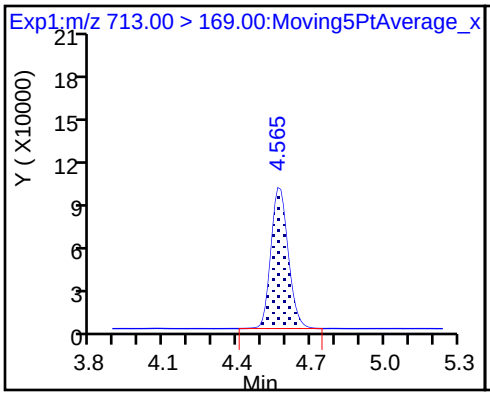
41 Perfluorotridecanoic acid



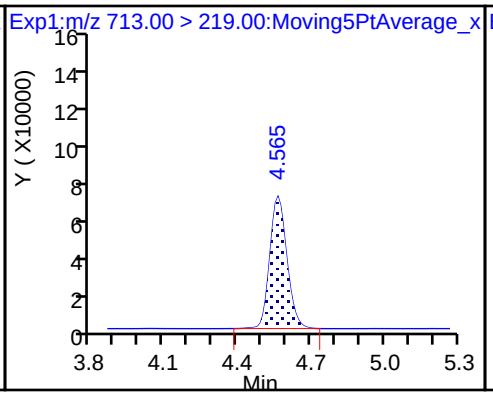
D 43 13C2-PFTeDA



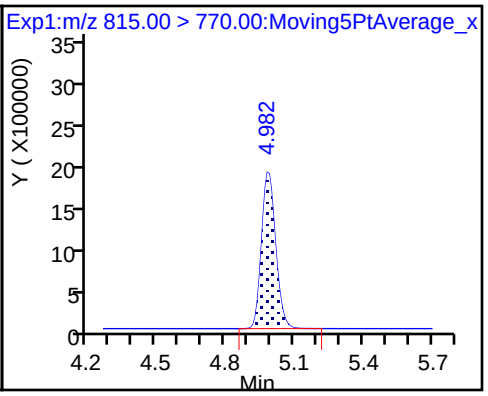
42 Perfluorotetradecanoic acid



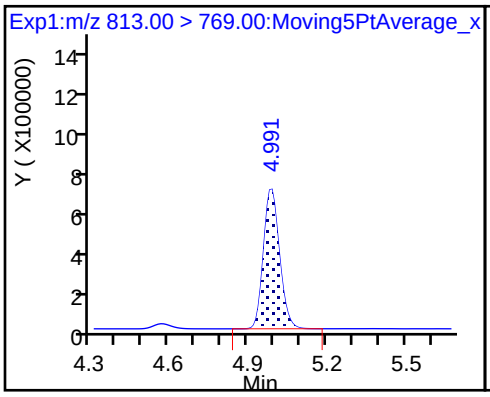
42 Perfluorotetradecanoic acid



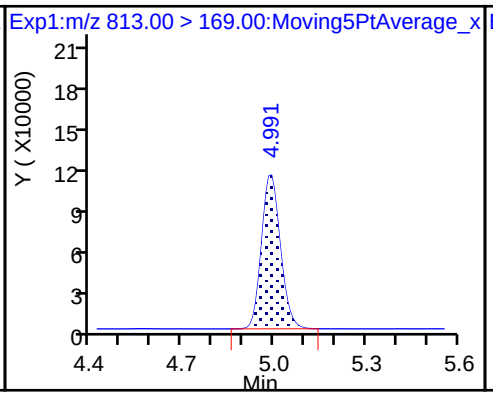
D 44 13C2-PFHxDA



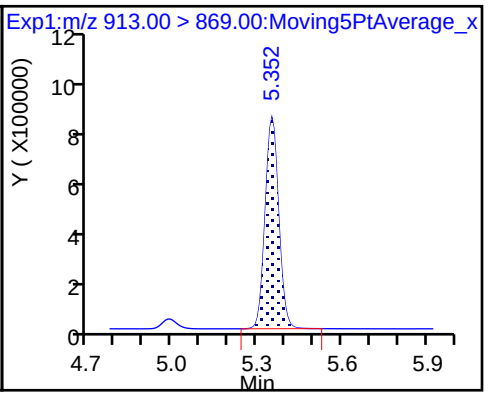
45 Perfluorohexadecanoic acid



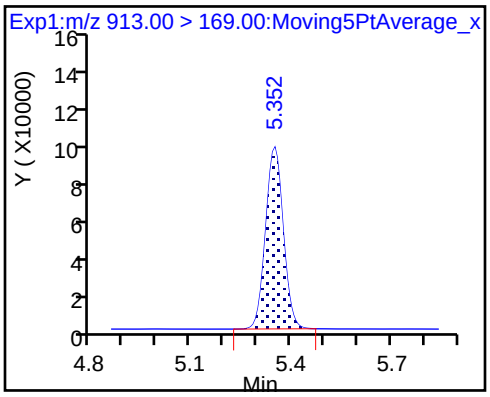
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 21-Mar-2018 18:55:39 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:40 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:24:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.447	-0.001	0.536	6188661	2.33		93.4	78410	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.449	0.003	1.004	5823834	2.50		99.9	2918	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4090438	2.33		93.0	131212	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	4762694	2.58		103	2851	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.743	0.001	0.647	87868	2.19		94.1	734	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.000	6781882	2.31		104	33882	
298.90 > 99.00	1.744	1.745	-0.001	1.000	2805006		2.42(1.25-3.74)	104	17877	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.959	0.007	0.729	609343	2.20		94.1	6498	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	1406742	2.30		98.7	64063	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.741	4600880	2.37		94.6	103804	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	4820853	2.56		102	14937	
313.00 > 119.00	1.997	1.998	-0.001	1.000	437719		11.01(5.03-15.10)	102	11379	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	4537445	2.36		94.6	85099	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.006	5088526	2.71		108	9556	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1858876		2.74(1.13-3.40)	108	18291	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	0.995	5440694	2.15		94.6	25940	
399.00 > 99.00	2.341	2.346	-0.005	0.995	1777291		3.06(1.50-4.49)	94.6	6637	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.873	5368855	2.27		95.9	60715	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.672	0.0	0.991	908164	2.28		96.1	19487	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.672	0.0	1.000	1590173	2.39		101	53321	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.695	0.001	1.000	4742395	2.42		96.6	65924	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.695	0.001		5235561	2.50			73005	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	5003450	2.33		93.4	1574	
413.00 > 169.00	2.696	2.697	-0.001	1.000	2673743		1.87(0.84-2.52)	93.4	6944	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.703	0.001	1.000	5113485	2.40		101	52355	
449.00 > 99.00	2.704	2.703	0.001	1.000	1305904		3.92(1.94-5.82)	101	14612	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.139	3973858	2.31		96.5	34284	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.000	4360129	2.35		101	13023	
499.00 > 99.00	3.072	3.070	0.002	1.000	949206		4.59(2.31-6.93)	101	11305	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4084349	2.36		94.4	91801	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	4311504	2.65		106	5737	
463.00 > 169.00	3.072	3.072	0.0	1.000	1044625		4.13(1.90-5.69)	106	21568	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.396	0.002	1.260	5666432	2.44		97.6	47804	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.397	0.001	1.000	5602803	2.51		100	74799	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.271	1157021	2.15		89.9	32125	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	1588740	2.58		108	39307	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3515629	2.32		92.7	59893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	3690292	2.66		106	13711	
513.00 > 169.00	3.435	3.435	0.0	1.000	621400		5.94(2.36-7.09)	106	1806	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	1848322	2.31		92.6	43598	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.594	0.006	1.003	2049489	2.77		111	10939	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	2934010	2.60		108	55841	
599.00 > 99.00	3.748	3.749	-0.001	1.000	945062		3.10(1.39-4.16)	108	19624	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2051910	2.26		90.2	11879	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	2666750	2.41		96.4	11171	
563.00 > 169.00	3.768	3.768	0.0	1.000	636340		4.19(2.12-6.36)	96.4	22140	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	2079318	2.71		108	23647	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.398	3209638	2.36		94.6	51590	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.066	0.001	1.508	3715622	2.41		96.5	29822	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.068	-0.001	1.000	3845398	2.47		98.9	3613	
613.00 > 169.00	4.067	4.068	-0.001	1.000	845112		4.55(2.13-6.40)	98.9	12526	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	-0.001	1.000	4156865	2.54		102	2825	
663.00 > 169.00	4.329	4.329	-0.001	1.000	1286777		3.23(1.25-3.76)	102	15589	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.568	0.007	1.697	4471429	2.38		95.1	25225	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.004	1.000	1127193	2.54		102	13059	
713.00 > 219.00	4.564	4.571	-0.007	0.998	791381		1.42(0.71-2.13)	102	14928	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.851	7064103	2.29		91.6	18829	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	7013285	2.71		108	2178	
813.00 > 169.00	4.990	4.989	0.001	1.000	1094747		6.41(2.86-8.58)	108	9232	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	6807875	2.61		104	2083	
913.00 > 169.00	5.352	5.354	-0.002	1.000	815201		8.35(3.83-11.48)	104	6311	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_006.d

Injection Date: 21-Mar-2018 18:55:39 Instrument ID: A8_N

Lims ID: IC L5 Full

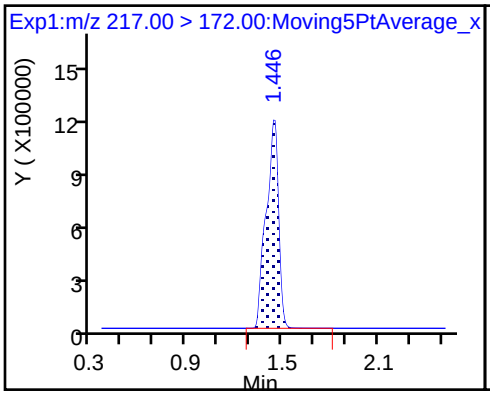
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

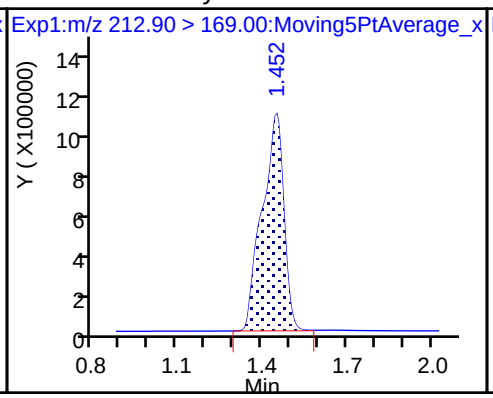
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

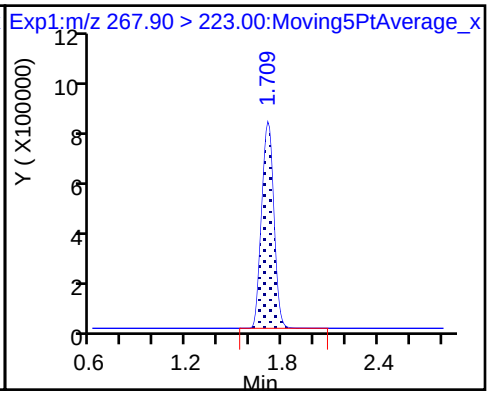
D 1 13C4 PFBA



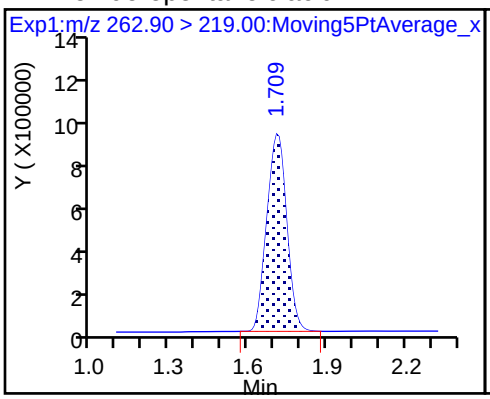
2 Perfluorobutyric acid



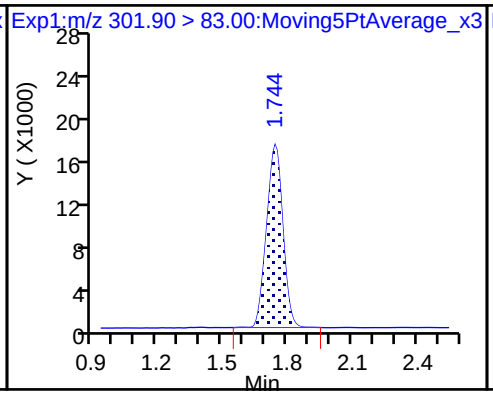
D 3 13C5-PFPeA



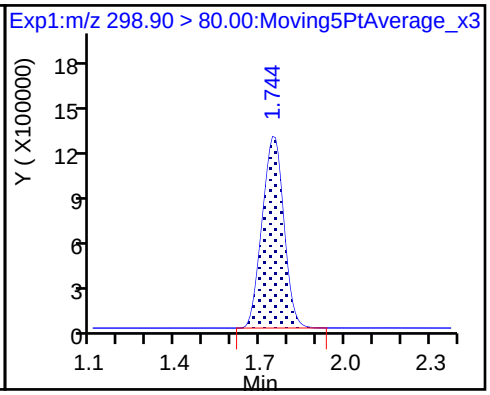
4 Perfluoropentanoic acid



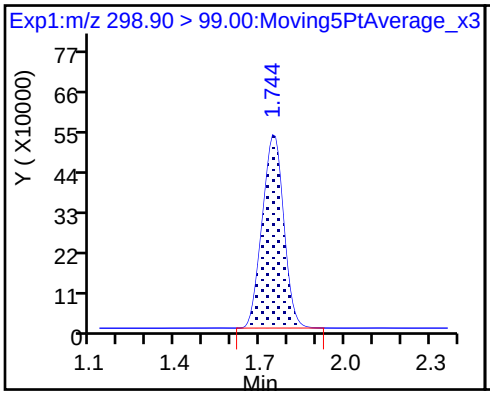
D 47 13C3-PFBS



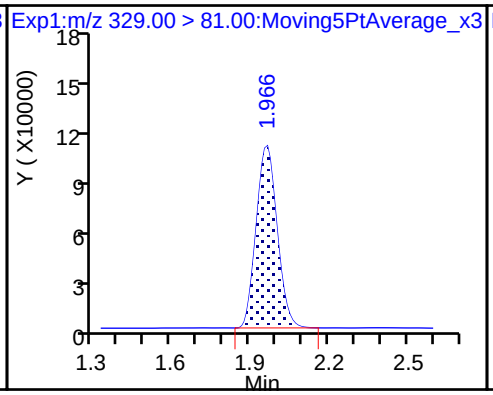
5 Perfluorobutanesulfonic acid



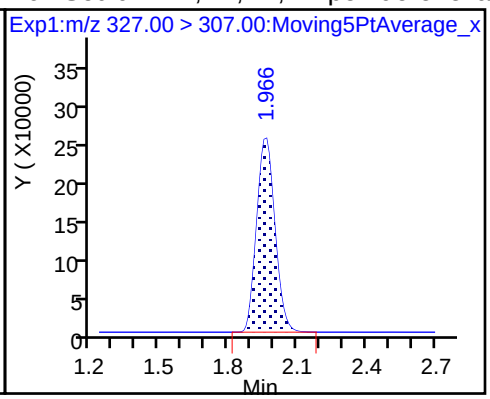
5 Perfluorobutanesulfonic acid



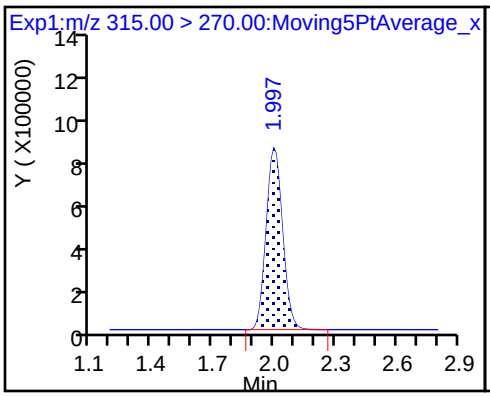
D 60 M2-4:2FTS



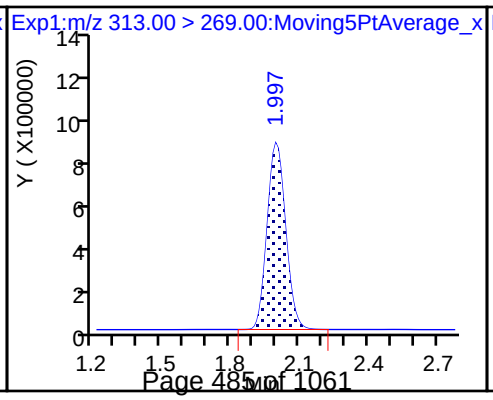
61 Sodium 1H,1H,2H,2H-perfluorohexane



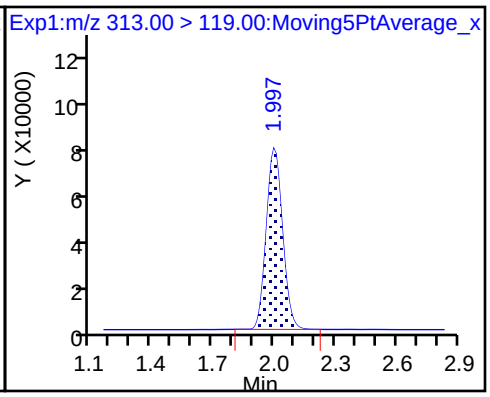
D 7 13C2 PFHxA



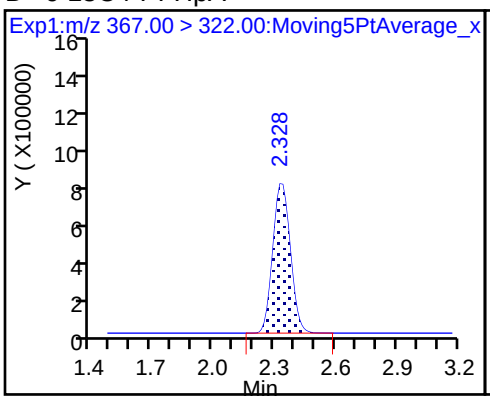
6 Perfluorohexanoic acid



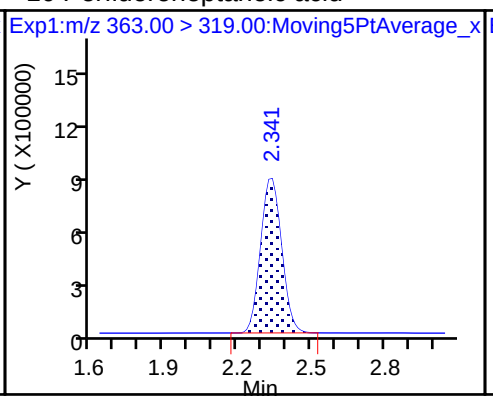
6 Perfluorohexanoic acid



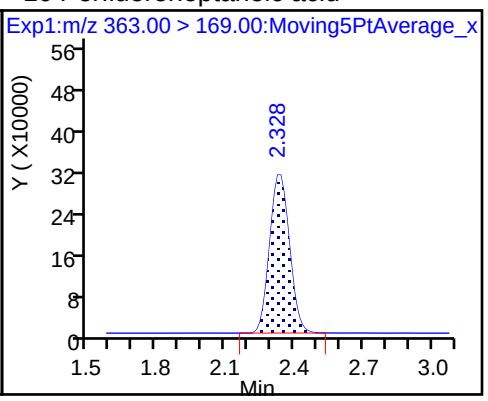
D 9 13C4-PFHpA



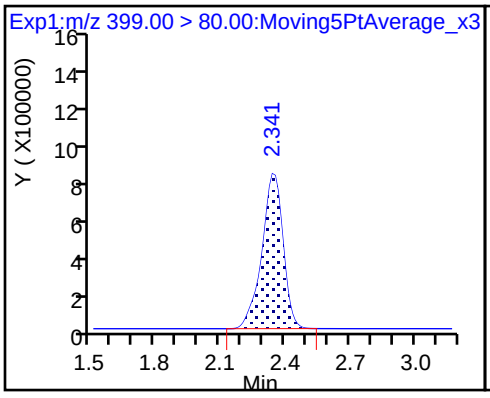
10 Perfluoroheptanoic acid



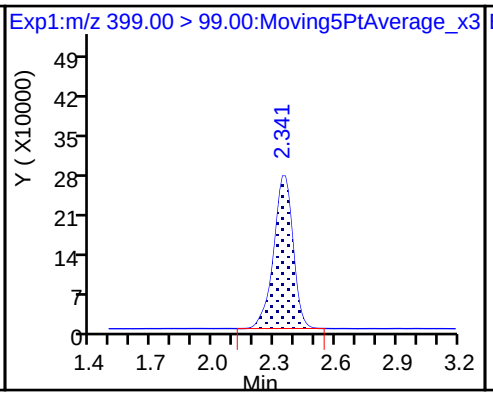
10 Perfluoroheptanoic acid



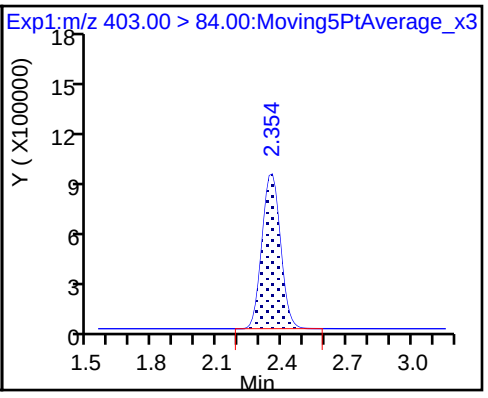
8 Perfluorohexanesulfonic acid



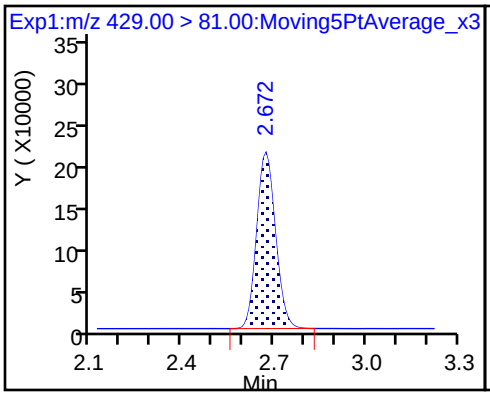
8 Perfluorohexanesulfonic acid



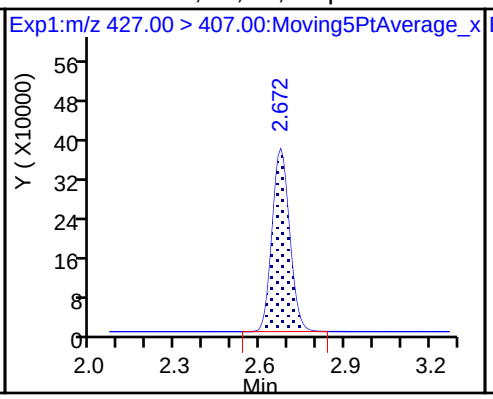
D 11 18O2 PFHxS



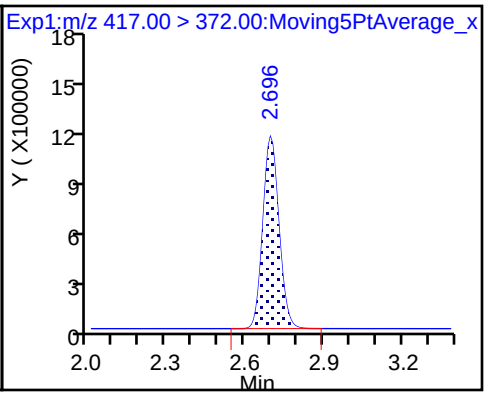
D 12 M2-6:2FTS



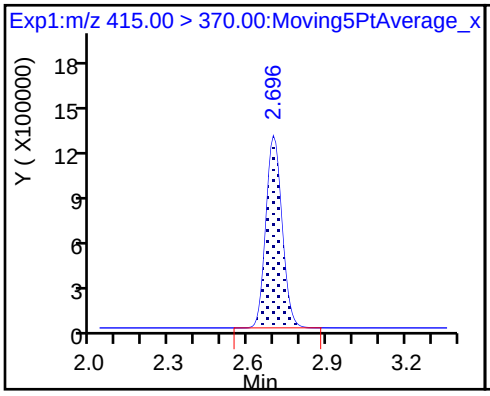
13 Sodium 1H,1H,2H,2H-perfluorooctane



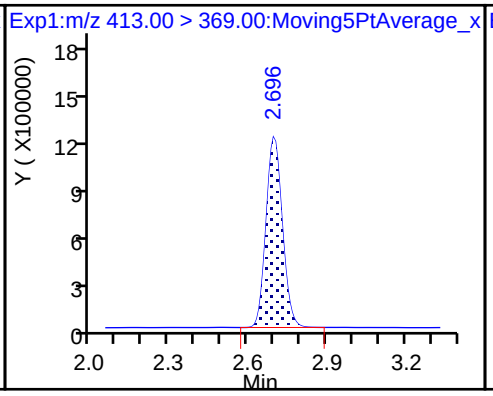
D 14 13C4 PFOA



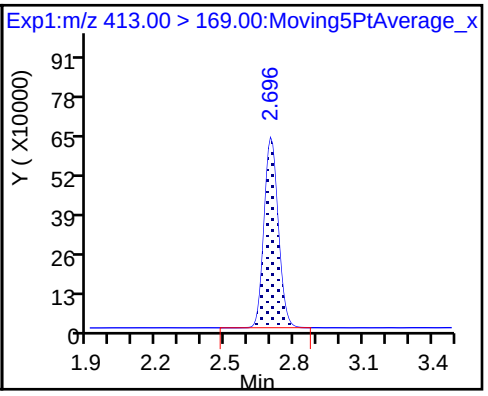
* 62 13C2-PFOA



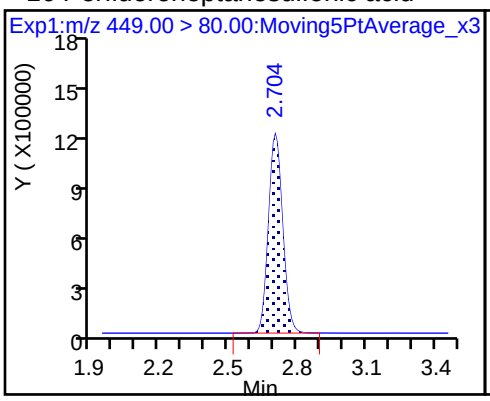
15 Perfluorooctanoic acid



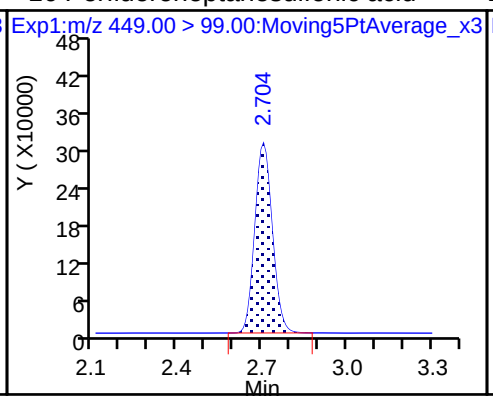
15 Perfluorooctanoic acid



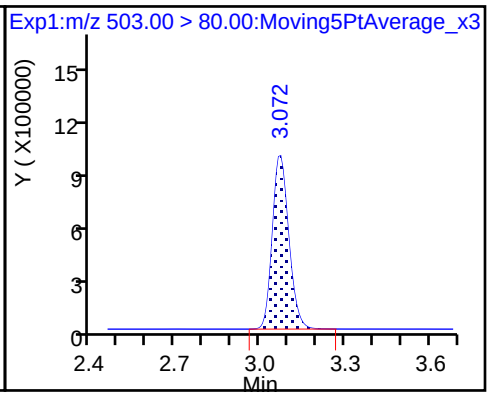
16 Perfluoroheptanesulfonic acid



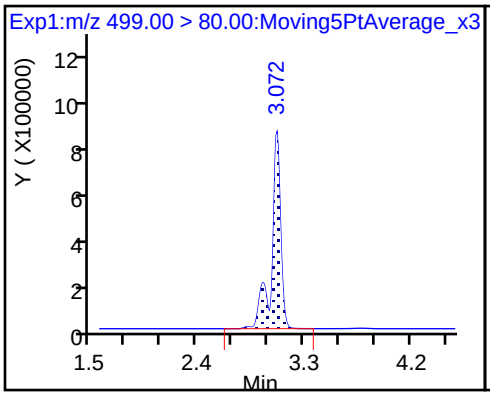
16 Perfluoroheptanesulfonic acid



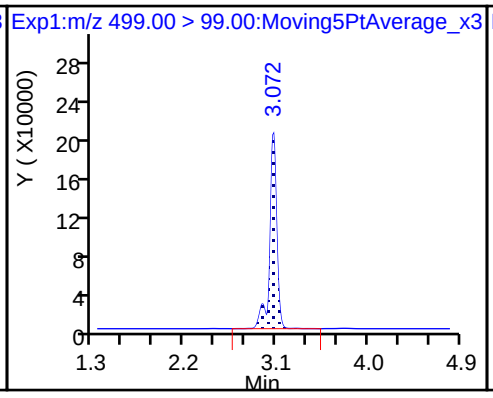
D 18 13C4 PFOS



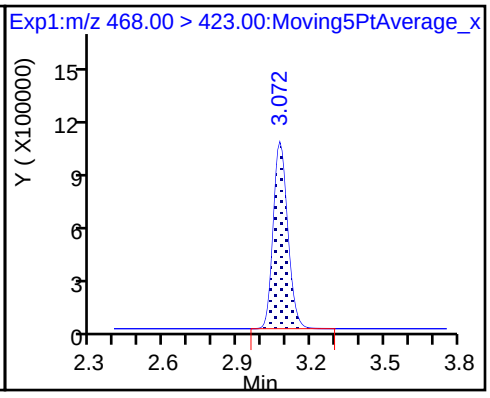
17 Perfluorooctane sulfonic acid



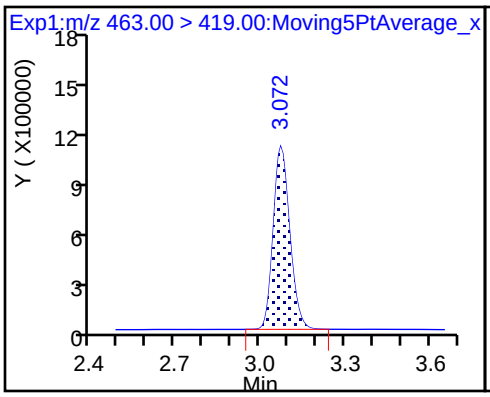
17 Perfluorooctane sulfonic acid



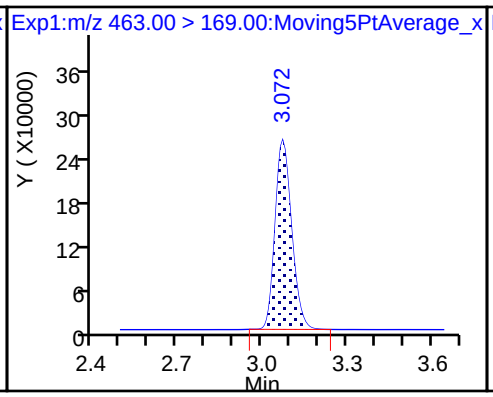
D 19 13C5 PFNA



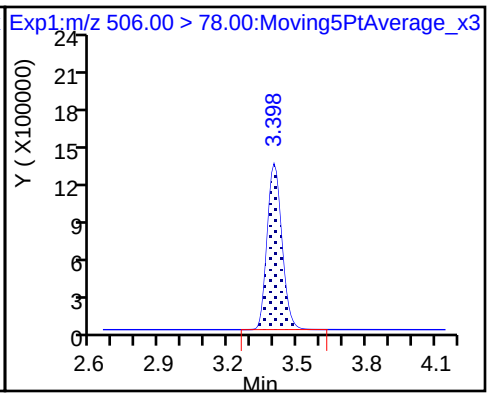
20 Perfluorononanoic acid



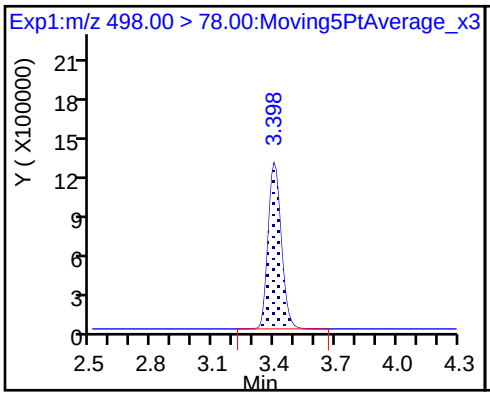
20 Perfluorononanoic acid



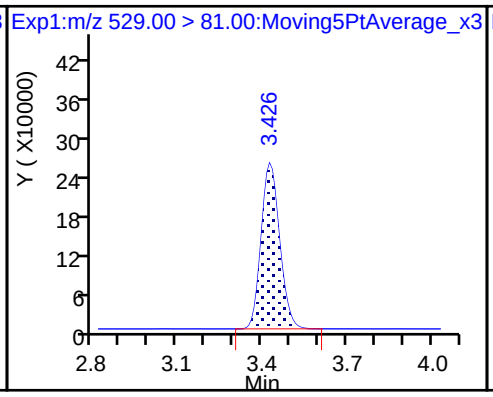
D 21 13C8 FOSA



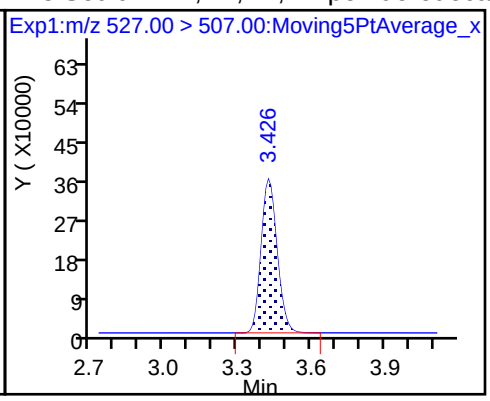
22 Perfluorooctane Sulfonamide



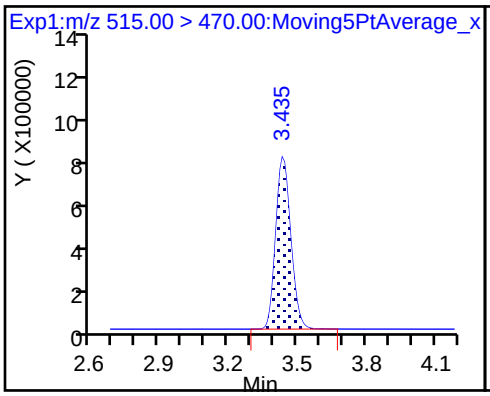
D 26 M2-8:2FTS



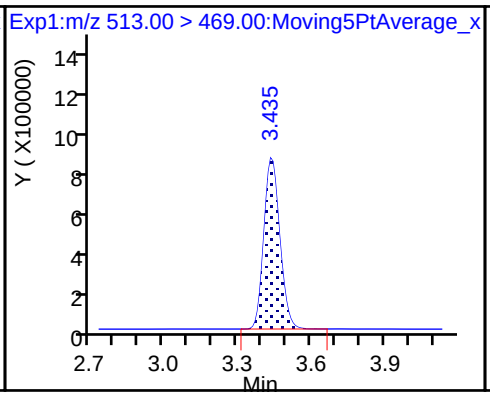
25 Sodium 1H,1H,2H,2H-perfluorodecane



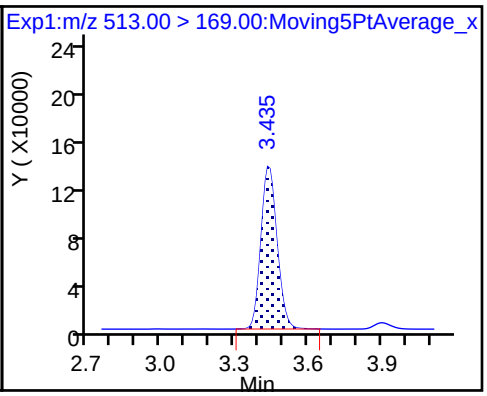
D 23 13C2 PFDA



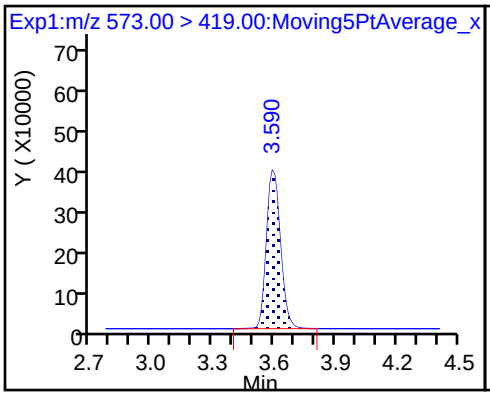
24 Perfluorodecanoic acid



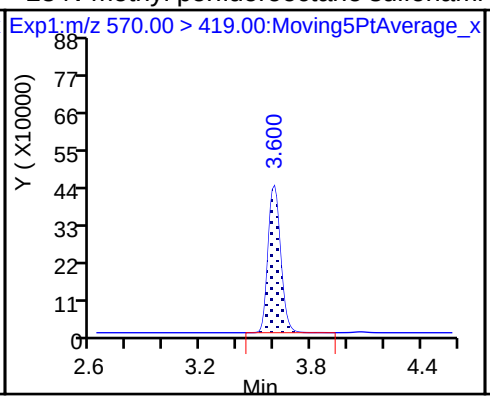
24 Perfluorodecanoic acid



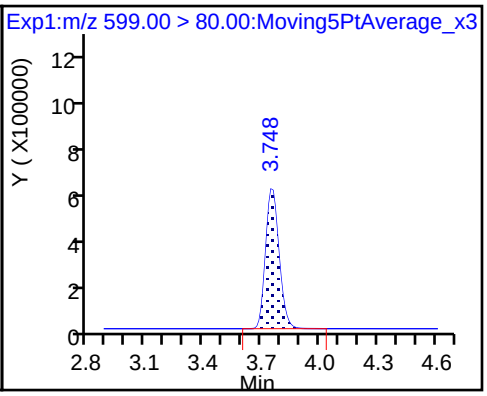
D 27 d3-NMeFOSAA



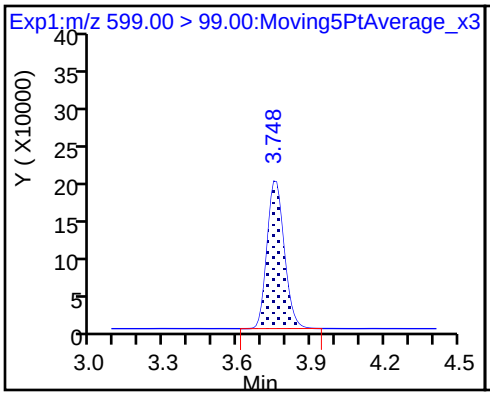
28 N-methyl perfluorooctane sulfonami



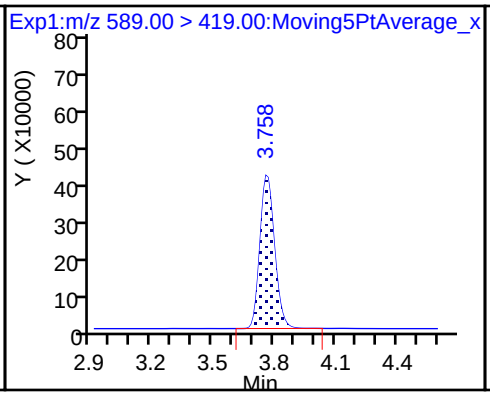
29 Perfluorodecane Sulfonic acid



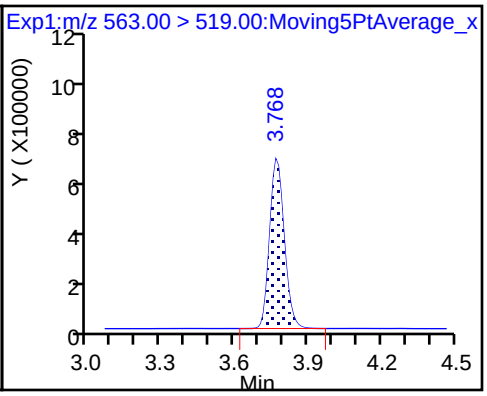
29 Perfluorodecane Sulfonic acid



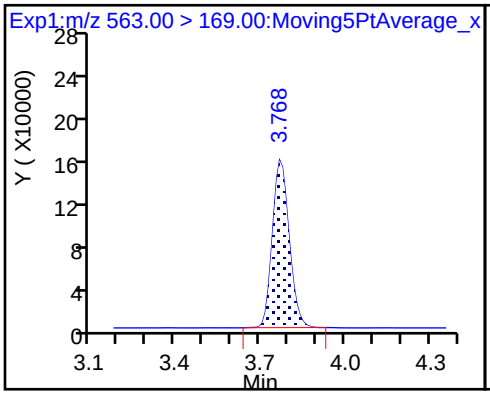
D 32 d5-NEtFOSAA



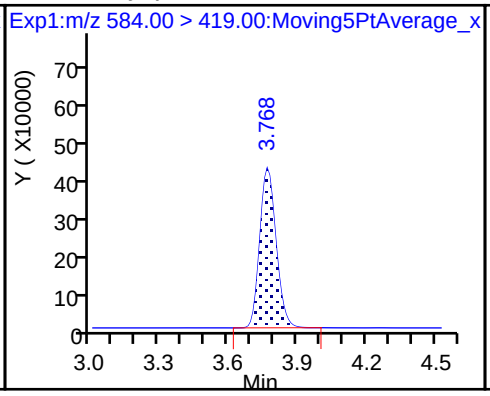
31 Perfluoroundecanoic acid



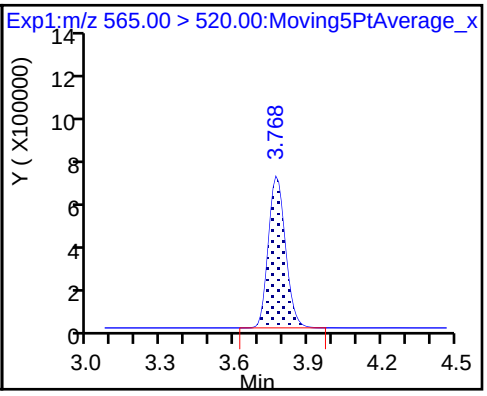
31 Perfluoroundecanoic acid



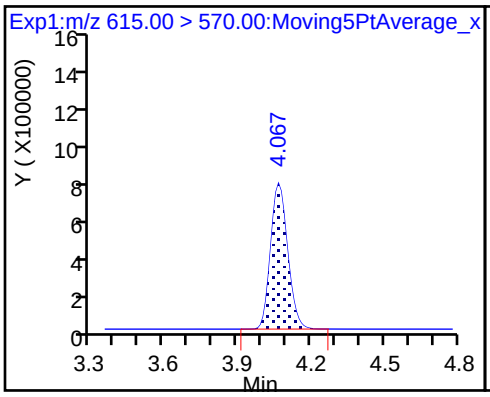
33 N-ethyl perfluorooctane sulfonamid



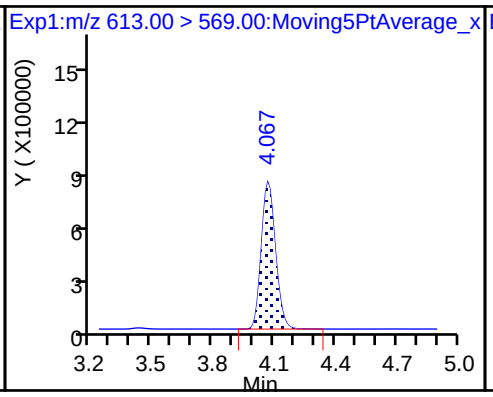
D 30 13C2 PFUnA



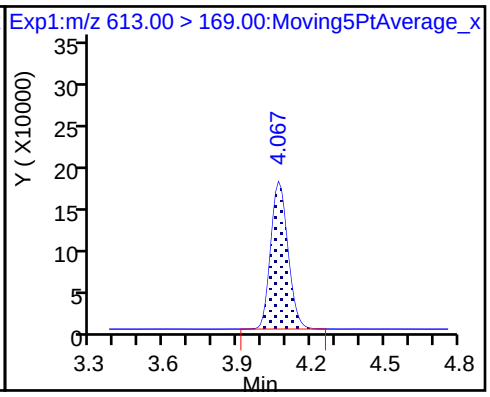
D 36 13C2 PFDoA



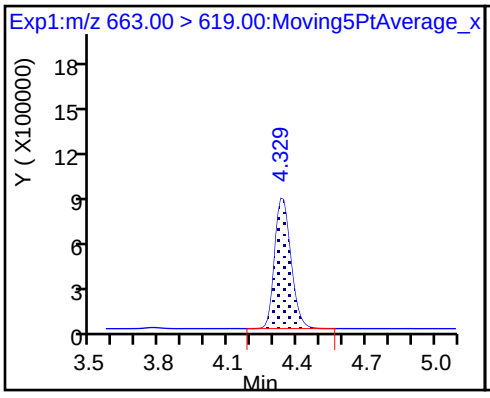
37 Perfluorododecanoic acid



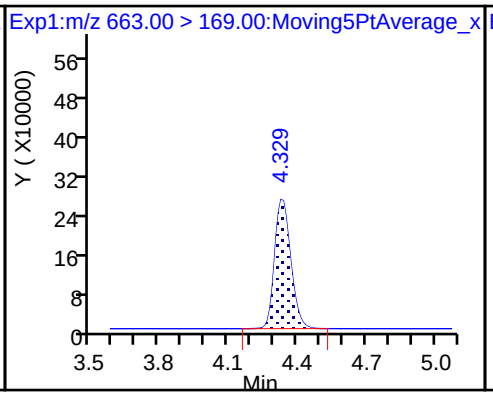
37 Perfluorododecanoic acid



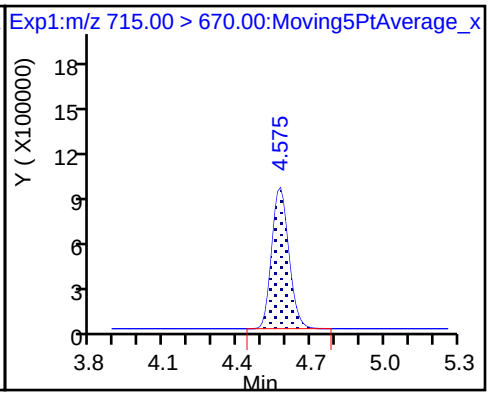
41 Perfluorotridecanoic acid



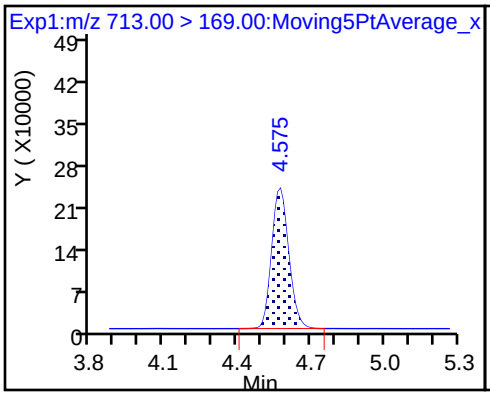
41 Perfluorotridecanoic acid



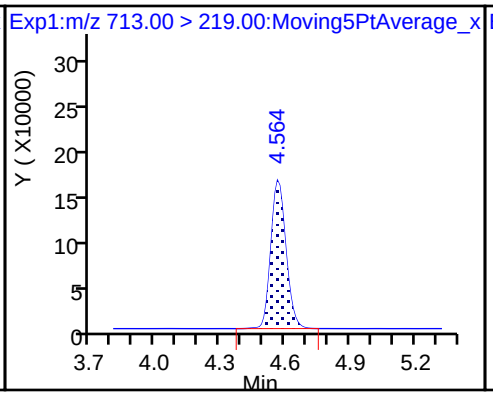
D 43 13C2-PFTeDA



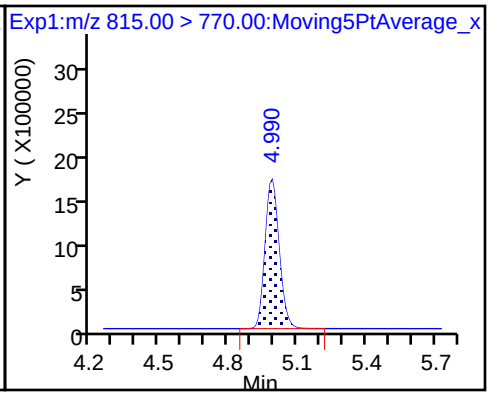
42 Perfluorotetradecanoic acid



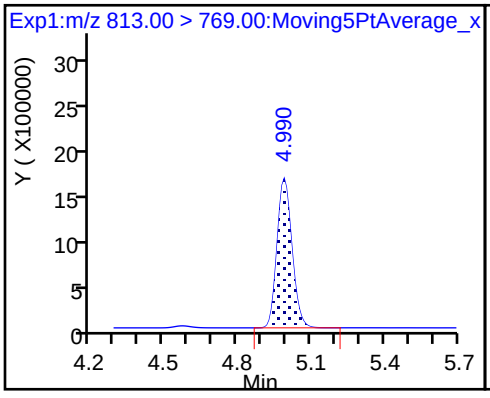
42 Perfluorotetradecanoic acid



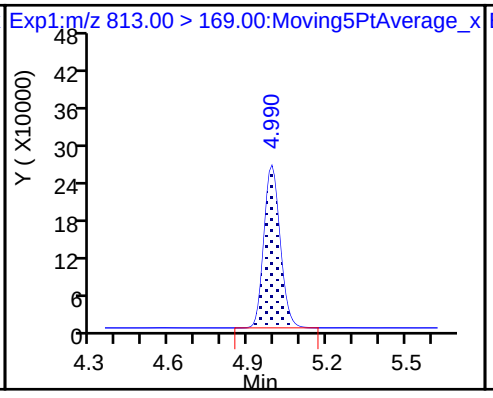
D 44 13C2-PFHxDA



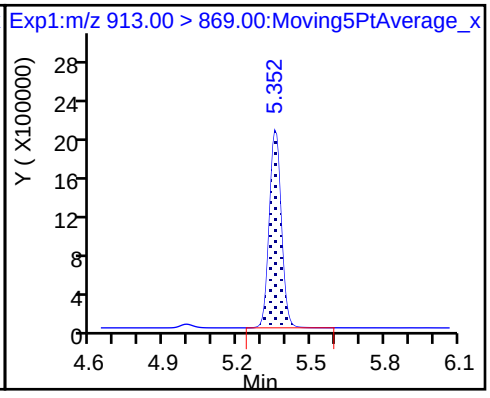
45 Perfluorohexadecanoic acid



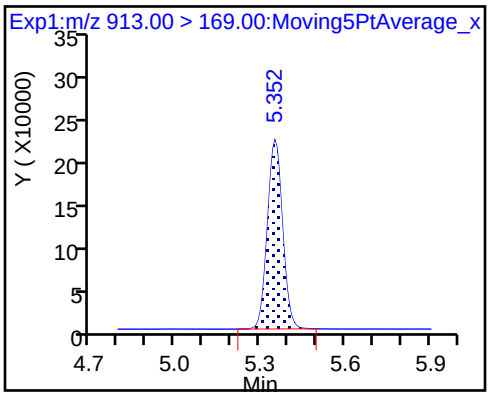
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 21-Mar-2018 19:03:30 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:44 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:25:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.538	6477851	2.55		102	71577	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	12506996	5.12		102	5009	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	10061856	5.28		106	5962	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.636	4228437	2.51		100	115375	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.743	-0.007	0.646	91170	2.37		102	642	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.005	13614957	4.47		101	59974	
298.90 > 99.00	1.744	1.745	-0.001	1.005	5744856		2.37(1.25-3.74)	101	34133	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.727	618185	2.33		99.8	9508	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.962	-0.006	1.000	3074271	4.85		104	113750	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	9699799	5.15		103	27756	
313.00 > 119.00	1.997	1.998	-0.001	1.000	852897		11.37(5.03-15.10)	103	18827	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.743	4608558	2.48		99.0	117004	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.866	4533044	2.47		98.7	76306	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	9620973	5.13		103	19806	
363.00 > 169.00	2.328	2.335	-0.007	1.000	3676177		2.62(1.13-3.40)	103	44226	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	11144344	4.59		101	37424	
399.00 > 99.00	2.341	2.346	-0.005	1.000	3686233		3.02(1.50-4.49)	101	14506	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	5161589	2.28		96.3	51420	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.672	-0.007	1.000	3079977	4.88		103	79193	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.672	-0.007	0.991	859398	2.26		95.0	19868	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.695	-0.006		5010487	2.50			60852	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.695	-0.006	1.000	4582778	2.44		97.6	62576	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.697	-0.008	1.000	10325028	4.99		99.7	3798	
413.00 > 169.00	2.689	2.697	-0.008	1.000	5578097		1.85(0.84-2.52)	99.7	12866	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.703	-0.007	1.000	10247281	4.92		103	95353	
449.00 > 99.00	2.697	2.703	-0.007	1.000	2802979		3.66(1.94-5.82)	103	30967	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.140	3887079	2.36		98.7	34652	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.070	-0.005	1.140	4190429	2.53		101	73908	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.070	-0.005	1.000	8507880	4.70		101	25330	
499.00 > 99.00	3.065	3.070	-0.005	1.000	1865180		4.56(2.31-6.93)	101	16885	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	8405623	5.03		101	11383	
463.00 > 169.00	3.065	3.072	-0.007	1.000	2050780		4.10(1.90-5.69)	101	33608	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.396	-0.007	1.261	5524474	2.49		99.4	47817	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.397	0.001	1.003	11417156	5.24		105	103044	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	3110907	4.74		98.9	52787	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.274	1232595	2.40		100	20905	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	7434177	5.20		104	34723	
513.00 > 169.00	3.435	3.435	0.0	1.000	1267093		5.87(2.36-7.09)	104	25626	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.278	3620699	2.49		99.7	67474	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.335	1999896	2.62		105	32859	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	4285891	5.35		107	16332	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	5812987	5.26		109	81589	
599.00 > 99.00	3.748	3.749	-0.001	1.000	1938375		3.00(1.39-4.16)	109	40850	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.398	2049207	2.35		94.1	11579	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.402	3287781	2.53		101	48915	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	4082815	5.33		107	52088	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	5555779	4.90		98.0	24720	
563.00 > 169.00	3.768	3.768	0.0	1.000	1268479		4.38(2.12-6.36)	98.0	37902	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.066	0.001	1.513	3576857	2.43		97.1	25243	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.068	-0.001	1.000	7940975	5.30		106	7729	
613.00 > 169.00	4.067	4.068	-0.001	1.000	1842955		4.31(2.13-6.40)	106	22214	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	8719608	5.54		111	6299	
663.00 > 169.00	4.329	4.329	0.0	1.000	2643202		3.30(1.25-3.76)	111	25957	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.698	4422729	2.46		98.3	24229	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.571	-0.007	1.000	2258774	5.15		103	23470	
713.00 > 219.00	4.564	4.571	-0.007	1.000	1681977		1.34(0.71-2.13)	103	21838	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.987	-0.006	1.853	7843306	2.66		106	20262	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.989	-0.008	1.000	14354924	5.01		100	4032	
813.00 > 169.00	4.981	4.989	-0.008	1.000	2391479		6.00(2.86-8.58)	100	14747	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	14635504	5.05		101	3845	
913.00 > 169.00	5.345	5.354	-0.009	0.999	1844593		7.93(3.83-11.48)	101	7769	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:45 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_007.d

Injection Date: 21-Mar-2018 19:03:30 Instrument ID: A8_N

Lims ID: IC L6 Full

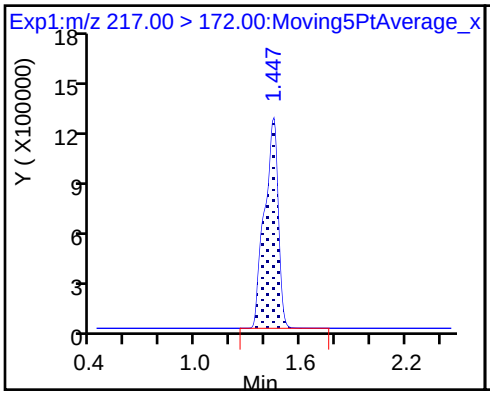
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

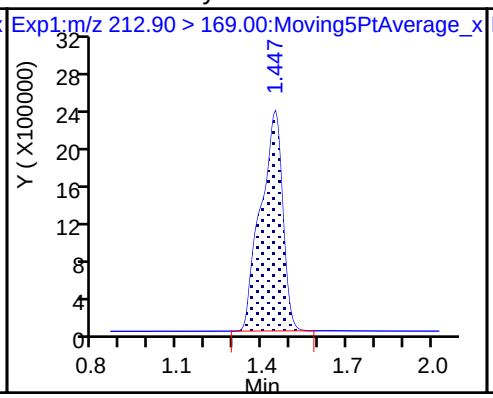
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

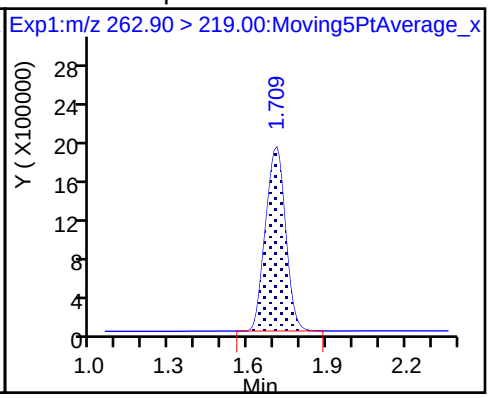
D 1 13C4 PFBA



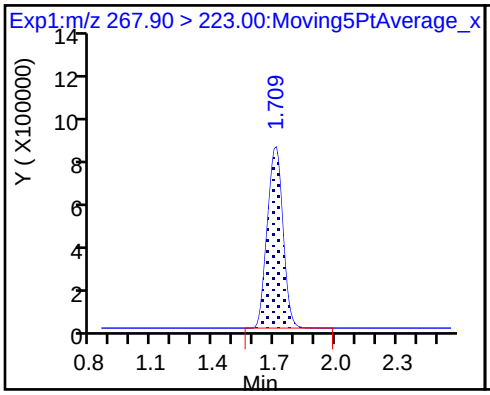
2 Perfluorobutyric acid



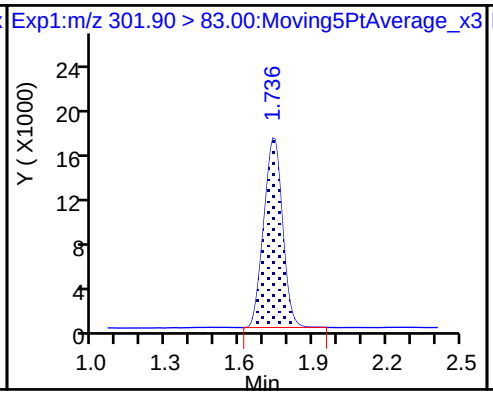
4 Perfluoropentanoic acid



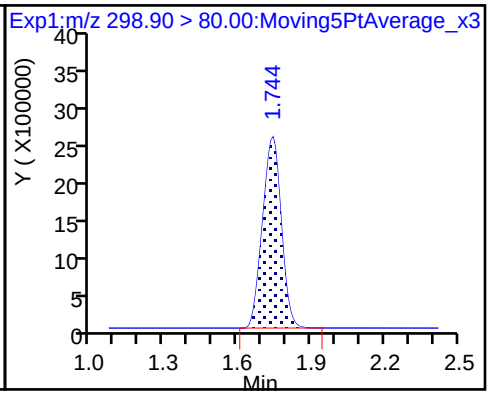
D 3 13C5-PFPeA



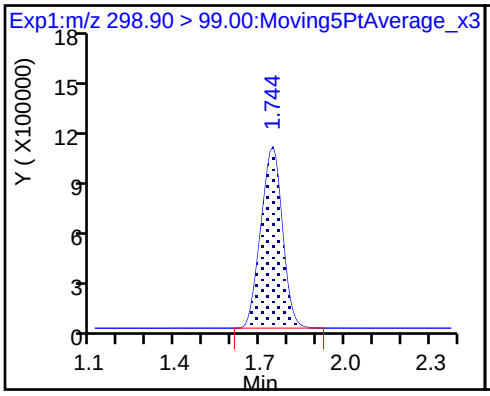
D 47 13C3-PFBS



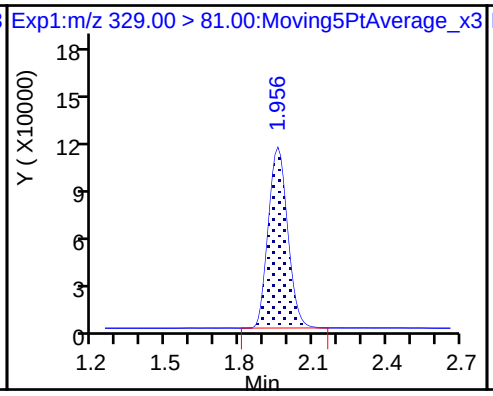
5 Perfluorobutanesulfonic acid



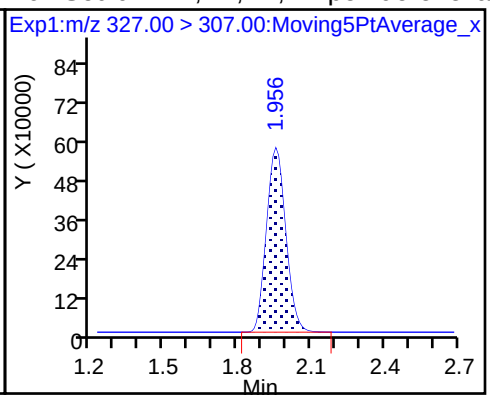
5 Perfluorobutanesulfonic acid



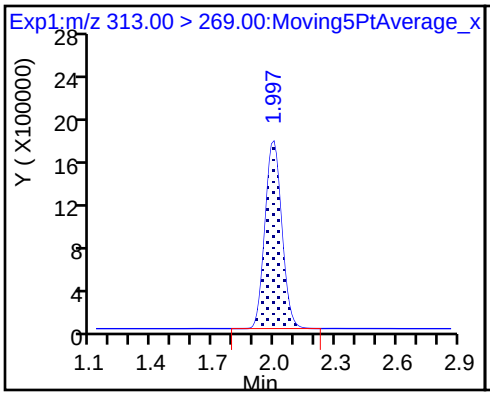
D 60 M2-4:2FTS



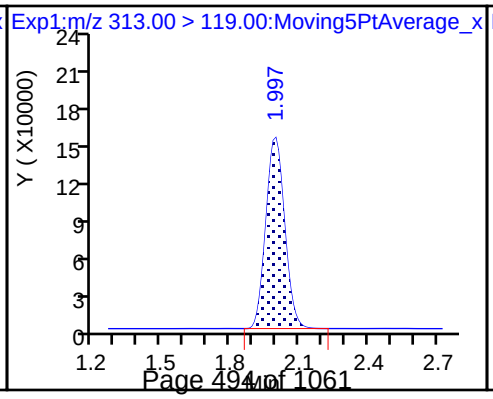
61 Sodium 1H,1H,2H,2H-perfluorohexane



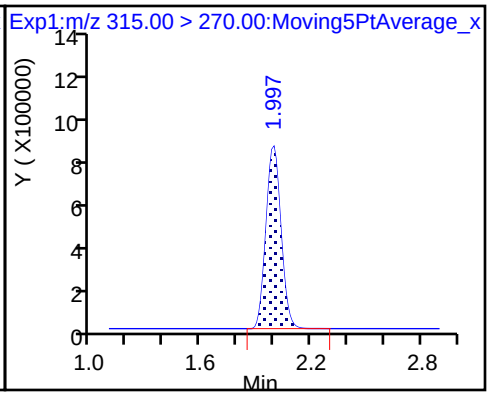
6 Perfluorohexanoic acid



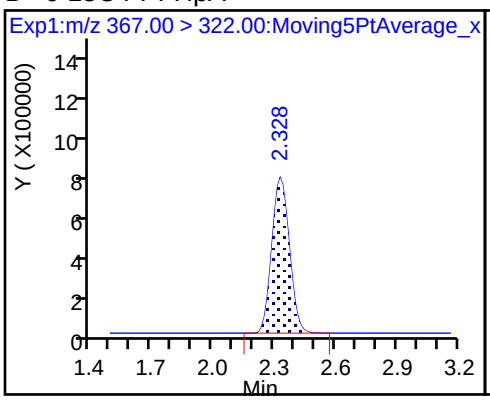
6 Perfluorohexanoic acid



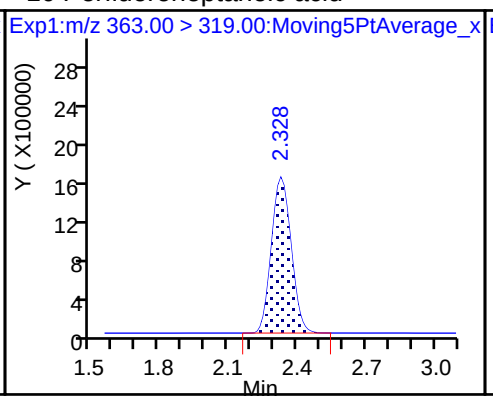
D 7 13C2 PFHxA



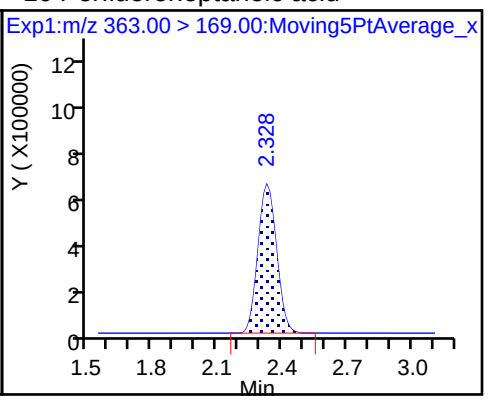
D 9 13C4-PFHpA



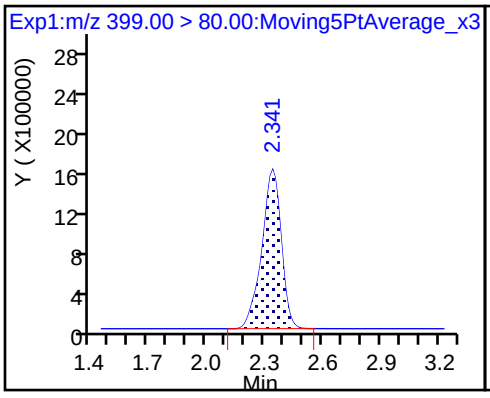
10 Perfluoroheptanoic acid



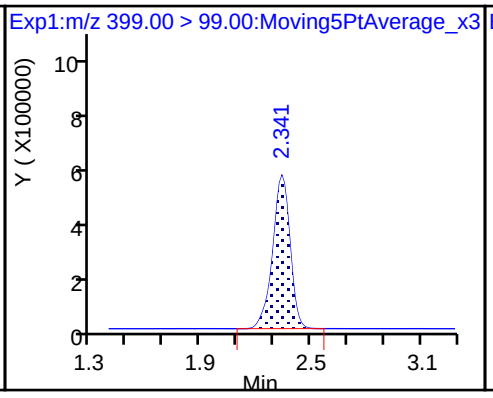
10 Perfluoroheptanoic acid



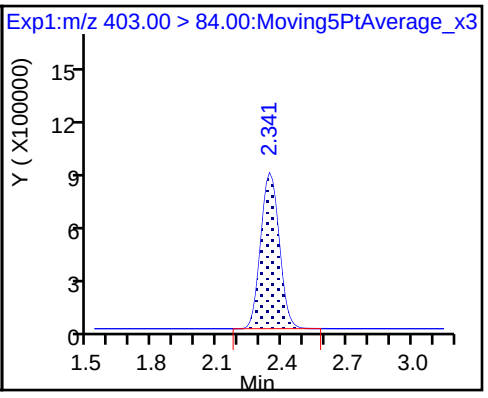
8 Perfluorohexanesulfonic acid



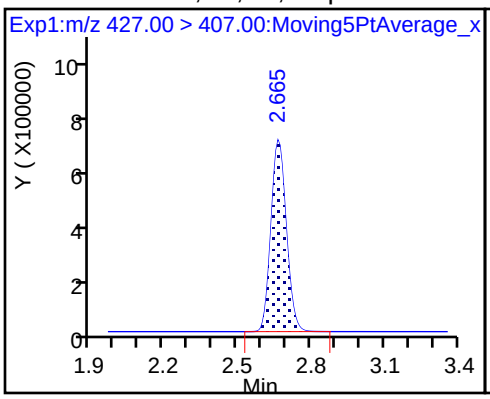
8 Perfluorohexanesulfonic acid



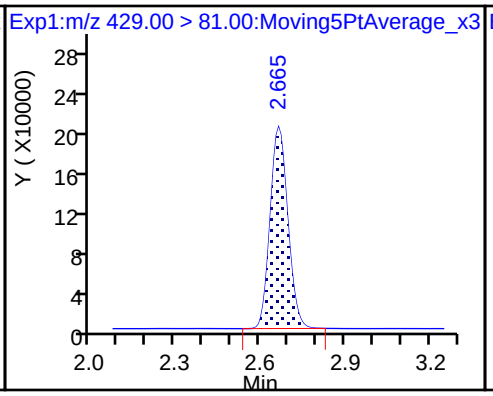
D 11 18O2 PFHxS



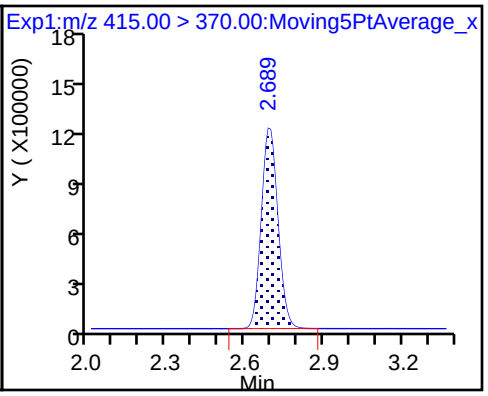
13 Sodium 1H,1H,2H,2H-perfluorooctan



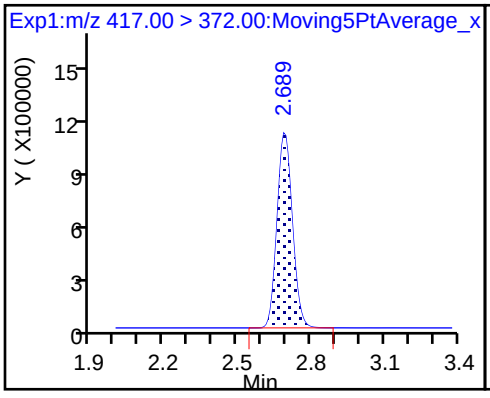
D 12 M2-6:2FTS



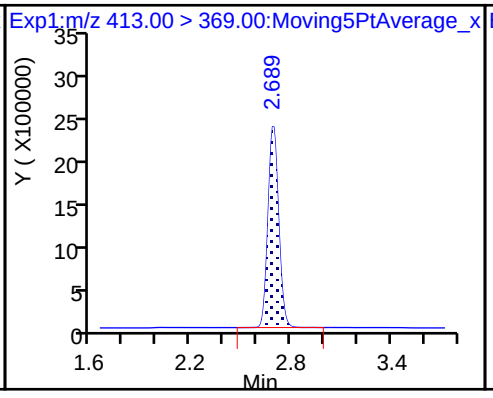
* 62 13C2-PFOA



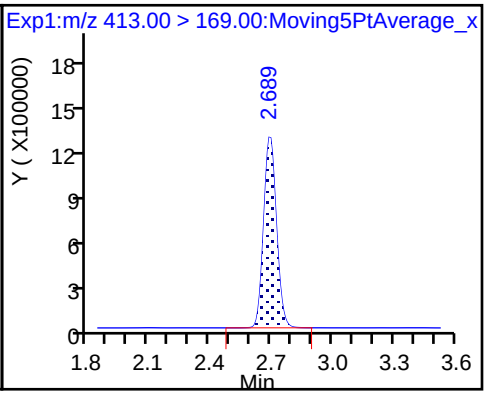
D 14 13C4 PFOA



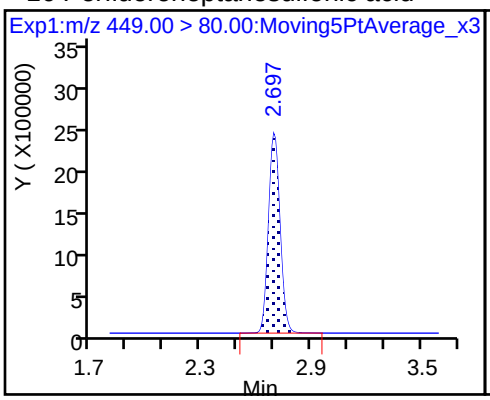
15 Perfluorooctanoic acid



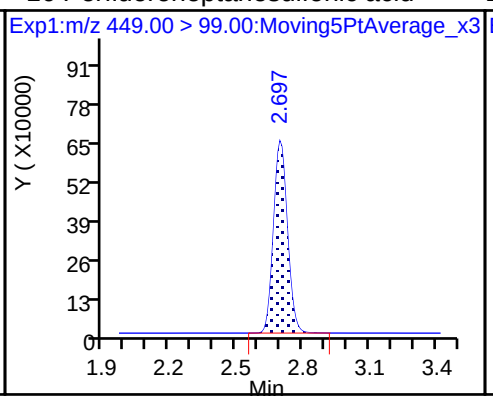
15 Perfluorooctanoic acid



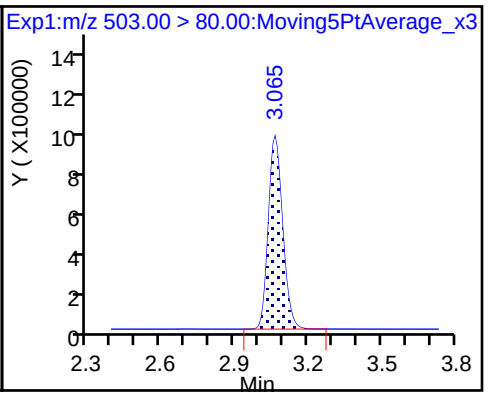
16 Perfluoroheptanesulfonic acid



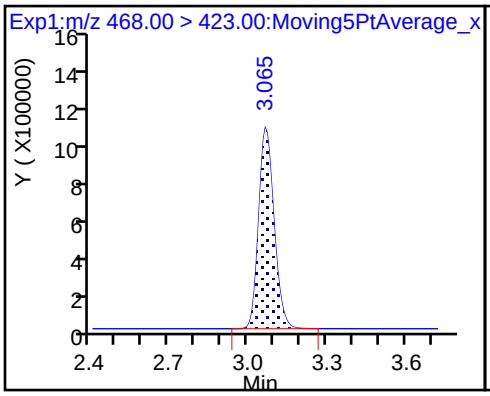
16 Perfluoroheptanesulfonic acid



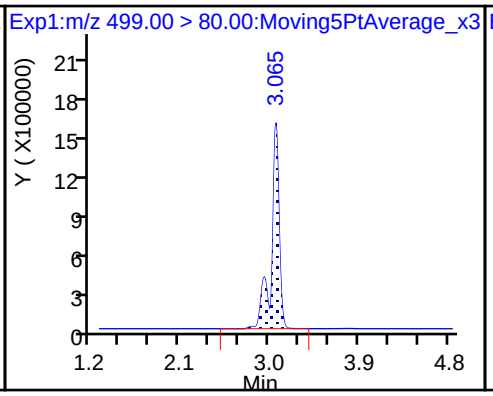
D 18 13C4 PFOS



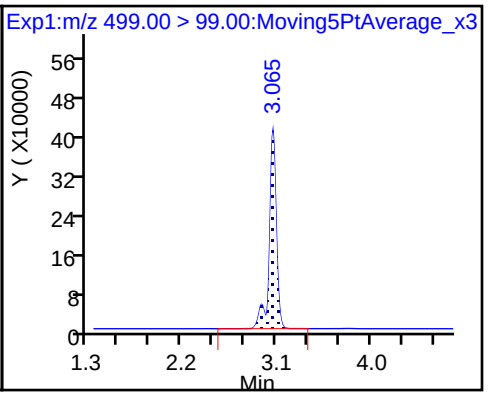
D 19 13C5 PFNA



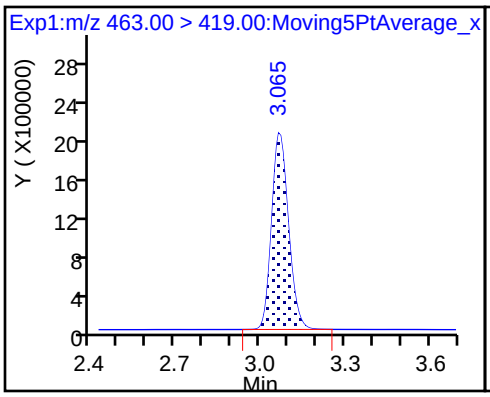
17 Perfluorooctane sulfonic acid



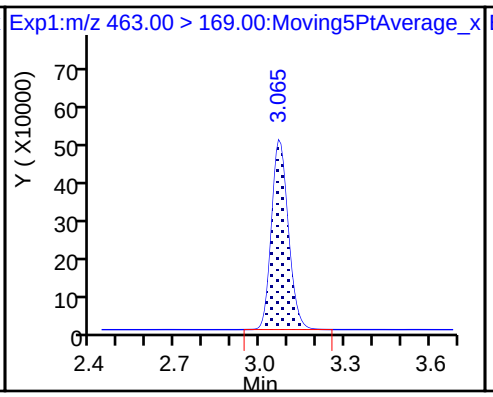
17 Perfluorooctane sulfonic acid



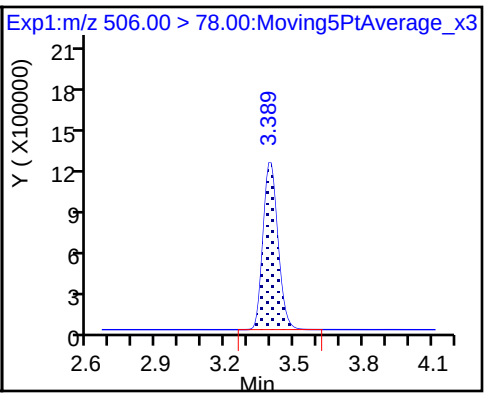
20 Perfluorononanoic acid



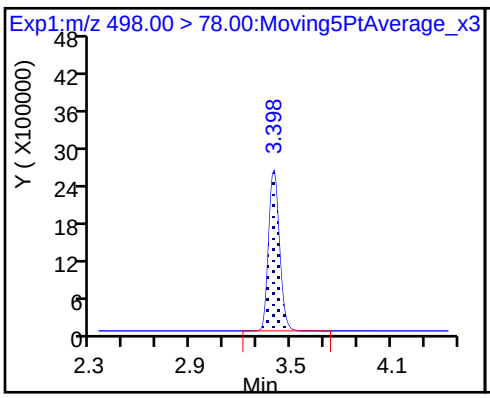
20 Perfluorononanoic acid



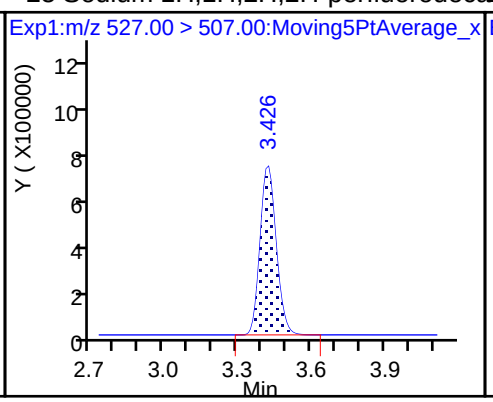
D 21 13C8 FOSA



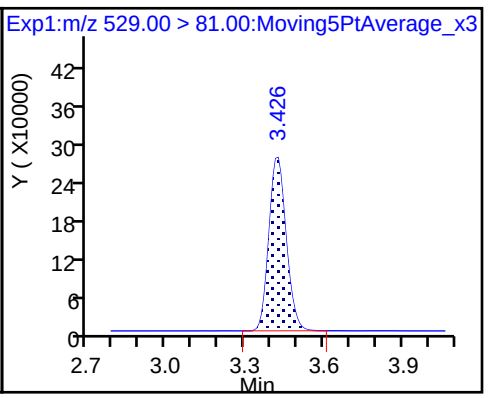
22 Perfluorooctane Sulfonamide



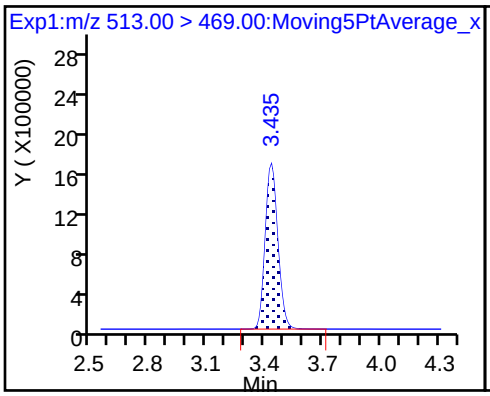
25 Sodium 1H,1H,2H,2H-perfluorodecane



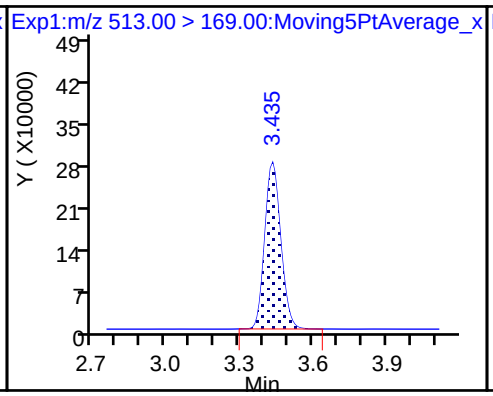
D 26 M2-8:2FTS



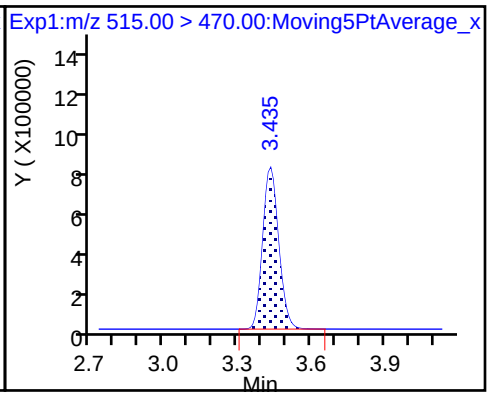
24 Perfluorodecanoic acid



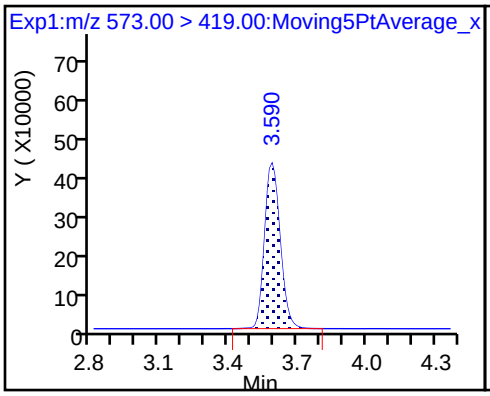
24 Perfluorodecanoic acid



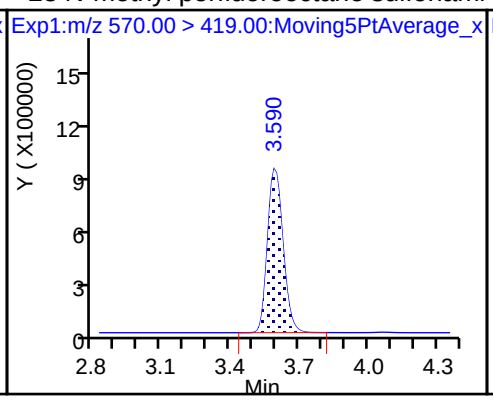
D 23 13C2 PFDA



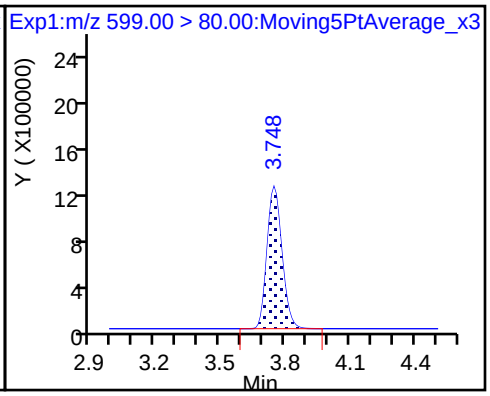
D 27 d3-NMeFOSAA



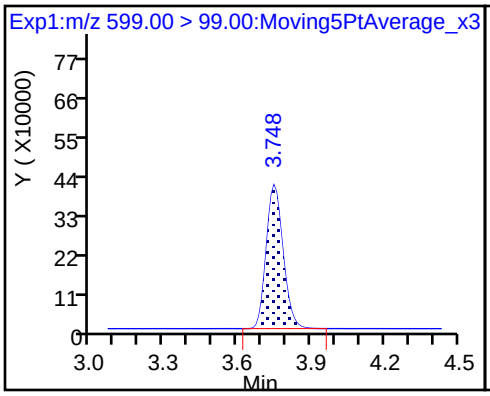
28 N-methyl perfluorooctane sulfonami



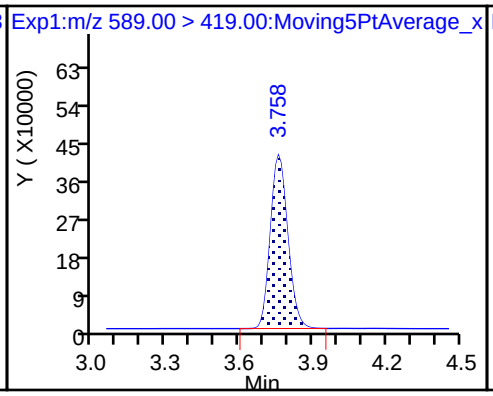
29 Perfluorodecane Sulfonic acid



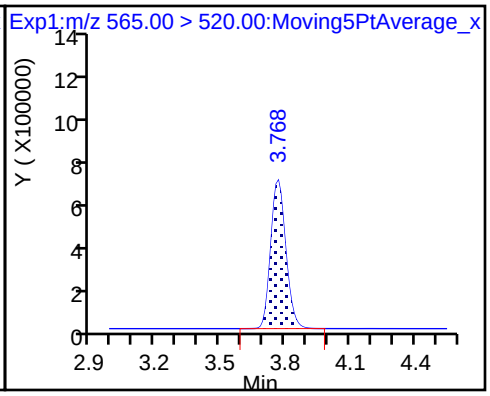
29 Perfluorodecane Sulfonic acid



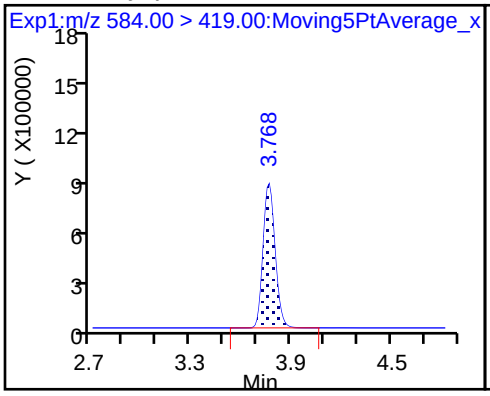
D 32 d5-NEtFOSAA



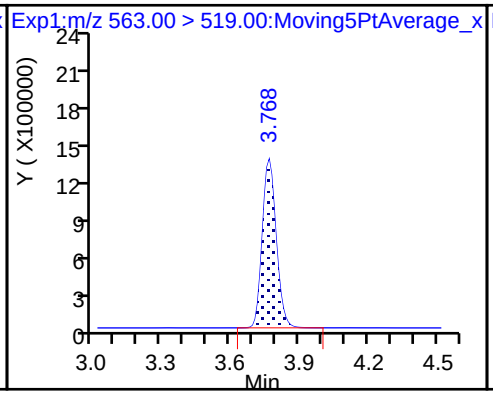
D 30 13C2 PFUnA



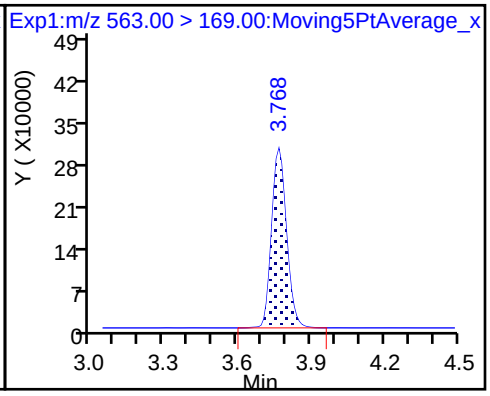
33 N-ethyl perfluorooctane sulfonamid



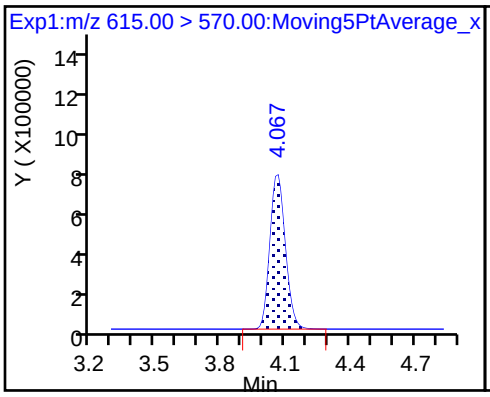
31 Perfluoroundecanoic acid



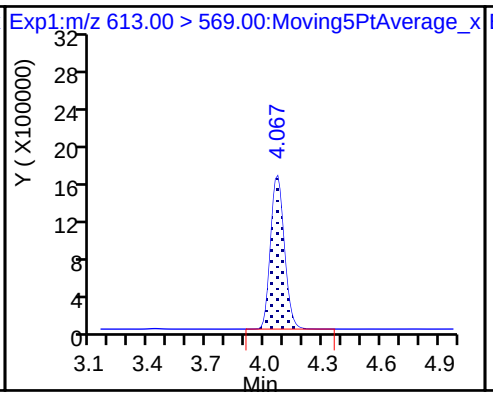
31 Perfluoroundecanoic acid



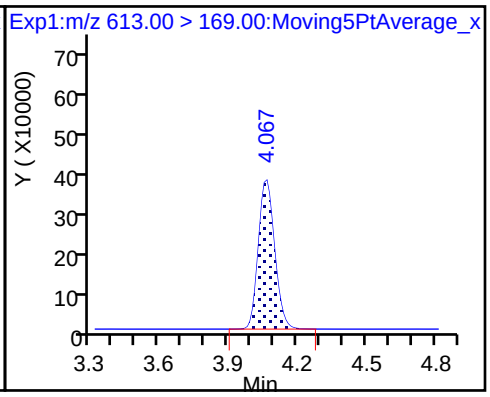
D 36 13C2 PFDoA



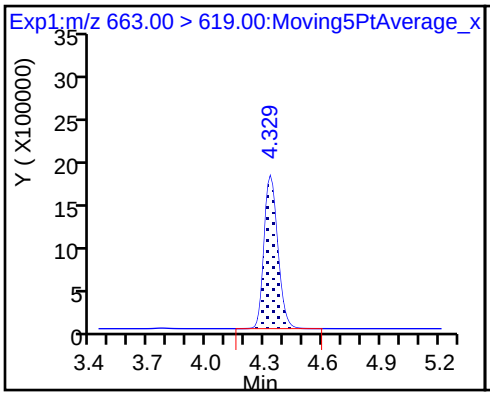
37 Perfluorododecanoic acid



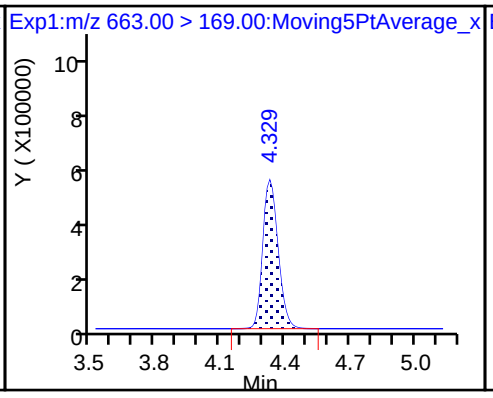
37 Perfluorododecanoic acid



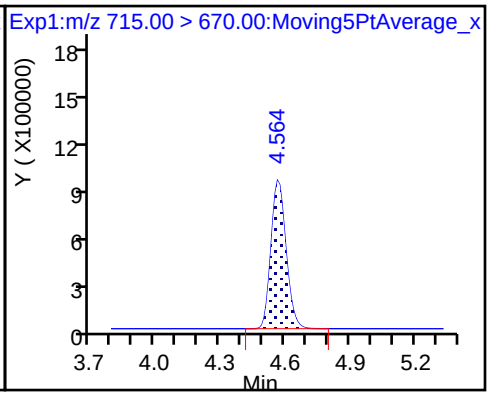
41 Perfluorotridecanoic acid



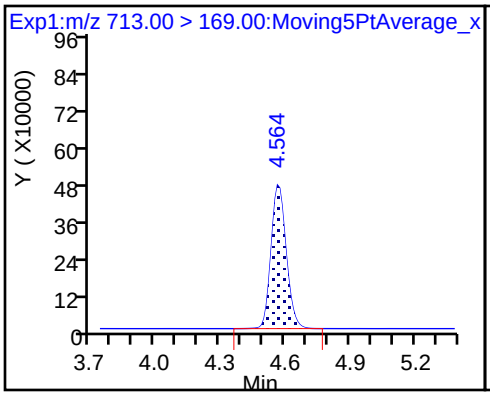
41 Perfluorotridecanoic acid



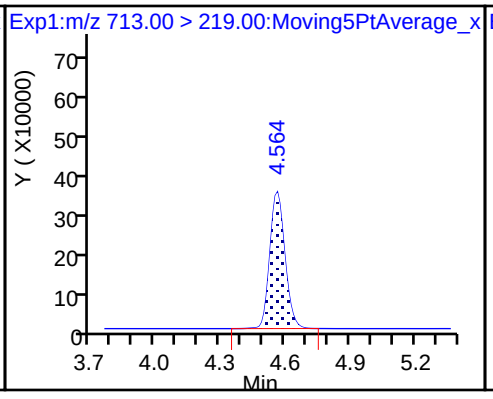
D 43 13C2-PFTeDA



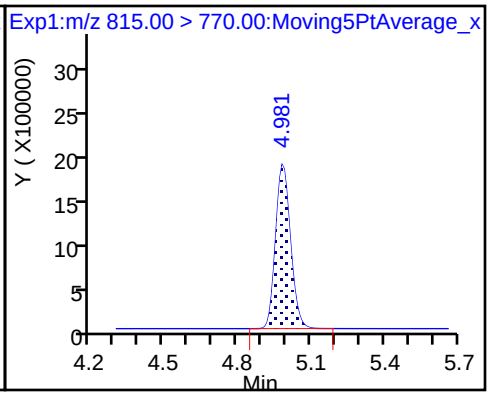
42 Perfluorotetradecanoic acid



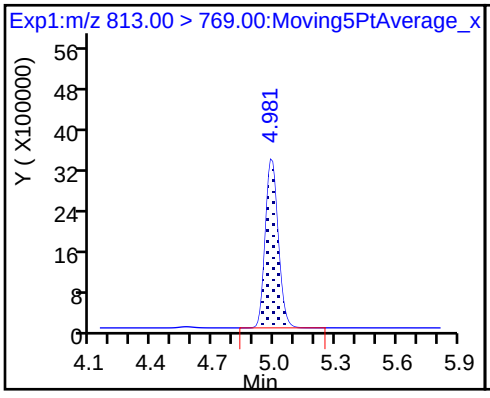
42 Perfluorotetradecanoic acid



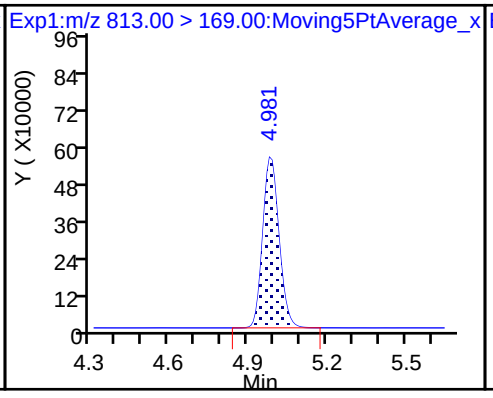
D 44 13C2-PFHxDA



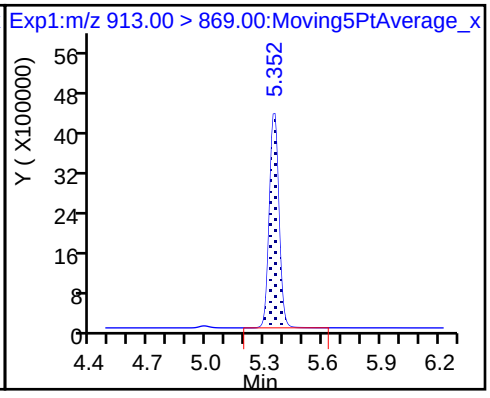
45 Perfluorohexadecanoic acid



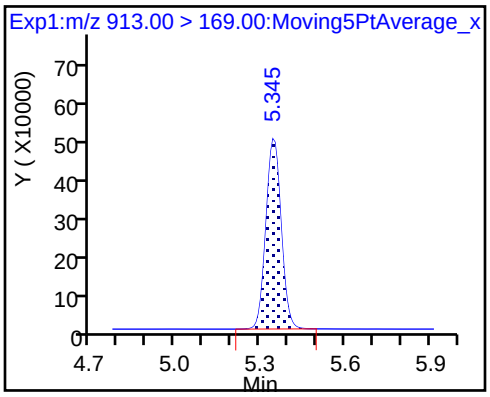
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 21-Mar-2018 19:11:19 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:48 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:26:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.447	-0.003	0.537	6100844	2.65		106	75996	
2 Perfluorobutyric acid										
212.90 > 169.00	1.450	1.449	0.001	1.004	22360079	9.72		97.2	8015	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.710	-0.005	0.634	4046135	2.65		106	97369	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.705	1.710	-0.005	1.000	18500324	10.1		101	10333	
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.743	-0.003	0.647	84106	2.41		104	620	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.745	-0.005	1.000	24100878	8.57		97.0	85607	
298.90 > 99.00	1.740	1.745	-0.005	1.000	10977956		2.20(1.25-3.74)	97.0	60614	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.959	0.001	0.729	533647	2.21		94.8	6419	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.962	-0.002	1.000	5293270	9.06		97.0	195984	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.998	-0.006	0.740	4257747	2.52		101	74703	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.998	-0.006	1.000	17232401	9.90		99.0	44074	
313.00 > 119.00	1.992	1.998	-0.006	1.000	1540944		11.18(5.03-15.10)	99.0	34184	
D 9 13C4-PFHpA										
367.00 > 322.00	2.335	2.333	0.002	0.868	4129064	2.48		99.0	69460	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.335	2.335	0.0	1.000	17149506	10.0		100	30306	
363.00 > 169.00	2.335	2.335	0.0	1.000	6613832		2.59(1.13-3.40)	100	48365	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.348	2.346	0.002	1.000	19742275	8.51		93.5	51185	
399.00 > 99.00	2.348	2.346	0.002	1.000	7022065		2.81(1.50-4.49)	93.5	22400	
D 11 18O2 PFHxS										
403.00 > 84.00	2.348	2.348	0.0	0.873	4928998	2.40		101	64840	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.672	-0.005	0.991	845912	2.45		103	18074	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.672	-0.005	1.000	5982174	9.63		102	108087	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.695	-0.004	1.000	4169807	2.44		97.7	59737	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.695	-0.004		4550962	2.50			65302	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.697	-0.006	1.000	18212815	9.67		96.7	5500	
413.00 > 169.00	2.691	2.697	-0.006	1.000	10080594		1.81(0.84-2.52)	96.7	18247	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.703	-0.004	1.000	17826274	9.17		96.3	103505	
449.00 > 99.00	2.699	2.703	-0.004	1.000	4999808		3.57(1.94-5.82)	96.3	34087	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.068	-0.001	1.140	3625826	2.42		101	21910	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.067	3.070	-0.003	1.000	15932478	9.43		102	19647	M
499.00 > 99.00	3.067	3.070	-0.003	1.000	3468678		4.59(2.31-6.93)	102	82323	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.070	-0.003	1.140	3729104	2.48		99.1	64949	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.072	-0.005	1.000	15598692	10.5		105	18229	
463.00 > 169.00	3.067	3.072	-0.005	1.000	3729122		4.18(1.90-5.69)	105	50397	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.396	-0.004	1.261	4957065	2.46		98.2	34240	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.397	-0.005	1.000	18741888	9.59		95.9	103813	
D 26 M2-8:2FTS										
529.00 > 81.00	3.420	3.426	-0.006	1.271	1040808	2.23		93.1	16509	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.420	3.426	-0.006	1.000	5541846	10.0		104	80664	
D 23 13C2 PFDA										
515.00 > 470.00	3.429	3.435	-0.006	1.274	3248595	2.46		98.5	64981	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.429	3.435	-0.006	1.000	12786299	9.96		99.6	52903	
513.00 > 169.00	3.429	3.435	-0.006	1.000	2320539		5.51(2.36-7.09)	99.6	85814	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.591	-0.007	1.332	1816501	2.62		105	27279	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.595	3.594	0.001	1.003	7642171	10.5		105	37247	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.744	3.749	-0.005	1.000	10545265	10.2		106	168906	
599.00 > 99.00	3.744	3.749	-0.005	1.000	3537256		2.98(1.39-4.16)	106	56975	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.754	3.759	-0.005	1.395	1842170	2.33		93.2	10683	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.764	3.768	-0.004	1.000	10065814	10.5		105	36194	
563.00 > 169.00	3.764	3.768	-0.004	1.000	2312836		4.35(2.12-6.36)	105	50289	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.764	3.768	-0.004	1.003	6938724	10.1		101	87182	
D 30 13C2 PFUnA										
565.00 > 520.00	3.764	3.768	-0.004	1.399	2787354	2.36		94.5	52309	
D 36 13C2 PFDoA										
615.00 > 570.00	4.063	4.066	-0.003	1.510	3528118	2.64		105	29032	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.063	4.068	-0.005	1.000	14548343	9.85		98.5	12448	
613.00 > 169.00	4.063	4.068	-0.005	1.000	3568672		4.08(2.13-6.40)	98.5	36734	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.325	4.329	-0.004	1.000	14795343	9.52		95.2	10222	
663.00 > 169.00	4.325	4.329	-0.004	1.000	4868530		3.04(1.25-3.76)	95.2	33458	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.568	-0.007	1.695	4321269	2.64		106	28163	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.571	-0.010	1.000	4319552	10.1		101	40804	
713.00 > 219.00	4.561	4.571	-0.010	1.000	3132710		1.38(0.71-2.13)	101	38066	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.978	4.987	-0.009	1.850	6875940	2.56		103	18896	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.987	4.989	-0.002	1.002	23776796	9.49		94.9	6474	
813.00 > 169.00	4.978	4.989	-0.011	1.000	4555370		5.22(2.86-8.58)	94.9	19192	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.349	5.354	-0.005	1.000	24460507	9.62		96.2	5275	
913.00 > 169.00	5.342	5.354	-0.012	0.999	3189601		7.67(3.83-11.48)	96.2	10811	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:49 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Injection Date: 21-Mar-2018 19:11:19 Instrument ID: A8_N

Lims ID: IC L7 Full

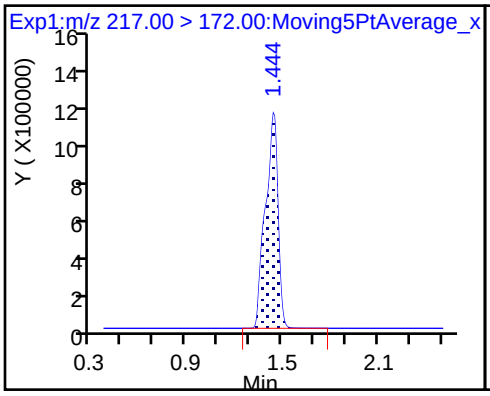
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

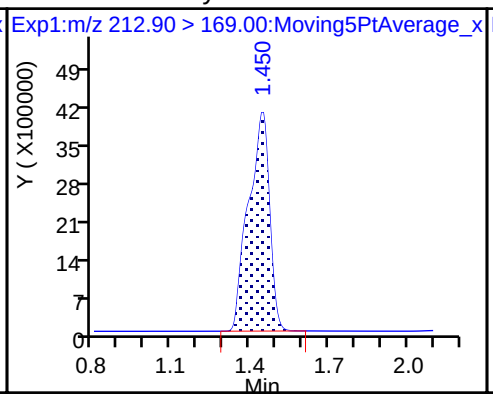
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

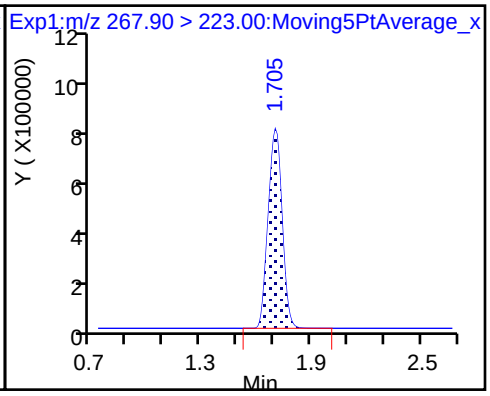
D 1 13C4 PFBA



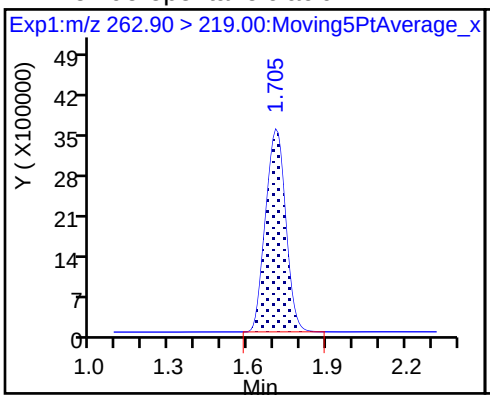
2 Perfluorobutyric acid



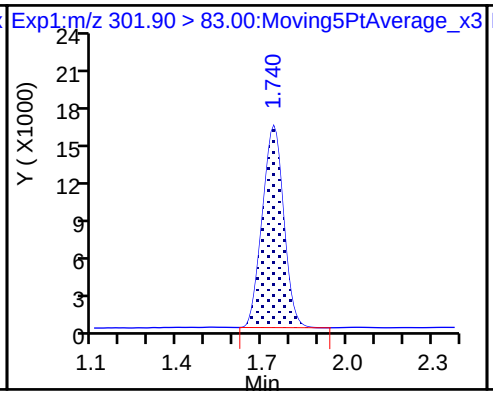
D 3 13C5-PFPeA



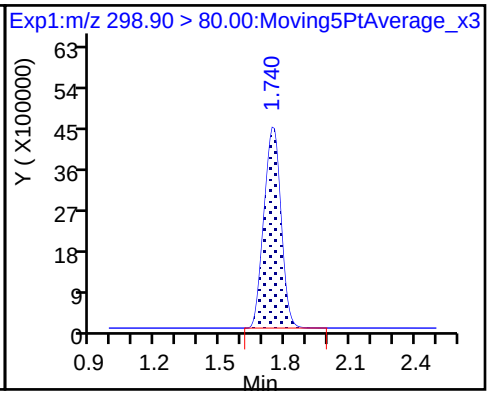
4 Perfluoropentanoic acid



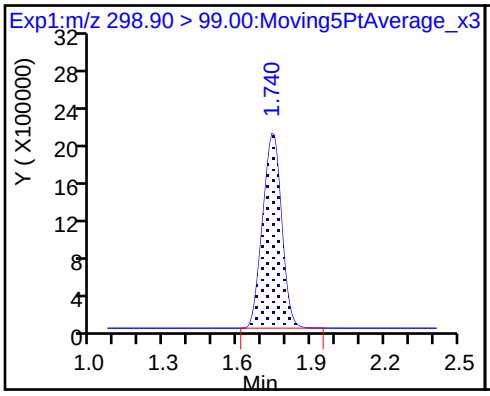
D 47 13C3-PFBS



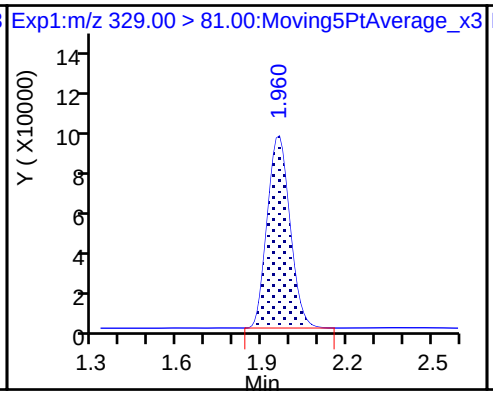
5 Perfluorobutanesulfonic acid



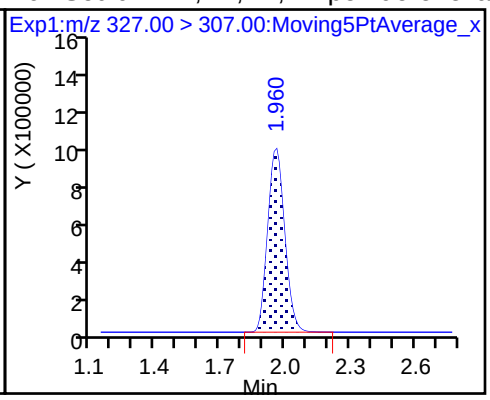
5 Perfluorobutanesulfonic acid



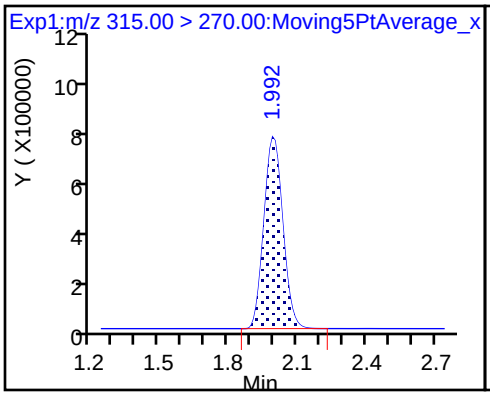
D 60 M2-4:2FTS



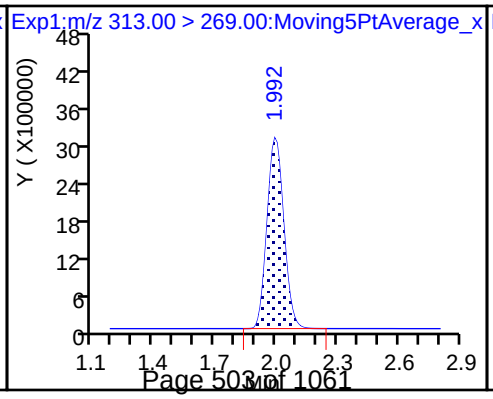
61 Sodium 1H,1H,2H,2H-perfluorohexane



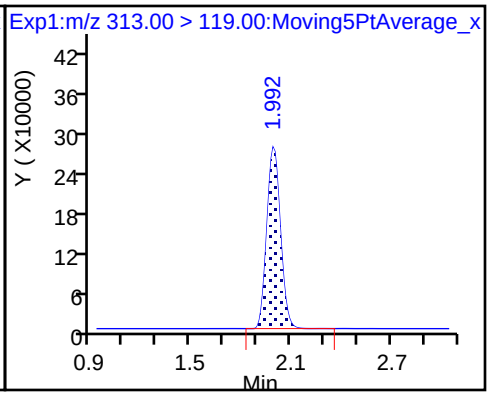
D 7 13C2 PFHxA



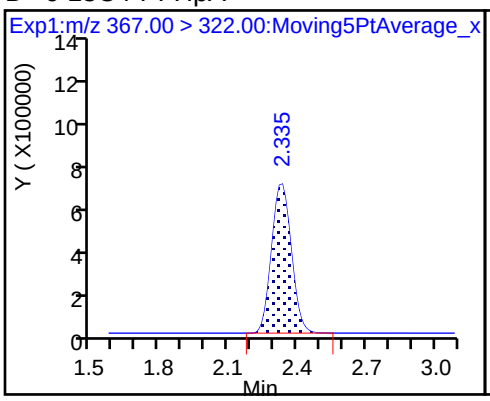
6 Perfluorohexanoic acid



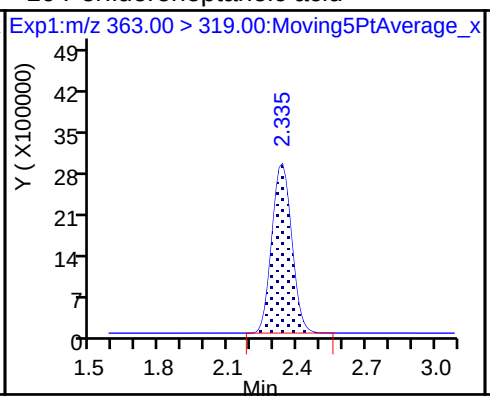
6 Perfluorohexanoic acid



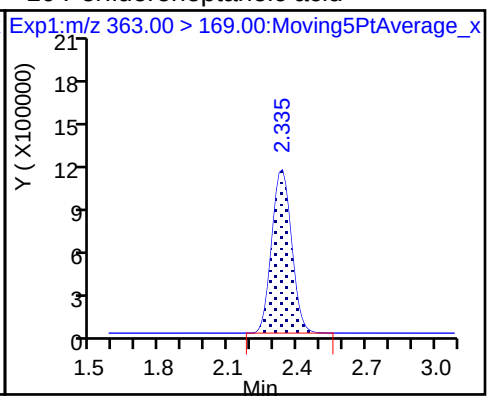
D 9 13C4-PFHpA



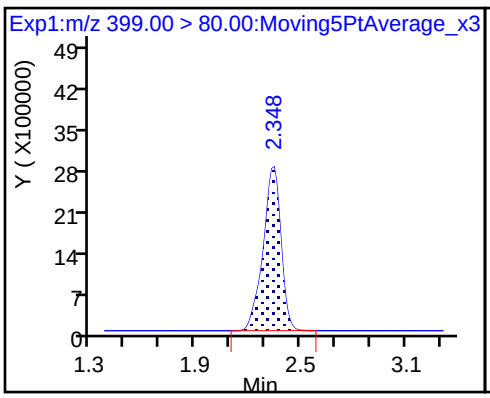
10 Perfluoroheptanoic acid



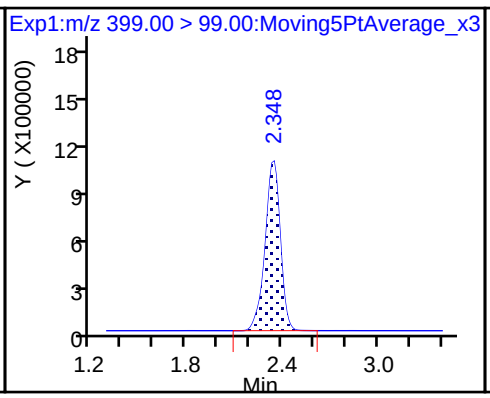
10 Perfluoroheptanoic acid



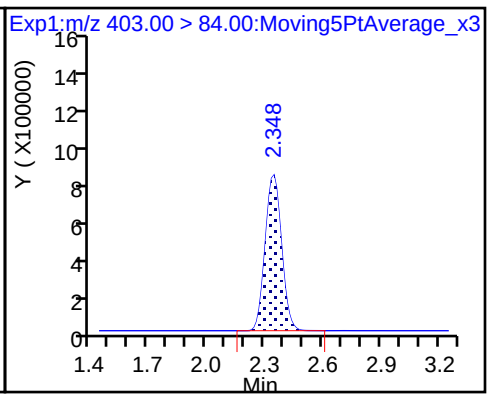
8 Perfluorohexanesulfonic acid



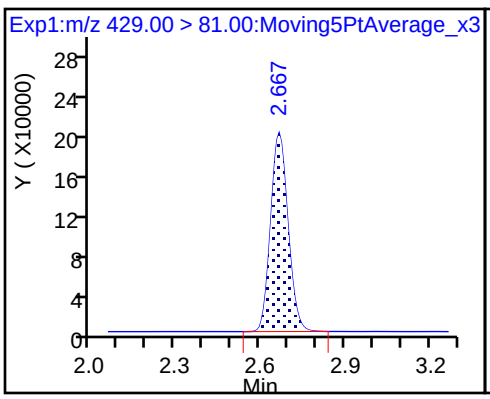
8 Perfluorohexanesulfonic acid



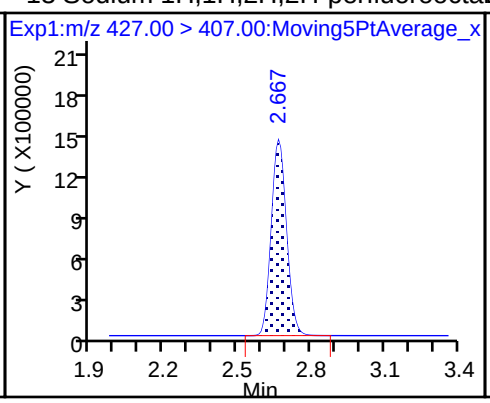
D 11 18O2 PFHxS



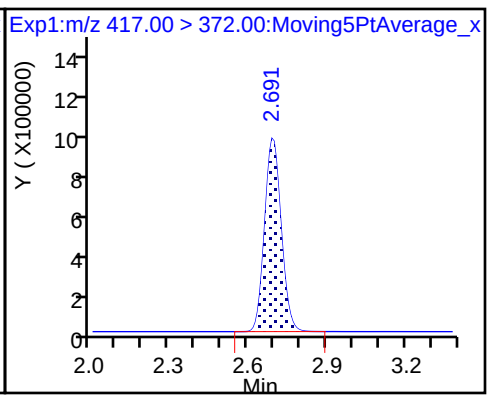
D 12 M2-6:2FTS



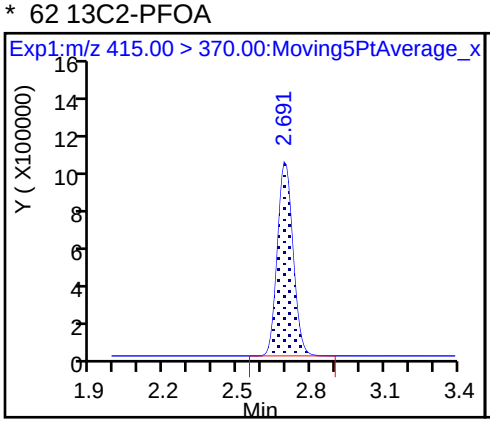
13 Sodium 1H,1H,2H,2H-perfluorooctane



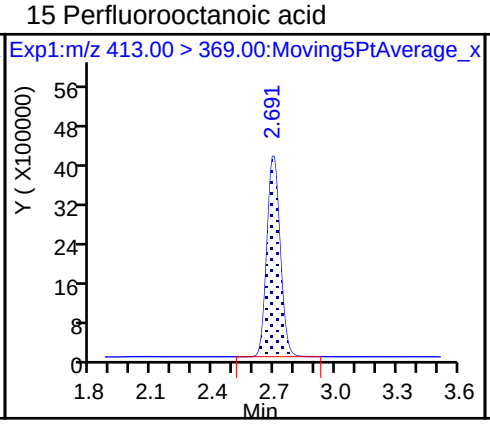
D 14 13C4 PFOA



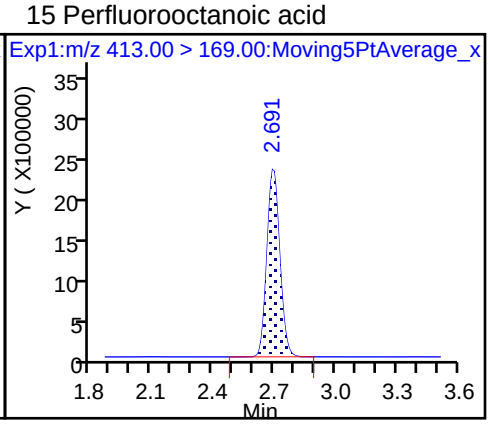
* 62 13C2-PFOA



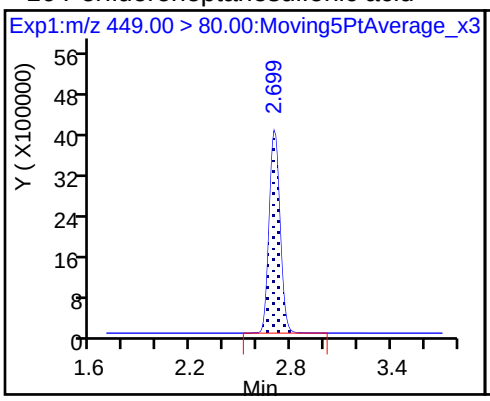
15 Perfluorooctanoic acid



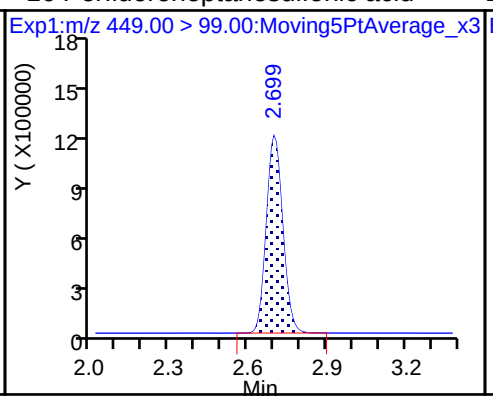
15 Perfluorooctanoic acid



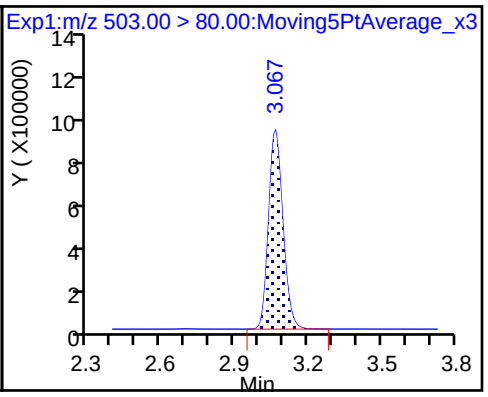
16 Perfluoroheptanesulfonic acid



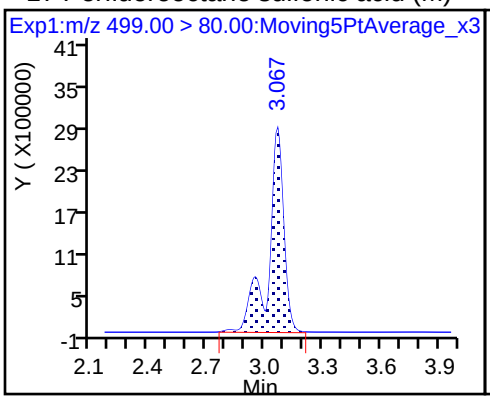
16 Perfluoroheptanesulfonic acid



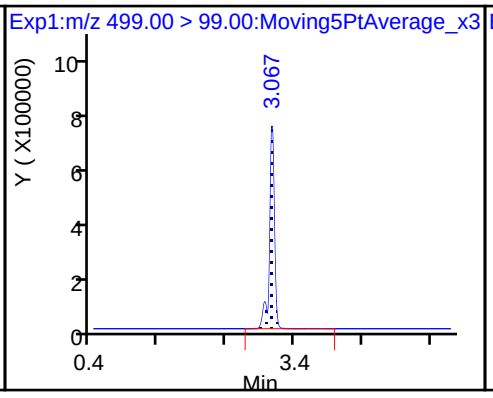
D 18 13C4 PFOS



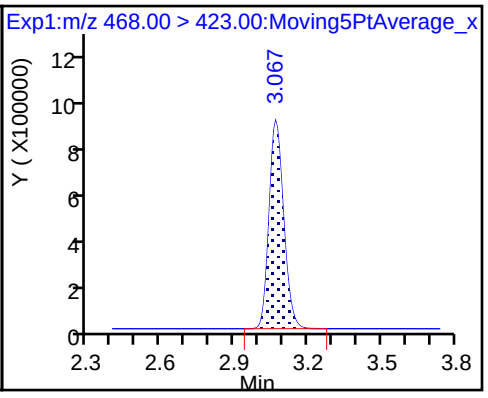
17 Perfluorooctane sulfonic acid (M)



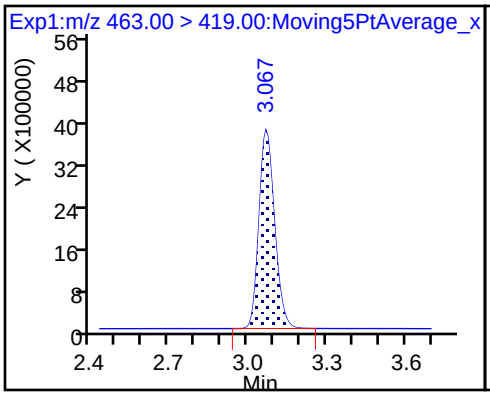
17 Perfluorooctane sulfonic acid



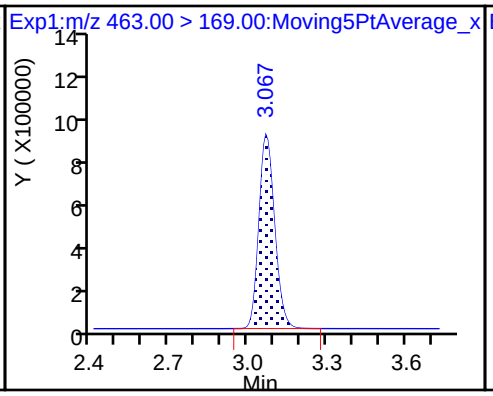
D 19 13C5 PFNA



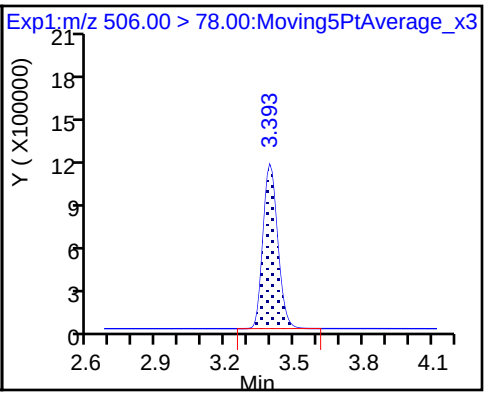
20 Perfluorononanoic acid



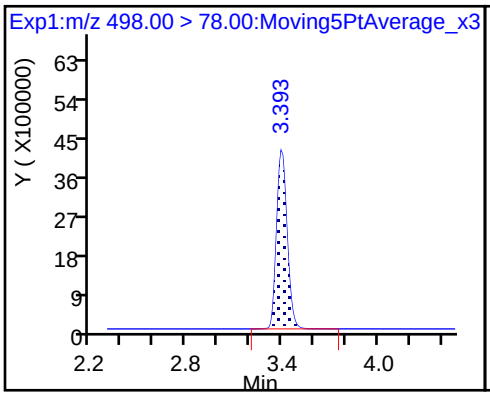
20 Perfluorononanoic acid



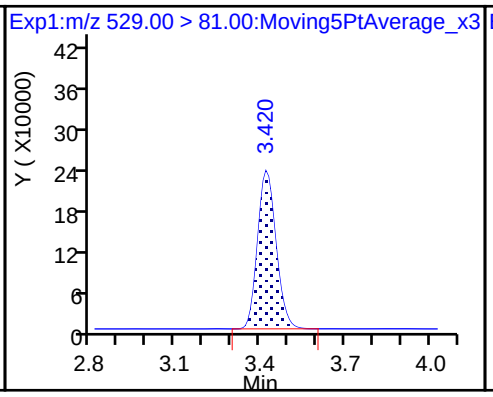
D 21 13C8 FOSA



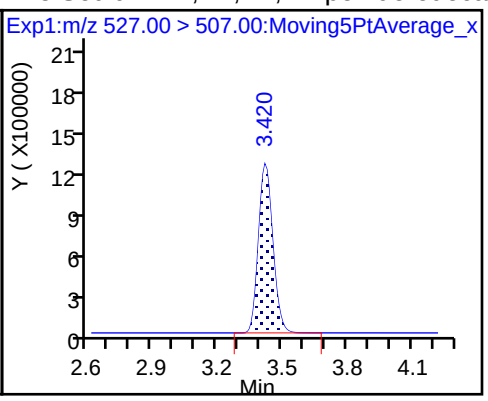
22 Perfluorooctane Sulfonamide



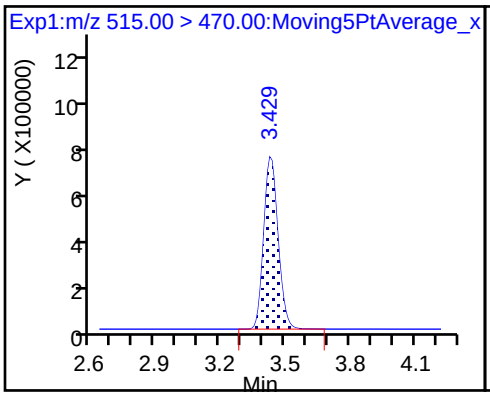
D 26 M2-8:2FTS



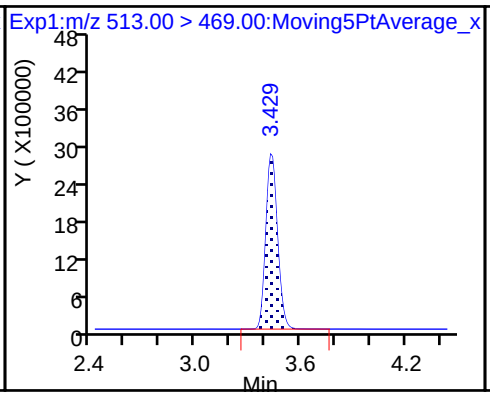
25 Sodium 1H,1H,2H,2H-perfluorodecane



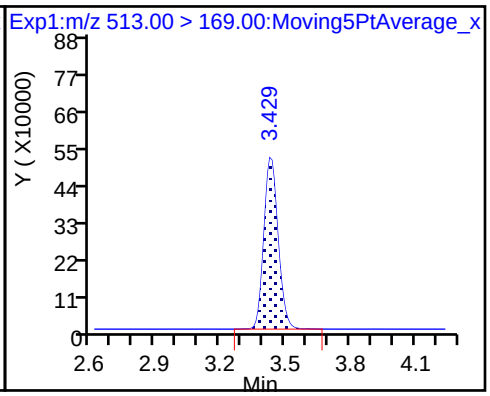
D 23 13C2 PFDA



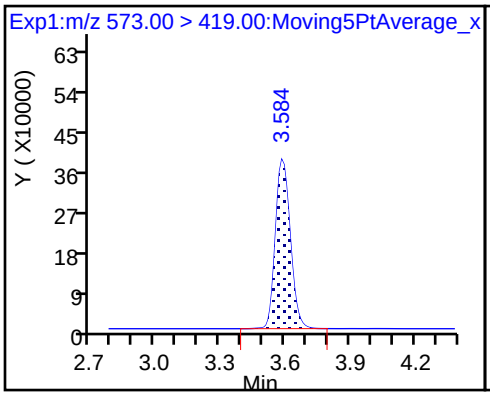
24 Perfluorodecanoic acid



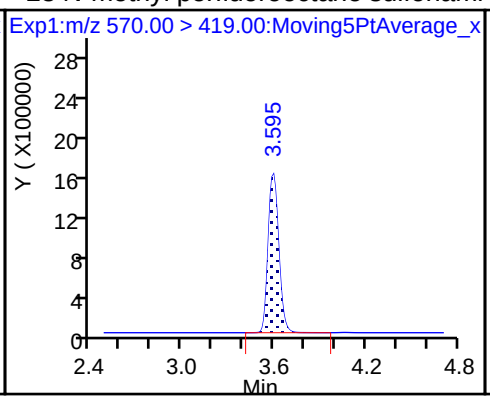
24 Perfluorodecanoic acid



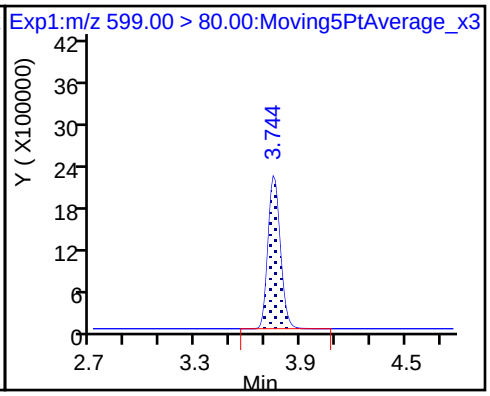
D 27 d3-NMeFOSAA



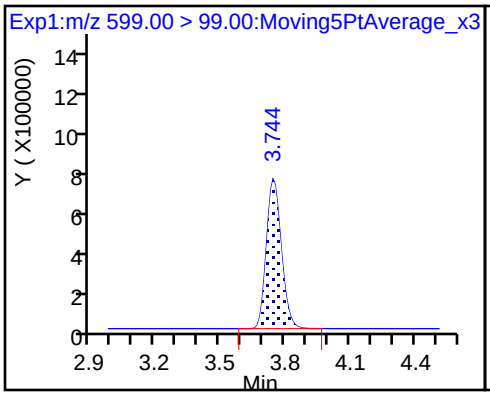
28 N-methyl perfluorooctane sulfonami



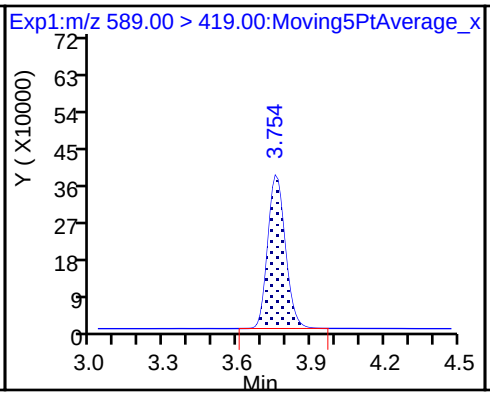
29 Perfluorodecane Sulfonic acid



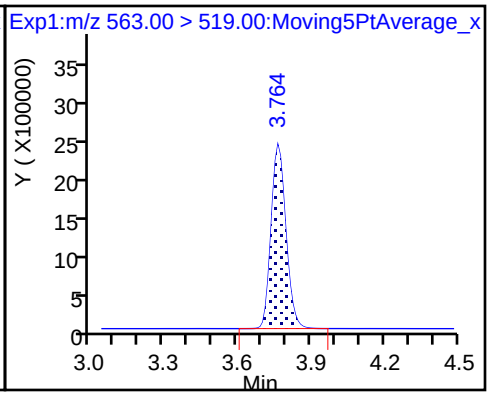
29 Perfluorodecane Sulfonic acid



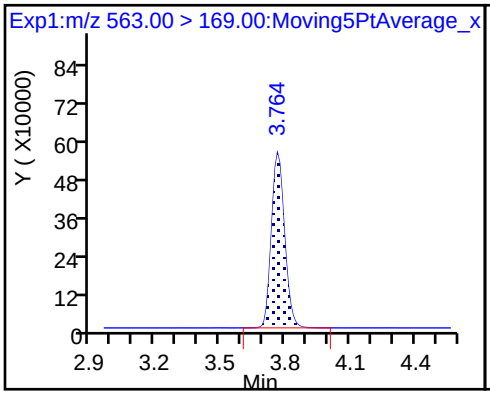
D 32 d5-NEtFOSAA



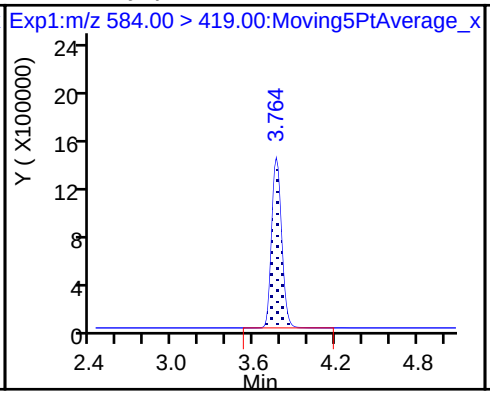
31 Perfluoroundecanoic acid



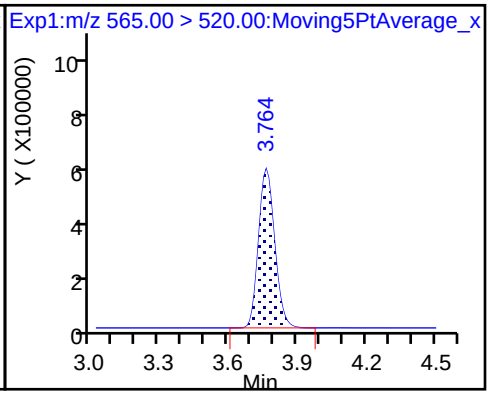
31 Perfluoroundecanoic acid



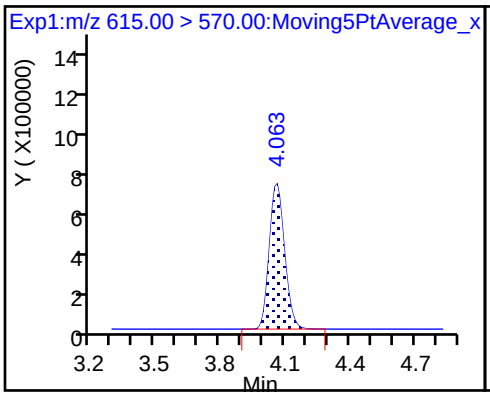
33 N-ethyl perfluorooctane sulfonamid



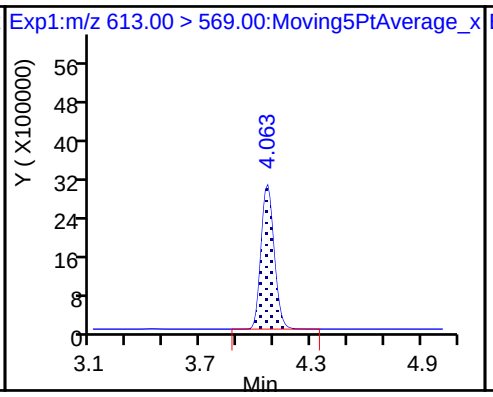
D 30 13C2 PFUnA



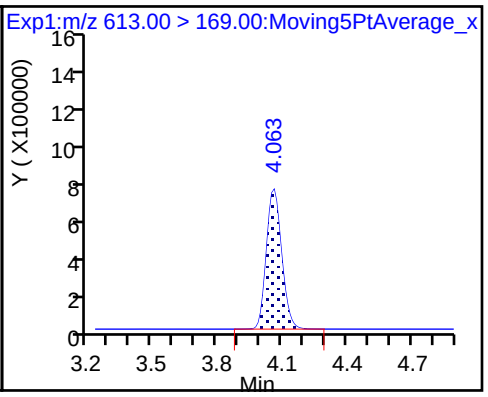
D 36 13C2 PFDoA



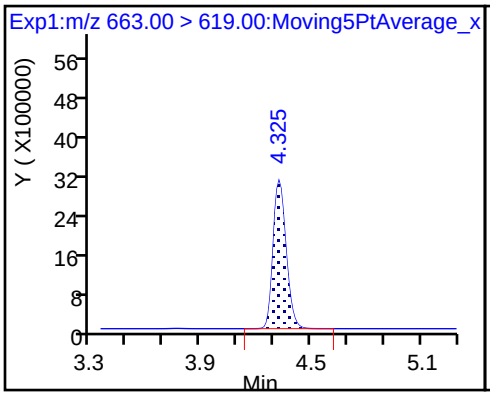
37 Perfluorododecanoic acid



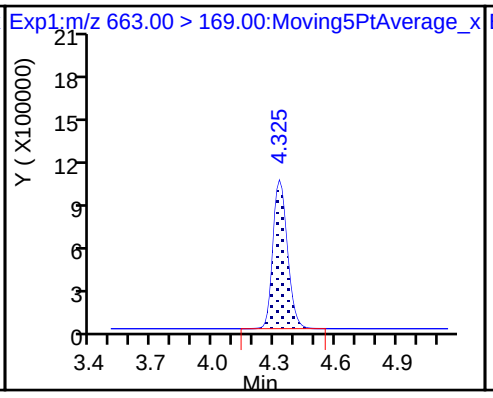
37 Perfluorododecanoic acid



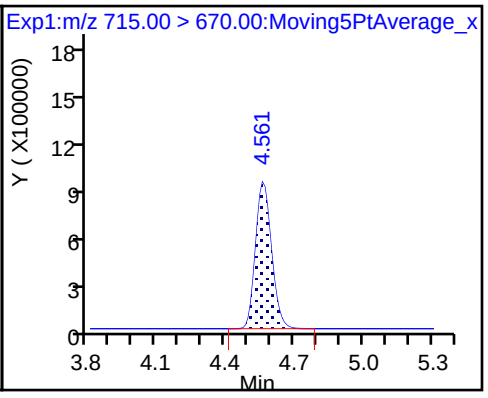
41 Perfluorotridecanoic acid



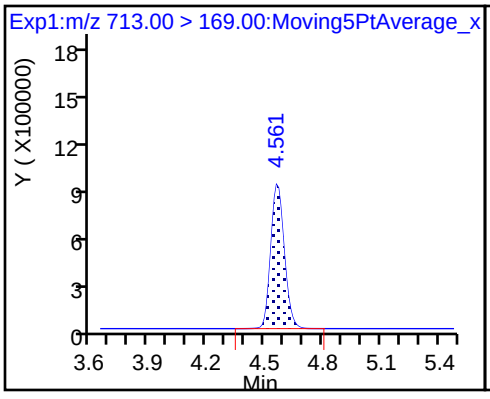
41 Perfluorotridecanoic acid



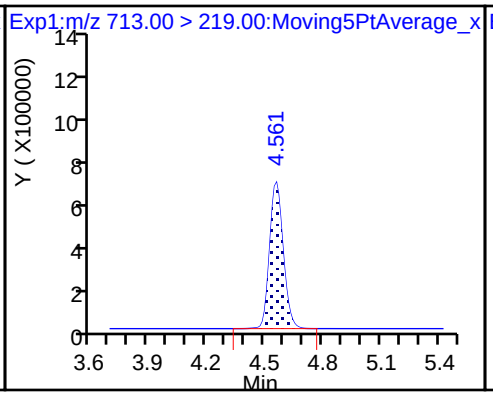
D 43 13C2-PFTeDA



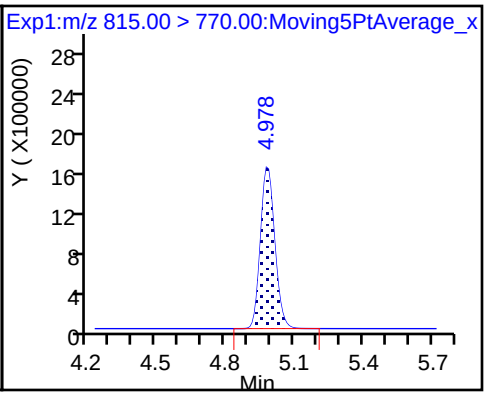
42 Perfluorotetradecanoic acid



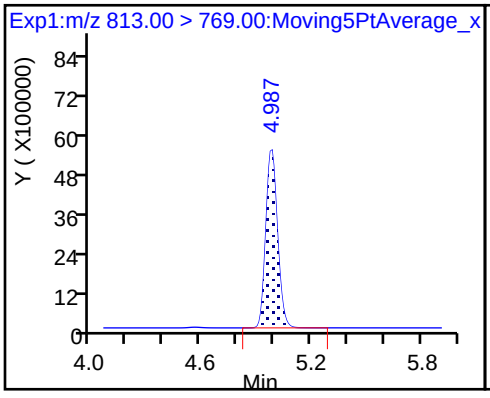
42 Perfluorotetradecanoic acid



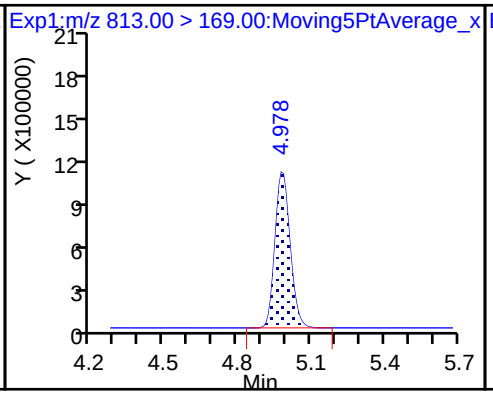
D 44 13C2-PFHxDA



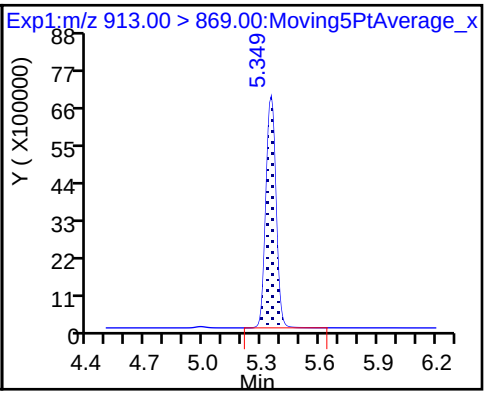
45 Perfluorohexadecanoic acid



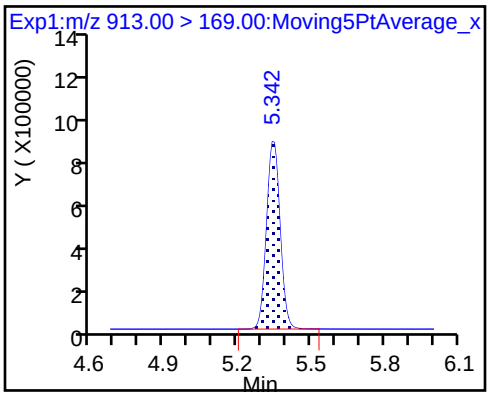
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

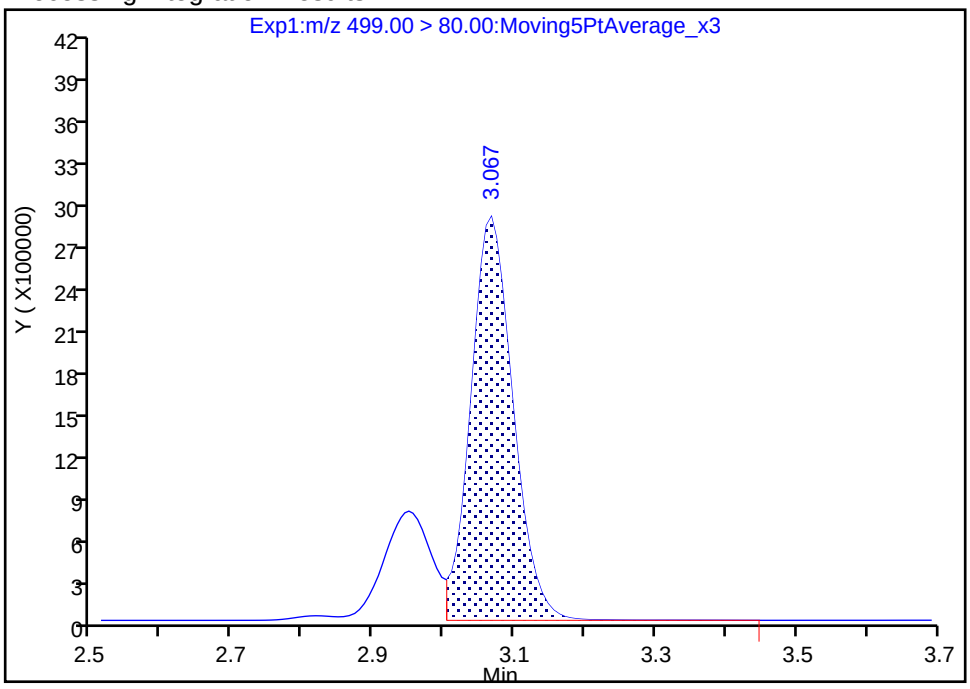
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d
Injection Date: 21-Mar-2018 19:11:19 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

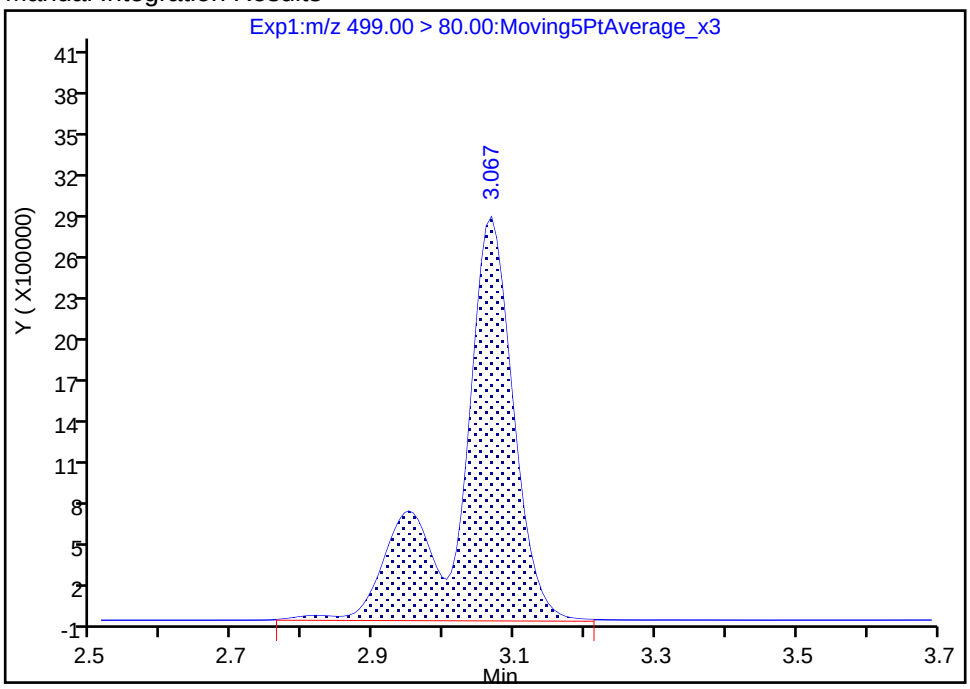
Processing Integration Results

RT: 3.07
Area: 12038170
Amount: 7.385381
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 15932478
Amount: 9.427786
Amount Units: ng/ml



Reviewer: phomsophat, 21-Mar-2018 19:25:51
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: ICV 320-213554/10 Calibration Date: 03/17/2018 00:12

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.16ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9442		2.55	2.50	1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.141		2.44	2.50	-2.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	80.09		2.29	2.21	3.5	50.0
4:2 FTS	AveID	16.07	16.34		2.38	2.34	1.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9865		2.44	2.50	-2.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.084		2.61	2.50	4.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.081		2.21	2.28	-3.1	40.0
6:2FTS	AveID	1.665	1.612		2.30	2.38	-3.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.132		2.53	2.50	1.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.364		2.47	2.38	3.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.055		2.59	2.50	3.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.106		2.37	2.31	2.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.048		2.70	2.50	7.9	40.0
8:2FTS	AveID	1.257	1.264		2.41	2.40	0.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	1.023		2.69	2.50	7.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.082		2.60	2.50	3.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6837		2.58	2.41	7.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	1.001		2.56	2.50	2.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7586		2.26	2.50	-9.5	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.089		2.66	2.50	6.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.066		2.59	2.50	3.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2637		2.39	2.50	-4.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9122		2.46	2.50	-1.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.031		2.64	2.50	5.8	50.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	None				0.0100	2.36	-100.0*	50.0
Adona	None				0.0100	2.50	-100.0*	50.0
HFPO-DA (GenX)	None				0.0100	2.50	-100.0*	40.0
13C4 PFBA	Ave	1.277	1.322		2.59	2.50	3.5	50.0
13C5 PFPeA	Ave	0.9006	0.9221		2.56	2.50	2.4	50.0
13C3-PFBS	Ave	0.0222	0.0230		2.40	2.33	3.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: ICV 320-213554/10 Calibration Date: 03/17/2018 00:12

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.16ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-4:2FTS	Ave	0.1590	0.1602		2.35	2.34	0.7	50.0
13C2 PFHxA	Ave	1.004	1.051		2.62	2.50	4.7	50.0
13C4-PFHpA	Ave	0.9767	0.9820		2.51	2.50	0.5	50.0
18O2 PFHxS	Ave	1.303	1.344		2.44	2.37	3.2	50.0
M2-6:2FTS	Ave	0.2501	0.2591		2.46	2.38	3.6	40.0
13C4 PFOA	Ave	0.9431	0.9566		2.54	2.50	1.4	50.0
13C4 PFOS	Ave	0.9113	0.9222		2.42	2.39	1.2	50.0
13C5 PFNA	Ave	0.7545	0.7649		2.53	2.50	1.4	50.0
13C8 FOSA	Ave	1.319	1.362		2.58	2.50	3.2	50.0
M2-8:2FTS	Ave	0.2350	0.2426		2.47	2.40	3.3	40.0
13C2 PFDA	Ave	0.6303	0.6356		2.52	2.50	0.8	50.0
d3-NMeFOSAA	Ave	0.2081	0.2105		2.53	2.50	1.1	50.0
13C2 PFUnA	Ave	0.4935	0.4851		2.46	2.50	-1.7	50.0
d5-NEtFOSAA	Ave	0.1990	0.2082		2.62	2.50	4.6	50.0
13C2 PFDoA	Ave	0.4680	0.4577		2.45	2.50	-2.2	50.0
13C2-PFTeDA	Ave	0.4272	0.4340		2.54	2.50	1.6	50.0
13C2-PFHxDA	Ave	0.6248	0.6152		2.46	2.50	-1.5	50.0
13C3 HFPO-DA	None				0.000000	2.50	-100.0*	50.0

FORM VII 537 (modified)

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_011.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 17-Mar-2018 00:12:15 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 18-Mar-2018 12:48:58 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 18-Mar-2018 12:44:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.440	-0.006	1.000	5401885	2.55			3628	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	5721403	2.59		104	100585	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.696	-0.005	0.633	3991424	2.56		102	129117	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.698	-0.007	1.000	4556129	2.44			1758	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.730	-0.004	0.646	92394	2.40		103	522	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.733	-0.007	1.000	7041872	2.29			3158	
298.90 > 99.00	1.726	1.733	-0.007	1.000	2973557		2.37(1.25-3.74)		3032	
D 60 M2-4:2FTS										
329.00 > 81.00	1.935	1.942	-0.007	0.724	647518	2.35		101	7120	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.935	1.944	-0.009	1.000	1517989	2.38			70600	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.979	-0.003	0.740	4550837	2.62		105	138888	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.982	-0.006	1.000	4489252	2.44			14788	
313.00 > 119.00	1.976	1.982	-0.006	1.000	404861		11.09(5.03-15.10)		9174	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.311	0.004	1.000	4606134	2.61			9749	
363.00 > 169.00	2.315	2.311	0.004	1.000	1700073		2.71(1.13-3.40)		31377	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.311	0.004	0.867	4250721	2.51		101	79088	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.326	0.002	1.000	5734629	2.21			691	
399.00 > 99.00	2.328	2.326	0.002	1.000	1813461		3.16(1.50-4.49)		679	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.326	0.002	0.871	5505090	2.44		103	71055	
D 12 M2-6:2FTS										
429.00 > 81.00	2.647	2.651	-0.004	0.991	1065489	2.46		104	27640	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.647	2.652	-0.005	1.000	1717537	2.30			57256	
* 62 13C2-PFOA										
415.00 > 370.00	2.671	2.678	-0.007		4328656	2.50			72093	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.671	2.678	-0.007	1.000	4685701	2.53			2031	
413.00 > 169.00	2.671	2.678	-0.007	1.000	2533012		1.85(0.84-2.52)		9849	
D 14 13C4 PFOA										
417.00 > 372.00	2.671	2.678	-0.007	1.000	4140983	2.54		101	80592	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.679	2.684	-0.005	1.000	5171675	2.46			58106	
449.00 > 99.00	2.679	2.684	-0.005	1.000	1381220		3.74(1.94-5.82)		27188	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.050	-0.006	1.000	4087568	2.36			13209	
499.00 > 99.00	3.044	3.050	-0.006	1.000	930895		4.39(2.31-6.93)		7381	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.050	-0.006	1.140	3816155	2.42		101	27105	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.052	-0.008	1.000	3491934	2.59			8077	
463.00 > 169.00	3.044	3.052	-0.008	1.000	854685		4.09(1.90-5.69)		23856	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.052	-0.008	1.140	3310919	2.53		101	82406	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.379	3.388	-0.009	1.000	6180644	2.70			60921	
D 21 13C8 FOSA										
506.00 > 78.00	3.379	3.388	-0.009	1.265	5896208	2.58		103	64390	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.397	3.406	-0.009	1.000	1274172	2.41			47471	
D 26 M2-8:2FTS										
529.00 > 81.00	3.397	3.406	-0.009	1.272	1006077	2.47		103	28136	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.416	-0.001	1.003	2813387	2.69			14655	
513.00 > 169.00	3.406	3.416	-0.010	1.000	488219		5.76(2.36-7.09)		21628	
D 23 13C2 PFDA										
515.00 > 470.00	3.406	3.416	-0.010	1.275	2751448	2.52		101	40710	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.560	3.570	-0.010	1.333	911160	2.53		101	24502	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.569	3.571	-0.002	1.002	986114	2.60			9760	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.729	-0.002	1.000	2633762	2.58			55447	
599.00 > 99.00	3.727	3.729	-0.002	1.000	848075		3.11(1.39-4.16)		17795	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.740	-0.002	1.399	901386	2.62		105	1738	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.738	3.746	-0.008	1.000	902302	2.56			18632	
D 30 13C2 PFUnA										
565.00 > 520.00	3.738	3.747	-0.009	1.399	2099983	2.46		98.3	54166	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.738	3.750	-0.012	1.000	1592969	2.26			4442	
563.00 > 169.00	3.748	3.750	-0.002	1.003	444020		3.59(2.12-6.36)		52364	
D 36 13C2 PFDoA										
615.00 > 570.00	4.035	4.041	-0.006	1.511	1981289	2.45		97.8	11104	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.035	4.042	-0.007	1.000	2158005	2.66			385	
613.00 > 169.00	4.035	4.042	-0.007	1.000	519175		4.16(2.13-6.40)		15351	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.304	-0.006	1.000	2112495	2.59			427	
663.00 > 169.00	4.298	4.304	-0.006	1.000	714785		2.96(1.25-3.76)		8933	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.545	-0.002	1.701	1878436	2.54		102	15695	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.545	-0.002	1.000	495306	2.39			6051	
713.00 > 219.00	4.533	4.545	-0.012	0.998	349581		1.42(0.71-2.13)		4317	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.956	-0.001	1.855	2662998	2.46		98.5	9883	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.960	-0.005	1.000	2429227	2.46			209	
813.00 > 169.00	4.955	4.960	-0.005	1.000	445490		5.45(2.86-8.58)		4231	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.320	-0.005	1.000	2745943	2.64			471	
913.00 > 169.00	5.315	5.320	-0.005	1.000	337941		8.13(3.83-11.48)		3421	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 18-Mar-2018 12:48:59 Chrom Revision: 2.2 08-Feb-2018 13:38:42

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_011.d

Injection Date: 17-Mar-2018 00:12:15 Instrument ID: A8_N

Lims ID: ICV Full

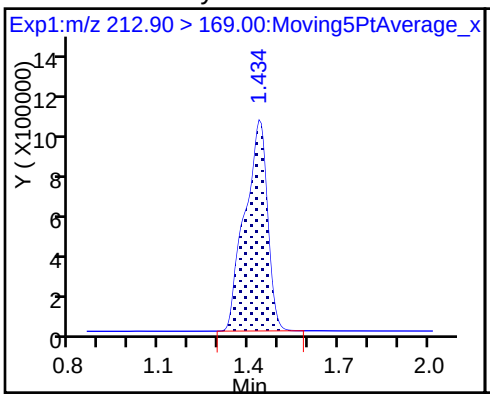
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

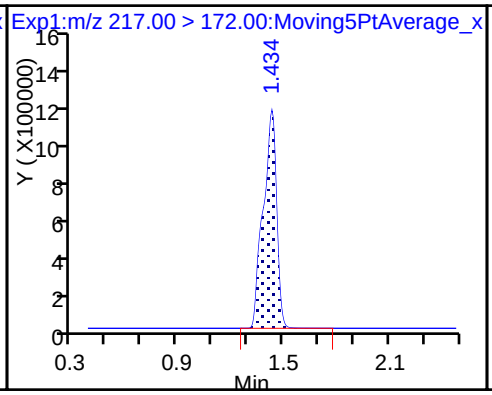
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

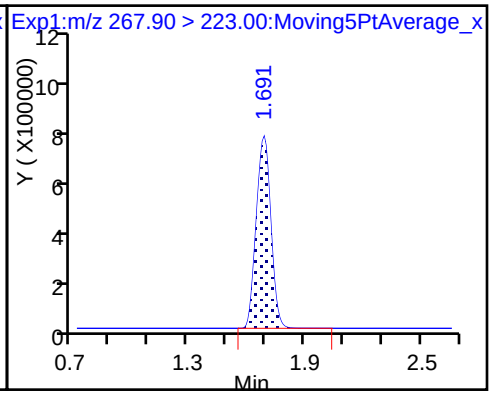
2 Perfluorobutyric acid



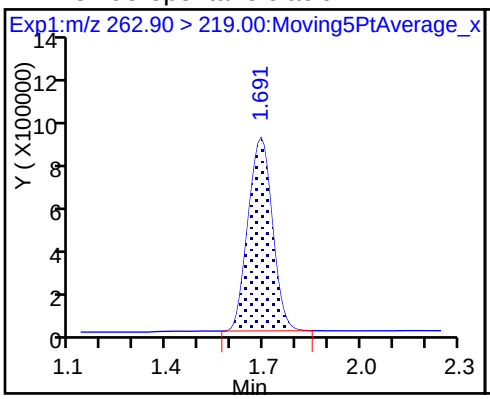
D 1 13C4 PFBA



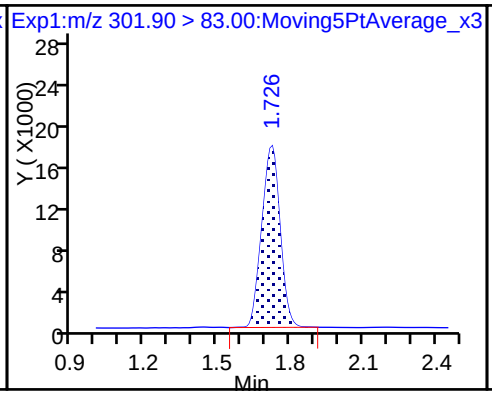
D 3 13C5-PFPeA



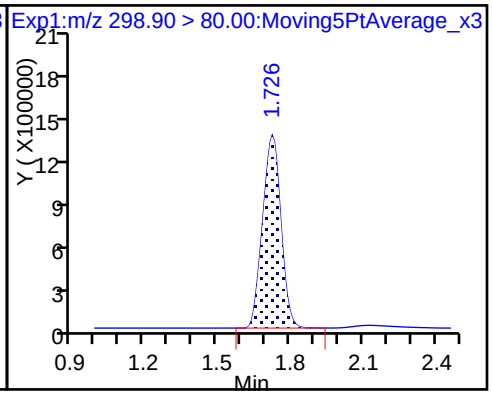
4 Perfluoropentanoic acid



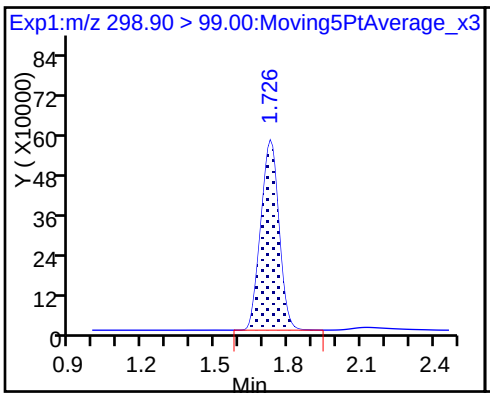
D 47 13C3-PFBS



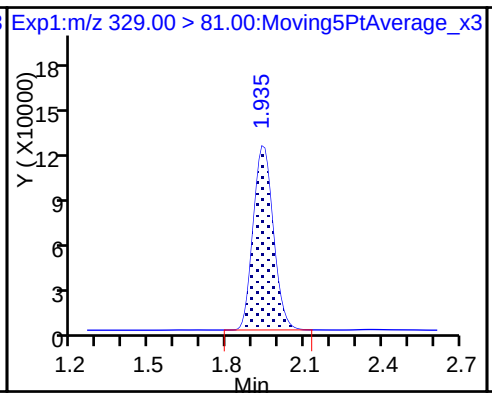
5 Perfluorobutanesulfonic acid



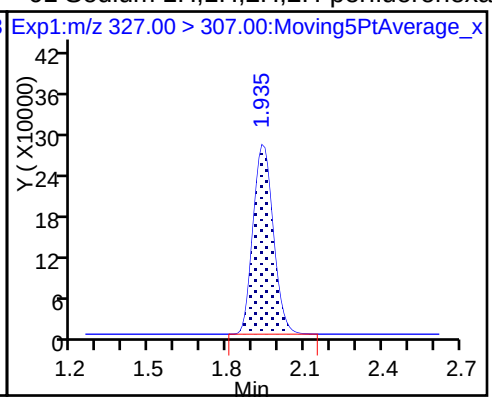
5 Perfluorobutanesulfonic acid



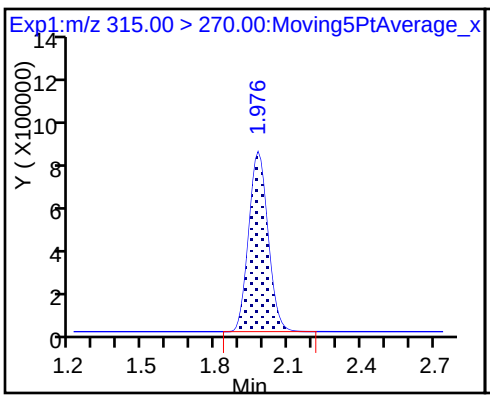
D 60 M2-4:2FTS



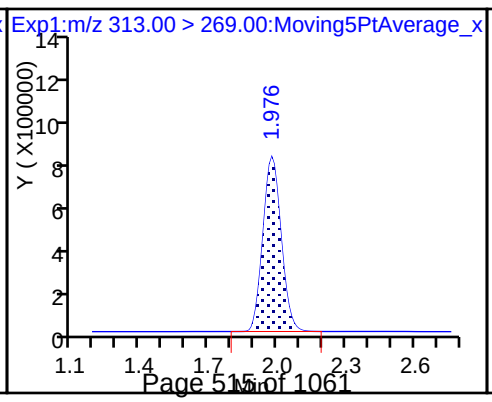
61 Sodium 1H,1H,2H,2H-perfluorohexane



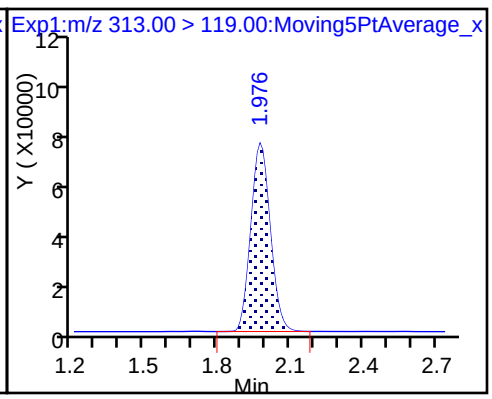
D 7 13C2 PFHxA



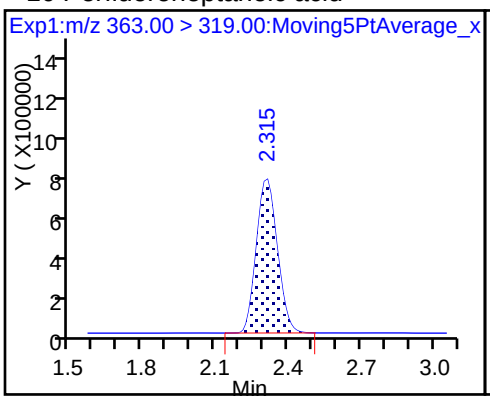
6 Perfluorohexanoic acid



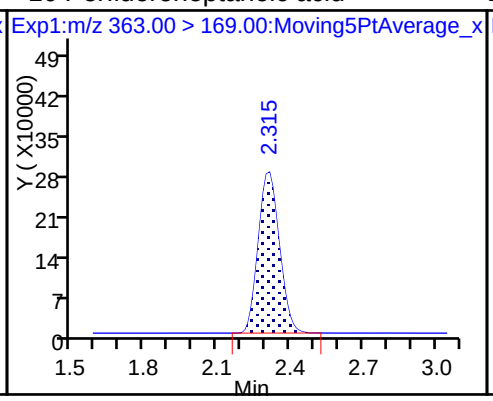
6 Perfluorohexanoic acid



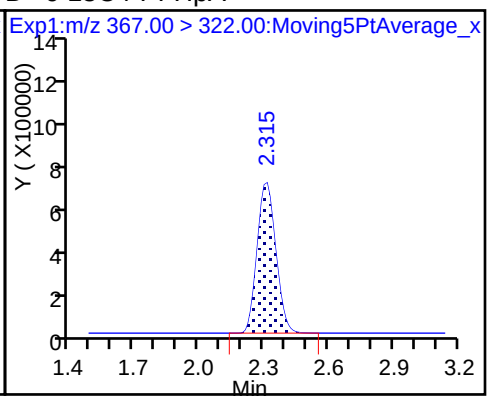
10 Perfluoroheptanoic acid



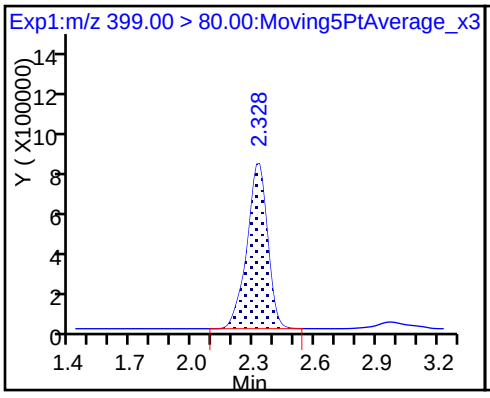
10 Perfluoroheptanoic acid



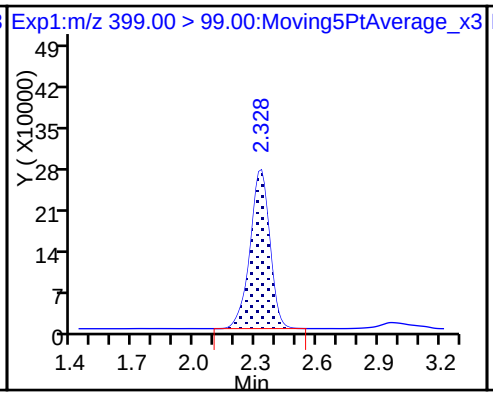
D 9 13C4-PFHpA



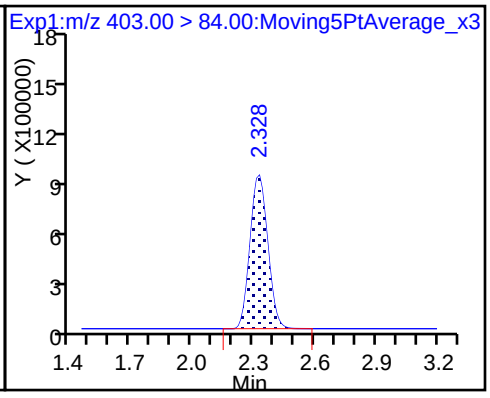
8 Perfluorohexanesulfonic acid



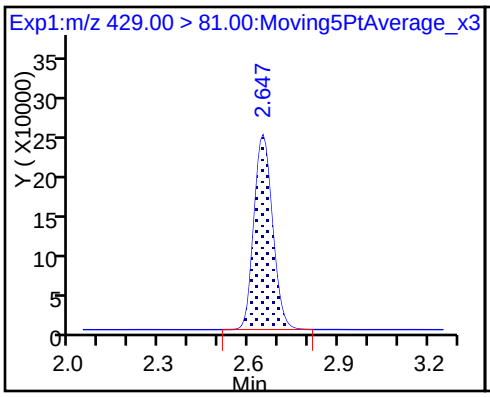
8 Perfluorohexanesulfonic acid



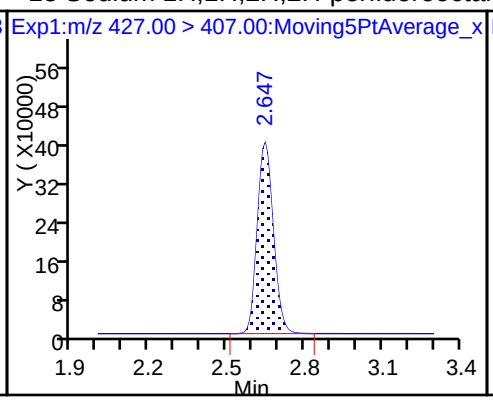
D 11 18O2 PFHxS



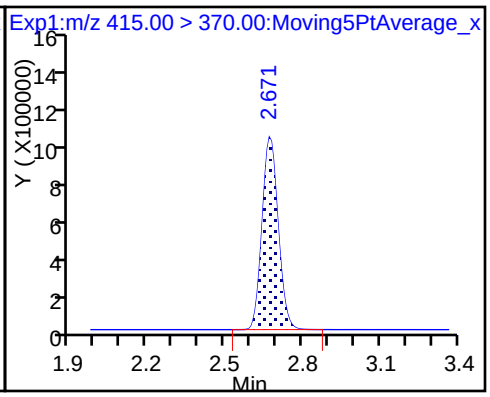
D 12 M2-6:2FTS



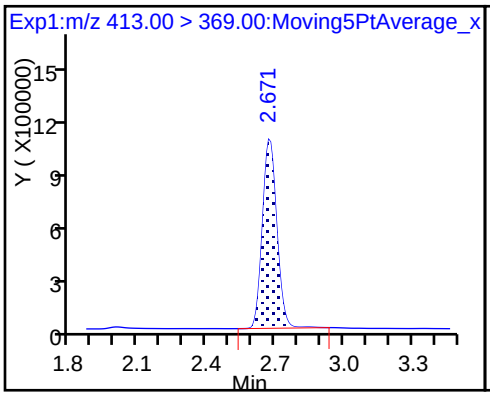
13 Sodium 1H,1H,2H,2H-perfluorooctane



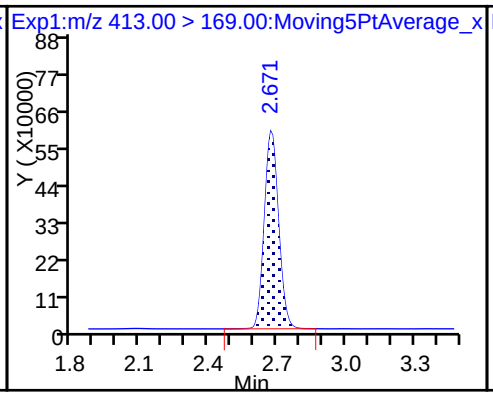
M62 13C2-PFOA



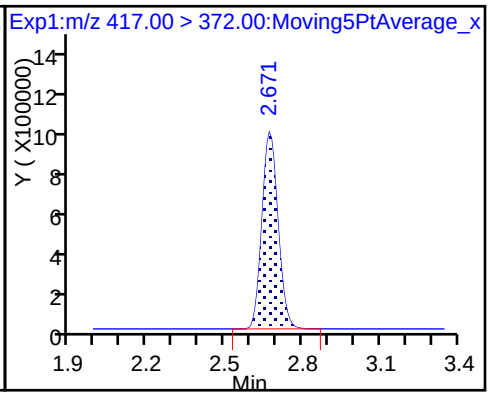
15 Perfluorooctanoic acid



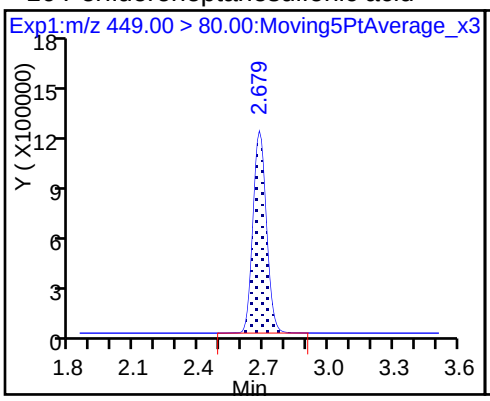
15 Perfluorooctanoic acid



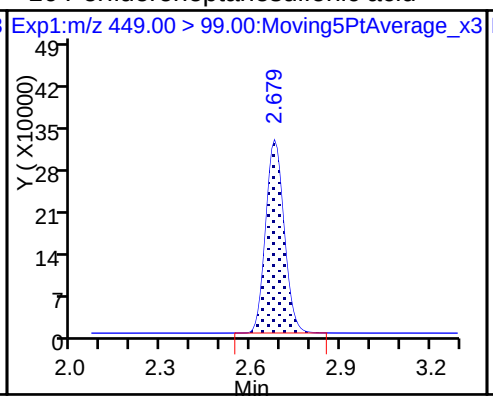
D 14 13C4 PFOA



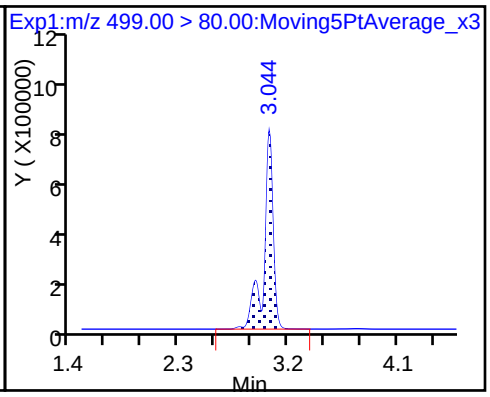
16 Perfluoroheptanesulfonic acid



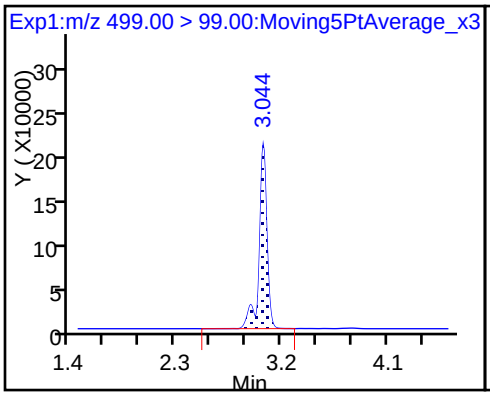
16 Perfluoroheptanesulfonic acid



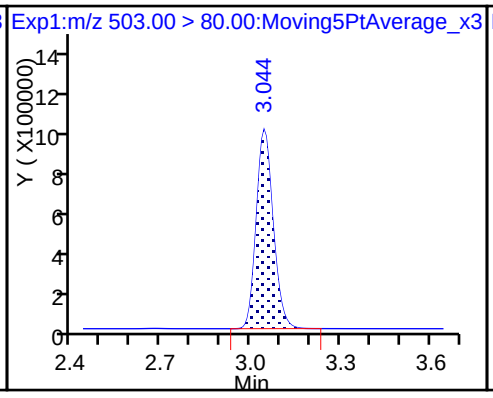
17 Perfluorooctane sulfonic acid



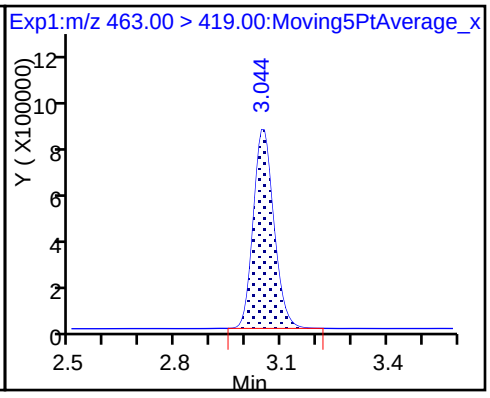
17 Perfluorooctane sulfonic acid



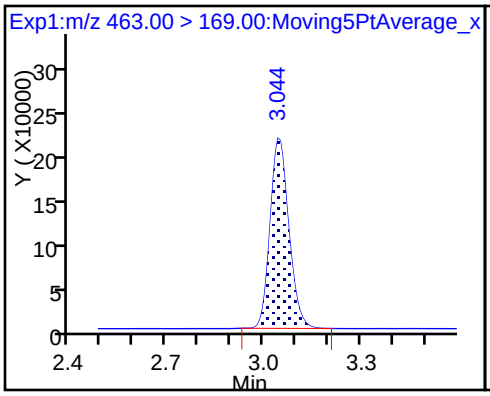
D 18 13C4 PFOS



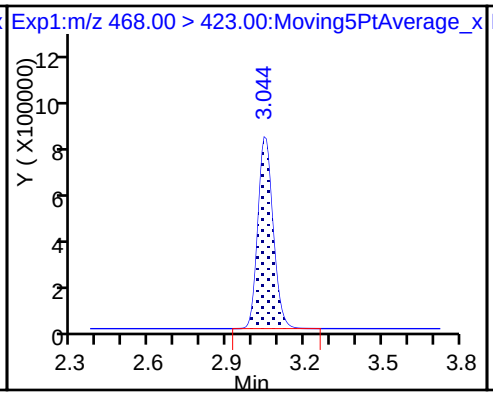
20 Perfluorononanoic acid



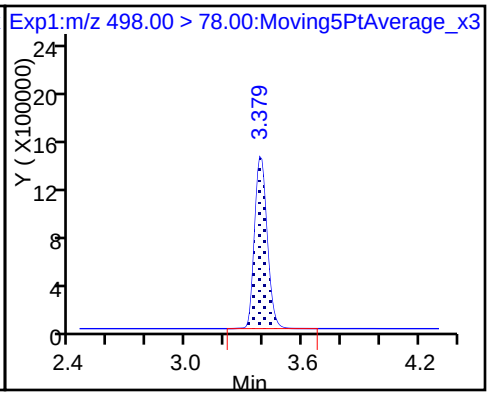
20 Perfluorononanoic acid



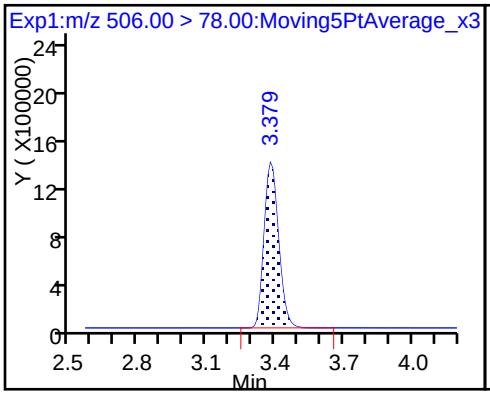
D 19 13C5 PFNA



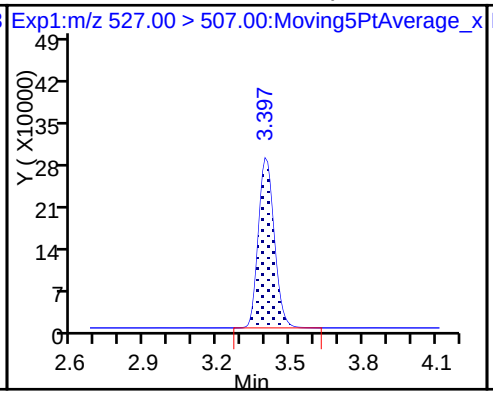
22 Perfluorooctane Sulfonamide



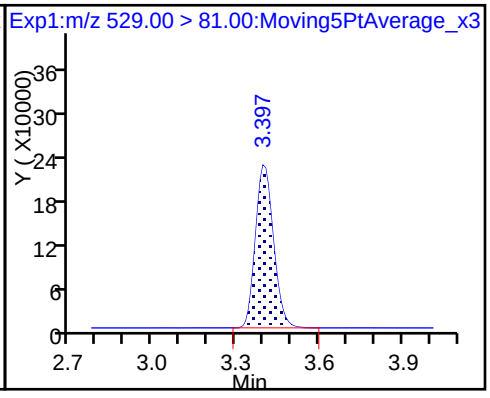
D 21 13C8 FOSA



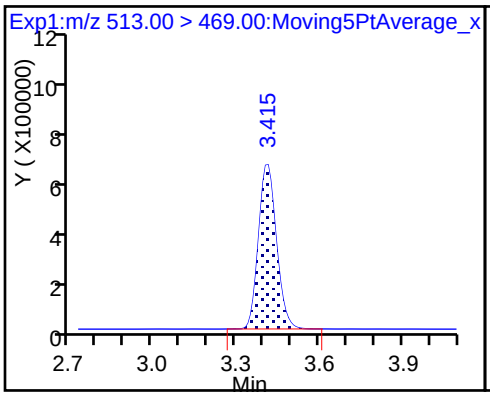
25 Sodium 1H,1H,2H,2H-perfluorodecane



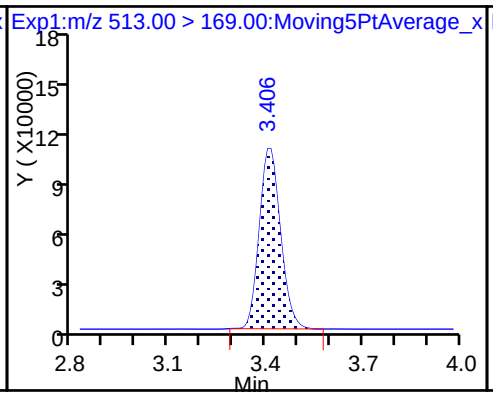
D 26 M2-8:2FTS



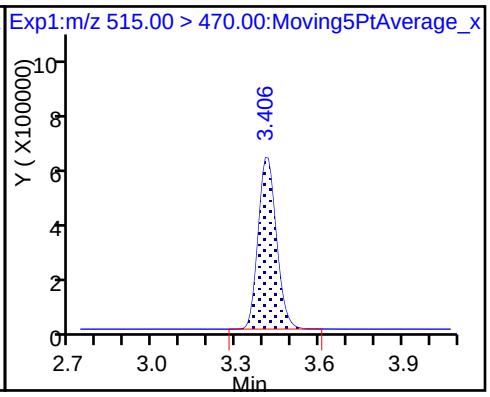
24 Perfluorodecanoic acid



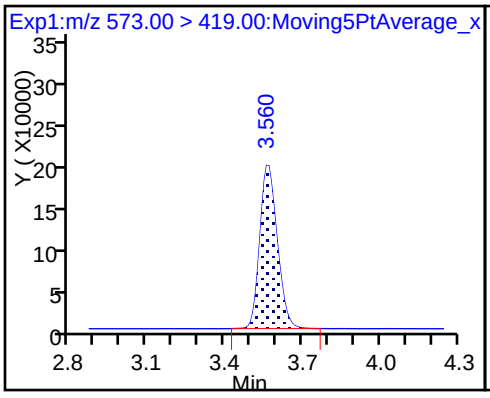
24 Perfluorodecanoic acid



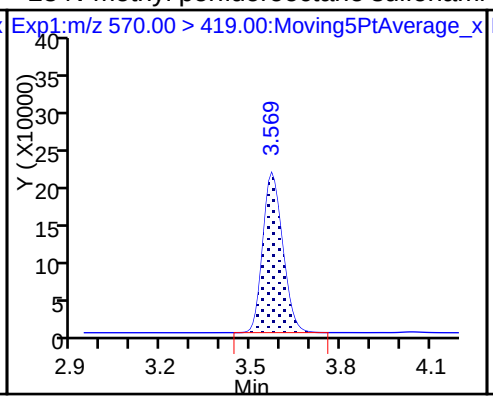
D 23 13C2 PFDA



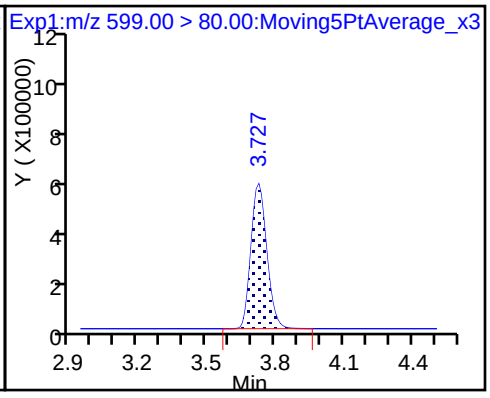
D 27 d3-NMeFOSAA



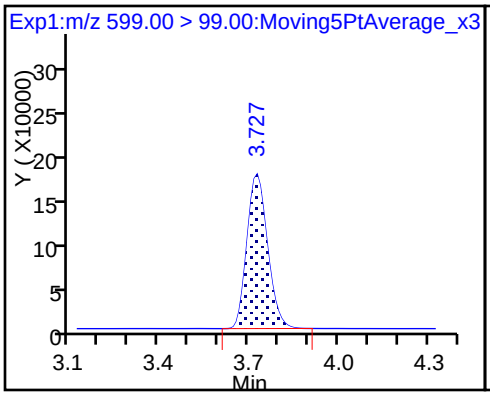
28 N-methyl perfluorooctane sulfonami



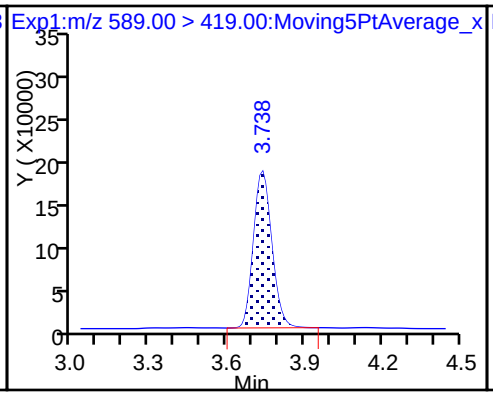
29 Perfluorodecane Sulfonic acid



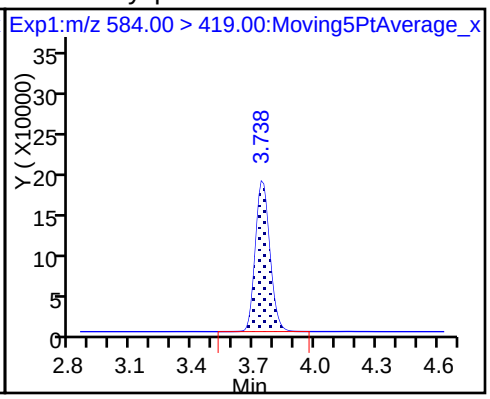
29 Perfluorodecane Sulfonic acid



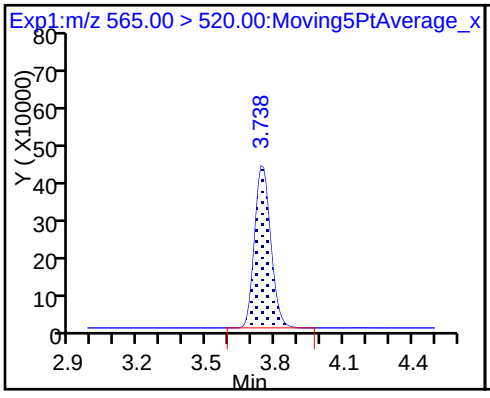
D 32 d5-NEtFOSAA



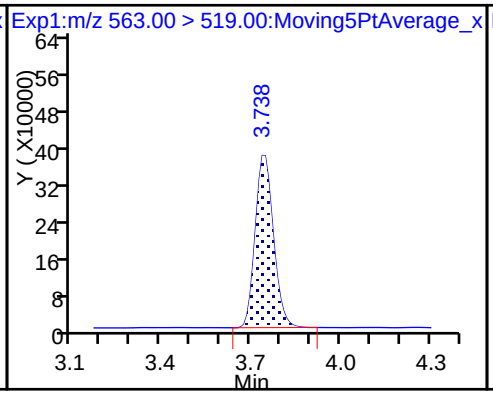
33 N-ethyl perfluorooctane sulfonamid



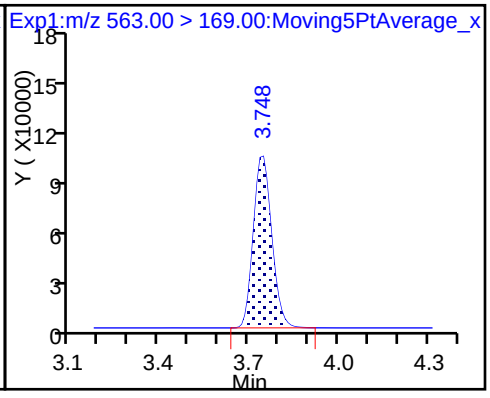
D 30 13C2 PFUnA



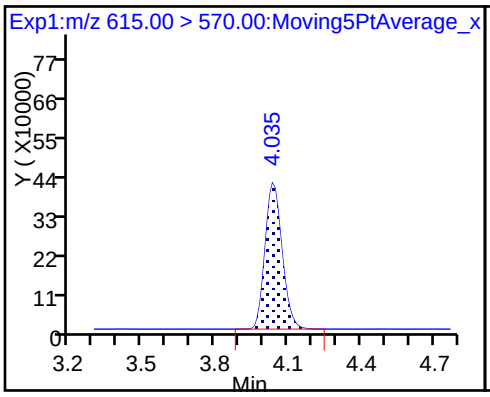
31 Perfluoroundecanoic acid



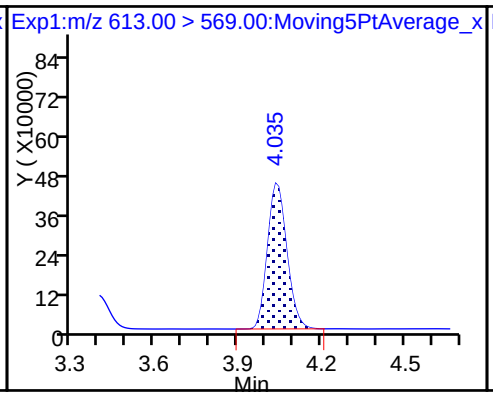
31 Perfluoroundecanoic acid



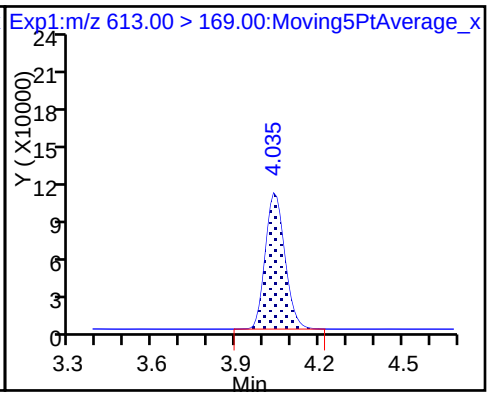
D 36 13C2 PFDoA



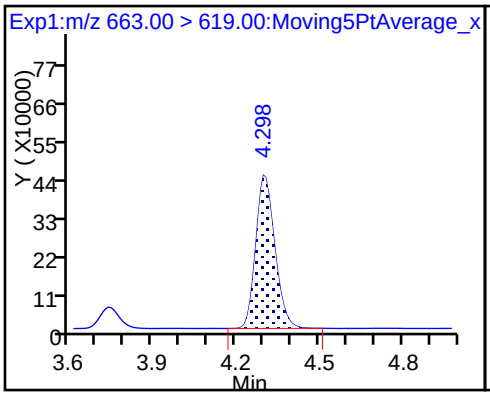
37 Perfluorododecanoic acid



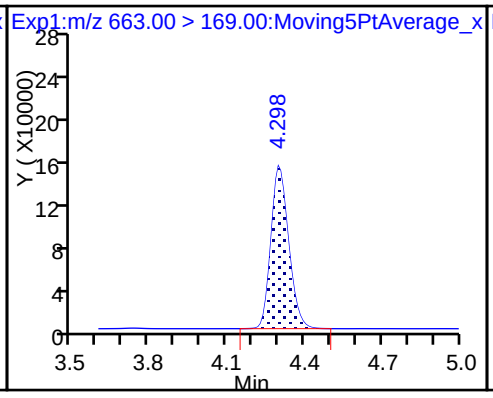
37 Perfluorododecanoic acid



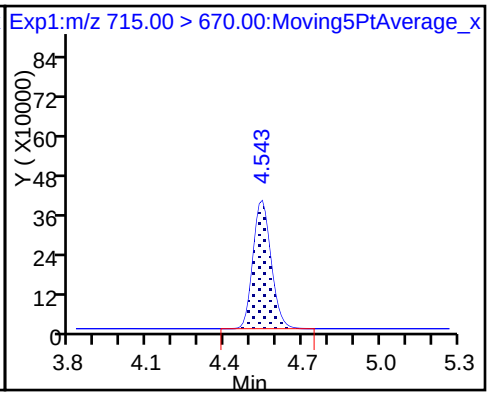
41 Perfluorotridecanoic acid



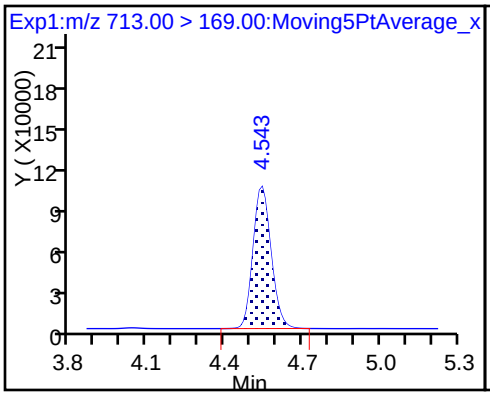
41 Perfluorotridecanoic acid



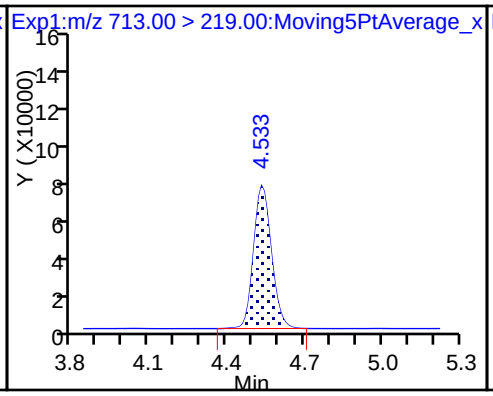
D 43 13C2-PFTeDA



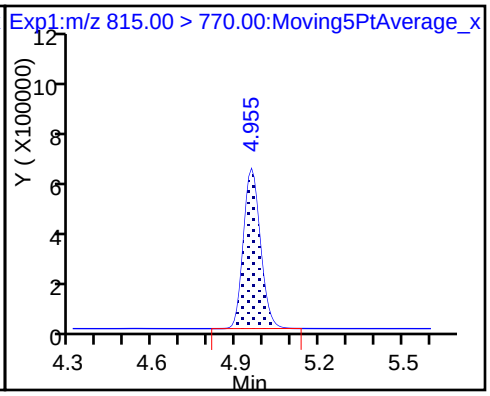
42 Perfluorotetradecanoic acid



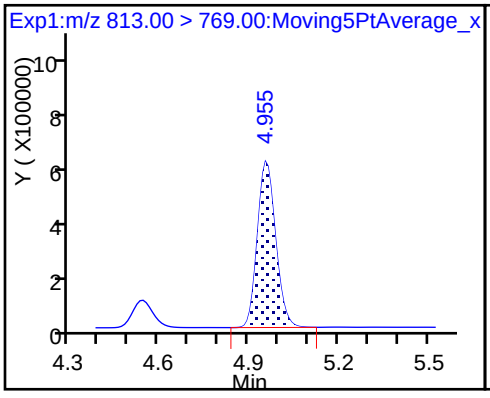
42 Perfluorotetradecanoic acid



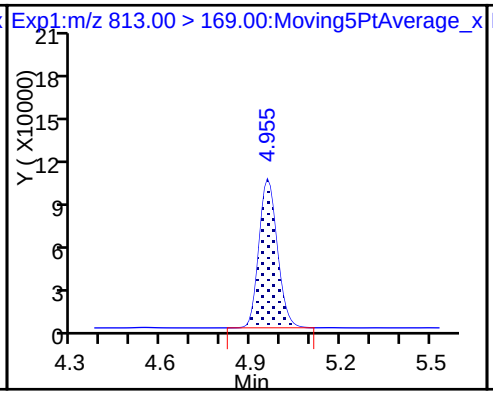
D 44 13C2-PFHxDA



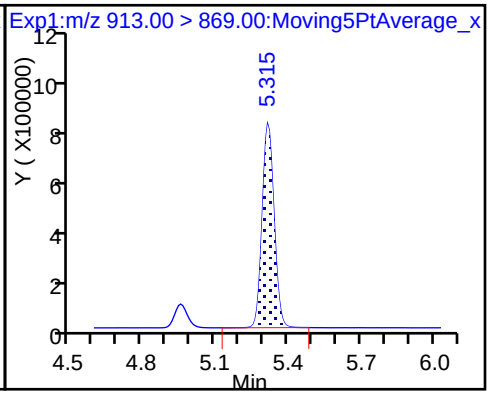
45 Perfluorohexadecanoic acid



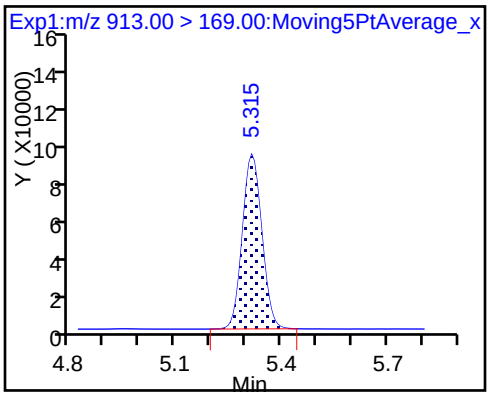
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-214045/2 Calibration Date: 03/20/2018 19:22

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9407		0.0507	0.0500	1.4	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.239		0.0530	0.0500	6.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	77.96		0.0445	0.0442	0.8	50.0
4:2 FTS	AveID	16.07	16.15		0.130	0.0467	0.4	
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.101		0.0545	0.0500	9.1	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.169		0.0564	0.0500	12.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.232		0.0502	0.0455	10.4	50.0
6:2FTS	AveID	1.665	2.330		0.0663	0.0474	40.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.180		0.0529	0.0500	5.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.267		0.0459	0.0476	-3.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.069		0.0458	0.0464	-1.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.997		0.0489	0.0500	-2.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9626		0.0495	0.0500	-0.9	50.0
8:2FTS	AveID	1.257	1.071		0.0500	0.0479	-14.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9845		0.0519	0.0500	3.8	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.011		0.0780	0.0500	-2.9	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.7292		0.0550	0.0482	14.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9604		0.0490	0.0500	-1.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.9598		0.0573	0.0500	14.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.046		0.0511	0.0500	2.2	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.009		0.0490	0.0500	-1.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2770		0.0502	0.0500	0.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.285		0.0460	0.0500	-8.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9185		0.0471	0.0500	-5.8	50.0
13C4 PFBA	Ave	1.277	1.141		2.24	2.50	-10.6	50.0
13C5 PFPeA	Ave	0.9006	0.8183		2.27	2.50	-9.1	50.0
13C3-PFBS	Ave	0.0222	0.0210		2.19	2.33	-5.7	50.0
M2-4:2FTS	Ave	0.1590	0.1346		1.98	2.34	-15.3	50.0
13C2 PFHxA	Ave	1.004	0.9444		2.35	2.50	-6.0	50.0
13C4-PFHpA	Ave	0.9767	0.9620		2.46	2.50	-1.5	50.0
18O2 PFHxS	Ave	1.303	1.257		2.28	2.37	-3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-214045/2 Calibration Date: 03/20/2018 19:22

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_002.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2266		2.15	2.38	-9.4	50.0
13C4 PFOA	Ave	0.9431	0.9028		2.39	2.50	-4.3	50.0
13C4 PFOS	Ave	0.9113	0.8783		2.30	2.39	-3.6	50.0
13C5 PFNA	Ave	0.7545	0.7624		2.53	2.50	1.0	50.0
13C8 FOSA	Ave	1.319	1.303		2.47	2.50	-1.3	50.0
M2-8:2FTS	Ave	0.2350	0.2347		2.39	2.40	-0.1	50.0
13C2 PFDA	Ave	0.6303	0.6343		2.52	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.2081	0.1952		2.35	2.50	-6.2	50.0
d5-NEtFOSAA	Ave	0.1990	0.2048		2.57	2.50	2.9	50.0
13C2 PFUnA	Ave	0.4935	0.4478		2.27	2.50	-9.3	50.0
13C2 PFDoA	Ave	0.4680	0.4444		2.37	2.50	-5.0	50.0
13C2-PFTeDA	Ave	0.4272	0.4165		2.44	2.50	-2.5	50.0
13C2-PFHxDA	Ave	0.6248	0.5762		2.31	2.50	-7.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_002.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 20-Mar-2018 19:22:44 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 21-Mar-2018 09:57:13 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: westendorfc Date: 21-Mar-2018 09:56:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.435	0.005	1.000	96158	0.0507		101	42.3	
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.536	5111085	2.23		89.4	97289	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.632	3665050	2.27		90.9	140831	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.701	0.0	1.000	90785	0.0530		106	26.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.727	0.008	0.646	87298	2.19		94.3	515	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.736	-0.001	1.000	129388	0.0445		101	53.9	
298.90 > 99.00	1.735	1.736	-0.001	1.000	54436		2.38(1.25-3.74)		49.8	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.946	0.010	0.727	563116	1.98		84.7	8484	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.946	0.010	1.000	28310	0.0469		100	1311	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	0.0	0.739	4229476	2.35		94.0	108650	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.987	-0.001	1.000	93112	0.0545		109	240	
313.00 > 119.00	1.997	1.987	0.010	1.005	8647		10.77(5.03-15.10)		213	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.866	4308607	2.46		98.5	103202	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.329	0.0	1.000	100753	0.0564		113	164	
363.00 > 169.00	2.328	2.329	0.0	1.000	33437		3.01(1.13-3.40)		521	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.329	0.013	1.000	126151	0.0502		110	235	
399.00 > 99.00	2.341	2.329	0.013	1.000	37197		3.39(1.50-4.49)		102	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	5324348	2.28		96.4	75169	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.657	0.008	0.991	964129	2.15		90.6	18584	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.657	0.008	1.000	44836	0.0663		140	2657	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.681	0.007	1.000	4043408	2.39		95.7	85289	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.689	-0.001	1.000	95462	0.0529		106	23.4	
413.00 > 169.00	2.688	2.689	-0.001	1.000	50646		1.88(0.84-2.52)		169	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.689	-0.001		4478615	2.50			74154	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.689	0.007	1.000	94860	0.0459		96.4	3650	
449.00 > 99.00	2.696	2.689	0.007	1.000	27096		3.50(1.94-5.82)		700	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.137	3760585	2.30		96.4	93450	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	3414346	2.53		101	84461	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.058	0.007	1.000	68049	0.0489		97.7	122	
463.00 > 169.00	3.065	3.058	0.007	1.000	16053		4.24(1.90-5.69)		516	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.058	0.0	1.000	78027	0.0458		98.7	216	
499.00 > 99.00	3.058	3.058	0.0	1.000	20027		3.90(2.31-6.93)		124	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.397	0.001	1.264	5833581	2.47		98.7	47203	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.399	-0.001	1.000	112307	0.0495		99.1	2563	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.415	0.001	1.271	1006865	2.39		99.9	22621	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.417	-0.001	1.000	21562	0.0408		85.2	957	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.424	0.001	1.274	2840666	2.52		101	49324	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.426	-0.001	1.000	55934	0.0519		104	265	
513.00 > 169.00	3.425	3.426	-0.001	1.000	12229		4.57(2.36-7.09)		715	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	874324	2.34		93.8	37880	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.580	0.010	1.003	17678	0.0485		97.1	248	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.738	-0.001	1.000	55306	0.0550		114	2316	
599.00 > 99.00	3.737	3.738	-0.001	1.000	16989		3.26(1.39-4.16)		363	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	917394	2.57		103	2219	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2005465	2.27		90.7	41944	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.759	0.0	1.003	17621	0.0490		98.1	452	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.759	0.0	1.000	38498	0.0573		115	106	
563.00 > 169.00	3.758	3.759	0.0	1.000	9189		4.19(2.12-6.36)		758	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.509	1990279	2.37		95.0	10260	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.047	0.009	1.000	41634	0.0511		102	7.0	
613.00 > 169.00	4.056	4.047	0.009	1.000	9329		4.46(2.13-6.40)		396	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.307	0.011	1.000	40155	0.0490		98.1	8.0	
663.00 > 169.00	4.307	4.307	0.0	0.997	13923		2.88(1.25-3.76)		248	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	1865385	2.44		97.5	17869	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	10335	0.0502		100	153	
713.00 > 219.00	4.554	4.554	0.0	1.000	6873		1.50(0.71-2.13)		93.4	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.964	0.008	1.000	66292	0.0460		92.0	5.9	
813.00 > 169.00	4.972	4.964	0.008	1.000	13844		4.79(2.86-8.58)		151	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	4.964	0.008	1.850	2580459	2.31		92.2	9297	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.322	0.008	1.000	47404	0.0471		94.2	9.6	
913.00 > 169.00	5.322	5.322	0.0	0.999	5854		8.10(3.83-11.48)		80.8	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 21-Mar-2018 09:57:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_002.d

Injection Date: 20-Mar-2018 19:22:44 Instrument ID: A8_N

Lims ID: CCVL

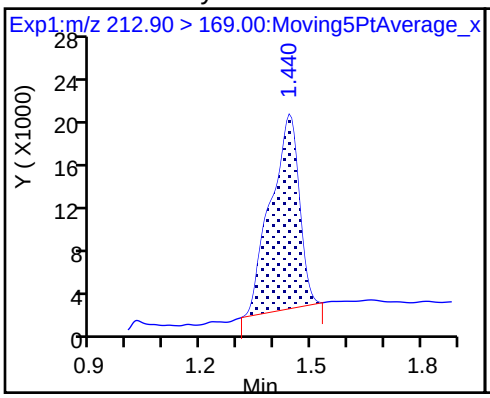
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

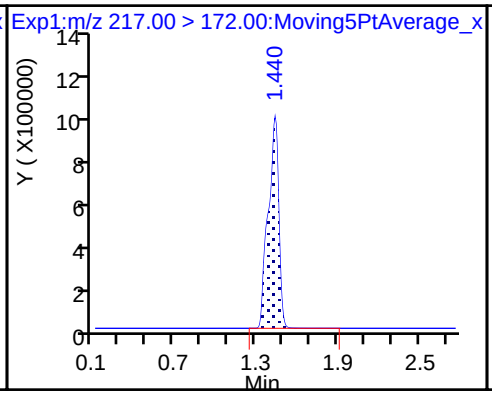
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

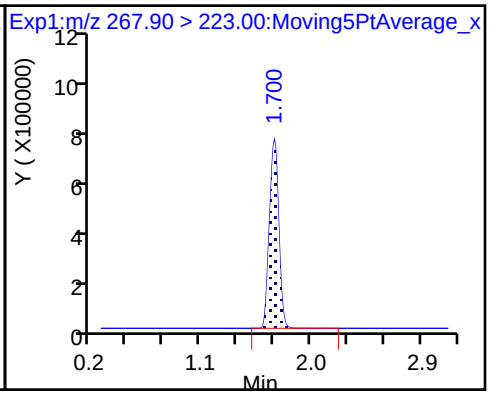
2 Perfluorobutyric acid



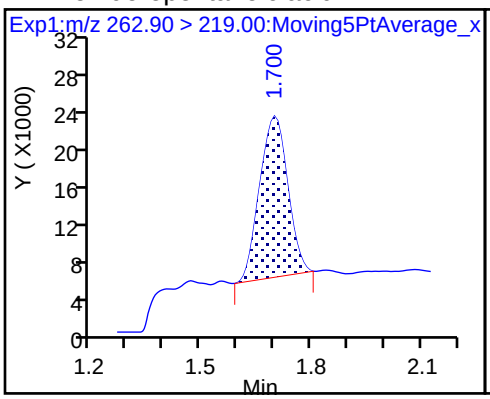
D 1 13C4 PFBA



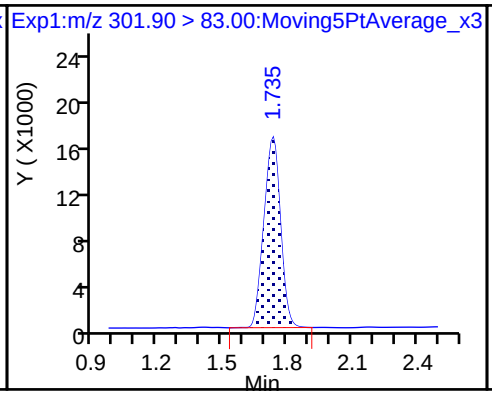
D 3 13C5-PFPeA



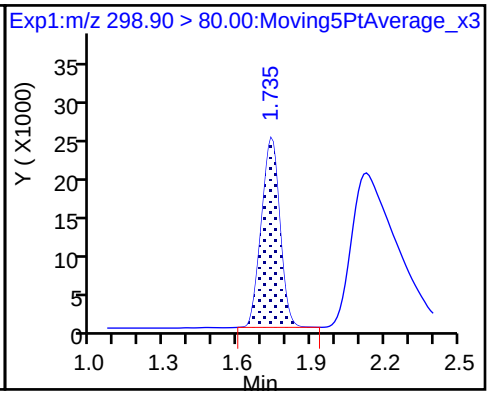
4 Perfluoropentanoic acid



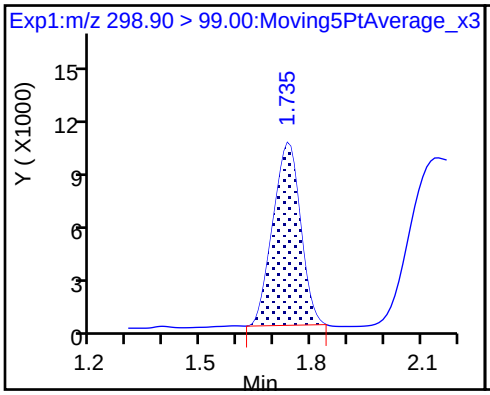
D 47 13C3-PFBS



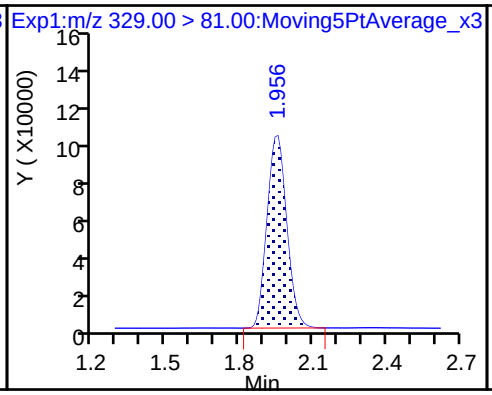
5 Perfluorobutanesulfonic acid



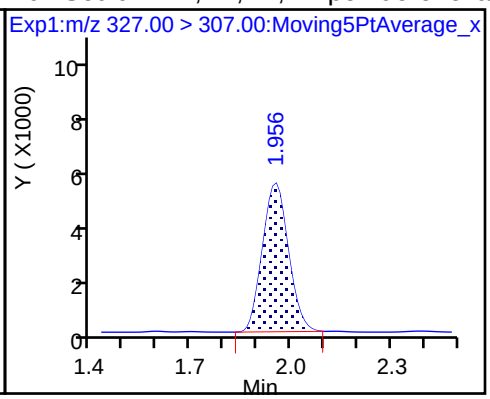
5 Perfluorobutanesulfonic acid



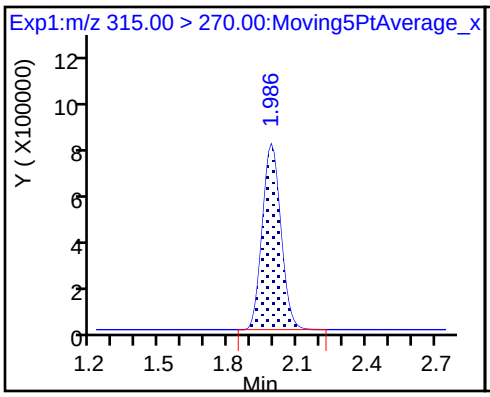
D 60 M2-4:2FTS



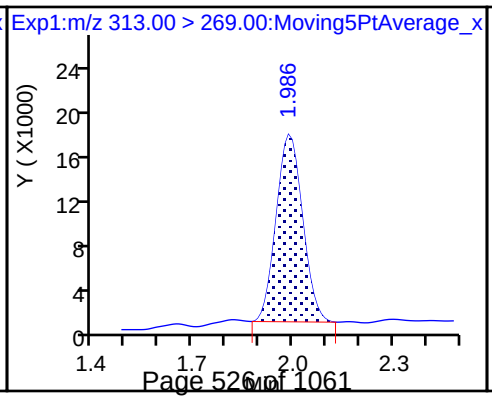
61 Sodium 1H,1H,2H,2H-perfluorohexane



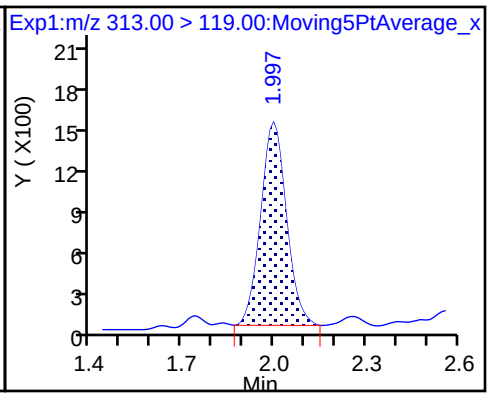
D 7 13C2 PFHxA



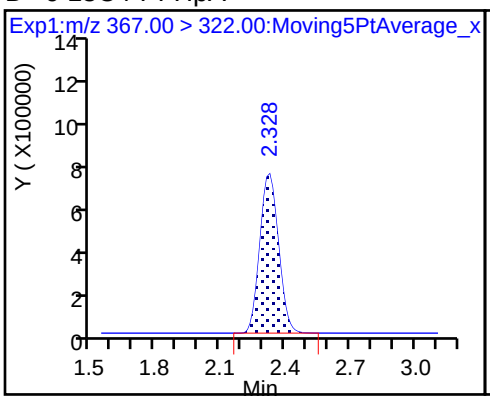
6 Perfluorohexanoic acid



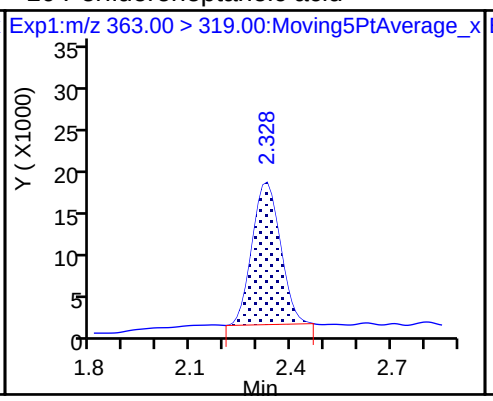
6 Perfluorohexanoic acid



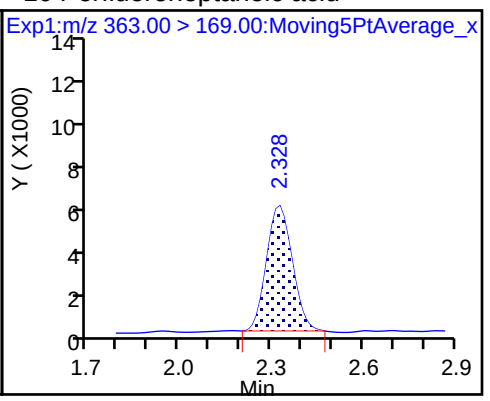
D 9 13C4-PFHpA



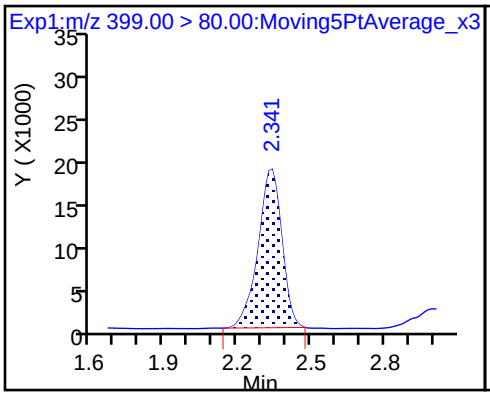
10 Perfluoroheptanoic acid



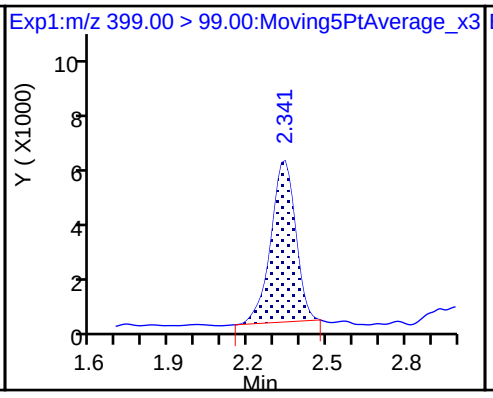
10 Perfluoroheptanoic acid



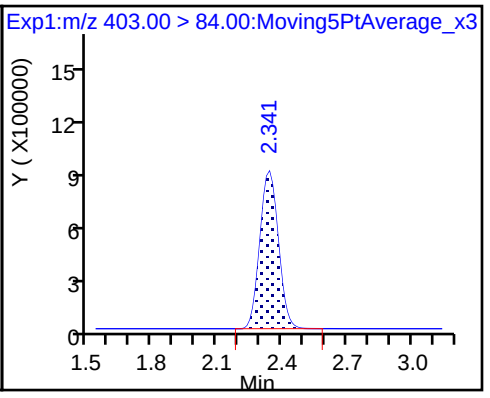
8 Perfluorohexanesulfonic acid



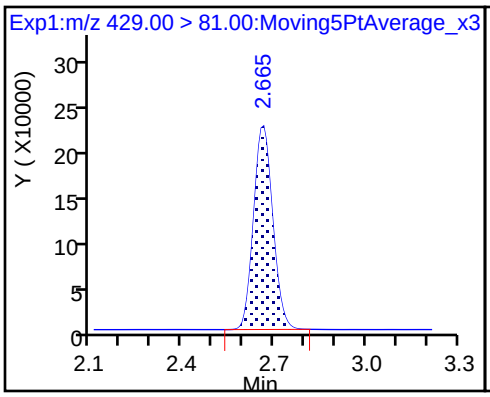
8 Perfluorohexanesulfonic acid



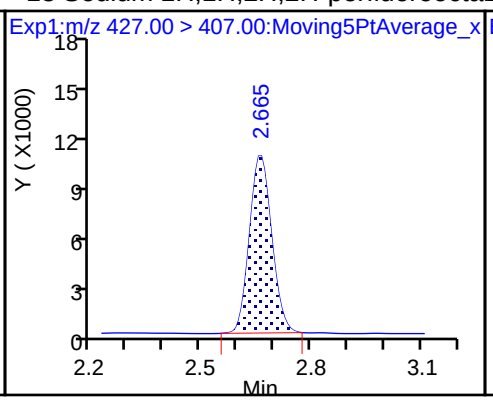
D 11 18O2 PFHxS



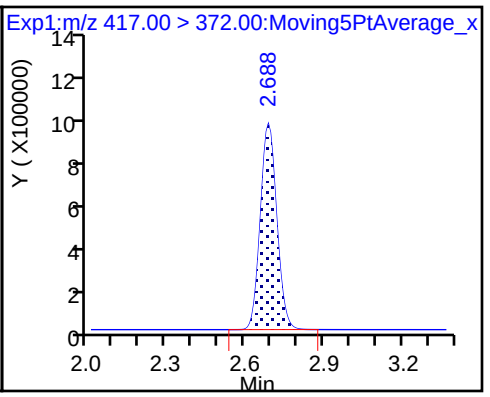
D 12 M2-6:2FTS



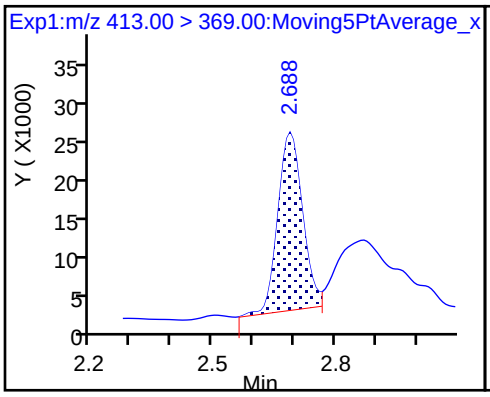
13 Sodium 1H,1H,2H,2H-perfluorooctane



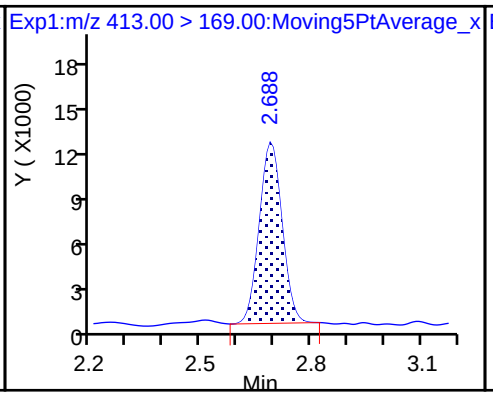
D 14 13C4 PFOA



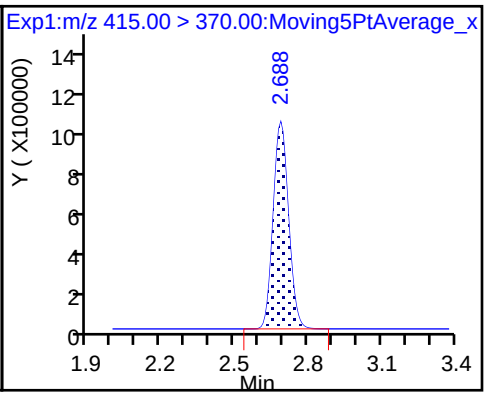
15 Perfluorooctanoic acid



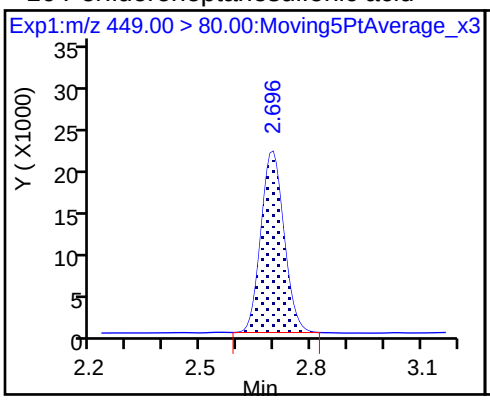
15 Perfluorooctanoic acid



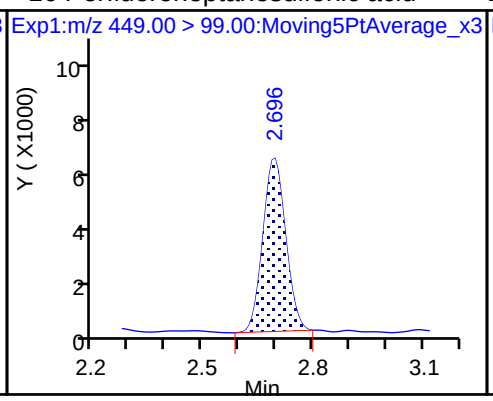
* 62 13C2-PFOA



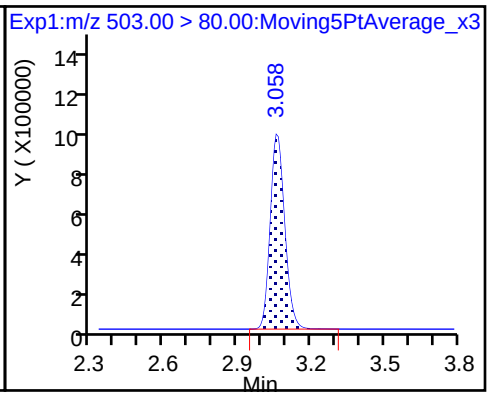
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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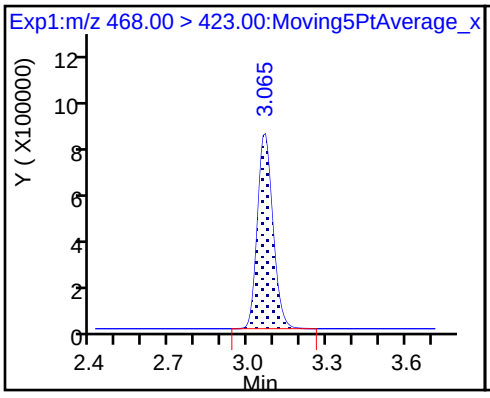
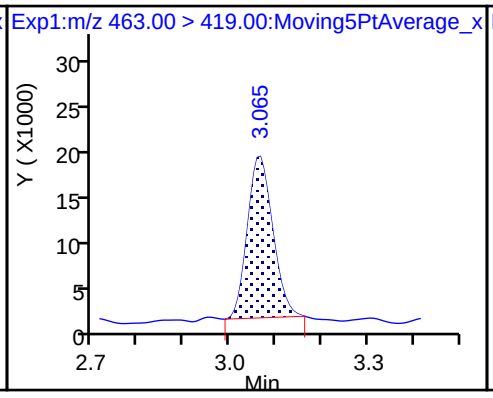
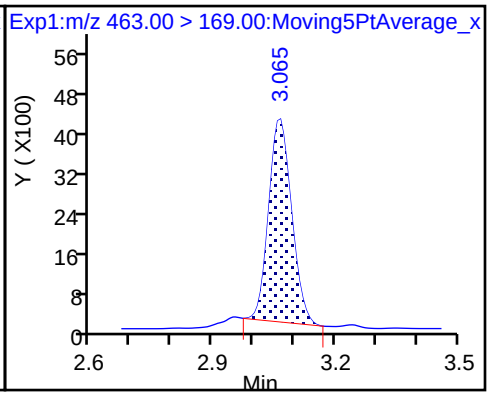


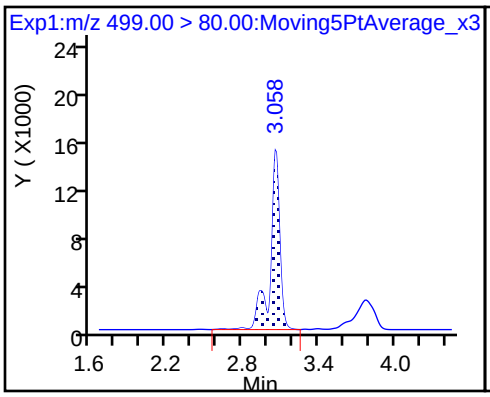
20 Perfluorononanoic acid



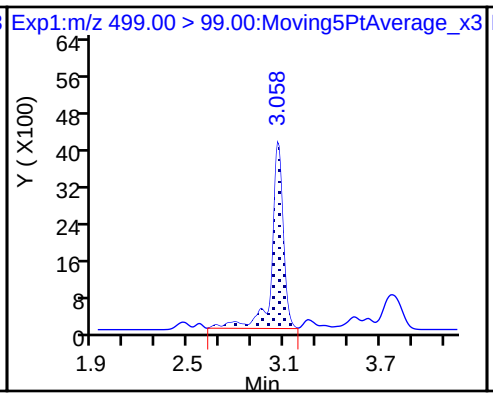
20 Perfluorononanoic acid



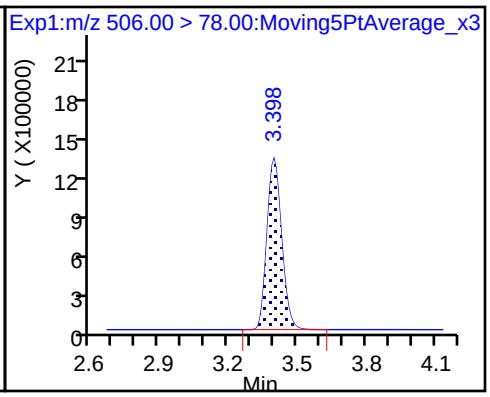
17 Perfluorooctane sulfonic acid



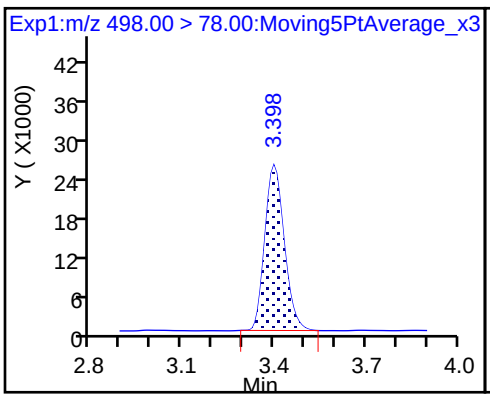
17 Perfluorooctane sulfonic acid



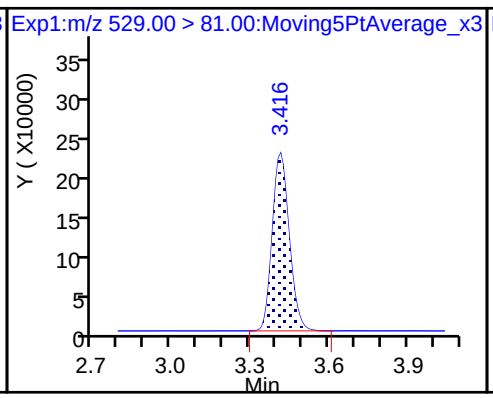
D 21 13C8 FOSA



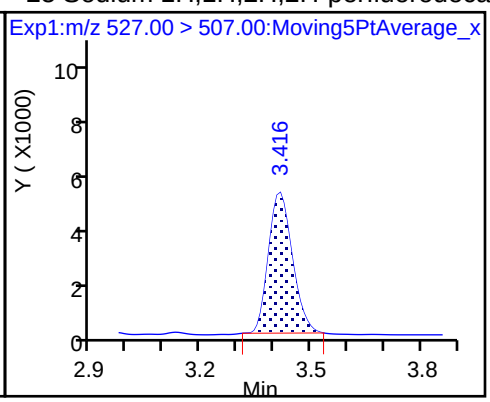
22 Perfluorooctane Sulfonamide



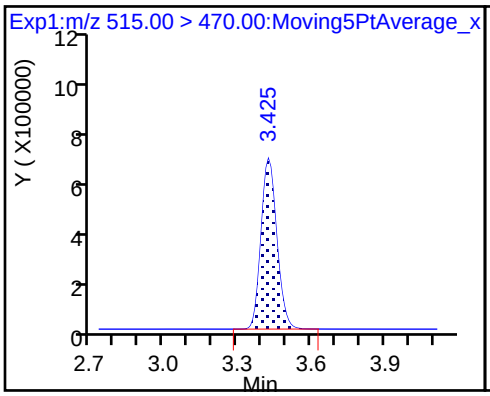
D 26 M2-8:2FTS



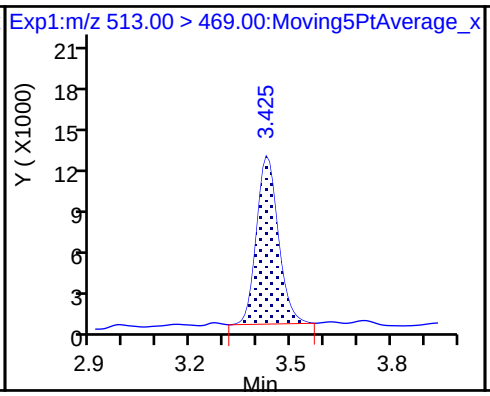
25 Sodium 1H,1H,2H,2H-perfluorodecane



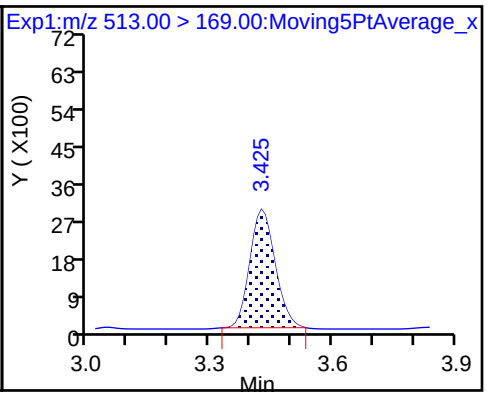
D 23 13C2 PFDA



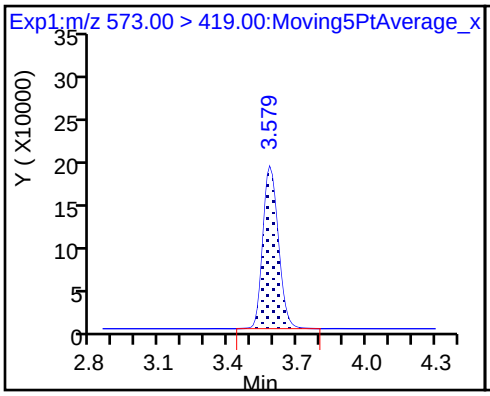
24 Perfluorodecanoic acid



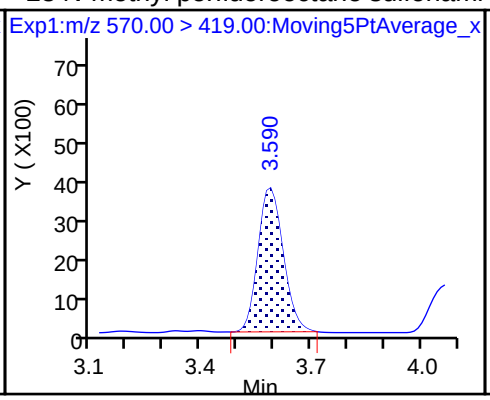
24 Perfluorodecanoic acid



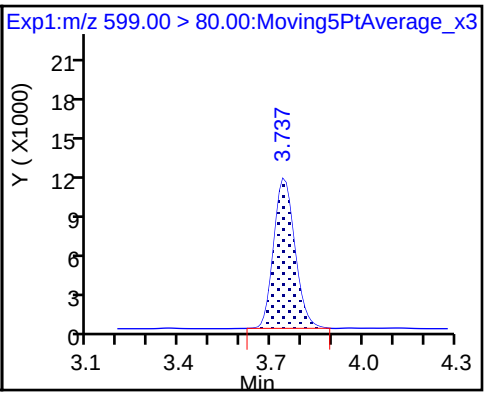
D 27 d3-NMeFOSAA



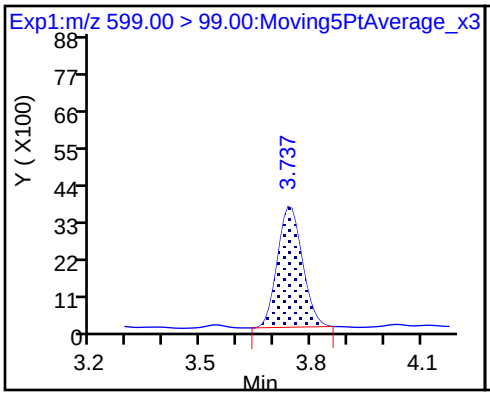
28 N-methyl perfluorooctane sulfonami



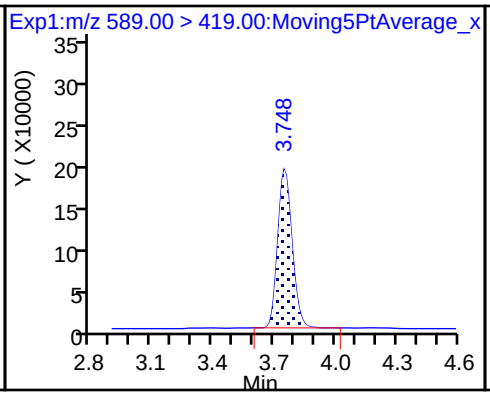
29 Perfluorodecane Sulfonic acid



29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



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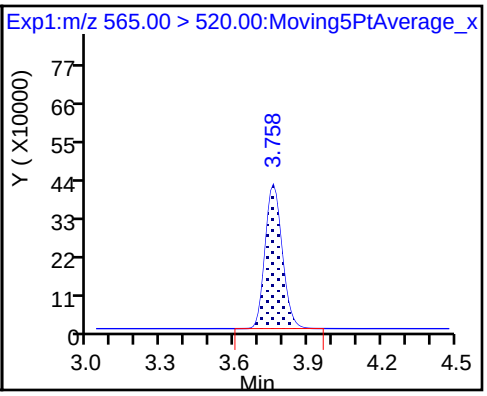
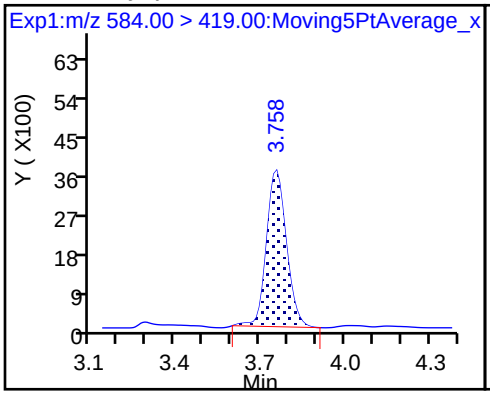
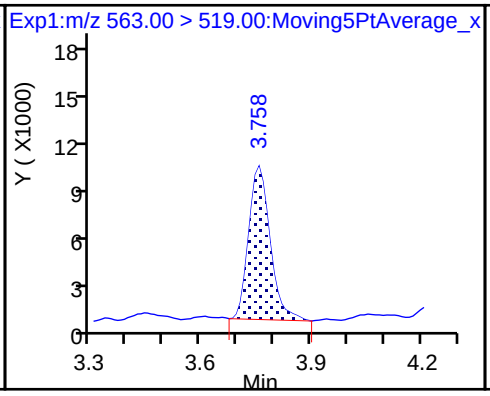


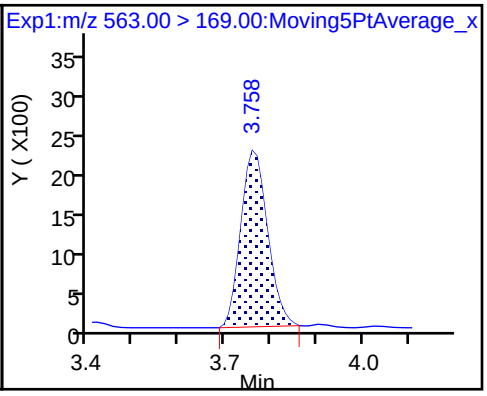
33 N-ethyl perfluorooctane sulfonamid



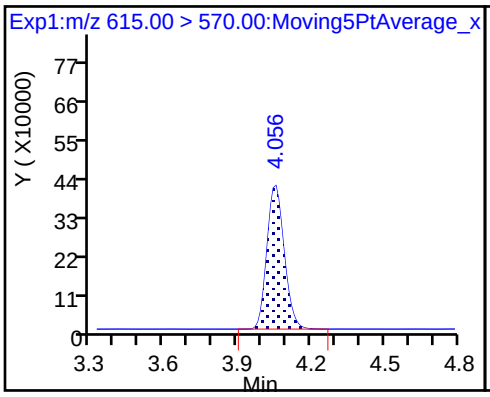
31 Perfluoroundecanoic acid



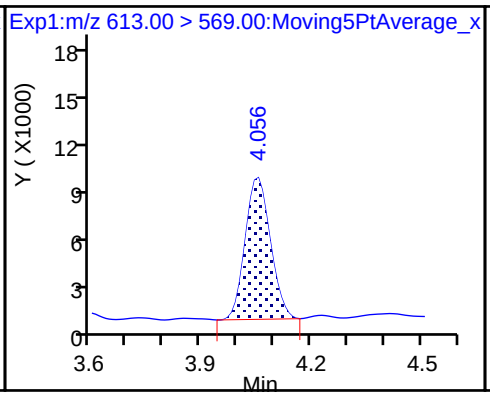
31 Perfluoroundecanoic acid



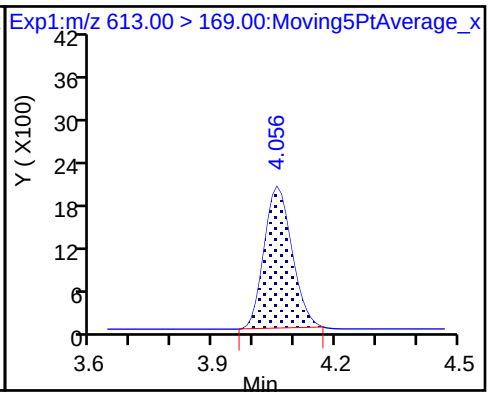
D 36 13C2 PFDoA



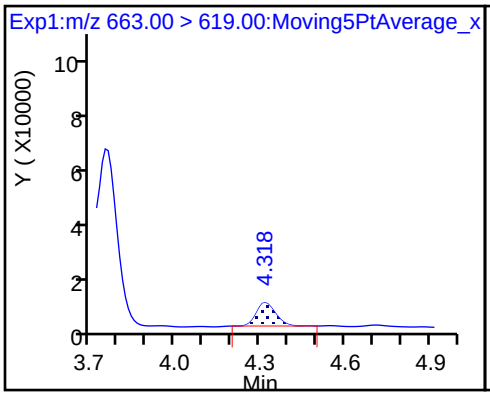
37 Perfluorododecanoic acid



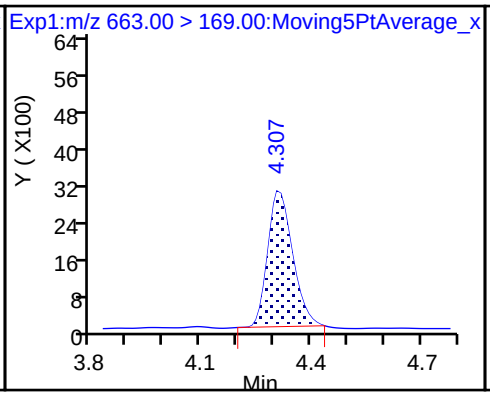
37 Perfluorododecanoic acid



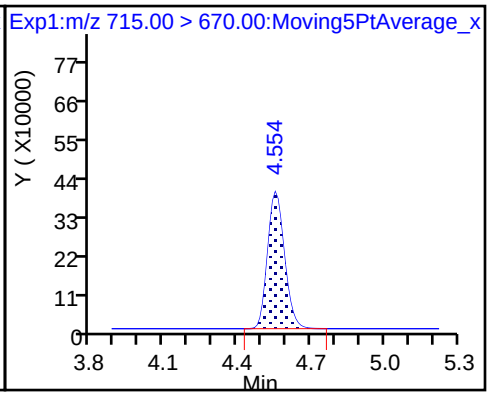
41 Perfluorotridecanoic acid



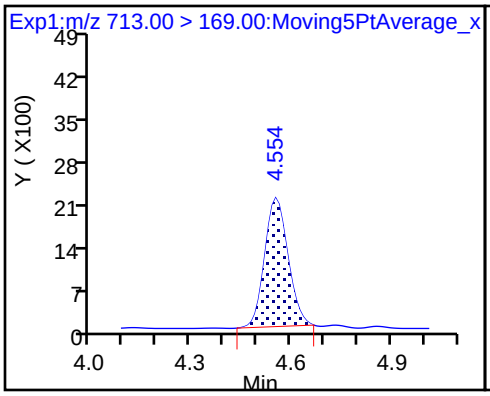
41 Perfluorotridecanoic acid



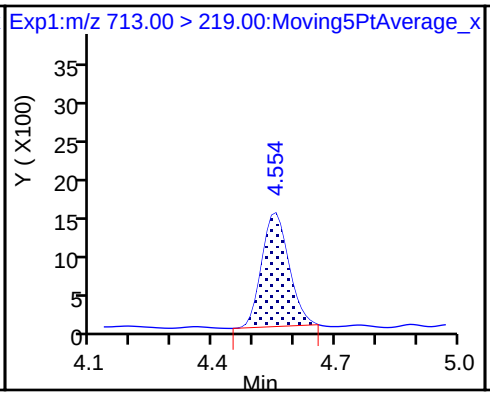
D 43 13C2-PFTeDA



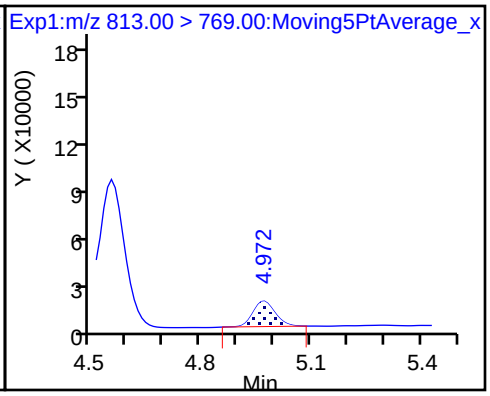
42 Perfluorotetradecanoic acid



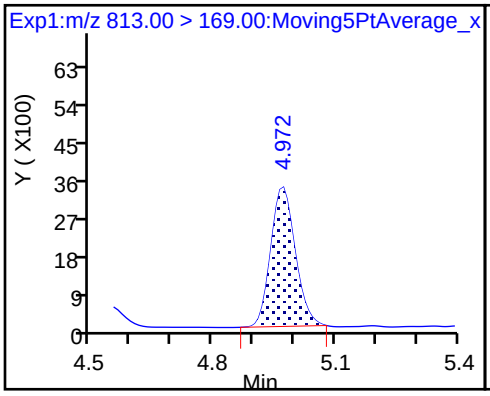
42 Perfluorotetradecanoic acid



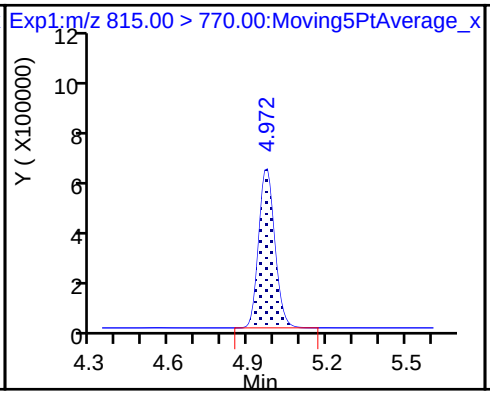
45 Perfluorohexadecanoic acid



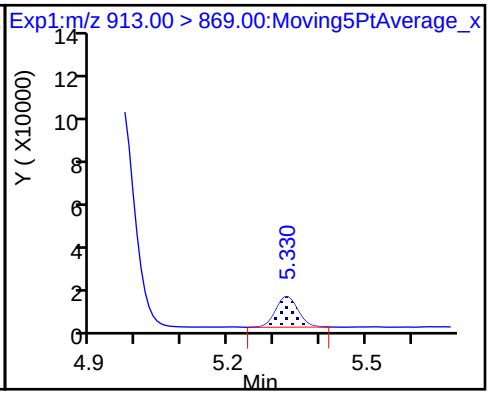
45 Perfluorohexadecanoic acid



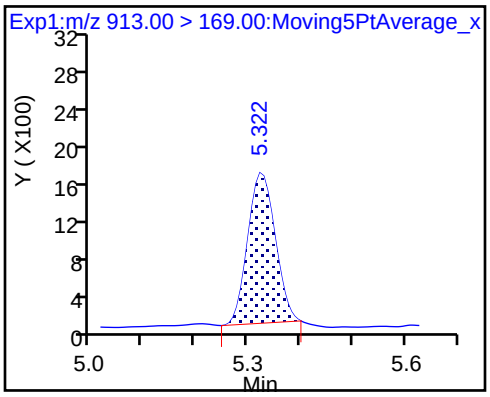
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214045/3 Calibration Date: 03/20/2018 19:30

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9470		2.55	2.50	2.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.162		2.49	2.50	-0.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	78.72		2.25	2.21	1.7	50.0
4:2 FTS	AveID	16.07	14.32		2.08	2.34	-10.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9848		2.44	2.50	-2.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.090		2.63	2.50	5.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.061		2.16	2.28	-4.9	40.0
6:2FTS	AveID	1.665	1.701		2.42	2.37	2.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.154		2.58	2.50	3.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.343		2.43	2.38	2.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.031		2.53	2.50	1.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.112		2.38	2.32	2.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9909		2.55	2.50	2.0	40.0
8:2FTS	AveID	1.257	1.305		2.49	2.40	3.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9781		2.58	2.50	3.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.082		2.60	2.50	3.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6490		2.45	2.41	1.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	1.019		2.60	2.50	4.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7736		2.31	2.50	-7.7	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.078		2.64	2.50	5.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.102		2.68	2.50	7.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2526		2.29	2.50	-8.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8739		2.36	2.50	-5.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.037		2.66	2.50	6.4	50.0
13C4 PFBA	Ave	1.277	1.162		2.28	2.50	-9.0	50.0
13C5 PFPeA	Ave	0.9006	0.8347		2.32	2.50	-7.3	50.0
13C3-PFBS	Ave	0.0222	0.0219		2.29	2.33	-1.4	50.0
M2-4:2FTS	Ave	0.1590	0.1394		2.05	2.34	-12.3	50.0
13C2 PFHxA	Ave	1.004	0.9683		2.41	2.50	-3.6	50.0
13C4-PFHpA	Ave	0.9767	0.9349		2.39	2.50	-4.3	50.0
18O2 PFHxS	Ave	1.303	1.281		2.32	2.37	-1.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214045/3 Calibration Date: 03/20/2018 19:30

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLB_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2229		2.12	2.38	-10.9	40.0
13C4 PFOA	Ave	0.9431	0.9110		2.42	2.50	-3.4	50.0
13C4 PFOS	Ave	0.9113	0.8948		2.35	2.39	-1.8	50.0
13C5 PFNA	Ave	0.7545	0.7692		2.55	2.50	2.0	50.0
13C8 FOSA	Ave	1.319	1.357		2.57	2.50	2.9	50.0
M2-8:2FTS	Ave	0.2350	0.2221		2.26	2.40	-5.5	40.0
13C2 PFDA	Ave	0.6303	0.6340		2.51	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.2081	0.1826		2.19	2.50	-12.3	50.0
13C2 PFUnA	Ave	0.4935	0.4565		2.31	2.50	-7.5	50.0
d5-NEtFOSAA	Ave	0.1990	0.1846		2.32	2.50	-7.3	50.0
13C2 PFDoA	Ave	0.4680	0.4536		2.42	2.50	-3.1	50.0
13C2-PFTeDA	Ave	0.4272	0.4162		2.44	2.50	-2.6	50.0
13C2-PFHxDA	Ave	0.6248	0.6013		2.41	2.50	-3.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_003.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 20-Mar-2018 19:30:32 ALS Bottle#: 14 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 21-Mar-2018 09:57:16 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK018

First Level Reviewer: westendorfc Date: 21-Mar-2018 09:57:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.004	4663240	2.55		102	2441	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.535	4924368	2.27		91.0	77553	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.631	3538910	2.32		92.7	96706	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.005	4111013	2.49		99.4	1382	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.727	0.0	0.644	86407	2.29		98.6	440	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.005	6465917	2.25		102	2616	
298.90 > 99.00	1.736	1.736	0.0	1.005	2690888		2.40(1.25-3.74)		2419	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.946	-0.001	0.726	552099	2.05		87.7	7268	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	1242547	2.08		89.1	57242	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	0.0	0.741	4105399	2.41		96.4	91594	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.986	0.0	1.000	4042886	2.44		97.6	15204	
313.00 > 119.00	1.986	1.986	0.0	1.000	368671		10.97(5.03-15.10)		8171	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3963791	2.39		95.7	60228	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.315	0.0	1.000	4320987	2.63		105	8378	
363.00 > 169.00	2.315	2.315	0.0	1.000	1601882		2.70(1.13-3.40)		24290	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	1.000	5240231	2.16		95.1	7880	
399.00 > 99.00	2.328	2.328	0.0	1.000	1731302		3.03(1.50-4.49)		4493	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	5135972	2.32		98.3	61808	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	897727	2.12		89.1	22823	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.657	0.0	1.000	1523792	2.42		102	43784	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3862348	2.41		96.6	68548	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	4455369	2.58		103	1662	
413.00 > 169.00	2.681	2.681	0.0	1.000	2297716		1.94(0.84-2.52)		8270	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4239672	2.50			88723	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	4849828	2.43		102	59497	
449.00 > 99.00	2.688	2.688	0.0	1.000	1258376		3.85(1.94-5.82)		29246	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.141	3626681	2.35		98.2	28707	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	3261225	2.55		102	47435	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.058	0.0	1.000	3361978	2.53		101	7137	
463.00 > 169.00	3.058	3.058	0.0	1.000	853770		3.94(1.90-5.69)		26621	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.058	0.0	1.000	3915257	2.38		103	9722	
499.00 > 99.00	3.058	3.058	0.0	1.000	860418		4.55(2.31-6.93)		6682	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.397	-0.008	1.264	5754831	2.57		103	48442	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	5702239	2.55		102	75148	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.415	-0.008	1.271	902000	2.26		94.5	25070	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.407	0.0	1.000	1177363	2.49		104	26161	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.424	-0.008	1.275	2687803	2.51		101	37531	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.425	0.0	1.003	2629029	2.58		103	13891	
513.00 > 169.00	3.425	3.425	0.0	1.003	478768		5.49(2.36-7.09)		2116	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.578	-0.008	1.332	774150	2.19		87.7	27626	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.579	0.0	1.002	837808	2.60		104	8262	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.738	0.0	1.000	2373350	2.45		102	45316	
599.00 > 99.00	3.738	3.738	0.0	1.000	798949		2.97(1.39-4.16)		13870	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	782421	2.32		92.7	1515	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1935403	2.31		92.5	49884	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.748	0.0	1.000	797375	2.60		104	18104	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.748	0.0	1.000	1497261	2.31		92.3	4889	
563.00 > 169.00	3.758	3.748	0.010	1.003	411312		3.64(2.12-6.36)		32780	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.047	-0.001	1.509	1922888	2.42		96.9	12477	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.046	0.0	1.000	2073465	2.64		105	396	
613.00 > 169.00	4.046	4.046	0.0	1.000	537318		3.86(2.13-6.40)		11119	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	2118450	2.68		107	461	
663.00 > 169.00	4.307	4.307	0.0	1.000	639978		3.31(1.25-3.76)		7456	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.699	1764690	2.44		97.4	17510	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	445673	2.29		91.6	6171	
713.00 > 219.00	4.543	4.554	-0.011	0.998	341830		1.30(0.71-2.13)		3431	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.964	0.0	1.000	2227757	2.36		94.2	195	
813.00 > 169.00	4.964	4.964	0.0	1.000	411046		5.42(2.86-8.58)		3652	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.852	2549294	2.41		96.2	10532	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.322	0.0	1.000	2643999	2.66		106	486	
913.00 > 169.00	5.322	5.322	0.0	1.000	337586		7.83(3.83-11.48)		3439	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 21-Mar-2018 09:57:18 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55604.b\2018.03.20LLB_003.d

Injection Date: 20-Mar-2018 19:30:32 Instrument ID: A8_N

Lims ID: CCV L5

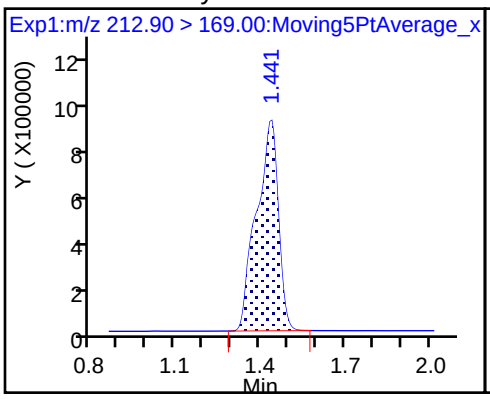
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 3

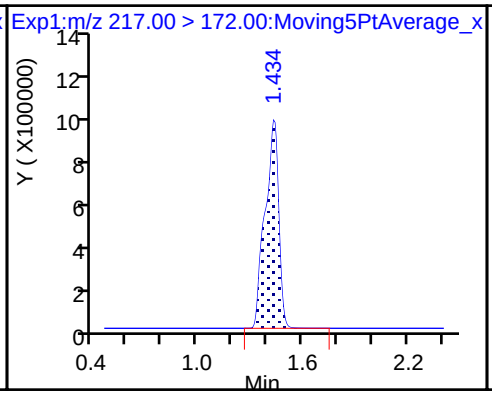
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

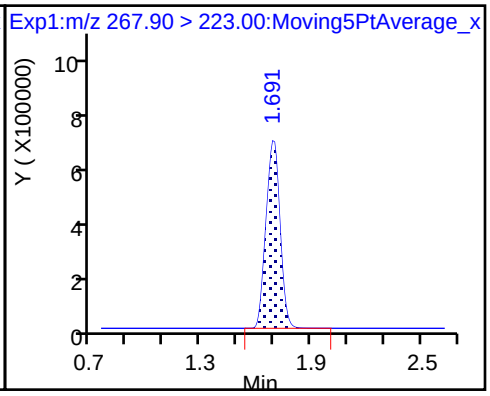
2 Perfluorobutyric acid



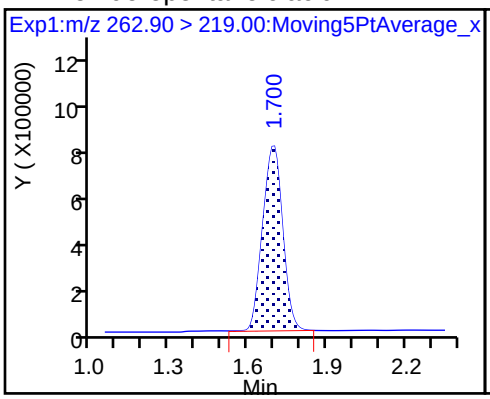
D 1 13C4 PFBA



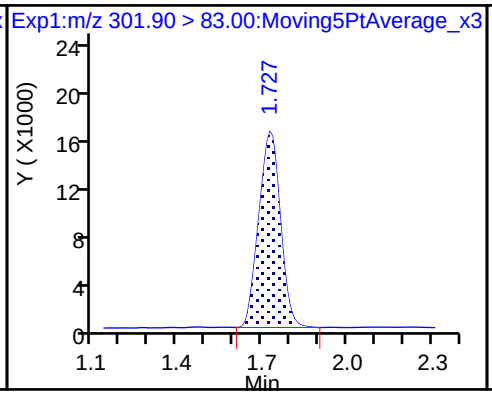
D 3 13C5-PFPeA



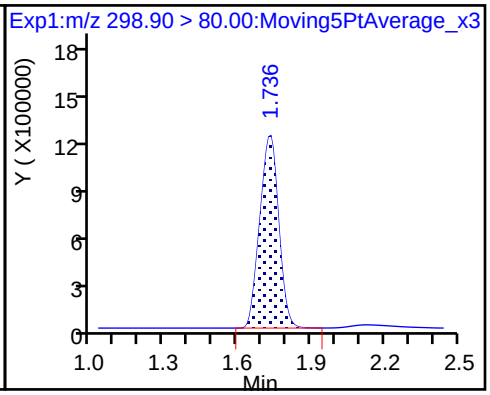
4 Perfluoropentanoic acid



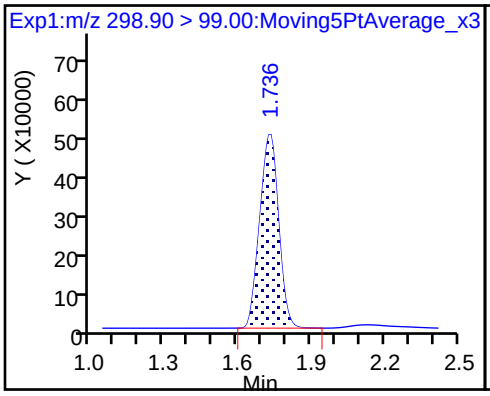
D 47 13C3-PFBS



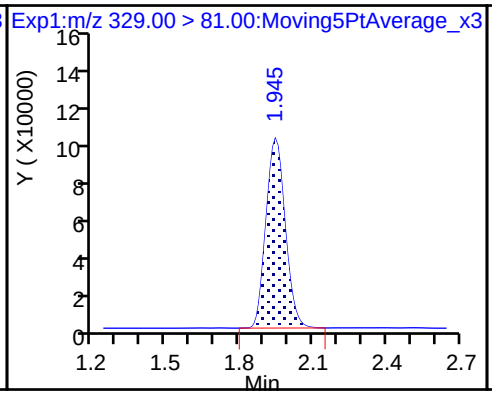
5 Perfluorobutanesulfonic acid



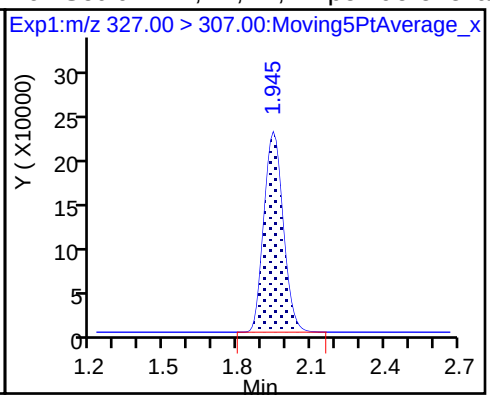
5 Perfluorobutanesulfonic acid



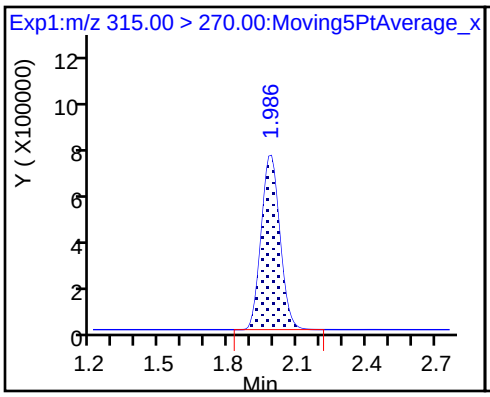
D 60 M2-4:2FTS



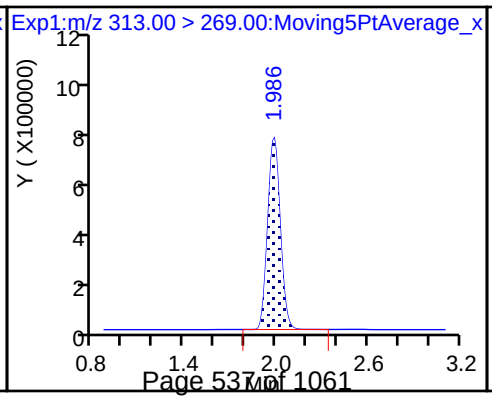
61 Sodium 1H,1H,2H,2H-perfluorohexane



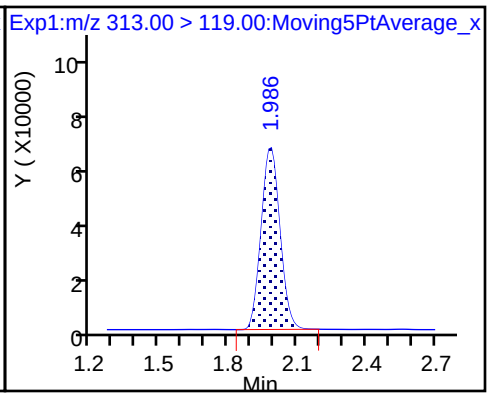
D 7 13C2 PFHxA



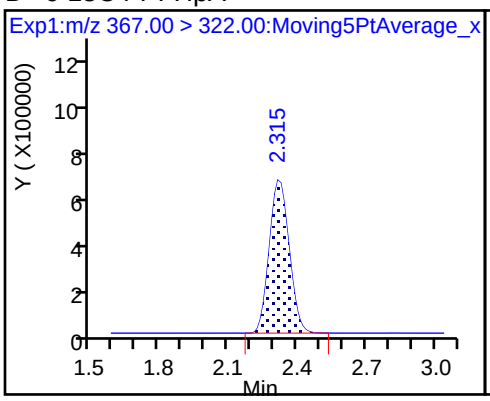
6 Perfluorohexanoic acid



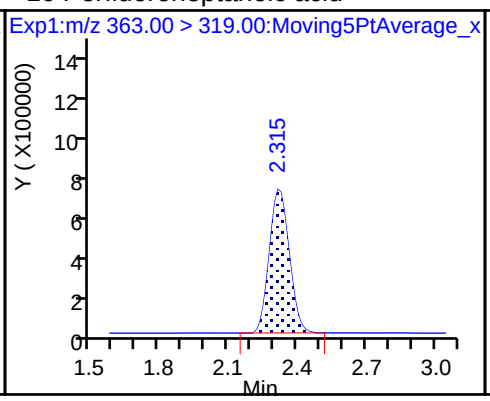
6 Perfluorohexanoic acid



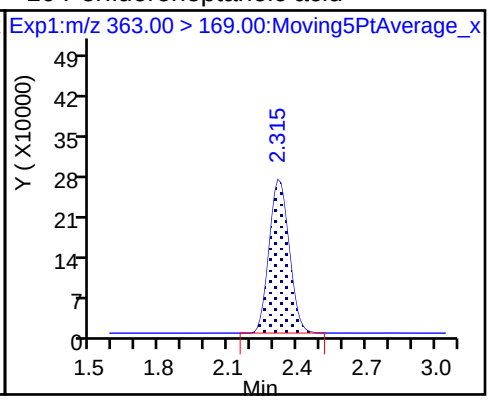
D 9 13C4-PFHpA



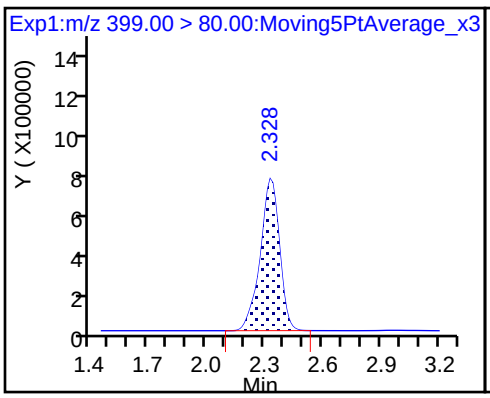
10 Perfluoroheptanoic acid



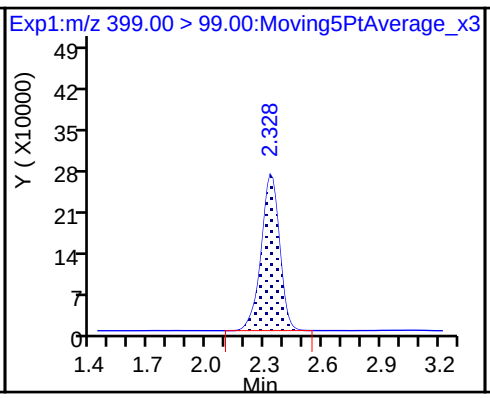
10 Perfluoroheptanoic acid



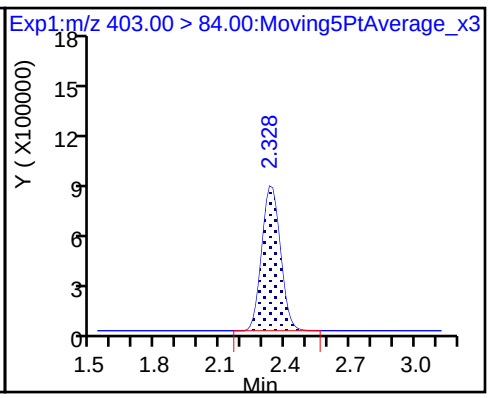
8 Perfluorohexanesulfonic acid



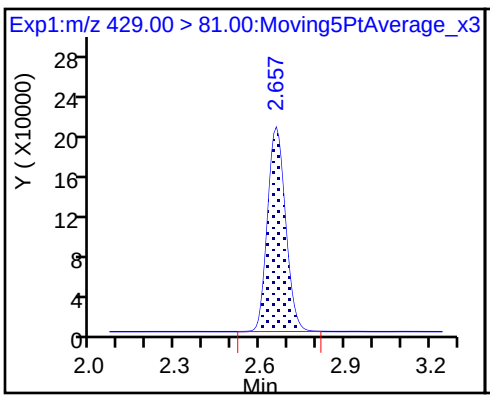
8 Perfluorohexanesulfonic acid



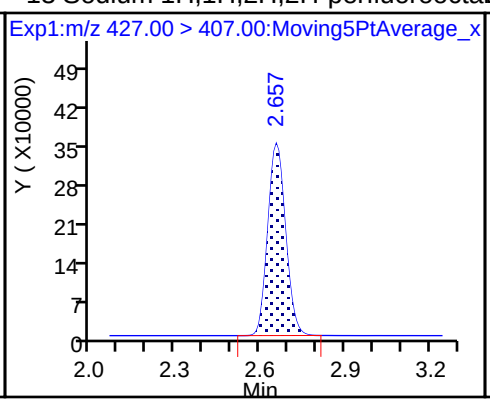
D 11 18O2 PFHxS



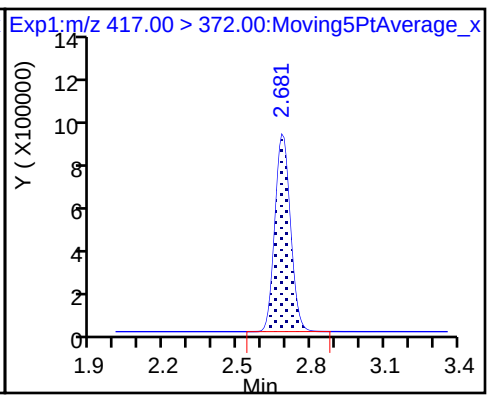
D 12 M2-6:2FTS



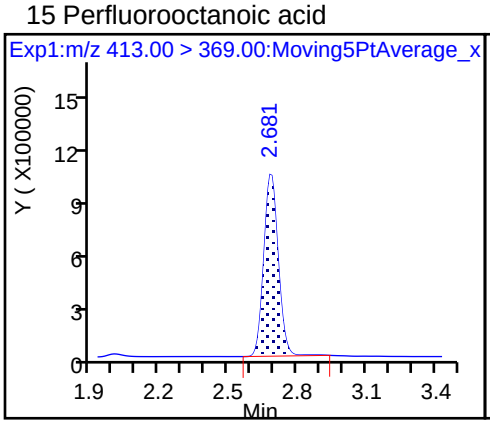
13 Sodium 1H,1H,2H,2H-perfluorooctane



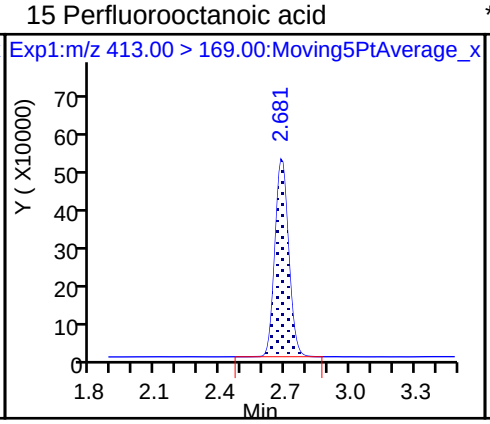
D 14 13C4 PFOA



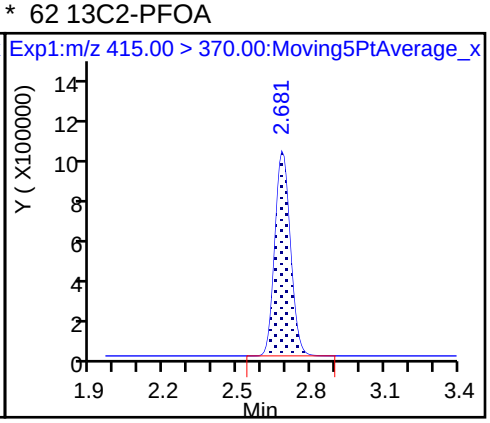
15 Perfluorooctanoic acid



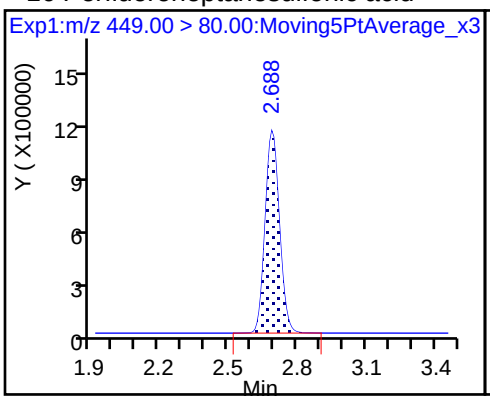
15 Perfluorooctanoic acid



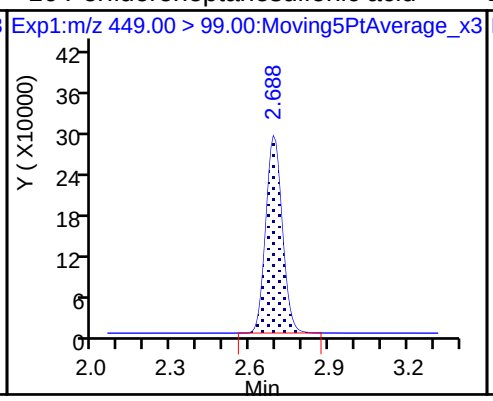
* 62 13C2-PFOA



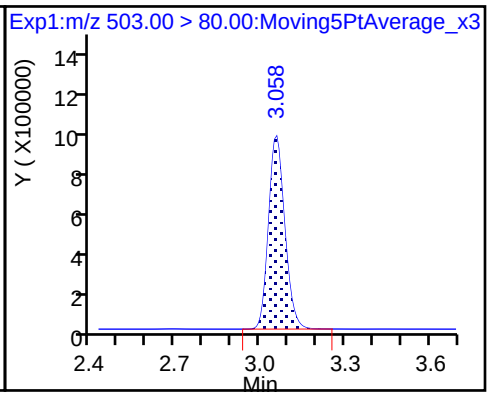
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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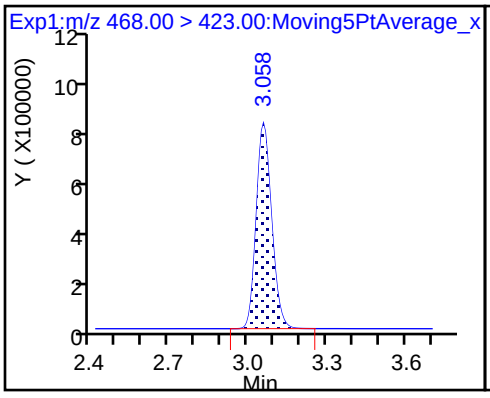
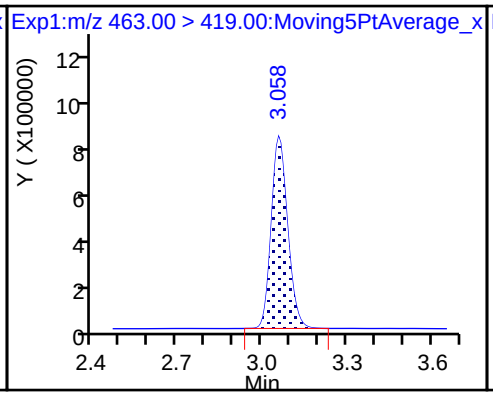
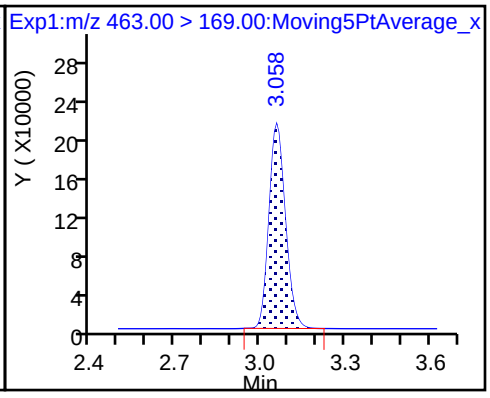


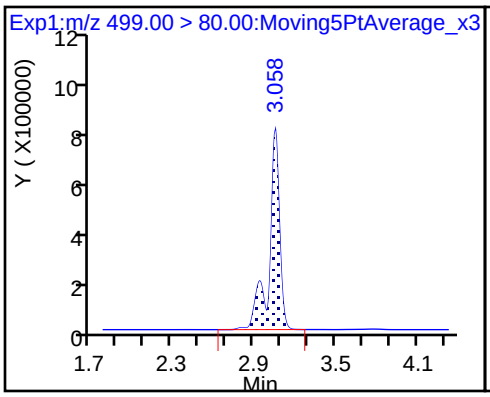
20 Perfluorononanoic acid



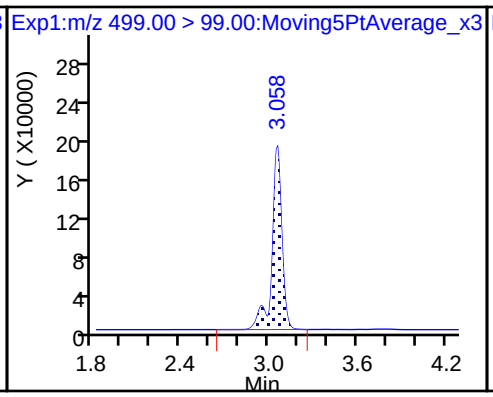
20 Perfluorononanoic acid



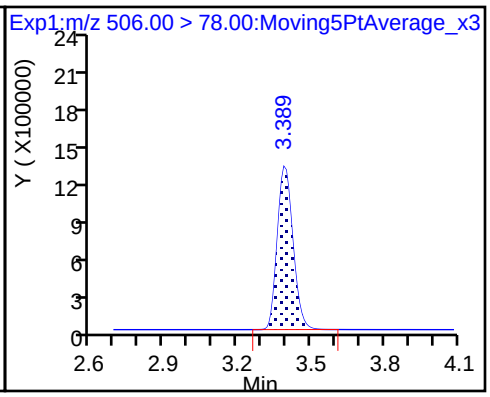
17 Perfluorooctane sulfonic acid



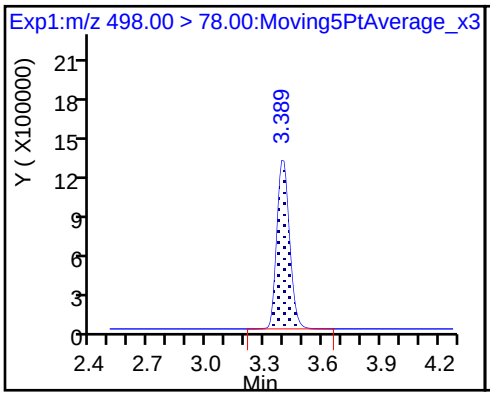
17 Perfluorooctane sulfonic acid



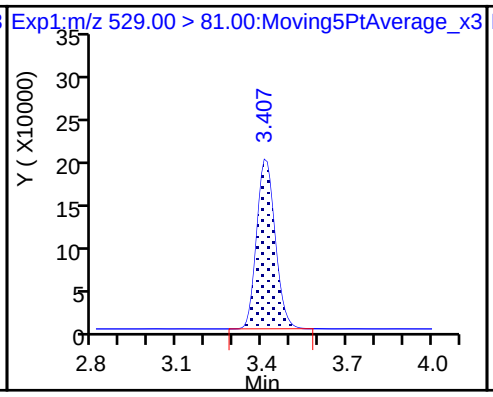
D 21 13C8 FOSA



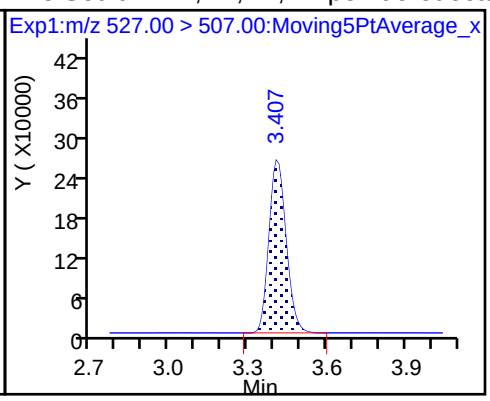
22 Perfluorooctane Sulfonamide



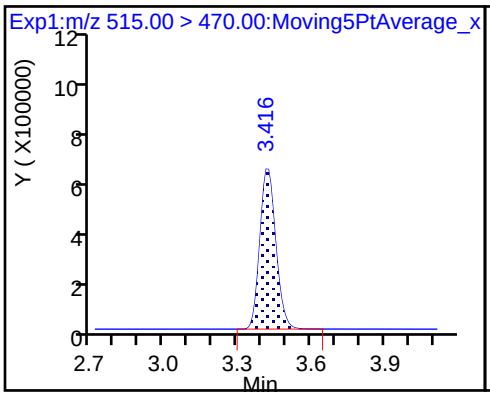
D 26 M2-8:2FTS



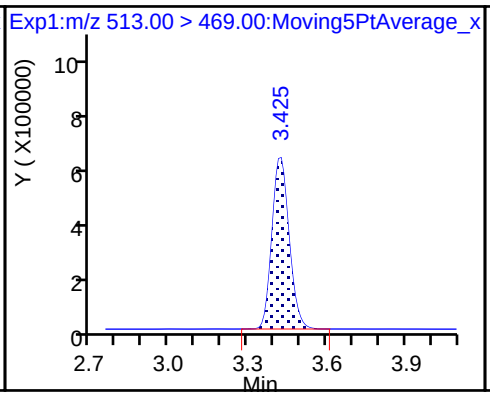
25 Sodium 1H,1H,2H,2H-perfluorodecane



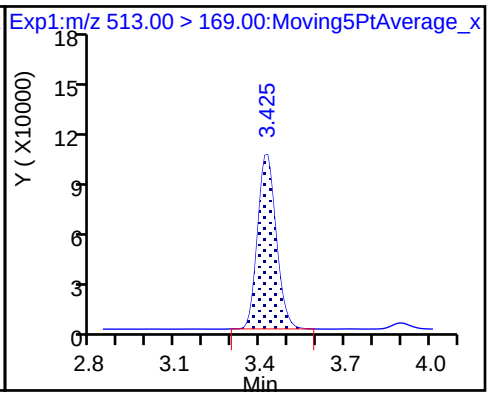
D 23 13C2 PFDA



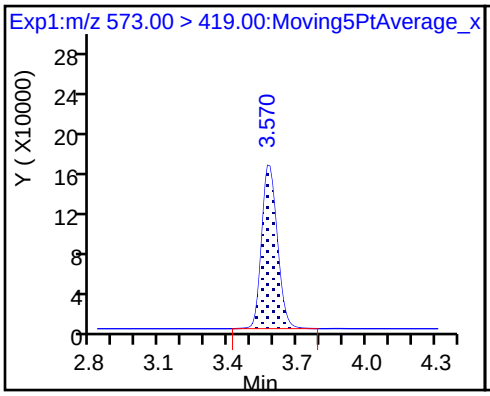
24 Perfluorodecanoic acid



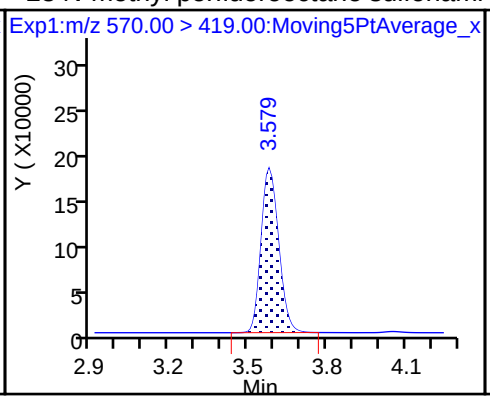
24 Perfluorodecanoic acid



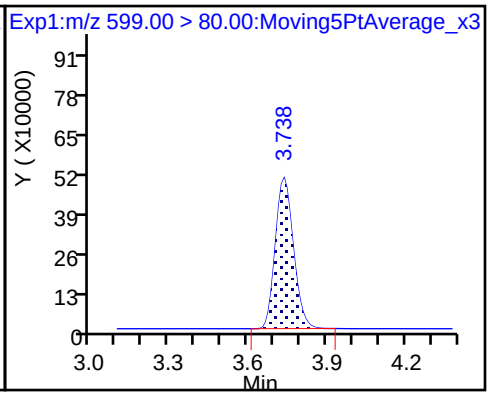
D 27 d3-NMeFOSAA



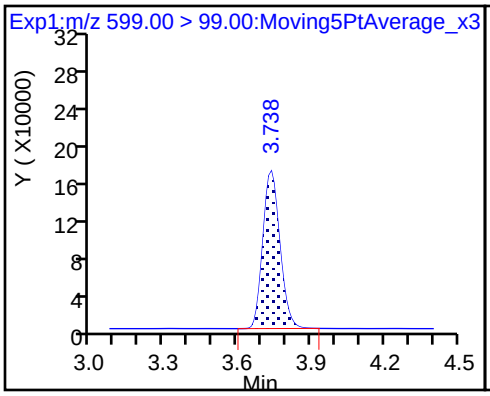
28 N-methyl perfluorooctane sulfonami



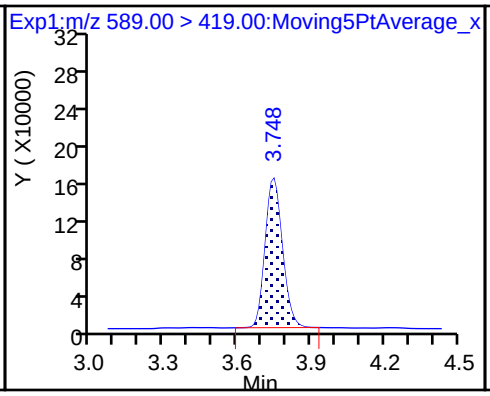
29 Perfluorodecane Sulfonic acid



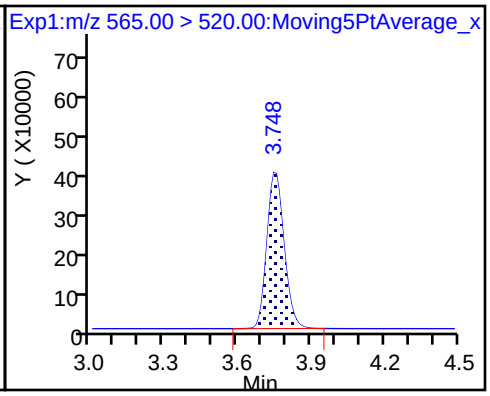
29 Perfluorodecane Sulfonic acid



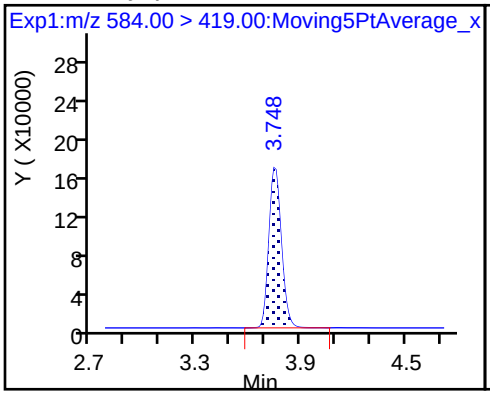
D 32 d5-NEtFOSAA



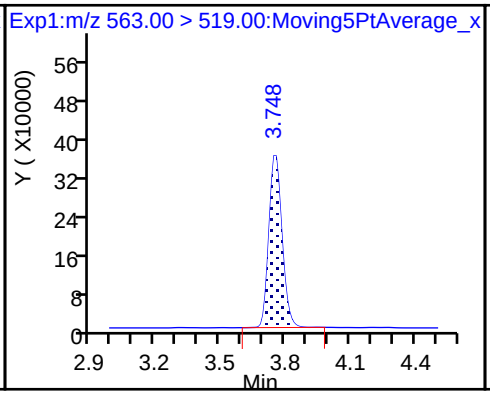
D 30 13C2 PFUnA



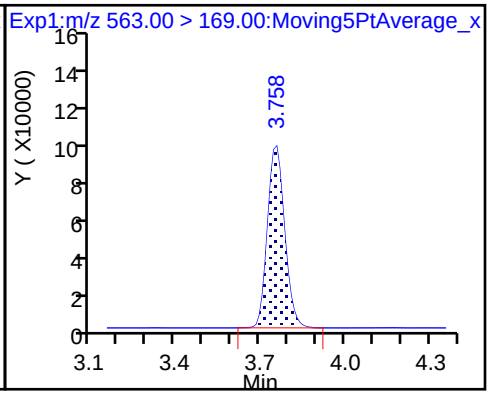
33 N-ethyl perfluorooctane sulfonamid



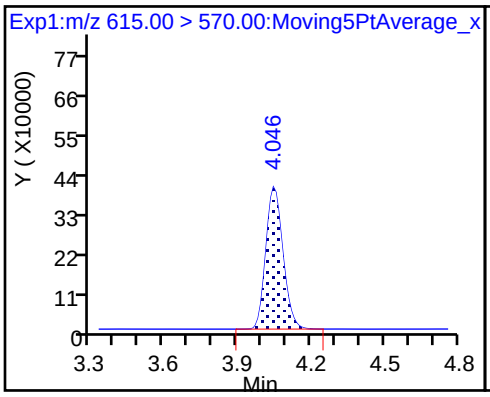
31 Perfluoroundecanoic acid



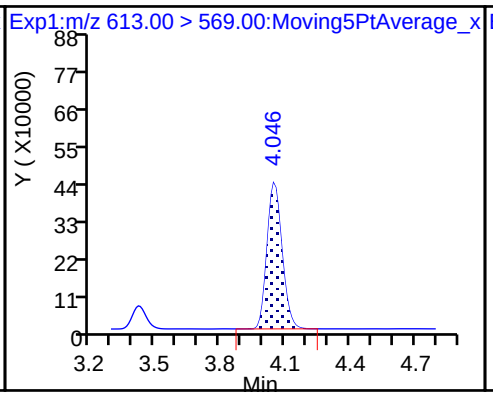
31 Perfluoroundecanoic acid



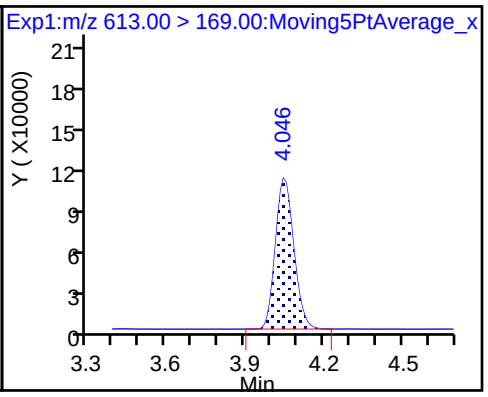
D 36 13C2 PFDoA



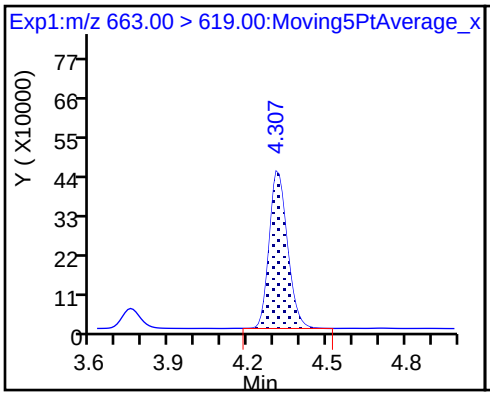
37 Perfluorododecanoic acid



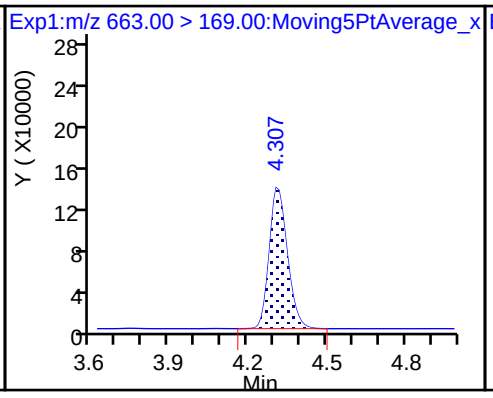
37 Perfluorododecanoic acid



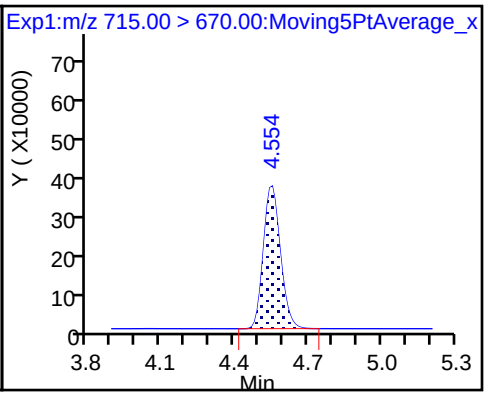
41 Perfluorotridecanoic acid



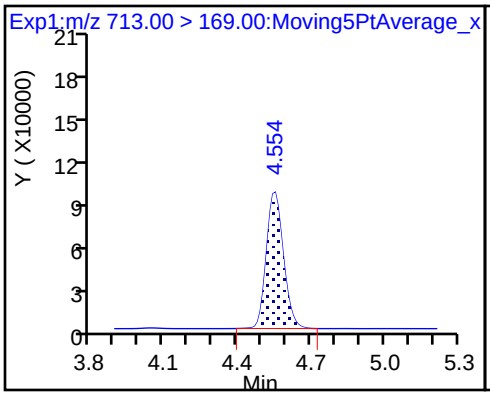
41 Perfluorotridecanoic acid



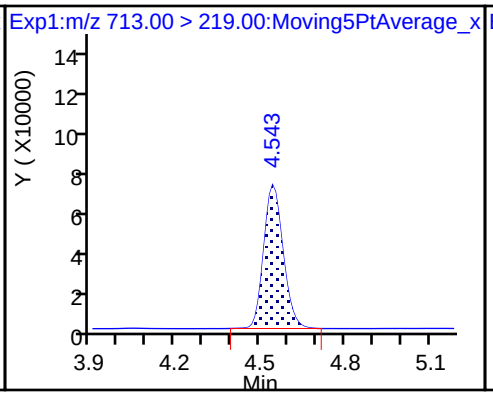
D 43 13C2-PFTeDA



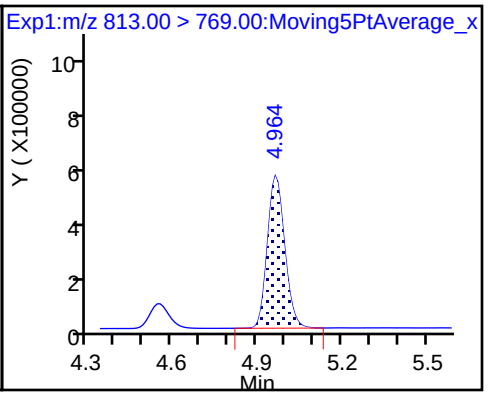
42 Perfluorotetradecanoic acid



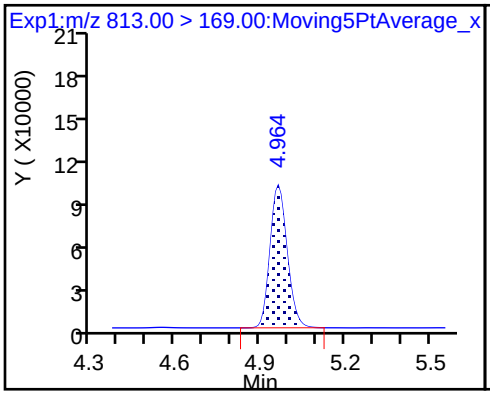
42 Perfluorotetradecanoic acid



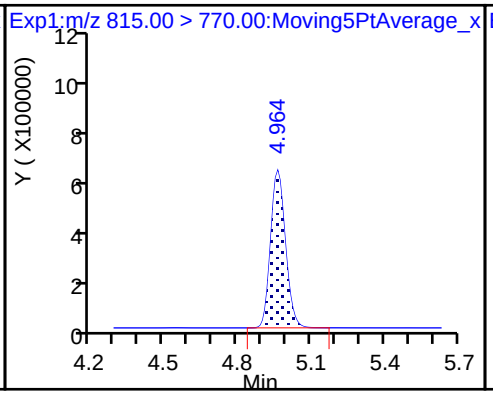
45 Perfluorohexadecanoic acid



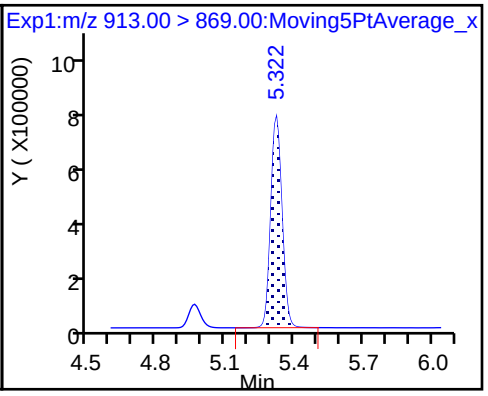
45 Perfluorohexadecanoic acid



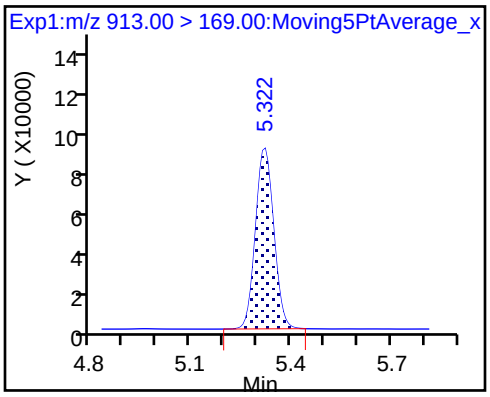
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/1 Calibration Date: 03/20/2018 23:01

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9121		0.983	1.00	-1.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.107		0.947	1.00	-5.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	75.59		0.864	0.884	-2.3	50.0
4:2 FTS	AveID	16.07	13.89		0.807	0.934	-13.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.017		1.01	1.00	0.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.005		0.969	1.00	-3.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.038		0.847	0.910	-6.9	40.0
6:2FTS	AveID	1.665	1.552		0.884	0.948	-6.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.103		0.988	1.00	-1.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.229		0.890	0.952	-6.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9737		0.955	1.00	-4.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.004		0.860	0.928	-7.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	0.9695		0.998	1.00	-0.2	40.0
8:2FTS	AveID	1.257	1.290		0.983	0.958	2.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9710		1.02	1.00	2.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	0.9918		0.952	1.00	-4.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6127		0.925	0.964	-4.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9211		0.941	1.00	-5.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7509		0.896	1.00	-10.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.043		1.02	1.00	1.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9525		0.926	1.00	-7.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2606		0.945	1.00	-5.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9645		1.03	1.00	2.7	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9889		1.01	1.00	1.4	50.0
13C4 PFBA	Ave	1.277	1.200		2.35	2.50	-6.0	50.0
13C5 PFPeA	Ave	0.9006	0.8507		2.36	2.50	-5.5	50.0
13C3-PFBS	Ave	0.0222	0.0225		2.36	2.33	1.4	50.0
M2-4:2FTS	Ave	0.1590	0.1399		2.05	2.34	-12.0	50.0
13C2 PFHxA	Ave	1.004	0.9694		2.41	2.50	-3.5	50.0
13C4-PFHpA	Ave	0.9767	0.9899		2.53	2.50	1.4	50.0
18O2 PFHxS	Ave	1.303	1.266		2.30	2.37	-2.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/1 Calibration Date: 03/20/2018 23:01

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2443		2.32	2.38	-2.3	40.0
13C4 PFOA	Ave	0.9431	0.9761		2.59	2.50	3.5	50.0
13C4 PFOS	Ave	0.9113	0.9526		2.50	2.39	4.5	50.0
13C5 PFNA	Ave	0.7545	0.7932		2.63	2.50	5.1	50.0
13C8 FOSA	Ave	1.319	1.370		2.60	2.50	3.8	50.0
M2-8:2FTS	Ave	0.2350	0.2349		2.40	2.40	-0.0	40.0
13C2 PFDA	Ave	0.6303	0.6587		2.61	2.50	4.5	50.0
d3-NMeFOSAA	Ave	0.2081	0.1972		2.37	2.50	-5.3	50.0
d5-NEtFOSAA	Ave	0.1990	0.2070		2.60	2.50	4.0	50.0
13C2 PFUnA	Ave	0.4935	0.4896		2.48	2.50	-0.8	50.0
13C2 PFDoA	Ave	0.4680	0.4616		2.47	2.50	-1.4	50.0
13C2-PFTeDA	Ave	0.4272	0.4245		2.48	2.50	-0.6	50.0
13C2-PFHxDA	Ave	0.6248	0.5984		2.40	2.50	-4.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_022.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 20-Mar-2018 23:01:55 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 09:41:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.537	5617146	2.35		94.0	78548	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	2049407	0.9835		98.3	1088	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.700	0.009	0.634	3981824	2.36		94.5	195713	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1762727	0.9474		94.7	588	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.644	98122	2.36		101	2351	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2820151	0.8636		97.7	1143	
298.90 > 99.00	1.744	1.744	0.0	1.005	1171990		2.41(1.25-3.74)		1121	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.946	0.009	0.726	611484	2.05		88.0	8896	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	547461	0.8070		86.4	26013	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.987	0.010	0.741	4537057	2.41		96.5	103094	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1844961	1.01		101	6758	
313.00 > 119.00	1.997	1.997	0.0	1.000	171650		10.75(5.03-15.10)		4390	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.864	4633169	2.53		101	132141	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1862001	0.9693		96.9	3530	
363.00 > 169.00	2.328	2.328	0.0	1.000	728309		2.56(1.13-3.40)		10408	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.869	5606936	2.30		97.2	96529	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2239191	0.8468		93.1	3954	
399.00 > 99.00	2.341	2.341	0.0	1.000	744503		3.01(1.50-4.49)		2120	
D 12 M2-6:2FTS										
429.00 > 81.00	2.663	2.657	0.006	0.988	1086363	2.32		97.7	32069	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.663	2.663	0.0	1.000	673007	0.8839		93.2	22805	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.681	0.014	1.000	4568746	2.59		104	98380	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.695	0.0	1.000	2016416	0.9884		98.8	652	
413.00 > 169.00	2.695	2.695	0.0	1.000	992596		2.03(0.84-2.52)		3677	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		4680397	2.50			91535	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	2086670	0.8904		93.5	41246	
449.00 > 99.00	2.703	2.703	0.0	1.000	555959		3.75(1.94-5.82)		10143	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.051	0.016	1.138	4262130	2.50		105	49295	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.058	0.009	1.138	3712241	2.63		105	77484	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.067	3.067	0.0	1.000	1660971	0.8603		92.7	5147	
499.00 > 99.00	3.067	3.067	0.0	1.000	371505		4.47(2.31-6.93)		3403	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.067	0.0	1.000	1445893	0.9551		95.5	2849	
463.00 > 169.00	3.067	3.067	0.0	1.000	357917		4.04(1.90-5.69)		11316	
D 21 13C8 FOSA										
506.00 > 78.00	3.401	3.389	0.012	1.262	6412105	2.60		104	66304	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.401	0.0	1.000	2486504	1.00		99.8	37607	
D 26 M2-8:2FTS										
529.00 > 81.00	3.419	3.408	0.011	1.269	1053413	2.39		100.0	21325	
D 23 13C2 PFDA										
515.00 > 470.00	3.428	3.417	0.011	1.272	3082970	2.61		105	43487	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.419	3.419	0.0	1.000	543664	0.9831		103	15278	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.428	3.428	0.0	1.000	1197428	1.02		102	6321	
513.00 > 169.00	3.428	3.428	0.0	1.000	219940		5.44(2.36-7.09)		8269	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.570	0.013	1.330	922766	2.37		94.7	33062	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.594	3.594	0.0	1.003	366076	0.9522		95.2	4310	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	1053282	0.9250		96.0	27644	
599.00 > 99.00	3.741	3.741	0.0	1.000	371952		2.83(1.39-4.16)		7863	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.748	0.004	1.392	969025	2.60		104	1769	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.748	0.014	1.396	2291330	2.48		99.2	53076	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.762	0.0	1.003	357040	0.9408		94.1	9180	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	688259	0.8961		89.6	2102	
563.00 > 169.00	3.762	3.762	0.0	1.000	182450		3.77(2.12-6.36)		14589	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.046	0.015	1.507	2160559	2.47		98.6	12102	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	901041	1.02		102	148	
613.00 > 169.00	4.061	4.061	0.0	1.000	227281		3.96(2.13-6.40)		5833	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.320	4.320	0.0	1.000	823170	0.9259		92.6	158	
663.00 > 169.00	4.320	4.320	0.0	1.000	268454		3.07(1.25-3.76)		2981	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.556	4.544	0.012	1.691	1986655	2.48		99.4	15300	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.556	4.556	0.0	1.000	207065	0.9448		94.5	2407	
713.00 > 219.00	4.556	4.556	0.0	1.000	144644		1.43(0.71-2.13)		1448	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.964	0.010	1.846	2800859	2.39		95.8	10458	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.974	0.0	1.000	1080583	1.03		103	95.2	
813.00 > 169.00	4.974	4.974	0.0	1.000	184825		5.85(2.86-8.58)		1770	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.331	5.331	0.0	1.000	1107926	1.01		101	215	
913.00 > 169.00	5.331	5.331	0.0	1.000	136577		8.11(3.83-11.48)		1602	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:55:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_022.d

Injection Date: 20-Mar-2018 23:01:55 Instrument ID: A8_N

Lims ID: CCV L4

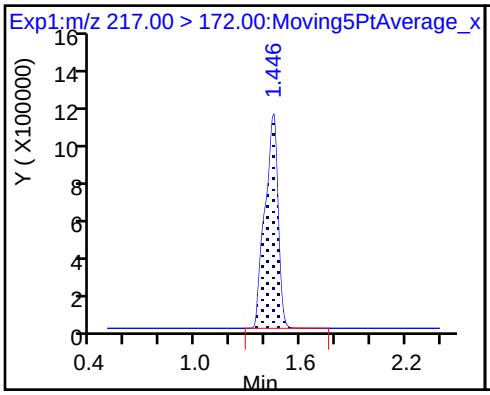
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

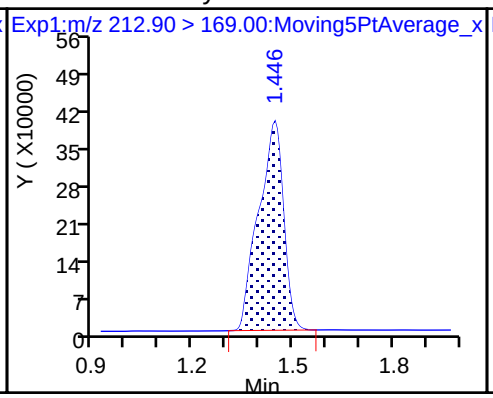
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

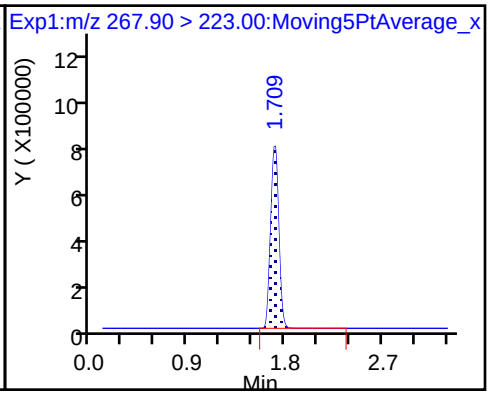
D 1 13C4 PFBA



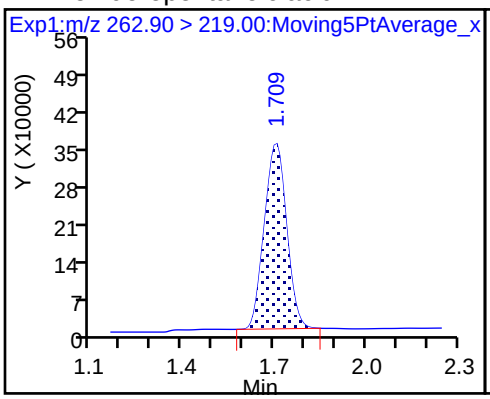
2 Perfluorobutyric acid



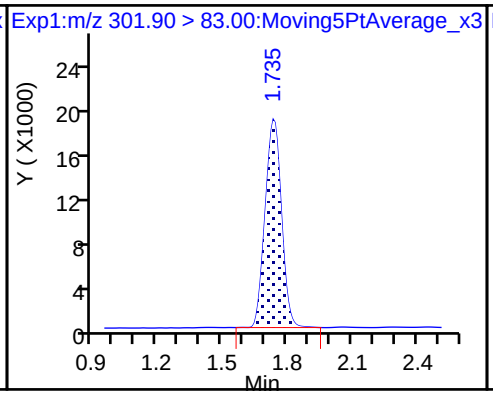
D 3 13C5-PFPeA



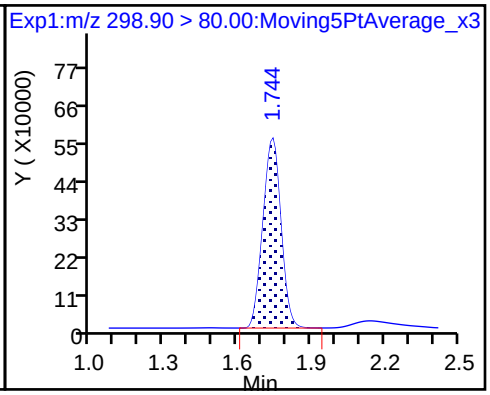
4 Perfluoropentanoic acid



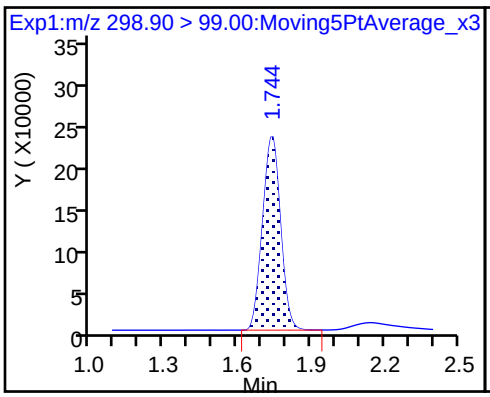
D 47 13C3-PFBS



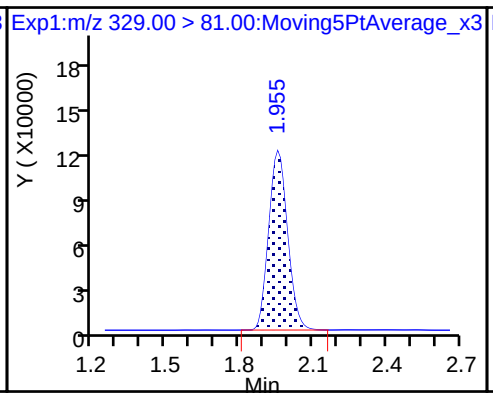
5 Perfluorobutanesulfonic acid



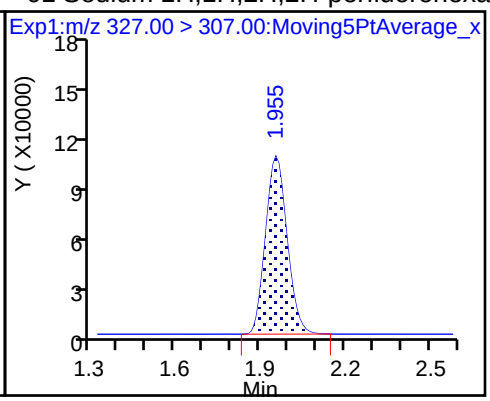
5 Perfluorobutanesulfonic acid



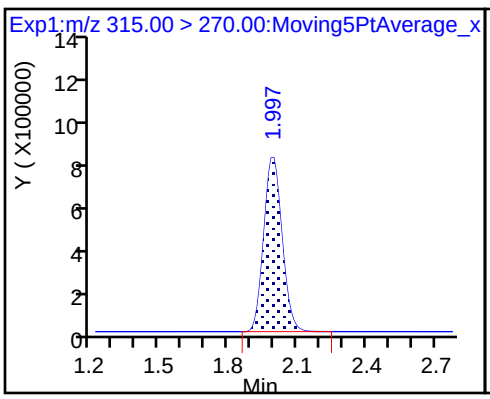
D 60 M2-4:2FTS



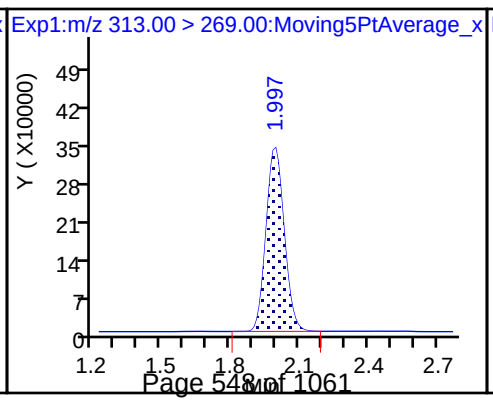
61 Sodium 1H,1H,2H,2H-perfluorohexane



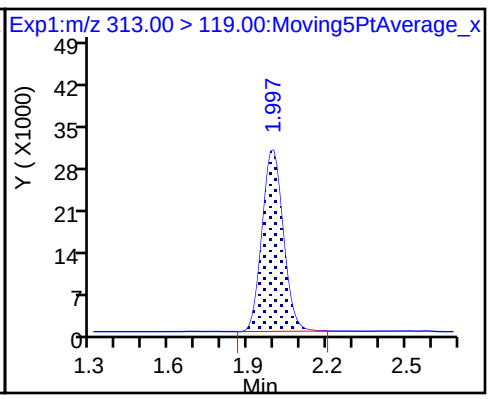
D 7 13C2 PFHxA



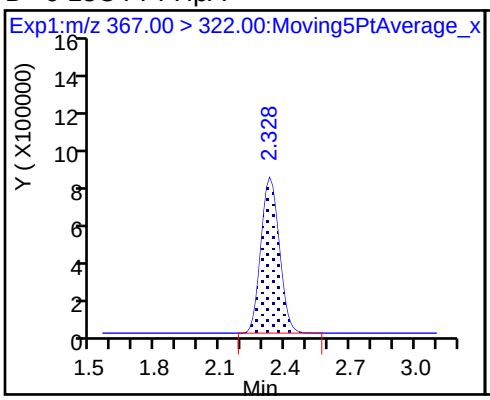
6 Perfluorohexanoic acid



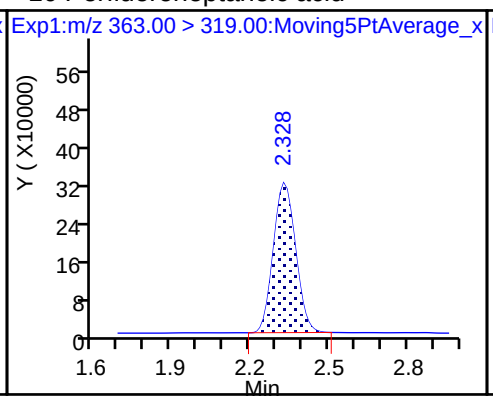
6 Perfluorohexanoic acid



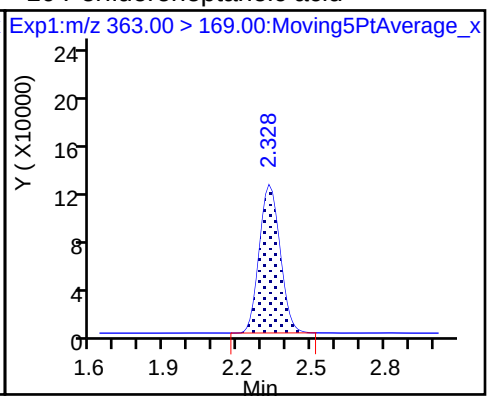
D 9 13C4-PFHpA



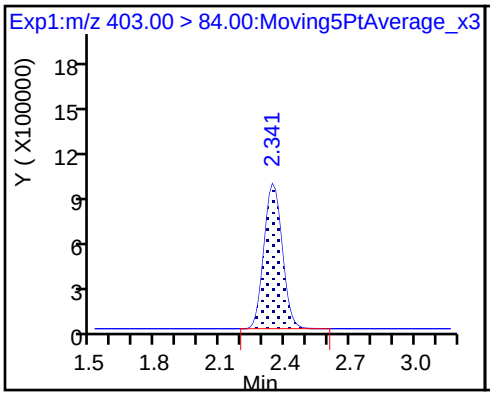
10 Perfluoroheptanoic acid



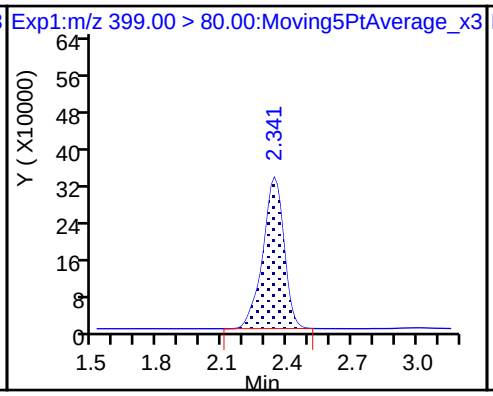
10 Perfluoroheptanoic acid



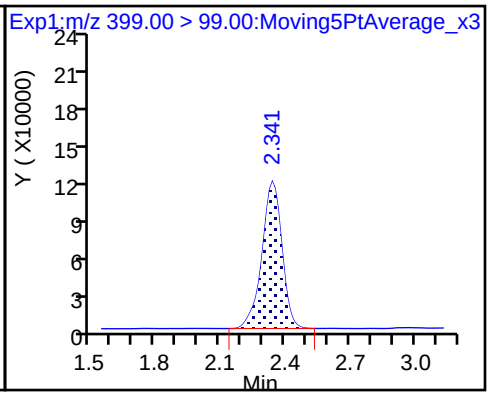
D 11 18O2 PFHxS



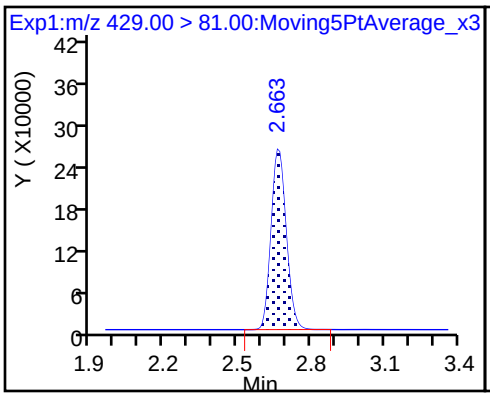
8 Perfluorohexanesulfonic acid



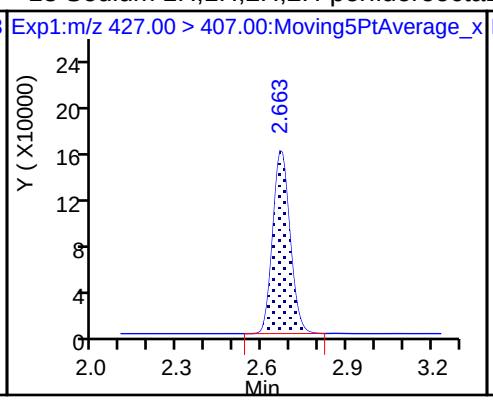
8 Perfluorohexanesulfonic acid



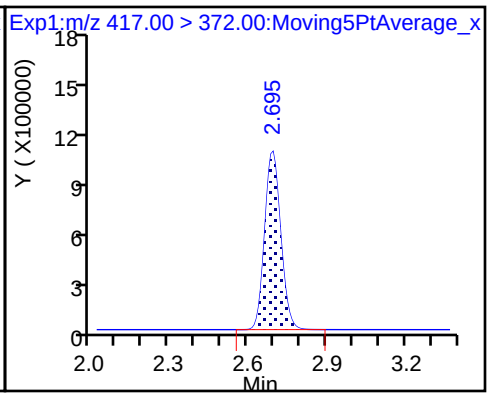
D 12 M2-6:2FTS



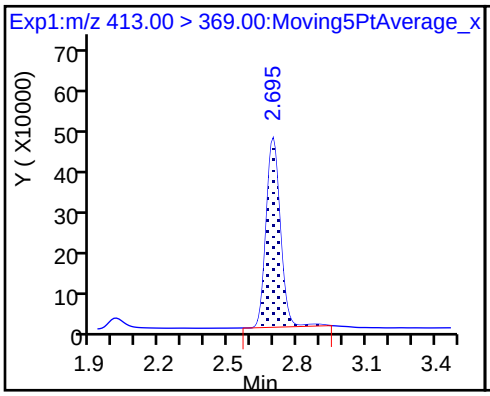
13 Sodium 1H,1H,2H,2H-perfluorooctane



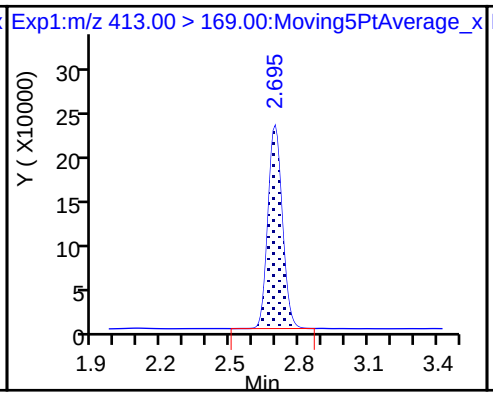
D 14 13C4 PFOA



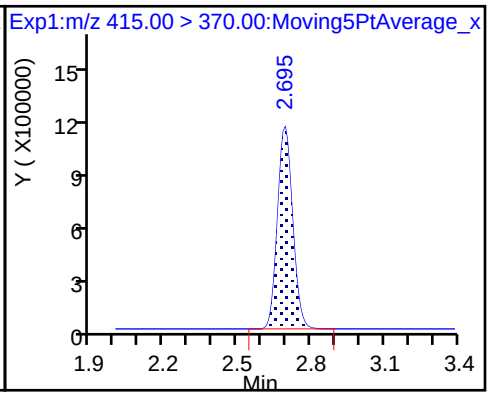
15 Perfluorooctanoic acid



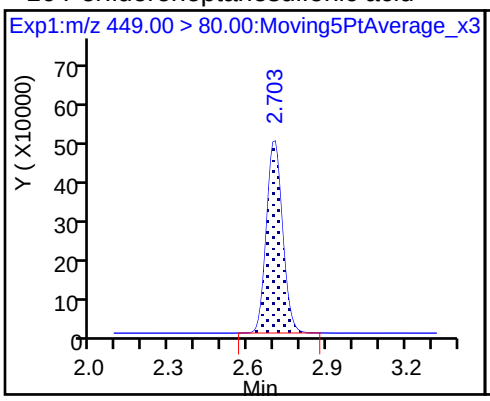
15 Perfluorooctanoic acid



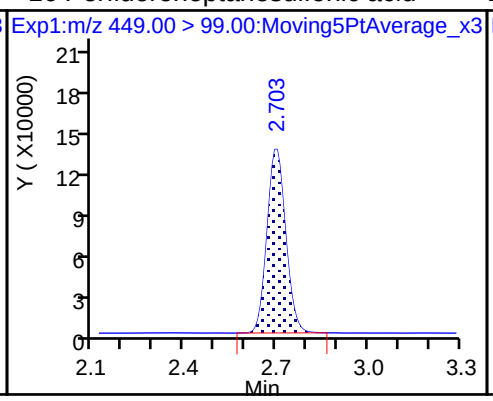
* 62 13C2-PFOA



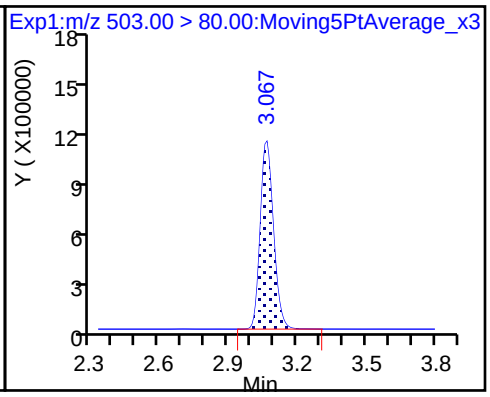
16 Perfluoroheptanesulfonic acid



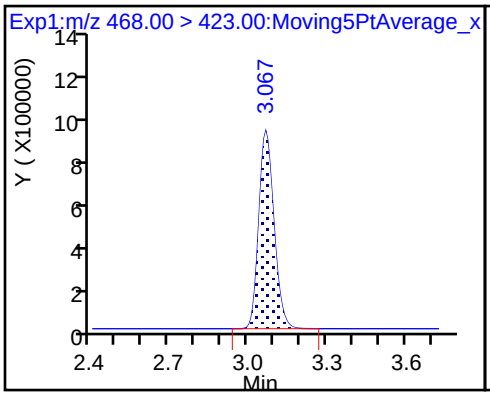
16 Perfluoroheptanesulfonic acid



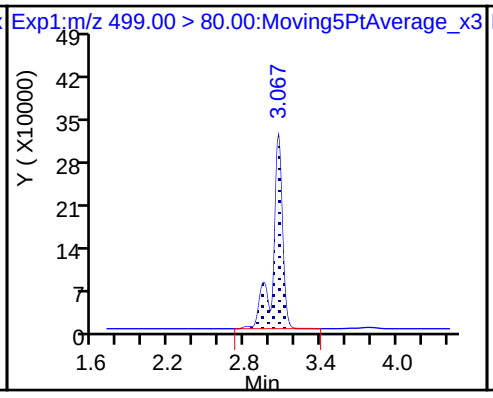
D 18 13C4 PFOS



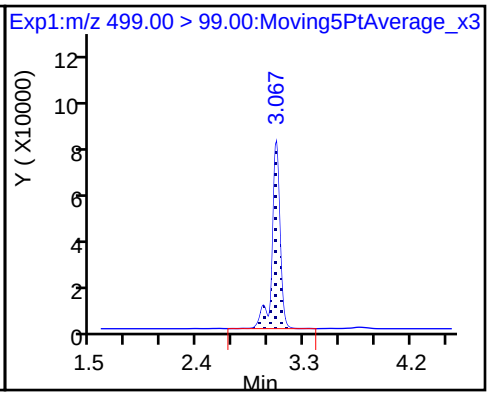
D 19 13C5 PFNA



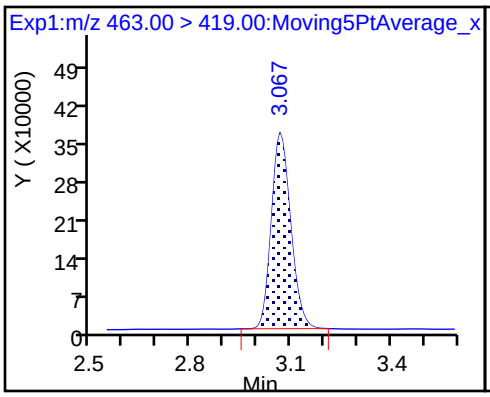
17 Perfluorooctane sulfonic acid



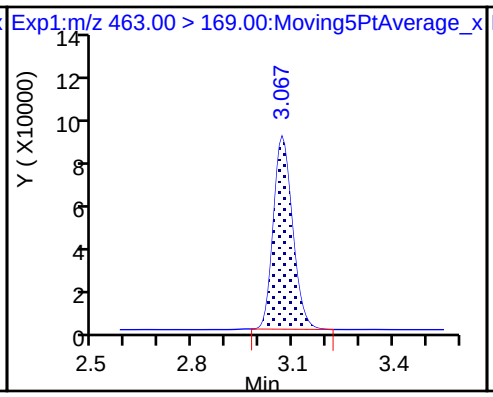
17 Perfluorooctane sulfonic acid



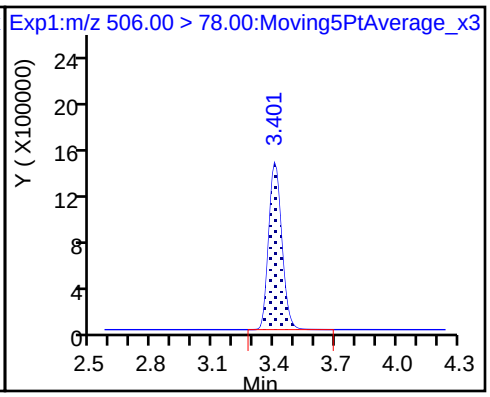
20 Perfluorononanoic acid



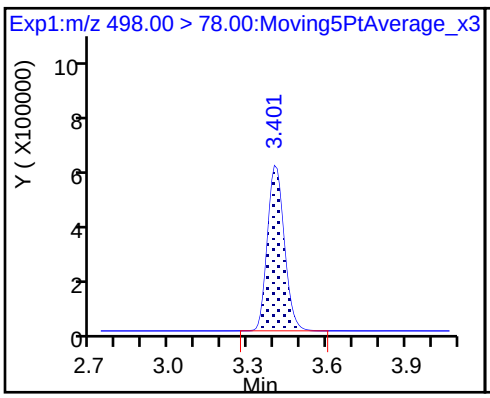
20 Perfluorononanoic acid



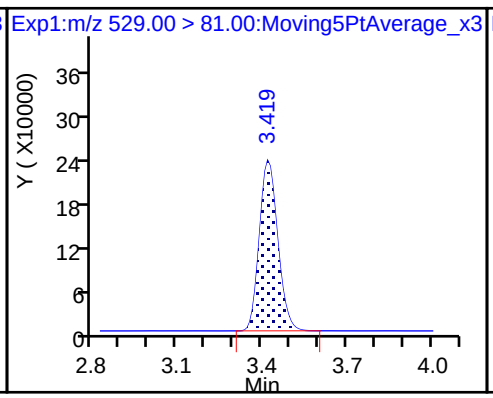
D 21 13C8 FOSA



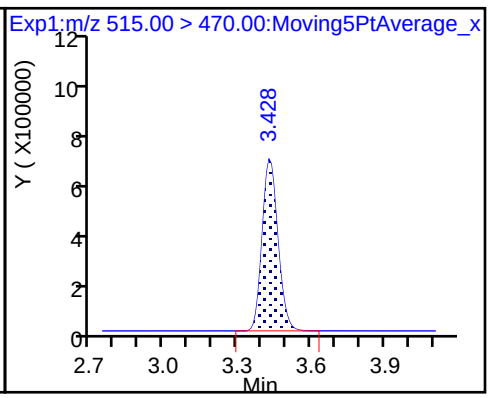
22 Perfluorooctane Sulfonamide



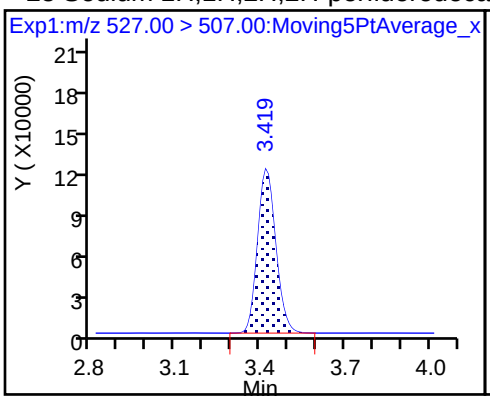
D 26 M2-8:2FTS



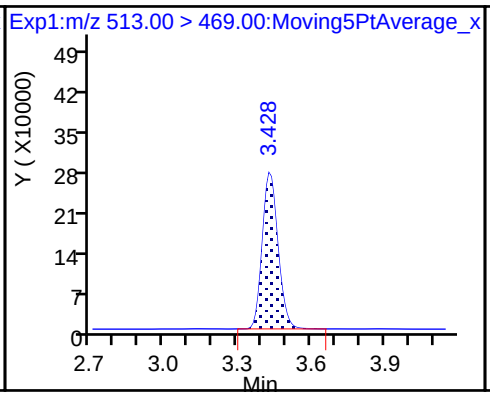
D 23 13C2 PFDA



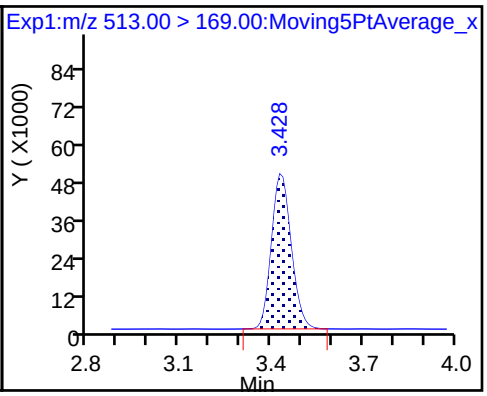
25 Sodium 1H,1H,2H,2H-perfluorodecan



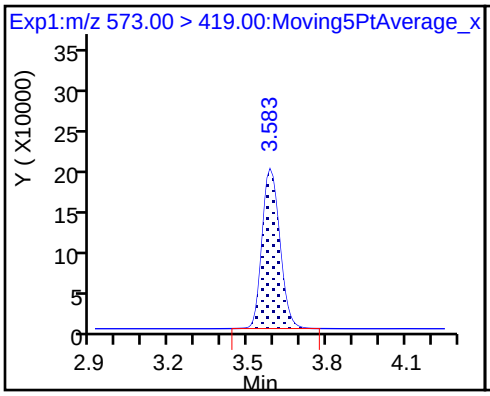
24 Perfluorodecanoic acid



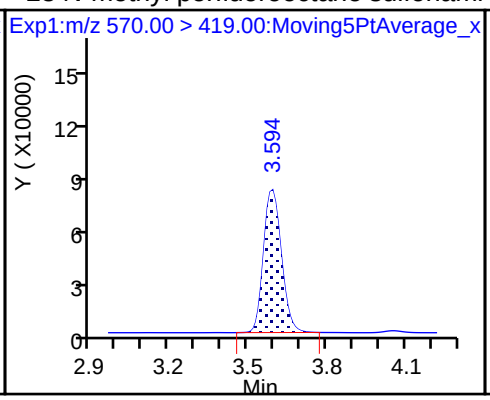
24 Perfluorodecanoic acid



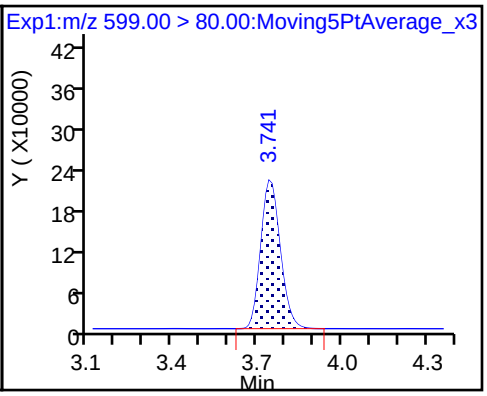
D 27 d3-NMeFOSAA



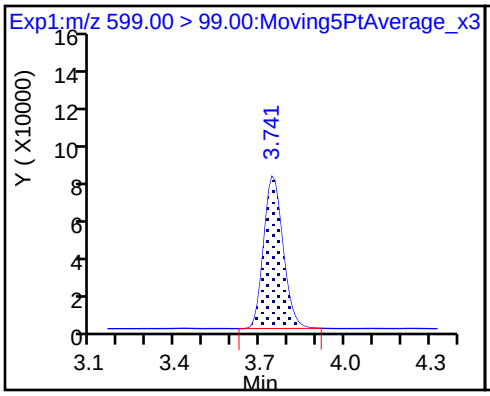
28 N-methyl perfluorooctane sulfonami



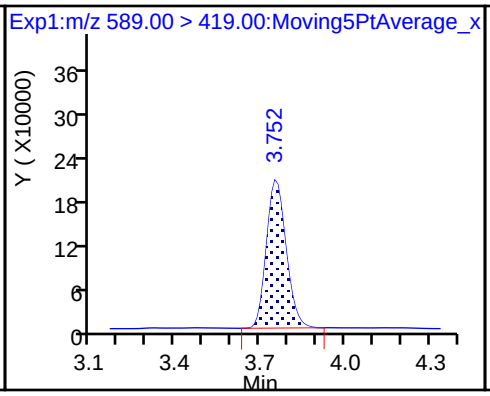
29 Perfluorodecane Sulfonic acid



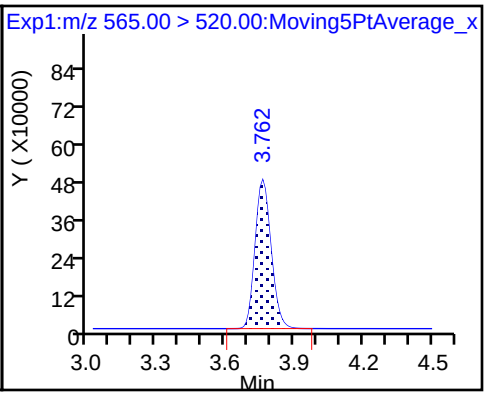
29 Perfluorodecane Sulfonic acid



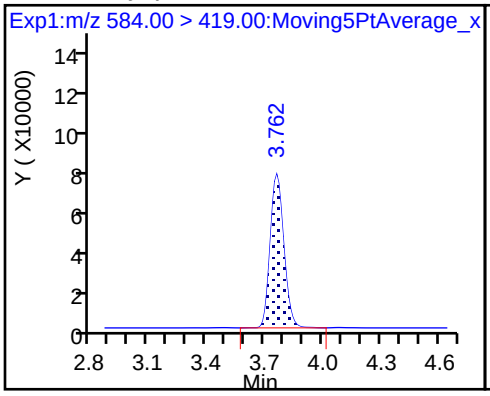
D 32 d5-NEtFOSAA



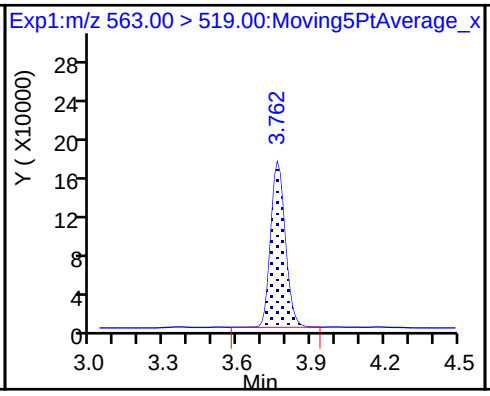
D 30 13C2 PFUnA



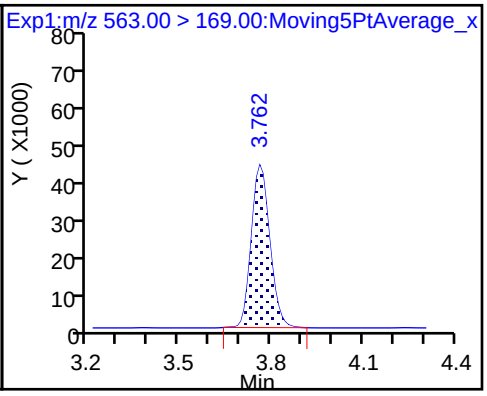
33 N-ethyl perfluorooctane sulfonamid



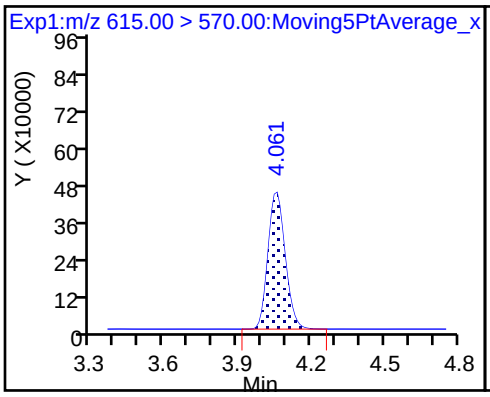
31 Perfluoroundecanoic acid



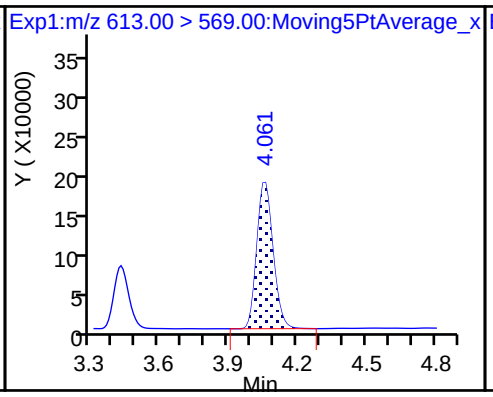
31 Perfluoroundecanoic acid



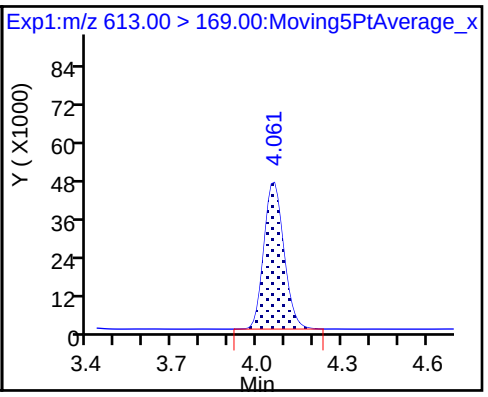
D 36 13C2 PFDoA



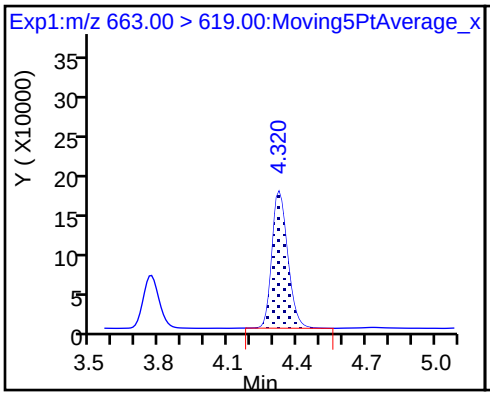
37 Perfluorododecanoic acid



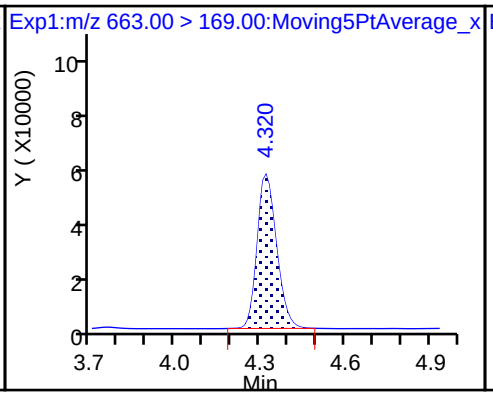
37 Perfluorododecanoic acid



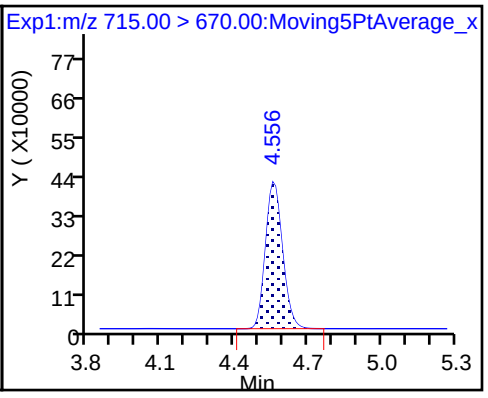
41 Perfluorotridecanoic acid



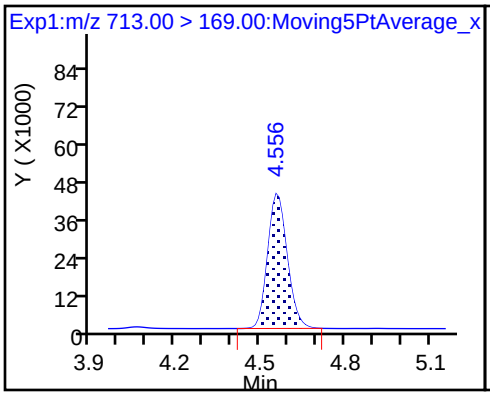
41 Perfluorotridecanoic acid



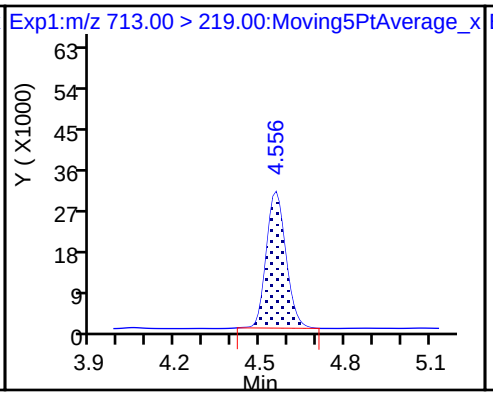
D 43 13C2-PFTeDA



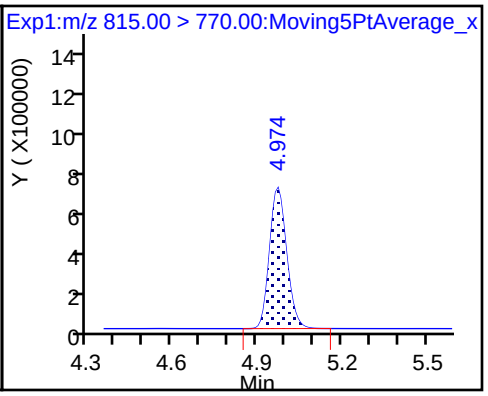
42 Perfluorotetradecanoic acid



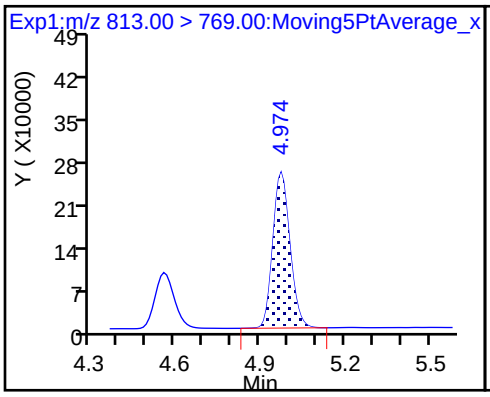
42 Perfluorotetradecanoic acid



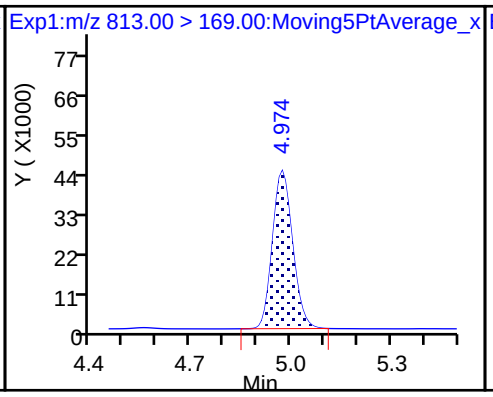
D 44 13C2-PFHxDA



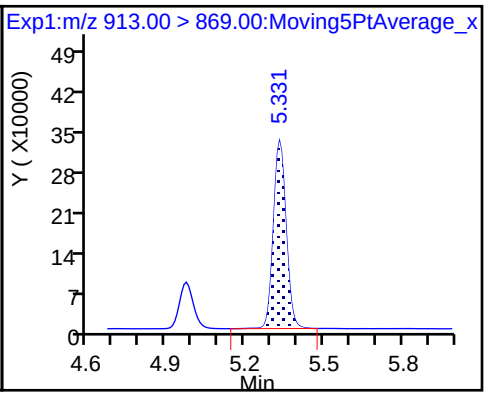
45 Perfluorohexadecanoic acid



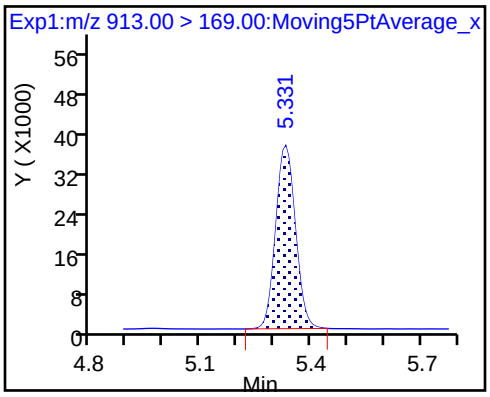
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/12 Calibration Date: 03/21/2018 00:28

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_033.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9303		2.51	2.50	0.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.167		2.50	2.50	-0.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	80.36		2.30	2.21	3.9	50.0
4:2 FTS	AveID	16.07	13.56		1.97	2.34	-15.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.042		2.58	2.50	3.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.054		2.54	2.50	1.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.101		2.25	2.28	-1.3	40.0
6:2FTS	AveID	1.665	1.766		2.51	2.37	6.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.125		2.52	2.50	0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.339		2.42	2.38	1.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.030		2.53	2.50	1.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.087		2.33	2.32	0.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.031		2.65	2.50	6.1	40.0
8:2FTS	AveID	1.257	1.320		2.51	2.40	5.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.9851		2.60	2.50	3.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.092		2.62	2.50	4.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6698		2.53	2.41	4.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9688		2.47	2.50	-1.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7712		2.30	2.50	-8.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	0.9948		2.43	2.50	-2.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9504		2.31	2.50	-7.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2398		2.17	2.50	-13.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9482		2.56	2.50	2.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.9327		2.39	2.50	-4.3	50.0
13C4 PFBA	Ave	1.277	1.131		2.22	2.50	-11.4	50.0
13C5 PFPeA	Ave	0.9006	0.7938		2.20	2.50	-11.9	50.0
13C3-PFBS	Ave	0.0222	0.0211		2.21	2.33	-4.9	50.0
M2-4:2FTS	Ave	0.1590	0.1291		1.90	2.34	-18.8	50.0
13C2 PFHxA	Ave	1.004	0.8939		2.23	2.50	-11.0	50.0
13C4-PFHpA	Ave	0.9767	0.9066		2.32	2.50	-7.2	50.0
18O2 PFHxS	Ave	1.303	1.173		2.13	2.37	-10.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/12 Calibration Date: 03/21/2018 00:28

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_033.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2085		1.98	2.38	-16.6	40.0
13C4 PFOA	Ave	0.9431	0.9046		2.40	2.50	-4.1	50.0
13C4 PFOS	Ave	0.9113	0.8732		2.29	2.39	-4.2	50.0
13C5 PFNA	Ave	0.7545	0.7313		2.42	2.50	-3.1	50.0
13C8 FOSA	Ave	1.319	1.236		2.34	2.50	-6.3	50.0
M2-8:2FTS	Ave	0.2350	0.2001		2.04	2.40	-14.8	40.0
13C2 PFDA	Ave	0.6303	0.6054		2.40	2.50	-4.0	50.0
d3-NMeFOSAA	Ave	0.2081	0.1822		2.19	2.50	-12.5	50.0
d5-NEtFOSAA	Ave	0.1990	0.1898		2.38	2.50	-4.6	50.0
13C2 PFUnA	Ave	0.4935	0.4633		2.35	2.50	-6.1	50.0
13C2 PFDoA	Ave	0.4680	0.4541		2.43	2.50	-3.0	50.0
13C2-PFTeDA	Ave	0.4272	0.4147		2.43	2.50	-2.9	50.0
13C2-PFHxDA	Ave	0.6248	0.5871		2.35	2.50	-6.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_033.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 00:28:13 ALS Bottle#: 14 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:14:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.438	1.441	-0.003	0.536	4869668	2.21		88.6	76522	
2 Perfluorobutyric acid										
212.90 > 169.00	1.444	1.446	-0.002	1.004	4530278	2.51		100	2542	
D 3 13C5-PFPeA										
267.90 > 223.00	1.696	1.700	-0.004	0.632	3418137	2.20		88.1	93822	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.696	1.709	-0.013	1.000	3988779	2.50		99.9	1379	
D 47 13C3-PFBS										
301.90 > 83.00	1.732	1.736	-0.004	0.645	84596	2.21		95.1	444	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.732	1.744	-0.012	1.000	6461810	2.30		104	2537	
298.90 > 99.00	1.732	1.744	-0.012	1.000	2665045		2.42(1.25-3.74)		2454	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.946	0.004	0.727	519389	1.90		81.2	7930	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.955	-0.005	1.000	1151989	1.97		84.4	71033	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.987	-0.006	0.738	3849045	2.23		89.0	98645	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.997	-0.016	1.000	4009235	2.58		103	14256	
313.00 > 119.00	1.981	1.997	-0.016	1.000	357701		11.21(5.03-15.10)		9121	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.315	0.007	0.866	3904065	2.32		92.8	73324	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.328	-0.006	1.000	4115326	2.54		102	7328	
363.00 > 169.00	2.322	2.328	-0.006	1.000	1611313		2.55(1.13-3.40)		24632	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.328	0.007	0.870	4776706	2.13		90.0	57940	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.341	-0.006	1.000	5060913	2.25		98.7	8055	
399.00 > 99.00	2.335	2.341	-0.006	1.000	1663126		3.04(1.50-4.49)		4403	
D 12 M2-6:2FTS										
429.00 > 81.00	2.659	2.657	0.002	0.991	853005	1.98		83.4	19757	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.659	2.663	-0.004	1.000	1503006	2.51		106	49947	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.681	0.002	1.000	3895329	2.40		95.9	90414	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.695	-0.012	1.000	4382323	2.52		101	1306	
413.00 > 169.00	2.683	2.695	-0.012	1.000	2235473		1.96(0.84-2.52)		7714	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.695	-0.012		4306135	2.50			83781	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.703	-0.013	1.000	4791624	2.42		102	59116	
449.00 > 99.00	2.691	2.703	-0.013	1.000	1199018		4.00(1.94-5.82)		21291	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.051	0.002	1.138	3594801	2.29		95.8	32668	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.058	-0.005	1.138	3149058	2.42		96.9	60112	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.053	3.067	-0.014	1.000	3792989	2.33		100	9287	
499.00 > 99.00	3.053	3.067	-0.014	1.000	834997		4.54(2.31-6.93)		5917	
20 Perfluorononanoic acid										
463.00 > 419.00	3.053	3.067	-0.014	1.000	3243889	2.53		101	6203	
463.00 > 169.00	3.053	3.067	-0.014	1.000	811169		4.00(1.90-5.69)		22572	
D 21 13C8 FOSA										
506.00 > 78.00	3.392	3.389	0.003	1.265	5321093	2.34		93.7	54739	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.392	3.401	-0.009	1.000	5486780	2.65		106	69158	
D 26 M2-8:2FTS										
529.00 > 81.00	3.411	3.408	0.003	1.271	825447	2.04		85.2	26034	
D 23 13C2 PFDA										
515.00 > 470.00	3.420	3.417	0.003	1.275	2606868	2.40		96.0	41723	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.411	3.419	-0.008	1.000	1089553	2.51		105	26854	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.420	3.428	-0.008	1.000	2568132	2.60		104	12277	
513.00 > 169.00	3.420	3.428	-0.008	1.000	466079		5.51(2.36-7.09)		1862	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.570	0.004	1.332	784482	2.19		87.5	19010	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.574	3.594	-0.020	1.000	856844	2.62		105	10297	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.733	3.741	-0.008	1.000	2427865	2.53		105	64341	
599.00 > 99.00	3.733	3.741	-0.008	1.000	773252		3.14(1.39-4.16)		13498	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.748	-0.005	1.395	817234	2.38		95.4	1213	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.748	0.006	1.399	1994891	2.35		93.9	41268	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.762	-0.008	1.003	791740	2.47		99.0	16040	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.754	3.762	-0.008	1.000	1538541	2.30		92.0	5512	
563.00 > 169.00	3.754	3.762	-0.008	1.000	413064		3.72(2.12-6.36)		32975	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.046	-0.004	1.507	1955230	2.43		97.0	14534	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.042	4.061	-0.019	1.000	1944974	2.43		97.2	346	
613.00 > 169.00	4.042	4.061	-0.019	1.000	488471		3.98(2.13-6.40)		20167	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.313	4.320	-0.007	1.000	1858153	2.31		92.4	378	
663.00 > 169.00	4.313	4.320	-0.007	1.000	608720		3.05(1.25-3.76)		7950	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.544	0.006	1.696	1785561	2.43		97.1	14479	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.556	-0.006	1.000	428226	2.17		87.0	4974	
713.00 > 219.00	4.550	4.556	-0.006	1.000	307829		1.39(0.71-2.13)		3004	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.960	4.964	-0.004	1.849	2528228	2.35		94.0	10734	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.969	4.974	-0.005	1.002	2397220	2.56		102	212	
813.00 > 169.00	4.960	4.974	-0.014	1.000	397108		6.04(2.86-8.58)		3765	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.331	-0.012	1.000	2358085	2.39		95.7	457	
913.00 > 169.00	5.319	5.331	-0.012	1.000	304589		7.74(3.83-11.48)		3136	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:56:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_033.d

Injection Date: 21-Mar-2018 00:28:13 Instrument ID: A8_N

Lims ID: CCV L5

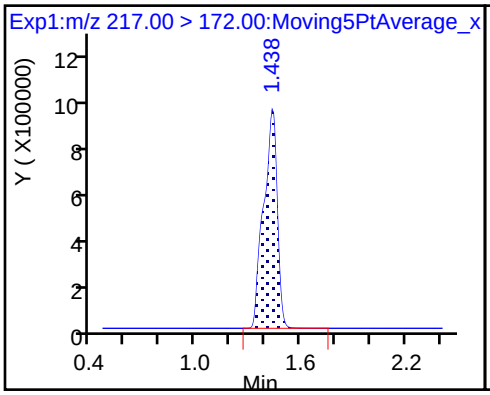
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 12

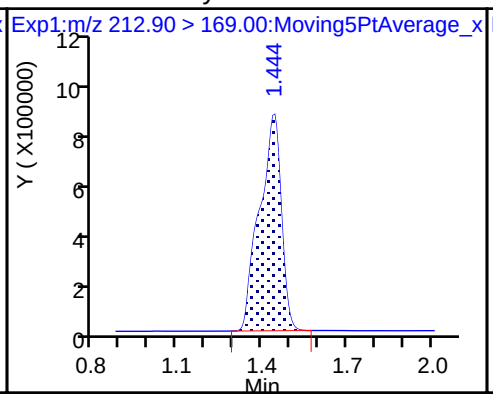
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

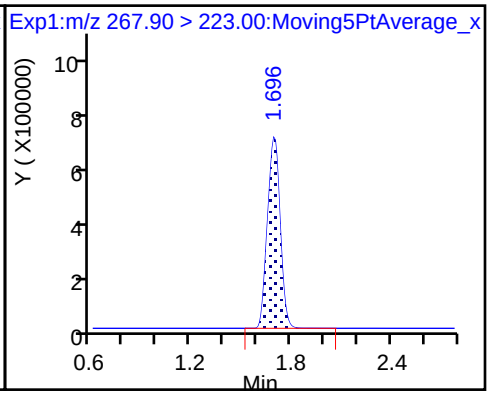
D 1 13C4 PFBA



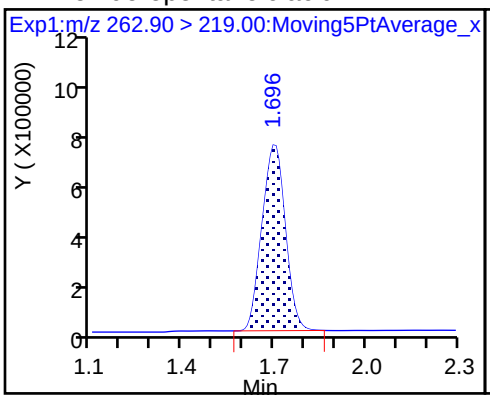
2 Perfluorobutyric acid



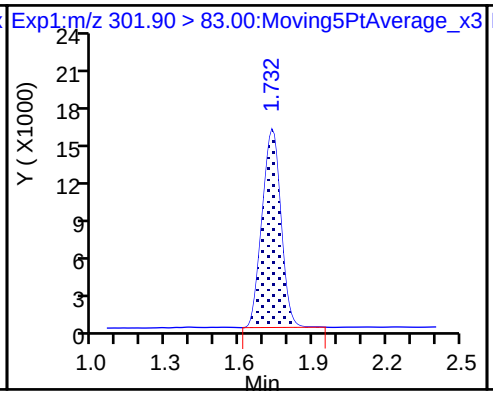
D 3 13C5-PFPeA



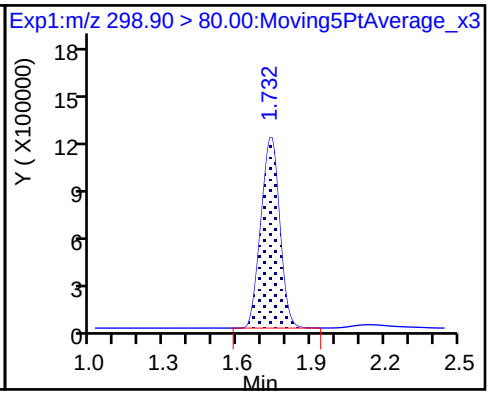
4 Perfluoropentanoic acid



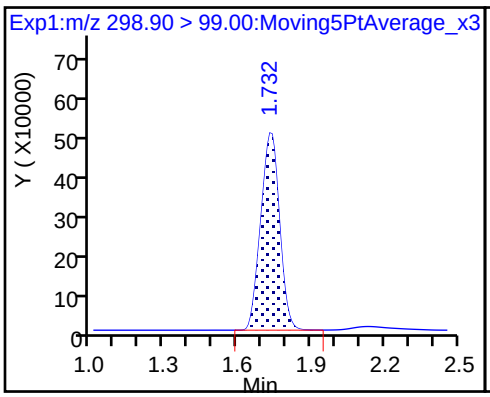
D 47 13C3-PFBS



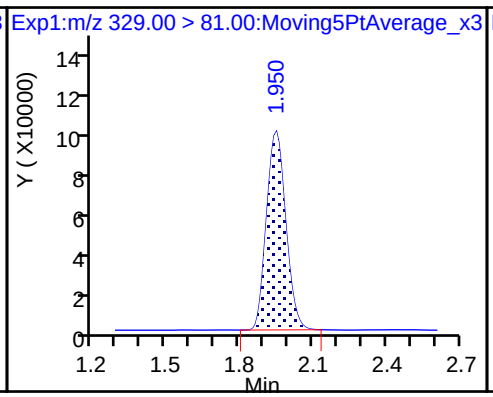
5 Perfluorobutanesulfonic acid



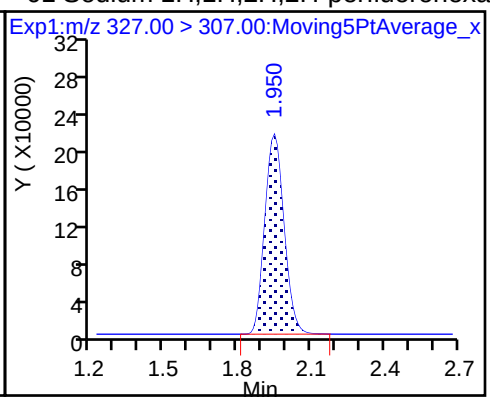
5 Perfluorobutanesulfonic acid



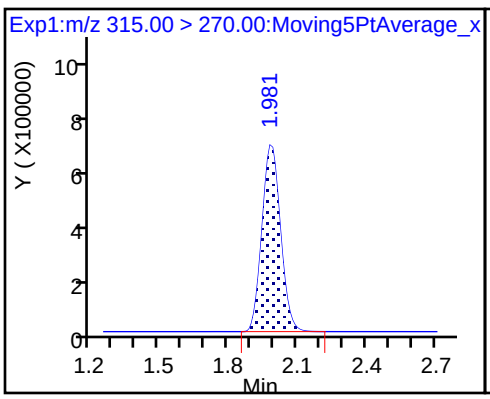
D 60 M2-4:2FTS



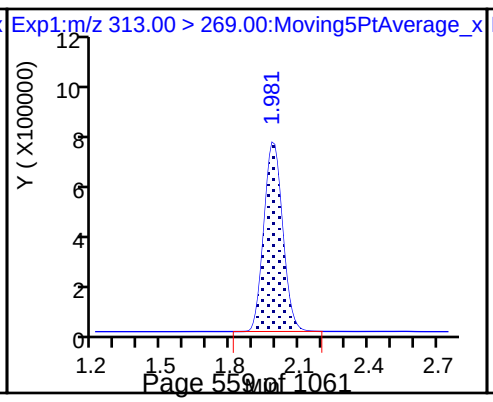
61 Sodium 1H,1H,2H,2H-perfluorohexane



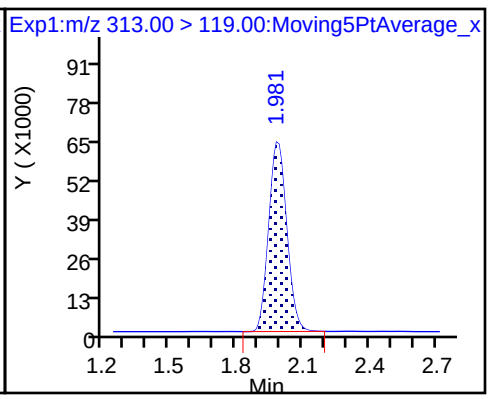
D 7 13C2 PFHxA



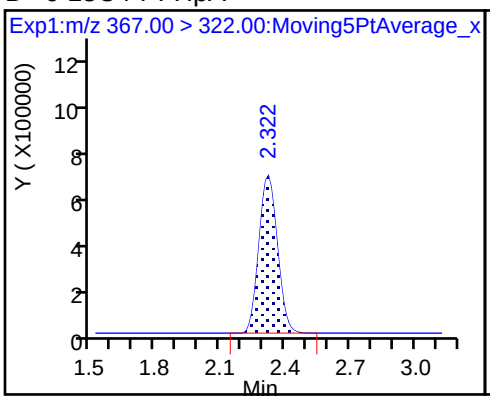
6 Perfluorohexanoic acid



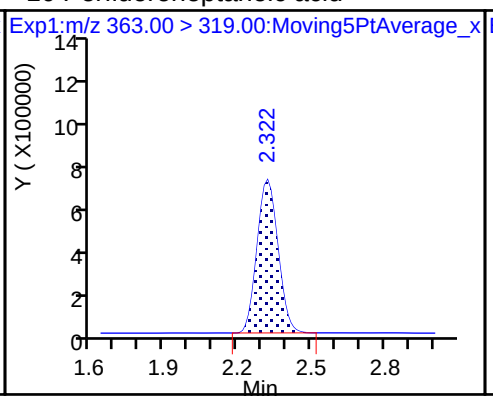
6 Perfluorohexanoic acid



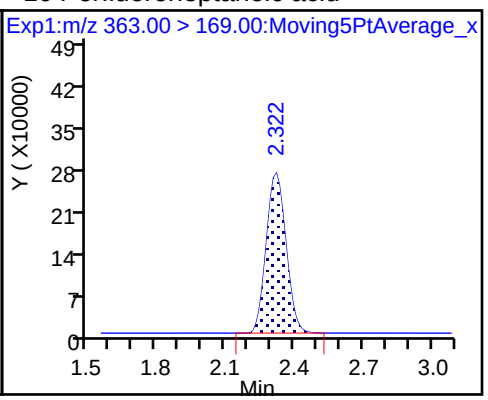
D 9 13C4-PFHpA



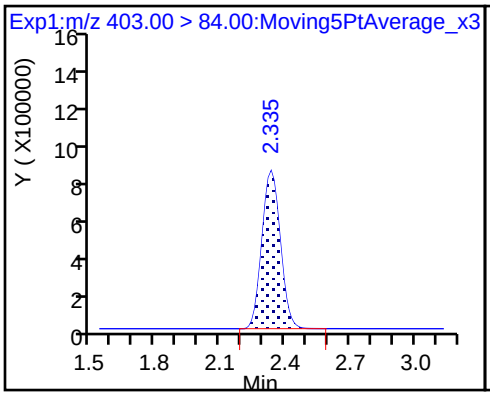
10 Perfluoroheptanoic acid



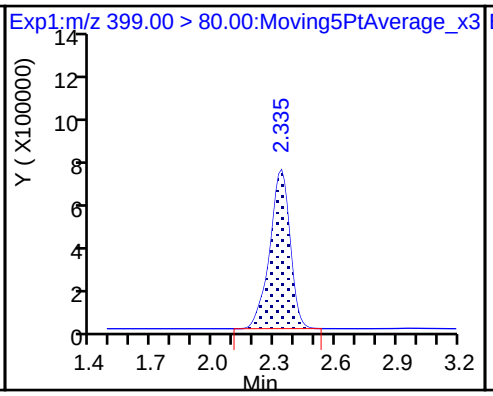
10 Perfluoroheptanoic acid



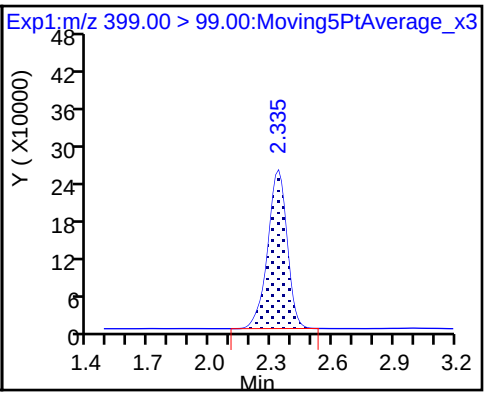
D 11 18O2 PFHxS



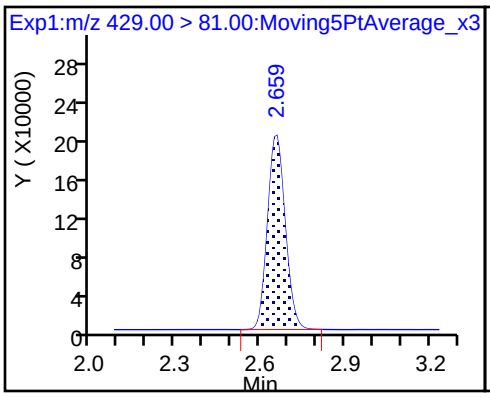
8 Perfluorohexanesulfonic acid



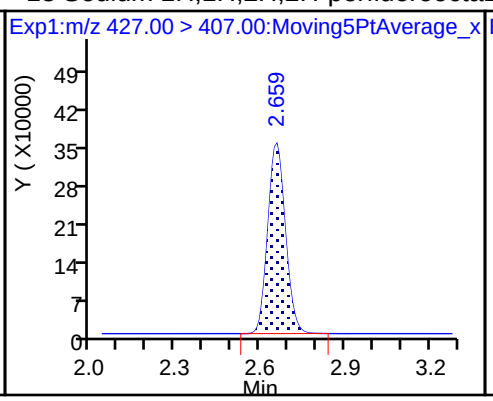
8 Perfluorohexanesulfonic acid



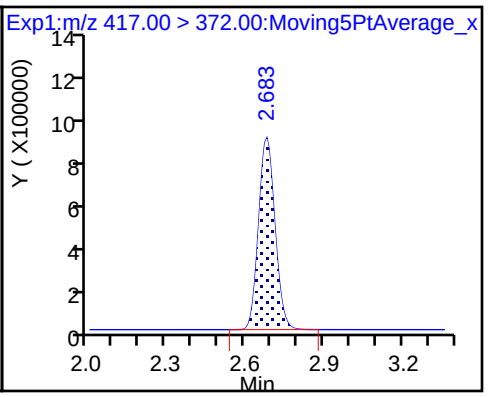
D 12 M2-6:2FTS



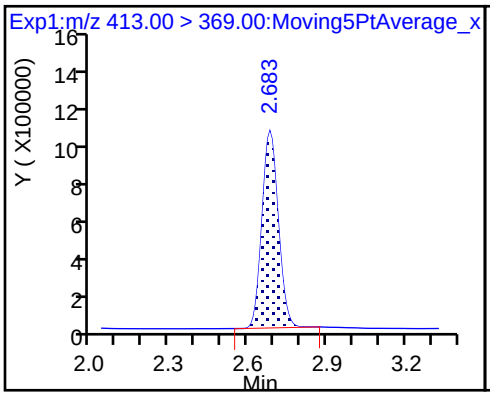
13 Sodium 1H,1H,2H,2H-perfluorooctane



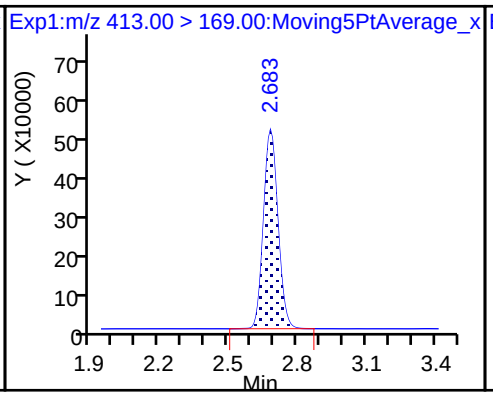
D 14 13C4 PFOA



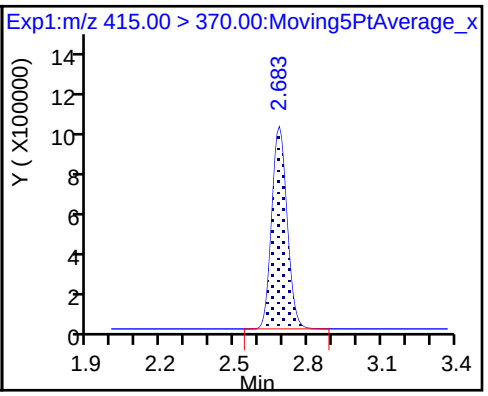
15 Perfluorooctanoic acid



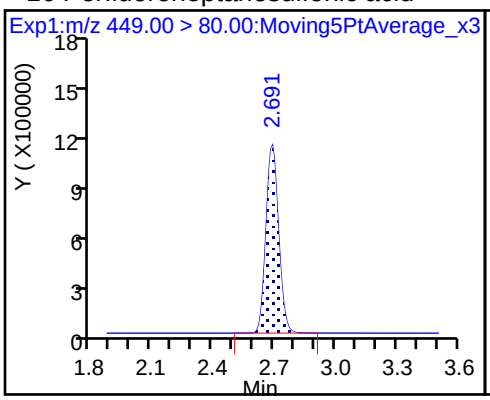
15 Perfluorooctanoic acid



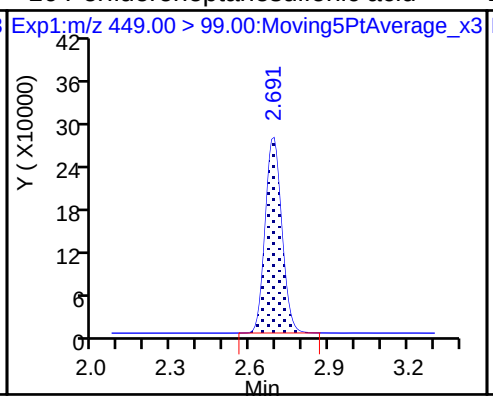
* 62 13C2-PFOA



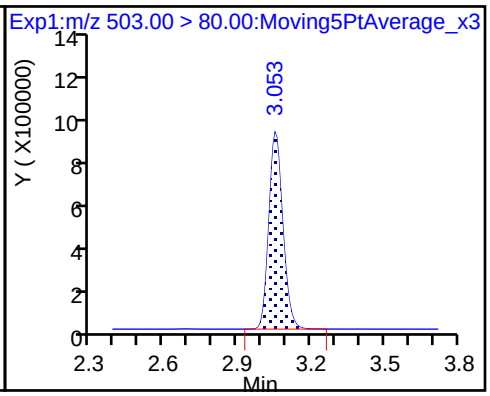
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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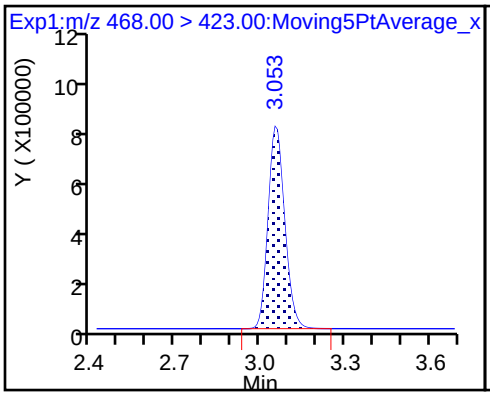
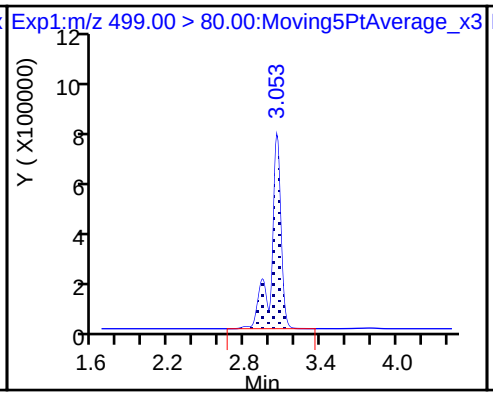
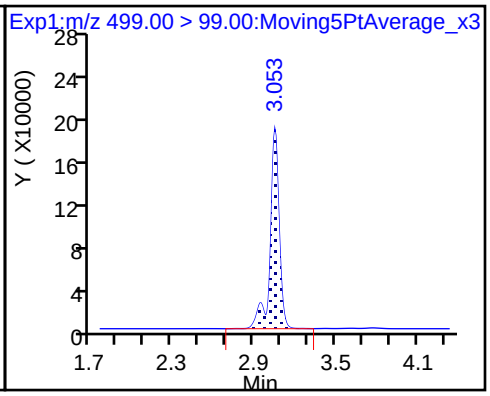


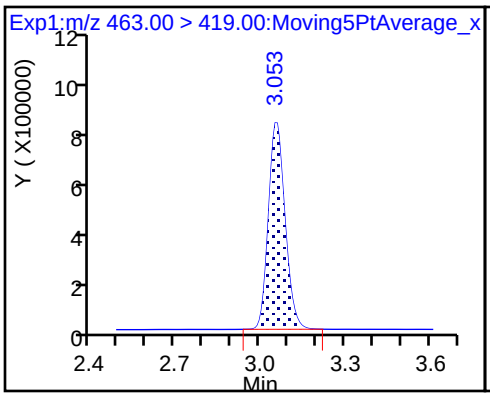
17 Perfluorooctane sulfonic acid



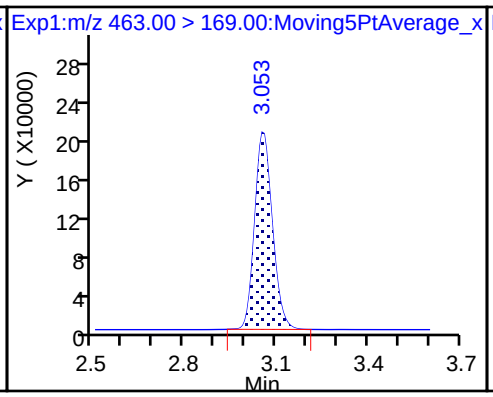
17 Perfluorooctane sulfonic acid



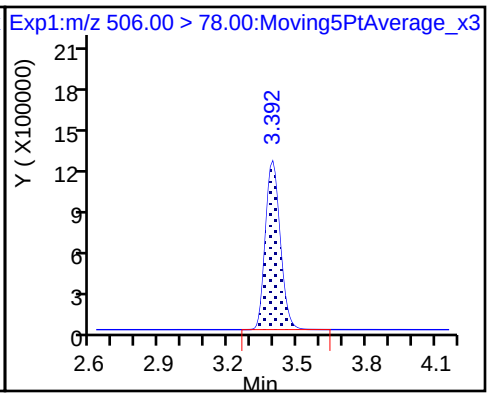
20 Perfluorononanoic acid



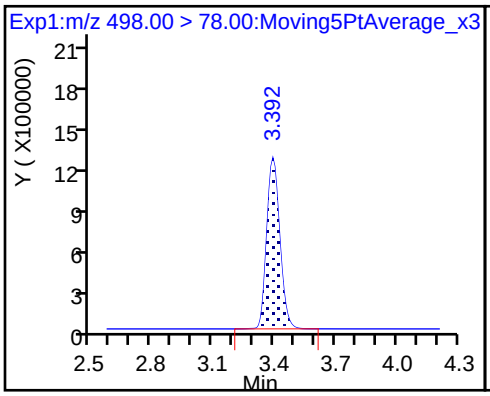
20 Perfluorononanoic acid



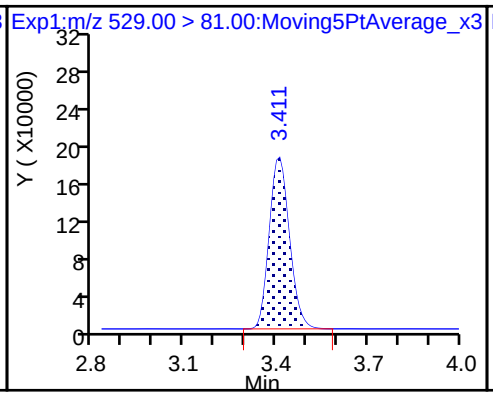
D 21 13C8 FOSA



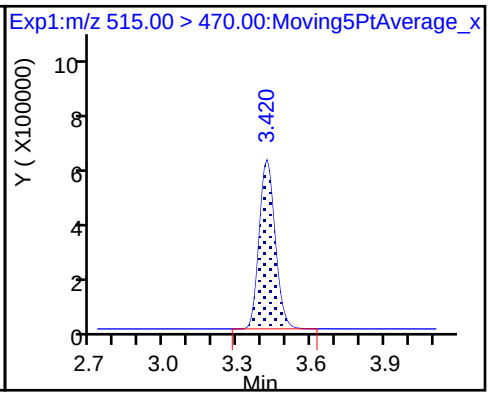
22 Perfluorooctane Sulfonamide



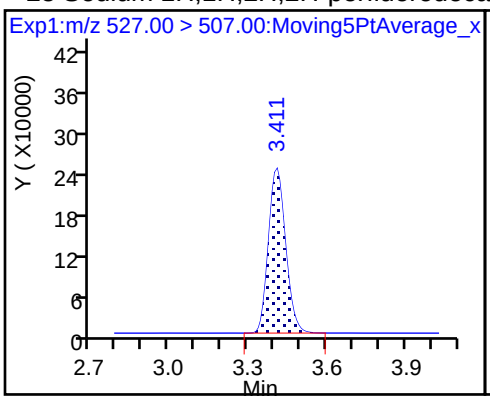
D 26 M2-8:2FTS



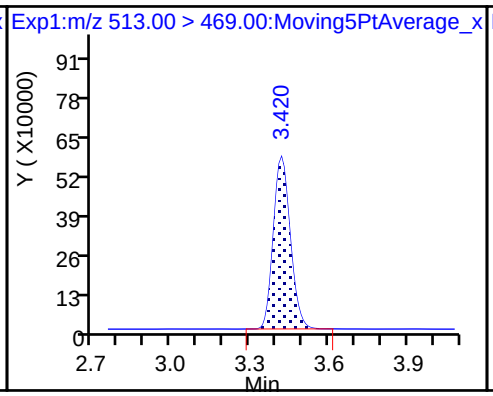
D 23 13C2 PFDA



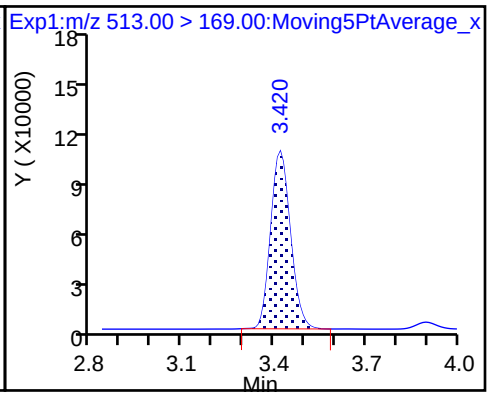
25 Sodium 1H,1H,2H,2H-perfluorodecan



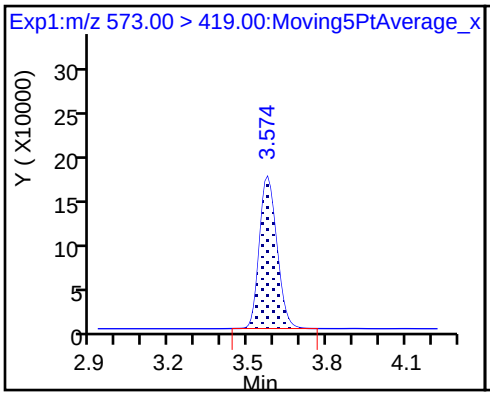
24 Perfluorodecanoic acid



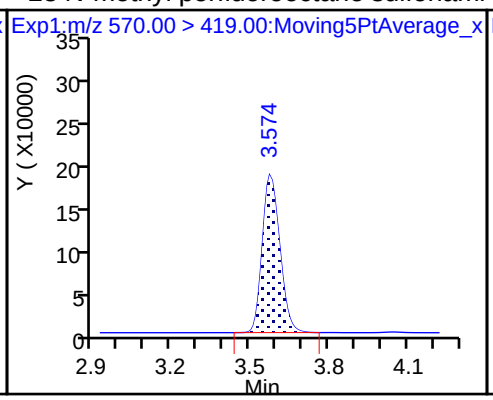
24 Perfluorodecanoic acid



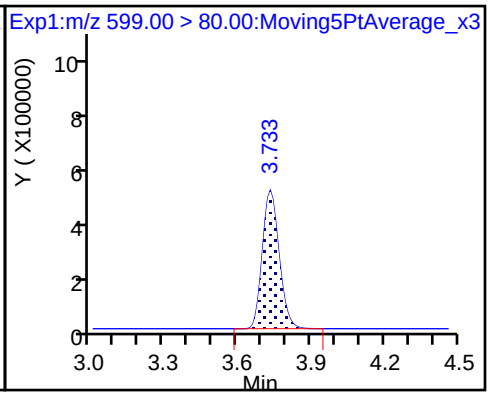
D 27 d3-NMeFOSAA



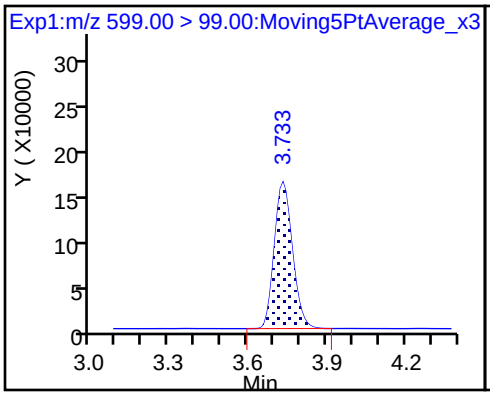
28 N-methyl perfluorooctane sulfonami



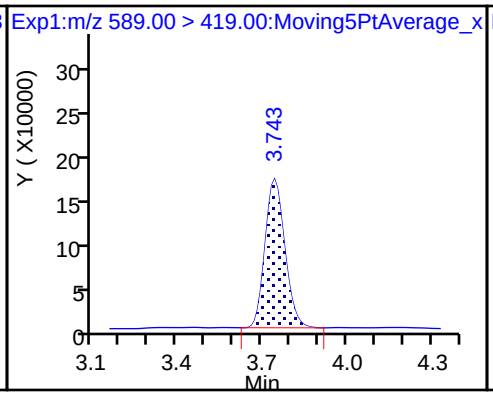
29 Perfluorodecane Sulfonic acid



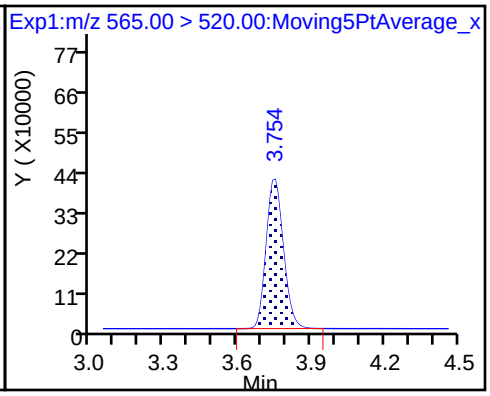
29 Perfluorodecane Sulfonic acid



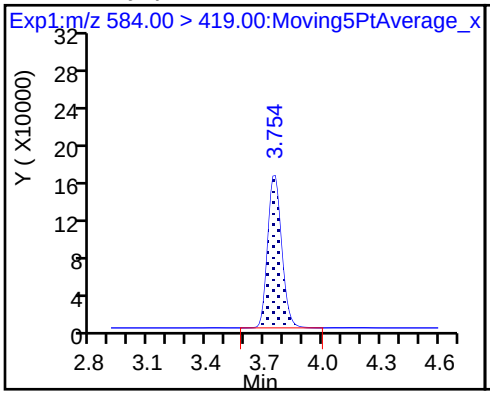
D 32 d5-NEtFOSAA



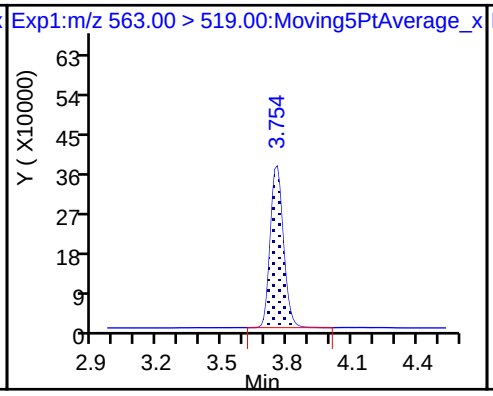
D 30 13C2 PFUnA



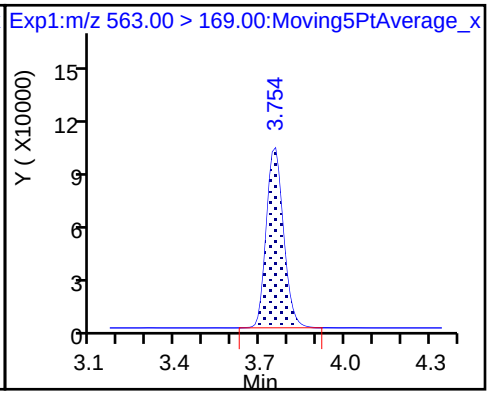
33 N-ethyl perfluorooctane sulfonamid



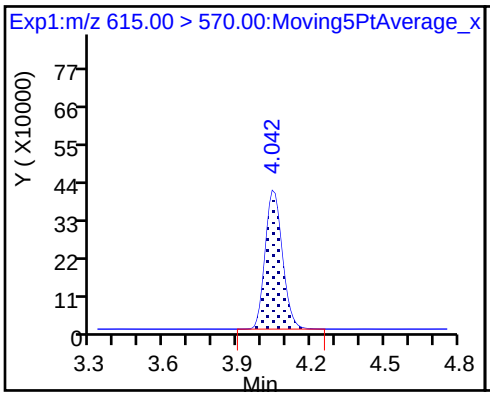
31 Perfluoroundecanoic acid



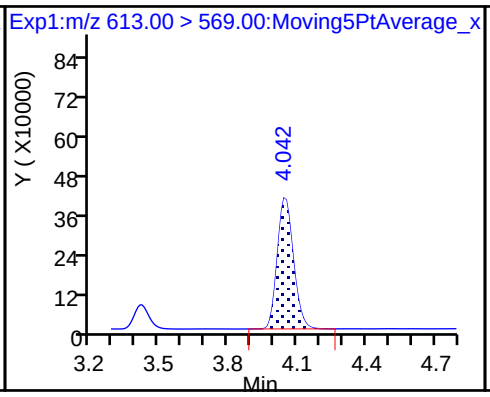
31 Perfluoroundecanoic acid



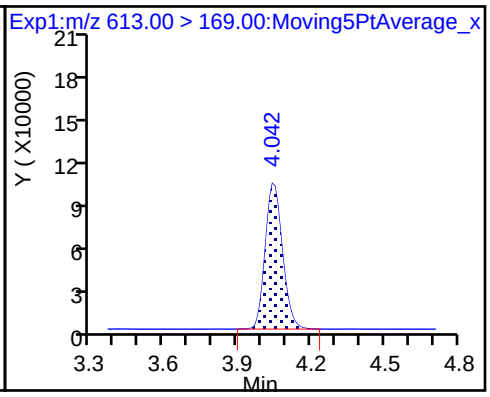
D 36 13C2 PFDoA



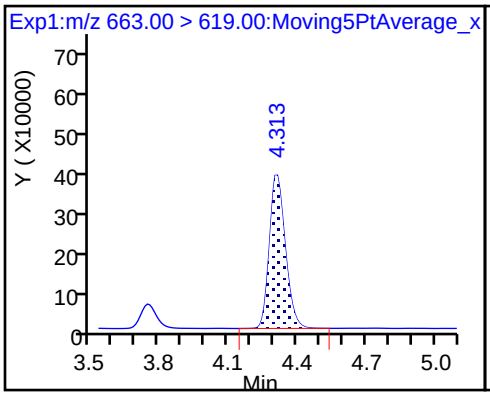
37 Perfluorododecanoic acid



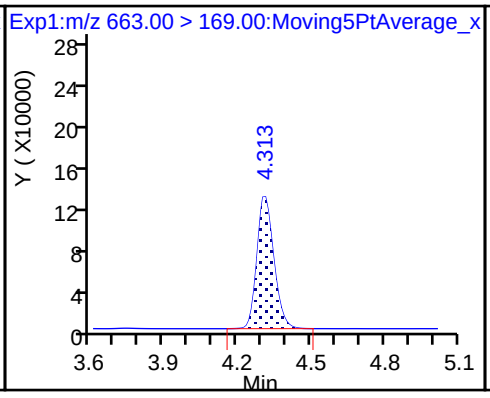
37 Perfluorododecanoic acid



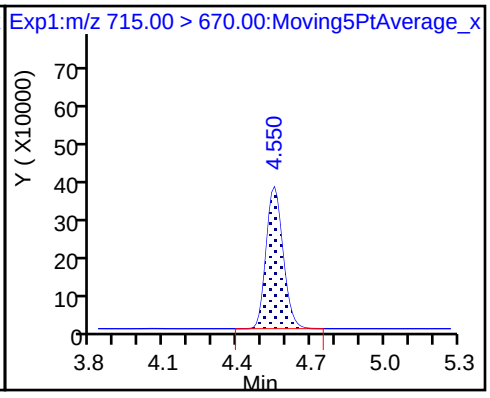
41 Perfluorotridecanoic acid



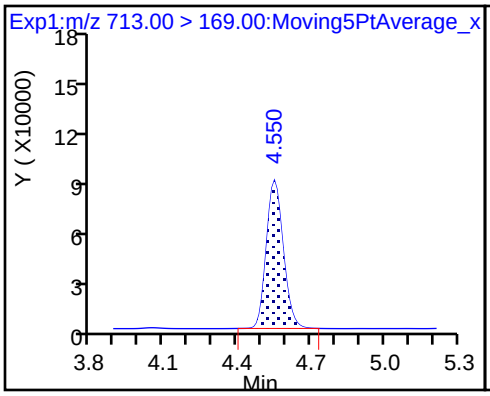
41 Perfluorotridecanoic acid



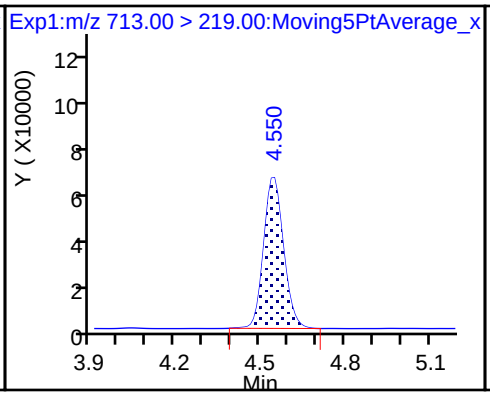
D 43 13C2-PFTeDA



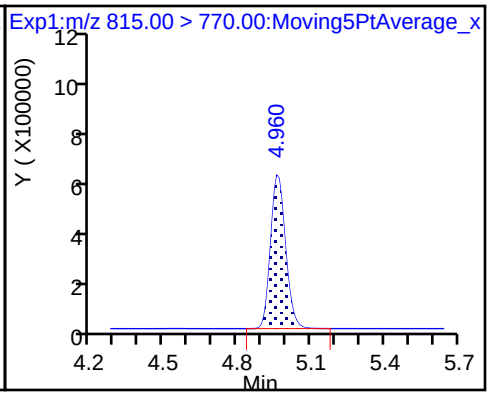
42 Perfluorotetradecanoic acid



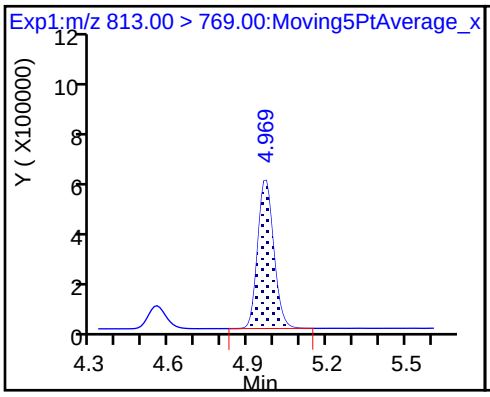
42 Perfluorotetradecanoic acid



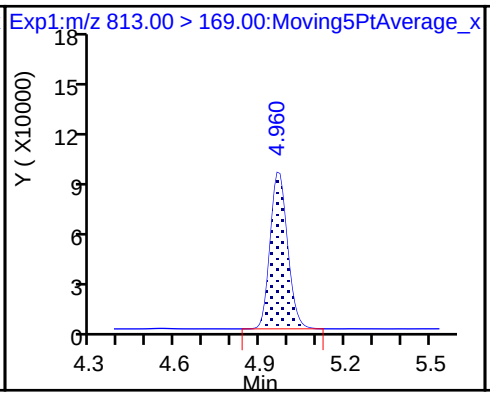
D 44 13C2-PFHxDA



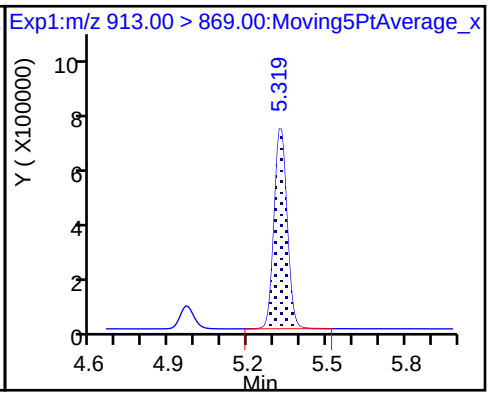
45 Perfluorohexadecanoic acid



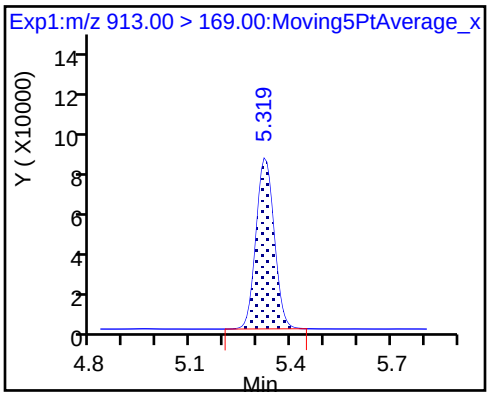
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/23 Calibration Date: 03/21/2018 01:54

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9027		0.973	1.00	-2.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.128		0.965	1.00	-3.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	77.21		0.882	0.884	-0.2	50.0
4:2 FTS	AveID	16.07	13.12		0.763	0.934	-18.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	0.9911		0.982	1.00	-1.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.007		0.971	1.00	-2.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.060		0.865	0.910	-5.0	40.0
6:2FTS	AveID	1.665	1.709		0.973	0.948	2.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.084		0.971	1.00	-2.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.283		0.929	0.952	-2.4	50.0
Perfluorononanoic acid (PFNA)	AveID	1.020	0.9925		0.973	1.00	-2.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.043		0.894	0.928	-3.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.002		1.03	1.00	3.1	40.0
8:2FTS	AveID	1.257	1.163		0.886	0.958	-7.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	0.995		1.05	1.00	4.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	0.9749		0.936	1.00	-6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6181		0.933	0.964	-3.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	1.000		1.02	1.00	2.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7417		0.885	1.00	-11.5	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	0.9673		0.946	1.00	-5.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	0.9326		0.906	1.00	-9.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2390		0.867	1.00	-13.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9026		0.959	1.00	-4.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	0.8763		0.899	1.00	-10.1	50.0
13C4 PFBA	Ave	1.277	1.176		2.30	2.50	-7.9	50.0
13C5 PFPeA	Ave	0.9006	0.8361		2.32	2.50	-7.2	50.0
13C3-PFBS	Ave	0.0222	0.0218		2.28	2.33	-1.7	50.0
M2-4:2FTS	Ave	0.1590	0.1314		1.93	2.34	-17.4	50.0
13C2 PFHxA	Ave	1.004	0.9545		2.38	2.50	-5.0	50.0
13C4-PFHpA	Ave	0.9767	0.9313		2.38	2.50	-4.7	50.0
18O2 PFHxS	Ave	1.303	1.245		2.26	2.37	-4.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/23 Calibration Date: 03/21/2018 01:54

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2113		2.01	2.38	-15.5	40.0
13C4 PFOA	Ave	0.9431	0.9327		2.47	2.50	-1.1	50.0
13C4 PFOS	Ave	0.9113	0.9158		2.40	2.39	0.5	50.0
13C5 PFNA	Ave	0.7545	0.7569		2.51	2.50	0.3	50.0
13C8 FOSA	Ave	1.319	1.313		2.49	2.50	-0.5	50.0
M2-8:2FTS	Ave	0.2350	0.2292		2.34	2.40	-2.4	40.0
13C2 PFDA	Ave	0.6303	0.6163		2.44	2.50	-2.2	50.0
d3-NMeFOSAA	Ave	0.2081	0.1931		2.32	2.50	-7.2	50.0
13C2 PFUnA	Ave	0.4935	0.4820		2.44	2.50	-2.3	50.0
d5-NEtFOSAA	Ave	0.1990	0.1975		2.48	2.50	-0.7	50.0
13C2 PFDoA	Ave	0.4680	0.4583		2.45	2.50	-2.1	50.0
13C2-PFTeDA	Ave	0.4272	0.4218		2.47	2.50	-1.3	50.0
13C2-PFHxDA	Ave	0.6248	0.6233		2.49	2.50	-0.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_044.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 01:54:15 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:33 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.538	5591401	2.30		92.1	90721	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.447	0.0	1.000	2019032	0.9734		97.3	1028	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.700	0.009	0.636	3974723	2.32		92.8	155978	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1793032	0.9654		96.5	631	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.646	96536	2.28		98.3	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2833803	0.8820		99.8	1173	
298.90 > 99.00	1.744	1.744	0.0	1.005	1163666		2.44(1.25-3.74)		1105	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.946	0.010	0.727	583189	1.93		82.6	11013	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	508928	0.7625		81.6	19228	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.987	0.010	0.743	4537398	2.38		95.0	118210	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1798723	0.9822		98.2	6329	
313.00 > 119.00	1.997	1.997	0.0	1.000	171175		10.51(5.03-15.10)		3488	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.315	0.013	0.866	4426855	2.38		95.3	75270	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1782763	0.9713		97.1	3261	
363.00 > 169.00	2.328	2.328	0.0	1.000	711314		2.51(1.13-3.40)		9393	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	5598609	2.26		95.5	80414	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2283144	0.8647		95.0	3781	
399.00 > 99.00	2.341	2.341	0.0	1.000	766083		2.98(1.50-4.49)		2057	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.657	0.008	0.991	954099	2.01		84.5	32071	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.665	0.0	1.000	650658	0.9730		103	18951	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.681	0.007	1.000	4433677	2.47		98.9	86841	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.689	0.0	1.000	1923201	0.9714		97.1	663	
413.00 > 169.00	2.689	2.689	0.0	1.000	1046960		1.84(0.84-2.52)		3191	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.689	0.0		4753634	2.50			70474	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.696	0.0	1.000	2126584	0.9293		97.6	29783	
449.00 > 99.00	2.696	2.696	0.0	1.000	561231		3.79(1.94-5.82)		12067	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.051	0.014	1.140	4161825	2.40		100	43767	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	3598076	2.51		100	69432	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1684959	0.8938		96.3	4433	
499.00 > 99.00	3.065	3.065	0.0	1.000	375844		4.48(2.31-6.93)		2744	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.065	0.0	1.000	1428435	0.9735		97.3	2689	
463.00 > 169.00	3.065	3.065	0.0	1.000	344495		4.15(1.90-5.69)		10744	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.264	6242103	2.49		99.5	64290	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	2501679	1.03		103	37533	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.408	0.008	1.271	1043866	2.34		97.6	26201	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.417	0.008	1.274	2929622	2.44		97.8	47122	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.416	0.0	1.000	485725	0.8864		92.5	12167	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.425	0.0	1.000	1166033	1.05		105	5482	
513.00 > 169.00	3.425	3.425	0.0	1.000	209835		5.56(2.36-7.09)		6713	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.331	917791	2.32		92.8	22034	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	357913	0.9361		93.6	3814	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1037555	0.9332		96.8	43476	
599.00 > 99.00	3.748	3.748	0.0	1.000	355545		2.92(1.39-4.16)		7396	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.398	939041	2.48		99.3	1646	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	2291238	2.44		97.7	43531	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.000	375439	1.02		102	7110	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	679747	0.8850		88.5	1711	
563.00 > 169.00	3.758	3.758	0.0	1.000	183415		3.71(2.12-6.36)		14564	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.046	0.010	1.509	2178550	2.45		97.9	14608	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.056	0.0	1.000	842949	0.9456		94.6	146	
613.00 > 169.00	4.056	4.056	0.0	1.000	219589		3.84(2.13-6.40)		5066	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.317	0.0	1.000	812659	0.9065		90.6	168	
663.00 > 169.00	4.317	4.317	0.0	1.000	255632		3.18(1.25-3.76)		4156	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.694	2004937	2.47		98.7	17472	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	191691	0.8667		86.7	2632	
713.00 > 219.00	4.554	4.554	0.0	1.000	134101		1.43(0.71-2.13)		1761	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.964	0.009	1.850	2962899	2.49		99.8	10899	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.000	1069763	0.9594		95.9	90.9	
813.00 > 169.00	4.973	4.973	0.0	1.000	173335		6.17(2.86-8.58)		2073	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.330	0.0	1.000	1038568	0.8989		89.9	216	
913.00 > 169.00	5.330	5.330	0.0	1.000	139097		7.47(3.83-11.48)		1634	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:56:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_044.d

Injection Date: 21-Mar-2018 01:54:15 Instrument ID: A8_N

Lims ID: CCV L4

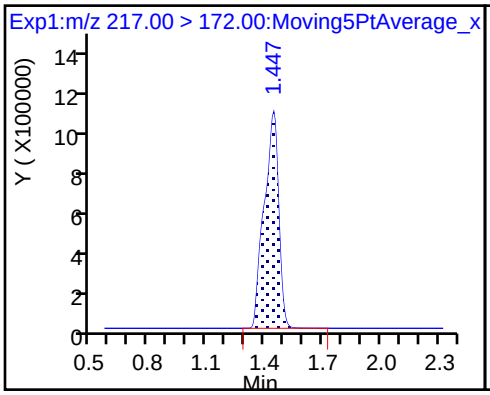
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

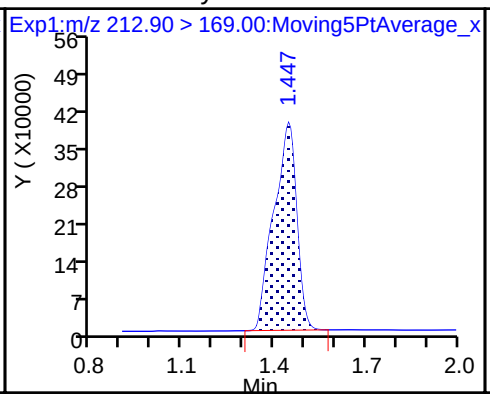
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

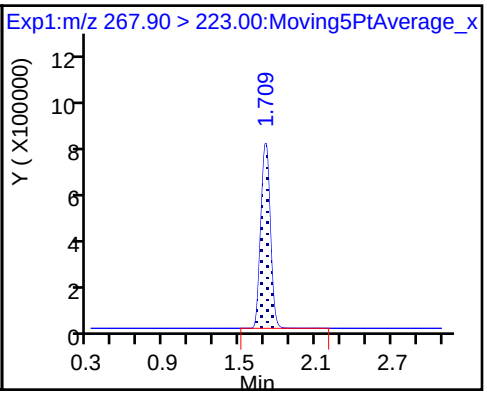
D 1 13C4 PFBA



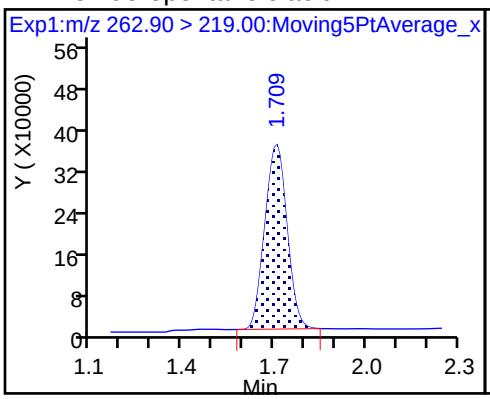
2 Perfluorobutyric acid



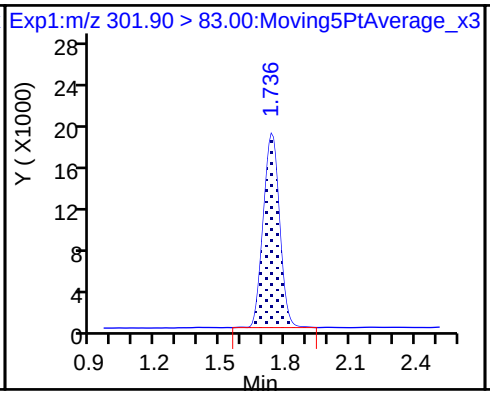
D 3 13C5-PFPeA



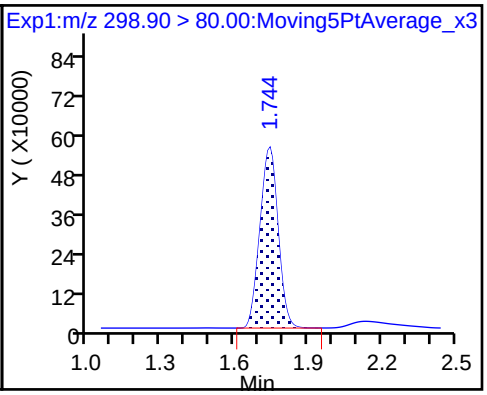
4 Perfluoropentanoic acid



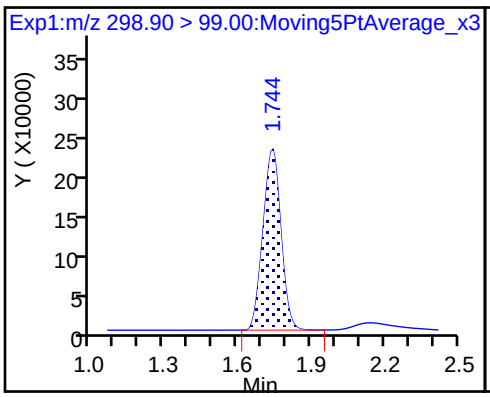
D 47 13C3-PFBS



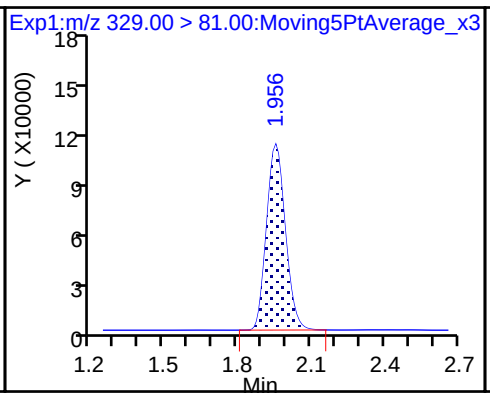
5 Perfluorobutanesulfonic acid



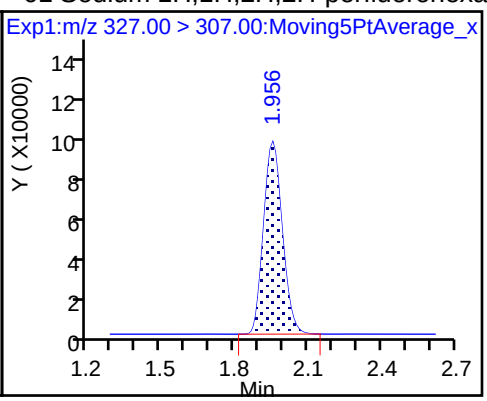
5 Perfluorobutanesulfonic acid



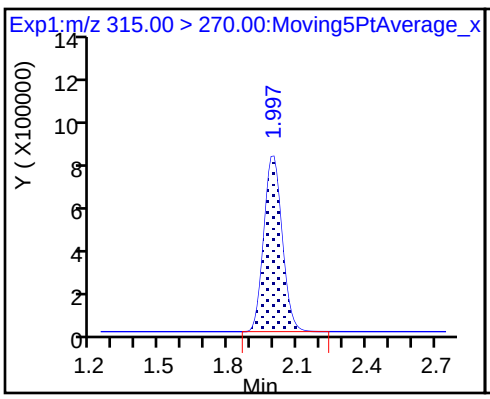
D 60 M2-4:2FTS



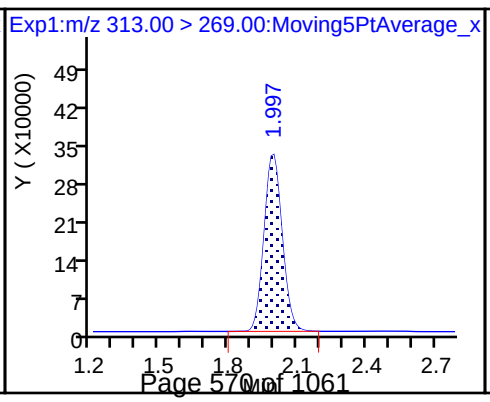
61 Sodium 1H,1H,2H,2H-perfluorohexane



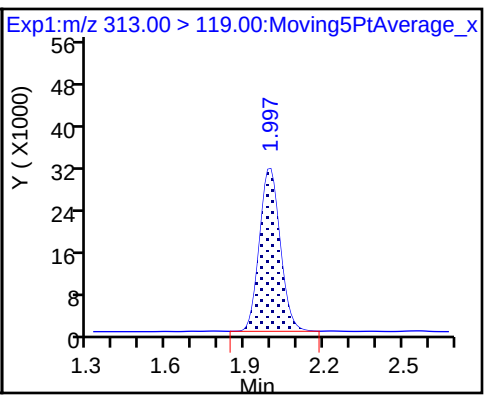
D 7 13C2 PFHxA



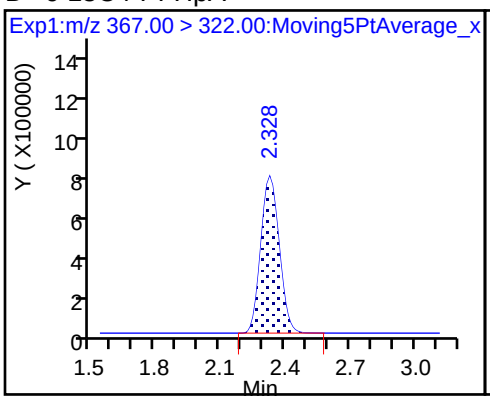
6 Perfluorohexanoic acid



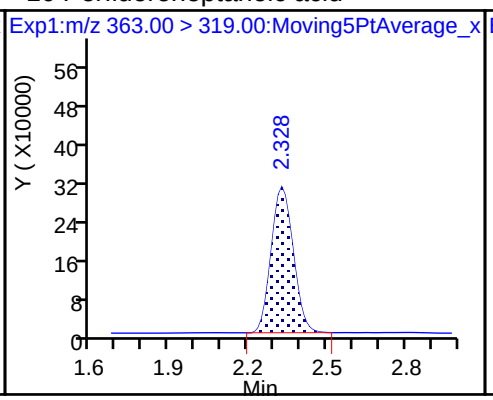
6 Perfluorohexanoic acid



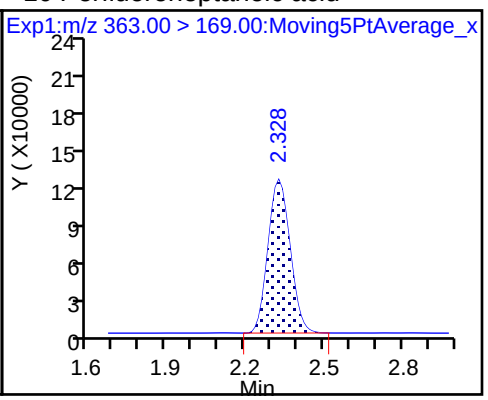
D 9 13C4-PFHpA



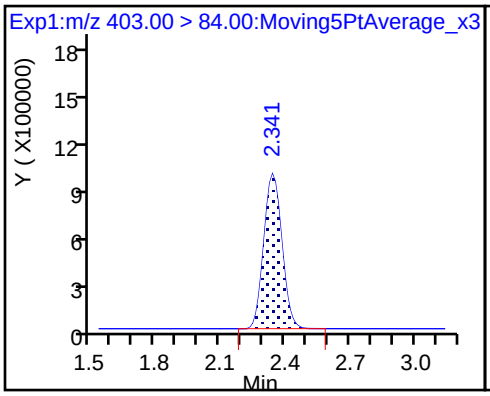
10 Perfluoroheptanoic acid



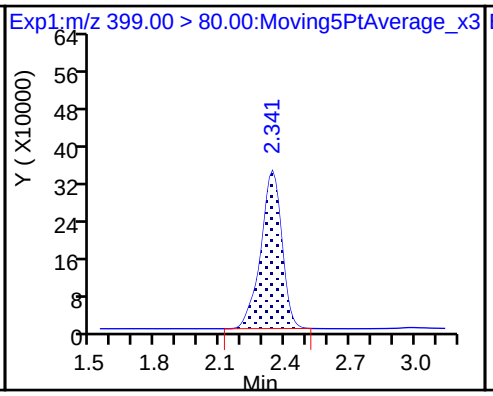
10 Perfluoroheptanoic acid



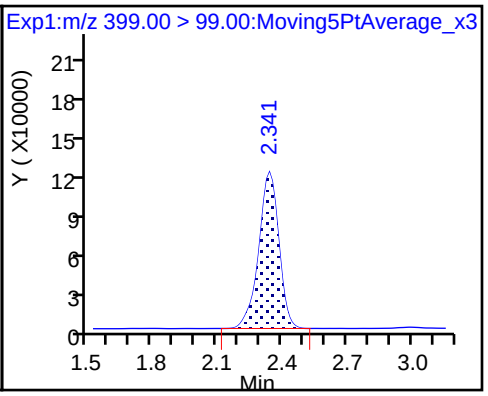
D 11 18O2 PFHxS



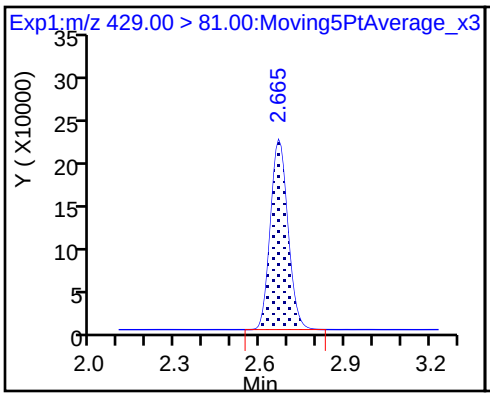
8 Perfluorohexanesulfonic acid



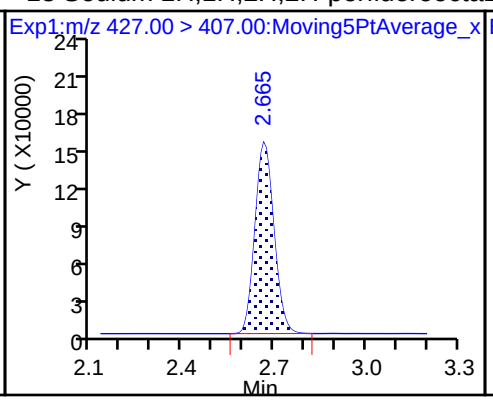
8 Perfluorohexanesulfonic acid



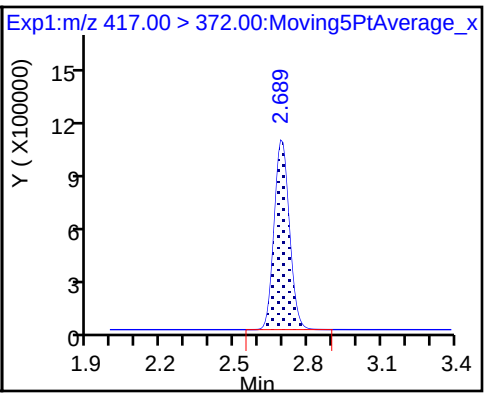
D 12 M2-6:2FTS



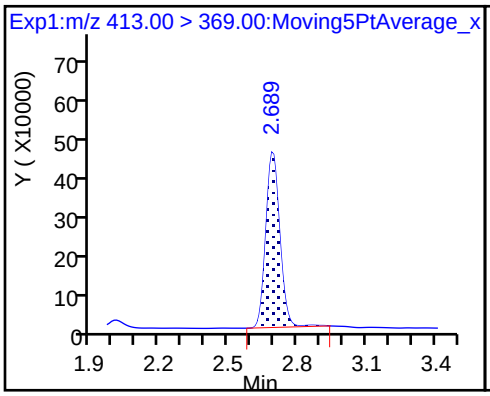
13 Sodium 1H,1H,2H,2H-perfluorooctane



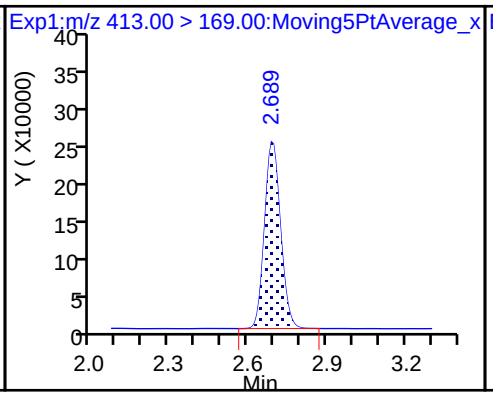
D 14 13C4 PFOA



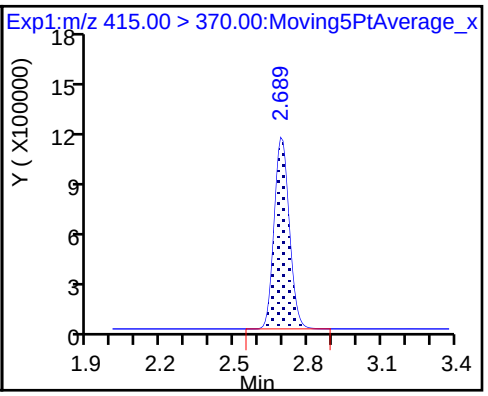
15 Perfluorooctanoic acid



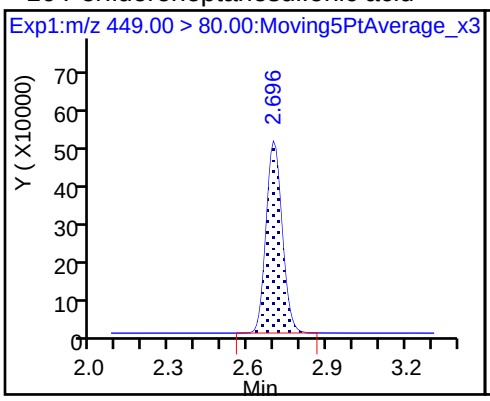
15 Perfluorooctanoic acid



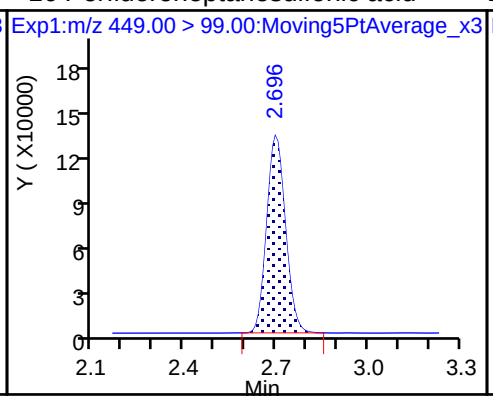
* 62 13C2-PFOA



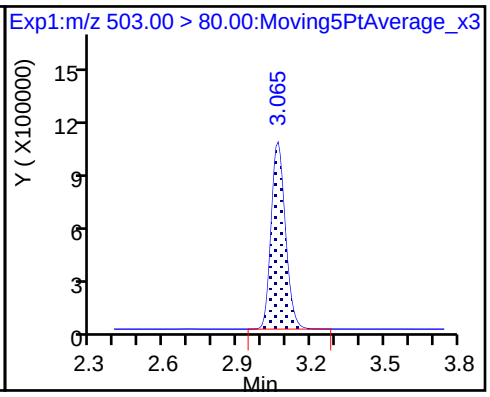
16 Perfluoroheptanesulfonic acid



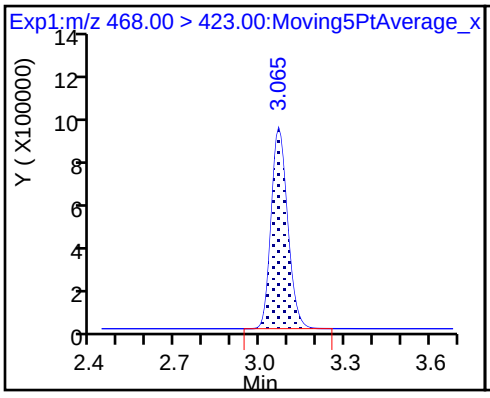
16 Perfluoroheptanesulfonic acid



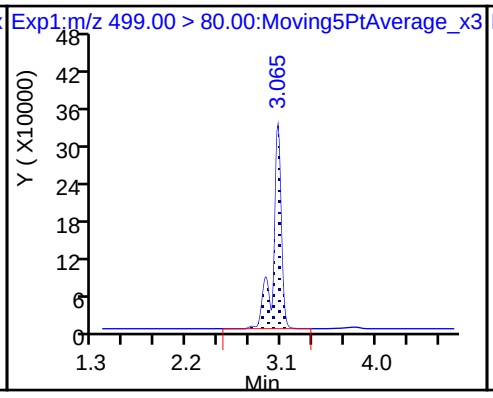
D 18 13C4 PFOS



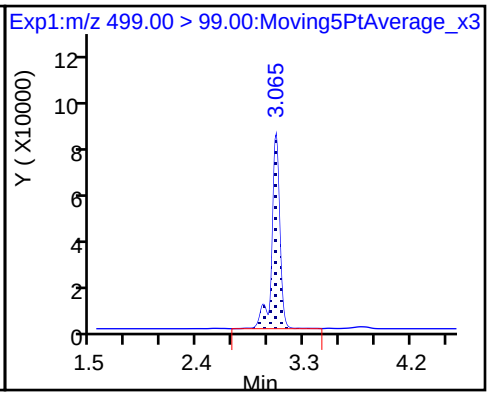
D 19 13C5 PFNA



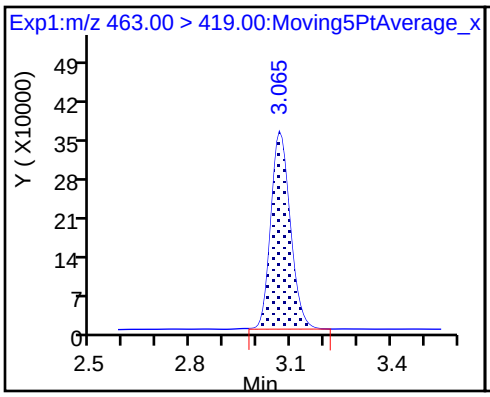
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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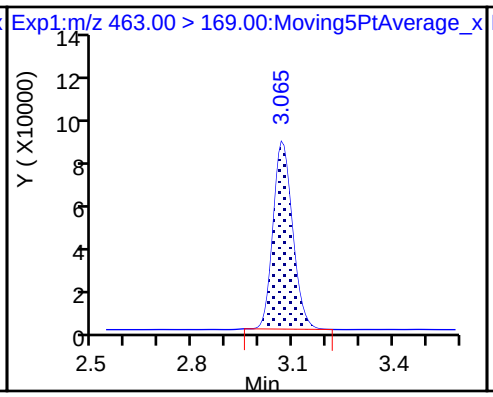
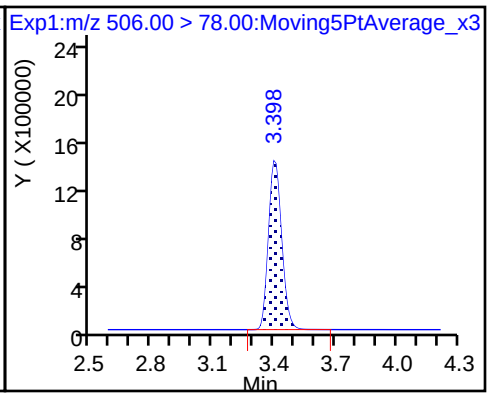
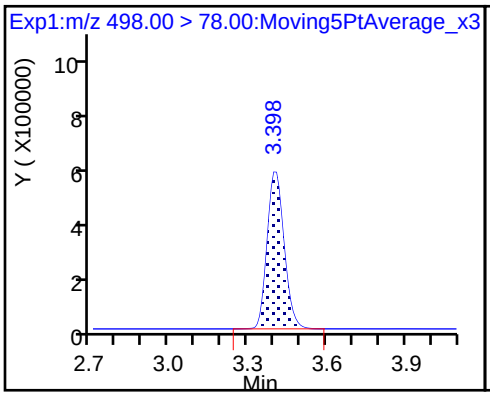


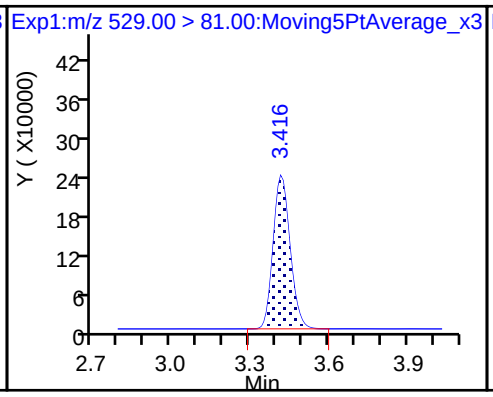
D 21 13C8 FOSA



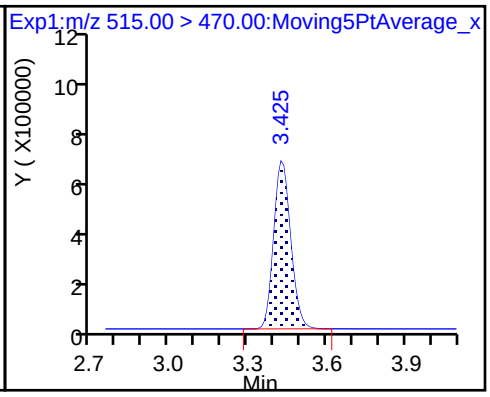
22 Perfluorooctane Sulfonamide



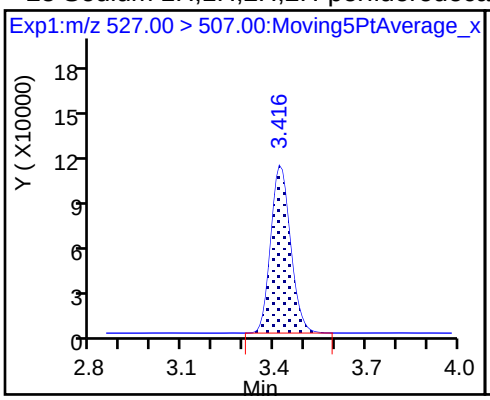
D 26 M2-8:2FTS



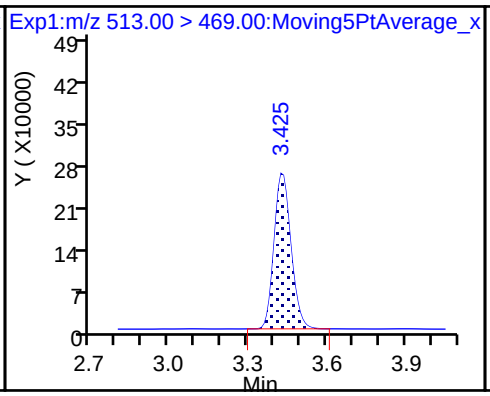
D 23 13C2 PFDA



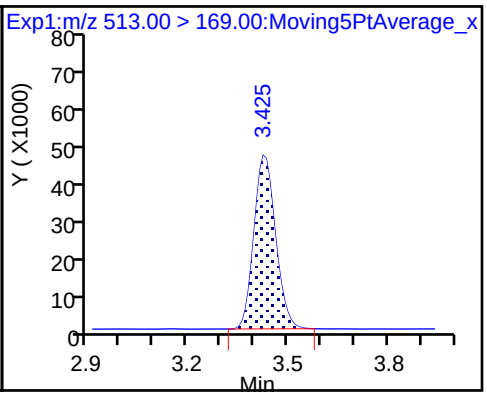
25 Sodium 1H,1H,2H,2H-perfluorodecan



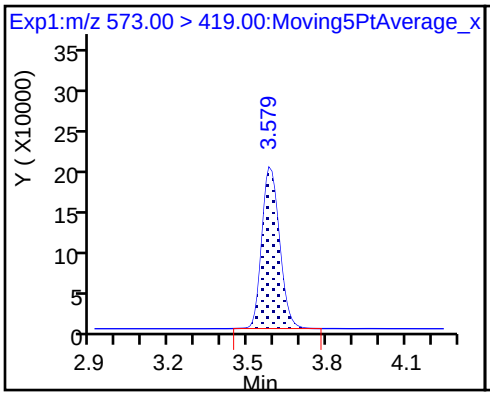
24 Perfluorodecanoic acid



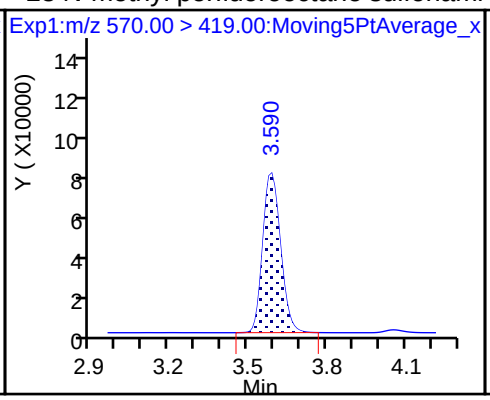
24 Perfluorodecanoic acid



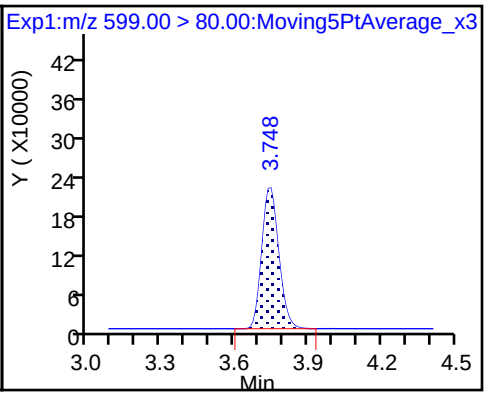
D 27 d3-NMeFOSAA



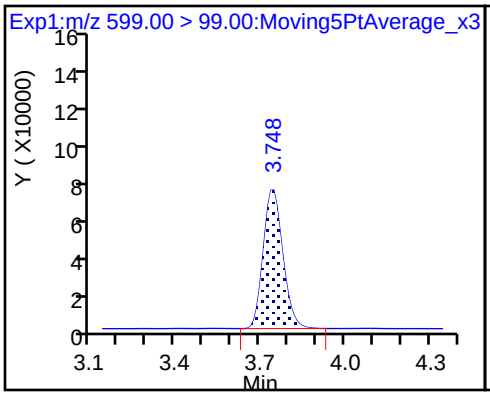
28 N-methyl perfluorooctane sulfonami



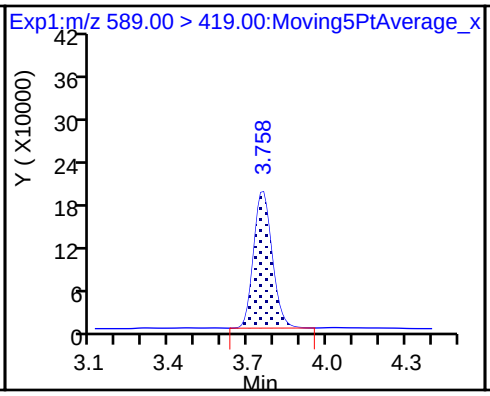
29 Perfluorodecane Sulfonic acid



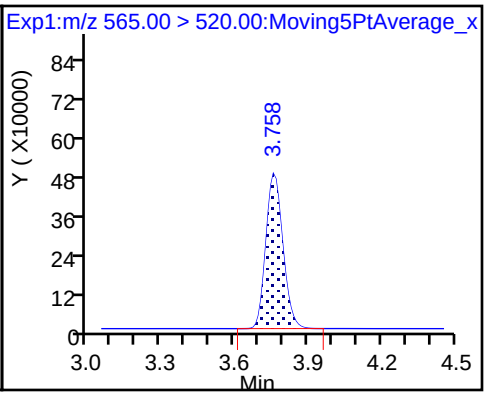
29 Perfluorodecane Sulfonic acid



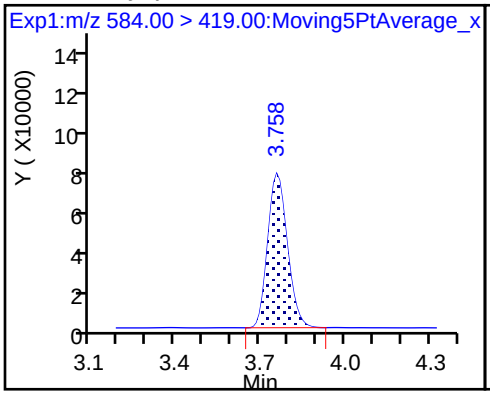
D 32 d5-NEtFOSAA



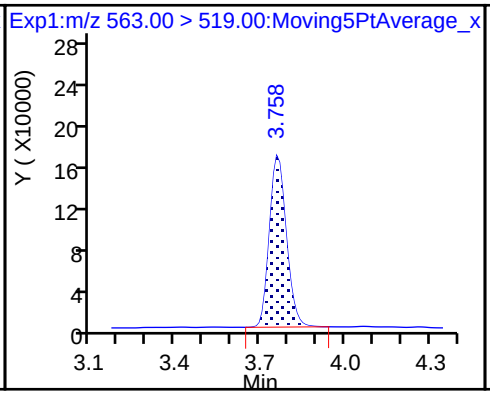
D 30 13C2 PFUnA



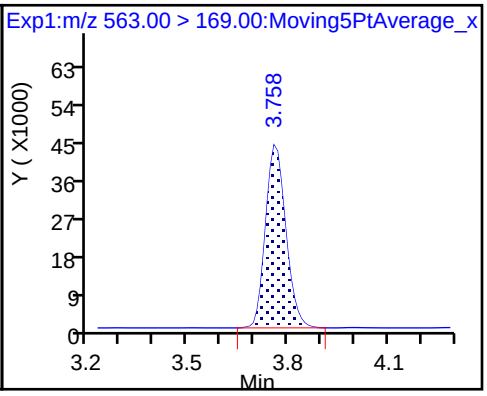
33 N-ethyl perfluorooctane sulfonamid



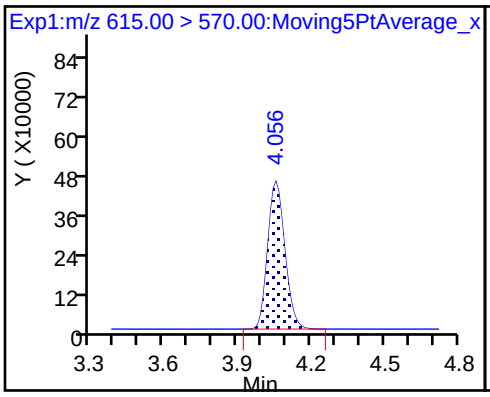
31 Perfluoroundecanoic acid



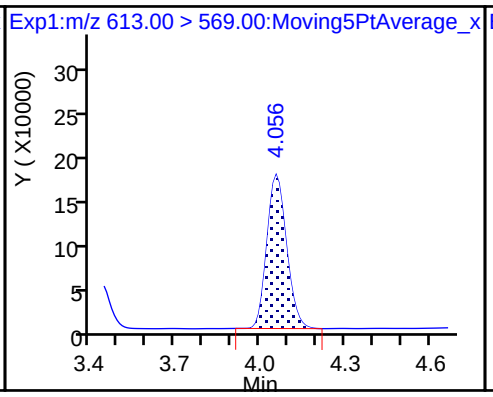
31 Perfluoroundecanoic acid



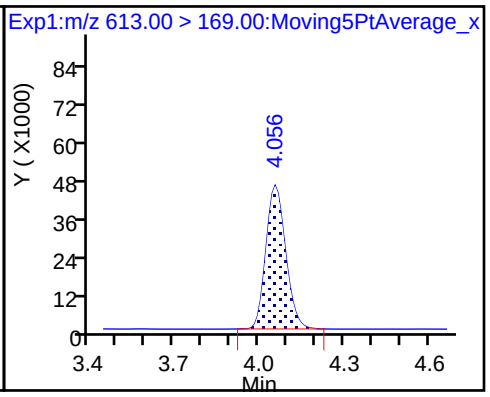
D 36 13C2 PFDoA



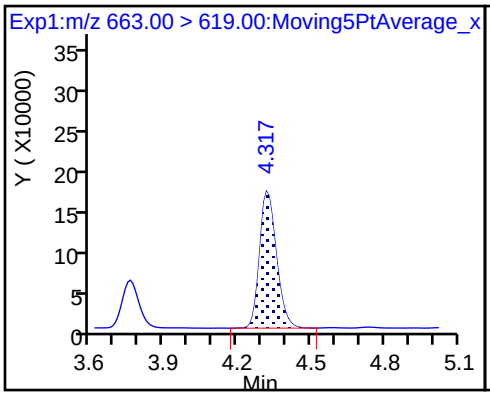
37 Perfluorododecanoic acid



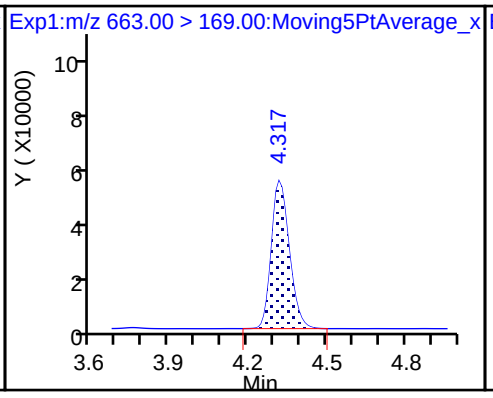
37 Perfluorododecanoic acid



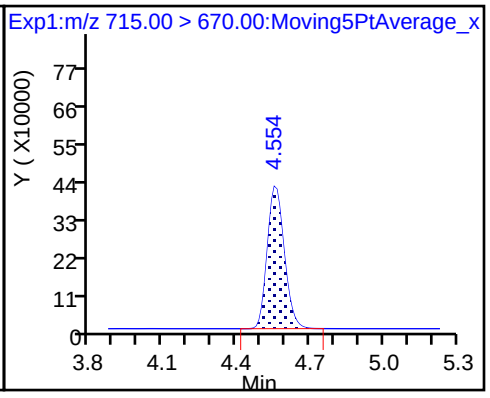
41 Perfluorotridecanoic acid



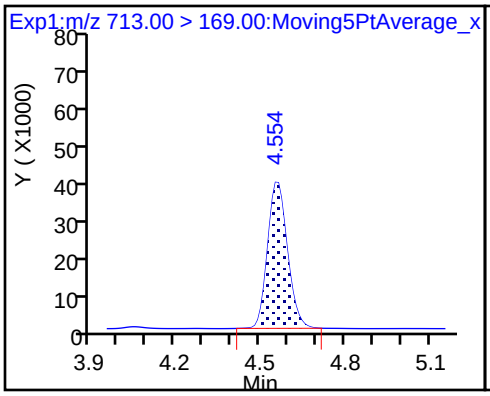
41 Perfluorotridecanoic acid



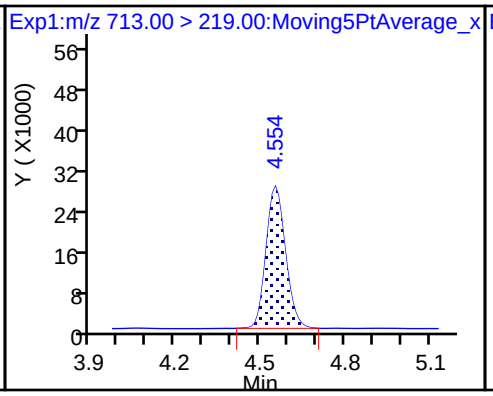
D 43 13C2-PFTeDA



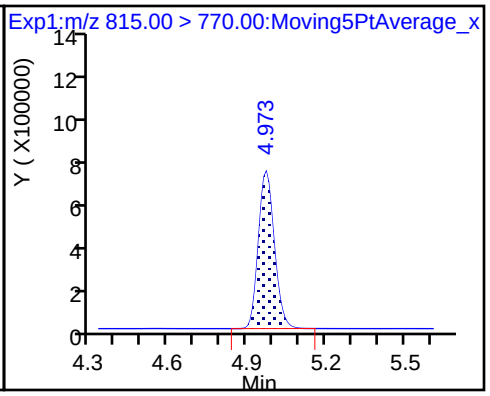
42 Perfluorotetradecanoic acid



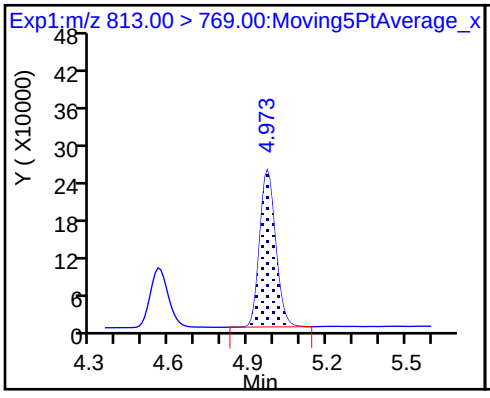
42 Perfluorotetradecanoic acid



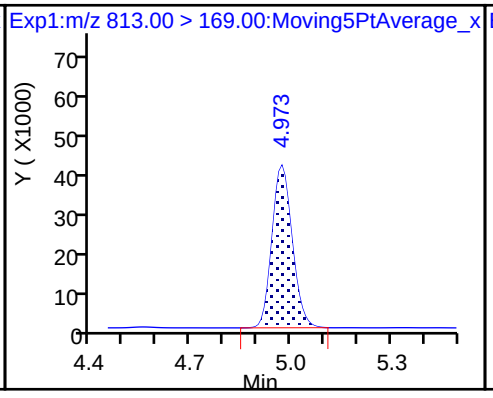
D 44 13C2-PFHxDA



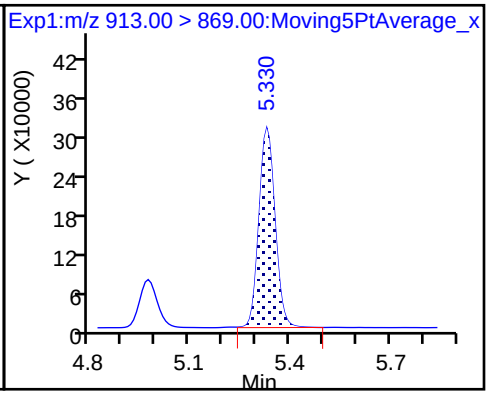
45 Perfluorohexadecanoic acid



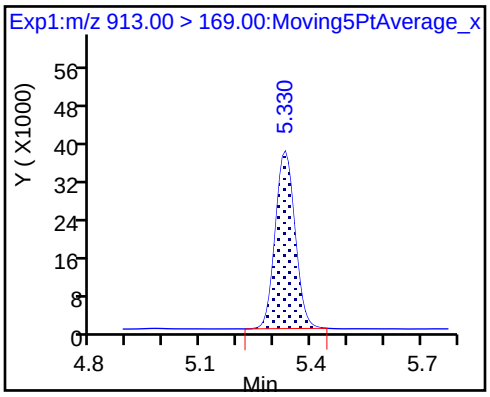
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/26 Calibration Date: 03/21/2018 02:17

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9274	0.9382		2.53	2.50	1.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.168	1.125		2.41	2.50	-3.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.38	77.91		2.23	2.21	0.7	50.0
4:2 FTS	AveID	16.07	13.28		1.93	2.34	-17.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.009	1.007		2.50	2.50	-0.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.037	1.108		2.67	2.50	6.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.115	1.077		2.20	2.28	-3.4	40.0
6:2FTS	AveID	1.665	1.760		2.51	2.37	5.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.314	1.334		2.42	2.38	1.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.116	1.136		2.55	2.50	1.8	40.0
Perfluorononanoic acid (PFNA)	AveID	1.020	1.042		2.56	2.50	2.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.083	1.098		2.35	2.32	1.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9717	1.028		2.64	2.50	5.8	40.0
8:2FTS	AveID	1.257	1.334		2.54	2.40	6.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9489	1.030		2.71	2.50	8.6	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.042	1.077		2.58	2.50	3.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6385	0.6637		2.51	2.41	3.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9791	0.9513		2.43	2.50	-2.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8380	0.7306		2.18	2.50	-12.8	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.023	1.139		2.78	2.50	11.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.029	1.067		2.59	2.50	3.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2758	0.2581		2.34	2.50	-6.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.017		2.75	2.50	9.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9749	1.013		2.60	2.50	3.9	50.0
13C4 PFBA	Ave	1.277	1.151		2.25	2.50	-9.9	50.0
13C5 PFPeA	Ave	0.9006	0.8069		2.24	2.50	-10.4	50.0
13C3-PFBS	Ave	0.0222	0.0218		2.28	2.33	-1.9	50.0
M2-4:2FTS	Ave	0.1590	0.1252		1.84	2.34	-21.3	50.0
13C2 PFHxA	Ave	1.004	0.9135		2.27	2.50	-9.0	50.0
13C4-PFHpA	Ave	0.9767	0.8985		2.30	2.50	-8.0	50.0
18O2 PFHxS	Ave	1.303	1.269		2.30	2.37	-2.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214053/26 Calibration Date: 03/21/2018 02:17

Instrument ID: A8_N Calib Start Date: 03/16/2018 23:09

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/16/2018 23:56

Lab File ID: 2018.03.20LLA_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.2501	0.2094		1.99	2.38	-16.3	40.0
13C4 PFOA	Ave	0.9431	0.8931		2.37	2.50	-5.3	50.0
13C4 PFOS	Ave	0.9113	0.9004		2.36	2.39	-1.2	50.0
13C5 PFNA	Ave	0.7545	0.7468		2.48	2.50	-1.0	50.0
13C8 FOSA	Ave	1.319	1.283		2.43	2.50	-2.8	50.0
M2-8:2FTS	Ave	0.2350	0.2053		2.09	2.40	-12.6	40.0
13C2 PFDA	Ave	0.6303	0.6003		2.38	2.50	-4.8	50.0
d3-NMeFOSAA	Ave	0.2081	0.1856		2.23	2.50	-10.8	50.0
d5-NEtFOSAA	Ave	0.1990	0.1927		2.42	2.50	-3.1	50.0
13C2 PFUnA	Ave	0.4935	0.4697		2.38	2.50	-4.8	50.0
13C2 PFDoA	Ave	0.4680	0.4279		2.29	2.50	-8.6	50.0
13C2-PFTeDA	Ave	0.4272	0.3986		2.33	2.50	-6.7	50.0
13C2-PFHxDA	Ave	0.6248	0.5803		2.32	2.50	-7.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_047.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 02:17:43 ALS Bottle#: 14 Worklist Smp#: 26
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:52 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:56:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.536	4835347	2.25		90.1	56464	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.447	0.0	1.004	4536521	2.53		101	2506	
D 3 13C5-PFPeA										
267.90 > 223.00	1.701	1.700	0.001	0.632	3390591	2.24		89.6	92813	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.709	-0.008	1.000	3813661	2.41		96.3	1304	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.646	85231	2.28		98.1	499	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.744	-0.008	1.000	6311657	2.23		101	2529	
298.90 > 99.00	1.736	1.744	-0.008	1.000	2664583		2.37(1.25-3.74)		2434	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.946	0.0	0.724	491369	1.84		78.7	8153	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	1136960	1.93		82.6	51920	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.739	3838407	2.27		91.0	98267	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	3866993	2.50		99.8	14319	
313.00 > 119.00	1.987	1.997	-0.010	1.000	362196		10.68(5.03-15.10)		9174	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.315	0.014	0.866	3775650	2.30		92.0	89991	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.329	2.328	0.001	1.000	4182668	2.67		107	7335	
363.00 > 169.00	2.329	2.328	0.001	1.000	1649194		2.54(1.13-3.40)		22954	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.342	2.328	0.014	0.871	5042767	2.30		97.4	85047	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.341	-0.012	0.994	5226436	2.20		96.6	7896	
399.00 > 99.00	2.342	2.341	0.001	1.000	1698840		3.08(1.50-4.49)		4941	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.988	835912	1.99		83.7	27695	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.665	-0.008	1.000	1467791	2.51		106	48793	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.681	0.008	1.000	3752876	2.37		94.7	71439	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.689	0.001	1.000	4264629	2.54		102	1540	
413.00 > 169.00	2.689	2.689	0.001	1.000	2227641		1.91(0.84-2.52)		7765	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.689	0.001		4202051	2.50			97193	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.696	-0.007	1.000	4806140	2.42		102	55847	
449.00 > 99.00	2.689	2.696	-0.007	1.000	1232745		3.90(1.94-5.82)		20348	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.051	0.008	1.137	3616863	2.36		98.8	30631	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.058	0.001	1.137	3138259	2.47		99.0	55901	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.065	-0.006	1.000	3853311	2.35		101	10251	
499.00 > 99.00	3.059	3.065	-0.006	1.000	848762		4.54(2.31-6.93)		6347	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.065	-0.006	1.000	3270319	2.56		102	6012	
463.00 > 169.00	3.059	3.065	-0.006	1.000	785088		4.17(1.90-5.69)		27653	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.389	0.010	1.264	5389568	2.43		97.2	50836	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.398	0.001	1.000	5539146	2.64		106	50300	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.408	0.009	1.271	826492	2.09		87.4	22759	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.416	0.001	1.000	1102670	2.54		106	30575	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.274	2522370	2.38		95.2	43694	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.425	0.001	1.000	2598077	2.71		109	12141	
513.00 > 169.00	3.426	3.425	0.001	1.000	450695		5.76(2.36-7.09)		2159	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.581	3.570	0.011	1.332	779952	2.23		89.2	33245	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.581	3.590	-0.009	1.000	839803	2.58		103	10597	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.748	-0.008	1.000	2420402	2.50		104	85073	
599.00 > 99.00	3.740	3.748	-0.008	1.000	802835		3.01(1.39-4.16)		11315	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.748	0.002	1.395	809871	2.42		96.9	1597	
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.748	0.012	1.398	1973830	2.38		95.2	58467	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.758	0.002	1.003	770431	2.43		97.2	15728	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.760	3.758	0.002	1.000	1441997	2.18		87.2	4713	
563.00 > 169.00	3.760	3.758	0.002	1.000	412813		3.49(2.12-6.36)		24915	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.046	0.002	1.506	1797976	2.29		91.4	11590	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.056	-0.008	1.000	2046996	2.78		111	413	
613.00 > 169.00	4.048	4.056	-0.008	1.000	486673		4.21(2.13-6.40)		11145	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.317	0.001	1.000	1918679	2.59		104	414	
663.00 > 169.00	4.318	4.317	0.001	1.000	585248		3.28(1.25-3.76)		7689	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.694	1674798	2.33		93.3	13409	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	432307	2.34		93.6	4771	
713.00 > 219.00	4.544	4.554	-0.010	0.998	327674		1.32(0.71-2.13)		3401	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.846	2438438	2.32		92.9	9289	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.973	-0.009	1.000	2479730	2.75		110	223	
813.00 > 169.00	4.964	4.973	-0.009	1.000	402341		6.16(2.86-8.58)		3684	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.323	5.330	-0.007	1.000	2469857	2.60		104	492	
913.00 > 169.00	5.323	5.330	-0.007	1.000	301695		8.19(3.83-11.48)		3114	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 10:56:53 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_047.d

Injection Date: 21-Mar-2018 02:17:43 Instrument ID: A8_N

Lims ID: CCV L5

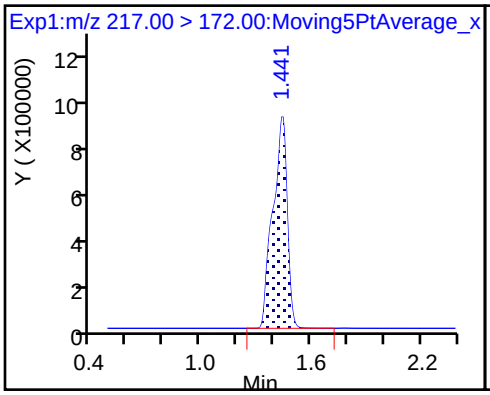
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 26

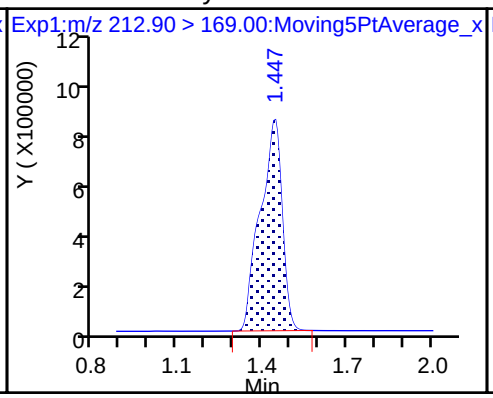
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

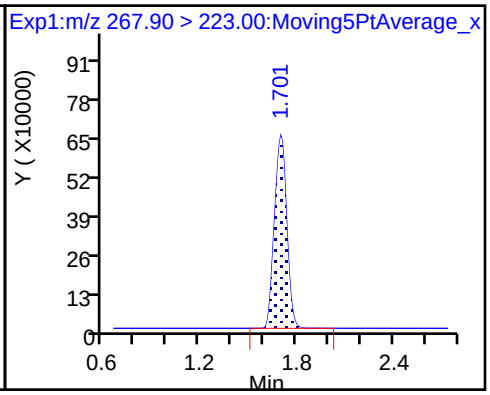
D 1 13C4 PFBA



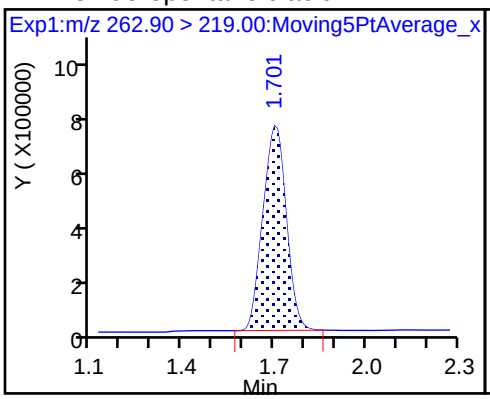
2 Perfluorobutyric acid



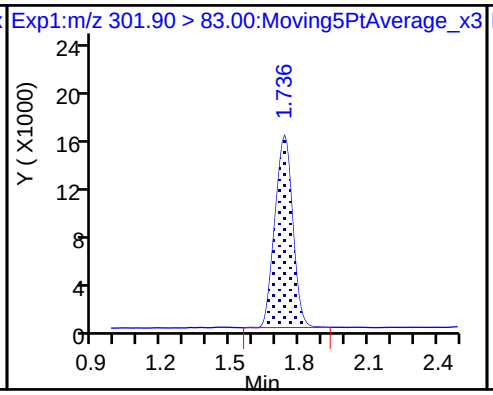
D 3 13C5-PFPeA



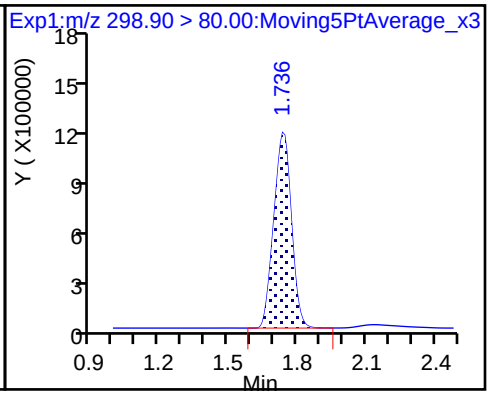
4 Perfluoropentanoic acid



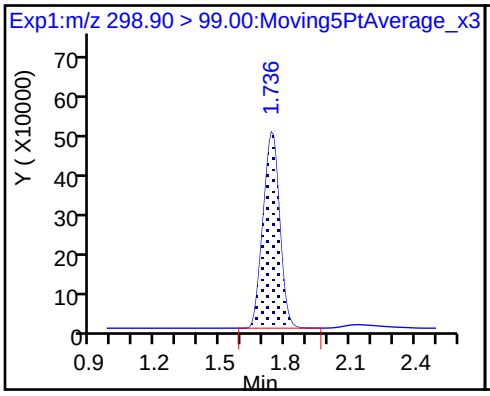
D 47 13C3-PFBS



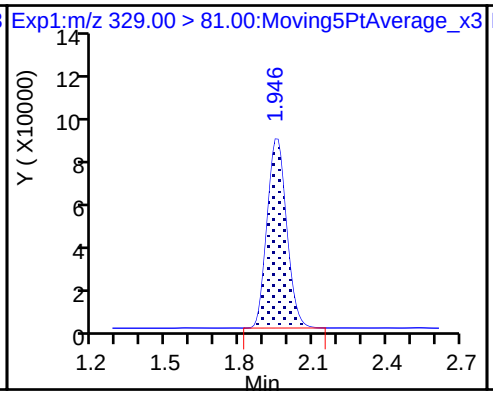
5 Perfluorobutanesulfonic acid



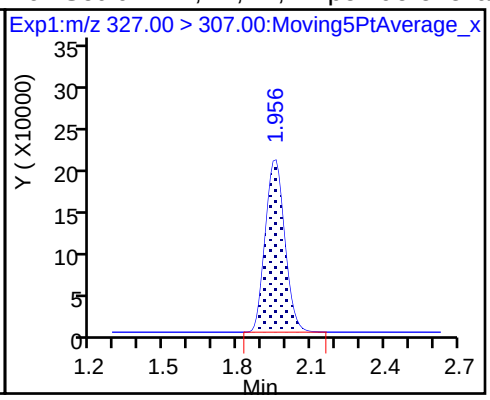
5 Perfluorobutanesulfonic acid



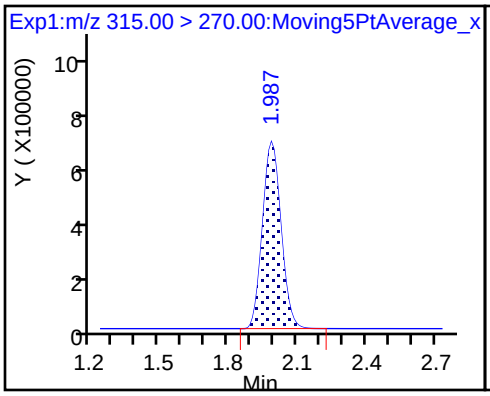
D 60 M2-4:2FTS



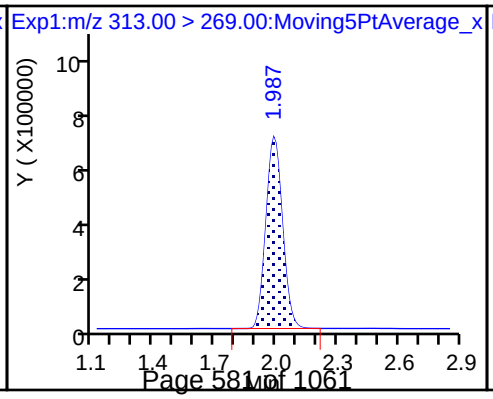
61 Sodium 1H,1H,2H,2H-perfluorohexane



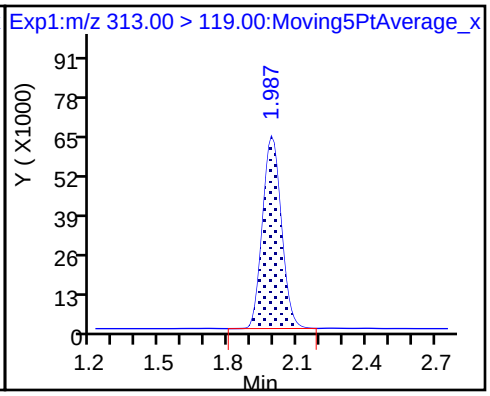
D 7 13C2 PFHxA



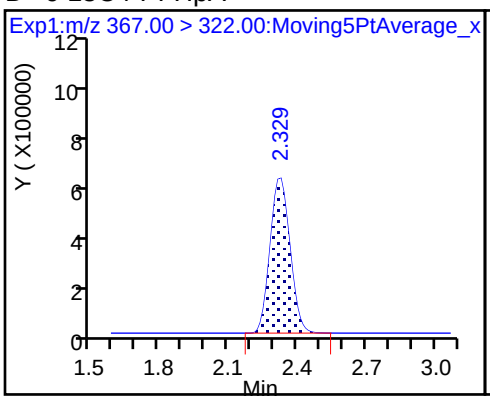
6 Perfluorohexanoic acid



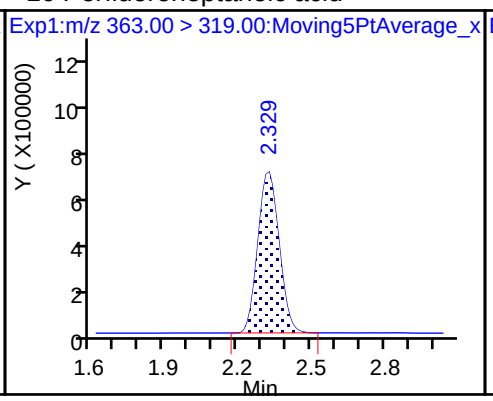
6 Perfluorohexanoic acid



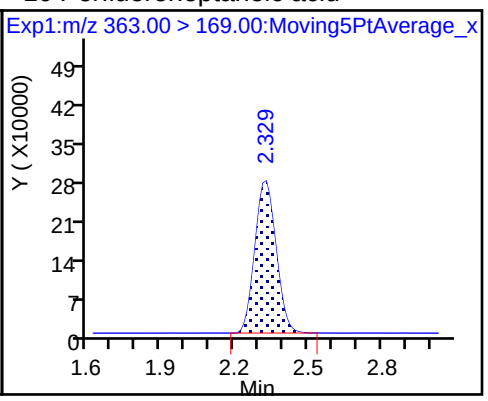
D 9 13C4-PFHpA



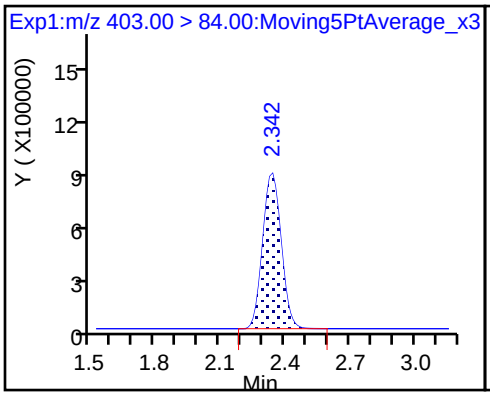
10 Perfluoroheptanoic acid



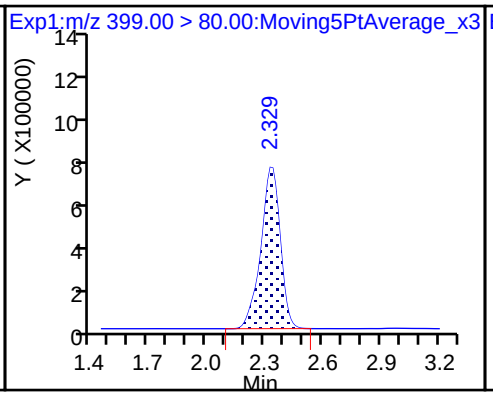
10 Perfluoroheptanoic acid



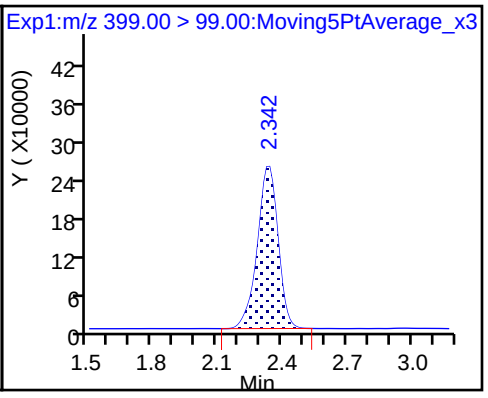
D 11 18O2 PFHxS



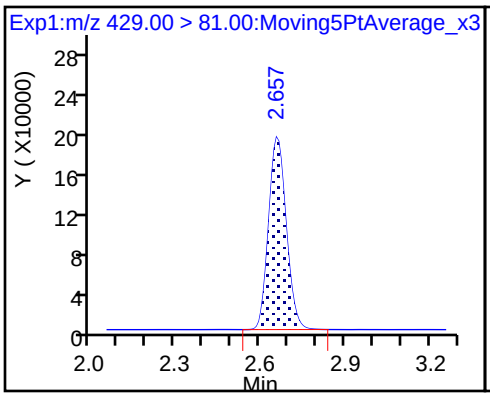
8 Perfluorohexanesulfonic acid



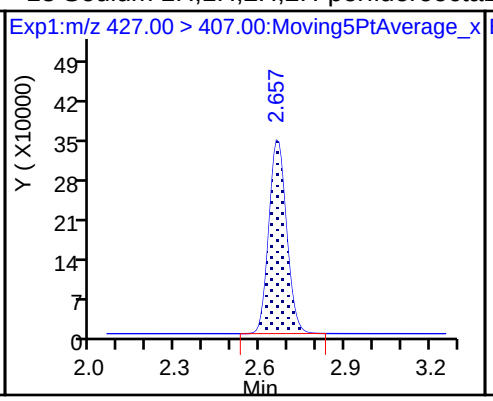
8 Perfluorohexanesulfonic acid



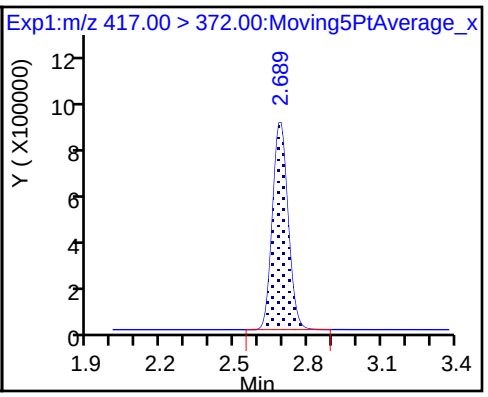
D 12 M2-6:2FTS



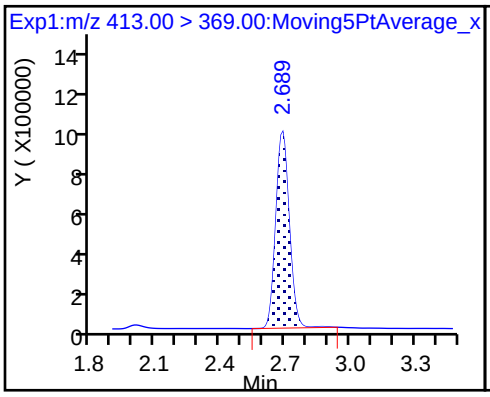
13 Sodium 1H,1H,2H,2H-perfluorooctane



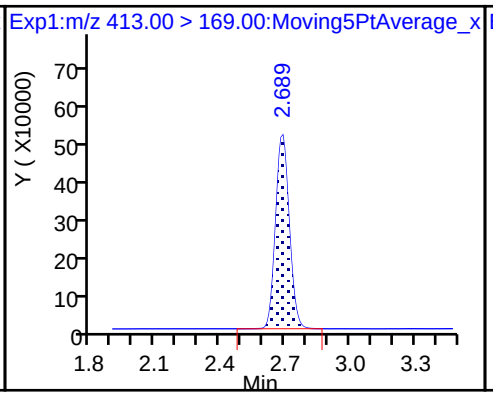
D 14 13C4 PFOA



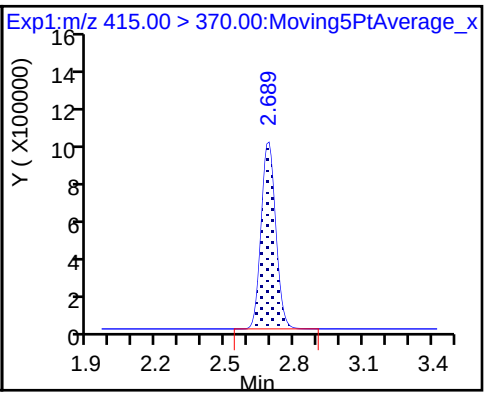
15 Perfluorooctanoic acid



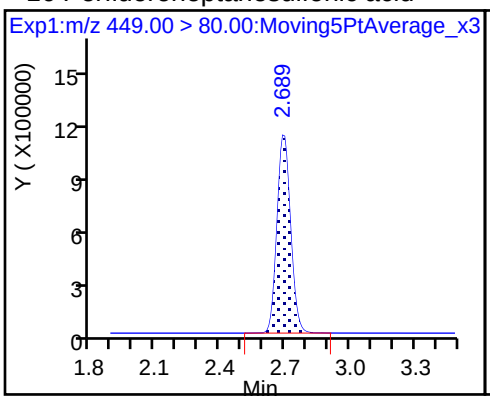
15 Perfluorooctanoic acid



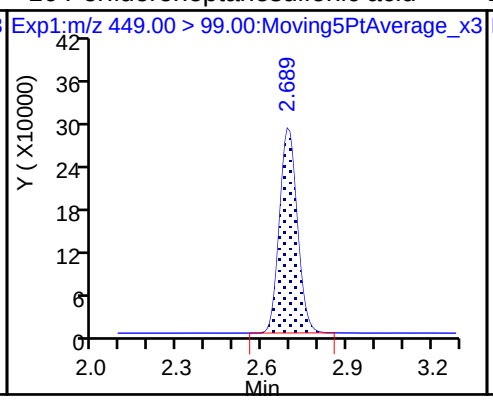
* 62 13C2-PFOA



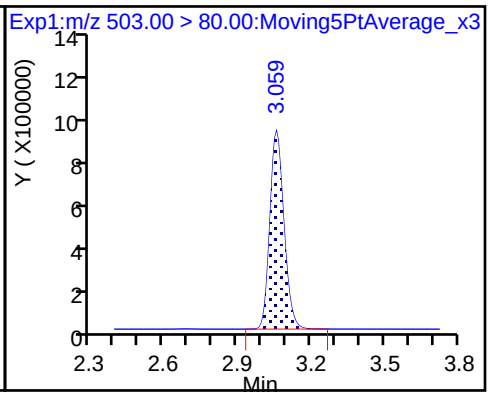
16 Perfluoroheptanesulfonic acid



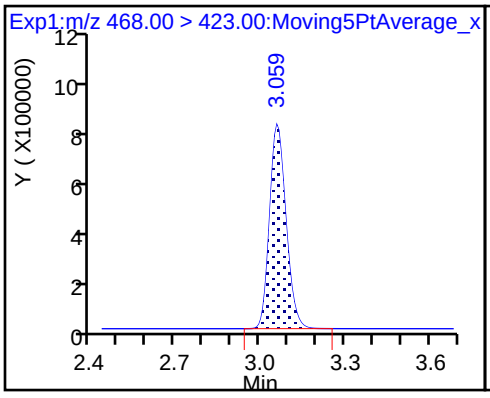
16 Perfluoroheptanesulfonic acid



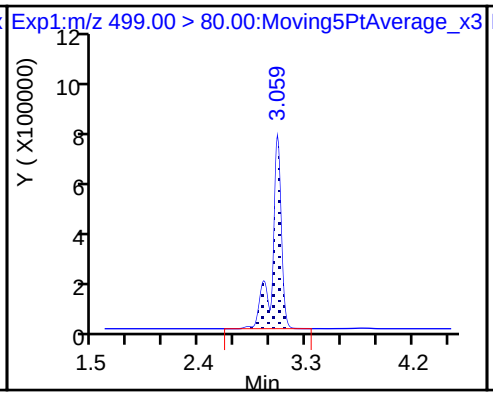
D 18 13C4 PFOS



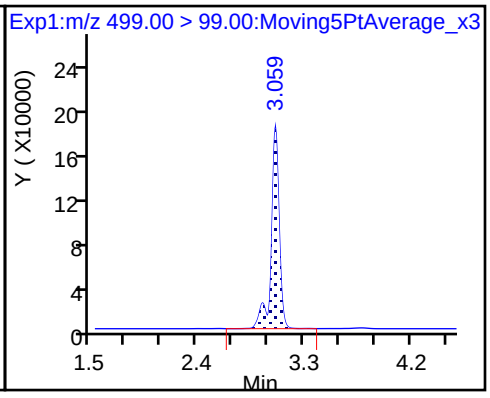
D 19 13C5 PFNA



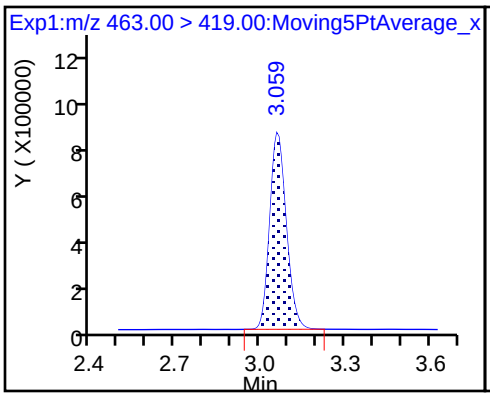
17 Perfluorooctane sulfonic acid



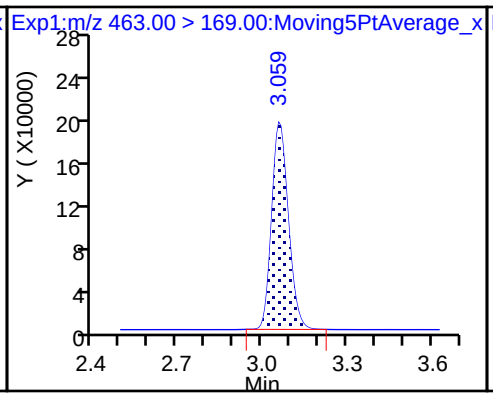
17 Perfluorooctane sulfonic acid



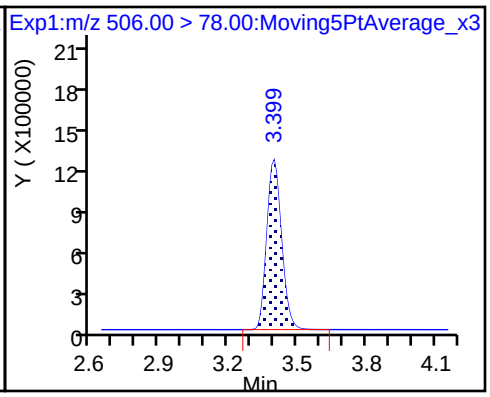
20 Perfluorononanoic acid



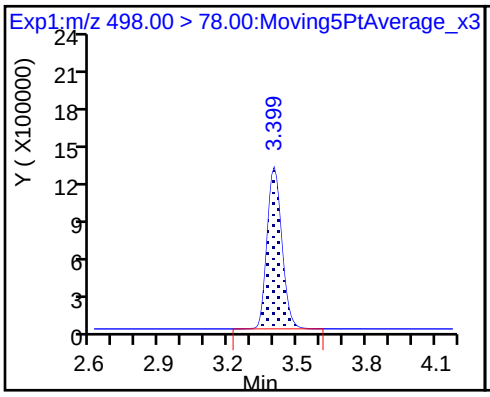
20 Perfluorononanoic acid



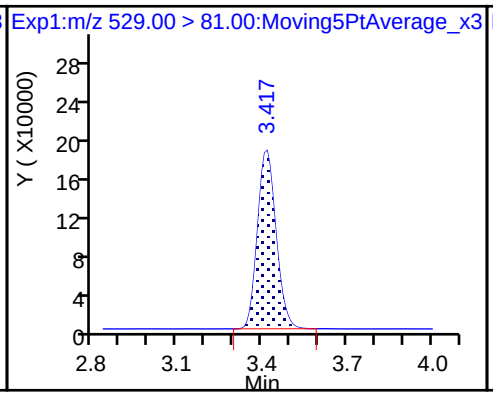
D 21 13C8 FOSA



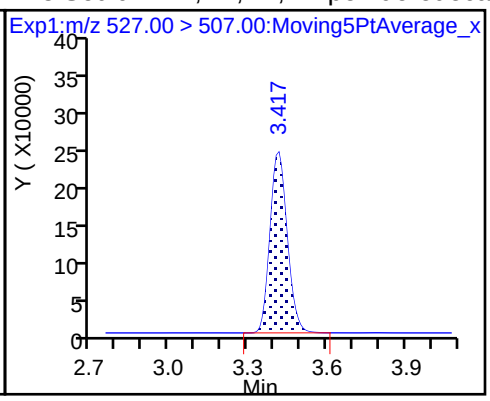
22 Perfluorooctane Sulfonamide



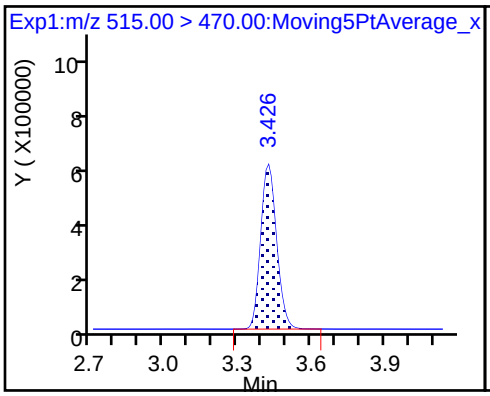
D 26 M2-8:2FTS



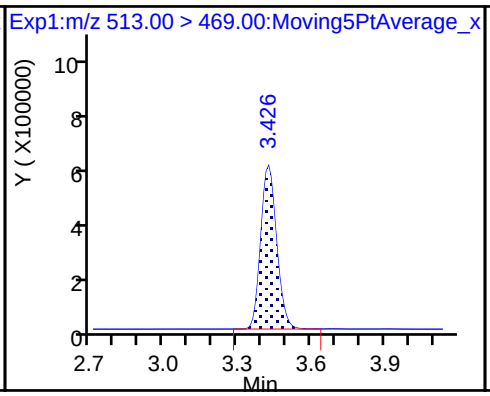
25 Sodium 1H,1H,2H,2H-perfluorodecane



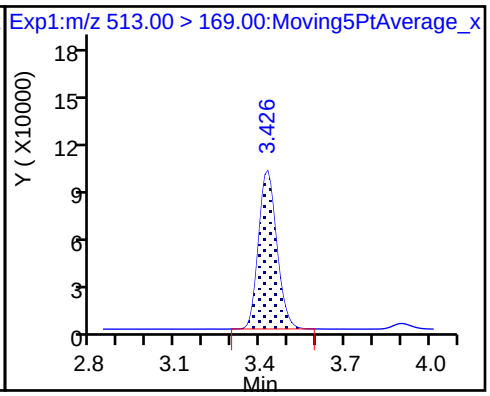
D 23 13C2 PFDA



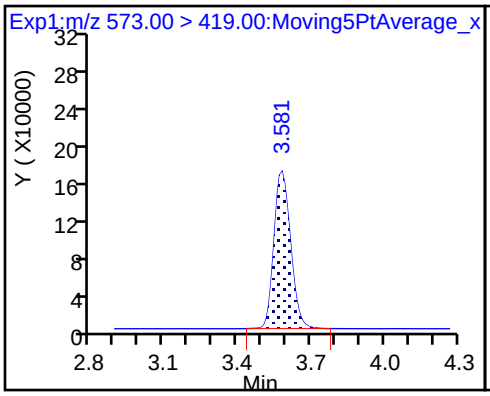
24 Perfluorodecanoic acid



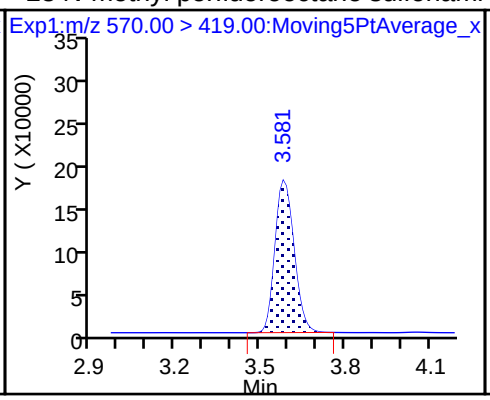
24 Perfluorodecanoic acid



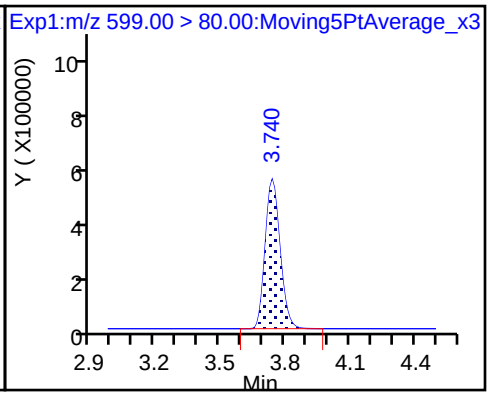
D 27 d3-NMeFOSAA



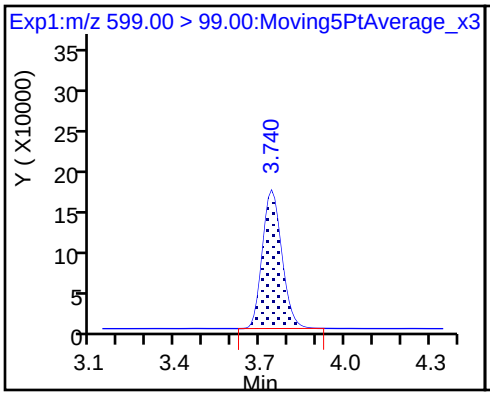
28 N-methyl perfluorooctane sulfonami



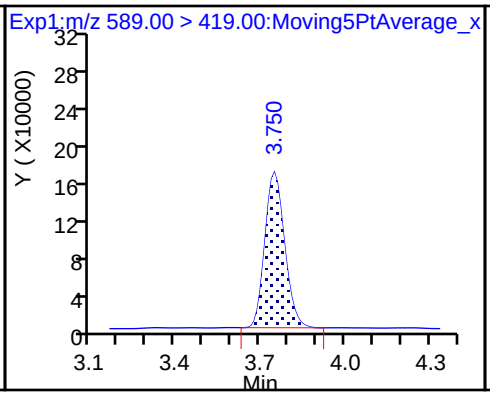
29 Perfluorodecane Sulfonic acid



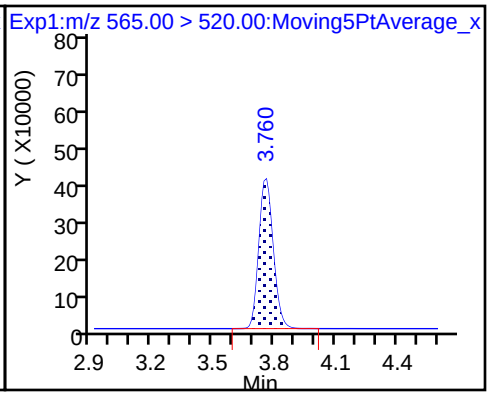
29 Perfluorodecane Sulfonic acid



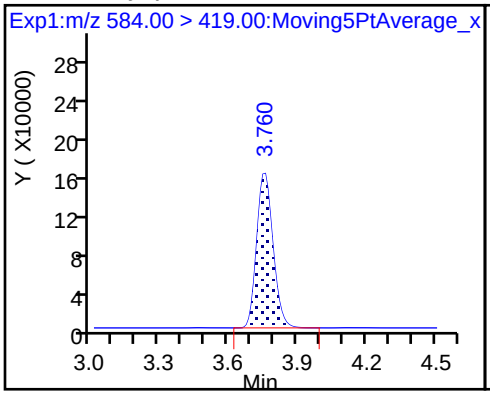
D 32 d5-NEtFOSAA



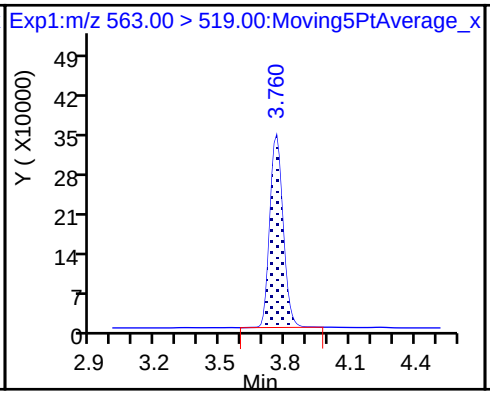
D 30 13C2 PFUnA



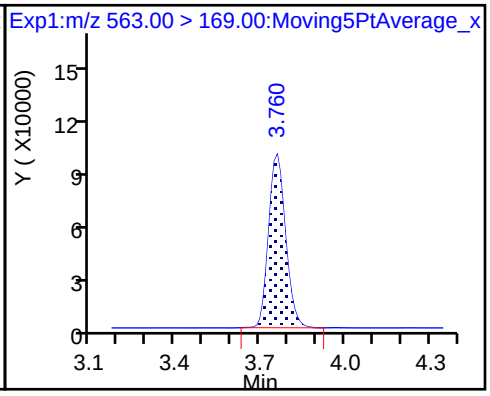
33 N-ethyl perfluorooctane sulfonamid



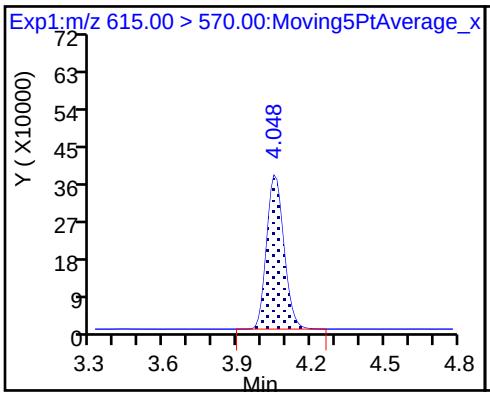
31 Perfluoroundecanoic acid



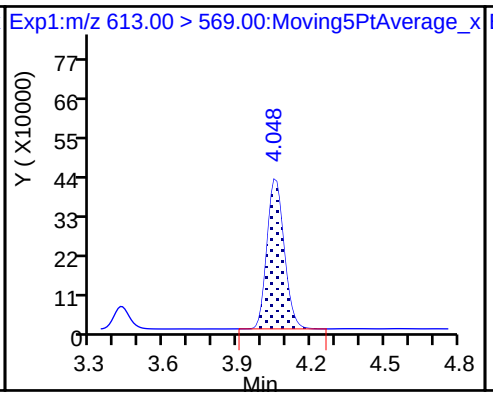
31 Perfluoroundecanoic acid



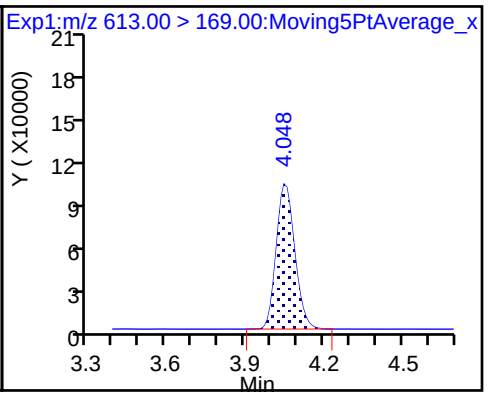
D 36 13C2 PFDoA



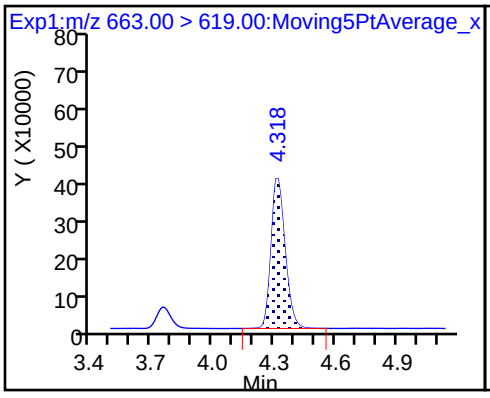
37 Perfluorododecanoic acid



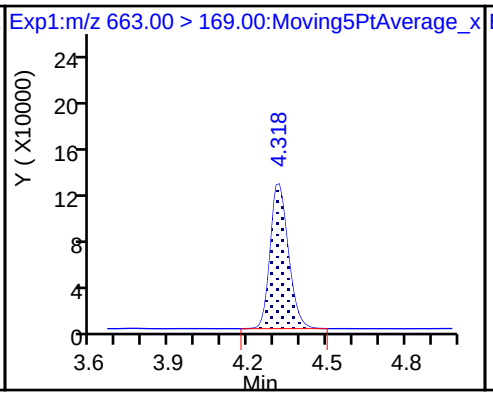
37 Perfluorododecanoic acid



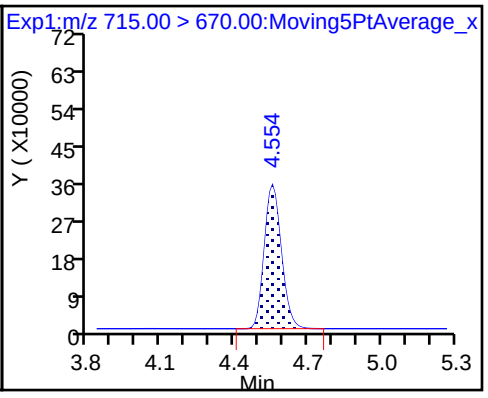
41 Perfluorotridecanoic acid



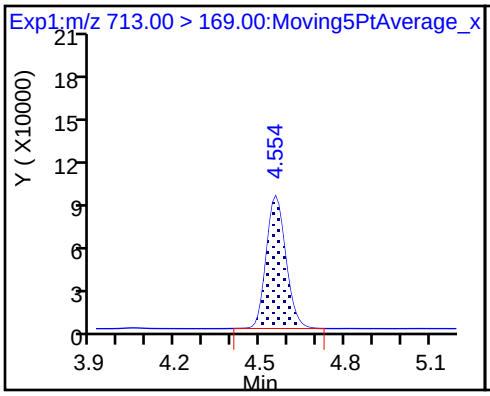
41 Perfluorotridecanoic acid



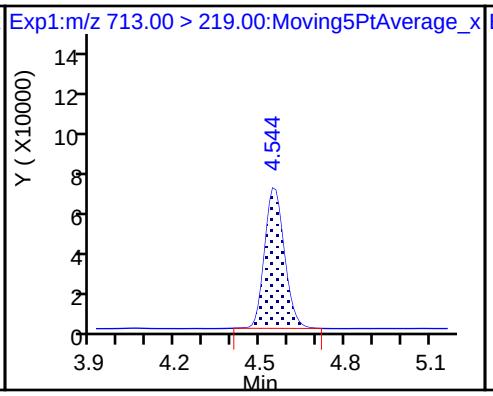
D 43 13C2-PFTeDA



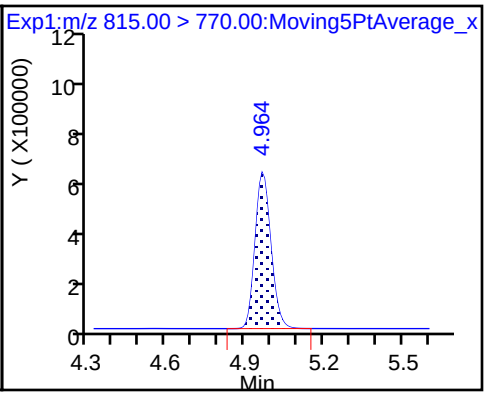
42 Perfluorotetradecanoic acid



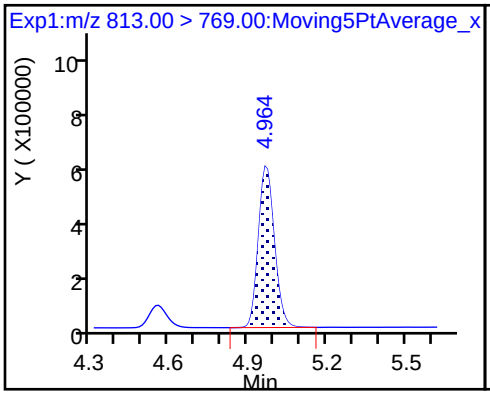
42 Perfluorotetradecanoic acid



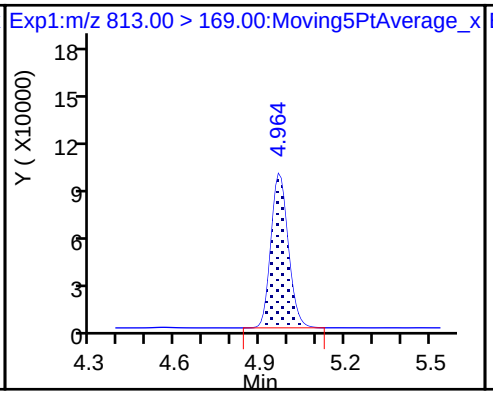
D 44 13C2-PFHxDA



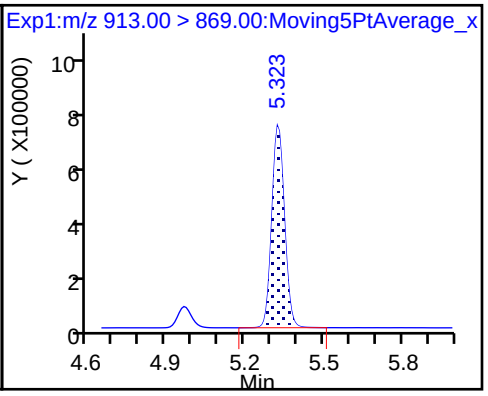
45 Perfluorohexadecanoic acid



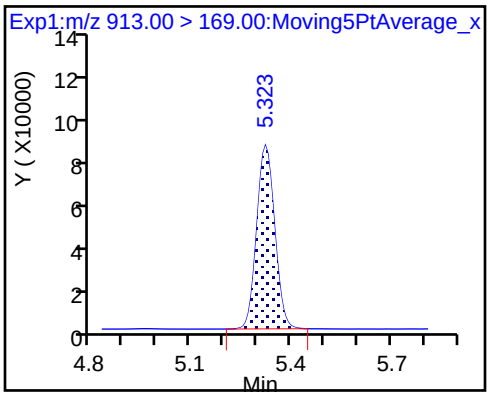
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: ICV 320-214175/10 Calibration Date: 03/21/2018 19:26

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLICALAX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9615		2.55	2.50	2.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.089		2.42	2.50	-3.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.20		2.23	2.21	0.6	50.0
4:2 FTS	AveID	16.15	15.34		2.22	2.34	-5.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9816		2.40	2.50	-4.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.059		2.56	2.50	2.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.067		2.19	2.28	-4.1	40.0
6:2FTS	AveID	1.744	1.722		2.35	2.38	-1.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.152		2.55	2.50	2.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.320		2.45	2.38	3.1	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.152		2.39	2.31	3.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.042		2.61	2.50	4.5	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.011		2.56	2.50	2.6	40.0
8:2FTS	AveID	1.276	1.320		2.48	2.40	3.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.017		2.57	2.50	2.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.043		2.61	2.50	4.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7758		2.75	2.41	14.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9386		2.51	2.50	0.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7832		2.27	2.50	-9.2	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.118		2.67	2.50	6.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.202		2.73	2.50	9.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2294		2.31	2.50	-7.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9290		2.53	2.50	1.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9401		2.54	2.50	1.7	50.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	None				0.0100	2.36	-100.0*	50.0
Adona	None				0.0100	2.50	-100.0*	50.0
HFPO-DA (GenX)	None				0.0100	2.50	-100.0*	40.0
13C4 PFBA	Ave	1.266	1.264		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	0.8399	0.8702		2.59	2.50	3.6	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.41	2.33	3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: ICV 320-214175/10 Calibration Date: 03/21/2018 19:26

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLICALAX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-4:2FTS	Ave	0.1324	0.1327		2.34	2.34	0.3	50.0
13C2 PFHxA	Ave	0.9288	0.9535		2.57	2.50	2.7	50.0
13C4-PFHpA	Ave	0.9164	0.9262		2.53	2.50	1.1	50.0
18O2 PFHxS	Ave	1.130	1.159		2.43	2.37	2.6	50.0
M2-6:2FTS	Ave	0.1900	0.1878		2.35	2.38	-1.2	40.0
13C4 PFOA	Ave	0.9374	0.9430		2.52	2.50	0.6	50.0
13C4 PFOS	Ave	0.8225	0.8093		2.35	2.39	-1.6	50.0
13C5 PFNA	Ave	0.8266	0.8343		2.52	2.50	0.9	50.0
13C8 FOSA	Ave	1.109	1.126		2.54	2.50	1.5	50.0
M2-8:2FTS	Ave	0.2565	0.2604		2.43	2.40	1.5	40.0
13C2 PFDA	Ave	0.7245	0.7523		2.60	2.50	3.8	50.0
d3-NMeFOSAA	Ave	0.3814	0.4010		2.63	2.50	5.1	50.0
13C2 PFUnA	Ave	0.6482	0.6709		2.59	2.50	3.5	50.0
d5-NEtFOSAA	Ave	0.4345	0.4611		2.65	2.50	6.1	50.0
13C2 PFDoA	Ave	0.7355	0.7399		2.52	2.50	0.6	50.0
13C2-PFTeDA	Ave	0.8983	0.9540		2.66	2.50	6.2	50.0
13C2-PFHxDA	Ave	1.473	1.524		2.59	2.50	3.5	50.0
13C3 HFPO-DA	None				0.000000	2.50	-100.0*	50.0

FORM VII 537 (modified)

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 21-Mar-2018 19:26:58 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:44:33 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: roycea Date: 22-Mar-2018 08:34:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.447	-0.001	0.537	6375865	2.50		99.9	65785	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.449	0.003	1.004	6130285	2.55			2673	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	4780167	2.42			2819	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4387769	2.59		104	120384	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.743	0.001	0.647	93121	2.41		104	803	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.000	6929756	2.23			34258	
298.90 > 99.00	1.744	1.745	-0.001	1.000	2824316		2.45(1.25-3.74)		16599	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.959	-0.004	0.726	625050	2.34		100	8149	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.962	-0.007	1.000	1436368	2.22			86809	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	4719162	2.40			15114	
313.00 > 119.00	1.997	1.998	-0.001	1.000	441716		10.68(5.03-15.10)		13104	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.741	4807774	2.57		103	122947	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.864	4670113	2.53		101	98504	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	4946435	2.56			10531	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1933812		2.56(1.13-3.40)		20438	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	5687997	2.19			28544	
399.00 > 99.00	2.341	2.346	-0.005	1.000	1847781		3.08(1.50-4.49)		6889	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.869	5529570	2.43		103	78148	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.672	-0.001	1.000	1549124	2.35			45102	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.672	-0.001	0.991	899400	2.35		98.8	20841	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		5042269	2.50			69178	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.695	0.0	1.000	4754986	2.52		101	74531	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.697	-0.002	1.000	5479179	2.55			1995	
413.00 > 169.00	2.695	2.697	-0.002	1.000	2731487		2.01(0.84-2.52)		6729	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	5118411	2.45			49555	
449.00 > 99.00	2.703	2.703	0.0	1.000	1344486		3.81(1.94-5.82)		14152	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	3900957	2.35		98.4	30995	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.070	-0.005	1.137	4206881	2.52		101	69098	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.070	-0.005	1.000	4349012	2.39			13682	
499.00 > 99.00	3.065	3.070	-0.005	1.000	929853		4.68(2.31-6.93)		10185	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.002	4384621	2.61			6586	
463.00 > 169.00	3.072	3.072	0.0	1.002	1021043		4.29(1.90-5.69)		25043	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.396	0.001	1.261	5679191	2.54		102	42851	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	5742102	2.56			54328	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.426	-0.002	1.000	1663512	2.48			30818	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.426	-0.002	1.271	1257938	2.43		102	30914	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.435	-0.002	1.000	3857119	2.57			20699	
513.00 > 169.00	3.433	3.435	-0.002	1.000	642231		6.01(2.36-7.09)		14683	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.435	-0.002	1.274	3793489	2.60		104	78039	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.589	3.591	-0.002	1.332	2021939	2.63		105	30702	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.589	3.594	-0.005	1.000	2108804	2.61			12474	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	3054904	2.75			64961	
599.00 > 99.00	3.748	3.749	-0.001	1.000	1042020		2.93(1.39-4.16)		31253	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.395	2324977	2.65		106	11021	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.768	-0.010	1.395	3383068	2.59		104	54133	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.768	-0.010	1.000	2182165	2.51			31564	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.003	2649764	2.27			13982	
563.00 > 169.00	3.769	3.768	0.001	1.003	676794		3.92(2.12-6.36)		27181	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.066	-0.010	1.505	3730503	2.51		101	31020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.068	-0.012	1.000	4172212	2.67			3940	
613.00 > 169.00	4.056	4.068	-0.012	1.000	959658		4.35(2.13-6.40)		18022	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.329	-0.011	1.000	4483777	2.73			3252	
663.00 > 169.00	4.318	4.329	-0.011	1.000	1408477		3.18(1.25-3.76)		18234	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.694	4810393	2.65		106	33667	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.571	-0.007	1.000	1103419	2.31			12823	
713.00 > 219.00	4.554	4.571	-0.017	0.998	846648		1.30(0.71-2.13)		16046	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.987	-0.006	1.848	7683636	2.59		103	21190	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.989	-0.008	1.000	7138289	2.53			2182	
813.00 > 169.00	4.981	4.989	-0.008	1.000	1127804		6.33(2.86-8.58)		8335	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.354	-0.010	1.000	7223481	2.54			2062	
913.00 > 169.00	5.344	5.354	-0.010	1.000	891804		8.10(3.83-11.48)		5703	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:44:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_010.d

Injection Date: 21-Mar-2018 19:26:58 Instrument ID: A8_N

Lims ID: ICV Full

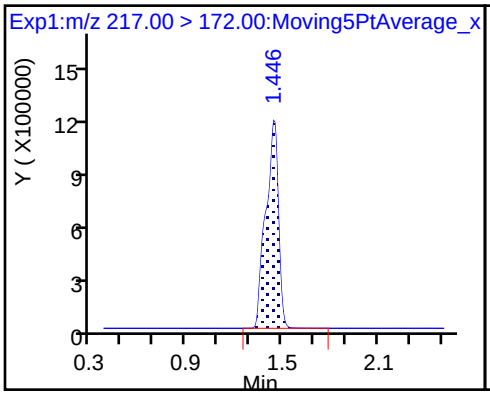
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

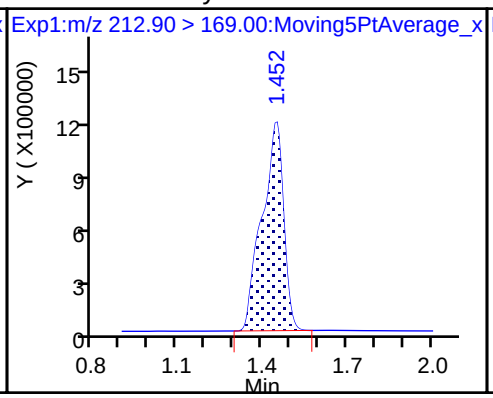
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

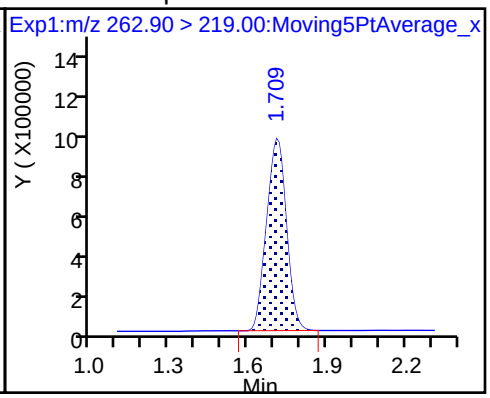
D 1 13C4 PFBA



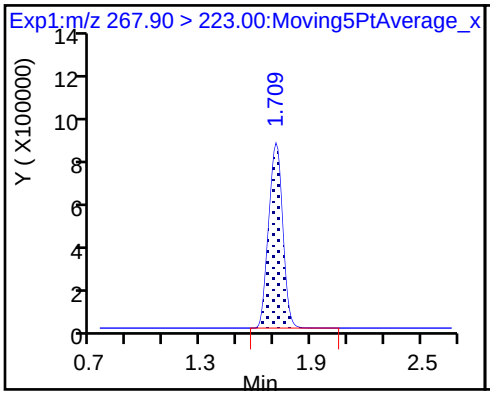
2 Perfluorobutyric acid



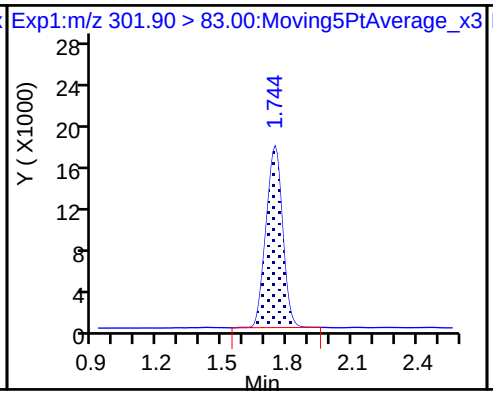
4 Perfluoropentanoic acid



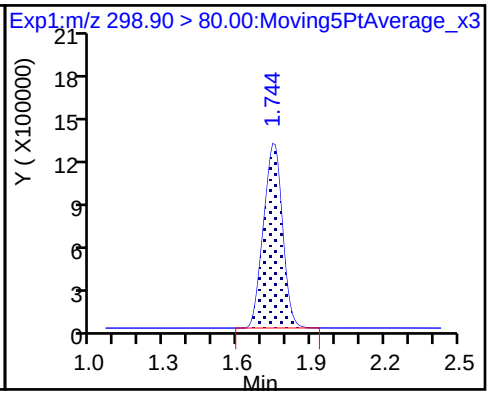
D 3 13C5-PFPeA



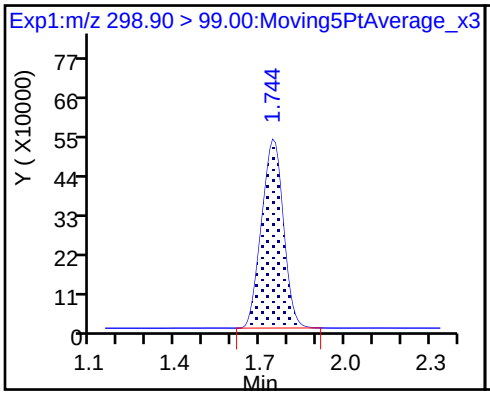
D 47 13C3-PFBS



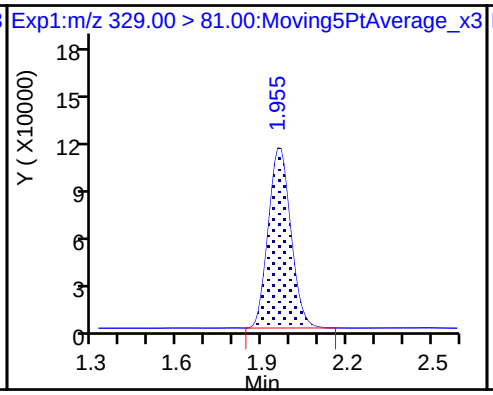
5 Perfluorobutanesulfonic acid



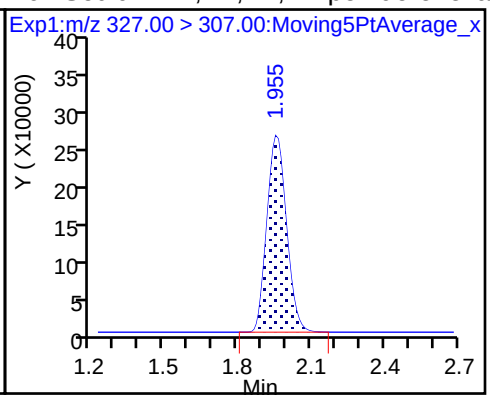
5 Perfluorobutanesulfonic acid



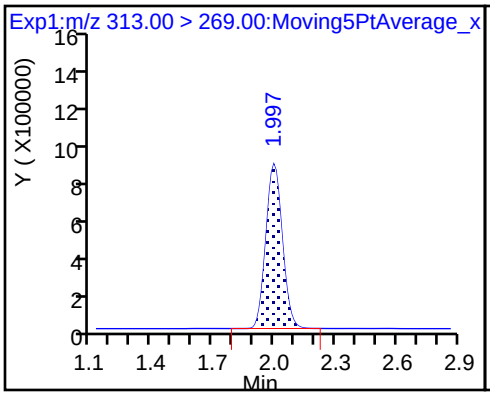
D 60 M2-4:2FTS



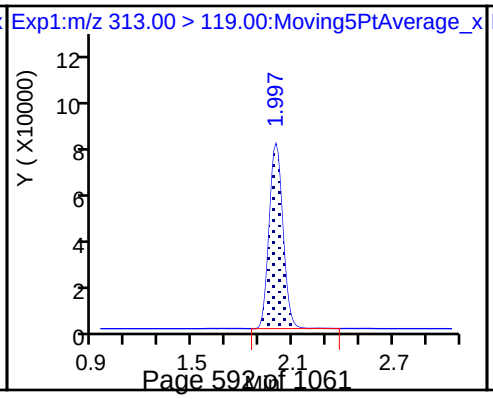
61 Sodium 1H,1H,2H,2H-perfluorohexane



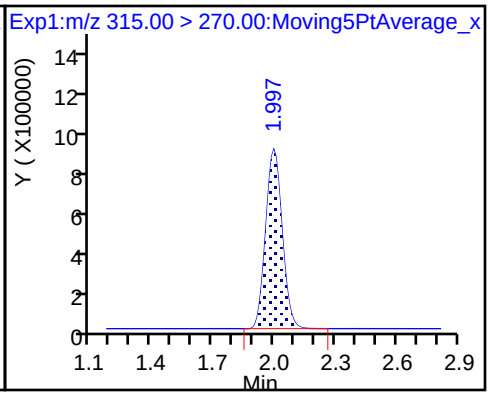
6 Perfluorohexanoic acid



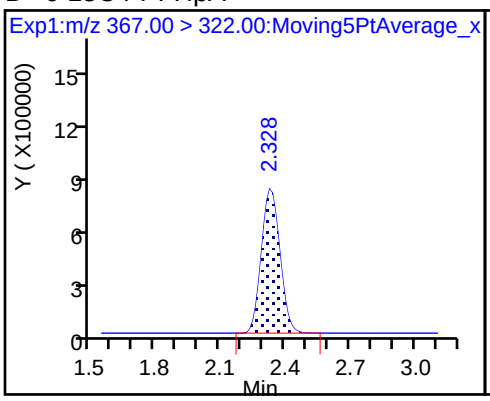
6 Perfluorohexanoic acid



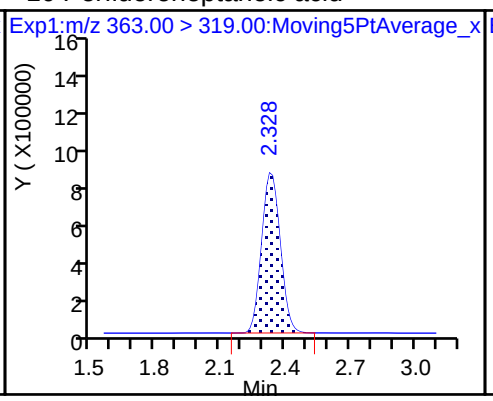
D 7 13C2 PFHxA



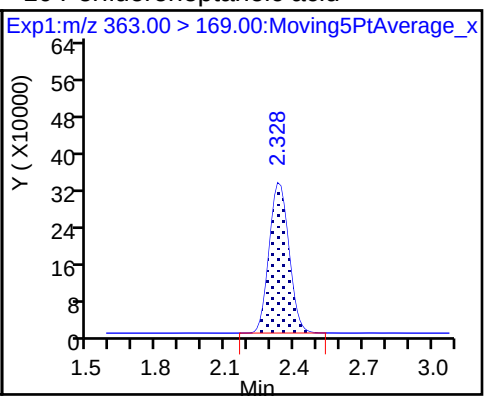
D 9 13C4-PFHpA



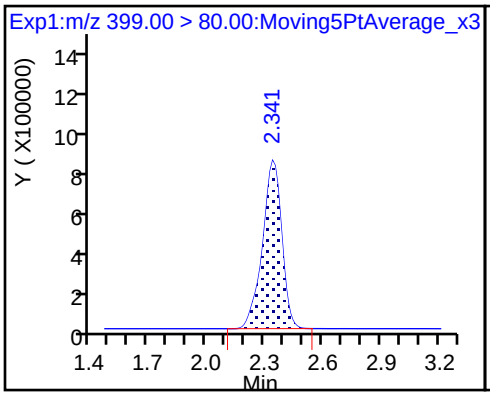
10 Perfluoroheptanoic acid



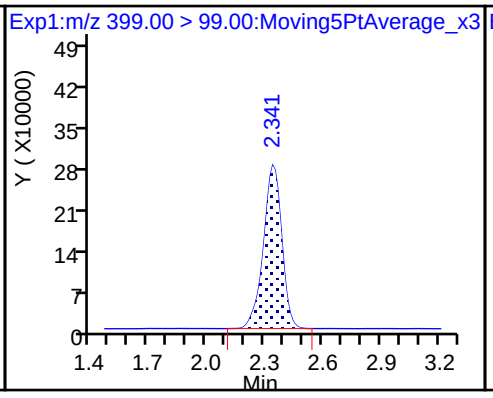
10 Perfluoroheptanoic acid



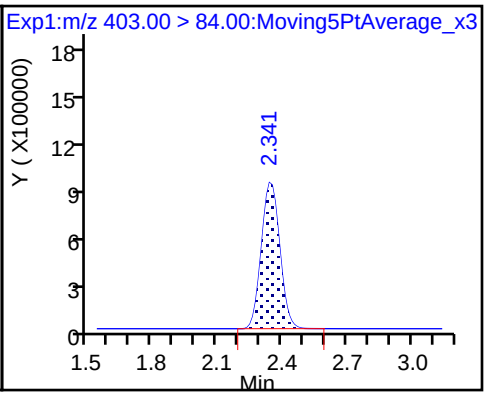
8 Perfluorohexanesulfonic acid



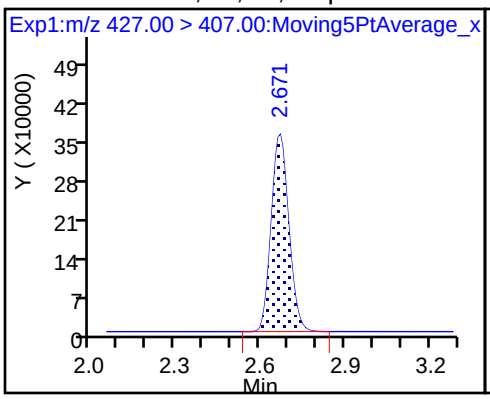
8 Perfluorohexanesulfonic acid



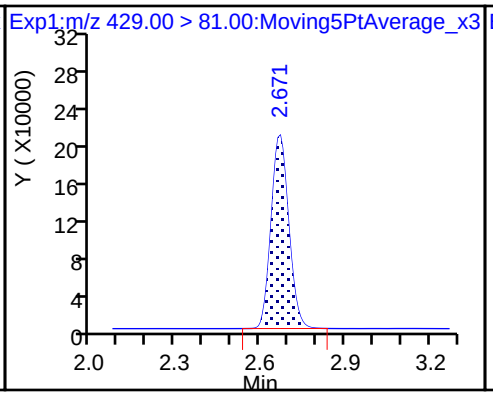
D 11 18O2 PFHxS



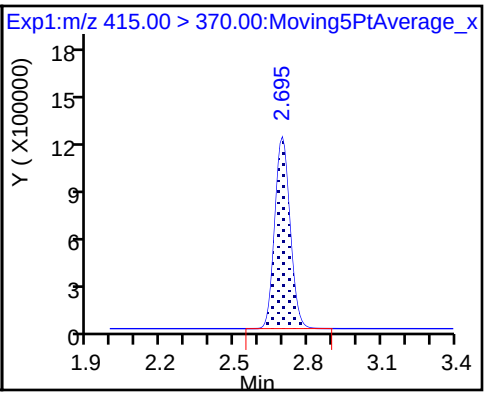
13 Sodium 1H,1H,2H,2H-perfluorooctan



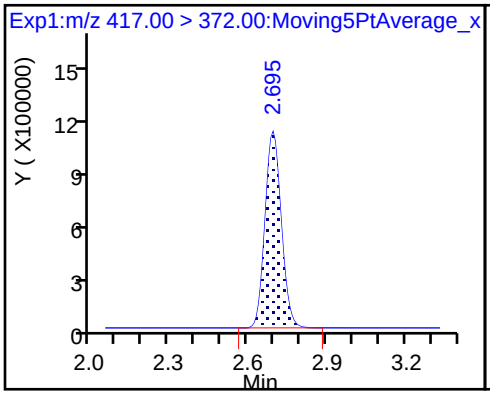
D 12 M2-6:2FTS



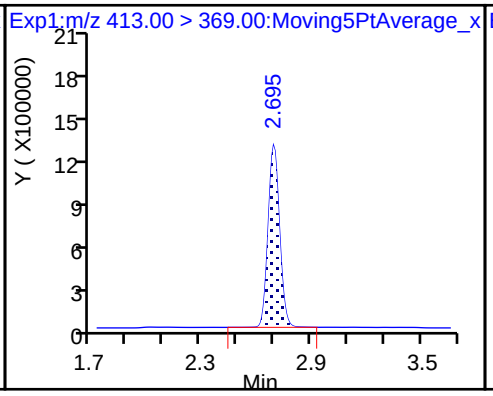
* 62 13C2-PFOA



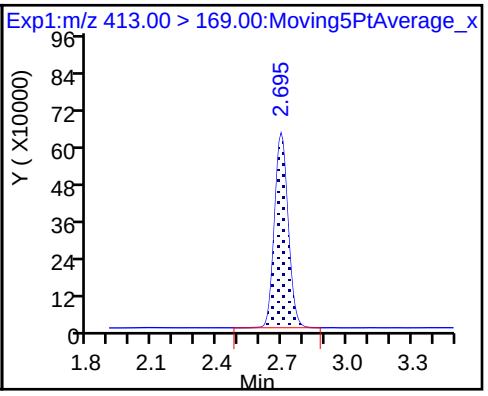
D 14 13C4 PFOA



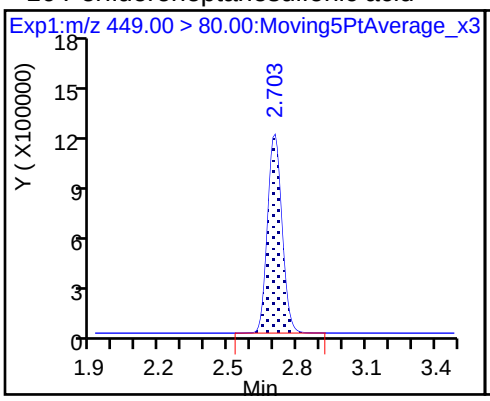
15 Perfluorooctanoic acid



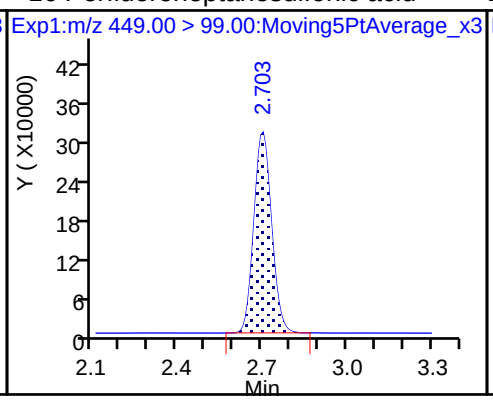
15 Perfluorooctanoic acid



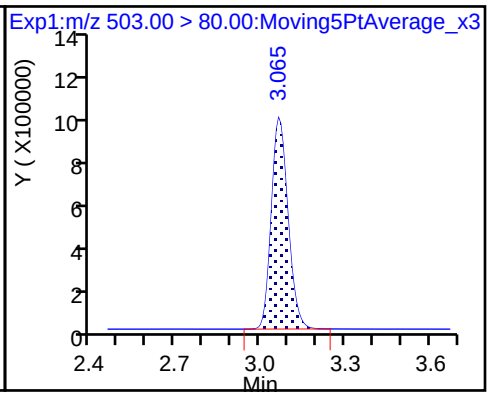
16 Perfluoroheptanesulfonic acid



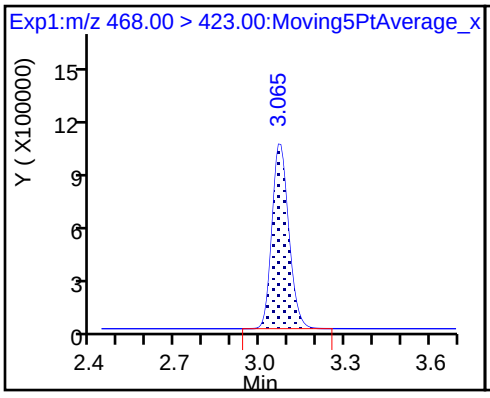
16 Perfluoroheptanesulfonic acid



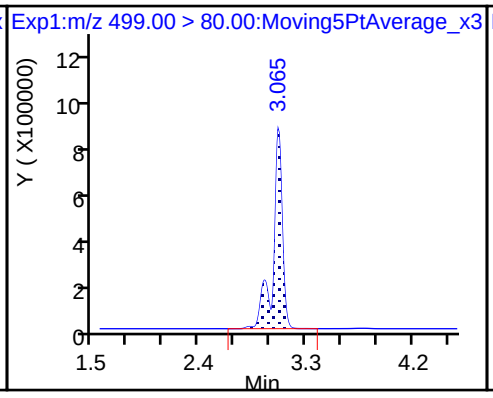
D 18 13C4 PFOS



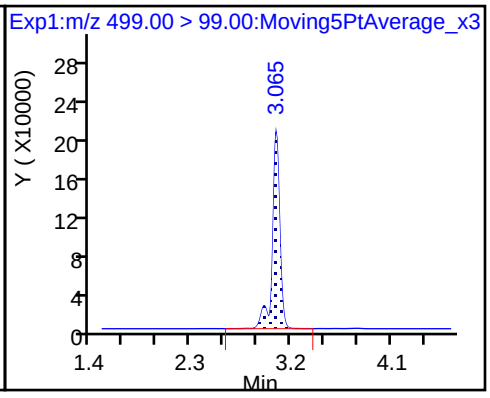
D 19 13C5 PFNA



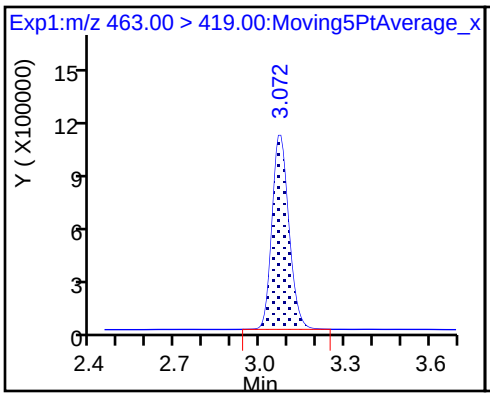
17 Perfluorooctane sulfonic acid



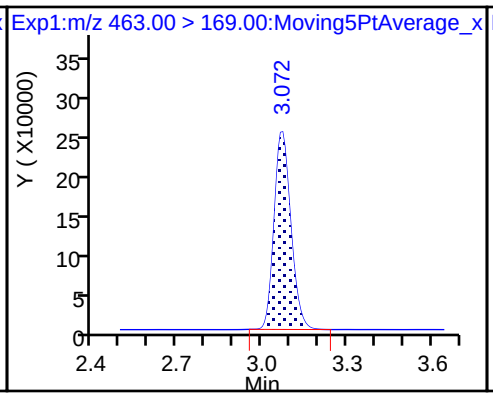
17 Perfluorooctane sulfonic acid



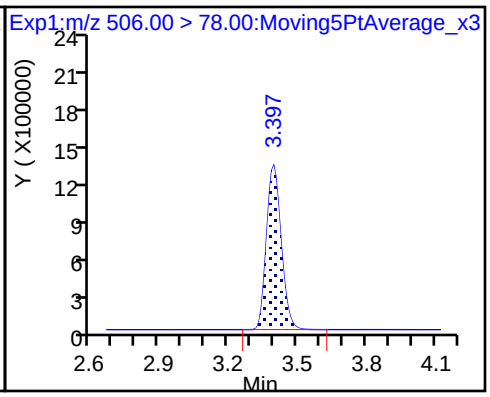
20 Perfluorononanoic acid



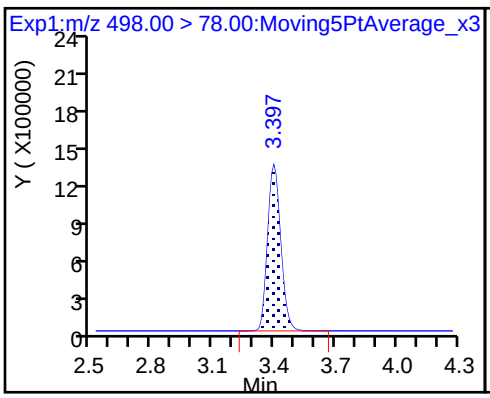
20 Perfluorononanoic acid



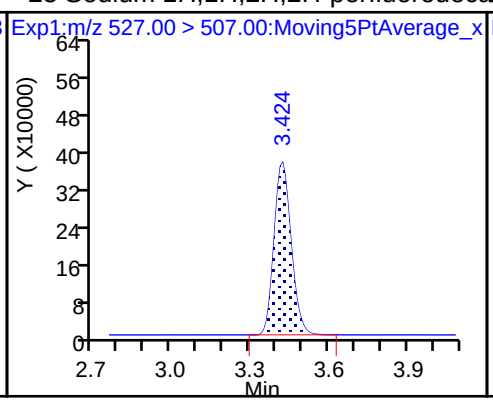
D 21 13C8 FOSA



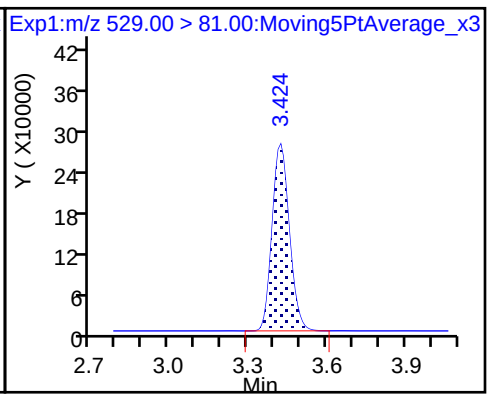
22 Perfluorooctane Sulfonamide



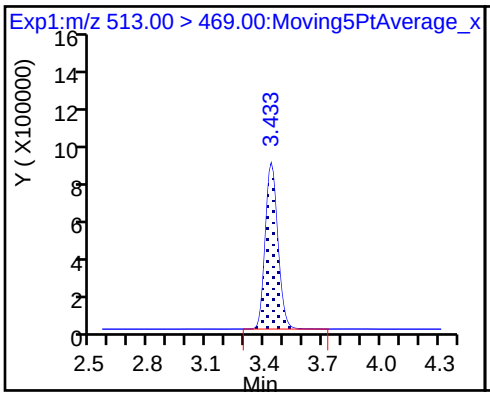
25 Sodium 1H,1H,2H,2H-perfluorodecane



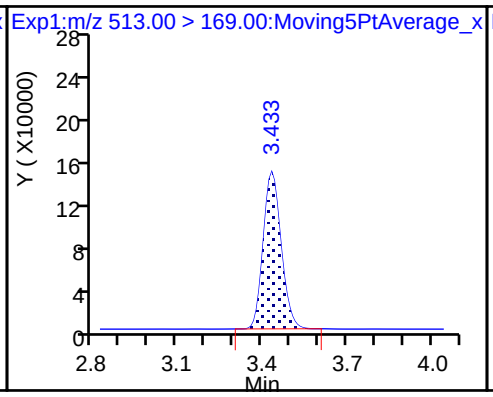
D 26 M2-8:2FTS



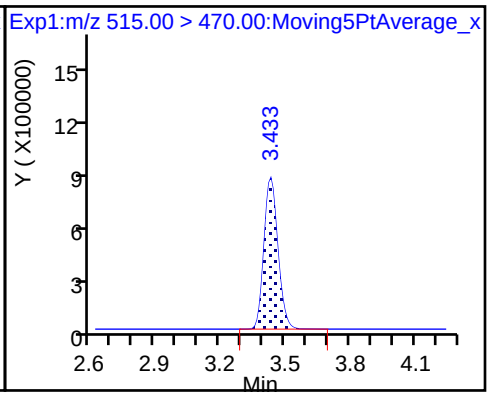
24 Perfluorodecanoic acid



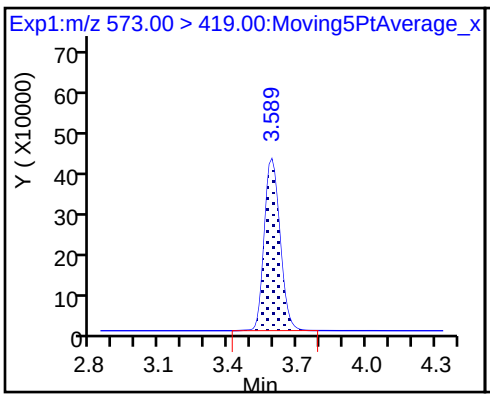
24 Perfluorodecanoic acid



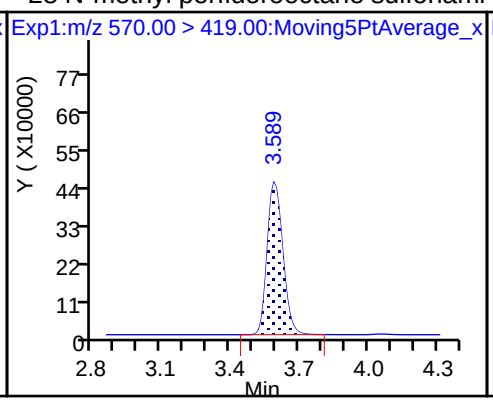
D 23 13C2 PFDA



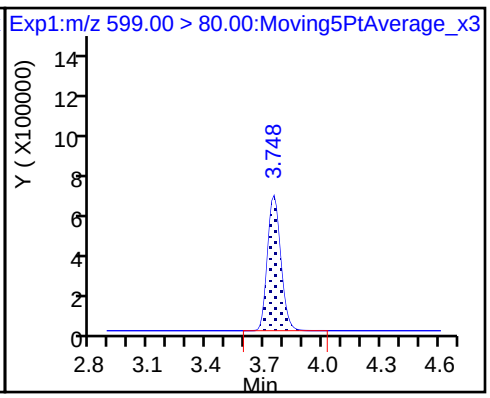
D 27 d3-NMeFOSAA



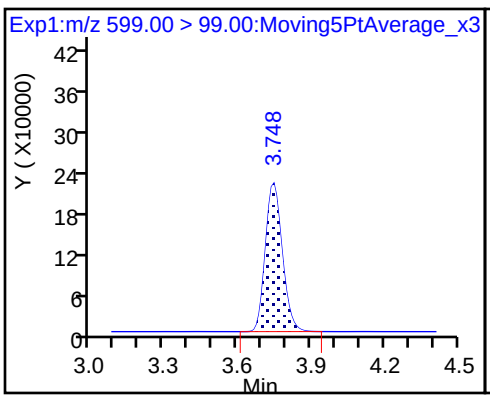
28 N-methyl perfluorooctane sulfonami



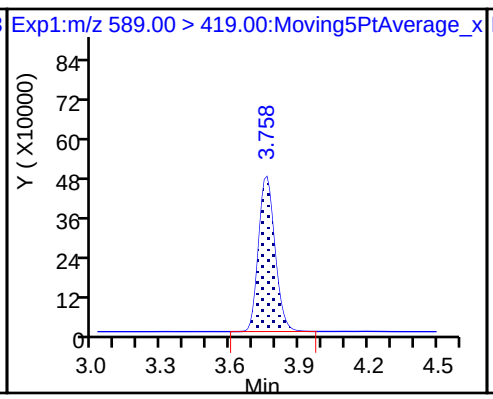
29 Perfluorodecane Sulfonic acid



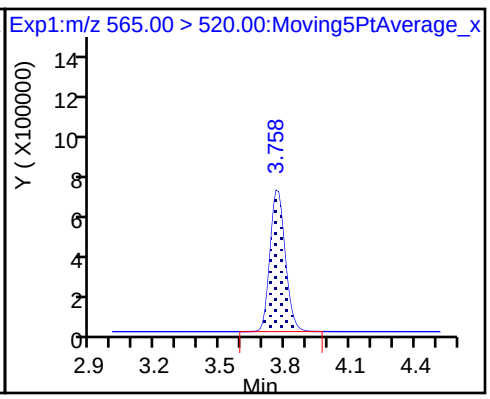
29 Perfluorodecane Sulfonic acid



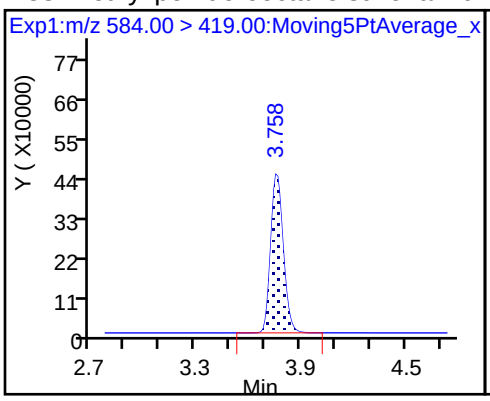
D 32 d5-NEtFOSAA



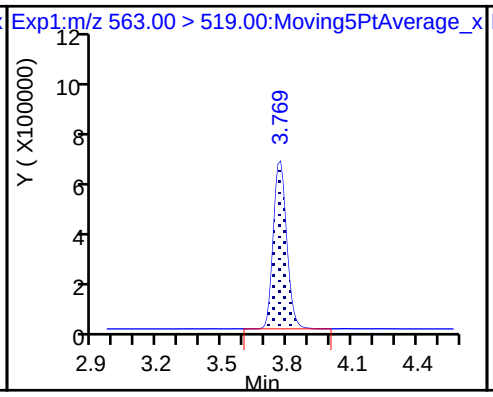
D 30 13C2 PFUnA



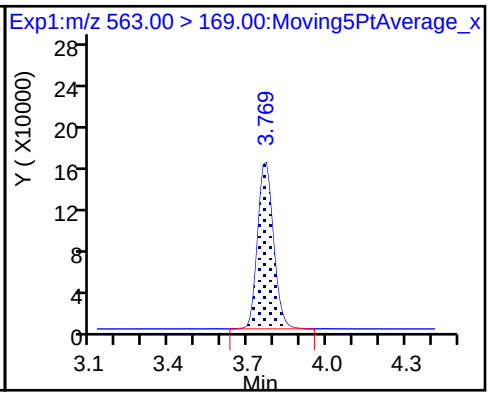
33 N-ethyl perfluorooctane sulfonamid



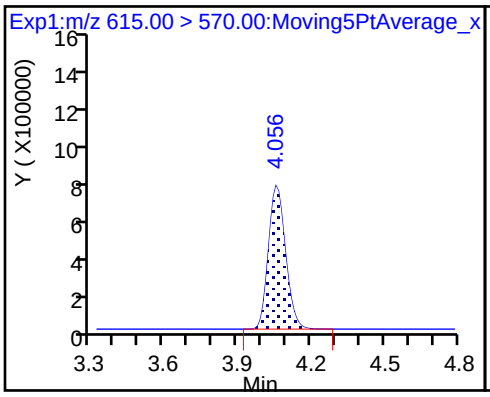
31 Perfluoroundecanoic acid



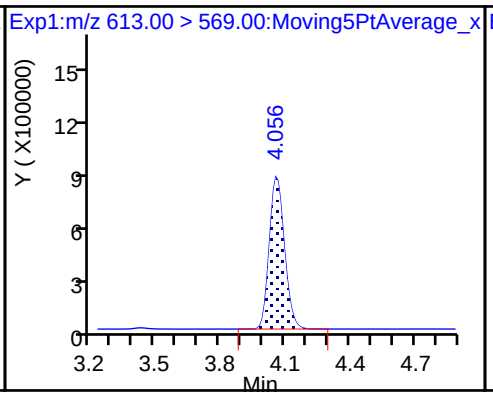
31 Perfluoroundecanoic acid



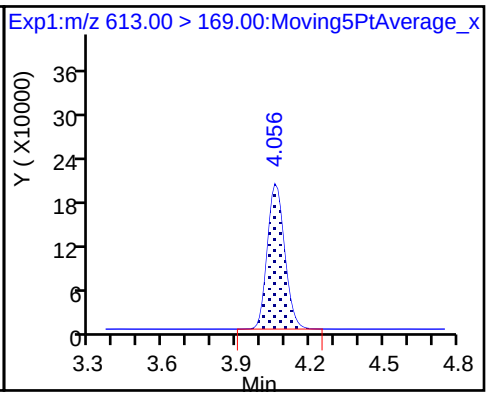
D 36 13C2 PFDoA



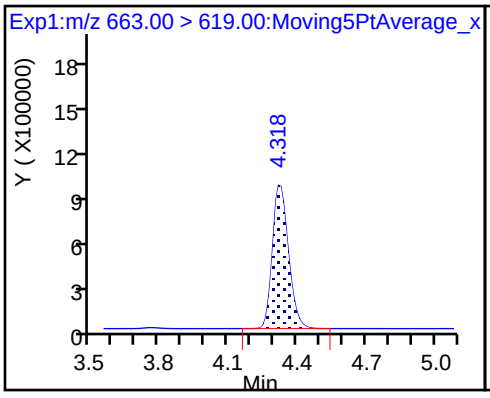
37 Perfluorododecanoic acid



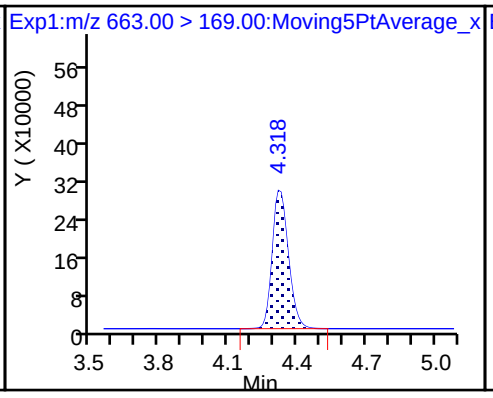
37 Perfluorododecanoic acid



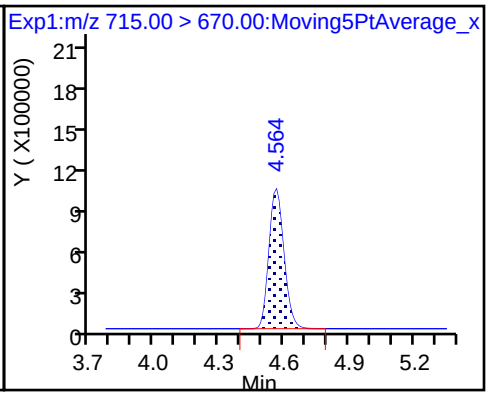
41 Perfluorotridecanoic acid



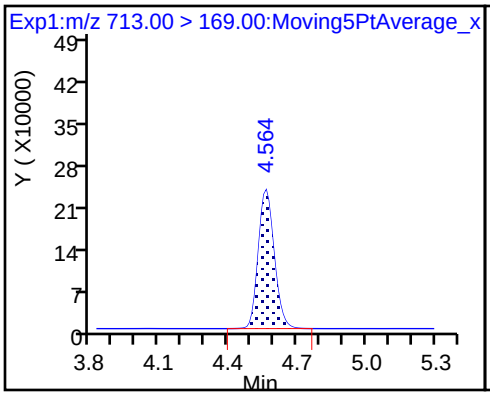
41 Perfluorotridecanoic acid



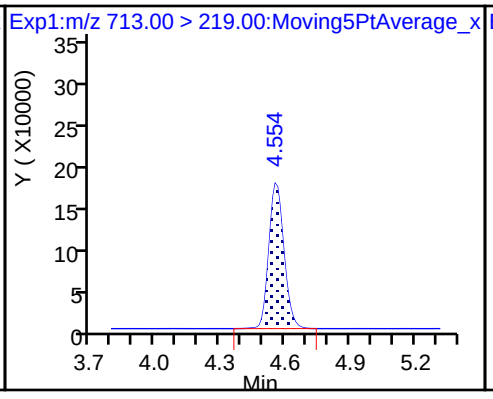
D 43 13C2-PFTeDA



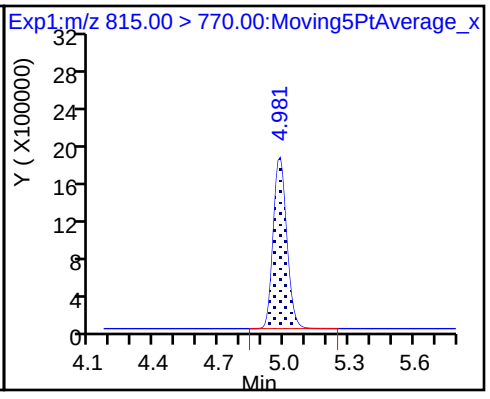
42 Perfluorotetradecanoic acid



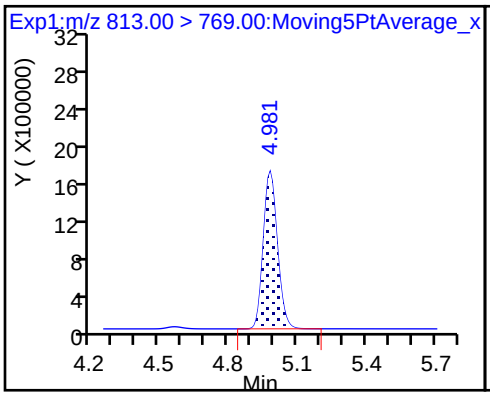
42 Perfluorotetradecanoic acid



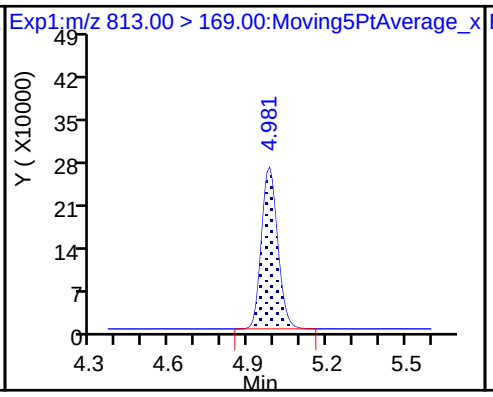
D 44 13C2-PFHxDA



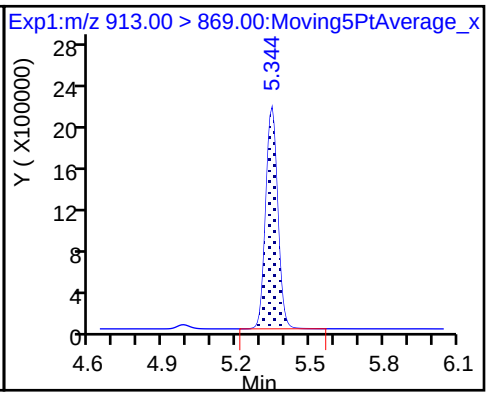
45 Perfluorohexadecanoic acid



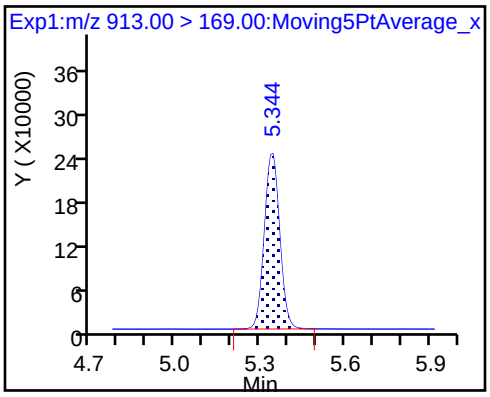
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214277/12 Calibration Date: 03/21/2018 23:21

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9420		2.50	2.50	-0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.121		2.49	2.50	-0.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.95		2.19	2.21	-1.0	50.0
4:2 FTS	AveID	16.15	14.79		2.14	2.34	-8.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9941		2.43	2.50	-2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.045		2.53	2.50	1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.057		2.16	2.28	-5.0	40.0
6:2FTS	AveID	1.744	1.718		2.34	2.37	-1.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.248		2.32	2.38	-2.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.122		2.48	2.50	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.055		2.64	2.50	5.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.094		2.28	2.32	-1.8	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.025		2.60	2.50	4.0	40.0
8:2FTS	AveID	1.276	1.312		2.46	2.40	2.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.016		2.57	2.50	2.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.042		2.60	2.50	4.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6784		2.40	2.41	-0.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9688		2.59	2.50	3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8417		2.44	2.50	-2.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.067		2.55	2.50	2.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.183		2.69	2.50	7.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2438		2.46	2.50	-1.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.028		2.80	2.50	12.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9561		2.59	2.50	3.4	50.0
13C4 PFBA	Ave	1.266	1.184		2.34	2.50	-6.5	50.0
13C5 PFPeA	Ave	0.8399	0.8072		2.40	2.50	-3.9	50.0
13C3-PFBS	Ave	0.0192	0.0187		2.27	2.33	-2.5	50.0
M2-4:2FTS	Ave	0.1324	0.1234		2.18	2.34	-6.8	50.0
13C2 PFHxA	Ave	0.9288	0.8858		2.38	2.50	-4.6	50.0
13C4-PFHpA	Ave	0.9164	0.8819		2.41	2.50	-3.8	50.0
18O2 PFHxS	Ave	1.130	1.083		2.27	2.37	-4.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214277/12 Calibration Date: 03/21/2018 23:21

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1844		2.31	2.38	-2.9	40.0
13C4 PFOA	Ave	0.9374	0.8641		2.31	2.50	-7.8	50.0
13C4 PFOS	Ave	0.8225	0.7844		2.28	2.39	-4.6	50.0
13C5 PFNA	Ave	0.8266	0.7808		2.36	2.50	-5.5	50.0
13C8 FOSA	Ave	1.109	1.046		2.36	2.50	-5.7	50.0
M2-8:2FTS	Ave	0.2565	0.2304		2.15	2.40	-10.2	40.0
13C2 PFDA	Ave	0.7245	0.6867		2.37	2.50	-5.2	50.0
d3-NMeFOSAA	Ave	0.3814	0.3651		2.39	2.50	-4.3	50.0
d5-NEtFOSAA	Ave	0.4345	0.4063		2.34	2.50	-6.5	50.0
13C2 PFUnA	Ave	0.6482	0.6135		2.37	2.50	-5.3	50.0
13C2 PFDoA	Ave	0.7355	0.6894		2.34	2.50	-6.3	50.0
13C2-PFTeDA	Ave	0.8983	0.8376		2.33	2.50	-6.8	50.0
13C2-PFHxDA	Ave	1.473	1.333		2.26	2.50	-9.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Mar-2018 23:21:58 ALS Bottle#: 14 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.538	6263259	2.34		93.5	78970	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.004	5899878	2.50		100.0	2827	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	4270427	2.40		96.1	117621	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	4786882	2.49		99.4	2960	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.735	0.010	0.649	91997	2.27		97.5	725	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.753	-0.008	1.000	6729306	2.19		99.0	31172	
298.90 > 99.00	1.745	1.753	-0.008	1.000	2894220		2.33(1.25-3.74)		19061	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.956	0.0	0.727	609582	2.18		93.2	8535	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.966	-0.010	1.000	1366285	2.14		91.5	49864	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.997	0.001	0.743	4686659	2.38		95.4	121333	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.997	0.001	1.000	4659192	2.43		97.2	15116	
313.00 > 119.00	1.998	1.997	0.001	1.000	441202		10.56(5.03-15.10)		11323	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.328	0.001	0.866	4665953	2.41		96.2	88209	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.329	2.328	0.001	1.000	4876391	2.53		101	10017	
363.00 > 169.00	2.329	2.328	0.001	1.000	1912706		2.55(1.13-3.40)		24957	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	5420741	2.27		95.8	77039	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	5510864	2.16		95.0	28087	
399.00 > 99.00	2.341	2.341	0.0	1.000	1760756		3.13(1.50-4.49)		5901	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.665	0.0	0.991	926685	2.30		97.1	21663	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.673	-0.008	1.000	1589118	2.34		98.6	61448	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.688	0.001	1.000	4571786	2.30		92.2	70991	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.697	-0.008		5290619	2.50			61255	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.003	5129257	2.48		99.3	1720	
413.00 > 169.00	2.697	2.697	0.0	1.003	2609781		1.97(0.84-2.52)		7256	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.704	-0.007	1.000	4929466	2.32		97.4	46613	
449.00 > 99.00	2.697	2.704	-0.007	1.000	1339215		3.68(1.94-5.82)		13719	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.140	3967417	2.28		95.4	35439	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	4130934	2.36		94.5	73876	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4211477	2.28		98.2	17489	
499.00 > 99.00	3.065	3.065	0.0	1.000	908351		4.64(2.31-6.93)		8668	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	4358316	2.64		106	5911	
463.00 > 169.00	3.065	3.072	-0.007	1.000	1027164		4.24(1.90-5.69)		25189	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.011	1.264	5532135	2.36		94.3	57685	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.398	0.001	1.000	5669538	2.60		104	71565	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.271	1167723	2.15		89.8	19988	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.274	3632900	2.37		94.8	48118	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.426	-0.009	1.000	1531748	2.46		103	30980	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.435	-0.009	1.000	3690382	2.57		103	15527	
513.00 > 169.00	3.426	3.435	-0.009	1.000	626605		5.89(2.36-7.09)		2196	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.581	3.578	0.003	1.332	1931639	2.39		95.7	31790	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.592	3.590	0.002	1.003	2013505	2.60		104	12415	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.748	-0.008	1.000	2713858	2.40		99.8	51577	
599.00 > 99.00	3.740	3.748	-0.008	1.000	897285		3.02(1.39-4.16)		23441	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.748	0.012	1.398	3246004	2.37		94.7	61653	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.748	0.002	1.395	2149601	2.34		93.5	11811	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.768	-0.008	1.003	2082450	2.59		104	84860	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.760	3.768	-0.008	1.000	2732169	2.44		97.6	15438	
563.00 > 169.00	3.760	3.768	-0.008	1.000	637349		4.29(2.12-6.36)		14119	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.047	0.012	1.510	3647536	2.34		93.7	32945	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.059	4.057	0.002	1.000	3891726	2.55		102	4010	
613.00 > 169.00	4.059	4.057	0.002	1.000	887380		4.39(2.13-6.40)		12266	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.328	-0.010	1.000	4314423	2.69		107	3326	
663.00 > 169.00	4.318	4.328	-0.010	1.000	1263033		3.42(1.25-3.76)		20320	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.554	0.011	1.698	4431420	2.33		93.2	30552	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.565	4.564	0.001	1.000	1080172	2.46		98.4	14897	
713.00 > 219.00	4.554	4.564	-0.010	0.998	815566		1.32(0.71-2.13)		13151	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.972	0.010	1.853	7050958	2.26		90.5	21677	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.982	4.981	0.001	1.000	7247728	2.80		112	2269	
813.00 > 169.00	4.982	4.981	0.001	1.000	1049664		6.90(2.86-8.58)		7881	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.338	5.344	-0.006	1.000	6741176	2.58		103	2063	
913.00 > 169.00	5.338	5.344	-0.006	1.000	822096		8.20(3.83-11.48)		5106	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 12:53:10 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_017.d

Injection Date: 21-Mar-2018 23:21:58 Instrument ID: A8_N

Lims ID: CCV L5

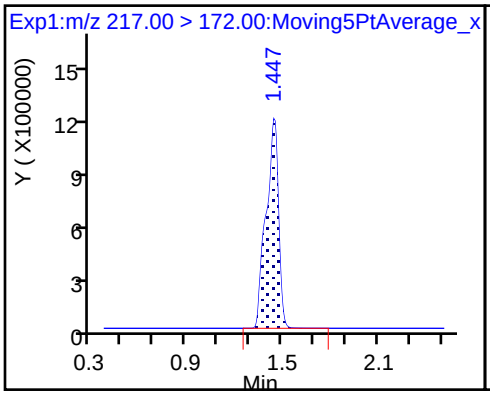
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 12

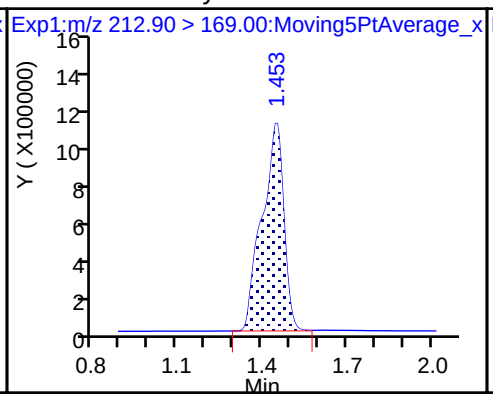
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

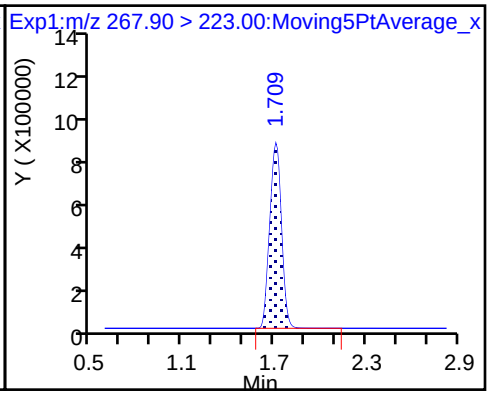
D 1 13C4 PFBA



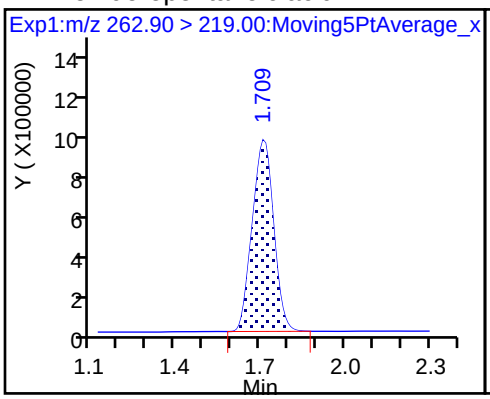
2 Perfluorobutyric acid



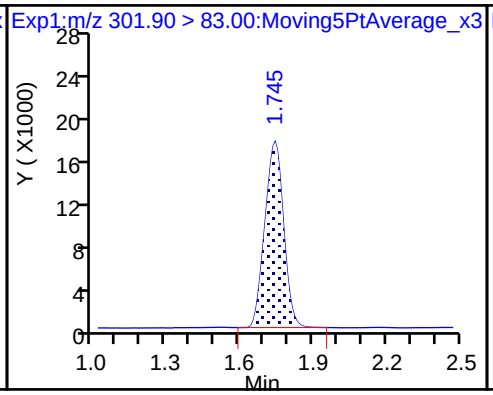
D 3 13C5-PFPeA



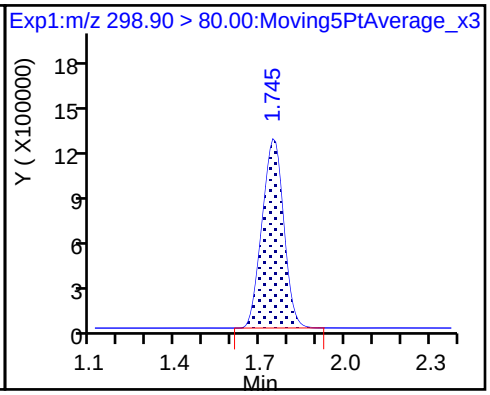
4 Perfluoropentanoic acid



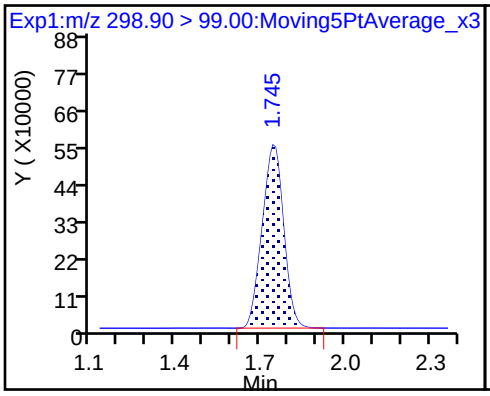
D 47 13C3-PFBS



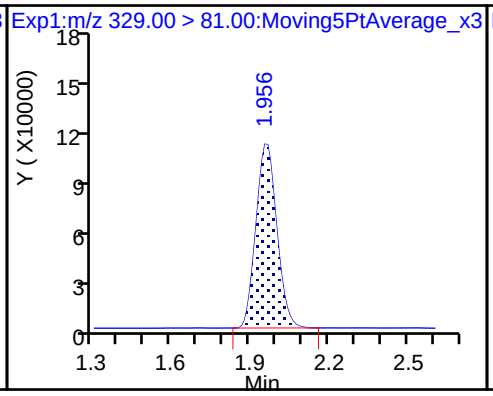
5 Perfluorobutanesulfonic acid



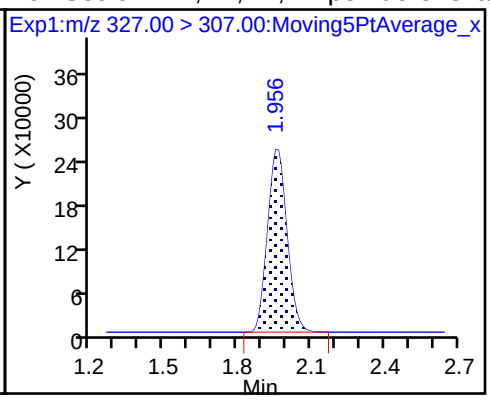
5 Perfluorobutanesulfonic acid



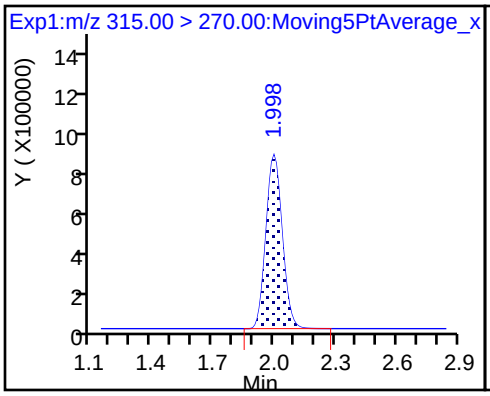
D 60 M2-4:2FTS



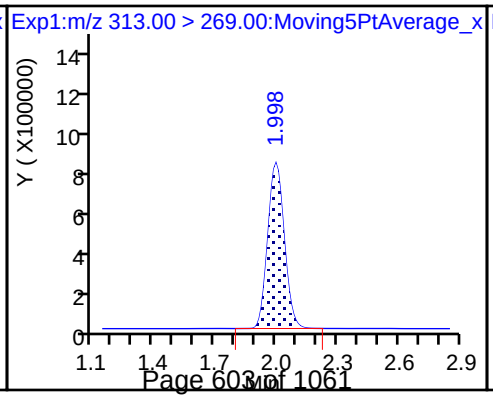
61 Sodium 1H,1H,2H,2H-perfluorohexane



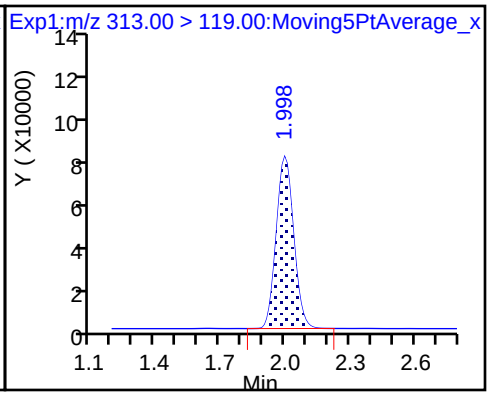
D 7 13C2 PFHxA



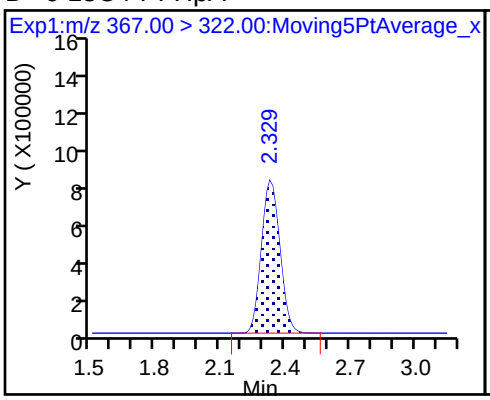
6 Perfluorohexanoic acid



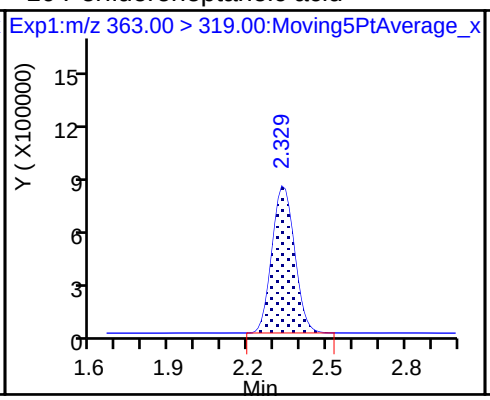
6 Perfluorohexanoic acid



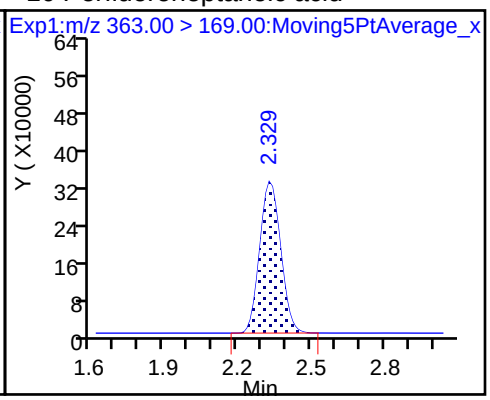
D 9 13C4-PFHpA



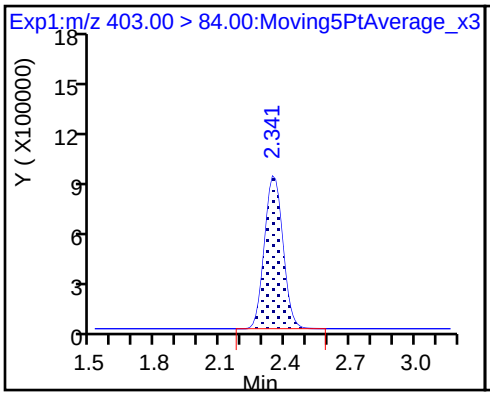
10 Perfluoroheptanoic acid



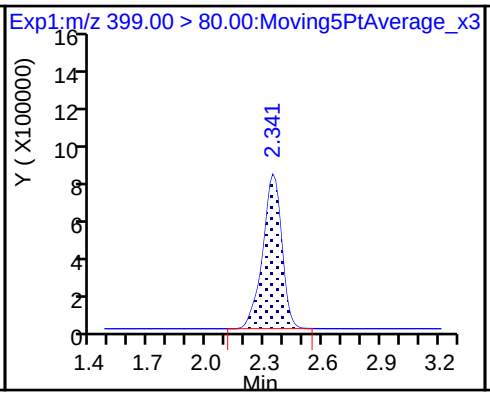
10 Perfluoroheptanoic acid



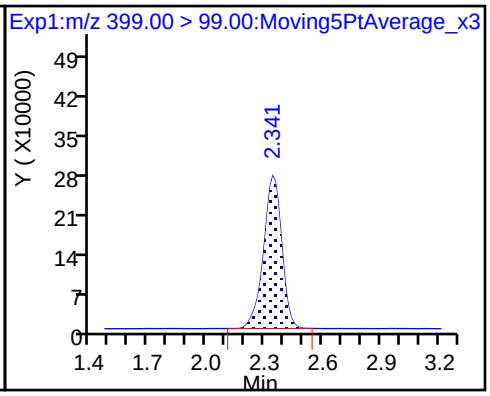
D 11 18O2 PFHxS



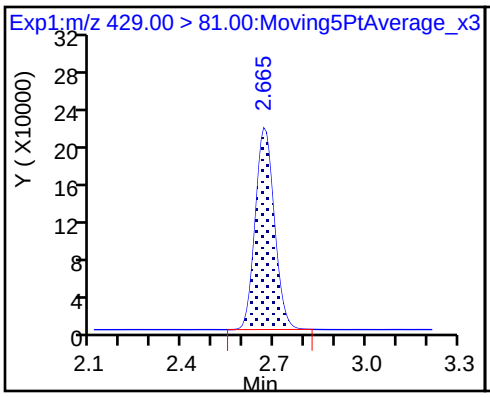
8 Perfluorohexanesulfonic acid



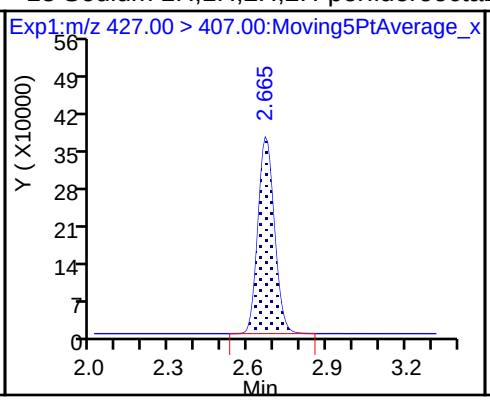
8 Perfluorohexanesulfonic acid



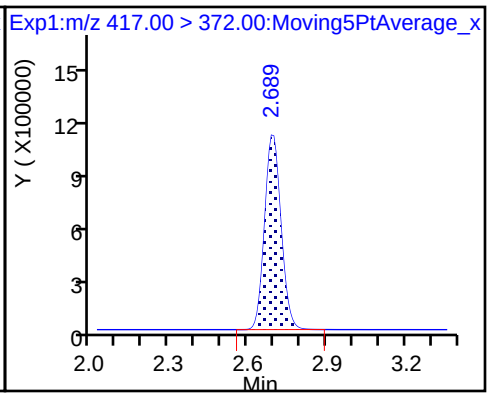
D 12 M2-6:2FTS



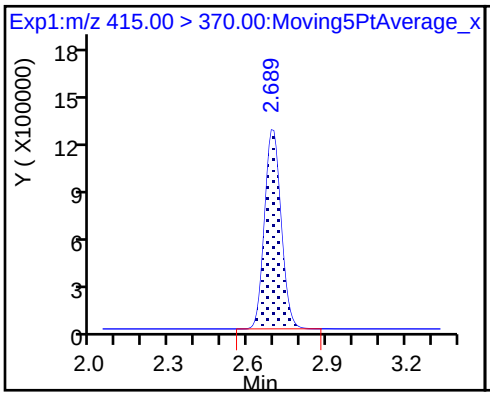
13 Sodium 1H,1H,2H,2H-perfluorooctane



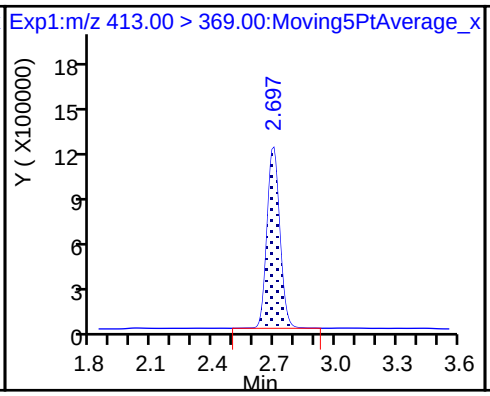
D 14 13C4 PFOA



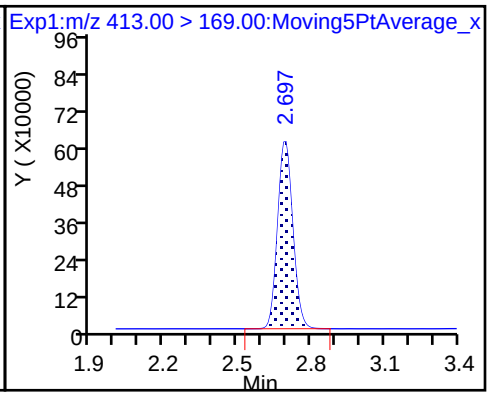
* 62 13C2-PFOA



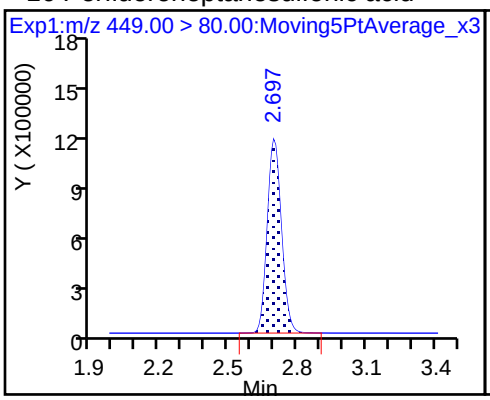
15 Perfluorooctanoic acid



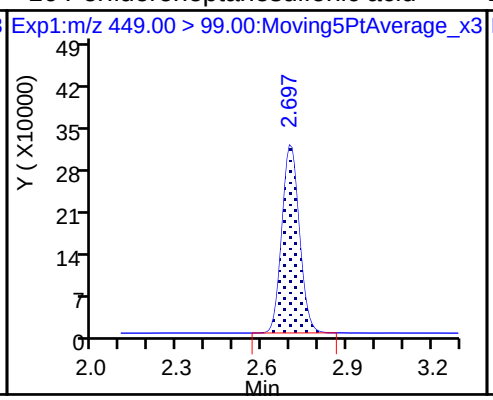
15 Perfluorooctanoic acid



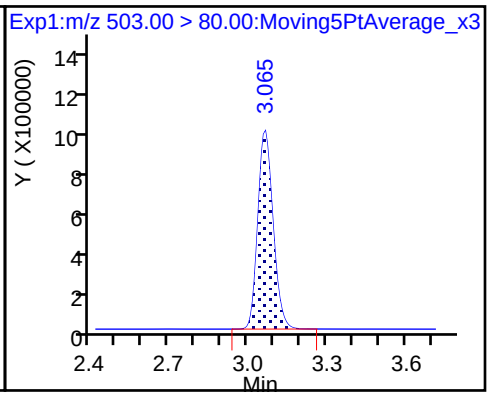
16 Perfluoroheptanesulfonic acid



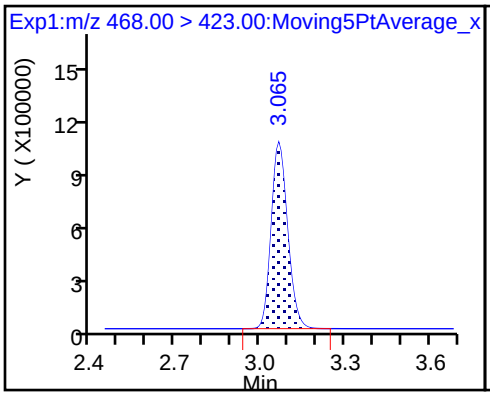
16 Perfluoroheptanesulfonic acid



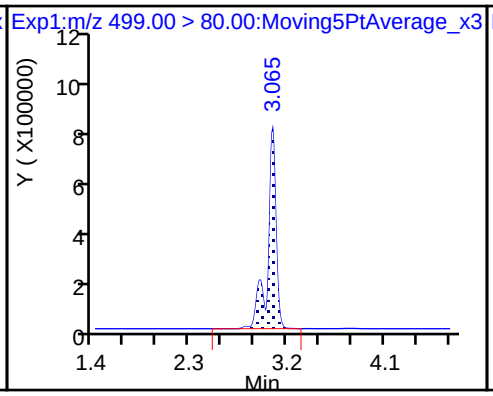
D 18 13C4 PFOS



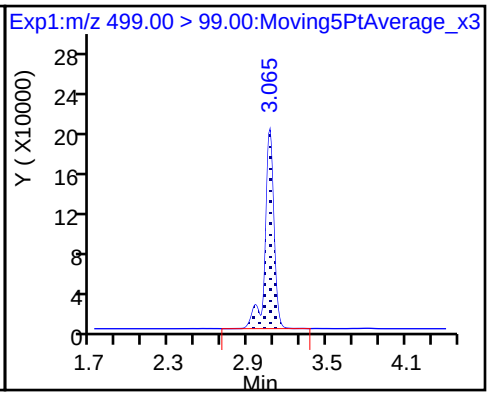
D 19 13C5 PFNA



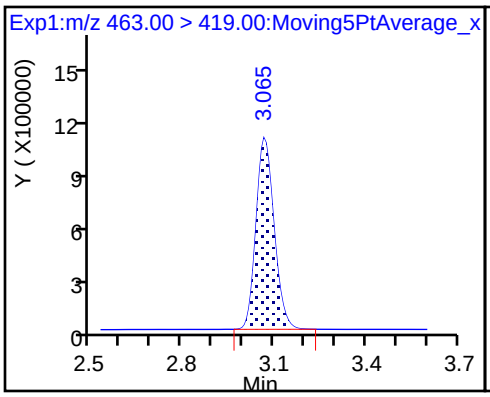
17 Perfluorooctane sulfonic acid



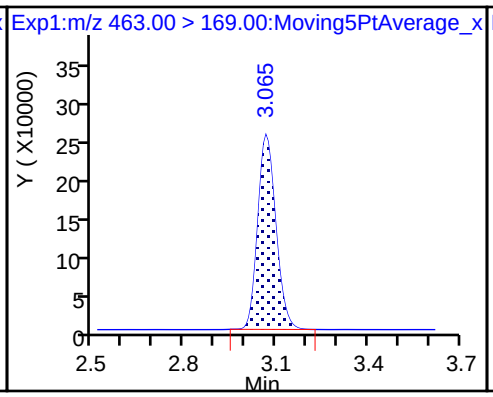
17 Perfluorooctane sulfonic acid



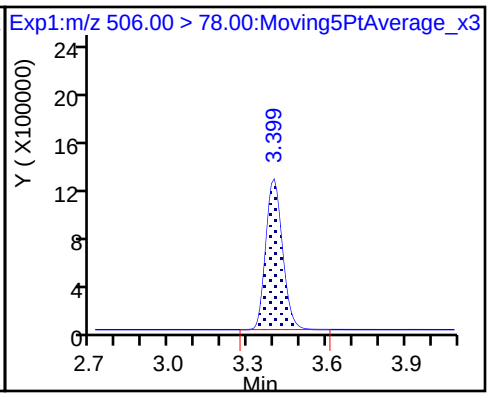
20 Perfluorononanoic acid



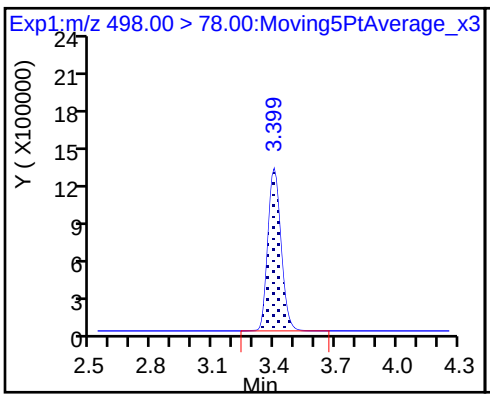
20 Perfluorononanoic acid



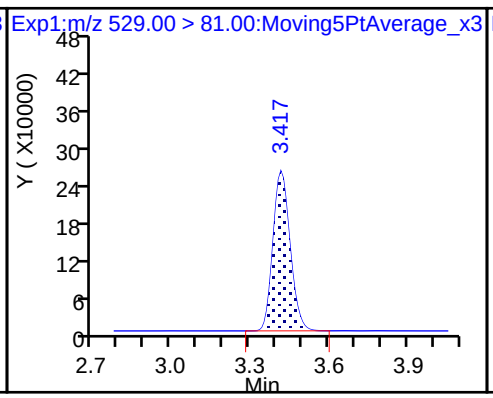
D 21 13C8 FOSA



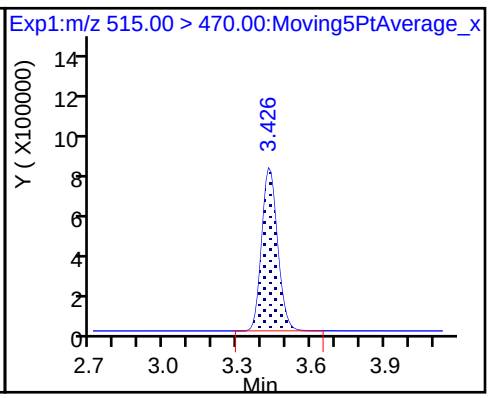
22 Perfluorooctane Sulfonamide



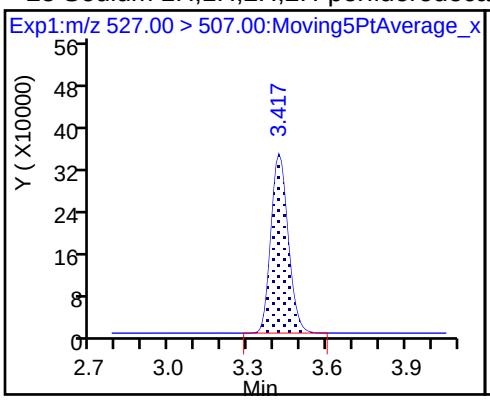
D 26 M2-8:2FTS



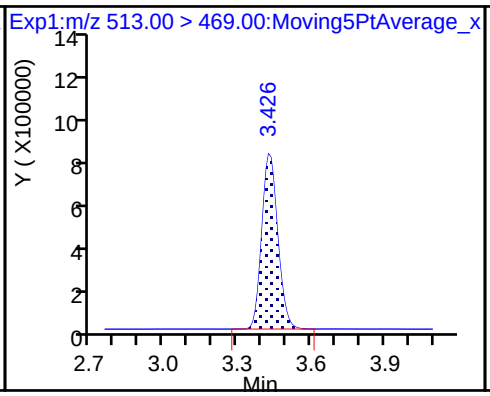
D 23 13C2 PFDA



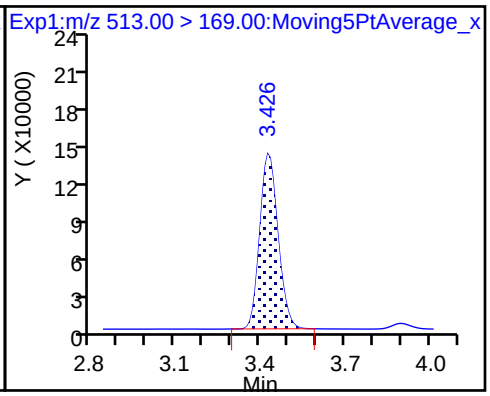
25 Sodium 1H,1H,2H,2H-perfluorodecane



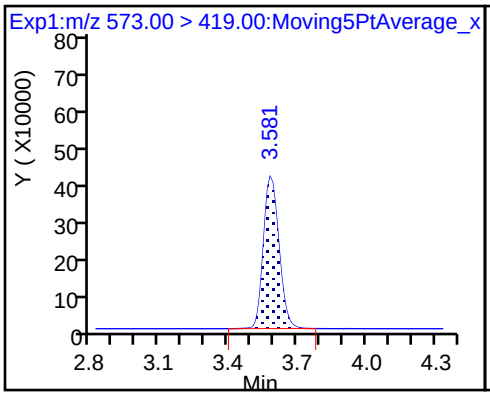
24 Perfluorodecanoic acid



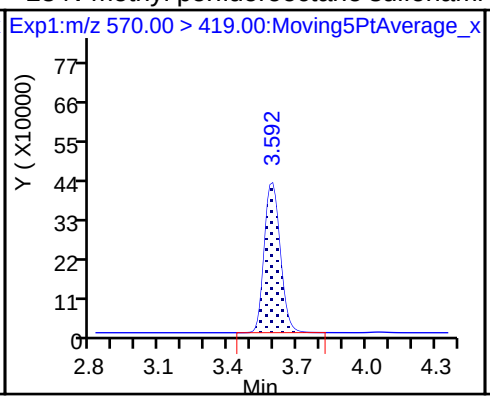
24 Perfluorodecanoic acid



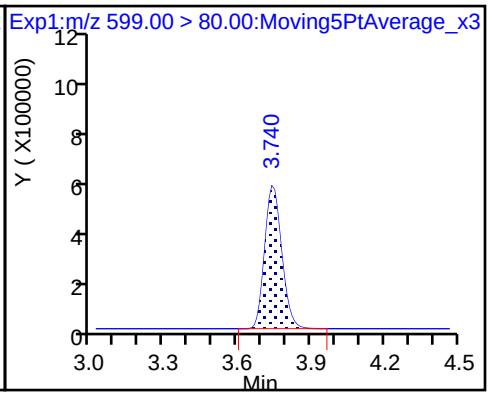
D 27 d3-NMeFOSAA



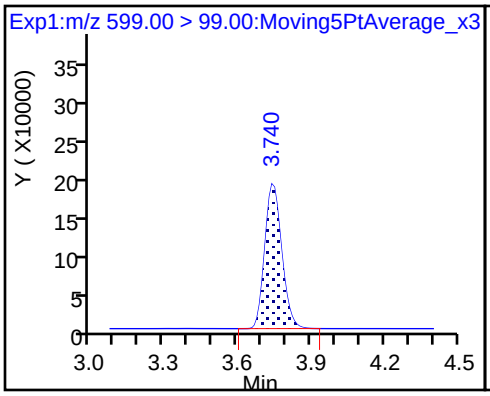
28 N-methyl perfluorooctane sulfonami



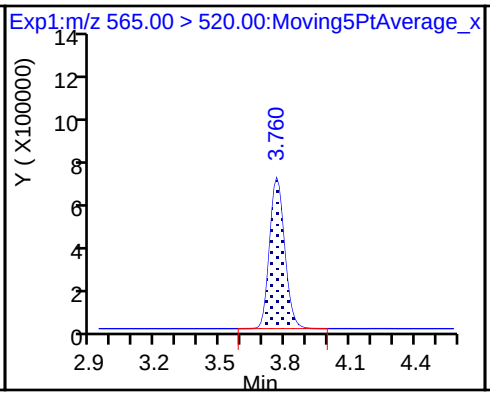
29 Perfluorodecane Sulfonic acid



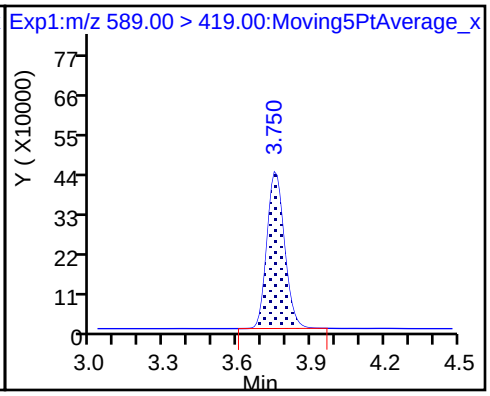
29 Perfluorodecane Sulfonic acid



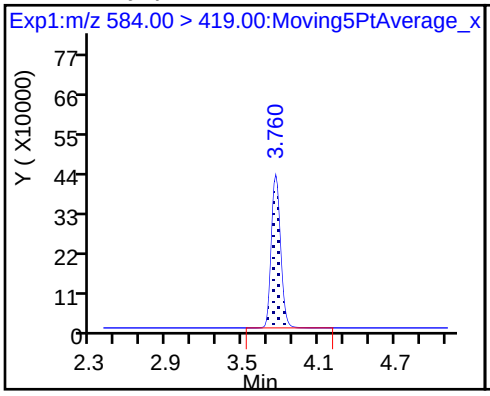
D 30 13C2 PFUnA



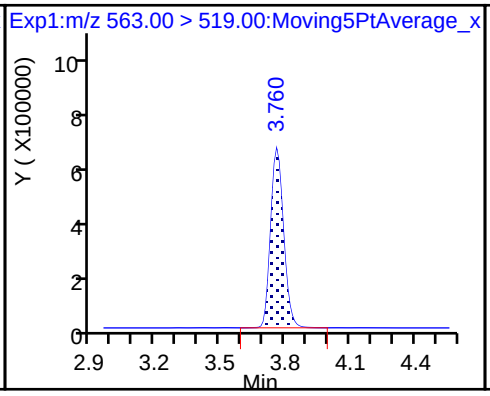
D 32 d5-NEtFOSAA



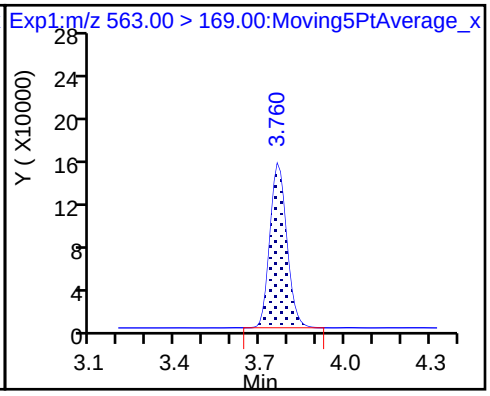
33 N-ethyl perfluorooctane sulfonamid



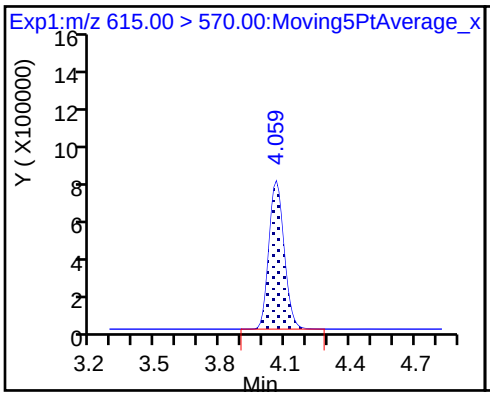
31 Perfluoroundecanoic acid



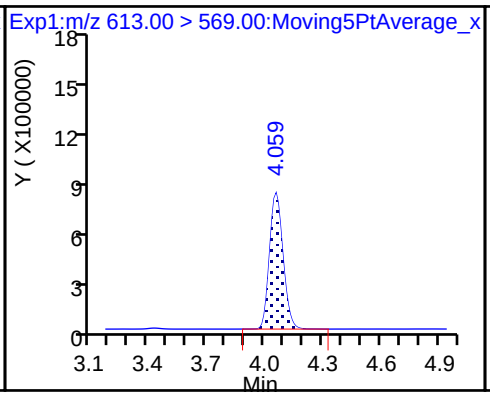
31 Perfluoroundecanoic acid



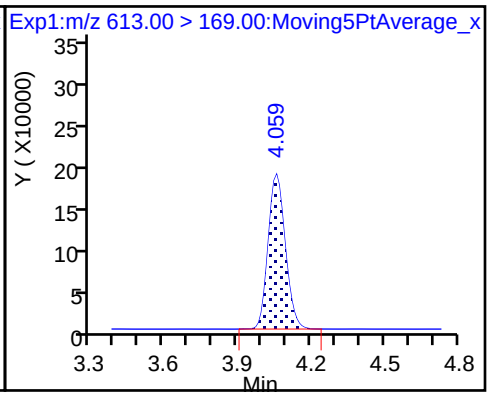
D 36 13C2 PFDoA



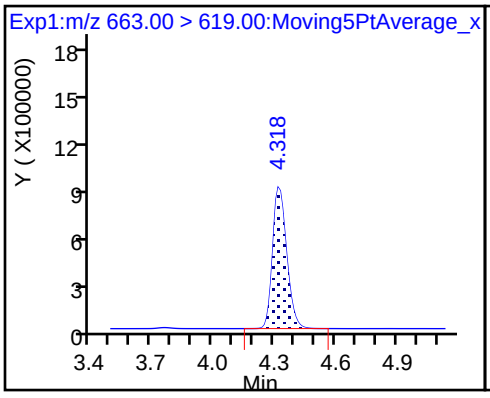
37 Perfluorododecanoic acid



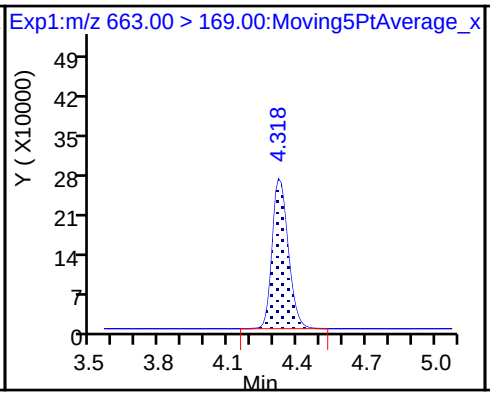
37 Perfluorododecanoic acid



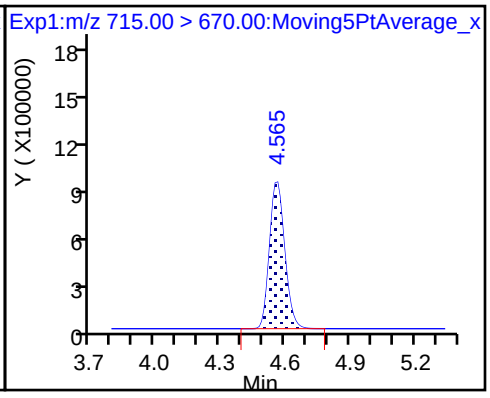
41 Perfluorotridecanoic acid



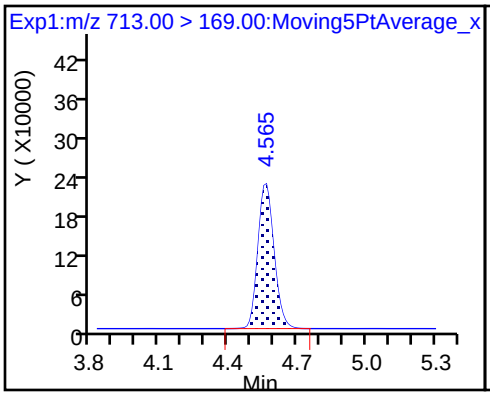
41 Perfluorotridecanoic acid



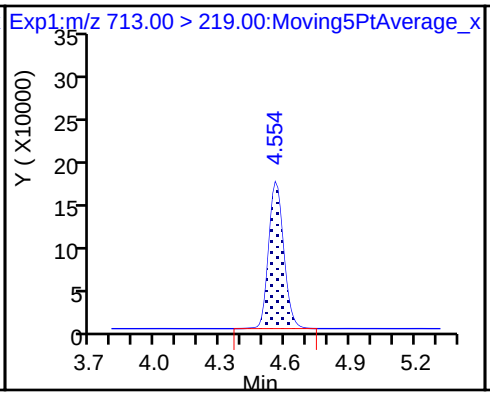
D 43 13C2-PFTeDA



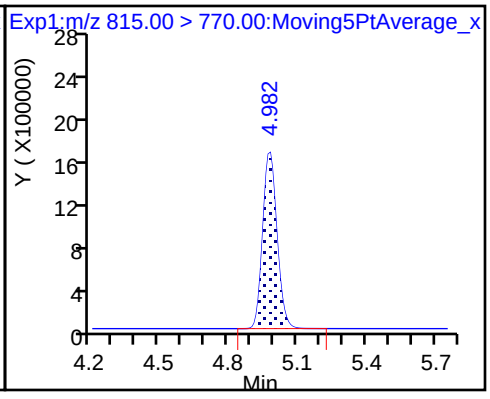
42 Perfluorotetradecanoic acid



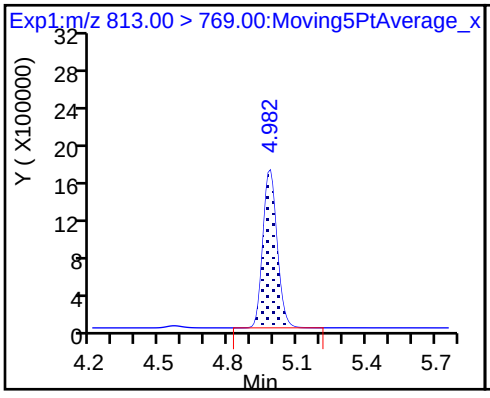
42 Perfluorotetradecanoic acid



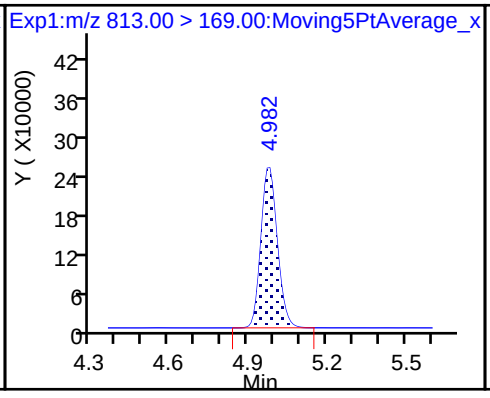
D 44 13C2-PFHxDA



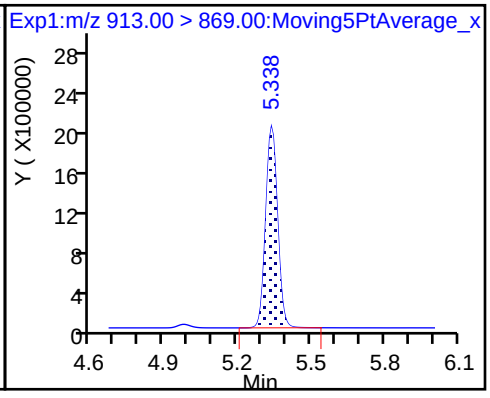
45 Perfluorohexadecanoic acid



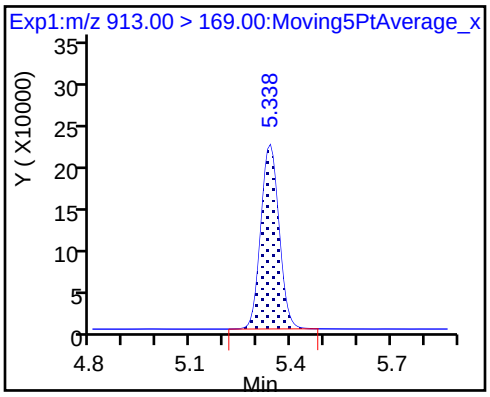
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214277/23 Calibration Date: 03/22/2018 00:48

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8818		0.936	1.00	-6.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.094		0.970	1.00	-3.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.39		0.869	0.884	-1.7	50.0
4:2 FTS	AveID	16.15	15.32		0.886	0.934	-5.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9462		0.926	1.00	-7.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9456		0.914	1.00	-8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.019		0.834	0.910	-8.4	40.0
6:2FTS	AveID	1.744	1.592		0.865	0.948	-8.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.096		0.970	1.00	-3.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.339		0.995	0.952	4.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.119		0.932	0.928	0.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.002		1.00	1.00	0.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9682		0.982	1.00	-1.8	40.0
8:2FTS	AveID	1.276	1.166		0.875	0.958	-8.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9292		0.940	1.00	-6.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9840		0.983	1.00	-1.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7129		1.01	0.964	4.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9413		1.01	1.00	0.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7593		0.881	1.00	-11.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.017		0.972	1.00	-2.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.117		1.02	1.00	1.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2229		0.900	1.00	-10.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9431		1.01	1.00	1.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9398		1.02	1.00	1.6	50.0
13C4 PFBA	Ave	1.266	1.270		2.51	2.50	0.3	50.0
13C5 PFPeA	Ave	0.8399	0.8564		2.55	2.50	2.0	50.0
13C3-PFBS	Ave	0.0192	0.0198		2.40	2.33	3.4	50.0
M2-4:2FTS	Ave	0.1324	0.1353		2.39	2.34	2.2	50.0
13C2 PFHxA	Ave	0.9288	0.9599		2.58	2.50	3.4	50.0
13C4-PFHpA	Ave	0.9164	0.9373		2.56	2.50	2.3	50.0
18O2 PFHxS	Ave	1.130	1.143		2.39	2.37	1.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214277/23 Calibration Date: 03/22/2018 00:48

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2048		2.56	2.38	7.8	40.0
13C4 PFOA	Ave	0.9374	0.9278		2.47	2.50	-1.0	50.0
13C4 PFOS	Ave	0.8225	0.7923		2.30	2.39	-3.7	50.0
13C5 PFNA	Ave	0.8266	0.8352		2.53	2.50	1.0	50.0
13C8 FOSA	Ave	1.109	1.099		2.48	2.50	-0.9	50.0
M2-8:2FTS	Ave	0.2565	0.2557		2.39	2.40	-0.3	40.0
13C2 PFDA	Ave	0.7245	0.7353		2.54	2.50	1.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.4044		2.65	2.50	6.0	50.0
d5-NEtFOSAA	Ave	0.4345	0.4613		2.65	2.50	6.2	50.0
13C2 PFUnA	Ave	0.6482	0.6567		2.53	2.50	1.3	50.0
13C2 PFDoA	Ave	0.7355	0.7576		2.58	2.50	3.0	50.0
13C2-PFTeDA	Ave	0.8983	0.9185		2.56	2.50	2.2	50.0
13C2-PFHxDA	Ave	1.473	1.447		2.46	2.50	-1.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_028.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 22-Mar-2018 00:48:18 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:32 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.536	6656593	2.51		100	83181	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.004	2347945	0.9359		93.6	1089	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	4489197	2.55		102	142202	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1963999	0.9700		97.0	1160	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.647	96645	2.40		103	754	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	2806957	0.8690		98.3	15316	
298.90 > 99.00	1.744	1.744	0.0	1.000	1135764		2.47(1.25-3.74)		7374	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.956	0.0	0.725	662667	2.39		102	9265	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	594782	0.8858		94.8	36034	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.741	5032053	2.58		103	113870	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	1904562	0.9255		92.6	6571	
313.00 > 119.00	1.997	1.997	0.0	1.000	183034		10.41(5.03-15.10)		3598	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.863	4913563	2.56		102	92749	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1858450	0.9141		91.4	3887	
363.00 > 169.00	2.328	2.328	0.0	1.000	760773		2.44(1.13-3.40)		11638	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.868	5667751	2.39		101	87351	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2223335	0.8335		91.6	13486	
399.00 > 99.00	2.341	2.341	0.0	1.000	733661		3.03(1.50-4.49)		3040	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.665	0.008	0.991	1019885	2.56		108	29965	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	647988	0.8654		91.3	25198	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.688	0.009	1.000	4863569	2.47		99.0	59989	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		5242214	2.50			64975	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	2132739	0.9704		97.0	605	
413.00 > 169.00	2.697	2.697	0.0	1.000	1056881		2.02(0.84-2.52)		3226	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.704	0.0	1.000	2117274	0.99		104	33137	
449.00 > 99.00	2.704	2.704	0.0	1.000	561209		3.77(1.94-5.82)		7324	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.137	3970468	2.30		96.3	46544	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.058	0.014	1.139	4378237	2.53		101	89839	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1724987	0.9321		100	7614	
499.00 > 99.00	3.065	3.065	0.0	1.000	372458		4.63(2.31-6.93)		5736	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1754373	1.00		100	2717	
463.00 > 169.00	3.072	3.072	0.0	1.000	402981		4.35(1.90-5.69)		7107	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.260	5760041	2.48		99.1	56338	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.003	2230629	0.9821		98.2	41586	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.415	0.011	1.270	1284332	2.39		99.7	23884	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.424	0.011	1.274	3854437	2.54		101	66772	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	598863	0.8750		91.3	13156	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1432670	0.9405		94.0	6677	
513.00 > 169.00	3.435	3.435	0.0	1.000	261307		5.48(2.36-7.09)		5811	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.578	0.012	1.331	2119890	2.65		106	37690	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.000	834405	0.9832		98.3	4147	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1141617	1.01		105	20107	
599.00 > 99.00	3.748	3.748	0.0	1.000	391706		2.91(1.39-4.16)		7461	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.748	0.021	1.398	3442560	2.53		101	59538	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.748	0.010	1.394	2418086	2.65		106	12454	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.769	0.0	1.003	910423	1.01		101	13268	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	1045528	0.8806		88.1	5808	
563.00 > 169.00	3.769	3.769	0.0	1.000	248254		4.21(2.12-6.36)		9818	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.505	3971498	2.58		103	29476	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	1616202	0.9723		97.2	1455	
613.00 > 169.00	4.057	4.057	0.0	1.000	375947		4.30(2.13-6.40)		5558	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1774832	1.01		101	1193	
663.00 > 169.00	4.318	4.318	0.0	1.000	548661		3.23(1.25-3.76)		8708	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.554	0.010	1.693	4815153	2.56		102	32464	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	429389	0.8997		90.0	5968	
713.00 > 219.00	4.554	4.564	-0.010	0.998	316451		1.36(0.71-2.13)		5488	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.972	0.001	1.844	7585998	2.46		98.3	18642	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.000	2861608	1.01		101	910	
813.00 > 169.00	4.973	4.973	0.0	1.000	436675		6.55(2.86-8.58)		4085	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2851799	1.02		102	960	
913.00 > 169.00	5.337	5.337	0.0	1.000	343212		8.31(3.83-11.48)		3523	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 12:53:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_028.d

Injection Date: 22-Mar-2018 00:48:18 Instrument ID: A8_N

Lims ID: CCV L4

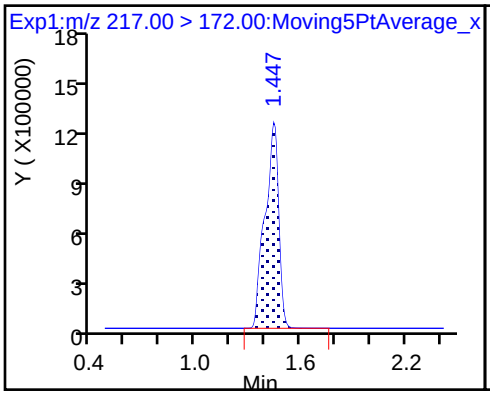
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

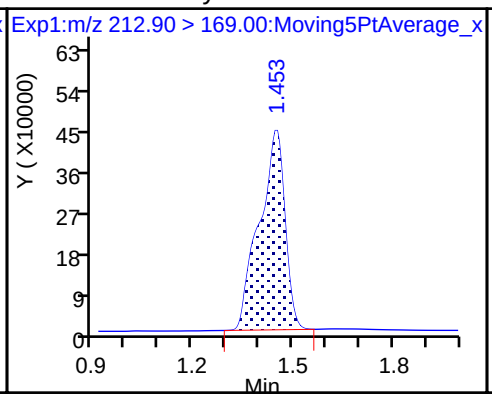
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

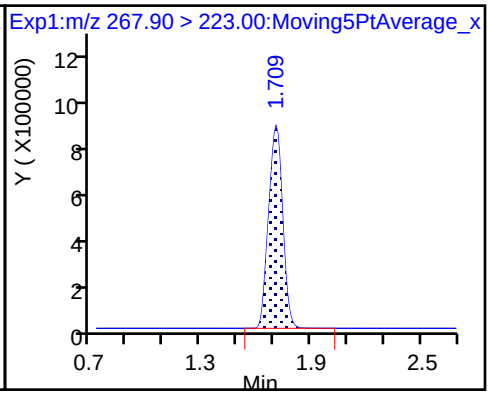
D 1 13C4 PFBA



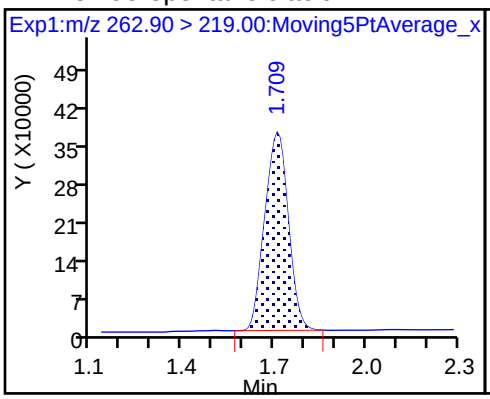
2 Perfluorobutyric acid



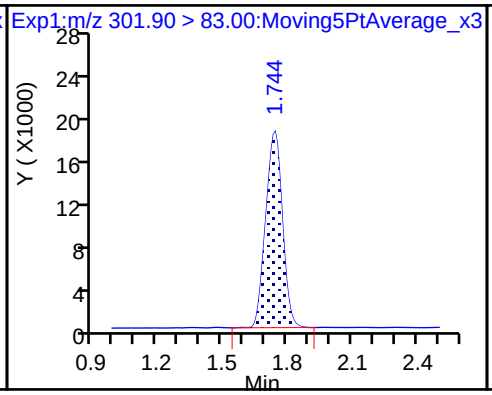
D 3 13C5-PFPeA



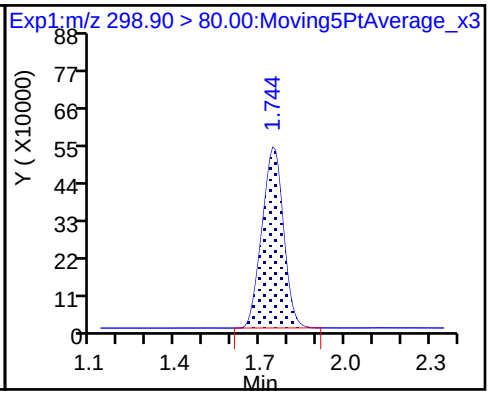
4 Perfluoropentanoic acid



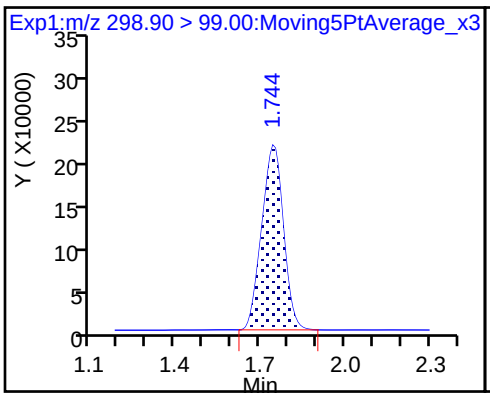
D 47 13C3-PFBS



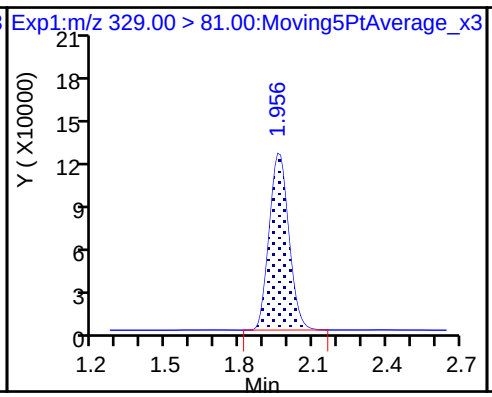
5 Perfluorobutanesulfonic acid



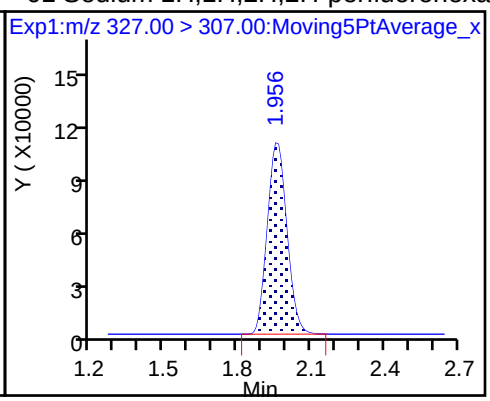
5 Perfluorobutanesulfonic acid



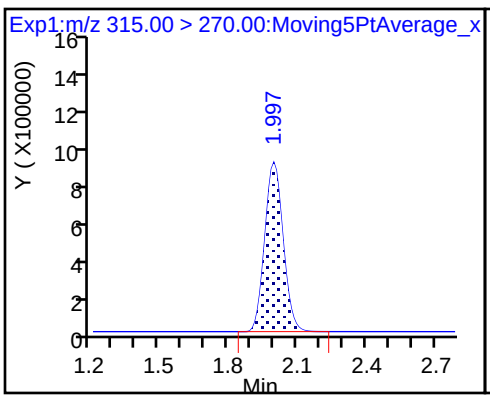
D 60 M2-4:2FTS



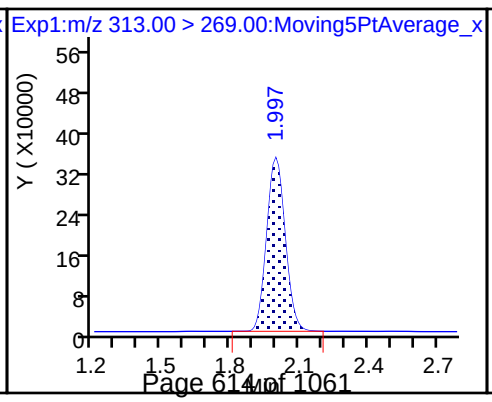
61 Sodium 1H,1H,2H,2H-perfluorohexane



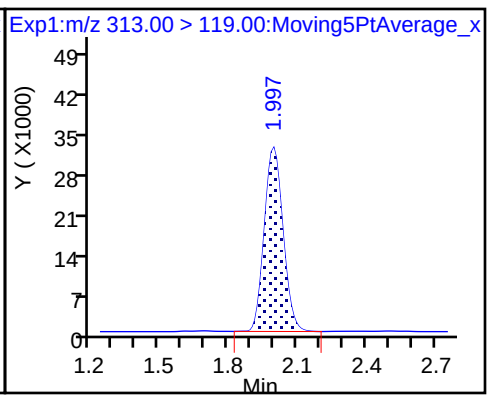
D 7 13C2 PFHxA



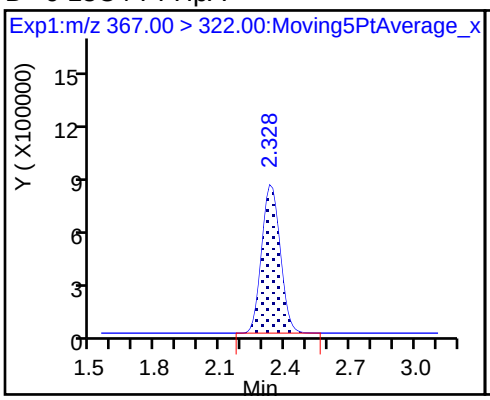
6 Perfluorohexanoic acid



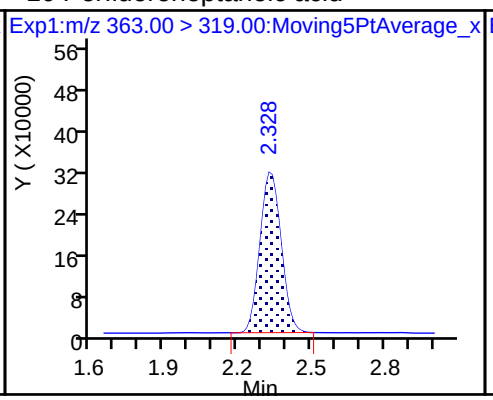
6 Perfluorohexanoic acid



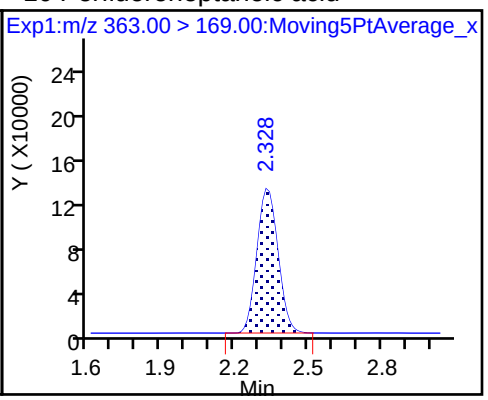
D 9 13C4-PFHpA



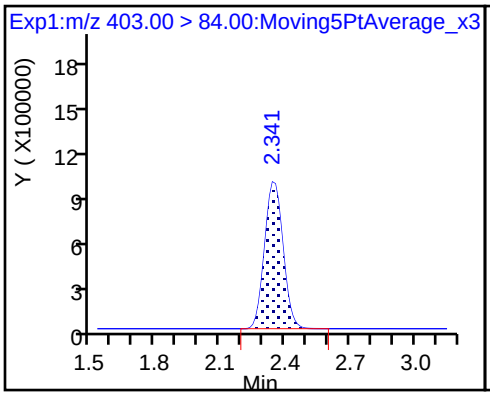
10 Perfluoroheptanoic acid



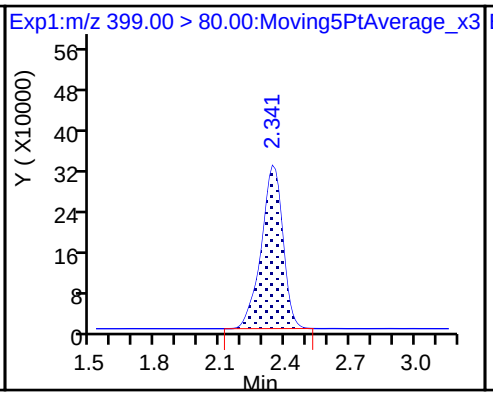
10 Perfluoroheptanoic acid



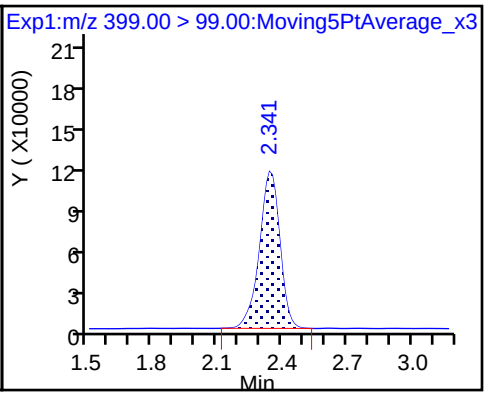
D 11 18O2 PFHxS



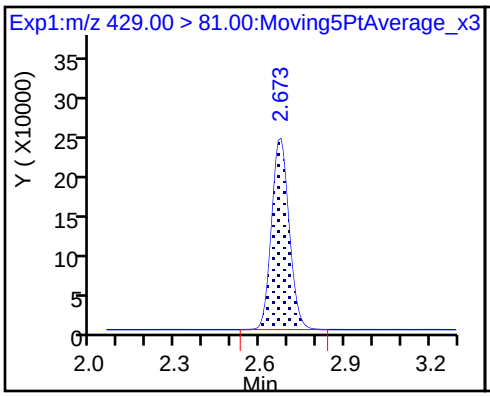
8 Perfluorohexanesulfonic acid



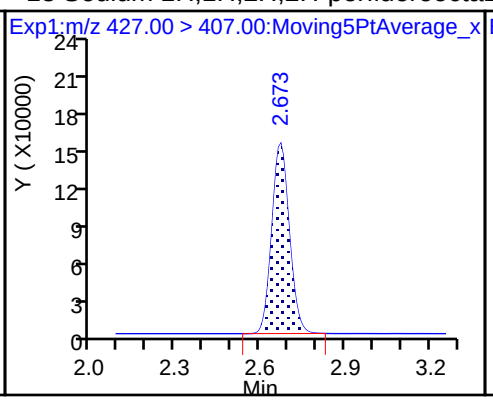
8 Perfluorohexanesulfonic acid



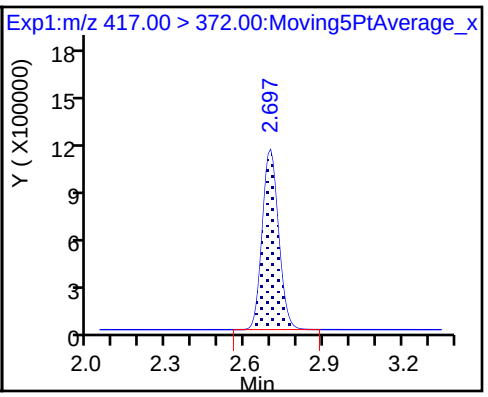
D 12 M2-6:2FTS



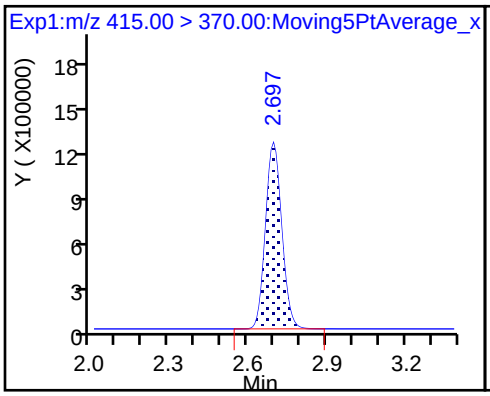
13 Sodium 1H,1H,2H,2H-perfluorooctane



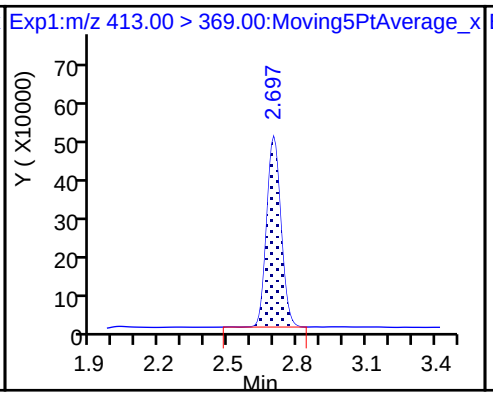
D 14 13C4 PFOA



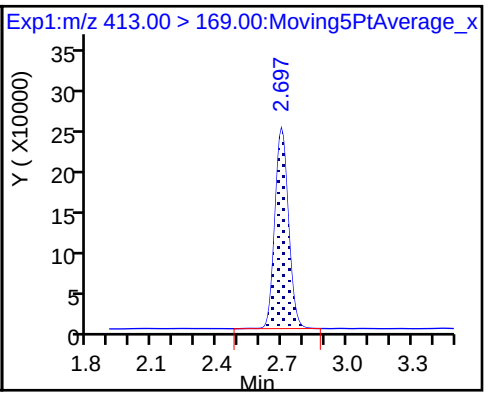
* 62 13C2-PFOA



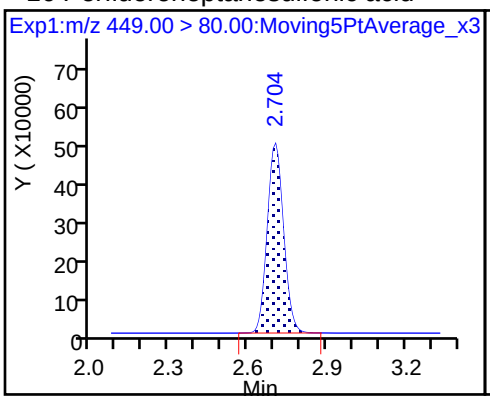
15 Perfluorooctanoic acid



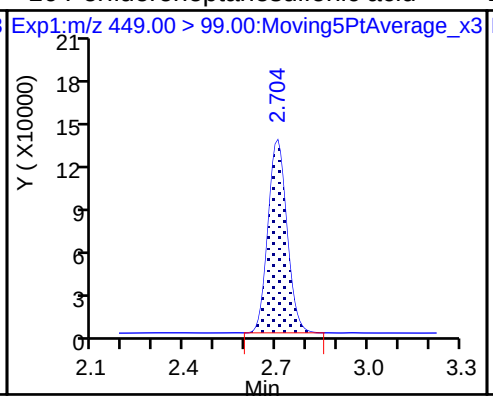
15 Perfluorooctanoic acid



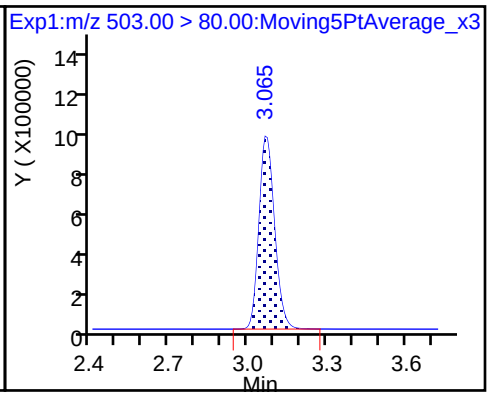
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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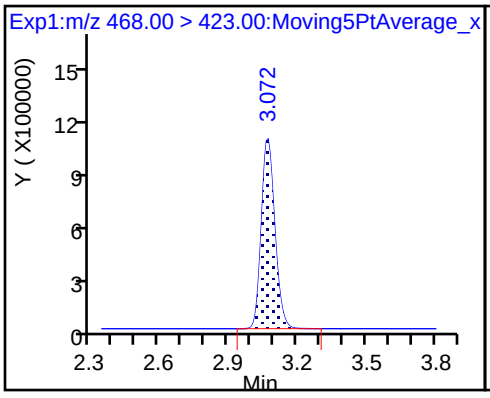
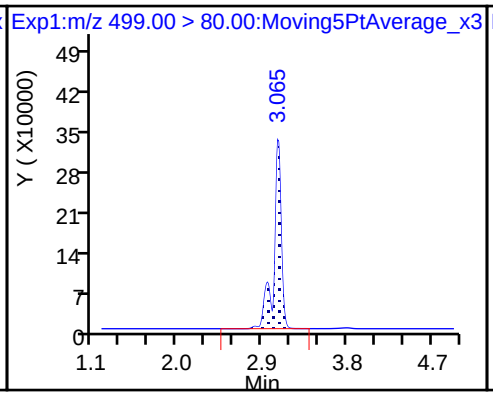
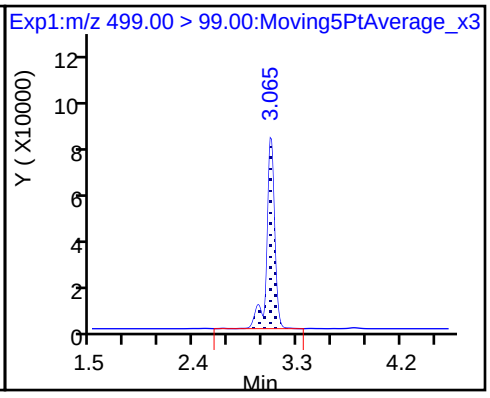


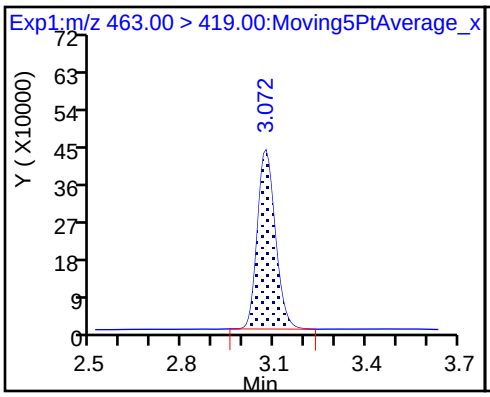
17 Perfluorooctane sulfonic acid



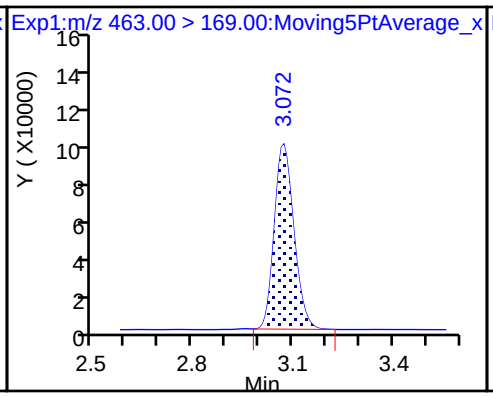
17 Perfluorooctane sulfonic acid



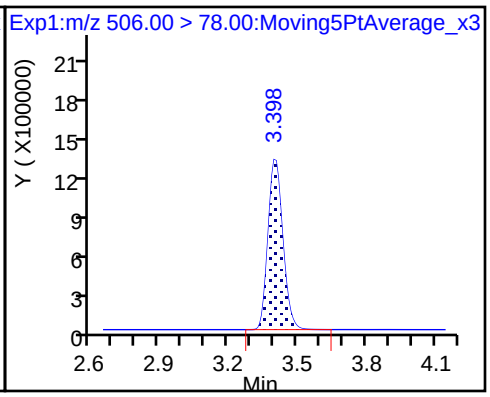
20 Perfluorononanoic acid



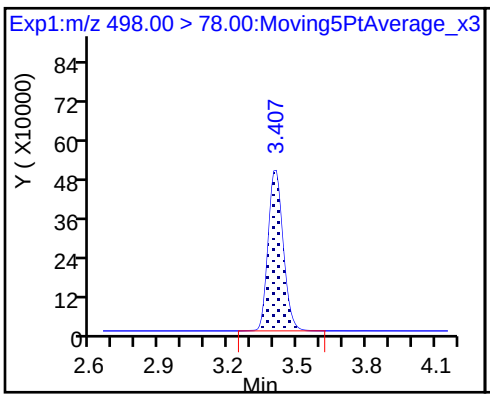
20 Perfluorononanoic acid



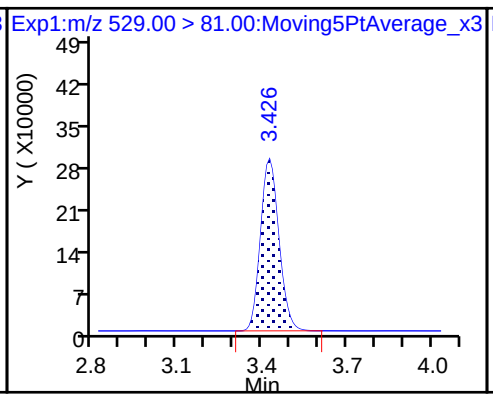
D 21 13C8 FOSA



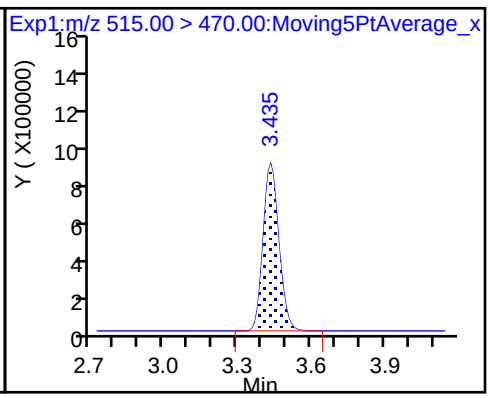
22 Perfluorooctane Sulfonamide



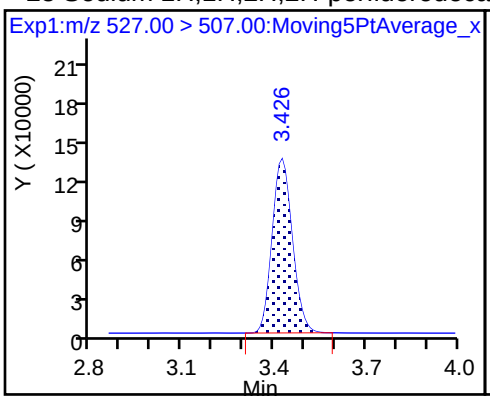
D 26 M2-8:2FTS



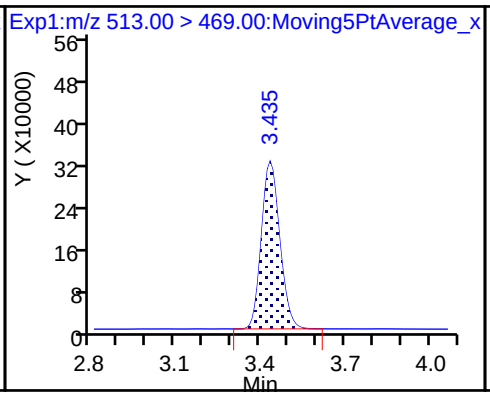
D 23 13C2 PFDA



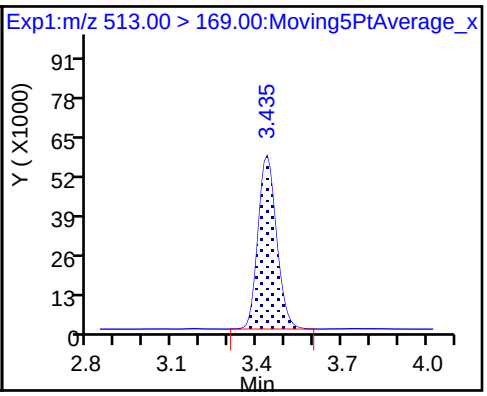
25 Sodium 1H,1H,2H,2H-perfluorodecan



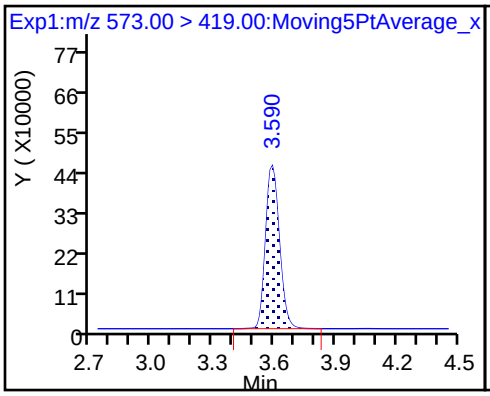
24 Perfluorodecanoic acid



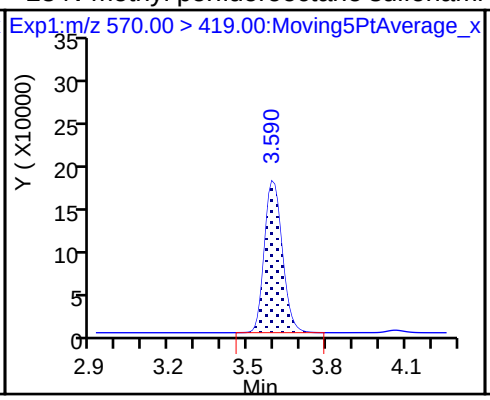
24 Perfluorodecanoic acid



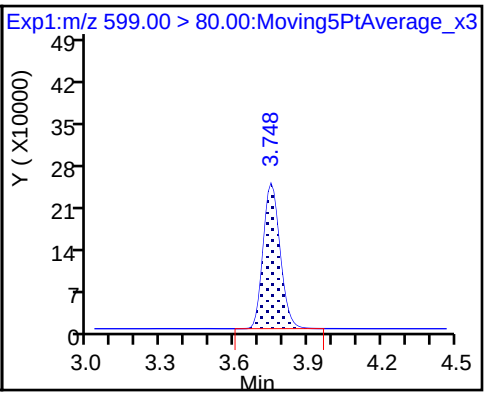
D 27 d3-NMeFOSAA



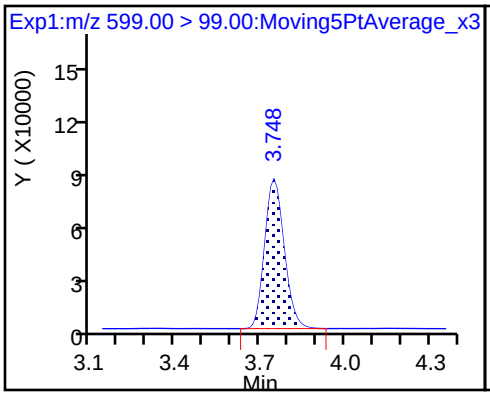
28 N-methyl perfluorooctane sulfonami



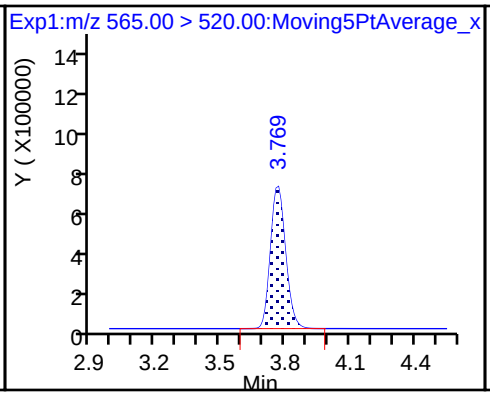
29 Perfluorodecane Sulfonic acid



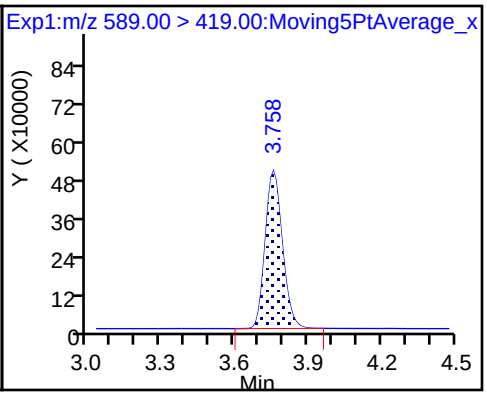
29 Perfluorodecane Sulfonic acid



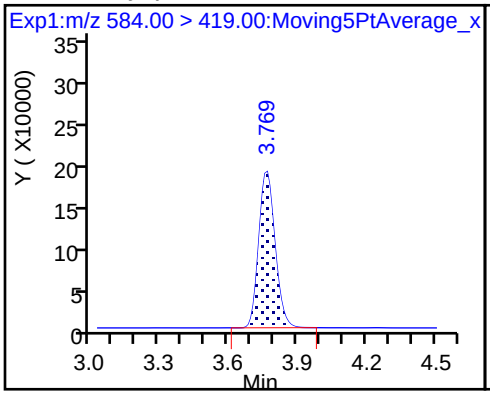
D 30 13C2 PFUnA



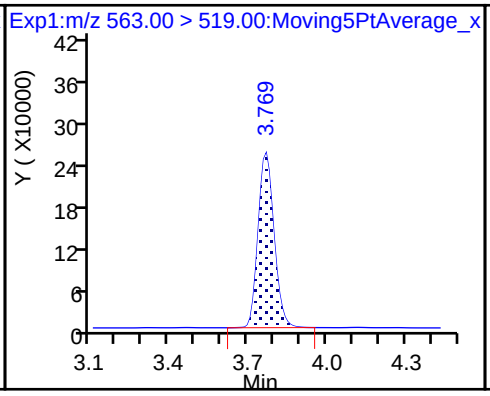
D 32 d5-NEtFOSAA



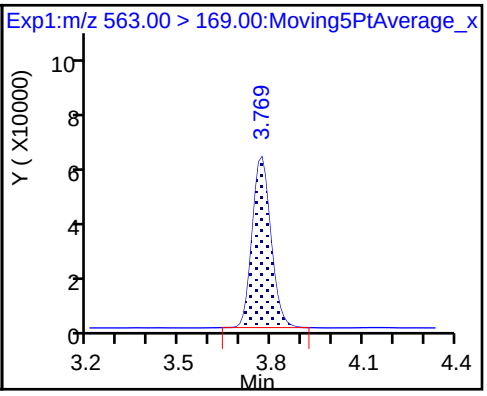
33 N-ethyl perfluorooctane sulfonamid



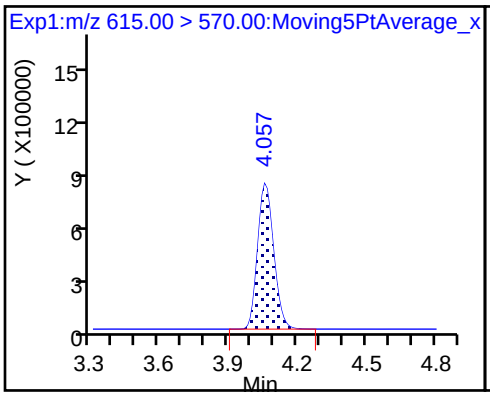
31 Perfluoroundecanoic acid



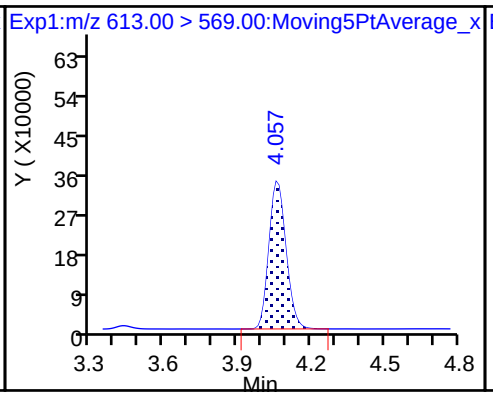
31 Perfluoroundecanoic acid



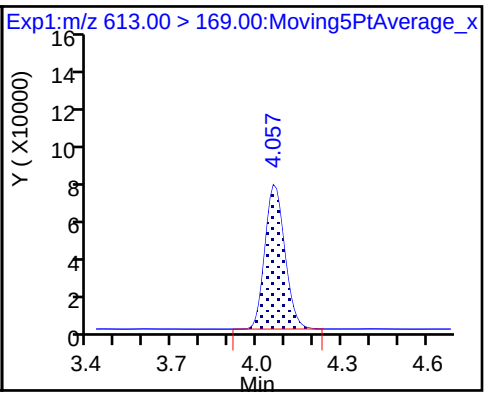
D 36 13C2 PFDoA



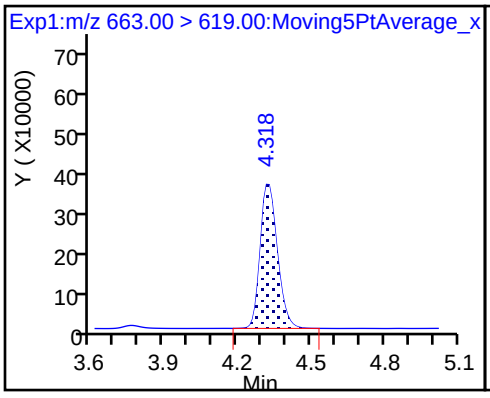
37 Perfluorododecanoic acid



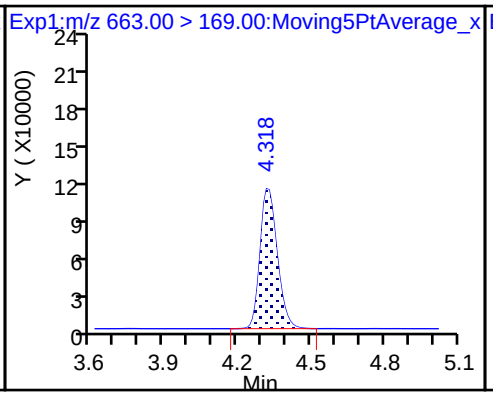
37 Perfluorododecanoic acid



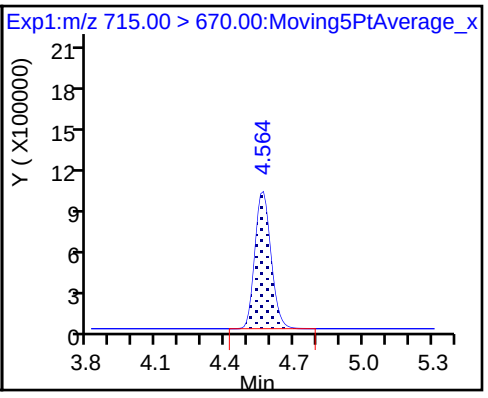
41 Perfluorotridecanoic acid



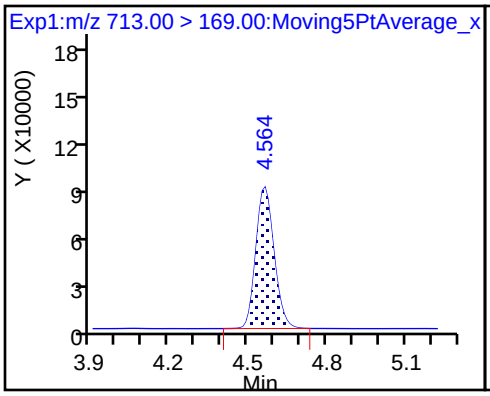
41 Perfluorotridecanoic acid



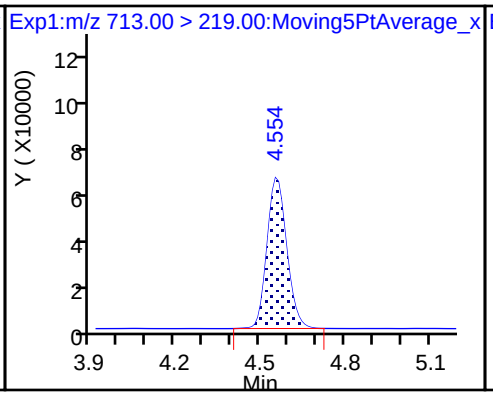
D 43 13C2-PFTeDA



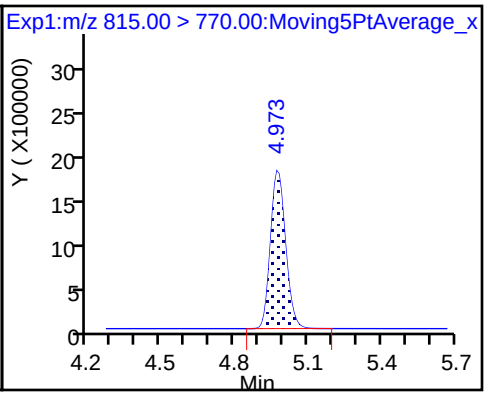
42 Perfluorotetradecanoic acid



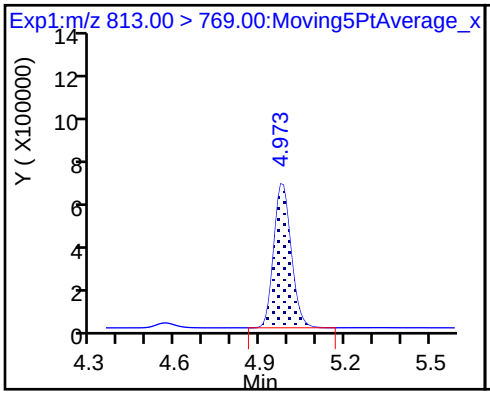
42 Perfluorotetradecanoic acid



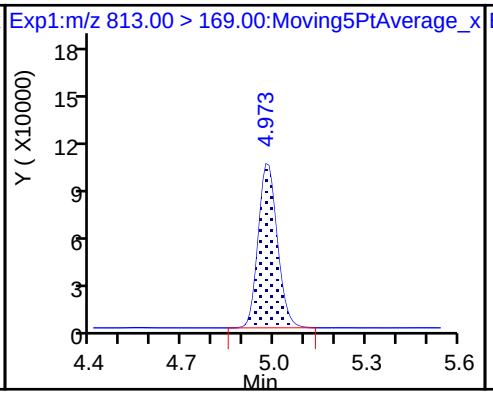
D 44 13C2-PFHxDA



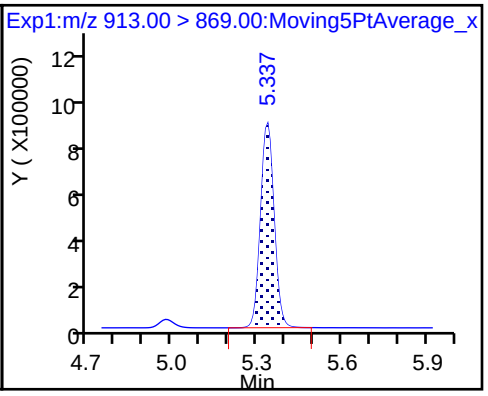
45 Perfluorohexadecanoic acid



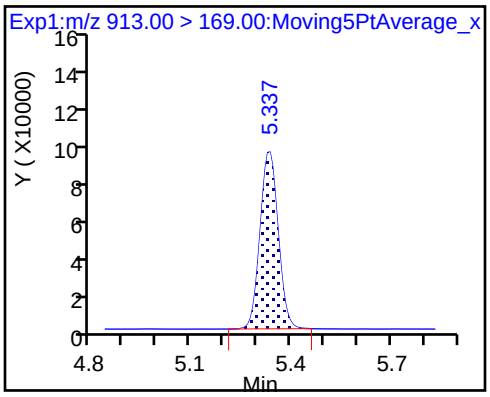
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214277/30 Calibration Date: 03/22/2018 01:43

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9316		2.47	2.50	-1.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.158		2.57	2.50	2.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.78		2.18	2.21	-1.2	50.0
4:2 FTS	AveID	16.15	16.38		2.37	2.34	1.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.016		2.49	2.50	-0.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.077		2.60	2.50	4.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.086		2.22	2.28	-2.4	40.0
6:2FTS	AveID	1.744	1.763		2.40	2.37	1.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.154		2.55	2.50	2.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.326		2.46	2.38	3.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.143		2.38	2.32	2.6	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.040		2.61	2.50	4.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.030		2.61	2.50	4.5	40.0
8:2FTS	AveID	1.276	1.339		2.51	2.40	4.9	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.043		2.64	2.50	5.6	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.083		2.71	2.50	8.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7462		2.65	2.41	9.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9651		2.58	2.50	3.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7907		2.29	2.50	-8.3	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.084		2.59	2.50	3.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.256		2.85	2.50	14.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2447		2.47	2.50	-1.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9854		2.69	2.50	7.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9621		2.60	2.50	4.1	50.0
13C4 PFBA	Ave	1.266	1.213		2.40	2.50	-4.2	50.0
13C5 PFPeA	Ave	0.8399	0.8101		2.41	2.50	-3.5	50.0
13C3-PFBS	Ave	0.0192	0.0191		2.32	2.33	-0.2	50.0
M2-4:2FTS	Ave	0.1324	0.1373		2.42	2.34	3.7	50.0
13C2 PFHxA	Ave	0.9288	0.8876		2.39	2.50	-4.4	50.0
13C4-PFHpA	Ave	0.9164	0.9064		2.47	2.50	-1.1	50.0
18O2 PFHxS	Ave	1.130	1.100		2.30	2.37	-2.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214277/30 Calibration Date: 03/22/2018 01:43

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLC_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1992		2.49	2.38	4.8	40.0
13C4 PFOA	Ave	0.9374	0.8790		2.34	2.50	-6.2	50.0
13C4 PFOS	Ave	0.8225	0.7767		2.26	2.39	-5.6	50.0
13C5 PFNA	Ave	0.8266	0.8189		2.48	2.50	-0.9	50.0
13C8 FOSA	Ave	1.109	1.050		2.37	2.50	-5.4	50.0
M2-8:2FTS	Ave	0.2565	0.2435		2.27	2.40	-5.1	40.0
13C2 PFDA	Ave	0.7245	0.7153		2.47	2.50	-1.3	50.0
d3-NMeFOSAA	Ave	0.3814	0.3894		2.55	2.50	2.1	50.0
d5-NEtFOSAA	Ave	0.4345	0.4367		2.51	2.50	0.5	50.0
13C2 PFUnA	Ave	0.6482	0.6573		2.54	2.50	1.4	50.0
13C2 PFDoA	Ave	0.7355	0.6950		2.36	2.50	-5.5	50.0
13C2-PFTeDA	Ave	0.8983	0.8762		2.44	2.50	-2.5	50.0
13C2-PFHxDA	Ave	1.473	1.397		2.37	2.50	-5.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_035.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 22-Mar-2018 01:43:21 ALS Bottle#: 14 Worklist Smp#: 30
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:54:41 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:54:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.538	6258136	2.40		95.8	78961	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.453	-0.006	1.000	5830162	2.47		98.9	3091	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	4178201	2.41		96.5	100051	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	4840374	2.57		103	2957	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.649	91790	2.32		99.8	653	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.000	6699105	2.18		98.8	35443	
298.90 > 99.00	1.744	1.744	0.0	1.000	2792227		2.40(1.25-3.74)		19197	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.956	0.0	0.727	661352	2.42		104	8181	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	1509679	2.37		101	55363	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.743	4578361	2.39		95.6	137558	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	4652528	2.48		99.4	16174	
313.00 > 119.00	1.997	1.997	0.0	1.000	425740		10.93(5.03-15.10)		9628	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	4674938	2.47		98.9	88351	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	5035841	2.60		104	11217	
363.00 > 169.00	2.328	2.328	0.0	1.000	1904482		2.64(1.13-3.40)		20225	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	5368300	2.30		97.3	65398	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	5607454	2.22		97.6	31657	
399.00 > 99.00	2.341	2.341	0.0	1.000	1831896		3.06(1.50-4.49)		6548	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.665	0.0	0.991	975816	2.49		105	20846	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.673	-0.008	1.000	1716419	2.40		101	56955	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.688	0.001	1.000	4533567	2.34		93.8	75439	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.697	-0.008		5157902	2.50			63879	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.697	-0.008	1.000	5230130	2.55		102	1481	
413.00 > 169.00	2.689	2.697	-0.008	1.000	2754092		1.90(0.84-2.52)		7807	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.704	-0.008	1.000	5056419	2.46		103	51862	
449.00 > 99.00	2.696	2.704	-0.008	1.000	1326866		3.81(1.94-5.82)		12865	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.137	3829647	2.26		94.4	44034	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	4224005	2.48		99.1	61485	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	4249408	2.38		103	18787	
499.00 > 99.00	3.058	3.065	-0.007	1.000	912842		4.66(2.31-6.93)		8943	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	4393677	2.61		104	6237	
463.00 > 169.00	3.065	3.072	-0.007	1.000	1037190		4.24(1.90-5.69)		21491	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.264	5413371	2.37		94.6	72291	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.407	-0.009	1.000	5578042	2.61		105	52866	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.415	0.001	1.271	1203069	2.27		94.9	33315	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.424	0.001	1.274	3689396	2.47		98.7	83139	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.426	-0.010	1.000	1611238	2.51		105	25802	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.435	-0.010	1.000	3849490	2.64		106	16773	
513.00 > 169.00	3.425	3.435	-0.010	1.000	634342		6.07(2.36-7.09)		2474	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	2008544	2.55		102	33483	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.590	-0.011	1.000	2175871	2.71		108	12521	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	2252352	2.51		101	12856	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	3390072	2.54		101	59020	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.748	-0.010	1.000	2881750	2.64		110	43412	
599.00 > 99.00	3.738	3.748	-0.010	1.000	942309		3.06(1.39-4.16)		21957	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.769	-0.011	1.003	2173625	2.58		103	27816	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.769	-0.011	1.000	2680613	2.29		91.7	12041	
563.00 > 169.00	3.758	3.769	-0.011	1.000	646129		4.15(2.12-6.36)		19256	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.047	0.009	1.509	3584717	2.36		94.5	32323	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.057	-0.001	1.000	3884037	2.59		104	3588	
613.00 > 169.00	4.056	4.057	-0.001	1.000	917483		4.23(2.13-6.40)		12713	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	4502268	2.85		114	3219	
663.00 > 169.00	4.318	4.318	0.0	1.000	1297256		3.47(1.25-3.76)		18118	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	4519159	2.44		97.5	31411	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.564	-0.010	1.000	1105866	2.47		98.8	14325	
713.00 > 219.00	4.554	4.564	-0.010	1.000	792153		1.40(0.71-2.13)		13684	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.972	0.002	1.850	7204324	2.37		94.8	22959	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.973	0.001	1.000	7098945	2.69		107	2130	
813.00 > 169.00	4.974	4.973	0.001	1.000	1129662		6.28(2.86-8.58)		8072	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.331	5.337	-0.006	1.000	6931342	2.60		104	2217	
913.00 > 169.00	5.331	5.337	-0.006	1.000	842765		8.22(3.83-11.48)		5968	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 12:54:42 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_035.d

Injection Date: 22-Mar-2018 01:43:21 Instrument ID: A8_N

Lims ID: CCV L5

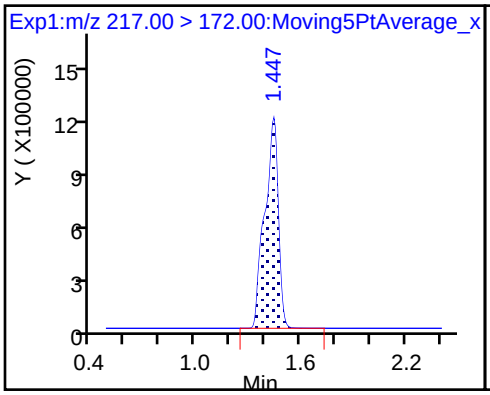
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 30

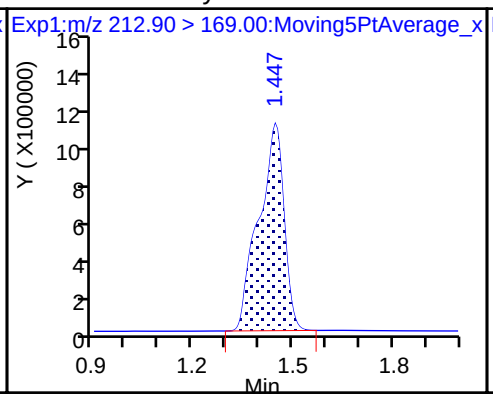
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

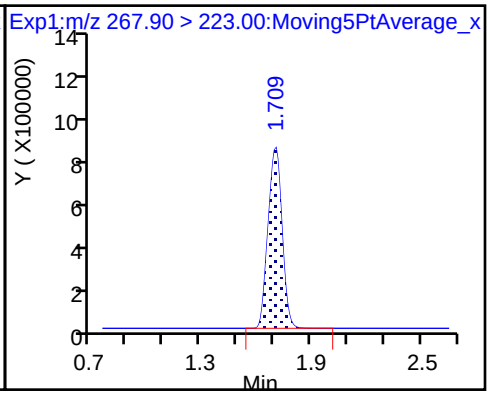
D 1 13C4 PFBA



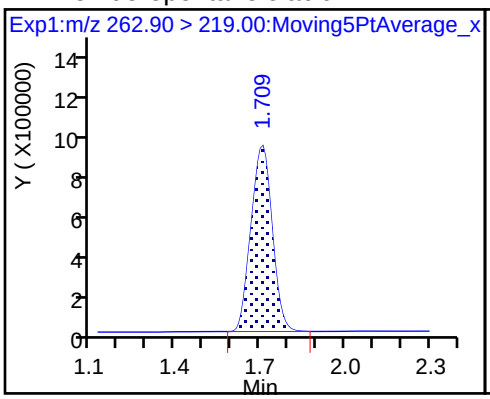
2 Perfluorobutyric acid



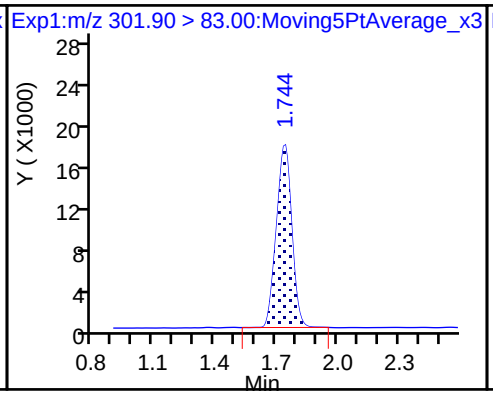
D 3 13C5-PFPeA



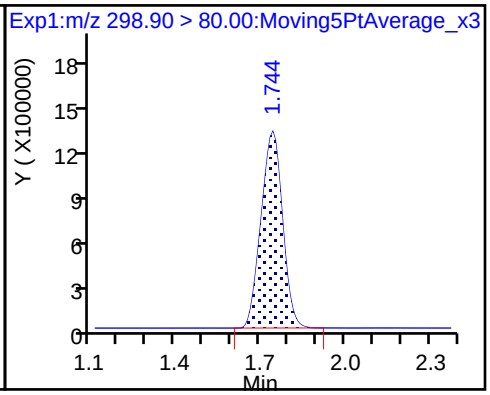
4 Perfluoropentanoic acid



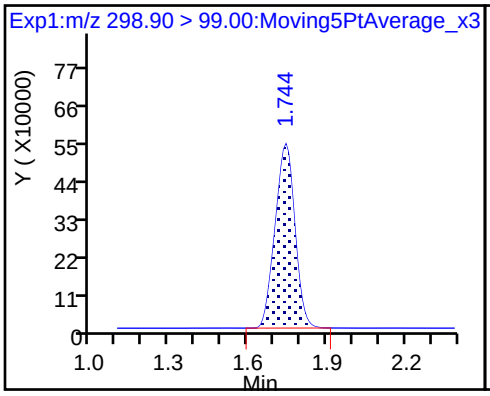
D 47 13C3-PFBS



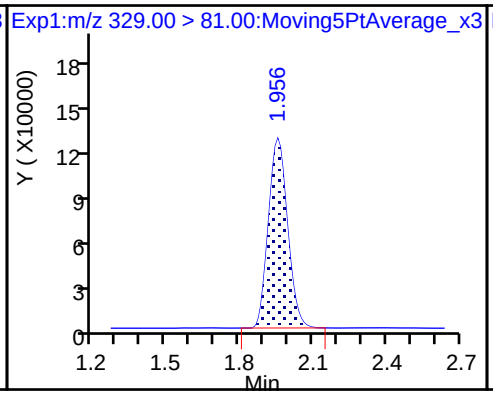
5 Perfluorobutanesulfonic acid



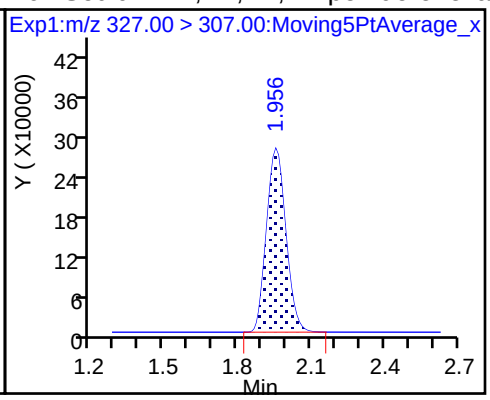
5 Perfluorobutanesulfonic acid



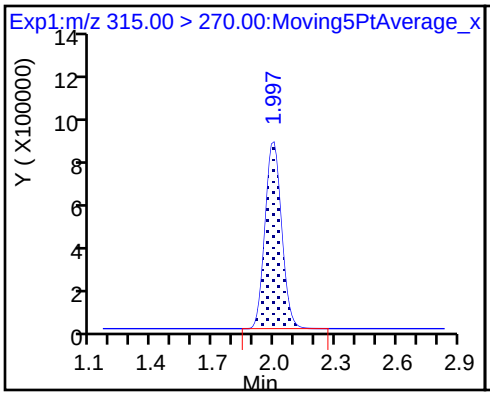
D 60 M2-4:2FTS



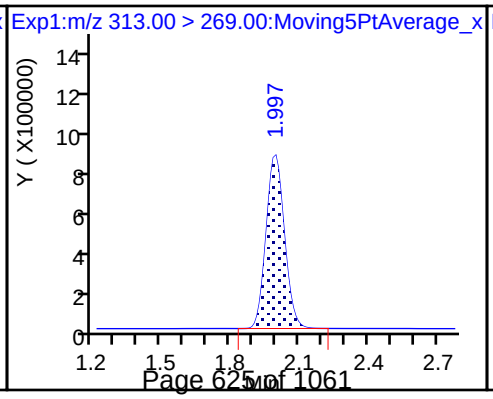
61 Sodium 1H,1H,2H,2H-perfluorohexane



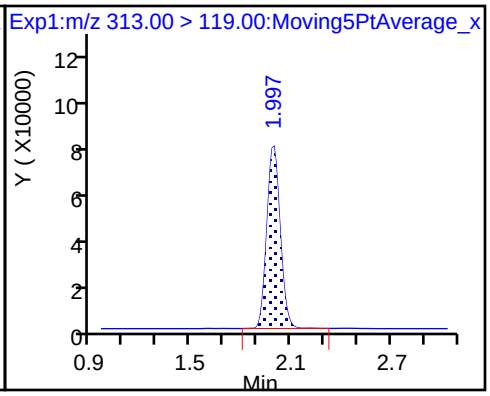
D 7 13C2 PFHxA



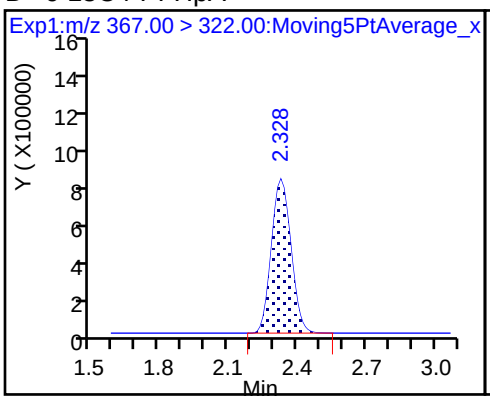
6 Perfluorohexanoic acid



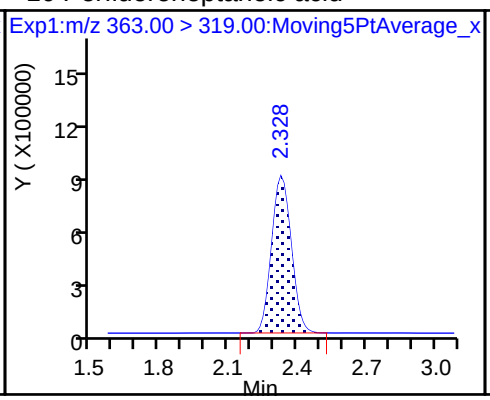
6 Perfluorohexanoic acid



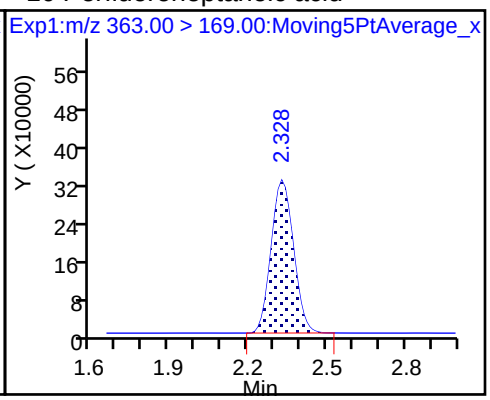
D 9 13C4-PFHpA



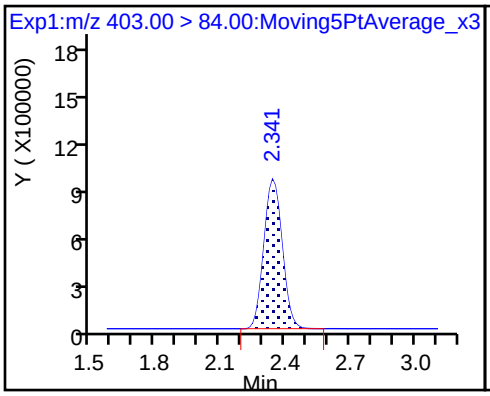
10 Perfluoroheptanoic acid



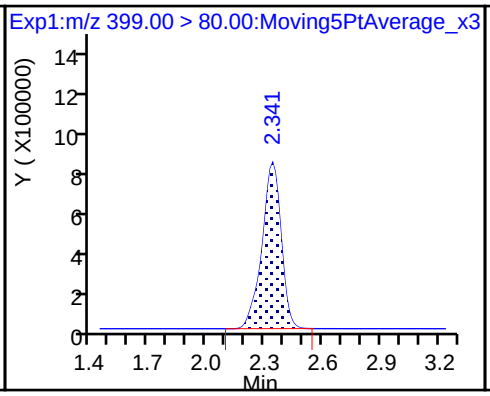
10 Perfluoroheptanoic acid



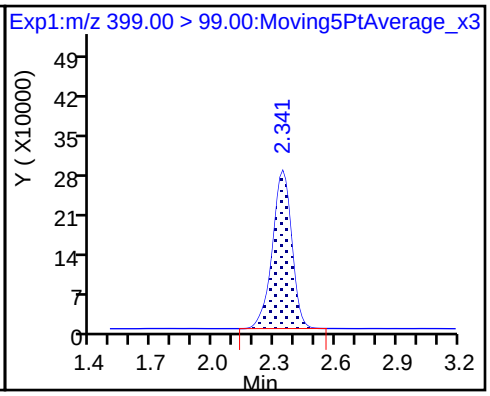
D 11 18O2 PFHxS



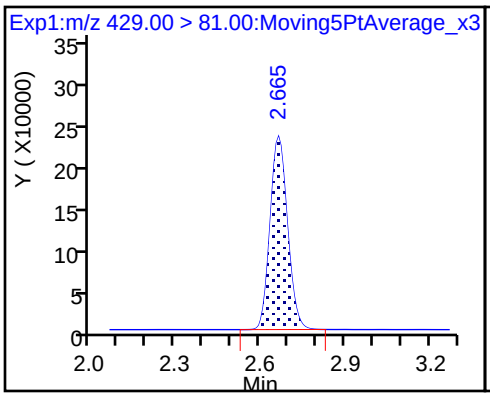
8 Perfluorohexanesulfonic acid



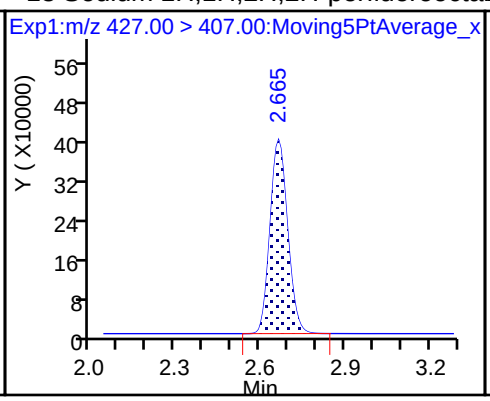
8 Perfluorohexanesulfonic acid



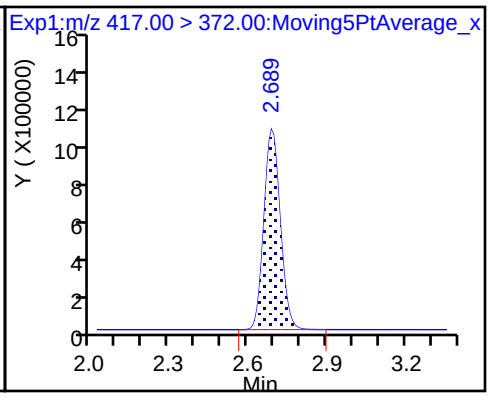
D 12 M2-6:2FTS



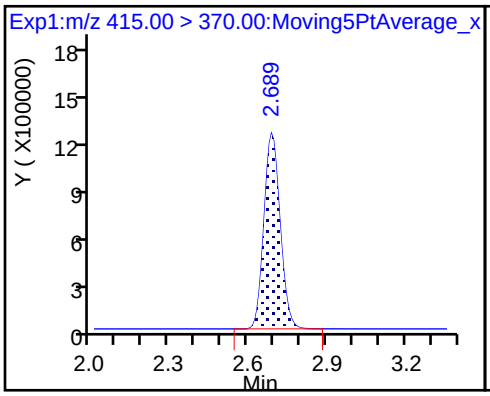
13 Sodium 1H,1H,2H,2H-perfluorooctane



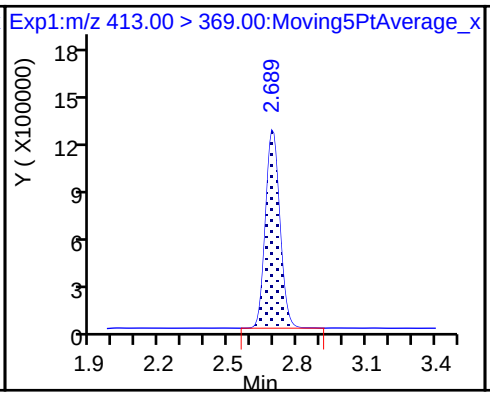
D 14 13C4 PFOA



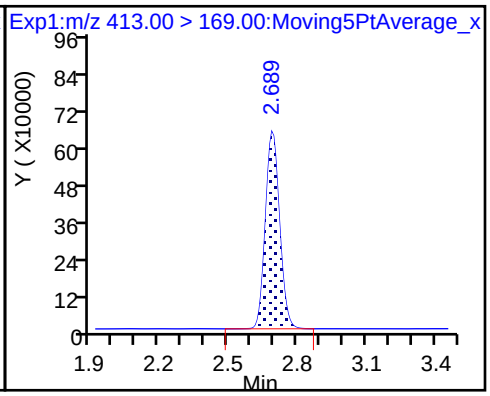
* 62 13C2-PFOA



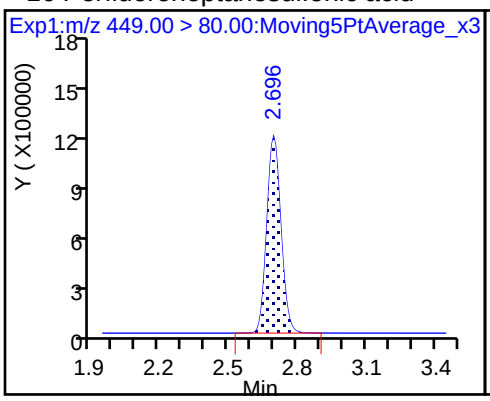
15 Perfluorooctanoic acid



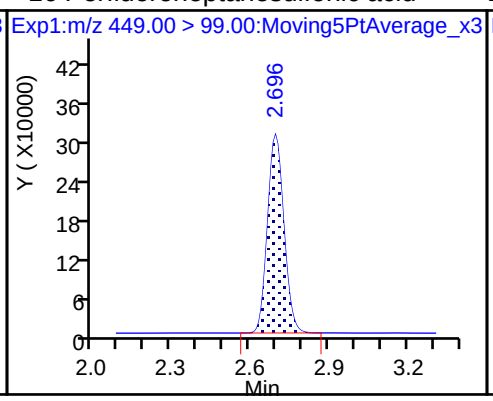
15 Perfluorooctanoic acid



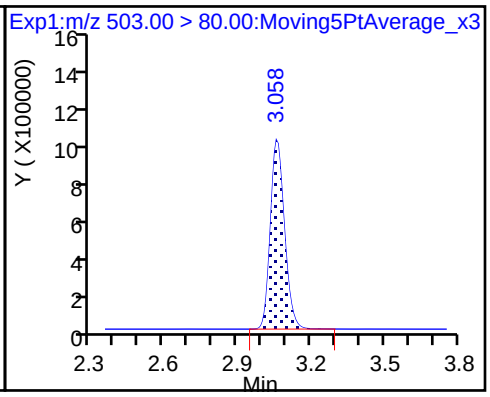
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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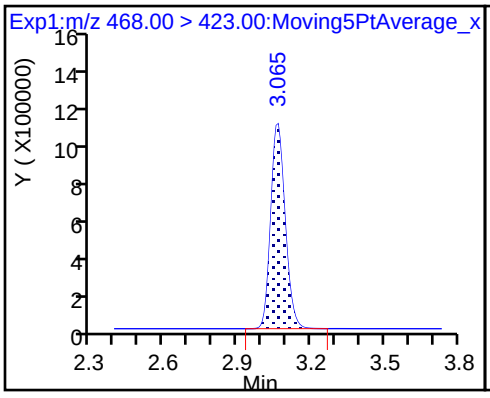
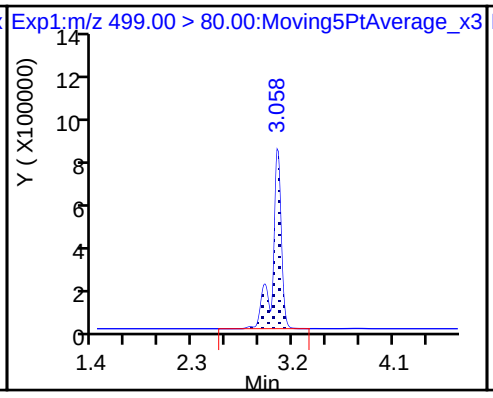
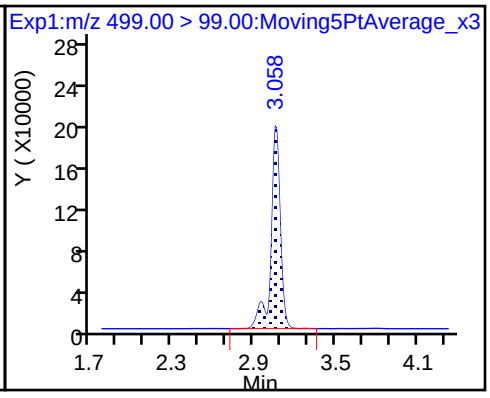


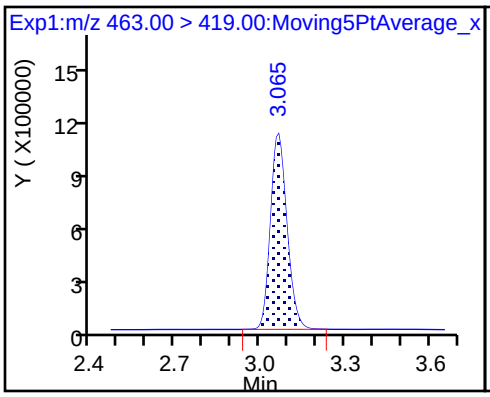
17 Perfluorooctane sulfonic acid



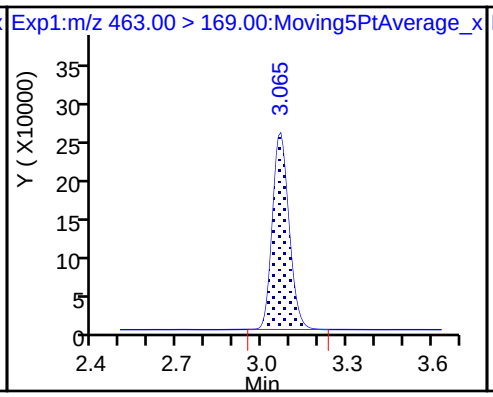
17 Perfluorooctane sulfonic acid



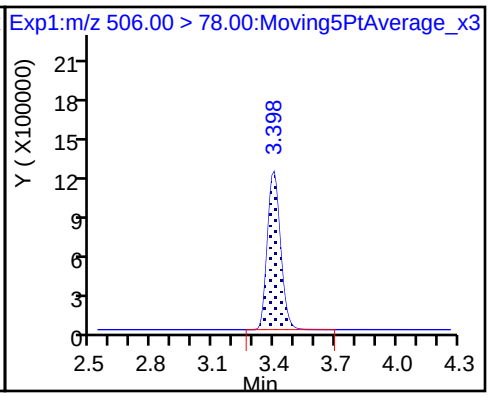
20 Perfluorononanoic acid



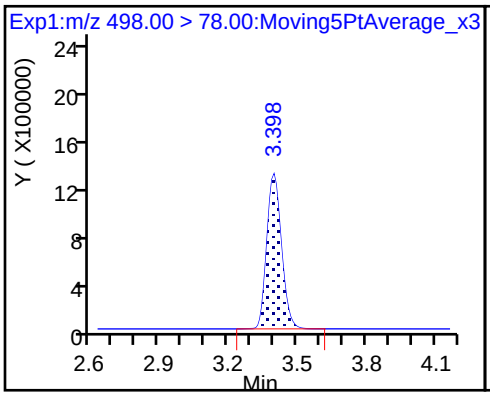
20 Perfluorononanoic acid



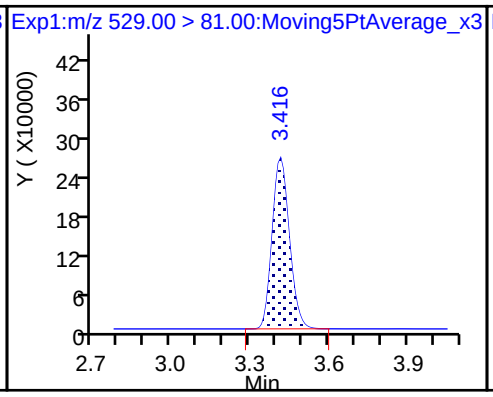
D 21 13C8 FOSA



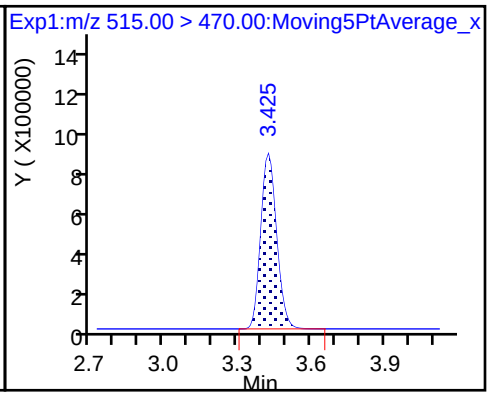
22 Perfluorooctane Sulfonamide



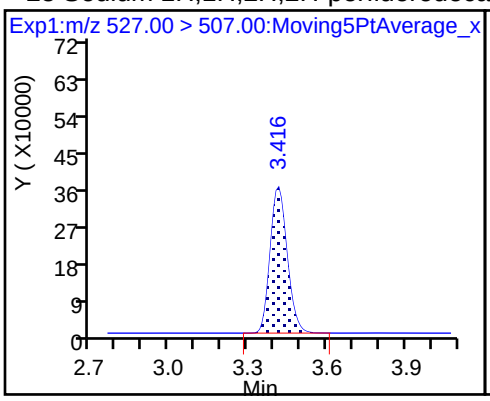
D 26 M2-8:2FTS



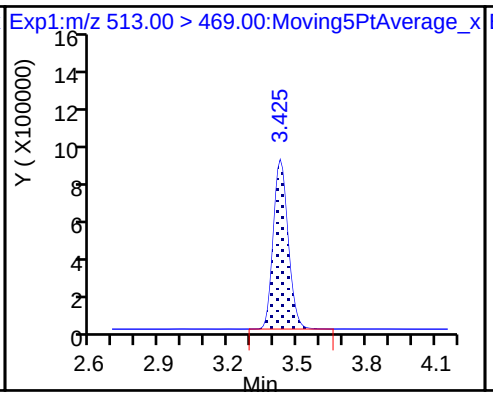
D 23 13C2 PFDA



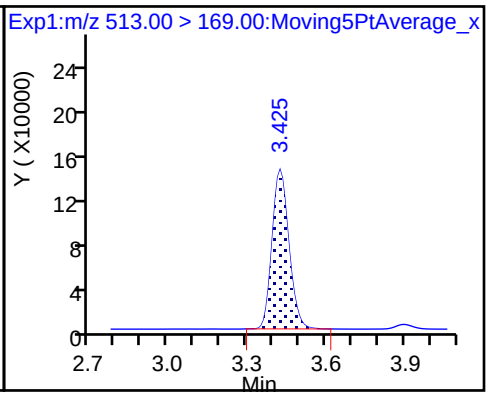
25 Sodium 1H,1H,2H,2H-perfluorodecan



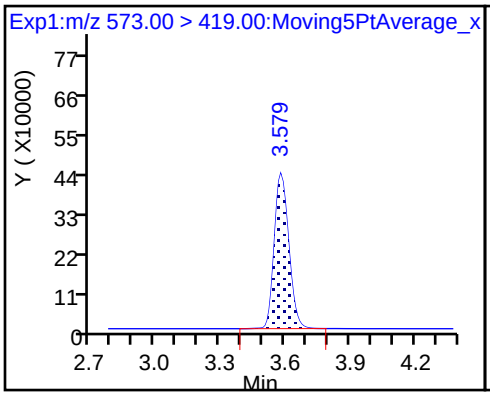
24 Perfluorodecanoic acid



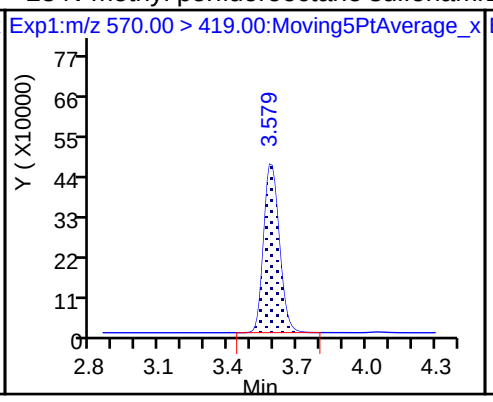
24 Perfluorodecanoic acid



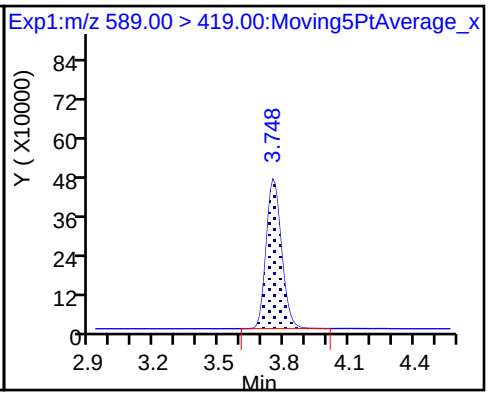
D 27 d3-NMeFOSAA



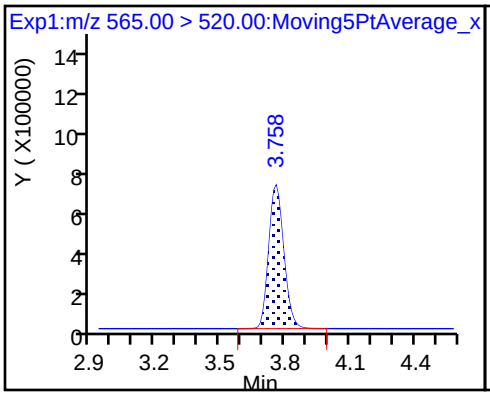
28 N-methyl perfluorooctane sulfonami



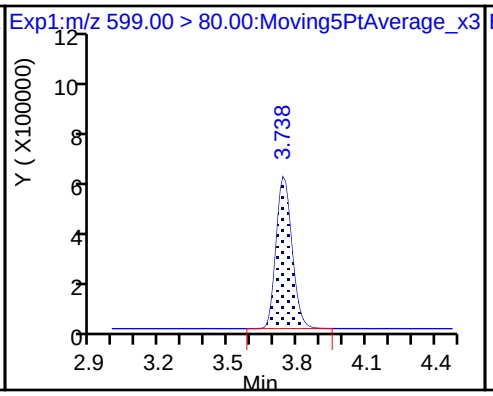
D 32 d5-NEtFOSAA



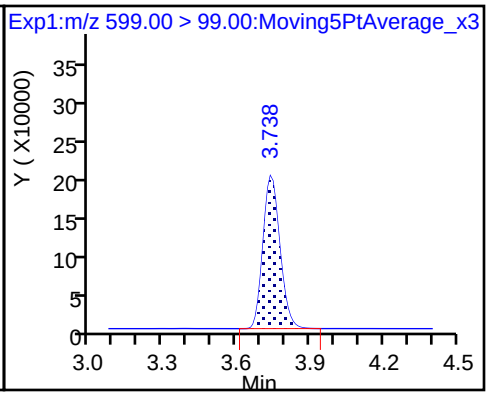
D 30 13C2 PFUnA



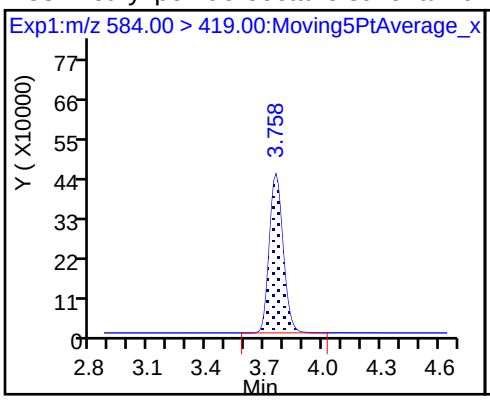
29 Perfluorodecane Sulfonic acid



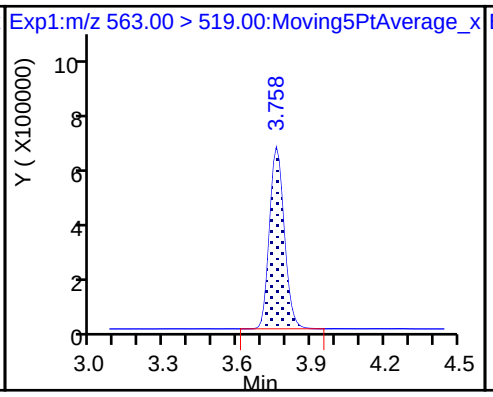
29 Perfluorodecane Sulfonic acid



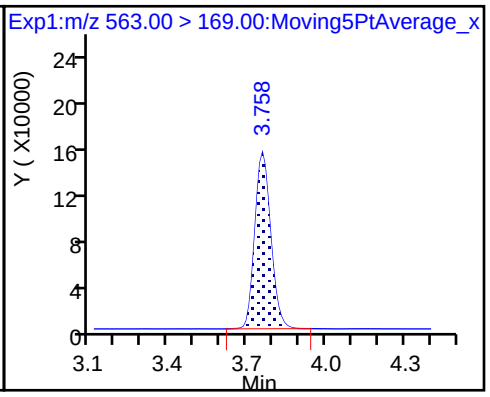
33 N-ethyl perfluorooctane sulfonamid



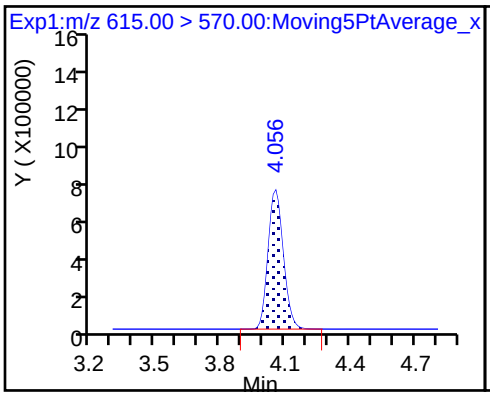
31 Perfluoroundecanoic acid



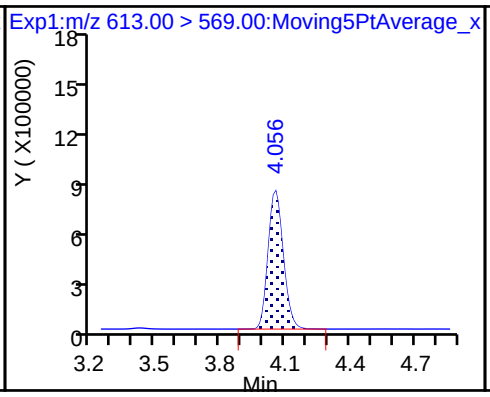
31 Perfluoroundecanoic acid



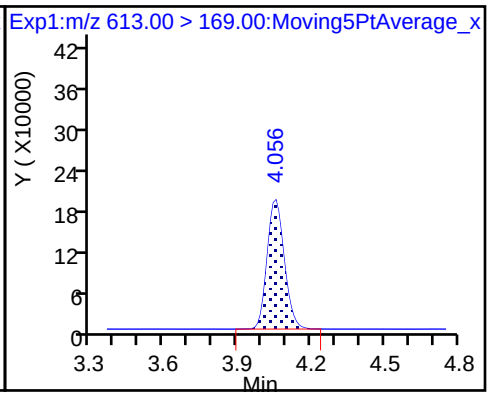
D 36 13C2 PFDoA



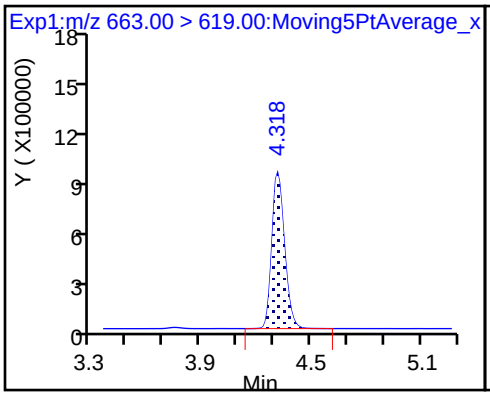
37 Perfluorododecanoic acid



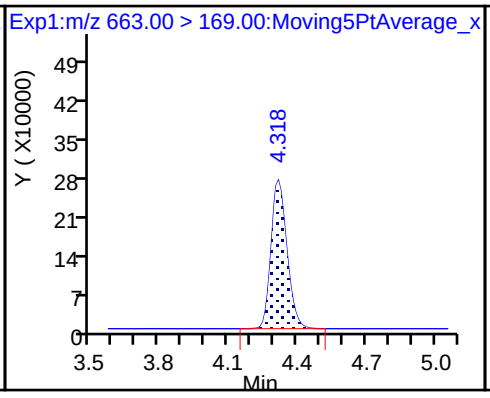
37 Perfluorododecanoic acid



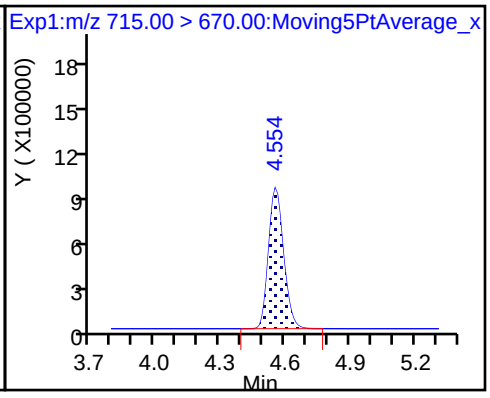
41 Perfluorotridecanoic acid



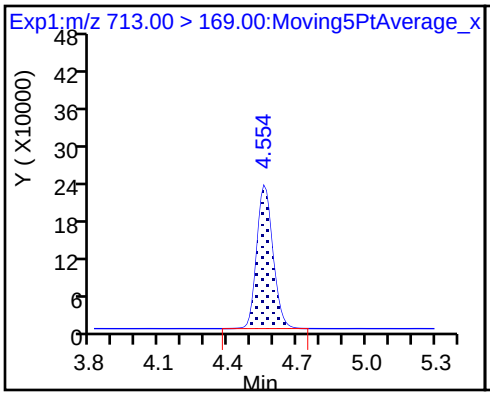
41 Perfluorotridecanoic acid



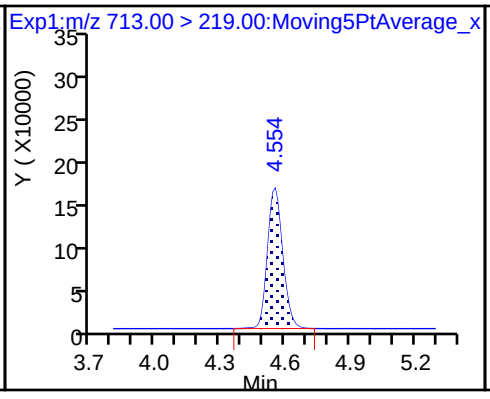
D 43 13C2-PFTeDA



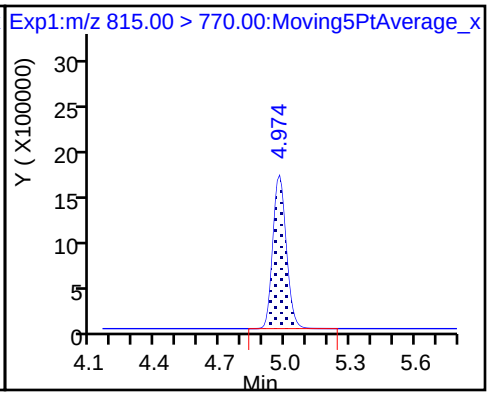
42 Perfluorotetradecanoic acid



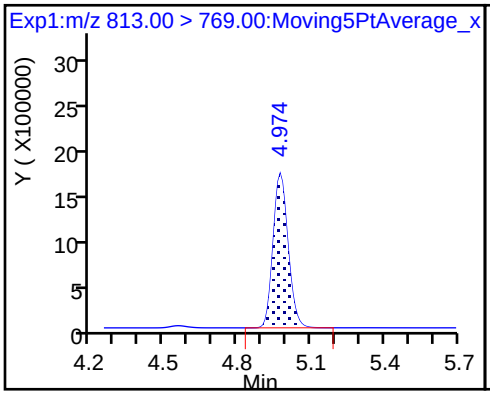
42 Perfluorotetradecanoic acid



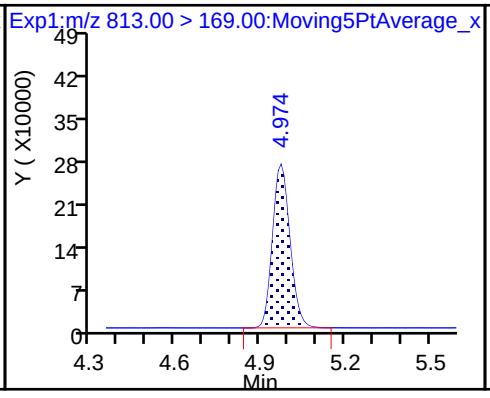
D 44 13C2-PFHxDA



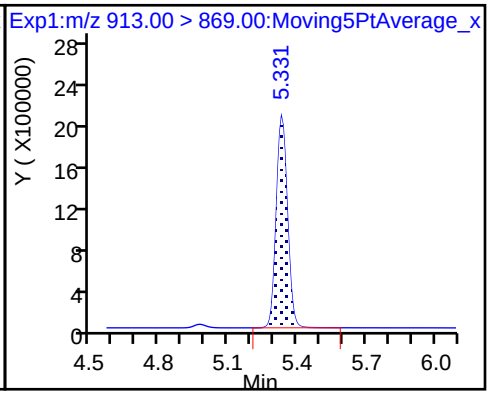
45 Perfluorohexadecanoic acid



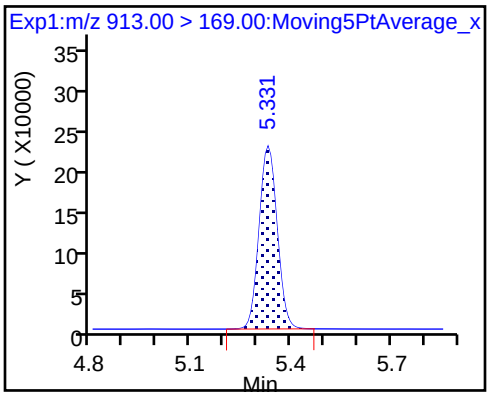
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-214657/2 Calibration Date: 03/23/2018 18:32

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.23LLAA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9408		0.0499	0.0500	-0.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.190		0.0528	0.0500	5.5	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	83.87		0.0477	0.0442	7.9	50.0
4:2 FTS	AveID	16.15	16.51		0.130	0.0467	2.2	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.055		0.0516	0.0500	3.2	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.032		0.0499	0.0500	-0.2	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.172		0.0479	0.0455	5.3	50.0
6:2FTS	AveID	1.744	1.925		0.0523	0.0474	10.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.213		0.0537	0.0500	7.4	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.179		0.0438	0.0476	-8.0	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.103		0.0553	0.0500	10.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.040		0.0433	0.0464	-6.6	50.0
8:2FTS	AveID	1.276	1.239		0.0500	0.0479	-3.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9607		0.0487	0.0500	-2.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9791		0.0495	0.0500	-0.9	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.037		0.0780	0.0500	3.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6527		0.0463	0.0482	-4.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9171		0.0491	0.0500	-1.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8538		0.0495	0.0500	-1.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	0.9229		0.0441	0.0500	-11.8	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.146		0.0521	0.0500	4.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2406		0.0485	0.0500	-2.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.293		0.0469	0.0500	-6.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9325		0.0504	0.0500	0.9	50.0
13C4 PFBA	Ave	1.266	1.352		2.67	2.50	6.8	50.0
13C5 PFPeA	Ave	0.8399	0.8851		2.64	2.50	5.4	50.0
13C3-PFBS	Ave	0.0192	0.0200		2.43	2.33	4.3	50.0
M2-4:2FTS	Ave	0.1324	0.1623		2.86	2.34	22.6	50.0
13C2 PFHxA	Ave	0.9288	0.9687		2.61	2.50	4.3	50.0
13C4-PFHpA	Ave	0.9164	0.9458		2.58	2.50	3.2	50.0
18O2 PFHxS	Ave	1.130	1.190		2.49	2.37	5.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-214657/2 Calibration Date: 03/23/2018 18:32

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.23LLAA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2172		2.72	2.38	14.3	50.0
13C4 PFOA	Ave	0.9374	0.9710		2.59	2.50	3.6	50.0
13C4 PFOS	Ave	0.8225	0.8701		2.53	2.39	5.8	50.0
13C5 PFNA	Ave	0.8266	0.8200		2.48	2.50	-0.8	50.0
13C8 FOSA	Ave	1.109	1.190		2.68	2.50	7.3	50.0
M2-8:2FTS	Ave	0.2565	0.2685		2.51	2.40	4.7	50.0
13C2 PFDA	Ave	0.7245	0.6877		2.37	2.50	-5.1	50.0
d3-NMeFOSAA	Ave	0.3814	0.3829		2.51	2.50	0.4	50.0
d5-NEtFOSAA	Ave	0.4345	0.4094		2.36	2.50	-5.8	50.0
13C2 PFUnA	Ave	0.6482	0.5866		2.26	2.50	-9.5	50.0
13C2 PFDoA	Ave	0.7355	0.6340		2.16	2.50	-13.8	50.0
13C2-PFTeDA	Ave	0.8983	0.6959		1.94	2.50	-22.5	50.0
13C2-PFHxDA	Ave	1.473	1.337		2.27	2.50	-9.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 23-Mar-2018 18:32:03 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:17:52 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:17:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.452	0.001	1.004	129270	0.0499		99.9	68.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.458	-0.011	0.538	6869976	2.67		107	98579	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.717	-0.008	1.000	107045	0.0528		106	44.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.717	-0.008	0.636	4497744	2.63		105	169514	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.752	-0.008	1.000	150701	0.0477		108	1635	
298.90 > 99.00	1.744	1.752	-0.008	1.000	66038		2.28(1.25-3.74)		458	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.753	-0.009	0.649	94520	2.43		104	430	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.965	-0.009	1.000	31343	0.0477		102	1871	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.976	-0.020	0.727	770131	2.86		123	10010	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.007	-0.010	1.000	103852	0.0516		103	342	
313.00 > 119.00	1.997	2.007	-0.010	1.000	9077		11.44(5.03-15.10)		235	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.008	-0.011	0.743	4922598	2.61		104	144775	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.340	-0.012	1.000	99234	0.0499		99.8	218	
363.00 > 169.00	2.328	2.340	-0.012	1.000	38434		2.58(1.13-3.40)		573	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.340	0.001	1.000	128944	0.0479		105	1379	
399.00 > 99.00	2.341	2.340	0.001	1.000	43983		2.93(1.50-4.49)		142	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.341	-0.013	0.866	4806217	2.58		103	89765	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.353	-0.012	0.871	5720135	2.49		105	60321	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.671	-0.006	1.000	40284	0.0523		110	2316	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.679	-0.014	0.991	1048701	2.72		114	26654	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.694	-0.005	1.000	119707	0.0537		107	36.3	
413.00 > 169.00	2.689	2.694	-0.005	1.000	62292		1.92(0.84-2.52)		191	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.694	-0.005		5081711	2.50			69204	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.702	-0.005	1.000	99282	0.0438		92.0	3320	
449.00 > 99.00	2.697	2.702	-0.005	1.000	27710		3.58(1.94-5.82)		354	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.703	-0.014	1.000	4934377	2.59		104	89063	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	85384	0.0433		93.4	630	
499.00 > 99.00	3.058	3.065	-0.007	1.000	19890		4.29(2.31-6.93)		161	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.065	-0.007	1.000	91907	0.0553		111	79.0	
463.00 > 169.00	3.058	3.065	-0.007	1.000	16808		5.47(1.90-5.69)		394	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.080	-0.022	1.137	4167141	2.48		99.2	57531	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.080	-0.022	1.137	4227006	2.53		106	53263	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.406	0.001	1.000	116230	0.0487		97.5	3244	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.415	-0.008	1.000	32383	0.0465		97.0	274	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.416	-0.009	1.267	6049058	2.68		107	54544	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.424	-0.008	1.000	68433	0.0495		99.1	323	
513.00 > 169.00	3.426	3.424	0.002	1.003	11892		5.75(2.36-7.09)		335	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.434	-0.027	1.267	1307272	2.51		105	36200	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.444	-0.028	1.271	3494713	2.37		94.9	60235	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.581	3.589	-0.007	1.003	40370	0.0518		104	369	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.602	-0.031	1.328	1945964	2.51		100	52793	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.738	-0.008	1.000	55637	0.0463		96.0	1915	
599.00 > 99.00	3.730	3.738	-0.008	1.000	15882		3.50(1.39-4.16)		264	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.758	-0.008	1.000	50903	0.0495		99.0	248	
563.00 > 169.00	3.750	3.758	-0.008	1.000	12236		4.16(2.12-6.36)		599	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.758	-0.008	1.003	38160	0.0491		98.2	711	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.771	-0.031	1.391	2080518	2.36		94.2	6120	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.771	-0.021	1.395	2980944	2.26		90.5	56369	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.039	4.046	-0.007	1.000	59468	0.0441		88.2	47.9	
613.00 > 169.00	4.039	4.046	-0.007	1.000	15358		3.87(2.13-6.40)		234	
D 36 13C2 PFDoA										
615.00 > 570.00	4.039	4.069	-0.030	1.502	3221742	2.15		86.2	24154	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.300	4.307	-0.007	1.000	73855	0.0521		104	36.7	
663.00 > 169.00	4.300	4.307	-0.007	1.000	24139		3.06(1.25-3.76)		529	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.535	4.543	-0.008	1.000	17017	0.0485		97.1	322	
713.00 > 219.00	4.535	4.543	-0.008	1.000	13799		1.23(0.71-2.13)		226	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.535	4.565	-0.030	1.687	3536503	1.94		77.5	21162	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.947	4.955	-0.008	1.000	175779	0.0469		93.7	51.7	
813.00 > 169.00	4.947	4.955	-0.008	1.000	31087		5.65(2.86-8.58)		460	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.947	4.982	-0.035	1.840	6796188	2.27		90.8	19544	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.301	5.307	-0.006	1.000	126753	0.0504		101	33.6	
913.00 > 169.00	5.301	5.307	-0.006	1.000	16773		7.56(3.83-11.48)		252	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:17:54 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_005.d

Injection Date: 23-Mar-2018 18:32:03 Instrument ID: A8_N

Lims ID: CCVL

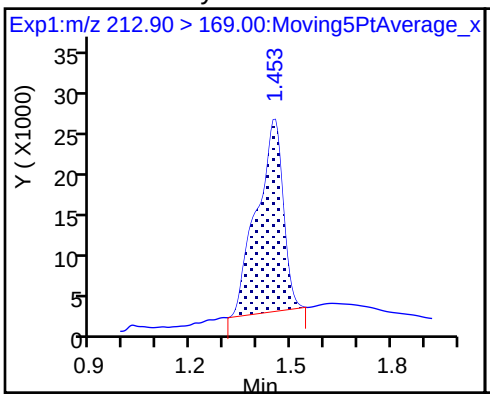
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

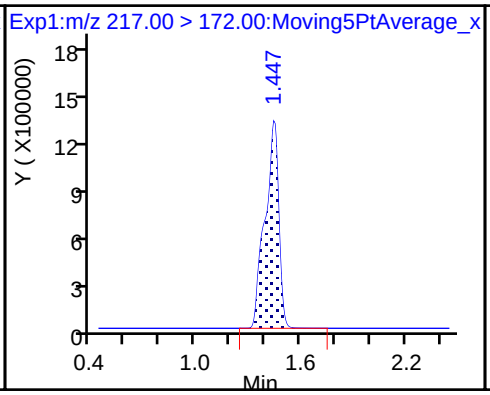
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

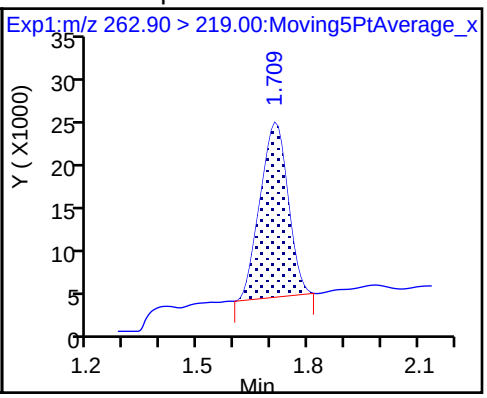
2 Perfluorobutyric acid



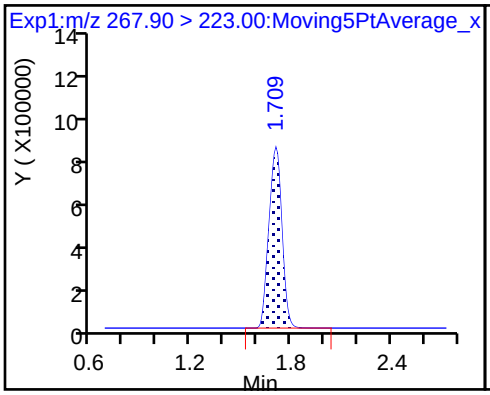
D 1 13C4 PFBA



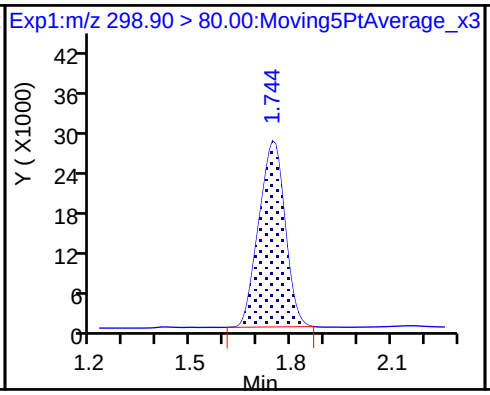
4 Perfluoropentanoic acid



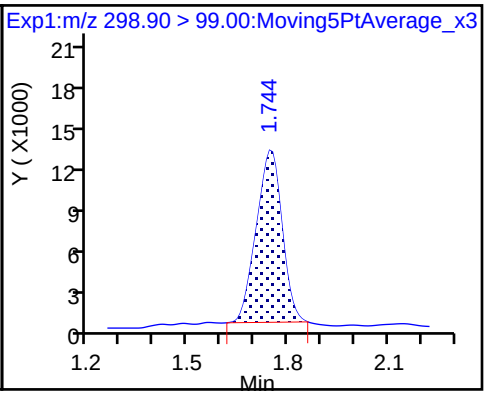
D 3 13C5-PFPeA



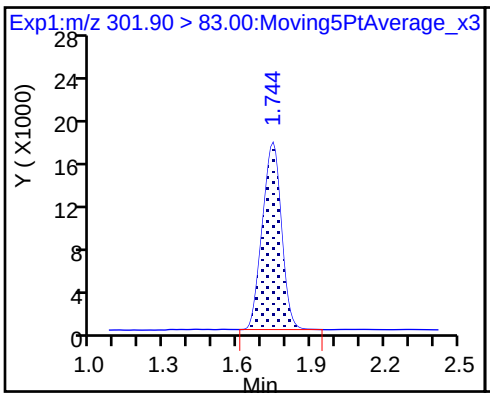
5 Perfluorobutanesulfonic acid



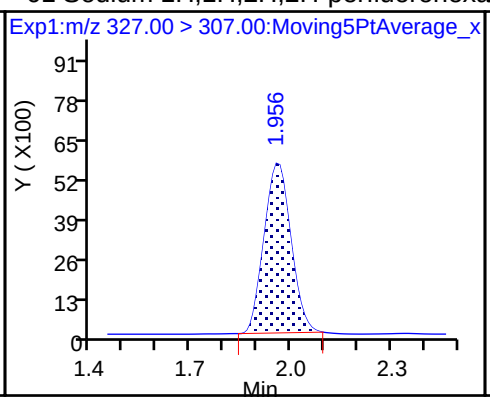
5 Perfluorobutanesulfonic acid



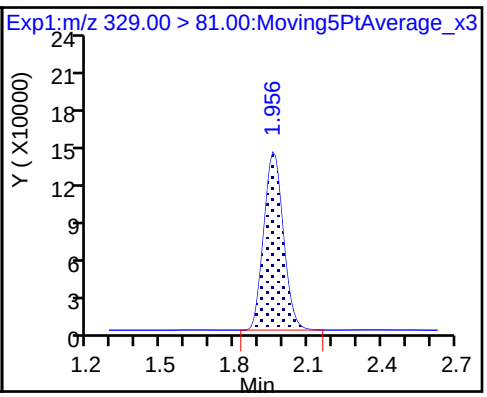
D 47 13C3-PFBS



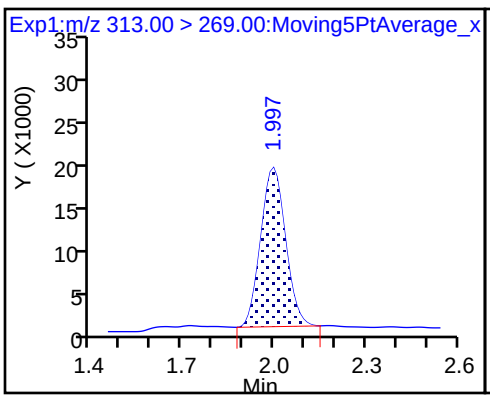
61 Sodium 1H,1H,2H,2H-perfluorohexane



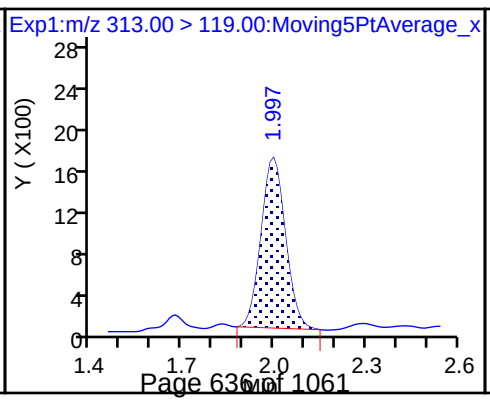
D 60 M2-4:2FTS



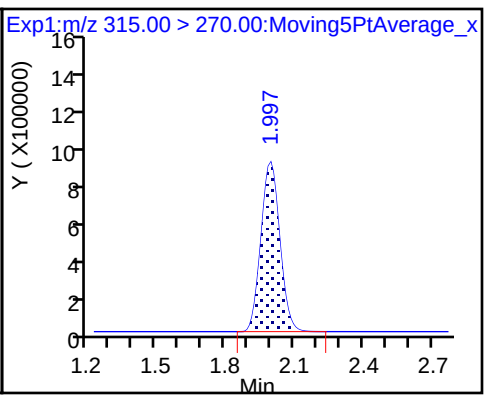
6 Perfluorohexanoic acid



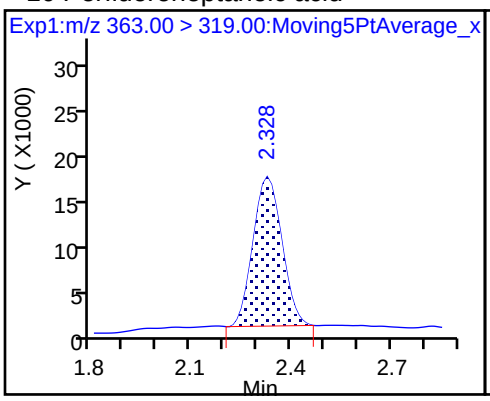
6 Perfluorohexanoic acid



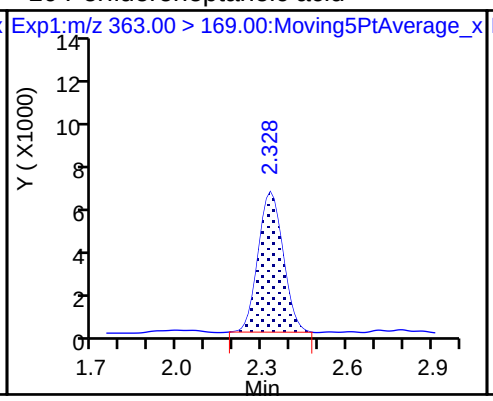
D 7 13C2 PFHxA



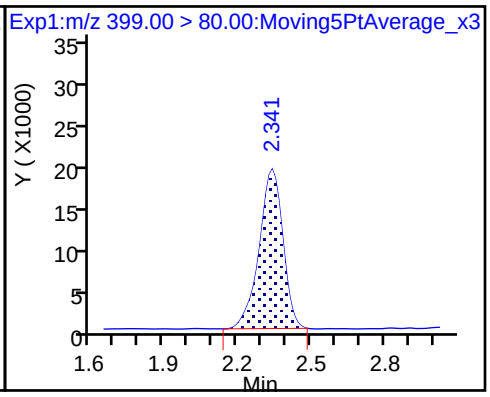
10 Perfluoroheptanoic acid



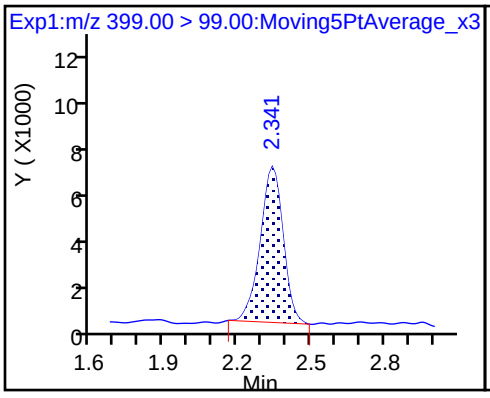
10 Perfluoroheptanoic acid



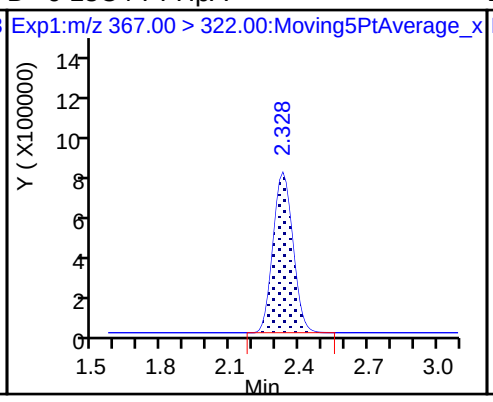
8 Perfluorohexanesulfonic acid



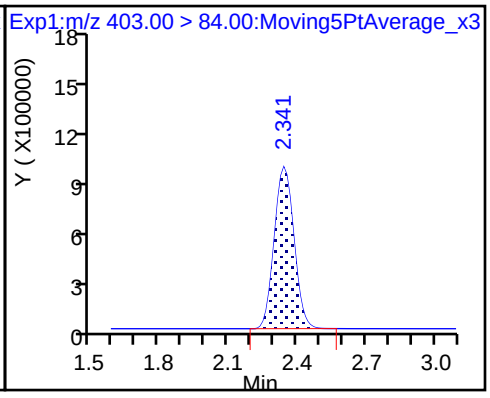
8 Perfluorohexanesulfonic acid



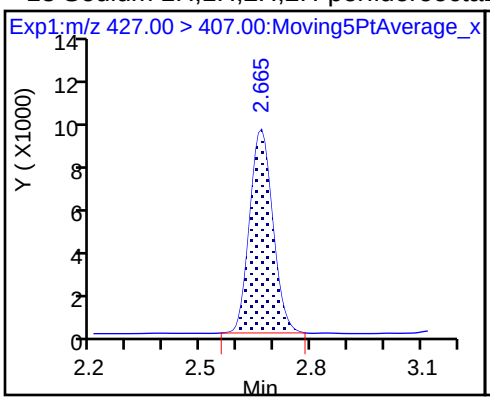
D 9 13C4-PFHpA



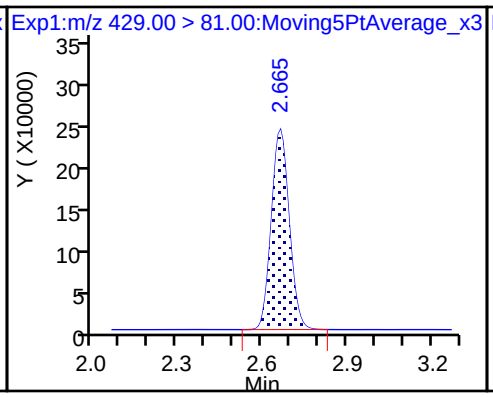
D 11 18O2 PFHxS



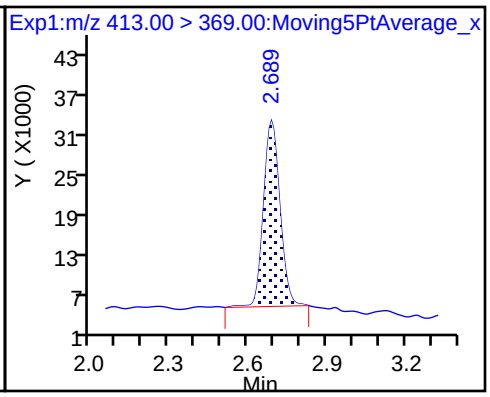
13 Sodium 1H,1H,2H,2H-perfluorooctane



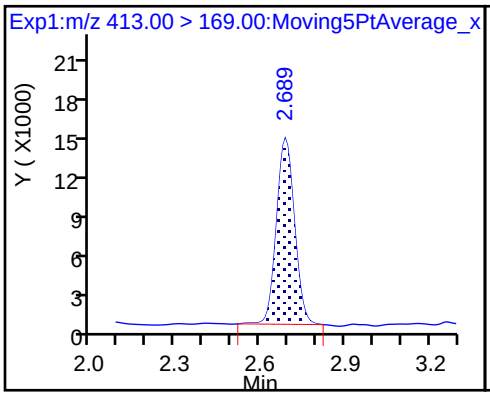
D 12 M2-6:2FTS



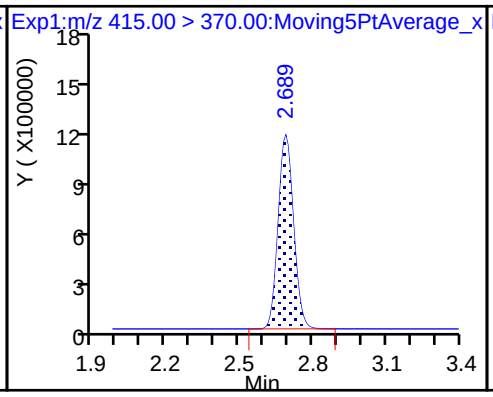
15 Perfluorooctanoic acid



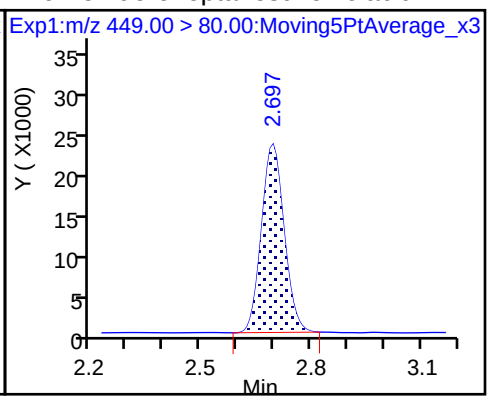
15 Perfluorooctanoic acid



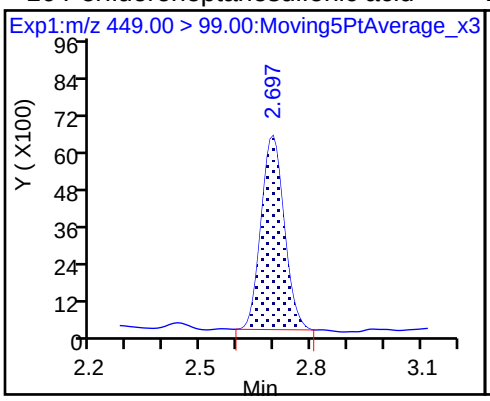
* 62 13C2-PFOA



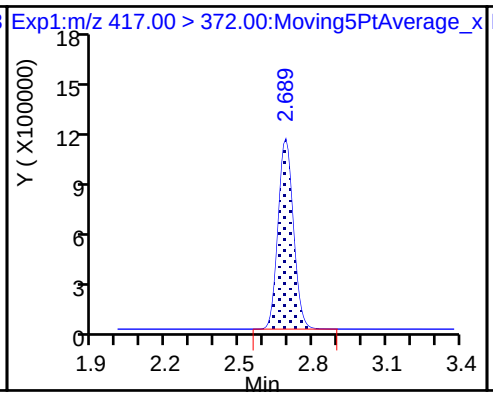
16 Perfluoroheptanesulfonic acid



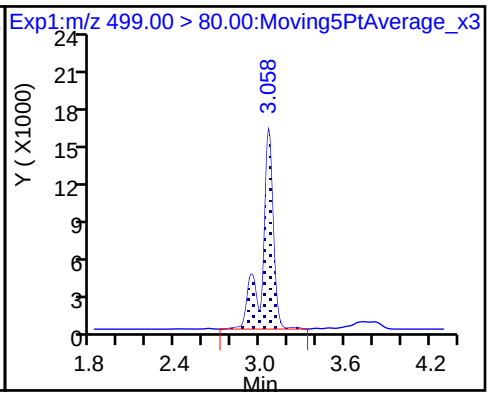
16 Perfluoroheptanesulfonic acid



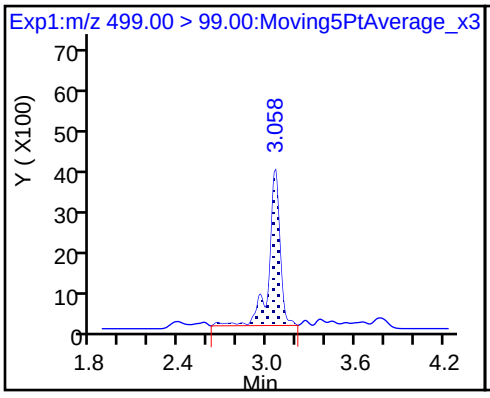
D 14 13C4 PFOA



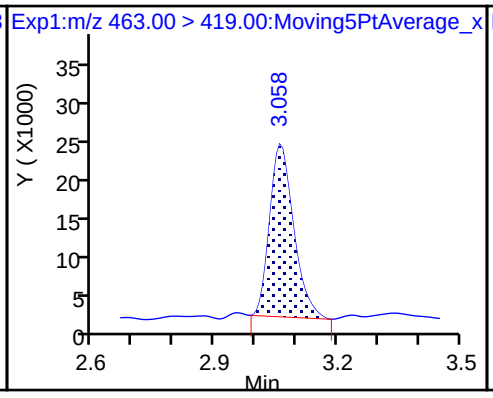
17 Perfluorooctane sulfonic acid



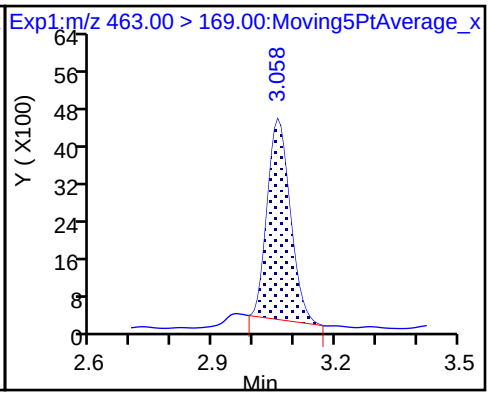
17 Perfluorooctane sulfonic acid



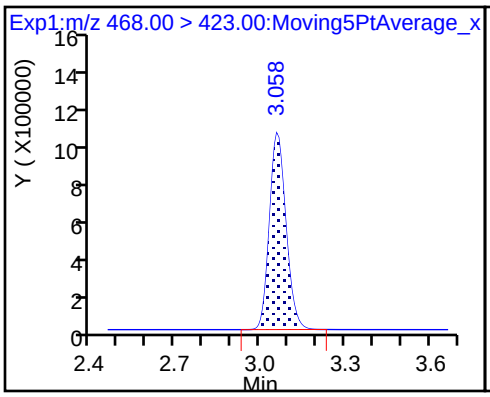
20 Perfluorononanoic acid



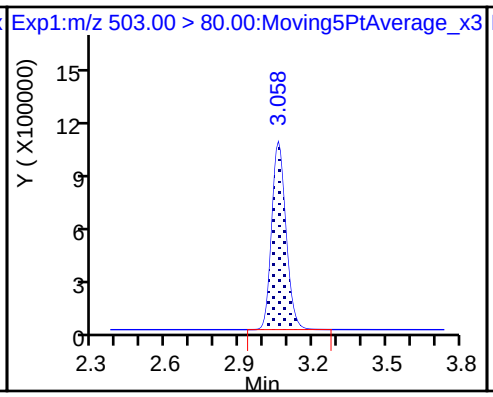
20 Perfluorononanoic acid



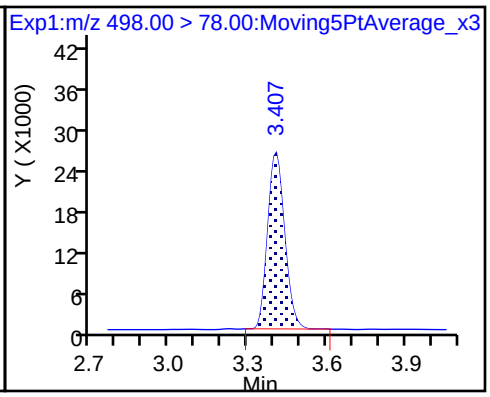
D 19 13C5 PFNA



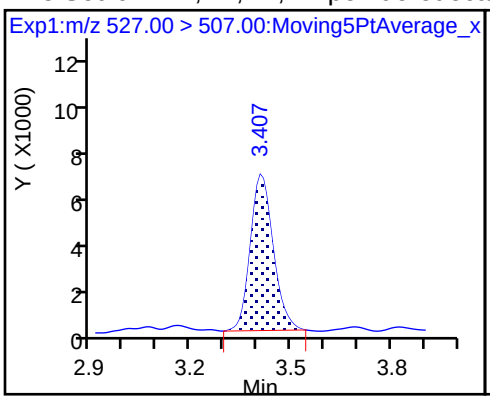
D 18 13C4 PFOS



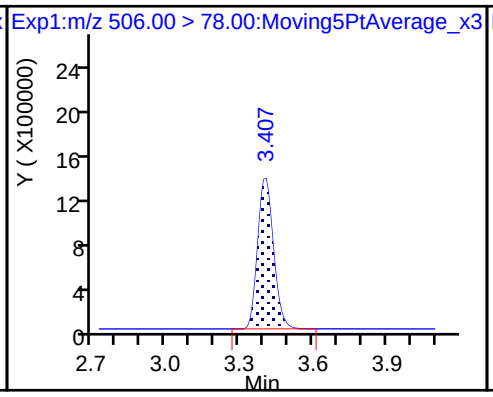
22 Perfluorooctane Sulfonamide



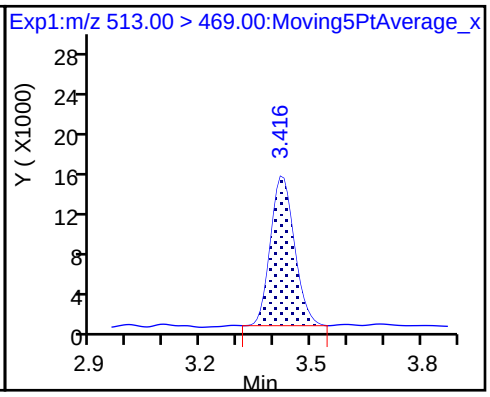
25 Sodium 1H,1H,2H,2H-perfluorodecane



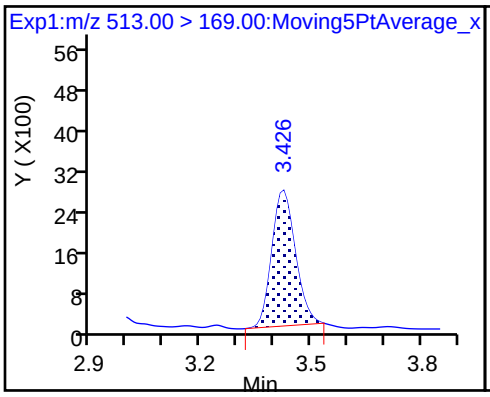
D 21 13C8 FOSA



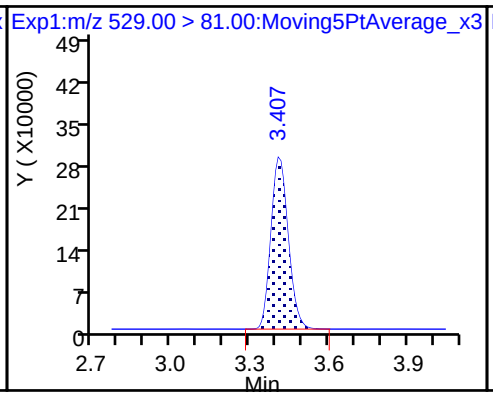
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid



D 26 M2-8:2FTS



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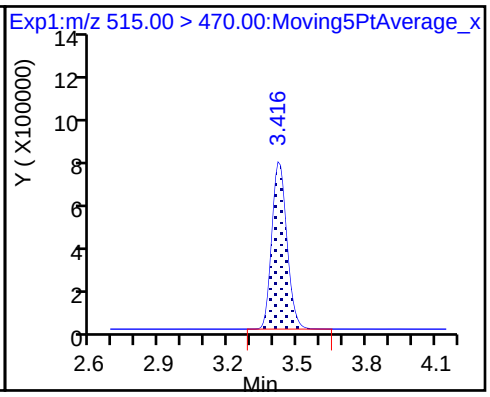
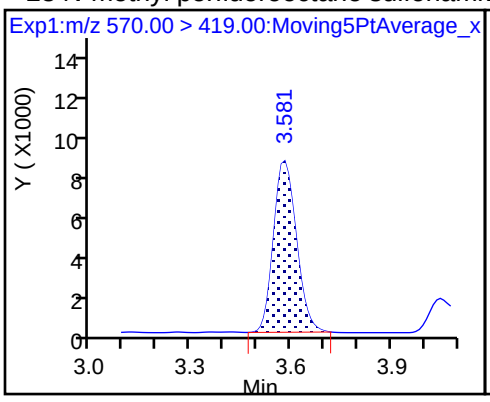
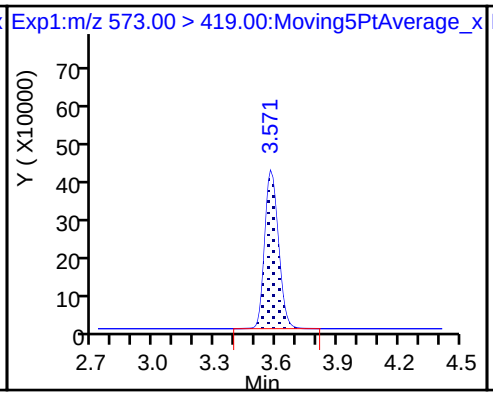


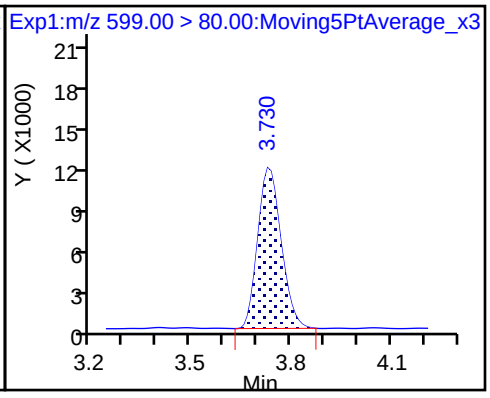
28 N-methyl perfluorooctane sulfonami



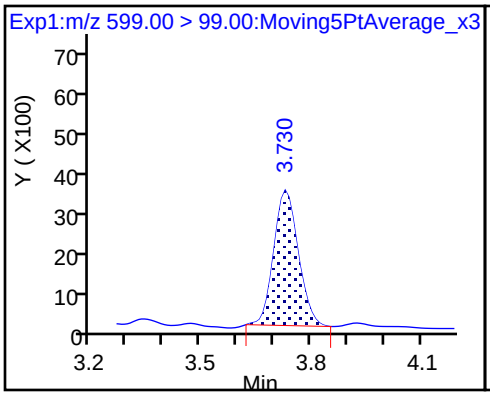
D 27 d3-NMeFOSAA



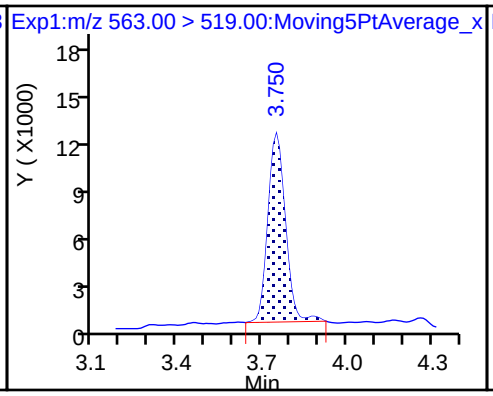
29 Perfluorodecane Sulfonic acid



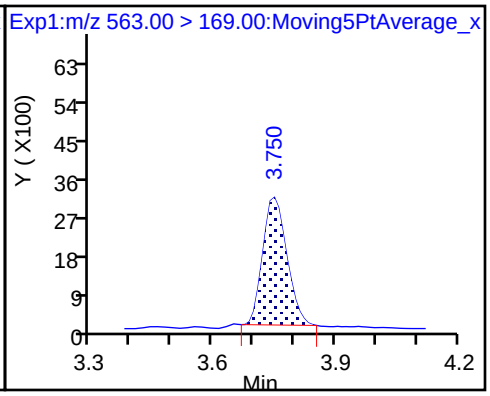
29 Perfluorodecane Sulfonic acid



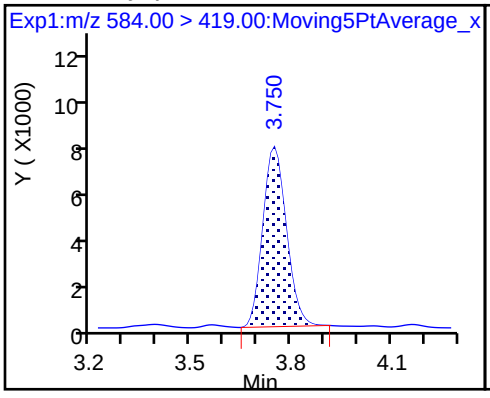
31 Perfluoroundecanoic acid



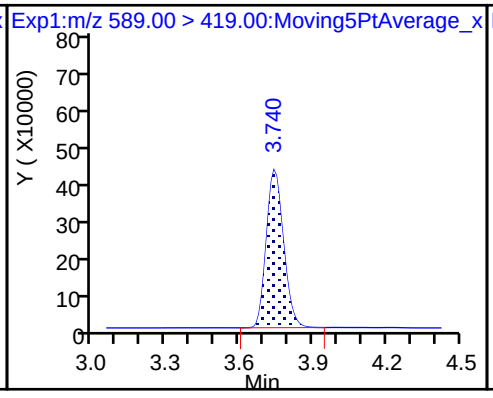
31 Perfluoroundecanoic acid



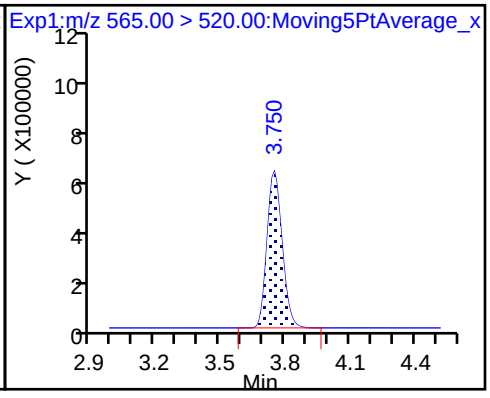
33 N-ethyl perfluorooctane sulfonamid



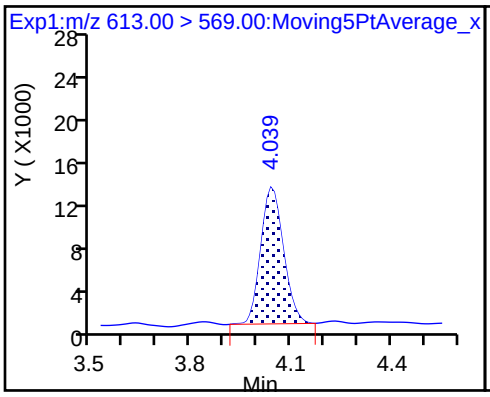
D 32 d5-NEtFOSAA



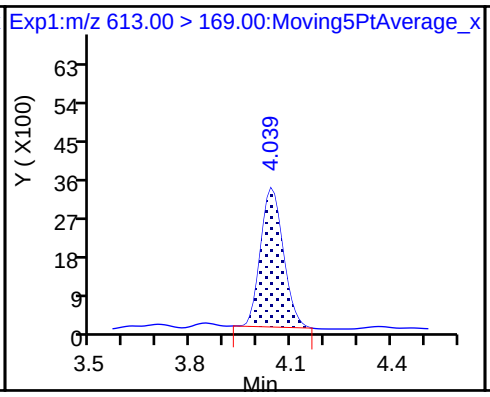
D 30 13C2 PFUnA



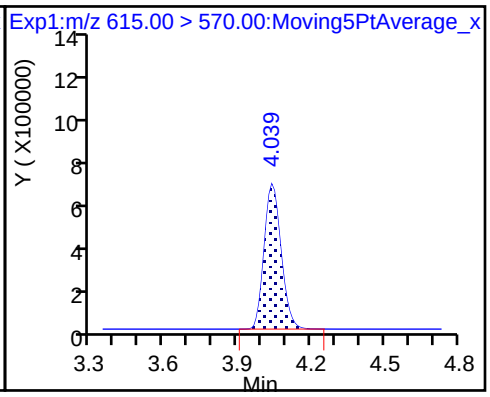
37 Perfluorododecanoic acid



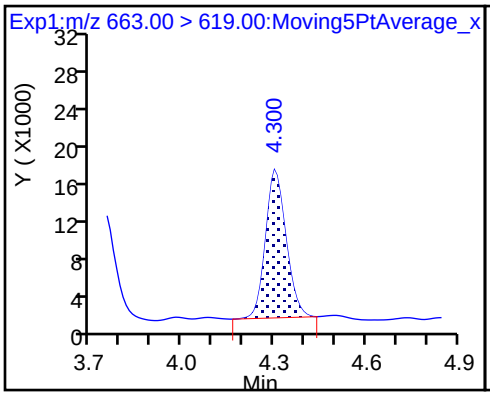
37 Perfluorododecanoic acid



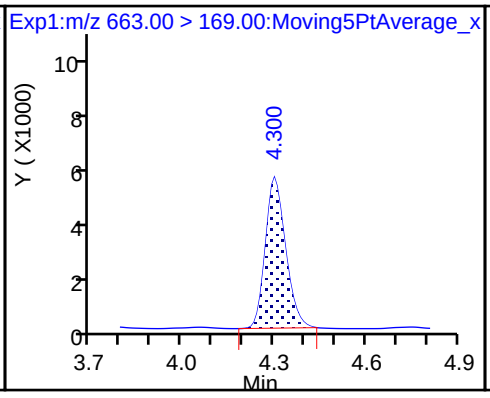
D 36 13C2 PFDoA



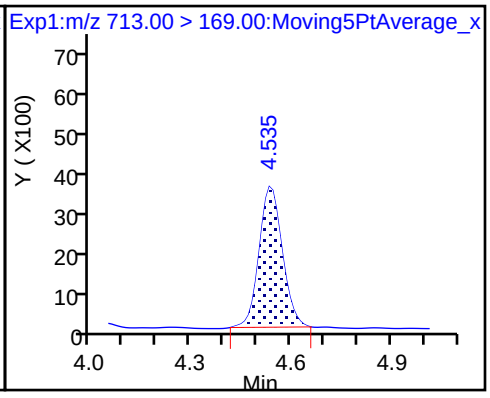
41 Perfluorotridecanoic acid



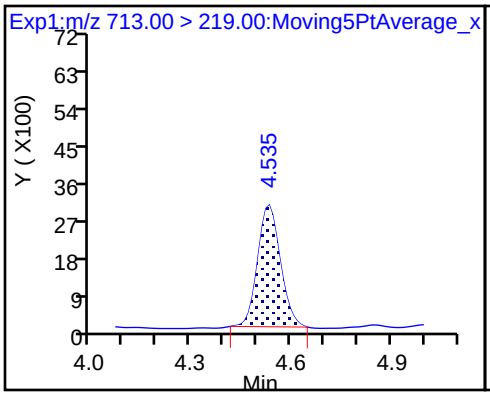
41 Perfluorotridecanoic acid



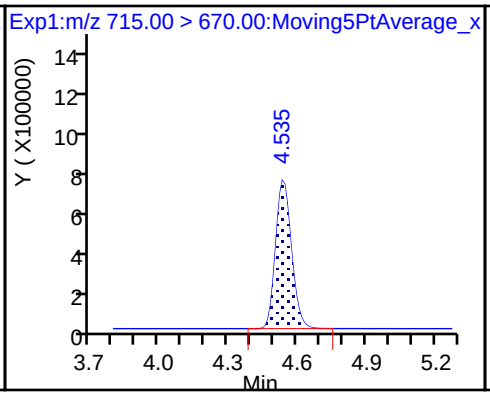
42 Perfluorotetradecanoic acid



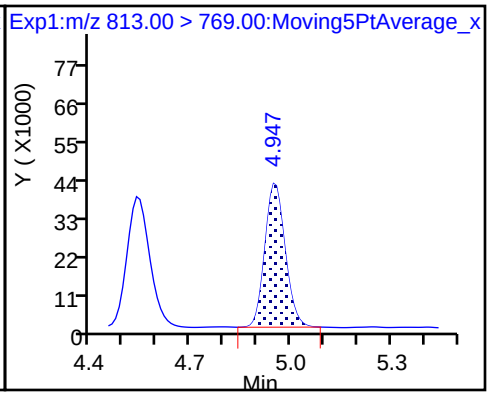
42 Perfluorotetradecanoic acid



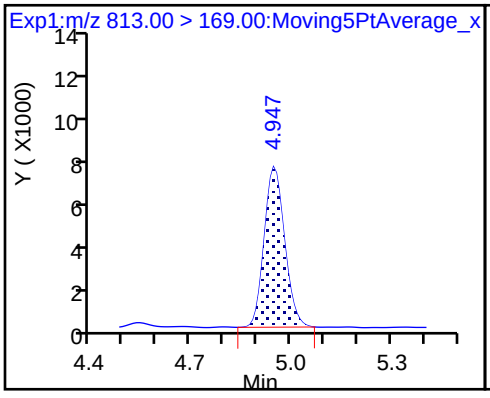
D 43 13C2-PFTeDA



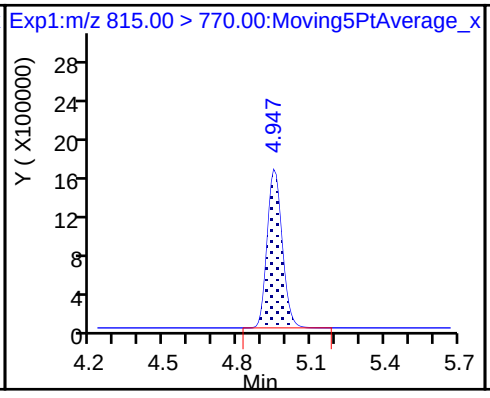
45 Perfluorohexadecanoic acid



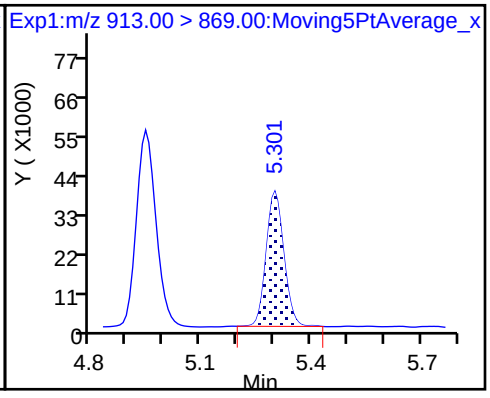
45 Perfluorohexadecanoic acid



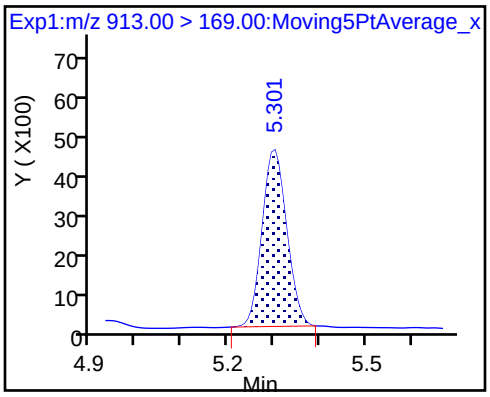
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214657/3 Calibration Date: 03/23/2018 18:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.23LLAA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9501		2.52	2.50	0.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.153		2.56	2.50	2.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.68		2.27	2.21	2.5	50.0
4:2 FTS	AveID	16.15	17.61		2.55	2.34	9.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9854		2.41	2.50	-3.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.089		2.63	2.50	5.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.024		2.09	2.28	-8.0	40.0
6:2FTS	AveID	1.744	1.757		2.39	2.37	0.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.186		2.62	2.50	5.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.349		2.51	2.38	5.3	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.077		2.70	2.50	8.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.143		2.38	2.32	2.6	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.000		2.54	2.50	1.5	40.0
8:2FTS	AveID	1.276	1.254		2.35	2.40	-1.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.068		2.70	2.50	8.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.044		2.61	2.50	4.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6721		2.38	2.41	-1.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9324		2.50	2.50	-0.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8020		2.33	2.50	-7.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	0.9936		2.37	2.50	-5.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.151		2.61	2.50	4.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2569		2.59	2.50	3.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9495		2.59	2.50	3.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9468		2.56	2.50	2.4	50.0
13C4 PFBA	Ave	1.266	1.288		2.54	2.50	1.7	50.0
13C5 PFPeA	Ave	0.8399	0.8611		2.56	2.50	2.5	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.42	2.33	3.9	50.0
M2-4:2FTS	Ave	0.1324	0.1454		2.57	2.34	9.9	50.0
13C2 PFHxA	Ave	0.9288	0.9546		2.57	2.50	2.8	50.0
13C4-PFHpA	Ave	0.9164	0.9003		2.46	2.50	-1.8	50.0
18O2 PFHxS	Ave	1.130	1.177		2.46	2.37	4.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214657/3 Calibration Date: 03/23/2018 18:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.23LLAA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2053		2.57	2.38	8.1	40.0
13C4 PFOA	Ave	0.9374	0.8872		2.37	2.50	-5.3	50.0
13C4 PFOS	Ave	0.8225	0.7991		2.32	2.39	-2.8	50.0
13C5 PFNA	Ave	0.8266	0.7921		2.40	2.50	-4.2	50.0
13C8 FOSA	Ave	1.109	1.122		2.53	2.50	1.2	50.0
M2-8:2FTS	Ave	0.2565	0.2531		2.36	2.40	-1.3	40.0
13C2 PFDA	Ave	0.7245	0.6491		2.24	2.50	-10.4	50.0
d3-NMeFOSAA	Ave	0.3814	0.3549		2.33	2.50	-6.9	50.0
d5-NEtFOSAA	Ave	0.4345	0.3950		2.27	2.50	-9.1	50.0
13C2 PFUnA	Ave	0.6482	0.5337		2.06	2.50	-17.7	50.0
13C2 PFDoA	Ave	0.7355	0.5782		1.97	2.50	-21.4	50.0
13C2-PFTeDA	Ave	0.8983	0.6754		1.88	2.50	-24.8	50.0
13C2-PFHxDA	Ave	1.473	1.255		2.13	2.50	-14.8	50.0

Report Date: 29-Mar-2018 09:17:57 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_006.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 23-Mar-2018 18:39:54 ALS Bottle#: 14 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:17:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:17:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.452	0.0	1.000	5989775	2.52		101	3957	
D 1 13C4 PFBA										
217.00 > 172.00	1.452	1.458	-0.006	0.539	6304524	2.54		102	90529	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.000	4860545	2.56		102	2283	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.717	0.0	0.637	4214640	2.56		103	197637	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.752	1.752	0.0	1.000	6864040	2.27		103	64144	
298.90 > 99.00	1.752	1.752	0.0	1.000	2838753		2.42(1.25-3.74)		18293	
D 47 13C3-PFBS										
301.90 > 83.00	1.752	1.753	-0.001	0.650	90625	2.41		104	584	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.965	1.965	0.0	1.000	1603140	2.55		109	72610	
D 60 M2-4:2FTS										
329.00 > 81.00	1.965	1.976	-0.011	0.729	664791	2.57		110	9166	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.007	2.007	0.0	1.005	4604037	2.41		96.4	17469	
313.00 > 119.00	1.997	2.007	-0.010	1.000	413580		11.13(5.03-15.10)		8939	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.008	-0.011	0.741	4672345	2.57		103	116637	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.340	0.0	1.000	4798838	2.63		105	10332	
363.00 > 169.00	2.340	2.340	0.0	1.000	1940184		2.47(1.13-3.40)		24964	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.340	2.340	0.0	0.995	5367678	2.09		92.0	23458	
399.00 > 99.00	2.353	2.340	0.013	1.000	1820057		2.95(1.50-4.49)		5582	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.341	-0.001	0.869	4406365	2.46		98.2	91595	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.353	0.0	0.873	5450905	2.46		104	70638	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.671	0.0	1.000	1673547	2.39		101	55602	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.679	-0.008	0.991	954472	2.57		108	21975	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.694	2.694	0.0	1.000	5149444	2.62		105	1719	
413.00 > 169.00	2.694	2.694	0.0	1.000	2640805		1.95(0.84-2.52)		8815	
* 62 13C2-PFOA										
415.00 > 370.00	2.694	2.694	0.0		4894601	2.50			51489	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.702	2.702	0.0	1.000	5022508	2.51		105	53092	
449.00 > 99.00	2.702	2.702	0.0	1.000	1335484		3.76(1.94-5.82)		14533	
D 14 13C4 PFOA										
417.00 > 372.00	2.694	2.703	-0.009	1.000	4342691	2.37		94.7	76672	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4146898	2.38		103	31243	
499.00 > 99.00	3.065	3.065	0.0	1.000	903773		4.59(2.31-6.93)		10851	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.065	0.0	1.000	4175624	2.70		108	4060	
463.00 > 169.00	3.065	3.065	0.0	1.000	1009664		4.14(1.90-5.69)		19154	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.080	-0.015	1.137	3876785	2.40		95.8	79333	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.080	-0.015	1.137	3739062	2.32		97.2	35714	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.406	0.0	1.000	5495095	2.54		101	68221	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.415	0.0	1.000	1488566	2.35		98.3	17364	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.416	-0.010	1.264	5492900	2.53		101	64628	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.424	0.0	1.000	3393931	2.70		108	17662	
513.00 > 169.00	3.424	3.424	0.0	1.000	620482		5.47(2.36-7.09)		2138	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.434	-0.019	1.267	1186857	2.36		98.7	32848	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.444	-0.020	1.271	3177140	2.24		89.6	47266	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.589	3.589	0.0	1.003	1813875	2.61		104	11690	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.602	-0.024	1.328	1737094	2.33		93.1	28865	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.738	0.0	1.000	2533902	2.38		98.8	48370	
599.00 > 99.00	3.738	3.738	0.0	1.000	840214		3.02(1.39-4.16)		15984	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	2095021	2.33		93.0	10290	
563.00 > 169.00	3.758	3.758	0.0	1.000	546920		3.83(2.12-6.36)		18858	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.003	1802857	2.50		99.8	61439	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.771	-0.023	1.391	1933585	2.27		90.9	7750	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.771	-0.013	1.395	2612355	2.06		82.3	42056	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.046	0.0	1.000	2812117	2.37		95.0	2438	
613.00 > 169.00	4.046	4.046	0.0	1.000	716255		3.93(2.13-6.40)		11347	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.069	-0.023	1.502	2830157	1.97		78.6	19583	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	3256535	2.61		105	1626	
663.00 > 169.00	4.307	4.307	0.0	1.000	1086915		3.00(1.25-3.76)		17736	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.543	0.0	1.000	849215	2.59		104	12618	
713.00 > 219.00	4.543	4.543	0.0	1.000	623527		1.36(0.71-2.13)		9227	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.565	-0.022	1.686	3305944	1.88		75.2	22316	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.955	0.0	1.000	5830377	2.59		103	1625	
813.00 > 169.00	4.955	4.955	0.0	1.000	970478		6.01(2.86-8.58)		10013	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.982	-0.027	1.839	6140744	2.13		85.2	16403	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.307	5.307	0.0	1.000	5814214	2.56		102	1170	
913.00 > 169.00	5.307	5.307	0.0	1.000	729578		7.97(3.83-11.48)		6039	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:17:57 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_006.d

Injection Date: 23-Mar-2018 18:39:54 Instrument ID: A8_N

Lims ID: CCV L5

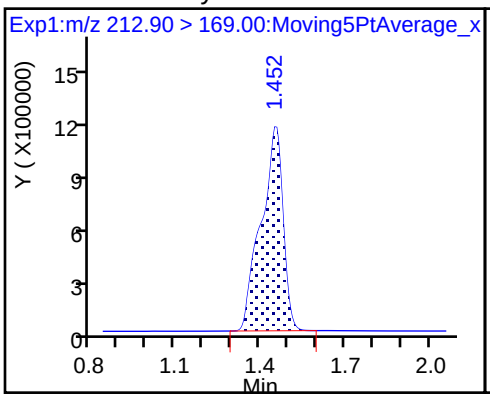
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 3

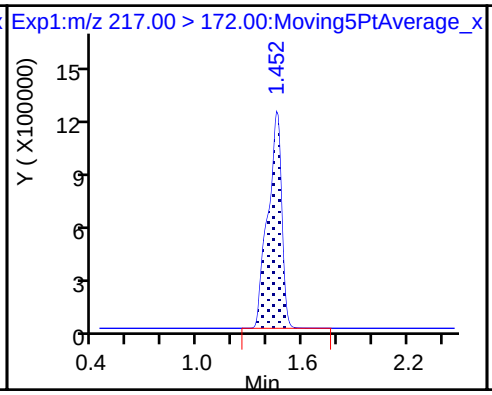
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

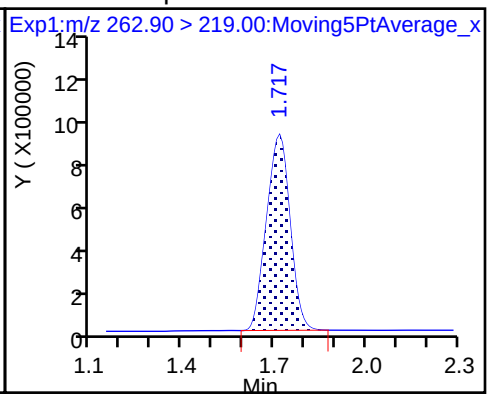
2 Perfluorobutyric acid



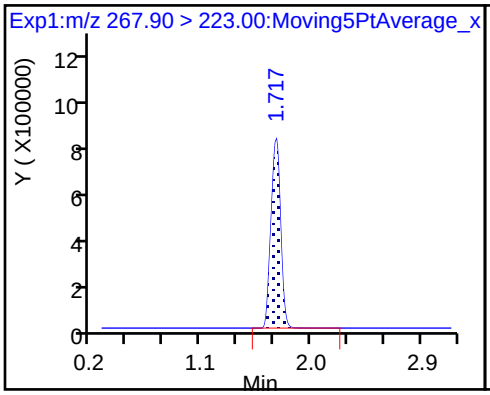
D 1 13C4 PFBA



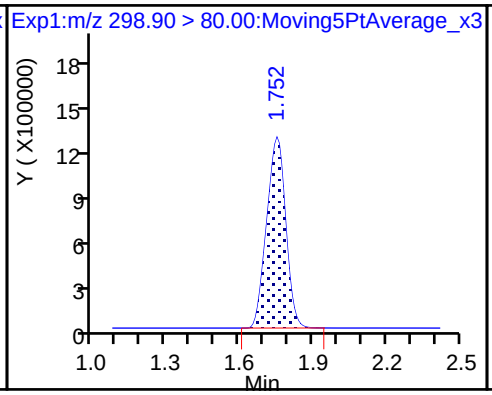
4 Perfluoropentanoic acid



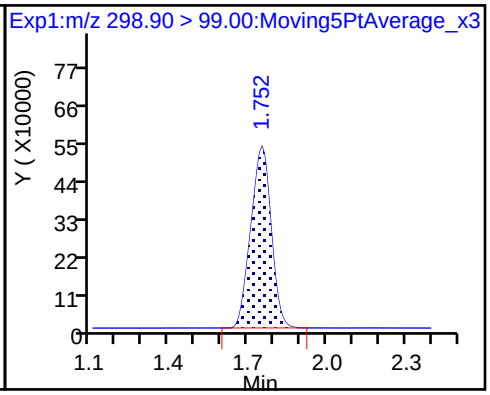
D 3 13C5-PFPeA



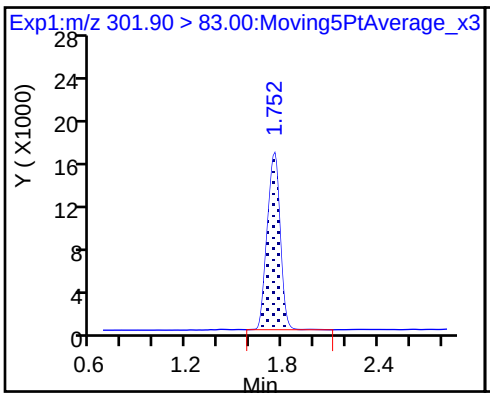
5 Perfluorobutanesulfonic acid



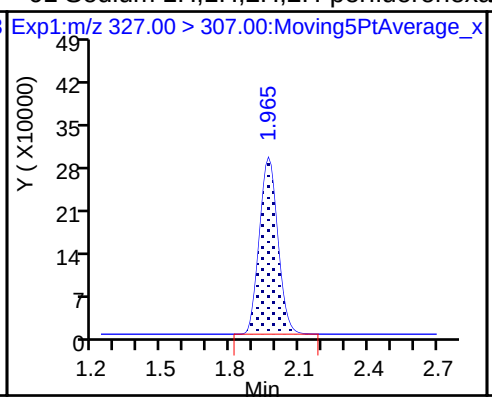
5 Perfluorobutanesulfonic acid



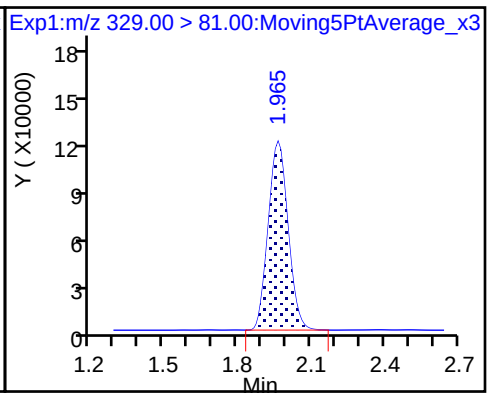
D 47 13C3-PFBS



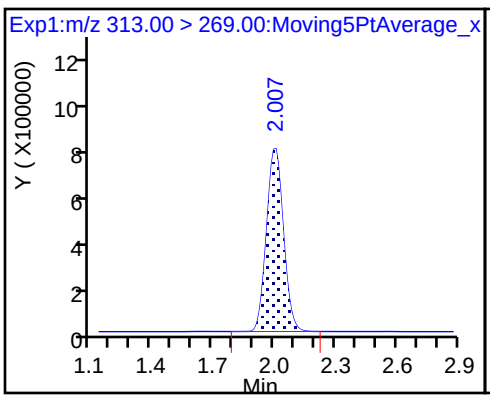
61 Sodium 1H,1H,2H,2H-perfluorohexane



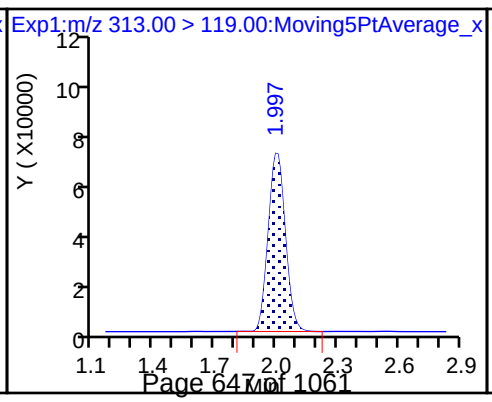
D 60 M2-4:2FTS



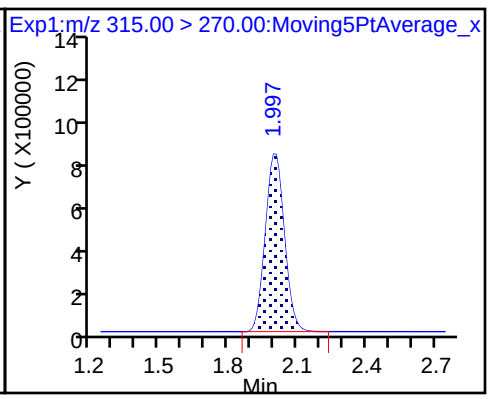
6 Perfluorohexanoic acid



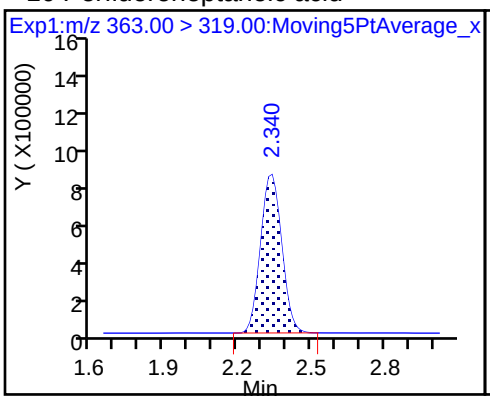
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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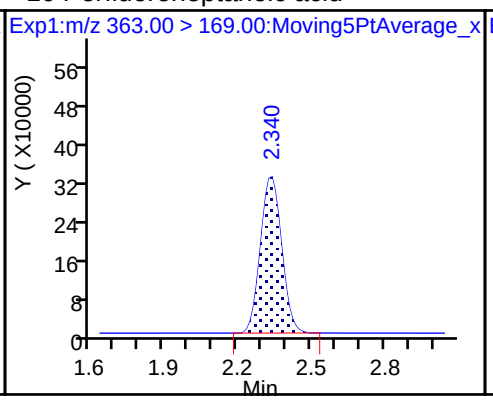
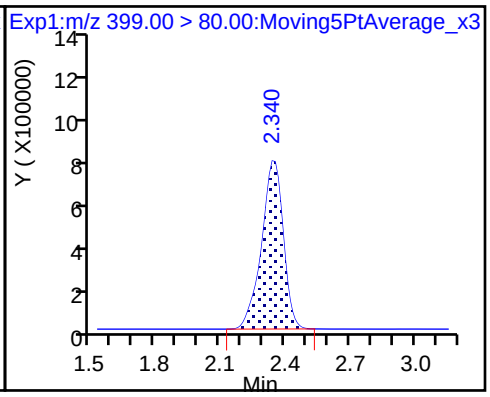
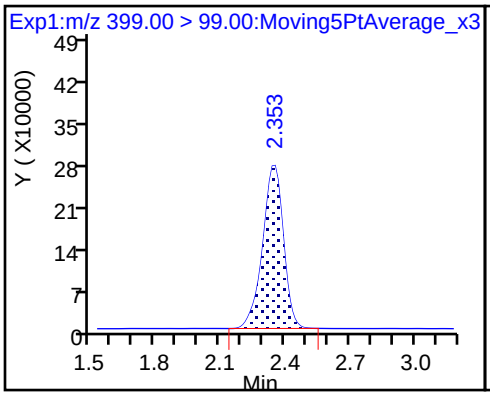


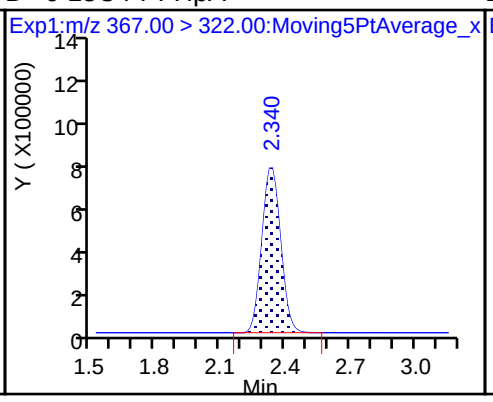
8 Perfluorohexanesulfonic acid



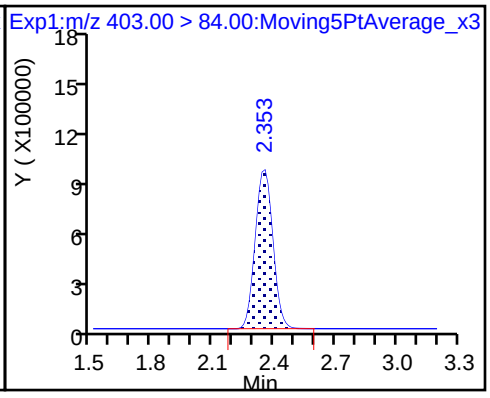
8 Perfluorohexanesulfonic acid



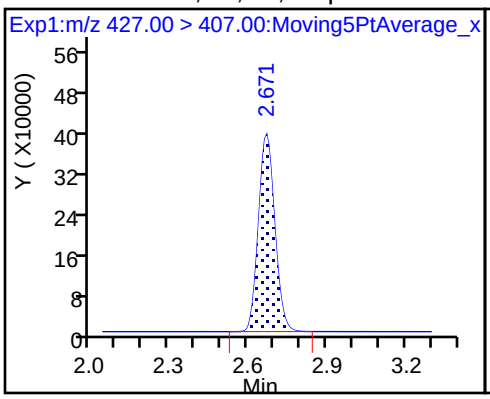
D 9 13C4-PFHpA



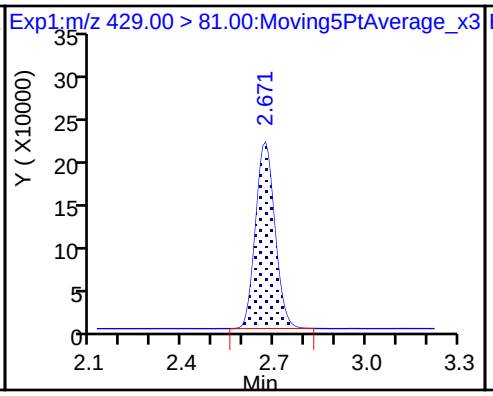
D 11 18O2 PFHxS



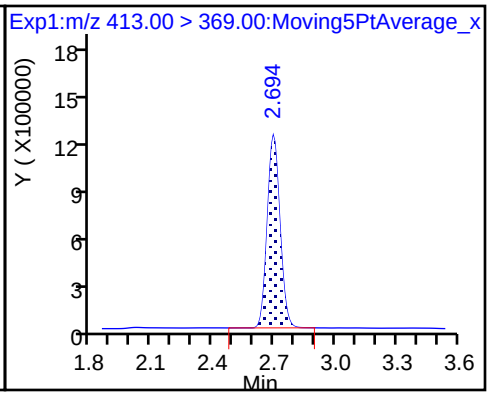
13 Sodium 1H,1H,2H,2H-perfluorooctane



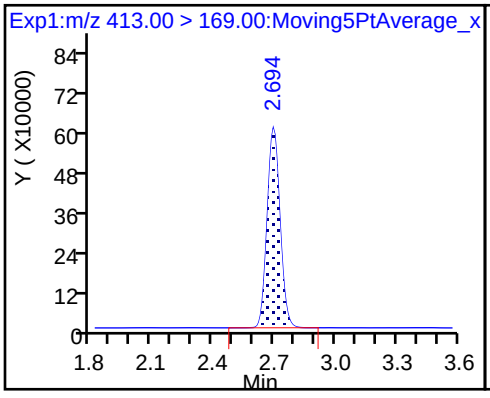
D 12 M2-6:2FTS



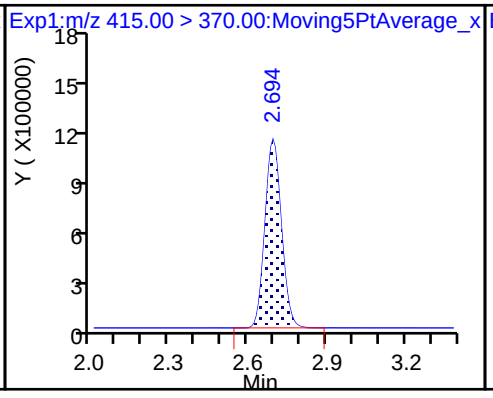
15 Perfluorooctanoic acid



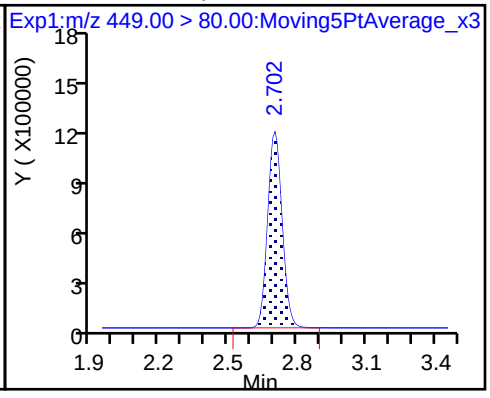
15 Perfluorooctanoic acid



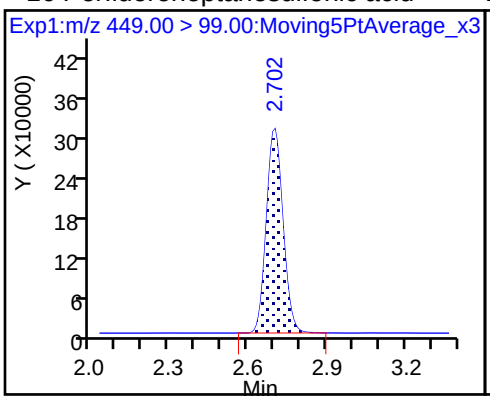
* 62 13C2-PFOA



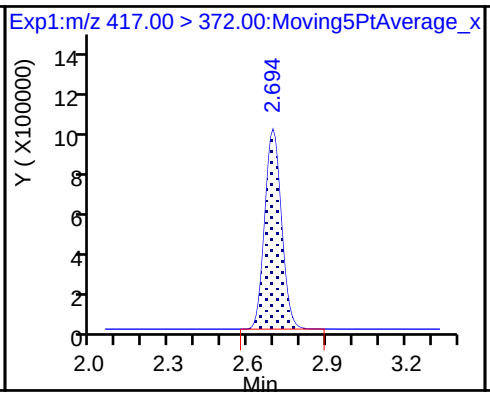
16 Perfluoroheptanesulfonic acid



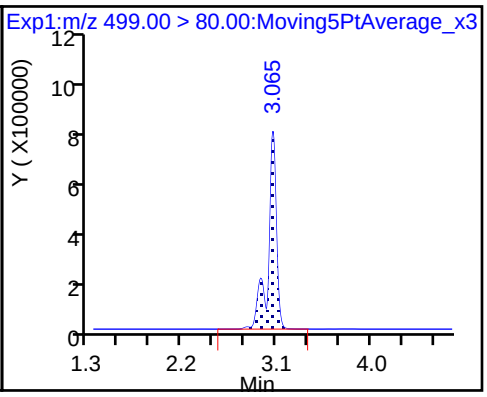
16 Perfluoroheptanesulfonic acid



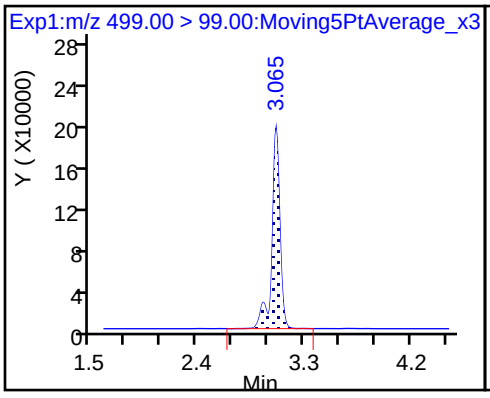
D 14 13C4 PFOA



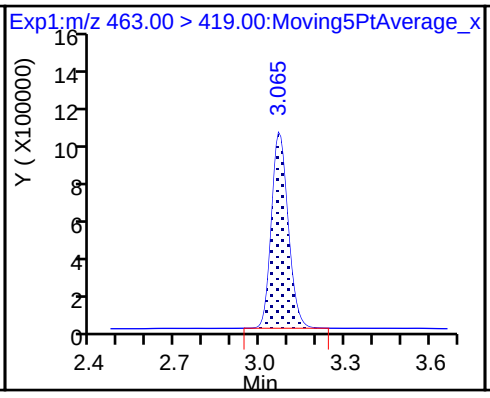
17 Perfluorooctane sulfonic acid



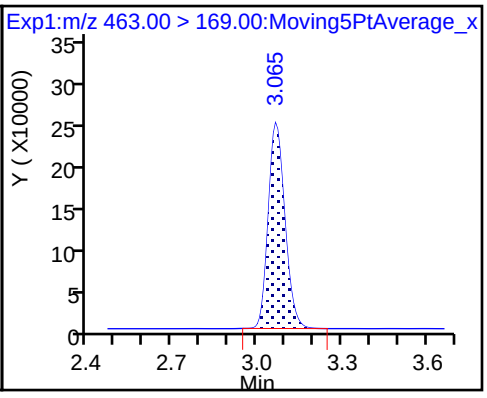
17 Perfluorooctane sulfonic acid



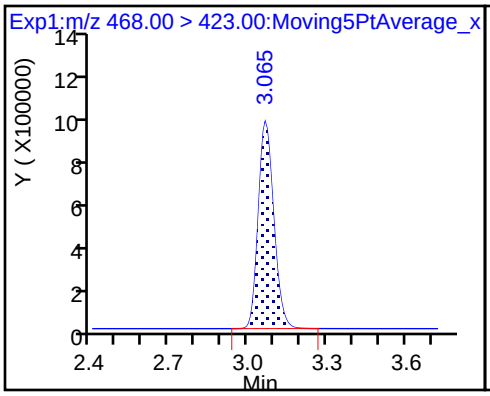
20 Perfluorononanoic acid



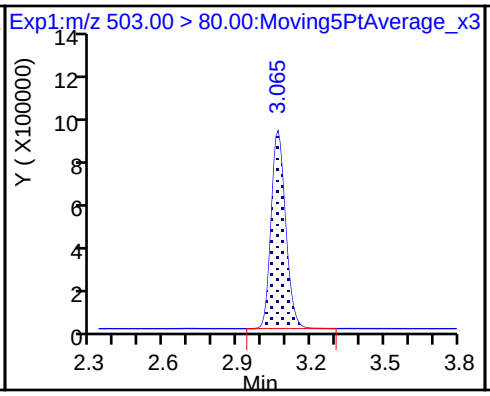
20 Perfluorononanoic acid



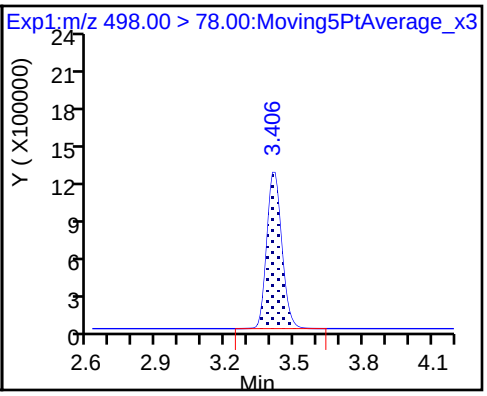
D 19 13C5 PFNA



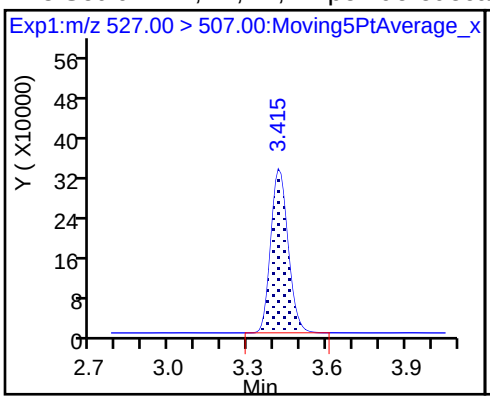
D 18 13C4 PFOS



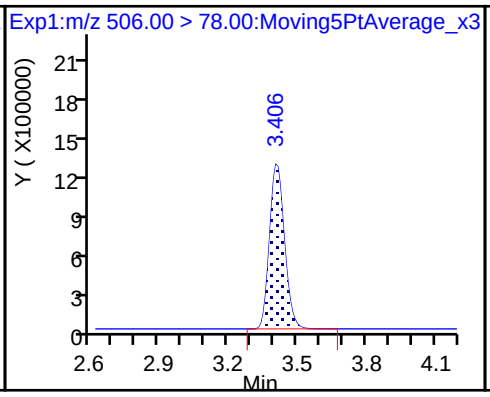
22 Perfluorooctane Sulfonamide



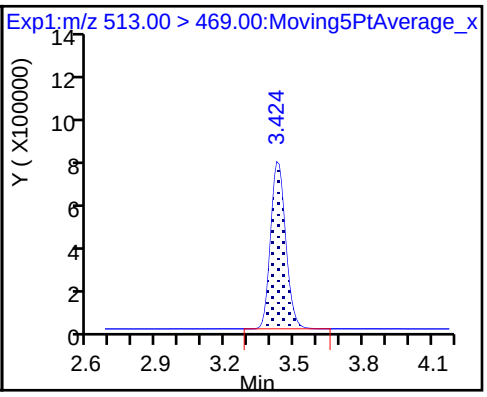
25 Sodium 1H,1H,2H,2H-perfluorodecane



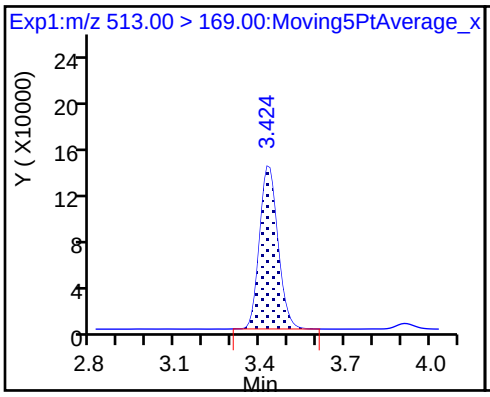
D 21 13C8 FOSA



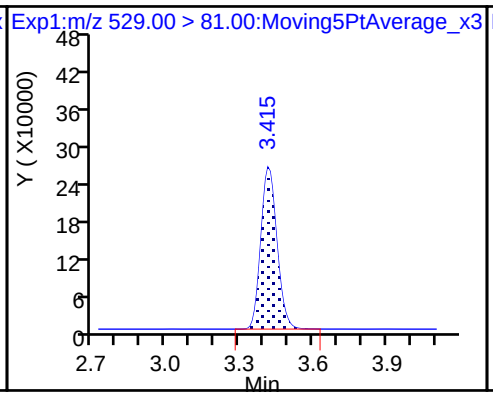
24 Perfluorodecanoic acid



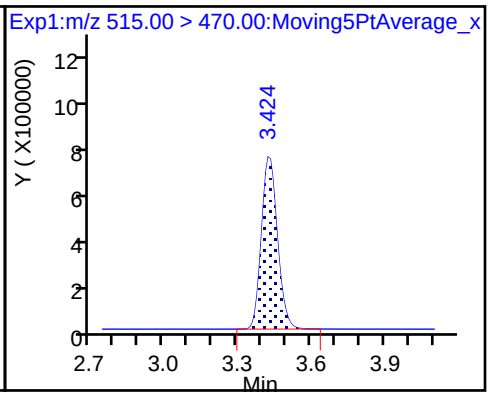
24 Perfluorodecanoic acid



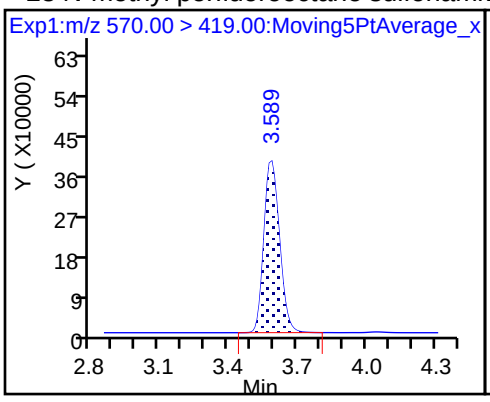
D 26 M2-8:2FTS



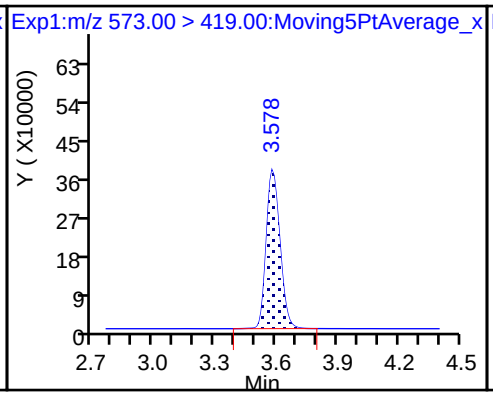
D 23 13C2 PFDA



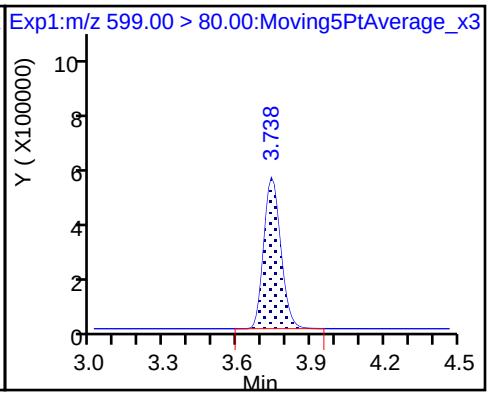
28 N-methyl perfluorooctane sulfonami



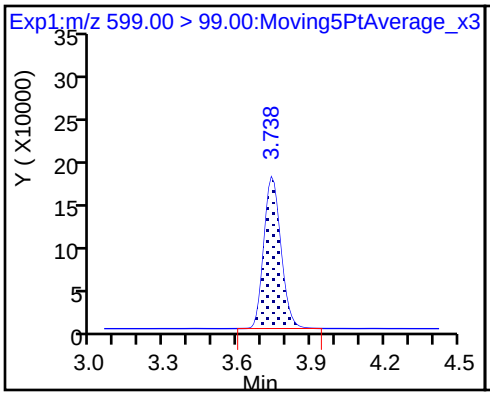
D 27 d3-NMeFOSAA



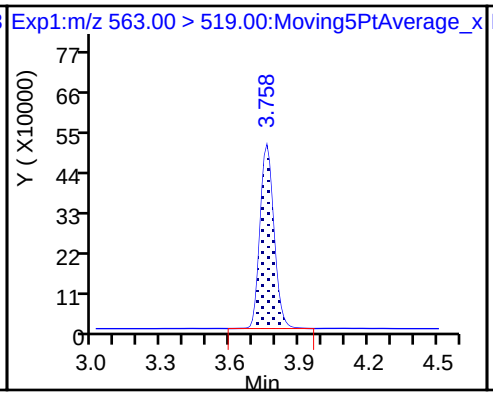
29 Perfluorodecane Sulfonic acid



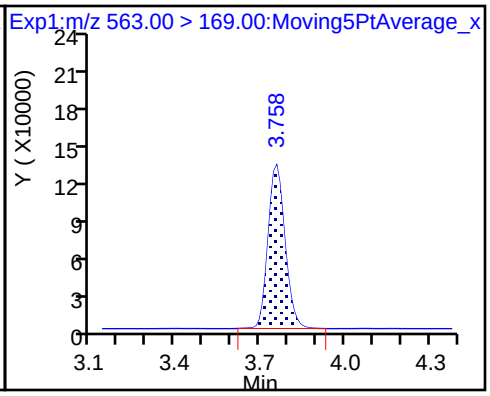
29 Perfluorodecane Sulfonic acid



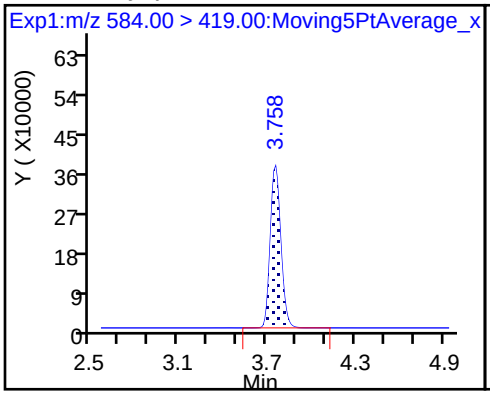
31 Perfluoroundecanoic acid



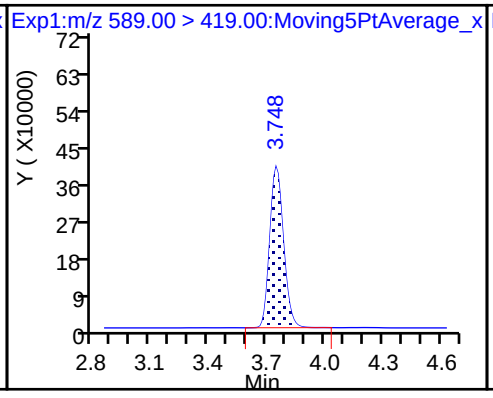
31 Perfluoroundecanoic acid



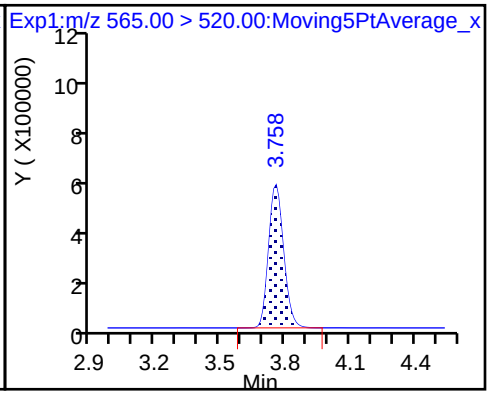
33 N-ethyl perfluorooctane sulfonamid



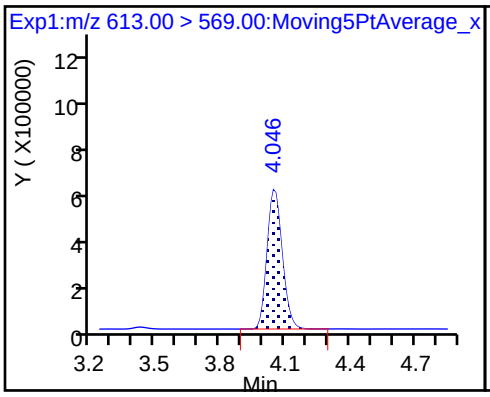
D 32 d5-NEtFOSAA



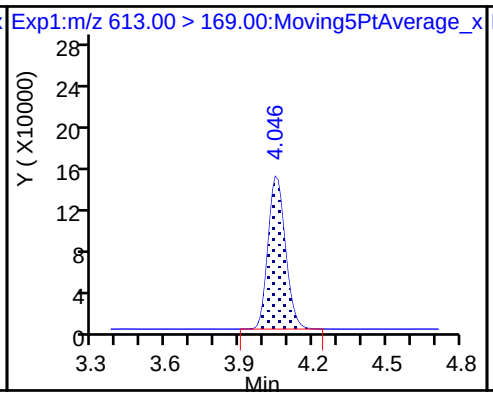
D 30 13C2 PFUnA



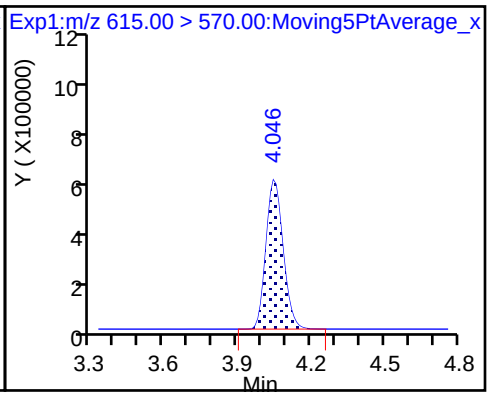
37 Perfluorododecanoic acid



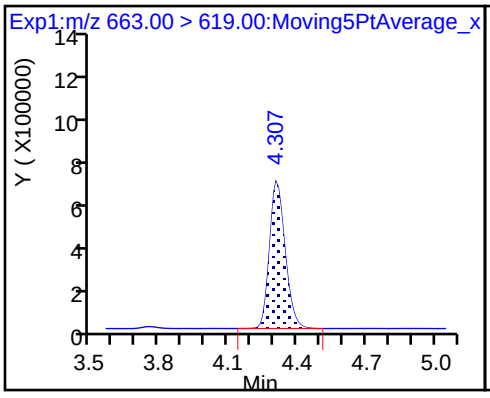
37 Perfluorododecanoic acid



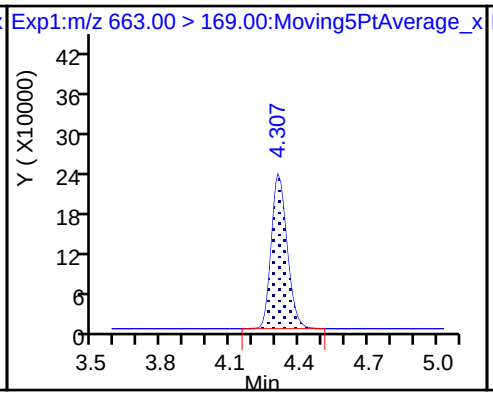
D 36 13C2 PFDoA



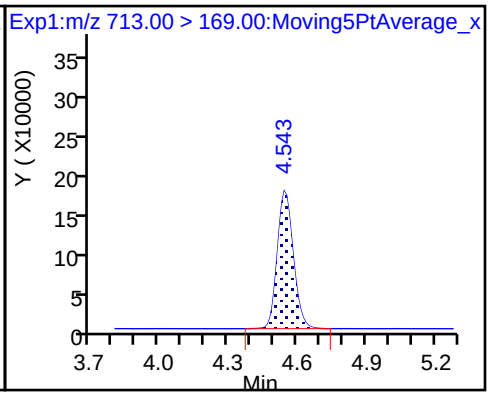
41 Perfluorotridecanoic acid



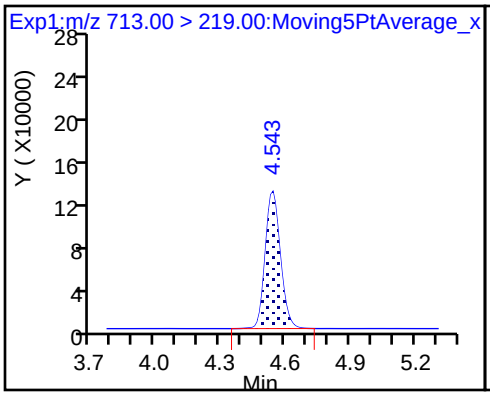
41 Perfluorotridecanoic acid



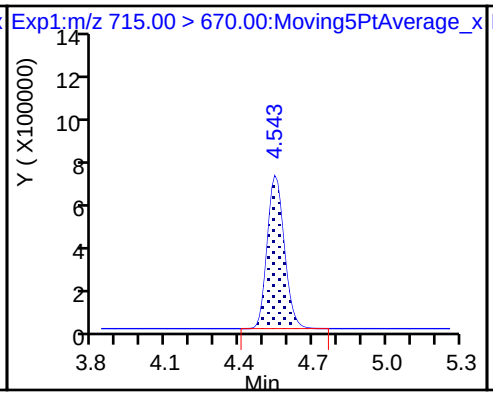
42 Perfluorotetradecanoic acid



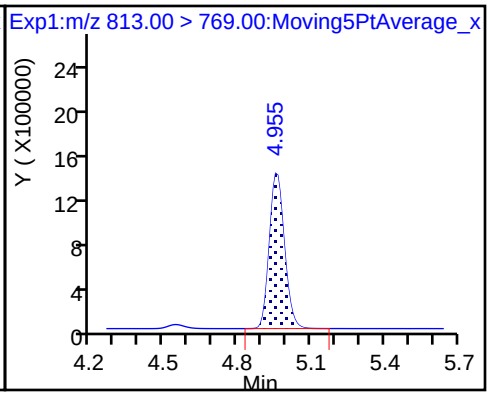
42 Perfluorotetradecanoic acid



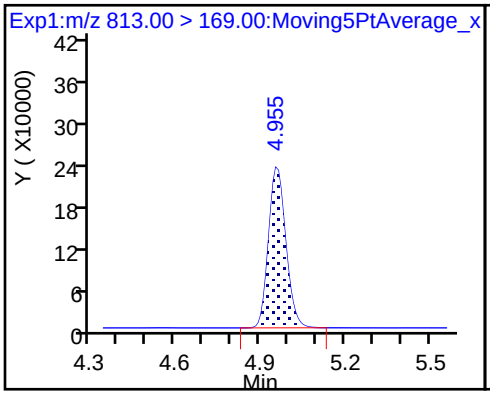
D 43 13C2-PFTeDA



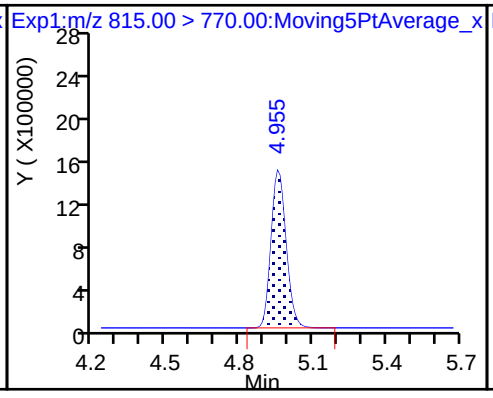
45 Perfluorohexadecanoic acid



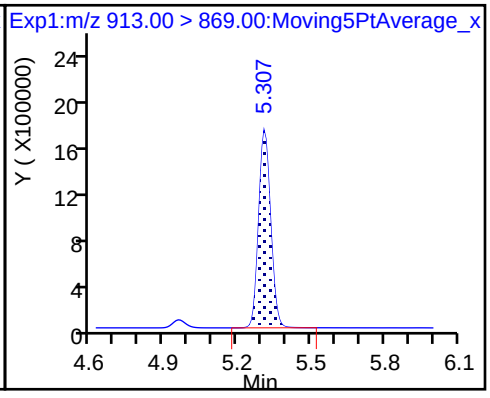
45 Perfluorohexadecanoic acid



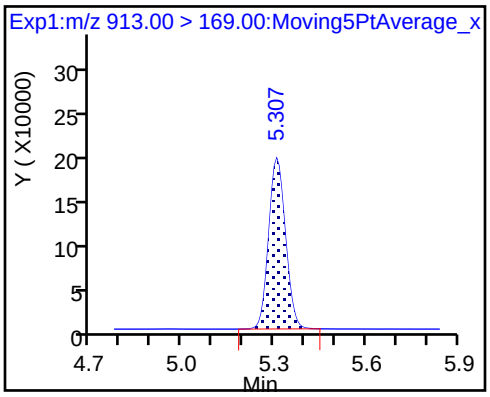
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214657/15 Calibration Date: 03/23/2018 20:13

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.23LLAA_065.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9421		2.50	2.50	-0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.151		2.55	2.50	2.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.05		2.25	2.21	1.7	50.0
4:2 FTS	AveID	16.15	17.32		2.50	2.34	7.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.023		2.50	2.50	0.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.036		2.50	2.50	0.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.106		2.26	2.28	-0.7	40.0
6:2FTS	AveID	1.744	1.600		2.18	2.37	-8.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.169		2.59	2.50	3.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.347		2.50	2.38	5.1	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.124		2.34	2.32	0.9	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.013		2.54	2.50	1.6	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.040		2.64	2.50	5.5	40.0
8:2FTS	AveID	1.276	1.169		2.19	2.40	-8.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.023		2.59	2.50	3.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.059		2.64	2.50	5.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7135		2.53	2.41	4.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9481		2.54	2.50	1.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7885		2.29	2.50	-8.5	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.066		2.55	2.50	1.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.126		2.56	2.50	2.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2575		2.60	2.50	3.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9665		2.63	2.50	5.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9537		2.58	2.50	3.1	50.0
13C4 PFBA	Ave	1.266	1.297		2.56	2.50	2.4	50.0
13C5 PFPeA	Ave	0.8399	0.8601		2.56	2.50	2.4	50.0
13C3-PFBS	Ave	0.0192	0.0206		2.50	2.33	7.6	50.0
M2-4:2FTS	Ave	0.1324	0.1543		2.72	2.34	16.6	50.0
13C2 PFHxA	Ave	0.9288	0.9391		2.53	2.50	1.1	50.0
13C4-PFHpA	Ave	0.9164	0.9304		2.54	2.50	1.5	50.0
18O2 PFHxS	Ave	1.130	1.144		2.39	2.37	1.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214657/15 Calibration Date: 03/23/2018 20:13

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.23LLAA_065.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2297		2.87	2.38	20.9	40.0
13C4 PFOA	Ave	0.9374	0.9170		2.45	2.50	-2.2	50.0
13C4 PFOS	Ave	0.8225	0.8142		2.37	2.39	-1.0	50.0
13C5 PFNA	Ave	0.8266	0.8205		2.48	2.50	-0.7	50.0
13C8 FOSA	Ave	1.109	1.130		2.55	2.50	1.8	50.0
M2-8:2FTS	Ave	0.2565	0.2641		2.47	2.40	3.0	40.0
13C2 PFDA	Ave	0.7245	0.6652		2.30	2.50	-8.2	50.0
d3-NMeFOSAA	Ave	0.3814	0.3455		2.27	2.50	-9.4	50.0
13C2 PFUnA	Ave	0.6482	0.5470		2.11	2.50	-15.6	50.0
d5-NEtFOSAA	Ave	0.4345	0.3778		2.17	2.50	-13.0	50.0
13C2 PFDoA	Ave	0.7355	0.5868		1.99	2.50	-20.2	50.0
13C2-PFTeDA	Ave	0.8983	0.7035		1.96	2.50	-21.7	50.0
13C2-PFHxDA	Ave	1.473	1.266		2.15	2.50	-14.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_065.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 23-Mar-2018 20:13:54 ALS Bottle#: 14 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:31:33 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:26:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.452	0.0	1.000	6004944	2.50		100.0	4238	
D 1 13C4 PFBA										
217.00 > 172.00	1.452	1.458	-0.006	0.539	6374089	2.56		102	85504	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.717	0.0	0.637	4227775	2.56		102	115265	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.000	4864202	2.55		102	2219	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.753	0.0	0.650	94302	2.50		108	567	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.000	7085432	2.25		102	53196	
298.90 > 99.00	1.753	1.753	0.0	1.000	2879441		2.46(1.25-3.74)		20080	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.965	1.965	0.0	1.000	1640423	2.50		107	75359	
D 60 M2-4:2FTS										
329.00 > 81.00	1.965	1.976	-0.011	0.729	708378	2.72		117	9953	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.008	0.0	0.745	4616236	2.53		101	116105	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	4721224	2.50		100	18089	
313.00 > 119.00	2.008	2.008	0.0	1.000	421721		11.20(5.03-15.10)		9211	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.341	0.0	0.869	4573442	2.54		102	69607	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	4737484	2.50		100	10742	
363.00 > 169.00	2.341	2.341	0.0	1.000	1916177		2.47(1.13-3.40)		29066	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.353	0.0	0.873	5319772	2.39		101	75281	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.353	0.0	1.000	5657762	2.26		99.3	34551	
399.00 > 99.00	2.353	2.353	0.0	1.000	1837944		3.08(1.50-4.49)		5423	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.679	-0.008	0.991	1072695	2.87		121	25301	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.671	0.0	1.000	1712685	2.17		91.8	43403	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.703	-0.008	1.000	4507207	2.45		97.8	74869	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.695	0.0	1.000	5270034	2.59		104	1696	
413.00 > 169.00	2.695	2.695	0.0	1.000	2659504		1.98(0.84-2.52)		7663	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		4915458	2.50			75931	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	5130905	2.50		105	49609	
449.00 > 99.00	2.703	2.703	0.0	1.000	1386300		3.70(1.94-5.82)		11868	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4173990	2.34		101	26478	
499.00 > 99.00	3.065	3.065	0.0	1.000	904959		4.61(2.31-6.93)		8682	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	4085703	2.54		102	3982	
463.00 > 169.00	3.072	3.072	0.0	1.000	1024210		3.99(1.90-5.69)		19345	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.080	-0.008	1.140	4033011	2.48		99.3	75985	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.080	-0.015	1.137	3826270	2.37		99.0	33345	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.406	0.0	1.000	5775810	2.64		106	49759	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.416	-0.010	1.264	5552563	2.55		102	54519	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.424	0.0	1.000	1453918	2.19		91.6	12898	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.434	-0.010	1.271	1243813	2.47		103	31115	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.433	0.0	1.000	3343967	2.59		103	15864	
513.00 > 169.00	3.433	3.433	0.0	1.000	573998		5.83(2.36-7.09)		2029	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.444	-0.011	1.274	3269964	2.30		91.8	33440	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.589	3.589	0.0	1.000	1797623	2.64		106	15281	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.589	3.602	-0.013	1.332	1698067	2.26		90.6	39832	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	2752927	2.53		105	44744	
599.00 > 99.00	3.748	3.748	0.0	1.000	884267		3.11(1.39-4.16)		16842	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	2119991	2.29		91.5	10750	
563.00 > 169.00	3.758	3.758	0.0	1.000	565724		3.75(2.12-6.36)		19171	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.000	1760846	2.54		101	35903	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.771	-0.013	1.395	1857207	2.17		87.0	6096	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.771	-0.013	1.395	2688799	2.11		84.4	56029	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.056	0.0	1.000	3074847	2.55		102	2690	
613.00 > 169.00	4.056	4.056	0.0	1.000	755418		4.07(2.13-6.40)		9811	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.069	-0.013	1.505	2884262	1.99		79.8	21331	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	3248165	2.56		102	1668	
663.00 > 169.00	4.318	4.318	0.0	1.000	1092080		2.97(1.25-3.76)		15290	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	890429	2.60		104	13234	
713.00 > 219.00	4.554	4.554	0.0	1.000	630095		1.41(0.71-2.13)		9247	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.565	-0.011	1.690	3458022	1.96		78.3	19018	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.973	0.0	1.002	6015406	2.63		105	1638	
813.00 > 169.00	4.973	4.973	0.0	1.002	1024316		5.87(2.86-8.58)		8323	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.982	-0.018	1.842	6223947	2.15		86.0	17006	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.322	0.0	1.000	5935889	2.58		103	1311	
913.00 > 169.00	5.322	5.322	0.0	1.000	768549		7.72(3.83-11.48)		6188	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:31:35 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_065.d

Injection Date: 23-Mar-2018 20:13:54 Instrument ID: A8_N

Lims ID: CCV L5

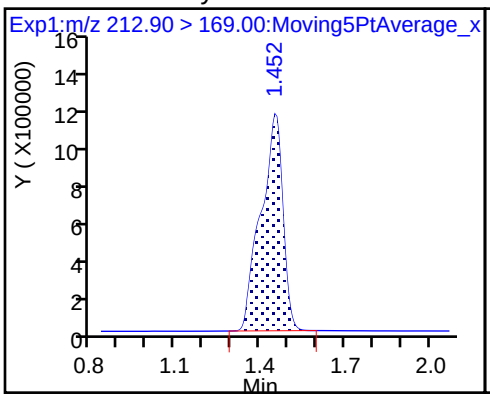
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 15

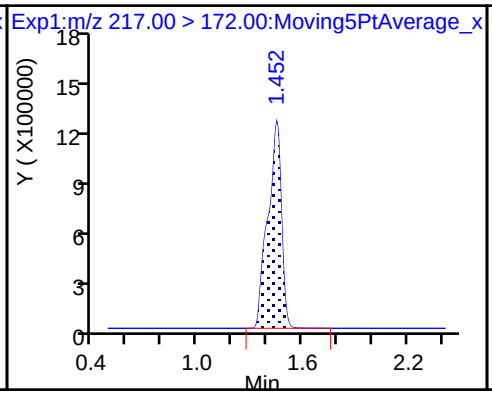
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

2 Perfluorobutyric acid



D 1 13C4 PFBA



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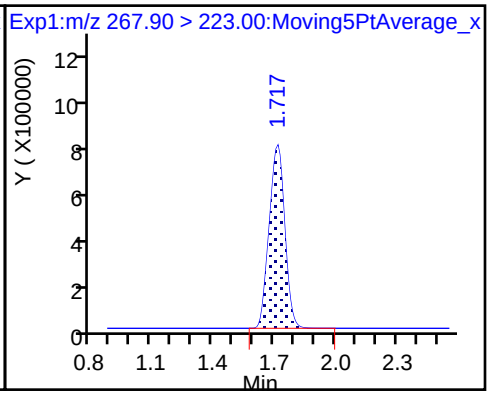
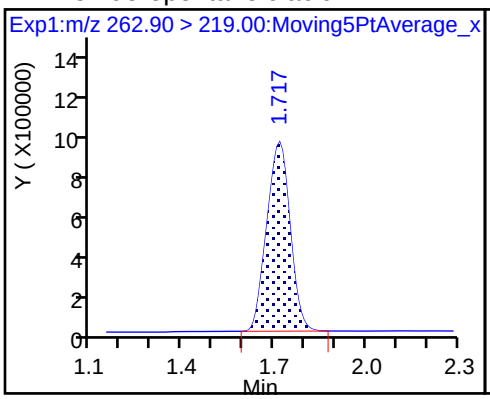
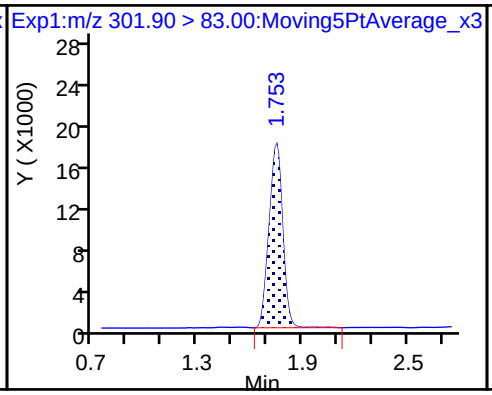


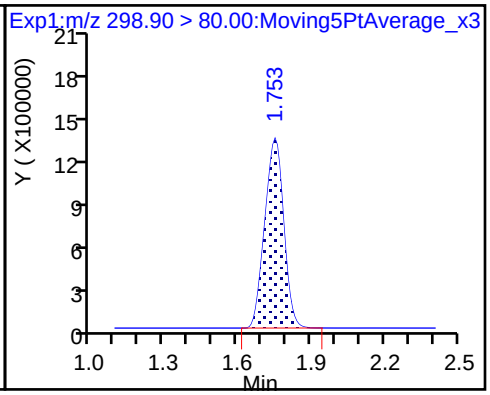
4 Perfluoropentanoic acid



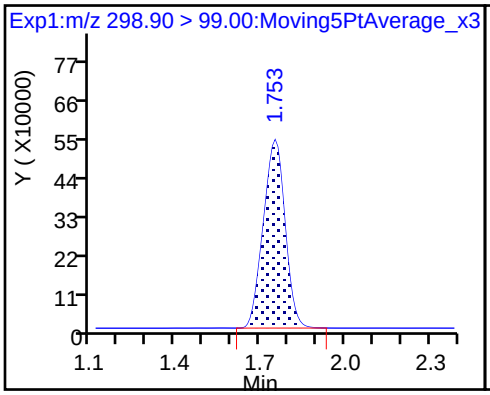
D 47 13C3-PFBS



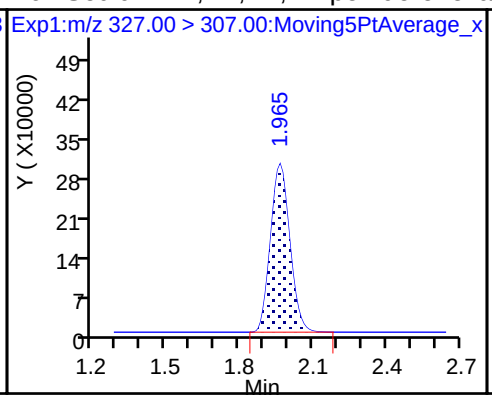
5 Perfluorobutanesulfonic acid



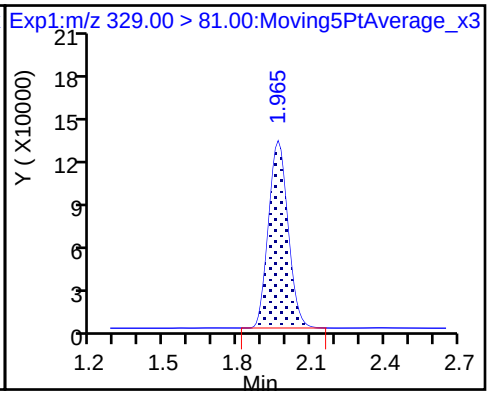
5 Perfluorobutanesulfonic acid



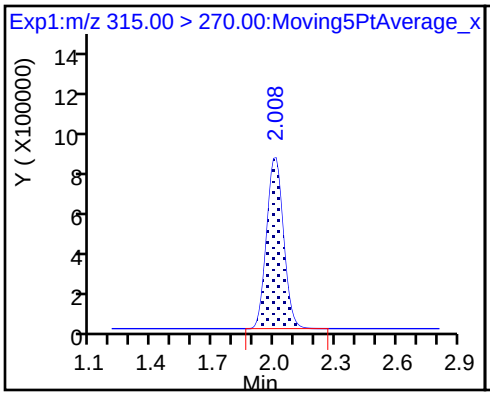
61 Sodium 1H,1H,2H,2H-perfluorohexane



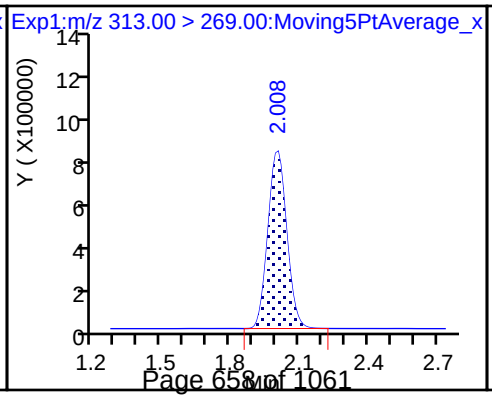
D 60 M2-4:2FTS



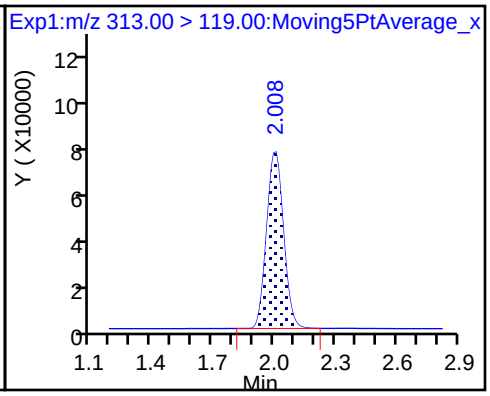
D 7 13C2 PFHxA



6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



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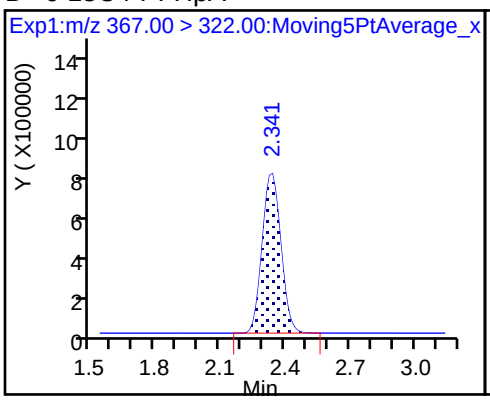
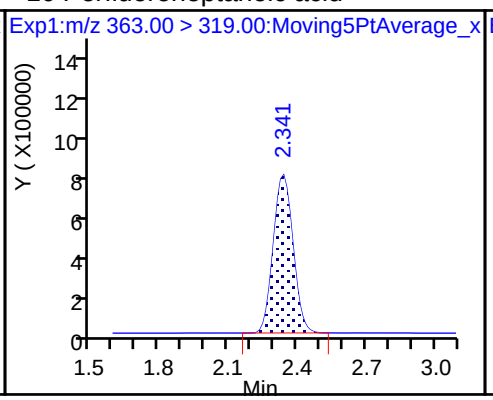


10 Perfluoroheptanoic acid



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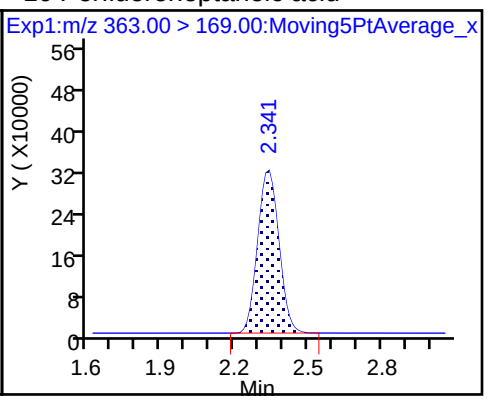
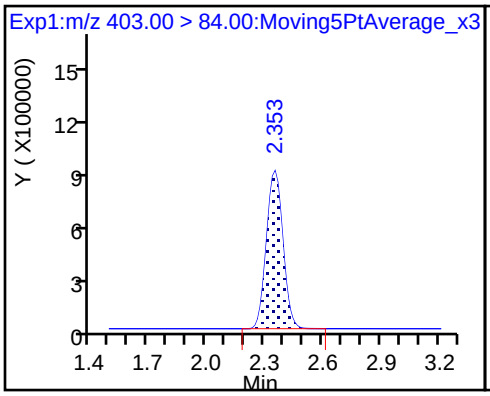
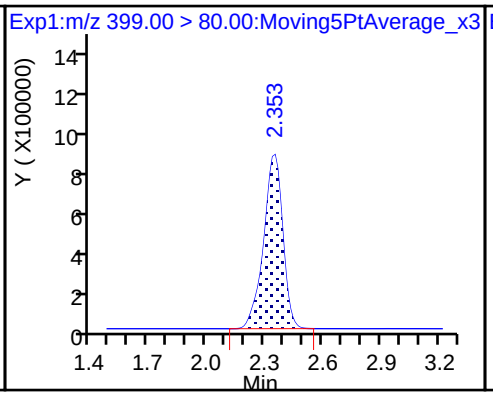


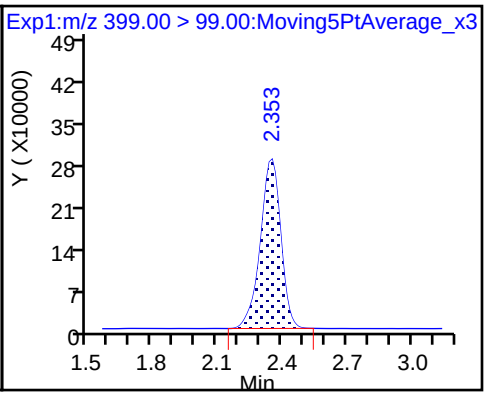
D 11 18O2 PFHxS



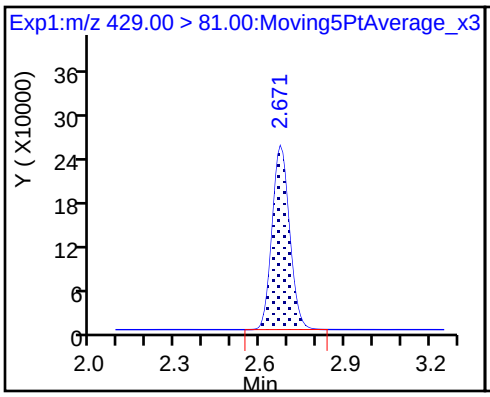
8 Perfluorohexanesulfonic acid



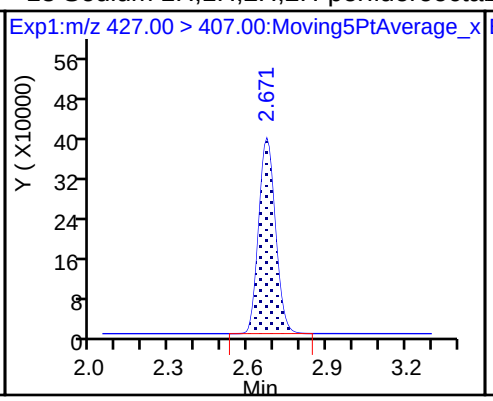
8 Perfluorohexanesulfonic acid



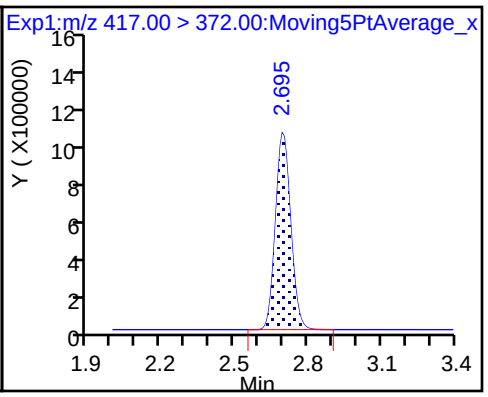
D 12 M2-6:2FTS



13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA



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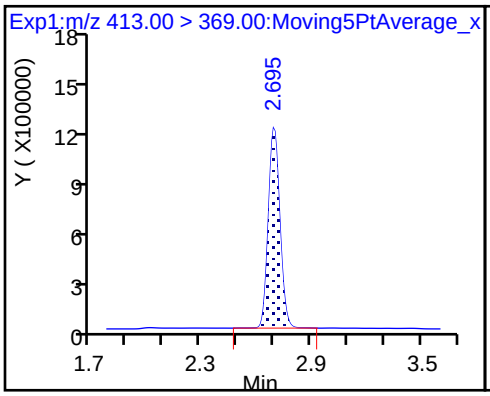

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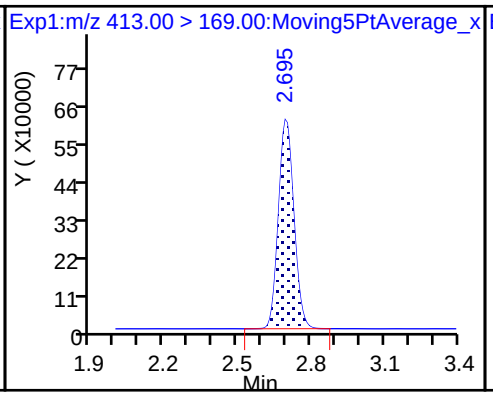
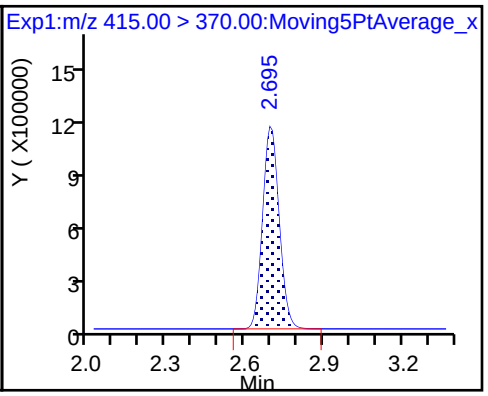
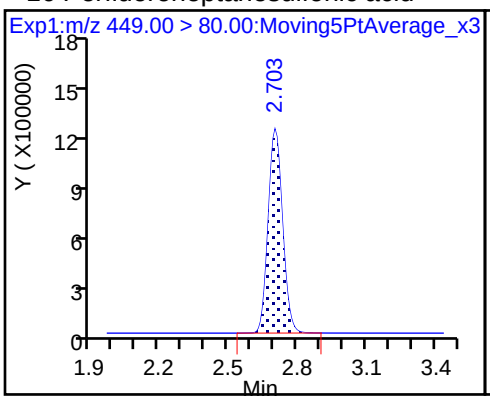


* 62 13C2-PFOA



16 Perfluoroheptanesulfonic acid



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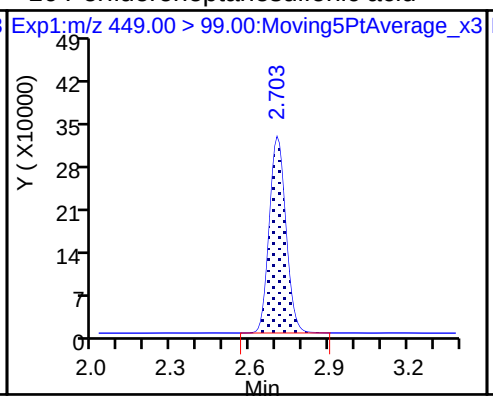
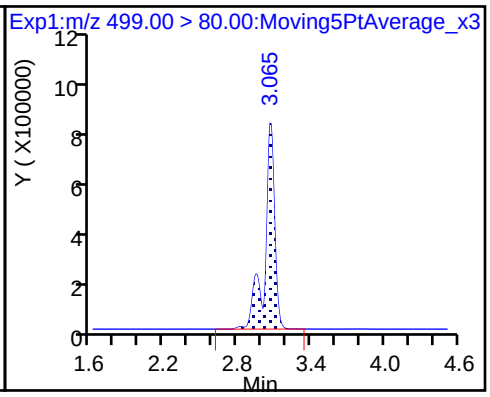


17 Perfluorooctane sulfonic acid



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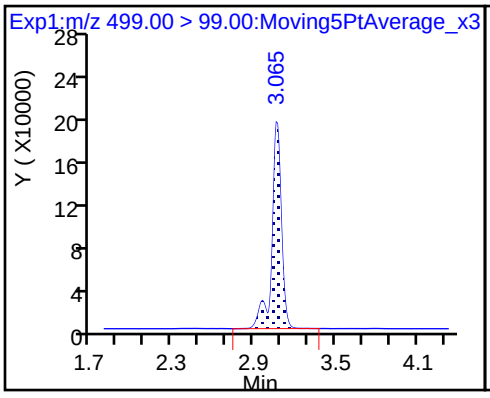
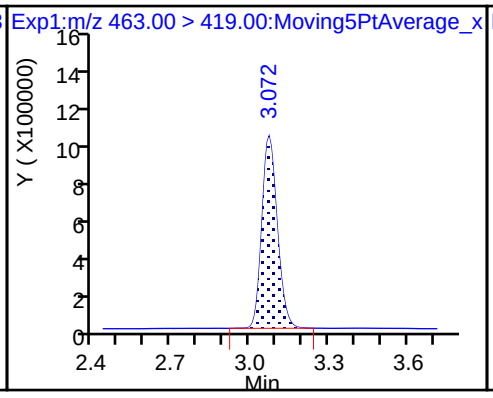


20 Perfluorononanoic acid



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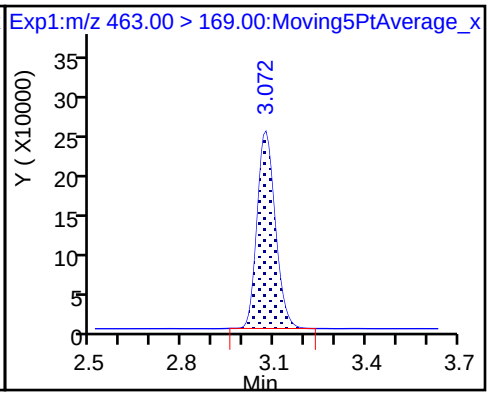
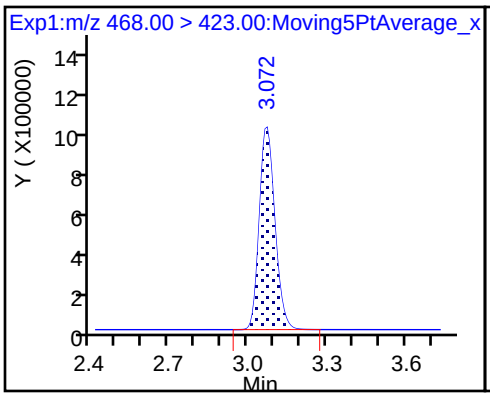


D 19 13C5 PFNA



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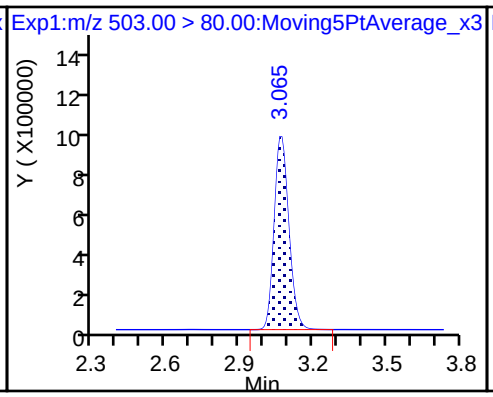
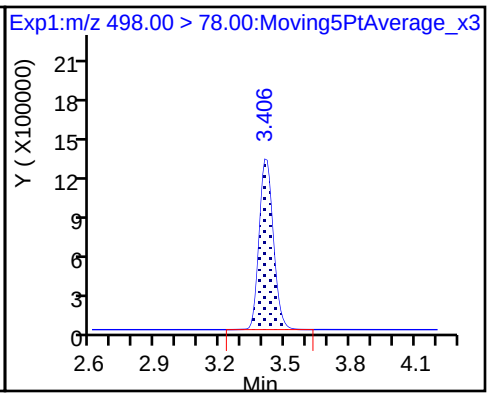
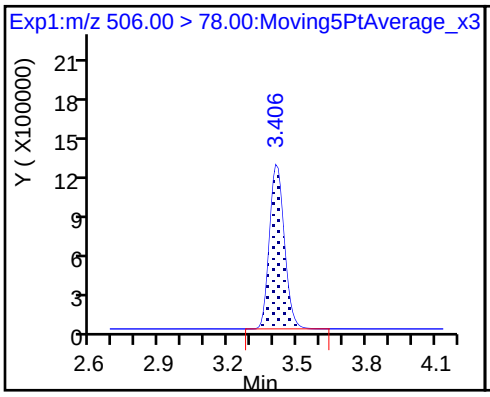


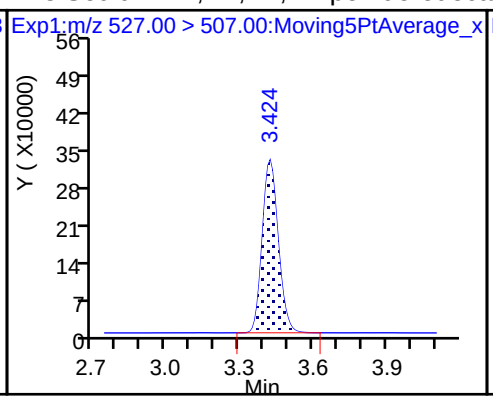
22 Perfluorooctane Sulfonamide



D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecane



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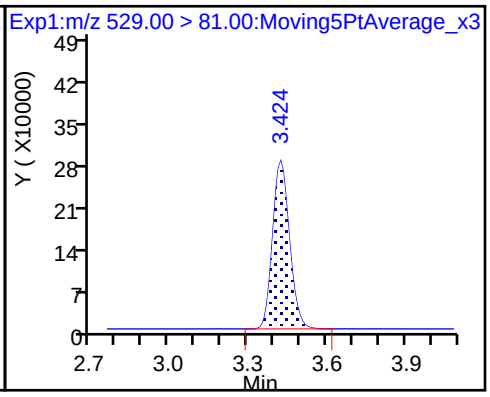
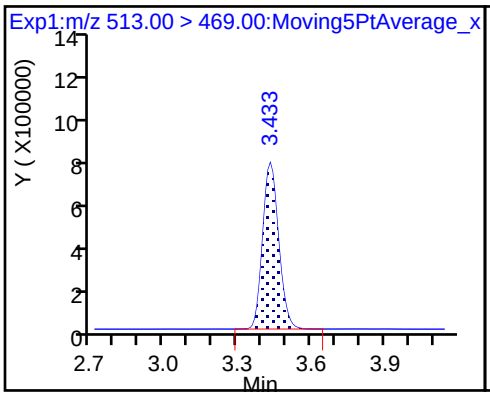


24 Perfluorodecanoic acid



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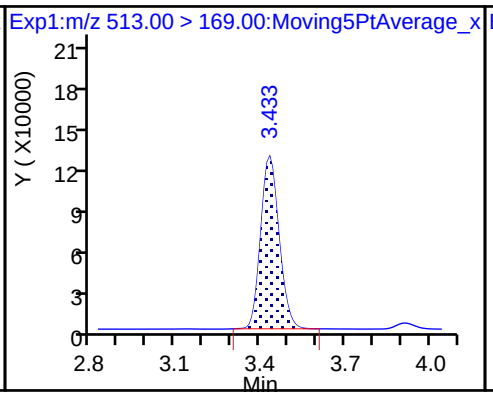
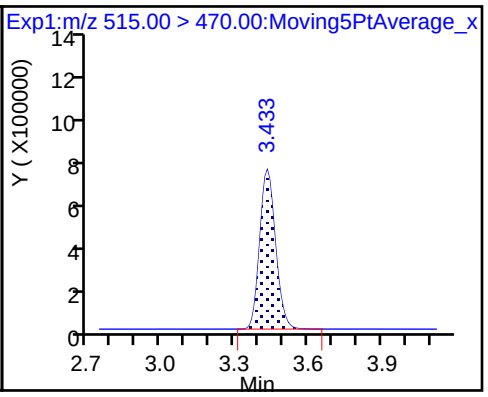
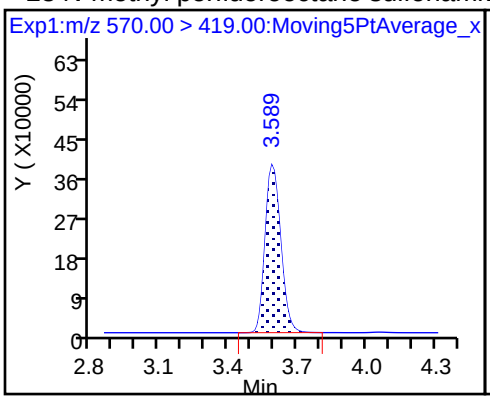


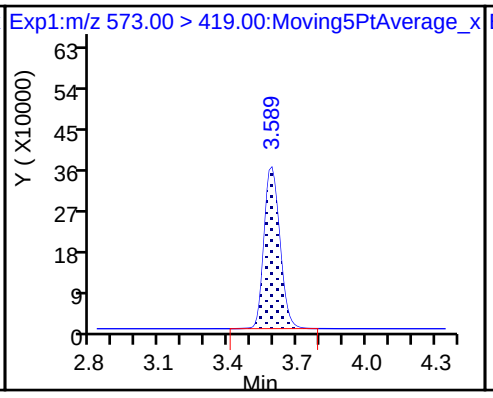
D 23 13C2 PFDA



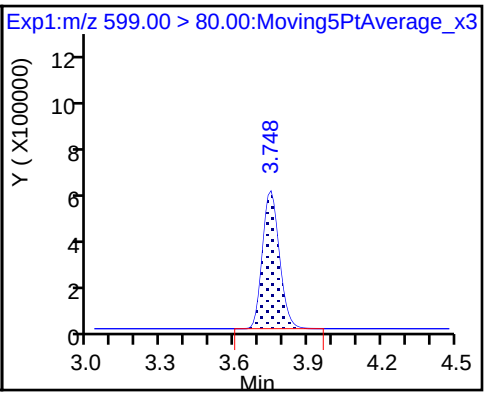
28 N-methyl perfluorooctane sulfonami



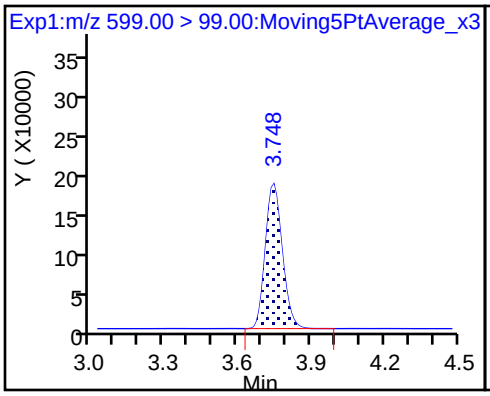
D 27 d3-NMeFOSAA



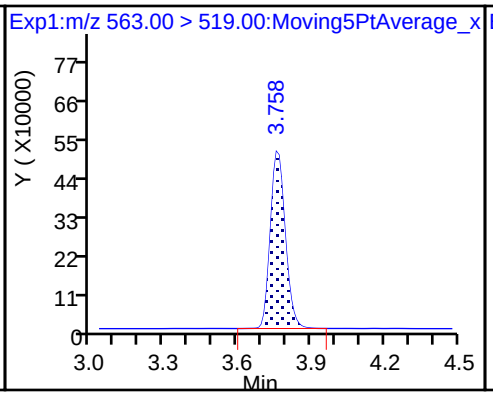
29 Perfluorodecane Sulfonic acid



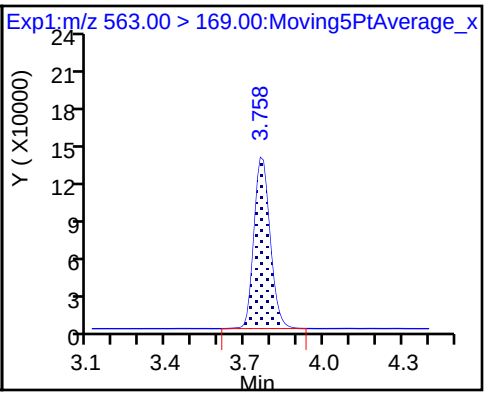
29 Perfluorodecane Sulfonic acid



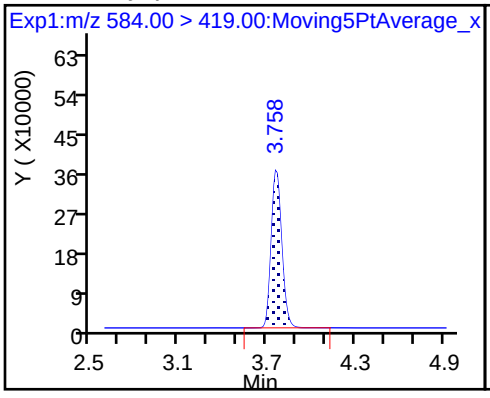
31 Perfluoroundecanoic acid



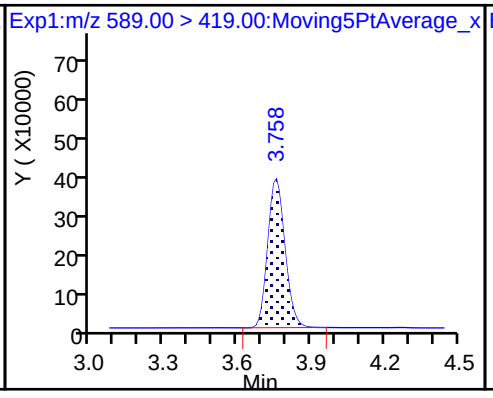
31 Perfluoroundecanoic acid



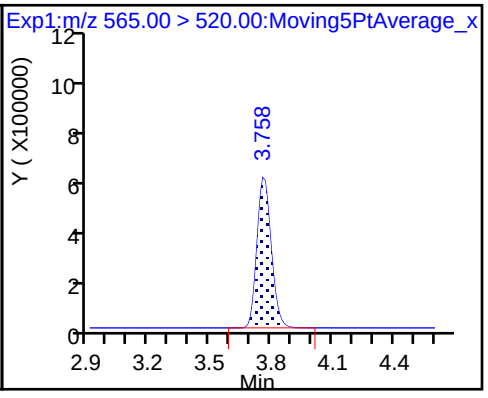
33 N-ethyl perfluorooctane sulfonamid



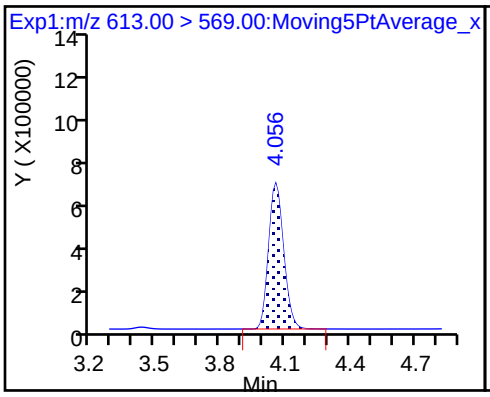
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA



37 Perfluorododecanoic acid



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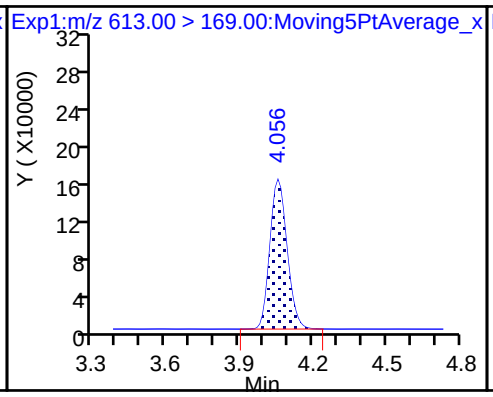
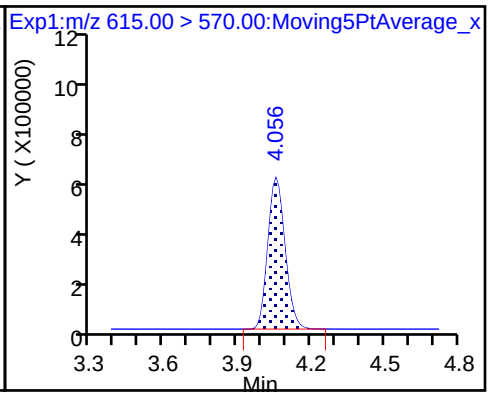
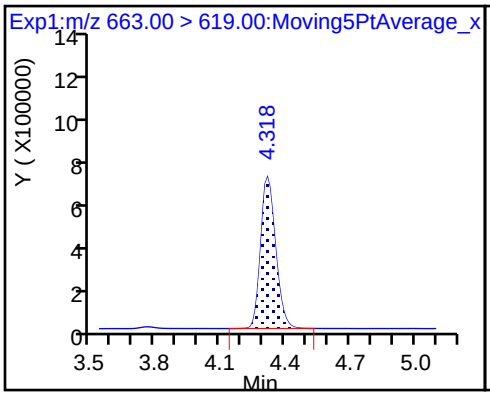


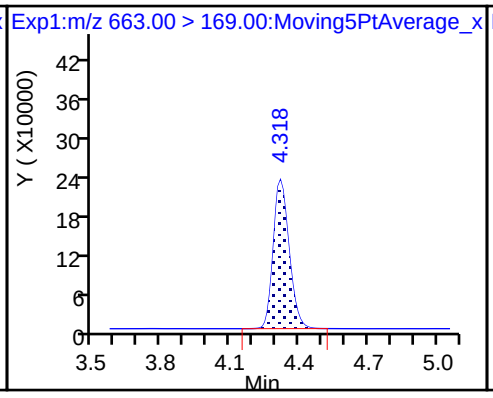
D 36 13C2 PFDoA



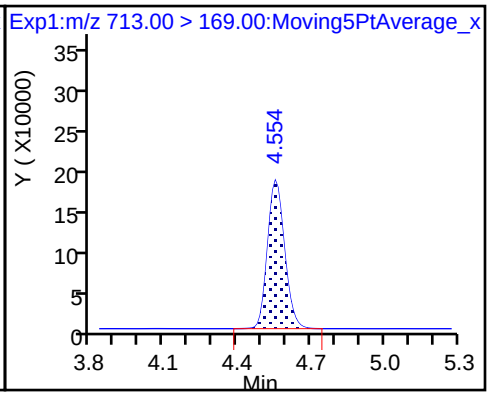
41 Perfluorotridecanoic acid



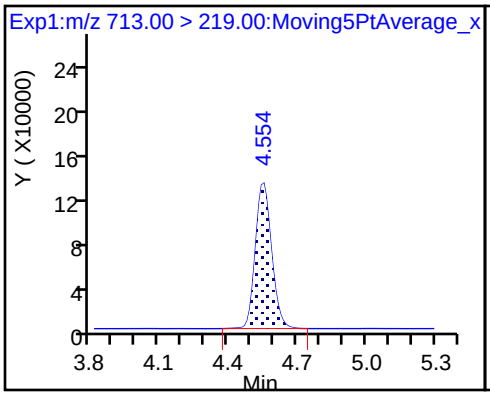
41 Perfluorotridecanoic acid



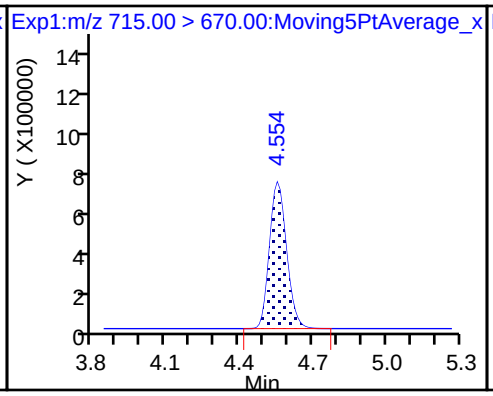
42 Perfluorotetradecanoic acid



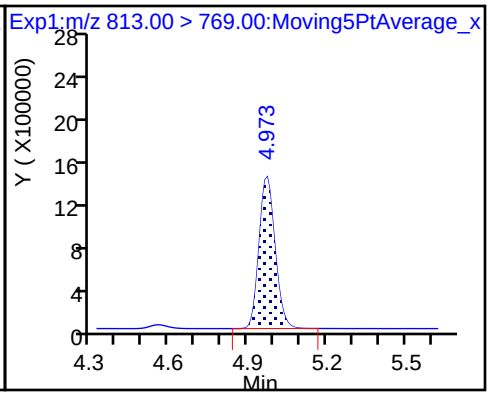
42 Perfluorotetradecanoic acid



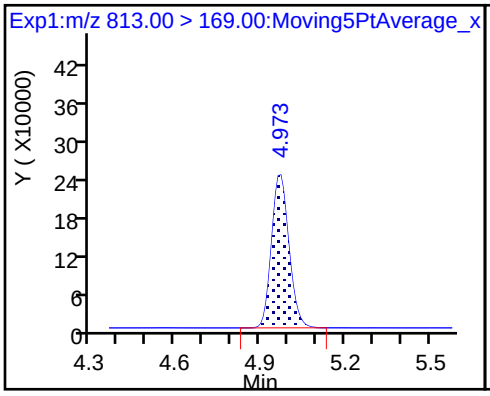
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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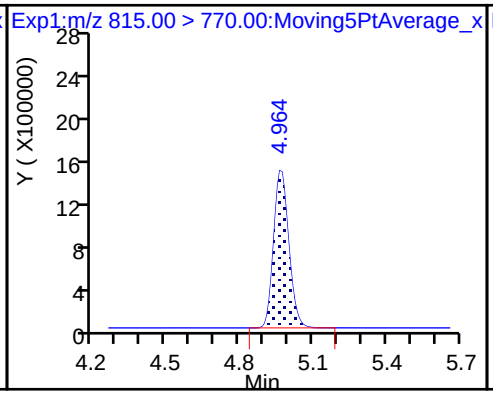
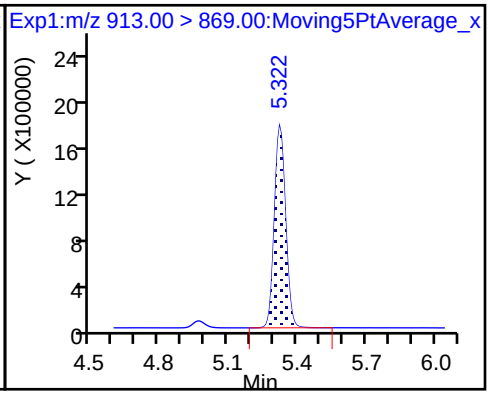
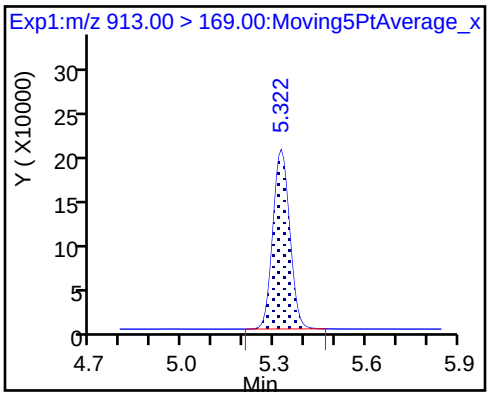


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-214825/2 Calibration Date: 03/26/2018 12:32

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9584		0.0509	0.0500	1.7	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.180		0.0523	0.0500	4.7	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	77.23		0.0439	0.0442	-0.6	50.0
4:2 FTS	AveID	16.15	19.38		0.130	0.0467	20.0	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9733		0.0476	0.0500	-4.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.199		0.0579	0.0500	15.9	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.184		0.0484	0.0455	6.4	50.0
6:2FTS	AveID	1.744	1.930		0.0525	0.0474	10.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.122		0.0497	0.0500	-0.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.368		0.0508	0.0476	6.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.101		0.0459	0.0464	-1.1	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.070		0.0536	0.0500	7.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9867		0.0500	0.0500	0.0	50.0
8:2FTS	AveID	1.276	1.114		0.0500	0.0479	-12.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9737		0.0493	0.0500	-1.5	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.026		0.0780	0.0500	2.5	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6104		0.0433	0.0482	-10.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.012		0.0541	0.0500	8.3	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8816		0.0511	0.0500	2.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.043		0.0499	0.0500	-0.3	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.206		0.0548	0.0500	9.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2973		0.0600	0.0500	20.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.343		0.0496	0.0500	-0.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9555		0.0517	0.0500	3.3	50.0
13C4 PFBA	Ave	1.266	1.316		2.60	2.50	4.0	50.0
13C5 PFPeA	Ave	0.8399	0.8570		2.55	2.50	2.0	50.0
13C3-PFBS	Ave	0.0192	0.0198		2.41	2.33	3.5	50.0
M2-4:2FTS	Ave	0.1324	0.1676		2.96	2.34	26.6	50.0
13C2 PFHxA	Ave	0.9288	0.9734		2.62	2.50	4.8	50.0
13C4-PFHpA	Ave	0.9164	0.8976		2.45	2.50	-2.0	50.0
18O2 PFHxS	Ave	1.130	1.221		2.55	2.37	8.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-214825/2 Calibration Date: 03/26/2018 12:32

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2409		3.01	2.38	26.8	50.0
13C4 PFOA	Ave	0.9374	0.9317		2.49	2.50	-0.6	50.0
13C4 PFOS	Ave	0.8225	0.8280		2.41	2.39	0.7	50.0
13C5 PFNA	Ave	0.8266	0.8042		2.43	2.50	-2.7	50.0
13C8 FOSA	Ave	1.109	1.164		2.62	2.50	4.9	50.0
M2-8:2FTS	Ave	0.2565	0.2848		2.66	2.40	11.0	50.0
13C2 PFDA	Ave	0.7245	0.7241		2.50	2.50	-0.0	50.0
d3-NMeFOSAA	Ave	0.3814	0.3719		2.44	2.50	-2.5	50.0
d5-NEtFOSAA	Ave	0.4345	0.4123		2.37	2.50	-5.1	50.0
13C2 PFUnA	Ave	0.6482	0.5854		2.26	2.50	-9.7	50.0
13C2 PFDoA	Ave	0.7355	0.6573		2.23	2.50	-10.6	50.0
13C2-PFTeDA	Ave	0.8983	0.7999		2.23	2.50	-11.0	50.0
13C2-PFHxDA	Ave	1.473	1.382		2.35	2.50	-6.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\2018.03.26LLA_006.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 26-Mar-2018 12:32:05 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Mar-2018 14:33:04 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK019

First Level Reviewer: hannigana Date: 26-Mar-2018 12:50:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.453	-0.006	1.000	127848	0.0509		102	36.3	
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.459	-0.012	0.535	6669763	2.60		104	95722	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	102509	0.0523		105	64.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.727	-0.018	0.632	4342851	2.55		102	221623	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.753	-0.008	1.000	137249	0.0439		99.4	927	
298.90 > 99.00	1.745	1.753	-0.008	1.000	58450		2.35(1.25-3.74)		235	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.762	-0.017	0.645	93477	2.41		103	752	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	36382	0.0560		120	2311	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.976	-0.010	0.727	793310	2.96		127	7427	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	2.008	-0.010	1.000	96029	0.0476		95.2	102	
313.00 > 119.00	1.998	2.008	-0.010	1.000	10001		9.60(5.03-15.10)		109	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	2.019	-0.021	0.739	4932965	2.62		105	131557	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	109045	0.0579		116	97.3	
363.00 > 169.00	2.341	2.341	0.0	1.000	43983		2.48(1.13-3.40)		108	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.866	4549001	2.45		98.0	87240	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	133355	0.0484		106	1065	
399.00 > 99.00	2.354	2.354	0.0	1.000	46273		2.88(1.50-4.49)		114	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.367	-0.013	0.870	5852493	2.55		108	113364	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.681	2.688	-0.007	1.000	44672	0.0525		111	242	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.696	-0.015	0.991	1159768	3.01		127	34587	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.705	2.712	-0.007	1.000	105967	0.0497		99.3	51.8	
413.00 > 169.00	2.705	2.712	-0.007	1.000	63431		1.67(0.84-2.52)		178	
* 62 13C2-PFOA										
415.00 > 370.00	2.705	2.712	-0.007		5067774	2.50			85532	
D 14 13C4 PFOA										
417.00 > 372.00	2.705	2.720	-0.015	1.000	4721720	2.48		99.4	93793	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.713	2.720	-0.007	1.000	109287	0.0508		107	3756	
449.00 > 99.00	2.713	2.720	-0.007	1.000	26389		4.14(1.94-5.82)		257	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.088	-0.008	1.000	85771	0.0459		98.9	761	
499.00 > 99.00	3.080	3.088	-0.008	1.000	22828		3.76(2.31-6.93)		152	
20 Perfluorononanoic acid										
463.00 > 419.00	3.088	3.088	0.0	1.000	87192	0.0536		107	119	
463.00 > 169.00	3.088	3.088	0.0	1.000	21237		4.11(1.90-5.69)		376	
D 19 13C5 PFNA										
468.00 > 423.00	3.088	3.096	-0.008	1.142	4075315	2.43		97.3	82980	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.139	4011443	2.41		101	82560	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.408	-0.010	1.000	116388	0.0500		100	2991	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.426	-0.028	1.257	5897625	2.62		105	64111	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.444	3.444	0.0	1.000	30799	0.0418		87.3	1418	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.453	3.453	0.0	1.000	71462	0.0493		98.5	328	
513.00 > 169.00	3.453	3.453	0.0	1.000	16608		4.30(2.36-7.09)		383	
D 26 M2-8:2FTS										
529.00 > 81.00	3.444	3.453	-0.009	1.273	1382781	2.66		111	31051	
D 23 13C2 PFDA										
515.00 > 470.00	3.453	3.462	-0.009	1.277	3669475	2.50		99.9	46542	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.611	3.620	-0.009	1.000	38678	0.0513		103	289	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.611	3.622	-0.011	1.335	1884760	2.44		97.5	44807	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.769	3.769	0.0	1.000	49382	0.0433		89.8	1743	
599.00 > 99.00	3.769	3.769	0.0	1.000	18426		2.68(1.39-4.16)		552	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.779	3.781	-0.002	1.397	2089235	2.37		94.9	12676	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.789	3.789	0.0	1.003	42266	0.0541		108	1100	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.789	3.789	0.0	1.000	52309	0.0511		102	242	
563.00 > 169.00	3.789	3.789	0.0	1.000	14415		3.63(2.12-6.36)		504	
D 30 13C2 PFUnA										
565.00 > 520.00	3.789	3.791	-0.002	1.401	2966613	2.26		90.3	51277	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.088	4.084	0.004	1.000	69512	0.0499		99.7	60.3	
613.00 > 169.00	4.088	4.084	0.004	1.000	14709		4.73(2.13-6.40)		176	
D 36 13C2 PFDoA										
615.00 > 570.00	4.088	4.090	-0.002	1.512	3330998	2.23		89.4	20427	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.351	4.347	0.004	1.000	80375	0.0548		110	52.8	
663.00 > 169.00	4.351	4.347	0.004	1.000	23688		3.39(1.25-3.76)		313	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.596	4.586	0.010	1.699	4053806	2.23		89.0	19606	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.596	4.593	0.003	1.000	24106	0.0600		120	335	
713.00 > 219.00	4.585	4.593	-0.008	0.998	15361		1.57(0.71-2.13)		219	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.008	5.008	0.0	1.852	7002311	2.35		93.8	17888	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.008	5.014	-0.006	1.000	188102	0.0496		99.2	56.6	
813.00 > 169.00	5.008	5.014	-0.006	1.000	33371		5.64(2.86-8.58)		346	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.384	5.387	-0.003	1.000	133807	0.0517		103	37.9	
913.00 > 169.00	5.384	5.387	-0.003	1.000	19296		6.93(3.83-11.48)		264	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Mar-2018 14:33:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\2018.03.26LLA_006.d

Injection Date: 26-Mar-2018 12:32:05 Instrument ID: A8_N

Lims ID: CCVL

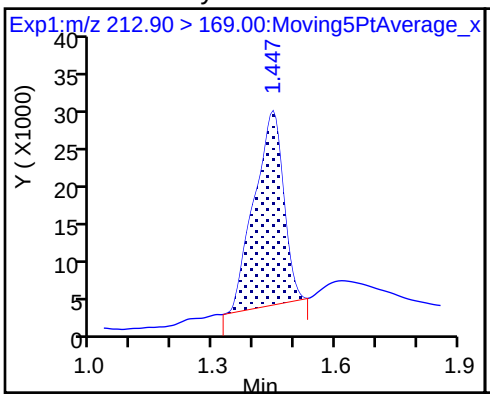
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

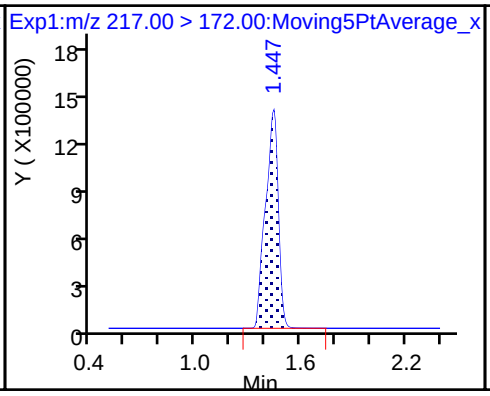
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

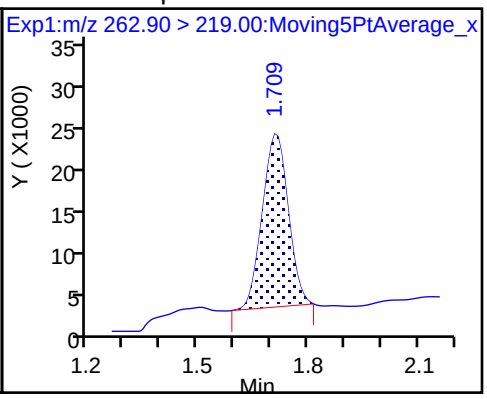
2 Perfluorobutyric acid



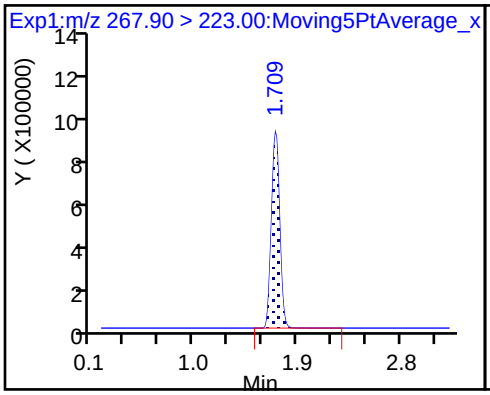
D 1 13C4 PFBA



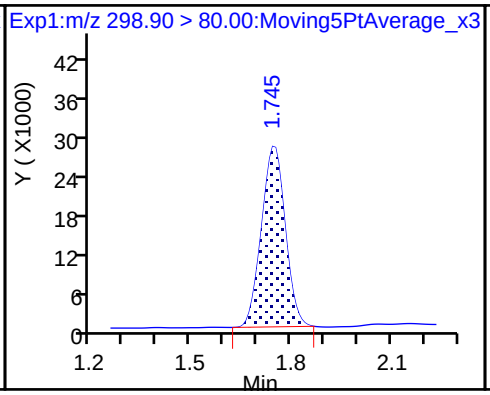
4 Perfluoropentanoic acid



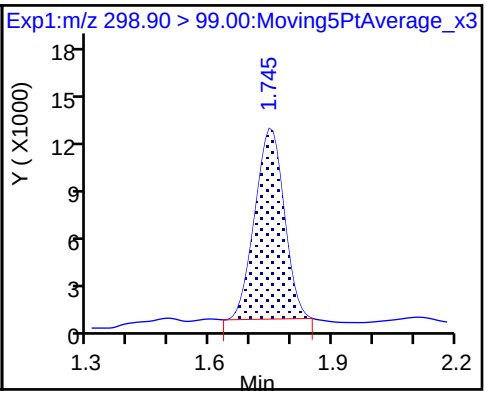
D 3 13C5-PFPeA



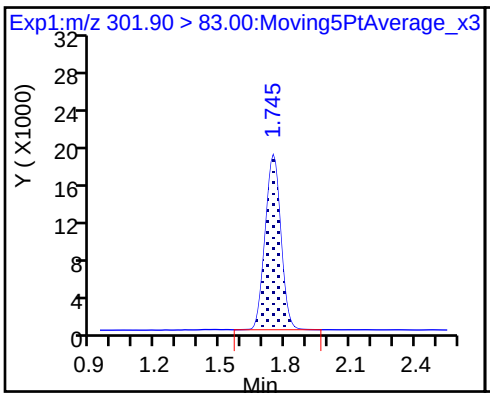
5 Perfluorobutanesulfonic acid



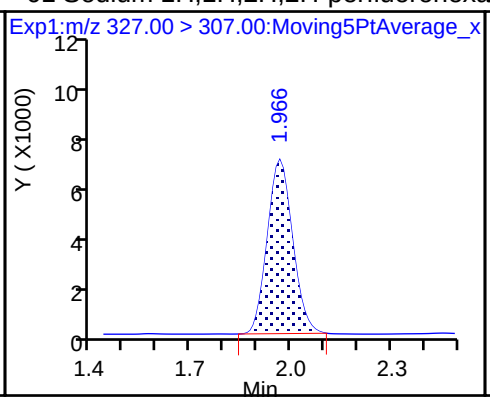
5 Perfluorobutanesulfonic acid



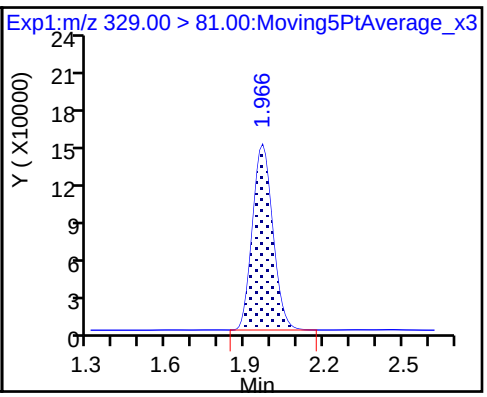
D 47 13C3-PFBS



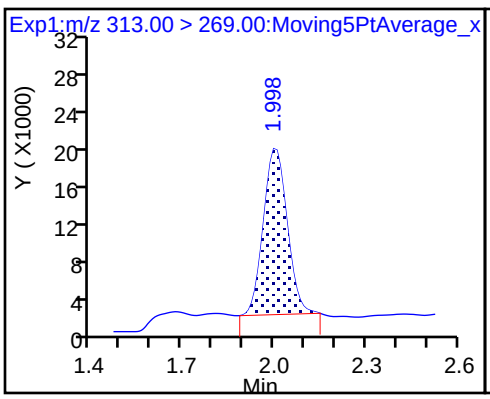
61 Sodium 1H,1H,2H,2H-perfluorohexane



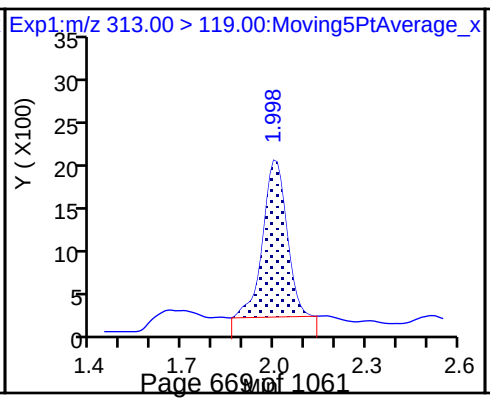
D 60 M2-4:2FTS



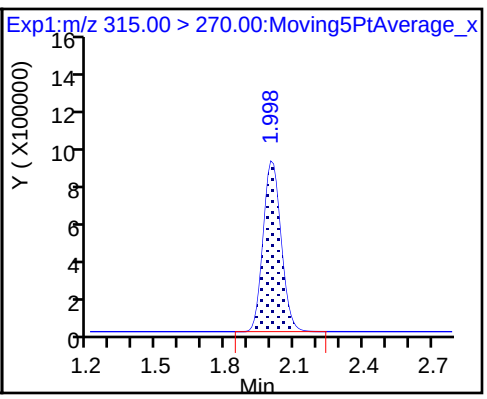
6 Perfluorohexanoic acid



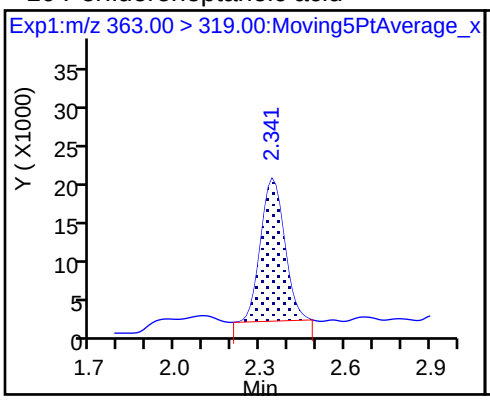
6 Perfluorohexanoic acid



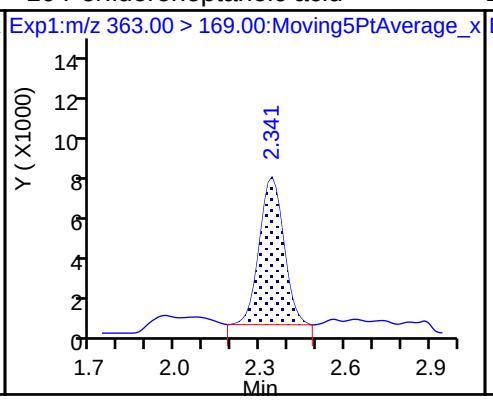
D 7 13C2 PFHxA



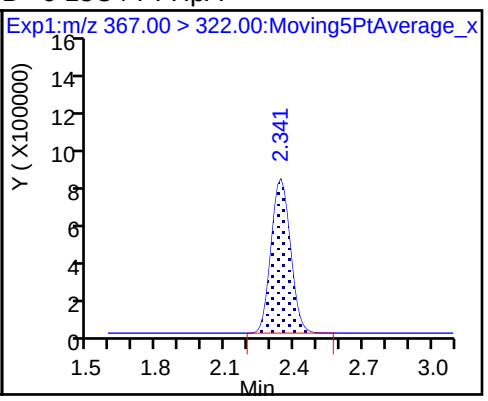
10 Perfluoroheptanoic acid



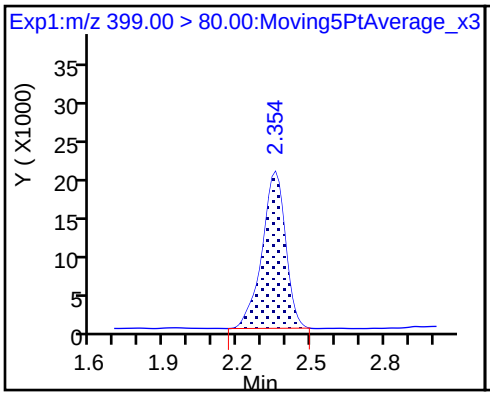
10 Perfluoroheptanoic acid



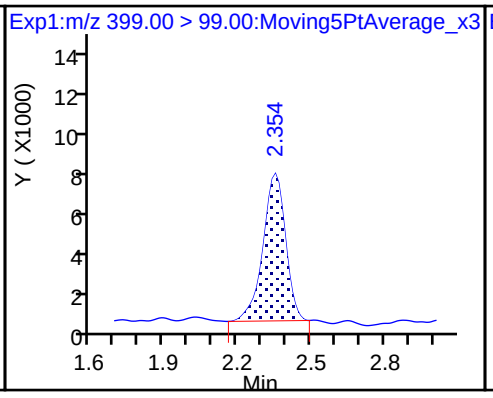
D 9 13C4-PFHpA



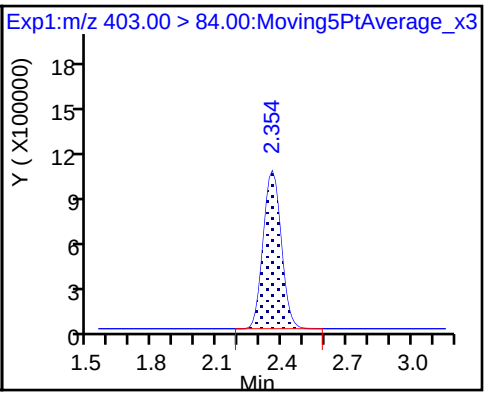
8 Perfluorohexanesulfonic acid



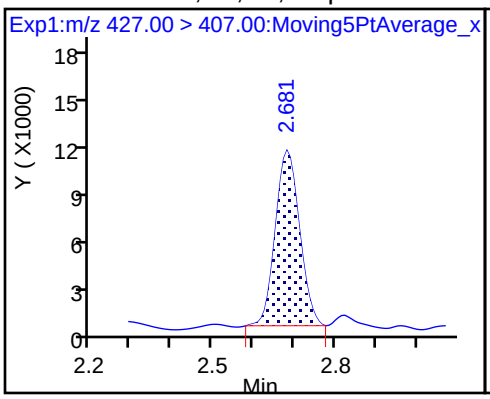
8 Perfluorohexanesulfonic acid



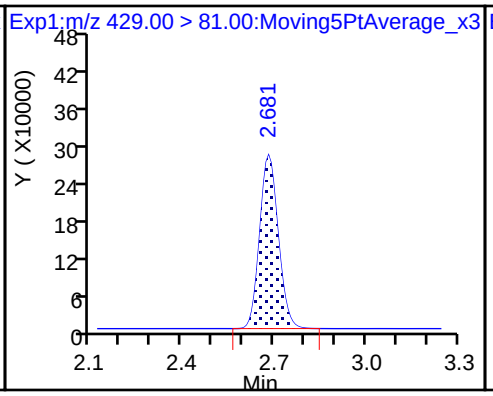
D 11 18O2 PFHxS



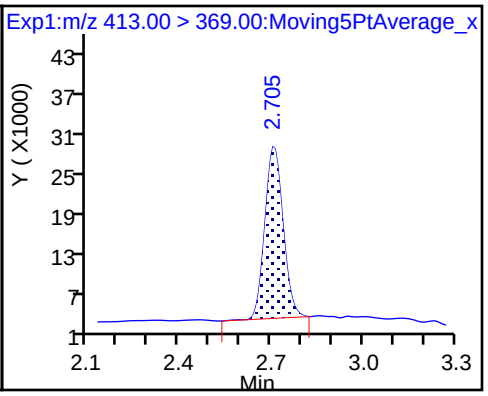
13 Sodium 1H,1H,2H,2H-perfluorooctane



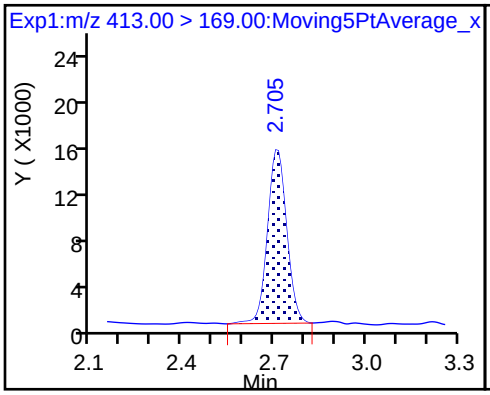
D 12 M2-6:2FTS



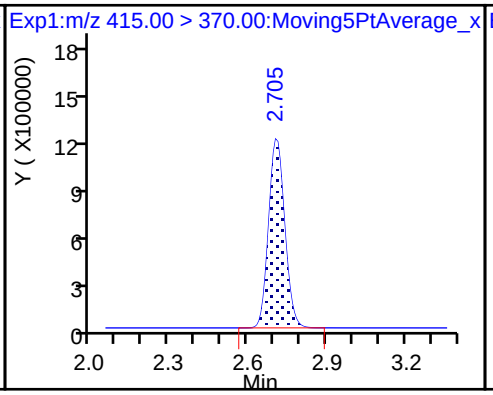
15 Perfluorooctanoic acid



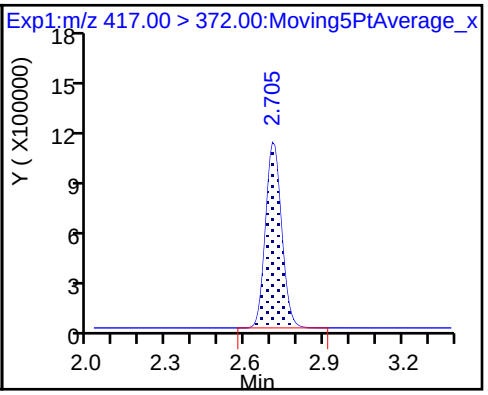
15 Perfluorooctanoic acid



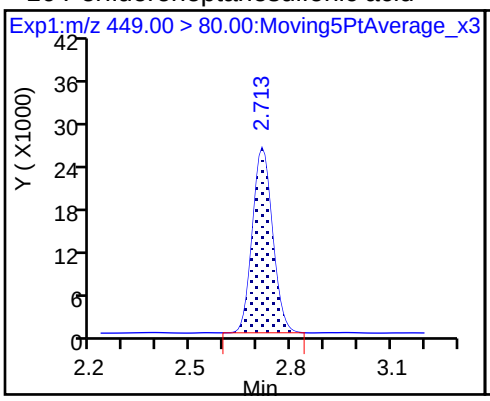
* 62 13C2-PFOA



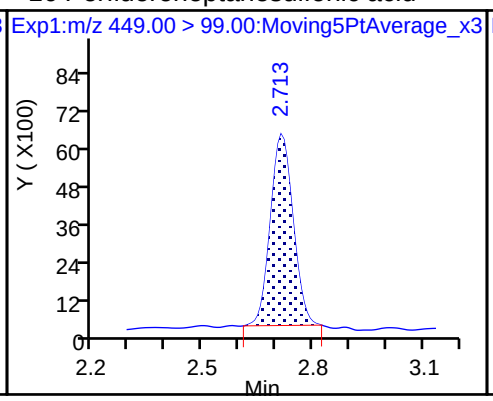
D 14 13C4 PFOA



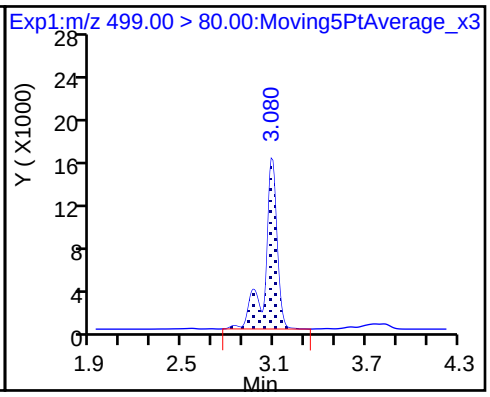
16 Perfluoroheptanesulfonic acid



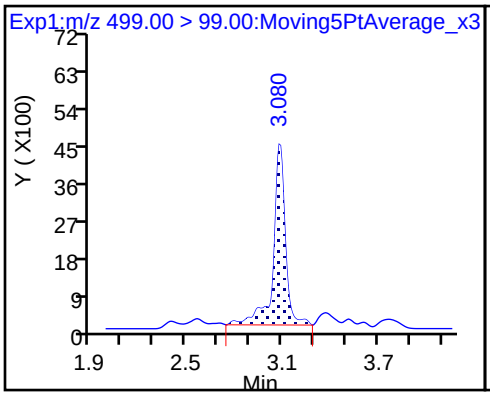
16 Perfluoroheptanesulfonic acid



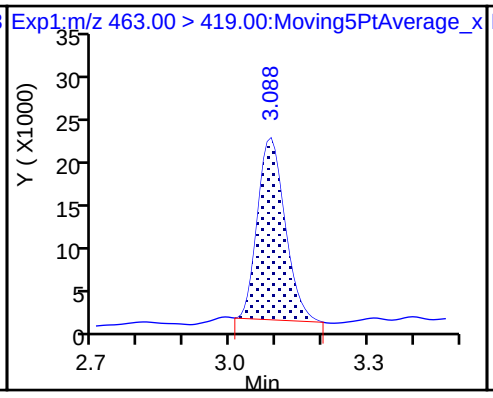
17 Perfluorooctane sulfonic acid



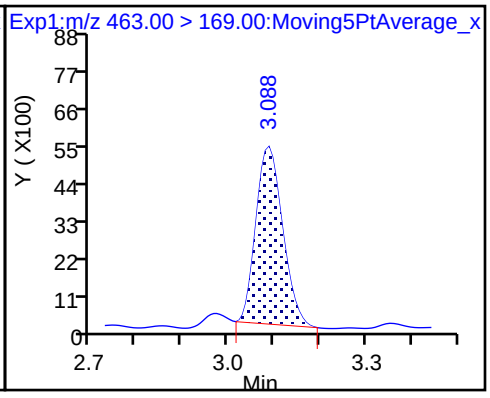
17 Perfluorooctane sulfonic acid



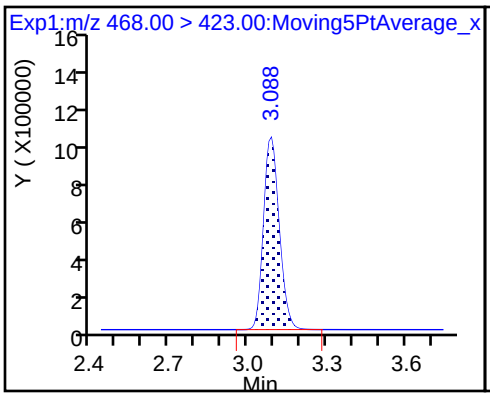
20 Perfluorononanoic acid



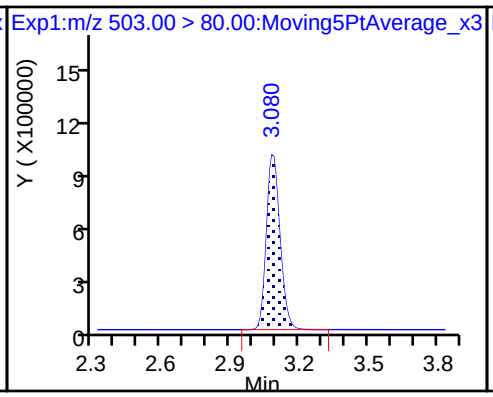
20 Perfluorononanoic acid



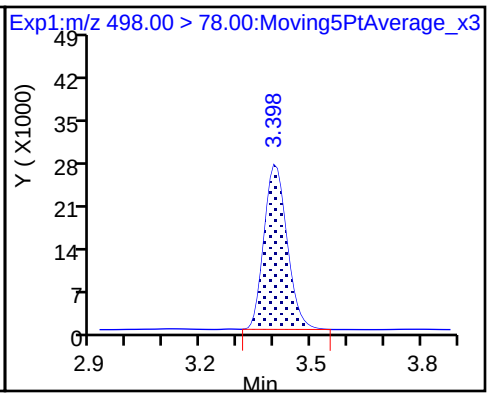
D 19 13C5 PFNA



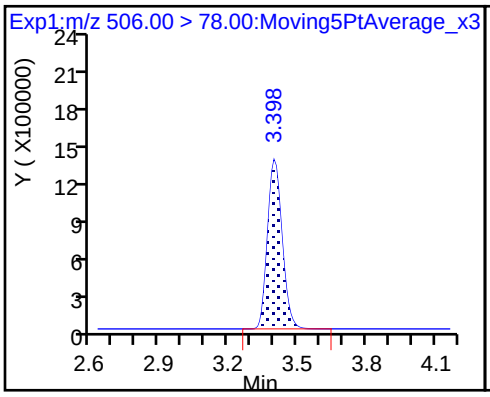
D 18 13C4 PFOS



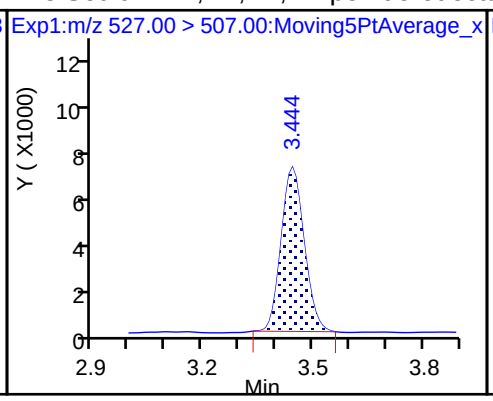
22 Perfluorooctane Sulfonamide



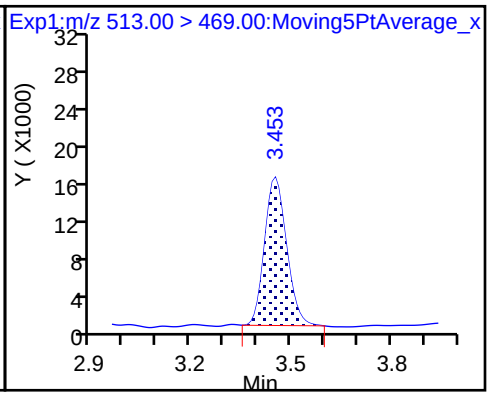
D 21 13C8 FOSA



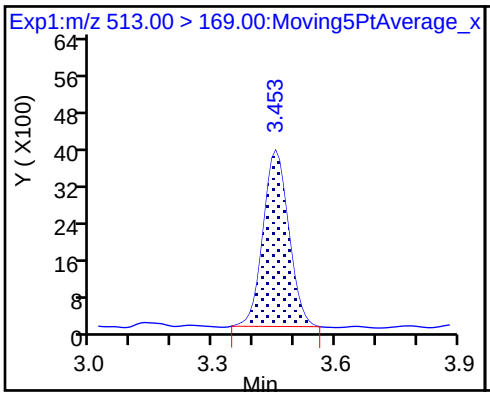
25 Sodium 1H,1H,2H,2H-perfluorodecan



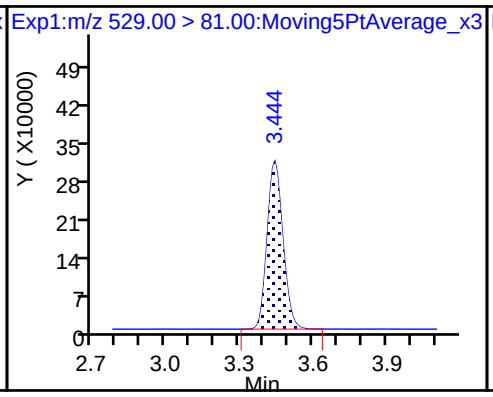
24 Perfluorodecanoic acid



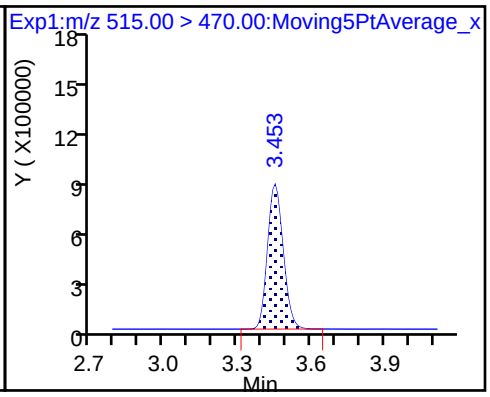
24 Perfluorodecanoic acid



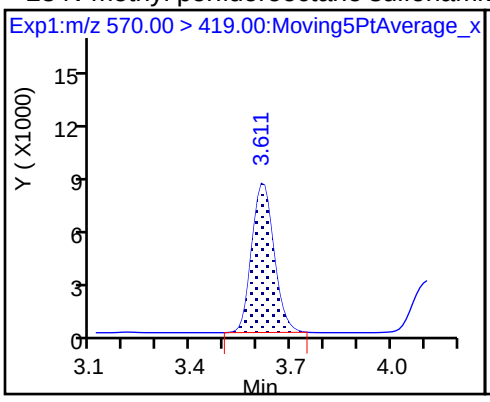
D 26 M2-8:2FTS



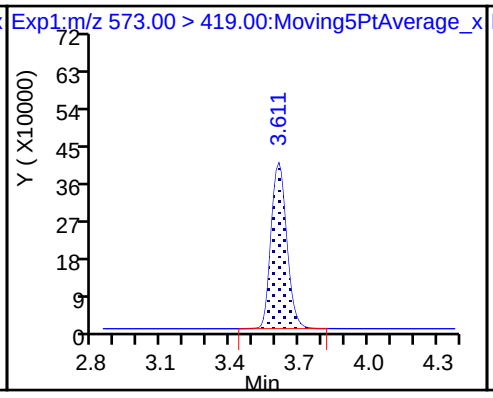
D 23 13C2 PFDA



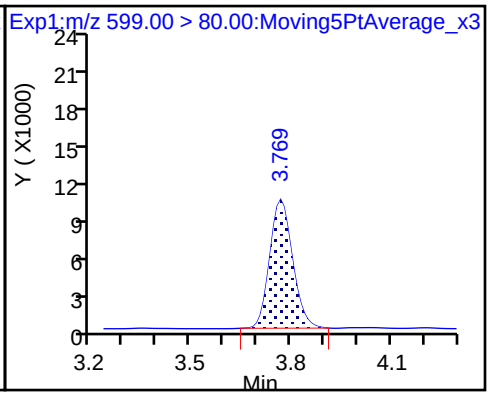
28 N-methyl perfluorooctane sulfonami



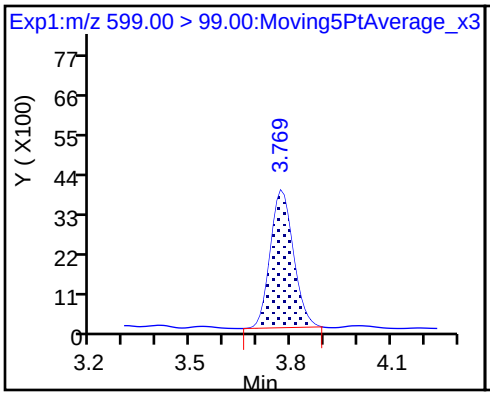
D 27 d3-NMeFOSAA



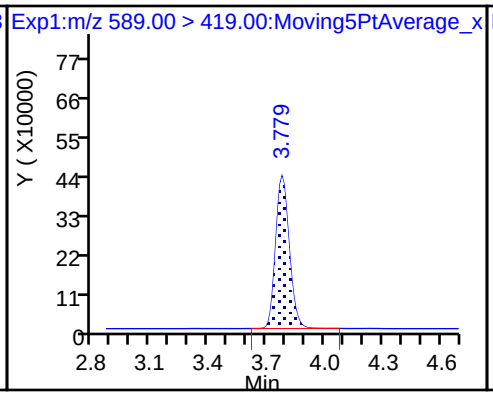
29 Perfluorodecane Sulfonic acid



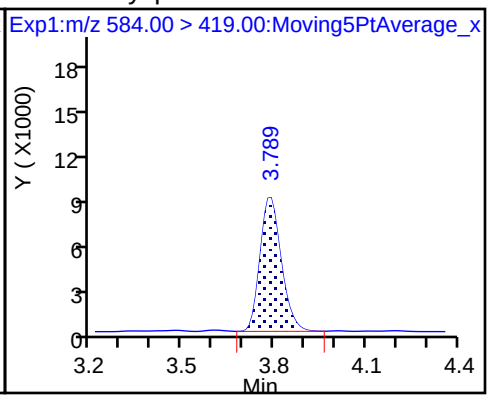
29 Perfluorodecane Sulfonic acid



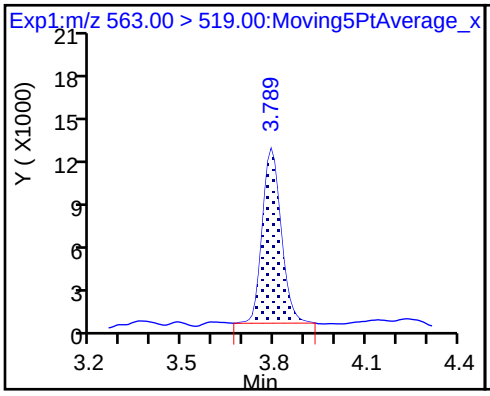
D 32 d5-NEtFOSAA



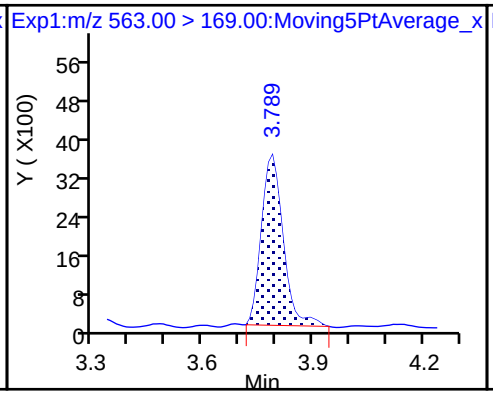
33 N-ethyl perfluorooctane sulfonamid



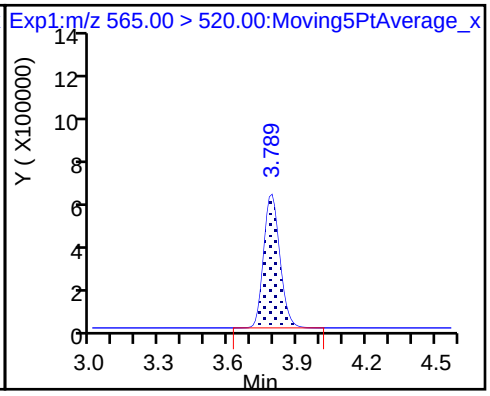
31 Perfluoroundecanoic acid



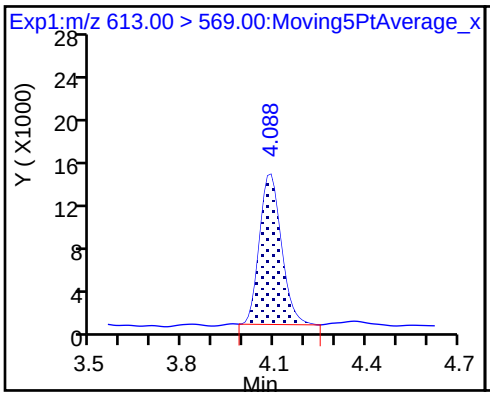
31 Perfluoroundecanoic acid



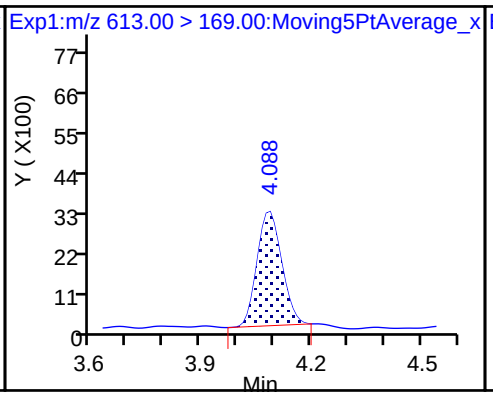
D 30 13C2 PFUnA



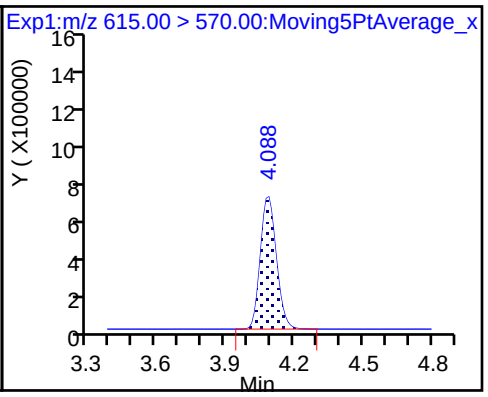
37 Perfluorododecanoic acid



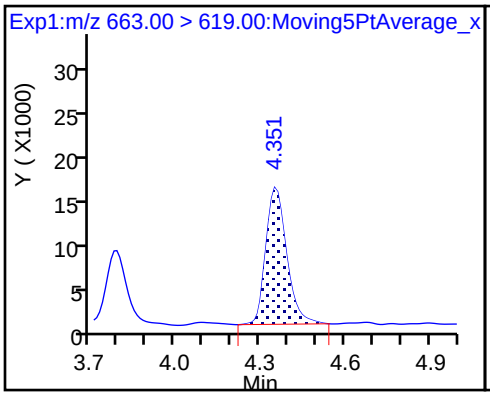
37 Perfluorododecanoic acid



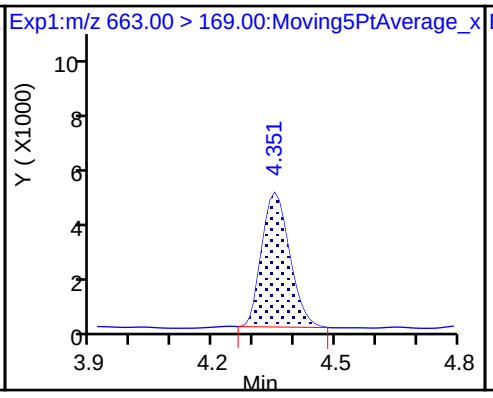
D 36 13C2 PFDoA



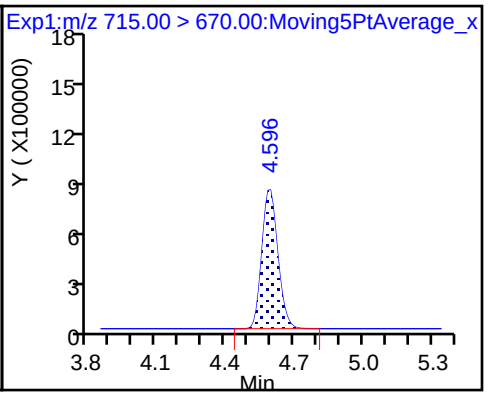
41 Perfluorotridecanoic acid



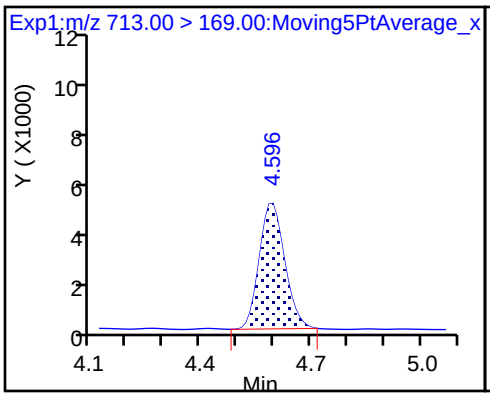
41 Perfluorotridecanoic acid



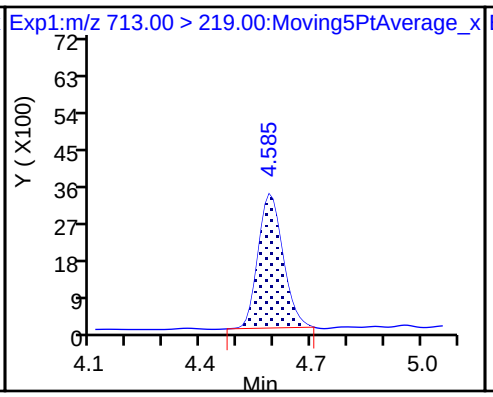
D 43 13C2-PFTeDA



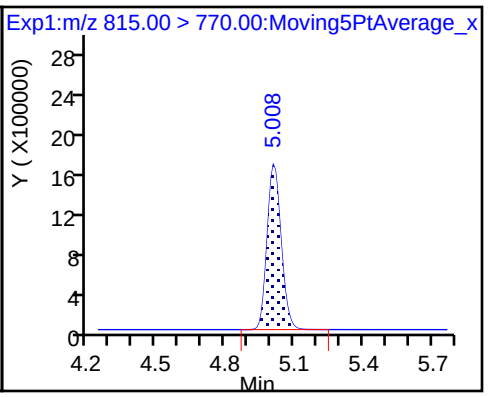
42 Perfluorotetradecanoic acid



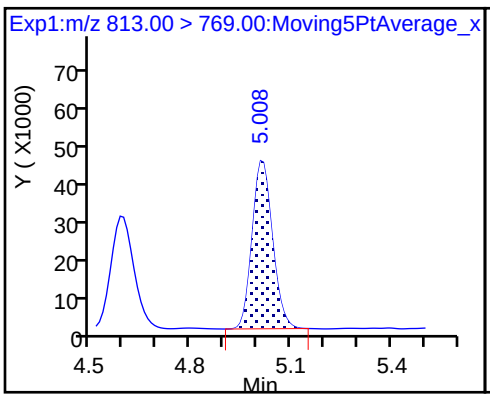
42 Perfluorotetradecanoic acid



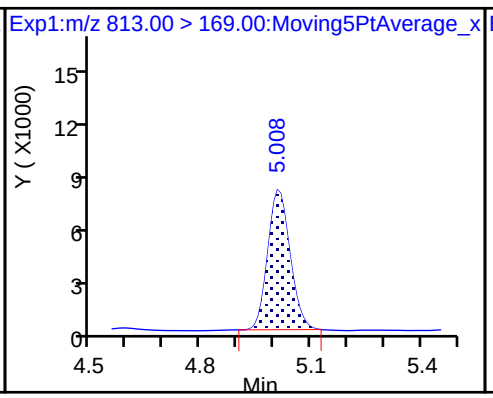
D 44 13C2-PFHxDA



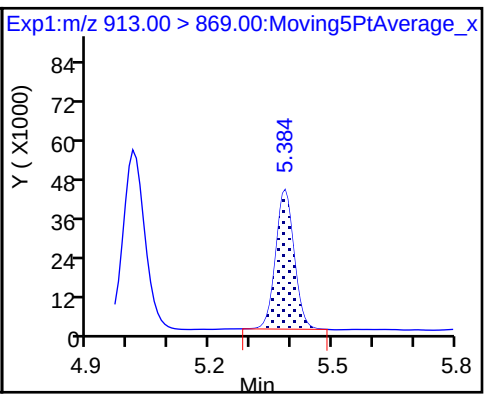
45 Perfluorohexadecanoic acid



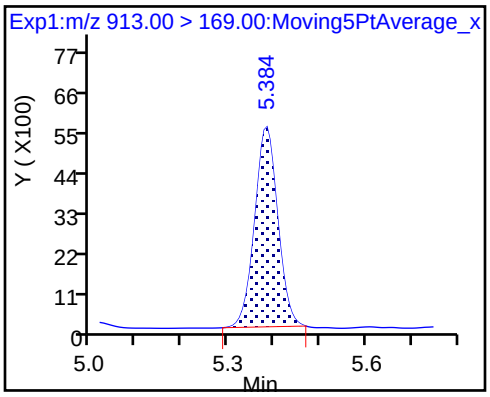
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214825/3 Calibration Date: 03/26/2018 12:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_021.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9123		0.968	1.00	-3.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.119		0.993	1.00	-0.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.58		0.871	0.884	-1.4	50.0
4:2 FTS	AveID	16.15	18.13		1.05	0.934	12.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.020		0.998	1.00	-0.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.004		0.970	1.00	-3.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.040		0.850	0.910	-6.6	40.0
6:2FTS	AveID	1.744	1.598		0.869	0.948	-8.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.073		0.950	1.00	-5.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.356		1.01	0.952	5.9	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9860		0.988	1.00	-1.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.062		0.885	0.928	-4.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9804		0.994	1.00	-0.6	40.0
8:2FTS	AveID	1.276	1.145		0.860	0.958	-10.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9419		0.953	1.00	-4.7	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.019		1.02	1.00	1.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6491		0.920	0.964	-4.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9102		0.974	1.00	-2.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7355		0.853	1.00	-14.7	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.026		0.981	1.00	-1.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.094		0.994	1.00	-0.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2707		1.09	1.00	9.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9353		1.01	1.00	0.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.018		1.10	1.00	10.1	50.0
13C4 PFBA	Ave	1.266	1.323		2.61	2.50	4.5	50.0
13C5 PFPeA	Ave	0.8399	0.8671		2.58	2.50	3.2	50.0
13C3-PFBS	Ave	0.0192	0.0200		2.42	2.33	4.1	50.0
M2-4:2FTS	Ave	0.1324	0.1718		3.03	2.34	29.8	50.0
13C2 PFHxA	Ave	0.9288	0.9196		2.48	2.50	-1.0	50.0
13C4-PFHpA	Ave	0.9164	0.9409		2.57	2.50	2.7	50.0
18O2 PFHxS	Ave	1.130	1.195		2.50	2.37	5.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214825/3 Calibration Date: 03/26/2018 12:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_021.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2396		3.00	2.38	26.1	40.0
13C4 PFOA	Ave	0.9374	0.9467		2.53	2.50	1.0	50.0
13C4 PFOS	Ave	0.8225	0.8419		2.45	2.39	2.4	50.0
13C5 PFNA	Ave	0.8266	0.8003		2.42	2.50	-3.2	50.0
13C8 FOSA	Ave	1.109	1.179		2.66	2.50	6.3	50.0
M2-8:2FTS	Ave	0.2565	0.2777		2.59	2.40	8.3	40.0
13C2 PFDA	Ave	0.7245	0.7267		2.51	2.50	0.3	50.0
d3-NMeFOSAA	Ave	0.3814	0.3693		2.42	2.50	-3.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3919		2.26	2.50	-9.8	50.0
13C2 PFUnA	Ave	0.6482	0.5913		2.28	2.50	-8.8	50.0
13C2 PFDoA	Ave	0.7355	0.6428		2.19	2.50	-12.6	50.0
13C2-PFTeDA	Ave	0.8983	0.7949		2.21	2.50	-11.5	50.0
13C2-PFHxDA	Ave	1.473	1.381		2.35	2.50	-6.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\2018.03.26LLA_021.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Mar-2018 12:39:57 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Mar-2018 14:33:10 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK019

First Level Reviewer: westendorfc Date: 26-Mar-2018 14:31:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.004	2439645	0.9683		96.8	901	
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.459	-0.013	0.533	6685405	2.61		104	95909	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.000	1962147	0.99		99.3	1249	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.727	-0.009	0.633	4383075	2.58		103	126973	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2731549	0.8713		98.6	16822	
298.90 > 99.00	1.753	1.753	0.0	1.005	1142659		2.39(1.25-3.74)		4927	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.762	-0.018	0.643	93809	2.42		104	753	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	683349	1.05		112	32501	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.976	-0.010	0.725	811274	3.03		130	9627	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	1896829	1.00		99.8	2493	
313.00 > 119.00	2.008	2.008	0.0	1.000	176662		10.74(5.03-15.10)		2182	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.019	-0.011	0.740	4648622	2.48		99.0	144665	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	1909653	0.9703		97.0	1632	
363.00 > 169.00	2.341	2.341	0.0	1.000	773028		2.47(1.13-3.40)		2244	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.863	4756472	2.57		103	75321	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	2286520	0.8504		93.4	13245	
399.00 > 99.00	2.354	2.354	0.0	1.000	768116		2.98(1.50-4.49)		2148	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.367	-0.013	0.868	5713218	2.50		106	83641	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.688	2.688	0.0	1.000	733837	0.8686		91.6	2328	
D 12 M2-6:2FTS										
429.00 > 81.00	2.688	2.696	-0.008	0.991	1150769	3.00		126	30203	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.712	2.712	0.0	1.000	2053534	0.9496		95.0	1020	
413.00 > 169.00	2.712	2.712	0.0	1.000	1136258		1.81(0.84-2.52)		3218	
* 62 13C2-PFOA										
415.00 > 370.00	2.712	2.712	0.0		5055137	2.50			121183	
D 14 13C4 PFOA										
417.00 > 372.00	2.712	2.720	-0.008	1.000	4785669	2.52		101	82097	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.720	2.720	0.0	1.000	2198181	1.01		106	58970	
449.00 > 99.00	2.720	2.720	0.0	1.000	553100		3.97(1.94-5.82)		4287	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.088	3.088	0.0	1.000	1677613	0.8846		95.3	16064	M
499.00 > 99.00	3.088	3.088	0.0	1.000	370004		4.53(2.31-6.93)		3365	
20 Perfluorononanoic acid										
463.00 > 419.00	3.088	3.088	0.0	1.000	1595686	0.9885		98.8	2231	
463.00 > 169.00	3.088	3.088	0.0	1.000	407405		3.92(1.90-5.69)		9856	
D 19 13C5 PFNA										
468.00 > 423.00	3.088	3.096	-0.008	1.139	4045758	2.42		96.8	82279	
D 18 13C4 PFOS										
503.00 > 80.00	3.088	3.096	-0.008	1.139	4068685	2.45		102	59222	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.408	0.0	1.000	2337712	0.99		99.4	48396	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.426	-0.018	1.256	5961192	2.66		106	64746	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.444	3.444	0.0	1.000	616124	0.8596		89.7	19701	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.453	3.453	0.0	1.000	1384003	0.9532		95.3	5458	
513.00 > 169.00	3.453	3.453	0.0	1.000	260108		5.32(2.36-7.09)		4884	
D 26 M2-8:2FTS										
529.00 > 81.00	3.444	3.453	-0.009	1.270	1344977	2.59		108	33753	
D 23 13C2 PFDA										
515.00 > 470.00	3.453	3.462	-0.009	1.273	3673593	2.51		100	39439	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.620	3.620	0.0	1.003	760877	1.02		102	6346	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.611	3.622	-0.011	1.331	1866713	2.42		96.8	44469	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.769	3.769	0.0	1.000	1065250	0.9202		95.5	32046	
599.00 > 99.00	3.769	3.769	0.0	1.000	373925		2.85(1.39-4.16)		7822	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.779	3.781	-0.002	1.393	1981227	2.26		90.2	11705	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.789	3.789	0.0	1.003	721310	0.9743		97.4	21247	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.789	3.789	0.0	1.000	879262	0.8530		85.3	3575	
563.00 > 169.00	3.789	3.789	0.0	1.000	243615		3.61(2.12-6.36)		7274	
D 30 13C2 PFUnA										
565.00 > 520.00	3.789	3.791	-0.002	1.397	2988857	2.28		91.2	51914	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.084	4.084	0.0	1.000	1333823	0.9807		98.1	1197	
613.00 > 169.00	4.084	4.084	0.0	1.000	357391		3.73(2.13-6.40)		3932	
D 36 13C2 PFDoA										
615.00 > 570.00	4.084	4.090	-0.006	1.506	3249372	2.18		87.4	22615	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.347	4.347	0.0	1.000	1422439	0.99		99.4	877	
663.00 > 169.00	4.347	4.347	0.0	1.000	441197		3.22(1.25-3.76)		6346	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.593	4.586	0.007	1.693	4018142	2.21		88.5	22205	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.593	4.593	0.0	1.000	435043	1.09		109	6118	
713.00 > 219.00	4.582	4.593	-0.011	0.998	277272		1.57(0.71-2.13)		3596	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.014	5.008	0.006	1.849	6982217	2.34		93.8	17266	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.014	5.014	0.0	1.000	2612160	1.00		100	750	
813.00 > 169.00	5.014	5.014	0.0	1.000	455013		5.74(2.86-8.58)		4145	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.387	5.387	0.0	1.000	2844461	1.10		110	757	
913.00 > 169.00	5.381	5.387	-0.006	0.999	355801		7.99(3.83-11.48)		3603	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Mar-2018 14:33:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\2018.03.26LLA_021.d

Injection Date: 26-Mar-2018 12:39:57 Instrument ID: A8_N

Lims ID: CCV L4

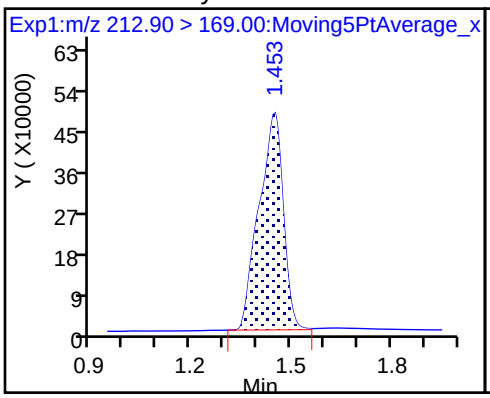
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

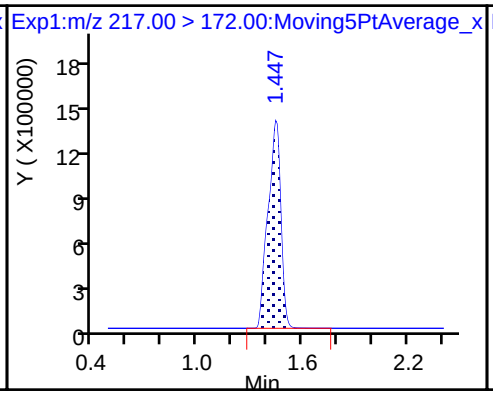
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

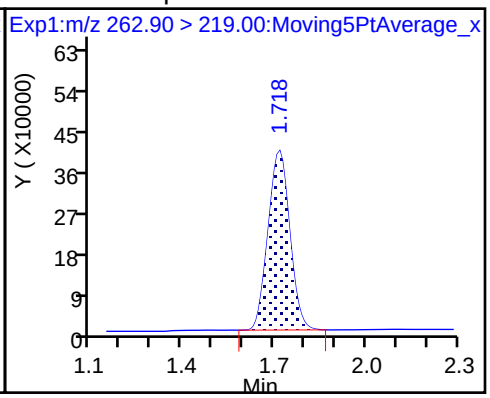
2 Perfluorobutyric acid



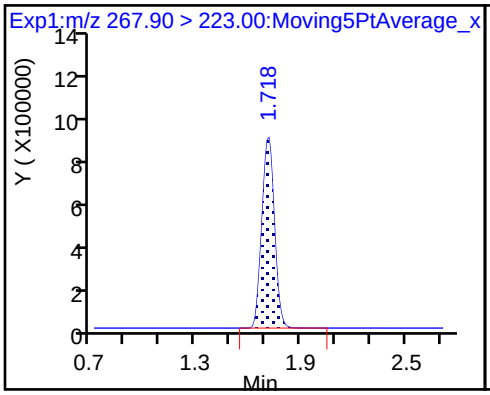
D 1 13C4 PFBA



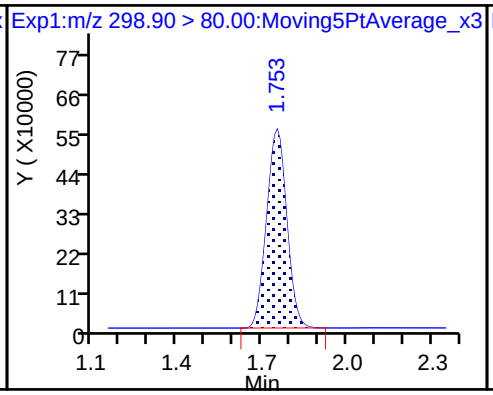
4 Perfluoropentanoic acid



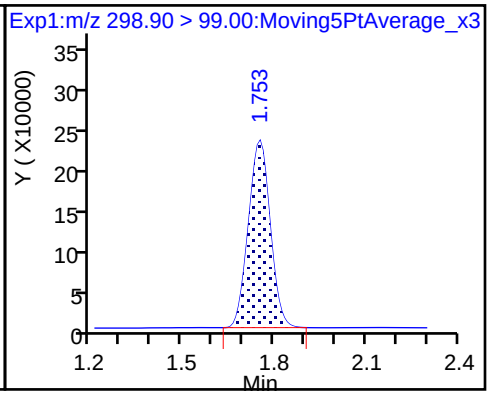
D 3 13C5-PFPeA



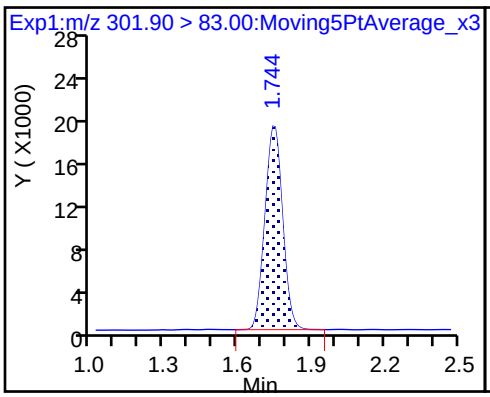
5 Perfluorobutanesulfonic acid



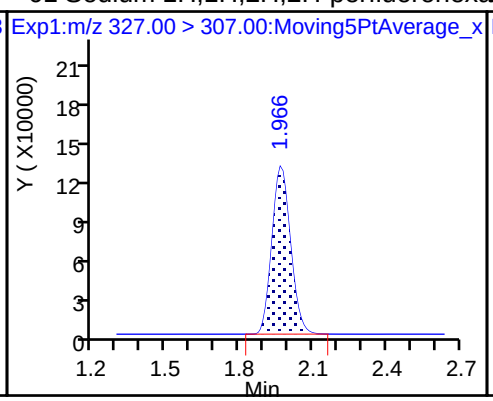
5 Perfluorobutanesulfonic acid



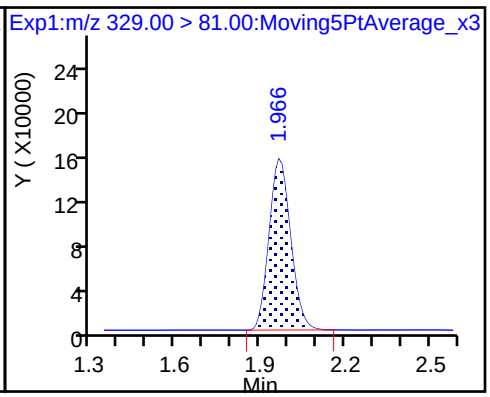
D 47 13C3-PFBS



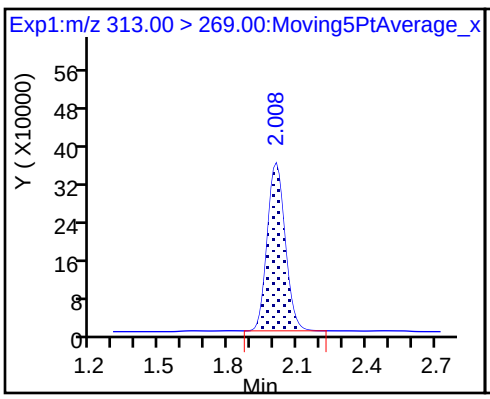
61 Sodium 1H,1H,2H,2H-perfluorohexane



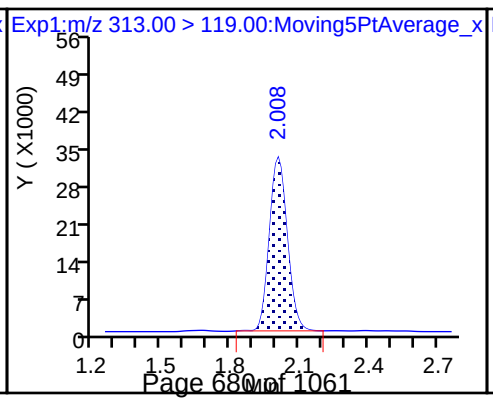
D 60 M2-4:2FTS



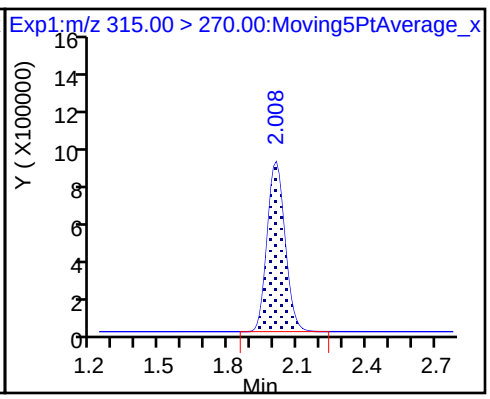
6 Perfluorohexanoic acid



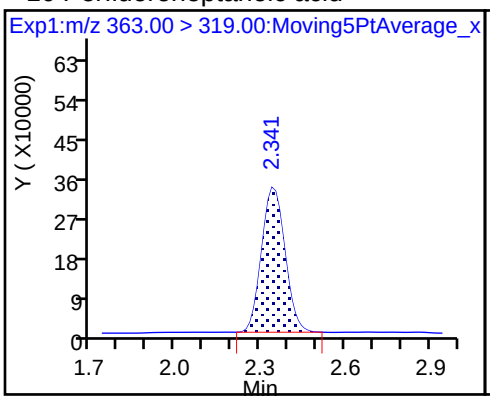
6 Perfluorohexanoic acid



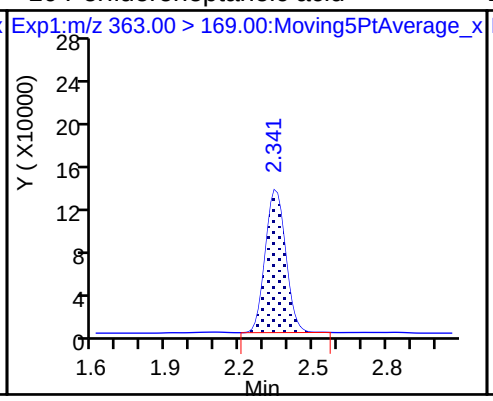
D 7 13C2 PFHxA



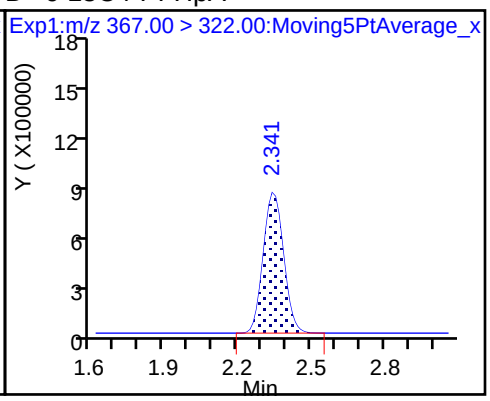
10 Perfluoroheptanoic acid



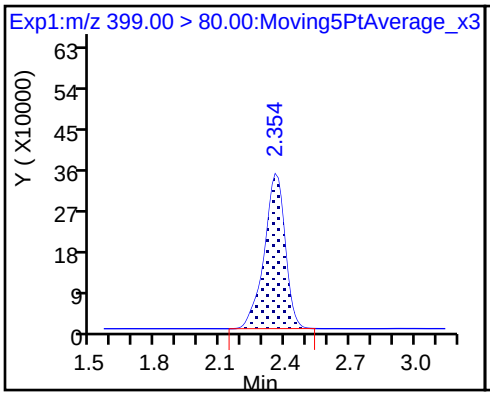
10 Perfluoroheptanoic acid



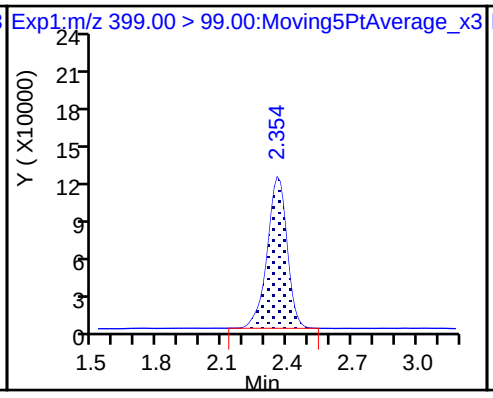
D 9 13C4-PFHpA



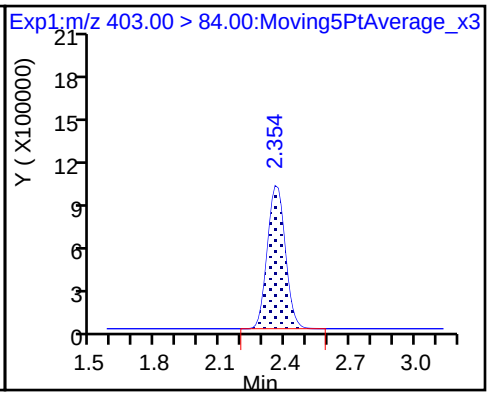
8 Perfluorohexanesulfonic acid



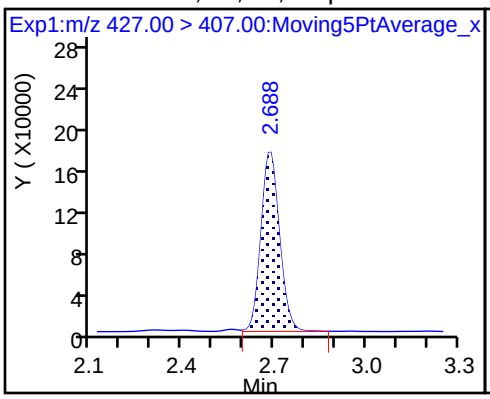
8 Perfluorohexanesulfonic acid



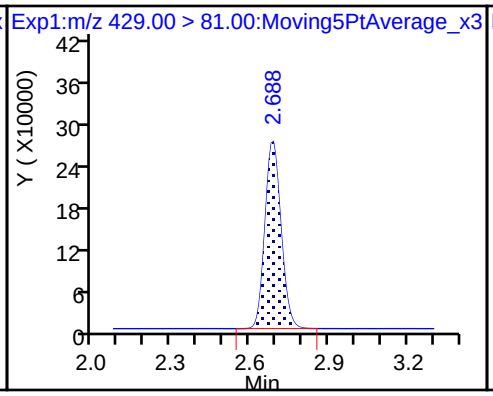
D 11 18O2 PFHxS



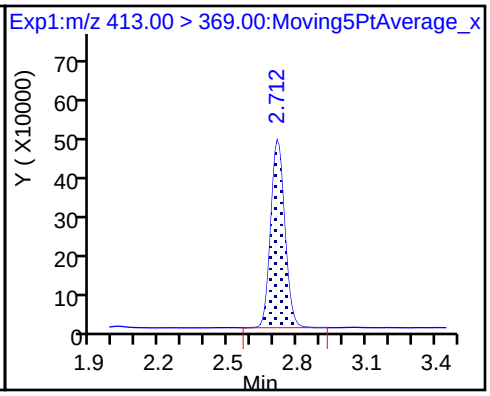
13 Sodium 1H,1H,2H,2H-perfluorooctane



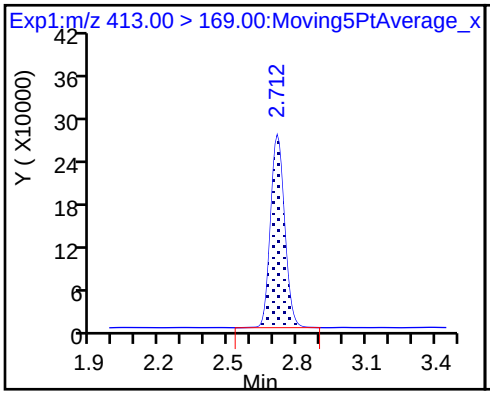
D 12 M2-6:2FTS



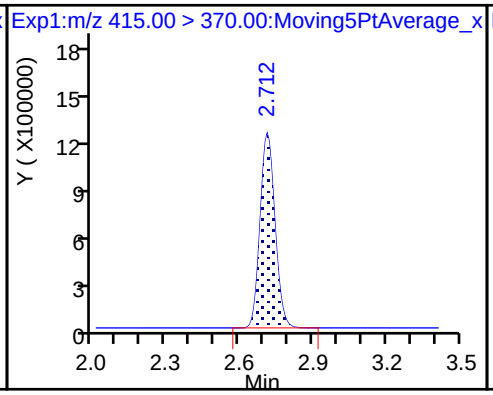
15 Perfluorooctanoic acid



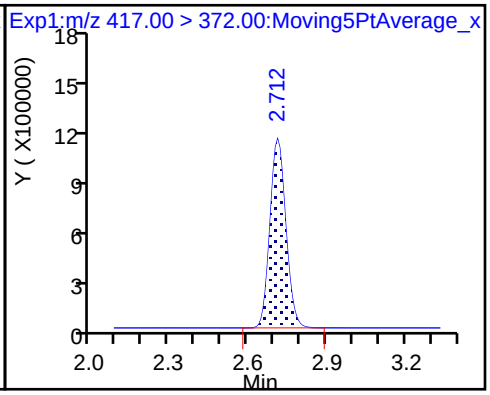
15 Perfluorooctanoic acid



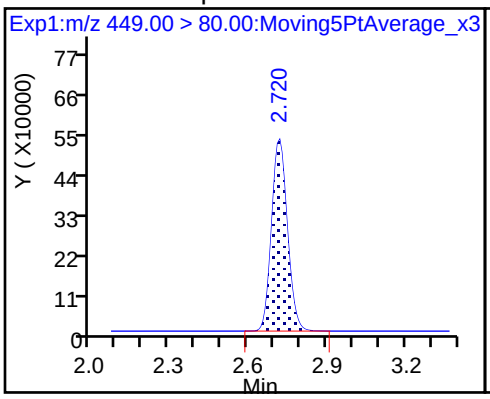
* 62 13C2-PFOA



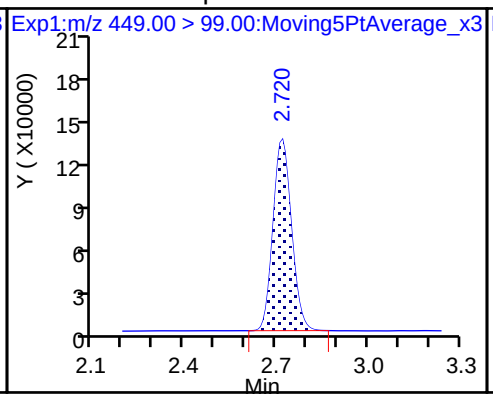
D 14 13C4 PFOA



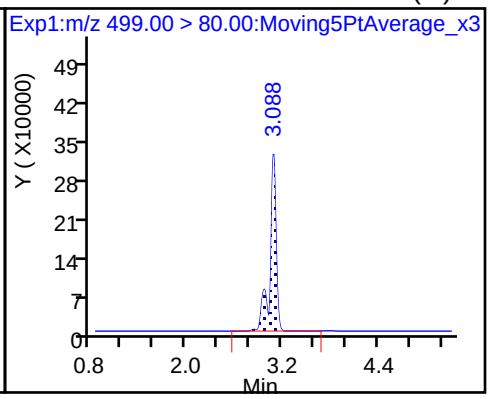
16 Perfluoroheptanesulfonic acid



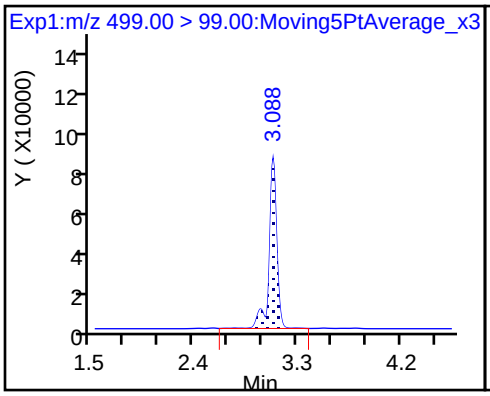
16 Perfluoroheptanesulfonic acid



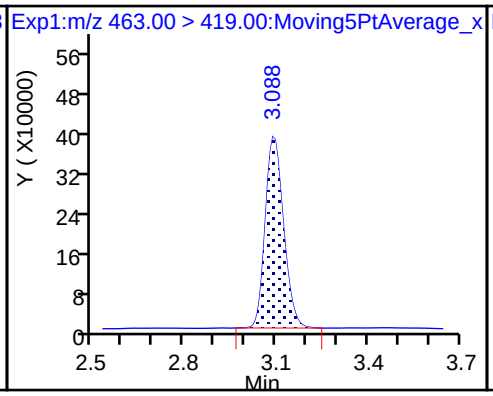
17 Perfluorooctane sulfonic acid (M)



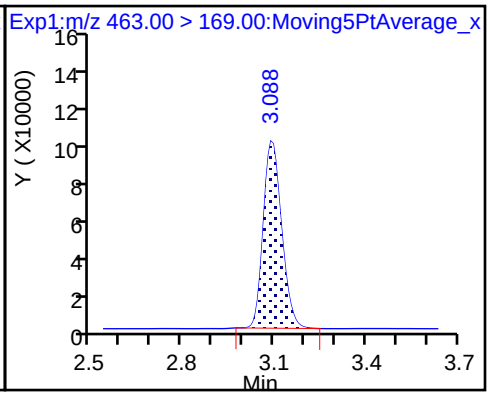
17 Perfluorooctane sulfonic acid



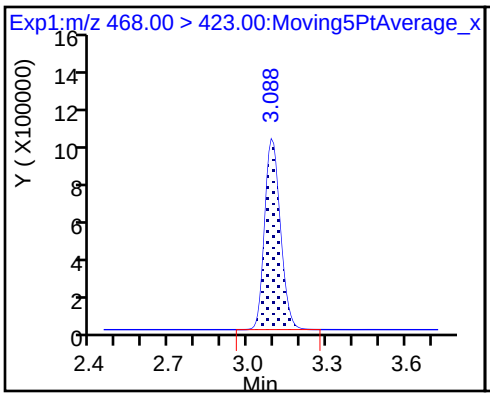
20 Perfluorononanoic acid



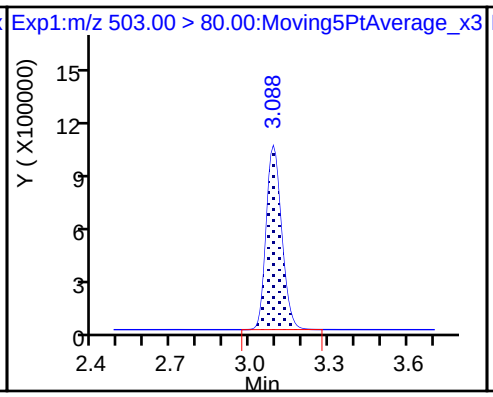
20 Perfluorononanoic acid



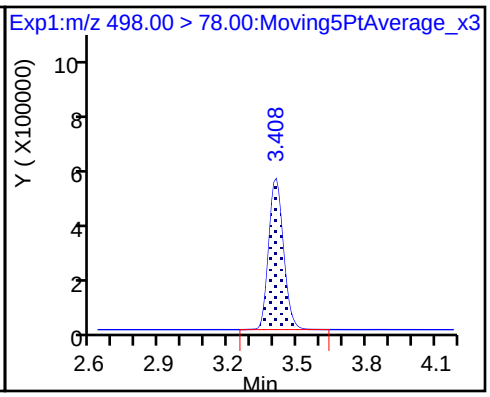
D 19 13C5 PFNA



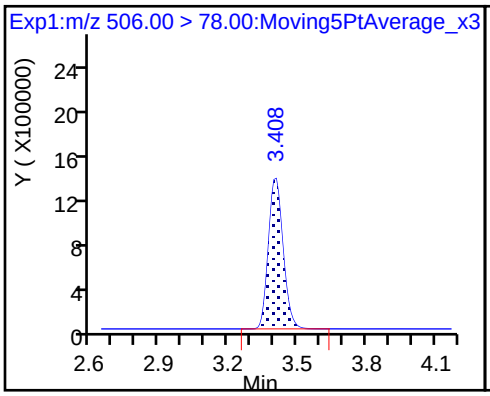
D 18 13C4 PFOS



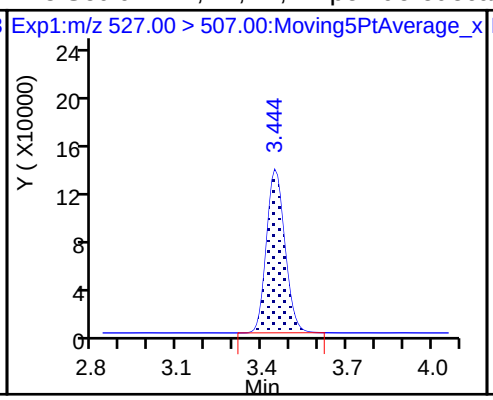
22 Perfluorooctane Sulfonamide



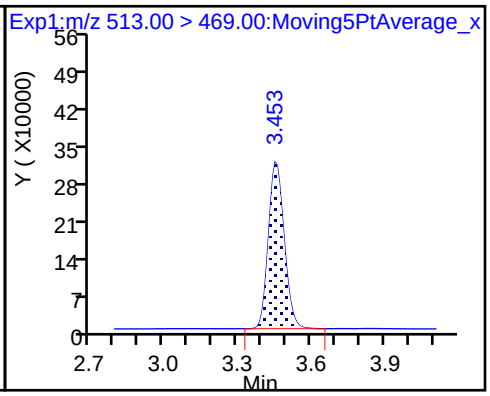
D 21 13C8 FOSA



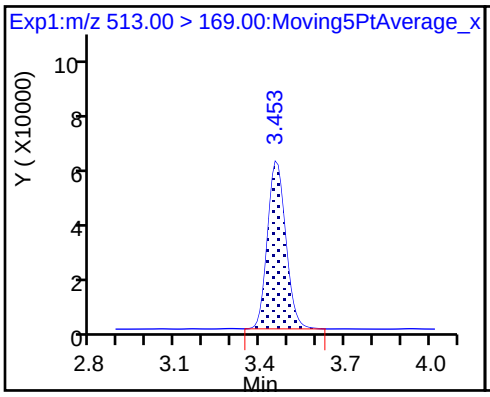
25 Sodium 1H,1H,2H,2H-perfluorodecan



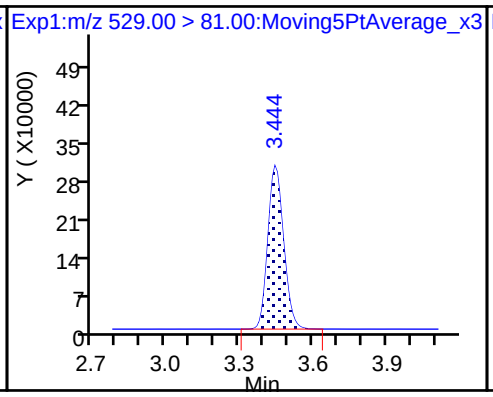
24 Perfluorodecanoic acid



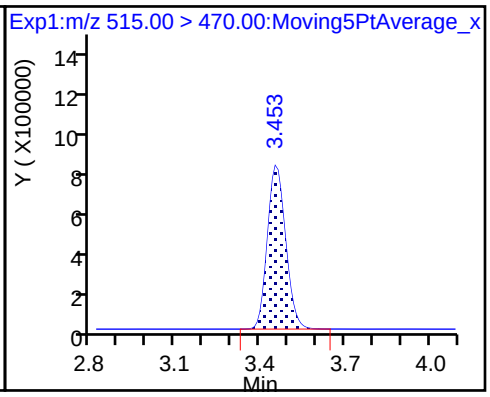
24 Perfluorodecanoic acid



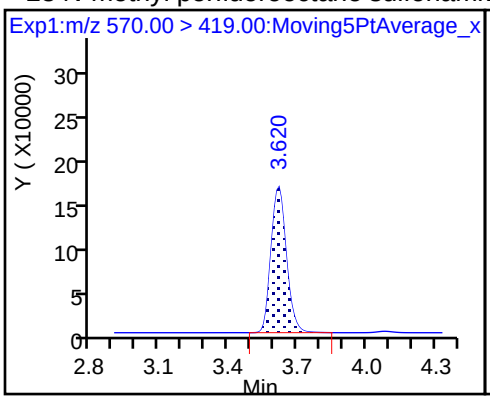
D 26 M2-8:2FTS



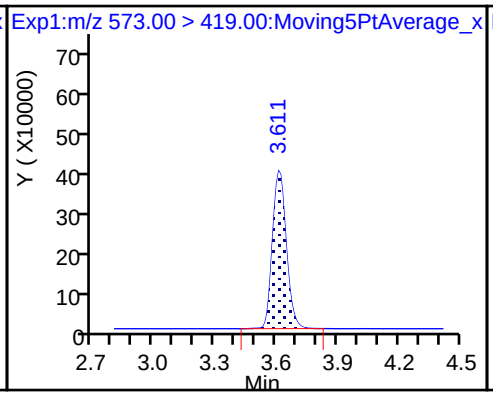
D 23 13C2 PFDA



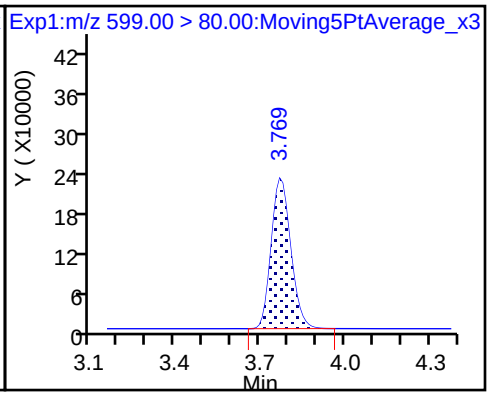
28 N-methyl perfluorooctane sulfonami



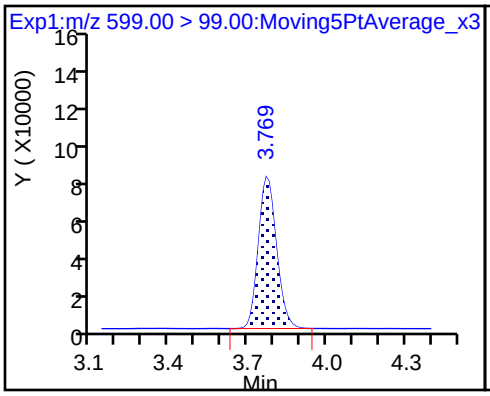
D 27 d3-NMeFOSAA



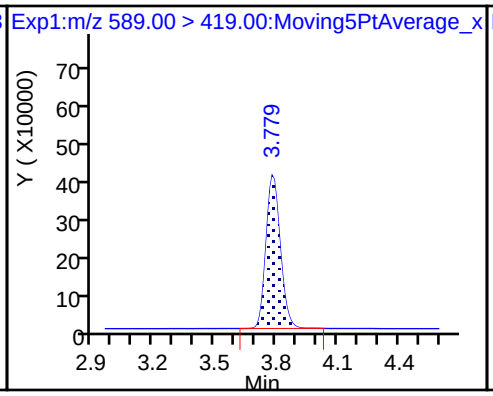
29 Perfluorodecane Sulfonic acid



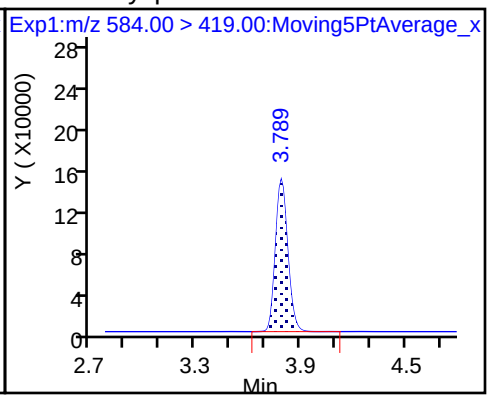
29 Perfluorodecane Sulfonic acid



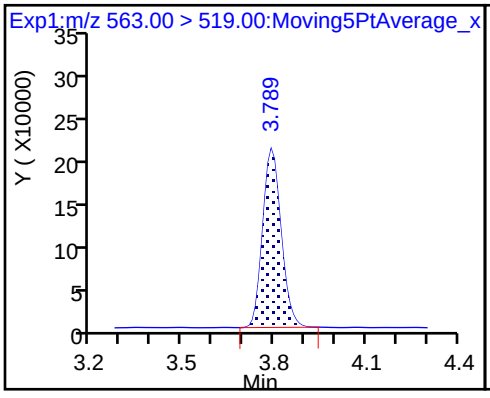
D 32 d5-NEtFOSAA



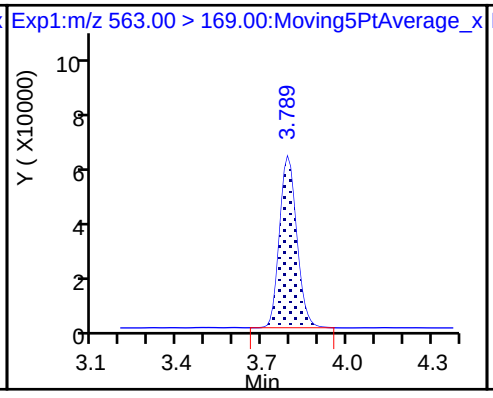
33 N-ethyl perfluorooctane sulfonamid



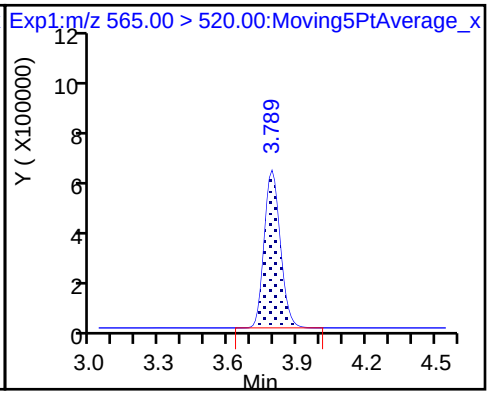
31 Perfluoroundecanoic acid



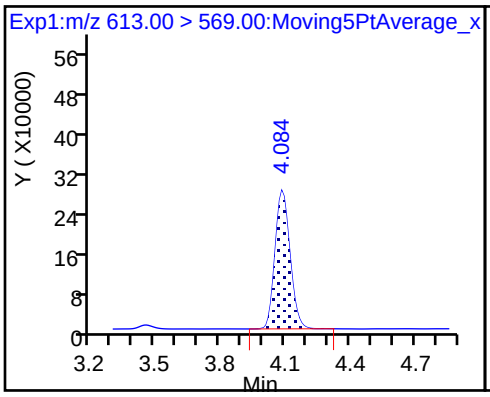
31 Perfluoroundecanoic acid



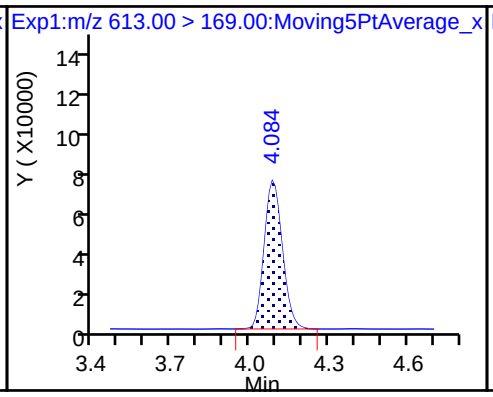
D 30 13C2 PFUnA



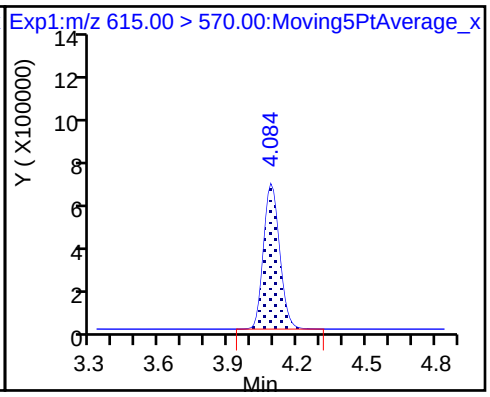
37 Perfluorododecanoic acid



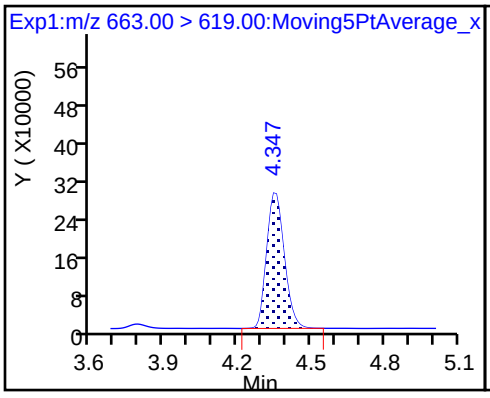
37 Perfluorododecanoic acid



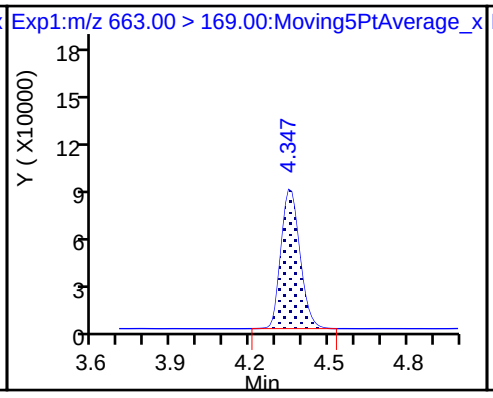
D 36 13C2 PFDoA



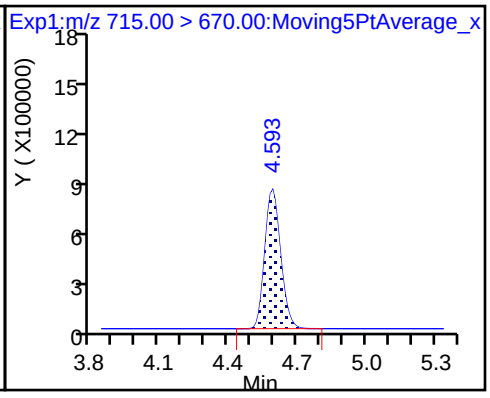
41 Perfluorotridecanoic acid



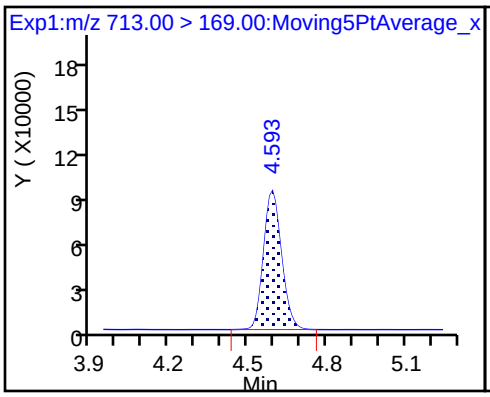
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



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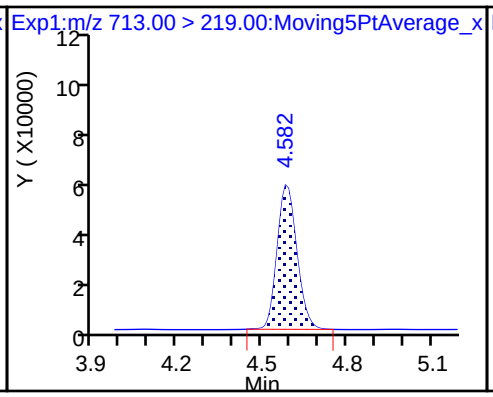
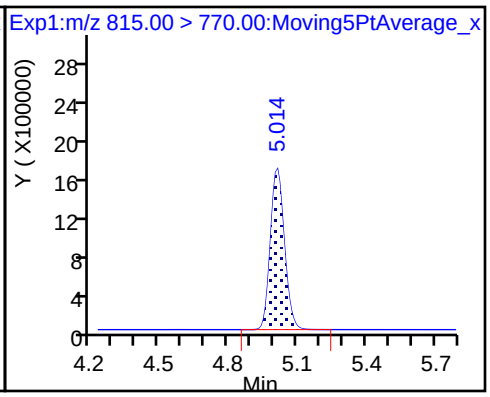
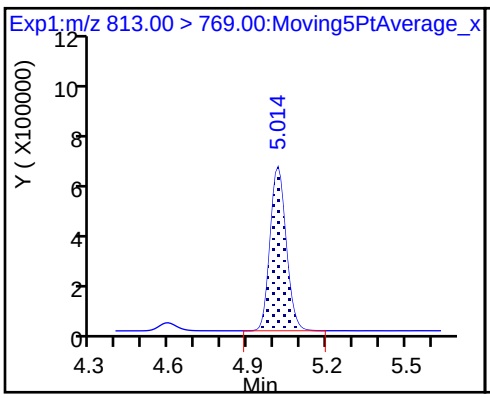


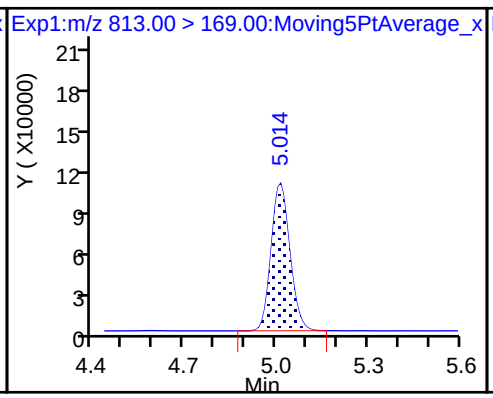
D 44 13C2-PFHxDA



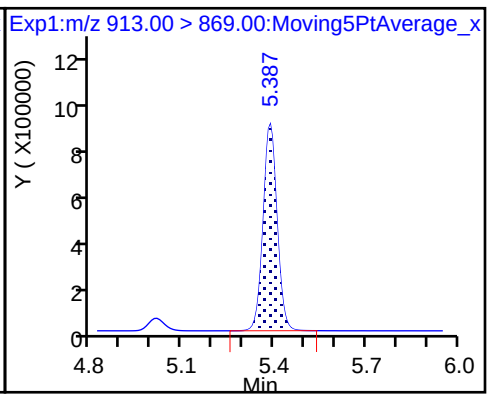
45 Perfluorohexadecanoic acid



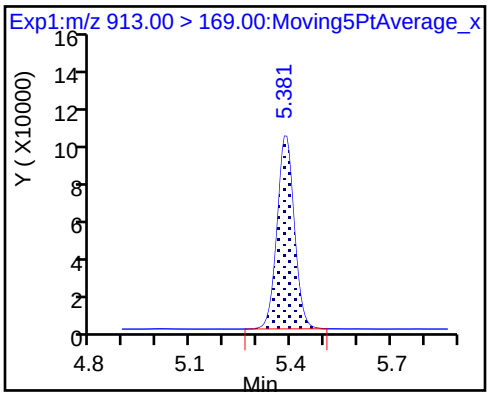
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

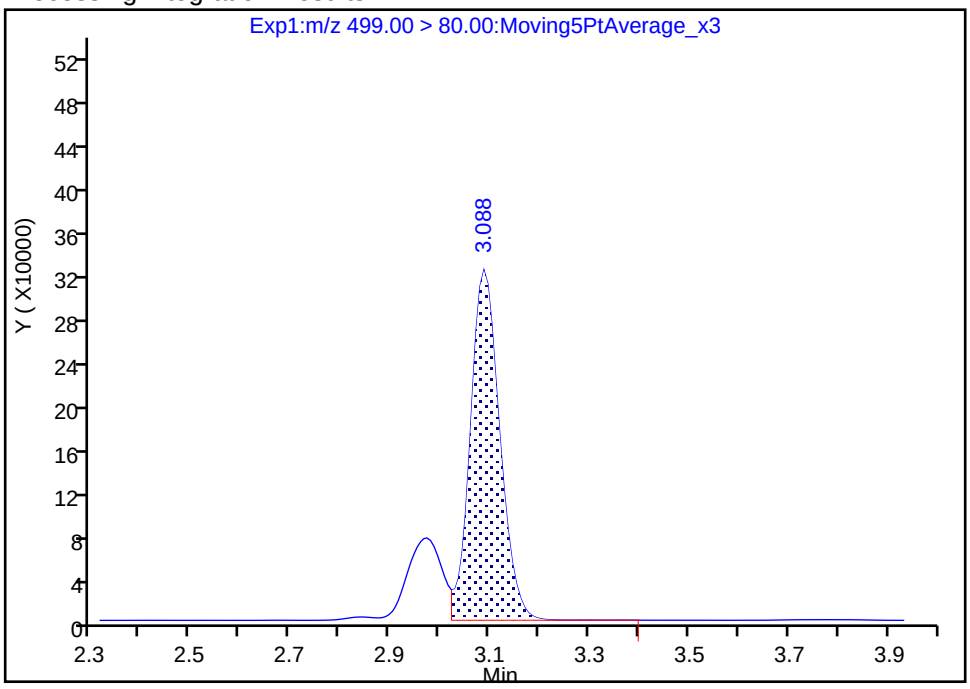
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b\2018.03.26LLA_021.d				
Injection Date:	26-Mar-2018 12:39:57	Instrument ID:	A8_N		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	13	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

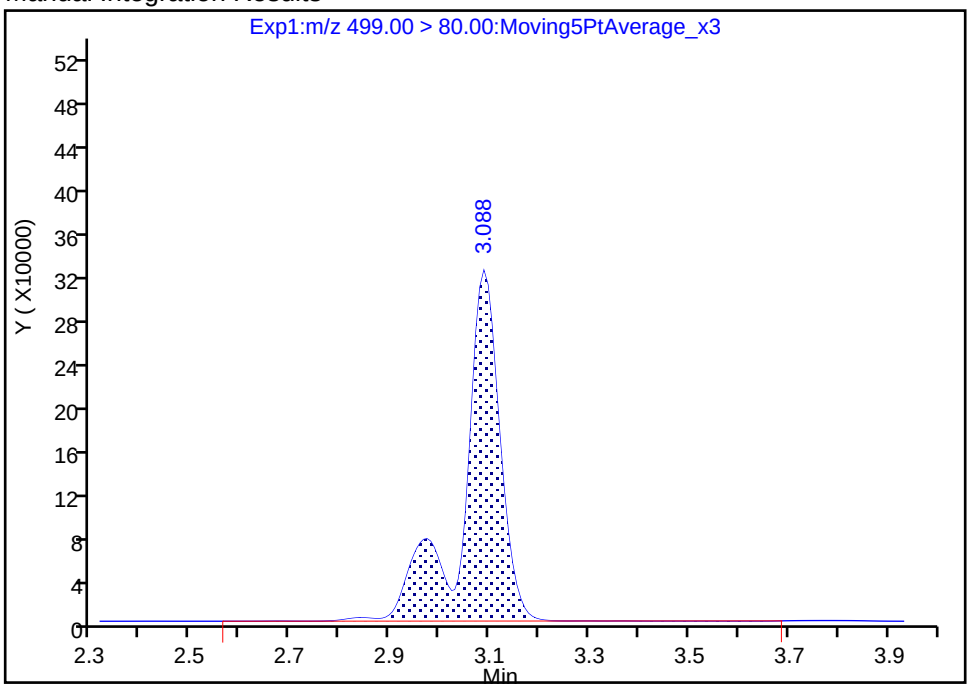
Processing Integration Results

RT: 3.09
Area: 1310875
Amount: 0.691259
Amount Units: ng/ml



Manual Integration Results

RT: 3.09
Area: 1677613
Amount: 0.884649
Amount Units: ng/ml



Reviewer: westendorfc, 26-Mar-2018 14:31:42

Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214885/1 Calibration Date: 03/26/2018 16:03

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_033.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9055		0.961	1.00	-3.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.128		1.00	1.00	0.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.59		0.905	0.884	2.4	50.0
4:2 FTS	AveID	16.15	18.83		1.09	0.934	16.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9347		0.914	1.00	-8.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.002		0.969	1.00	-3.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.025		0.838	0.910	-7.9	40.0
6:2FTS	AveID	1.744	1.720		0.935	0.948	-1.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.081		0.957	1.00	-4.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.281		0.952	0.952	0.0	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9905		0.993	1.00	-0.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.056		0.880	0.928	-5.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9818		0.996	1.00	-0.4	40.0
8:2FTS	AveID	1.276	1.344		1.01	0.958	5.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9430		0.954	1.00	-4.6	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.012		1.01	1.00	1.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6469		0.917	0.964	-4.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.997		1.07	1.00	6.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8166		0.947	1.00	-5.3	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.055		1.01	1.00	0.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.114		1.01	1.00	1.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2562		1.03	1.00	3.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9792		1.05	1.00	5.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9512		1.03	1.00	2.9	50.0
13C4 PFBA	Ave	1.266	1.356		2.68	2.50	7.1	50.0
13C5 PFPeA	Ave	0.8399	0.8912		2.65	2.50	6.1	50.0
13C3-PFBS	Ave	0.0192	0.0204		2.48	2.33	6.5	50.0
M2-4:2FTS	Ave	0.1324	0.1648		2.91	2.34	24.5	50.0
13C2 PFHxA	Ave	0.9288	1.023		2.75	2.50	10.1	50.0
13C4-PFHpA	Ave	0.9164	0.9788		2.67	2.50	6.8	50.0
18O2 PFHxS	Ave	1.130	1.227		2.57	2.37	8.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214885/1 Calibration Date: 03/26/2018 16:03

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_033.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2377		2.97	2.38	25.1	40.0
13C4 PFOA	Ave	0.9374	0.9723		2.59	2.50	3.7	50.0
13C4 PFOS	Ave	0.8225	0.8635		2.51	2.39	5.0	50.0
13C5 PFNA	Ave	0.8266	0.8593		2.60	2.50	4.0	50.0
13C8 FOSA	Ave	1.109	1.187		2.67	2.50	7.0	50.0
M2-8:2FTS	Ave	0.2565	0.2830		2.64	2.40	10.3	40.0
13C2 PFDA	Ave	0.7245	0.7380		2.55	2.50	1.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3819		2.50	2.50	0.1	50.0
d5-NEtFOSAA	Ave	0.4345	0.4100		2.36	2.50	-5.6	50.0
13C2 PFUnA	Ave	0.6482	0.6104		2.35	2.50	-5.8	50.0
13C2 PFDoA	Ave	0.7355	0.6339		2.16	2.50	-13.8	50.0
13C2-PFTeDA	Ave	0.8983	0.8157		2.27	2.50	-9.2	50.0
13C2-PFHxDA	Ave	1.473	1.366		2.32	2.50	-7.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_033.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Mar-2018 16:03:34 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:35:12 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:34:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.439	0.008	1.000	2374166	0.9611		96.1	870	
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.439	0.008	0.536	6554536	2.68		107	100760	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.699	0.010	0.634	4307642	2.65		106	176502	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.708	0.001	1.000	1943590	1.00		100	1055	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.734	0.010	0.647	91791	2.48		107	1847	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.743	0.001	1.000	2777677	0.9055		102	19371	
298.90 > 99.00	1.744	1.743	0.001	1.000	1127061		2.46(1.25-3.74)		5288	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.954	0.012	1.000	694213	1.09		117	32927	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.954	0.012	0.729	743958	2.91		124	8757	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.996	0.001	1.000	1848670	0.9143		91.4	2687	
313.00 > 119.00	1.997	1.996	0.001	1.000	172095		10.74(5.03-15.10)		2666	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.996	0.001	0.741	4944522	2.75		110	133010	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.327	0.014	1.006	1896931	0.9691		96.9	1831	
363.00 > 169.00	2.341	2.327	0.014	1.006	768802		2.47(1.13-3.40)		2164	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.327	0.001	0.863	4730588	2.67		107	101272	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.340	0.001	0.995	2212484	0.8380		92.1	11723	
399.00 > 99.00	2.341	2.340	0.001	0.995	738977		2.99(1.50-4.49)		2252	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.340	0.014	0.873	5609924	2.57		109	88594	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.670	0.003	1.000	749219	0.9350		98.6	2907	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.670	0.003	0.991	1091475	2.97		125	25748	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.694	0.003	1.000	2032703	0.9572		95.7	806	
413.00 > 169.00	2.697	2.694	0.003	1.000	1103676		1.84(0.84-2.52)		3621	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.694	0.003		4833317	2.50			76651	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.694	0.003	1.000	4699345	2.59		104	86101	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.702	0.003	1.000	2036724	0.9522		100	37730	
449.00 > 99.00	2.705	2.702	0.003	1.000	543735		3.75(1.94-5.82)		4667	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.072	3.071	0.001	1.000	1635669	0.8795		94.8	12193	M
499.00 > 99.00	3.072	3.071	0.001	1.000	363468		4.50(2.31-6.93)		3698	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.071	0.001	1.000	1645568	0.99		99.3	2029	
463.00 > 169.00	3.072	3.071	0.001	1.000	417834		3.94(1.90-5.69)		7989	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.071	0.001	1.139	4153385	2.60		104	79239	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.071	0.001	1.139	3990105	2.51		105	50124	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.395	0.004	1.000	2252382	1.00		99.6	51727	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.395	0.004	1.260	5735076	2.67		107	50685	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.431	-0.005	1.000	704520	1.01		105	17483	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.431	-0.005	1.270	1310279	2.64		110	24378	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.440	-0.005	1.000	1345495	0.9544		95.4	5776	
513.00 > 169.00	3.435	3.440	-0.005	1.000	246944		5.45(2.36-7.09)		3982	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.440	-0.005	1.274	3567028	2.55		102	44249	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.602	3.597	0.005	1.003	747302	1.01		101	6076	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.597	-0.005	1.332	1845652	2.50		100	49021	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.750	3.756	-0.006	1.000	1041036	0.9170		95.1	22013	
599.00 > 99.00	3.750	3.756	-0.006	1.000	355457		2.93(1.39-4.16)		7438	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.770	3.767	0.003	1.003	789947	1.07		107	18189	
D 30 13C2 PFUnA										
565.00 > 520.00	3.770	3.767	0.003	1.398	2950108	2.35		94.2	51575	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.767	-0.007	1.394	1981704	2.36		94.4	10685	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.770	3.777	-0.007	1.000	963587	0.9471		94.7	3995	
563.00 > 169.00	3.770	3.777	-0.007	1.000	254503		3.79(2.12-6.36)		7608	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.064	0.005	1.000	1293364	1.01		101	1131	
613.00 > 169.00	4.069	4.064	0.005	1.000	317384		4.08(2.13-6.40)		4116	
D 36 13C2 PFDoA										
615.00 > 570.00	4.069	4.064	0.005	1.509	3063987	2.15		86.2	19913	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.337	-0.008	1.000	1364917	1.01		101	875	
663.00 > 169.00	4.329	4.337	-0.008	1.000	433880		3.15(1.25-3.76)		5652	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.572	0.003	1.002	403986	1.03		103	5234	
713.00 > 219.00	4.565	4.572	-0.007	1.000	276513		1.46(0.71-2.13)		4839	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.572	-0.007	1.693	3942316	2.27		90.8	19978	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.988	0.003	1.002	2585314	1.05		105	803	
813.00 > 169.00	4.991	4.988	0.003	1.002	449023		5.76(2.86-8.58)		4405	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.988	-0.006	1.848	6600517	2.32		92.7	17040	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.356	-0.004	1.000	2511263	1.03		103	679	
913.00 > 169.00	5.352	5.356	-0.004	1.000	328274		7.65(3.83-11.48)		2978	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:35:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_033.d

Injection Date: 26-Mar-2018 16:03:34 Instrument ID: A8_N

Lims ID: CCV L4

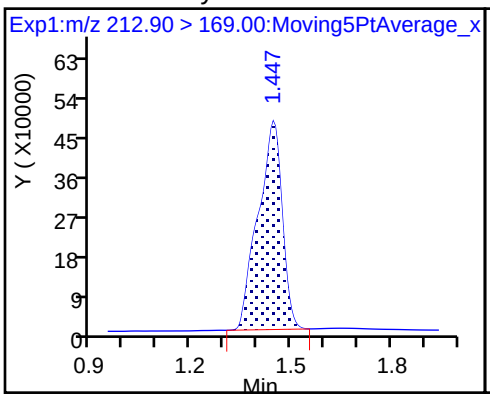
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

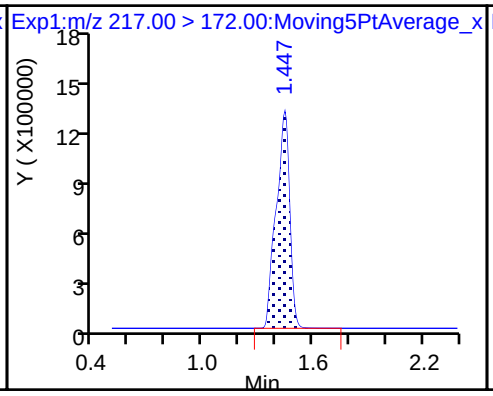
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

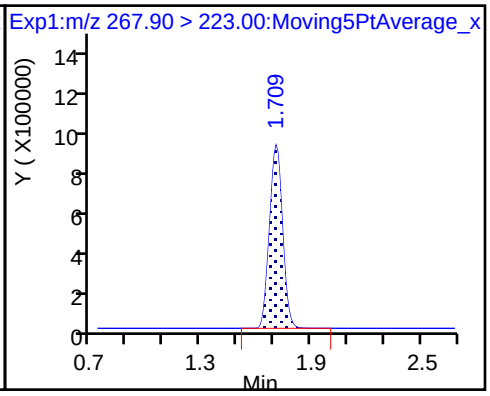
2 Perfluorobutyric acid



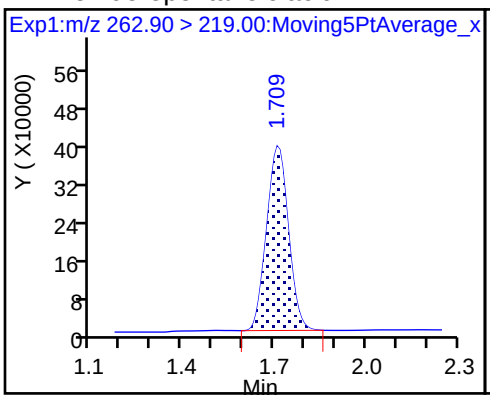
D 1 13C4 PFBA



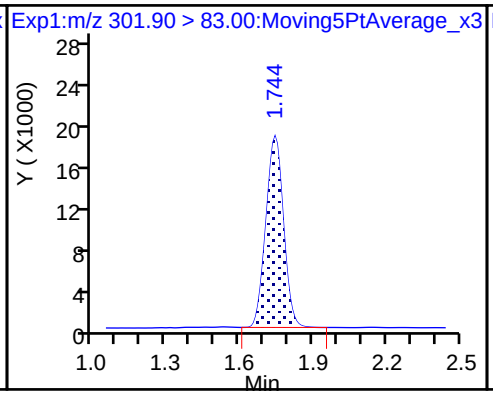
D 3 13C5-PFPeA



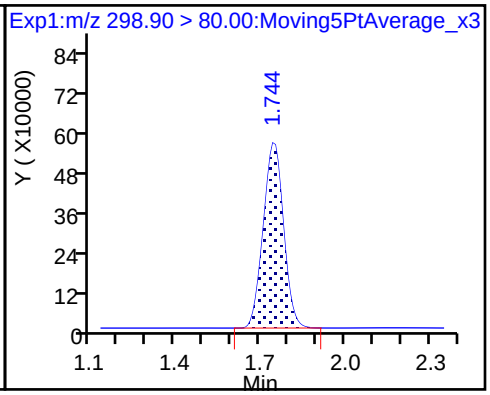
4 Perfluoropentanoic acid



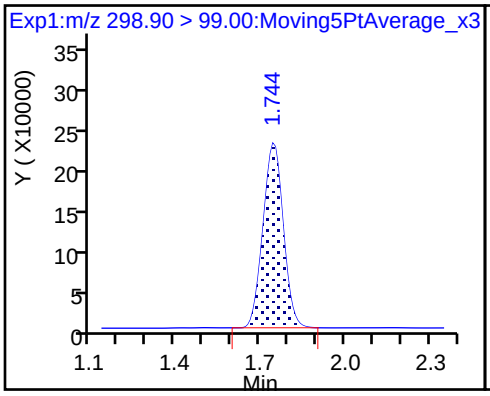
D 47 13C3-PFBS



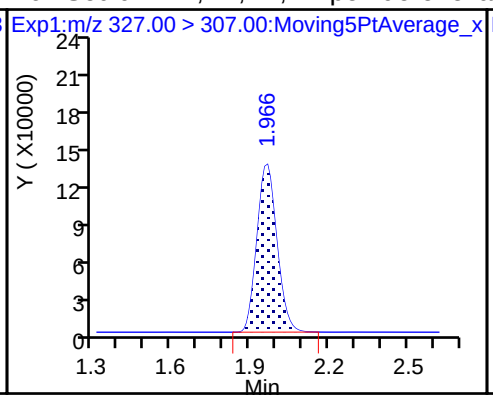
5 Perfluorobutanesulfonic acid



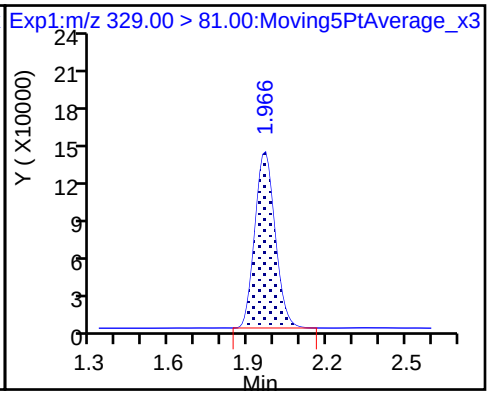
5 Perfluorobutanesulfonic acid



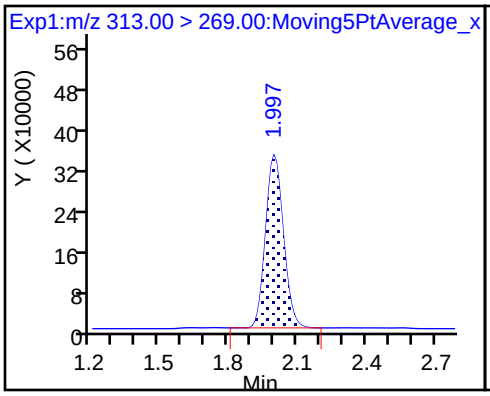
61 Sodium 1H,1H,2H,2H-perfluorohexane



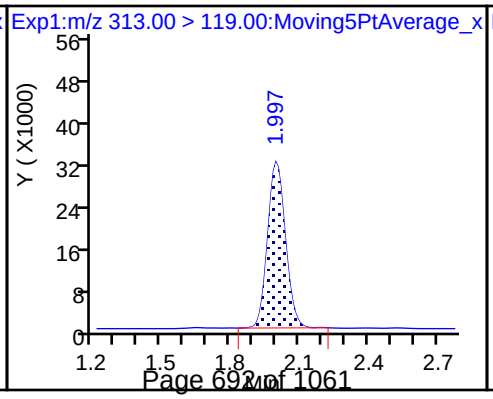
D 60 M2-4:2FTS



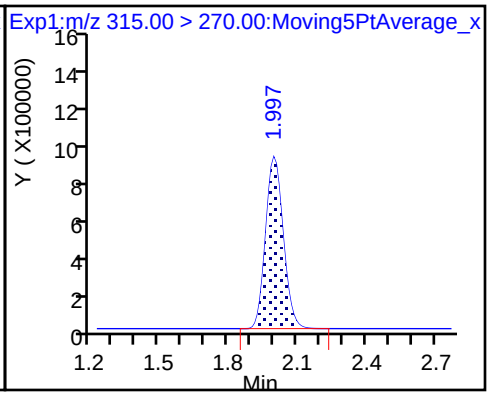
6 Perfluorohexanoic acid



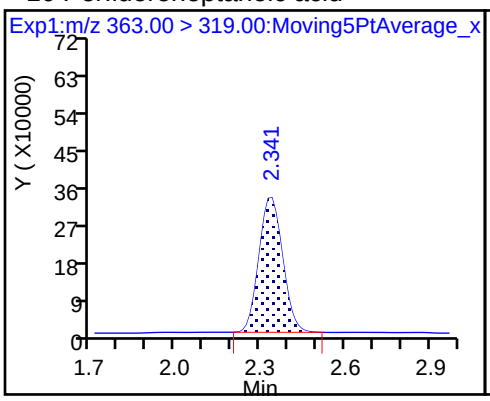
6 Perfluorohexanoic acid



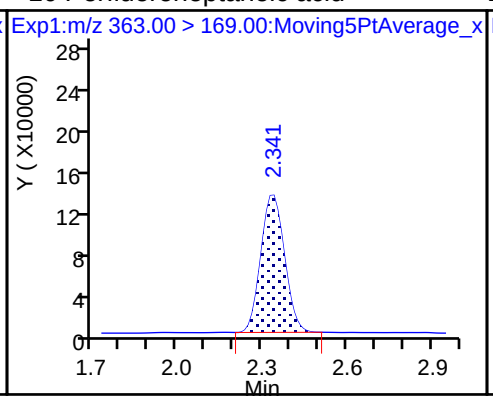
D 7 13C2 PFHxA



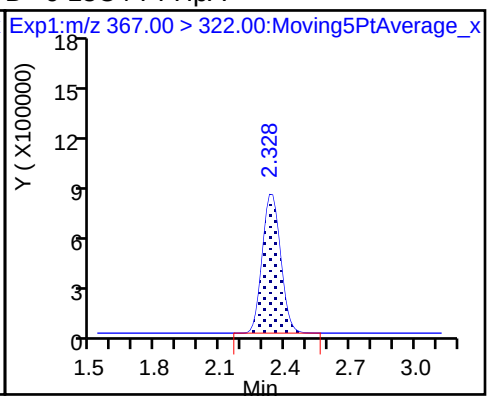
10 Perfluoroheptanoic acid



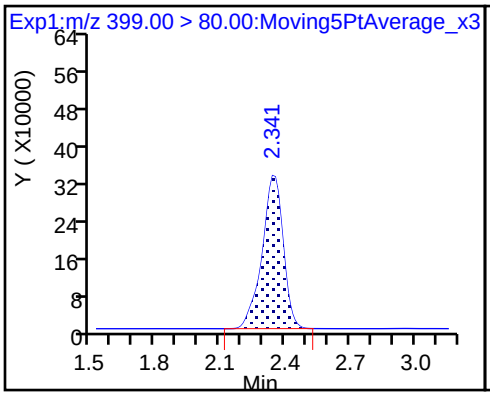
10 Perfluoroheptanoic acid



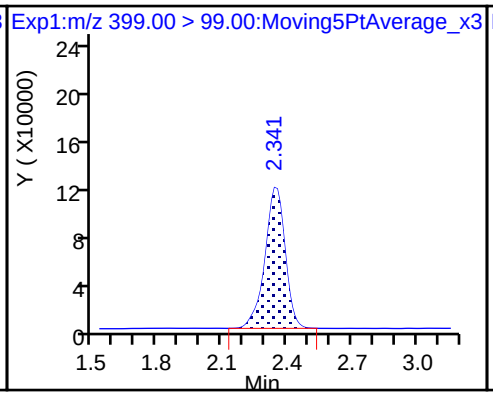
D 9 13C4-PFHpA



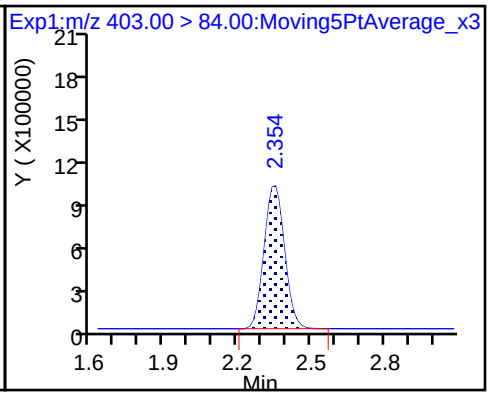
8 Perfluorohexanesulfonic acid



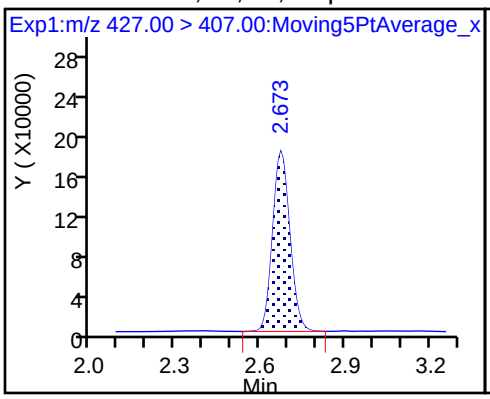
8 Perfluorohexanesulfonic acid



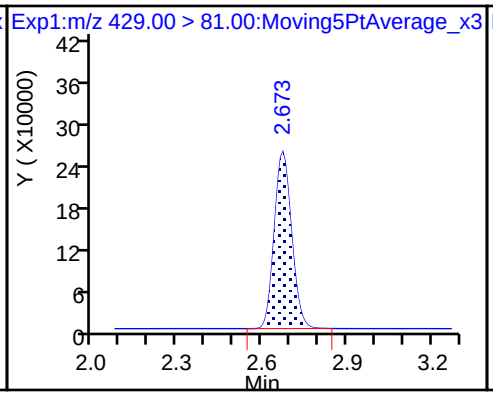
D 11 18O2 PFHxS



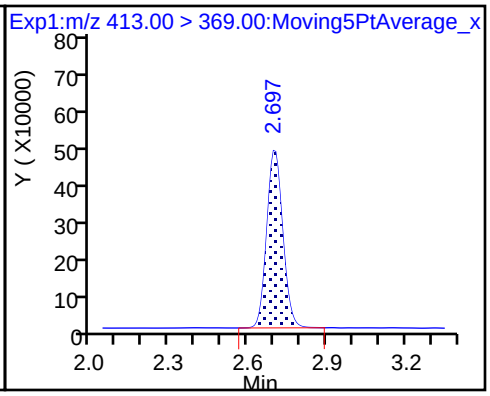
13 Sodium 1H,1H,2H,2H-perfluorooctane



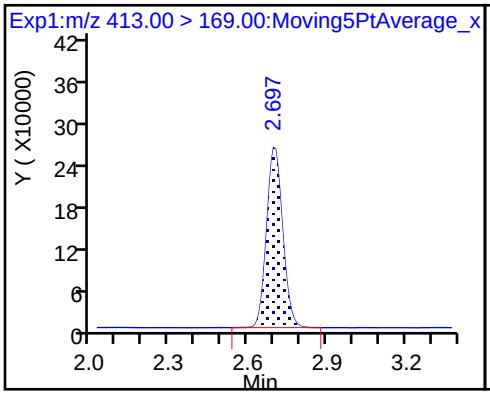
D 12 M2-6:2FTS



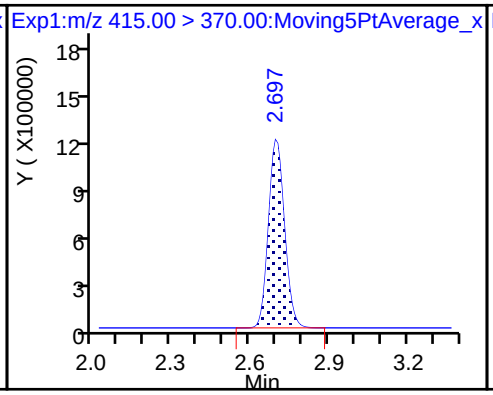
15 Perfluorooctanoic acid



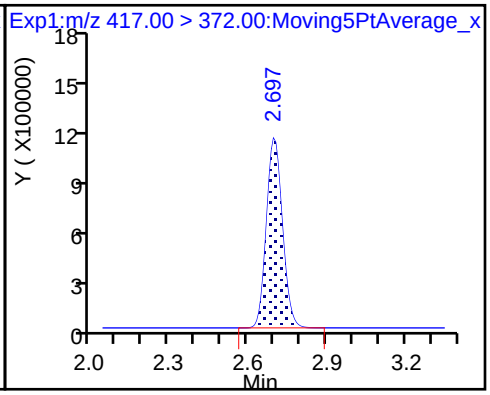
15 Perfluorooctanoic acid



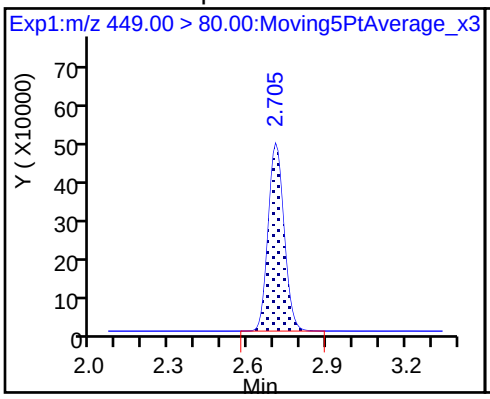
* 62 13C2-PFOA



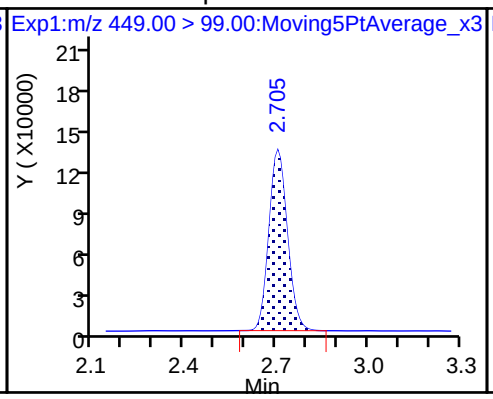
D 14 13C4 PFOA



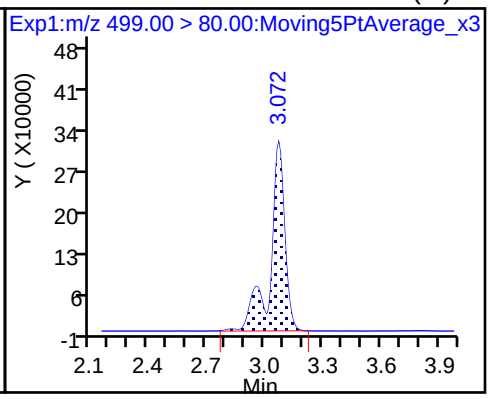
16 Perfluoroheptanesulfonic acid



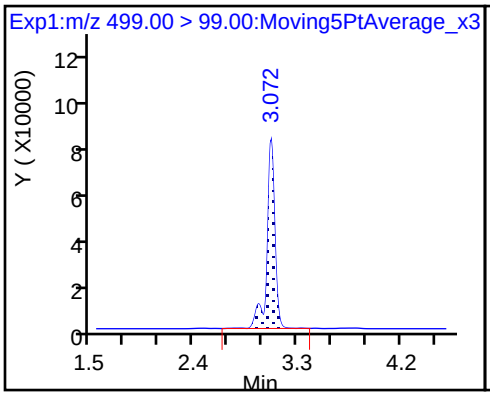
16 Perfluoroheptanesulfonic acid



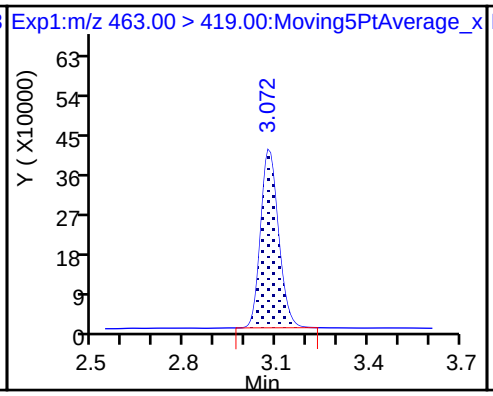
17 Perfluorooctane sulfonic acid (M)



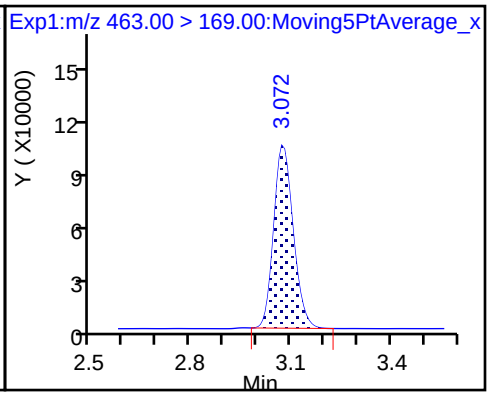
17 Perfluorooctane sulfonic acid



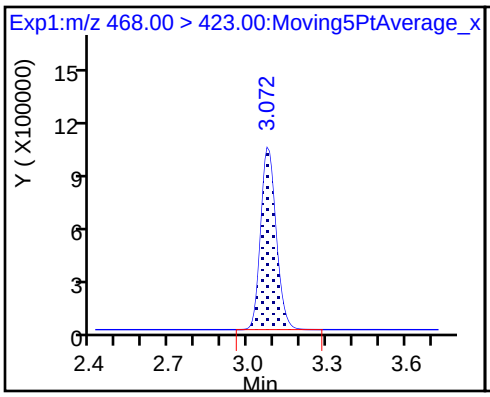
20 Perfluorononanoic acid



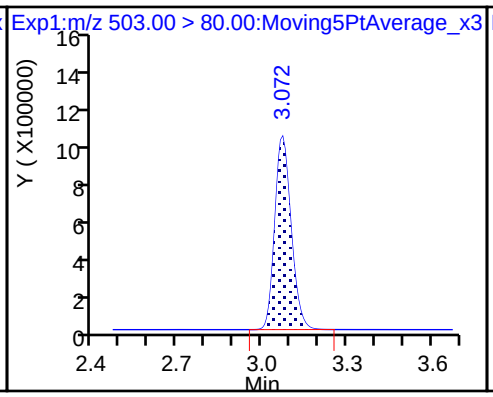
20 Perfluorononanoic acid



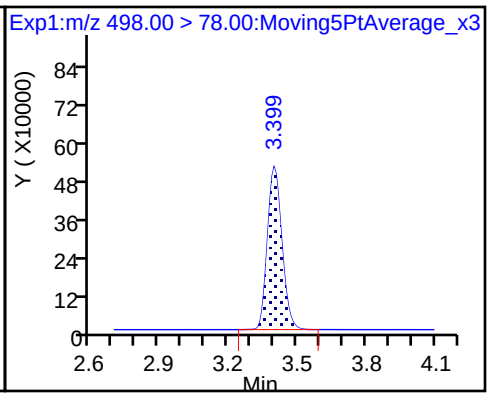
D 19 13C5 PFNA



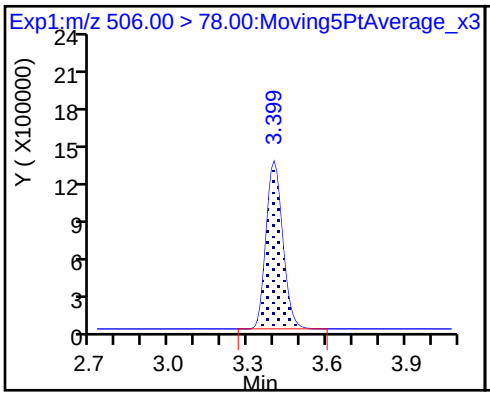
D 18 13C4 PFOS



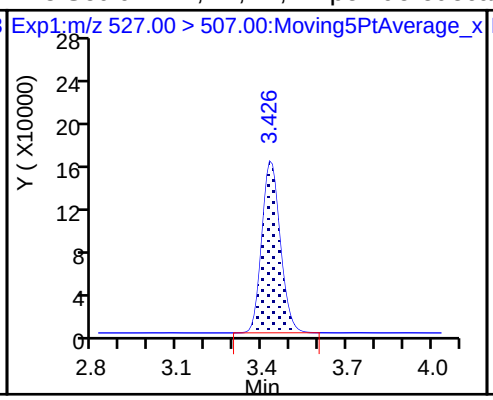
22 Perfluorooctane Sulfonamide



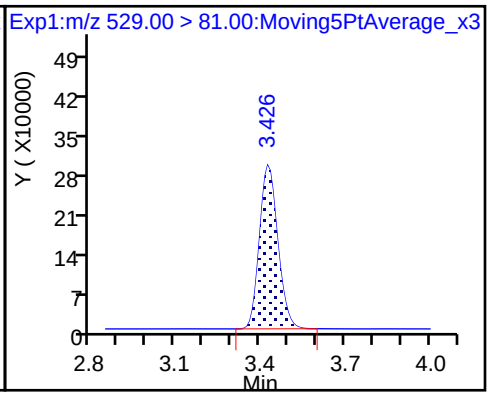
D 21 13C8 FOSA



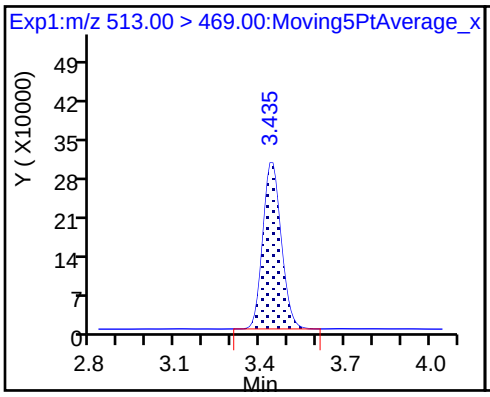
25 Sodium 1H,1H,2H,2H-perfluorodecane



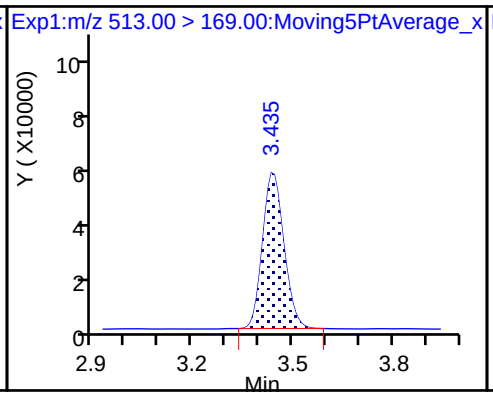
D 26 M2-8:2FTS



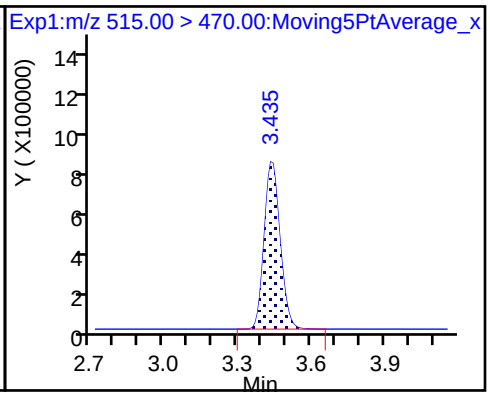
24 Perfluorodecanoic acid



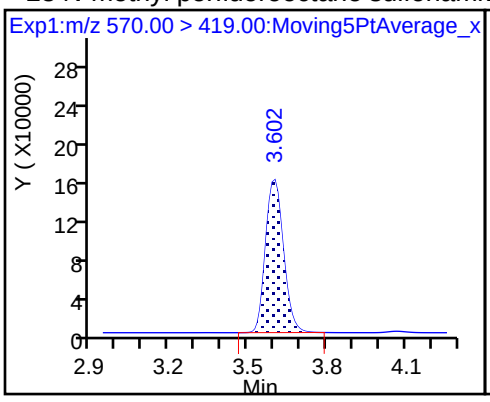
24 Perfluorodecanoic acid



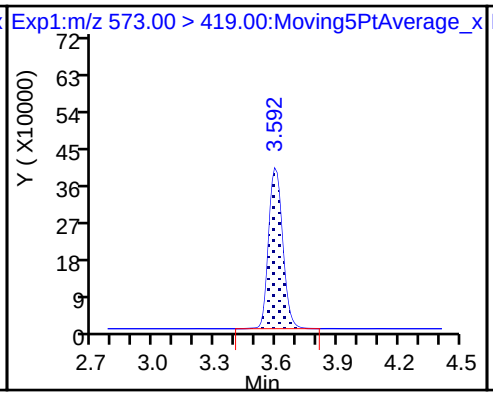
D 23 13C2 PFDA



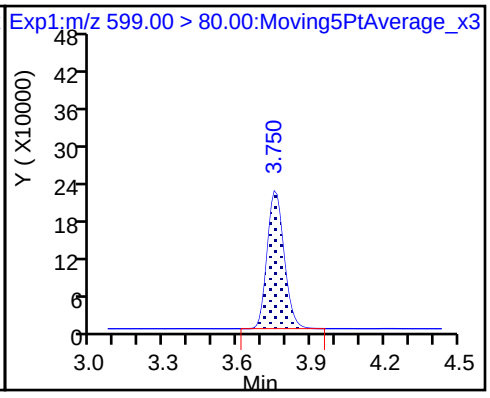
28 N-methyl perfluorooctane sulfonami



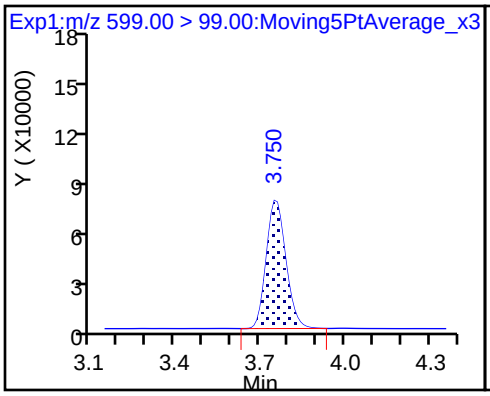
D 27 d3-NMeFOSAA



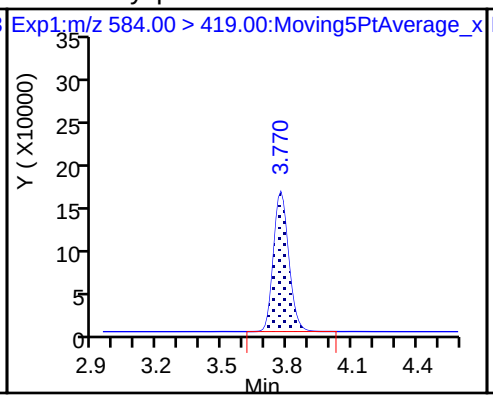
29 Perfluorodecane Sulfonic acid



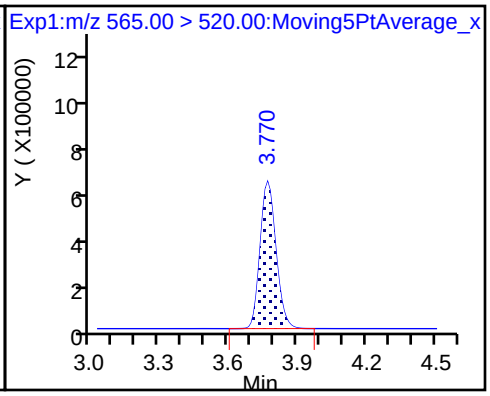
29 Perfluorodecane Sulfonic acid



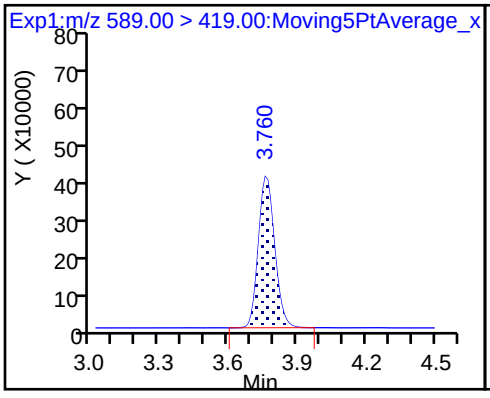
33 N-ethyl perfluorooctane sulfonamid



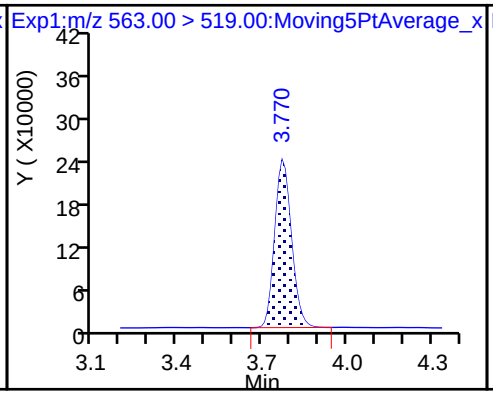
D 30 13C2 PFUnA



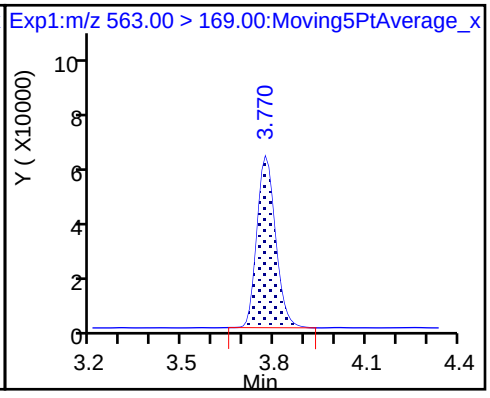
D 32 d5-NEtFOSAA



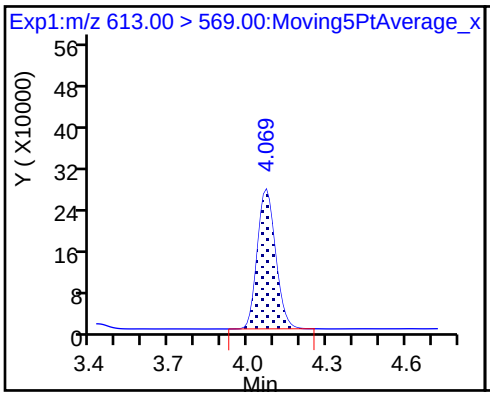
31 Perfluoroundecanoic acid



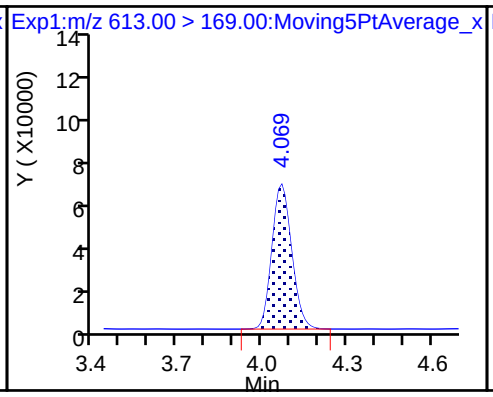
31 Perfluoroundecanoic acid



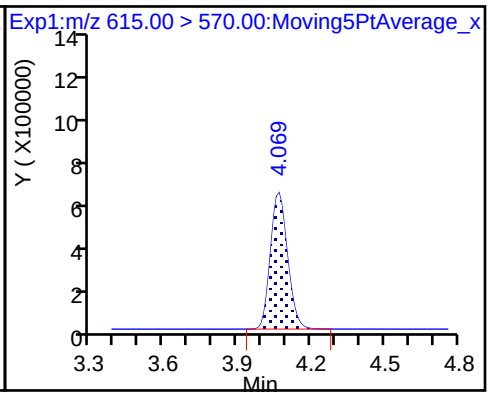
37 Perfluorododecanoic acid



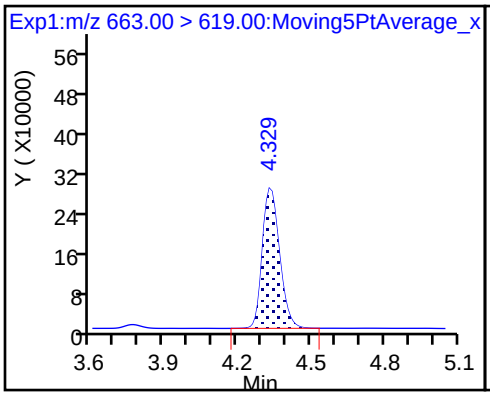
37 Perfluorododecanoic acid



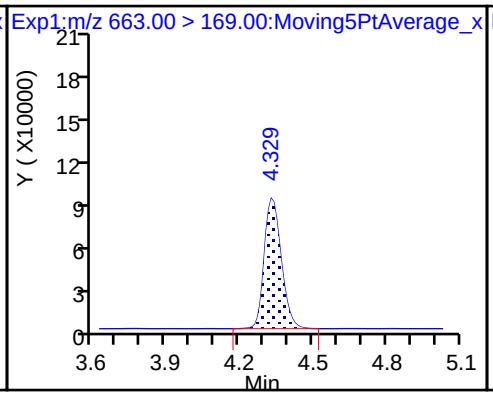
D 36 13C2 PFDoA



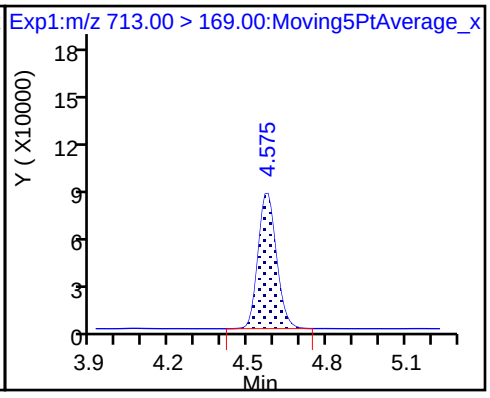
41 Perfluorotridecanoic acid



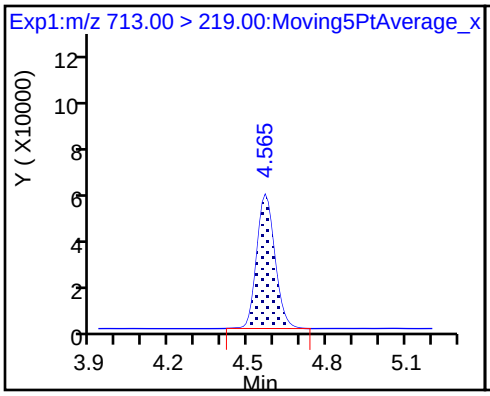
41 Perfluorotridecanoic acid



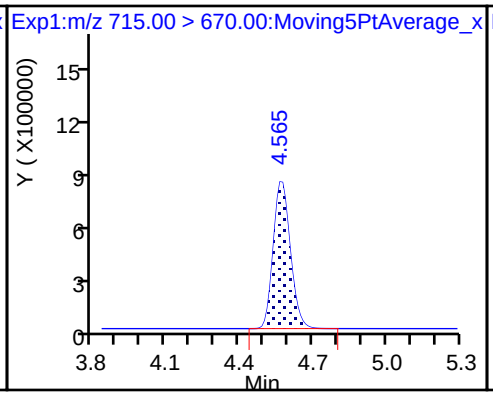
42 Perfluorotetradecanoic acid



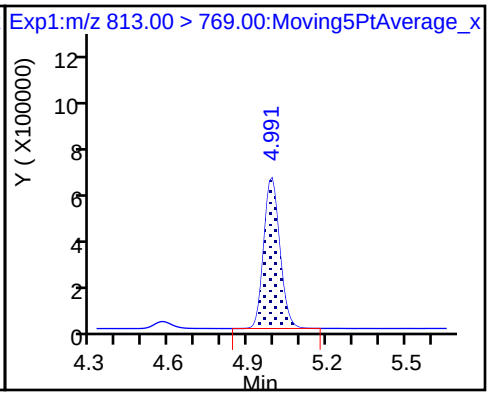
42 Perfluorotetradecanoic acid



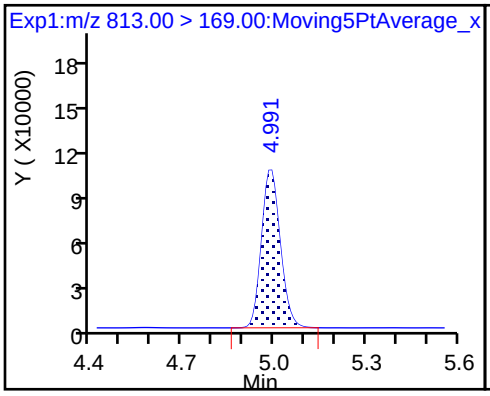
D 43 13C2-PFTeDA



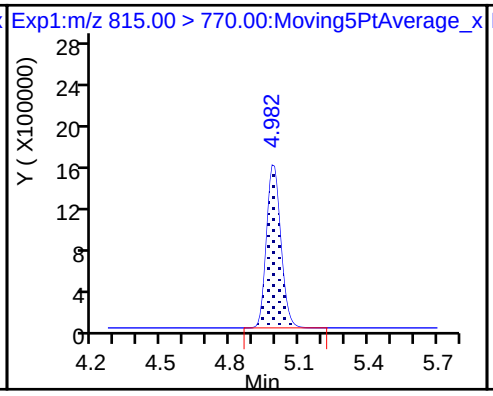
45 Perfluorohexadecanoic acid



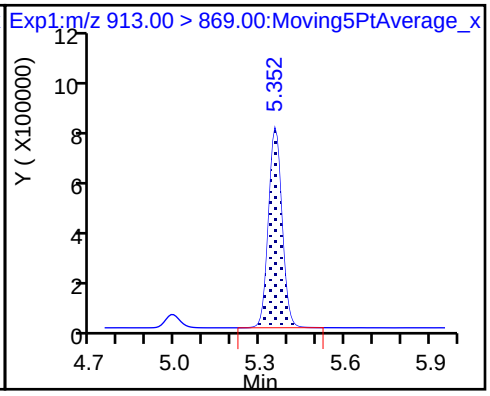
45 Perfluorohexadecanoic acid



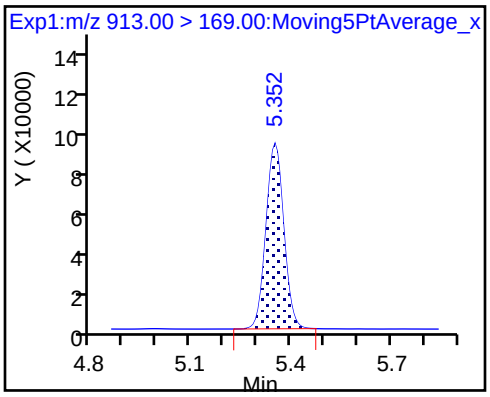
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

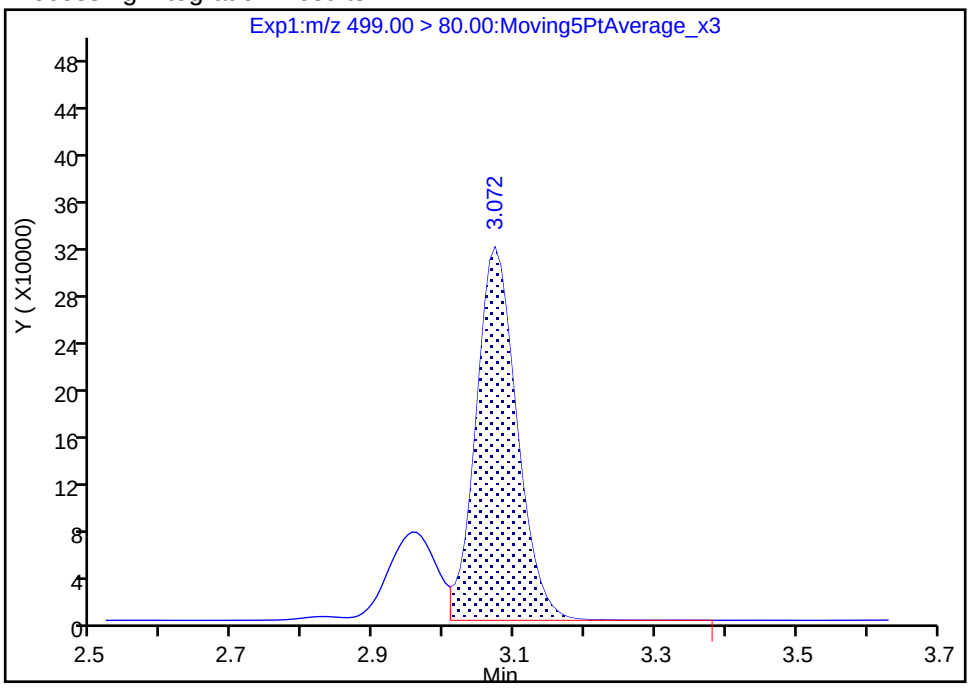
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_033.d
Injection Date: 26-Mar-2018 16:03:34 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

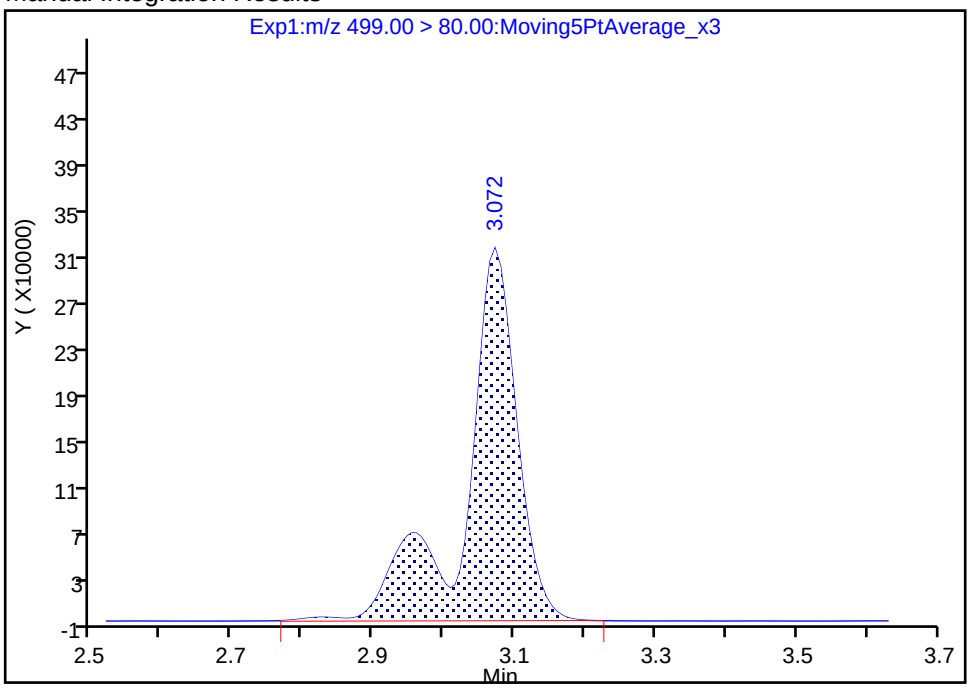
Processing Integration Results

RT: 3.07
Area: 1274725
Amount: 0.685434
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 1635669
Amount: 0.879517
Amount Units: ng/ml



Reviewer: hannigana, 29-Mar-2018 09:34:03
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214885/12 Calibration Date: 03/26/2018 17:29

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9528		2.53	2.50	1.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.153		2.56	2.50	2.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.27		2.28	2.21	3.3	50.0
4:2 FTS	AveID	16.15	18.46		2.67	2.34	14.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9714		2.38	2.50	-5.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.094		2.64	2.50	5.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.073		2.19	2.28	-3.6	40.0
6:2FTS	AveID	1.744	1.690		2.30	2.37	-3.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.155		2.56	2.50	2.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.331		2.47	2.38	3.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.122		2.34	2.32	0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.099		2.76	2.50	10.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.010		2.56	2.50	2.5	40.0
8:2FTS	AveID	1.276	1.177		2.21	2.40	-7.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.008		2.55	2.50	2.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.093		2.73	2.50	9.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6965		2.47	2.41	2.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9723		2.60	2.50	4.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7938		2.30	2.50	-7.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.046		2.50	2.50	-0.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.102		2.50	2.50	0.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2687		2.71	2.50	8.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9744		2.66	2.50	6.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9820		2.66	2.50	6.2	50.0
13C4 PFBA	Ave	1.266	1.267		2.50	2.50	0.0	50.0
13C5 PFPeA	Ave	0.8399	0.8300		2.47	2.50	-1.2	50.0
13C3-PFBS	Ave	0.0192	0.0196		2.38	2.33	2.5	50.0
M2-4:2FTS	Ave	0.1324	0.1546		2.73	2.34	16.8	50.0
13C2 PFHxA	Ave	0.9288	0.9231		2.49	2.50	-0.6	50.0
13C4-PFHpA	Ave	0.9164	0.8897		2.43	2.50	-2.9	50.0
18O2 PFHxS	Ave	1.130	1.166		2.44	2.37	3.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-214885/12 Calibration Date: 03/26/2018 17:29

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.26LLA_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2257		2.82	2.38	18.8	40.0
13C4 PFOA	Ave	0.9374	0.8989		2.40	2.50	-4.1	50.0
13C4 PFOS	Ave	0.8225	0.8236		2.39	2.39	0.1	50.0
13C5 PFNA	Ave	0.8266	0.7668		2.32	2.50	-7.2	50.0
13C8 FOSA	Ave	1.109	1.103		2.49	2.50	-0.5	50.0
M2-8:2FTS	Ave	0.2565	0.2740		2.56	2.40	6.8	40.0
13C2 PFDA	Ave	0.7245	0.6988		2.41	2.50	-3.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.3458		2.27	2.50	-9.3	50.0
d5-NEtFOSAA	Ave	0.4345	0.3744		2.15	2.50	-13.8	50.0
13C2 PFUnA	Ave	0.6482	0.5524		2.13	2.50	-14.8	50.0
13C2 PFDoA	Ave	0.7355	0.5904		2.01	2.50	-19.7	50.0
13C2-PFTeDA	Ave	0.8983	0.7305		2.03	2.50	-18.7	50.0
13C2-PFHxDA	Ave	1.473	1.321		2.24	2.50	-10.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_044.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 26-Mar-2018 17:29:29 ALS Bottle#: 14 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:46:43 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:42:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.444	1.439	0.005	1.000	5884739	2.53		101	2435	
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.439	0.005	0.535	6176177	2.50		100	100689	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.699	0.006	0.632	4047639	2.47		98.8	134717	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.714	1.708	0.006	1.005	4667940	2.56		102	2484	
D 47 13C3-PFBS										
301.90 > 83.00	1.741	1.734	0.007	0.645	89075	2.38		102	480	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.750	1.743	0.007	1.005	6796767	2.28		103	39755	
298.90 > 99.00	1.750	1.743	0.007	1.005	2790154		2.44(1.25-3.74)		11323	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.962	1.954	0.008	1.000	1651640	2.67		114	78557	
D 60 M2-4:2FTS										
329.00 > 81.00	1.962	1.954	0.008	0.727	704064	2.73		117	8166	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.994	1.996	-0.002	1.000	4372805	2.38		95.0	6232	
313.00 > 119.00	1.994	1.996	-0.002	1.000	407547		10.73(5.03-15.10)		4957	
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	1.996	-0.002	0.738	4501510	2.48		99.4	137364	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.338	2.327	0.011	1.000	4746384	2.64		106	4645	
363.00 > 169.00	2.338	2.327	0.011	1.000	1842073		2.58(1.13-3.40)		5534	
D 9 13C4-PFHpA										
367.00 > 322.00	2.338	2.327	0.011	0.866	4338497	2.43		97.1	106958	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.350	2.340	0.010	1.000	5551916	2.19		96.4	27101	
399.00 > 99.00	2.350	2.340	0.010	1.000	1861074		2.98(1.50-4.49)		4966	
D 11 18O2 PFHxS										
403.00 > 84.00	2.350	2.340	0.010	0.870	5379924	2.44		103	67370	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.676	2.670	0.006	1.000	1763177	2.30		96.9	9358	
D 12 M2-6:2FTS										
429.00 > 81.00	2.676	2.670	0.006	0.991	1045601	2.82		119	24440	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.700	2.694	0.006	1.000	5064678	2.56		102	1924	
413.00 > 169.00	2.700	2.694	0.006	1.000	2623163		1.93(0.84-2.52)		9149	
* 62 13C2-PFOA										
415.00 > 370.00	2.700	2.694	0.006		4876494	2.50			82996	
D 14 13C4 PFOA										
417.00 > 372.00	2.700	2.694	0.006	1.000	4383216	2.40		95.9	115597	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.708	2.702	0.006	1.000	5089830	2.47		104	67778	
449.00 > 99.00	2.708	2.702	0.006	1.000	1371822		3.71(1.94-5.82)		12041	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.075	3.071	0.004	1.000	4182243	2.34		101	39887	
499.00 > 99.00	3.075	3.071	0.004	1.000	943014		4.43(2.31-6.93)		8868	
20 Perfluorononanoic acid										
463.00 > 419.00	3.083	3.071	0.012	1.003	4111446	2.76		110	4828	
463.00 > 169.00	3.083	3.071	0.012	1.003	1001586		4.10(1.90-5.69)		18905	
D 19 13C5 PFNA										
468.00 > 423.00	3.075	3.071	0.004	1.139	3739418	2.32		92.8	61117	
D 18 13C4 PFOS										
503.00 > 80.00	3.075	3.071	0.004	1.139	3839533	2.39		100	46046	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.403	3.395	0.008	1.000	5433240	2.56		102	82628	
D 21 13C8 FOSA										
506.00 > 78.00	3.403	3.395	0.008	1.260	5379270	2.49		99.5	71984	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.430	3.431	-0.001	1.000	1506421	2.21		92.2	33321	
D 26 M2-8:2FTS										
529.00 > 81.00	3.430	3.431	-0.001	1.270	1280237	2.56		107	31567	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.448	3.440	0.008	1.000	3435232	2.55		102	15130	
513.00 > 169.00	3.439	3.440	-0.001	0.997	627231		5.48(2.36-7.09)		2162	
D 23 13C2 PFDA										
515.00 > 470.00	3.448	3.440	0.008	1.277	3407604	2.41		96.5	50835	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.607	3.597	0.010	1.003	1843631	2.73		109	15669	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.596	3.597	-0.001	1.332	1686373	2.27		90.7	29543	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.755	3.756	-0.001	1.000	2696689	2.47		102	51426	
599.00 > 99.00	3.755	3.756	-0.001	1.000	868252		3.11(1.39-4.16)		16400	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.776	3.767	0.009	1.003	1774976	2.60		104	91289	
D 30 13C2 PFUnA										
565.00 > 520.00	3.776	3.767	0.009	1.398	2693743	2.13		85.2	43403	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.766	3.767	-0.001	1.395	1825628	2.15		86.2	8411	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.776	3.777	-0.001	1.000	2138345	2.30		92.1	10917	
563.00 > 169.00	3.776	3.777	-0.001	1.000	551706		3.88(2.12-6.36)		18931	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.074	4.064	0.010	1.000	3011878	2.50		100.0	2860	
613.00 > 169.00	4.074	4.064	0.010	1.000	789546		3.81(2.13-6.40)		9641	
D 36 13C2 PFDoA										
615.00 > 570.00	4.074	4.064	0.010	1.509	2879171	2.01		80.3	16180	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.336	4.337	-0.001	1.000	3173735	2.50		100	1968	
663.00 > 169.00	4.336	4.337	-0.001	1.000	1046227		3.03(1.25-3.76)		10679	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.572	4.572	0.0	1.000	957269	2.71		108	11676	
713.00 > 219.00	4.572	4.572	0.0	1.000	663084		1.44(0.71-2.13)		8616	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.572	4.572	0.0	1.693	3562047	2.03		81.3	20656	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.988	4.988	0.0	1.000	6274902	2.66		106	1855	
813.00 > 169.00	4.988	4.988	0.0	1.000	1051671		5.97(2.86-8.58)		7922	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.988	4.988	0.0	1.847	6439540	2.24		89.7	15057	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.356	5.356	0.0	1.000	6323684	2.66		106	1625	
913.00 > 169.00	5.356	5.356	0.0	1.000	803367		7.87(3.83-11.48)		6308	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:46:44 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b\2018.03.26LLA_044.d

Injection Date: 26-Mar-2018 17:29:29 Instrument ID: A8_N

Lims ID: CCV L5

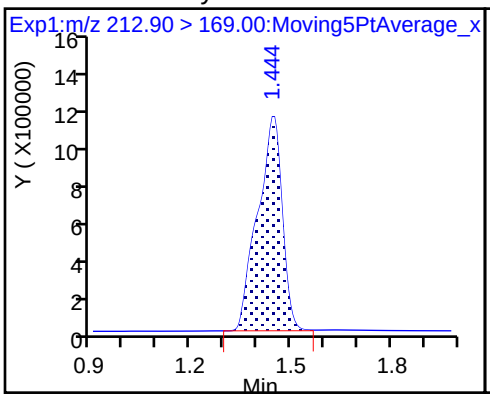
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 12

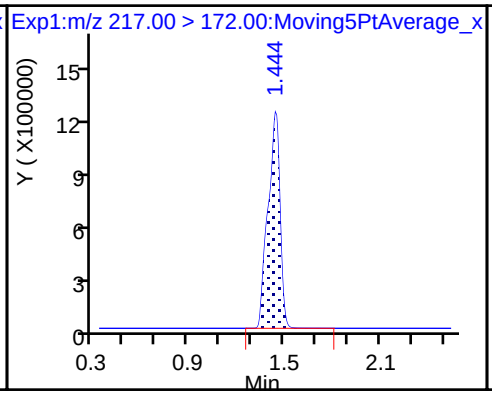
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

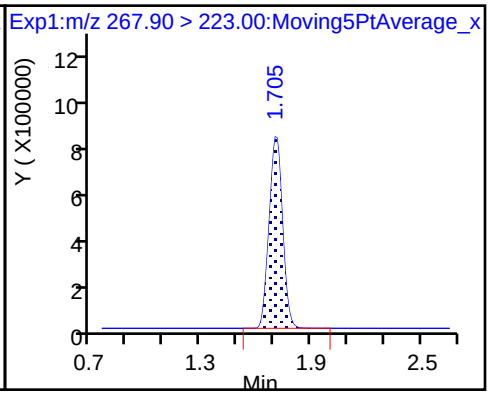
2 Perfluorobutyric acid



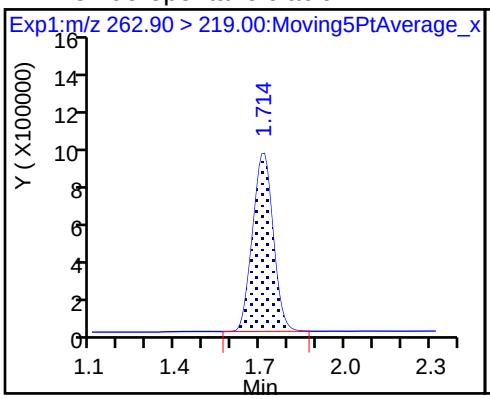
D 1 13C4 PFBA



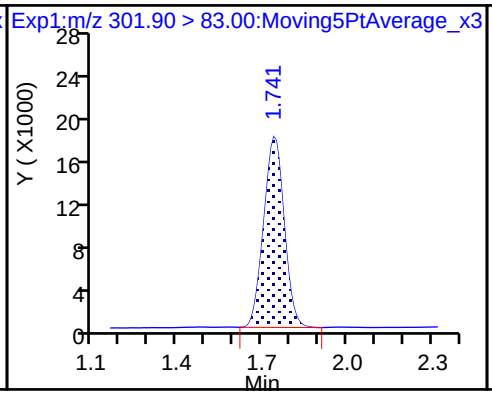
D 3 13C5-PFPeA



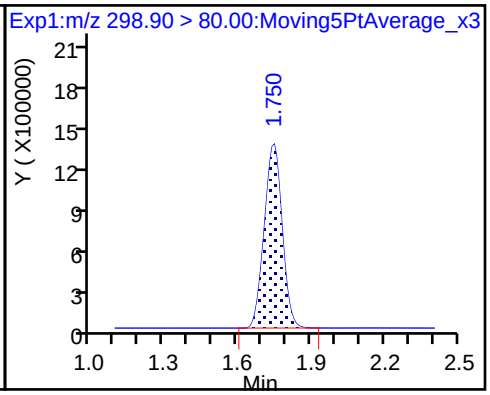
4 Perfluoropentanoic acid



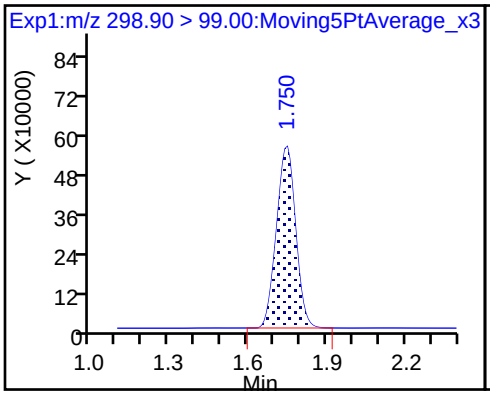
D 47 13C3-PFBS



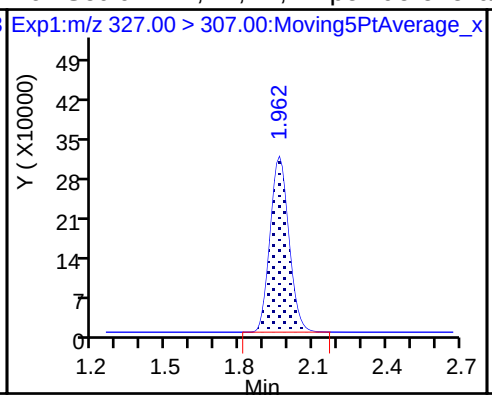
5 Perfluorobutanesulfonic acid



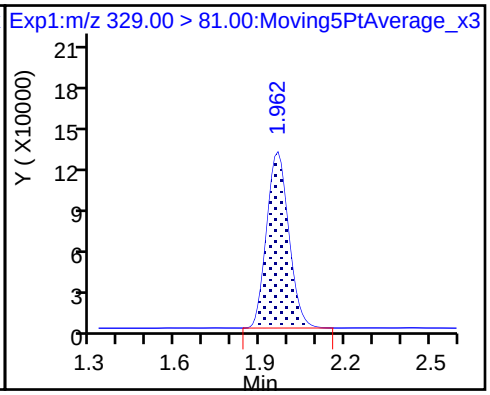
5 Perfluorobutanesulfonic acid



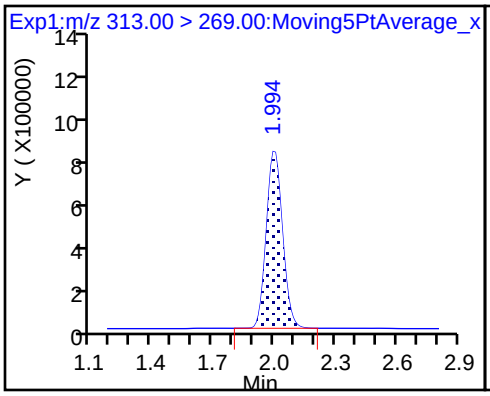
61 Sodium 1H,1H,2H,2H-perfluorohexane



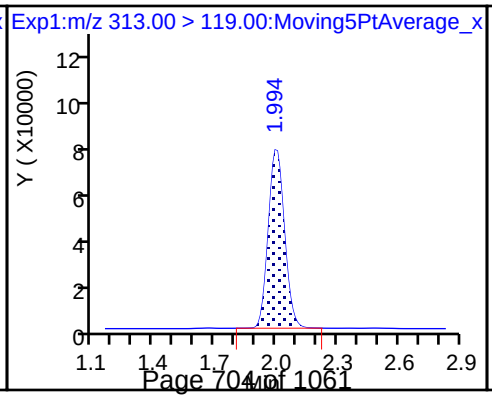
D 60 M2-4:2FTS



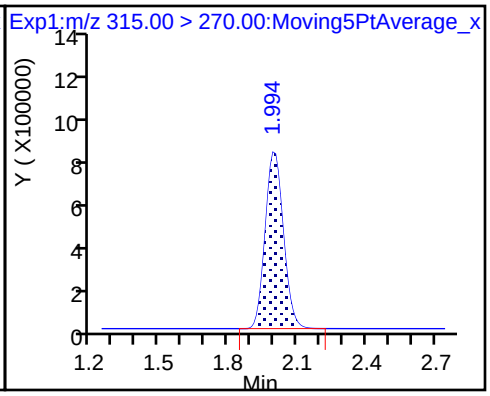
6 Perfluorohexanoic acid



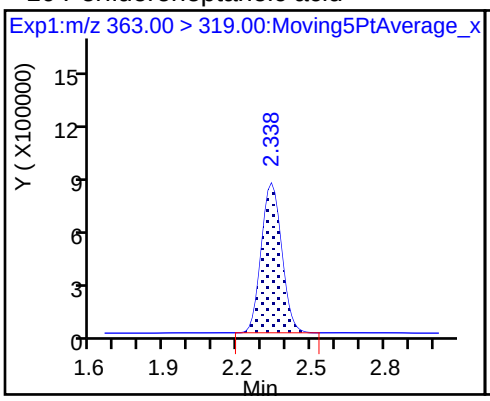
6 Perfluorohexanoic acid



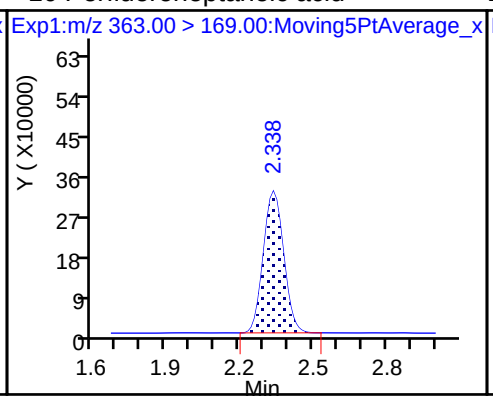
D 7 13C2 PFHxA



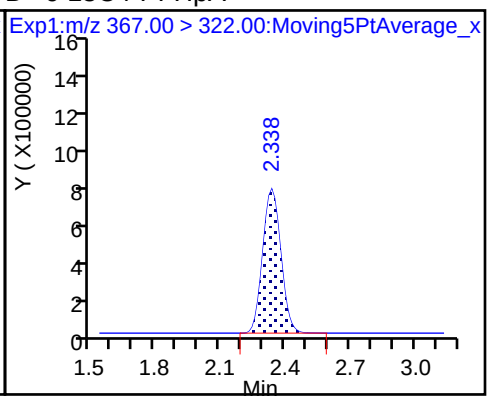
10 Perfluoroheptanoic acid



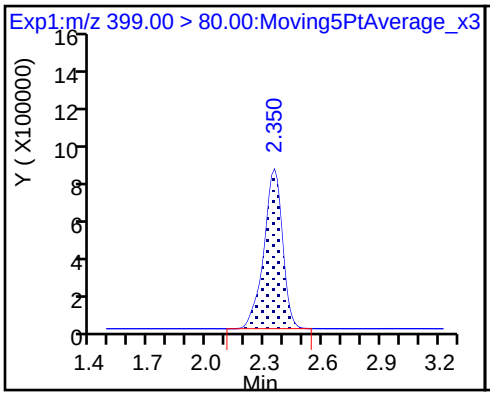
10 Perfluoroheptanoic acid



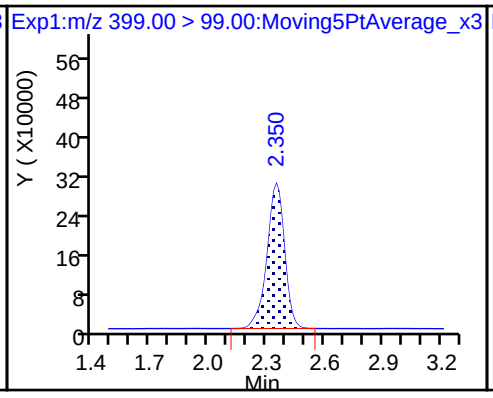
D 9 13C4-PFHpA



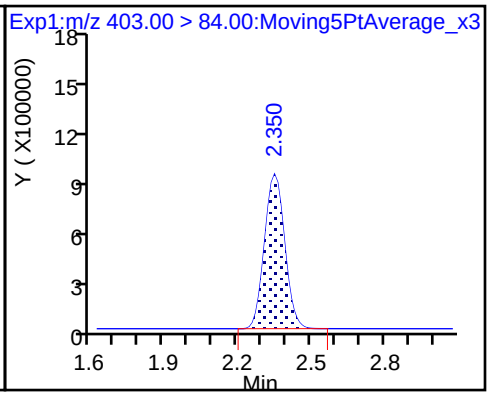
8 Perfluorohexanesulfonic acid



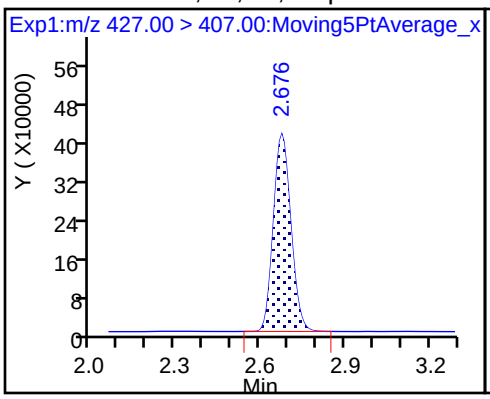
8 Perfluorohexanesulfonic acid



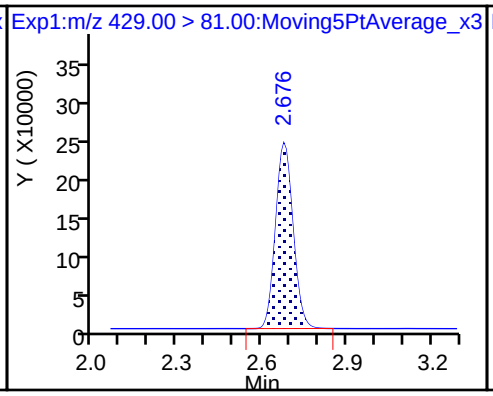
D 11 18O2 PFHxS



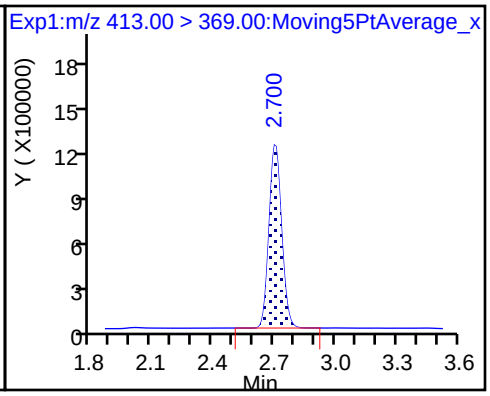
13 Sodium 1H,1H,2H,2H-perfluorooctane



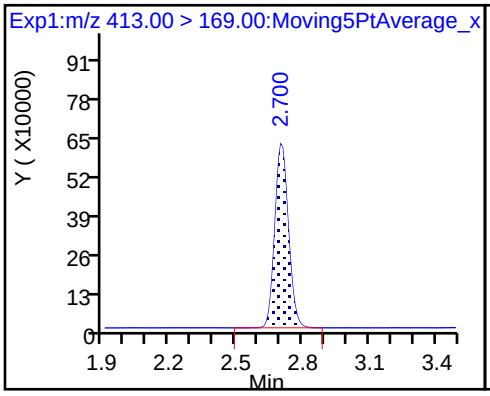
D 12 M2-6:2FTS



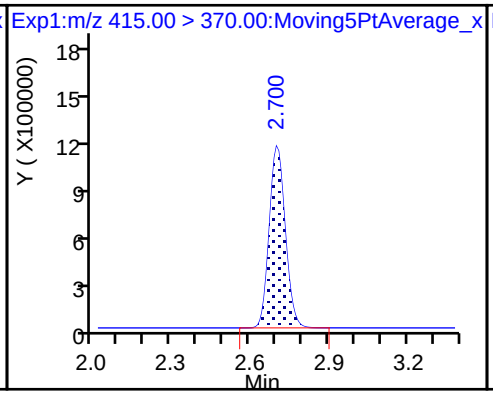
15 Perfluorooctanoic acid



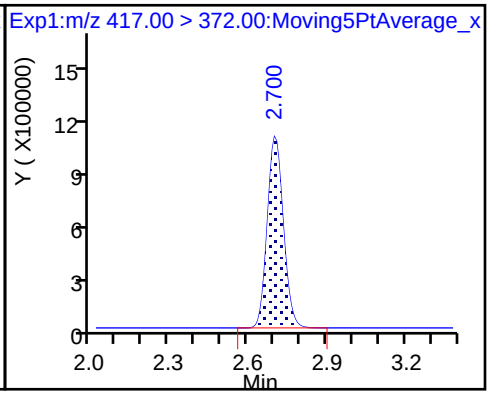
15 Perfluorooctanoic acid



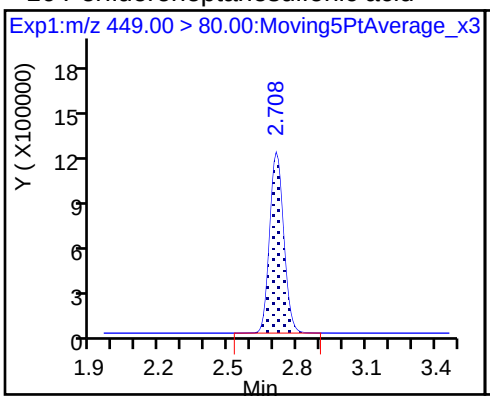
* 62 13C2-PFOA



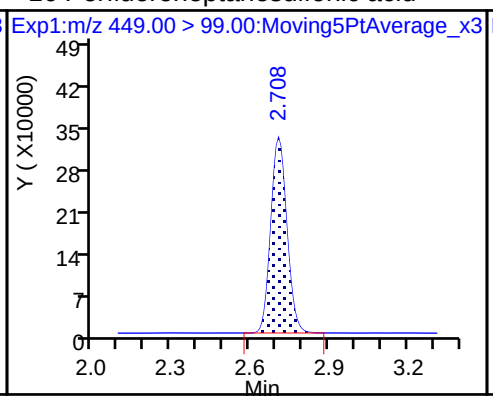
D 14 13C4 PFOA



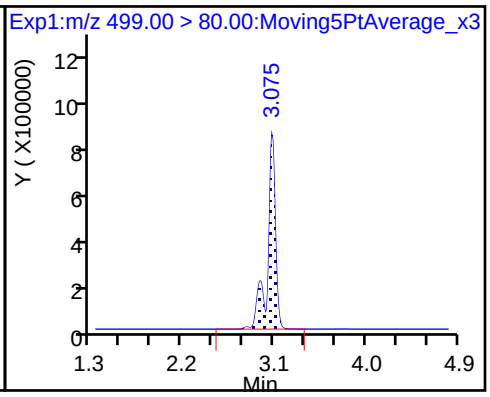
16 Perfluoroheptanesulfonic acid



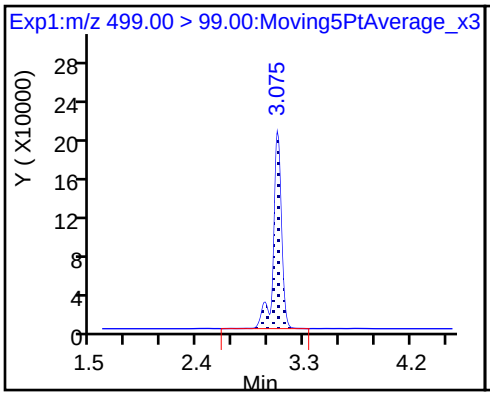
16 Perfluoroheptanesulfonic acid



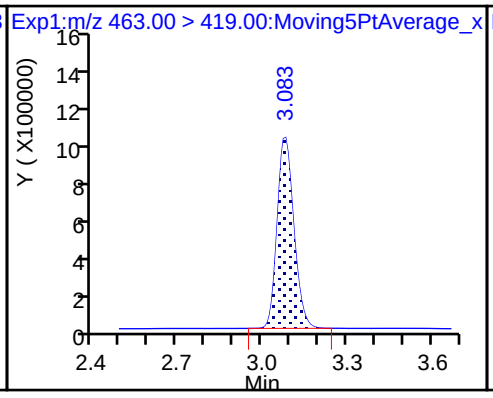
17 Perfluorooctane sulfonic acid



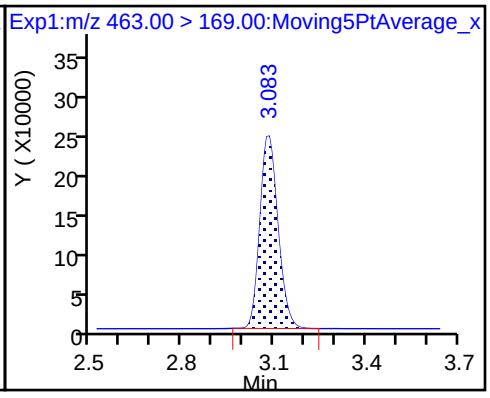
17 Perfluorooctane sulfonic acid



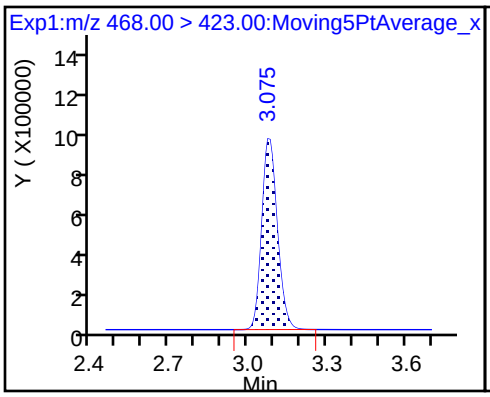
20 Perfluorononanoic acid



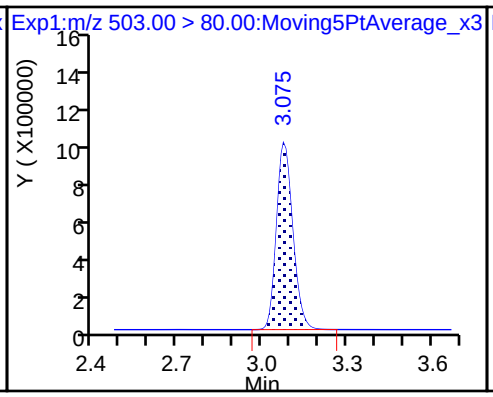
20 Perfluorononanoic acid



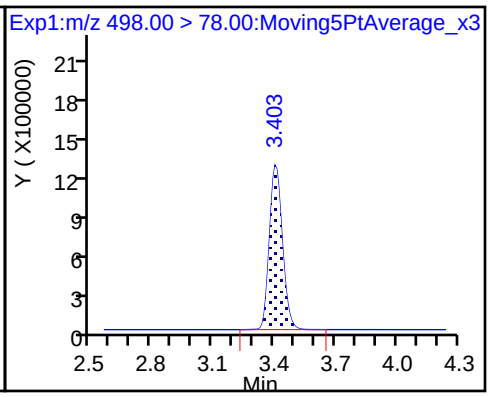
D 19 13C5 PFNA



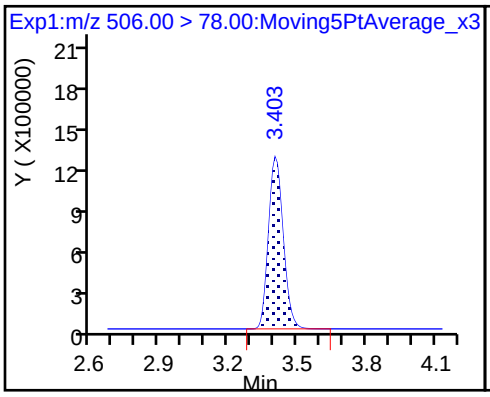
D 18 13C4 PFOS



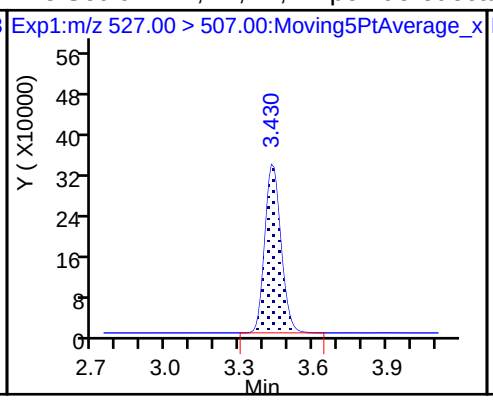
22 Perfluorooctane Sulfonamide



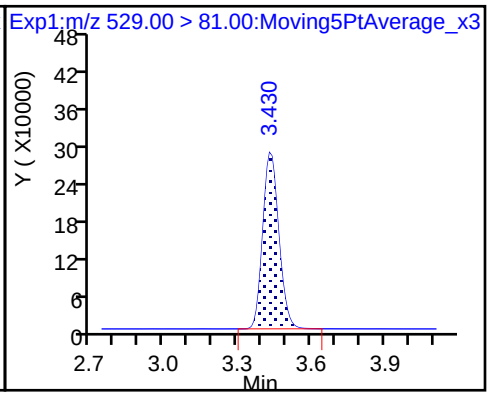
D 21 13C8 FOSA



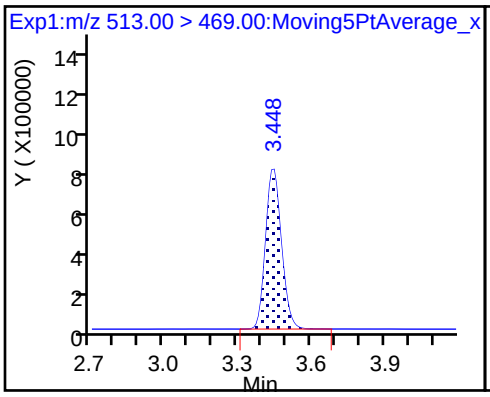
25 Sodium 1H,1H,2H,2H-perfluorodecane



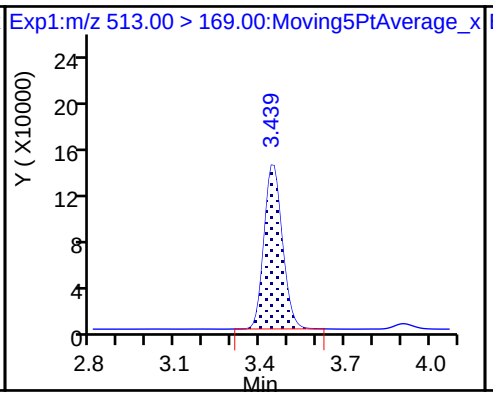
D 26 M2-8:2FTS



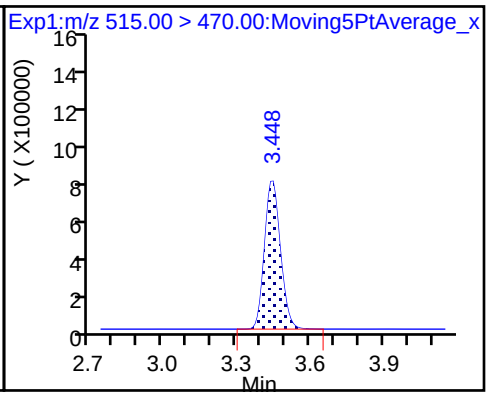
24 Perfluorodecanoic acid



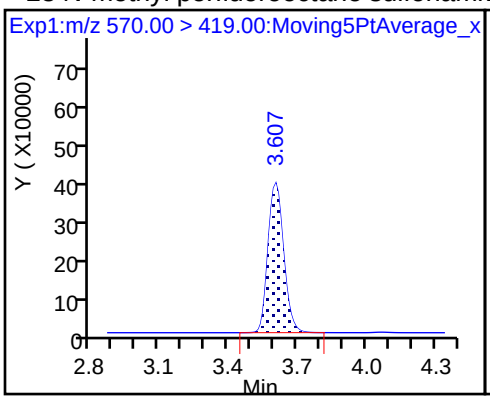
24 Perfluorodecanoic acid



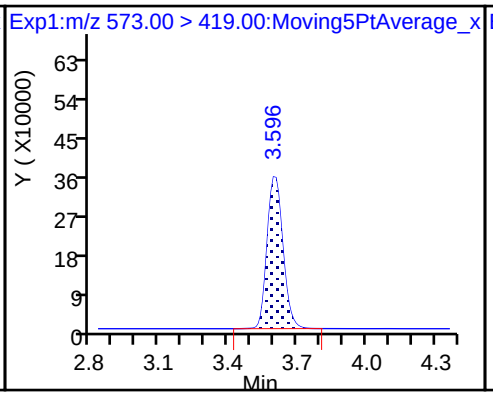
D 23 13C2 PFDA



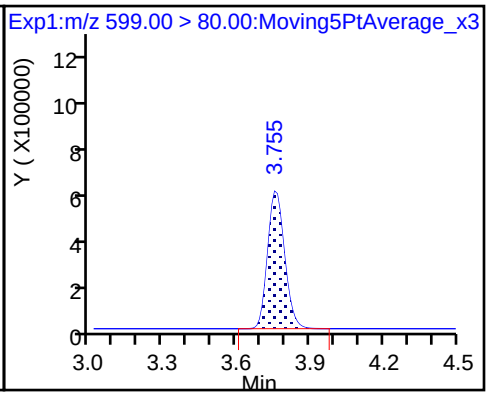
28 N-methyl perfluorooctane sulfonami



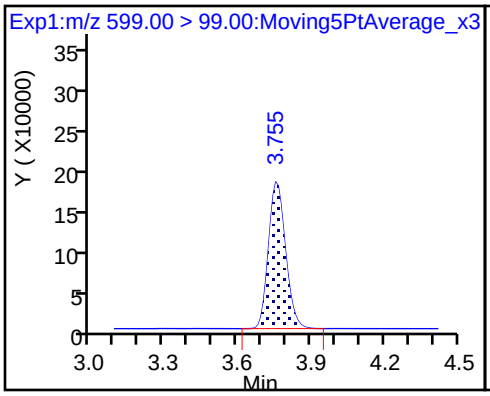
D 27 d3-NMeFOSAA



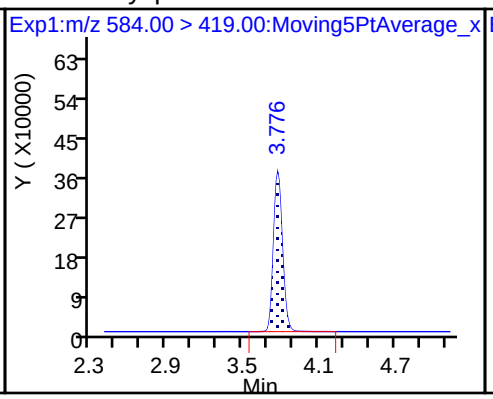
29 Perfluorodecane Sulfonic acid



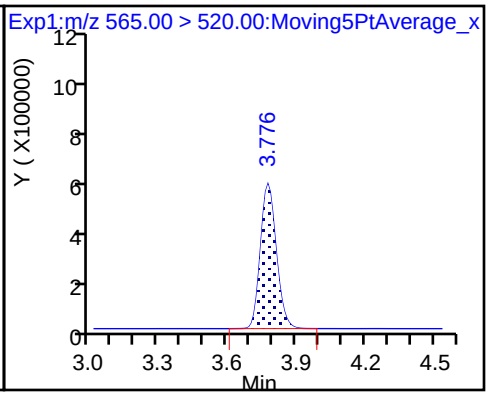
29 Perfluorodecane Sulfonic acid



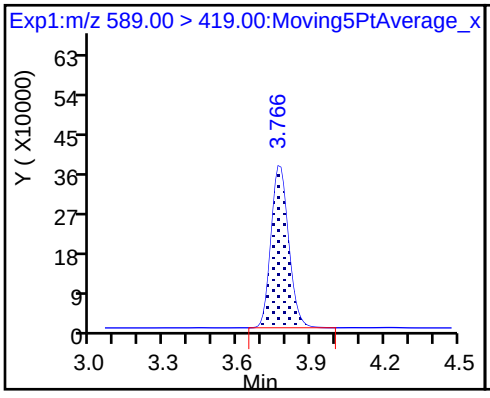
33 N-ethyl perfluorooctane sulfonamid



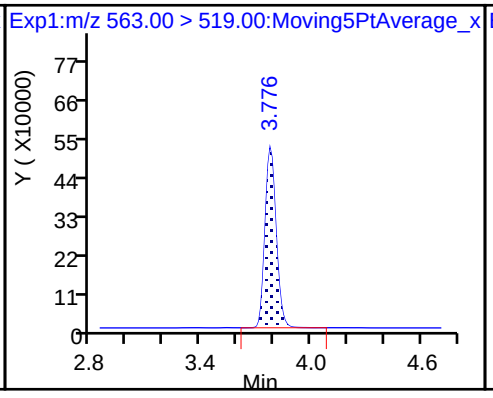
D 30 13C2 PFUnA



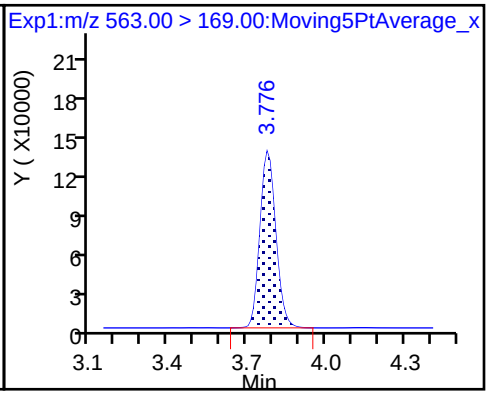
D 32 d5-NEtFOSAA



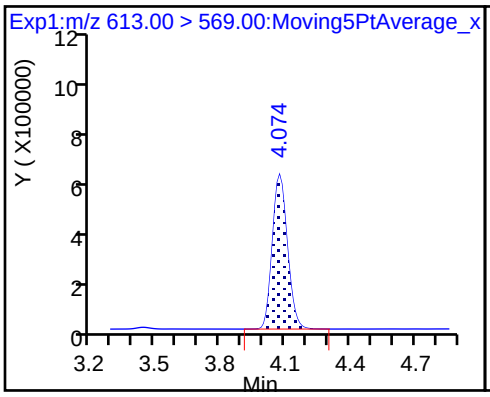
31 Perfluoroundecanoic acid



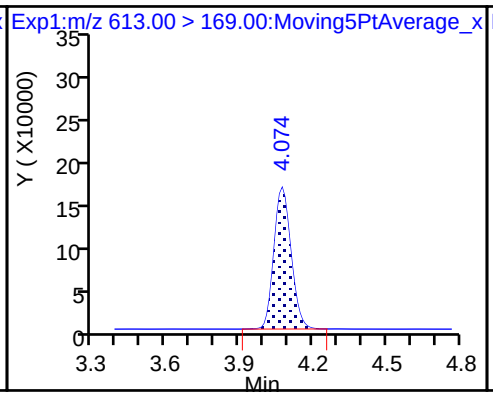
31 Perfluoroundecanoic acid



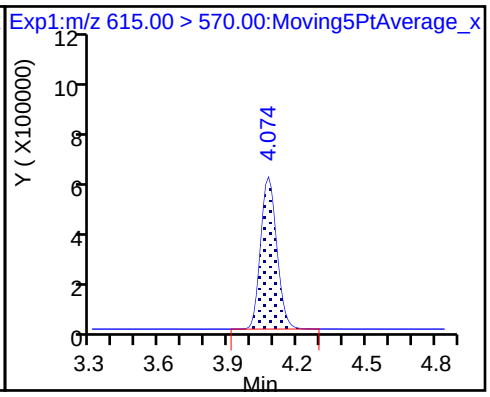
37 Perfluorododecanoic acid



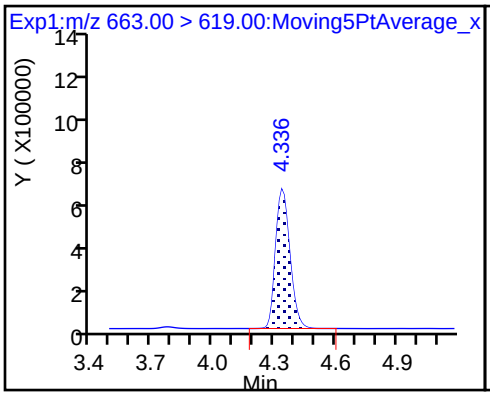
37 Perfluorododecanoic acid



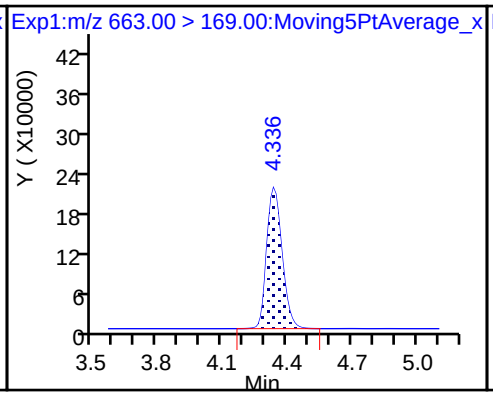
D 36 13C2 PFDoA



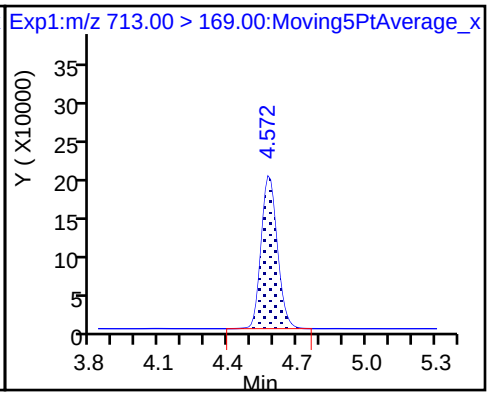
41 Perfluorotridecanoic acid



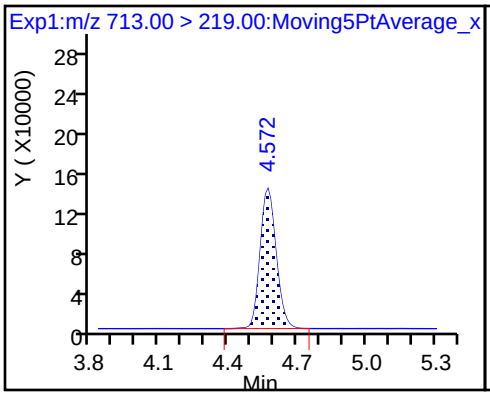
41 Perfluorotridecanoic acid



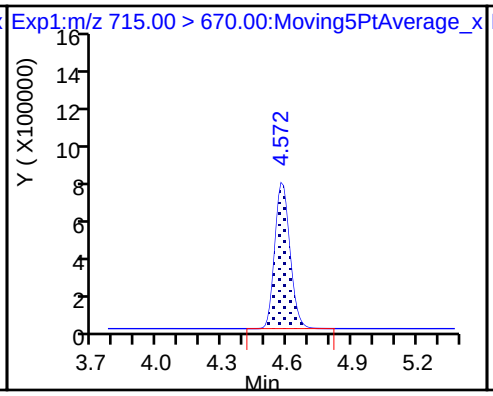
42 Perfluorotetradecanoic acid



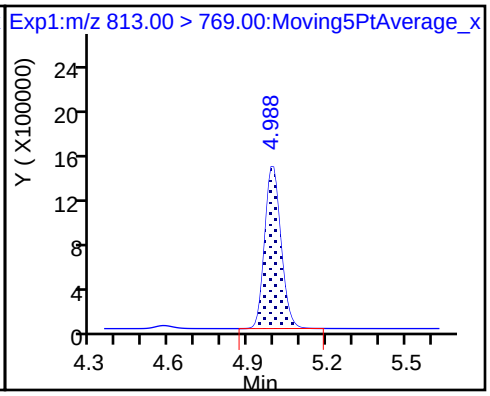
42 Perfluorotetradecanoic acid



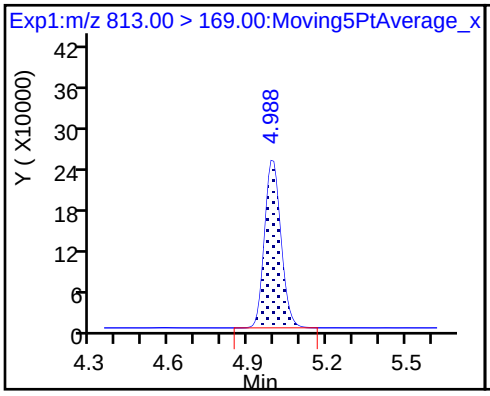
D 43 13C2-PFTeDA



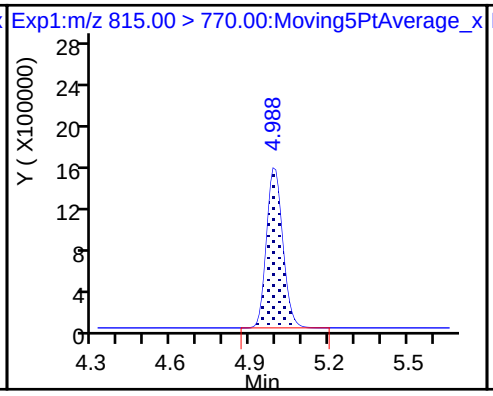
45 Perfluorohexadecanoic acid



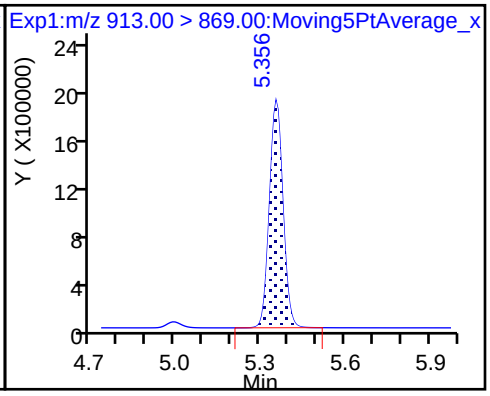
45 Perfluorohexadecanoic acid



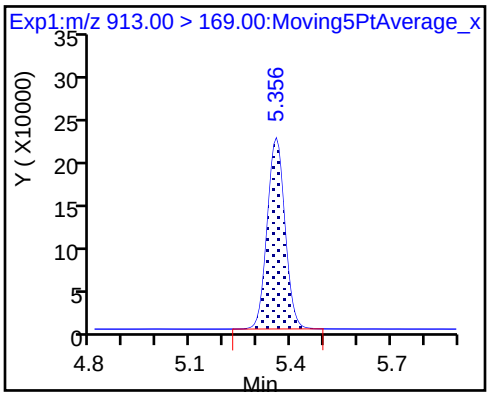
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-215294/2 Calibration Date: 03/28/2018 18:36

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9469		0.0502	0.0500	0.5	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.089		0.0483	0.0500	-3.5	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.53		0.0447	0.0442	1.1	50.0
4:2 FTS	AveID	16.15	16.39		0.130	0.0467	1.5	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.091		0.0534	0.0500	6.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.193		0.0576	0.0500	15.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.224		0.0500	0.0455	10.0	50.0
6:2FTS	AveID	1.744	1.882		0.0512	0.0474	7.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.207		0.0534	0.0500	6.8	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.300		0.0483	0.0476	1.5	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9909		0.0497	0.0500	-0.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.091		0.0454	0.0464	-2.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9691		0.0492	0.0500	-1.7	50.0
8:2FTS	AveID	1.276	1.356		0.0509	0.0479	6.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.052		0.0532	0.0500	6.5	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.050		0.0780	0.0500	4.9	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6447		0.0457	0.0482	-5.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9449		0.0506	0.0500	1.1	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8990		0.0521	0.0500	4.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	0.9281		0.0443	0.0500	-11.3	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.079		0.0490	0.0500	-2.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2565		0.0518	0.0500	3.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.351		0.0500	0.0500	0.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.012		0.0547	0.0500	9.5	50.0
13C4 PFBA	Ave	1.266	1.321		2.61	2.50	4.4	50.0
13C5 PFPeA	Ave	0.8399	0.8840		2.63	2.50	5.3	50.0
13C3-PFBS	Ave	0.0192	0.0196		2.37	2.33	2.1	50.0
M2-4:2FTS	Ave	0.1324	0.1434		2.53	2.34	8.3	50.0
13C2 PFHxA	Ave	0.9288	0.9493		2.56	2.50	2.2	50.0
13C4-PFHpA	Ave	0.9164	0.9261		2.53	2.50	1.1	50.0
18O2 PFHxS	Ave	1.130	1.196		2.50	2.37	5.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-215294/2 Calibration Date: 03/28/2018 18:36

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2110		2.64	2.38	11.0	50.0
13C4 PFOA	Ave	0.9374	0.9443		2.52	2.50	0.7	50.0
13C4 PFOS	Ave	0.8225	0.8388		2.44	2.39	2.0	50.0
13C5 PFNA	Ave	0.8266	0.7932		2.40	2.50	-4.0	50.0
13C8 FOSA	Ave	1.109	1.233		2.78	2.50	11.2	50.0
M2-8:2FTS	Ave	0.2565	0.2453		2.29	2.40	-4.4	50.0
13C2 PFDA	Ave	0.7245	0.6938		2.39	2.50	-4.2	50.0
d3-NMeFOSAA	Ave	0.3814	0.3349		2.20	2.50	-12.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3536		2.03	2.50	-18.6	50.0
13C2 PFUnA	Ave	0.6482	0.6212		2.40	2.50	-4.2	50.0
13C2 PFDoA	Ave	0.7355	0.6779		2.30	2.50	-7.8	50.0
13C2-PFTeDA	Ave	0.8983	0.7735		2.15	2.50	-13.9	50.0
13C2-PFHxDA	Ave	1.473	1.165		1.98	2.50	-20.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 28-Mar-2018 18:36:11 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:24:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:23:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.529	6326738	2.61		104	111314	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.446	0.001	1.000	119810	0.0502		100	44.4	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.717	0.001	1.000	92159	0.0483		96.5	32.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.718	0.0	0.628	4233192	2.63		105	139422	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.641	87156	2.37		102	570	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.761	0.001	1.005	130112	0.0447		101	88.7	
298.90 > 99.00	1.762	1.761	0.001	1.005	56676		2.30(1.25-3.74)		86.8	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.976	1.975	0.001	1.000	28688	0.0474		101	1785	
D 60 M2-4:2FTS										
329.00 > 81.00	1.976	1.976	0.0	0.722	641430	2.53		108	10685	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.019	2.018	0.001	1.000	99239	0.0534		107	133	
313.00 > 119.00	2.019	2.018	0.001	1.000	8259		12.02(5.03-15.10)		109	
D 7 13C2 PFHxA										
315.00 > 270.00	2.019	2.019	0.0	0.738	4546099	2.56		102	166397	
D 9 13C4-PFHpA										
367.00 > 322.00	2.368	2.354	0.014	0.865	4434987	2.53		101	85653	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.368	2.367	0.001	1.000	105775	0.0576		115	69.8	
363.00 > 169.00	2.368	2.367	0.001	1.000	40329		2.62(1.13-3.40)		87.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.380	2.368	0.012	0.870	5417706	2.50		106	80451	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.380	2.379	0.001	1.000	127613	0.0500		110	782	
399.00 > 99.00	2.380	2.379	0.001	1.000	45102		2.83(1.50-4.49)		285	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.705	2.702	0.003	0.997	36050	0.0512		108	581	
D 12 M2-6:2FTS										
429.00 > 81.00	2.713	2.705	0.008	0.991	959719	2.64		111	36067	
D 14 13C4 PFOA										
417.00 > 372.00	2.736	2.728	0.008	1.000	4521824	2.52		101	130848	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.736	2.734	0.002	1.000	109120	0.0534		107	35.8	
413.00 > 169.00	2.736	2.734	0.002	1.000	53595		2.04(0.84-2.52)		233	
* 62 13C2-PFOA										
415.00 > 370.00	2.736	2.734	0.002		4788672	2.50			85891	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.744	2.742	0.002	1.000	99411	0.0483		101	3873	
449.00 > 99.00	2.744	2.742	0.002	1.000	28435		3.50(1.94-5.82)		725	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.120	3.111	0.009	1.003	81342	0.0454		98.0	214	
499.00 > 99.00	3.112	3.111	0.001	1.000	17366		4.68(2.31-6.93)		164	
20 Perfluorononanoic acid										
463.00 > 419.00	3.120	3.111	0.009	1.000	75278	0.0497		99.3	59.0	
463.00 > 169.00	3.120	3.111	0.009	1.000	18901		3.98(1.90-5.69)		448	
D 19 13C5 PFNA										
468.00 > 423.00	3.120	3.112	0.008	1.140	3798370	2.40		96.0	87531	
D 18 13C4 PFOS										
503.00 > 80.00	3.112	3.112	0.0	1.137	3839866	2.44		102	75484	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.418	3.417	0.001	1.000	114457	0.0492		98.3	3142	
D 21 13C8 FOSA										
506.00 > 78.00	3.418	3.418	0.0	1.249	5905362	2.78		111	56090	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.473	3.463	0.010	1.000	30521	0.0509		106	456	
D 26 M2-8:2FTS										
529.00 > 81.00	3.473	3.464	0.009	1.269	1125118	2.29		95.6	34291	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.482	3.472	0.010	1.000	69907	0.0532		106	282	
513.00 > 169.00	3.482	3.472	0.010	1.000	13624		5.13(2.36-7.09)		431	
D 23 13C2 PFDA										
515.00 > 470.00	3.482	3.473	0.009	1.273	3322580	2.39		95.8	51713	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.643	3.633	0.010	1.000	33670	0.0524		105	421	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.643	3.633	0.010	1.331	1603660	2.20		87.8	41201	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.794	3.792	0.002	1.000	49927	0.0457		94.8	2548	
599.00 > 99.00	3.794	3.792	0.002	1.000	18048		2.77(1.39-4.16)		746	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.815	3.803	0.012	1.003	31997	0.0506		101	717	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.805	3.804	0.001	1.390	1693100	2.03		81.4	3921	
D 30 13C2 PFUnA										
565.00 > 520.00	3.815	3.804	0.011	1.394	2974617	2.40		95.8	60704	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.815	3.813	0.002	1.000	53483	0.0521		104	219	
563.00 > 169.00	3.815	3.813	0.002	1.000	11520		4.64(2.12-6.36)		579	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.116	4.103	0.013	1.000	60253	0.0443		88.7	39.5	
613.00 > 169.00	4.116	4.103	0.013	1.000	15139		3.98(2.13-6.40)		398	
D 36 13C2 PFDoA										
615.00 > 570.00	4.116	4.105	0.011	1.504	3246092	2.30		92.2	26529	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.380	4.367	0.013	1.000	70046	0.0490		98.0	27.2	
663.00 > 169.00	4.380	4.367	0.013	1.000	20003		3.50(1.25-3.76)		399	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.624	4.612	0.012	1.000	18998	0.0518		104	382	
713.00 > 219.00	4.614	4.612	0.002	0.998	13405		1.42(0.71-2.13)		299	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.624	4.613	0.011	1.690	3703775	2.15		86.1	20893	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.041	5.030	0.011	1.000	150695	0.0500		100	31.4	
813.00 > 169.00	5.041	5.030	0.011	1.000	25879		5.82(2.86-8.58)		234	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.041	5.040	0.001	1.842	5577652	1.98		79.1	14312	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.419	5.410	0.009	1.000	112897	0.0547		109	23.7	
913.00 > 169.00	5.419	5.410	0.009	1.000	14145		7.98(3.83-11.48)		190	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 07:24:57 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_005.d

Injection Date: 28-Mar-2018 18:36:11 Instrument ID: A8_N

Lims ID: CCVL

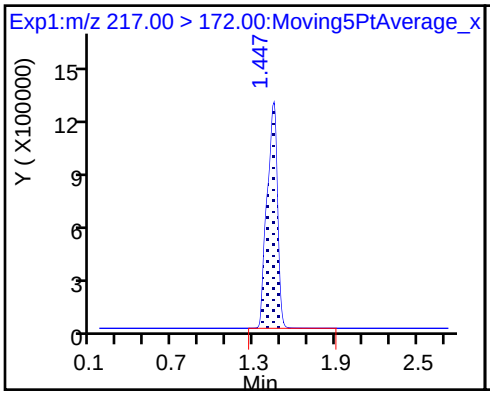
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

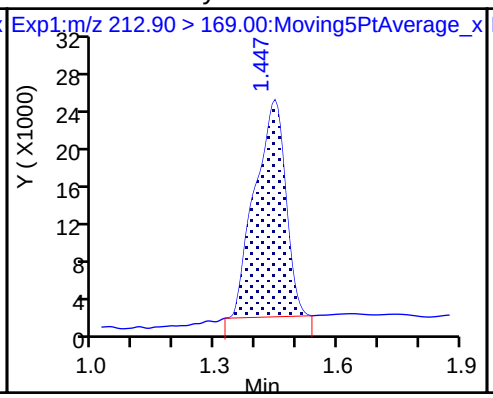
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

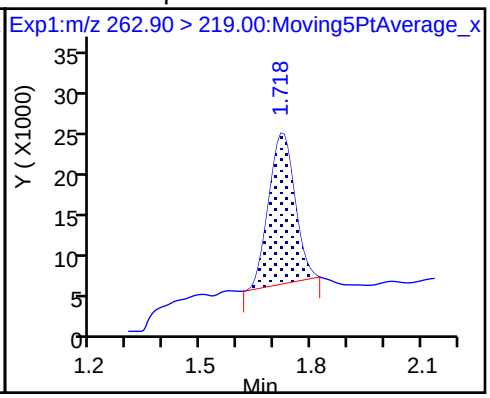
D 1 13C4 PFBA



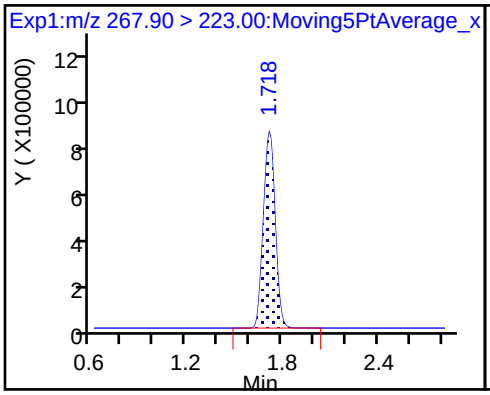
2 Perfluorobutyric acid



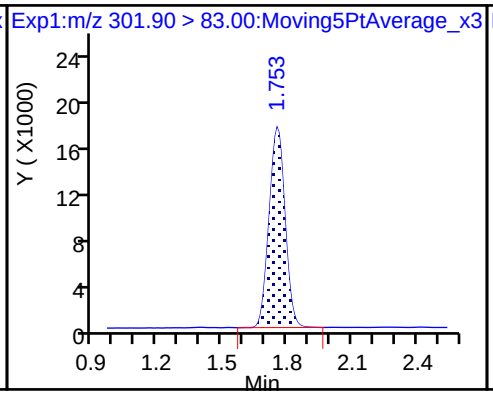
4 Perfluoropentanoic acid



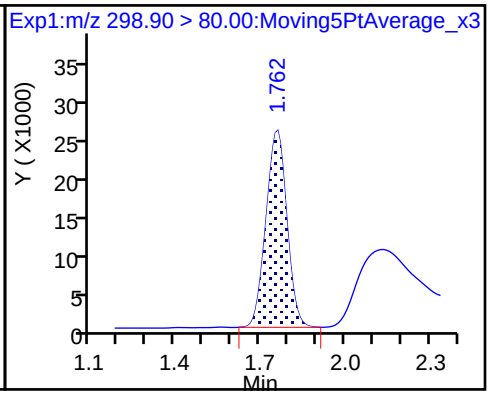
D 3 13C5-PFPeA



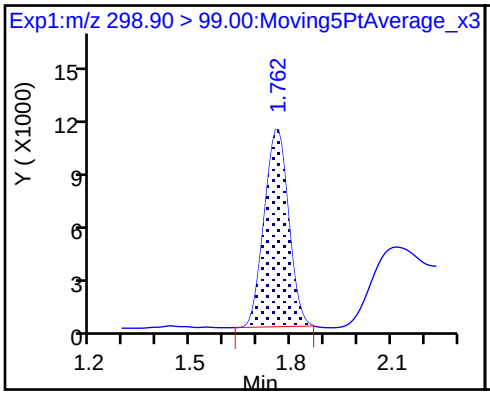
D 47 13C3-PFBS



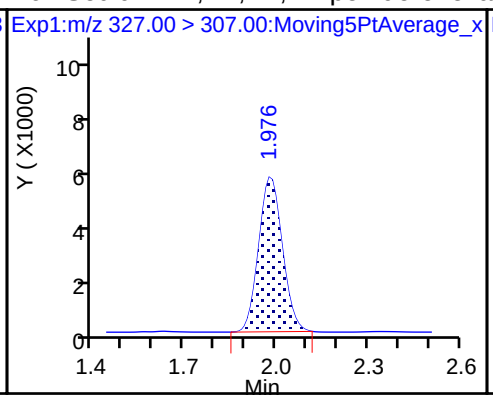
5 Perfluorobutanesulfonic acid



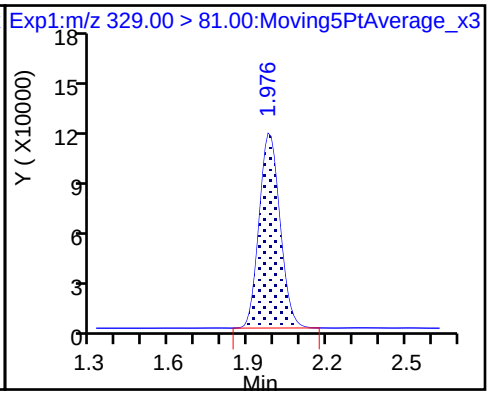
5 Perfluorobutanesulfonic acid



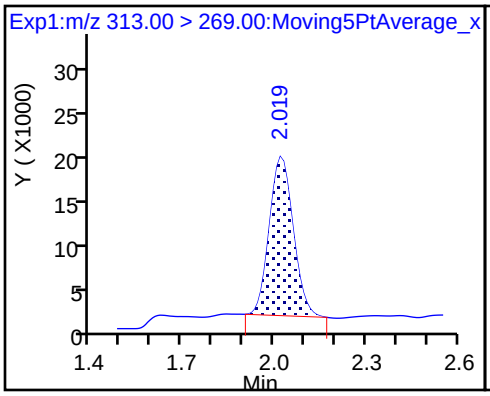
61 Sodium 1H,1H,2H,2H-perfluorohexane



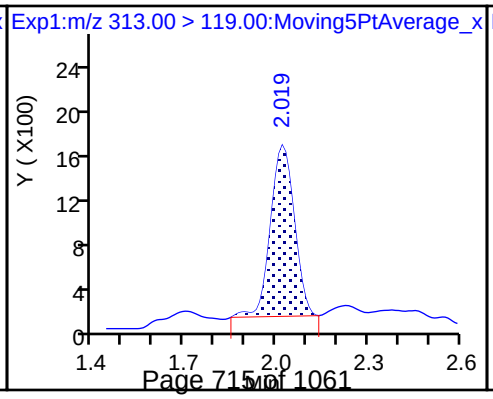
D 60 M2-4:2FTS



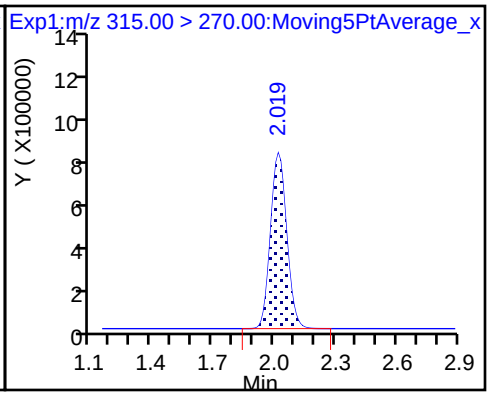
6 Perfluorohexanoic acid



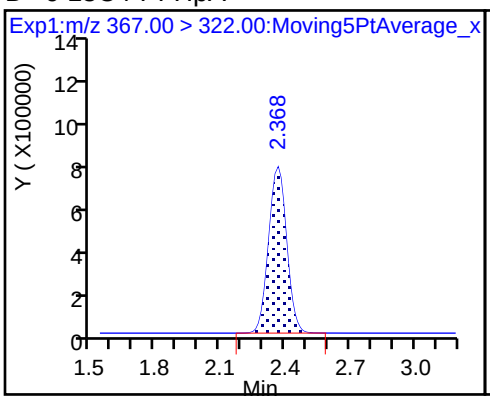
6 Perfluorohexanoic acid



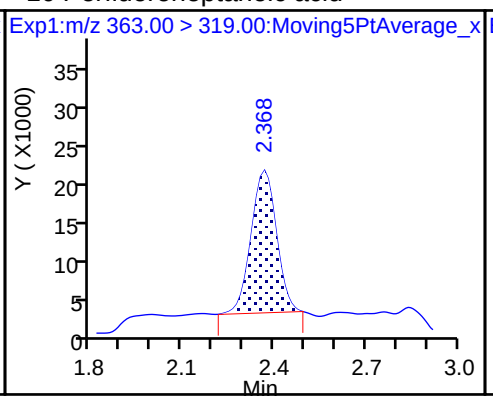
D 7 13C2 PFHxA



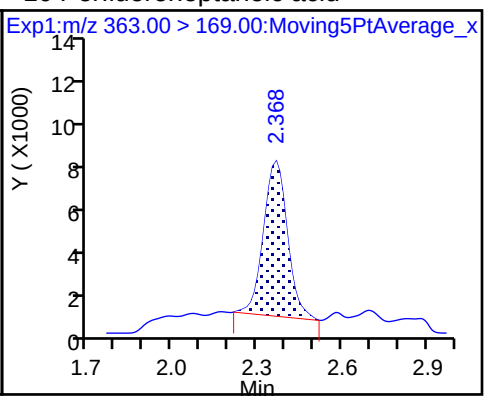
D 9 13C4-PFHpA



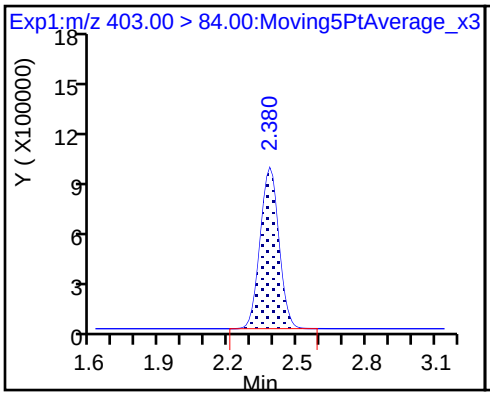
10 Perfluoroheptanoic acid



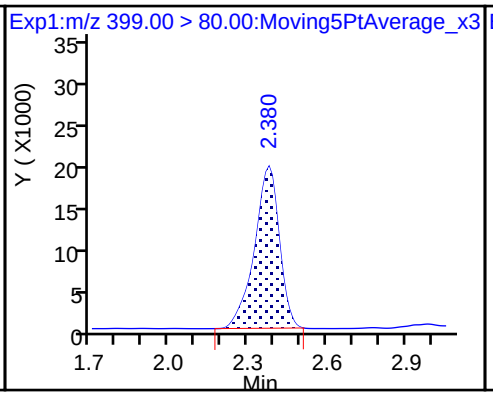
10 Perfluoroheptanoic acid



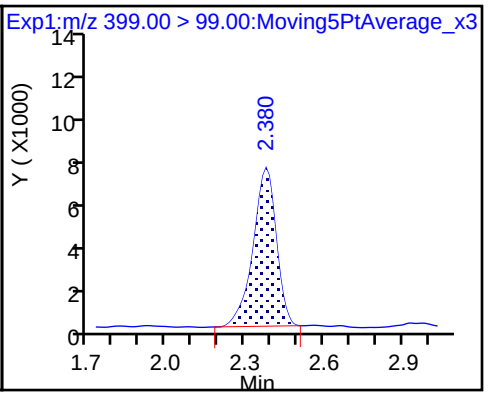
D 11 18O2 PFHxS



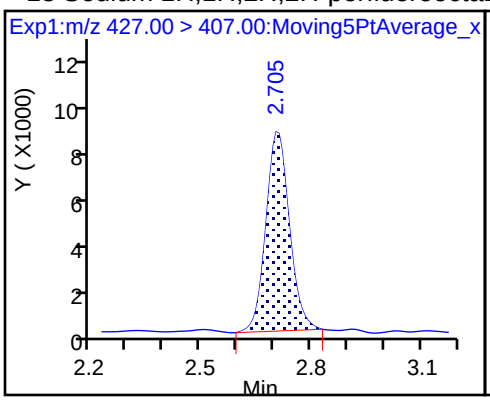
8 Perfluorohexanesulfonic acid



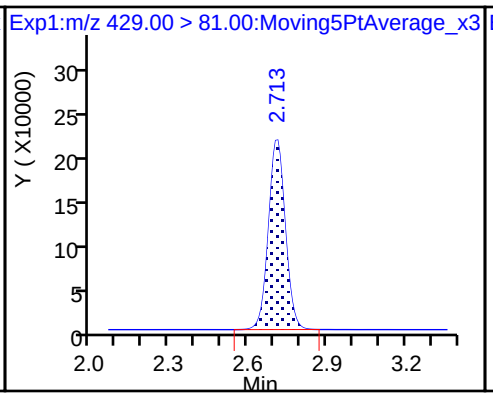
8 Perfluorohexanesulfonic acid



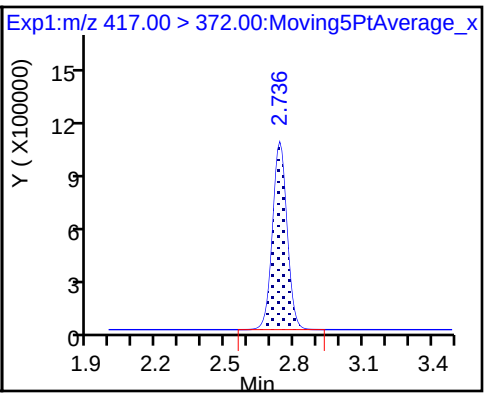
13 Sodium 1H,1H,2H,2H-perfluorooctane



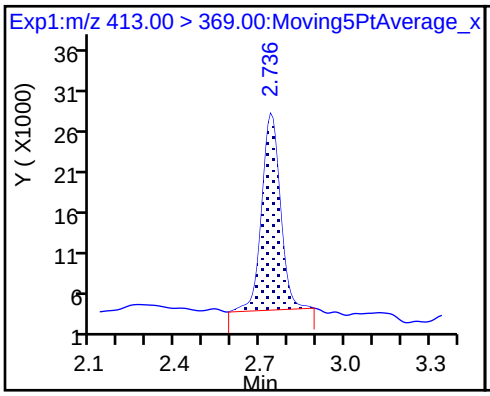
D 12 M2-6:2FTS



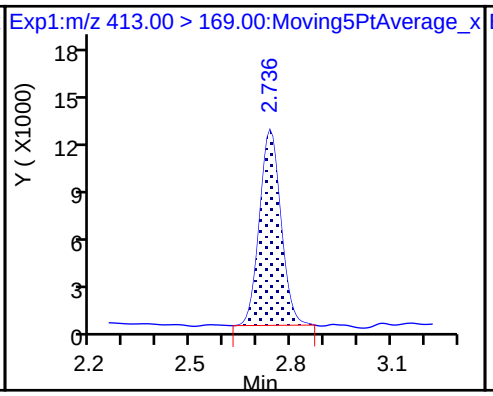
D 14 13C4 PFOA



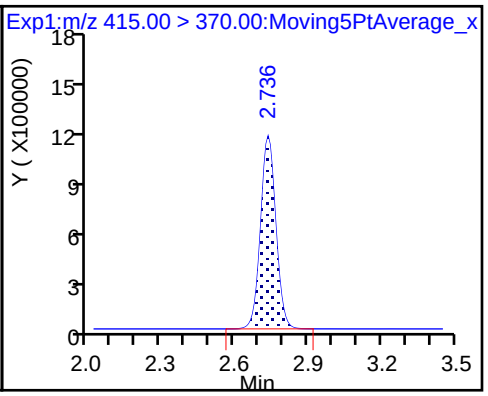
15 Perfluorooctanoic acid



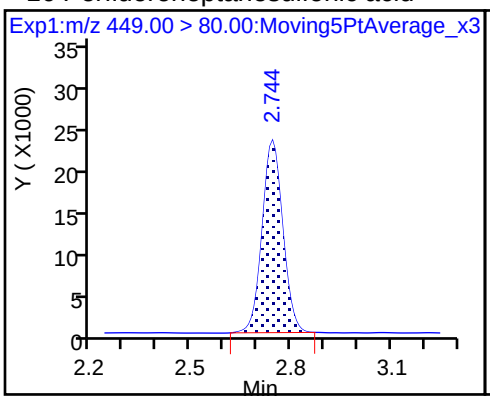
15 Perfluorooctanoic acid



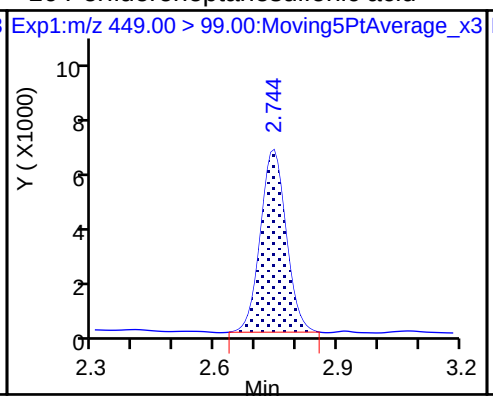
* 62 13C2-PFOA



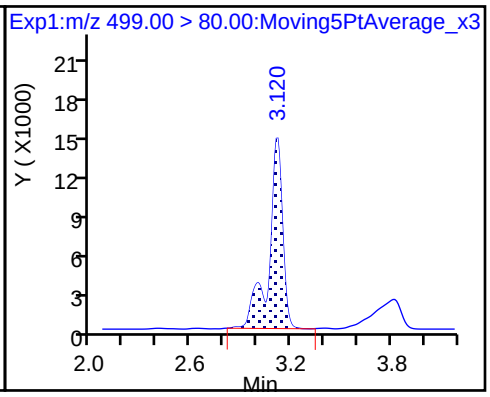
16 Perfluoroheptanesulfonic acid



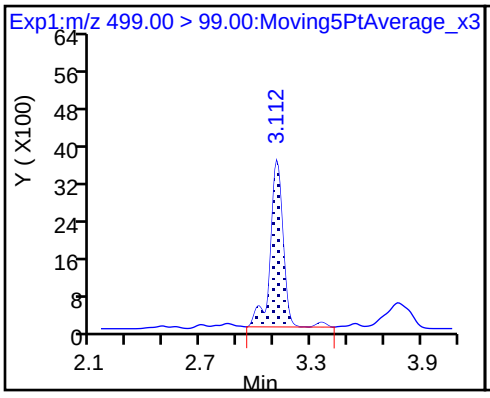
16 Perfluoroheptanesulfonic acid



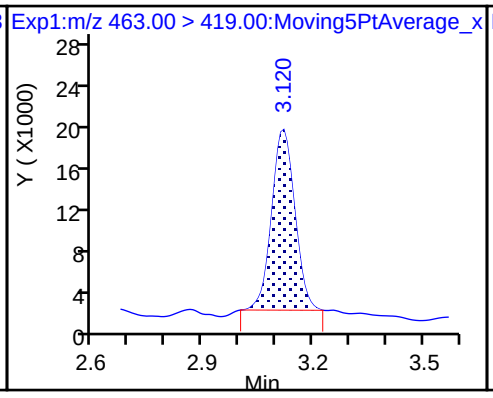
17 Perfluorooctane sulfonic acid



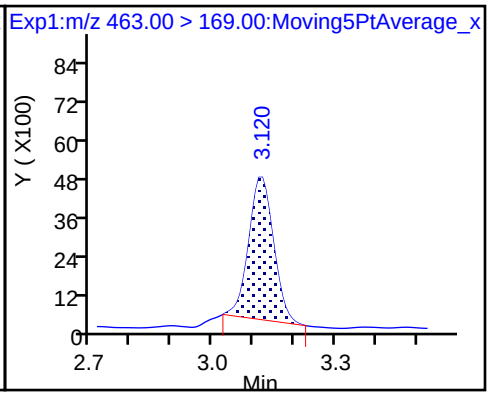
17 Perfluorooctane sulfonic acid



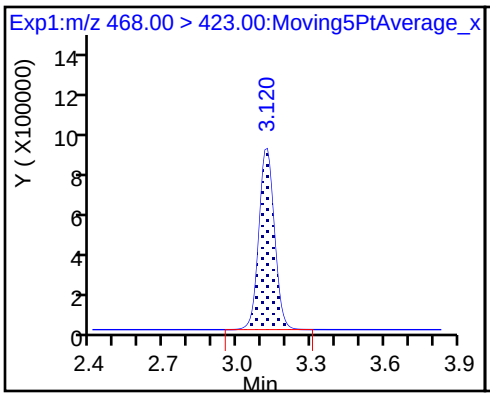
20 Perfluorononanoic acid



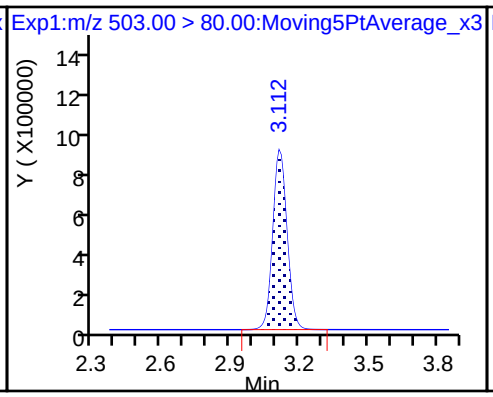
20 Perfluorononanoic acid



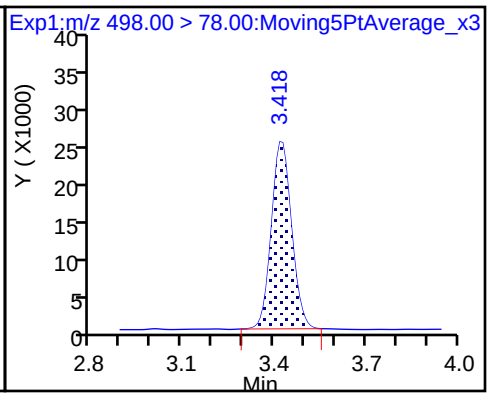
D 19 13C5 PFNA



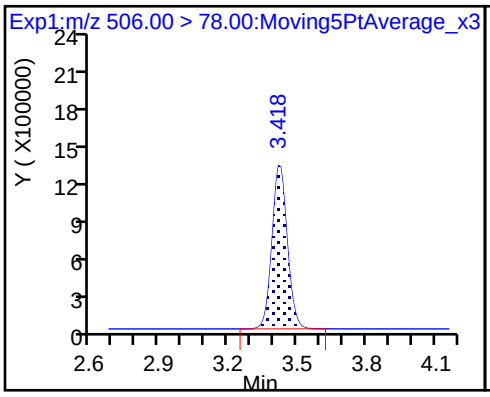
D 18 13C4 PFOS



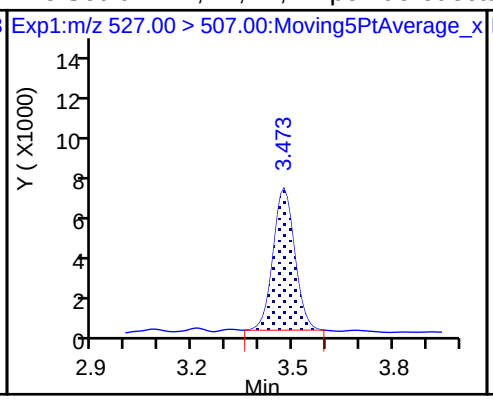
22 Perfluorooctane Sulfonamide



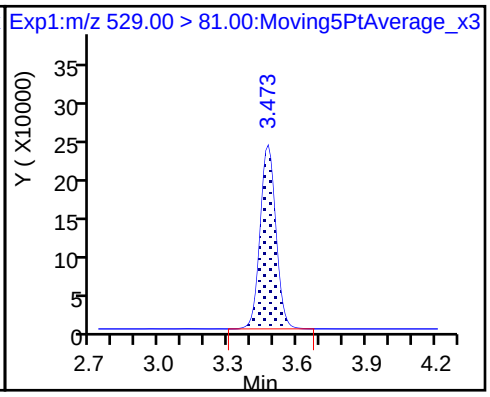
D 21 13C8 FOSA



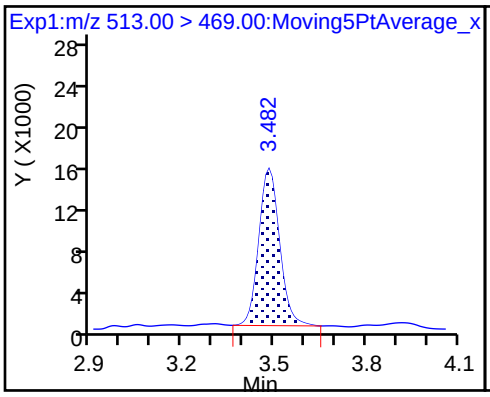
25 Sodium 1H,1H,2H,2H-perfluorodecane



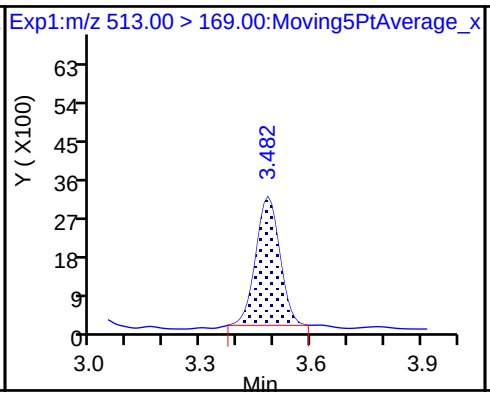
D 26 M2-8:2FTS



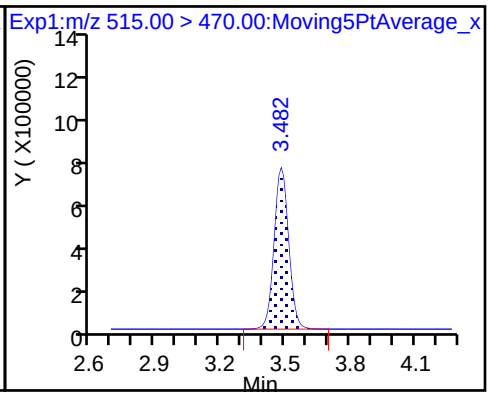
24 Perfluorodecanoic acid



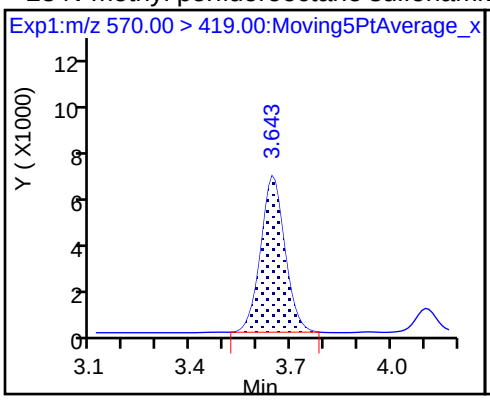
24 Perfluorodecanoic acid



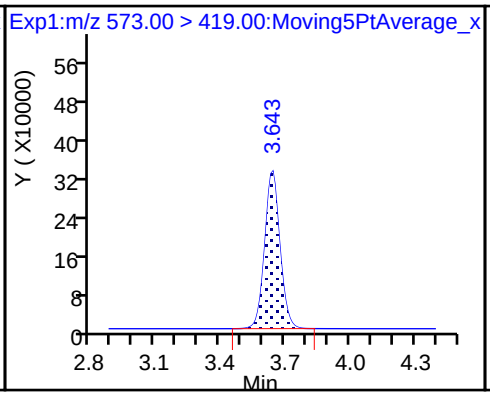
D 23 13C2 PFDA



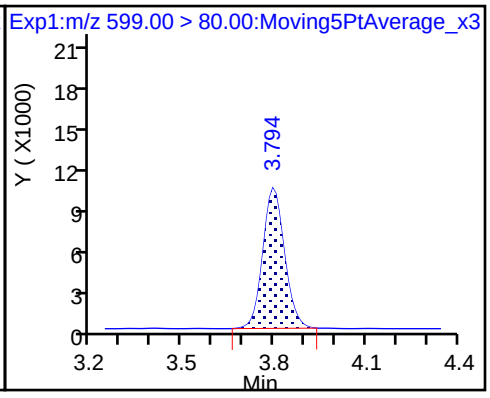
28 N-methyl perfluorooctane sulfonami



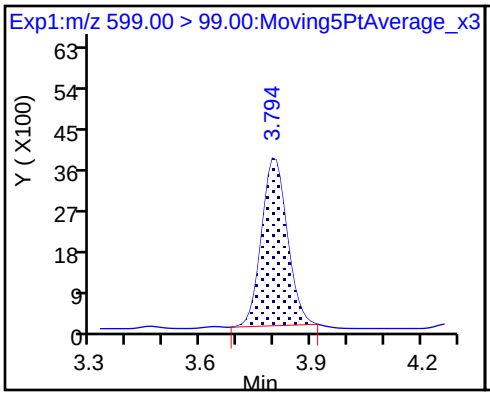
D 27 d3-NMeFOSAA



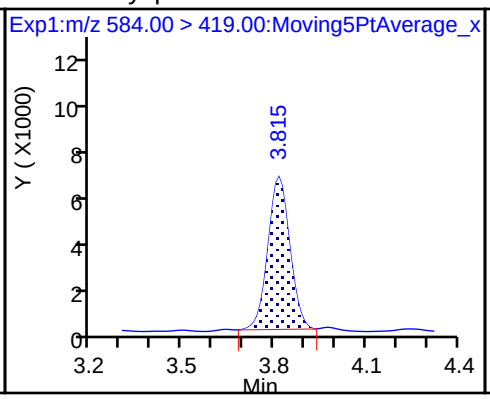
29 Perfluorodecane Sulfonic acid



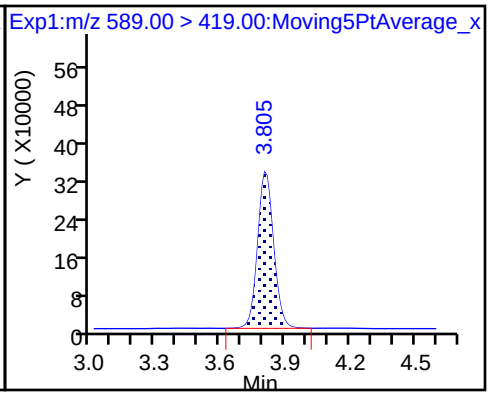
29 Perfluorodecane Sulfonic acid



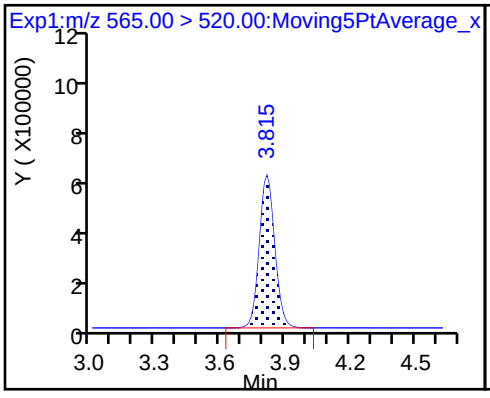
33 N-ethyl perfluorooctane sulfonamid



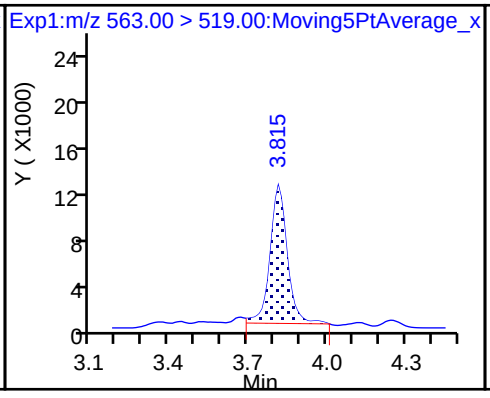
D 32 d5-NEtFOSAA



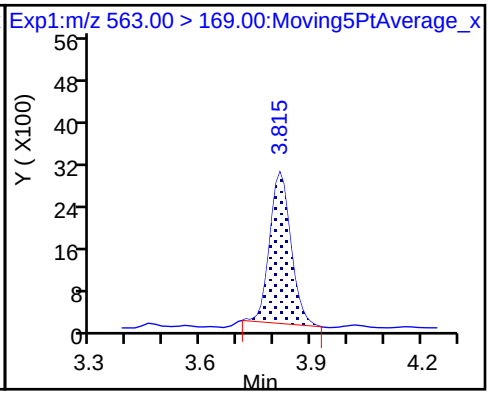
D 30 13C2 PFUnA



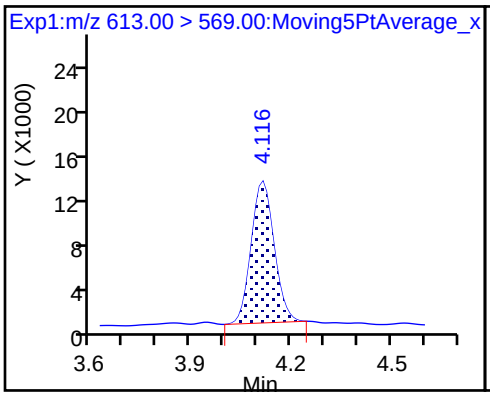
31 Perfluoroundecanoic acid



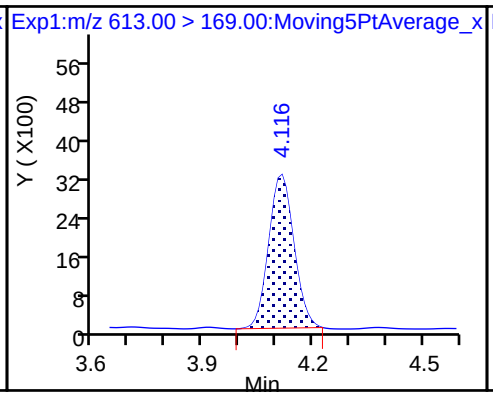
31 Perfluoroundecanoic acid



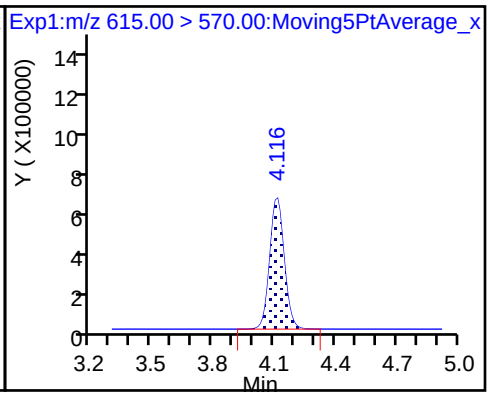
37 Perfluorododecanoic acid



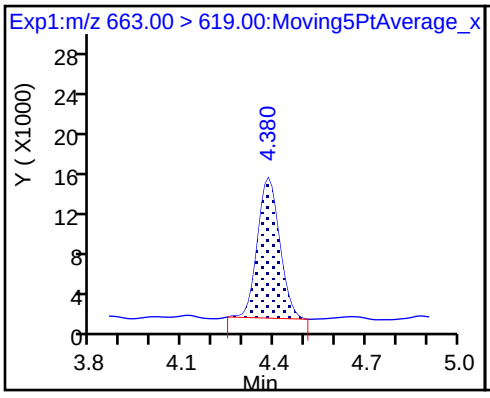
37 Perfluorododecanoic acid



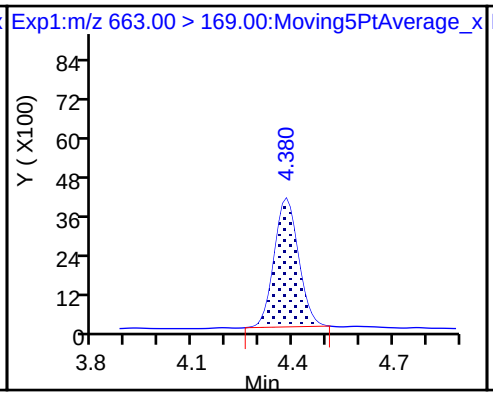
D 36 13C2 PFDoA



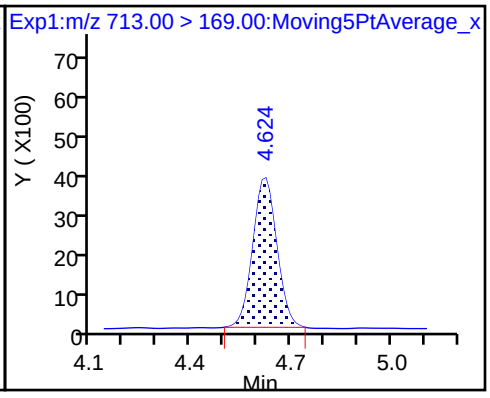
41 Perfluorotridecanoic acid



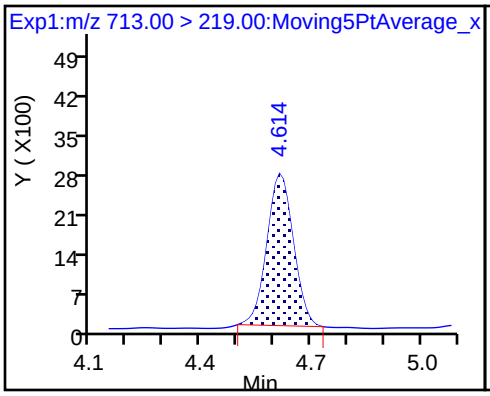
41 Perfluorotridecanoic acid



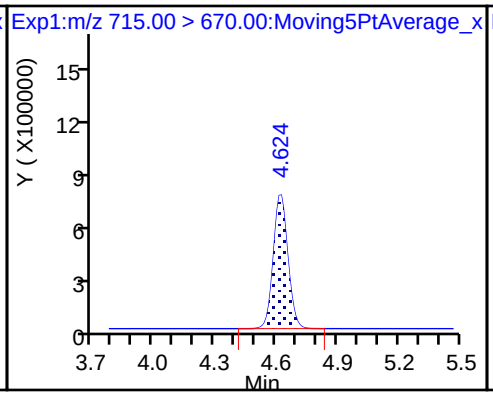
42 Perfluorotetradecanoic acid



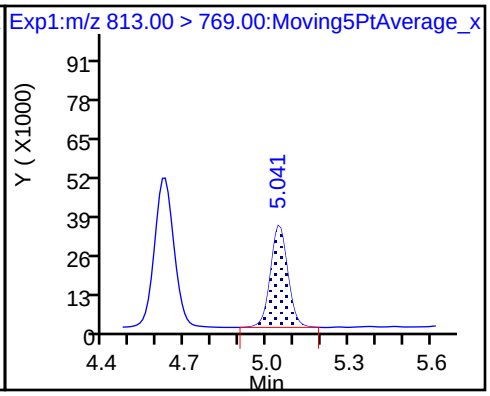
42 Perfluorotetradecanoic acid



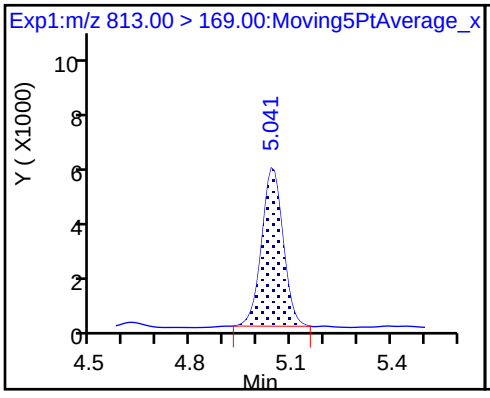
D 43 13C2-PFTeDA



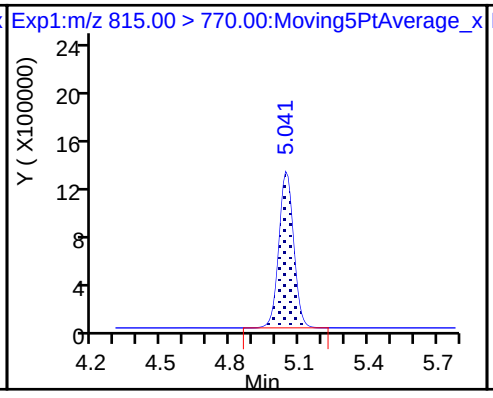
45 Perfluorohexadecanoic acid



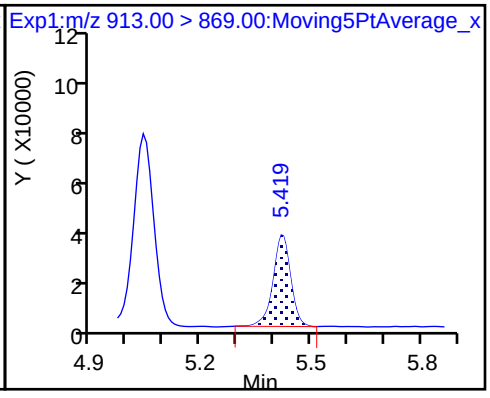
45 Perfluorohexadecanoic acid



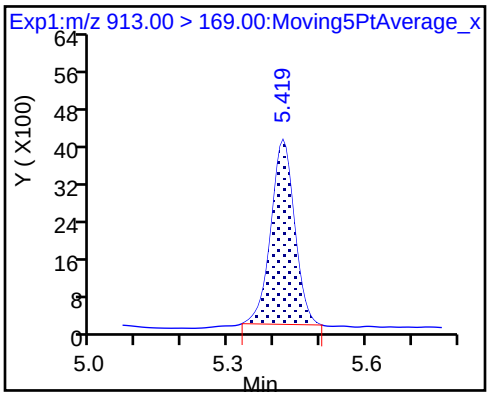
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215294/3 Calibration Date: 03/28/2018 18:44

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8976		0.953	1.00	-4.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.119		0.993	1.00	-0.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.11		0.889	0.884	0.5	50.0
4:2 FTS	AveID	16.15	15.76		0.911	0.934	-2.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.995		0.974	1.00	-2.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.043		1.01	1.00	0.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.017		0.831	0.910	-8.7	40.0
6:2FTS	AveID	1.744	1.689		0.918	0.948	-3.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.101		0.975	1.00	-2.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.304		0.969	0.952	1.8	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9783		0.981	1.00	-1.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.062		0.885	0.928	-4.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9873		1.00	1.00	0.2	40.0
8:2FTS	AveID	1.276	1.270		0.953	0.958	-0.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9397		0.951	1.00	-4.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.032		1.03	1.00	3.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6823		0.967	0.964	0.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9208		0.986	1.00	-1.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7465		0.866	1.00	-13.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.010		0.965	1.00	-3.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.059		0.962	1.00	-3.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2600		1.05	1.00	4.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8966		0.962	1.00	-3.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.145		1.24	1.00	23.8	50.0
13C4 PFBA	Ave	1.266	1.375		2.72	2.50	8.6	50.0
13C5 PFPeA	Ave	0.8399	0.8870		2.64	2.50	5.6	50.0
13C3-PFBS	Ave	0.0192	0.0202		2.45	2.33	5.5	50.0
M2-4:2FTS	Ave	0.1324	0.1490		2.63	2.34	12.6	50.0
13C2 PFHxA	Ave	0.9288	0.9736		2.62	2.50	4.8	50.0
13C4-PFHpA	Ave	0.9164	0.9639		2.63	2.50	5.2	50.0
18O2 PFHxS	Ave	1.130	1.283		2.68	2.37	13.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215294/3 Calibration Date: 03/28/2018 18:44

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2183		2.73	2.38	14.9	40.0
13C4 PFOA	Ave	0.9374	0.9453		2.52	2.50	0.8	50.0
13C4 PFOS	Ave	0.8225	0.8450		2.46	2.39	2.7	50.0
13C5 PFNA	Ave	0.8266	0.8212		2.48	2.50	-0.7	50.0
13C8 FOSA	Ave	1.109	1.266		2.85	2.50	14.1	50.0
M2-8:2FTS	Ave	0.2565	0.2508		2.34	2.40	-2.2	40.0
13C2 PFDA	Ave	0.7245	0.6929		2.39	2.50	-4.4	50.0
d3-NMeFOSAA	Ave	0.3814	0.3466		2.27	2.50	-9.1	50.0
13C2 PFUnA	Ave	0.6482	0.6085		2.35	2.50	-6.1	50.0
d5-NEtFOSAA	Ave	0.4345	0.3631		2.09	2.50	-16.4	50.0
13C2 PFDoA	Ave	0.7355	0.6809		2.31	2.50	-7.4	50.0
13C2-PFTeDA	Ave	0.8983	0.7629		2.12	2.50	-15.1	50.0
13C2-PFHxDA	Ave	1.473	1.262		2.14	2.50	-14.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 28-Mar-2018 18:44:00 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:24:59 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:24:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.529	6512234	2.71		109	97783	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	2338220	0.9527		95.3	1339	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.000	1881545	0.99		99.3	710	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.718	-0.001	0.628	4202113	2.64		106	119819	
D 47 13C3-PFBS										
301.90 > 83.00	1.752	1.754	-0.002	0.641	89080	2.45		105	600	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.761	1.761	0.0	1.005	2645526	0.8886		101	1704	
298.90 > 99.00	1.752	1.761	-0.009	1.000	1099218		2.41(1.25-3.74)		1663	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.975	1.975	0.0	1.000	563971	0.9113		97.6	35179	
D 60 M2-4:2FTS										
329.00 > 81.00	1.975	1.976	-0.001	0.723	659305	2.63		113	11132	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.018	2.018	0.0	1.000	1836229	0.9736		97.4	2537	
313.00 > 119.00	2.018	2.018	0.0	1.000	171073		10.73(5.03-15.10)		2219	
D 7 13C2 PFHxA										
315.00 > 270.00	2.018	2.019	-0.001	0.738	4612109	2.62		105	121709	
D 9 13C4-PFHpA										
367.00 > 322.00	2.367	2.354	0.013	0.866	4566371	2.63		105	88027	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.367	2.367	0.0	1.000	1905455	1.01		101	1297	
363.00 > 169.00	2.367	2.367	0.0	1.000	735260		2.59(1.13-3.40)		1563	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.379	2.368	0.011	0.870	5749080	2.68		113	102099	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.379	2.379	0.0	1.000	2249013	0.8312		91.3	10646	
399.00 > 99.00	2.379	2.379	0.0	1.000	749910		3.00(1.50-4.49)		4804	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.702	2.702	0.0	0.997	662464	0.9184		96.9	7656	
D 12 M2-6:2FTS										
429.00 > 81.00	2.710	2.705	0.005	0.991	982538	2.73		115	32008	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.728	0.006	1.000	4478336	2.52		101	93637	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	1973119	0.9750		97.5	742	
413.00 > 169.00	2.734	2.734	0.0	1.000	1041704		1.89(0.84-2.52)		4025	
* 62 13C2-PFOA										
415.00 > 370.00	2.734	2.734	0.0		4737298	2.50			72744	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.742	2.742	0.0	1.000	1988304	0.9691		102	38453	
449.00 > 99.00	2.742	2.742	0.0	1.000	524127		3.79(1.94-5.82)		10171	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.111	3.111	0.0	1.000	1577803	0.8846		95.3	4525	
499.00 > 99.00	3.111	3.111	0.0	1.000	342924		4.60(2.31-6.93)		3837	
20 Perfluorononanoic acid										
463.00 > 419.00	3.111	3.111	0.0	1.000	1522338	0.9807		98.1	1367	
463.00 > 169.00	3.111	3.111	0.0	1.000	362152		4.20(1.90-5.69)		8454	
D 19 13C5 PFNA										
468.00 > 423.00	3.111	3.112	-0.001	1.138	3890250	2.48		99.3	64352	
D 18 13C4 PFOS										
503.00 > 80.00	3.111	3.112	-0.001	1.138	3826990	2.46		103	68118	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	2368449	1.00		100	74528	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.418	-0.001	1.250	5997329	2.85		114	57752	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.463	3.463	0.0	1.000	578346	0.9535		99.5	6864	
D 26 M2-8:2FTS										
529.00 > 81.00	3.463	3.464	-0.001	1.267	1138260	2.34		97.8	30447	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.472	3.472	0.0	1.000	1233834	0.9511		95.1	6168	
513.00 > 169.00	3.472	3.472	0.0	1.000	222871		5.54(2.36-7.09)		4846	
D 23 13C2 PFDA										
515.00 > 470.00	3.472	3.473	-0.001	1.270	3282435	2.39		95.6	32641	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.633	3.633	0.0	1.000	677844	1.03		103	5815	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.633	3.633	0.0	1.329	1641727	2.27		90.9	42694	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.792	3.792	0.0	1.000	1053233	0.9673		100	30660	
599.00 > 99.00	3.792	3.792	0.0	1.000	374365		2.81(1.39-4.16)		12694	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.803	3.803	0.0	1.000	633608	0.9856		98.6	13857	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.803	3.804	-0.001	1.391	1720253	2.09		83.6	3868	
D 30 13C2 PFUnA										
565.00 > 520.00	3.803	3.804	-0.001	1.391	2882389	2.35		93.9	64434	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.813	3.813	0.0	1.003	860629	0.8658		86.6	3958	
563.00 > 169.00	3.813	3.813	0.0	1.003	245067		3.51(2.12-6.36)		8067	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.103	4.103	0.0	1.000	1302787	0.9650		96.5	840	
613.00 > 169.00	4.103	4.103	0.0	1.000	316855		4.11(2.13-6.40)		5360	
D 36 13C2 PFDoA										
615.00 > 570.00	4.103	4.105	-0.002	1.501	3225575	2.31		92.6	25192	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.367	4.367	0.0	1.000	1366116	0.9619		96.2	554	
663.00 > 169.00	4.367	4.367	0.0	1.000	404754		3.38(1.25-3.76)		8738	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.612	4.612	0.0	1.000	375778	1.05		105	6382	
713.00 > 219.00	4.601	4.612	-0.011	0.998	258113		1.46(0.71-2.13)		5217	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.612	4.613	-0.001	1.687	3613938	2.12		84.9	21060	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.030	5.030	0.0	1.000	2144774	0.9622		96.2	440	
813.00 > 169.00	5.030	5.030	0.0	1.000	362999		5.91(2.86-8.58)		2638	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.030	5.040	-0.010	1.840	5980624	2.14		85.7	14735	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.410	5.410	0.0	1.000	2738951	1.24		124	544	
913.00 > 169.00	5.410	5.410	0.0	1.000	341009		8.03(3.83-11.48)		3478	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 07:25:00 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_006.d

Injection Date: 28-Mar-2018 18:44:00 Instrument ID: A8_N

Lims ID: CCV L4

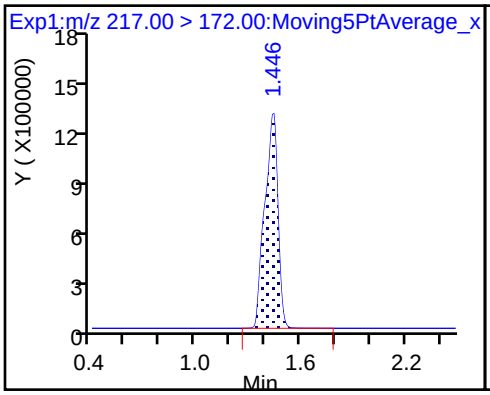
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

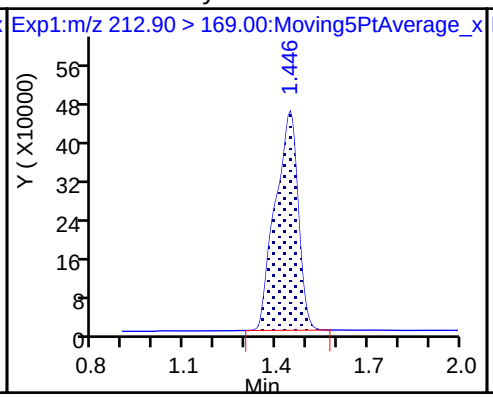
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

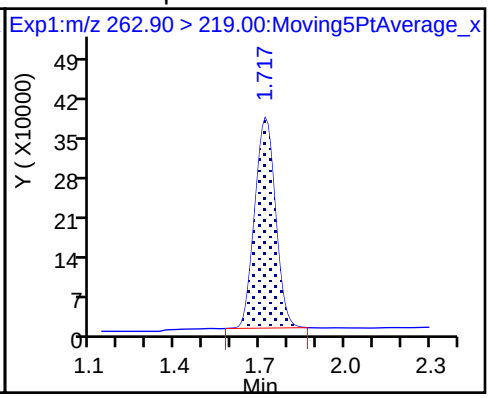
D 1 13C4 PFBA



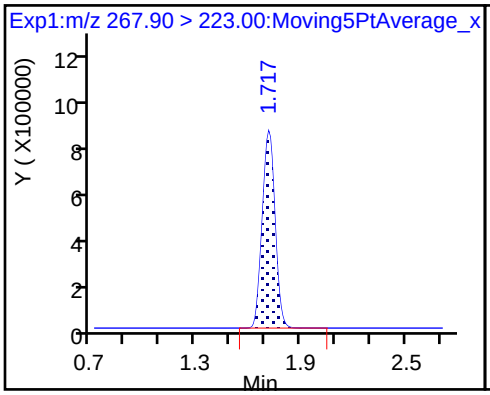
2 Perfluorobutyric acid



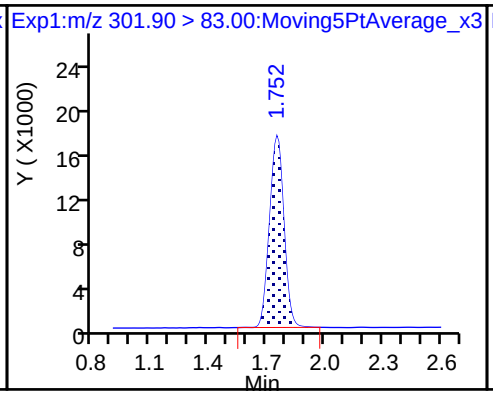
4 Perfluoropentanoic acid



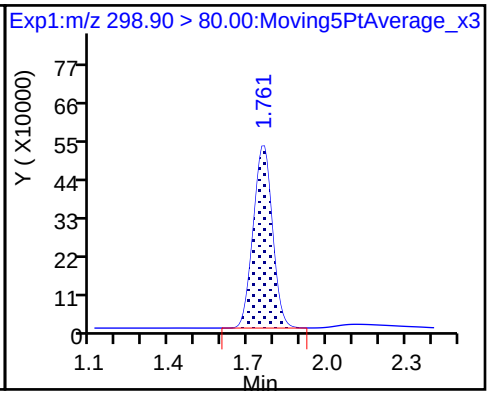
D 3 13C5-PFPeA



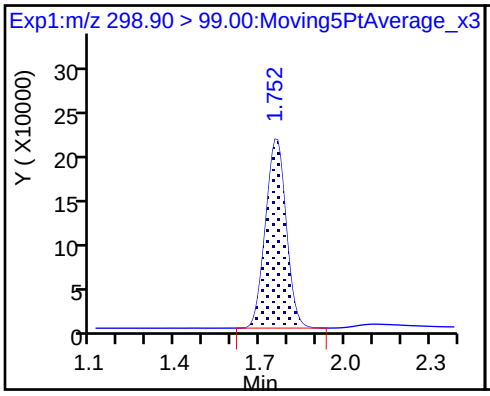
D 47 13C3-PFBS



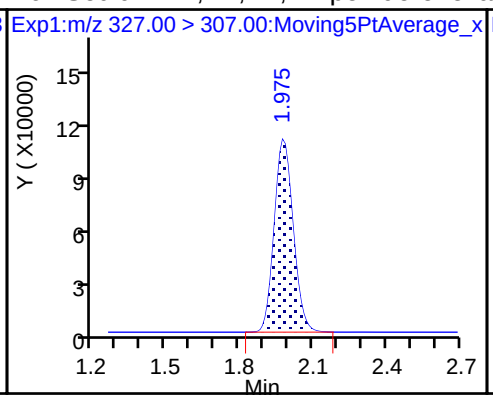
5 Perfluorobutanesulfonic acid



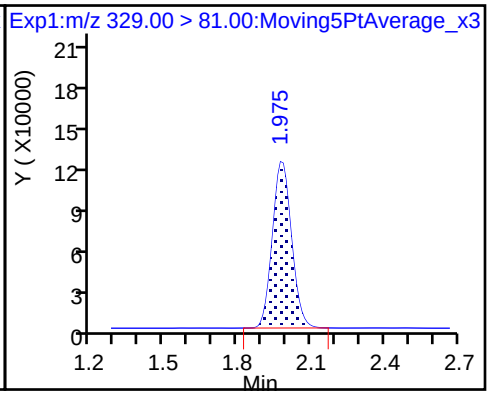
5 Perfluorobutanesulfonic acid



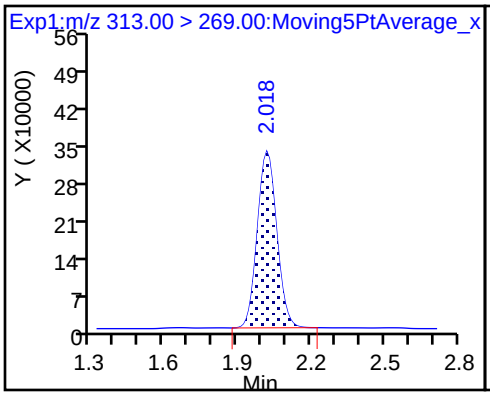
61 Sodium 1H,1H,2H,2H-perfluorohexane



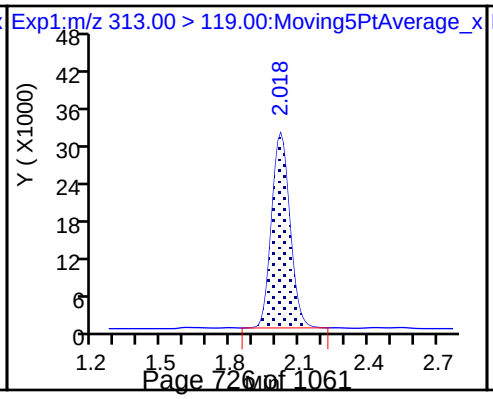
D 60 M2-4:2FTS



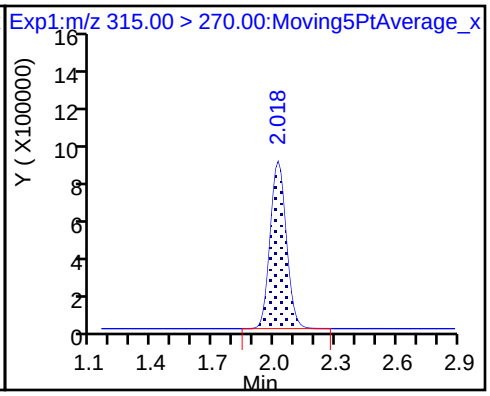
6 Perfluorohexanoic acid



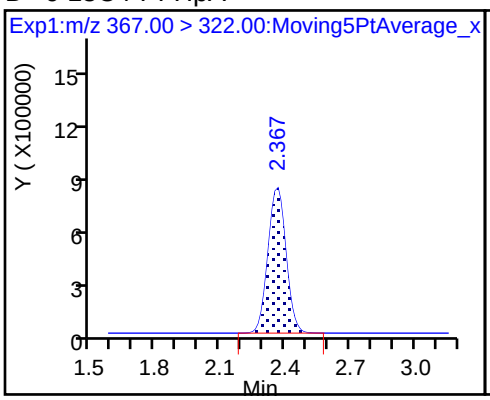
6 Perfluorohexanoic acid



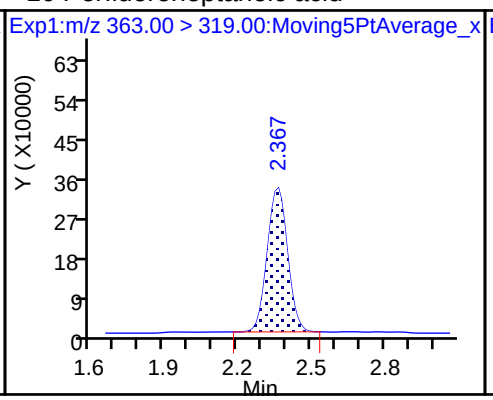
D 7 13C2 PFHxA



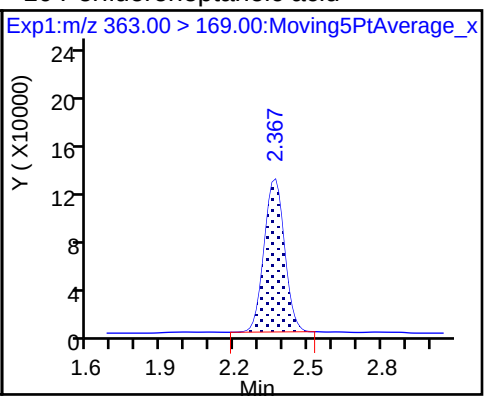
D 9 13C4-PFHpA



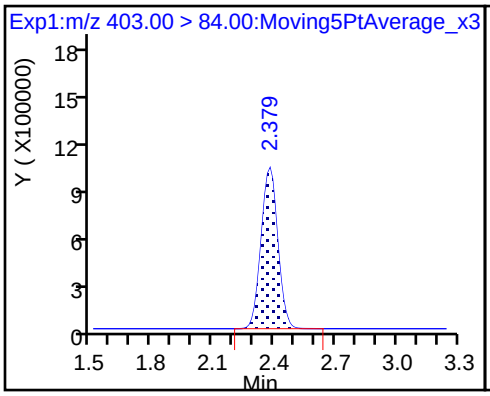
10 Perfluoroheptanoic acid



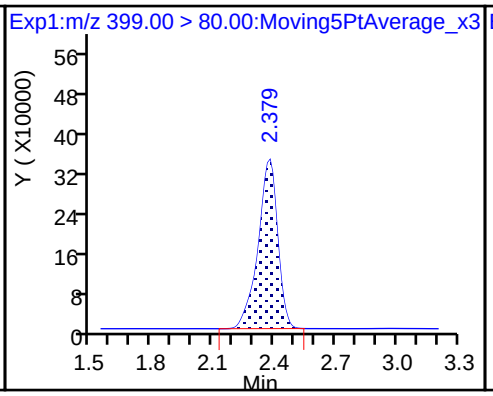
10 Perfluoroheptanoic acid



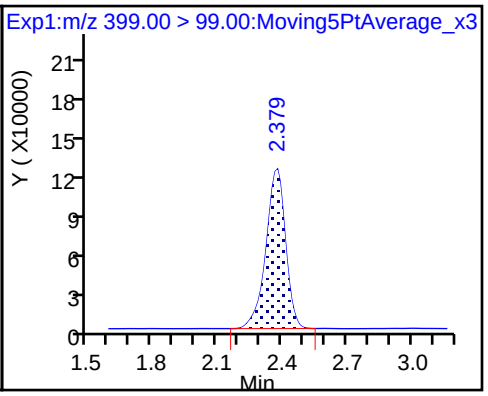
D 11 18O2 PFHxS



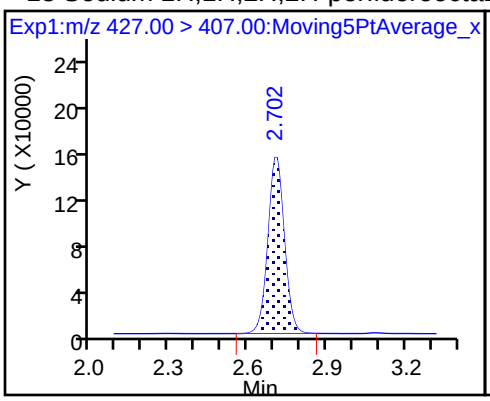
8 Perfluorohexanesulfonic acid



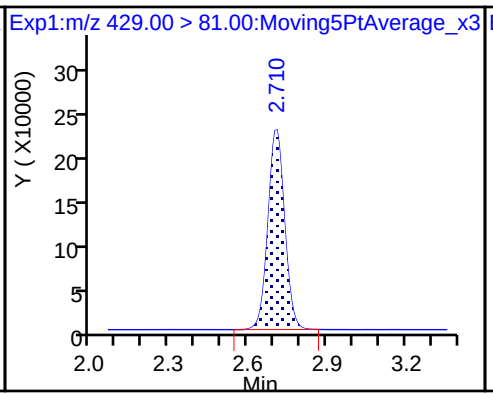
8 Perfluorohexanesulfonic acid



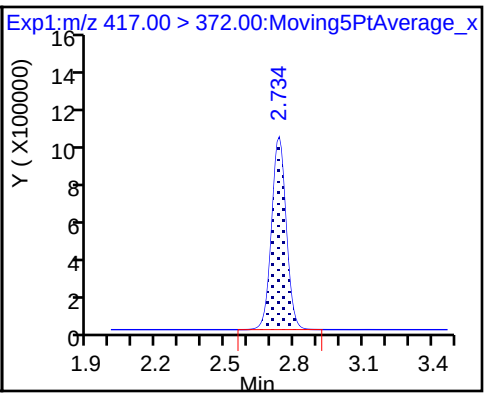
13 Sodium 1H,1H,2H,2H-perfluorooctane



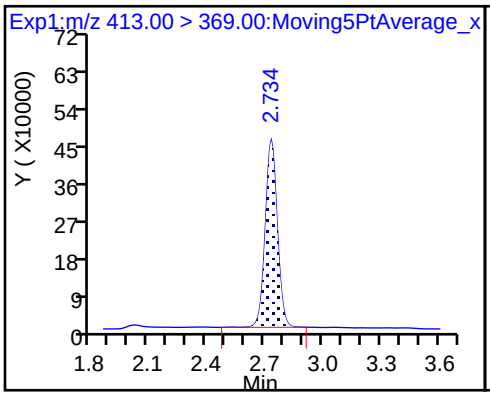
D 12 M2-6:2FTS



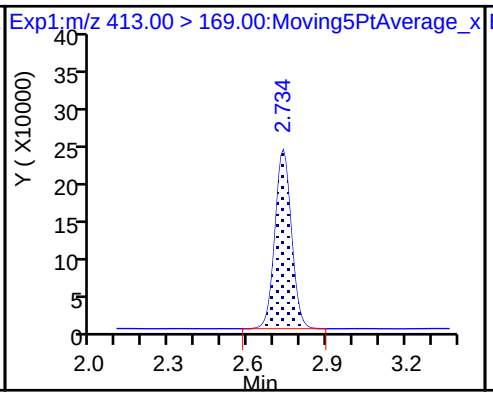
D 14 13C4 PFOA



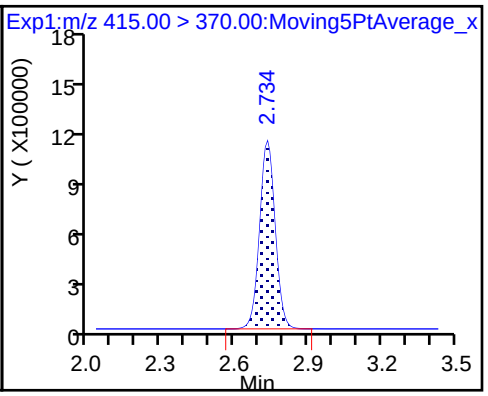
15 Perfluorooctanoic acid



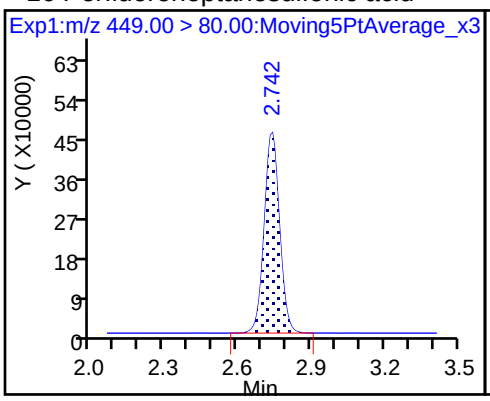
15 Perfluorooctanoic acid



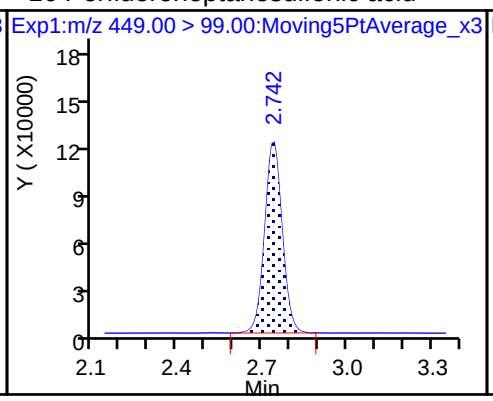
* 62 13C2-PFOA



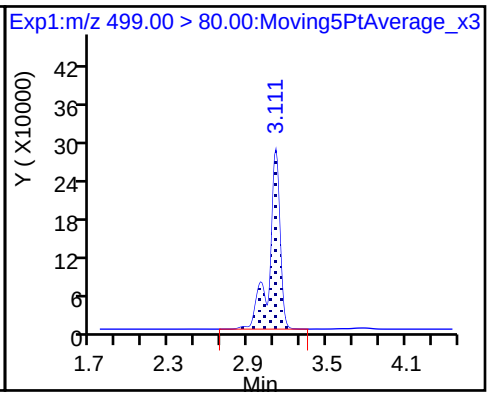
16 Perfluoroheptanesulfonic acid



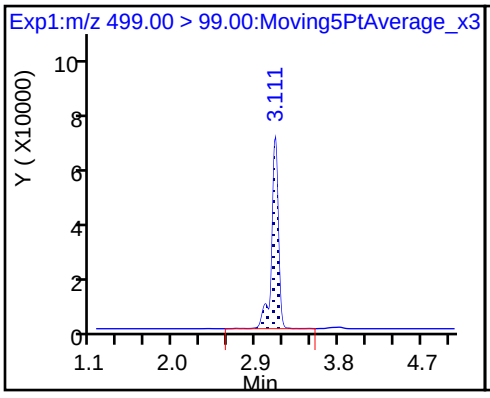
16 Perfluoroheptanesulfonic acid



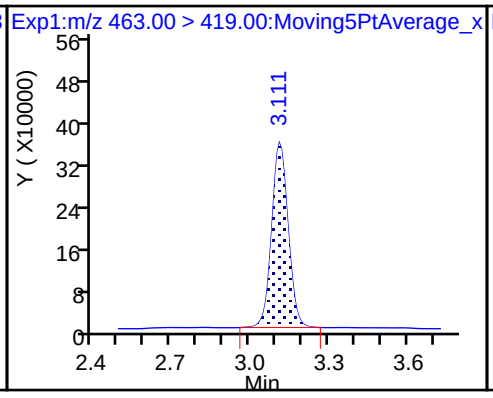
17 Perfluorooctane sulfonic acid



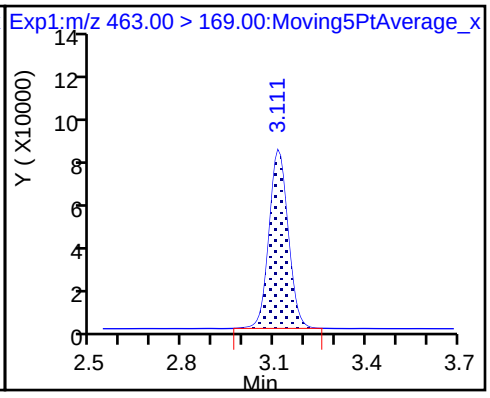
17 Perfluorooctane sulfonic acid



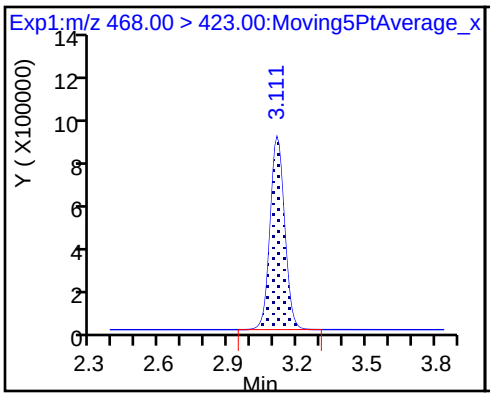
20 Perfluorononanoic acid



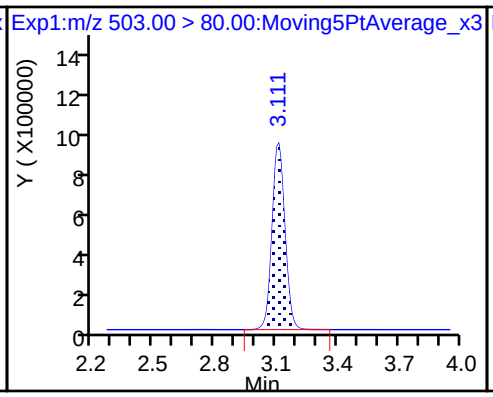
20 Perfluorononanoic acid



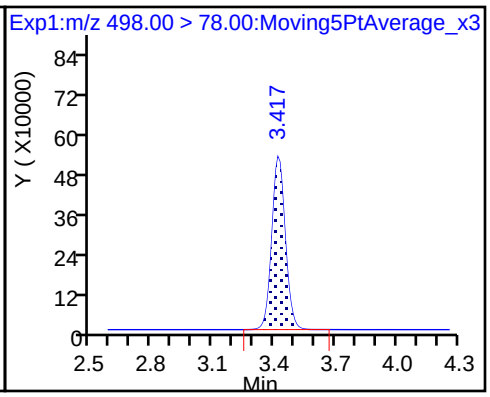
D 19 13C5 PFNA



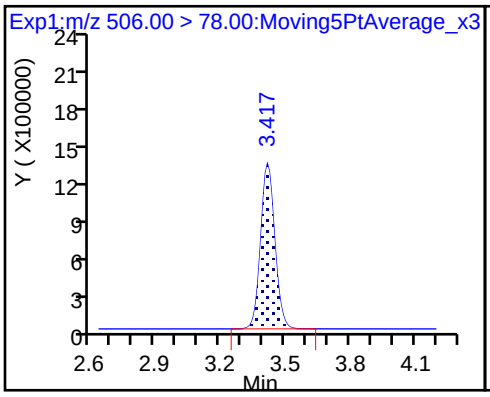
D 18 13C4 PFOS



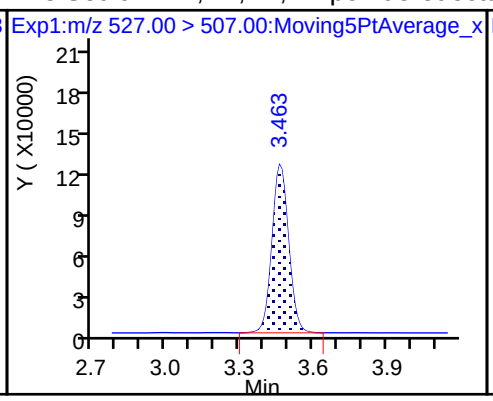
22 Perfluorooctane Sulfonamide



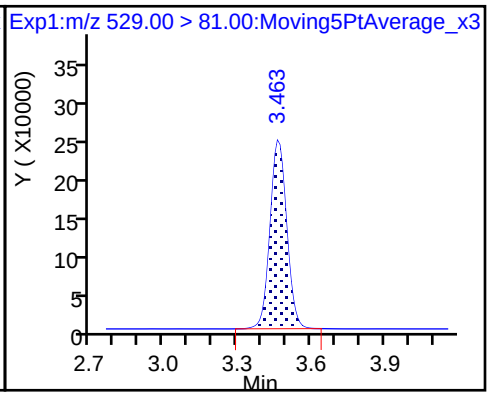
D 21 13C8 FOSA



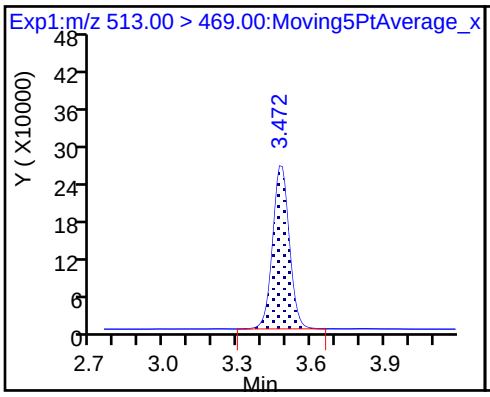
25 Sodium 1H,1H,2H,2H-perfluorodecane



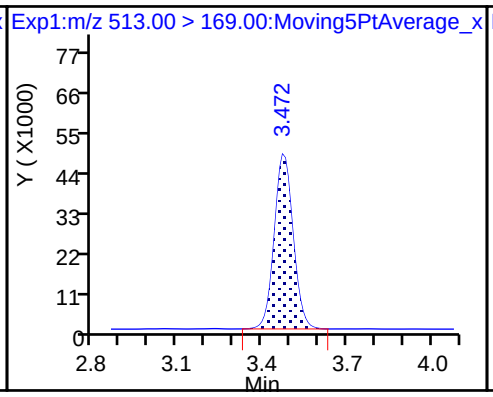
D 26 M2-8:2FTS



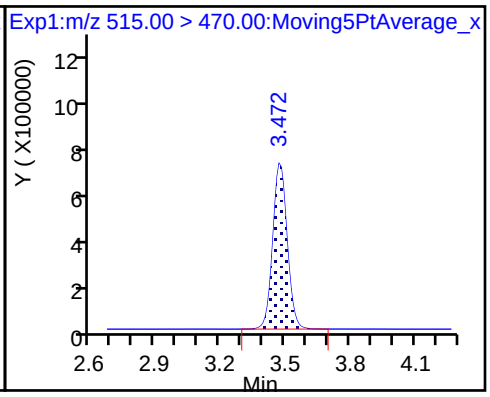
24 Perfluorodecanoic acid



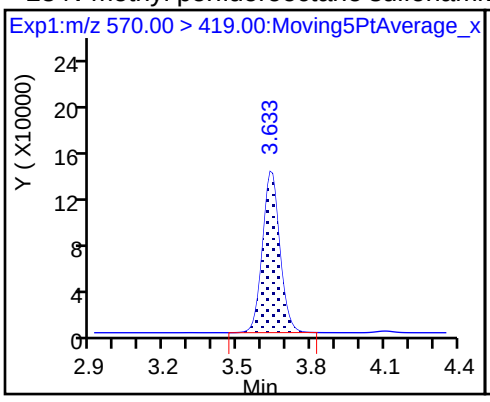
24 Perfluorodecanoic acid



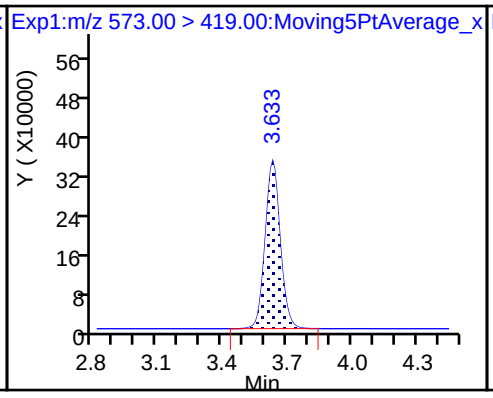
D 23 13C2 PFDA



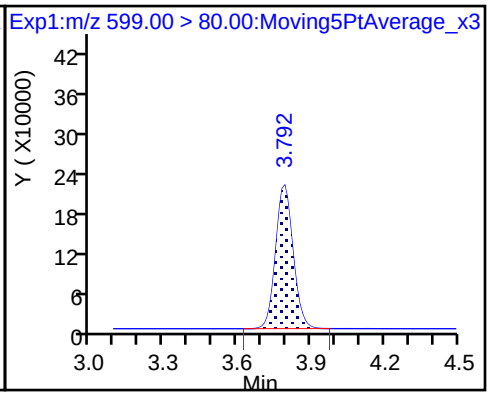
28 N-methyl perfluorooctane sulfonami



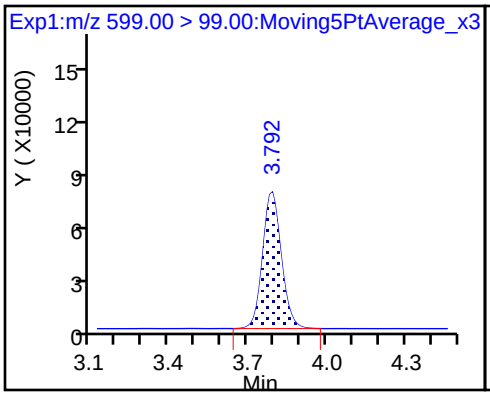
D 27 d3-NMeFOSAA



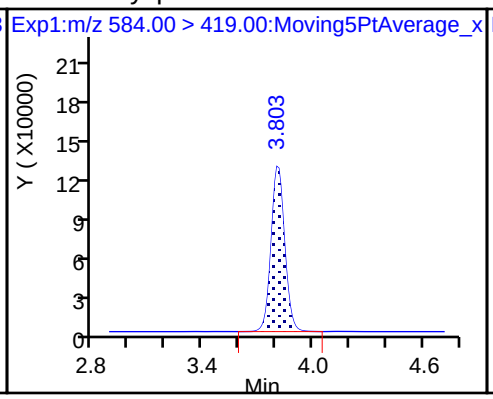
29 Perfluorodecane Sulfonic acid



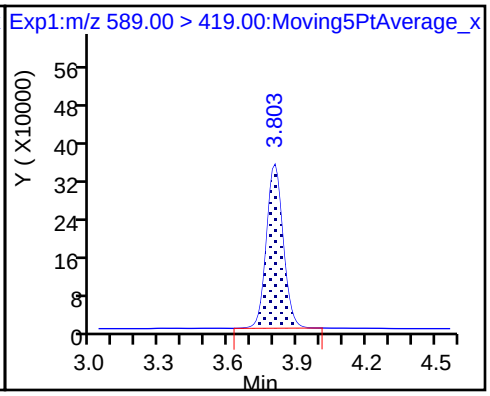
29 Perfluorodecane Sulfonic acid



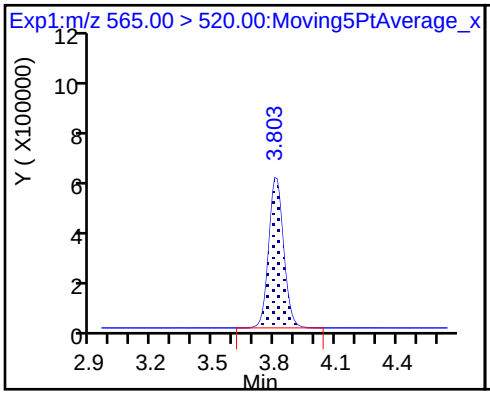
33 N-ethyl perfluorooctane sulfonamid



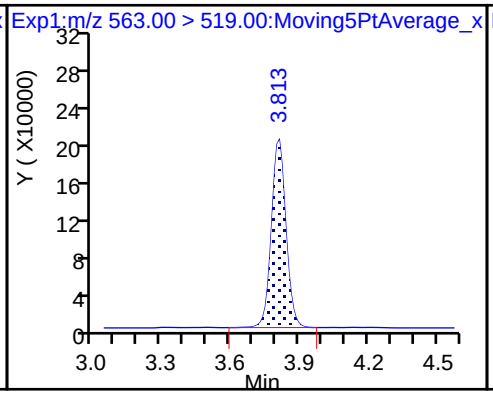
D 32 d5-NEtFOSAA



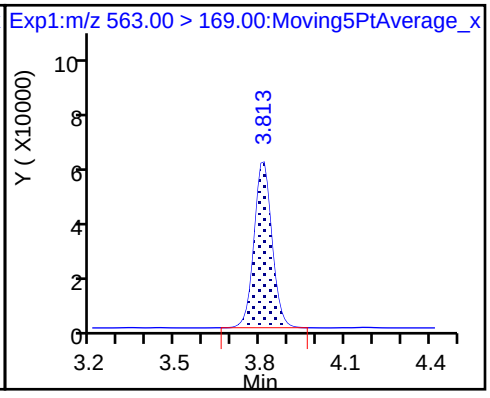
D 30 13C2 PFUnA



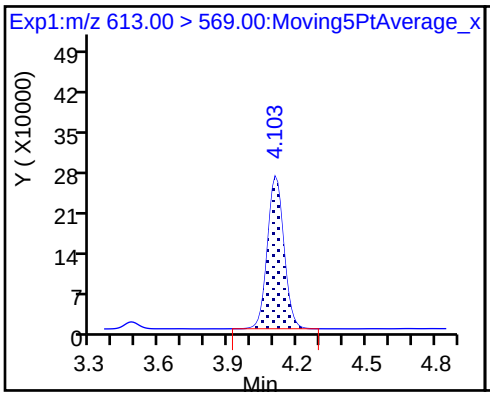
31 Perfluoroundecanoic acid



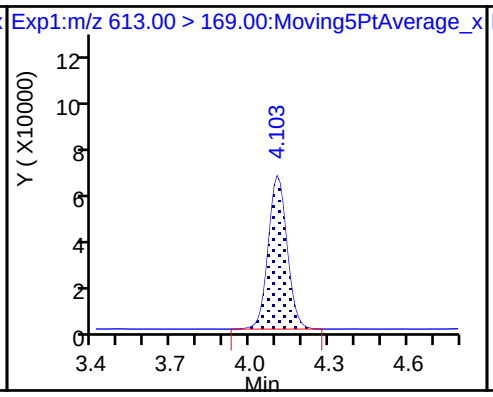
31 Perfluoroundecanoic acid



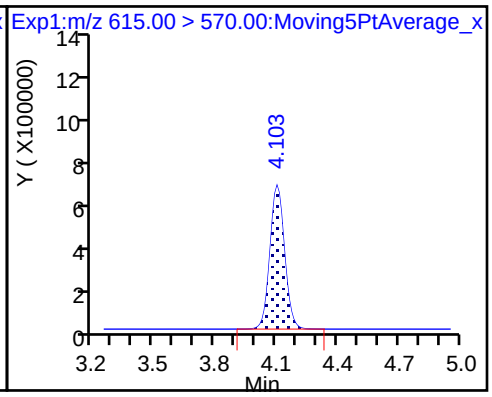
37 Perfluorododecanoic acid



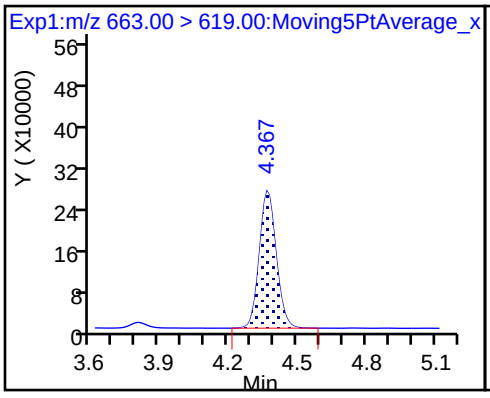
37 Perfluorododecanoic acid



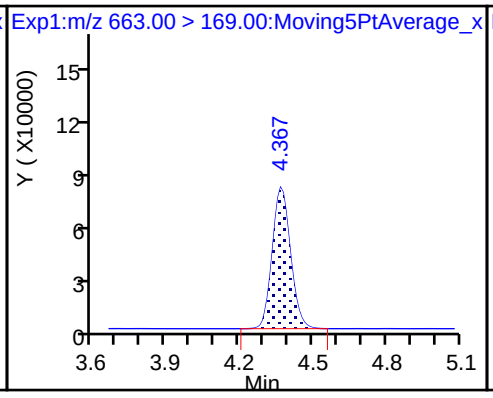
D 36 13C2 PFDoA



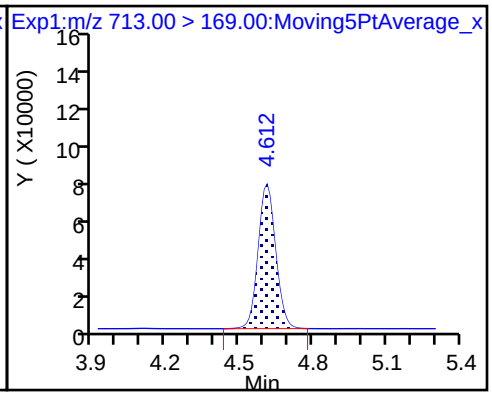
41 Perfluorotridecanoic acid



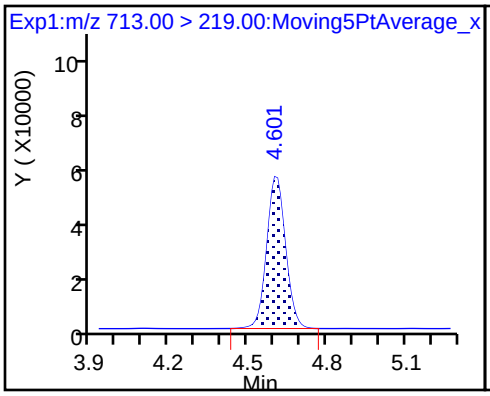
41 Perfluorotridecanoic acid



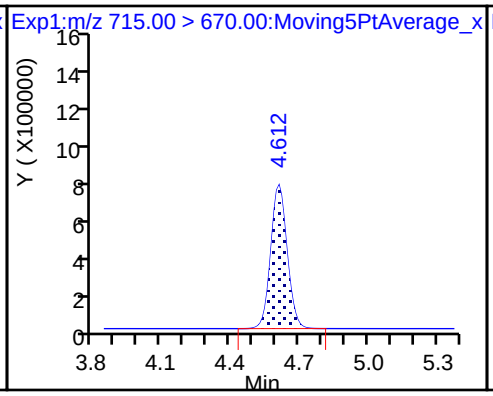
42 Perfluorotetradecanoic acid



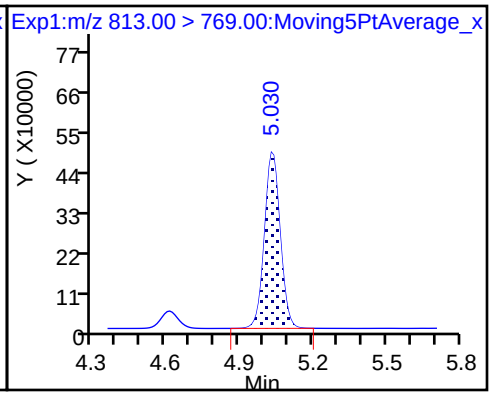
42 Perfluorotetradecanoic acid



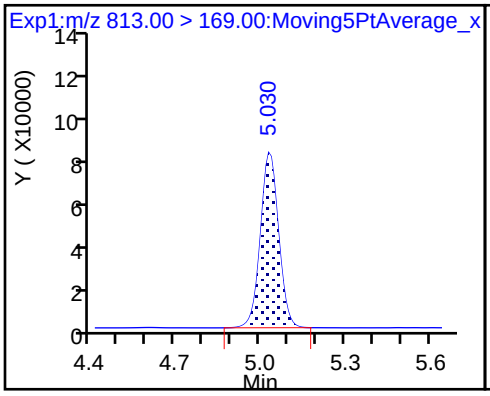
D 43 13C2-PFTeDA



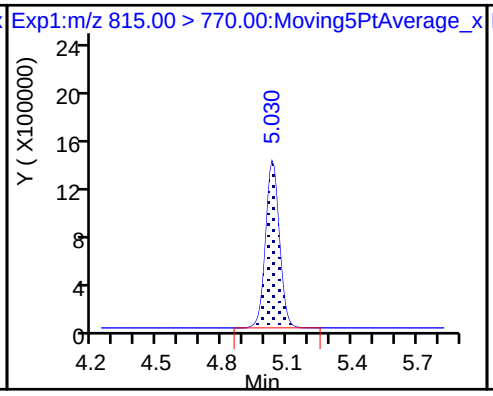
45 Perfluorohexadecanoic acid



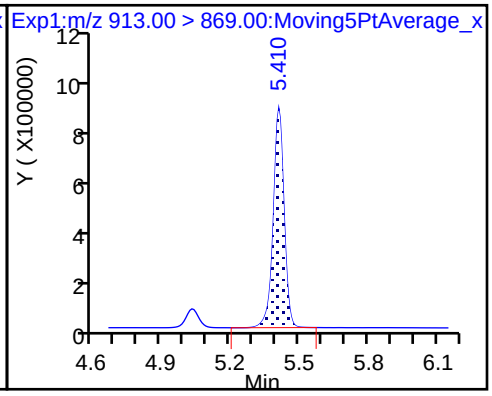
45 Perfluorohexadecanoic acid



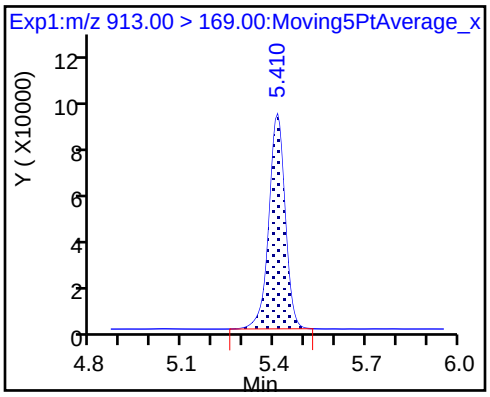
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215294/14 Calibration Date: 03/28/2018 20:10

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9503		2.52	2.50	0.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.153		2.56	2.50	2.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.32		2.28	2.21	3.4	50.0
4:2 FTS	AveID	16.15	15.51		2.24	2.34	-4.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.030		2.52	2.50	0.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.033		2.50	2.50	-0.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.071		2.19	2.28	-3.8	40.0
6:2FTS	AveID	1.744	1.764		2.40	2.37	1.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.409		2.62	2.38	9.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.178		2.61	2.50	4.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.104		2.30	2.32	-0.9	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.054		2.64	2.50	5.7	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.011		2.57	2.50	2.6	40.0
8:2FTS	AveID	1.276	1.272		2.39	2.40	-0.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.000		2.53	2.50	1.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.115		2.78	2.50	11.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7200		2.55	2.41	5.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9474		2.54	2.50	1.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7727		2.24	2.50	-10.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.072		2.56	2.50	2.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.231		2.80	2.50	11.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2574		2.60	2.50	3.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9499		2.59	2.50	3.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9587		2.59	2.50	3.7	50.0
13C4 PFBA	Ave	1.266	1.366		2.70	2.50	7.9	50.0
13C5 PFPeA	Ave	0.8399	0.9015		2.68	2.50	7.3	50.0
13C3-PFBS	Ave	0.0192	0.0203		2.46	2.33	5.9	50.0
M2-4:2FTS	Ave	0.1324	0.1399		2.47	2.34	5.7	50.0
13C2 PFHxA	Ave	0.9288	0.9550		2.57	2.50	2.8	50.0
13C4-PFHpA	Ave	0.9164	0.9432		2.57	2.50	2.9	50.0
18O2 PFHxS	Ave	1.130	1.224		2.56	2.37	8.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215294/14 Calibration Date: 03/28/2018 20:10

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2010		2.51	2.38	5.8	40.0
13C4 PFOA	Ave	0.9374	0.9239		2.46	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8225	0.8328		2.42	2.39	1.3	50.0
13C5 PFNA	Ave	0.8266	0.7812		2.36	2.50	-5.5	50.0
13C8 FOSA	Ave	1.109	1.225		2.76	2.50	10.4	50.0
M2-8:2FTS	Ave	0.2565	0.2470		2.31	2.40	-3.7	40.0
13C2 PFDA	Ave	0.7245	0.6900		2.38	2.50	-4.8	50.0
d3-NMeFOSAA	Ave	0.3814	0.3308		2.17	2.50	-13.2	50.0
13C2 PFUnA	Ave	0.6482	0.5859		2.26	2.50	-9.6	50.0
d5-NEtFOSAA	Ave	0.4345	0.3596		2.07	2.50	-17.2	50.0
13C2 PFDoA	Ave	0.7355	0.6250		2.12	2.50	-15.0	50.0
13C2-PFTeDA	Ave	0.8983	0.7969		2.22	2.50	-11.3	50.0
13C2-PFHxDA	Ave	1.473	1.464		2.49	2.50	-0.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 28-Mar-2018 20:10:07 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:50:11 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:49:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.530	6261710	2.70		108	85060	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	5950781	2.52		101	3089	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.000	4761612	2.56		102	1841	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.718	-0.001	0.630	4131036	2.68		107	101131	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.000	6608283	2.28		103	4156	
298.90 > 99.00	1.753	1.753	0.0	1.000	2759028		2.40(1.25-3.74)		4025	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.643	86553	2.46		106	549	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.976	1.976	0.0	1.000	1348154	2.24		96.0	62140	
D 60 M2-4:2FTS										
329.00 > 81.00	1.976	1.976	0.0	0.725	598930	2.47		106	9065	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	4505978	2.52		101	7275	
313.00 > 119.00	2.008	2.008	0.0	1.000	418402		10.77(5.03-15.10)		5722	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.019	-0.011	0.736	4376327	2.57		103	131340	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.353	2.353	0.0	1.000	4463436	2.50		99.8	3484	
363.00 > 169.00	2.353	2.353	0.0	1.000	1766383		2.53(1.13-3.40)		4579	
D 9 13C4-PFHpA										
367.00 > 322.00	2.353	2.354	-0.001	0.863	4322354	2.57		103	92700	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.367	2.367	0.0	1.000	5462398	2.19		96.2	18510	
399.00 > 99.00	2.367	2.367	0.0	1.000	1793193		3.05(1.50-4.49)		8276	
D 11 18O2 PFHxS										
403.00 > 84.00	2.367	2.368	-0.001	0.868	5304336	2.56		108	61842	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.695	2.695	0.0	1.000	1540016	2.40		101	17369	
D 12 M2-6:2FTS										
429.00 > 81.00	2.695	2.705	-0.010	0.988	874950	2.51		106	27991	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.726	2.726	0.0	1.000	5118102	2.62		110	78842	
449.00 > 99.00	2.726	2.726	0.0	1.000	1319069		3.88(1.94-5.82)		30062	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.726	2.726	0.0	1.003	4987083	2.61		104	1949	
413.00 > 169.00	2.726	2.726	0.0	1.003	2578385		1.93(0.84-2.52)		9956	
* 62 13C2-PFOA										
415.00 > 370.00	2.726	2.726	0.0		4582531	2.50			104480	
D 14 13C4 PFOA										
417.00 > 372.00	2.718	2.728	-0.010	0.997	4233987	2.46		98.6	68451	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.095	3.095	0.0	1.000	3908264	2.30		99.1	7781	
499.00 > 99.00	3.095	3.095	0.0	1.000	880090		4.44(2.31-6.93)		29705	
20 Perfluorononanoic acid										
463.00 > 419.00	3.103	3.103	0.0	1.000	3774305	2.64		106	3386	
463.00 > 169.00	3.103	3.103	0.0	1.000	875409		4.31(1.90-5.69)		20158	
D 19 13C5 PFNA										
468.00 > 423.00	3.103	3.112	-0.009	1.138	3579744	2.36		94.5	91563	
D 18 13C4 PFOS										
503.00 > 80.00	3.095	3.112	-0.017	1.135	3648351	2.42		101	34378	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	5675160	2.56		103	51945	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.418	-0.001	1.253	5611625	2.76		110	61929	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.454	3.454	0.0	1.000	1379280	2.39		99.7	19807	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.463	3.463	0.0	1.000	3161822	2.53		101	14059	
513.00 > 169.00	3.463	3.463	0.0	1.000	568812		5.56(2.36-7.09)		15278	
D 26 M2-8:2FTS										
529.00 > 81.00	3.454	3.464	-0.010	1.267	1084365	2.31		96.3	28886	
D 23 13C2 PFDA										
515.00 > 470.00	3.463	3.473	-0.010	1.270	3162000	2.38		95.2	40242	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.623	3.623	0.0	1.000	1689898	2.78		111	11731	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.623	3.633	-0.010	1.329	1516084	2.17		86.8	35047	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.781	3.781	0.0	1.000	2648669	2.55		106	60097	
599.00 > 99.00	3.781	3.781	0.0	1.000	890297		2.98(1.39-4.16)		20184	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.792	3.792	0.0	1.000	1561001	2.54		101	38577	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.802	3.802	0.0	1.003	2074449	2.24		89.6	4501	
563.00 > 169.00	3.802	3.802	0.0	1.003	533757		3.89(2.12-6.36)		40526	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.804	-0.012	1.391	1647666	2.07		82.8	3626	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.804	-0.012	1.391	2684709	2.26		90.4	59601	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.092	4.092	0.0	1.000	3070277	2.56		102	2347	
613.00 > 169.00	4.092	4.092	0.0	1.000	771707		3.98(2.13-6.40)		10407	
D 36 13C2 PFDoA										
615.00 > 570.00	4.092	4.105	-0.013	1.501	2864054	2.12		85.0	20730	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.356	4.356	0.0	1.000	3524624	2.80		112	1467	
663.00 > 169.00	4.356	4.356	0.0	1.000	1064528		3.31(1.25-3.76)		14941	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.601	4.601	0.0	1.000	939817	2.60		104	9476	
713.00 > 219.00	4.590	4.601	-0.011	0.998	659758		1.42(0.71-2.13)		8819	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.601	4.613	-0.012	1.688	3651628	2.22		88.7	24528	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.012	5.012	0.0	1.000	6372810	2.59		104	1325	
813.00 > 169.00	5.012	5.012	0.0	1.000	1035424		6.15(2.86-8.58)		7078	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.012	5.040	-0.028	1.838	6709307	2.49		99.4	16930	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.387	5.387	0.0	1.000	6432363	2.59		104	1491	
913.00 > 169.00	5.387	5.387	0.0	1.000	816489		7.88(3.83-11.48)		5416	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 07:50:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_017.d

Injection Date: 28-Mar-2018 20:10:07 Instrument ID: A8_N

Lims ID: CCV L5

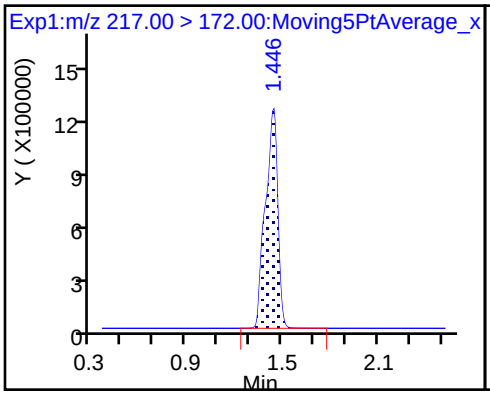
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 14

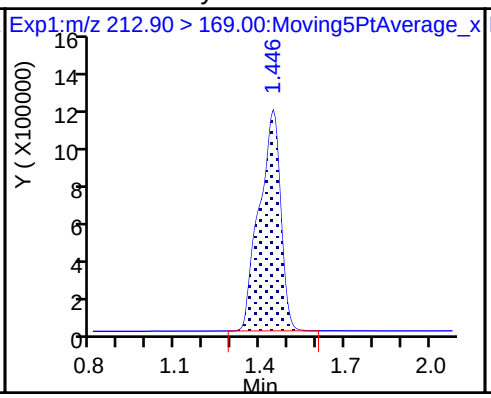
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

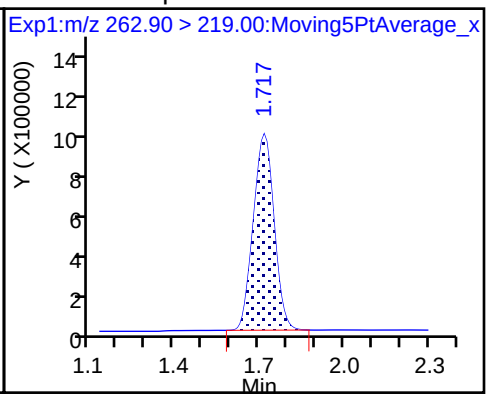
D 1 13C4 PFBA



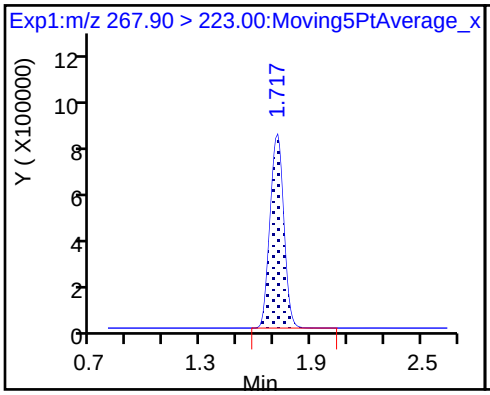
2 Perfluorobutyric acid



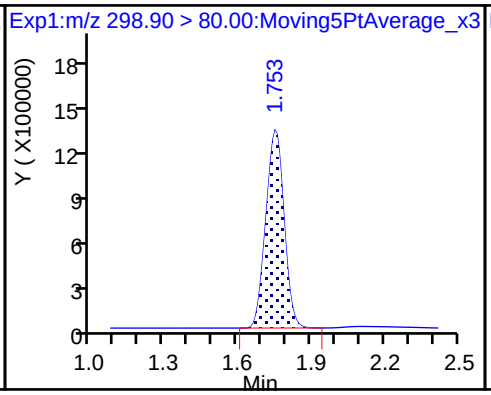
4 Perfluoropentanoic acid



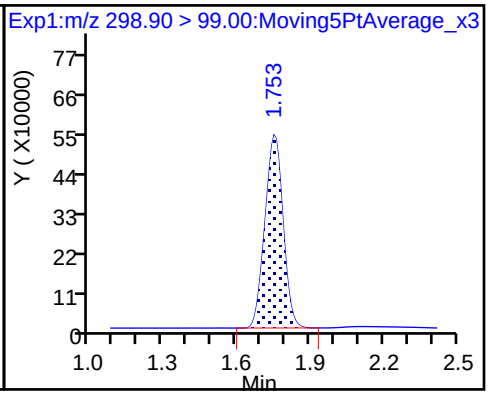
D 3 13C5-PFPeA



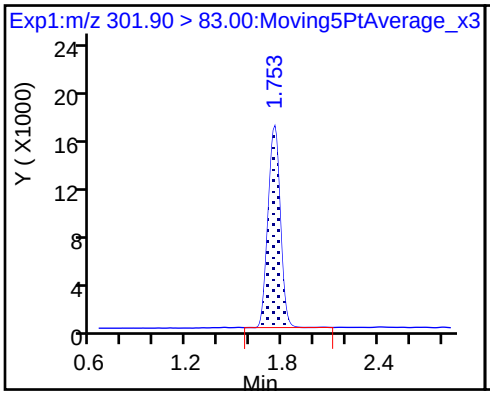
5 Perfluorobutanesulfonic acid



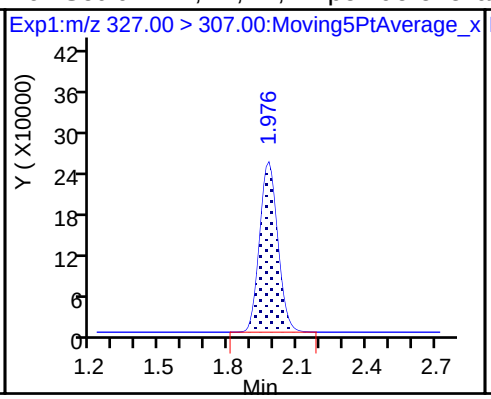
5 Perfluorobutanesulfonic acid



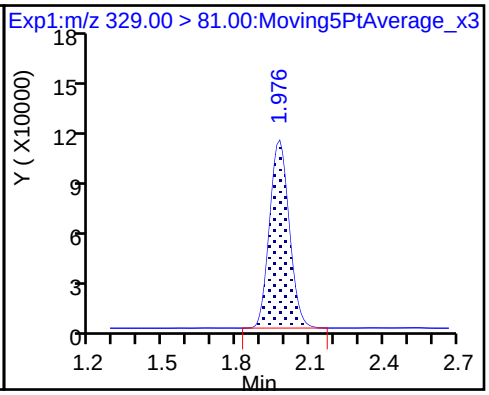
D 47 13C3-PFBS



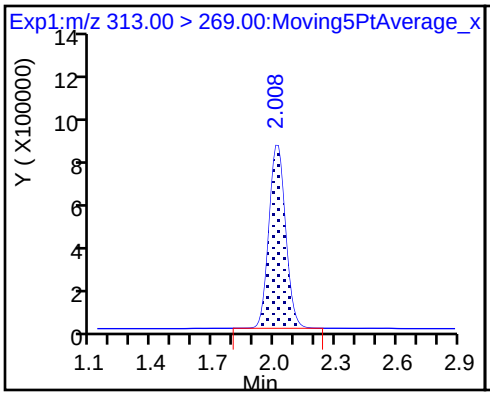
61 Sodium 1H,1H,2H,2H-perfluorohexa



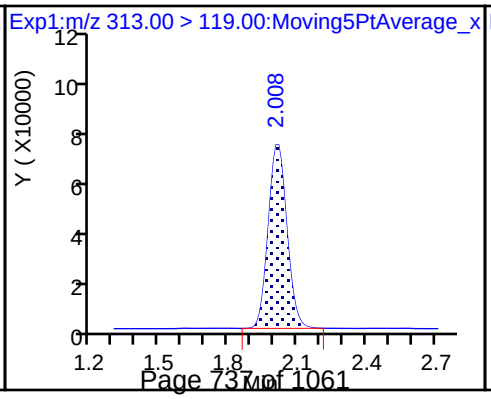
D 60 M2-4:2FTS



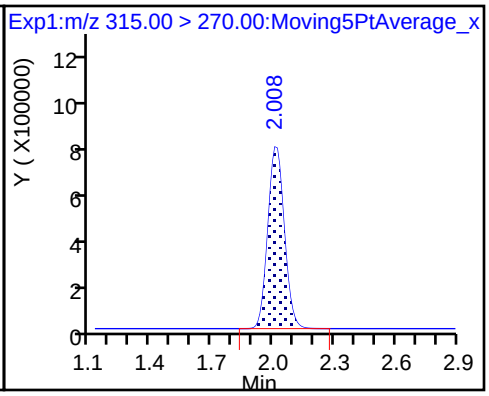
6 Perfluorohexanoic acid



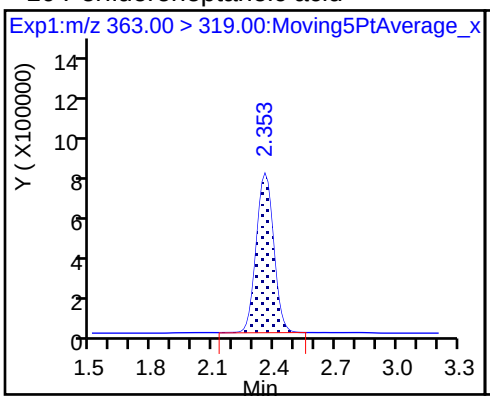
6 Perfluorohexanoic acid



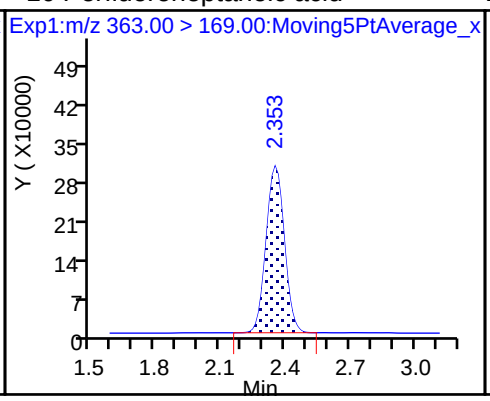
D 7 13C2 PFHxA



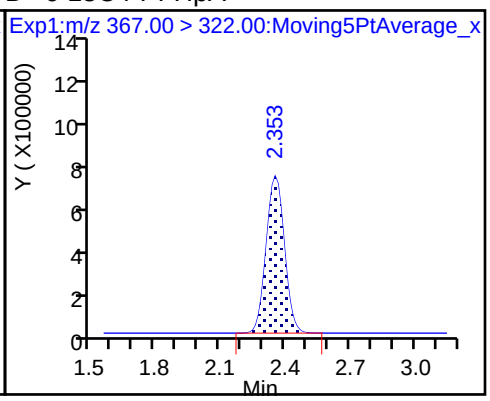
10 Perfluoroheptanoic acid



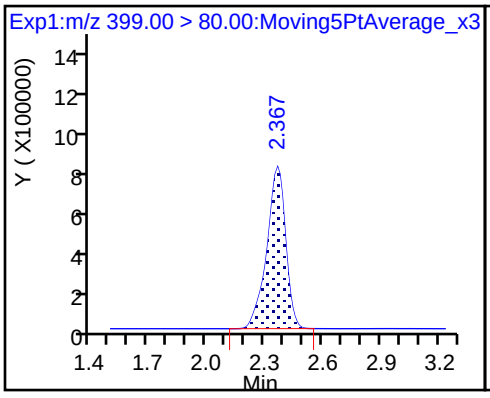
10 Perfluoroheptanoic acid



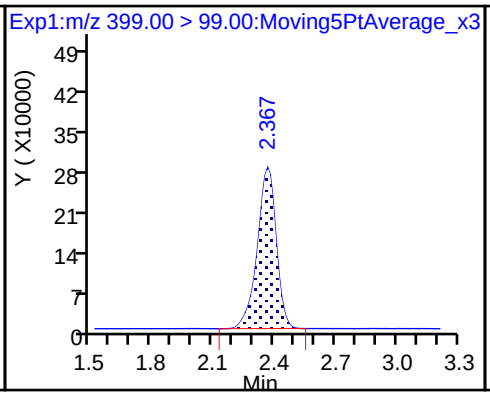
D 9 13C4-PFHpA



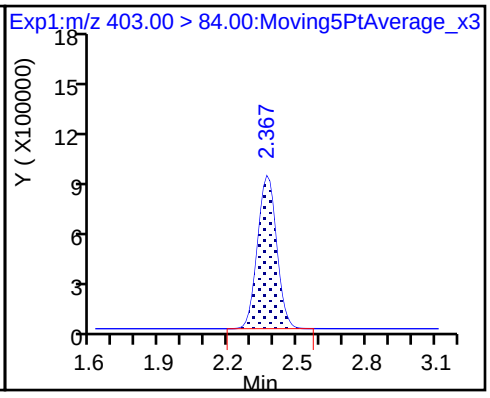
8 Perfluorohexanesulfonic acid



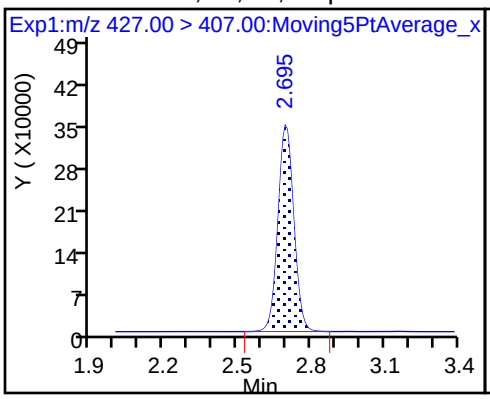
8 Perfluorohexanesulfonic acid



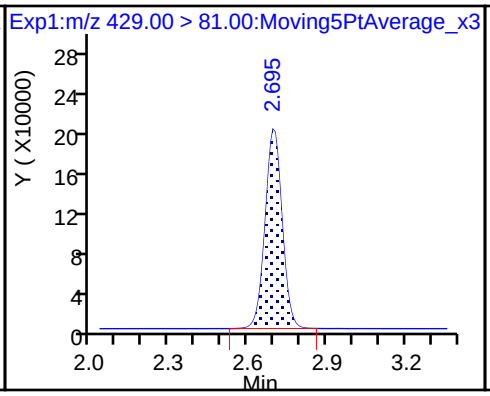
D 11 18O2 PFHxS



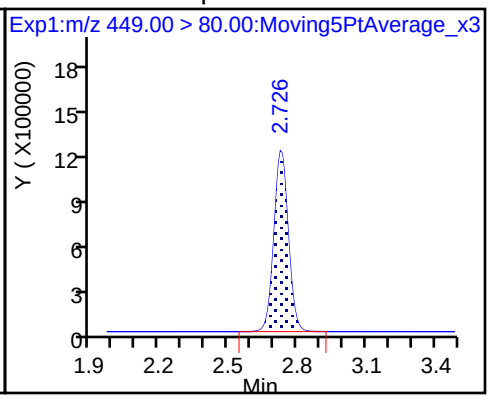
13 Sodium 1H,1H,2H,2H-perfluorooctane



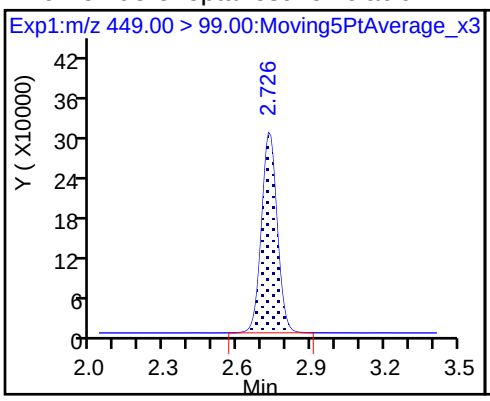
D 12 M2-6:2FTS



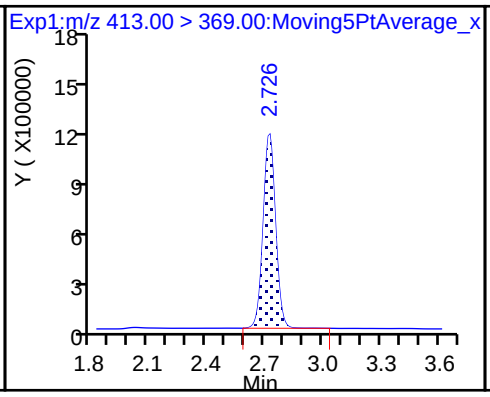
16 Perfluoroheptanesulfonic acid



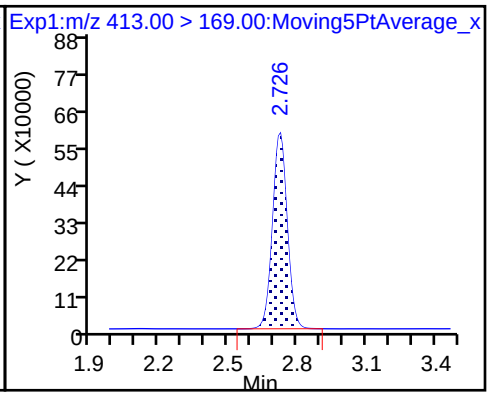
16 Perfluoroheptanesulfonic acid



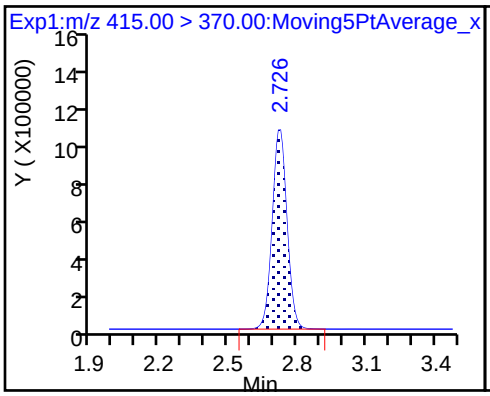
15 Perfluorooctanoic acid



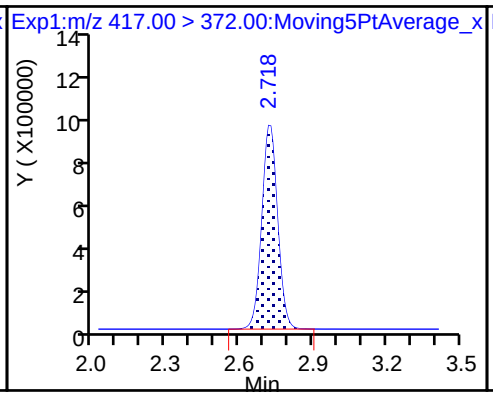
15 Perfluorooctanoic acid



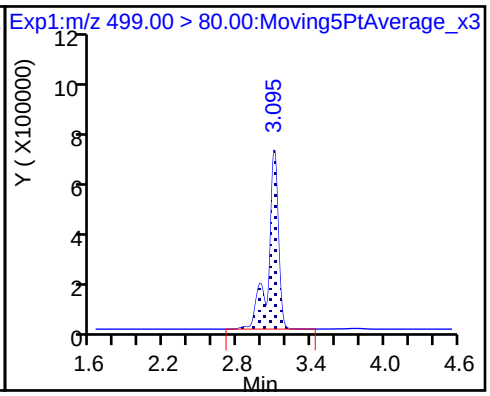
* 62 13C2-PFOA



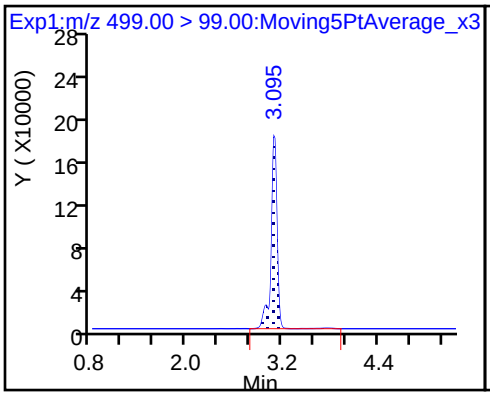
D 14 13C4 PFOA



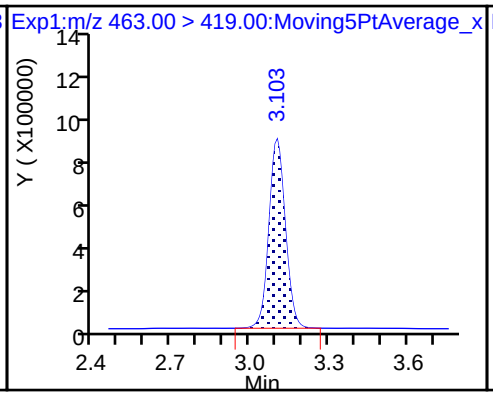
17 Perfluorooctane sulfonic acid



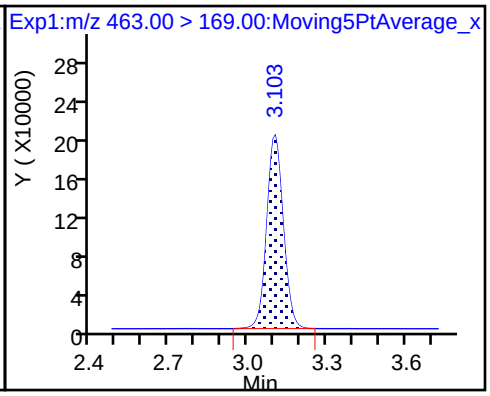
17 Perfluorooctane sulfonic acid



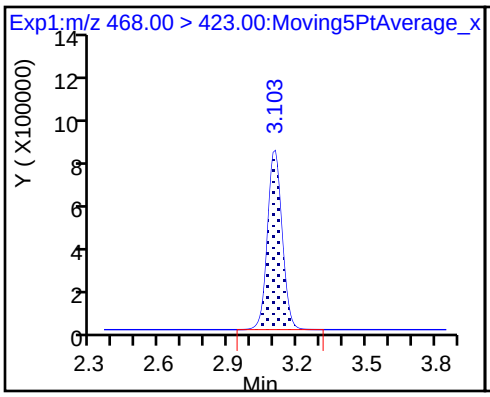
20 Perfluorononanoic acid



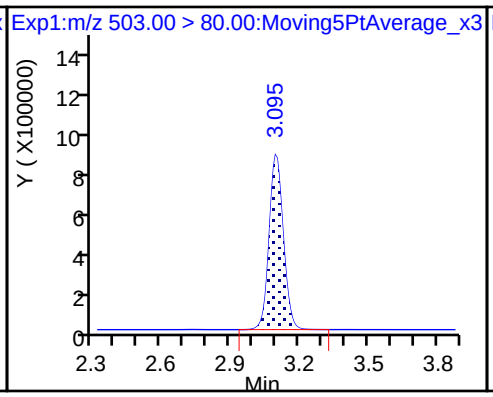
20 Perfluorononanoic acid



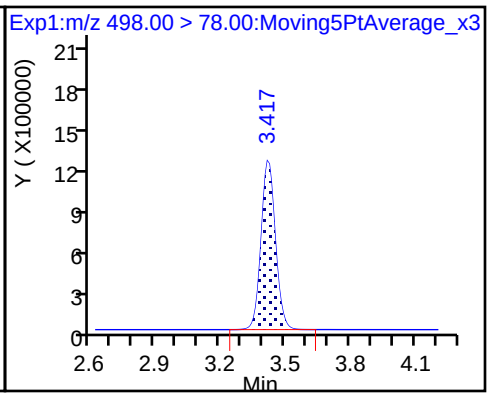
D 19 13C5 PFNA



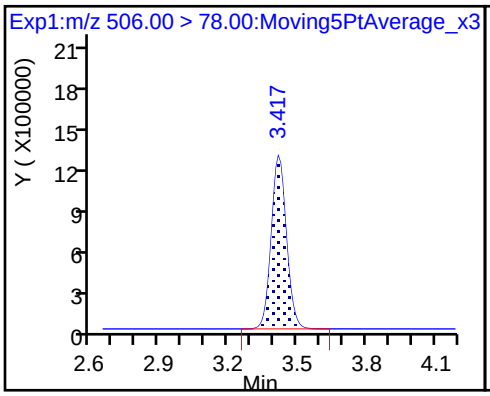
D 18 13C4 PFOS



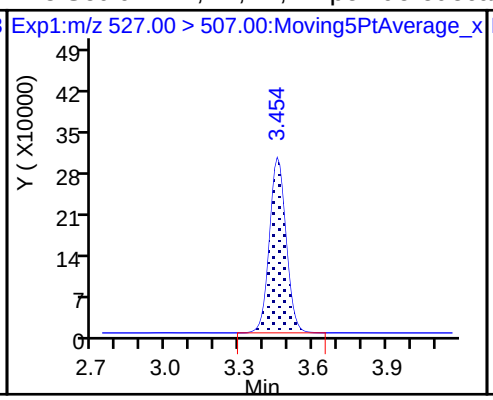
22 Perfluorooctane Sulfonamide



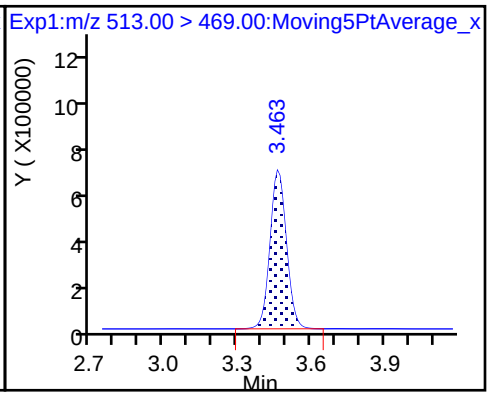
D 21 13C8 FOSA



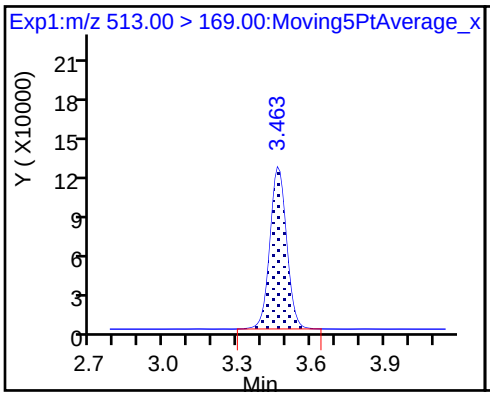
25 Sodium 1H,1H,2H,2H-perfluorodecan



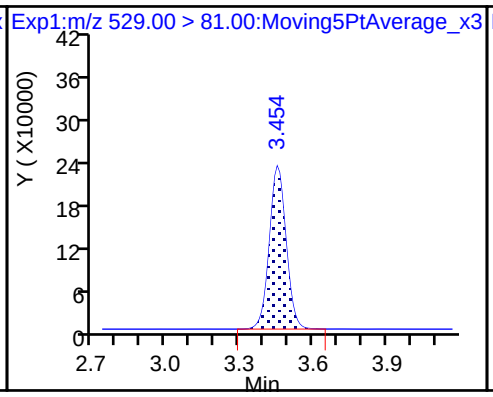
24 Perfluorodecanoic acid



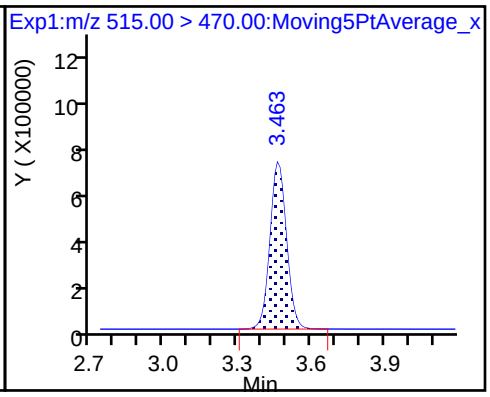
24 Perfluorodecanoic acid



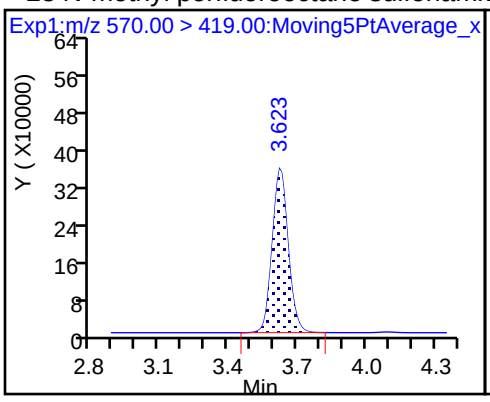
D 26 M2-8:2FTS



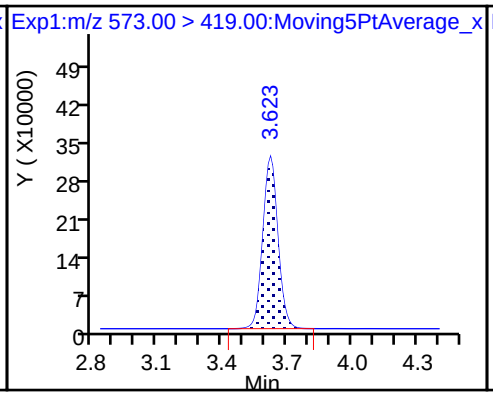
D 23 13C2 PFDA



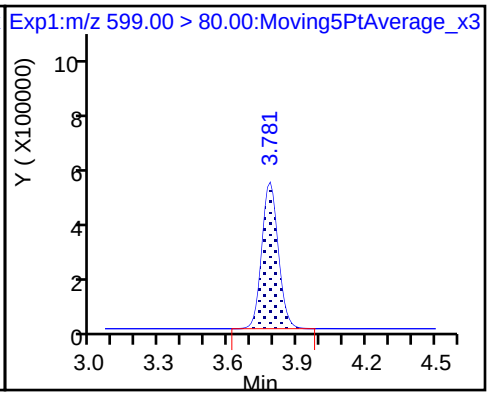
28 N-methyl perfluorooctane sulfonami



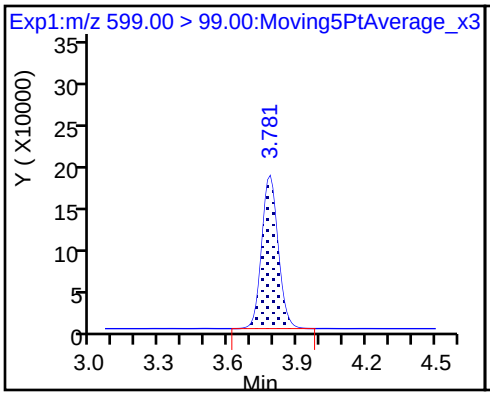
D 27 d3-NMeFOSAA



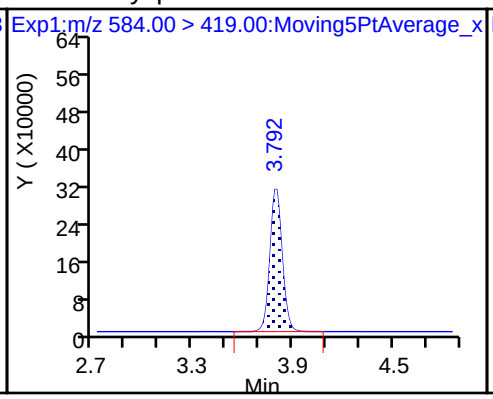
29 Perfluorodecane Sulfonic acid



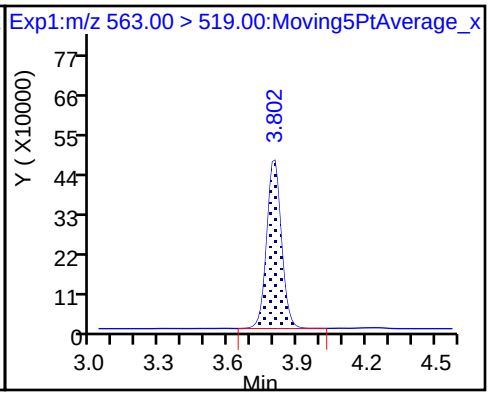
29 Perfluorodecane Sulfonic acid



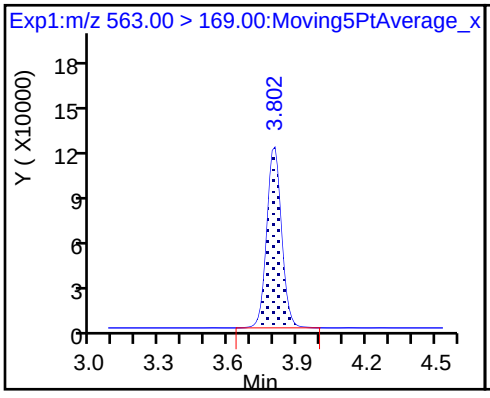
33 N-ethyl perfluorooctane sulfonamid



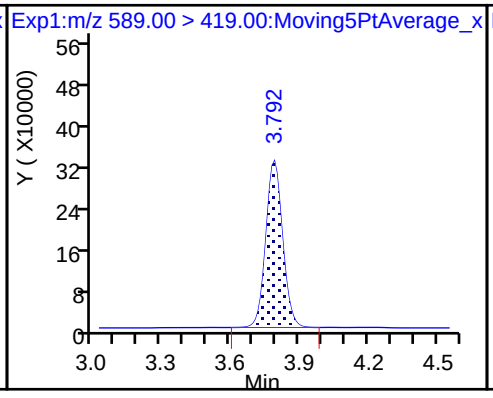
31 Perfluoroundecanoic acid



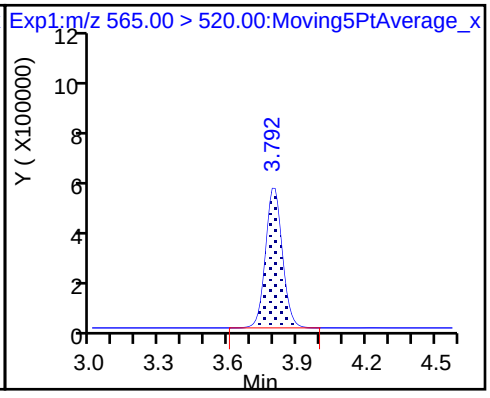
31 Perfluoroundecanoic acid



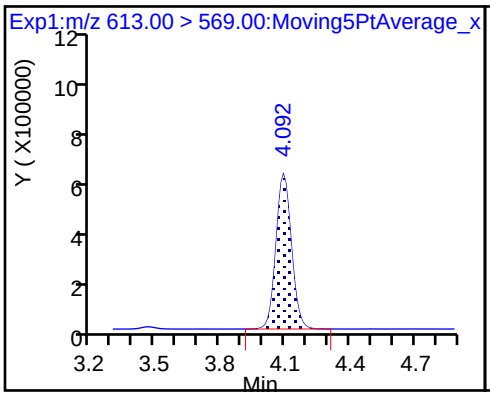
D 32 d5-NEtFOSAA



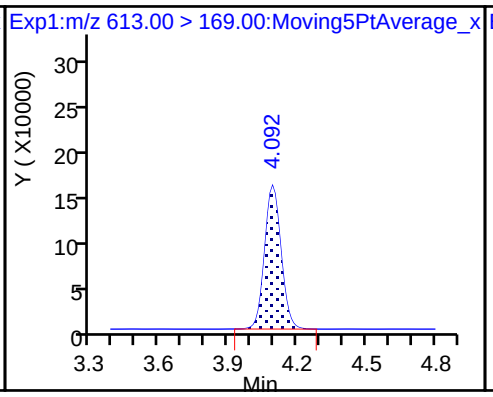
D 30 13C2 PFUnA



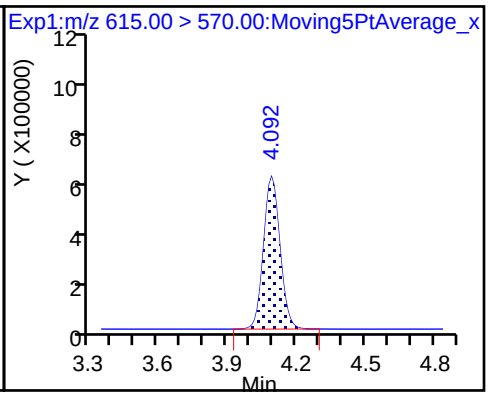
37 Perfluorododecanoic acid



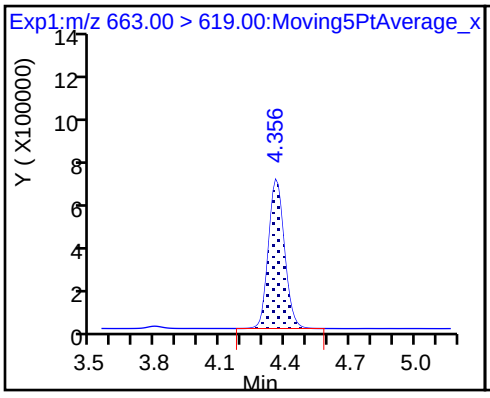
37 Perfluorododecanoic acid



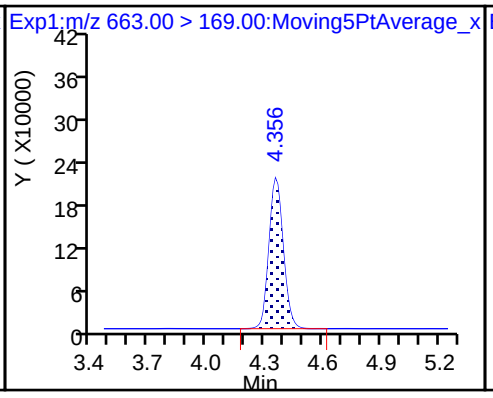
D 36 13C2 PFDoA



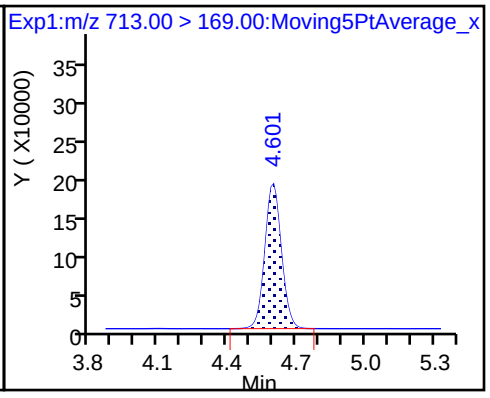
41 Perfluorotridecanoic acid



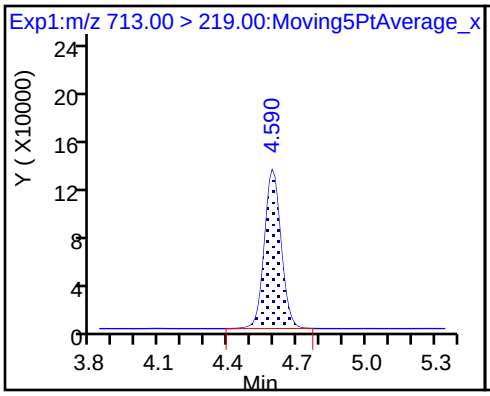
41 Perfluorotridecanoic acid



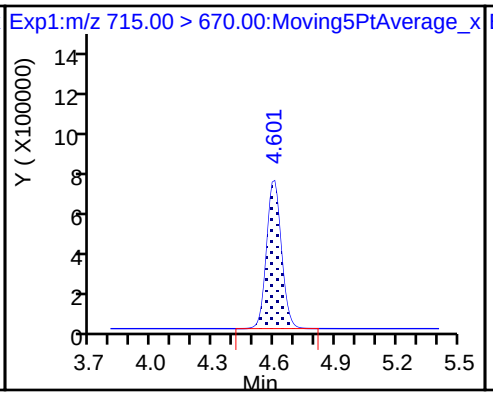
42 Perfluorotetradecanoic acid



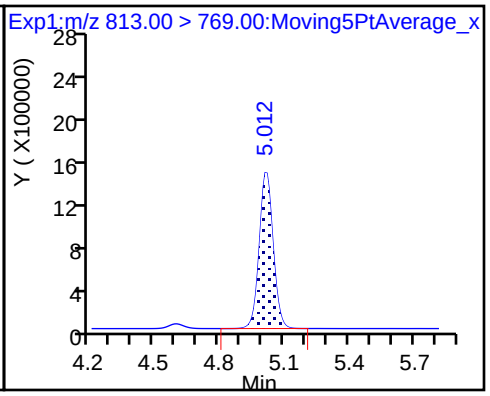
42 Perfluorotetradecanoic acid



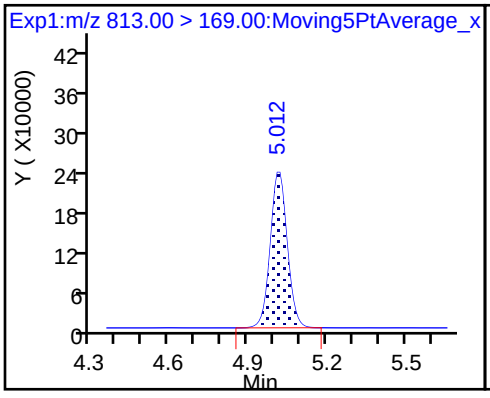
D 43 13C2-PFTeDA



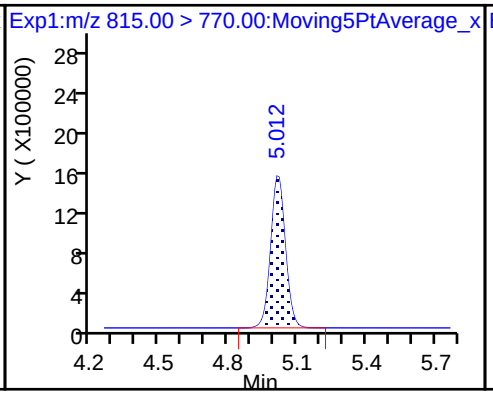
45 Perfluorohexadecanoic acid



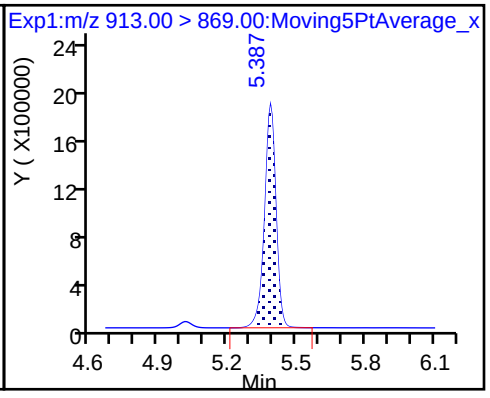
45 Perfluorohexadecanoic acid



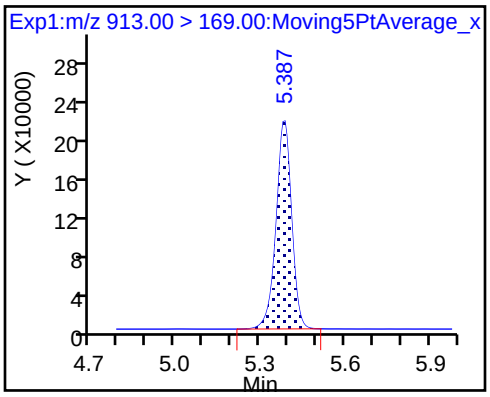
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215294/21 Calibration Date: 03/28/2018 21:04

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9094		0.965	1.00	-3.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.127		1.00	1.00	-0.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	77.79		0.885	0.884	0.1	50.0
4:2 FTS	AveID	16.15	14.81		0.856	0.934	-8.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.055		1.03	1.00	3.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.042		1.01	1.00	0.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.020		0.834	0.910	-8.3	40.0
6:2FTS	AveID	1.744	1.683		0.915	0.948	-3.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.260		0.936	0.952	-1.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.090		0.965	1.00	-3.5	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.023		1.03	1.00	2.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.042		0.868	0.928	-6.5	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9661		0.980	1.00	-2.0	40.0
8:2FTS	AveID	1.276	1.197		0.899	0.958	-6.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9769		0.989	1.00	-1.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9823		0.982	1.00	-1.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6347		0.900	0.964	-6.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9510		1.02	1.00	1.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7787		0.903	1.00	-9.7	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.012		0.967	1.00	-3.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.080		0.981	1.00	-1.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2515		1.02	1.00	1.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9326		1.00	1.00	0.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9903		1.07	1.00	7.1	50.0
13C4 PFBA	Ave	1.266	1.356		2.68	2.50	7.1	50.0
13C5 PFPeA	Ave	0.8399	0.8665		2.58	2.50	3.2	50.0
13C3-PFBS	Ave	0.0192	0.0202		2.45	2.33	5.3	50.0
M2-4:2FTS	Ave	0.1324	0.1336		2.36	2.34	0.9	50.0
13C2 PFHxA	Ave	0.9288	0.9251		2.49	2.50	-0.4	50.0
13C4-PFHpA	Ave	0.9164	0.9311		2.54	2.50	1.6	50.0
18O2 PFHxS	Ave	1.130	1.208		2.53	2.37	6.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215294/21 Calibration Date: 03/28/2018 21:04

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLDXD_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1951		2.44	2.38	2.7	40.0
13C4 PFOA	Ave	0.9374	0.9239		2.46	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8225	0.8557		2.49	2.39	4.0	50.0
13C5 PFNA	Ave	0.8266	0.7855		2.38	2.50	-5.0	50.0
13C8 FOSA	Ave	1.109	1.203		2.71	2.50	8.4	50.0
M2-8:2FTS	Ave	0.2565	0.2327		2.17	2.40	-9.3	40.0
13C2 PFDA	Ave	0.7245	0.6808		2.35	2.50	-6.0	50.0
d3-NMeFOSAA	Ave	0.3814	0.3320		2.18	2.50	-12.9	50.0
d5-NEtFOSAA	Ave	0.4345	0.3427		1.97	2.50	-21.1	50.0
13C2 PFUnA	Ave	0.6482	0.5600		2.16	2.50	-13.6	50.0
13C2 PFDoA	Ave	0.7355	0.6350		2.16	2.50	-13.7	50.0
13C2-PFTeDA	Ave	0.8983	0.7380		2.05	2.50	-17.8	50.0
13C2-PFHxDA	Ave	1.473	1.250		2.12	2.50	-15.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_024.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 28-Mar-2018 21:04:58 ALS Bottle#: 13 Worklist Smp#: 21
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:55:52 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:55:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.530	6331500	2.68		107	102727	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2303169	0.9652		96.5	744	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.000	1824636	1.00		100	756	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.718	-0.009	0.628	4046084	2.58		103	114851	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.754	1.754	0.0	1.005	2593698	0.8850		100	1746	
298.90 > 99.00	1.754	1.754	0.0	1.005	1071636		2.42(1.25-3.74)		1630	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.754	-0.009	0.641	87694	2.45		105	616	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	521672	0.8563		91.7	24146	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.976	-0.010	0.723	582648	2.36		101	8217	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.009	2.009	0.0	1.000	1822332	1.03		103	2794	
313.00 > 119.00	2.009	2.009	0.0	1.000	171198		10.64(5.03-15.10)		1852	
D 7 13C2 PFHxA										
315.00 > 270.00	2.009	2.019	-0.010	0.738	4319769	2.49		99.6	131375	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.354	2.354	0.0	1.000	1812190	1.01		101	1180	
363.00 > 169.00	2.354	2.354	0.0	1.000	672624		2.69(1.13-3.40)		1442	
D 9 13C4-PFHpA										
367.00 > 322.00	2.354	2.354	0.0	0.865	4347650	2.54		102	82030	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.368	2.368	0.0	1.000	2094910	0.8340		91.7	9141	
399.00 > 99.00	2.368	2.368	0.0	1.000	726756		2.88(1.50-4.49)		4707	
D 11 18O2 PFHxS										
403.00 > 84.00	2.368	2.368	0.0	0.870	5337069	2.53		107	77076	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.697	2.697	0.0	1.000	581256	0.9148		96.5	2187	
D 12 M2-6:2FTS										
429.00 > 81.00	2.697	2.705	-0.008	0.991	865457	2.44		103	24661	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.721	2.721	0.0	1.000	1916787	0.9361		98.3	40112	
449.00 > 99.00	2.721	2.721	0.0	1.000	531612		3.61(1.94-5.82)		10190	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.721	2.721	0.0	1.000	1881397	0.9651		96.5	779	
413.00 > 169.00	2.721	2.721	0.0	1.000	984133		1.91(0.84-2.52)		3831	
* 62 13C2-PFOA										
415.00 > 370.00	2.721	2.721	0.0		4669445	2.50			63674	
D 14 13C4 PFOA										
417.00 > 372.00	2.721	2.728	-0.007	1.000	4313929	2.46		98.6	70994	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.096	3.096	0.0	1.000	1545197	0.8680		93.5	4085	
499.00 > 99.00	3.096	3.096	0.0	1.000	348503		4.43(2.31-6.93)		2862	
20 Perfluorononanoic acid										
463.00 > 419.00	3.096	3.096	0.0	1.000	1500284	1.03		103	1548	
463.00 > 169.00	3.096	3.096	0.0	1.000	356742		4.21(1.90-5.69)		9316	
D 19 13C5 PFNA										
468.00 > 423.00	3.096	3.112	-0.016	1.138	3667727	2.38		95.0	78252	
D 18 13C4 PFOS										
503.00 > 80.00	3.096	3.112	-0.016	1.138	3819637	2.49		104	41049	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	2170193	0.9800		98.0	27877	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.418	-0.001	1.256	5615876	2.71		108	51743	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.453	3.453	0.0	1.000	498545	0.8987		93.8	7563	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.462	3.462	0.0	1.000	1242265	0.9887		98.9	5507	
513.00 > 169.00	3.462	3.462	0.0	1.000	221029		5.62(2.36-7.09)		6826	
D 26 M2-8:2FTS										
529.00 > 81.00	3.453	3.464	-0.011	1.269	1040936	2.17		90.7	37272	
D 23 13C2 PFDA										
515.00 > 470.00	3.462	3.473	-0.011	1.273	3178973	2.35		94.0	49427	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.621	3.621	0.0	1.003	609137	0.9816		98.2	4808	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.611	3.633	-0.022	1.327	1550241	2.18		87.1	32429	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.769	3.769	0.0	1.000	977838	0.8998		93.3	39742	
599.00 > 99.00	3.769	3.769	0.0	1.000	344874		2.84(1.39-4.16)		11617	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.790	3.790	0.0	1.003	608642	1.02		102	12298	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.790	3.790	0.0	1.000	814514	0.9032		90.3	3124	
563.00 > 169.00	3.790	3.790	0.0	1.000	209417		3.89(2.12-6.36)		8187	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.779	3.804	-0.025	1.389	1600002	1.97		78.9	3828	
D 30 13C2 PFUnA										
565.00 > 520.00	3.790	3.804	-0.014	1.393	2614922	2.16		86.4	106484	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.089	4.089	0.0	1.000	1200076	0.9669		96.7	850	
613.00 > 169.00	4.089	4.089	0.0	1.000	311758		3.85(2.13-6.40)		5702	
D 36 13C2 PFDoA										
615.00 > 570.00	4.089	4.105	-0.016	1.503	2965303	2.16		86.3	23982	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.350	4.350	0.0	1.000	1280676	0.9809		98.1	557	
663.00 > 169.00	4.350	4.350	0.0	1.000	392472		3.26(1.25-3.76)		7049	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.595	4.595	0.0	1.002	346693	1.02		102	4611	
713.00 > 219.00	4.585	4.595	-0.010	1.000	239782		1.45(0.71-2.13)		4847	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.585	4.613	-0.028	1.685	3445941	2.05		82.2	18561	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.008	5.008	0.0	1.000	2177924	1.00		100	513	
813.00 > 169.00	5.008	5.008	0.0	1.000	349605		6.23(2.86-8.58)		3474	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.008	5.040	-0.032	1.841	5838069	2.12		84.9	15907	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.377	5.377	0.0	1.000	2312456	1.07		107	484	
913.00 > 169.00	5.377	5.377	0.0	1.000	295799		7.82(3.83-11.48)		3289	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 07:55:53 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_024.d

Injection Date: 28-Mar-2018 21:04:58 Instrument ID: A8_N

Lims ID: CCV L4

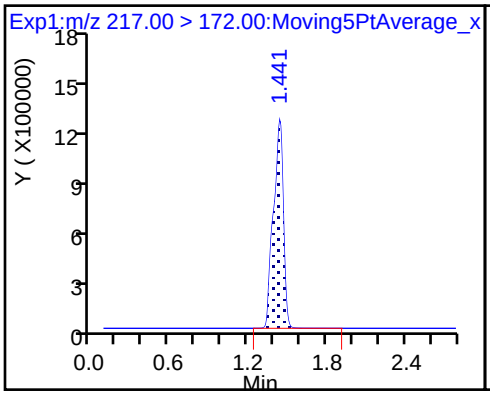
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 21

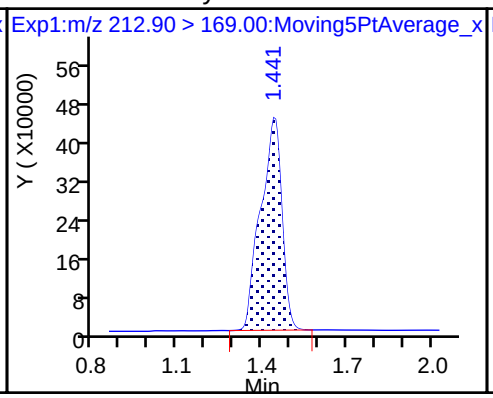
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

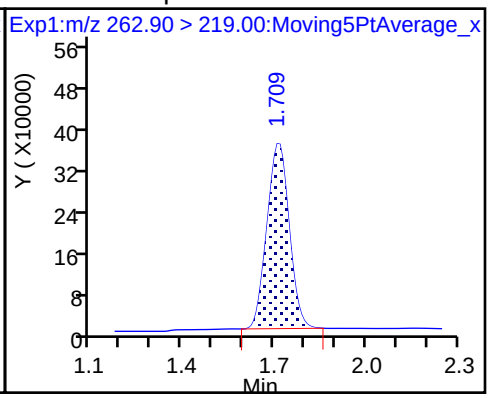
D 1 13C4 PFBA



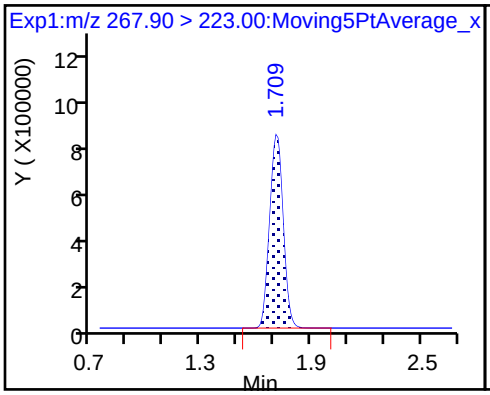
2 Perfluorobutyric acid



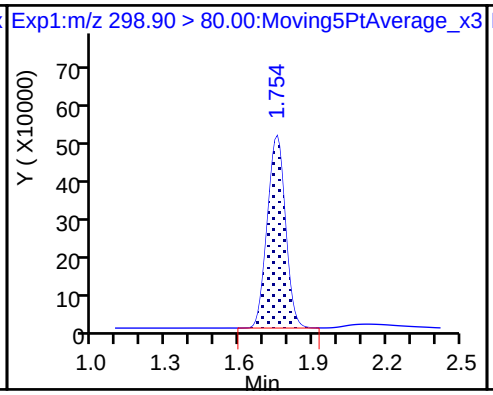
4 Perfluoropentanoic acid



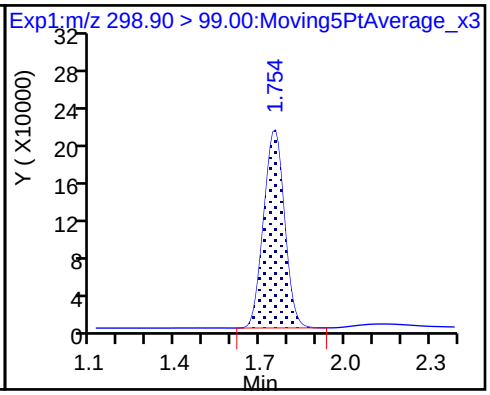
D 3 13C5-PFPeA



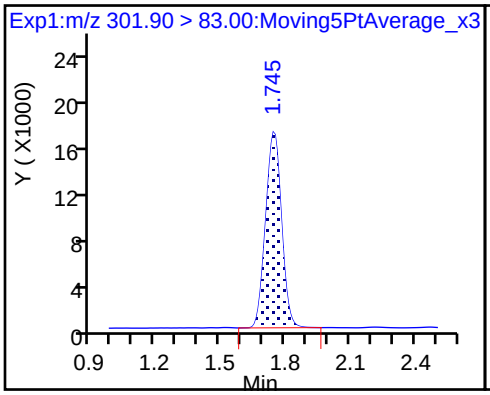
5 Perfluorobutanesulfonic acid



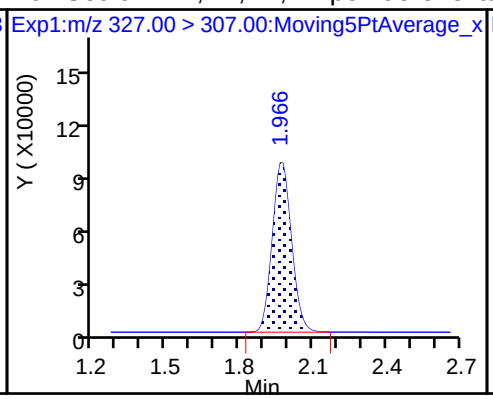
5 Perfluorobutanesulfonic acid



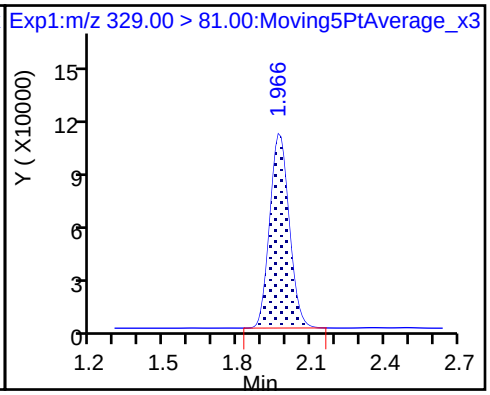
D 47 13C3-PFBS



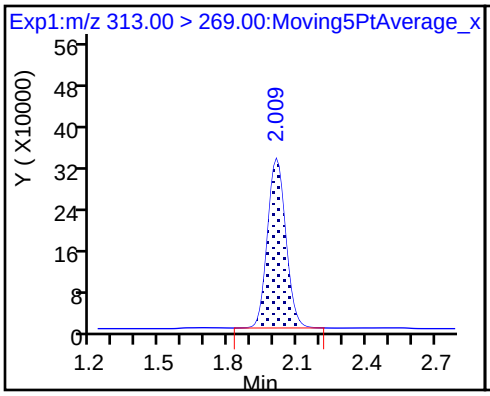
61 Sodium 1H,1H,2H,2H-perfluorohexa



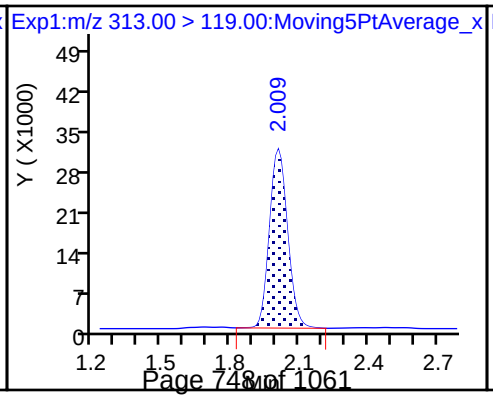
D 60 M2-4:2FTS



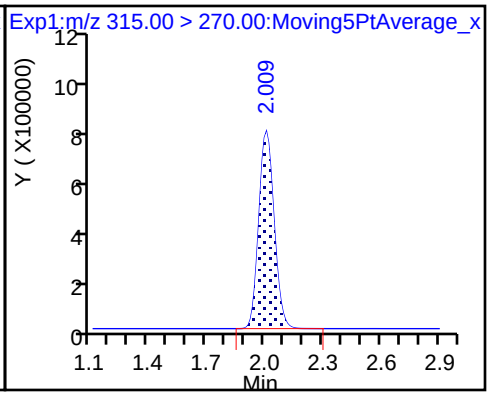
6 Perfluorohexanoic acid



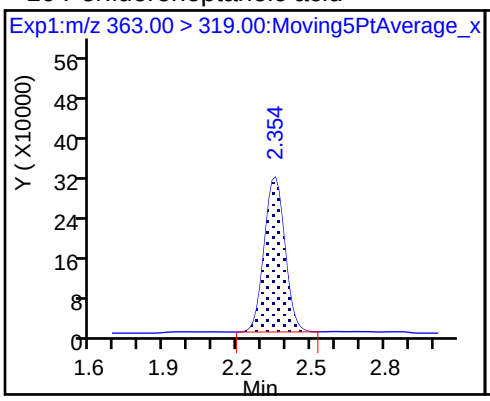
6 Perfluorohexanoic acid



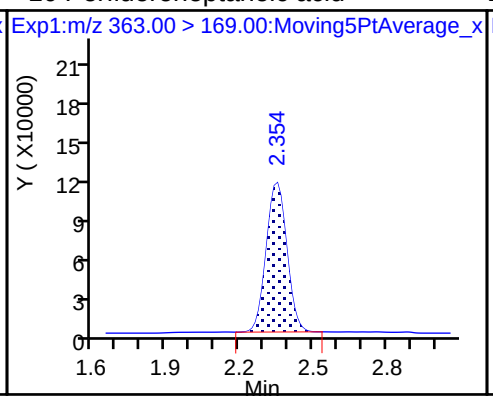
D 7 13C2 PFHxA



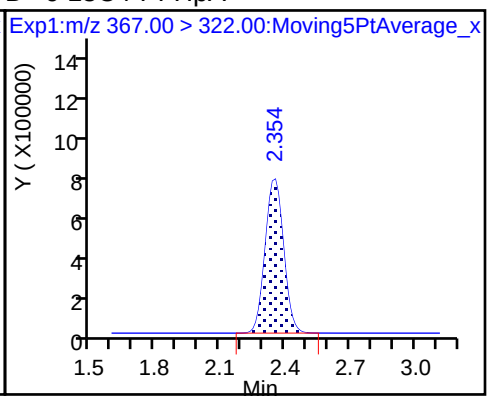
10 Perfluoroheptanoic acid



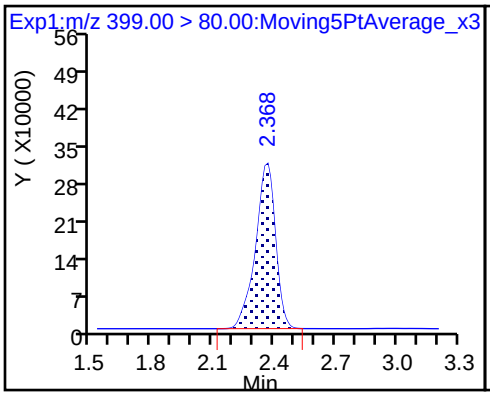
10 Perfluoroheptanoic acid



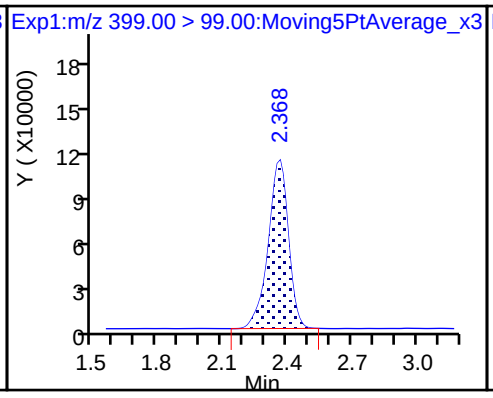
D 9 13C4-PFHpA



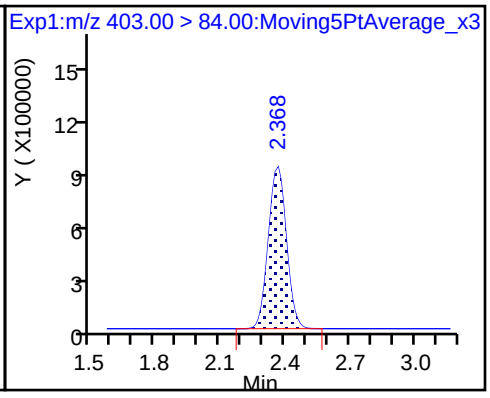
8 Perfluorohexanesulfonic acid



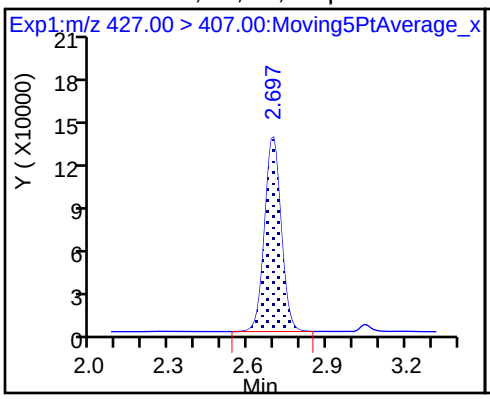
8 Perfluorohexanesulfonic acid



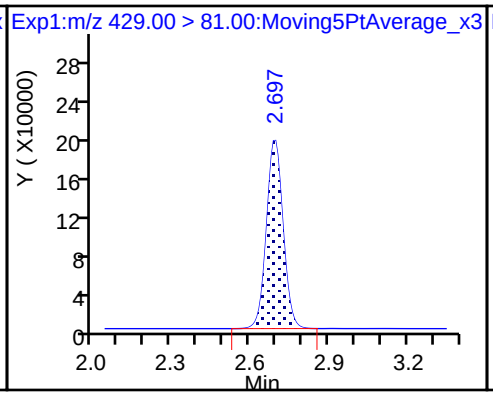
D 11 18O2 PFHxS



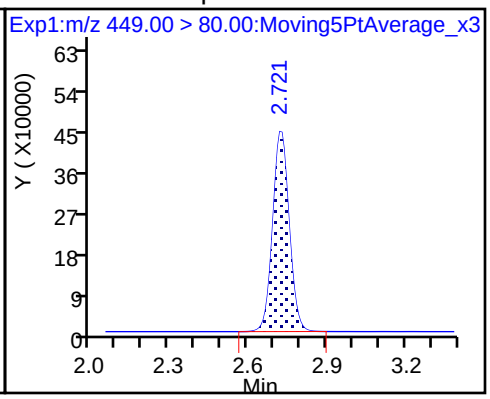
13 Sodium 1H,1H,2H,2H-perfluorooctane



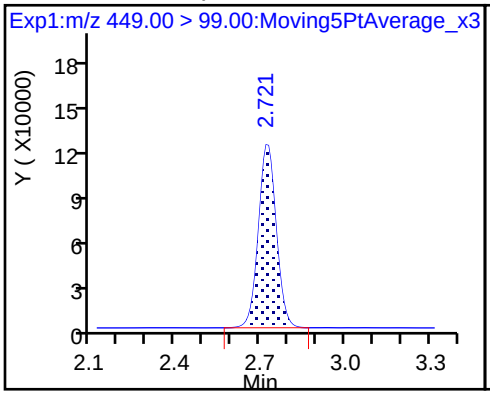
D 12 M2-6:2FTS



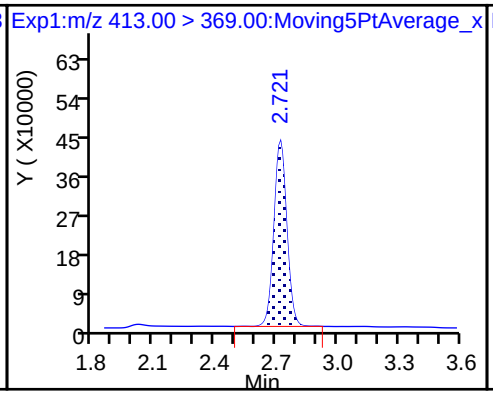
16 Perfluoroheptanesulfonic acid



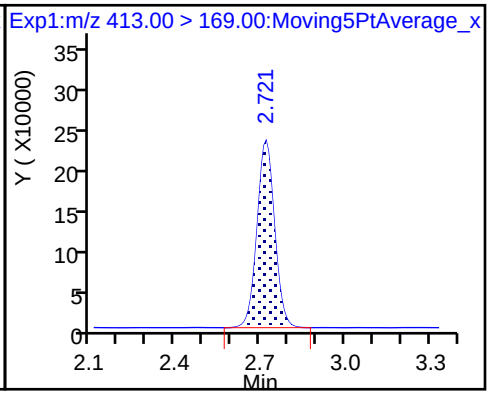
16 Perfluoroheptanesulfonic acid



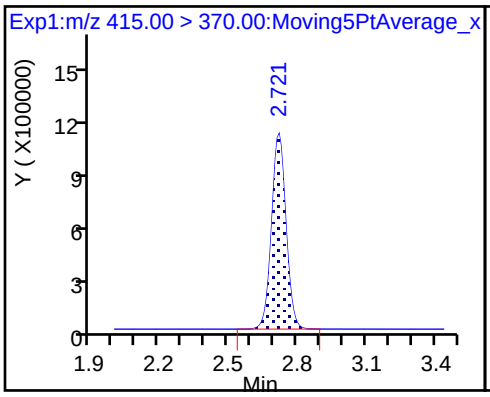
15 Perfluorooctanoic acid



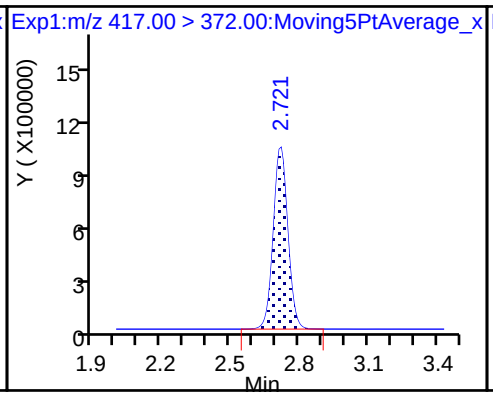
15 Perfluorooctanoic acid



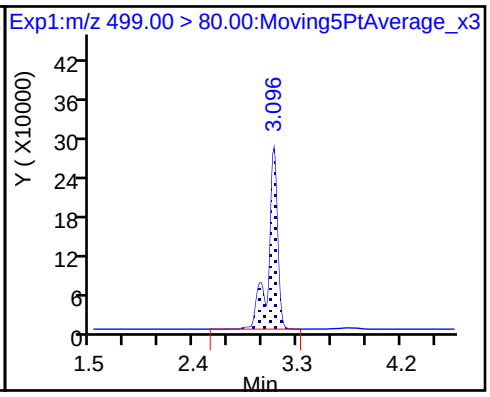
* 62 13C2-PFOA



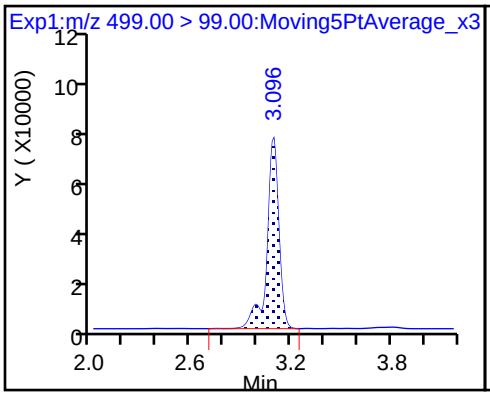
D 14 13C4 PFOA



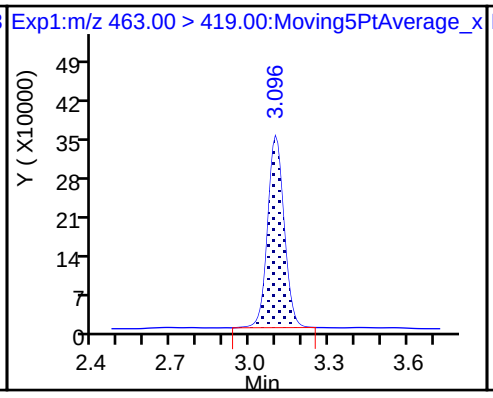
17 Perfluorooctane sulfonic acid



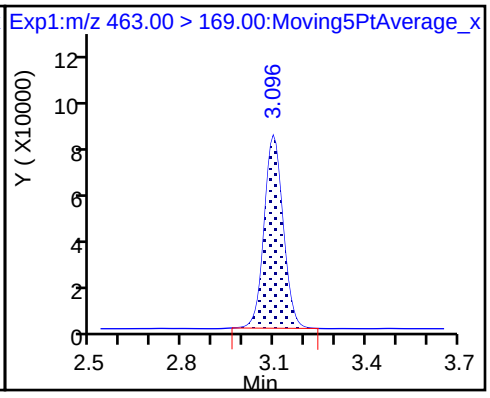
17 Perfluorooctane sulfonic acid



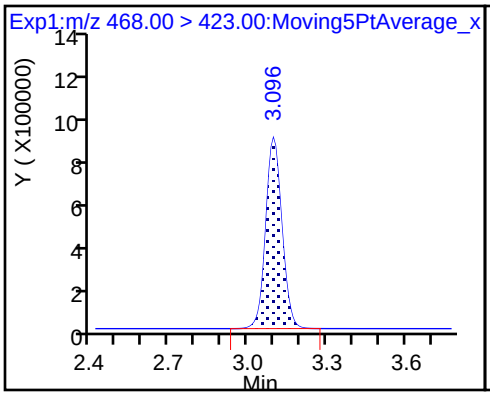
20 Perfluorononanoic acid



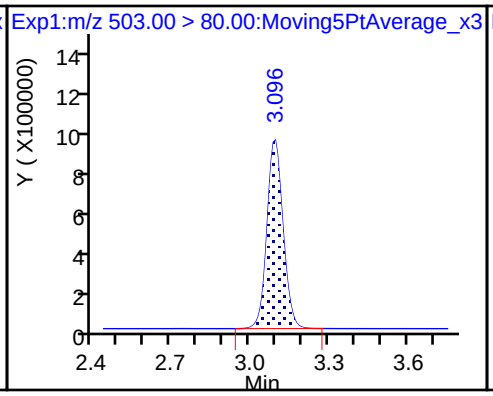
20 Perfluorononanoic acid



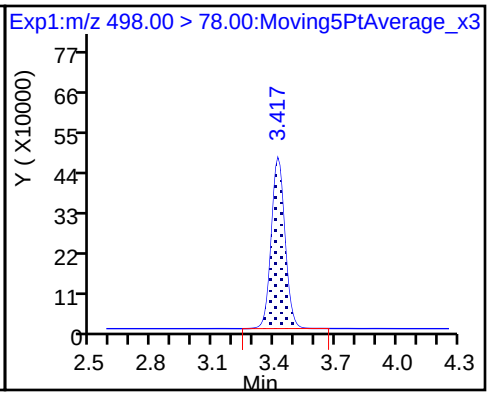
D 19 13C5 PFNA



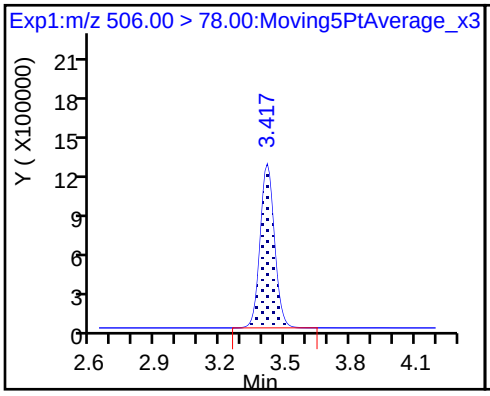
D 18 13C4 PFOS



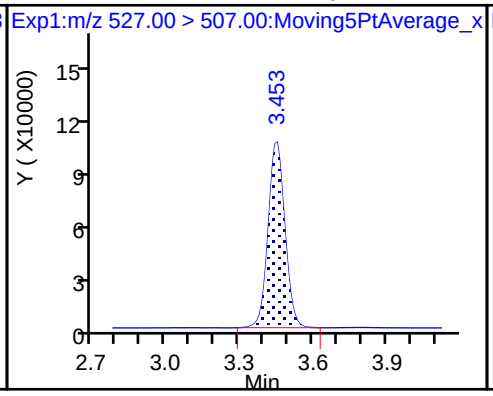
22 Perfluorooctane Sulfonamide



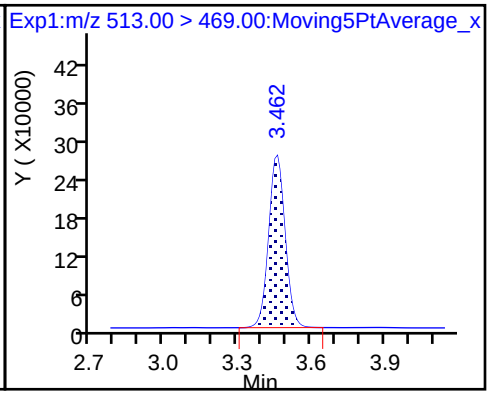
D 21 13C8 FOSA



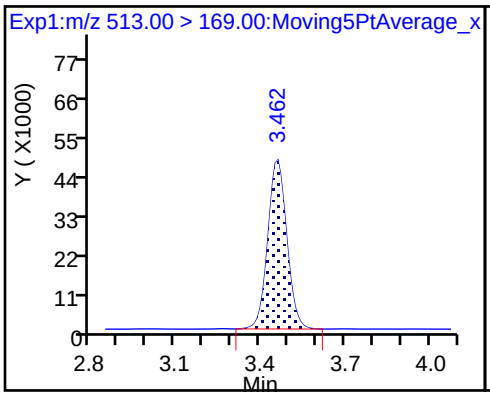
25 Sodium 1H,1H,2H,2H-perfluorodecan



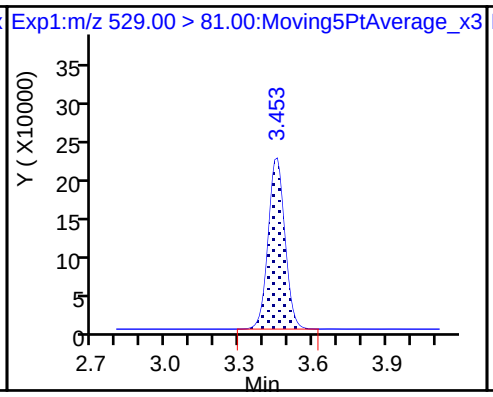
24 Perfluorodecanoic acid



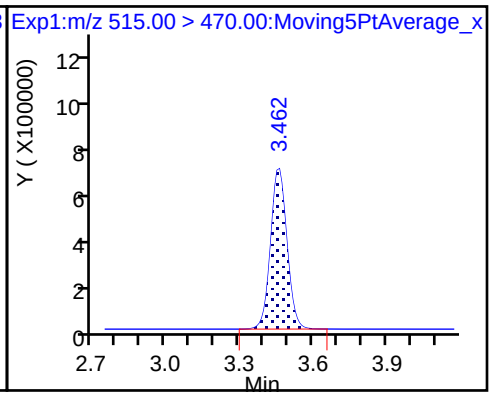
24 Perfluorodecanoic acid



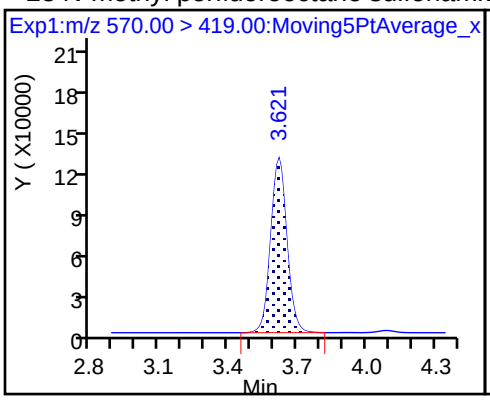
D 26 M2-8:2FTS



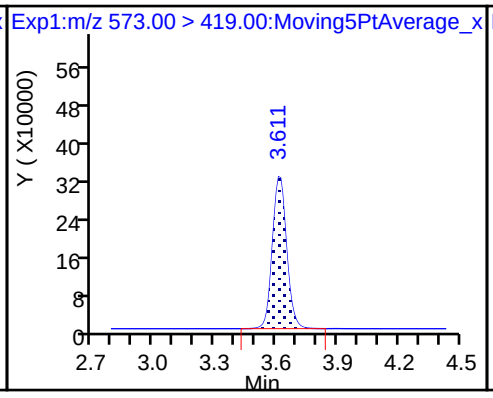
D 23 13C2 PFDA



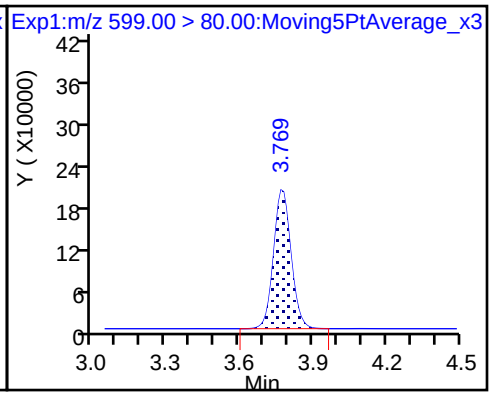
28 N-methyl perfluorooctane sulfonami



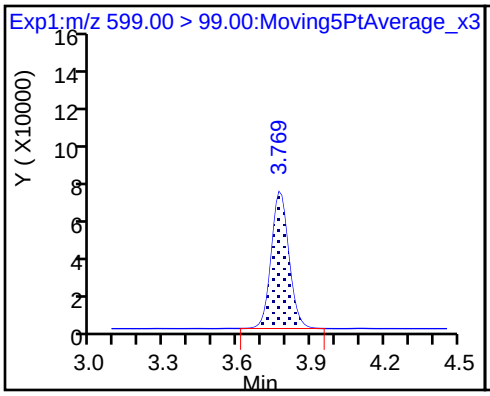
D 27 d3-NMeFOSAA



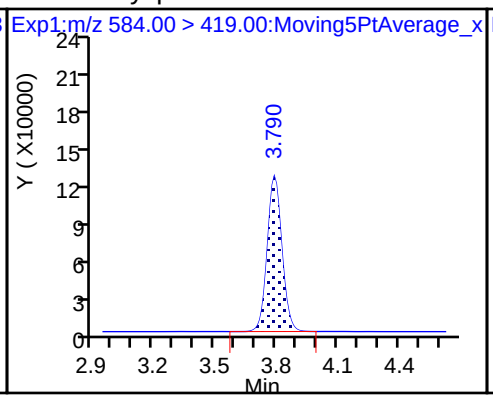
29 Perfluorodecane Sulfonic acid



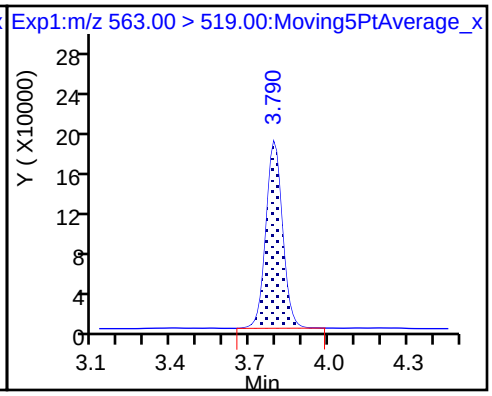
29 Perfluorodecane Sulfonic acid



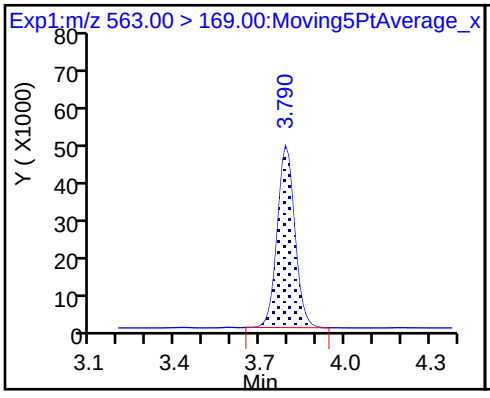
33 N-ethyl perfluorooctane sulfonamid



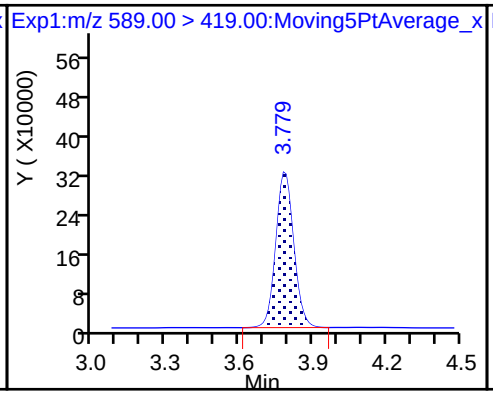
31 Perfluoroundecanoic acid



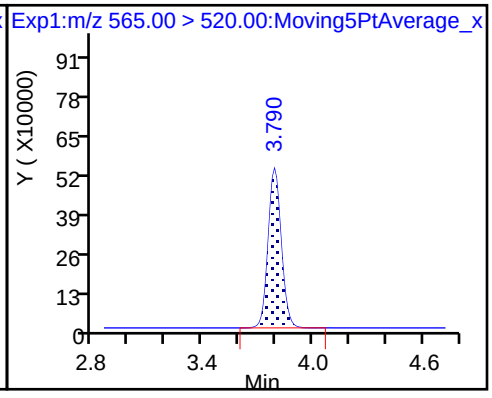
31 Perfluoroundecanoic acid



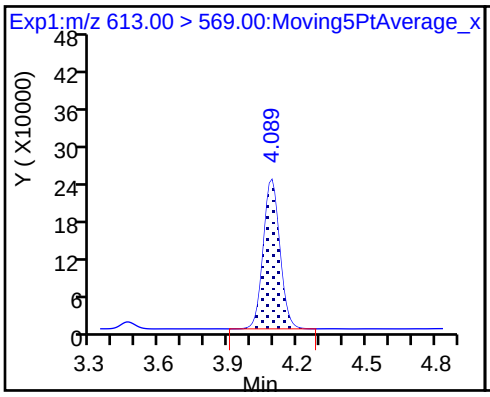
D 32 d5-NEtFOSAA



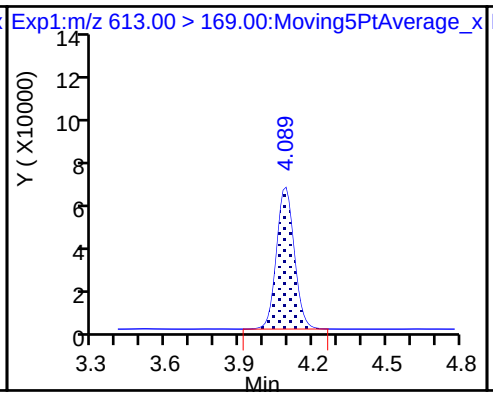
D 30 13C2 PFUnA



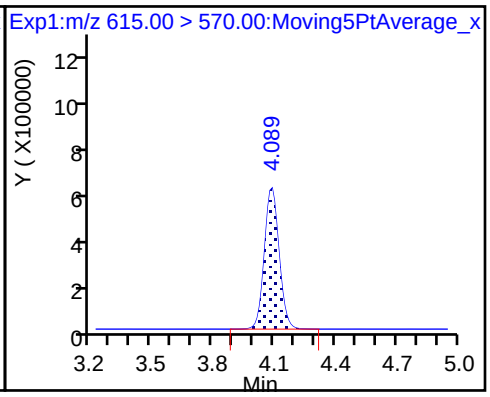
37 Perfluorododecanoic acid



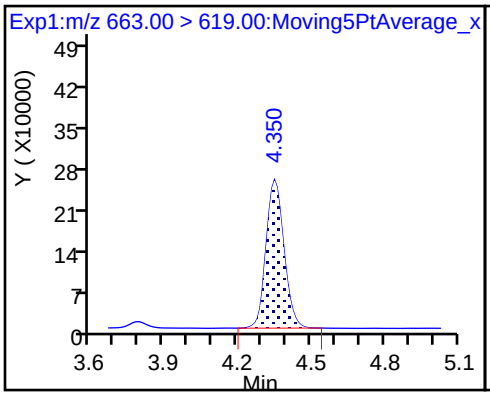
37 Perfluorododecanoic acid



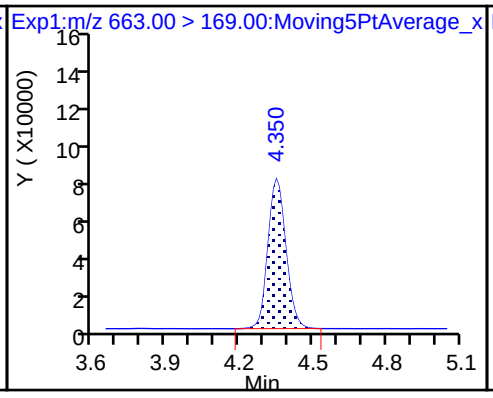
D 36 13C2 PFDoA



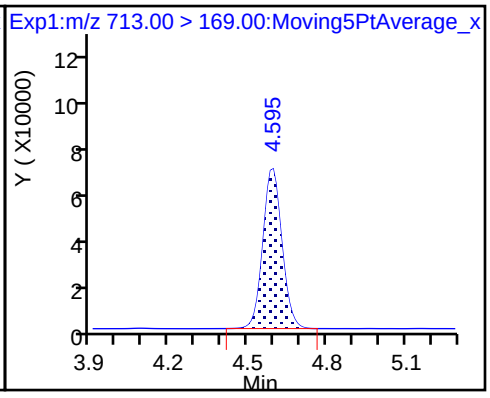
41 Perfluorotridecanoic acid



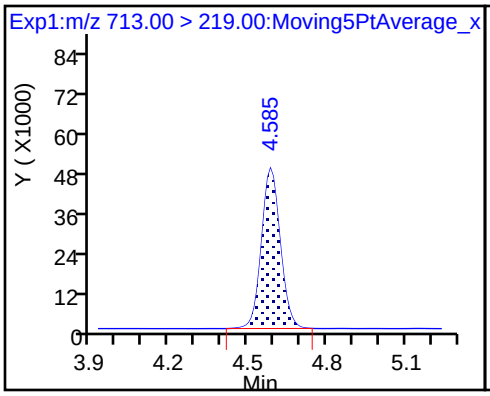
41 Perfluorotridecanoic acid



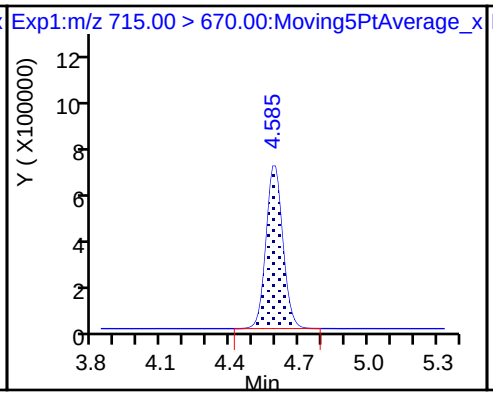
42 Perfluorotetradecanoic acid



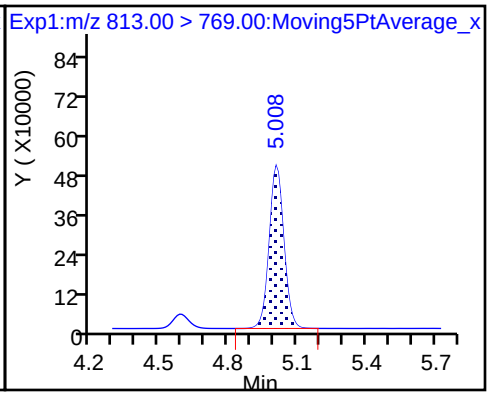
42 Perfluorotetradecanoic acid



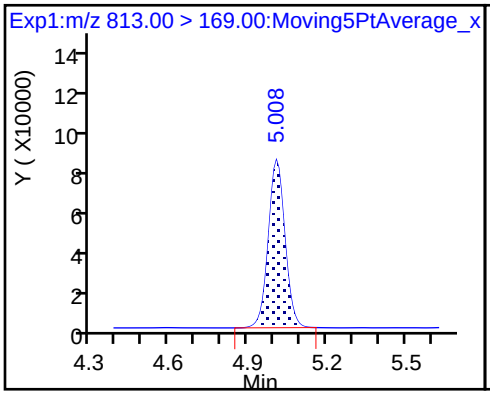
D 43 13C2-PFTeDA



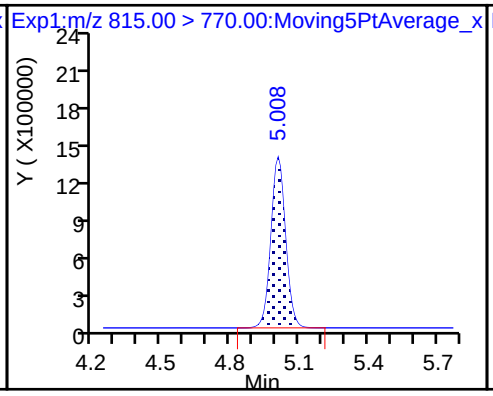
45 Perfluorohexadecanoic acid



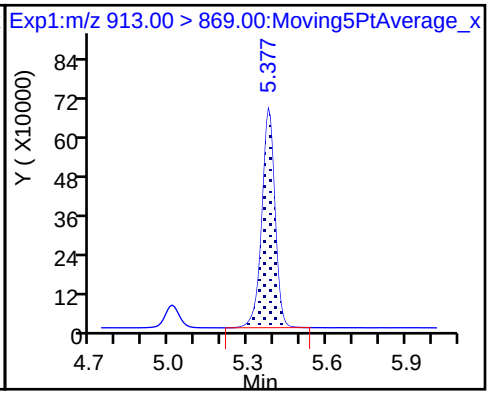
45 Perfluorohexadecanoic acid



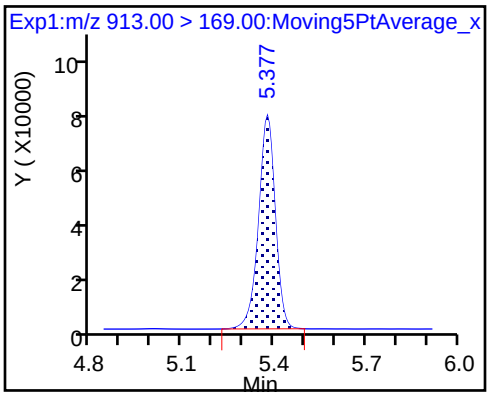
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-215311/2 Calibration Date: 03/28/2018 23:54

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9218		0.0489	0.0500	-2.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.257		0.0557	0.0500	11.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.78		0.0437	0.0442	-1.2	50.0
4:2 FTS	AveID	16.15	15.26		0.130	0.0467	-5.5	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.081		0.0529	0.0500	5.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.190		0.0575	0.0500	15.0	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.195		0.0489	0.0455	7.4	50.0
6:2FTS	AveID	1.744	1.859		0.0505	0.0474	6.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.300		0.0575	0.0500	15.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.291		0.0480	0.0476	0.8	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9524		0.0477	0.0500	-4.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	0.9806		0.0408	0.0464	-12.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9648		0.0489	0.0500	-2.1	50.0
8:2FTS	AveID	1.276	1.376		0.0517	0.0479	7.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.062		0.0537	0.0500	7.5	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9768		0.0780	0.0500	-2.4	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6189		0.0439	0.0482	-9.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.044		0.0559	0.0500	11.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8741		0.0507	0.0500	1.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.061		0.0507	0.0500	1.4	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.191		0.0541	0.0500	8.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2713		0.0548	0.0500	9.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.353		0.0502	0.0500	0.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9188		0.0497	0.0500	-0.6	50.0
13C4 PFBA	Ave	1.266	1.349		2.66	2.50	6.6	50.0
13C5 PFPeA	Ave	0.8399	0.8822		2.63	2.50	5.0	50.0
13C3-PFBS	Ave	0.0192	0.0200		2.43	2.33	4.4	50.0
M2-4:2FTS	Ave	0.1324	0.1360		2.40	2.34	2.7	50.0
13C2 PFHxA	Ave	0.9288	0.9655		2.60	2.50	3.9	50.0
13C4-PFHpA	Ave	0.9164	0.9226		2.52	2.50	0.7	50.0
18O2 PFHxS	Ave	1.130	1.183		2.47	2.37	4.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCVL 320-215311/2 Calibration Date: 03/28/2018 23:54

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2040		2.55	2.38	7.4	50.0
13C4 PFOA	Ave	0.9374	0.9695		2.59	2.50	3.4	50.0
13C4 PFOS	Ave	0.8225	0.8459		2.46	2.39	2.8	50.0
13C5 PFNA	Ave	0.8266	0.8131		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.180		2.66	2.50	6.4	50.0
M2-8:2FTS	Ave	0.2565	0.2344		2.19	2.40	-8.6	50.0
13C2 PFDA	Ave	0.7245	0.6741		2.33	2.50	-7.0	50.0
d3-NMeFOSAA	Ave	0.3814	0.3382		2.22	2.50	-11.3	50.0
13C2 PFUnA	Ave	0.6482	0.5628		2.17	2.50	-13.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3508		2.02	2.50	-19.3	50.0
13C2 PFDoA	Ave	0.7355	0.6171		2.10	2.50	-16.1	50.0
13C2-PFTeDA	Ave	0.8983	0.7426		2.07	2.50	-17.3	50.0
13C2-PFHxDA	Ave	1.473	1.169		1.98	2.50	-20.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 28-Mar-2018 23:54:44 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:06 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:57:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.532	6451393	2.66		107	93700	
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.446	-0.012	1.000	118940	0.0489		97.8	35.2	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.708	-0.008	1.000	106032	0.0557		111	40.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	4219309	2.63		105	137909	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.644	89013	2.43		104	660	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.005	129929	0.0437		98.8	85.5	
298.90 > 99.00	1.735	1.753	-0.018	1.000	56911		2.28(1.25-3.74)		82.3	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.965	-0.010	1.000	27285	0.0441		94.5	1669	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.966	-0.011	0.726	607499	2.40		103	8723	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	99798	0.0529		106	137	
313.00 > 119.00	1.997	2.008	-0.011	1.000	8523		11.71(5.03-15.10)		89.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	4617404	2.60		104	119647	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.340	-0.012	1.000	105003	0.0575		115	59.3	
363.00 > 169.00	2.328	2.340	-0.012	1.000	42589		2.47(1.13-3.40)		77.5	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.353	-0.012	1.000	123047	0.0489		107	618	
399.00 > 99.00	2.341	2.353	-0.012	1.000	44762		2.75(1.50-4.49)		289	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.864	4412529	2.52		101	82800	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.869	5350380	2.47		105	64600	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.679	-0.008	1.000	34390	0.0505		107	213	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.697	-0.026	0.991	926971	2.55		107	30446	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.710	-0.015		4782622	2.50			99509	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.710	-0.015	1.000	120565	0.0575		115	39.2	
413.00 > 169.00	2.695	2.710	-0.015	1.000	56523		2.13(0.84-2.52)		207	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.710	-0.007	1.000	99464	0.0480		101	4510	
449.00 > 99.00	2.703	2.710	-0.007	1.000	26954		3.69(1.94-5.82)		525	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.721	-0.026	1.000	4636520	2.59		103	89142	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.080	-0.008	1.000	73625	0.0408		88.0	193	
499.00 > 99.00	3.072	3.080	-0.008	1.000	18817		3.91(2.31-6.93)		154	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.080	-0.008	1.000	74069	0.0477		95.5	66.2	
463.00 > 169.00	3.072	3.080	-0.008	1.000	17914		4.13(1.90-5.69)		333	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.140	3888597	2.46		98.4	66984	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.140	3867363	2.46		103	49278	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.415	-0.009	1.000	108923	0.0489		97.9	2370	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.417	-0.011	1.264	5645112	2.66		106	51326	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.433	-0.009	1.000	29562	0.0517		108	410	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.442	-0.009	1.000	68469	0.0537		107	388	
513.00 > 169.00	3.433	3.442	-0.009	1.000	10736		6.38(2.36-7.09)		407	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.453	-0.029	1.271	1073976	2.19		91.4	38319	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.462	-0.029	1.274	3223961	2.33		93.0	49854	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.599	-0.009	1.000	31600	0.0488		97.6	302	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.332	1617597	2.22		88.7	30515	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.758	-0.010	1.000	48267	0.0439		91.0	2487	
599.00 > 99.00	3.748	3.758	-0.010	1.000	22652		2.13(1.39-4.16)		941	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.779	-0.011	1.003	47053	0.0507		101	194	
563.00 > 169.00	3.768	3.779	-0.011	1.003	9256		5.08(2.12-6.36)		436	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.779	-0.021	1.000	35031	0.0559		112	695	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.395	1677578	2.02		80.7	3954	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.790	-0.032	1.395	2691466	2.17		86.8	49209	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.067	-0.011	1.000	62640	0.0507		101	43.0	
613.00 > 169.00	4.056	4.067	-0.011	1.000	14948		4.19(2.13-6.40)		367	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.505	2951529	2.10		83.9	19276	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.329	-0.011	1.000	70296	0.0541		108	30.1	
663.00 > 169.00	4.318	4.329	-0.011	1.000	20757		3.39(1.25-3.76)		425	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.575	-0.021	1.000	19273	0.0548		110	440	
713.00 > 219.00	4.554	4.575	-0.021	1.000	11077		1.74(0.71-2.13)		296	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.585	-0.031	1.690	3551413	2.07		82.7	23976	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.990	-0.018	1.000	151314	0.0502		100	39.2	
813.00 > 169.00	4.972	4.990	-0.018	1.000	25363		5.97(2.86-8.58)		389	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	5.008	-0.036	1.845	5589979	1.98		79.4	18082	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.351	-0.014	1.000	102726	0.0497		99.4	21.4	
913.00 > 169.00	5.330	5.351	-0.021	0.999	12485		8.23(3.83-11.48)		191	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_005.d

Injection Date: 28-Mar-2018 23:54:44 Instrument ID: A8_N

Lims ID: CCVL

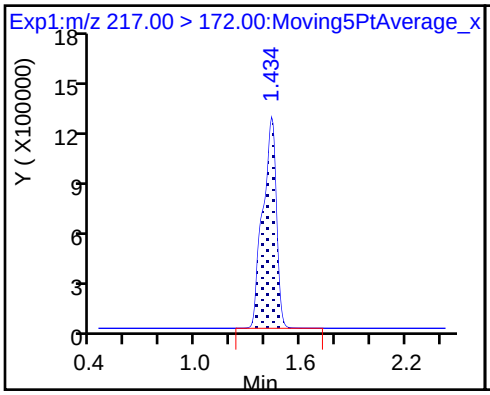
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

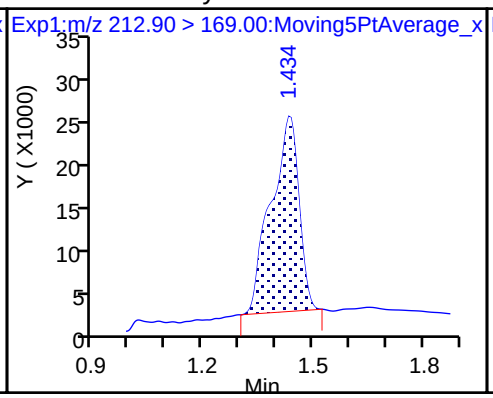
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

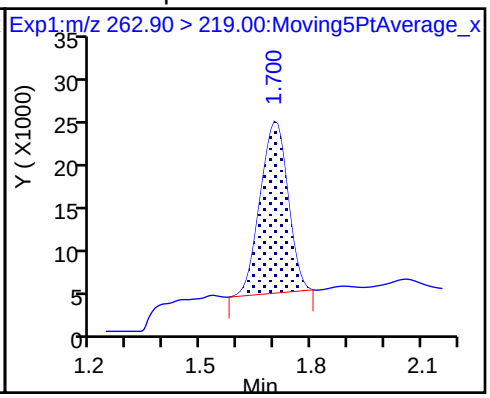
D 1 13C4 PFBA



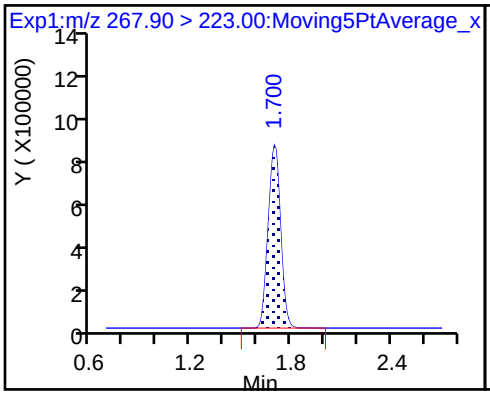
2 Perfluorobutyric acid



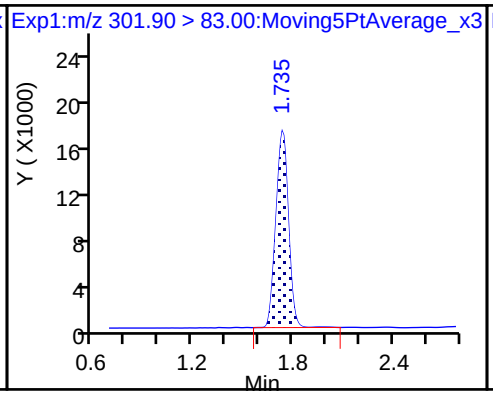
4 Perfluoropentanoic acid



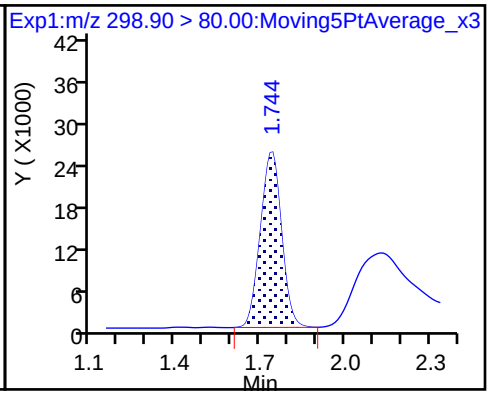
D 3 13C5-PFPeA



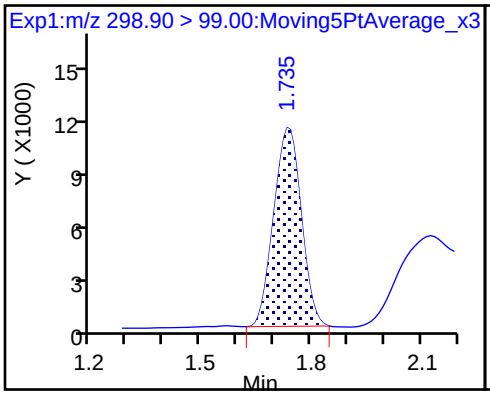
D 47 13C3-PFBS



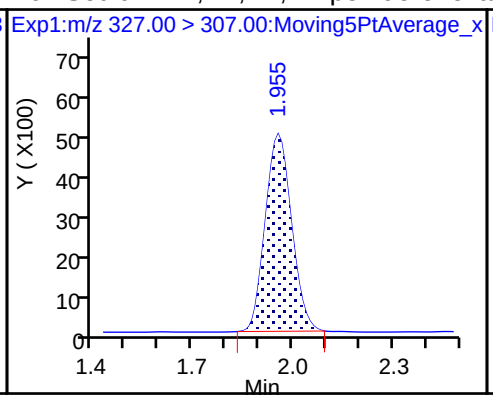
5 Perfluorobutanesulfonic acid



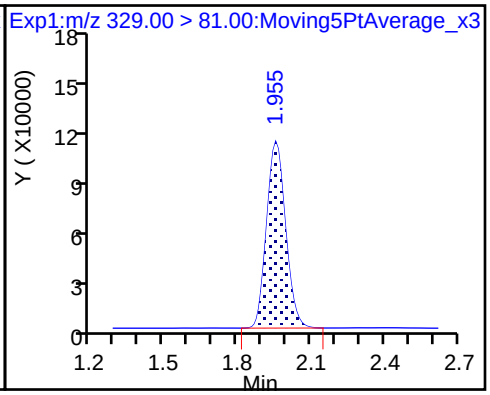
5 Perfluorobutanesulfonic acid



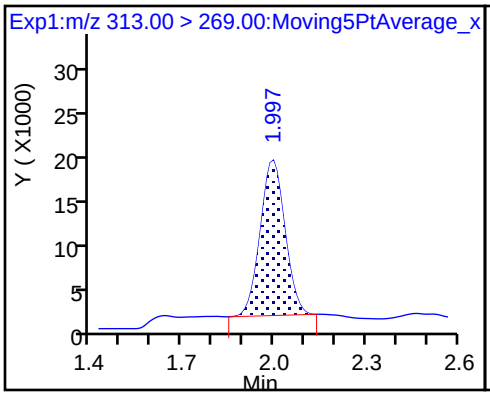
61 Sodium 1H,1H,2H,2H-perfluorohexane



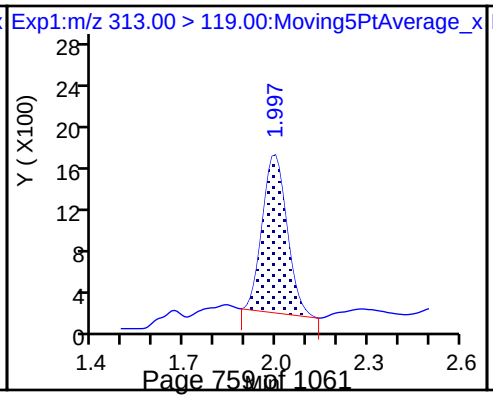
D 60 M2-4:2FTS



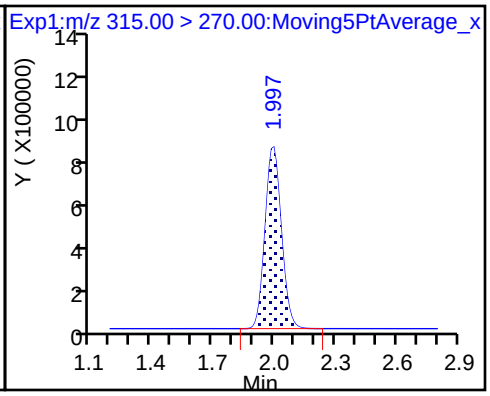
6 Perfluorohexanoic acid



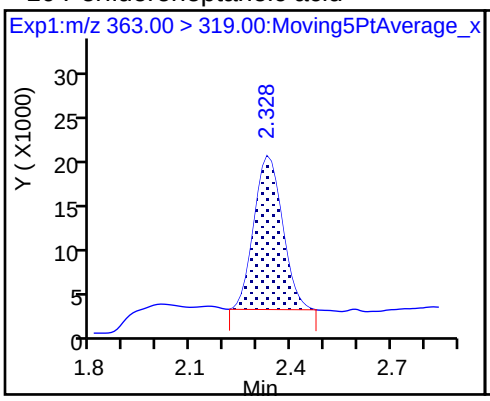
6 Perfluorohexanoic acid



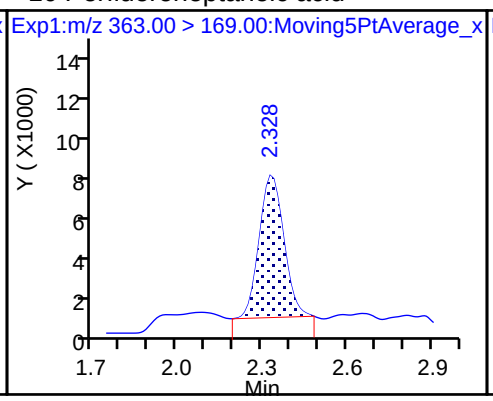
D 7 13C2 PFHxA



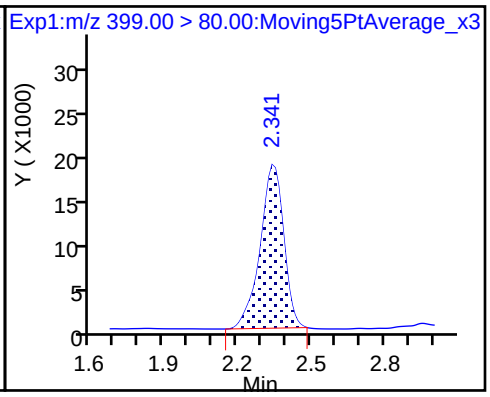
10 Perfluoroheptanoic acid



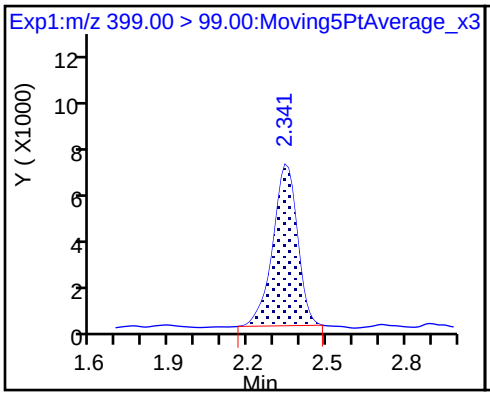
10 Perfluoroheptanoic acid



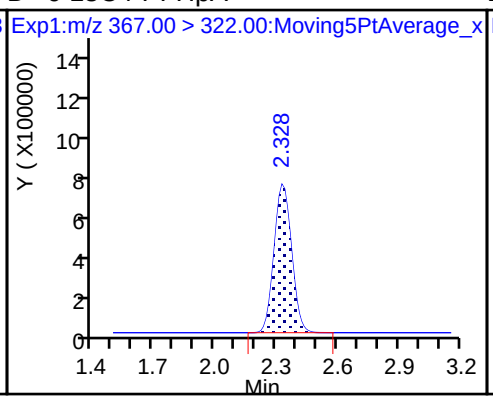
8 Perfluorohexanesulfonic acid



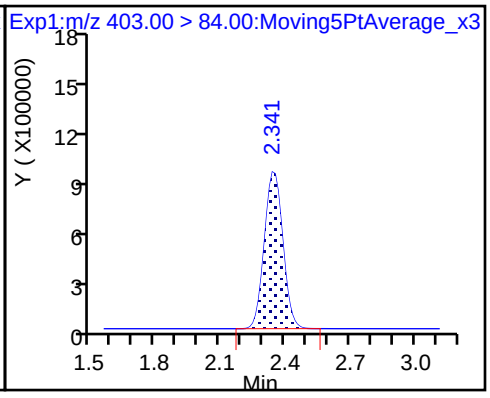
8 Perfluorohexanesulfonic acid



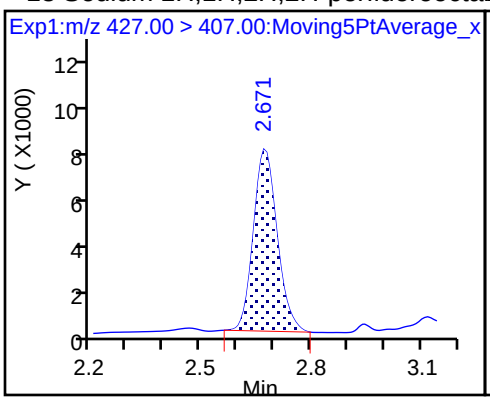
D 9 13C4-PFHpA



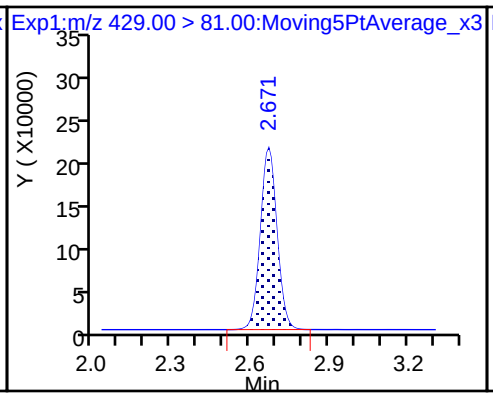
D 11 18O2 PFHxS



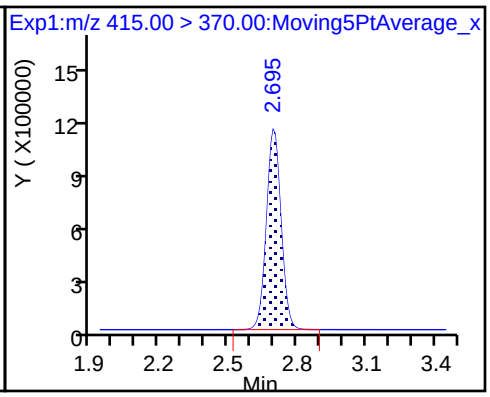
13 Sodium 1H,1H,2H,2H-perfluorooctan



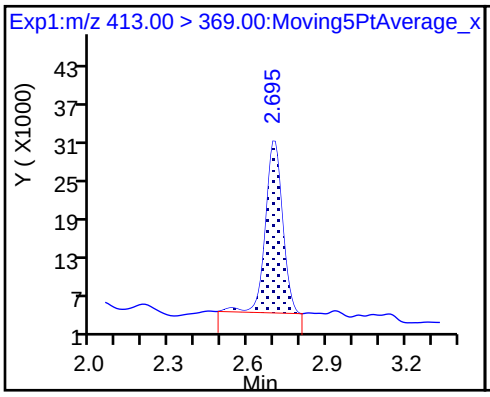
D 12 M2-6:2FTS



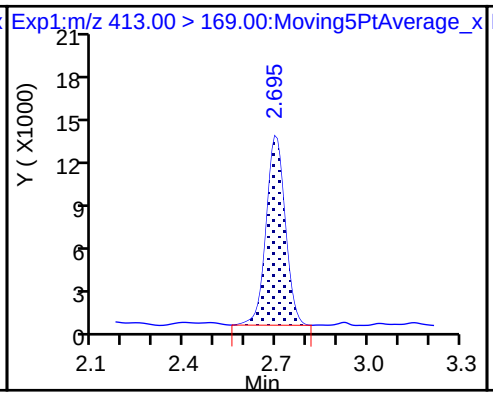
* 62 13C2-PFOA



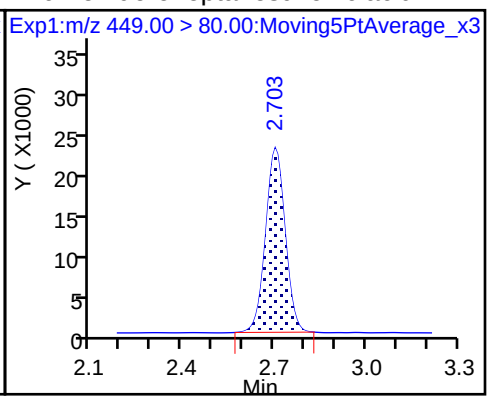
15 Perfluorooctanoic acid



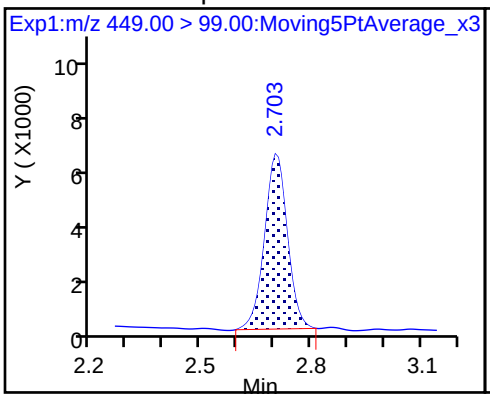
15 Perfluorooctanoic acid



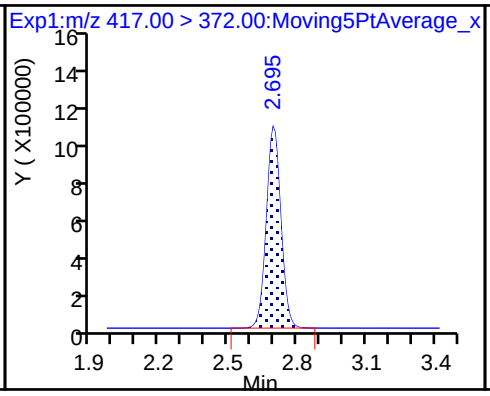
16 Perfluoroheptanesulfonic acid



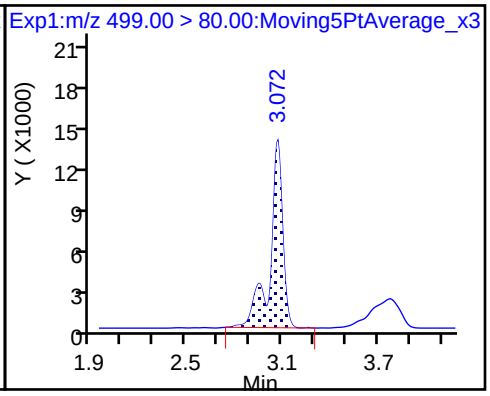
16 Perfluoroheptanesulfonic acid



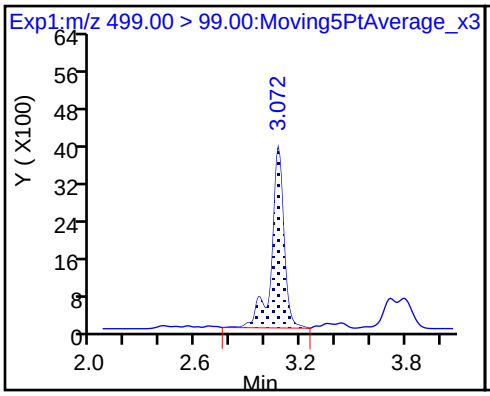
D 14 13C4 PFOA



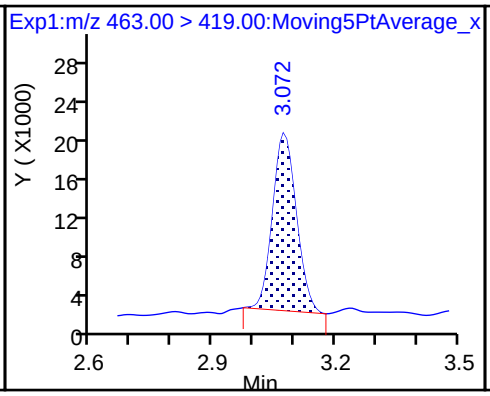
17 Perfluorooctane sulfonic acid



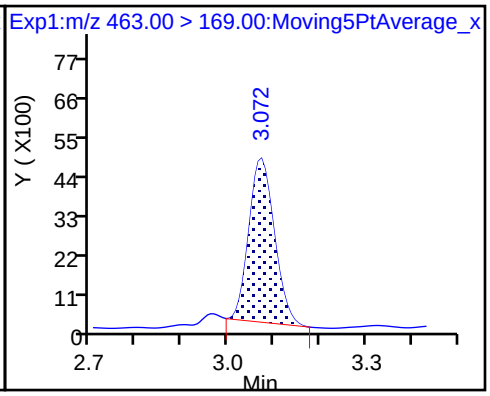
17 Perfluorooctane sulfonic acid



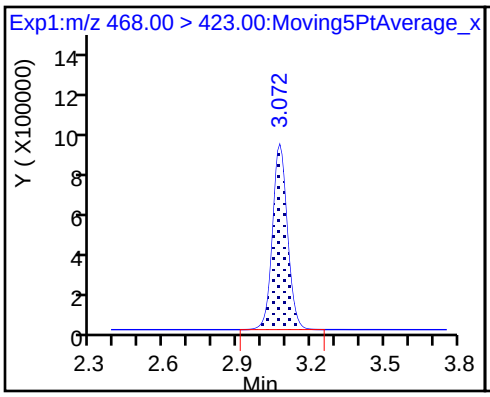
20 Perfluorononanoic acid



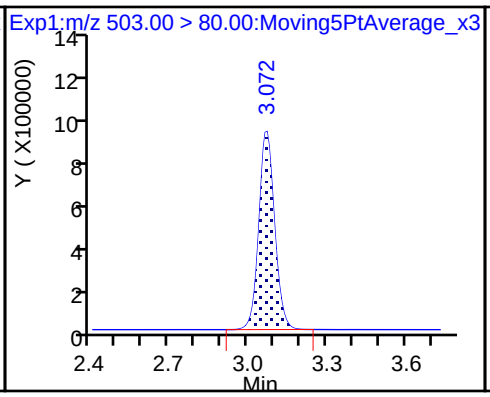
20 Perfluorononanoic acid



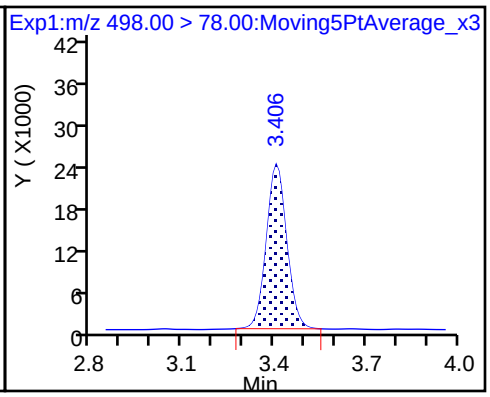
D 19 13C5 PFNA



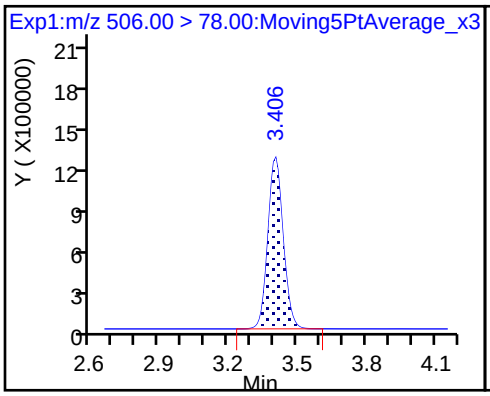
D 18 13C4 PFOS



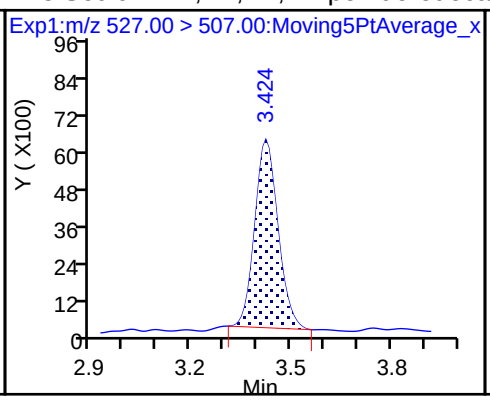
22 Perfluorooctane Sulfonamide



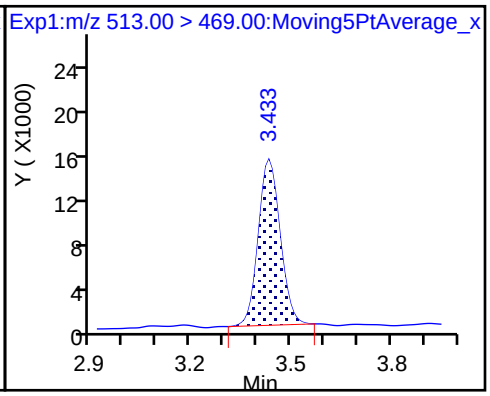
D 21 13C8 FOSA



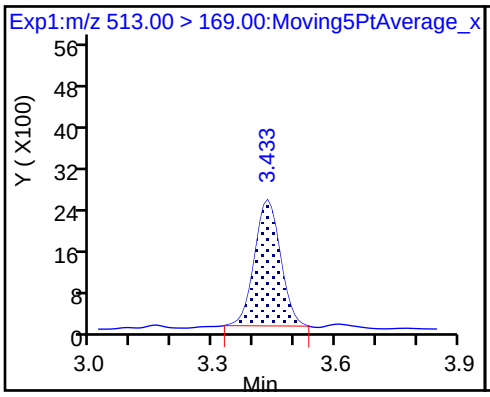
25 Sodium 1H,1H,2H,2H-perfluorodecan



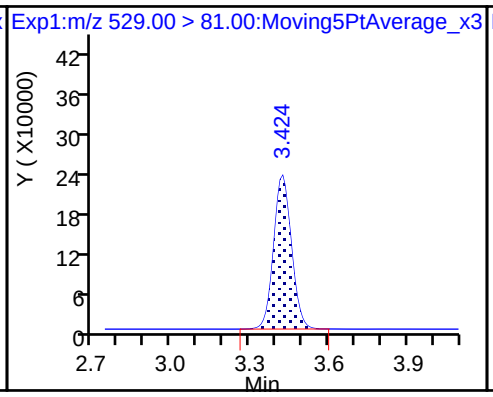
24 Perfluorodecanoic acid



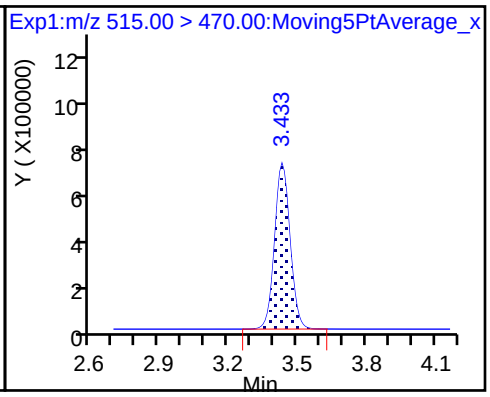
24 Perfluorodecanoic acid



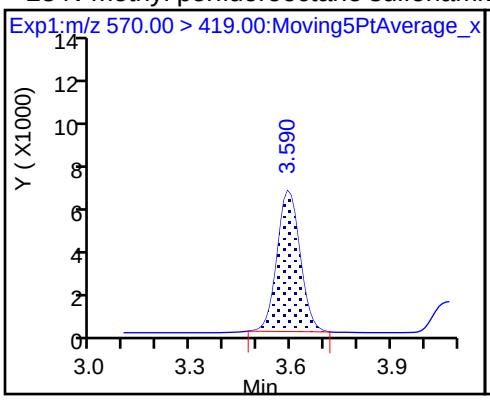
D 26 M2-8:2FTS



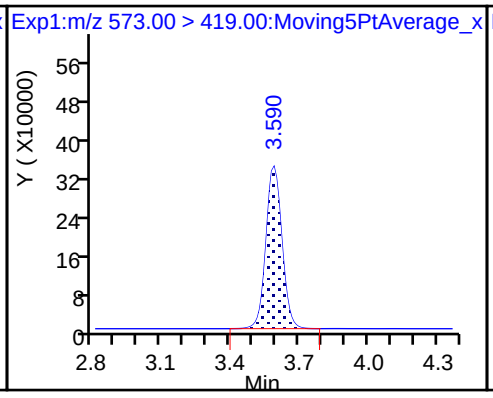
D 23 13C2 PFDA



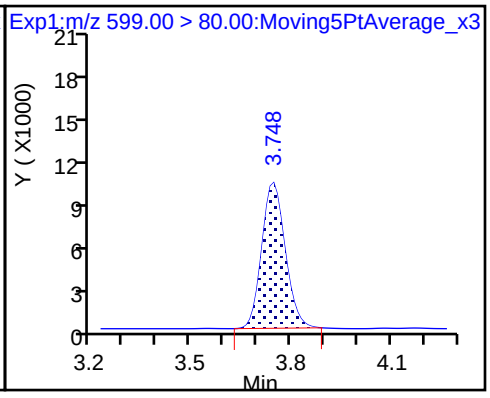
28 N-methyl perfluorooctane sulfonami



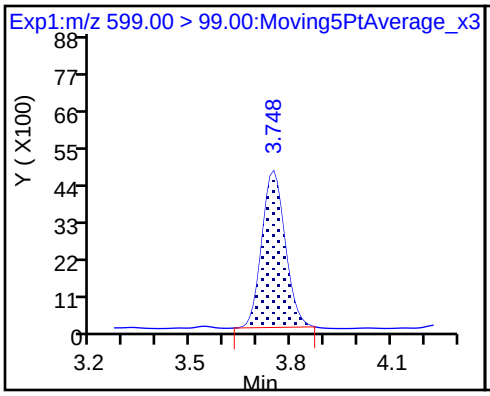
D 27 d3-NMeFOSAA



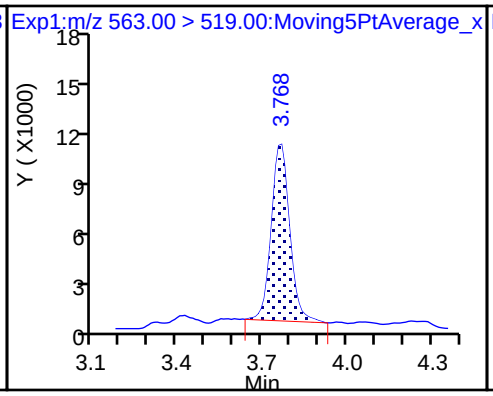
29 Perfluorodecane Sulfonic acid



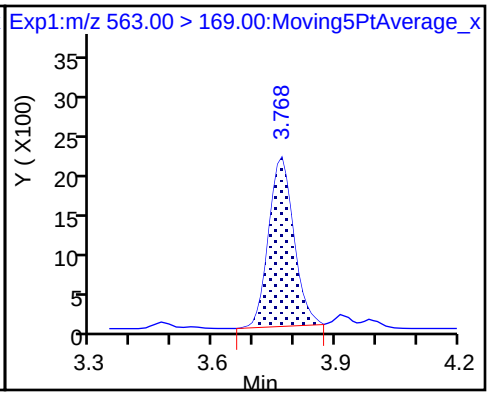
29 Perfluorodecane Sulfonic acid



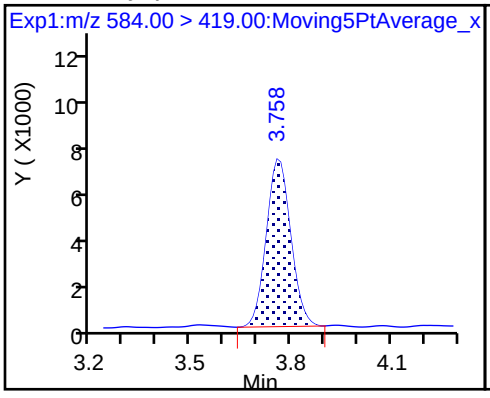
31 Perfluoroundecanoic acid



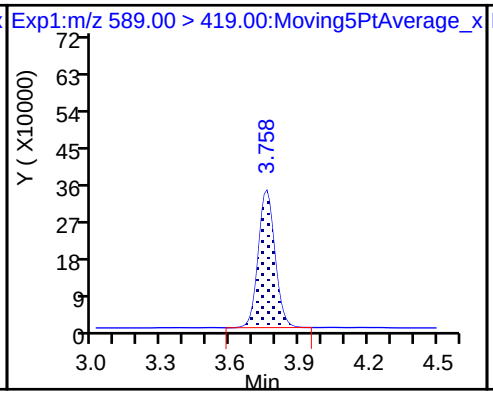
31 Perfluoroundecanoic acid



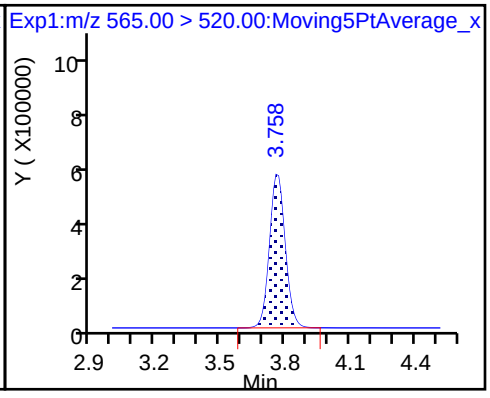
33 N-ethyl perfluorooctane sulfonamid



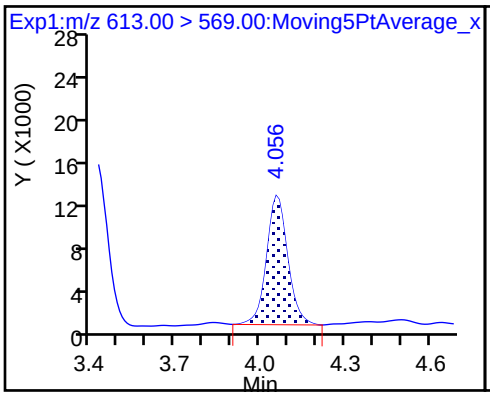
D 32 d5-NEtFOSAA



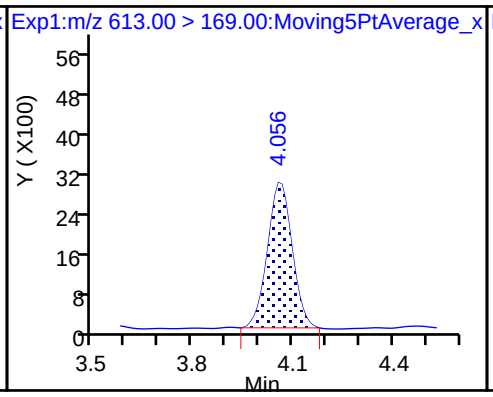
D 30 13C2 PFUnA



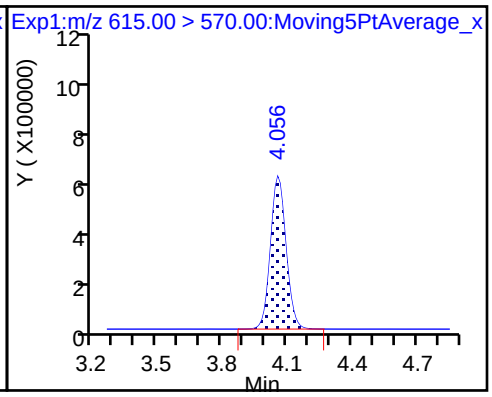
37 Perfluorododecanoic acid



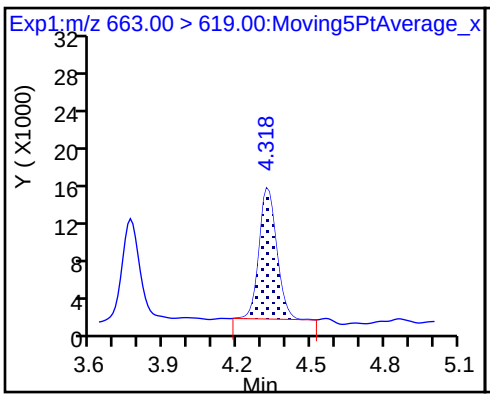
37 Perfluorododecanoic acid



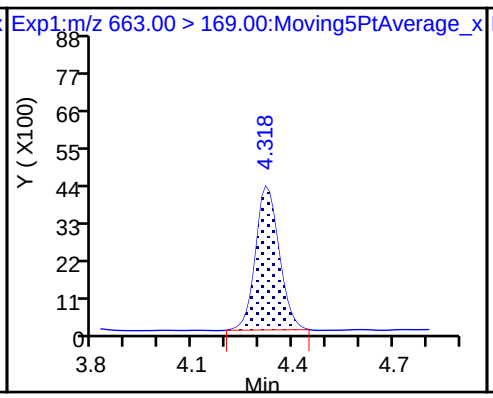
D 36 13C2 PFDoA



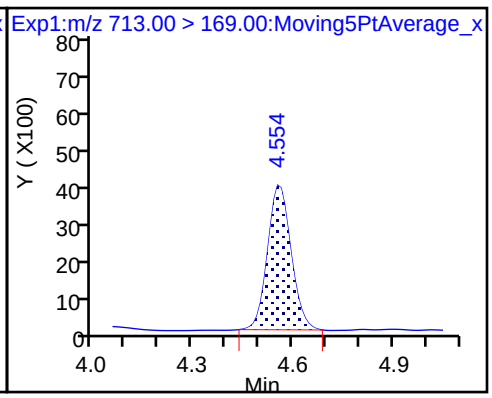
41 Perfluorotridecanoic acid



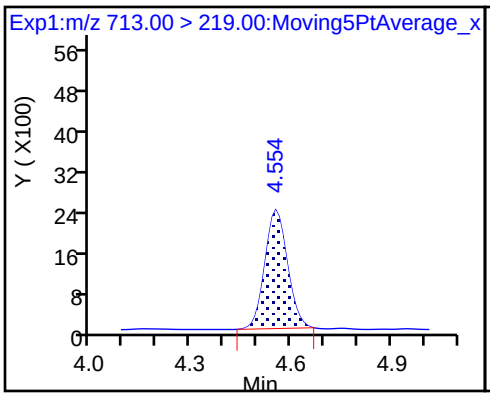
41 Perfluorotridecanoic acid



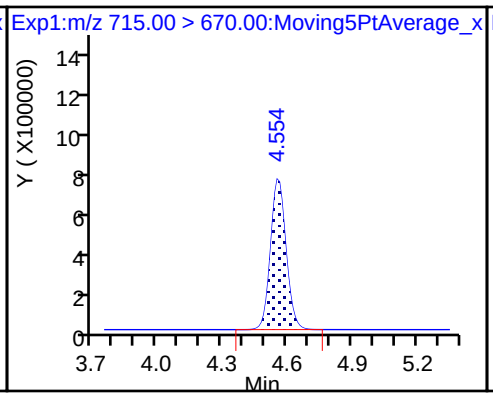
42 Perfluorotetradecanoic acid



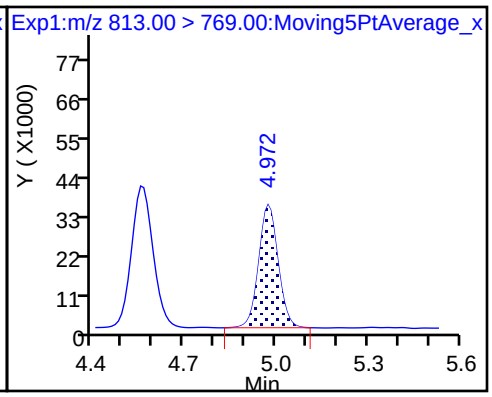
42 Perfluorotetradecanoic acid



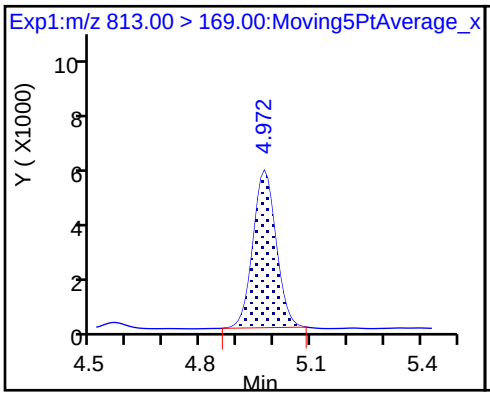
D 43 13C2-PFTeDA



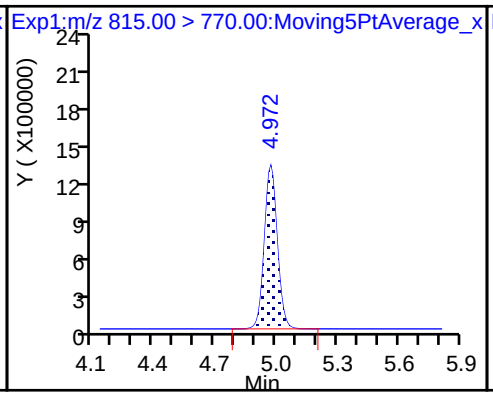
45 Perfluorohexadecanoic acid



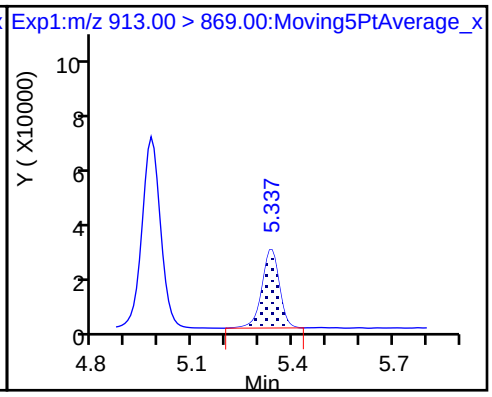
45 Perfluorohexadecanoic acid



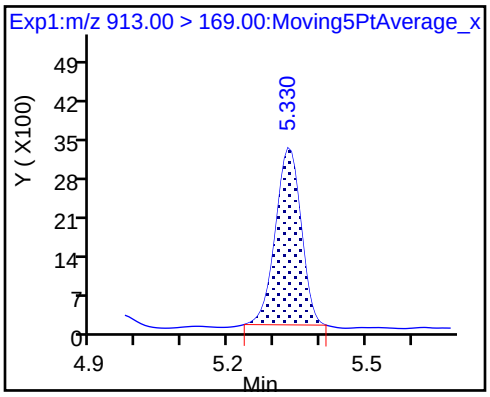
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215311/3 Calibration Date: 03/29/2018 00:02

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8924		0.947	1.00	-5.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.142		1.01	1.00	1.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.57		0.905	0.884	2.4	50.0
4:2 FTS	AveID	16.15	15.53		0.898	0.934	-3.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9667		0.946	1.00	-5.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9790		0.946	1.00	-5.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.031		0.843	0.910	-7.4	40.0
6:2FTS	AveID	1.744	1.592		0.866	0.948	-8.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.098		0.972	1.00	-2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.261		0.937	0.952	-1.6	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.998		1.00	1.00	0.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.042		0.868	0.928	-6.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9739		0.988	1.00	-1.2	40.0
8:2FTS	AveID	1.276	1.182		0.887	0.958	-7.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9371		0.948	1.00	-5.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.079		1.08	1.00	7.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6603		0.936	0.964	-2.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8993		0.963	1.00	-3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7966		0.924	1.00	-7.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.020		0.975	1.00	-2.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.093		0.993	1.00	-0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2455		0.991	1.00	-0.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9714		1.05	1.00	4.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9670		1.05	1.00	4.6	50.0
13C4 PFBA	Ave	1.266	1.367		2.70	2.50	8.0	50.0
13C5 PFPeA	Ave	0.8399	0.8826		2.63	2.50	5.1	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.41	2.33	3.7	50.0
M2-4:2FTS	Ave	0.1324	0.1390		2.45	2.34	5.0	50.0
13C2 PFHxA	Ave	0.9288	0.9780		2.63	2.50	5.3	50.0
13C4-PFHpA	Ave	0.9164	0.9787		2.67	2.50	6.8	50.0
18O2 PFHxS	Ave	1.130	1.225		2.56	2.37	8.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215311/3 Calibration Date: 03/29/2018 00:02

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2113		2.64	2.38	11.2	40.0
13C4 PFOA	Ave	0.9374	0.9331		2.49	2.50	-0.5	50.0
13C4 PFOS	Ave	0.8225	0.8627		2.51	2.39	4.9	50.0
13C5 PFNA	Ave	0.8266	0.8249		2.50	2.50	-0.2	50.0
13C8 FOSA	Ave	1.109	1.202		2.71	2.50	8.3	50.0
M2-8:2FTS	Ave	0.2565	0.2361		2.21	2.40	-8.0	40.0
13C2 PFDA	Ave	0.7245	0.7235		2.50	2.50	-0.1	50.0
d3-NMeFOSAA	Ave	0.3814	0.3315		2.17	2.50	-13.1	50.0
d5-NEtFOSAA	Ave	0.4345	0.3598		2.07	2.50	-17.2	50.0
13C2 PFUnA	Ave	0.6482	0.5665		2.19	2.50	-12.6	50.0
13C2 PFDoA	Ave	0.7355	0.6159		2.09	2.50	-16.3	50.0
13C2-PFTeDA	Ave	0.8983	0.7974		2.22	2.50	-11.2	50.0
13C2-PFHxDA	Ave	1.473	1.192		2.02	2.50	-19.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 29-Mar-2018 00:02:32 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:57:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.441	-0.006	0.532	6491022	2.70		108	87292	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.435	0.0	1.000	2317059	0.9471		94.7	723	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	1914426	1.01		101	799	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	4191640	2.63		105	136388	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.745	-0.009	0.644	87773	2.41		104	611	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.000	2655497	0.9052		102	1719	
298.90 > 99.00	1.736	1.736	0.0	1.000	1101457		2.41(1.25-3.74)		1617	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	547605	0.8980		96.1	34136	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.966	-0.010	0.725	616600	2.45		105	8882	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	1795950	0.9456		94.6	2505	
313.00 > 119.00	1.987	1.998	-0.011	0.995	164172		10.94(5.03-15.10)		1659	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	2.009	-0.011	0.741	4644551	2.63		105	119475	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1820200	0.9464		94.6	1102	
363.00 > 169.00	2.328	2.328	0.0	1.000	731307		2.49(1.13-3.40)		1395	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2183584	0.8430		92.6	9714	
399.00 > 99.00	2.341	2.341	0.0	1.000	757019		2.88(1.50-4.49)		4010	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	4648219	2.67		107	98582	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	5503672	2.56		108	77912	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	605953	0.8656		91.3	6588	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	953489	2.64		111	27123	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		4749284	2.50			83446	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	1946993	0.9723		97.2	848	
413.00 > 169.00	2.697	2.697	0.0	1.000	1009231		1.93(0.84-2.52)		3738	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.705	0.0	1.000	1967259	0.9369		98.4	41446	
449.00 > 99.00	2.705	2.705	0.0	1.000	557648		3.53(1.94-5.82)		11814	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	4431614	2.49		99.5	77967	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	1584932	0.8682		93.6	3950	
499.00 > 99.00	3.072	3.072	0.0	1.000	357363		4.44(2.31-6.93)		3391	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1563364	1.00		100	1765	
463.00 > 169.00	3.072	3.072	0.0	1.000	398934		3.92(1.90-5.69)		11995	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3917807	2.49		99.8	93433	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3916793	2.51		105	49719	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	2223319	0.9879		98.8	34978	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	5707485	2.71		108	54409	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	507733	0.8869		92.6	7311	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1288024	0.9484		94.8	6954	
513.00 > 169.00	3.435	3.435	0.0	1.000	234128		5.50(2.36-7.09)		8582	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	1074334	2.20		92.0	29127	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	3436313	2.50		99.9	50280	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.000	679645	1.08		108	7441	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1574436	2.17		86.9	54626	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1043162	0.9361		97.1	35331	
599.00 > 99.00	3.748	3.748	0.0	1.000	374347		2.79(1.39-4.16)		10996	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	857318	0.9239		92.4	4606	
563.00 > 169.00	3.769	3.769	0.0	1.000	211507		4.05(2.12-6.36)		7867	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.769	0.0	1.003	614753	0.9626		96.3	17120	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1708952	2.07		82.8	5149	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.398	2690556	2.19		87.4	67111	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	1193328	0.9748		97.5	875	
613.00 > 169.00	4.057	4.057	0.0	1.000	302869		3.94(2.13-6.40)		6775	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.089	-0.032	1.505	2924870	2.09		83.7	19649	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1278762	0.99		99.3	533	
663.00 > 169.00	4.318	4.318	0.0	1.000	423159		3.02(1.25-3.76)		6493	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	371953	0.99		99.1	6258	
713.00 > 219.00	4.554	4.564	-0.010	0.998	239337		1.55(0.71-2.13)		6897	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3787135	2.22		88.8	23848	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.972	0.0	1.000	2198939	1.04		104	523	
813.00 > 169.00	4.972	4.972	0.0	1.000	366939		5.99(2.86-8.58)		4396	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	5.008	-0.036	1.844	5659007	2.02		80.9	17559	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2188881	1.05		105	445	
913.00 > 169.00	5.337	5.337	0.0	1.000	272210		8.04(3.83-11.48)		3165	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_006.d

Injection Date: 29-Mar-2018 00:02:32 Instrument ID: A8_N

Lims ID: CCV L4

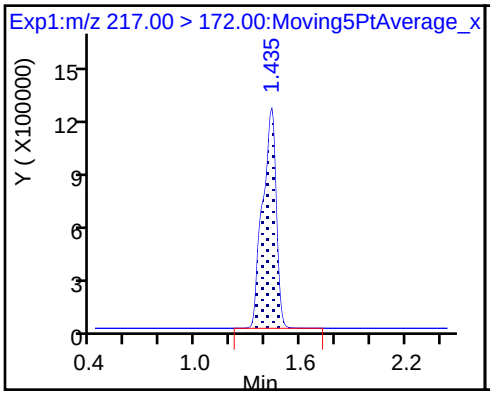
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

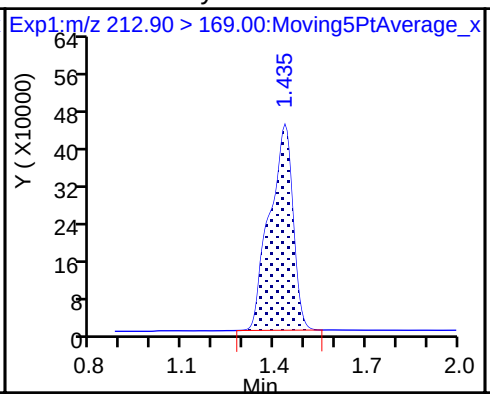
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

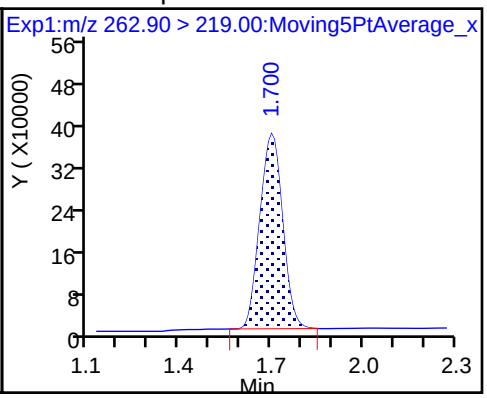
D 1 13C4 PFBA



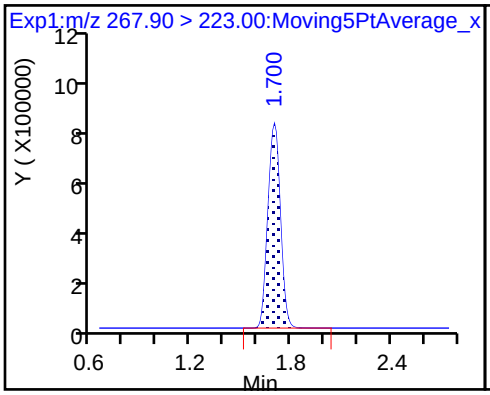
2 Perfluorobutyric acid



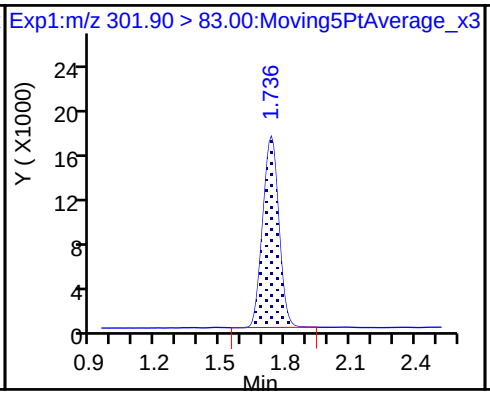
4 Perfluoropentanoic acid



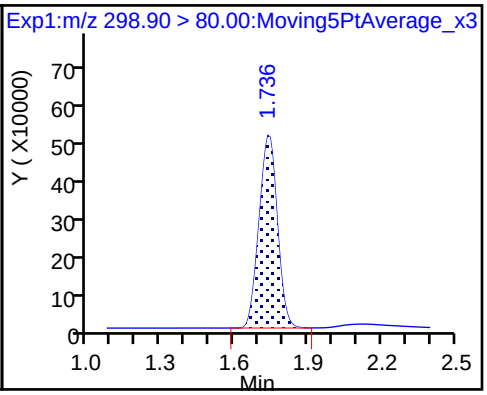
D 3 13C5-PFPeA



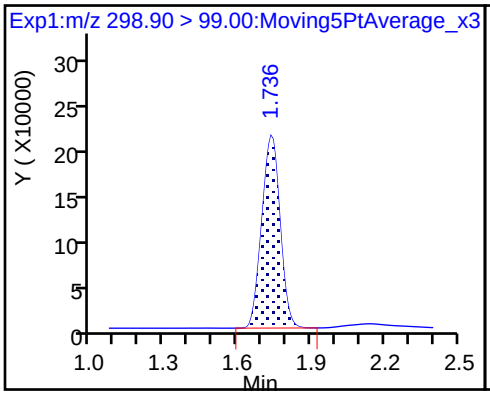
D 47 13C3-PFBS



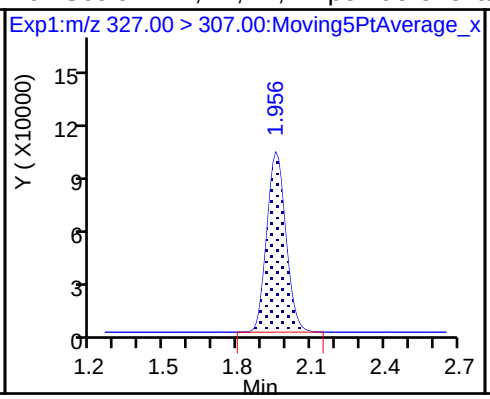
5 Perfluorobutanesulfonic acid



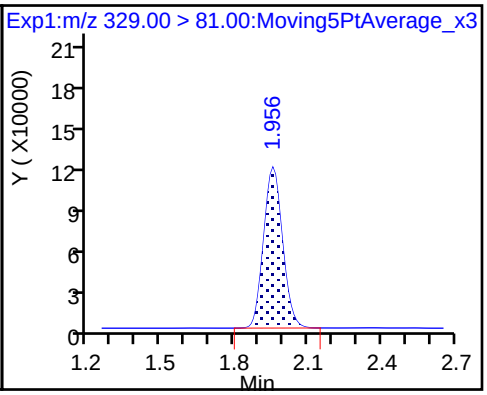
5 Perfluorobutanesulfonic acid



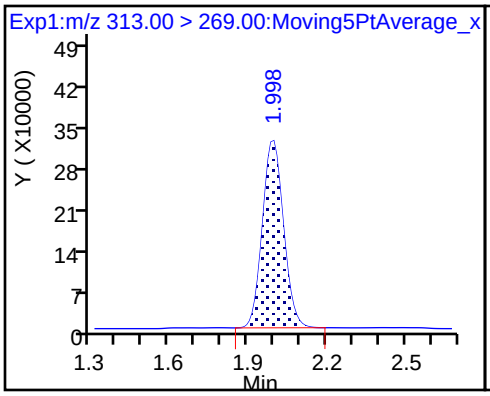
61 Sodium 1H,1H,2H,2H-perfluorohexane



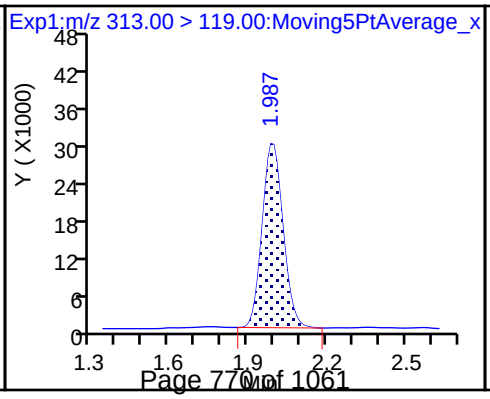
D 60 M2-4:2FTS



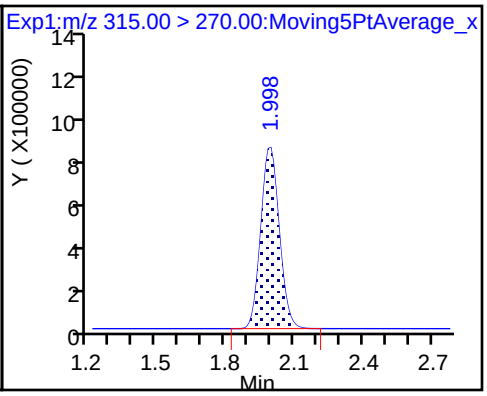
6 Perfluorohexanoic acid



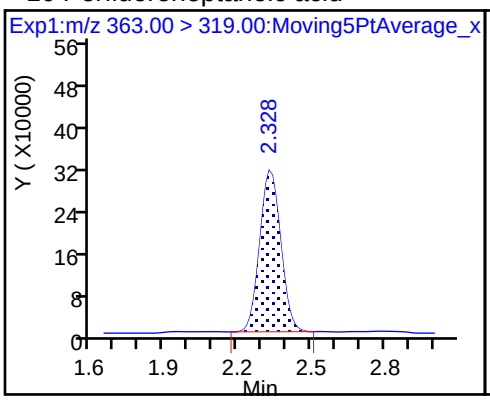
6 Perfluorohexanoic acid



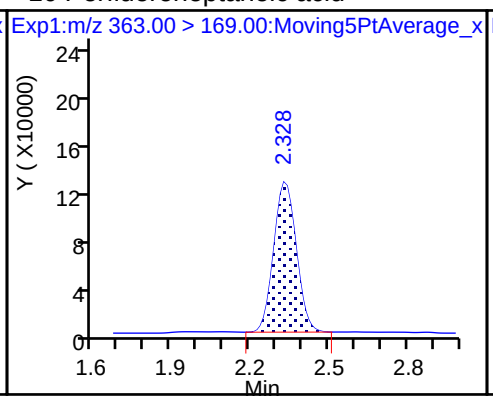
D 7 13C2 PFHxA



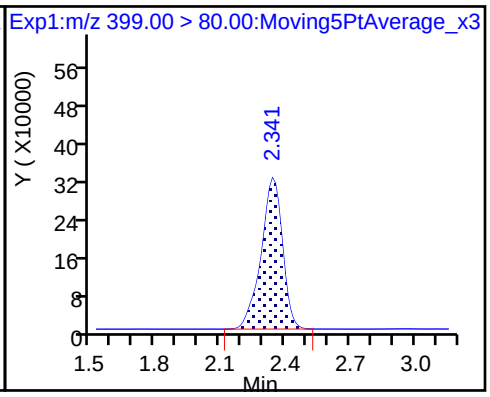
10 Perfluoroheptanoic acid



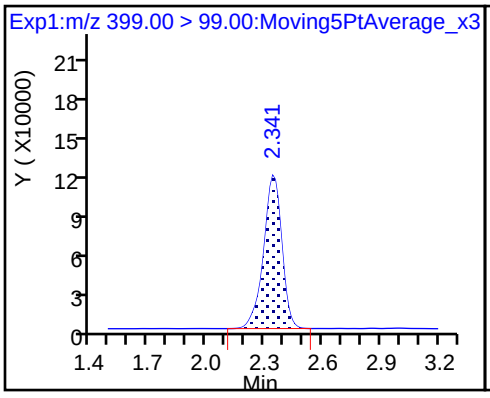
10 Perfluoroheptanoic acid



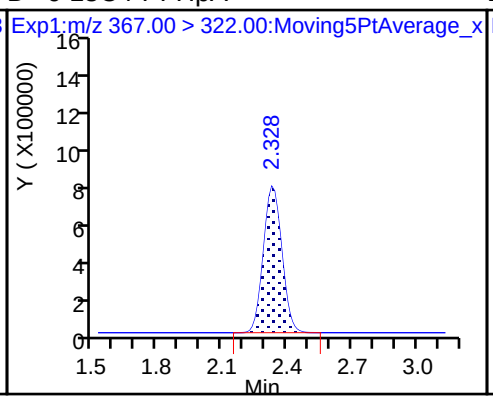
8 Perfluorohexanesulfonic acid



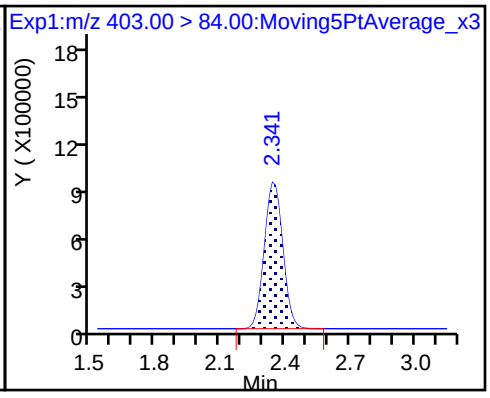
8 Perfluorohexanesulfonic acid



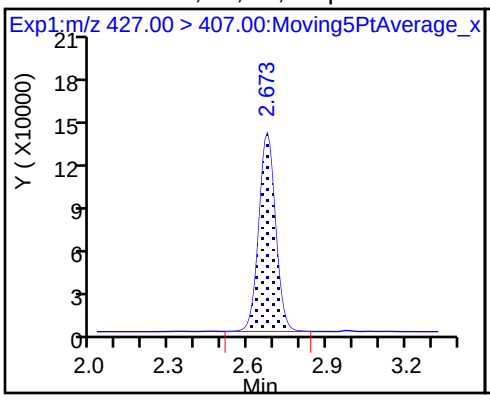
D 9 13C4-PFHpA



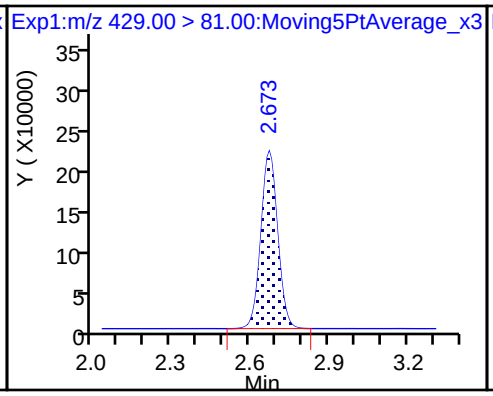
D 11 18O2 PFHxS



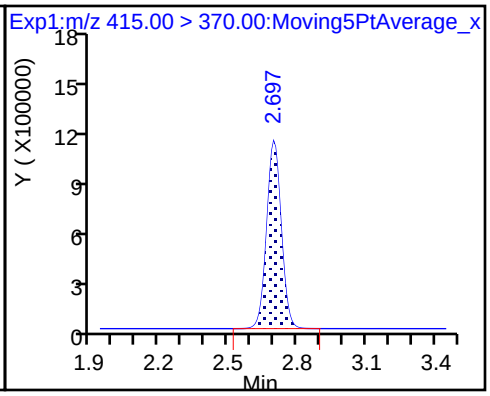
13 Sodium 1H,1H,2H,2H-perfluorooctan



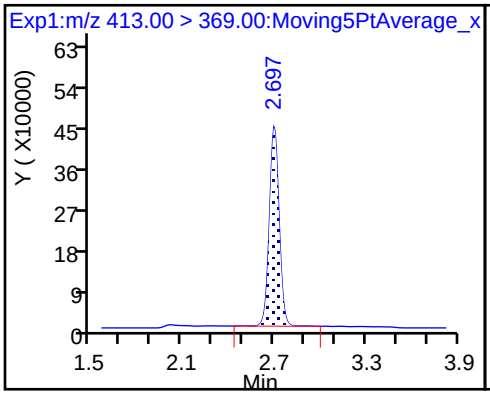
D 12 M2-6:2FTS



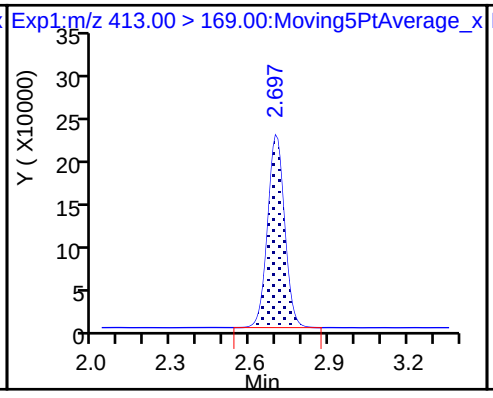
* 62 13C2-PFOA



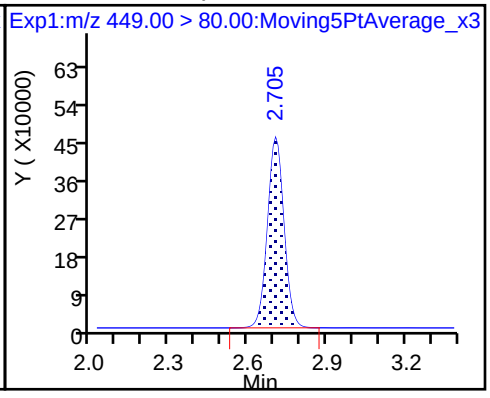
15 Perfluorooctanoic acid



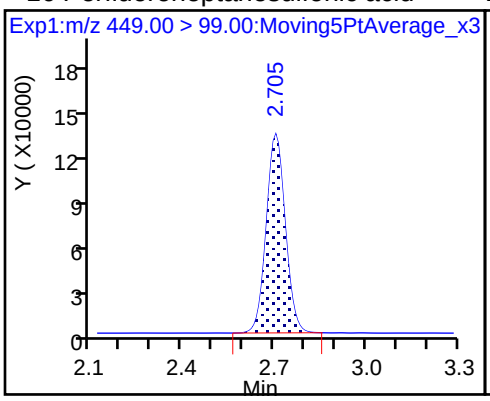
15 Perfluorooctanoic acid



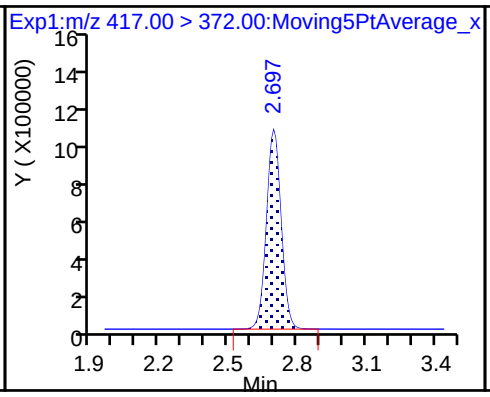
16 Perfluoroheptanesulfonic acid



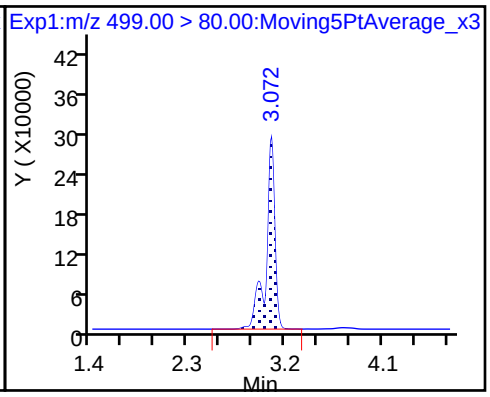
16 Perfluoroheptanesulfonic acid



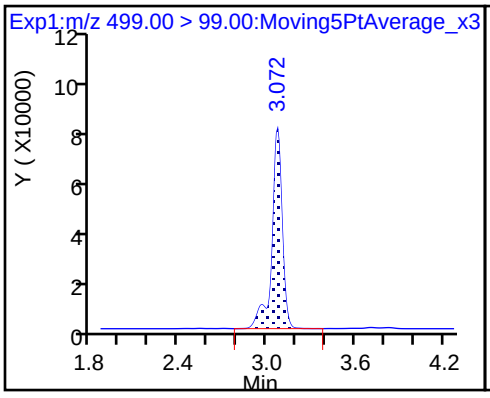
D 14 13C4 PFOA



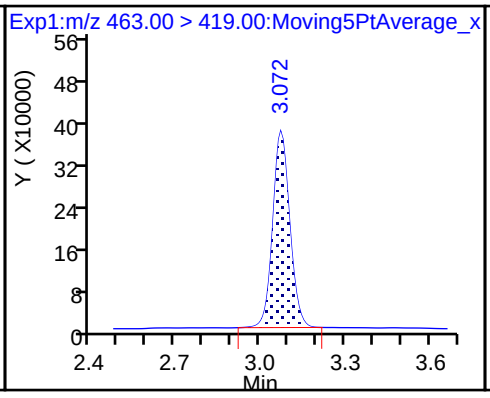
17 Perfluorooctane sulfonic acid



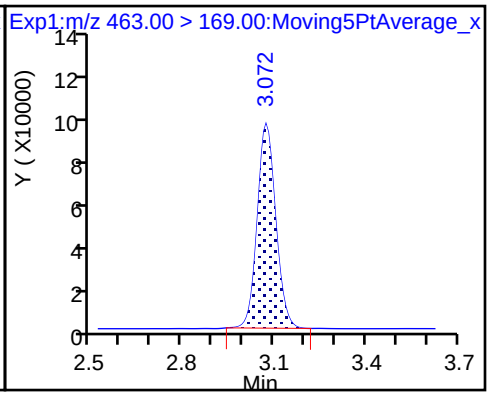
17 Perfluorooctane sulfonic acid



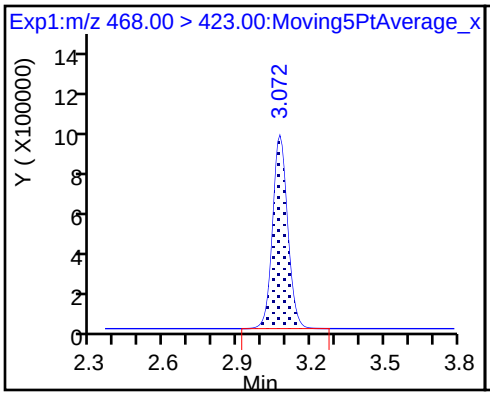
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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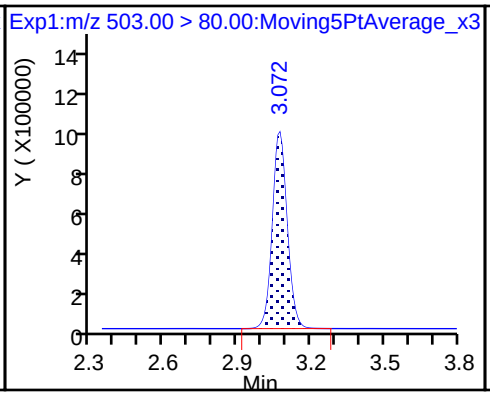
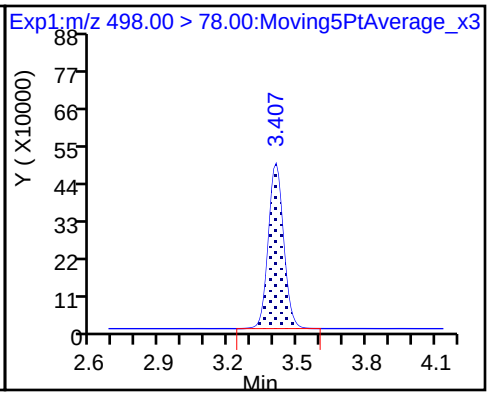
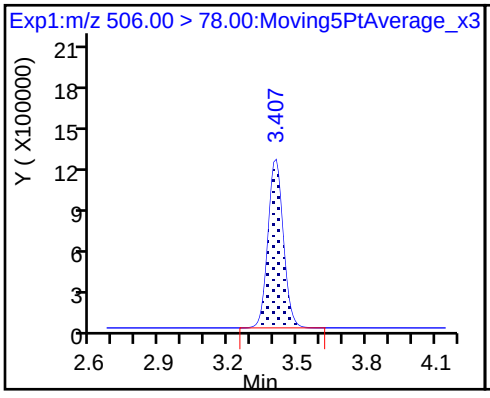


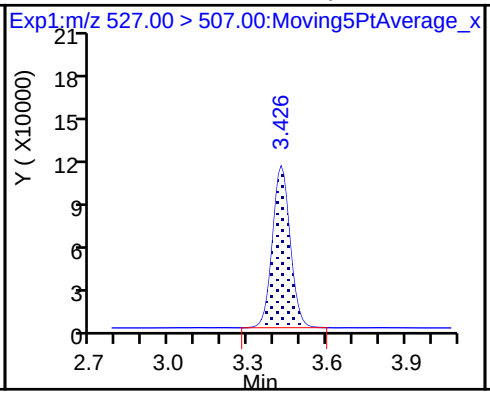
22 Perfluorooctane Sulfonamide



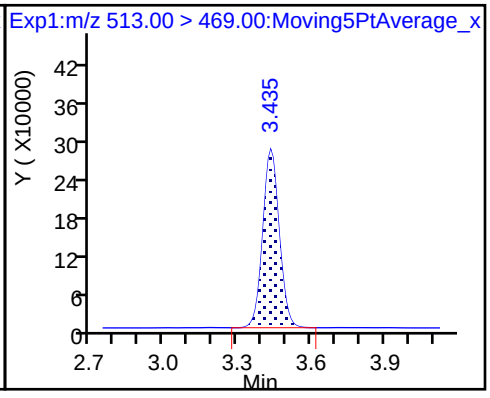
D 21 13C8 FOSA



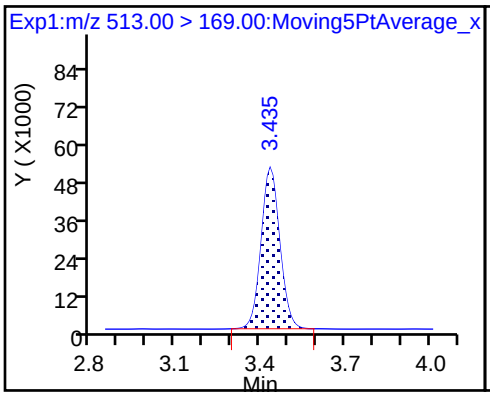
25 Sodium 1H,1H,2H,2H-perfluorodecan



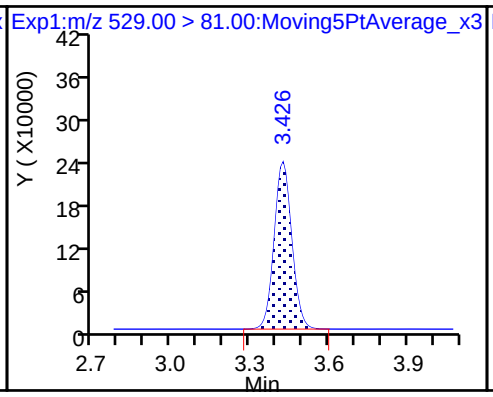
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid



D 26 M2-8:2FTS



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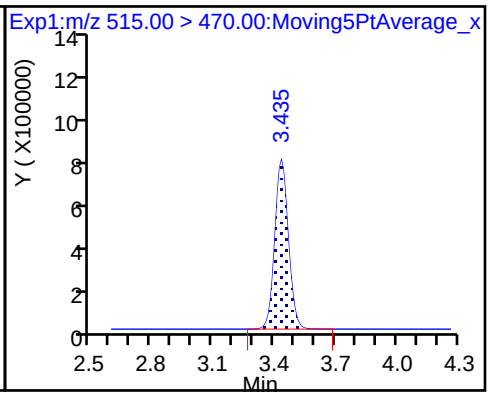
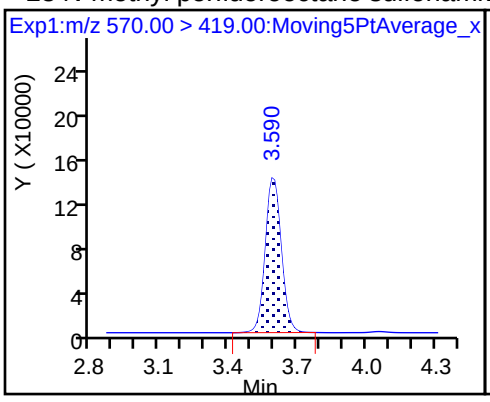
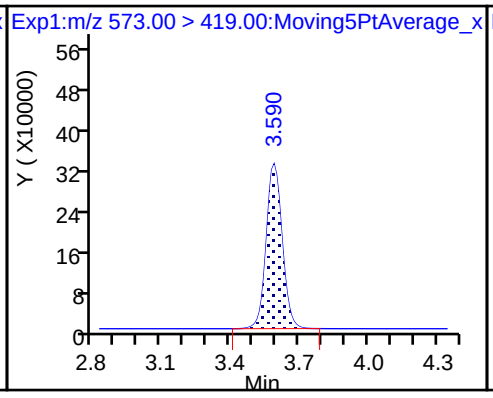


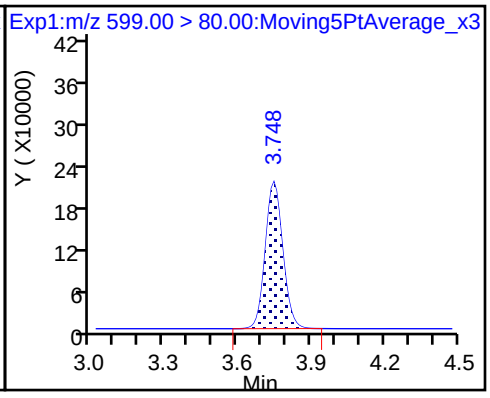
28 N-methyl perfluorooctane sulfonami



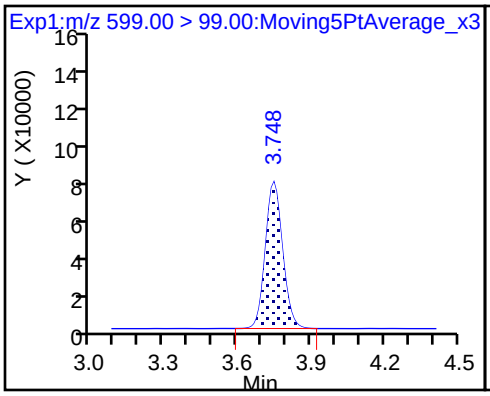
D 27 d3-NMeFOSAA



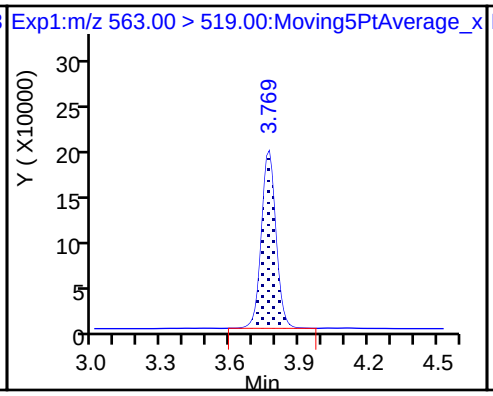
29 Perfluorodecane Sulfonic acid



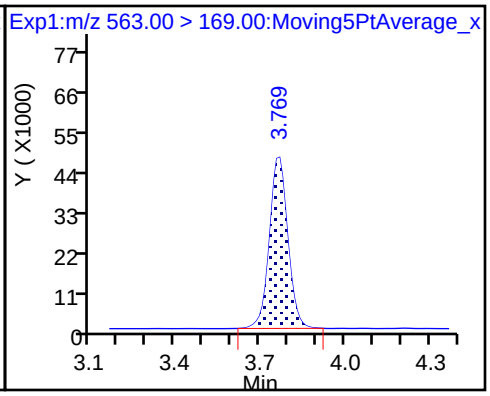
29 Perfluorodecane Sulfonic acid



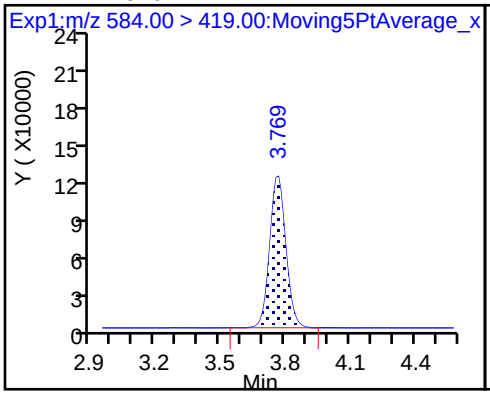
31 Perfluoroundecanoic acid



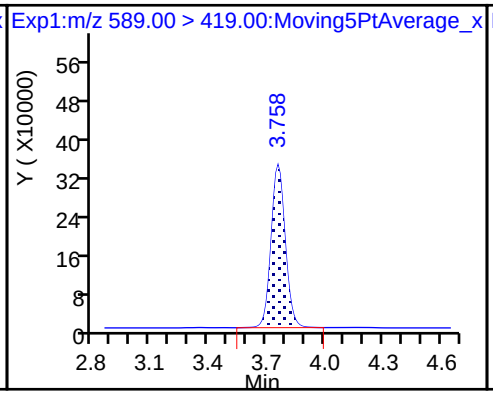
31 Perfluoroundecanoic acid



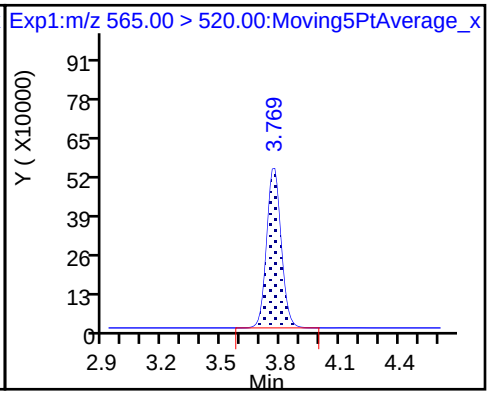
33 N-ethyl perfluorooctane sulfonamid



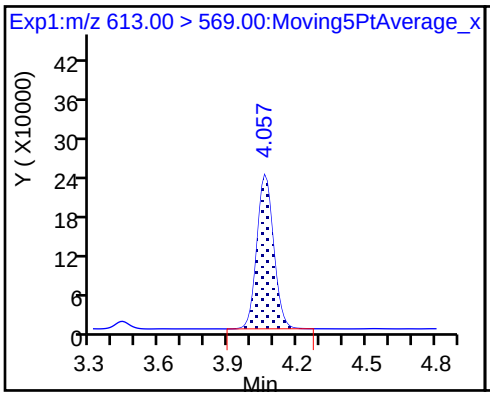
D 32 d5-NEtFOSAA



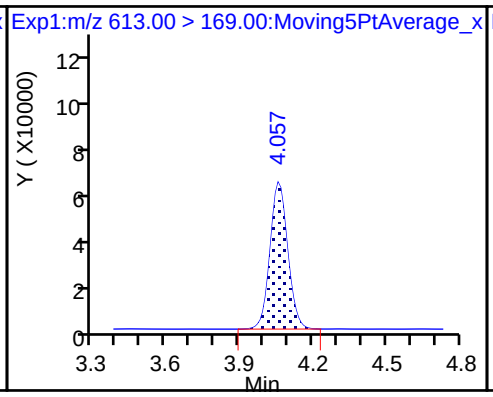
D 30 13C2 PFUnA



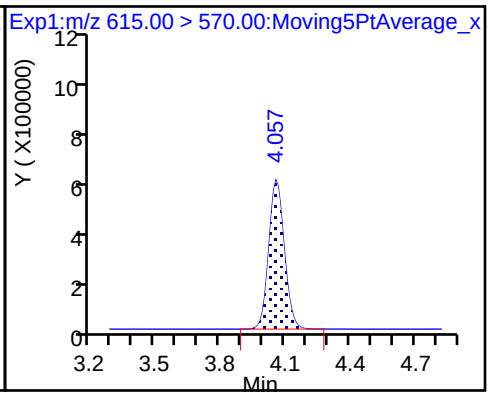
37 Perfluorododecanoic acid



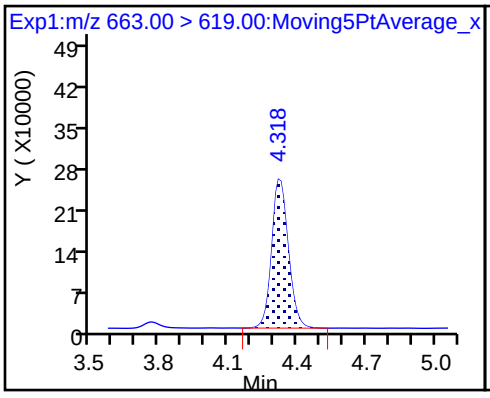
37 Perfluorododecanoic acid



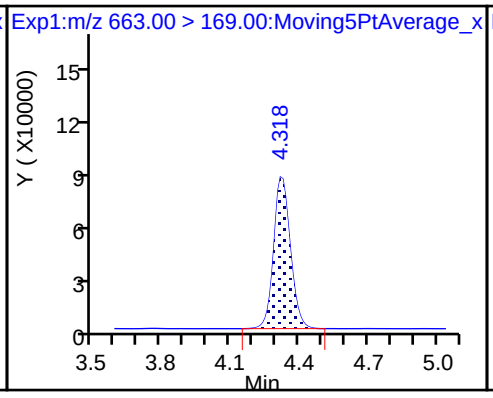
D 36 13C2 PFDoA



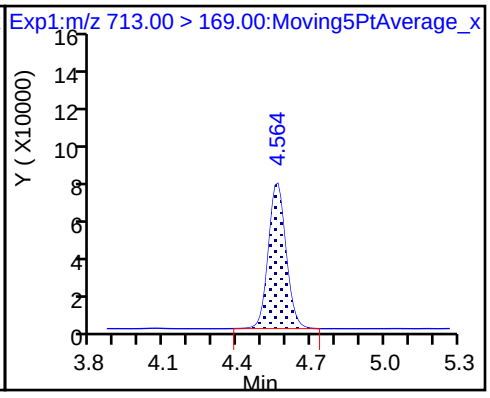
41 Perfluorotridecanoic acid



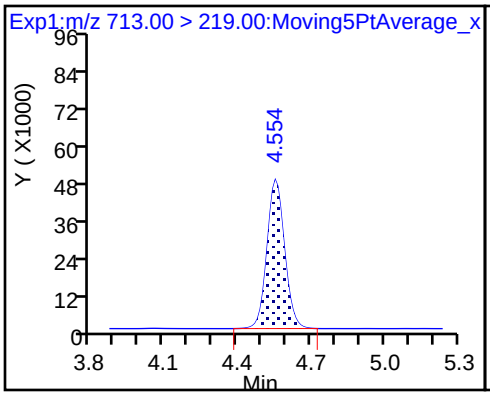
41 Perfluorotridecanoic acid



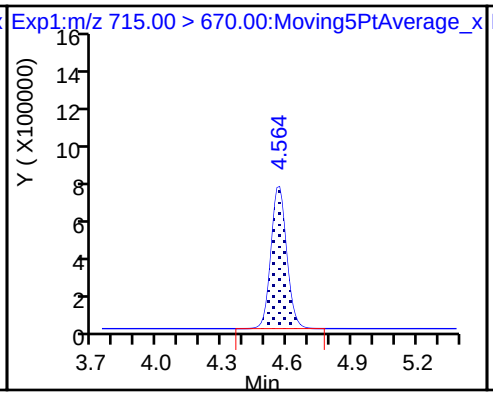
42 Perfluorotetradecanoic acid



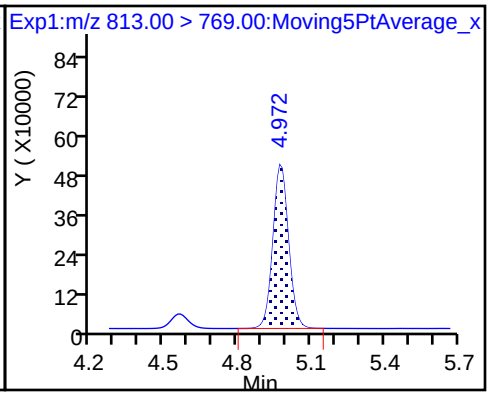
42 Perfluorotetradecanoic acid



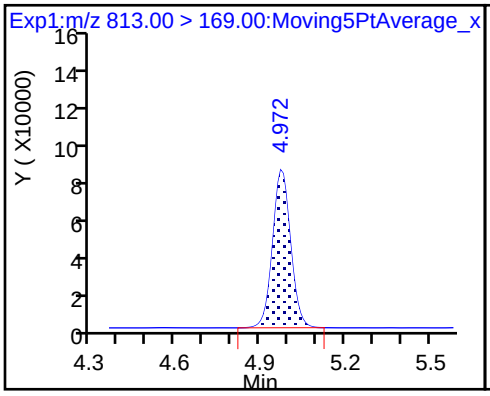
D 43 13C2-PFTeDA



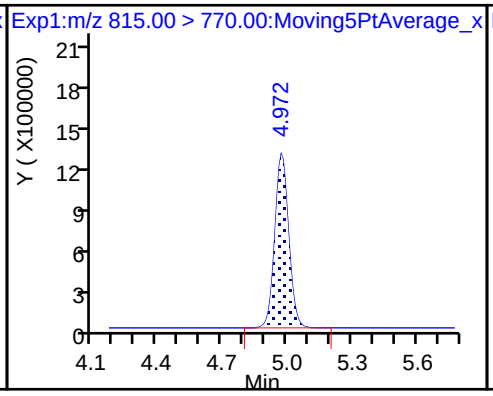
45 Perfluorohexadecanoic acid



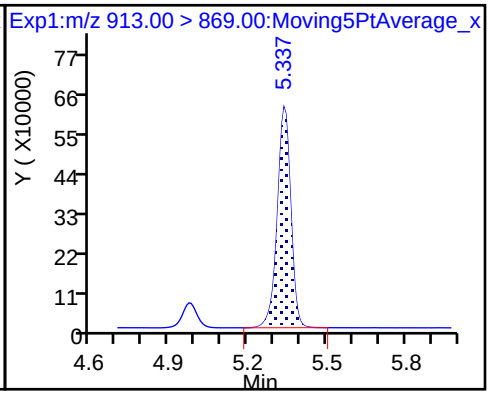
45 Perfluorohexadecanoic acid



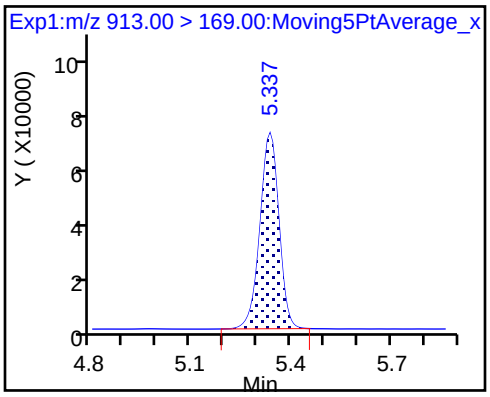
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215311/14 Calibration Date: 03/29/2018 01:28

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9423		2.50	2.50	0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.130		2.51	2.50	0.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.89		2.30	2.21	4.1	50.0
4:2 FTS	AveID	16.15	14.60		2.11	2.34	-9.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.011		2.47	2.50	-1.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.015		2.45	2.50	-1.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.043		2.13	2.28	-6.3	40.0
6:2FTS	AveID	1.744	1.601		2.18	2.37	-8.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.160		2.57	2.50	2.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.336		2.48	2.38	4.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.107		2.31	2.32	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.019		2.55	2.50	2.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9904		2.51	2.50	0.5	40.0
8:2FTS	AveID	1.276	1.263		2.37	2.40	-1.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9797		2.48	2.50	-0.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.053		2.63	2.50	5.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6958		2.47	2.41	2.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9610		2.57	2.50	2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7894		2.29	2.50	-8.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.025		2.45	2.50	-2.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.096		2.49	2.50	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2605		2.63	2.50	5.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9189		2.50	2.50	0.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.004		2.71	2.50	8.6	50.0
13C4 PFBA	Ave	1.266	1.372		2.71	2.50	8.4	50.0
13C5 PFPeA	Ave	0.8399	0.9074		2.70	2.50	8.0	50.0
13C3-PFBS	Ave	0.0192	0.0205		2.48	2.33	6.7	50.0
M2-4:2FTS	Ave	0.1324	0.1363		2.40	2.34	3.0	50.0
13C2 PFHxA	Ave	0.9288	0.9688		2.61	2.50	4.3	50.0
13C4-PFHpA	Ave	0.9164	0.9379		2.56	2.50	2.3	50.0
18O2 PFHxS	Ave	1.130	1.165		2.44	2.37	3.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215311/14 Calibration Date: 03/29/2018 01:28

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1899		2.37	2.38	-0.0	40.0
13C4 PFOA	Ave	0.9374	0.9109		2.43	2.50	-2.8	50.0
13C4 PFOS	Ave	0.8225	0.8168		2.37	2.39	-0.7	50.0
13C5 PFNA	Ave	0.8266	0.7894		2.39	2.50	-4.5	50.0
13C8 FOSA	Ave	1.109	1.194		2.69	2.50	7.6	50.0
M2-8:2FTS	Ave	0.2565	0.2224		2.08	2.40	-13.3	40.0
13C2 PFDA	Ave	0.7245	0.6843		2.36	2.50	-5.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.3225		2.11	2.50	-15.4	50.0
d5-NEtFOSAA	Ave	0.4345	0.3488		2.01	2.50	-19.7	50.0
13C2 PFUnA	Ave	0.6482	0.5468		2.11	2.50	-15.6	50.0
13C2 PFDoA	Ave	0.7355	0.6090		2.07	2.50	-17.2	50.0
13C2-PFTeDA	Ave	0.8983	0.7258		2.02	2.50	-19.2	50.0
13C2-PFHxDA	Ave	1.473	1.208		2.05	2.50	-18.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 01:28:41 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:05:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	5840228	2.50		100	2403	
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.533	6198132	2.71		108	84141	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.005	4634069	2.51		100	1962	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.630	4099654	2.70		108	132636	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	6605911	2.30		104	4356	
298.90 > 99.00	1.753	1.753	0.0	1.005	2673352		2.47(1.25-3.74)		3828	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.643	85915	2.48		107	680	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	1259846	2.11		90.4	58200	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.966	0.0	0.725	575122	2.40		103	8163	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	4424965	2.47		98.9	6664	
313.00 > 119.00	2.008	2.008	0.0	1.000	409381		10.81(5.03-15.10)		4085	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.009	-0.001	0.740	4377236	2.61		104	112699	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	4302228	2.45		98.1	2545	
363.00 > 169.00	2.341	2.341	0.0	1.000	1724510		2.49(1.13-3.40)		3181	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	4995727	2.13		93.7	18869	
399.00 > 99.00	2.354	2.354	0.0	1.000	1736570		2.88(1.50-4.49)		9592	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.863	4237513	2.56		102	89634	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.868	4979665	2.44		103	56840	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.689	2.689	0.0	1.003	1301589	2.18		91.8	7492	
* 62 13C2-PFOA										
415.00 > 370.00	2.712	2.712	0.0		4518281	2.50			57655	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.712	2.712	0.0	1.000	4775923	2.57		103	1918	
413.00 > 169.00	2.712	2.712	0.0	1.000	2458605		1.94(0.84-2.52)		7385	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.697	-0.016	0.988	814942	2.37		99.9	26160	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.720	2.720	0.0	1.000	4693748	2.48		104	59556	
449.00 > 99.00	2.720	2.720	0.0	1.000	1240624		3.78(1.94-5.82)		20216	
D 14 13C4 PFOA										
417.00 > 372.00	2.712	2.721	-0.009	1.000	4115673	2.43		97.2	72512	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.080	0.0	1.000	3789829	2.30		99.3	8407	
499.00 > 99.00	3.080	3.080	0.0	1.000	828400		4.57(2.31-6.93)		8522	
20 Perfluorononanoic acid										
463.00 > 419.00	3.088	3.088	0.0	1.003	3633457	2.55		102	4136	
463.00 > 169.00	3.080	3.088	-0.008	1.000	898576		4.04(1.90-5.69)		26428	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.136	3566813	2.39		95.5	52356	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.136	3528164	2.37		99.3	38249	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	5341022	2.51		100	19262	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.417	-0.001	1.260	5392779	2.69		108	78645	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	1216006	2.37		99.0	17269	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.444	0.0	1.000	3028889	2.48		99.2	13496	
513.00 > 169.00	3.444	3.444	0.0	1.000	535502		5.66(2.36-7.09)		14552	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.266	962442	2.08		86.7	26039	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.270	3091690	2.36		94.5	42089	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.611	3.611	0.0	1.003	1534511	2.63		105	13738	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.327	1457072	2.11		84.6	43057	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.758	0.0	1.000	2475351	2.47		102	38969	
599.00 > 99.00	3.758	3.758	0.0	1.000	835253		2.96(1.39-4.16)		21171	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.000	1950313	2.29		91.6	10296	
563.00 > 169.00	3.779	3.779	0.0	1.000	487414		4.00(2.12-6.36)		14147	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.779	0.0	1.003	1514354	2.57		103	25068	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.779	-0.011	1.389	1575807	2.01		80.3	5810	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.790	-0.011	1.393	2470511	2.11		84.4	62225	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.077	4.077	0.0	1.003	2819148	2.45		97.9	2116	
613.00 > 169.00	4.067	4.077	-0.010	1.000	697683		4.04(2.13-6.40)		8082	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.499	2751682	2.07		82.8	19614	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.339	4.339	0.0	1.000	3014633	2.49		99.5	1254	
663.00 > 169.00	4.339	4.339	0.0	1.000	1007002		2.99(1.25-3.76)		15338	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	854354	2.63		105	10814	
713.00 > 219.00	4.564	4.575	-0.011	0.998	585679		1.46(0.71-2.13)		10626	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.687	3279457	2.02		80.8	18345	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	5013383	2.50		100	1129	
813.00 > 169.00	4.990	4.990	0.0	1.000	869695		5.76(2.86-8.58)		6790	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	5.008	-0.018	1.840	5456177	2.05		82.0	14121	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	5476305	2.71		109	967	
913.00 > 169.00	5.351	5.351	0.0	1.000	699259		7.83(3.83-11.48)		5776	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_017.d

Injection Date: 29-Mar-2018 01:28:41 Instrument ID: A8_N

Lims ID: CCV L5

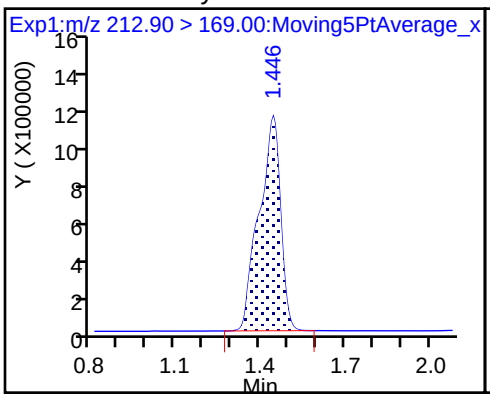
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 14

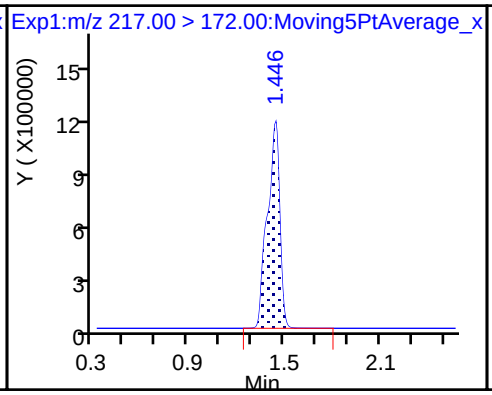
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

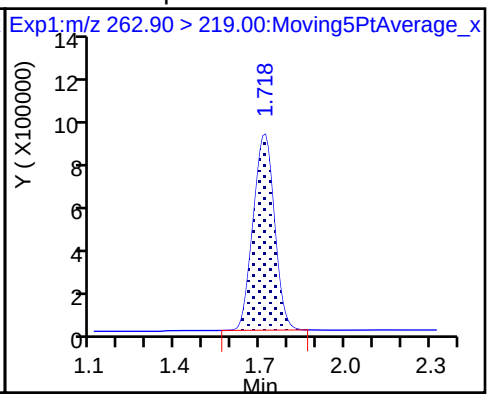
2 Perfluorobutyric acid



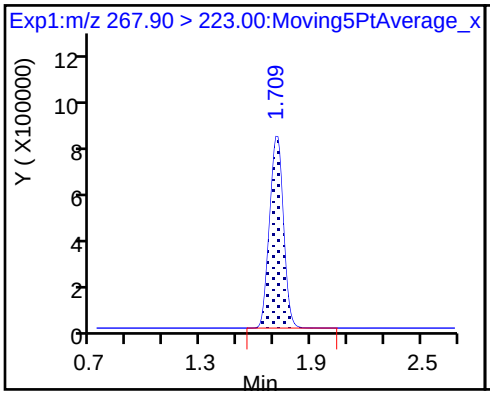
D 1 13C4 PFBA



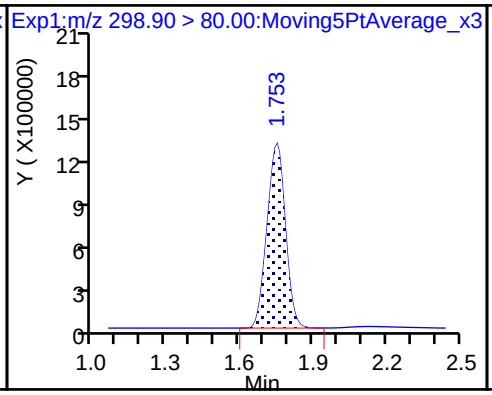
4 Perfluoropentanoic acid



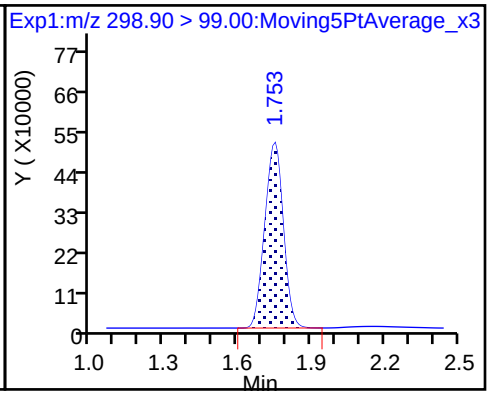
D 3 13C5-PFPeA



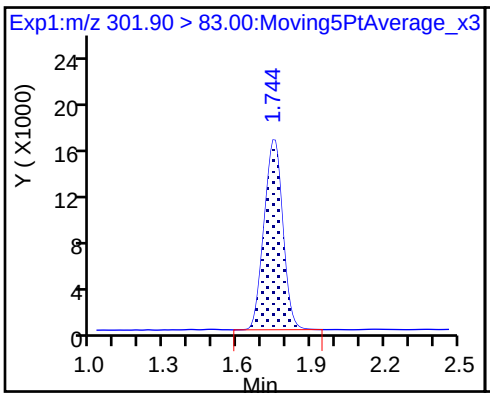
5 Perfluorobutanesulfonic acid



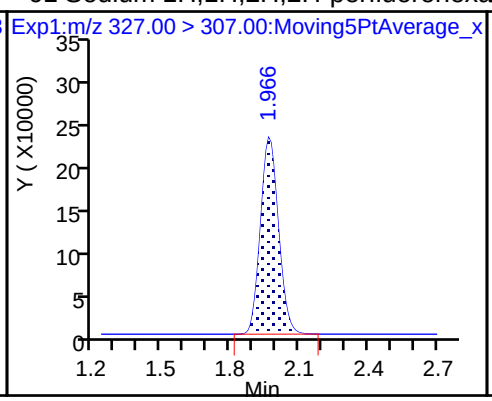
5 Perfluorobutanesulfonic acid



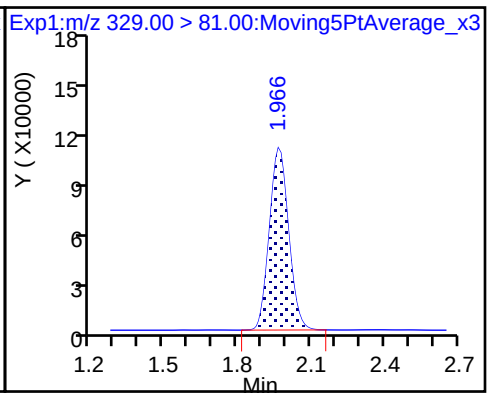
D 47 13C3-PFBS



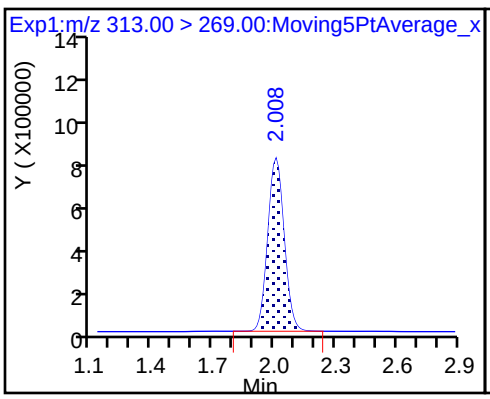
61 Sodium 1H,1H,2H,2H-perfluorohexa



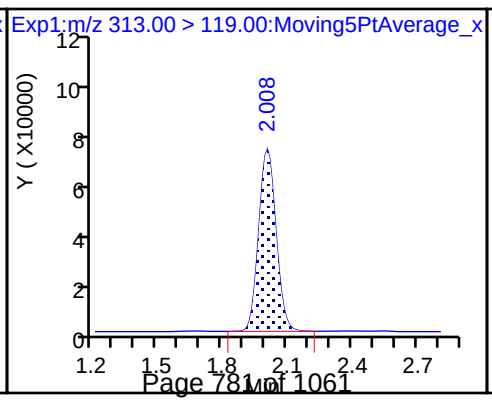
D 60 M2-4:2FTS



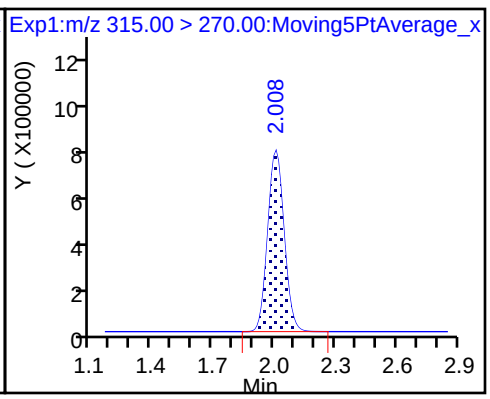
6 Perfluorohexanoic acid



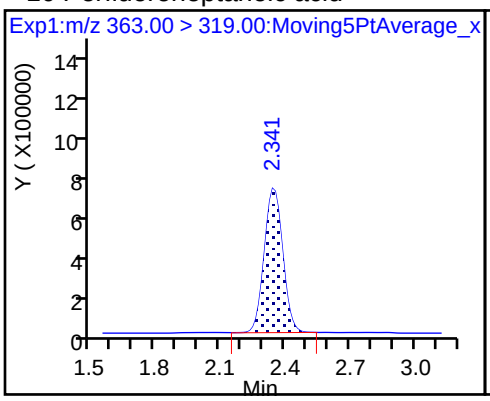
6 Perfluorohexanoic acid



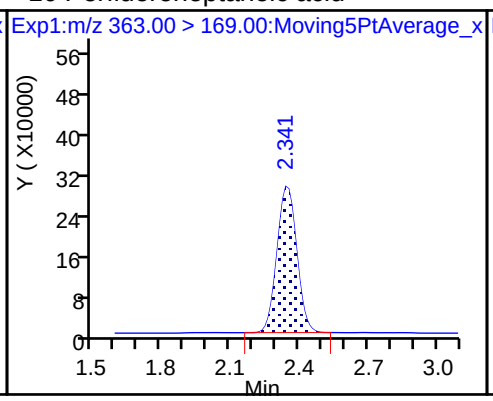
D 7 13C2 PFHxA



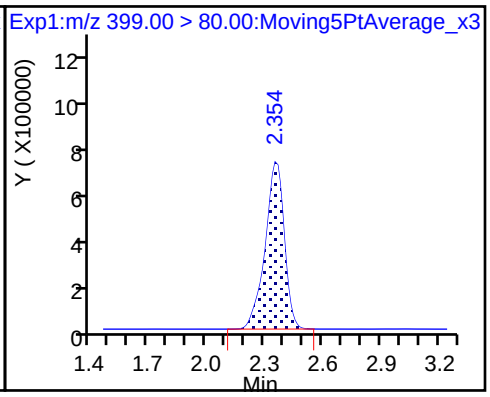
10 Perfluoroheptanoic acid



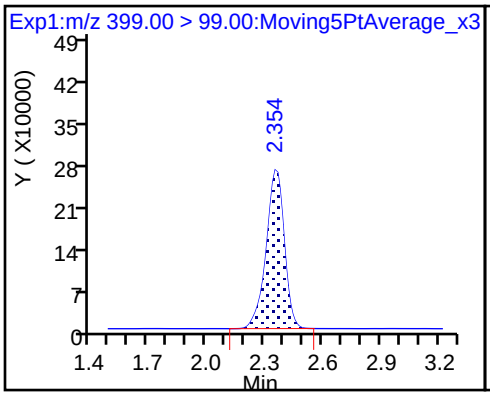
10 Perfluoroheptanoic acid



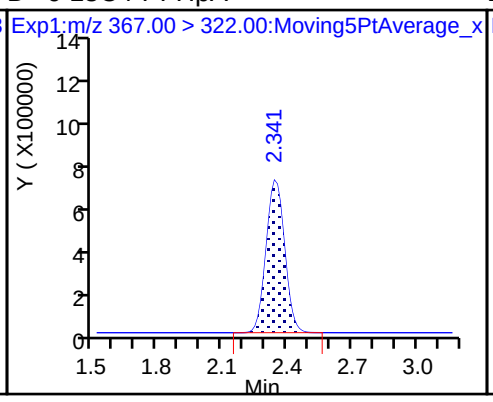
8 Perfluorohexanesulfonic acid



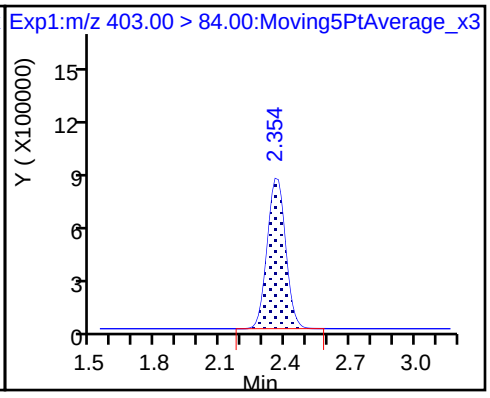
8 Perfluorohexanesulfonic acid



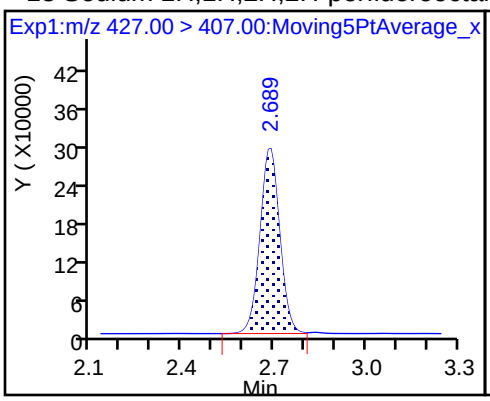
D 9 13C4-PFHpA



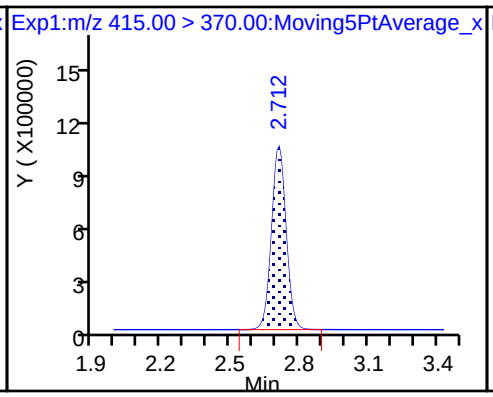
D 11 18O2 PFHxS



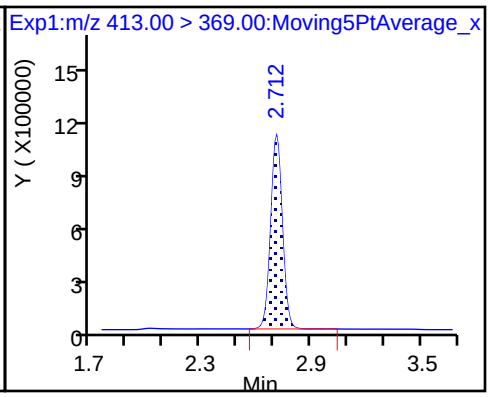
13 Sodium 1H,1H,2H,2H-perfluorooctane



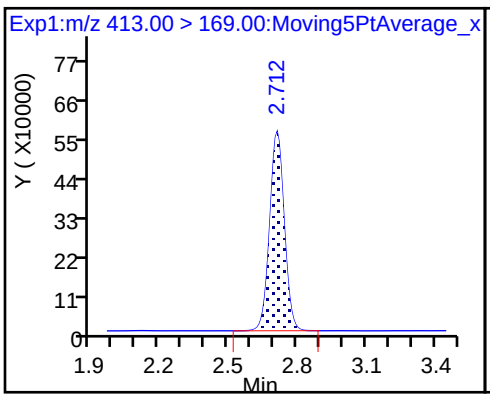
M2 13C2-PFOA



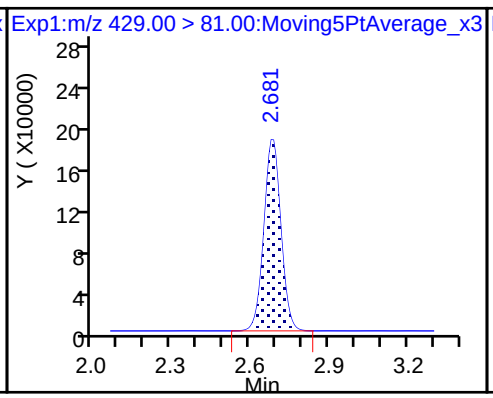
15 Perfluorooctanoic acid



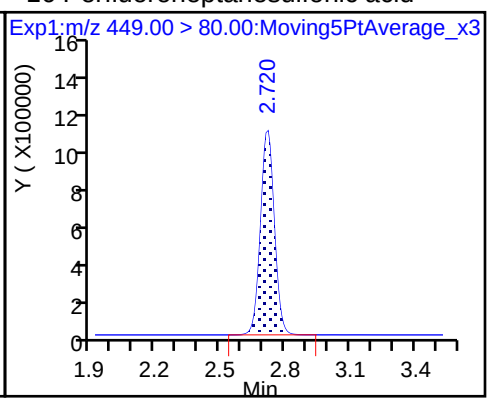
15 Perfluorooctanoic acid



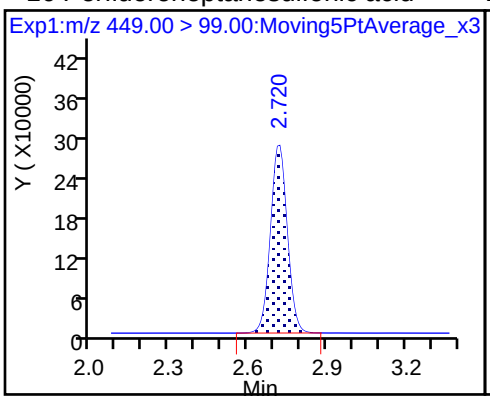
D 12 M2-6:2FTS



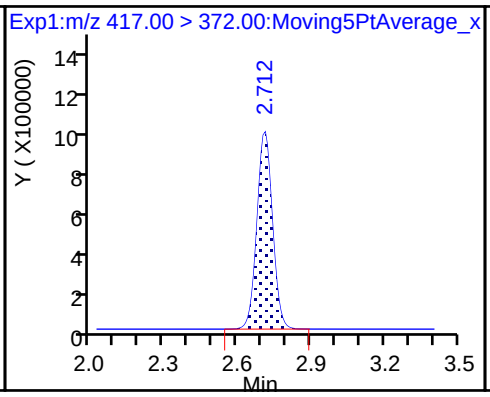
16 Perfluoroheptanesulfonic acid



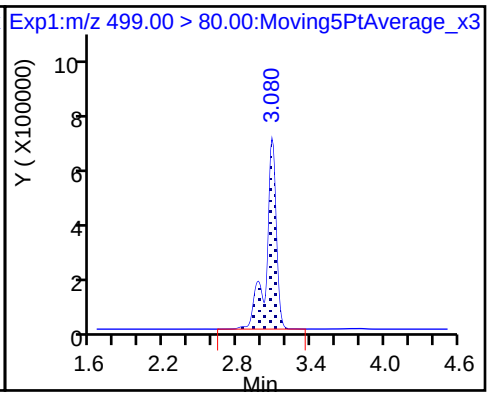
16 Perfluoroheptanesulfonic acid



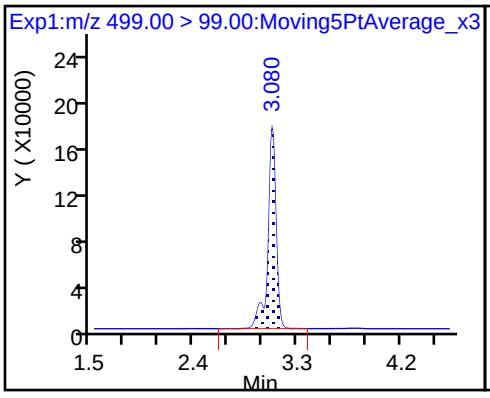
D 14 13C4 PFOA



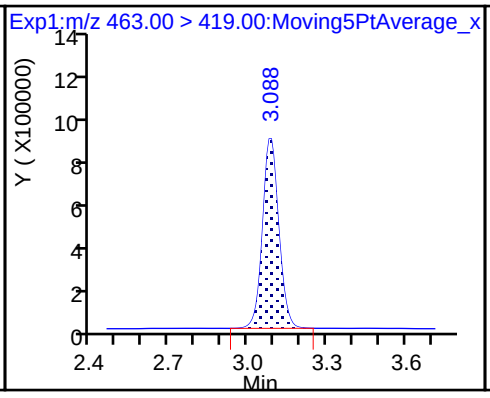
17 Perfluorooctane sulfonic acid



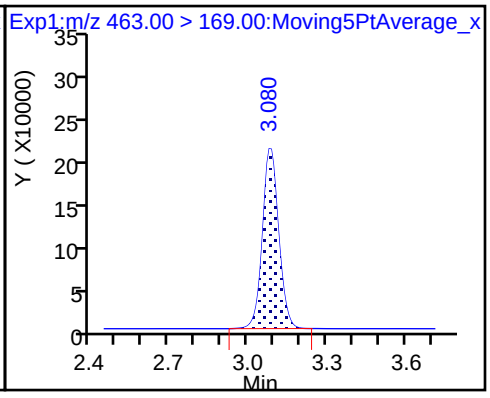
17 Perfluorooctane sulfonic acid



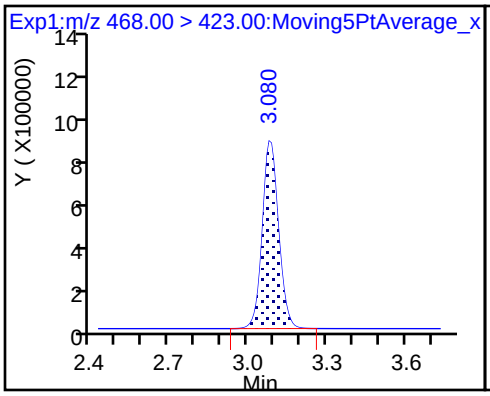
20 Perfluorononanoic acid



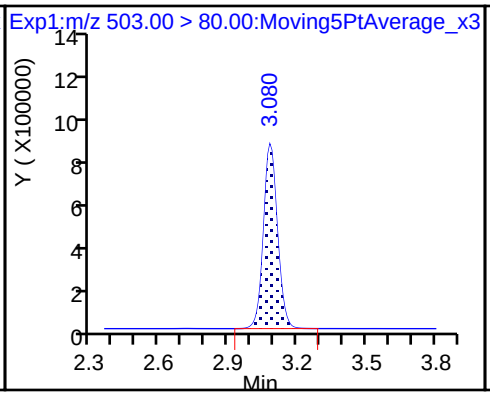
20 Perfluorononanoic acid



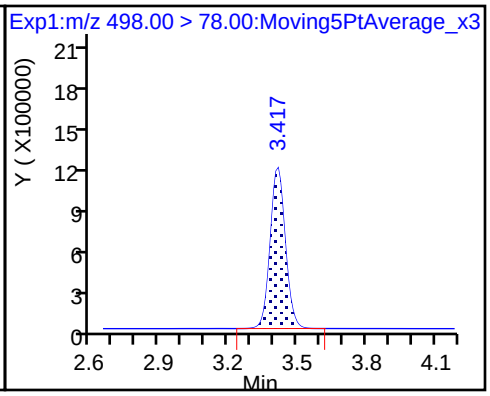
D 19 13C5 PFNA



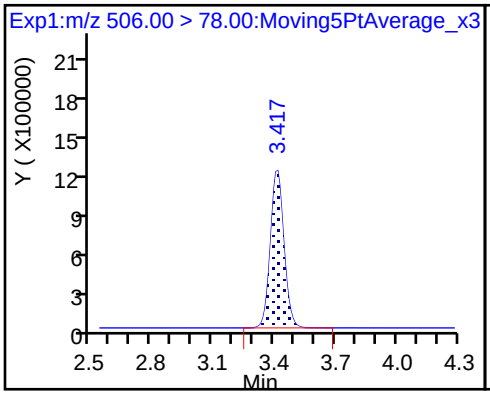
D 18 13C4 PFOS



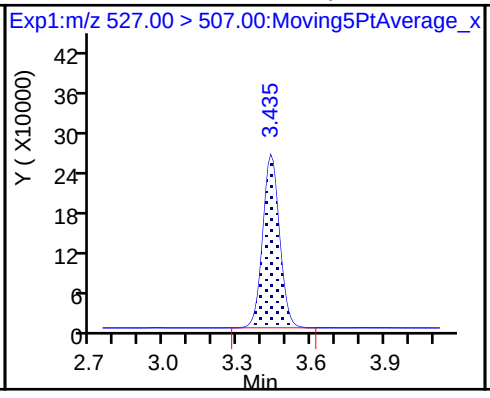
22 Perfluorooctane Sulfonamide



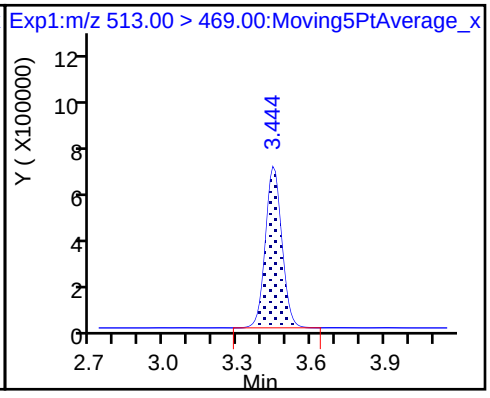
D 21 13C8 FOSA



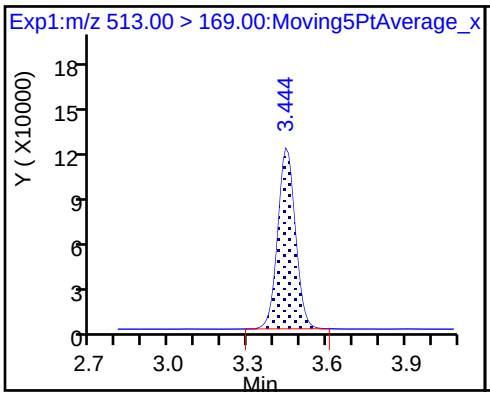
25 Sodium 1H,1H,2H,2H-perfluorodecan



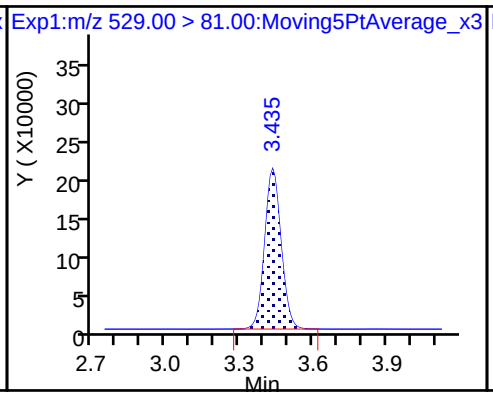
24 Perfluorodecanoic acid



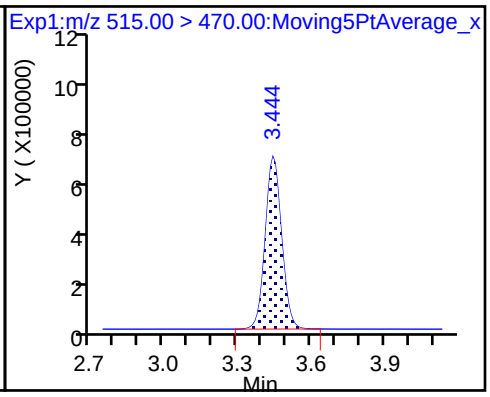
24 Perfluorodecanoic acid



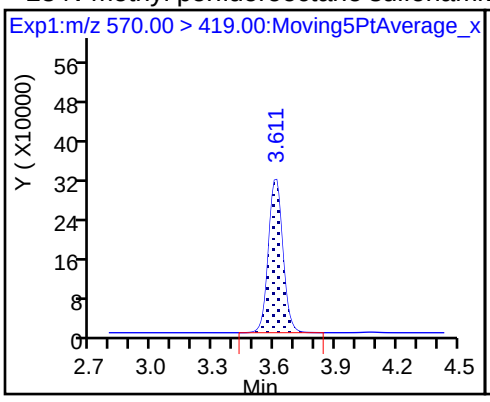
D 26 M2-8:2FTS



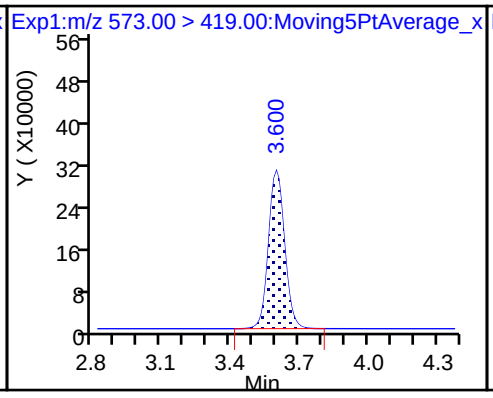
D 23 13C2 PFDA



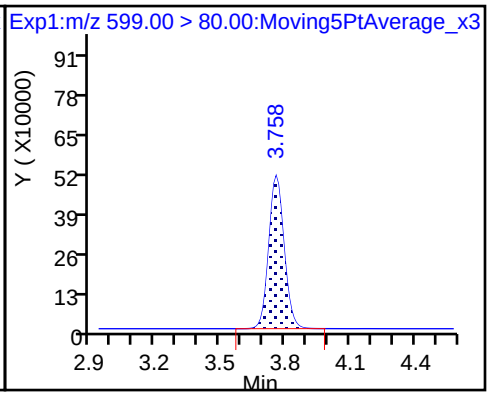
28 N-methyl perfluorooctane sulfonami



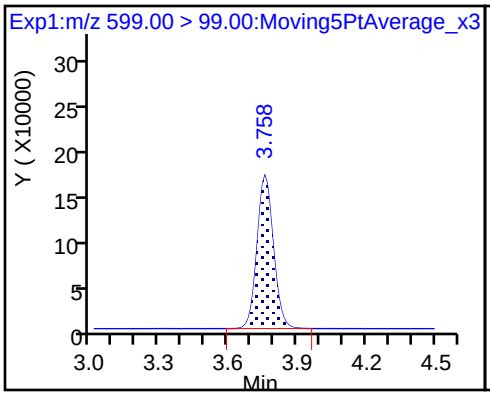
D 27 d3-NMeFOSAA



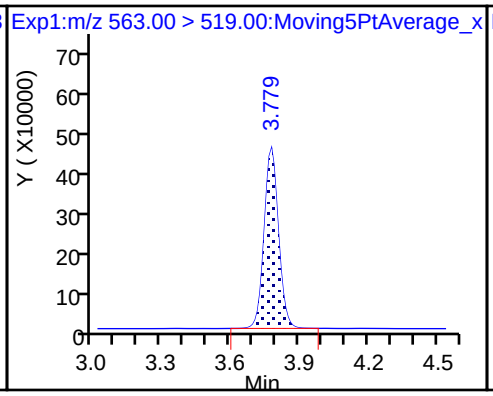
29 Perfluorodecane Sulfonic acid



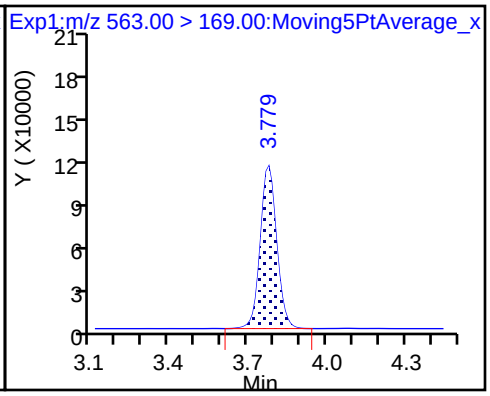
29 Perfluorodecane Sulfonic acid



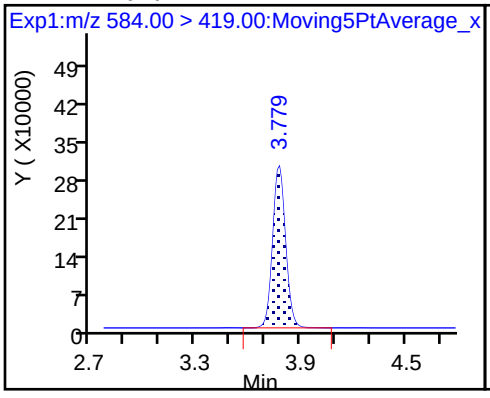
31 Perfluoroundecanoic acid



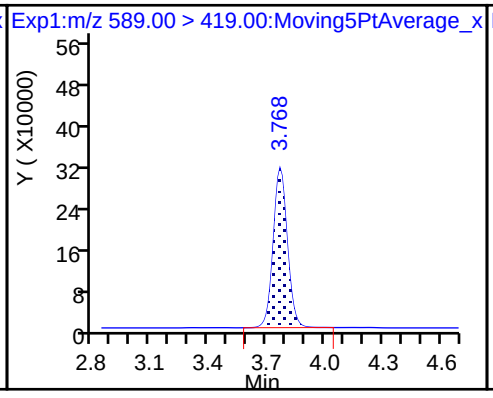
31 Perfluoroundecanoic acid



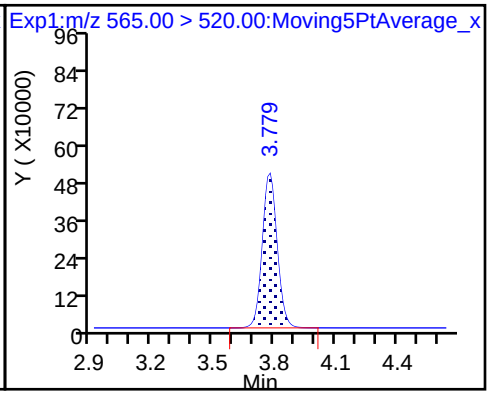
33 N-ethyl perfluorooctane sulfonamid



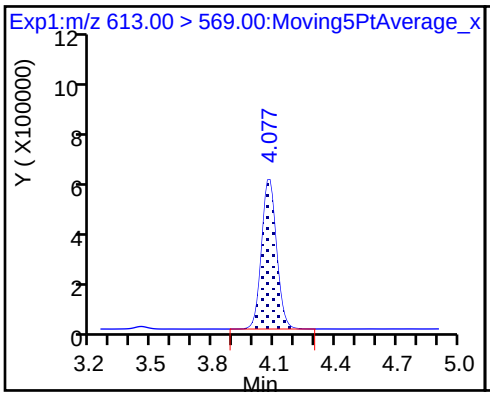
D 32 d5-NEtFOSAA



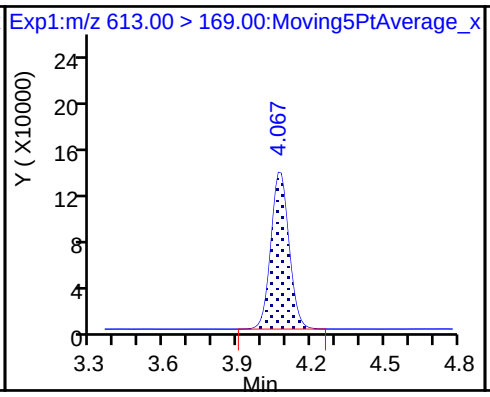
D 30 13C2 PFUnA



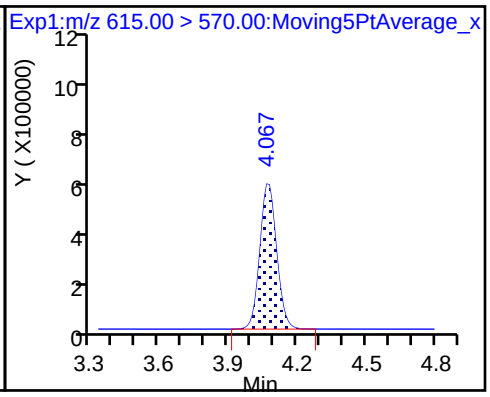
37 Perfluorododecanoic acid



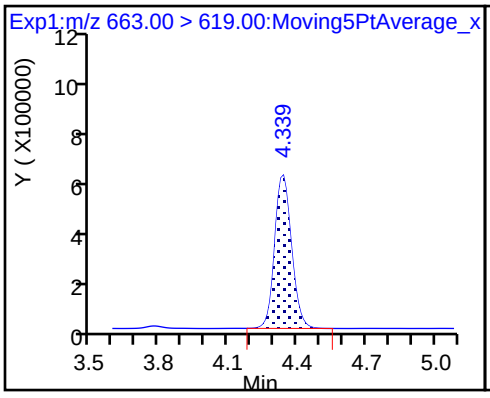
37 Perfluorododecanoic acid



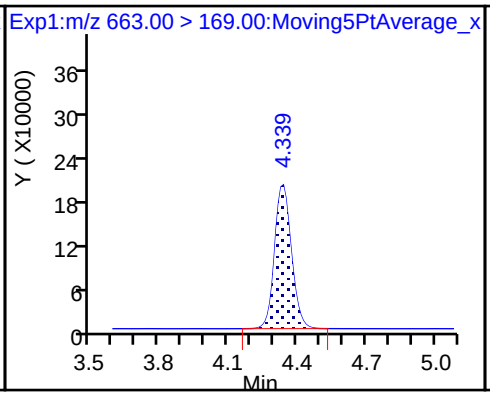
D 36 13C2 PFDoA



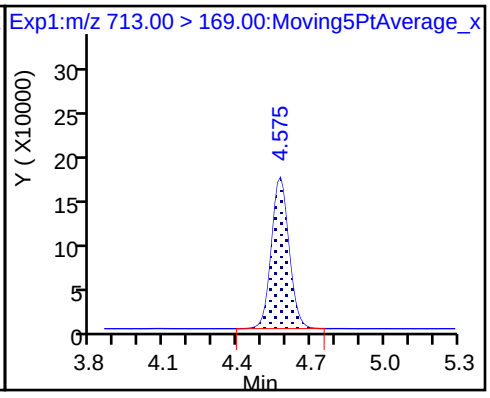
41 Perfluorotridecanoic acid



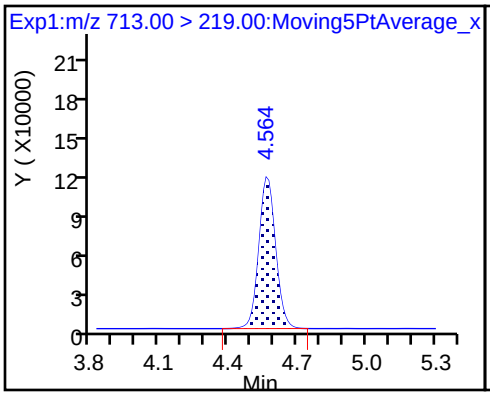
41 Perfluorotridecanoic acid



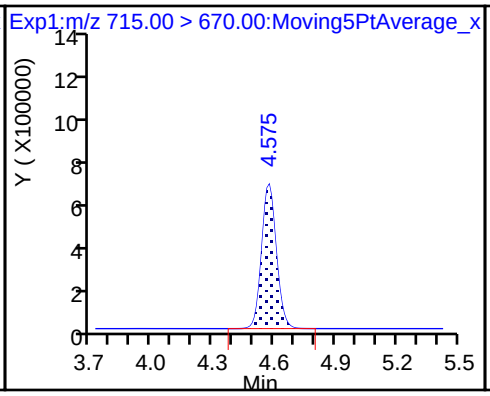
42 Perfluorotetradecanoic acid



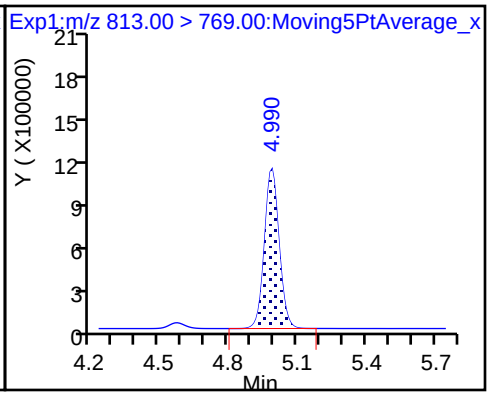
42 Perfluorotetradecanoic acid



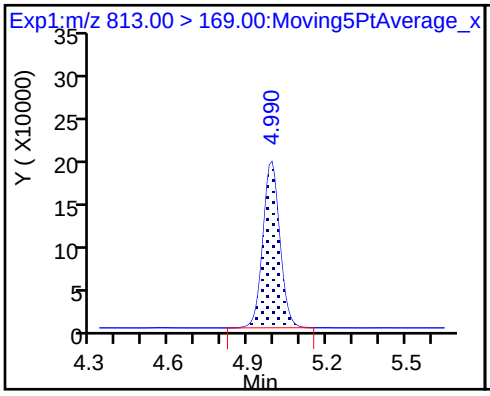
D 43 13C2-PFTeDA



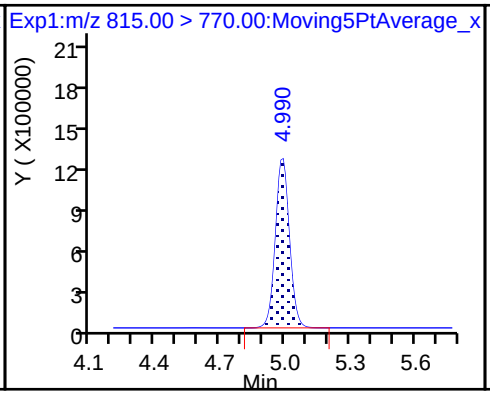
45 Perfluorohexadecanoic acid



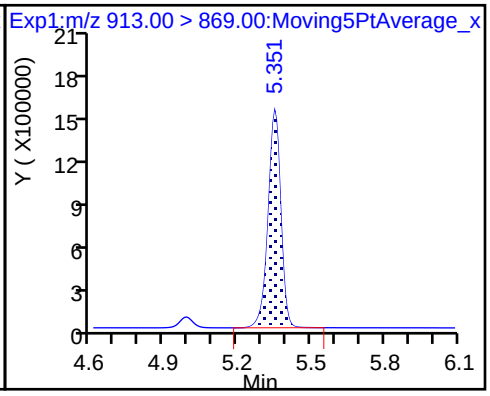
45 Perfluorohexadecanoic acid



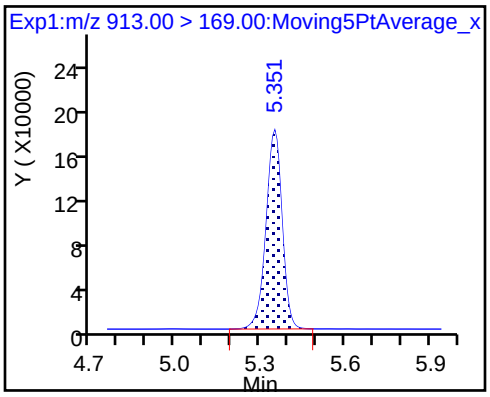
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215311/23 Calibration Date: 03/29/2018 02:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8904		0.945	1.00	-5.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.117		0.991	1.00	-0.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.74		0.907	0.884	2.6	50.0
4:2 FTS	AveID	16.15	15.14		0.875	0.934	-6.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9855		0.964	1.00	-3.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9451		0.914	1.00	-8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.024		0.837	0.910	-8.0	40.0
6:2FTS	AveID	1.744	1.867		1.02	0.948	7.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.327		0.986	0.952	3.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.103		0.976	1.00	-2.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.005		1.01	1.00	0.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.059		0.882	0.928	-4.9	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9746		0.989	1.00	-1.1	40.0
8:2FTS	AveID	1.276	1.198		0.899	0.958	-6.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9845		0.996	1.00	-0.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9467		0.946	1.00	-5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6390		0.906	0.964	-6.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9261		0.991	1.00	-0.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7882		0.914	1.00	-8.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.054		1.01	1.00	0.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.100		0.999	1.00	-0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2443		0.986	1.00	-1.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		1.07	1.00	7.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.015		1.10	1.00	9.8	50.0
13C4 PFBA	Ave	1.266	1.414		2.79	2.50	11.7	50.0
13C5 PFPeA	Ave	0.8399	0.9104		2.71	2.50	8.4	50.0
13C3-PFBS	Ave	0.0192	0.0201		2.44	2.33	4.8	50.0
M2-4:2FTS	Ave	0.1324	0.1386		2.45	2.34	4.7	50.0
13C2 PFHxA	Ave	0.9288	1.019		2.74	2.50	9.7	50.0
13C4-PFHpA	Ave	0.9164	1.020		2.78	2.50	11.3	50.0
18O2 PFHxS	Ave	1.130	1.250		2.62	2.37	10.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Lab Sample ID: CCV 320-215311/23 Calibration Date: 03/29/2018 02:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2062		2.58	2.38	8.5	40.0
13C4 PFOA	Ave	0.9374	0.9699		2.59	2.50	3.5	50.0
13C4 PFOS	Ave	0.8225	0.8395		2.44	2.39	2.1	50.0
13C5 PFNA	Ave	0.8266	0.8215		2.49	2.50	-0.6	50.0
13C8 FOSA	Ave	1.109	1.192		2.69	2.50	7.5	50.0
M2-8:2FTS	Ave	0.2565	0.2321		2.17	2.40	-9.5	40.0
13C2 PFDA	Ave	0.7245	0.6959		2.40	2.50	-3.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3307		2.17	2.50	-13.3	50.0
d5-NEtFOSAA	Ave	0.4345	0.3708		2.13	2.50	-14.7	50.0
13C2 PFUnA	Ave	0.6482	0.5557		2.14	2.50	-14.3	50.0
13C2 PFDoA	Ave	0.7355	0.5989		2.04	2.50	-18.6	50.0
13C2-PFTeDA	Ave	0.8983	0.7676		2.14	2.50	-14.5	50.0
13C2-PFHxDA	Ave	1.473	1.206		2.05	2.50	-18.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_026.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 02:39:02 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:46 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.531	6548078	2.79		112	89754	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.004	2332048	0.9450		94.5	643	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.709	-0.001	0.630	4217246	2.71		108	138459	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.708	0.0	1.000	1884819	0.99		99.1	808	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.643	86566	2.44		105	670	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2624658	0.9072		103	1676	
298.90 > 99.00	1.744	1.753	-0.009	1.000	1086198		2.42(1.25-3.74)		1606	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.965	1.965	0.0	1.000	526360	0.8752		93.7	33168	
D 60 M2-4:2FTS										
329.00 > 81.00	1.965	1.966	-0.001	0.725	599682	2.44		105	7984	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.005	1860647	0.9640		96.4	2781	
313.00 > 119.00	2.008	2.008	0.0	1.005	177718		10.47(5.03-15.10)		1919	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.737	4720053	2.74		110	122733	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.340	0.0	1.000	1786118	0.9136		91.4	1090	
363.00 > 169.00	2.340	2.340	0.0	1.000	709115		2.52(1.13-3.40)		1360	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.353	0.0	1.000	2158695	0.8374		92.0	10042	
399.00 > 99.00	2.353	2.353	0.0	1.000	736498		2.93(1.50-4.49)		3974	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.354	-0.014	0.864	4724790	2.78		111	81085	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.368	-0.015	0.868	5477237	2.62		111	86550	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.679	0.0	1.000	676139	1.01		107	7339	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.697	-0.018	0.988	907460	2.58		109	22899	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.710	2.710	0.0	1.000	1981654	0.9761		97.6	738	
413.00 > 169.00	2.710	2.710	0.0	1.000	997336		1.99(0.84-2.52)		3351	
* 62 13C2-PFOA										
415.00 > 370.00	2.710	2.710	0.0		4632500	2.50			88894	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.710	0.0	1.000	1965298	0.9860		104	41408	
449.00 > 99.00	2.710	2.710	0.0	1.000	522003		3.76(1.94-5.82)		9350	
D 14 13C4 PFOA										
417.00 > 372.00	2.710	2.721	-0.011	1.000	4492864	2.59		103	68234	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.080	0.0	1.000	1528619	0.8821		95.1	3966	
499.00 > 99.00	3.080	3.080	0.0	1.000	362839		4.21(2.31-6.93)		3476	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.080	0.0	1.000	1530258	1.01		101	1740	
463.00 > 169.00	3.080	3.080	0.0	1.000	369816		4.14(1.90-5.69)		12333	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.136	3805587	2.48		99.4	59685	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.136	3717946	2.44		102	44458	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.415	3.415	0.0	1.000	2152678	0.9886		98.9	33836	
D 21 13C8 FOSA										
506.00 > 78.00	3.415	3.417	-0.002	1.260	5521959	2.69		107	50448	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.433	0.0	1.000	493680	0.8994		93.9	7579	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.442	0.0	1.000	1269531	1.00		99.6	7284	
513.00 > 169.00	3.442	3.442	0.0	1.000	234974		5.40(2.36-7.09)		6383	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.453	-0.020	1.267	1030011	2.17		90.5	31774	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.462	-0.020	1.270	3223915	2.40		96.1	41489	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.599	3.599	0.0	1.000	580048	0.9459		94.6	5887	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.611	-0.012	1.328	1531822	2.17		86.7	34809	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.758	0.0	1.000	958245	0.9059		94.0	24340	
599.00 > 99.00	3.758	3.758	0.0	1.000	328510		2.92(1.39-4.16)		7360	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.000	811629	0.9143		91.4	4613	
563.00 > 169.00	3.779	3.779	0.0	1.000	207336		3.91(2.12-6.36)		9848	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.779	0.0	1.003	636296	0.99		99.1	9771	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.779	-0.011	1.390	1717749	2.13		85.3	4875	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.790	-0.011	1.394	2574169	2.14		85.7	51849	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.067	0.0	1.000	1170037	1.01		101	961	
613.00 > 169.00	4.067	4.067	0.0	1.000	290060		4.03(2.13-6.40)		5834	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.500	2774227	2.04		81.4	19936	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	1220551	1.00		99.9	521	
663.00 > 169.00	4.329	4.329	0.0	1.000	383343		3.18(1.25-3.76)		6321	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	347500	0.9859		98.6	7062	
713.00 > 219.00	4.564	4.575	-0.011	0.998	251562		1.38(0.71-2.13)		5068	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.688	3556086	2.14		85.5	19579	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	2224680	1.07		107	556	
813.00 > 169.00	4.990	4.990	0.0	1.000	360673		6.17(2.86-8.58)		3136	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	5.008	-0.018	1.841	5586314	2.05		81.9	15400	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	2268007	1.10		110	454	
913.00 > 169.00	5.351	5.351	0.0	1.000	292665		7.75(3.83-11.48)		3288	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_026.d

Injection Date: 29-Mar-2018 02:39:02 Instrument ID: A8_N

Lims ID: CCV L4

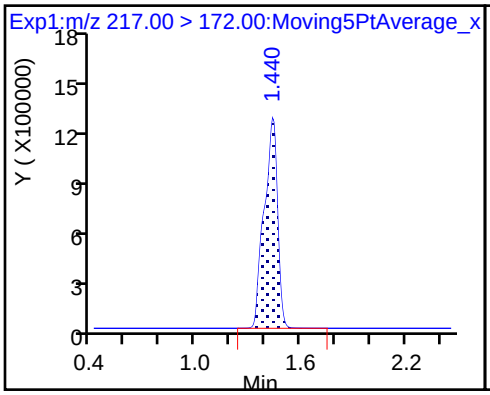
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

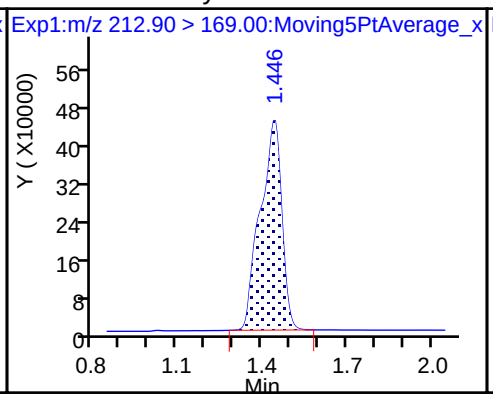
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

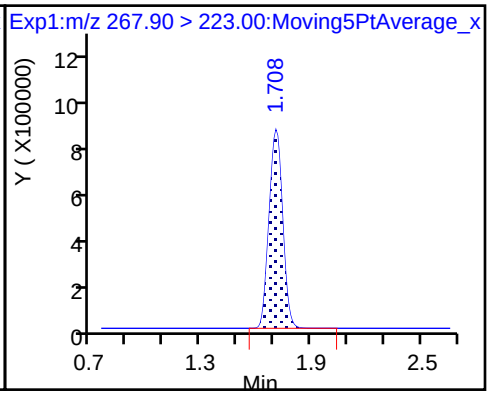
D 1 13C4 PFBA



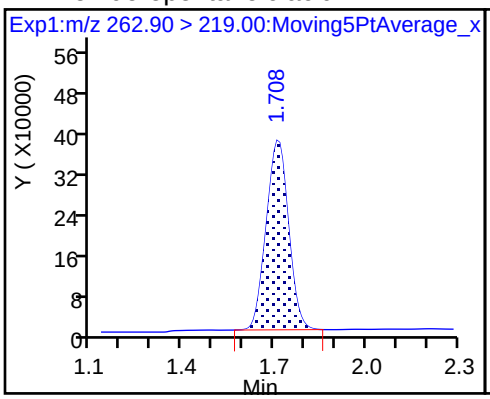
2 Perfluorobutyric acid



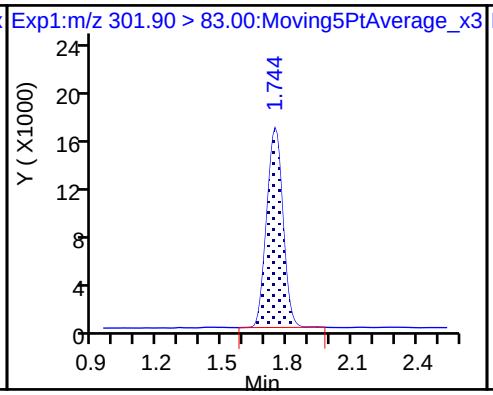
D 3 13C5-PFPeA



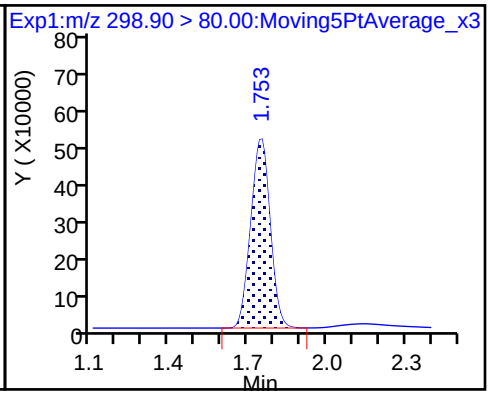
4 Perfluoropentanoic acid



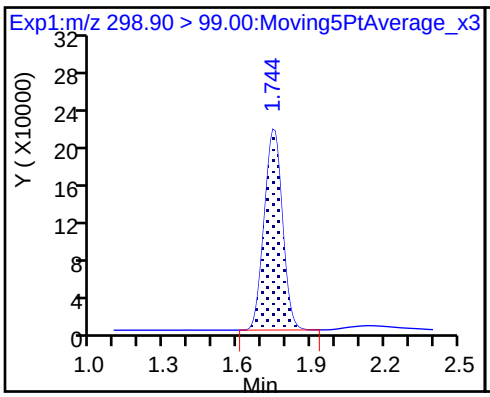
D 47 13C3-PFBS



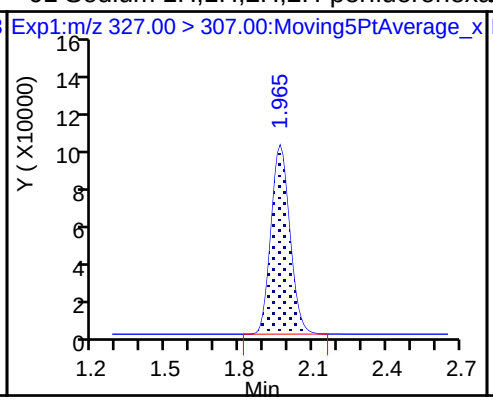
5 Perfluorobutanesulfonic acid



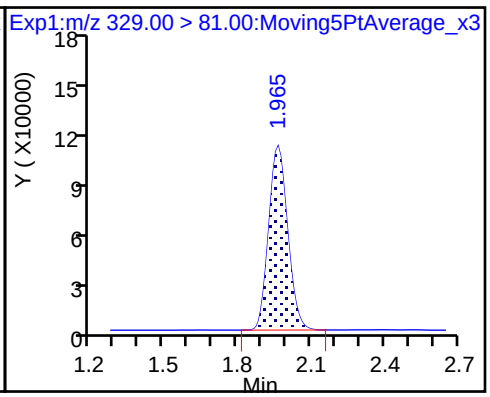
5 Perfluorobutanesulfonic acid



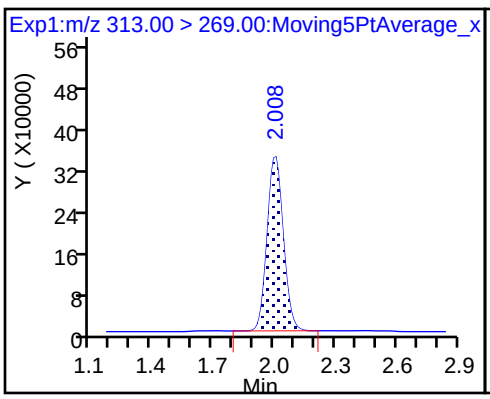
61 Sodium 1H,1H,2H,2H-perfluorohexane



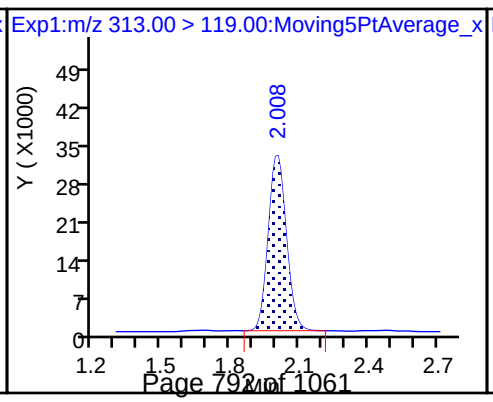
D 60 M2-4:2FTS



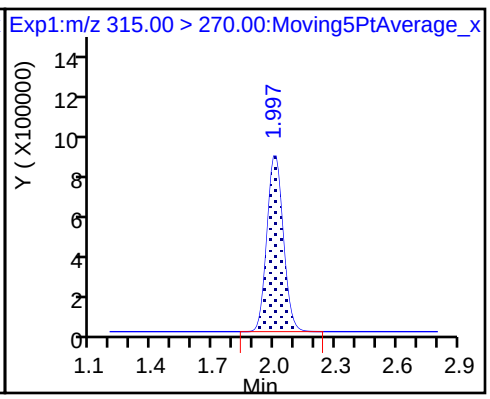
6 Perfluorohexanoic acid



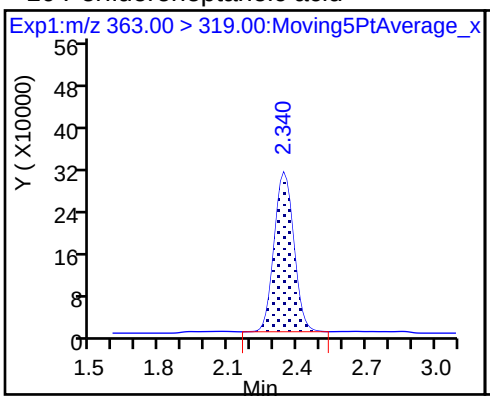
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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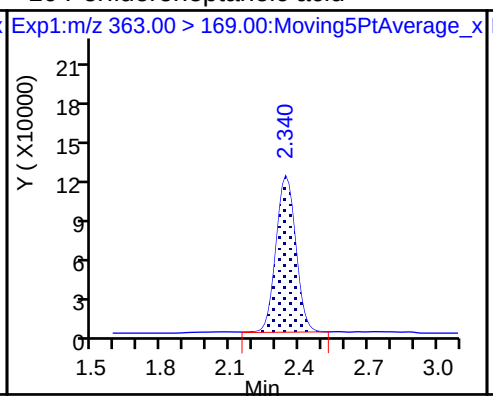
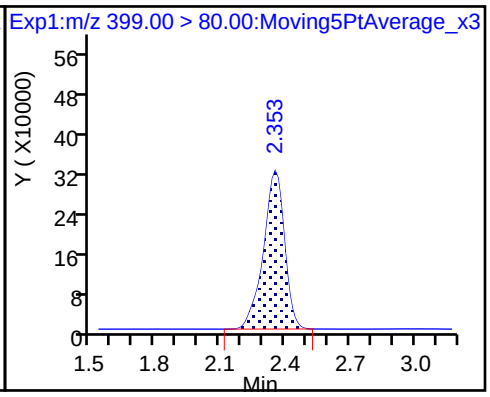


8 Perfluorohexanesulfonic acid



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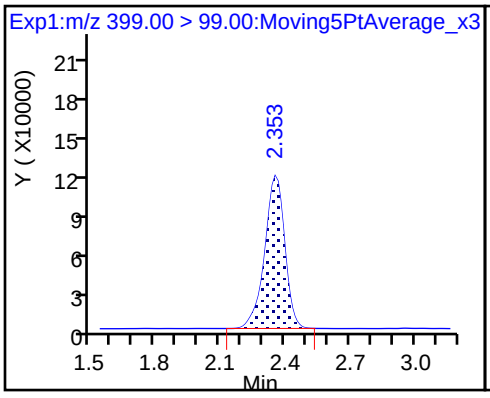
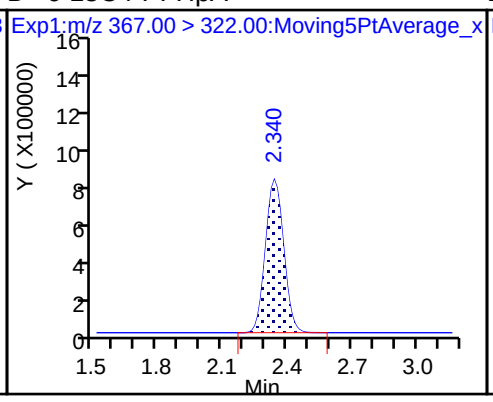
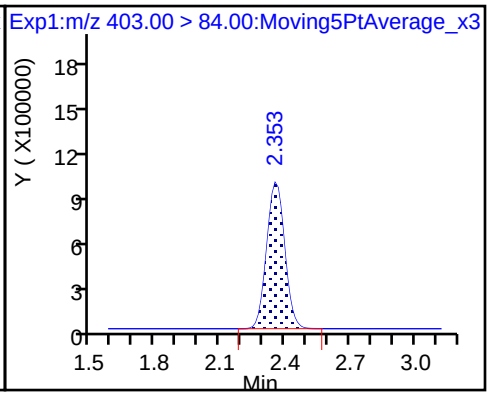


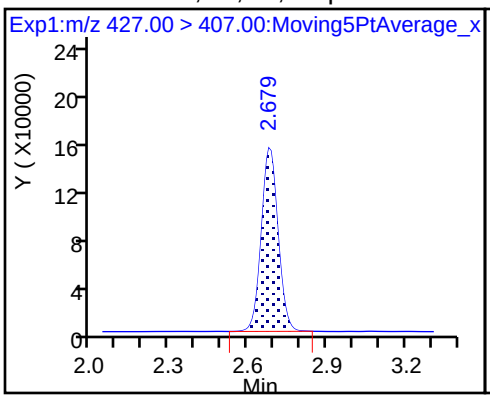
D 9 13C4-PFHpA



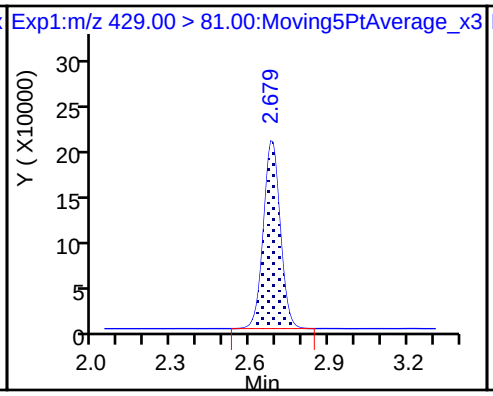
D 11 18O2 PFHxS



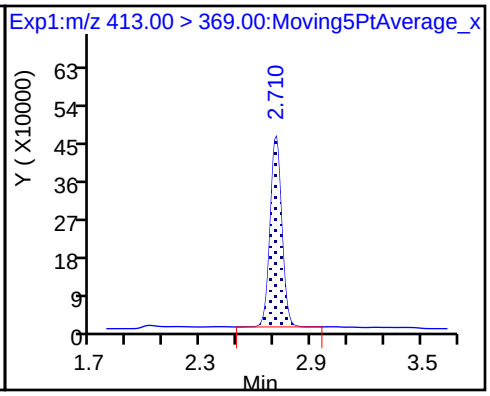
13 Sodium 1H,1H,2H,2H-perfluorooctane



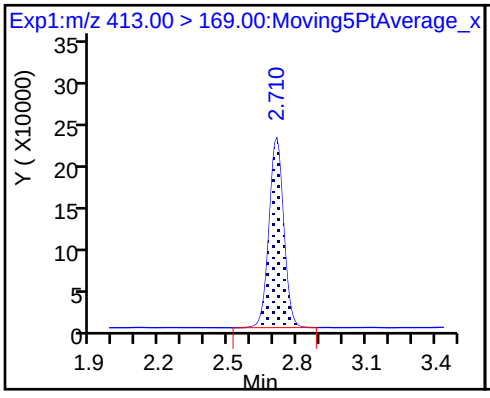
D 12 M2-6:2FTS



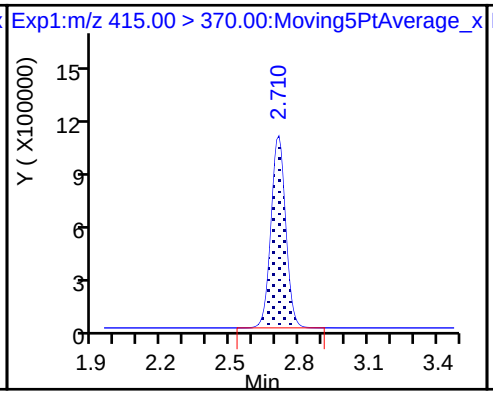
15 Perfluorooctanoic acid



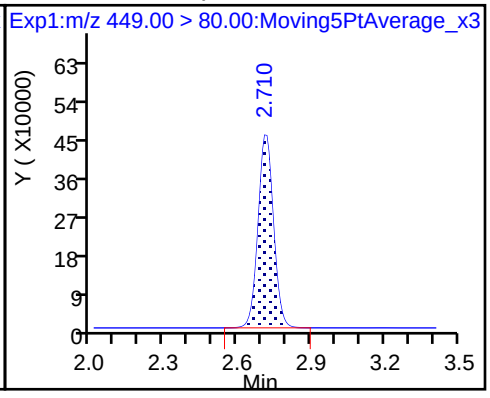
15 Perfluorooctanoic acid



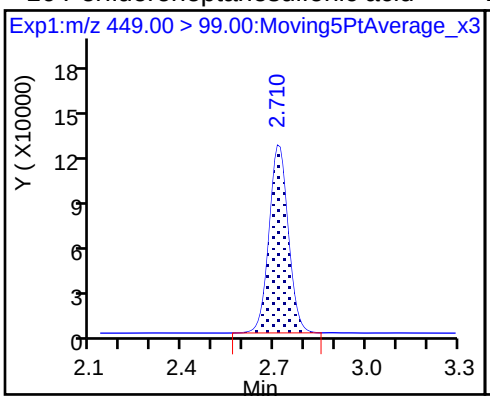
* 62 13C2-PFOA



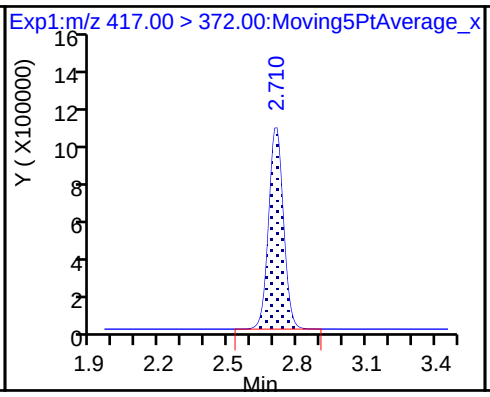
16 Perfluoroheptanesulfonic acid



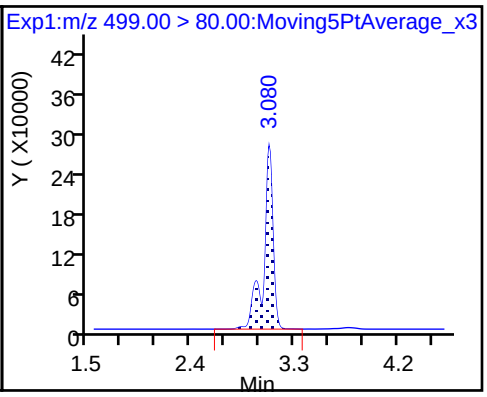
16 Perfluoroheptanesulfonic acid



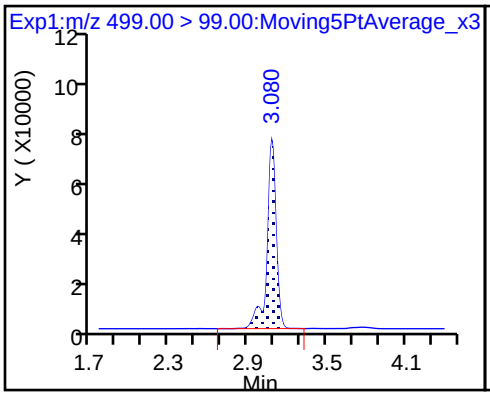
D 14 13C4 PFOA



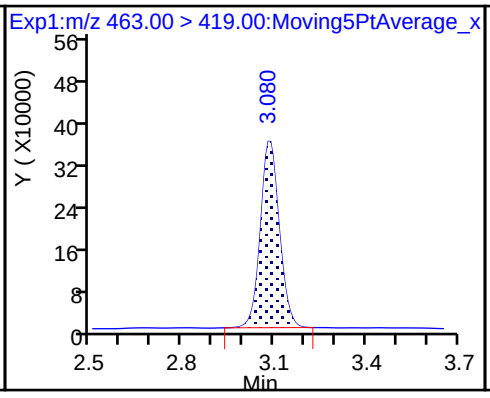
17 Perfluorooctane sulfonic acid



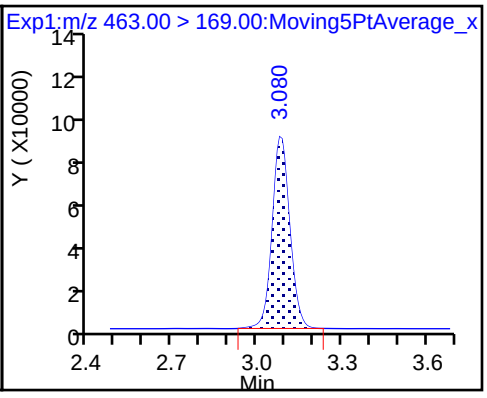
17 Perfluorooctane sulfonic acid



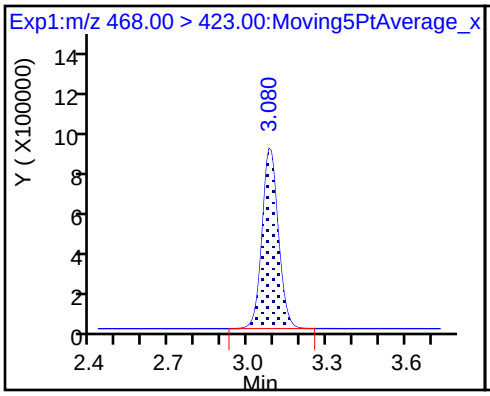
20 Perfluorononanoic acid



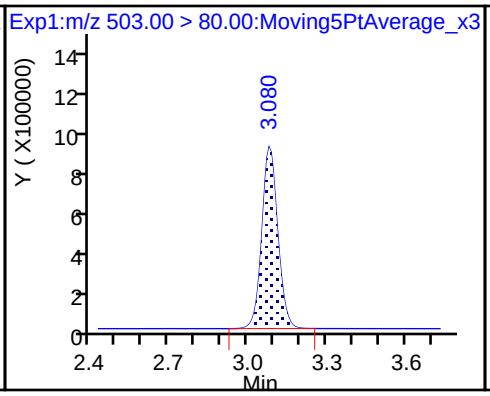
20 Perfluorononanoic acid



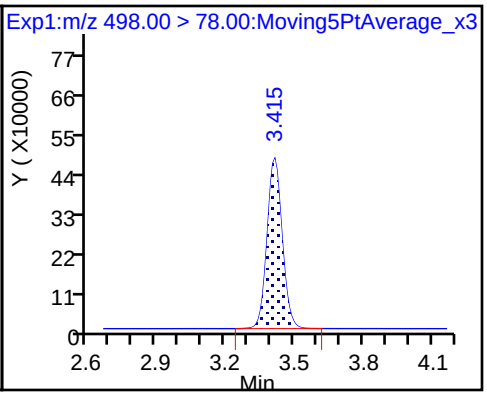
D 19 13C5 PFNA



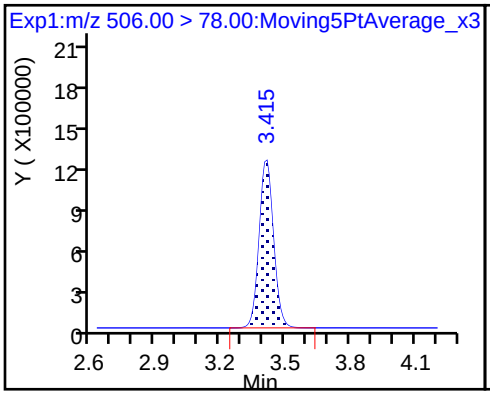
D 18 13C4 PFOS



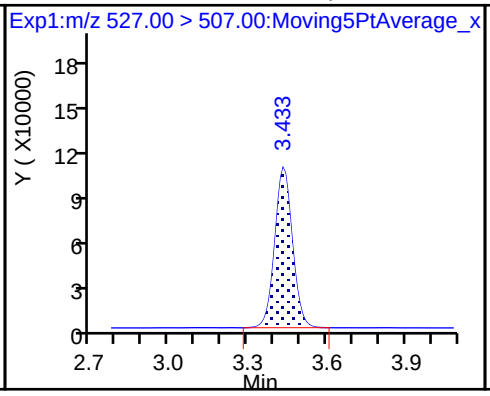
22 Perfluorooctane Sulfonamide



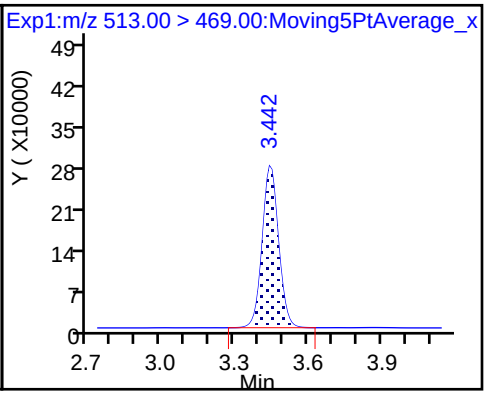
D 21 13C8 FOSA



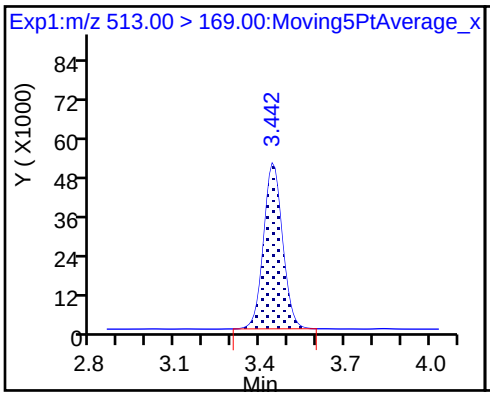
25 Sodium 1H,1H,2H,2H-perfluorodecan



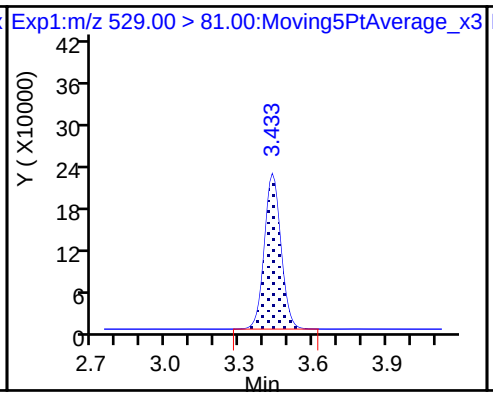
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid



D 26 M2-8:2FTS



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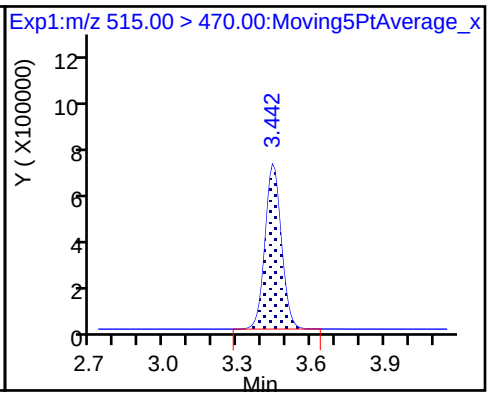
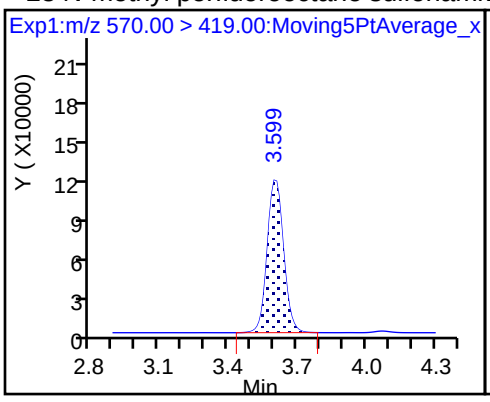
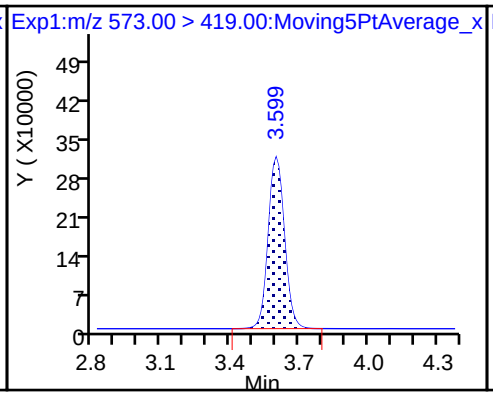


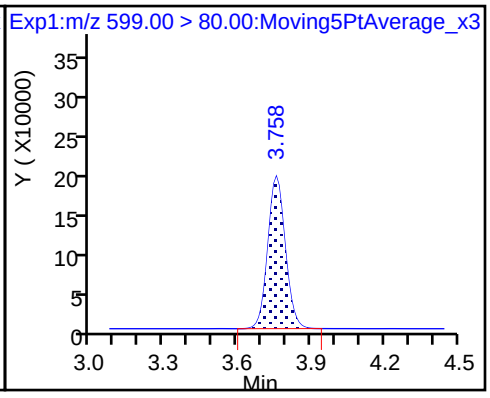
28 N-methyl perfluorooctane sulfonami



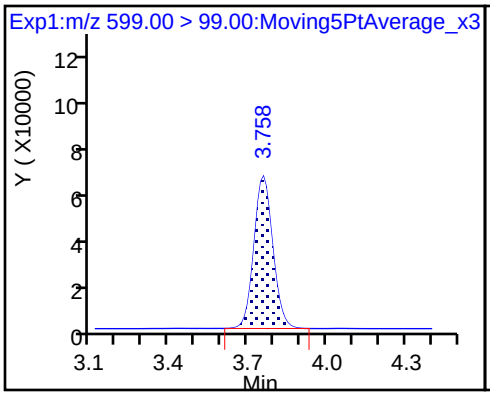
D 27 d3-NMeFOSAA



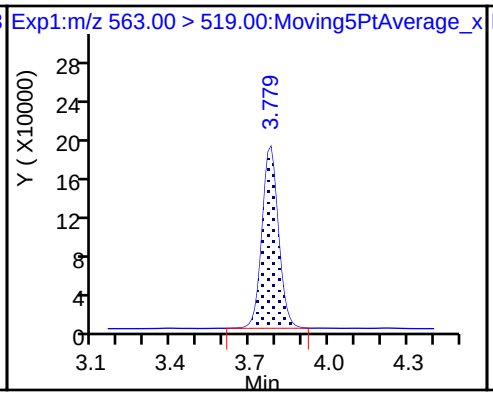
29 Perfluorodecane Sulfonic acid



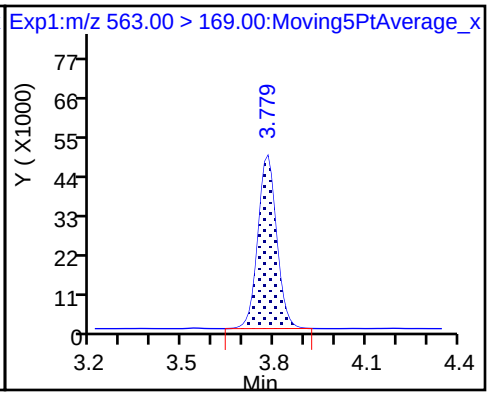
29 Perfluorodecane Sulfonic acid



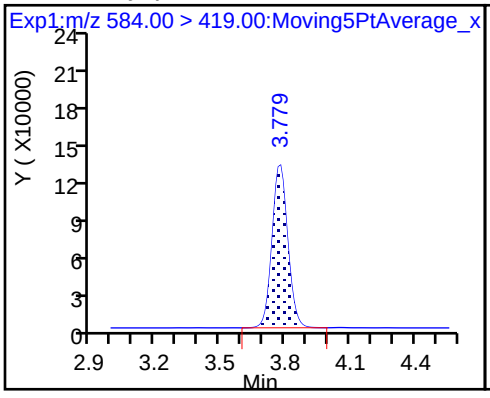
31 Perfluoroundecanoic acid



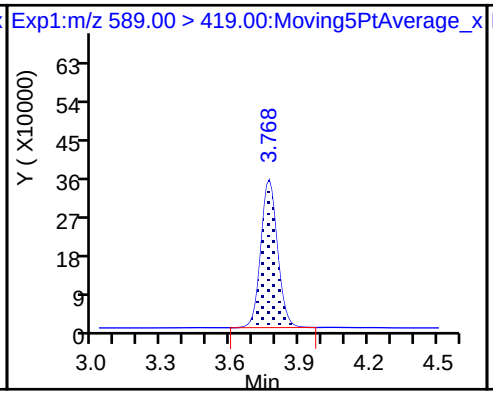
31 Perfluoroundecanoic acid



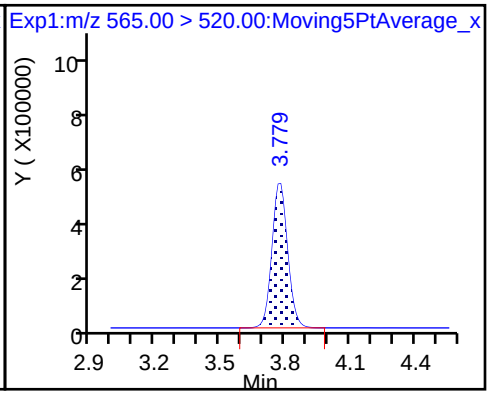
33 N-ethyl perfluorooctane sulfonamid



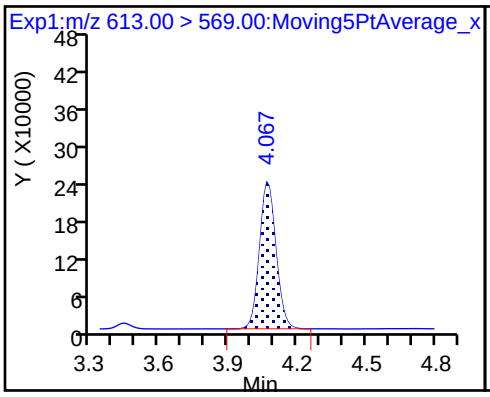
D 32 d5-NEtFOSAA



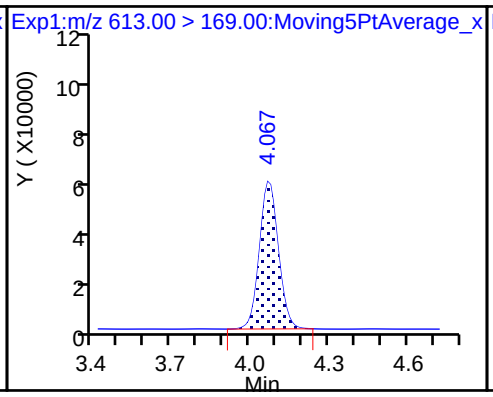
D 30 13C2 PFUnA



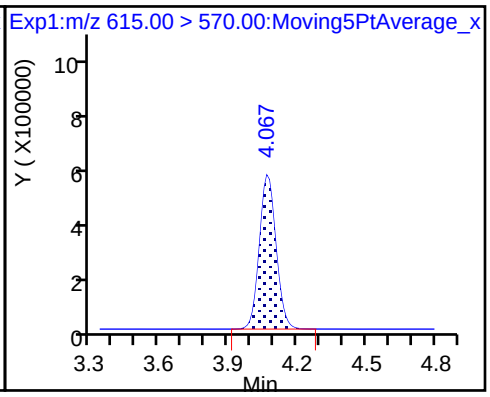
37 Perfluorododecanoic acid



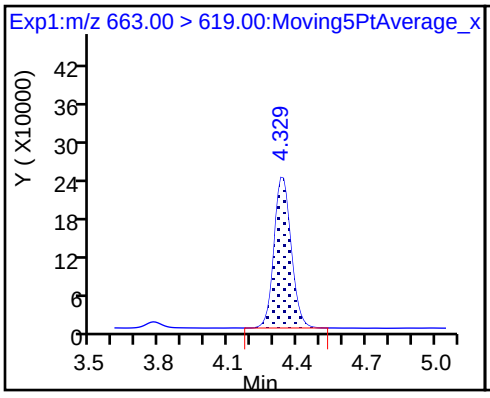
37 Perfluorododecanoic acid



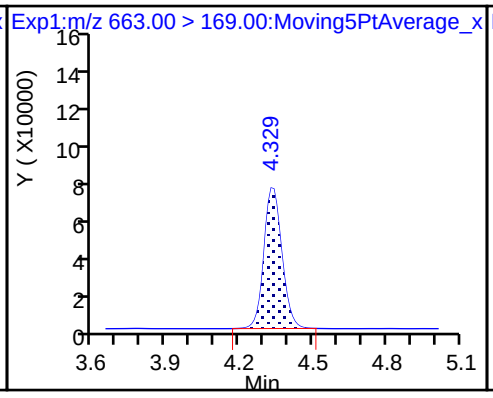
D 36 13C2 PFDoA



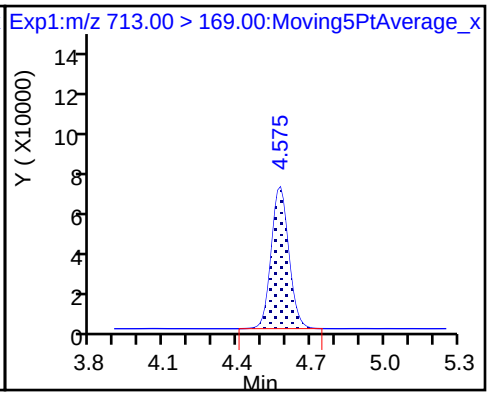
41 Perfluorotridecanoic acid



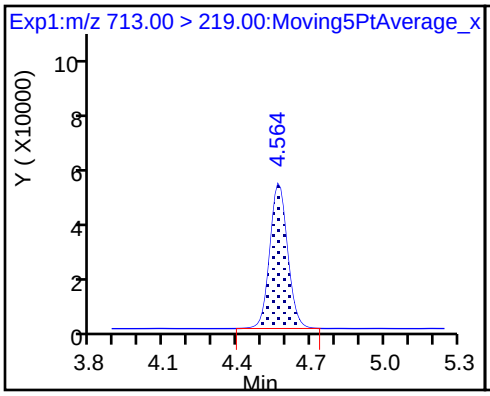
41 Perfluorotridecanoic acid



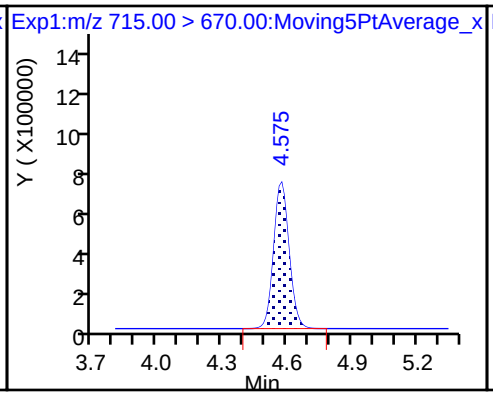
42 Perfluorotetradecanoic acid



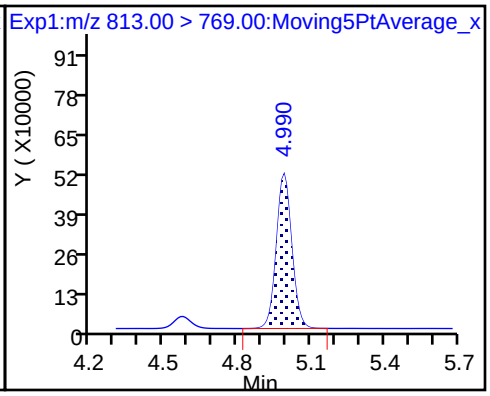
42 Perfluorotetradecanoic acid



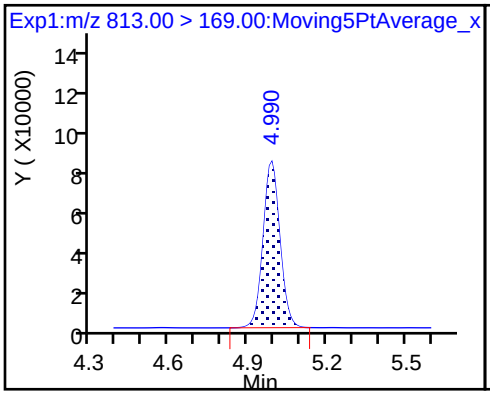
D 43 13C2-PFTeDA



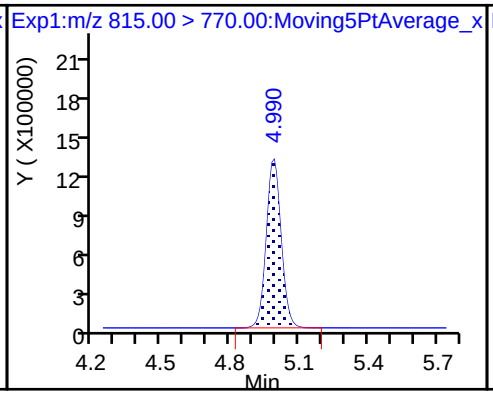
45 Perfluorohexadecanoic acid



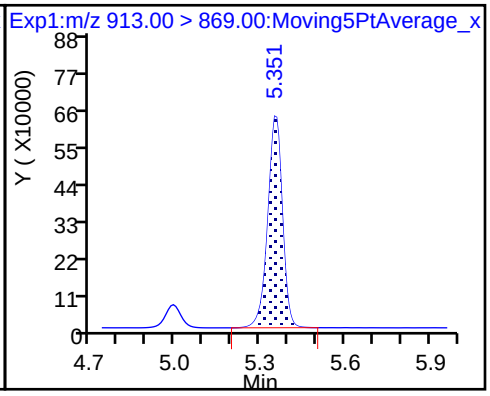
45 Perfluorohexadecanoic acid



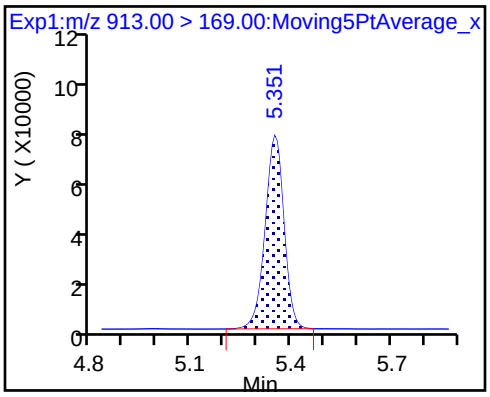
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-212510/1-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_023.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0000394	J	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.000310	J	0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037
27619-97-2	6:2FTS	0.00015	U	0.0020	0.00015
39108-34-4	8:2FTS	0.00025	U	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-212510/1-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_023.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	73		25-150
STL01893	13C5 PFPeA	81		25-150
STL00993	13C2 PFHxA	80		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	83		25-150
STL00995	13C5 PFNA	83		25-150
STL00996	13C2 PFDA	71		25-150
STL00997	13C2 PFUnA	58		25-150
STL00998	13C2 PFDoA	33		25-150
STL02116	13C2-PFTeDA	14	*	25-150
STL02337	13C3-PFBS	81		25-150
STL00994	18O2 PFHxS	80		25-150
STL00991	13C4 PFOS	69		25-150
STL01056	13C8 FOSA	48		25-150
STL02118	d3-NMeFOSAA	33		25-150
STL02117	d5-NEtFOSAA	32		25-150
STL02279	M2-6:2FTS	73		25-150
STL02280	M2-8:2FTS	55		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Lims ID: MB 320-212510/1-A
Client ID:
Sample Type: MB
Inject. Date: 20-Mar-2018 23:09:46 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-212510/1-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:16:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.435	1.441	-0.006	0.535	4320545	1.84		73.5	56872	M
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.446	-0.005	1.004	31582	0.0197			10.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	3350087	2.02		80.8	63670	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.647	76639	1.87		80.5	356	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.741	3691437	2.00		79.8	77171	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.864	3875189	2.15		86.2	70776	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.315	2.328	-0.013	1.000	12132	0.007551			13.8	R
363.00 > 169.00	2.315	2.328	-0.013	1.000	2773		4.38(1.13-3.40)		38.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4547731	1.89		80.1	94018	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.006	16183	0.007545			32.9	
399.00 > 99.00	2.328	2.341	-0.013	1.000	4717		3.43(1.50-4.49)		12.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	799768	1.74		73.1	30860	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	2175	0.003880			112	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3619906	2.08		83.3	82788	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.681	2.695	-0.014	1.000	23686	0.0147			5.8	M
413.00 > 169.00	2.681	2.695	-0.014	1.000	11215		2.11(0.84-2.52)		35.3	M
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4605601	2.50			75562	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2769098	1.65		69.0	53727	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.141	2877115	2.07		82.8	65138	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.067	-0.016	1.000	194172	0.1548			686	
499.00 > 99.00	3.058	3.067	-0.009	1.002	49774		3.90(2.31-6.93)		344	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.389	0.0	1.264	2946389	1.21		48.5	50605	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.401	-0.012	1.000	20293	0.0177			101	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.408	-0.001	1.271	568447	1.31		54.8	12779	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.417	0.0	1.274	2048631	1.76		70.6	46082	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.570	0.0	1.332	313830	0.8185		32.7	13622	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.398	294839	0.8043		32.2	607	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1324558	1.46		58.3	46373	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.509	705950	0.8188		32.8	5451	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.544	0.009	1.699	284093	0.3610		14.4	2715	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.963	4.964	-0.001	1.852	205630	0.1787		7.1	1219	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:55:53 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d

Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N

Lims ID: MB 320-212510/1-A

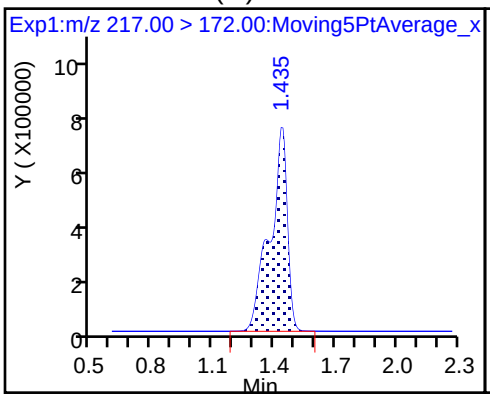
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2

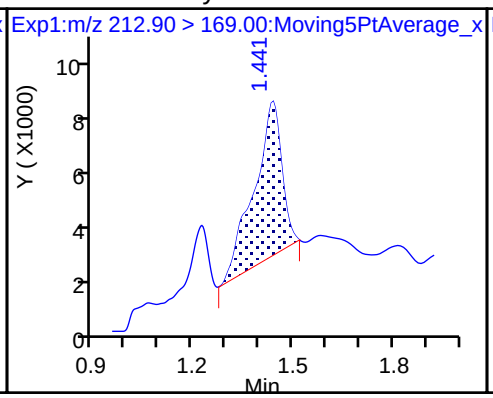
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

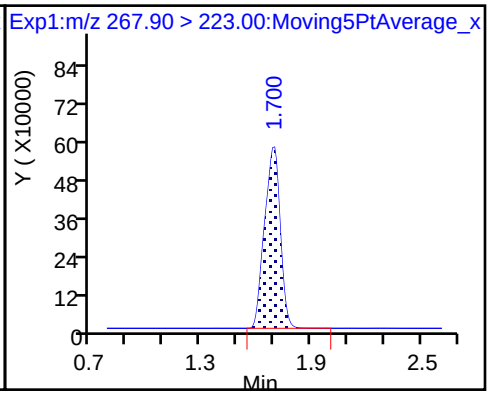
D 1 13C4 PFBA (M)



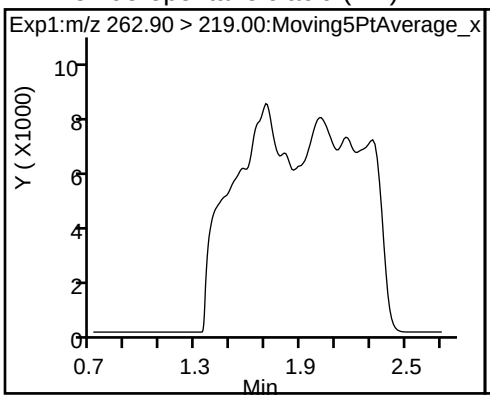
2 Perfluorobutyric acid



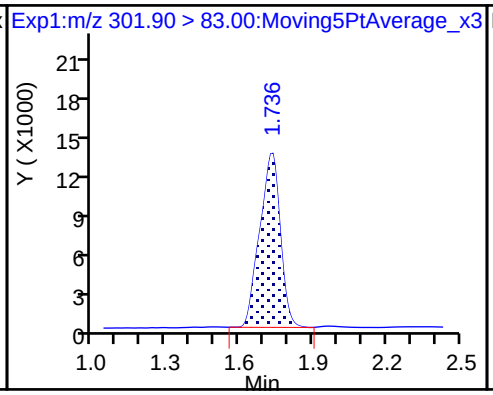
D 3 13C5-PFPeA



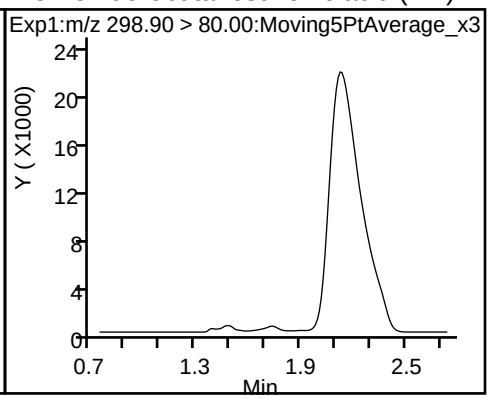
4 Perfluoropentanoic acid (ND)



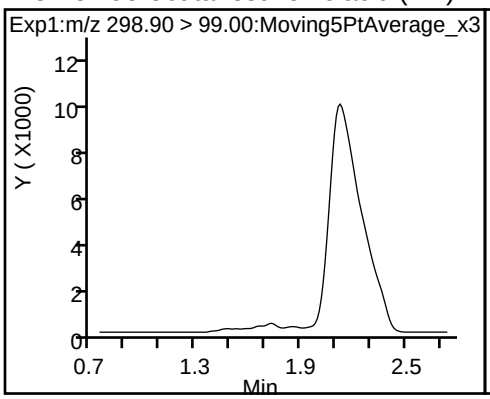
D 47 13C3-PFBS



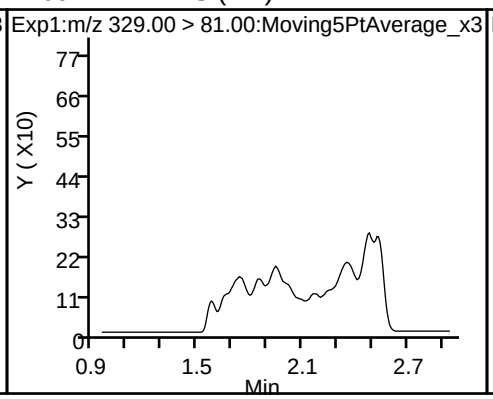
5 Perfluorobutanesulfonic acid (ND)



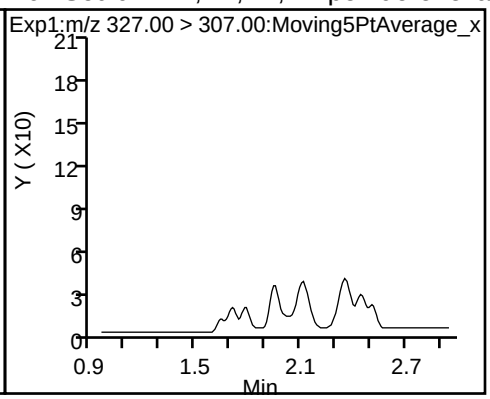
5 Perfluorobutanesulfonic acid (ND)



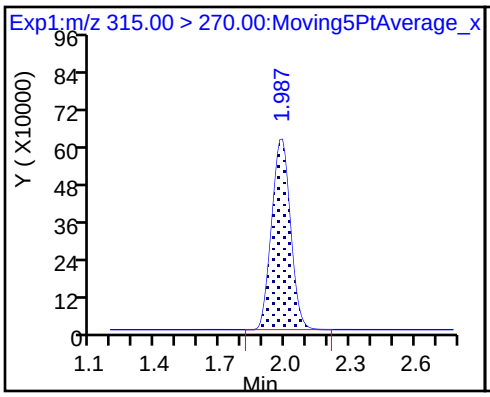
D 60 M2-4:2FTS (ND)



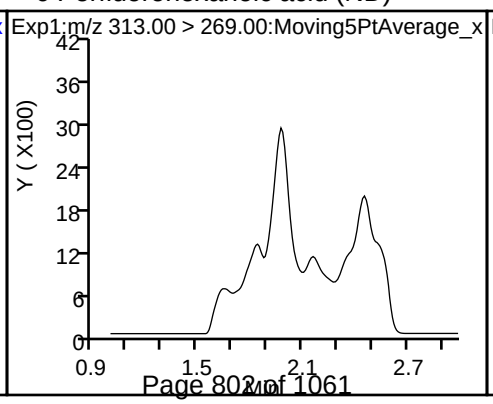
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



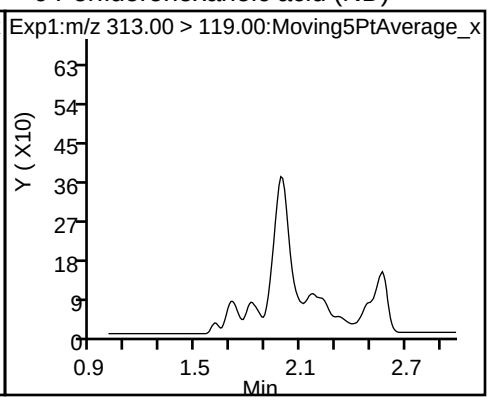
D 7 13C2 PFHxA



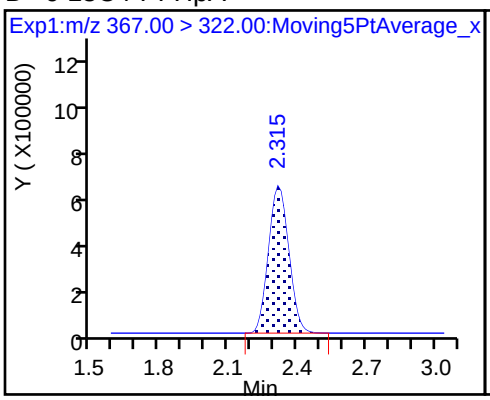
6 Perfluorohexanoic acid (ND)



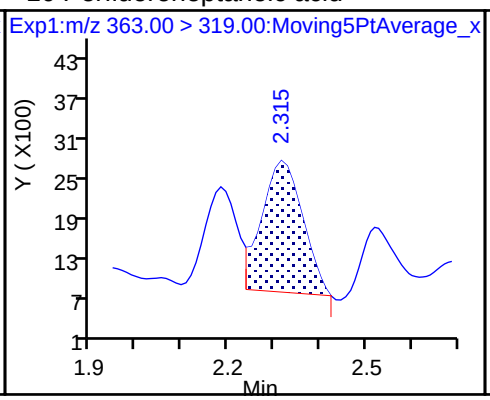
6 Perfluorohexanoic acid (ND)



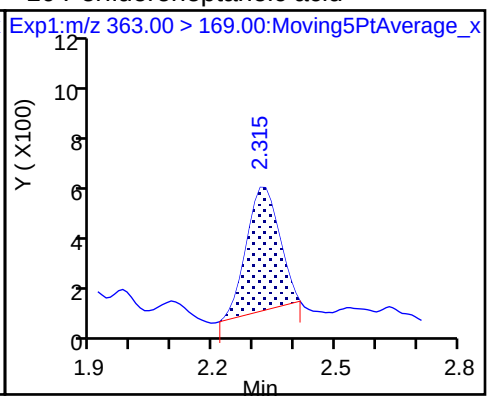
D 9 13C4-PFHpA



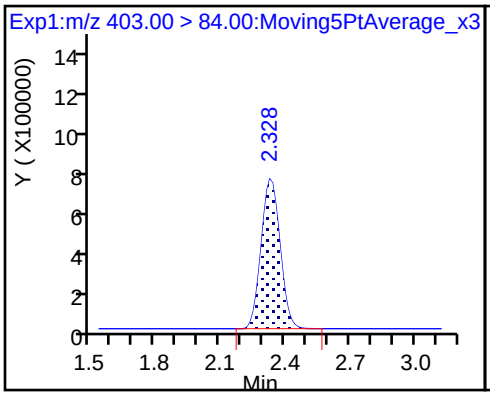
10 Perfluoroheptanoic acid



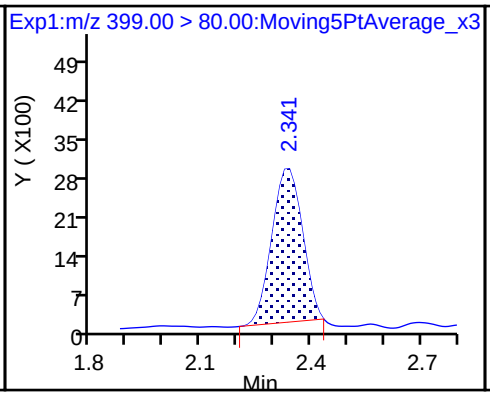
10 Perfluoroheptanoic acid



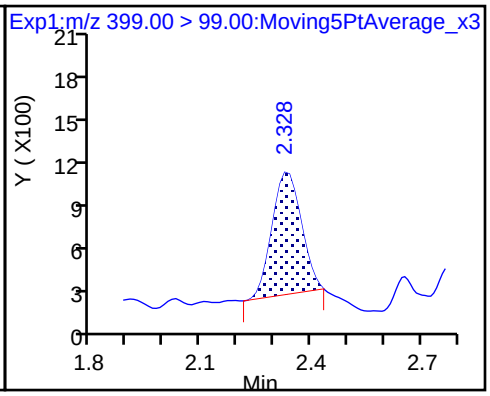
D 11 18O2 PFHxS



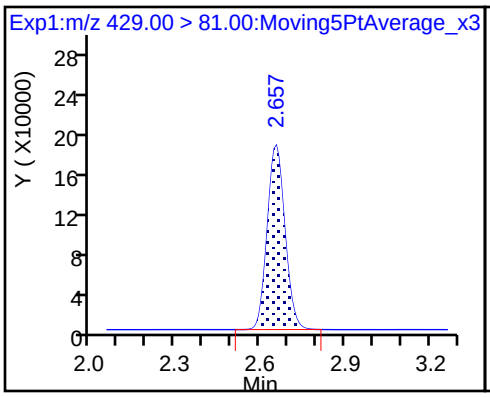
8 Perfluorohexanesulfonic acid



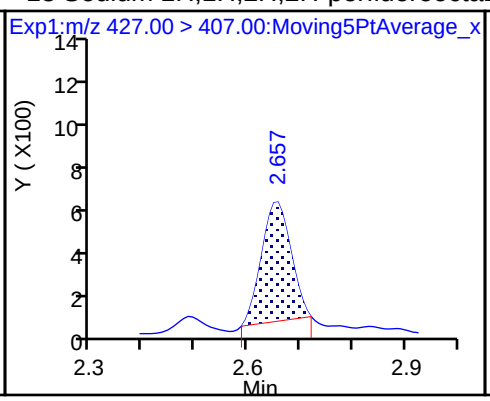
8 Perfluorohexanesulfonic acid



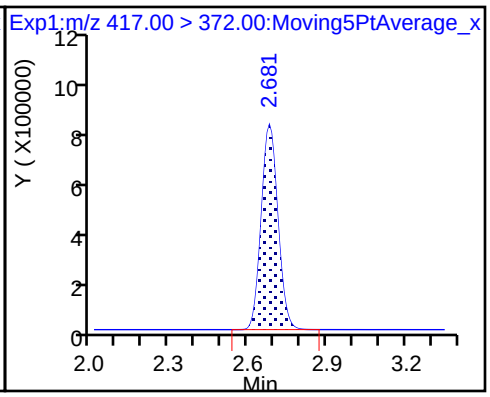
D 12 M2-6:2FTS



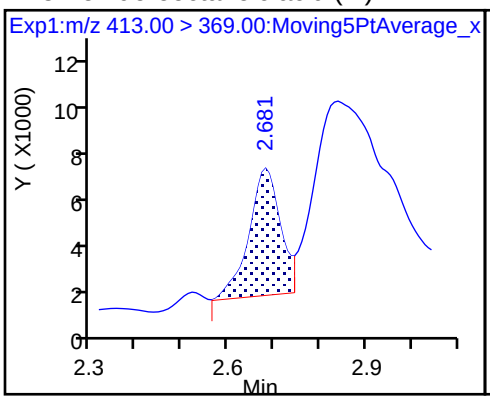
13 Sodium 1H,1H,2H,2H-perfluorooctane



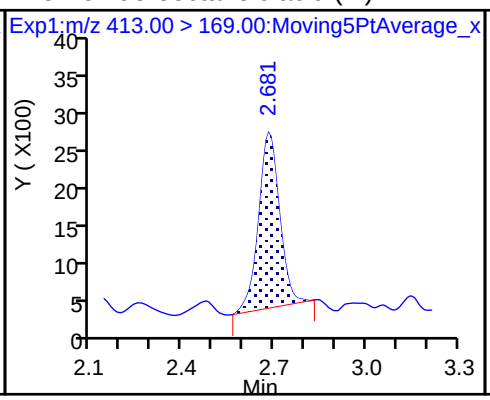
D 14 13C4 PFOA



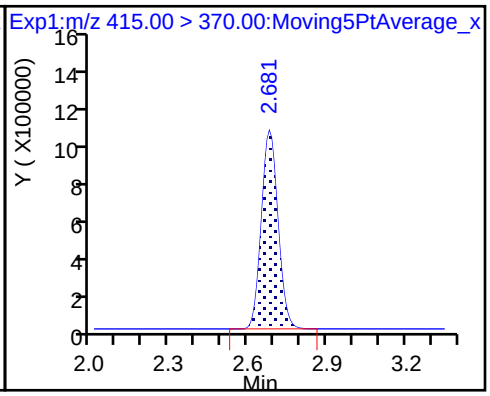
15 Perfluorooctanoic acid (M)



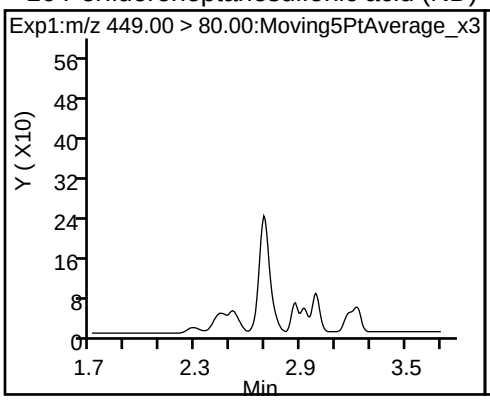
15 Perfluorooctanoic acid (M)



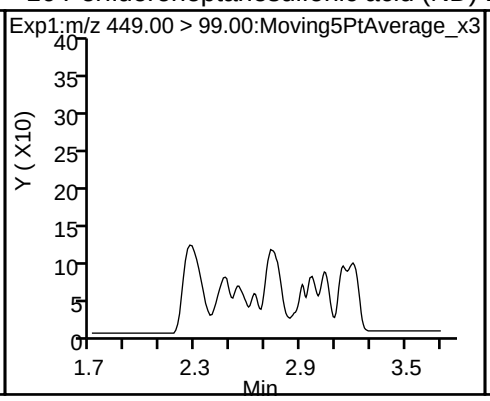
* 62 13C2-PFOA



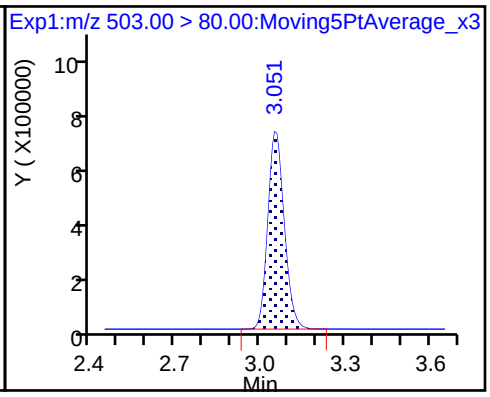
16 Perfluoroheptanesulfonic acid (ND)



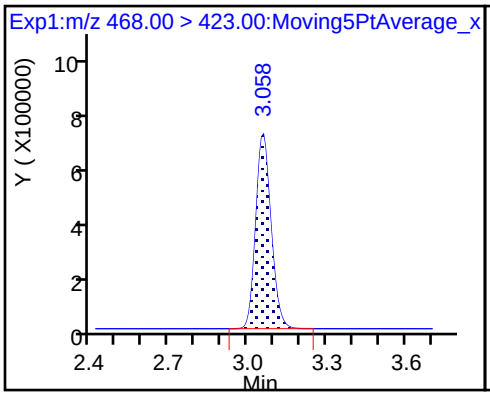
16 Perfluoroheptanesulfonic acid (ND)



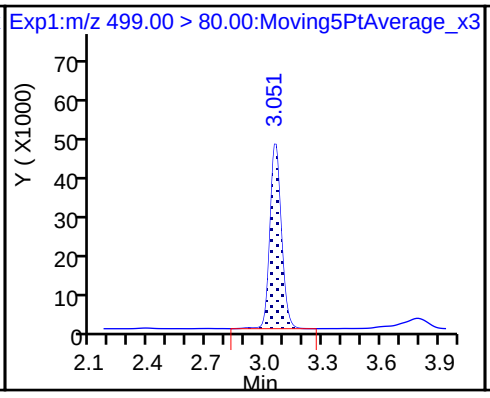
D 18 13C4 PFOS



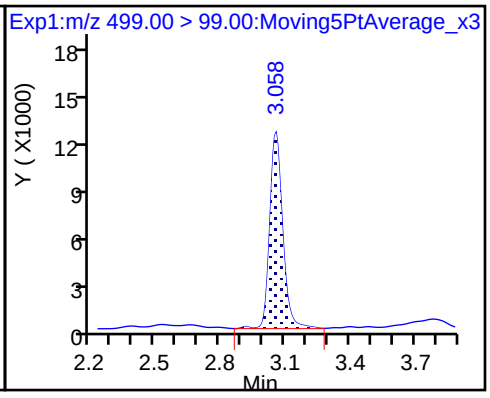
D 19 13C5 PFNA



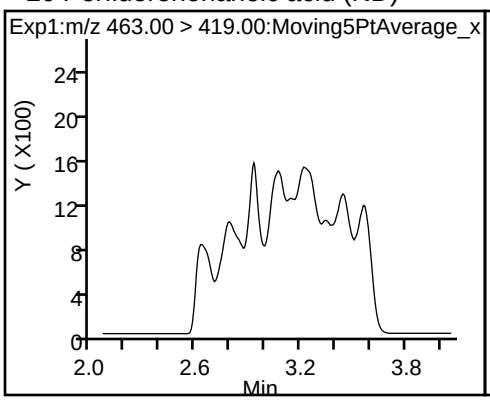
17 Perfluorooctane sulfonic acid



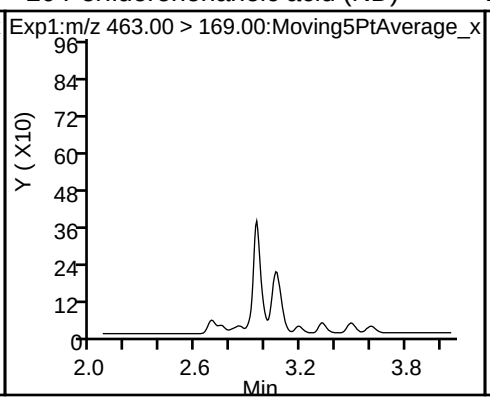
17 Perfluorooctane sulfonic acid



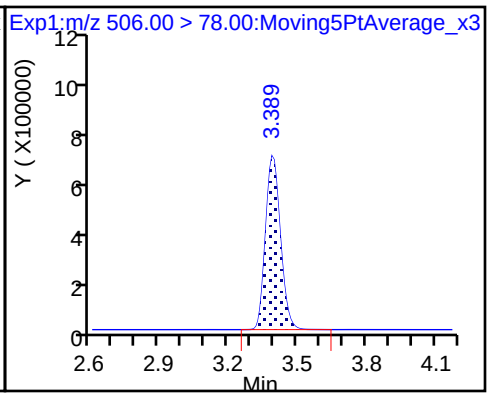
20 Perfluorononanoic acid (ND)



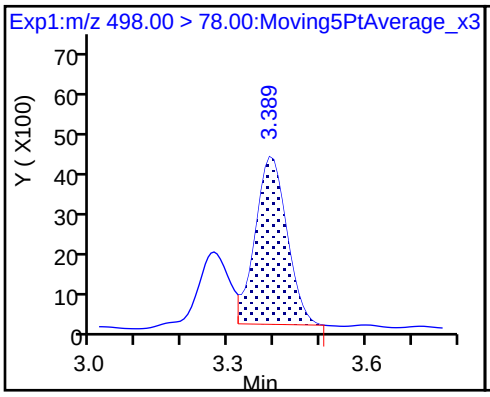
20 Perfluorononanoic acid (ND)



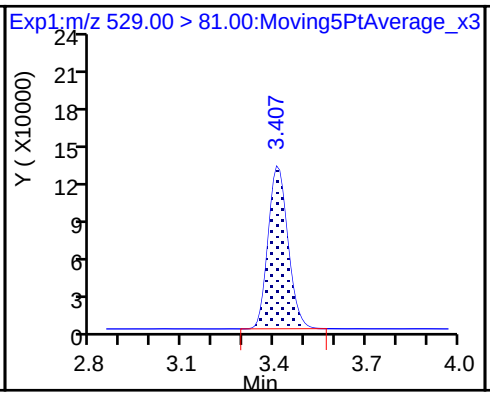
D 21 13C8 FOSA



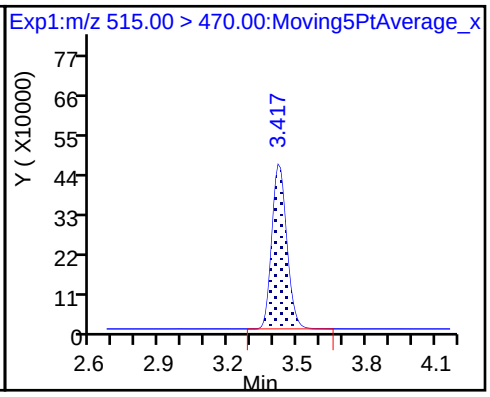
22 Perfluorooctane Sulfonamide



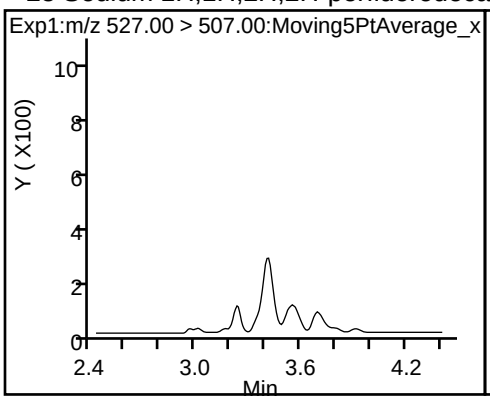
D 26 M2-8:2FTS



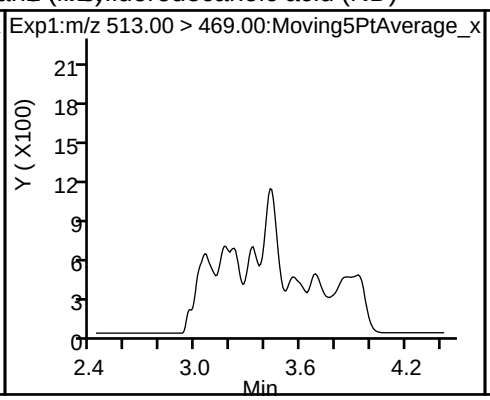
D 23 13C2 PFDA



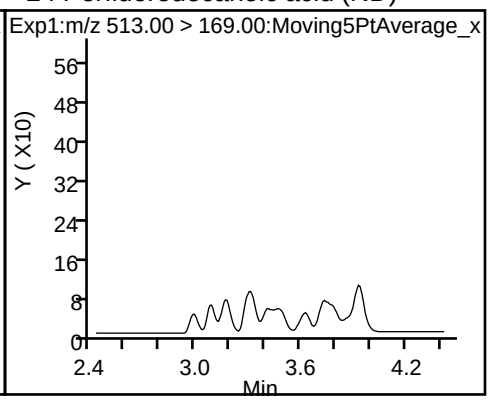
25 Sodium 1H,1H,2H,2H-perfluorodecane Sulfonic acid (ND)



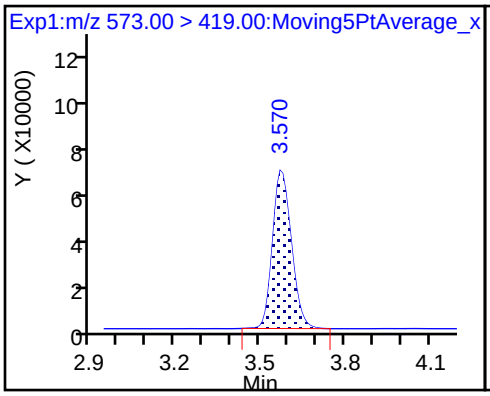
24 Perfluorodecanoic acid (ND)



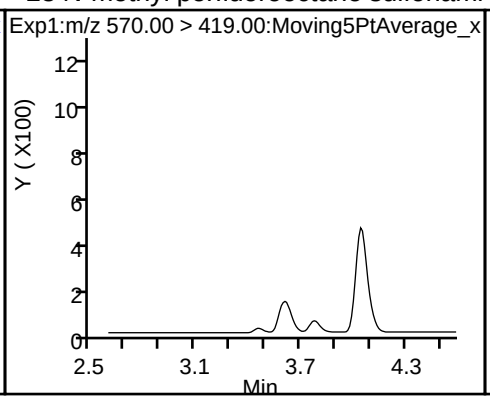
24 Perfluorodecanoic acid (ND)



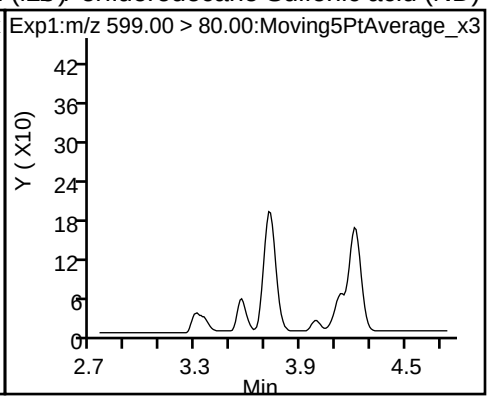
D 27 d3-NMeFOSAA



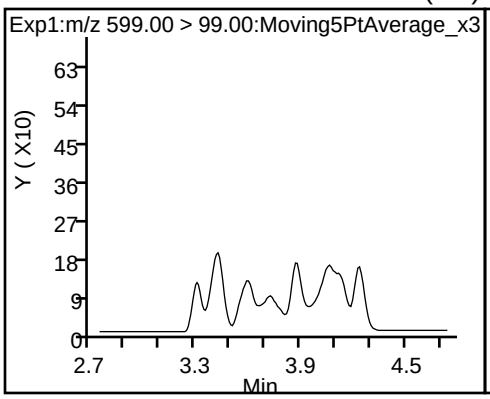
28 N-methyl perfluorooctane sulfonami (ND)



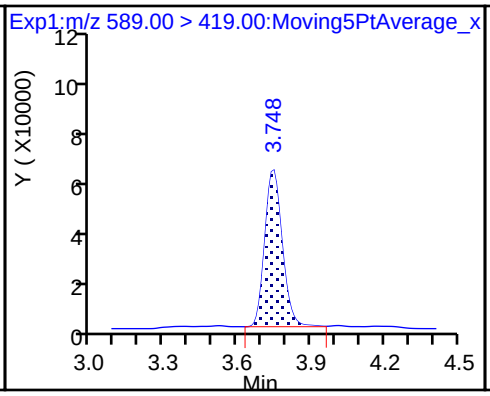
29 Perfluorodecane Sulfonic acid (ND)



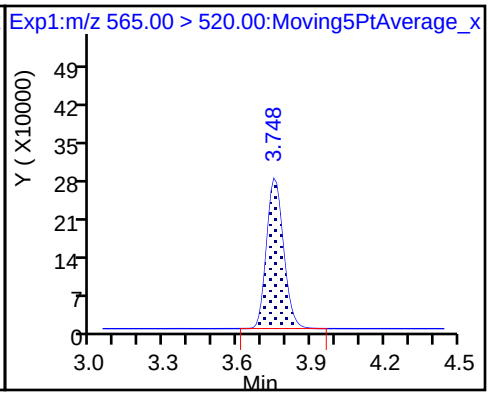
29 Perfluorodecane Sulfonic acid (ND)



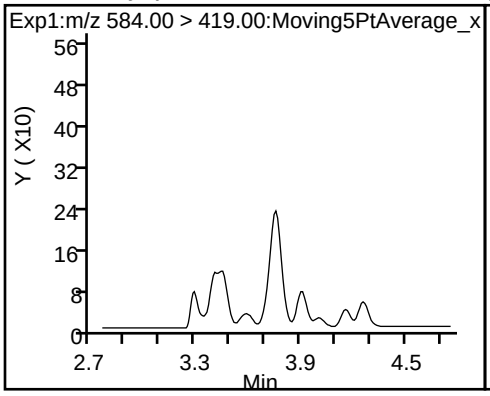
D 32 d5-NEtFOSAA



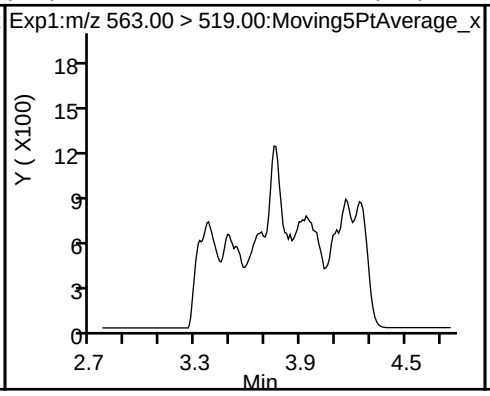
D 30 13C2 PFUnA



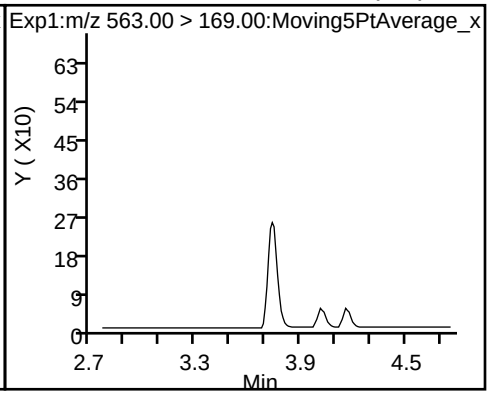
33 N-ethyl perfluorooctane sulfonamid (ND)



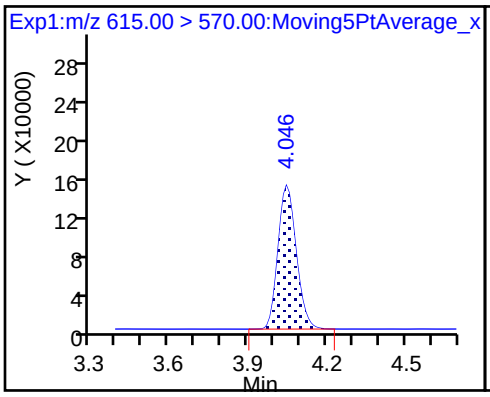
31 Perfluoroundecanoic acid (ND)



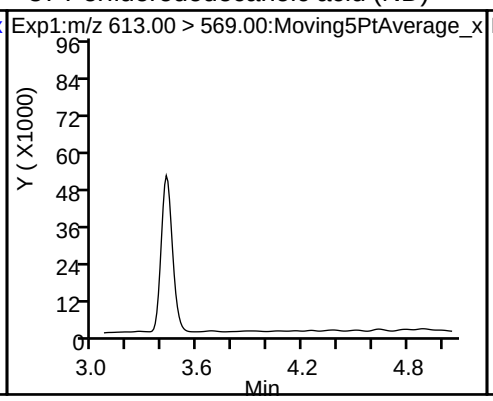
31 Perfluoroundecanoic acid (ND)



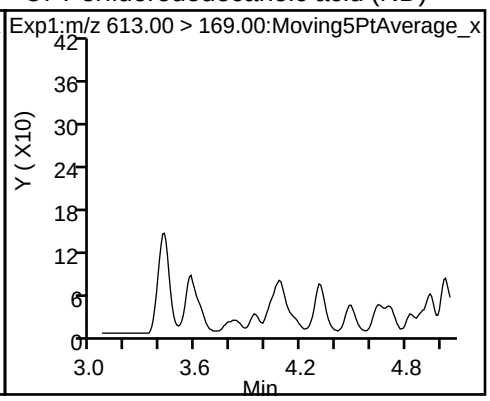
D 36 13C2 PFDoA



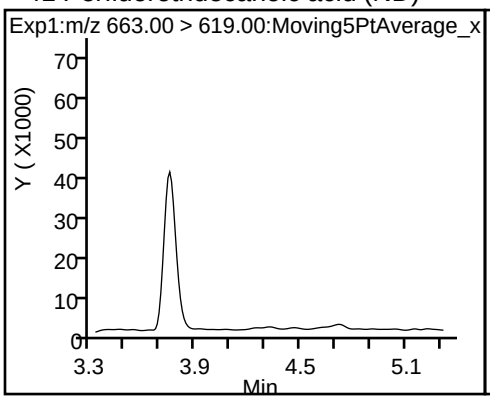
37 Perfluorododecanoic acid (ND)



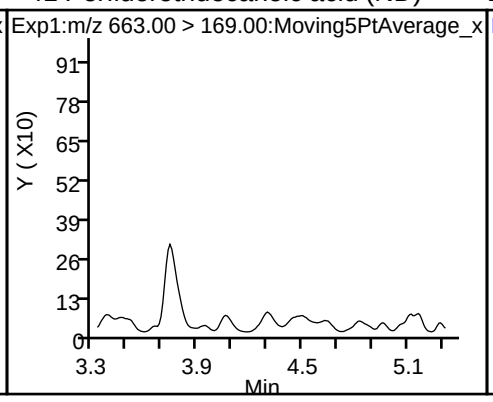
37 Perfluorododecanoic acid (ND)



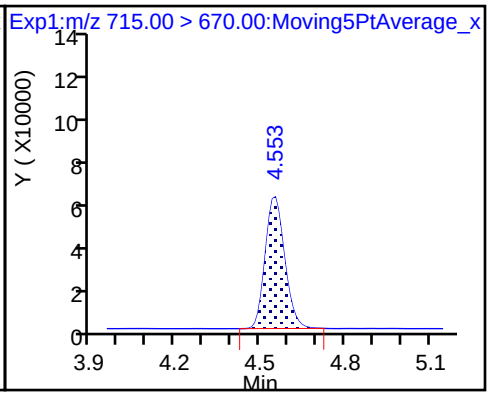
41 Perfluorotridecanoic acid (ND)



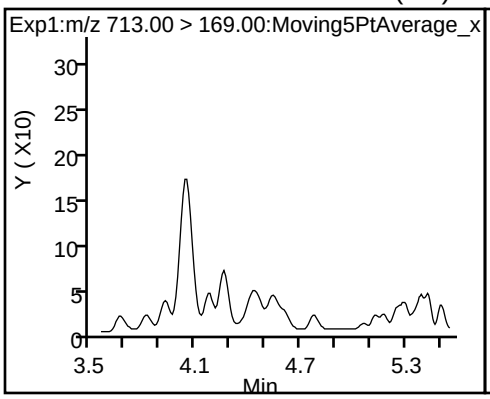
41 Perfluorotridecanoic acid (ND)



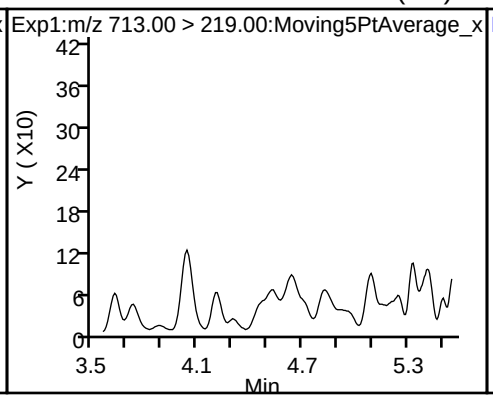
D 43 13C2-PFTeDA



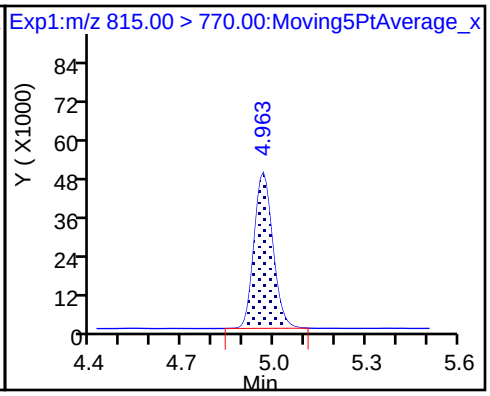
42 Perfluorotetradecanoic acid (ND)



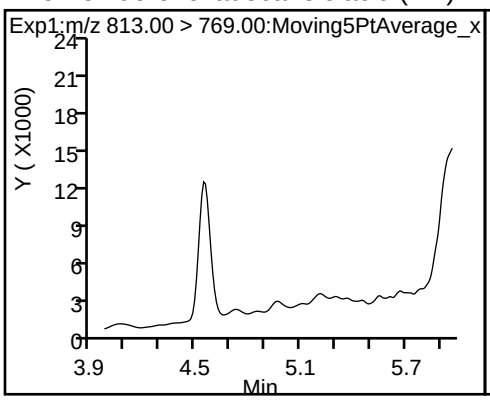
42 Perfluorotetradecanoic acid (ND)



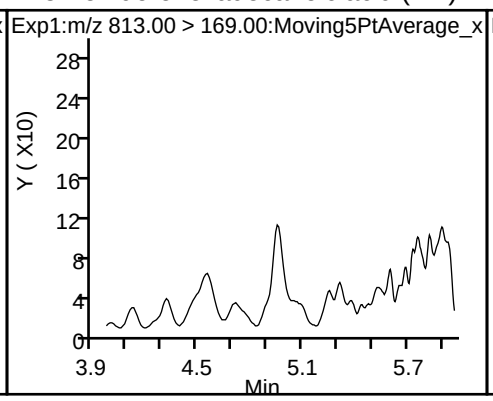
D 44 13C2-PFHxDA



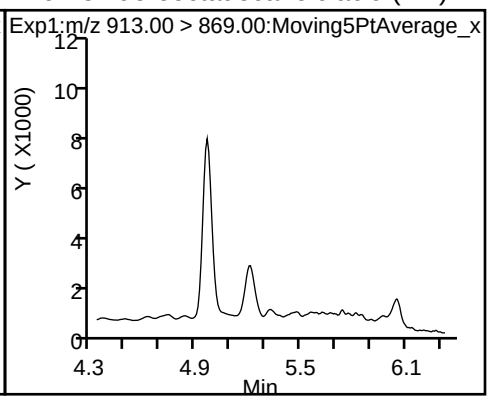
45 Perfluorohexadecanoic acid (ND)



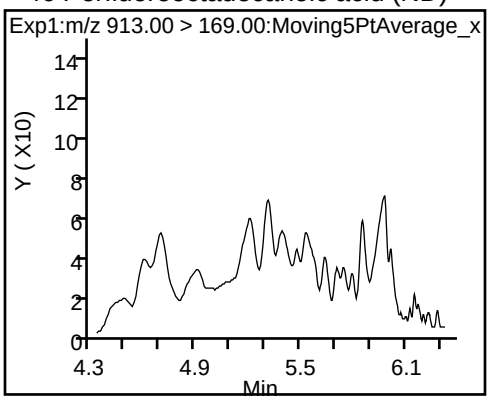
45 Perfluorohexadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

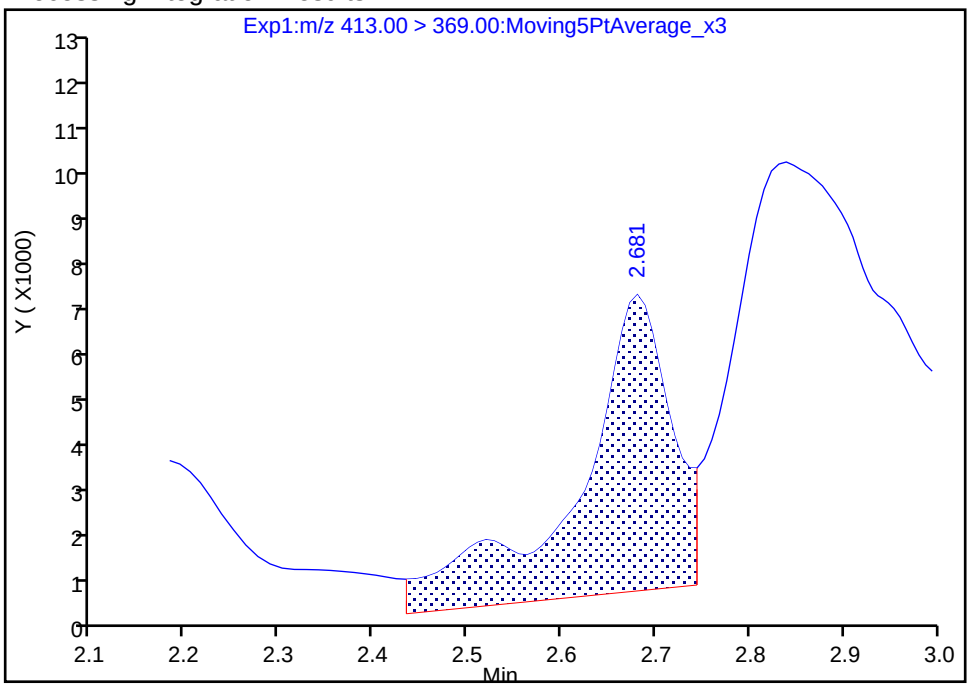
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N
Lims ID: MB 320-212510/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

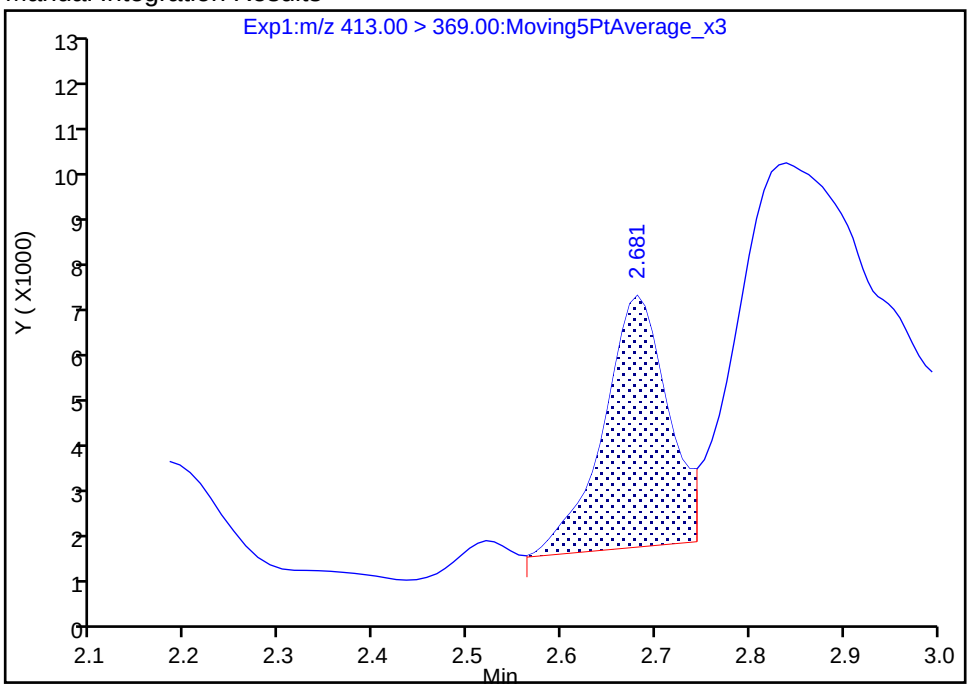
Processing Integration Results

RT: 2.68
Area: 40891
Amount: 0.025297
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 23686
Amount: 0.014653
Amount Units: ng/ml



Reviewer: barnettj, 21-Mar-2018 16:15:37
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

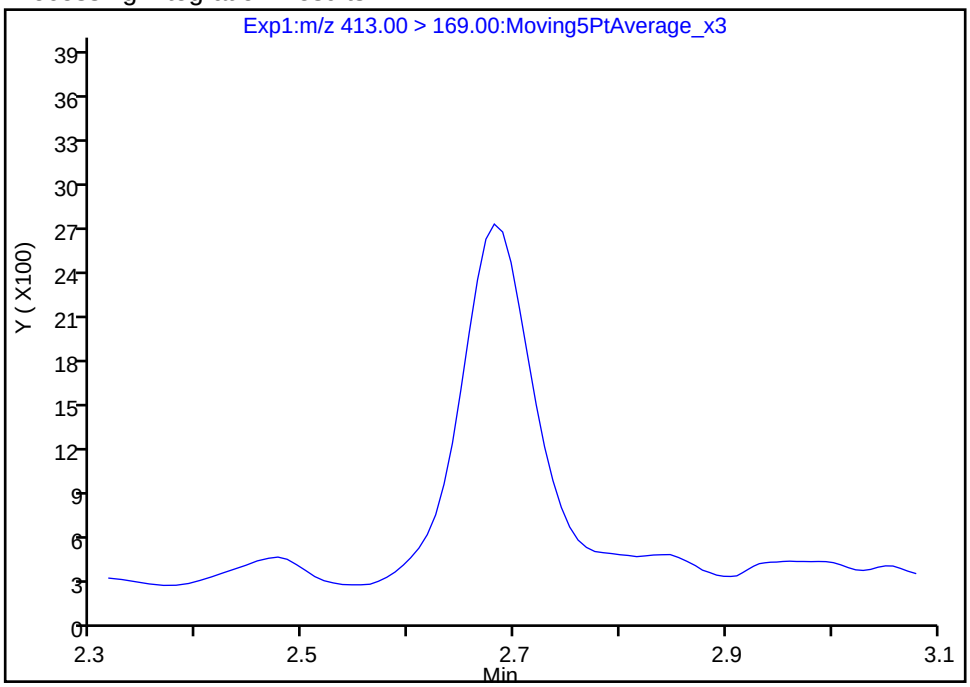
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N
Lims ID: MB 320-212510/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

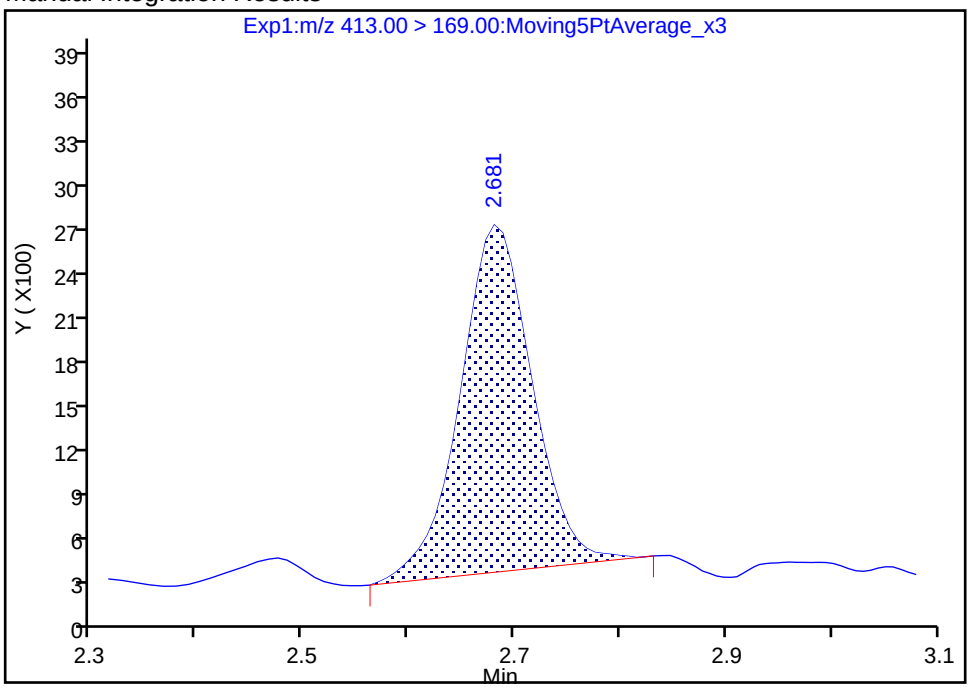
Processing Integration Results

RT: 2.69
Area: 0
Amount: 0.025297
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 11215
Amount: 0.014653
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 09:43:18
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

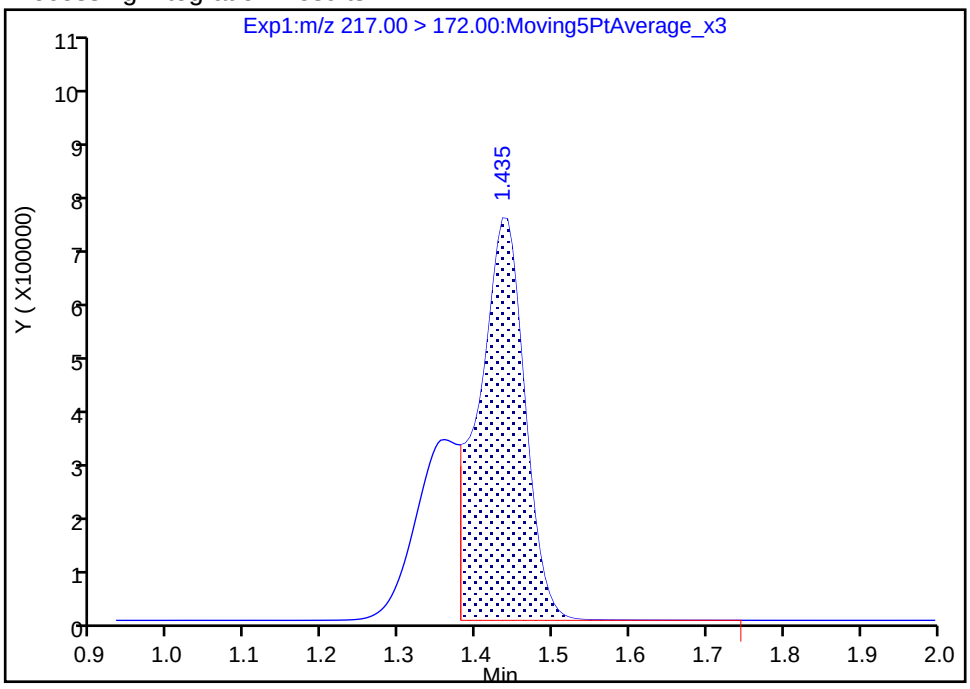
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_023.d
Injection Date: 20-Mar-2018 23:09:46 Instrument ID: A8_N
Lims ID: MB 320-212510/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

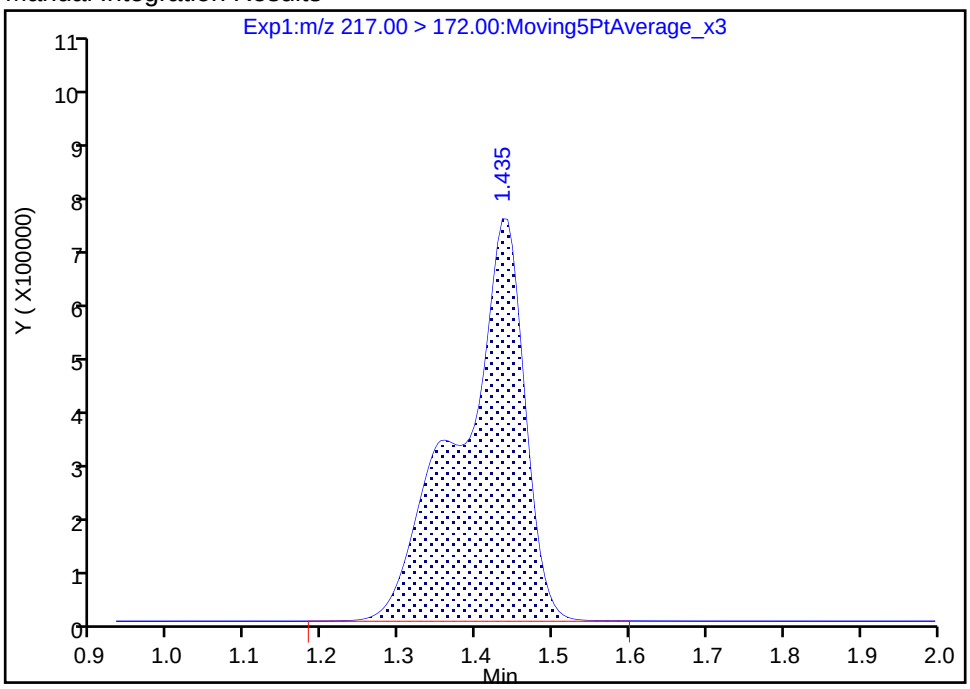
Processing Integration Results

RT: 1.43
Area: 3033218
Amount: 1.289806
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 4320545
Amount: 1.837213
Amount Units: ng/ml



Reviewer: barnettj, 21-Mar-2018 16:15:05
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-214126/1-A

Matrix: Solid | Lab File ID: 2018.03.23LLAA_054.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250(mL) | Date Analyzed: 03/23/2018 18:47

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.277	J	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.331	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90
27619-97-2	6:2FTS	4.687	J	20.0	2.00
39108-34-4	8:2FTS	2.00	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-214126/1-A

Matrix: Solid | Lab File ID: 2018.03.23LLAA_054.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250(mL) | Date Analyzed: 03/23/2018 18:47

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	88		25-150
STL01893	13C5 PFPeA	89		25-150
STL00993	13C2 PFHxA	90		25-150
STL01892	13C4-PFHpA	90		25-150
STL00990	13C4 PFOA	89		25-150
STL00995	13C5 PFNA	86		25-150
STL00996	13C2 PFDA	88		25-150
STL00997	13C2 PFUnA	77		25-150
STL00998	13C2 PFDoA	75		25-150
STL02116	13C2-PFTeDA	78		25-150
STL02337	13C3-PFBS	90		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	90		25-150
STL02117	d5-NEtFOSAA	78		25-150
STL02279	M2-6:2FTS	111		25-150
STL02280	M2-8:2FTS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_054.d
Lims ID: MB 320-214126/1-A
Client ID:
Sample Type: MB
Inject. Date: 23-Mar-2018 18:47:45 ALS Bottle#: 36 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-214126/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 09:19:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.459	1.453	0.006	1.004	12215	0.004923			6.8	
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.458	-0.005	0.539	6582806	2.19		87.7	112078	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.717	0.001	0.637	4445202	2.23		89.3	147794	
D 47 13C3-PFBS										
301.90 > 83.00	1.754	1.753	0.001	0.650	95325	2.10		90.2	570	
D 7 13C2 PFHxA										
315.00 > 270.00	2.009	2.008	0.001	0.745	4931668	2.24		89.6	153628	
D 9 13C4-PFHpA										
367.00 > 322.00	2.342	2.341	0.001	0.868	4869867	2.24		89.6	94372	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.342	2.341	0.001	1.000	13944	0.006920			32.1	R
363.00 > 169.00	2.329	2.341	-0.012	0.994	3944		3.54(1.13-3.40)		49.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.353	0.001	0.873	5994076	2.24		94.5	82185	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	23333	0.008271			303	
399.00 > 99.00	2.354	2.354	0.0	1.000	8279		2.82(1.50-4.49)		28.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.679	-0.006	0.991	1192834	2.65		111	32008	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.681	-0.008	1.000	102621	0.1172			6173	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.703	-0.006	1.000	4949929	2.23		89.1	133873	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.705	2.704	0.001	1.003	20547	0.009186			5.7	
413.00 > 169.00	2.697	2.704	-0.007	1.000	10196		2.02(0.84-2.52)		30.1	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.704	-0.007		5929071	2.50			102763	
D 19 13C5 PFNA										
468.00 > 423.00	3.073	3.080	-0.007	1.139	4237604	2.16		86.5	97655	
D 18 13C4 PFOS										
503.00 > 80.00	3.073	3.080	-0.007	1.139	4287836	2.20		92.0	72949	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.408	0.009	1.000	4448	0.001991			75.9	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.416	0.001	1.267	5665142	2.15		86.1	71567	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.427	-0.010	0.997	1654	0.002282			20.2	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.434	-0.008	1.270	1360212	2.24		93.4	38361	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.444	-0.009	1.274	3762999	2.19		87.6	85596	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.592	-0.002	1.000	4217	0.005187			52.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.602	-0.012	1.331	2030775	2.25		89.8	36692	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.761	-0.002	1.000	8061	0.007921			40.2	
563.00 > 169.00	3.769	3.761	0.008	1.003	2138		3.77(2.12-6.36)		147	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.761	-0.002	1.003	6124	0.008175			107	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.771	-0.023	1.390	2004709	1.95		77.8	11085	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.771	-0.012	1.394	2950826	1.92		76.8	62179	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.069	-0.012	1.504	3262699	1.87		74.8	22441	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	4988	0.003472			2.5	
663.00 > 169.00	4.307	4.319	-0.012	0.997	1973		2.53(1.25-3.76)		47.1	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.565	-0.011	1.688	4166765	1.96		78.2	32177	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	57736	0.000174			15.9	
813.00 > 169.00	4.964	4.974	-0.010	1.000	10325		5.59(2.86-8.58)		156	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.982	-0.018	1.841	6492727	1.86		74.4	16492	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Report Date: 29-Mar-2018 09:31:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_054.d

Injection Date: 23-Mar-2018 18:47:45 Instrument ID: A8_N

Lims ID: MB 320-214126/1-A

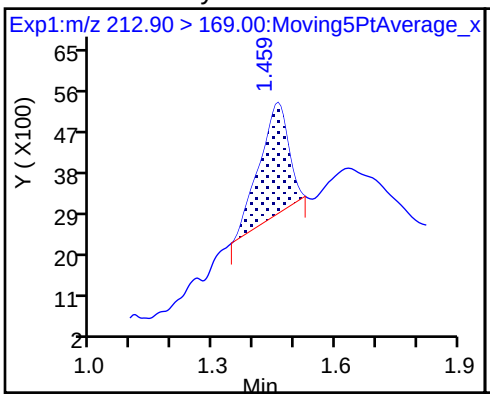
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 4

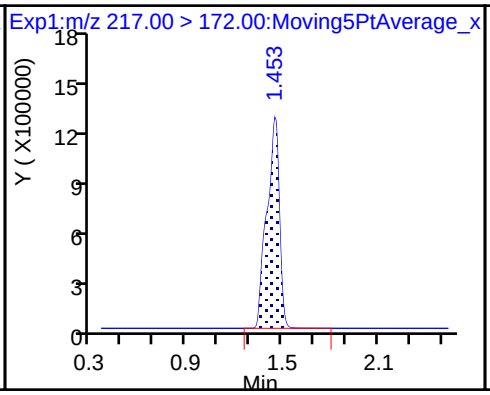
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

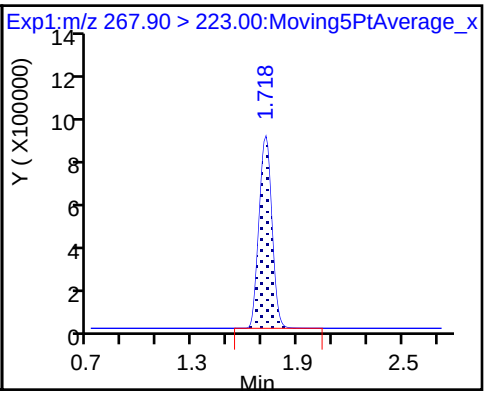
2 Perfluorobutyric acid



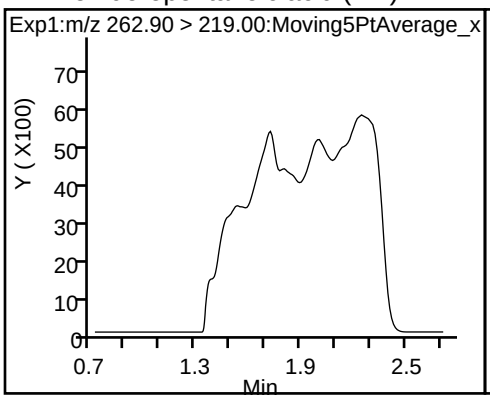
D 1 13C4 PFBA



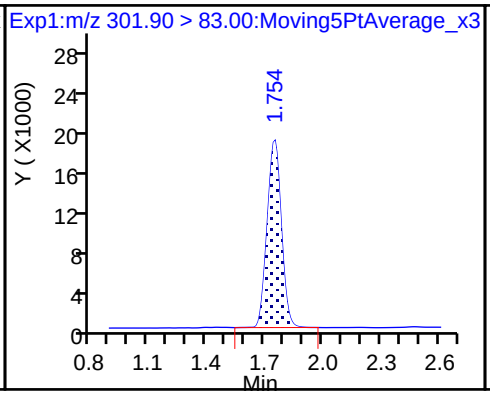
D 3 13C5-PFPeA



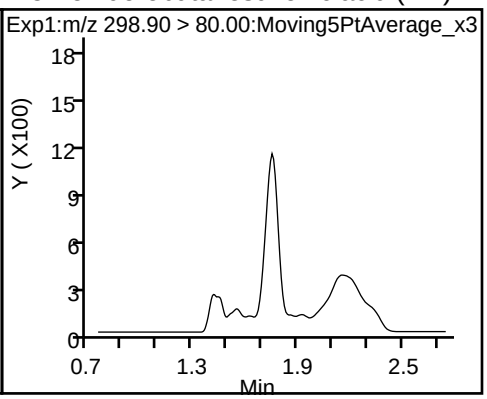
4 Perfluoropentanoic acid (ND)



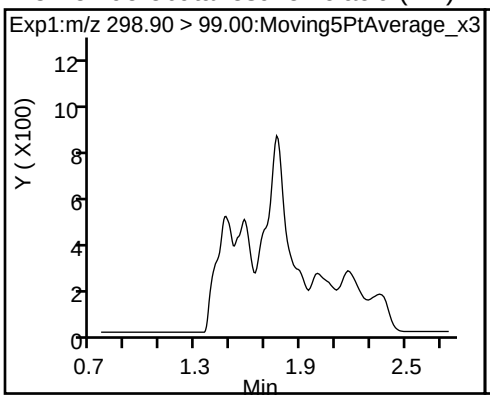
D 47 13C3-PFBS



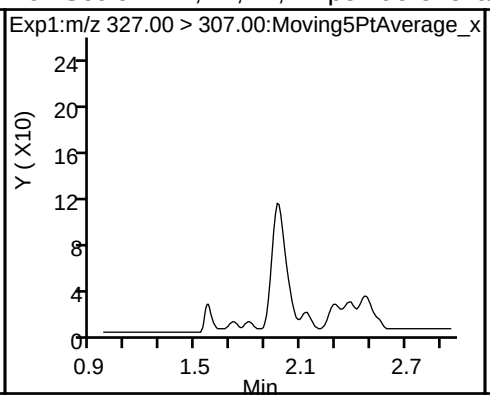
5 Perfluorobutanesulfonic acid (ND)



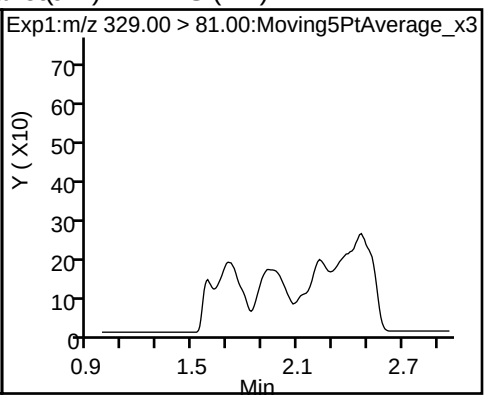
5 Perfluorobutanesulfonic acid (ND)



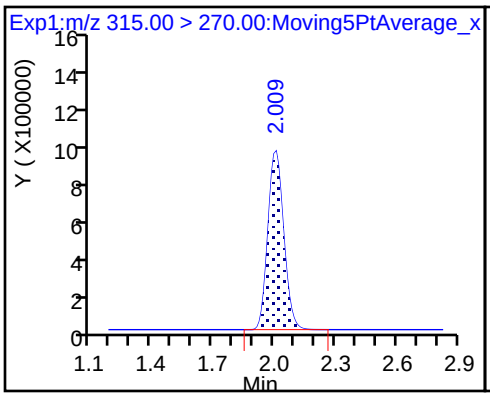
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



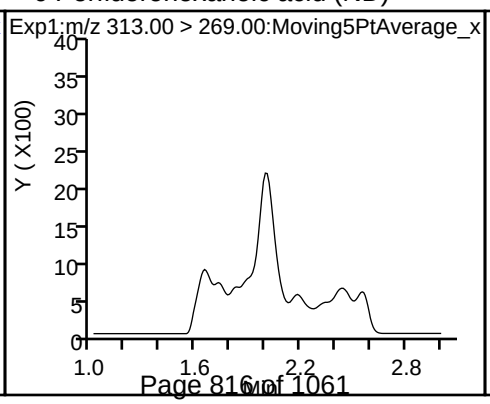
D 60 (ND) 4:2FTS (ND)



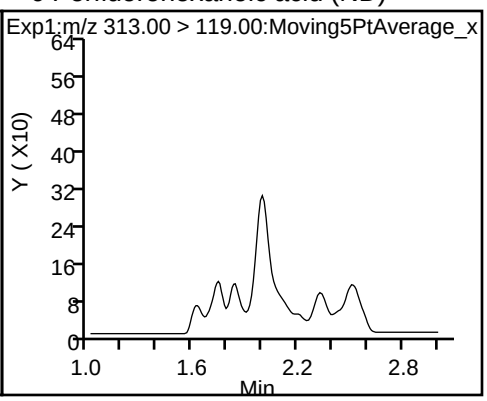
D 7 13C2 PFHxA



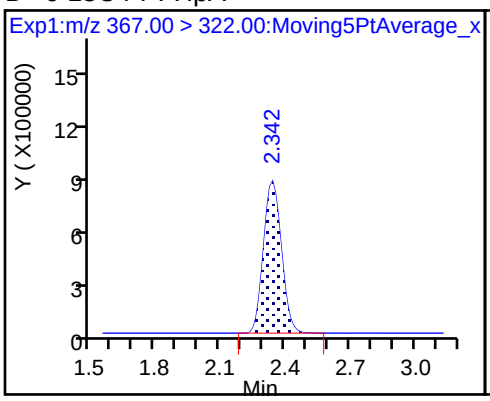
6 Perfluorohexanoic acid (ND)



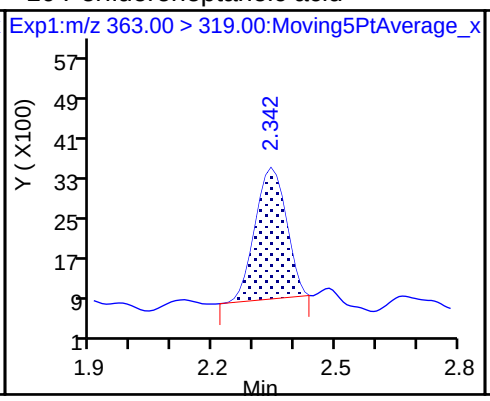
6 Perfluorohexanoic acid (ND)



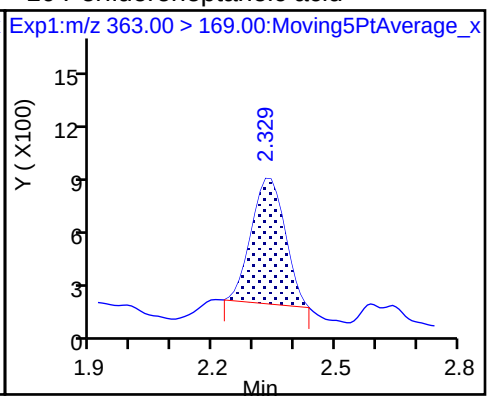
D 9 13C4-PFHpA



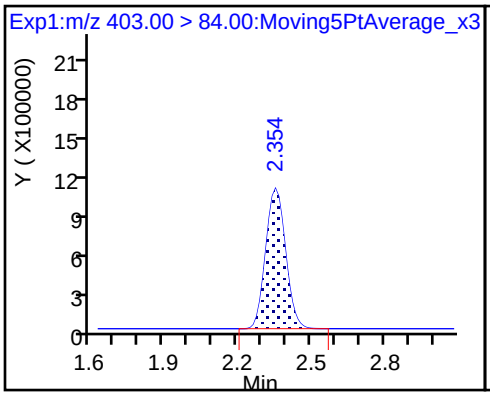
10 Perfluoroheptanoic acid



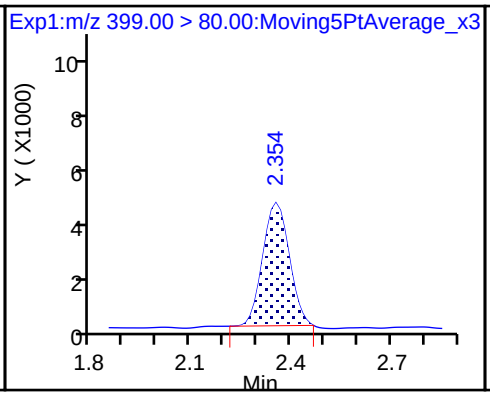
10 Perfluoroheptanoic acid



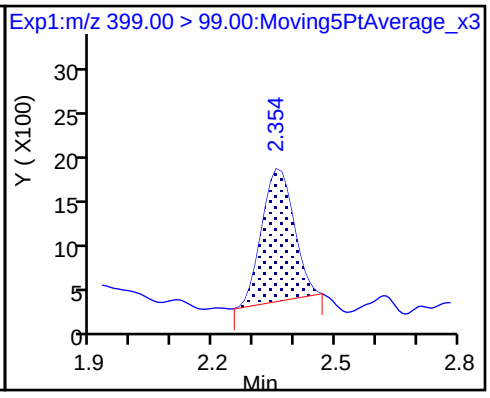
D 11 18O2 PFHxS



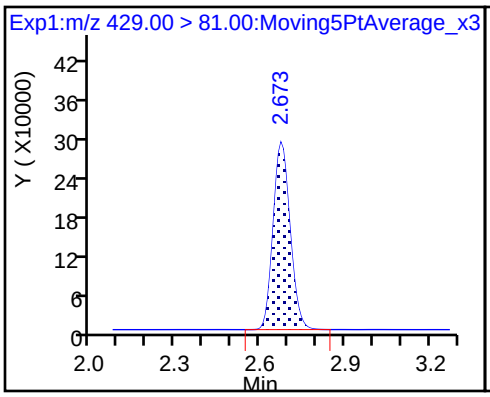
8 Perfluorohexanesulfonic acid



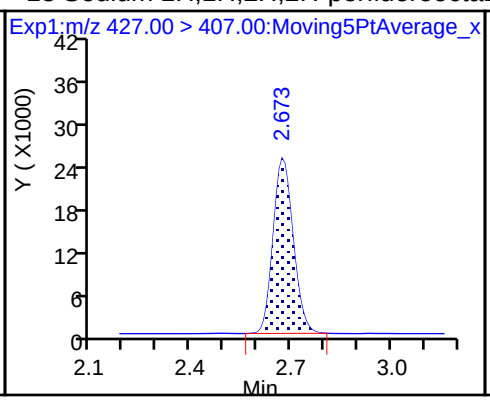
8 Perfluorohexanesulfonic acid



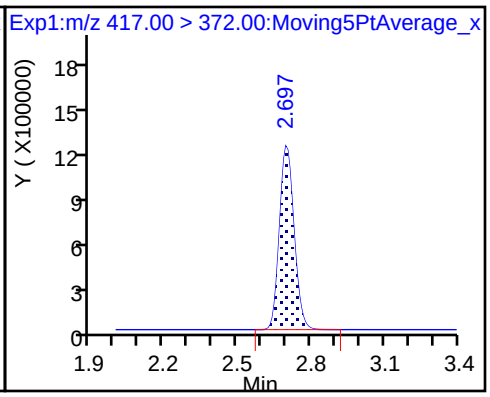
D 12 M2-6:2FTS



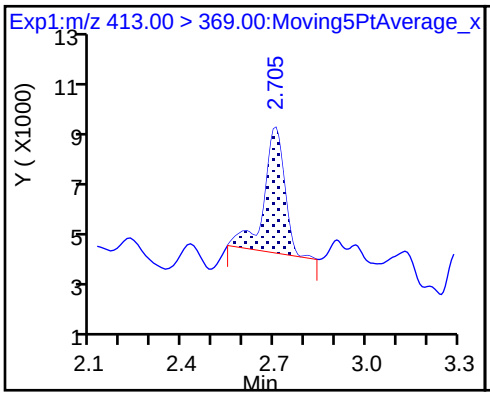
13 Sodium 1H,1H,2H,2H-perfluorooctane



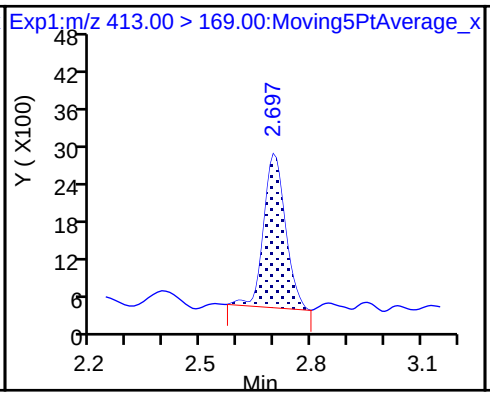
D 14 13C4 PFOA



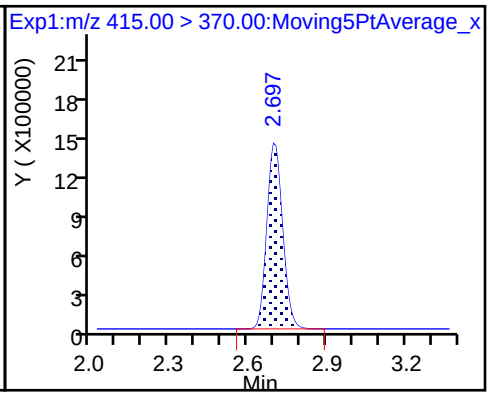
15 Perfluorooctanoic acid



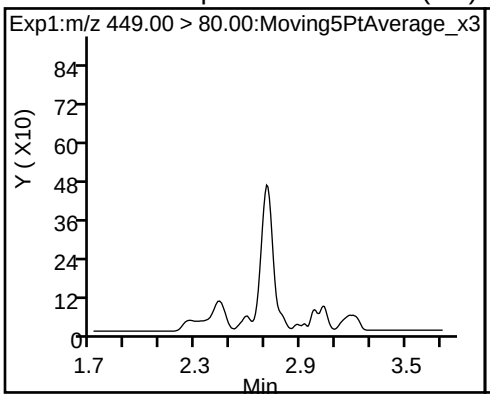
15 Perfluorooctanoic acid



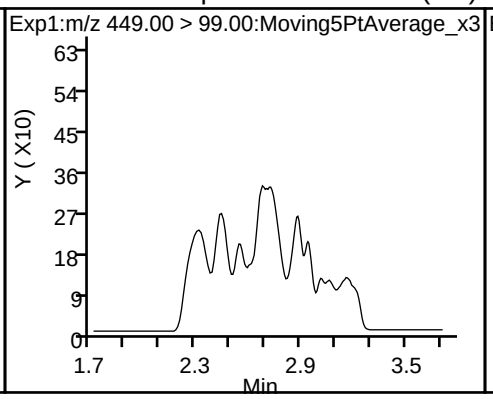
* 62 13C2-PFOA



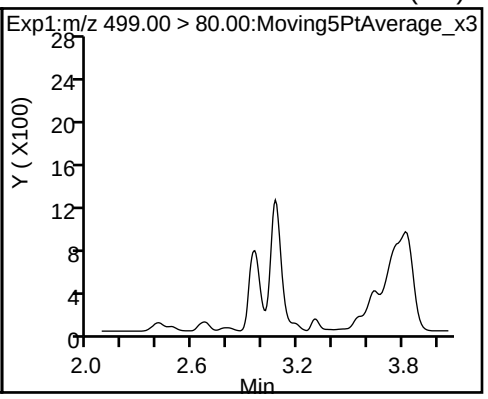
16 Perfluoroheptanesulfonic acid (ND)



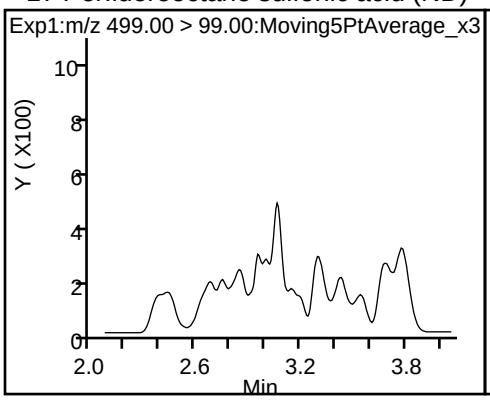
16 Perfluoroheptanesulfonic acid (ND)



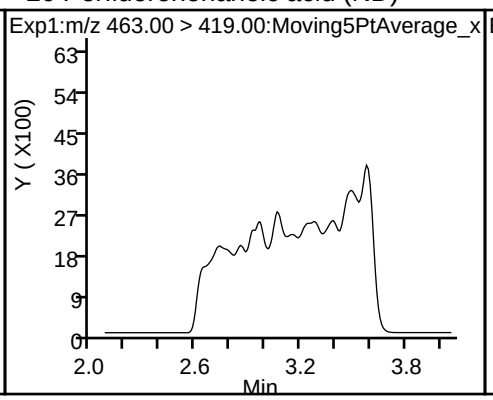
17 Perfluorooctane sulfonic acid (ND)



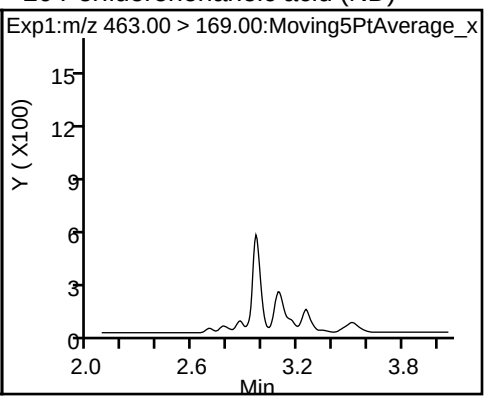
17 Perfluorooctane sulfonic acid (ND)



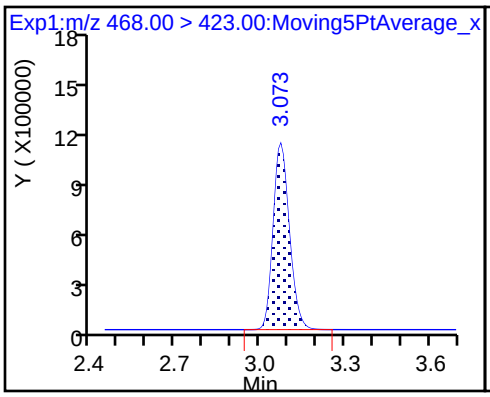
20 Perfluorononanoic acid (ND)



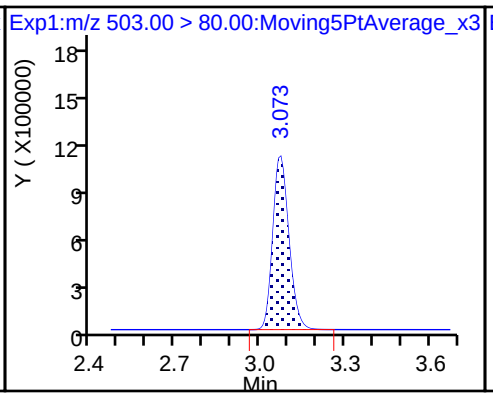
20 Perfluorononanoic acid (ND)



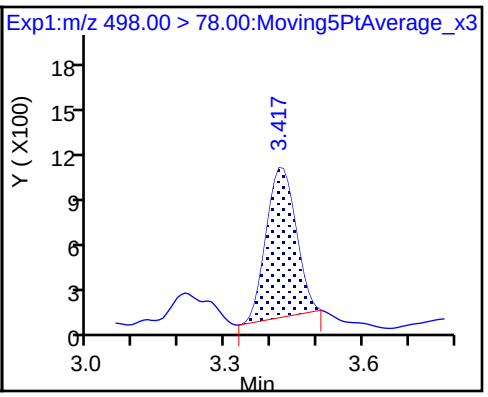
D 19 13C5 PFNA



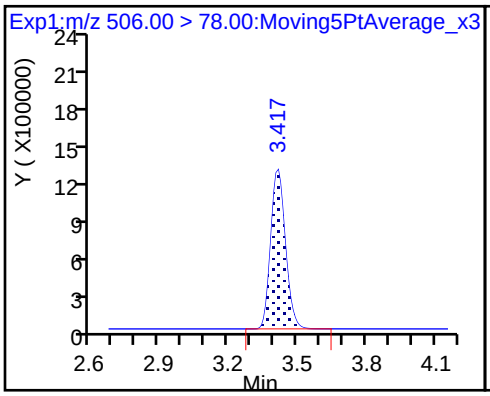
D 18 13C4 PFOS



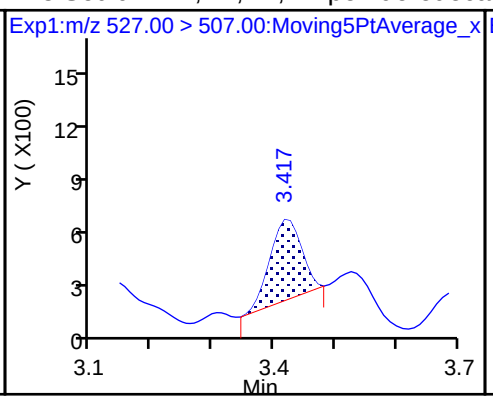
22 Perfluorooctane Sulfonamide



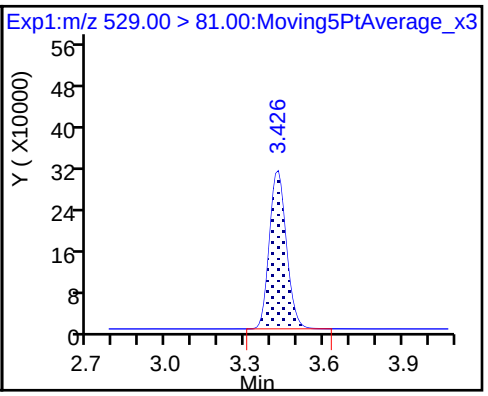
D 21 13C8 FOSA



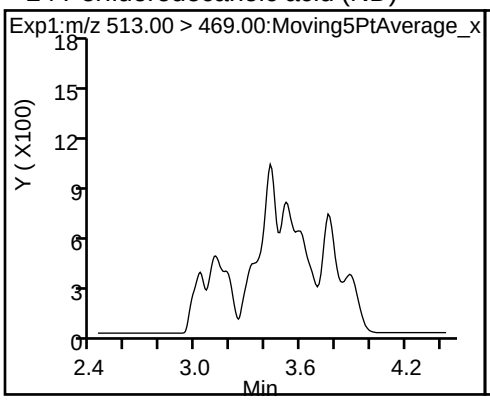
25 Sodium 1H,1H,2H,2H-perfluorodecane



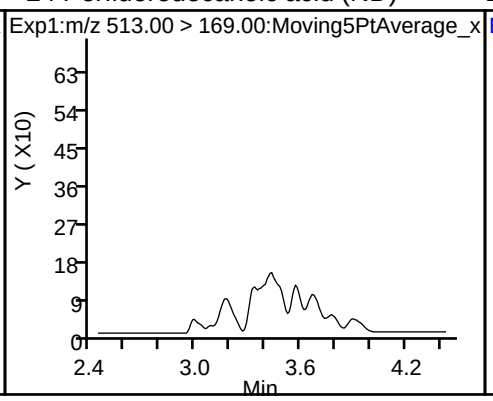
D 26 M2-8:2FTS



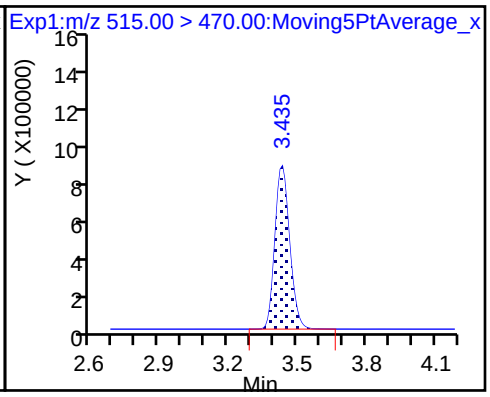
24 Perfluorodecanoic acid (ND)



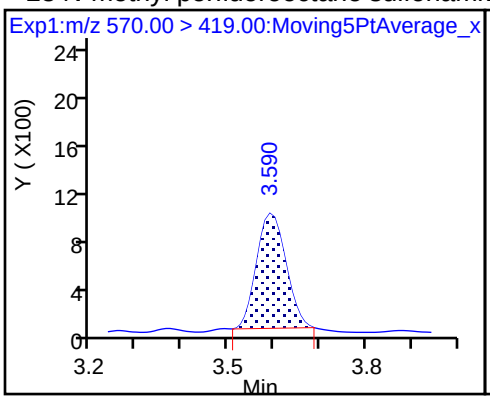
24 Perfluorodecanoic acid (ND)



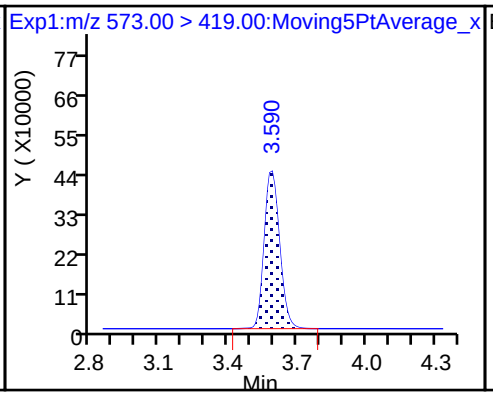
D 23 13C2 PFDA



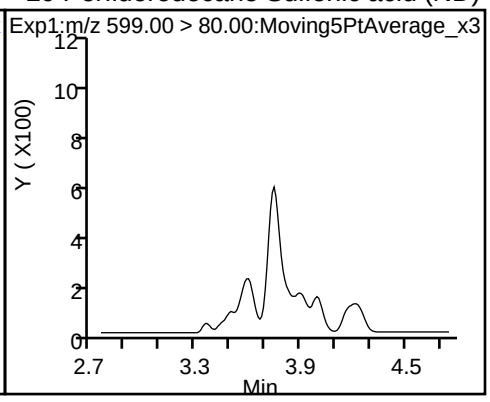
28 N-methyl perfluorooctane sulfonami



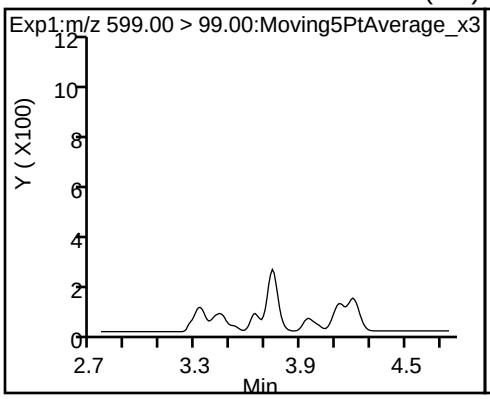
D 27 d3-NMeFOSAA



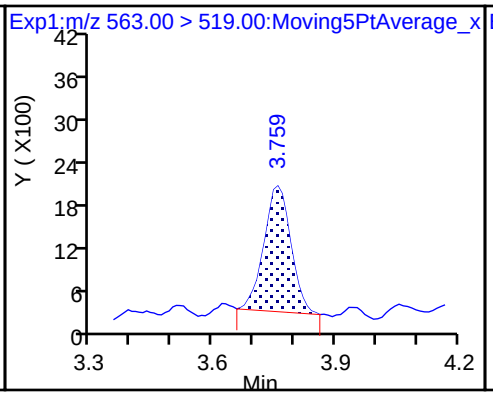
29 Perfluorodecane Sulfonic acid (ND)



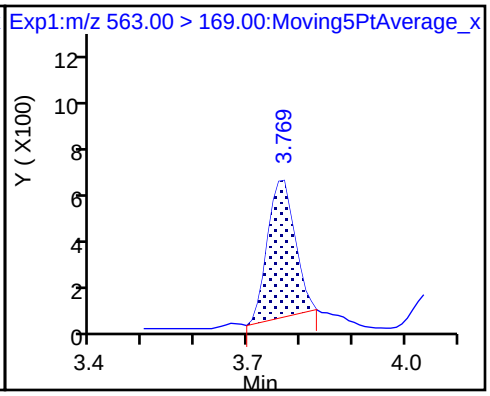
29 Perfluorodecane Sulfonic acid (ND)



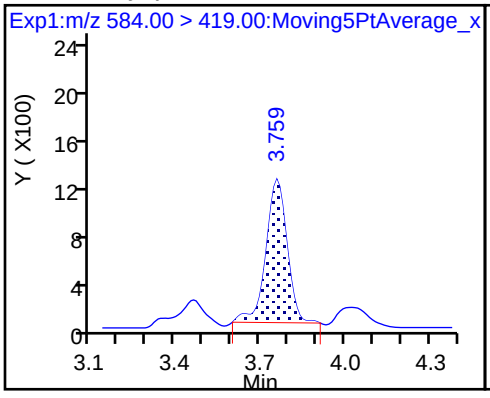
31 Perfluoroundecanoic acid



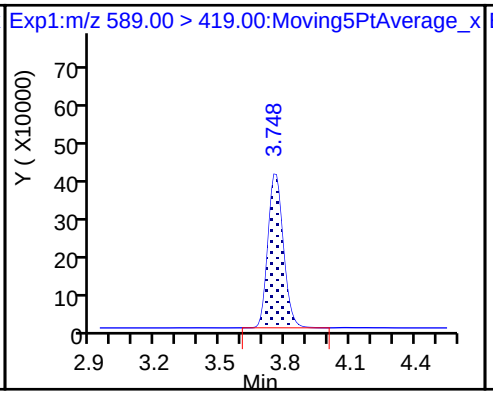
31 Perfluoroundecanoic acid



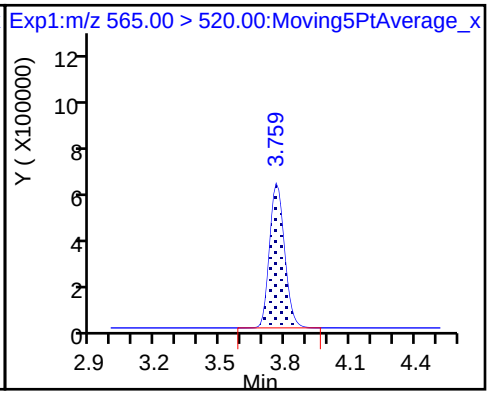
33 N-ethyl perfluorooctane sulfonamid



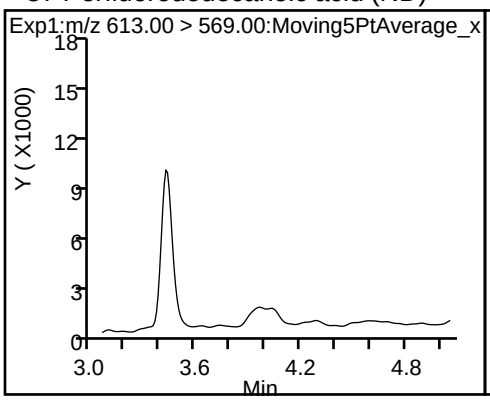
D 32 d5-NEtFOSAA



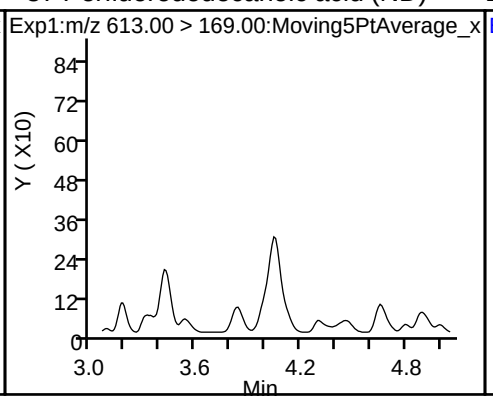
D 30 13C2 PFUnA



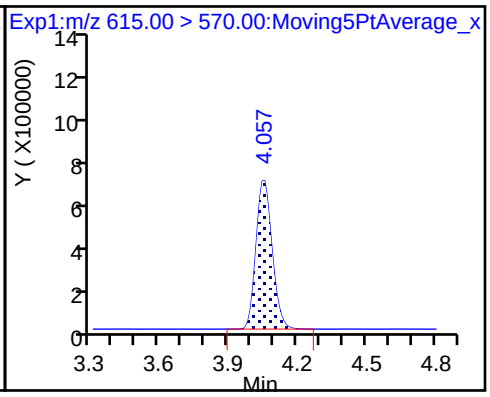
37 Perfluorododecanoic acid (ND)



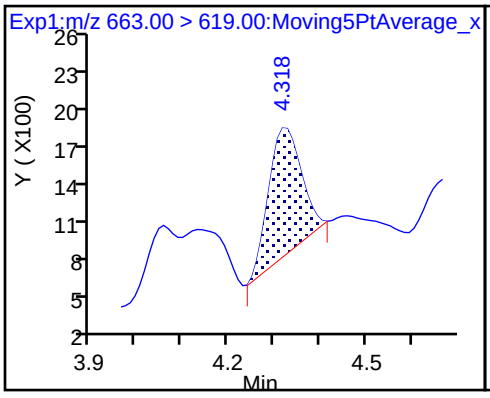
37 Perfluorododecanoic acid (ND)



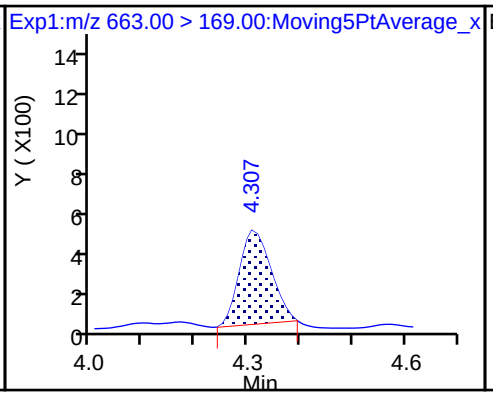
D 36 13C2 PFDoA



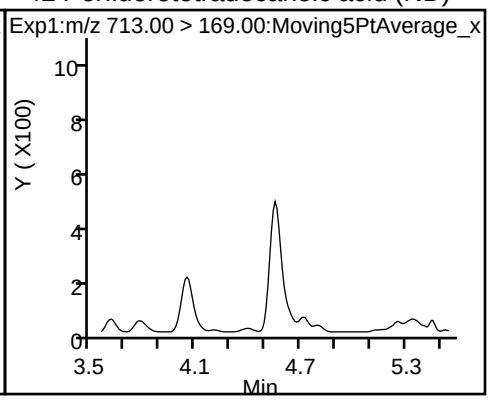
41 Perfluorotridecanoic acid



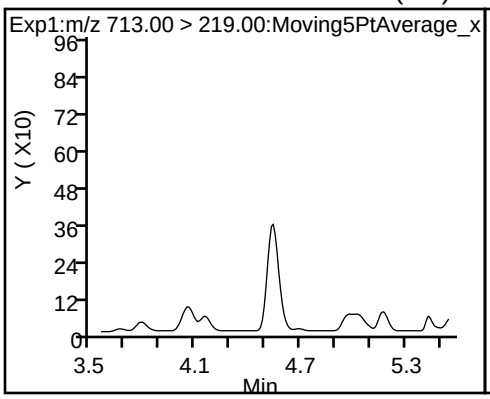
41 Perfluorotridecanoic acid



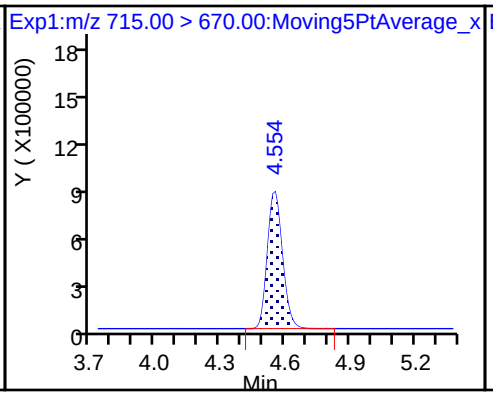
42 Perfluorotetradecanoic acid (ND)



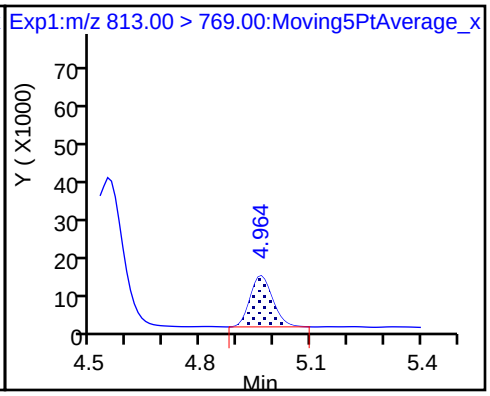
42 Perfluorotetradecanoic acid (ND)



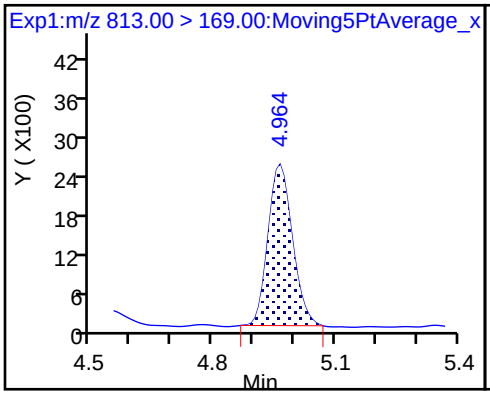
D 43 13C2-PFTeDA



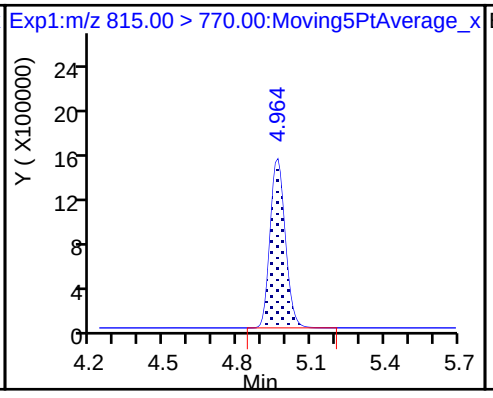
45 Perfluorohexadecanoic acid



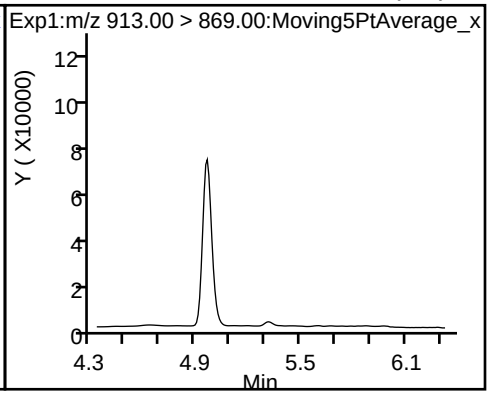
45 Perfluorohexadecanoic acid



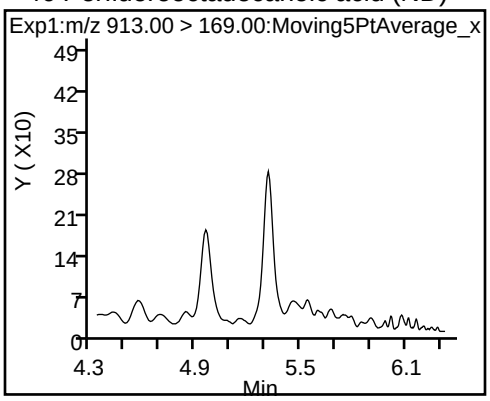
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-214600/1-A

Matrix: Solid Lab File ID: 2018.03.28LLFF_007.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) Date Analyzed: 03/29/2018 00:10

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	80		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d
Lims ID: MB 320-214600/1-A
Client ID:
Sample Type: MB
Inject. Date: 29-Mar-2018 00:10:19 ALS Bottle#: 14 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-214600/1-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: hannigana Date: 29-Mar-2018 08:07:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.435	0.005	1.000	42280	0.0196			8.8	
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5723007	1.98		79.2	139611	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3989907	2.08		83.2	136656	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.647	78649	1.80		77.3	467	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	4341596	2.05		81.9	122109	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.341	0.013	1.006	15209	0.006424			95.8	
399.00 > 99.00	2.341	2.341	0.0	1.000	5871		2.59(1.50-4.49)		30.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	4303232	2.06		82.3	117369	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	5030753	1.95		82.4	117902	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	61377	0.1045			1064	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		5707612	2.50			115471	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	20004	0.0108			6.0	
413.00 > 169.00	2.697	2.697	0.0	1.000	0		0.00(0.84-2.52)			
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	800106	1.84		77.7	22027	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	4101375	1.92		76.7	100970	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	65880	0.0392			207	
499.00 > 99.00	3.072	3.072	0.0	1.000	14697		4.48(2.31-6.93)		146	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3416391	1.81		72.4	72921	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3609706	1.92		80.4	61995	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	4643155	1.83		73.3	53390	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	992178	1.69		70.7	36269	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	3044071	1.84		73.6	51303	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1293693	1.49		59.4	53666	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.748	3.769	-0.021	0.995	2213	0.002655			10.8	R
563.00 > 169.00	3.768	3.769	-0.001	1.000	1143		1.94(2.12-6.36)		121	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.769	-0.001	1.003	2391	0.004501			35.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1421551	1.43		57.3	4127	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.397	2416877	1.63		65.3	40925	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.508	2654925	1.58		63.2	24158	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3491791	1.70		68.1	21597	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.972	0.009	1.000	44461	-0.000211			12.0	
813.00 > 169.00	4.981	4.972	0.009	1.000	7202		6.17(2.86-8.58)		96.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.008	-0.027	1.847	5079767	1.51		60.4	14594	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d

Injection Date: 29-Mar-2018 00:10:19 Instrument ID: A8_N

Lims ID: MB 320-214600/1-A

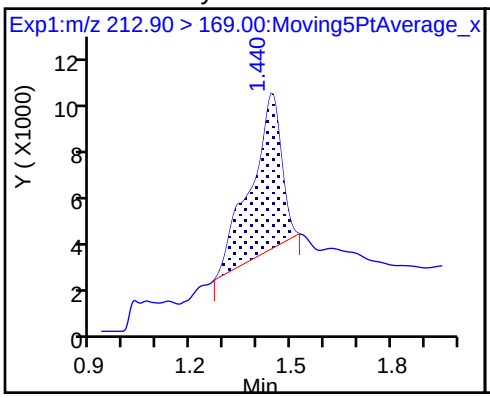
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 4

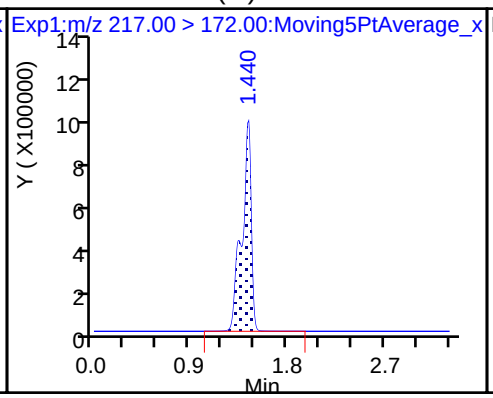
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

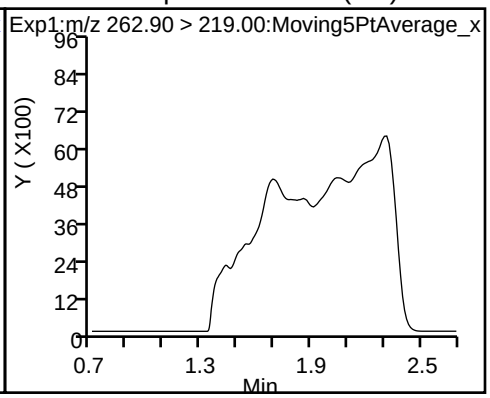
2 Perfluorobutyric acid



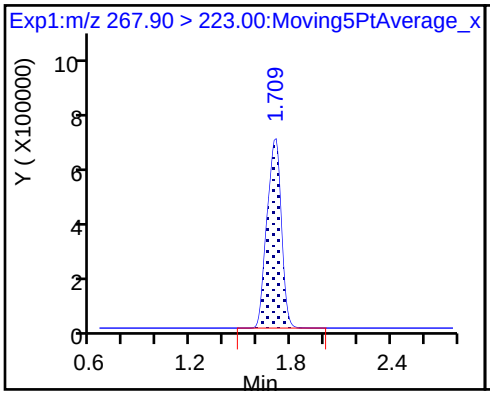
D 1 13C4 PFBA (M)



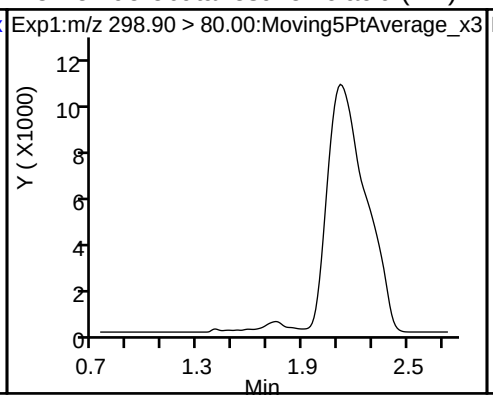
4 Perfluoropentanoic acid (ND)



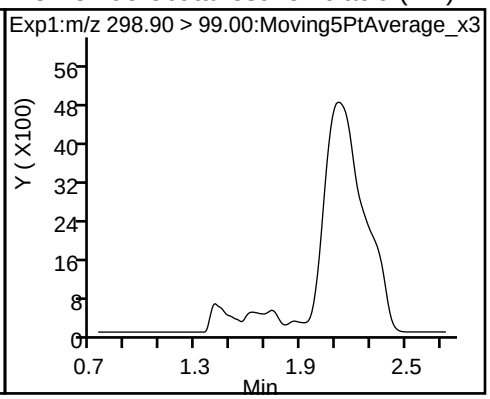
D 3 13C5-PFPeA



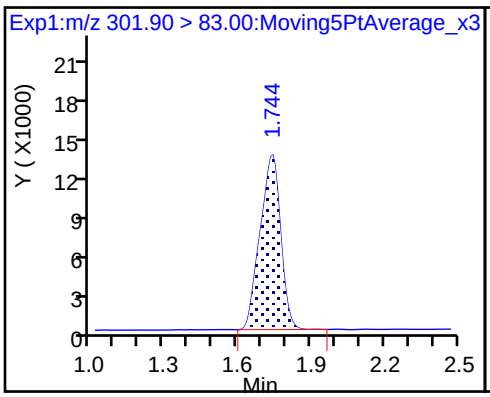
5 Perfluorobutanesulfonic acid (ND)



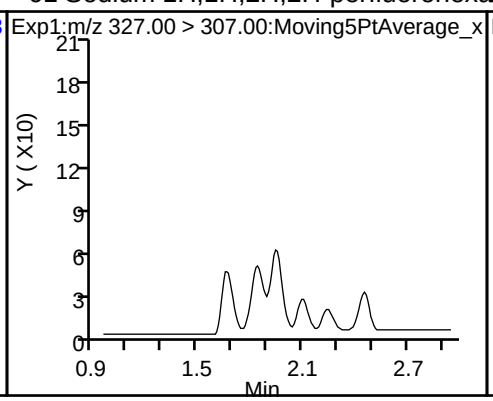
5 Perfluorobutanesulfonic acid (ND)



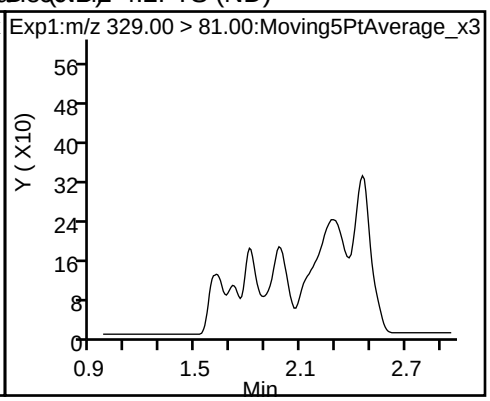
D 47 13C3-PFBS



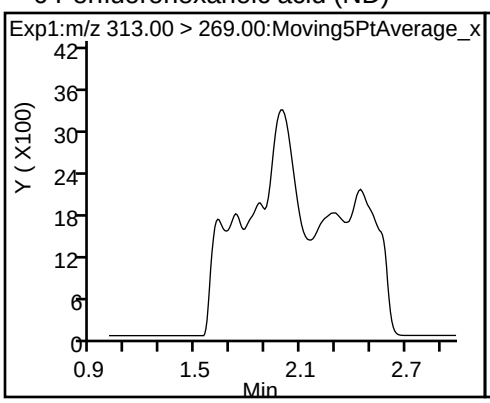
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



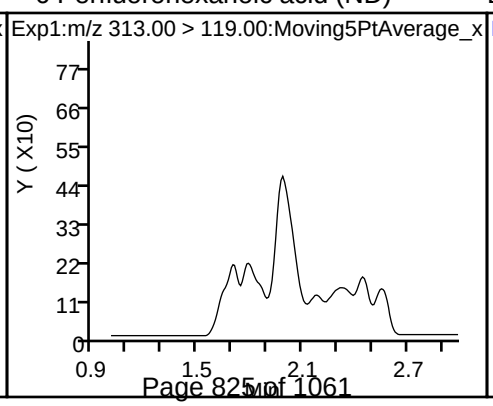
D 60 M2-4:2FTS (ND)



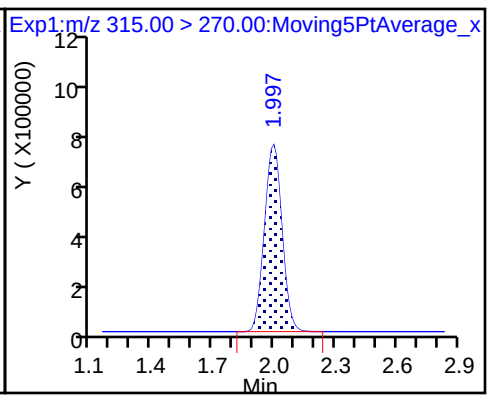
6 Perfluorohexanoic acid (ND)



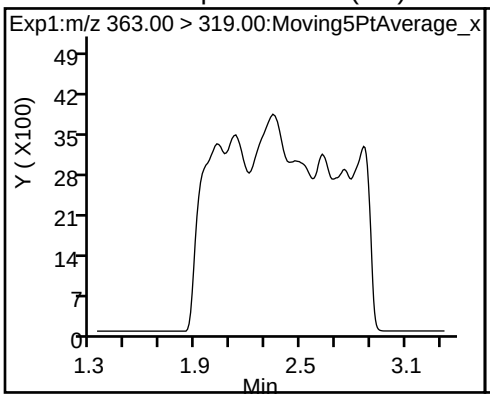
6 Perfluorohexanoic acid (ND)



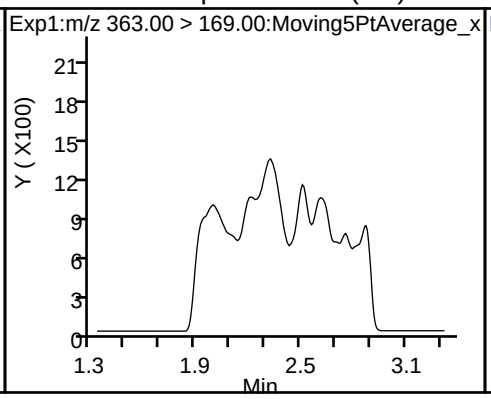
D 7 13C2 PFHxA



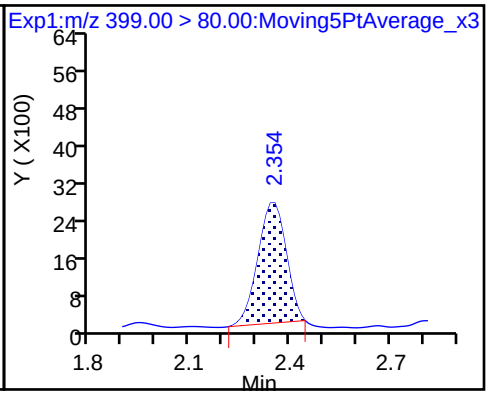
10 Perfluoroheptanoic acid (ND)



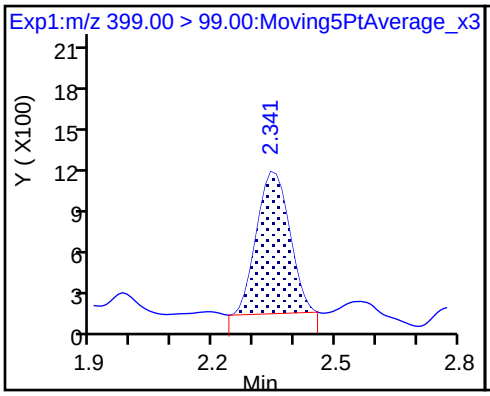
10 Perfluoroheptanoic acid (ND)



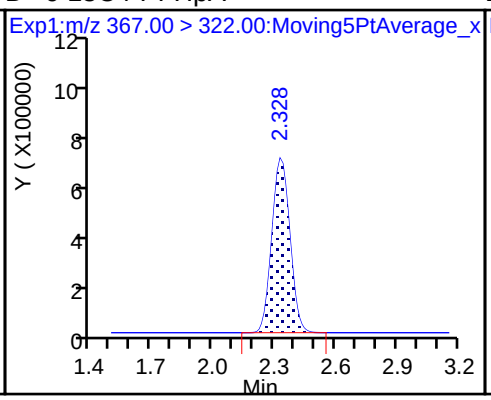
8 Perfluorohexanesulfonic acid



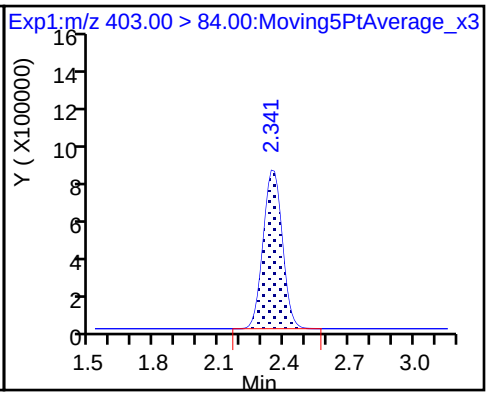
8 Perfluorohexanesulfonic acid



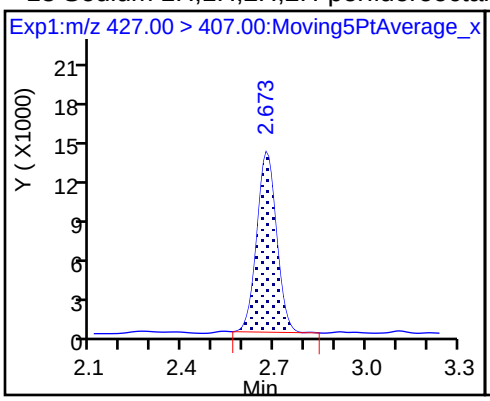
D 9 13C4-PFHpA



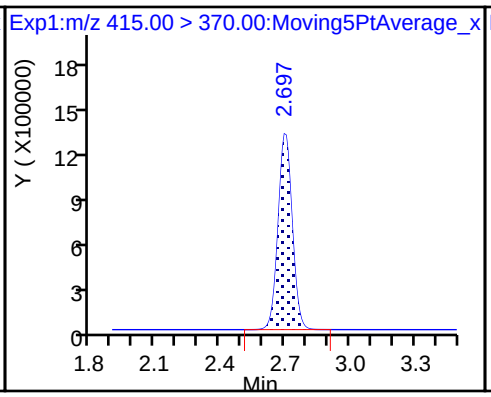
D 11 18O2 PFHxS



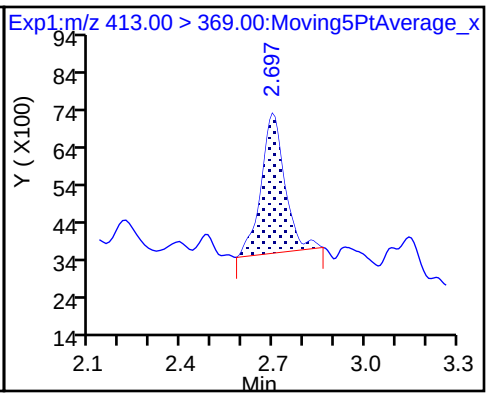
13 Sodium 1H,1H,2H,2H-perfluorooctane



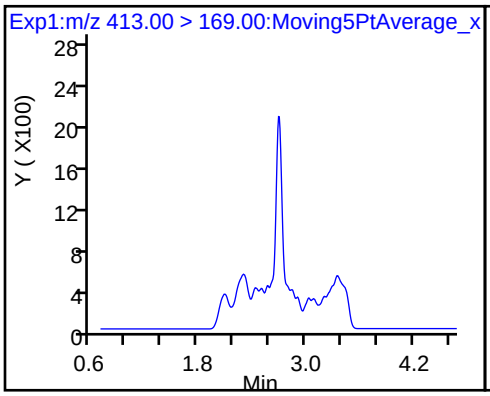
62 13C2-PFOA



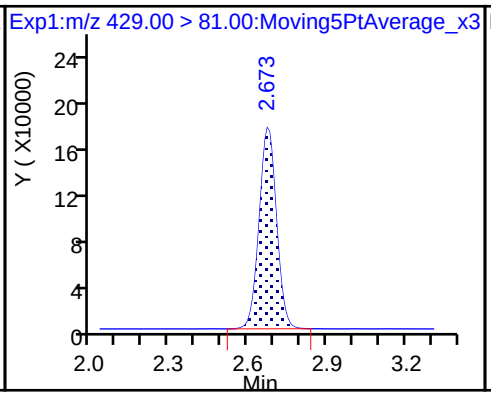
15 Perfluorooctanoic acid



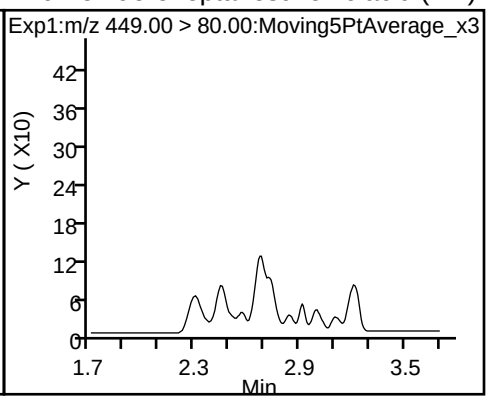
15 Perfluorooctanoic acid



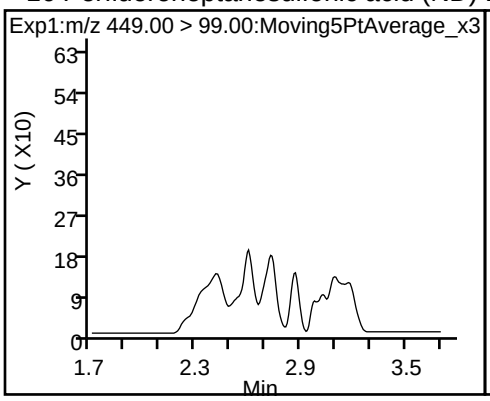
D 12 M2-6:2FTS



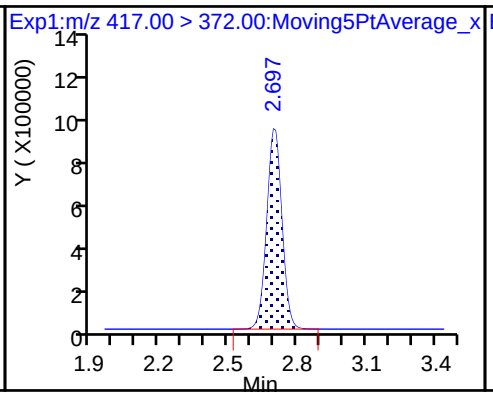
16 Perfluoroheptanesulfonic acid (ND)



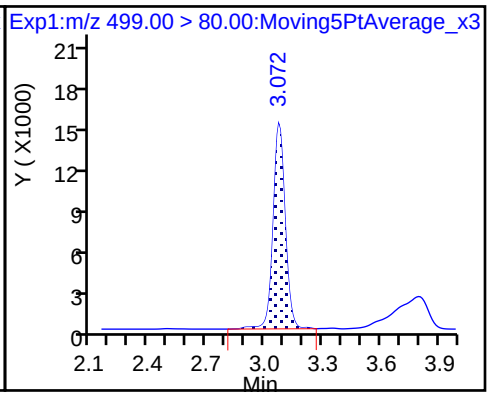
16 Perfluoroheptanesulfonic acid (ND)



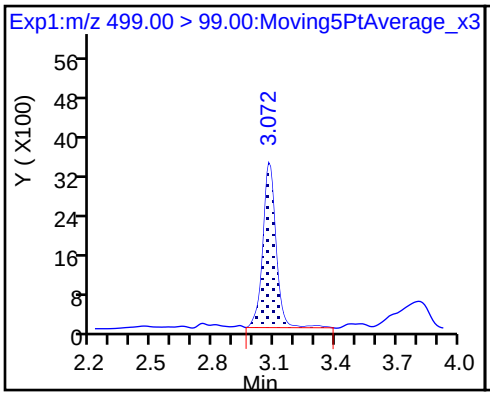
D 14 13C4 PFOA



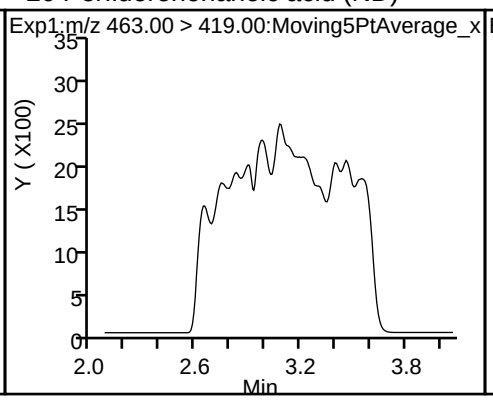
17 Perfluorooctane sulfonic acid



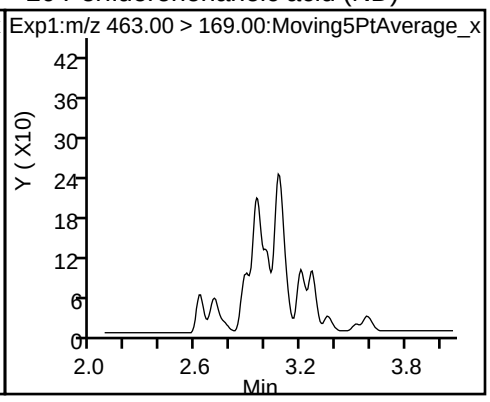
17 Perfluorooctane sulfonic acid



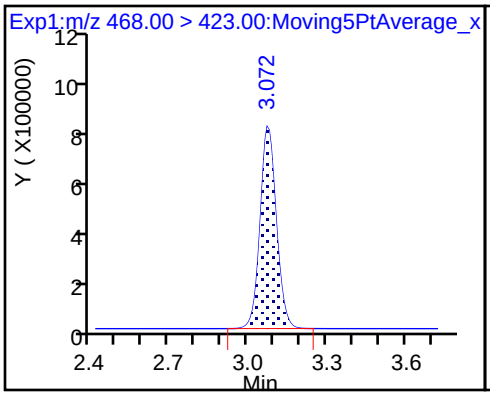
20 Perfluorononanoic acid (ND)



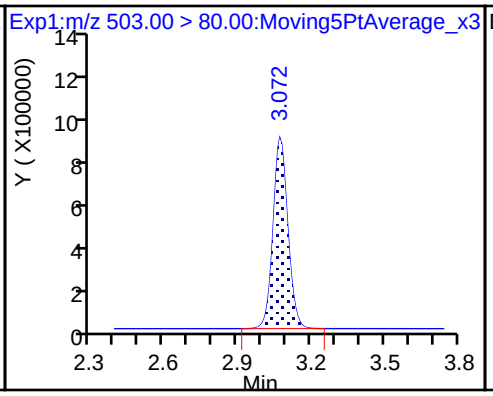
20 Perfluorononanoic acid (ND)



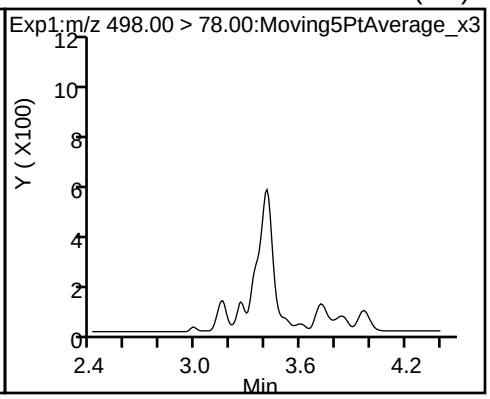
D 19 13C5 PFNA



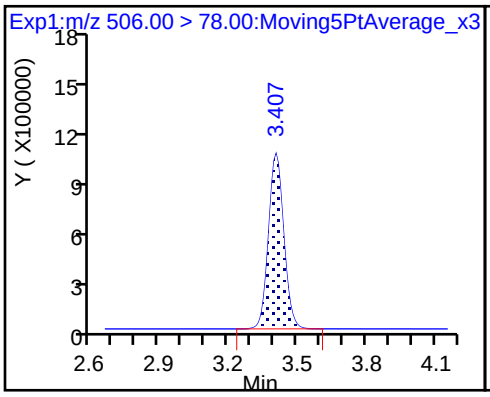
D 18 13C4 PFOS



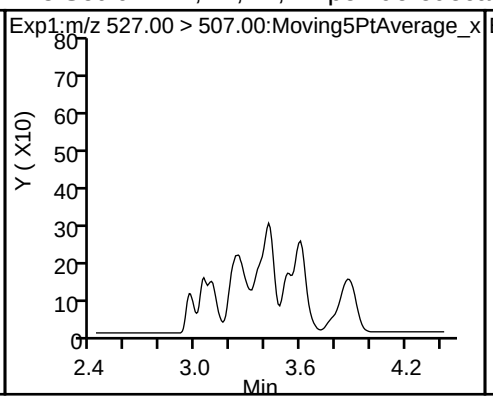
22 Perfluorooctane Sulfonamide (ND)



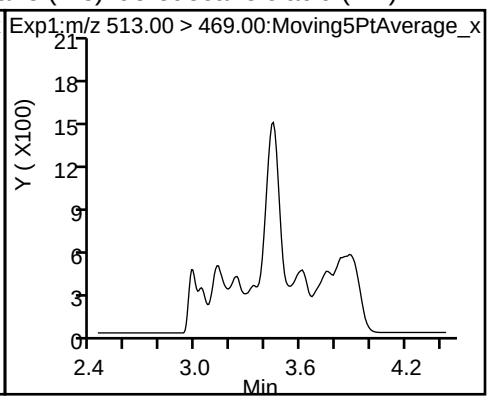
D 21 13C8 FOSA



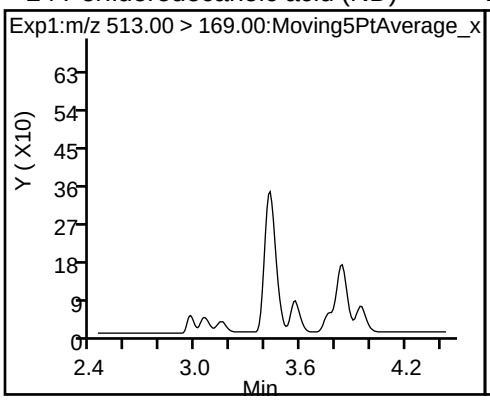
25 Sodium 1H,1H,2H,2H-perfluorodecane2 (ND)



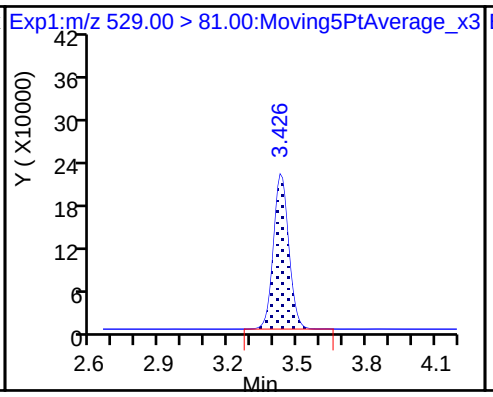
24 Perfluorodecanoic acid (ND)



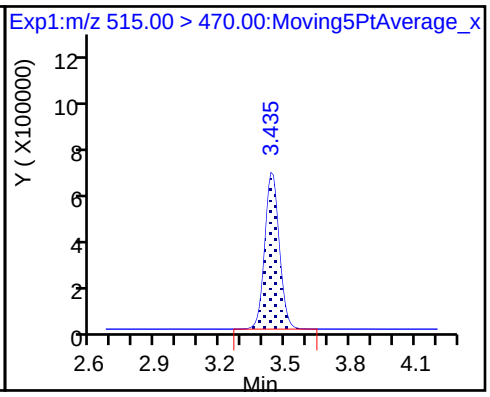
24 Perfluorodecanoic acid (ND)



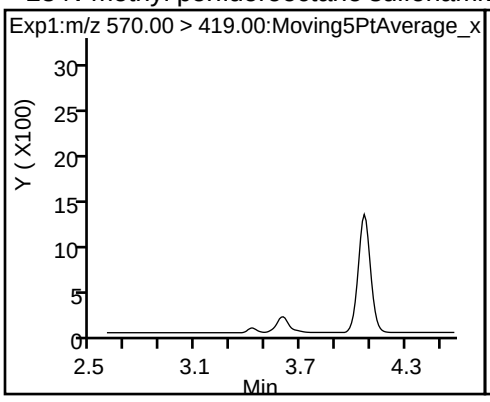
D 26 M2-8:2FTS



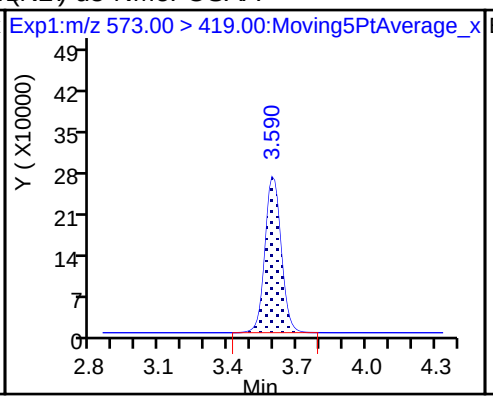
D 23 13C2 PFDA



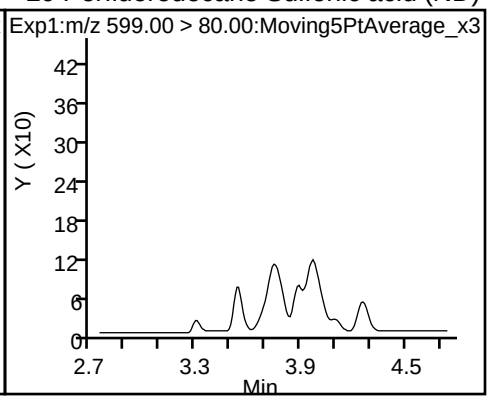
28 N-methyl perfluorooctane sulfonamid (ND)



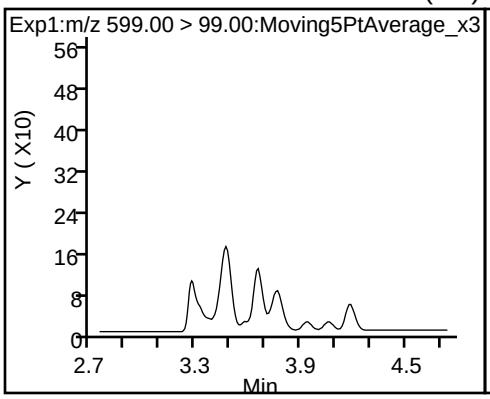
D 27 d3-NMeFOSAA



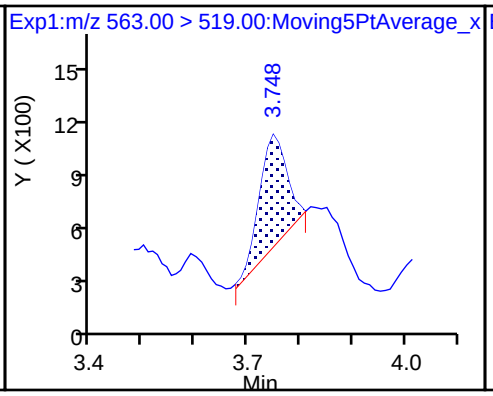
29 Perfluorodecane Sulfonic acid (ND)



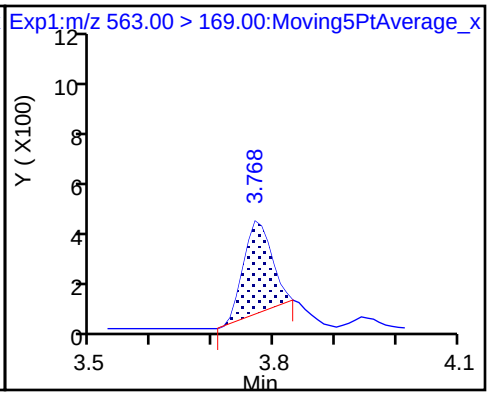
29 Perfluorodecane Sulfonic acid (ND)



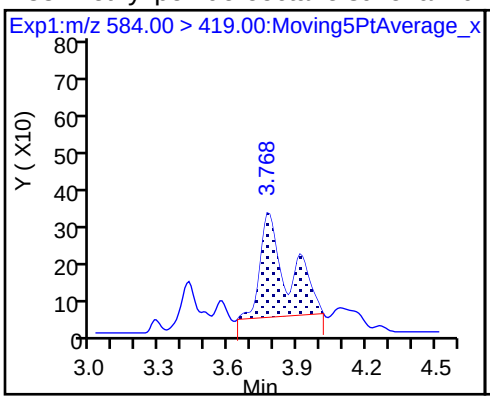
31 Perfluoroundecanoic acid



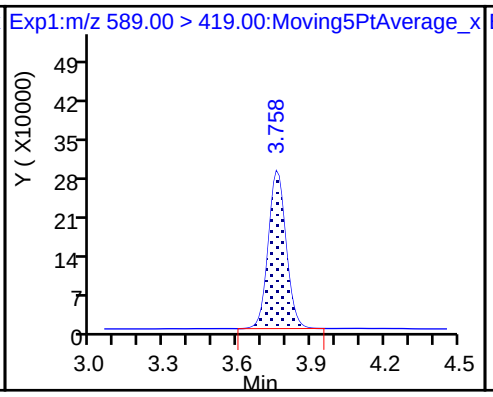
31 Perfluoroundecanoic acid



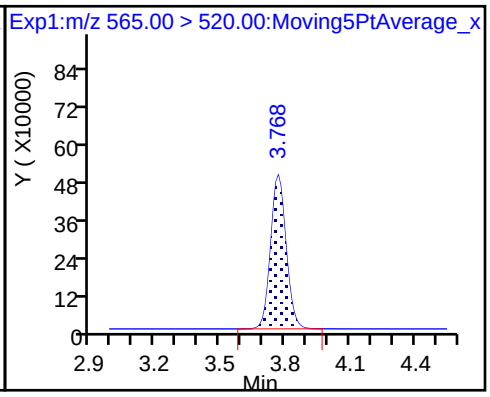
33 N-ethyl perfluorooctane sulfonamid



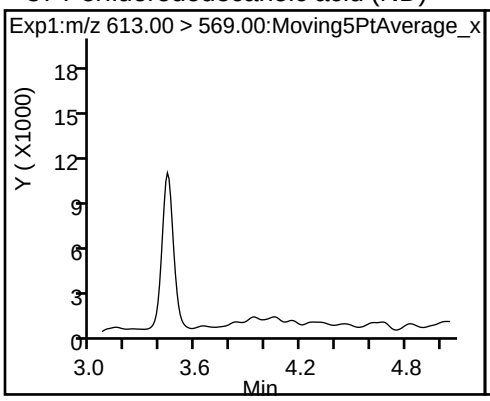
D 32 d5-NEtFOSAA



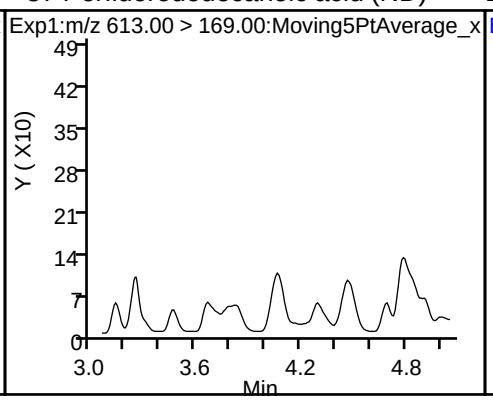
D 30 13C2 PFUnA



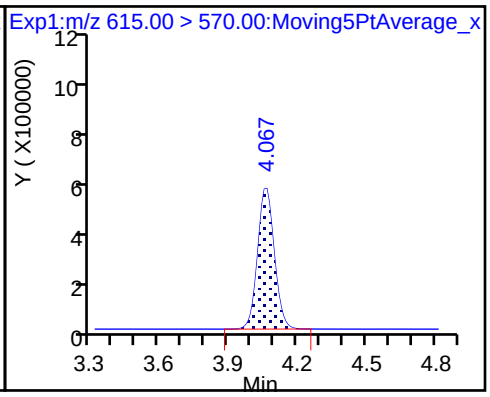
37 Perfluorododecanoic acid (ND)



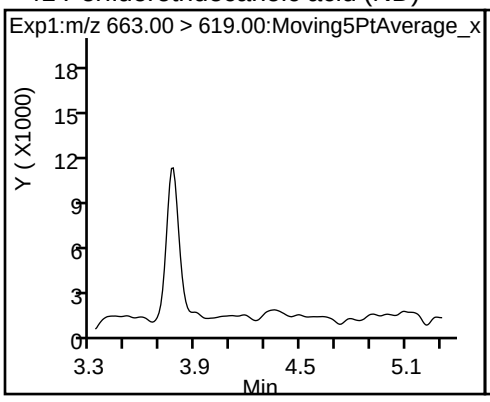
37 Perfluorododecanoic acid (ND)



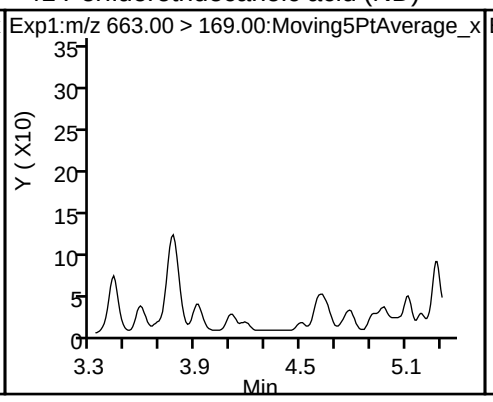
D 36 13C2 PFDoA



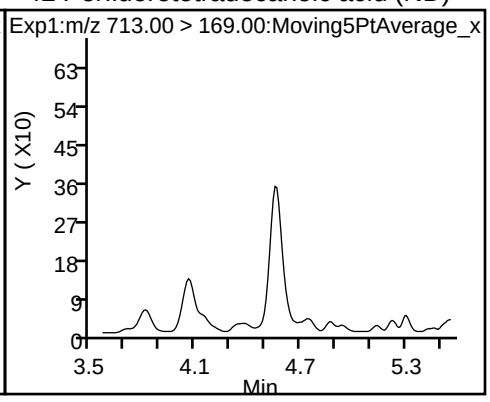
41 Perfluorotridecanoic acid (ND)



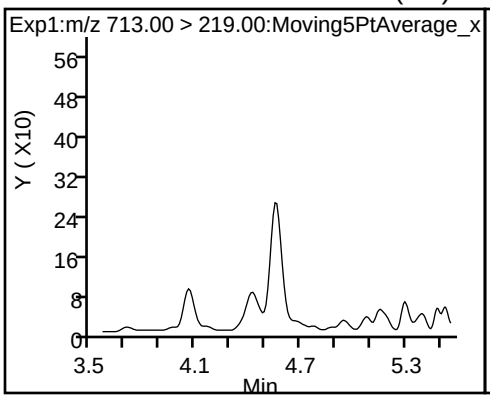
41 Perfluorotridecanoic acid (ND)



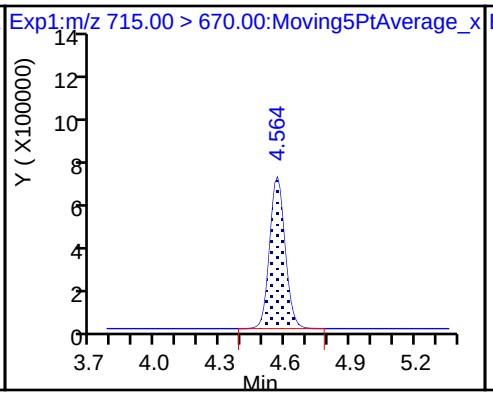
42 Perfluorotetradecanoic acid (ND)



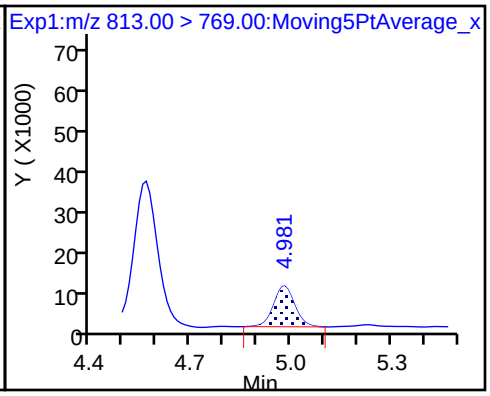
42 Perfluorotetradecanoic acid (ND)



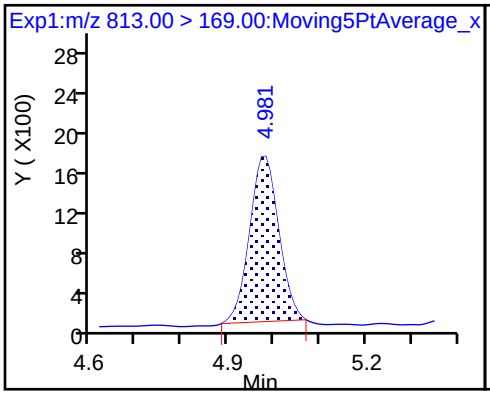
D 43 13C2-PFTeDA



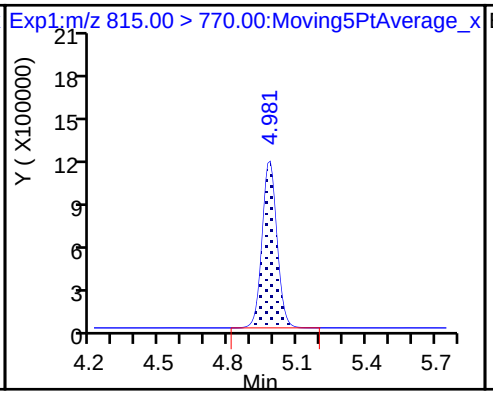
45 Perfluorohexadecanoic acid



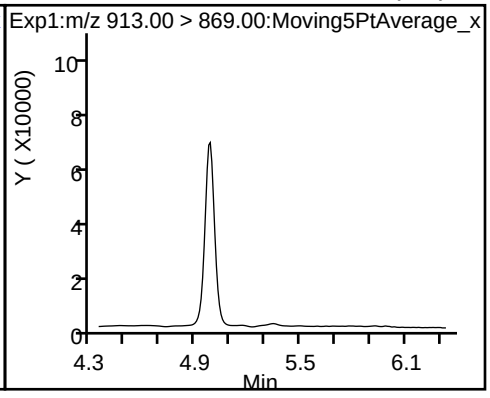
45 Perfluorohexadecanoic acid



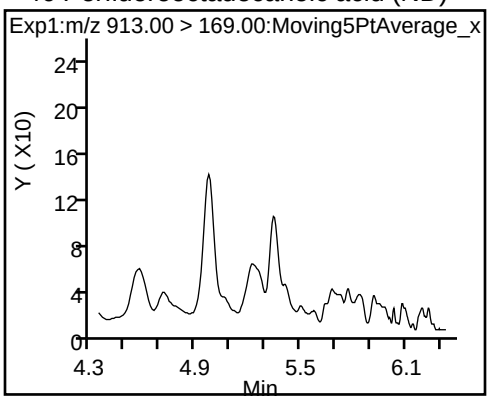
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-215106/1-A

Matrix: Solid | Lab File ID: 2018.03.28LLDXD_008.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/27/2018 20:41

Sample wt/vol: 250.00(mL) | Date Analyzed: 03/28/2018 18:59

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	2.00	U	20.0	2.00

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	112		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_008.d
Lims ID: MB 320-215106/1-A
Client ID:
Sample Type: MB
Inject. Date: 28-Mar-2018 18:59:38 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-215106/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:49:47 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:37:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.530	6852109	2.69		107	107673	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	27137	0.0105			9.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.718	0.0	0.630	4462082	2.64		106	158066	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.643	94261	2.44		105	738	
D 7 13C2 PFHxA										
315.00 > 270.00	2.019	2.019	0.0	0.740	4696557	2.51		100	129308	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.328	2.353	-0.025	0.983	3088	0.001581			2.3	R
363.00 > 169.00	2.341	2.353	-0.012	0.989	2830		1.09(1.13-3.40)		5.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.367	2.354	0.013	0.868	4719288	2.56		102	92928	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.379	2.367	0.012	1.000	20398	0.007136			137	
399.00 > 99.00	2.379	2.367	0.012	1.000	6636		3.07(1.50-4.49)		47.9	
D 11 18O2 PFHxS										
403.00 > 84.00	2.379	2.368	0.011	0.872	6073884	2.67		113	100659	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.704	2.695	0.009	1.000	25288	0.0338			152	
D 12 M2-6:2FTS										
429.00 > 81.00	2.704	2.705	-0.001	0.991	1019175	2.66		112	26840	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.736	2.726	0.010	1.003	13030	0.006116			4.1	
413.00 > 169.00	2.728	2.726	0.002	1.000	7221		1.80(0.84-2.52)		29.4	M
* 62 13C2-PFOA										
415.00 > 370.00	2.728	2.726	0.002		5035786	2.50			74183	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.728	2.728	0.0	1.000	4715181	2.50		99.9	101133	
D 19 13C5 PFNA										
468.00 > 423.00	3.112	3.112	0.0	1.141	4004666	2.41		96.2	85341	
D 18 13C4 PFOS										
503.00 > 80.00	3.112	3.112	0.0	1.141	4136583	2.50		104	70251	
D 21 13C8 FOSA										
506.00 > 78.00	3.418	3.418	0.0	1.253	5812205	2.60		104	60852	
D 26 M2-8:2FTS										
529.00 > 81.00	3.463	3.464	-0.001	1.269	1235113	2.39		99.8	29724	
D 23 13C2 PFDA										
515.00 > 470.00	3.472	3.473	-0.001	1.273	3483786	2.39		95.5	51050	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.633	3.633	0.0	1.332	1543183	2.01		80.4	44888	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.804	3.802	0.002	1.000	7018	0.006878			28.7	
563.00 > 169.00	3.814	3.802	0.012	1.003	1615		4.35(2.12-6.36)		84.8	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.793	3.804	-0.011	1.391	1714807	1.96		78.4	4465	
D 30 13C2 PFUnA										
565.00 > 520.00	3.804	3.804	0.0	1.394	2958497	2.27		90.6	60019	
D 36 13C2 PFDoA										
615.00 > 570.00	4.104	4.105	-0.001	1.504	3172869	2.14		85.7	21340	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.602	4.613	-0.011	1.687	3949772	2.18		87.3	25014	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.031	5.012	0.019	1.000	50765	-0.000484			11.0	
813.00 > 169.00	5.031	5.012	0.019	1.000	7595		6.68(2.86-8.58)		63.1	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.031	5.040	-0.009	1.844	5866448	1.98		79.1	13834	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 07:49:58 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_008.d

Injection Date: 28-Mar-2018 18:59:38 Instrument ID: A8_N

Lims ID: MB 320-215106/1-A

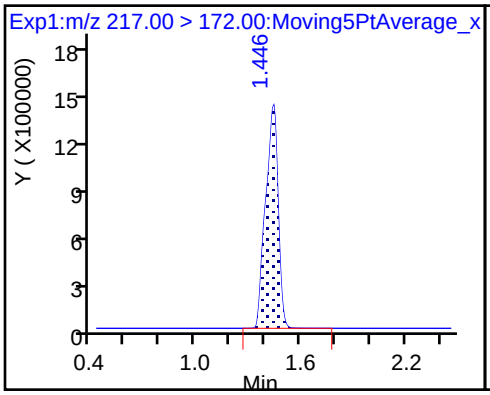
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 5

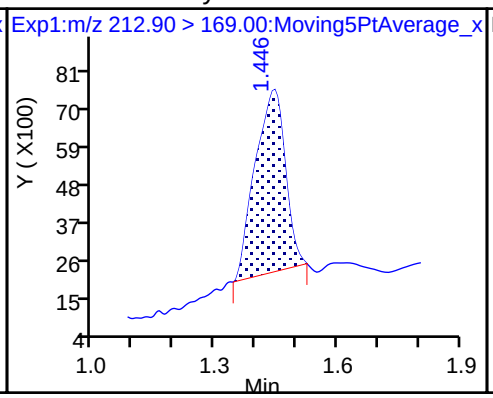
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

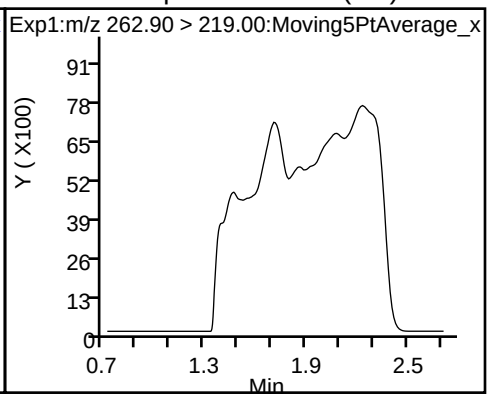
D 1 13C4 PFBA



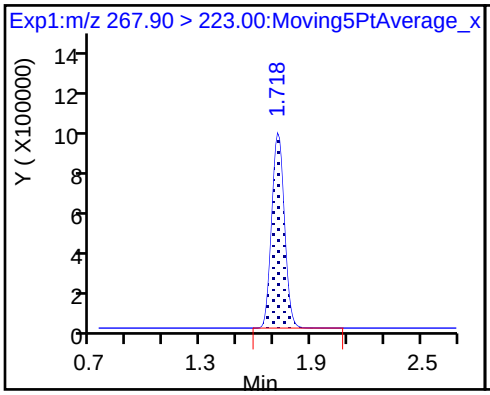
2 Perfluorobutyric acid



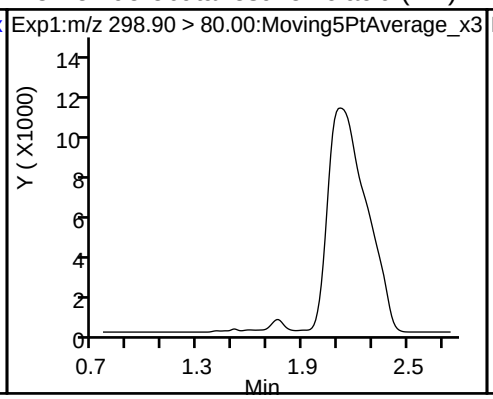
4 Perfluoropentanoic acid (ND)



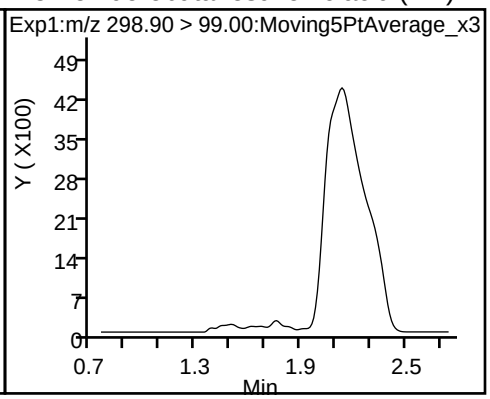
D 3 13C5-PFPeA



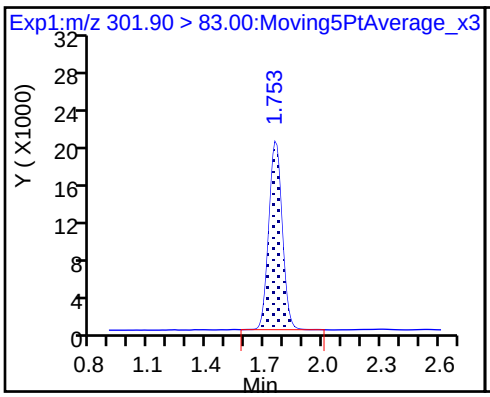
5 Perfluorobutanesulfonic acid (ND)



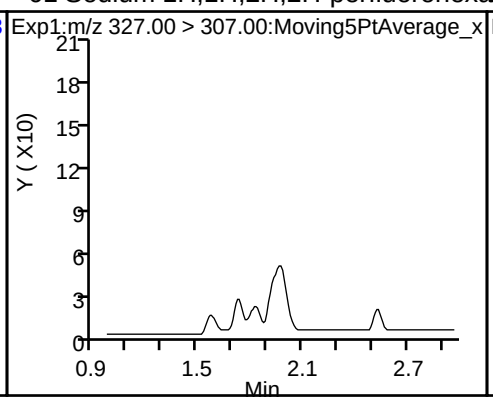
5 Perfluorobutanesulfonic acid (ND)



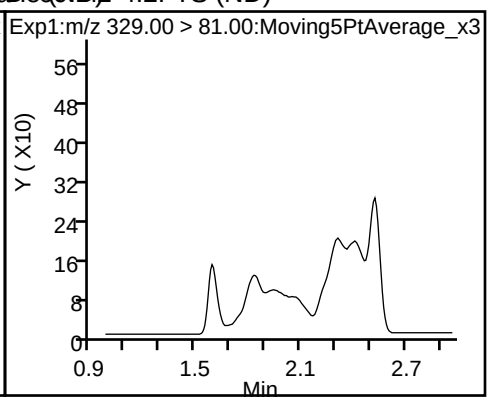
D 47 13C3-PFBS



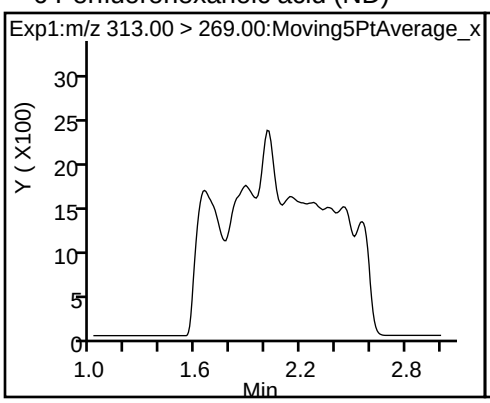
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (ND)



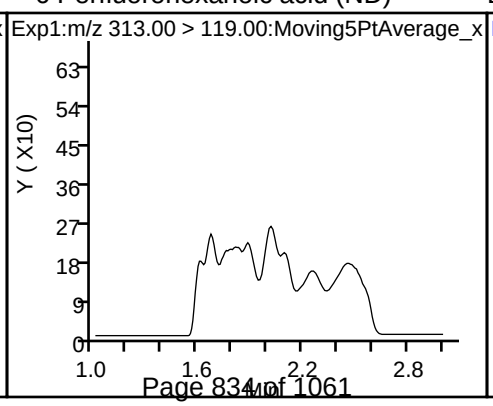
D 60 M2-4:2FTS (ND)



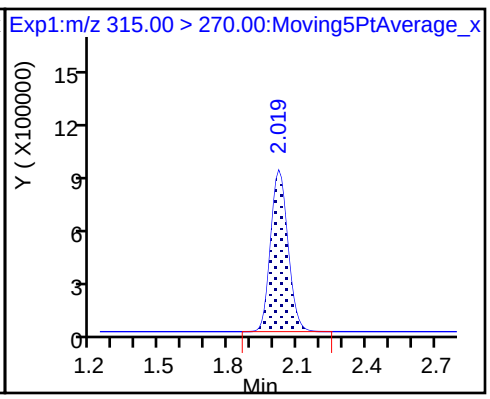
6 Perfluorohexanoic acid (ND)



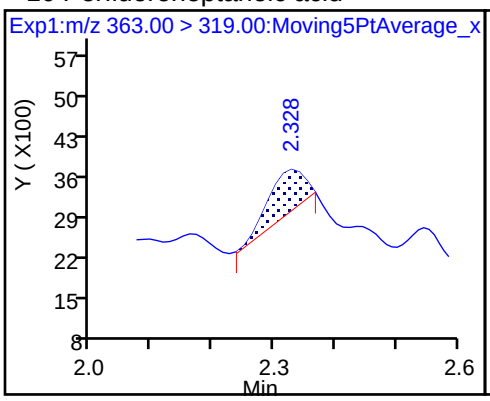
6 Perfluorohexanoic acid (ND)



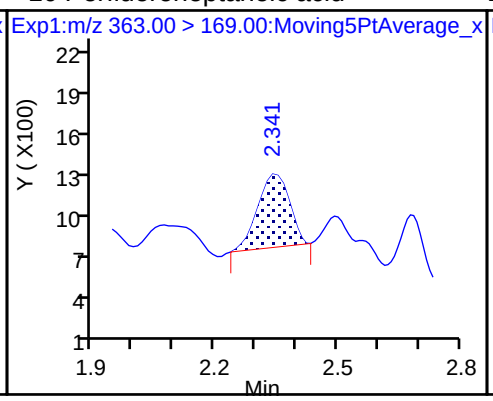
D 7 13C2 PFHxA



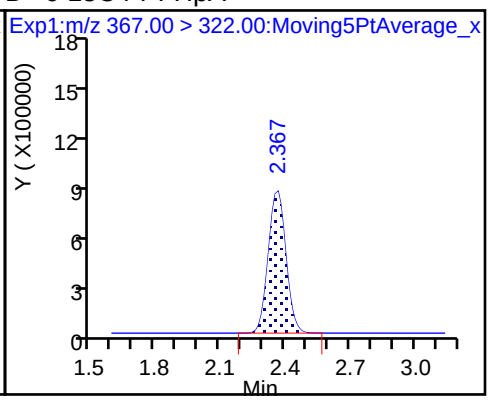
10 Perfluoroheptanoic acid



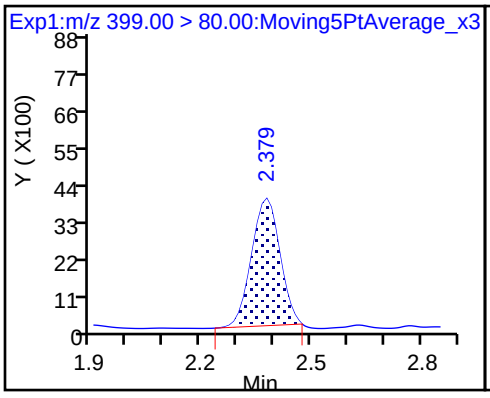
10 Perfluoroheptanoic acid



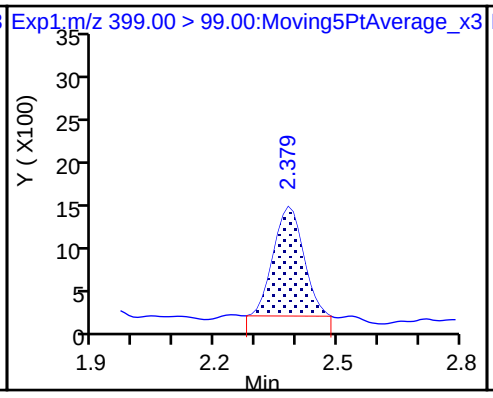
D 9 13C4-PFHpA



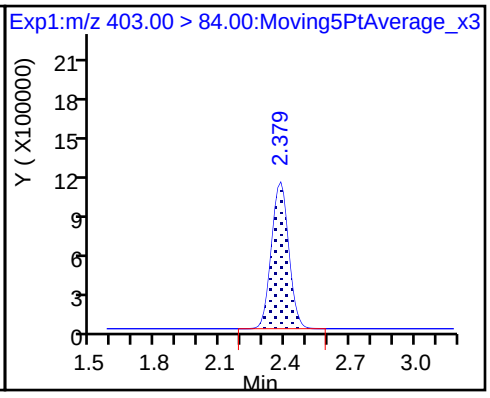
8 Perfluorohexanesulfonic acid



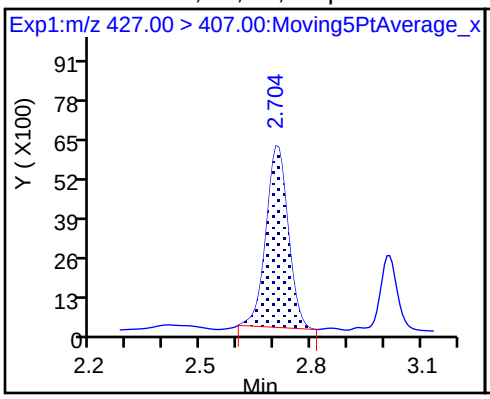
8 Perfluorohexanesulfonic acid



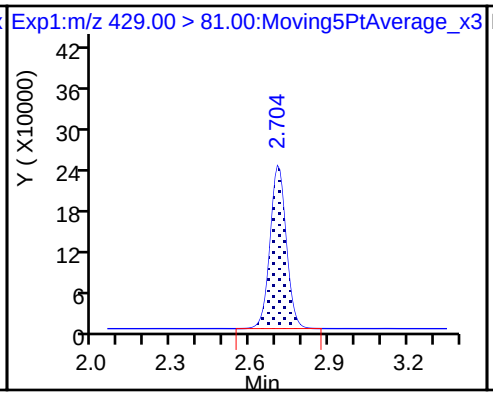
D 11 18O2 PFHxS



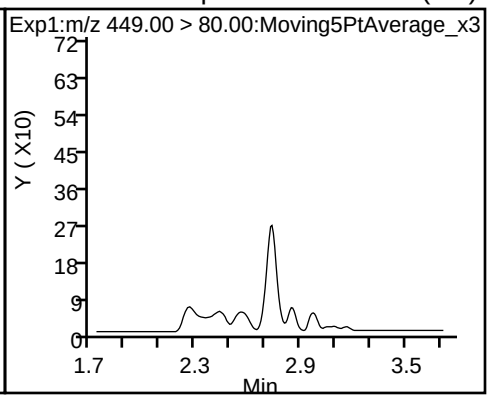
13 Sodium 1H,1H,2H,2H-perfluorooctane



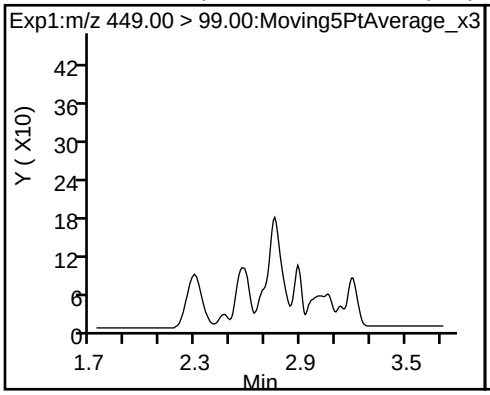
D 12 M2-6:2FTS



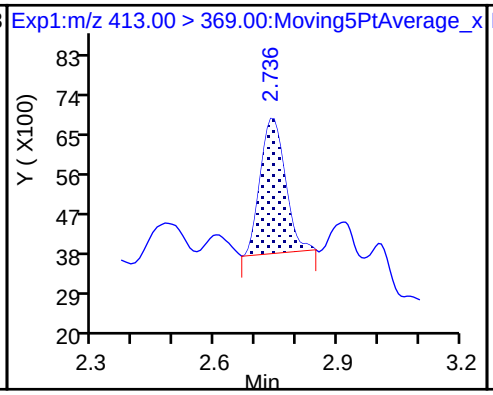
16 Perfluoroheptanesulfonic acid (ND)



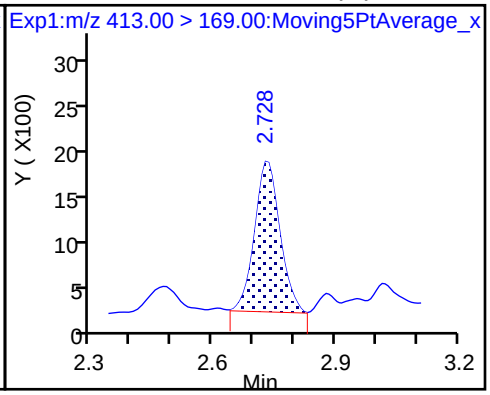
16 Perfluoroheptanesulfonic acid (ND)



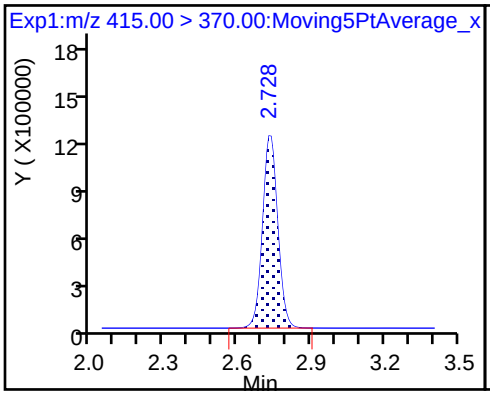
15 Perfluorooctanoic acid



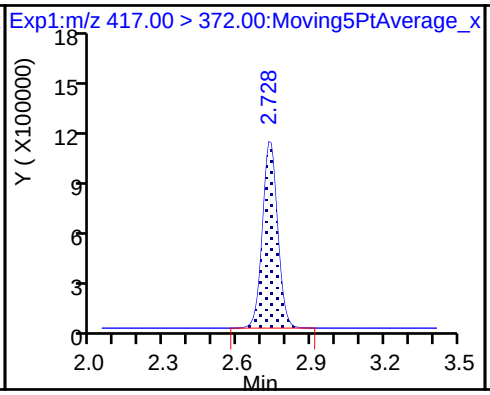
15 Perfluorooctanoic acid (M)



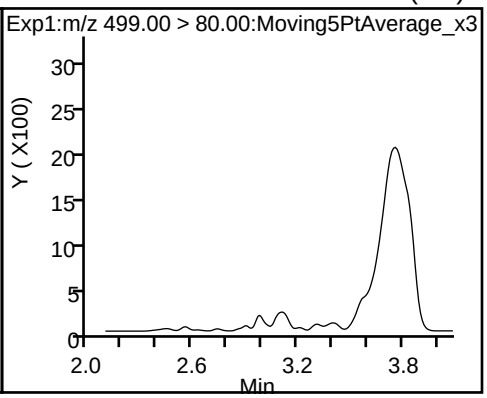
* 62 13C2-PFOA



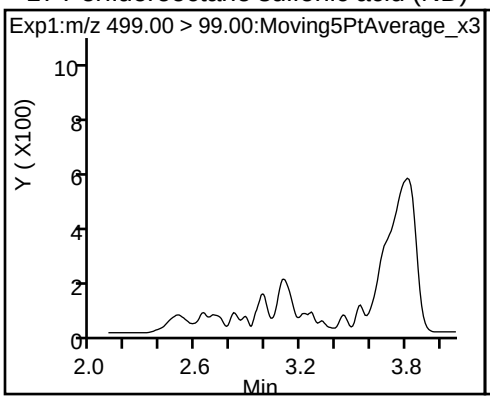
D 14 13C4 PFOA



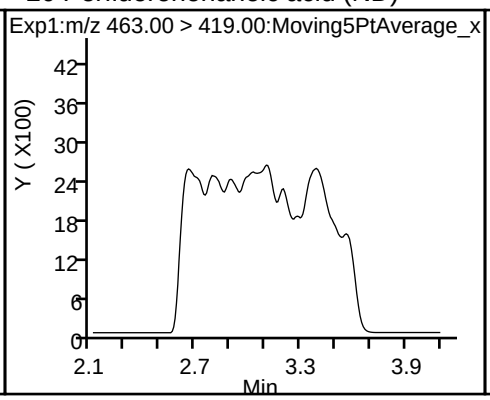
17 Perfluorooctane sulfonic acid (ND)



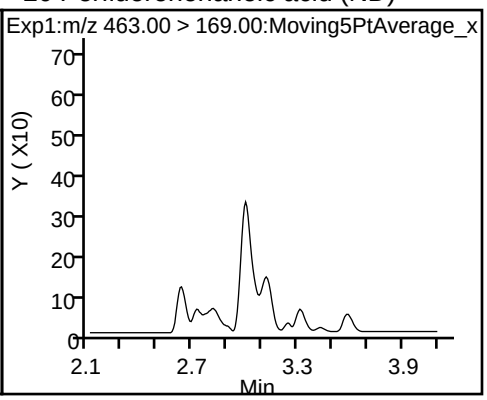
17 Perfluorooctane sulfonic acid (ND)



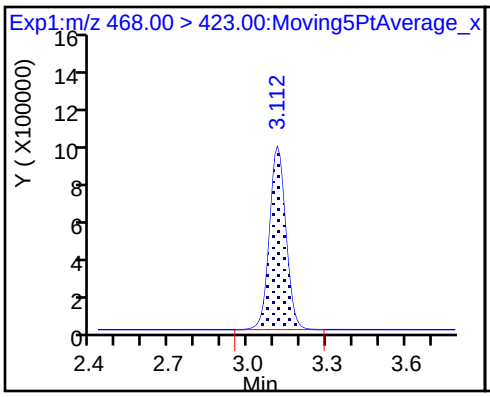
20 Perfluorononanoic acid (ND)



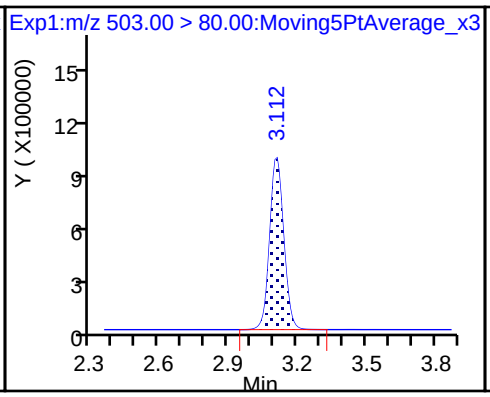
20 Perfluorononanoic acid (ND)



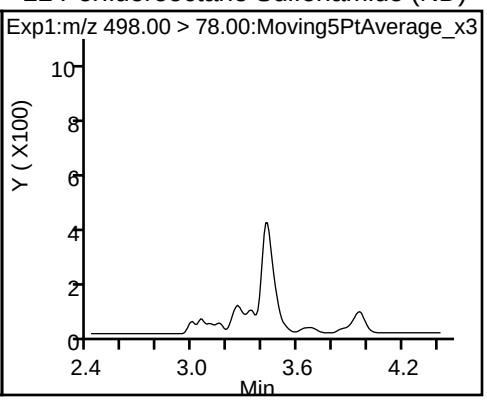
D 19 13C5 PFNA



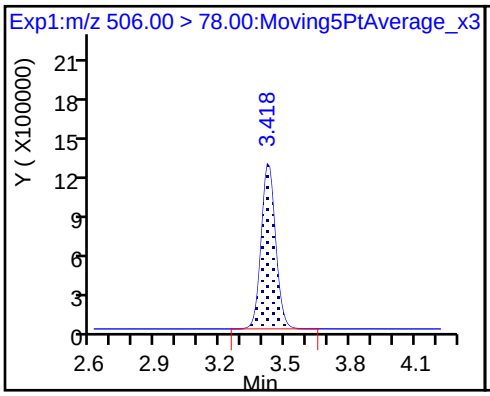
D 18 13C4 PFOS



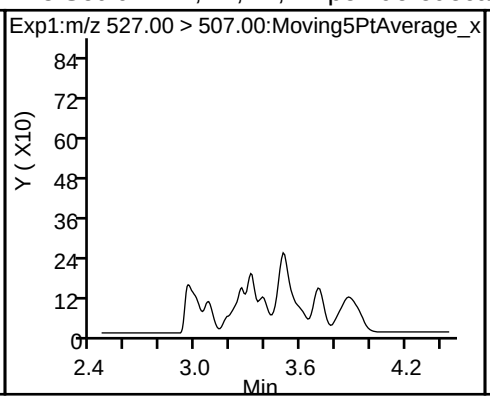
22 Perfluorooctane Sulfonamide (ND)



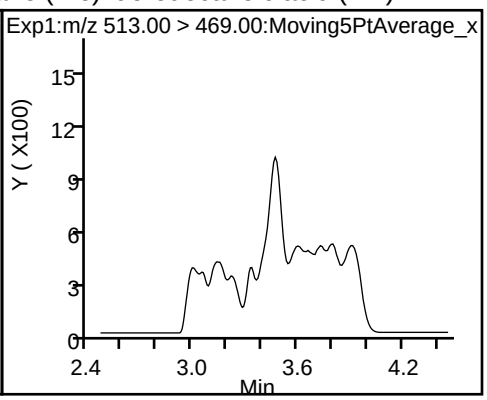
D 21 13C8 FOSA



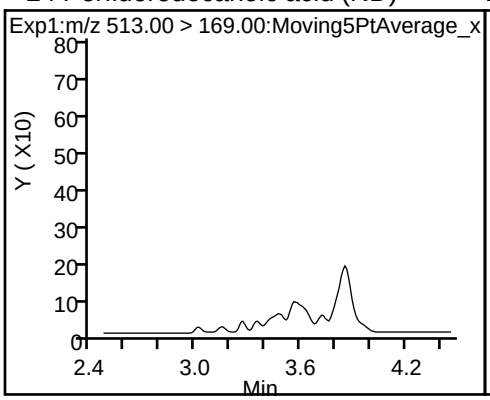
25 Sodium 1H,1H,2H,2H-perfluorodecane2 (ND)



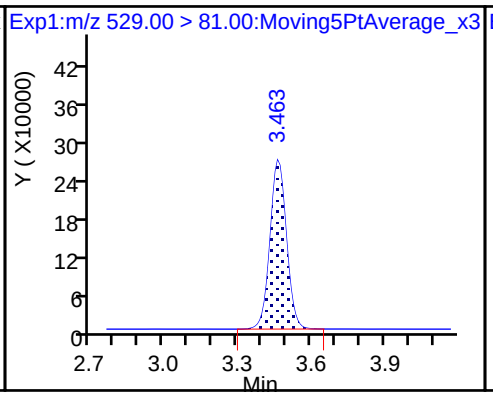
24 Perfluorodecanoic acid (ND)



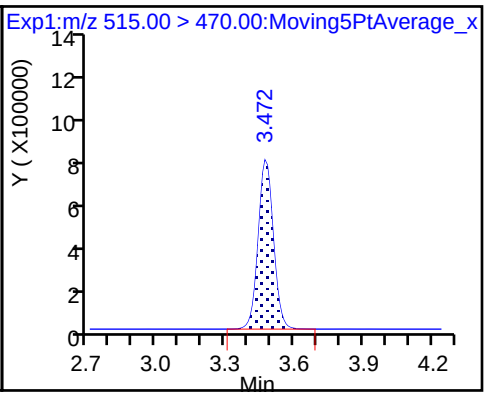
24 Perfluorodecanoic acid (ND)



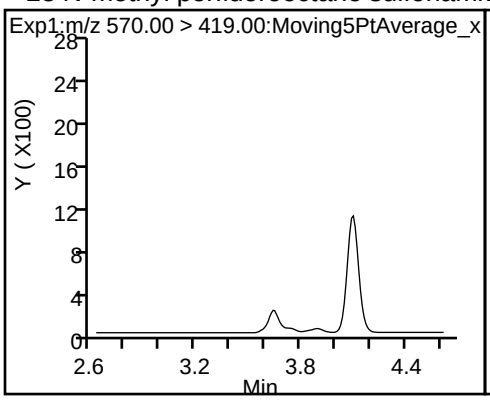
D 26 M2-8:2FTS



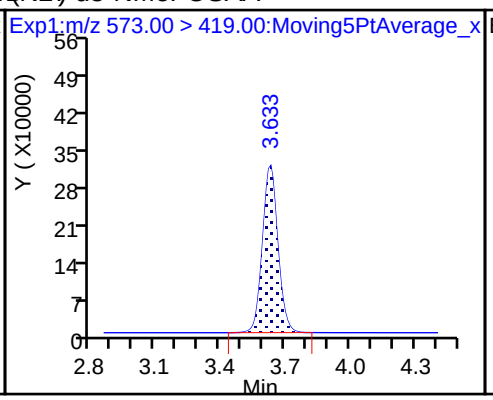
D 23 13C2 PFDA



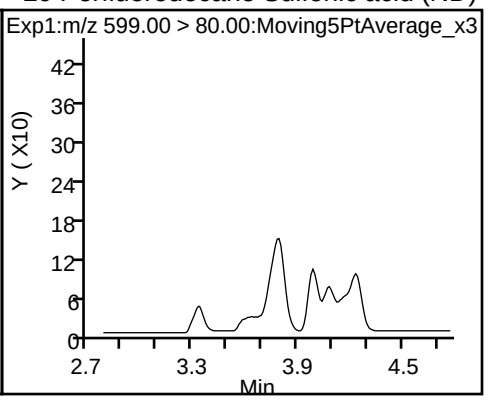
28 N-methyl perfluorooctane sulfonamid (ND)



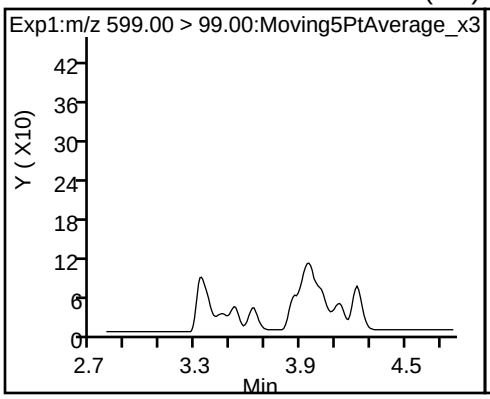
D 27 d3-NMeFOSAA



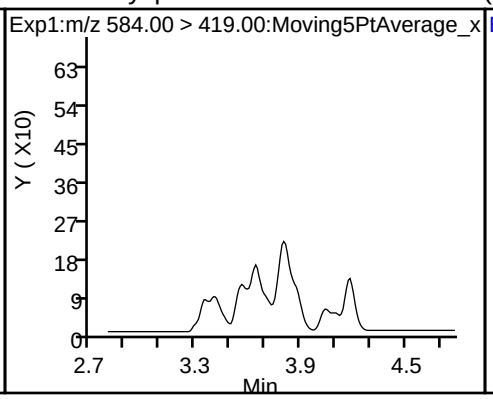
29 Perfluorodecane Sulfonic acid (ND)



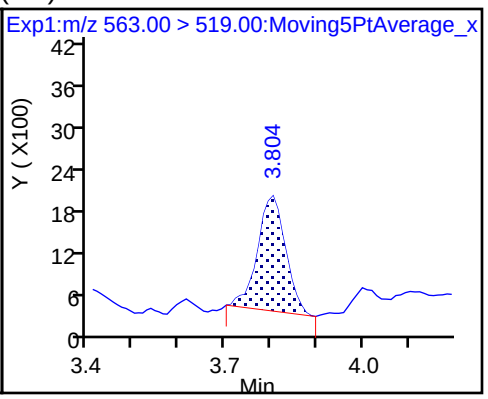
29 Perfluorodecane Sulfonic acid (ND)



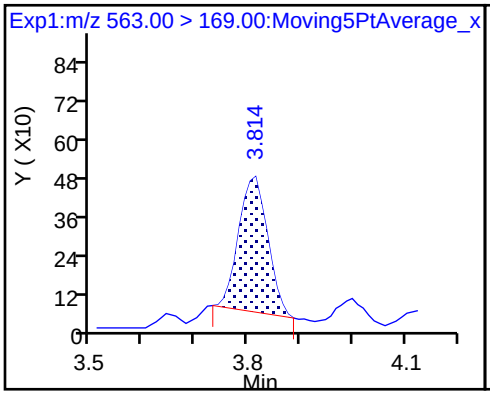
33 N-ethyl perfluorooctane sulfonamid (ND)



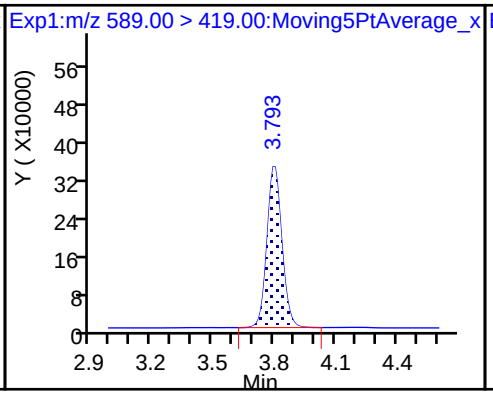
31 Perfluoroundecanoic acid



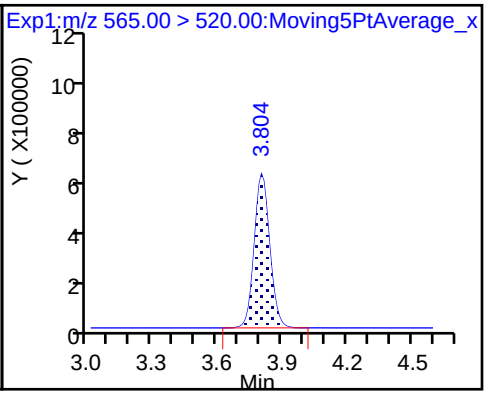
31 Perfluoroundecanoic acid



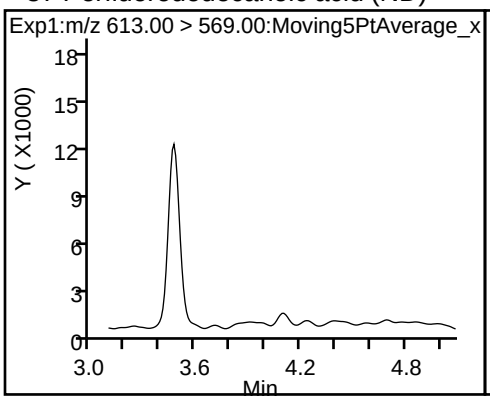
D 32 d5-NEtFOSAA



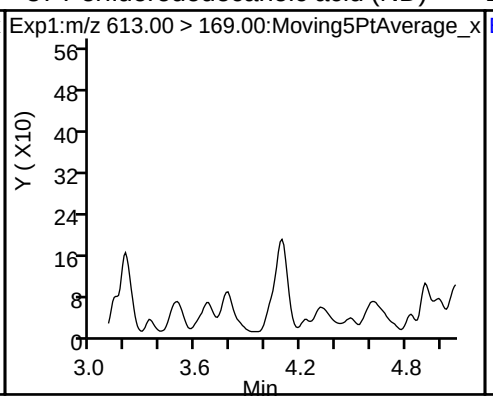
D 30 13C2 PFUnA



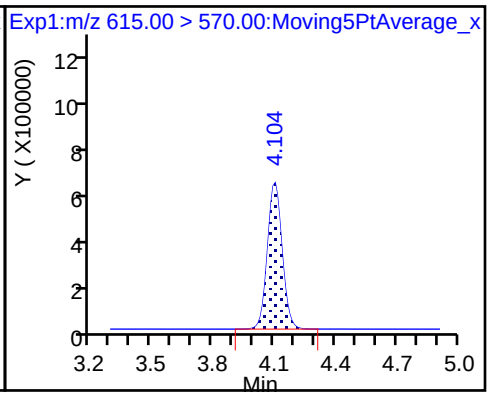
37 Perfluorododecanoic acid (ND)



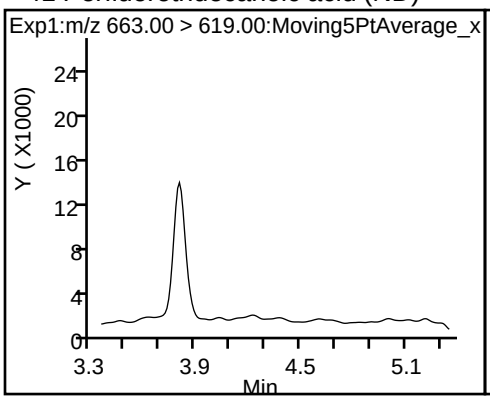
37 Perfluorododecanoic acid (ND)



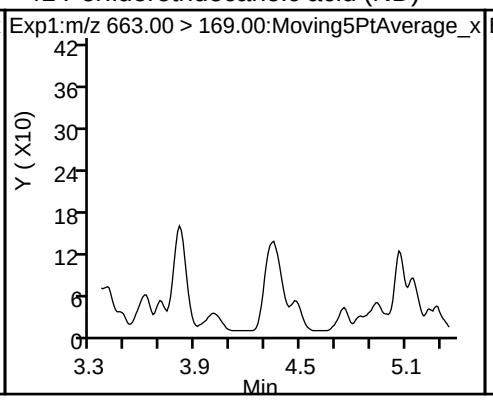
D 36 13C2 PFDoA



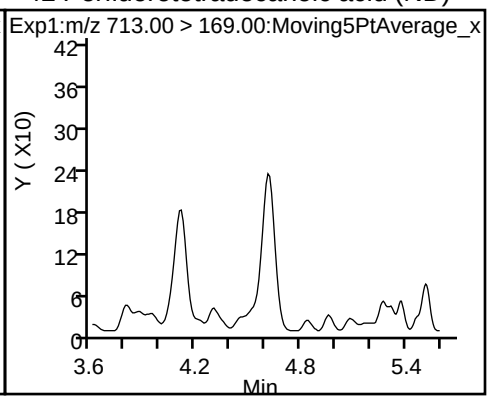
41 Perfluorotridecanoic acid (ND)



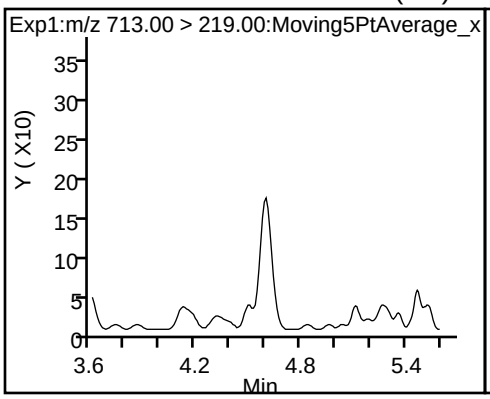
41 Perfluorotridecanoic acid (ND)



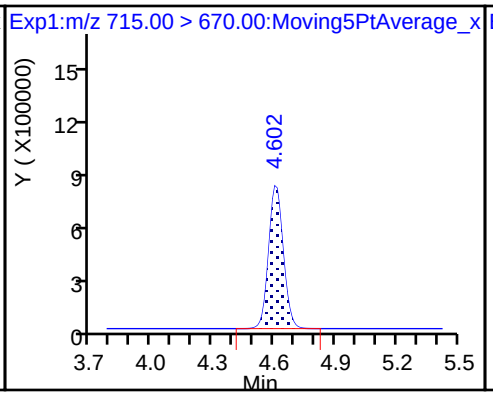
42 Perfluorotetradecanoic acid (ND)



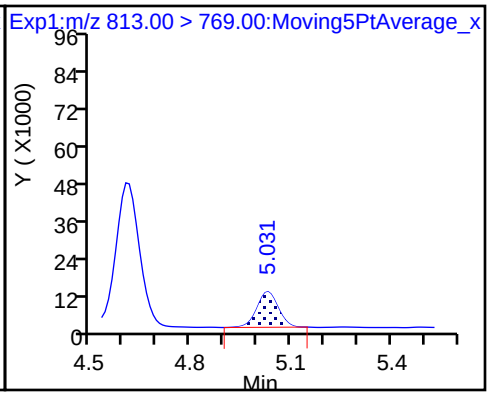
42 Perfluorotetradecanoic acid (ND)



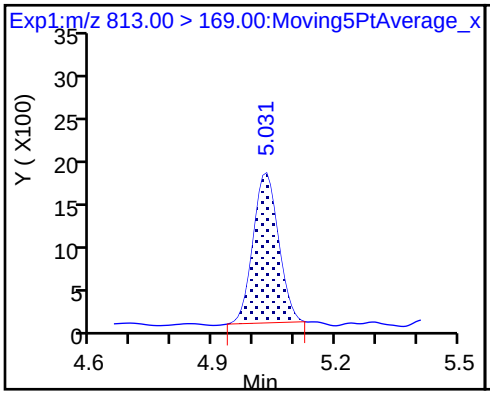
D 43 13C2-PFTeDA



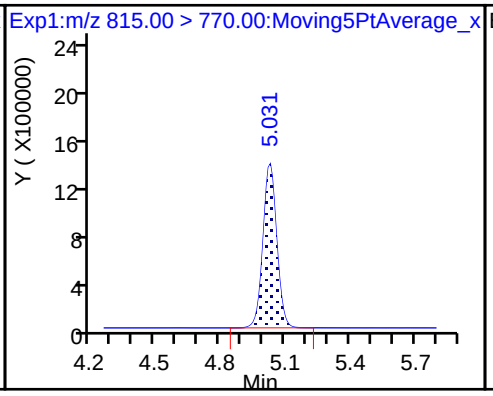
45 Perfluorohexadecanoic acid



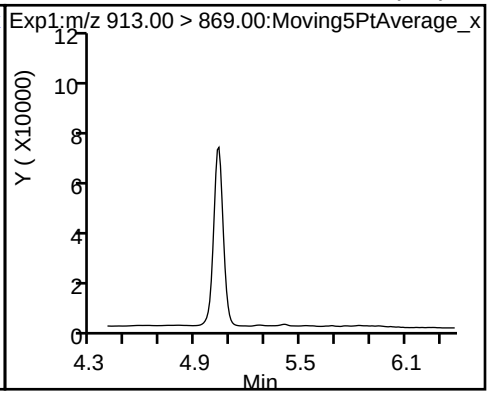
45 Perfluorohexadecanoic acid



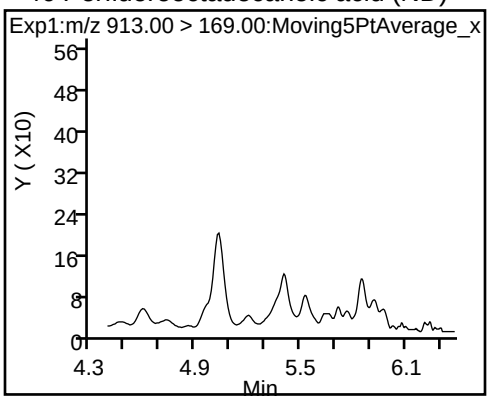
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-212127/1-B

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_059.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250.6(mL) | Date Analyzed: 03/23/2018 19:26

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.496	J	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.244	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.360	J	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.09	U	20.0	3.09
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90
27619-97-2	6:2FTS	136.2		20.0	2.00
39108-34-4	8:2FTS	2.00	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-212127/1-B

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.23LLAA_059.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250.6(mL) | Date Analyzed: 03/23/2018 19:26

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	92		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	92		25-150
STL01892	13C4-PFHpA	93		25-150
STL00990	13C4 PFOA	91		25-150
STL00995	13C5 PFNA	89		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	85		25-150
STL00998	13C2 PFDoA	87		25-150
STL02116	13C2-PFTeDA	95		25-150
STL02337	13C3-PFBS	91		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	96		25-150
STL02117	d5-NEtFOSAA	88		25-150
STL02279	M2-6:2FTS	112		25-150
STL02280	M2-8:2FTS	116		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_059.d
Lims ID: LB 320-212127/1-B
Client ID:
Sample Type: LB
Inject. Date: 23-Mar-2018 19:26:52 ALS Bottle#: 41 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lb 320-212127/1-
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 27-Mar-2018 09:17:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.458	1.453	0.005	1.004	12317	0.005089			5.3	
D 1 13C4 PFBA										
217.00 > 172.00	1.452	1.458	-0.006	0.537	6421508	2.30		92.1	85683	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.717	0.0	0.635	4253655	2.30		91.9	92943	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.753	0.0	0.649	89490	2.12		91.1	475	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.976	1.966	0.010	1.000	2368	0.003809			123	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.008	0.0	0.743	4700700	2.30		91.9	124669	
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.341	-0.001	0.866	4673869	2.31		92.6	102114	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.341	-0.001	1.000	10858	0.005614			22.7	
363.00 > 169.00	2.328	2.341	-0.013	0.994	3344		3.25(1.13-3.40)		51.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.353	0.0	0.871	5766455	2.31		97.9	102139	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.354	-0.001	1.000	16614	0.006122			140	
399.00 > 99.00	2.353	2.354	-0.001	1.000	5036		3.30(1.50-4.49)		13.5	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.679	0.0	0.991	1110960	2.65		112	21849	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.681	-0.002	1.000	2783566	3.41			3942	
D 14 13C4 PFOA										
417.00 > 372.00	2.702	2.703	-0.001	1.000	4676990	2.26		90.6	93515	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.702	2.704	-0.002	1.000	13553	0.006413			3.4	
413.00 > 169.00	2.694	2.704	-0.010	0.997	0		0.00(0.84-2.52)			
* 62 13C2-PFOA										
415.00 > 370.00	2.702	2.704	-0.002		5509806	2.50			89597	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.073	3.072	0.001	1.002	66327	0.0341			220	
499.00 > 99.00	3.073	3.072	0.001	1.002	14115		4.70(2.31-6.93)		108	
D 19 13C5 PFNA										
468.00 > 423.00	3.073	3.080	-0.007	1.137	4070996	2.23		89.4	84731	
D 18 13C4 PFOS										
503.00 > 80.00	3.066	3.080	-0.014	1.134	4175964	2.30		96.4	48007	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.416	-0.008	1.261	5674886	2.32		92.9	60941	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.427	-0.010	0.997	10802	0.0129			134	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.434	-0.008	1.268	1570546	2.78		116	25448	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.444	-0.009	1.271	3763126	2.36		94.3	94508	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.602	-0.010	1.329	2007788	2.39		95.6	47056	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.003	4695	0.005957			100	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.771	-0.021	1.388	2109040	2.20		88.1	15953	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.771	-0.010	1.392	3032260	2.12		84.9	70461	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.069	-0.020	1.498	3519760	2.17		86.9	31568	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.318	4.319	-0.001	1.000	20230	0.0131			9.3	R
663.00 > 169.00	4.318	4.319	-0.001	1.000	3126		6.47(1.25-3.76)		69.1	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.555	4.555	0.0	1.000	5820	0.0124			105	
713.00 > 219.00	4.555	4.555	0.0	1.000	4364		1.33(0.71-2.13)		88.2	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.555	4.565	-0.010	1.685	4719731	2.38		95.4	33245	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.974	-0.009	1.000	78762	0.008039			23.9	
813.00 > 169.00	4.965	4.974	-0.009	1.000	12947		6.08(2.86-8.58)		183	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.982	-0.017	1.837	6702150	2.07		82.6	19888	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Report Date: 29-Mar-2018 09:31:21 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_059.d

Injection Date: 23-Mar-2018 19:26:52 Instrument ID: A8_N

Lims ID: LB 320-212127/1-B

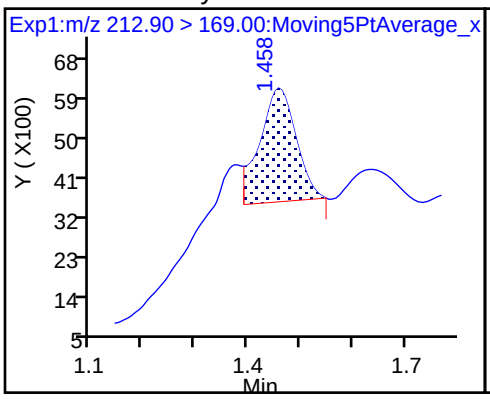
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 41 Worklist Smp#: 9

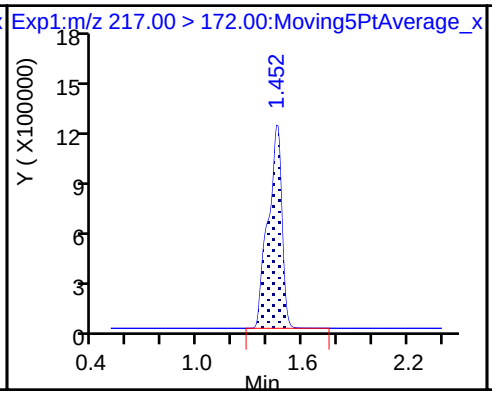
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

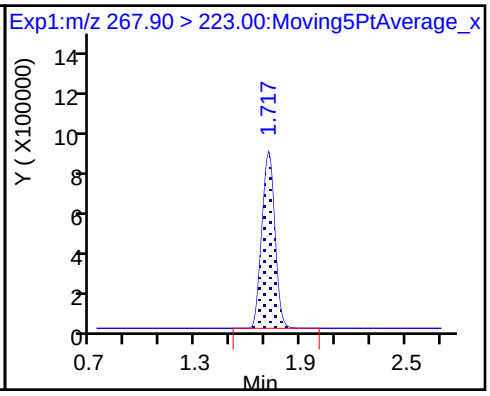
2 Perfluorobutyric acid



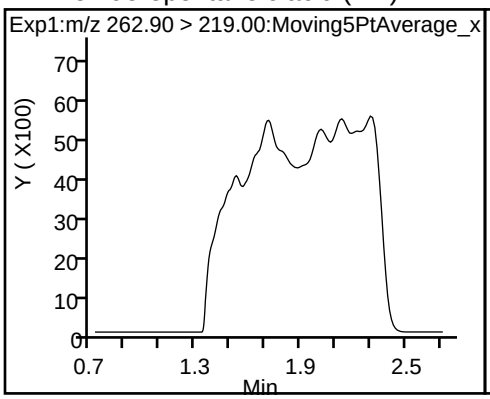
D 1 13C4 PFBA



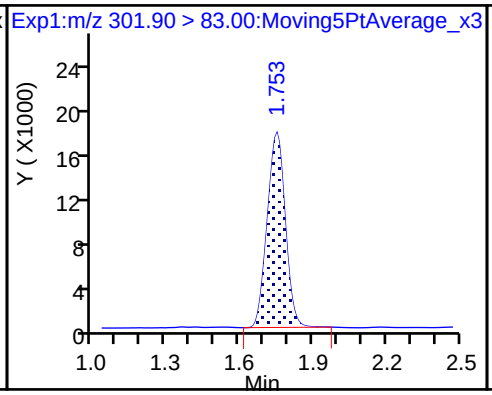
D 3 13C5-PFPeA



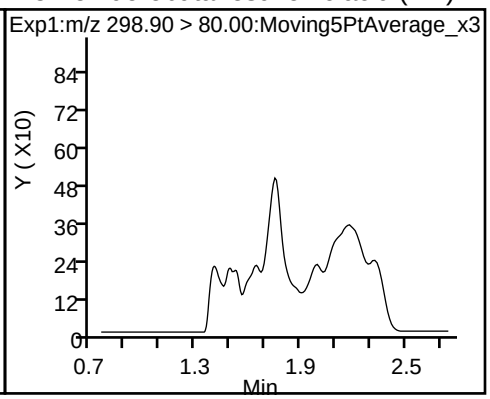
4 Perfluoropentanoic acid (ND)



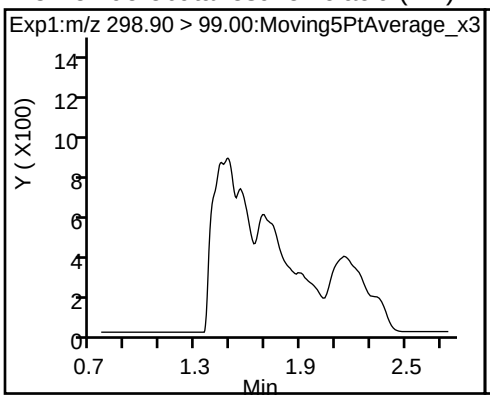
D 47 13C3-PFBS



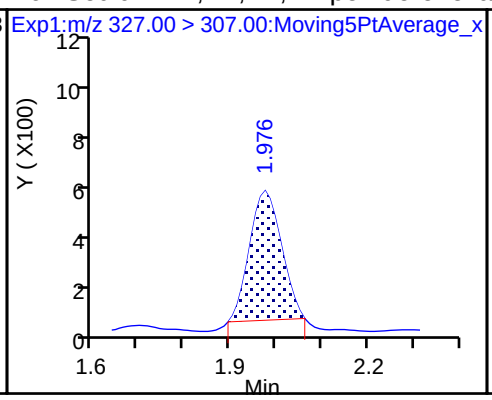
5 Perfluorobutanesulfonic acid (ND)



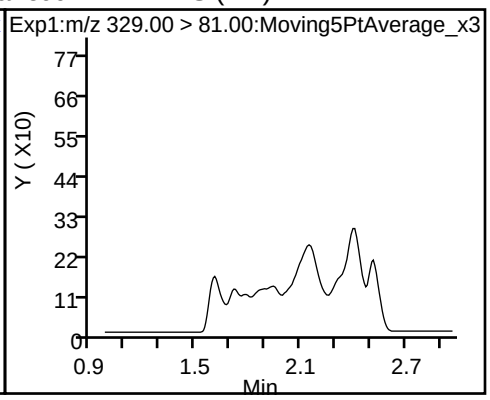
5 Perfluorobutanesulfonic acid (ND)



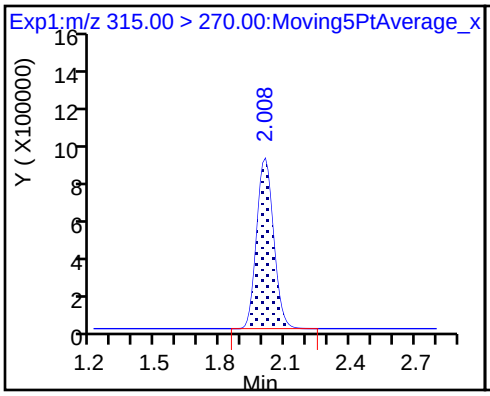
61 Sodium 1H,1H,2H,2H-perfluorohexane



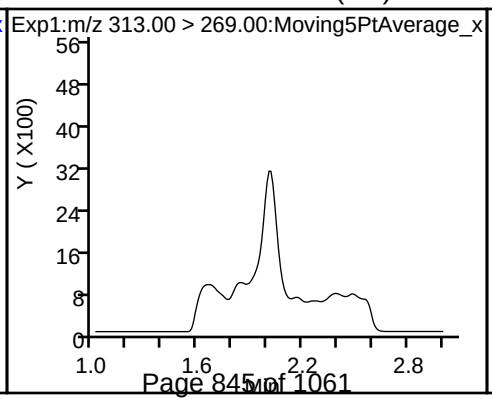
D 60 M2-4:2FTS (ND)



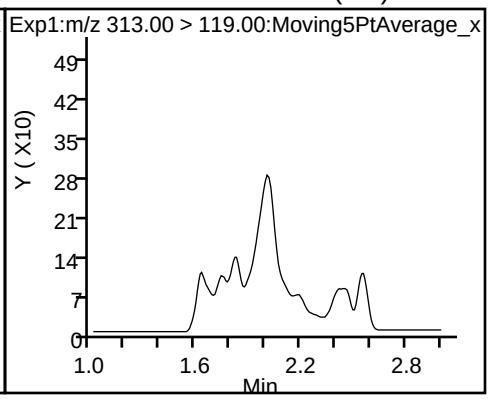
D 7 13C2 PFHxA



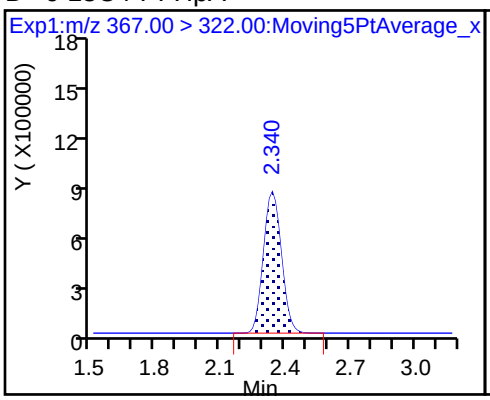
6 Perfluorohexanoic acid (ND)



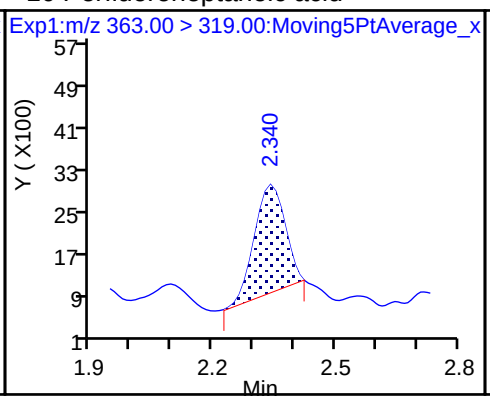
6 Perfluorohexanoic acid (ND)



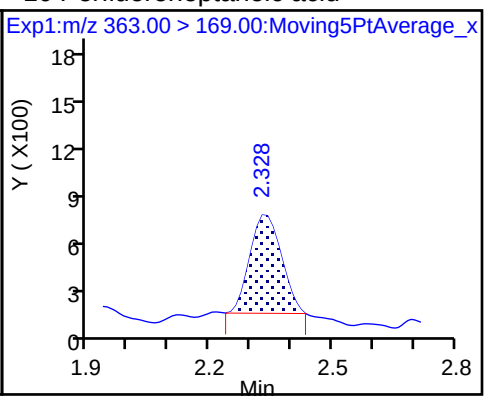
D 9 13C4-PFHpA



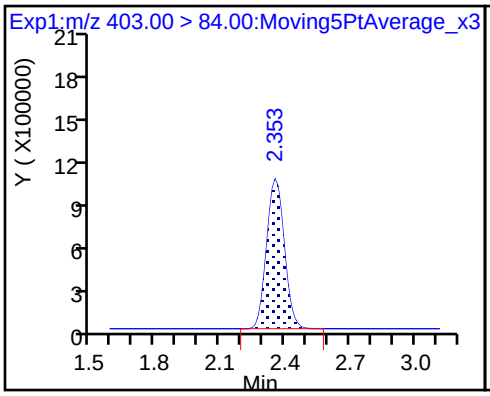
10 Perfluoroheptanoic acid



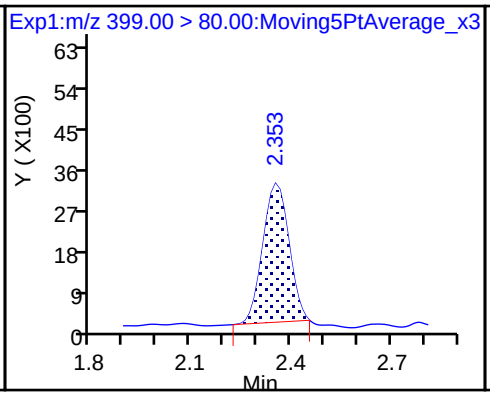
10 Perfluoroheptanoic acid



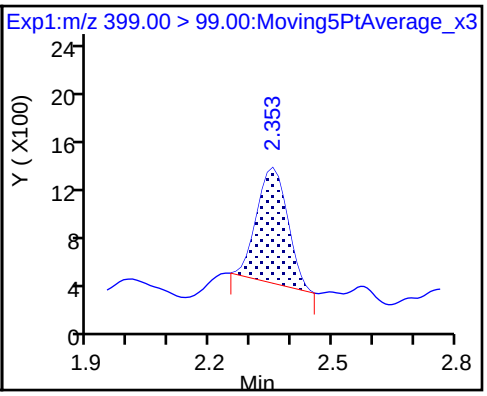
D 11 18O2 PFHxS



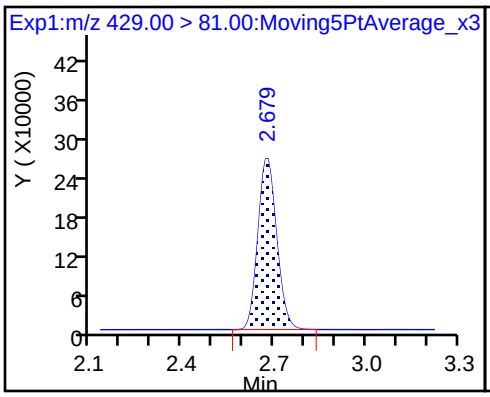
8 Perfluorohexanesulfonic acid



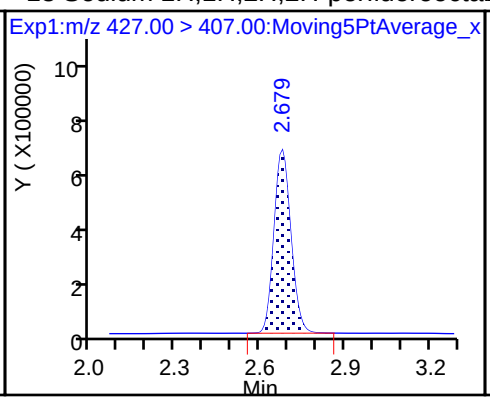
8 Perfluorohexanesulfonic acid



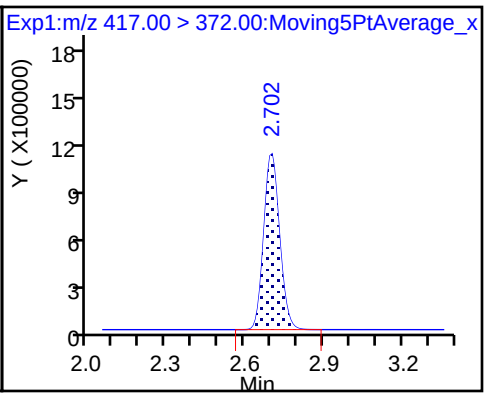
D 12 M2-6:2FTS



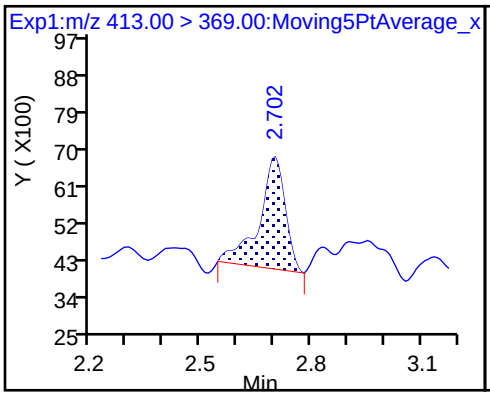
13 Sodium 1H,1H,2H,2H-perfluorooctane



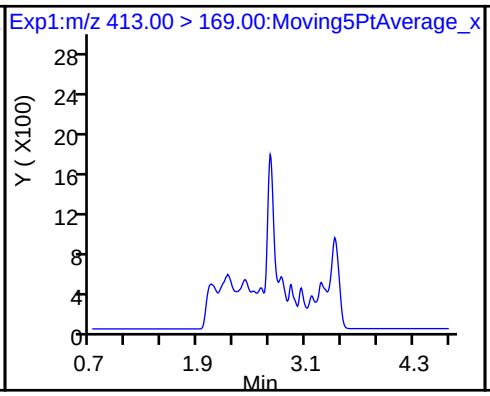
D 14 13C4 PFOA



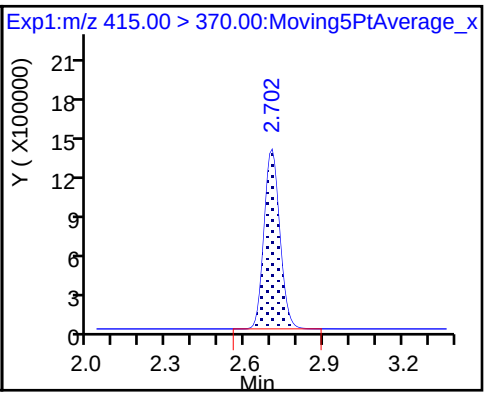
15 Perfluorooctanoic acid



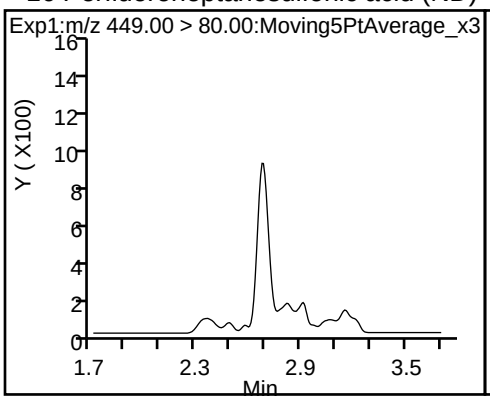
15 Perfluorooctanoic acid



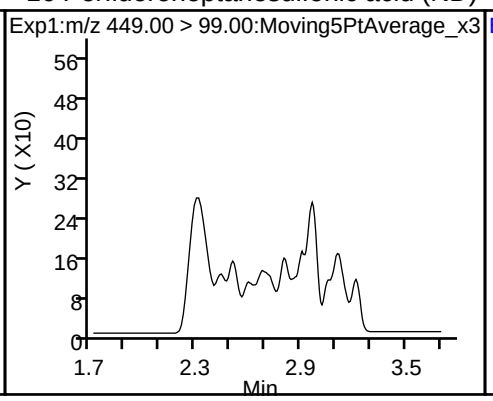
* 62 13C2-PFOA



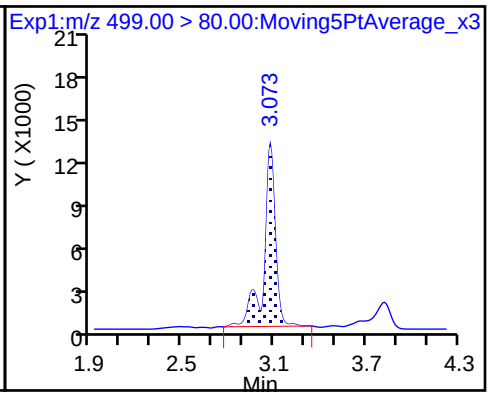
16 Perfluoroheptanesulfonic acid (ND)



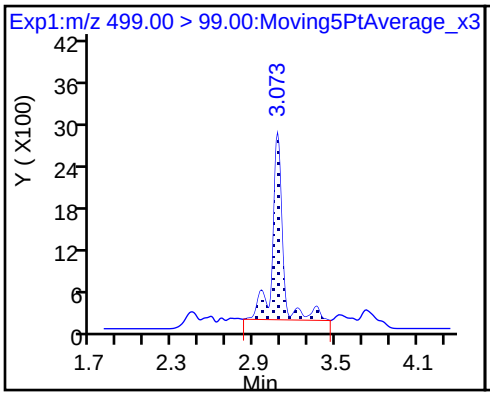
16 Perfluoroheptanesulfonic acid (ND)



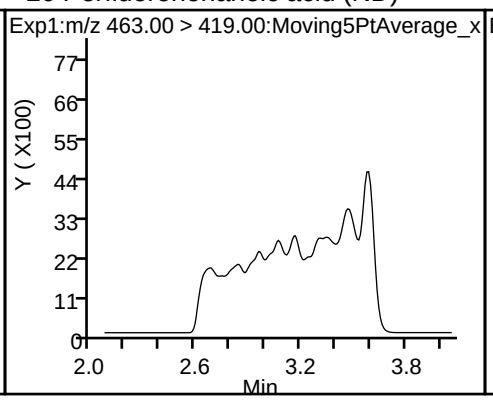
17 Perfluorooctane sulfonic acid



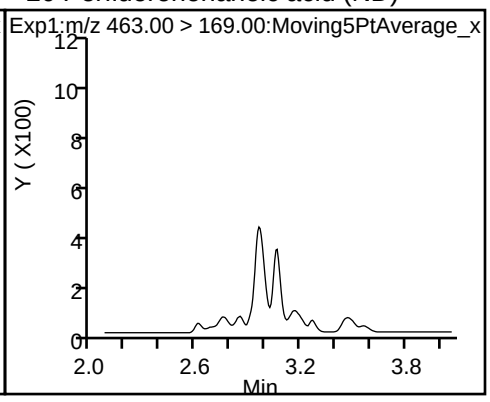
17 Perfluorooctane sulfonic acid



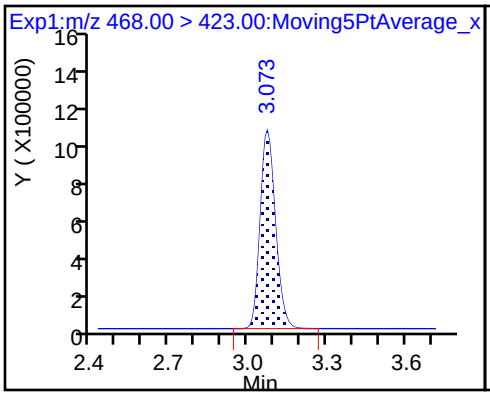
20 Perfluorononanoic acid (ND)



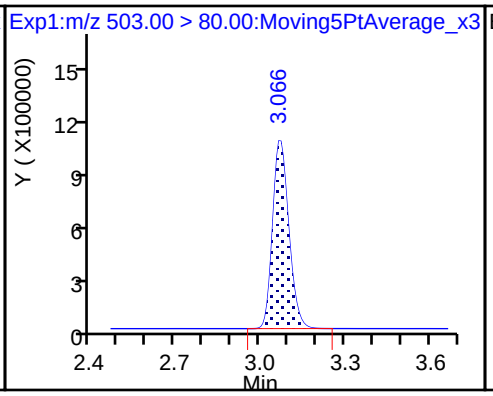
20 Perfluorononanoic acid (ND)



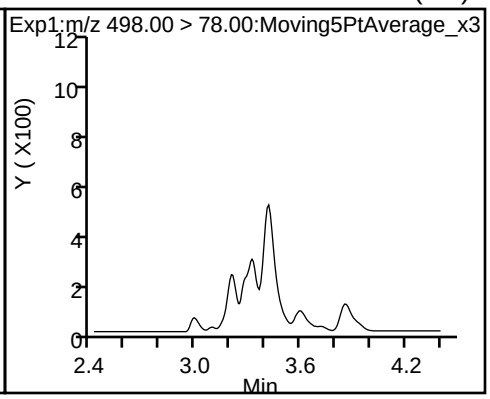
D 19 13C5 PFNA



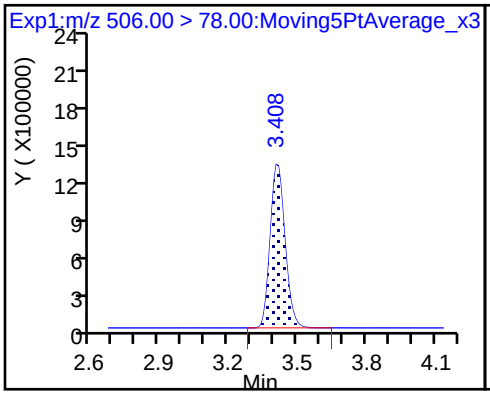
D 18 13C4 PFOS



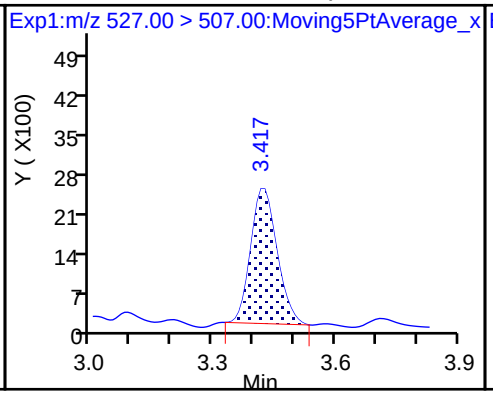
22 Perfluorooctane Sulfonamide (ND)



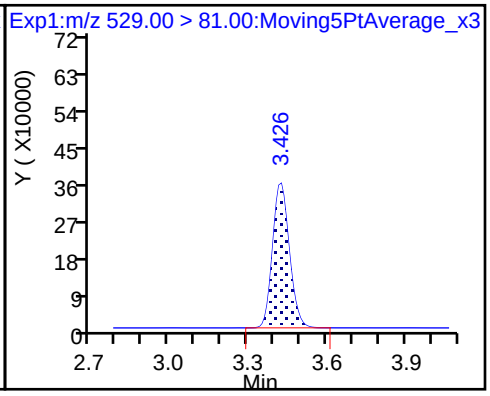
D 21 13C8 FOSA



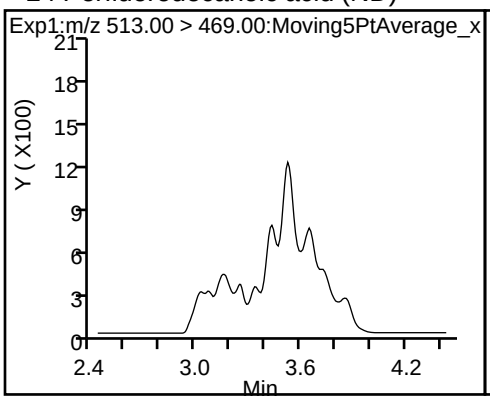
25 Sodium 1H,1H,2H,2H-perfluorodecane



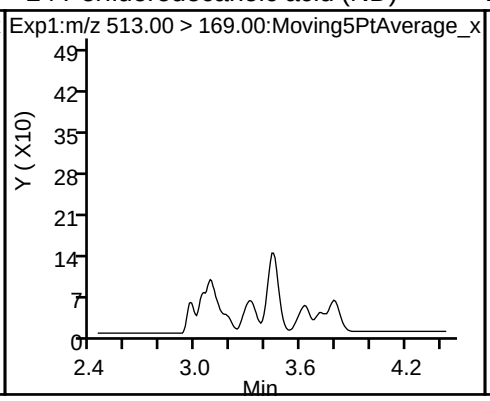
D 26 M2-8:2FTS



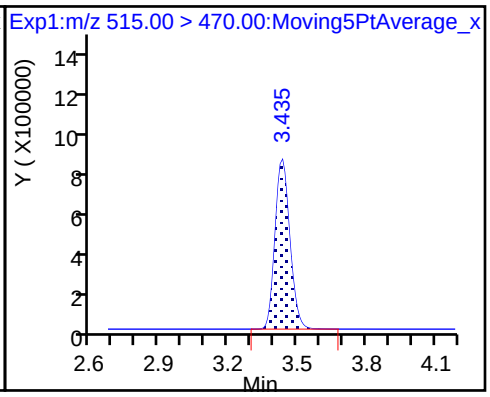
24 Perfluorodecanoic acid (ND)



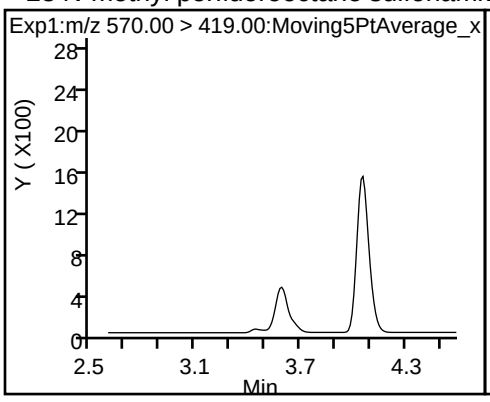
24 Perfluorodecanoic acid (ND)



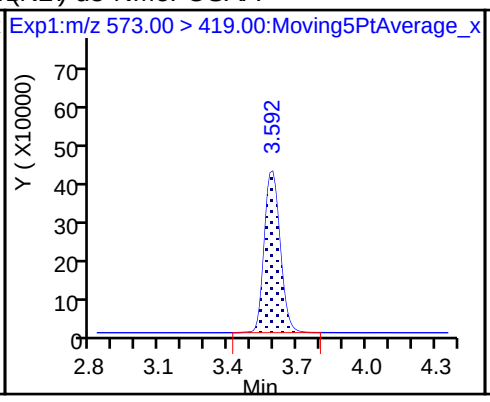
D 23 13C2 PFDA



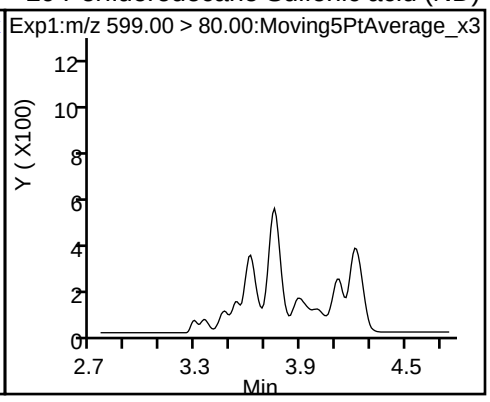
28 N-methyl perfluorooctane sulfonamid



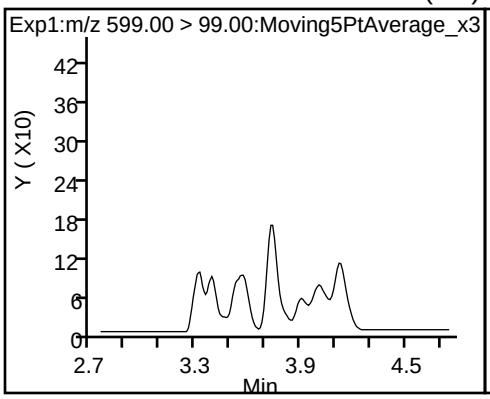
D 27 d3-NMeFOSAA



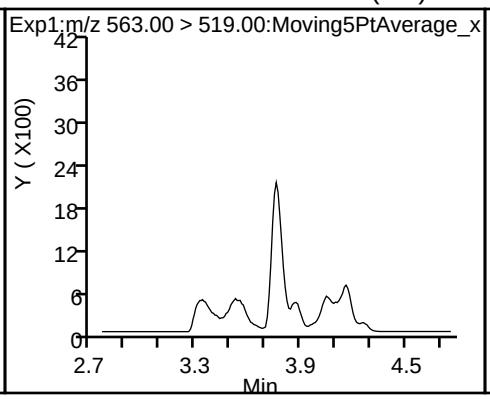
29 Perfluorodecane Sulfonic acid (ND)



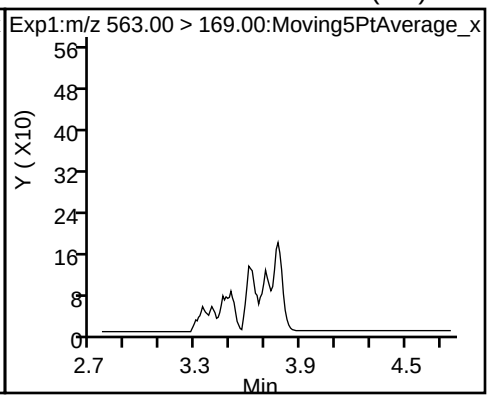
29 Perfluorodecane Sulfonic acid (ND)



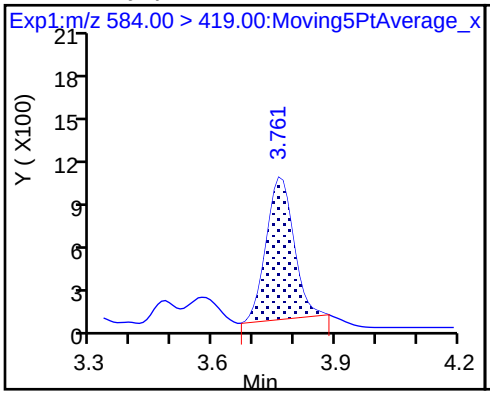
31 Perfluoroundecanoic acid (ND)



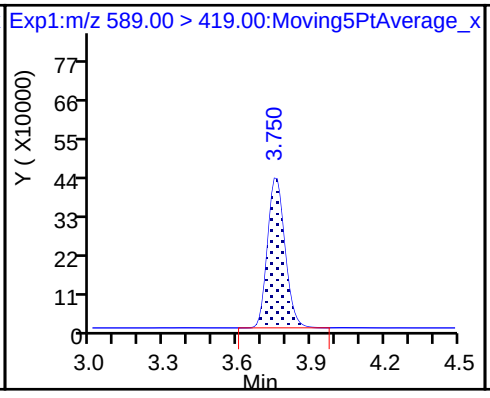
31 Perfluoroundecanoic acid (ND)



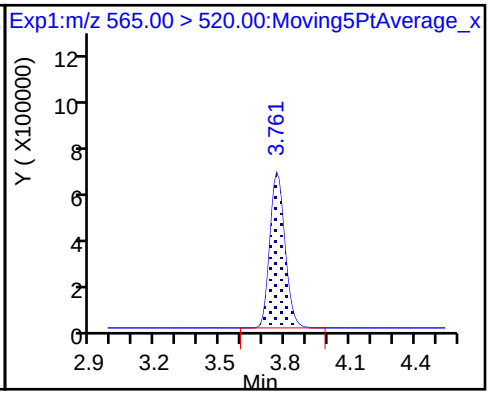
33 N-ethyl perfluorooctane sulfonamid



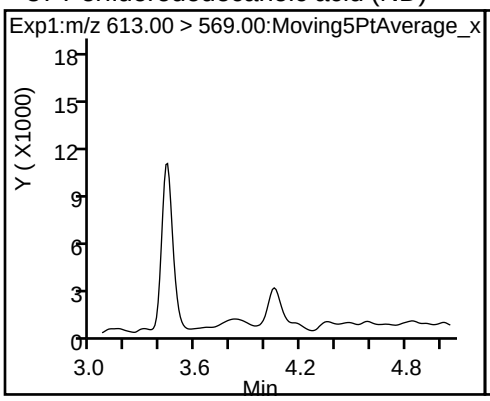
D 32 d5-NEtFOSAA



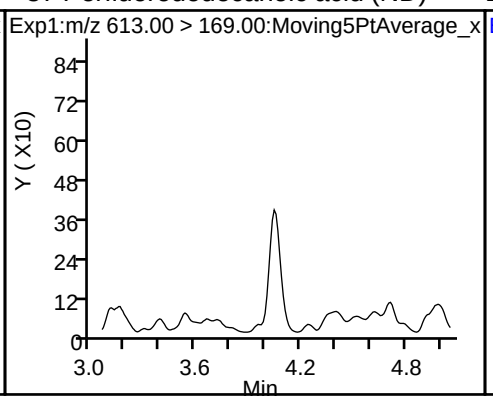
D 30 13C2 PFUnA



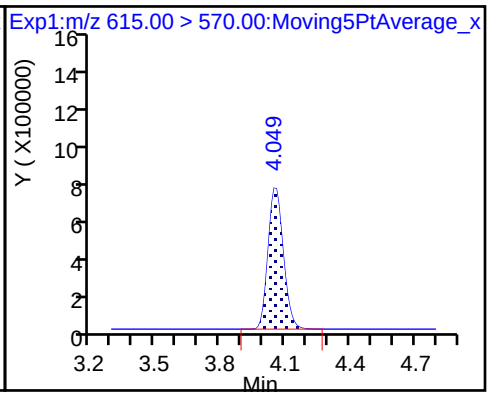
37 Perfluorododecanoic acid (ND)



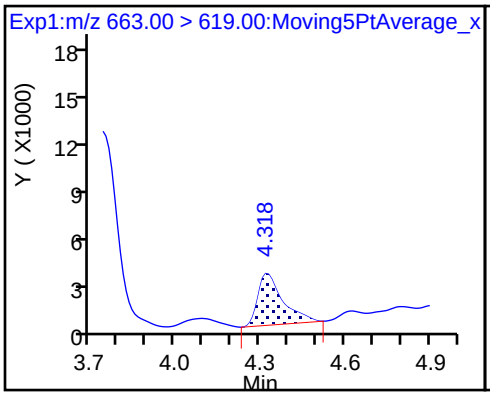
37 Perfluorododecanoic acid (ND)



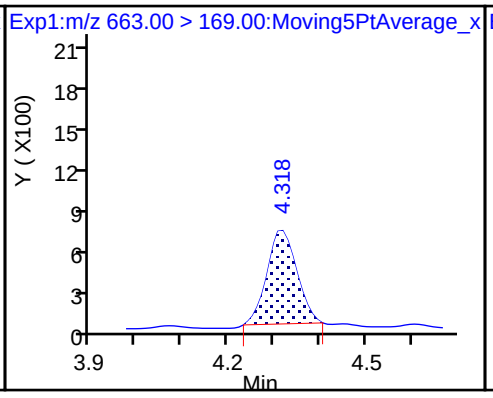
D 36 13C2 PFDoA



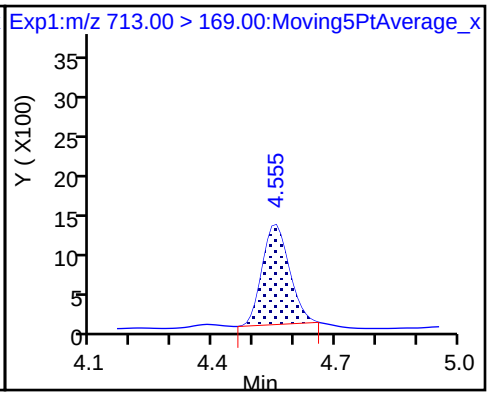
41 Perfluorotridecanoic acid



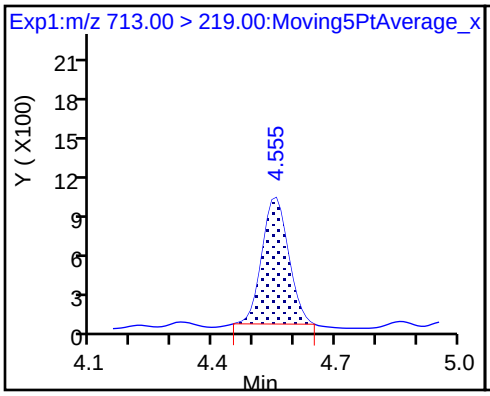
41 Perfluorotridecanoic acid



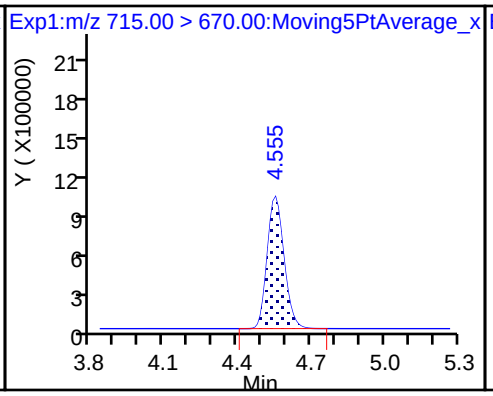
42 Perfluorotetradecanoic acid



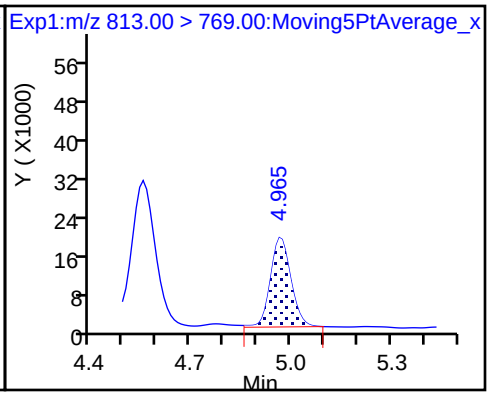
42 Perfluorotetradecanoic acid



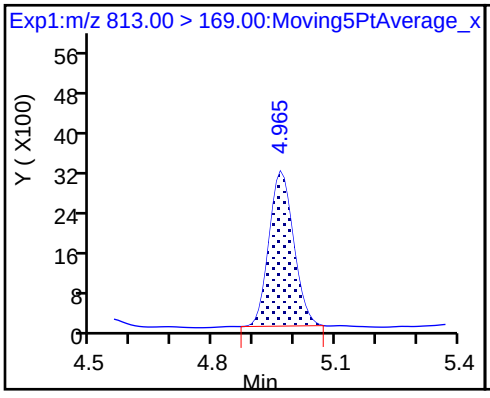
D 43 13C2-PFTeDA



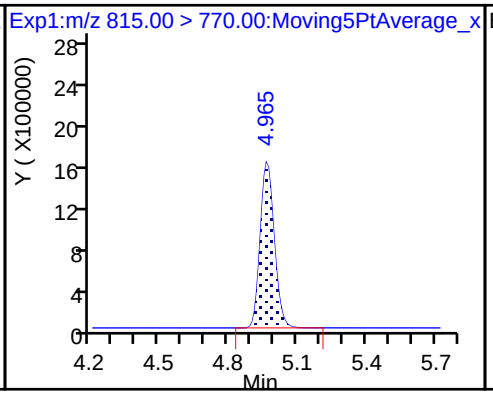
45 Perfluorohexadecanoic acid



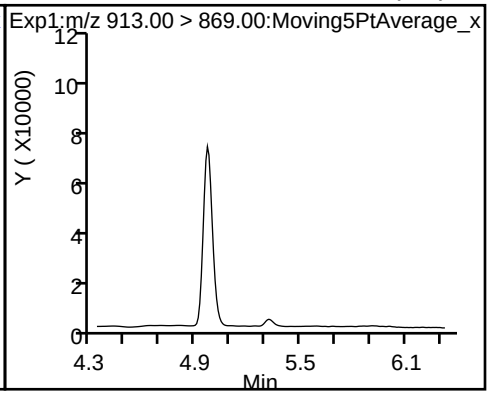
45 Perfluorohexadecanoic acid



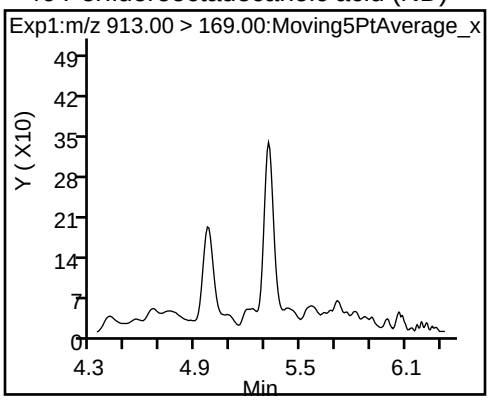
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-212127/1-C

Matrix: Solid (SPLP East) | Lab File ID: 2018.03.28LLDXD_007.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/27/2018 20:41

Sample wt/vol: 252(mL) | Date Analyzed: 03/28/2018 18:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	1.98	U	19.8	1.98

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	112		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_007.d
Lims ID: LB 320-212127/1-C
Client ID:
Sample Type: LB
Inject. Date: 28-Mar-2018 18:51:49 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lb 320-212127/1-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:49:47 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: phomsophat Date: 28-Mar-2018 19:12:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.528	6726650	2.58		103	98934	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.446	-0.005	1.000	35347	0.0139			10.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.718	0.0	0.630	4212206	2.44		97.5	88824	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.643	92065	2.33		100	516	
D 7 13C2 PFHxA										
315.00 > 270.00	2.019	2.019	0.0	0.740	4703328	2.46		98.4	151652	
D 9 13C4-PFHpA										
367.00 > 322.00	2.354	2.354	0.0	0.863	4746803	2.52		101	93447	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.380	2.367	0.013	1.000	17878	0.006728			93.2	
399.00 > 99.00	2.380	2.367	0.013	1.000	4936		3.62(1.50-4.49)		11.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.380	2.368	0.012	0.872	5645804	2.43		103	127040	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.705	2.695	0.010	1.000	14939	0.0195			203	
D 12 M2-6:2FTS										
429.00 > 81.00	2.705	2.705	0.0	0.991	1042673	2.67		112	27084	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.736	2.726	0.010	1.003	13873	0.006313			3.5	
413.00 > 169.00	2.728	2.726	0.002	1.000	6053		2.29(0.84-2.52)		25.5	M
* 62 13C2-PFOA										
415.00 > 370.00	2.728	2.726	0.002		5145511	2.50			94503	
D 14 13C4 PFOA										
417.00 > 372.00	2.728	2.728	0.0	1.000	4862854	2.52		101	97682	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA										
468.00 > 423.00	3.112	3.112	0.0	1.141	3946271	2.32		92.8	92362	
D 18 13C4 PFOS										
503.00 > 80.00	3.104	3.112	-0.008	1.138	3995880	2.36		98.8	59313	
D 21 13C8 FOSA										
506.00 > 78.00	3.418	3.418	0.0	1.253	6188592	2.71		108	68886	
D 26 M2-8:2FTS										
529.00 > 81.00	3.463	3.464	-0.001	1.269	1404422	2.66		111	38091	
D 23 13C2 PFDA										
515.00 > 470.00	3.472	3.473	-0.001	1.273	3572111	2.40		95.8	65551	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.632	3.633	-0.001	1.331	1735255	2.21		88.4	59403	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.802	3.792	0.010	1.003	2192	0.003233			59.4	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.804	-0.012	1.390	1814328	2.03		81.2	6862	
D 30 13C2 PFUnA										
565.00 > 520.00	3.802	3.804	-0.002	1.394	3102615	2.33		93.0	78555	
D 36 13C2 PFDoA										
615.00 > 570.00	4.092	4.105	-0.013	1.500	3400702	2.25		89.9	32749	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.601	4.613	-0.012	1.686	4077033	2.21		88.2	24970	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.029	5.012	0.017	1.000	55027	0.002049			12.5	
813.00 > 169.00	5.029	5.012	0.017	1.000	7855		7.01(2.86-8.58)		70.2	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.029	5.040	-0.011	1.843	5747365	1.90		75.9	14724	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 07:49:56 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_007.d

Injection Date: 28-Mar-2018 18:51:49 Instrument ID: A8_N

Lims ID: LB 320-212127/1-C

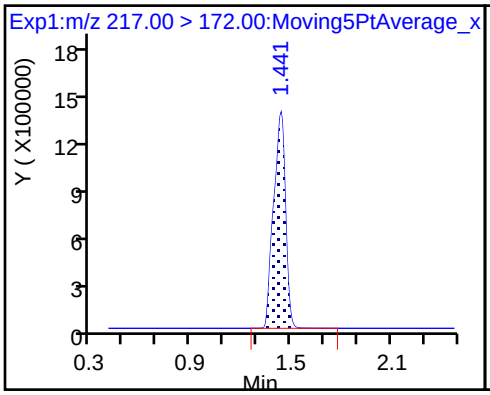
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 4

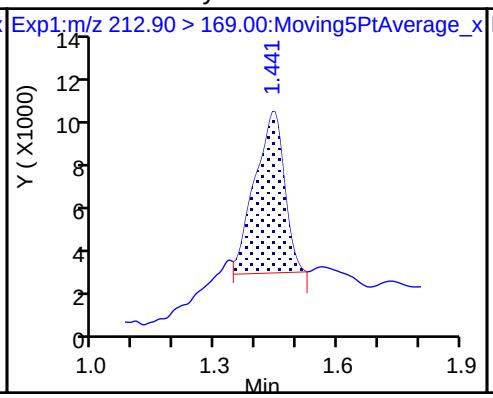
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

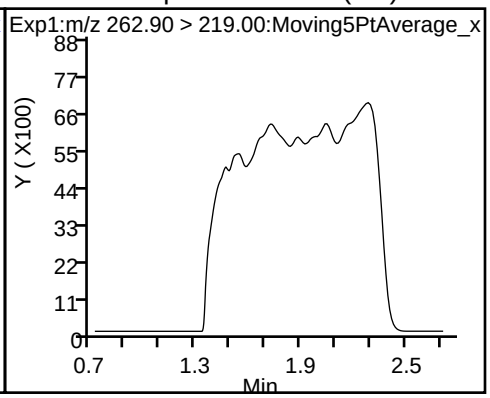
D 1 13C4 PFBA



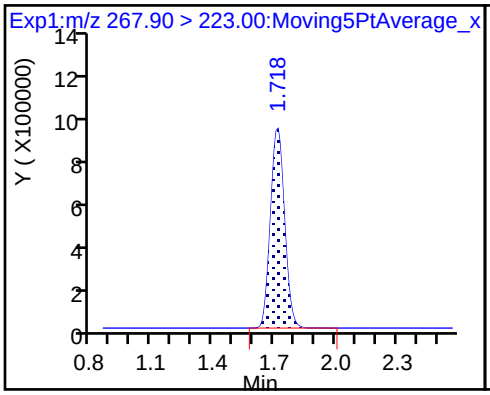
2 Perfluorobutyric acid



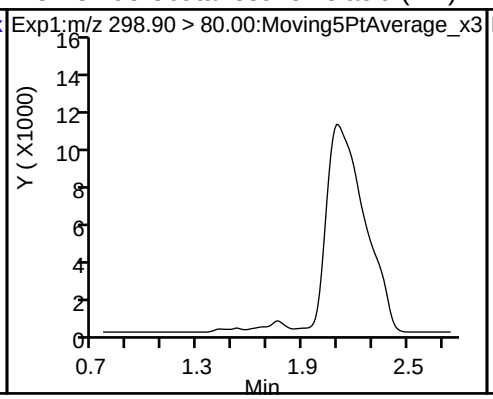
4 Perfluoropentanoic acid (ND)



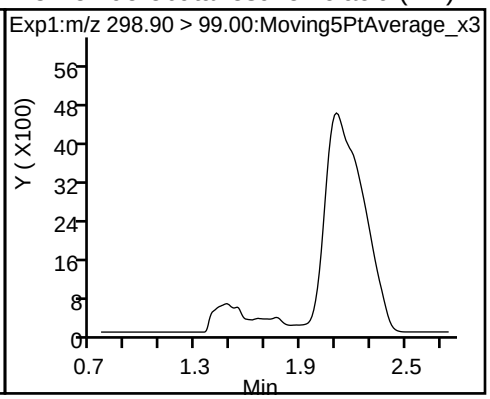
D 3 13C5-PFPeA



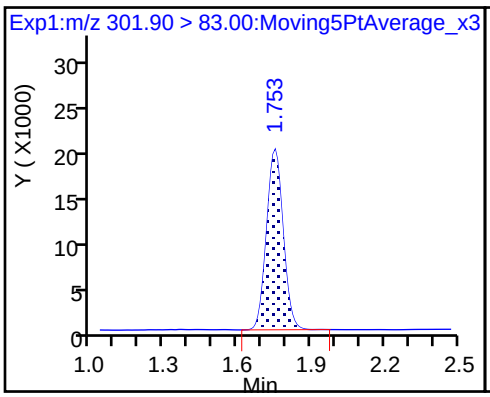
5 Perfluorobutanesulfonic acid (ND)



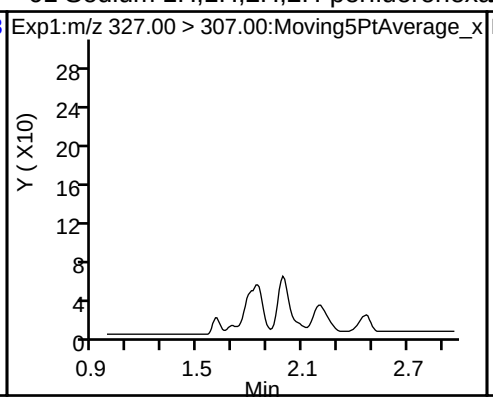
5 Perfluorobutanesulfonic acid (ND)



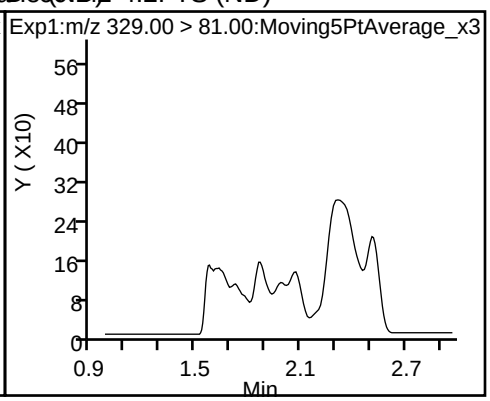
D 47 13C3-PFBS



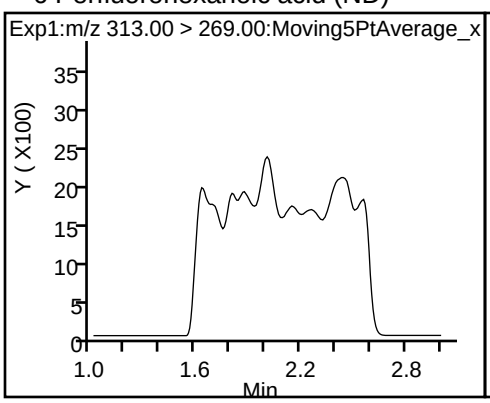
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (NM2-4:2FTS (ND)



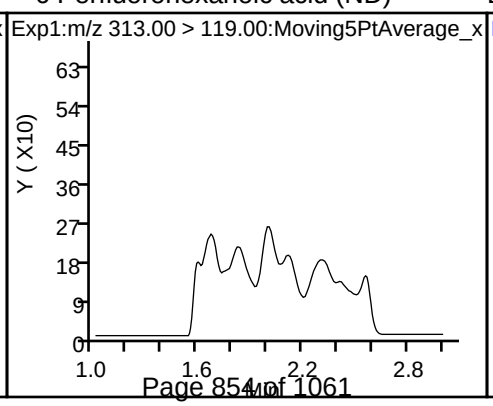
D 60 (ND)



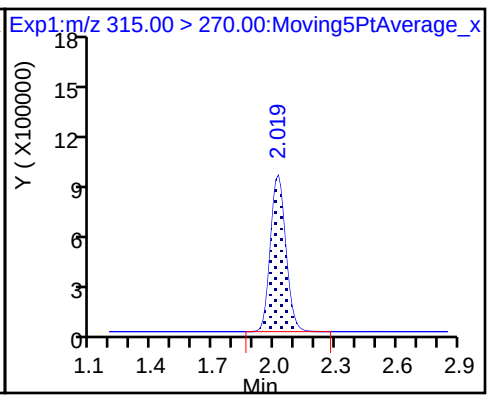
6 Perfluorohexanoic acid (ND)



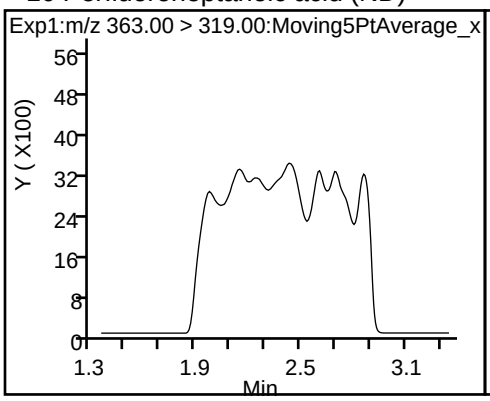
6 Perfluorohexanoic acid (ND)



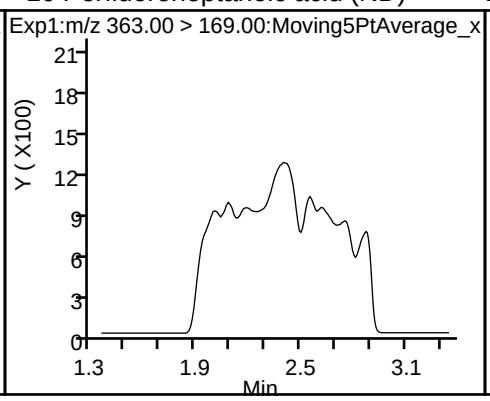
D 7 13C2 PFHxA



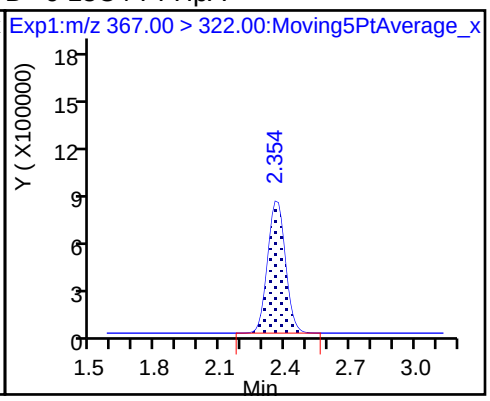
10 Perfluoroheptanoic acid (ND)



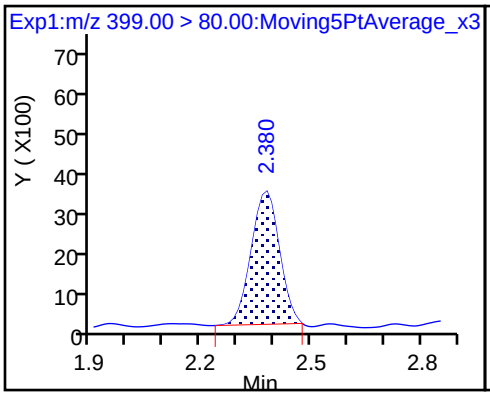
10 Perfluoroheptanoic acid (ND)



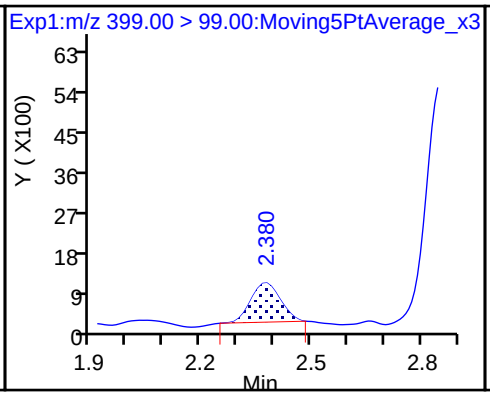
D 9 13C4-PFHpA



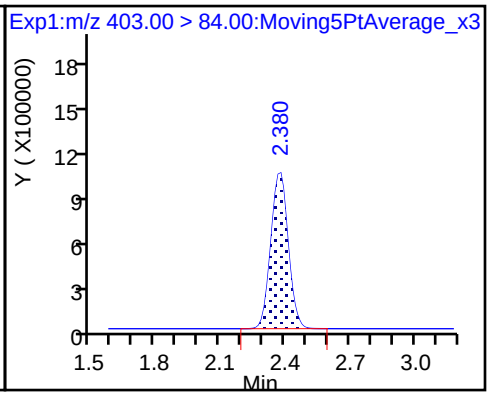
8 Perfluorohexanesulfonic acid



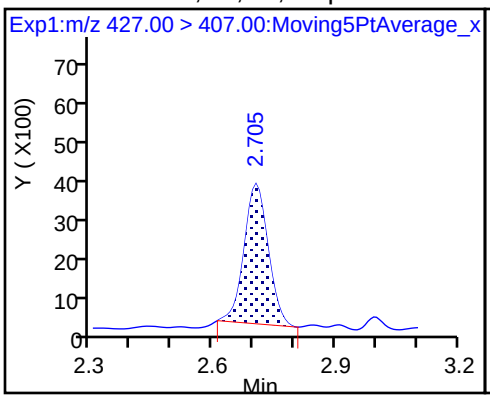
8 Perfluorohexanesulfonic acid



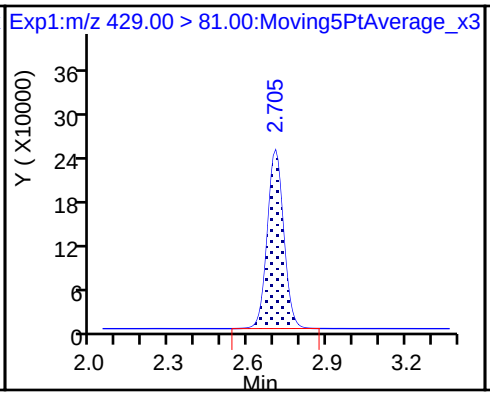
D 11 18O2 PFHxS



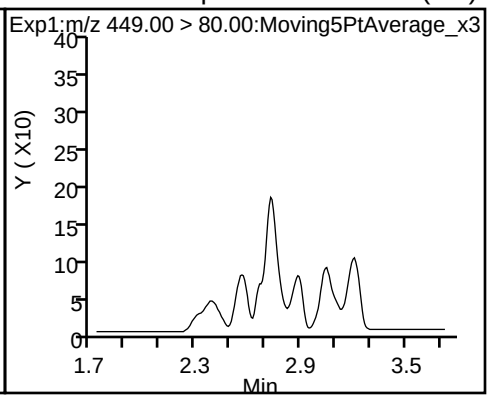
13 Sodium 1H,1H,2H,2H-perfluorooctane



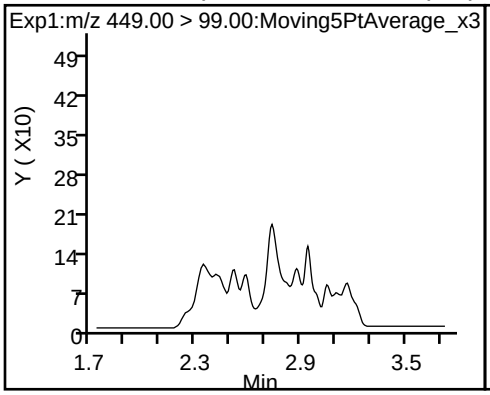
D 12 M2-6:2FTS



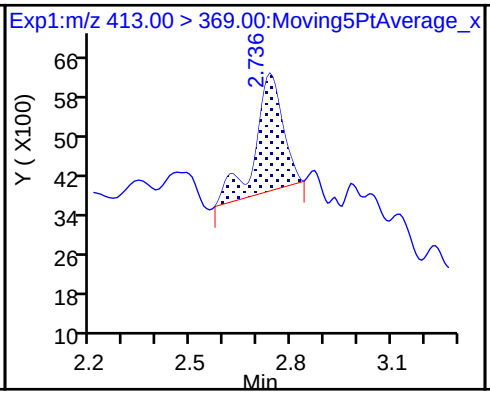
16 Perfluoroheptanesulfonic acid (ND)



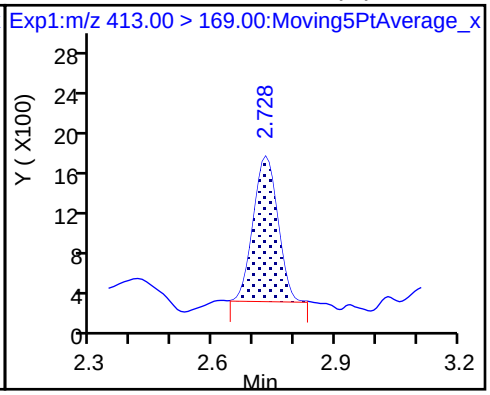
16 Perfluoroheptanesulfonic acid (ND)



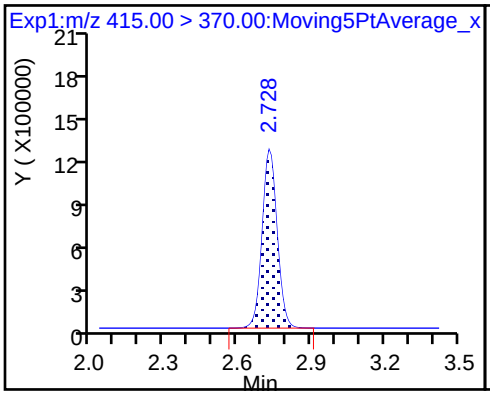
15 Perfluorooctanoic acid



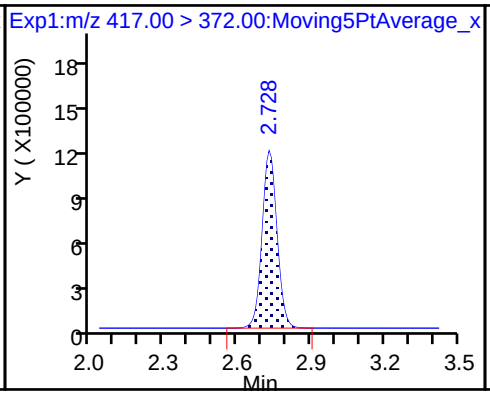
15 Perfluorooctanoic acid (M)



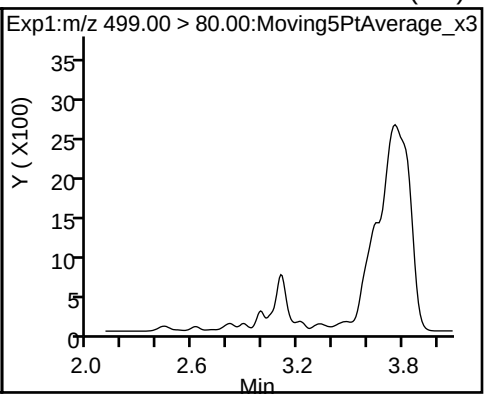
* 62 13C2-PFOA



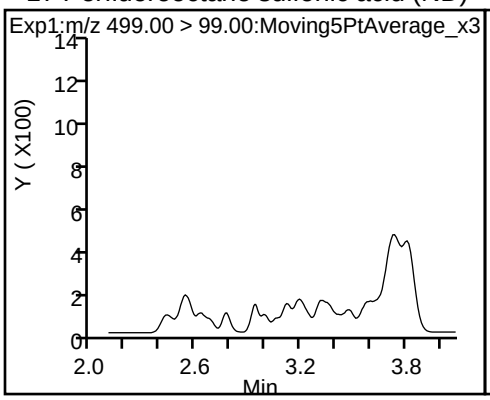
D 14 13C4 PFOA



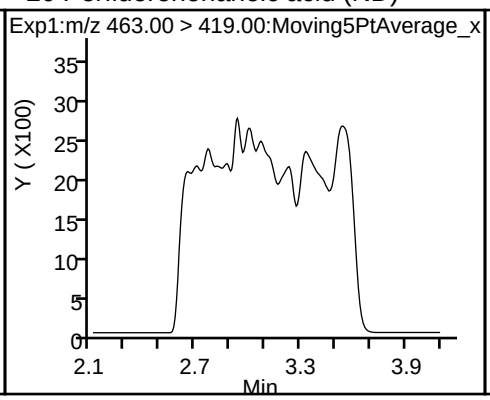
17 Perfluorooctane sulfonic acid (ND)



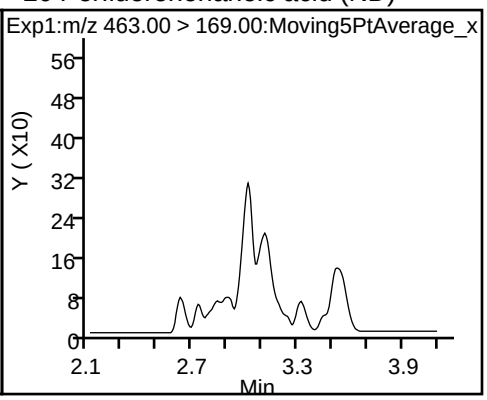
17 Perfluorooctane sulfonic acid (ND)



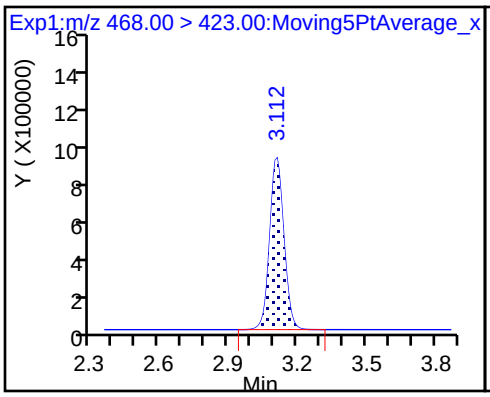
20 Perfluorononanoic acid (ND)



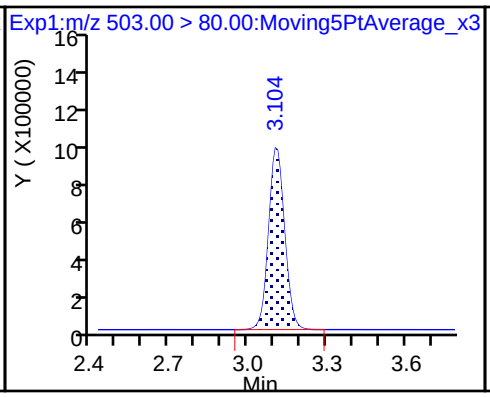
20 Perfluorononanoic acid (ND)



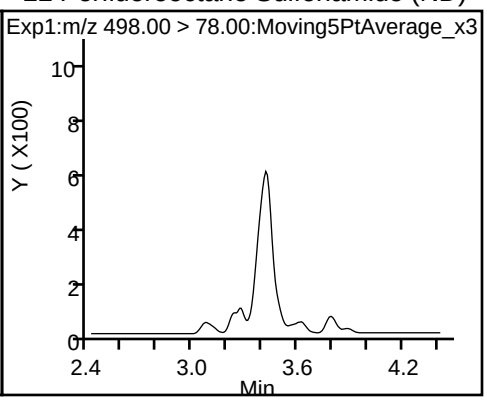
D 19 13C5 PFNA



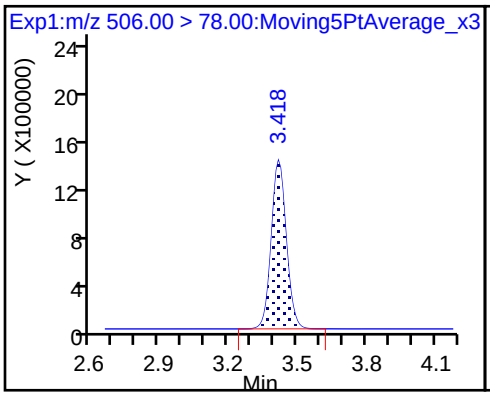
D 18 13C4 PFOS



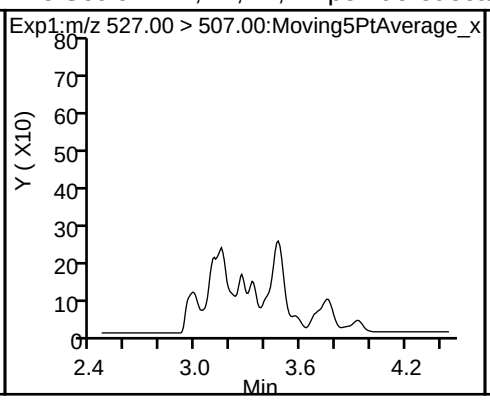
22 Perfluorooctane Sulfonamide (ND)



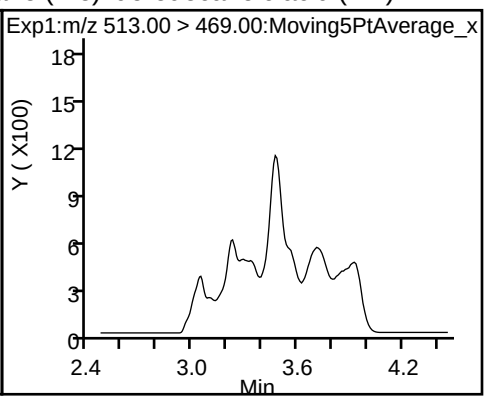
D 21 13C8 FOSA



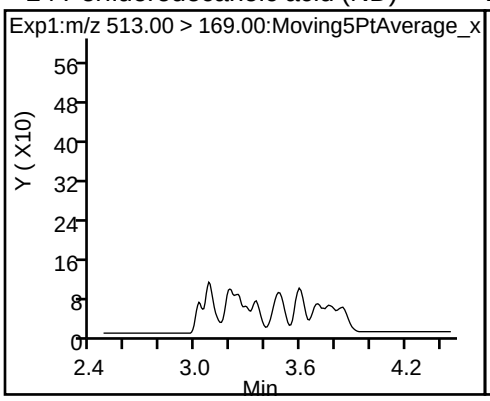
25 Sodium 1H,1H,2H,2H-perfluorodecane2(ND)



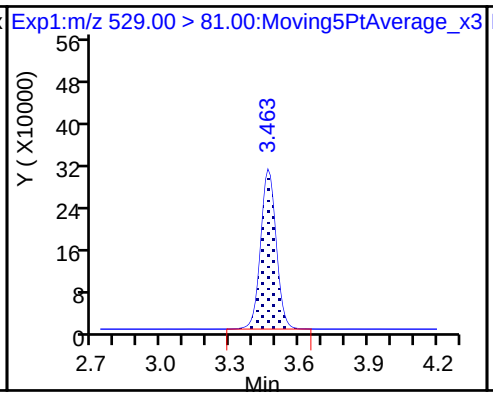
24 Perfluorodecanoic acid (ND)



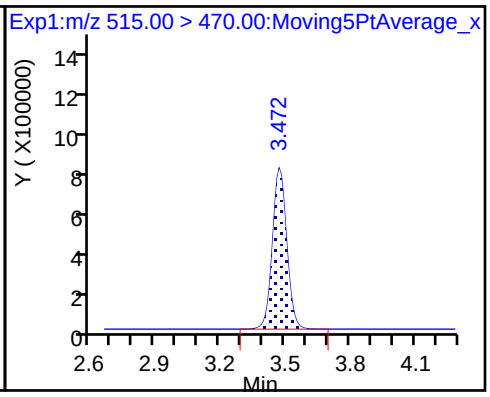
24 Perfluorodecanoic acid (ND)



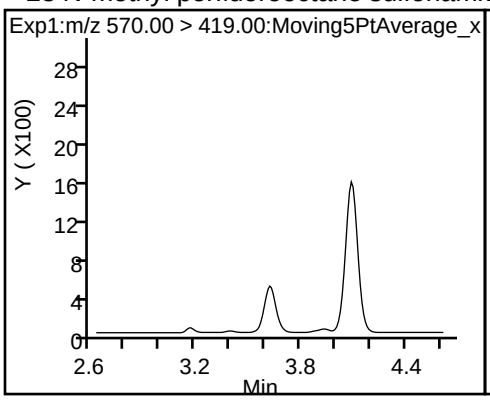
D 26 M2-8:2FTS



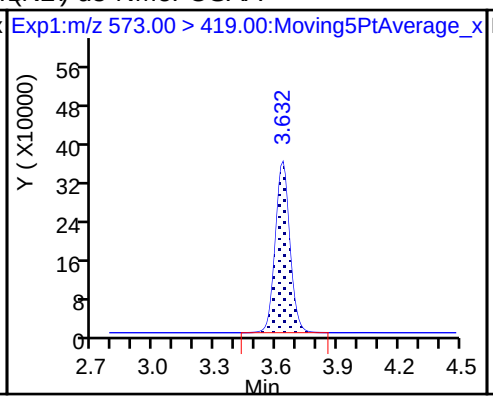
D 23 13C2 PFDA



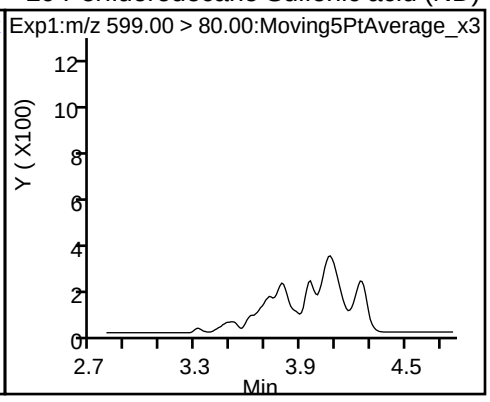
28 N-methyl perfluorooctane sulfonamid (ND)



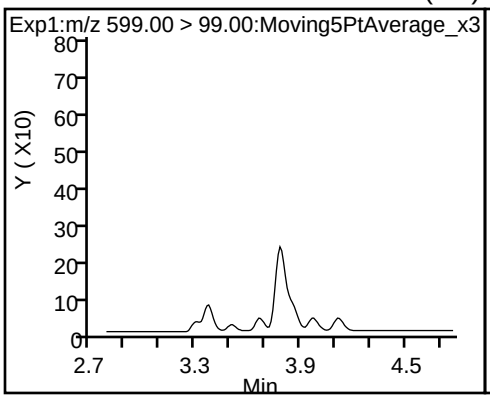
D 27 d3-NMeFOSAA



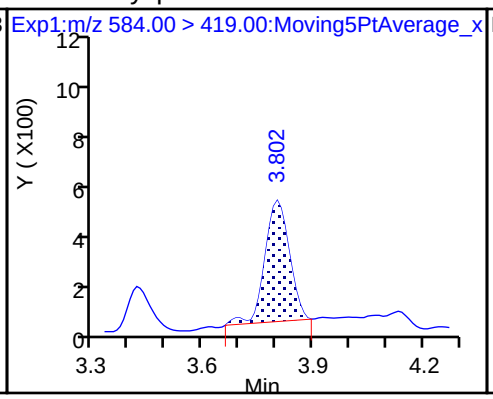
29 Perfluorodecane Sulfonic acid (ND)



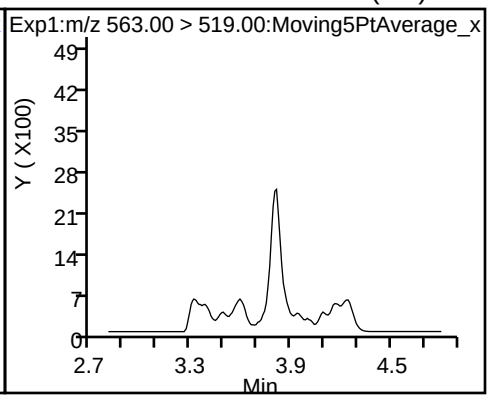
29 Perfluorodecane Sulfonic acid (ND)



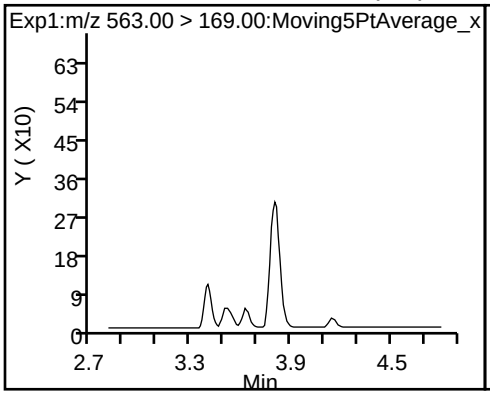
33 N-ethyl perfluorooctane sulfonamid



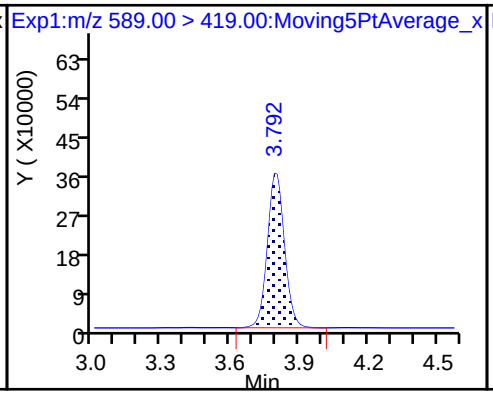
31 Perfluoroundecanoic acid (ND)



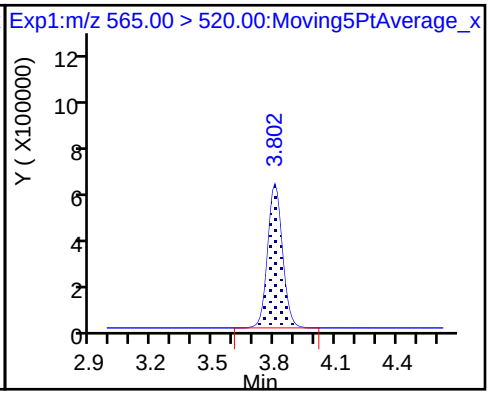
31 Perfluoroundecanoic acid (ND)



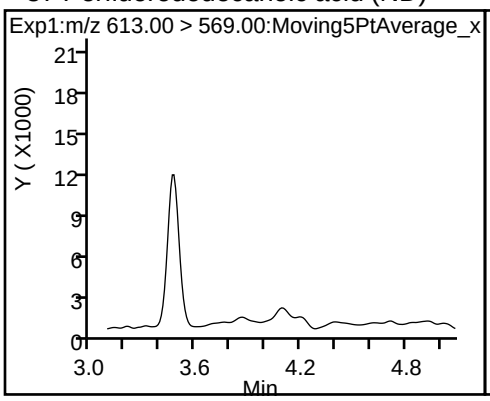
D 32 d5-NEtFOSAA



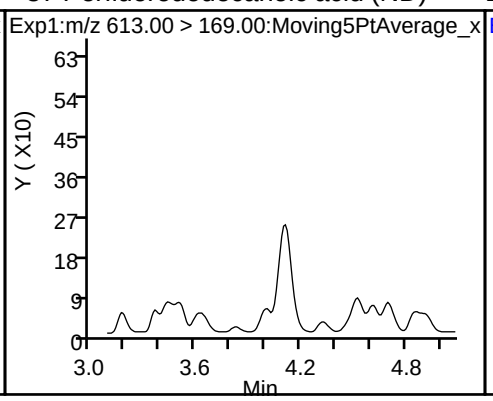
D 30 13C2 PFUnA



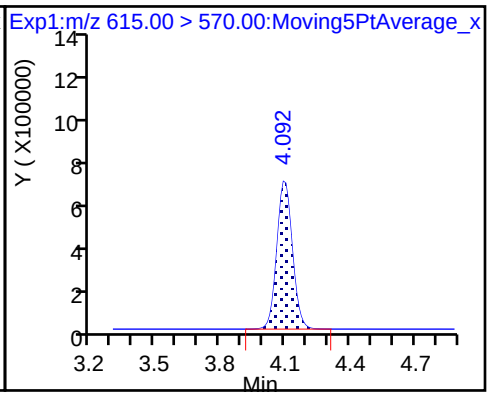
37 Perfluorododecanoic acid (ND)



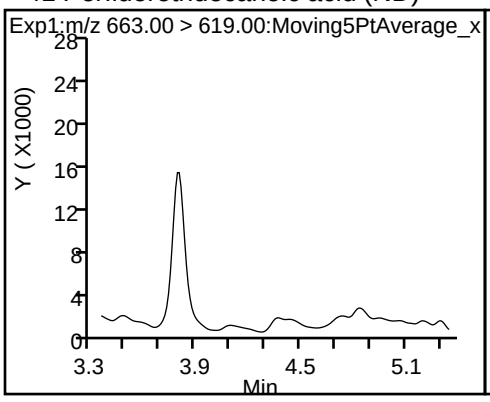
37 Perfluorododecanoic acid (ND)



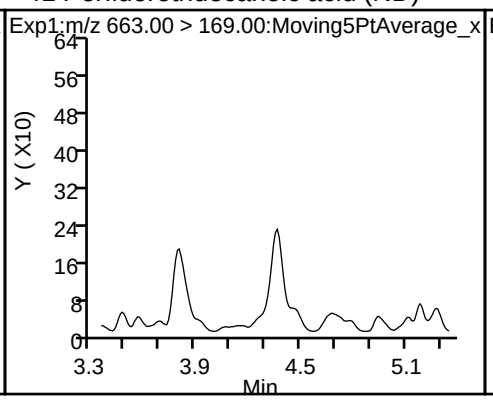
D 36 13C2 PFDoA



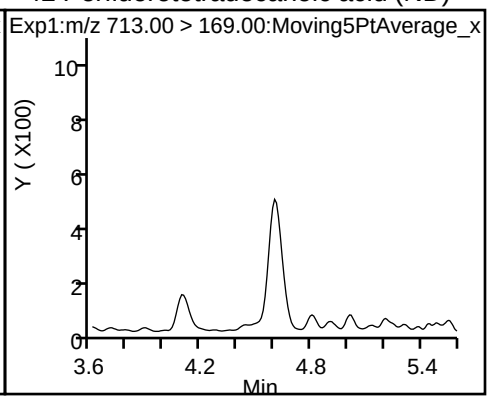
41 Perfluorotridecanoic acid (ND)



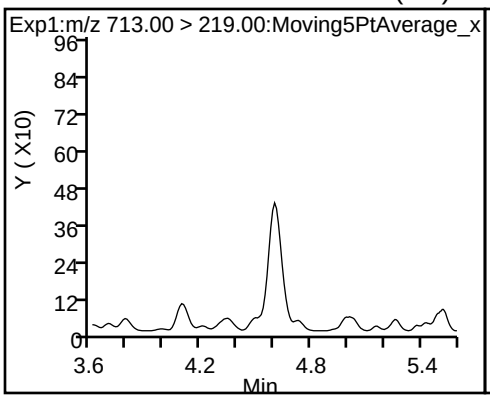
41 Perfluorotridecanoic acid (ND)



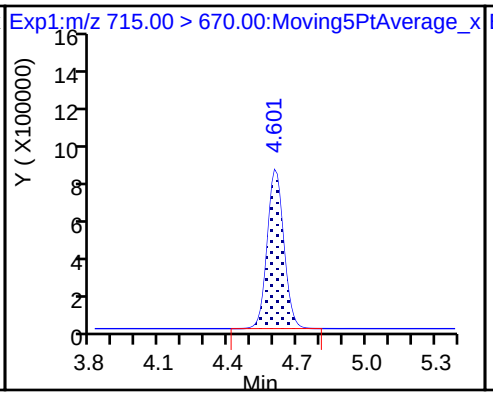
42 Perfluorotetradecanoic acid (ND)



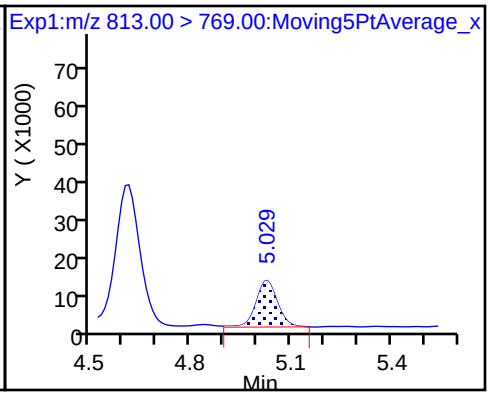
42 Perfluorotetradecanoic acid (ND)



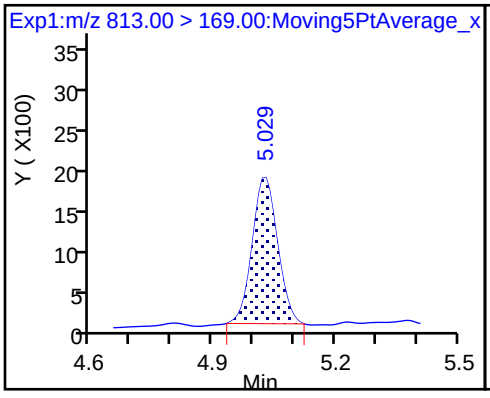
D 43 13C2-PFTeDA



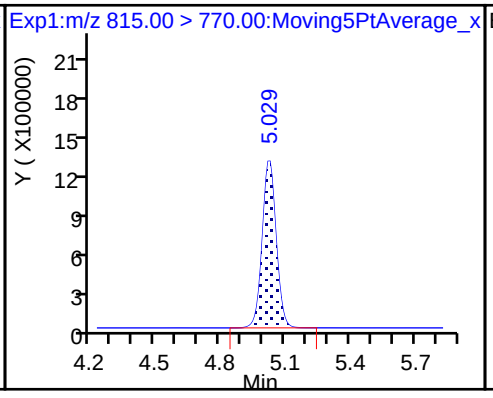
45 Perfluorohexadecanoic acid



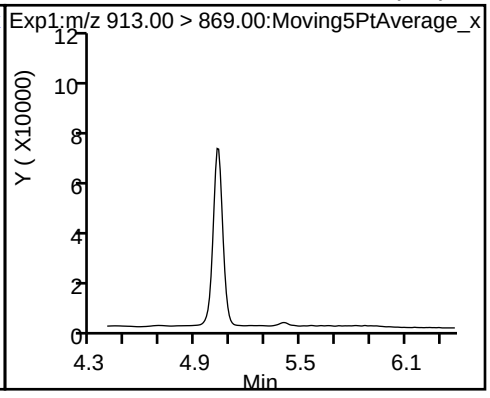
45 Perfluorohexadecanoic acid



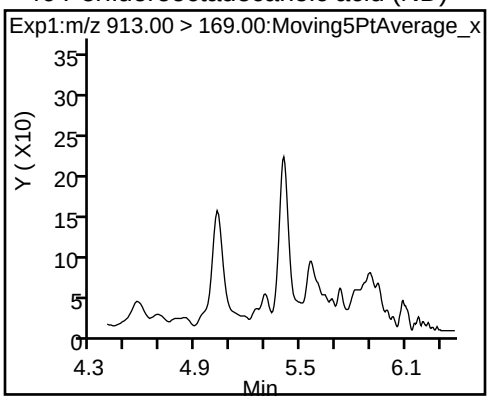
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-212510/2-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:17

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00198		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00186		0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00200		0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00203		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00198		0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.00189		0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.00206		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00156		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00198		0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00129		0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00202		0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00172		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00165		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00216		0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00220		0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000908		0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00196		0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00192	J	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00185	J	0.0020	0.00037
27619-97-2	6:2FTS	0.00176	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00188	J	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-212510/2-A

Matrix: Solid | Lab File ID: 2018.03.20LLA_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.00(g) | Date Analyzed: 03/20/2018 23:17

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	72		25-150
STL01893	13C5 PFPeA	79		25-150
STL00993	13C2 PFHxA	77		25-150
STL01892	13C4-PFHpA	85		25-150
STL00990	13C4 PFOA	84		25-150
STL00995	13C5 PFNA	85		25-150
STL00996	13C2 PFDA	70		25-150
STL00997	13C2 PFUnA	52		25-150
STL00998	13C2 PFDoA	29		25-150
STL02116	13C2-PFTeDA	13	*	25-150
STL02337	13C3-PFBS	82		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	69		25-150
STL01056	13C8 FOSA	50		25-150
STL02118	d3-NMeFOSAA	37		25-150
STL02117	d5-NEtFOSAA	37		25-150
STL02279	M2-6:2FTS	83		25-150
STL02280	M2-8:2FTS	64		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_024.d
Lims ID: LCS 320-212510/2-A
Client ID:
Sample Type: LCS
Inject. Date: 20-Mar-2018 23:17:37 ALS Bottle#: 15 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-212510/2-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:55:51 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: barnettj Date: 21-Mar-2018 16:18:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	0.537	4091361	1.81		72.5	69926	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.446	-0.005	1.000	1503671	0.99		99.1	536	
D 3 13C5-PFPeA										
267.90 > 223.00	1.701	1.700	0.001	0.634	3160392	1.98		79.4	76049	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.709	-0.008	1.000	1373832	0.9303		93.0	432	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.736	-0.009	0.644	74995	1.91		82.1	306	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.744	-0.008	1.005	2146811	0.8601		97.3	721	
298.90 > 99.00	1.736	1.744	-0.008	1.005	891609		2.41(1.25-3.74)		726	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.955	-0.009	1.000	384914	0.7424		79.5	16557	
D 7 13C2 PFHxA										
315.00 > 270.00	1.977	1.987	-0.011	0.737	3397208	1.91		76.5	95581	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.977	1.997	-0.021	1.000	1373598	1.00		100	2914	
313.00 > 119.00	1.987	1.997	-0.010	1.005	122542		11.21(5.03-15.10)		2269	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.315	0.001	0.864	3662731	2.12		84.8	74650	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.328	-0.012	1.000	1541132	1.01		101	2416	
363.00 > 169.00	2.316	2.328	-0.012	1.000	603096		2.56(1.13-3.40)		9033	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.328	0.0	0.869	4492467	1.95		82.4	122838	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	1.000	1748667	0.8253		90.7	2460	
399.00 > 99.00	2.328	2.341	-0.013	1.000	577437		3.03(1.50-4.49)		1418	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.991	871739	1.97		83.0	21807	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	538416	0.8812		93.0	29894	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	3519269	2.11		84.4	88300	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.695	-0.014	1.000	1552802	0.9881		98.8	636	
413.00 > 169.00	2.681	2.695	-0.014	1.000	799440		1.94(0.84-2.52)		3006	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.695	-0.014		4421732	2.50			125013	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	1566237	1.08		113	39408	
449.00 > 99.00	2.681	2.703	-0.022	0.997	412397		3.80(1.94-5.82)		7703	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.0	1.138	2643326	1.64		68.6	36622	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.058	-0.007	1.138	2827942	2.12		84.8	63029	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.067	-0.016	1.000	1314286	1.10		118	3128	
499.00 > 99.00	3.051	3.067	-0.016	1.000	302766		4.34(2.31-6.93)		1867	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.067	-0.009	1.002	1092614	0.9474		94.7	2063	
463.00 > 169.00	3.051	3.067	-0.016	1.000	261207		4.18(1.90-5.69)		6451	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.389	0.001	1.264	2898975	1.24		49.7	32332	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.390	3.401	-0.011	1.000	1102578	0.9785		97.9	4404	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.408	0.0	1.271	632909	1.52		63.6	17529	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.417	0.0	1.274	1953399	1.75		70.1	33999	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.419	-0.011	1.000	311706	0.9382		97.9	14023	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.428	-0.011	1.000	764138	1.03		103	3366	
513.00 > 169.00	3.417	3.428	-0.011	1.000	148220		5.16(2.36-7.09)		2608	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.570	0.001	1.332	335974	0.9127		36.5	14631	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.580	3.594	-0.014	1.003	134490	0.9608		96.1	4182	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	320709	0.4541		47.1	13465	
599.00 > 99.00	3.738	3.741	-0.003	1.000	110312		2.91(1.39-4.16)		2317	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.748	-0.010	1.394	326974	0.9290		37.2	645	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.398	1140627	1.31		52.3	39836	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.762	-0.014	1.003	118399	0.9246		92.5	1874	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	298333	0.7802		78.0	857	
563.00 > 169.00	3.748	3.762	-0.014	1.000	95271		3.13(2.12-6.36)		5852	
35 MeFOSA										
512.00 > 169.00	3.893	3.875	0.018		136268	NC			2200	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.509	604992	0.7309		29.2	5221	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.061	-0.014	1.000	245602	0.99		99.2	56.3	
613.00 > 169.00	4.047	4.061	-0.014	1.000	61736		3.98(2.13-6.40)		1622	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.089	4.066	0.023		94388	NC			2504	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.320	-0.013	1.000	160394	0.6443		64.4	44.9	
663.00 > 169.00	4.307	4.320	-0.013	1.000	47056		3.41(1.25-3.76)		775	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.544	-0.001	1.695	243911	0.3228		12.9	2830	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.556	-0.013	1.000	27240	1.01		101	514	
713.00 > 219.00	4.543	4.556	-0.013	1.000	16072		1.69(0.71-2.13)		227	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.851	173020	0.1566		6.3	1110	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	63748	0.9796		98.0	9.3	
813.00 > 169.00	4.964	4.974	-0.010	1.000	12988		4.91(2.86-8.58)		185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.331	-0.009	1.000	45796	0.6787		67.9	27.6	
913.00 > 169.00	5.315	5.331	-0.016	0.999	5739		7.98(3.83-11.48)		90.2	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 22-Mar-2018 10:55:56 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_024.d

Injection Date: 20-Mar-2018 23:17:37 Instrument ID: A8_N

Lims ID: LCS 320-212510/2-A

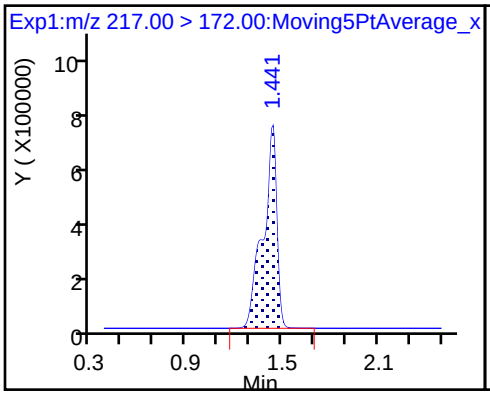
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 3

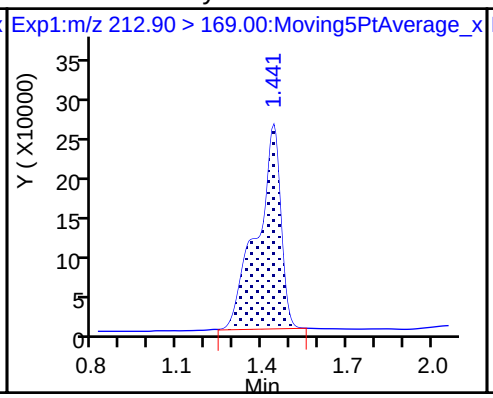
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

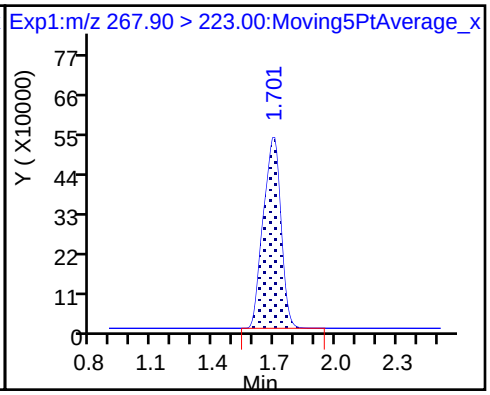
D 1 13C4 PFBA



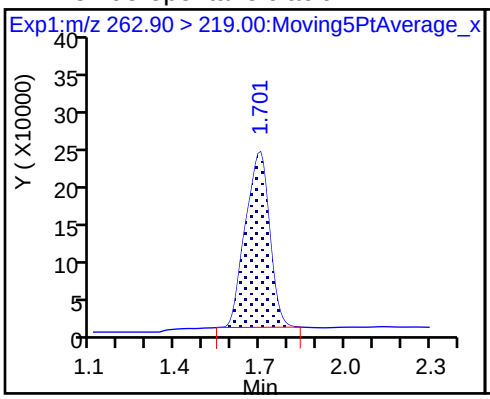
2 Perfluorobutyric acid



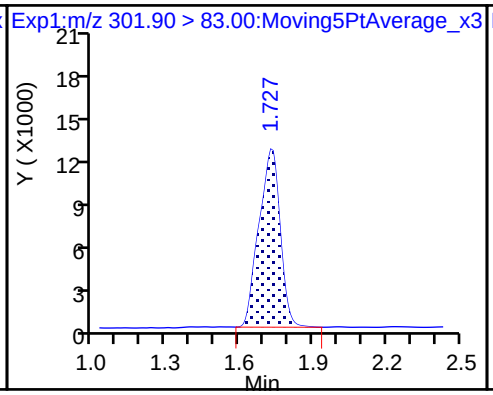
D 3 13C5-PFPeA



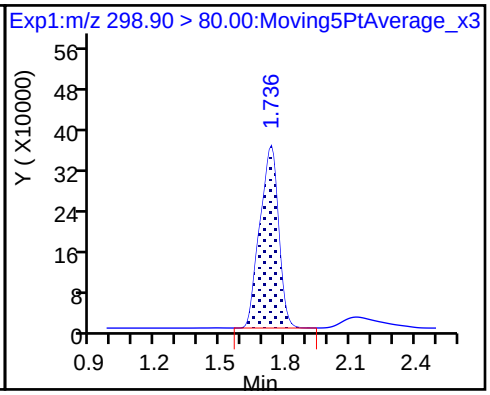
4 Perfluoropentanoic acid



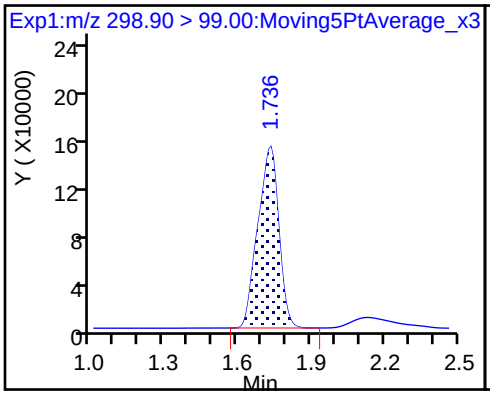
D 47 13C3-PFBS



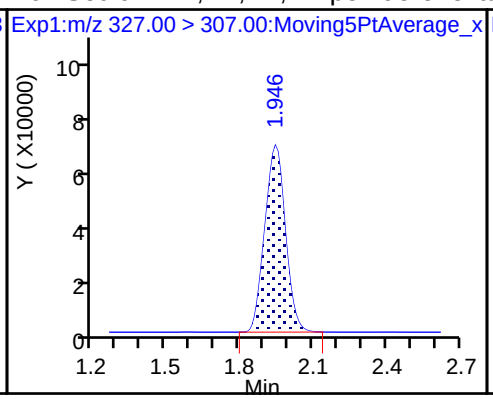
5 Perfluorobutanesulfonic acid



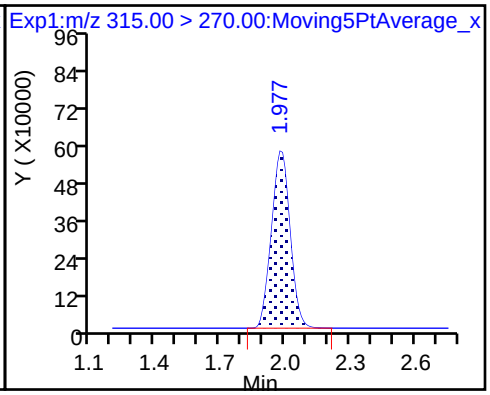
5 Perfluorobutanesulfonic acid



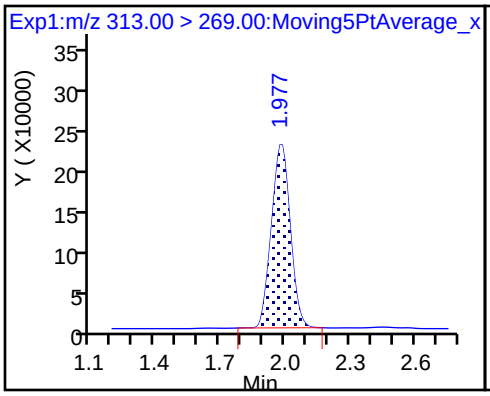
61 Sodium 1H,1H,2H,2H-perfluorohexa



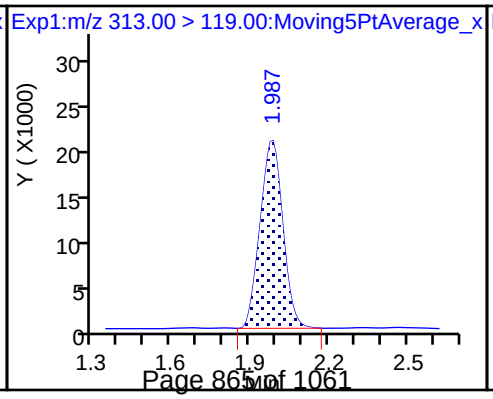
D 7 13C2 PFHxA



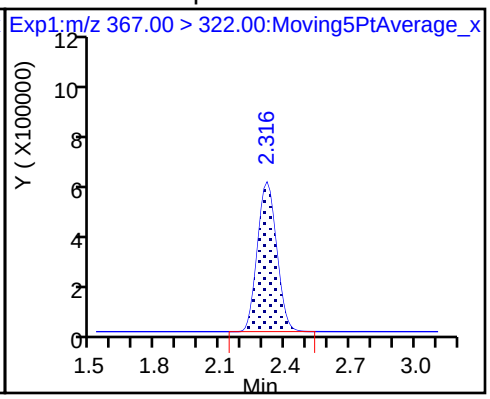
6 Perfluorohexanoic acid



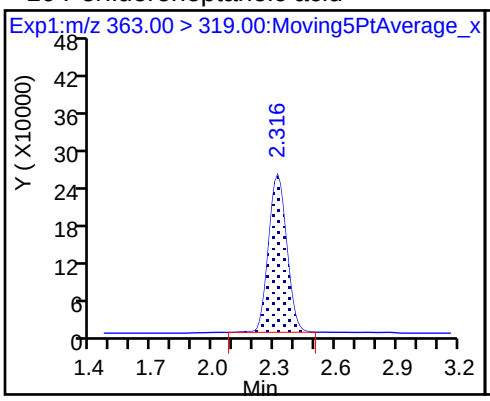
6 Perfluorohexanoic acid



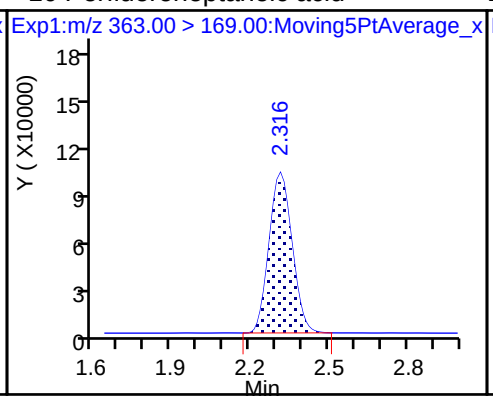
D 9 13C4-PFHpA



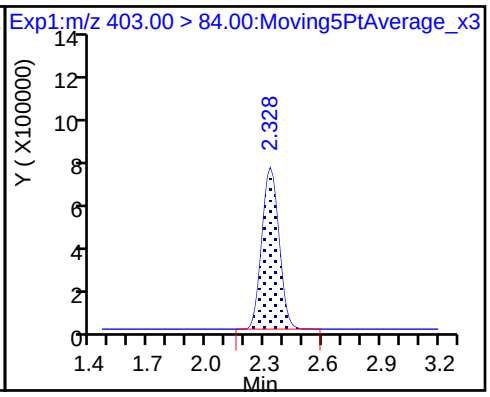
10 Perfluoroheptanoic acid



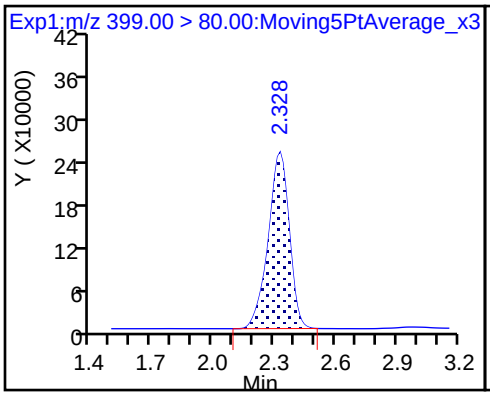
10 Perfluoroheptanoic acid



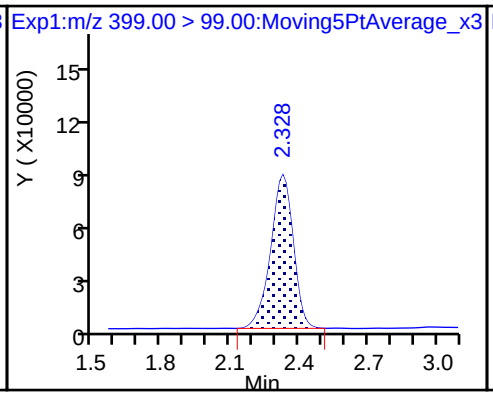
D 11 18O2 PFHxS



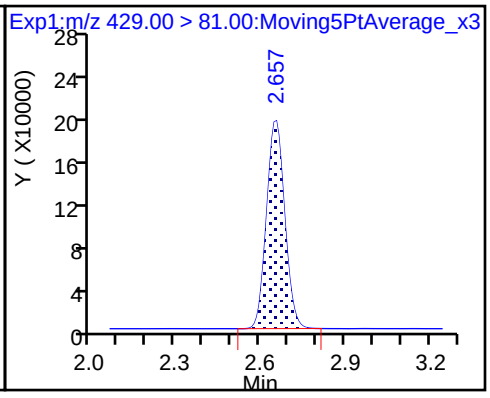
8 Perfluorohexanesulfonic acid



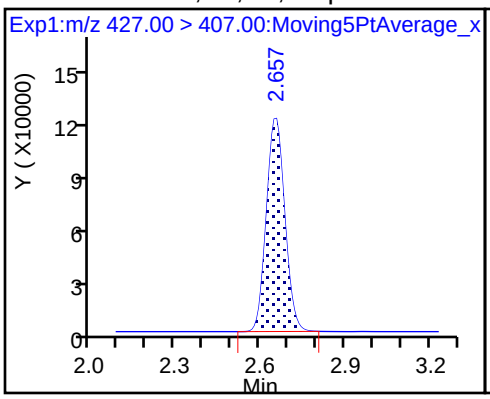
8 Perfluorohexanesulfonic acid



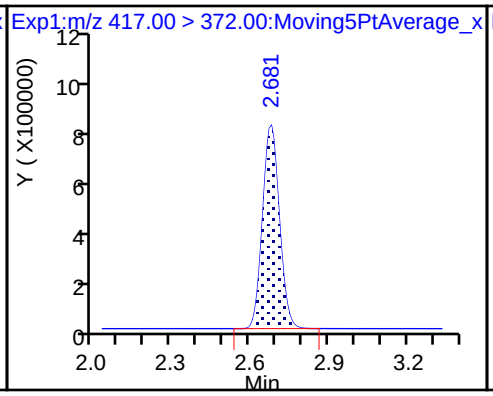
D 12 M2-6:2FTS



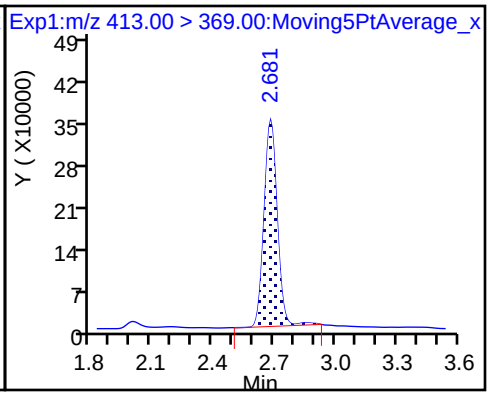
13 Sodium 1H,1H,2H,2H-perfluorooctane



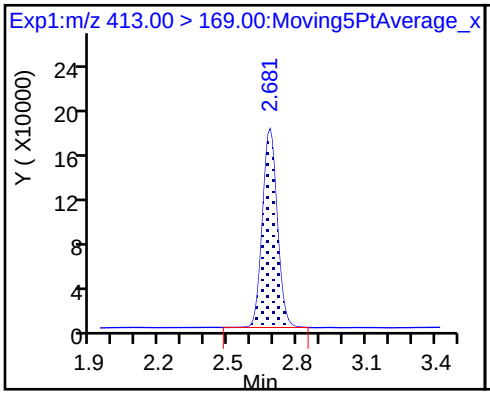
D 14 13C4 PFOA



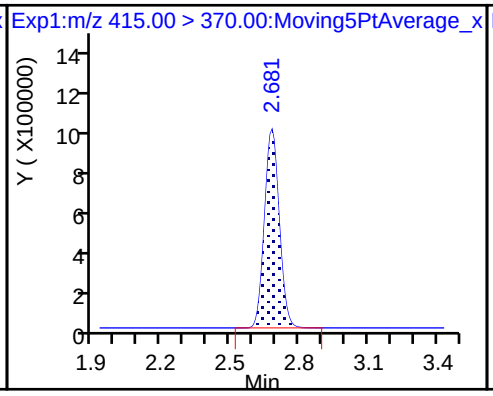
15 Perfluorooctanoic acid



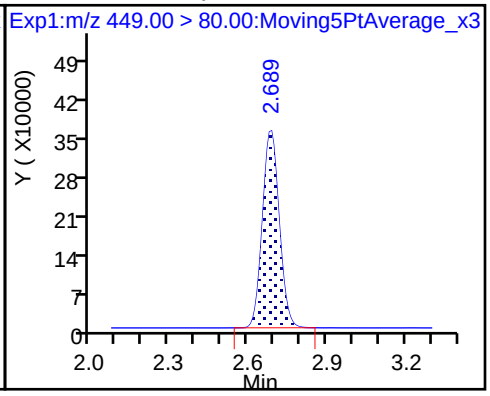
15 Perfluorooctanoic acid



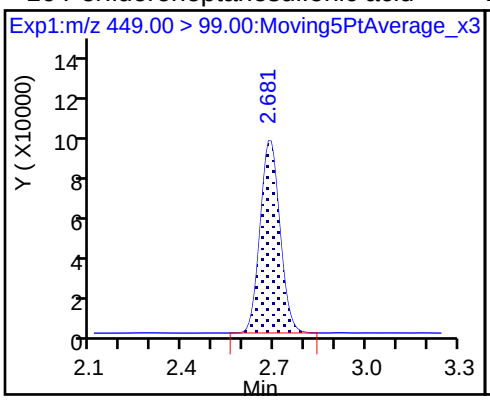
* 62 13C2-PFOA



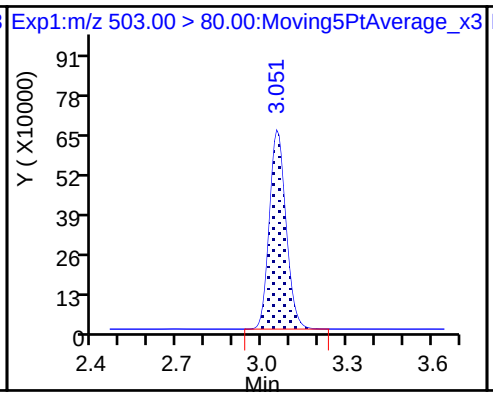
16 Perfluoroheptanesulfonic acid



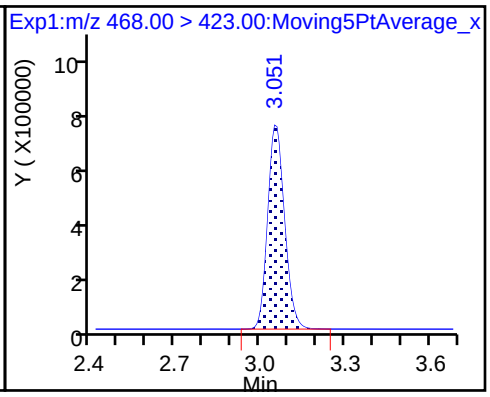
16 Perfluoroheptanesulfonic acid



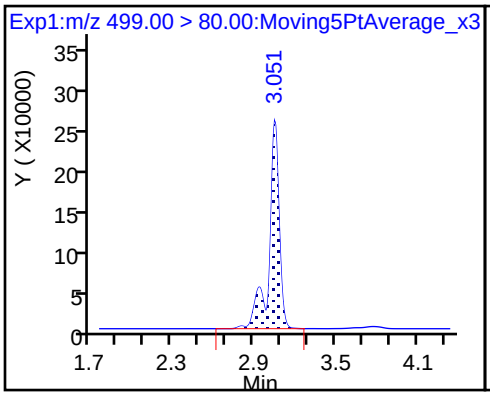
D 18 13C4 PFOS



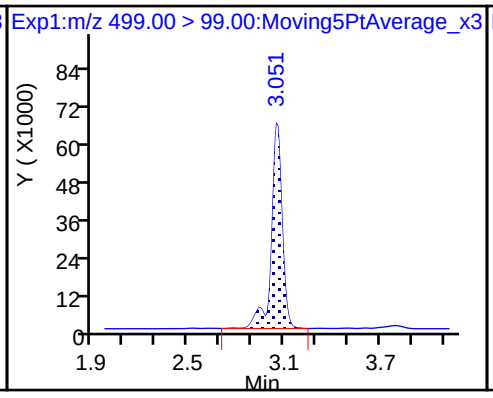
D 19 13C5 PFNA



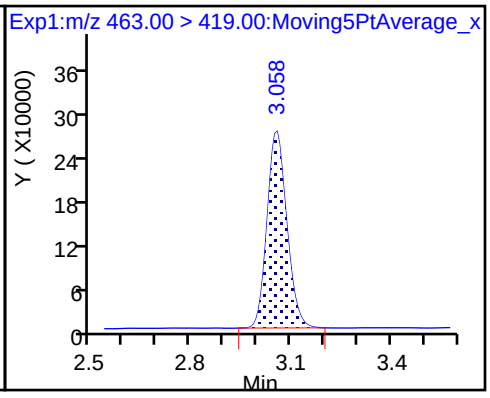
17 Perfluorooctane sulfonic acid



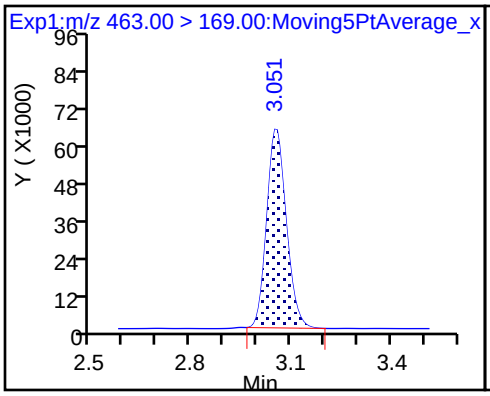
17 Perfluorooctane sulfonic acid



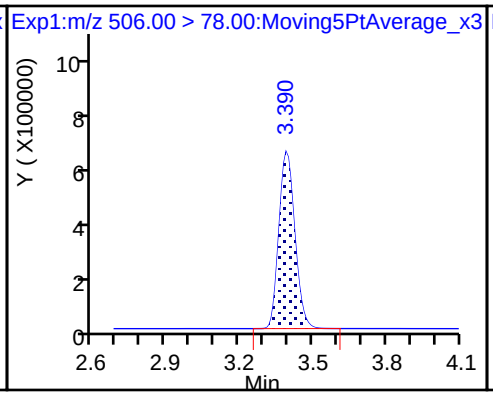
20 Perfluorononanoic acid



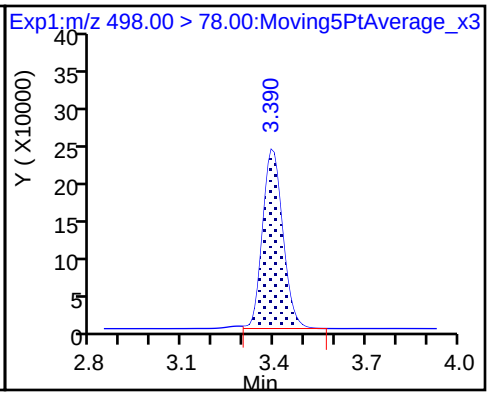
20 Perfluorononanoic acid



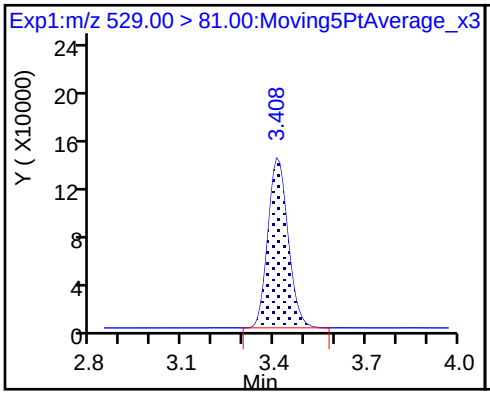
D 21 13C8 FOSA



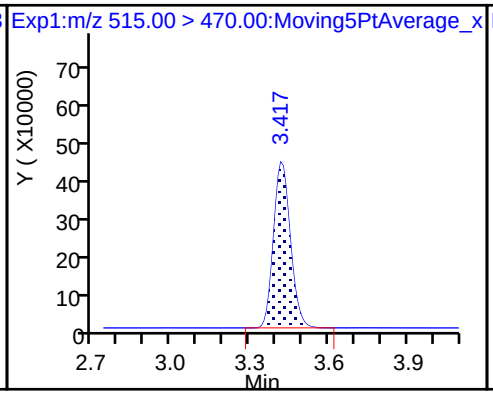
22 Perfluorooctane Sulfonamide



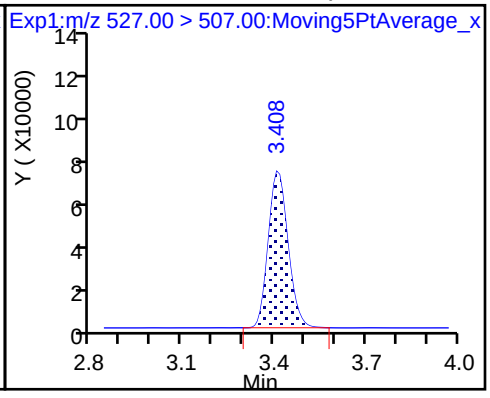
D 26 M2-8:2FTS



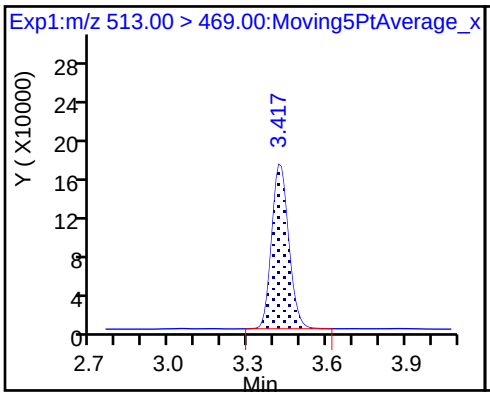
D 23 13C2 PFDA



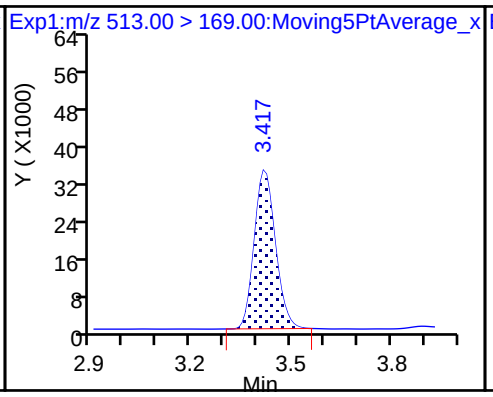
25 Sodium 1H,1H,2H,2H-perfluorodecane



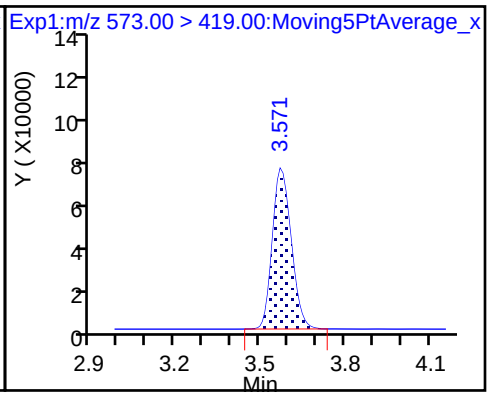
24 Perfluorodecanoic acid



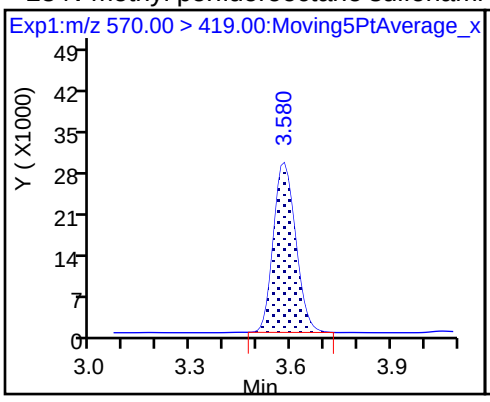
24 Perfluorodecanoic acid



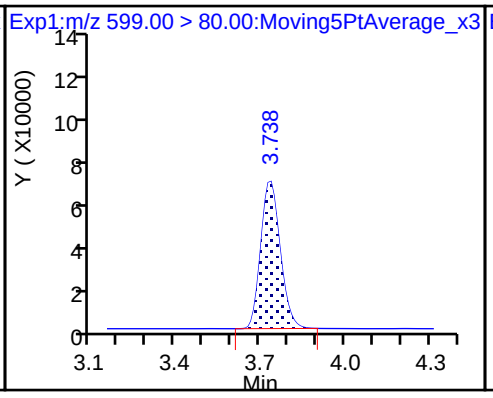
D 27 d3-NMeFOSAA



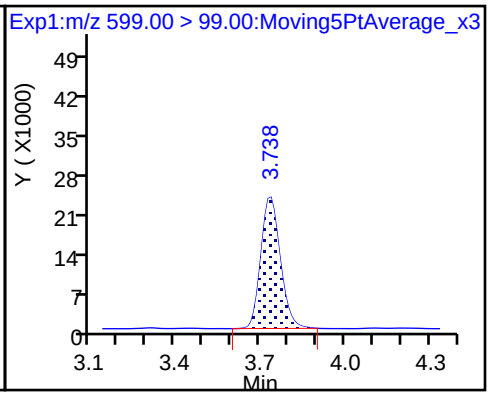
28 N-methyl perfluorooctane sulfonami



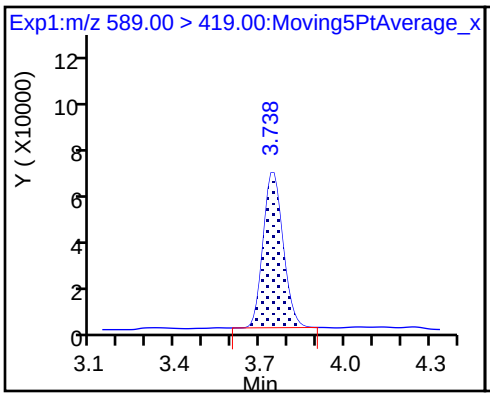
29 Perfluorodecane Sulfonic acid



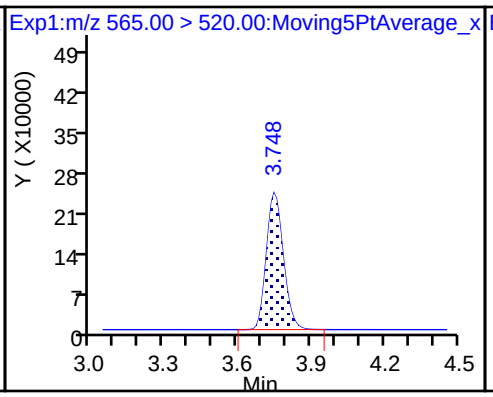
29 Perfluorodecane Sulfonic acid



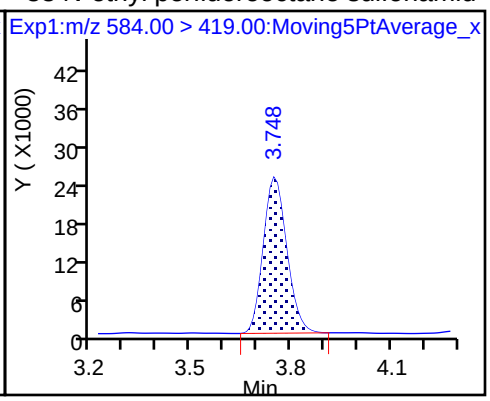
D 32 d5-NEtFOSAA



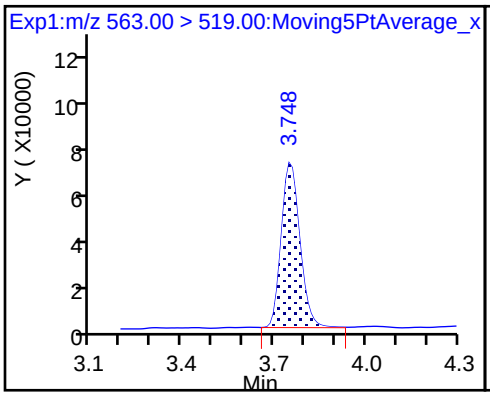
D 30 13C2 PFUnA



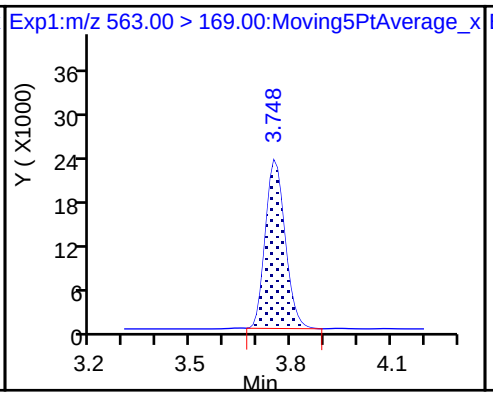
33 N-ethyl perfluorooctane sulfonamid



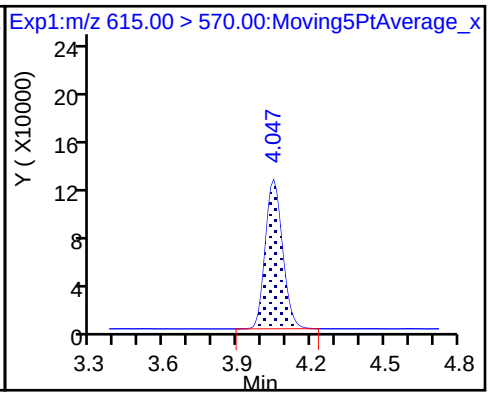
31 Perfluoroundecanoic acid



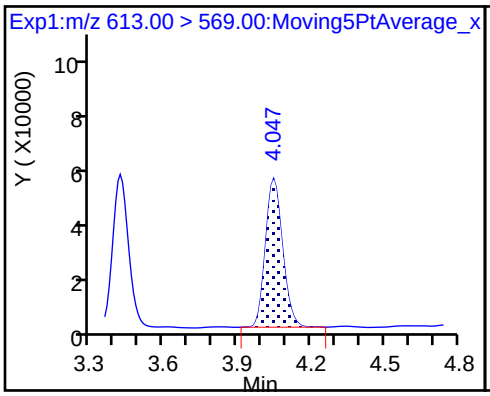
31 Perfluoroundecanoic acid



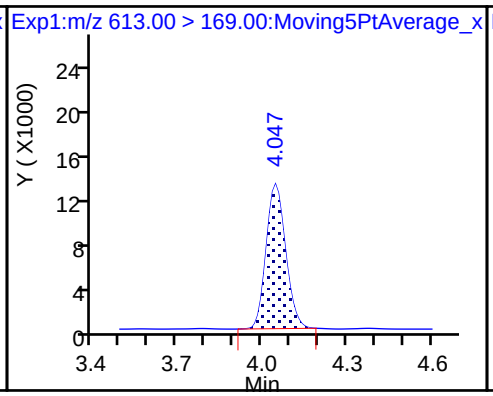
D 36 13C2 PFDoA



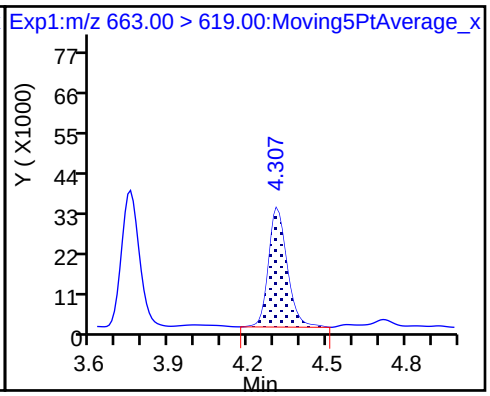
37 Perfluorododecanoic acid



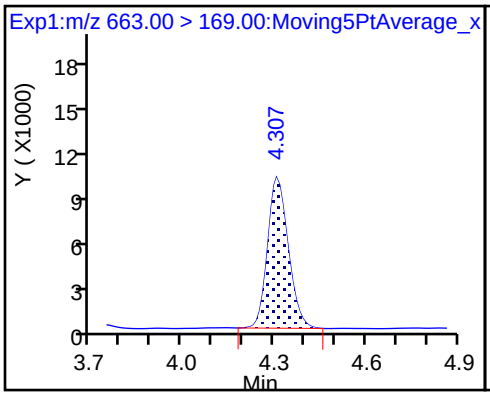
37 Perfluorododecanoic acid



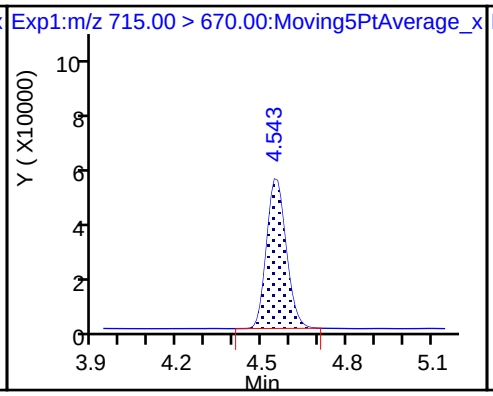
41 Perfluorotridecanoic acid



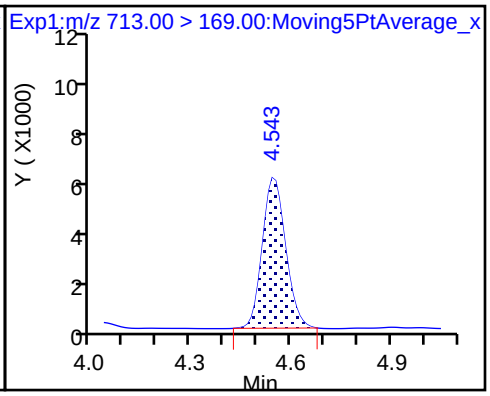
41 Perfluorotridecanoic acid



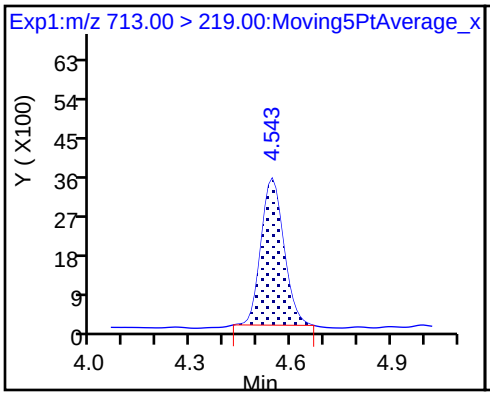
D 43 13C2-PFTeDA



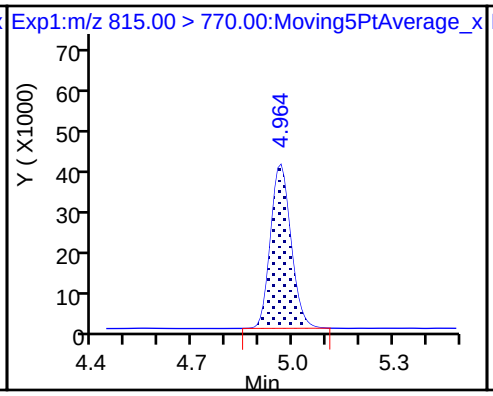
42 Perfluorotetradecanoic acid



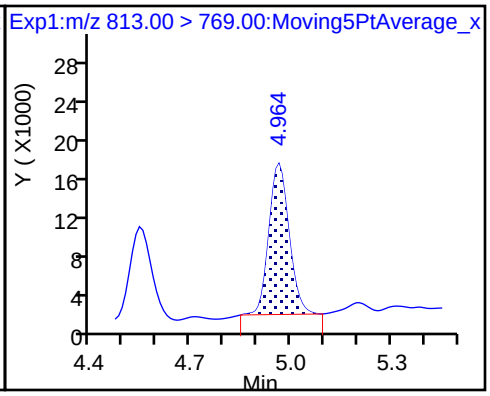
42 Perfluorotetradecanoic acid



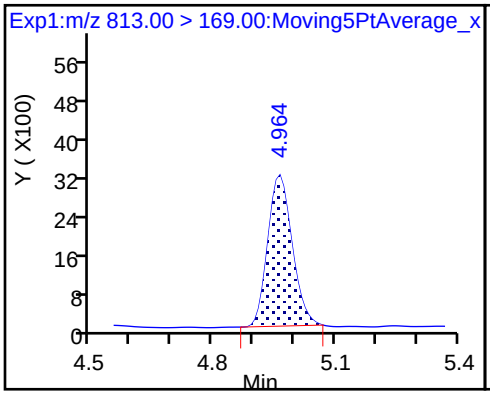
D 44 13C2-PFHxDA



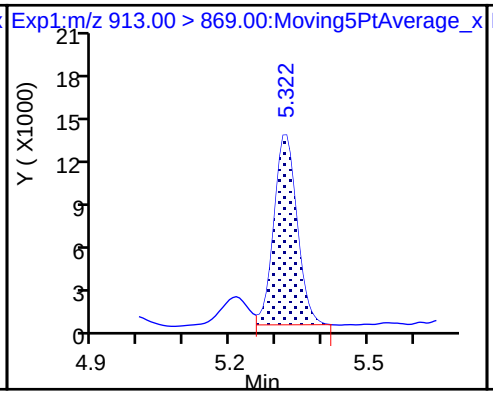
45 Perfluorohexadecanoic acid



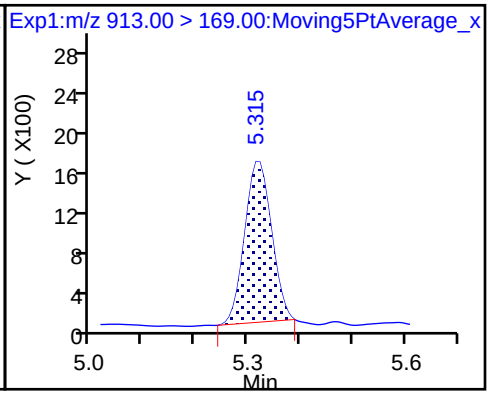
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-214126/2-A

Matrix: Solid | Lab File ID: 2018.03.23LLAA_055.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250(mL) | Date Analyzed: 03/23/2018 18:55

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	43.00		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	42.68		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	41.22		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	44.05		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	41.16		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	43.70		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	43.80		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	40.64		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	43.64		2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	46.04		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	44.47		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	39.75		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	37.30		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	43.73		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	39.97		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	41.05		2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	41.47		2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	43.65		20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	44.14		20.0	1.90
27619-97-2	6:2FTS	48.43		20.0	2.00
39108-34-4	8:2FTS	40.19		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-214126/2-A

Matrix: Solid | Lab File ID: 2018.03.23LLAA_055.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250(mL) | Date Analyzed: 03/23/2018 18:55

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	97		25-150
STL01893	13C5 PFPeA	98		25-150
STL00993	13C2 PFHxA	101		25-150
STL01892	13C4-PFHpA	99		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	79		25-150
STL00998	13C2 PFDoA	77		25-150
STL02116	13C2-PFTeDA	81		25-150
STL02337	13C3-PFBS	98		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	94		25-150
STL02118	d3-NMeFOSAA	91		25-150
STL02117	d5-NEtFOSAA	85		25-150
STL02279	M2-6:2FTS	115		25-150
STL02280	M2-8:2FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_055.d
Lims ID: LCS 320-214126/2-A
Client ID:
Sample Type: LCS
Inject. Date: 23-Mar-2018 18:55:35 ALS Bottle#: 37 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-214126/2-
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: phomsophat Date: 26-Mar-2018 13:49:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.456	1.453	0.003	1.004	2537667	1.07		107	1517	
D 1 13C4 PFBA										
217.00 > 172.00	1.450	1.458	-0.008	0.537	6263817	2.41		96.6	89510	
D 3 13C5-PFPeA										
267.90 > 223.00	1.714	1.717	-0.003	0.635	4212301	2.45		97.9	138335	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.714	1.718	-0.004	1.000	2026937	1.07		107	948	
D 47 13C3-PFBS										
301.90 > 83.00	1.749	1.753	-0.004	0.648	89620	2.28		98.1	535	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.749	1.753	-0.004	1.000	2976153	0.99		112	32509	
298.90 > 99.00	1.749	1.753	-0.004	1.000	1200423		2.48(1.25-3.74)		8118	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.966	-0.006	1.000	699239	1.12		120	32772	
D 7 13C2 PFHxA										
315.00 > 270.00	2.003	2.008	-0.005	0.742	4806683	2.53		101	128554	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.003	2.008	-0.005	1.000	2025779	1.03		103	8593	
313.00 > 119.00	2.003	2.008	-0.005	1.000	186921		10.84(5.03-15.10)		3924	
D 9 13C4-PFHpA										
367.00 > 322.00	2.335	2.341	-0.006	0.865	4658042	2.48		99.2	116453	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.335	2.341	-0.006	1.000	2122431	1.10		110	5148	
363.00 > 169.00	2.335	2.341	-0.006	1.000	847974		2.50(1.13-3.40)		14858	
D 11 18O2 PFHxS										
403.00 > 84.00	2.348	2.353	-0.005	0.870	5500174	2.37		100	97949	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.348	2.354	-0.006	1.000	2413847	0.9325		102	16832	
399.00 > 99.00	2.348	2.354	-0.006	1.000	799695		3.02(1.50-4.49)		2550	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.679	-0.012	0.988	1061107	2.73		115	25238	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.681	-0.006	1.003	943116	1.21		128	36748	
D 14 13C4 PFOA										
417.00 > 372.00	2.699	2.703	-0.005	1.000	4833634	2.52		101	96569	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.699	2.704	-0.006	1.000	2247367	1.03		103	773	
413.00 > 169.00	2.699	2.704	-0.006	1.000	1181135		1.90(0.84-2.52)		3734	
* 62 13C2-PFOA										
415.00 > 370.00	2.699	2.704	-0.006		5122606	2.50			88456	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.712	-0.014	1.000	2273707	1.09		115	39235	
449.00 > 99.00	2.706	2.712	-0.006	1.003	579944		3.92(1.94-5.82)		6358	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.067	3.072	-0.005	1.000	1806505	1.00		108	11714	
499.00 > 99.00	3.067	3.072	-0.005	1.000	395148		4.57(2.31-6.93)		3746	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.072	-0.005	1.000	1771995	1.09		109	1807	
463.00 > 169.00	3.067	3.072	-0.005	1.000	435019		4.07(1.90-5.69)		9949	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.080	-0.013	1.137	4064586	2.40		96.0	60543	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.080	-0.013	1.137	3879274	2.30		96.3	42890	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.411	3.408	0.003	1.000	2189122	1.04		104	55274	
D 21 13C8 FOSA										
506.00 > 78.00	3.411	3.416	-0.005	1.264	5354734	2.36		94.2	67560	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.420	3.427	-0.007	1.000	681887	1.00		105	8139	
D 26 M2-8:2FTS										
529.00 > 81.00	3.420	3.434	-0.014	1.267	1273378	2.42		101	31958	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.429	3.436	-0.007	1.000	1528534	1.10		110	7831	
513.00 > 169.00	3.429	3.436	-0.007	1.000	268733		5.69(2.36-7.09)		2195	
D 23 13C2 PFDA										
515.00 > 470.00	3.429	3.444	-0.015	1.271	3531829	2.38		95.2	50367	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.592	-0.008	1.000	777367	1.09		109	7058	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.602	-0.018	1.328	1779549	2.28		91.1	31825	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.744	3.750	-0.006	1.000	1132734	1.03		106	18366	
599.00 > 99.00	3.744	3.750	-0.006	1.000	379523		2.98(1.39-4.16)		4976	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.754	3.761	-0.007	1.000	921398	1.02		102	4743	
563.00 > 169.00	3.754	3.761	-0.007	1.000	213141		4.32(2.12-6.36)		6583	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.761	-0.007	1.000	780636	1.10		110	16044	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.754	3.771	-0.017	1.391	1892934	2.13		85.0	7342	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.771	-0.017	1.391	2629552	1.98		79.2	61155	
35 MeFOSA										
512.00 > 169.00	3.919	3.875	0.044		543970	NC			3590	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.052	4.059	-0.007	1.000	1325285	1.09		109	1129	
613.00 > 169.00	4.052	4.059	-0.007	1.000	347808		3.81(2.13-6.40)		5168	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.105	4.066	0.039		474685	NC			2139	
D 36 13C2 PFDoA										
615.00 > 570.00	4.052	4.069	-0.017	1.502	2902178	1.93		77.0	21603	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.314	4.319	-0.005	1.000	1470819	1.15		115	709	
663.00 > 169.00	4.303	4.319	-0.016	0.997	489914		3.00(1.25-3.76)		10174	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.555	-0.005	1.000	408753	1.11		111	6562	
713.00 > 219.00	4.540	4.555	-0.015	0.998	282170		1.45(0.71-2.13)		4550	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.565	-0.015	1.686	3709660	2.02		80.6	22737	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.960	4.974	-0.014	1.000	2434861	1.02		102	707	
813.00 > 169.00	4.960	4.974	-0.014	1.000	413540		5.89(2.86-8.58)		4925	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.960	4.982	-0.022	1.838	6420582	2.13		85.1	17653	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.312	5.331	-0.019	1.000	2710362	1.14		114	593	
913.00 > 169.00	5.312	5.331	-0.019	1.000	335265		8.08(3.83-11.48)		3860	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 29-Mar-2018 09:31:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_055.d

Injection Date: 23-Mar-2018 18:55:35 Instrument ID: A8_N

Lims ID: LCS 320-214126/2-A

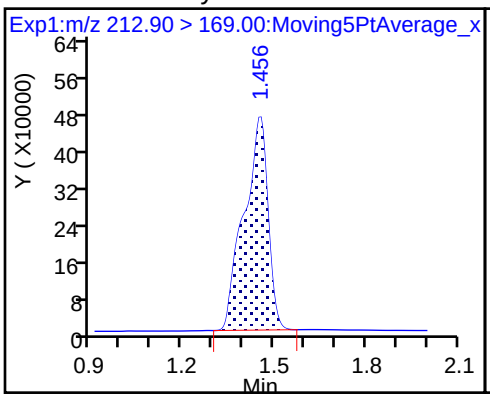
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 37 Worklist Smp#: 5

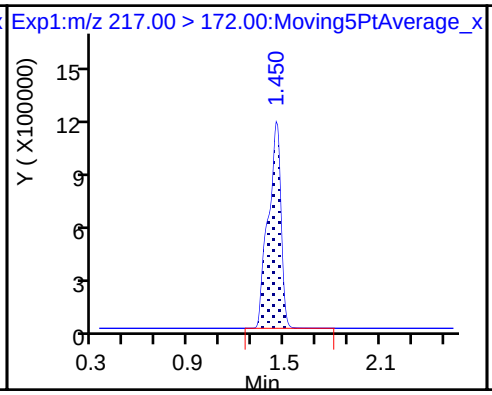
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

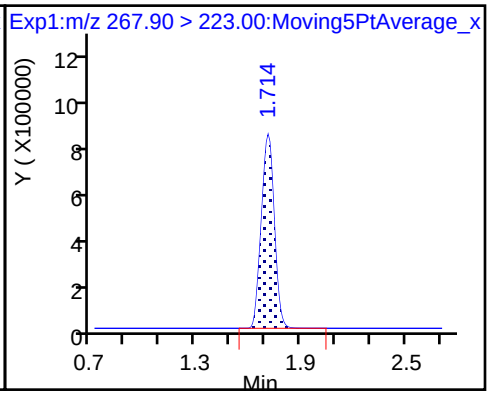
2 Perfluorobutyric acid



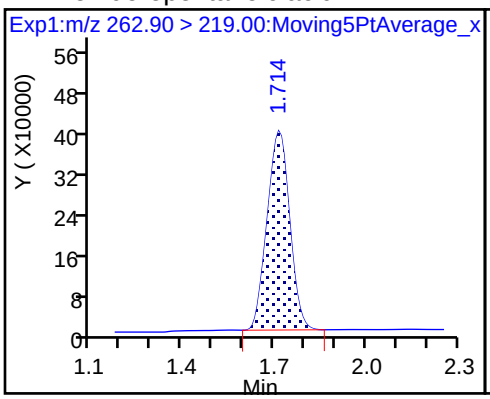
D 1 13C4 PFBA



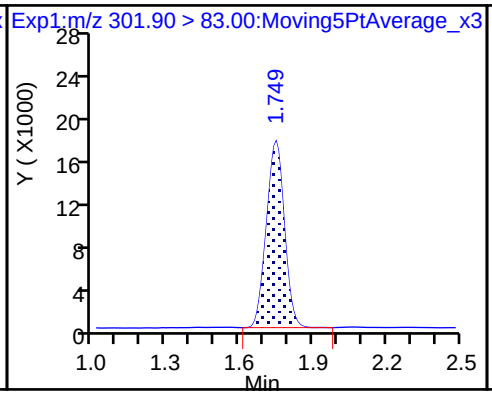
D 3 13C5-PFPeA



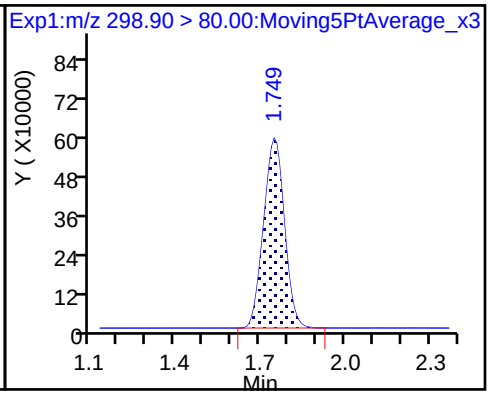
4 Perfluoropentanoic acid



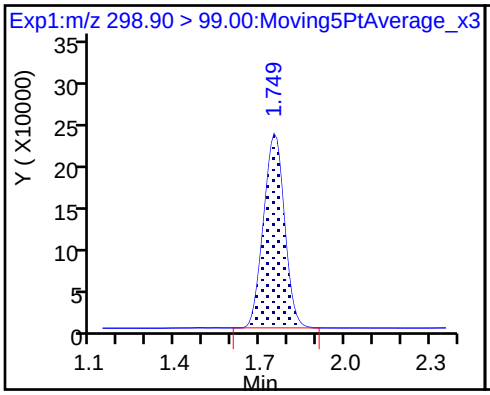
D 47 13C3-PFBS



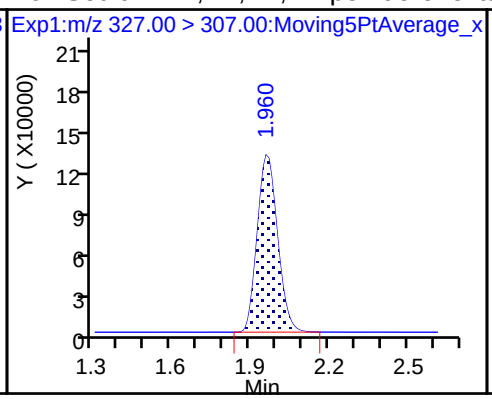
5 Perfluorobutanesulfonic acid



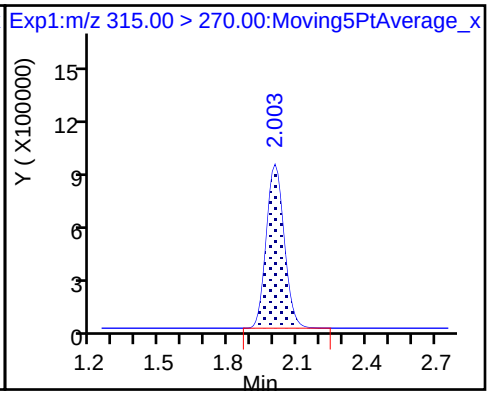
5 Perfluorobutanesulfonic acid



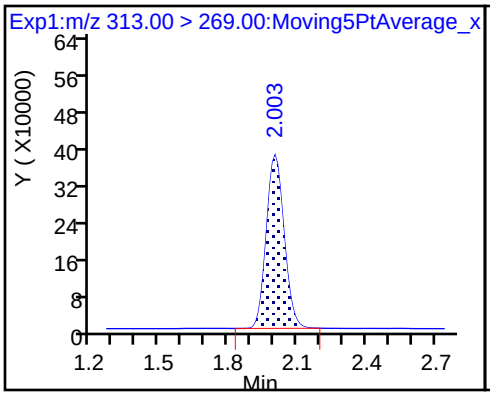
61 Sodium 1H,1H,2H,2H-perfluorohexa



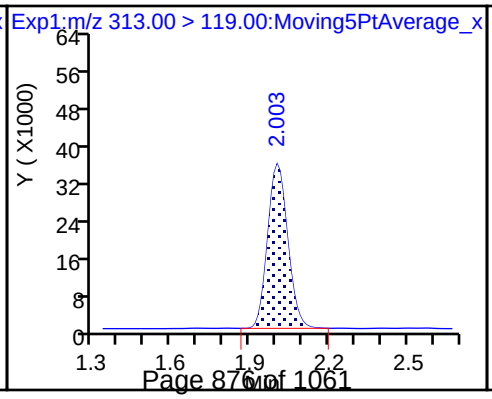
D 7 13C2 PFHxA



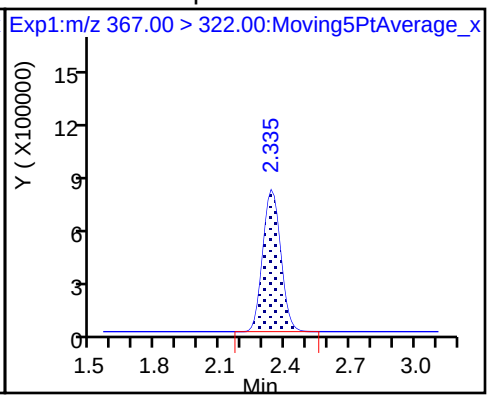
6 Perfluorohexanoic acid



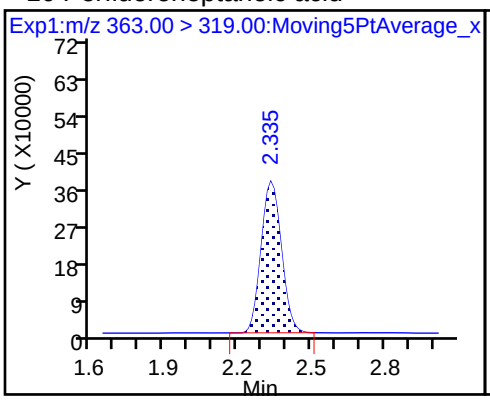
6 Perfluorohexanoic acid



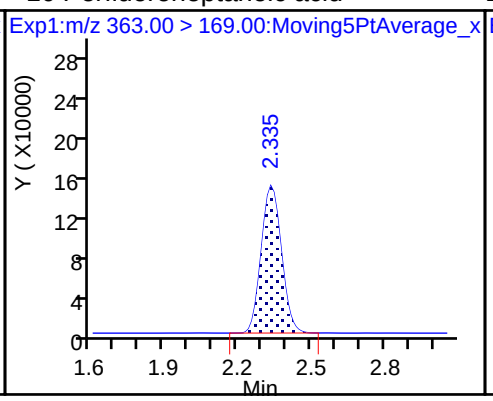
D 9 13C4-PFHpA



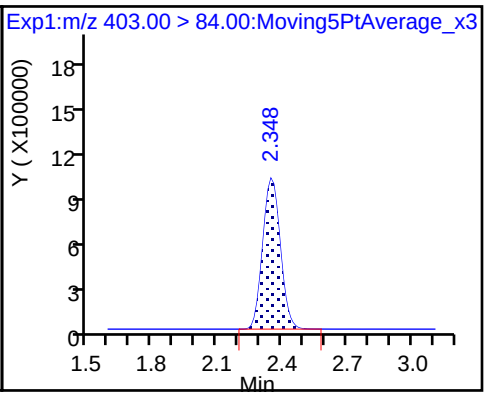
10 Perfluoroheptanoic acid



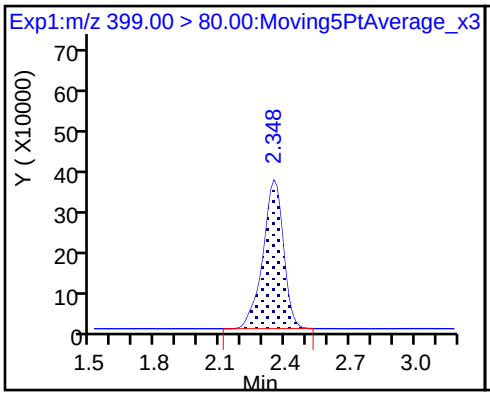
10 Perfluoroheptanoic acid



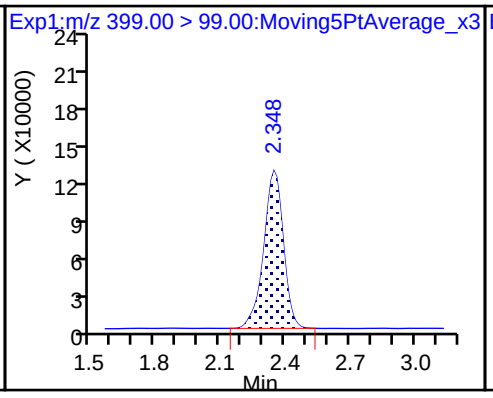
D 11 18O2 PFHxS



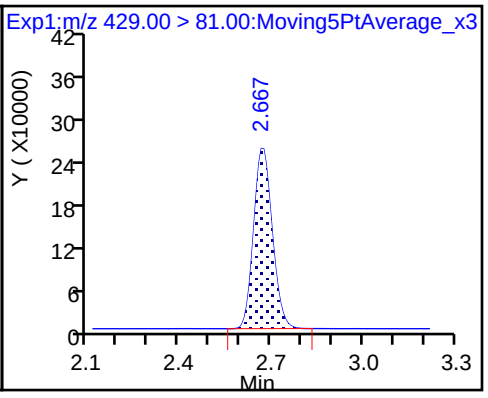
8 Perfluorohexanesulfonic acid



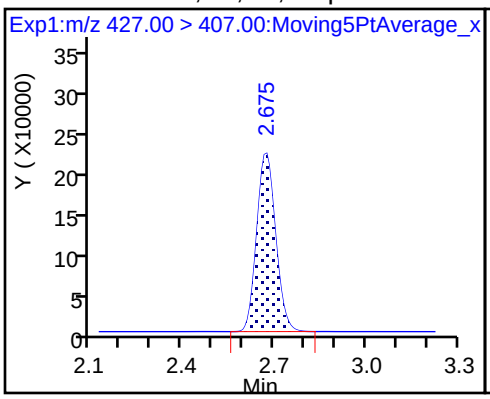
8 Perfluorohexanesulfonic acid



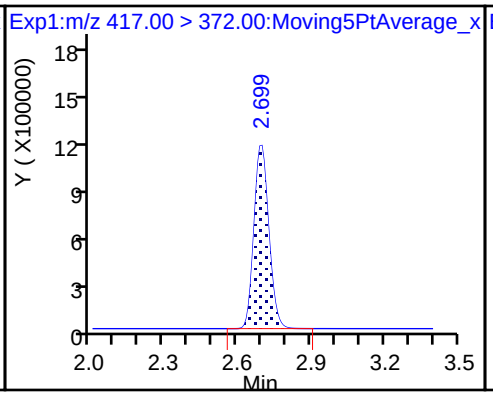
D 12 M2-6:2FTS



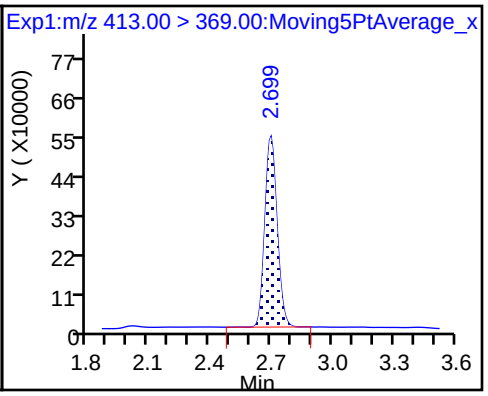
13 Sodium 1H,1H,2H,2H-perfluorooctane



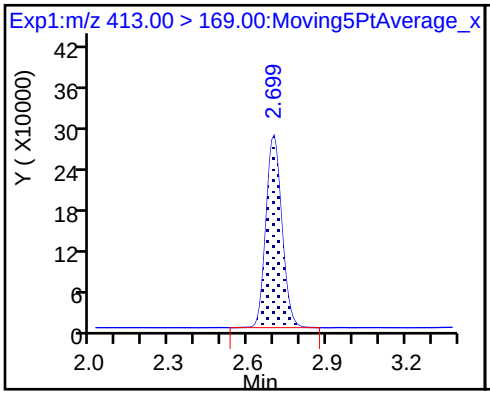
D 14 13C4 PFOA



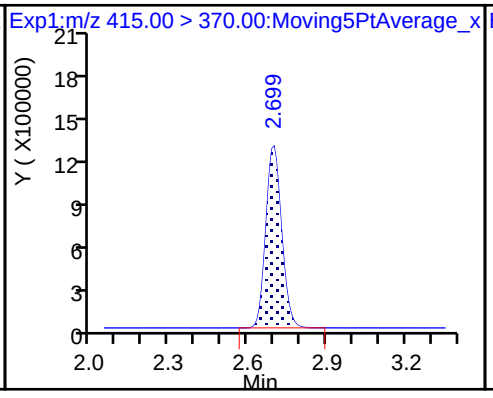
15 Perfluorooctanoic acid



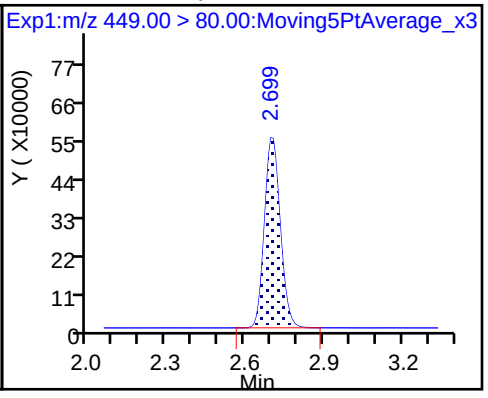
15 Perfluorooctanoic acid



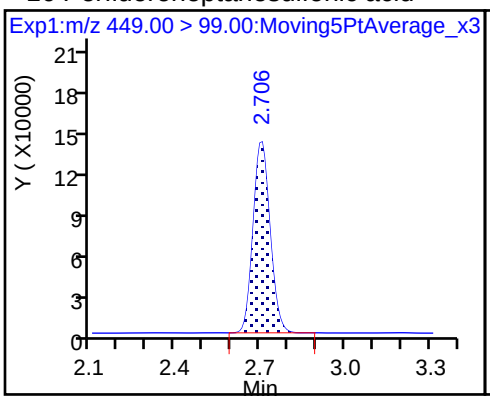
* 62 13C2-PFOA



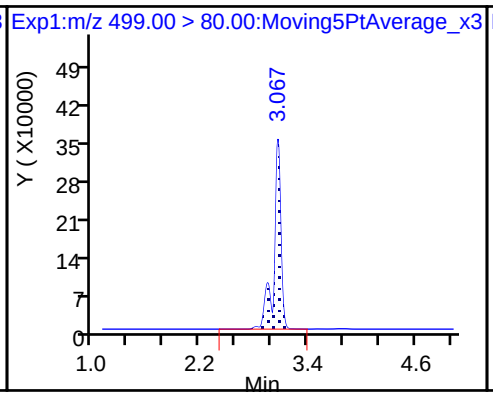
16 Perfluoroheptanesulfonic acid



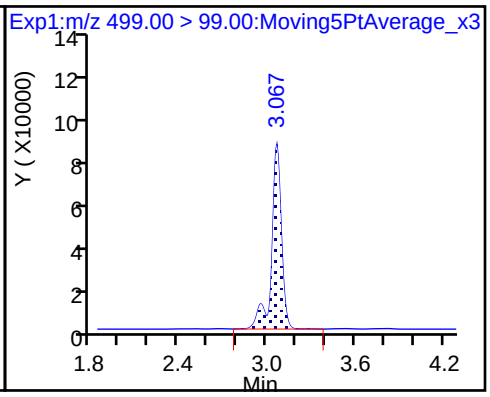
16 Perfluoroheptanesulfonic acid



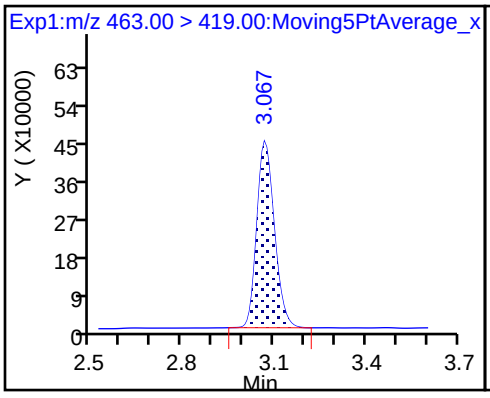
17 Perfluorooctane sulfonic acid



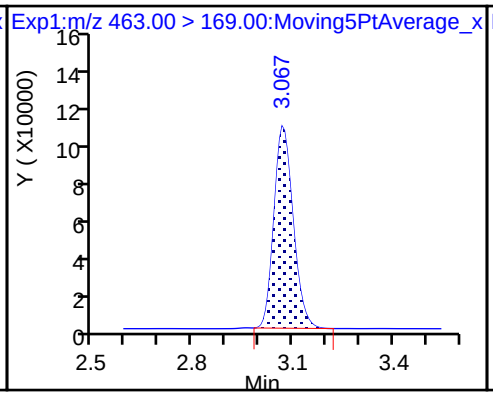
17 Perfluorooctane sulfonic acid



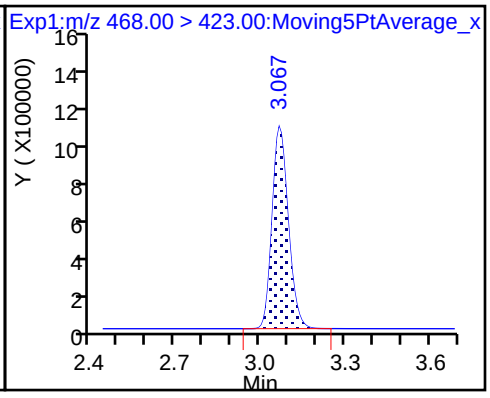
20 Perfluorononanoic acid



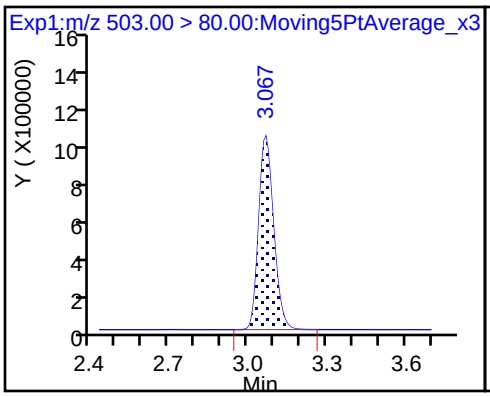
20 Perfluorononanoic acid



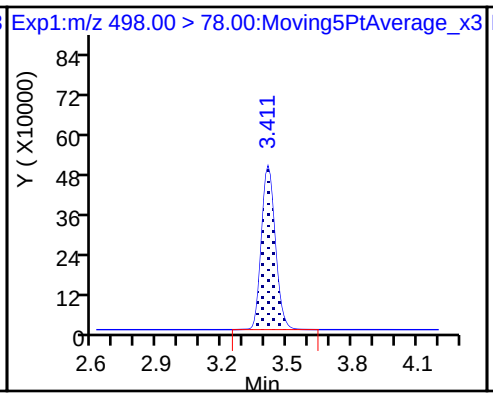
D 19 13C5 PFNA



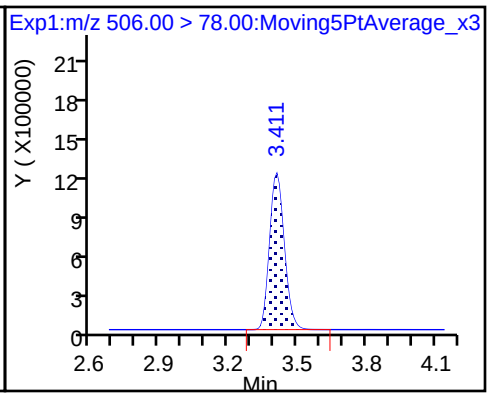
D 18 13C4 PFOS



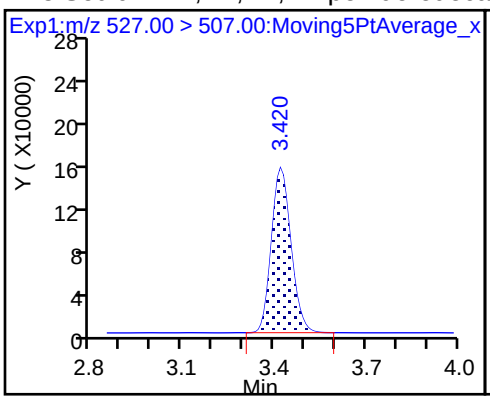
22 Perfluorooctane Sulfonamide



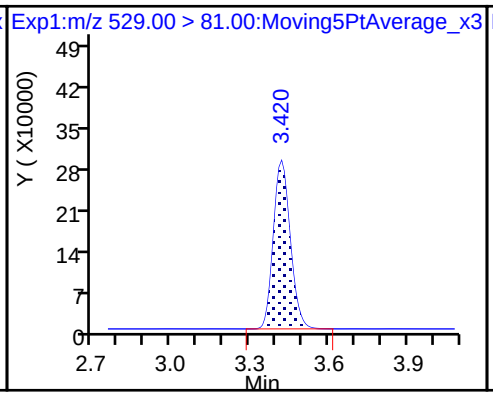
D 21 13C8 FOSA



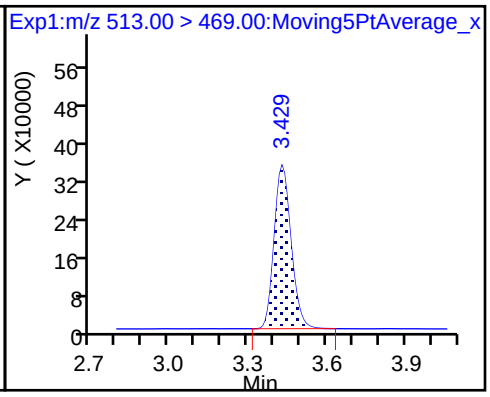
25 Sodium 1H,1H,2H,2H-perfluorodecane



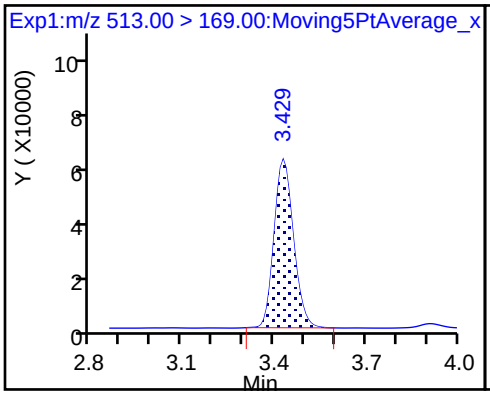
D26 M2-8:2FTS



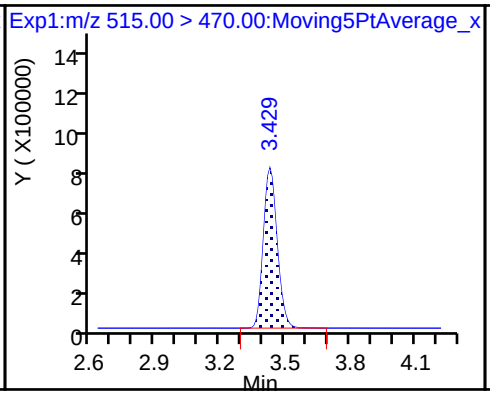
24 Perfluorodecanoic acid



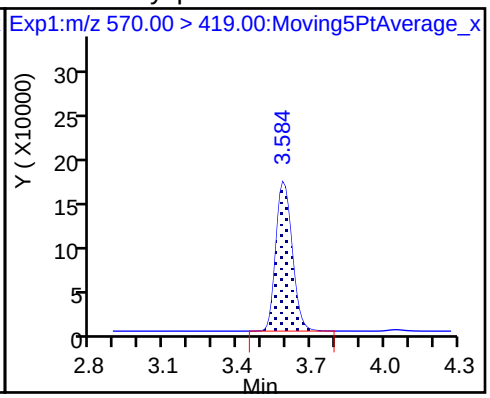
24 Perfluorodecanoic acid



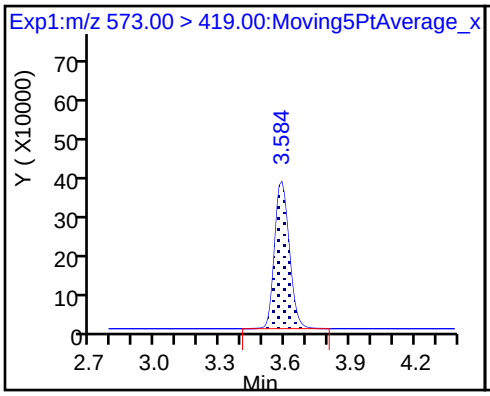
D 23 13C2 PFDA



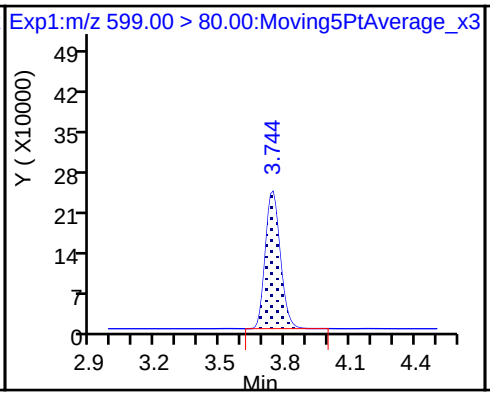
28 N-methyl perfluorooctane sulfonami



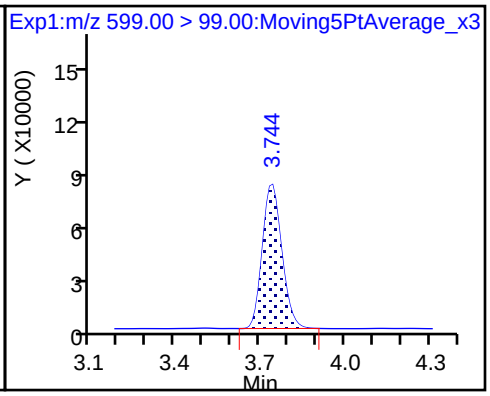
D 27 d3-NMeFOSAA



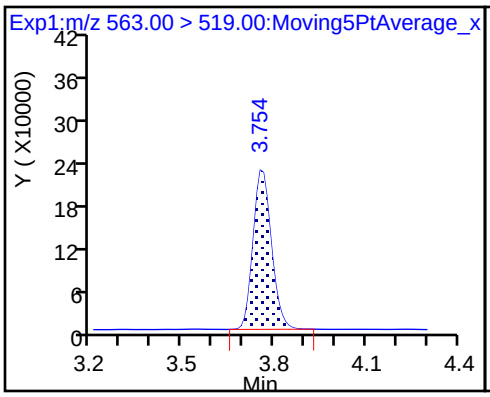
29 Perfluorodecane Sulfonic acid



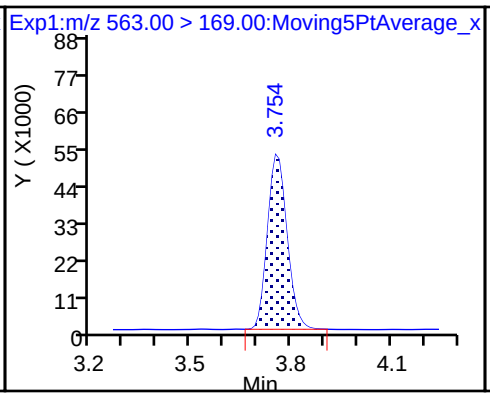
29 Perfluorodecane Sulfonic acid



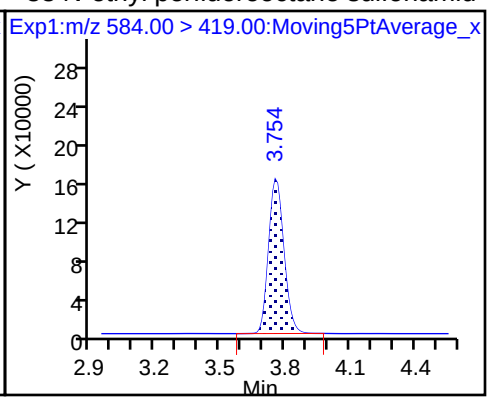
31 Perfluoroundecanoic acid



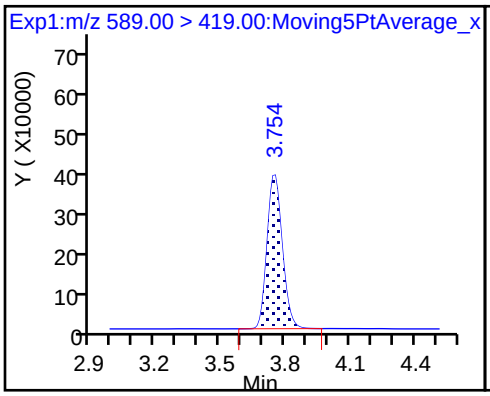
31 Perfluoroundecanoic acid



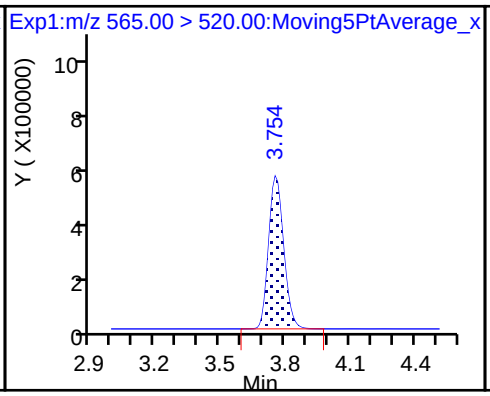
33 N-ethyl perfluorooctane sulfonamid



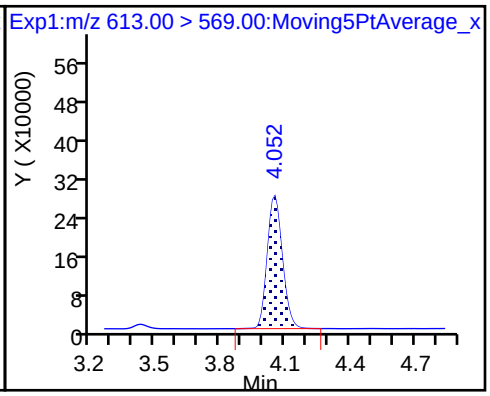
D 32 d5-NEtFOSAA



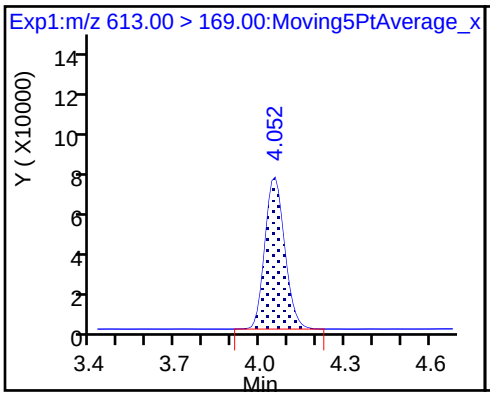
D 30 13C2 PFUnA



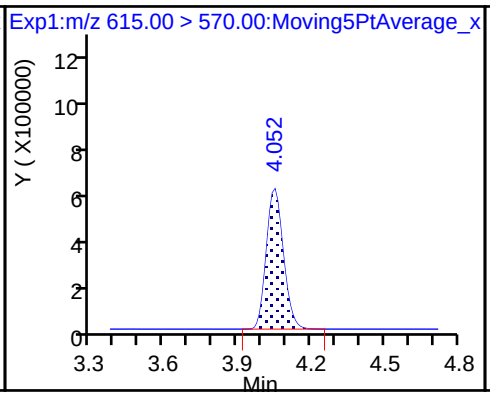
37 Perfluorododecanoic acid



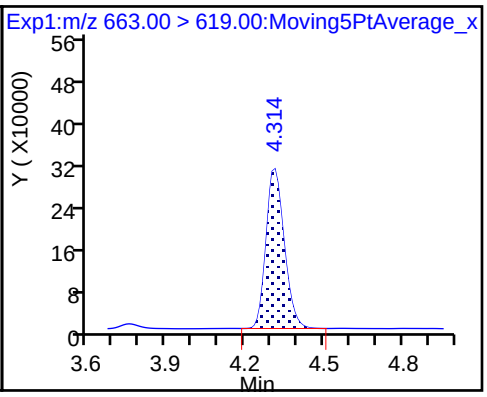
37 Perfluorododecanoic acid



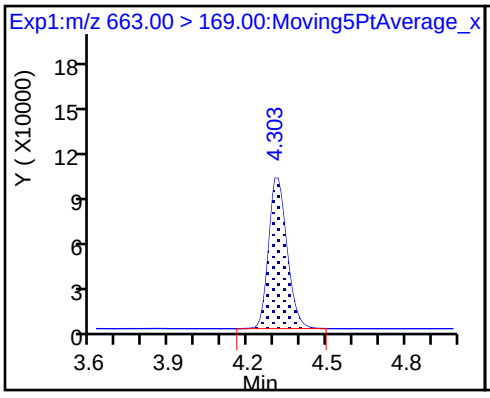
D 36 13C2 PFDoA



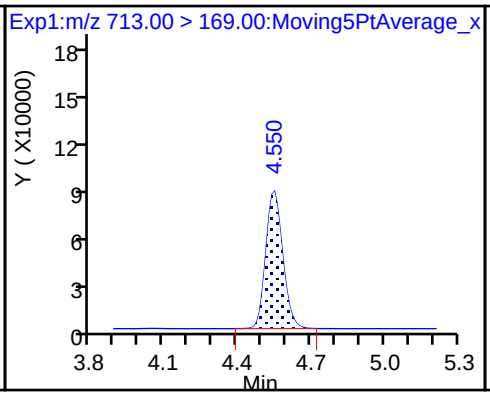
41 Perfluorotridecanoic acid



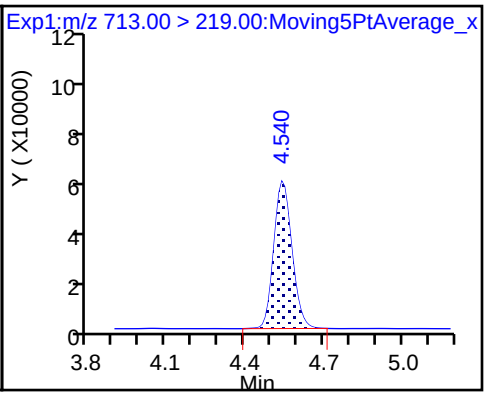
41 Perfluorotridecanoic acid



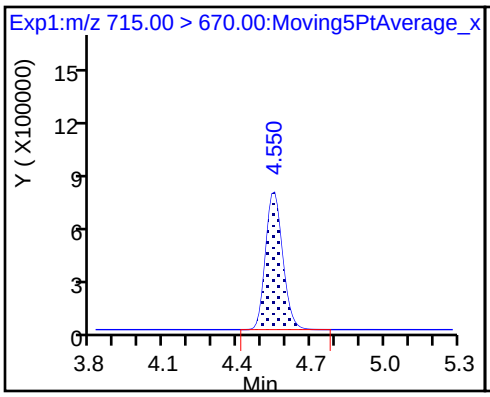
42 Perfluorotetradecanoic acid



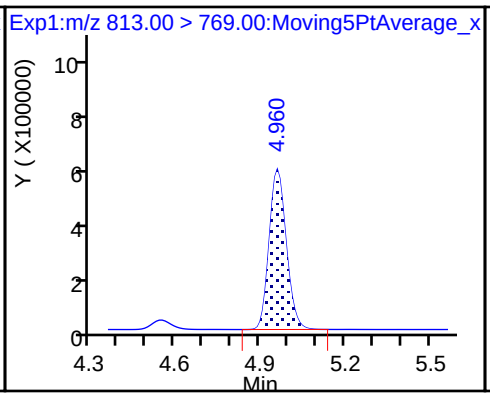
42 Perfluorotetradecanoic acid



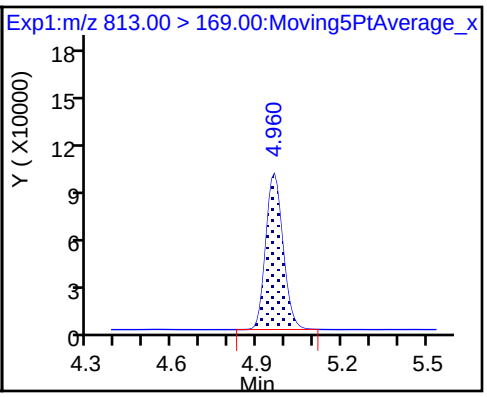
D 43 13C2-PFTeDA



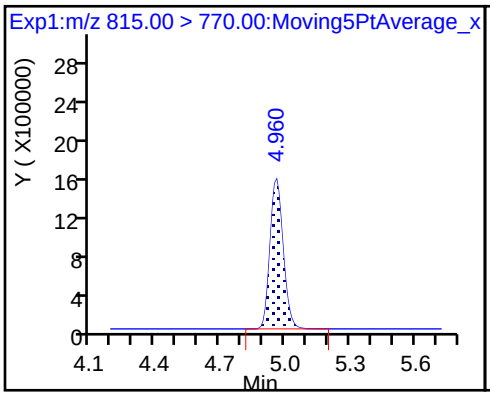
45 Perfluorohexadecanoic acid



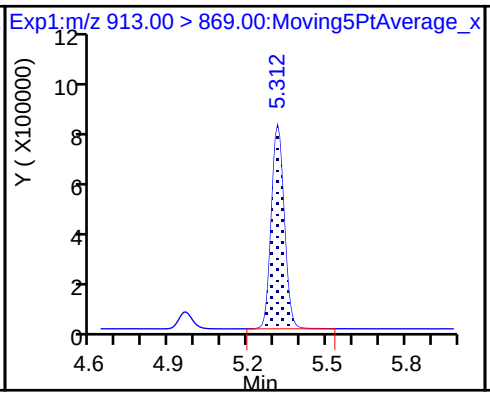
45 Perfluorohexadecanoic acid



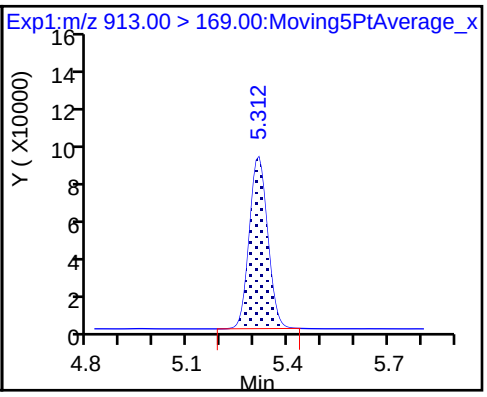
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-214600/2-A

Matrix: Solid Lab File ID: 2018.03.28LLFF_008.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) Date Analyzed: 03/29/2018 00:18

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00169		0.00020	0.000039

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	82		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d
Lims ID: LCS 320-214600/2-A
Client ID:
Sample Type: LCS
Inject. Date: 29-Mar-2018 00:18:08 ALS Bottle#: 15 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-214600/2-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:58:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.000	1922942	0.9601		96.0	473	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5314173	2.07		82.9	82247	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.009	1.000	1499447	0.9195		91.9	706	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3615733	2.13		85.0	86398	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.736	0.008	1.005	2057201	0.8043		91.0	1190	
298.90 > 99.00	1.744	1.736	0.008	1.005	857728		2.40(1.25-3.74)		939	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.644	76530	1.97		84.8	476	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.956	-0.001	1.000	398446	0.7494		80.2	16894	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	1422900	0.9114		91.1	1755	
313.00 > 119.00	1.997	1.998	-0.001	1.000	131403		10.83(5.03-15.10)		1643	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	3817872	2.03		81.2	105962	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1513616	0.9200		92.0	836	
363.00 > 169.00	2.328	2.328	0.0	1.000	594180		2.55(1.13-3.40)		945	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	1719033	0.7826		86.0	7573	
399.00 > 99.00	2.341	2.341	0.0	1.000	593372		2.90(1.50-4.49)		3146	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	3976034	2.14		85.7	92617	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	4667373	2.04		86.2	95324	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.673	-0.001	1.000	506072	0.9063		95.6	6383	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		5062517	2.50			86207	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	1620851	0.9520		95.2	598	
413.00 > 169.00	2.696	2.697	-0.001	1.000	799754		2.03(0.84-2.52)		2928	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.697	-0.025	0.991	760569	1.98		83.2	20745	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.705	0.0	1.000	1491471	0.8508		89.4	36869	
449.00 > 99.00	2.704	2.705	0.0	1.000	404428		3.69(1.94-5.82)		9934	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.721	-0.025	1.000	3767716	1.98		79.4	76025	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	1378238	0.9043		97.5	3740	
499.00 > 99.00	3.072	3.072	0.0	1.000	313864		4.39(2.31-6.93)		3441	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1275089	0.9738		97.4	1343	
463.00 > 169.00	3.072	3.072	0.0	1.000	297894		4.28(1.90-5.69)		8692	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3281808	1.96		78.4	85229	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3269841	1.96		82.1	52043	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	1646148	0.8910		89.1	35333	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	4685404	2.09		83.4	50912	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.426	-0.001	1.000	441521	0.9528		99.5	7253	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.434	3.435	-0.001	1.000	1045654	1.01		101	5723	
513.00 > 169.00	3.434	3.435	-0.001	1.000	171796		6.09(2.36-7.09)		7353	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.453	-0.028	1.271	869560	1.67		69.9	23706	
D 23 13C2 PFDA										
515.00 > 470.00	3.434	3.462	-0.028	1.274	2608168	1.78		71.1	30973	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.590	0.010	1.003	455355	1.00		99.8	4135	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1139433	1.48		59.0	23562	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	785212	0.8440		87.6	20001	
599.00 > 99.00	3.748	3.748	0.0	1.000	289023		2.72(1.39-4.16)		8490	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.769	-0.001	1.000	651861	0.8327		83.3	3823	
563.00 > 169.00	3.768	3.769	-0.001	1.000	172283		3.78(2.12-6.36)		10082	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.769	-0.001	1.003	431808	0.9812		98.1	10798	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1177642	1.34		53.5	3338	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.398	2269882	1.73		69.2	57478	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.057	-0.001	1.000	1008631	0.9734		97.3	725	
613.00 > 169.00	4.056	4.057	-0.001	1.000	241465		4.18(2.13-6.40)		4825	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.504	2475713	1.66		66.5	24841	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.318	0.010	1.000	1016514	0.9326		93.3	493	
663.00 > 169.00	4.317	4.318	-0.001	0.997	319295		3.18(1.25-3.76)		7862	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	288698	0.9206		92.1	4845	
713.00 > 219.00	4.554	4.564	-0.010	0.998	207070		1.39(0.71-2.13)		4203	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3163929	1.74		69.6	21467	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.972	0.009	1.000	1686805	0.9820		98.2	480	
813.00 > 169.00	4.981	4.972	0.009	1.000	274888		6.14(2.86-8.58)		3286	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.008	-0.027	1.848	4610984	1.55		61.9	15104	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.337	0.007	1.000	1634551	0.9585		95.8	368	
913.00 > 169.00	5.344	5.337	0.007	1.000	201902		8.10(3.83-11.48)		2597	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d

Injection Date: 29-Mar-2018 00:18:08 Instrument ID: A8_N

Lims ID: LCS 320-214600/2-A

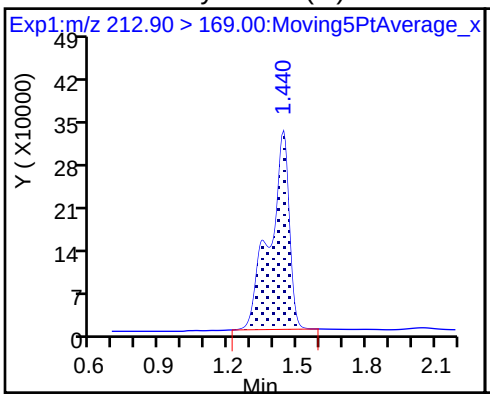
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 5

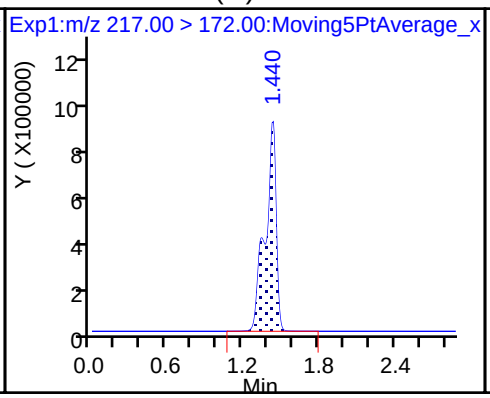
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

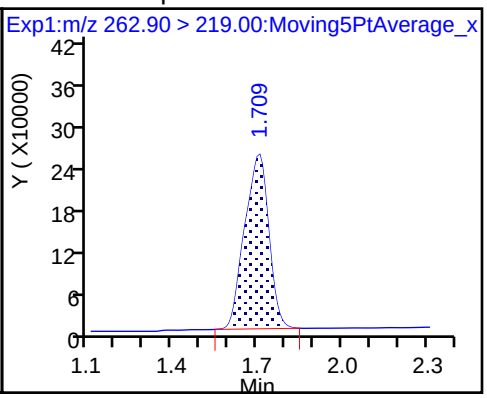
2 Perfluorobutyric acid (M)



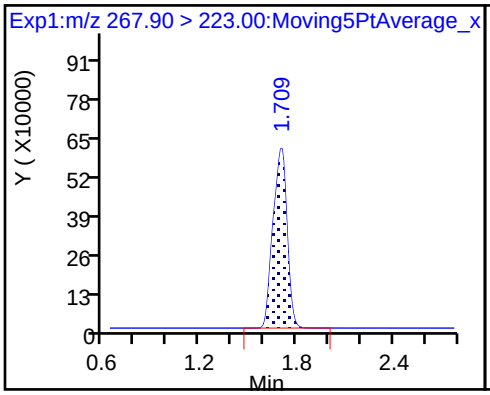
D 1 13C4 PFBA (M)



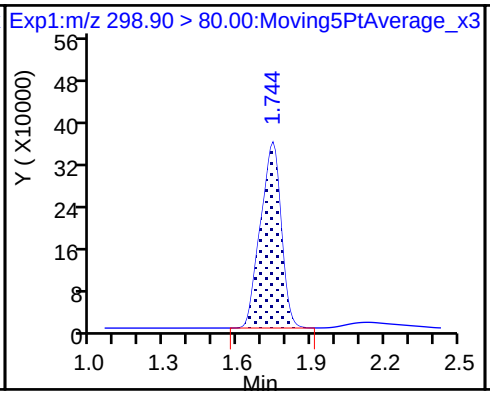
4 Perfluoropentanoic acid



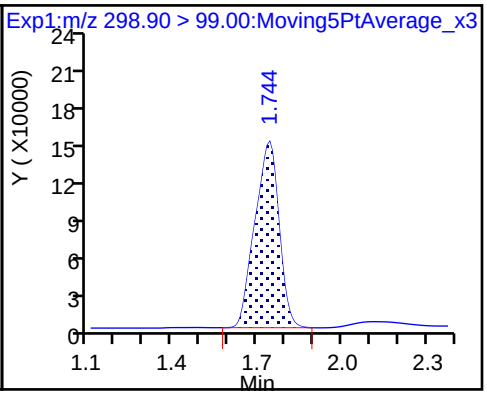
D 3 13C5-PFPeA



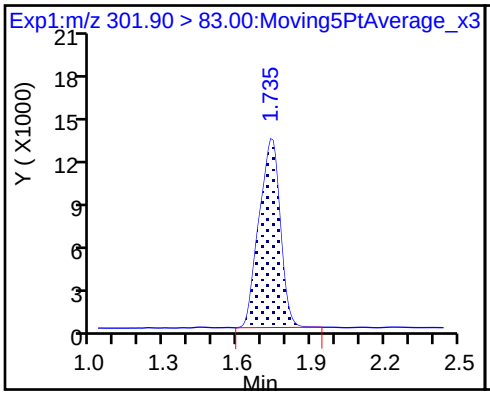
5 Perfluorobutanesulfonic acid



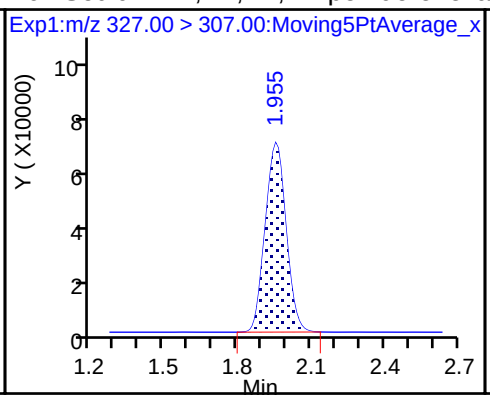
5 Perfluorobutanesulfonic acid



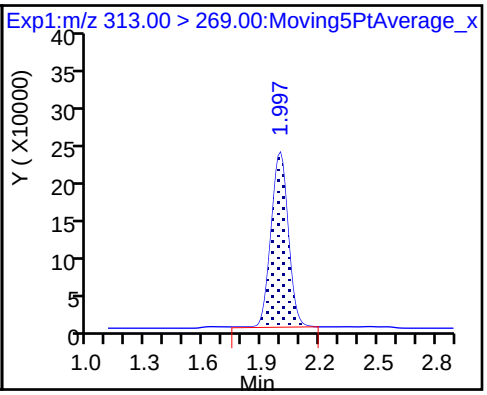
D 47 13C3-PFBS



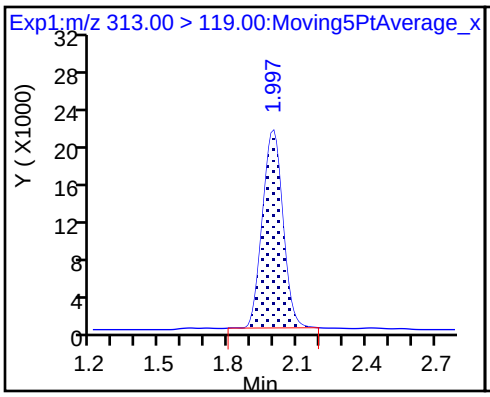
61 Sodium 1H,1H,2H,2H-perfluorohexane



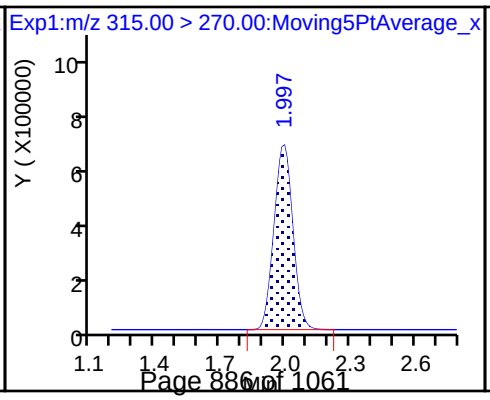
6 Perfluorohexanoic acid



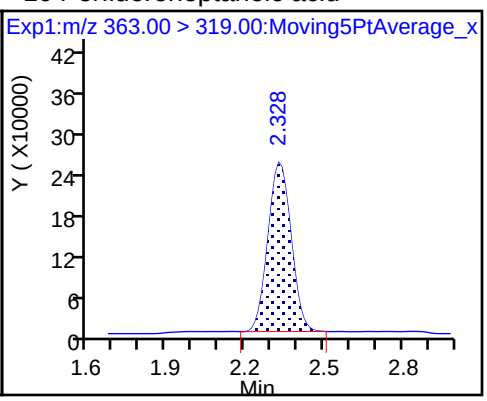
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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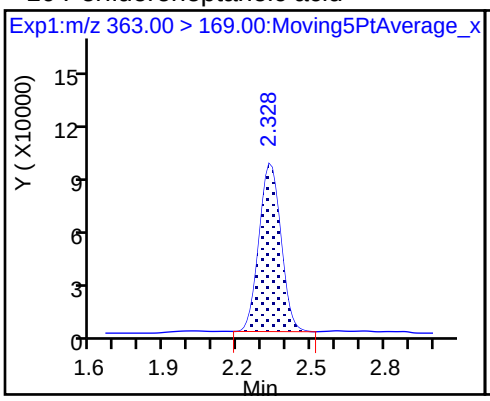
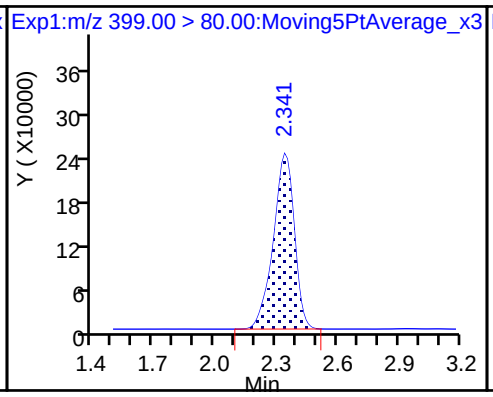
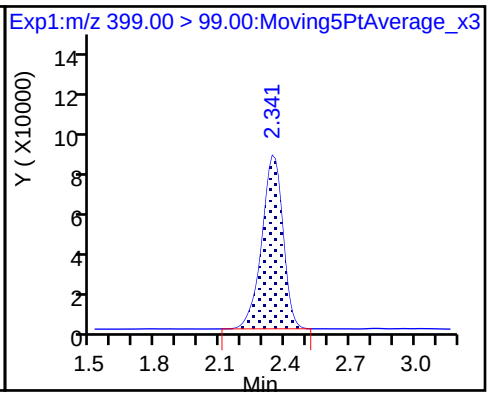


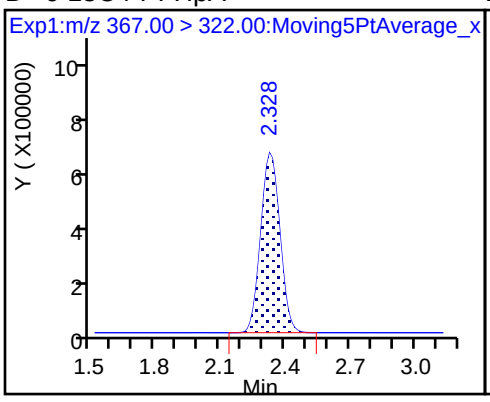
8 Perfluorohexanesulfonic acid



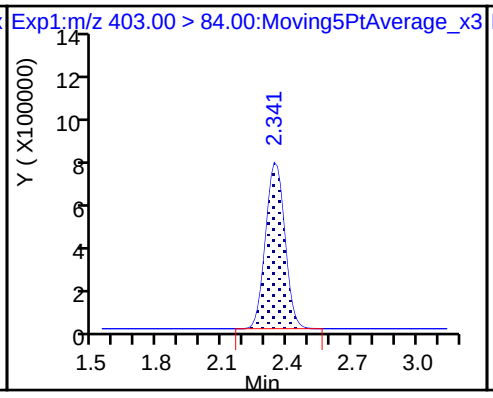
8 Perfluorohexanesulfonic acid



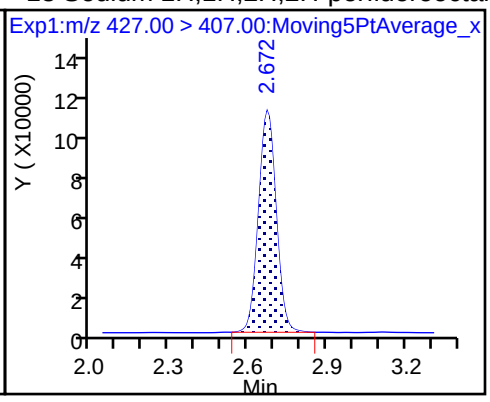
D 9 13C4-PFHpA



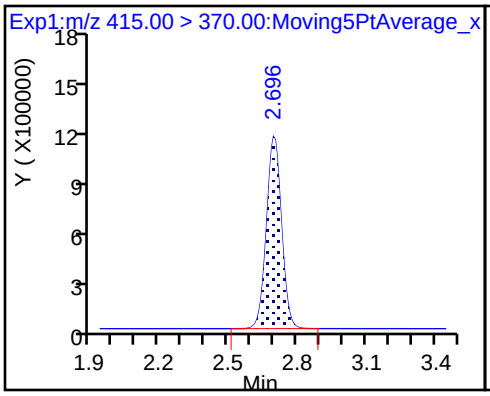
D 11 18O2 PFHxS



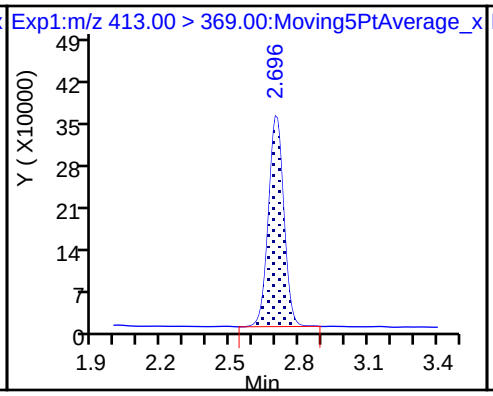
13 Sodium 1H,1H,2H,2H-perfluorooctane



* 62 13C2-PFOA



15 Perfluorooctanoic acid



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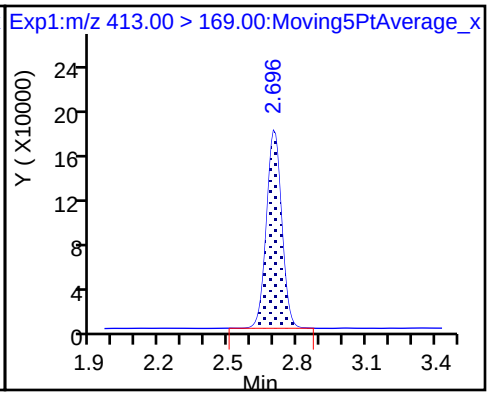
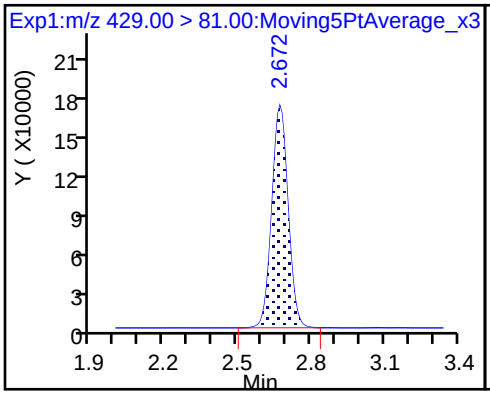
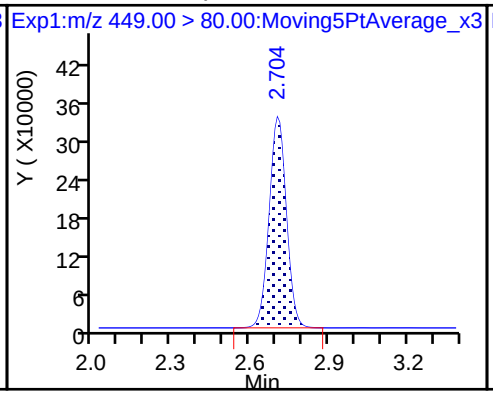


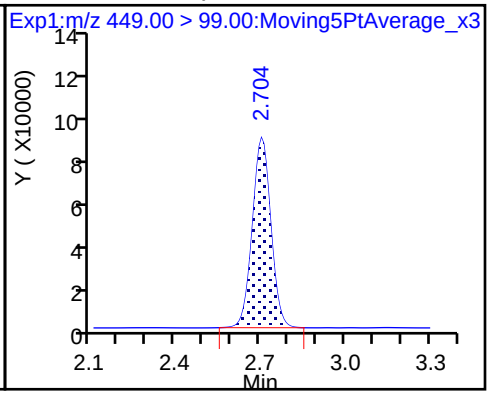
D 12 M2-6:2FTS



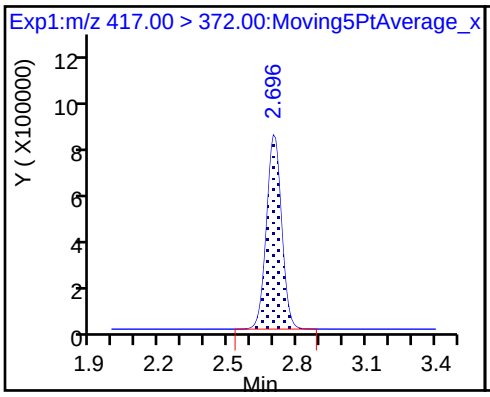
16 Perfluoroheptanesulfonic acid



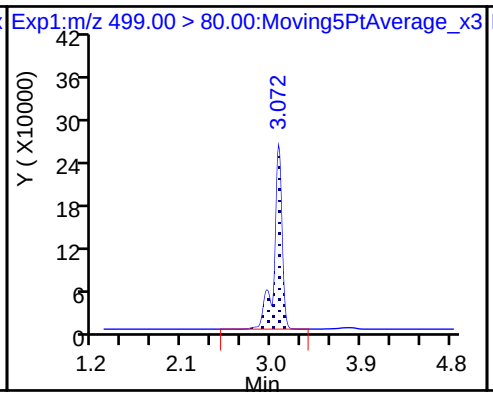
16 Perfluoroheptanesulfonic acid



D 14 13C4 PFOA



17 Perfluorooctane sulfonic acid



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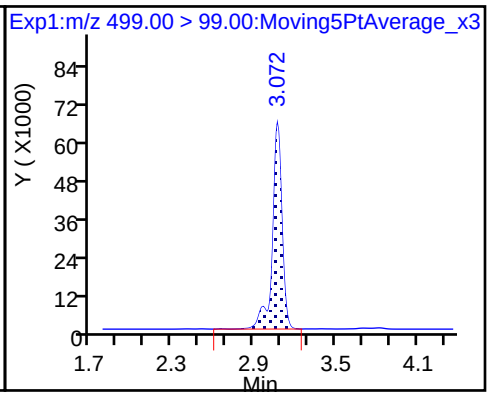
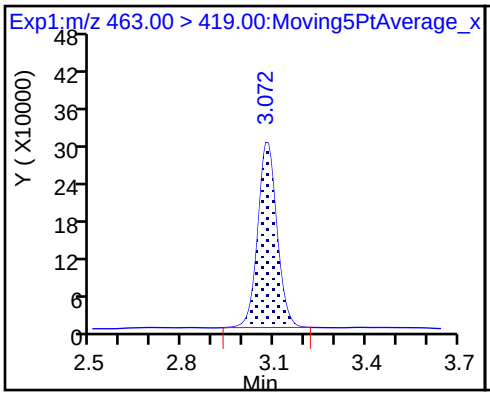


20 Perfluorononanoic acid



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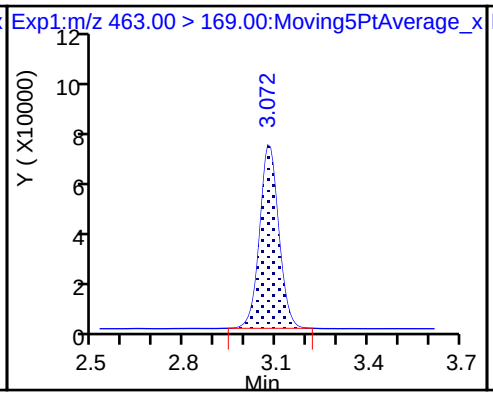
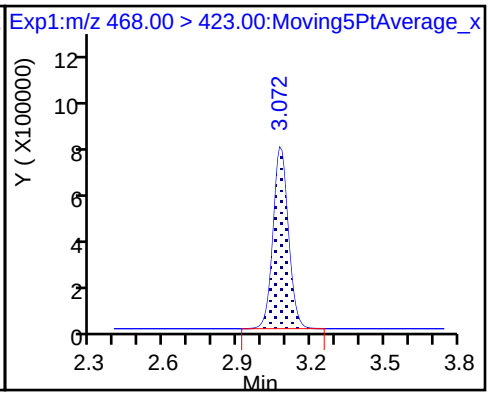
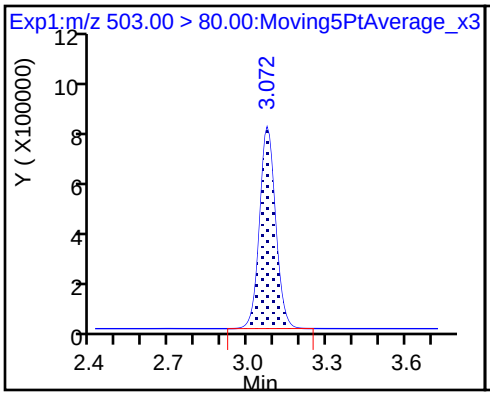


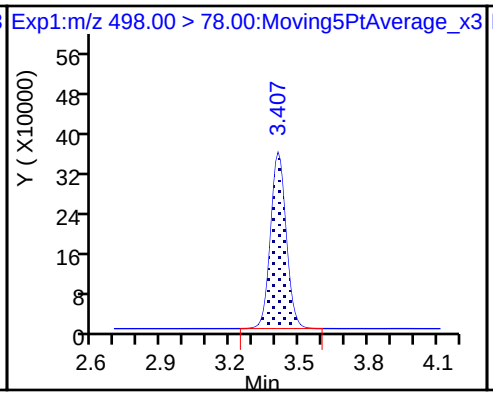
D 19 13C5 PFNA



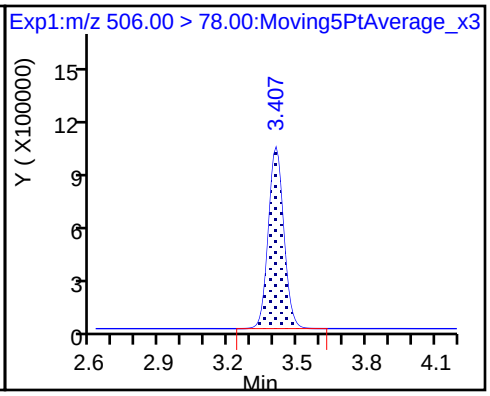
D 18 13C4 PFOS



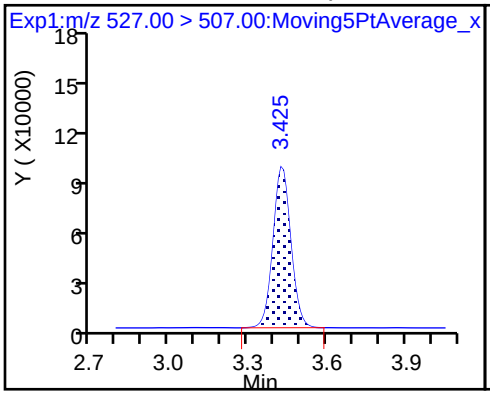
22 Perfluorooctane Sulfonamide



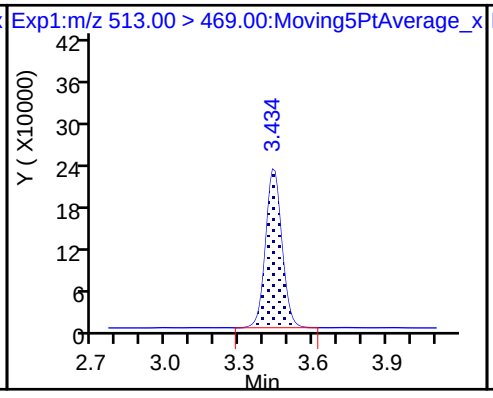
D 21 13C8 FOSA



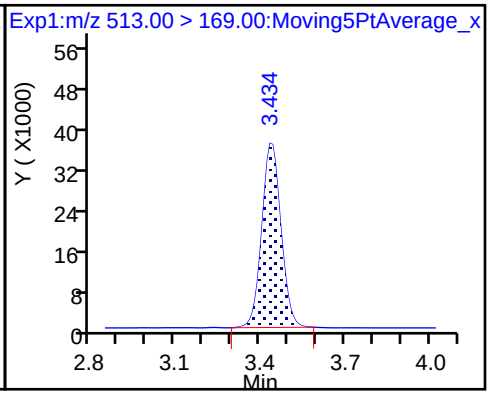
25 Sodium 1H,1H,2H,2H-perfluorodecane



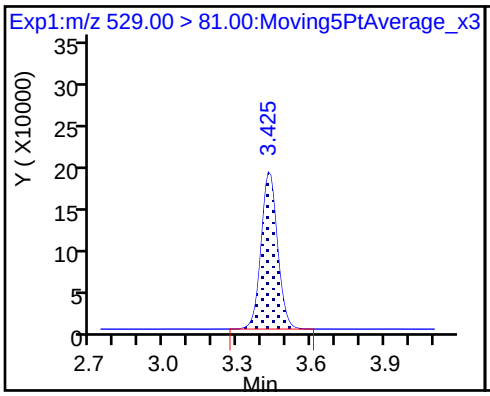
24 Perfluorodecanoic acid



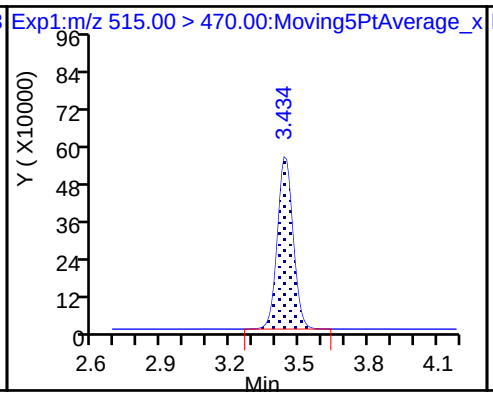
24 Perfluorodecanoic acid



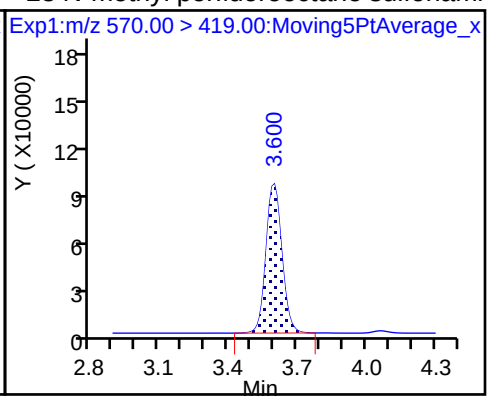
D 26 M2-8:2FTS



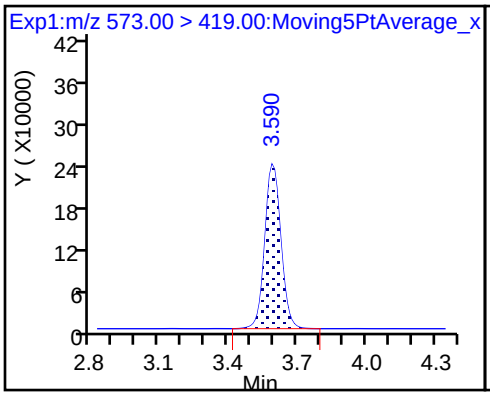
D 23 13C2 PFDA



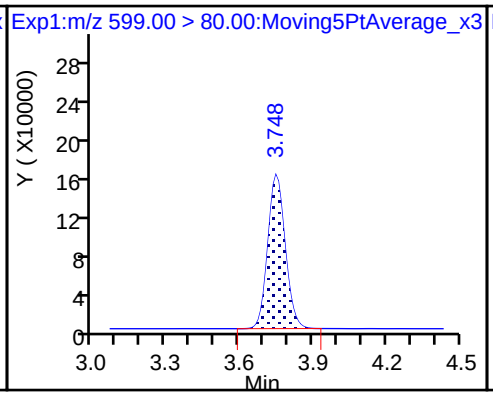
28 N-methyl perfluorooctane sulfonami



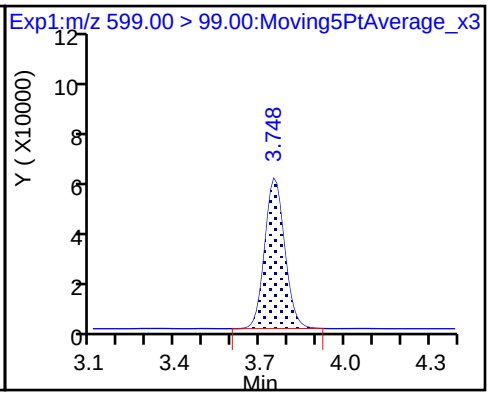
D 27 d3-NMeFOSAA



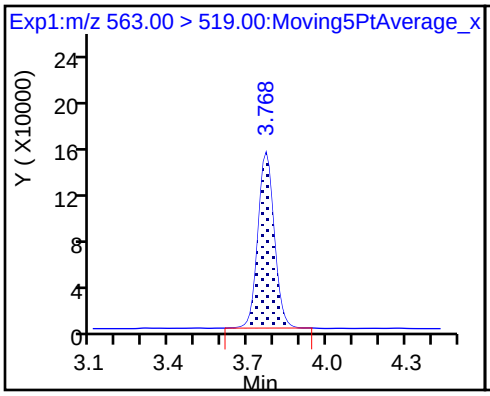
29 Perfluorodecane Sulfonic acid



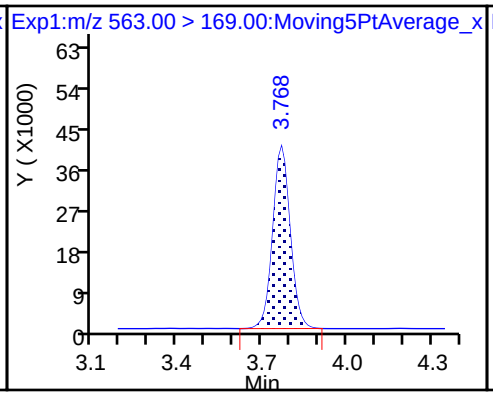
29 Perfluorodecane Sulfonic acid



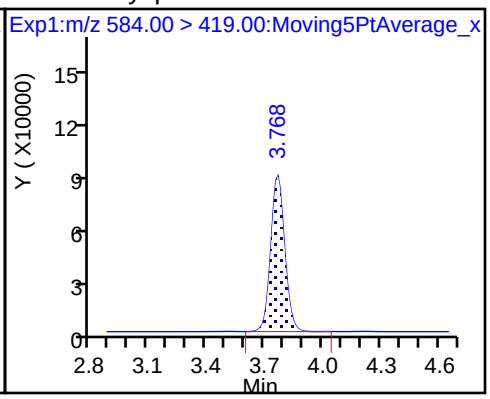
31 Perfluoroundecanoic acid



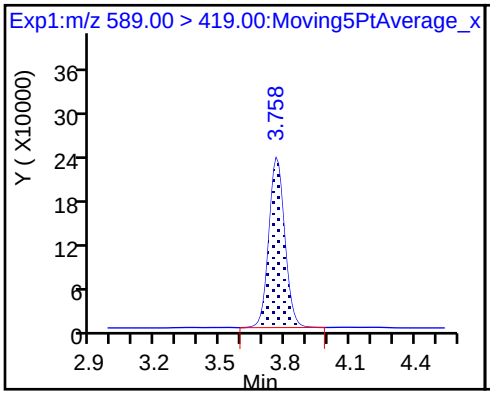
31 Perfluoroundecanoic acid



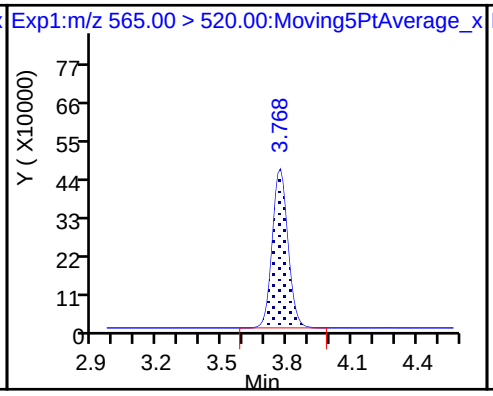
33 N-ethyl perfluorooctane sulfonamid



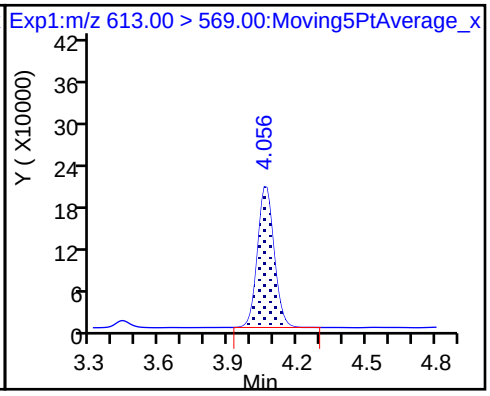
D 32 d5-NEtFOSAA



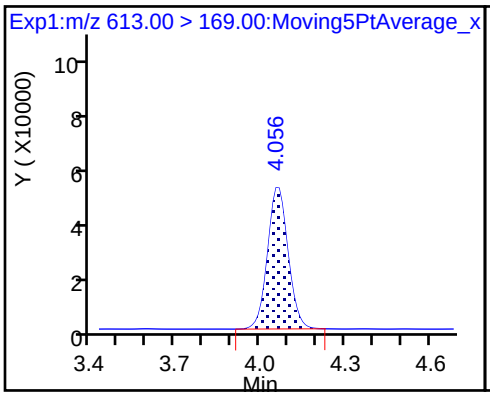
D 30 13C2 PFUnA



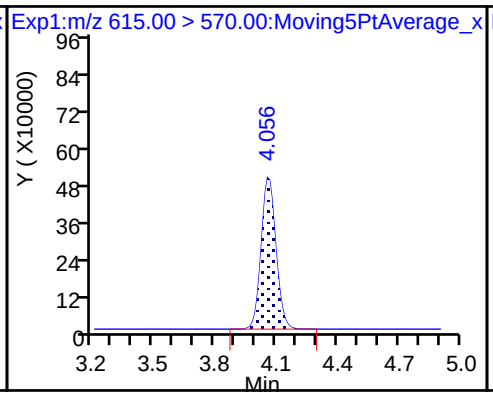
37 Perfluorododecanoic acid



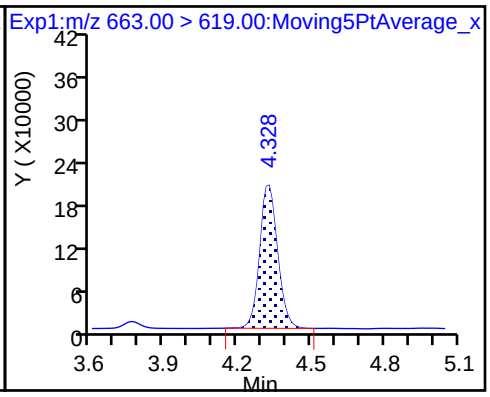
37 Perfluorododecanoic acid



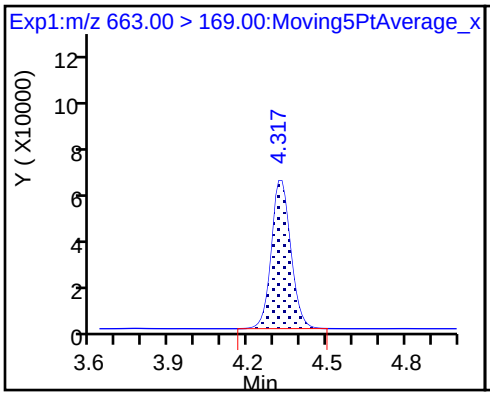
D 36 13C2 PFDoA



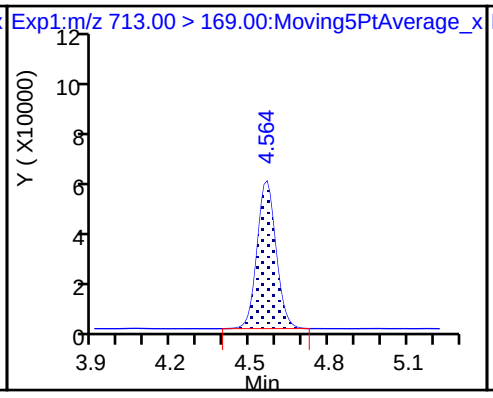
41 Perfluorotridecanoic acid



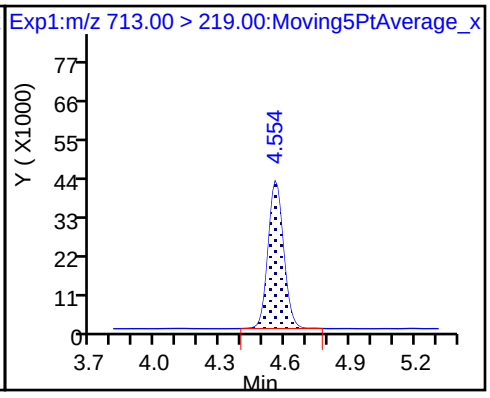
41 Perfluorotridecanoic acid



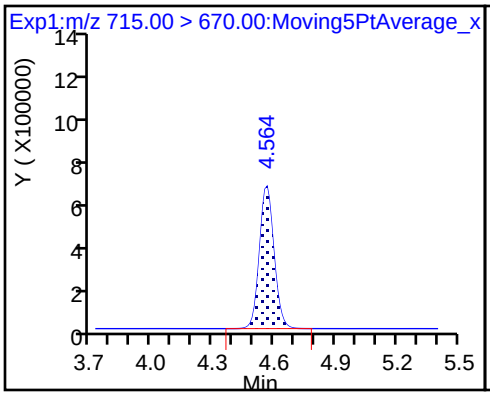
42 Perfluorotetradecanoic acid



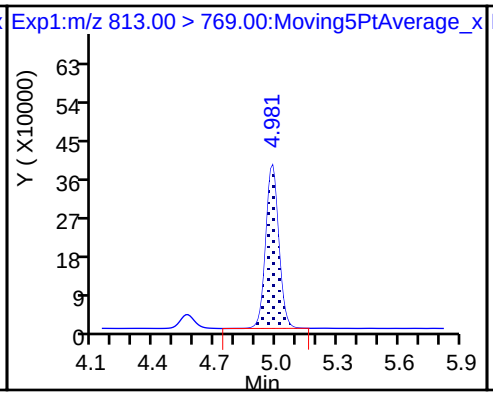
42 Perfluorotetradecanoic acid



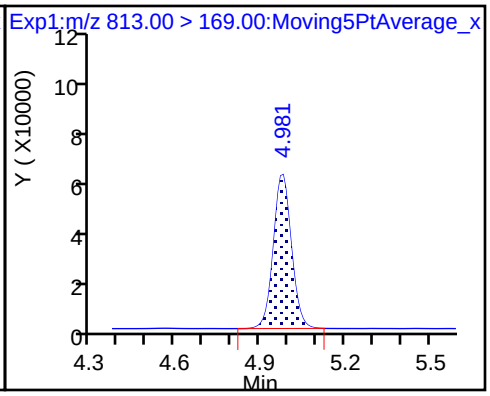
D 43 13C2-PFTeDA



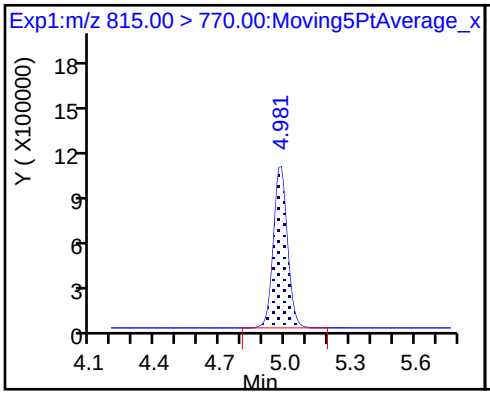
45 Perfluorohexadecanoic acid



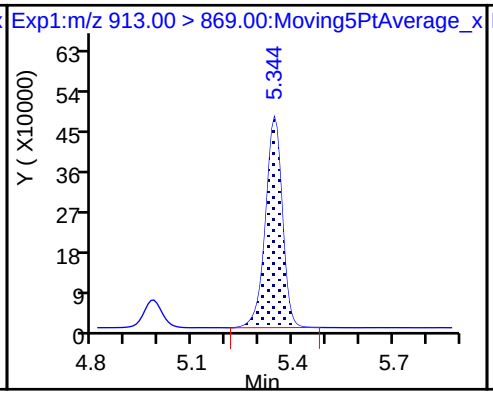
45 Perfluorohexadecanoic acid



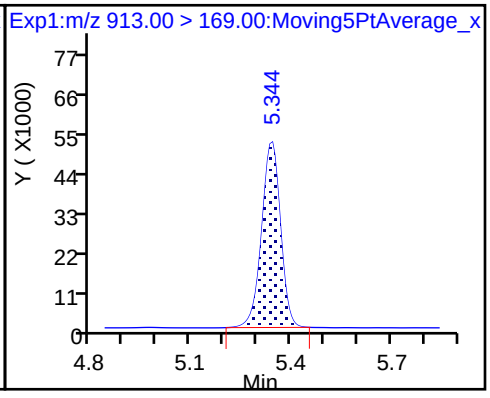
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-215106/2-A

Matrix: Solid | Lab File ID: 2018.03.28LLDXD_009.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/27/2018 20:41

Sample wt/vol: 250.00(mL) | Date Analyzed: 03/28/2018 19:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	41.48		20.0	2.00

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	115		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_009.d
Lims ID: LCS 320-215106/2-A
Client ID:
Sample Type: LCS
Inject. Date: 28-Mar-2018 19:07:26 ALS Bottle#: 3 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-215106/2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:49:47 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:26:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.528	6449593	2.49		99.5	90794	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.446	-0.006	1.000	2259948	0.9297		93.0	869	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.000	1766015	0.9414		94.1	703	
D 3 13C5-PFPeA										
267.90 > 223.00	1.717	1.718	-0.001	0.630	4159661	2.42		96.7	142944	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.000	2444581	0.8053		91.1	1731	
298.90 > 99.00	1.753	1.753	0.0	1.000	997038		2.45(1.25-3.74)		1582	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.754	-0.001	0.643	90833	2.31		99.5	651	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.976	1.976	0.0	1.000	551003	0.8731		93.5	35391	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.019	2.008	0.011	1.000	1827542	1.01		101	2741	
313.00 > 119.00	2.019	2.008	0.011	1.000	165999		11.01(5.03-15.10)		2668	
D 7 13C2 PFHxA										
315.00 > 270.00	2.019	2.019	0.0	0.740	4442612	2.34		93.4	120002	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.354	2.353	0.001	1.000	1730295	0.9444		94.4	1227	
363.00 > 169.00	2.354	2.353	0.001	1.000	705753		2.45(1.13-3.40)		1601	
D 9 13C4-PFHpA										
367.00 > 322.00	2.354	2.354	0.0	0.863	4427683	2.36		94.4	86448	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.367	2.367	0.0	0.995	2160112	0.8170		89.8	9854	
399.00 > 99.00	2.367	2.367	0.0	0.995	693670		3.11(1.50-4.49)		4453	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.379	2.368	0.011	0.873	5617526	2.43		103	100944	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.703	2.695	0.008	1.000	807588	1.04		109	9948	
D 12 M2-6:2FTS										
429.00 > 81.00	2.703	2.705	-0.002	0.991	1060714	2.73		115	35394	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.734	2.726	0.008	1.000	1896238	0.9239		97.0	50473	
449.00 > 99.00	2.734	2.726	0.008	1.000	516405		3.67(1.94-5.82)		12447	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.727	2.726	0.001	1.000	1857095	0.8925		89.2	694	
413.00 > 169.00	2.727	2.726	0.001	1.000	983323		1.89(0.84-2.52)		3945	
* 62 13C2-PFOA										M
415.00 > 370.00	2.727	2.726	0.001		5120545	2.50			86416	M
D 14 13C4 PFOA										
417.00 > 372.00	2.727	2.728	-0.001	1.000	4604825	2.40		95.9	77995	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.104	3.095	0.009	1.000	1466060	0.8216		88.5	3901	
499.00 > 99.00	3.104	3.095	0.009	1.000	350925		4.18(2.31-6.93)		4058	
20 Perfluorononanoic acid										
463.00 > 419.00	3.112	3.103	0.009	1.003	1426674	0.9315		93.1	1335	
463.00 > 169.00	3.104	3.103	0.001	1.000	358543		3.98(1.90-5.69)		10403	
D 19 13C5 PFNA										
468.00 > 423.00	3.104	3.112	-0.008	1.138	3838648	2.27		90.7	81763	
D 18 13C4 PFOS										
503.00 > 80.00	3.104	3.112	-0.008	1.138	3828632	2.27		95.1	65244	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	1858981	0.9022		90.2	31426	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.418	-0.001	1.253	5225298	2.30		92.0	60606	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.463	3.454	0.009	1.000	650799	0.9231		96.4	8920	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.472	3.463	0.009	1.000	1180588	0.9470		94.7	6427	
513.00 > 169.00	3.472	3.463	0.009	1.000	223685		5.28(2.36-7.09)		4870	
D 26 M2-8:2FTS										
529.00 > 81.00	3.463	3.464	-0.001	1.270	1323034	2.52		105	36723	
D 23 13C2 PFDA										
515.00 > 470.00	3.472	3.473	-0.001	1.273	3154154	2.13		85.0	46090	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.632	3.623	0.009	1.003	597194	0.9867		98.7	5356	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.623	3.633	-0.010	1.329	1511958	1.94		77.4	51620	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.782	3.781	0.001	1.000	899037	0.8253		85.6	36589	
599.00 > 99.00	3.782	3.781	0.001	1.000	305422		2.94(1.39-4.16)		8960	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.802	3.792	0.010	1.003	551526	0.9470		94.7	9165	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.802	3.802	0.0	1.000	765467	0.8336		83.4	3487	
563.00 > 169.00	3.802	3.802	0.0	1.000	195899		3.91(2.12-6.36)		7526	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.804	-0.012	1.391	1558547	1.75		70.1	3723	
D 30 13C2 PFUnA										
565.00 > 520.00	3.802	3.804	-0.002	1.395	2662819	2.01		80.2	53725	
35 MeFOSA										
512.00 > 169.00	3.642	3.875	-0.233		4584	NC			137	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.102	4.092	0.010	1.000	1146746	0.8925		89.3	821	
613.00 > 169.00	4.102	4.092	0.010	1.000	285342		4.02(2.13-6.40)		4423	
D 36 13C2 PFDoA										
615.00 > 570.00	4.102	4.105	-0.003	1.505	3069701	2.04		81.5	23018	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.363	4.356	0.007	1.000	1190248	0.8806		88.1	477	
663.00 > 169.00	4.363	4.356	0.007	1.000	377938		3.15(1.25-3.76)		6264	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.598	4.601	-0.003	1.000	337354	0.9335		93.3	5652	
713.00 > 219.00	4.598	4.601	-0.003	1.000	250093		1.35(0.71-2.13)		5640	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.598	4.613	-0.015	1.686	3646175	1.98		79.3	24371	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.027	5.012	0.015	1.000	2033102	0.9694		96.9	456	
813.00 > 169.00	5.027	5.012	0.015	1.000	328903		6.18(2.86-8.58)		2401	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.027	5.040	-0.013	1.844	5628162	1.87		74.6	16137	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.396	5.387	0.009	1.000	2223607	1.07		107	434	
913.00 > 169.00	5.396	5.387	0.009	1.000	279440		7.96(3.83-11.48)		2821	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 07:49:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_009.d

Injection Date: 28-Mar-2018 19:07:26 Instrument ID: A8_N

Lims ID: LCS 320-215106/2-A

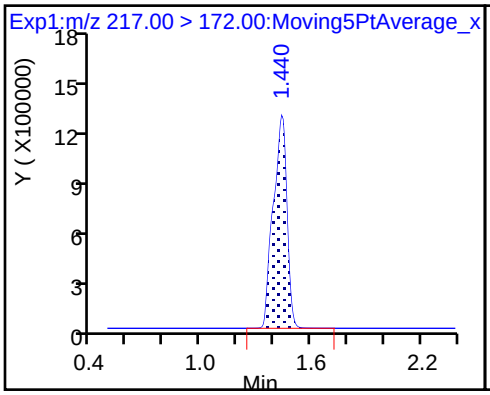
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 6

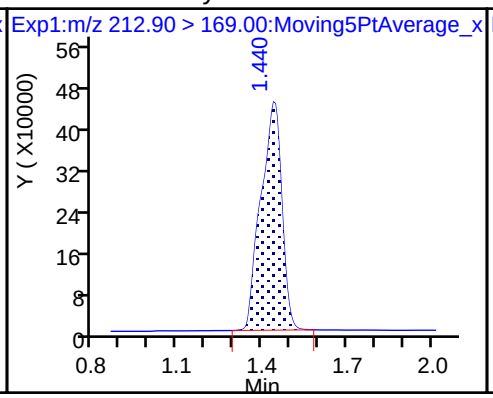
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

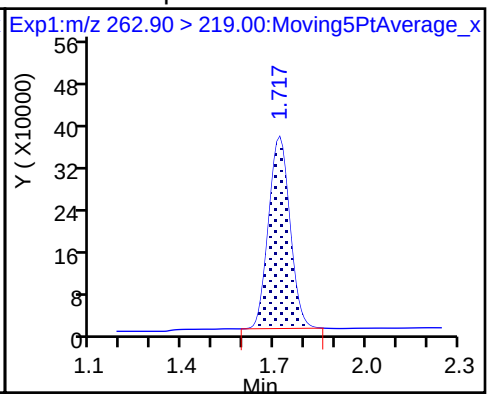
D 1 13C4 PFBA



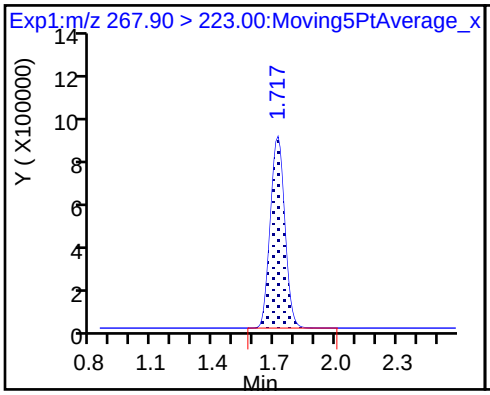
2 Perfluorobutyric acid



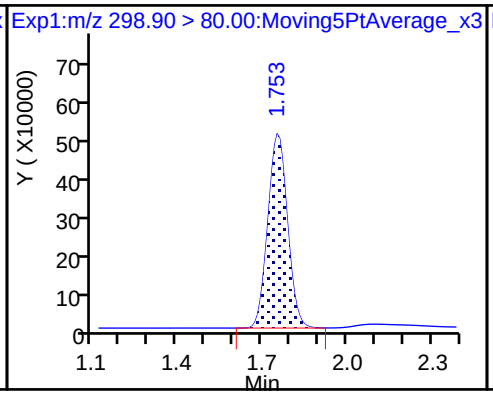
4 Perfluoropentanoic acid



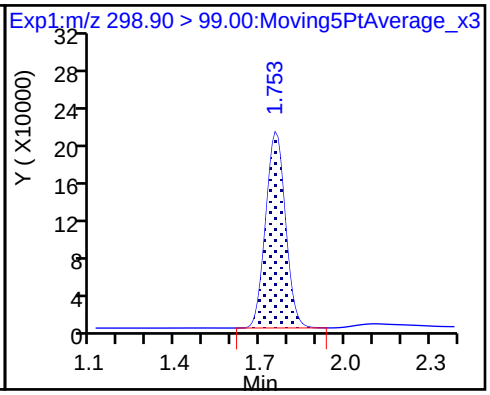
D 3 13C5-PFPeA



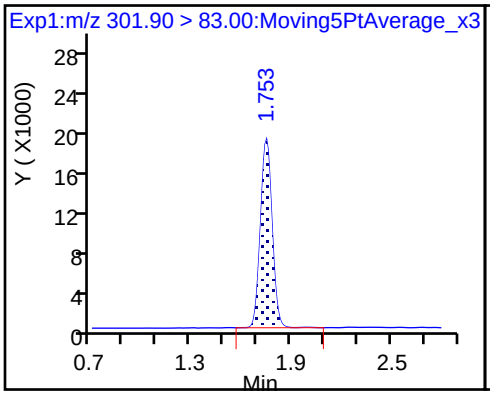
5 Perfluorobutanesulfonic acid



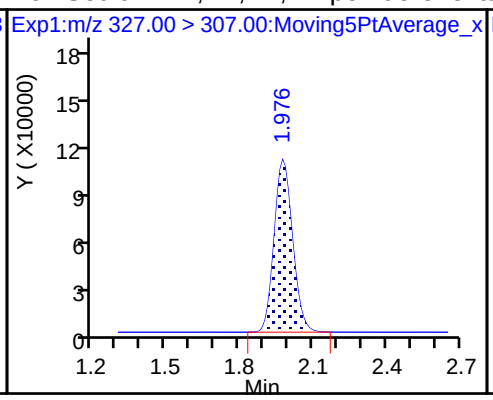
5 Perfluorobutanesulfonic acid



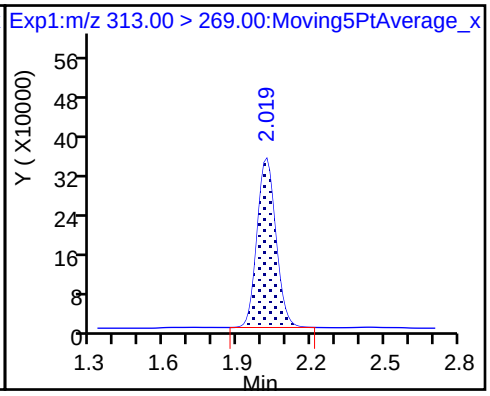
D 47 13C3-PFBS



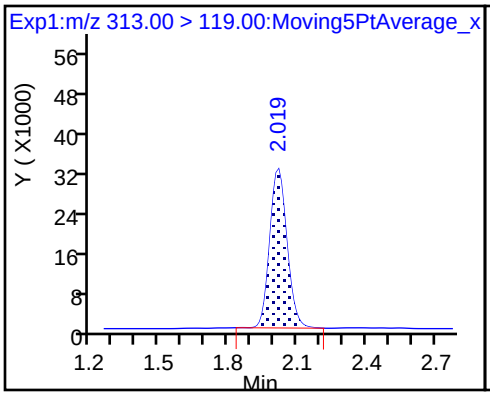
61 Sodium 1H,1H,2H,2H-perfluorohexane



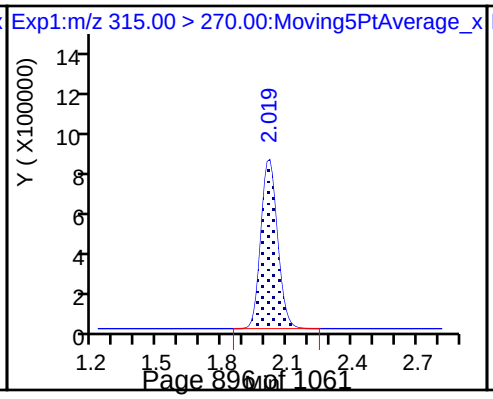
6 Perfluorohexanoic acid



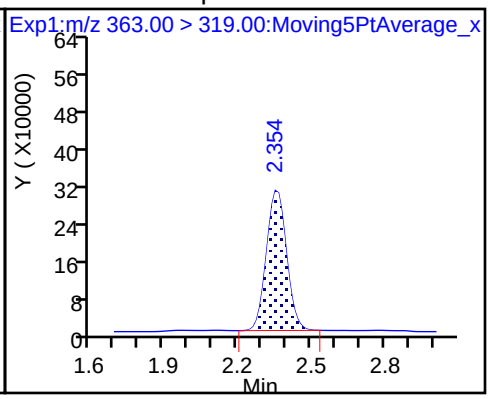
6 Perfluorohexanoic acid



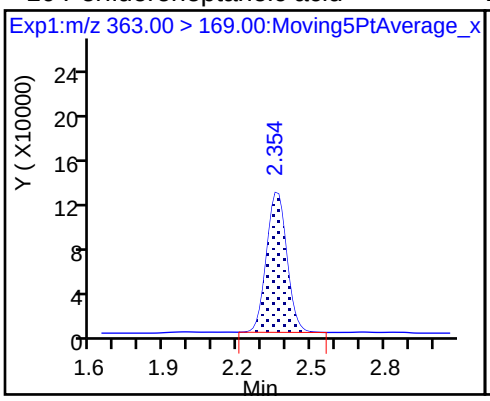
D 7 13C2 PFHxA



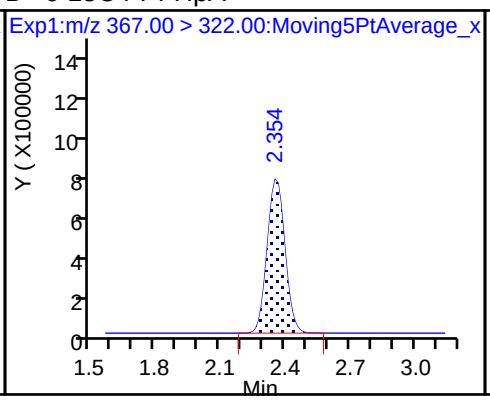
10 Perfluoroheptanoic acid



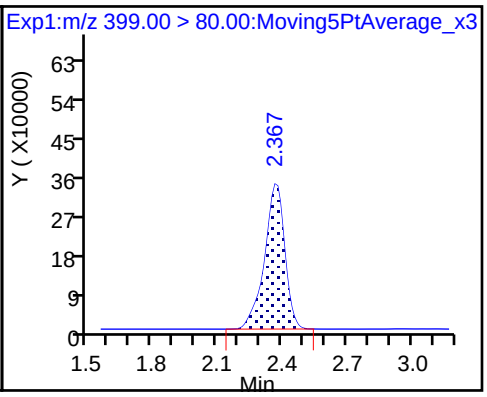
10 Perfluoroheptanoic acid



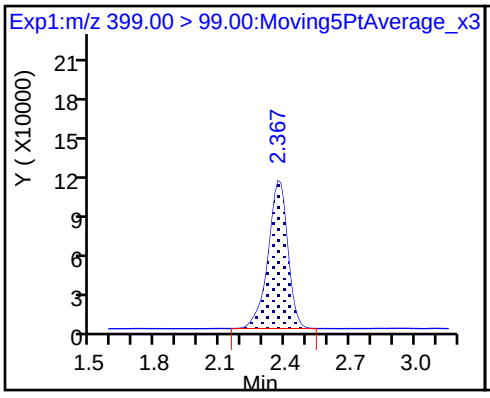
D 9 13C4-PFHpA



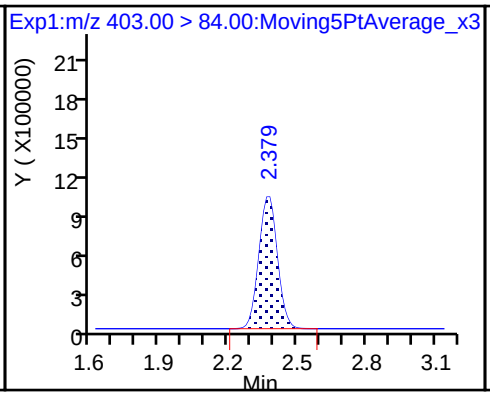
8 Perfluorohexanesulfonic acid



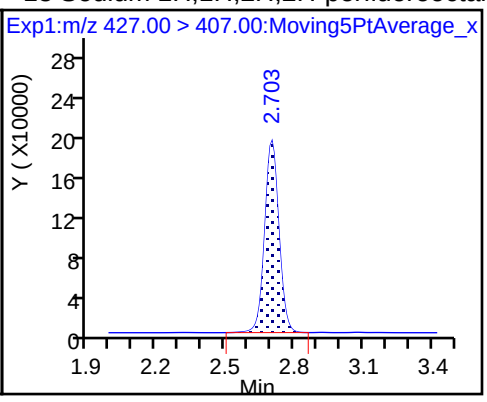
8 Perfluorohexanesulfonic acid



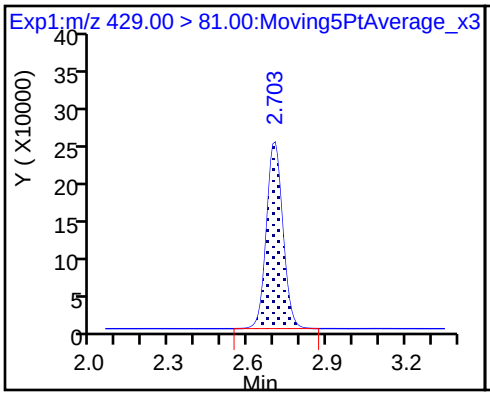
D 11 18O2 PFHxS



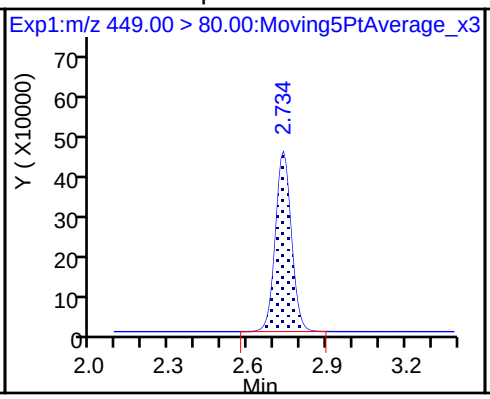
13 Sodium 1H,1H,2H,2H-perfluorooctane



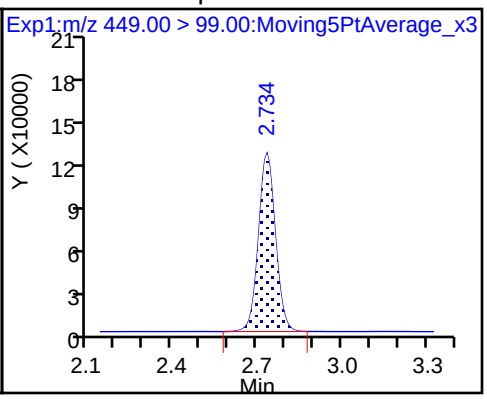
D 12 M2-6:2FTS



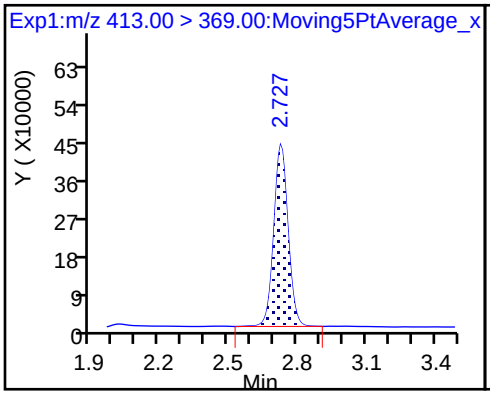
16 Perfluoroheptanesulfonic acid



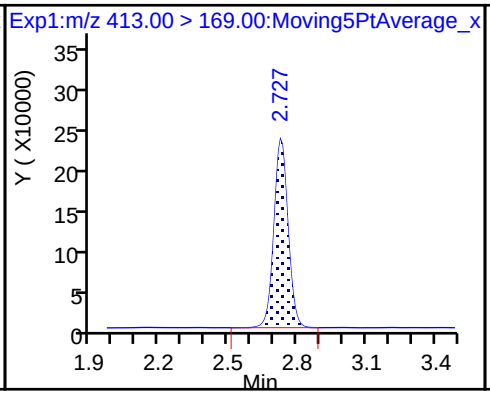
16 Perfluoroheptanesulfonic acid



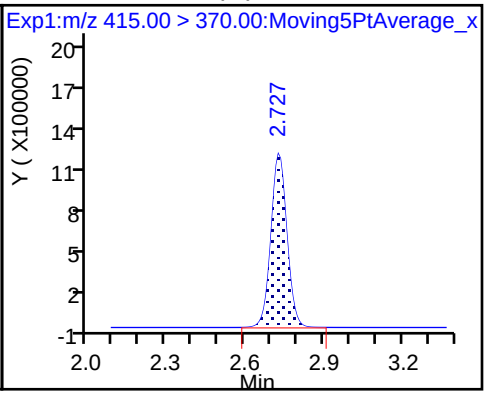
15 Perfluorooctanoic acid



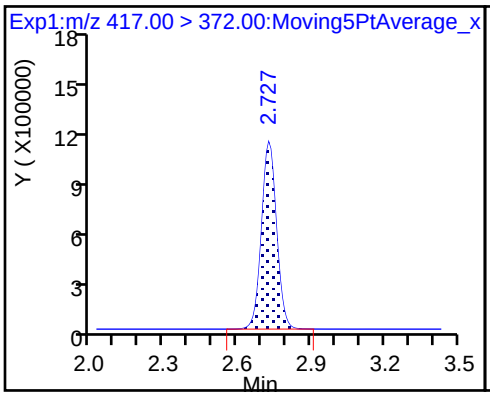
15 Perfluorooctanoic acid



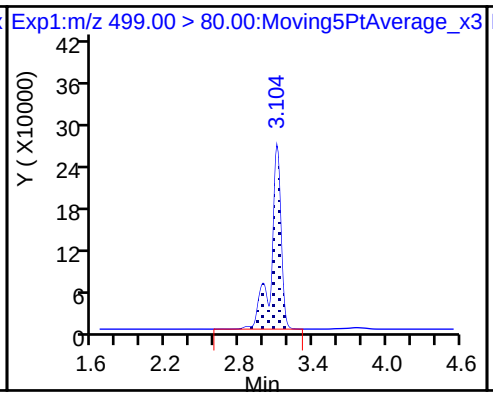
* 62 13C2-PFOA (M)



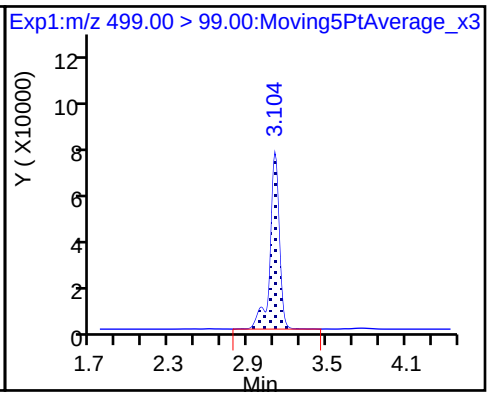
D 14 13C4 PFOA



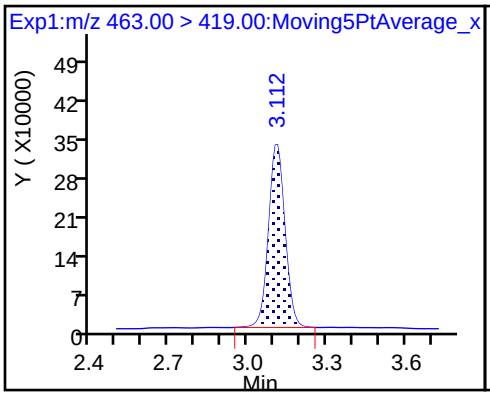
17 Perfluorooctane sulfonic acid



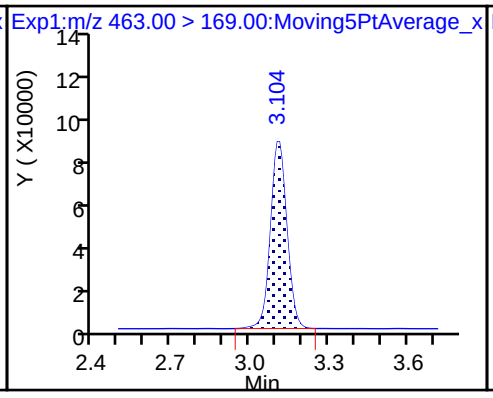
17 Perfluorooctane sulfonic acid



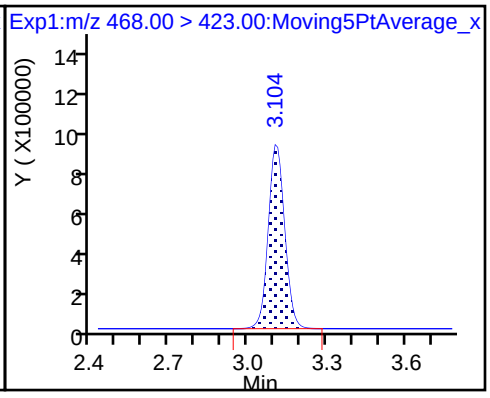
20 Perfluorononanoic acid



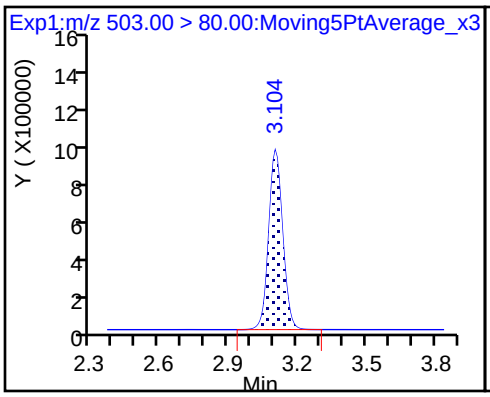
20 Perfluorononanoic acid



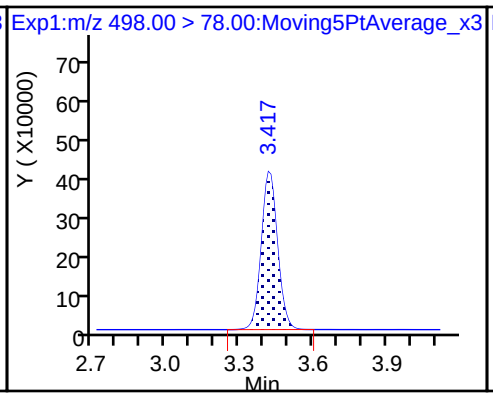
D 19 13C5 PFNA



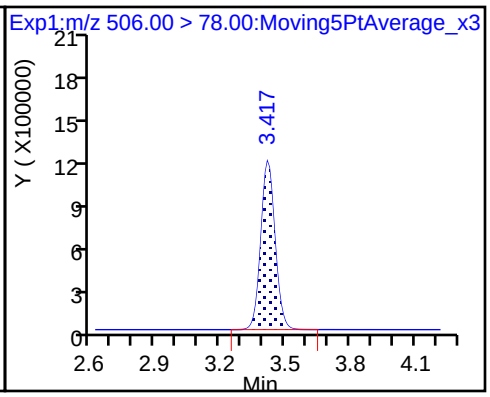
D 18 13C4 PFOS



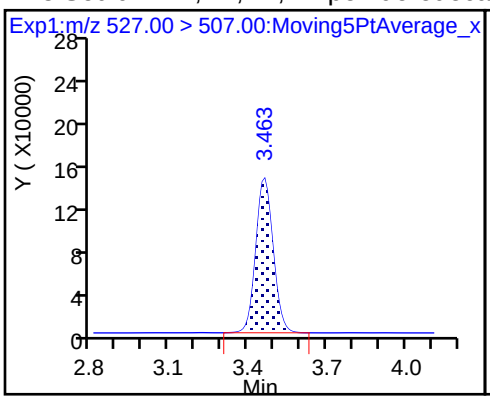
22 Perfluorooctane Sulfonamide



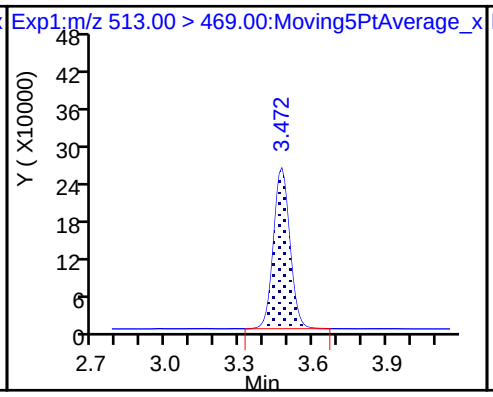
D 21 13C8 FOSA



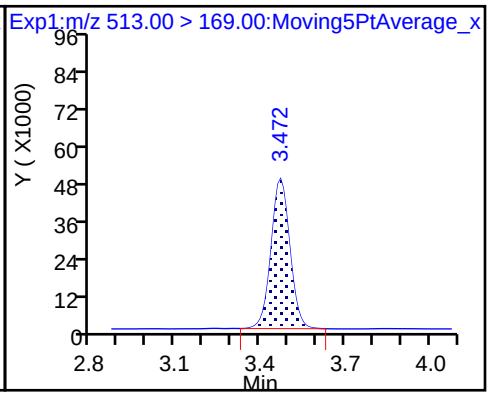
25 Sodium 1H,1H,2H,2H-perfluorodecane



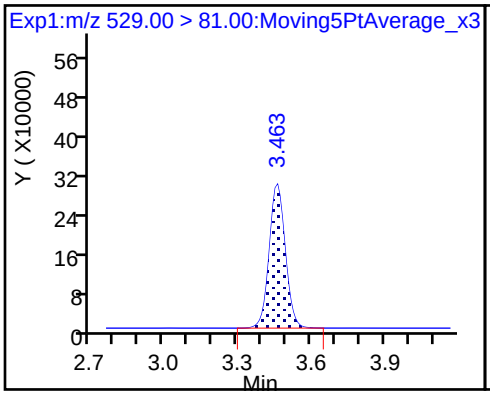
24 Perfluorodecanoic acid



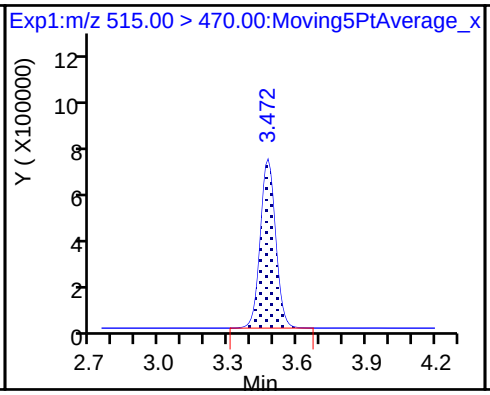
24 Perfluorodecanoic acid



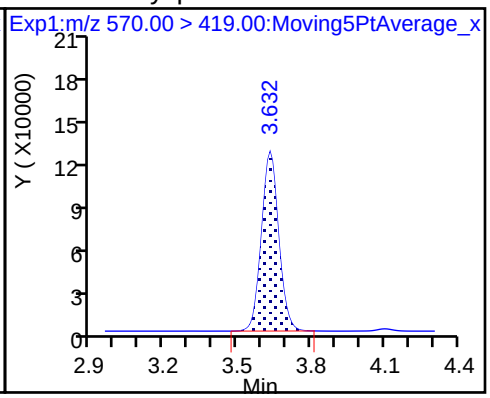
D 26 M2-8:2FTS



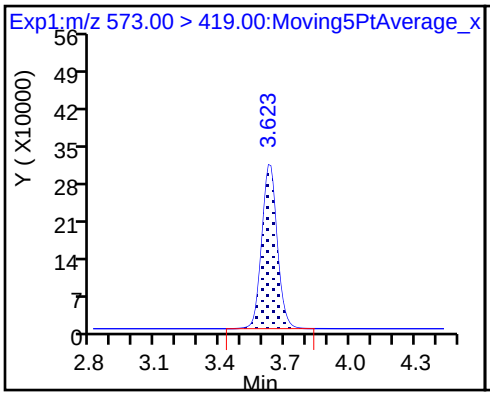
D 23 13C2 PFDA



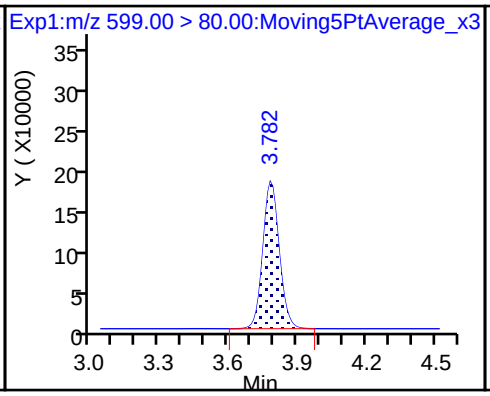
28 N-methyl perfluorooctane sulfonami



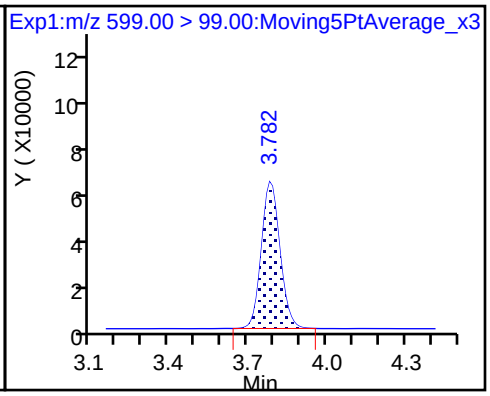
D 27 d3-NMeFOSAA



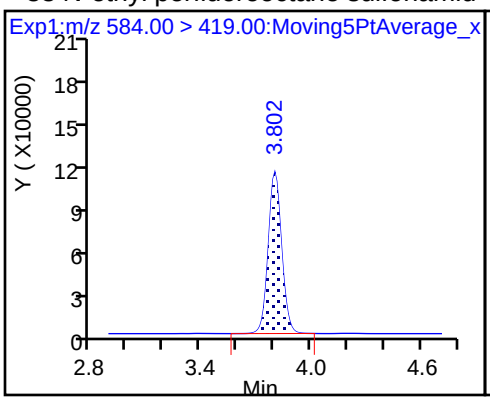
29 Perfluorodecane Sulfonic acid



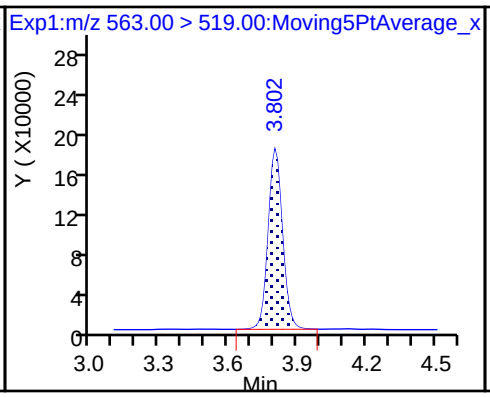
29 Perfluorodecane Sulfonic acid



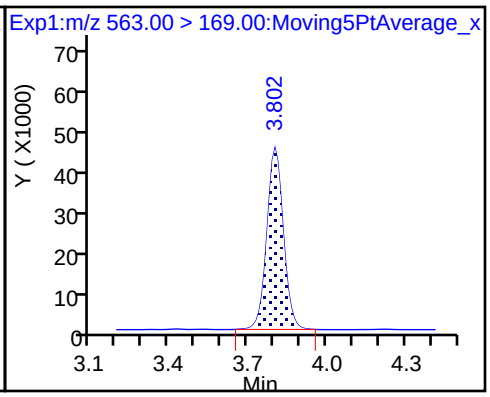
33 N-ethyl perfluorooctane sulfonamid



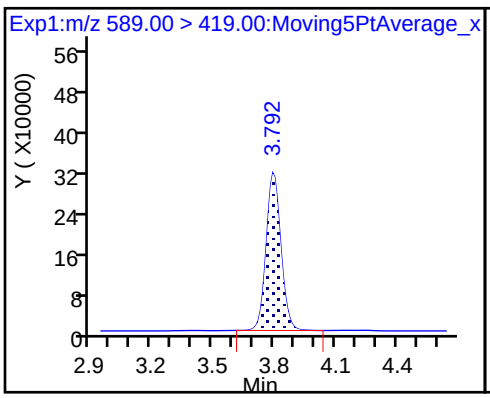
31 Perfluoroundecanoic acid



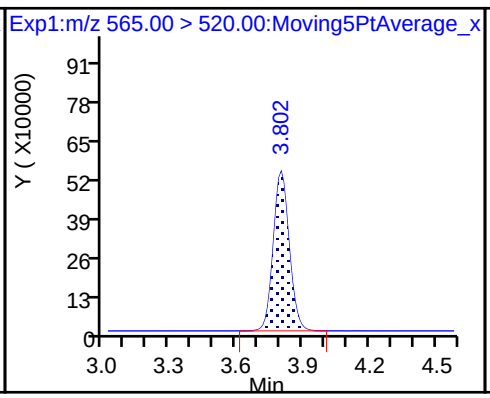
31 Perfluoroundecanoic acid



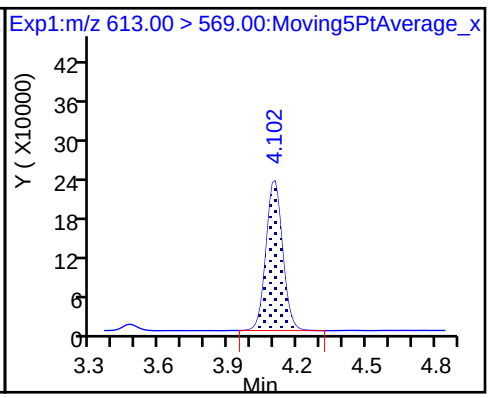
D 32 d5-NEtFOSAA



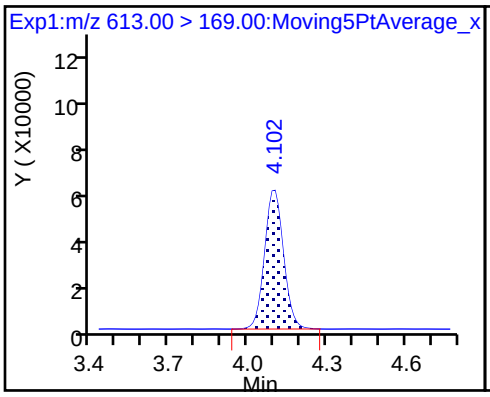
D 30 13C2 PFUnA



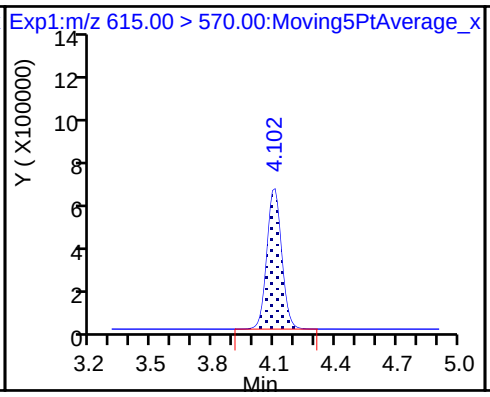
37 Perfluorododecanoic acid



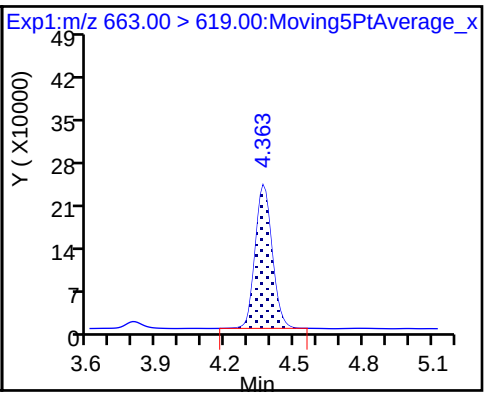
37 Perfluorododecanoic acid



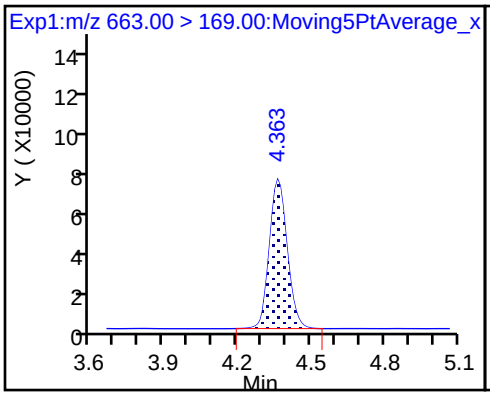
D 36 13C2 PFDoA



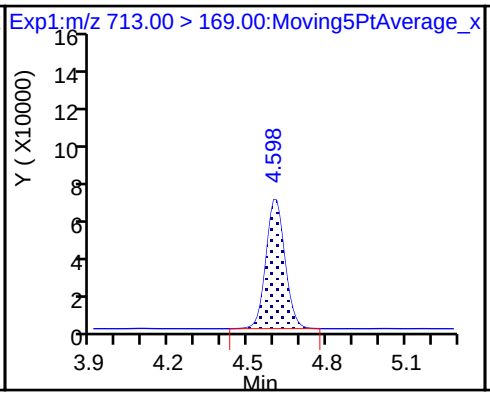
41 Perfluorotridecanoic acid



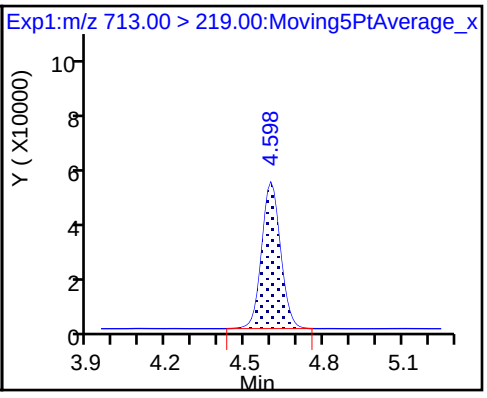
41 Perfluorotridecanoic acid



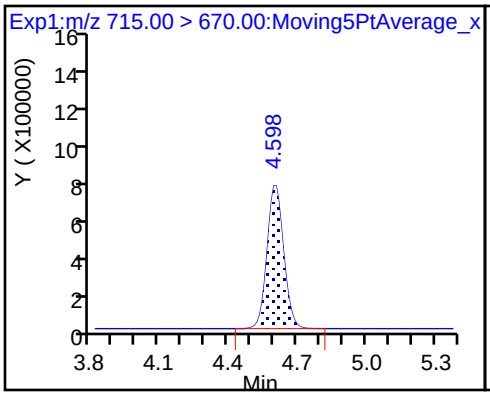
42 Perfluorotetradecanoic acid



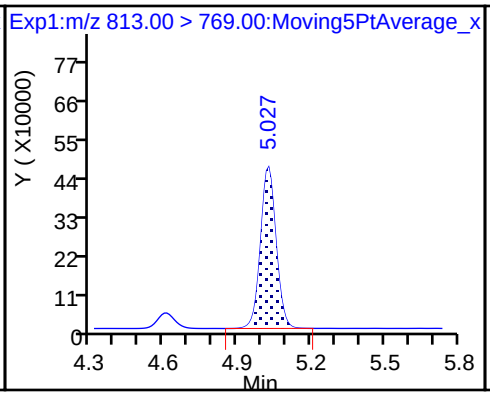
42 Perfluorotetradecanoic acid



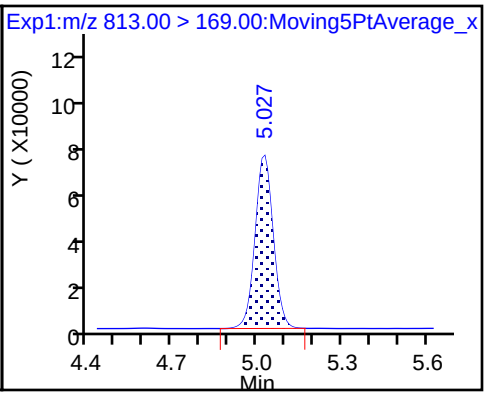
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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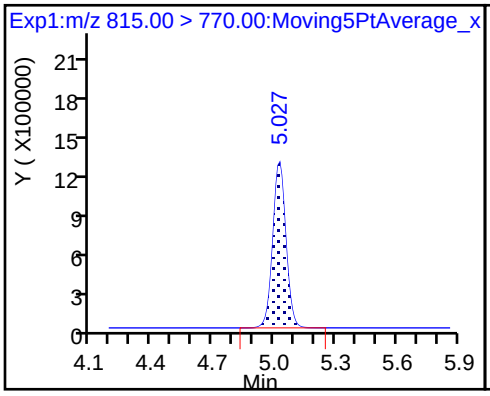
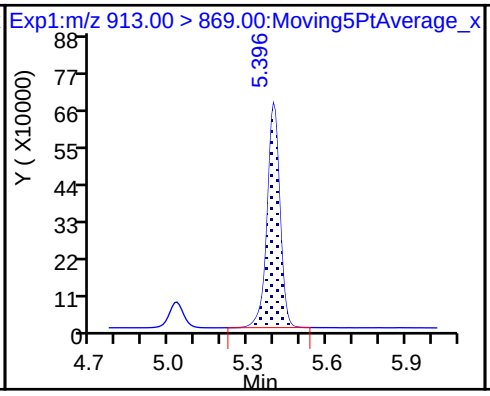
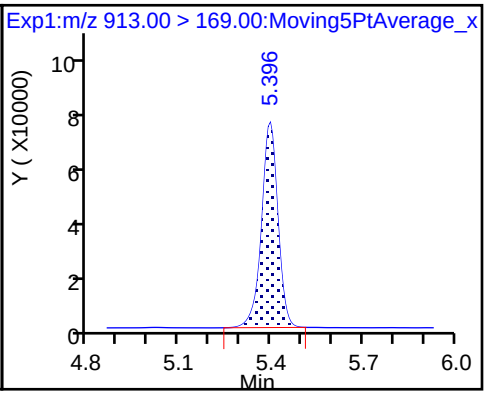


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-214126/3-A

Matrix: Solid | Lab File ID: 2018.03.23LLAA_056.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250(mL) | Date Analyzed: 03/23/2018 19:03

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	42.06		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	42.49		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	41.74		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	45.32		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	42.03		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	44.41		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	41.34		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	36.67		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	42.29		2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	50.11		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	45.47		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	38.21		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	35.20		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	42.96		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.64		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	41.28		2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	42.30		2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	45.24		20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	43.35		20.0	1.90
27619-97-2	6:2FTS	89.86		20.0	2.00
39108-34-4	8:2FTS	39.42		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-214126/3-A

Matrix: Solid | Lab File ID: 2018.03.23LLAA_056.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 03/21/2018 12:31

Sample wt/vol: 250(mL) | Date Analyzed: 03/23/2018 19:03

Con. Extract Vol.: 10(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214657 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	101		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	100		25-150
STL01892	13C4-PFHpA	98		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	84		25-150
STL00998	13C2 PFDoA	79		25-150
STL02116	13C2-PFTeDA	82		25-150
STL02337	13C3-PFBS	101		25-150
STL00994	18O2 PFHxS	104		25-150
STL00991	13C4 PFOS	97		25-150
STL01056	13C8 FOSA	94		25-150
STL02118	d3-NMeFOSAA	92		25-150
STL02117	d5-NEtFOSAA	85		25-150
STL02279	M2-6:2FTS	121		25-150
STL02280	M2-8:2FTS	104		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_056.d
Lims ID: LCSD 320-214126/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 23-Mar-2018 19:03:27 ALS Bottle#: 38 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-214126/3
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:30:56 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: phomsophat Date: 26-Mar-2018 13:49:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.453	0.0	1.000	2540635	1.05		105	1521	
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.458	-0.005	0.539	6410495	2.52		101	91120	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.717	-0.008	0.634	4203291	2.49		99.6	116693	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.005	2013813	1.06		106	951	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.753	-0.009	0.647	90860	2.36		101	459	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2900932	0.9553		108	29962	
298.90 > 99.00	1.753	1.753	0.0	1.005	1190193		2.44(1.25-3.74)		6608	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	691678	1.10		117	43142	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.008	-0.011	0.741	4691717	2.51		100	144147	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	2002167	1.04		104	6708	
313.00 > 119.00	1.997	2.008	-0.011	1.000	179418		11.16(5.03-15.10)		4684	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.341	-0.013	0.863	4518452	2.45		98.1	86115	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.006	2118338	1.13		113	4786	
363.00 > 169.00	2.328	2.341	-0.013	1.000	780729		2.71(1.13-3.40)		9615	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.353	0.001	0.873	5578545	2.45		104	88664	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.354	-0.013	0.995	2310169	0.8799		96.7	14943	
399.00 > 99.00	2.354	2.354	0.0	1.000	767670		3.01(1.50-4.49)		2376	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.679	-0.006	0.991	1098571	2.88		121	26293	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.681	-0.008	1.000	1811758	2.25		237	72135	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.703	-0.007	1.000	4674189	2.48		99.2	124204	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.704	-0.008	1.000	2219226	1.05		105	685	
413.00 > 169.00	2.696	2.704	-0.008	1.000	1199421		1.85(0.84-2.52)		3642	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.704	-0.008		5026420	2.50			93349	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.712	-0.008	1.000	2208221	1.07		113	44438	
449.00 > 99.00	2.704	2.712	-0.008	1.000	578588		3.82(1.94-5.82)		6327	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.072	-0.007	1.000	1726750	0.9660		104	12358	
499.00 > 99.00	3.065	3.072	-0.007	1.000	401821		4.30(2.31-6.93)		3438	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	1770791	1.11		111	1677	
463.00 > 169.00	3.065	3.072	-0.007	1.000	418129		4.24(1.90-5.69)		8109	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.080	-0.015	1.137	3997239	2.41		96.2	92350	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.080	-0.015	1.137	3835290	2.32		97.0	44519	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.408	-0.001	1.000	2175826	1.06		106	32853	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.416	-0.009	1.264	5217764	2.34		93.6	53769	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.427	-0.011	1.000	673604	0.9854		103	6090	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.434	-0.018	1.267	1282785	2.49		104	32327	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.436	-0.011	1.000	1488481	1.03		103	7798	
513.00 > 169.00	3.425	3.436	-0.011	1.000	274909		5.41(2.36-7.09)		2315	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.444	-0.019	1.270	3644104	2.50		100	49050	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.592	-0.002	1.003	802091	1.13		113	6915	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.602	-0.023	1.327	1771484	2.31		92.4	64379	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.750	-0.012	1.000	1126025	1.03		107	14957	
599.00 > 99.00	3.738	3.750	-0.012	1.000	385133		2.92(1.39-4.16)		5049	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.761	-0.003	1.000	860351	0.9168		91.7	3872	
563.00 > 169.00	3.758	3.761	-0.003	1.000	224435		3.83(2.12-6.36)		10843	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.761	-0.003	1.003	748506	1.08		108	22321	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.771	-0.023	1.390	1848093	2.12		84.6	6973	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.771	-0.013	1.394	2721141	2.09		83.5	63586	
35 MeFOSA										
512.00 > 169.00	3.912	3.875	0.037		497546	NC			3405	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.059	-0.013	1.000	1290962	1.06		106	1129	
613.00 > 169.00	4.046	4.059	-0.013	1.000	328368		3.93(2.13-6.40)		4830	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.098	4.066	0.032		406766	NC			1995	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.069	-0.023	1.500	2917031	1.97		78.9	22354	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.319	-0.013	1.000	1608834	1.25		125	847	
663.00 > 169.00	4.307	4.319	-0.013	1.000	486400		3.31(1.25-3.76)		8585	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.555	-0.012	1.000	417645	1.14		114	7269	
713.00 > 219.00	4.543	4.555	-0.012	1.000	292729		1.43(0.71-2.13)		5067	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.565	-0.022	1.685	3707242	2.05		82.1	25969	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.974	-0.019	1.000	2500781	1.05		105	716	
813.00 > 169.00	4.955	4.974	-0.019	1.000	450333		5.55(2.86-8.58)		4616	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.982	-0.027	1.838	6400176	2.16		86.5	17384	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.331	-0.016	1.000	2659215	1.12		112	584	
913.00 > 169.00	5.308	5.331	-0.023	0.999	345133		7.70(3.83-11.48)		3495	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 29-Mar-2018 09:31:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b\2018.03.23LLAA_056.d

Injection Date: 23-Mar-2018 19:03:27 Instrument ID: A8_N

Lims ID: LCSD 320-214126/3-A

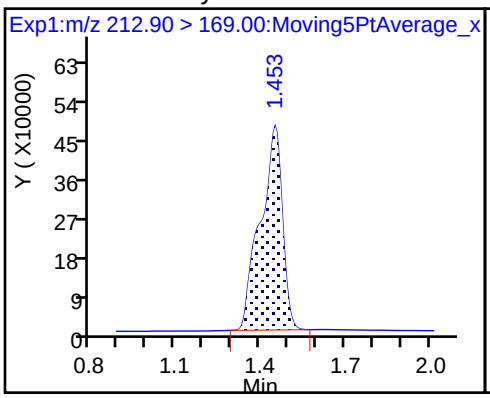
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 38 Worklist Smp#: 6

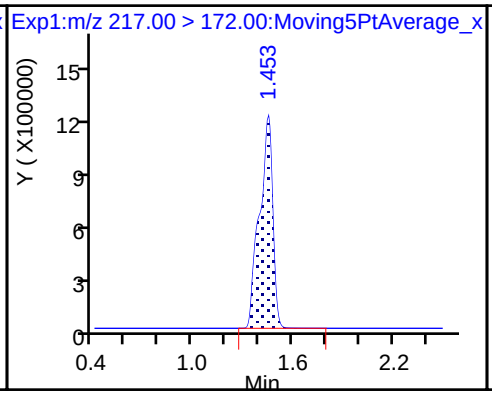
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

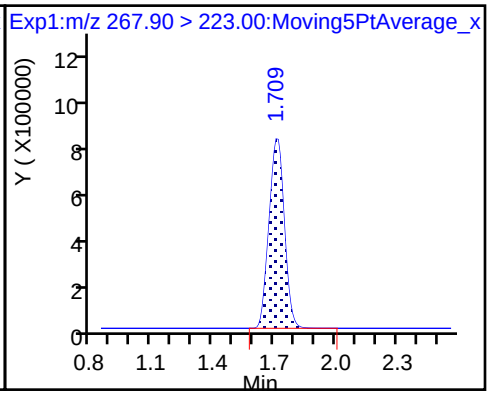
2 Perfluorobutyric acid



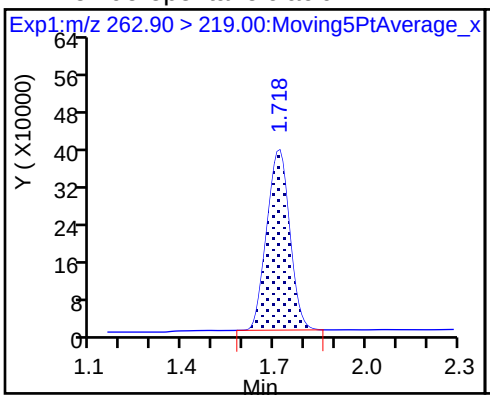
D 1 13C4 PFBA



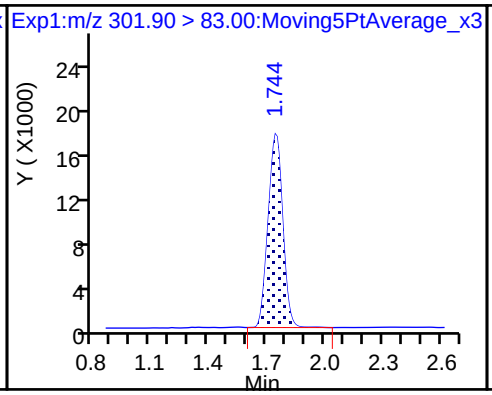
D 3 13C5-PFPeA



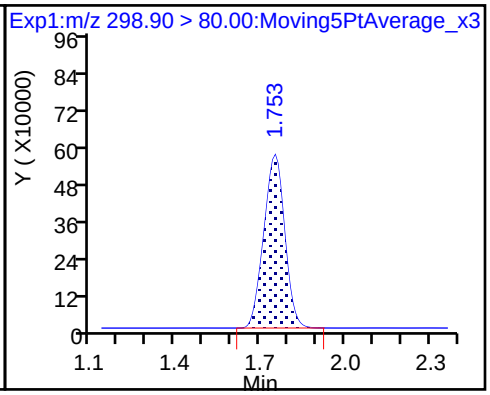
4 Perfluoropentanoic acid



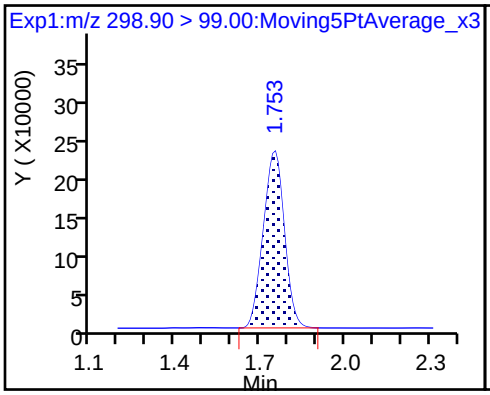
D 47 13C3-PFBS



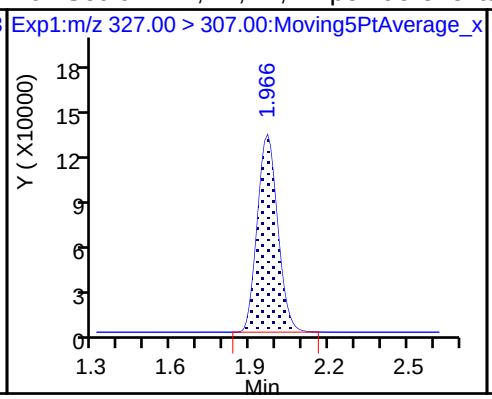
5 Perfluorobutanesulfonic acid



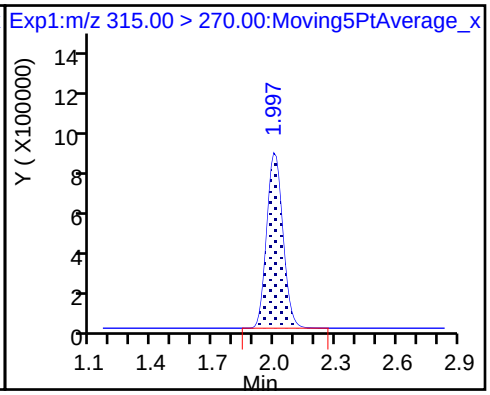
5 Perfluorobutanesulfonic acid



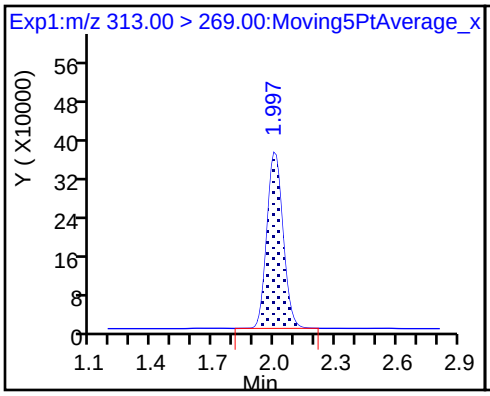
61 Sodium 1H,1H,2H,2H-perfluorohexa



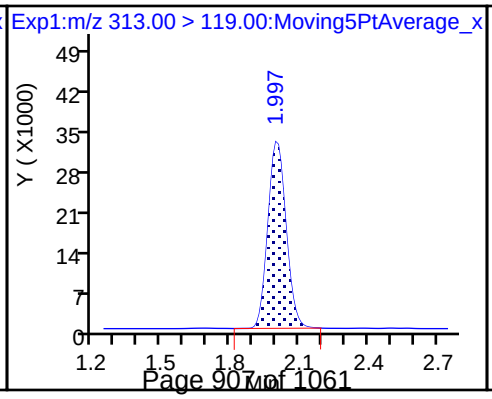
D 7 13C2 PFHxA



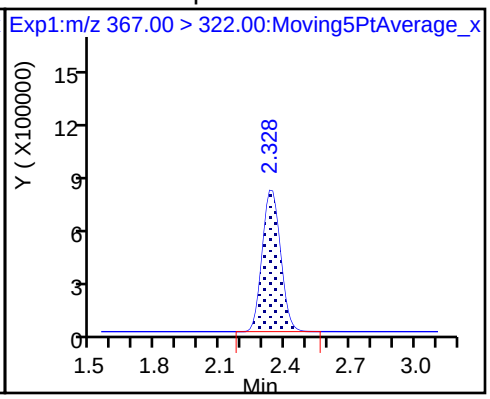
6 Perfluorohexanoic acid



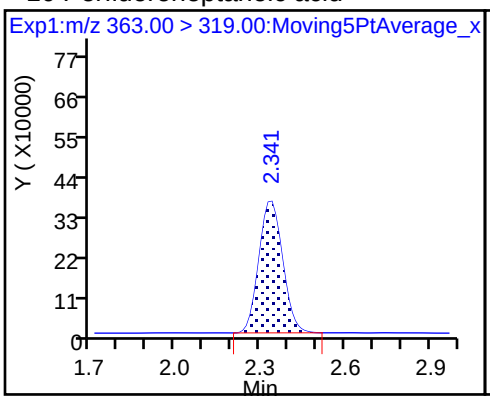
6 Perfluorohexanoic acid



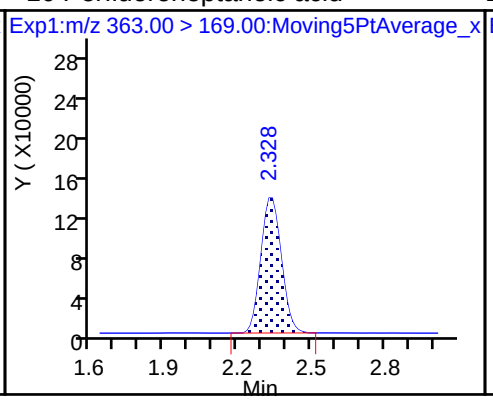
D 9 13C4-PFHpA



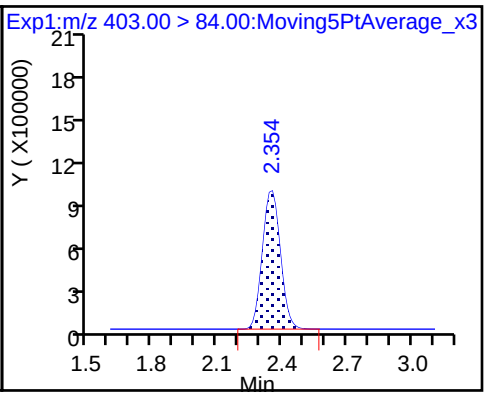
10 Perfluoroheptanoic acid



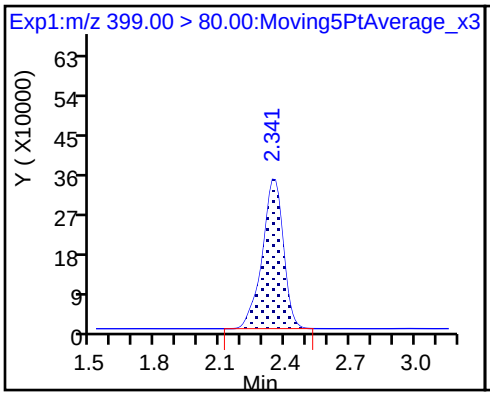
10 Perfluoroheptanoic acid



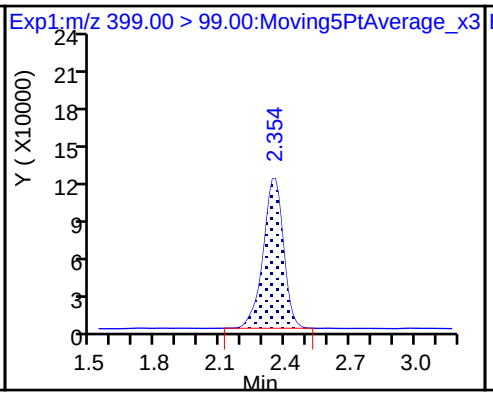
D 11 18O2 PFHxS



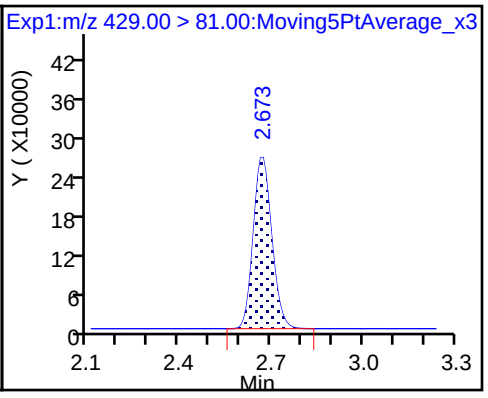
8 Perfluorohexanesulfonic acid



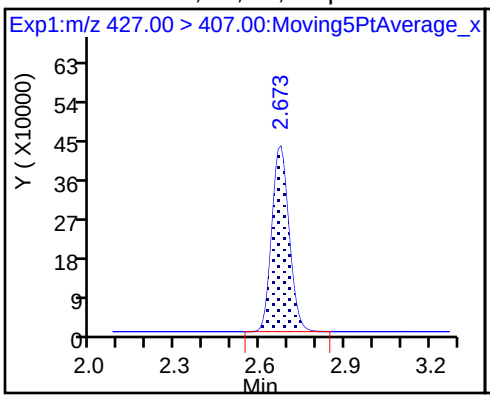
8 Perfluorohexanesulfonic acid



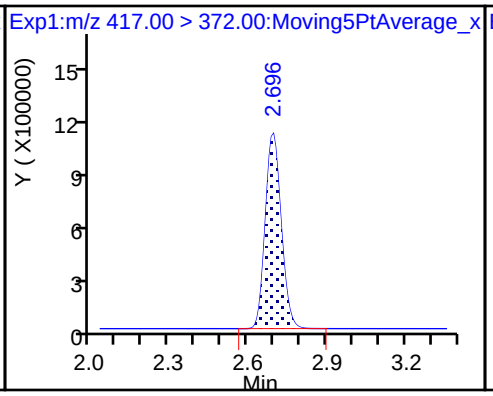
D 12 M2-6:2FTS



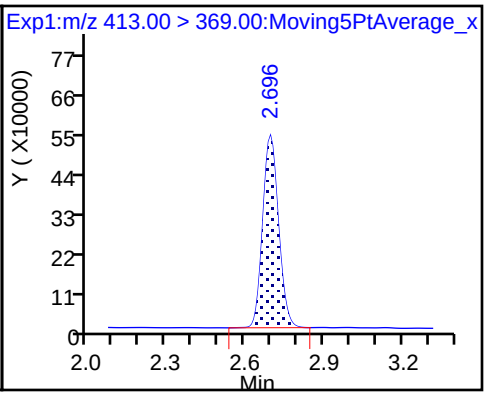
13 Sodium 1H,1H,2H,2H-perfluorooctane



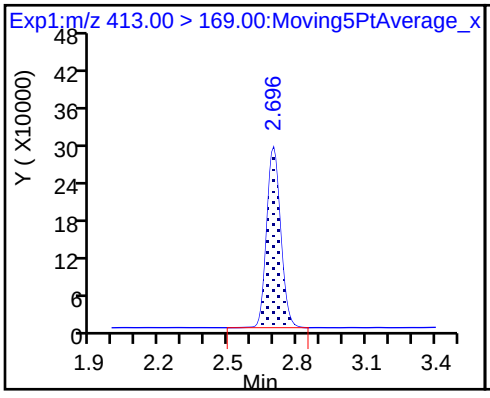
D 14 13C4 PFOA



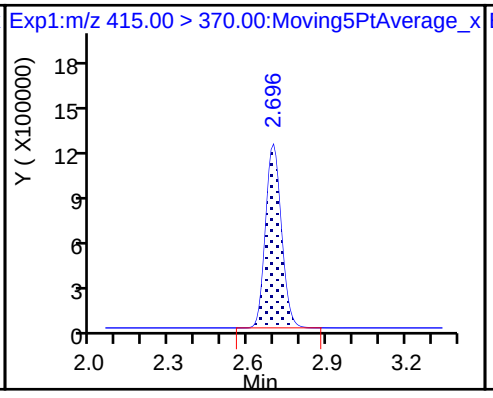
15 Perfluorooctanoic acid



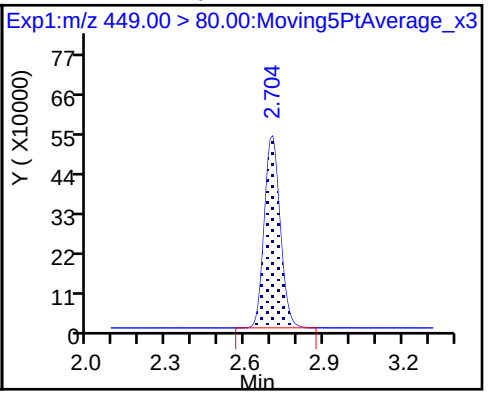
15 Perfluorooctanoic acid



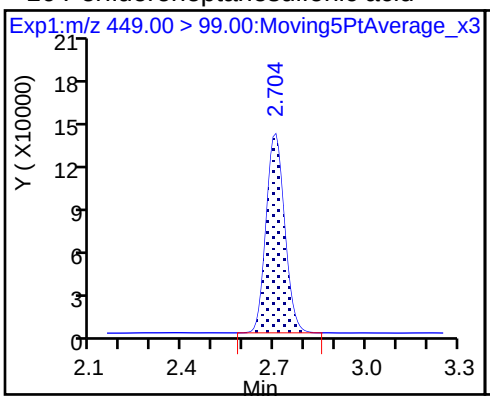
* 62 13C2-PFOA



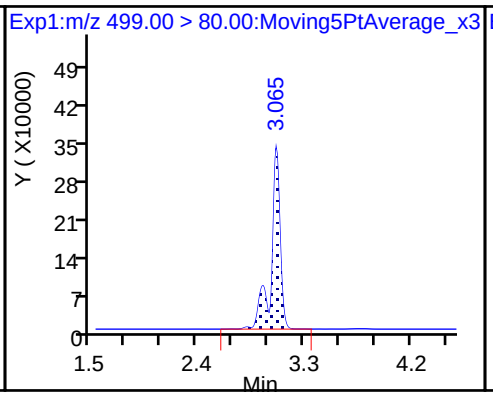
16 Perfluoroheptanesulfonic acid



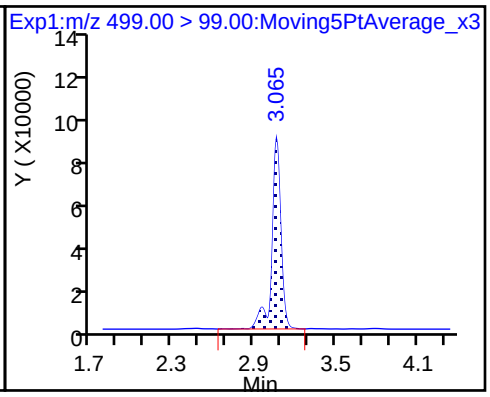
16 Perfluoroheptanesulfonic acid



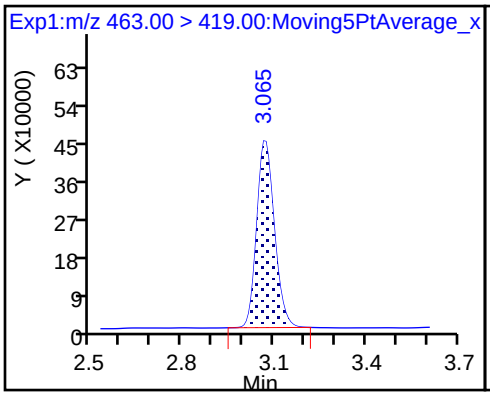
17 Perfluorooctane sulfonic acid



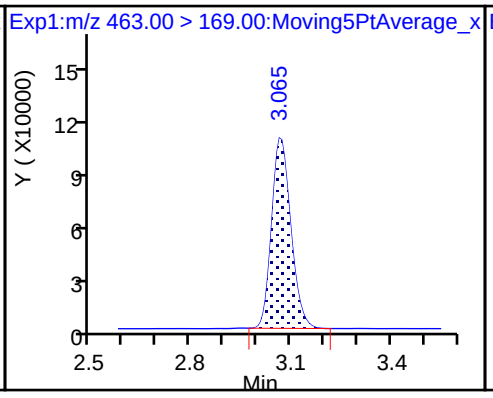
17 Perfluorooctane sulfonic acid



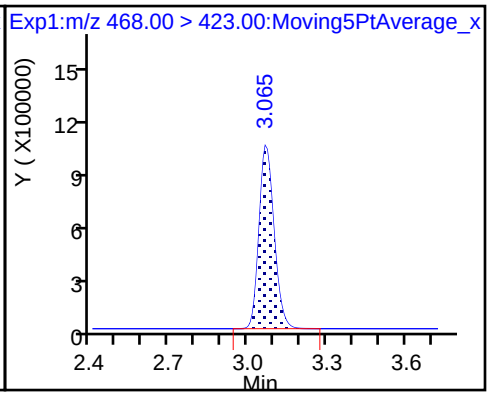
20 Perfluorononanoic acid



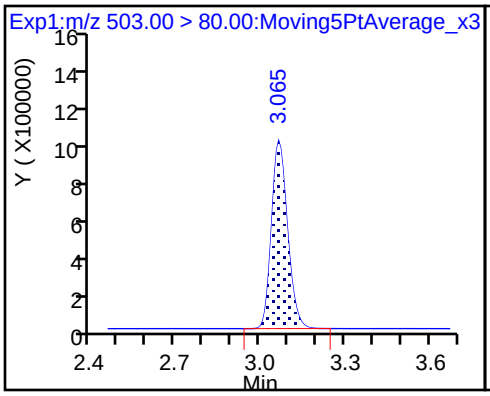
20 Perfluorononanoic acid



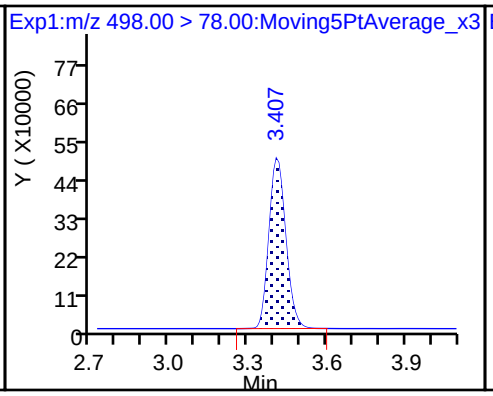
D 19 13C5 PFNA



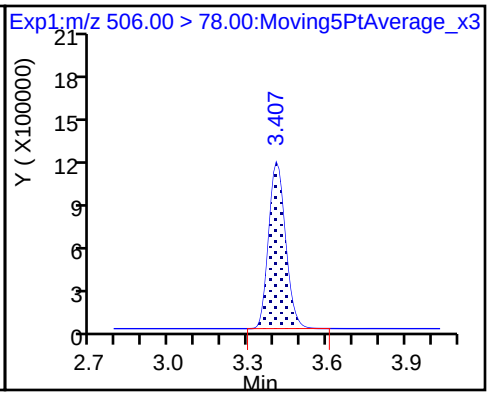
D 18 13C4 PFOS



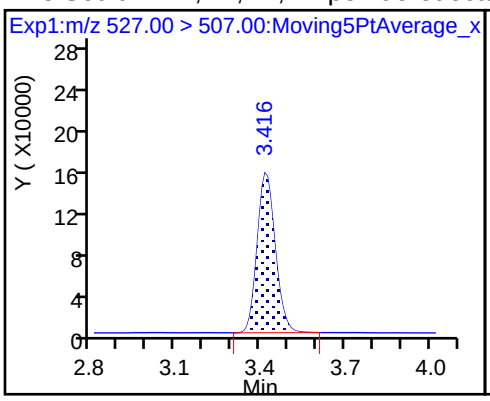
22 Perfluorooctane Sulfonamide



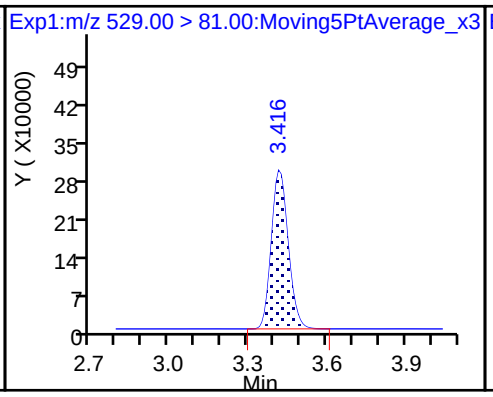
D 21 13C8 FOSA



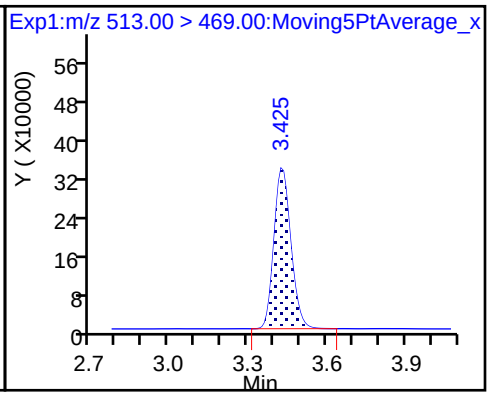
25 Sodium 1H,1H,2H,2H-perfluorodecane



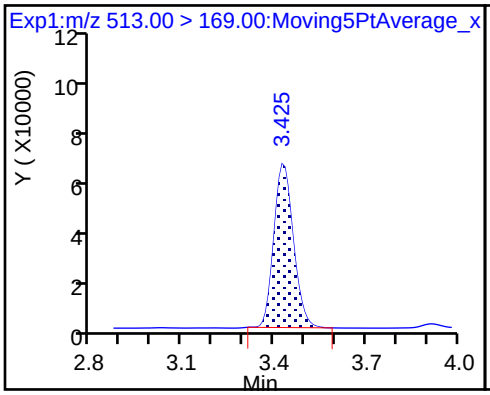
D26 M2-8:2FTS



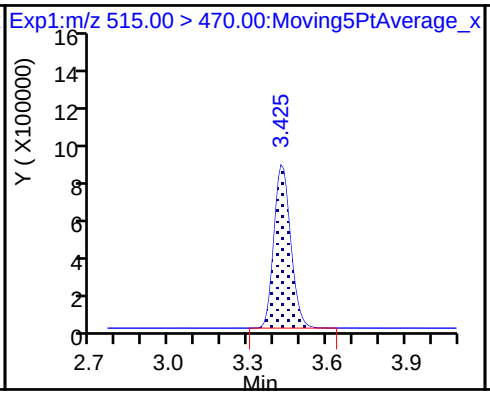
24 Perfluorodecanoic acid



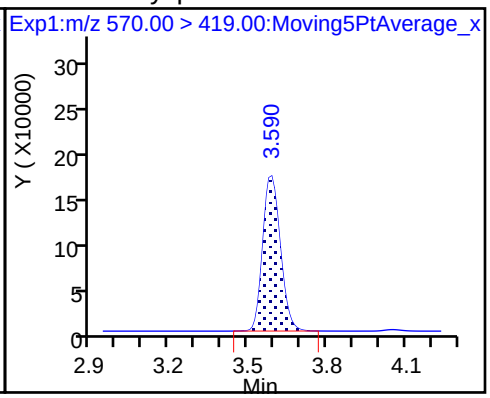
24 Perfluorodecanoic acid



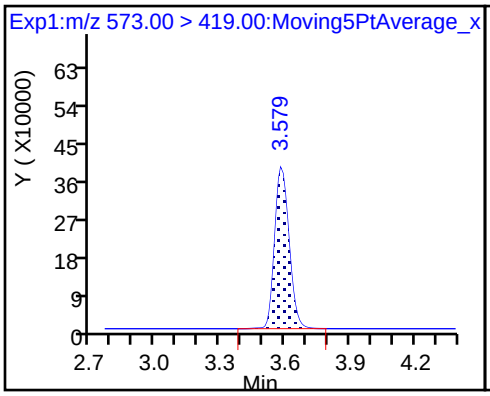
D 23 13C2 PFDA



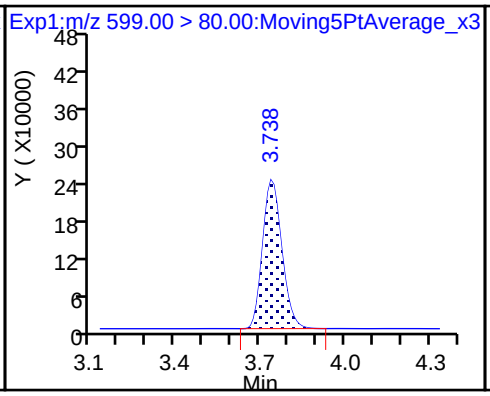
28 N-methyl perfluorooctane sulfonami



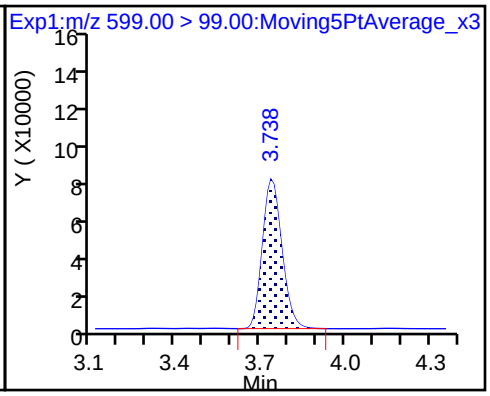
D 27 d3-NMeFOSAA



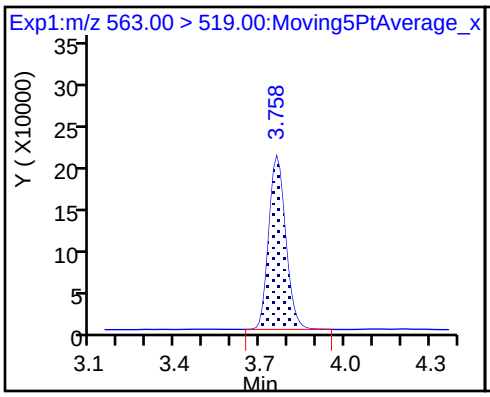
29 Perfluorodecane Sulfonic acid



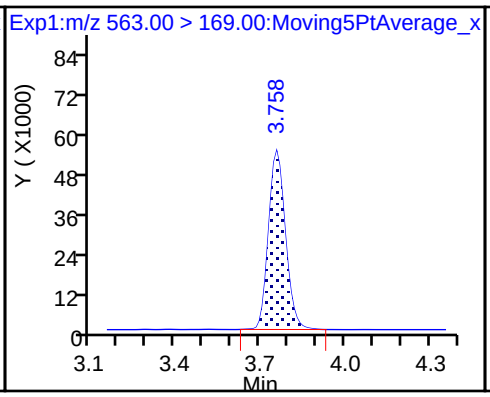
29 Perfluorodecane Sulfonic acid



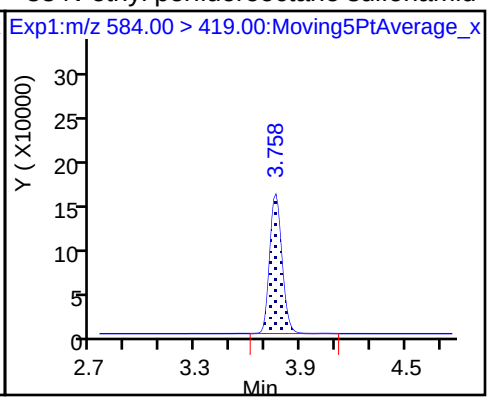
31 Perfluoroundecanoic acid



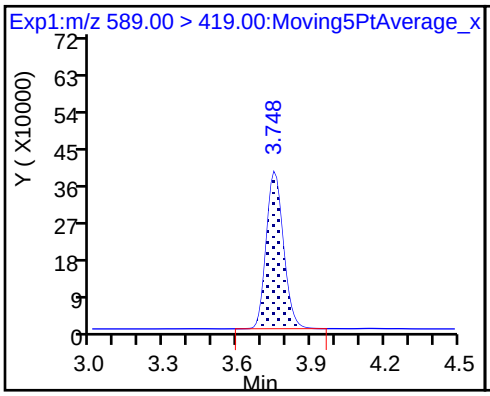
31 Perfluoroundecanoic acid



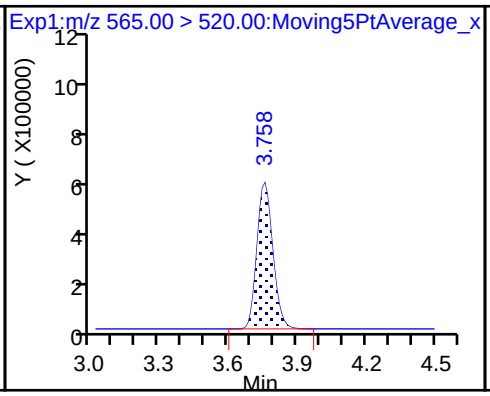
33 N-ethyl perfluorooctane sulfonamid



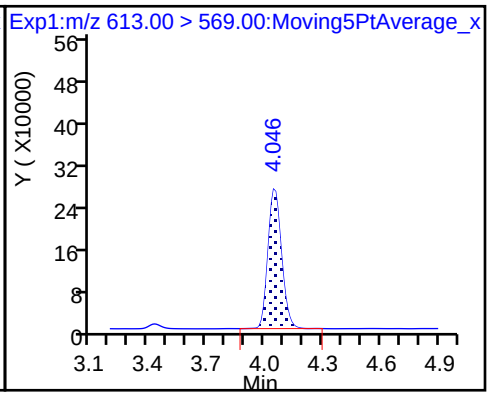
D 32 d5-NEtFOSAA



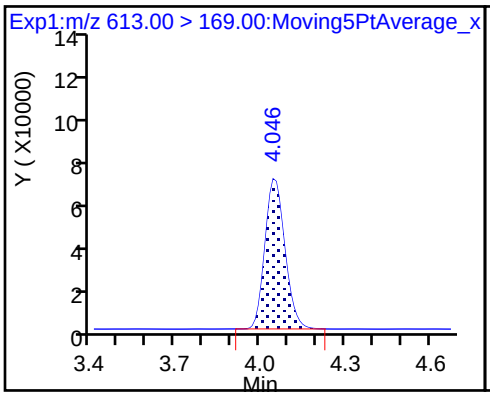
D 30 13C2 PFUnA



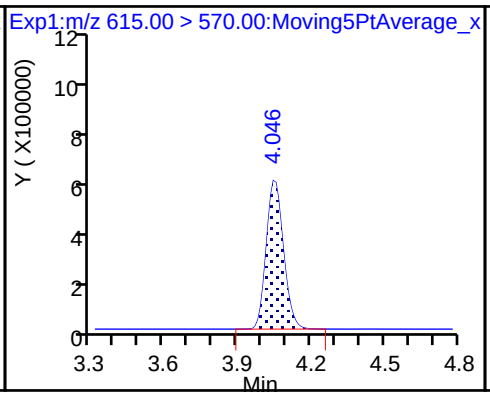
37 Perfluorododecanoic acid



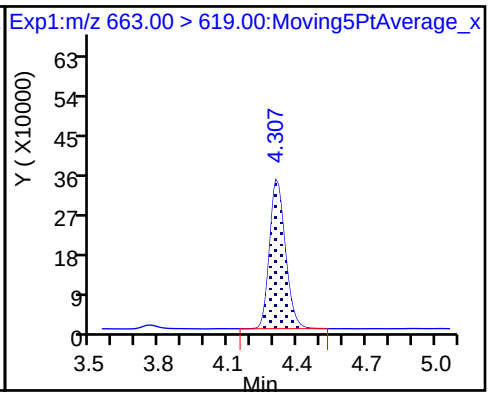
37 Perfluorododecanoic acid



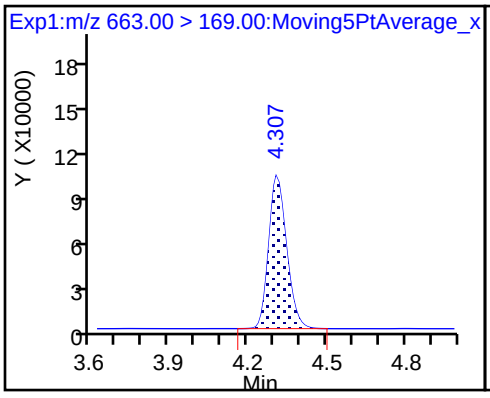
D 36 13C2 PFDoA



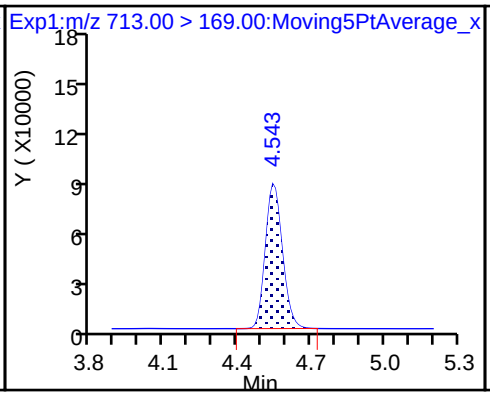
41 Perfluorotridecanoic acid



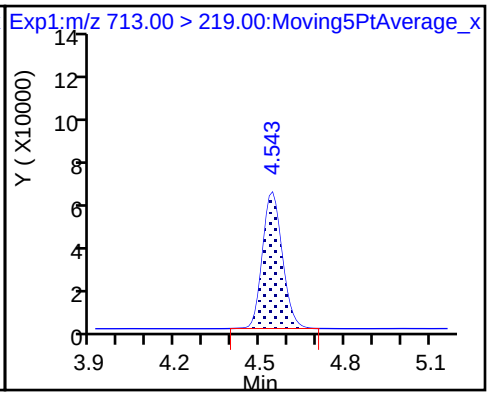
41 Perfluorotridecanoic acid



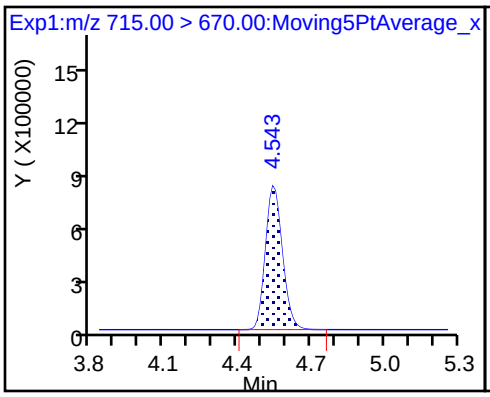
42 Perfluorotetradecanoic acid



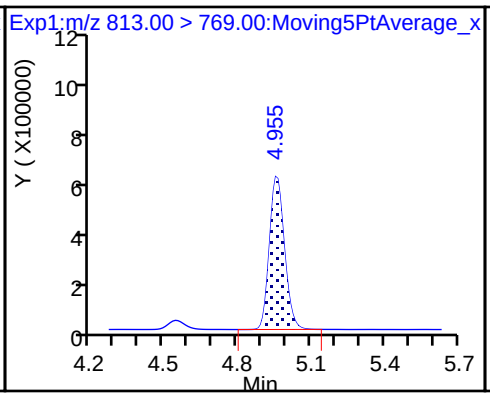
42 Perfluorotetradecanoic acid



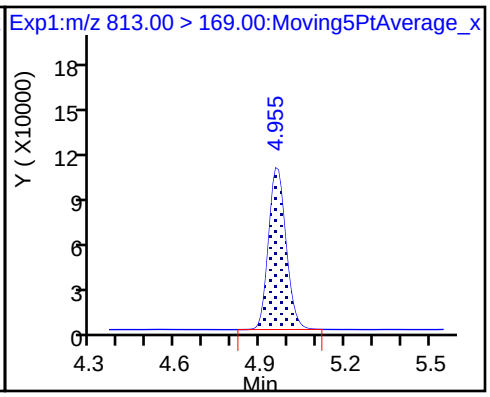
D 43 13C2-PFTeDA



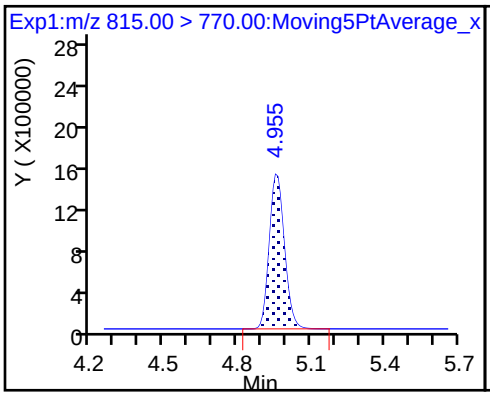
45 Perfluorohexadecanoic acid



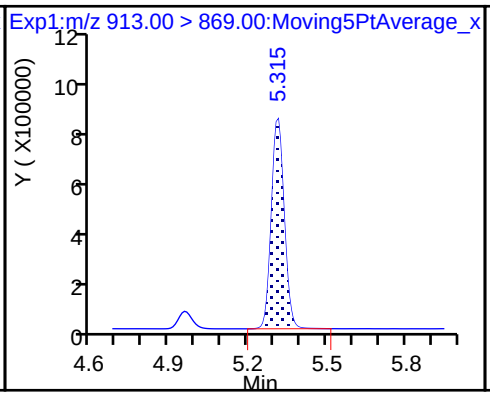
45 Perfluorohexadecanoic acid



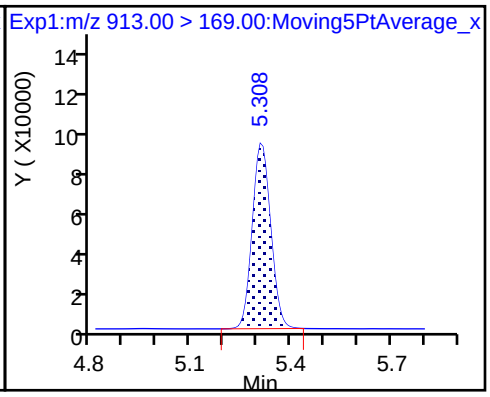
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-215106/3-A

Matrix: Solid Lab File ID: 2018.03.28LLDXD_010.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 03/27/2018 20:41

Sample wt/vol: 250.00(mL) Date Analyzed: 03/28/2018 19:15

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 215294 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	33.87		20.0	2.00

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	119		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_010.d
Lims ID: LCSD 320-215106/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 28-Mar-2018 19:15:15 ALS Bottle#: 4 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-215106/3-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 07:49:47 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 29-Mar-2018 07:40:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.528	6586800	2.70		108	93285	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.446	-0.006	1.000	2363462	0.9521		95.2	873	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.717	1.717	0.0	1.005	1828487	0.9602		96.0	761	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.718	-0.010	0.627	4222289	2.61		104	110428	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2534675	0.8341		94.4	1786	
298.90 > 99.00	1.753	1.753	0.0	1.005	1077187		2.35(1.25-3.74)		1714	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.754	-0.010	0.640	90929	2.46		106	629	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.975	1.976	-0.001	1.000	575606	0.9112		97.6	37059	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	1808526	0.9682		96.8	3022	
313.00 > 119.00	2.008	2.008	0.0	1.000	167119		10.82(5.03-15.10)		2126	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.019	-0.011	0.736	4567548	2.55		102	173735	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.353	2.353	0.0	1.000	1830876	0.9125		91.3	1282	
363.00 > 169.00	2.353	2.353	0.0	1.000	712413		2.57(1.13-3.40)		1567	
D 9 13C4-PFHpA										
367.00 > 322.00	2.353	2.354	-0.001	0.863	4848814	2.75		110	107619	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.367	2.367	0.0	1.000	2200531	0.8088		88.9	10867	
399.00 > 99.00	2.367	2.367	0.0	1.000	753564		2.92(1.50-4.49)		3916	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.367	2.368	-0.001	0.868	5781155	2.66		112	115811	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.695	2.695	0.0	1.000	644213	0.8468		89.3	9957	
D 12 M2-6:2FTS										
429.00 > 81.00	2.695	2.705	-0.010	0.988	1036238	2.83		119	48738	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.726	2.726	0.0	1.000	1958044	0.9339		98.1	52076	
449.00 > 99.00	2.726	2.726	0.0	1.000	510439		3.84(1.94-5.82)		13543	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.726	2.726	0.0	1.000	1915010	0.9592		95.9	709	
413.00 > 169.00	2.726	2.726	0.0	1.000	993487		1.93(0.84-2.52)		4010	
* 62 13C2-PFOA										M
415.00 > 370.00	2.726	2.726	0.0		4813679	2.50			56010	M
D 14 13C4 PFOA										
417.00 > 372.00	2.726	2.728	-0.002	1.000	4418106	2.45		97.9	115164	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.103	3.095	0.008	1.000	1607192	0.8817		95.0	4212	
499.00 > 99.00	3.103	3.095	0.008	1.000	364778		4.41(2.31-6.93)		3563	
20 Perfluorononanoic acid										
463.00 > 419.00	3.103	3.103	0.0	1.000	1500216	0.9606		96.1	1316	
463.00 > 169.00	3.103	3.103	0.0	1.000	379914		3.95(1.90-5.69)		8926	
D 19 13C5 PFNA										
468.00 > 423.00	3.103	3.112	-0.009	1.138	3914067	2.46		98.4	83815	
D 18 13C4 PFOS										
503.00 > 80.00	3.103	3.112	-0.009	1.138	3910920	2.47		103	83428	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.416	3.417	-0.001	1.000	2003157	0.9153		91.5	36946	
D 21 13C8 FOSA										
506.00 > 78.00	3.416	3.418	-0.002	1.253	5550193	2.60		104	82004	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.453	3.454	-0.001	1.000	616529	0.9397		98.1	7881	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.462	3.463	-0.001	1.000	1261275	0.9428		94.3	6659	
513.00 > 169.00	3.462	3.463	-0.001	1.000	219532		5.75(2.36-7.09)		5925	
D 26 M2-8:2FTS										
529.00 > 81.00	3.453	3.464	-0.011	1.266	1231228	2.49		104	33509	
D 23 13C2 PFDA										
515.00 > 470.00	3.462	3.473	-0.011	1.270	3385045	2.43		97.1	52919	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.622	3.623	-0.001	1.000	626988	1.01		101	6161	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.622	3.633	-0.011	1.329	1556764	2.12		84.8	40663	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.781	3.781	0.0	1.000	1002858	0.9013		93.5	41223	
599.00 > 99.00	3.781	3.781	0.0	1.000	346305		2.90(1.39-4.16)		10026	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.791	3.792	-0.001	1.000	598608	0.9261		92.6	11881	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.802	3.802	0.0	1.003	796444	0.8765		87.6	3352	
563.00 > 169.00	3.802	3.802	0.0	1.003	206705		3.85(2.12-6.36)		9440	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.804	-0.013	1.391	1729728	2.07		82.7	3811	
D 30 13C2 PFUnA										
565.00 > 520.00	3.791	3.804	-0.013	1.391	2634947	2.11		84.5	66246	
35 MeFOSA										
512.00 > 169.00	3.632	3.875	-0.243		6028	NC			236	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.091	4.092	-0.001	1.000	1171955	0.9364		93.6	832	
613.00 > 169.00	4.091	4.092	-0.001	1.000	286826		4.09(2.13-6.40)		5303	
D 36 13C2 PFDoA										
615.00 > 570.00	4.091	4.105	-0.014	1.501	2990102	2.11		84.5	20974	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.363	4.356	0.007	1.000	1178830	0.8954		89.5	456	
663.00 > 169.00	4.363	4.356	0.007	1.000	383629		3.07(1.25-3.76)		6753	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.597	4.601	-0.004	1.000	338397	0.9015		90.2	5309	
713.00 > 219.00	4.597	4.601	-0.004	1.000	240049		1.41(0.71-2.13)		4043	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.597	4.613	-0.016	1.686	3787163	2.19		87.6	25047	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.018	5.012	0.006	1.000	2108405	0.9867		98.7	475	
813.00 > 169.00	5.018	5.012	0.006	1.000	343393		6.14(2.86-8.58)		2601	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.018	5.040	-0.022	1.841	5736621	2.02		80.9	16367	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.391	5.387	0.004	1.000	2239913	1.06		106	448	
913.00 > 169.00	5.391	5.387	0.004	1.000	277658		8.07(3.83-11.48)		2761	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 07:50:01 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b\2018.03.28LLDXD_010.d

Injection Date: 28-Mar-2018 19:15:15 Instrument ID: A8_N

Lims ID: LCSD 320-215106/3-A

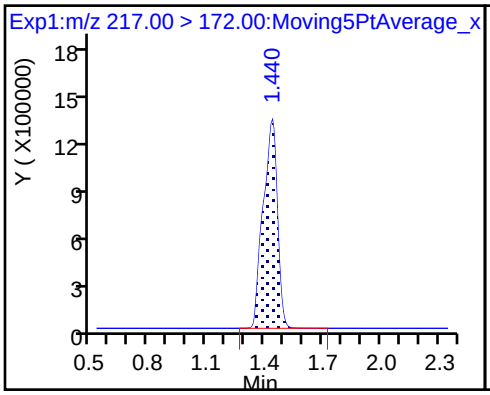
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 7

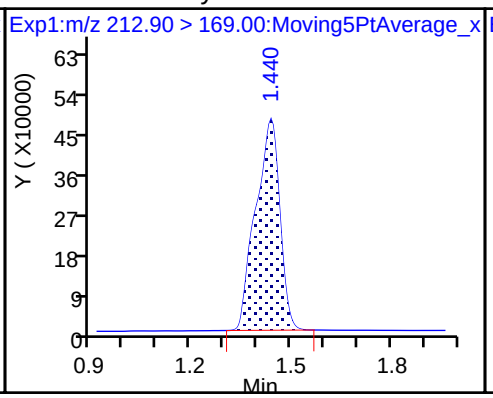
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

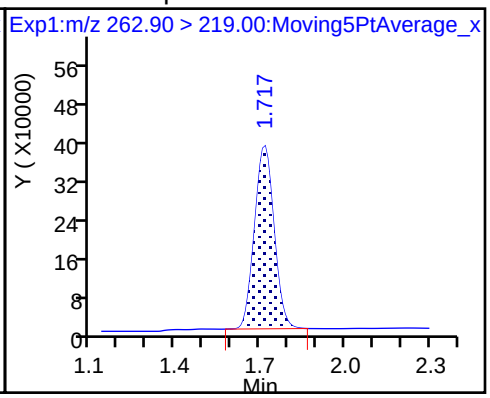
D 1 13C4 PFBA



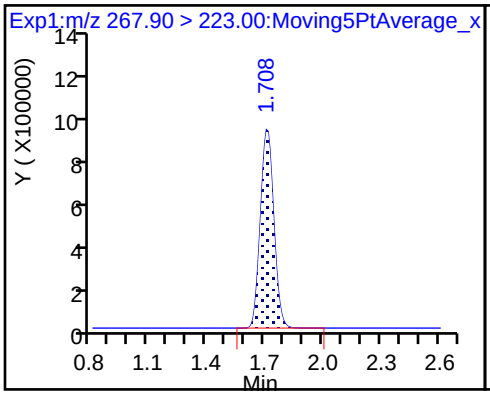
2 Perfluorobutyric acid



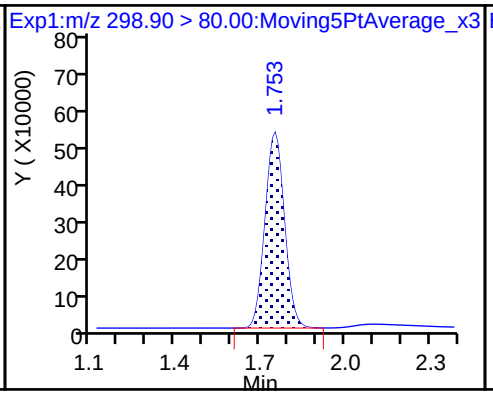
4 Perfluoropentanoic acid



D 3 13C5-PFPeA



5 Perfluorobutanesulfonic acid



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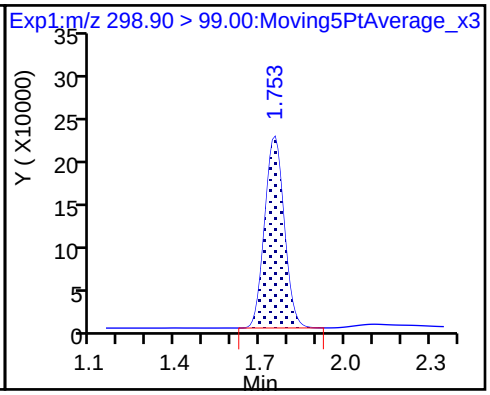
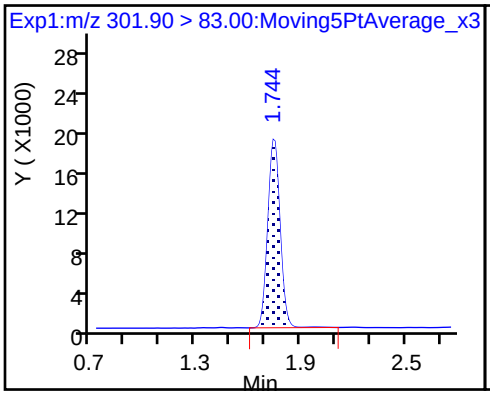
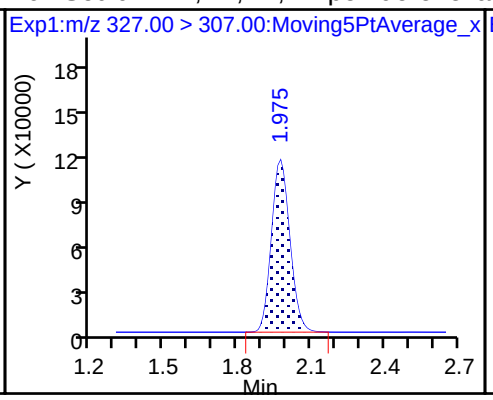


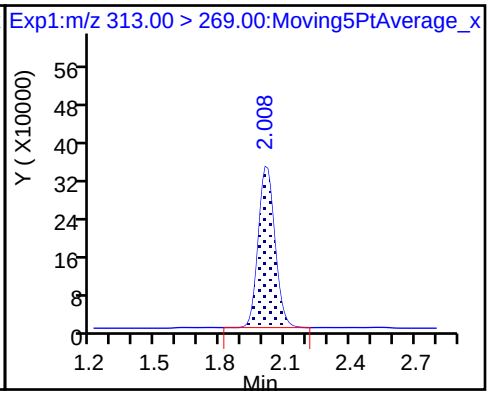
D 47 13C3-PFBS



61 Sodium 1H,1H,2H,2H-perfluorohexane



6 Perfluorohexanoic acid



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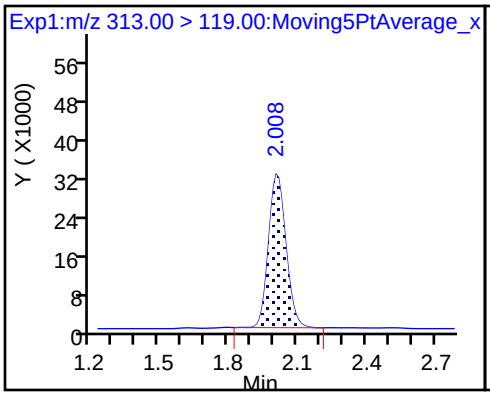
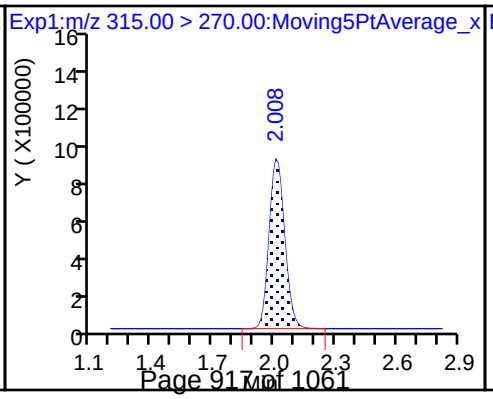
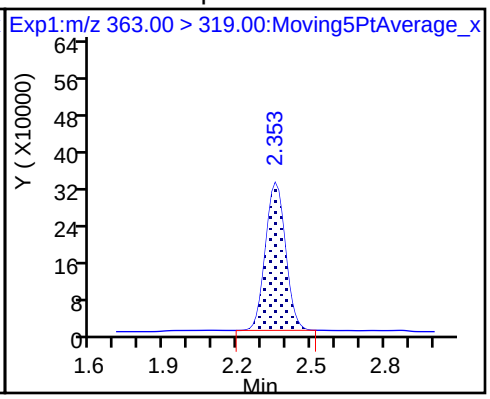


D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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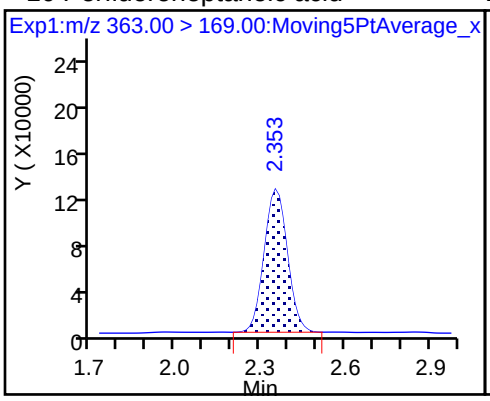
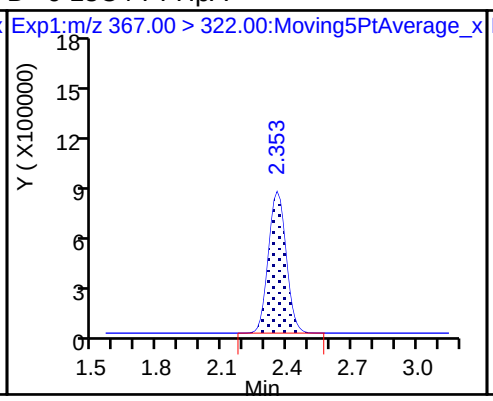
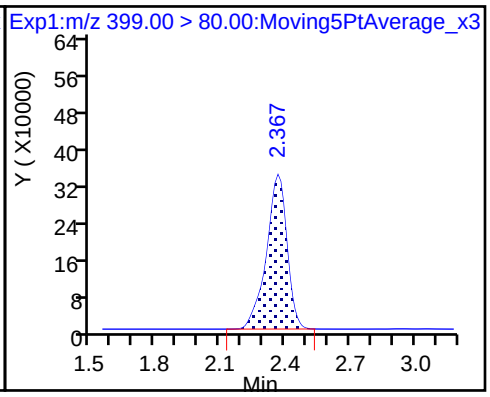


D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid



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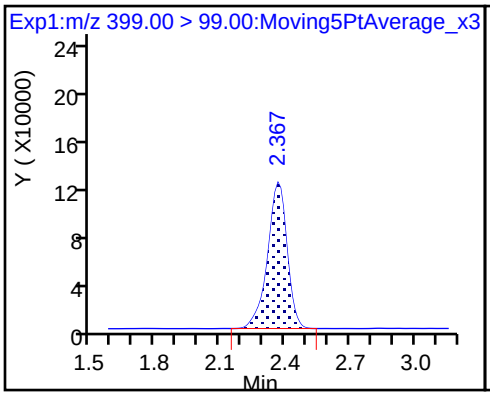
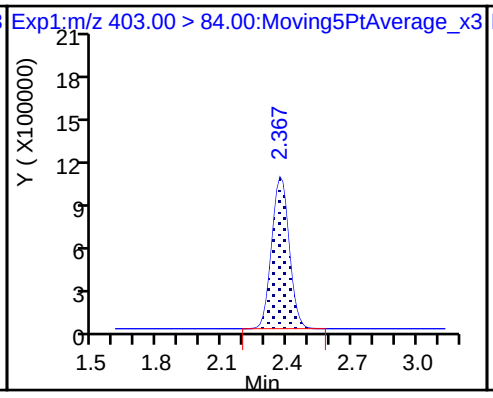
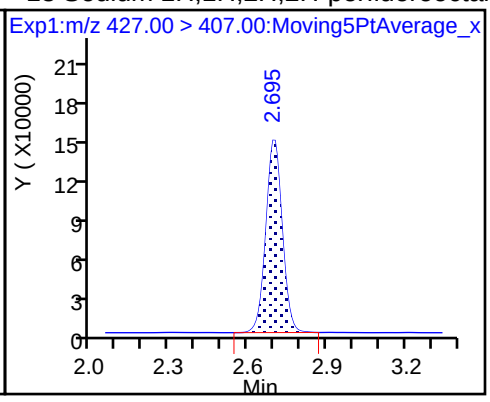


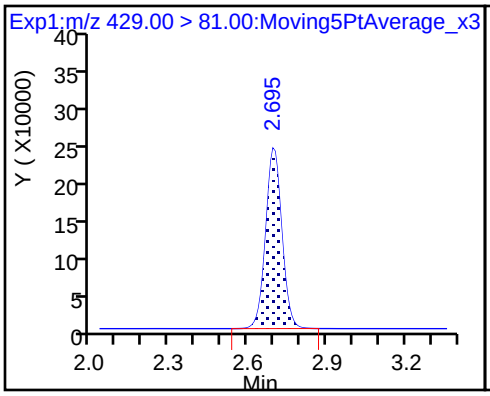
D 11 18O2 PFHxS



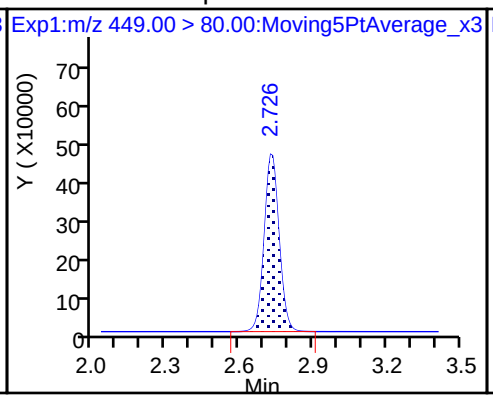
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 12 M2-6:2FTS



16 Perfluoroheptanesulfonic acid



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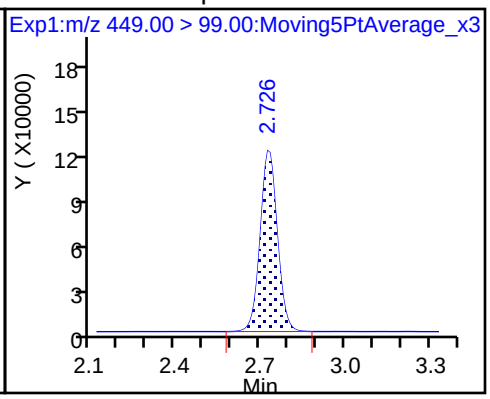
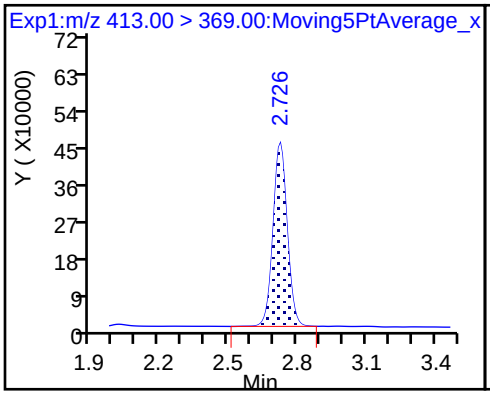


15 Perfluorooctanoic acid



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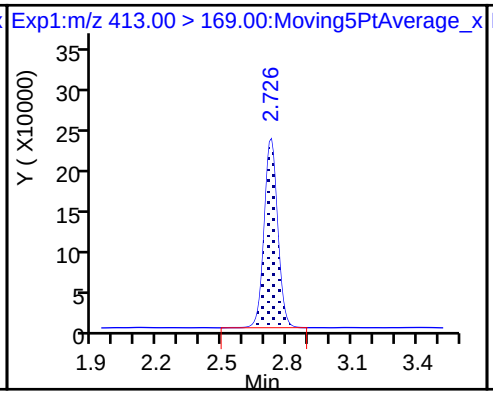
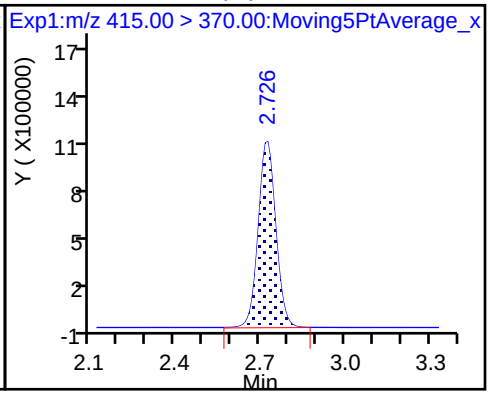
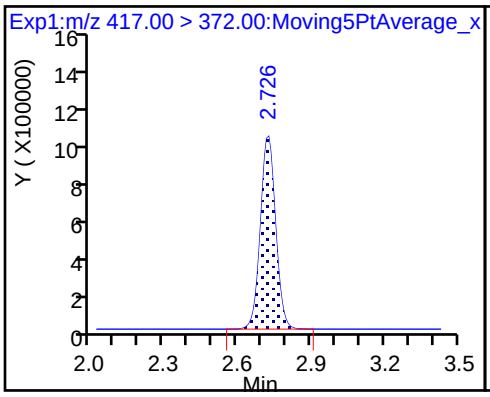


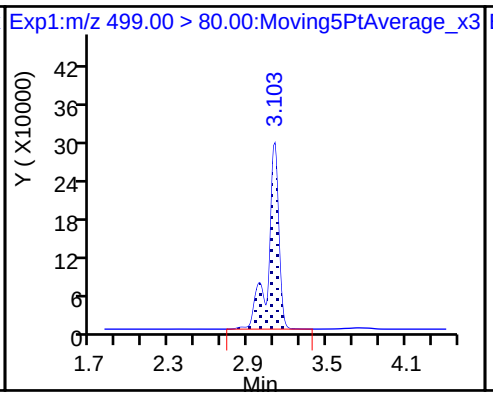
* 62 13C2-PFOA (M)



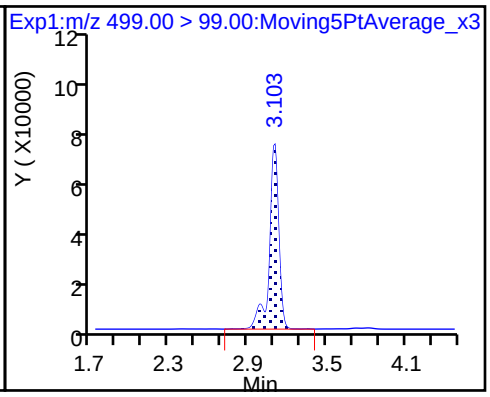
D 14 13C4 PFOA



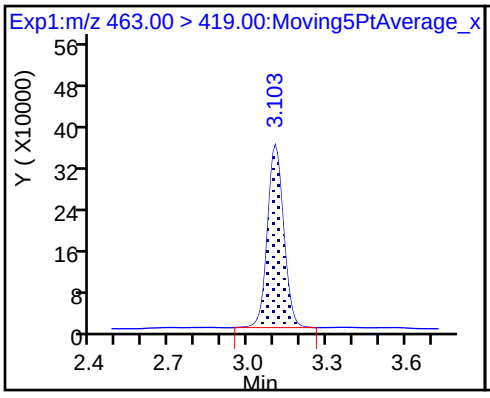
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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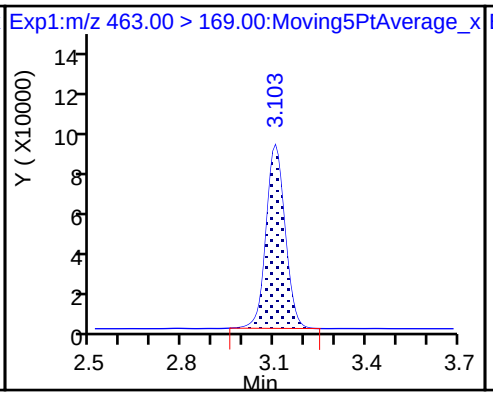
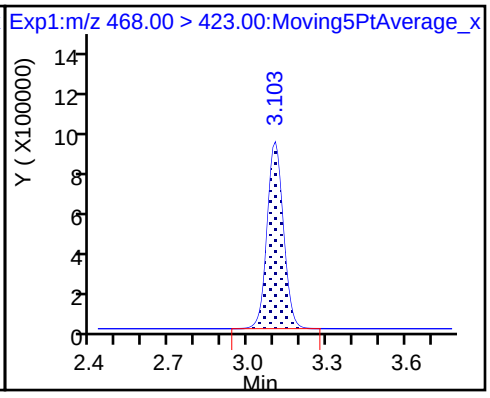
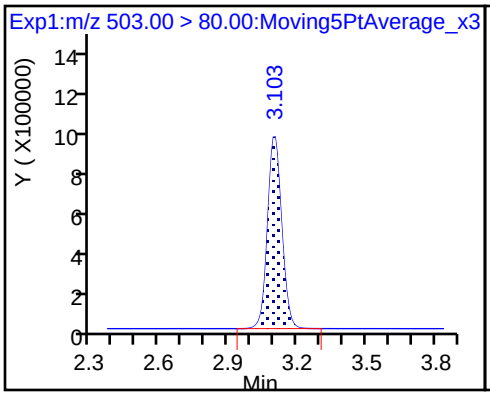


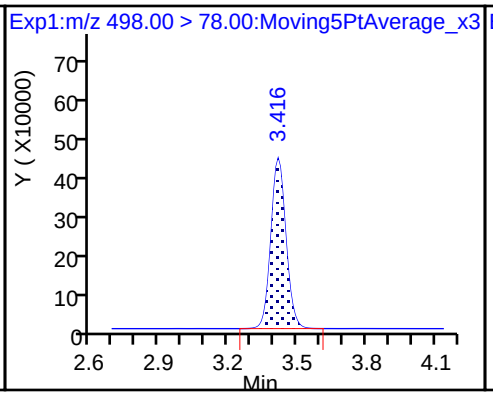
D 19 13C5 PFNA



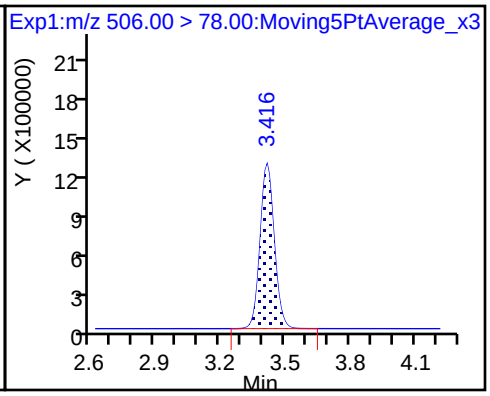
D 18 13C4 PFOS



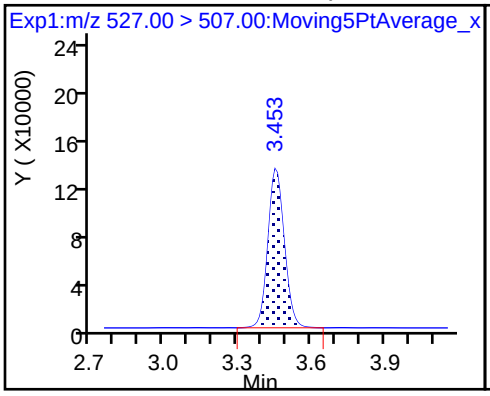
22 Perfluorooctane Sulfonamide



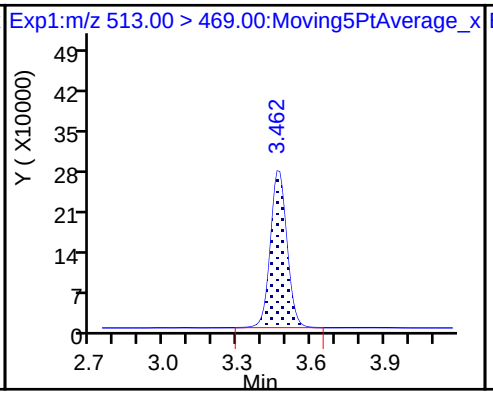
D 21 13C8 FOSA



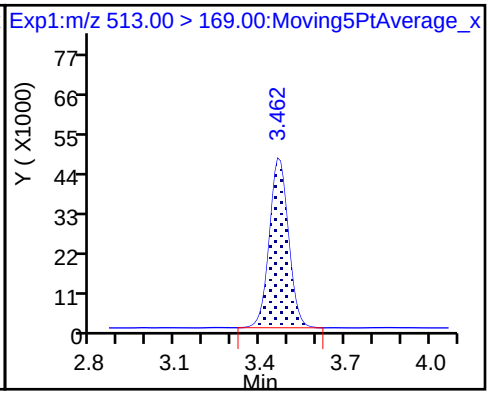
25 Sodium 1H,1H,2H,2H-perfluorodecane



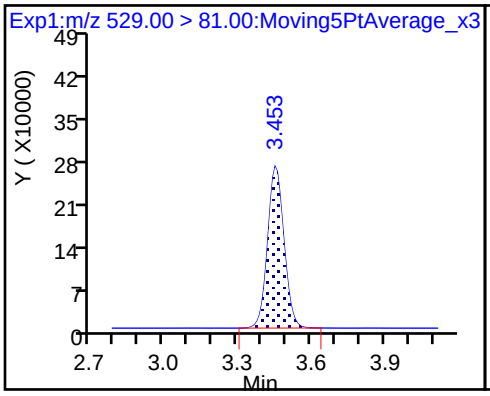
24 Perfluorodecanoic acid



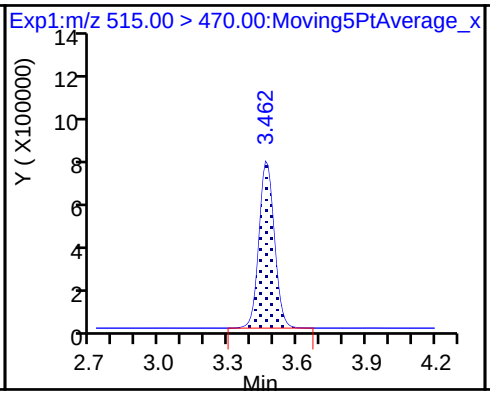
24 Perfluorodecanoic acid



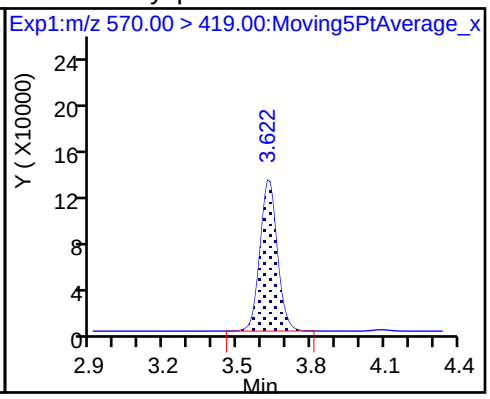
D 26 M2-8:2FTS



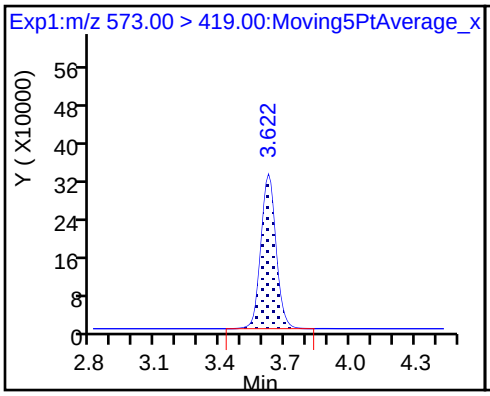
D 23 13C2 PFDA



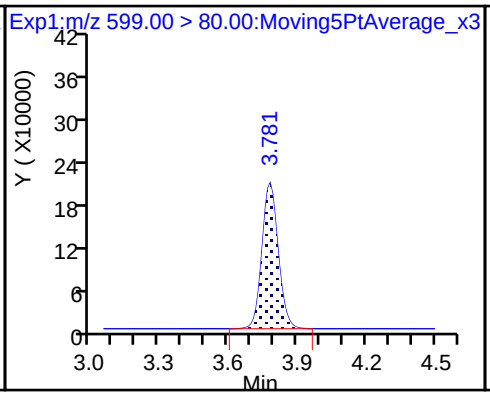
28 N-methyl perfluorooctane sulfonami



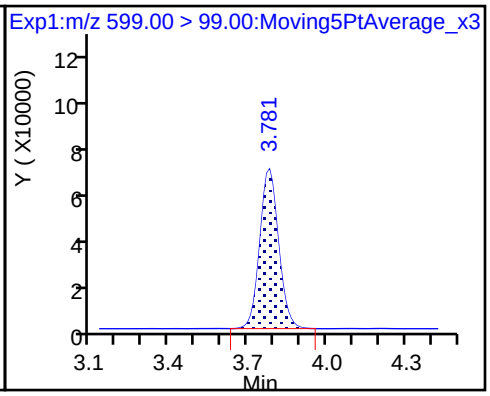
D 27 d3-NMeFOSAA



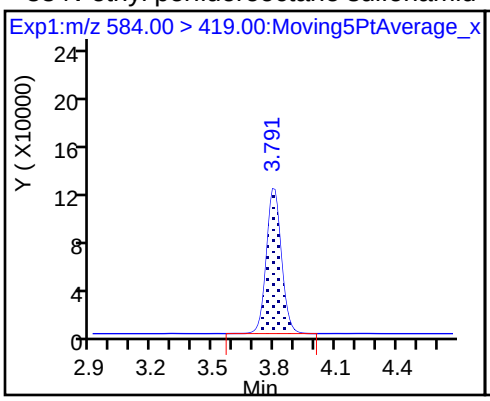
29 Perfluorodecane Sulfonic acid



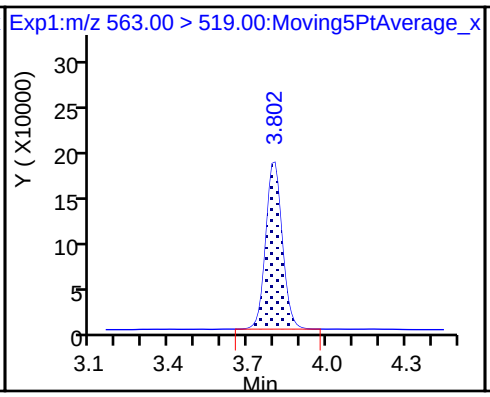
29 Perfluorodecane Sulfonic acid



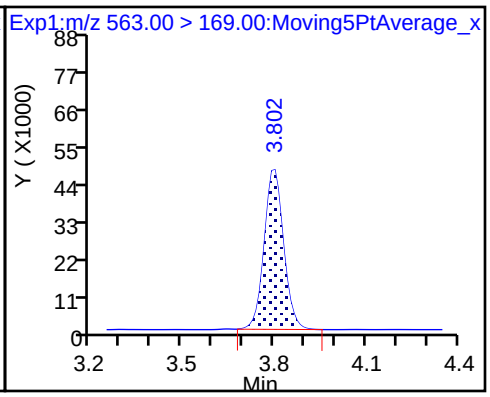
33 N-ethyl perfluorooctane sulfonamid



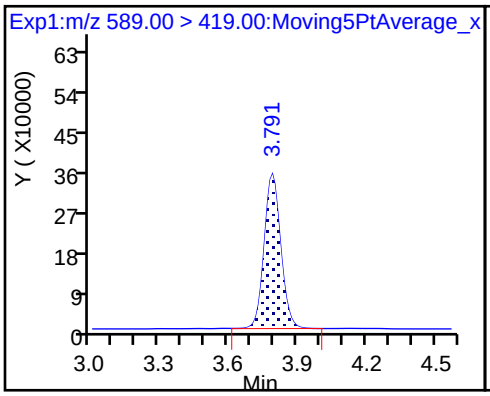
31 Perfluoroundecanoic acid



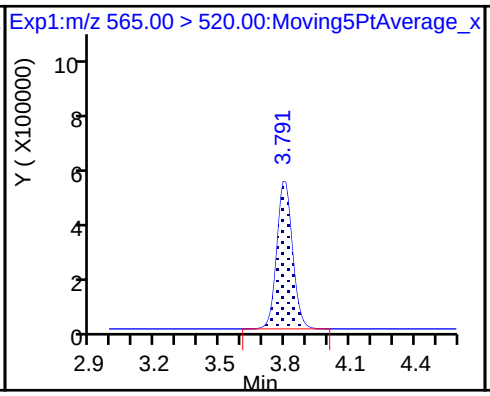
31 Perfluoroundecanoic acid



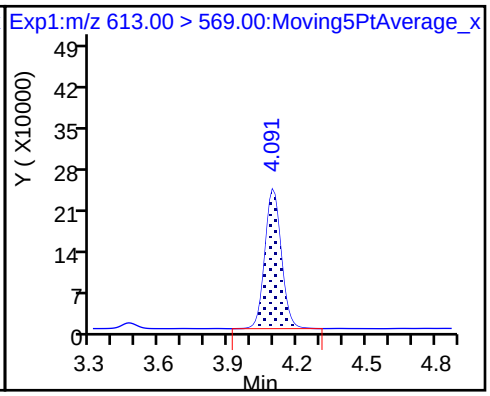
D 32 d5-NEtFOSAA



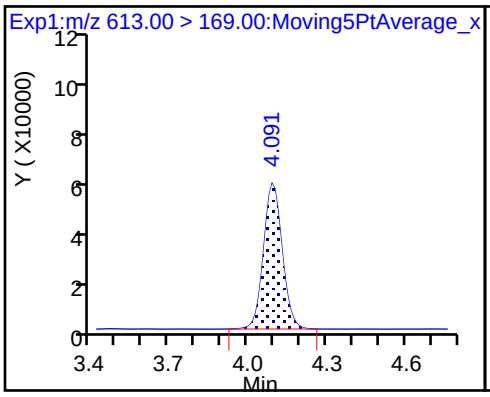
D 30 13C2 PFUnA



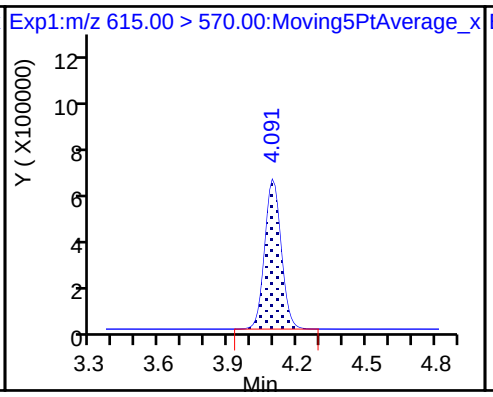
37 Perfluorododecanoic acid



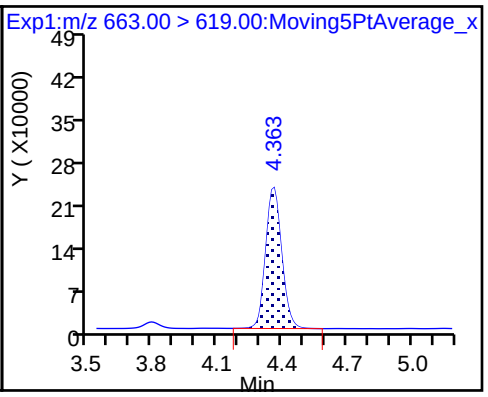
37 Perfluorododecanoic acid



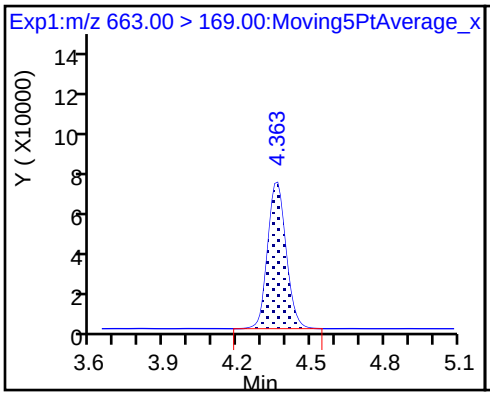
D 36 13C2 PFDoA



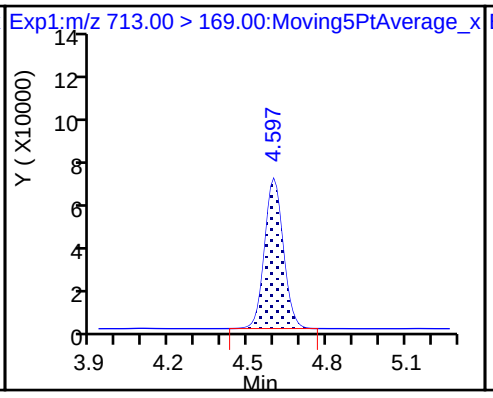
41 Perfluorotridecanoic acid



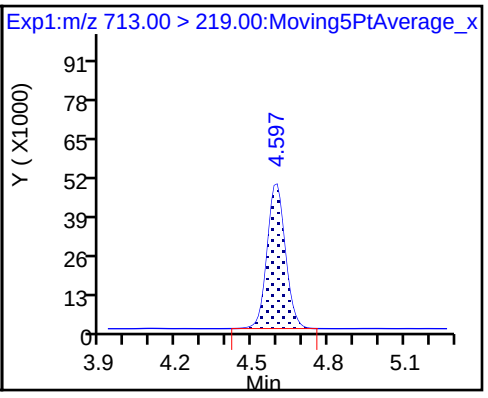
41 Perfluorotridecanoic acid



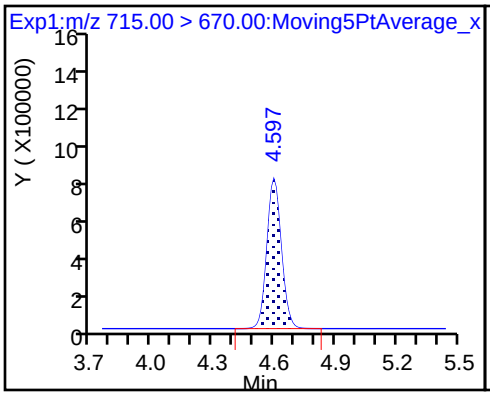
42 Perfluorotetradecanoic acid



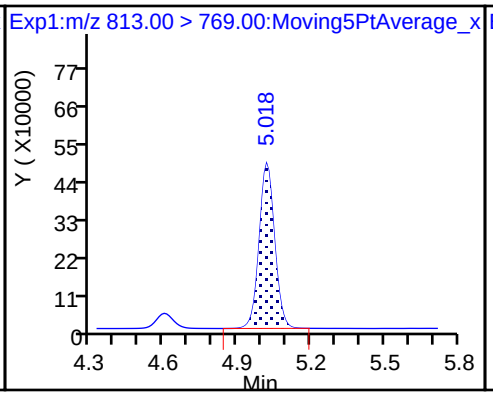
42 Perfluorotetradecanoic acid



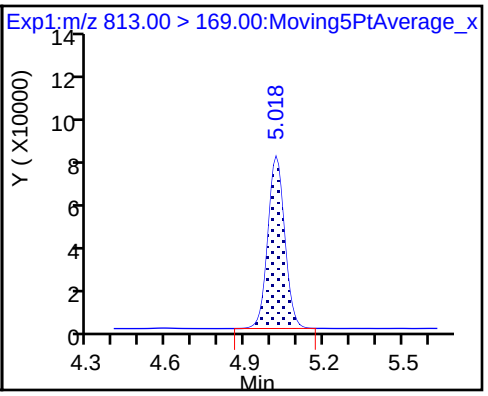
D 43 13C2-PFTeDA



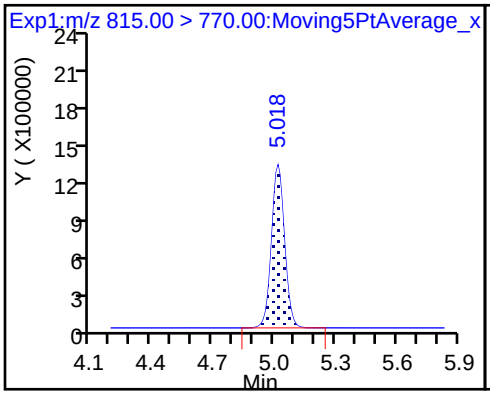
45 Perfluorohexadecanoic acid



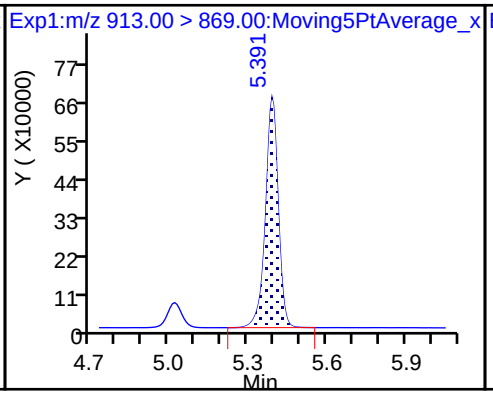
45 Perfluorohexadecanoic acid



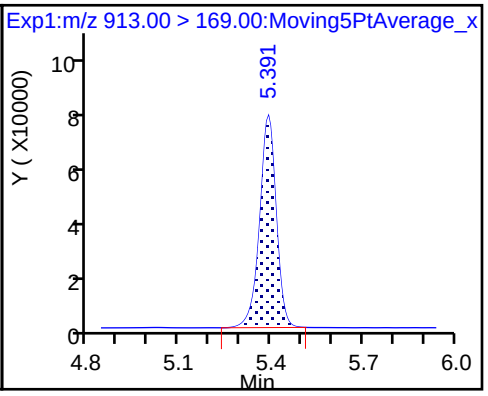
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-B MS

Matrix: Solid | Lab File ID: 2018.03.20LLA_038.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.05(g) | Date Analyzed: 03/21/2018 01:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00218		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00211		0.00020	0.000078
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00258		0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00217		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00341		0.00020	0.000087
375-95-1	Perfluorononanoic acid (PFNA)	0.0183		0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00243		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00181		0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00210		0.00020	0.000068
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00194		0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00189		0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00203		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00907		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00820		0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00139		0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00219		0.00020	0.000083
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00202		0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00212		0.0020	0.00038
27619-97-2	6:2FTS	0.00713		0.0020	0.00015
39108-34-4	8:2FTS	0.00240		0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-B MS

Matrix: Solid | Lab File ID: 2018.03.20LLA_038.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.05(g) | Date Analyzed: 03/21/2018 01:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	82		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	83		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	83		25-150
STL00995	13C5 PFNA	50		25-150
STL00996	13C2 PFDA	60		25-150
STL00997	13C2 PFUnA	44		25-150
STL00998	13C2 PFDoA	28		25-150
STL02116	13C2-PFTeDA	30		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	56		25-150
STL01056	13C8 FOSA	46		25-150
STL02118	d3-NMeFOSAA	24	*	25-150
STL02117	d5-NEtFOSAA	23	*	25-150
STL02279	M2-6:2FTS	77		25-150
STL02280	M2-8:2FTS	63		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d
Lims ID: 320-36683-A-10-B MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 21-Mar-2018 01:07:20 ALS Bottle#: 28 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-10-b ms
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:39:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.537	4655375	2.05		81.9	66355	
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.446	-0.006	1.000	1847258	1.07		107	665	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.700	-0.001	0.634	3290993	2.05		82.0	69795	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.699	1.709	-0.010	1.000	1597771	1.04		104	424	M
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.736	-0.001	0.648	77850	1.97		84.6	370	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.744	-0.009	1.000	2579543	1.00		113	871	
298.90 > 99.00	1.735	1.744	-0.009	1.000	1091386		2.36(1.25-3.74)		887	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.955	0.0	1.000	471519	0.8761		93.8	20471	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.987	-0.001	0.741	3704236	2.07		82.8	89875	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.997	-0.011	1.000	1898970	1.27		127	2604	
313.00 > 119.00	1.986	1.997	-0.011	1.000	179272		10.59(5.03-15.10)		3051	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.315	-0.001	0.864	3736909	2.15		85.9	88132	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.328	-0.014	1.000	1650667	1.07		107	1804	
363.00 > 169.00	2.314	2.328	-0.014	1.000	660139		2.50(1.13-3.40)		12140	
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.328	-0.001	0.869	4546039	1.96		82.8	106881	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.341	-0.014	1.000	9558488	4.46		490	15780	
399.00 > 99.00	2.327	2.341	-0.014	1.000	2953908		3.24(1.50-4.49)		7667	
D 12 M2-6:2FTS										
429.00 > 81.00	2.655	2.657	-0.002	0.991	813297	1.82		76.8	13252	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.663	-0.008	1.000	1996772	3.50		370	76383	
D 14 13C4 PFOA										
417.00 > 372.00	2.678	2.681	-0.003	1.000	3501523	2.08		83.4	114527	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.678	2.695	-0.017	1.000	2619706	1.68		168	916	M
413.00 > 169.00	2.678	2.695	-0.017	1.000	1391887		1.88(0.84-2.52)		3889	
* 62 13C2-PFOA										
415.00 > 370.00	2.678	2.695	-0.017		4454486	2.50			127030	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.686	2.703	-0.017	1.000	4790527	4.03		423	1165	
449.00 > 99.00	2.686	2.703	-0.017	1.000	1283582		3.73(1.94-5.82)		2405	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.051	0.006	1.141	2161020	1.33		55.7	15155	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.058	-0.001	1.141	1667868	1.24		49.6	35072	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.057	3.067	-0.010	1.000	118241873	120.8		13017	46054	E
499.00 > 99.00	3.050	3.067	-0.017	0.998	34250081		3.45(2.31-6.93)		82252	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.067	-0.010	1.000	6131680	9.01		901	9488	
463.00 > 169.00	3.057	3.067	-0.010	1.000	1540383		3.98(1.90-5.69)		7047	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.389	0.008	1.268	2675542	1.14		45.5	34945	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.401	-0.004	1.000	1120997	1.08		108	1670	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.408	0.007	1.275	634662	1.52		63.3	12859	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.417	0.007	1.278	1677670	1.49		59.8	31367	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.419	-0.004	1.000	392529	1.18		123	8781	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.428	-0.004	1.000	760060	1.19		119	3078	
513.00 > 169.00	3.424	3.428	-0.004	1.000	135871		5.59(2.36-7.09)		992	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.578	3.570	0.008	1.336	224152	0.6044		24.2	9689	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.578	3.594	-0.016	1.000	92941	1.00		99.5	2901	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.741	-0.004	1.000	394773	0.6838		70.9	7576	
599.00 > 99.00	3.737	3.741	-0.004	1.000	125081		3.16(1.39-4.16)		2615	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.399	201110	0.5672		22.7	400	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.748	0.0	1.399	966690	1.10		44.0	33695	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.762	-0.014	1.000	81921	1.04		104	2070	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.762	-0.014	1.000	288474	0.8902		89.0	743	
563.00 > 169.00	3.748	3.762	-0.014	1.000	77756		3.71(2.12-6.36)		3162	
35 MeFOSA										
512.00 > 169.00	3.902	3.875	0.027		68480	NC			2409	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.046	0.0	1.510	584930	0.7015		28.1	4515	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.046	4.061	-0.015	1.000	247153	1.03		103	68.1	
613.00 > 169.00	4.046	4.061	-0.015	1.000	60544		4.08(2.13-6.40)		1792	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.088	4.066	0.022		45645	NC			1616	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.320	-0.013	1.000	229510	0.9535		95.4	78.5	
663.00 > 169.00	4.307	4.320	-0.013	1.000	73631		3.12(1.25-3.76)		1735	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.700	571478	0.7509		30.0	7396	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.556	-0.002	1.000	58615	0.9298		93.0	1374	
713.00 > 219.00	4.543	4.556	-0.013	0.998	43685		1.34(0.71-2.13)		443	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.853	523312	0.4701		18.8	3008	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	209555	1.07		107	28.7	
813.00 > 169.00	4.964	4.974	-0.010	1.000	35338		5.93(2.86-8.58)		448	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.331	-0.009	1.000	158717	0.7777		77.8	76.7	
913.00 > 169.00	5.322	5.331	-0.009	1.000	18184		8.73(3.83-11.48)		246	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:22 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d

Injection Date: 21-Mar-2018 01:07:20 Instrument ID: A8_N

Lims ID: 320-36683-A-10-B MS

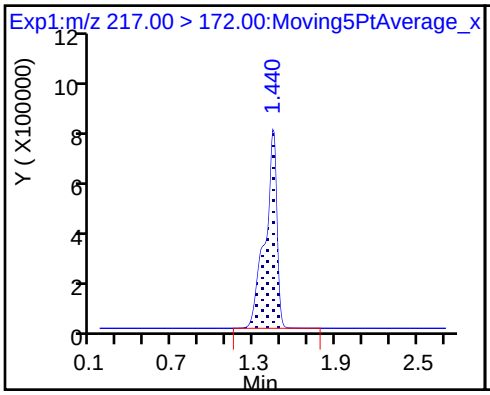
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 17

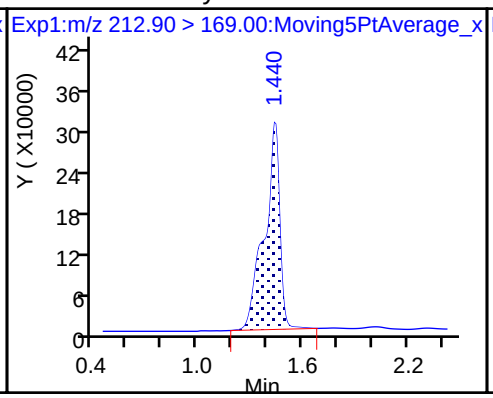
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

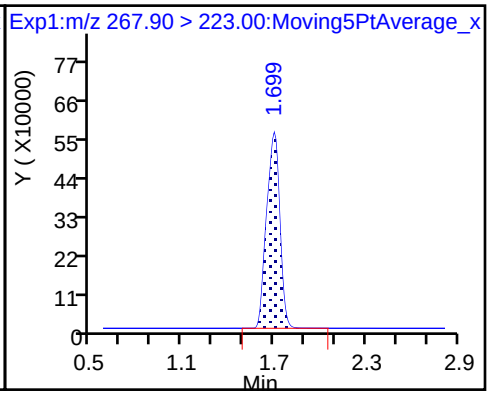
D 1 13C4 PFBA



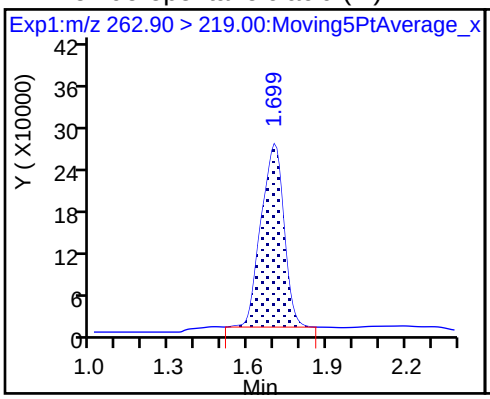
2 Perfluorobutyric acid



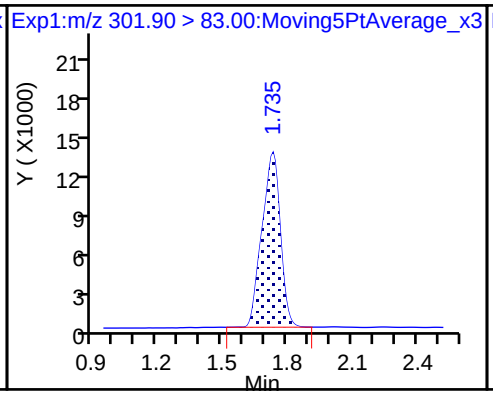
D 3 13C5-PFPeA



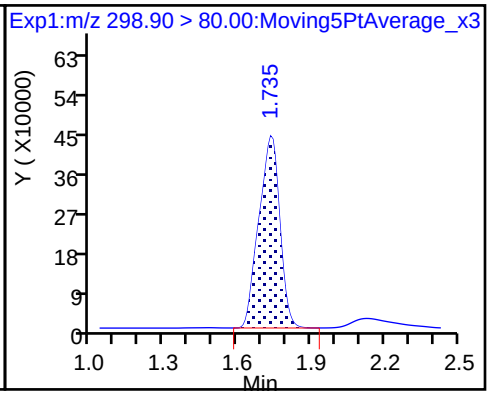
4 Perfluoropentanoic acid (M)



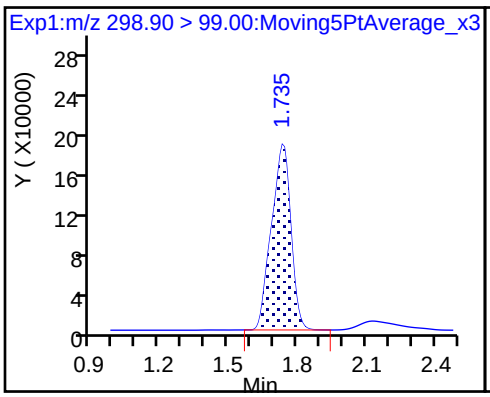
D 47 13C3-PFBS



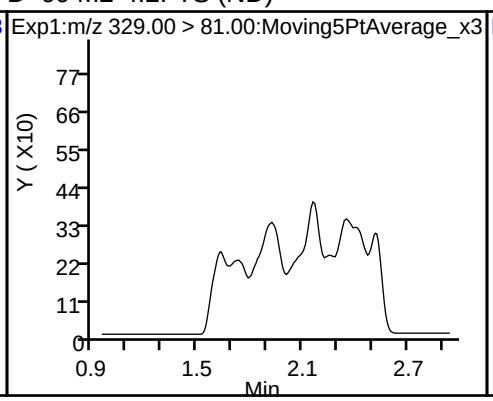
5 Perfluorobutanesulfonic acid



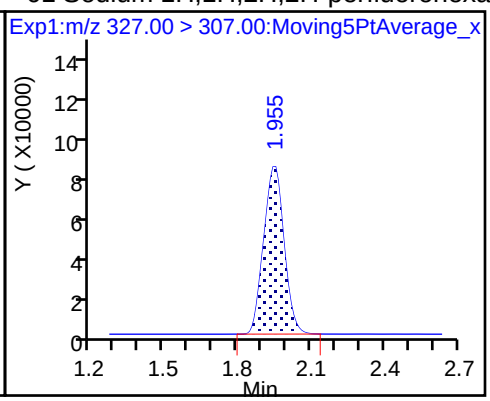
5 Perfluorobutanesulfonic acid



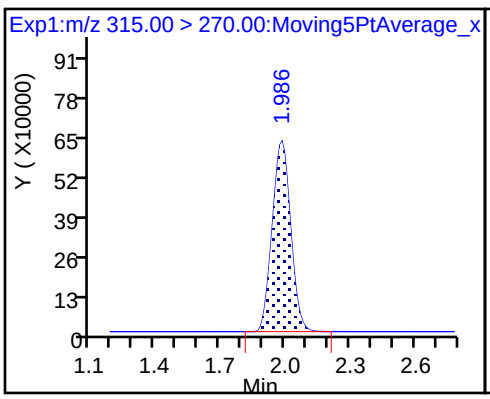
D 60 M2-4:2FTS (ND)



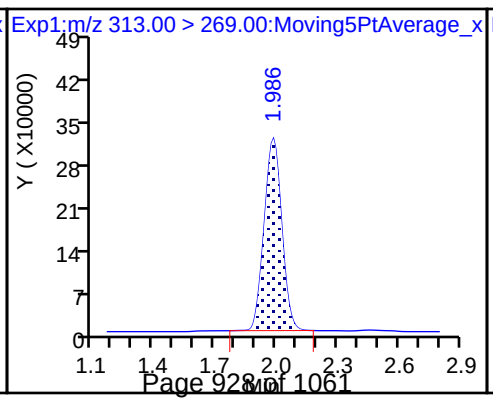
61 Sodium 1H,1H,2H,2H-perfluorohexane



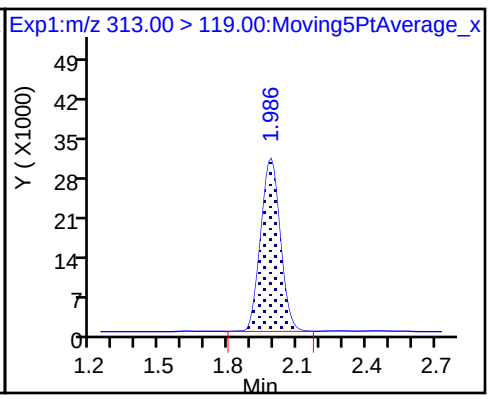
D 7 13C2 PFHxA



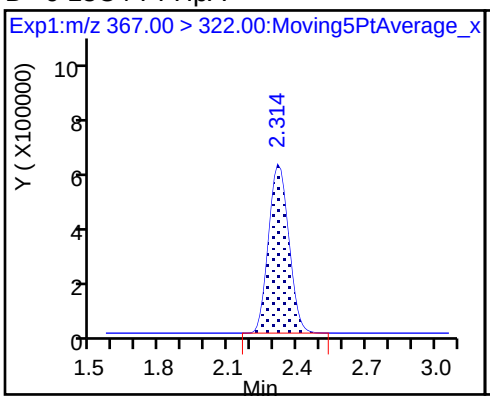
6 Perfluorohexanoic acid



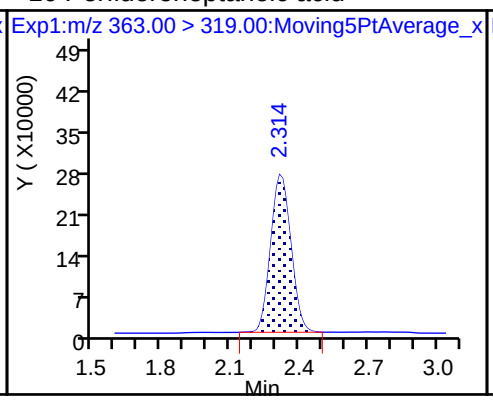
6 Perfluorohexanoic acid



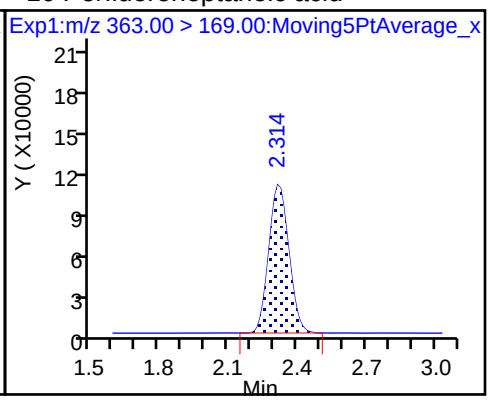
D 9 13C4-PFHpA



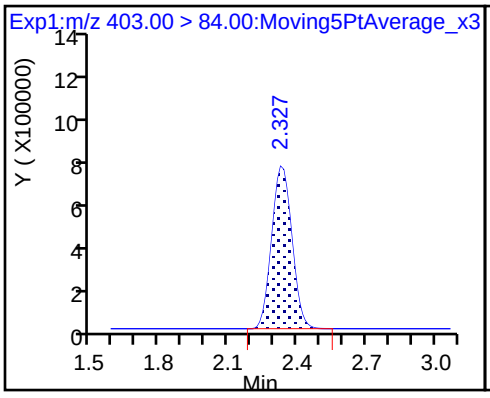
10 Perfluoroheptanoic acid



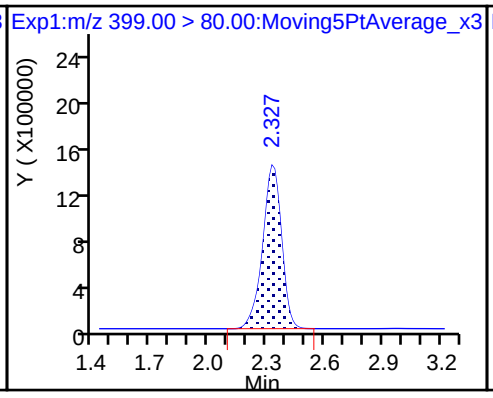
10 Perfluoroheptanoic acid



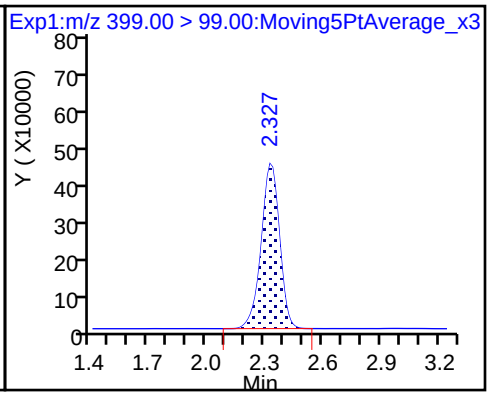
D 11 18O2 PFHxS



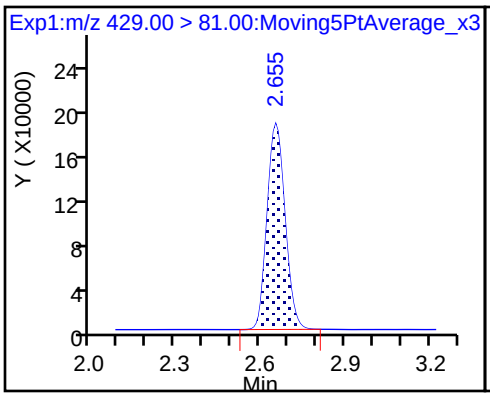
8 Perfluorohexanesulfonic acid



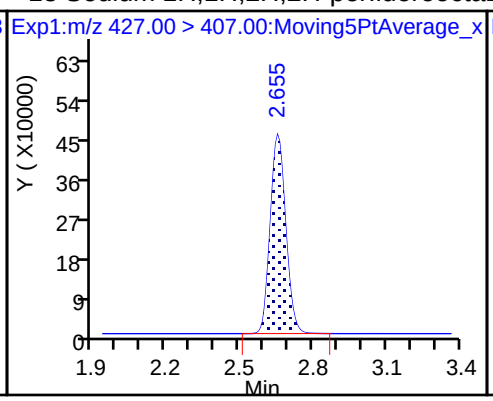
8 Perfluorohexanesulfonic acid



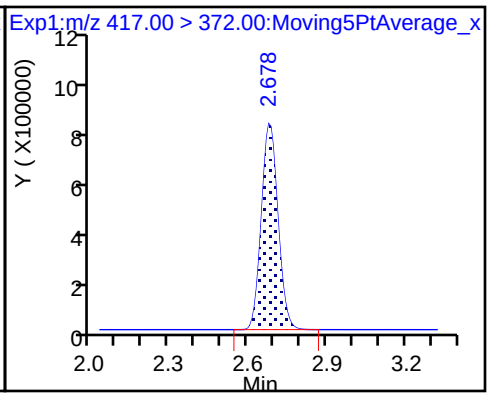
D 12 M2-6:2FTS



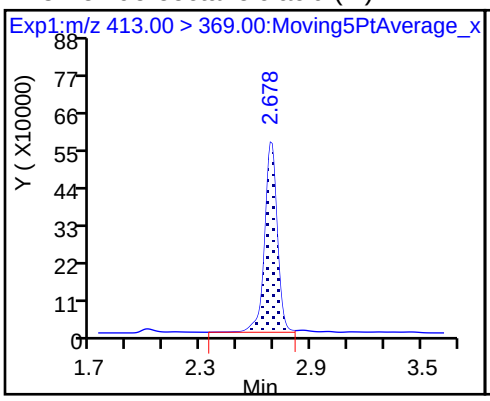
13 Sodium 1H,1H,2H,2H-perfluorooctane



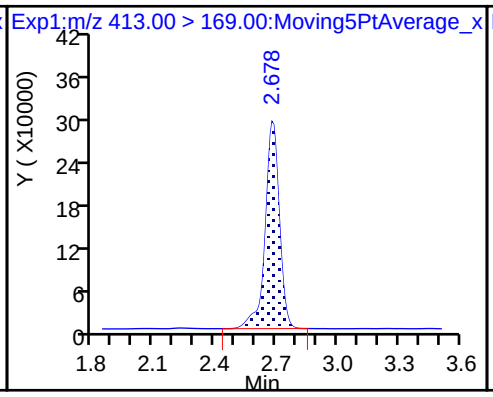
D 14 13C4 PFOA



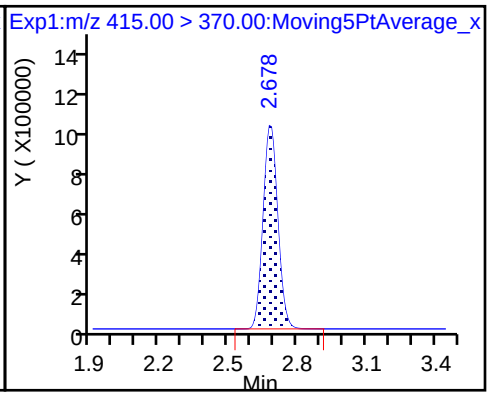
15 Perfluorooctanoic acid (M)



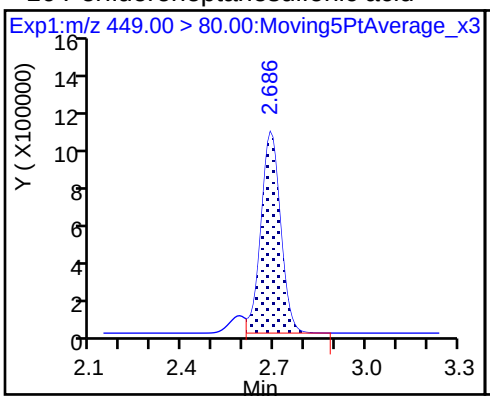
15 Perfluorooctanoic acid



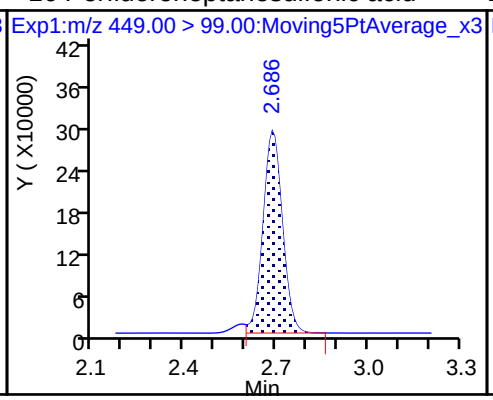
* 62 13C2-PFOA



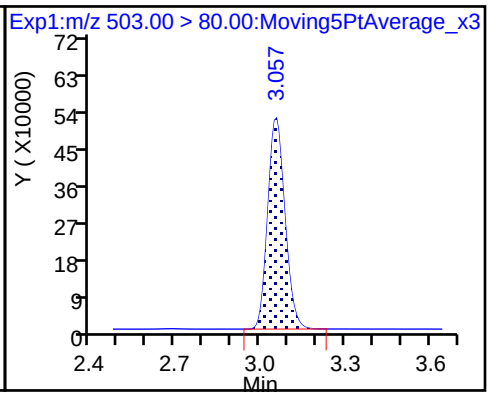
16 Perfluoroheptanesulfonic acid



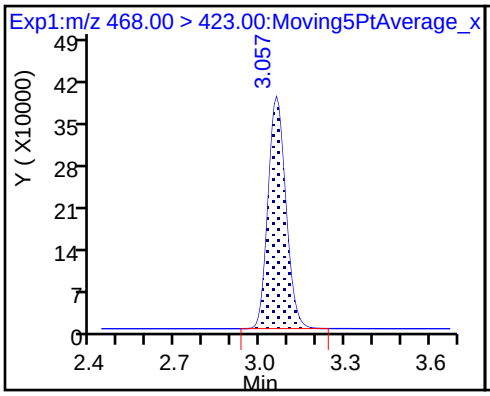
16 Perfluoroheptanesulfonic acid



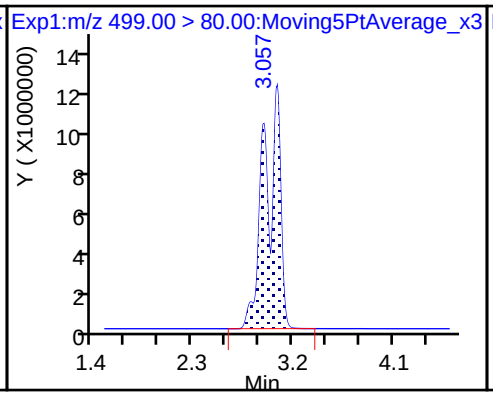
D 18 13C4 PFOS



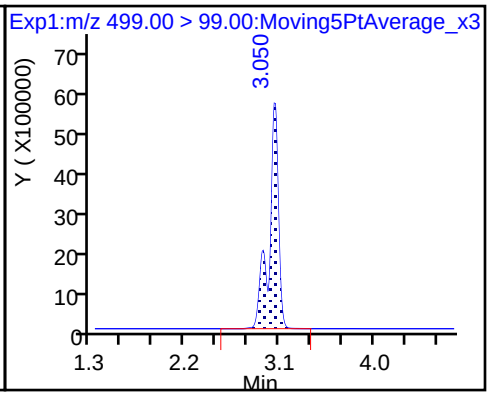
D 19 13C5 PFNA



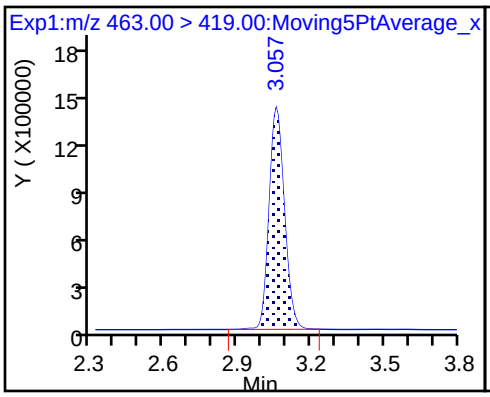
17 Perfluorooctane sulfonic acid



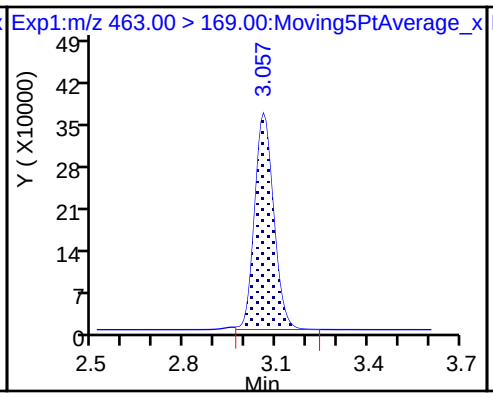
17 Perfluorooctane sulfonic acid



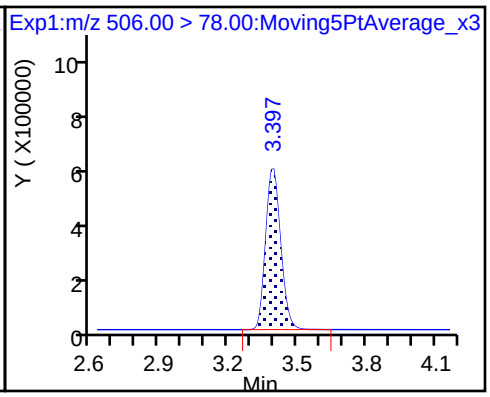
20 Perfluorononanoic acid



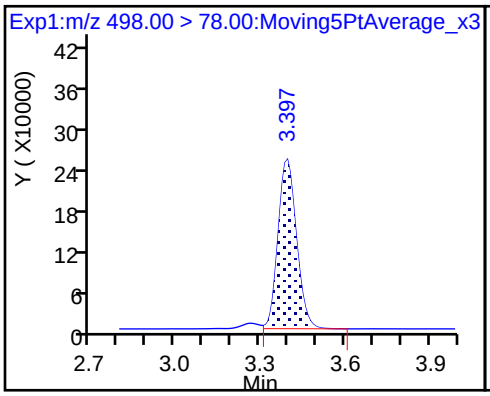
20 Perfluorononanoic acid



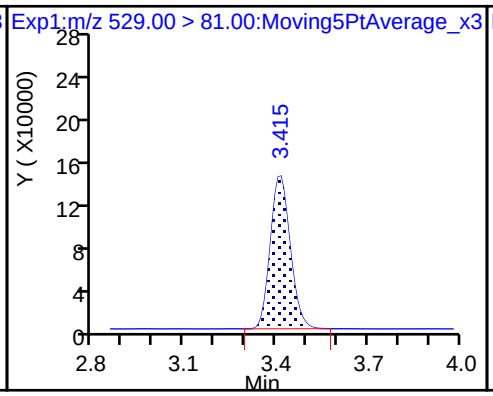
D 21 13C8 FOSA



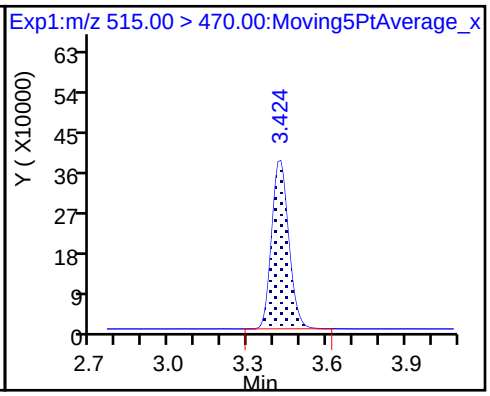
22 Perfluorooctane Sulfonamide



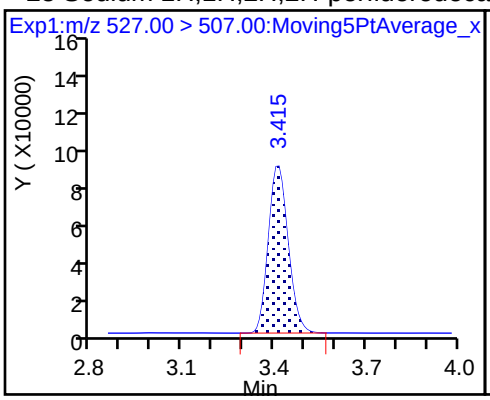
D 26 M2-8:2FTS



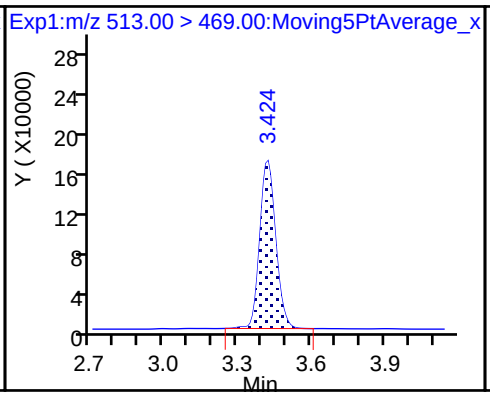
D 23 13C2 PFDA



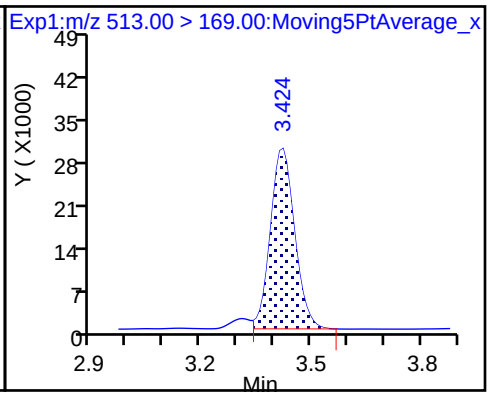
25 Sodium 1H,1H,2H,2H-perfluorodecan



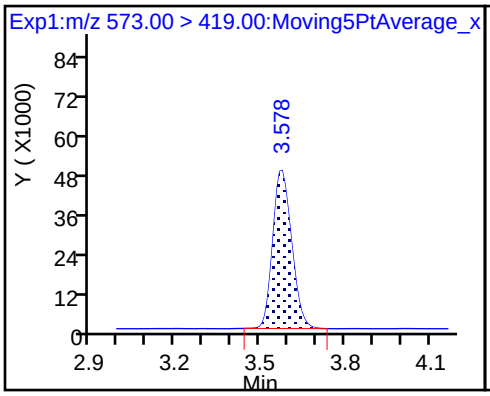
24 Perfluorodecanoic acid



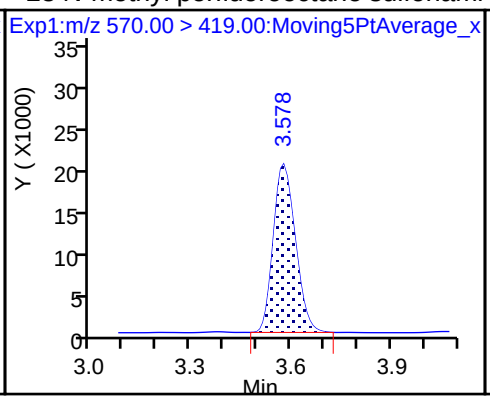
24 Perfluorodecanoic acid



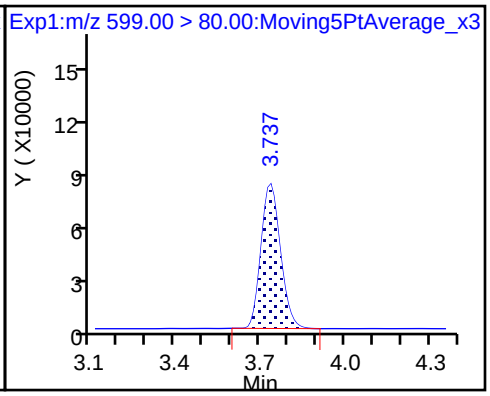
D 27 d3-NMeFOSAA



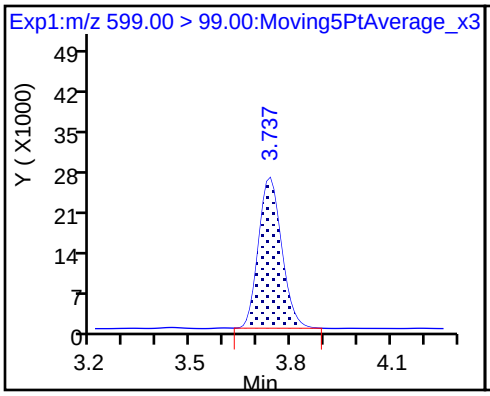
28 N-methyl perfluorooctane sulfonami



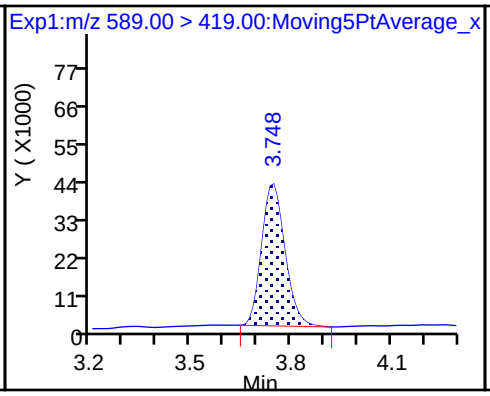
29 Perfluorodecane Sulfonic acid



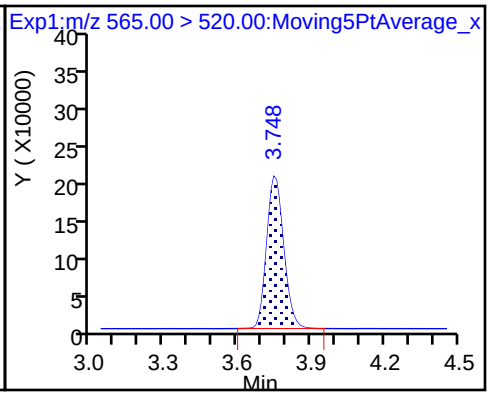
29 Perfluorodecane Sulfonic acid



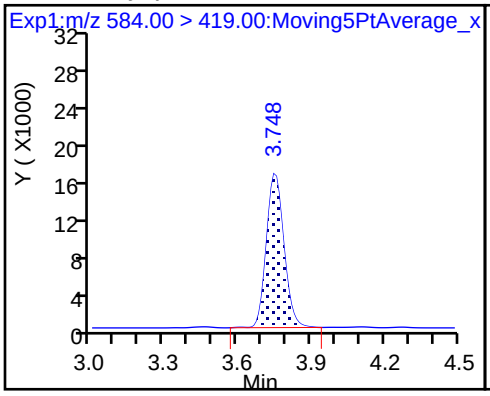
D 32 d5-NEtFOSAA



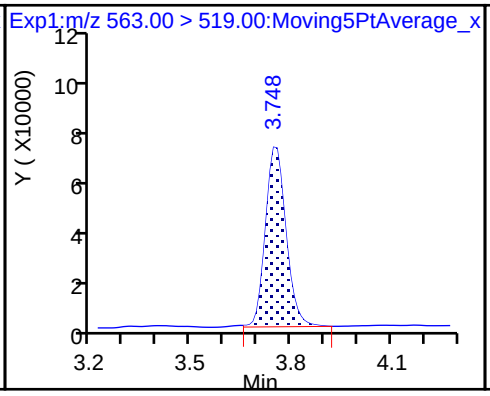
D 30 13C2 PFUnA



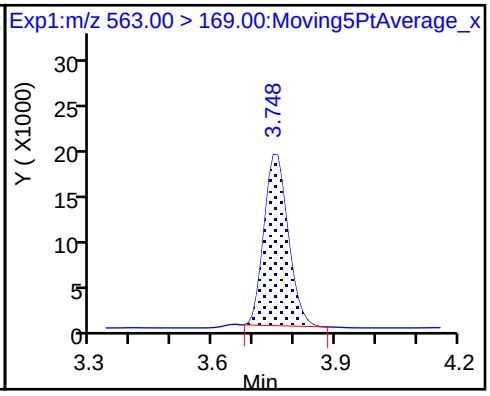
33 N-ethyl perfluorooctane sulfonamid



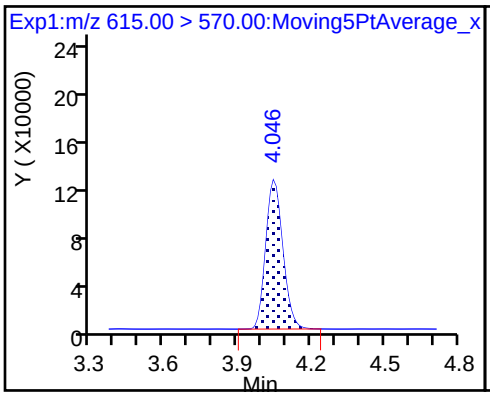
31 Perfluoroundecanoic acid



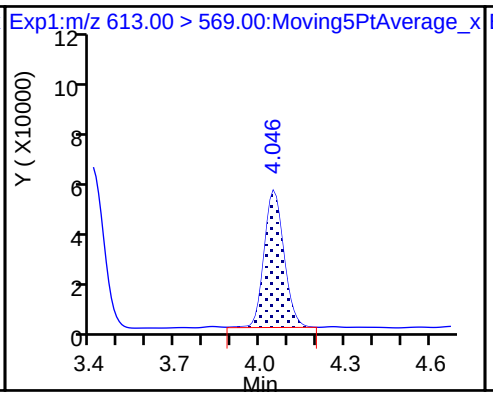
31 Perfluoroundecanoic acid



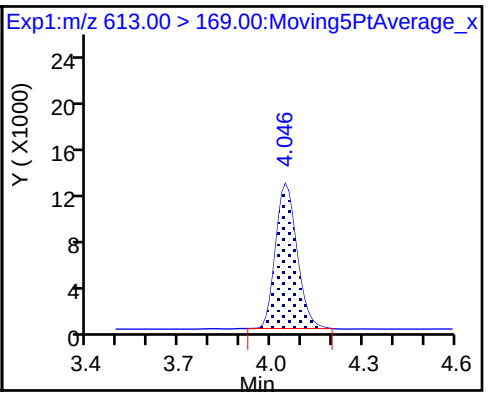
D 36 13C2 PFDoA



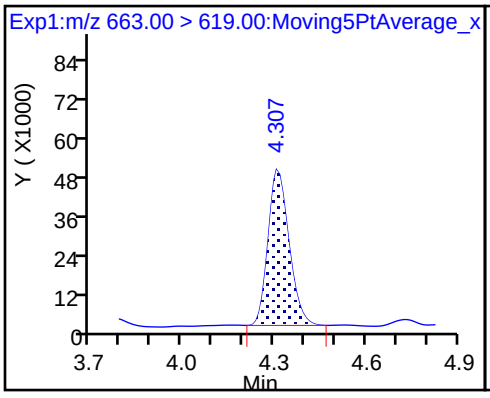
37 Perfluorododecanoic acid



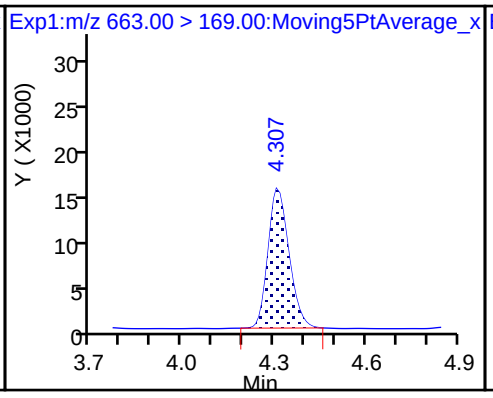
37 Perfluorododecanoic acid



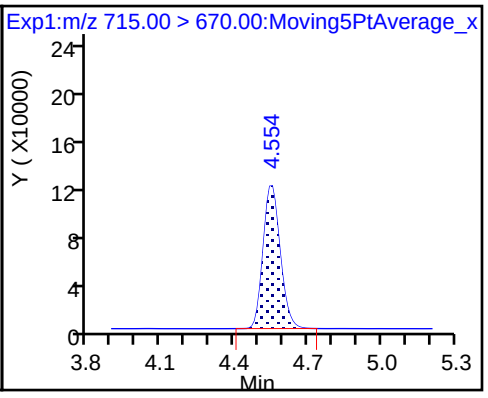
41 Perfluorotridecanoic acid



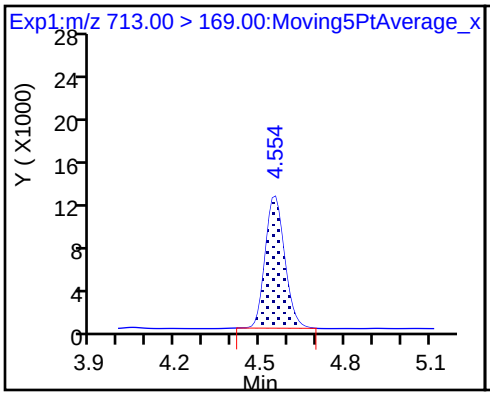
41 Perfluorotridecanoic acid



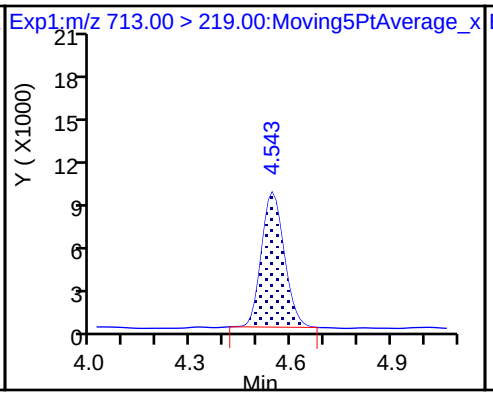
D 43 13C2-PFTeDA



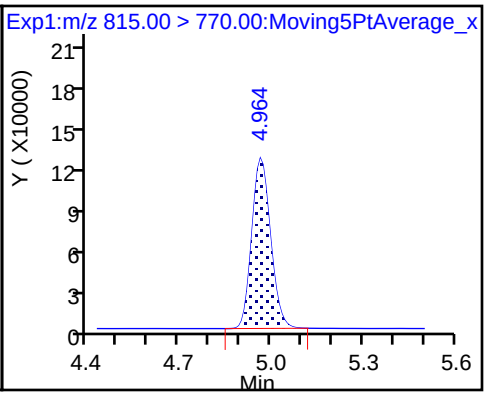
42 Perfluorotetradecanoic acid



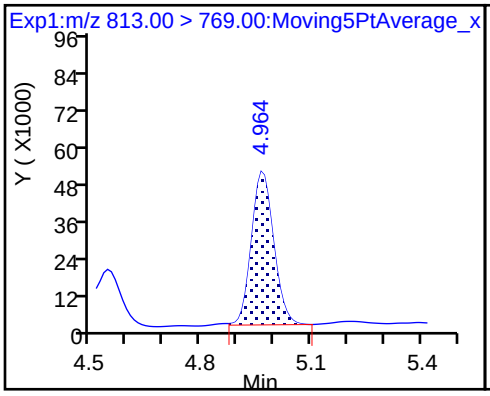
42 Perfluorotetradecanoic acid



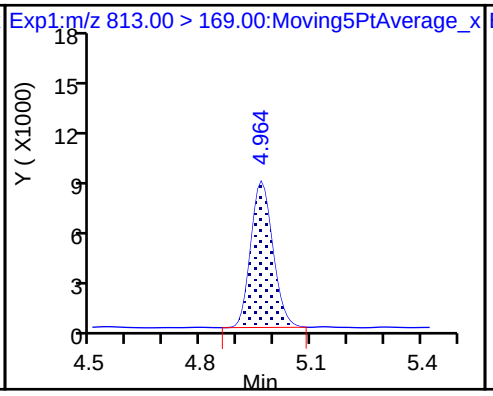
D 44 13C2-PFHxDA



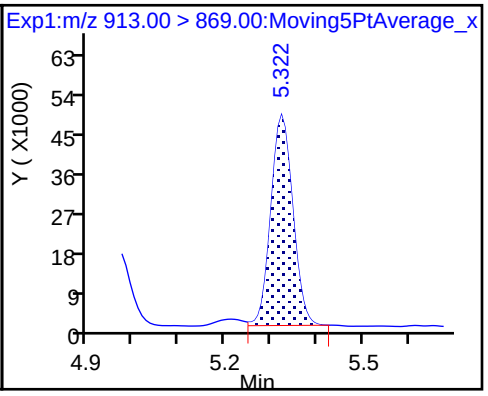
45 Perfluorohexadecanoic acid



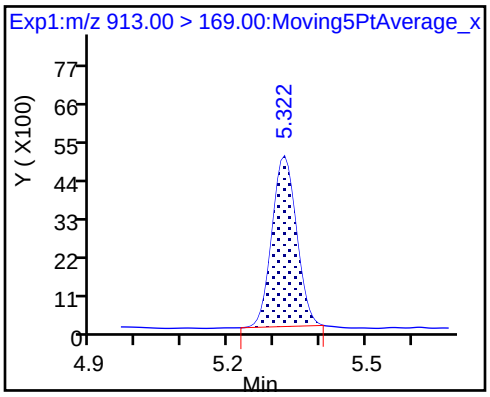
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

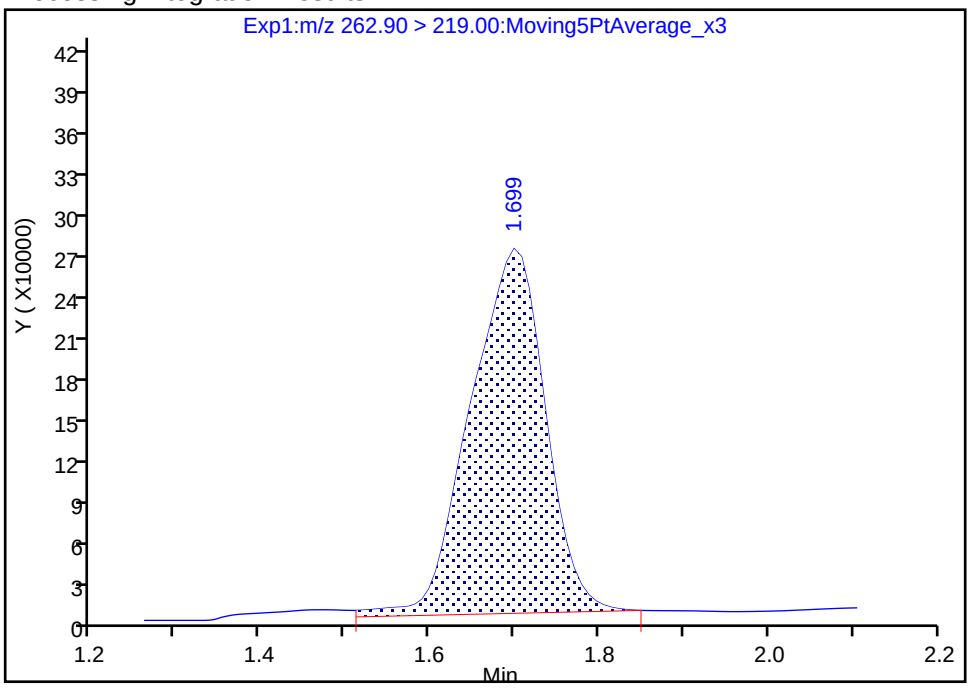
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d				
Injection Date:	21-Mar-2018 01:07:20	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-B MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	28	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

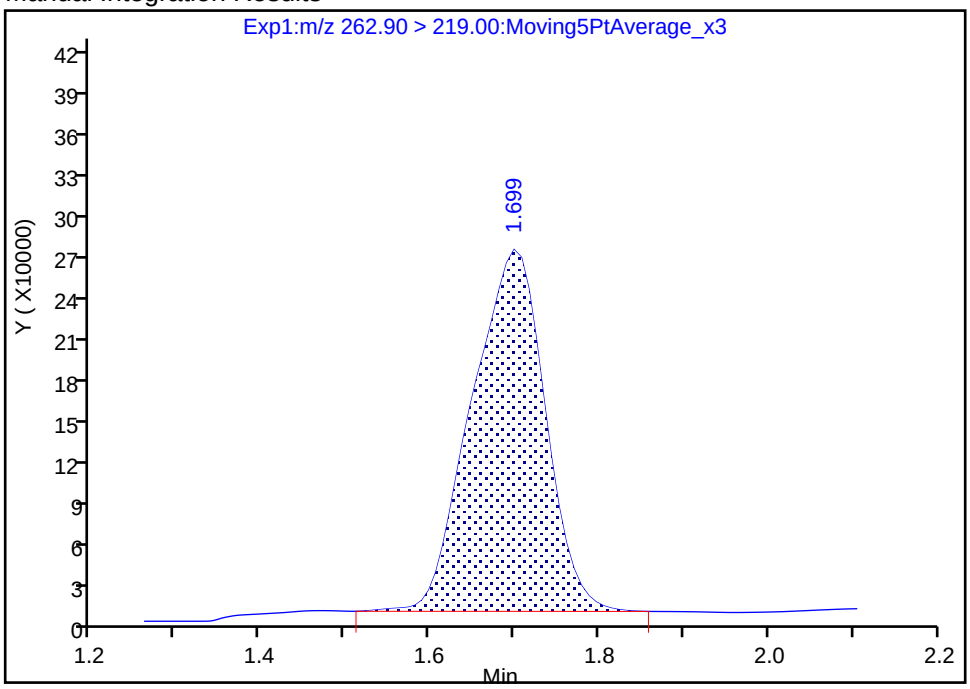
Processing Integration Results

RT: 1.70
Area: 1645140
Amount: 1.069854
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 1597771
Amount: 1.039049
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:38:15

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

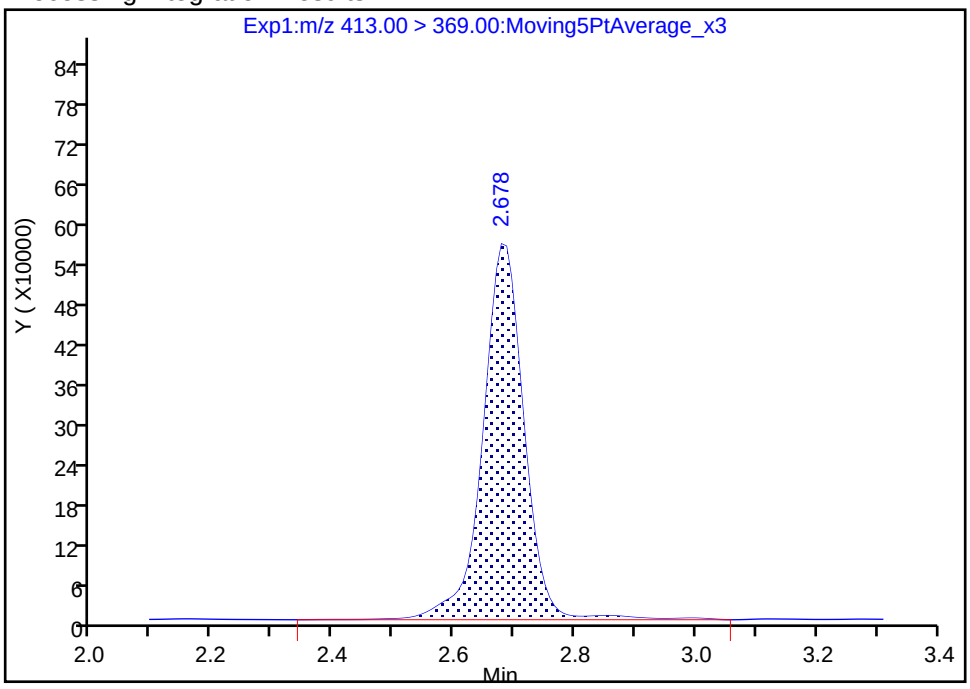
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_038.d				
Injection Date:	21-Mar-2018 01:07:20	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-B MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	28	Worklist Smp#:	17
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

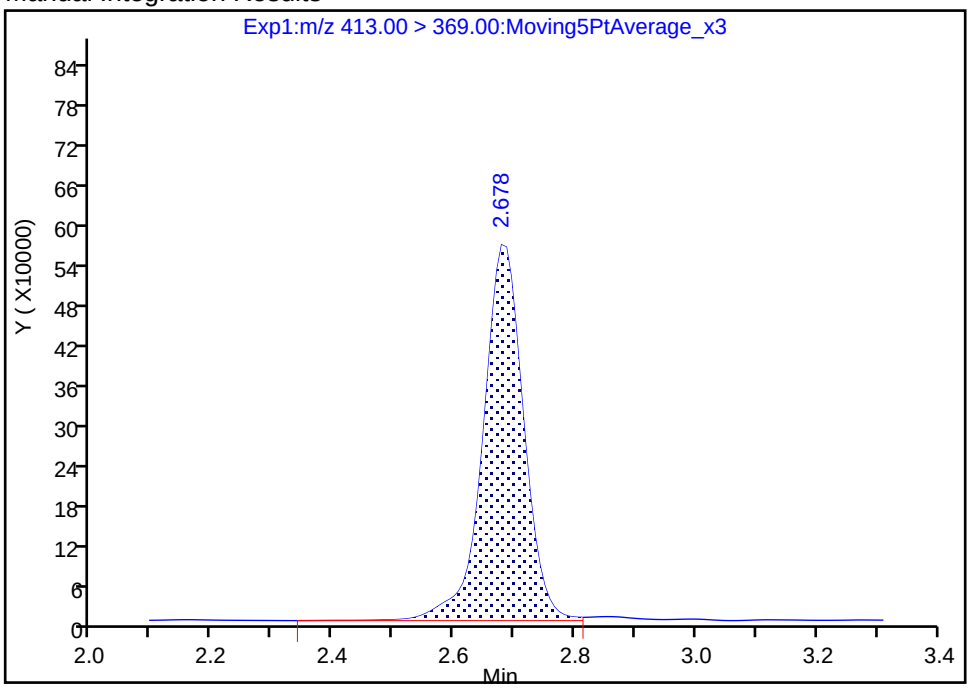
Processing Integration Results

RT: 2.68
Area: 2662573
Amount: 1.702844
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 2619706
Amount: 1.675429
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:38:43

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-B MS DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_022.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.05(g) | Date Analyzed: 03/22/2018 00:01

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.323		0.025	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	67		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_022.d
Lims ID: 320-36683-A-10-B MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 22-Mar-2018 00:01:17 ALS Bottle#: 24 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-a-10-b ms 50X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:37:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.446	0.001	0.538	114698	0.0390		78.0	1457	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.453	-0.006	1.000	44126	0.0204		102	19.8	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	78275	0.0401		80.3	2495	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.718	-0.018	0.995	44504	0.0252		126	25.2	M
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.735	0.001	0.646	1858	0.0417		89.8	13.8	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.005	55010	0.0177		100	302	
298.90 > 99.00	1.744	1.753	-0.009	1.005	21593		2.55(1.25-3.74)		136	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.966	-0.010	1.000	9333	0.0145		77.4	577	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.997	-0.011	0.739	83912	0.0389		77.8	3084	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.005	43308	0.0252		126	109	
313.00 > 119.00	1.986	1.997	-0.011	1.000	3332		13.00(5.03-15.10)		78.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	79441	0.0373		74.7	3417	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	41668	0.0254		127	76.2	
363.00 > 169.00	2.328	2.328	0.0	1.000	14041		2.97(1.13-3.40)		172	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	93454	0.0356		75.3	4066	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	201833	0.0918		504	2090	
399.00 > 99.00	2.341	2.341	0.0	1.000	63981		3.15(1.50-4.49)		271	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.665	0.016	0.997	38720	0.0878		185	1315	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.681	2.673	0.008	1.000	108021	0.0760		401	6535	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.688	0.001	1.000	99599	0.0458		91.5	3941	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.697	-0.008		116122	0.0500			3907	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.003	82091	0.0365		182	26.5	
413.00 > 169.00	2.697	2.697	0.0	1.003	40097		2.05(0.84-2.52)		105	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.704	-0.007	1.000	109888	0.0674		354	960	
449.00 > 99.00	2.697	2.704	-0.007	1.000	26685		4.12(1.94-5.82)		313	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.058	0.007	1.140	60848	0.0319		66.6	1179	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.058	0.007	1.140	66852	0.0348		69.6	3354	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4499144	3.17		17095	13347	
499.00 > 99.00	3.065	3.065	0.0	1.000	1016280		4.43(2.31-6.93)		12879	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	266711	0.2000		1000	401	
463.00 > 169.00	3.065	3.072	-0.007	1.000	61025		4.37(1.90-5.69)		2249	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.388	0.011	1.264	49235	0.0191		38.2	1625	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.398	0.001	1.000	21923	0.0226		113	400	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.271	16372	0.0275		57.4	401	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.274	52445	0.0312		62.3	1301	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.426	-0.009	1.000	10791	0.0247		129	246	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.435	-0.009	1.000	20612	0.0199		99.4	90.1	
513.00 > 169.00	3.435	3.435	0.0	1.003	3494		5.90(2.36-7.09)		89.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	11319	0.0128		25.6	305	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.003	5107	0.0225		113	288	
29 Perfluorodecane Sulfonic acid										RM
599.00 > 80.00	3.748	3.748	0.0	1.000	10396	0.0120		62.3	359	R
599.00 > 99.00	3.748	3.748	0.0	1.000	2461		4.22(1.39-4.16)		58.3	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	27667	0.0184		36.8	837	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	11157	0.0111		22.1	76.6	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.768	-0.010	1.003	4671	0.0224		112	94.0	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.003	10489	0.0220		110	51.5	
563.00 > 169.00	3.758	3.768	-0.010	1.000	2602		4.03(2.12-6.36)		137	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.047	0.010	1.509	26714	0.0156		31.3	296	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	10342	0.0185		92.5	15.8	
613.00 > 169.00	4.057	4.057	0.0	1.000	1993		5.19(2.13-6.40)		37.4	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.328	0.0	1.000	9424	0.0160		80.1	8.2	
663.00 > 169.00	4.318	4.328	-0.010	0.997	2938		3.21(1.25-3.76)		66.0	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	23461	0.0112		22.5	185	
42 Perfluorotetradecanoic acid										M
713.00 > 169.00	4.554	4.564	-0.010	1.000	2189	0.0188		94.1	37.6	M
713.00 > 219.00	4.554	4.564	-0.010	1.000	2031		1.08(0.71-2.13)		56.1	M
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.972	0.001	1.850	34342	0.0100		20.1	207	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.981	-0.008	1.000	11886	-0.005246		-26.2	7.4	
813.00 > 169.00	4.973	4.981	-0.008	1.000	2294		5.18(2.86-8.58)		30.7	
46 Perfluorooctadecanoic acid										M
913.00 > 869.00	5.337	5.344	-0.007	1.000	9594	0.0151		75.5	8.4	
913.00 > 169.00	5.330	5.344	-0.014	0.999	855		11.22(3.83-11.48)		12.7	M

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

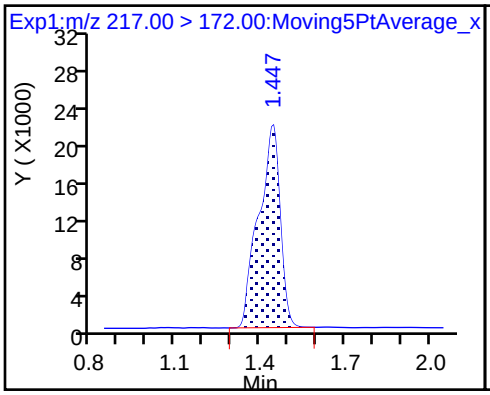
M - Manually Integrated

Report Date: 22-Mar-2018 12:53:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

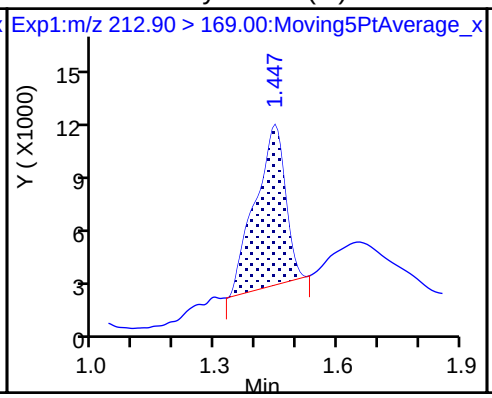
TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_022.d
Injection Date: 22-Mar-2018 00:01:17 Instrument ID: A8_N
Lims ID: 320-36683-A-10-B MS
Client ID: SB012(10'-12')
Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Method: A8_N Limit Group: LC PFC ICAL

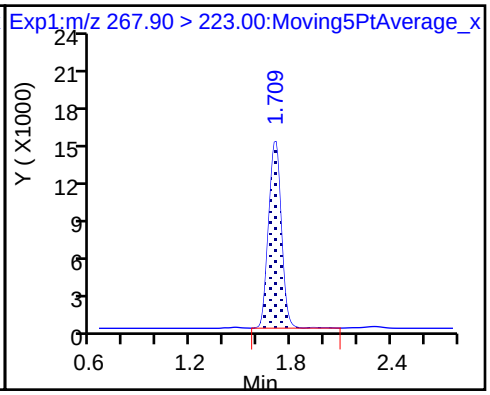
D 1 13C4 PFBA



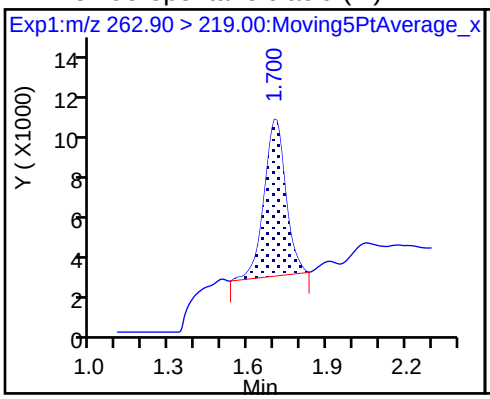
2 Perfluorobutyric acid (M)



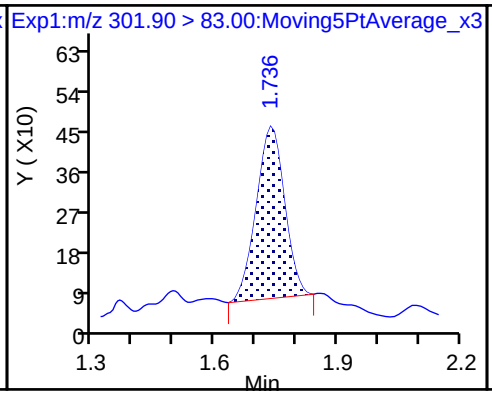
D 3 13C5-PFPeA



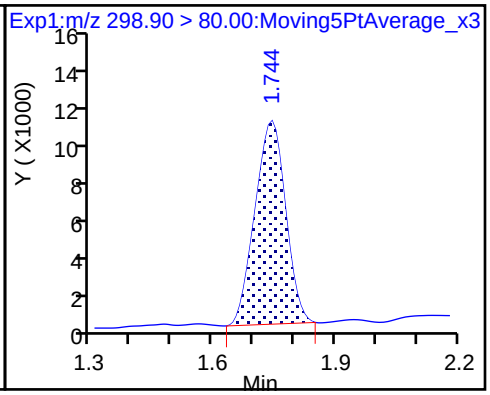
4 Perfluoropentanoic acid (M)



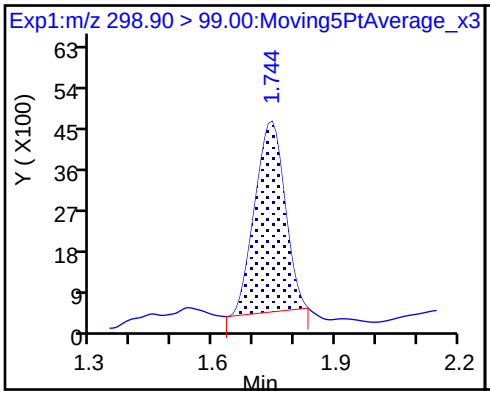
D 47 13C3-PFBS



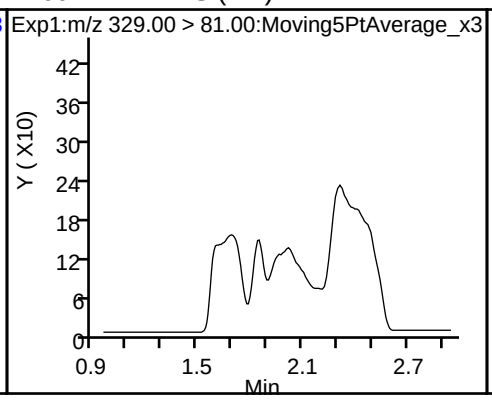
5 Perfluorobutanesulfonic acid



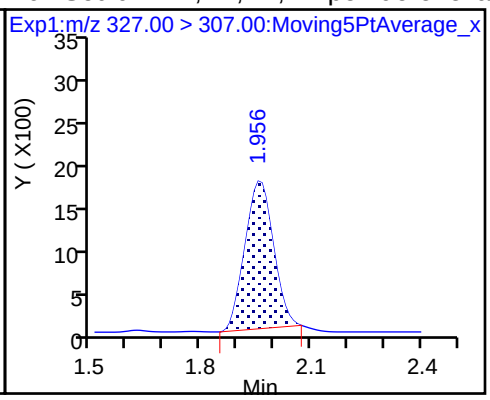
5 Perfluorobutanesulfonic acid



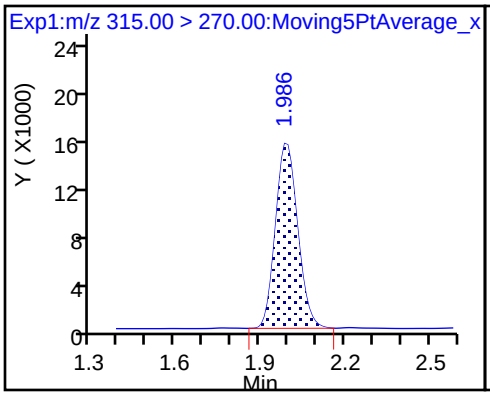
D 60 M2-4:2FTS (ND)



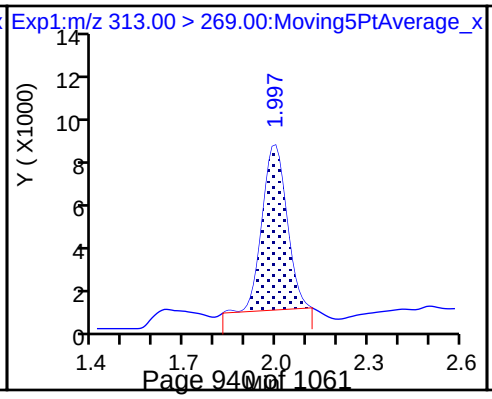
61 Sodium 1H,1H,2H,2H-perfluorohexane



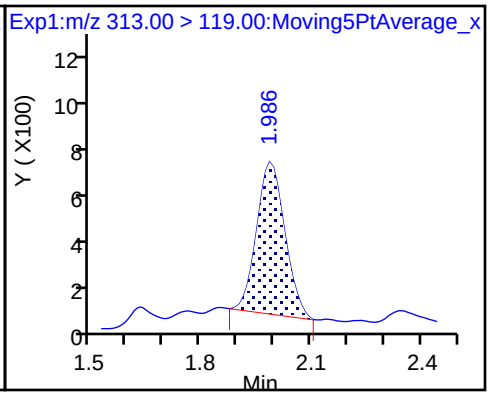
D 7 13C2 PFHxA



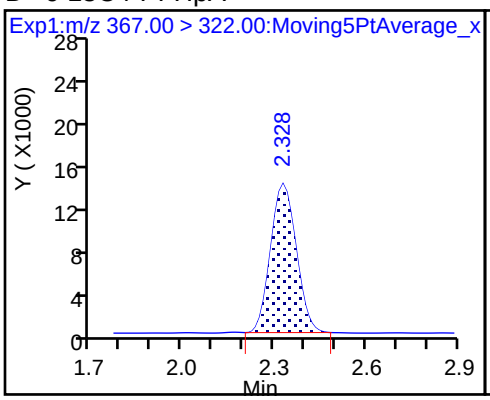
6 Perfluorohexanoic acid



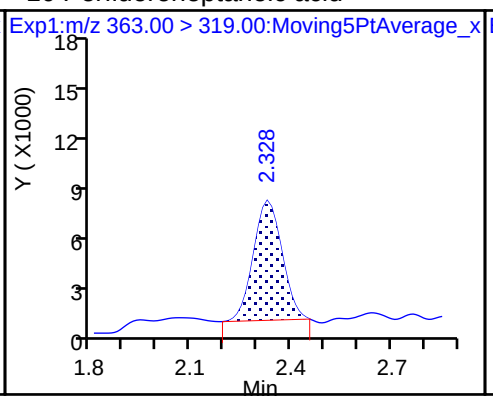
6 Perfluorohexanoic acid



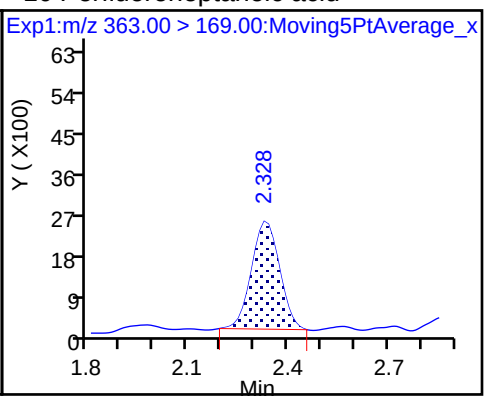
D 9 13C4-PFHpA



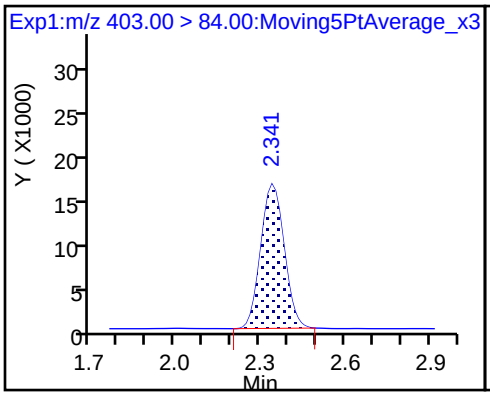
10 Perfluoroheptanoic acid



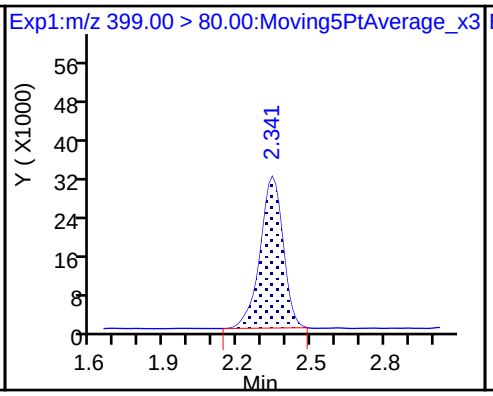
10 Perfluoroheptanoic acid



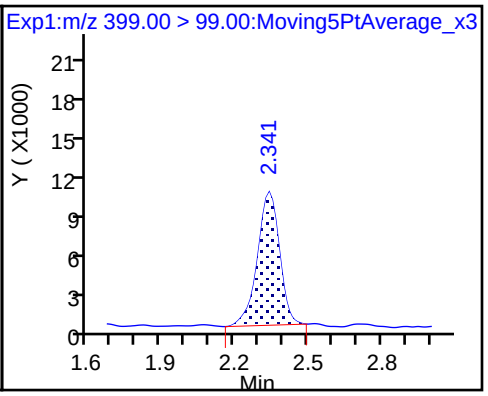
D 11 18O2 PFHxS



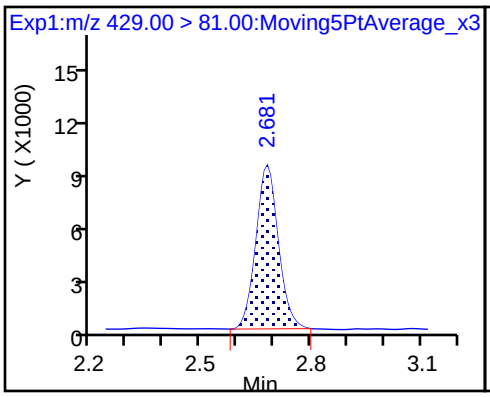
8 Perfluorohexanesulfonic acid



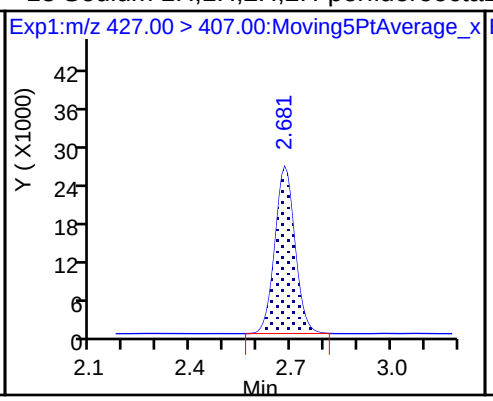
8 Perfluorohexanesulfonic acid



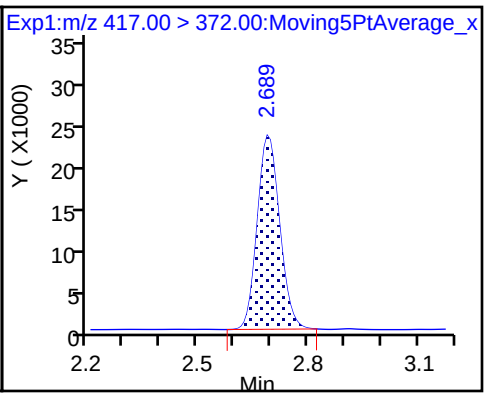
D 12 M2-6:2FTS



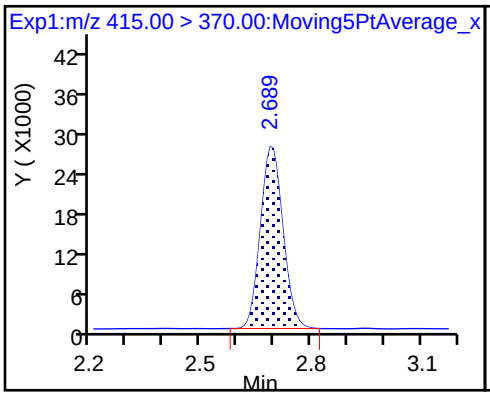
13 Sodium 1H,1H,2H,2H-perfluorooctane



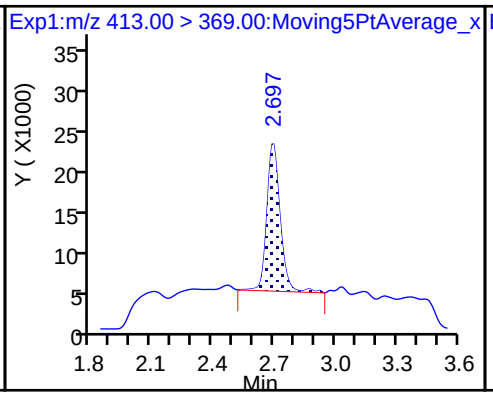
D 14 13C4 PFOA



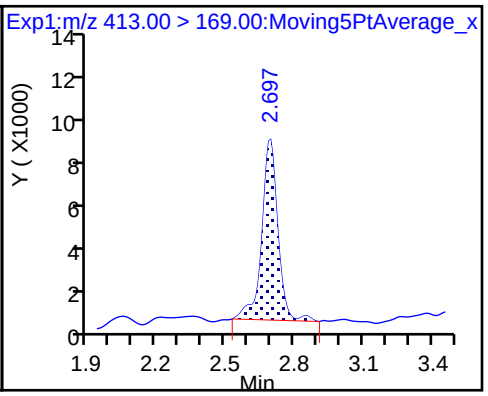
* 62 13C2-PFOA



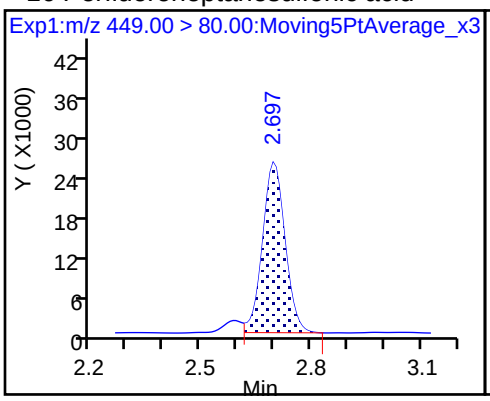
15 Perfluorooctanoic acid



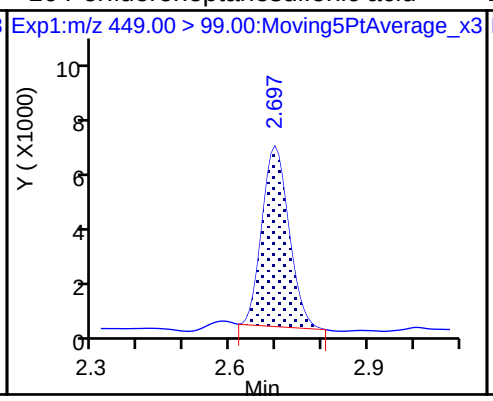
15 Perfluorooctanoic acid



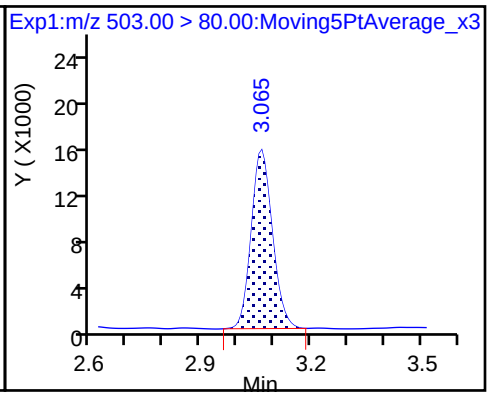
16 Perfluoroheptanesulfonic acid



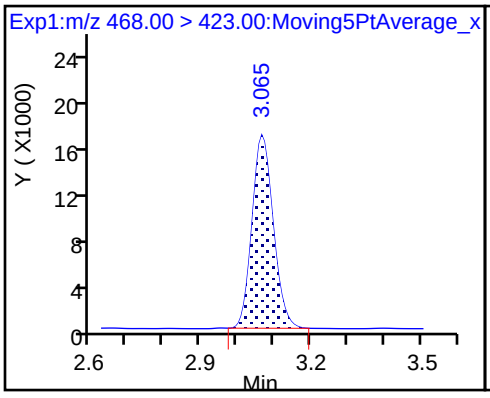
16 Perfluoroheptanesulfonic acid



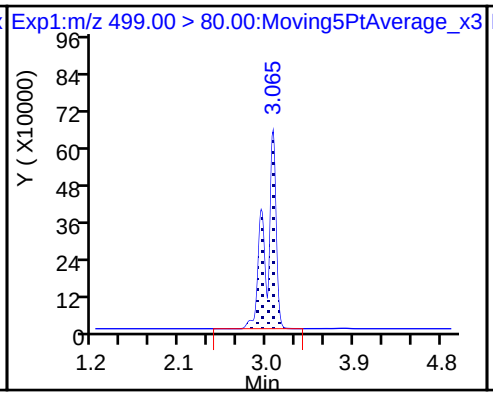
D 18 13C4 PFOS



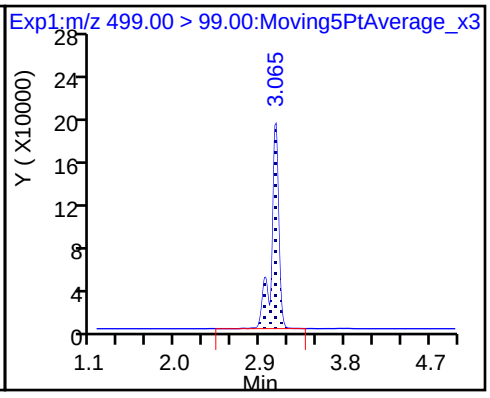
D 19 13C5 PFNA



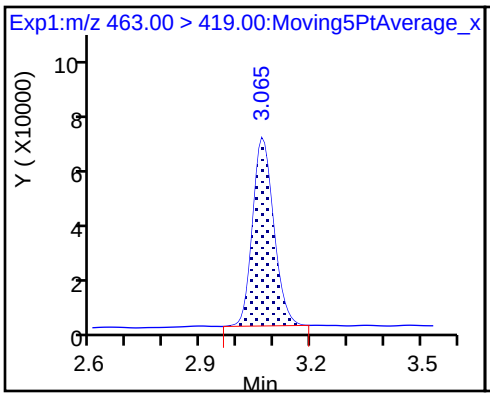
17 Perfluorooctane sulfonic acid



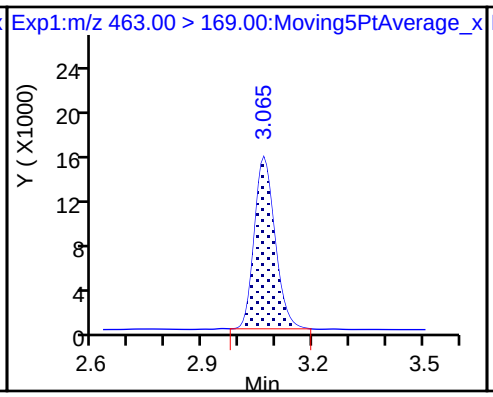
17 Perfluorooctane sulfonic acid



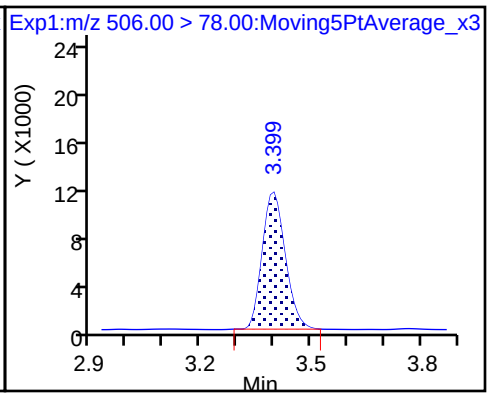
20 Perfluorononanoic acid



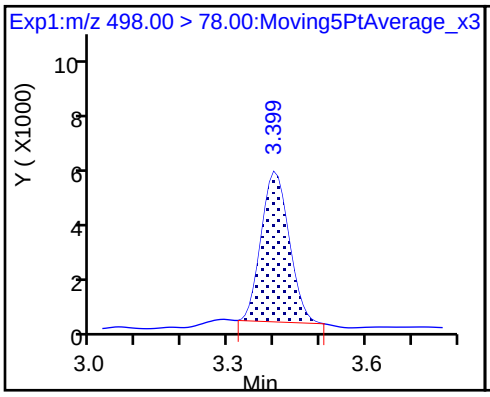
20 Perfluorononanoic acid



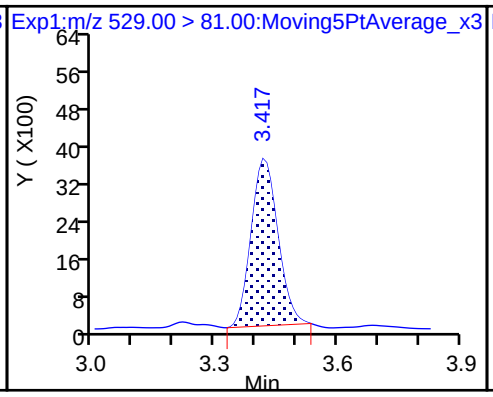
D 21 13C8 FOSA



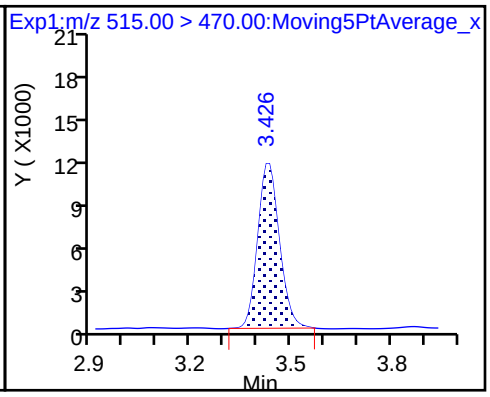
22 Perfluorooctane Sulfonamide



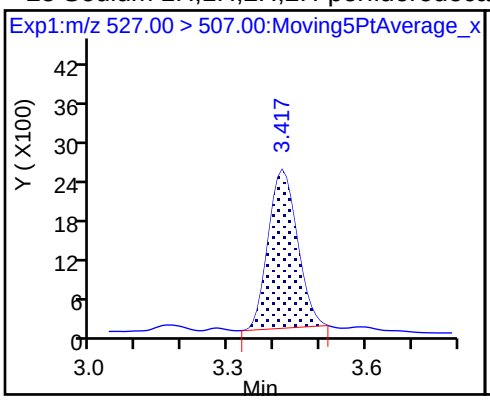
D 26 M2-8:2FTS



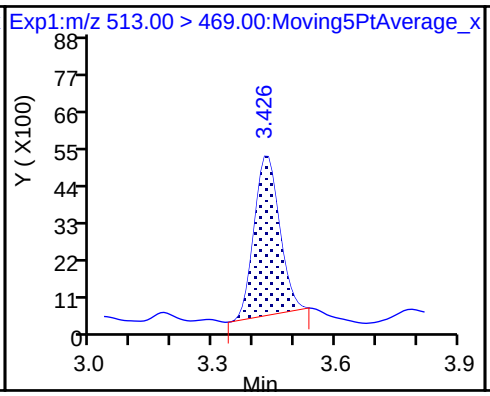
D 23 13C2 PFDA



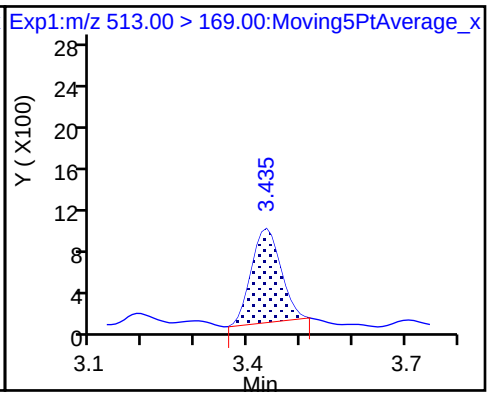
25 Sodium 1H,1H,2H,2H-perfluorodecane



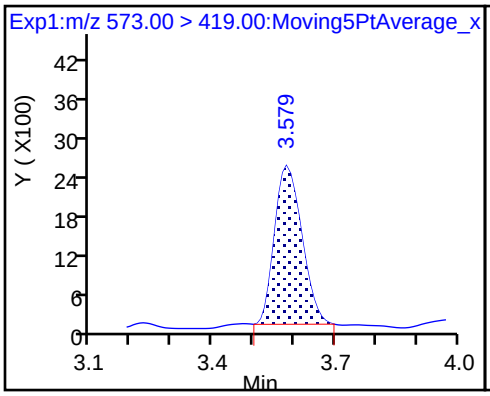
24 Perfluorodecanoic acid



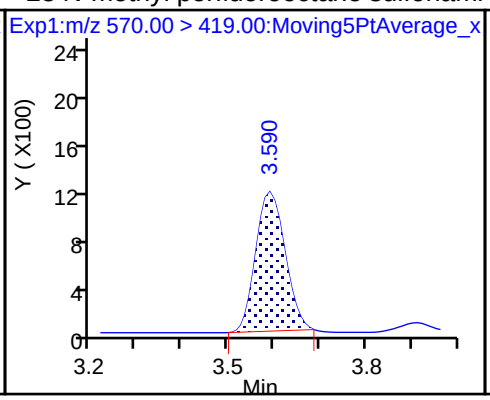
24 Perfluorodecanoic acid



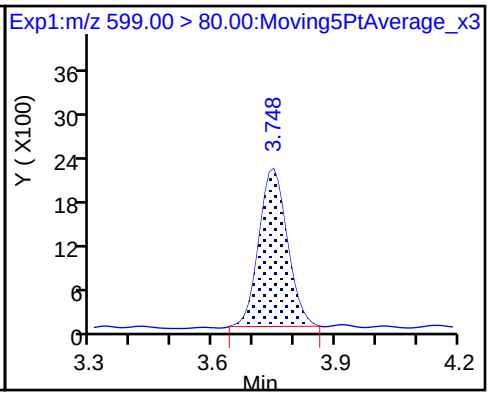
D 27 d3-NMeFOSAA



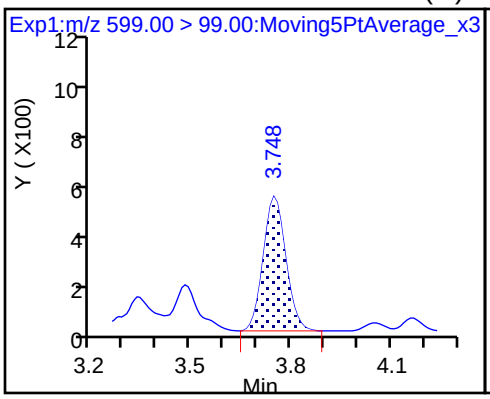
28 N-methyl perfluorooctane sulfonami



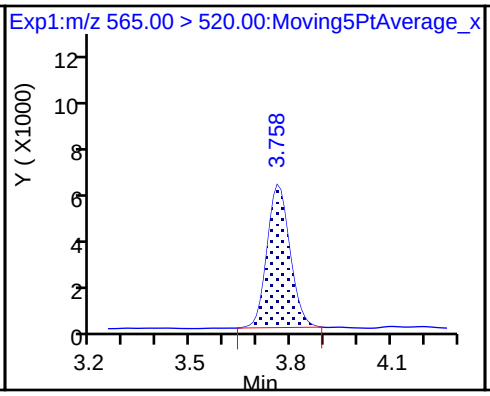
29 Perfluorodecane Sulfonic acid



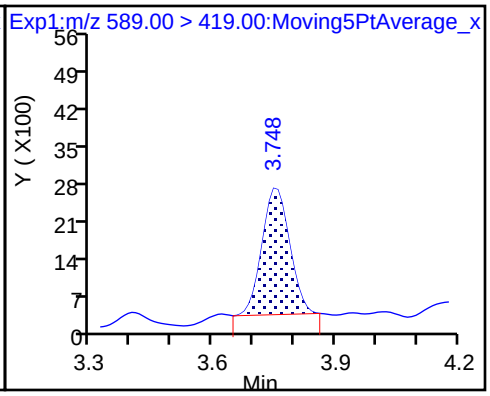
29 Perfluorodecane Sulfonic acid (M)



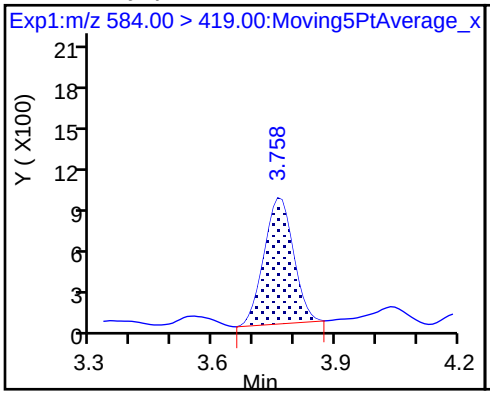
D 30 13C2 PFUnA



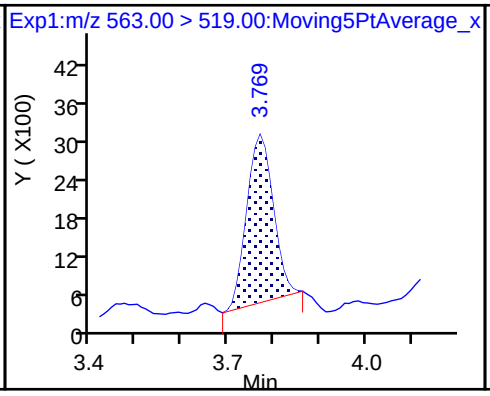
D 32 d5-NEtFOSAA



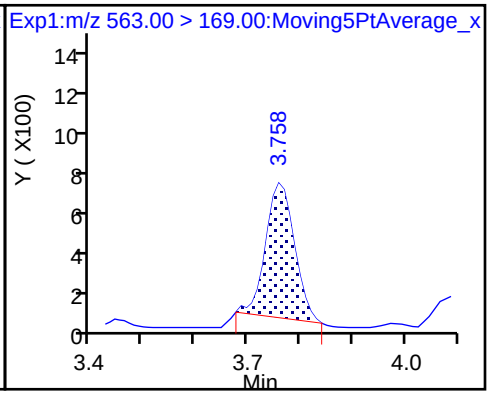
33 N-ethyl perfluorooctane sulfonamid



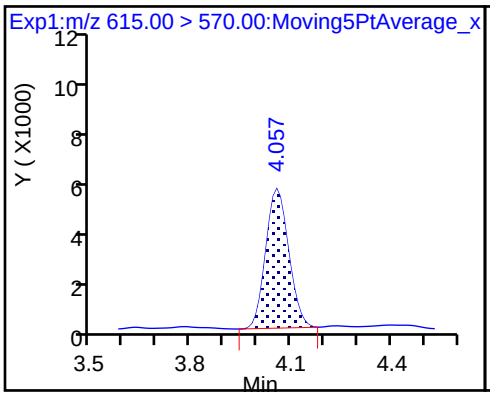
31 Perfluoroundecanoic acid



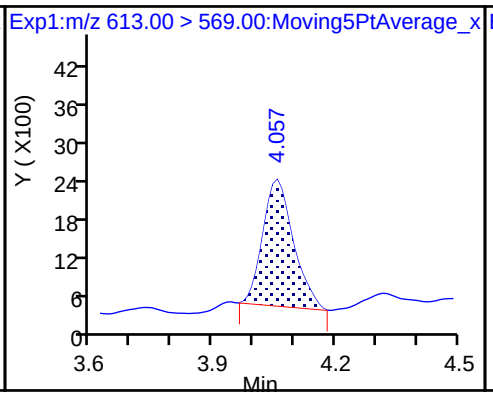
31 Perfluoroundecanoic acid



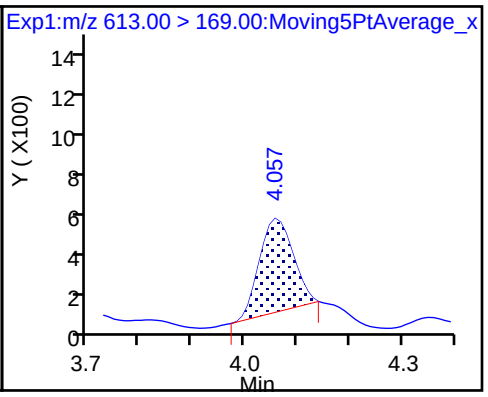
D 36 13C2 PFDoA



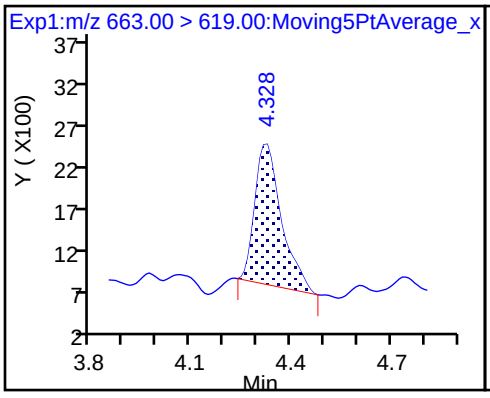
37 Perfluorododecanoic acid



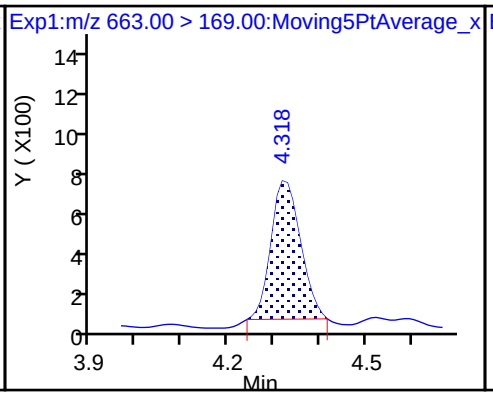
37 Perfluorododecanoic acid



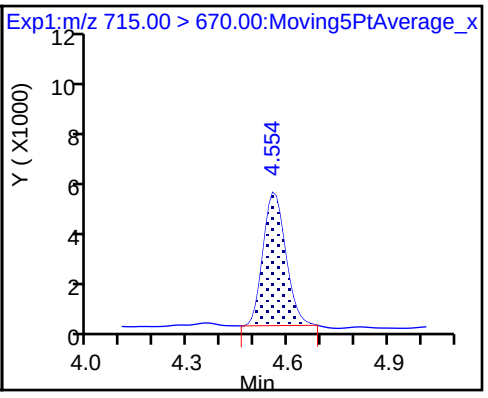
41 Perfluorotridecanoic acid



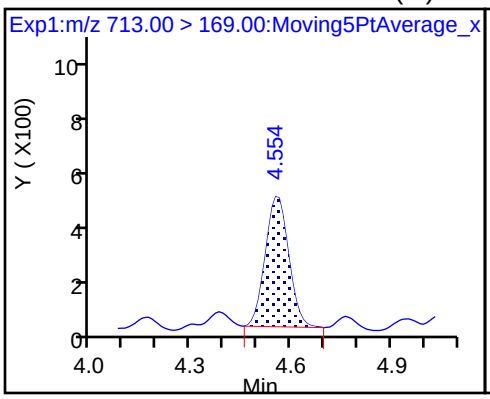
41 Perfluorotridecanoic acid



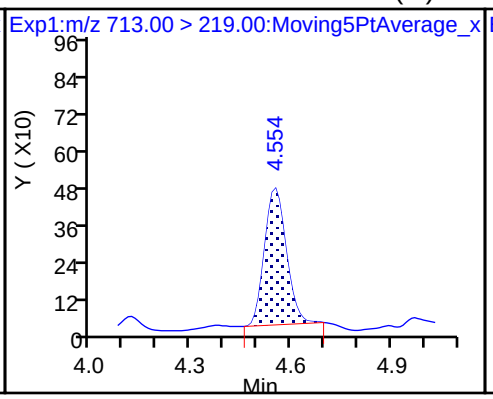
D 43 13C2-PFTeDA



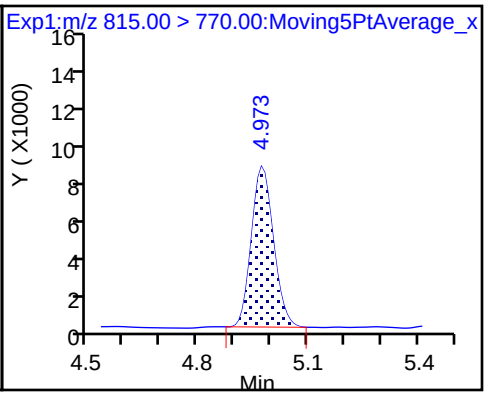
42 Perfluorotetradecanoic acid (M)



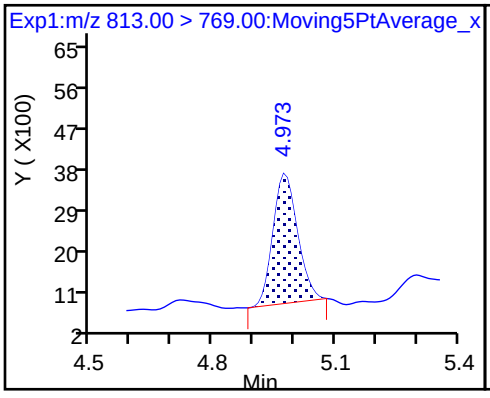
42 Perfluorotetradecanoic acid (M)



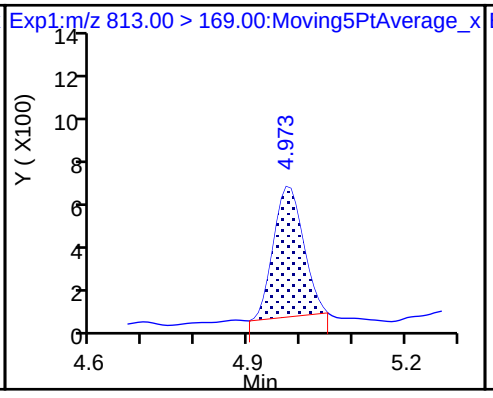
D 44 13C2-PFHxDA



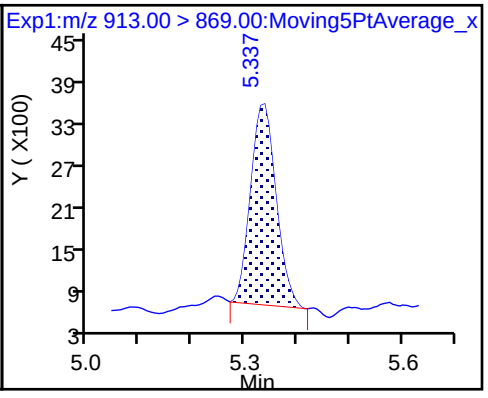
45 Perfluorohexadecanoic acid



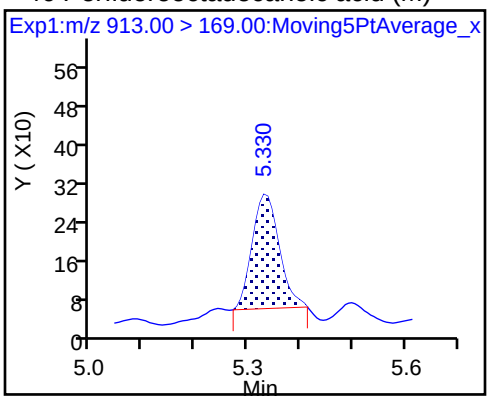
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid (M)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-E MS RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_022.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 02:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00239*		*0.00021*	*0.000040*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	61		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d
Lims ID: 320-36683-A-10-E MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 29-Mar-2018 02:07:40 ALS Bottle#: 25 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-E MS
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.533	5355696	2.17		86.7	90432	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.446	0.001	1.004	2029687	1.01		101	393	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.632	3642346	2.22		88.8	53416	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.709	1.718	-0.009	1.000	1632656	0.99		99.4	597	M
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	75967	2.03		87.3	491	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2262754	0.8912		101	1087	
298.90 > 99.00	1.753	1.753	0.0	1.005	938212		2.41(1.25-3.74)		941	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	442838	0.8391		89.8	14713	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	1784407	1.17		117	1441	
313.00 > 119.00	1.997	2.008	-0.011	1.000	169524		10.53(5.03-15.10)		1649	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3722239	2.05		82.1	85246	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	1598591	0.9794		97.9	793	
363.00 > 169.00	2.341	2.341	0.0	1.000	679861		2.35(1.13-3.40)		1132	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	8235617	4.03		443	34086	
399.00 > 99.00	2.354	2.354	0.0	1.000	2504109		3.29(1.50-4.49)		11737	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.866	3944538	2.20		88.2	79216	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.870	4343250	1.97		83.2	100097	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.689	-0.009	1.000	1601665	2.78		293	28039	
D 12 M2-6:2FTS										
429.00 > 81.00	2.680	2.697	-0.017	0.991	785758	2.12		89.2	18564	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.704	2.712	-0.008	1.000	2406231	1.44		144	924	
413.00 > 169.00	2.704	2.712	-0.008	1.000	1349034		1.78(0.84-2.52)		3562	
* 62 13C2-PFOA										
415.00 > 370.00	2.704	2.712	-0.008		4882236	2.50			113799	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.712	2.720	-0.008	1.000	4253231	3.37		354	1077	
449.00 > 99.00	2.704	2.720	-0.016	0.997	1110925		3.83(1.94-5.82)		1859	M
D 14 13C4 PFOA										
417.00 > 372.00	2.704	2.721	-0.017	1.000	3686683	2.01		80.6	59039	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.080	3.080	0.0	1.000	116622442	106.3		11451	53072	E
499.00 > 99.00	3.080	3.080	0.0	1.000	34023955		3.43(2.31-6.93)		119593	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.088	-0.008	1.000	8187088	8.56		856	8283	
463.00 > 169.00	3.080	3.088	-0.008	1.000	2055468		3.98(1.90-5.69)		37280	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.139	2397623	1.49		59.4	52930	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.139	2354591	1.47		61.3	25952	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.416	3.417	0.0	1.003	1562701	0.9766		97.7	13796	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.260	4058001	1.87		74.9	54268	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	522540	1.10		115	9440	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.444	0.0	1.000	1101900	1.03		103	5256	
513.00 > 169.00	3.444	3.444	0.0	1.000	208641		5.28(2.36-7.09)		4021	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.270	893467	1.78		74.5	17678	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.273	2694728	1.90		76.2	44842	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.611	-0.011	1.000	524564	0.9672		96.7	4891	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.331	1354810	1.82		72.8	28102	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.759	3.758	0.001	1.000	778380	1.16		121	6596	
599.00 > 99.00	3.759	3.758	0.001	1.000	276648		2.81(1.39-4.16)		6961	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.003	678453	0.9396		94.0	3367	
563.00 > 169.00	3.779	3.779	0.0	1.003	186467		3.64(2.12-6.36)		14006	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.779	-0.010	1.000	475560	1.00		99.6	13471	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.769	3.779	-0.010	1.394	1278195	1.51		60.3	5317	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.394	2093692	1.65		66.2	46331	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.077	-0.008	1.000	938278	0.9741		97.4	728	
613.00 > 169.00	4.069	4.077	-0.008	1.000	239511		3.92(2.13-6.40)		4817	
D 36 13C2 PFDoA										
615.00 > 570.00	4.069	4.089	-0.020	1.504	2301389	1.60		64.1	20078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.339	-0.010	1.000	1027279	1.01		101	542	
663.00 > 169.00	4.329	4.339	-0.010	1.000	358566		2.86(1.25-3.76)		5973	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	303579	1.00		99.8	5068	
713.00 > 219.00	4.565	4.575	-0.010	0.998	215031		1.41(0.71-2.13)		5403	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.692	3069028	1.75		70.0	22014	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.990	0.001	1.002	1670899	0.99		99.4	464	
813.00 > 169.00	4.991	4.990	0.001	1.002	274670		6.08(2.86-8.58)		2586	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	5.008	-0.026	1.842	4515540	1.57		62.8	13789	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	1565846	0.9376		93.8	347	
913.00 > 169.00	5.351	5.351	0.0	1.000	202966		7.71(3.83-11.48)		2502	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d

Injection Date: 29-Mar-2018 02:07:40 Instrument ID: A8_N

Lims ID: 320-36683-A-10-E MS

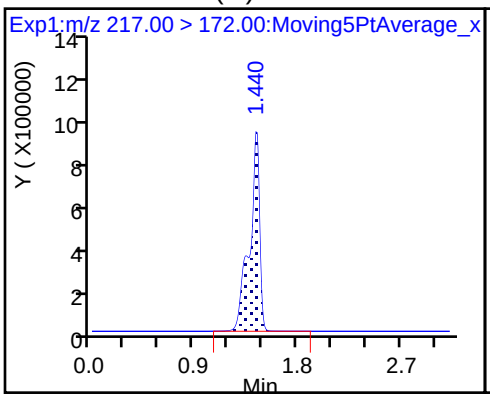
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 19

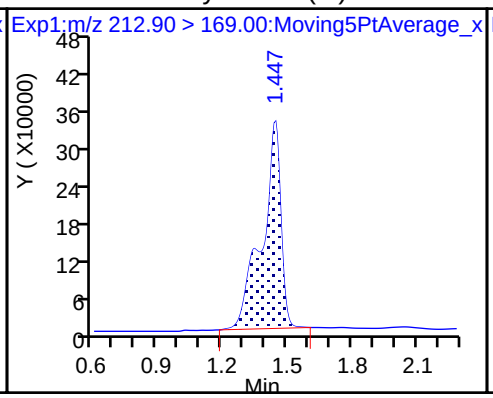
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

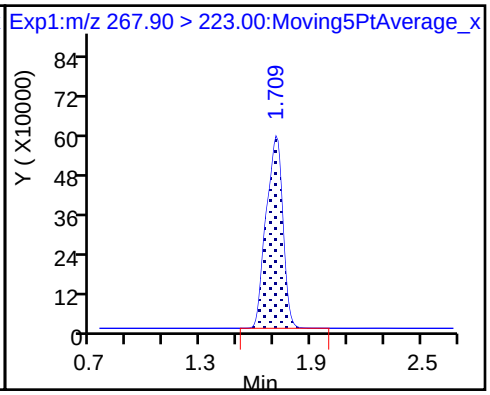
D 1 13C4 PFBA (M)



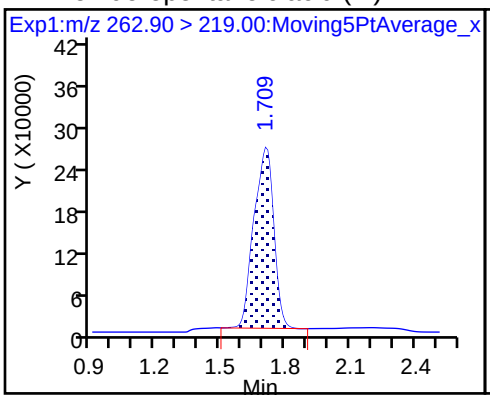
2 Perfluorobutyric acid (M)



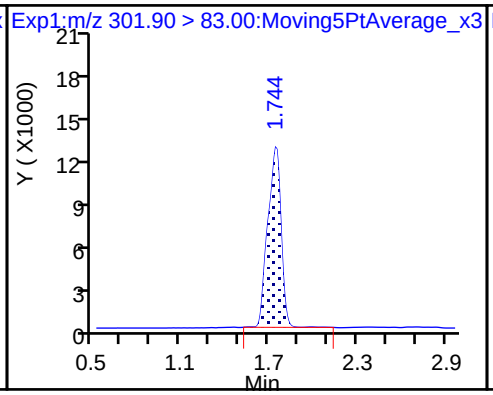
D 3 13C5-PFPeA



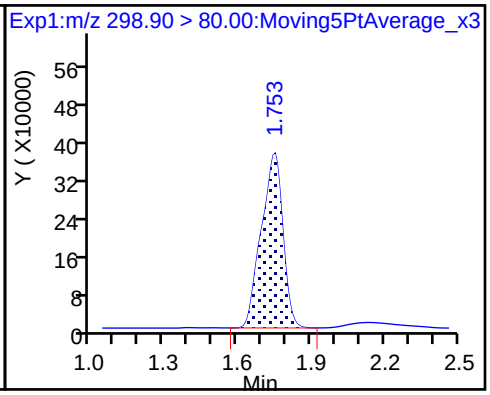
4 Perfluoropentanoic acid (M)



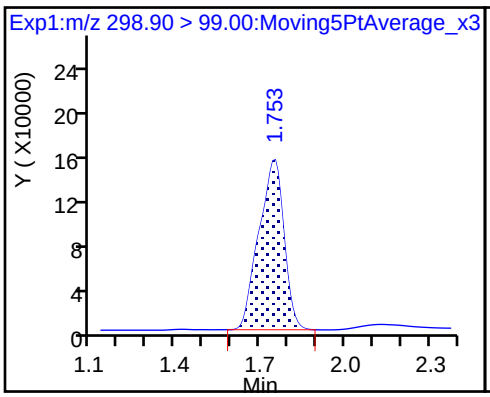
D 47 13C3-PFBS



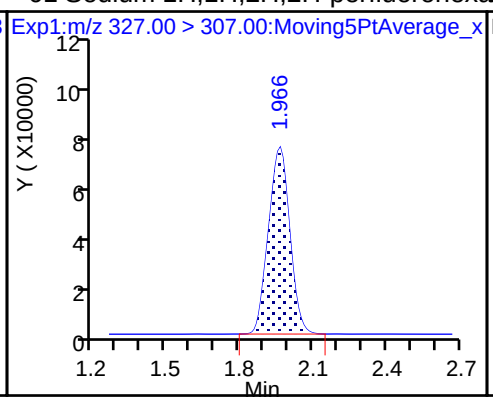
5 Perfluorobutanesulfonic acid



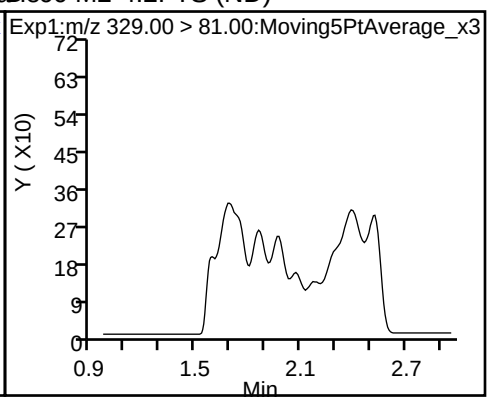
5 Perfluorobutanesulfonic acid



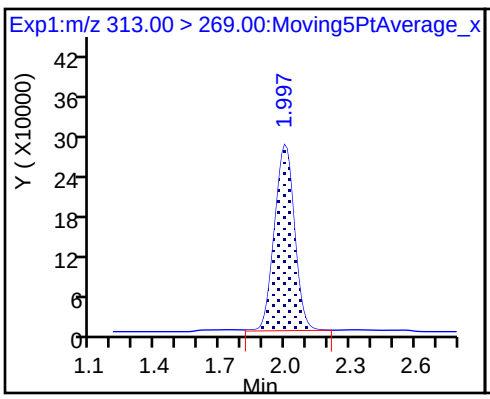
61 Sodium 1H,1H,2H,2H-perfluorohexane



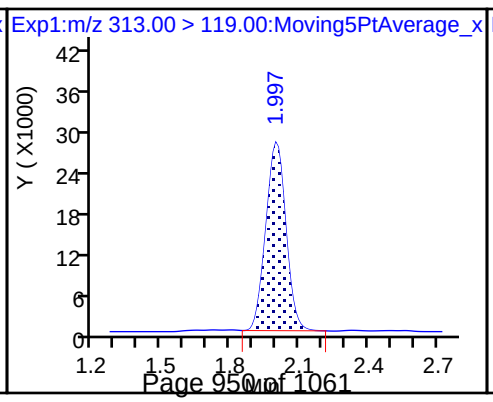
D 60 M2-4:2FTS (ND)



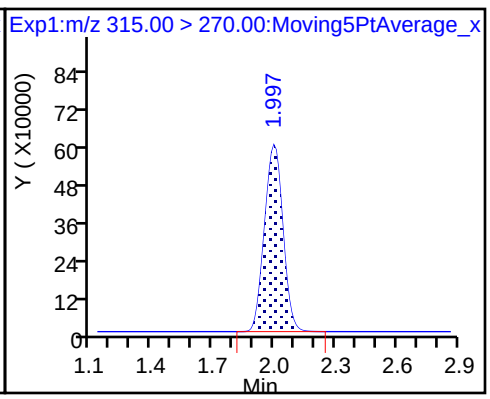
6 Perfluorohexanoic acid



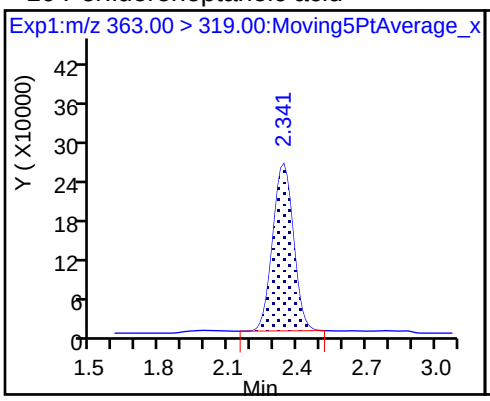
6 Perfluorohexanoic acid



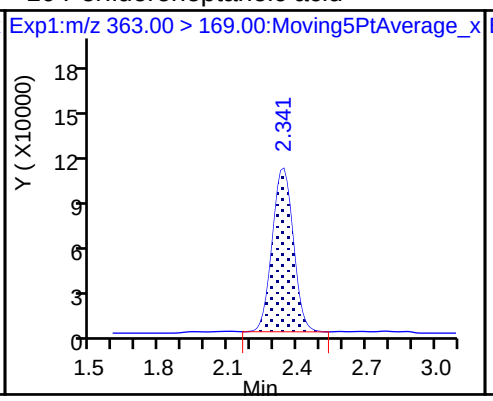
D 7 13C2 PFHxA



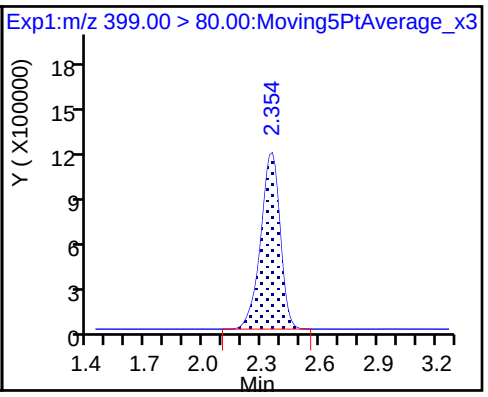
10 Perfluoroheptanoic acid



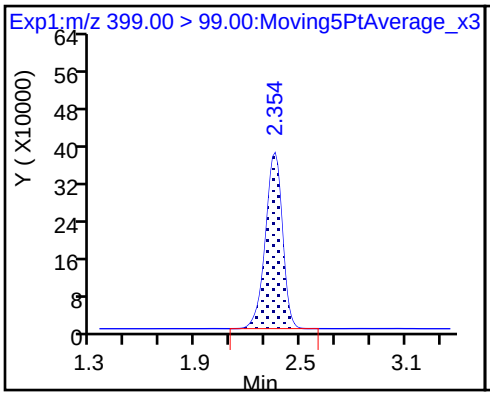
10 Perfluoroheptanoic acid



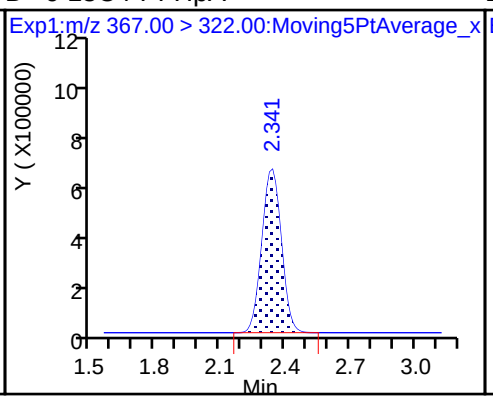
8 Perfluorohexanesulfonic acid



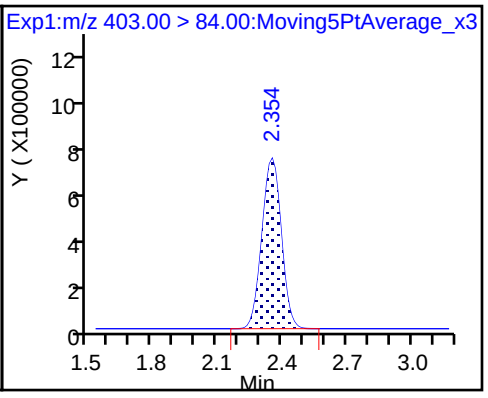
8 Perfluorohexanesulfonic acid



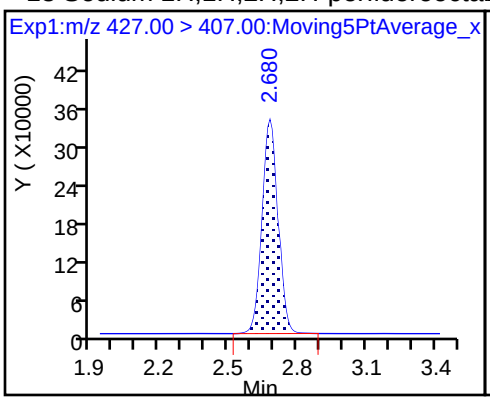
D 9 13C4-PFHpA



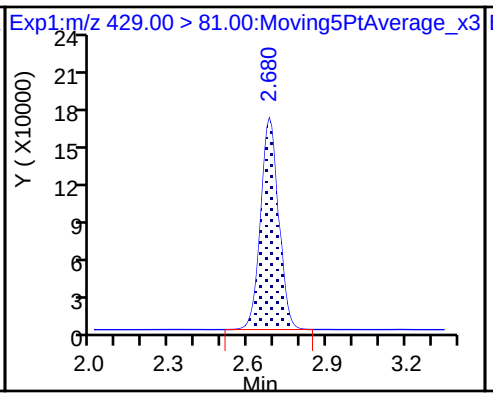
D 11 18O2 PFHxS



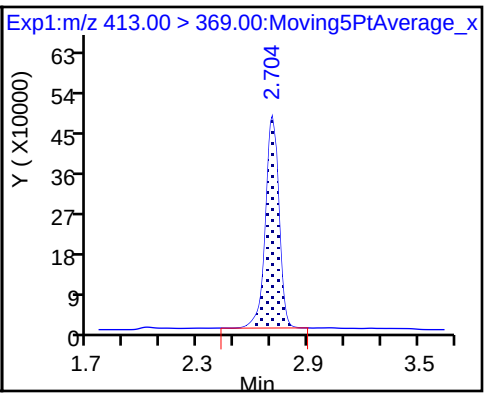
13 Sodium 1H,1H,2H,2H-perfluorooctane



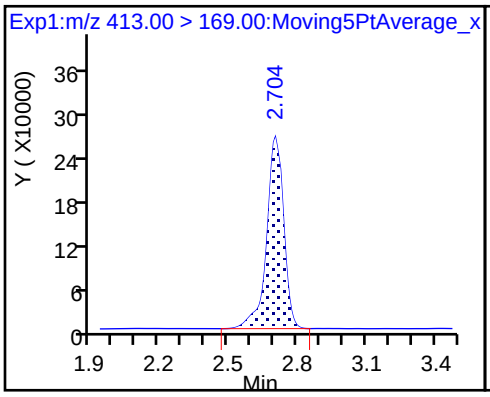
D 12 M2-6:2FTS



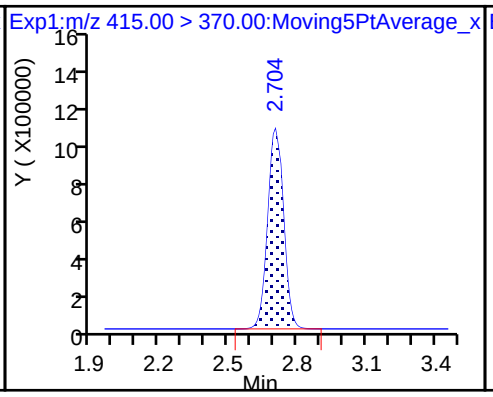
15 Perfluorooctanoic acid



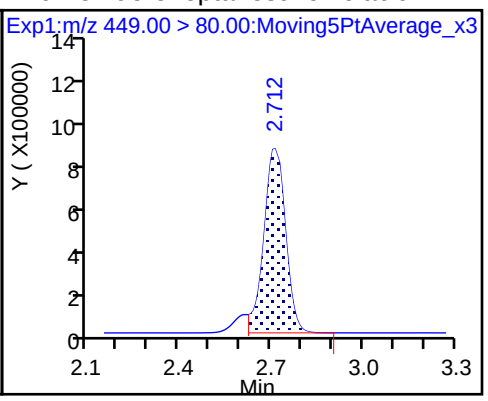
15 Perfluorooctanoic acid



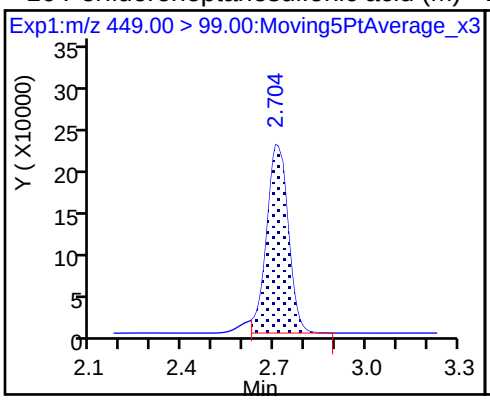
* 62 13C2-PFOA



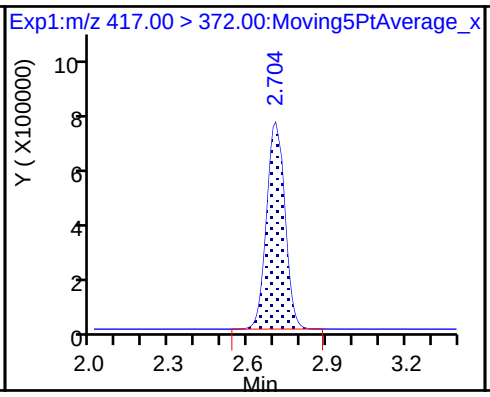
16 Perfluoroheptanesulfonic acid



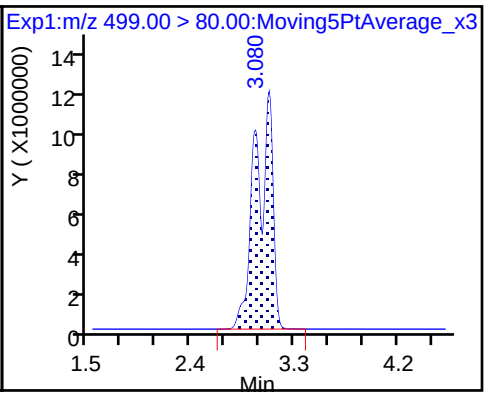
16 Perfluoroheptanesulfonic acid (M)



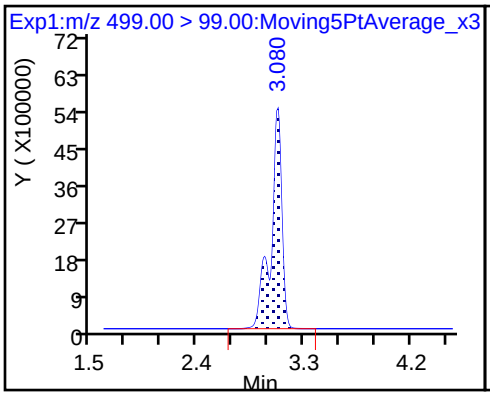
D 14 13C4 PFOA



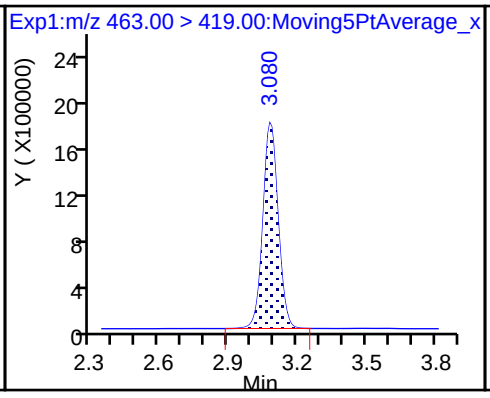
17 Perfluorooctane sulfonic acid



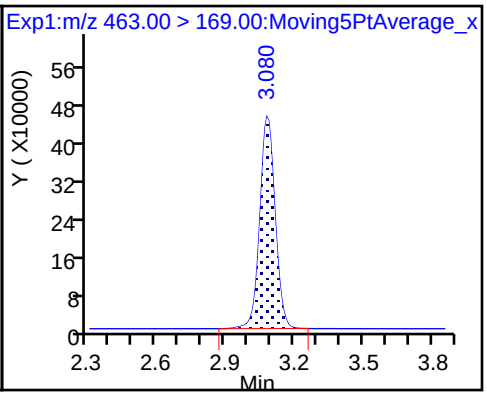
17 Perfluorooctane sulfonic acid



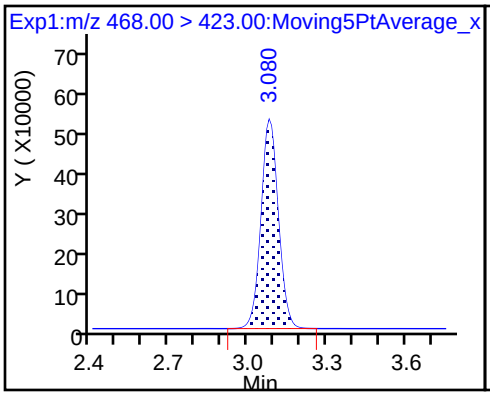
20 Perfluorononanoic acid



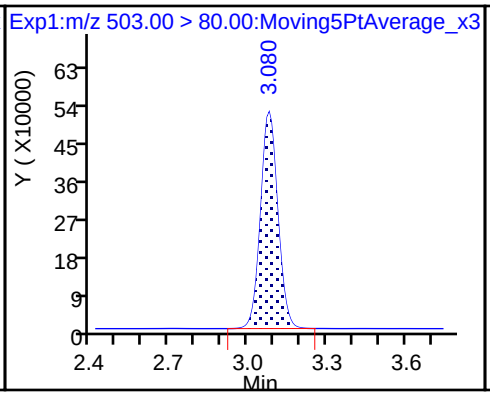
20 Perfluorononanoic acid



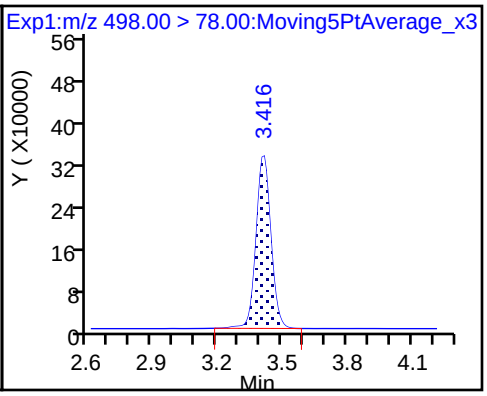
D 19 13C5 PFNA



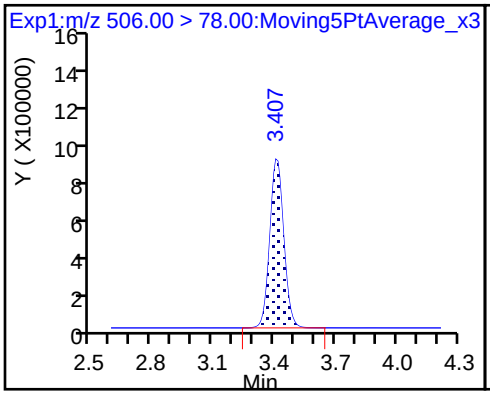
D 18 13C4 PFOS



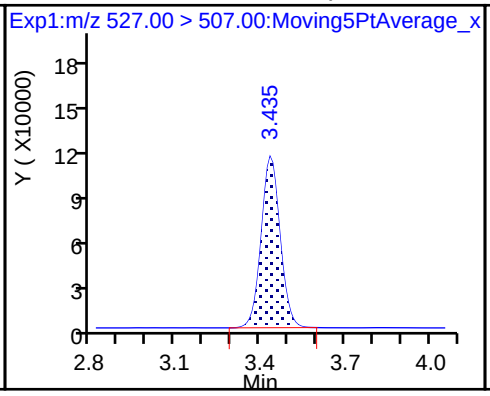
22 Perfluorooctane Sulfonamide



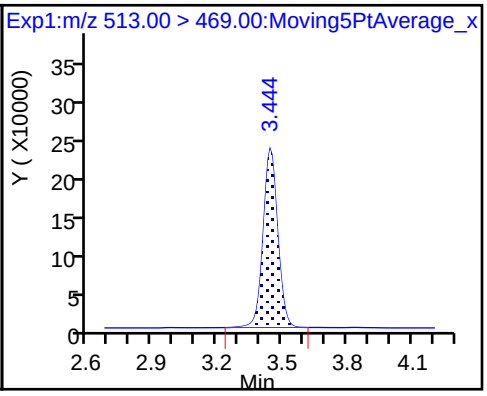
D 21 13C8 FOSA



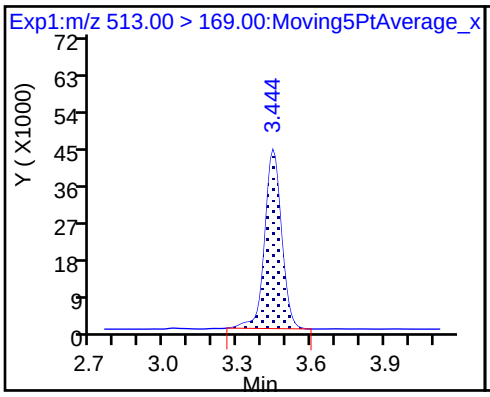
25 Sodium 1H,1H,2H,2H-perfluorodecan



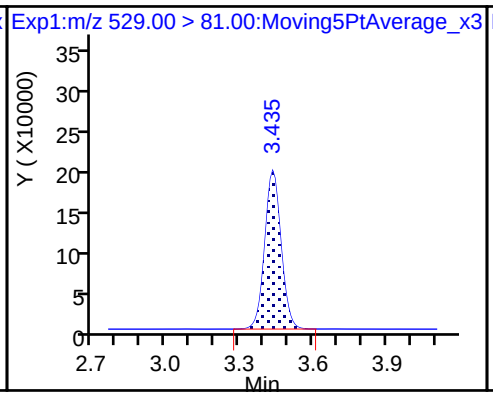
24 Perfluorodecanoic acid



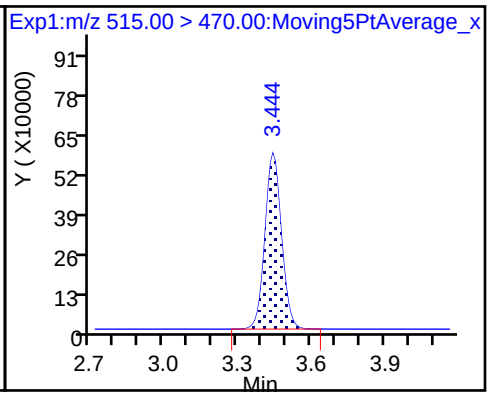
24 Perfluorodecanoic acid



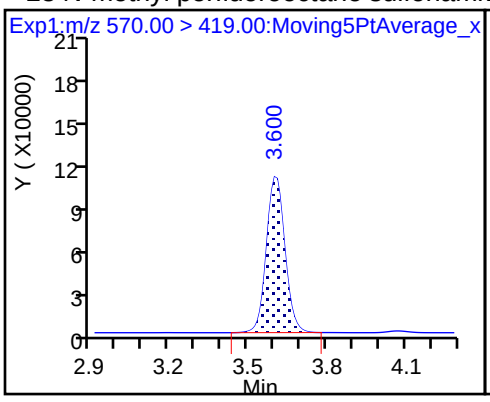
D 26 M2-8:2FTS



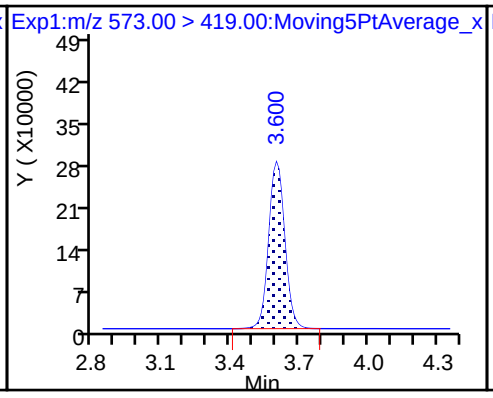
D 23 13C2 PFDA



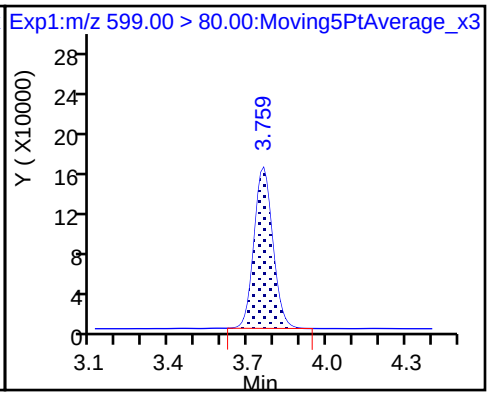
28 N-methyl perfluorooctane sulfonami



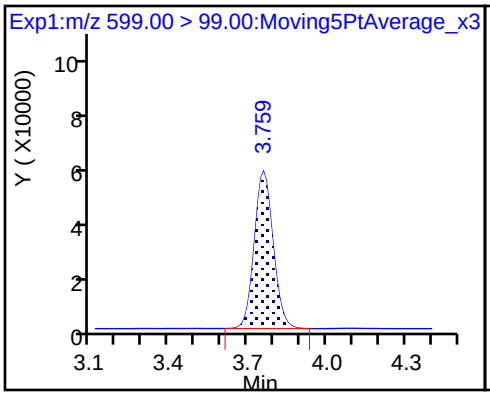
D 27 d3-NMeFOSAA



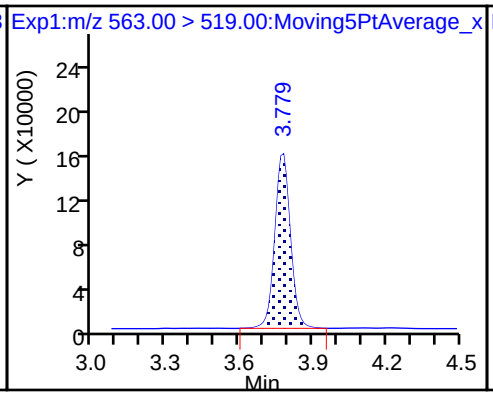
29 Perfluorodecane Sulfonic acid



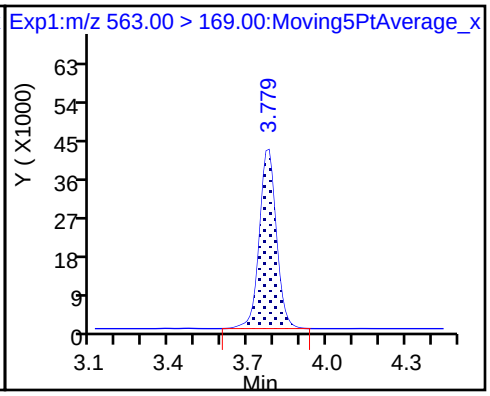
29 Perfluorodecane Sulfonic acid



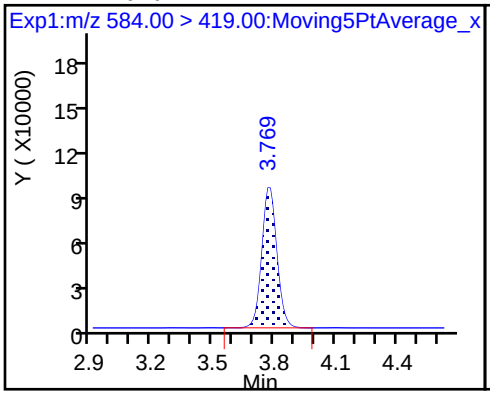
31 Perfluoroundecanoic acid



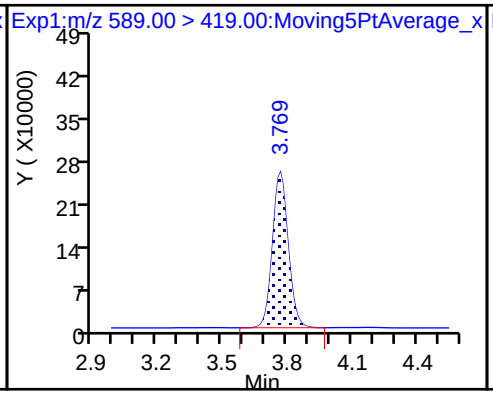
31 Perfluoroundecanoic acid



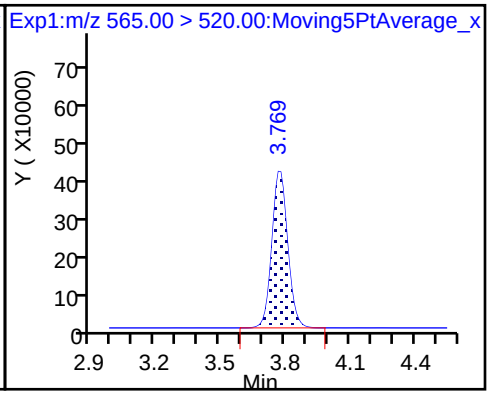
33 N-ethyl perfluorooctane sulfonamid



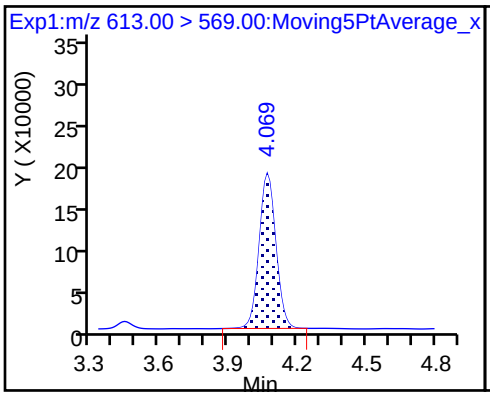
D 32 d5-NEtFOSAA



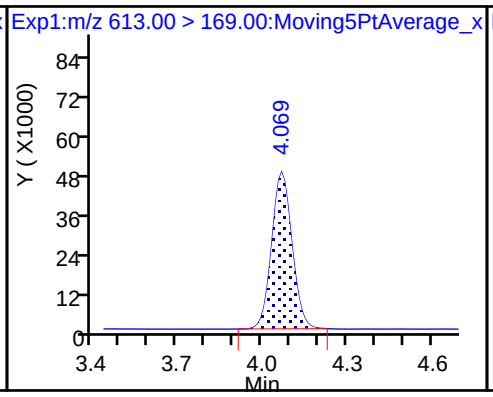
D 30 13C2 PFUnA



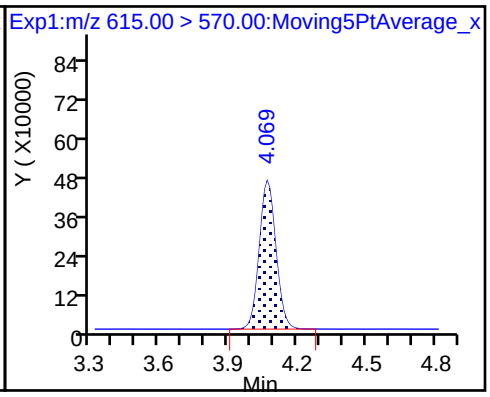
37 Perfluorododecanoic acid



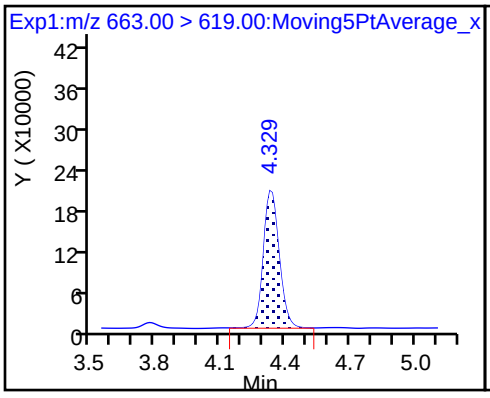
37 Perfluorododecanoic acid



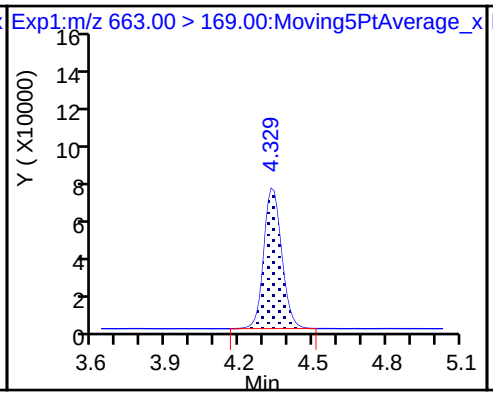
D 36 13C2 PFDoA



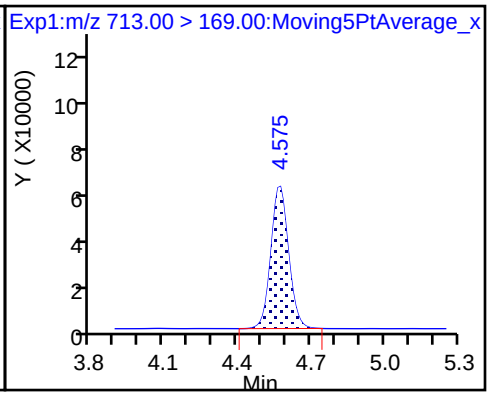
41 Perfluorotridecanoic acid



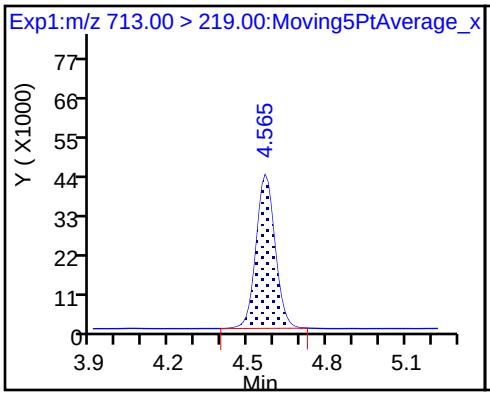
41 Perfluorotridecanoic acid



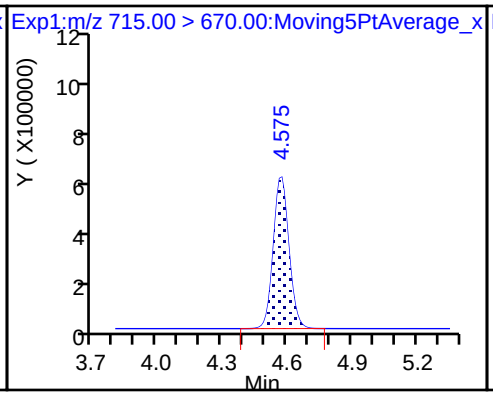
42 Perfluorotetradecanoic acid



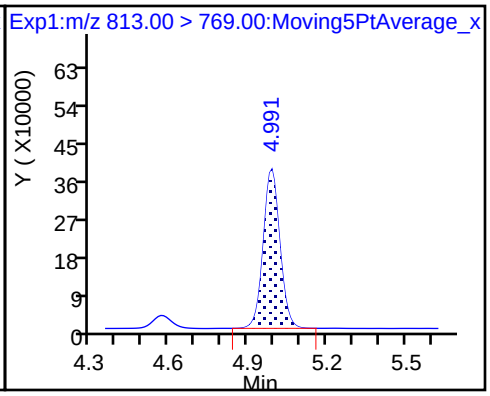
42 Perfluorotetradecanoic acid



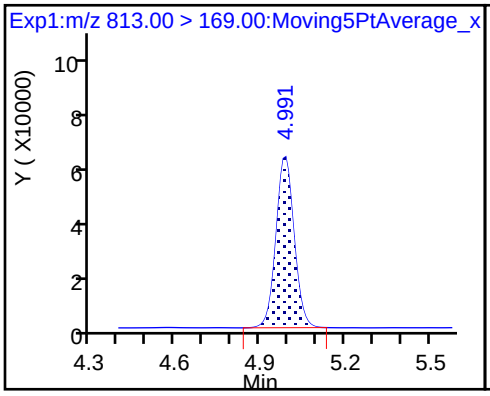
D 43 13C2-PFTeDA



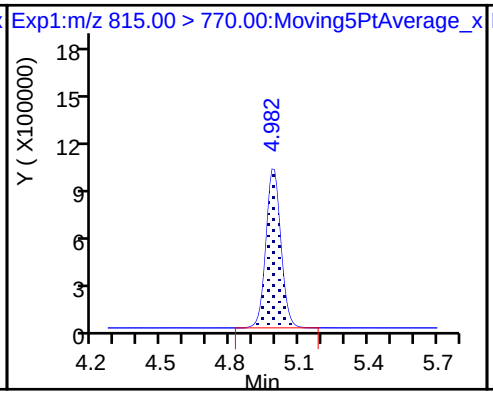
45 Perfluorohexadecanoic acid



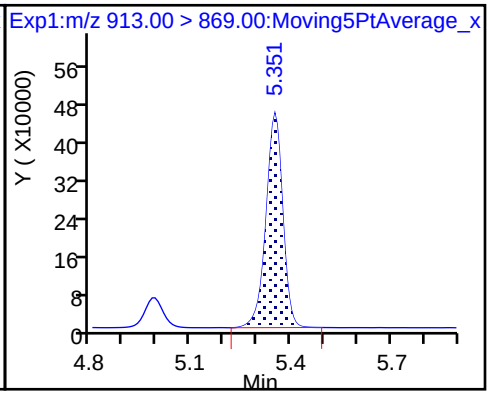
45 Perfluorohexadecanoic acid



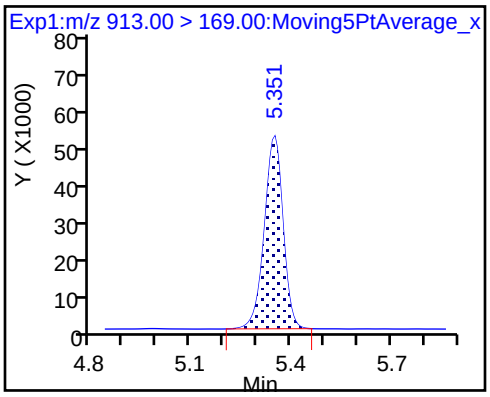
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-C MSD

Matrix: Solid | Lab File ID: 2018.03.20LLA_039.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 01:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00217		0.00020	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00214		0.00020	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00236		0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00220		0.00020	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00286		0.00020	0.000088
375-95-1	Perfluorononanoic acid (PFNA)	0.0138		0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00238		0.00020	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00185		0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00210		0.00020	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00254		0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00199		0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00206		0.00020	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00596		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00584		0.00020	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00154		0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00222		0.00020	0.000084
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00212		0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00204		0.0020	0.00038
27619-97-2	6:2FTS	0.00422		0.0020	0.00015
39108-34-4	8:2FTS	0.00230		0.0020	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-C MSD

Matrix: Solid | Lab File ID: 2018.03.20LLA_039.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/21/2018 01:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214053 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	77		25-150
STL01893	13C5 PFPeA	77		25-150
STL00993	13C2 PFHxA	79		25-150
STL01892	13C4-PFHpA	82		25-150
STL00990	13C4 PFOA	82		25-150
STL00995	13C5 PFNA	53		25-150
STL00996	13C2 PFDA	64		25-150
STL00997	13C2 PFUnA	48		25-150
STL00998	13C2 PFDoA	41		25-150
STL02116	13C2-PFTeDA	55		25-150
STL02337	13C3-PFBS	78		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	61		25-150
STL01056	13C8 FOSA	45		25-150
STL02118	d3-NMeFOSAA	33		25-150
STL02117	d5-NEtFOSAA	33		25-150
STL02279	M2-6:2FTS	75		25-150
STL02280	M2-8:2FTS	65		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_039.d
Lims ID: 320-36683-A-10-C MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 21-Mar-2018 01:15:09 ALS Bottle#: 29 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-a-10-c msd
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 10:56:11 Calib Date: 16-Mar-2018 23:56:35
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180318-55469.b\2018.03.16ICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 10:40:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	0.538	4651590	1.93		77.1	71542	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.446	0.001	1.000	1832965	1.06		106	598	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.632	3281010	1.93		77.1	69521	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.709	0.0	1.005	1604665	1.05		105	417	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.736	0.0	0.646	75892	1.81		77.7	409	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.744	0.0	1.005	2544776	1.01		114	864	
298.90 > 99.00	1.745	1.744	0.0	1.005	1047383		2.43(1.25-3.74)		851	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.955	0.001	1.000	485993	0.9263		99.2	20903	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.987	0.0	0.739	3747814	1.97		79.0	90037	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.997	-0.010	1.000	1741176	1.15		115	2597	
313.00 > 119.00	1.987	1.997	-0.010	1.000	161098		10.81(5.03-15.10)		3006	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.315	0.0	0.861	3783831	2.05		82.0	88503	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.328	-0.013	1.000	1687322	1.08		108	2108	
363.00 > 169.00	2.328	2.328	0.0	1.006	664755		2.54(1.13-3.40)		7683	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.328	0.013	0.871	4767789	1.94		81.8	87527	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.341	-0.013	0.994	6547671	2.91		320	10225	
399.00 > 99.00	2.341	2.341	0.0	1.000	2027227		3.23(1.50-4.49)		5138	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.657	0.0	0.988	846289	1.79		75.3	21421	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.663	-0.006	1.000	1224490	2.06		218	55637	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.681	0.008	1.000	3646258	2.04		81.8	83820	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.689	2.695	-0.006	1.000	2274532	1.40		140	729	M
413.00 > 169.00	2.689	2.695	-0.006	1.000	1248927		1.82(0.84-2.52)		4265	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.695	-0.006		4726713	2.50			98807	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.703	-0.014	1.000	3944994	2.85		300	1547	
449.00 > 99.00	2.689	2.703	-0.014	1.000	1033068		3.82(1.94-5.82)		2790	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.051	0.007	1.137	2515726	1.46		61.1	24413	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.137	1896829	1.33		53.2	40090	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.067	-0.009	1.000	98324725	86.3		9298	51777	E
499.00 > 99.00	3.058	3.067	-0.009	1.000	27566930		3.57(2.31-6.93)		83277	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.067	-0.002	1.002	5223942	6.75		675	8072	
463.00 > 169.00	3.058	3.067	-0.009	1.000	1319112		3.96(1.90-5.69)		30323	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.389	0.009	1.264	2803337	1.12		44.9	37166	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.401	-0.003	1.000	1180730	1.08		108	2666	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.408	0.009	1.271	693881	1.56		65.2	14093	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.417	0.009	1.274	1909072	1.60		64.1	30837	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.419	-0.002	1.000	408613	1.12		117	13042	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.428	-0.002	1.000	843669	1.16		116	3721	
513.00 > 169.00	3.426	3.428	-0.002	1.000	153177		5.51(2.36-7.09)		1244	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.570	0.009	1.331	320078	0.8134		32.5	17421	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.594	-0.015	1.000	138106	1.04		104	3006	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	505937	0.7528		78.1	7608	
599.00 > 99.00	3.738	3.741	-0.003	1.000	185343		2.73(1.39-4.16)		4332	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	309488	0.8226		32.9	716	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	1129982	1.21		48.4	46953	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.762	-0.004	1.003	120542	0.99		99.5	3089	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.762	-0.004	1.000	342155	0.9033		90.3	1038	
563.00 > 169.00	3.758	3.762	-0.004	1.000	95641		3.58(2.12-6.36)		11466	
35 MeFOSA										
512.00 > 169.00	3.903	3.875	0.028		89740	NC			2112	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.505	904037	1.02		40.9	6266	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.061	-0.014	1.000	380034	1.03		103	92.5	
613.00 > 169.00	4.047	4.061	-0.014	1.000	97415		3.90(2.13-6.40)		2019	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.089	4.066	0.023		67736	NC			1219	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.320	-0.002	1.000	462158	1.24		124	138	
663.00 > 169.00	4.318	4.320	-0.002	1.000	150724		3.07(1.25-3.76)		2265	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.544	0.010	1.694	1108401	1.37		54.9	13576	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.556	-0.002	1.000	118920	0.9726		97.3	2272	
713.00 > 219.00	4.543	4.556	-0.013	0.998	88665		1.34(0.71-2.13)		1172	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.964	0.0	1.846	1053141	0.8915		35.7	4956	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.974	-0.010	1.000	401224	1.01		101	48.8	
813.00 > 169.00	4.964	4.974	-0.010	1.000	68193		5.88(2.86-8.58)		735	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.322	5.331	-0.009	1.000	268618	0.6541		65.4	99.3	
913.00 > 169.00	5.322	5.331	-0.009	1.000	34109		7.88(3.83-11.48)		481	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 22-Mar-2018 10:56:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_039.d

Injection Date: 21-Mar-2018 01:15:09 Instrument ID: A8_N

Lims ID: 320-36683-A-10-C MSD

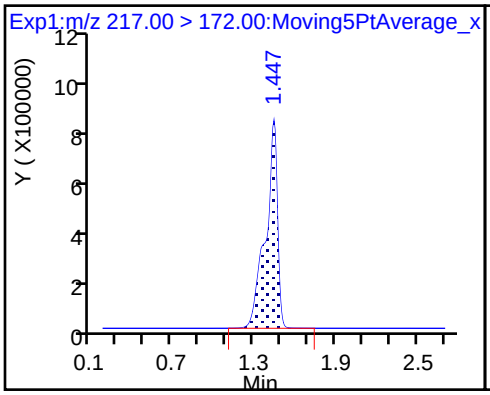
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 18

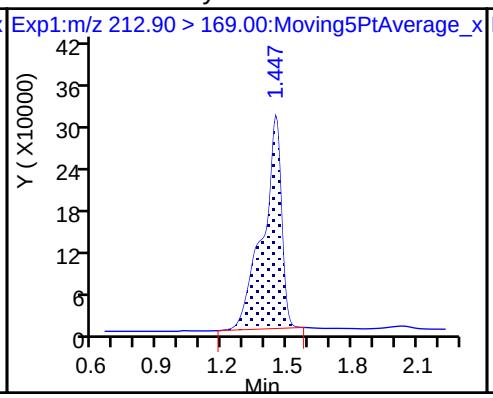
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

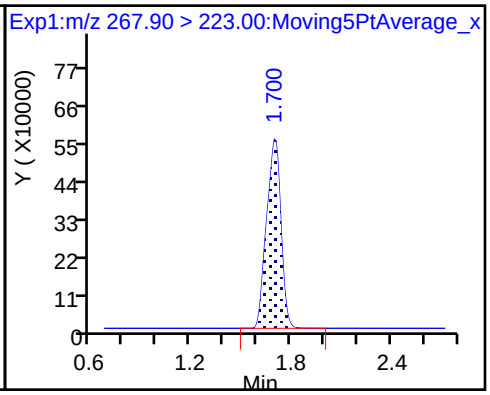
D 1 13C4 PFBA



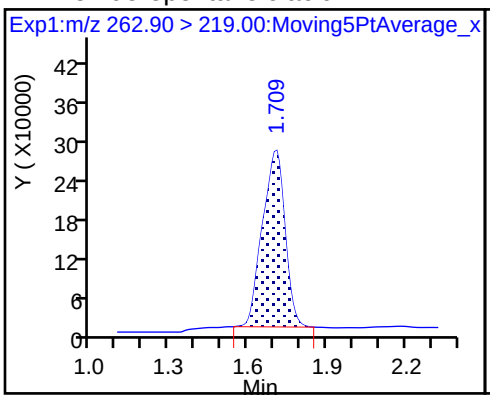
2 Perfluorobutyric acid



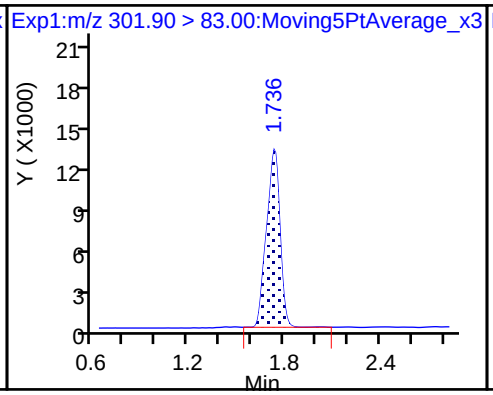
D 3 13C5-PFPeA



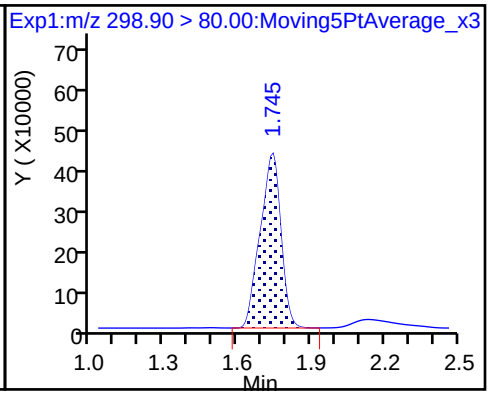
4 Perfluoropentanoic acid



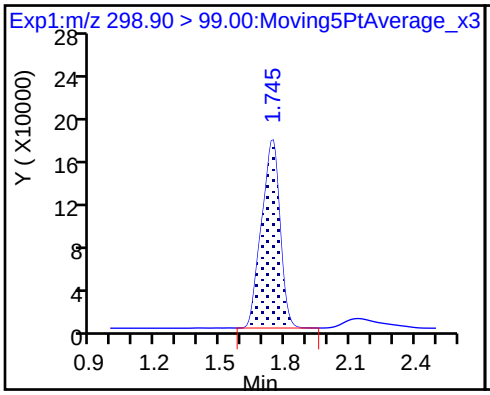
D 47 13C3-PFBS



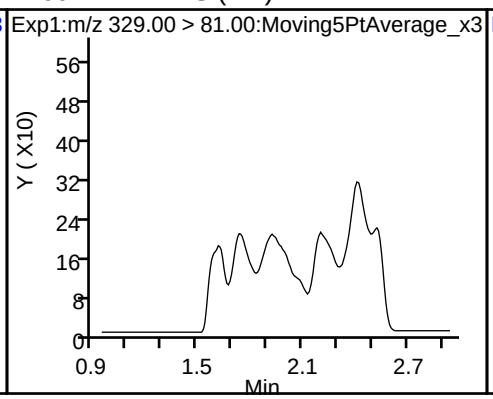
5 Perfluorobutanesulfonic acid



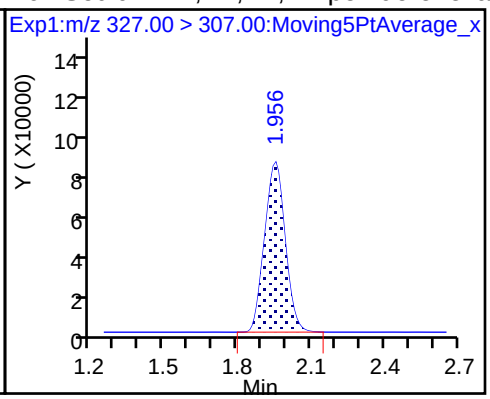
5 Perfluorobutanesulfonic acid



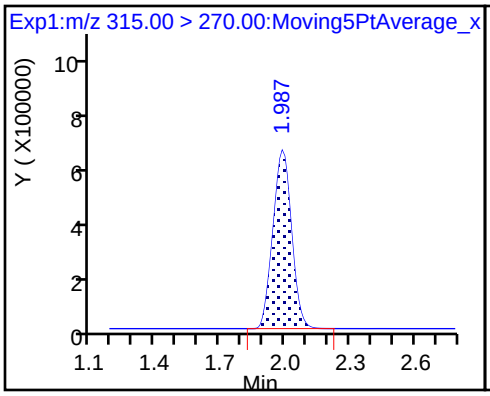
D 60 M2-4:2FTS (ND)



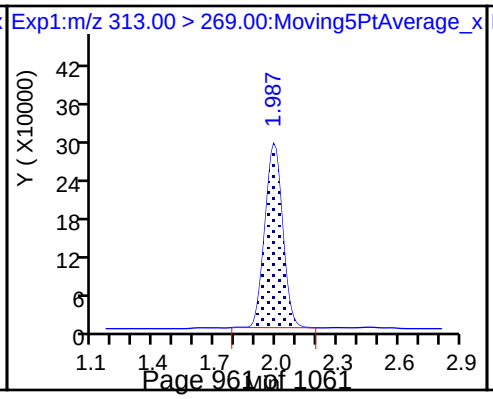
61 Sodium 1H,1H,2H,2H-perfluorohexane



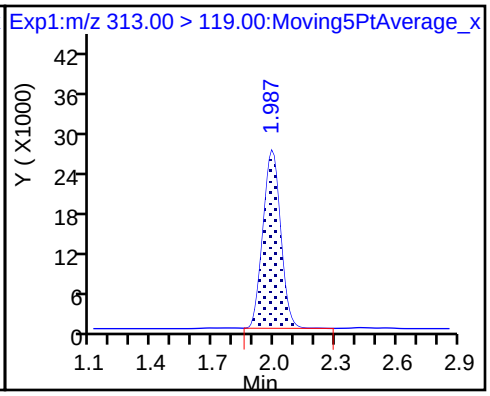
D 7 13C2 PFHxA



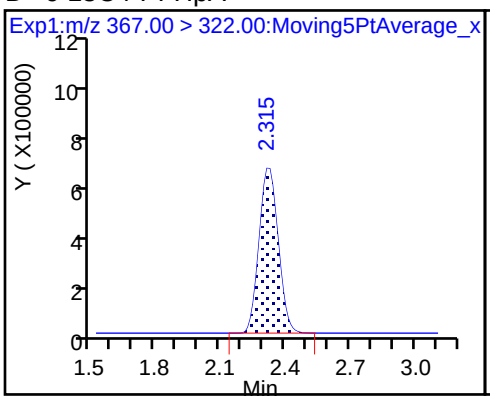
6 Perfluorohexanoic acid



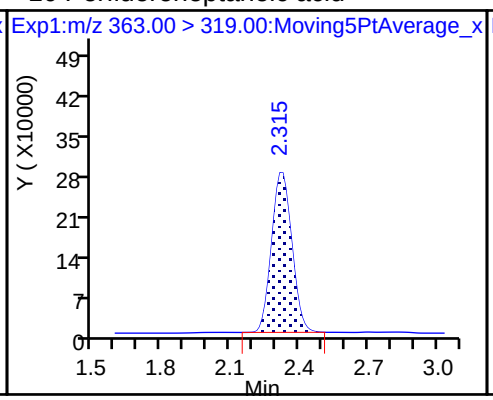
6 Perfluorohexanoic acid



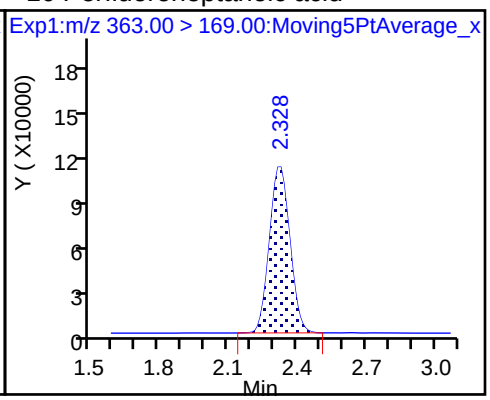
D 9 13C4-PFHpA



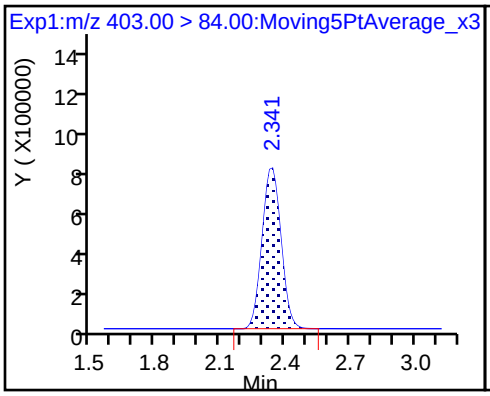
10 Perfluoroheptanoic acid



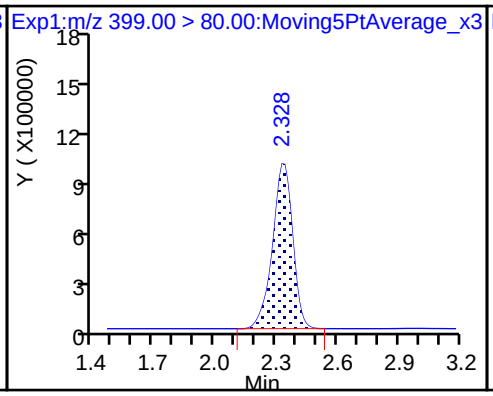
10 Perfluoroheptanoic acid



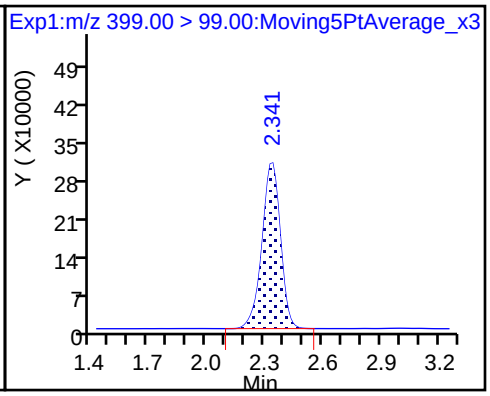
D 11 18O2 PFHxS



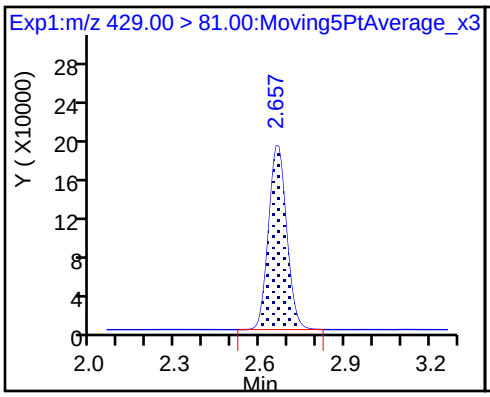
8 Perfluorohexanesulfonic acid



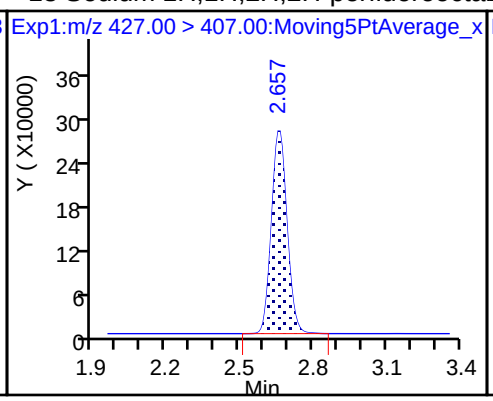
8 Perfluorohexanesulfonic acid



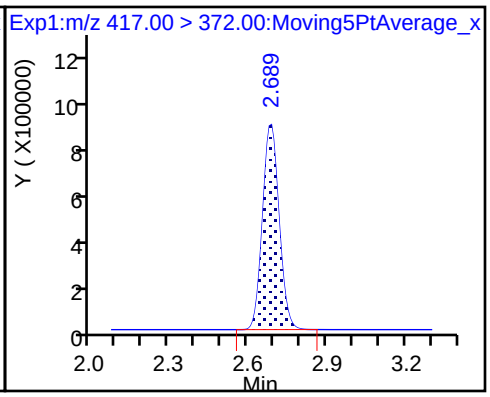
D 12 M2-6:2FTS



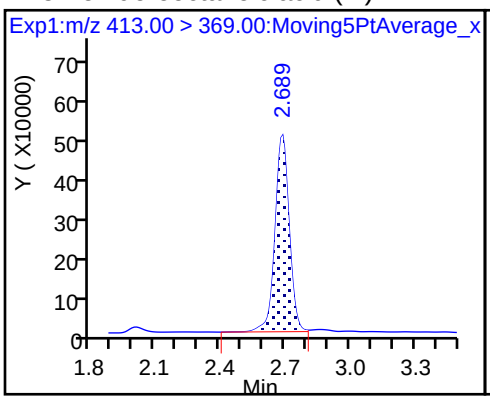
13 Sodium 1H,1H,2H,2H-perfluorooctane



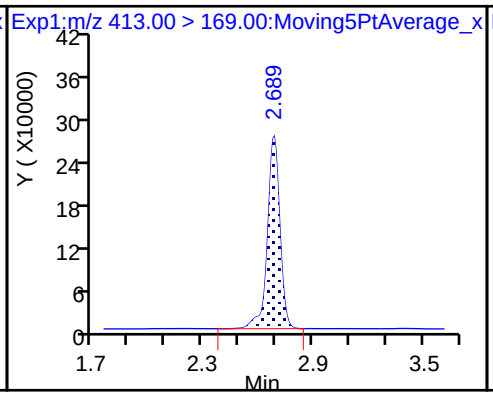
D 14 13C4 PFOA



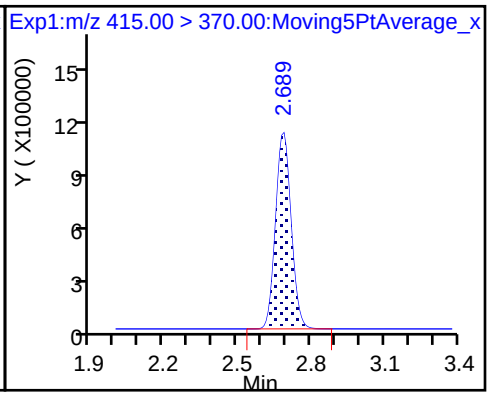
15 Perfluorooctanoic acid (M)



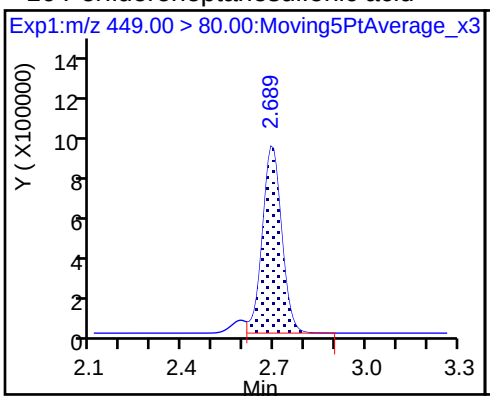
15 Perfluorooctanoic acid



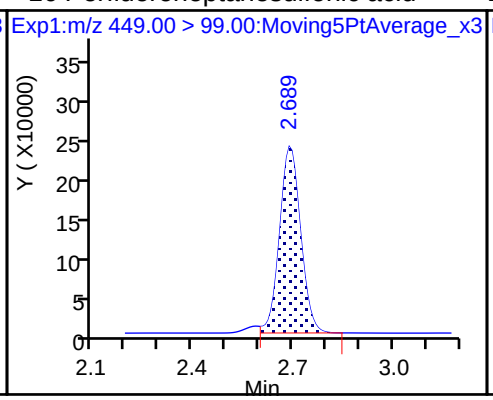
* 62 13C2-PFOA



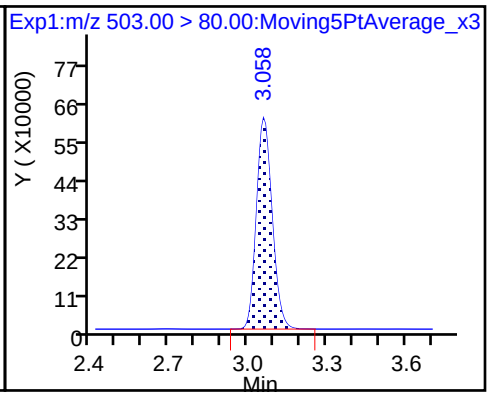
16 Perfluoroheptanesulfonic acid



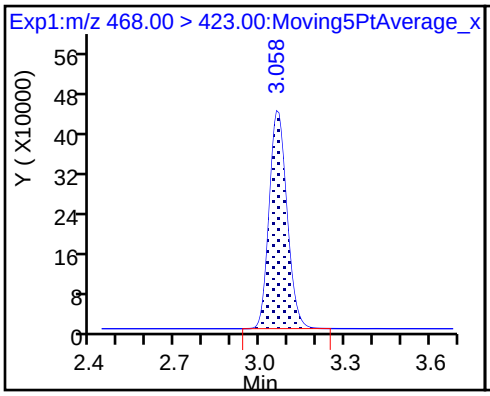
16 Perfluoroheptanesulfonic acid



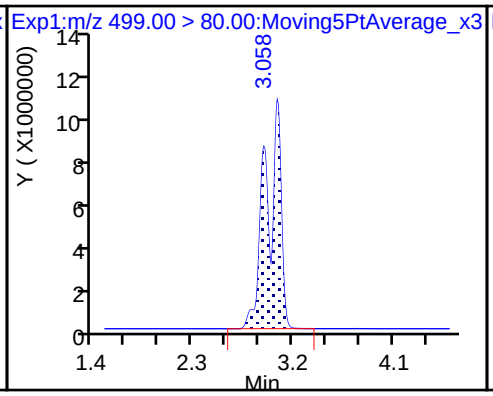
D 18 13C4 PFOS



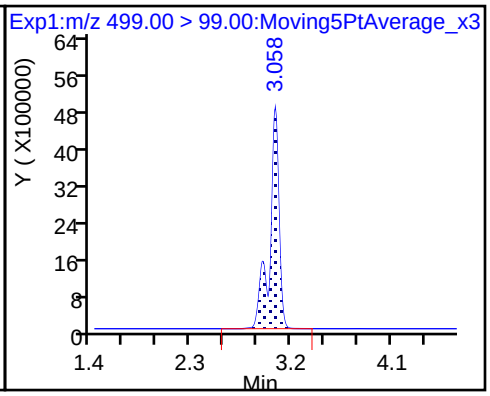
D 19 13C5 PFNA



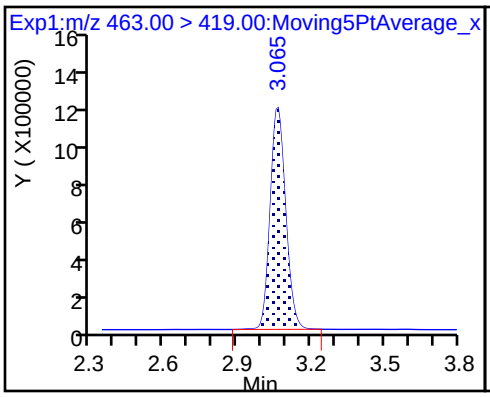
17 Perfluorooctane sulfonic acid



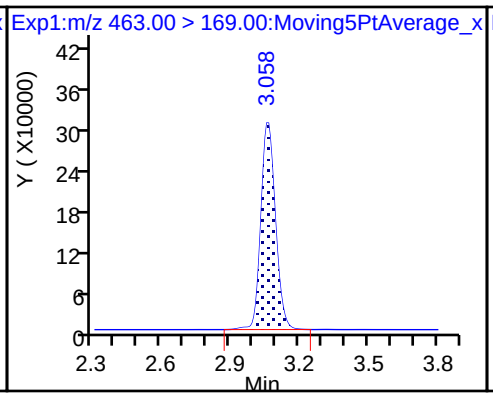
17 Perfluorooctane sulfonic acid



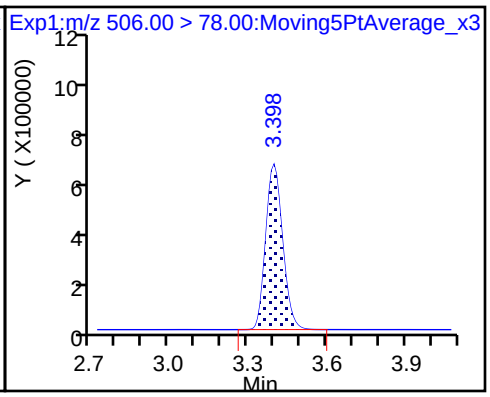
20 Perfluorononanoic acid



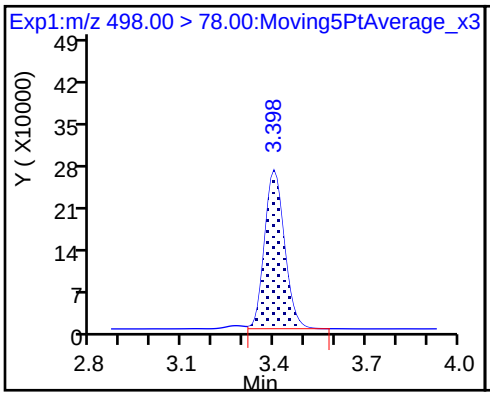
20 Perfluorononanoic acid



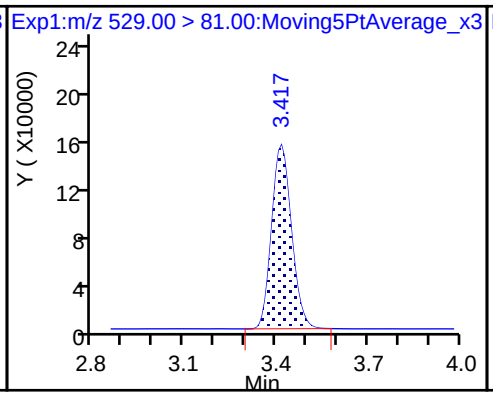
D 21 13C8 FOSA



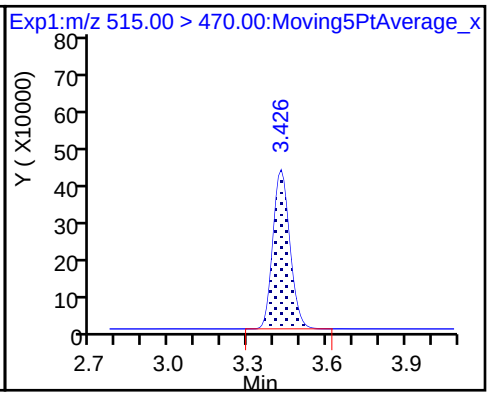
22 Perfluorooctane Sulfonamide



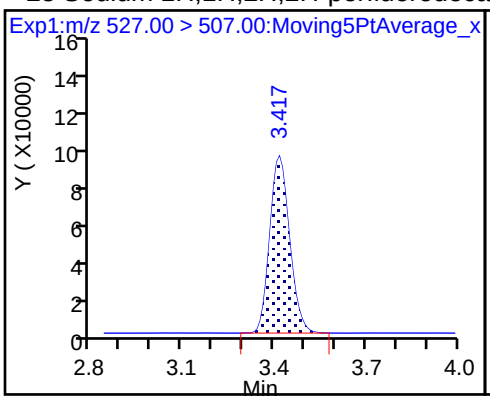
D 26 M2-8:2FTS



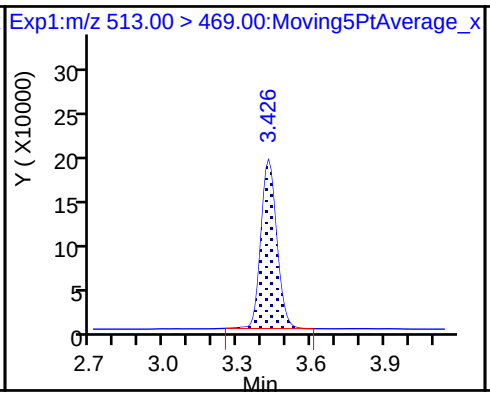
D 23 13C2 PFDA



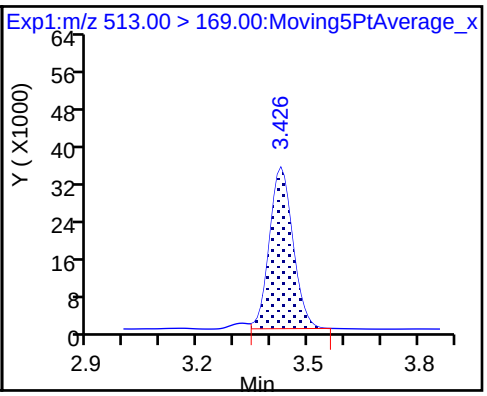
25 Sodium 1H,1H,2H,2H-perfluorodecan



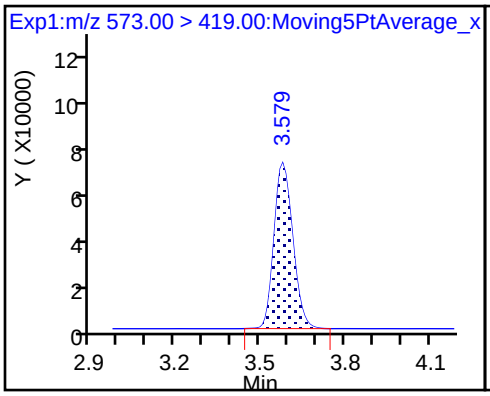
24 Perfluorodecanoic acid



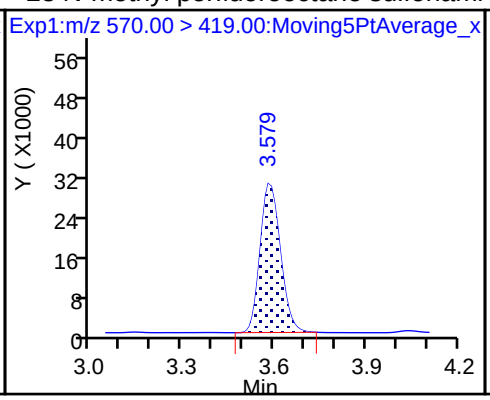
24 Perfluorodecanoic acid



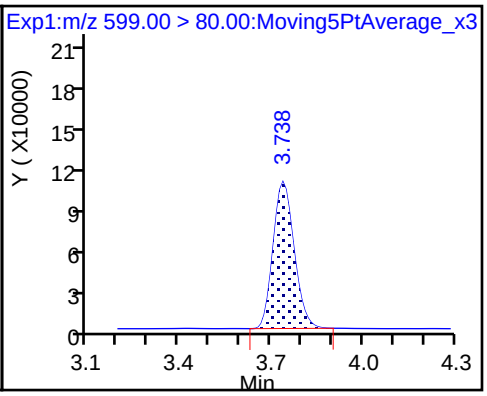
D 27 d3-NMeFOSAA



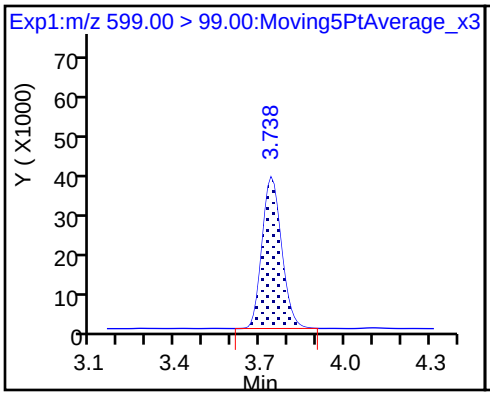
28 N-methyl perfluorooctane sulfonami



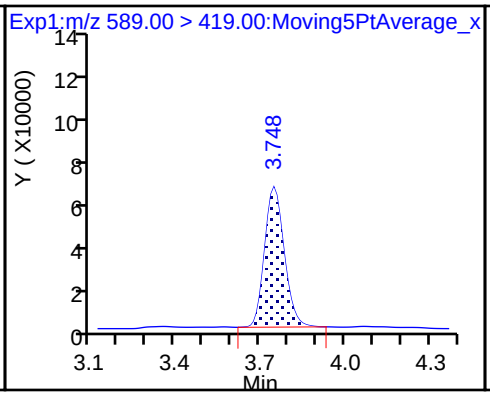
29 Perfluorodecane Sulfonic acid



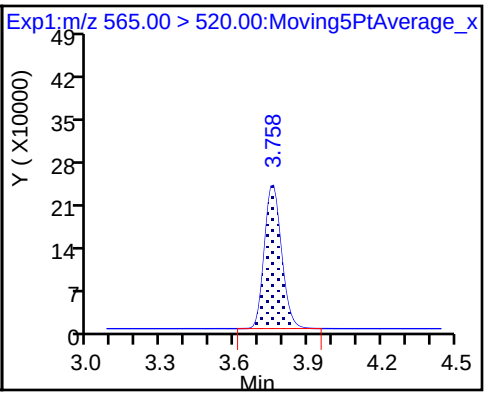
29 Perfluorodecane Sulfonic acid



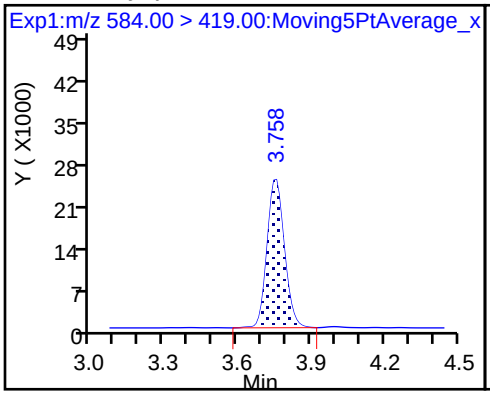
D 32 d5-NEtFOSAA



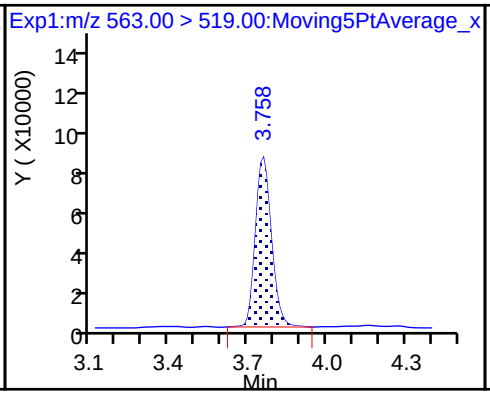
D 30 13C2 PFUnA



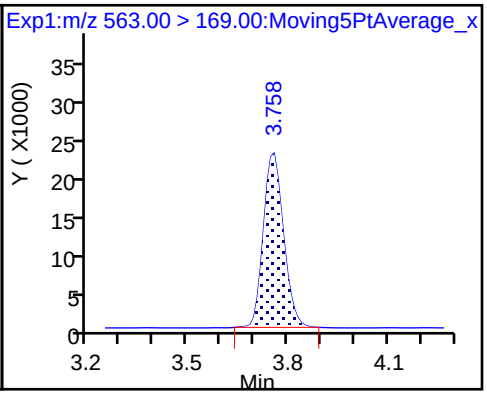
33 N-ethyl perfluorooctane sulfonamid



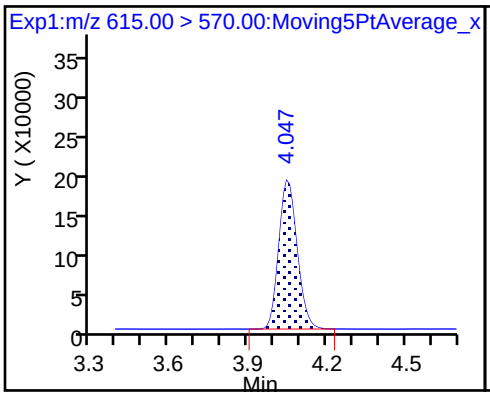
31 Perfluoroundecanoic acid



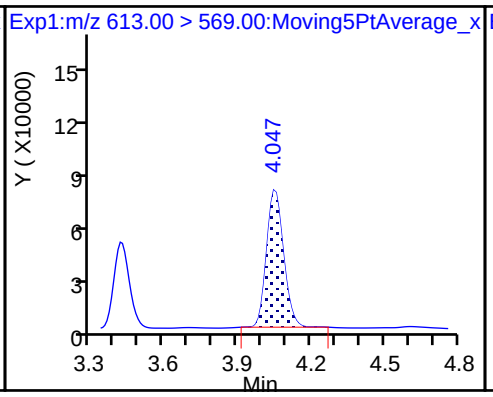
31 Perfluoroundecanoic acid



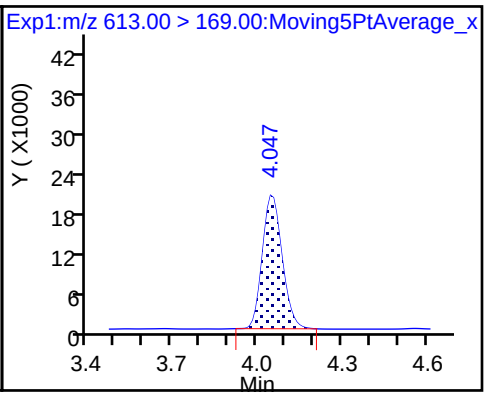
D 36 13C2 PFDoA



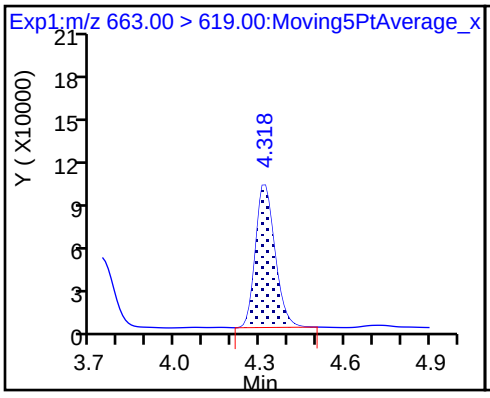
37 Perfluorododecanoic acid



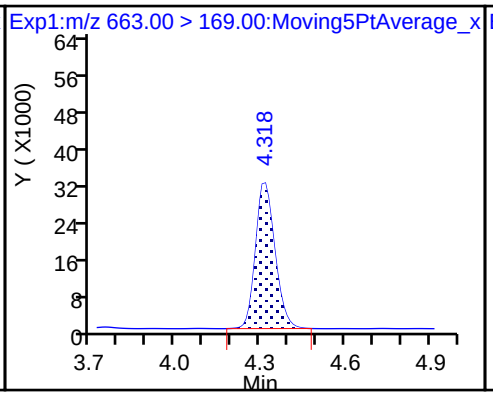
37 Perfluorododecanoic acid



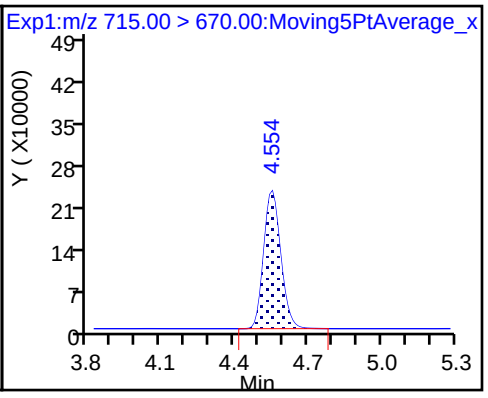
41 Perfluorotridecanoic acid



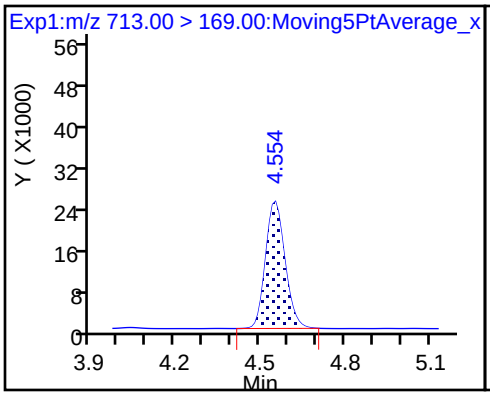
41 Perfluorotridecanoic acid



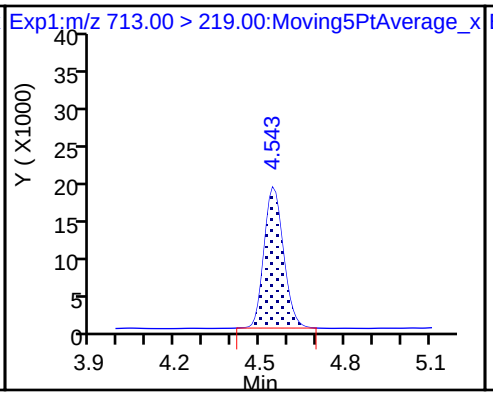
D 43 13C2-PFTeDA



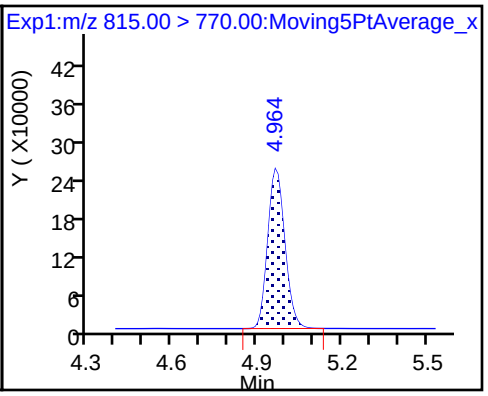
42 Perfluorotetradecanoic acid



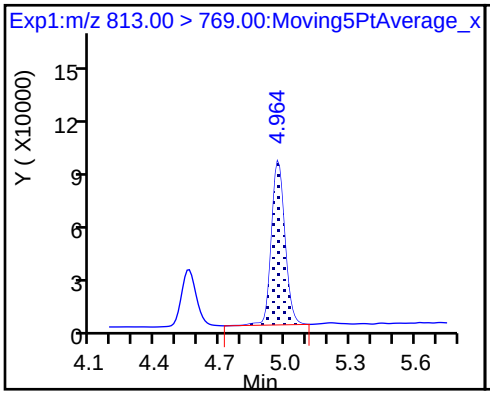
42 Perfluorotetradecanoic acid



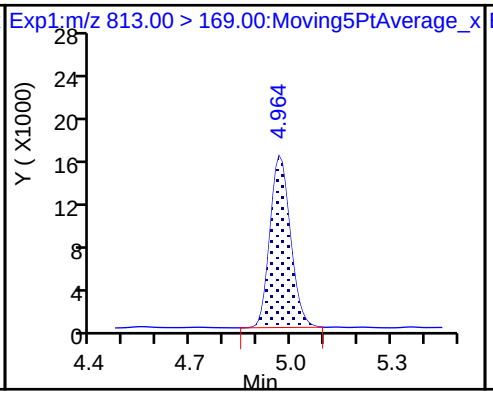
D 44 13C2-PFHxDA



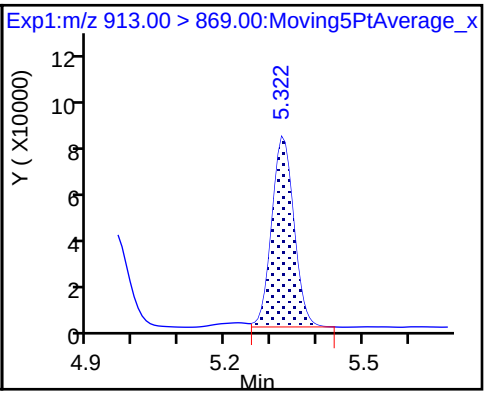
45 Perfluorohexadecanoic acid



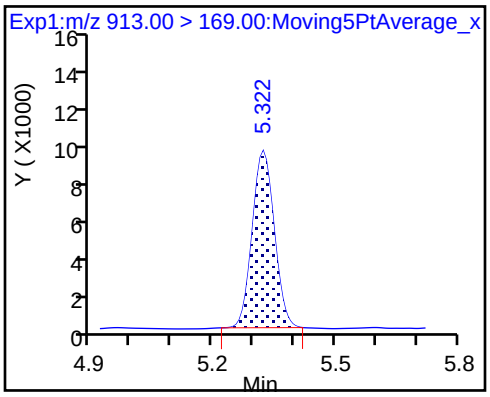
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

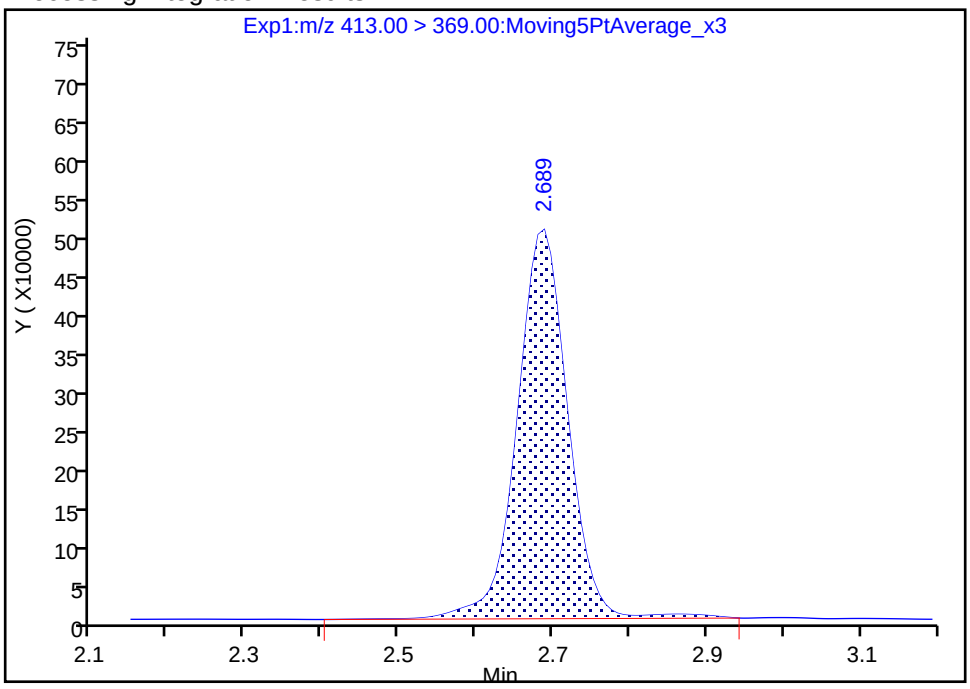
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b\2018.03.20LLA_039.d				
Injection Date:	21-Mar-2018 01:15:09	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-C MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	29	Worklist Smp#:	18
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

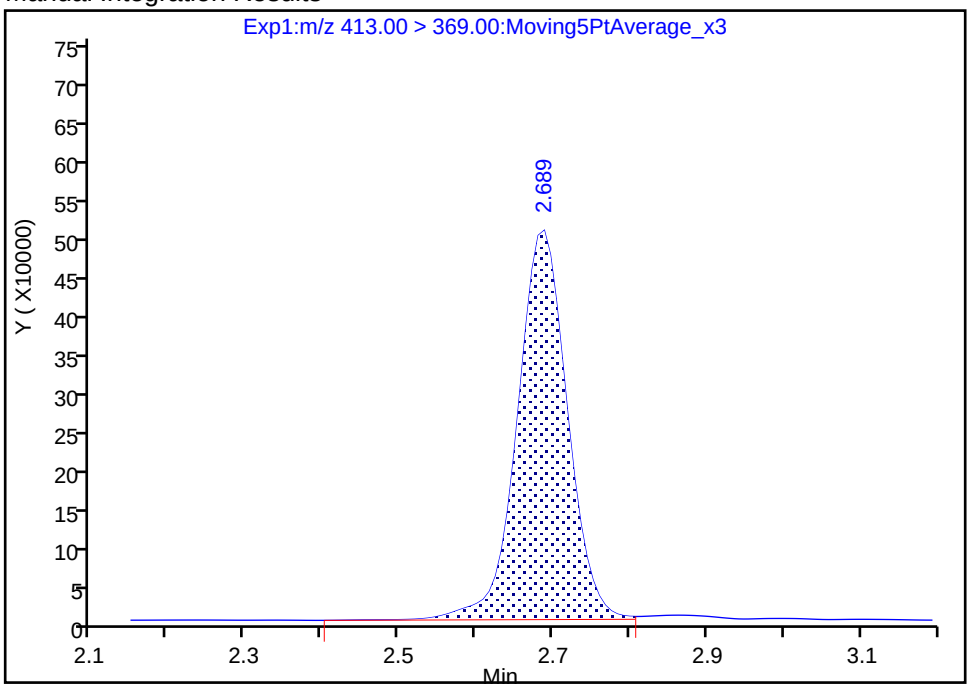
Processing Integration Results

RT: 2.69
Area: 2303571
Amount: 1.414766
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 2274532
Amount: 1.396931
Amount Units: ng/ml



Reviewer: krenns, 22-Mar-2018 10:39:54

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-C MSD DL

Matrix: Solid | Lab File ID: 2018.03.21LLC_023.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/12/2018 15:35

Sample wt/vol: 5.02(g) | Date Analyzed: 03/22/2018 00:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 214277 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.216		0.026	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	69		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_023.d
Lims ID: 320-36683-A-10-C MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 22-Mar-2018 00:09:06 ALS Bottle#: 25 Worklist Smp#: 18
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-a-10-c msd 50X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 12:53:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: krenns Date: 22-Mar-2018 12:38:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.446	0.0	0.538	117191	0.0377		75.4	1434	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.453	-0.007	1.000	50079	0.0227		113	22.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.636	84373	0.0409		81.8	3252	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.718	-0.009	1.000	34082	0.0179		89.6	18.5	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.735	0.009	0.649	1726	0.0367		78.8	12.9	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.000	55794	0.0193		109	330	
298.90 > 99.00	1.744	1.753	-0.009	1.000	24712		2.26(1.25-3.74)		163	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.966	-0.011	1.000	9327	0.0156		83.3	605	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.997	0.0	0.743	89593	0.0393		78.5	3198	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.997	0.0	1.000	40871	0.0223		112	109	
313.00 > 119.00	1.997	1.997	0.0	1.000	3641		11.23(5.03-15.10)		67.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.328	0.0	0.866	88686	0.0394		78.8	3029	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	38008	0.0207		104	74.3	
363.00 > 169.00	2.328	2.328	0.0	1.000	14591		2.60(1.13-3.40)		172	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.341	0.0	0.871	103559	0.0373		78.9	4415	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	137522	0.0564		310	1514	
399.00 > 99.00	2.341	2.341	0.0	1.000	44857		3.07(1.50-4.49)		108	
D 12 M2-6:2FTS										
429.00 > 81.00	2.680	2.665	0.015	0.997	35642	0.0764		161	1198	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.673	0.007	1.000	66106	0.0505		266	3158	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.688	0.0	1.000	96298	0.0418		83.6	3803	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.697	-0.009		122812	0.0500			4915	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.003	75082	0.0345		173	20.4	
413.00 > 169.00	2.688	2.697	-0.009	1.000	33818		2.22(0.84-2.52)		88.3	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.704	-0.008	1.000	82787	0.0463		243	979	
449.00 > 99.00	2.696	2.704	-0.008	1.000	23188		3.57(1.94-5.82)		336	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.058	0.0	1.138	66778	0.0331		69.2	1207	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.058	0.0	1.138	70475	0.0347		69.4	2955	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.065	-0.007	1.000	3282901	2.11		11366	10603	
499.00 > 99.00	3.058	3.065	-0.007	1.000	747509		4.39(2.31-6.93)		8104	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.002	206292	0.1467		734	295	
463.00 > 169.00	3.065	3.072	-0.007	1.002	51397		4.01(1.90-5.69)		1449	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.388	0.010	1.264	56802	0.0208		41.7	2158	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	0.997	20299	0.0181		90.6	336	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.415	0.002	1.271	20482	0.0325		67.9	498	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.424	0.002	1.274	47057	0.0264		52.9	1550	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.426	-0.009	1.000	13704	0.0251		131	341	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.435	-0.009	1.000	20689	0.0222		111	89.4	
513.00 > 169.00	3.426	3.435	-0.009	1.000	4209		4.92(2.36-7.09)		109	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.331	15549	0.0166		33.2	499	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.590	-0.011	1.000	8989	0.0289		144	483	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	10120	0.0107		55.3	306	
599.00 > 99.00	3.738	3.748	-0.010	0.997	5227		1.94(1.39-4.16)		94.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.748	0.010	1.398	38096	0.0239		47.9	1607	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.748	0.0	1.394	16515	0.0155		30.9	136	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.768	-0.020	1.000	6758	0.0219		110	158	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.768	-0.010	1.000	10749	0.0164		81.8	50.5	
563.00 > 169.00	3.758	3.768	-0.010	1.000	2518		4.27(2.12-6.36)		286	
35 MeFOSA										
512.00 > 169.00	3.903	3.875	0.028		2193	NC			66.0	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.047	0.0	1.505	33707	0.0187		37.3	328	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.057	-0.010	1.000	14139	0.0200		100	21.4	
613.00 > 169.00	4.057	4.057	0.0	1.003	3029		4.67(2.13-6.40)		65.7	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.088	4.066	0.022		1997	NC			70.4	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.328	-0.011	1.000	16698	0.0225		113	19.4	
663.00 > 169.00	4.317	4.328	-0.011	1.000	5472		3.05(1.25-3.76)		126	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.694	47114	0.0214		42.7	444	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.564	-0.010	1.000	6011	0.0257		129	115	
713.00 > 219.00	4.554	4.564	-0.010	1.000	2882		2.09(0.71-2.13)		63.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	4.972	0.0	1.850	60919	0.0168		33.7	400	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.981	-0.009	1.000	22467	-0.003998		-20.0	13.6	
813.00 > 169.00	4.972	4.981	-0.009	1.000	3710		6.06(2.86-8.58)		41.0	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.344	-0.015	1.000	16435	0.0146		72.9	14.4	
913.00 > 169.00	5.329	5.344	-0.015	1.000	1815		9.06(3.83-11.48)		30.2	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Report Date: 22-Mar-2018 12:53:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b\2018.03.21LLC_023.d

Injection Date: 22-Mar-2018 00:09:06 Instrument ID: A8_N

Lims ID: 320-36683-A-10-C MSD

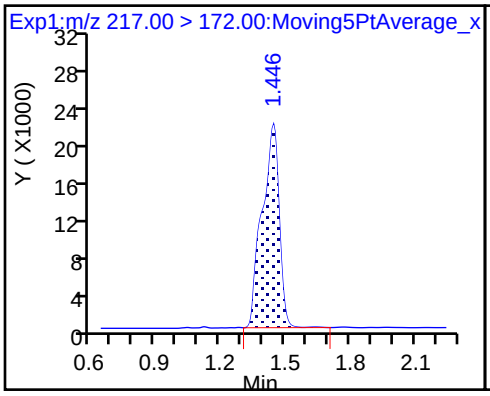
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 18

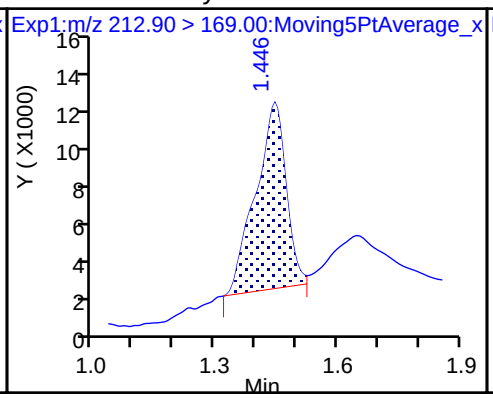
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

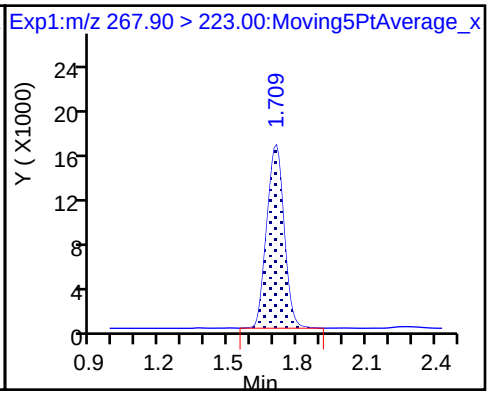
D 1 13C4 PFBA



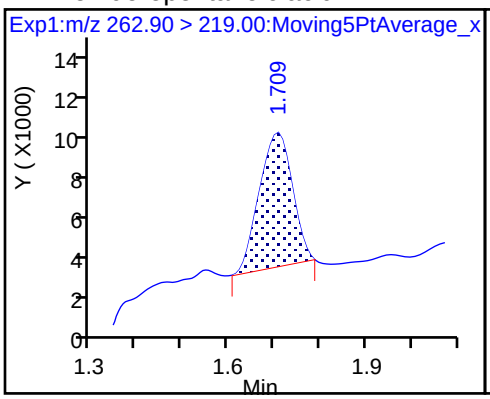
2 Perfluorobutyric acid



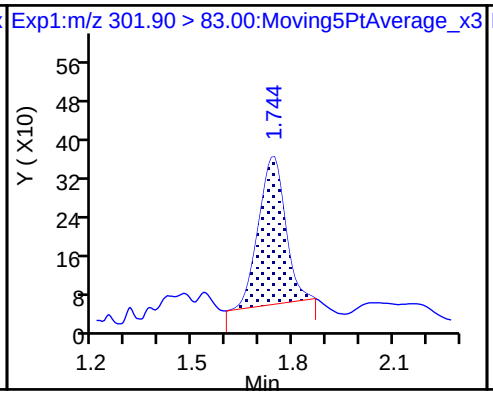
D 3 13C5-PFPeA



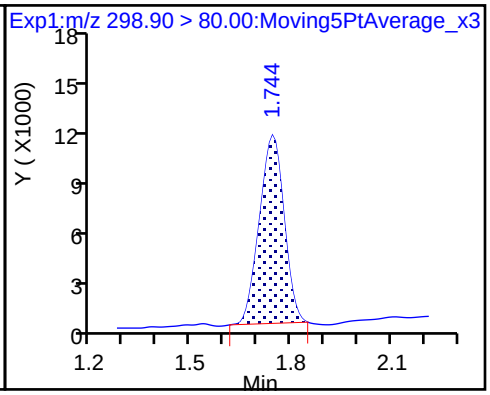
4 Perfluoropentanoic acid



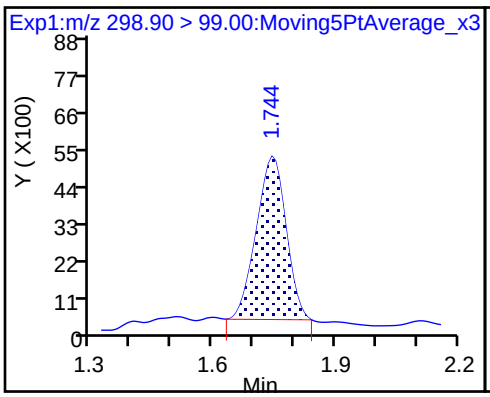
D 47 13C3-PFBS



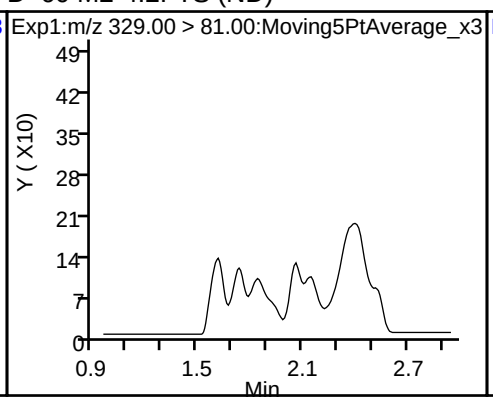
5 Perfluorobutanesulfonic acid



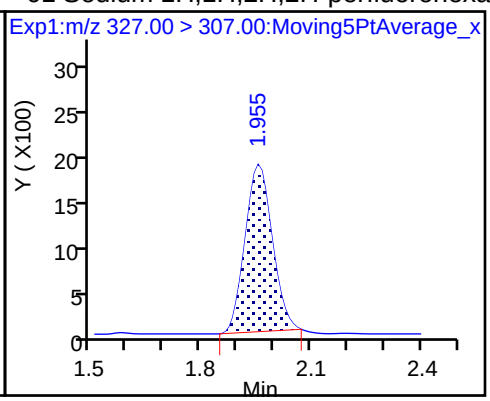
5 Perfluorobutanesulfonic acid



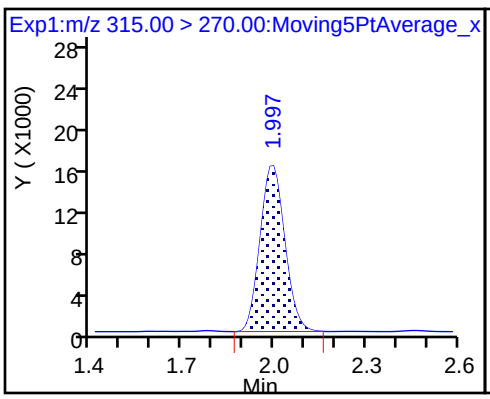
D 60 M2-4:2FTS (ND)



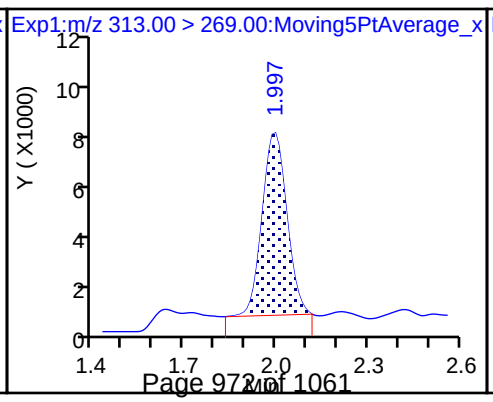
61 Sodium 1H,1H,2H,2H-perfluorohexane



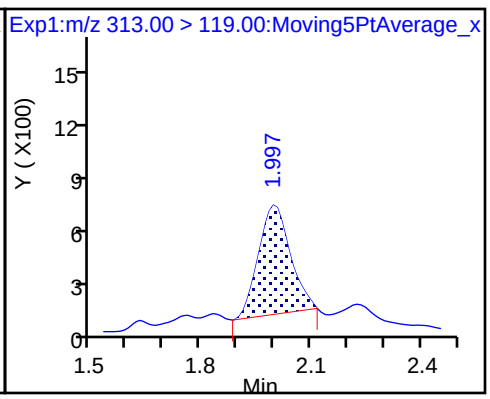
D 7 13C2 PFHxA



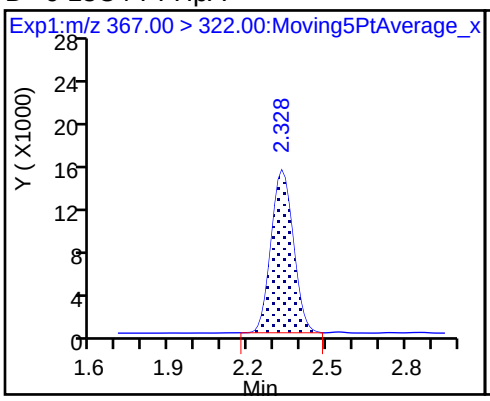
6 Perfluorohexanoic acid



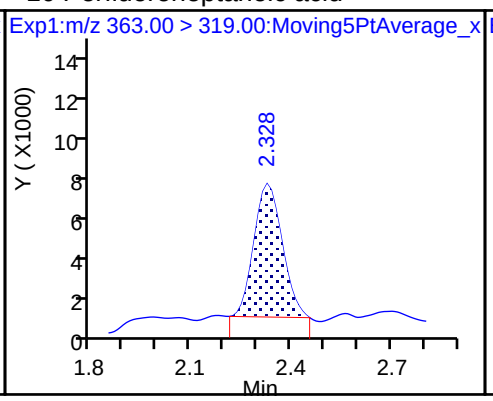
6 Perfluorohexanoic acid



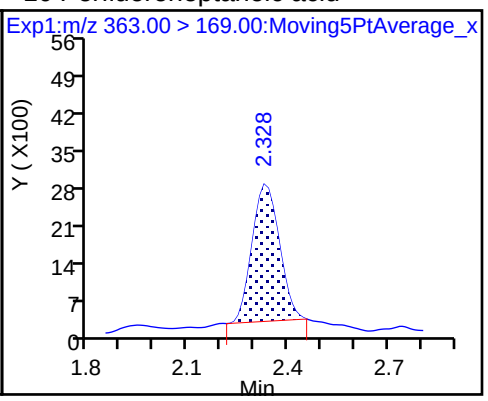
D 9 13C4-PFHpA



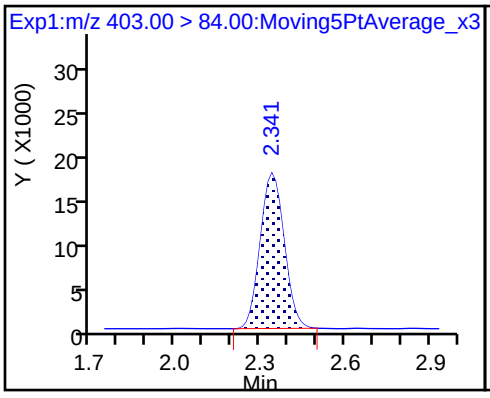
10 Perfluoroheptanoic acid



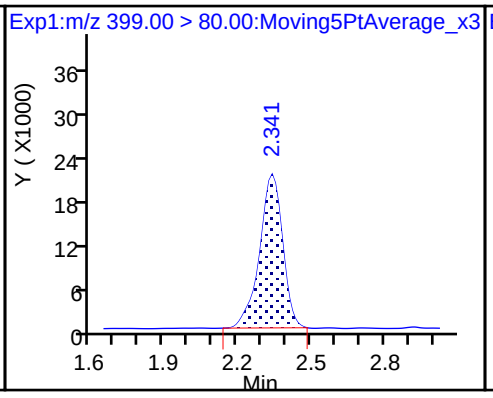
10 Perfluoroheptanoic acid



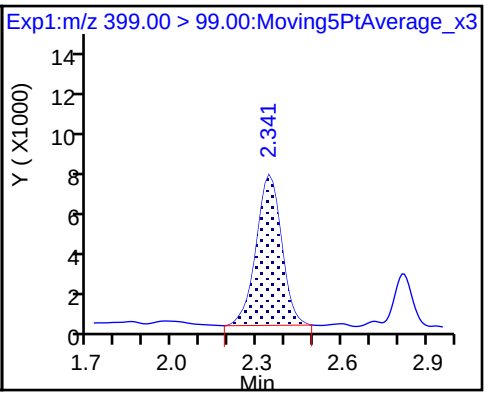
D 11 18O2 PFHxS



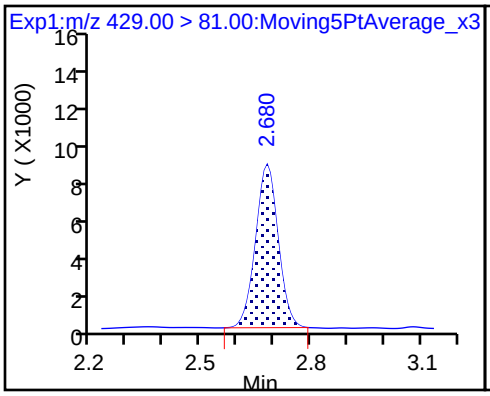
8 Perfluorohexanesulfonic acid



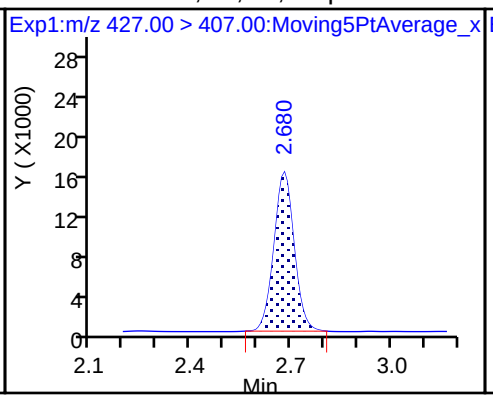
8 Perfluorohexanesulfonic acid



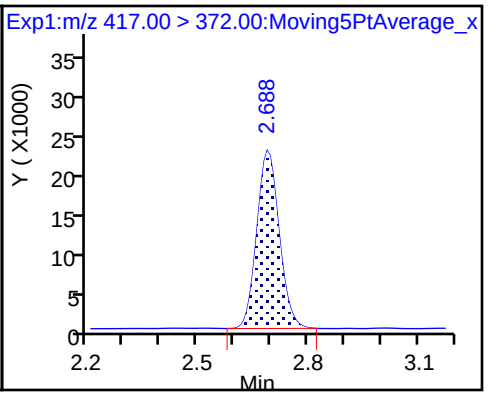
D 12 M2-6:2FTS



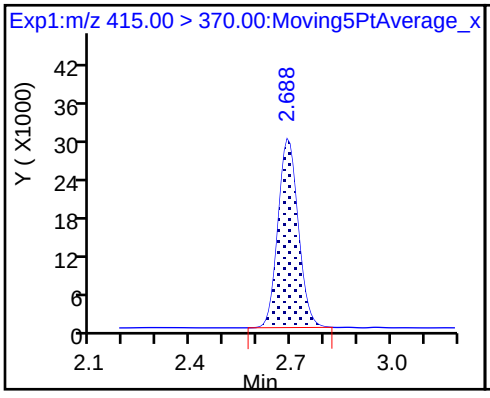
13 Sodium 1H,1H,2H,2H-perfluorooctane



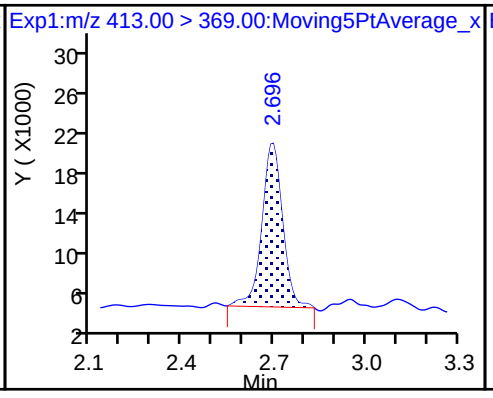
D 14 13C4 PFOA



* 62 13C2-PFOA



15 Perfluorooctanoic acid



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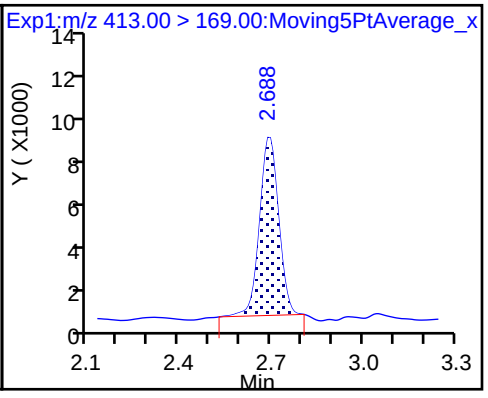
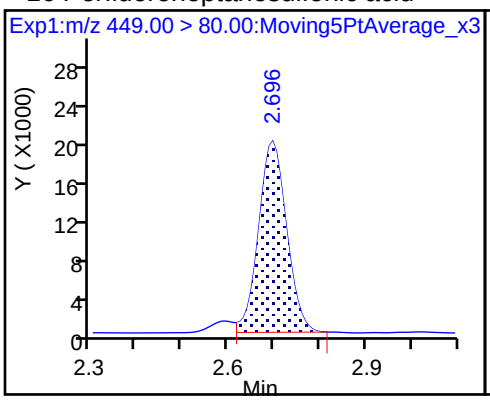
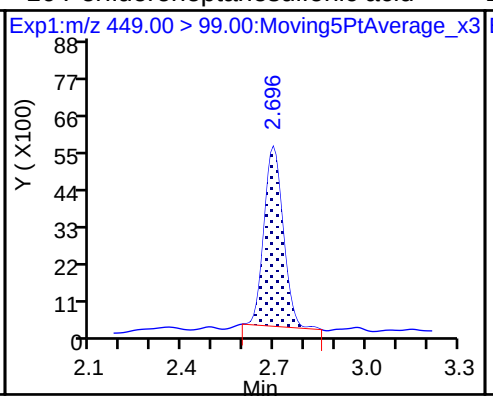


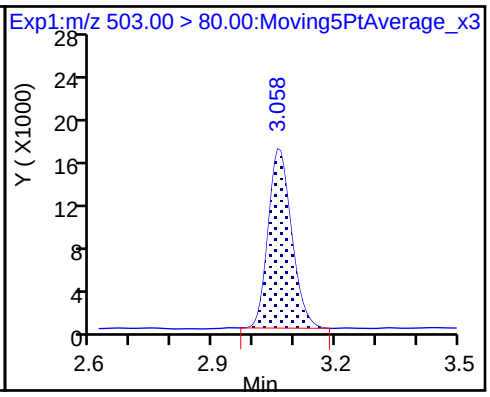
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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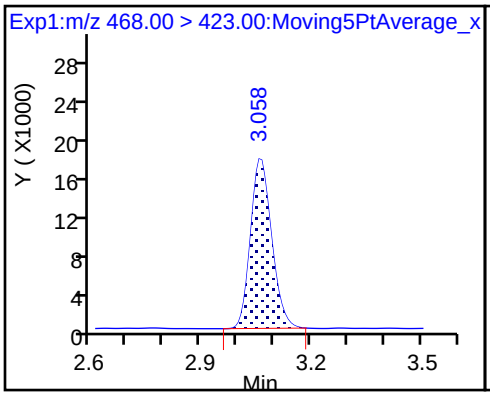
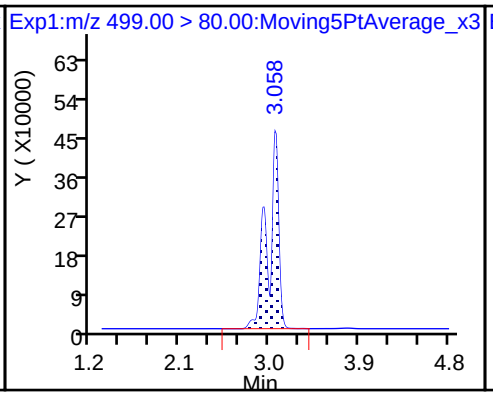
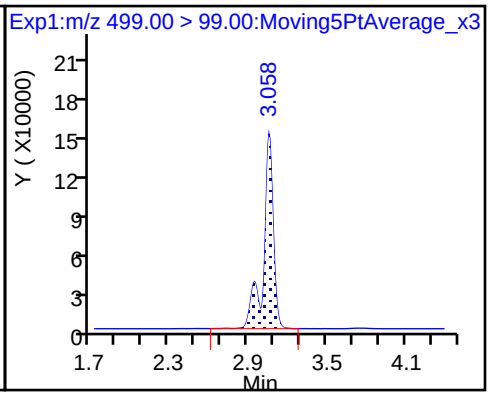


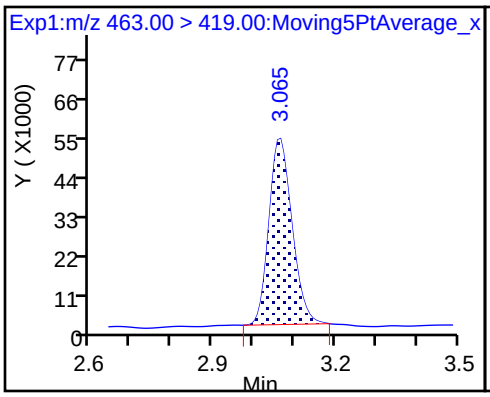
17 Perfluorooctane sulfonic acid



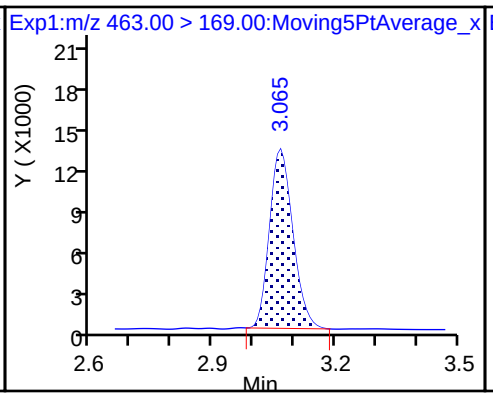
17 Perfluorooctane sulfonic acid



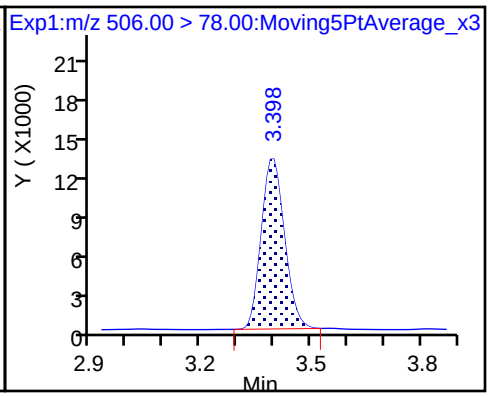
20 Perfluorononanoic acid



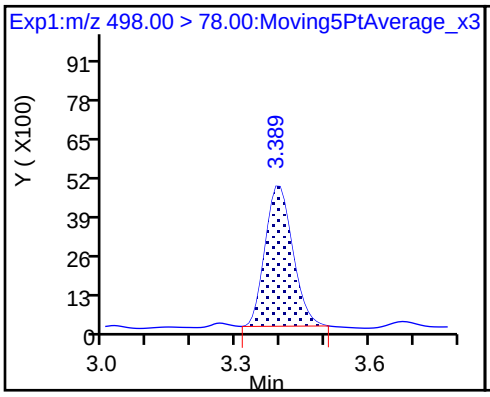
20 Perfluorononanoic acid



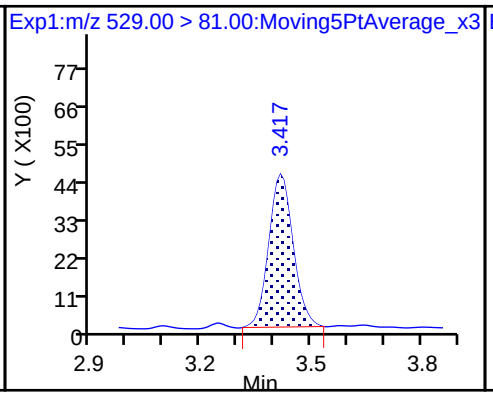
D 21 13C8 FOSA



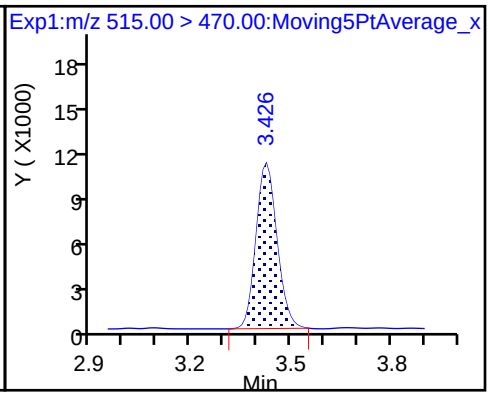
22 Perfluorooctane Sulfonamide



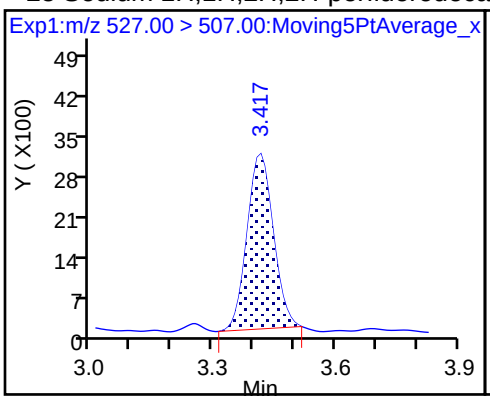
D 26 M2-8:2FTS



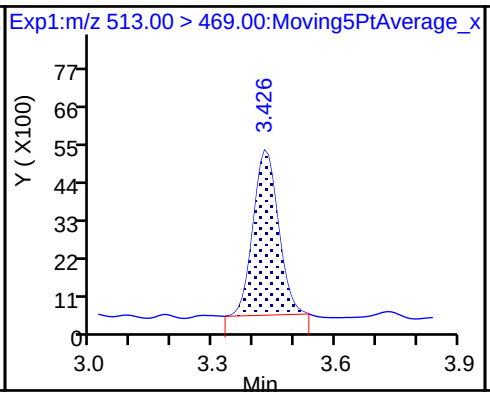
D 23 13C2 PFDA



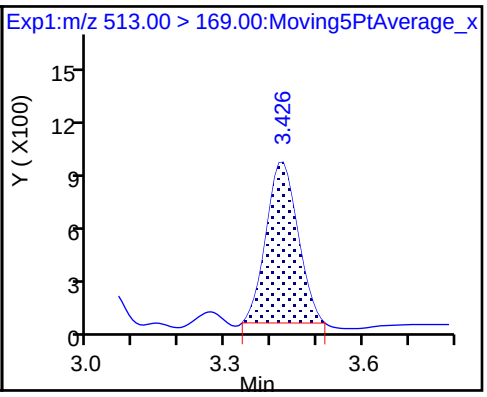
25 Sodium 1H,1H,2H,2H-perfluorodecane



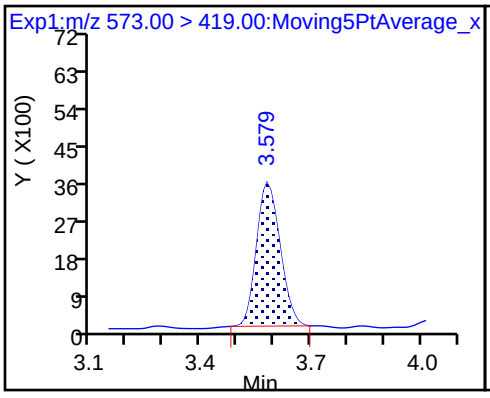
24 Perfluorodecanoic acid



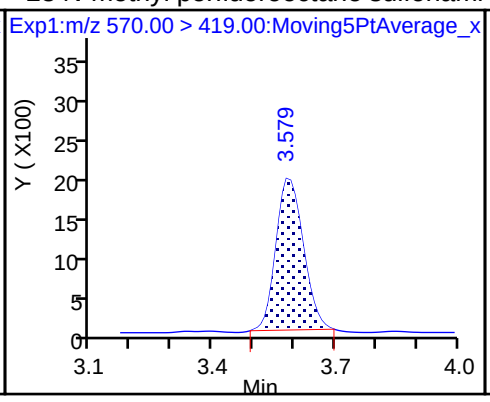
24 Perfluorodecanoic acid



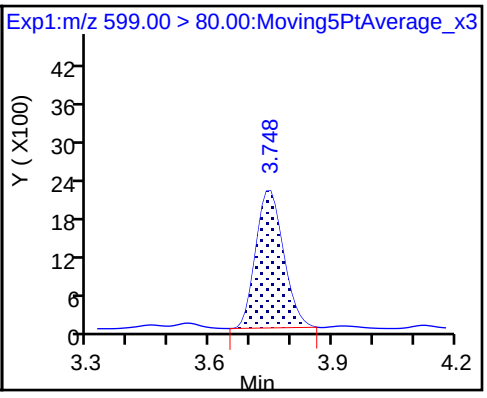
D 27 d3-NMeFOSAA



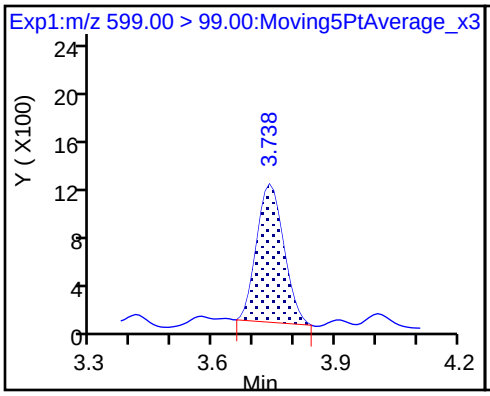
28 N-methyl perfluorooctane sulfonami



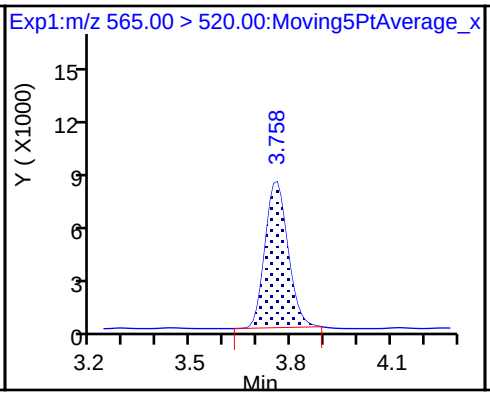
29 Perfluorodecane Sulfonic acid



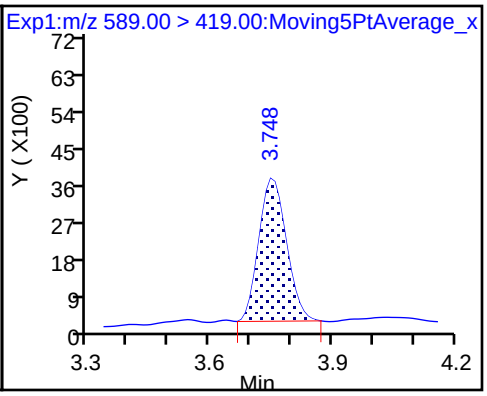
29 Perfluorodecane Sulfonic acid



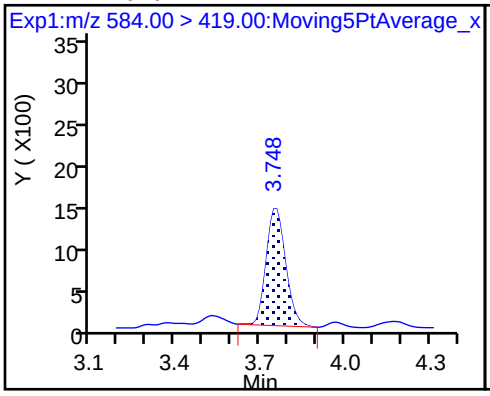
D 30 13C2 PFUnA



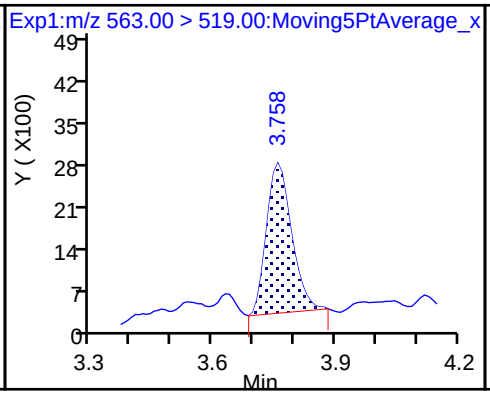
D 32 d5-NEtFOSAA



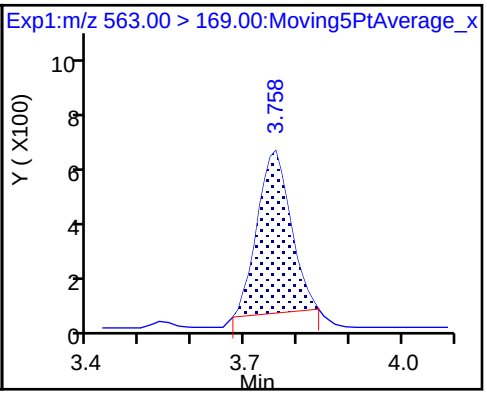
33 N-ethyl perfluorooctane sulfonamid



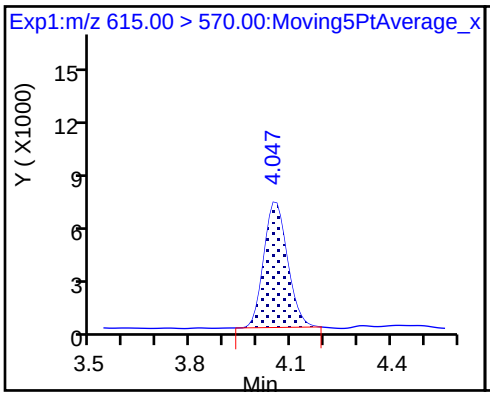
31 Perfluoroundecanoic acid



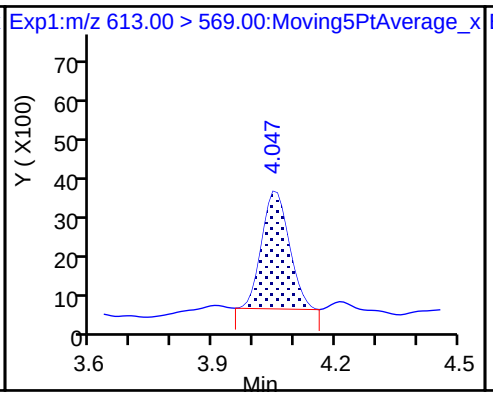
31 Perfluoroundecanoic acid



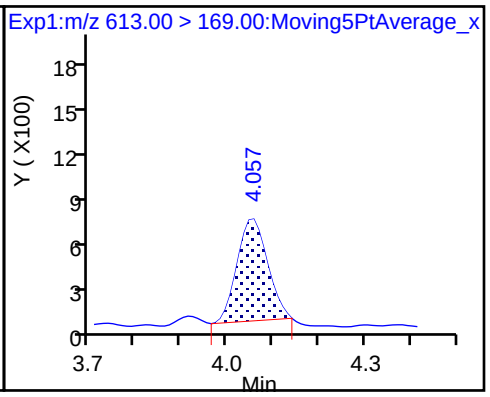
D 36 13C2 PFDoA



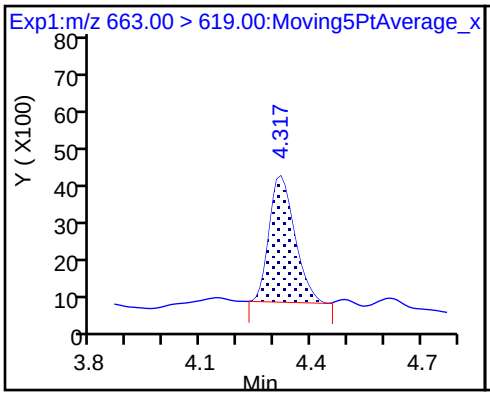
37 Perfluorododecanoic acid



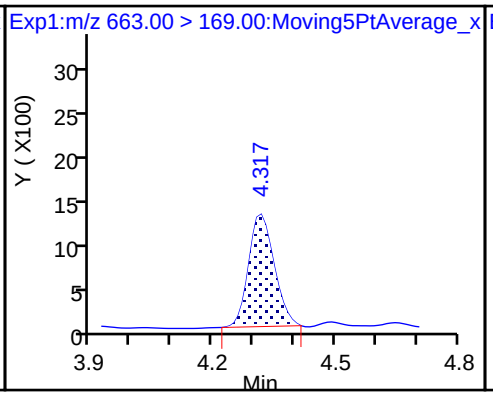
37 Perfluorododecanoic acid



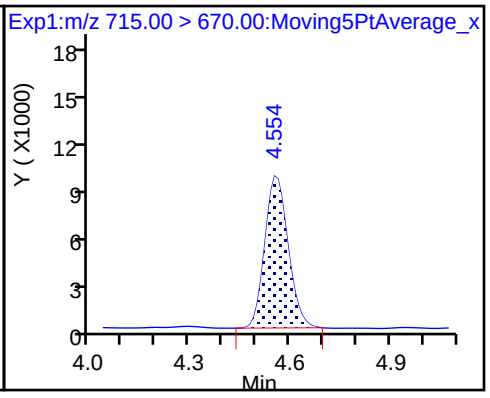
41 Perfluorotridecanoic acid



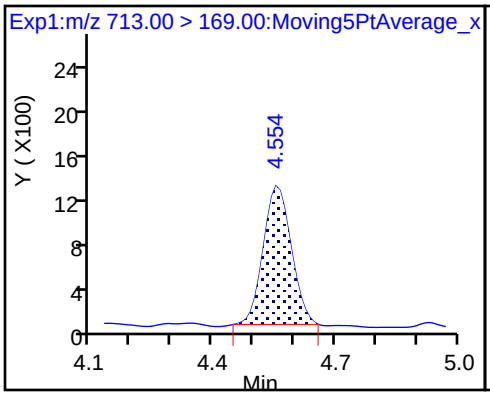
41 Perfluorotridecanoic acid



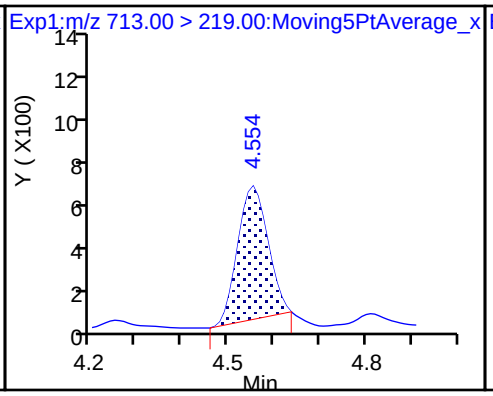
D 43 13C2-PFTeDA



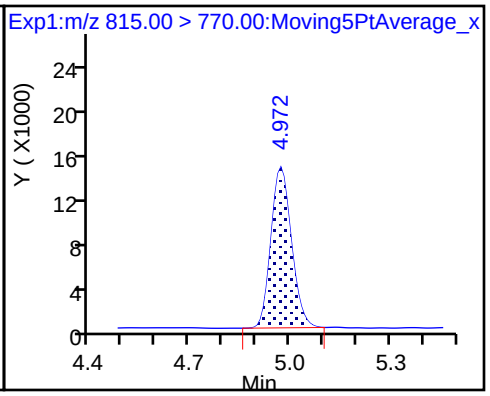
42 Perfluorotetradecanoic acid



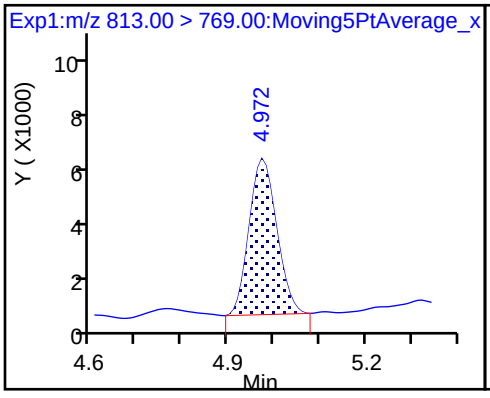
42 Perfluorotetradecanoic acid



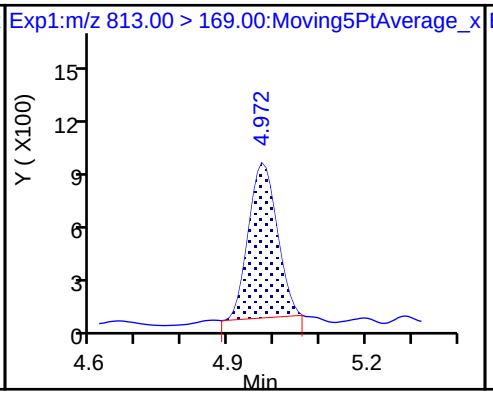
D 44 13C2-PFHxDA



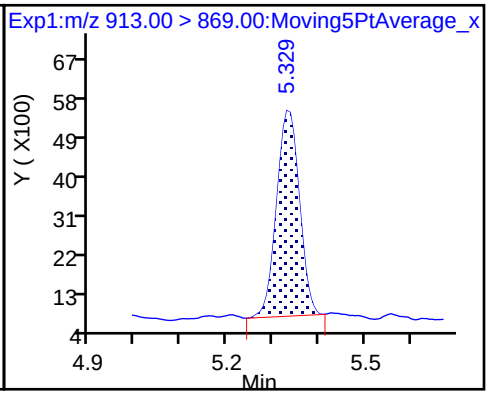
45 Perfluorohexadecanoic acid



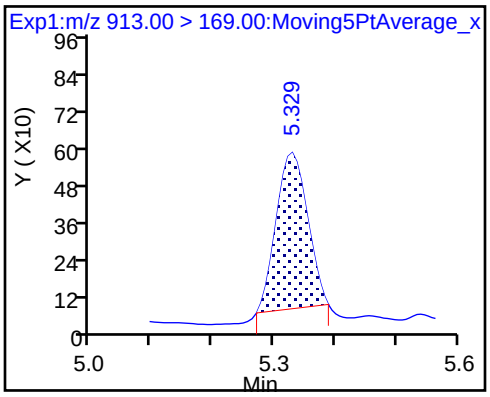
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36761-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-F MSD RE

Matrix: Solid | Lab File ID: 2018.03.28LLFF_023.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) | Date Analyzed: 03/29/2018 02:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
335-77-3	*Perfluorodecanesulfonic acid (PFDS)*	*0.00220*		*0.00020*	*0.000039*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	58		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d
Lims ID: 320-36683-A-10-F MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 29-Mar-2018 02:15:31 ALS Bottle#: 26 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-F MSD
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.438	1.441	-0.003	0.533	5343461	1.94		77.7	181725	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.438	1.446	-0.008	1.000	1936612	0.9616		96.2	466	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.709	-0.004	0.632	3560312	1.95		78.1	113466	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.705	1.718	-0.013	1.000	1524477	0.9494		94.9	525	M
D 47 13C3-PFBS										
301.90 > 83.00	1.741	1.745	-0.004	0.645	73500	1.77		75.9	535	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.749	1.753	-0.004	1.005	2091972	0.8516		96.3	1053	
298.90 > 99.00	1.741	1.753	-0.012	1.000	862932		2.42(1.25-3.74)		914	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.966	-0.005	1.000	414565	0.8119		86.9	13389	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	2.008	-0.016	1.000	1655593	1.12		112	1597	
313.00 > 119.00	1.992	2.008	-0.016	1.000	148383		11.16(5.03-15.10)		1784	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	2.009	-0.017	0.738	3623267	1.80		71.9	94966	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.336	2.341	-0.005	1.000	1583204	0.9817		98.2	804	
363.00 > 169.00	2.336	2.341	-0.005	1.000	624426		2.54(1.13-3.40)		1027	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.349	2.354	-0.005	1.000	6140964	2.94		323	22890	
399.00 > 99.00	2.349	2.354	-0.005	1.000	1939795		3.17(1.50-4.49)		8038	
D 9 13C4-PFHpA										
367.00 > 322.00	2.336	2.354	-0.018	0.865	3897242	1.96		78.3	103091	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.349	2.368	-0.019	0.870	4437937	1.81		76.4	101460	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.689	-0.021	1.000	1316249	2.42		255	14033	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.697	-0.029	0.988	741880	1.80		75.7	19842	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.699	2.712	-0.013	1.000	2223686	1.30		130	905	
413.00 > 169.00	2.699	2.712	-0.013	1.000	1141975		1.95(0.84-2.52)		3703	
* 62 13C2-PFOA										
415.00 > 370.00	2.699	2.712	-0.013		5429069	2.50			106315	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.707	2.720	-0.013	1.000	3724302	2.79		294	1236	M
449.00 > 99.00	2.699	2.720	-0.021	0.997	957548		3.89(1.94-5.82)		2036	M
D 14 13C4 PFOA										
417.00 > 372.00	2.699	2.721	-0.022	1.000	3778970	1.86		74.3	116312	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.067	3.080	-0.013	1.000	102792210	88.7		9559	48367	E
499.00 > 99.00	3.067	3.080	-0.013	1.000	28993701		3.55(2.31-6.93)		1578094	
20 Perfluorononanoic acid										
463.00 > 419.00	3.074	3.088	-0.014	1.000	7075815	7.14		714	8114	
463.00 > 169.00	3.074	3.088	-0.014	1.000	1780621		3.97(1.90-5.69)		43844	
D 19 13C5 PFNA										
468.00 > 423.00	3.074	3.096	-0.022	1.139	2484525	1.38		55.4	50190	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.096	-0.029	1.136	2486089	1.39		58.2	26479	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.417	-0.015	1.000	1489868	0.9205		92.0	16050	
D 21 13C8 FOSA										
506.00 > 78.00	3.401	3.417	-0.016	1.260	4104632	1.70		68.2	42163	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.428	3.435	-0.007	1.000	496992	1.08		113	10620	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.437	3.444	-0.007	1.000	1088389	1.04		104	5580	
513.00 > 169.00	3.437	3.444	-0.007	1.000	182695		5.96(2.36-7.09)		3797	
D 26 M2-8:2FTS										
529.00 > 81.00	3.428	3.453	-0.025	1.270	861216	1.55		64.5	18463	
D 23 13C2 PFDA										
515.00 > 470.00	3.437	3.462	-0.025	1.273	2641853	1.68		67.2	37913	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.594	3.611	-0.017	1.000	492961	0.9003		90.0	5037	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.594	3.611	-0.017	1.331	1367741	1.65		66.1	31073	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.758	-0.017	1.000	769554	1.09		113	9086	
599.00 > 99.00	3.741	3.758	-0.017	1.000	261826		2.94(1.39-4.16)		5944	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.779	-0.017	1.000	628685	0.8260		82.6	3581	
563.00 > 169.00	3.762	3.779	-0.017	1.000	164706		3.82(2.12-6.36)		7580	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.779	-0.017	1.003	442635	0.9070		90.7	14352	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.779	-0.027	1.390	1305868	1.38		55.4	5038	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.790	-0.028	1.394	2206985	1.57		62.7	89363	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.077	-0.016	1.000	896893	0.9045		90.5	633	
613.00 > 169.00	4.061	4.077	-0.016	1.000	217323		4.13(2.13-6.40)		4327	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.089	-0.028	1.504	2369029	1.48		59.3	22511	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.323	4.339	-0.016	1.000	1012842	0.9710		97.1	552	
663.00 > 169.00	4.323	4.339	-0.016	1.000	313073		3.24(1.25-3.76)		6938	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.559	4.575	-0.016	1.000	277086	0.8728		87.3	6253	
713.00 > 219.00	4.559	4.575	-0.016	1.000	197381		1.40(0.71-2.13)		5665	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.559	4.585	-0.026	1.689	3203002	1.64		65.7	20941	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.985	4.990	-0.005	1.002	1535014	0.8955		89.6	418	
813.00 > 169.00	4.976	4.990	-0.014	1.000	266848		5.75(2.86-8.58)		2415	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	5.008	-0.032	1.843	4590658	1.44		57.4	14659	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.347	5.351	-0.004	1.000	1349521	0.7948		79.5	298	
913.00 > 169.00	5.347	5.351	-0.004	1.000	167302		8.07(3.83-11.48)		2027	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:43 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d

Injection Date: 29-Mar-2018 02:15:31 Instrument ID: A8_N

Lims ID: 320-36683-A-10-F MSD

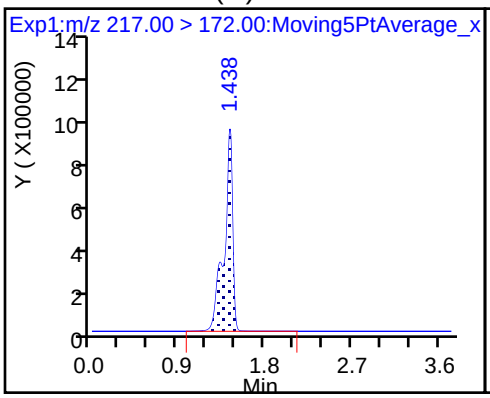
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 20

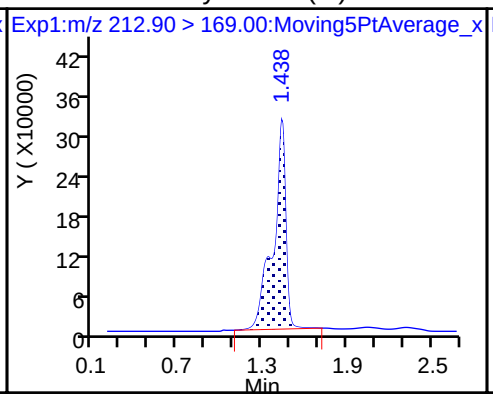
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

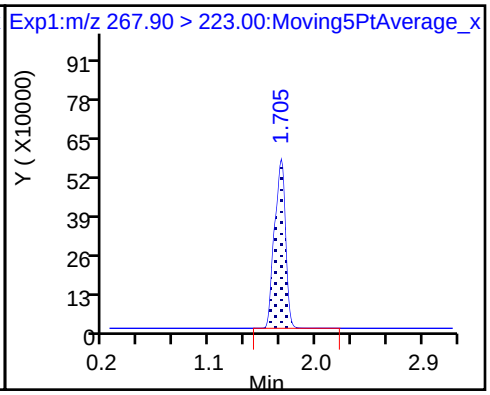
D 1 13C4 PFBA (M)



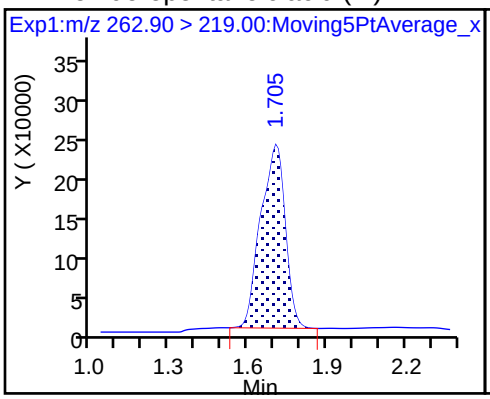
2 Perfluorobutyric acid (M)



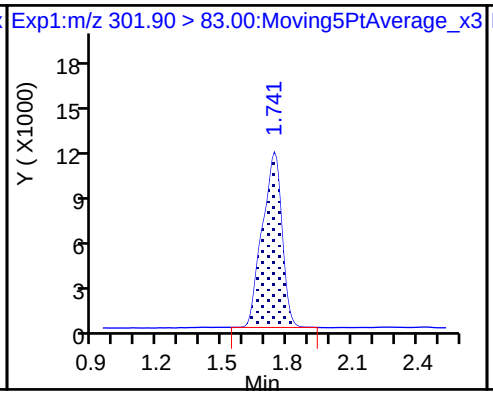
D 3 13C5-PFPeA



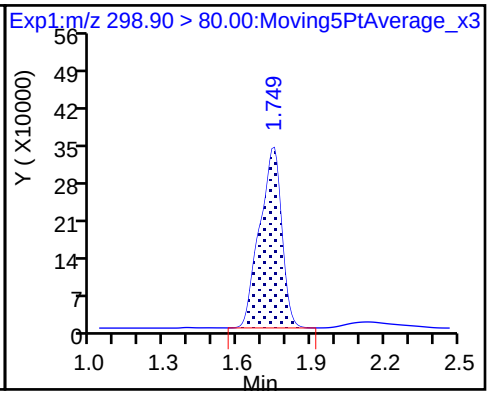
4 Perfluoropentanoic acid (M)



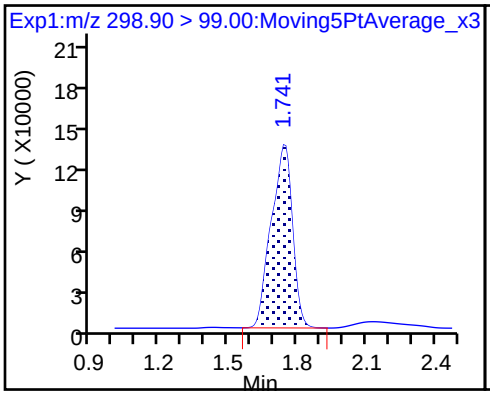
D 47 13C3-PFBS



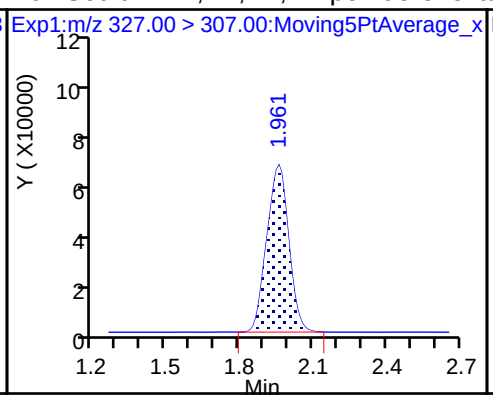
5 Perfluorobutanesulfonic acid



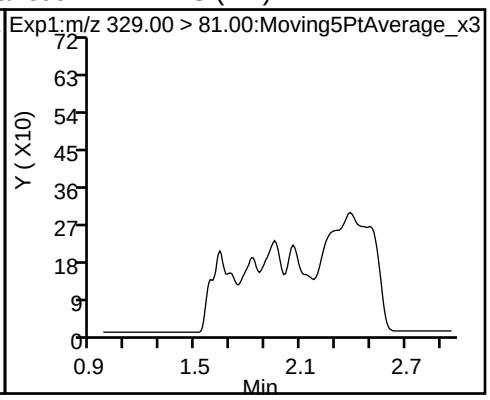
5 Perfluorobutanesulfonic acid



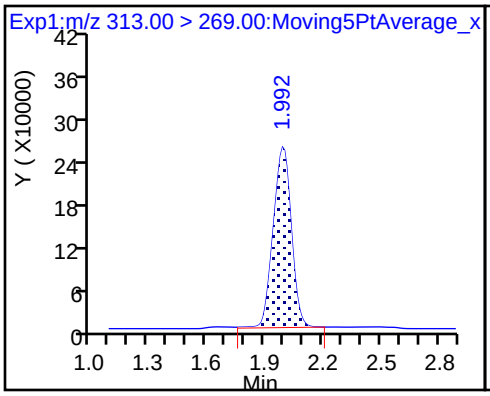
61 Sodium 1H,1H,2H,2H-perfluorohexa



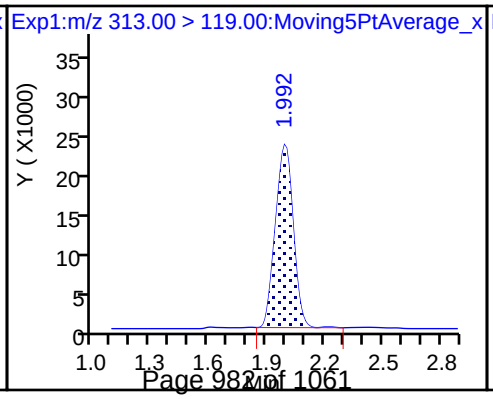
D 60 M2-4:2FTS (ND)



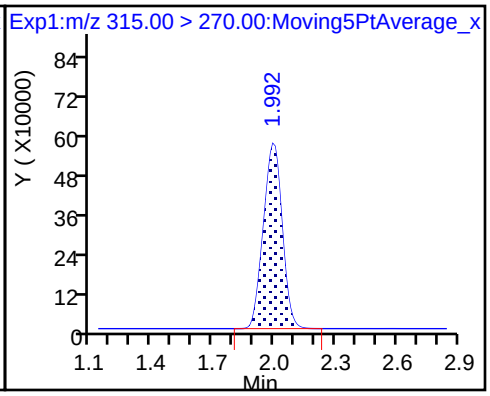
6 Perfluorohexanoic acid



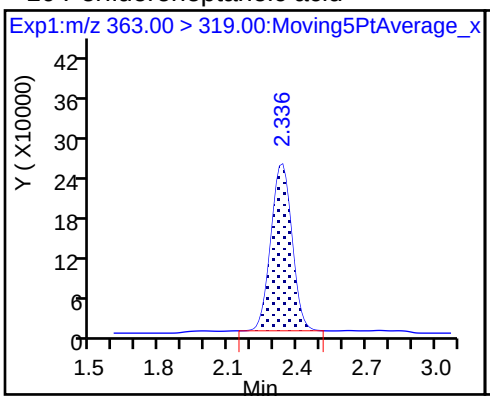
6 Perfluorohexanoic acid



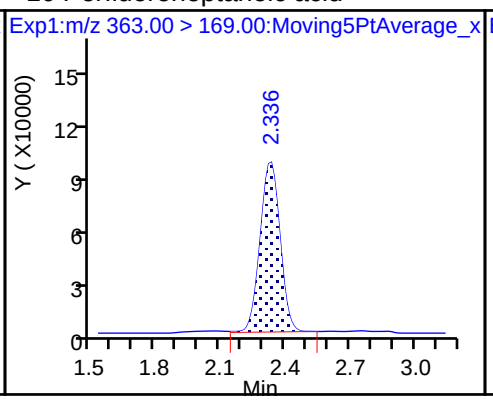
D 7 13C2 PFHxA



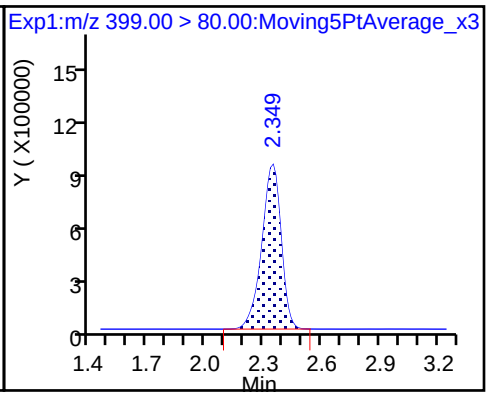
10 Perfluoroheptanoic acid



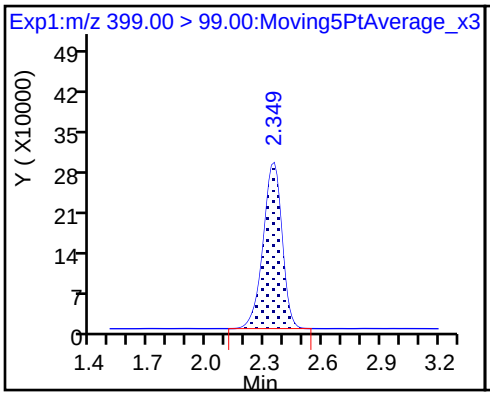
10 Perfluoroheptanoic acid



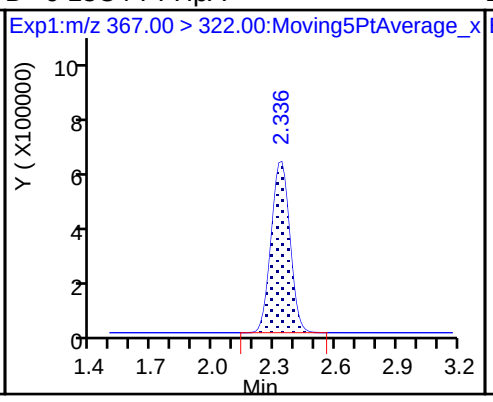
8 Perfluorohexanesulfonic acid



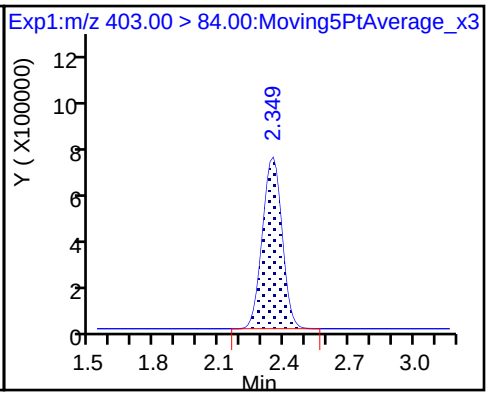
8 Perfluorohexanesulfonic acid



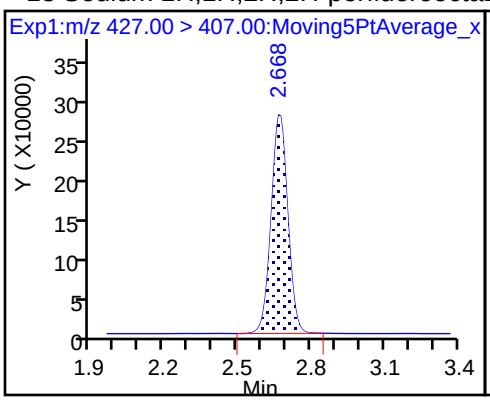
D 9 13C4-PFHpA



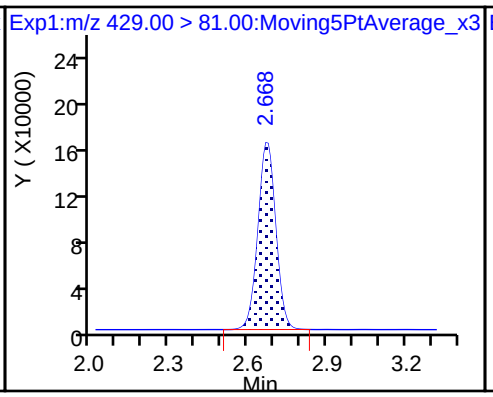
D 11 18O2 PFHxS



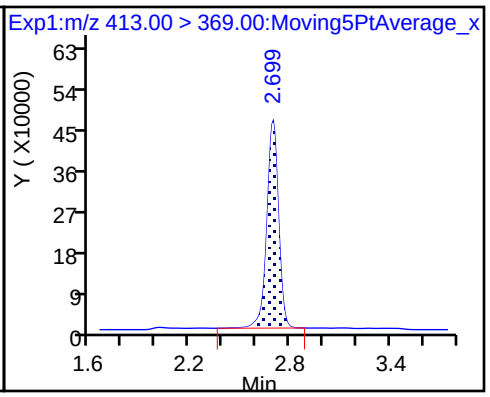
13 Sodium 1H,1H,2H,2H-perfluorooctane



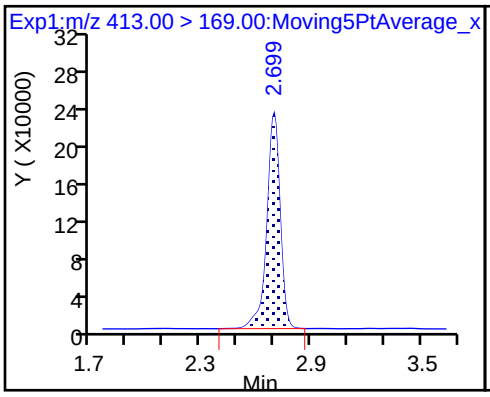
D 12 M2-6:2FTS



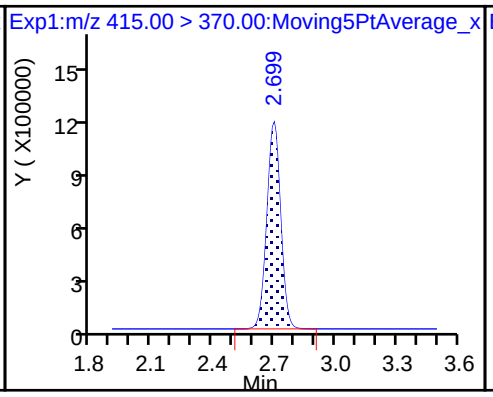
15 Perfluorooctanoic acid



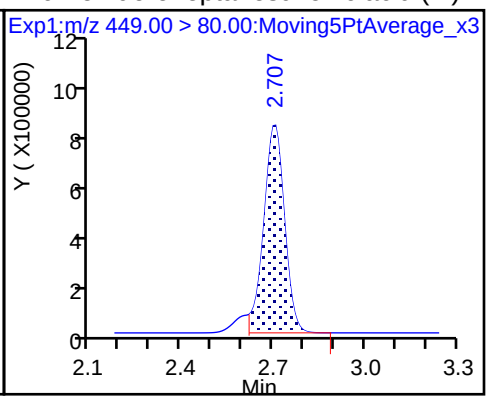
15 Perfluorooctanoic acid



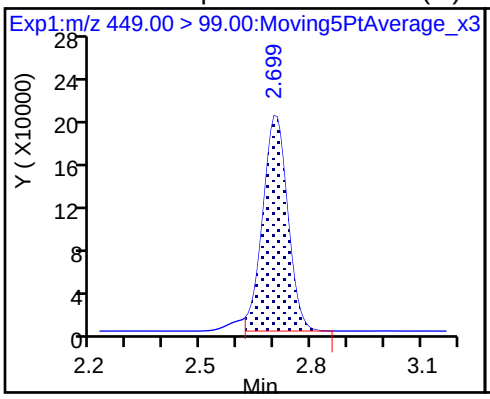
* 62 13C2-PFOA



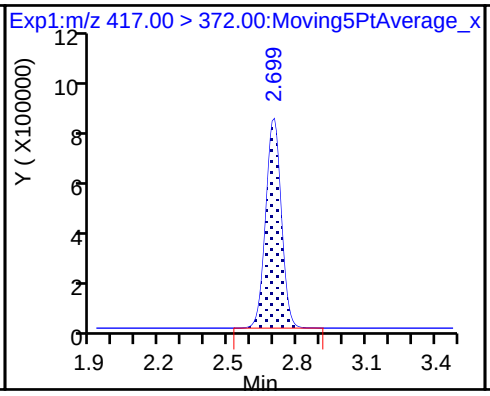
16 Perfluoroheptanesulfonic acid (M)



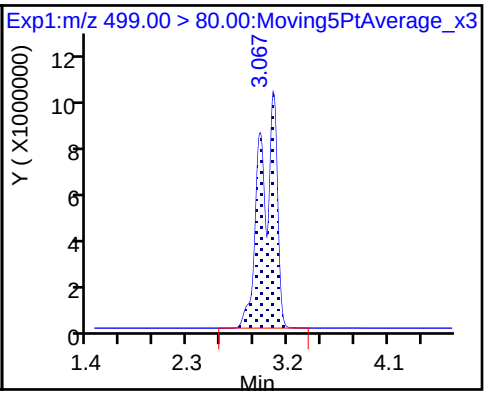
16 Perfluoroheptanesulfonic acid (M)



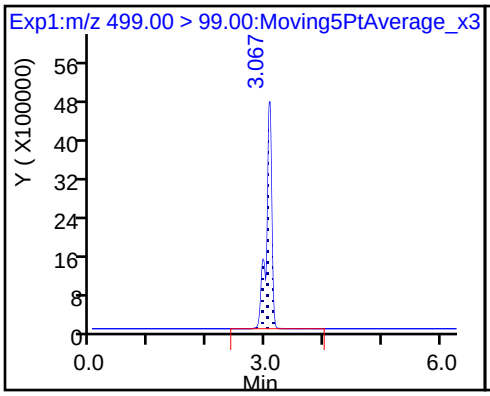
D 14 13C4 PFOA



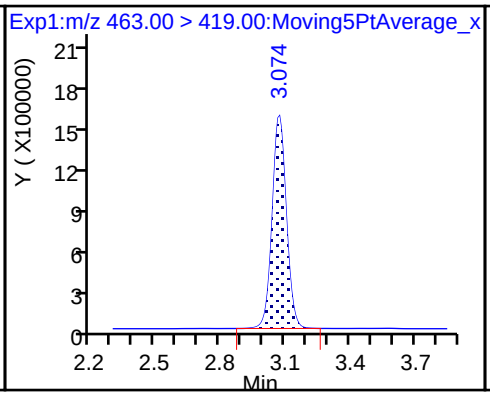
17 Perfluorooctane sulfonic acid



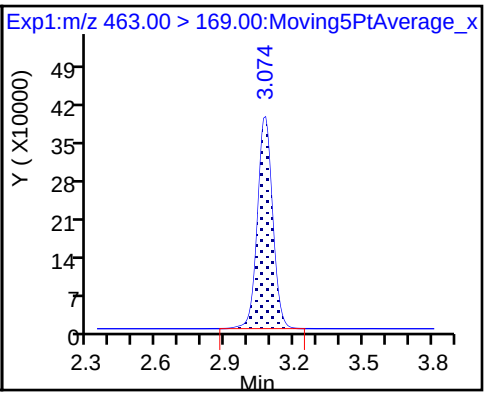
17 Perfluorooctane sulfonic acid



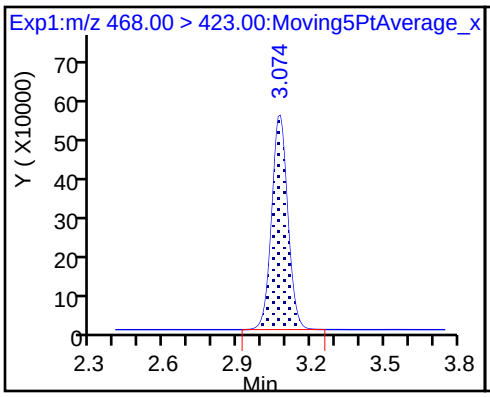
20 Perfluorononanoic acid



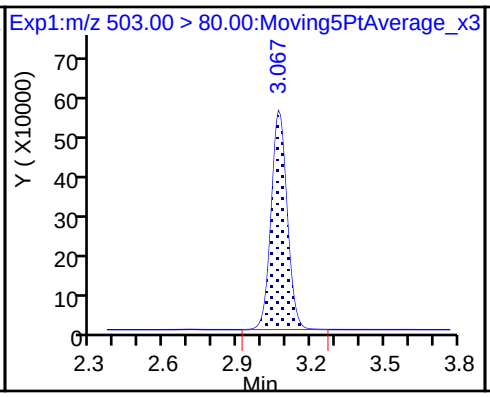
20 Perfluorononanoic acid



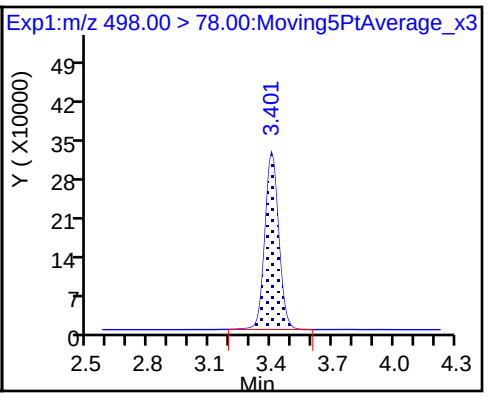
D 19 13C5 PFNA



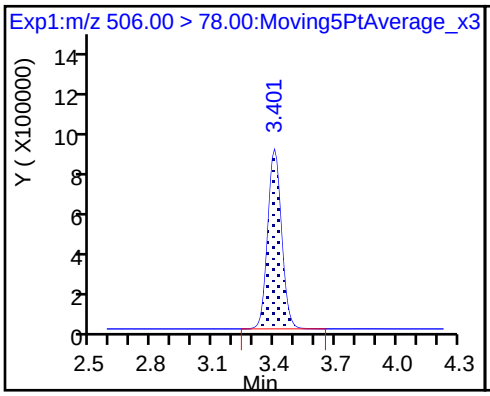
D 18 13C4 PFOS



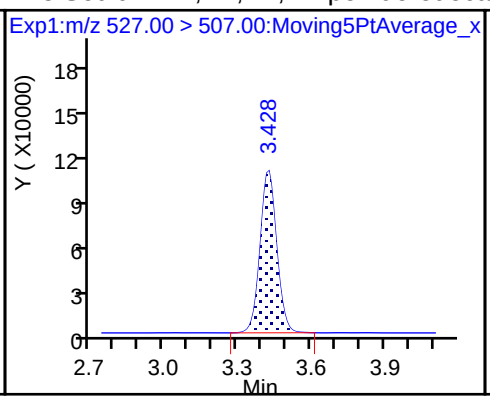
22 Perfluorooctane Sulfonamide



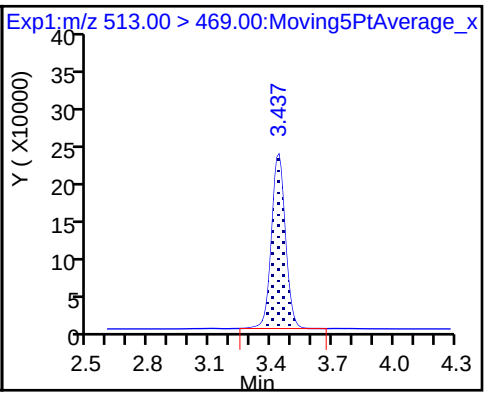
D 21 13C8 FOSA



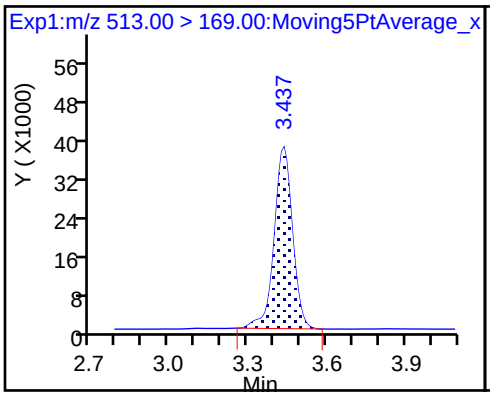
25 Sodium 1H,1H,2H,2H-perfluorodecan



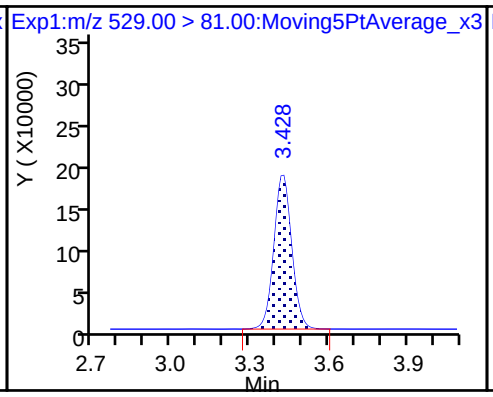
24 Perfluorodecanoic acid



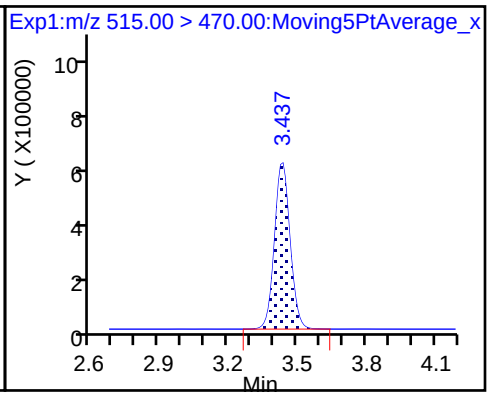
24 Perfluorodecanoic acid



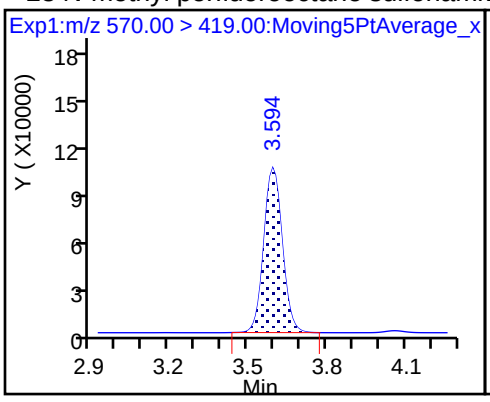
D 26 M2-8:2FTS



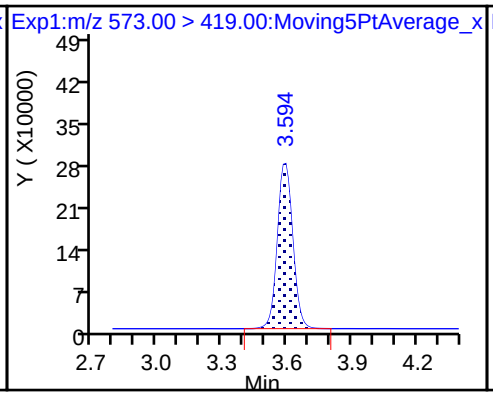
D 23 13C2 PFDA



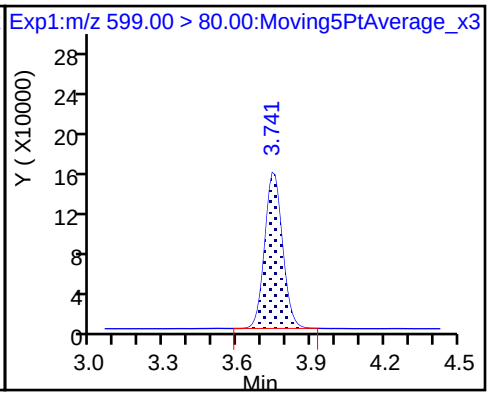
28 N-methyl perfluorooctane sulfonami



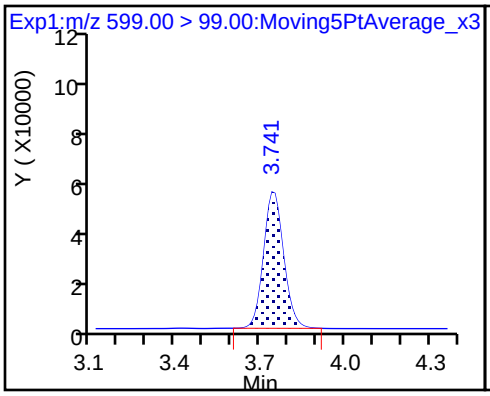
D 27 d3-NMeFOSAA



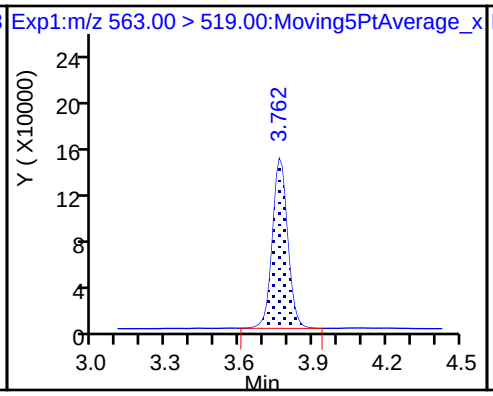
29 Perfluorodecane Sulfonic acid



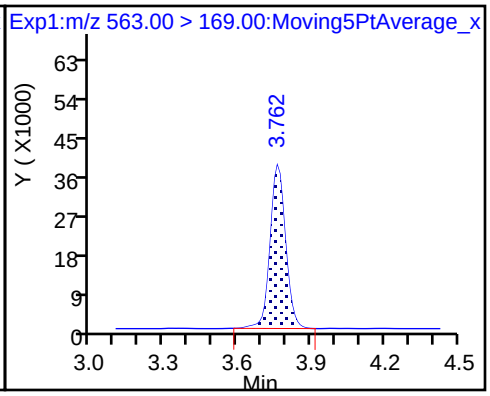
29 Perfluorodecane Sulfonic acid



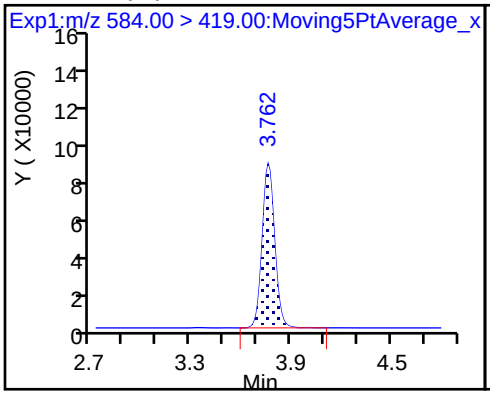
31 Perfluoroundecanoic acid



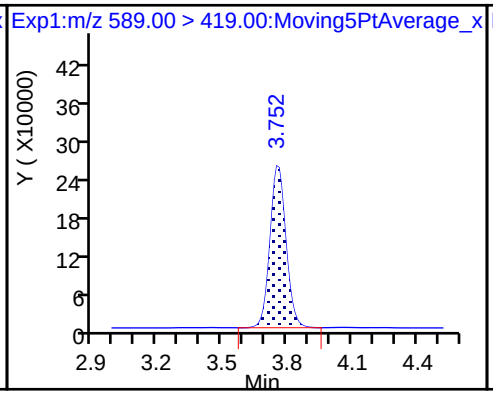
31 Perfluoroundecanoic acid



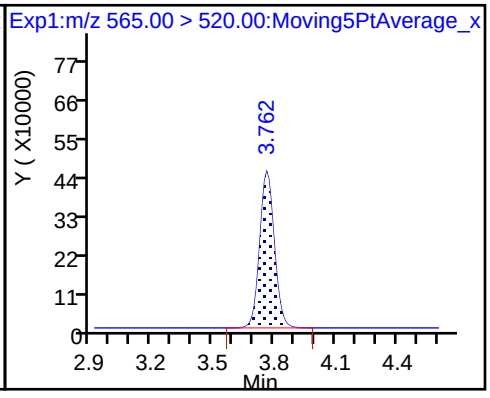
33 N-ethyl perfluorooctane sulfonamid



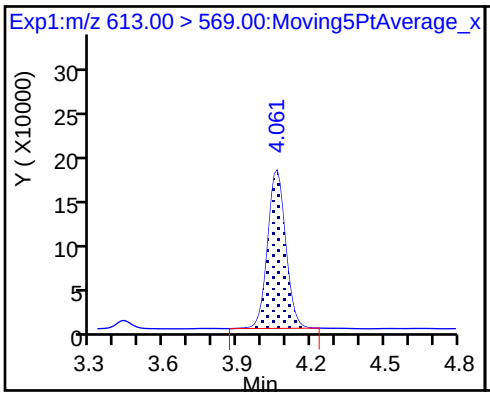
D 32 d5-NEtFOSAA



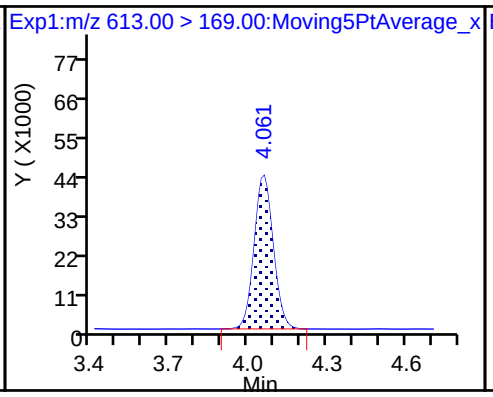
D 30 13C2 PFUnA



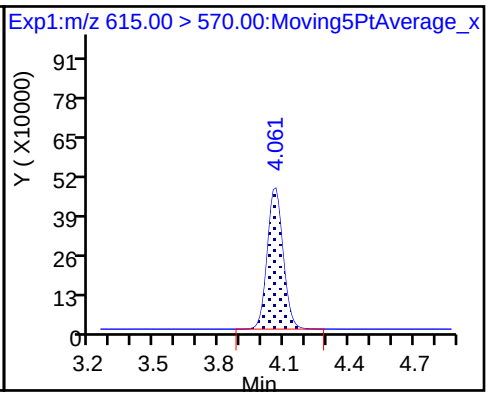
37 Perfluorododecanoic acid



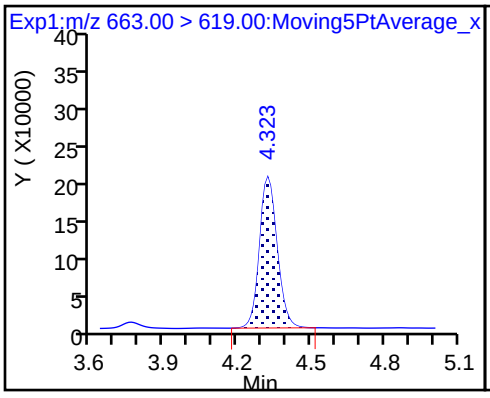
37 Perfluorododecanoic acid



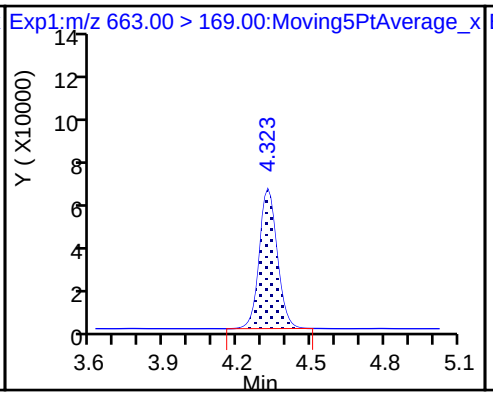
D 36 13C2 PFDoA



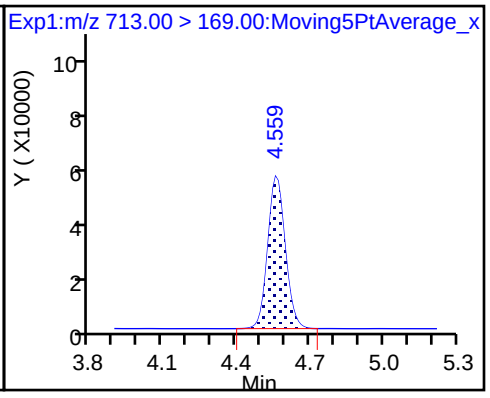
41 Perfluorotridecanoic acid



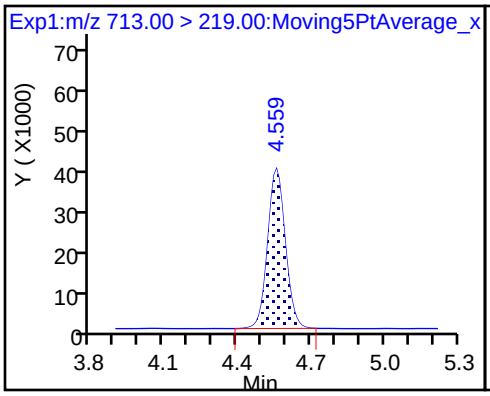
41 Perfluorotridecanoic acid



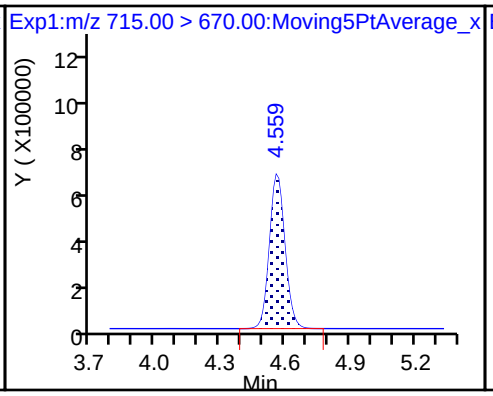
42 Perfluorotetradecanoic acid



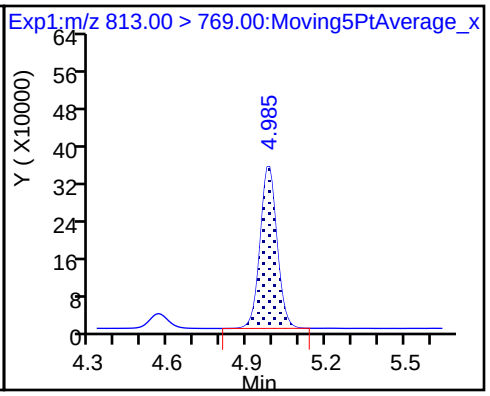
42 Perfluorotetradecanoic acid



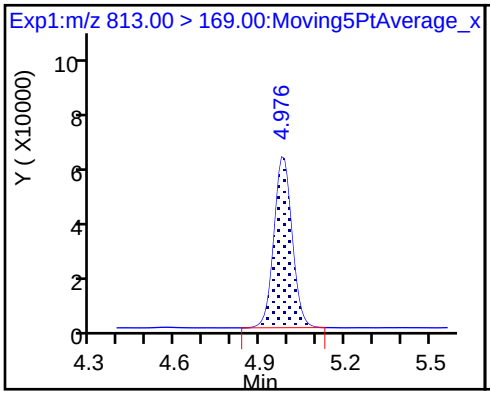
D 43 13C2-PFTeDA



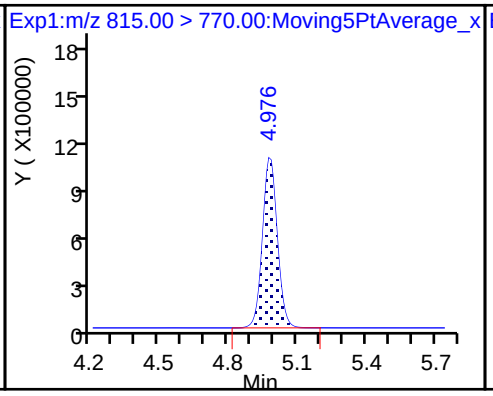
45 Perfluorohexadecanoic acid



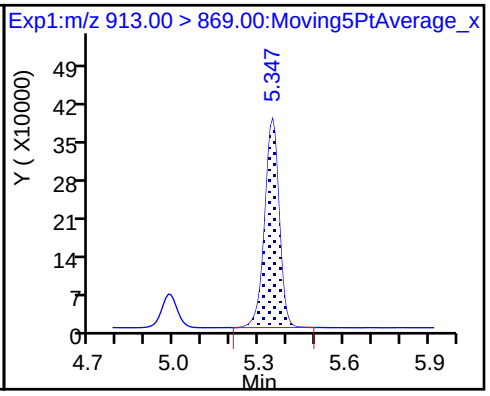
45 Perfluorohexadecanoic acid



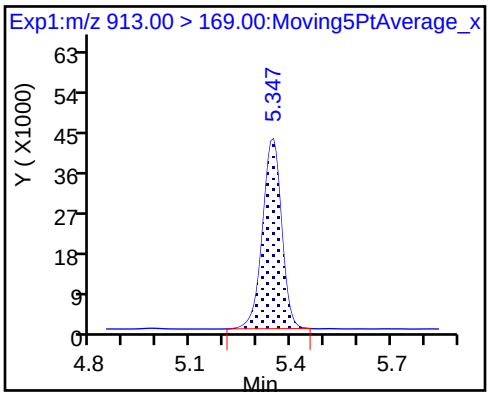
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/16/2018 23:01

Analysis Batch Number: 213554 End Date: 03/17/2018 00:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		03/16/2018 23:01	1		GeminiC18 3x100 3(mm)
IC 320-213554/2		03/16/2018 23:09	1	2018.03.16ICAL_002.d	GeminiC18 3x100 3(mm)
IC 320-213554/3		03/16/2018 23:17	1	2018.03.16ICAL_003.d	GeminiC18 3x100 3(mm)
IC 320-213554/4		03/16/2018 23:25	1	2018.03.16ICAL_004.d	GeminiC18 3x100 3(mm)
IC 320-213554/5 ICIS		03/16/2018 23:33	1	2018.03.16ICAL_005.d	GeminiC18 3x100 3(mm)
IC 320-213554/6		03/16/2018 23:41	1	2018.03.16ICAL_006.d	GeminiC18 3x100 3(mm)
IC 320-213554/7		03/16/2018 23:48	1	2018.03.16ICAL_007.d	GeminiC18 3x100 3(mm)
IC 320-213554/8		03/16/2018 23:56	1	2018.03.16ICAL_008.d	GeminiC18 3x100 3(mm)
ICB 320-213554/9		03/17/2018 00:04	1	2018.03.16ICAL_010.d	GeminiC18 3x100 3(mm)
ICV 320-213554/10		03/17/2018 00:12	1	2018.03.16ICAL_011.d	GeminiC18 3x100 3(mm)
CCB 320-213554/11		03/17/2018 00:20	1		GeminiC18 3x100 3(mm)
CCVL 320-213554/12		03/17/2018 00:27	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/20/2018 19:14

Analysis Batch Number: 214045 End Date: 03/20/2018 19:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-214045/1		03/20/2018 19:14	1	2018.03.20LLB_001.d	GeminiC18 3x100 3(mm)
CCVL 320-214045/2		03/20/2018 19:22	1	2018.03.20LLB_002.d	GeminiC18 3x100 3(mm)
CCV 320-214045/3 CCVIS		03/20/2018 19:30	1	2018.03.20LLB_003.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/20/2018 23:01

Analysis Batch Number: 214053 End Date: 03/21/2018 02:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-214053/1		03/20/2018 23:01	1	2018.03.20LLA_022.d	GeminiC18 3x100 3(mm)
MB 320-212510/1-A		03/20/2018 23:09	1	2018.03.20LLA_023.d	GeminiC18 3x100 3(mm)
LCS 320-212510/2-A		03/20/2018 23:17	1	2018.03.20LLA_024.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:25	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/20/2018 23:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:20	1		GeminiC18 3x100 3(mm)
CCV 320-214053/12		03/21/2018 00:28	1	2018.03.20LLA_033.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:43	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 00:59	1		GeminiC18 3x100 3(mm)
320-36683-A-10-B MS		03/21/2018 01:07	1	2018.03.20LLA_038.d	GeminiC18 3x100 3(mm)
320-36683-A-10-C MSD		03/21/2018 01:15	1	2018.03.20LLA_039.d	GeminiC18 3x100 3(mm)
320-36761-1		03/21/2018 01:22	1	2018.03.20LLA_040.d	GeminiC18 3x100 3(mm)
320-36761-4		03/21/2018 01:30	1	2018.03.20LLA_041.d	GeminiC18 3x100 3(mm)
320-36761-5		03/21/2018 01:38	1	2018.03.20LLA_042.d	GeminiC18 3x100 3(mm)
320-36761-6		03/21/2018 01:46	1	2018.03.20LLA_043.d	GeminiC18 3x100 3(mm)
CCV 320-214053/23		03/21/2018 01:54	1	2018.03.20LLA_044.d	GeminiC18 3x100 3(mm)
320-36761-8		03/21/2018 02:02	1	2018.03.20LLA_045.d	GeminiC18 3x100 3(mm)
320-36761-9		03/21/2018 02:09	1	2018.03.20LLA_046.d	GeminiC18 3x100 3(mm)
CCV 320-214053/26		03/21/2018 02:17	1	2018.03.20LLA_047.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/21/2018 18:16

Analysis Batch Number: 214175 End Date: 03/21/2018 19:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		03/21/2018 18:16	1		GeminiC18 3x100 3(mm)
IC 320-214175/2		03/21/2018 18:24	1	2018.03.21LLICA LAX 002.d	GeminiC18 3x100 3(mm)
IC 320-214175/3		03/21/2018 18:32	1	2018.03.21LLICA LAX 003.d	GeminiC18 3x100 3(mm)
IC 320-214175/4		03/21/2018 18:39	1	2018.03.21LLICA LAX 004.d	GeminiC18 3x100 3(mm)
IC 320-214175/5 ICIS		03/21/2018 18:47	1	2018.03.21LLICA LAX 005.d	GeminiC18 3x100 3(mm)
IC 320-214175/6		03/21/2018 18:55	1	2018.03.21LLICA LAX 006.d	GeminiC18 3x100 3(mm)
IC 320-214175/7		03/21/2018 19:03	1	2018.03.21LLICA LAX 007.d	GeminiC18 3x100 3(mm)
IC 320-214175/8		03/21/2018 19:11	1	2018.03.21LLICA LAX 008.d	GeminiC18 3x100 3(mm)
ICB 320-214175/9		03/21/2018 19:19	1	2018.03.21LLICA LAX 009.d	GeminiC18 3x100 3(mm)
ICV 320-214175/10		03/21/2018 19:26	1	2018.03.21LLICA LAX 010.d	GeminiC18 3x100 3(mm)
CCB 320-214175/11		03/21/2018 19:34	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/21/2018 21:55

Analysis Batch Number: 214277 End Date: 03/22/2018 01:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-214277/1		03/21/2018 21:55	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:03	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:34	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 22:58	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 23:06	5		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 23:14	5		GeminiC18 3x100 3(mm)
CCV 320-214277/12		03/21/2018 23:21	1	2018.03.21LLC_017.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 23:29	20		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 23:37	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 23:45	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/21/2018 23:53	50		GeminiC18 3x100 3(mm)
320-36683-A-10-B MS DL		03/22/2018 00:01	50	2018.03.21LLC_022.d	GeminiC18 3x100 3(mm)
320-36683-A-10-C MSD DL		03/22/2018 00:09	50	2018.03.21LLC_023.d	GeminiC18 3x100 3(mm)
320-36761-1 DL		03/22/2018 00:16	5	2018.03.21LLC_024.d	GeminiC18 3x100 3(mm)
320-36761-4 DL		03/22/2018 00:24	10	2018.03.21LLC_025.d	GeminiC18 3x100 3(mm)
320-36761-5 DL		03/22/2018 00:32	50	2018.03.21LLC_026.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 00:40	1		GeminiC18 3x100 3(mm)
CCV 320-214277/23		03/22/2018 00:48	1	2018.03.21LLC_028.d	GeminiC18 3x100 3(mm)
320-36761-9 DL		03/22/2018 00:56	10	2018.03.21LLC_029.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/22/2018 01:35	1		GeminiC18 3x100 3(mm)
CCV 320-214277/30		03/22/2018 01:43	1	2018.03.21LLC_035.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/23/2018 18:24

Analysis Batch Number: 214657 End Date: 03/23/2018 21:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-214657/1		03/23/2018 18:24	1		GeminiC18 3x100 3(mm)
CCVL 320-214657/2		03/23/2018 18:32	1	2018.03.23LLAA_005.d	GeminiC18 3x100 3(mm)
CCV 320-214657/3 CCVIS		03/23/2018 18:39	1	2018.03.23LLAA_006.d	GeminiC18 3x100 3(mm)
MB 320-214126/1-A		03/23/2018 18:47	1	2018.03.23LLAA_054.d	GeminiC18 3x100 3(mm)
LCS 320-214126/2-A		03/23/2018 18:55	1	2018.03.23LLAA_055.d	GeminiC18 3x100 3(mm)
LCSD 320-214126/3-A		03/23/2018 19:03	1	2018.03.23LLAA_056.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/23/2018 19:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/23/2018 19:19	1		GeminiC18 3x100 3(mm)
LB 320-212127/1-B		03/23/2018 19:26	1	2018.03.23LLAA_059.d	GeminiC18 3x100 3(mm)
320-36761-2		03/23/2018 19:34	1	2018.03.23LLAA_060.d	GeminiC18 3x100 3(mm)
320-36761-3		03/23/2018 19:42	1	2018.03.23LLAA_061.d	GeminiC18 3x100 3(mm)
320-36761-7		03/23/2018 19:50	1	2018.03.23LLAA_062.d	GeminiC18 3x100 3(mm)
CCV 320-214657/15		03/23/2018 20:13	1	2018.03.23LLAA_065.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/23/2018 20:21	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/23/2018 20:29	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/23/2018 20:37	1		GeminiC18 3x100 3(mm)
CCV 320-214657/21		03/23/2018 21:00	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/26/2018 12:24

Analysis Batch Number: 214825 End Date: 03/26/2018 13:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-214825/1		03/26/2018 12:24	1	2018.03.26LLA_005.d	GeminiC18 3x100 3(mm)
CCVL 320-214825/2		03/26/2018 12:32	1	2018.03.26LLA_006.d	GeminiC18 3x100 3(mm)
CCV 320-214825/3 CCVIS		03/26/2018 12:39	1	2018.03.26LLA_021.d	GeminiC18 3x100 3(mm)
CCV 320-214825/6		03/26/2018 13:03	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/26/2018 16:03

Analysis Batch Number: 214885 End Date: 03/26/2018 18:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-214885/1		03/26/2018 16:03	1	2018.03.26LLA_033.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 16:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 16:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 16:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 16:34	20		GeminiC18 3x100 3(mm)
320-36761-2 DL		03/26/2018 16:42	10	2018.03.26LLA_035.d	GeminiC18 3x100 3(mm)
320-36761-3 DL		03/26/2018 16:50	20	2018.03.26LLA_036.d	GeminiC18 3x100 3(mm)
320-36761-7 DL		03/26/2018 16:58	10	2018.03.26LLA_037.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 17:06	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 17:13	50		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 17:21	1		GeminiC18 3x100 3(mm)
CCV 320-214885/12		03/26/2018 17:29	1	2018.03.26LLA_044.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 17:37	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 17:45	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/26/2018 17:52	50		GeminiC18 3x100 3(mm)
CCV 320-214885/18		03/26/2018 18:16	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/28/2018 18:28

Analysis Batch Number: 215294 End Date: 03/28/2018 21:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-215294/1		03/28/2018 18:28	1	2018.03.28LLDXD 004.d	GeminiC18 3x100 3(mm)
CCVL 320-215294/2		03/28/2018 18:36	1	2018.03.28LLDXD 005.d	GeminiC18 3x100 3(mm)
CCV 320-215294/3 CCVIS		03/28/2018 18:44	1	2018.03.28LLDXD 006.d	GeminiC18 3x100 3(mm)
LB 320-212127/1-C		03/28/2018 18:51	1	2018.03.28LLDXD 007.d	GeminiC18 3x100 3(mm)
MB 320-215106/1-A		03/28/2018 18:59	1	2018.03.28LLDXD 008.d	GeminiC18 3x100 3(mm)
LCS 320-215106/2-A		03/28/2018 19:07	1	2018.03.28LLDXD 009.d	GeminiC18 3x100 3(mm)
LCSD 320-215106/3-A		03/28/2018 19:15	1	2018.03.28LLDXD 010.d	GeminiC18 3x100 3(mm)
320-36761-2 RE		03/28/2018 19:23	10	2018.03.28LLDXD 011.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/28/2018 19:30	50		GeminiC18 3x100 3(mm)
ZZZZZ		03/28/2018 19:38	10		GeminiC18 3x100 3(mm)
ZZZZZ		03/28/2018 19:46	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/28/2018 20:02	1		GeminiC18 3x100 3(mm)
CCV 320-215294/14		03/28/2018 20:10	1	2018.03.28LLDXD 017.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/28/2018 20:17	100		GeminiC18 3x100 3(mm)
ZZZZZ		03/28/2018 20:25	1		GeminiC18 3x100 3(mm)
320-36761-3 RE		03/28/2018 20:33	1	2018.03.28LLDXD 020.d	GeminiC18 3x100 3(mm)
320-36761-7 RE		03/28/2018 20:41	1	2018.03.28LLDXD 021.d	GeminiC18 3x100 3(mm)
CCV 320-215294/21		03/28/2018 21:04	1	2018.03.28LLDXD 024.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: A8_N Start Date: 03/28/2018 23:46

Analysis Batch Number: 215311 End Date: 03/29/2018 02:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-215311/1		03/28/2018 23:46	1	2018.03.28LLFF_004.d	GeminiC18 3x100 3(mm)
CCVL 320-215311/2		03/28/2018 23:54	1	2018.03.28LLFF_005.d	GeminiC18 3x100 3(mm)
CCV 320-215311/3 CCVIS		03/29/2018 00:02	1	2018.03.28LLFF_006.d	GeminiC18 3x100 3(mm)
MB 320-214600/1-A		03/29/2018 00:10	1	2018.03.28LLFF_007.d	GeminiC18 3x100 3(mm)
LCS 320-214600/2-A		03/29/2018 00:18	1	2018.03.28LLFF_008.d	GeminiC18 3x100 3(mm)
320-36761-1 RE		03/29/2018 00:25	1	2018.03.28LLFF_009.d	GeminiC18 3x100 3(mm)
320-36761-4 RE		03/29/2018 00:33	1	2018.03.28LLFF_010.d	GeminiC18 3x100 3(mm)
320-36761-5 RE		03/29/2018 00:41	1	2018.03.28LLFF_011.d	GeminiC18 3x100 3(mm)
320-36761-6 RE		03/29/2018 00:49	1	2018.03.28LLFF_012.d	GeminiC18 3x100 3(mm)
320-36761-8 RE		03/29/2018 00:57	1	2018.03.28LLFF_013.d	GeminiC18 3x100 3(mm)
320-36761-9 RE		03/29/2018 01:05	1	2018.03.28LLFF_014.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:13	1		GeminiC18 3x100 3(mm)
CCV 320-215311/14		03/29/2018 01:28	1	2018.03.28LLFF_017.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:59	1		GeminiC18 3x100 3(mm)
320-36683-A-10-E MS RE		03/29/2018 02:07	1	2018.03.28LLFF_022.d	GeminiC18 3x100 3(mm)
320-36683-A-10-F MSD RE		03/29/2018 02:15	1	2018.03.28LLFF_023.d	GeminiC18 3x100 3(mm)
CCV 320-215311/23		03/29/2018 02:39	1	2018.03.28LLFF_026.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 212127 Batch Start Date: 03/08/18 16:10 Batch Analyst: Merritt, Nataliya

Batch Method: 1312 Batch End Date: 03/09/18 10:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LB 320-212127/1		1312, 3535, 537 (modified)		100.0 g	2000 mL				
320-36761-A-2	SB004-SPLP(8'-10')	1312, 3535, 537 (modified)	E	99.96 g	2000 mL				
320-36761-A-3	SB003-SPLP(0-2')	1312, 3535, 537 (modified)	E	100.03 g	2000 mL				
320-36761-A-7	SB007-SPLP(0-2')	1312, 3535, 537 (modified)	E	99.97 g	2000 mL				

Batch Notes	

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 212510 Batch Start Date: 03/12/18 15:34 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/19/18 16:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00043	LCPFC-IS 00030	LCPFCSP 00119	
MB 320-212510/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-212510/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MS		SHAKE, 537 (modified)	T	5.05 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MSD		SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL	500 uL	
320-36761-A-1	SB004 (5'-7')	SHAKE, 537 (modified)	T	5.03 g	10.00 mL	500 uL	500 uL		
320-36761-A-4	SB003(5'-7')	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-36761-A-5	SB003(10'-12')	SHAKE, 537 (modified)	T	5.08 g	10.00 mL	500 uL	500 uL		
320-36761-A-6	SB007(2'-4')	SHAKE, 537 (modified)	T	5.01 g	10.00 mL	500 uL	500 uL		
320-36761-A-8	SB007(4-5')	SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL		
320-36761-A-9	SB030(2'-4')	SHAKE, 537 (modified)	T	5.03 g	10.00 mL	500 uL	500 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 212510 Batch Start Date: 03/12/18 15:34 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/19/18 16:30

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	KMK
Balance ID	QA-070
Batch Comment	Sample labels match client IDs TWL 3/12/18 ENVI carb lot # 96014
Analyst ID - Concentration	KMK
Analyst ID - Final Volume Step	KMK
Hexane ID	1134418
Internal Standard ID#	1178672
Manifold ID	5
Methanol ID	1175201
Methanolic Potassium Hydroxide ID	1188472
Millipore Water Dispense Date	3-16-18
Sodium Hydroxide ID	1178465
Ammonium Hydroxide/MeOH ID	1170748
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	VPM
Analyst ID - IS Reagent Drop	KMK
Analyst ID - IS Reagent Drop Witness	JER
Blank Sand Lot #	162639
SPE Cartridge Lot ID	01763748A
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 214126 Batch Start Date: 03/21/18 12:31 Batch Analyst: Kouchari, Shamiran

Batch Method: 3535 Batch End Date: 03/22/18 17:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00044	LCPFC-IS 00031
MB 320-214126/1		3535, 537 (modified)				250 mL	10 mL	500 uL	500 uL
LCS 320-214126/2		3535, 537 (modified)				250 mL	10 mL	500 uL	500 uL
LCSD 320-214126/3		3535, 537 (modified)				250 mL	10 mL	500 uL	500 uL
LB 320-212127/1-A		3535, 537 (modified)		280.24 g	29.68 g	250.6 mL	10 mL	500 uL	500 uL
320-36761-A-2-A	SB004-SPLP(8'-10')	3535, 537 (modified)	E	280.80 g	27.86 g	252.9 mL	10 mL	500 uL	500 uL
320-36761-A-3-A	SB003-SPLP(0-2')	3535, 537 (modified)	E	281.66 g	28.02 g	253.6 mL	10 mL	500 uL	500 uL
320-36761-A-7-A	SB007-SPLP(0-2')	3535, 537 (modified)	E	280.47 g	27.90 g	252.6 mL	10 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00119	AnalysisComment				
MB 320-214126/1		3535, 537 (modified)							
LCS 320-214126/2		3535, 537 (modified)		500 uL					
LCSD 320-214126/3		3535, 537 (modified)		500 uL					
LB 320-212127/1-A		3535, 537 (modified)							
320-36761-A-2-A	SB004-SPLP(8'-10')	3535, 537 (modified)	E						
320-36761-A-3-A	SB003-SPLP(0-2')	3535, 537 (modified)	E		Light yellow color prior to extraction.				
320-36761-A-7-A	SB007-SPLP(0-2')	3535, 537 (modified)	E						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 214126 Batch Start Date: 03/21/18 12:31 Batch Analyst: Kouchari, Shamiran

Batch Method: 3535 Batch End Date: 03/22/18 17:10

Batch Notes	
Analyst ID - Aliquot Step	VPM
Balance ID	QA-070
Batch Comment	Client labels match TA labels, 03/21/18 SKD
Analyst ID - Final Volume Step	SKD
H2O ID	03/16/18
Hexane ID	1175188
Internal Standard ID#	1178673
Manifold ID	15
Methanol ID	1185912
Sodium Hydroxide ID	1178465
Pipette ID	N32728F
Analyst ID - Reagent Drop	VPM
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	SKD
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	SKD
Solvent Lot #	1153379
Solvent Name	3%NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137011A

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 214600 Batch Start Date: 03/23/18 15:01 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/28/18 19:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00044	LCPFC-IS 00024	LCPFCSP 00138	
MB 320-214600/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-214600/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MS		SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MSD		SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL	500 uL	
320-36761-A-1	SB004 (5'-7')	SHAKE, 537 (modified)	T	5.05 g	10.00 mL	500 uL	500 uL		
320-36761-A-4	SB003(5'-7')	SHAKE, 537 (modified)	T	5.06 g	10.00 mL	500 uL	500 uL		
320-36761-A-5	SB003(10'-12')	SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL		
320-36761-A-6	SB007(2'-4')	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-36761-A-8	SB007(4-5')	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-36761-A-9	SB030(2'-4')	SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 214600 Batch Start Date: 03/23/18 15:01 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/28/18 19:45

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	JER
Balance ID	QA-078
Batch Comment	Sample labels match client IDs TWL/Envi Carb 97221 Supelco
Analyst ID - Final Volume Step	JER
Hexane ID	1175189
Internal Standard ID#	1140898
Manifold ID	5
Methanol ID	1197667
Methanolic Potassium Hydroxide ID	1188475
Millipore Water Dispense Date	031618
Sodium Hydroxide ID	1178465
Ammonium Hydroxide/MeOH ID	1186517
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	VPM
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	VPM
Blank Sand Lot #	162639
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 215106 Batch Start Date: 03/27/18 20:41 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/28/18 14:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00044	LCPFC-IS 00032
MB 320-215106/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-215106/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCSD 320-215106/3		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LB 320-212127/1-A		3535, 537 (modified)		279.76 g	27.80 g	252 mL	10.00 mL	500 uL	500 uL
320-36761-A-2-A	SB004-SPLP(8'-10')	3535, 537 (modified)	E	282.49 g	27.92 g	254.6 mL	10.00 mL	500 uL	500 uL
320-36761-A-3-A	SB003-SPLP(0-2')	3535, 537 (modified)	E	279.31 g	28.16 g	251.2 mL	10.00 mL	500 uL	500 uL
320-36761-A-7-A	SB007-SPLP(0-2')	3535, 537 (modified)	E	282.27 g	29.23 g	253 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00139	AnalysisComment				
MB 320-215106/1		3535, 537 (modified)							
LCS 320-215106/2		3535, 537 (modified)		500 uL					
LCSD 320-215106/3		3535, 537 (modified)		500 uL					
LB 320-212127/1-A		3535, 537 (modified)							
320-36761-A-2-A	SB004-SPLP(8'-10')	3535, 537 (modified)	E		rx				
320-36761-A-3-A	SB003-SPLP(0-2')	3535, 537 (modified)	E		rx				
320-36761-A-7-A	SB007-SPLP(0-2')	3535, 537 (modified)	E		rx				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 215106 Batch Start Date: 03/27/18 20:41 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 03/28/18 14:15

Batch Notes	
Analyst ID - Aliquot Step	AAR
Balance ID	QA-070
Batch Comment	Sample labels match client IDs JER 3/27/18
Analyst ID - Final Volume Step	AAR
H2O ID	3/27/18
Hexane ID	1175188
Internal Standard ID#	1178674
Manifold ID	2
Methanol ID	1191294
Sodium Hydroxide ID	1196582
Pipette ID	N32728F
Analyst ID - Reagent Drop	JER
Analyst ID - IS Reagent Drop	TWL
Analyst ID - IS Reagent Drop Witness	AAR
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Solvent Lot #	1195189
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137011A

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 320-36031, -36083, -36761 Work List ID(s): 55606, 55672

Extraction Batch: 262510 Analysis Batch(es): 214053, 214277

Delivery Rank: 4 Due Date:

A Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 213554, 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).			✓
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?			✓
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	①	✓	
4. Are MS/MSD recoveries and RPD within control limits?	②	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	② ④	✓	
C Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D Documentation			
1. Are all non-conformances documented/attached? NCM# See below	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	DRC	✓	

Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1st Level (Analyst): [signature] Date: 3/23/18

2nd Level Reviewer: CBW Date: 3/27/18

① 119932 ② 119937 ③ 119940 ④ 120027

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 20MAR2018NCAC_PFC Worklist Number: 55606
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch 1	LC PFC ICAL Raw Batch: 214053
# 1 CCV L4	# 1 CCV L4
# 2 MB 320-212510/1-A	# 2 MB 320-212510/1-A
# 3 LCS 320-212510/2-A	# 3 LCS 320-212510/2-A
# 4 320-36631-A-1-A	# 4 320-36631-A-1-A
# 5 320-36631-A-2-A	# 5 320-36631-A-2-A
# 6 320-36631-A-4-A	# 6 320-36631-A-4-A
# 7 320-36631-A-6-A	# 7 320-36631-A-6-A
# 8 320-36631-A-7-A	# 8 320-36631-A-7-A
# 9 320-36631-A-9-A	# 9 320-36631-A-9-A
#10 320-36683-A-3-A	#10 320-36683-A-3-A
#11 320-36683-A-4-A	#11 320-36683-A-4-A
#12 CCV L5	#12 CCV L5
#13 320-36683-A-5-A	#13 320-36683-A-5-A
#14 320-36683-A-7-A	#14 320-36683-A-7-A
#15 320-36683-A-8-A	#15 320-36683-A-8-A
#16 320-36683-A-10-A	#16 320-36683-A-10-A
#17 320-36683-A-10-B MS	#17 320-36683-A-10-B MS
#18 320-36683-A-10-C MSD	#18 320-36683-A-10-C MSD
#19 320-36761-A-1-A	#19 320-36761-A-1-A
#20 320-36761-A-4-A	#20 320-36761-A-4-A
#21 320-36761-A-5-A	#21 320-36761-A-5-A
#22 320-36761-A-6-A	#22 320-36761-A-6-A
#23 CCV L4	#23 CCV L4
#24 320-36761-A-8-A	#24 320-36761-A-8-A
#25 320-36761-A-9-A	#25 320-36761-A-9-A
#26 CCV L5	#26 CCV L5

CCVL - 214045

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 20MAR2018NCAC_PFC Worklist Num: 55606
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55606.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CV L4	320-0055606-001	CCV	20-Mar-2018 23:01:55	2018.03.20LLA_022.d	13	1.0		sv
B 320-212510/1-A	320-0055606-002	MB	20-Mar-2018 23:09:46	2018.03.20LLA_023.d	14	1.0		sv
CS 320-212510/2-A	320-0055606-003	LCS	20-Mar-2018 23:17:37	2018.03.20LLA_024.d	15	1.0		sv
20-36631-A-1-A	320-0055606-004	Client	20-Mar-2018 23:25:29	2018.03.20LLA_025.d	16	1.0	SB031(5'-7')	sv
20-36631-A-2-A	320-0055606-005	Client	20-Mar-2018 23:33:19	2018.03.20LLA_026.d	17	1.0	SB031(10'-12')	sv
20-36631-A-4-A	320-0055606-006	Client	20-Mar-2018 23:41:12	2018.03.20LLA_027.d	18	1.0	SB006(5'-7')	sv
20-36631-A-6-A	320-0055606-007	Client	20-Mar-2018 23:49:05	2018.03.20LLA_028.d	19	1.0	SB021(5'-7')	sv
20-36631-A-7-A	320-0055606-008	Client	20-Mar-2018 23:56:55	2018.03.20LLA_029.d	20	1.0	SB021(10'-12')	sv
20-36631-A-9-A	320-0055606-009	Client	21-Mar-2018 00:04:44	2018.03.20LLA_030.d	21	1.0	SB024(5'-7')	sv
20-36683-A-3-A	320-0055606-010	Client	21-Mar-2018 00:12:34	2018.03.20LLA_031.d	22	1.0	SB008(5'-7')	sv
20-36683-A-4-A	320-0055606-011	Client	21-Mar-2018 00:20:22	2018.03.20LLA_032.d	23	1.0	DUPE006	sv
CV L5	320-0055606-012	CCV	21-Mar-2018 00:28:13	2018.03.20LLA_033.d	14	1.0		sv
20-36683-A-5-A	320-0055606-013	Client	21-Mar-2018 00:36:00	2018.03.20LLA_034.d	24	1.0	SB013(5'-7')	sv
20-36683-A-7-A	320-0055606-014	Client	21-Mar-2018 00:43:51	2018.03.20LLA_035.d	25	1.0	SB002(5'-7')	sv
20-36683-A-8-A	320-0055606-015	Client	21-Mar-2018 00:51:41	2018.03.20LLA_036.d	26	1.0	SB012(5'-7')	sv
20-36683-A-10-A	320-0055606-016	Client	21-Mar-2018 00:59:30	2018.03.20LLA_037.d	27	1.0	SB012(10'-12')	sv
20-36683-A-10-B MS	320-0055606-017	MS	21-Mar-2018 01:07:20	2018.03.20LLA_038.d	28	1.0	SB012(10'-12')	sv
20-36683-A-10-C MSD	320-0055606-018	MSD	21-Mar-2018 01:15:09	2018.03.20LLA_039.d	29	1.0	SB012(10'-12')	sv
20-36761-A-1-A	320-0055606-019	Client	21-Mar-2018 01:22:58	2018.03.20LLA_040.d	30	1.0	SB004 (5'-7')	sv
20-36761-A-4-A	320-0055606-020	Client	21-Mar-2018 01:30:47	2018.03.20LLA_041.d	31	1.0	SB003(5'-7')	sv
20-36761-A-5-A	320-0055606-021	Client	21-Mar-2018 01:38:36	2018.03.20LLA_042.d	32	1.0	SB003(10'-12')	sv
20-36761-A-6-A	320-0055606-022	Client	21-Mar-2018 01:46:25	2018.03.20LLA_043.d	33	1.0	SB007(2'-4')	sv
CV L4	320-0055606-023	CCV	21-Mar-2018 01:54:15	2018.03.20LLA_044.d	13	1.0		sv
20-36761-A-8-A	320-0055606-024	Client	21-Mar-2018 02:02:05	2018.03.20LLA_045.d	34	1.0	SB007(4-5')	sv
20-36761-A-9-A	320-0055606-025	Client	21-Mar-2018 02:09:55	2018.03.20LLA_046.d	35	1.0	SB030(2'-4')	sv
CV L5	320-0055606-026	CCV	21-Mar-2018 02:17:43	2018.03.20LLA_047.d	14	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 21MAR2018NCCC_PFC Worklist Number: 55672
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 214276	LC PFC ICAL Raw Batch: 214277	LC PFC_QSM5-1 ICAL Raw Batch: 214278
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 MB 320-212510/1-A		# 2 MB 320-212510/1-A	
# 3 LCS 320-212510/2-A		# 3 LCS 320-212510/2-A	
# 4 320-36631-A-1-A		# 4 320-36631-A-1-A	
# 5 320-36631-A-2-A		# 5 320-36631-A-2-A	
# 6 320-36631-A-4-A		# 6 320-36631-A-4-A	
# 7 320-36631-A-6-A		# 7 320-36631-A-6-A	
# 8 320-36631-A-7-A		# 8 320-36631-A-7-A	
# 9 320-36631-A-9-A		# 9 320-36631-A-9-A	
#10 320-36683-A-3-A		#10 320-36683-A-3-A	
#11 320-36683-A-4-A		#11 320-36683-A-4-A	
#12 CCV L5	#12 CCV L5	#12 CCV L5	#12 CCV L5
#13 320-36683-A-5-A		#13 320-36683-A-5-A	
#14 320-36683-A-7-A		#14 320-36683-A-7-A	
#15 320-36683-A-8-A		#15 320-36683-A-8-A	
#16 320-36683-A-10-A		#16 320-36683-A-10-A	
#17 320-36683-A-10-B MS		#17 320-36683-A-10-B MS	
#18 320-36683-A-10-C MSD		#18 320-36683-A-10-C MSD	
#19 320-36761-A-1-A		#19 320-36761-A-1-A	
#20 320-36761-A-4-A		#20 320-36761-A-4-A	
#21 320-36761-A-5-A		#21 320-36761-A-5-A	
#22 320-36761-A-6-A		#22 320-36761-A-6-A	
#23 CCV L4	#23 CCV L4	#23 CCV L4	#23 CCV L4
#24 320-36761-A-9-A		#24 320-36761-A-9-A	
#25 320-36631-A-4-A		#25 320-36631-A-4-A	
#26 320-36683-A-3-A		#26 320-36683-A-3-A	
#27 320-36683-A-4-A		#27 320-36683-A-4-A	
#28 320-36683-A-5-A		#28 320-36683-A-5-A	
#29 320-36683-A-7-A		#29 320-36683-A-7-A	
#30 CCV L5	#30 CCV L5	#30 CCV L5	#30 CCV L5

after 1cm

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 21MAR2018NCCC_PFC Worklist Num: 55672
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180322-55672.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CV L4	320-0055672-001	CCV	21-Mar-2018 21:55:54	2018.03.21LLC_006.d	13	1.0		sv
B 320-212510/1-A	320-0055672-002	MB	21-Mar-2018 22:03:43	2018.03.21LLC_007.d	10	1.0		sv
CS 320-212510/2-A	320-0055672-003	LCS	21-Mar-2018 22:11:33	2018.03.21LLC_008.d	11	1.0		sv
20-36631-A-1-A	320-0055672-004	Client	21-Mar-2018 22:19:22	2018.03.21LLC_009.d	12	1.0	SB031(5'-7')	sv
20-36631-A-2-A	320-0055672-005	Client	21-Mar-2018 22:27:10	2018.03.21LLC_010.d	13	1.0	SB031(10'-12')	sv
20-36631-A-4-A	320-0055672-006	Client	21-Mar-2018 22:34:59	2018.03.21LLC_011.d	14	20.0	SB006(5'-7')	sv
20-36631-A-6-A	320-0055672-007	Client	21-Mar-2018 22:42:49	2018.03.21LLC_012.d	15	1.0	SB021(5'-7')	sv
20-36631-A-7-A	320-0055672-008	Client	21-Mar-2018 22:50:38	2018.03.21LLC_013.d	16	1.0	SB021(10'-12')	sv
20-36631-A-9-A	320-0055672-009	Client	21-Mar-2018 22:58:26	2018.03.21LLC_014.d	17	1.0	SB024(5'-7')	sv
20-36683-A-3-A	320-0055672-010	Client	21-Mar-2018 23:06:17	2018.03.21LLC_015.d	18	5.0	SB008(5'-7')	sv
20-36683-A-4-A	320-0055672-011	Client	21-Mar-2018 23:14:07	2018.03.21LLC_016.d	19	5.0	DUPE006	sv
CV L5	320-0055672-012	CCV	21-Mar-2018 23:21:58	2018.03.21LLC_017.d	14	1.0		sv
20-36683-A-5-A	320-0055672-013	Client	21-Mar-2018 23:29:50	2018.03.21LLC_018.d	20	20.0	SB013(5'-7')	sv
20-36683-A-7-A	320-0055672-014	Client	21-Mar-2018 23:37:39	2018.03.21LLC_019.d	21	10.0	SB002(5'-7')	sv
20-36683-A-8-A	320-0055672-015	Client	21-Mar-2018 23:45:31	2018.03.21LLC_020.d	22	100.	SB012(5'-7')	sv
20-36683-A-10-A	320-0055672-016	Client	21-Mar-2018 23:53:24	2018.03.21LLC_021.d	23	50.0	SB012(10'-12')	sv
20-36683-A-10-B MS	320-0055672-017	MS	22-Mar-2018 00:01:17	2018.03.21LLC_022.d	24	50.0	SB012(10'-12')	sv
20-36683-A-10-C MSD	320-0055672-018	MSD	22-Mar-2018 00:09:06	2018.03.21LLC_023.d	25	50.0	SB012(10'-12')	sv
20-36761-A-1-A	320-0055672-019	Client	22-Mar-2018 00:16:54	2018.03.21LLC_024.d	26	5.0	SB004 (5'-7')	sv
20-36761-A-4-A	320-0055672-020	Client	22-Mar-2018 00:24:41	2018.03.21LLC_025.d	27	10.0	SB003(5'-7')	sv
20-36761-A-5-A	320-0055672-021	Client	22-Mar-2018 00:32:33	2018.03.21LLC_026.d	28	50.0	SB003(10'-12')	sv
20-36761-A-6-A	320-0055672-022	Client	22-Mar-2018 00:40:26	2018.03.21LLC_027.d	29	1.0	SB007(2'-4')	sv
CV L4	320-0055672-023	CCV	22-Mar-2018 00:48:18	2018.03.21LLC_028.d	13	1.0		sv
20-36761-A-9-A	320-0055672-024	Client	22-Mar-2018 00:56:11	2018.03.21LLC_029.d	30	10.0	SB030(2'-4')	sv
20-36631-A-4-A	320-0055672-025	Client	22-Mar-2018 01:04:04	2018.03.21LLC_030.d	31	1.0	SB006(5'-7')	sv
20-36683-A-3-A	320-0055672-026	Client	22-Mar-2018 01:11:56	2018.03.21LLC_031.d	32	1.0	SB008(5'-7')	sv
20-36683-A-4-A	320-0055672-027	Client	22-Mar-2018 01:19:49	2018.03.21LLC_032.d	33	1.0	DUPE006	sv
20-36683-A-5-A	320-0055672-028	Client	22-Mar-2018 01:27:40	2018.03.21LLC_033.d	34	1.0	SB013(5'-7')	sv
20-36683-A-7-A	320-0055672-029	Client	22-Mar-2018 01:35:32	2018.03.21LLC_034.d	35	1.0	SB002(5'-7')	sv
CV L5	320-0055672-030	CCV	22-Mar-2018 01:43:21	2018.03.21LLC_035.d	14	1.0		sv

AF 3/20/18
AS 3/21/18

21

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Batch End: 3/19/2018 4:30:00PM

Shake Extraction with Ultrasonic Bath Extraction

3/22

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-212510/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A	R1	MB 320-212510/1-A
2	LCS-320-212510/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-212510/2-A
3	320-36631-A-1 (PFC_IDA)	N/A (320-36631-1)	5.06 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-1-A
4	320-36631-A-2 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-2-A
5	320-36631-A-4 (PFC_IDA)	N/A (320-36631-1)	5.07 g	10.00 mL	3/7/18	12_Days	4	20x	320-36631-A-4-A
6	320-36631-A-6 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-6-A
7	320-36631-A-7 (PFC_IDA)	N/A (320-36631-1)	5.04 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-7-A
8	320-36631-A-9 (PFC_IDA)	N/A (320-36631-1)	5.00 g	10.00 mL	3/7/18	12_Days	4		320-36631-A-9-A
9	320-36683-A-3 (PFC_IDA)	N/A (320-36683-1)	5.07 g	10.00 mL	3/8/18	12_Days	4	5x	320-36683-A-3-A
10	320-36683-A-4 (PFC_IDA)	N/A (320-36683-1)	5.00 g	10.00 mL	3/8/18	12_Days	4	5x	320-36683-A-4-A
11	320-36683-A-5 (PFC_IDA)	N/A (320-36683-1)	5.03 g	10.00 mL	3/8/18	12_Days	4	20x	320-36683-A-5-A
12	320-36683-A-7 (PFC_IDA)	N/A (320-36683-1)	5.04 g	10.00 mL	3/8/18	12_Days	4	10x	320-36683-A-7-A
13	320-36683-A-8 (PFC_IDA)	N/A (320-36683-1)	5.01 g	10.00 mL	3/8/18	12_Days	4	100x	320-36683-A-8-A
14	320-36683-A-10 (PFC_IDA)	N/A (320-36683-1)	5.02 g	10.00 mL	3/8/18	12_Days	4	50x	320-36683-A-10-A
15	320-36683-A-10-MS (PFC_IDA)	N/A (320-36683-1)	5.05 g	10.00 mL	3/8/18	12_Days	4	50x	320-36683-A-10-B MS

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/19/2018 4:30:00PM

16	320-36683-A-10~MSD (PFC_IDA)	N/A (320-36683-1)	5.02 g	10.00 mL	3/8/18	12_Days	4	50x
17	320-36761-A-1 (PFC_IDA)	N/A (320-36761-1)	5.03 g	10.00 mL	3/12/18	12_Days	4	5x
18	320-36761-A-4 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4	10X
19	320-36761-A-5 (PFC_IDA)	N/A (320-36761-1)	5.08 g	10.00 mL	3/12/18	12_Days	4	50x
20	320-36761-A-6 (PFC_IDA)	N/A (320-36761-1)	5.01 g	10.00 mL	3/12/18	12_Days	4	R1
21	320-36761-A-8 (PFC_IDA)	N/A (320-36761-1)	5.00 g	10.00 mL	3/12/18	12_Days	4	
22	320-36761-A-9 (PFC_IDA)	N/A (320-36761-1)	5.03 g	10.00 mL	3/12/18	12_Days	4	10X

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Batch End: 3/19/2018 4:30:00PM

Batch Notes

Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	3-16-18
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	01763748A
SPE Cartridge Type	WAX 150mg
Hexane ID	1134418
Methanol ID	1175201
Ammonium Hydroxide/MeOH ID	1170748
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188472
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	KMK
Analyst ID - IS Reagent Drop Witness	JER
Internal Standard ID#	1178672
Analyst ID - Concentration	KMK
Analyst ID - Aliquot Step	KMK

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/19/2018 4:30:00PM

Analyst ID - Final Volume Step KMK

Batch Comment Sample labels match client IDs TWL 3/12/18 1 Envi-Carb #96214

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-212510/1	LCMPFC_ALL_SU_00043	500 uL	10.00 mL	3/13/18	VPM 3-13-18
LCS 320-212510/2	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
LCS 320-212510/2	LCPFCSP_00119	500 uL	10.00 mL		
320-36631-A-1	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-2	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-4	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-6	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-7	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36631-A-9	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-3	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-4	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-5	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-7	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-8	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-10	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-10 MS	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36683-A-10 MS	LCPFCSP_00119	500 uL	10.00 mL		
320-36683-A-10 MSD	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-212510

Analyst: Long, Tyrel W

Batch Open: 3/12/2018 3:34:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

320-36683-A-10 MSD	LCPFCSP_00119	500 uL	10.00 mL	3/13/18	VPM 3-13-18
320-36761-A-1	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-4	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-5	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-6	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-8	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		
320-36761-A-9	LCMPFC_ALL_SU_00043	500 uL	10.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 212510 Test Shake-Bath_14D(Soil)

Earliest Holding Time 3/14/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	NA	NA
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	NA	NA
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: NSH Date: 3/20/18

2nd Level Reviewer: VPM Date: 3/20/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC - 1DA

Analyst (Print Name) Amani Royce **Reagent ID** 1168592

Date 3/21/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
480-132210	4	10,000	15 ~~to~~ aar 3/21/18	300	20 X
480-132260	1	↓	↓	↓	20X
↓	3				20X
	4				20X
	4 MS				20X
	4 MSD		↓		20X
↓	5		30		10X
190-15745	2		15		20X
320-366631	4		↓		20X
320-366683	3		60		5X
↓	4		↓		5X
	5		15		20X
	7		30	↓	10X
	8		15 ~~+500~~ aar 3/21/18	1500	100X
	10		30	↓	50X
	10MS		↓		50X
	10 MSD		↓	↓	50X
320-367061	1		60	300	5X
↓	4		30	↓	10X
	5		30 ~~1500~~ aar 3/21/18	1500	50X
	9	↓	↓	↓	10X
		aar 3/21/18			

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

480-132475, 190-15804
Job Number(s): 320-36761, 320-37224 Work List ID(s): 55777, 55839, 55950

Extraction Batch: 214126, 215106 Analysis Batch(es): 214657, 214885, 215294

Delivery Rank 2, 4 Due Date: 3/27/18

A Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓		
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D Documentation NCMs: 120568, 120570, 120571, 120578, 120581			
1. Are all non-conformances documented/attached? NCM# 120565, 120566	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): ABH Date: 3/29/2018

2nd Level Reviewer: [signature] Date: 3/29/2018

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 23MAR2018NCAAA_PFC Worklist Number: 55777
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 214656	LC PFC ICAL Raw Batch: 214657	LC PFC_QSM5-1 ICAL Raw Batch: 214658
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L5	# 3 CCV L5	# 3 CCV L5	# 3 CCV L5
# 4 MB 320-214126/1-A		# 4 MB 320-214126/1-A	
# 5 LCS 320-214126/2-A		# 5 LCS 320-214126/2-A	
# 6 LCSD 320-214126/3-A		# 6 LCSD 320-214126/3-A	
# 7 190-15804-A-1-A		# 7 190-15804-A-1-A	
# 8 190-15804-A-2-A		# 8 190-15804-A-2-A	
# 9 LB 320-212127/1-B		# 9 LB 320-212127/1-B	
#10 320-36761-A-2-B		#10 320-36761-A-2-B	
#11 320-36761-A-3-B		#11 320-36761-A-3-B	
#12 320-36761-A-7-B		#12 320-36761-A-7-B	
#13 RB	#13 RB	#13 RB	#13 RB
#14 RB	#14 RB	#14 RB	#14 RB
#15 CCV L5	#15 CCV L5	#15 CCV L5	#15 CCV L5
#16 480-132475-C-1-A		#16 480-132475-C-1-A	
#17 480-132475-C-2-A		#17 480-132475-C-2-A	
#18 190-15804-A-3-A		#18 190-15804-A-3-A	
#19 RB	#19 RB	#19 RB	#19 RB
#20 RB	#20 RB	#20 RB	#20 RB
#21 CCV L4	#21 CCV L4	#21 CCV L4	#21 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26MAR2018NCD_PFC Worklist Number: 55839
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch: 214885
# 1 CCV L4	# 1 CCV L4
# 2 LCS 320-214126/2-A	# 2 LCS 320-214126/2-A
# 3 LCSD 320-214126/3-A	# 3 LCSD 320-214126/3-A
# 4 LB 320-212127/1-B	# 4 LB 320-212127/1-B
# 5 190-15804-A-2-A	# 5 190-15804-A-2-A
# 6 320-36761-A-2-B	# 6 320-36761-A-2-B
# 7 320-36761-A-3-B	# 7 320-36761-A-3-B
# 8 320-36761-A-7-B	# 8 320-36761-A-7-B
# 9 480-132475-C-1-A	# 9 480-132475-C-1-A
#10 480-132475-C-2-A	#10 480-132475-C-2-A
#11 RB	#11 RB
#12 CCV L5	#12 CCV L5
#13 480-132475-C-1-A	#13 480-132475-C-1-A
#14 RB	#14 RB
#15 480-132475-C-2-A	#15 480-132475-C-2-A
#16 RB	#16 RB
#17 RB	#17 RB
#18 CCV L4	#18 CCV L4

CCVL: 214825

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 28MAR2018NCAA_PFC Worklist Number: 55950
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215293	LC PFC ICAL Raw Batch: 215294	LC PFC_QSM5-1 ICAL Raw Batch: 215295
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 LB 320-212127/1-C		# 4 LB 320-212127/1-C	
# 5 MB 320-215106/1-A		# 5 MB 320-215106/1-A	
# 6 LCS 320-215106/2-A		# 6 LCS 320-215106/2-A	
# 7 LCSD 320-215106/3-A		# 7 LCSD 320-215106/3-A	
# 8 320-36761-A-2-C		# 8 320-36761-A-2-C	
# 9 320-36761-A-3-C		# 9 320-36761-A-3-C	
#10 320-36761-A-7-C		#10 320-36761-A-7-C	
#11 320-37224-A-1-A		#11 320-37224-A-1-A	
#12 RB	#12 RB	#12 RB	#12 RB
#13 190-15804-B-1-A		#13 190-15804-B-1-A	
#14 CCV L5	#14 CCV L5	#14 CCV L5	#14 CCV L5
#15 190-15804-A-3-B		#15 190-15804-A-3-B	
#16 320-36761-A-2-C		#16 320-36761-A-2-C	
#17 320-36761-A-3-C		#17 320-36761-A-3-C	
#18 320-36761-A-7-C		#18 320-36761-A-7-C	
#19 RB	#19 RB	#19 RB	#19 RB
#20 RB	#20 RB	#20 RB	#20 RB
#21 CCV L4	#21 CCV L4	#21 CCV L4	#21 CCV L4

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 23MAR2018NCAAA_PFC Worklist Num: 55777
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180323-55777.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055777-001	CCB	23-Mar-2018 18:24:10	2018.03.23LLAA_004.d	20	1.0		sv
CCVL	320-0055777-002	CCVL	23-Mar-2018 18:32:03	2018.03.23LLAA_005.d	21	1.0		sv
CCV L5	320-0055777-003	CCVIS	23-Mar-2018 18:39:54	2018.03.23LLAA_006.d	14	1.0		sv
MB 320-214126/1-A	320-0055777-004	MB	23-Mar-2018 18:47:45	2018.03.23LLAA_054.d	36	1.0		sv
LCS 320-214126/2-A	320-0055777-005	LCS	23-Mar-2018 18:55:35	2018.03.23LLAA_055.d	37	1.0		sv
LCSD 320-214126/3-A	320-0055777-006	LCSD	23-Mar-2018 19:03:27	2018.03.23LLAA_056.d	38	1.0		sv
190-15804-A-1-A	320-0055777-007	Client	23-Mar-2018 19:11:16	2018.03.23LLAA_057.d	39	1.0	Main Discharge	sv
190-15804-A-2-A	320-0055777-008	Client	23-Mar-2018 19:19:05	2018.03.23LLAA_058.d	40	1.0	Main Holding	sv
LB 320-212127/1-B	320-0055777-009	LB	23-Mar-2018 19:26:52	2018.03.23LLAA_059.d	41	1.0		sv
320-36761-A-2-B	320-0055777-010	Client	23-Mar-2018 19:34:41	2018.03.23LLAA_060.d	42	1.0	SB004-SPLP(8'-10')	sv
320-36761-A-3-B	320-0055777-011	Client	23-Mar-2018 19:42:28	2018.03.23LLAA_061.d	43	1.0	SB003-SPLP(0-2')	sv
320-36761-A-7-B	320-0055777-012	Client	23-Mar-2018 19:50:19	2018.03.23LLAA_062.d	44	1.0	SB007-SPLP(0-2')	sv
RB	320-0055777-013	RB	23-Mar-2018 19:58:09	2018.03.23LLAA_063.d	20	1.0		sv
RB	320-0055777-014	RB	23-Mar-2018 20:06:02	2018.03.23LLAA_064.d	20	1.0		sv
CCV L5	320-0055777-015	CCV	23-Mar-2018 20:13:54	2018.03.23LLAA_065.d	14	1.0		sv
480-132475-C-1-A	320-0055777-016	Client	23-Mar-2018 20:21:45	2018.03.23LLAA_066.d	45	1.0	R9-031218-LT	sv
480-132475-C-2-A	320-0055777-017	Client	23-Mar-2018 20:29:35	2018.03.23LLAA_067.d	46	1.0	R9-031218-VR3	sv
190-15804-A-3-A	320-0055777-018	Client	23-Mar-2018 20:37:24	2018.03.23LLAA_068.d	47	1.0	LF-19	sv
RB	320-0055777-019	RB	23-Mar-2018 20:45:13	2018.03.23LLAA_069.d	20	1.0		sv
RB	320-0055777-020	RB	23-Mar-2018 20:53:01	2018.03.23LLAA_070.d	20	1.0		sv
CCV L4	320-0055777-021	CCV	23-Mar-2018 21:00:49	2018.03.23LLAA_071.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26MAR2018NCA_PFC Worklist Num: 55826
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55826.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055826-001	CCB	26-Mar-2018 12:24:15	2018.03.26LLA_005.d	20	1.0		sv
CCVL	320-0055826-002	CCVL	26-Mar-2018 12:32:05	2018.03.26LLA_006.d	21	1.0		sv
CCV L4	320-0055826-003	CCVIS	26-Mar-2018 12:39:57	2018.03.26LLA_021.d	13	1.0		sv
320-37021-A-1-A	320-0055826-004	Client	26-Mar-2018 12:47:45	2018.03.26LLA_022.d	13	1.0	18EIE388SB02SS01	sv
320-37026-B-3-A	320-0055826-005	Client	26-Mar-2018 12:55:35	2018.03.26LLA_023.d	14	1.0	18EIE378SB03SS01	sv
CCV L5	320-0055826-006	CCV	26-Mar-2018 13:03:25	2018.03.26LLA_024.d	14	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26MAR2018NCD_PFC Worklist Num: 55839
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180326-55839.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0055839-001	CCV	26-Mar-2018 16:03:34	2018.03.26LLA_033.d	13	1.0		sv
LCS 320-214126/2-A	320-0055839-002	LCS	26-Mar-2018 16:11:21	2018.03.26LLA_040.d	27	1.0		sv
LCSD 320-214126/3-A	320-0055839-003	LCSD	26-Mar-2018 16:19:09	2018.03.26LLA_041.d	28	1.0		sv
LB 320-212127/1-B	320-0055839-004	LB	26-Mar-2018 16:26:57	2018.03.26LLA_042.d	29	1.0		sv
190-15804-A-2-A	320-0055839-005	Client	26-Mar-2018 16:34:46	2018.03.26LLA_034.d	21	20.0	Main Holding	sv
320-36761-A-2-B	320-0055839-006	Client	26-Mar-2018 16:42:34	2018.03.26LLA_035.d	22	10.0	SB004-SPLP(8'-10')	sv
320-36761-A-3-B	320-0055839-007	Client	26-Mar-2018 16:50:24	2018.03.26LLA_036.d	23	20.0	SB003-SPLP(0-2')	sv
320-36761-A-7-B	320-0055839-008	Client	26-Mar-2018 16:58:13	2018.03.26LLA_037.d	24	10.0	SB007-SPLP(0-2')	sv
480-132475-C-1-A	320-0055839-009	Client	26-Mar-2018 17:06:03	2018.03.26LLA_038.d	25	10.0	R9-031218-LT	sv
480-132475-C-2-A	320-0055839-010	Client	26-Mar-2018 17:13:52	2018.03.26LLA_039.d	26	50.0	R9-031218-VR3	sv
RB	320-0055839-011	RB	26-Mar-2018 17:21:41	2018.03.26LLA_043.d	20	1.0		sv
CCV L5	320-0055839-012	CCV	26-Mar-2018 17:29:29	2018.03.26LLA_044.d	14	1.0		sv
480-132475-C-1-A	320-0055839-013	Client	26-Mar-2018 17:37:17	2018.03.26LLA_045.d	30	10.0	R9-031218-LT	sv
RB	320-0055839-014	RB	26-Mar-2018 17:45:06	2018.03.26LLA_046.d	20	1.0		sv
480-132475-C-2-A	320-0055839-015	Client	26-Mar-2018 17:52:55	2018.03.26LLA_047.d	31	50.0	R9-031218-VR3	sv
RB	320-0055839-016	RB	26-Mar-2018 18:00:42	2018.03.26LLA_048.d	20	1.0		sv
RB	320-0055839-017	RB	26-Mar-2018 18:08:29	2018.03.26LLA_049.d	20	1.0		sv
CCV L4	320-0055839-018	CCV	26-Mar-2018 18:16:17	2018.03.26LLA_050.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 28MAR2018NCAA_PFC Worklist Num: 55950
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180328-55950.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055950-001	CCB	28-Mar-2018 18:28:21	2018.03.28LLDXD_004.d	20	1.0		sv
CCVL	320-0055950-002	CCVL	28-Mar-2018 18:36:11	2018.03.28LLDXD_005.d	21	1.0		sv
CCV L4	320-0055950-003	CCVIS	28-Mar-2018 18:44:00	2018.03.28LLDXD_006.d	13	1.0		sv
LB 320-212127/1-C	320-0055950-004	LB	28-Mar-2018 18:51:49	2018.03.28LLDXD_007.d	1	1.0		sv
MB 320-215106/1-A	320-0055950-005	MB	28-Mar-2018 18:59:38	2018.03.28LLDXD_008.d	2	1.0		sv
LCS 320-215106/2-A	320-0055950-006	LCS	28-Mar-2018 19:07:26	2018.03.28LLDXD_009.d	3	1.0		sv
LCSD 320-215106/3-A	320-0055950-007	LCSD	28-Mar-2018 19:15:15	2018.03.28LLDXD_010.d	4	1.0		sv
320-36761-A-2-C	320-0055950-008	Client	28-Mar-2018 19:23:05	2018.03.28LLDXD_011.d	5	10.0	SB004-SPLP(8'-10')	sv
320-36761-A-3-C	320-0055950-009	Client	28-Mar-2018 19:30:54	2018.03.28LLDXD_012.d	6	50.0	SB003-SPLP(0-2')	sv
320-36761-A-7-C	320-0055950-010	Client	28-Mar-2018 19:38:41	2018.03.28LLDXD_013.d	7	10.0	SB007-SPLP(0-2')	sv
320-37224-A-1-A	320-0055950-011	Client	28-Mar-2018 19:46:33	2018.03.28LLDXD_014.d	8	1.0	Recharge Basin	sv
RB	320-0055950-012	RB	28-Mar-2018 19:54:25	2018.03.28LLDXD_015.d	54	1.0		sv
190-15804-B-1-A	320-0055950-013	Client	28-Mar-2018 20:02:16	2018.03.28LLDXD_016.d	9	1.0	Main Discharge	sv
CCV L5	320-0055950-014	CCV	28-Mar-2018 20:10:07	2018.03.28LLDXD_017.d	14	1.0		sv
190-15804-A-3-B	320-0055950-015	Client	28-Mar-2018 20:17:59	2018.03.28LLDXD_018.d	10	100.	LF-19	sv
320-36761-A-2-C	320-0055950-016	Client	28-Mar-2018 20:25:48	2018.03.28LLDXD_019.d	11	1.0	SB004-SPLP(8'-10')	sv
320-36761-A-3-C	320-0055950-017	Client	28-Mar-2018 20:33:40	2018.03.28LLDXD_020.d	12	1.0	SB003-SPLP(0-2')	sv
320-36761-A-7-C	320-0055950-018	Client	28-Mar-2018 20:41:32	2018.03.28LLDXD_021.d	13	1.0	SB007-SPLP(0-2')	sv
RB	320-0055950-019	RB	28-Mar-2018 20:49:23	2018.03.28LLDXD_022.d	54	1.0		sv
RB	320-0055950-020	RB	28-Mar-2018 20:57:11	2018.03.28LLDXD_023.d	54	1.0		sv
CCV L4	320-0055950-021	CCV	28-Mar-2018 21:04:58	2018.03.28LLDXD_024.d	13	1.0		sv

Aqueous Extraction Analysis Sheet

25 AS 3/23/18 AS 3/26/18

(To Accompany Samples to Instruments)

Batch Number: 320-214126 ✓

Analyst: Kouchari, Shamiran

Batch Open: 3/21/2018 12:31:00PM

Method Code: 320-3535_PFC-320

* Caution some could be High *

Batch End: 3/22/2018 5:10:00PM

Solid-Phase Extraction (SPE)

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-214126/1 N/A	N/A		250 mL				N/A	N/A	N/A		MB 320-214126/1-A
				10 mL								
2	LCS~320-214126/2 N/A	N/A		250 mL				N/A	N/A	N/A	120%. R1	LCS 320-214126/2-A
				10 mL								
3	LCSD~320-214126/3 N/A	N/A		250 mL				N/A	N/A	N/A	200% R1	LCSD 320-214126/3-A
				10 mL								
4	190-15804-A-1 (PFC_IDA)	N/A (190-15804-1)	287.49 g	258.8 mL				3/23/18	8_Days	2	Light yellow color prior to extraction. ~~20X~~ acur 3/27/18	190-15804-A-1-A
			28.68 g	10 mL								
5	190-15804-A-2 (PFC_IDA)	N/A (190-15804-1)	278.60 g	251.5 mL				3/23/18	8_Days	2	Light yellow color prior to extraction. (yellow after FV) 20X	190-15804-A-2-A
			27.15 g	10 mL								
6	LB~320-212127/1-A N/A	N/A	280.24 g	250.6 mL				N/A	N/A	N/A	R1	LB 320-212127/1-B
			29.68 g	10 mL								
7	320-36761-A-2-A (PFC_IDA)	N/A (320-36761-1)	280.80 g	252.9 mL				3/22/18	12_Days	4	10X	320-36761-A-2-B
			27.86 g	10 mL								
8	320-36761-A-3-A (PFC_IDA)	N/A (320-36761-1)	281.66 g	253.6 mL				3/22/18	12_Days	4	Light yellow color prior to extraction. 20X	320-36761-A-3-B
			28.02 g	10 mL								
9	320-36761-A-7-A (PFC_IDA)	N/A (320-36761-1)	280.47 g	252.6 mL				3/22/18	12_Days	4	10X	320-36761-A-7-B
			27.90 g	10 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214126 Analyst: Kouchari, Shamiran Batch Open: 3/21/2018 12:31:00PM

Method Code: 320-3535_PFC-320 Batch End: 3/22/2018 5:10:00PM

10	480-132475-C-1 (PFC_IDA)	N/A (480-132475-1)	285.51 g 30.22 g	255.3 mL 10 mL				3/22/18	8_Day_Rush	4	Light yellow color prior to extraction. (yellow after FV) R1, 10X
11	480-132475-C-2 (PFC_IDA)	N/A (480-132475-1)	284.89 g 30.95 g	253.9 mL 10 mL				3/22/18	8_Day_Rush	4	Brown color and foamy prior to extraction. (dark yellow after FV) R1, 50X
12	190-15804-A-3 (PFC_IDA) ~~10,000X~~ 1000X needed	N/A (190-15804-1) TP 3/26/18		100 mL 10 mL				3/23/18	8_Days	2	Light pink color and foamy prior to extraction. ~~100X~~ R1 1:2 dilution 15? TP 3/26/18

0.25mL → 250mL

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214126

Method Code: 320-3535_PFC-320

Analyst: Kouchari, Shamiran

Batch Open: 3/21/2018 12:31:00PM

Batch End: 3/22/2018 5:10:00PM

Batch Notes

Manifold ID	15
Methanol ID	1185912
Hexane ID	1175188
Sodium Hydroxide ID	1178465
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137011A
Balance ID	QA-070
H2O ID	03/16/18
Pipette ID	N32728F
Solvent Name	3%NH4OH/MeOH
Solvent Lot #	1153379
Analyst ID - Reagent Drop	VPM
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	SKD
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
Analyst ID - IS Reagent Drop	VPM

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214126

Analyst: Kouchari, Shamiran

Batch Open: 3/21/2018 12:31:00PM

Method Code: 320-3535_PFC-320

Batch End: 3/22/2018 5:10:00PM

Analyst ID - IS Reagent Drop Witness	SKD
Internal Standard ID#	1178673
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	VPM
Analyst ID - Final Volume Step	SKD
SOP Number	WS-LC-0025
Batch Comment	Client labels match TA labels, 03/21/18 SKD

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Comments

Login Comments for Job 132475: L4Reviewed(Bflo):
~Sub method:PFC_IDA.~

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214126

Method Code: 320-3535_PFC-320

Analyst: Kouchari, Shamiran

Batch Open: 3/21/2018 12:31:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-214126/1	LCMPFC_ALL_SU_00044	500 uL	10 mL	VPM 3/21/18	SKD 3/21/18
LCS 320-214126/2	LCMPFC_ALL_SU_00044	500 uL	10 mL		
LCS 320-214126/2	LCPFCSP_00119	500 uL	10 mL		
LCSD 320-214126/3	LCMPFC_ALL_SU_00044	500 uL	10 mL		
LCSD 320-214126/3	LCPFCSP_00119	500 uL	10 mL		
190-15804-A-1	LCMPFC_ALL_SU_00044	500 uL	10 mL		
190-15804-A-2	LCMPFC_ALL_SU_00044	500 uL	10 mL		
LB 320-212127/1-A	LCMPFC_ALL_SU_00044	500 uL	10 mL		
320-36761-A-2-A	LCMPFC_ALL_SU_00044	500 uL	10 mL		
320-36761-A-3-A	LCMPFC_ALL_SU_00044	500 uL	10 mL		
320-36761-A-7-A	LCMPFC_ALL_SU_00044	500 uL	10 mL		
480-132475-C-1	LCMPFC_ALL_SU_00044	500 uL	10 mL		
480-132475-C-2	LCMPFC_ALL_SU_00044	500 uL	10 mL		
190-15804-A-3	LCMPFC_ALL_SU_00044	500 uL	10 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214126

Analyst: Kouchari, Shamiran

Batch Open: 3/21/2018 12:31:00PM

Method Code: 320-3535_PFC-320

Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
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Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 214126 Test 3535 - PFC

Earliest Holding Time 3/22/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	N/A	N/A
MS/MSD or MS/DU NCM filed	✓	✓
NCM for any anomalies filed	✓	✓
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	1st Level Reviewer	2nd Level Reviewer
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	N/A	N/A
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	1st Level Reviewer	2nd Level Reviewer
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: VPM Date: 3/22/18

2nd Level Reviewer: ABH Date: 3/29/18

Comments: _____

TestAmerica
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Test America – Sacramento

Sample Dilution Record

Method ID PFC. LDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** 11168592

Date 3/26/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
190-15804-	2	10,000	15	300	20
320-36761	2		30		10
	3		15		20
	7		30		10
480-132475	1		30	300	10
	2		30	1500	50

Comments:

Aqueous Extraction Analysis Sheet

AS 3/28/18

31

(To Accompany Samples to Instruments)

Batch Number: 320-215106

Method Code: 320-3535_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 3/27/2018 8:41:00PM

Batch End: 3/28/18 14:15 pm

Solid-Phase Extraction (SPE)

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-215106/1 N/A	N/A		250.00 mL				N/A	N/A	N/A		MB 320-215106/1-A
				10.00 mL								
2	LCS-320-215106/2 N/A	N/A		250.00 mL				N/A	N/A	N/A		LCS 320-215106/2-A
				10.00 mL								
3	LCSD-320-215106/3 N/A	N/A		250.00 mL				N/A	N/A	N/A		LCSD 320-215106/3-A
				10.00 mL								
4	LB-320-212127/1-A N/A	N/A	279.76 g	252 mL				N/A	N/A	N/A		LB 320-212127/1-C
			27.80 g	10.00 mL								
5	320-37224-A-1 (PFC_IDA)	N/A (320-37224-1)	278.20 g	249.1 mL				4/4/18	12_Days	4		320-37224-A-1-A
			29.14 g	10.00 mL								
6	190-15804-B-1 (PFC_IDA)	N/A (190-15804-1)	299.89 g	269.6 mL				3/23/18	8_Days	2		190-15804-B-1-A
			30.30 g	10.00 mL								
7	190-15804-A-3 (PFC_IDA)	N/A (190-15804-1)		0.25 mL				3/23/18	8_Days	2	100X screen	190-15804-A-3-B
				10.00 mL								
8	320-36761-A-2-A (PFC_IDA)	N/A (320-36761-1)	282.49 g	254.6 mL				3/22/18	12_Days	4	10X	320-36761-A-2-C
			27.92 g	10.00 mL								
9	320-36761-A-3-A (PFC_IDA)	N/A (320-36761-1)	279.31 g	251.2 mL				3/22/18	12_Days	4	50X	320-36761-A-3-C
			28.16 g	10.00 mL								
10	320-36761-A-7-A (PFC_IDA)	N/A (320-36761-1)	282.27 g	253 mL				3/22/18	12_Days	4	10X	320-36761-A-7-C
			29.23 g	10.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215106
Method Code: 320-3535_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 3/27/2018 8:41:00PM
Batch End:

Batch Notes

Manifold ID	2
Methanol ID	1191294
Hexane ID	1175188
Sodium Hydroxide ID	1196582
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137011A
Balance ID	QA-070
H2O ID	3/27/18
Pipette ID	N32728F
Solvent Name	0.3% NH4OH/MeOH
Solvent Lot #	1195189
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
Analyst ID - IS Reagent Drop	JWL

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215106 Analyst: Reed, Jonathan E Batch Open: 3/27/2018 8:41:00PM

Method Code: 320-3535_PFC-320 Batch End:

Analyst ID - IS Reagent Drop Witness	aar
Internal Standard ID#	1178674
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	aar
Analyst ID - Final Volume Step	aar
SOP Number	WS-LC-0025
Batch Comment	Sample labels match client IDs JER 3/27/18

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Comments

190-15804-B-1	Rework Comments:	LCS and LCSD failed for 6:2FTS.
190-15804-A-3	Rework Comments:	LCS and LCSD failed for 6:2FTS.
320-36761-A-2-A	Rework Comments:	LCS and LCSD failed for 6:2FTS.
320-36761-A-3-A	Rework Comments:	LCS and LCSD failed for 6:2FTS.
320-36761-A-7-A	Rework Comments:	LCS and LCSD failed for 6:2FTS.

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215106

Analyst: Reed, Jonathan E

Batch Open: 3/27/2018 8:41:00PM

Method Code: 320-3535_PFC-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-215106/1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL	3/27/18	3-27-18
LCS 320-215106/2	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
LCS 320-215106/2	LCPFCSP_00139	500 uL	10.00 mL		
LCSD 320-215106/3	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
LCSD 320-215106/3	LCPFCSP_00139	500 uL	10.00 mL		
LB 320-212127/1-A	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-37224-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
190-15804-B-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
190-15804-A-3	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-2-A	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-3-A	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-7-A	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215106

Analyst: Reed, Jonathan E

Batch Open: 3/27/2018 8:41:00PM

Method Code: 320-3535_PFC-320

Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 215106 Test PFC (W)

Earliest Holding Time 3/22/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	✓	✓
MS/MSD or MS/DU NCM filed	✓	✓
NCM for any anomalies filed	✓	✓
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	1st Level Reviewer	2nd Level Reviewer
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	1st Level Reviewer	2nd Level Reviewer
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: VPM Date: 3/28/18

2nd Level Reviewer: ABH Date: 3/28/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC-10A

Analyst (Print Name) Amani Royce **Reagent ID** 1168592

Date 3/28/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
190-15804	3	10,000	15	1500	100X
320-36761	2	↓	30	300	10X
↓	3		30	1500	50X
	7		30	300	10X

AMR 3/28/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 36761, 36956, 36683 Work List ID(s): 55955, 55978

Extraction Batch: 214600 Analysis Batch(es): 215311, 215399

Delivery Rank 4 Due Date: ———

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓	✓	
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1st Level (Analyst): CBW Date: 3/29/18

2nd Level Reviewer: MWW Date: 3/29/2018

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 28MAR2018NCAB_PFC Worklist Num: 55955
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055955-001	CCB	28-Mar-2018 23:46:56	2018.03.28LLFF_004.d	20	1.0		sv
CCVL	320-0055955-002	CCVL	28-Mar-2018 23:54:44	2018.03.28LLFF_005.d	21	1.0		sv
CCV L4	320-0055955-003	CCVIS	29-Mar-2018 00:02:32	2018.03.28LLFF_006.d	13	1.0		sv
MB 320-214600/1-A	320-0055955-004	MB	29-Mar-2018 00:10:19	2018.03.28LLFF_007.d	14	1.0		sv
LCS 320-214600/2-A	320-0055955-005	LCS	29-Mar-2018 00:18:08	2018.03.28LLFF_008.d	15	1.0		sv
320-36761-A-1-B	320-0055955-006	Client	29-Mar-2018 00:25:58	2018.03.28LLFF_009.d	16	1.0	SB004 (5'-7')	sv
320-36761-A-4-B	320-0055955-007	Client	29-Mar-2018 00:33:50	2018.03.28LLFF_010.d	17	1.0	SB003(5'-7')	sv
320-36761-A-5-B	320-0055955-008	Client	29-Mar-2018 00:41:40	2018.03.28LLFF_011.d	18	1.0	SB003(10'-12')	sv
320-36761-A-6-B	320-0055955-009	Client	29-Mar-2018 00:49:32	2018.03.28LLFF_012.d	19	1.0	SB007(2'-4')	sv
320-36761-A-8-B	320-0055955-010	Client	29-Mar-2018 00:57:23	2018.03.28LLFF_013.d	20	1.0	SB007(4-5')	sv
320-36761-A-9-B	320-0055955-011	Client	29-Mar-2018 01:05:16	2018.03.28LLFF_014.d	21	1.0	SB030(2'-4')	sv
320-36956-A-1-A	320-0055955-012	Client	29-Mar-2018 01:13:04	2018.03.28LLFF_015.d	22	1.0	SB042 (0-2")	sv
Rinse	320-0055955-013	Client	29-Mar-2018 01:20:53	2018.03.28LLFF_016.d	54	1.0		sv
CCV L5	320-0055955-014	CCV	29-Mar-2018 01:28:41	2018.03.28LLFF_017.d	14	1.0		sv
320-36683-A-8-B	320-0055955-015	Client	29-Mar-2018 01:36:29	2018.03.28LLFF_018.d	23	1.0	SB012(5'-7')	sv
Rinse	320-0055955-016	Client	29-Mar-2018 01:44:18	2018.03.28LLFF_019.d	54	1.0		sv
Rinse	320-0055955-017	Client	29-Mar-2018 01:52:06	2018.03.28LLFF_020.d	54	1.0		sv
320-36683-A-10-D	320-0055955-018	Client	29-Mar-2018 01:59:53	2018.03.28LLFF_021.d	24	1.0	SB012(10'-12')	sv
320-36683-A-10-E MS	320-0055955-019	MS	29-Mar-2018 02:07:40	2018.03.28LLFF_022.d	25	1.0	SB012(10'-12')	sv
320-36683-A-10-F MSD	320-0055955-020	MSD	29-Mar-2018 02:15:31	2018.03.28LLFF_023.d	26	1.0	SB012(10'-12')	sv
Rinse	320-0055955-021	Client	29-Mar-2018 02:23:23	2018.03.28LLFF_024.d	54	1.0		sv
Rinse	320-0055955-022	Client	29-Mar-2018 02:31:13	2018.03.28LLFF_025.d	54	1.0		sv
CCV L4	320-0055955-023	CCV	29-Mar-2018 02:39:02	2018.03.28LLFF_026.d	13	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 28MAR2018NCAB_PFC Worklist Number: 55955
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215310	LC PFC ICAL Raw Batch: 215311	LC PFC_QSM5-1 ICAL Raw Batch: 215312
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 MB 320-214600/1-A		# 4 MB 320-214600/1-A	
# 5 LCS 320-214600/2-A		# 5 LCS 320-214600/2-A	
# 6 320-36761-A-1-B		# 6 320-36761-A-1-B	
# 7 320-36761-A-4-B		# 7 320-36761-A-4-B	
# 8 320-36761-A-5-B		# 8 320-36761-A-5-B	
# 9 320-36761-A-6-B		# 9 320-36761-A-6-B	
#10 320-36761-A-8-B		#10 320-36761-A-8-B	
#11 320-36761-A-9-B		#11 320-36761-A-9-B	
#12 320-36956-A-1-A		#12 320-36956-A-1-A	
#13 Rinse	#13 Rinse	#13 Rinse	#13 Rinse
#14 CCV L5	#14 CCV L5	#14 CCV L5	#14 CCV L5
#15 320-36683-A-8-B		#15 320-36683-A-8-B	
#16 Rinse	#16 Rinse	#16 Rinse	#16 Rinse
#17 Rinse	#17 Rinse	#17 Rinse	#17 Rinse
#18 320-36683-A-10-D		#18 320-36683-A-10-D	
#19 320-36683-A-10-E MS		#19 320-36683-A-10-E MS	
#20 320-36683-A-10-F MSD		#20 320-36683-A-10-F MSD	
#21 Rinse	#21 Rinse	#21 Rinse	#21 Rinse
#22 Rinse	#22 Rinse	#22 Rinse	#22 Rinse
#23 CCV L4	#23 CCV L4	#23 CCV L4	#23 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 29MAR2018NCA_PFC Worklist Number: 55978
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215398	LC PFC ICAL Raw Batch: 215399	LC PFC_QSM5-1 ICAL Raw Batch: 215400
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 320-36761-A-6-B		# 4 320-36761-A-6-B	
# 5 320-36761-A-8-B		# 5 320-36761-A-8-B	
# 6 320-36683-A-10-D		# 6 320-36683-A-10-D	
# 7 320-36683-A-10-E MS		# 7 320-36683-A-10-E MS	
# 8 320-36683-A-10-F MSD		# 8 320-36683-A-10-F MSD	
# 9 320-36956-A-1-A		# 9 320-36956-A-1-A	
#10 CCV L5	#10 CCV L5	#10 CCV L5	#10 CCV L5

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

A 8 3/28/18

Batch Number: 320-214600

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Batch End: 3/28/2018 7:45:00PM

Shake Extraction with Ultrasonic Bath Extraction

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-214600/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-214600/1-A
2	LCS~320-214600/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-214600/2-A
3	320-36683-A-8 (PFC_IDA)	N/A (320-36683-1)	5.09 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-8-B
4	320-36683-A-10 (PFC_IDA)	N/A (320-36683-1)	5.07 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-D
5	320-36683-A-10~MS (PFC_IDA)	N/A (320-36683-1)	5.00 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-E MS
6	320-36683-A-10~MSD (PFC_IDA)	N/A (320-36683-1)	5.09 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-F MSD
7	320-36761-A-1 (PFC_IDA)	N/A (320-36761-1)	5.05 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-1-B
8	320-36761-A-4 (PFC_IDA)	N/A (320-36761-1)	5.06 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-4-B
9	320-36761-A-5 (PFC_IDA)	N/A (320-36761-1)	5.02 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-5-B
10	320-36761-A-6 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-6-B
11	320-36761-A-8 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-8-B
12	320-36761-A-9 (PFC_IDA)	N/A (320-36761-1)	5.02 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-9-B
13	320-36956-A-1 (PFC_IDA)	N/A (320-36956-1)	5.06 g	10.00 mL	3/16/18	12_Days	4		320-36956-A-1-A

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/28/2018 7:45:00PM

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	031618
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	1197667
Ammonium Hydroxide/MeOH ID	1186517
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188475
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	VPM
Internal Standard ID#	1140898
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JER

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/28/2018 7:45:00PM

Analyst ID - Final Volume Step JER

Batch Comment Sample labels match client IDs TWL/Envi Carb 97221 Supelco

Comments

320-36683-A-8	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10~MS	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10~MSD	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-1	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-4	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-5	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-6	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-8	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-9	Rework Comments: Please RX due to LCS failing low for PFDoA

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-214600/1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL	3/23/18	VPM 3/23/18
LCS 320-214600/2	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
LCS 320-214600/2	LCPFCSP_00138	500 uL	10.00 mL		
320-36683-A-8	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MS	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MS	LCPFCSP_00138	500 uL	10.00 mL		
320-36683-A-10 MSD	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MSD	LCPFCSP_00138	500 uL	10.00 mL		
320-36761-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-4	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-5	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-6	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-8	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-9	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36956-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 214600 Test PFC

Earliest Holding Time 3/12/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	✓	✓
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: _____ Date: 3/28/18

2nd Level Reviewer: CBW Date: 3/29/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC. IDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** 1168592

Date 3/29/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-36761	1	10,000	30	300	10
	4		30	300	10
	5		30	1500	50
	9		30	300	10
320-36956	1		15	1500	100X
320-36683	8		15		100
	10 ms		30		50
	10 msd		30		50
	10		30		50

Comments:

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36761-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB004 (5'-7')	320-36761-1
SB003(5'-7')	320-36761-4
SB003(10'-12')	320-36761-5
SB007(2'-4')	320-36761-6
SB007(4-5')	320-36761-8
SB030(2'-4')	320-36761-9

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36761-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36761-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 03/12/2018 14:27 End Date: 03/12/2018 14:27

Lab Sample ID	D / F	Type	Time	Analytes																				
				% Sol	Moist																			
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
320-36761-1	1	T	14:27	X	X																			
320-36761-4	1	T	14:27	X	X																			
320-36761-5	1	T	14:27	X	X																			
320-36761-6	1	T	14:27	X	X																			
320-36761-8	1	T	14:27	X	X																			
320-36761-9	1	T	14:27	X	X																			
320-36761-9 DU	1	T	14:27	X	X																			
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					
ZZZZZZ			14:27																					

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36761-1

SDG No.:

Batch Number: 212480 Batch Start Date: 03/12/18 14:27 Batch Analyst: Saechao, Tammy C

Batch Method: D 2216 Batch End Date: 03/13/18 11:02

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry	AnalysisComment	
320-36761-A-1	SB004 (5'-7')	D 2216	T	10	1.02 g	13.36 g	12.41 g		
320-36761-A-4	SB003(5'-7')	D 2216	T	11	1.02 g	11.48 g	11.16 g		
320-36761-A-5	SB003(10'-12')	D 2216	T	12	1.01 g	11.78 g	11.37 g	pebbles	
320-36761-A-6	SB007(2'-4')	D 2216	T	13	1.02 g	10.98 g	10.55 g		
320-36761-A-8	SB007(4-5')	D 2216	T	14	1.01 g	12.28 g	11.20 g		
320-36761-A-9	SB030(2'-4')	D 2216	T	15	1.02 g	14.02 g	11.71 g		
320-36761-A-9 DU	SB030(2'-4')	D 2216	T	16	1.01 g	13.45 g	11.33 g		

Batch Notes	
Balance ID	QA-068
Date and Time Samples in Desiccator	03/13/2018 09:46
Date and Time Samples out of Desiccator	03/13/2018 11:02
Date samples were placed in the oven	03/12/2018
Oven Temp In	111 Degrees C
Time samples were place in the oven	14:27
Date samples were removed from oven	03/13/2018
Oven Temp Out	106 Degrees C
Time Samples were removed from oven	09:46
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Janelle Cooley	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-432-6717.	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:

Address: 630 Johnson Ave Suite 7	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Bohemia	TAT Requested (days): 15 days	320-36761 Chain of Custody	4 - HCL, - NaOH, - Zn Acetate, - Nitric Acid, - NaHSO4, - MeOH, - Amchlor, - Ascorbic Acid, Ice, - DI Water, K - EDTA, L - EDA; M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: NY, 11716			
Phone: 631-589-6353(Tel)	PO #: 37ID1801		Other:
Email: andyl@pwgrosser.com	WO #: 37ID1801		
Project Name: Suffolk County Firematics Site	Project #: 46024260		
Site:	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	SPLP PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of container	Special Instructions/Note:
			Preservation Code:				N			
SB004 (5'-7')	3/5/18	900	C	S			X		1	
SB004-SPLP(8'-10')	3/5/18	915	C	S				X	2	
SB003-SPLP(0-2')	3/5/18	1000	C	S				X	2	
SB003 (5'-7')	3/5/18	1015	C	S			X		1	
SB003 (10'-12')	3/5/18	1030	C	S			X		1	
SB007 (2'-4')	3/5/18	935	C	S			X		1	
SB007-SPLP(0-2')	3/5/18	932	C	S				X	2	
SB007 (4-5')	3/5/18	940	C	S			X		1	
SB030 (2'-4')	3/5/18	1005	C	S			X		1	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3/5/18. 1400	3/5/18 1200			3/5/18 1205	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3/5/18 1615	3/5/18 1615			3/5/18 1615	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/5/18 1800			3-6-18 0940	TA W-Sac

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.5°C

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-36761-1

Login Number: 36761
List Number: 1
Creator: Nelson, Kym D

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-36956-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
630 Johnson Ave
Suite 7
Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
3/29/2018 4:01 PM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
03/29/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 320-36956-1

Job Description: Suffolk County Firematics Site

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
3/29/2018 4:01 PM

Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-36956-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The sample was received on 3/10/2018 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED HYDROCARBONS (PFC)
Sample SB042 (0-2") (320-36956-1) was analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 03/23/2018 and analyzed on 03/29/2018.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-214600 and analytical batch 320-215311 were outside control limits for several analytes. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 320-214600 and analytical batch 320-215311 was outside control limits for Perfluorohexanesulfonic acid (PFHxS). Sample matrix interference and/or non-homogeneity are suspected.

Several analytes failed the recovery criteria low for the MSD of sample 320-36683-10 in batch 320-215399. Perfluorohexanesulfonic acid (PFHxS) exceeded the RPD limit.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Due to the high concentration of Perfluorooctanesulfonic acid (PFOS), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-214600 and analytical batch 320-215399 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Results for samples SB042 (0-2") (320-36956-1), (320-36683-A-10-D), (320-36683-A-10-E MS) and (320-36683-A-10-F MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

6:2FTS and Perfluorobutanoic acid (PFBA) were detected in method blank MB 320-214600/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

6:2FTS and Perfluorooctanesulfonic acid (PFOS) failed the recovery criteria low for the MS of sample 320-36683-10 in batch 320-215399. Perfluorodecanesulfonic acid (PFDS) failed the recovery criteria high.

Refer to the QC report for details.

No other difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Sample SB042 (0-2") (320-36956-1) was analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 03/19/2018.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36956-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-36956-1	SB042 (0-2")	Solid	03/09/18 13:20	03/10/18 09:30

Client Sample ID: SB042 (0-2")

Lab Sample ID: 320-36956-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.0016	B	0.00022	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.0031		0.00022	0.000083	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.0048		0.00022	0.000046	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.0023		0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.013		0.00022	0.000093	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.014		0.00022	0.000073	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.0045		0.00022	0.000059	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.00060		0.00022	0.000027	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.013		0.00022	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.0034		0.00022	0.000042	mg/Kg	1	☼	537 (modified)	Total/NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00051	J	0.0022	0.00042	mg/Kg	1	☼	537 (modified)	Total/NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0040		0.0022	0.00040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA) - DL	0.39	D	0.022	0.0039	mg/Kg	100	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA) - DL	0.077	D	0.022	0.0024	mg/Kg	100	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA) - DL	0.63	D	0.022	0.0039	mg/Kg	100	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA) - DL	0.17	D	0.022	0.0055	mg/Kg	100	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS) - DL	0.010	J D	0.022	0.0038	mg/Kg	100	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	1.87	D	0.054	0.022	mg/Kg	100	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA) - DL	0.24	D	0.022	0.0089	mg/Kg	100	☼	537 (modified)	Total/NA
6:2FTS - DL	0.20	J B D	0.22	0.016	mg/Kg	100	☼	537 (modified)	Total/NA
8:2FTS - DL	0.45	D	0.22	0.027	mg/Kg	100	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36956-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB042 (0-2")

Date Collected: 03/09/18 13:20
Date Received: 03/10/18 09:30

Lab Sample ID: 320-36956-1

Matrix: Solid
Percent Solids: 91.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0016	B	0.00022	0.000030	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluoropentanoic acid (PFPeA)	0.0031		0.00022	0.000083	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorohexanoic acid (PFHxA)	0.0048		0.00022	0.000046	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluoroheptanoic acid (PFHpA)	0.0023		0.00022	0.000031	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorooctanoic acid (PFOA)	0.013		0.00022	0.000093	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorododecanoic acid (PFDoA)	0.014		0.00022	0.000073	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorotetradecanoic acid (PFTeA)	0.0045		0.00022	0.000059	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorobutanesulfonic acid (PFBS)	0.00060		0.00022	0.000027	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorohexanesulfonic acid (PFHxS)	0.013		0.00022	0.000034	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
Perfluorodecanesulfonic acid (PFDS)	0.0034		0.00022	0.000042	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00051	J	0.0022	0.00042	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0040		0.0022	0.00040	mg/Kg	☼	03/23/18 15:02	03/29/18 01:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*76*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C5 PFPeA	*88*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C2 PFHxA	*75*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C4-PFHpA	*77*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C4 PFOA	*68*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C2 PFDoA	*64*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C2-PFTeDA	*64*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C3-PFBS	*85*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
18O2 PFHxS	*79*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
13C4 PFOS	*27*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
d3-NMeFOSAA	*80*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*
d5-NEtFOSAA	*33*		*25 - 150*	*03/23/18 15:02*	*03/29/18 01:13*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	0.39	D	0.022	0.0039	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
Perfluorodecanoic acid (PFDA)	0.077	D	0.022	0.0024	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
Perfluoroundecanoic acid (PFUnA)	0.63	D	0.022	0.0039	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
Perfluorotridecanoic Acid (PFTriA)	0.17	D	0.022	0.0055	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
Perfluoroheptanesulfonic Acid (PFHpS)	0.010	J D	0.022	0.0038	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
Perfluorooctanesulfonic acid (PFOS)	1.87	D	0.054	0.022	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
Perfluorooctane Sulfonamide (FOSA)	0.24	D	0.022	0.0089	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
6:2FTS	0.20	J B D	0.22	0.016	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100
8:2FTS	0.45	D	0.22	0.027	mg/Kg	☼	03/23/18 15:02	03/29/18 09:51	100

Client Sample ID: SB042 (0-2")
Lab Sample ID: 320-36956-1

Date Collected: 03/09/18 13:20
Matrix: Solid
Date Received: 03/10/18 09:30
Percent Solids: 91.2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	52	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
13C2 PFDA	52	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
13C2 PFUnA	59	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
13C2 PFDoA	50	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
13C4 PFOS	60	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
13C8 FOSA	61	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
M2-6:2FTS	134	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100
M2-8:2FTS	97	*	25 - 150	03/23/18 15:02	03/29/18 09:51	100

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36956-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-36683-A-10-E MS	Matrix Spike	87	89	82	88	81	59	76	66
320-36683-A-10-E MS - DL	Matrix Spike								
320-36683-A-10-F MSD	Matrix Spike Duplicate	78	78	72	78	74	55	67	63
320-36683-A-10-F MSD - DL	Matrix Spike Duplicate								
320-36956-1	SB042 (0-2")	76	88	75	77	68			
320-36956-1 - DL	SB042 (0-2")						52 *	52 *	59 *
LCS 320-214600/2-A	Lab Control Sample	83	85	81	86	79	78	71	69
MB 320-214600/1-A	Method Blank	79	83	82	82	77	72	74	65

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
320-36683-A-10-E MS	Matrix Spike	64	70	87	83	61	75	73	60
320-36683-A-10-E MS - DL	Matrix Spike					69 *			
320-36683-A-10-F MSD	Matrix Spike Duplicate	59	66	76	76	58	68	66	55
320-36683-A-10-F MSD - DL	Matrix Spike Duplicate					67 *			
320-36956-1	SB042 (0-2")	64	64	85	79	27		80	33
320-36956-1 - DL	SB042 (0-2")	50 *				60 *	61 *		
LCS 320-214600/2-A	Lab Control Sample	66	70	85	86	82	83	59	54
MB 320-214600/1-A	Method Blank	63	68	77	82	80	73	59	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)						
320-36683-A-10-E MS	Matrix Spike	89	74						
320-36683-A-10-E MS - DL	Matrix Spike								
320-36683-A-10-F MSD	Matrix Spike Duplicate	76	65						
320-36683-A-10-F MSD - DL	Matrix Spike Duplicate								
320-36956-1	SB042 (0-2")								
320-36956-1 - DL	SB042 (0-2")	134 *	97 *						
LCS 320-214600/2-A	Lab Control Sample	83	70						
MB 320-214600/1-A	Method Blank	78	71						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-36956-1

d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-214600/1-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214600

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0000392	J	0.00020	0.000028	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorooctanesulfonic acid (PFOS)	0.00020	U	0.00050	0.00020	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
6:2FTS	0.000209	J	0.0020	0.00015	mg/Kg		03/23/18 15:02	03/29/18 00:10	1
8:2FTS	0.00025	U	0.0020	0.00025	mg/Kg		03/23/18 15:02	03/29/18 00:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C5 PFPeA	*83*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C2 PFHxA	*82*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C4-PFHpA	*82*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C4 PFOA	*77*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C5 PFNA	*72*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C2 PFDA	*74*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C2 PFUnA	*65*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C2 PFDoA	*63*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C2-PFTeDA	*68*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C3-PFBS	*77*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
18O2 PFHxS	*82*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C4 PFOS	*80*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
13C8 FOSA	*73*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
d3-NMeFOSAA	*59*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
d5-NEtFOSAA	*57*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
M2-6:2FTS	*78*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*
M2-8:2FTS	*71*		*25 - 150*	*03/23/18 15:02*	*03/29/18 00:10*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-214600/2-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00200	0.00192		mg/Kg		96	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00200	0.00184		mg/Kg		92	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00200	0.00182		mg/Kg		91	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00184		mg/Kg		92	76 - 124
Perfluorooctanoic acid (PFOA)	0.00200	0.00190		mg/Kg		95	76 - 121
Perfluorononanoic acid (PFNA)	0.00200	0.00195		mg/Kg		97	74 - 126
Perfluorodecanoic acid (PFDA)	0.00200	0.00203		mg/Kg		101	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00167		mg/Kg		83	74 - 114
Perfluorododecanoic acid (PFDoA)	0.00200	0.00195		mg/Kg		97	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00187		mg/Kg		93	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00184		mg/Kg		92	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00161		mg/Kg		91	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00157		mg/Kg		86	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00170		mg/Kg		89	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00181		mg/Kg		97	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00169		mg/Kg		88	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00178		mg/Kg		89	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00200		mg/Kg		100	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00196	J	mg/Kg		98	65 - 135
6:2FTS	0.00190	0.00181	J	mg/Kg		96	65 - 135
8:2FTS	0.00192	0.00191	J	mg/Kg		99	65 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*83*		*25 - 150*
13C5 PFPeA	*85*		*25 - 150*
13C2 PFHxA	*81*		*25 - 150*
13C4-PFHpA	*86*		*25 - 150*
13C4 PFOA	*79*		*25 - 150*
13C5 PFNA	*78*		*25 - 150*
13C2 PFDA	*71*		*25 - 150*
13C2 PFUnA	*69*		*25 - 150*
13C2 PFDoA	*66*		*25 - 150*
13C2-PFTeDA	*70*		*25 - 150*
13C3-PFBS	*85*		*25 - 150*
18O2 PFHxS	*86*		*25 - 150*
13C4 PFOS	*82*		*25 - 150*
13C8 FOSA	*83*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-214600/2-A
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214600

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	59		25 - 150
d5-NEtFOSAA	54		25 - 150
M2-6:2FTS	83		25 - 150
M2-8:2FTS	70		25 - 150

Lab Sample ID: 320-36683-A-10-E MS
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00012	J B	0.00205	0.00207		mg/Kg	☼	95	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00013	J	0.00205	0.00204		mg/Kg	☼	93	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00049		0.00205	0.00241		mg/Kg	☼	93	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00205	0.00201		mg/Kg	☼	89	76 - 124
Perfluorooctanoic acid (PFOA)	0.0013	F1	0.00205	0.00297		mg/Kg	☼	82	76 - 121
Perfluorononanoic acid (PFNA)	0.015		0.00205	0.0176	4	mg/Kg	☼	107	74 - 126
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00205	0.00213		mg/Kg	☼	98	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.000040	J	0.00205	0.00193		mg/Kg	☼	92	74 - 114
Perfluorododecanoic acid (PFDoA)	0.000068	U	0.00205	0.00200		mg/Kg	☼	97	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.000052	U	0.00205	0.00208		mg/Kg	☼	101	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00205	0.00205		mg/Kg	☼	100	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00013	J	0.00182	0.00183		mg/Kg	☼	94	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.0067	F1 F2	0.00187	0.00828		mg/Kg	☼	83	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.0049	F1	0.00196	0.00692		mg/Kg	☼	106	78 - 146
Perfluorodecanesulfonic acid (PFDS)	0.000040	U F1	0.00198	0.00239	F1	mg/Kg	☼	121	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.000083	U	0.00205	0.00201		mg/Kg	☼	98	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.00205	0.00199	J	mg/Kg	☼	97	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.00205	0.00205	J	mg/Kg	☼	100	65 - 135
6:2FTS	0.0045	B F1	0.00195	0.00570	F1	mg/Kg	☼	64	65 - 135
8:2FTS	0.00051	J	0.00197	0.00225		mg/Kg	☼	89	65 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	87		25 - 150
13C5 PFPeA	89		25 - 150
13C2 PFHxA	82		25 - 150
13C4-PFHpA	88		25 - 150
13C4 PFOA	81		25 - 150
13C5 PFNA	59		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-36683-A-10-E MS
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214600

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFDA	*76*		*25 - 150*
13C2 PFUnA	*66*		*25 - 150*
13C2 PFDoA	*64*		*25 - 150*
13C2-PFTeDA	*70*		*25 - 150*
13C3-PFBS	*87*		*25 - 150*
18O2 PFHxS	*83*		*25 - 150*
13C4 PFOS	*61*		*25 - 150*
13C8 FOSA	*75*		*25 - 150*
d3-NMeFOSAA	*73*		*25 - 150*
d5-NEtFOSAA	*60*		*25 - 150*
M2-6:2FTS	*89*		*25 - 150*
M2-8:2FTS	*74*		*25 - 150*

Lab Sample ID: 320-36683-A-10-F MSD
Matrix: Solid
Analysis Batch: 215311

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.00012	J B	0.00202	0.00194		mg/Kg	☼	90	81 - 133	6	30
Perfluoropentanoic acid (PFPeA)	0.00013	J	0.00202	0.00192		mg/Kg	☼	88	79 - 120	6	30
Perfluorohexanoic acid (PFHxA)	0.00049		0.00202	0.00226		mg/Kg	☼	87	75 - 125	7	30
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00202	0.00198		mg/Kg	☼	89	76 - 124	2	30
Perfluorooctanoic acid (PFOA)	0.0013	F1	0.00202	0.00263	F1	mg/Kg	☼	66	76 - 121	12	30
Perfluorononanoic acid (PFNA)	0.015		0.00202	0.0144	4	mg/Kg	☼	-48	74 - 126	20	30
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00202	0.00210		mg/Kg	☼	99	74 - 124	1	30
Perfluoroundecanoic acid (PFUnA)	0.000040	J	0.00202	0.00167		mg/Kg	☼	81	74 - 114	15	30
Perfluorododecanoic acid (PFDoA)	0.000068	U	0.00202	0.00183		mg/Kg	☼	90	75 - 123	9	30
Perfluorotridecanoic Acid (PFTriA)	0.000052	U	0.00202	0.00196		mg/Kg	☼	97	43 - 116	6	30
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00202	0.00176		mg/Kg	☼	87	22 - 129	15	30
Perfluorobutanesulfonic acid (PFBS)	0.00013	J	0.00178	0.00172		mg/Kg	☼	89	73 - 142	6	30
Perfluorohexanesulfonic acid (PFHxS)	0.0067	F1 F2	0.00184	0.00593	F1 F2	mg/Kg	☼	-43	75 - 121	33	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.0049	F1	0.00192	0.00564	F1	mg/Kg	☼	41	78 - 146	20	30
Perfluorodecanesulfonic acid (PFDS)	0.000040	U F1	0.00195	0.00220		mg/Kg	☼	113	54 - 113	8	30
Perfluorooctane Sulfonamide (FOSA)	0.000083	U	0.00202	0.00186		mg/Kg	☼	92	62 - 135	8	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.00202	0.00182	J	mg/Kg	☼	90	65 - 135	9	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.00202	0.00183	J	mg/Kg	☼	91	65 - 135	11	30
6:2FTS	0.0045	B F1	0.00191	0.00488	F1	mg/Kg	☼	22	65 - 135	16	30
8:2FTS	0.00051	J	0.00193	0.00219		mg/Kg	☼	87	65 - 135	3	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA	78		25 - 150
13C5 PFPeA	78		25 - 150
13C2 PFHxA	72		25 - 150
13C4-PFHpA	78		25 - 150
13C4 PFOA	74		25 - 150
13C5 PFNA	55		25 - 150
13C2 PFDA	67		25 - 150
13C2 PFUnA	63		25 - 150
13C2 PFDoA	59		25 - 150
13C2-PFTeDA	66		25 - 150
13C3-PFBS	76		25 - 150
18O2 PFHxS	76		25 - 150
13C4 PFOS	58		25 - 150
13C8 FOSA	68		25 - 150
d3-NMeFOSAA	66		25 - 150
d5-NEtFOSAA	55		25 - 150
M2-6:2FTS	76		25 - 150
M2-8:2FTS	65		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Lab Sample ID: 320-36683-A-10-E MS
Matrix: Solid
Analysis Batch: 215399

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	D	0.00191	0.269	4	mg/Kg	☼	-2570	69 - 131		

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFOS - DL	69	*	25 - 150

Lab Sample ID: 320-36683-A-10-F MSD
Matrix: Solid
Analysis Batch: 215399

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 214600

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid (PFOS) - DL	0.32	D	0.00187	0.219	4	mg/Kg	☼	-5256	69 - 131	20	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFOS - DL	67	*	25 - 150

Qualifiers

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
*	ISTD response or retention time outside acceptable limits
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Prep Batch: 214600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36956-1 - DL	SB042 (0-2")	Total/NA	Solid	SHAKE	
320-36956-1	SB042 (0-2")	Total/NA	Solid	SHAKE	
MB 320-214600/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-214600/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-36683-A-10-E MS	Matrix Spike	Total/NA	Solid	SHAKE	
320-36683-A-10-E MS - DL	Matrix Spike	Total/NA	Solid	SHAKE	
320-36683-A-10-F MSD	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	
320-36683-A-10-F MSD - DL	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	

Analysis Batch: 215311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36956-1	SB042 (0-2")	Total/NA	Solid	537 (modified)	214600
MB 320-214600/1-A	Method Blank	Total/NA	Solid	537 (modified)	214600
LCS 320-214600/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	214600
320-36683-A-10-E MS	Matrix Spike	Total/NA	Solid	537 (modified)	214600
320-36683-A-10-F MSD	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	214600

Analysis Batch: 215399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36956-1 - DL	SB042 (0-2")	Total/NA	Solid	537 (modified)	214600
320-36683-A-10-E MS - DL	Matrix Spike	Total/NA	Solid	537 (modified)	214600
320-36683-A-10-F MSD - DL	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	214600

General Chemistry

Analysis Batch: 213794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-36956-1	SB042 (0-2")	Total/NA	Solid	D 2216	
320-37017-A-4 DU	Duplicate	Total/NA	Solid	D 2216	

Client Sample ID: SB042 (0-2")

Lab Sample ID: 320-36956-1

Date Collected: 03/09/18 13:20

Matrix: Solid

Date Received: 03/10/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	213794	03/19/18 16:34	TCS	TAL SAC

Client Sample ID: SB042 (0-2")

Lab Sample ID: 320-36956-1

Date Collected: 03/09/18 13:20

Matrix: Solid

Date Received: 03/10/18 09:30

Percent Solids: 91.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	215311	03/29/18 01:13	CBW	TAL SAC
Total/NA	Prep	SHAKE	DL		214600	03/23/18 15:02	TWL	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100	215399	03/29/18 09:51	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-36956-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
Arizona	State Program	9	AZ0708	08-11-18
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-18
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-18 *
Kansas	NELAP	7	E-10375	10-31-18
L-A-B	DoD ELAP		L2468	01-20-21
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-14-18
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-18
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	04-01-18
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-18 *
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	07-31-18
USDA	Federal		P330-11-00436	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS	#	PFNA	#	PFOS	#	PFOSA	#	M282FTS	#	PFDA	#	PFUnA	#	PFDoA	#
SB042 (0-2") DL	320-36956-1 DL	134	*	52	*	60	*	61	*	97	*	52	*	59	*	50	*

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
	MB 320-214600/1-A	79	83	77	82	82	82	78	77
	LCS 320-214600/2-A	83	85	85	81	86	86	83	79
	320-36683-A-10-E MS	87	89	87	82	88	83	89	81
	320-36683-A-10-F MSD	78	78	76	72	78	76	76	74

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
	MB 320-214600/1-A	72	80	73	71	74	59	57	65
	LCS 320-214600/2-A	78	82	83	70	71	59	54	69
	320-36683-A-10-E MS	59	61	75	74	76	73	60	66
	320-36683-A-10-F MSD	55	58	68	65	67	66	55	63

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
	MB 320-214600/1-A	63	68
	LCS 320-214600/2-A	66	70
	320-36683-A-10-E MS	64	70
	320-36683-A-10-F MSD	59	66

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB042 (0-2")	320-36956-1	76	88	85	75	77	79	68	27

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	d3NMFOS #	d5NEFOS #	PFDoA #	PFTDA #
SB042 (0-2")	320-36956-1	80	33	64	64

	QC LIMITS
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS	#
	320-36683-A-10-E MS DL	69	*
	320-36683-A-10-F MSD DL	67	*

	QC LIMITS
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_008.d

Lab ID: LCS 320-214600/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00200	0.00192	96	81-133	
Perfluoropentanoic acid (PFPeA)	0.00200	0.00184	92	79-120	
Perfluorohexanoic acid (PFHxA)	0.00200	0.00182	91	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00184	92	76-124	
Perfluorooctanoic acid (PFOA)	0.00200	0.00190	95	76-121	
Perfluorononanoic acid (PFNA)	0.00200	0.00195	97	74-126	
Perfluorodecanoic acid (PFDA)	0.00200	0.00203	101	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00167	83	74-114	
Perfluorododecanoic acid (PFDoA)	0.00200	0.00195	97	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00187	93	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00184	92	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00161	91	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00157	86	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00170	89	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00181	97	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00169	88	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00178	89	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00200	100	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00196 J	98	65-135	
6:2FTS	0.00190	0.00181 J	96	65-135	
8:2FTS	0.00192	0.00191 J	99	65-135	
13C4 PFBA	0.00500	0.00415	83	25-150	
13C5 PFPeA	0.00500	0.00425	85	25-150	
13C2 PFHxA	0.00500	0.00406	81	25-150	
13C4-PFHpA	0.00500	0.00429	86	25-150	
13C4 PFOA	0.00500	0.00397	79	25-150	
13C5 PFNA	0.00500	0.00392	78	25-150	
13C2 PFDA	0.00500	0.00356	71	25-150	
13C2 PFUnA	0.00500	0.00346	69	25-150	
13C2 PFDoA	0.00500	0.00332	66	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_008.d

Lab ID: LCS 320-214600/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00500	0.00348	70	25-150	
13C3-PFBS	0.00465	0.00394	85	25-150	
18O2 PFHxS	0.00473	0.00408	86	25-150	
13C4 PFOS	0.00478	0.00393	82	25-150	
13C8 FOSA	0.00500	0.00417	83	25-150	
d3-NMeFOSAA	0.00500	0.00295	59	25-150	
d5-NEtFOSAA	0.00500	0.00268	54	25-150	
M2-6:2FTS	0.00475	0.00395	83	25-150	
M2-8:2FTS	0.00479	0.00335	70	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_022.d

Lab ID: 320-36683-A-10-E MS Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00205	0.00012 J	0.00207	95	81-133	
Perfluoropentanoic acid (PFPeA)	0.00205	0.00013 J	0.00204	93	79-120	
Perfluorohexanoic acid (PFHxA)	0.00205	0.00049	0.00241	93	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00205	0.00018 J	0.00201	89	76-124	
Perfluorooctanoic acid (PFOA)	0.00205	0.0013	0.00297	82	76-121	
Perfluorononanoic acid (PFNA)	0.00205	0.015	0.0176	107	74-126	4
Perfluorodecanoic acid (PFDA)	0.00205	0.00010 J	0.00213	98	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00205	0.000040 J	0.00193	92	74-114	
Perfluorododecanoic acid (PFDoA)	0.00205	0.000068 U	0.00200	97	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00205	0.000052 U	0.00208	101	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00205	0.000055 U	0.00205	100	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00182	0.00013 J	0.00183	94	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00187	0.0067	0.00828	83	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00196	0.0049	0.00692	106	78-146	
Perfluorodecanesulfonic acid (PFDS)	0.00198	0.000040 U	0.00239	121	54-113	F1
Perfluorooctane Sulfonamide (FOSA)	0.00205	0.000083 U	0.00201	98	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00205	0.00040 U	0.00199 J	97	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00205	0.00037 U	0.00205 J	100	65-135	
6:2FTS	0.00195	0.0045	0.00570	64	65-135	F1
8:2FTS	0.00197	0.00051 J	0.00225	89	65-135	
13C4 PFBA	0.00514	0.0034	0.00445	87	25-150	
13C5 PFPeA	0.00514	0.0035	0.00456	89	25-150	
13C2 PFHxA	0.00514	0.0034	0.00422	82	25-150	
13C4-PFHpA	0.00514	0.0035	0.00453	88	25-150	
13C4 PFOA	0.00514	0.0032	0.00414	81	25-150	
13C5 PFNA	0.00514	0.0024	0.00305	59	25-150	
13C2 PFDA	0.00514	0.0031	0.00391	76	25-150	
13C2 PFUnA	0.00514	0.0027	0.00340	66	25-150	
13C2 PFDoA	0.00514	0.0026	0.00329	64	25-150	
13C2-PFTeDA	0.00514	0.0028	0.00359	70	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_022.d

Lab ID: 320-36683-A-10-E MS Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
13C3-PFBS	0.00478	0.0032	0.00417	87	25-150	
18O2 PFHxS	0.00486	0.0032	0.00404	83	25-150	
13C4 PFOS	0.00491	0.0022	0.00301	61	25-150	
13C8 FOSA	0.00514	0.0029	0.00385	75	25-150	
d3-NMeFOSAA	0.00514	0.0025	0.00374	73	25-150	
d5-NEtFOSAA	0.00514	0.0024	0.00309	60	25-150	
M2-6:2FTS	0.00488	0.0033	0.00435	89	25-150	
M2-8:2FTS	0.00492	0.0028	0.00366	74	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.29LLA_010.d

Lab ID: 320-36683-A-10-E MS DL Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.00191	0.32	0.269	-2570	69-131	4
13C4 PFOS	0.00491	0.0027	0.00338	69	25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_023.d

Lab ID: 320-36683-A-10-F MSD Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00202	0.00194	90	6	30	81-133	
Perfluoropentanoic acid (PFPeA)	0.00202	0.00192	88	6	30	79-120	
Perfluorohexanoic acid (PFHxA)	0.00202	0.00226	87	7	30	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00202	0.00198	89	2	30	76-124	
Perfluorooctanoic acid (PFOA)	0.00202	0.00263	66	12	30	76-121	F1
Perfluorononanoic acid (PFNA)	0.00202	0.0144	-48	20	30	74-126	4
Perfluorodecanoic acid (PFDA)	0.00202	0.00210	99	1	30	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00202	0.00167	81	15	30	74-114	
Perfluorododecanoic acid (PFDoA)	0.00202	0.00183	90	9	30	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00202	0.00196	97	6	30	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00202	0.00176	87	15	30	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00178	0.00172	89	6	30	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00184	0.00593	-43	33	30	75-121	F1 F2
Perfluoroheptanesulfonic Acid (PFHpS)	0.00192	0.00564	41	20	30	78-146	F1
Perfluorodecanesulfonic acid (PFDS)	0.00195	0.00220	113	8	30	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00202	0.00186	92	8	30	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00202	0.00182 J	90	9	30	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00202	0.00183 J	91	11	30	65-135	
6:2FTS	0.00191	0.00488	22	16	30	65-135	F1
8:2FTS	0.00193	0.00219	87	3	30	65-135	
13C4 PFBA	0.00505	0.00392	78			25-150	
13C5 PFPeA	0.00505	0.00394	78			25-150	
13C2 PFHxA	0.00505	0.00363	72			25-150	
13C4-PFHpA	0.00505	0.00395	78			25-150	
13C4 PFOA	0.00505	0.00375	74			25-150	
13C5 PFNA	0.00505	0.00279	55			25-150	
13C2 PFDA	0.00505	0.00339	67			25-150	
13C2 PFUnA	0.00505	0.00316	63			25-150	
13C2 PFDoA	0.00505	0.00299	59			25-150	
13C2-PFTeDA	0.00505	0.00331	66			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.28LLFF_023.d

Lab ID: 320-36683-A-10-F MSD Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C3-PFBS	0.00469	0.00356	76			25-150	
18O2 PFHxS	0.00477	0.00365	76			25-150	
13C4 PFOS	0.00482	0.00281	58			25-150	
13C8 FOSA	0.00505	0.00344	68			25-150	
d3-NMeFOSAA	0.00505	0.00333	66			25-150	
d5-NEtFOSAA	0.00505	0.00279	55			25-150	
M2-6:2FTS	0.00479	0.00363	76			25-150	
M2-8:2FTS	0.00483	0.00312	65			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.03.29LLA_011.d

Lab ID: 320-36683-A-10-F MSD DL Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	0.00187	0.219	-5256	20	30	69-131	4
13C4 PFOS	0.00482	0.00322	67			25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab File ID: 2018.03.28LLFF_007.d Lab Sample ID: MB 320-214600/1-A

Matrix: Solid Date Extracted: 03/23/2018 15:02

Instrument ID: A8_N Date Analyzed: 03/29/2018 00:10

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-214600/2-A	2018.03.28LLFF_008.d	03/29/2018 00:18
SB042 (0-2")	320-36956-1	2018.03.28LLFF_015.d	03/29/2018 01:13
	320-36683-A-10-E MS	2018.03.28LLFF_022.d	03/29/2018 02:07
	320-36683-A-10-F MSD	2018.03.28LLFF_023.d	03/29/2018 02:15
	320-36683-A-10-E MS DL	2018.03.29LLA_010.d	03/29/2018 09:35
	320-36683-A-10-F MSD DL	2018.03.29LLA_011.d	03/29/2018 09:43
SB042 (0-2") DL	320-36956-1 DL	2018.03.29LLA_012.d	03/29/2018 09:51

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Sample No.: IC 320-214175/5 Date Analyzed: 03/21/2018 18:47

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.21LLICALAX_ Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		5311138	2.70				
UPPER LIMIT		7966707	2.90				
LOWER LIMIT		2655569	2.50				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-214175/9		5094636	2.69				
ICV 320-214175/10		5042269	2.70				
CCV 320-215311/3 CCVIS		4749284	2.70				
CCV 320-215399/3 CCVIS		4856254	2.67				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Sample No.: CCV 320-215311/3 Date Analyzed: 03/29/2018 00:02

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.28LLFF_006. Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4749284	2.70				
UPPER LIMIT		7123926	2.90				
LOWER LIMIT		2374642	2.50				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-215311/1		4759356	2.70				
CCVL 320-215311/2		4782622	2.70				
MB 320-214600/1-A		5707612	2.70				
LCS 320-214600/2-A		5062517	2.70				
320-36956-1	SB042 (0-2")	4936850	2.70				
CCV 320-215311/14		4518281	2.71				
320-36683-A-10-E MS		4882236	2.70				
320-36683-A-10-F MSD		5429069	2.70				
CCV 320-215311/23		4632500	2.71				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Sample No.: CCV 320-215399/3 Date Analyzed: 03/29/2018 09:03

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.29LLA_006.d Heated Purge: (Y/N) N

Calibration ID: 38241

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4856254	2.67				
UPPER LIMIT		7284381	2.87				
LOWER LIMIT		2428127	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-215399/1		4752982	2.67				
CCVL 320-215399/2		4717799	2.67				
320-36683-A-10-E MS DL		121894*	2.68				
320-36683-A-10-F MSD DL		123449*	2.67				
320-36956-1 DL	SB042 (0-2") DL	61778*	2.67				
CCV 320-215399/10		4708999	2.68				

13PFOA = 13C2-PFOA
13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: SB042 (0-2") | Lab Sample ID: 320-36956-1

Matrix: Solid | Lab File ID: 2018.03.28LLFF_015.d

Analysis Method: 537 (modified) | Date Collected: 03/09/2018 13:20

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.06(g) | Date Analyzed: 03/29/2018 01:13

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0016	B	0.00022	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.0031		0.00022	0.000083
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0048		0.00022	0.000046
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.0023		0.00022	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.013		0.00022	0.000093
307-55-1	Perfluorododecanoic acid (PFDoA)	0.014		0.00022	0.000073
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0045		0.00022	0.000059
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00060		0.00022	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.013		0.00022	0.000034
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.0034		0.00022	0.000042
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00051	J	0.0022	0.00042
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0040		0.0022	0.00040

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	76		25-150
STL01893	13C5 PFPeA	88		25-150
STL00993	13C2 PFHxA	75		25-150
STL01892	13C4-PFHpA	77		25-150
STL00990	13C4 PFOA	68		25-150
STL00998	13C2 PFDoA	64		25-150
STL02116	13C2-PFTeDA	64		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	79		25-150
STL00991	13C4 PFOS	27		25-150
STL02118	d3-NMeFOSAA	80		25-150
STL02117	d5-NEtFOSAA	33		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d
Lims ID: 320-36956-A-1-A
Client ID: SB042 (0-2")
Sample Type: Client
Inject. Date: 29-Mar-2018 01:13:04 ALS Bottle#: 22 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36956-A-1-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:05:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.438	1.435	0.003	1.000	1289348	0.7242			60.7	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.438	1.441	-0.003	0.533	4723881	1.89		75.6	47127	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.707	1.700	0.007	1.000	2359627	1.44			222	
D 3 13C5-PFPeA										
267.90 > 223.00	1.707	1.709	-0.002	0.632	3631731	2.19		87.6	29483	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.742	1.736	0.006	1.000	692870	0.2760			98.9	M
298.90 > 99.00	1.742	1.736	0.006	1.000	199342		3.48(1.25-3.74)		77.9	M
D 47 13C3-PFBS										
301.90 > 83.00	1.742	1.745	-0.003	0.645	75116	1.98		85.3	58.6	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.995	1.998	-0.003	1.000	3126561	2.22			752	
313.00 > 119.00	1.995	1.998	-0.003	1.000	291920		10.71(5.03-15.10)		950	
D 7 13C2 PFHxA										
315.00 > 270.00	1.995	2.009	-0.014	0.739	3446661	1.88		75.2	52398	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.326	2.328	-0.002	1.000	1534206	1.06			444	M
363.00 > 169.00	2.326	2.328	-0.002	1.000	630528		2.43(1.13-3.40)		991	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.339	2.341	-0.002	1.000	11763844	5.96			7964	
399.00 > 99.00	2.339	2.341	-0.002	1.000	3964631		2.97(1.50-4.49)		3559	
D 9 13C4-PFHpA										
367.00 > 322.00	2.326	2.354	-0.028	0.861	3496215	1.93		77.3	62198	
D 11 18O2 PFHxS										
403.00 > 84.00	2.339	2.368	-0.029	0.866	4196488	1.88		79.5	74901	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.677	2.673	0.004	1.000	49684009	73.4			11242	E
* 62 13C2-PFOA										
415.00 > 370.00	2.701	2.697	0.004		4936850	2.50			84524	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.701	2.697	0.004	1.000	8860427	6.20			3504	
413.00 > 169.00	2.701	2.697	0.004	1.000	4669440		1.90(0.84-2.52)		5576	
D 12 M2-6:2FTS										
429.00 > 81.00	2.677	2.697	-0.020	0.991	921693	2.46		103	1375	
16 Perfluoroheptanesulfonic acid										EM
449.00 > 80.00	2.709	2.705	0.005	1.000	6816112	12.0			1521	E
449.00 > 99.00	2.709	2.705	0.005	1.000	1859990		3.66(1.94-5.82)		2314	M
D 14 13C4 PFOA										
417.00 > 372.00	2.701	2.721	-0.020	1.000	3163460	1.71		68.4	58114	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.070	3.072	-0.002	1.000	241252301	487.0			24723	E
499.00 > 99.00	3.070	3.072	-0.002	1.000	87597531		2.75(2.31-6.93)		385655	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.077	3.072	0.005	1.000	52945990	113.2			47238	E
463.00 > 169.00	3.077	3.072	0.005	1.000	17522282		3.02(1.90-5.69)		118692	
D 19 13C5 PFNA										
468.00 > 423.00	3.077	3.096	-0.019	1.139	1171932	0.7179		28.7	15589	
D 18 13C4 PFOS										
503.00 > 80.00	3.070	3.096	-0.026	1.137	1062776	0.6543		27.4	3730	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.404	3.407	-0.003	1.000	71874443	66.0			101	E
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.417	-0.013	1.260	2760348	1.26		50.4	47.8	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.431	3.426	0.005	1.003	86756531	99.7			125513	E
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.440	3.435	0.005	1.000	22952579	26.8			31540	E
513.00 > 169.00	3.440	3.435	0.005	1.000	4789860		4.79(2.36-7.09)		9938	
D 26 M2-8:2FTS										
529.00 > 81.00	3.422	3.453	-0.031	1.267	1633061	3.22		135	9580	
D 23 13C2 PFDA										
515.00 > 470.00	3.440	3.462	-0.022	1.274	2164756	1.51		60.5	38173	
28 N-methyl perfluorooctane sulfonami										M
570.00 > 419.00	3.597	3.590	0.007	1.003	141972	0.2360			196	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.587	3.611	-0.024	1.328	1502977	2.00		79.8	23062	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.746	3.748	-0.002	1.000	468537	1.55			16.4	
599.00 > 99.00	3.746	3.748	-0.002	1.000	184762		2.54(1.39-4.16)		83.1	
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.767	3.769	-0.002	1.000	85034028	155.3			189942	E
563.00 > 169.00	3.767	3.769	-0.002	1.000	34818019		2.44(2.12-6.36)		315881	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.767	3.769	-0.002	1.003	485965	1.86			117	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.757	3.779	-0.022	1.391	700870	0.8169		32.7	4905	
D 30 13C2 PFUnA										
565.00 > 520.00	3.767	3.790	-0.023	1.395	1587271	1.24		49.6	32794	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.060	4.057	0.003	1.000	6496807	6.68			3718	
613.00 > 169.00	4.060	4.057	0.003	1.000	1731093		3.75(2.13-6.40)		6981	
D 36 13C2 PFDoA										
615.00 > 570.00	4.060	4.089	-0.029	1.503	2322673	1.60		64.0	19912	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.324	4.318	0.006	1.000	47018413	46.0			16516	E
663.00 > 169.00	4.324	4.318	0.006	1.000	19493516		2.41(1.25-3.76)		61713	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.560	4.564	-0.004	1.000	584106	2.07			2799	
713.00 > 219.00	4.560	4.564	-0.004	1.000	418145		1.40(0.71-2.13)		2333	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.560	4.585	-0.025	1.688	2843146	1.60		64.1	22146	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

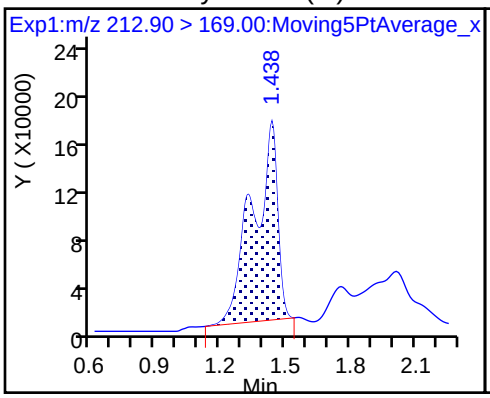
Report Date: 29-Mar-2018 09:09:28 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

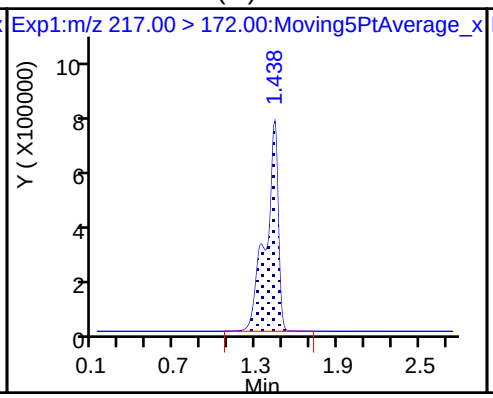
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d

Injection Date:	29-Mar-2018 01:13:04	Instrument ID:	A8_N		
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

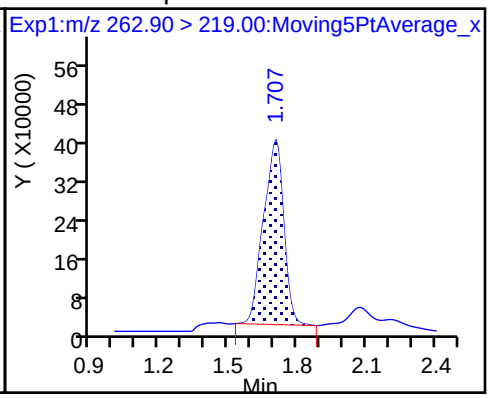
2 Perfluorobutyric acid (M)



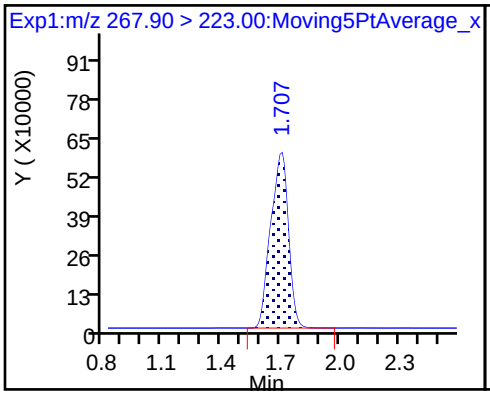
D 1 13C4 PFBA (M)



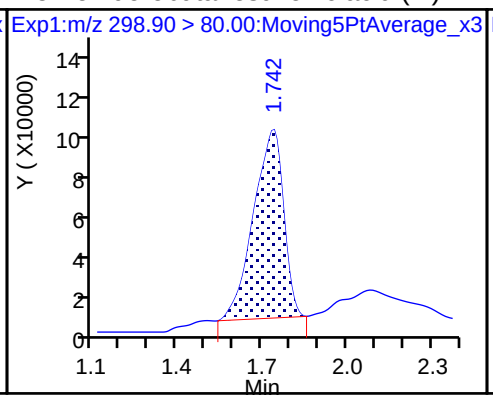
4 Perfluoropentanoic acid



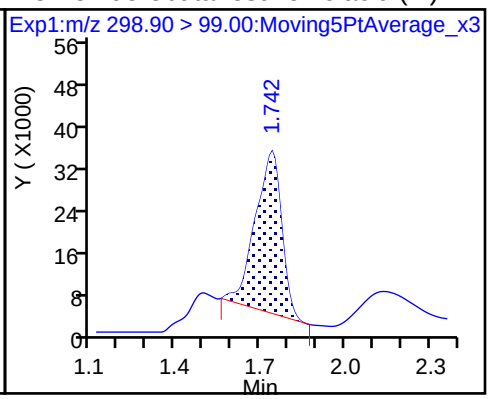
D 3 13C5-PFPeA



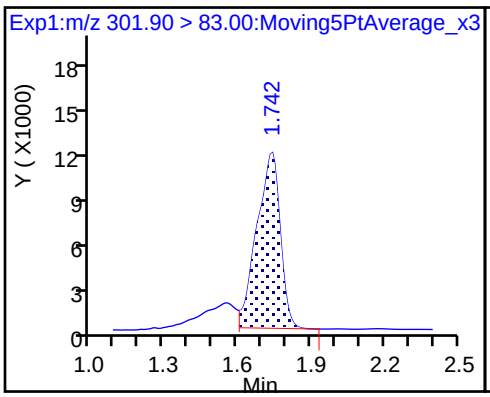
5 Perfluorobutanesulfonic acid (M)



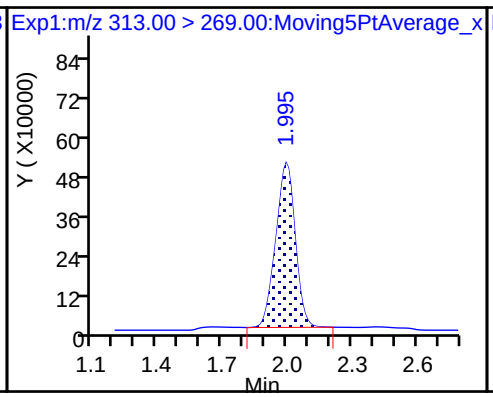
5 Perfluorobutanesulfonic acid (M)



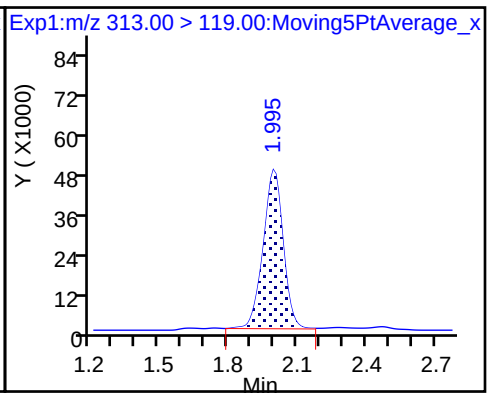
D 47 13C3-PFBS



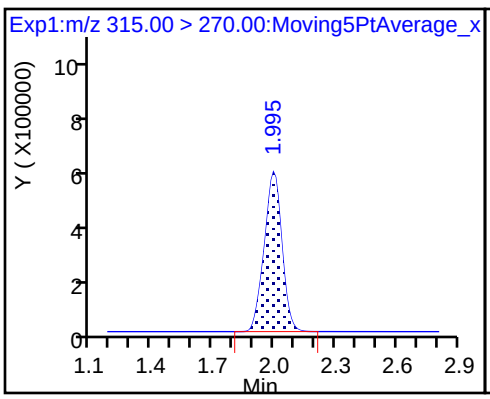
6 Perfluorohexanoic acid



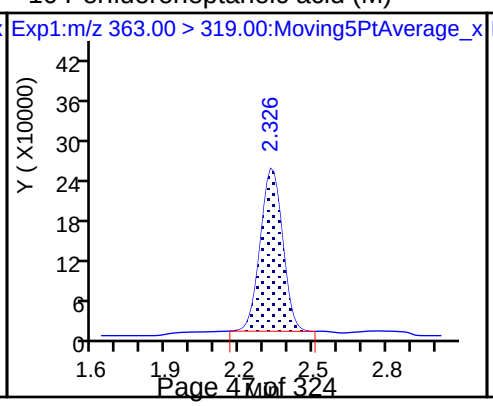
6 Perfluorohexanoic acid



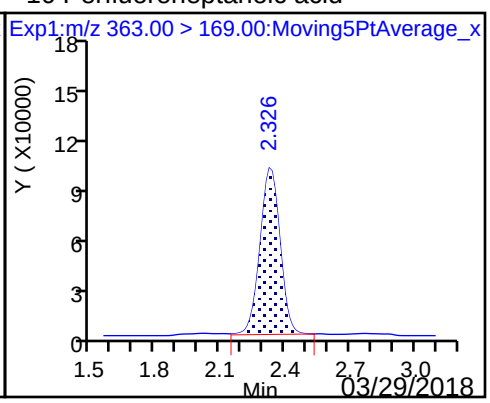
D 7 13C2 PFHxA



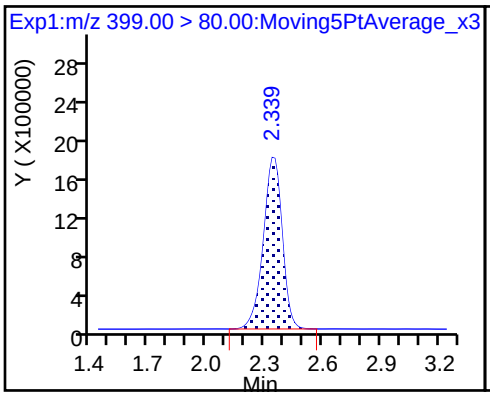
10 Perfluoroheptanoic acid (M)



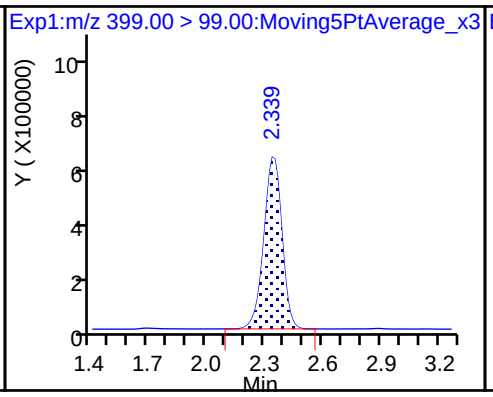
10 Perfluoroheptanoic acid



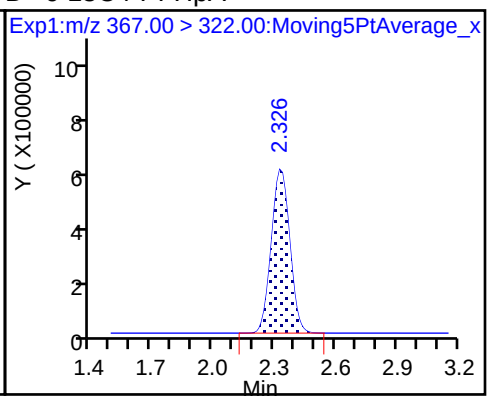
8 Perfluorohexanesulfonic acid



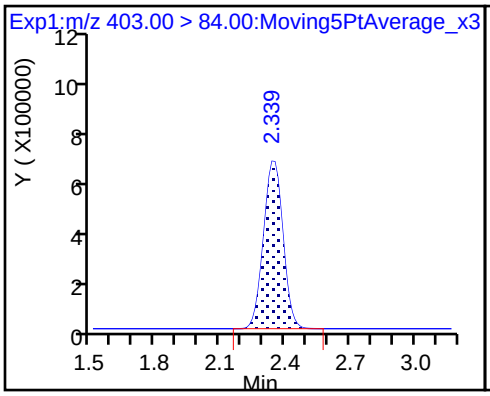
8 Perfluorohexanesulfonic acid



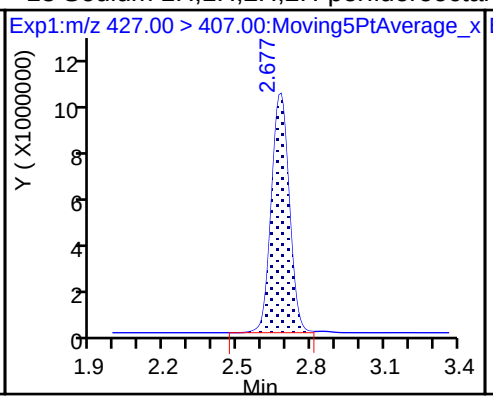
D 9 13C4-PFHpA



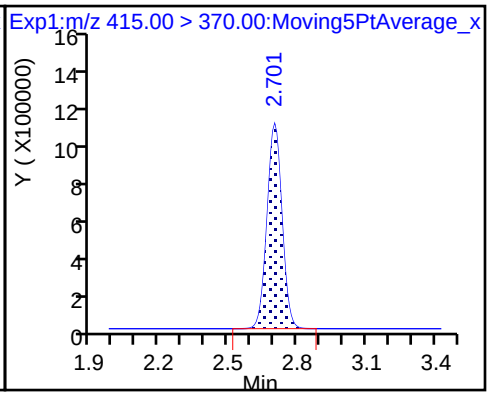
D 11 18O2 PFHxS



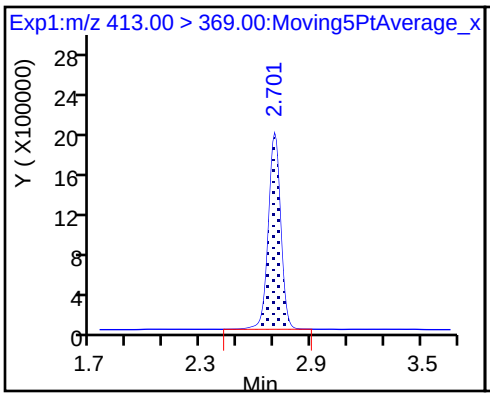
13 Sodium 1H,1H,2H,2H-perfluorooctane



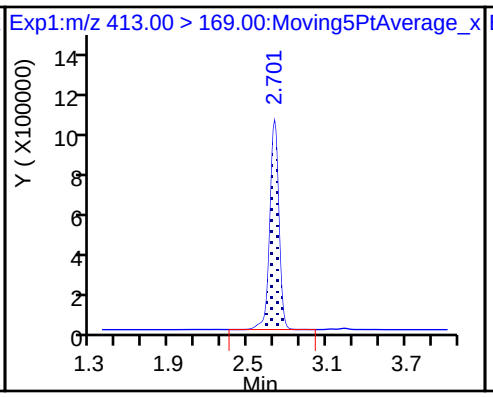
M2 6:2 13C2-PFOA



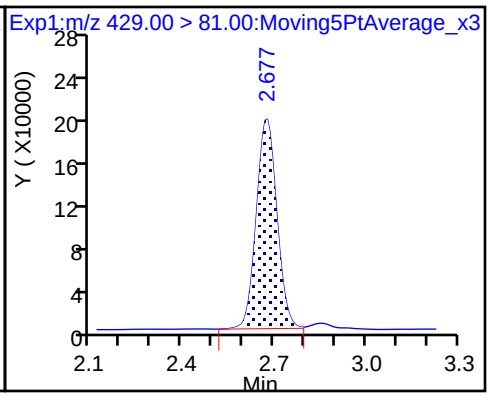
15 Perfluorooctanoic acid



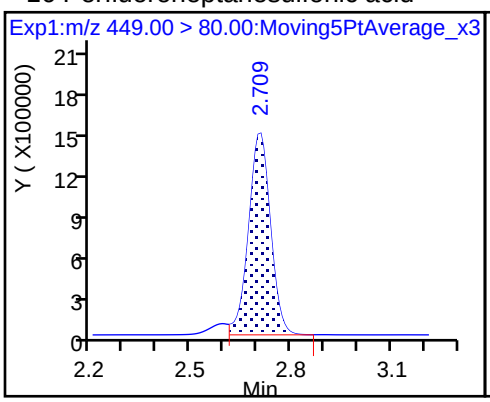
15 Perfluorooctanoic acid



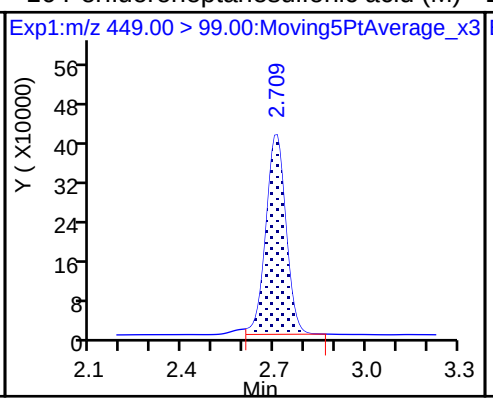
D 12 M2-6:2FTS



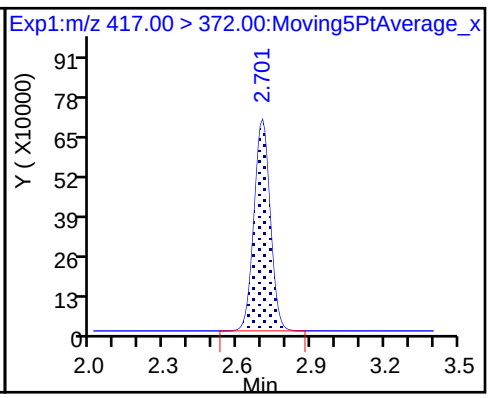
16 Perfluoroheptanesulfonic acid



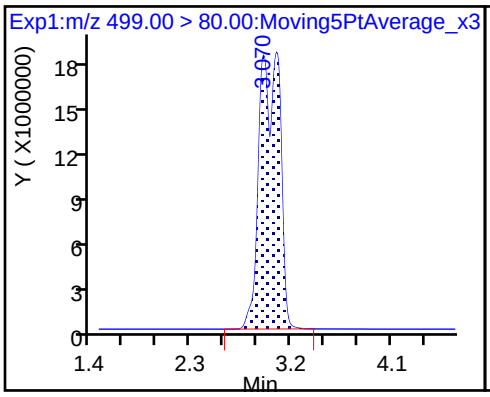
16 Perfluoroheptanesulfonic acid (M)



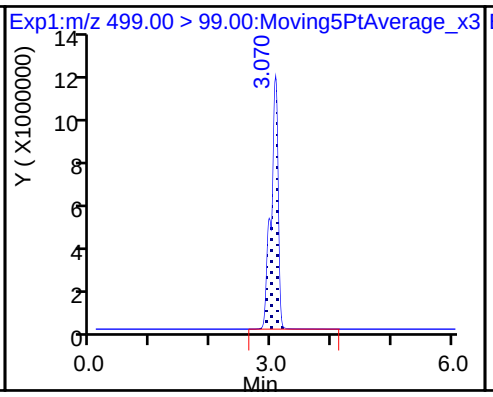
D 14 13C4 PFOA



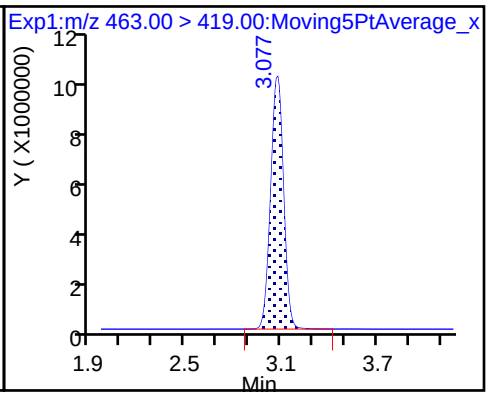
17 Perfluorooctane sulfonic acid



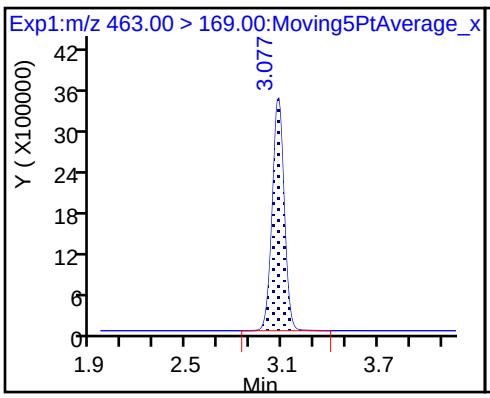
17 Perfluorooctane sulfonic acid



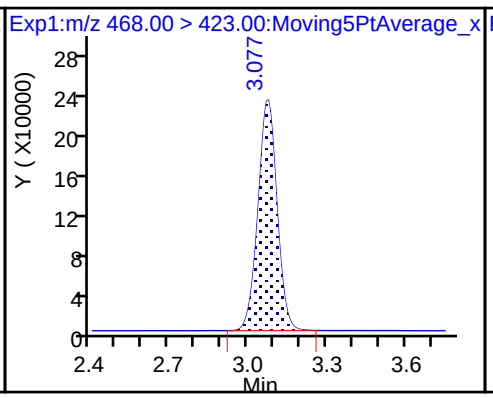
20 Perfluorononanoic acid



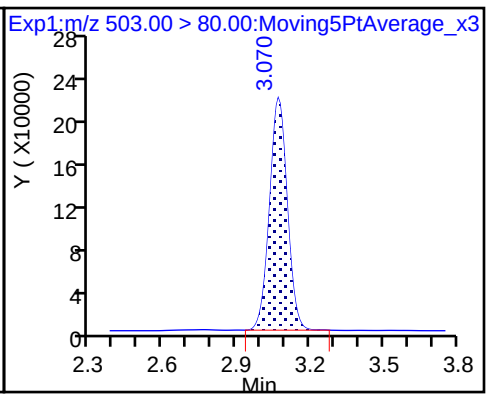
20 Perfluorononanoic acid



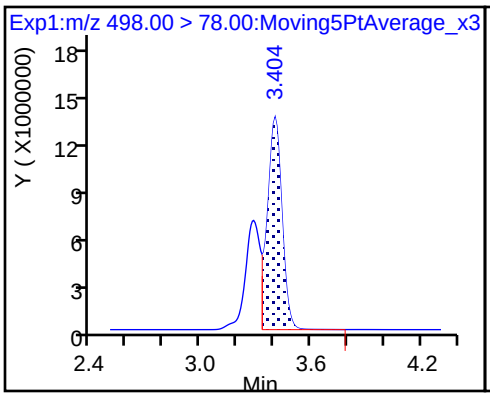
D 19 13C5 PFNA



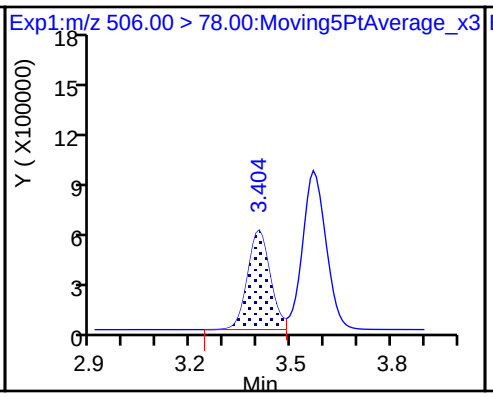
D 18 13C4 PFOS



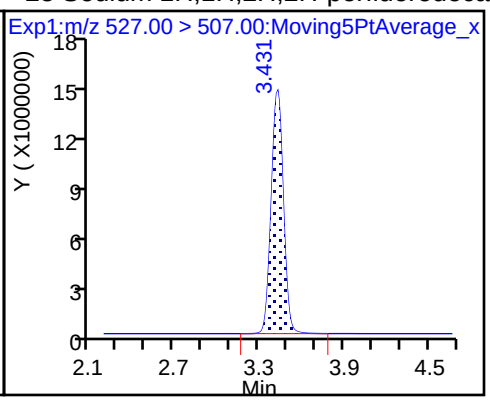
22 Perfluorooctane Sulfonamide



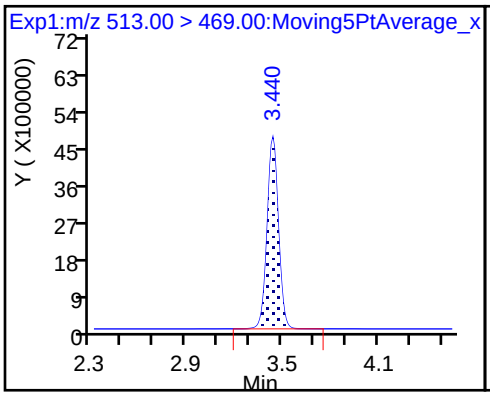
D 21 13C8 FOSA



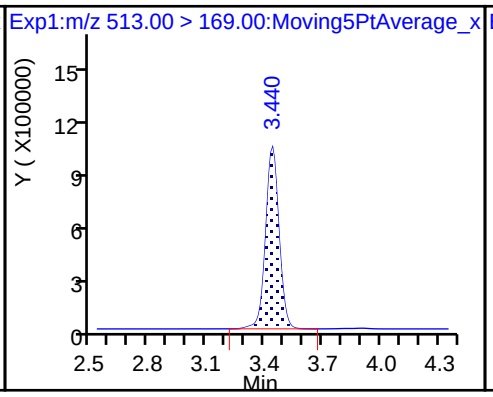
25 Sodium 1H,1H,2H,2H-perfluorodecane



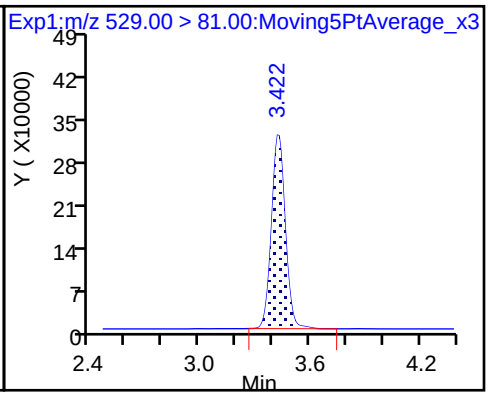
24 Perfluorodecanoic acid



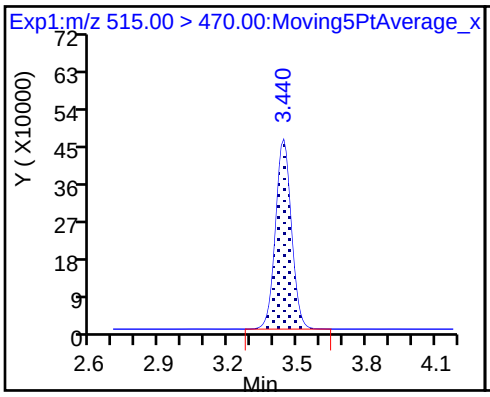
24 Perfluorodecanoic acid



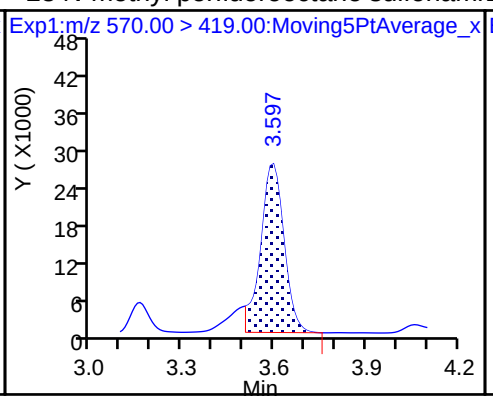
D 26 M2-8:2FTS



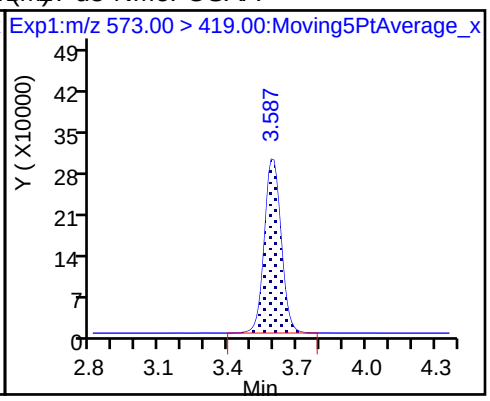
D 23 13C2 PFDA



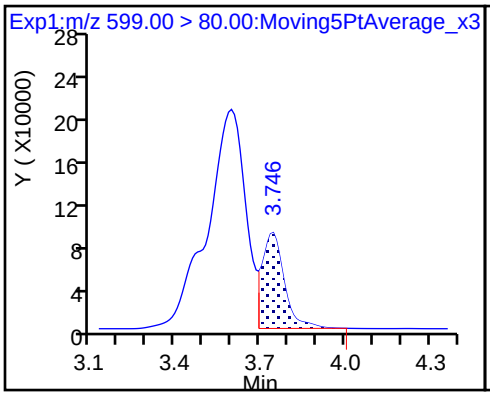
28 N-methyl perfluorooctane sulfonamid



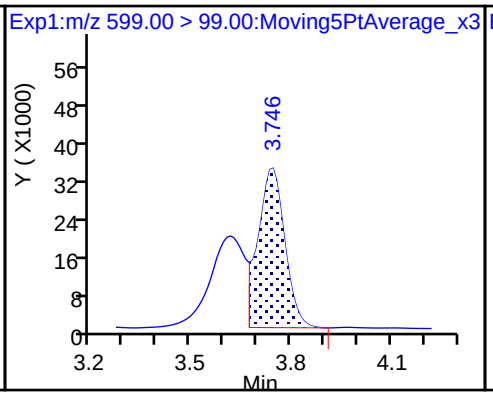
D 27 d3-NMeFOSAA



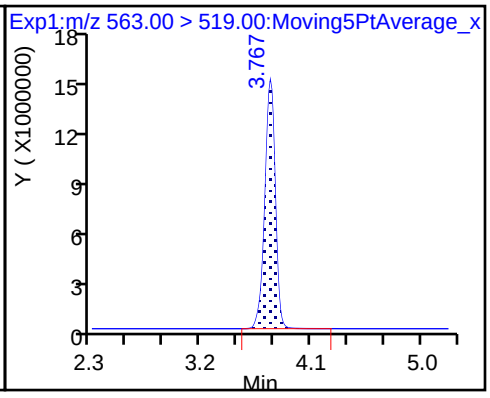
29 Perfluorodecane Sulfonic acid



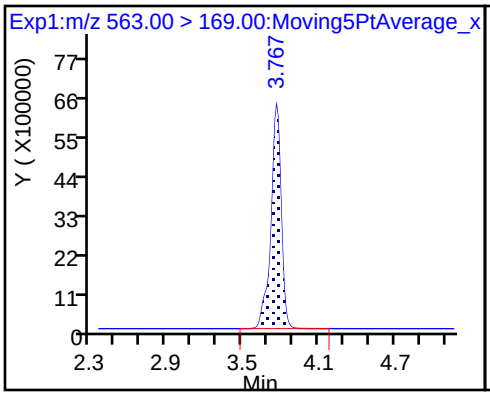
29 Perfluorodecane Sulfonic acid



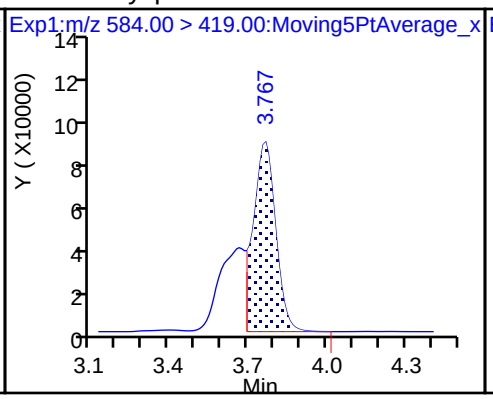
31 Perfluoroundecanoic acid



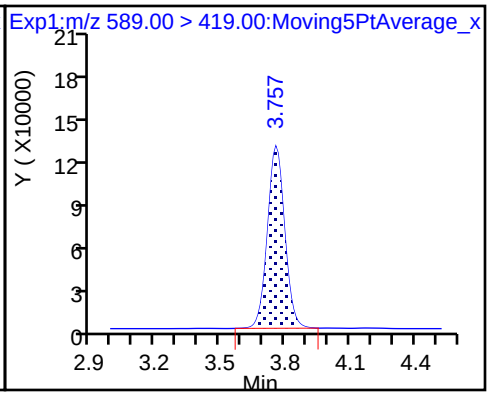
31 Perfluoroundecanoic acid



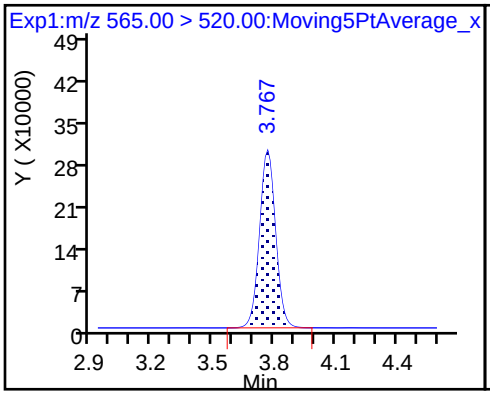
33 N-ethyl perfluorooctane sulfonamid



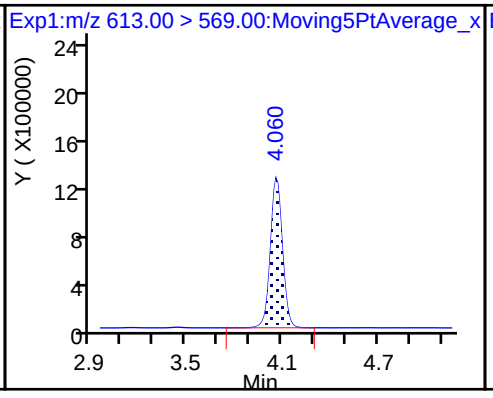
D 32 d5-NEtFOSAA



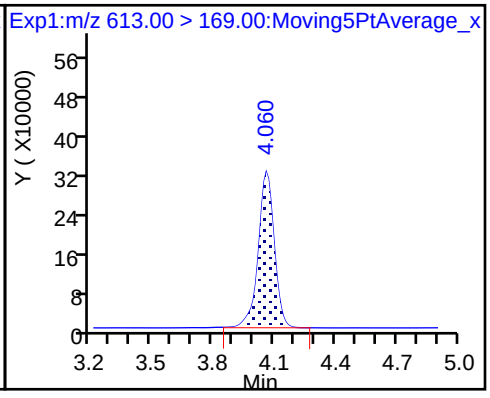
D 30 13C2 PFUnA



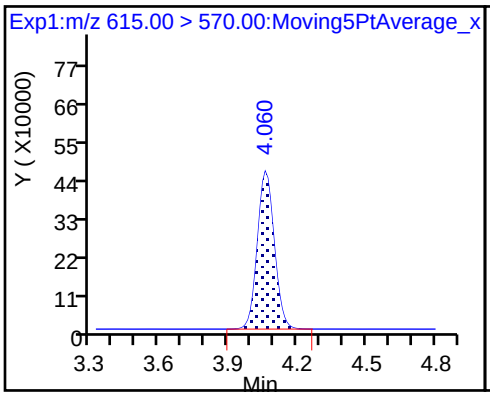
37 Perfluorododecanoic acid



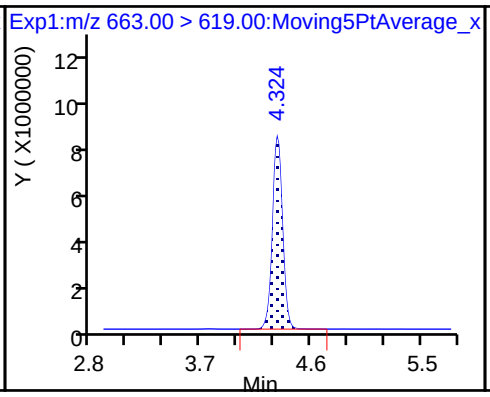
37 Perfluorododecanoic acid



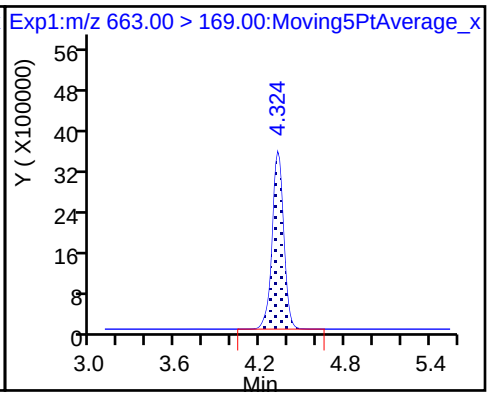
D 36 13C2 PFDoA



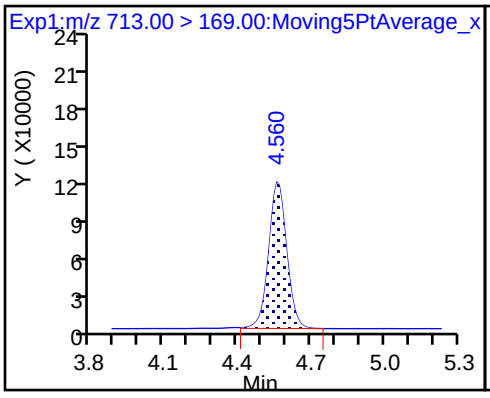
41 Perfluorotridecanoic acid



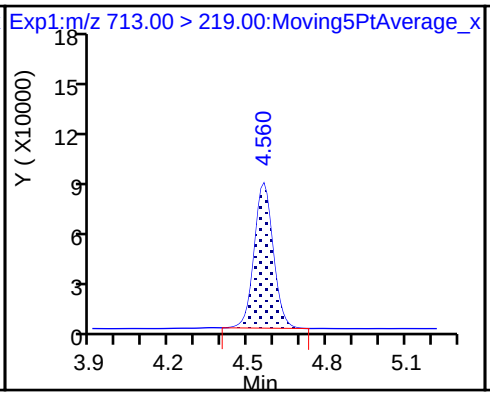
41 Perfluorotridecanoic acid



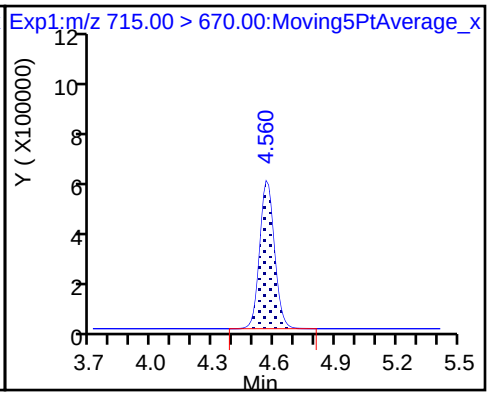
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d				
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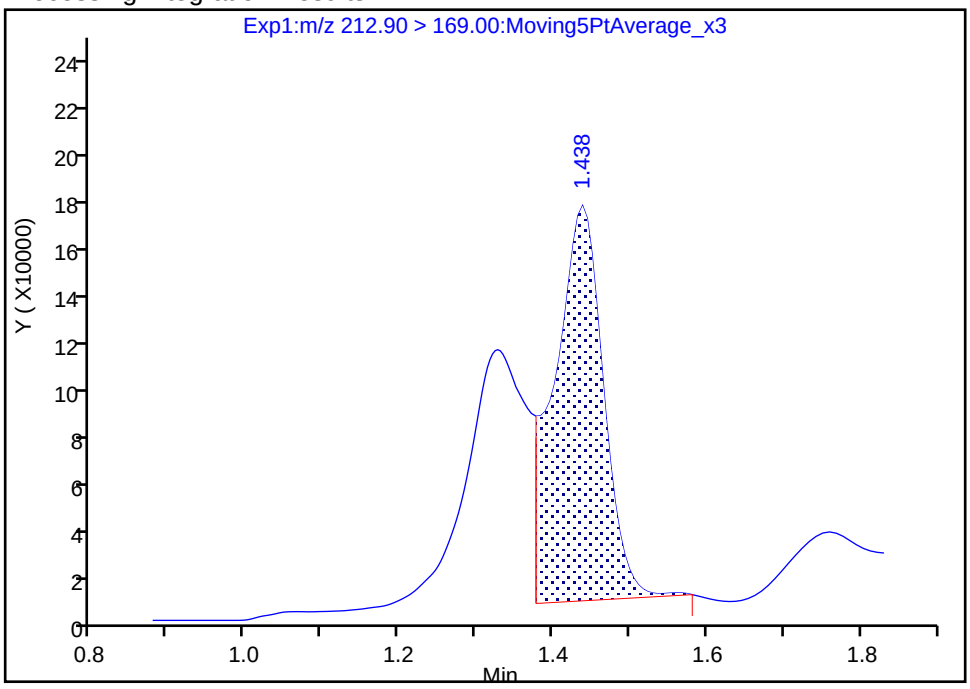
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

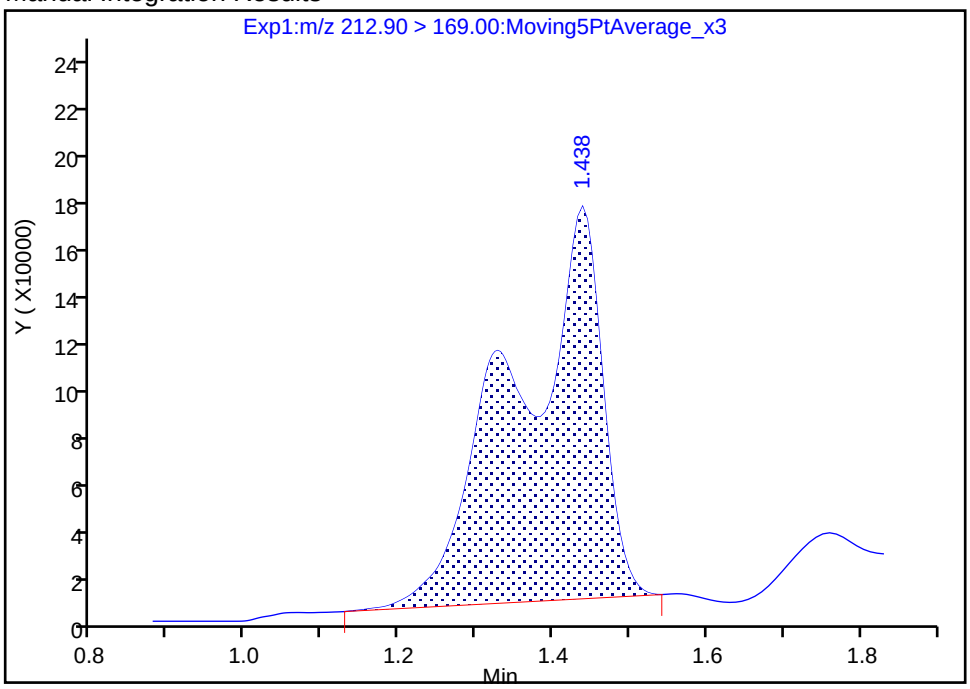
Processing Integration Results

RT: 1.44
Area: 725976
Amount: 0.587048
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 1289348
Amount: 0.724206
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:04:08

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

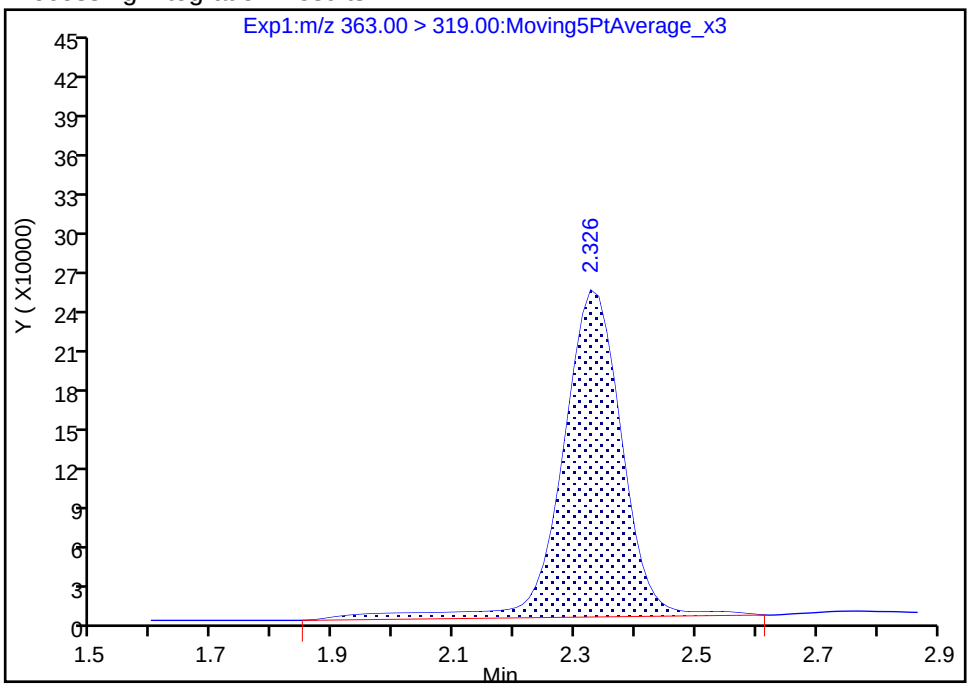
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d				
Injection Date:	29-Mar-2018 01:13:04	Instrument ID:	A8_N		
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

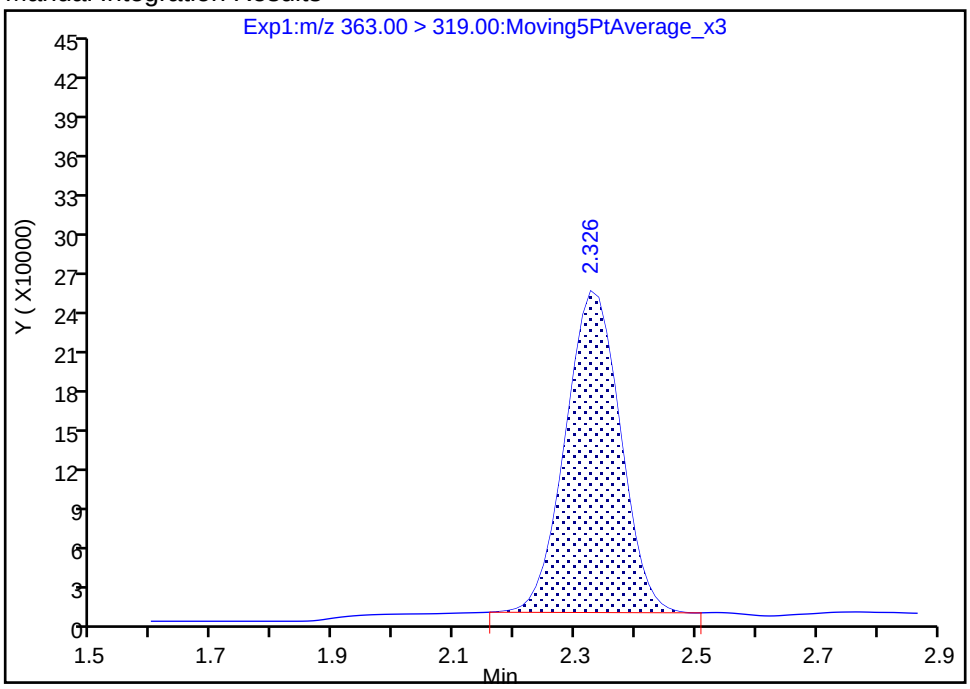
Processing Integration Results

RT: 2.33
Area: 1700655
Amount: 1.175544
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 1534206
Amount: 1.060489
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:04:32

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

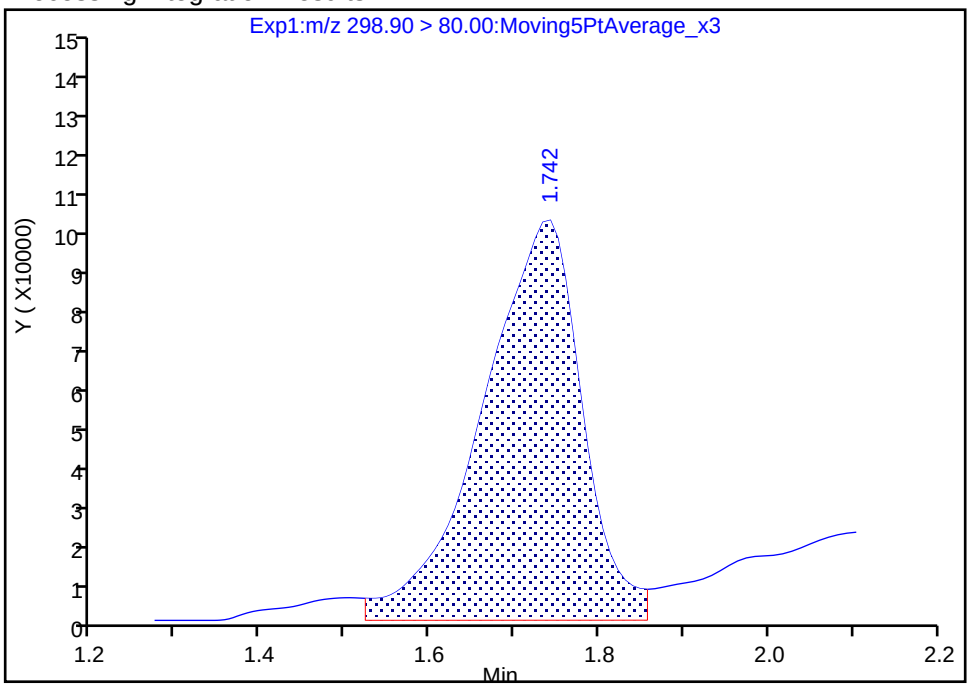
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d				
Injection Date:	29-Mar-2018 01:13:04	Instrument ID:	A8_N		
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

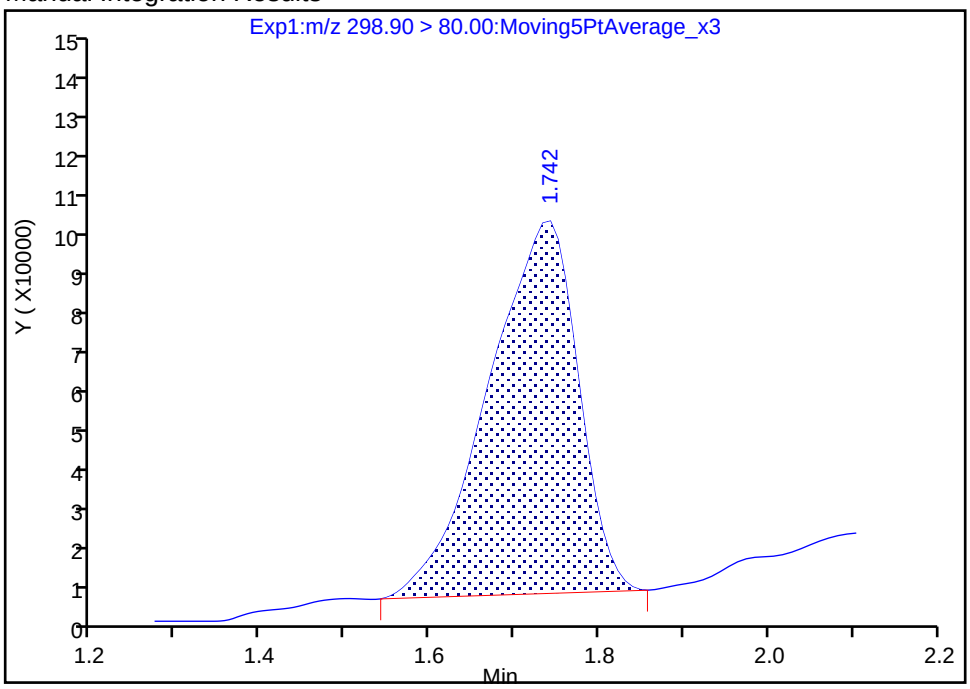
Processing Integration Results

RT: 1.74
Area: 825687
Amount: 0.328902
Amount Units: ng/ml



Manual Integration Results

RT: 1.74
Area: 692870
Amount: 0.275996
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:04:23

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

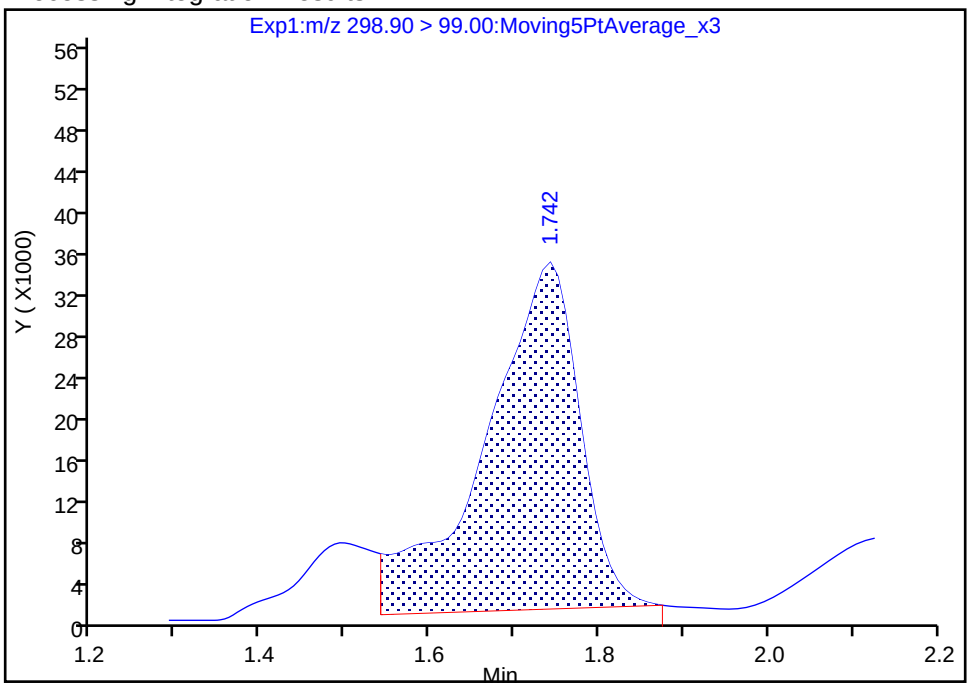
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d				
Injection Date:	29-Mar-2018 01:13:04	Instrument ID:	A8_N		
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

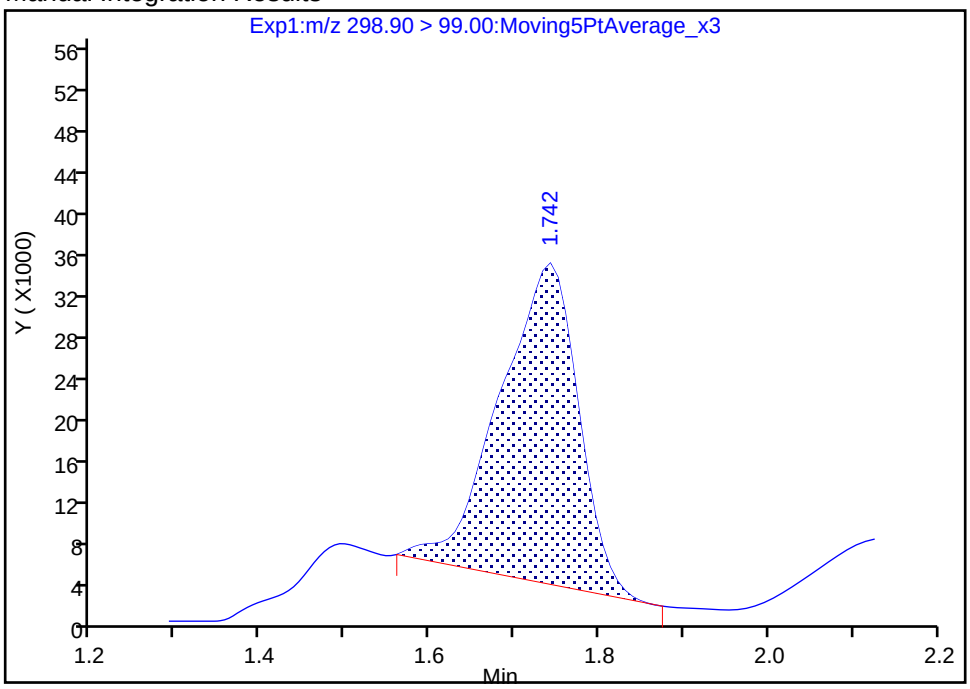
Processing Integration Results

RT: 1.74
Area: 261036
Amount: 0.328902
Amount Units: ng/ml



Manual Integration Results

RT: 1.74
Area: 199342
Amount: 0.275996
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:04:25

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

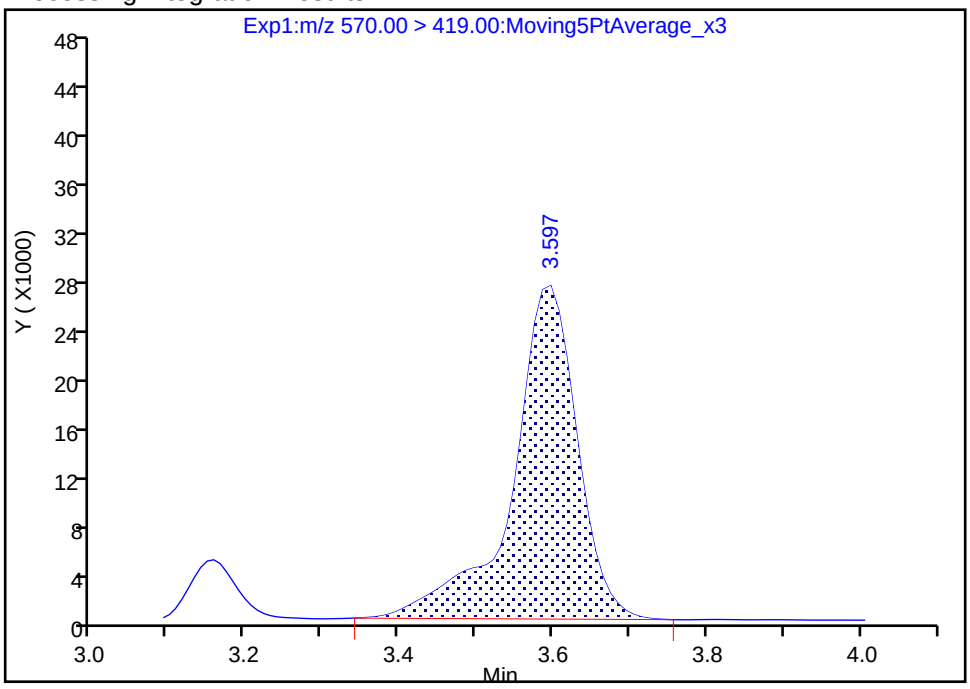
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d				
Injection Date:	29-Mar-2018 01:13:04	Instrument ID:	A8_N		
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

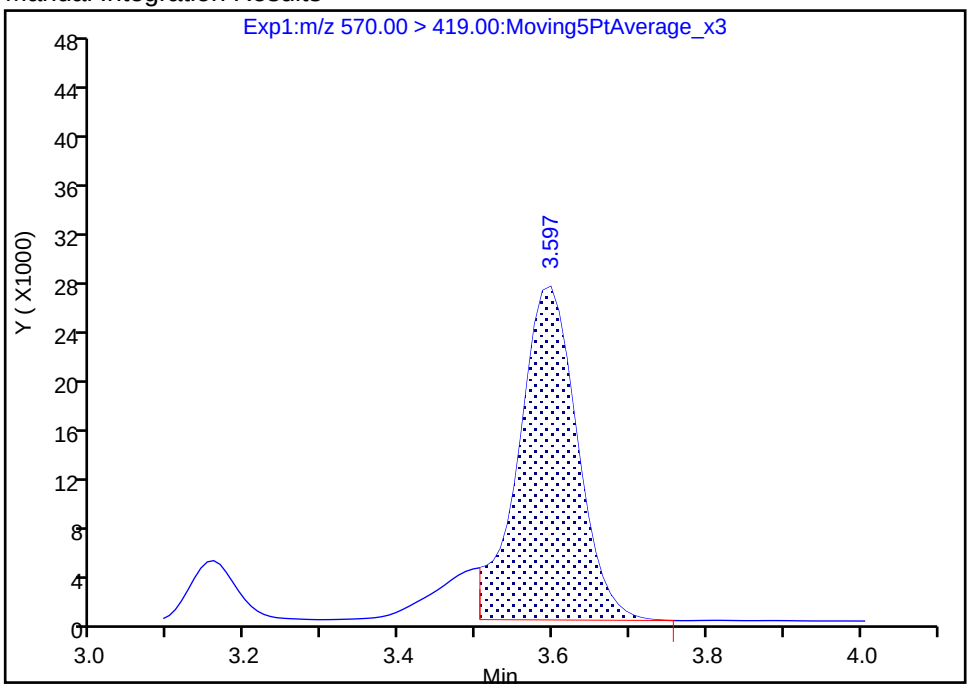
Processing Integration Results

RT: 3.60
Area: 158539
Amount: 0.263500
Amount Units: ng/ml



Manual Integration Results

RT: 3.60
Area: 141972
Amount: 0.235965
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:04:57

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

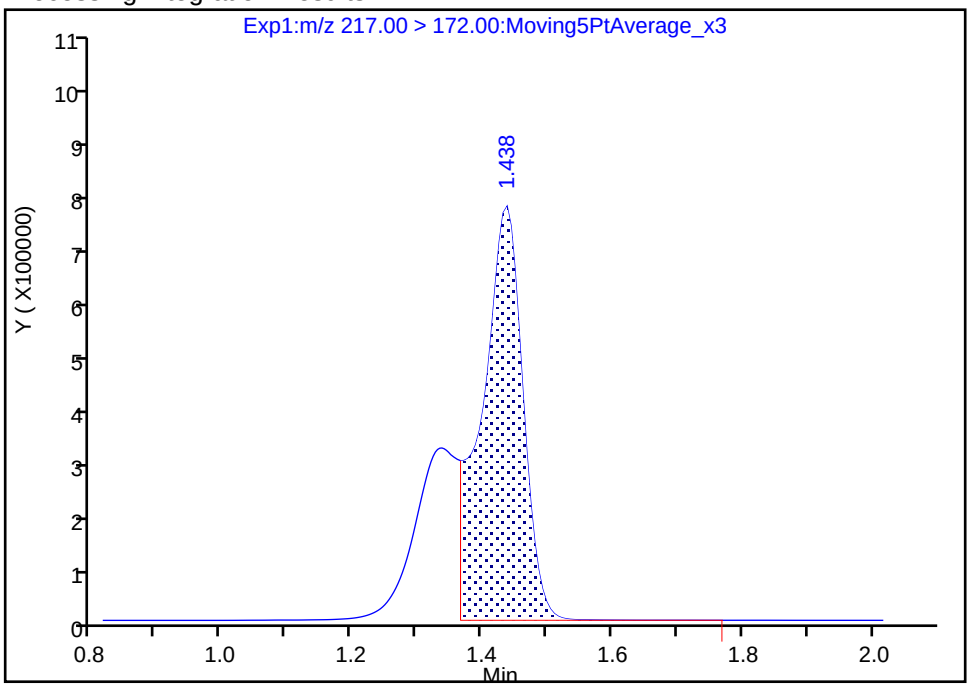
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_015.d				
Injection Date:	29-Mar-2018 01:13:04	Instrument ID:	A8_N		
Lims ID:	320-36956-A-1-A	Lab Sample ID:	320-36956-1		
Client ID:	SB042 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	12
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

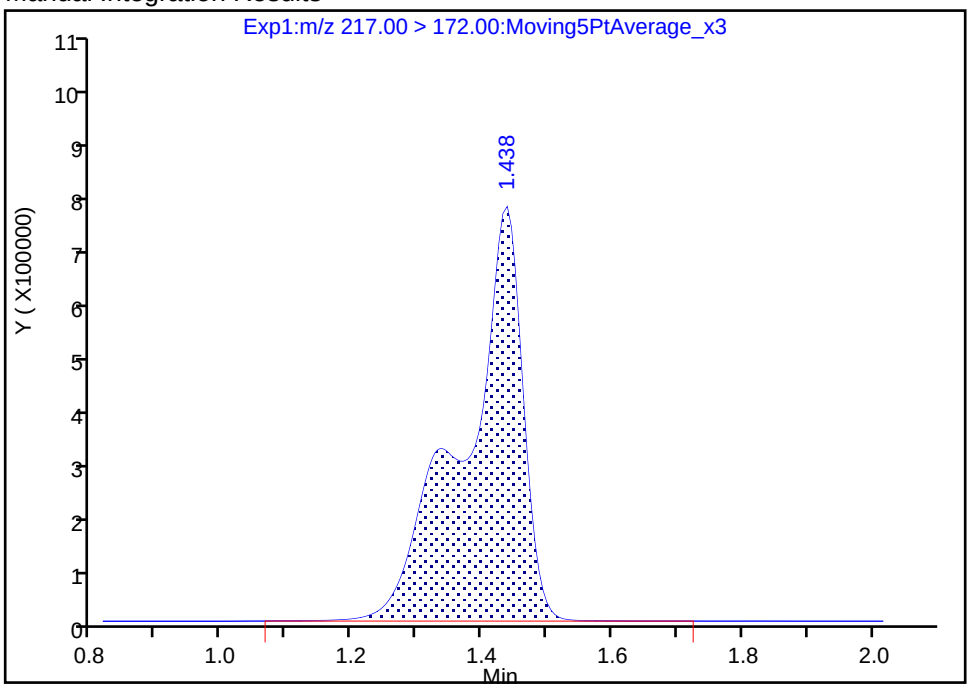
Processing Integration Results

RT: 1.44
Area: 3281252
Amount: 1.312526
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 4723881
Amount: 1.889589
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:04:12

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: SB042 (0-2") DL | Lab Sample ID: 320-36956-1 DL

Matrix: Solid | Lab File ID: 2018.03.29LLA_012.d

Analysis Method: 537 (modified) | Date Collected: 03/09/2018 13:20

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.06(g) | Date Analyzed: 03/29/2018 09:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215399 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	0.39	D	0.022	0.0039
335-76-2	Perfluorodecanoic acid (PFDA)	0.077	D	0.022	0.0024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.63	D	0.022	0.0039
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.17	D	0.022	0.0055
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.010	J D	0.022	0.0038
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.87	D	0.054	0.022
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.24	D	0.022	0.0089
27619-97-2	6:2FTS	0.20	J B D	0.22	0.016
39108-34-4	8:2FTS	0.45	D	0.22	0.027

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	52	*	25-150
STL00996	13C2 PFDA	52	*	25-150
STL00997	13C2 PFUnA	59	*	25-150
STL00998	13C2 PFDoA	50	*	25-150
STL00991	13C4 PFOS	60	*	25-150
STL01056	13C8 FOSA	61	*	25-150
STL02279	M2-6:2FTS	134	*	25-150
STL02280	M2-8:2FTS	97	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_012.d
Lims ID: 320-36956-A-1-A
Client ID: SB042 (0-2")
Sample Type: Client
Inject. Date: 29-Mar-2018 09:51:02 ALS Bottle#: 11 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-36956-1 100X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:35 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 10:10:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.434	1.429	0.005	1.004	16446	0.008551			4.5	M
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.440	-0.012	0.534	51031	0.0163		65.2	960	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.692	0.008	1.005	18755	0.0116			7.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.633	35940	0.0173		69.3	1167	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.976	0.010	1.005	29788	0.0186			41.5	
313.00 > 119.00	1.976	1.976	0.0	1.000	3013		9.89(5.03-15.10)		32.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.739	39129	0.0170		68.2	1860	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.302	0.013	1.000	16687	0.0105			10.4	
363.00 > 169.00	2.315	2.302	0.013	1.000	9100		1.83(1.13-3.40)		19.9	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.315	0.013	1.000	135785	0.0619			740	
399.00 > 99.00	2.328	2.315	0.013	1.000	46404		2.93(1.50-4.49)		260	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.328	-0.013	0.866	38324	0.0169		67.7	1641	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.871	46617	0.0167		70.6	2006	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.641	0.016	1.000	990267	0.9045			6284	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.663	-0.006	0.994	14912	0.0318		134	334	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.672	2.665	0.007	1.000	117294	0.0629			33.4	M
413.00 > 169.00	2.672	2.665	0.007	1.000	65630		1.79(0.84-2.52)		259	
* 62 13C2-PFOA										
415.00 > 370.00	2.672	2.665	0.007		61778	0.0250			2078	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.680	2.673	0.007	1.000	72388	0.0462			820	
449.00 > 99.00	2.672	2.673	-0.001	0.997	21290		3.40(1.94-5.82)		393	
D 14 13C4 PFOA										
417.00 > 372.00	2.672	2.687	-0.015	1.000	41298	0.0178		71.3	1916	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.037	3.037	0.0	1.000	11726114	8.61			22079	
499.00 > 99.00	3.037	3.037	0.0	1.000	2759237		4.25(2.31-6.93)		22495	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.037	0.007	1.002	1887773	1.78			2114	
463.00 > 169.00	3.044	3.037	0.007	1.002	467449		4.04(1.90-5.69)		12617	
D 19 13C5 PFNA										
468.00 > 423.00	3.037	3.058	-0.021	1.136	26548	0.0130		52.0	1063	
D 18 13C4 PFOS										
503.00 > 80.00	3.037	3.058	-0.021	1.136	29210	0.0144		60.1	1190	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.379	3.373	0.006	1.000	1816663	1.10			252	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.388	3.382	0.006	1.000	1638726	2.09			14988	
D 21 13C8 FOSA										
506.00 > 78.00	3.379	3.388	-0.009	1.264	41835	0.0153		61.1	52.7	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.397	3.391	0.006	1.000	327439	0.3541			1681	
513.00 > 169.00	3.397	3.391	0.006	1.000	48605		6.74(2.36-7.09)		1052	
D 26 M2-8:2FTS										
529.00 > 81.00	3.388	3.406	-0.018	1.268	14729	0.0232		97.0	398	
D 23 13C2 PFDA										
515.00 > 470.00	3.397	3.424	-0.027	1.271	23398	0.0131		52.3	282	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.551	3.569	-0.018	1.329	14655	0.0156		62.2	748	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.727	3.720	0.007	1.000	8539	0.0154			156	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.727	3.720	0.007	1.000	2365074	2.93			17846	
563.00 > 169.00	3.727	3.720	0.007	1.000	645566		3.66(2.12-6.36)		28403	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.748	-0.021	1.395	14818	0.0138		55.2	31.3	
D 30 13C2 PFUnA										
565.00 > 520.00	3.727	3.748	-0.021	1.395	23442	0.0146		58.5	958	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.025	4.018	0.007	1.000	65393	0.0683			98.1	
613.00 > 169.00	4.025	4.018	0.007	1.000	16692		3.92(2.13-6.40)		422	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.025	4.047	-0.022	1.506	22879	0.0126		50.4	195	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.289	4.283	0.006	1.000	808202	0.8023			479	
663.00 > 169.00	4.289	4.283	0.006	1.000	266165		3.04(1.25-3.76)		5931	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.533	4.524	0.009	1.000	5823	0.0199			114	
713.00 > 219.00	4.522	4.524	-0.002	0.998	4731		1.23(0.71-2.13)		128	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.533	4.554	-0.021	1.696	29546	0.0133		53.2	268	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 10:10:49 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_012.d

Injection Date: 29-Mar-2018 09:51:02 Instrument ID: A8_N

Lims ID: 320-36956-A-1-A Lab Sample ID: 320-36956-1

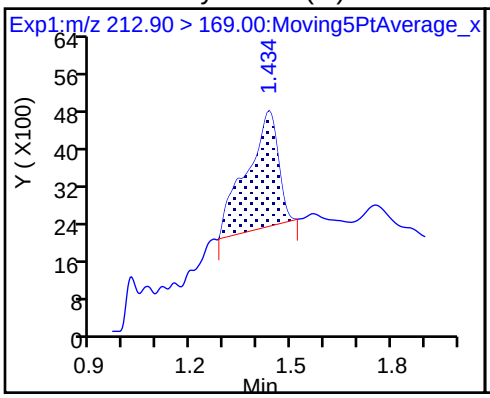
Client ID: SB042 (0-2")

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 9

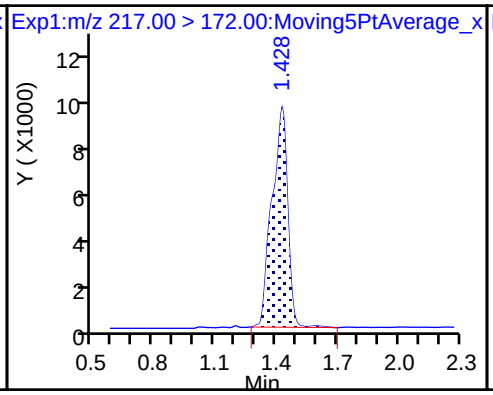
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

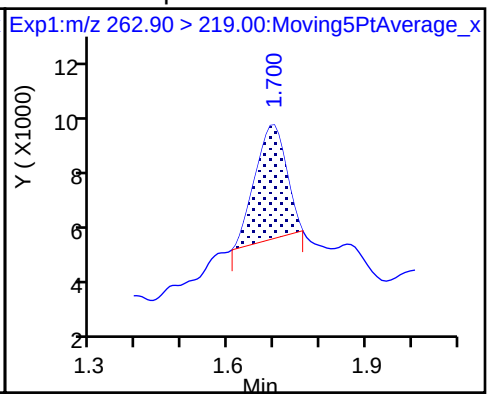
2 Perfluorobutyric acid (M)



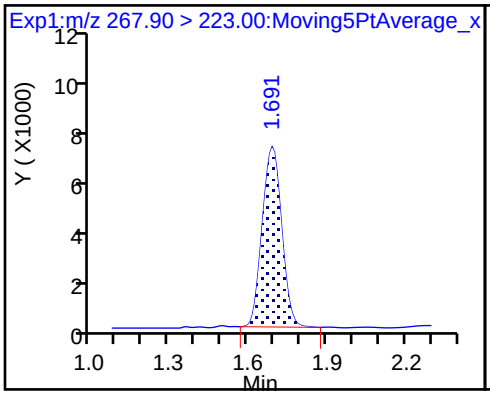
D 1 13C4 PFBA



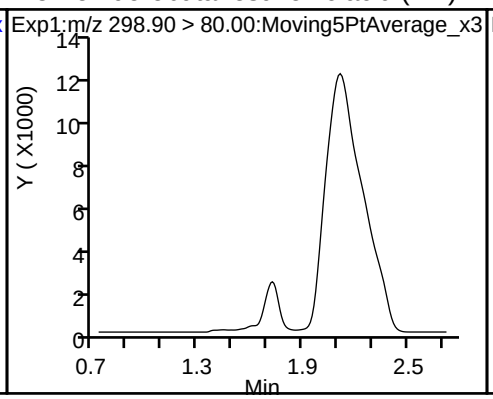
4 Perfluoropentanoic acid



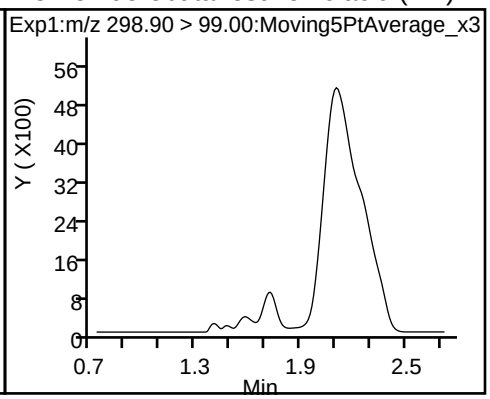
D 3 13C5-PFPeA



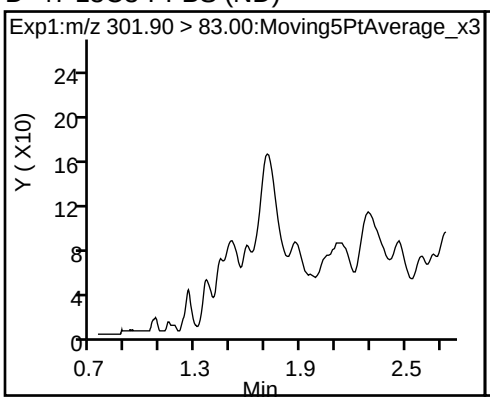
5 Perfluorobutanesulfonic acid (ND)



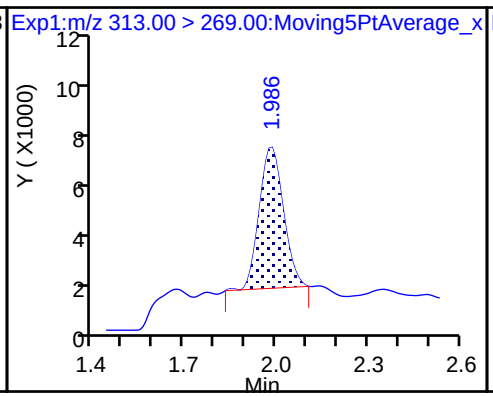
5 Perfluorobutanesulfonic acid (ND)



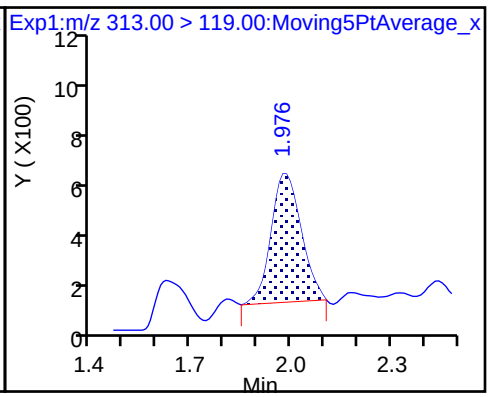
D 47 13C3-PFBS (ND)



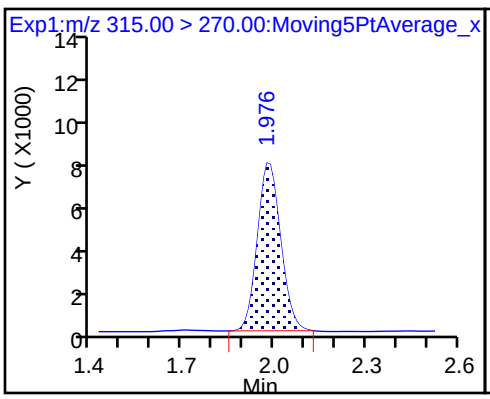
6 Perfluorohexanoic acid



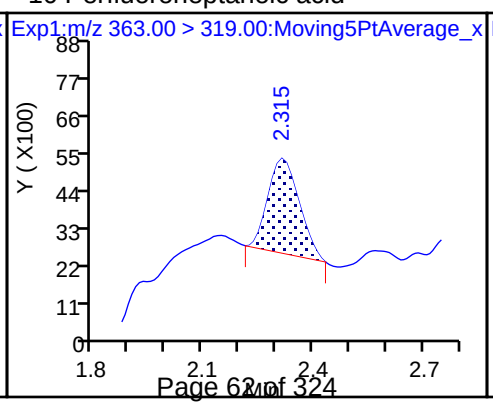
6 Perfluorohexanoic acid



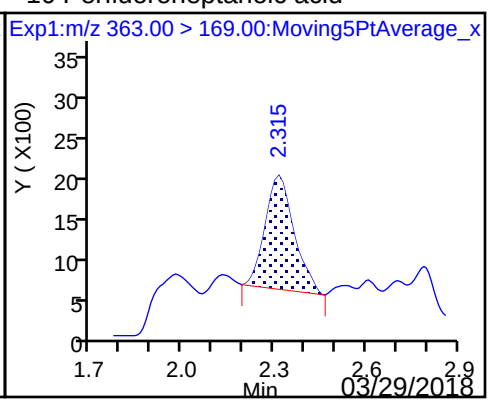
D 7 13C2 PFHxA



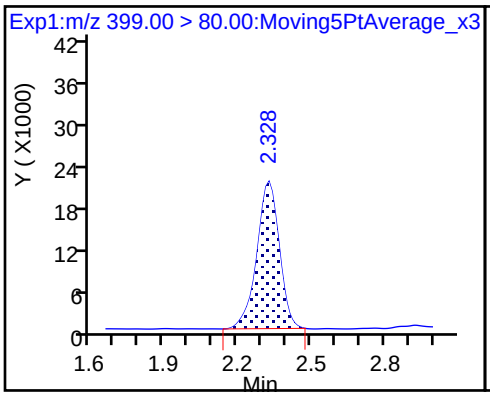
10 Perfluoroheptanoic acid



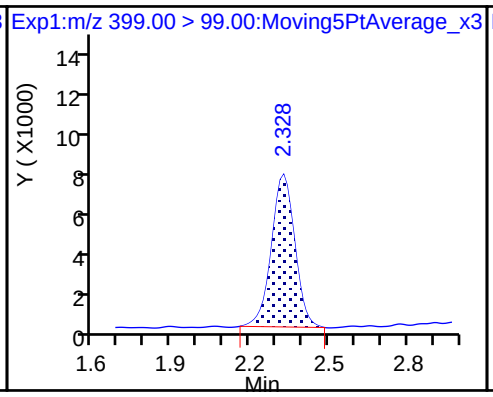
10 Perfluoroheptanoic acid



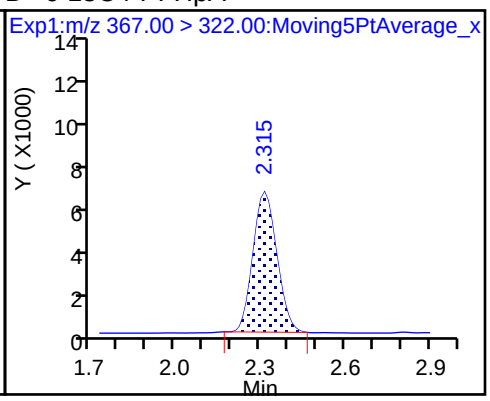
8 Perfluorohexanesulfonic acid



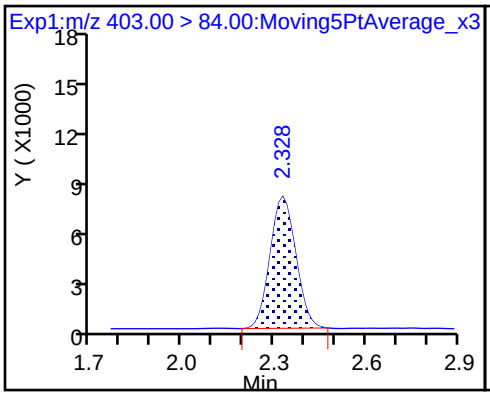
8 Perfluorohexanesulfonic acid



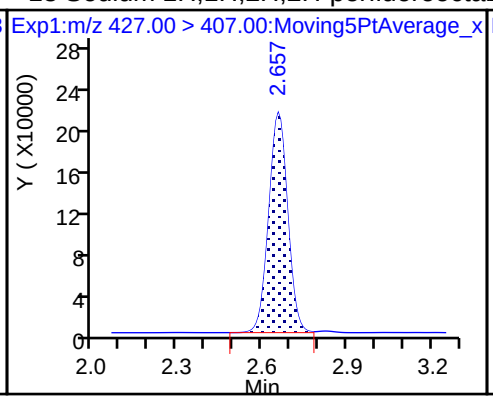
D 9 13C4-PFHpA



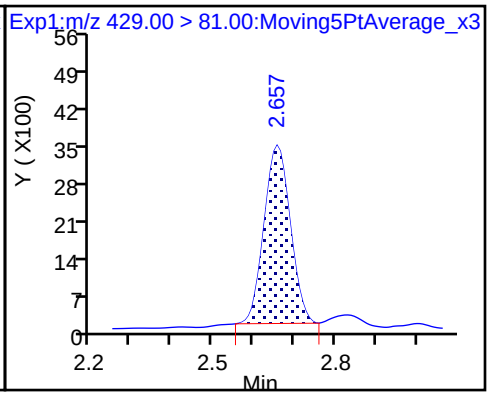
D 11 18O2 PFHxS



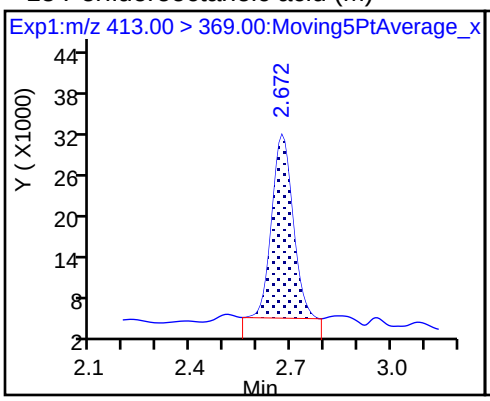
13 Sodium 1H,1H,2H,2H-perfluorooctane



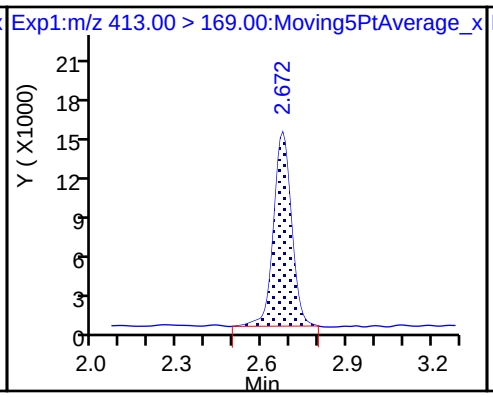
D 12 M2-6:2FTS



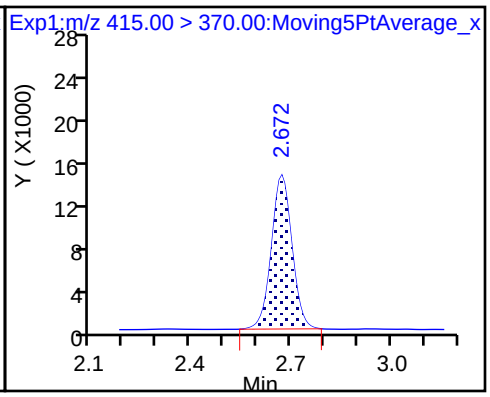
15 Perfluorooctanoic acid (M)



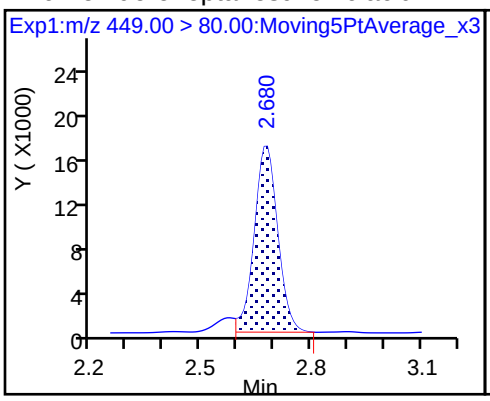
15 Perfluorooctanoic acid



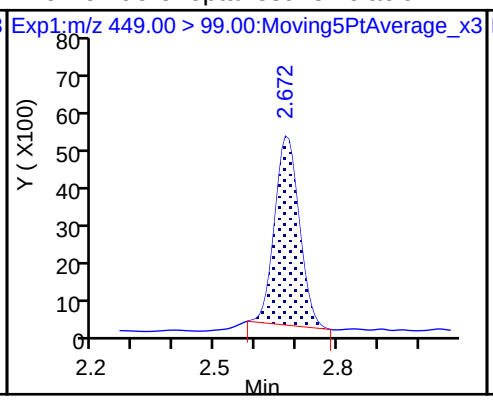
* 62 13C2-PFOA



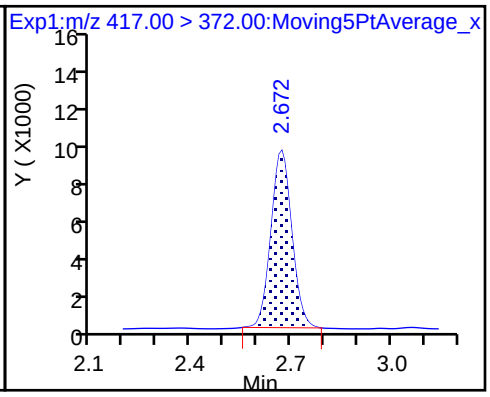
16 Perfluoroheptanesulfonic acid



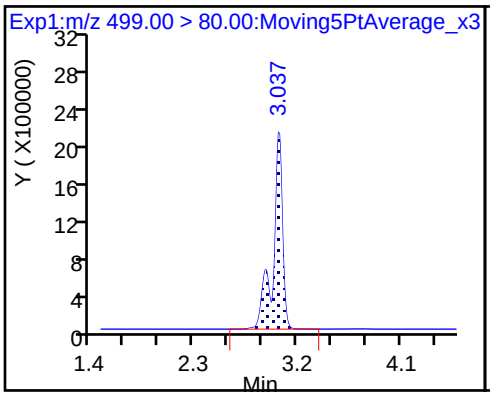
16 Perfluoroheptanesulfonic acid



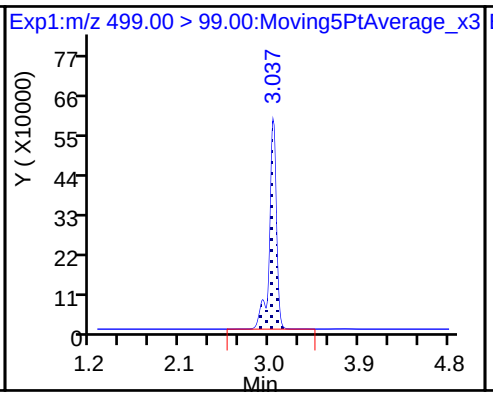
D 14 13C4 PFOA



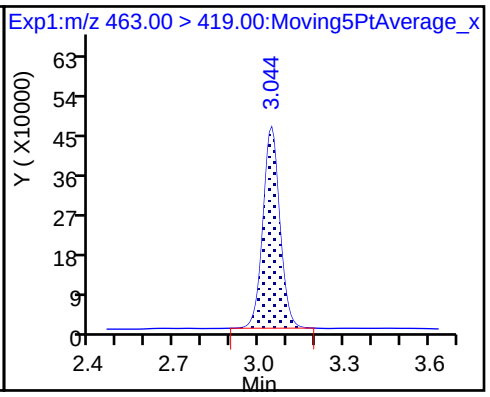
17 Perfluorooctane sulfonic acid



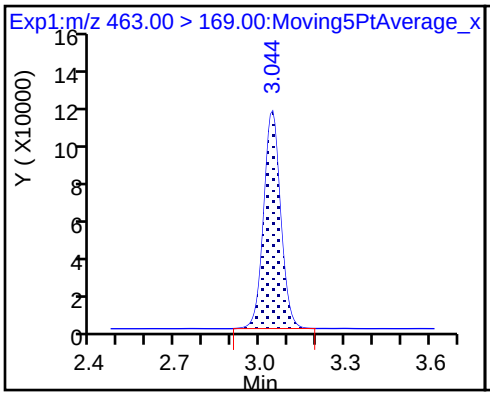
17 Perfluorooctane sulfonic acid



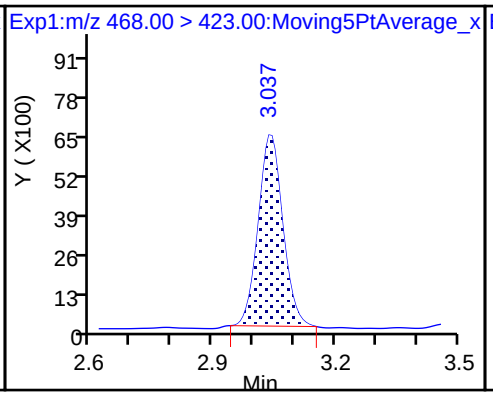
20 Perfluorononanoic acid



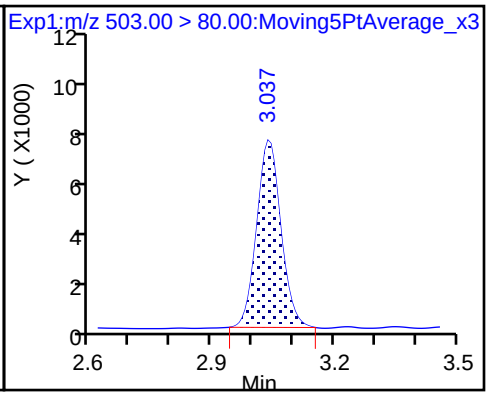
20 Perfluorononanoic acid



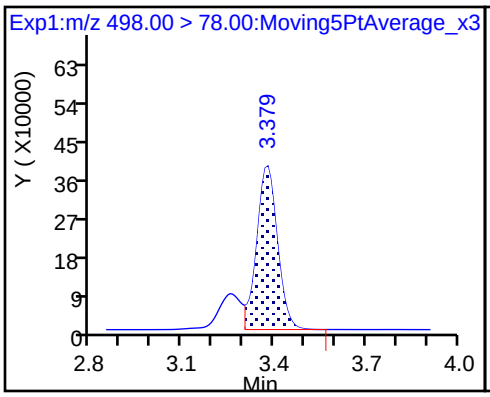
D 19 13C5 PFNA



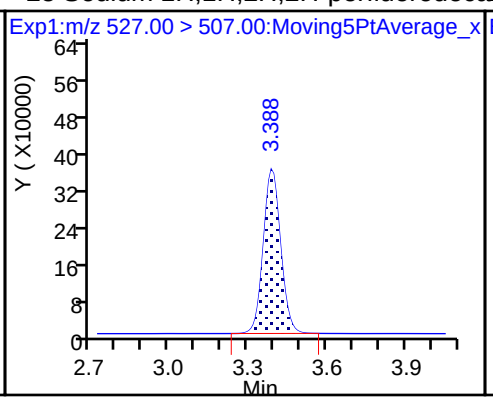
D 18 13C4 PFOS



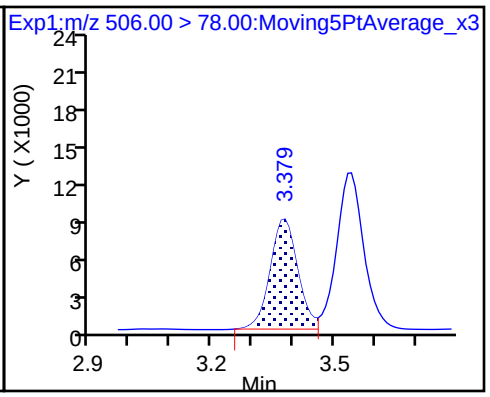
22 Perfluorooctane Sulfonamide



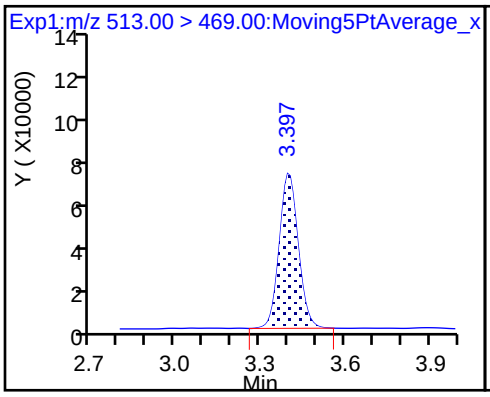
25 Sodium 1H,1H,2H,2H-perfluorodecane



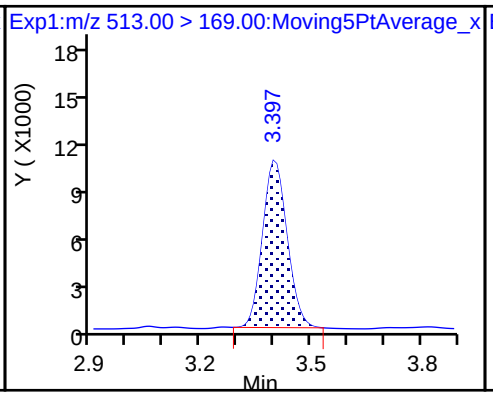
D 21 13C8 FOSA



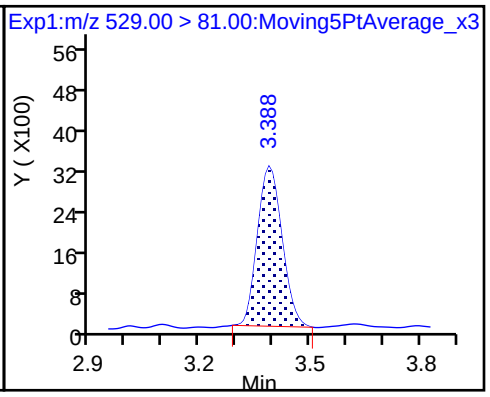
24 Perfluorodecanoic acid



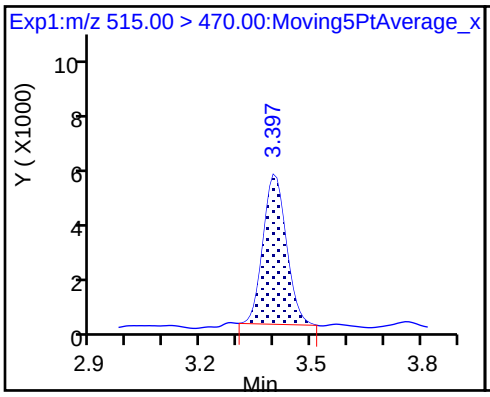
24 Perfluorodecanoic acid



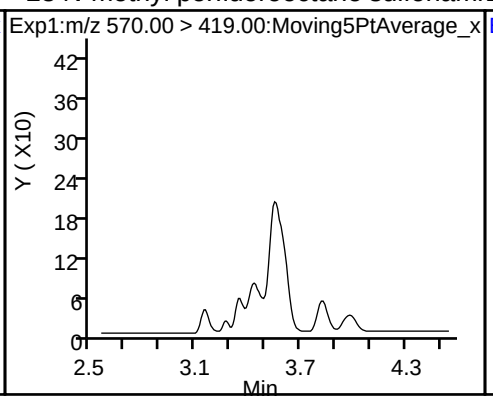
D 26 M2-8:2FTS



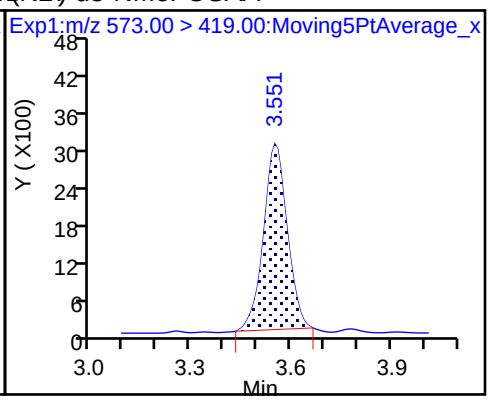
D 23 13C2 PFDA



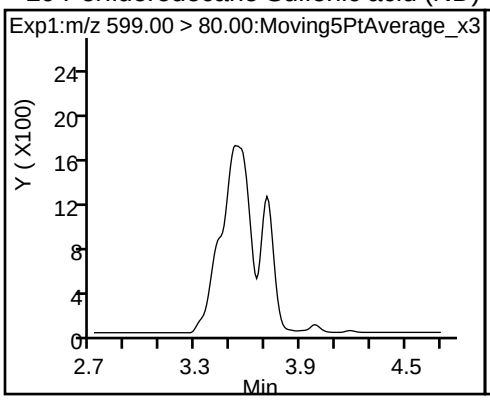
28 N-methyl perfluorooctane sulfonamid (ND)



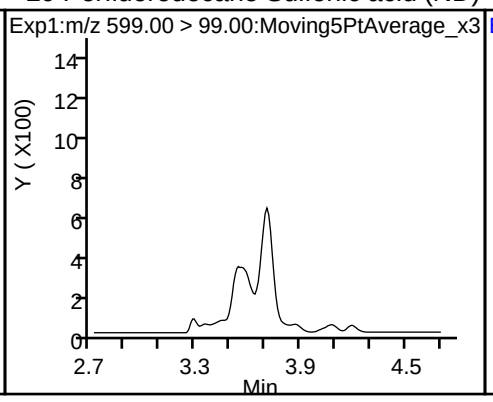
D 27 d3-NMeFOSAA



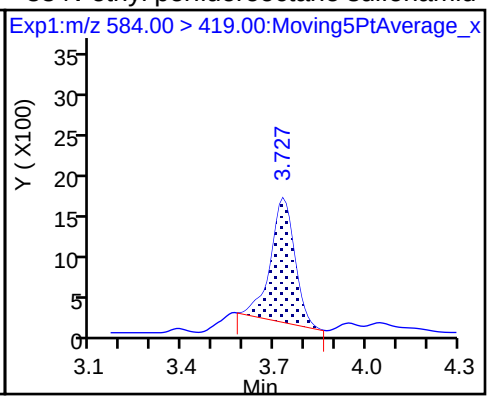
29 Perfluorodecane Sulfonic acid (ND)



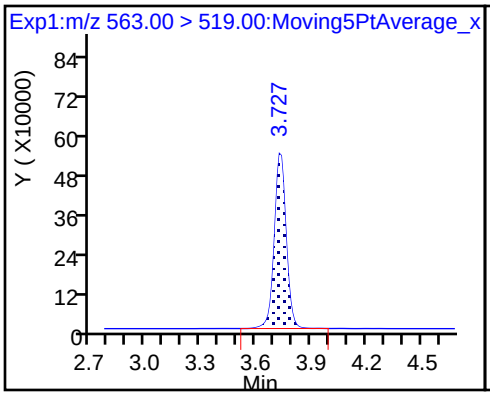
29 Perfluorodecane Sulfonic acid (ND)



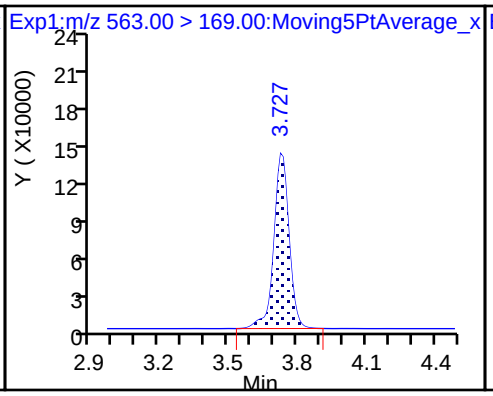
33 N-ethyl perfluorooctane sulfonamid



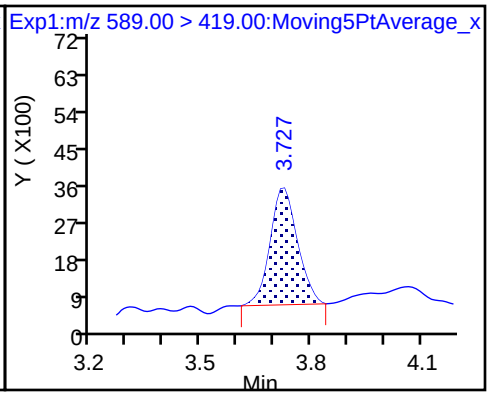
31 Perfluoroundecanoic acid



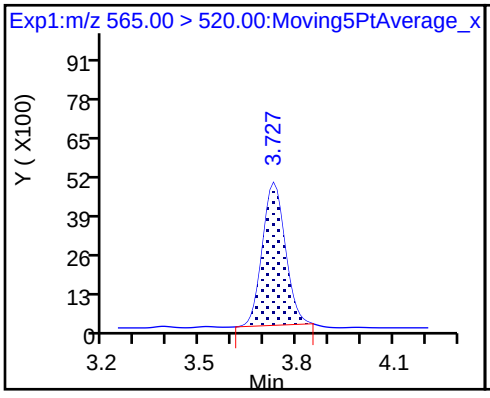
31 Perfluoroundecanoic acid



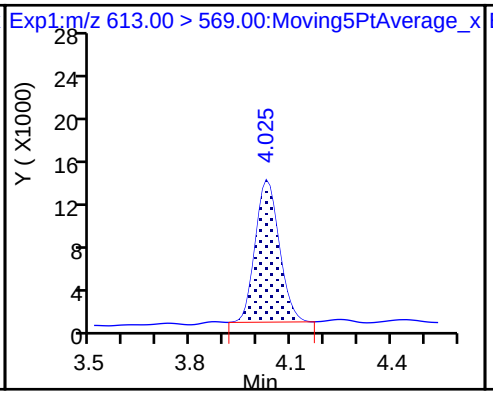
D 32 d5-NEtFOSAA



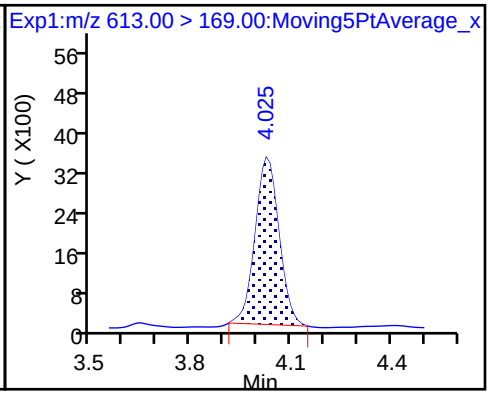
D 30 13C2 PFUnA



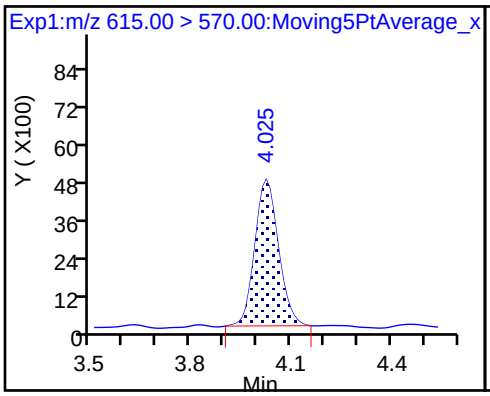
37 Perfluorododecanoic acid



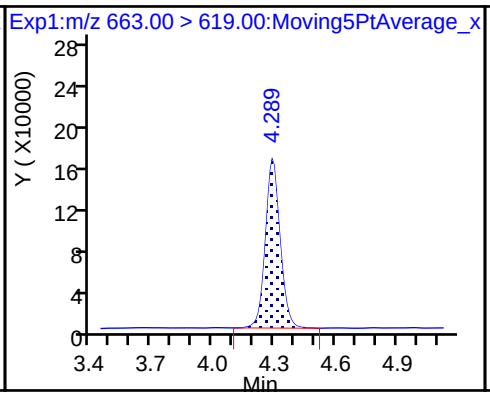
37 Perfluorododecanoic acid



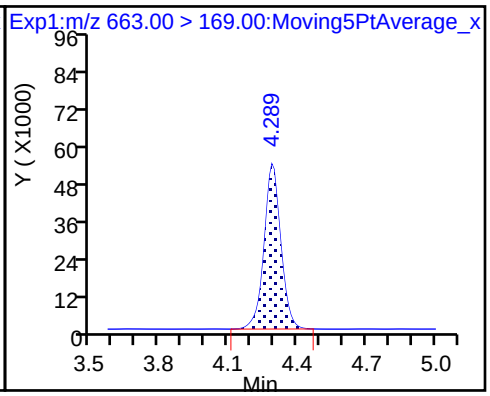
D 36 13C2 PFDoA



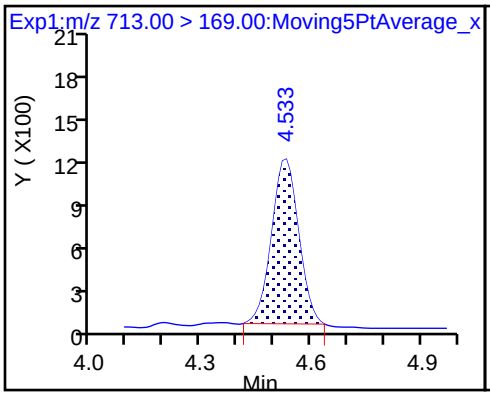
41 Perfluorotridecanoic acid



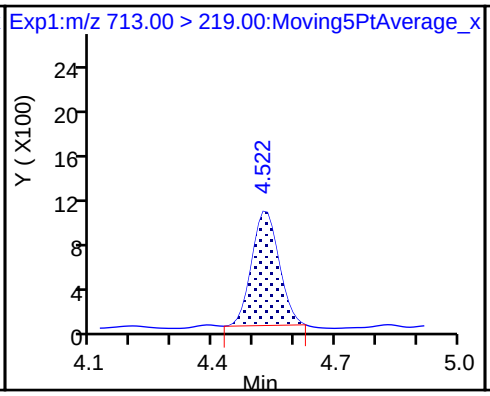
41 Perfluorotridecanoic acid



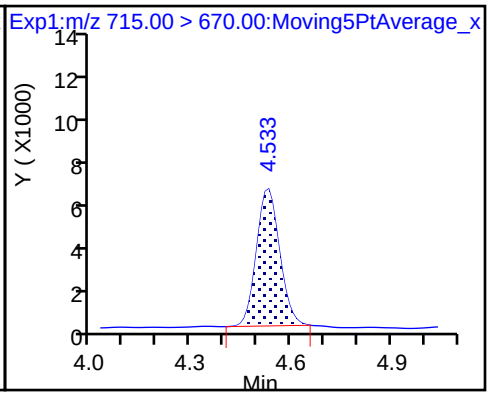
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-214175/2	2018.03.21LLICALAX_002.d
Level 2	IC 320-214175/3	2018.03.21LLICALAX_003.d
Level 3	IC 320-214175/4	2018.03.21LLICALAX_004.d
Level 4	IC 320-214175/5	2018.03.21LLICALAX_005.d
Level 5	IC 320-214175/6	2018.03.21LLICALAX_006.d
Level 6	IC 320-214175/7	2018.03.21LLICALAX_007.d
Level 7	IC 320-214175/8	2018.03.21LLICALAX_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9770 0.9654	0.9782 0.9163	0.9137	0.9039	0.9410	AveID		0.9422				3.4		35.0			
Perfluoropentanoic acid (PFPeA)	1.0398 1.1898	1.1118 1.1431	1.1414	1.1024	1.1643	AveID		1.1275				4.3		35.0			
Perfluorobutanesulfonic acid (PFBS)	77.286 78.553	78.814 75.366	76.480	76.225	81.199	AveID		77.703				2.5		50.0			
4:2 FTS	16.804 16.788	16.170 15.667	16.310	15.390	15.941	AveID		16.153				3.3		50.0			
Perfluorohexanoic acid (PFHxA)	1.0196 1.0524	1.0518 1.0118	1.0085	0.9645	1.0478	AveID		1.0223				3.1		35.0			
Perfluoroheptanoic acid (PFHpA)	0.9689 1.0612	1.0927 1.0383	0.9816	0.9771	1.1215	AveID		1.0345				5.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3404 1.1223	1.1639 1.0409	1.0385	1.0319	1.0535	AveID		1.1130				10.1		35.0			
6:2FTS	1.5576 1.7957	1.8911 1.7717	1.7412	1.6933	1.7547	AveID		1.7436				5.9		35.0			
Perfluorooctanoic acid (PFOA)	1.2278 1.1265	1.2535 1.0919	1.0964	1.0565	1.0550	AveID		1.1297				7.1		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.3002 1.3237	1.2934 1.2343	1.2772	1.2479	1.2922	AveID		1.2813				2.4		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.1788 1.1274	1.0854 1.1317	1.0974	1.0467	1.1303	AveID		1.1139				3.8		35.0			
Perfluorononanoic acid (PFNA)	0.9610 1.0030	0.9765 1.0457	0.9865	0.9543	1.0556	AveID		0.9975				4.0		35.0			
Perfluorooctane Sulfonamide (FOSA)	1.0217 1.0333	0.9663 0.9452	0.9546	0.9908	0.9888	AveID		0.9858				3.4		35.0			
8:2FTS	1.3252 1.2619	1.1418 1.3311	1.2543	1.2466	1.3731	AveID		1.2763				5.9		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	1.0098 1.0266	0.8873 0.9840	1.0025	0.9567	1.0497	AveID		0.9881				5.4		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.8624 1.0715	0.9123 1.0518	1.0465	0.9523	1.1088	AveID		1.0008				9.2		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6016 0.7415	0.6694 0.7211	0.6530	0.6412	0.7322	AveID		0.6800				7.8		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.9224 0.9962	0.8646 0.9417	0.9112	0.8903	1.0134	AveID		0.9342				5.8		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9695 0.8449	0.8967 0.9028	0.7661	0.8243	0.8309	AveID		0.8622				7.7		35.0			
Perfluorododecanoic acid (PFDoA)	1.0503 1.1100	1.0998 1.0309	1.0210	0.9776	1.0349	AveID		1.0464				4.4		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.0242 1.2189	1.0806 1.0484	1.0979	1.1164	1.1188	AveID		1.1007				5.7		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2400 0.2554	0.2594 0.2499	0.2475	0.2303	0.2521	AveID		0.2478				4.0		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7892 0.9151	1.3570 0.8645	0.9897	0.9038	0.9928	L2ID	0.0221	0.9088							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.9497 0.9330	0.9448 0.8894	0.9065	0.8854	0.9637	AveID		0.9246				3.3		50.0			
13C4 PFBA	1.2518 1.2929	1.2583 1.3406	1.2790	1.2572	1.1820	Ave		1.2660				3.8		50.0			
13C5 PFPeA	0.8327 0.8439	0.8366 0.8891	0.8605	0.8349	0.7813	Ave		0.8399				3.9		50.0			
13C3-PFBS	0.0186 0.0196	0.0192 0.0199	0.0198	0.0192	0.0180	Ave		0.0192				3.4		50.0			
M2-4:2FTS	0.1314 0.1321	0.1400 0.1255	0.1372	0.1358	0.1246	Ave		0.1324				4.4		50.0			
13C2 PFHxA	0.9295 0.9198	0.9713 0.9356	0.9418	0.9249	0.8788	Ave		0.9288				3.0		50.0			
13C4-PFHpA	0.9506 0.9047	0.8936 0.9073	0.9677	0.9239	0.8667	Ave		0.9164				3.7		50.0			
18O2 PFHxS	1.1127 1.0890	1.1664 1.1449	1.1850	1.1305	1.0840	Ave		1.1303				3.4		50.0			
M2-6:2FTS	0.1884 0.1805	0.1973 0.1957	0.1922	0.1932	0.1826	Ave		0.1900				3.4		50.0			
13C4 PFOA	0.9424 0.9146	0.9504 0.9162	0.9605	0.9718	0.9058	Ave		0.9374				2.7		50.0			
13C4 PFOS	0.8084 0.8115	0.8346 0.8334	0.8459	0.8297	0.7939	Ave		0.8225				2.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C5 PFNA	0.8159 0.8363	0.8387 0.8194	0.8535	0.8423	0.7801	Ave		0.8266				2.9		50.0			
13C8 FOSA	1.0958 1.1026	1.0947 1.0892	1.1838	1.1159	1.0823	Ave		1.1092				3.1		50.0			
M2-8:2FTS	0.2677 0.2568	0.2739 0.2387	0.2803	0.2476	0.2307	Ave		0.2565				7.2		50.0			
13C2 PFDA	0.7397 0.7226	0.7599 0.7138	0.7506	0.7132	0.6715	Ave		0.7245				4.1		50.0			
d3-NMeFOSAA	0.3775 0.3991	0.3624 0.3991	0.4007	0.3777	0.3530	Ave		0.3814				5.0		50.0			
d5-NEtFOSAA	0.4563 0.4090	0.4567 0.4048	0.4709	0.4518	0.3919	Ave		0.4345				7.2		50.0			
13C2 PFUnA	0.6503 0.6562	0.6561 0.6125	0.7132	0.6358	0.6130	Ave		0.6482				5.3		50.0			
13C2 PFDoA	0.7369 0.7139	0.7087 0.7752	0.7608	0.7433	0.7097	Ave		0.7355				3.6		50.0			
13C2-PFTeDA	0.9180 0.8827	0.8229 0.9495	0.9129	0.9482	0.8540	Ave		0.8983				5.3		50.0			
13C2-PFHxDA	1.4911 1.5654	1.2829 1.5109	1.5999	1.5088	1.3493	Ave		1.4726				7.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-214175/2	2018.03.21LLICALAX_002.d
Level 2	IC 320-214175/3	2018.03.21LLICALAX_003.d
Level 3	IC 320-214175/4	2018.03.21LLICALAX_004.d
Level 4	IC 320-214175/5	2018.03.21LLICALAX_005.d
Level 5	IC 320-214175/6	2018.03.21LLICALAX_006.d
Level 6	IC 320-214175/7	2018.03.21LLICALAX_007.d
Level 7	IC 320-214175/8	2018.03.21LLICALAX_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	64128 12506996	131334 22360079	612393	2414180	5823834	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	45401 10061856	99242 18500324	514727	1955236	4762694	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	66644 13614957	142407 24100878	700112	2745542	6781882	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	15310 3074271	30869 5293270	157752	585674	1406742	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	49694 9699799	109004 17232401	497709	1895160	4820853	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	48297 9620973	104181 17149506	497784	1917800	5088526	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	71171 11144344	131804 19742275	586824	2255246	5440694	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
6:2FTS		AveID	14587 3079977	37735 5982174	166250	658727	1590173	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	60671 10325028	127108 18212815	551855	2181038	5003450	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	52467 10247281	109652 17826274	539007	2094073	5113485	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	46371 8507880	89694 15932478	451427	1712110	4360129	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	41117 8405623	87380 15598692	441188	1707633	4311504	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctane Sulfonamide (FOSA)		AveID	58708 11417156	112857 18741888	592188	2348890	5602803	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2FTS		AveID	17824 3110907	31966 5541846	176483	628171	1588740	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	39168 7434177	71937 12786299	394276	1449524	3690292	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	17070 4285891	35274 7642171	219720	764025	2049489	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	24583 5812987	57466 10545265	279040	1089522	2934010	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	22073 4082815	42131 6938724	224858	854457	2079318	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	33058 5555779	62776 10065814	286311	1113457	2666750	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	40586 7940975	83165 14548343	407079	1543700	3845398	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	39576 8719608	81708 14795343	437729	1762916	4156865	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	11552 2258774	22776 4319552	118401	463840	1127193	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	139895 14354924	185745 23776796	829775	2896964	7013285	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	74253 14635504	129317 24460507	760025	2837993	6807875	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6564034 6477851	6712910 6100844	6702182	6677108	6188661	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4366350 4228437	4463093 4046135	4509425	4434133	4090438	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	90718 91170	95045 84106	96305	94733	87868	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	643318 618185	697680 533647	671337	673891	609343	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4874041 4608558	5181558 4257747	4935175	4912134	4600880	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4-PFHpA	13PFOA	Ave	4984623 4533044	4767222 4129064	5071076	4906862	4537445	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PFOA	Ave	5519750 5161589	5886251 4928998	5874354	5679886	5368855	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PFOA	Ave	938472 859398	999800 845912	956838	974611	908164	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PFOA	Ave	4941609 4582778	5069957 4169807	5033130	5161114	4742395	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PFOA	Ave	4052357 3887079	4256604 3625826	4237867	4212796	3973858	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PFOA	Ave	4278627 4190429	4474026 3729104	4472333	4473666	4084349	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PFOA	Ave	5746202 5524474	5839734 4957065	6203337	5926892	5666432	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1 Analy Batch No.: 214175

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2018 18:24 Calibration End Date: 03/21/2018 19:11 Calibration ID: 38241

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
M2-8:2FTS	13PF OA	Ave	1345013 1232595	1399775 1040808	1407067	1259787	1157021	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	3878963 3620699	4053733 3248595	3933118	3787833	3515629	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1979468 1999896	1933236 1816501	2099631	2005802	1848322	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2392883 2049207	2436559 1842170	2467789	2399407	2051910	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	3409956 3287781	3500228 2787354	3737470	3376806	3209638	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	3864207 3576857	3780852 3528118	3986883	3947765	3715622	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	4813878 4422729	4389855 4321269	4783571	5036200	4471429	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	7818840 7843306	6843963 6875940	8384119	8013194	7064103	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 21-Mar-2018 18:24:14 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:19 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:00:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.536	6564034	2.47		98.9	83431	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	64128	0.0259		104	24.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4366350	2.48		99.1	93154	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	45401	0.0231		92.2	23.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	90718	2.26		97.0	614	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	66644	0.0220		99.5	376	
298.90 > 99.00	1.745	1.745	0.0	1.000	28118		2.37(1.25-3.74)	99.5	171	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	643318	2.32		99.2	7775	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	15310	0.0243		104	941	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4874041	2.50		100	145438	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	49694	0.0249		99.7	127	
313.00 > 119.00	1.998	1.998	0.0	1.000	4724		10.52(5.03-15.10)	99.7	94.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.333	0.008	0.868	4984623	2.59		104	93288	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.000	48297	0.0234		93.7	96.7	
363.00 > 169.00	2.341	2.335	0.006	1.000	20477		2.36(1.13-3.40)	93.7	268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.346	0.008	1.000	71171	0.0274		120	609	
399.00 > 99.00	2.354	2.346	0.008	1.000	22990		3.10(1.50-4.49)	120	94.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.873	5519750	2.33		98.4	62536	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	938472	2.36		99.2	21899	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	14587	0.0212		89.3	1143	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	4941609	2.51		101	82002	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5243768	2.50			67801	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.705	2.697	0.008	1.003	60671	0.0272		109	17.7	
413.00 > 169.00	2.697	2.697	0.0	1.000	32946		1.84(0.84-2.52)	109	87.6	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	52467	0.0242		101	1533	
449.00 > 99.00	2.705	2.703	0.002	1.000	13197		3.98(1.94-5.82)	101	181	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.139	4052357	2.35		98.3	50838	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.072	3.070	0.002	1.000	46371	0.0246		106	171	
499.00 > 99.00	3.072	3.070	0.002	1.000	11047		4.20(2.31-6.93)	106	85.3	M
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4278627	2.47		98.7	81507	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	41117	0.0241		96.3	48.9	
463.00 > 169.00	3.072	3.072	0.0	1.000	9349		4.40(1.90-5.69)	96.3	229	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	5746202	2.47		98.8	46543	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	58708	0.0259		104	1350	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1345013	2.50		104	42755	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	17824	0.0249		104	503	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3878963	2.55		102	72834	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	39168	0.0255		102	160	
513.00 > 169.00	3.435	3.435	0.0	1.000	6534		5.99(2.36-7.09)	102	158	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	1979468	2.47		99.0	38616	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	17070	0.0215		86.2	131	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	24583	0.0213		88.5	853	
599.00 > 99.00	3.748	3.749	-0.001	1.000	8435		2.91(1.39-4.16)	88.5	305	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2392883	2.63		105	11372	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.000	33058	0.0281		112	146	
563.00 > 169.00	3.769	3.768	0.001	1.000	10108		3.27(2.12-6.36)	112	319	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.768	0.001	1.003	22073	0.0247		98.7	505	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.768	0.001	1.398	3409956	2.51		100	42217	
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.066	0.002	1.508	3864207	2.50		100	26731	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.068	0.0	1.000	40586	0.0251		100	34.7	
613.00 > 169.00	4.068	4.068	0.0	1.000	8184		4.96(2.13-6.40)	100	145	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.329	-0.001	1.000	39576	0.0233		93.0	27.3	
663.00 > 169.00	4.328	4.329	-0.001	1.000	13312		2.97(1.25-3.76)	93.0	278	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.568	0.006	1.696	4813878	2.55		102	33813	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.003	1.000	11552	0.0242		96.8	204	
713.00 > 219.00	4.564	4.571	-0.007	0.998	8925		1.29(0.71-2.13)	96.8	192	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.851	7818840	2.53		101	18128	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	139895	0.0249		99.7	45.6	
813.00 > 169.00	4.990	4.989	0.001	1.000	24399		5.73(2.86-8.58)	99.7	287	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.358	5.354	0.004	1.000	74253	0.0257		103	25.7	
913.00 > 169.00	5.351	5.354	-0.003	0.999	8840		8.40(3.83-11.48)	103	123	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:20 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d

Injection Date: 21-Mar-2018 18:24:14 Instrument ID: A8_N

Lims ID: IC L1 Full

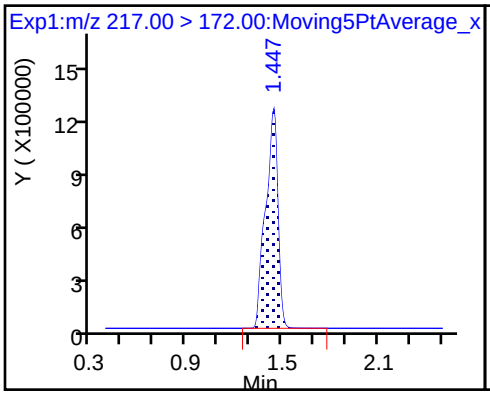
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

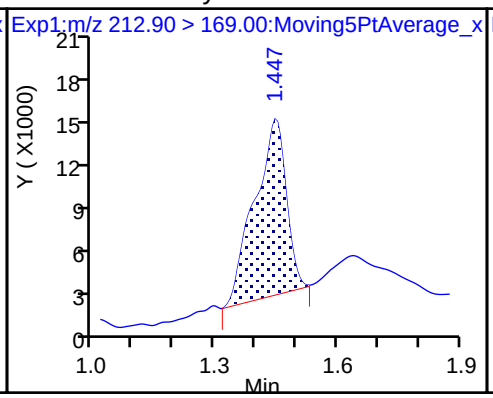
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

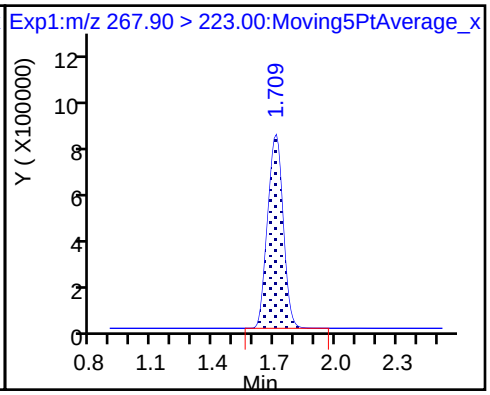
D 1 13C4 PFBA



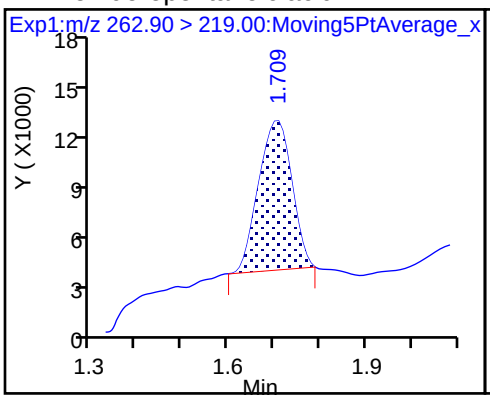
2 Perfluorobutyric acid



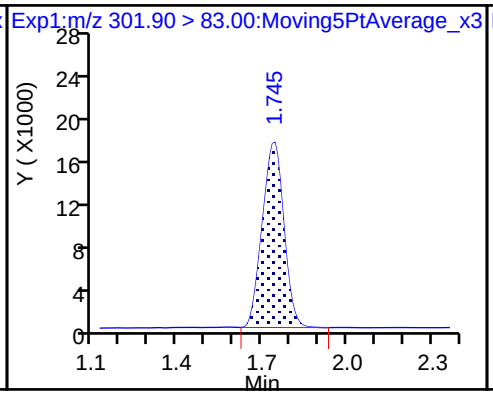
D 3 13C5-PFPeA



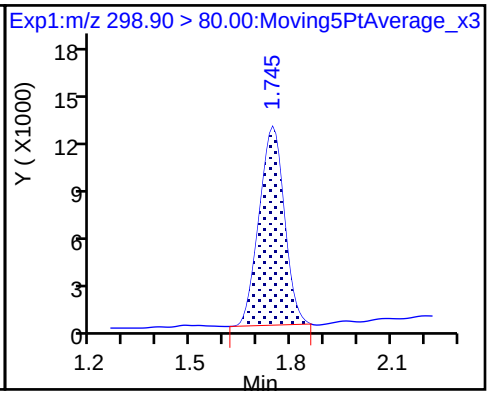
4 Perfluoropentanoic acid



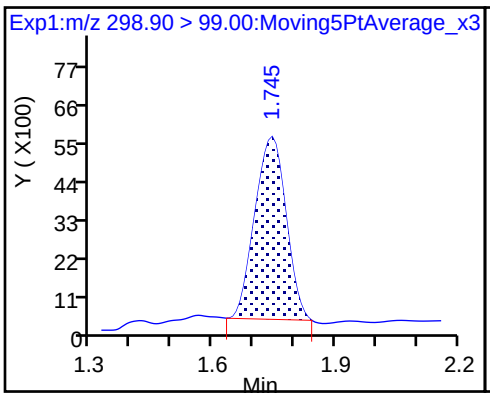
D 47 13C3-PFBS



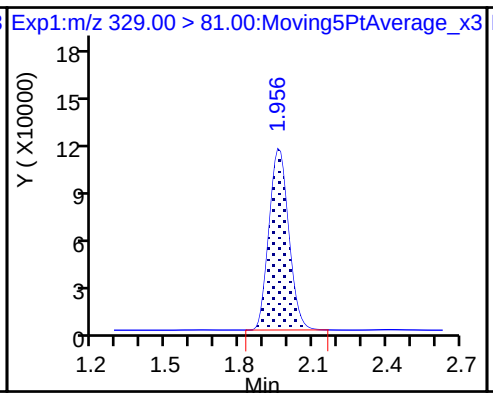
5 Perfluorobutanesulfonic acid



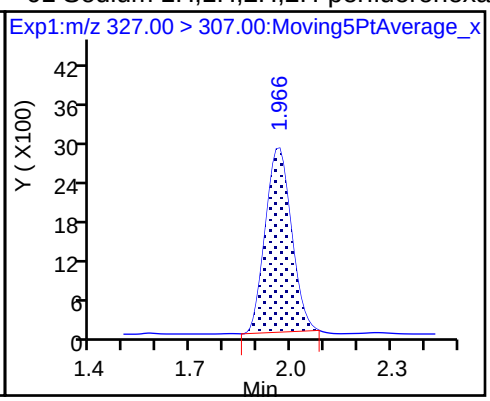
5 Perfluorobutanesulfonic acid



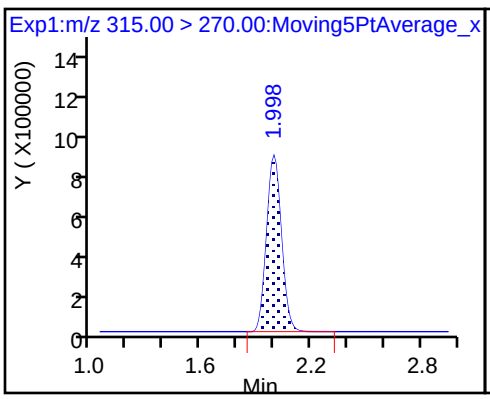
D 60 M2-4:2FTS



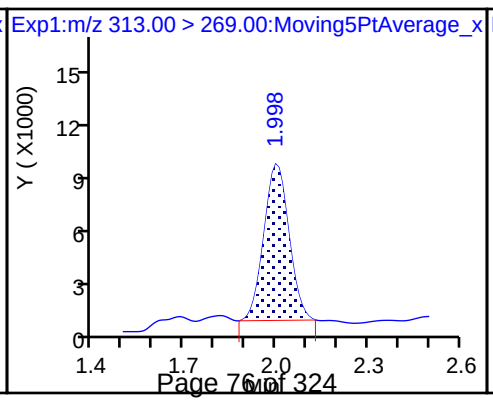
61 Sodium 1H,1H,2H,2H-perfluorohexane



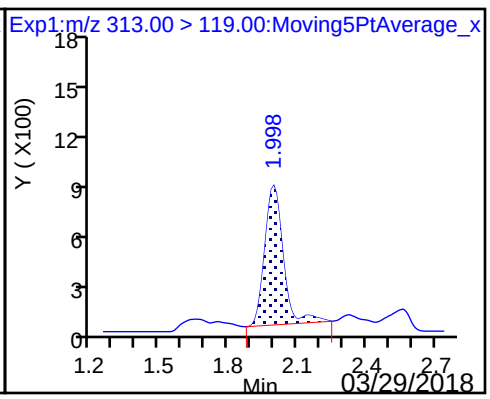
D 7 13C2 PFHxA



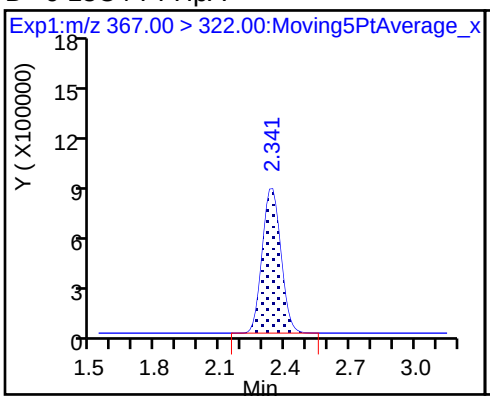
6 Perfluorohexanoic acid



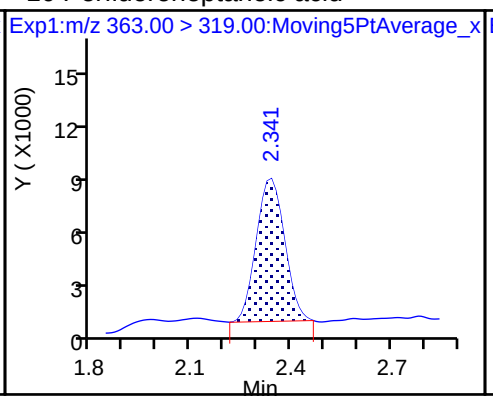
6 Perfluorohexanoic acid



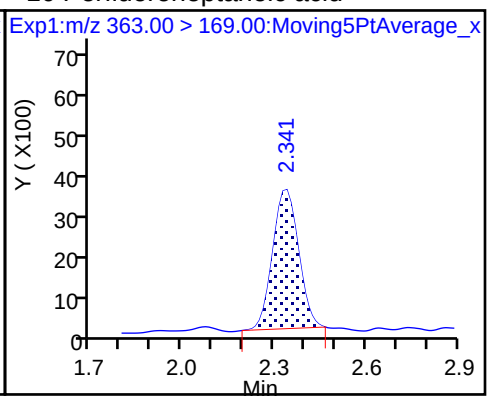
D 9 13C4-PFHpA



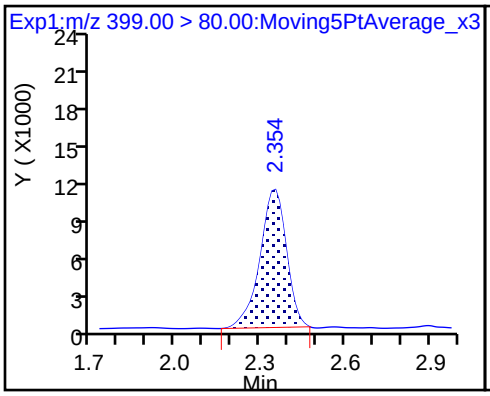
10 Perfluoroheptanoic acid



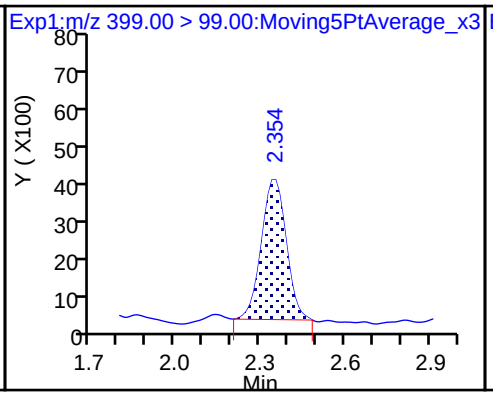
10 Perfluoroheptanoic acid



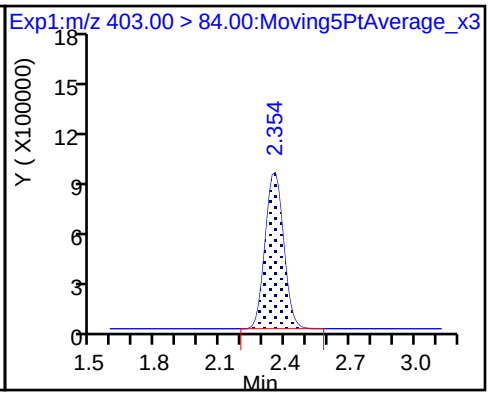
8 Perfluorohexanesulfonic acid



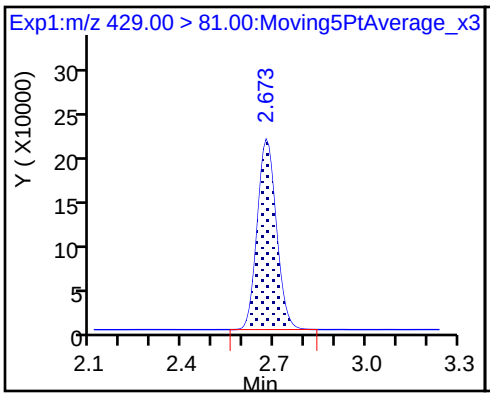
8 Perfluorohexanesulfonic acid



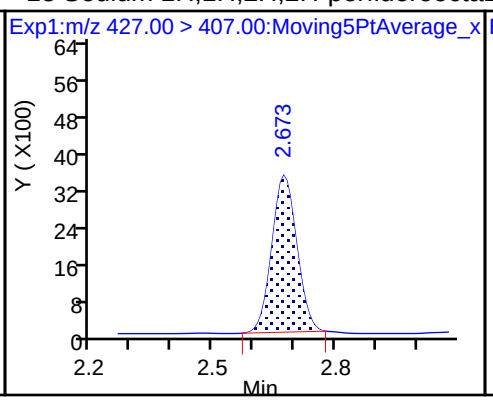
D 11 18O2 PFHxS



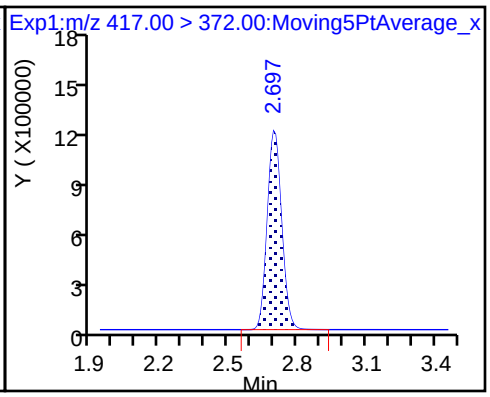
D 12 M2-6:2FTS



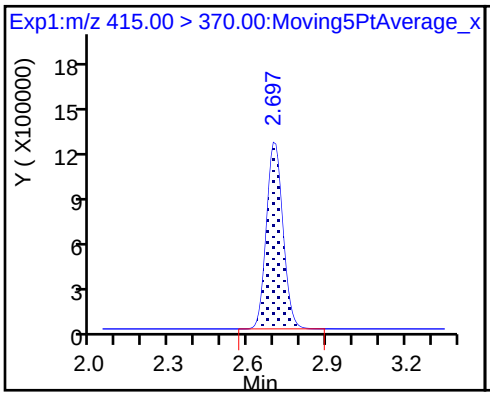
13 Sodium 1H,1H,2H,2H-perfluorooctane



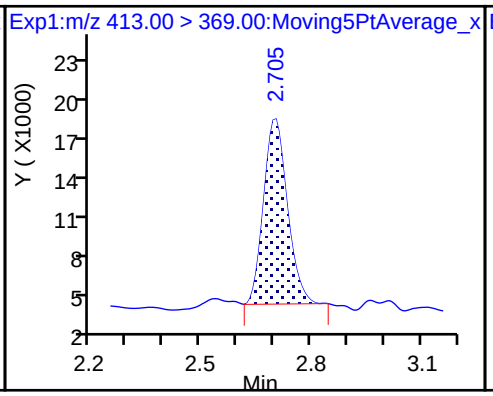
D 14 13C4 PFOA



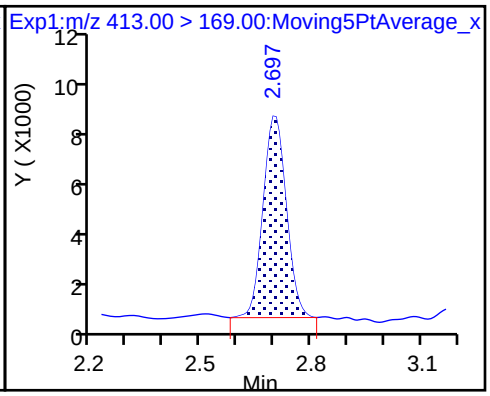
* 62 13C2-PFOA



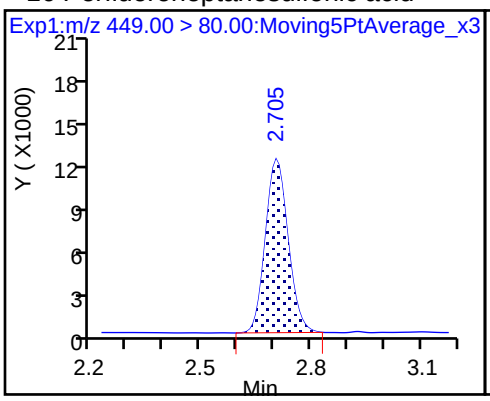
15 Perfluorooctanoic acid



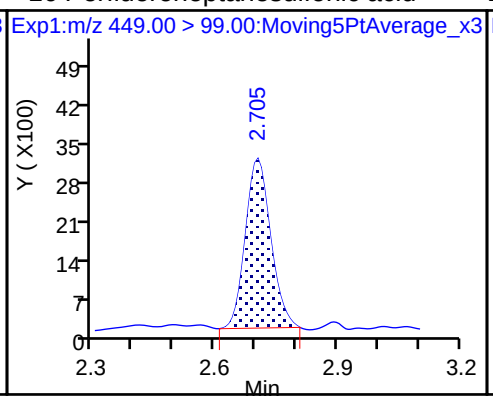
15 Perfluorooctanoic acid



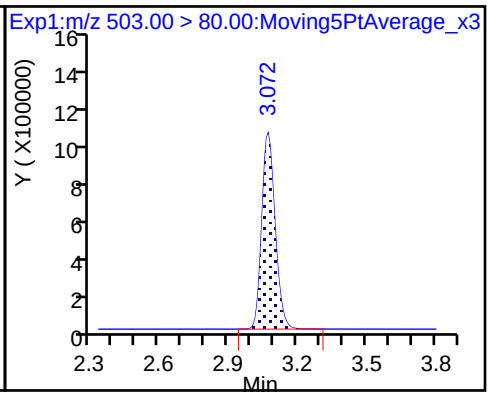
16 Perfluoroheptanesulfonic acid



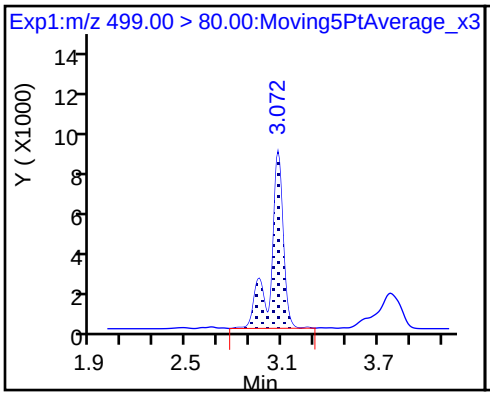
16 Perfluoroheptanesulfonic acid



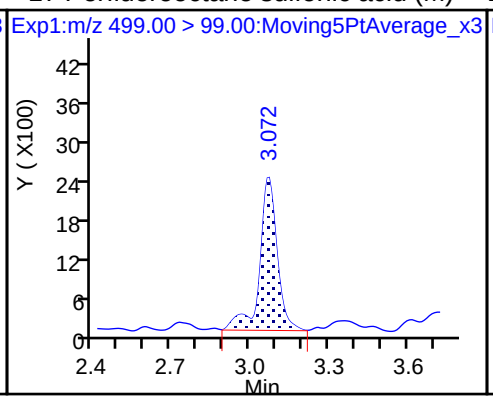
D 18 13C4 PFOS



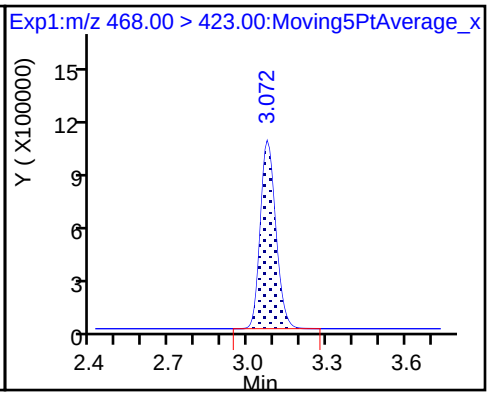
17 Perfluorooctane sulfonic acid



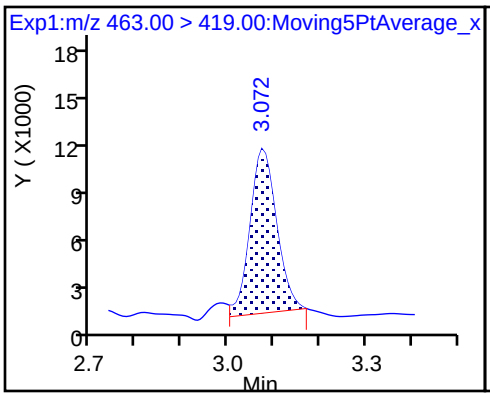
17 Perfluorooctane sulfonic acid (M)



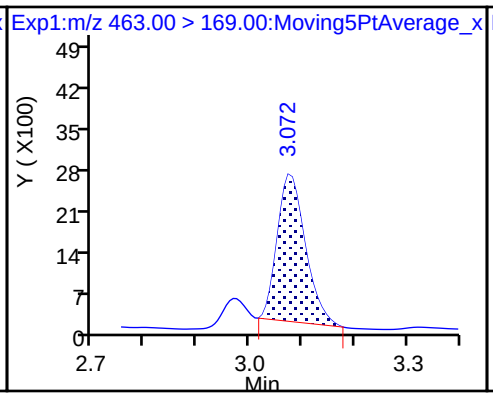
D 19 13C5 PFNA



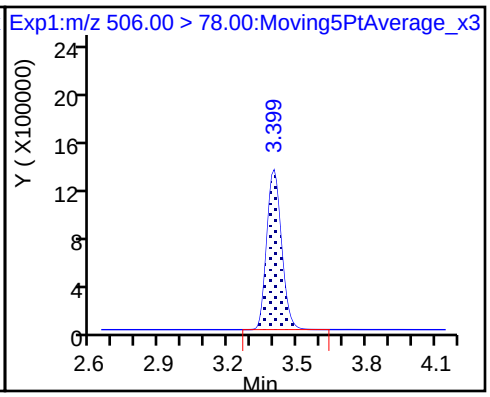
20 Perfluorononanoic acid



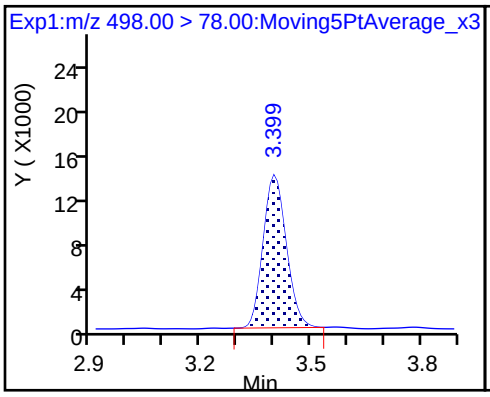
20 Perfluorononanoic acid



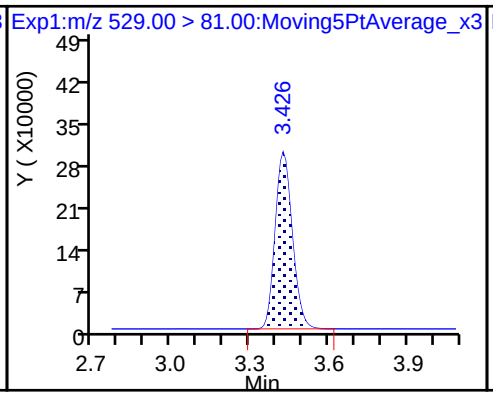
D 21 13C8 FOSA



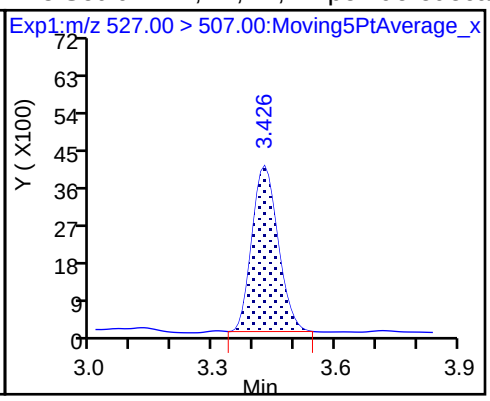
22 Perfluorooctane Sulfonamide



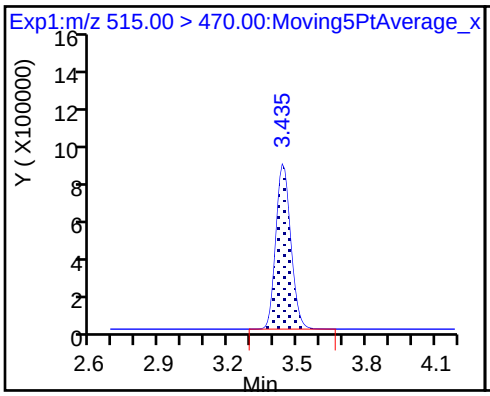
D 26 M2-8:2FTS



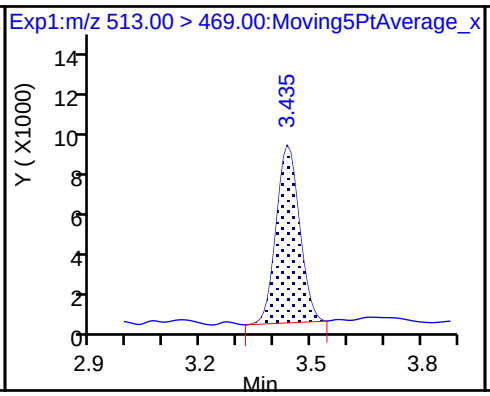
25 Sodium 1H,1H,2H,2H-perfluorodecane



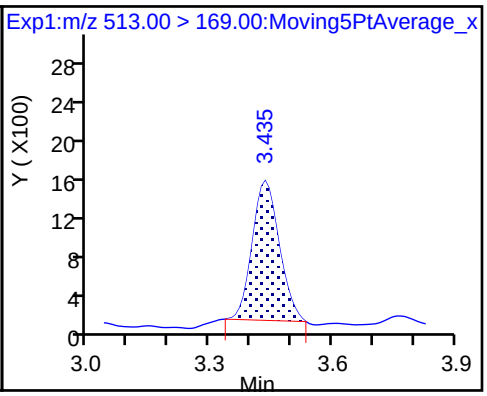
D 23 13C2 PFDA



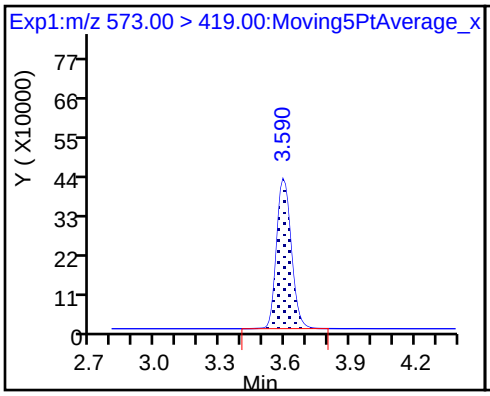
24 Perfluorodecanoic acid



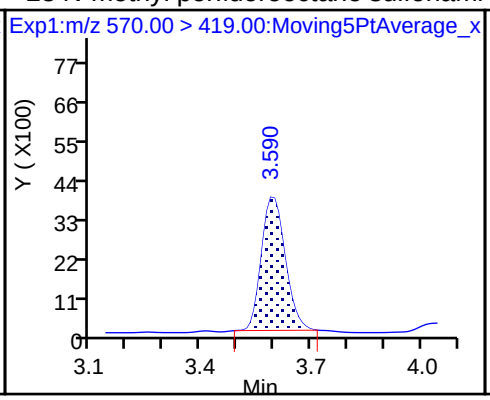
24 Perfluorodecanoic acid



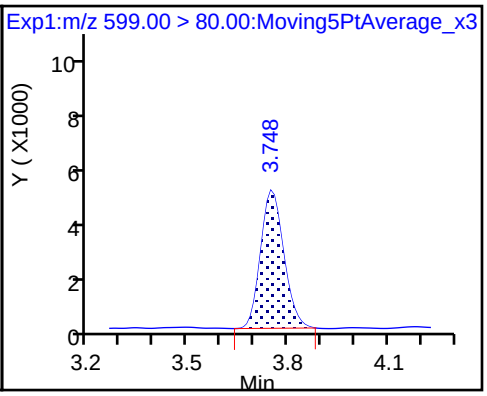
D 27 d3-NMeFOSAA



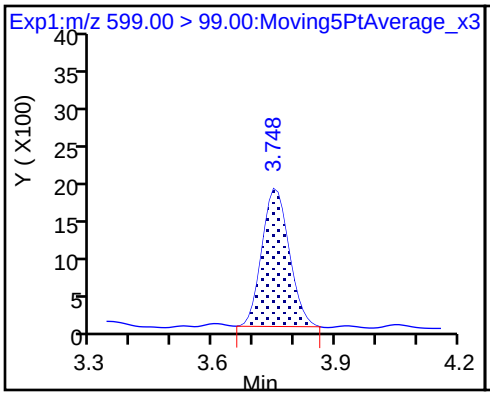
28 N-methyl perfluorooctane sulfonami



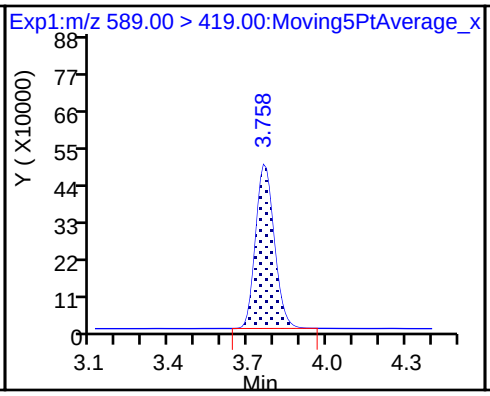
29 Perfluorodecane Sulfonic acid



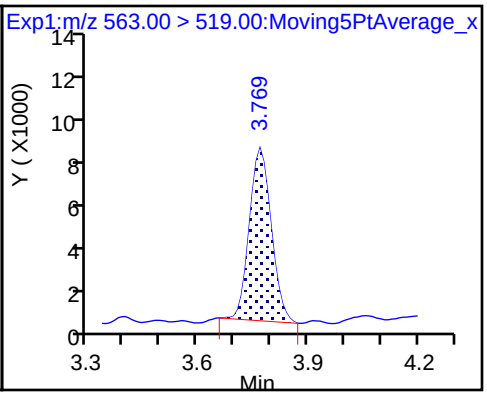
29 Perfluorodecane Sulfonic acid



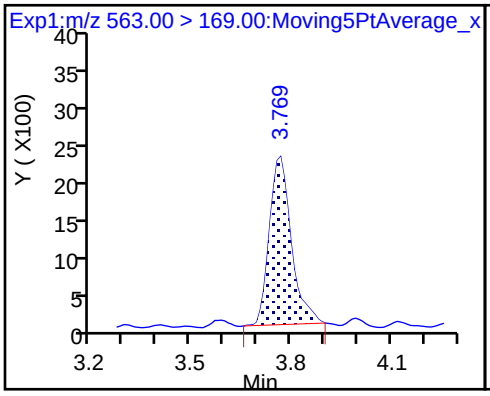
D 32 d5-NEtFOSAA



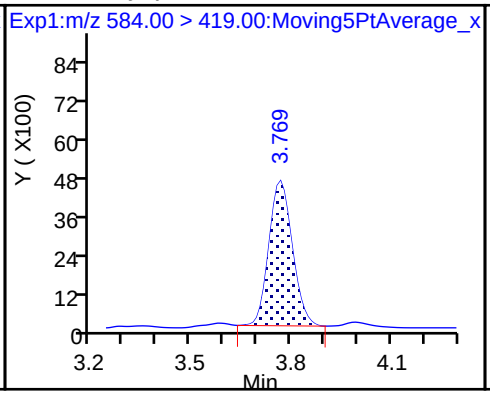
31 Perfluoroundecanoic acid



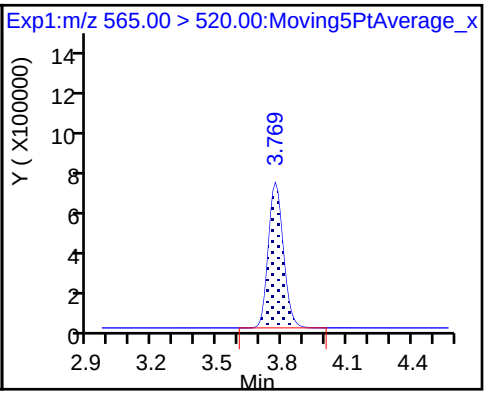
31 Perfluoroundecanoic acid



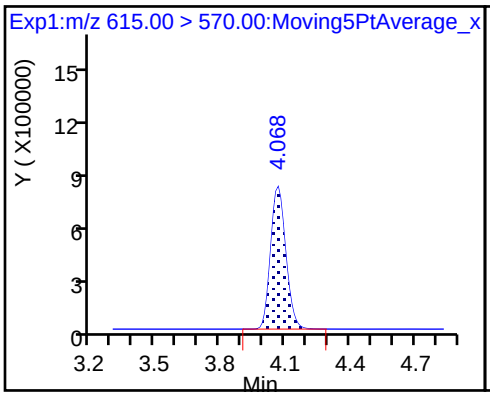
33 N-ethyl perfluorooctane sulfonamid



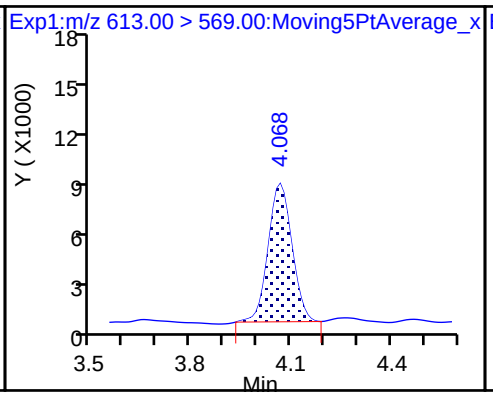
D 30 13C2 PFUnA



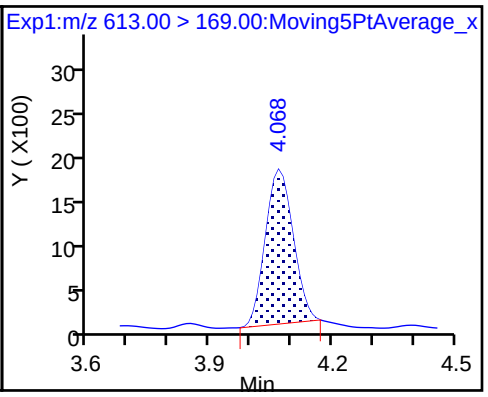
D 36 13C2 PFDoA



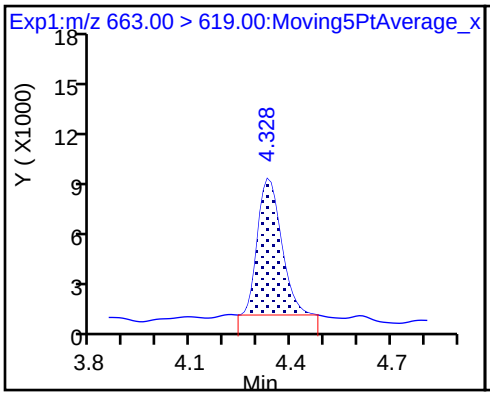
37 Perfluorododecanoic acid



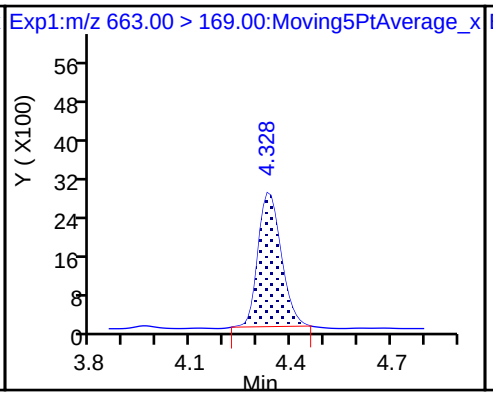
37 Perfluorododecanoic acid



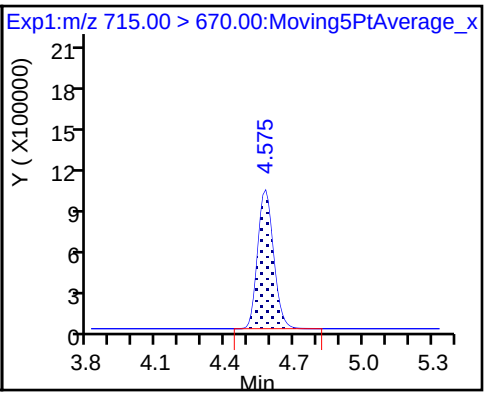
41 Perfluorotridecanoic acid



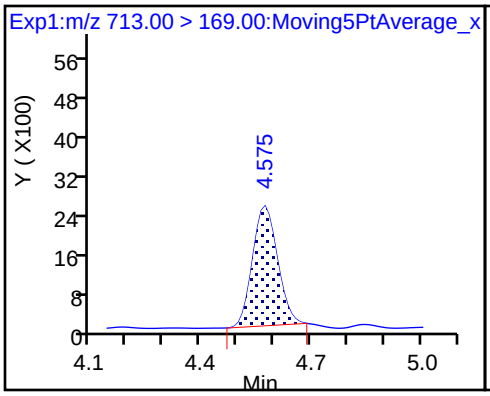
41 Perfluorotridecanoic acid



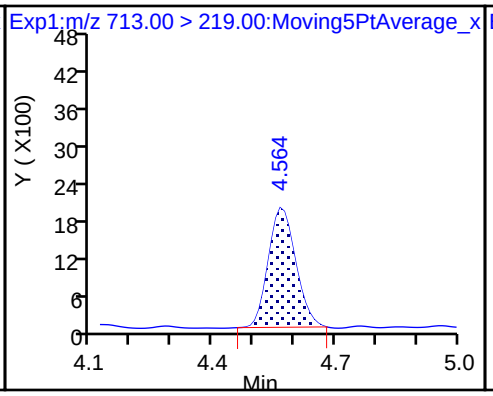
D 43 13C2-PFTeDA



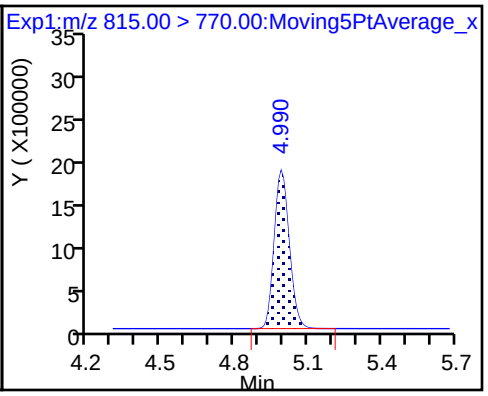
42 Perfluorotetradecanoic acid



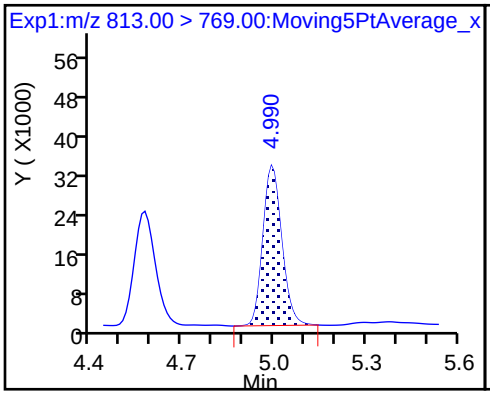
42 Perfluorotetradecanoic acid



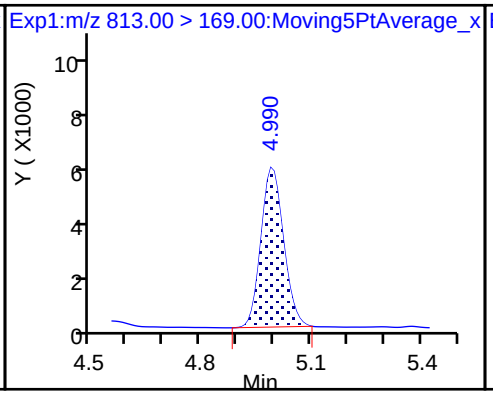
D 44 13C2-PFHxDA



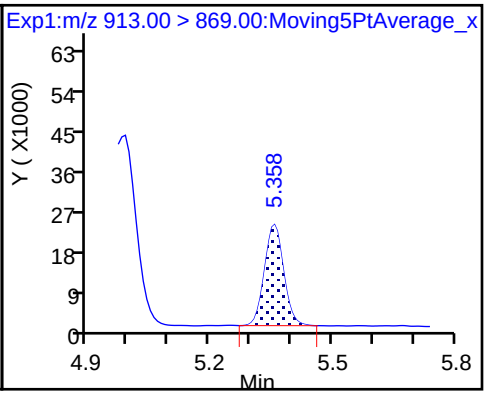
45 Perfluorohexadecanoic acid



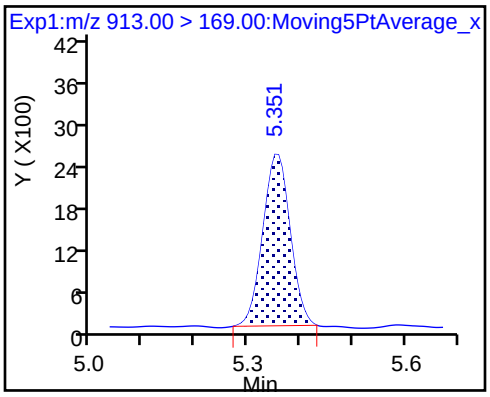
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

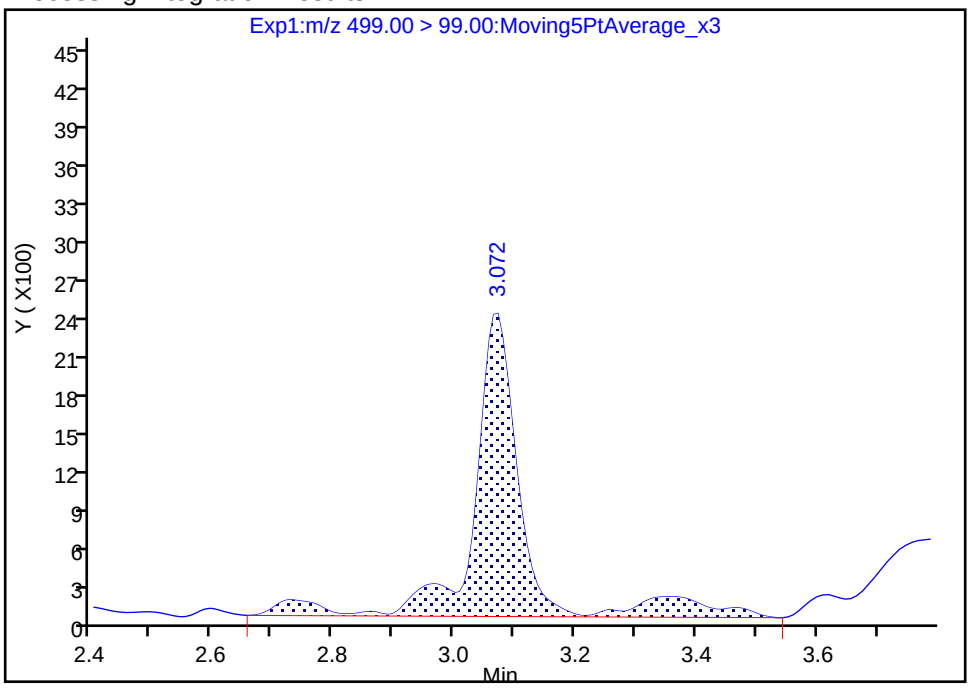
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_002.d
Injection Date: 21-Mar-2018 18:24:14 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

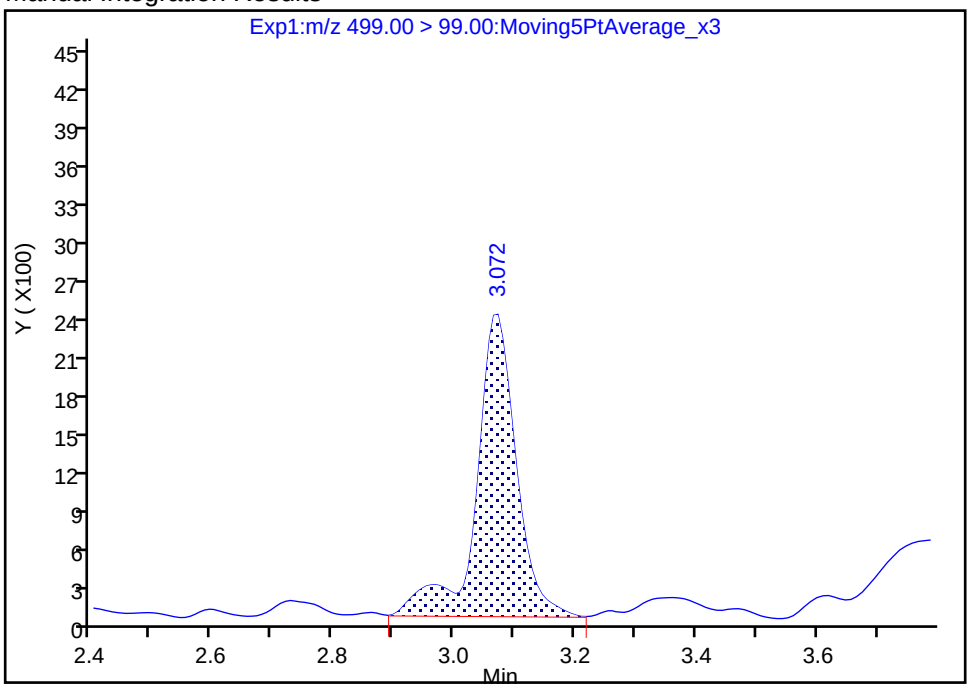
Processing Integration Results

RT: 3.07
Area: 13417
Amount: 0.025454
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 11047
Amount: 0.024551
Amount Units: ng/ml



Reviewer: phomsophat, 21-Mar-2018 19:22:35
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 21-Mar-2018 18:32:06 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:24 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:01:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.453	1.447	0.006	0.538	6712910	2.48		99.4	74780	
2 Perfluorobutyric acid										
212.90 > 169.00	1.453	1.449	0.004	1.000	131334	0.0519		104	51.1	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.710	0.008	1.000	99242	0.0493		98.6	52.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.718	1.710	0.008	0.636	4463093	2.49		99.6	170407	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.646	95045	2.32		99.9	742	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.754	1.745	0.009	1.005	142407	0.0448		101	854	
298.90 > 99.00	1.754	1.745	0.009	1.005	60865		2.34(1.25-3.74)	101	355	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.959	0.007	0.728	697680	2.47		106	9203	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	30869	0.0467		100	1890	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.009	1.998	0.011	1.000	109004	0.0514		103	280	
313.00 > 119.00	1.998	1.998	0.0	0.995	10400		10.48(5.03-15.10)	103	241	
D 7 13C2 PFHxA										
315.00 > 270.00	2.009	1.998	0.011	0.743	5181558	2.61		105	132505	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.333	0.008	0.866	4767222	2.44		97.5	90402	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.000	104181	0.0528		106	196	
363.00 > 169.00	2.341	2.335	0.006	1.000	41833		2.49(1.13-3.40)	106	451	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.346	0.008	1.000	131804	0.0476		105	1325	
399.00 > 99.00	2.354	2.346	0.008	1.000	47613		2.77(1.50-4.49)	105	223	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.871	5886251	2.44		103	63857	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.672	0.007	1.000	37735	0.0514		108	2241	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.672	0.007	0.991	999800	2.47		104	23113	
* 62 13C2-PFOA										
415.00 > 370.00	2.702	2.695	0.007		5334725	2.50			83817	
D 14 13C4 PFOA										
417.00 > 372.00	2.702	2.695	0.007	1.000	5069957	2.53		101	74355	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.702	2.697	0.005	1.000	127108	0.0555		111	40.5	
413.00 > 169.00	2.702	2.697	0.005	1.000	59408		2.14(0.84-2.52)	111	145	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.703	0.007	1.000	109652	0.0481		101	2629	
449.00 > 99.00	2.710	2.703	0.007	1.000	29467		3.72(1.94-5.82)	101	328	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.137	4256604	2.43		101	42340	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.137	4474026	2.54		101	84326	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.000	89694	0.0452		97.4	274	
499.00 > 99.00	3.072	3.070	0.002	1.000	22534		3.98(2.31-6.93)	97.4	162	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.072	0.008	1.003	87380	0.0489		97.9	102	
463.00 > 169.00	3.080	3.072	0.008	1.003	21332		4.10(1.90-5.69)	97.9	528	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.396	0.001	1.257	5839734	2.47		98.7	42573	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	112857	0.0490		98.0	1944	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.426	0.007	1.000	31966	0.0429		89.5	895	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.426	0.007	1.270	1399775	2.56		107	26042	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.435	0.007	1.000	71937	0.0449		89.8	349	
513.00 > 169.00	3.442	3.435	0.007	1.000	15536		4.63(2.36-7.09)	89.8	510	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.435	0.007	1.274	4053733	2.62		105	70301	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.591	0.008	1.332	1933236	2.38		95.0	40929	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.599	3.594	0.005	1.000	35274	0.0456		91.2	272	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.749	0.009	1.000	57466	0.0475		98.4	1493	
599.00 > 99.00	3.758	3.749	0.009	1.000	18714		3.07(1.39-4.16)	98.4	448	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.759	0.009	1.394	2436559	2.63		105	12783	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.394	3500228	2.53		101	72445	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.000	42131	0.0463		92.5	1086	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	62776	0.0520		104	262	
563.00 > 169.00	3.768	3.768	0.0	1.000	16020		3.92(2.12-6.36)	104	775	
D 36 13C2 PFDoA										
615.00 > 570.00	4.073	4.066	0.007	1.507	3780852	2.41		96.4	28974	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.073	4.068	0.005	1.000	83165	0.0526		105	73.8	
613.00 > 169.00	4.073	4.068	0.005	1.000	18963		4.39(2.13-6.40)	105	336	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.335	4.329	0.006	1.000	81708	0.0491		98.2	55.2	
663.00 > 169.00	4.335	4.329	0.006	1.000	28392		2.88(1.25-3.76)	98.2	490	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.571	4.568	0.002	1.691	4389855	2.29		91.6	28506	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.581	4.571	0.010	1.002	22776	0.0523		105	394	
713.00 > 219.00	4.571	4.571	-0.001	1.000	16546		1.38(0.71-2.13)	105	443	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.995	4.987	0.008	1.848	6843963	2.18		87.1	16591	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.995	4.989	0.006	1.000	185745	0.0504		101	64.9	
813.00 > 169.00	4.995	4.989	0.006	1.000	27597		6.73(2.86-8.58)	101	326	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.361	5.354	0.007	1.000	129317	0.0511		102	50.9	
913.00 > 169.00	5.361	5.354	0.007	1.000	15542		8.32(3.83-11.48)	102	221	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:26 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_003.d

Injection Date: 21-Mar-2018 18:32:06 Instrument ID: A8_N

Lims ID: IC L2 Full

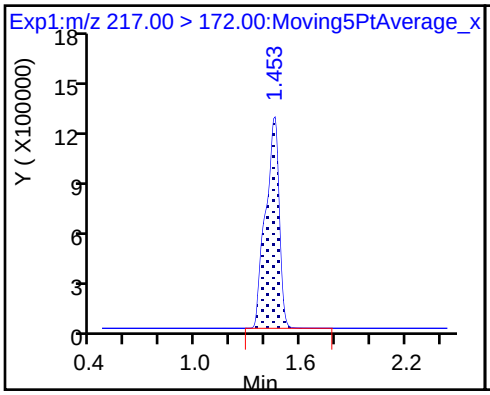
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

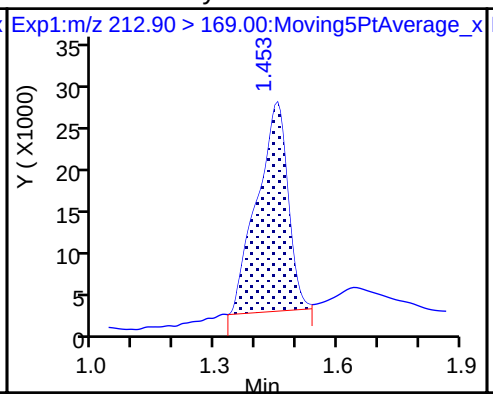
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

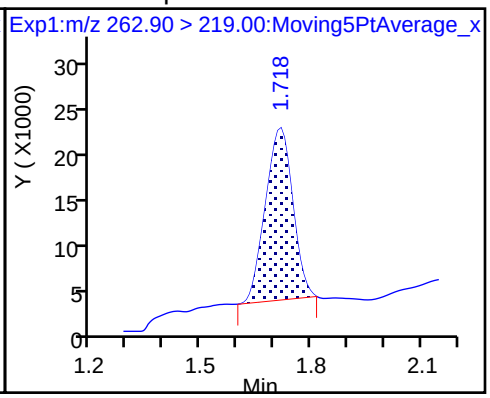
D 1 13C4 PFBA



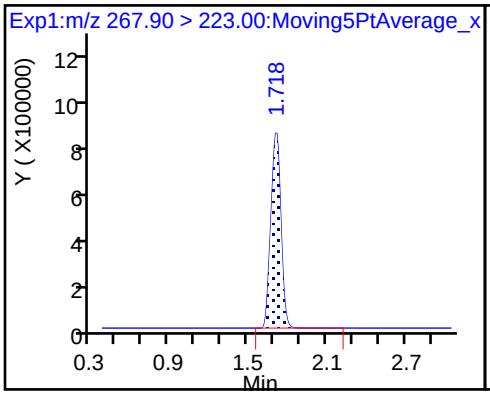
2 Perfluorobutyric acid



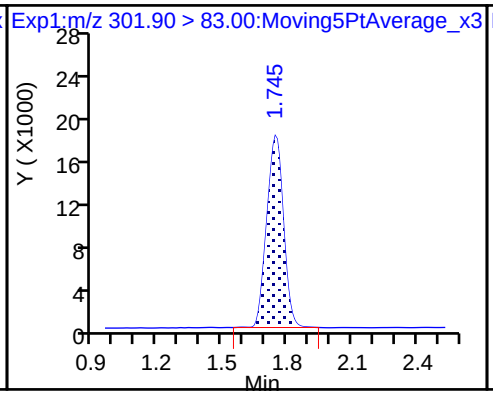
4 Perfluoropentanoic acid



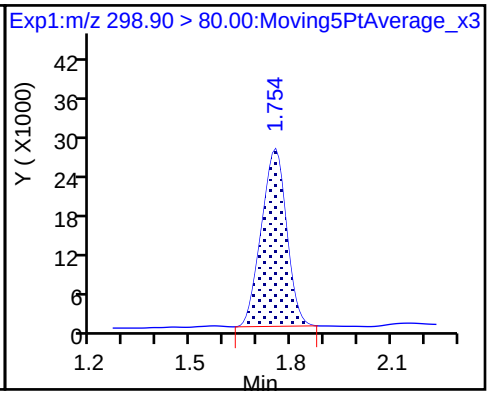
D 3 13C5-PFPeA



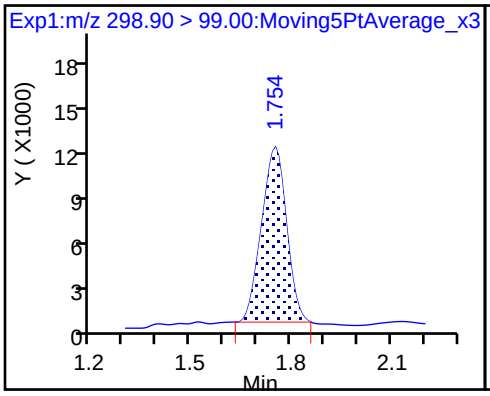
D 47 13C3-PFBS



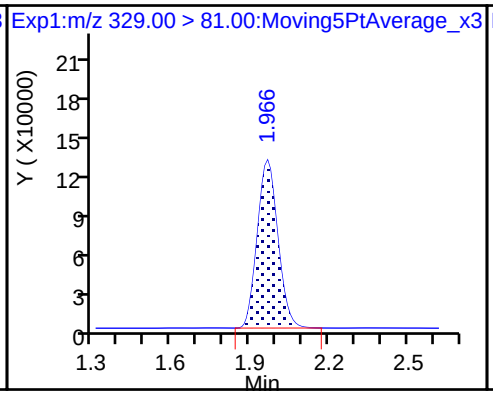
5 Perfluorobutanesulfonic acid



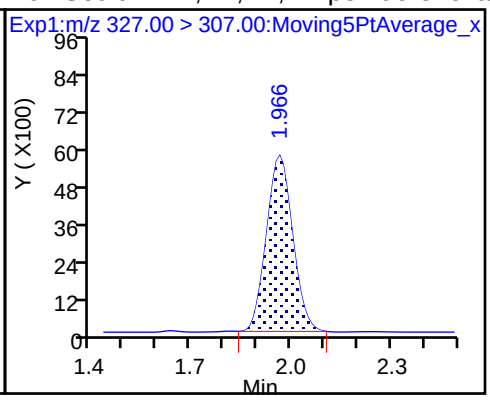
5 Perfluorobutanesulfonic acid



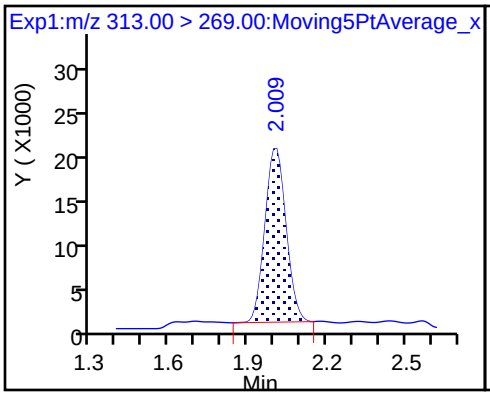
D 60 M2-4:2FTS



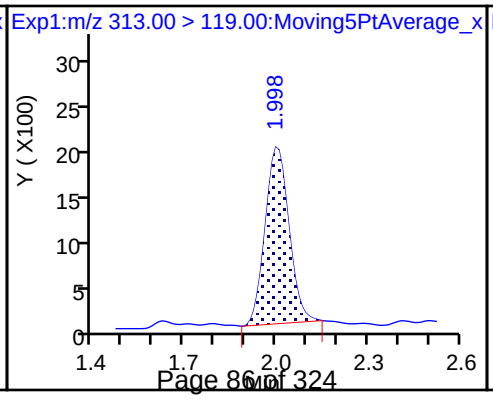
61 Sodium 1H,1H,2H,2H-perfluorohexane



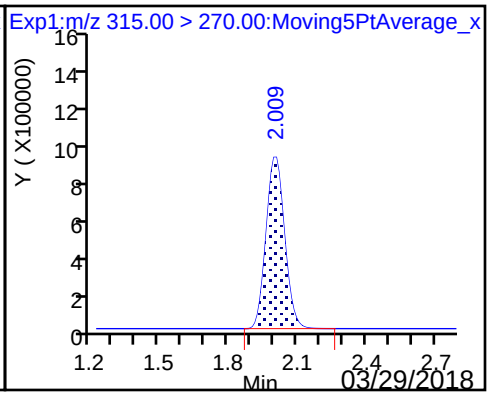
6 Perfluorohexanoic acid



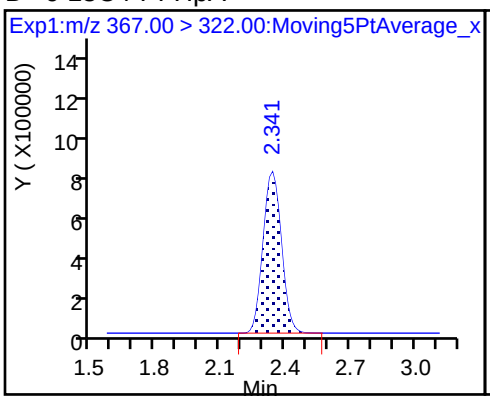
6 Perfluorohexanoic acid



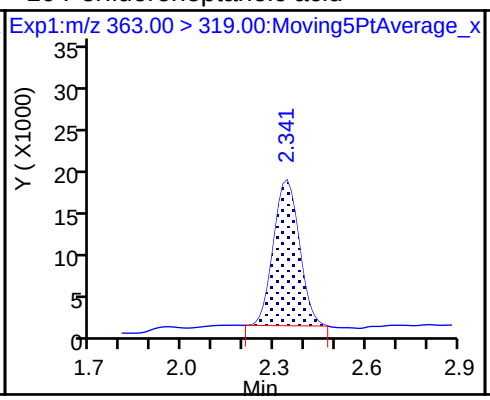
D 7 13C2 PFHxA



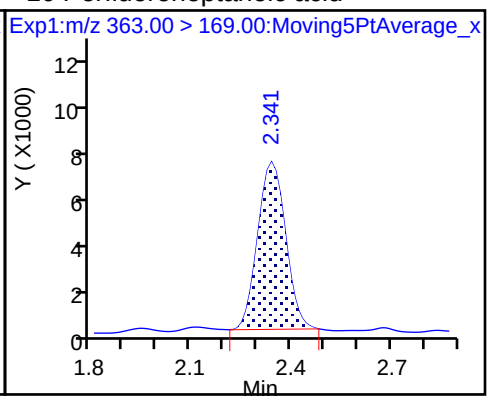
D 9 13C4-PFHpA



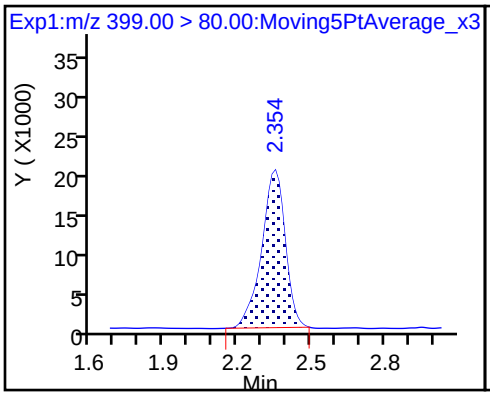
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid



8 Perfluorohexanesulfonic acid



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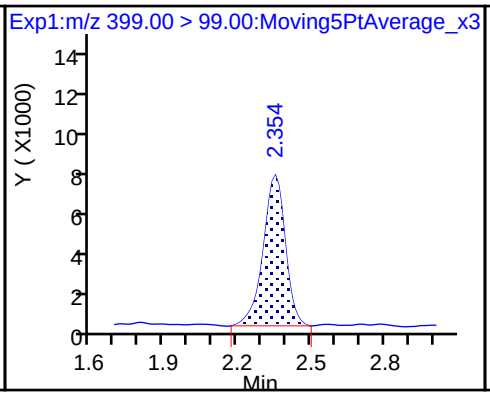
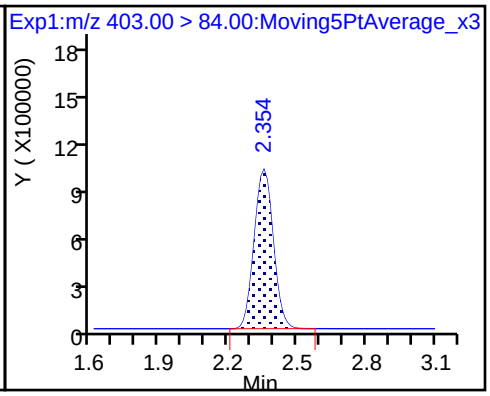
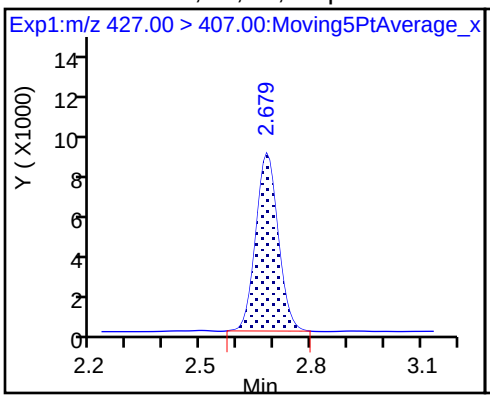


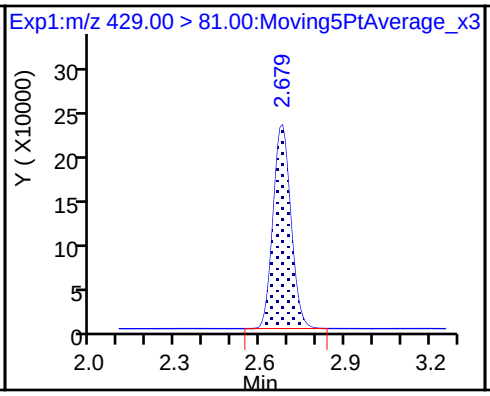
D 11 18O2 PFHxS



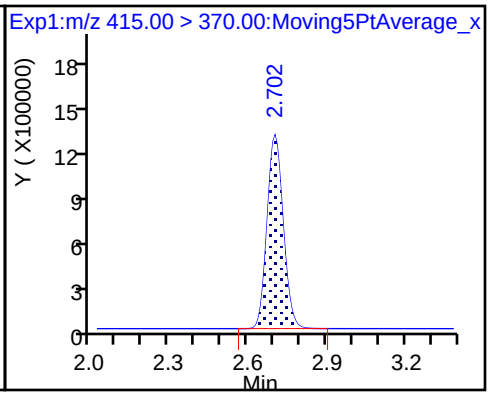
13 Sodium 1H,1H,2H,2H-perfluorooctan



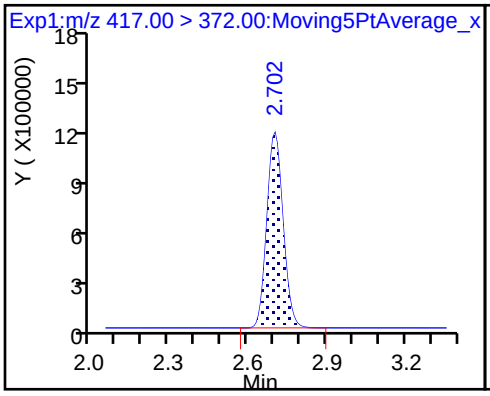
D 12 M2-6:2FTS



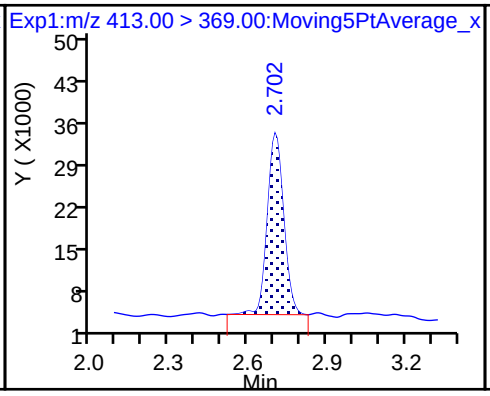
* 62 13C2-PFOA



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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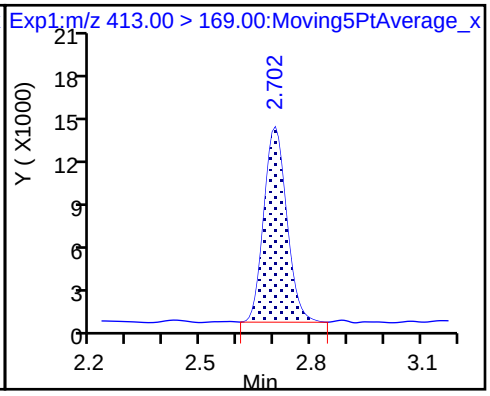
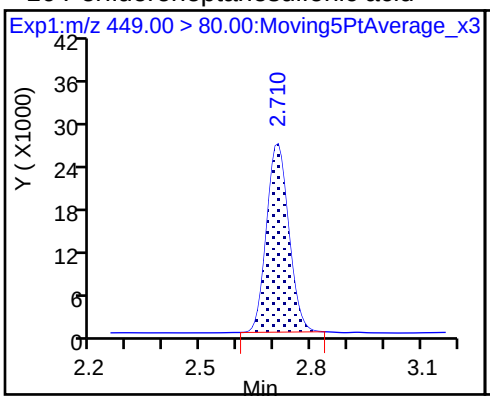
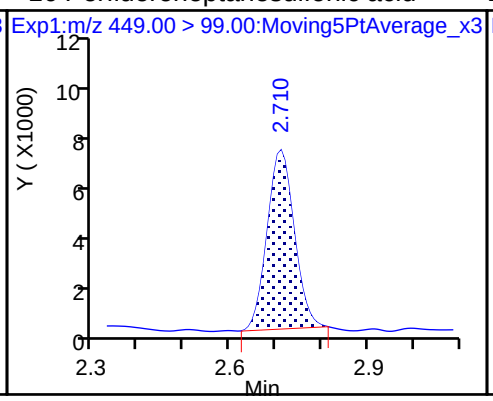


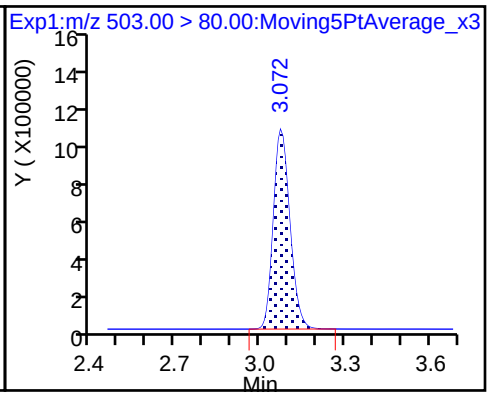
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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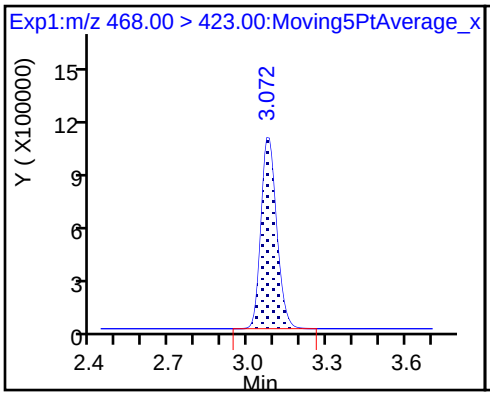
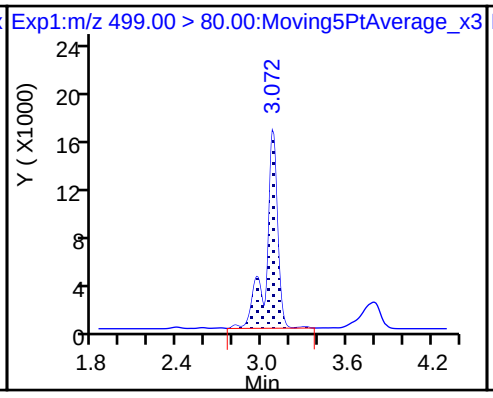
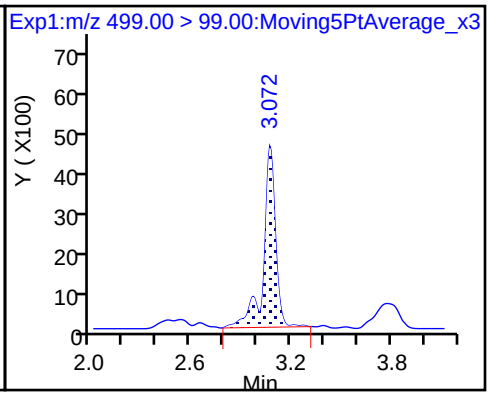


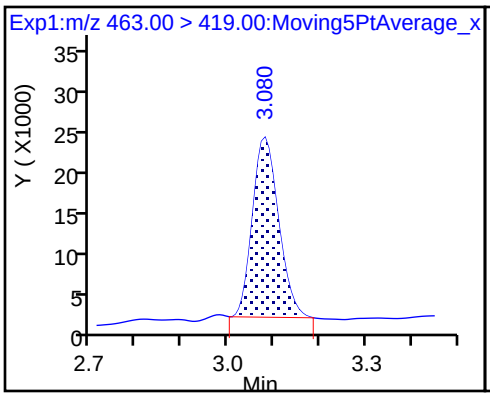
17 Perfluorooctane sulfonic acid



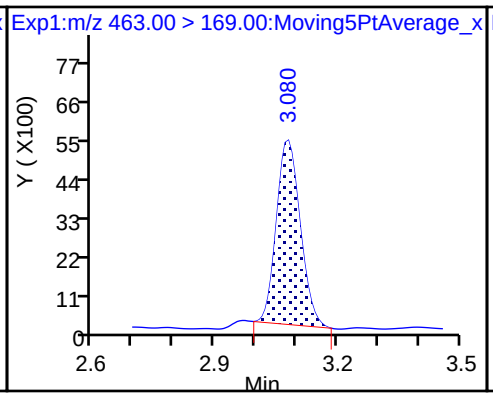
17 Perfluorooctane sulfonic acid



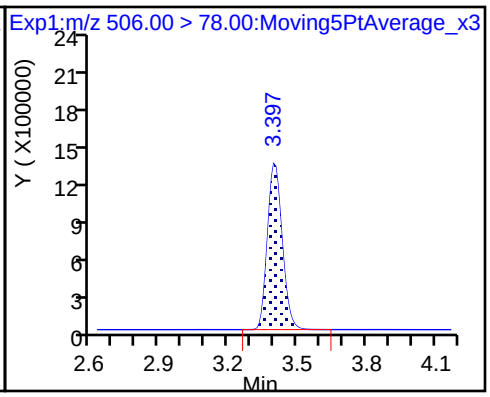
20 Perfluorononanoic acid



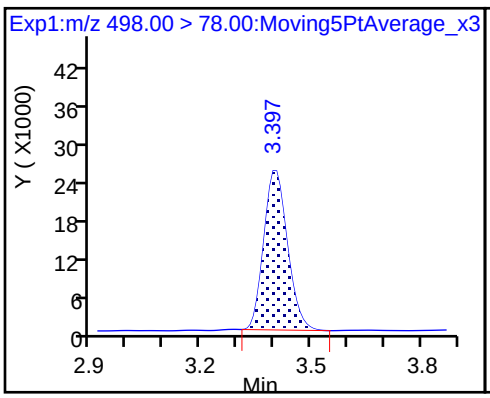
20 Perfluorononanoic acid



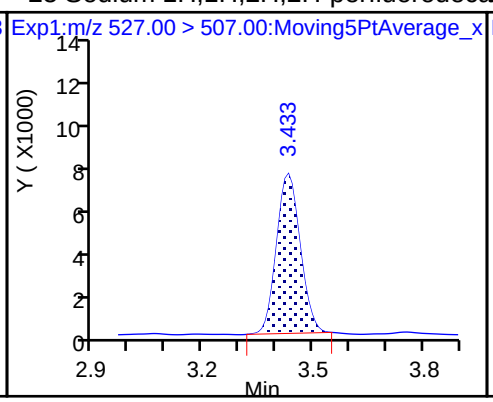
D 21 13C8 FOSA



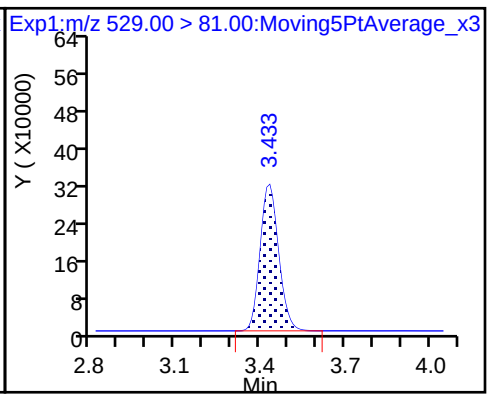
22 Perfluorooctane Sulfonamide



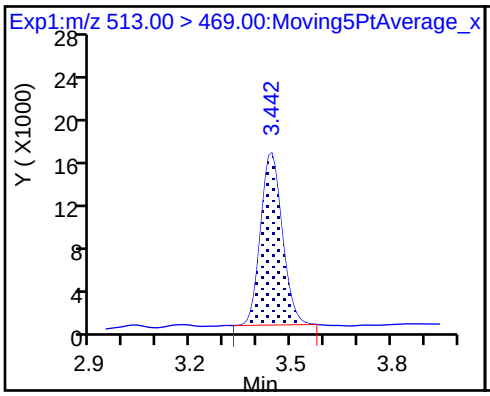
25 Sodium 1H,1H,2H,2H-perfluorodecane



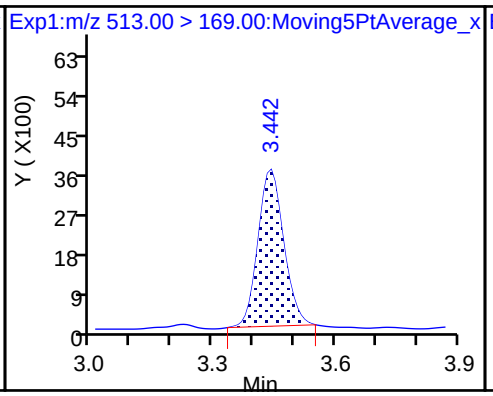
D 26 M2-8:2FTS



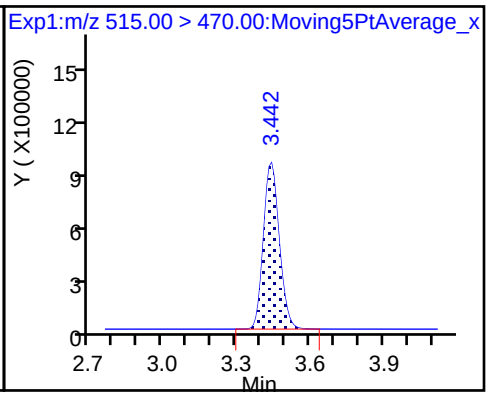
24 Perfluorodecanoic acid



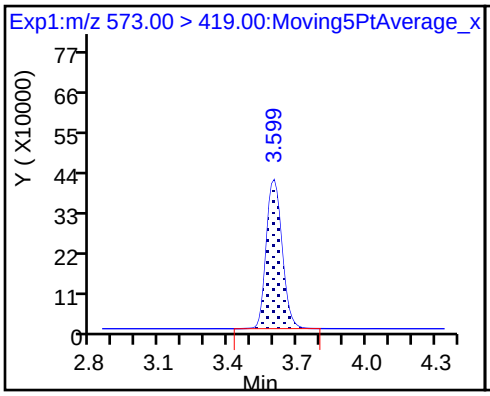
24 Perfluorodecanoic acid



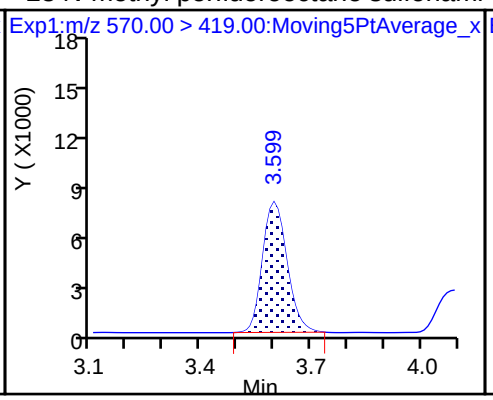
D 23 13C2 PFDA



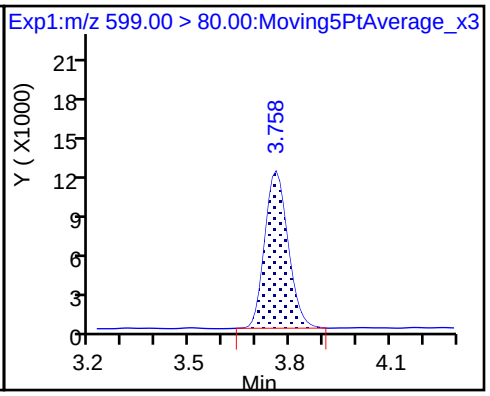
D 27 d3-NMeFOSAA



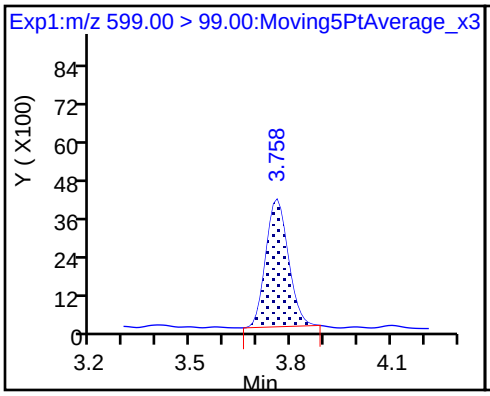
28 N-methyl perfluorooctane sulfonami



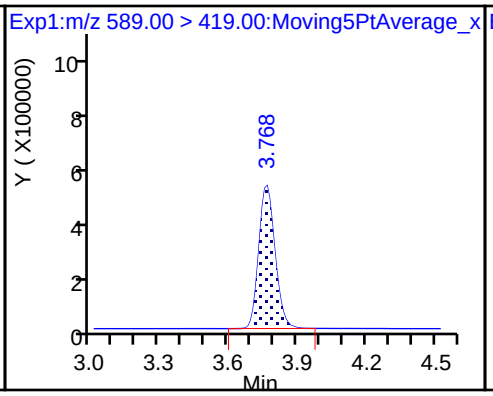
29 Perfluorodecane Sulfonic acid



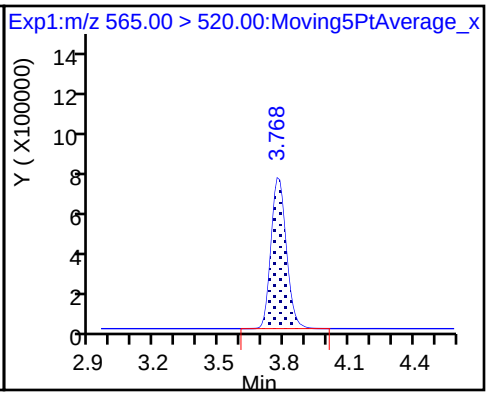
29 Perfluorodecane Sulfonic acid



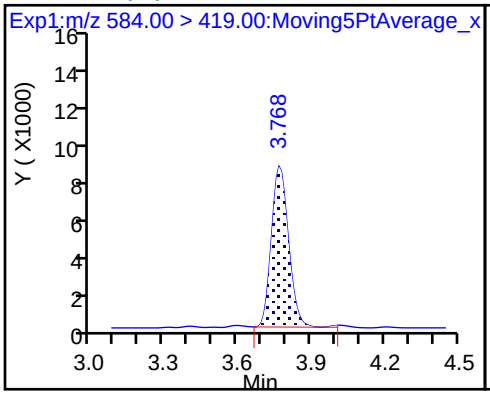
D 32 d5-NEtFOSAA



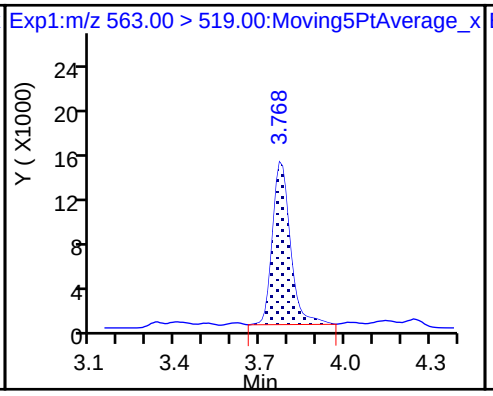
D 30 13C2 PFUnA



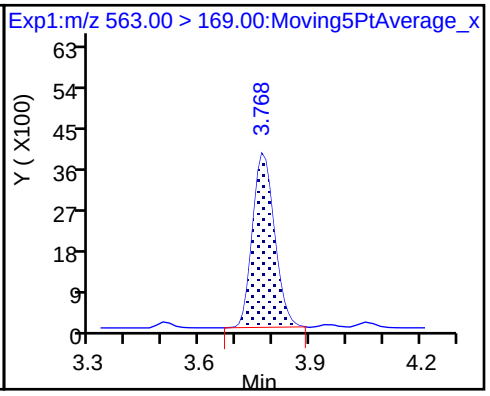
33 N-ethyl perfluorooctane sulfonamid



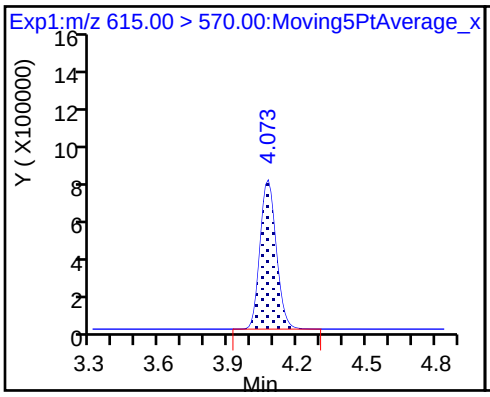
31 Perfluoroundecanoic acid



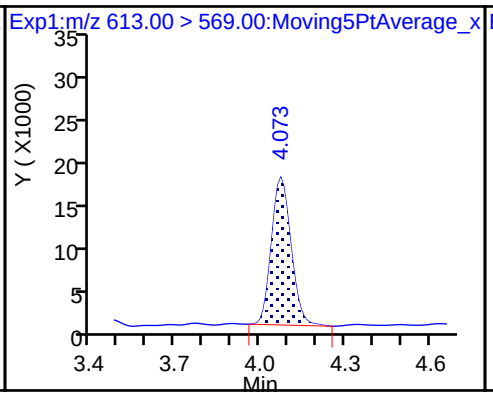
31 Perfluoroundecanoic acid



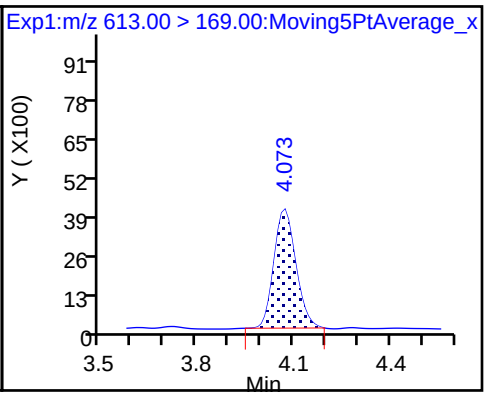
D 36 13C2 PFDoA



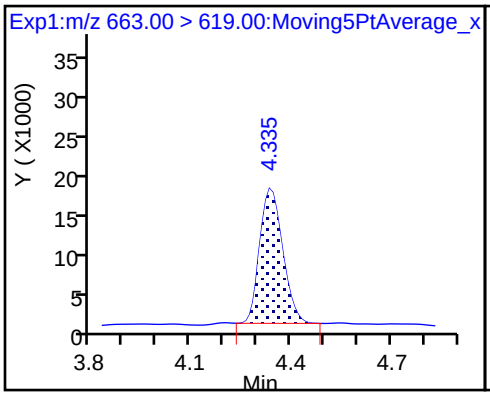
37 Perfluorododecanoic acid



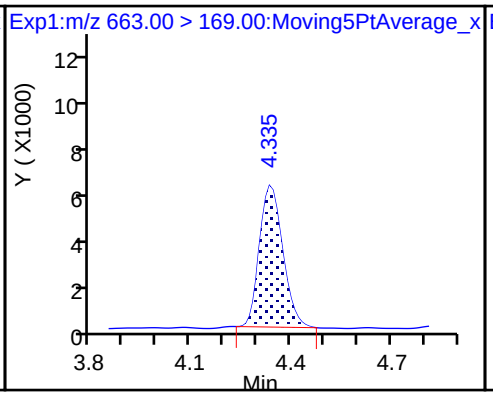
37 Perfluorododecanoic acid



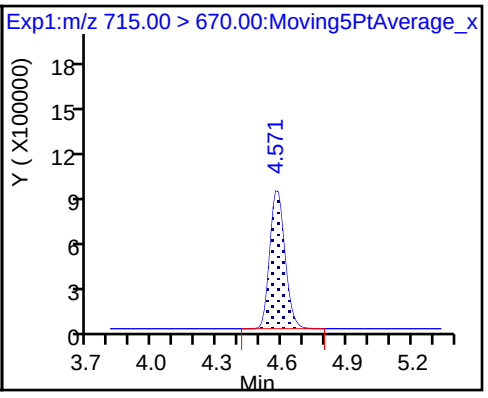
41 Perfluorotridecanoic acid



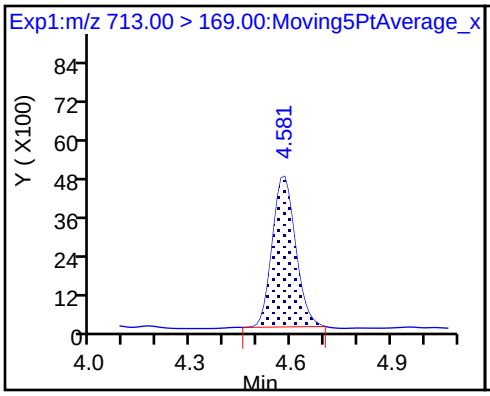
41 Perfluorotridecanoic acid



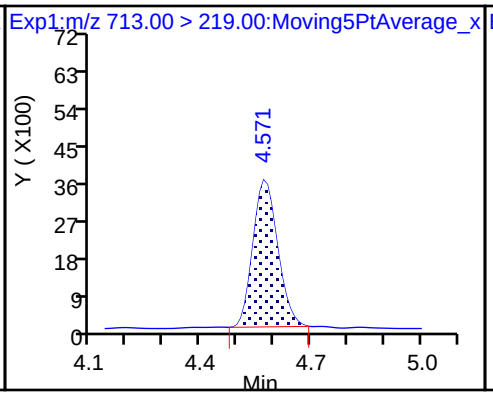
D 43 13C2-PFTeDA



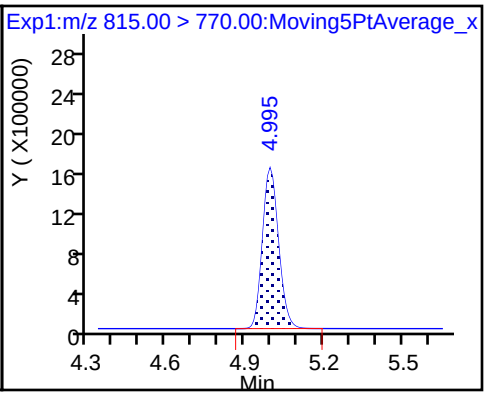
42 Perfluorotetradecanoic acid



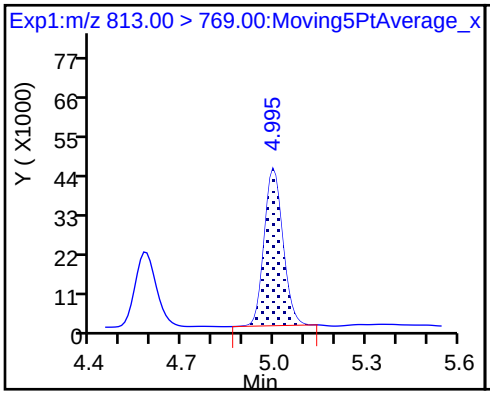
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA



45 Perfluorohexadecanoic acid



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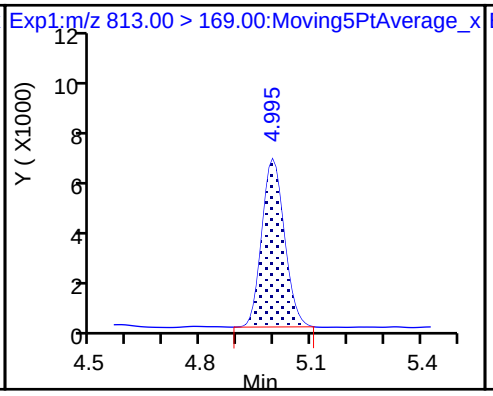
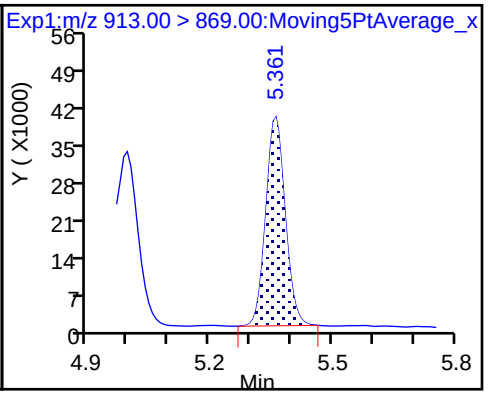
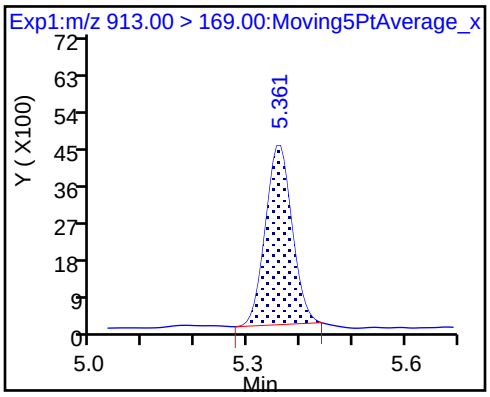


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 21-Mar-2018 18:39:58 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:23:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.536	6702182	2.53		101	75015	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	612393	0.2424		97.0	243	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4509425	2.56		102	109848	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	514727	0.2531		101	294	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	96305	2.40		103	583	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	700112	0.2175		98.4	3860	
298.90 > 99.00	1.745	1.745	0.0	1.000	305236		2.29(1.25-3.74)	98.4	1868	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	671337	2.42		104	8849	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	157752	0.2358		101	9759	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4935175	2.53		101	100521	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	497709	0.2466		98.6	1488	
313.00 > 119.00	1.998	1.998	0.0	1.000	45082		11.04(5.03-15.10)	98.6	905	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	5071076	2.64		106	96377	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	497784	0.2372		94.9	1108	
363.00 > 169.00	2.328	2.335	-0.007	1.000	196215		2.54(1.13-3.40)	94.9	2375	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	586824	0.2123		93.3	5073	
399.00 > 99.00	2.341	2.346	-0.005	1.000	193855		3.03(1.50-4.49)	93.3	806	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5874354	2.48		105	67207	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	956838	2.40		101	20351	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	166250	0.2367		99.9	7823	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	5033130	2.56		102	66085	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5240249	2.50			72893	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	551855	0.2426		97.1	186	
413.00 > 169.00	2.697	2.697	0.0	1.000	289099		1.91(0.84-2.52)	97.1	792	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	539007	0.2372		99.7	10606	
449.00 > 99.00	2.705	2.703	0.002	1.000	146271		3.68(1.94-5.82)	99.7	2312	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	4237867	2.46		103	39217	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.002	451427	0.2285		98.5	1564	
499.00 > 99.00	3.072	3.070	0.002	1.002	100623		4.49(2.31-6.93)	98.5	894	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4472333	2.58		103	73916	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	441188	0.2472		98.9	582	
463.00 > 169.00	3.072	3.072	0.0	1.000	113267		3.90(1.90-5.69)	98.9	1929	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	6203337	2.67		107	61203	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	592188	0.2421		96.8	13446	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1407067	2.62		109	26205	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	176483	0.2354		98.3	7854	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3933118	2.59		104	68284	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	394276	0.2536		101	1808	
513.00 > 169.00	3.435	3.435	0.0	1.000	66021		5.97(2.36-7.09)	101	3009	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	2099631	2.63		105	32210	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	219720	0.2614		105	1753	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	279040	0.2314		96.0	7395	
599.00 > 99.00	3.748	3.749	-0.001	1.000	91540		3.05(1.39-4.16)	96.0	3261	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2467789	2.71		108	15339	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.000	286311	0.2221		88.9	1276	
563.00 > 169.00	3.769	3.768	0.001	1.000	74133		3.86(2.12-6.36)	88.9	2992	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.768	0.001	1.003	224858	0.2438		97.5	5777	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.768	0.001	1.397	3737470	2.75		110	87838	
D 36 13C2 PFDoA										
615.00 > 570.00	4.068	4.066	0.002	1.508	3986883	2.59		103	35715	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.068	4.068	0.0	1.000	407079	0.2439		97.6	349	
613.00 > 169.00	4.068	4.068	0.0	1.000	100267		4.06(2.13-6.40)	97.6	2078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	-0.001	1.000	437729	0.2494		99.7	324	
663.00 > 169.00	4.329	4.329	-0.001	1.000	138849		3.15(1.25-3.76)	99.7	2090	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.692	4783571	2.54		102	32092	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.004	1.002	118401	0.2497		99.9	1652	
713.00 > 219.00	4.564	4.571	-0.007	1.000	85338		1.39(0.71-2.13)	99.9	2012	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.850	8384119	2.72		109	19806	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	829775	0.2480		99.2	259	
813.00 > 169.00	4.990	4.989	0.001	1.000	141643		5.86(2.86-8.58)	99.2	1896	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.355	5.354	0.001	1.000	760025	0.2451		98.0	259	
913.00 > 169.00	5.355	5.354	0.001	1.000	94500		8.04(3.83-11.48)	98.0	1322	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_004.d

Injection Date: 21-Mar-2018 18:39:58 Instrument ID: A8_N

Lims ID: IC L3 Full

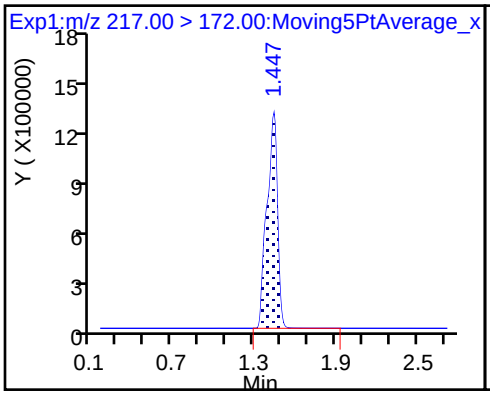
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

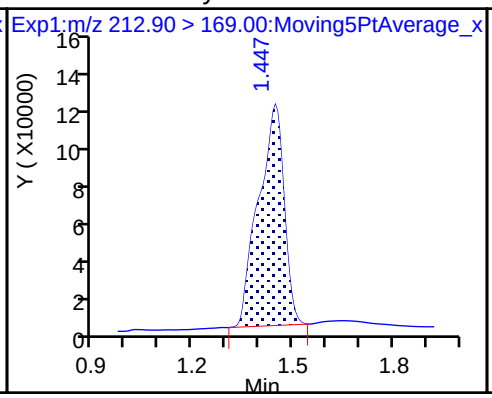
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

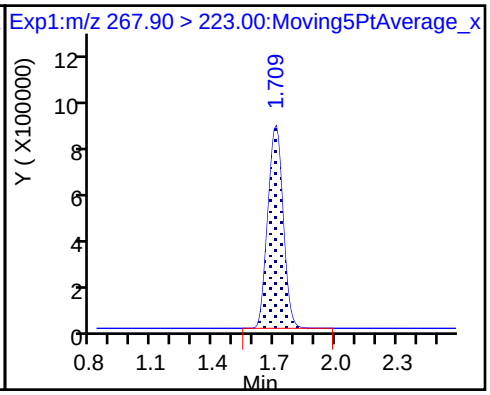
D 1 13C4 PFBA



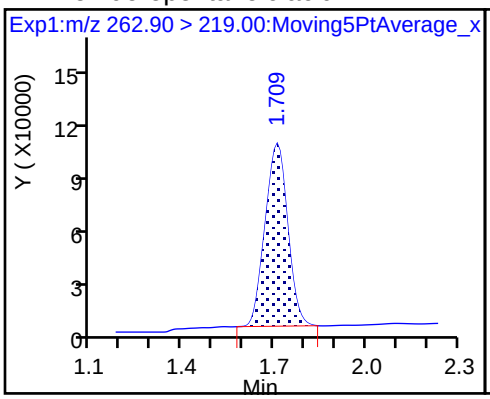
2 Perfluorobutyric acid



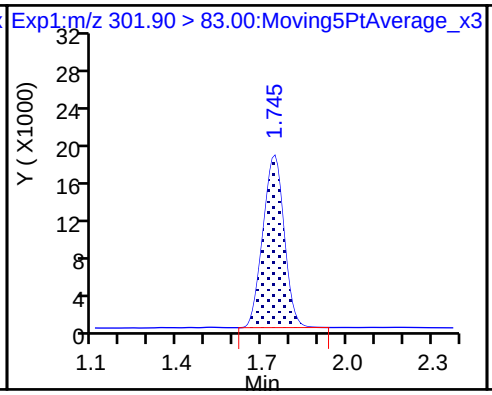
D 3 13C5-PFPeA



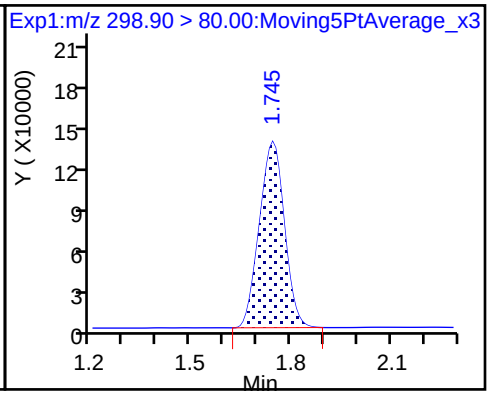
4 Perfluoropentanoic acid



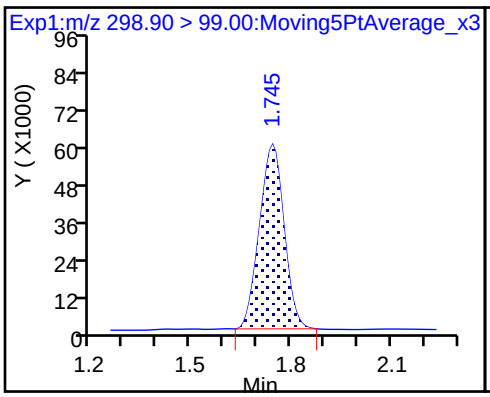
D 47 13C3-PFBS



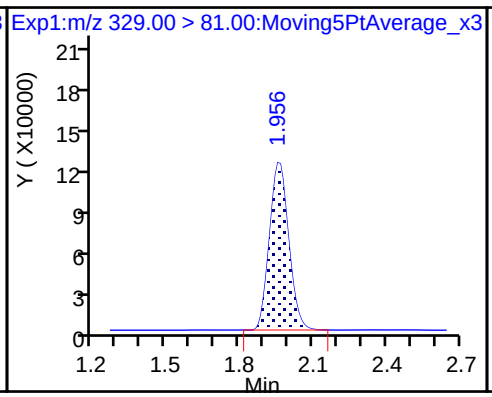
5 Perfluorobutanesulfonic acid



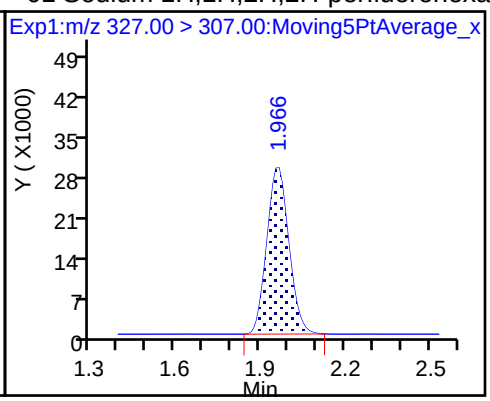
5 Perfluorobutanesulfonic acid



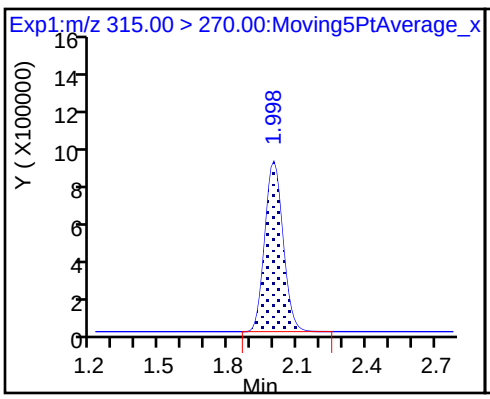
D 60 M2-4:2FTS



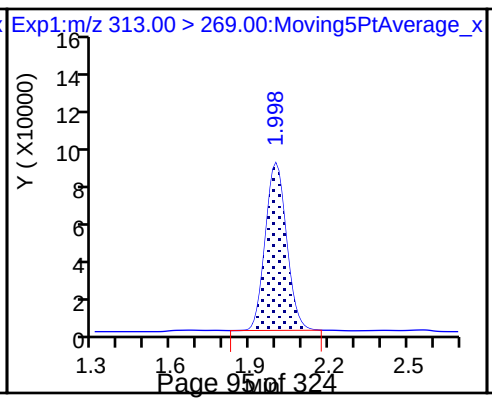
61 Sodium 1H,1H,2H,2H-perfluorohexane



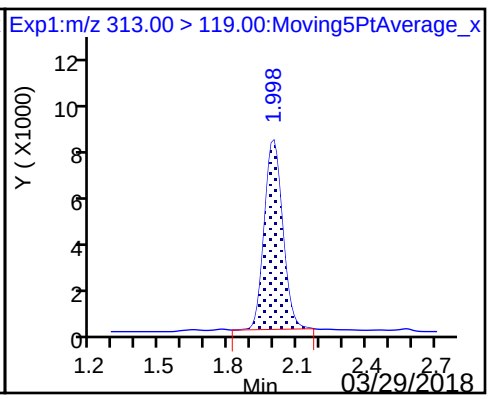
D 7 13C2 PFHxA



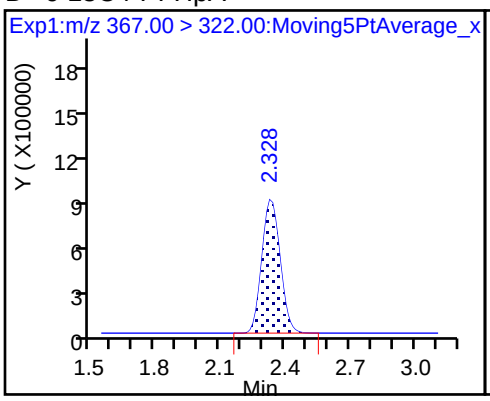
6 Perfluorohexanoic acid



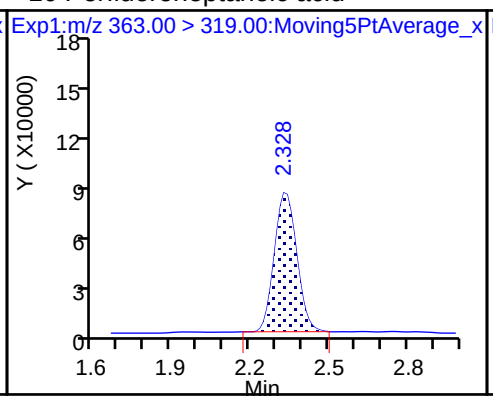
6 Perfluorohexanoic acid



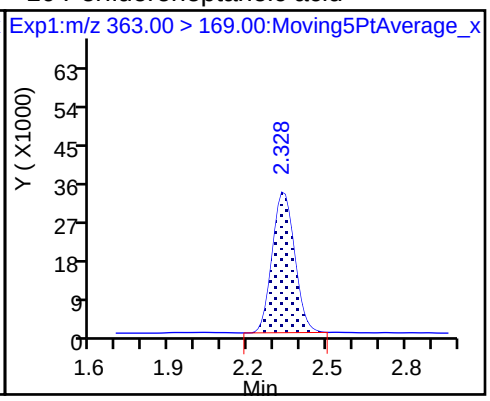
D 9 13C4-PFHpA



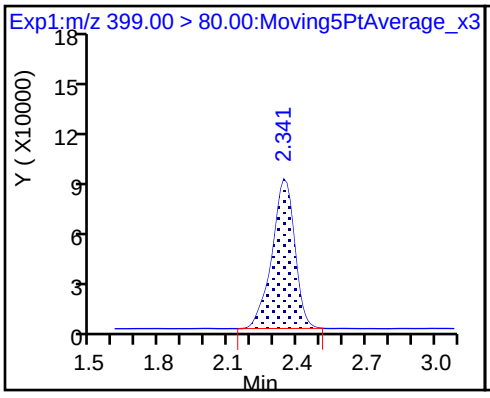
10 Perfluoroheptanoic acid



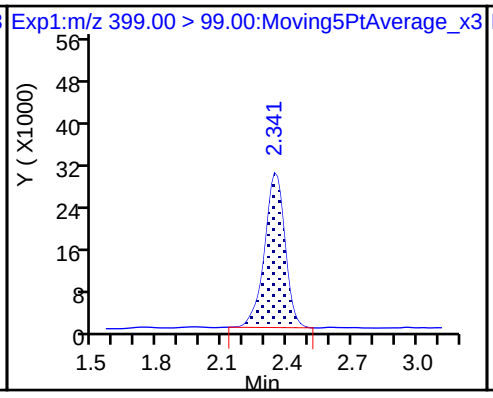
10 Perfluoroheptanoic acid



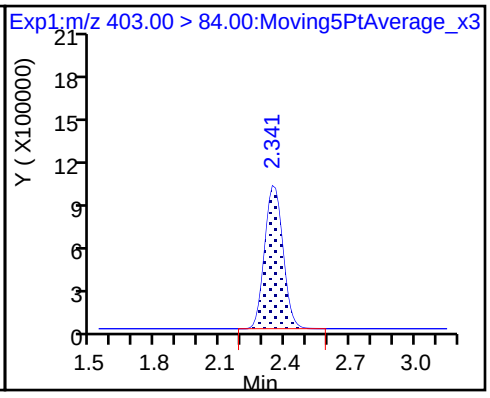
8 Perfluorohexanesulfonic acid



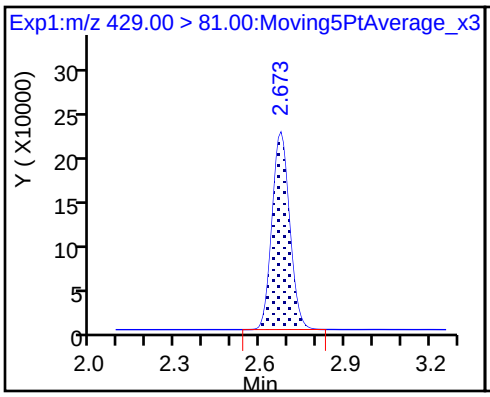
8 Perfluorohexanesulfonic acid



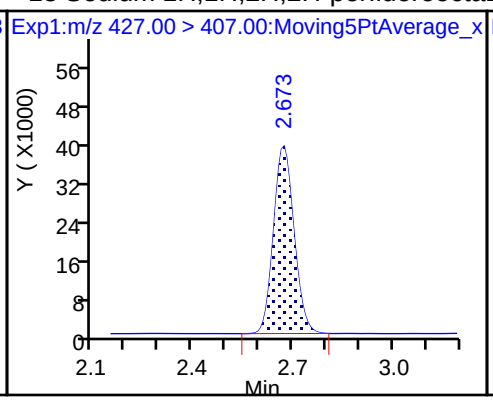
D 11 18O2 PFHxS



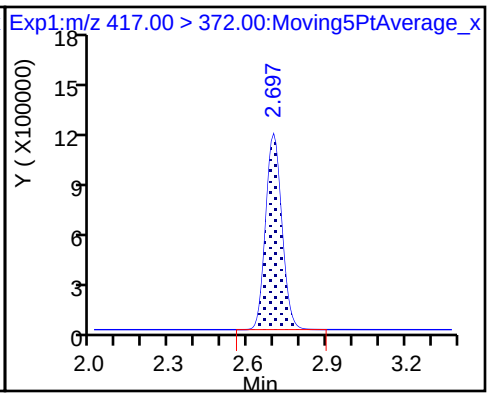
D 12 M2-6:2FTS



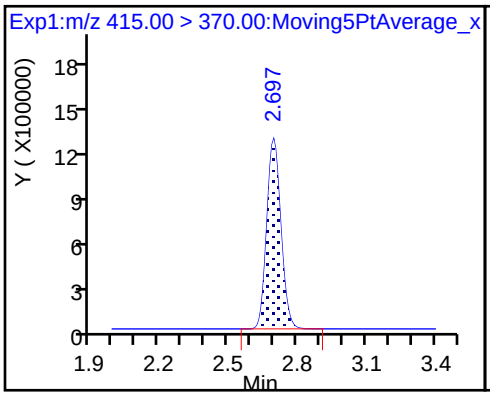
13 Sodium 1H,1H,2H,2H-perfluorooctane



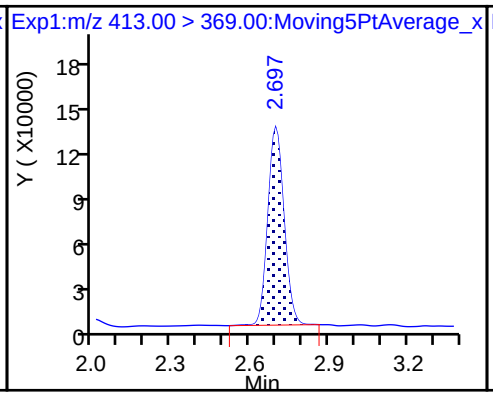
D 14 13C4 PFOA



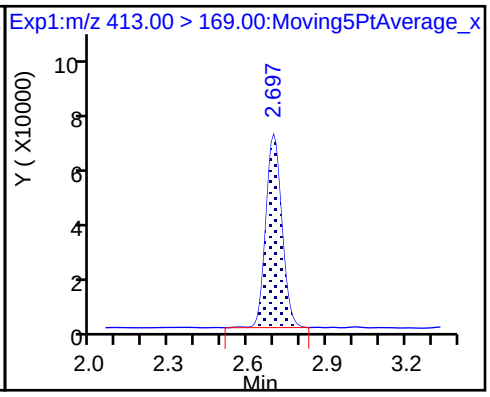
* 62 13C2-PFOA



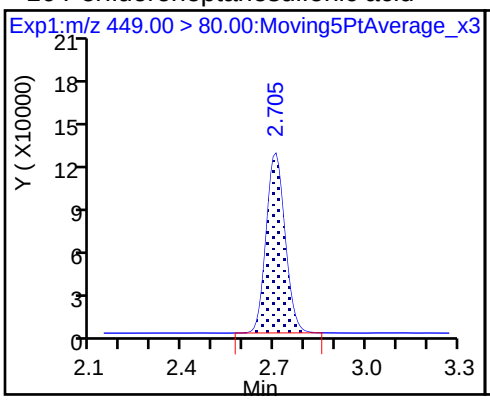
15 Perfluorooctanoic acid



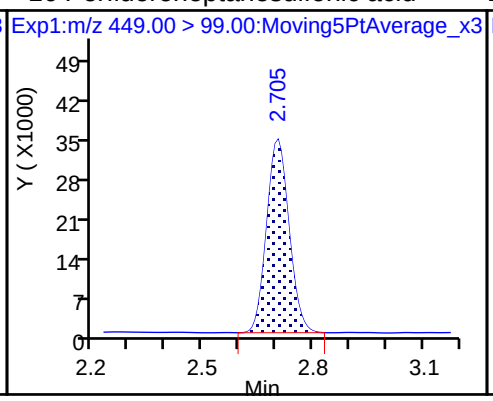
15 Perfluorooctanoic acid



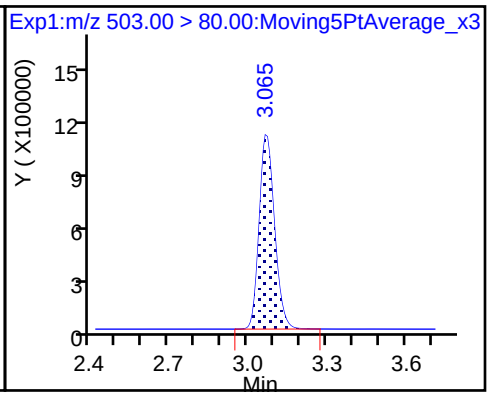
16 Perfluoroheptanesulfonic acid



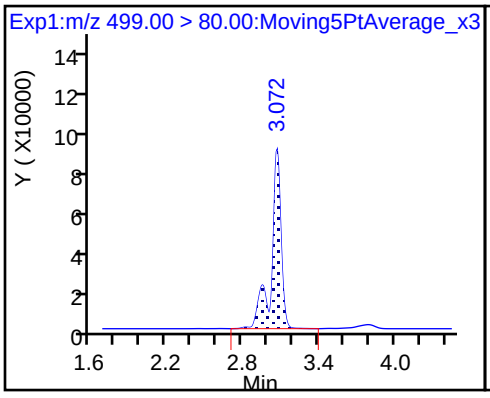
16 Perfluoroheptanesulfonic acid



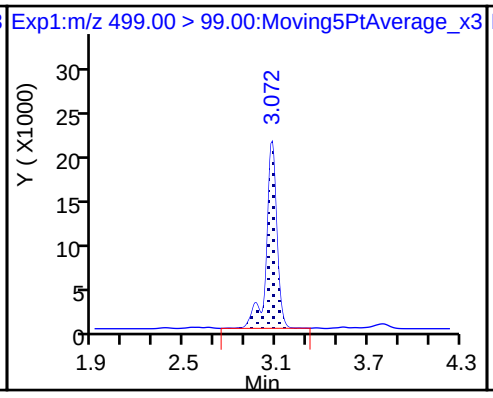
D 18 13C4 PFOS



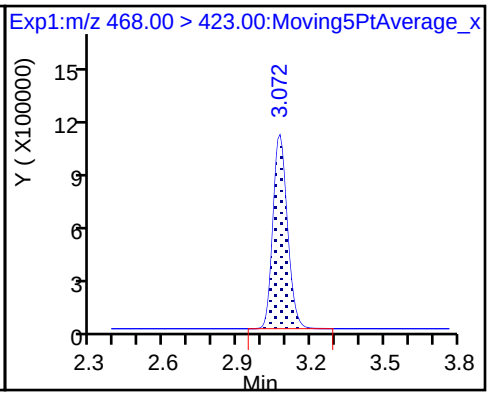
17 Perfluorooctane sulfonic acid



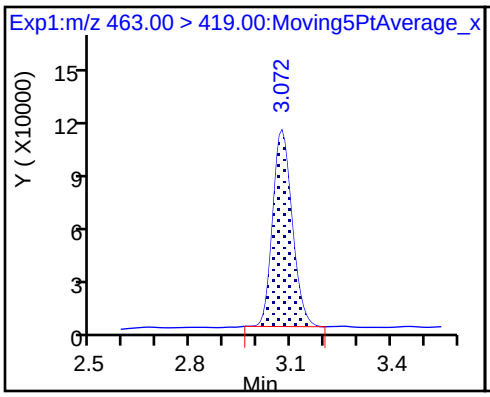
17 Perfluorooctane sulfonic acid



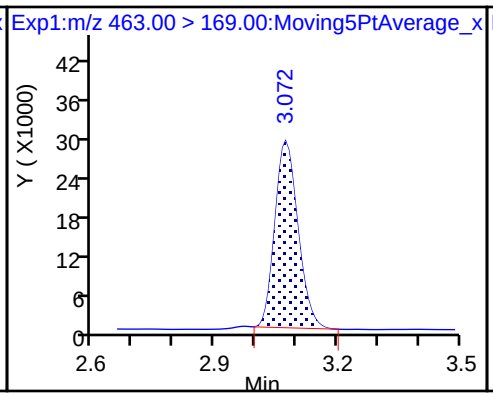
D 19 13C5 PFNA



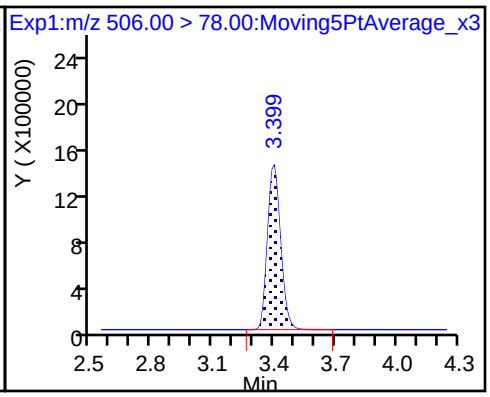
20 Perfluorononanoic acid



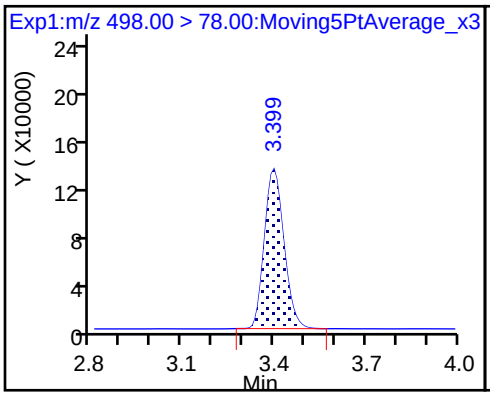
20 Perfluorononanoic acid



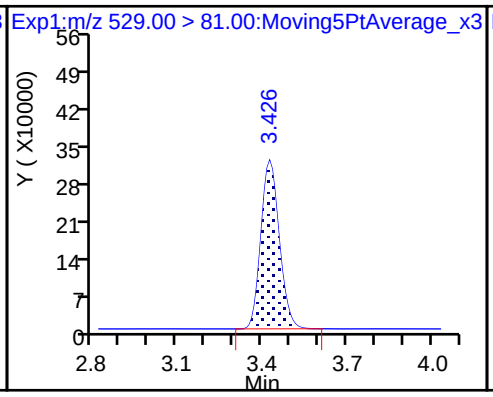
D 21 13C8 FOSA



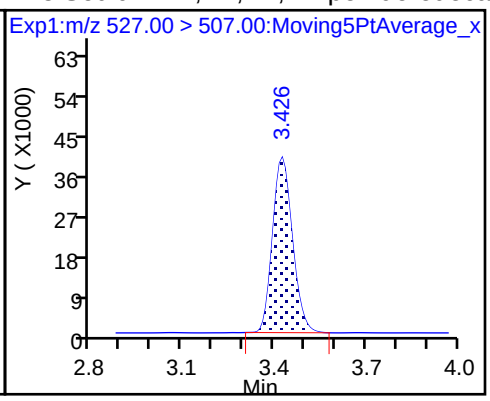
22 Perfluorooctane Sulfonamide



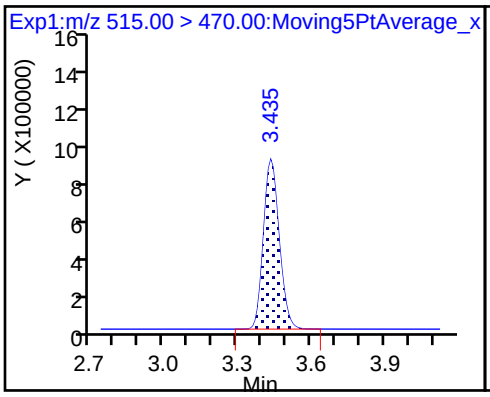
D 26 M2-8:2FTS



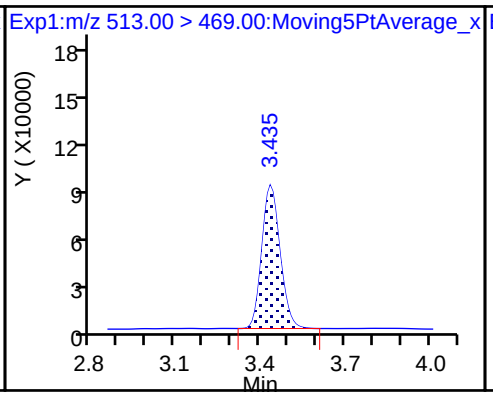
25 Sodium 1H,1H,2H,2H-perfluorodecane



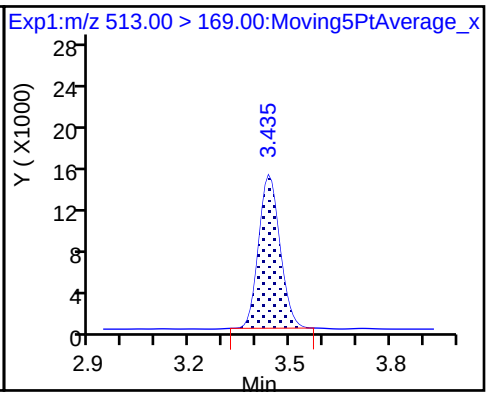
D 23 13C2 PFDA



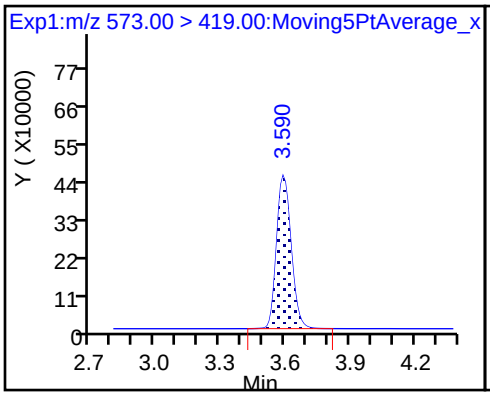
24 Perfluorodecanoic acid



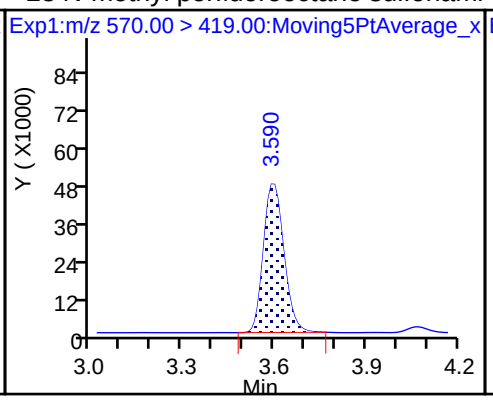
24 Perfluorodecanoic acid



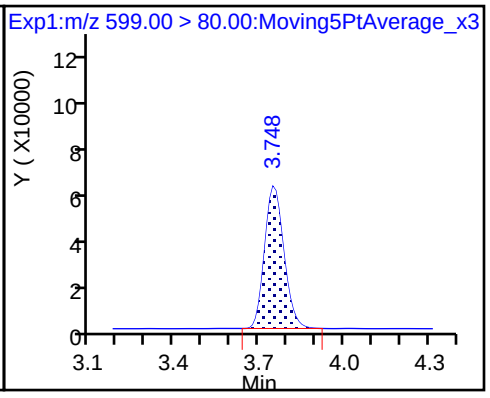
D 27 d3-NMeFOSAA



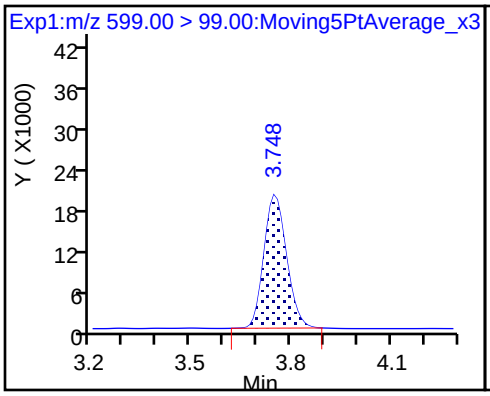
28 N-methyl perfluorooctane sulfonami



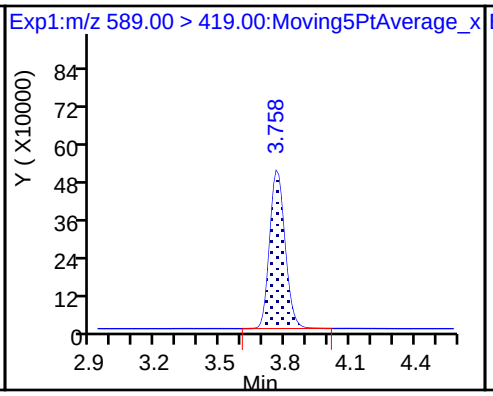
29 Perfluorodecane Sulfonic acid



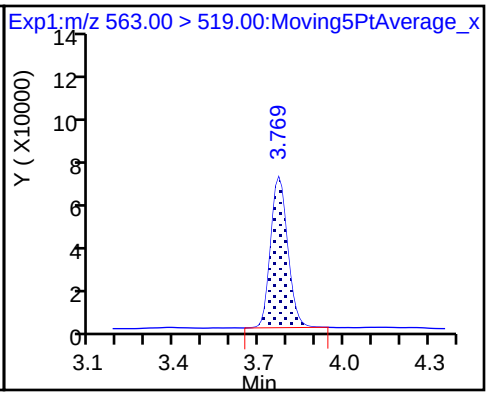
29 Perfluorodecane Sulfonic acid



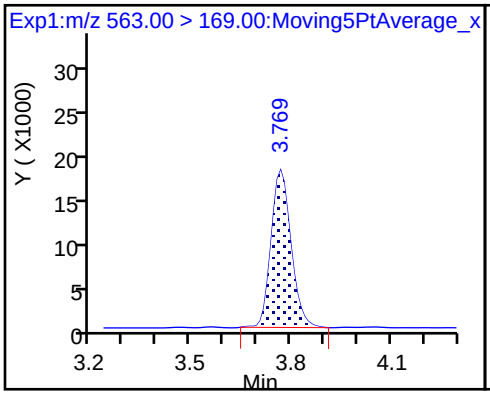
D 32 d5-NEtFOSAA



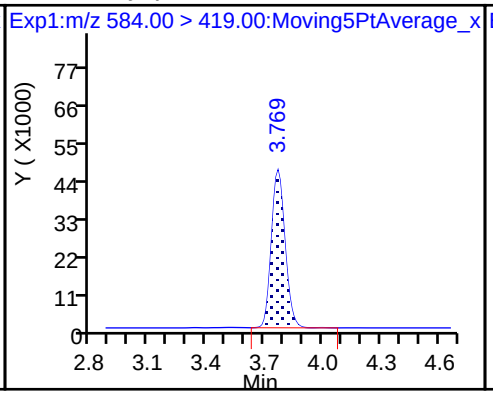
31 Perfluoroundecanoic acid



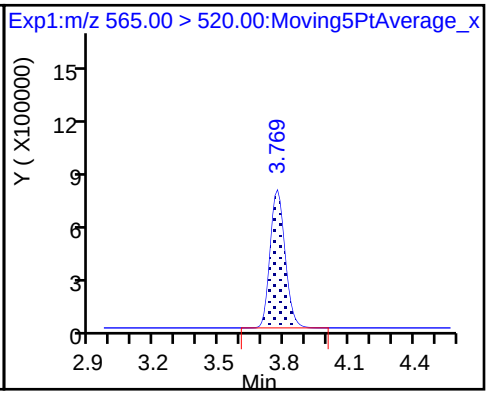
31 Perfluoroundecanoic acid



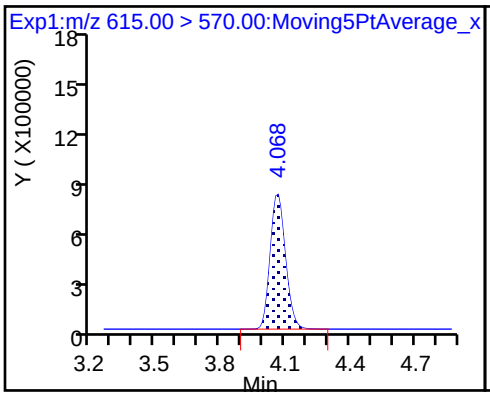
33 N-ethyl perfluorooctane sulfonamid



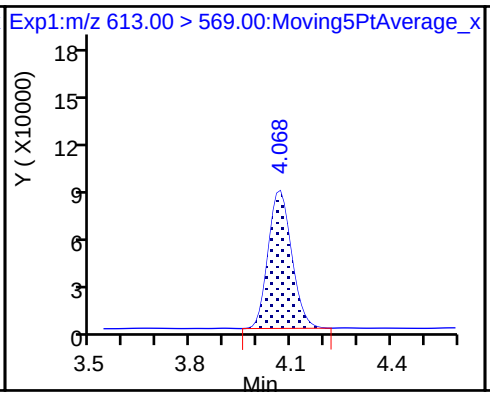
D 30 13C2 PFUnA



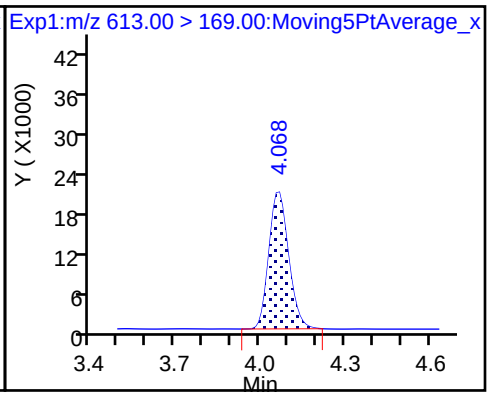
D 36 13C2 PFDoA



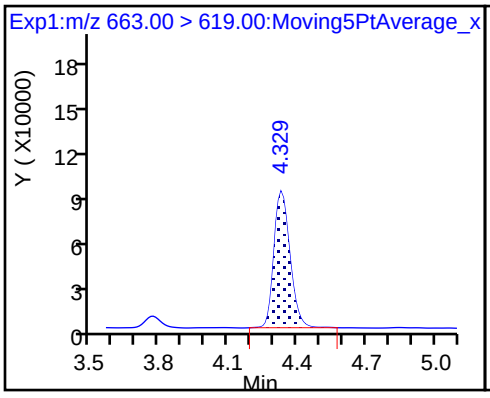
37 Perfluorododecanoic acid



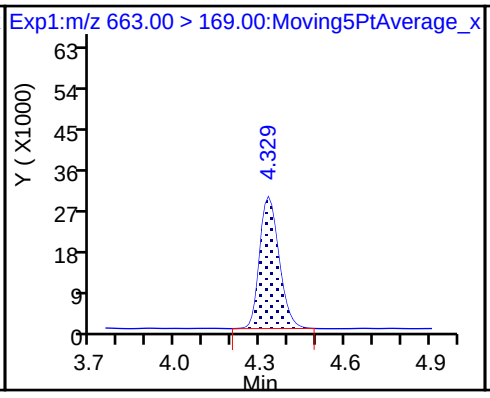
37 Perfluorododecanoic acid



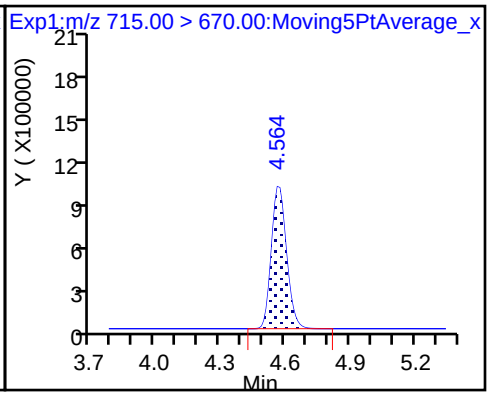
41 Perfluorotridecanoic acid



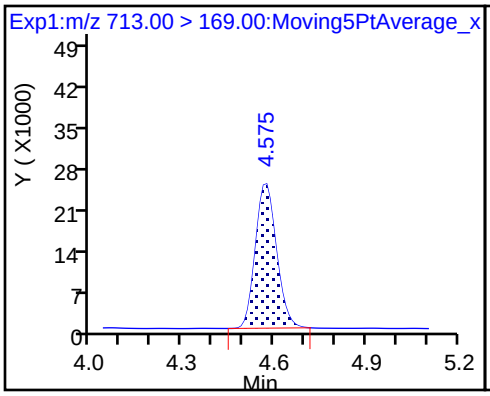
41 Perfluorotridecanoic acid



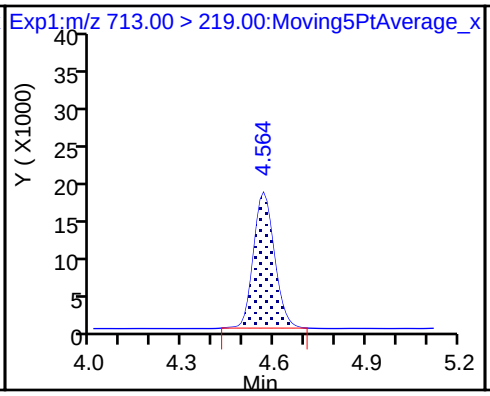
D 43 13C2-PFTeDA



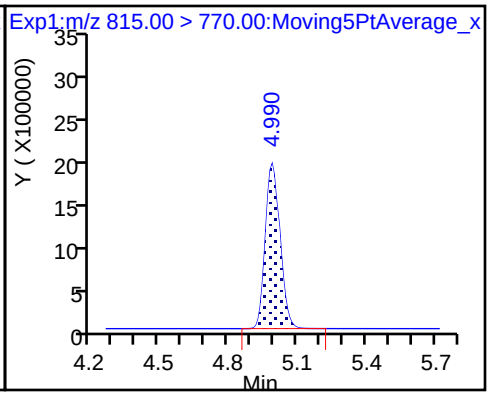
42 Perfluorotetradecanoic acid



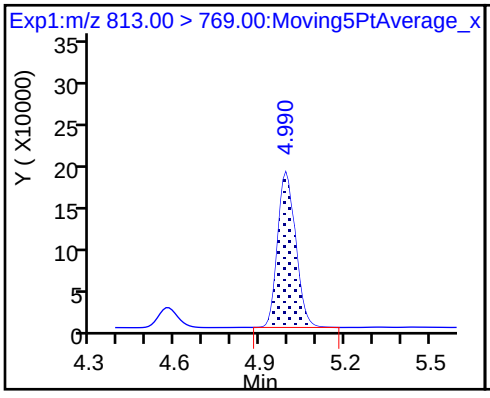
42 Perfluorotetradecanoic acid



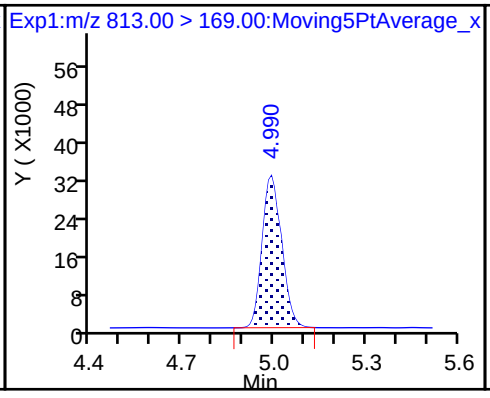
D 44 13C2-PFHxDA



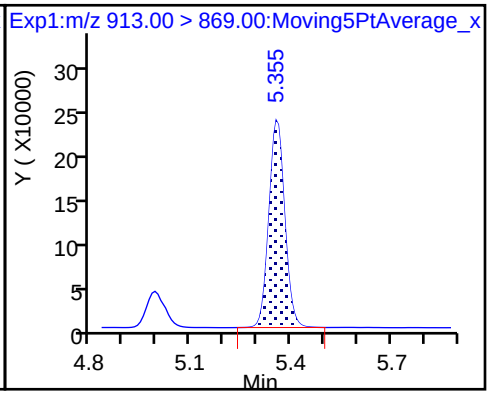
45 Perfluorohexadecanoic acid



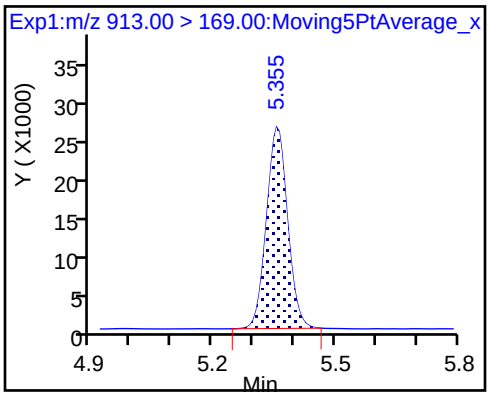
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 21-Mar-2018 18:47:49 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:36 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:24:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.537	6677108	2.48		99.3	91884	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	2414180	0.9593		95.9	1039	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	1955236	0.9777		97.8	1101	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4434133	2.49		99.4	122232	
D 47 13C3-PFBS										
301.90 > 83.00	1.745	1.743	0.002	0.647	94733	2.33		100	728	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.745	1.745	0.0	1.000	2745542	0.8672		98.1	15073	
298.90 > 99.00	1.745	1.745	0.0	1.000	1158456		2.37(1.25-3.74)	98.1	8636	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.725	673891	2.40		103	7759	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.962	-0.006	1.000	585674	0.8899		95.3	36020	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	1895160	0.9434		94.3	5502	
313.00 > 119.00	1.998	1.998	0.0	1.000	171177		11.07(5.03-15.10)	94.3	5106	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	1.998	0.0	0.741	4912134	2.49		99.6	148634	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	4906862	2.52		101	91934	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	1917800	0.9445		94.5	4030	
363.00 > 169.00	2.328	2.335	-0.007	1.000	781323		2.45(1.13-3.40)	94.5	11000	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	2255246	0.8437		92.7	14407	
399.00 > 99.00	2.341	2.346	-0.005	1.000	758154		2.97(1.50-4.49)	92.7	2920	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.868	5679886	2.37		100	64479	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.672	0.001	1.000	658727	0.9206		97.1	39075	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.672	0.001	0.991	974611	2.41		102	32347	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.695	0.002		5311138	2.50			78253	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.695	0.002	1.000	5161114	2.59		104	75890	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	2181038	0.9352		93.5	739	
413.00 > 169.00	2.697	2.697	0.0	1.000	1079898		2.02(0.84-2.52)	93.5	2905	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.703	0.002	1.000	2094073	0.9272		97.4	32757	
449.00 > 99.00	2.705	2.703	0.002	1.000	562149		3.73(1.94-5.82)	97.4	7735	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	4212796	2.41		101	38767	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4473666	2.55		102	61714	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.002	1712110	0.8720		94.0	5345	
499.00 > 99.00	3.065	3.070	-0.005	1.000	388300		4.41(2.31-6.93)	94.0	3489	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1707633	0.9567		95.7	2306	
463.00 > 169.00	3.072	3.072	0.0	1.000	412933		4.14(1.90-5.69)	95.7	8555	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.396	0.003	1.260	5926892	2.52		101	51859	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.397	0.002	1.000	2348890	1.01		101	35724	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	628171	0.9357		97.7	12703	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.270	1259787	2.31		96.5	25503	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1449524	0.9682		96.8	7703	
513.00 > 169.00	3.435	3.435	0.0	1.000	250563		5.79(2.36-7.09)	96.8	5629	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3787833	2.46		98.4	60985	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.592	3.591	0.001	1.332	2005802	2.48		99.0	38757	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.592	3.594	-0.002	1.000	764025	0.9515		95.2	5524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.750	3.749	0.001	1.000	1089522	0.9090		94.3	25437	
599.00 > 99.00	3.750	3.749	0.001	1.000	401224		2.72(1.39-4.16)	94.3	7593	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.759	0.001	1.394	2399407	2.60		104	12942	
D 30 13C2 PFUnA										
565.00 > 520.00	3.770	3.768	0.002	1.398	3376806	2.45		98.1	53912	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.770	3.768	0.002	1.003	854457	0.9529		95.3	15864	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.770	3.768	0.002	1.000	1113457	0.9561		95.6	5076	
563.00 > 169.00	3.770	3.768	0.002	1.000	264745		4.21(2.12-6.36)	95.6	9089	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.066	-0.007	1.505	3947765	2.53		101	38697	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.068	0.001	1.003	1543700	0.9343		93.4	1390	
613.00 > 169.00	4.069	4.068	0.001	1.003	381642		4.04(2.13-6.40)	93.4	5997	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	1762916	1.01		101	1166	
663.00 > 169.00	4.329	4.329	0.0	1.000	525318		3.36(1.25-3.76)	101	9931	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.565	4.568	-0.003	1.693	5036200	2.64		106	31784	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.565	4.571	-0.006	1.000	463840	0.9292		92.9	6420	
713.00 > 219.00	4.565	4.571	-0.006	1.000	332536		1.39(0.71-2.13)	92.9	6906	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.987	-0.005	1.847	8013194	2.56		102	20349	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.989	0.002	1.002	2896964	0.9702		97.0	883	
813.00 > 169.00	4.991	4.989	0.002	1.002	467916		6.19(2.86-8.58)	97.0	4401	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	2837993	0.9576		95.8	899	
913.00 > 169.00	5.352	5.354	-0.002	1.000	349894		8.11(3.83-11.48)	95.8	3684	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:38 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_005.d

Injection Date: 21-Mar-2018 18:47:49 Instrument ID: A8_N

Lims ID: IC L4 Full

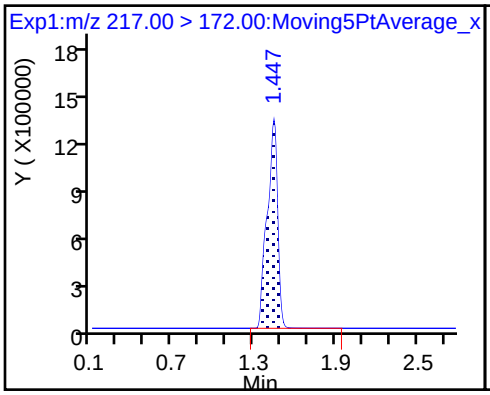
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

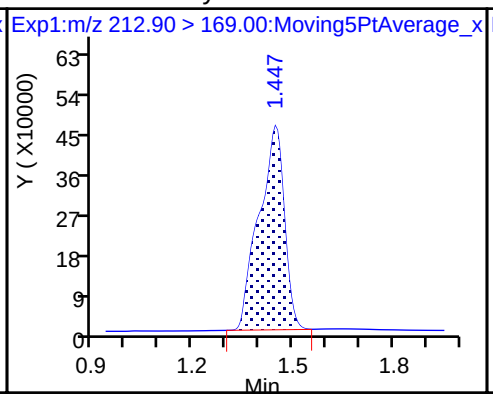
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

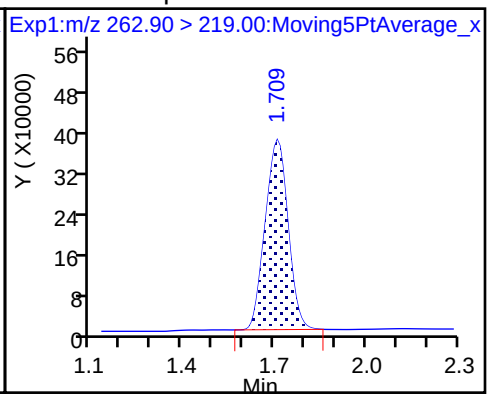
D 1 13C4 PFBA



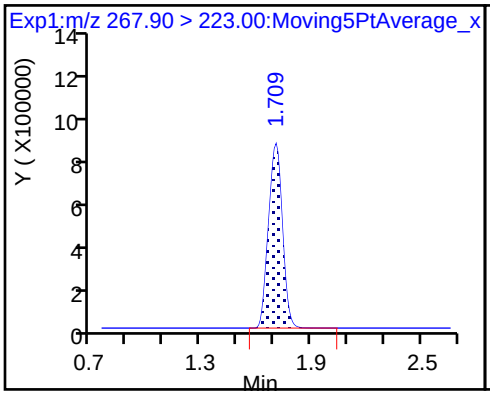
2 Perfluorobutyric acid



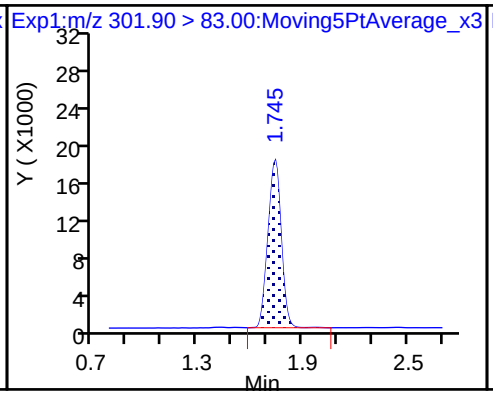
4 Perfluoropentanoic acid



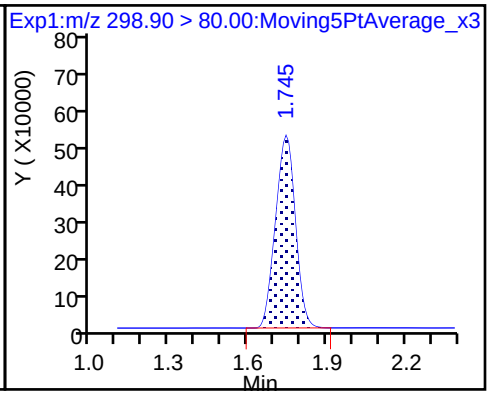
D 3 13C5-PFPeA



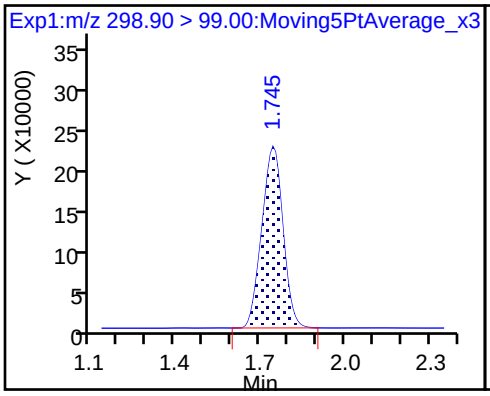
D 47 13C3-PFBS



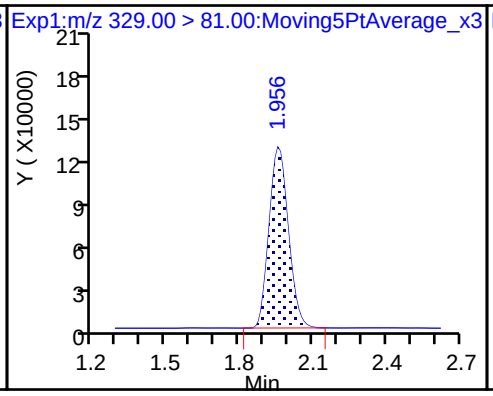
5 Perfluorobutanesulfonic acid



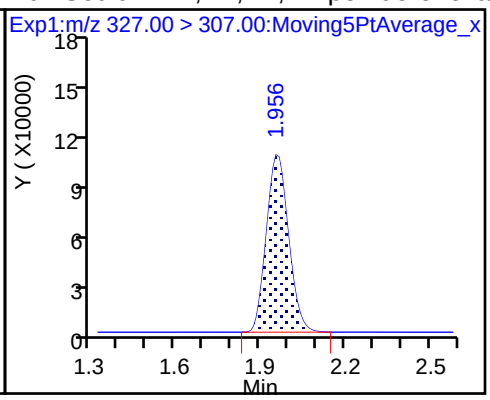
5 Perfluorobutanesulfonic acid



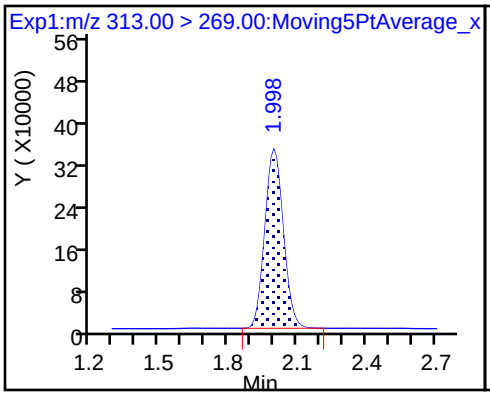
D 60 M2-4:2FTS



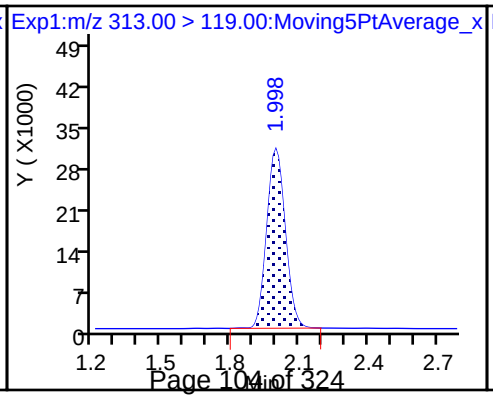
61 Sodium 1H,1H,2H,2H-perfluorohexane



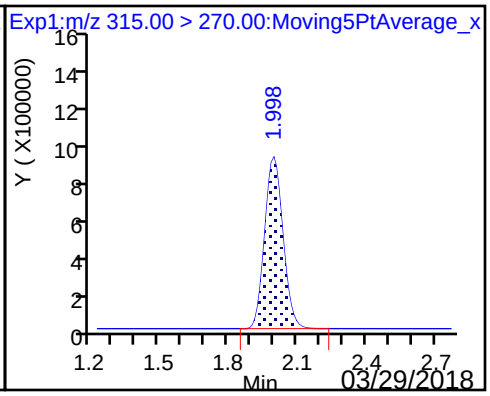
6 Perfluorohexanoic acid



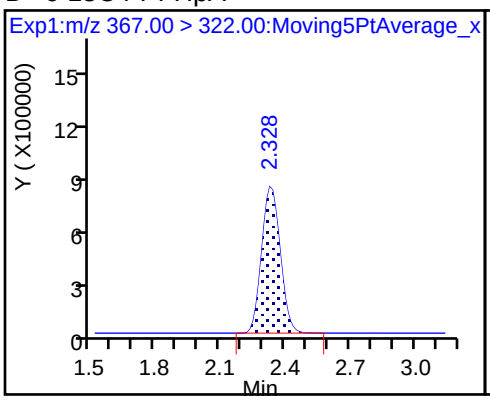
6 Perfluorohexanoic acid



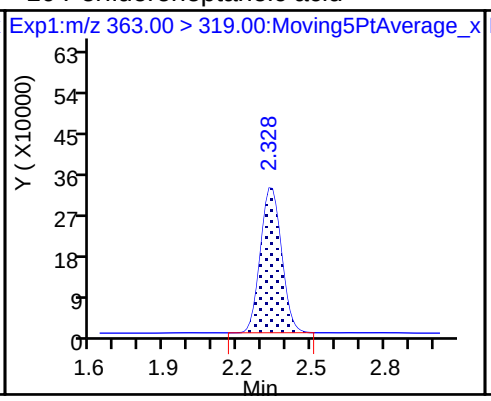
D 7 13C2 PFHxA



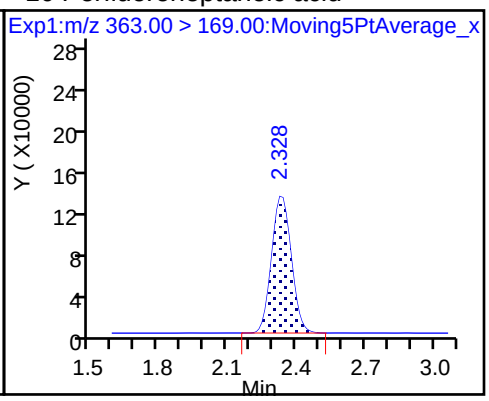
D 9 13C4-PFHpA



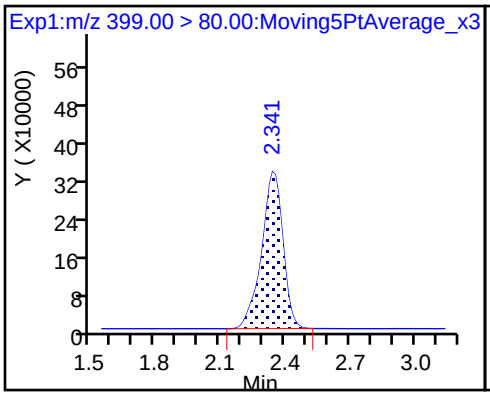
10 Perfluoroheptanoic acid



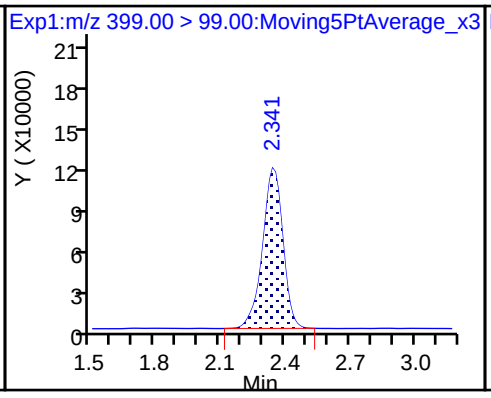
10 Perfluoroheptanoic acid



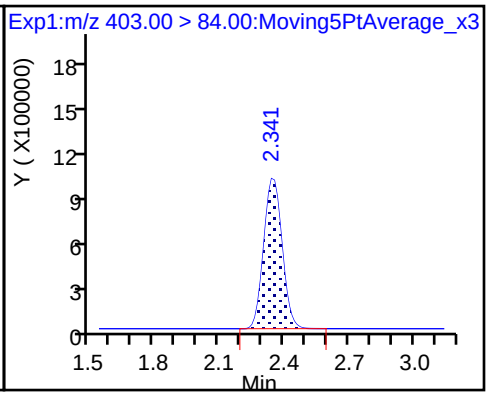
8 Perfluorohexanesulfonic acid



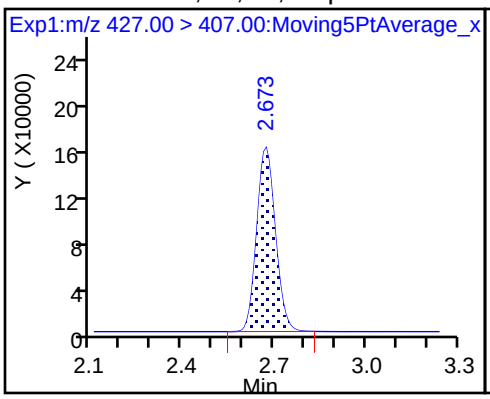
8 Perfluorohexanesulfonic acid



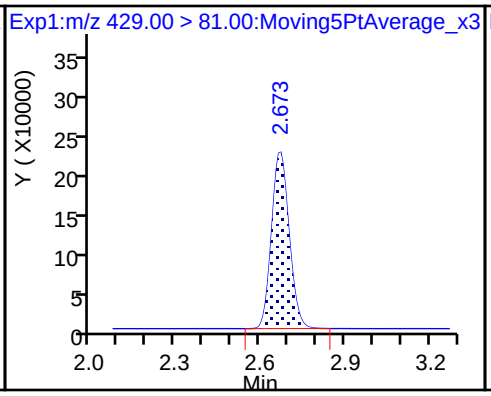
D 11 18O2 PFHxS



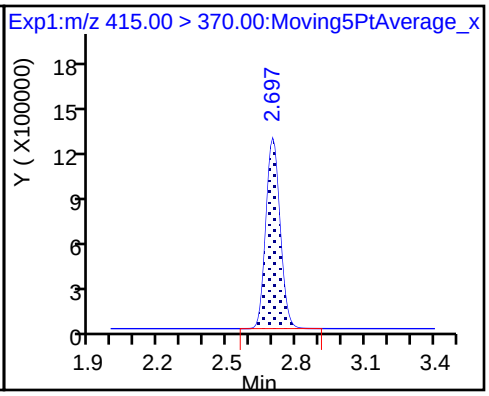
13 Sodium 1H,1H,2H,2H-perfluorooctan



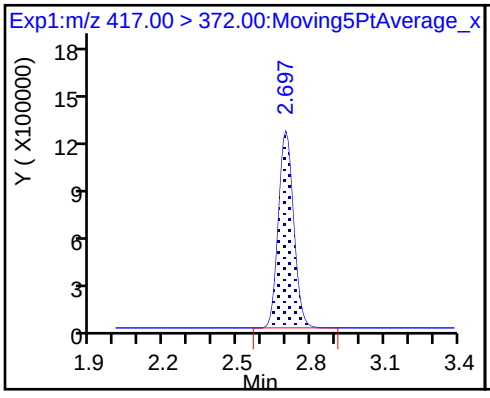
D 12 M2-6:2FTS



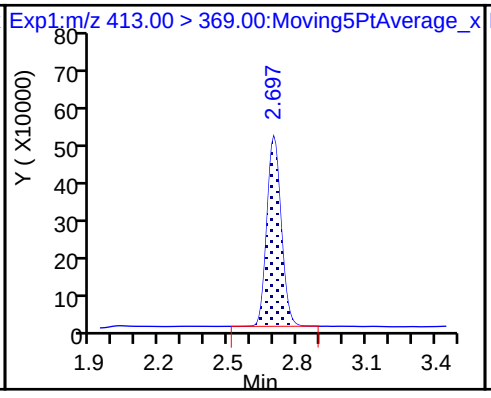
* 62 13C2-PFOA



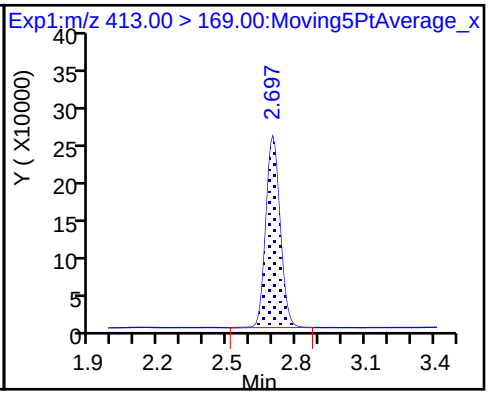
D 14 13C4 PFOA



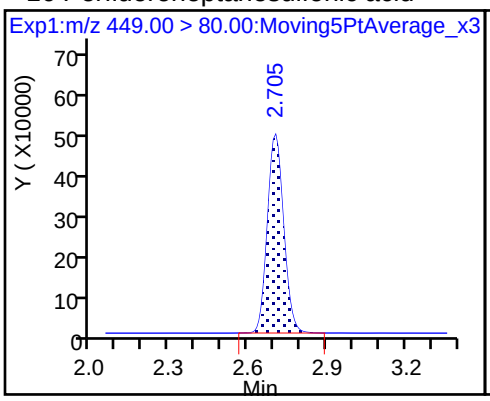
15 Perfluorooctanoic acid



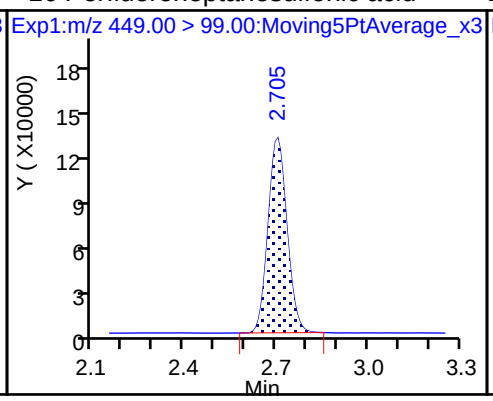
15 Perfluorooctanoic acid



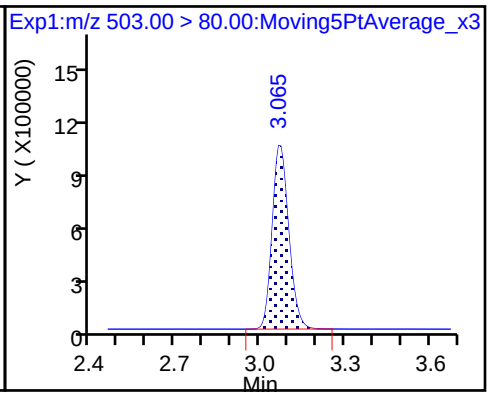
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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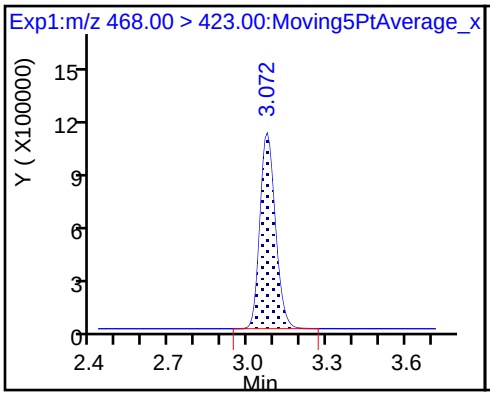
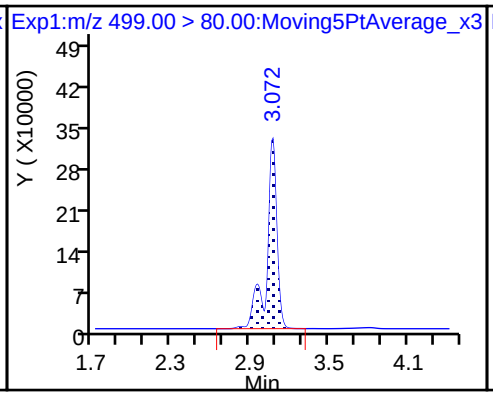
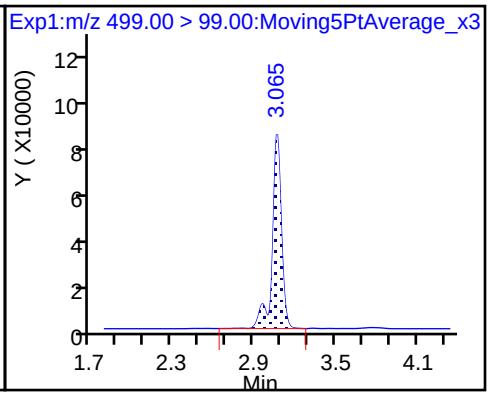


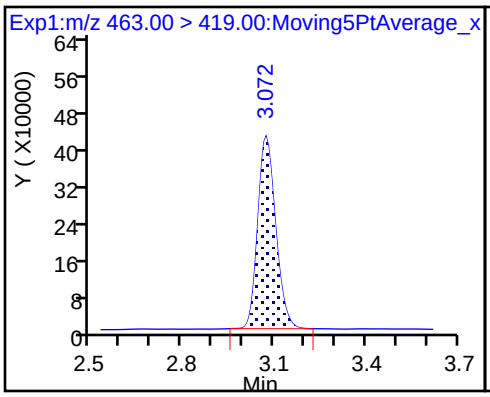
17 Perfluorooctane sulfonic acid



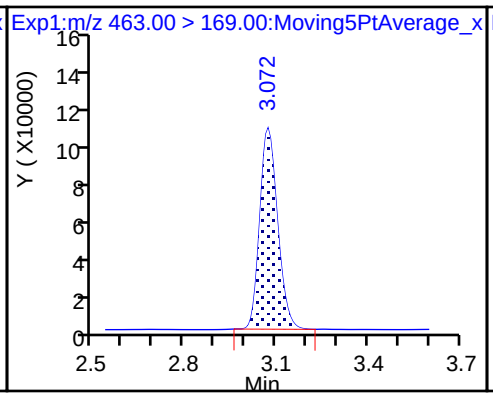
17 Perfluorooctane sulfonic acid



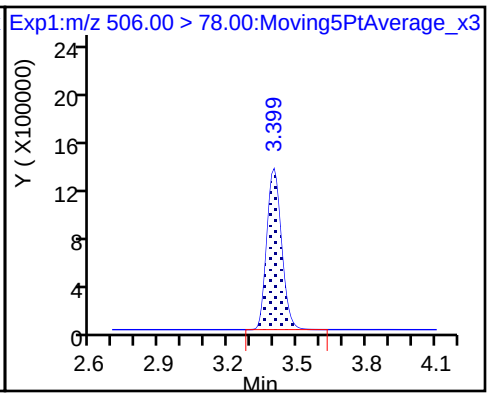
20 Perfluorononanoic acid



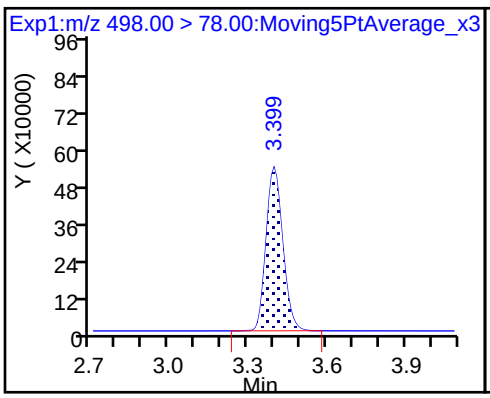
20 Perfluorononanoic acid



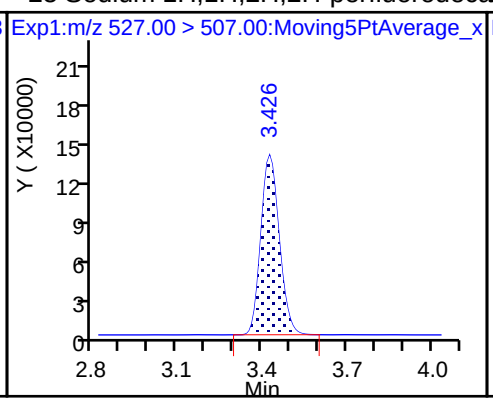
D 21 13C8 FOSA



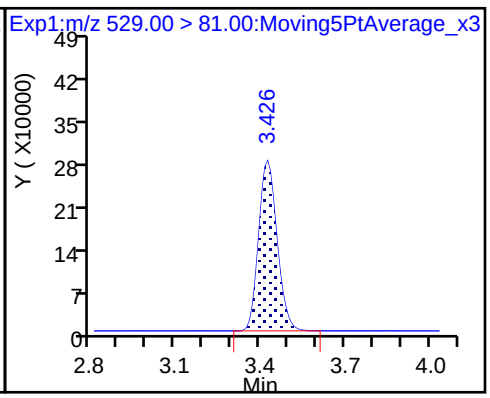
22 Perfluorooctane Sulfonamide



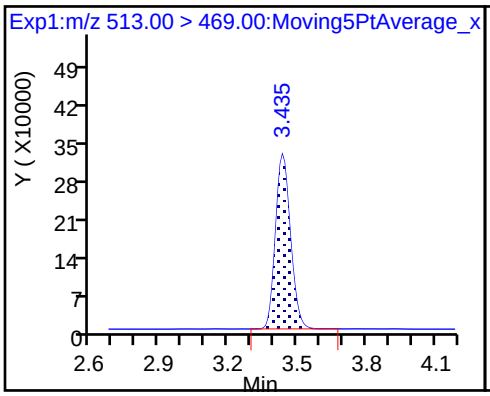
25 Sodium 1H,1H,2H,2H-perfluorodecane



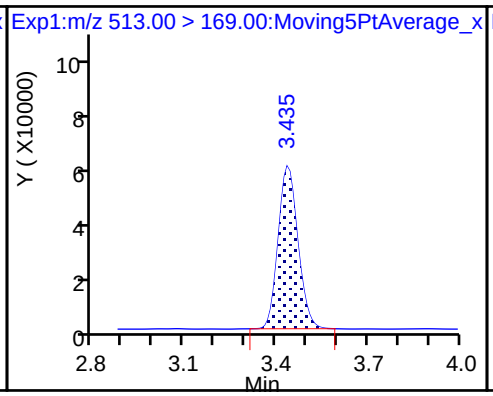
D 26 M2-8:2FTS



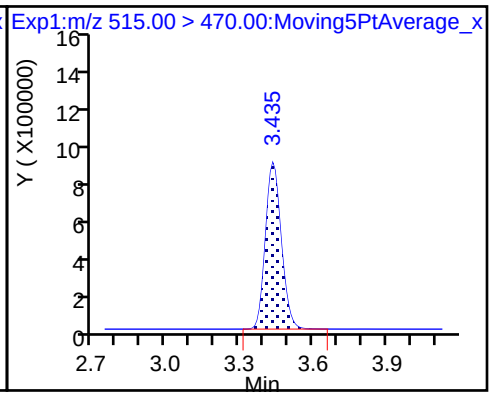
24 Perfluorodecanoic acid



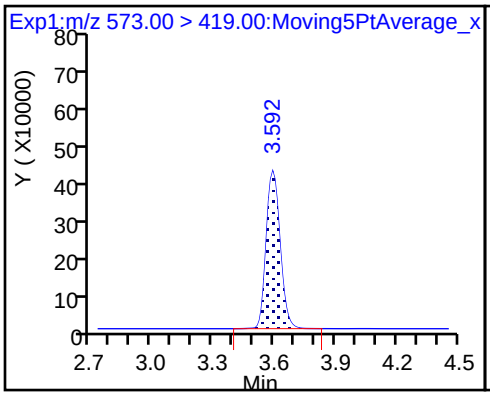
24 Perfluorodecanoic acid



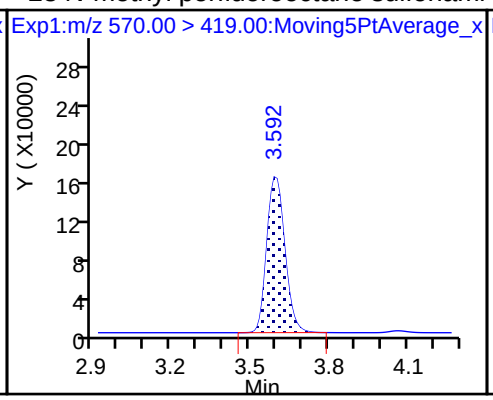
D 23 13C2 PFDA



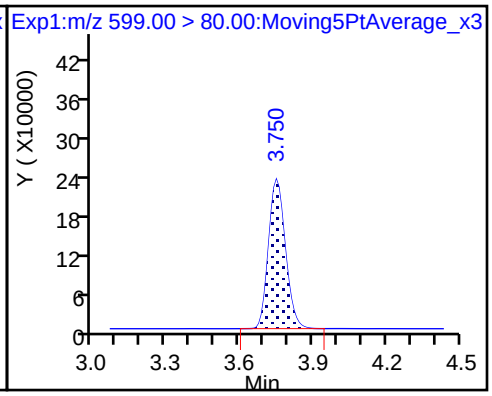
D 27 d3-NMeFOSAA



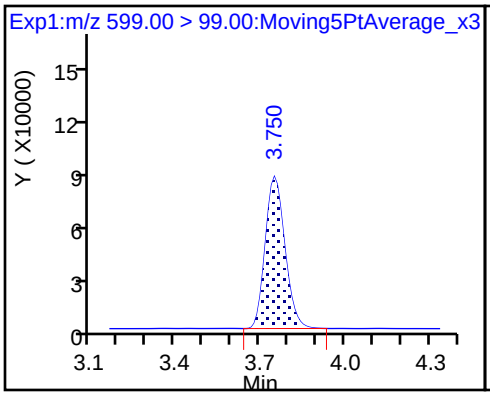
28 N-methyl perfluorooctane sulfonami



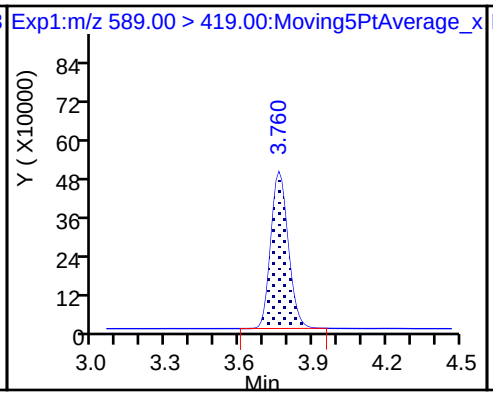
29 Perfluorodecane Sulfonic acid



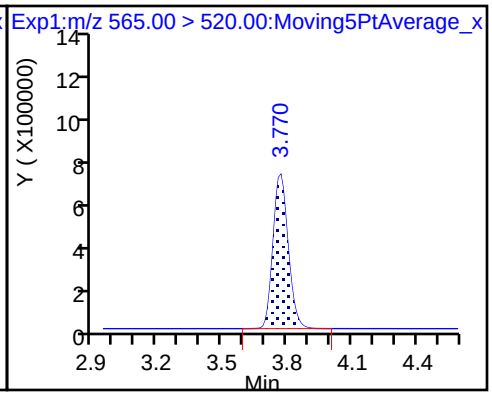
29 Perfluorodecane Sulfonic acid



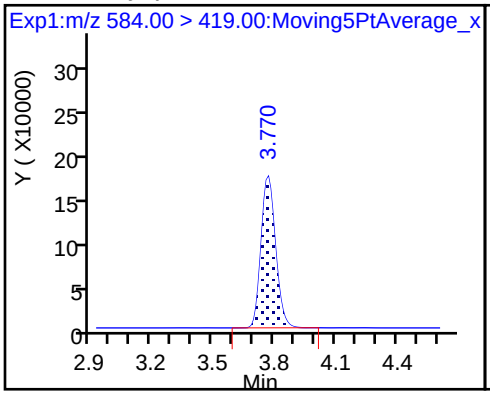
D 32 d5-NEtFOSAA



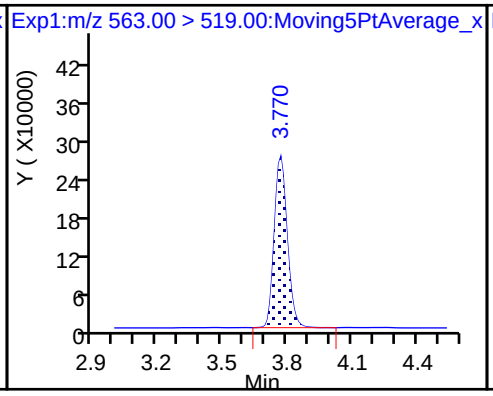
D 30 13C2 PFUnA



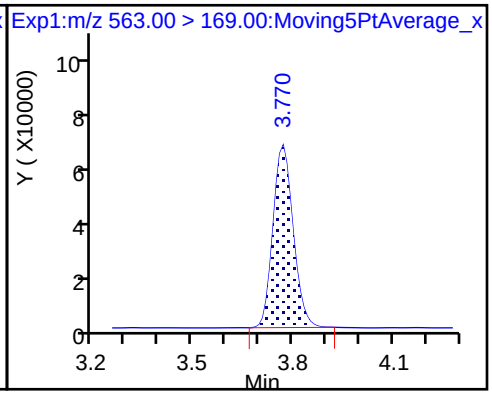
33 N-ethyl perfluorooctane sulfonamid



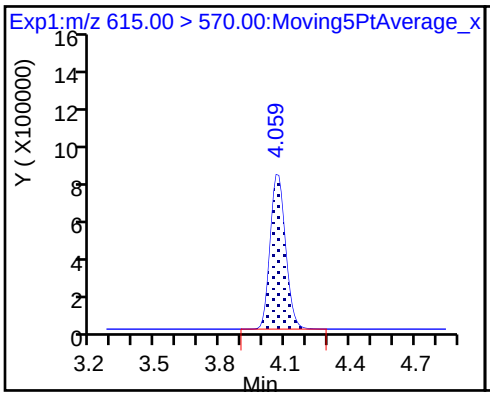
31 Perfluoroundecanoic acid



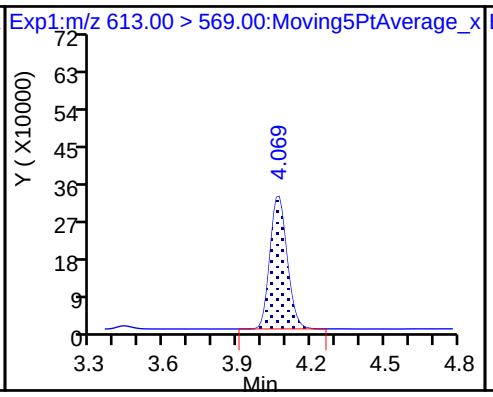
31 Perfluoroundecanoic acid



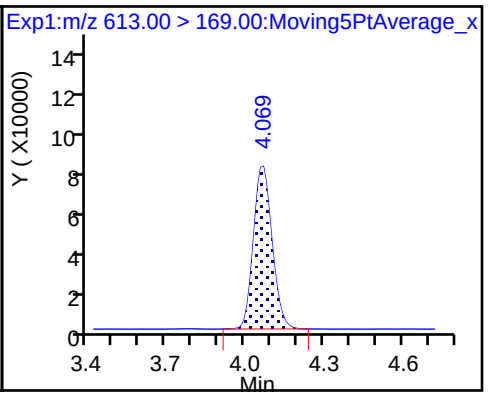
D 36 13C2 PFDoA



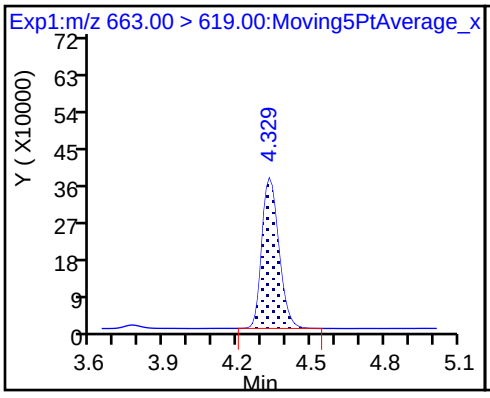
37 Perfluorododecanoic acid



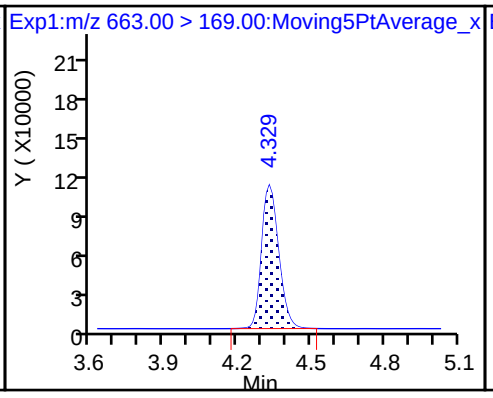
37 Perfluorododecanoic acid



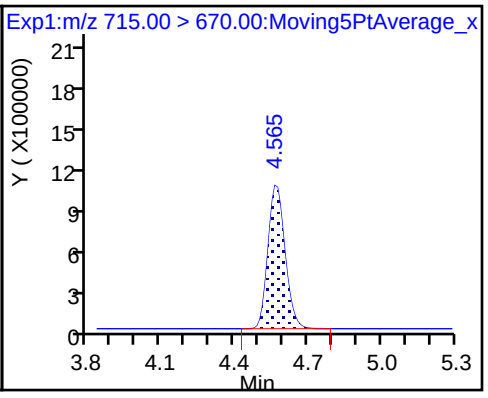
41 Perfluorotridecanoic acid



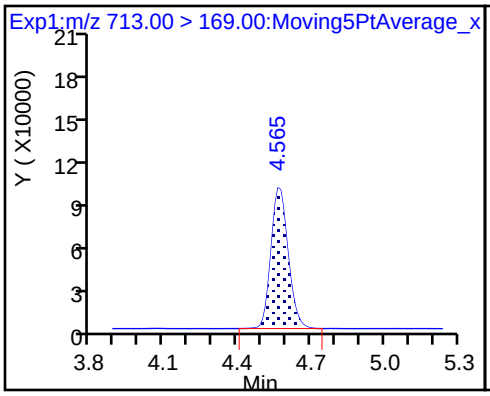
41 Perfluorotridecanoic acid



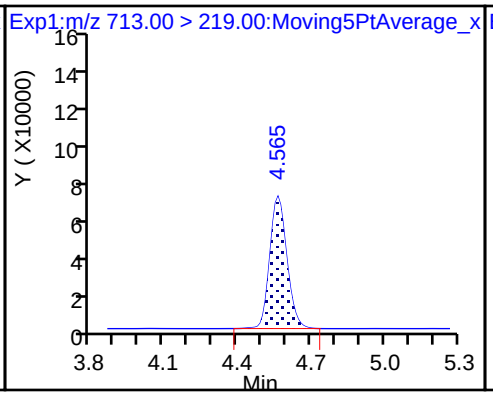
D 43 13C2-PFTeDA



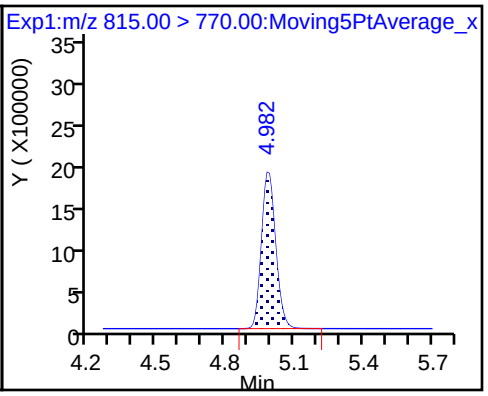
42 Perfluorotetradecanoic acid



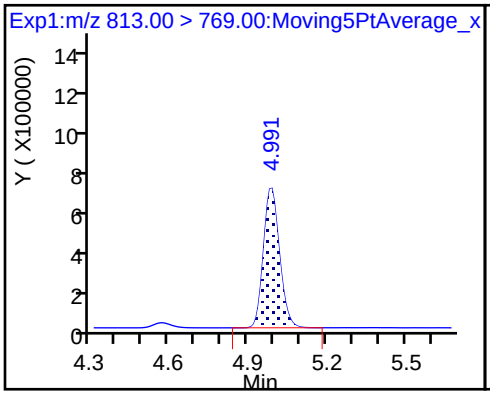
42 Perfluorotetradecanoic acid



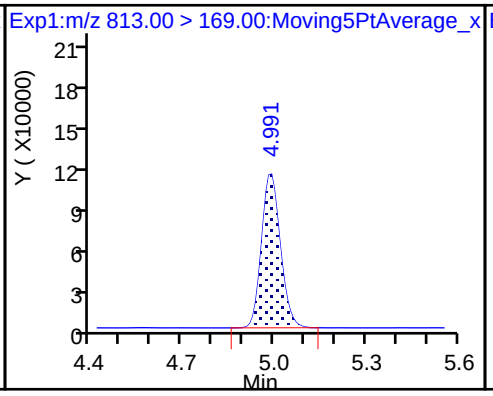
D 44 13C2-PFHxDA



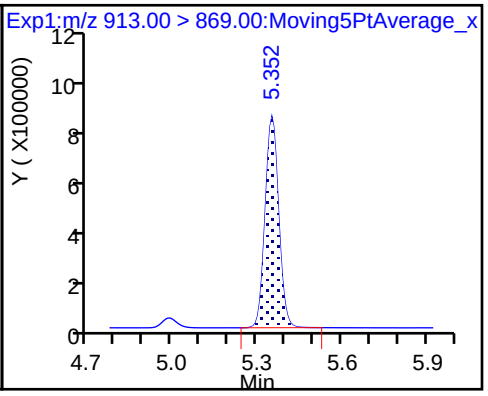
45 Perfluorohexadecanoic acid



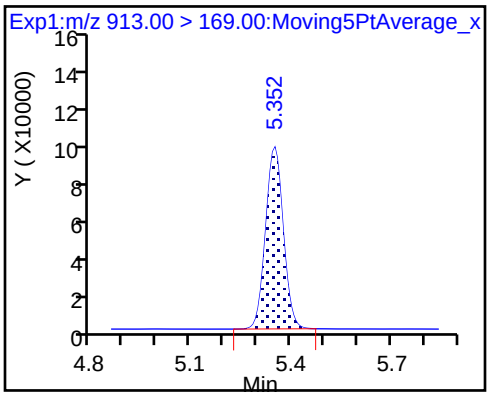
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 21-Mar-2018 18:55:39 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:40 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:24:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.447	-0.001	0.536	6188661	2.33		93.4	78410	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.449	0.003	1.004	5823834	2.50		99.9	2918	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4090438	2.33		93.0	131212	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	4762694	2.58		103	2851	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.743	0.001	0.647	87868	2.19		94.1	734	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.000	6781882	2.31		104	33882	
298.90 > 99.00	1.744	1.745	-0.001	1.000	2805006		2.42(1.25-3.74)	104	17877	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.959	0.007	0.729	609343	2.20		94.1	6498	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.962	0.004	1.000	1406742	2.30		98.7	64063	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.741	4600880	2.37		94.6	103804	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	4820853	2.56		102	14937	
313.00 > 119.00	1.997	1.998	-0.001	1.000	437719		11.01(5.03-15.10)	102	11379	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.863	4537445	2.36		94.6	85099	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.335	0.006	1.006	5088526	2.71		108	9556	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1858876		2.74(1.13-3.40)	108	18291	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	0.995	5440694	2.15		94.6	25940	
399.00 > 99.00	2.341	2.346	-0.005	0.995	1777291		3.06(1.50-4.49)	94.6	6637	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.348	0.006	0.873	5368855	2.27		95.9	60715	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.672	0.0	0.991	908164	2.28		96.1	19487	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.672	0.0	1.000	1590173	2.39		101	53321	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.695	0.001	1.000	4742395	2.42		96.6	65924	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.695	0.001		5235561	2.50			73005	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	5003450	2.33		93.4	1574	
413.00 > 169.00	2.696	2.697	-0.001	1.000	2673743		1.87(0.84-2.52)	93.4	6944	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.703	0.001	1.000	5113485	2.40		101	52355	
449.00 > 99.00	2.704	2.703	0.001	1.000	1305904		3.92(1.94-5.82)	101	14612	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.068	0.004	1.139	3973858	2.31		96.5	34284	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.070	0.002	1.000	4360129	2.35		101	13023	
499.00 > 99.00	3.072	3.070	0.002	1.000	949206		4.59(2.31-6.93)	101	11305	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.070	0.002	1.139	4084349	2.36		94.4	91801	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	4311504	2.65		106	5737	
463.00 > 169.00	3.072	3.072	0.0	1.000	1044625		4.13(1.90-5.69)	106	21568	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.396	0.002	1.260	5666432	2.44		97.6	47804	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.397	0.001	1.000	5602803	2.51		100	74799	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.271	1157021	2.15		89.9	32125	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	1588740	2.58		108	39307	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.274	3515629	2.32		92.7	59893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	3690292	2.66		106	13711	
513.00 > 169.00	3.435	3.435	0.0	1.000	621400		5.94(2.36-7.09)	106	1806	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.331	1848322	2.31		92.6	43598	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.594	0.006	1.003	2049489	2.77		111	10939	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	2934010	2.60		108	55841	
599.00 > 99.00	3.748	3.749	-0.001	1.000	945062		3.10(1.39-4.16)	108	19624	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.394	2051910	2.26		90.2	11879	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	2666750	2.41		96.4	11171	
563.00 > 169.00	3.768	3.768	0.0	1.000	636340		4.19(2.12-6.36)	96.4	22140	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	2079318	2.71		108	23647	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.398	3209638	2.36		94.6	51590	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.066	0.001	1.508	3715622	2.41		96.5	29822	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.068	-0.001	1.000	3845398	2.47		98.9	3613	
613.00 > 169.00	4.067	4.068	-0.001	1.000	845112		4.55(2.13-6.40)	98.9	12526	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	-0.001	1.000	4156865	2.54		102	2825	
663.00 > 169.00	4.329	4.329	-0.001	1.000	1286777		3.23(1.25-3.76)	102	15589	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.568	0.007	1.697	4471429	2.38		95.1	25225	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.571	0.004	1.000	1127193	2.54		102	13059	
713.00 > 219.00	4.564	4.571	-0.007	0.998	791381		1.42(0.71-2.13)	102	14928	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	4.987	0.003	1.851	7064103	2.29		91.6	18829	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.989	0.001	1.000	7013285	2.71		108	2178	
813.00 > 169.00	4.990	4.989	0.001	1.000	1094747		6.41(2.86-8.58)	108	9232	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	6807875	2.61		104	2083	
913.00 > 169.00	5.352	5.354	-0.002	1.000	815201		8.35(3.83-11.48)	104	6311	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_006.d

Injection Date: 21-Mar-2018 18:55:39 Instrument ID: A8_N

Lims ID: IC L5 Full

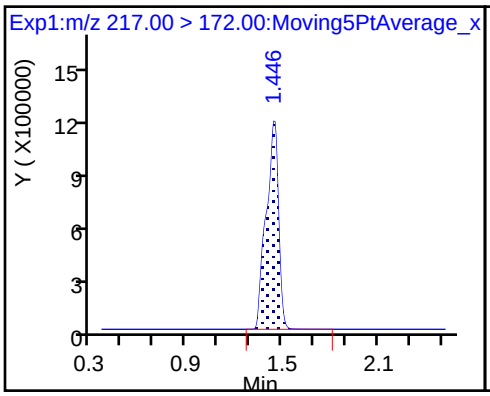
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

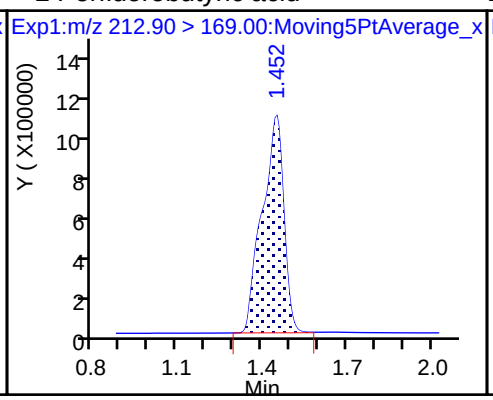
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

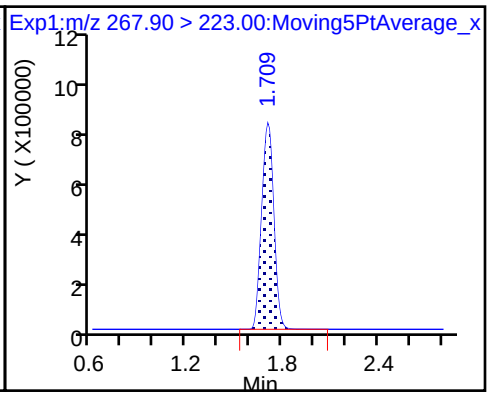
D 1 13C4 PFBA



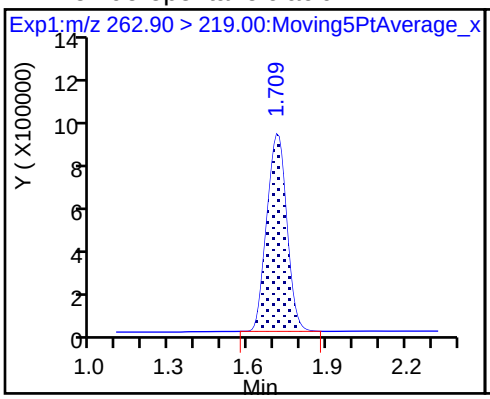
2 Perfluorobutyric acid



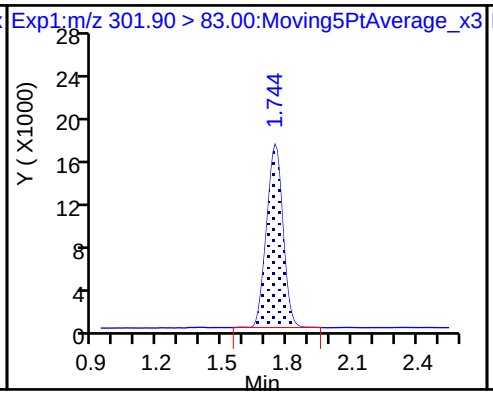
D 3 13C5-PFPeA



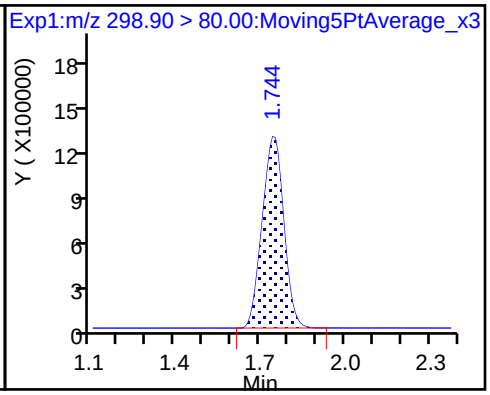
4 Perfluoropentanoic acid



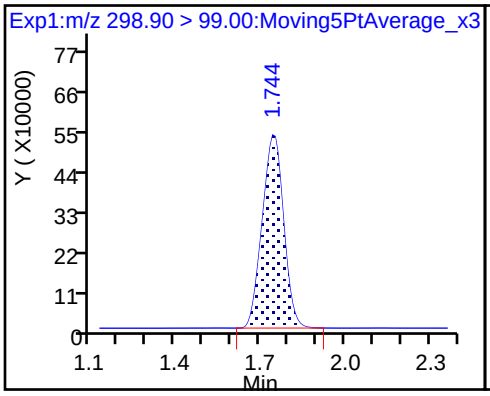
D 47 13C3-PFBS



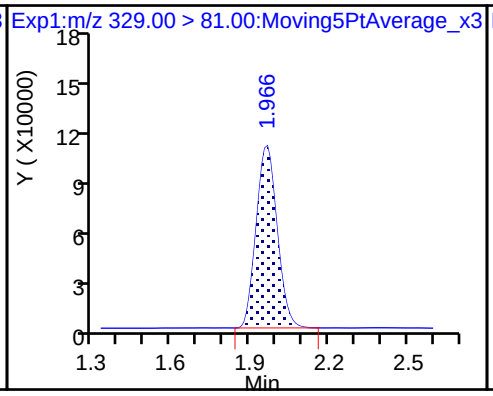
5 Perfluorobutanesulfonic acid



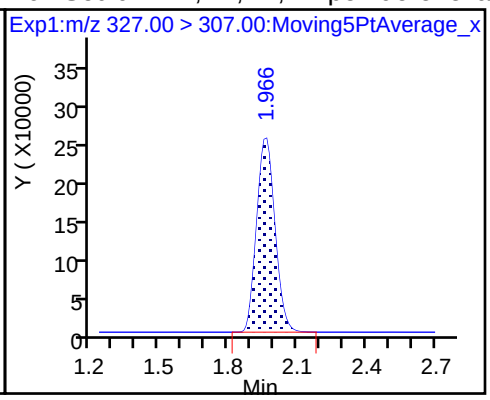
5 Perfluorobutanesulfonic acid



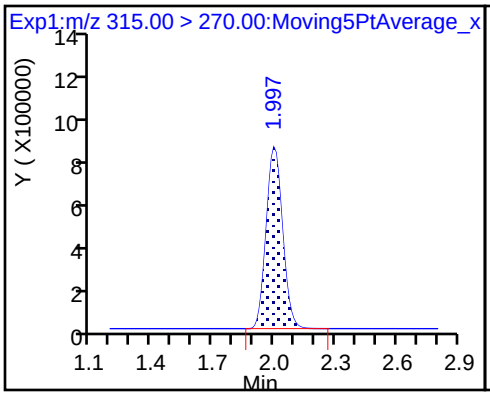
D 60 M2-4:2FTS



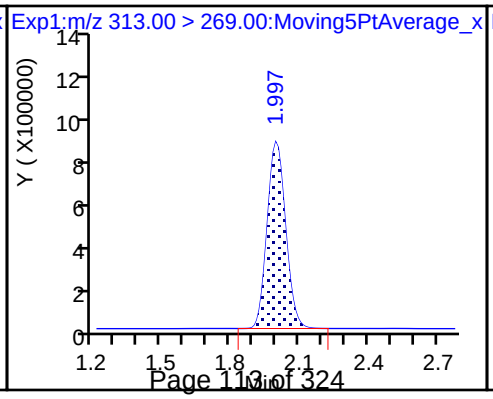
61 Sodium 1H,1H,2H,2H-perfluorohexane



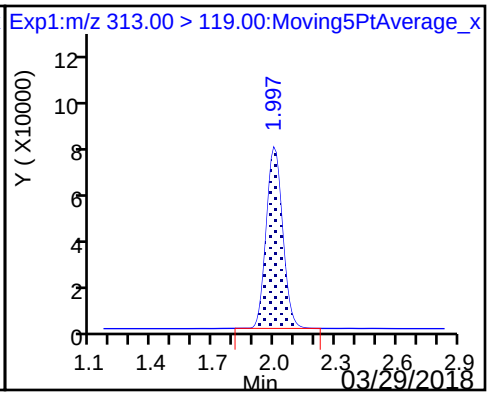
D 7 13C2 PFHxA



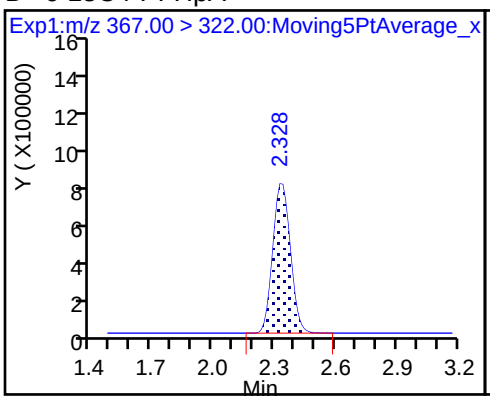
6 Perfluorohexanoic acid



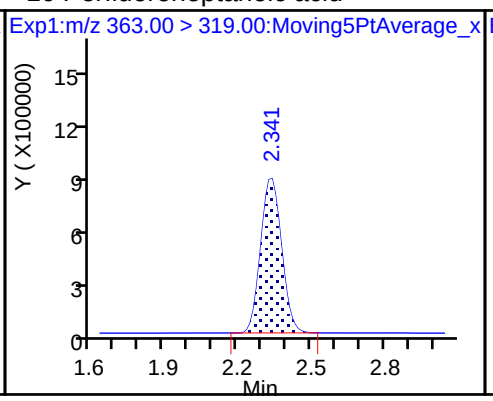
6 Perfluorohexanoic acid



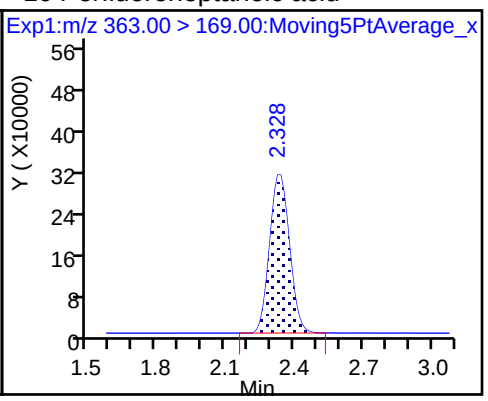
D 9 13C4-PFHpA



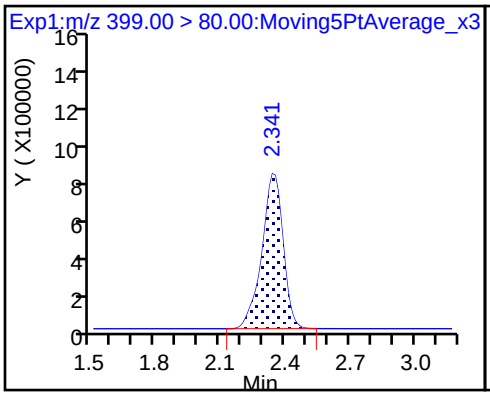
10 Perfluoroheptanoic acid



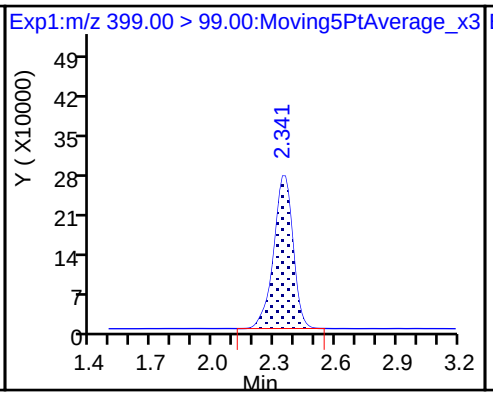
10 Perfluoroheptanoic acid



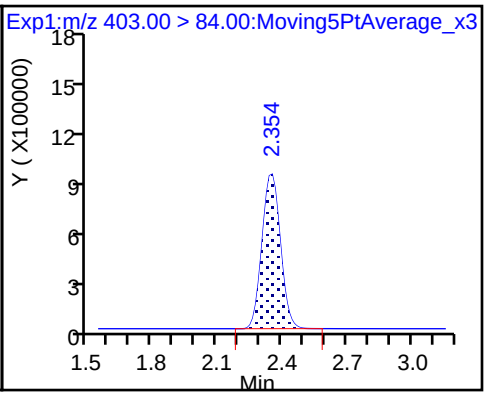
8 Perfluorohexanesulfonic acid



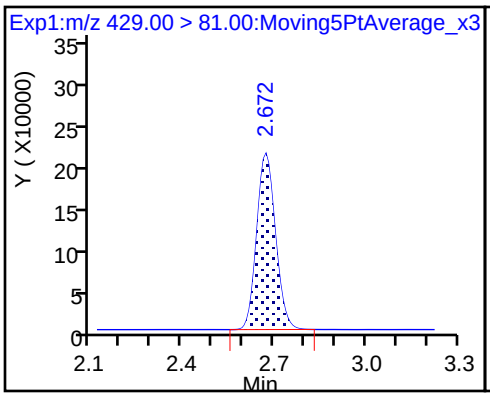
8 Perfluorohexanesulfonic acid



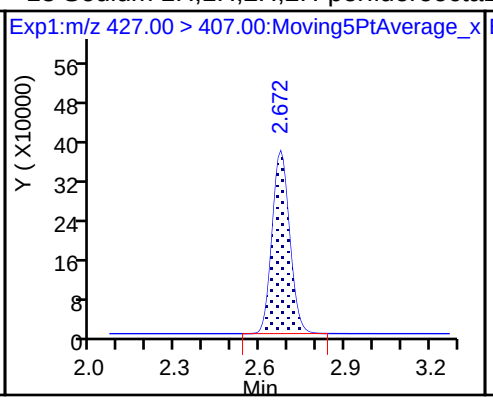
D 11 18O2 PFHxS



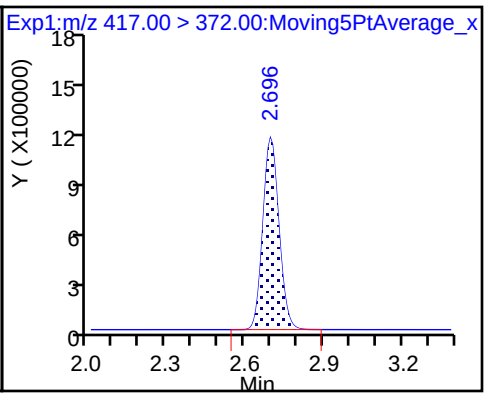
D 12 M2-6:2FTS



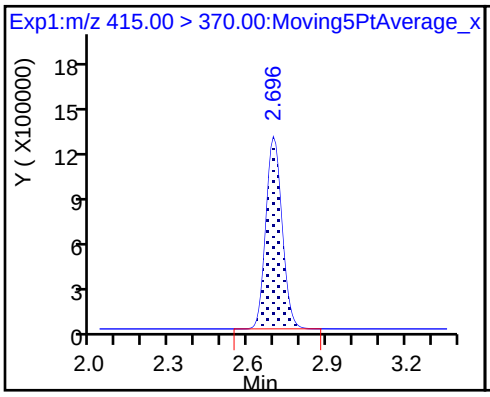
13 Sodium 1H,1H,2H,2H-perfluorooctane



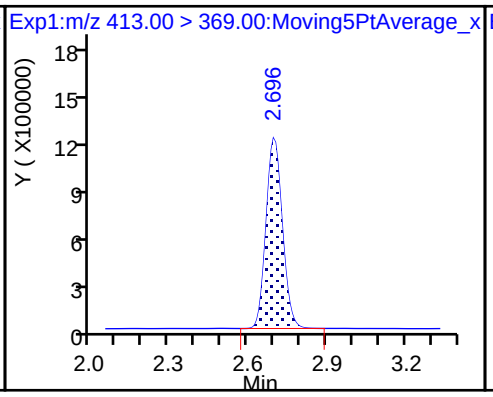
D 14 13C4 PFOA



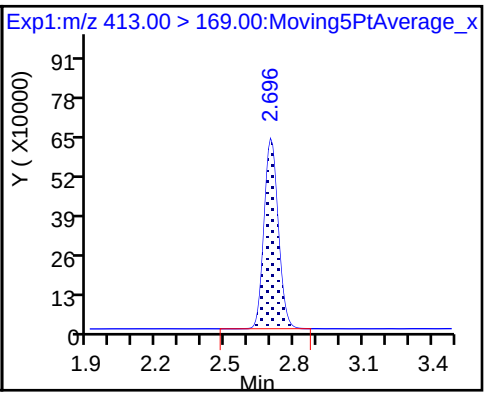
* 62 13C2-PFOA



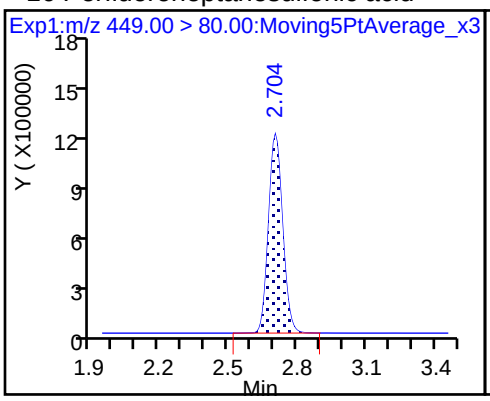
15 Perfluorooctanoic acid



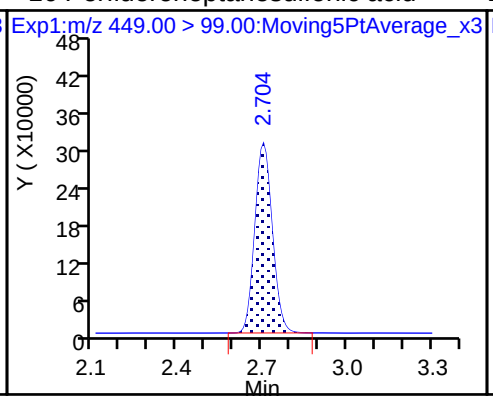
15 Perfluorooctanoic acid



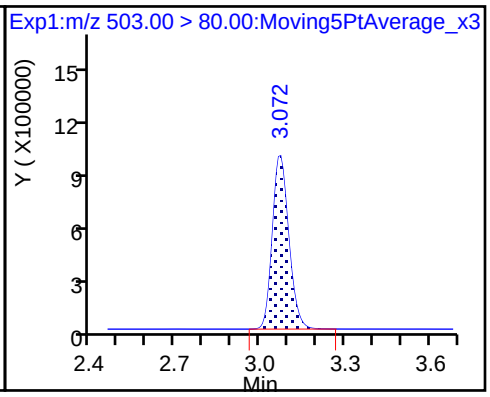
16 Perfluoroheptanesulfonic acid



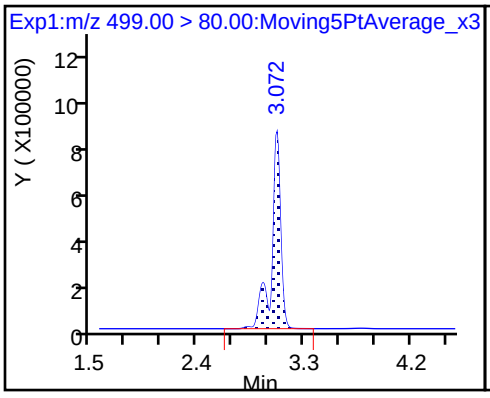
16 Perfluoroheptanesulfonic acid



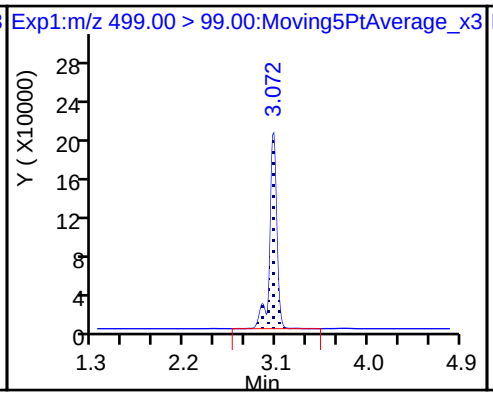
D 18 13C4 PFOS



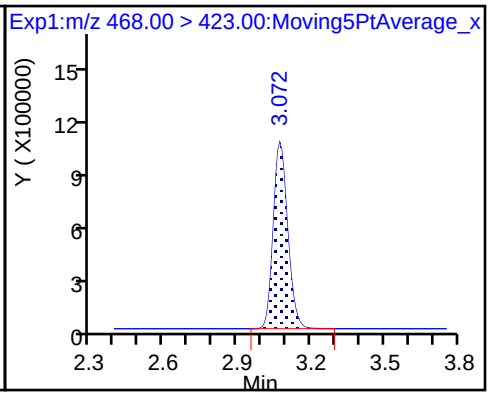
17 Perfluorooctane sulfonic acid



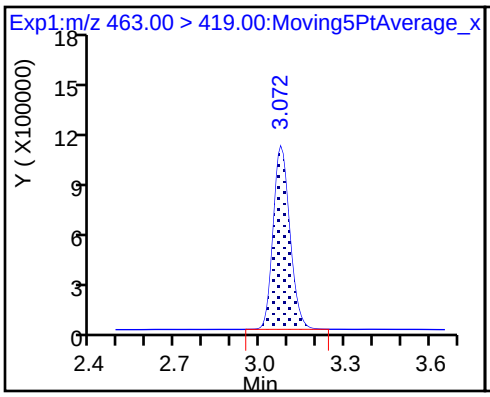
17 Perfluorooctane sulfonic acid



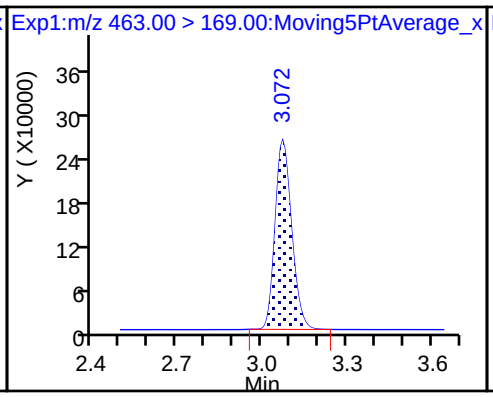
D 19 13C5 PFNA



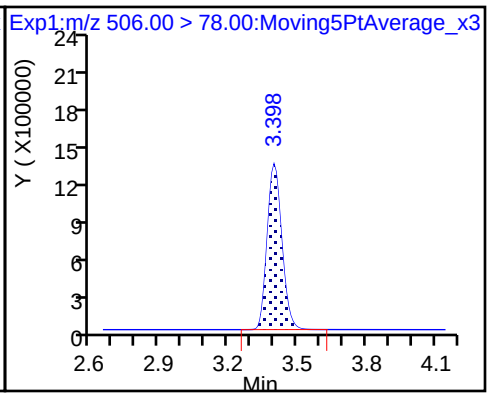
20 Perfluorononanoic acid



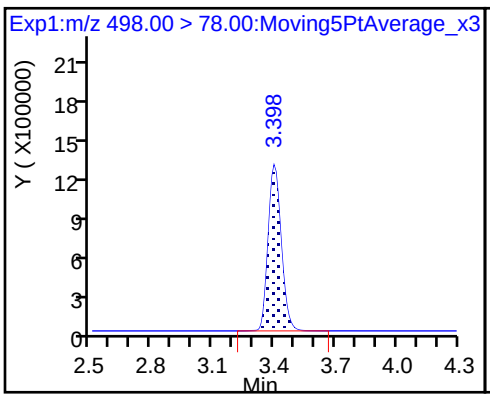
20 Perfluorononanoic acid



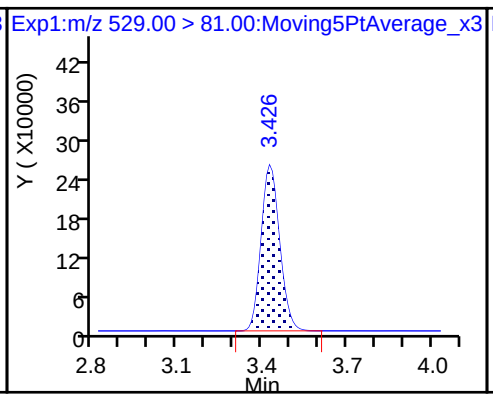
D 21 13C8 FOSA



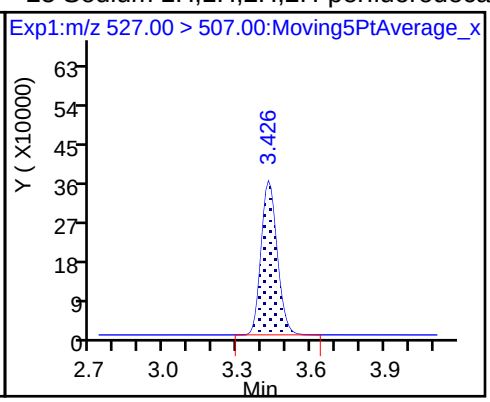
22 Perfluorooctane Sulfonamide



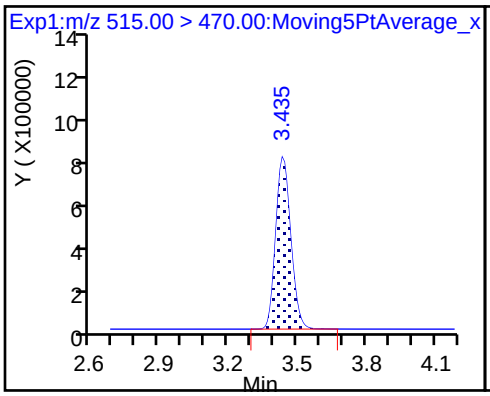
D 26 M2-8:2FTS



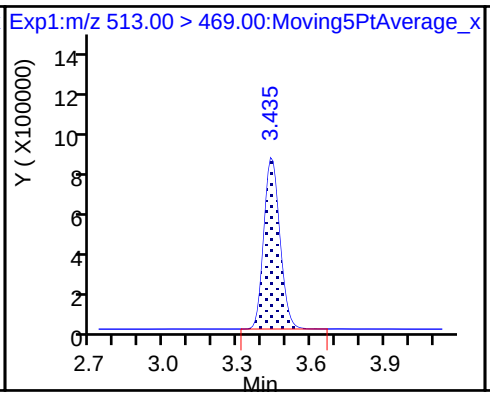
25 Sodium 1H,1H,2H,2H-perfluorodecane



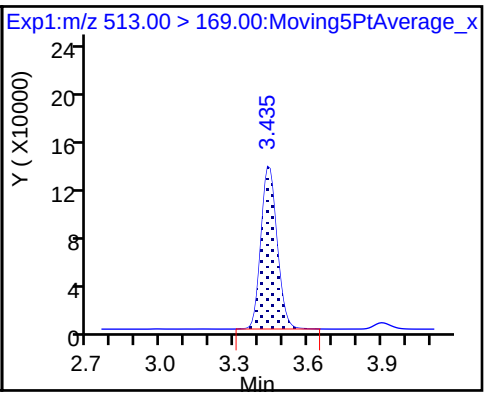
D 23 13C2 PFDA



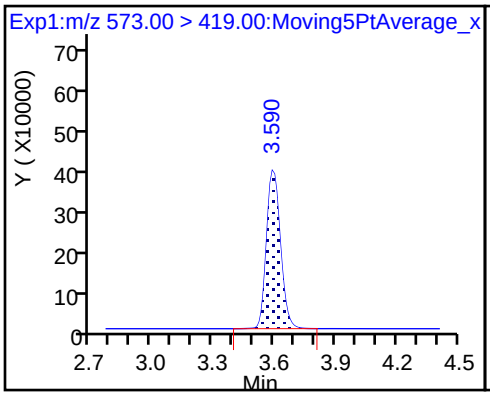
24 Perfluorodecanoic acid



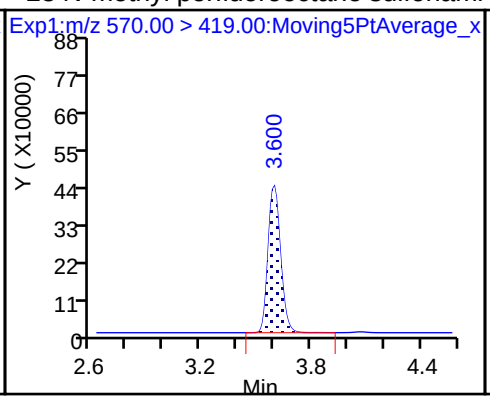
24 Perfluorodecanoic acid



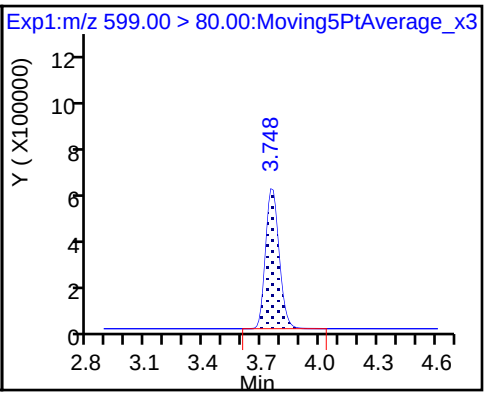
D 27 d3-NMeFOSAA



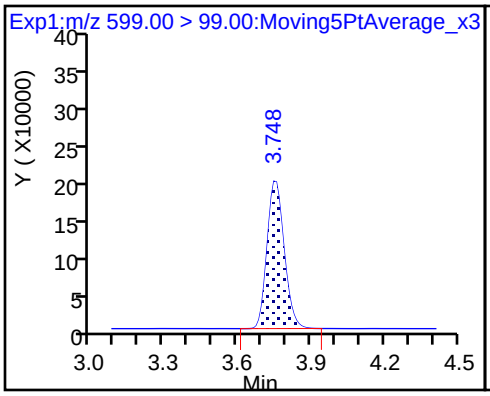
28 N-methyl perfluorooctane sulfonami



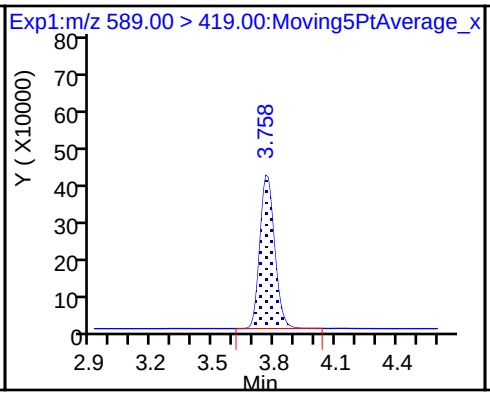
29 Perfluorodecane Sulfonic acid



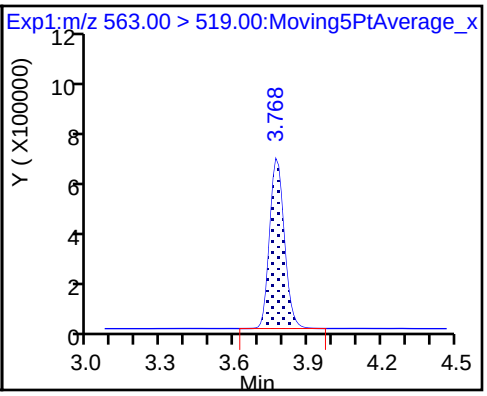
29 Perfluorodecane Sulfonic acid



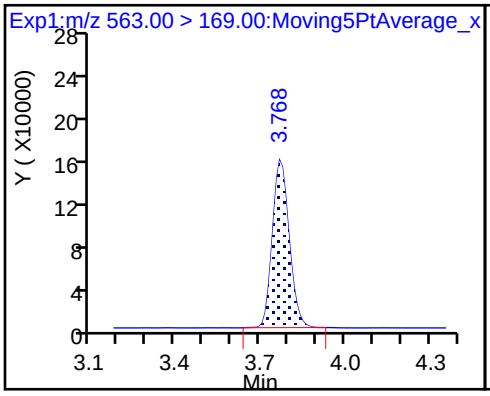
D 32 d5-NEtFOSAA



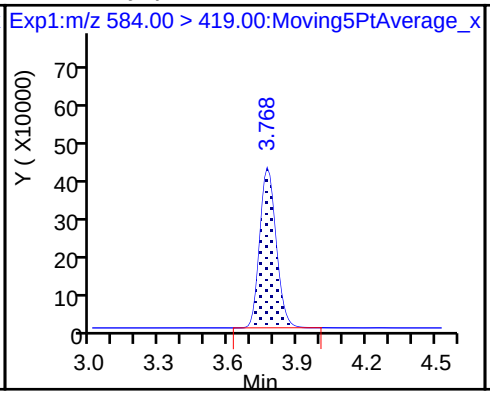
31 Perfluoroundecanoic acid



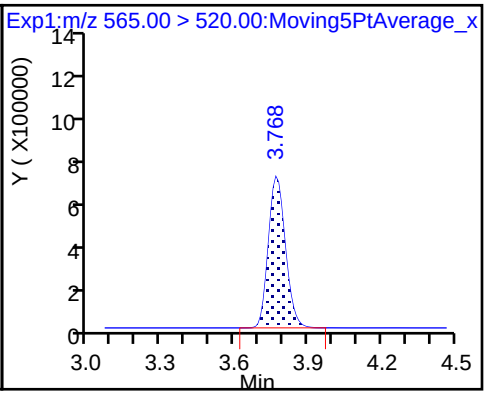
31 Perfluoroundecanoic acid



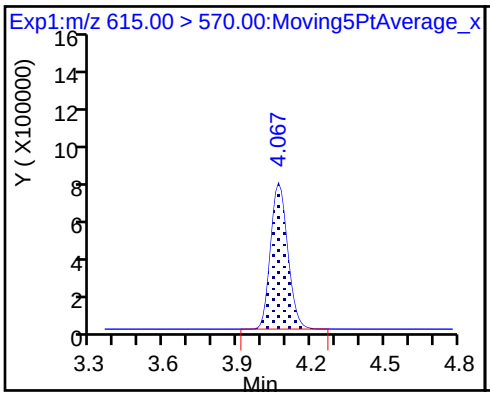
33 N-ethyl perfluorooctane sulfonamid



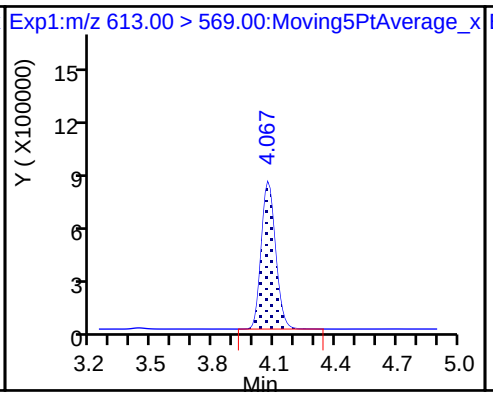
D 30 13C2 PFUnA



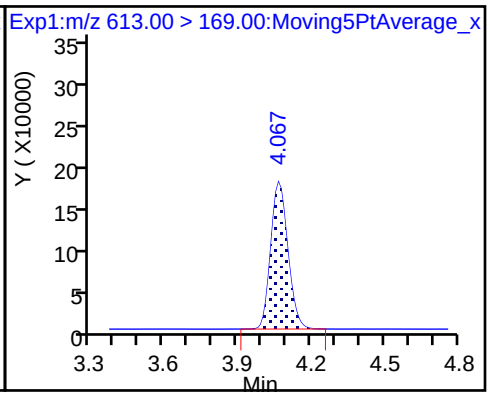
D 36 13C2 PFDoA



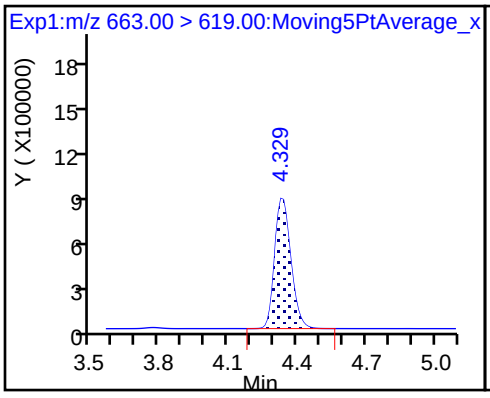
37 Perfluorododecanoic acid



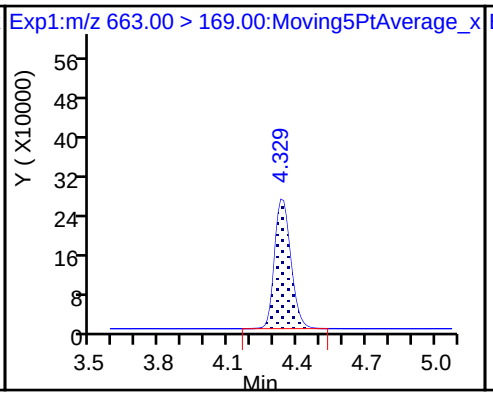
37 Perfluorododecanoic acid



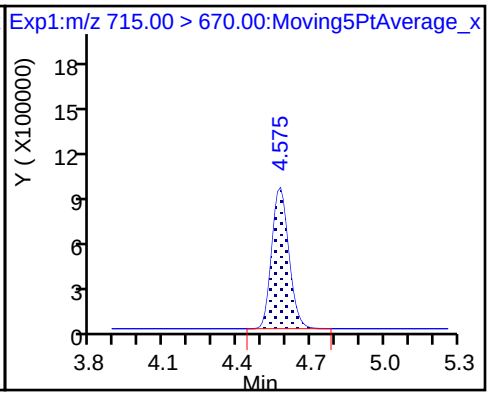
41 Perfluorotridecanoic acid



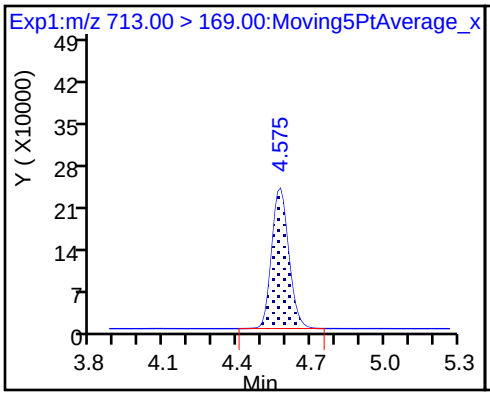
41 Perfluorotridecanoic acid



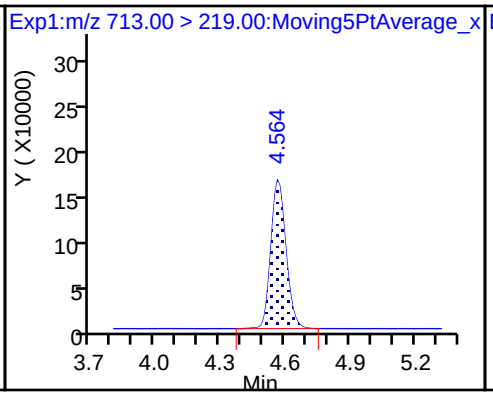
D 43 13C2-PFTeDA



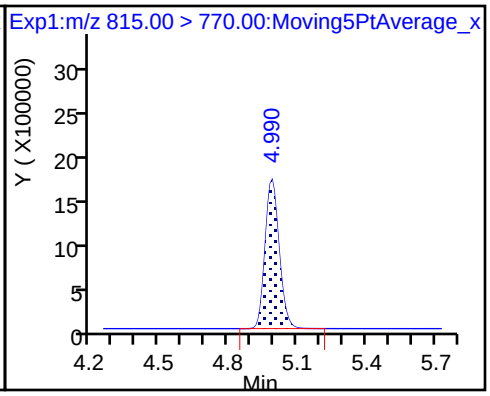
42 Perfluorotetradecanoic acid



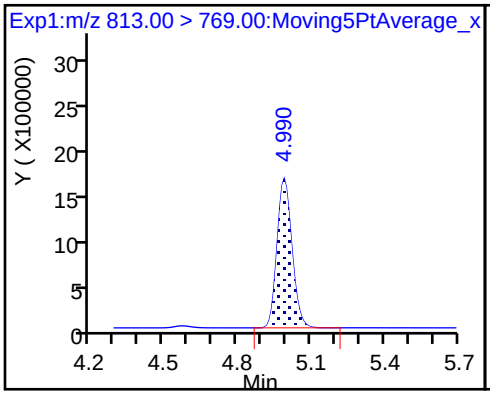
42 Perfluorotetradecanoic acid



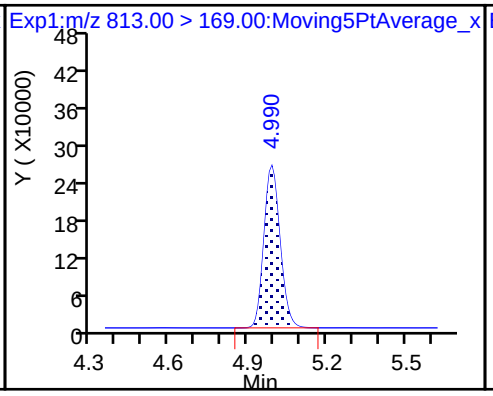
D 44 13C2-PFHxDA



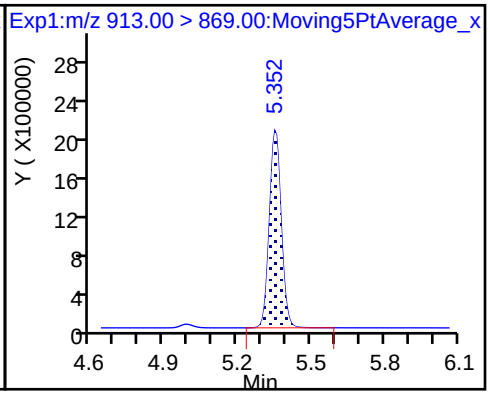
45 Perfluorohexadecanoic acid



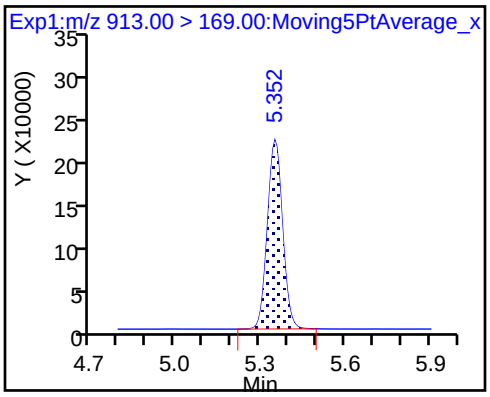
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 21-Mar-2018 19:03:30 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:44 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:25:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.447	0.0	0.538	6477851	2.55		102	71577	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.449	-0.002	1.000	12506996	5.12		102	5009	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	10061856	5.28		106	5962	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.636	4228437	2.51		100	115375	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.743	-0.007	0.646	91170	2.37		102	642	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.005	13614957	4.47		101	59974	
298.90 > 99.00	1.744	1.745	-0.001	1.005	5744856		2.37(1.25-3.74)	101	34133	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.959	-0.003	0.727	618185	2.33		99.8	9508	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.962	-0.006	1.000	3074271	4.85		104	113750	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	9699799	5.15		103	27756	
313.00 > 119.00	1.997	1.998	-0.001	1.000	852897		11.37(5.03-15.10)	103	18827	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.743	4608558	2.48		99.0	117004	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.866	4533044	2.47		98.7	76306	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	9620973	5.13		103	19806	
363.00 > 169.00	2.328	2.335	-0.007	1.000	3676177		2.62(1.13-3.40)	103	44226	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	11144344	4.59		101	37424	
399.00 > 99.00	2.341	2.346	-0.005	1.000	3686233		3.02(1.50-4.49)	101	14506	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.871	5161589	2.28		96.3	51420	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.672	-0.007	1.000	3079977	4.88		103	79193	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.672	-0.007	0.991	859398	2.26		95.0	19868	
* 62 13C2-PFOA										
415.00 > 370.00	2.689	2.695	-0.006		5010487	2.50			60852	
D 14 13C4 PFOA										
417.00 > 372.00	2.689	2.695	-0.006	1.000	4582778	2.44		97.6	62576	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.689	2.697	-0.008	1.000	10325028	4.99		99.7	3798	
413.00 > 169.00	2.689	2.697	-0.008	1.000	5578097		1.85(0.84-2.52)	99.7	12866	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.703	-0.007	1.000	10247281	4.92		103	95353	
449.00 > 99.00	2.697	2.703	-0.007	1.000	2802979		3.66(1.94-5.82)	103	30967	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.140	3887079	2.36		98.7	34652	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.070	-0.005	1.140	4190429	2.53		101	73908	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.070	-0.005	1.000	8507880	4.70		101	25330	
499.00 > 99.00	3.065	3.070	-0.005	1.000	1865180		4.56(2.31-6.93)	101	16885	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	8405623	5.03		101	11383	
463.00 > 169.00	3.065	3.072	-0.007	1.000	2050780		4.10(1.90-5.69)	101	33608	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.396	-0.007	1.261	5524474	2.49		99.4	47817	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.397	0.001	1.003	11417156	5.24		105	103044	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	3110907	4.74		98.9	52787	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.426	0.0	1.274	1232595	2.40		100	20905	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	7434177	5.20		104	34723	
513.00 > 169.00	3.435	3.435	0.0	1.000	1267093		5.87(2.36-7.09)	104	25626	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.435	0.0	1.278	3620699	2.49		99.7	67474	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.591	-0.001	1.335	1999896	2.62		105	32859	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.594	-0.004	1.000	4285891	5.35		107	16332	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	5812987	5.26		109	81589	
599.00 > 99.00	3.748	3.749	-0.001	1.000	1938375		3.00(1.39-4.16)	109	40850	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.398	2049207	2.35		94.1	11579	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.768	0.0	1.402	3287781	2.53		101	48915	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.768	0.0	1.003	4082815	5.33		107	52088	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.768	0.0	1.000	5555779	4.90		98.0	24720	
563.00 > 169.00	3.768	3.768	0.0	1.000	1268479		4.38(2.12-6.36)	98.0	37902	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.066	0.001	1.513	3576857	2.43		97.1	25243	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.068	-0.001	1.000	7940975	5.30		106	7729	
613.00 > 169.00	4.067	4.068	-0.001	1.000	1842955		4.31(2.13-6.40)	106	22214	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	8719608	5.54		111	6299	
663.00 > 169.00	4.329	4.329	0.0	1.000	2643202		3.30(1.25-3.76)	111	25957	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.698	4422729	2.46		98.3	24229	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.571	-0.007	1.000	2258774	5.15		103	23470	
713.00 > 219.00	4.564	4.571	-0.007	1.000	1681977		1.34(0.71-2.13)	103	21838	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.987	-0.006	1.853	7843306	2.66		106	20262	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.989	-0.008	1.000	14354924	5.01		100	4032	
813.00 > 169.00	4.981	4.989	-0.008	1.000	2391479		6.00(2.86-8.58)	100	14747	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.352	5.354	-0.002	1.000	14635504	5.05		101	3845	
913.00 > 169.00	5.345	5.354	-0.009	0.999	1844593		7.93(3.83-11.48)	101	7769	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:45 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_007.d

Injection Date: 21-Mar-2018 19:03:30 Instrument ID: A8_N

Lims ID: IC L6 Full

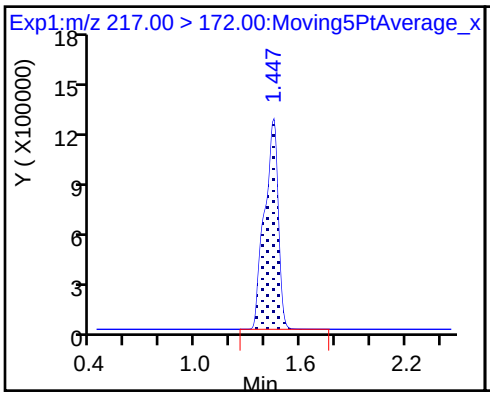
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

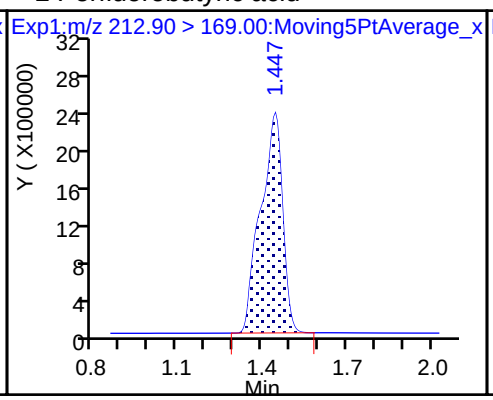
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

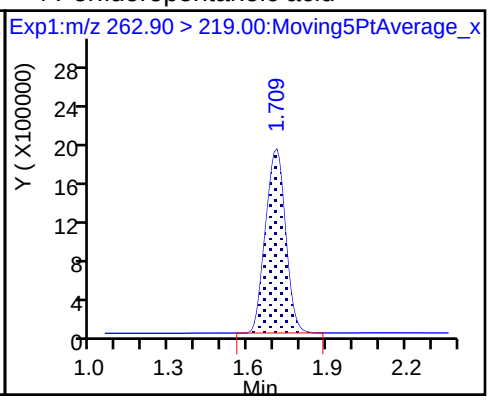
D 1 13C4 PFBA



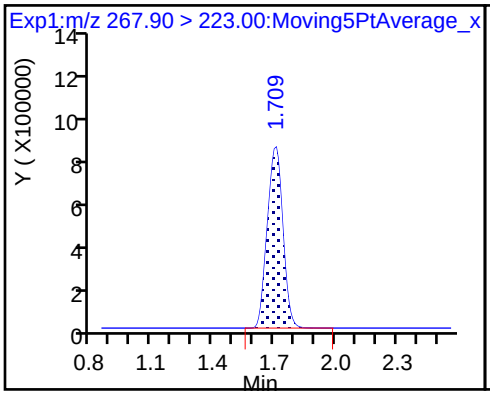
2 Perfluorobutyric acid



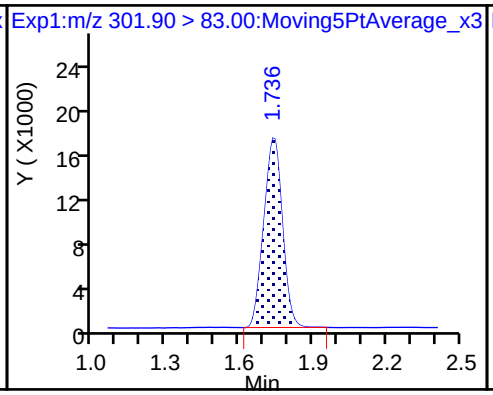
4 Perfluoropentanoic acid



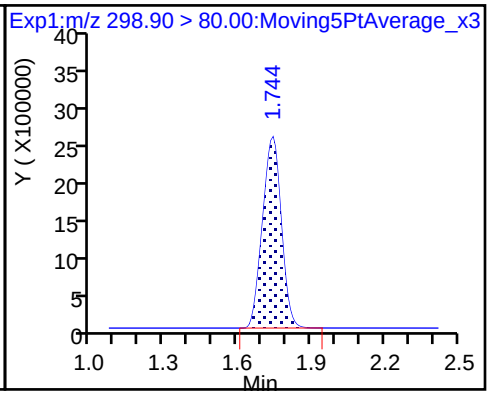
D 3 13C5-PFPeA



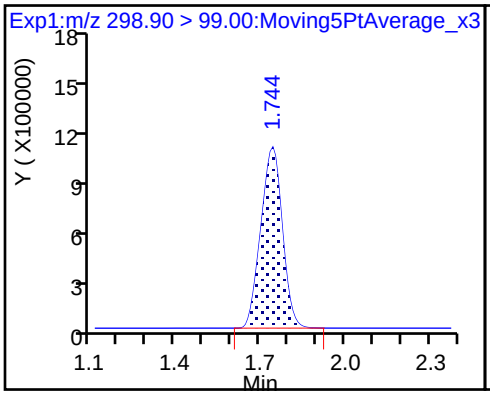
D 47 13C3-PFBS



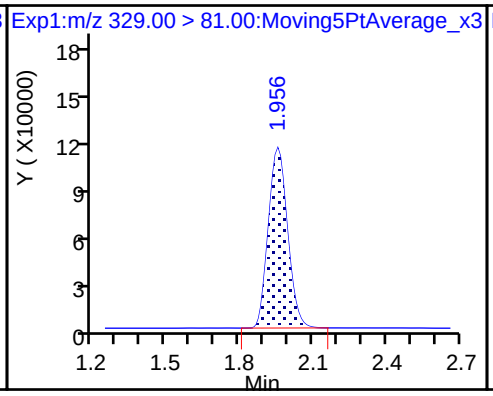
5 Perfluorobutanesulfonic acid



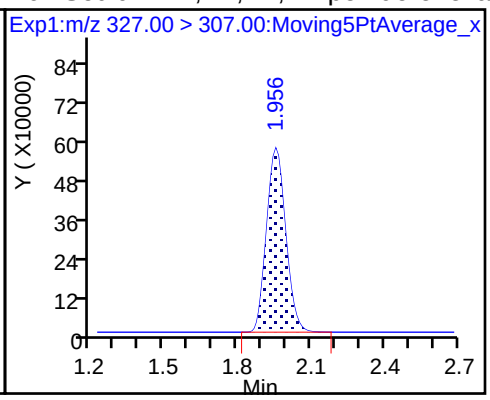
5 Perfluorobutanesulfonic acid



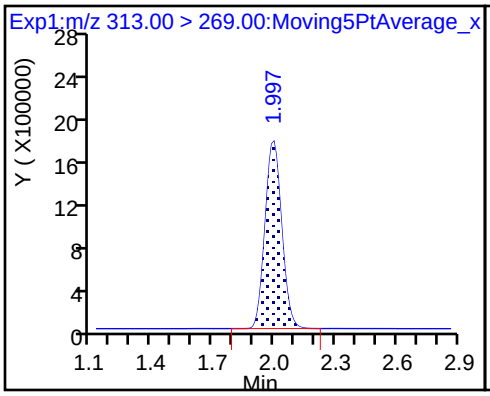
D 60 M2-4:2FTS



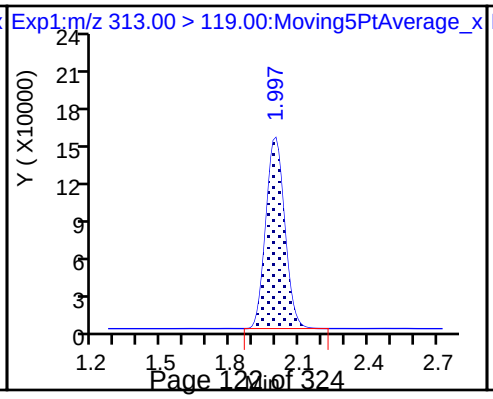
61 Sodium 1H,1H,2H,2H-perfluorohexane



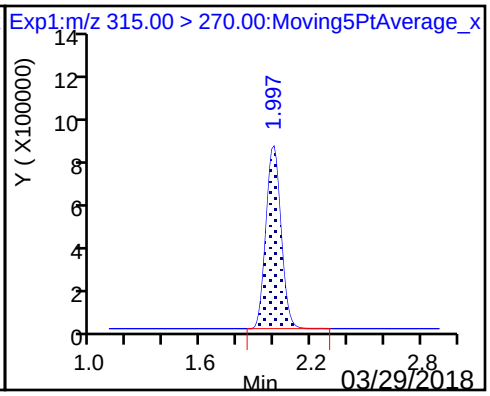
6 Perfluorohexanoic acid



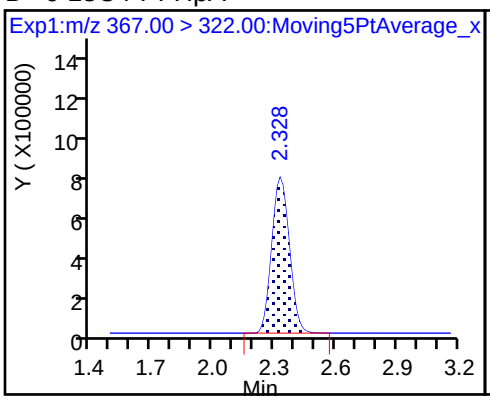
6 Perfluorohexanoic acid



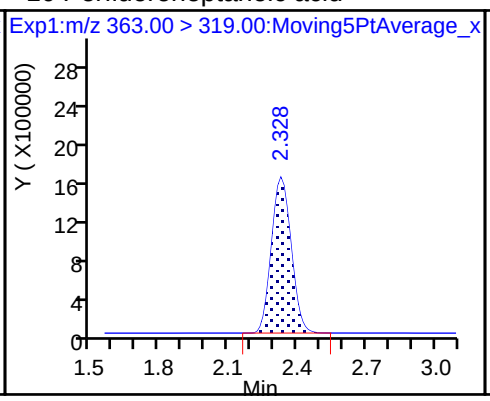
D 7 13C2 PFHxA



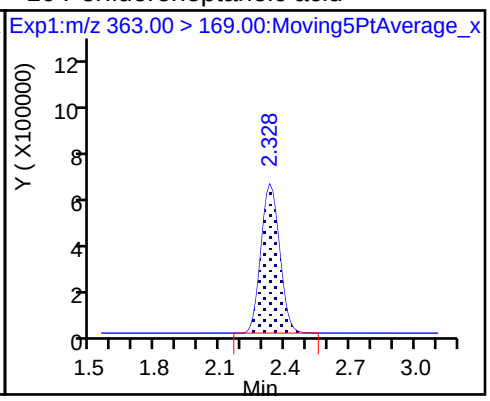
D 9 13C4-PFHpA



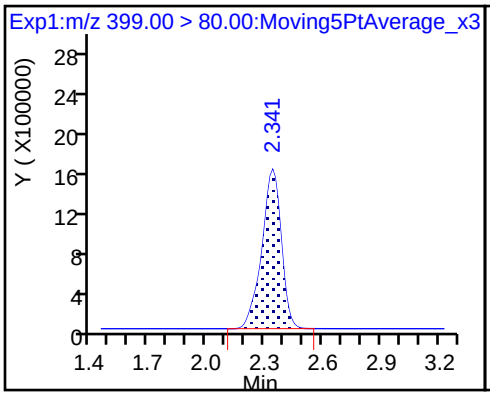
10 Perfluoroheptanoic acid



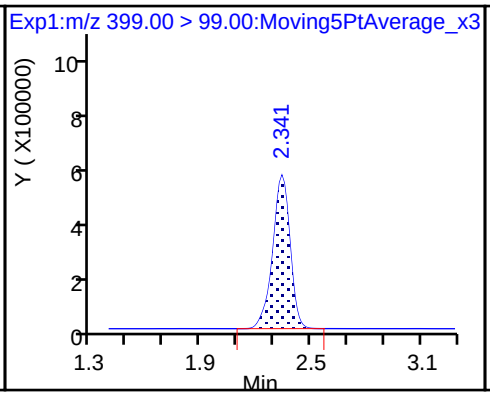
10 Perfluoroheptanoic acid



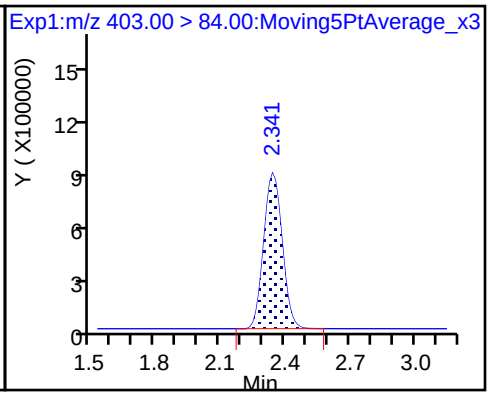
8 Perfluorohexanesulfonic acid



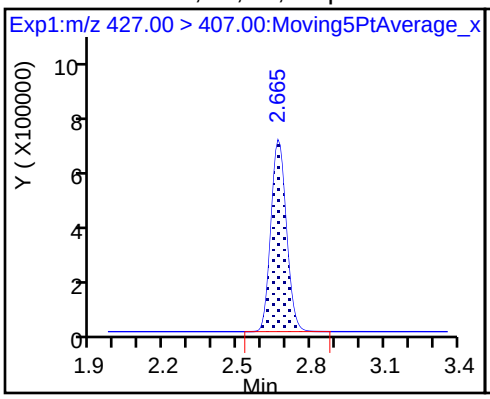
8 Perfluorohexanesulfonic acid



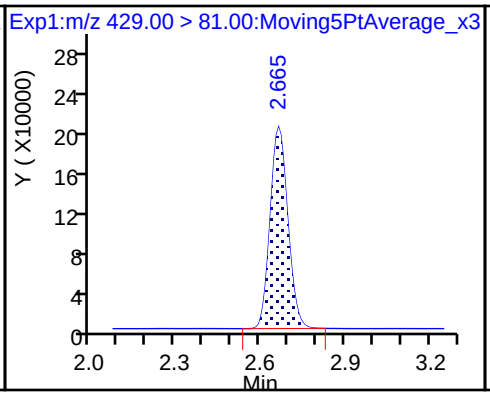
D 11 18O2 PFHxS



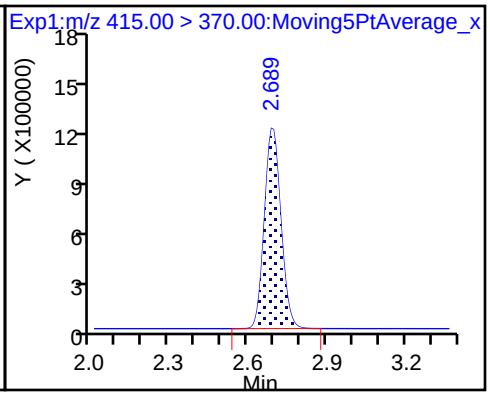
13 Sodium 1H,1H,2H,2H-perfluorooctan



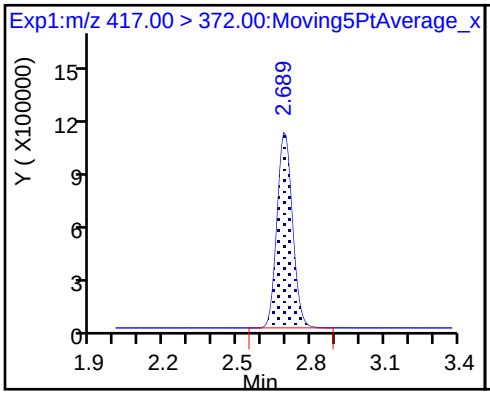
D 12 M2-6:2FTS



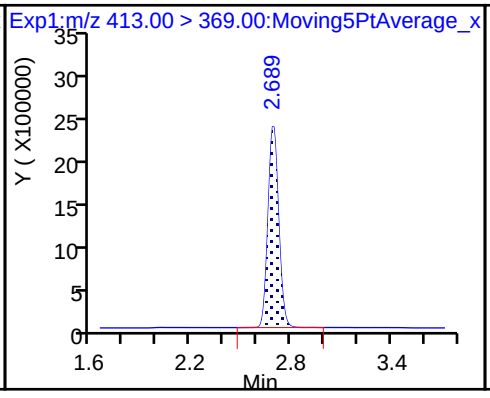
* 62 13C2-PFOA



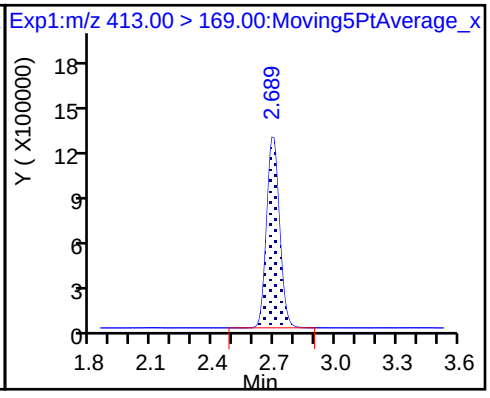
D 14 13C4 PFOA



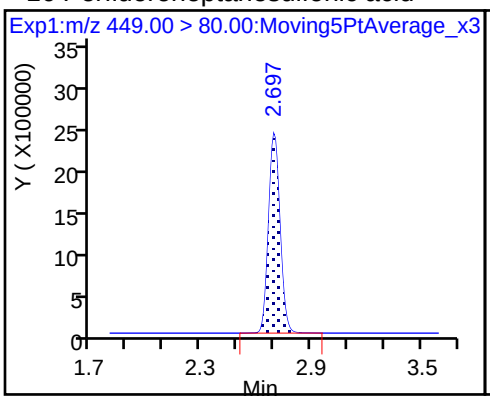
15 Perfluorooctanoic acid



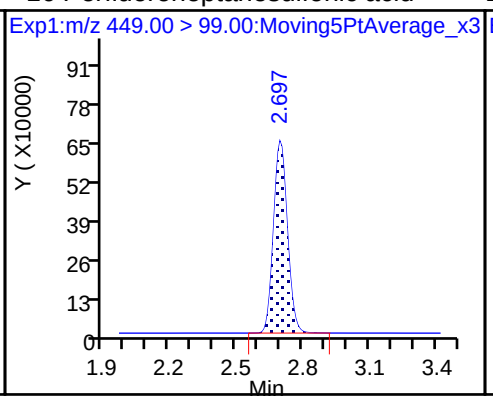
15 Perfluorooctanoic acid



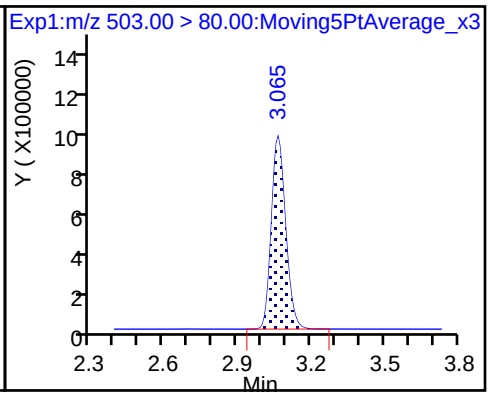
16 Perfluoroheptanesulfonic acid



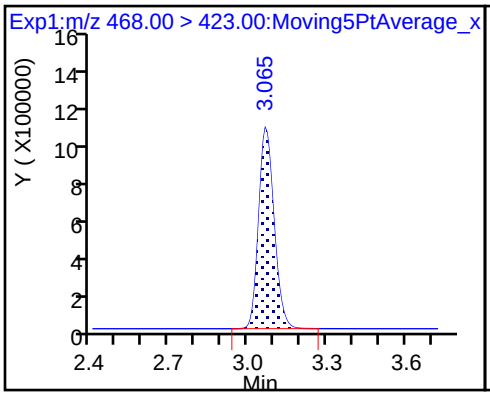
16 Perfluoroheptanesulfonic acid



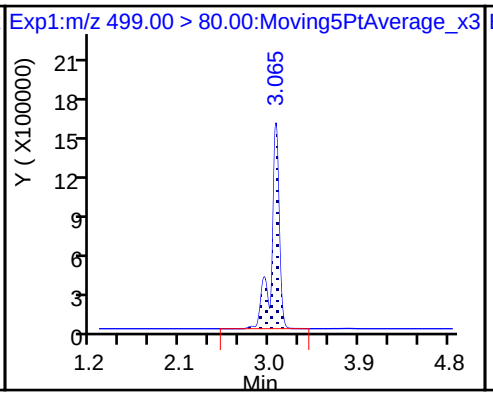
D 18 13C4 PFOS



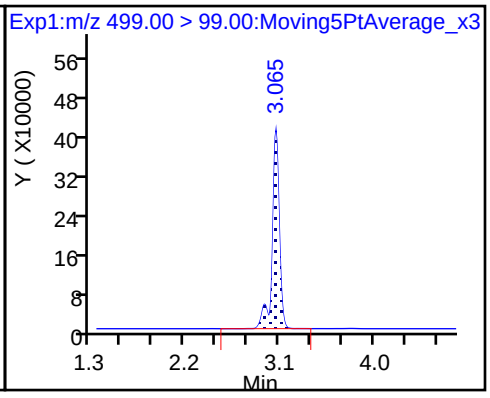
D 19 13C5 PFNA



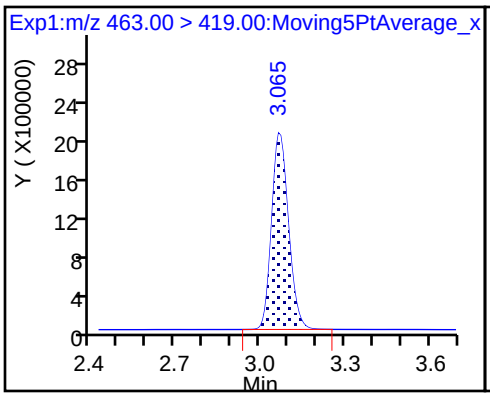
17 Perfluorooctane sulfonic acid



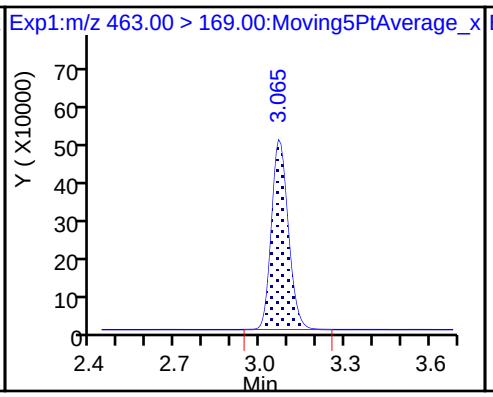
17 Perfluorooctane sulfonic acid



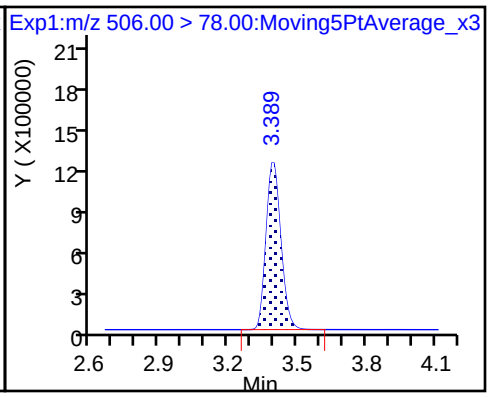
20 Perfluorononanoic acid



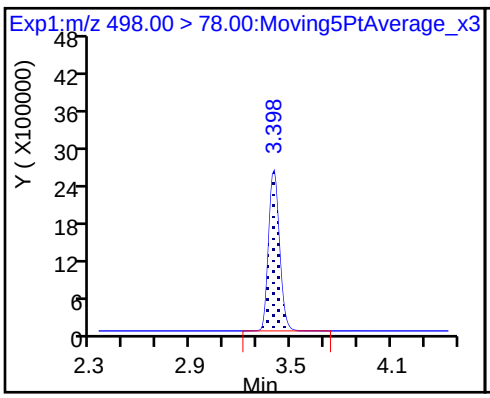
20 Perfluorononanoic acid



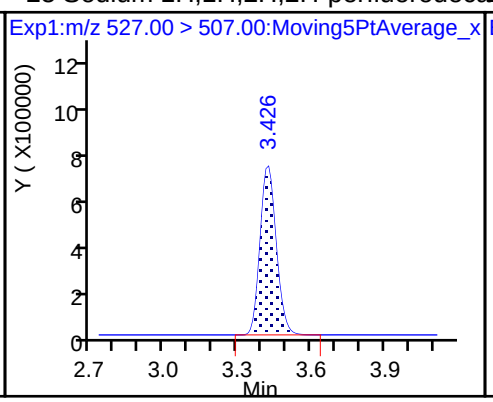
D 21 13C8 FOSA



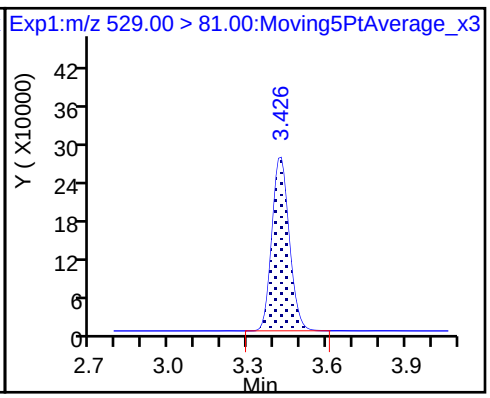
22 Perfluorooctane Sulfonamide



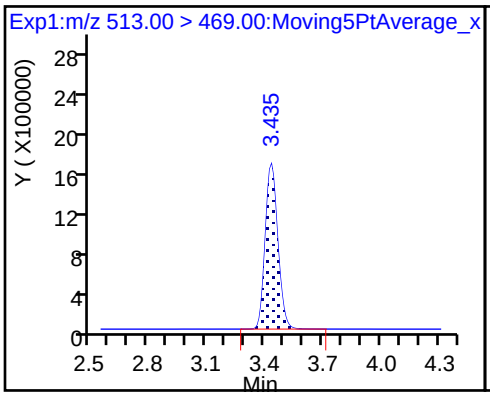
25 Sodium 1H,1H,2H,2H-perfluorodecane



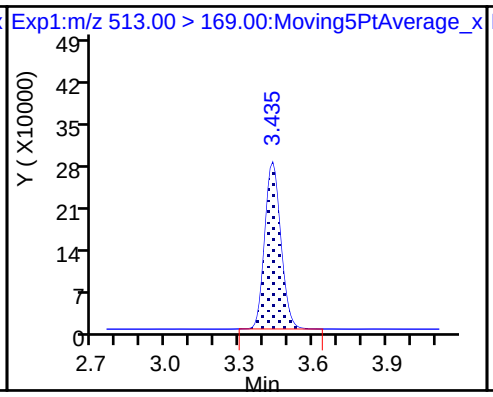
D 26 M2-8:2FTS



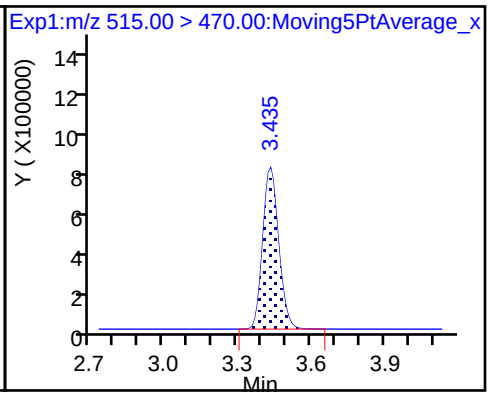
24 Perfluorodecanoic acid



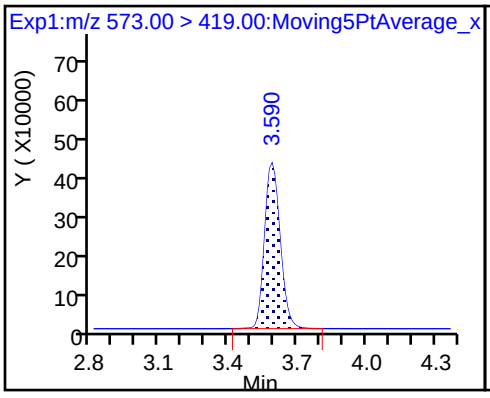
24 Perfluorodecanoic acid



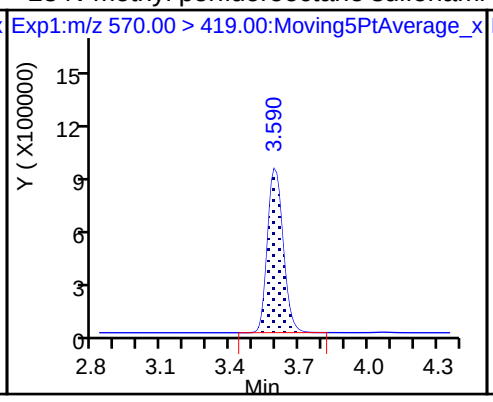
D 23 13C2 PFDA



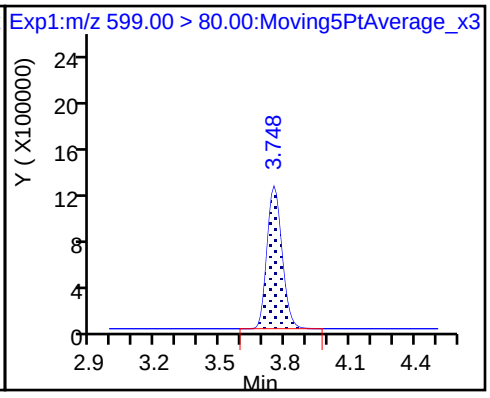
D 27 d3-NMeFOSAA



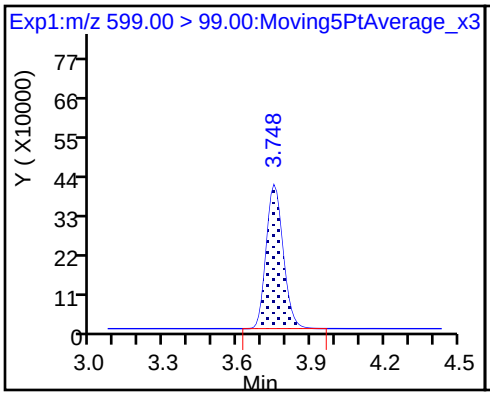
28 N-methyl perfluorooctane sulfonami



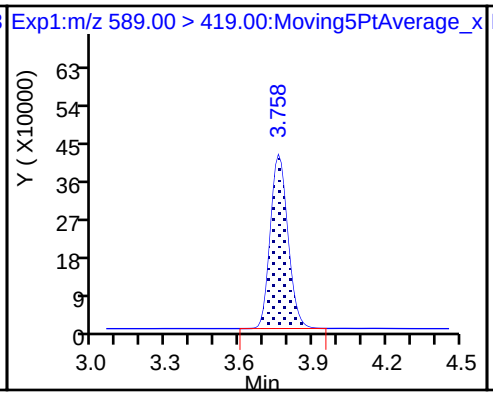
29 Perfluorodecane Sulfonic acid



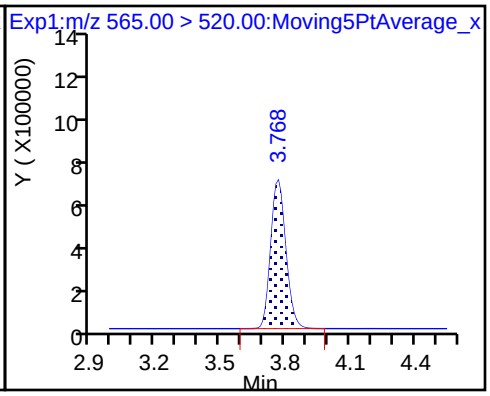
29 Perfluorodecane Sulfonic acid



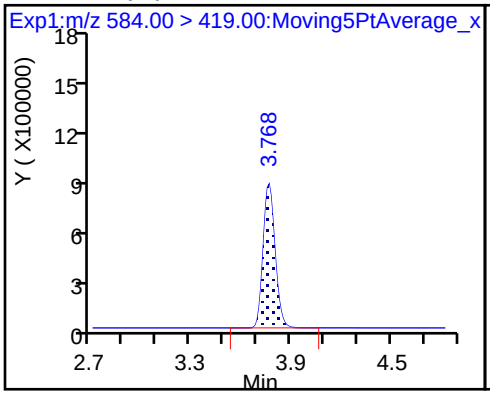
D 32 d5-NEtFOSAA



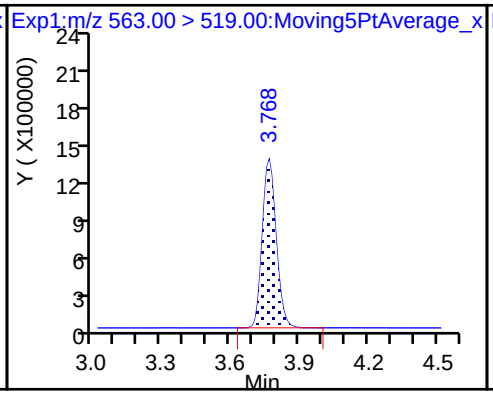
D 30 13C2 PFUnA



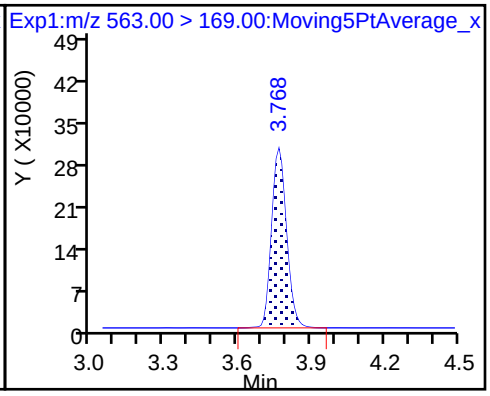
33 N-ethyl perfluorooctane sulfonamid



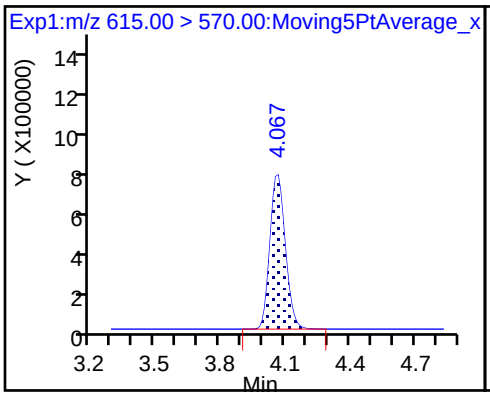
31 Perfluoroundecanoic acid



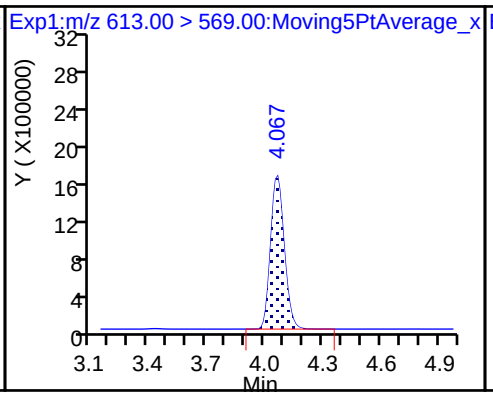
31 Perfluoroundecanoic acid



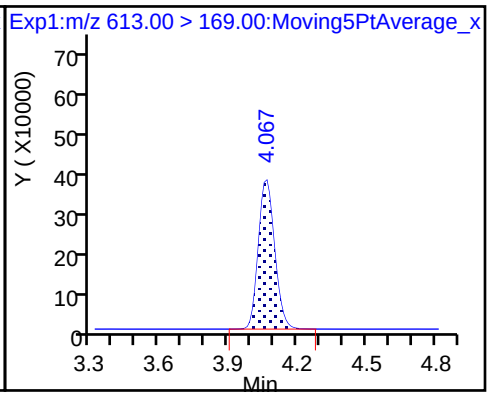
D 36 13C2 PFDoA



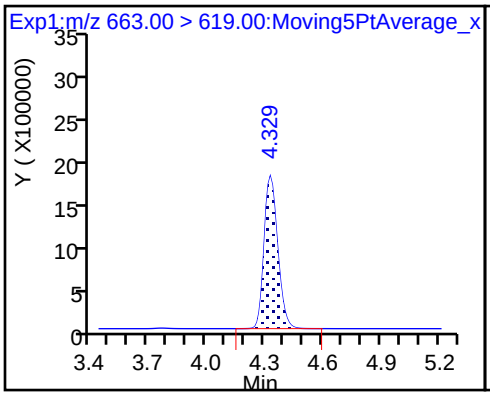
37 Perfluorododecanoic acid



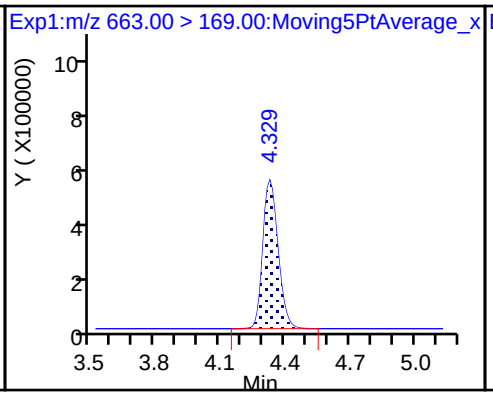
37 Perfluorododecanoic acid



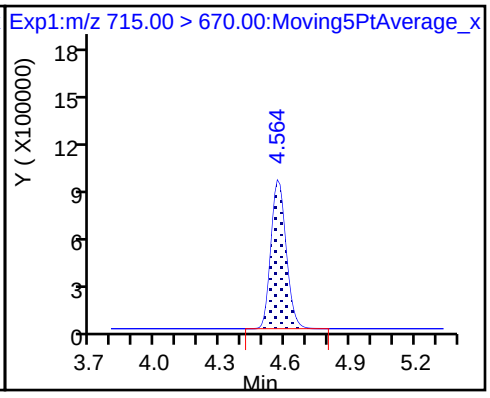
41 Perfluorotridecanoic acid



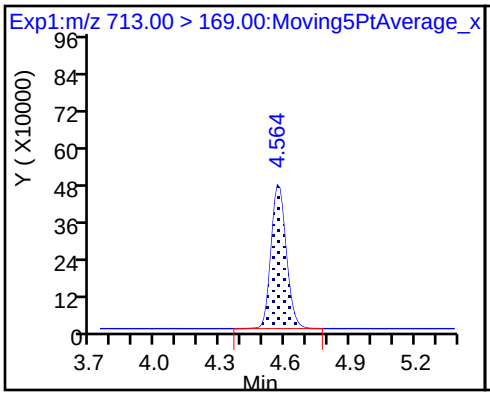
41 Perfluorotridecanoic acid



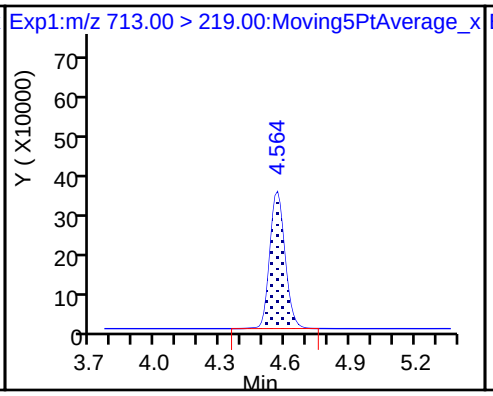
D 43 13C2-PFTeDA



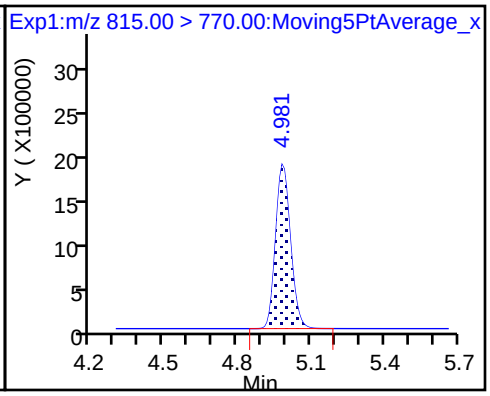
42 Perfluorotetradecanoic acid



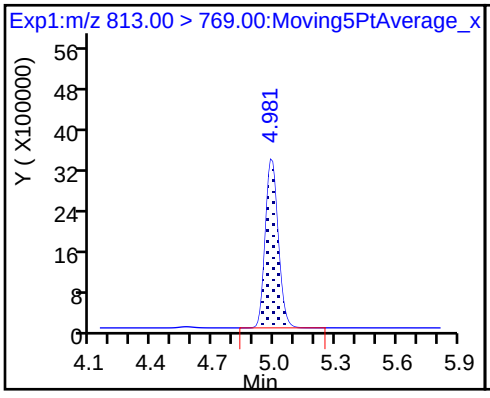
42 Perfluorotetradecanoic acid



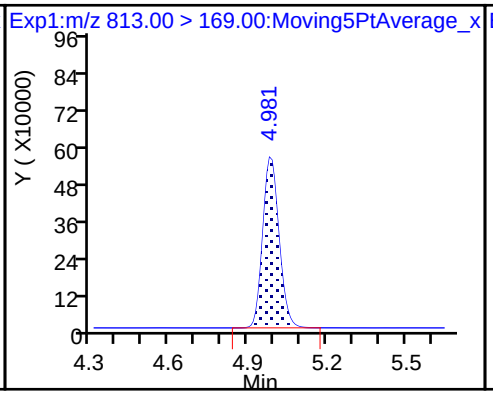
D 44 13C2-PFHxDA



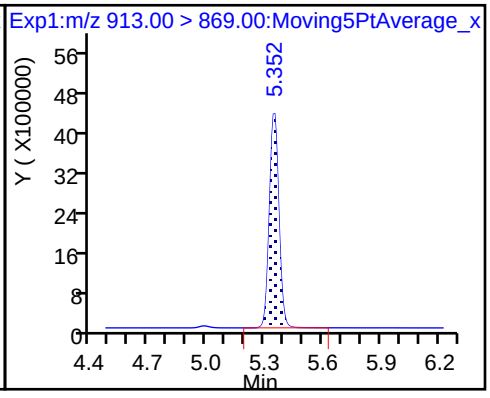
45 Perfluorohexadecanoic acid



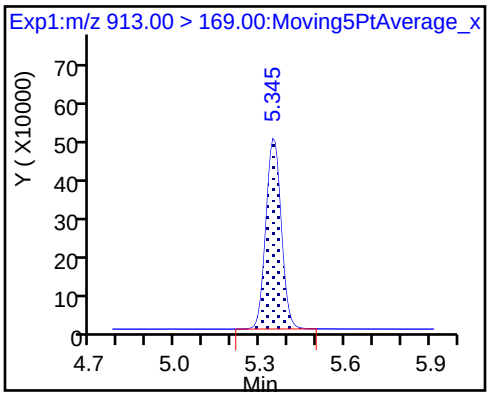
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 21-Mar-2018 19:11:19 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:42:48 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: phomsophat Date: 21-Mar-2018 19:26:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.444	1.447	-0.003	0.537	6100844	2.65		106	75996	
2 Perfluorobutyric acid										
212.90 > 169.00	1.450	1.449	0.001	1.004	22360079	9.72		97.2	8015	
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.710	-0.005	0.634	4046135	2.65		106	97369	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.705	1.710	-0.005	1.000	18500324	10.1		101	10333	
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.743	-0.003	0.647	84106	2.41		104	620	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.745	-0.005	1.000	24100878	8.57		97.0	85607	
298.90 > 99.00	1.740	1.745	-0.005	1.000	10977956		2.20(1.25-3.74)	97.0	60614	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.959	0.001	0.729	533647	2.21		94.8	6419	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.962	-0.002	1.000	5293270	9.06		97.0	195984	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.998	-0.006	0.740	4257747	2.52		101	74703	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.998	-0.006	1.000	17232401	9.90		99.0	44074	
313.00 > 119.00	1.992	1.998	-0.006	1.000	1540944		11.18(5.03-15.10)	99.0	34184	
D 9 13C4-PFHpA										
367.00 > 322.00	2.335	2.333	0.002	0.868	4129064	2.48		99.0	69460	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.335	2.335	0.0	1.000	17149506	10.0		100	30306	
363.00 > 169.00	2.335	2.335	0.0	1.000	6613832		2.59(1.13-3.40)	100	48365	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.348	2.346	0.002	1.000	19742275	8.51		93.5	51185	
399.00 > 99.00	2.348	2.346	0.002	1.000	7022065		2.81(1.50-4.49)	93.5	22400	
D 11 18O2 PFHxS										
403.00 > 84.00	2.348	2.348	0.0	0.873	4928998	2.40		101	64840	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.672	-0.005	0.991	845912	2.45		103	18074	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.672	-0.005	1.000	5982174	9.63		102	108087	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.695	-0.004	1.000	4169807	2.44		97.7	59737	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.695	-0.004		4550962	2.50			65302	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.697	-0.006	1.000	18212815	9.67		96.7	5500	
413.00 > 169.00	2.691	2.697	-0.006	1.000	10080594		1.81(0.84-2.52)	96.7	18247	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.703	-0.004	1.000	17826274	9.17		96.3	103505	
449.00 > 99.00	2.699	2.703	-0.004	1.000	4999808		3.57(1.94-5.82)	96.3	34087	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.068	-0.001	1.140	3625826	2.42		101	21910	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.067	3.070	-0.003	1.000	15932478	9.43		102	19647	M
499.00 > 99.00	3.067	3.070	-0.003	1.000	3468678		4.59(2.31-6.93)	102	82323	
D 19 13C5 PFNA										
468.00 > 423.00	3.067	3.070	-0.003	1.140	3729104	2.48		99.1	64949	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.072	-0.005	1.000	15598692	10.5		105	18229	
463.00 > 169.00	3.067	3.072	-0.005	1.000	3729122		4.18(1.90-5.69)	105	50397	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.396	-0.004	1.261	4957065	2.46		98.2	34240	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.397	-0.005	1.000	18741888	9.59		95.9	103813	
D 26 M2-8:2FTS										
529.00 > 81.00	3.420	3.426	-0.006	1.271	1040808	2.23		93.1	16509	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.420	3.426	-0.006	1.000	5541846	10.0		104	80664	
D 23 13C2 PFDA										
515.00 > 470.00	3.429	3.435	-0.006	1.274	3248595	2.46		98.5	64981	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.429	3.435	-0.006	1.000	12786299	9.96		99.6	52903	
513.00 > 169.00	3.429	3.435	-0.006	1.000	2320539		5.51(2.36-7.09)	99.6	85814	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.591	-0.007	1.332	1816501	2.62		105	27279	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.595	3.594	0.001	1.003	7642171	10.5		105	37247	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.744	3.749	-0.005	1.000	10545265	10.2		106	168906	
599.00 > 99.00	3.744	3.749	-0.005	1.000	3537256		2.98(1.39-4.16)	106	56975	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.754	3.759	-0.005	1.395	1842170	2.33		93.2	10683	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.764	3.768	-0.004	1.000	10065814	10.5		105	36194	
563.00 > 169.00	3.764	3.768	-0.004	1.000	2312836		4.35(2.12-6.36)	105	50289	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.764	3.768	-0.004	1.003	6938724	10.1		101	87182	
D 30 13C2 PFUnA										
565.00 > 520.00	3.764	3.768	-0.004	1.399	2787354	2.36		94.5	52309	
D 36 13C2 PFDoA										
615.00 > 570.00	4.063	4.066	-0.003	1.510	3528118	2.64		105	29032	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.063	4.068	-0.005	1.000	14548343	9.85		98.5	12448	
613.00 > 169.00	4.063	4.068	-0.005	1.000	3568672		4.08(2.13-6.40)	98.5	36734	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.325	4.329	-0.004	1.000	14795343	9.52		95.2	10222	
663.00 > 169.00	4.325	4.329	-0.004	1.000	4868530		3.04(1.25-3.76)	95.2	33458	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.568	-0.007	1.695	4321269	2.64		106	28163	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.571	-0.010	1.000	4319552	10.1		101	40804	
713.00 > 219.00	4.561	4.571	-0.010	1.000	3132710		1.38(0.71-2.13)	101	38066	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.978	4.987	-0.009	1.850	6875940	2.56		103	18896	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.987	4.989	-0.002	1.002	23776796	9.49		94.9	6474	
813.00 > 169.00	4.978	4.989	-0.011	1.000	4555370		5.22(2.86-8.58)	94.9	19192	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.349	5.354	-0.005	1.000	24460507	9.62		96.2	5275	
913.00 > 169.00	5.342	5.354	-0.012	0.999	3189601		7.67(3.83-11.48)	96.2	10811	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:42:49 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Injection Date: 21-Mar-2018 19:11:19 Instrument ID: A8_N

Lims ID: IC L7 Full

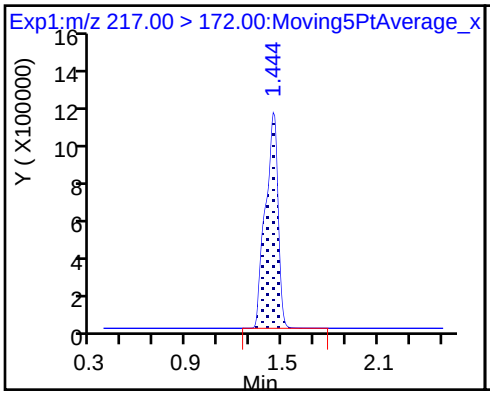
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

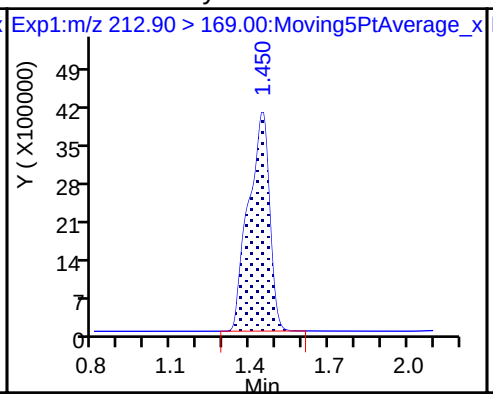
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

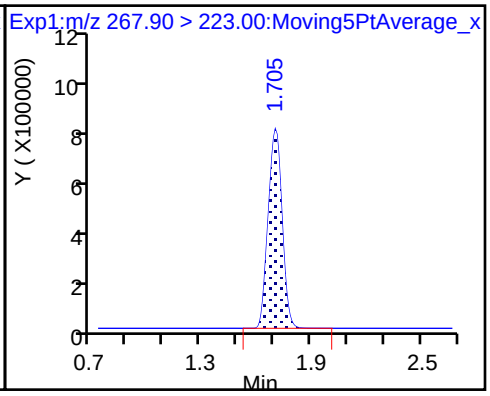
D 1 13C4 PFBA



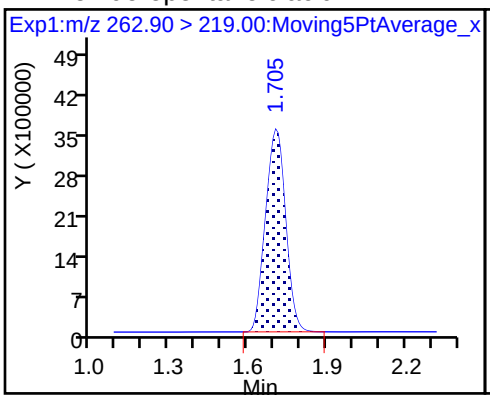
2 Perfluorobutyric acid



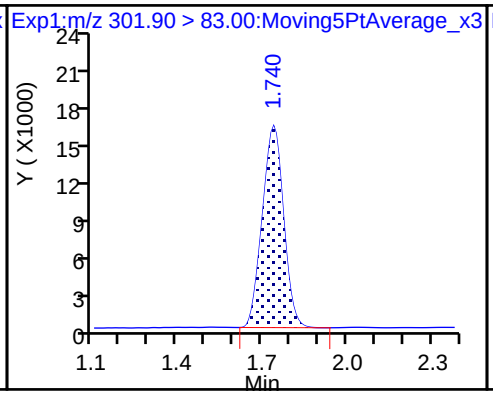
D 3 13C5-PFPeA



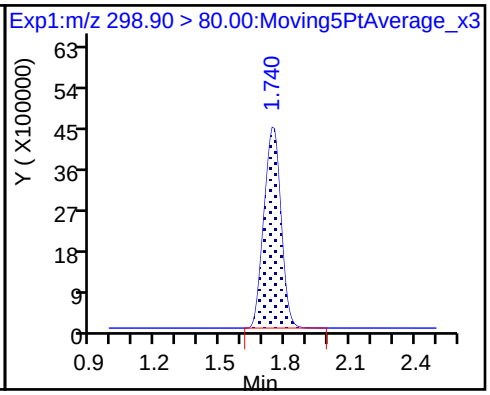
4 Perfluoropentanoic acid



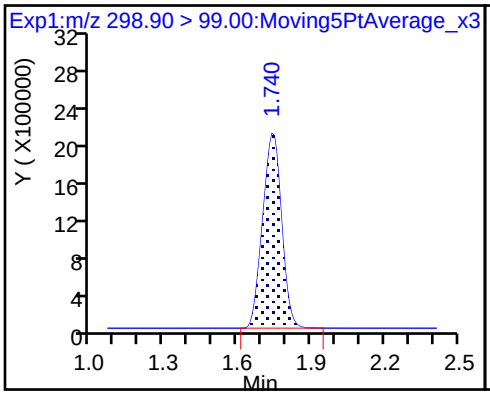
D 47 13C3-PFBS



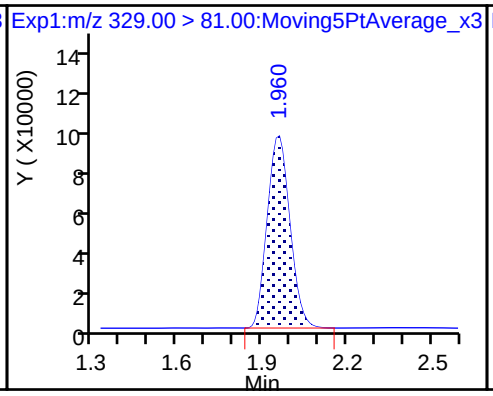
5 Perfluorobutanesulfonic acid



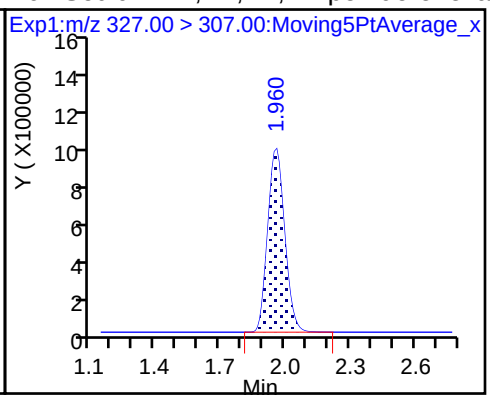
5 Perfluorobutanesulfonic acid



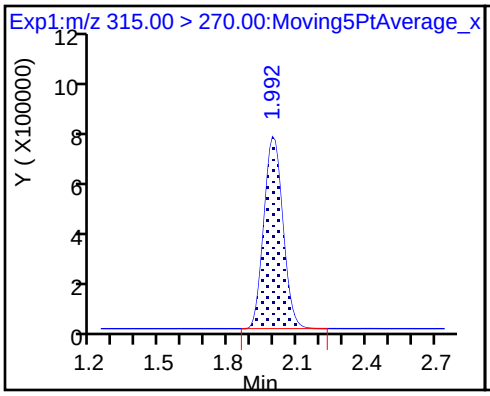
D 60 M2-4:2FTS



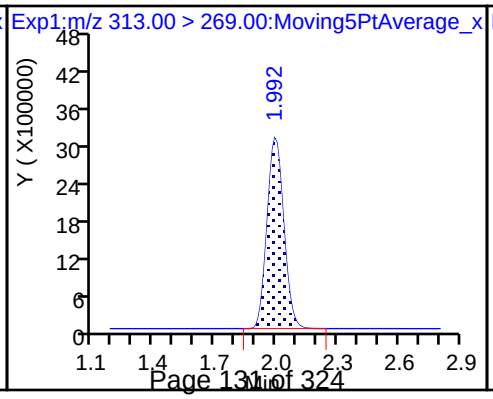
61 Sodium 1H,1H,2H,2H-perfluorohexane



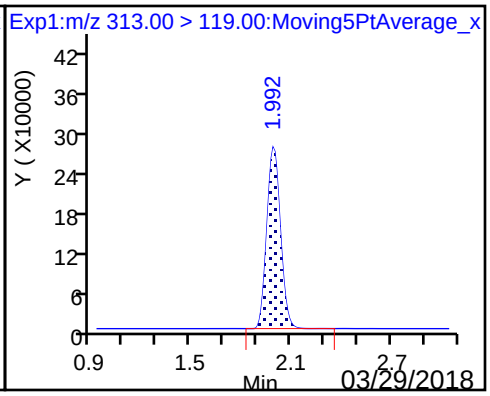
D 7 13C2 PFHxA



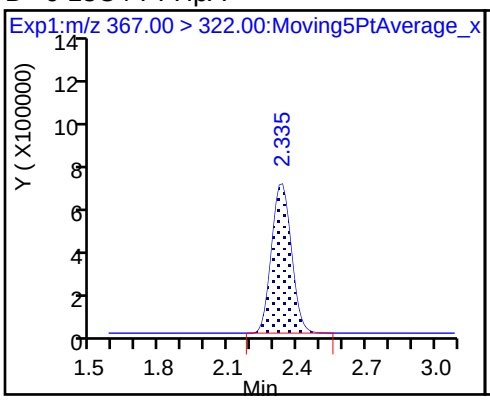
6 Perfluorohexanoic acid



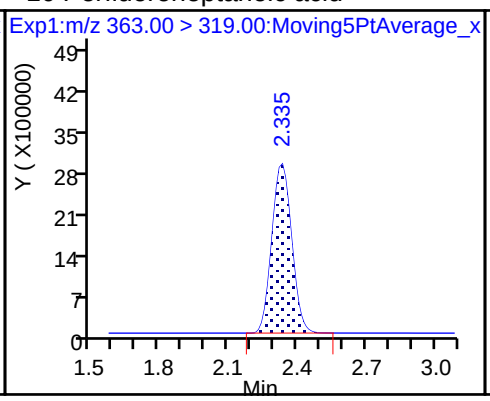
6 Perfluorohexanoic acid



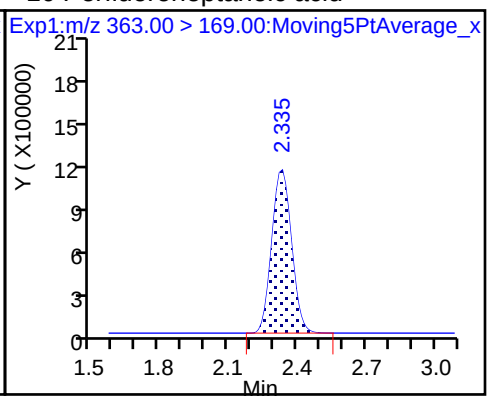
D 9 13C4-PFHpA



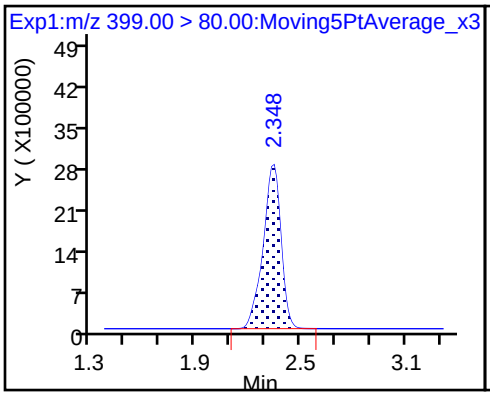
10 Perfluoroheptanoic acid



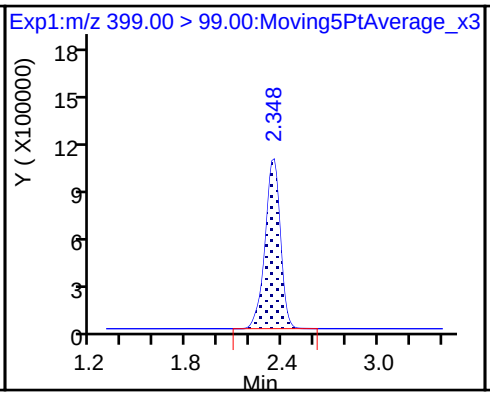
10 Perfluoroheptanoic acid



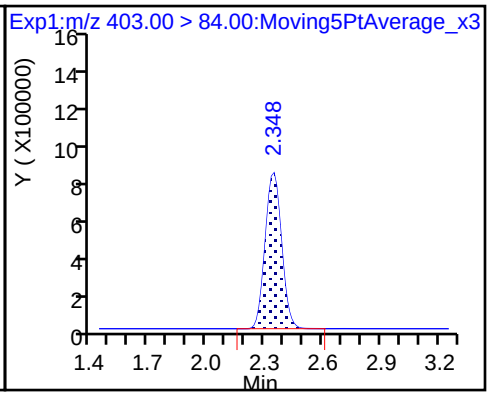
8 Perfluorohexanesulfonic acid



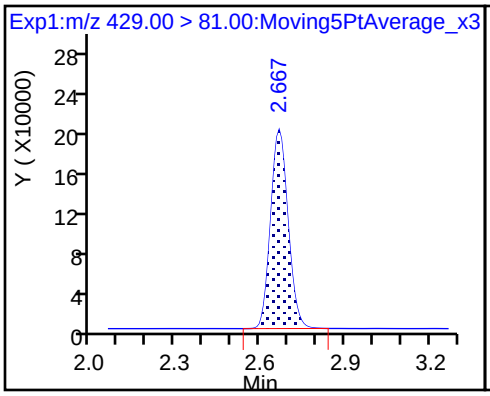
8 Perfluorohexanesulfonic acid



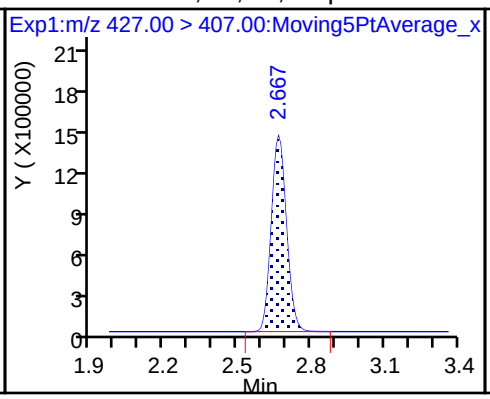
D 11 18O2 PFHxS



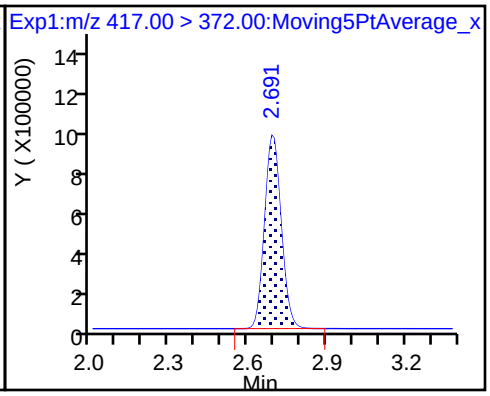
D 12 M2-6:2FTS



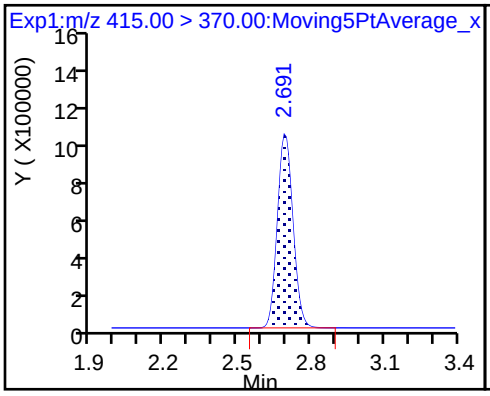
13 Sodium 1H,1H,2H,2H-perfluorooctane



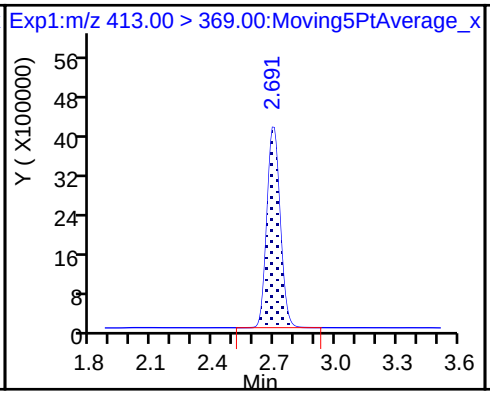
D 14 13C4 PFOA



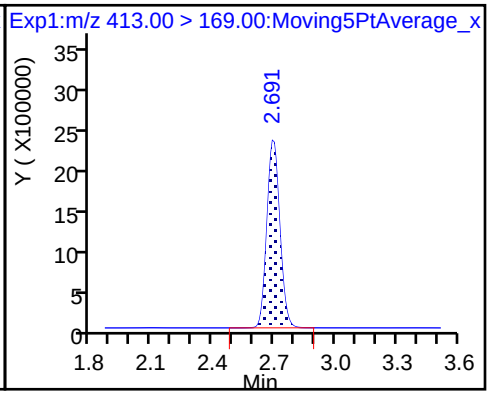
* 62 13C2-PFOA



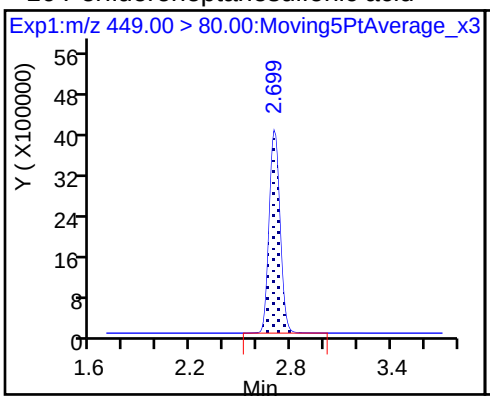
15 Perfluorooctanoic acid



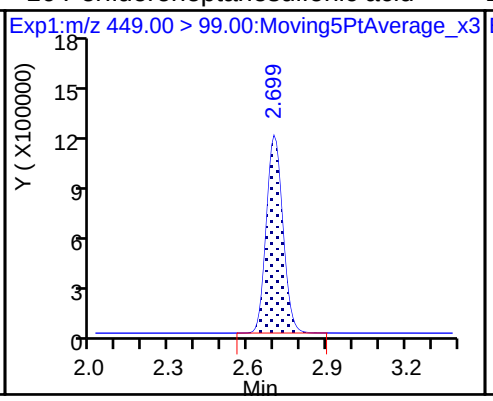
15 Perfluorooctanoic acid



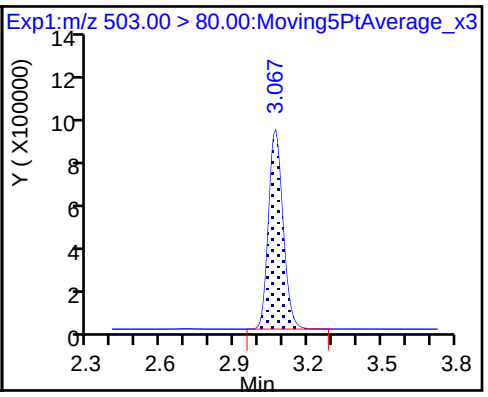
16 Perfluoroheptanesulfonic acid



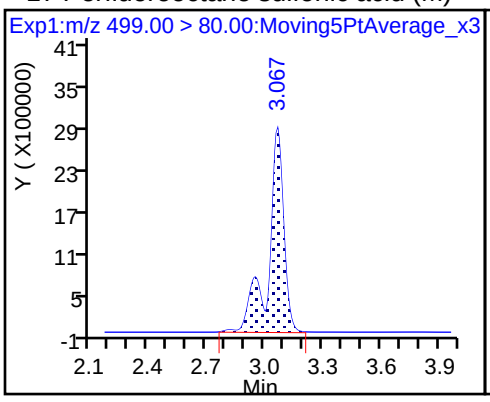
16 Perfluoroheptanesulfonic acid



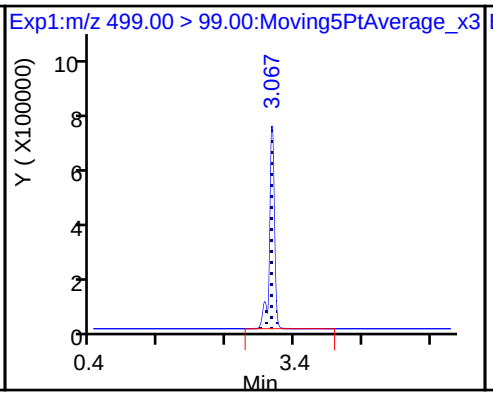
D 18 13C4 PFOS



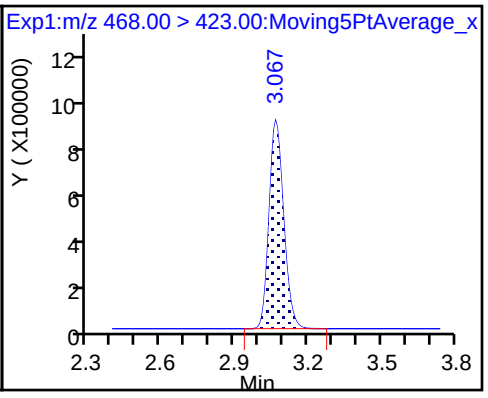
17 Perfluorooctane sulfonic acid (M)



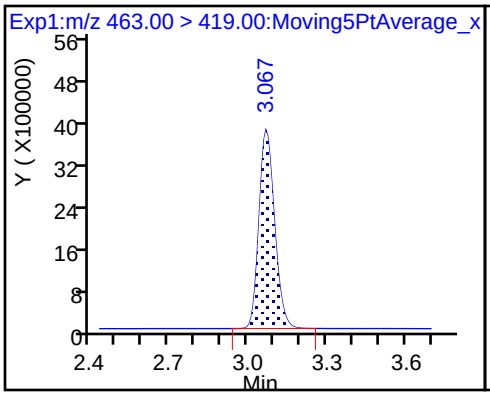
17 Perfluorooctane sulfonic acid



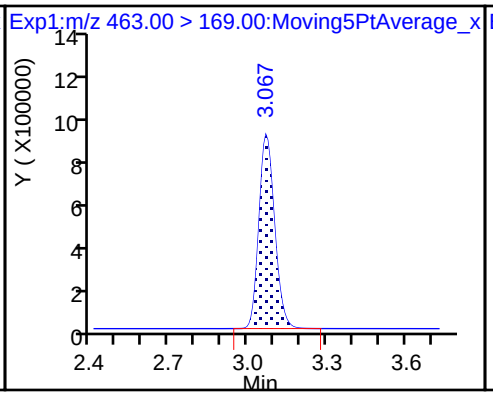
D 19 13C5 PFNA



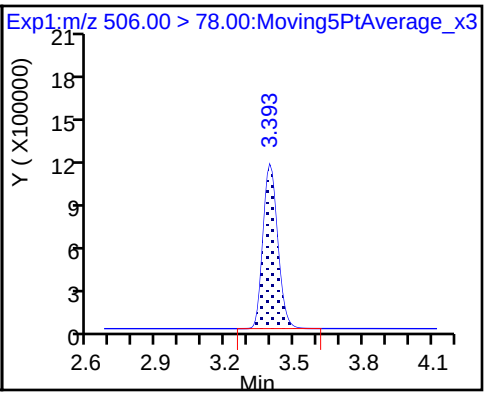
20 Perfluorononanoic acid



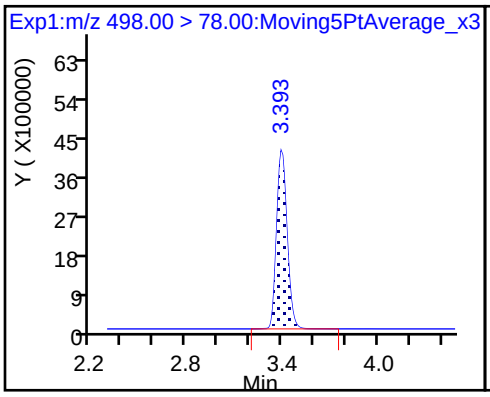
20 Perfluorononanoic acid



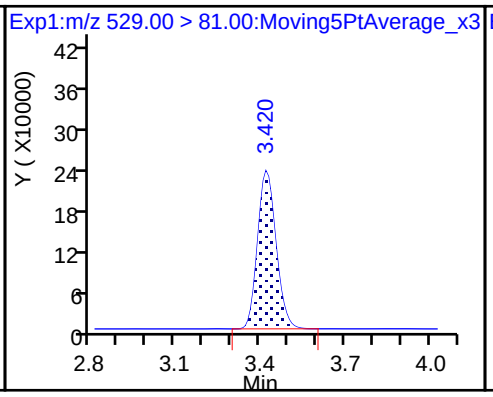
D 21 13C8 FOSA



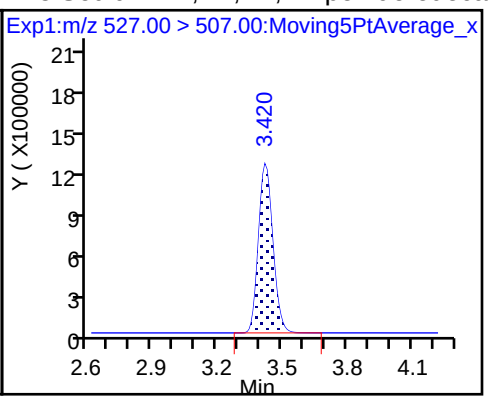
22 Perfluorooctane Sulfonamide



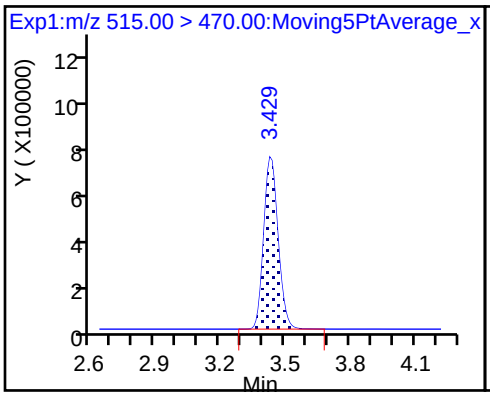
D 26 M2-8:2FTS



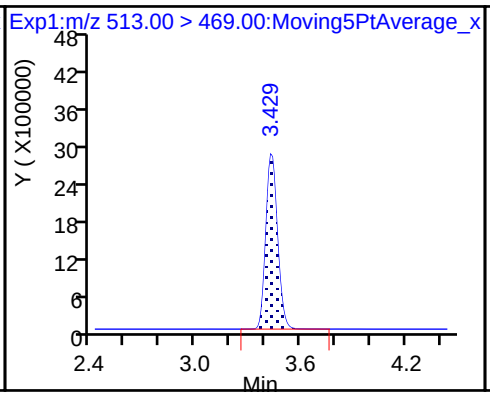
25 Sodium 1H,1H,2H,2H-perfluorodecane



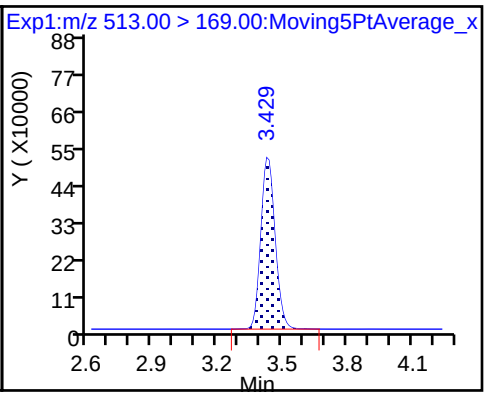
D 23 13C2 PFDA



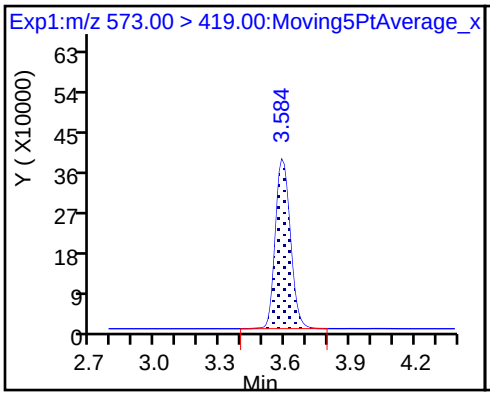
24 Perfluorodecanoic acid



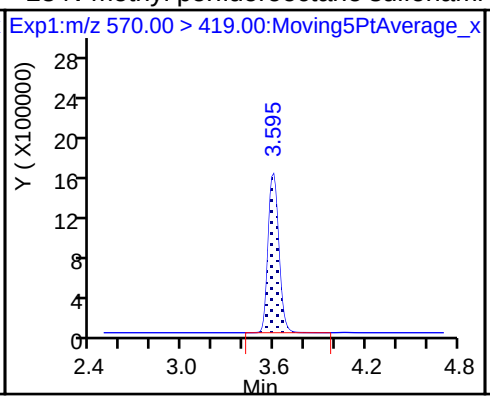
24 Perfluorodecanoic acid



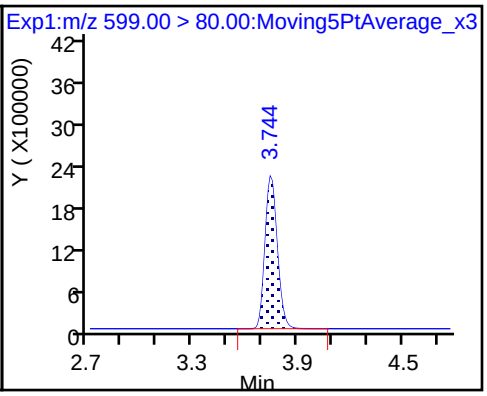
D 27 d3-NMeFOSAA



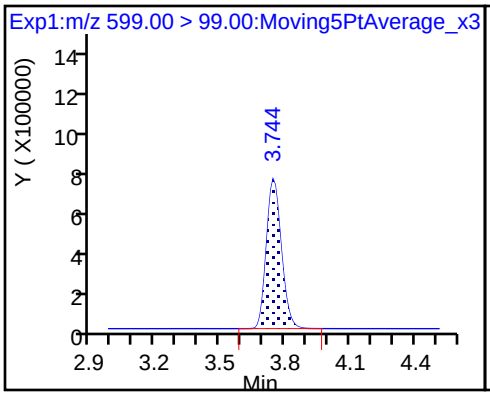
28 N-methyl perfluorooctane sulfonami



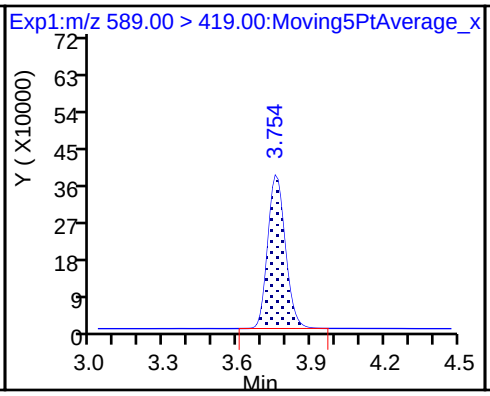
29 Perfluorodecane Sulfonic acid



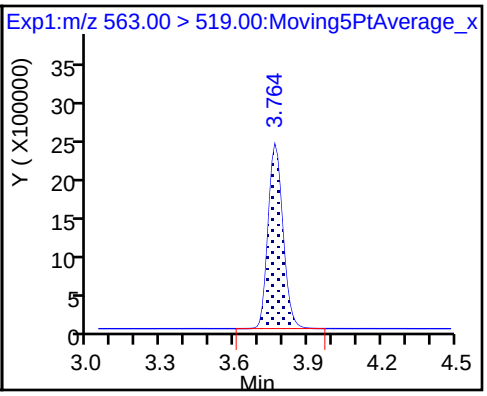
29 Perfluorodecane Sulfonic acid



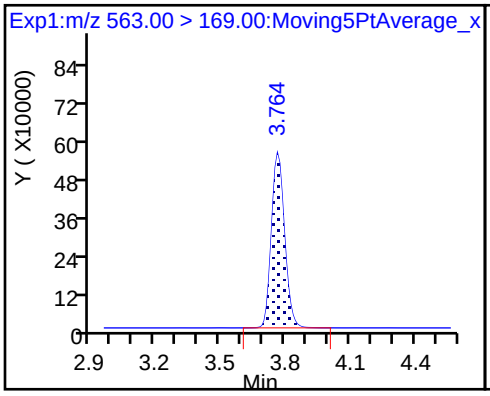
D 32 d5-NEtFOSAA



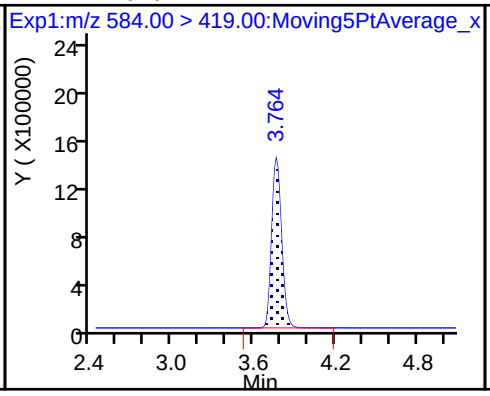
31 Perfluoroundecanoic acid



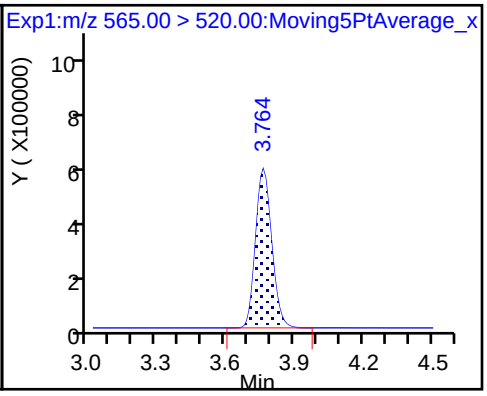
31 Perfluoroundecanoic acid



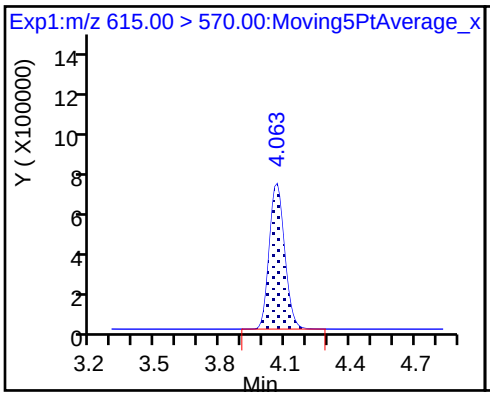
33 N-ethyl perfluorooctane sulfonamid



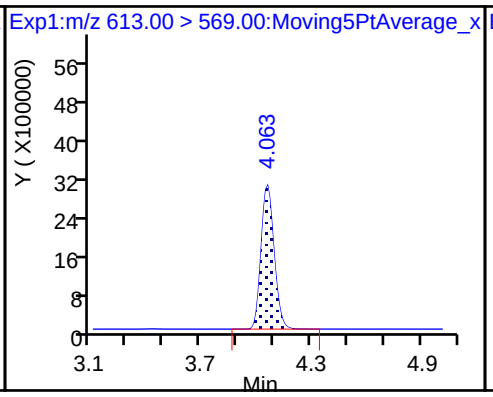
D 30 13C2 PFUnA



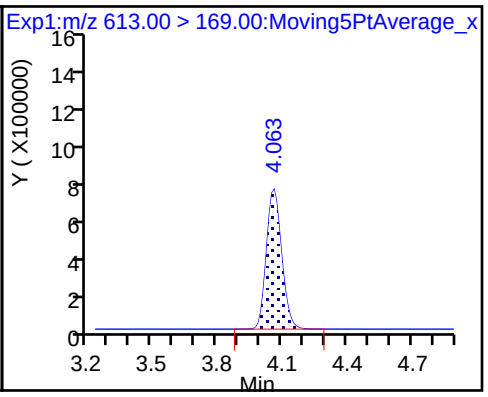
D 36 13C2 PFDoA



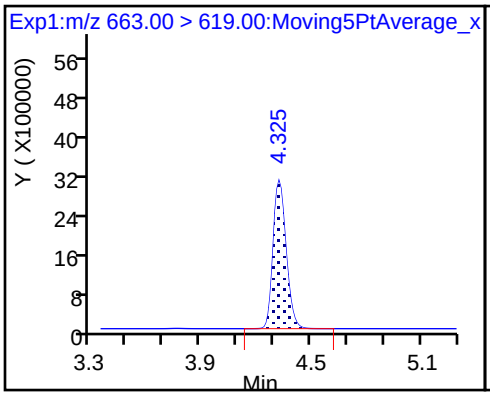
37 Perfluorododecanoic acid



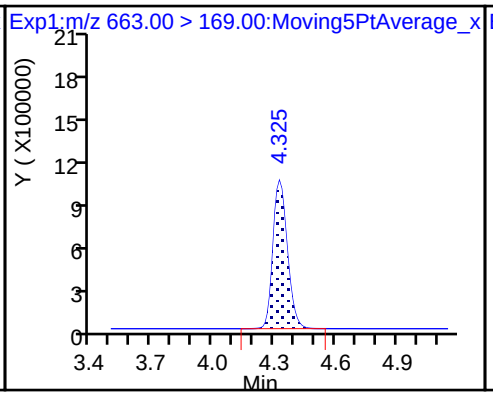
37 Perfluorododecanoic acid



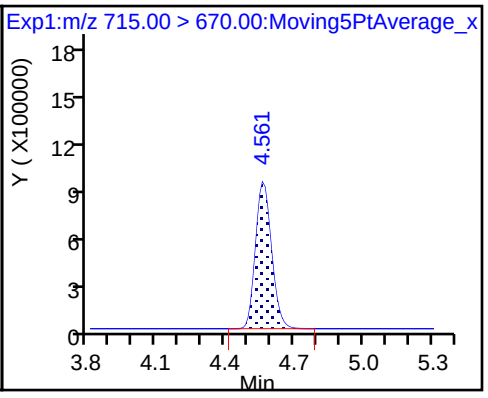
41 Perfluorotridecanoic acid



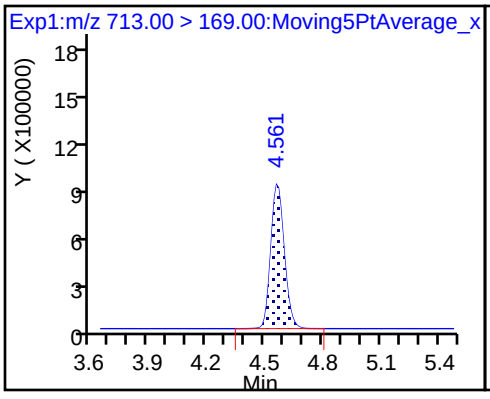
41 Perfluorotridecanoic acid



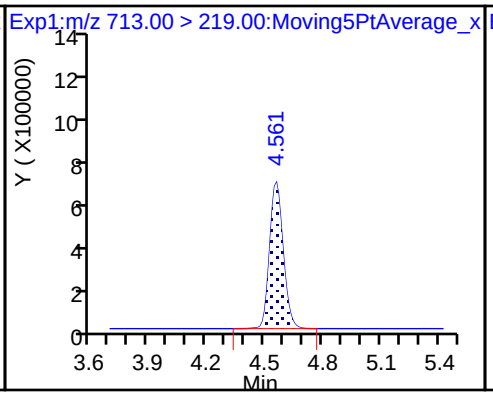
D 43 13C2-PFTeDA



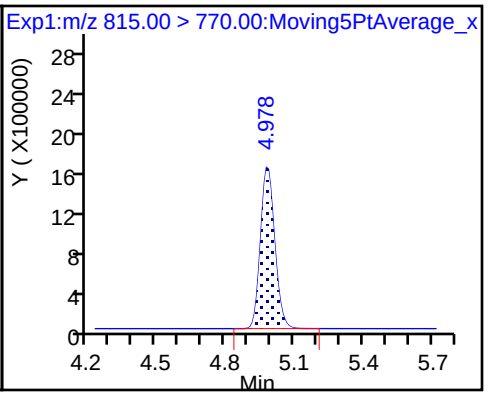
42 Perfluorotetradecanoic acid



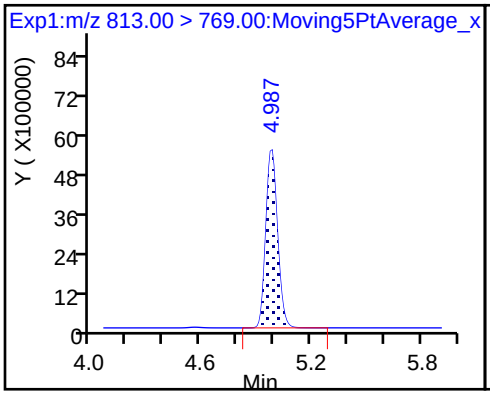
42 Perfluorotetradecanoic acid



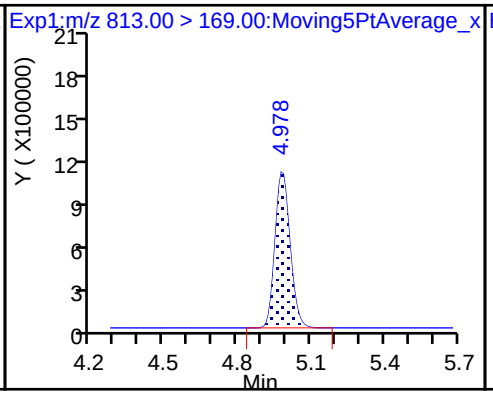
D 44 13C2-PFHxDA



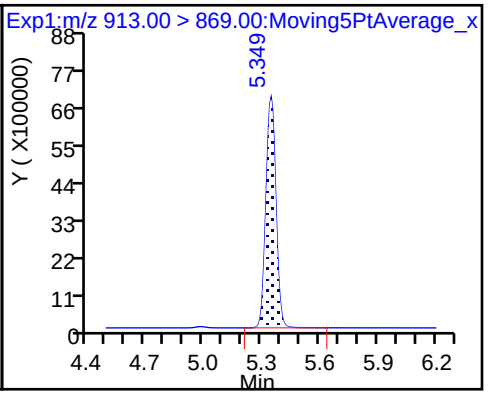
45 Perfluorohexadecanoic acid



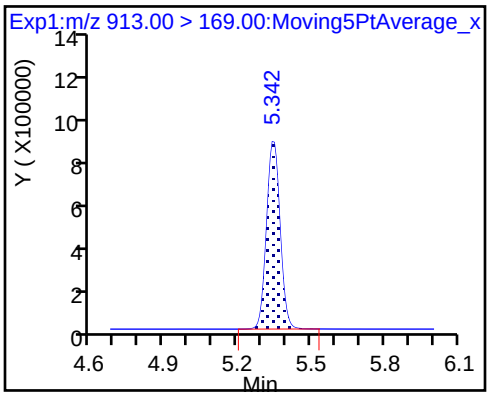
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

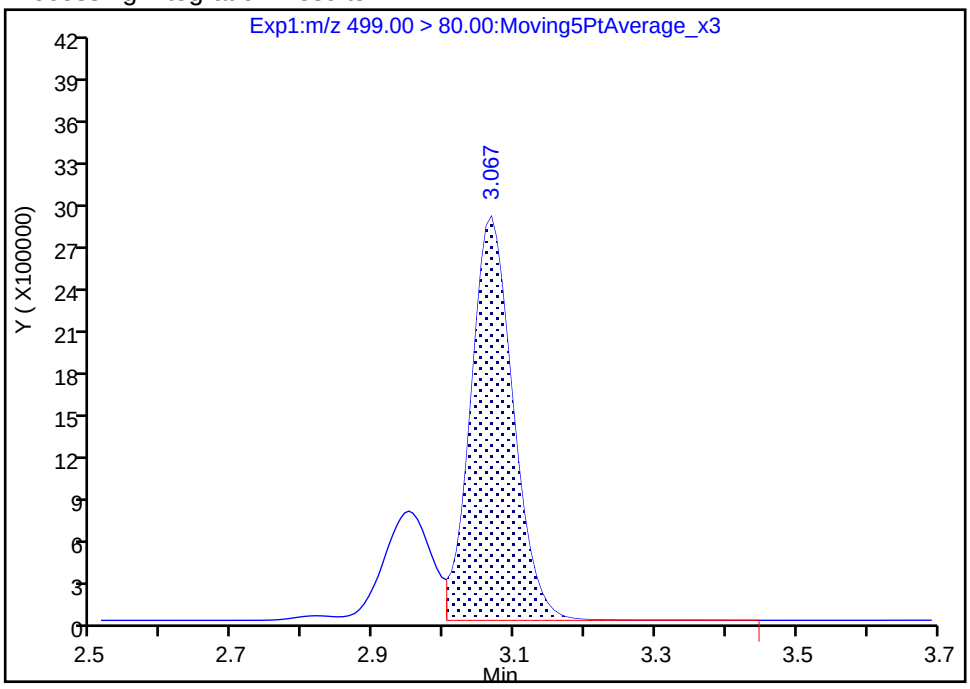
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d
Injection Date: 21-Mar-2018 19:11:19 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

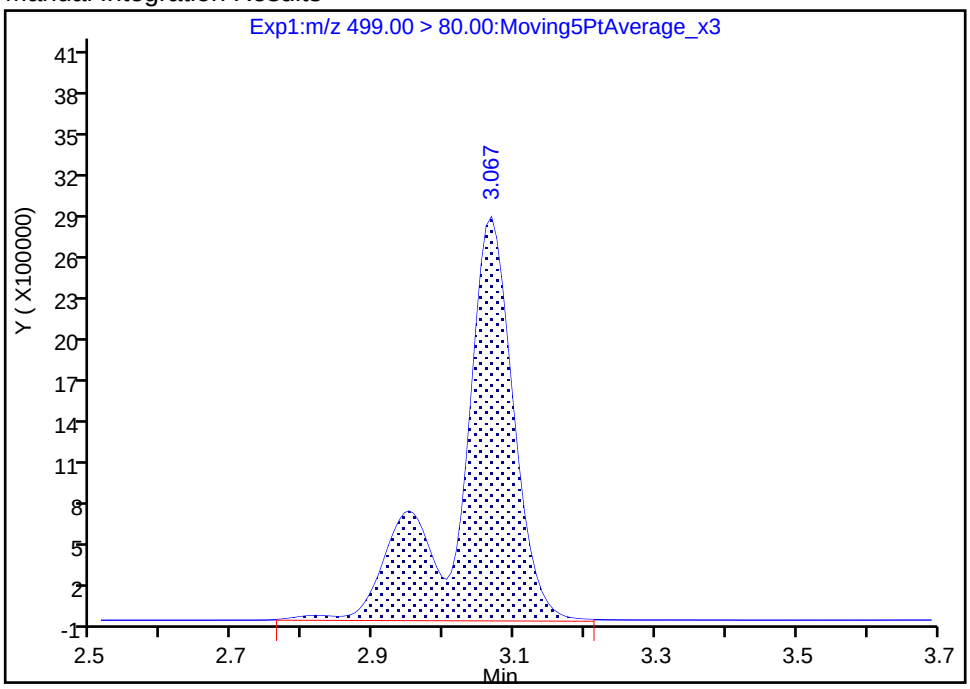
Processing Integration Results

RT: 3.07
Area: 12038170
Amount: 7.385381
Amount Units: ng/ml



Manual Integration Results

RT: 3.07
Area: 15932478
Amount: 9.427786
Amount Units: ng/ml



Reviewer: phomsophat, 21-Mar-2018 19:25:51
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: ICV 320-214175/10 Calibration Date: 03/21/2018 19:26

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLICALAX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9615		2.55	2.50	2.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.089		2.42	2.50	-3.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.20		2.23	2.21	0.6	50.0
4:2 FTS	AveID	16.15	15.34		2.22	2.34	-5.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9816		2.40	2.50	-4.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.059		2.56	2.50	2.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.067		2.19	2.28	-4.1	40.0
6:2FTS	AveID	1.744	1.722		2.35	2.38	-1.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.152		2.55	2.50	2.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.320		2.45	2.38	3.1	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.152		2.39	2.31	3.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.042		2.61	2.50	4.5	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.011		2.56	2.50	2.6	40.0
8:2FTS	AveID	1.276	1.320		2.48	2.40	3.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.017		2.57	2.50	2.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.043		2.61	2.50	4.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.7758		2.75	2.41	14.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9386		2.51	2.50	0.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7832		2.27	2.50	-9.2	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.118		2.67	2.50	6.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.202		2.73	2.50	9.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2294		2.31	2.50	-7.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9290		2.53	2.50	1.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9401		2.54	2.50	1.7	50.0
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	None				0.0100	2.36	-100.0*	50.0
Adona	None				0.0100	2.50	-100.0*	50.0
HFPO-DA (GenX)	None				0.0100	2.50	-100.0*	40.0
13C4 PFBA	Ave	1.266	1.264		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	0.8399	0.8702		2.59	2.50	3.6	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.41	2.33	3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: ICV 320-214175/10 Calibration Date: 03/21/2018 19:26

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.21LLICALAX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-4:2FTS	Ave	0.1324	0.1327		2.34	2.34	0.3	50.0
13C2 PFHxA	Ave	0.9288	0.9535		2.57	2.50	2.7	50.0
13C4-PFHpA	Ave	0.9164	0.9262		2.53	2.50	1.1	50.0
18O2 PFHxS	Ave	1.130	1.159		2.43	2.37	2.6	50.0
M2-6:2FTS	Ave	0.1900	0.1878		2.35	2.38	-1.2	40.0
13C4 PFOA	Ave	0.9374	0.9430		2.52	2.50	0.6	50.0
13C4 PFOS	Ave	0.8225	0.8093		2.35	2.39	-1.6	50.0
13C5 PFNA	Ave	0.8266	0.8343		2.52	2.50	0.9	50.0
13C8 FOSA	Ave	1.109	1.126		2.54	2.50	1.5	50.0
M2-8:2FTS	Ave	0.2565	0.2604		2.43	2.40	1.5	40.0
13C2 PFDA	Ave	0.7245	0.7523		2.60	2.50	3.8	50.0
d3-NMeFOSAA	Ave	0.3814	0.4010		2.63	2.50	5.1	50.0
13C2 PFUnA	Ave	0.6482	0.6709		2.59	2.50	3.5	50.0
d5-NEtFOSAA	Ave	0.4345	0.4611		2.65	2.50	6.1	50.0
13C2 PFDoA	Ave	0.7355	0.7399		2.52	2.50	0.6	50.0
13C2-PFTeDA	Ave	0.8983	0.9540		2.66	2.50	6.2	50.0
13C2-PFHxDA	Ave	1.473	1.524		2.59	2.50	3.5	50.0
13C3 HFPO-DA	None				0.000000	2.50	-100.0*	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 21-Mar-2018 19:26:58 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 22-Mar-2018 08:44:33 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK059

First Level Reviewer: roycea Date: 22-Mar-2018 08:34:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.447	-0.001	0.537	6375865	2.50		99.9	65785	
2 Perfluorobutyric acid										
212.90 > 169.00	1.452	1.449	0.003	1.004	6130285	2.55			2673	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.710	-0.001	1.000	4780167	2.42			2819	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.710	-0.001	0.634	4387769	2.59		104	120384	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.743	0.001	0.647	93121	2.41		104	803	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.745	-0.001	1.000	6929756	2.23			34258	
298.90 > 99.00	1.744	1.745	-0.001	1.000	2824316		2.45(1.25-3.74)		16599	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.959	-0.004	0.726	625050	2.34		100	8149	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.962	-0.007	1.000	1436368	2.22			86809	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	4719162	2.40			15114	
313.00 > 119.00	1.997	1.998	-0.001	1.000	441716		10.68(5.03-15.10)		13104	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	1.998	-0.001	0.741	4807774	2.57		103	122947	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.333	-0.005	0.864	4670113	2.53		101	98504	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.335	-0.007	1.000	4946435	2.56			10531	
363.00 > 169.00	2.328	2.335	-0.007	1.000	1933812		2.56(1.13-3.40)		20438	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.346	-0.005	1.000	5687997	2.19			28544	
399.00 > 99.00	2.341	2.346	-0.005	1.000	1847781		3.08(1.50-4.49)		6889	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.348	-0.007	0.869	5529570	2.43		103	78148	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.672	-0.001	1.000	1549124	2.35			45102	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.672	-0.001	0.991	899400	2.35		98.8	20841	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.695	0.0		5042269	2.50			69178	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.695	0.0	1.000	4754986	2.52		101	74531	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.697	-0.002	1.000	5479179	2.55			1995	
413.00 > 169.00	2.695	2.697	-0.002	1.000	2731487		2.01(0.84-2.52)		6729	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.703	0.0	1.000	5118411	2.45			49555	
449.00 > 99.00	2.703	2.703	0.0	1.000	1344486		3.81(1.94-5.82)		14152	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.068	-0.003	1.137	3900957	2.35		98.4	30995	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.070	-0.005	1.137	4206881	2.52		101	69098	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.070	-0.005	1.000	4349012	2.39			13682	
499.00 > 99.00	3.065	3.070	-0.005	1.000	929853		4.68(2.31-6.93)		10185	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.002	4384621	2.61			6586	
463.00 > 169.00	3.072	3.072	0.0	1.002	1021043		4.29(1.90-5.69)		25043	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.396	0.001	1.261	5679191	2.54		102	42851	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	5742102	2.56			54328	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.426	-0.002	1.000	1663512	2.48			30818	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.426	-0.002	1.271	1257938	2.43		102	30914	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.435	-0.002	1.000	3857119	2.57			20699	
513.00 > 169.00	3.433	3.435	-0.002	1.000	642231		6.01(2.36-7.09)		14683	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.435	-0.002	1.274	3793489	2.60		104	78039	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.589	3.591	-0.002	1.332	2021939	2.63		105	30702	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.589	3.594	-0.005	1.000	2108804	2.61			12474	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.749	-0.001	1.000	3054904	2.75			64961	
599.00 > 99.00	3.748	3.749	-0.001	1.000	1042020		2.93(1.39-4.16)		31253	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.759	-0.001	1.395	2324977	2.65		106	11021	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.768	-0.010	1.395	3383068	2.59		104	54133	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.768	-0.010	1.000	2182165	2.51			31564	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.768	0.001	1.003	2649764	2.27			13982	
563.00 > 169.00	3.769	3.768	0.001	1.003	676794		3.92(2.12-6.36)		27181	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.066	-0.010	1.505	3730503	2.51		101	31020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.068	-0.012	1.000	4172212	2.67			3940	
613.00 > 169.00	4.056	4.068	-0.012	1.000	959658		4.35(2.13-6.40)		18022	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.329	-0.011	1.000	4483777	2.73			3252	
663.00 > 169.00	4.318	4.329	-0.011	1.000	1408477		3.18(1.25-3.76)		18234	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.568	-0.004	1.694	4810393	2.65		106	33667	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.571	-0.007	1.000	1103419	2.31			12823	
713.00 > 219.00	4.554	4.571	-0.017	0.998	846648		1.30(0.71-2.13)		16046	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	4.987	-0.006	1.848	7683636	2.59		103	21190	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.989	-0.008	1.000	7138289	2.53			2182	
813.00 > 169.00	4.981	4.989	-0.008	1.000	1127804		6.33(2.86-8.58)		8335	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.354	-0.010	1.000	7223481	2.54			2062	
913.00 > 169.00	5.344	5.354	-0.010	1.000	891804		8.10(3.83-11.48)		5703	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 22-Mar-2018 08:44:34 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_010.d

Injection Date: 21-Mar-2018 19:26:58 Instrument ID: A8_N

Lims ID: ICV Full

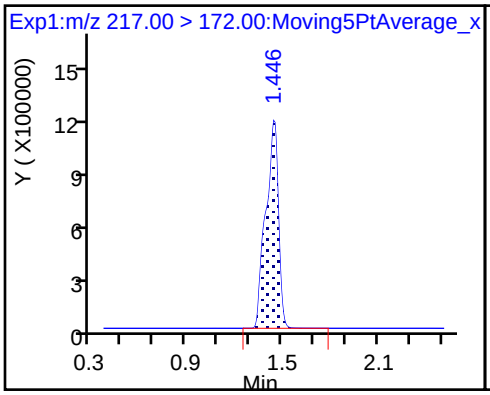
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

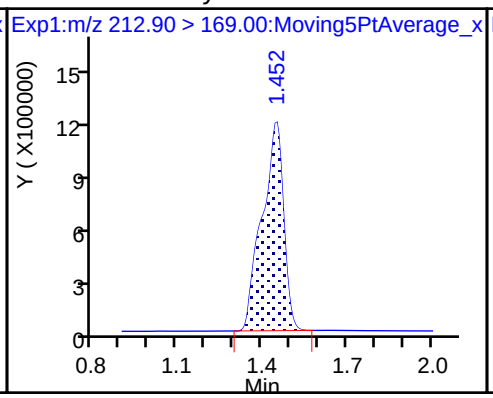
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

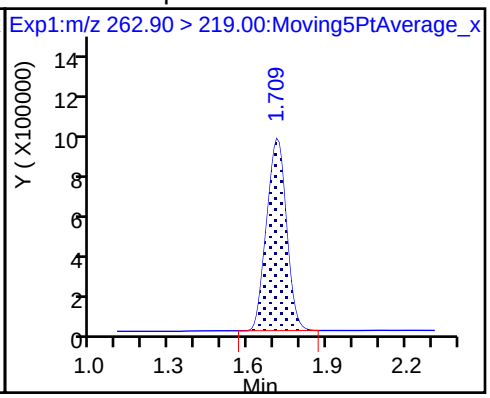
D 1 13C4 PFBA



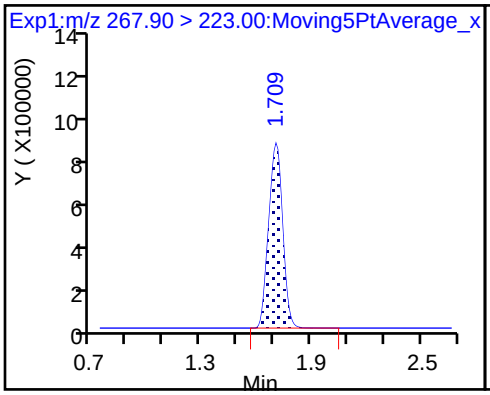
2 Perfluorobutyric acid



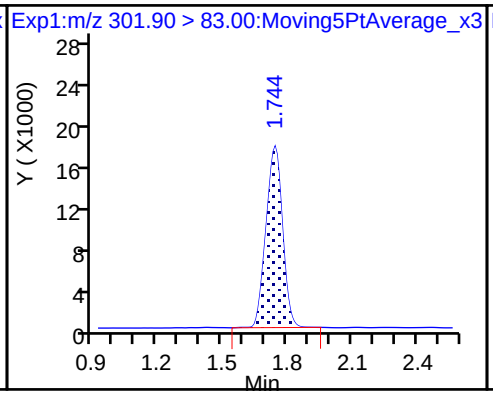
4 Perfluoropentanoic acid



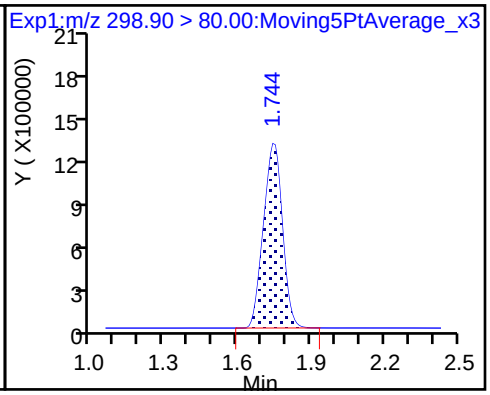
D 3 13C5-PFPeA



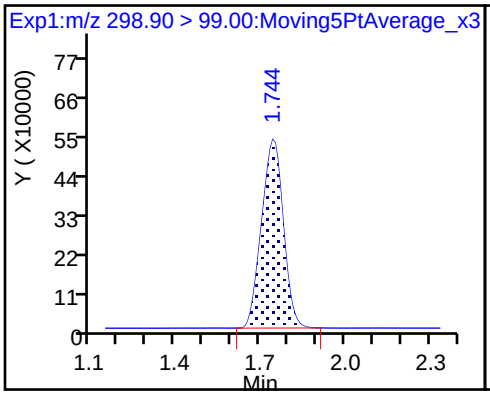
D 47 13C3-PFBS



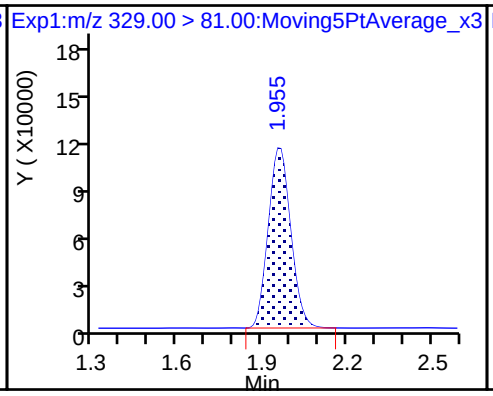
5 Perfluorobutanesulfonic acid



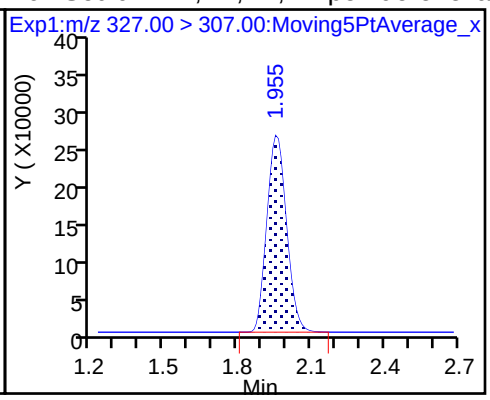
5 Perfluorobutanesulfonic acid



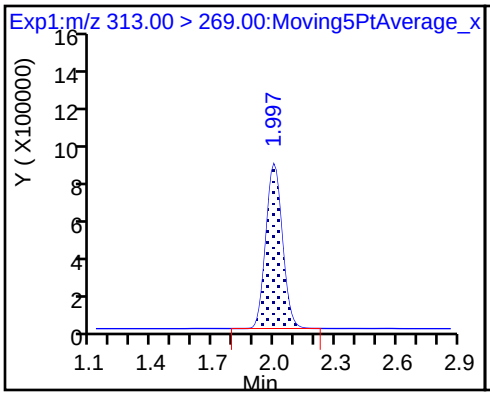
D 60 M2-4:2FTS



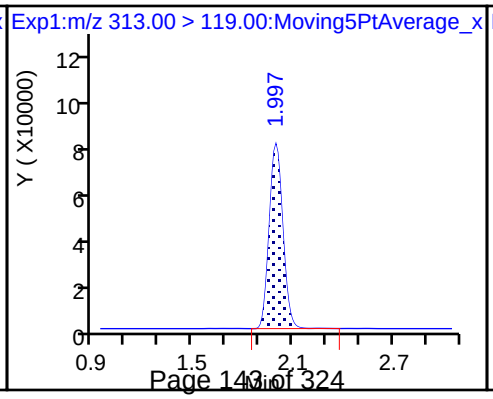
61 Sodium 1H,1H,2H,2H-perfluorohexane



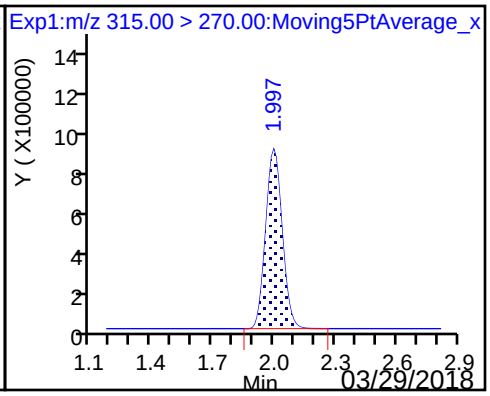
6 Perfluorohexanoic acid



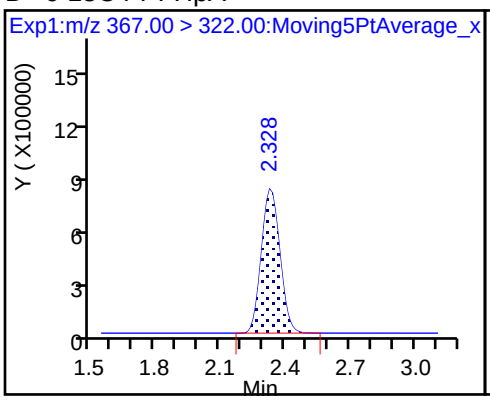
6 Perfluorohexanoic acid



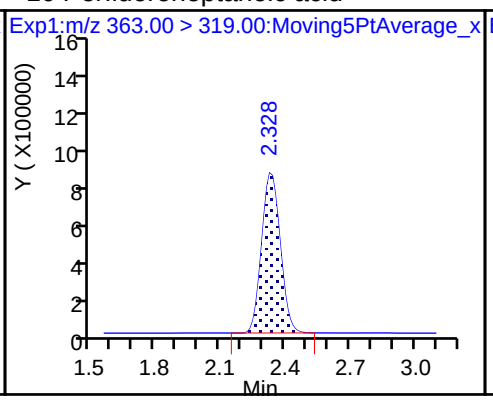
D 7 13C2 PFHxA



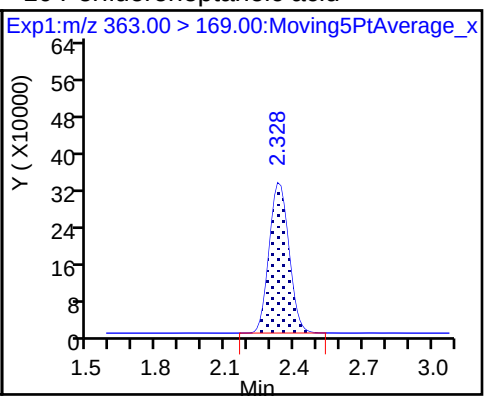
D 9 13C4-PFHpA



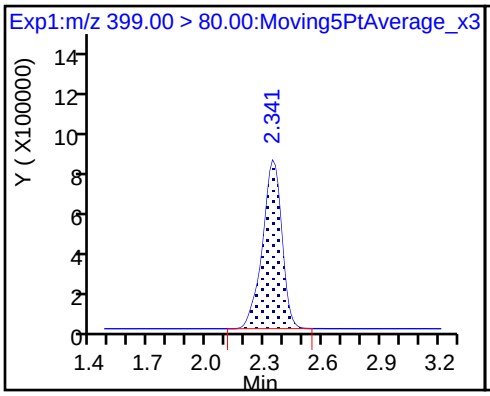
10 Perfluoroheptanoic acid



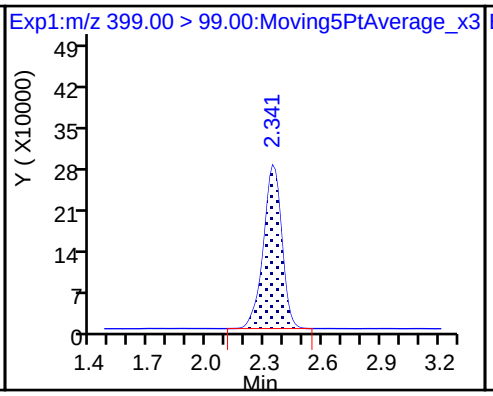
10 Perfluoroheptanoic acid



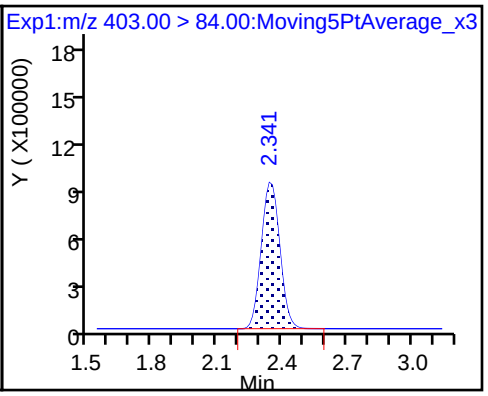
8 Perfluorohexanesulfonic acid



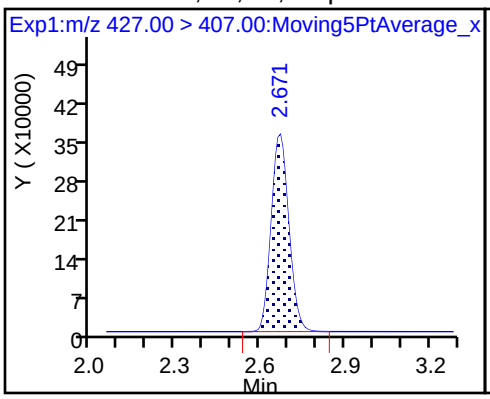
8 Perfluorohexanesulfonic acid



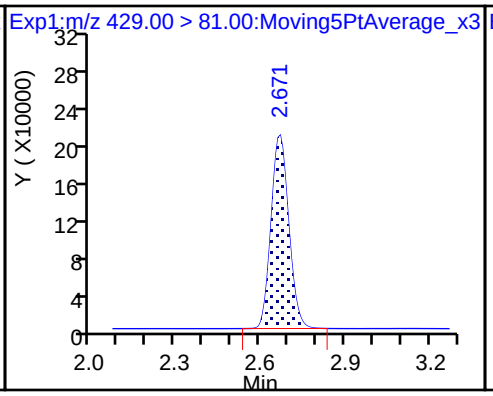
D 11 18O2 PFHxS



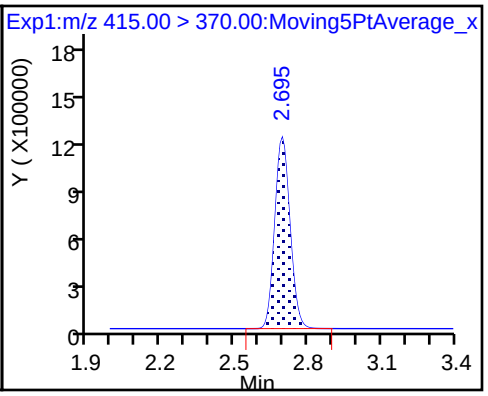
13 Sodium 1H,1H,2H,2H-perfluorooctan



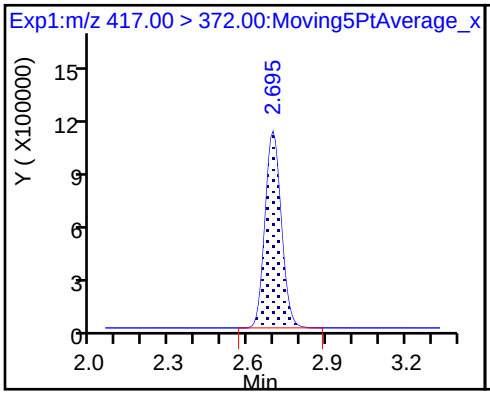
D 12 M2-6:2FTS



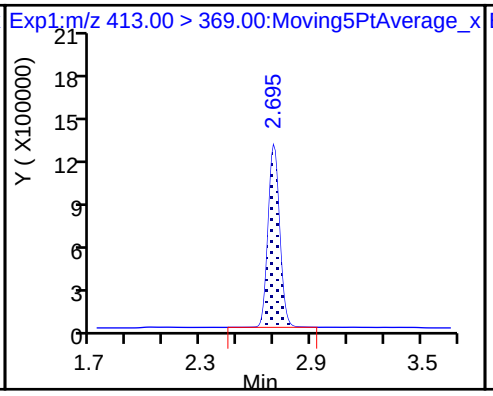
* 62 13C2-PFOA



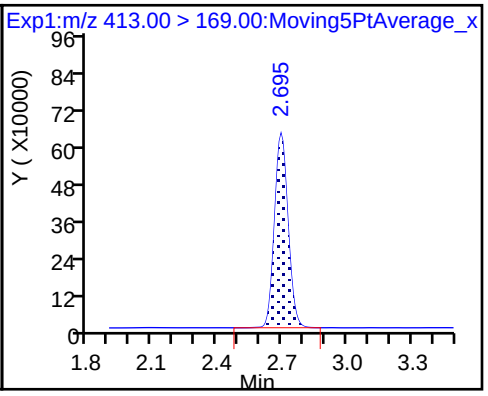
D 14 13C4 PFOA



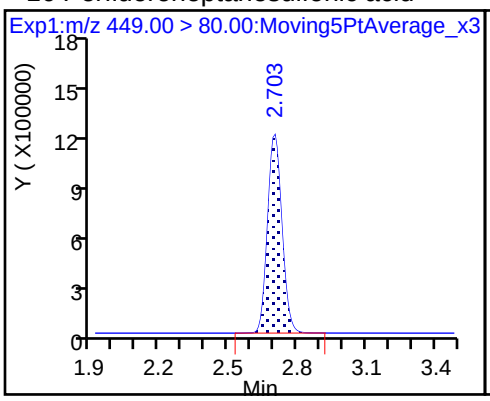
15 Perfluorooctanoic acid



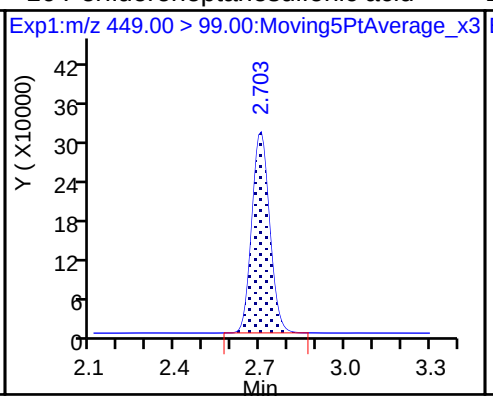
15 Perfluorooctanoic acid



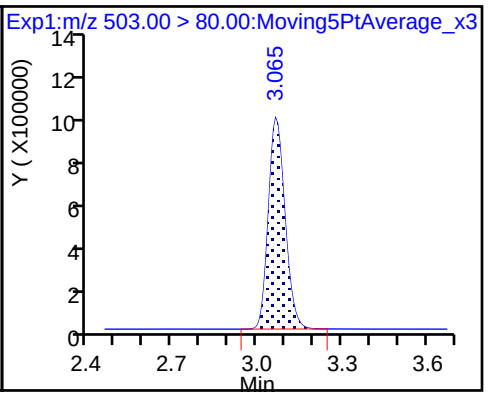
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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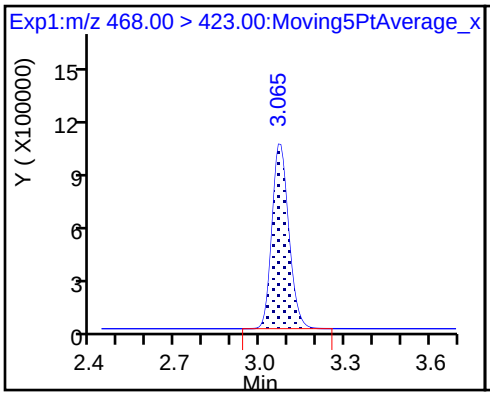
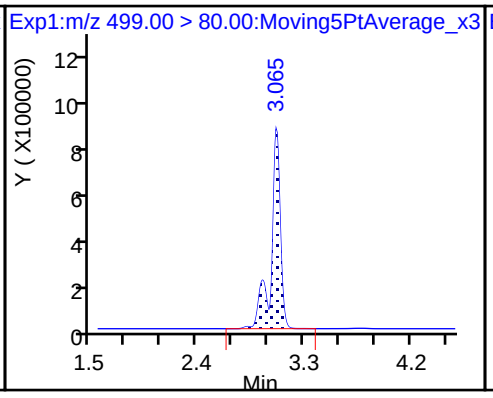
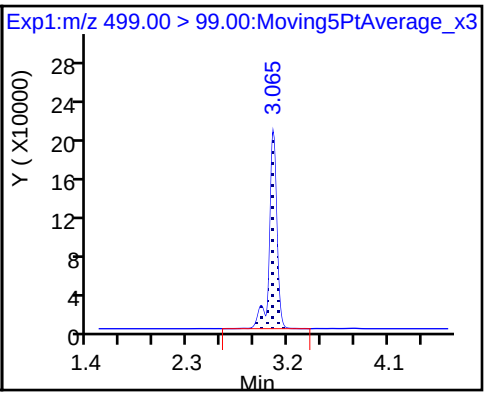


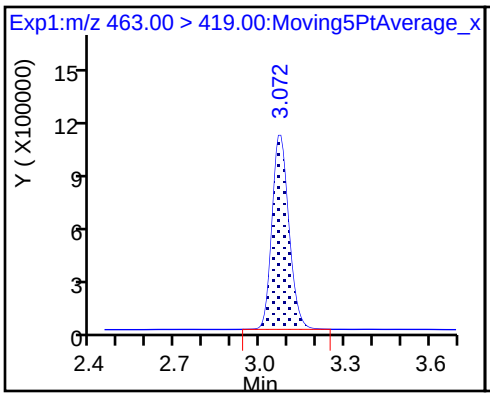
17 Perfluorooctane sulfonic acid



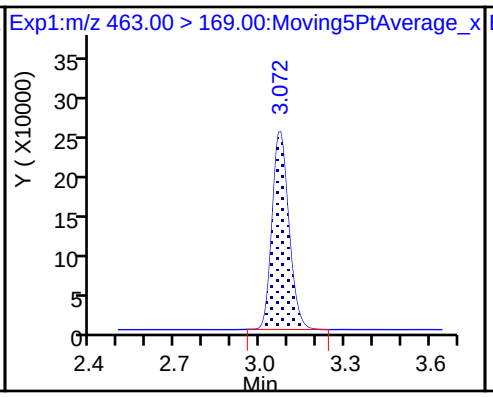
17 Perfluorooctane sulfonic acid



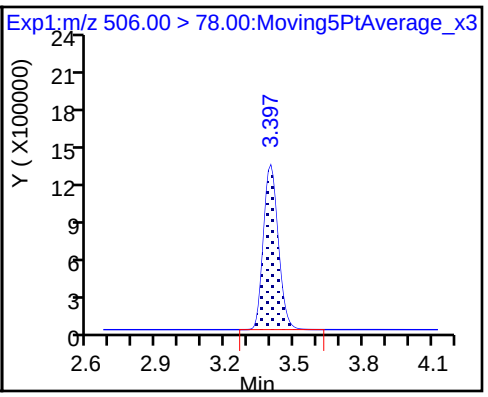
20 Perfluorononanoic acid



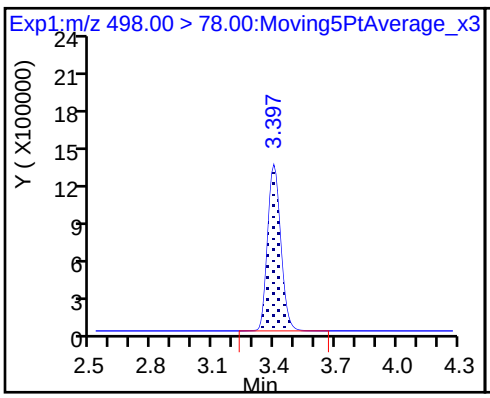
20 Perfluorononanoic acid



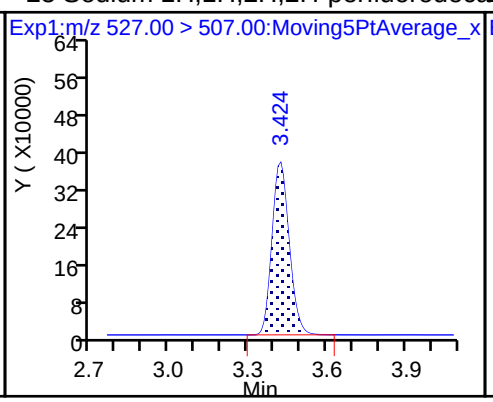
D 21 13C8 FOSA



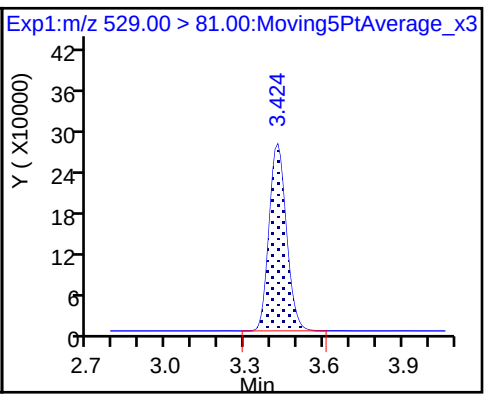
22 Perfluorooctane Sulfonamide



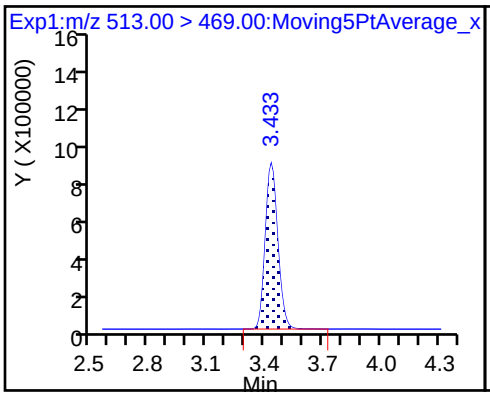
25 Sodium 1H,1H,2H,2H-perfluorodecane



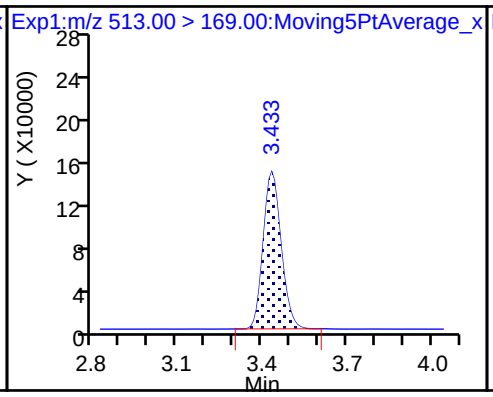
D 26 M2-8:2FTS



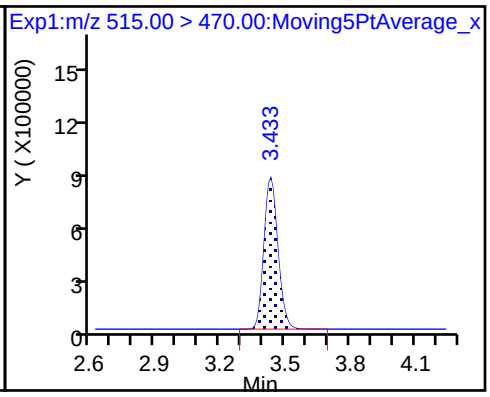
24 Perfluorodecanoic acid



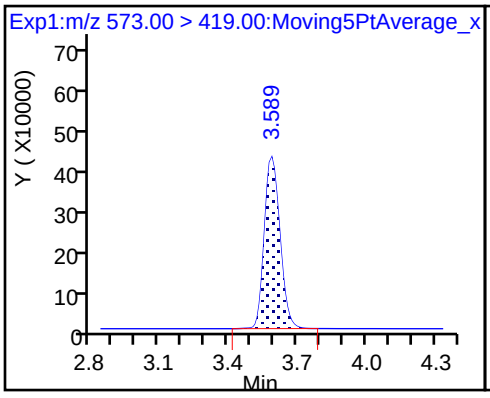
24 Perfluorodecanoic acid



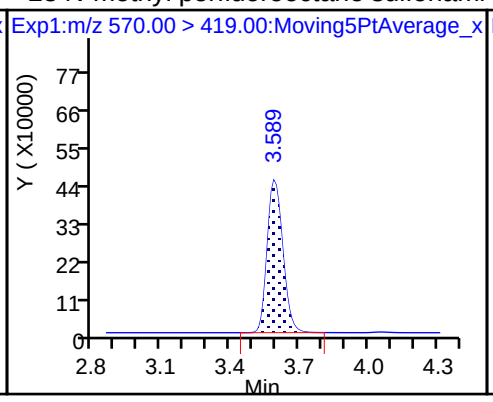
D 23 13C2 PFDA



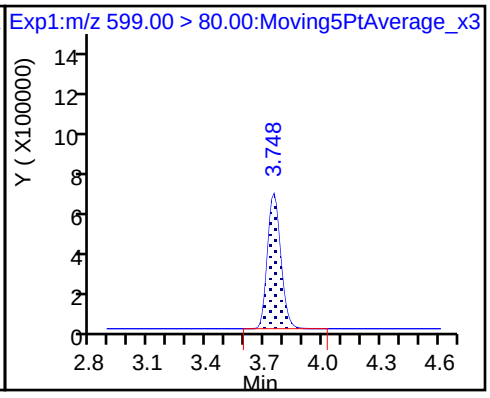
D 27 d3-NMeFOSAA



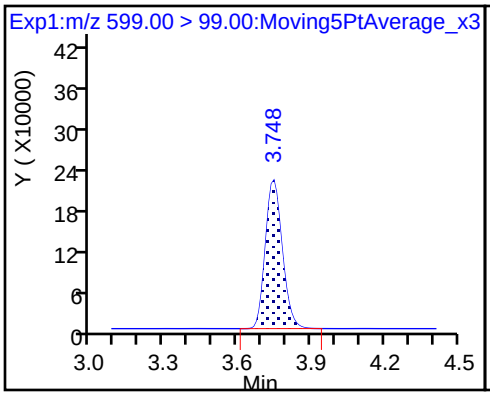
28 N-methyl perfluorooctane sulfonami



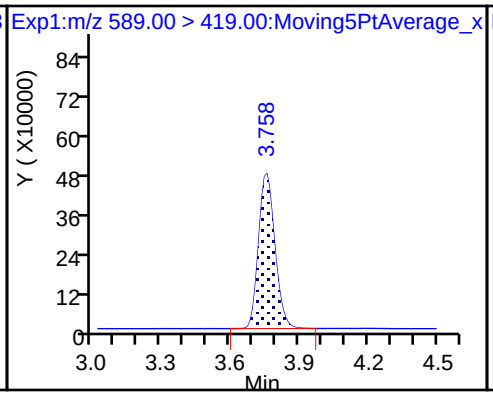
29 Perfluorodecane Sulfonic acid



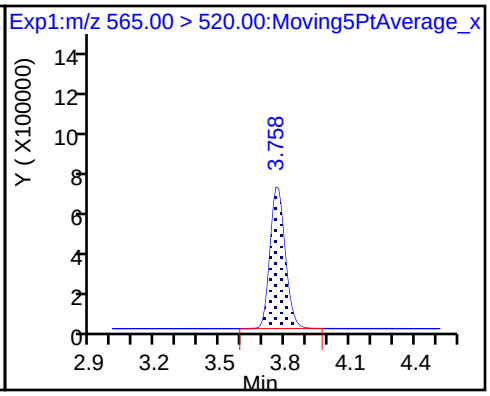
29 Perfluorodecane Sulfonic acid



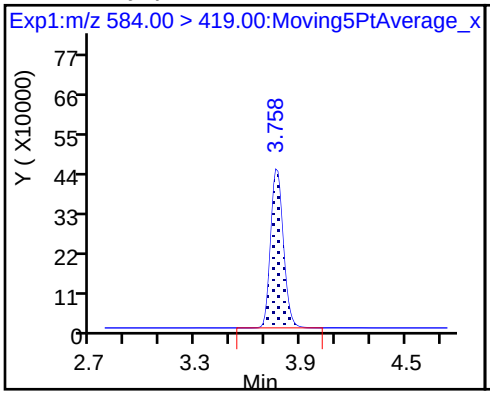
D 32 d5-NEtFOSAA



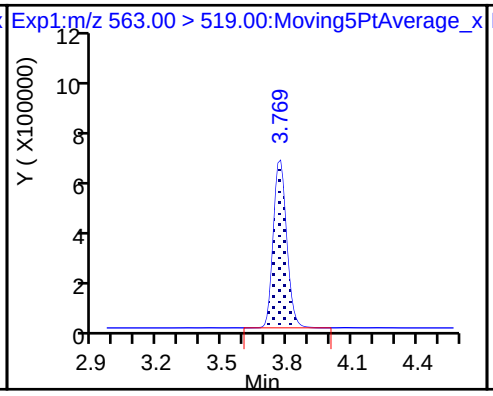
D 30 13C2 PFUnA



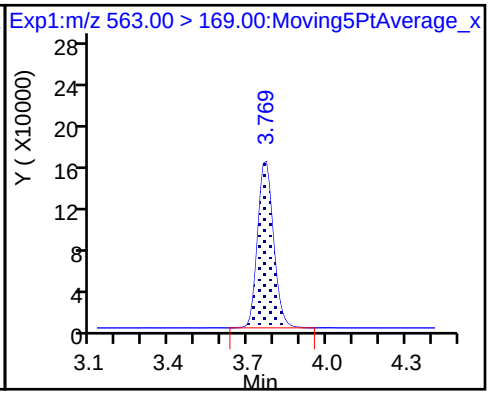
33 N-ethyl perfluorooctane sulfonamid



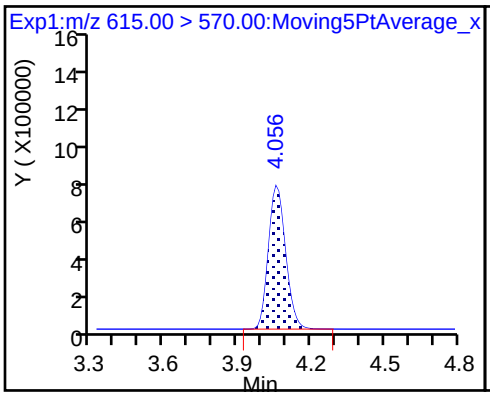
31 Perfluoroundecanoic acid



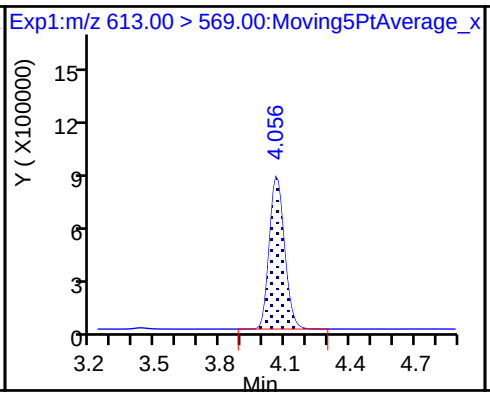
31 Perfluoroundecanoic acid



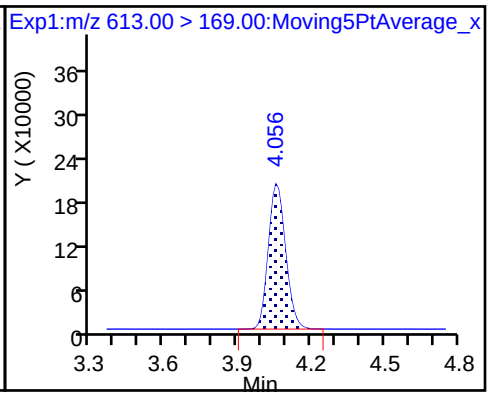
D 36 13C2 PFDoA



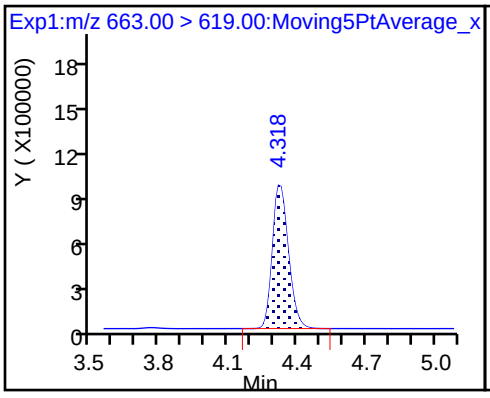
37 Perfluorododecanoic acid



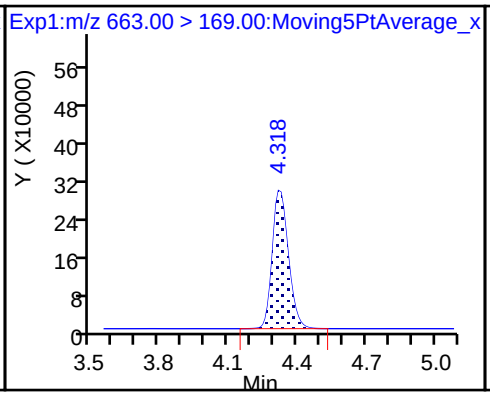
37 Perfluorododecanoic acid



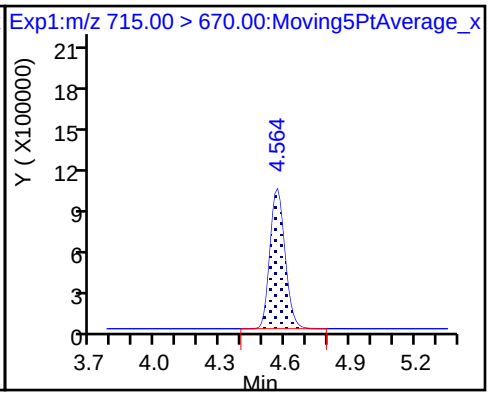
41 Perfluorotridecanoic acid



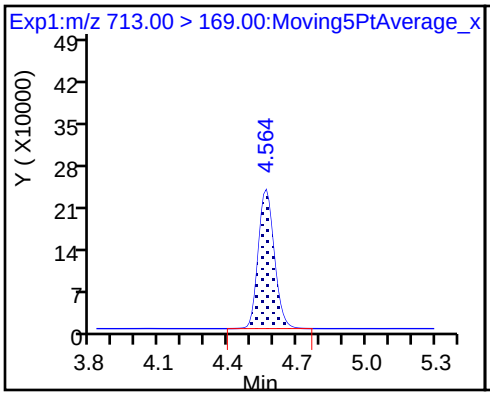
41 Perfluorotridecanoic acid



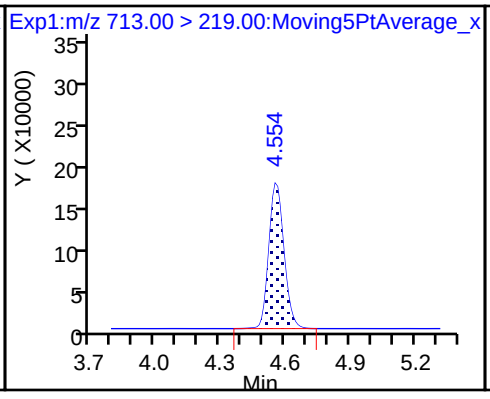
D 43 13C2-PFTeDA



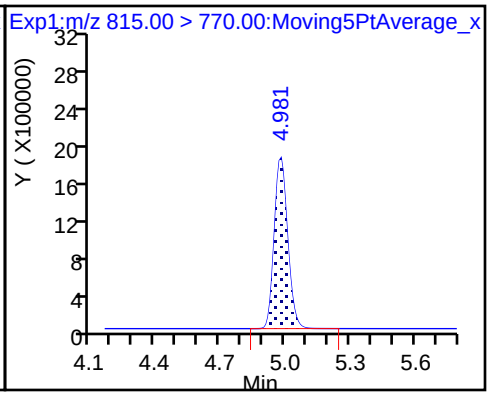
42 Perfluorotetradecanoic acid



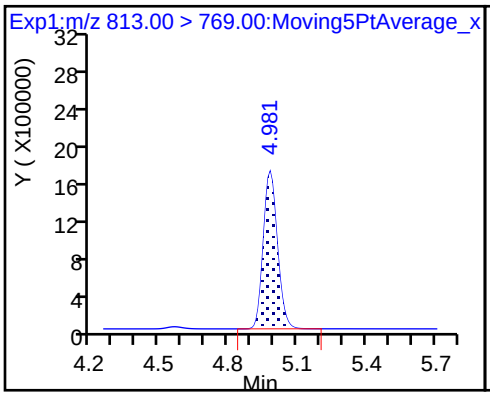
42 Perfluorotetradecanoic acid



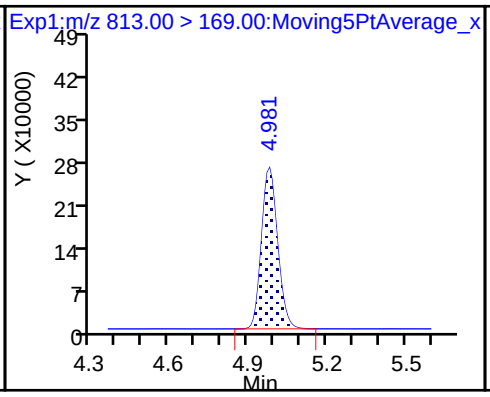
D 44 13C2-PFHxDA



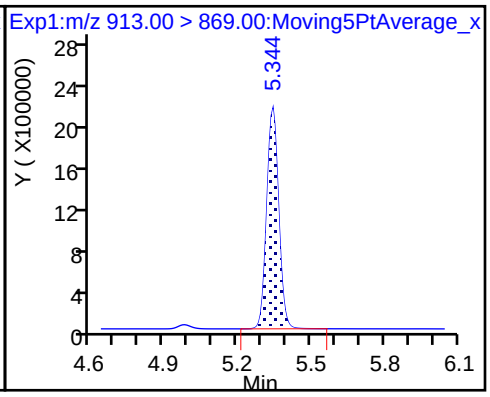
45 Perfluorohexadecanoic acid



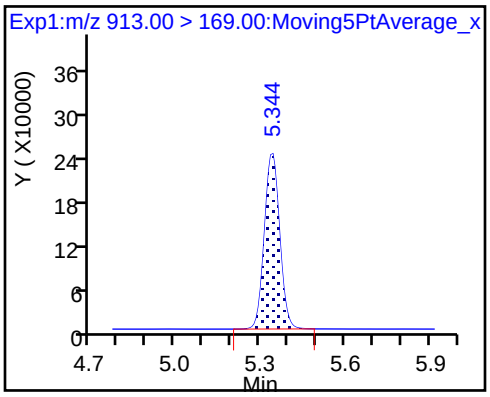
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCVL 320-215311/2 Calibration Date: 03/28/2018 23:54

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9218		0.0489	0.0500	-2.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.257		0.0557	0.0500	11.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	76.78		0.0437	0.0442	-1.2	50.0
4:2 FTS	AveID	16.15	15.26		0.130	0.0467	-5.5	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.081		0.0529	0.0500	5.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.190		0.0575	0.0500	15.0	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.195		0.0489	0.0455	7.4	50.0
6:2FTS	AveID	1.744	1.859		0.0505	0.0474	6.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.300		0.0575	0.0500	15.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.291		0.0480	0.0476	0.8	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9524		0.0477	0.0500	-4.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	0.9806		0.0408	0.0464	-12.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9648		0.0489	0.0500	-2.1	50.0
8:2FTS	AveID	1.276	1.376		0.0517	0.0479	7.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	1.062		0.0537	0.0500	7.5	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9768		0.0780	0.0500	-2.4	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6189		0.0439	0.0482	-9.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.044		0.0559	0.0500	11.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8741		0.0507	0.0500	1.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.061		0.0507	0.0500	1.4	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.191		0.0541	0.0500	8.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2713		0.0548	0.0500	9.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.353		0.0502	0.0500	0.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9188		0.0497	0.0500	-0.6	50.0
13C4 PFBA	Ave	1.266	1.349		2.66	2.50	6.6	50.0
13C5 PFPeA	Ave	0.8399	0.8822		2.63	2.50	5.0	50.0
13C3-PFBS	Ave	0.0192	0.0200		2.43	2.33	4.4	50.0
M2-4:2FTS	Ave	0.1324	0.1360		2.40	2.34	2.7	50.0
13C2 PFHxA	Ave	0.9288	0.9655		2.60	2.50	3.9	50.0
13C4-PFHpA	Ave	0.9164	0.9226		2.52	2.50	0.7	50.0
18O2 PFHxS	Ave	1.130	1.183		2.47	2.37	4.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCVL 320-215311/2 Calibration Date: 03/28/2018 23:54

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2040		2.55	2.38	7.4	50.0
13C4 PFOA	Ave	0.9374	0.9695		2.59	2.50	3.4	50.0
13C4 PFOS	Ave	0.8225	0.8459		2.46	2.39	2.8	50.0
13C5 PFNA	Ave	0.8266	0.8131		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.180		2.66	2.50	6.4	50.0
M2-8:2FTS	Ave	0.2565	0.2344		2.19	2.40	-8.6	50.0
13C2 PFDA	Ave	0.7245	0.6741		2.33	2.50	-7.0	50.0
d3-NMeFOSAA	Ave	0.3814	0.3382		2.22	2.50	-11.3	50.0
13C2 PFUnA	Ave	0.6482	0.5628		2.17	2.50	-13.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3508		2.02	2.50	-19.3	50.0
13C2 PFDoA	Ave	0.7355	0.6171		2.10	2.50	-16.1	50.0
13C2-PFTeDA	Ave	0.8983	0.7426		2.07	2.50	-17.3	50.0
13C2-PFHxDA	Ave	1.473	1.169		1.98	2.50	-20.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 28-Mar-2018 23:54:44 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:06 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:57:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.441	-0.007	0.532	6451393	2.66		107	93700	
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.446	-0.012	1.000	118940	0.0489		97.8	35.2	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.708	-0.008	1.000	106032	0.0557		111	40.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	4219309	2.63		105	137909	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.644	89013	2.43		104	660	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.753	-0.009	1.005	129929	0.0437		98.8	85.5	
298.90 > 99.00	1.735	1.753	-0.018	1.000	56911		2.28(1.25-3.74)		82.3	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.965	-0.010	1.000	27285	0.0441		94.5	1669	
D 60 M2-4:2FTS										
329.00 > 81.00	1.955	1.966	-0.011	0.726	607499	2.40		103	8723	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	99798	0.0529		106	137	
313.00 > 119.00	1.997	2.008	-0.011	1.000	8523		11.71(5.03-15.10)		89.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	4617404	2.60		104	119647	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.340	-0.012	1.000	105003	0.0575		115	59.3	
363.00 > 169.00	2.328	2.340	-0.012	1.000	42589		2.47(1.13-3.40)		77.5	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.353	-0.012	1.000	123047	0.0489		107	618	
399.00 > 99.00	2.341	2.353	-0.012	1.000	44762		2.75(1.50-4.49)		289	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.864	4412529	2.52		101	82800	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.869	5350380	2.47		105	64600	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.671	2.679	-0.008	1.000	34390	0.0505		107	213	
D 12 M2-6:2FTS										
429.00 > 81.00	2.671	2.697	-0.026	0.991	926971	2.55		107	30446	
* 62 13C2-PFOA										
415.00 > 370.00	2.695	2.710	-0.015		4782622	2.50			99509	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.695	2.710	-0.015	1.000	120565	0.0575		115	39.2	
413.00 > 169.00	2.695	2.710	-0.015	1.000	56523		2.13(0.84-2.52)		207	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.703	2.710	-0.007	1.000	99464	0.0480		101	4510	
449.00 > 99.00	2.703	2.710	-0.007	1.000	26954		3.69(1.94-5.82)		525	
D 14 13C4 PFOA										
417.00 > 372.00	2.695	2.721	-0.026	1.000	4636520	2.59		103	89142	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.080	-0.008	1.000	73625	0.0408		88.0	193	
499.00 > 99.00	3.072	3.080	-0.008	1.000	18817		3.91(2.31-6.93)		154	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.080	-0.008	1.000	74069	0.0477		95.5	66.2	
463.00 > 169.00	3.072	3.080	-0.008	1.000	17914		4.13(1.90-5.69)		333	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.140	3888597	2.46		98.4	66984	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.140	3867363	2.46		103	49278	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.415	-0.009	1.000	108923	0.0489		97.9	2370	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.417	-0.011	1.264	5645112	2.66		106	51326	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.433	-0.009	1.000	29562	0.0517		108	410	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.442	-0.009	1.000	68469	0.0537		107	388	
513.00 > 169.00	3.433	3.442	-0.009	1.000	10736		6.38(2.36-7.09)		407	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.453	-0.029	1.271	1073976	2.19		91.4	38319	
D 23 13C2 PFDA										
515.00 > 470.00	3.433	3.462	-0.029	1.274	3223961	2.33		93.0	49854	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.599	-0.009	1.000	31600	0.0488		97.6	302	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.332	1617597	2.22		88.7	30515	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.758	-0.010	1.000	48267	0.0439		91.0	2487	
599.00 > 99.00	3.748	3.758	-0.010	1.000	22652		2.13(1.39-4.16)		941	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.779	-0.011	1.003	47053	0.0507		101	194	
563.00 > 169.00	3.768	3.779	-0.011	1.003	9256		5.08(2.12-6.36)		436	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.779	-0.021	1.000	35031	0.0559		112	695	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.395	1677578	2.02		80.7	3954	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.790	-0.032	1.395	2691466	2.17		86.8	49209	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.067	-0.011	1.000	62640	0.0507		101	43.0	
613.00 > 169.00	4.056	4.067	-0.011	1.000	14948		4.19(2.13-6.40)		367	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.505	2951529	2.10		83.9	19276	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.329	-0.011	1.000	70296	0.0541		108	30.1	
663.00 > 169.00	4.318	4.329	-0.011	1.000	20757		3.39(1.25-3.76)		425	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.575	-0.021	1.000	19273	0.0548		110	440	
713.00 > 219.00	4.554	4.575	-0.021	1.000	11077		1.74(0.71-2.13)		296	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.585	-0.031	1.690	3551413	2.07		82.7	23976	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.990	-0.018	1.000	151314	0.0502		100	39.2	
813.00 > 169.00	4.972	4.990	-0.018	1.000	25363		5.97(2.86-8.58)		389	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	5.008	-0.036	1.845	5589979	1.98		79.4	18082	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.351	-0.014	1.000	102726	0.0497		99.4	21.4	
913.00 > 169.00	5.330	5.351	-0.021	0.999	12485		8.23(3.83-11.48)		191	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:07 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_005.d

Injection Date: 28-Mar-2018 23:54:44 Instrument ID: A8_N

Lims ID: CCVL

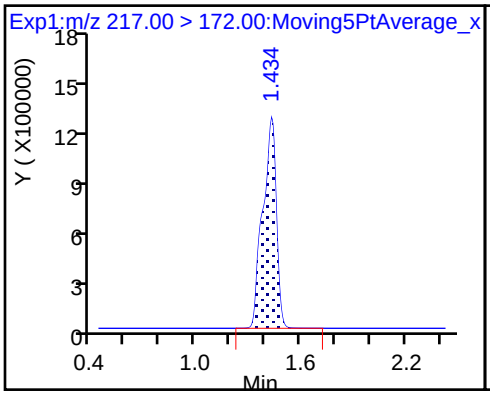
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

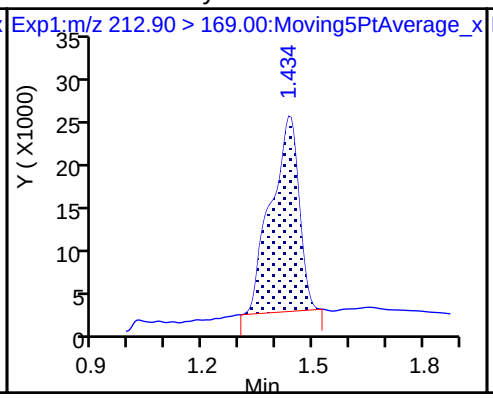
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

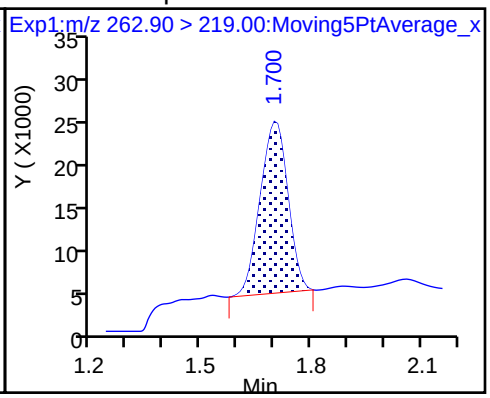
D 1 13C4 PFBA



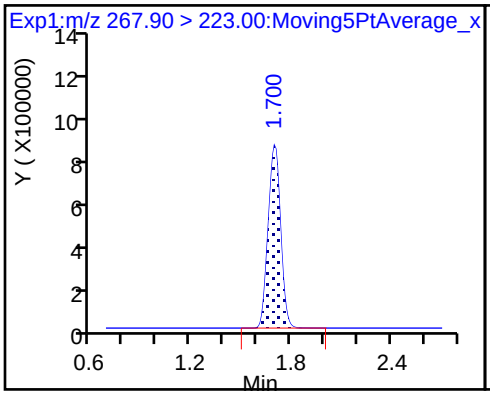
2 Perfluorobutyric acid



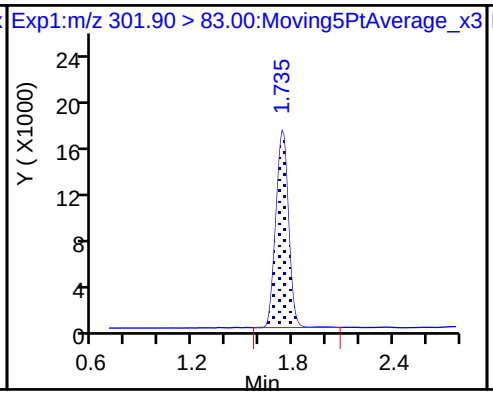
4 Perfluoropentanoic acid



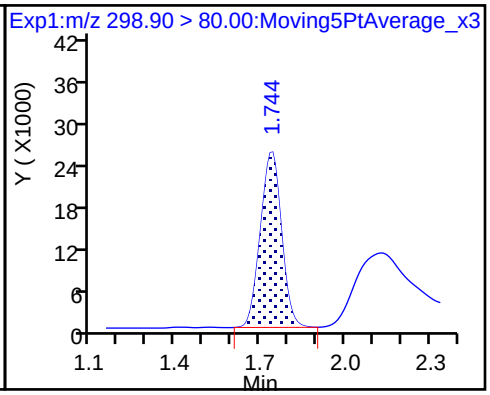
D 3 13C5-PFPeA



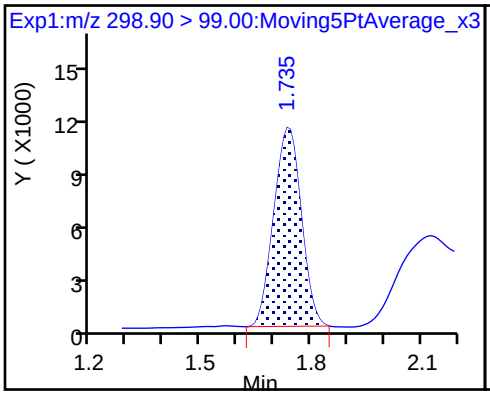
D 47 13C3-PFBS



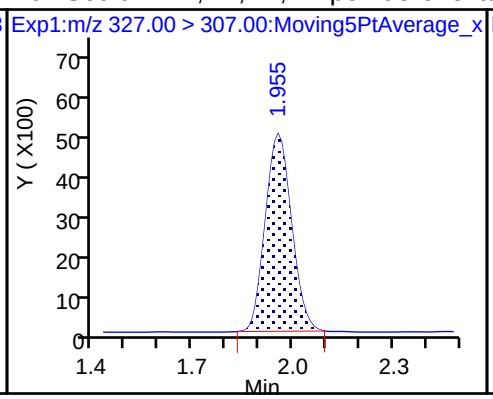
5 Perfluorobutanesulfonic acid



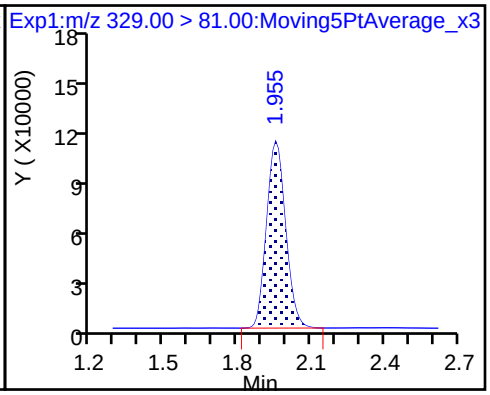
5 Perfluorobutanesulfonic acid



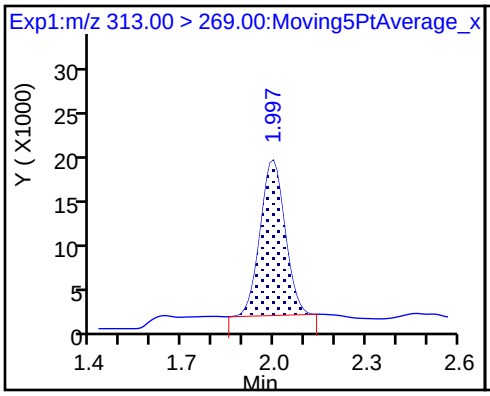
61 Sodium 1H,1H,2H,2H-perfluorohexane



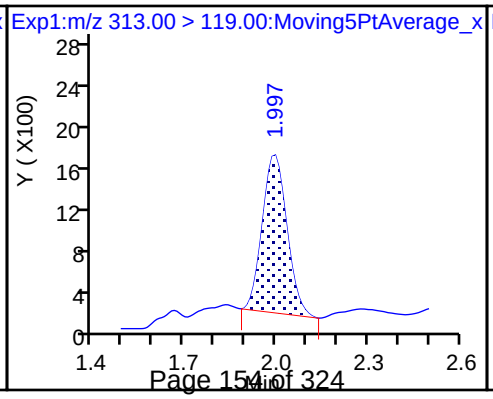
D 60 M2-4:2FTS



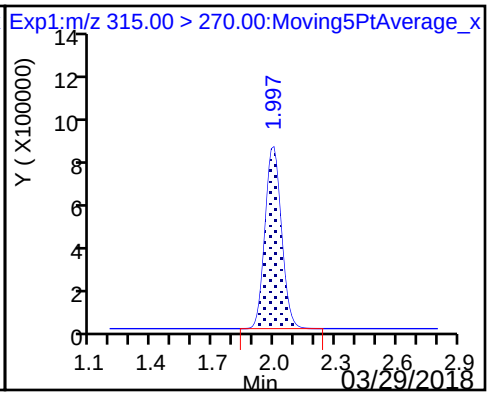
6 Perfluorohexanoic acid



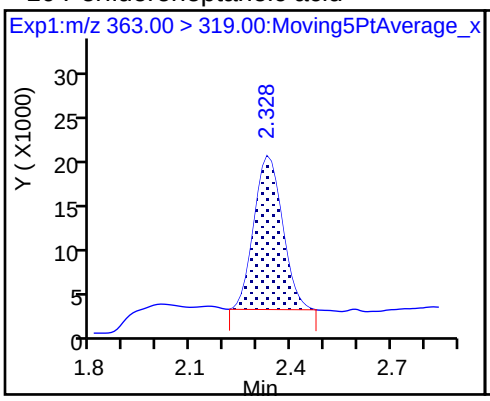
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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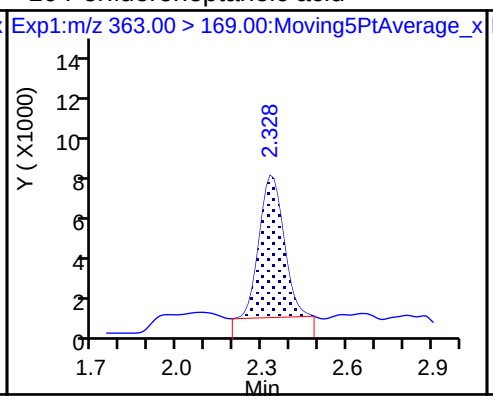
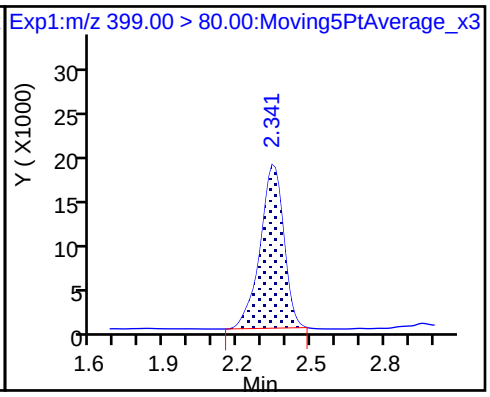


8 Perfluorohexanesulfonic acid



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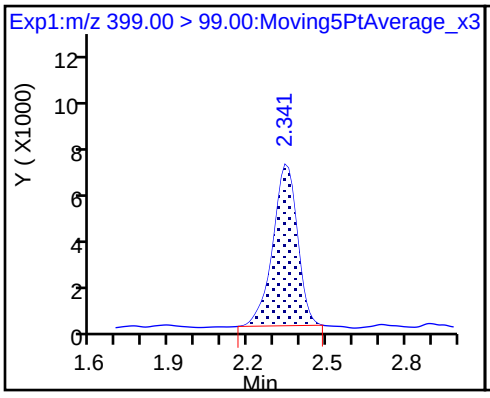
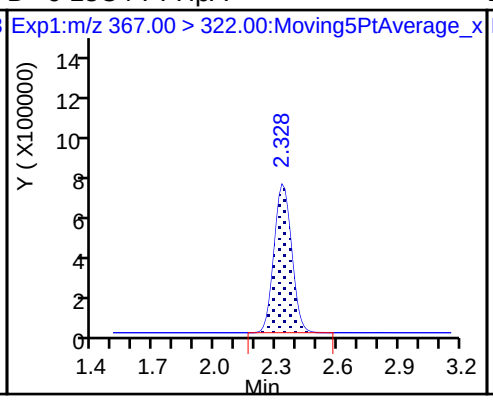
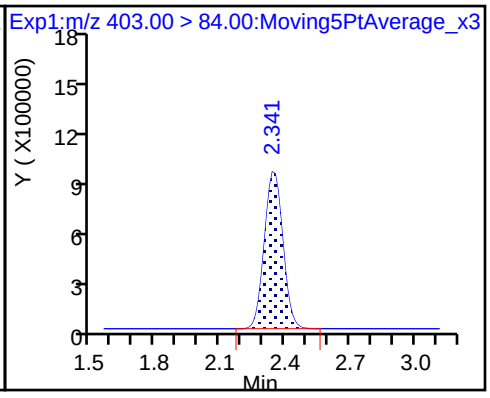


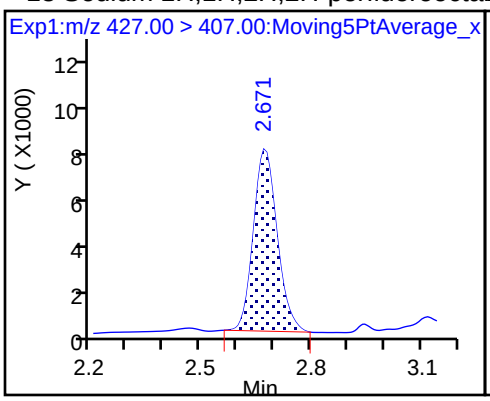
D 9 13C4-PFHpA



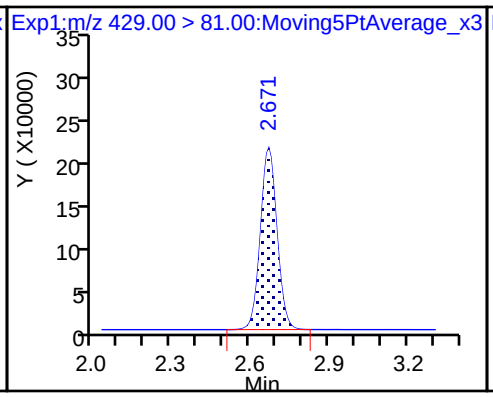
D 11 18O2 PFHxS



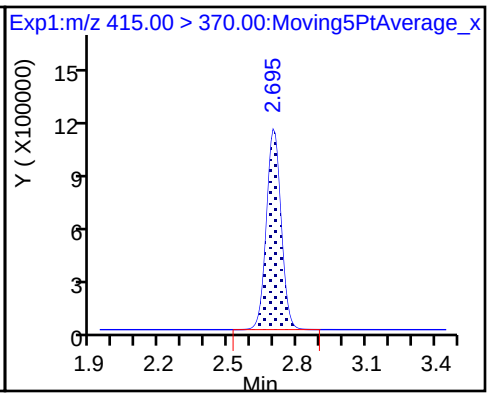
13 Sodium 1H,1H,2H,2H-perfluorooctan



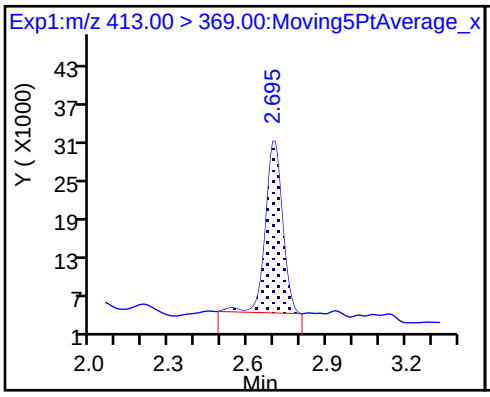
D 12 M2-6:2FTS



* 62 13C2-PFOA



15 Perfluorooctanoic acid



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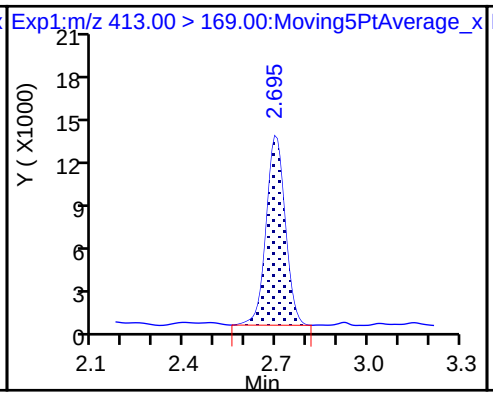
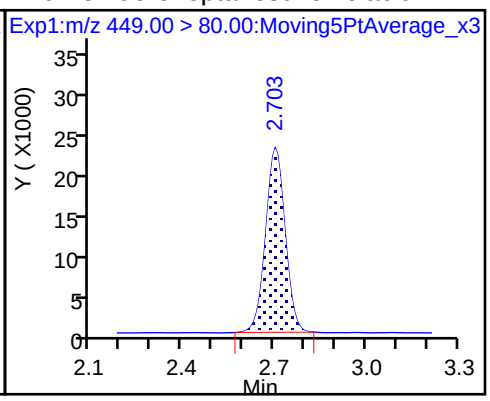
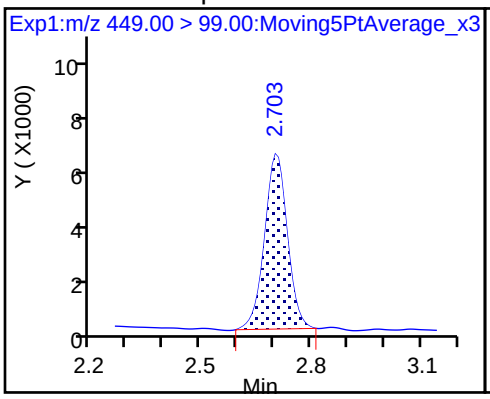


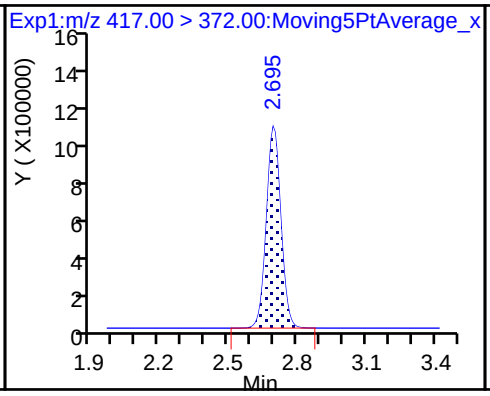
16 Perfluoroheptanesulfonic acid



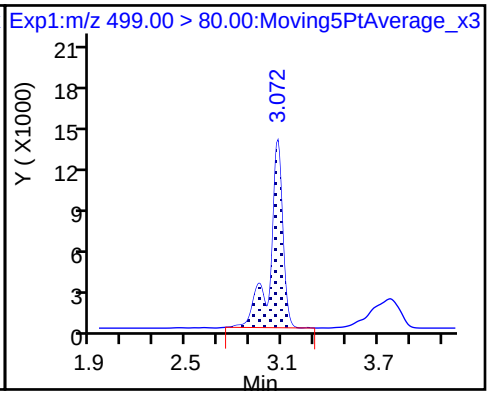
16 Perfluoroheptanesulfonic acid



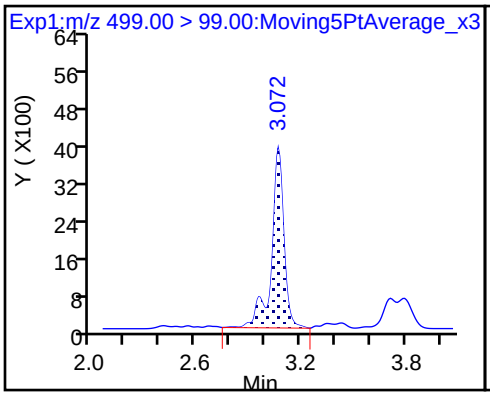
D 14 13C4 PFOA



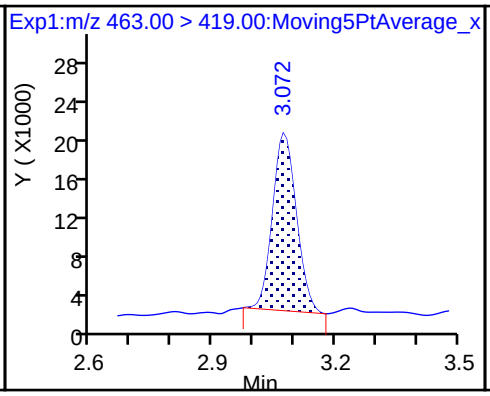
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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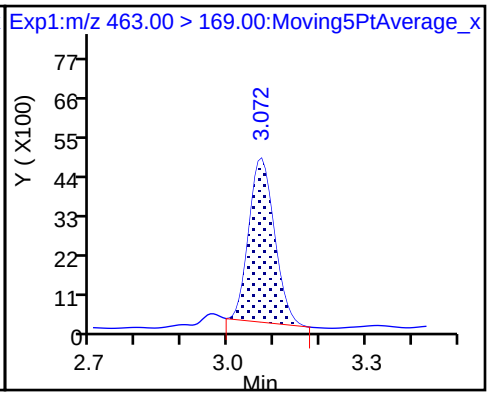
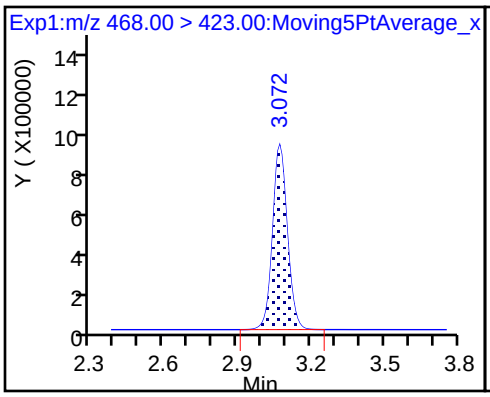


D 19 13C5 PFNA



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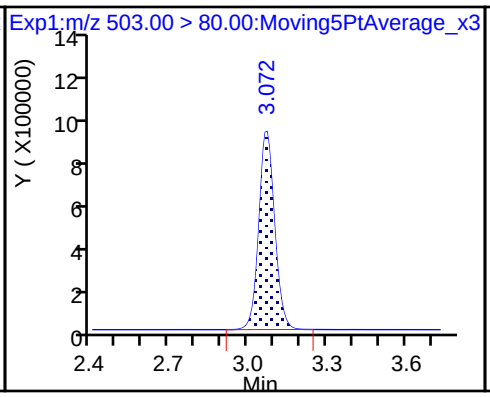
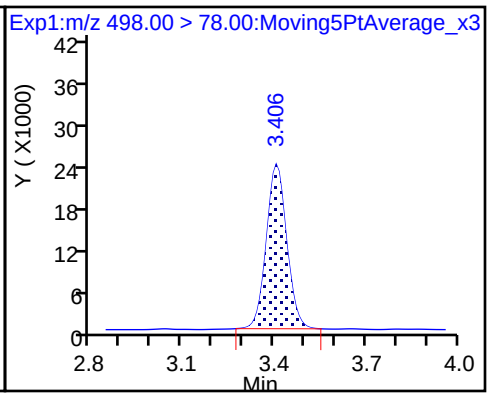
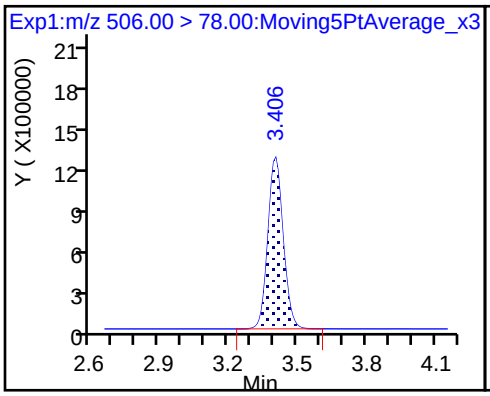


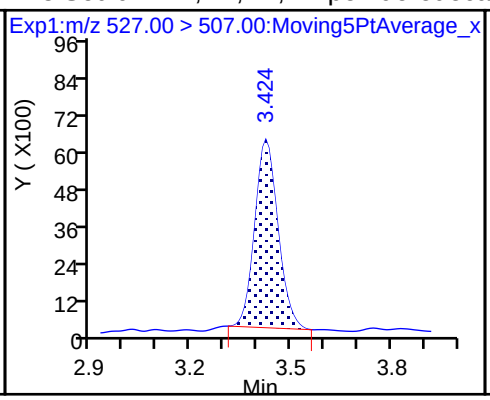
22 Perfluorooctane Sulfonamide



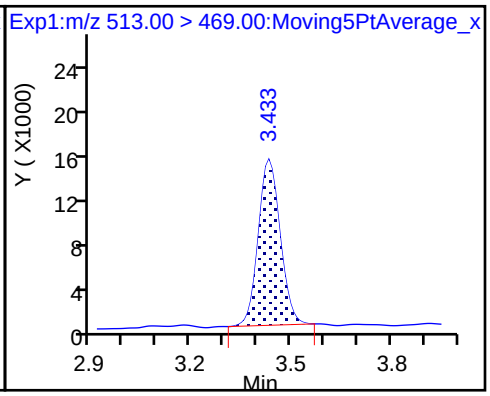
D 21 13C8 FOSA



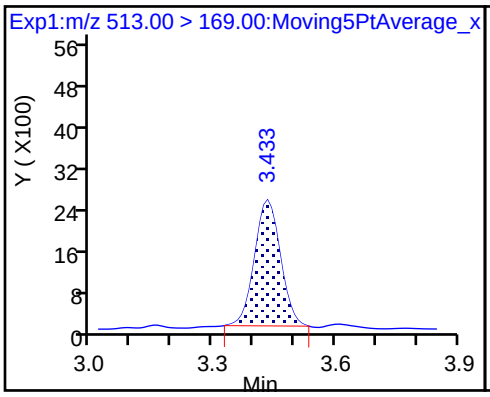
25 Sodium 1H,1H,2H,2H-perfluorodecan



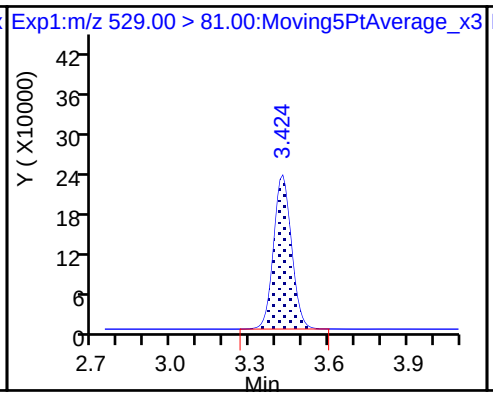
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid



D 26 M2-8:2FTS



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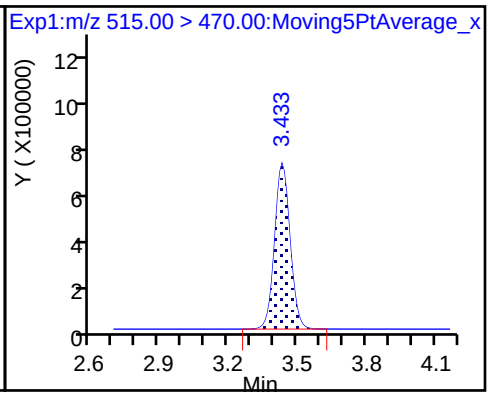
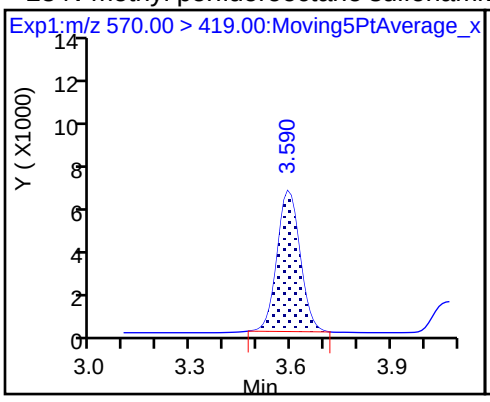
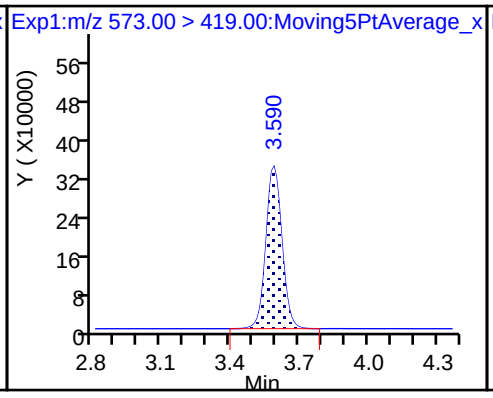


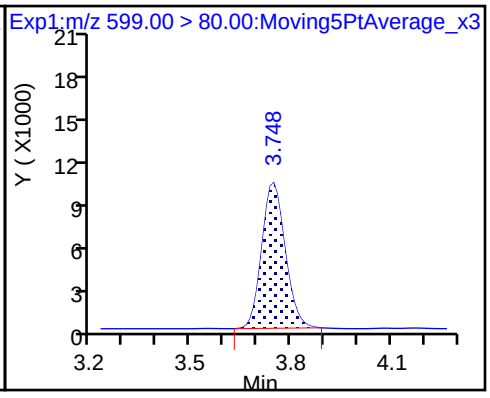
28 N-methyl perfluorooctane sulfonami



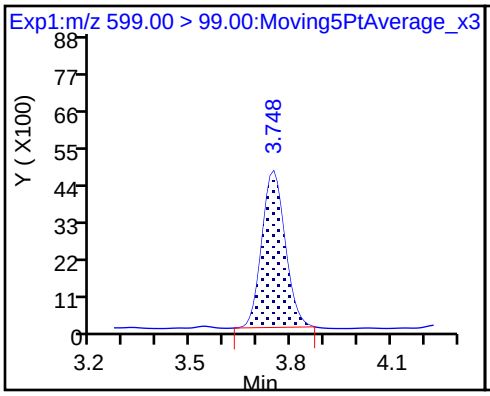
D 27 d3-NMeFOSAA



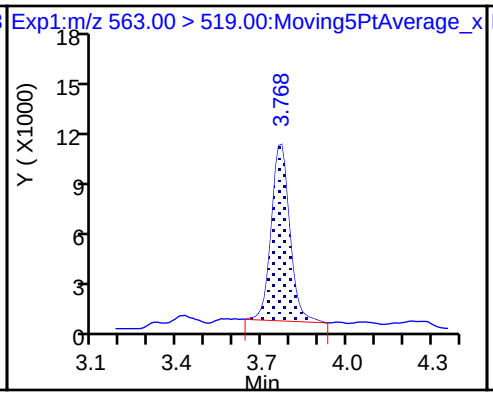
29 Perfluorodecane Sulfonic acid



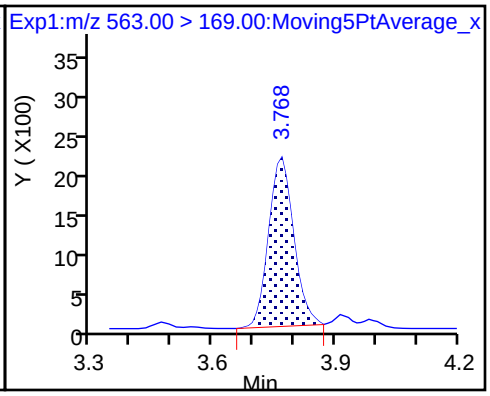
29 Perfluorodecane Sulfonic acid



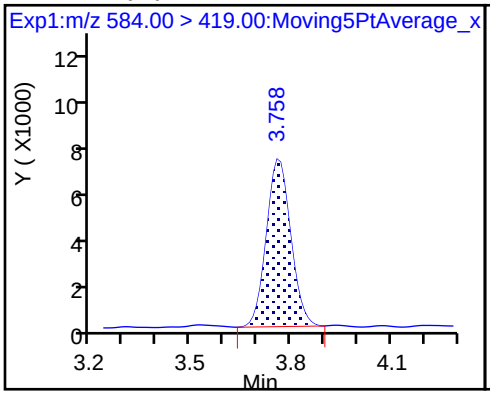
31 Perfluoroundecanoic acid



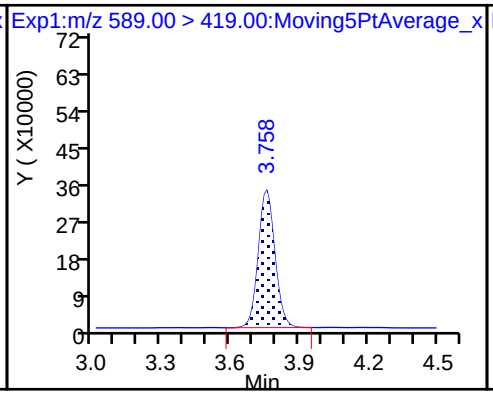
31 Perfluoroundecanoic acid



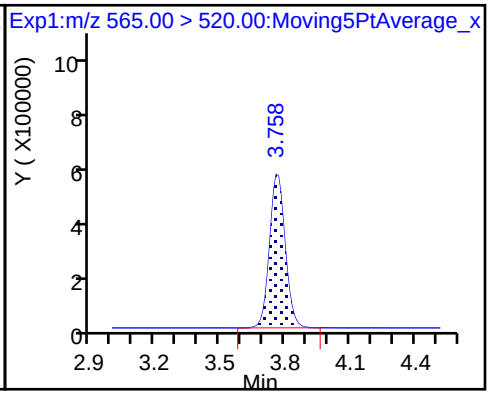
33 N-ethyl perfluorooctane sulfonamid



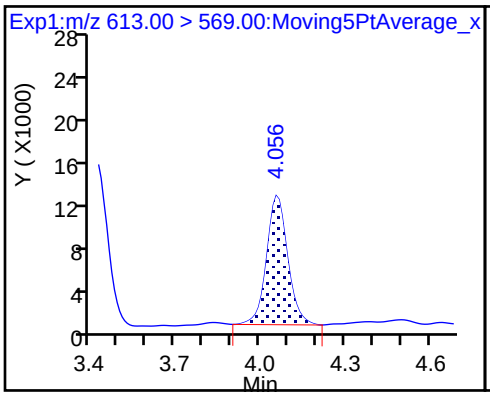
D 32 d5-NEtFOSAA



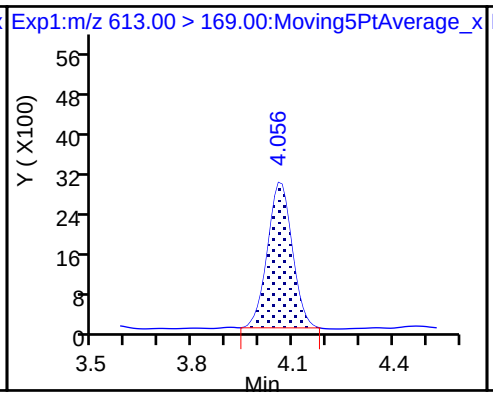
D 30 13C2 PFUnA



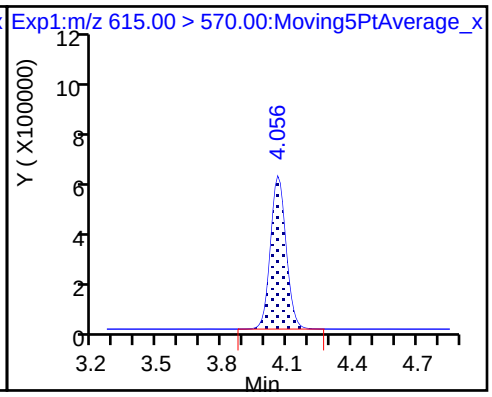
37 Perfluorododecanoic acid



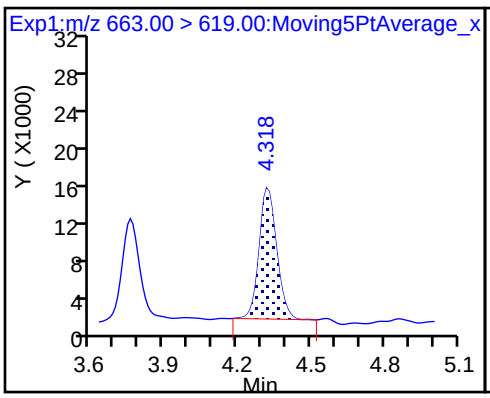
37 Perfluorododecanoic acid



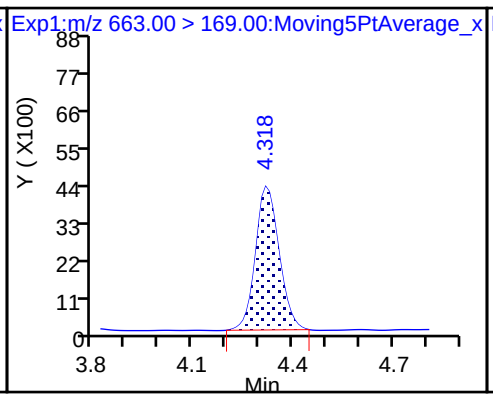
D 36 13C2 PFDoA



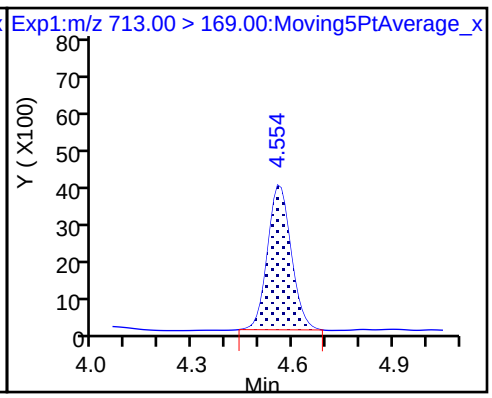
41 Perfluorotridecanoic acid



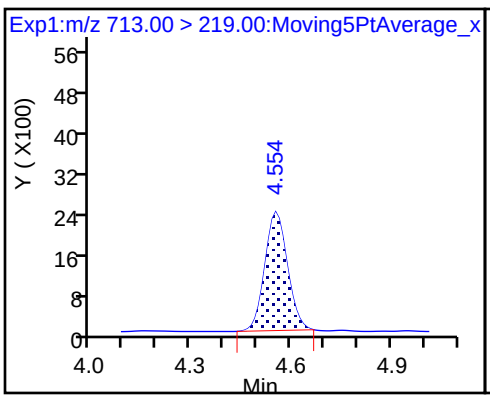
41 Perfluorotridecanoic acid



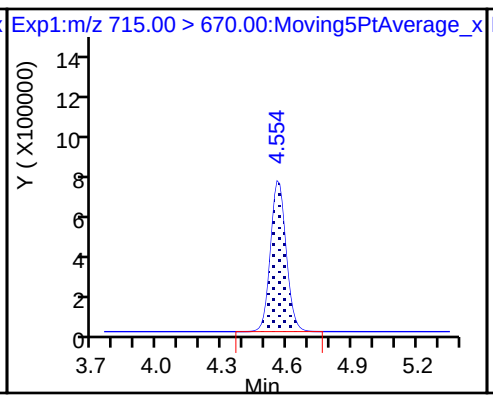
42 Perfluorotetradecanoic acid



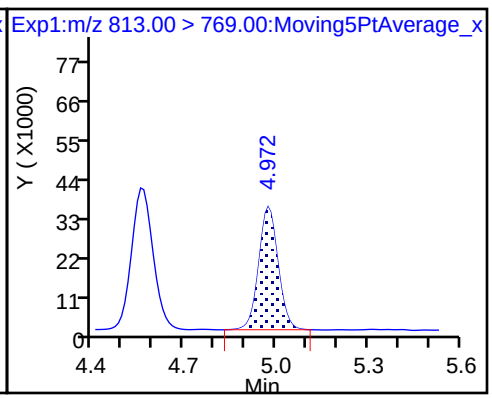
42 Perfluorotetradecanoic acid



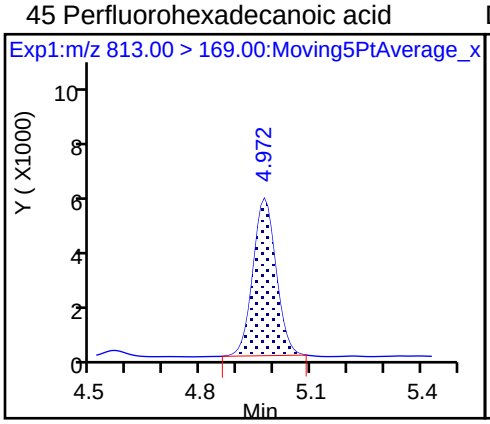
D 43 13C2-PFTeDA



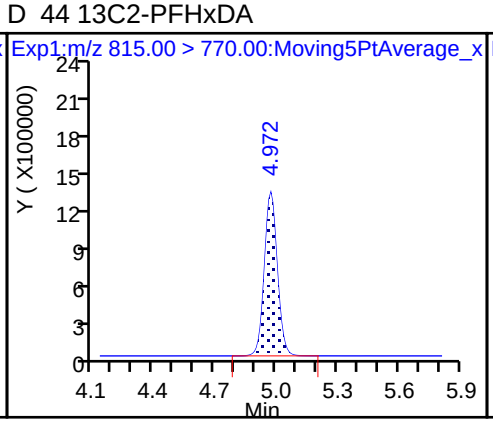
45 Perfluorohexadecanoic acid



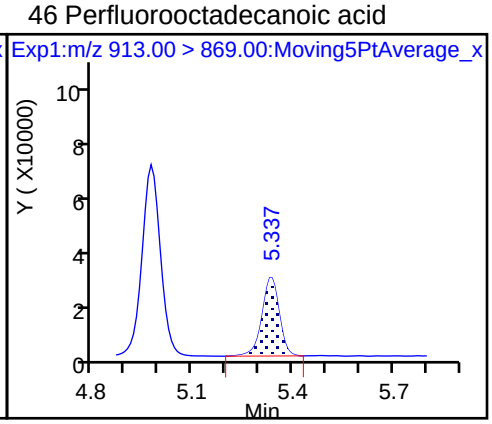
45 Perfluorohexadecanoic acid



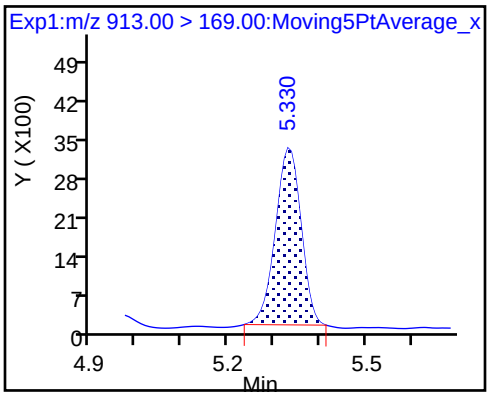
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215311/3 Calibration Date: 03/29/2018 00:02

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8924		0.947	1.00	-5.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.142		1.01	1.00	1.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.57		0.905	0.884	2.4	50.0
4:2 FTS	AveID	16.15	15.53		0.898	0.934	-3.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9667		0.946	1.00	-5.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9790		0.946	1.00	-5.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.031		0.843	0.910	-7.4	40.0
6:2FTS	AveID	1.744	1.592		0.866	0.948	-8.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.098		0.972	1.00	-2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.261		0.937	0.952	-1.6	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.998		1.00	1.00	0.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.042		0.868	0.928	-6.4	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9739		0.988	1.00	-1.2	40.0
8:2FTS	AveID	1.276	1.182		0.887	0.958	-7.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9371		0.948	1.00	-5.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.079		1.08	1.00	7.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6603		0.936	0.964	-2.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.8993		0.963	1.00	-3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7966		0.924	1.00	-7.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.020		0.975	1.00	-2.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.093		0.993	1.00	-0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2455		0.991	1.00	-0.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9714		1.05	1.00	4.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9670		1.05	1.00	4.6	50.0
13C4 PFBA	Ave	1.266	1.367		2.70	2.50	8.0	50.0
13C5 PFPeA	Ave	0.8399	0.8826		2.63	2.50	5.1	50.0
13C3-PFBS	Ave	0.0192	0.0199		2.41	2.33	3.7	50.0
M2-4:2FTS	Ave	0.1324	0.1390		2.45	2.34	5.0	50.0
13C2 PFHxA	Ave	0.9288	0.9780		2.63	2.50	5.3	50.0
13C4-PFHpA	Ave	0.9164	0.9787		2.67	2.50	6.8	50.0
18O2 PFHxS	Ave	1.130	1.225		2.56	2.37	8.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215311/3 Calibration Date: 03/29/2018 00:02

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2113		2.64	2.38	11.2	40.0
13C4 PFOA	Ave	0.9374	0.9331		2.49	2.50	-0.5	50.0
13C4 PFOS	Ave	0.8225	0.8627		2.51	2.39	4.9	50.0
13C5 PFNA	Ave	0.8266	0.8249		2.50	2.50	-0.2	50.0
13C8 FOSA	Ave	1.109	1.202		2.71	2.50	8.3	50.0
M2-8:2FTS	Ave	0.2565	0.2361		2.21	2.40	-8.0	40.0
13C2 PFDA	Ave	0.7245	0.7235		2.50	2.50	-0.1	50.0
d3-NMeFOSAA	Ave	0.3814	0.3315		2.17	2.50	-13.1	50.0
d5-NEtFOSAA	Ave	0.4345	0.3598		2.07	2.50	-17.2	50.0
13C2 PFUnA	Ave	0.6482	0.5665		2.19	2.50	-12.6	50.0
13C2 PFDoA	Ave	0.7355	0.6159		2.09	2.50	-16.3	50.0
13C2-PFTeDA	Ave	0.8983	0.7974		2.22	2.50	-11.2	50.0
13C2-PFHxDA	Ave	1.473	1.192		2.02	2.50	-19.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 29-Mar-2018 00:02:32 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:57:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.441	-0.006	0.532	6491022	2.70		108	87292	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.435	0.0	1.000	2317059	0.9471		94.7	723	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	1914426	1.01		101	799	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.709	-0.009	0.631	4191640	2.63		105	136388	
D 47 13C3-PFBS										
301.90 > 83.00	1.736	1.745	-0.009	0.644	87773	2.41		104	611	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.000	2655497	0.9052		102	1719	
298.90 > 99.00	1.736	1.736	0.0	1.000	1101457		2.41(1.25-3.74)		1617	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	547605	0.8980		96.1	34136	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.966	-0.010	0.725	616600	2.45		105	8882	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.998	1.998	0.0	1.000	1795950	0.9456		94.6	2505	
313.00 > 119.00	1.987	1.998	-0.011	0.995	164172		10.94(5.03-15.10)		1659	
D 7 13C2 PFHxA										
315.00 > 270.00	1.998	2.009	-0.011	0.741	4644551	2.63		105	119475	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1820200	0.9464		94.6	1102	
363.00 > 169.00	2.328	2.328	0.0	1.000	731307		2.49(1.13-3.40)		1395	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	2183584	0.8430		92.6	9714	
399.00 > 99.00	2.341	2.341	0.0	1.000	757019		2.88(1.50-4.49)		4010	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	4648219	2.67		107	98582	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	5503672	2.56		108	77912	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	605953	0.8656		91.3	6588	
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	953489	2.64		111	27123	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		4749284	2.50			83446	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	1946993	0.9723		97.2	848	
413.00 > 169.00	2.697	2.697	0.0	1.000	1009231		1.93(0.84-2.52)		3738	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.705	0.0	1.000	1967259	0.9369		98.4	41446	
449.00 > 99.00	2.705	2.705	0.0	1.000	557648		3.53(1.94-5.82)		11814	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	4431614	2.49		99.5	77967	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	1584932	0.8682		93.6	3950	
499.00 > 99.00	3.072	3.072	0.0	1.000	357363		4.44(2.31-6.93)		3391	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1563364	1.00		100	1765	
463.00 > 169.00	3.072	3.072	0.0	1.000	398934		3.92(1.90-5.69)		11995	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3917807	2.49		99.8	93433	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3916793	2.51		105	49719	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	2223319	0.9879		98.8	34978	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	5707485	2.71		108	54409	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	507733	0.8869		92.6	7311	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.435	0.0	1.000	1288024	0.9484		94.8	6954	
513.00 > 169.00	3.435	3.435	0.0	1.000	234128		5.50(2.36-7.09)		8582	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	1074334	2.20		92.0	29127	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	3436313	2.50		99.9	50280	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.590	3.590	0.0	1.000	679645	1.08		108	7441	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1574436	2.17		86.9	54626	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	1043162	0.9361		97.1	35331	
599.00 > 99.00	3.748	3.748	0.0	1.000	374347		2.79(1.39-4.16)		10996	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.769	3.769	0.0	1.000	857318	0.9239		92.4	4606	
563.00 > 169.00	3.769	3.769	0.0	1.000	211507		4.05(2.12-6.36)		7867	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.769	0.0	1.003	614753	0.9626		96.3	17120	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1708952	2.07		82.8	5149	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.398	2690556	2.19		87.4	67111	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.000	1193328	0.9748		97.5	875	
613.00 > 169.00	4.057	4.057	0.0	1.000	302869		3.94(2.13-6.40)		6775	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.089	-0.032	1.505	2924870	2.09		83.7	19649	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1278762	0.99		99.3	533	
663.00 > 169.00	4.318	4.318	0.0	1.000	423159		3.02(1.25-3.76)		6493	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	371953	0.99		99.1	6258	
713.00 > 219.00	4.554	4.564	-0.010	0.998	239337		1.55(0.71-2.13)		6897	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3787135	2.22		88.8	23848	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.972	0.0	1.000	2198939	1.04		104	523	
813.00 > 169.00	4.972	4.972	0.0	1.000	366939		5.99(2.86-8.58)		4396	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	5.008	-0.036	1.844	5659007	2.02		80.9	17559	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2188881	1.05		105	445	
913.00 > 169.00	5.337	5.337	0.0	1.000	272210		8.04(3.83-11.48)		3165	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_006.d

Injection Date: 29-Mar-2018 00:02:32 Instrument ID: A8_N

Lims ID: CCV L4

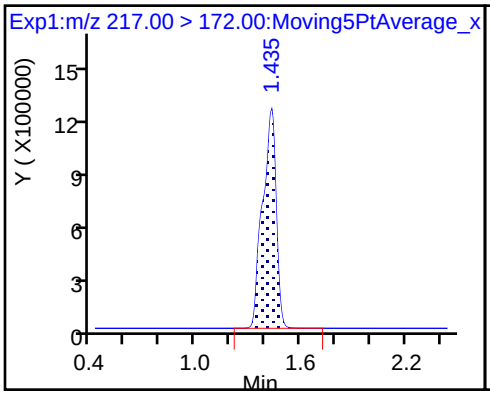
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

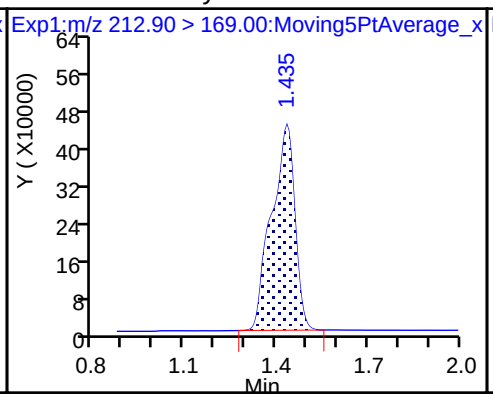
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

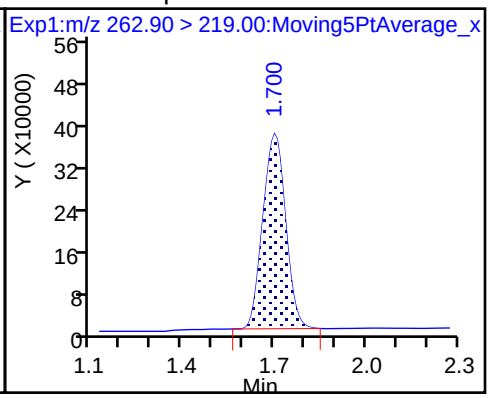
D 1 13C4 PFBA



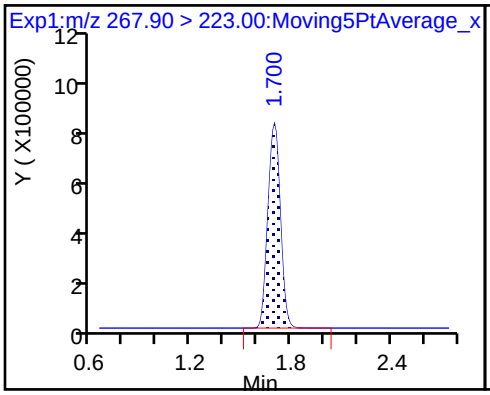
2 Perfluorobutyric acid



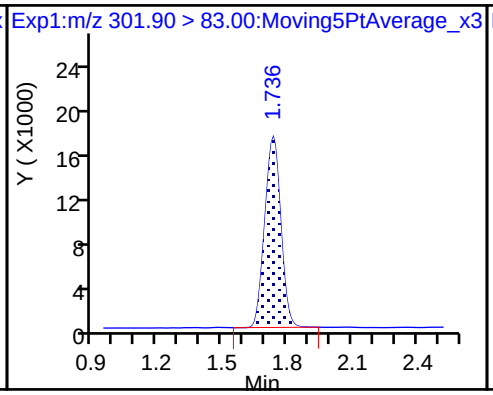
4 Perfluoropentanoic acid



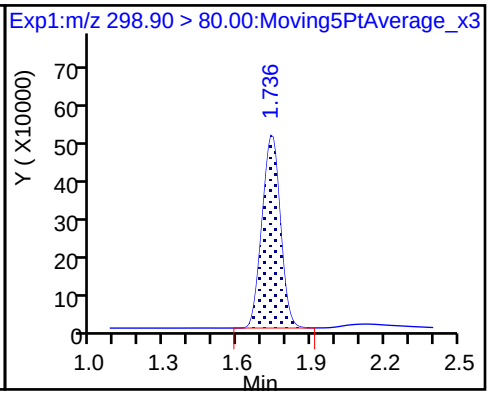
D 3 13C5-PFPeA



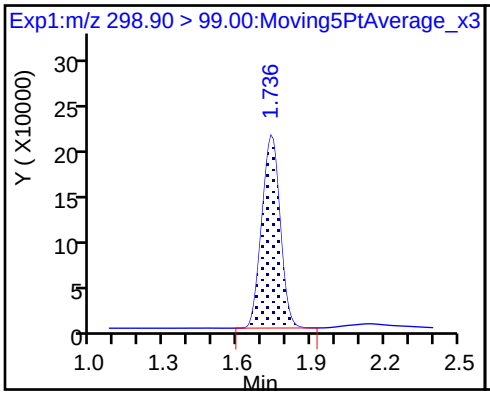
D 47 13C3-PFBS



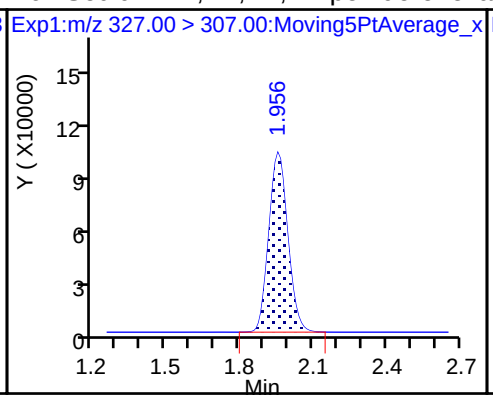
5 Perfluorobutanesulfonic acid



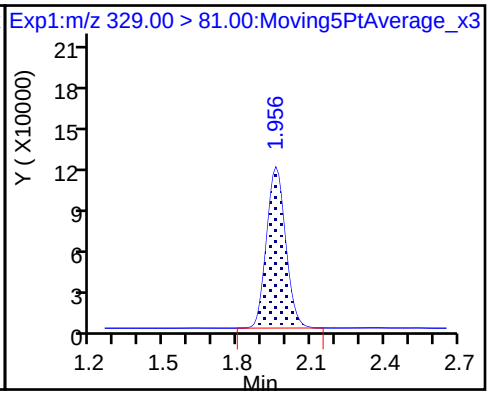
5 Perfluorobutanesulfonic acid



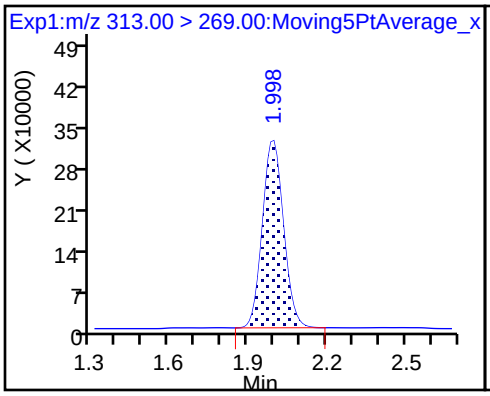
61 Sodium 1H,1H,2H,2H-perfluorohexane



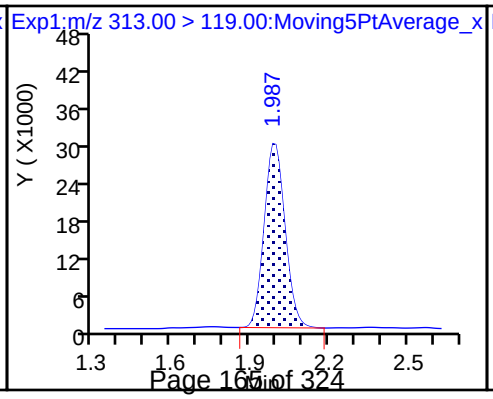
D 60 M2-4:2FTS



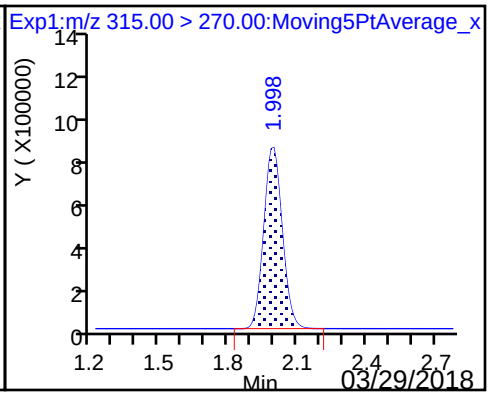
6 Perfluorohexanoic acid



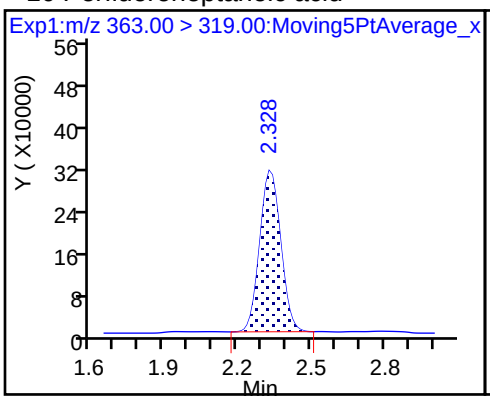
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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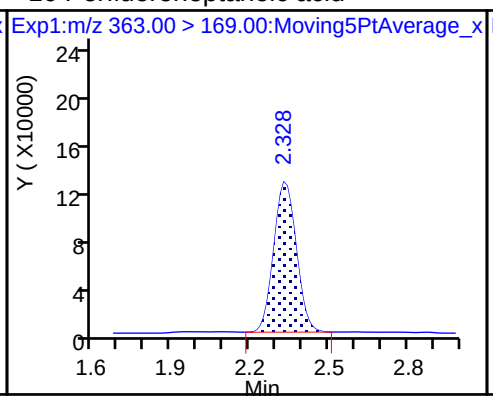
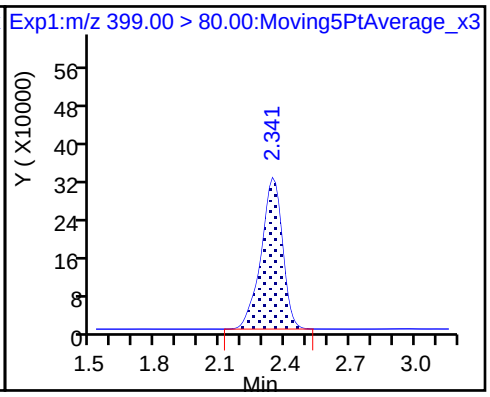
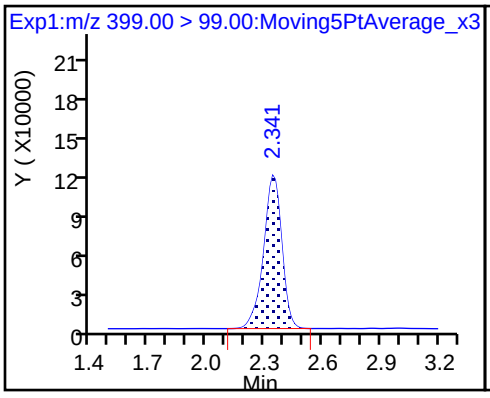


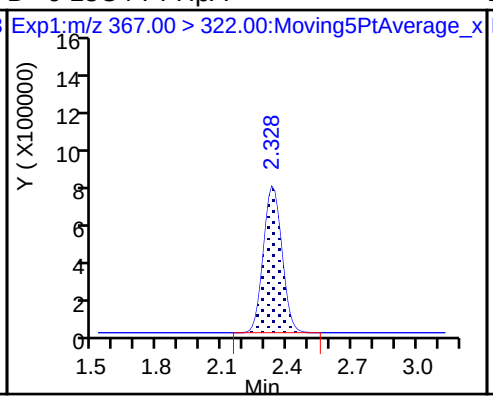
8 Perfluorohexanesulfonic acid



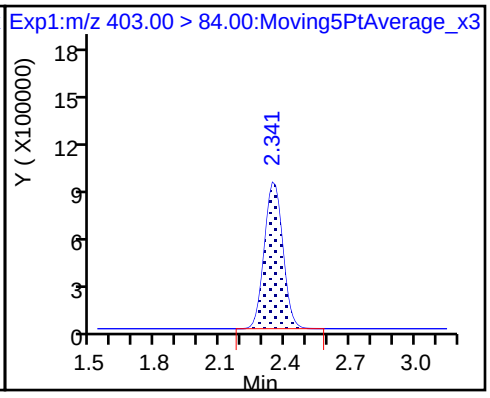
8 Perfluorohexanesulfonic acid



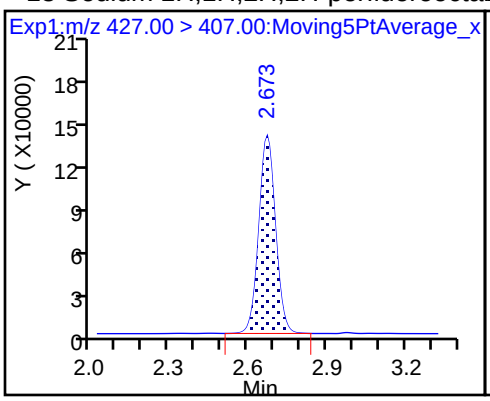
D 9 13C4-PFHpA



D 11 18O2 PFHxS



13 Sodium 1H,1H,2H,2H-perfluorooctan



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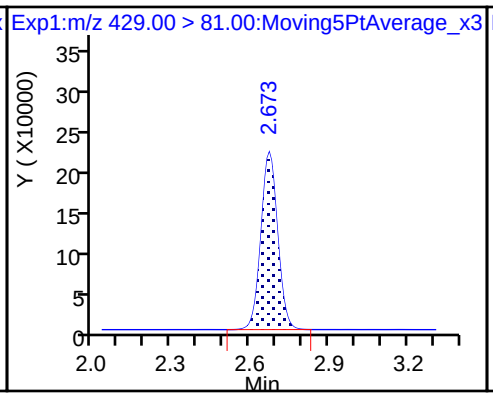
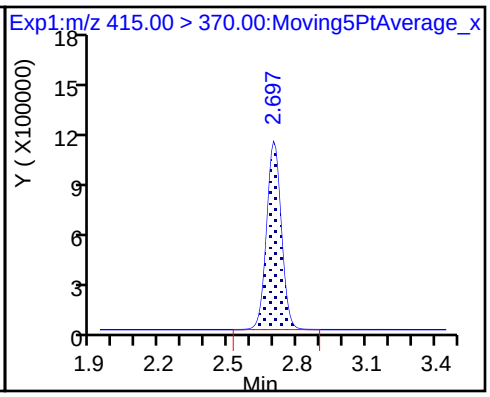
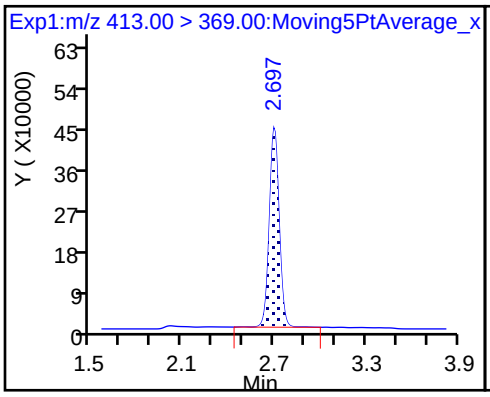


* 62 13C2-PFOA



15 Perfluorooctanoic acid



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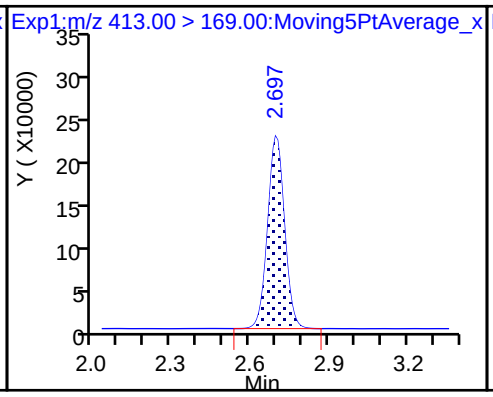
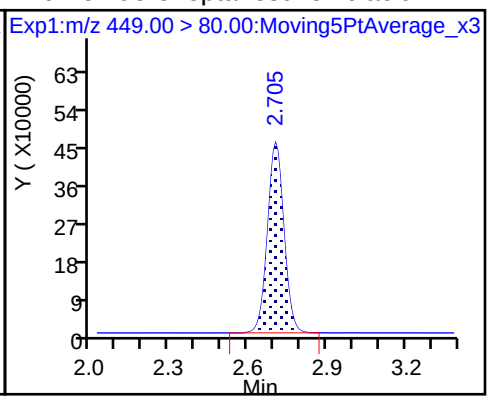
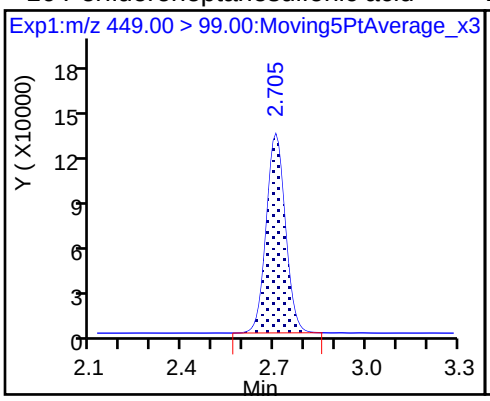


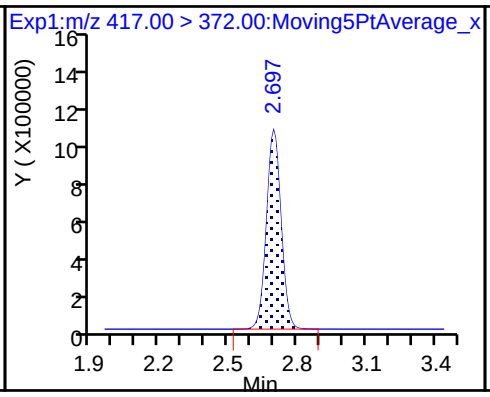
16 Perfluoroheptanesulfonic acid



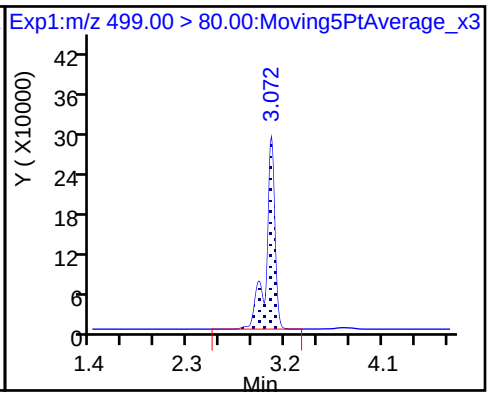
16 Perfluoroheptanesulfonic acid



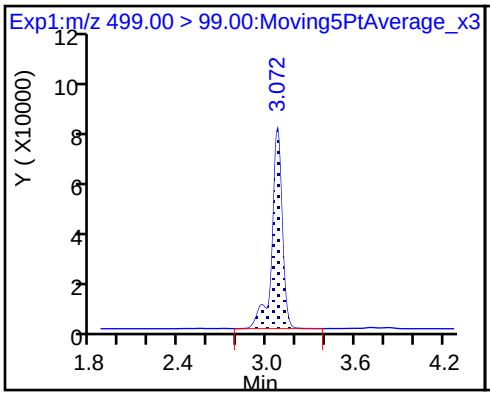
D 14 13C4 PFOA



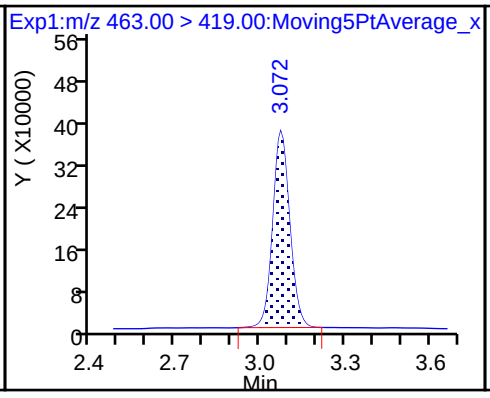
17 Perfluorooctane sulfonic acid



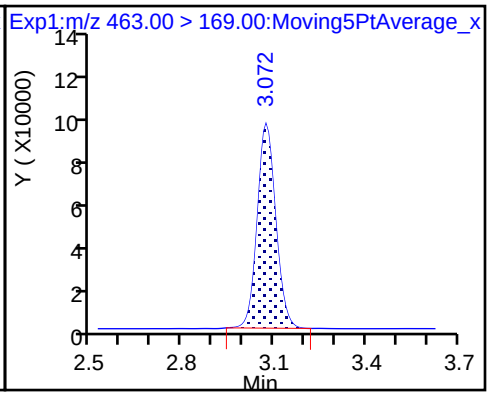
17 Perfluorooctane sulfonic acid



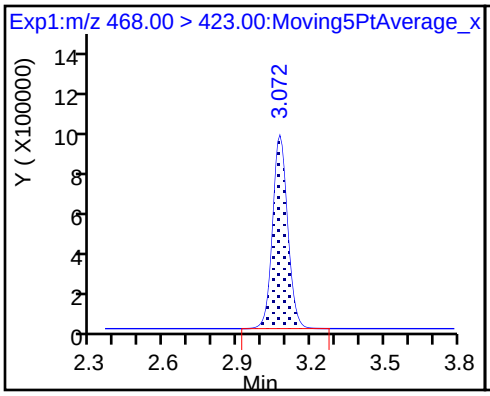
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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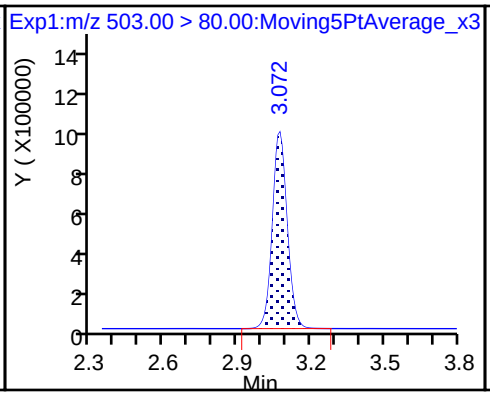
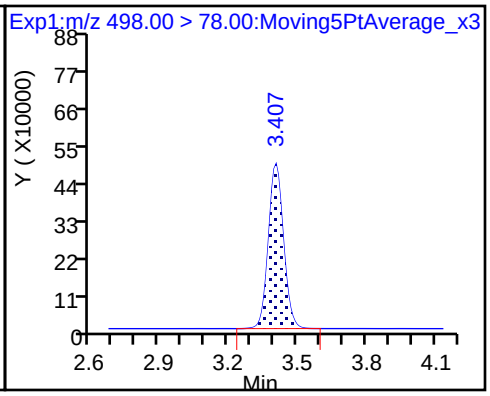
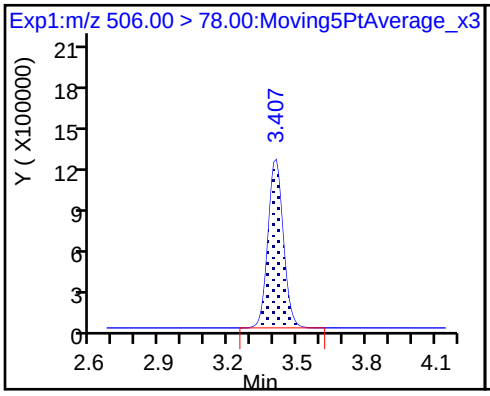


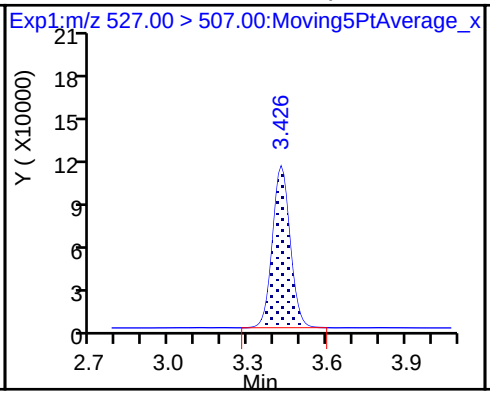
22 Perfluorooctane Sulfonamide



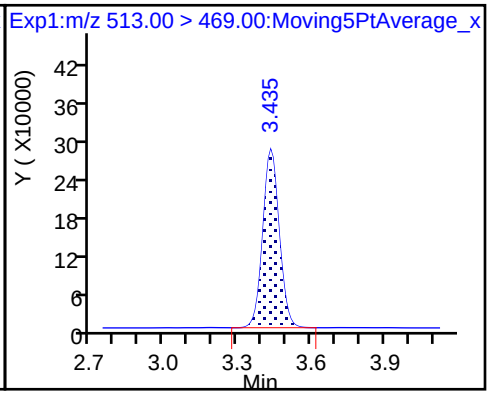
D 21 13C8 FOSA



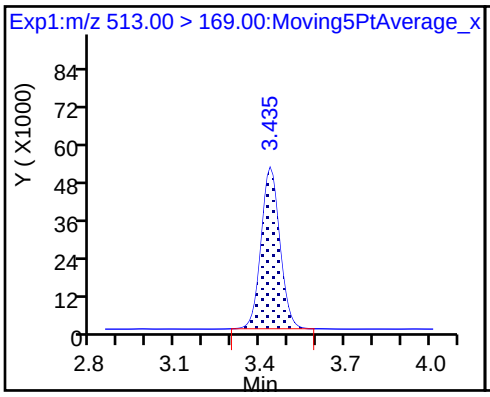
25 Sodium 1H,1H,2H,2H-perfluorodecan



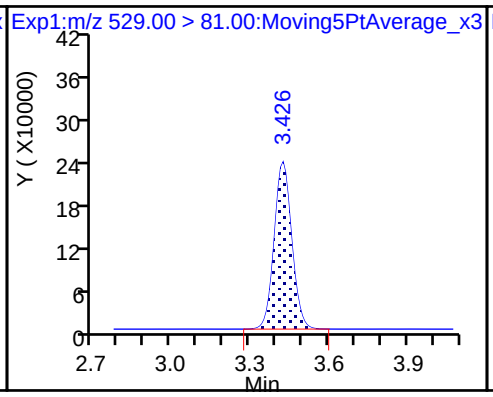
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid



D 26 M2-8:2FTS



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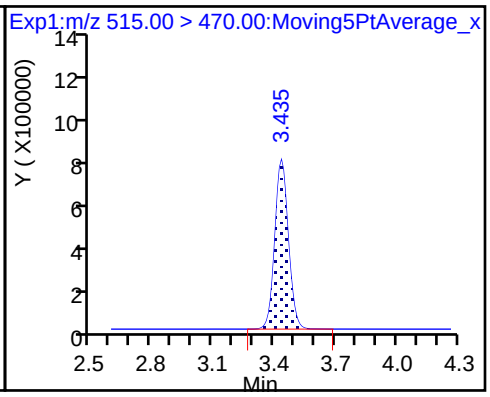
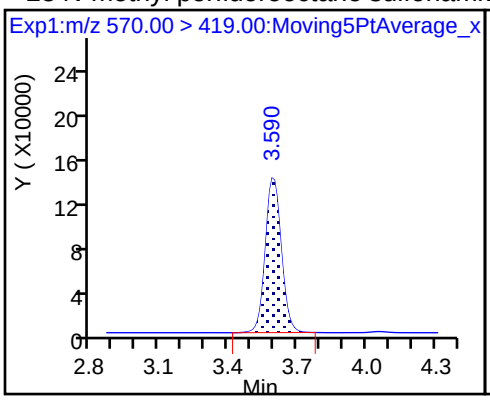
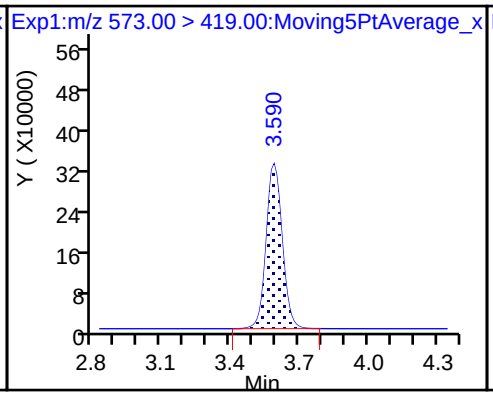


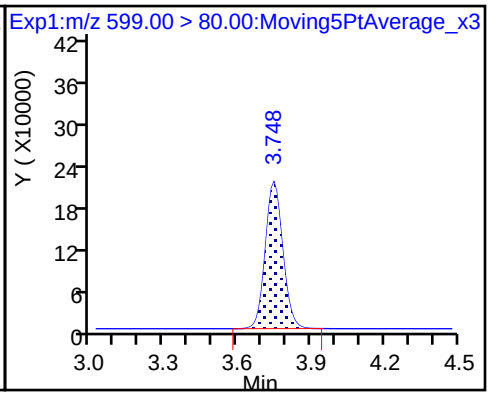
28 N-methyl perfluorooctane sulfonami



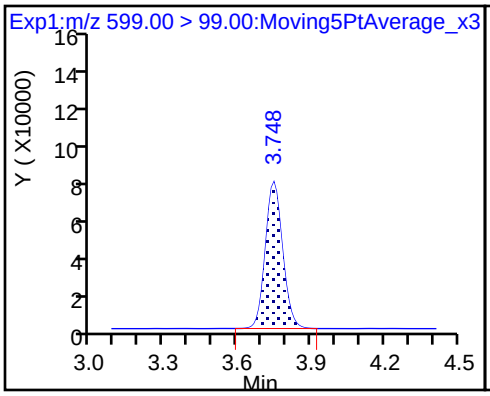
D 27 d3-NMeFOSAA



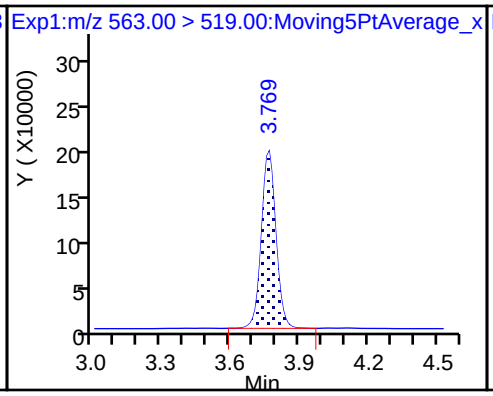
29 Perfluorodecane Sulfonic acid



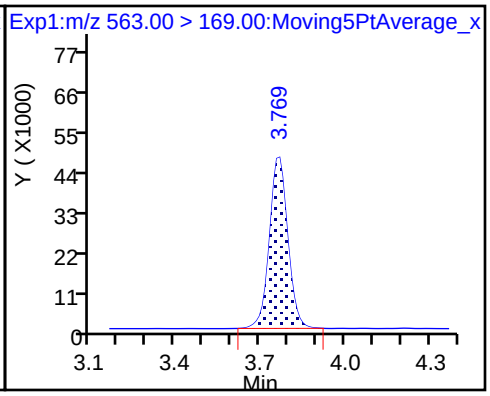
29 Perfluorodecane Sulfonic acid



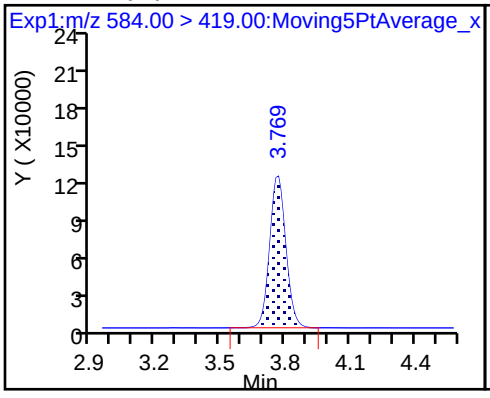
31 Perfluoroundecanoic acid



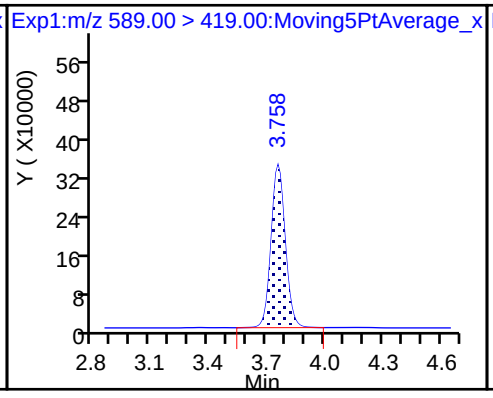
31 Perfluoroundecanoic acid



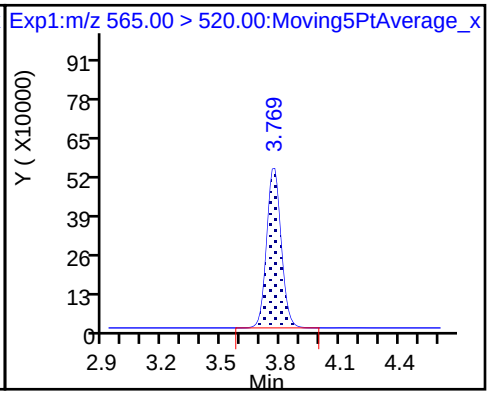
33 N-ethyl perfluorooctane sulfonamid



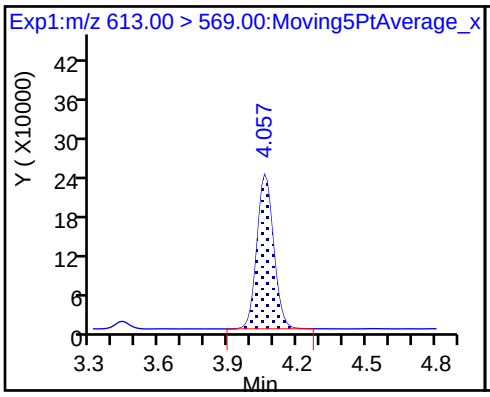
D 32 d5-NEtFOSAA



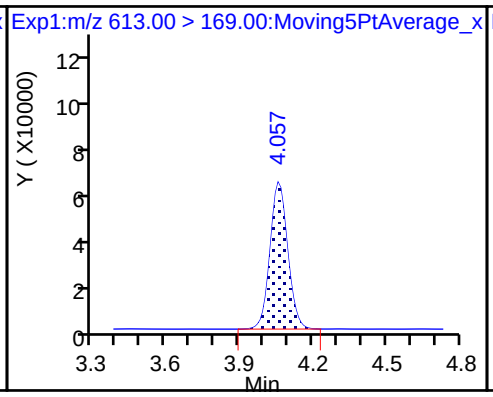
D 30 13C2 PFUnA



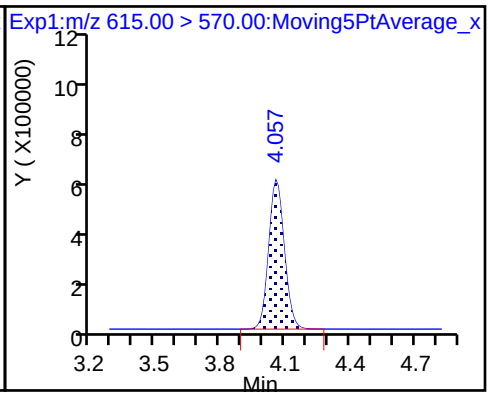
37 Perfluorododecanoic acid



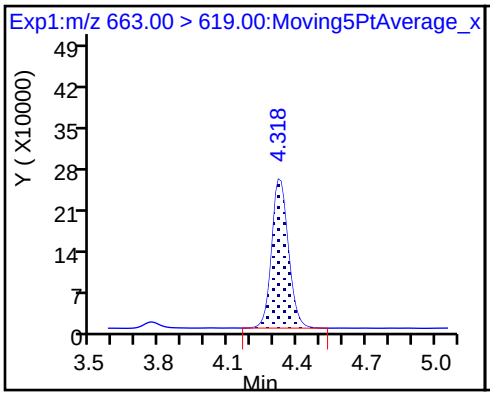
37 Perfluorododecanoic acid



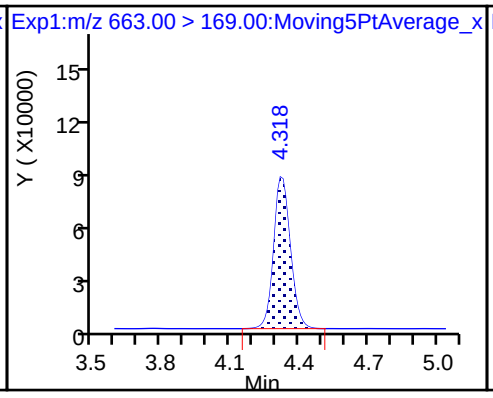
D 36 13C2 PFDoA



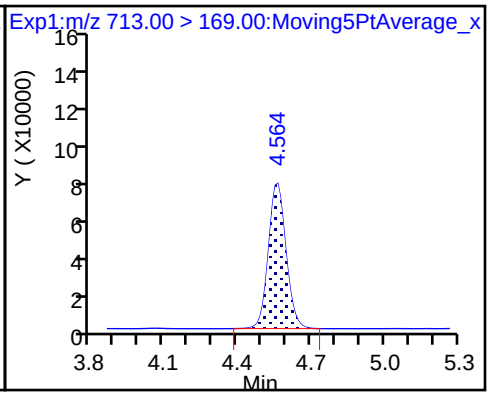
41 Perfluorotridecanoic acid



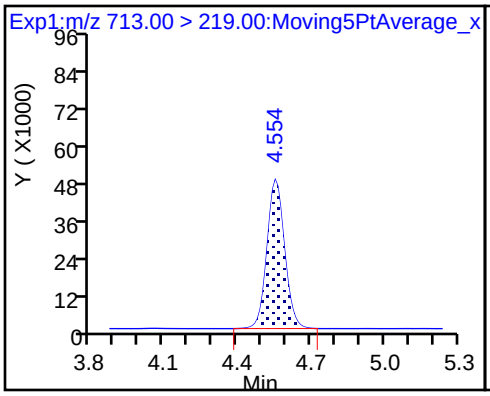
41 Perfluorotridecanoic acid



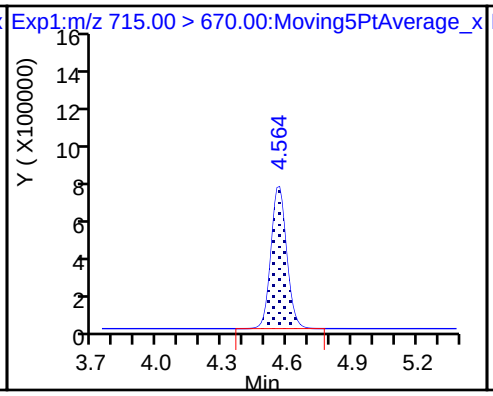
42 Perfluorotetradecanoic acid



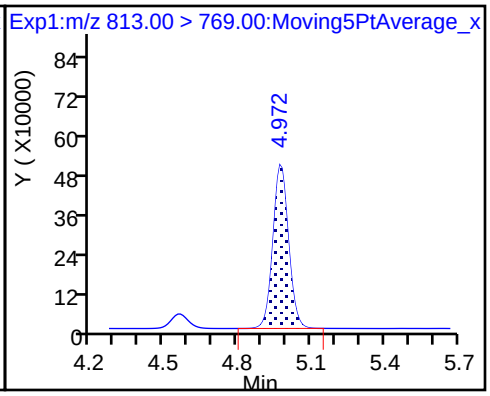
42 Perfluorotetradecanoic acid



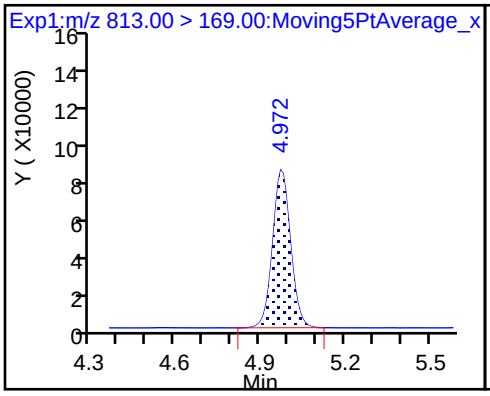
D 43 13C2-PFTeDA



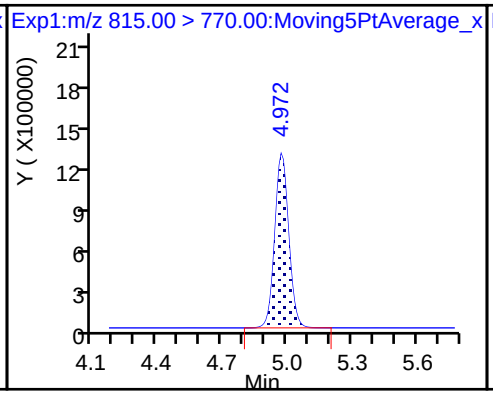
45 Perfluorohexadecanoic acid



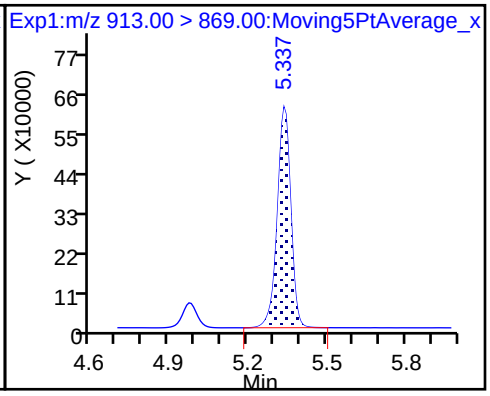
45 Perfluorohexadecanoic acid



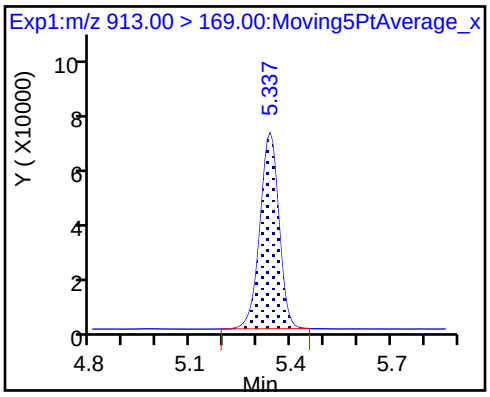
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215311/14 Calibration Date: 03/29/2018 01:28

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9423		2.50	2.50	0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.130		2.51	2.50	0.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.89		2.30	2.21	4.1	50.0
4:2 FTS	AveID	16.15	14.60		2.11	2.34	-9.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.011		2.47	2.50	-1.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.015		2.45	2.50	-1.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.043		2.13	2.28	-6.3	40.0
6:2FTS	AveID	1.744	1.601		2.18	2.37	-8.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.160		2.57	2.50	2.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.336		2.48	2.38	4.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.107		2.31	2.32	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.019		2.55	2.50	2.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9904		2.51	2.50	0.5	40.0
8:2FTS	AveID	1.276	1.263		2.37	2.40	-1.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9797		2.48	2.50	-0.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.053		2.63	2.50	5.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6958		2.47	2.41	2.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9610		2.57	2.50	2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7894		2.29	2.50	-8.4	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.025		2.45	2.50	-2.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.096		2.49	2.50	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2605		2.63	2.50	5.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9189		2.50	2.50	0.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.004		2.71	2.50	8.6	50.0
13C4 PFBA	Ave	1.266	1.372		2.71	2.50	8.4	50.0
13C5 PFPeA	Ave	0.8399	0.9074		2.70	2.50	8.0	50.0
13C3-PFBS	Ave	0.0192	0.0205		2.48	2.33	6.7	50.0
M2-4:2FTS	Ave	0.1324	0.1363		2.40	2.34	3.0	50.0
13C2 PFHxA	Ave	0.9288	0.9688		2.61	2.50	4.3	50.0
13C4-PFHpA	Ave	0.9164	0.9379		2.56	2.50	2.3	50.0
18O2 PFHxS	Ave	1.130	1.165		2.44	2.37	3.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215311/14 Calibration Date: 03/29/2018 01:28

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.1899		2.37	2.38	-0.0	40.0
13C4 PFOA	Ave	0.9374	0.9109		2.43	2.50	-2.8	50.0
13C4 PFOS	Ave	0.8225	0.8168		2.37	2.39	-0.7	50.0
13C5 PFNA	Ave	0.8266	0.7894		2.39	2.50	-4.5	50.0
13C8 FOSA	Ave	1.109	1.194		2.69	2.50	7.6	50.0
M2-8:2FTS	Ave	0.2565	0.2224		2.08	2.40	-13.3	40.0
13C2 PFDA	Ave	0.7245	0.6843		2.36	2.50	-5.5	50.0
d3-NMeFOSAA	Ave	0.3814	0.3225		2.11	2.50	-15.4	50.0
d5-NEtFOSAA	Ave	0.4345	0.3488		2.01	2.50	-19.7	50.0
13C2 PFUnA	Ave	0.6482	0.5468		2.11	2.50	-15.6	50.0
13C2 PFDoA	Ave	0.7355	0.6090		2.07	2.50	-17.2	50.0
13C2-PFTeDA	Ave	0.8983	0.7258		2.02	2.50	-19.2	50.0
13C2-PFHxDA	Ave	1.473	1.208		2.05	2.50	-18.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 01:28:41 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:05:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	5840228	2.50		100	2403	
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.441	0.005	0.533	6198132	2.71		108	84141	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.718	1.718	0.0	1.005	4634069	2.51		100	1962	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.630	4099654	2.70		108	132636	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	6605911	2.30		104	4356	
298.90 > 99.00	1.753	1.753	0.0	1.005	2673352		2.47(1.25-3.74)		3828	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.643	85915	2.48		107	680	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	1259846	2.11		90.4	58200	
D 60 M2-4:2FTS										
329.00 > 81.00	1.966	1.966	0.0	0.725	575122	2.40		103	8163	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.000	4424965	2.47		98.9	6664	
313.00 > 119.00	2.008	2.008	0.0	1.000	409381		10.81(5.03-15.10)		4085	
D 7 13C2 PFHxA										
315.00 > 270.00	2.008	2.009	-0.001	0.740	4377236	2.61		104	112699	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	4302228	2.45		98.1	2545	
363.00 > 169.00	2.341	2.341	0.0	1.000	1724510		2.49(1.13-3.40)		3181	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	4995727	2.13		93.7	18869	
399.00 > 99.00	2.354	2.354	0.0	1.000	1736570		2.88(1.50-4.49)		9592	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.863	4237513	2.56		102	89634	
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.868	4979665	2.44		103	56840	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.689	2.689	0.0	1.003	1301589	2.18		91.8	7492	
* 62 13C2-PFOA										
415.00 > 370.00	2.712	2.712	0.0		4518281	2.50			57655	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.712	2.712	0.0	1.000	4775923	2.57		103	1918	
413.00 > 169.00	2.712	2.712	0.0	1.000	2458605		1.94(0.84-2.52)		7385	
D 12 M2-6:2FTS										
429.00 > 81.00	2.681	2.697	-0.016	0.988	814942	2.37		99.9	26160	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.720	2.720	0.0	1.000	4693748	2.48		104	59556	
449.00 > 99.00	2.720	2.720	0.0	1.000	1240624		3.78(1.94-5.82)		20216	
D 14 13C4 PFOA										
417.00 > 372.00	2.712	2.721	-0.009	1.000	4115673	2.43		97.2	72512	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.080	0.0	1.000	3789829	2.30		99.3	8407	
499.00 > 99.00	3.080	3.080	0.0	1.000	828400		4.57(2.31-6.93)		8522	
20 Perfluorononanoic acid										
463.00 > 419.00	3.088	3.088	0.0	1.003	3633457	2.55		102	4136	
463.00 > 169.00	3.080	3.088	-0.008	1.000	898576		4.04(1.90-5.69)		26428	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.136	3566813	2.39		95.5	52356	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.136	3528164	2.37		99.3	38249	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.417	3.417	0.0	1.000	5341022	2.51		100	19262	
D 21 13C8 FOSA										
506.00 > 78.00	3.417	3.417	-0.001	1.260	5392779	2.69		108	78645	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	1216006	2.37		99.0	17269	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.444	0.0	1.000	3028889	2.48		99.2	13496	
513.00 > 169.00	3.444	3.444	0.0	1.000	535502		5.66(2.36-7.09)		14552	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.266	962442	2.08		86.7	26039	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.270	3091690	2.36		94.5	42089	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.611	3.611	0.0	1.003	1534511	2.63		105	13738	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.327	1457072	2.11		84.6	43057	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.758	0.0	1.000	2475351	2.47		102	38969	
599.00 > 99.00	3.758	3.758	0.0	1.000	835253		2.96(1.39-4.16)		21171	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.000	1950313	2.29		91.6	10296	
563.00 > 169.00	3.779	3.779	0.0	1.000	487414		4.00(2.12-6.36)		14147	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.779	0.0	1.003	1514354	2.57		103	25068	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.779	-0.011	1.389	1575807	2.01		80.3	5810	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.790	-0.011	1.393	2470511	2.11		84.4	62225	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.077	4.077	0.0	1.003	2819148	2.45		97.9	2116	
613.00 > 169.00	4.067	4.077	-0.010	1.000	697683		4.04(2.13-6.40)		8082	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.499	2751682	2.07		82.8	19614	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.339	4.339	0.0	1.000	3014633	2.49		99.5	1254	
663.00 > 169.00	4.339	4.339	0.0	1.000	1007002		2.99(1.25-3.76)		15338	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	854354	2.63		105	10814	
713.00 > 219.00	4.564	4.575	-0.011	0.998	585679		1.46(0.71-2.13)		10626	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.687	3279457	2.02		80.8	18345	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	5013383	2.50		100	1129	
813.00 > 169.00	4.990	4.990	0.0	1.000	869695		5.76(2.86-8.58)		6790	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	5.008	-0.018	1.840	5456177	2.05		82.0	14121	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	5476305	2.71		109	967	
913.00 > 169.00	5.351	5.351	0.0	1.000	699259		7.83(3.83-11.48)		5776	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_017.d

Injection Date: 29-Mar-2018 01:28:41 Instrument ID: A8_N

Lims ID: CCV L5

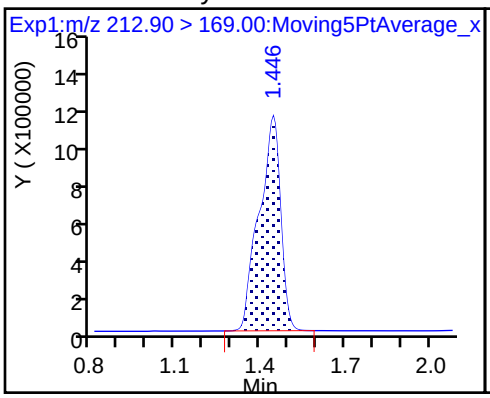
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 14

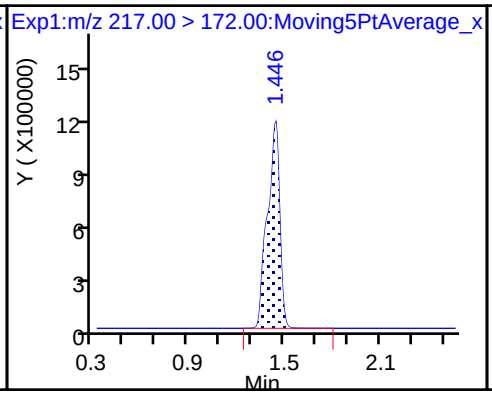
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

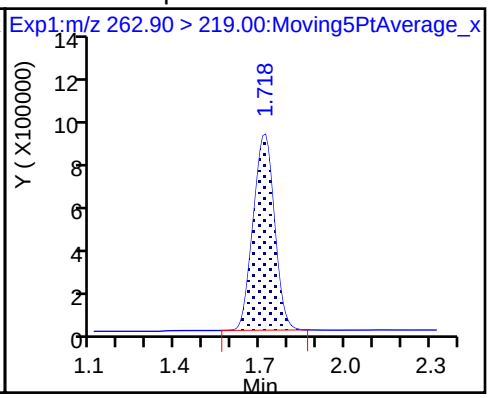
2 Perfluorobutyric acid



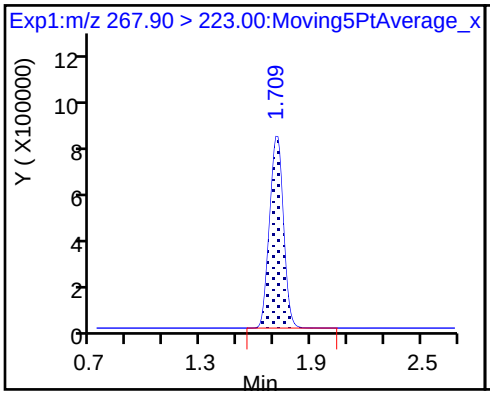
D 1 13C4 PFBA



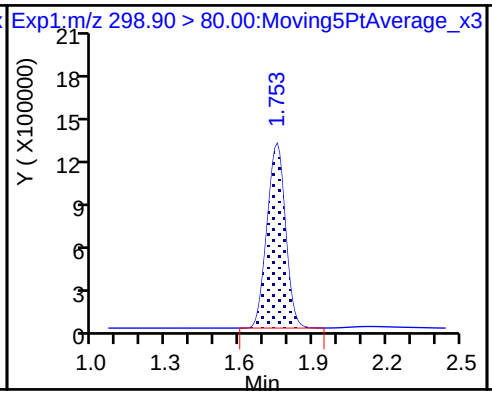
4 Perfluoropentanoic acid



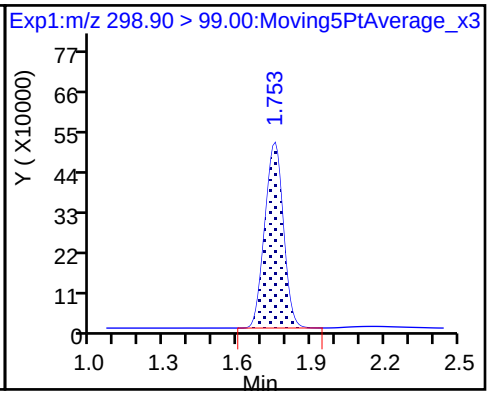
D 3 13C5-PFPeA



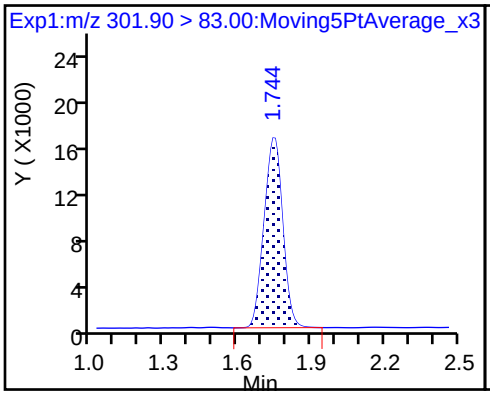
5 Perfluorobutanesulfonic acid



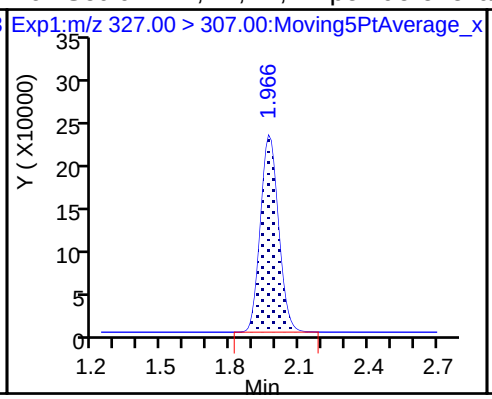
5 Perfluorobutanesulfonic acid



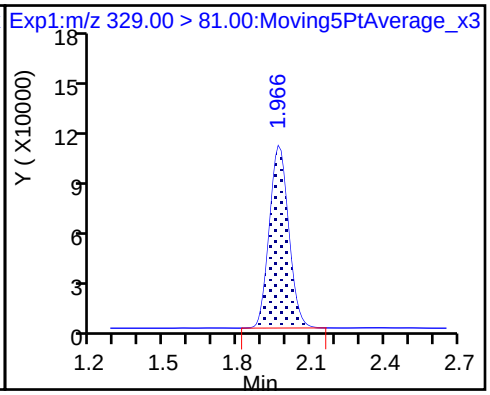
D 47 13C3-PFBS



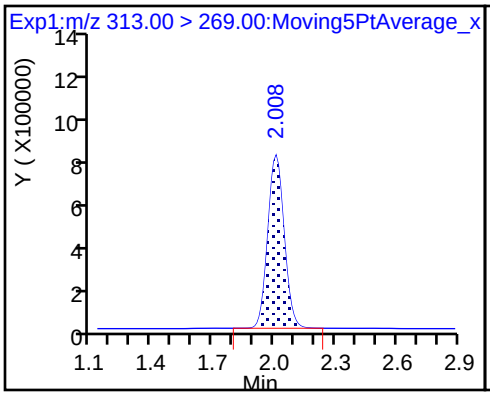
61 Sodium 1H,1H,2H,2H-perfluorohexa



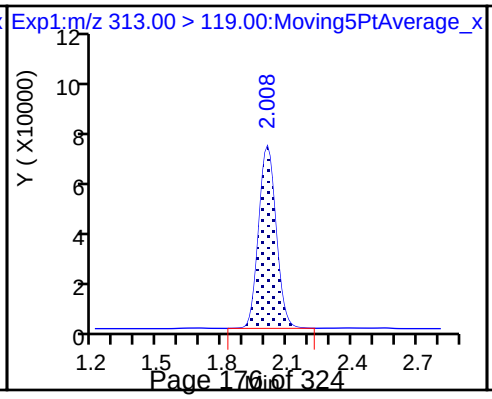
D 60 M2-4:2FTS



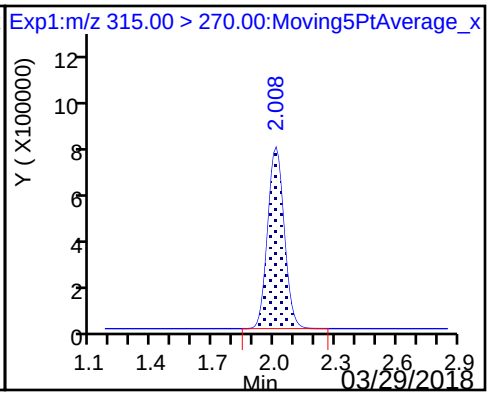
6 Perfluorohexanoic acid



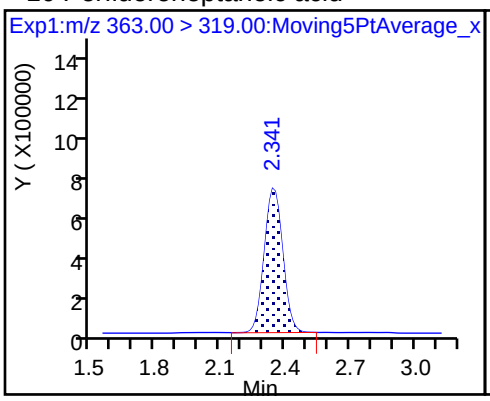
6 Perfluorohexanoic acid



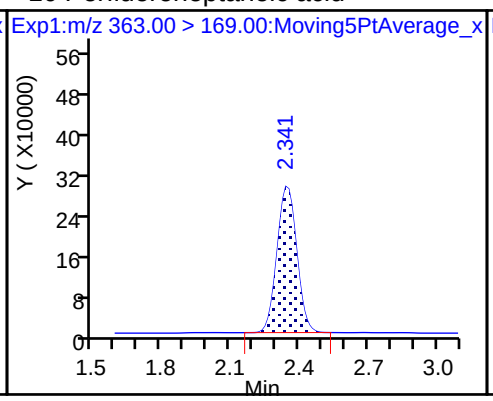
D 7 13C2 PFHxA



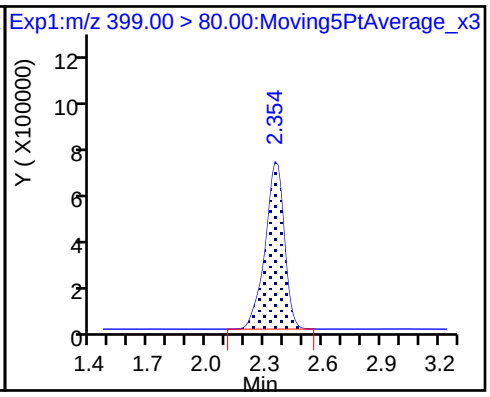
10 Perfluoroheptanoic acid



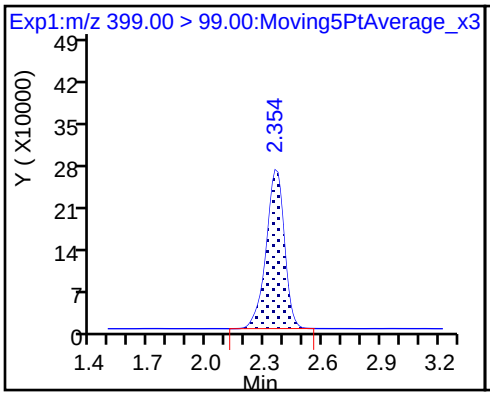
10 Perfluoroheptanoic acid



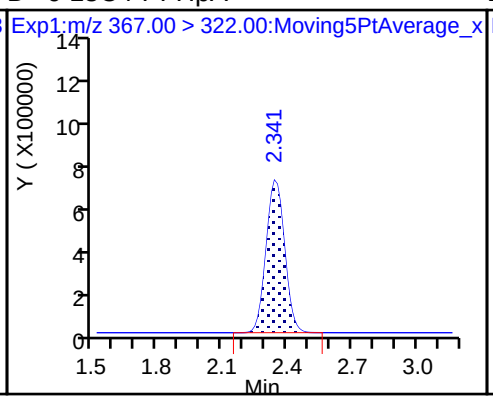
8 Perfluorohexanesulfonic acid



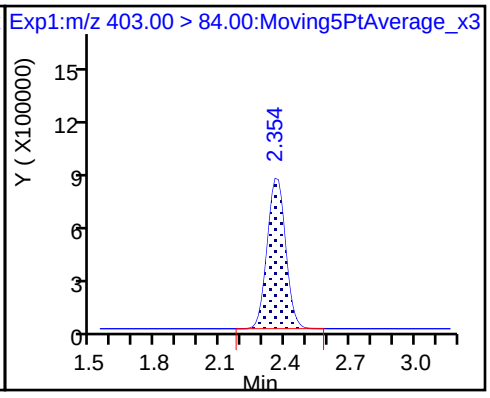
8 Perfluorohexanesulfonic acid



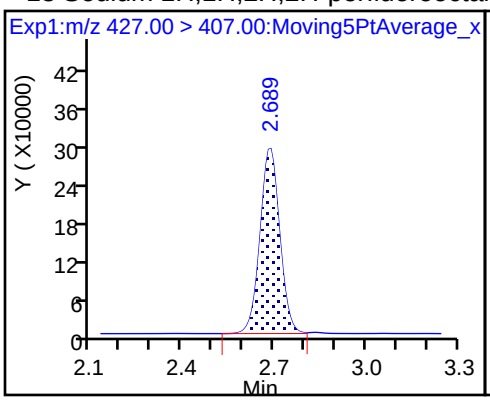
D 9 13C4-PFHpA



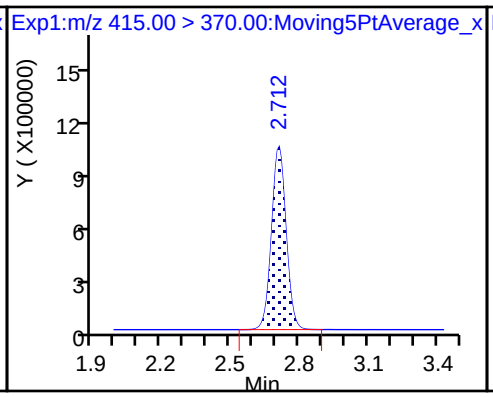
D 11 18O2 PFHxS



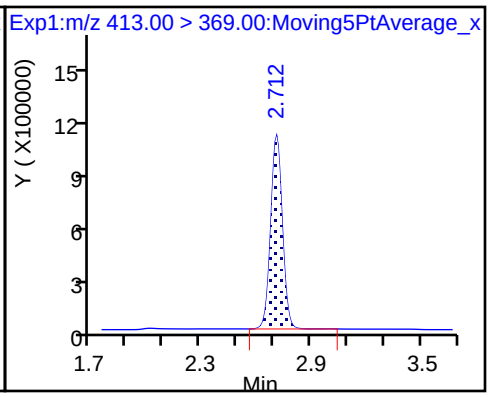
13 Sodium 1H,1H,2H,2H-perfluorooctane



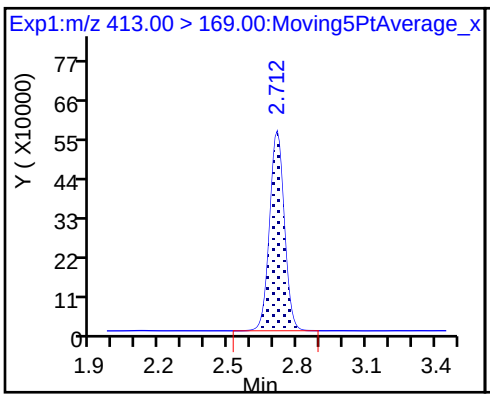
M2 13C2-PFOA



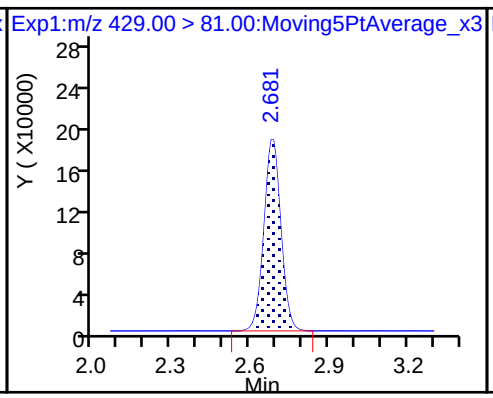
15 Perfluorooctanoic acid



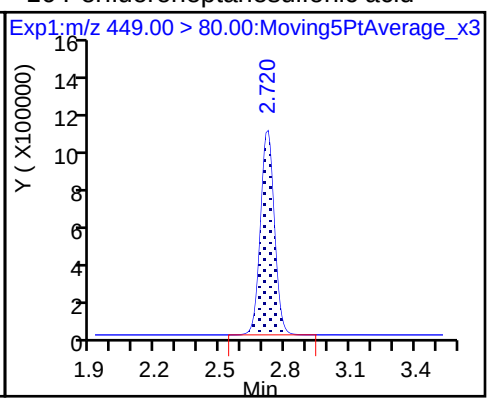
15 Perfluorooctanoic acid



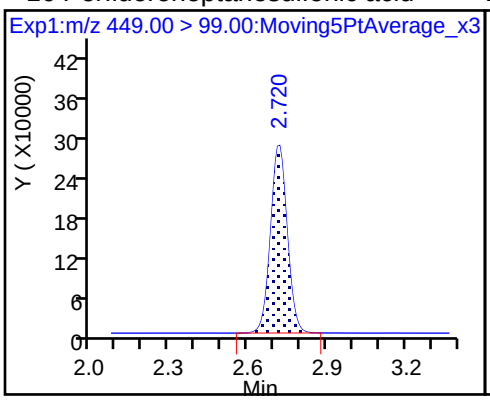
D 12 M2-6:2FTS



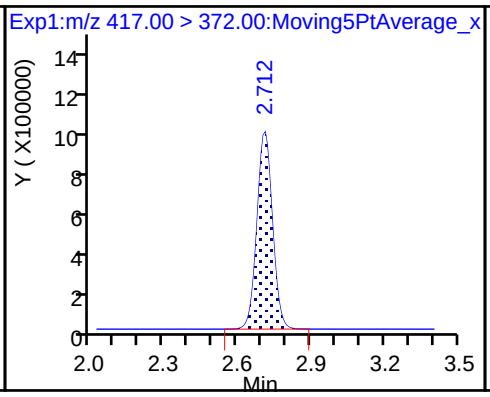
16 Perfluoroheptanesulfonic acid



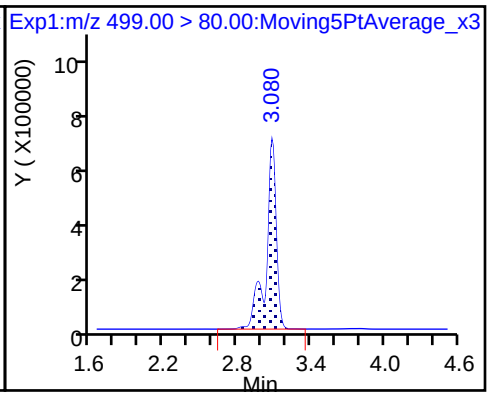
16 Perfluoroheptanesulfonic acid



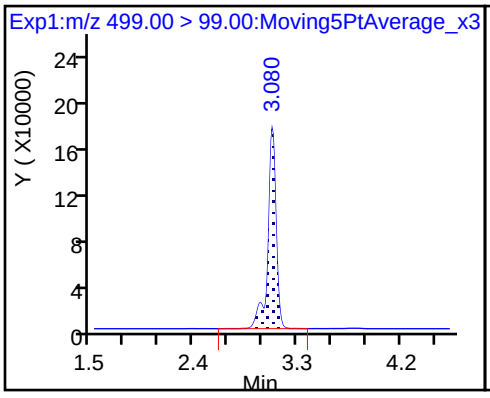
D 14 13C4 PFOA



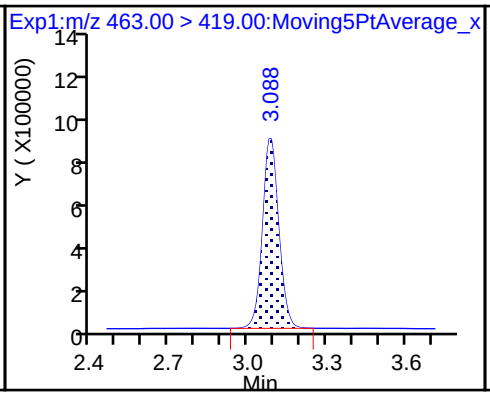
17 Perfluorooctane sulfonic acid



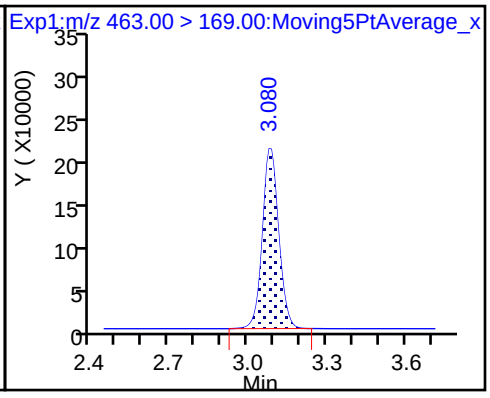
17 Perfluorooctane sulfonic acid



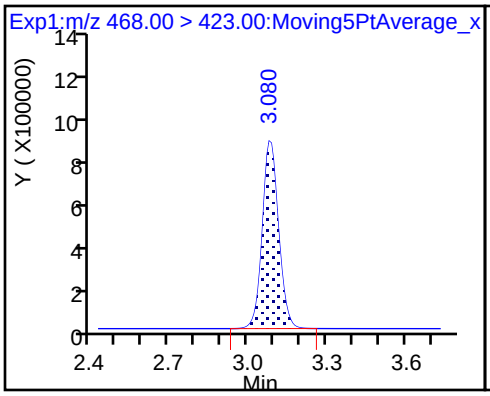
20 Perfluorononanoic acid



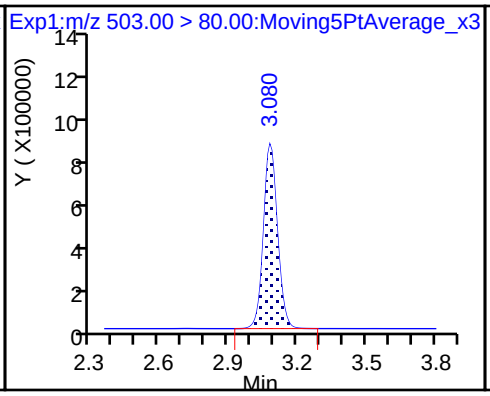
20 Perfluorononanoic acid



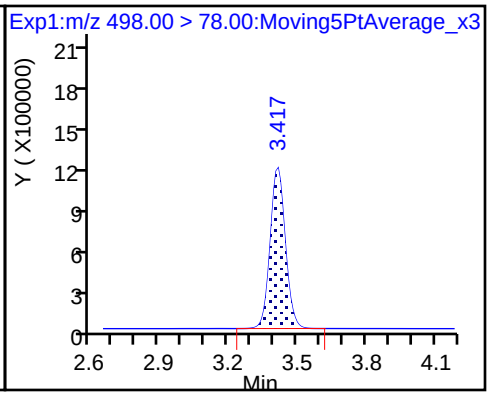
D 19 13C5 PFNA



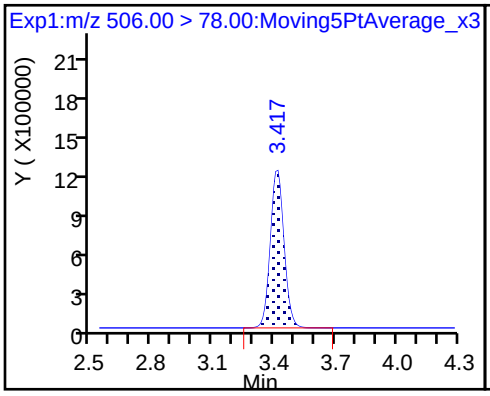
D 18 13C4 PFOS



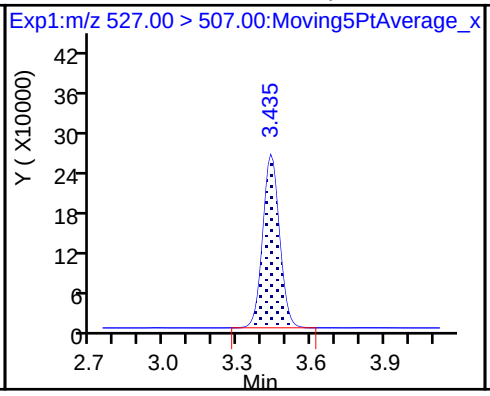
22 Perfluorooctane Sulfonamide



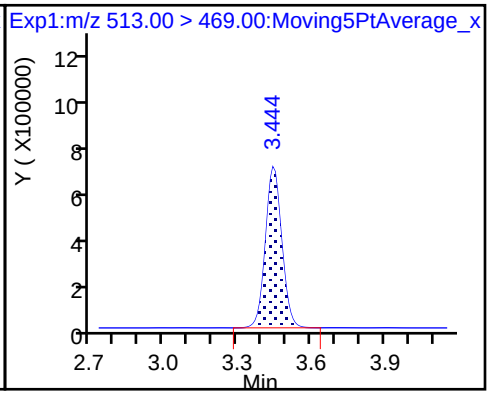
D 21 13C8 FOSA



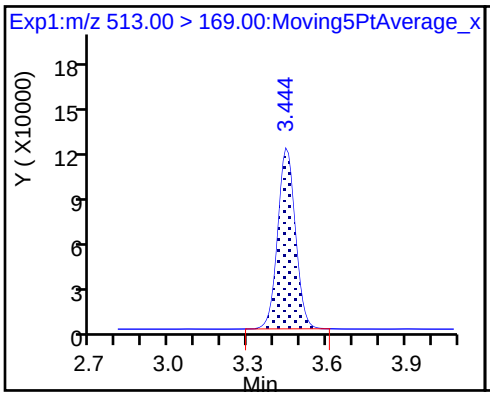
25 Sodium 1H,1H,2H,2H-perfluorodecan



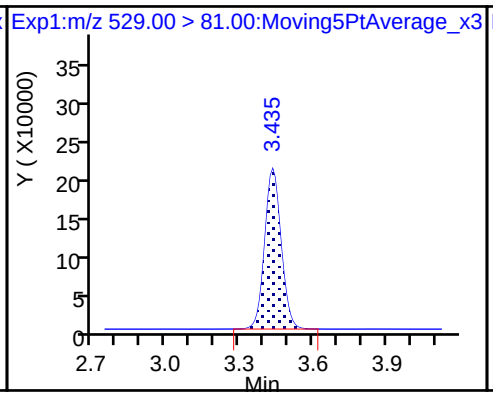
24 Perfluorodecanoic acid



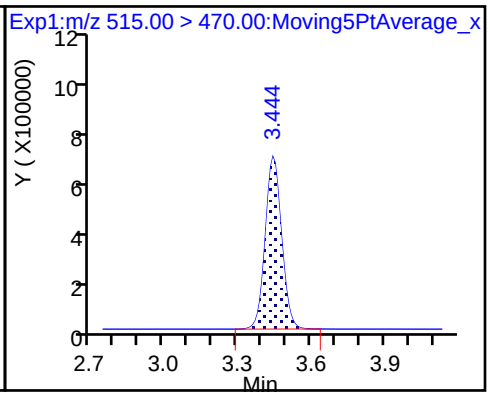
24 Perfluorodecanoic acid



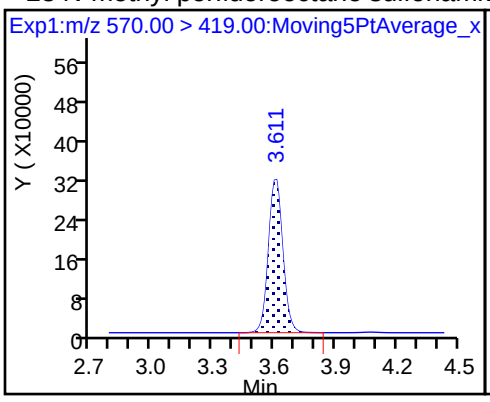
D 26 M2-8:2FTS



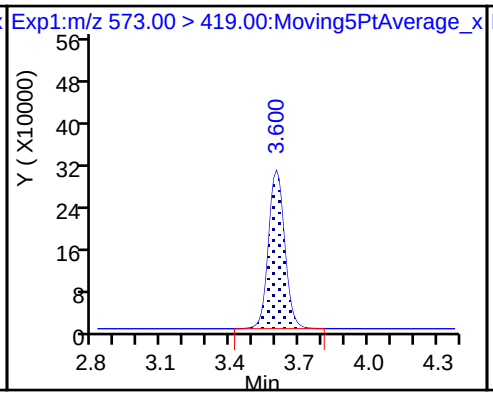
D 23 13C2 PFDA



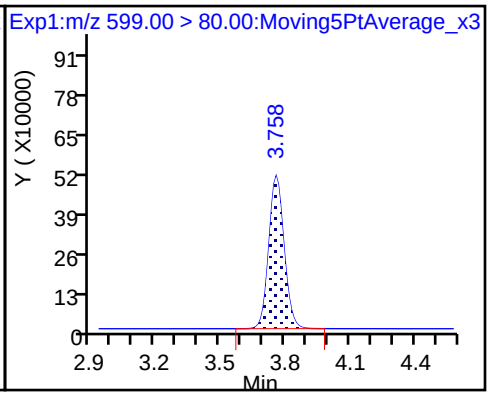
28 N-methyl perfluorooctane sulfonami



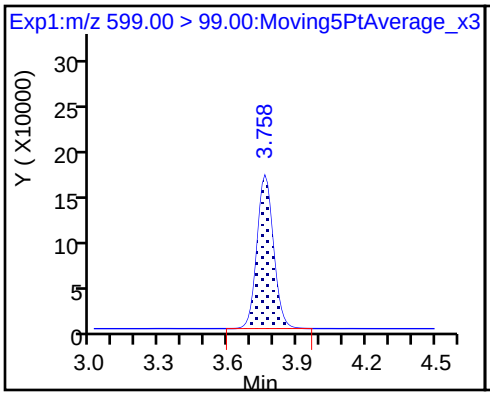
D 27 d3-NMeFOSAA



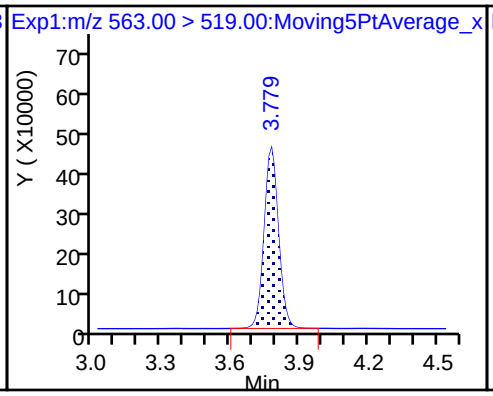
29 Perfluorodecane Sulfonic acid



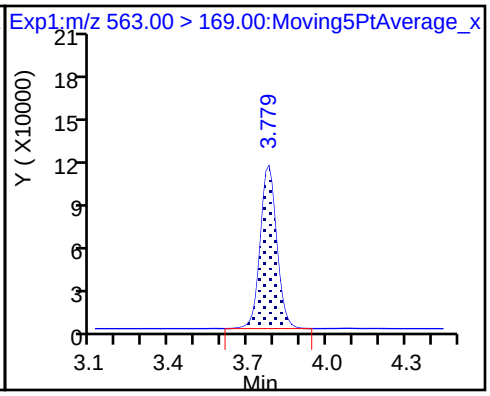
29 Perfluorodecane Sulfonic acid



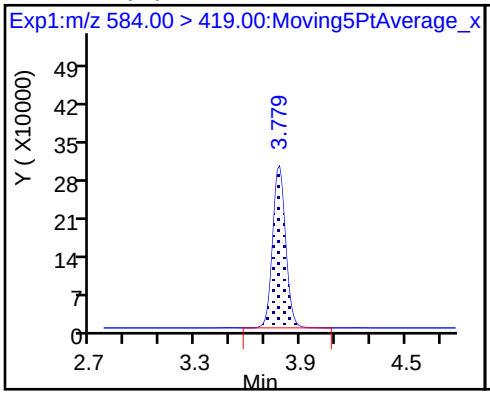
31 Perfluoroundecanoic acid



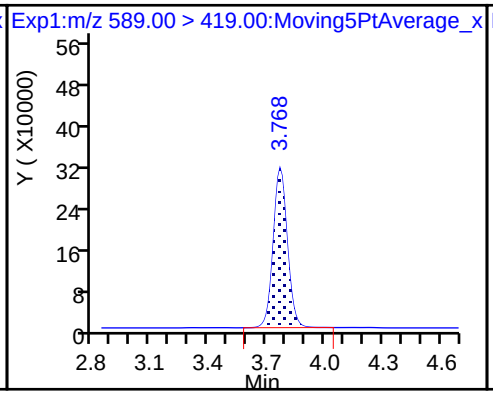
31 Perfluoroundecanoic acid



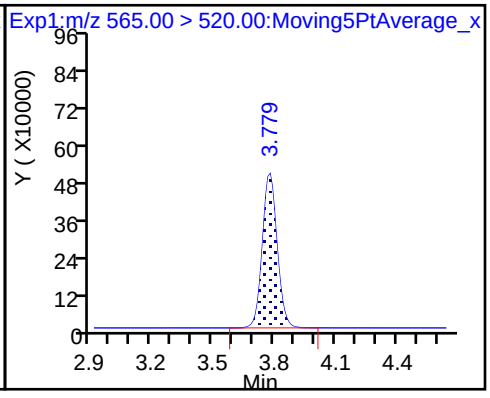
33 N-ethyl perfluorooctane sulfonamid



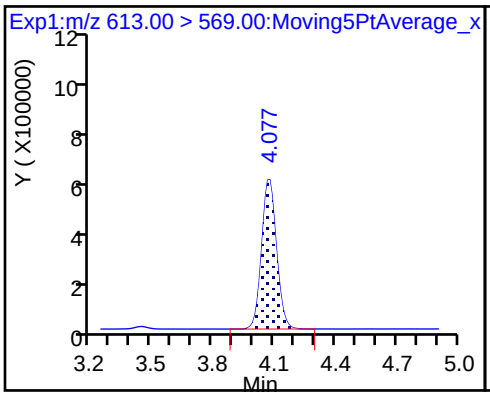
D 32 d5-NEtFOSAA



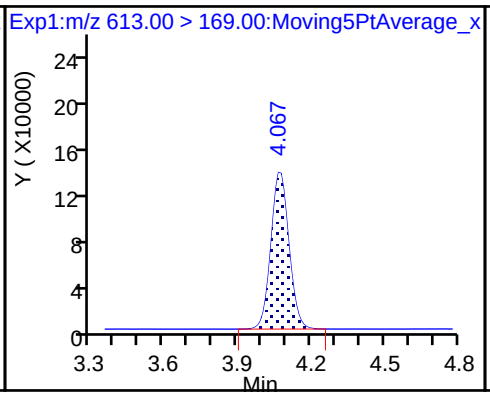
D 30 13C2 PFUnA



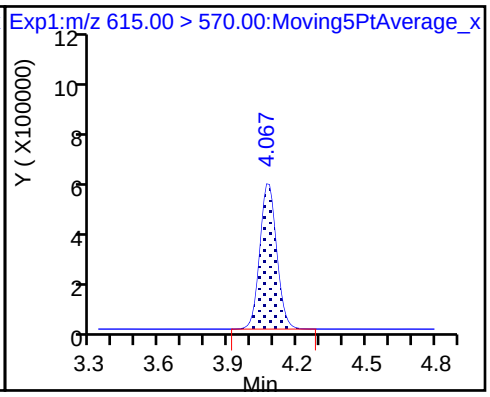
37 Perfluorododecanoic acid



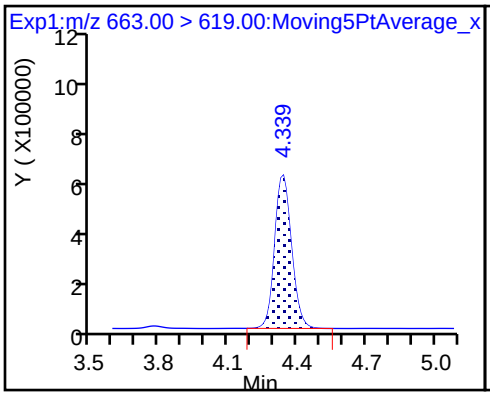
37 Perfluorododecanoic acid



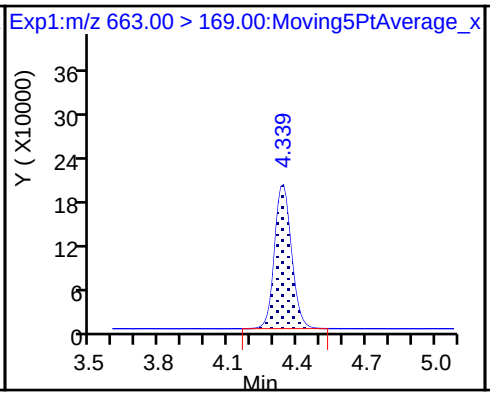
D 36 13C2 PFDoA



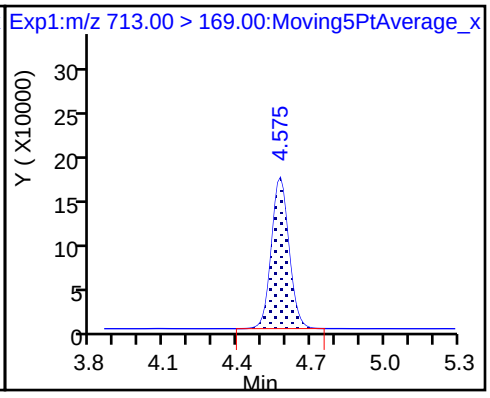
41 Perfluorotridecanoic acid



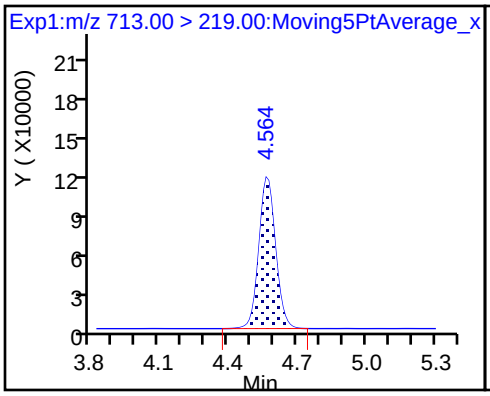
41 Perfluorotridecanoic acid



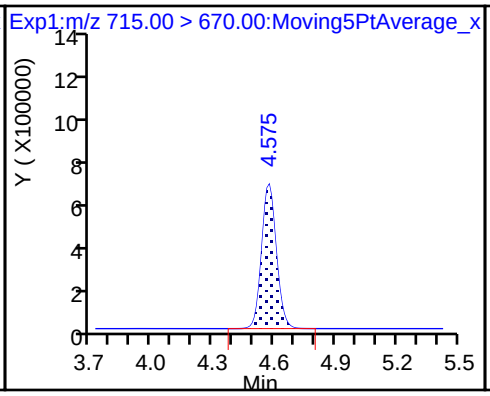
42 Perfluorotetradecanoic acid



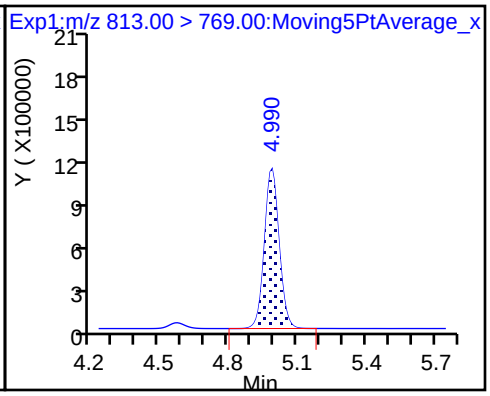
42 Perfluorotetradecanoic acid



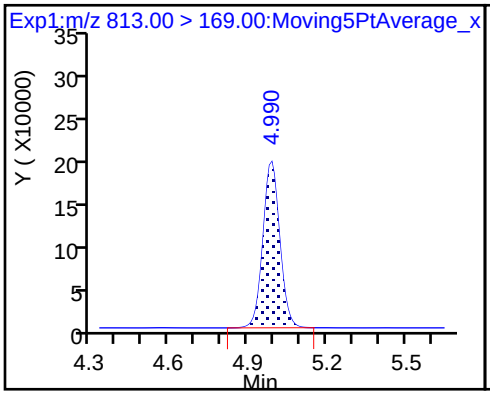
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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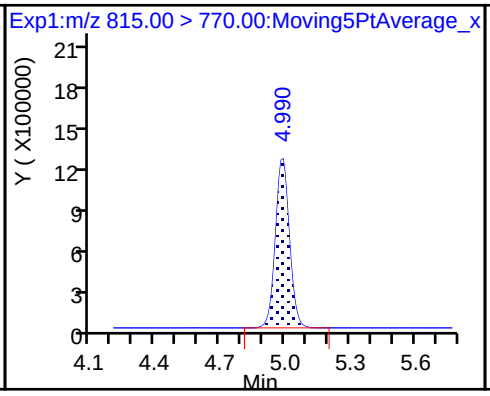
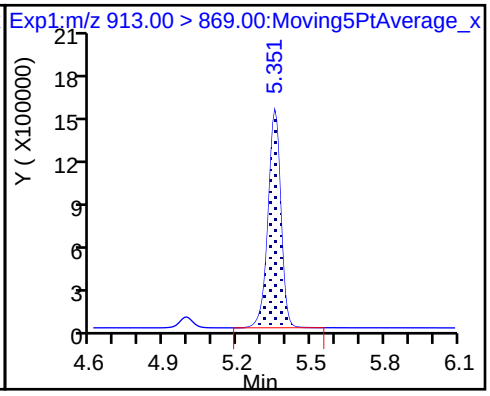
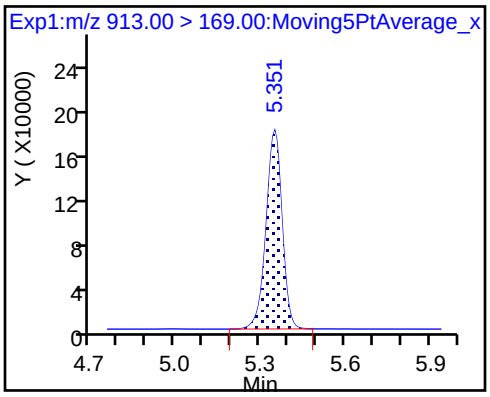


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215311/23 Calibration Date: 03/29/2018 02:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8904		0.945	1.00	-5.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.117		0.991	1.00	-0.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	79.74		0.907	0.884	2.6	50.0
4:2 FTS	AveID	16.15	15.14		0.875	0.934	-6.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9855		0.964	1.00	-3.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	0.9451		0.914	1.00	-8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.024		0.837	0.910	-8.0	40.0
6:2FTS	AveID	1.744	1.867		1.02	0.948	7.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.327		0.986	0.952	3.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.103		0.976	1.00	-2.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.005		1.01	1.00	0.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.059		0.882	0.928	-4.9	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9746		0.989	1.00	-1.1	40.0
8:2FTS	AveID	1.276	1.198		0.899	0.958	-6.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9845		0.996	1.00	-0.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.9467		0.946	1.00	-5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6390		0.906	0.964	-6.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9261		0.991	1.00	-0.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7882		0.914	1.00	-8.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.054		1.01	1.00	0.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.100		0.999	1.00	-0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2443		0.986	1.00	-1.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		1.07	1.00	7.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.015		1.10	1.00	9.8	50.0
13C4 PFBA	Ave	1.266	1.414		2.79	2.50	11.7	50.0
13C5 PFPeA	Ave	0.8399	0.9104		2.71	2.50	8.4	50.0
13C3-PFBS	Ave	0.0192	0.0201		2.44	2.33	4.8	50.0
M2-4:2FTS	Ave	0.1324	0.1386		2.45	2.34	4.7	50.0
13C2 PFHxA	Ave	0.9288	1.019		2.74	2.50	9.7	50.0
13C4-PFHpA	Ave	0.9164	1.020		2.78	2.50	11.3	50.0
18O2 PFHxS	Ave	1.130	1.250		2.62	2.37	10.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215311/23 Calibration Date: 03/29/2018 02:39

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.28LLFF_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2062		2.58	2.38	8.5	40.0
13C4 PFOA	Ave	0.9374	0.9699		2.59	2.50	3.5	50.0
13C4 PFOS	Ave	0.8225	0.8395		2.44	2.39	2.1	50.0
13C5 PFNA	Ave	0.8266	0.8215		2.49	2.50	-0.6	50.0
13C8 FOSA	Ave	1.109	1.192		2.69	2.50	7.5	50.0
M2-8:2FTS	Ave	0.2565	0.2321		2.17	2.40	-9.5	40.0
13C2 PFDA	Ave	0.7245	0.6959		2.40	2.50	-3.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3307		2.17	2.50	-13.3	50.0
d5-NEtFOSAA	Ave	0.4345	0.3708		2.13	2.50	-14.7	50.0
13C2 PFUnA	Ave	0.6482	0.5557		2.14	2.50	-14.3	50.0
13C2 PFDoA	Ave	0.7355	0.5989		2.04	2.50	-18.6	50.0
13C2-PFTeDA	Ave	0.8983	0.7676		2.14	2.50	-14.5	50.0
13C2-PFHxDA	Ave	1.473	1.206		2.05	2.50	-18.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_026.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 02:39:02 ALS Bottle#: 13 Worklist Smp#: 23
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:46 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.440	1.441	-0.001	0.531	6548078	2.79		112	89754	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.004	2332048	0.9450		94.5	643	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.709	-0.001	0.630	4217246	2.71		108	138459	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.708	0.0	1.000	1884819	0.99		99.1	808	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.643	86566	2.44		105	670	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2624658	0.9072		103	1676	
298.90 > 99.00	1.744	1.753	-0.009	1.000	1086198		2.42(1.25-3.74)		1606	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.965	1.965	0.0	1.000	526360	0.8752		93.7	33168	
D 60 M2-4:2FTS										
329.00 > 81.00	1.965	1.966	-0.001	0.725	599682	2.44		105	7984	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.008	2.008	0.0	1.005	1860647	0.9640		96.4	2781	
313.00 > 119.00	2.008	2.008	0.0	1.005	177718		10.47(5.03-15.10)		1919	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.737	4720053	2.74		110	122733	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.340	2.340	0.0	1.000	1786118	0.9136		91.4	1090	
363.00 > 169.00	2.340	2.340	0.0	1.000	709115		2.52(1.13-3.40)		1360	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.353	2.353	0.0	1.000	2158695	0.8374		92.0	10042	
399.00 > 99.00	2.353	2.353	0.0	1.000	736498		2.93(1.50-4.49)		3974	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.340	2.354	-0.014	0.864	4724790	2.78		111	81085	
D 11 18O2 PFHxS										
403.00 > 84.00	2.353	2.368	-0.015	0.868	5477237	2.62		111	86550	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.679	2.679	0.0	1.000	676139	1.01		107	7339	
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.697	-0.018	0.988	907460	2.58		109	22899	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.710	2.710	0.0	1.000	1981654	0.9761		97.6	738	
413.00 > 169.00	2.710	2.710	0.0	1.000	997336		1.99(0.84-2.52)		3351	
* 62 13C2-PFOA										
415.00 > 370.00	2.710	2.710	0.0		4632500	2.50			88894	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.710	2.710	0.0	1.000	1965298	0.9860		104	41408	
449.00 > 99.00	2.710	2.710	0.0	1.000	522003		3.76(1.94-5.82)		9350	
D 14 13C4 PFOA										
417.00 > 372.00	2.710	2.721	-0.011	1.000	4492864	2.59		103	68234	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.080	3.080	0.0	1.000	1528619	0.8821		95.1	3966	
499.00 > 99.00	3.080	3.080	0.0	1.000	362839		4.21(2.31-6.93)		3476	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.080	0.0	1.000	1530258	1.01		101	1740	
463.00 > 169.00	3.080	3.080	0.0	1.000	369816		4.14(1.90-5.69)		12333	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.136	3805587	2.48		99.4	59685	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.136	3717946	2.44		102	44458	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.415	3.415	0.0	1.000	2152678	0.9886		98.9	33836	
D 21 13C8 FOSA										
506.00 > 78.00	3.415	3.417	-0.002	1.260	5521959	2.69		107	50448	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.433	3.433	0.0	1.000	493680	0.8994		93.9	7579	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.442	3.442	0.0	1.000	1269531	1.00		99.6	7284	
513.00 > 169.00	3.442	3.442	0.0	1.000	234974		5.40(2.36-7.09)		6383	
D 26 M2-8:2FTS										
529.00 > 81.00	3.433	3.453	-0.020	1.267	1030011	2.17		90.5	31774	
D 23 13C2 PFDA										
515.00 > 470.00	3.442	3.462	-0.020	1.270	3223915	2.40		96.1	41489	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.599	3.599	0.0	1.000	580048	0.9459		94.6	5887	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.599	3.611	-0.012	1.328	1531822	2.17		86.7	34809	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.758	3.758	0.0	1.000	958245	0.9059		94.0	24340	
599.00 > 99.00	3.758	3.758	0.0	1.000	328510		2.92(1.39-4.16)		7360	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.000	811629	0.9143		91.4	4613	
563.00 > 169.00	3.779	3.779	0.0	1.000	207336		3.91(2.12-6.36)		9848	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.779	3.779	0.0	1.003	636296	0.99		99.1	9771	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.768	3.779	-0.011	1.390	1717749	2.13		85.3	4875	
D 30 13C2 PFUnA										
565.00 > 520.00	3.779	3.790	-0.011	1.394	2574169	2.14		85.7	51849	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.067	4.067	0.0	1.000	1170037	1.01		101	961	
613.00 > 169.00	4.067	4.067	0.0	1.000	290060		4.03(2.13-6.40)		5834	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.500	2774227	2.04		81.4	19936	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.329	0.0	1.000	1220551	1.00		99.9	521	
663.00 > 169.00	4.329	4.329	0.0	1.000	383343		3.18(1.25-3.76)		6321	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	347500	0.9859		98.6	7062	
713.00 > 219.00	4.564	4.575	-0.011	0.998	251562		1.38(0.71-2.13)		5068	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.688	3556086	2.14		85.5	19579	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.990	4.990	0.0	1.000	2224680	1.07		107	556	
813.00 > 169.00	4.990	4.990	0.0	1.000	360673		6.17(2.86-8.58)		3136	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.990	5.008	-0.018	1.841	5586314	2.05		81.9	15400	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	2268007	1.10		110	454	
913.00 > 169.00	5.351	5.351	0.0	1.000	292665		7.75(3.83-11.48)		3288	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 09:09:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_026.d

Injection Date: 29-Mar-2018 02:39:02 Instrument ID: A8_N

Lims ID: CCV L4

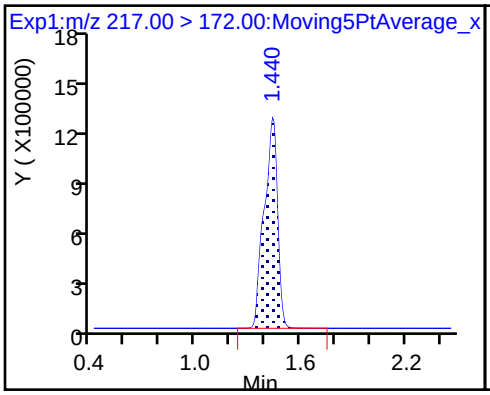
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 23

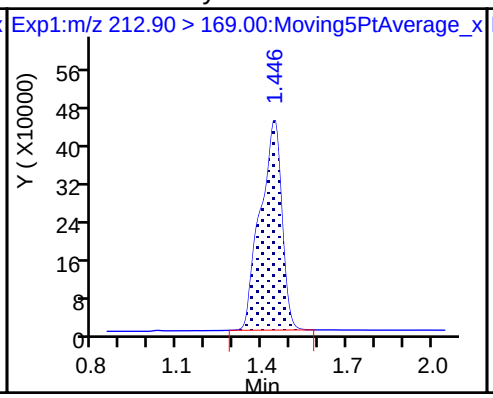
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

D 1 13C4 PFBA



2 Perfluorobutyric acid



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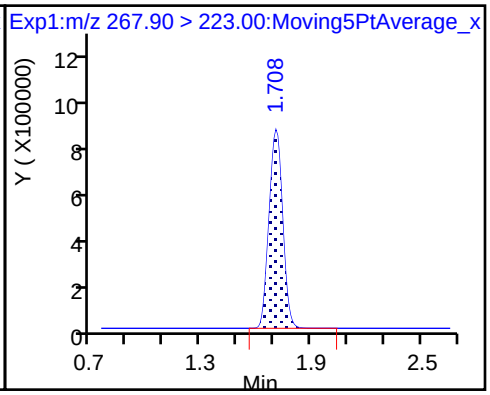
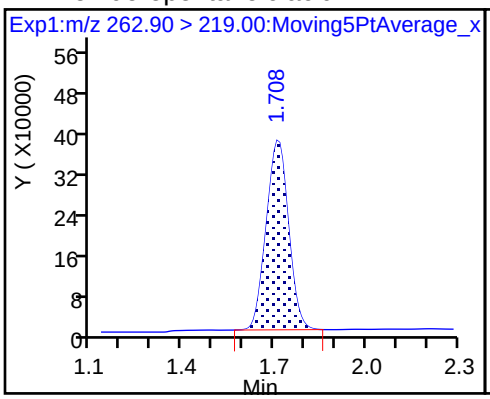
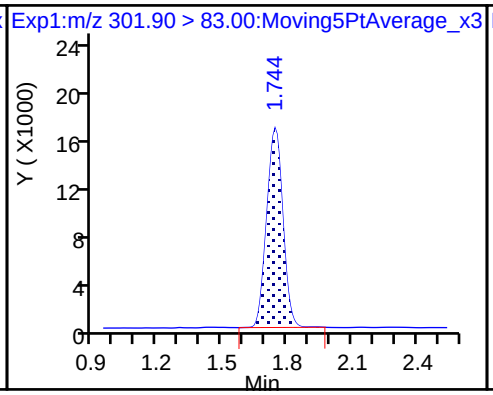


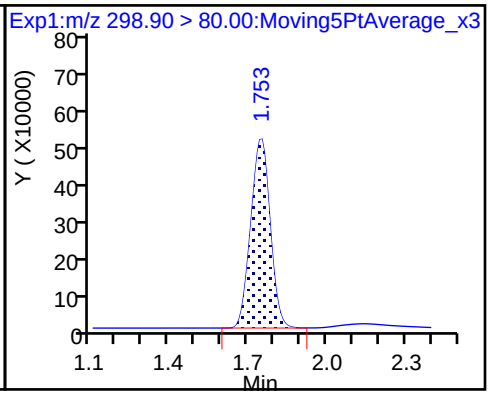
4 Perfluoropentanoic acid



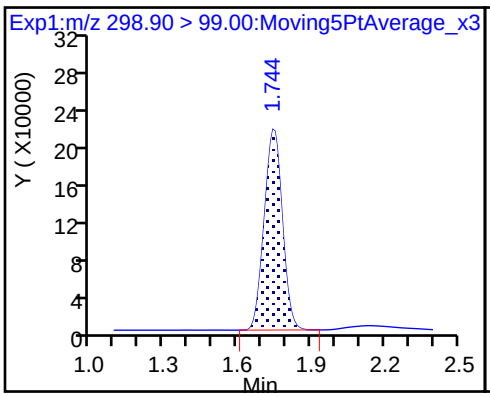
D 47 13C3-PFBS



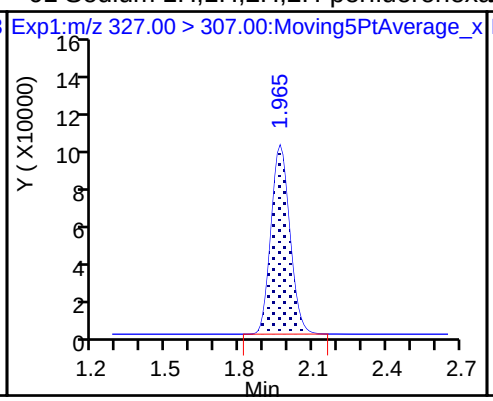
5 Perfluorobutanesulfonic acid



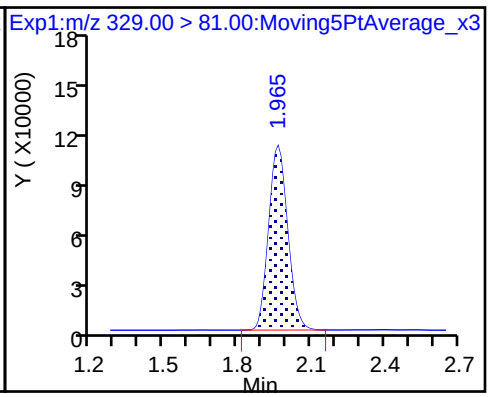
5 Perfluorobutanesulfonic acid



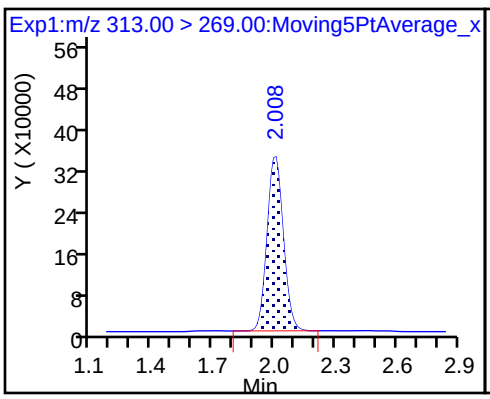
61 Sodium 1H,1H,2H,2H-perfluorohexane



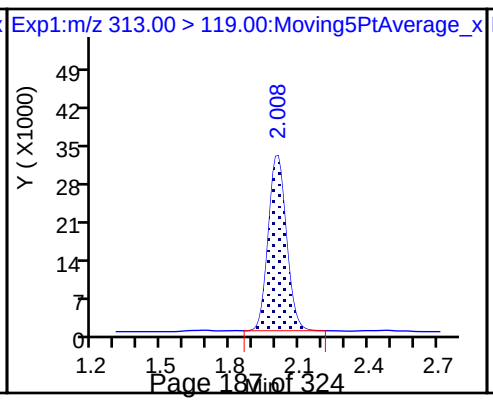
D 60 M2-4:2FTS



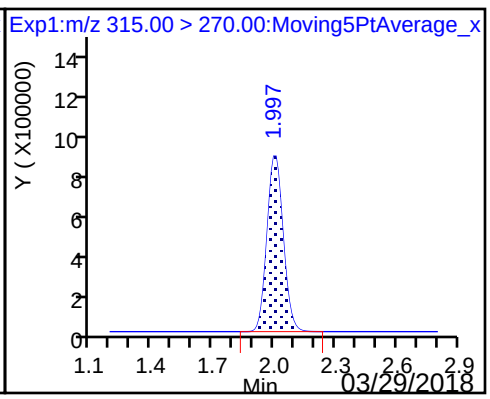
6 Perfluorohexanoic acid



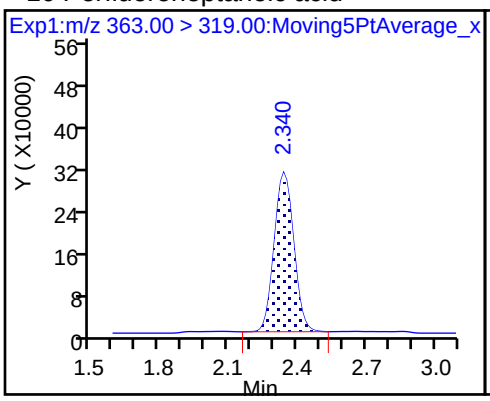
6 Perfluorohexanoic acid



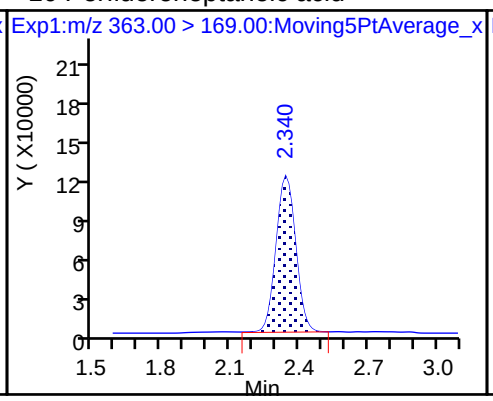
D 7 13C2 PFHxA



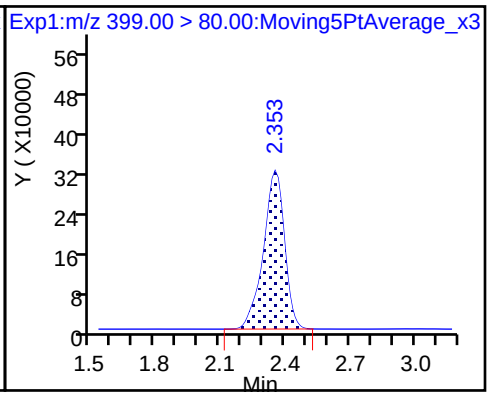
10 Perfluoroheptanoic acid



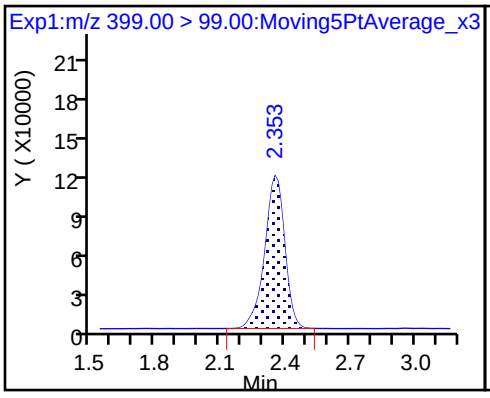
10 Perfluoroheptanoic acid



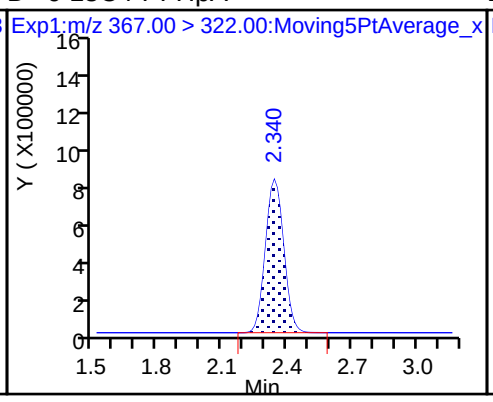
8 Perfluorohexanesulfonic acid



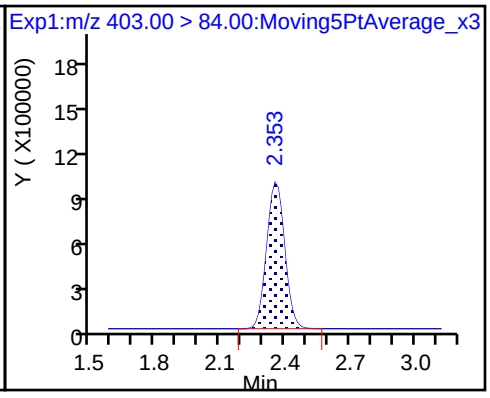
8 Perfluorohexanesulfonic acid



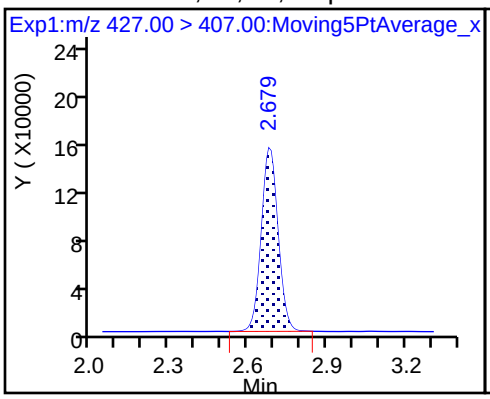
D 9 13C4-PFHpA



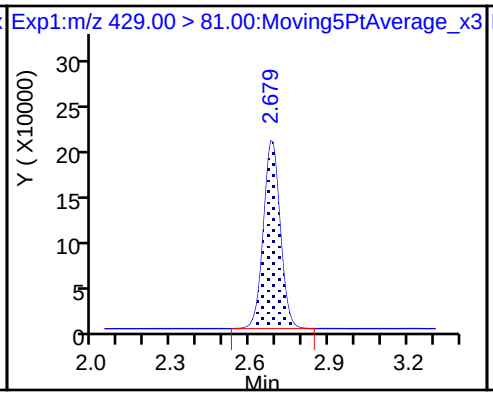
D 11 18O2 PFHxS



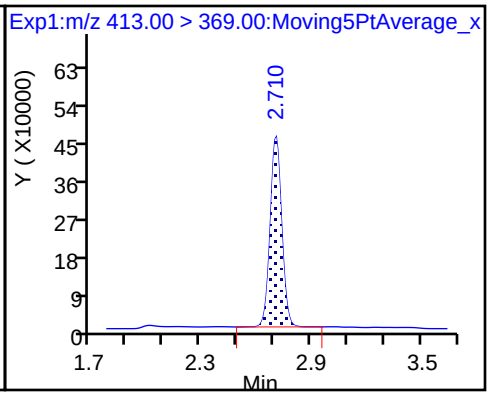
13 Sodium 1H,1H,2H,2H-perfluorooctane



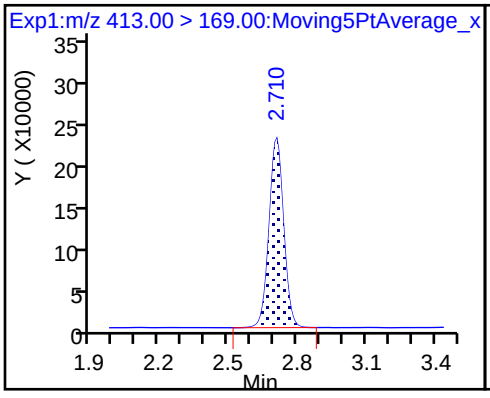
D 12 M2-6:2FTS



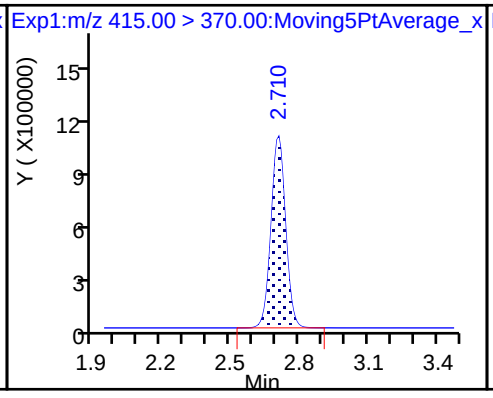
15 Perfluorooctanoic acid



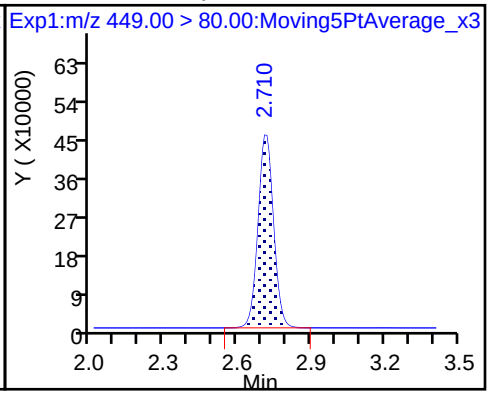
15 Perfluorooctanoic acid



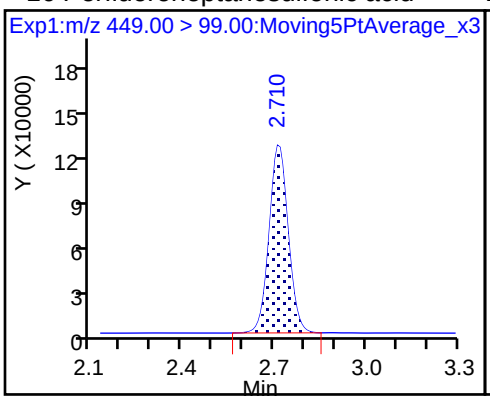
* 62 13C2-PFOA



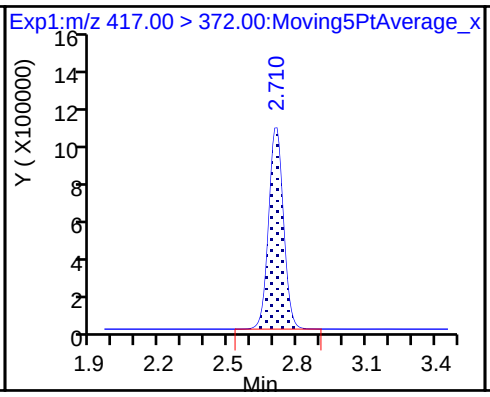
16 Perfluoroheptanesulfonic acid



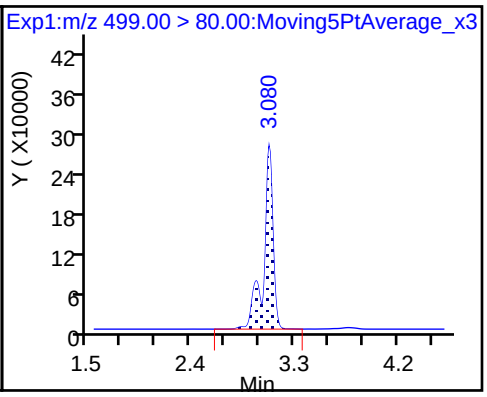
16 Perfluoroheptanesulfonic acid



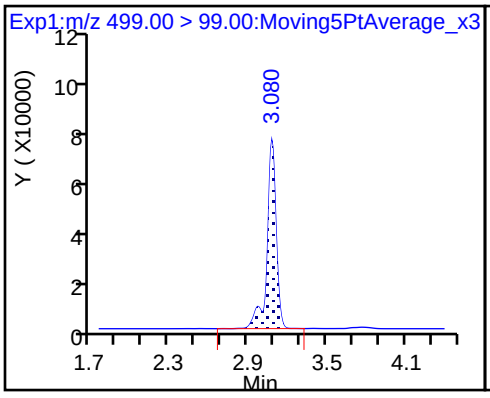
D 14 13C4 PFOA



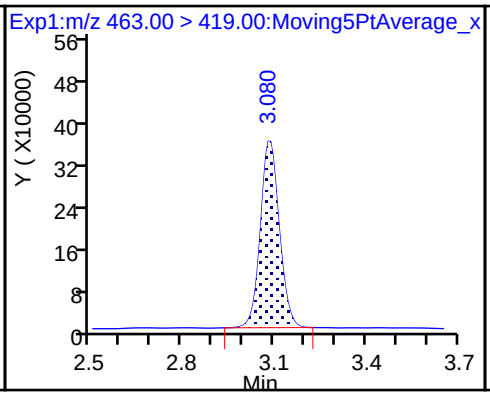
17 Perfluorooctane sulfonic acid



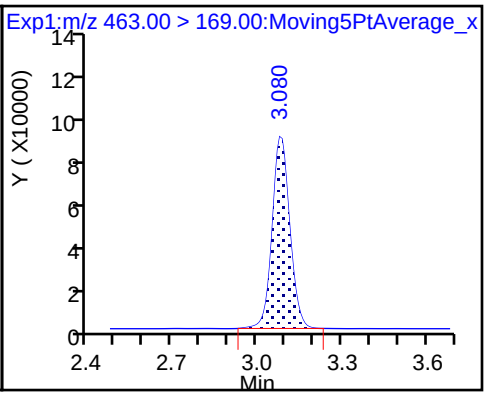
17 Perfluorooctane sulfonic acid



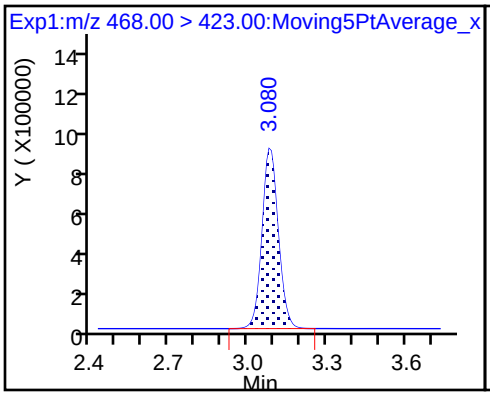
20 Perfluorononanoic acid



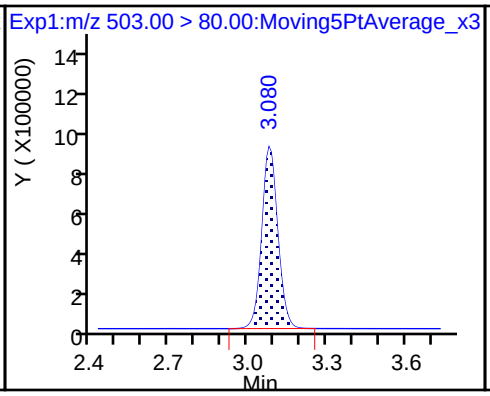
20 Perfluorononanoic acid



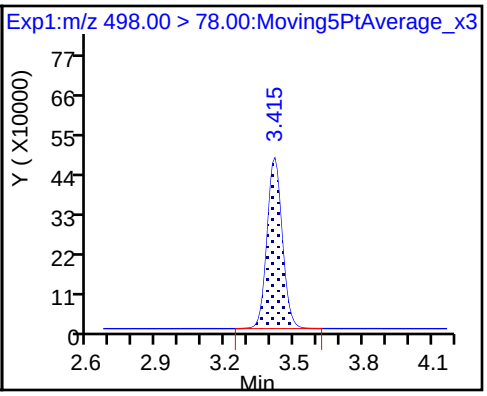
D 19 13C5 PFNA



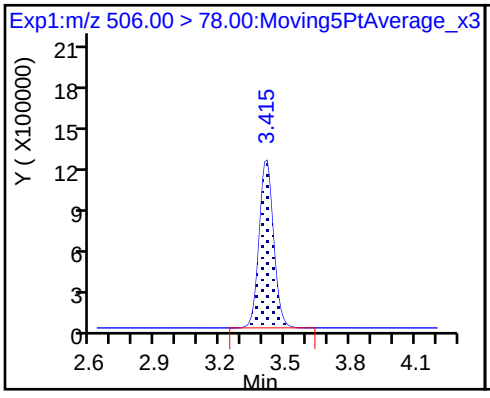
D 18 13C4 PFOS



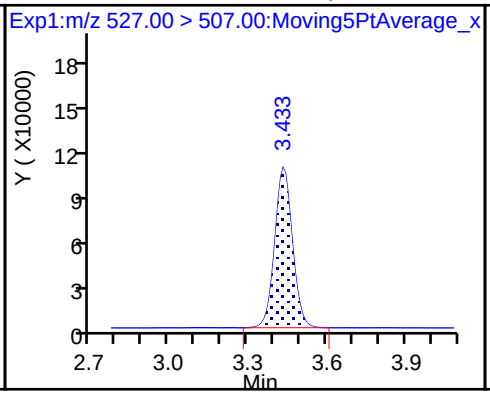
22 Perfluorooctane Sulfonamide



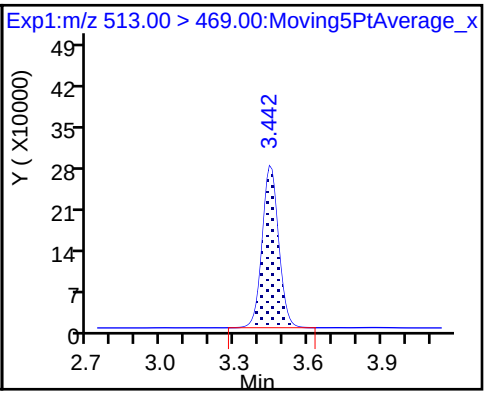
D 21 13C8 FOSA



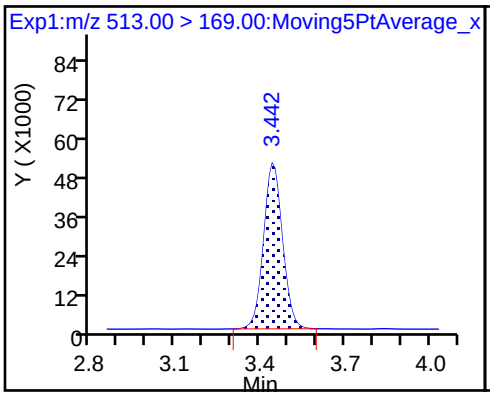
25 Sodium 1H,1H,2H,2H-perfluorodecan



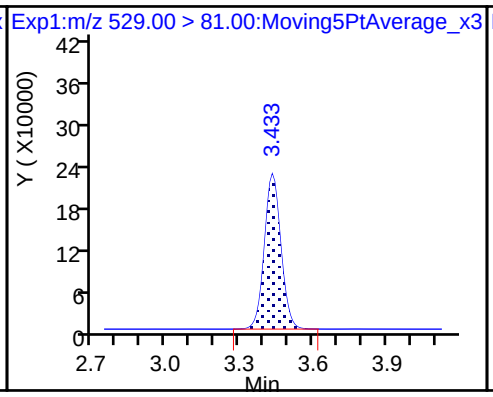
24 Perfluorodecanoic acid



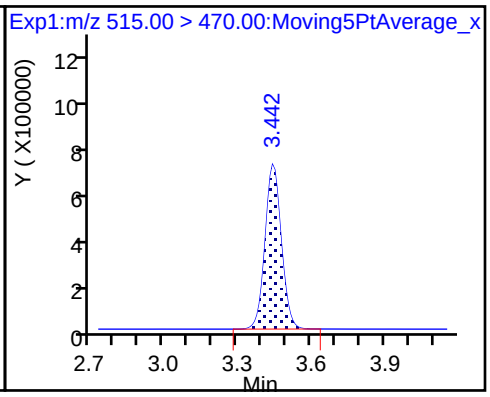
24 Perfluorodecanoic acid



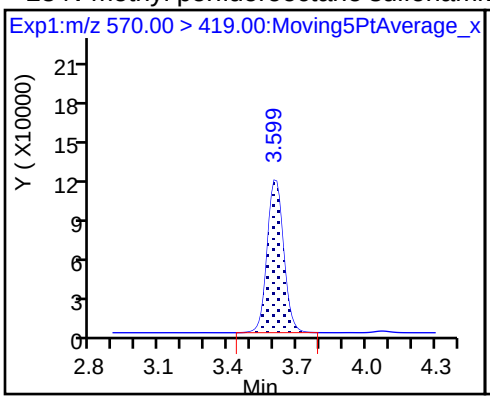
D 26 M2-8:2FTS



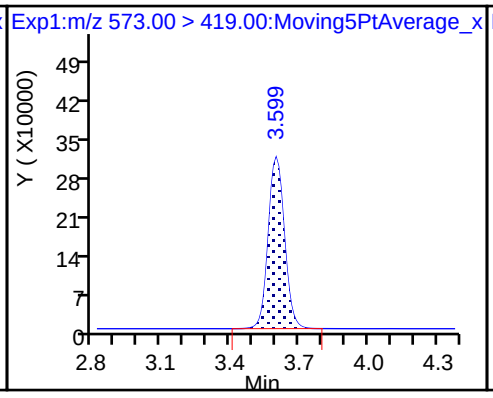
D 23 13C2 PFDA



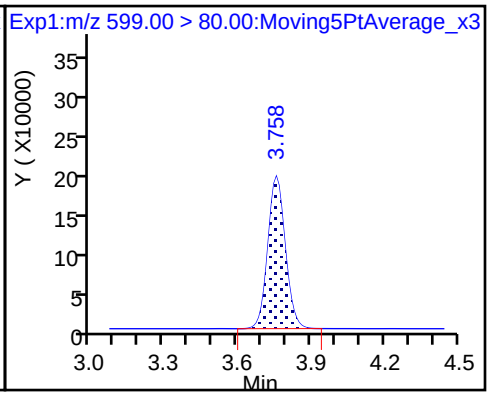
28 N-methyl perfluorooctane sulfonami



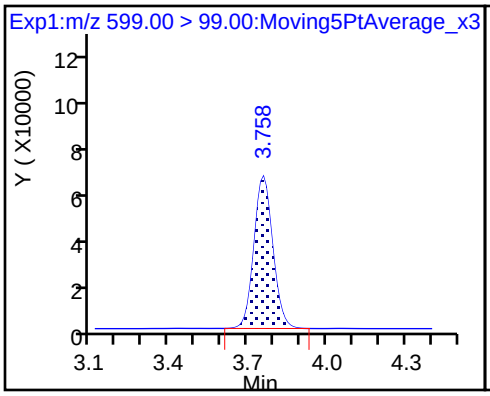
D 27 d3-NMeFOSAA



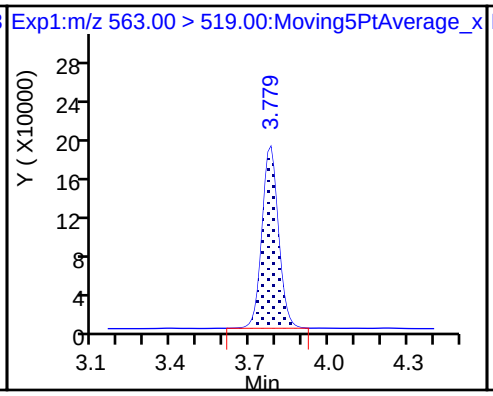
29 Perfluorodecane Sulfonic acid



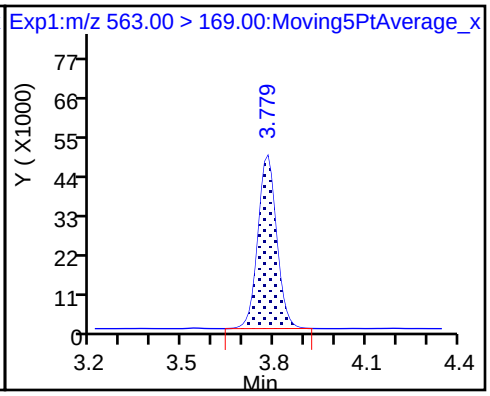
29 Perfluorodecane Sulfonic acid



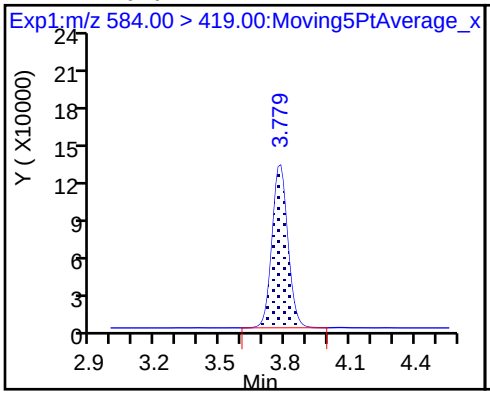
31 Perfluoroundecanoic acid



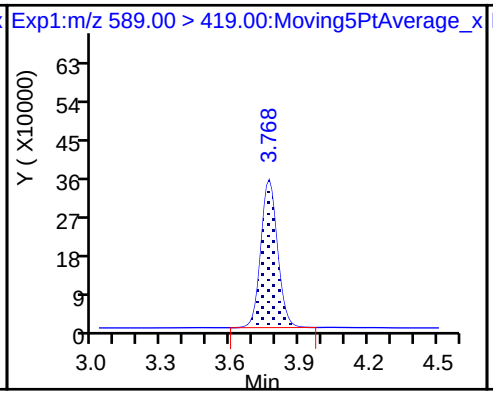
31 Perfluoroundecanoic acid



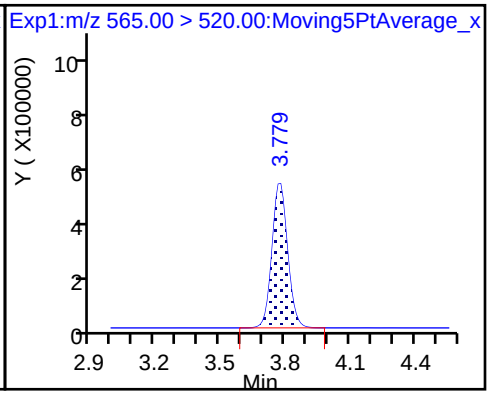
33 N-ethyl perfluorooctane sulfonamid



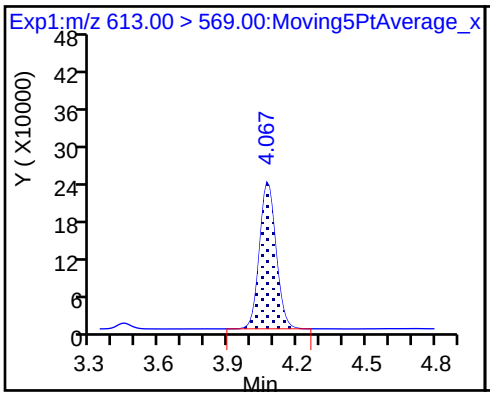
D 32 d5-NEtFOSAA



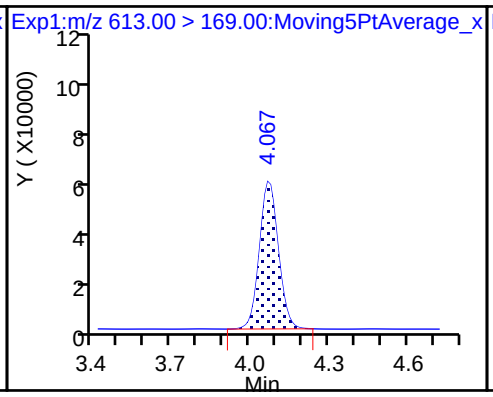
D 30 13C2 PFUnA



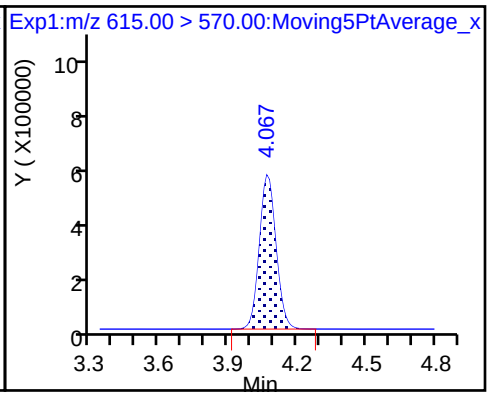
37 Perfluorododecanoic acid



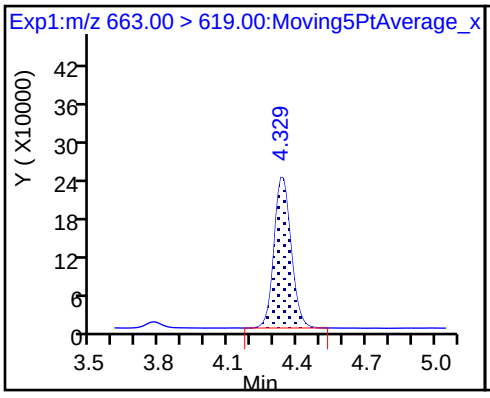
37 Perfluorododecanoic acid



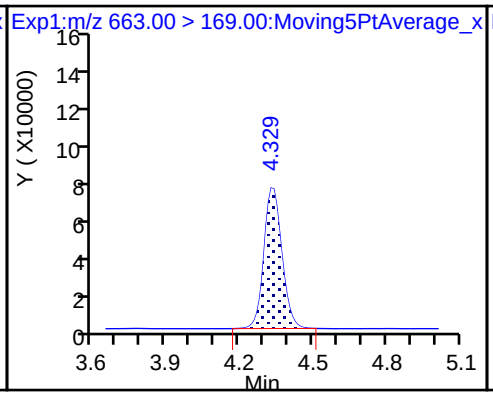
D 36 13C2 PFDoA



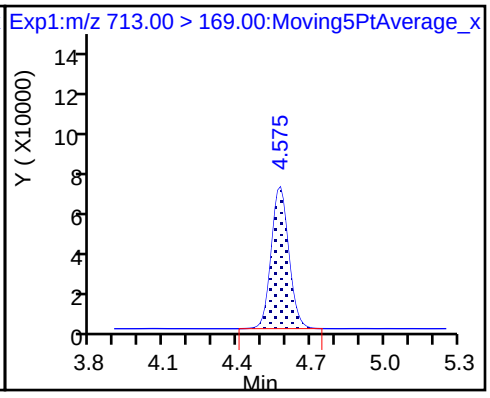
41 Perfluorotridecanoic acid



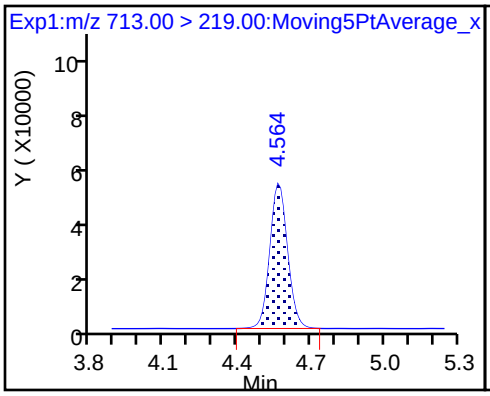
41 Perfluorotridecanoic acid



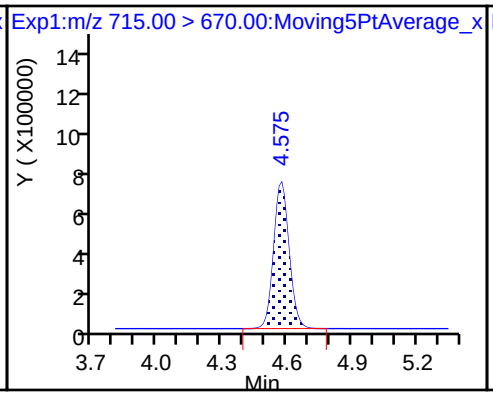
42 Perfluorotetradecanoic acid



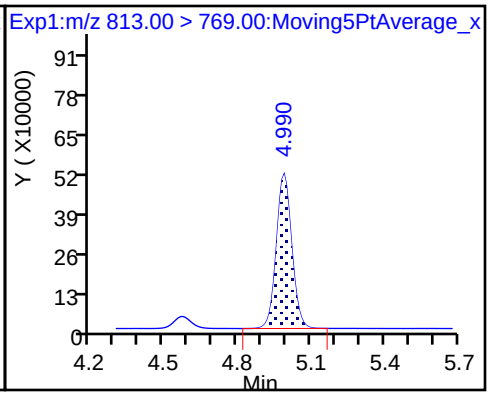
42 Perfluorotetradecanoic acid



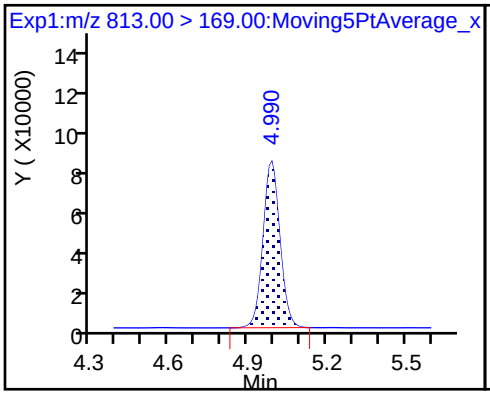
D 43 13C2-PFTeDA



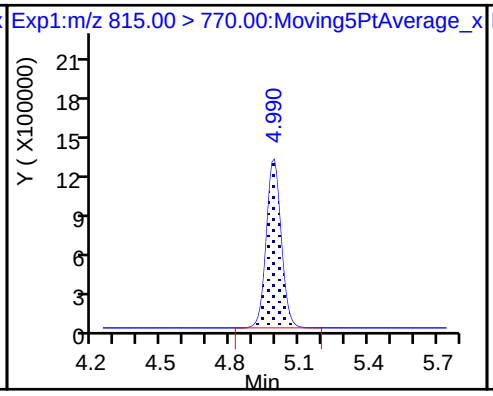
45 Perfluorohexadecanoic acid



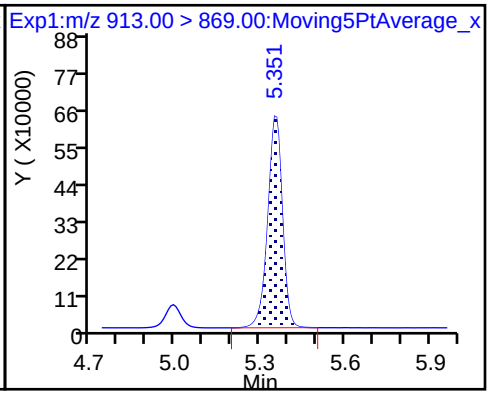
45 Perfluorohexadecanoic acid



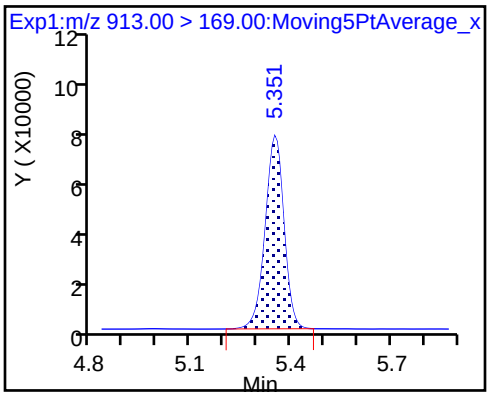
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCVL 320-215399/2 Calibration Date: 03/29/2018 08:56

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9285		0.0493	0.0500	-1.5	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.165		0.0517	0.0500	3.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	80.41		0.0457	0.0442	3.5	50.0
4:2 FTS	AveID	16.15	15.99		0.130	0.0467	-1.0	
Perfluorohexanoic acid (PFHxA)	AveID	1.022	1.004		0.0491	0.0500	-1.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.015		0.0491	0.0500	-1.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.297		0.0530	0.0455	16.5	50.0
6:2FTS	AveID	1.744	1.785		0.0500	0.0474	2.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.216		0.0538	0.0500	7.6	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.297		0.0482	0.0476	1.2	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	0.9903		0.0496	0.0500	-0.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.101		0.0459	0.0464	-1.1	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.9624		0.0488	0.0500	-2.4	50.0
8:2FTS	AveID	1.276	1.321		0.0500	0.0479	3.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9780		0.0495	0.0500	-1.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.226		0.0780	0.0500	22.5	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6790		0.0481	0.0482	-0.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9799		0.0524	0.0500	4.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.9895		0.0574	0.0500	14.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.177		0.0563	0.0500	12.5	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.096		0.0498	0.0500	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2905		0.0586	0.0500	17.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.400		0.0528	0.0500	5.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	0.9869		0.0534	0.0500	6.7	50.0
13C4 PFBA	Ave	1.266	1.341		2.65	2.50	5.9	50.0
13C5 PFPeA	Ave	0.8399	0.8930		2.66	2.50	6.3	50.0
13C3-PFBS	Ave	0.0192	0.0201		2.44	2.33	4.9	50.0
M2-4:2FTS	Ave	0.1324	0.1504		2.65	2.34	13.6	50.0
13C2 PFHxA	Ave	0.9288	1.006		2.71	2.50	8.3	50.0
13C4-PFHpA	Ave	0.9164	0.9652		2.63	2.50	5.3	50.0
18O2 PFHxS	Ave	1.130	1.174		2.46	2.37	3.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCVL 320-215399/2 Calibration Date: 03/29/2018 08:56

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2243		2.80	2.38	18.1	50.0
13C4 PFOA	Ave	0.9374	0.9553		2.55	2.50	1.9	50.0
13C4 PFOS	Ave	0.8225	0.8124		2.36	2.39	-1.2	50.0
13C5 PFNA	Ave	0.8266	0.8137		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.137		2.56	2.50	2.5	50.0
M2-8:2FTS	Ave	0.2565	0.2515		2.35	2.40	-1.9	50.0
13C2 PFDA	Ave	0.7245	0.6835		2.36	2.50	-5.7	50.0
d3-NMeFOSAA	Ave	0.3814	0.3462		2.27	2.50	-9.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3834		2.21	2.50	-11.8	50.0
13C2 PFUnA	Ave	0.6482	0.5618		2.17	2.50	-13.3	50.0
13C2 PFDoA	Ave	0.7355	0.5827		1.98	2.50	-20.8	50.0
13C2-PFTeDA	Ave	0.8983	0.7955		2.21	2.50	-11.5	50.0
13C2-PFHxDA	Ave	1.473	1.144		1.94	2.50	-22.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 29-Mar-2018 08:56:06 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:53:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.428	0.006	1.000	117457	0.0493		98.5	43.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.537	6324809	2.65		106	84704	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.691	0.0	0.995	98190	0.0517		103	35.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.636	4212888	2.66		106	135361	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.726	0.009	1.005	134849	0.0457		103	88.0	
298.90 > 99.00	1.735	1.726	0.009	1.005	54630		2.47(1.25-3.74)		83.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.735	-0.008	0.646	88219	2.44		105	673	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	28329	0.0462		99.0	1704	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.955	-0.010	0.728	662741	2.65		114	12222	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.976	0.010	1.000	95318	0.0491		98.2	154	
313.00 > 119.00	1.986	1.976	0.010	1.000	8421		11.32(5.03-15.10)		95.0	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.986	0.0	0.743	4746836	2.71		108	106945	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.310	0.005	1.000	92486	0.0491		98.2	62.0	
363.00 > 169.00	2.315	2.310	0.005	1.000	38186		2.42(1.13-3.40)		73.2	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.323	0.005	1.000	130735	0.0530		117	705	
399.00 > 99.00	2.328	2.323	0.005	1.000	39692		3.29(1.50-4.49)		260	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.328	-0.013	0.866	4553828	2.63		105	109021	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.871	5239034	2.46		104	67895	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.649	2.652	-0.003	1.000	35812	0.0485		102	218	
D 12 M2-6:2FTS										
429.00 > 81.00	2.649	2.663	-0.014	0.991	1005154	2.80		118	38438	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.676	-0.003	1.000	109580	0.0538		108	31.9	
413.00 > 169.00	2.673	2.676	-0.003	1.000	54581		2.01(0.84-2.52)		173	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.676	-0.003		4717799	2.50			89645	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.684	-0.003	1.000	94669	0.0482		101	5463	
449.00 > 99.00	2.681	2.684	-0.003	1.000	24184		3.91(1.94-5.82)		467	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.687	-0.014	1.000	4506729	2.55		102	85138	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.046	-0.002	1.000	78355	0.0459		98.9	168	
499.00 > 99.00	3.051	3.046	0.005	1.002	17708		4.42(2.31-6.93)		145	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.046	-0.002	1.000	76029	0.0496		99.3	73.5	
463.00 > 169.00	3.044	3.046	-0.002	1.000	19949		3.81(1.90-5.69)		480	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.058	-0.014	1.139	3838689	2.46		98.4	72126	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.058	-0.014	1.139	3664245	2.36		98.8	52933	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.383	0.006	1.003	103213	0.0488		97.6	2761	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.388	-0.008	1.265	5362294	2.56		102	53285	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.398	3.402	-0.004	1.000	30041	0.0496		104	247	
D 26 M2-8:2FTS										
529.00 > 81.00	3.398	3.406	-0.008	1.271	1136839	2.35		98.1	35016	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.411	-0.004	1.000	63071	0.0495		99.0	386	
513.00 > 169.00	3.407	3.411	-0.004	1.000	12456		5.06(2.36-7.09)		463	
D 23 13C2 PFDA										
515.00 > 470.00	3.407	3.424	-0.017	1.275	3224388	2.36		94.3	53811	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.561	3.565	-0.004	1.000	40032	0.0612		122	468	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.561	3.569	-0.008	1.333	1633203	2.27		90.8	28537	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.723	-0.006	1.000	50179	0.0481		99.9	1753	
599.00 > 99.00	3.717	3.723	-0.006	1.000	16384		3.06(1.39-4.16)		491	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.727	3.733	-0.006	1.000	35451	0.0524		105	693	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.744	-0.007	1.000	52451	0.0574		115	313	
563.00 > 169.00	3.737	3.744	-0.007	1.000	9698		5.41(2.12-6.36)		389	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.748	-0.021	1.395	1808866	2.21		88.2	4363	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.748	-0.011	1.398	2650407	2.17		86.7	75744	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.025	4.031	-0.006	1.000	64731	0.0563		113	48.7	
613.00 > 169.00	4.035	4.031	0.004	1.003	13170		4.92(2.13-6.40)		374	
D 36 13C2 PFDoA										
615.00 > 570.00	4.025	4.047	-0.022	1.506	2749128	1.98		79.2	22743	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.294	0.004	1.000	60236	0.0498		99.5	24.2	
663.00 > 169.00	4.289	4.294	-0.005	0.998	19633		3.07(1.25-3.76)		420	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.533	4.540	-0.007	1.000	21800	0.0586		117	450	
713.00 > 219.00	4.522	4.540	-0.018	0.998	14587		1.49(0.71-2.13)		377	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.533	4.554	-0.021	1.696	3752803	2.21		88.5	26233	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.946	4.952	-0.006	1.000	151186	0.0528		106	38.4	
813.00 > 169.00	4.946	4.952	-0.006	1.000	25635		5.90(2.86-8.58)		388	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.946	4.973	-0.027	1.851	5397890	1.94		77.7	16593	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.307	5.319	-0.012	1.000	106543	0.0534		107	19.2	
913.00 > 169.00	5.307	5.319	-0.012	1.000	12763		8.35(3.83-11.48)		204	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 10:10:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_005.d

Injection Date: 29-Mar-2018 08:56:06 Instrument ID: A8_N

Lims ID: CCVL

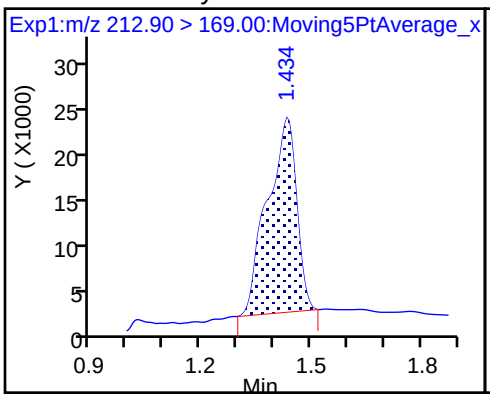
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

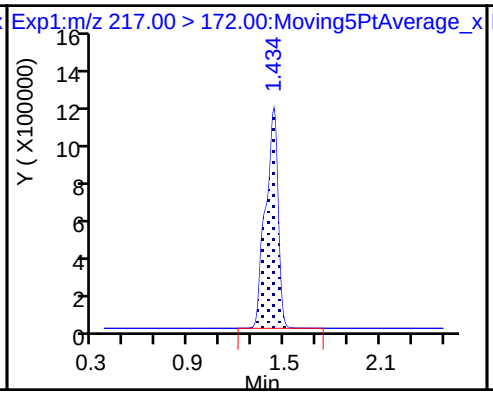
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

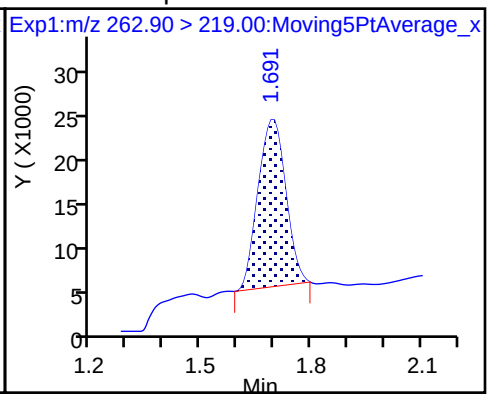
2 Perfluorobutyric acid



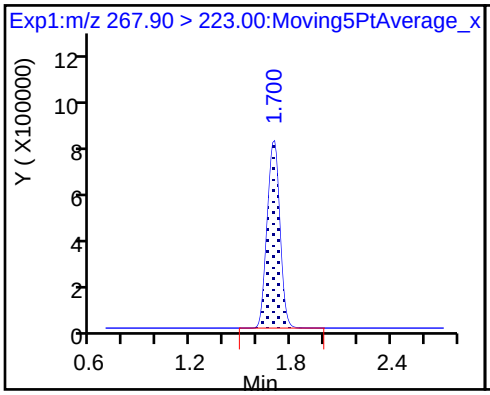
D 1 13C4 PFBA



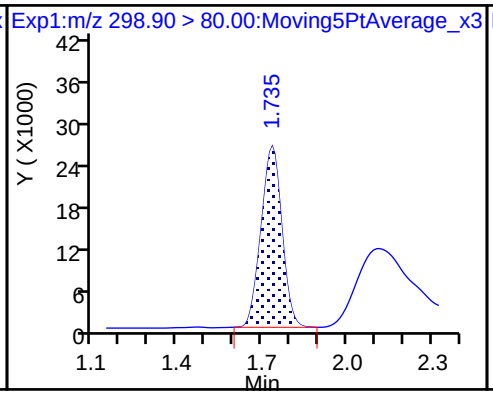
4 Perfluoropentanoic acid



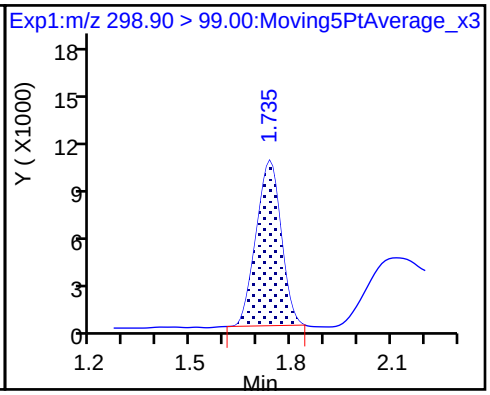
D 3 13C5-PFPeA



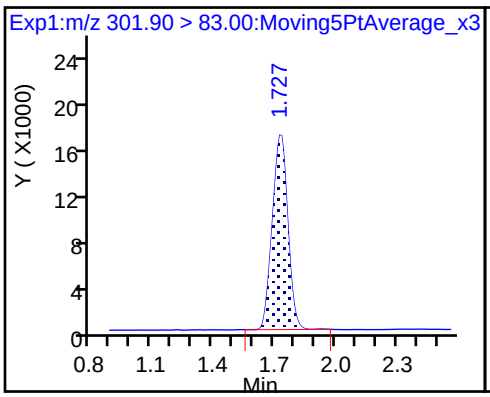
5 Perfluorobutanesulfonic acid



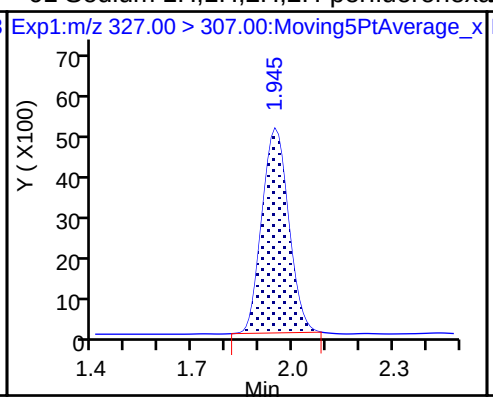
5 Perfluorobutanesulfonic acid



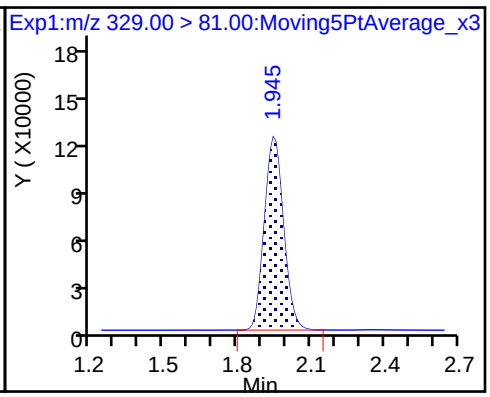
D 47 13C3-PFBS



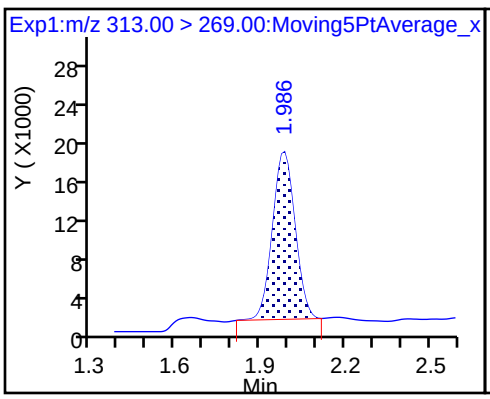
61 Sodium 1H,1H,2H,2H-perfluorohexane



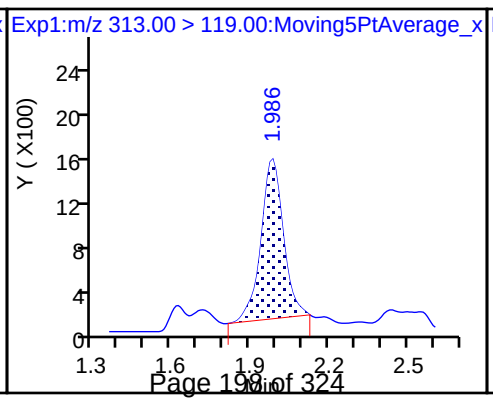
D 60 M2-4:2FTS



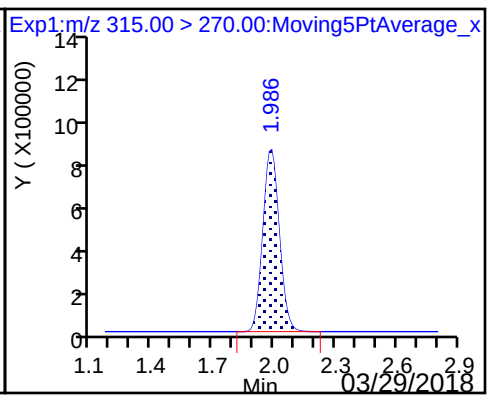
6 Perfluorohexanoic acid



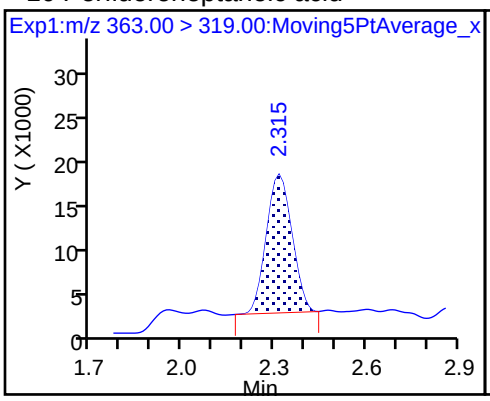
6 Perfluorohexanoic acid



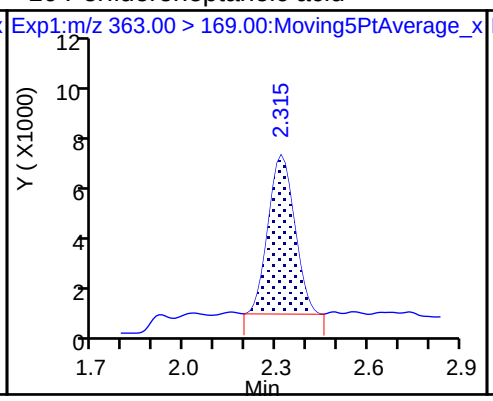
D 7 13C2 PFHxA



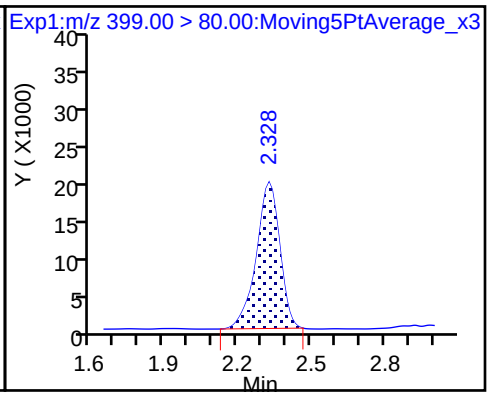
10 Perfluoroheptanoic acid



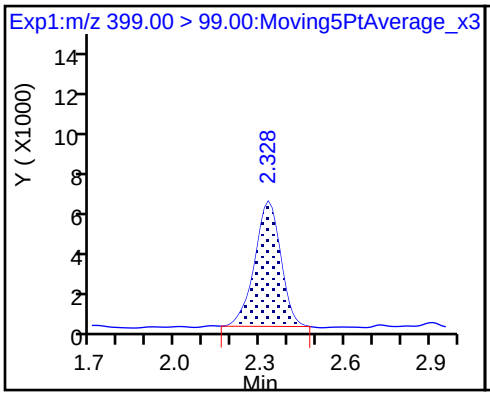
10 Perfluoroheptanoic acid



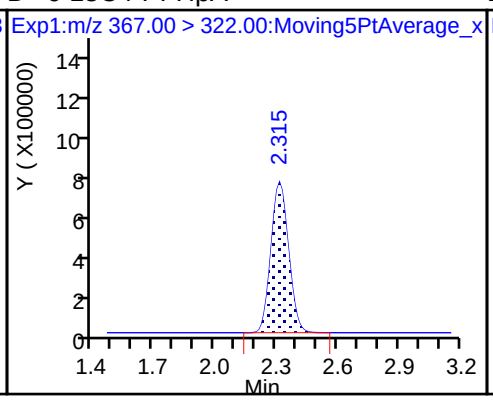
8 Perfluorohexanesulfonic acid



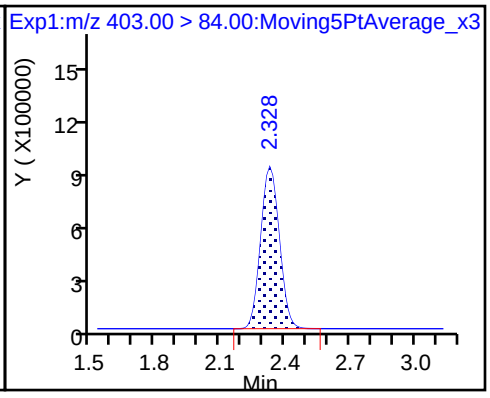
8 Perfluorohexanesulfonic acid



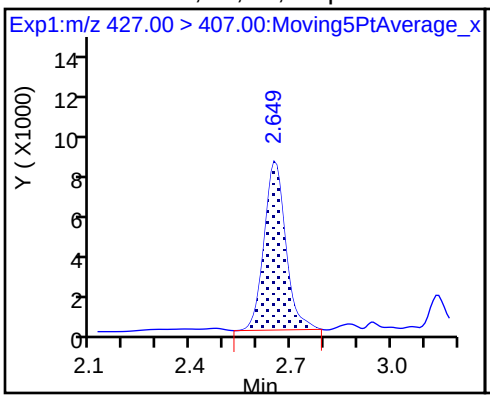
D 9 13C4-PFHpA



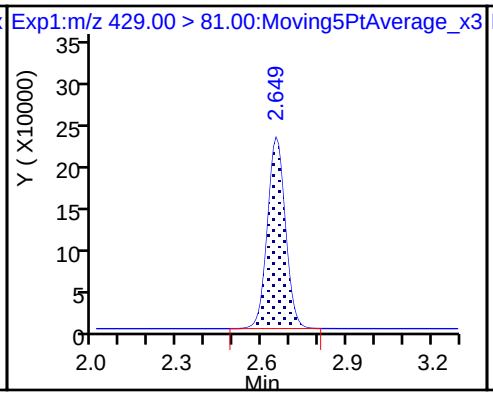
D 11 18O2 PFHxS



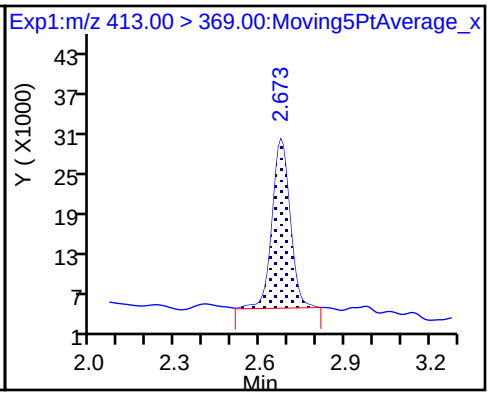
13 Sodium 1H,1H,2H,2H-perfluorooctane



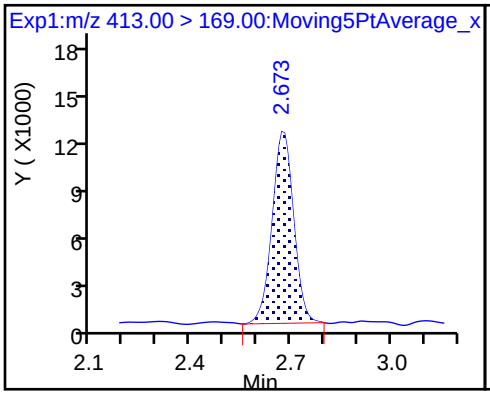
D 12 M2-6:2FTS



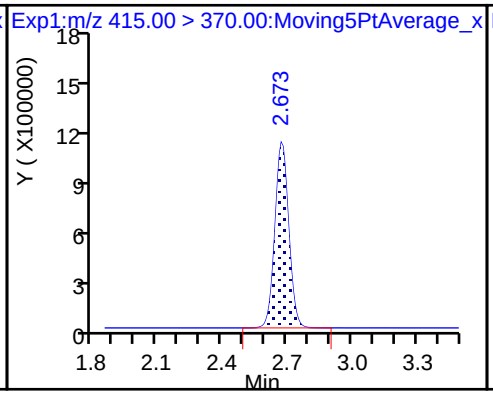
15 Perfluorooctanoic acid



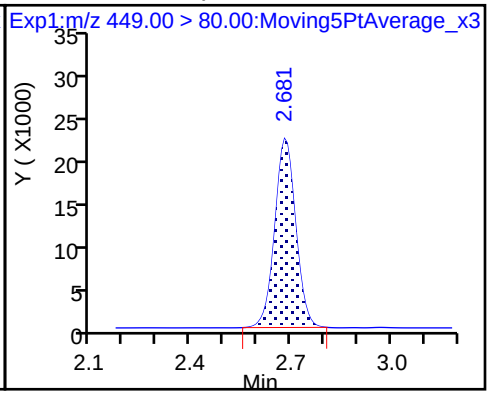
15 Perfluorooctanoic acid



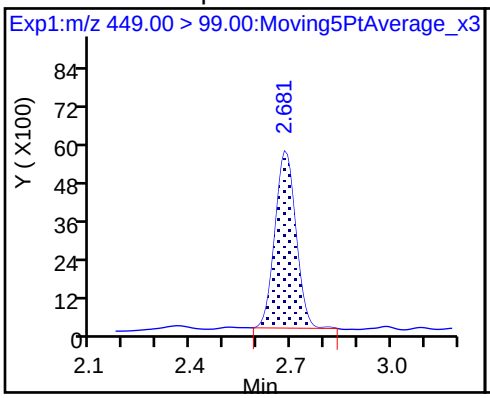
* 62 13C2-PFOA



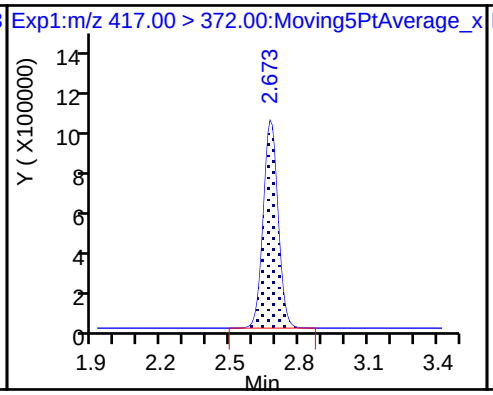
16 Perfluoroheptanesulfonic acid



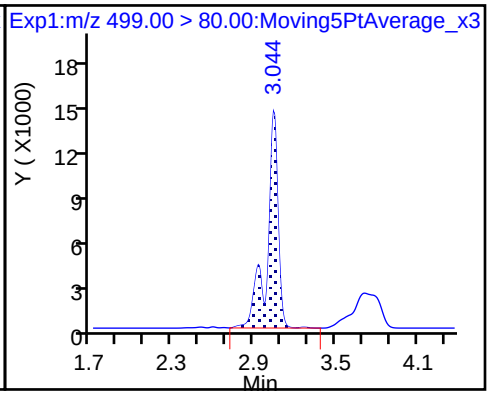
16 Perfluoroheptanesulfonic acid



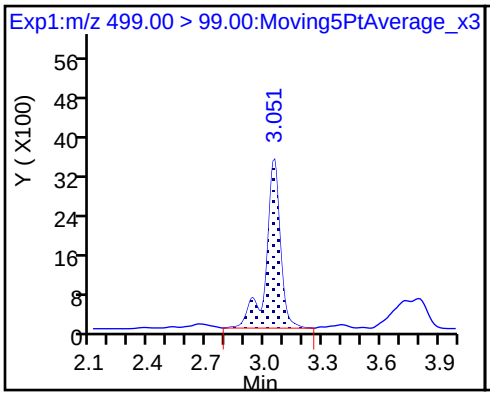
D 14 13C4 PFOA



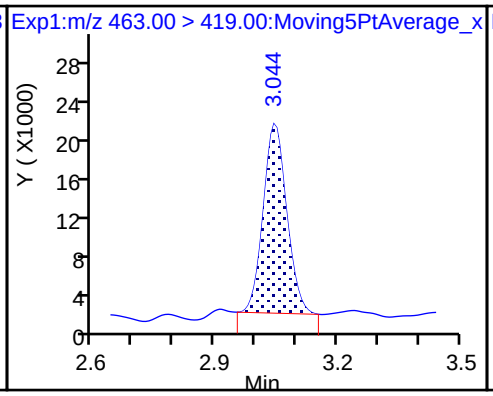
17 Perfluorooctane sulfonic acid



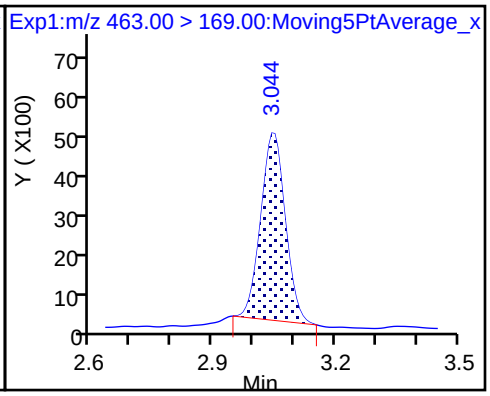
17 Perfluorooctane sulfonic acid



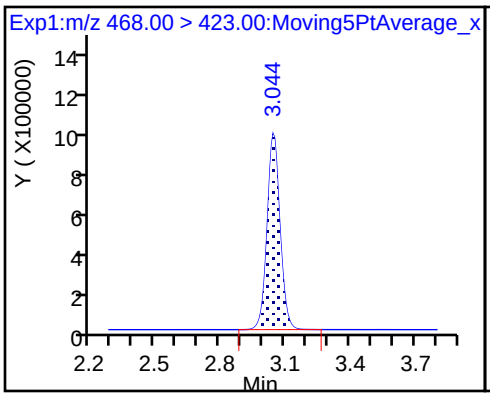
20 Perfluorononanoic acid



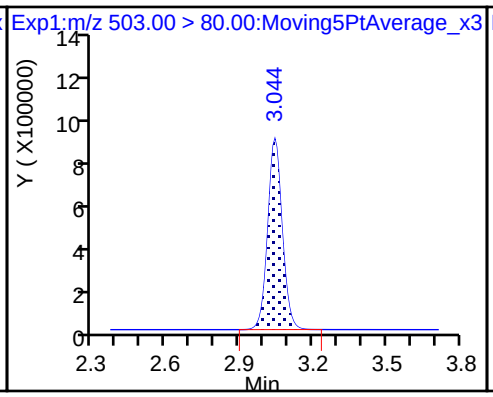
20 Perfluorononanoic acid



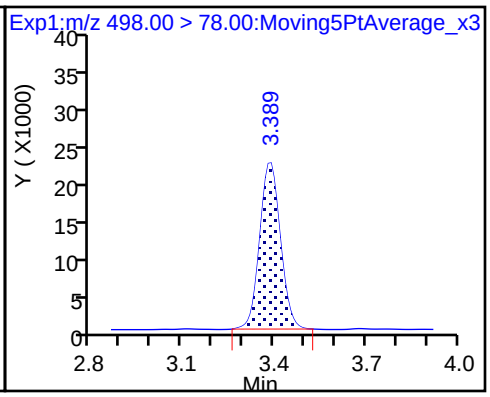
D 19 13C5 PFNA



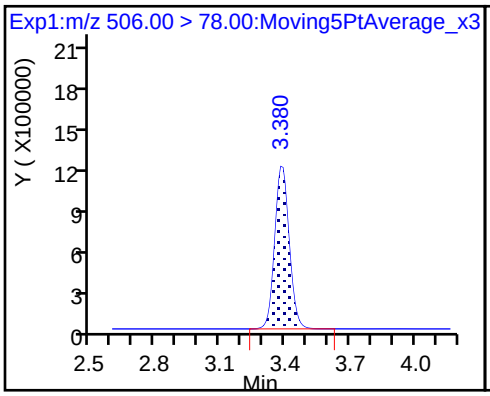
D 18 13C4 PFOS



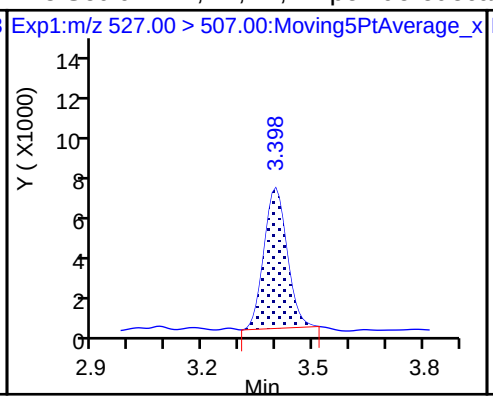
22 Perfluorooctane Sulfonamide



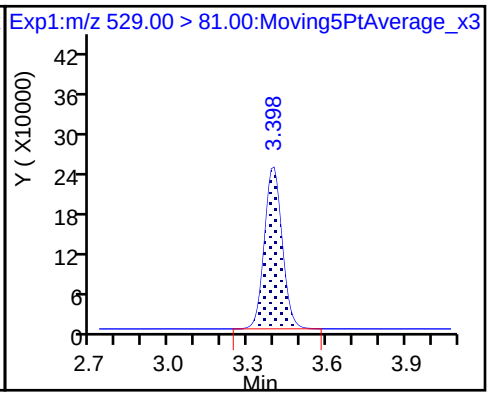
D 21 13C8 FOSA



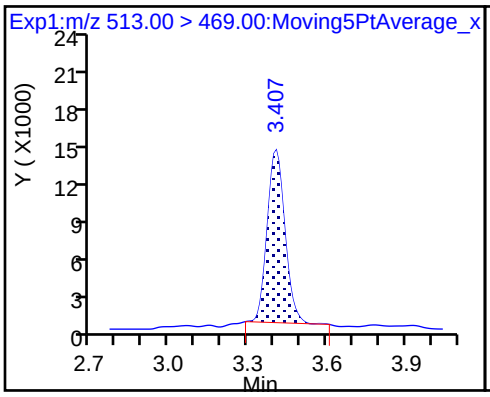
25 Sodium 1H,1H,2H,2H-perfluorodecane



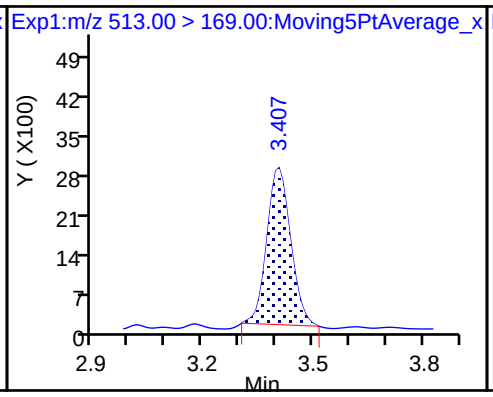
D 26 M2-8:2FTS



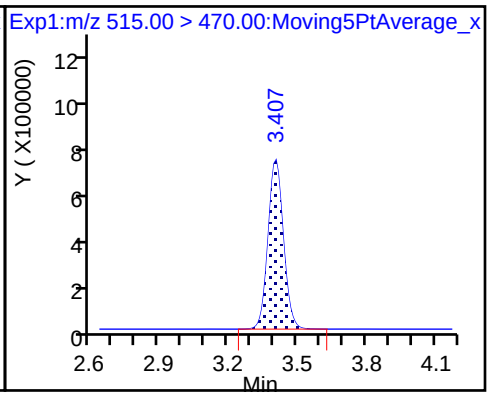
24 Perfluorodecanoic acid



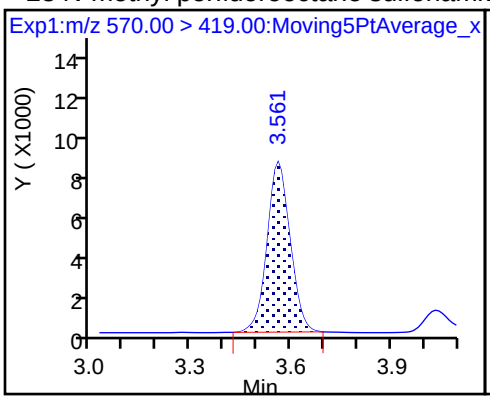
24 Perfluorodecanoic acid



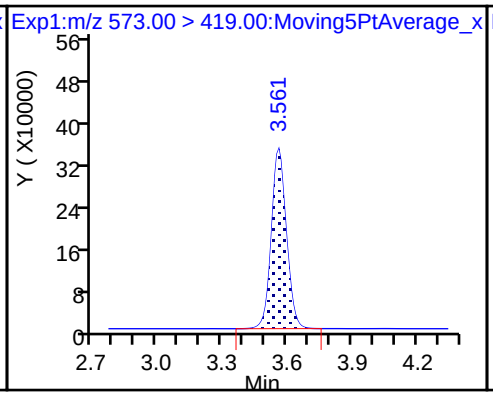
D 23 13C2 PFDA



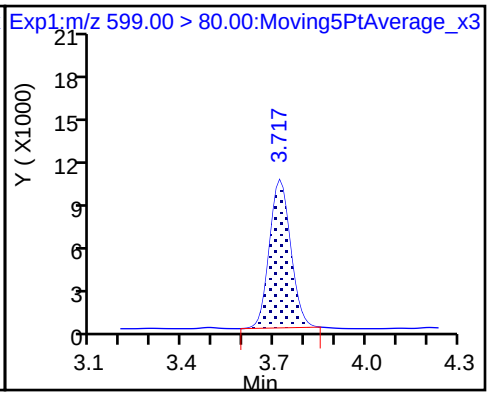
28 N-methyl perfluorooctane sulfonami



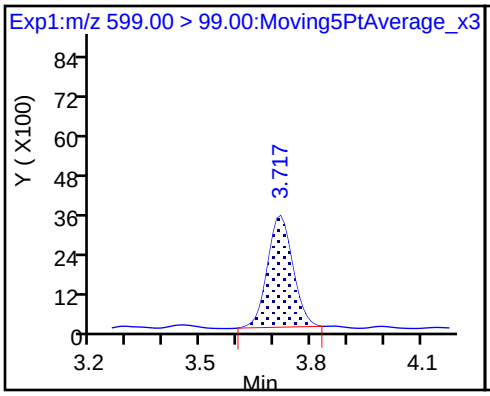
D 27 d3-NMeFOSAA



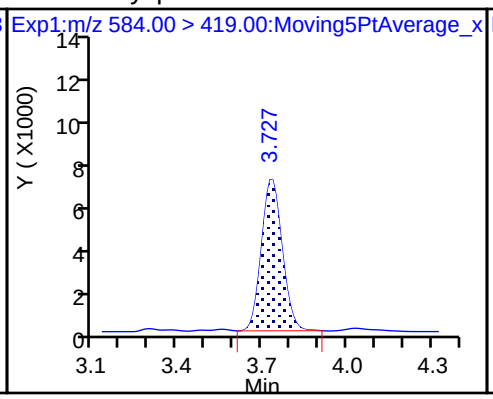
29 Perfluorodecane Sulfonic acid



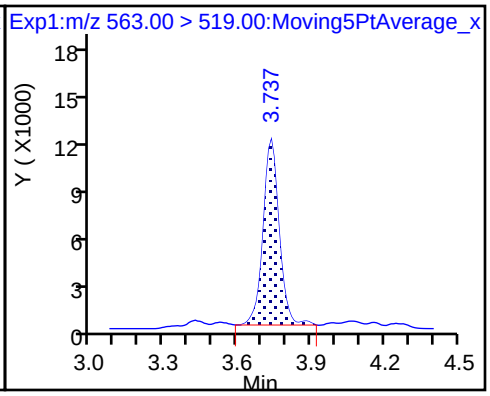
29 Perfluorodecane Sulfonic acid



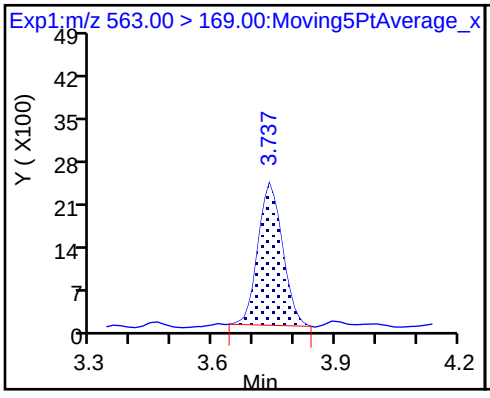
33 N-ethyl perfluorooctane sulfonamid



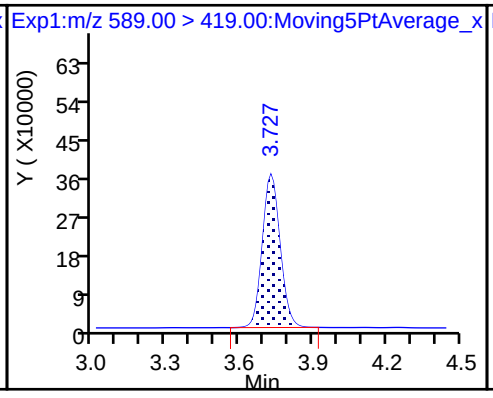
31 Perfluoroundecanoic acid



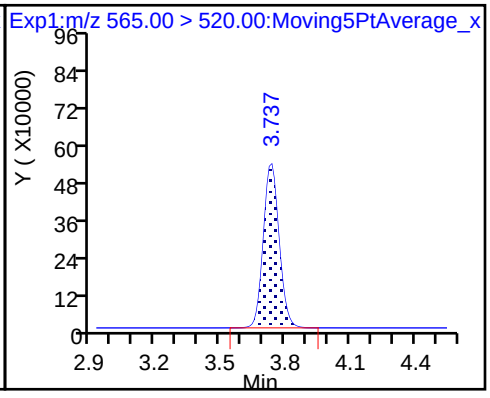
31 Perfluoroundecanoic acid



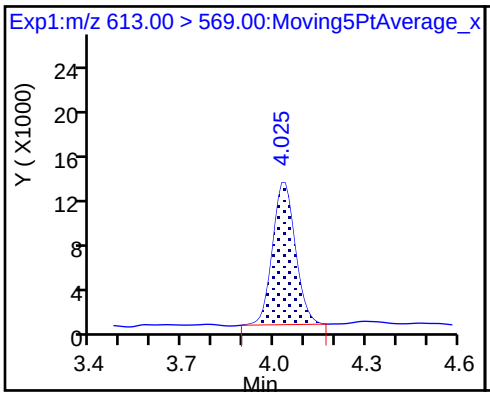
D 32 d5-NEtFOSAA



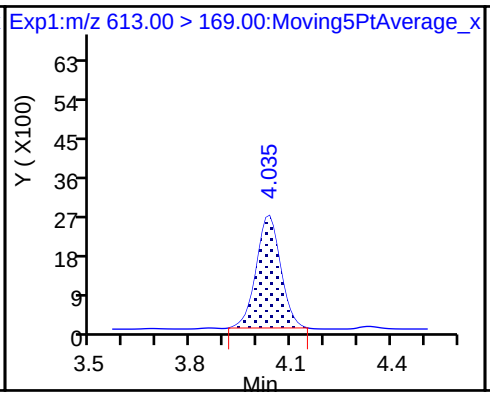
D 30 13C2 PFUnA



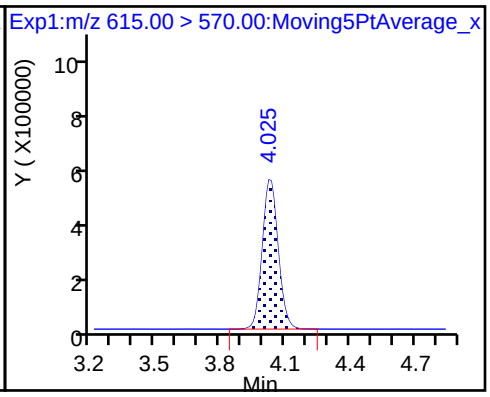
37 Perfluorododecanoic acid



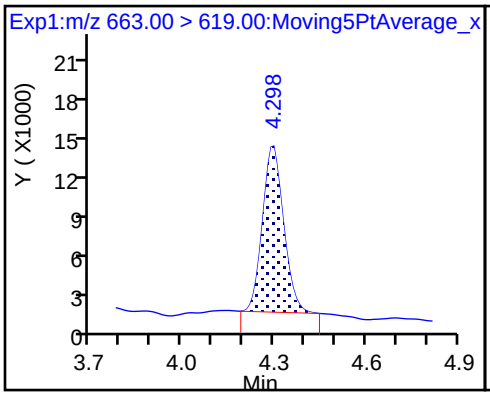
37 Perfluorododecanoic acid



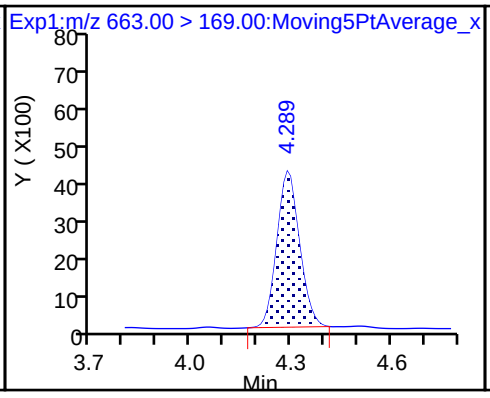
D 36 13C2 PFDoA



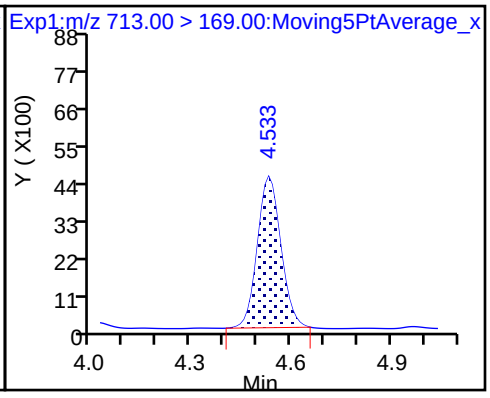
41 Perfluorotridecanoic acid



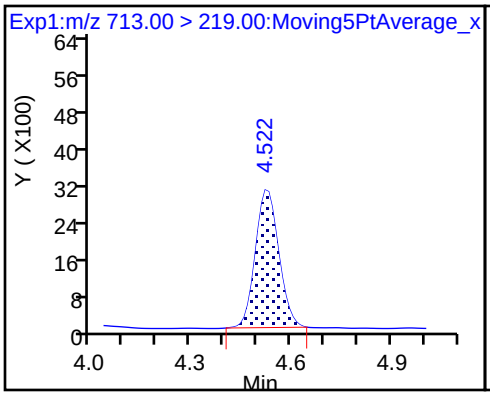
41 Perfluorotridecanoic acid



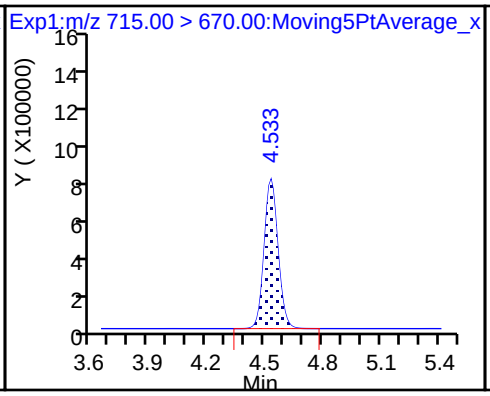
42 Perfluorotetradecanoic acid



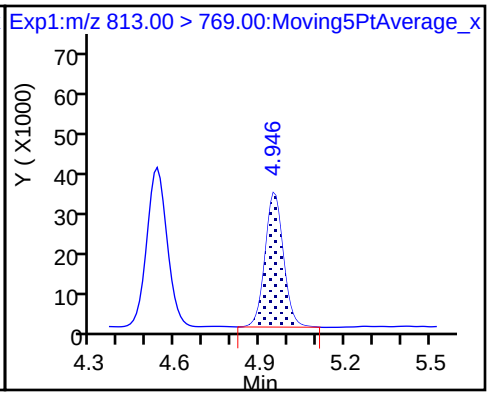
42 Perfluorotetradecanoic acid



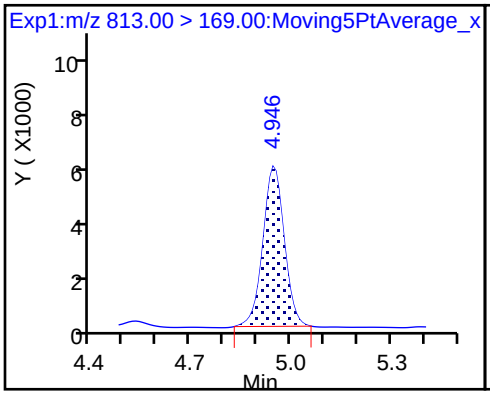
D 43 13C2-PFTeDA



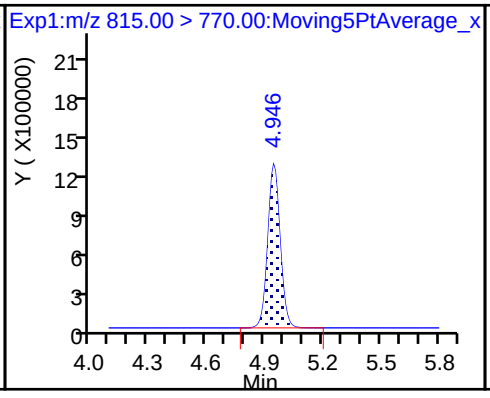
45 Perfluorohexadecanoic acid



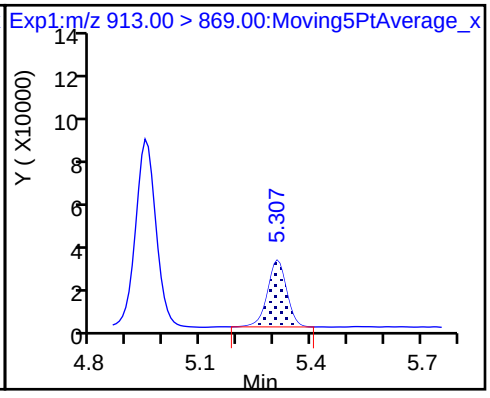
45 Perfluorohexadecanoic acid



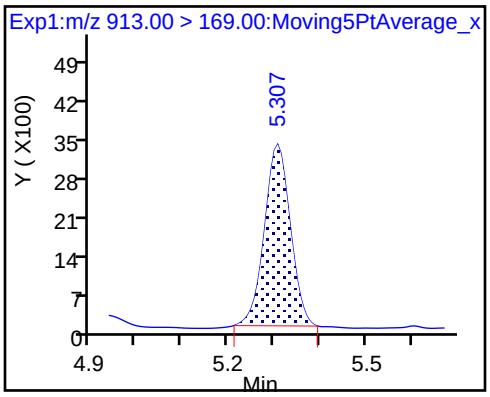
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215399/3 Calibration Date: 03/29/2018 09:03

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.8927		0.947	1.00	-5.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.122		0.995	1.00	-0.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.11		0.889	0.884	0.5	50.0
4:2 FTS	AveID	16.15	14.72		0.851	0.934	-8.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9923		0.971	1.00	-2.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.032		0.998	1.00	-0.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.051		0.859	0.910	-5.6	40.0
6:2FTS	AveID	1.744	1.523		0.828	0.948	-12.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.076		0.953	1.00	-4.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.328		0.987	0.952	3.6	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.016		1.02	1.00	1.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.079		0.899	0.928	-3.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	0.996		1.01	1.00	1.0	40.0
8:2FTS	AveID	1.276	1.235		0.927	0.958	-3.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9831		0.995	1.00	-0.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	0.999		0.998	1.00	-0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6840		0.970	0.964	0.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9217		0.987	1.00	-1.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.7679		0.891	1.00	-10.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.056		1.01	1.00	0.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.212		1.10	1.00	10.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2423		0.978	1.00	-2.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9540		1.03	1.00	2.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.022		1.11	1.00	10.6	50.0
13C4 PFBA	Ave	1.266	1.344		2.65	2.50	6.2	50.0
13C5 PFPeA	Ave	0.8399	0.8826		2.63	2.50	5.1	50.0
13C3-PFBS	Ave	0.0192	0.0197		2.39	2.33	2.6	50.0
M2-4:2FTS	Ave	0.1324	0.1399		2.47	2.34	5.7	50.0
13C2 PFHxA	Ave	0.9288	0.9637		2.59	2.50	3.8	50.0
13C4-PFHpA	Ave	0.9164	0.9343		2.55	2.50	2.0	50.0
18O2 PFHxS	Ave	1.130	1.160		2.43	2.37	2.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215399/3 Calibration Date: 03/29/2018 09:03

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2136		2.67	2.38	12.4	40.0
13C4 PFOA	Ave	0.9374	0.9423		2.51	2.50	0.5	50.0
13C4 PFOS	Ave	0.8225	0.7869		2.29	2.39	-4.3	50.0
13C5 PFNA	Ave	0.8266	0.7810		2.36	2.50	-5.5	50.0
13C8 FOSA	Ave	1.109	1.110		2.50	2.50	0.0	50.0
M2-8:2FTS	Ave	0.2565	0.2361		2.20	2.40	-8.0	40.0
13C2 PFDA	Ave	0.7245	0.6715		2.32	2.50	-7.3	50.0
d3-NMeFOSAA	Ave	0.3814	0.3684		2.42	2.50	-3.4	50.0
13C2 PFUnA	Ave	0.6482	0.5564		2.15	2.50	-14.2	50.0
d5-NEtFOSAA	Ave	0.4345	0.3637		2.09	2.50	-16.3	50.0
13C2 PFDoA	Ave	0.7355	0.5681		1.93	2.50	-22.8	50.0
13C2-PFTeDA	Ave	0.8983	0.7283		2.03	2.50	-18.9	50.0
13C2-PFHxDA	Ave	1.473	1.112		1.89	2.50	-24.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 29-Mar-2018 09:03:55 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:35 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:53:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.429	1.429	0.0	1.000	2330631	0.9474		94.7	863	
D 1 13C4 PFBA										
217.00 > 172.00	1.429	1.440	-0.011	0.536	6527097	2.65		106	102442	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.692	0.0	1.000	1924183	1.00		99.5	807	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.700	-0.008	0.635	4286102	2.63		105	167806	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.727	0.0	1.000	2639324	0.8887		101	1687	
298.90 > 99.00	1.727	1.727	0.0	1.000	1104689		2.39(1.25-3.74)		1626	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.735	-0.008	0.648	88865	2.39		103	693	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.935	1.935	0.0	1.000	525372	0.8510		91.1	32602	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.955	-0.009	0.730	634354	2.47		106	8315	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	1857550	0.9706		97.1	3179	
313.00 > 119.00	1.976	1.976	0.0	1.000	168666		11.01(5.03-15.10)		2551	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.742	4680151	2.59		104	143075	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.302	0.0	1.000	1873505	1.00		99.8	1359	
363.00 > 169.00	2.302	2.302	0.0	1.000	701643		2.67(1.13-3.40)		1723	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.315	2.315	0.0	1.000	2153971	0.8591		94.4	9401	
399.00 > 99.00	2.315	2.315	0.0	1.000	718215		3.00(1.50-4.49)		4534	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.328	-0.026	0.864	4537045	2.55		102	83802	
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.341	-0.026	0.869	5327613	2.43		103	63709	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.641	2.641	0.0	1.000	598974	0.8279		87.3	7980	
D 12 M2-6:2FTS										
429.00 > 81.00	2.641	2.663	-0.022	0.991	985473	2.67		112	32620	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.665	2.665	0.0	1.000	1970375	0.9529		95.3	608	
413.00 > 169.00	2.665	2.665	0.0	1.000	1044244		1.89(0.84-2.52)		3663	
* 62 13C2-PFOA										
415.00 > 370.00	2.665	2.665	0.0		4856254	2.50			73966	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.673	2.673	0.0	1.000	1932250	0.9866		104	31869	
449.00 > 99.00	2.673	2.673	0.0	1.000	530985		3.64(1.94-5.82)		11086	
D 14 13C4 PFOA										
417.00 > 372.00	2.665	2.687	-0.022	1.000	4576237	2.51		101	87451	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.037	3.037	0.0	1.000	1531232	0.8992		96.9	3541	
499.00 > 99.00	3.037	3.037	0.0	1.000	346132		4.42(2.31-6.93)		2887	
20 Perfluorononanoic acid										
463.00 > 419.00	3.037	3.037	0.0	1.000	1541431	1.02		102	1777	
463.00 > 169.00	3.037	3.037	0.0	1.000	385417		4.00(1.90-5.69)		10511	
D 19 13C5 PFNA										
468.00 > 423.00	3.037	3.058	-0.021	1.140	3792862	2.36		94.5	58242	
D 18 13C4 PFOS										
503.00 > 80.00	3.037	3.058	-0.021	1.140	3653402	2.29		95.7	44840	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.373	3.373	0.0	1.000	2146158	1.01		101	39365	
D 21 13C8 FOSA										
506.00 > 78.00	3.373	3.388	-0.015	1.266	5389190	2.50		100	62360	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.382	3.382	0.0	1.000	542644	0.9270		96.8	4653	
D 26 M2-8:2FTS										
529.00 > 81.00	3.382	3.406	-0.024	1.269	1098463	2.20		92.0	47077	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.391	3.391	0.0	1.000	1282315	0.99		99.5	7734	
513.00 > 169.00	3.391	3.391	0.0	1.000	243899		5.26(2.36-7.09)		8911	
D 23 13C2 PFDA										
515.00 > 470.00	3.391	3.424	-0.033	1.272	3260861	2.32		92.7	36998	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.554	3.554	0.0	1.003	714684	1.00		99.8	6571	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.545	3.569	-0.024	1.330	1789241	2.42		96.6	53450	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.710	3.710	0.0	1.000	1007982	0.9697		101	29328	
599.00 > 99.00	3.710	3.710	0.0	1.000	334220		3.02(1.39-4.16)		9631	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.720	3.720	0.0	1.000	651146	0.9865		98.7	12993	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.720	3.720	0.0	1.000	829823	0.8906		89.1	5357	
563.00 > 169.00	3.720	3.720	0.0	1.000	202252		4.10(2.12-6.36)		15241	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.720	3.748	-0.028	1.396	1766234	2.09		83.7	4665	
D 30 13C2 PFUnA										
565.00 > 520.00	3.720	3.748	-0.028	1.396	2701756	2.15		85.8	49846	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.018	0.0	1.000	1164791	1.01		101	938	
613.00 > 169.00	4.018	4.018	0.0	1.000	282913		4.12(2.13-6.40)		5610	
D 36 13C2 PFDoA										
615.00 > 570.00	4.018	4.047	-0.029	1.508	2758702	1.93		77.2	21414	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.283	4.283	0.0	1.000	1337257	1.10		110	545	
663.00 > 169.00	4.283	4.283	0.0	1.000	423178		3.16(1.25-3.76)		8053	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.524	4.524	0.0	1.000	342730	0.9777		97.8	5697	
713.00 > 219.00	4.514	4.524	-0.010	0.998	244007		1.40(0.71-2.13)		4845	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.524	4.554	-0.030	1.698	3536613	2.03		81.1	22737	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.938	4.938	0.0	1.000	2060960	1.03		103	504	
813.00 > 169.00	4.938	4.938	0.0	1.000	352800		5.84(2.86-8.58)		4442	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.938	4.973	-0.035	1.853	5400687	1.89		75.5	16185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.301	5.301	0.0	1.000	2208531	1.11		111	373	
913.00 > 169.00	5.294	5.301	-0.007	0.999	275151		8.03(3.83-11.48)		3514	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 10:10:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_006.d

Injection Date: 29-Mar-2018 09:03:55 Instrument ID: A8_N

Lims ID: CCV L4

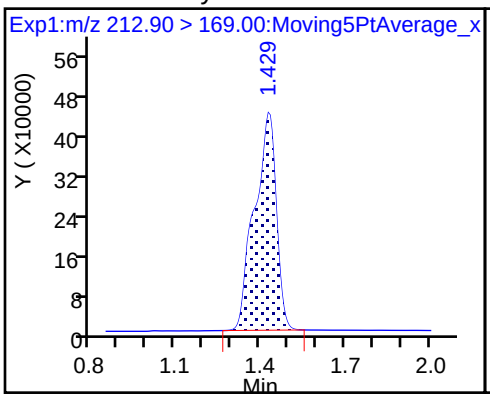
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

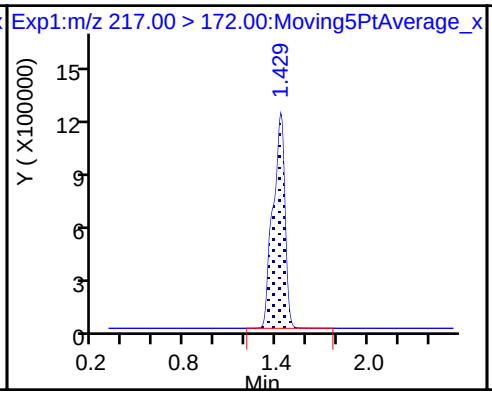
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

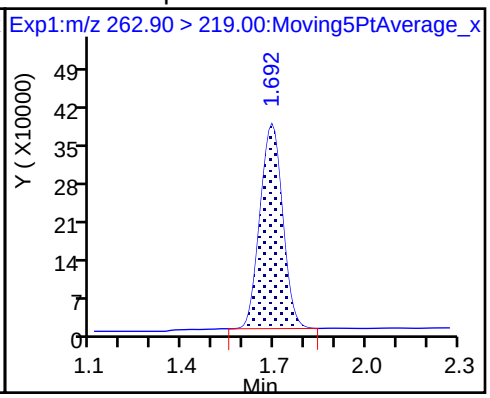
2 Perfluorobutyric acid



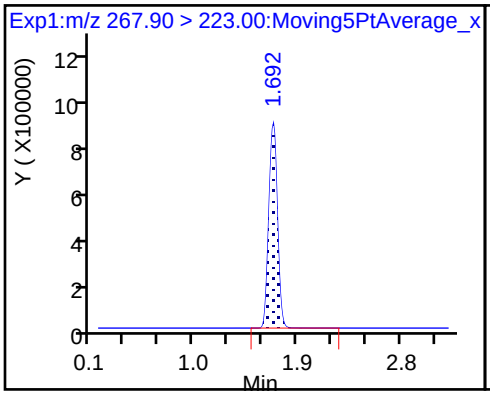
D 1 13C4 PFBA



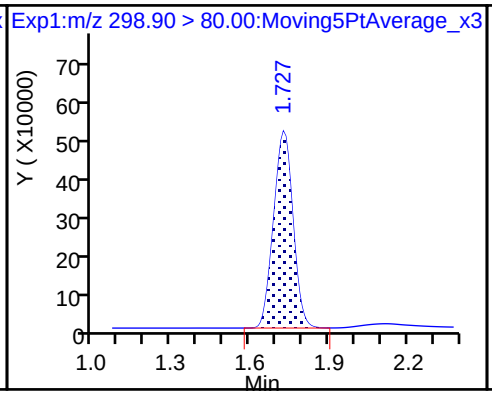
4 Perfluoropentanoic acid



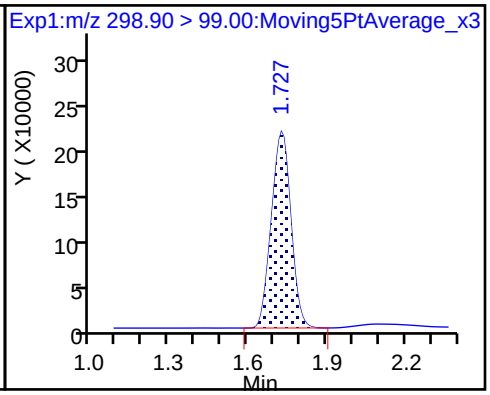
D 3 13C5-PFPeA



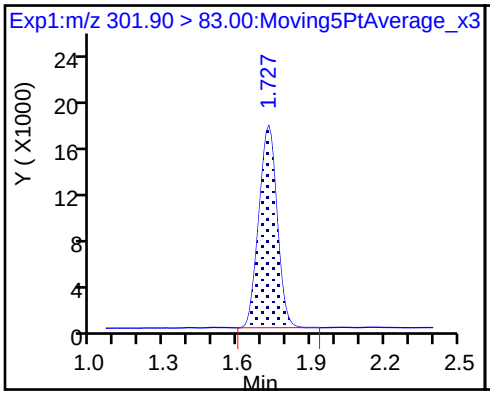
5 Perfluorobutanesulfonic acid



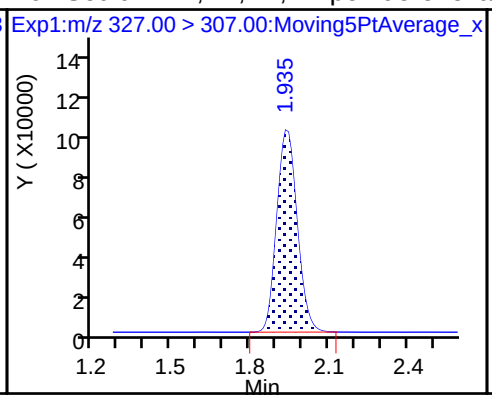
5 Perfluorobutanesulfonic acid



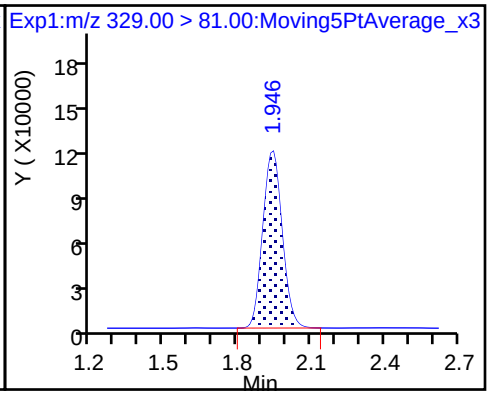
D 47 13C3-PFBS



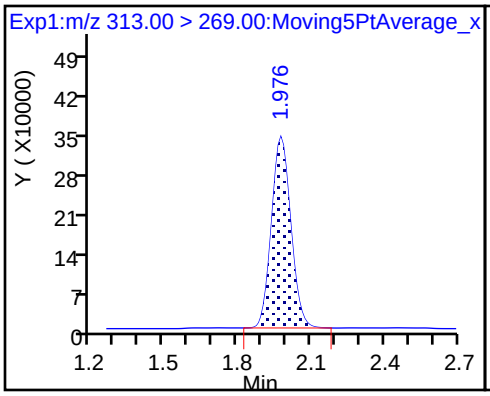
61 Sodium 1H,1H,2H,2H-perfluorohexane



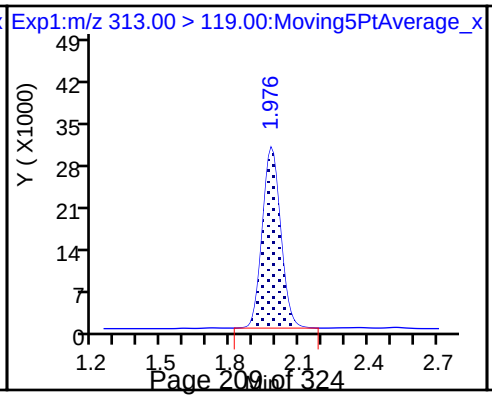
D 60 M2-4:2FTS



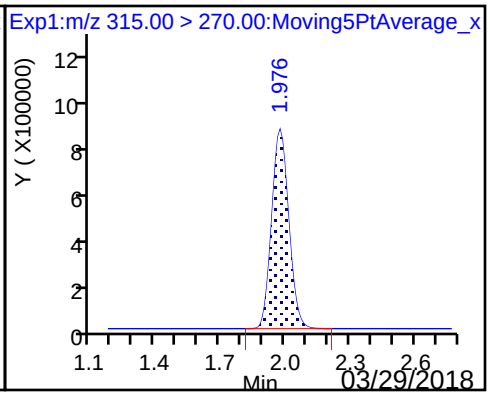
6 Perfluorohexanoic acid



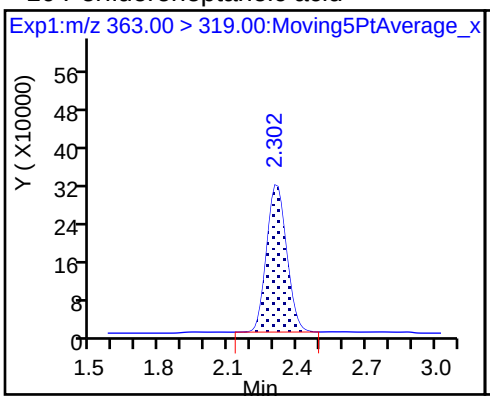
6 Perfluorohexanoic acid



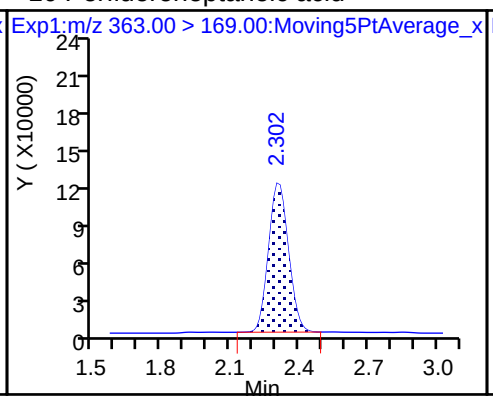
D 7 13C2 PFHxA



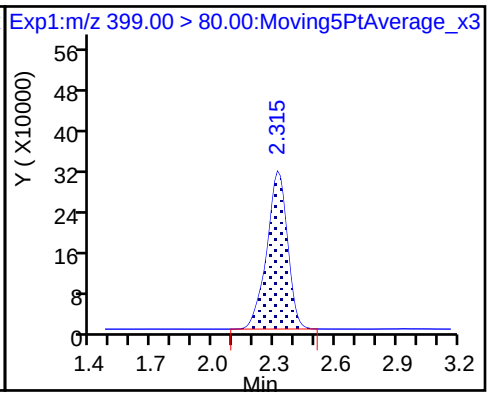
10 Perfluoroheptanoic acid



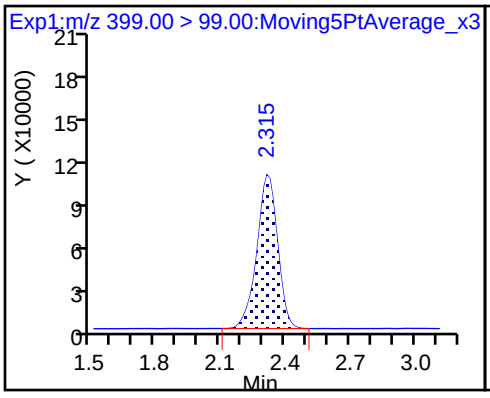
10 Perfluoroheptanoic acid



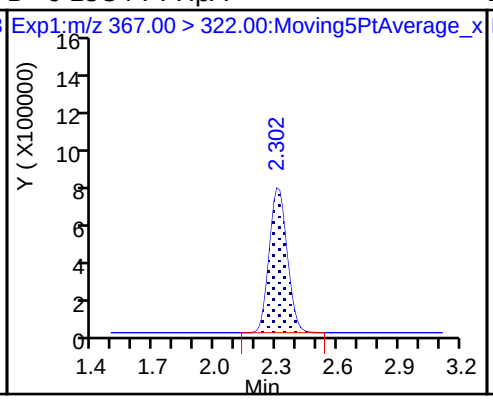
8 Perfluorohexanesulfonic acid



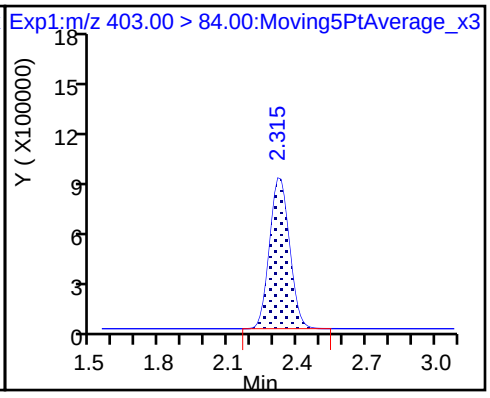
8 Perfluorohexanesulfonic acid



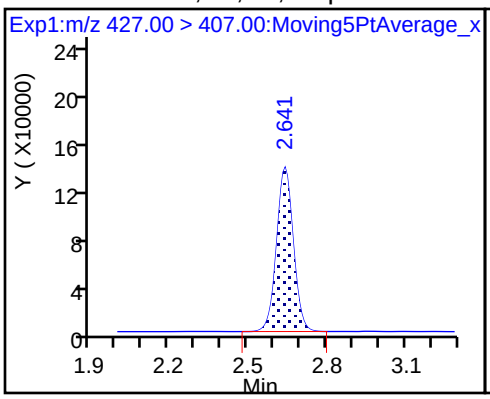
D 9 13C4-PFHpA



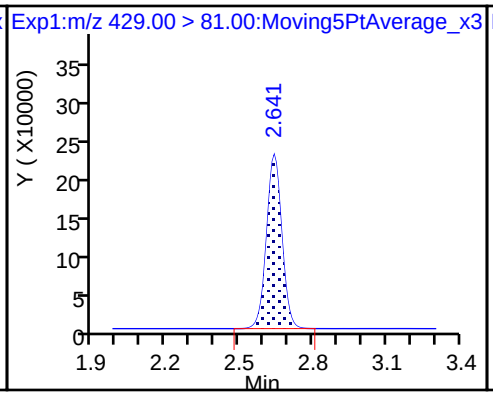
D 11 18O2 PFHxS



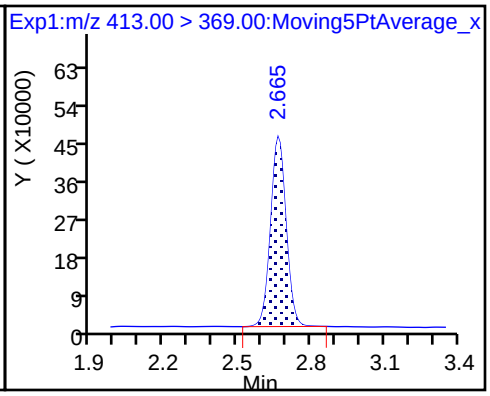
13 Sodium 1H,1H,2H,2H-perfluorooctane



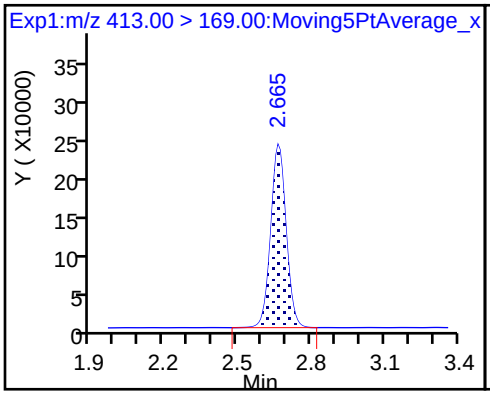
D 12 M2-6:2FTS



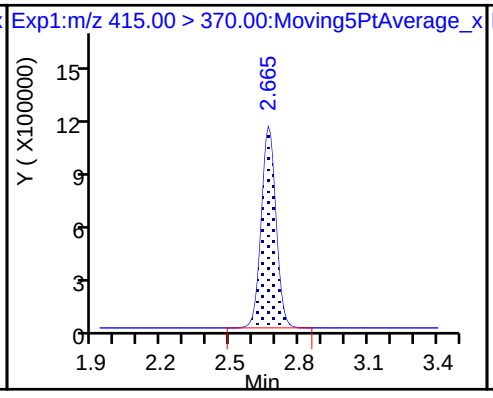
15 Perfluorooctanoic acid



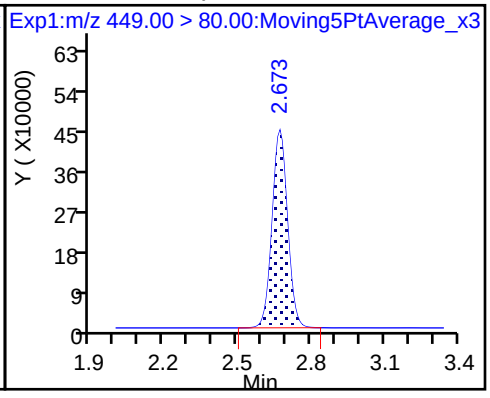
15 Perfluorooctanoic acid



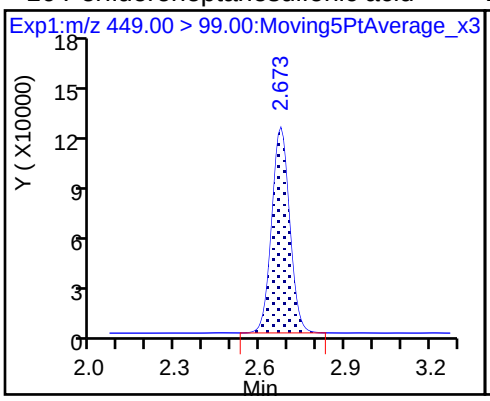
* 62 13C2-PFOA



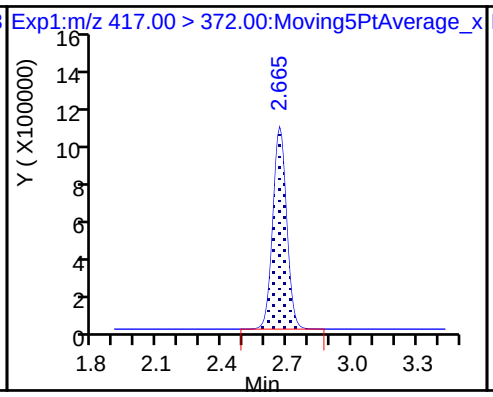
16 Perfluoroheptanesulfonic acid



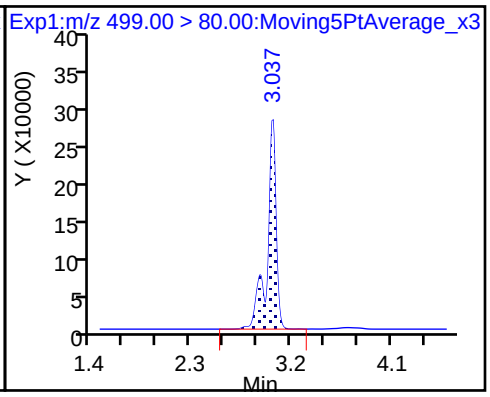
16 Perfluoroheptanesulfonic acid



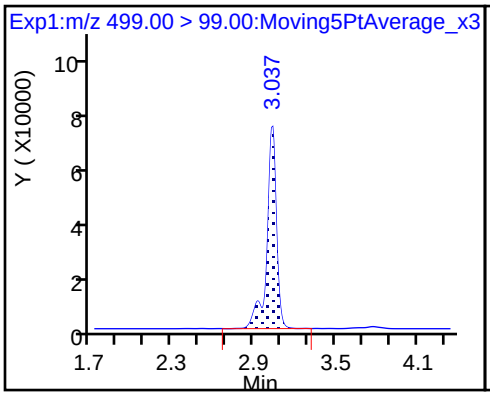
D 14 13C4 PFOA



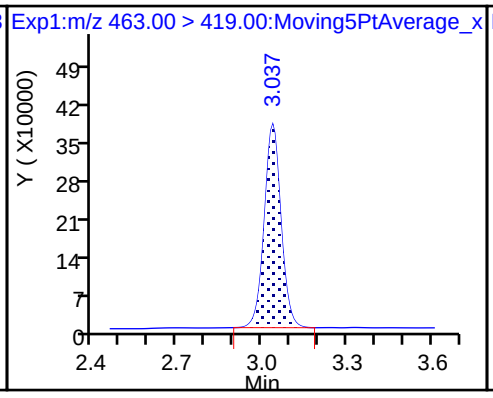
17 Perfluorooctane sulfonic acid



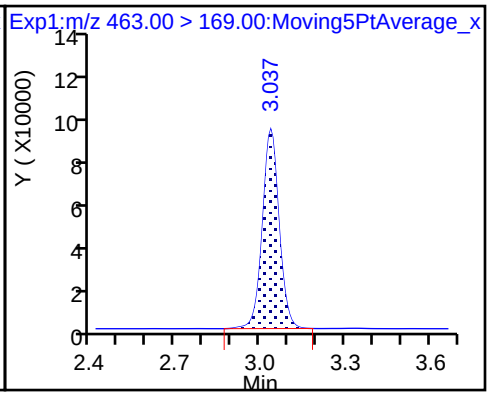
17 Perfluorooctane sulfonic acid



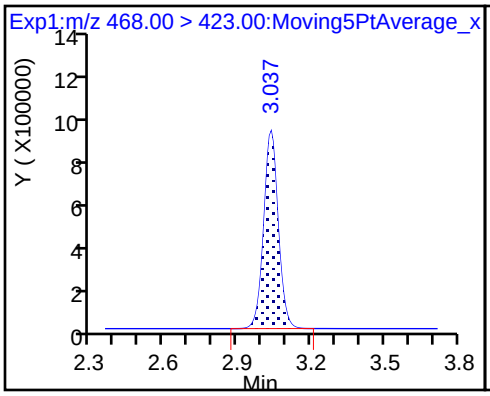
20 Perfluorononanoic acid



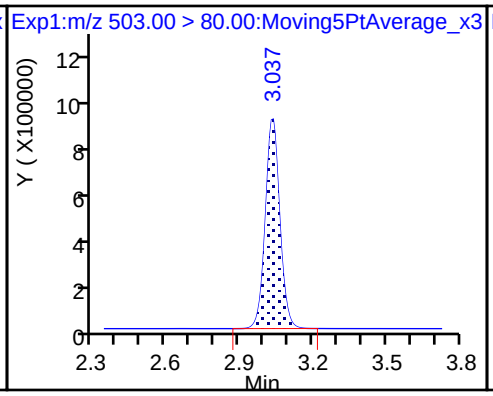
20 Perfluorononanoic acid



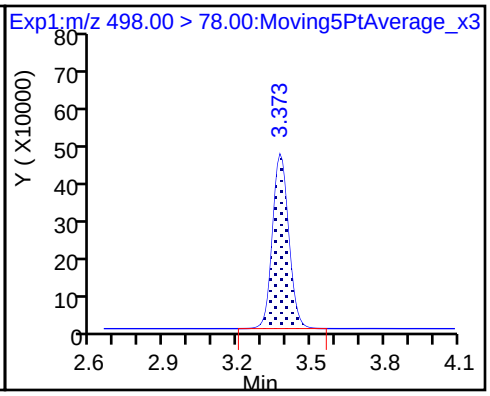
D 19 13C5 PFNA



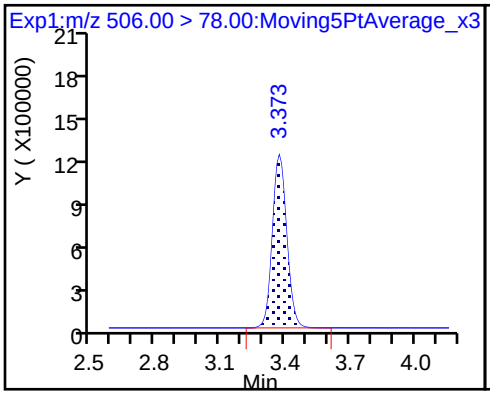
D 18 13C4 PFOS



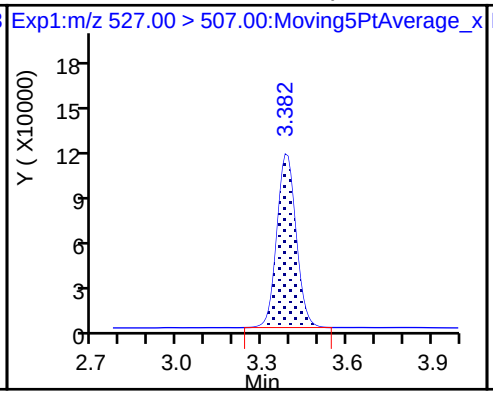
22 Perfluorooctane Sulfonamide



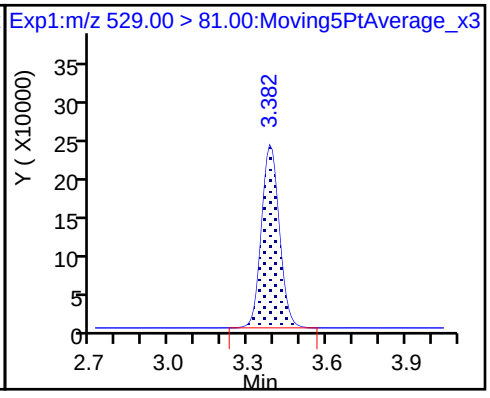
D 21 13C8 FOSA



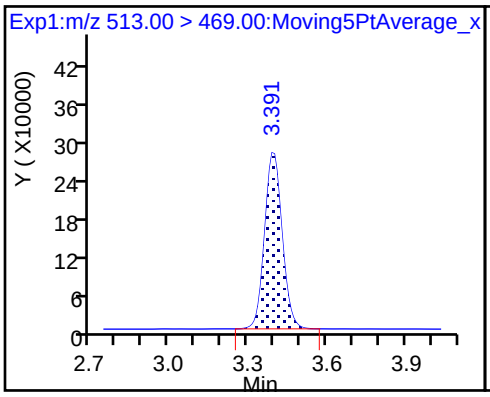
25 Sodium 1H,1H,2H,2H-perfluorodecane



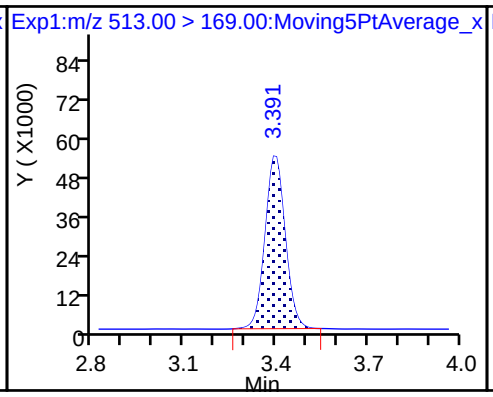
D 26 M2-8:2FTS



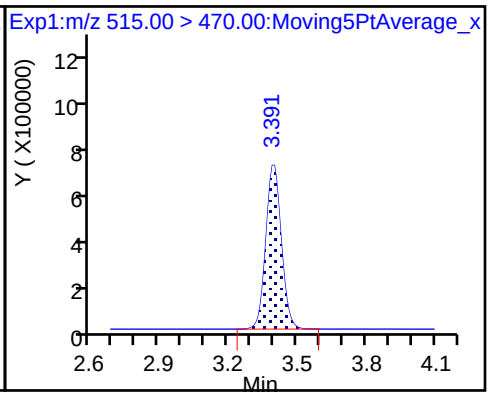
24 Perfluorodecanoic acid



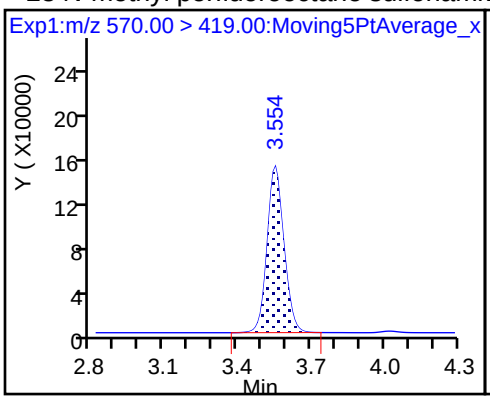
24 Perfluorodecanoic acid



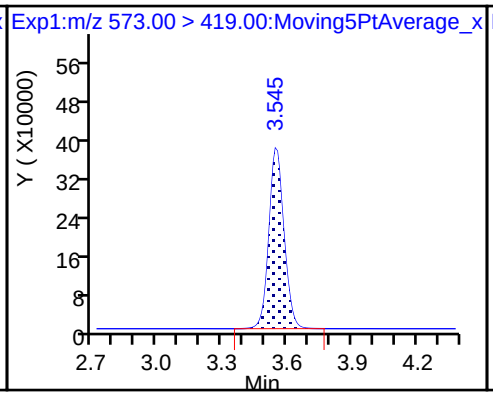
D 23 13C2 PFDA



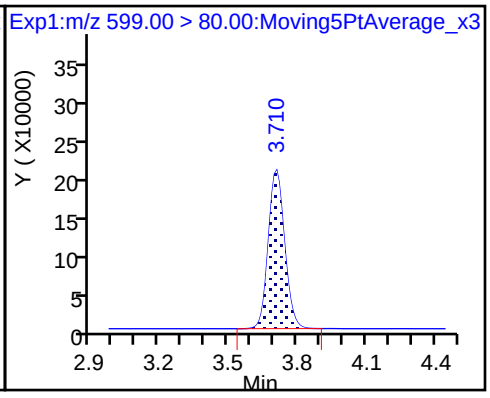
28 N-methyl perfluorooctane sulfonami



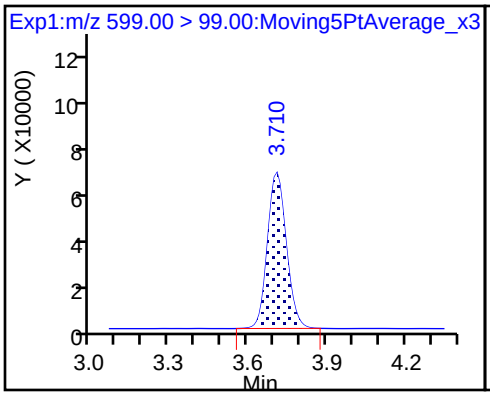
D 27 d3-NMeFOSAA



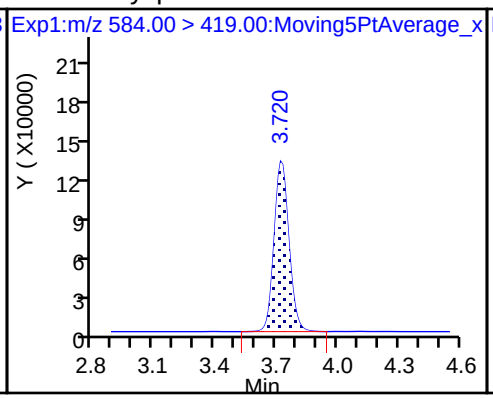
29 Perfluorodecane Sulfonic acid



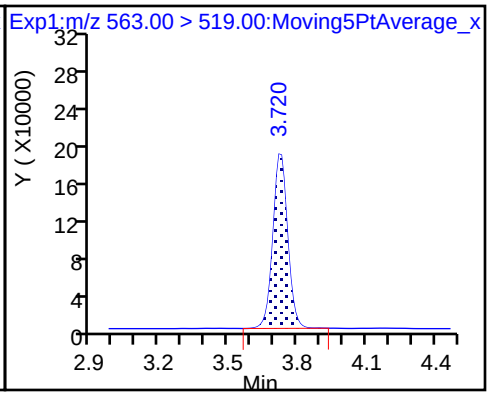
29 Perfluorodecane Sulfonic acid



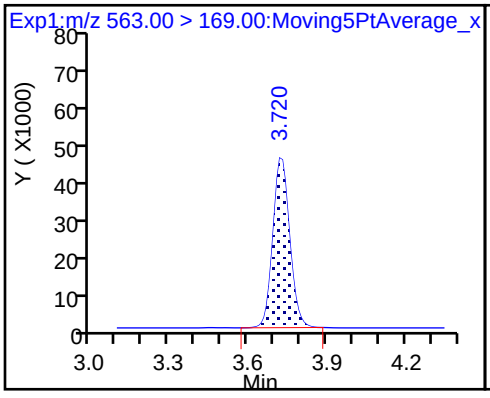
33 N-ethyl perfluorooctane sulfonamid



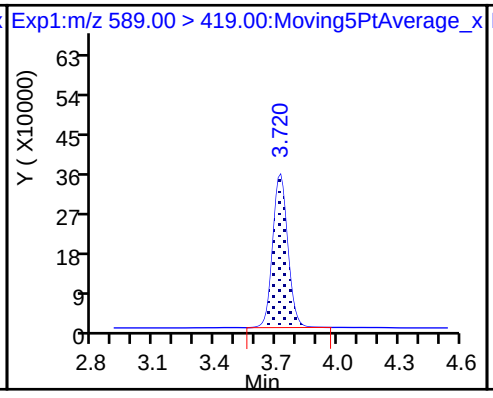
31 Perfluoroundecanoic acid



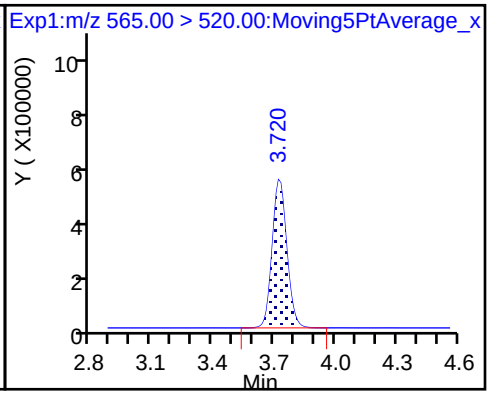
31 Perfluoroundecanoic acid



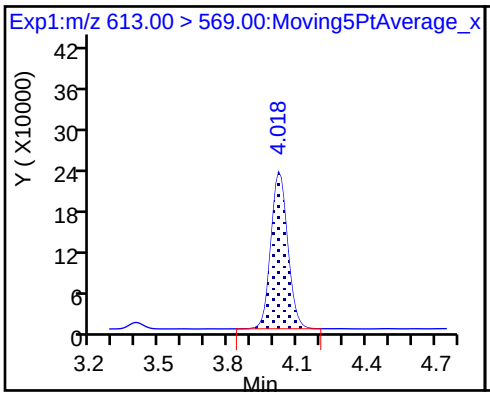
D 32 d5-NEtFOSAA



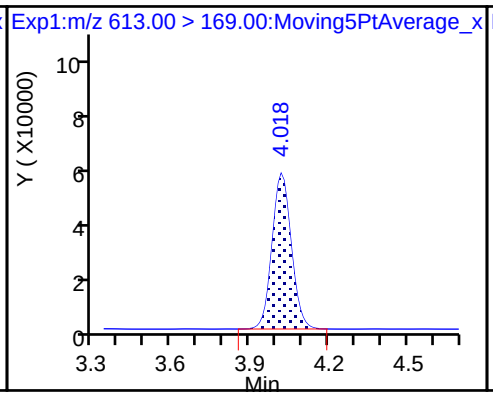
D 30 13C2 PFUnA



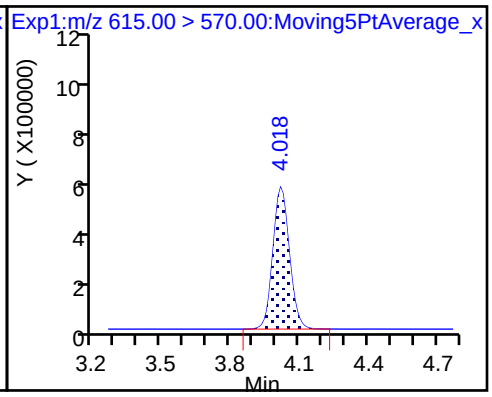
37 Perfluorododecanoic acid



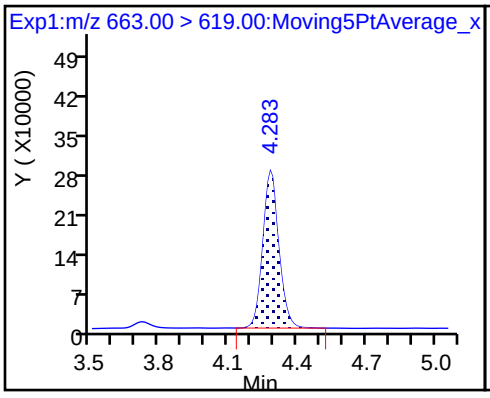
37 Perfluorododecanoic acid



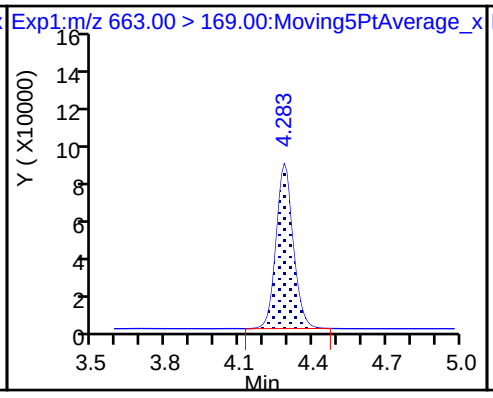
D 36 13C2 PFDoA



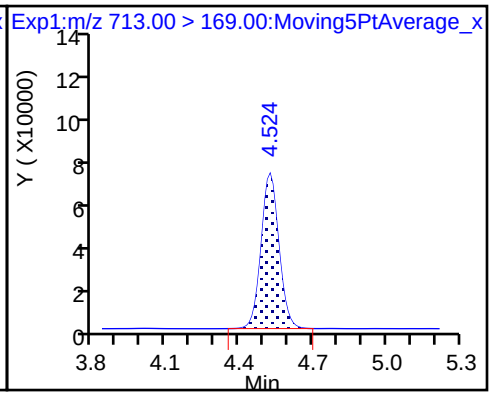
41 Perfluorotridecanoic acid



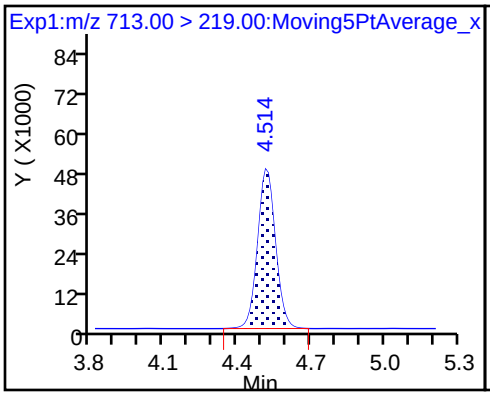
41 Perfluorotridecanoic acid



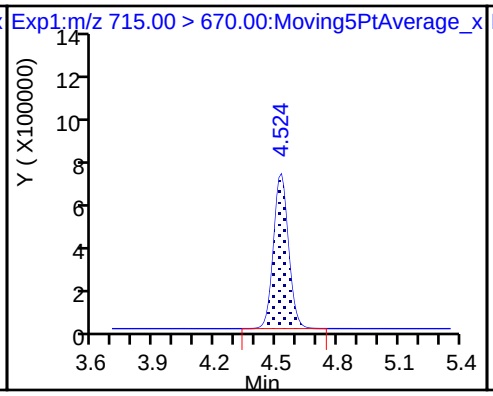
42 Perfluorotetradecanoic acid



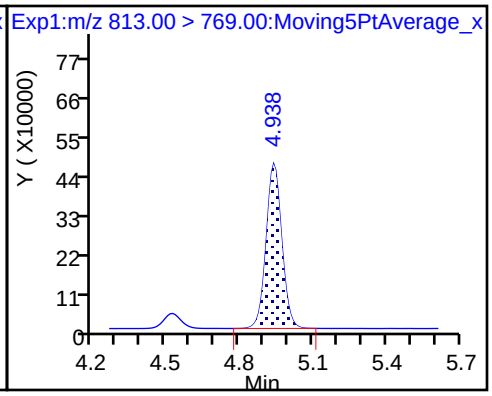
42 Perfluorotetradecanoic acid



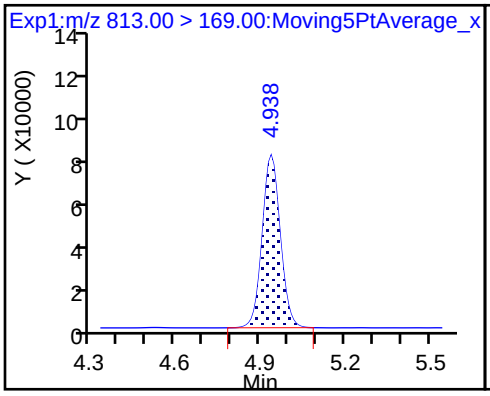
D 43 13C2-PFTeDA



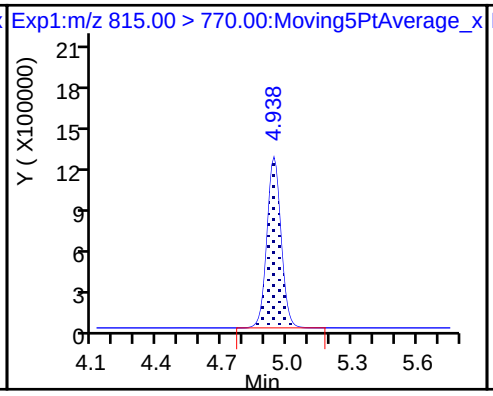
45 Perfluorohexadecanoic acid



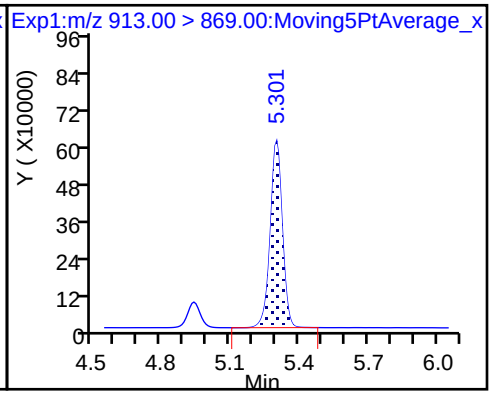
45 Perfluorohexadecanoic acid



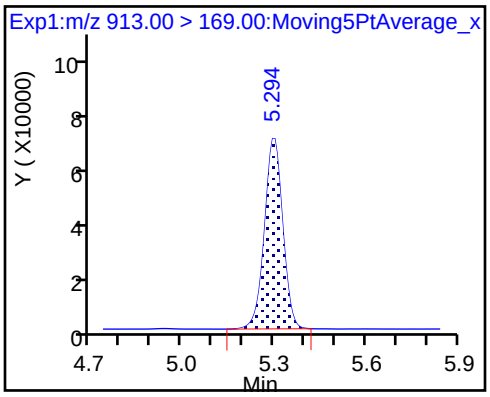
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215399/10 Calibration Date: 03/29/2018 09:58

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9422	0.9488		2.52	2.50	0.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.128	1.139		2.53	2.50	1.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	77.70	78.18		2.22	2.21	0.6	50.0
4:2 FTS	AveID	16.15	15.34		2.22	2.34	-5.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.022	0.9934		2.43	2.50	-2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.034	1.062		2.57	2.50	2.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.099		2.25	2.28	-1.3	40.0
6:2FTS	AveID	1.744	1.722		2.34	2.37	-1.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.130	1.153		2.55	2.50	2.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.281	1.367		2.54	2.38	6.7	50.0
Perfluorononanoic acid (PFNA)	AveID	0.998	1.027		2.57	2.50	2.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.114	1.116		2.33	2.32	0.2	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9858	1.021		2.59	2.50	3.6	40.0
8:2FTS	AveID	1.276	1.233		2.31	2.40	-3.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9881	0.9765		2.47	2.50	-1.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.001	1.027		2.57	2.50	2.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6800	0.6639		2.35	2.41	-2.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9384		2.51	2.50	0.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8622	0.8200		2.38	2.50	-4.9	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.046	1.106		2.64	2.50	5.7	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.101	1.328		3.02	2.50	20.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2478	0.2582		2.61	2.50	4.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		2.72	2.50	8.7	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9246	1.055		2.85	2.50	14.1	50.0
13C4 PFBA	Ave	1.266	1.350		2.67	2.50	6.6	50.0
13C5 PFPeA	Ave	0.8399	0.9012		2.68	2.50	7.3	50.0
13C3-PFBS	Ave	0.0192	0.0207		2.51	2.33	8.1	50.0
M2-4:2FTS	Ave	0.1324	0.1479		2.61	2.34	11.7	50.0
13C2 PFHxA	Ave	0.9288	0.9631		2.59	2.50	3.7	50.0
13C4-PFHpA	Ave	0.9164	0.8969		2.45	2.50	-2.1	50.0
18O2 PFHxS	Ave	1.130	1.132		2.37	2.37	0.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Lab Sample ID: CCV 320-215399/10 Calibration Date: 03/29/2018 09:58

Instrument ID: A8_N Calib Start Date: 03/21/2018 18:24

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/21/2018 19:11

Lab File ID: 2018.03.29LLA_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
M2-6:2FTS	Ave	0.1900	0.2080		2.60	2.38	9.5	40.0
13C4 PFOA	Ave	0.9374	0.9406		2.51	2.50	0.3	50.0
13C4 PFOS	Ave	0.8225	0.8111		2.36	2.39	-1.4	50.0
13C5 PFNA	Ave	0.8266	0.8134		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.109	1.137		2.56	2.50	2.5	50.0
M2-8:2FTS	Ave	0.2565	0.2593		2.42	2.40	1.1	40.0
13C2 PFDA	Ave	0.7245	0.6892		2.38	2.50	-4.9	50.0
d3-NMeFOSAA	Ave	0.3814	0.3673		2.41	2.50	-3.7	50.0
13C2 PFUnA	Ave	0.6482	0.5393		2.08	2.50	-16.8	50.0
d5-NEtFOSAA	Ave	0.4345	0.3672		2.11	2.50	-15.5	50.0
13C2 PFDoA	Ave	0.7355	0.5634		1.92	2.50	-23.4	50.0
13C2-PFTeDA	Ave	0.8983	0.7497		2.09	2.50	-16.6	50.0
13C2-PFHxDA	Ave	1.473	1.152		1.96	2.50	-21.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_013.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 29-Mar-2018 09:58:51 ALS Bottle#: 14 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:50 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 10:10:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.428	1.428	0.0	1.000	6029464	2.52		101	2637	
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.440	-0.012	0.534	6354951	2.67		107	91380	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.691	0.0	1.000	4832220	2.52		101	2046	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.700	-0.009	0.632	4243820	2.68		107	102139	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.726	1.726	0.0	1.000	6744686	2.22		101	4068	
298.90 > 99.00	1.726	1.726	0.0	1.000	2762450		2.44(1.25-3.74)		4149	
D 47 13C3-PFBS										
301.90 > 83.00	1.726	1.735	-0.009	0.645	90759	2.51		108	724	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	1398578	2.22		95.0	65260	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.955	-0.010	0.727	650535	2.61		112	10048	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	4505477	2.43		97.2	7967	
313.00 > 119.00	1.976	1.976	0.0	1.000	423797		10.63(5.03-15.10)		6315	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.738	4535357	2.59		104	116633	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.310	0.0	1.000	4484611	2.57		103	3463	
363.00 > 169.00	2.310	2.310	0.0	1.000	1760395		2.55(1.13-3.40)		4540	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.323	0.0	1.000	5330300	2.25		98.7	17743	
399.00 > 99.00	2.323	2.323	0.0	1.000	1805162		2.95(1.50-4.49)		8919	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.310	2.328	-0.018	0.863	4223527	2.45		97.9	84565	
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.341	-0.018	0.868	5042454	2.37		100	74382	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.652	0.0	1.000	1598779	2.34		98.8	15601	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.663	-0.011	0.991	930471	2.60		109	23806	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.676	0.0	1.000	5107084	2.55		102	2123	
413.00 > 169.00	2.676	2.676	0.0	1.000	2627578		1.94(0.84-2.52)		8806	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.676	0.0		4708999	2.50			89622	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.684	2.684	0.0	1.000	4970487	2.54		107	63039	
449.00 > 99.00	2.684	2.684	0.0	1.000	1341397		3.71(1.94-5.82)		23564	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.687	-0.011	1.000	4429132	2.51		100	77687	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.046	3.046	0.0	1.000	3957480	2.33		100	8778	
499.00 > 99.00	3.046	3.046	0.0	1.000	867411		4.56(2.31-6.93)		7680	
20 Perfluorononanoic acid										
463.00 > 419.00	3.046	3.046	0.0	1.000	3932600	2.57		103	4305	
463.00 > 169.00	3.046	3.046	0.0	1.000	986569		3.99(1.90-5.69)		34189	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.058	-0.012	1.138	3830389	2.46		98.4	77213	
D 18 13C4 PFOS										
503.00 > 80.00	3.046	3.058	-0.012	1.138	3651522	2.36		98.6	42516	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.383	3.383	0.0	1.000	5468110	2.59		104	56807	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.402	3.402	0.0	1.000	1442586	2.31		96.6	11530	
D 21 13C8 FOSA										
506.00 > 78.00	3.383	3.388	-0.005	1.264	5354017	2.56		103	65183	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.411	3.411	0.0	1.000	3169144	2.47		98.8	22038	
513.00 > 169.00	3.411	3.411	0.0	1.000	571987		5.54(2.36-7.09)		15508	
D 26 M2-8:2FTS										
529.00 > 81.00	3.402	3.406	-0.004	1.271	1169638	2.42		101	27730	
D 23 13C2 PFDA										
515.00 > 470.00	3.411	3.424	-0.013	1.275	3245332	2.38		95.1	36801	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.565	3.565	0.0	1.000	1776161	2.57		103	14667	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.565	3.569	-0.004	1.332	1729632	2.41		96.3	35968	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.723	3.723	0.0	1.000	2444678	2.35		97.6	70547	
599.00 > 99.00	3.723	3.723	0.0	1.000	879142		2.78(1.39-4.16)		25467	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.733	3.733	0.0	1.000	1622800	2.51		100	26330	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.744	3.744	0.0	1.003	2082268	2.38		95.1	10835	
563.00 > 169.00	3.744	3.744	0.0	1.003	523133		3.98(2.12-6.36)		9913	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.733	3.748	-0.015	1.395	1729296	2.11		84.5	4228	
D 30 13C2 PFUnA										
565.00 > 520.00	3.733	3.748	-0.015	1.395	2539455	2.08		83.2	56503	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.031	4.031	0.0	1.000	2934545	2.64		106	2171	
613.00 > 169.00	4.031	4.031	0.0	1.000	727302		4.03(2.13-6.40)		14522	
D 36 13C2 PFDoA										
615.00 > 570.00	4.031	4.047	-0.016	1.507	2652996	1.91		76.6	20425	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.294	4.294	0.0	1.000	3522368	3.02		121	1454	
663.00 > 169.00	4.294	4.294	0.0	1.000	1124476		3.13(1.25-3.76)		14376	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.540	4.540	0.0	1.000	911614	2.61		104	16473	
713.00 > 219.00	4.529	4.540	-0.011	0.998	626410		1.46(0.71-2.13)		11246	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.540	4.554	-0.014	1.697	3530096	2.09		83.4	22055	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.952	4.952	0.0	1.000	5406962	2.72		109	1350	
813.00 > 169.00	4.952	4.952	0.0	1.000	912917		5.92(2.86-8.58)		7339	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.952	4.973	-0.021	1.851	5426221	1.96		78.3	17621	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.319	5.319	0.0	1.000	5726790	2.85		114	932	
913.00 > 169.00	5.312	5.319	-0.007	0.999	719883		7.96(3.83-11.48)		6054	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 29-Mar-2018 10:10:52 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_013.d

Injection Date: 29-Mar-2018 09:58:51 Instrument ID: A8_N

Lims ID: CCV L5

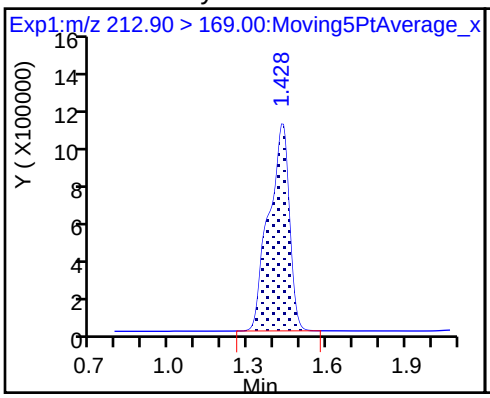
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 10

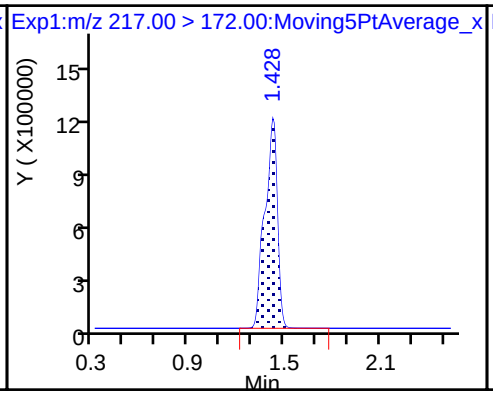
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

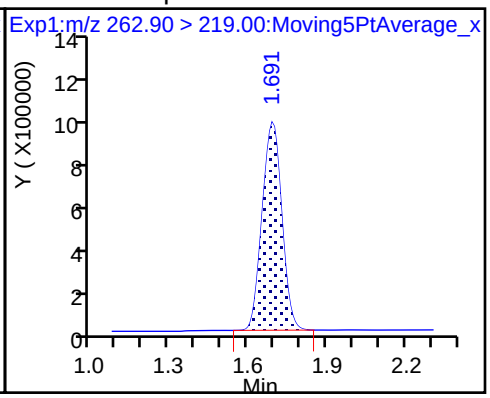
2 Perfluorobutyric acid



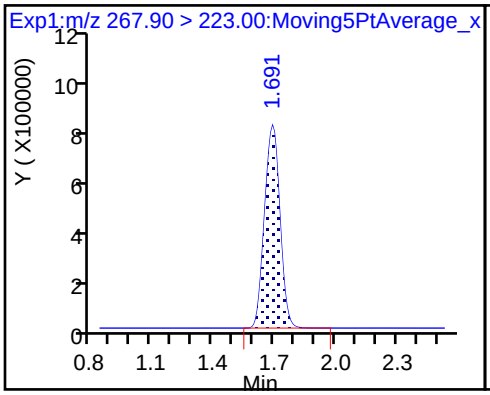
D 1 13C4 PFBA



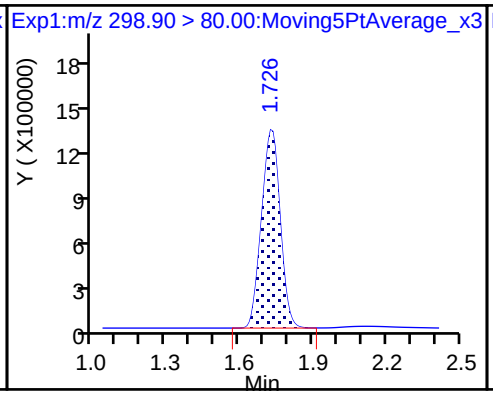
4 Perfluoropentanoic acid



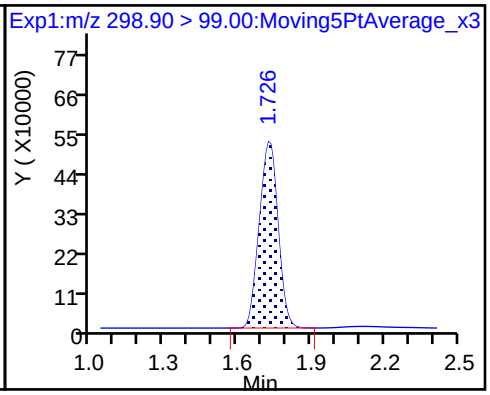
D 3 13C5-PFPeA



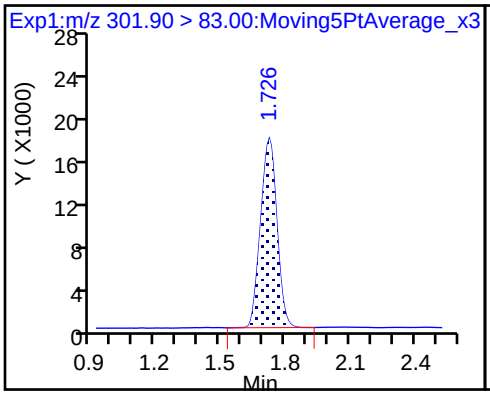
5 Perfluorobutanesulfonic acid



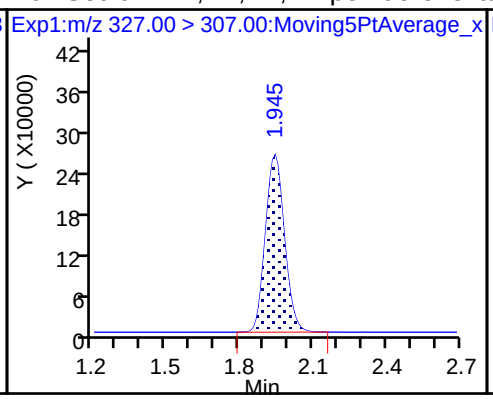
5 Perfluorobutanesulfonic acid



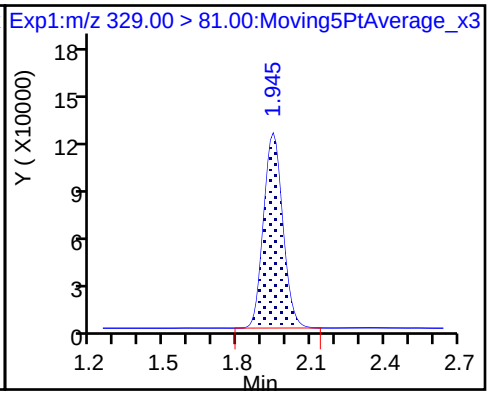
D 47 13C3-PFBS



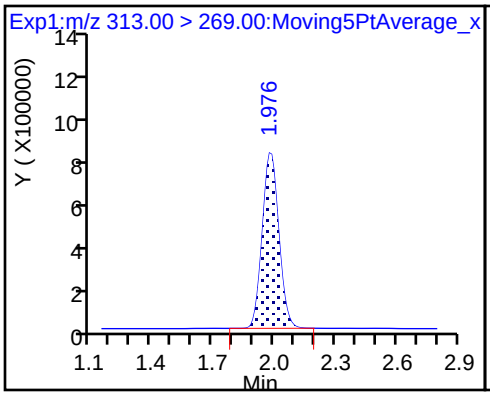
61 Sodium 1H,1H,2H,2H-perfluorohexane



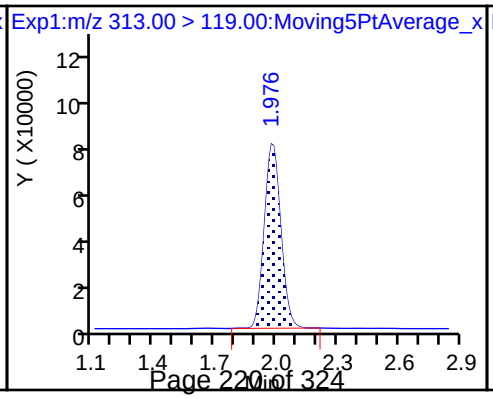
D 60 M2-4:2FTS



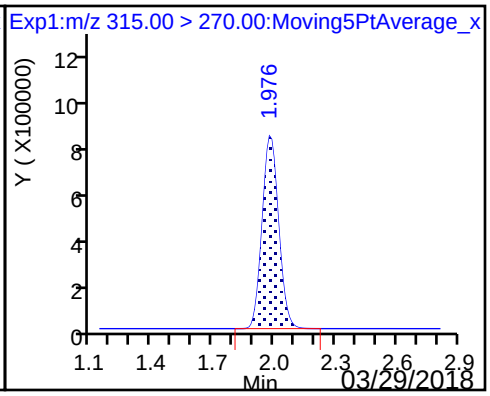
6 Perfluorohexanoic acid



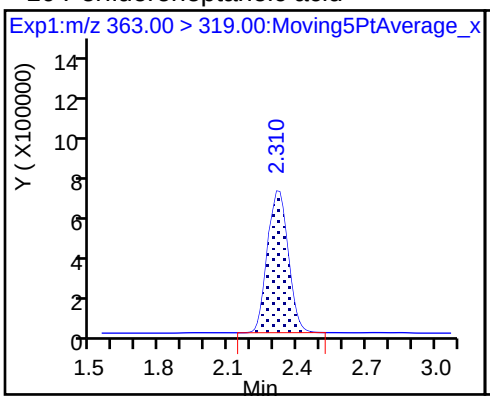
6 Perfluorohexanoic acid



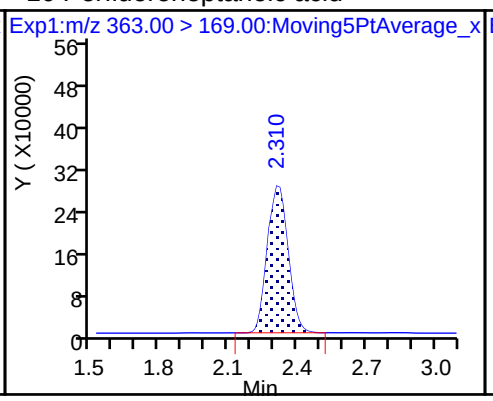
D 7 13C2 PFHxA



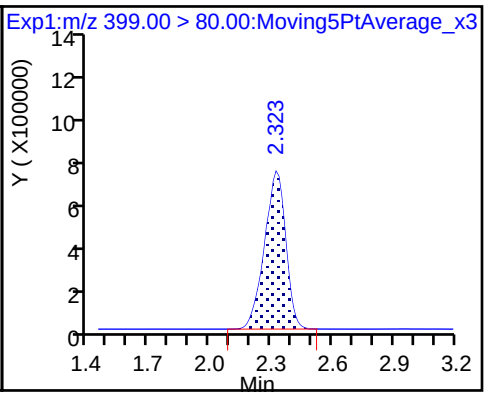
10 Perfluoroheptanoic acid



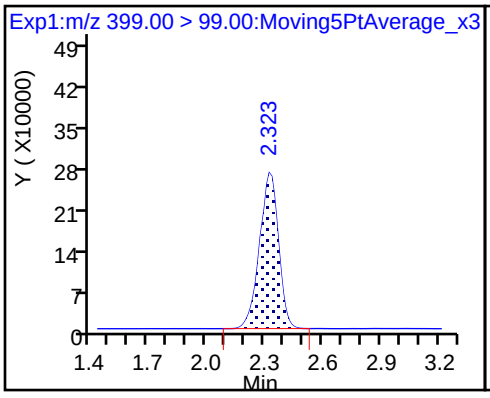
10 Perfluoroheptanoic acid



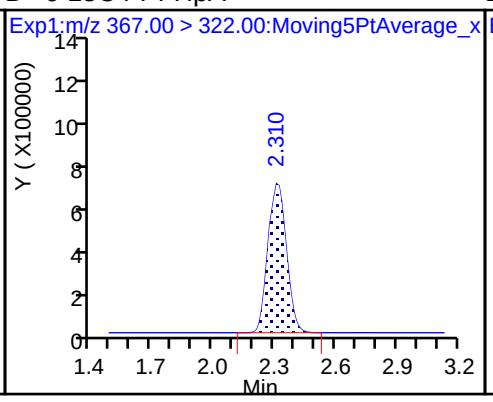
8 Perfluorohexanesulfonic acid



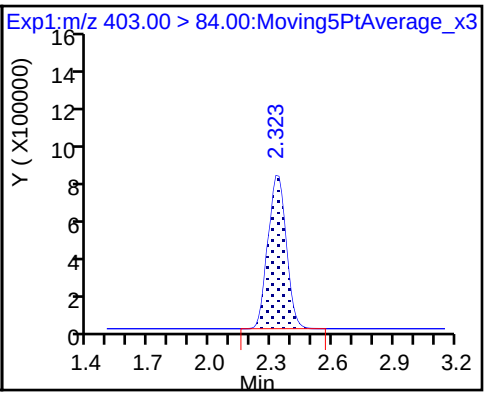
8 Perfluorohexanesulfonic acid



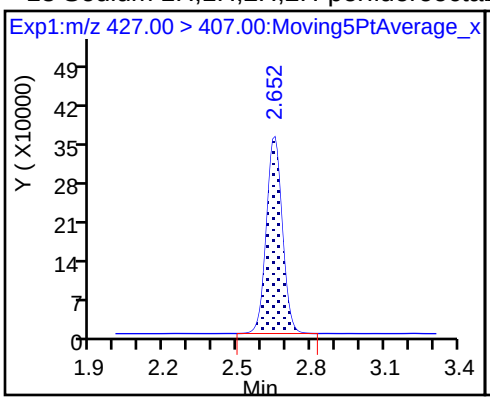
D 9 13C4-PFHpA



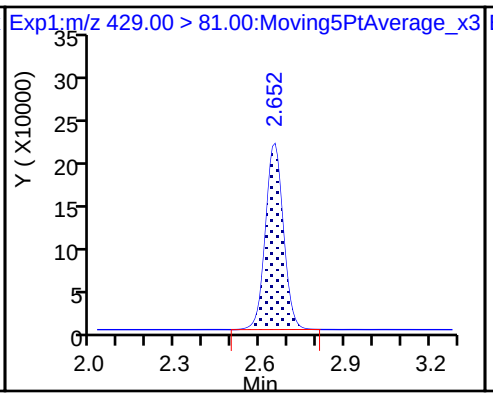
D 11 18O2 PFHxS



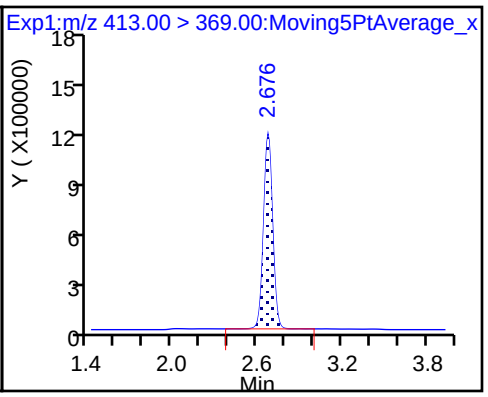
13 Sodium 1H,1H,2H,2H-perfluorooctane



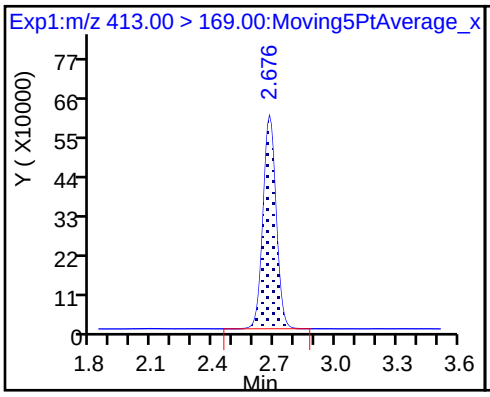
D 12 M2-6:2FTS



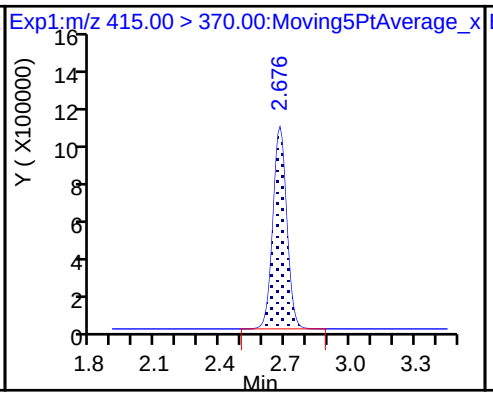
15 Perfluorooctanoic acid



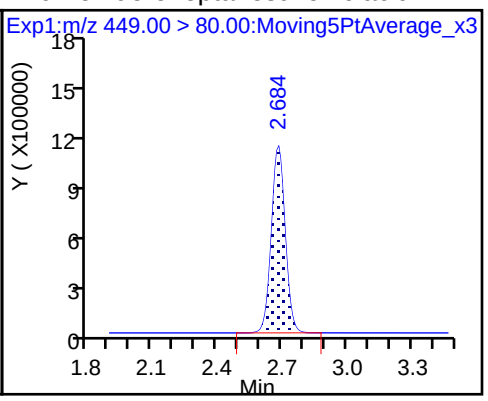
15 Perfluorooctanoic acid



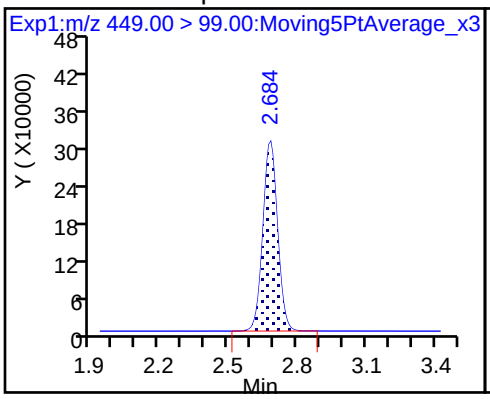
* 62 13C2-PFOA



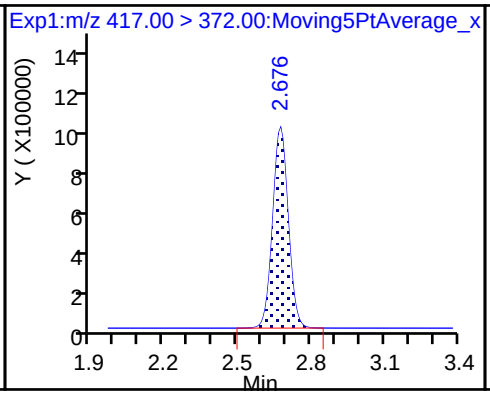
16 Perfluoroheptanesulfonic acid



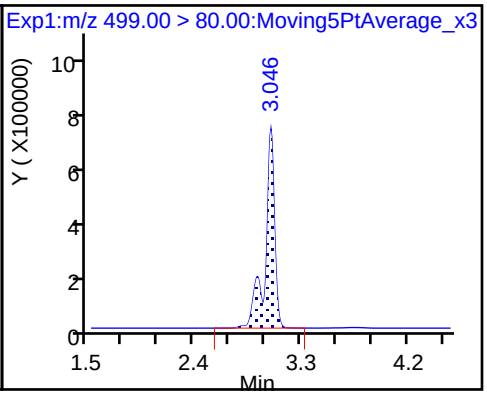
16 Perfluoroheptanesulfonic acid



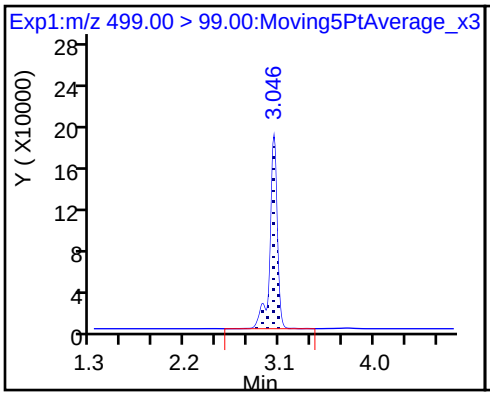
D 14 13C4 PFOA



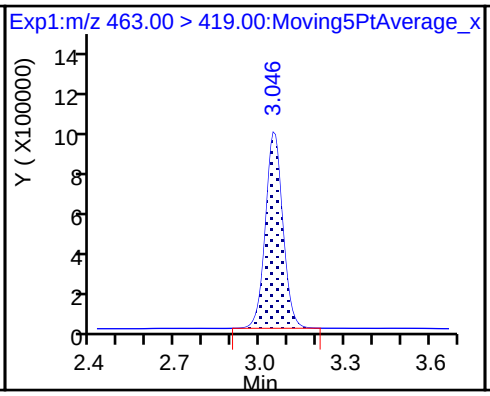
17 Perfluorooctane sulfonic acid



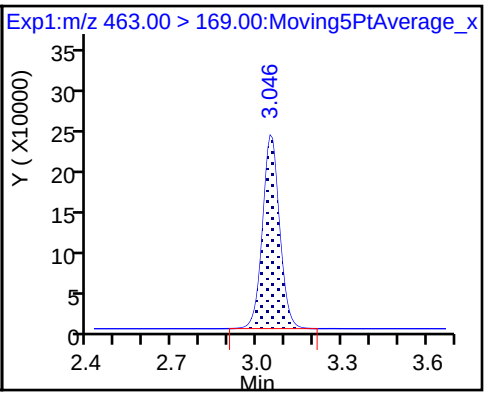
17 Perfluorooctane sulfonic acid



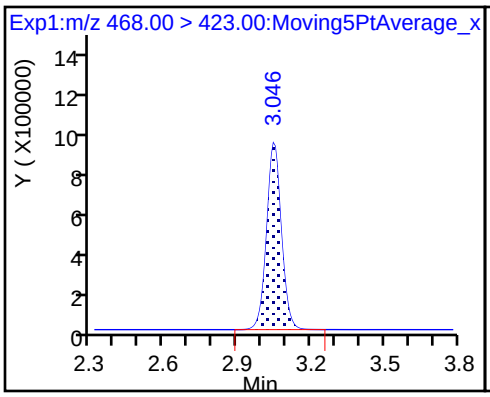
20 Perfluorononanoic acid



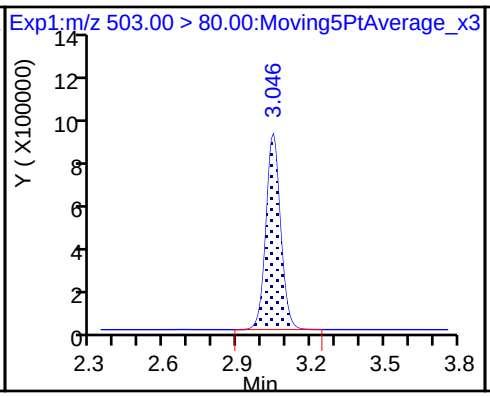
20 Perfluorononanoic acid



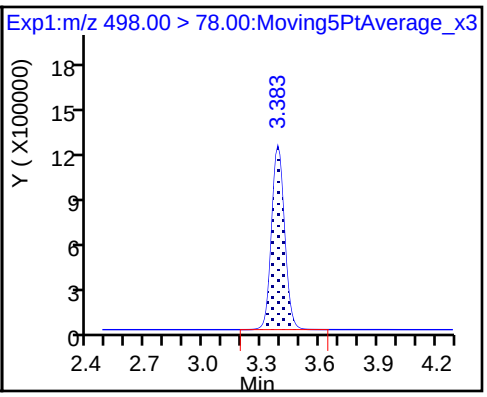
D 19 13C5 PFNA



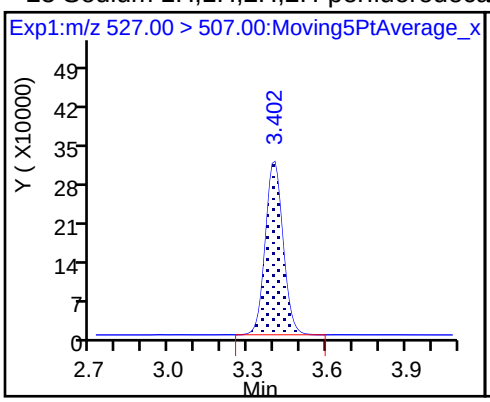
D 18 13C4 PFOS



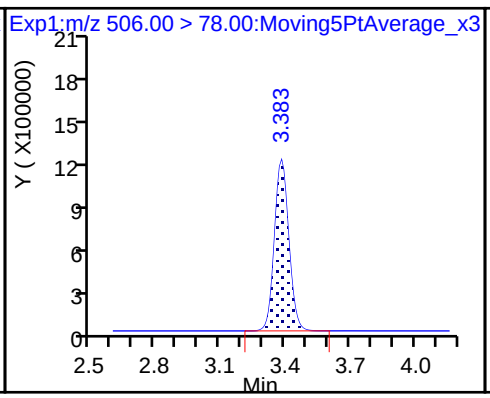
22 Perfluorooctane Sulfonamide



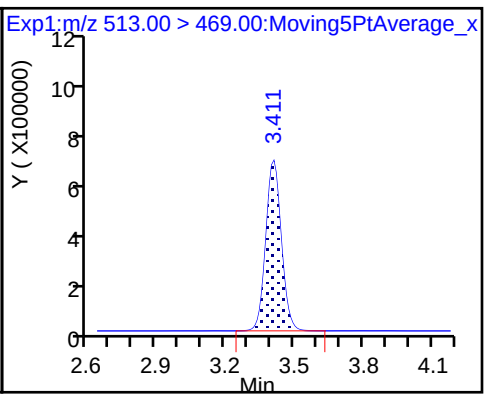
25 Sodium 1H,1H,2H,2H-perfluorodecane



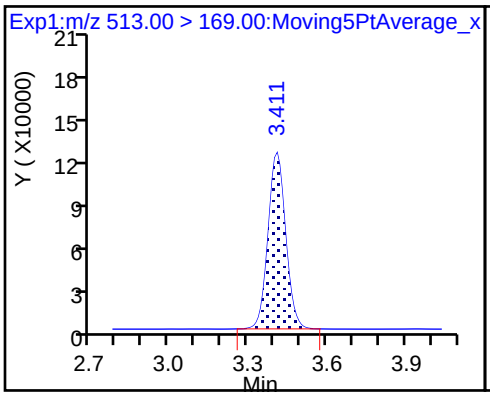
D 21 13C8 FOSA



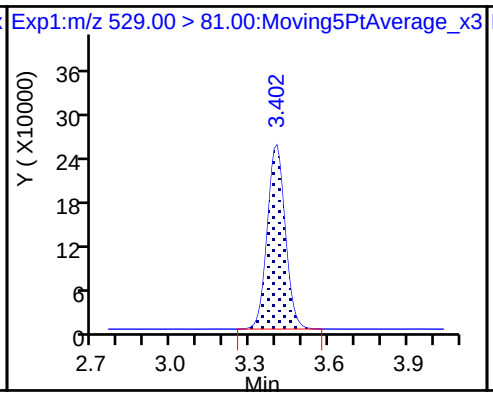
24 Perfluorodecanoic acid



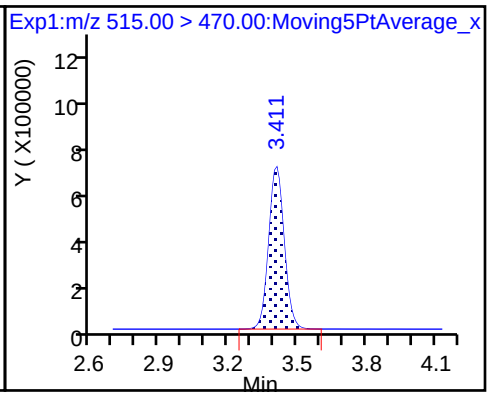
24 Perfluorodecanoic acid



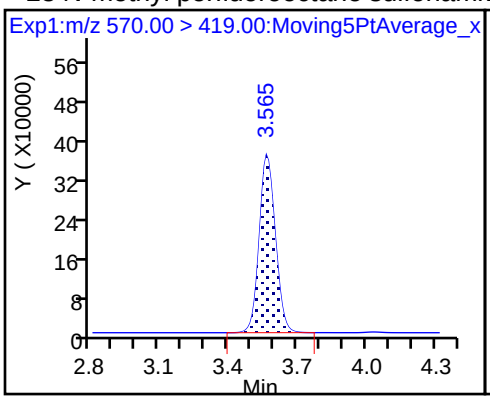
D 26 M2-8:2FTS



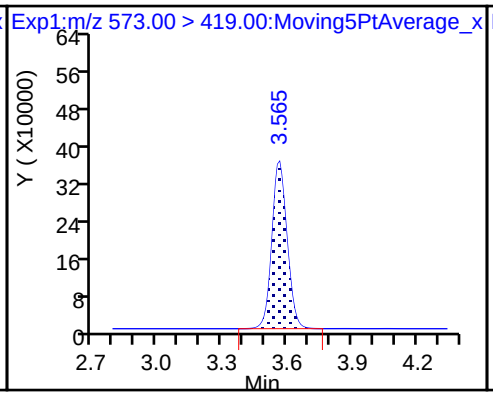
D 23 13C2 PFDA



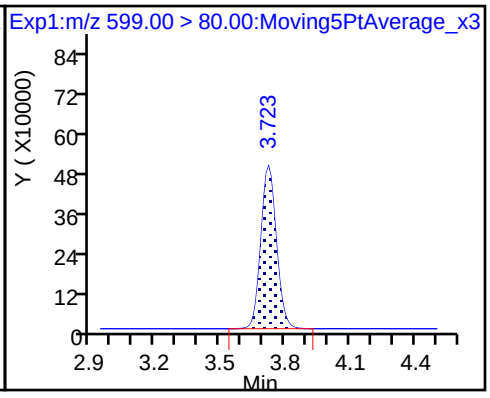
28 N-methyl perfluorooctane sulfonami



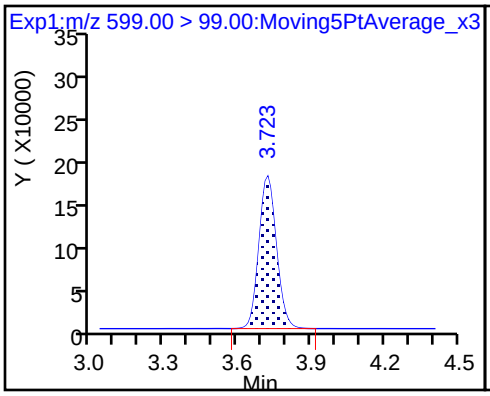
D 27 d3-NMeFOSAA



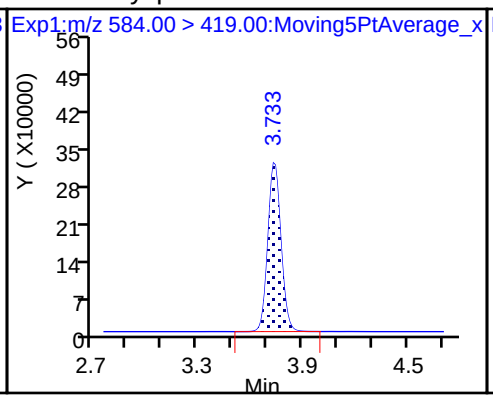
29 Perfluorodecane Sulfonic acid



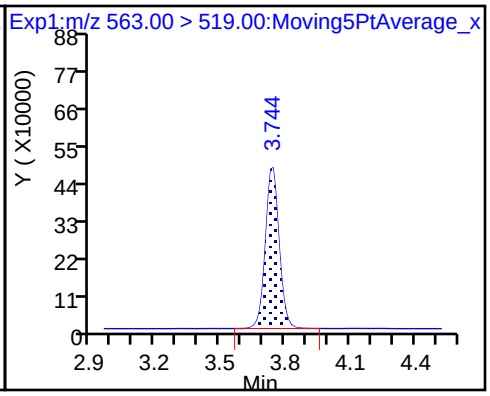
29 Perfluorodecane Sulfonic acid



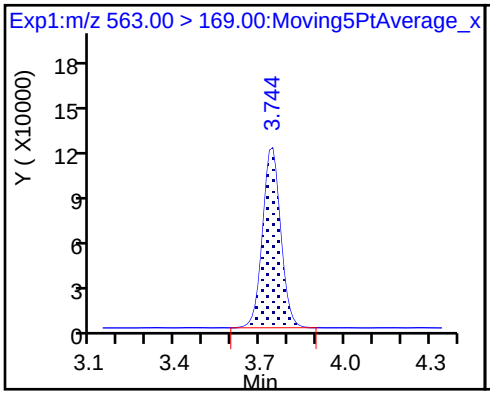
33 N-ethyl perfluorooctane sulfonamid



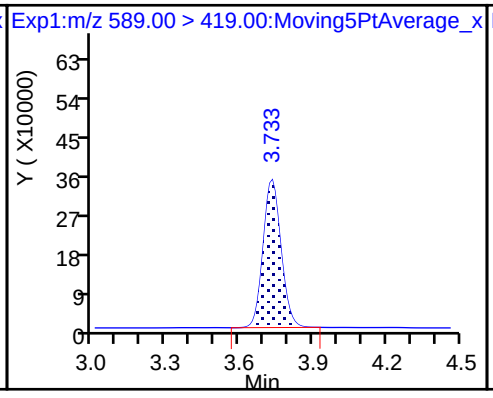
31 Perfluoroundecanoic acid



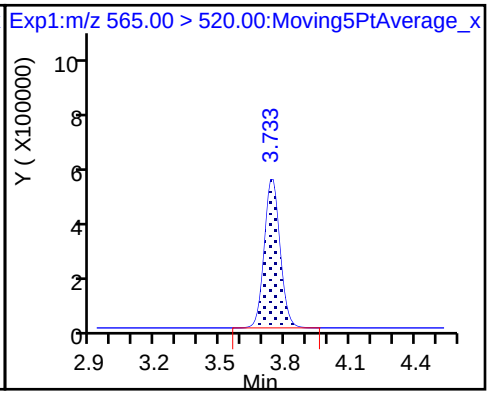
31 Perfluoroundecanoic acid



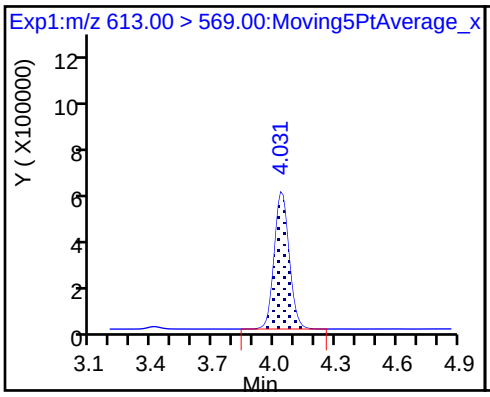
D 32 d5-NEtFOSAA



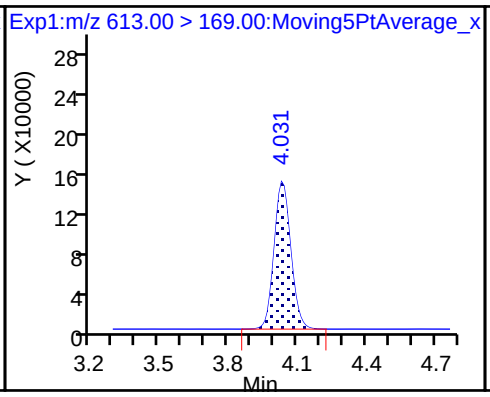
D 30 13C2 PFUnA



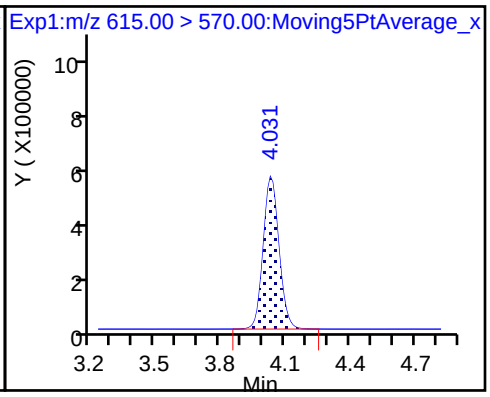
37 Perfluorododecanoic acid



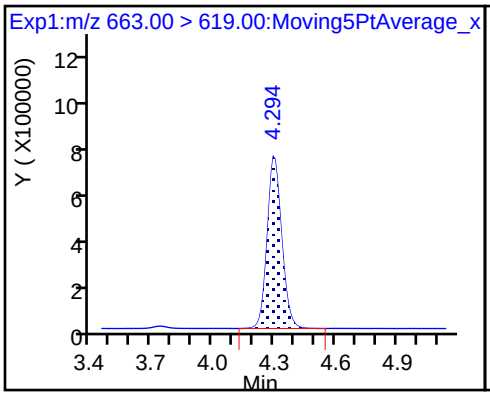
37 Perfluorododecanoic acid



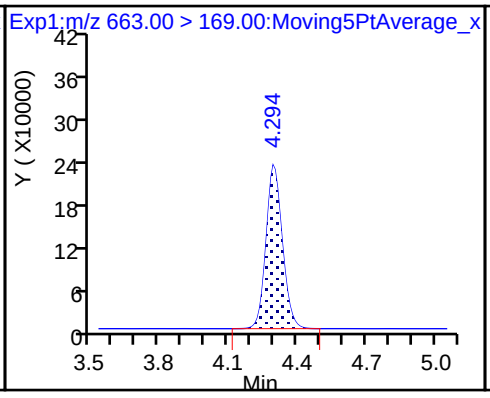
D 36 13C2 PFDoA



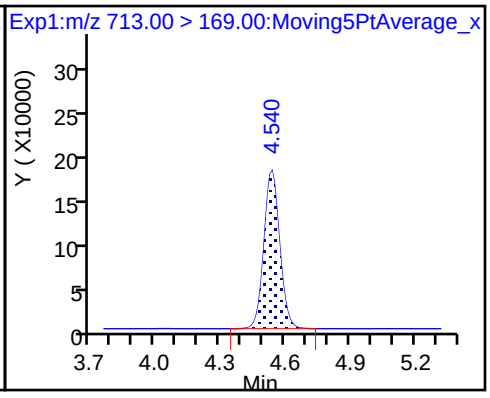
41 Perfluorotridecanoic acid



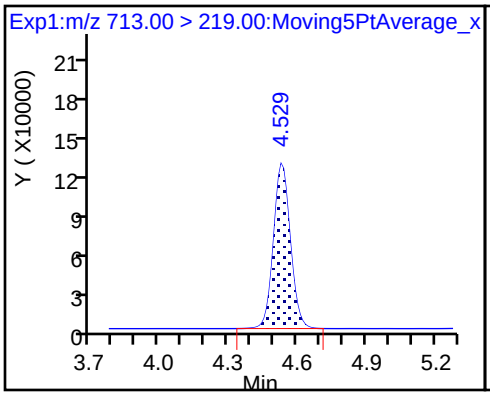
41 Perfluorotridecanoic acid



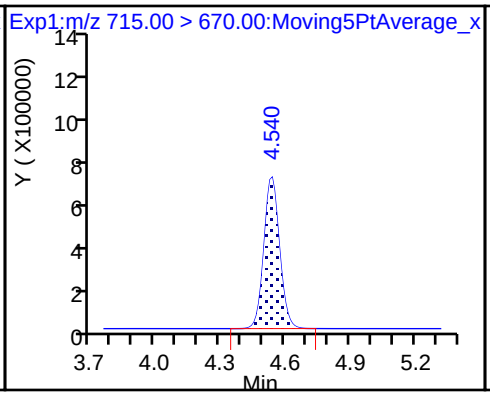
42 Perfluorotetradecanoic acid



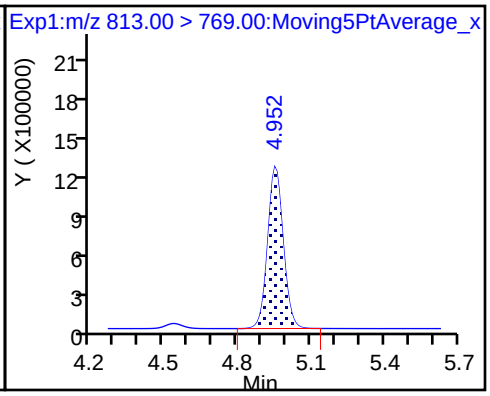
42 Perfluorotetradecanoic acid



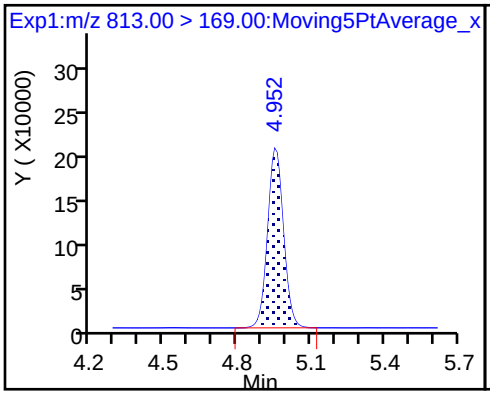
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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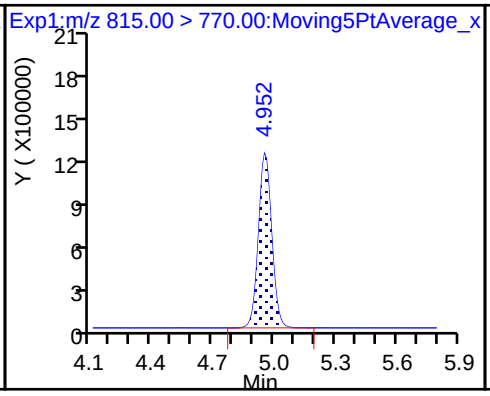
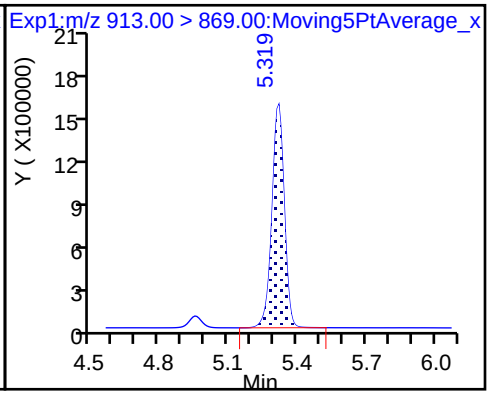
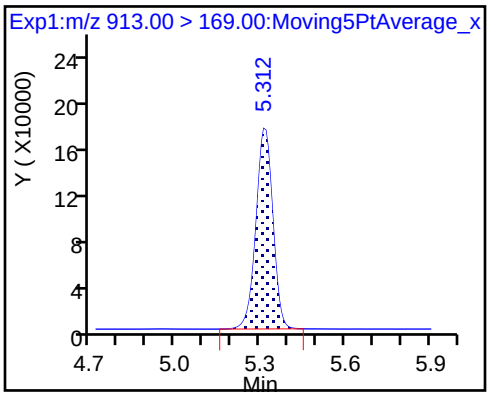


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-214600/1-A

Matrix: Solid | Lab File ID: 2018.03.28LLFF_007.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 00:10

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0000392	J	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00020	U	0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037
27619-97-2	6:2FTS	0.000209	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00025	U	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-214600/1-A

Matrix: Solid | Lab File ID: 2018.03.28LLFF_007.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 00:10

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	79		25-150
STL01893	13C5 PFPeA	83		25-150
STL00993	13C2 PFHxA	82		25-150
STL01892	13C4-PFHpA	82		25-150
STL00990	13C4 PFOA	77		25-150
STL00995	13C5 PFNA	72		25-150
STL00996	13C2 PFDA	74		25-150
STL00997	13C2 PFUnA	65		25-150
STL00998	13C2 PFDoA	63		25-150
STL02116	13C2-PFTeDA	68		25-150
STL02337	13C3-PFBS	77		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	80		25-150
STL01056	13C8 FOSA	73		25-150
STL02118	d3-NMeFOSAA	59		25-150
STL02117	d5-NEtFOSAA	57		25-150
STL02279	M2-6:2FTS	78		25-150
STL02280	M2-8:2FTS	71		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d
Lims ID: MB 320-214600/1-A
Client ID:
Sample Type: MB
Inject. Date: 29-Mar-2018 00:10:19 ALS Bottle#: 14 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: MB 320-214600/1-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: hannigana Date: 29-Mar-2018 08:07:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.435	0.005	1.000	42280	0.0196			8.8	
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5723007	1.98		79.2	139611	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3989907	2.08		83.2	136656	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.647	78649	1.80		77.3	467	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	4341596	2.05		81.9	122109	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.341	0.013	1.006	15209	0.006424			95.8	
399.00 > 99.00	2.341	2.341	0.0	1.000	5871		2.59(1.50-4.49)		30.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	4303232	2.06		82.3	117369	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	5030753	1.95		82.4	117902	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.673	2.673	0.0	1.000	61377	0.1045			1064	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		5707612	2.50			115471	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	20004	0.0108			6.0	
413.00 > 169.00	2.697	2.697	0.0	1.000	0		0.00(0.84-2.52)			
D 12 M2-6:2FTS										
429.00 > 81.00	2.673	2.697	-0.024	0.991	800106	1.84		77.7	22027	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.721	-0.024	1.000	4101375	1.92		76.7	100970	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	65880	0.0392			207	
499.00 > 99.00	3.072	3.072	0.0	1.000	14697		4.48(2.31-6.93)		146	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3416391	1.81		72.4	72921	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3609706	1.92		80.4	61995	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	4643155	1.83		73.3	53390	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.453	-0.027	1.270	992178	1.69		70.7	36269	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.462	-0.027	1.274	3044071	1.84		73.6	51303	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1293693	1.49		59.4	53666	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.748	3.769	-0.021	0.995	2213	0.002655			10.8	R
563.00 > 169.00	3.768	3.769	-0.001	1.000	1143		1.94(2.12-6.36)		121	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.769	-0.001	1.003	2391	0.004501			35.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1421551	1.43		57.3	4127	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.397	2416877	1.63		65.3	40925	
D 36 13C2 PFDoA										
615.00 > 570.00	4.067	4.089	-0.022	1.508	2654925	1.58		63.2	24158	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3491791	1.70		68.1	21597	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.972	0.009	1.000	44461	-0.000211			12.0	
813.00 > 169.00	4.981	4.972	0.009	1.000	7202		6.17(2.86-8.58)		96.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.008	-0.027	1.847	5079767	1.51		60.4	14594	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d

Injection Date: 29-Mar-2018 00:10:19 Instrument ID: A8_N

Lims ID: MB 320-214600/1-A

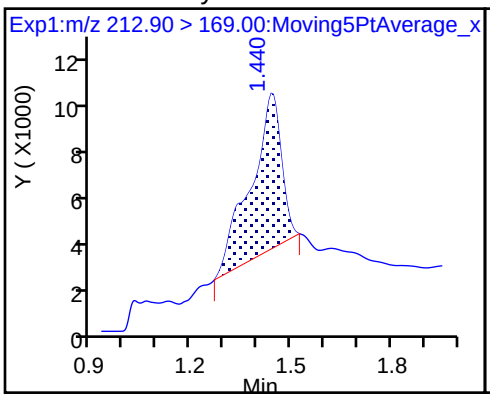
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 4

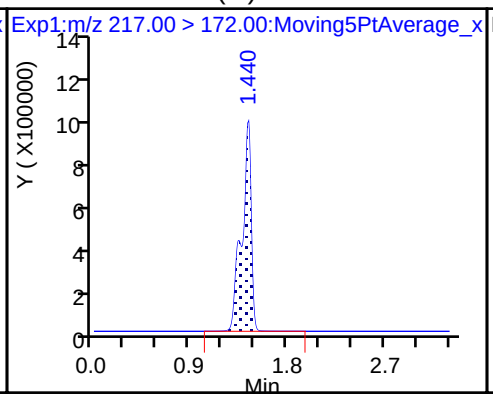
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

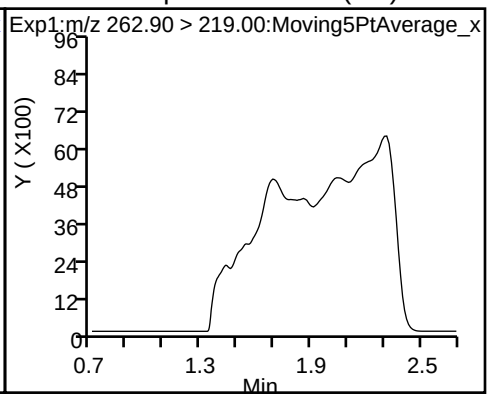
2 Perfluorobutyric acid



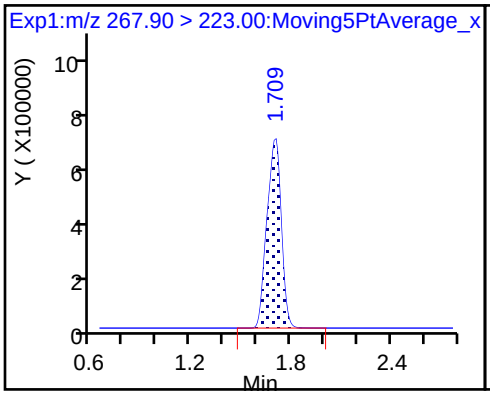
D 1 13C4 PFBA (M)



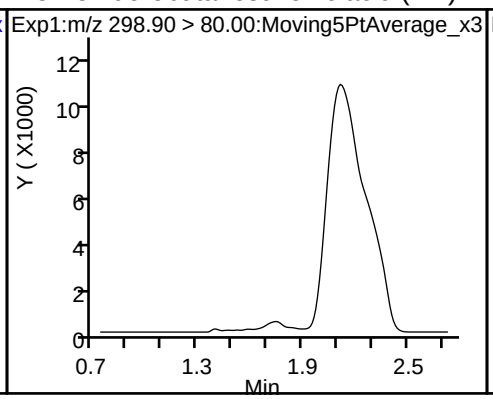
4 Perfluoropentanoic acid (ND)



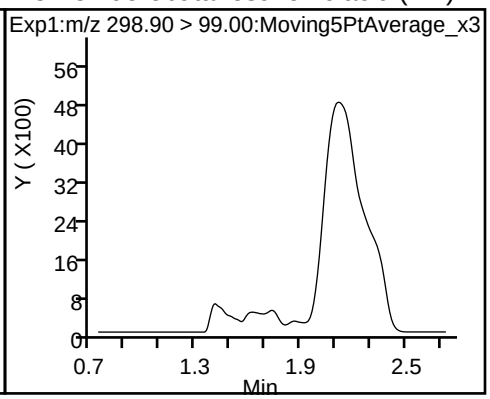
D 3 13C5-PFPeA



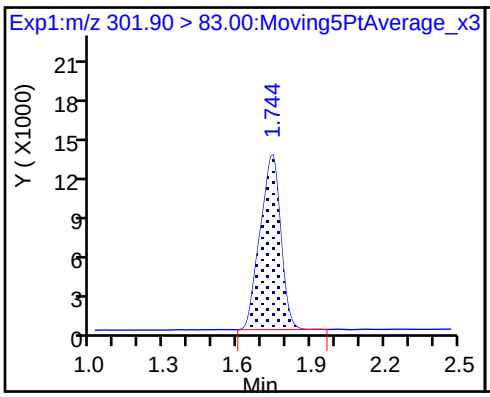
5 Perfluorobutanesulfonic acid (ND)



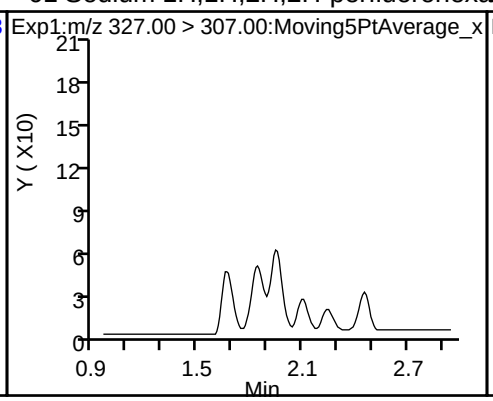
5 Perfluorobutanesulfonic acid (ND)



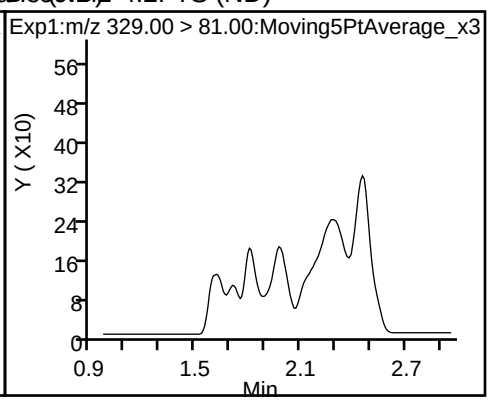
D 47 13C3-PFBS



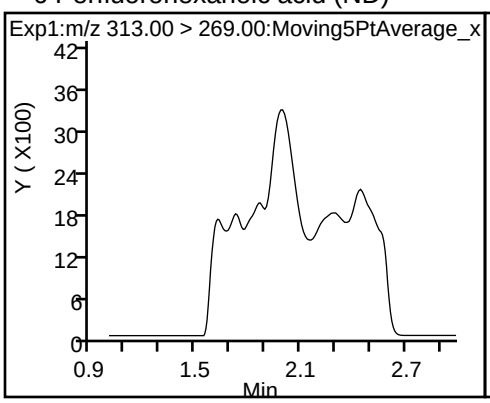
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



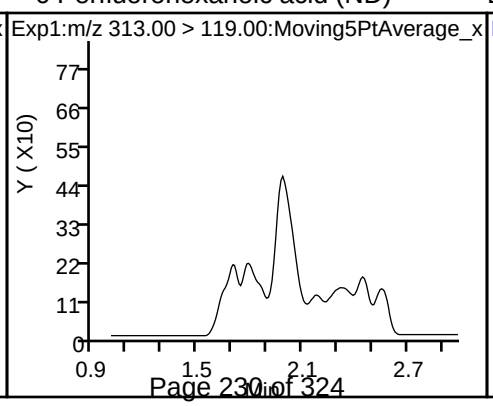
D 60 M2-4:2FTS (ND)



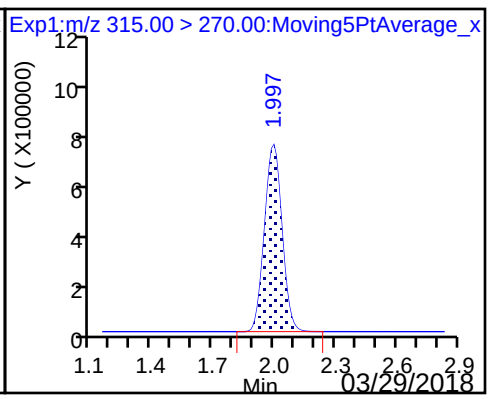
6 Perfluorohexanoic acid (ND)



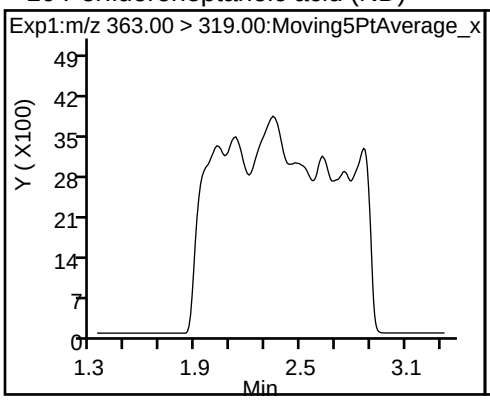
6 Perfluorohexanoic acid (ND)



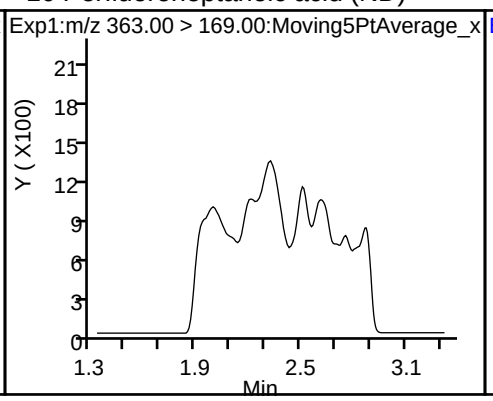
D 7 13C2 PFHxA



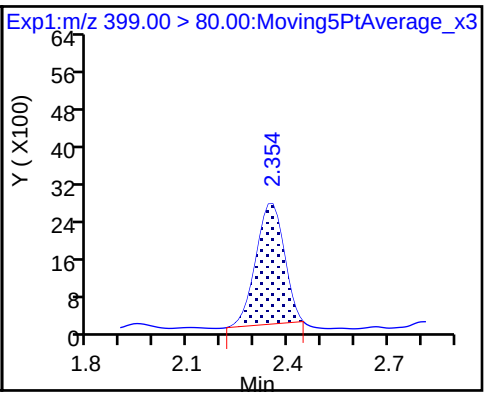
10 Perfluoroheptanoic acid (ND)



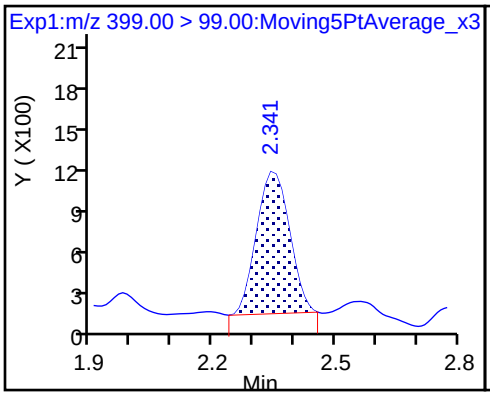
10 Perfluoroheptanoic acid (ND)



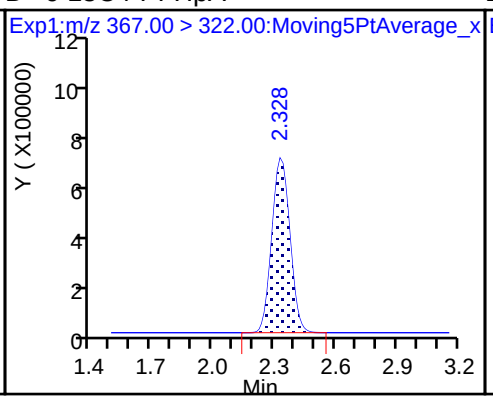
8 Perfluorohexanesulfonic acid



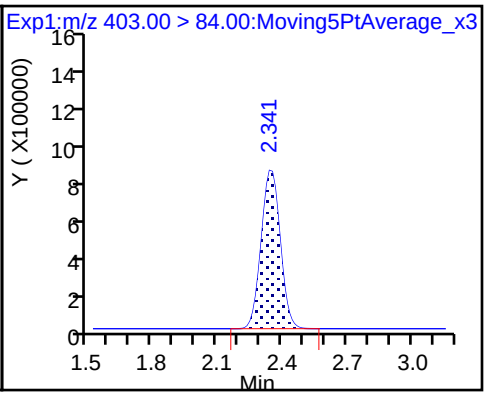
8 Perfluorohexanesulfonic acid



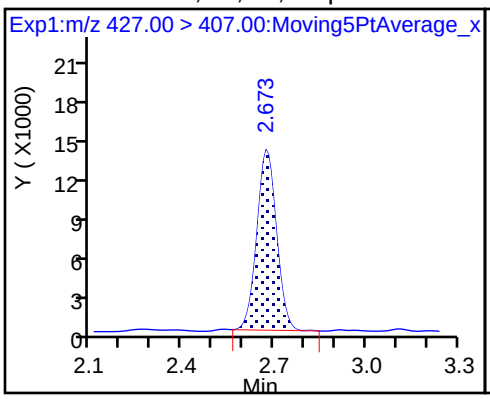
D 9 13C4-PFHpA



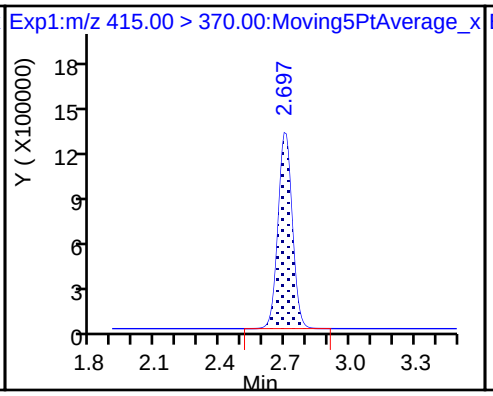
D 11 18O2 PFHxS



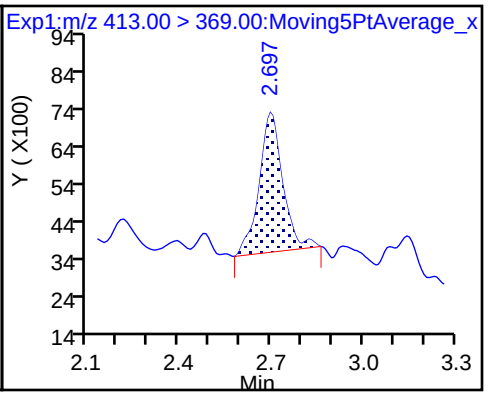
13 Sodium 1H,1H,2H,2H-perfluorooctane



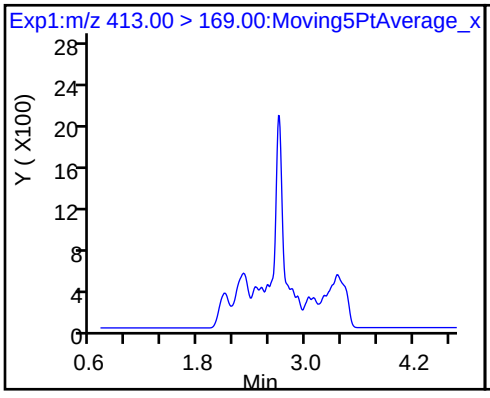
62 13C2-PFOA



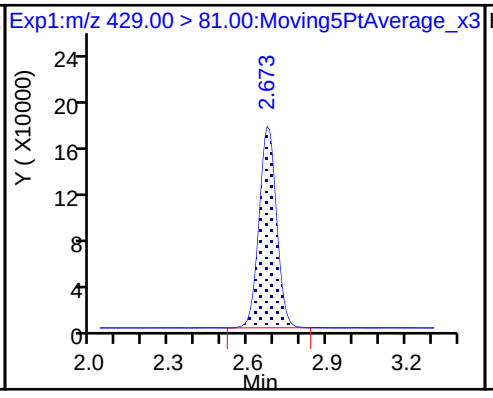
15 Perfluorooctanoic acid



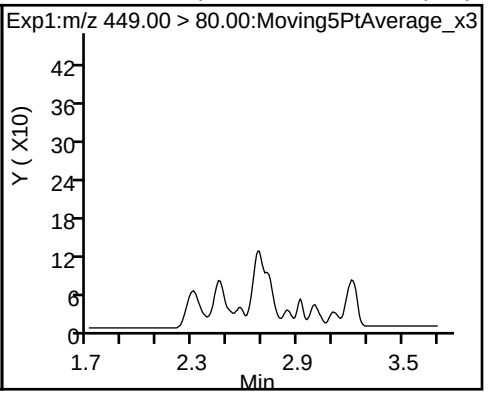
15 Perfluorooctanoic acid



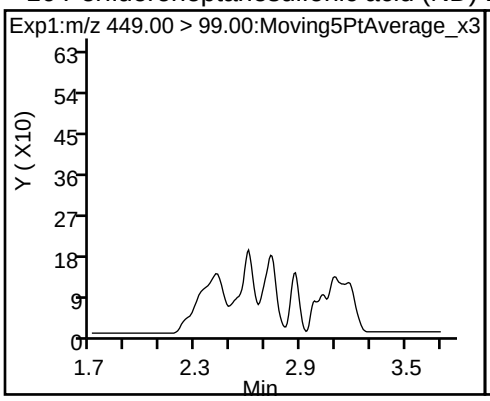
D 12 M2-6:2FTS



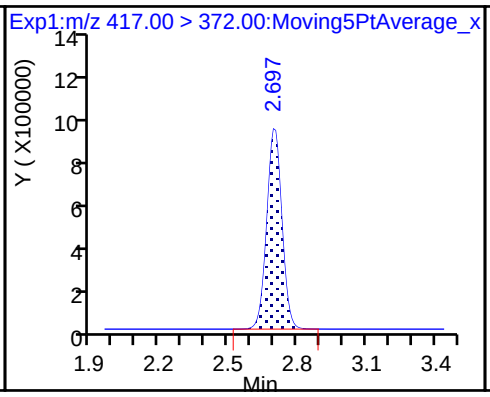
16 Perfluoroheptanesulfonic acid (ND)



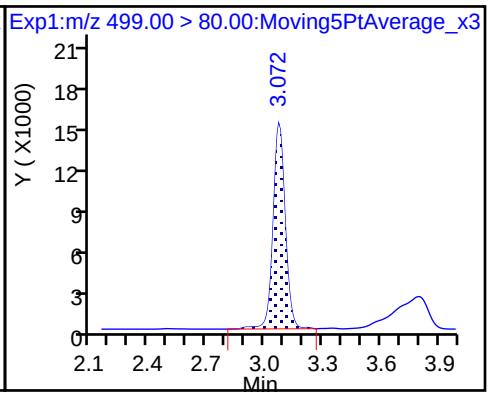
16 Perfluoroheptanesulfonic acid (ND)



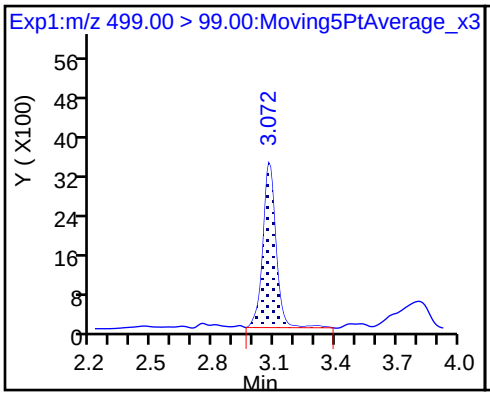
D 14 13C4 PFOA



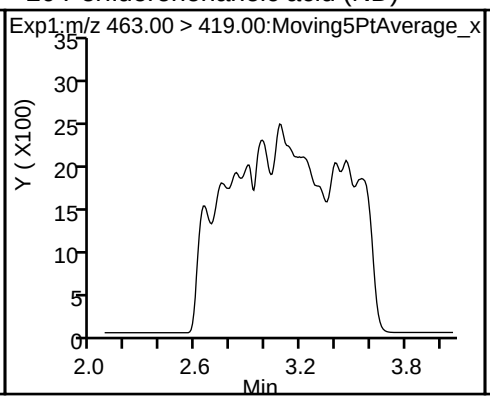
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid (ND)



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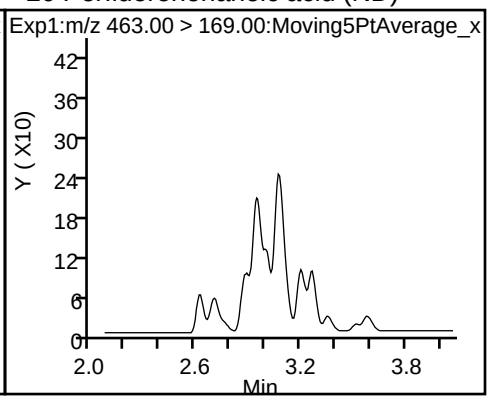
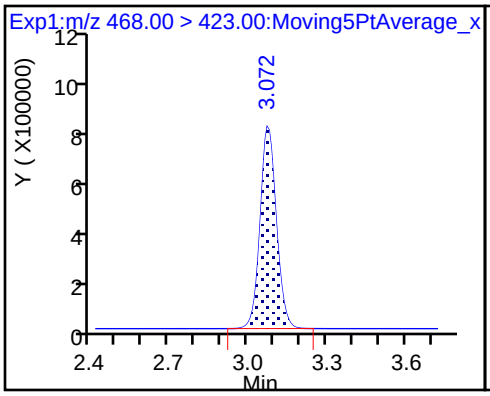
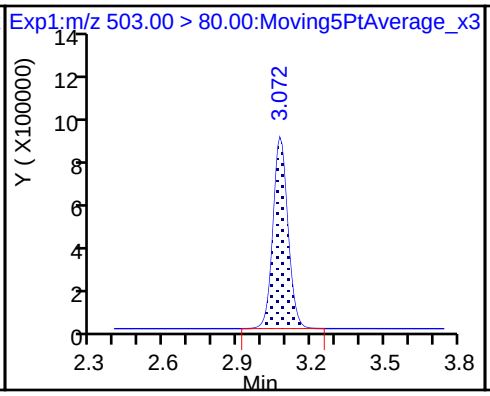


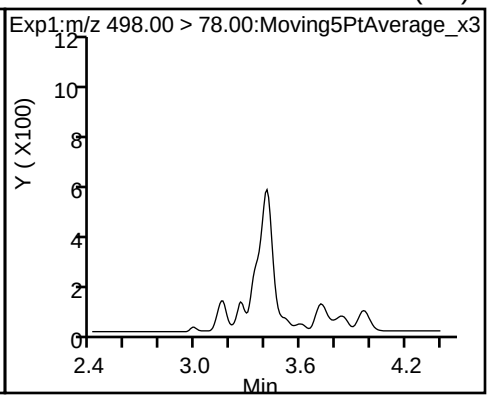
D 19 13C5 PFNA



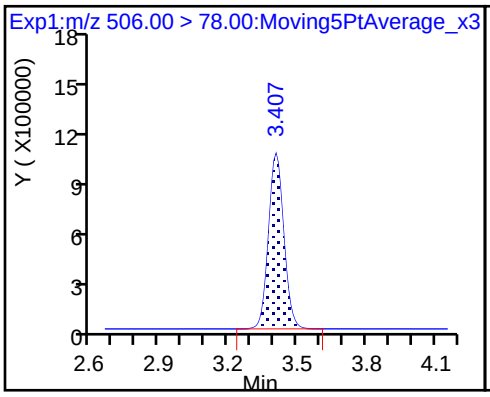
D 18 13C4 PFOS



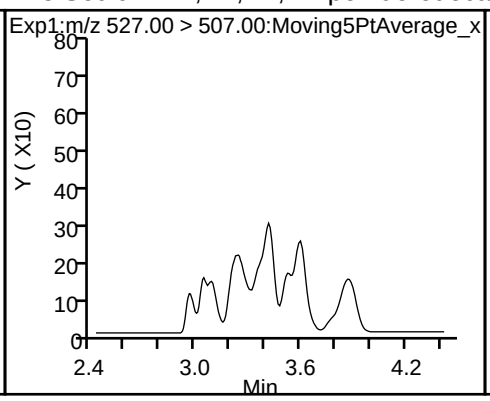
22 Perfluorooctane Sulfonamide (ND)



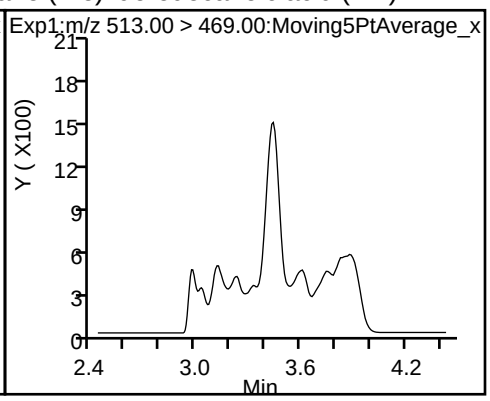
D 21 13C8 FOSA



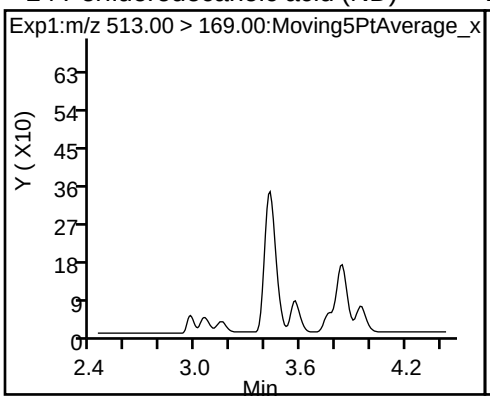
25 Sodium 1H,1H,2H,2H-perfluorodecane2 (ND)



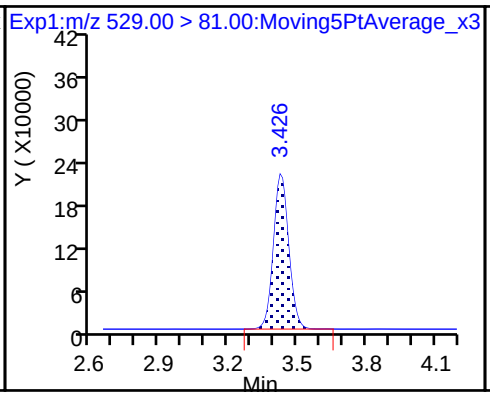
24 Perfluorodecanoic acid (ND)



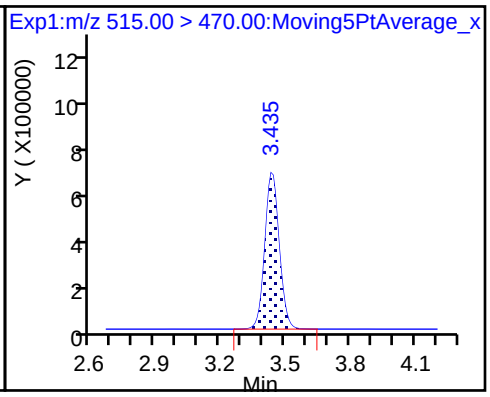
24 Perfluorodecanoic acid (ND)



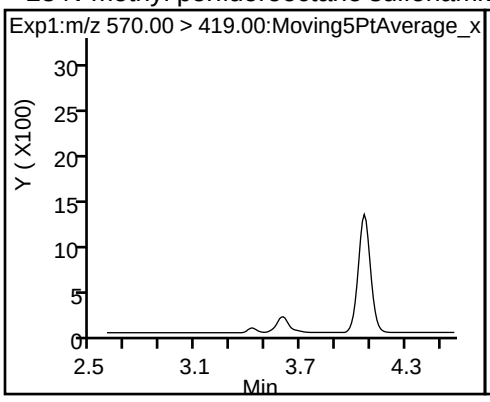
D 26 M2-8:2FTS



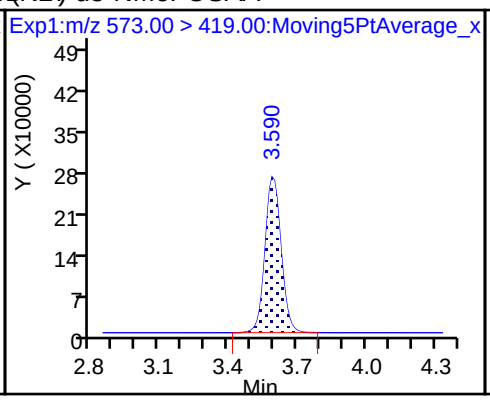
D 23 13C2 PFDA



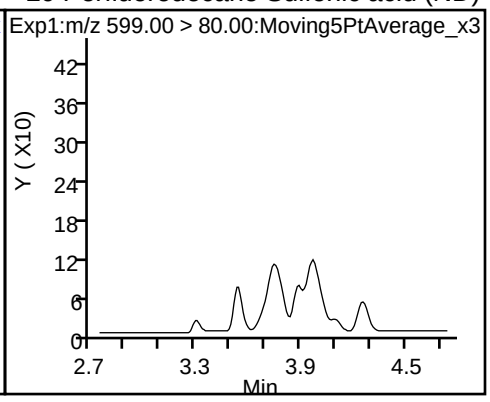
28 N-methyl perfluorooctane sulfonamid (ND)



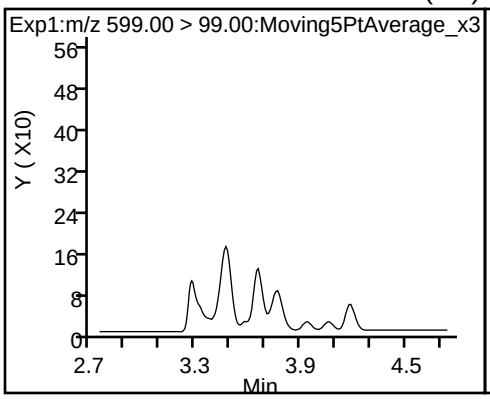
D 27 d3-NMeFOSAA



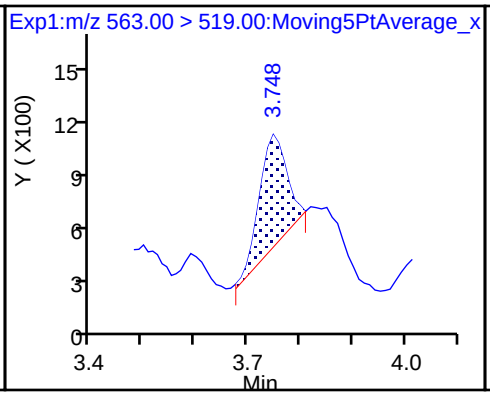
29 Perfluorodecane Sulfonic acid (ND)



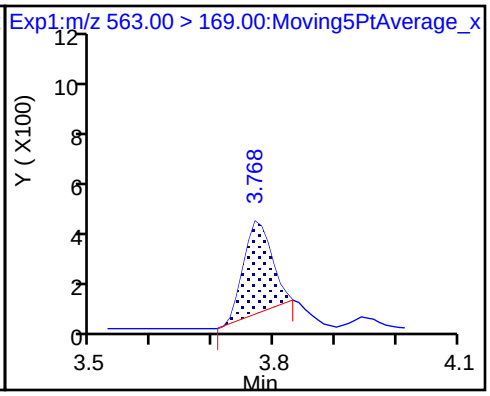
29 Perfluorodecane Sulfonic acid (ND)



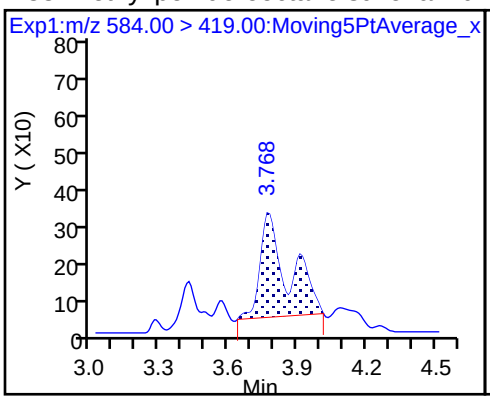
31 Perfluoroundecanoic acid



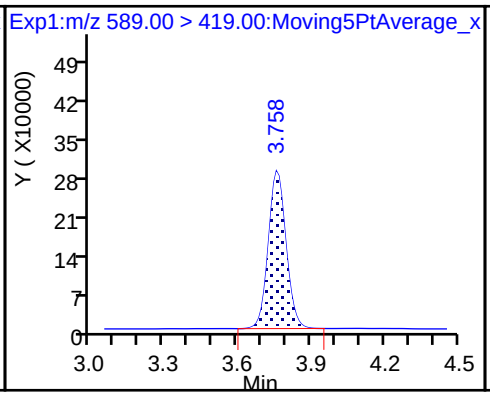
31 Perfluoroundecanoic acid



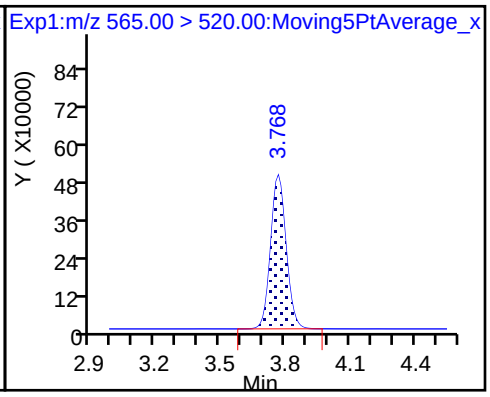
33 N-ethyl perfluorooctane sulfonamid



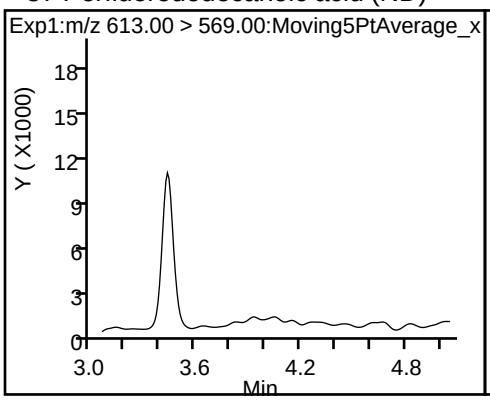
D 32 d5-NEtFOSAA



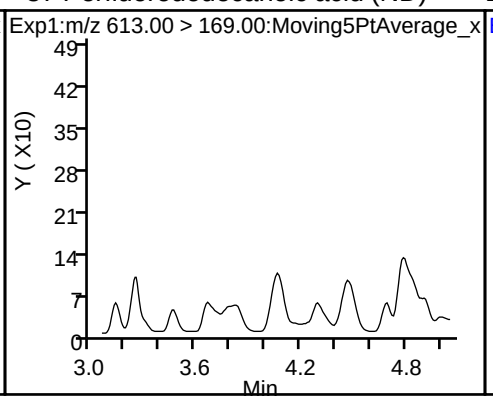
D 30 13C2 PFUnA



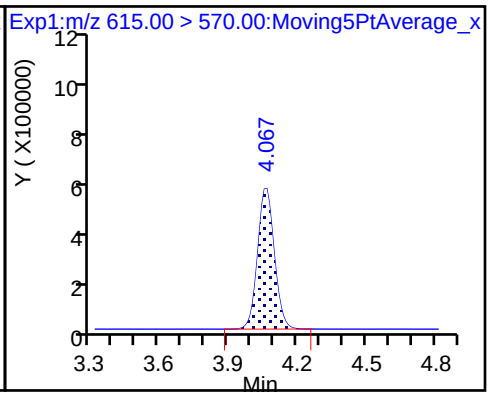
37 Perfluorododecanoic acid (ND)



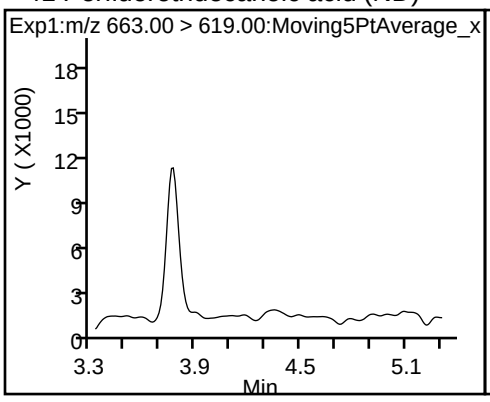
37 Perfluorododecanoic acid (ND)



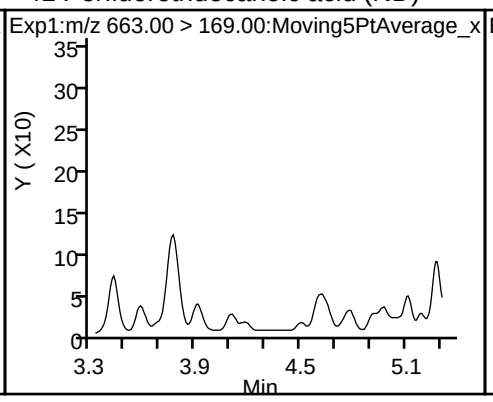
D 36 13C2 PFDoA



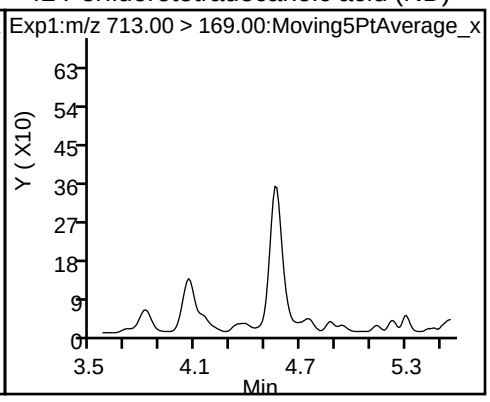
41 Perfluorotridecanoic acid (ND)



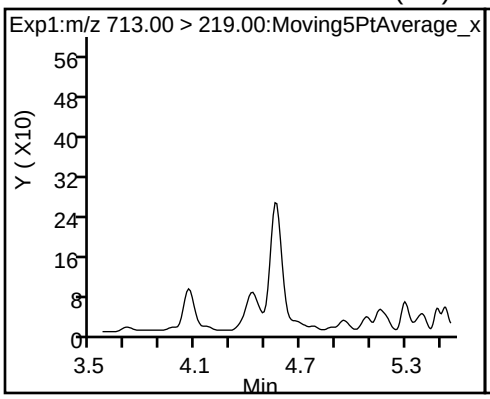
41 Perfluorotridecanoic acid (ND)



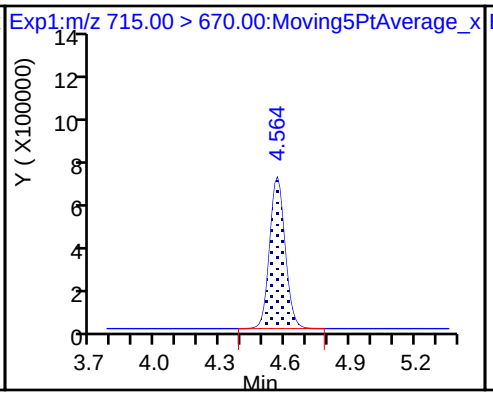
42 Perfluorotetradecanoic acid (ND)



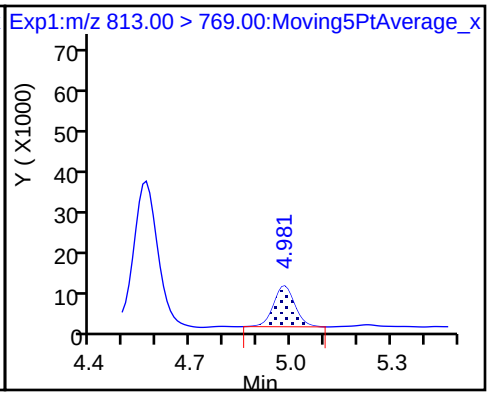
42 Perfluorotetradecanoic acid (ND)



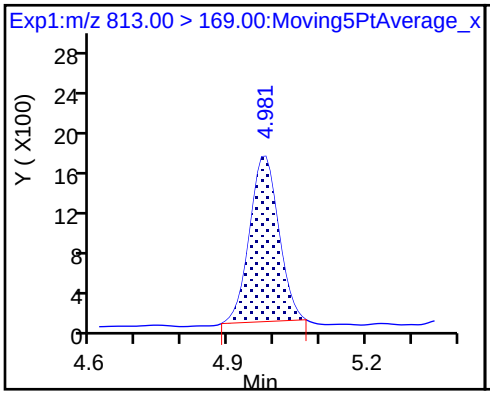
D 43 13C2-PFTeDA



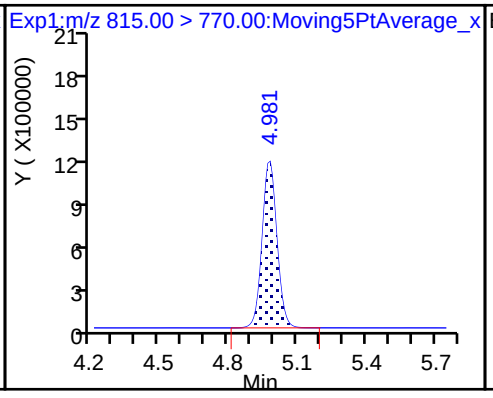
45 Perfluorohexadecanoic acid



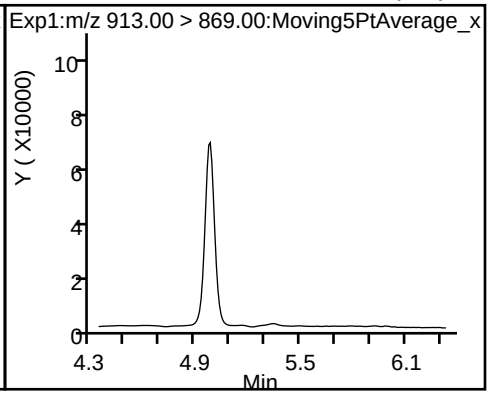
45 Perfluorohexadecanoic acid



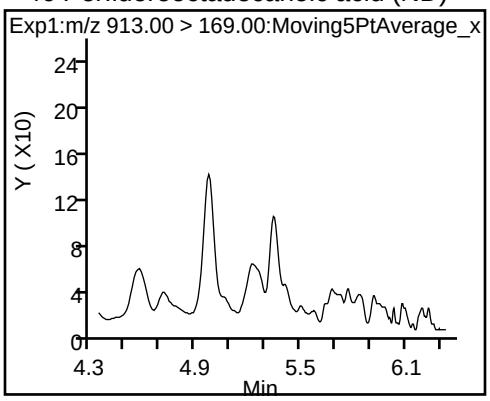
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

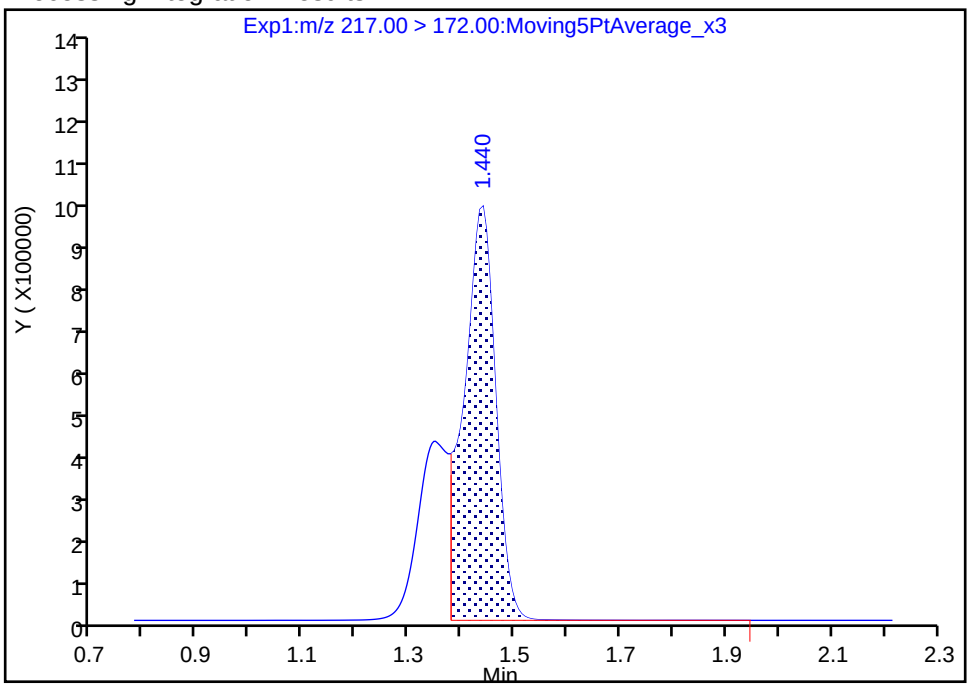
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_007.d
Injection Date: 29-Mar-2018 00:10:19 Instrument ID: A8_N
Lims ID: MB 320-214600/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

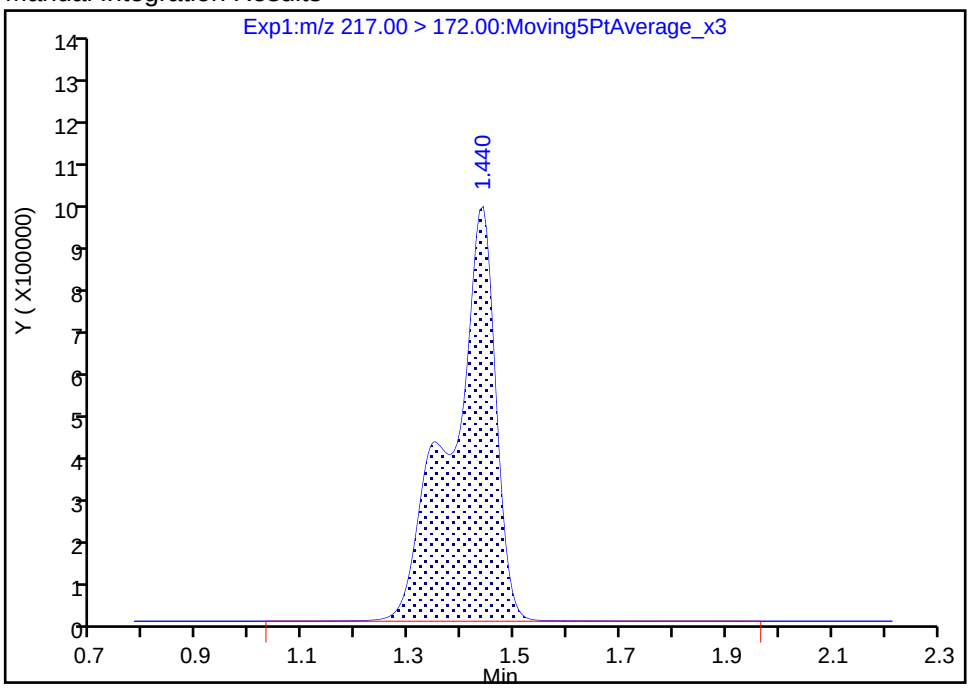
Processing Integration Results

RT: 1.44
Area: 4012287
Amount: 1.388212
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 5723007
Amount: 1.980105
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 08:57:53
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-214600/2-A

Matrix: Solid | Lab File ID: 2018.03.28LLFF_008.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 00:18

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00192		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00184		0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00182		0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00184		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00190		0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.00195		0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.00203		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00167		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00195		0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00187		0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00184		0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00161		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00157		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00170		0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00181		0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00169		0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00178		0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200		0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00196	J	0.0020	0.00037
27619-97-2	6:2FTS	0.00181	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00191	J	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-214600/2-A

Matrix: Solid | Lab File ID: 2018.03.28LLFF_008.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 00:18

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	83		25-150
STL01893	13C5 PFPeA	85		25-150
STL00993	13C2 PFHxA	81		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	79		25-150
STL00995	13C5 PFNA	78		25-150
STL00996	13C2 PFDA	71		25-150
STL00997	13C2 PFUnA	69		25-150
STL00998	13C2 PFDoA	66		25-150
STL02116	13C2-PFTeDA	70		25-150
STL02337	13C3-PFBS	85		25-150
STL00994	18O2 PFHxS	86		25-150
STL00991	13C4 PFOS	82		25-150
STL01056	13C8 FOSA	83		25-150
STL02118	d3-NMeFOSAA	59		25-150
STL02117	d5-NEtFOSAA	54		25-150
STL02279	M2-6:2FTS	83		25-150
STL02280	M2-8:2FTS	70		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d
Lims ID: LCS 320-214600/2-A
Client ID:
Sample Type: LCS
Inject. Date: 29-Mar-2018 00:18:08 ALS Bottle#: 15 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: LCS 320-214600/2-A
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:09 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 08:58:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.440	1.435	0.005	1.000	1922942	0.9601		96.0	473	M
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.534	5314173	2.07		82.9	82247	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.709	1.700	0.009	1.000	1499447	0.9195		91.9	706	
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.634	3615733	2.13		85.0	86398	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.736	0.008	1.005	2057201	0.8043		91.0	1190	
298.90 > 99.00	1.744	1.736	0.008	1.005	857728		2.40(1.25-3.74)		939	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.745	-0.010	0.644	76530	1.97		84.8	476	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.956	-0.001	1.000	398446	0.7494		80.2	16894	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	1.998	-0.001	1.000	1422900	0.9114		91.1	1755	
313.00 > 119.00	1.997	1.998	-0.001	1.000	131403		10.83(5.03-15.10)		1643	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.741	3817872	2.03		81.2	105962	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	1513616	0.9200		92.0	836	
363.00 > 169.00	2.328	2.328	0.0	1.000	594180		2.55(1.13-3.40)		945	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.341	2.341	0.0	1.000	1719033	0.7826		86.0	7573	
399.00 > 99.00	2.341	2.341	0.0	1.000	593372		2.90(1.50-4.49)		3146	
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.354	-0.026	0.863	3976034	2.14		85.7	92617	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.368	-0.027	0.868	4667373	2.04		86.2	95324	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.672	2.673	-0.001	1.000	506072	0.9063		95.6	6383	
* 62 13C2-PFOA										
415.00 > 370.00	2.696	2.697	-0.001		5062517	2.50			86207	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.696	2.697	-0.001	1.000	1620851	0.9520		95.2	598	
413.00 > 169.00	2.696	2.697	-0.001	1.000	799754		2.03(0.84-2.52)		2928	
D 12 M2-6:2FTS										
429.00 > 81.00	2.672	2.697	-0.025	0.991	760569	1.98		83.2	20745	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.704	2.705	0.0	1.000	1491471	0.8508		89.4	36869	
449.00 > 99.00	2.704	2.705	0.0	1.000	404428		3.69(1.94-5.82)		9934	
D 14 13C4 PFOA										
417.00 > 372.00	2.696	2.721	-0.025	1.000	3767716	1.98		79.4	76025	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.072	3.072	0.0	1.000	1378238	0.9043		97.5	3740	
499.00 > 99.00	3.072	3.072	0.0	1.000	313864		4.39(2.31-6.93)		3441	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1275089	0.9738		97.4	1343	
463.00 > 169.00	3.072	3.072	0.0	1.000	297894		4.28(1.90-5.69)		8692	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.096	-0.024	1.139	3281808	1.96		78.4	85229	
D 18 13C4 PFOS										
503.00 > 80.00	3.072	3.096	-0.024	1.139	3269841	1.96		82.1	52043	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.407	0.0	1.000	1646148	0.8910		89.1	35333	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.264	4685404	2.09		83.4	50912	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.426	-0.001	1.000	441521	0.9528		99.5	7253	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.434	3.435	-0.001	1.000	1045654	1.01		101	5723	
513.00 > 169.00	3.434	3.435	-0.001	1.000	171796		6.09(2.36-7.09)		7353	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.453	-0.028	1.271	869560	1.67		69.9	23706	
D 23 13C2 PFDA										
515.00 > 470.00	3.434	3.462	-0.028	1.274	2608168	1.78		71.1	30973	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.590	0.010	1.003	455355	1.00		99.8	4135	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.590	3.611	-0.021	1.331	1139433	1.48		59.0	23562	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.748	0.0	1.000	785212	0.8440		87.6	20001	
599.00 > 99.00	3.748	3.748	0.0	1.000	289023		2.72(1.39-4.16)		8490	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.769	-0.001	1.000	651861	0.8327		83.3	3823	
563.00 > 169.00	3.768	3.769	-0.001	1.000	172283		3.78(2.12-6.36)		10082	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.769	-0.001	1.003	431808	0.9812		98.1	10798	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.779	-0.021	1.394	1177642	1.34		53.5	3338	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.790	-0.022	1.398	2269882	1.73		69.2	57478	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.057	-0.001	1.000	1008631	0.9734		97.3	725	
613.00 > 169.00	4.056	4.057	-0.001	1.000	241465		4.18(2.13-6.40)		4825	
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.089	-0.033	1.504	2475713	1.66		66.5	24841	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.318	0.010	1.000	1016514	0.9326		93.3	493	
663.00 > 169.00	4.317	4.318	-0.001	0.997	319295		3.18(1.25-3.76)		7862	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	288698	0.9206		92.1	4845	
713.00 > 219.00	4.554	4.564	-0.010	0.998	207070		1.39(0.71-2.13)		4203	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.585	-0.021	1.693	3163929	1.74		69.6	21467	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.981	4.972	0.009	1.000	1686805	0.9820		98.2	480	
813.00 > 169.00	4.981	4.972	0.009	1.000	274888		6.14(2.86-8.58)		3286	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.981	5.008	-0.027	1.848	4610984	1.55		61.9	15104	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.337	0.007	1.000	1634551	0.9585		95.8	368	
913.00 > 169.00	5.344	5.337	0.007	1.000	201902		8.10(3.83-11.48)		2597	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d

Injection Date: 29-Mar-2018 00:18:08 Instrument ID: A8_N

Lims ID: LCS 320-214600/2-A

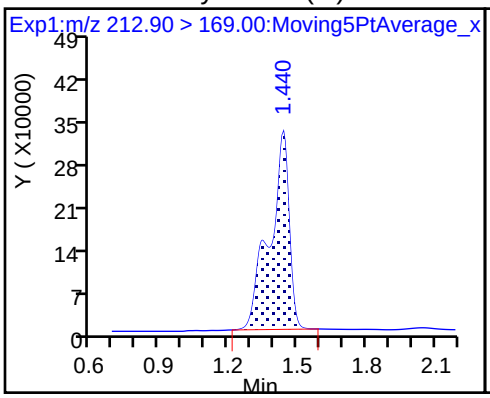
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 5

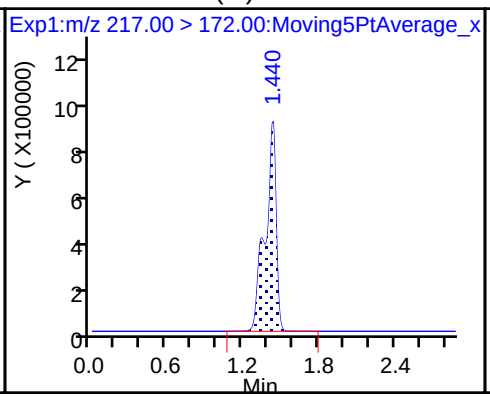
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

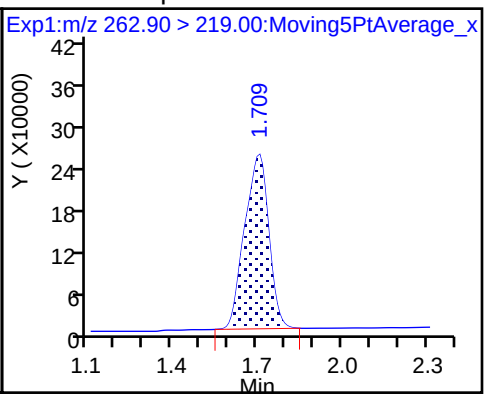
2 Perfluorobutyric acid (M)



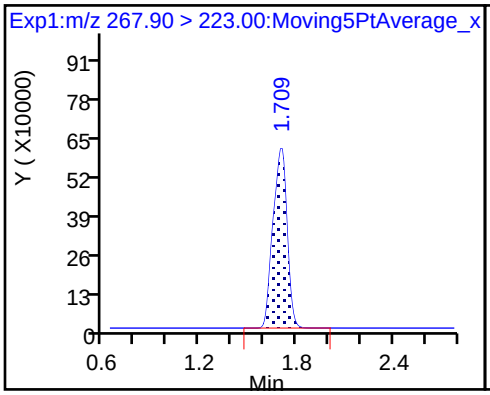
D 1 13C4 PFBA (M)



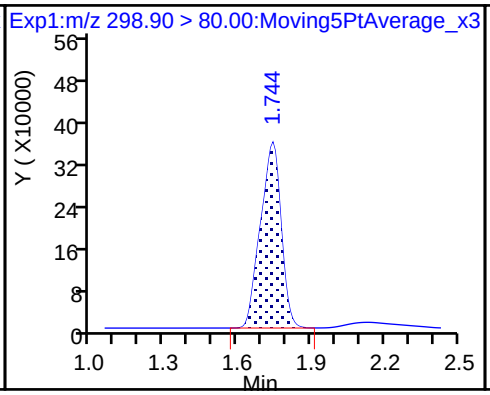
4 Perfluoropentanoic acid



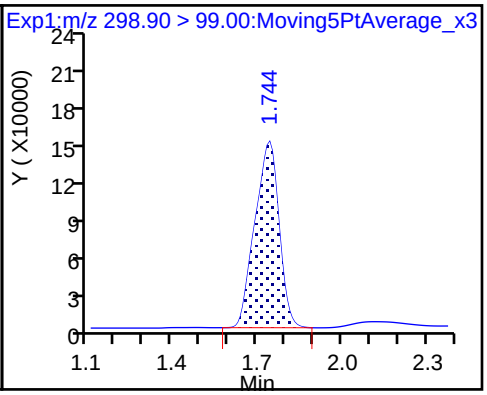
D 3 13C5-PFPeA



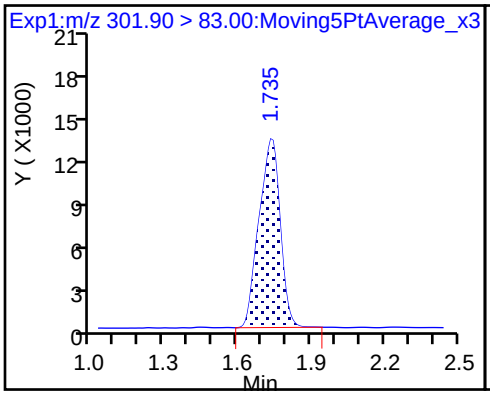
5 Perfluorobutanesulfonic acid



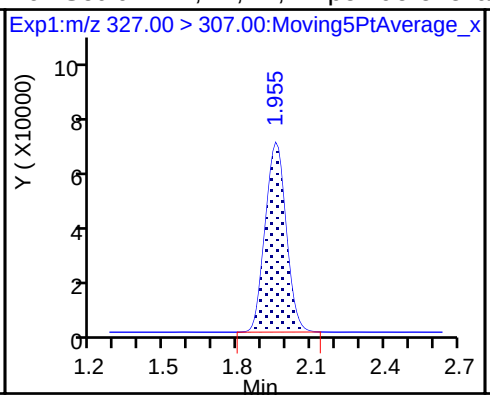
5 Perfluorobutanesulfonic acid



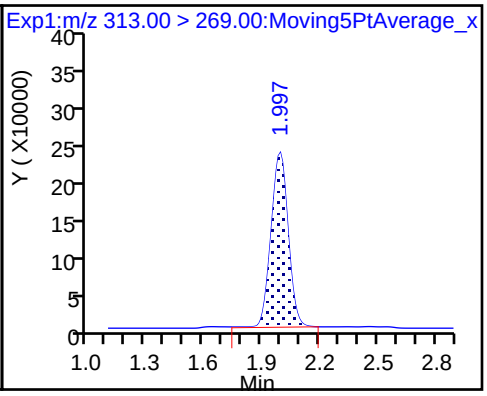
D 47 13C3-PFBS



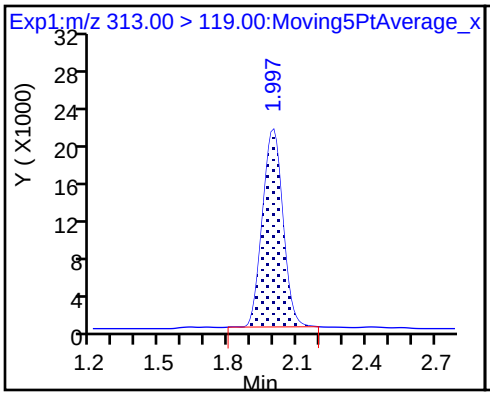
61 Sodium 1H,1H,2H,2H-perfluorohexane



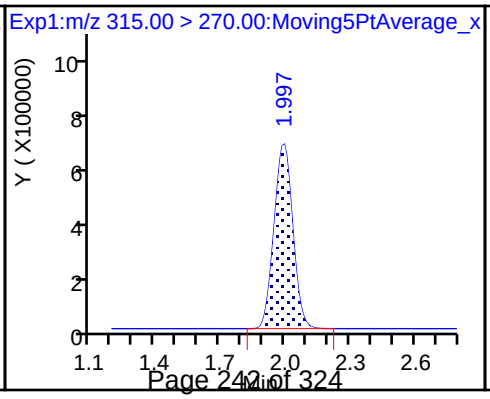
6 Perfluorohexanoic acid



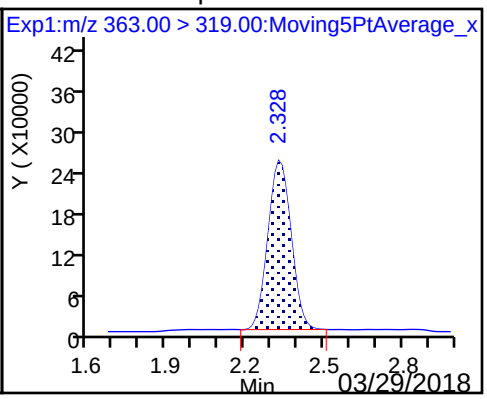
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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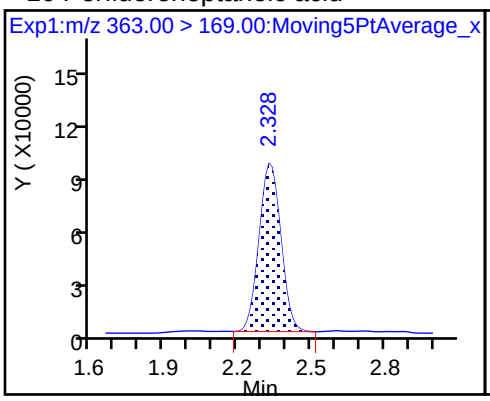
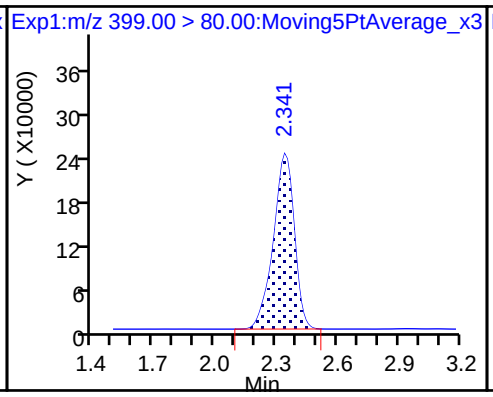


8 Perfluorohexanesulfonic acid



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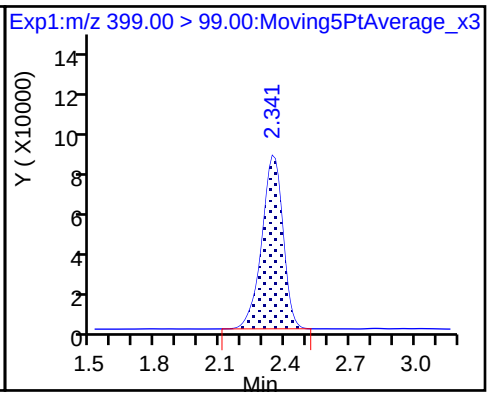
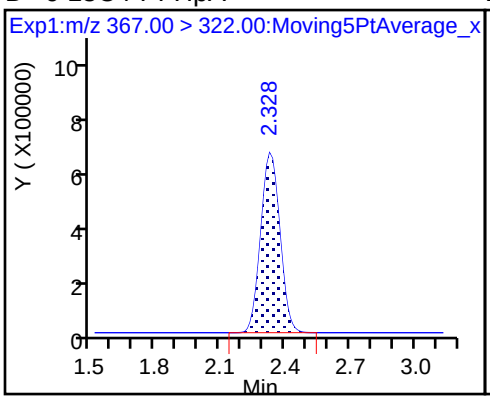
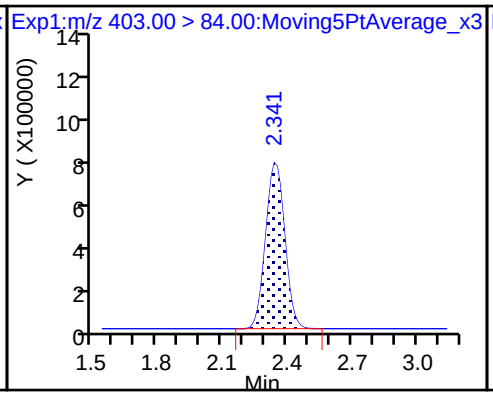


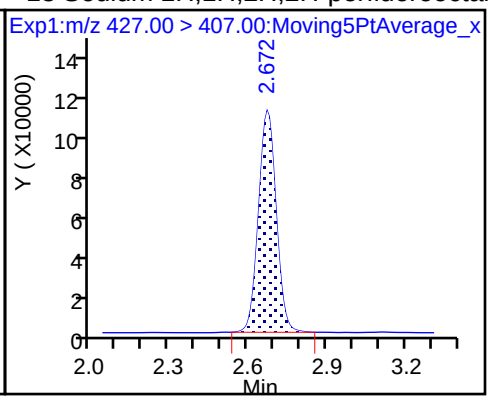
D 9 13C4-PFHpA



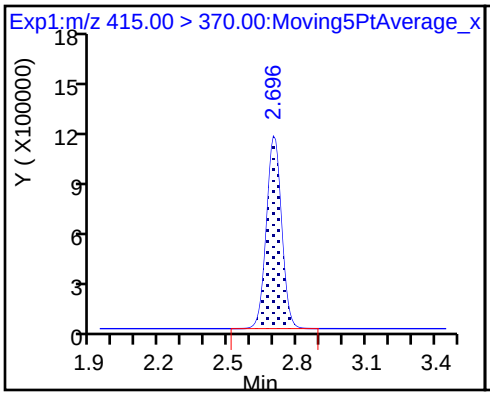
D 11 18O2 PFHxS



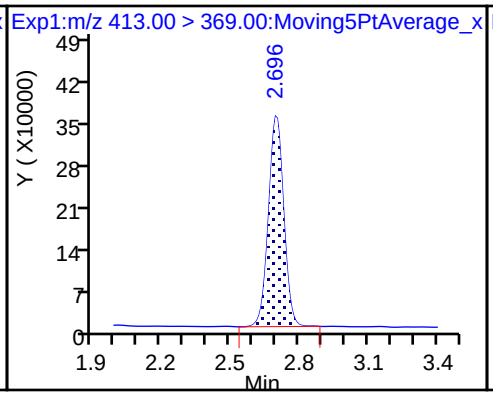
13 Sodium 1H,1H,2H,2H-perfluorooctane



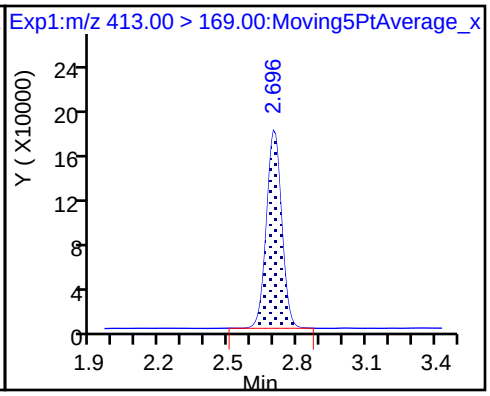
* 62 13C2-PFOA



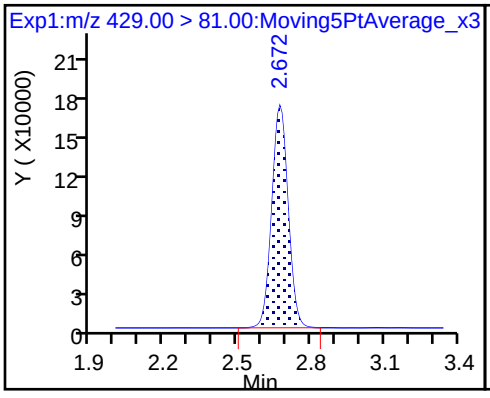
15 Perfluorooctanoic acid



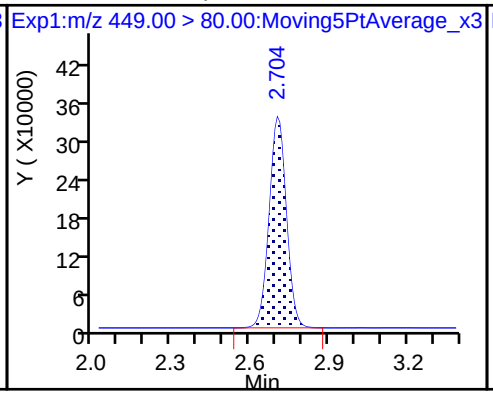
15 Perfluorooctanoic acid



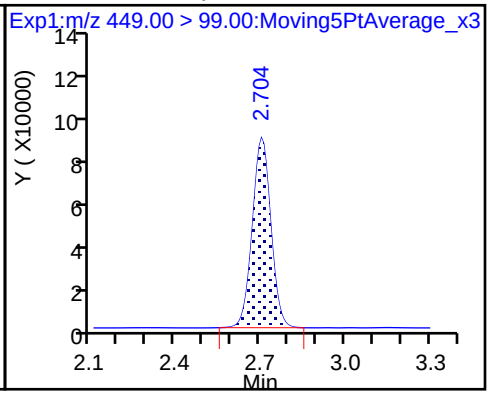
D 12 M2-6:2FTS



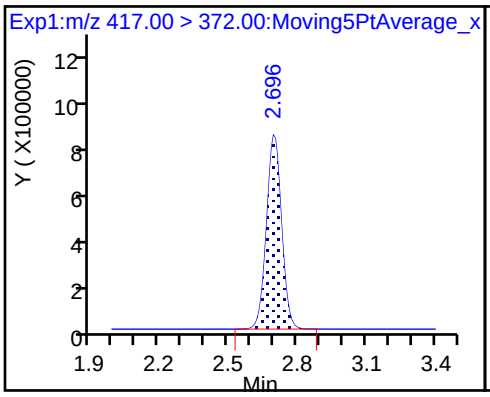
16 Perfluoroheptanesulfonic acid



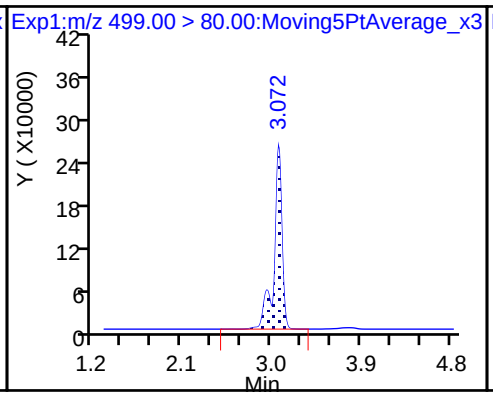
16 Perfluoroheptanesulfonic acid



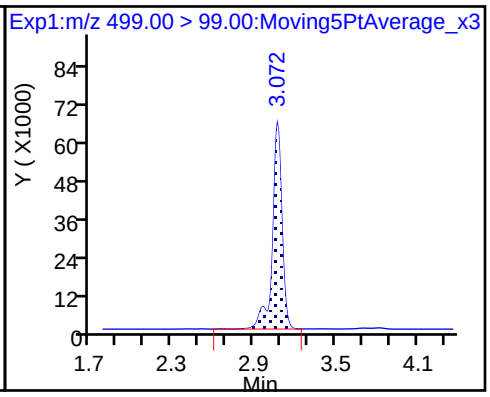
D 14 13C4 PFOA



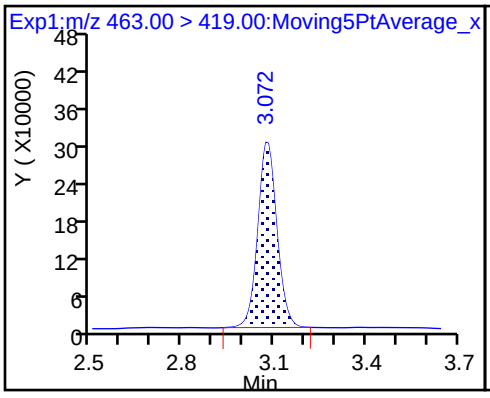
17 Perfluorooctane sulfonic acid



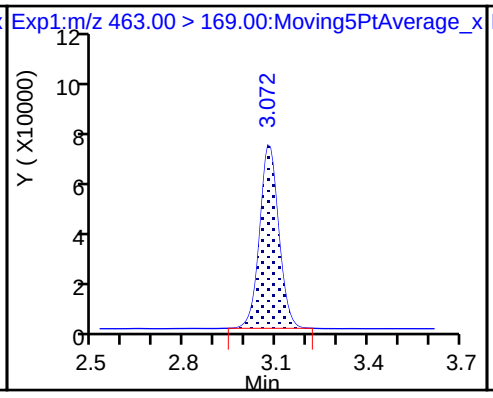
17 Perfluorooctane sulfonic acid



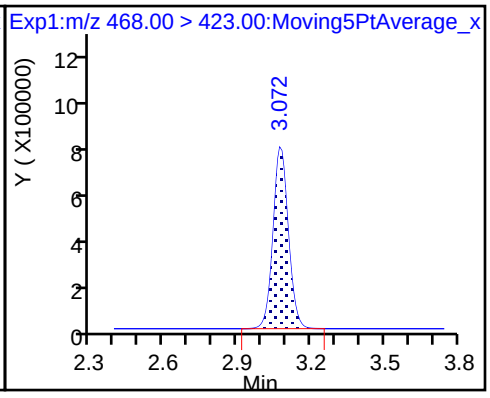
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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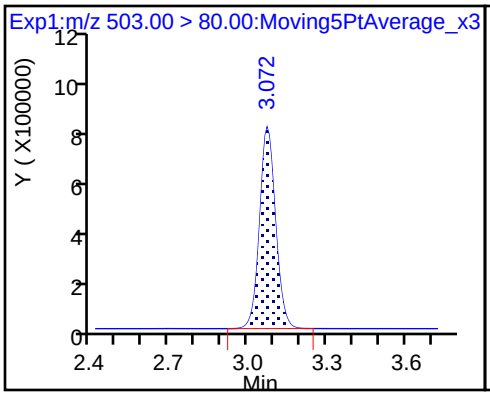
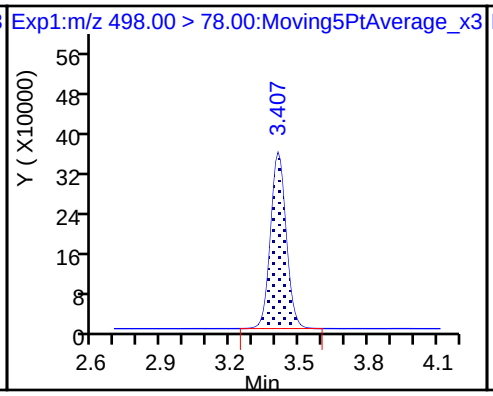
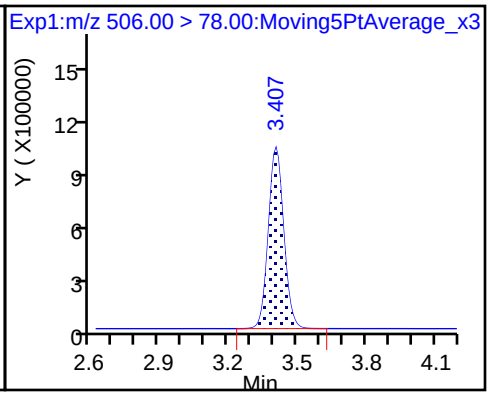


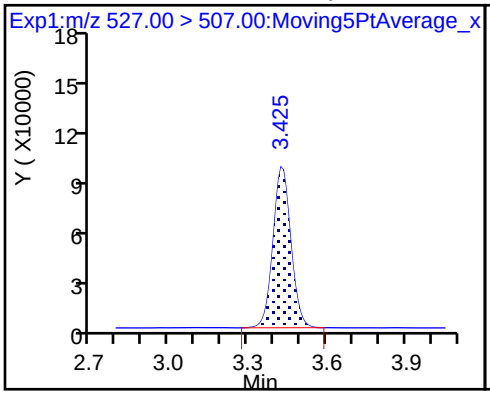
22 Perfluorooctane Sulfonamide



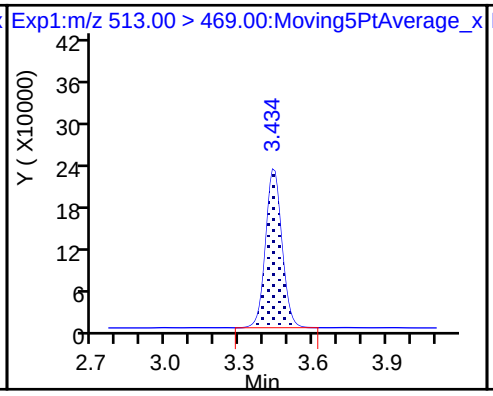
D 21 13C8 FOSA



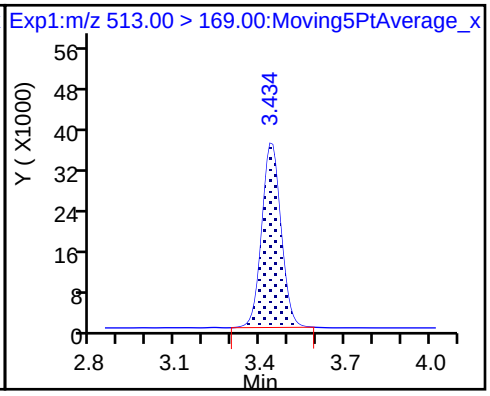
25 Sodium 1H,1H,2H,2H-perfluorodecane



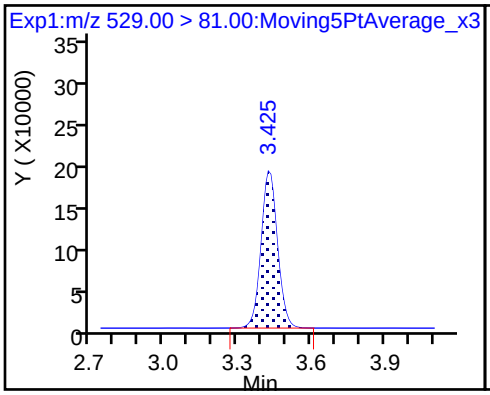
24 Perfluorodecanoic acid



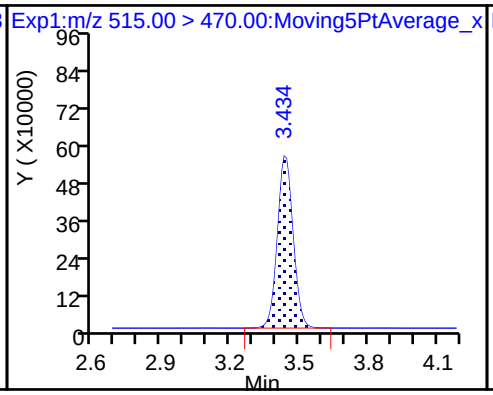
24 Perfluorodecanoic acid



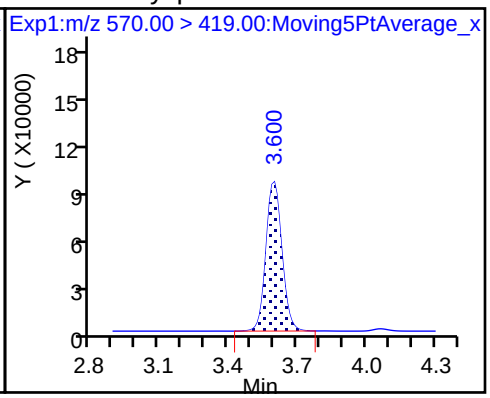
D 26 M2-8:2FTS



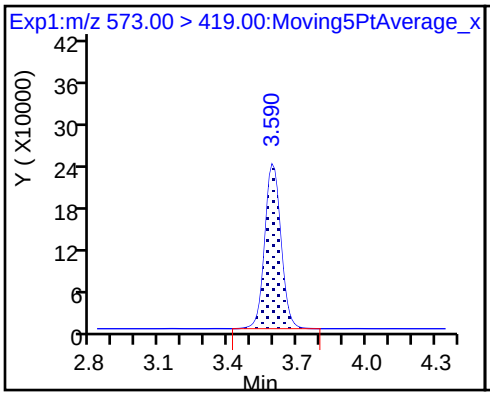
D 23 13C2 PFDA



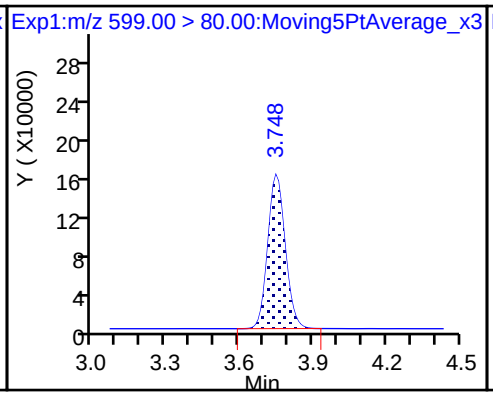
28 N-methyl perfluorooctane sulfonami



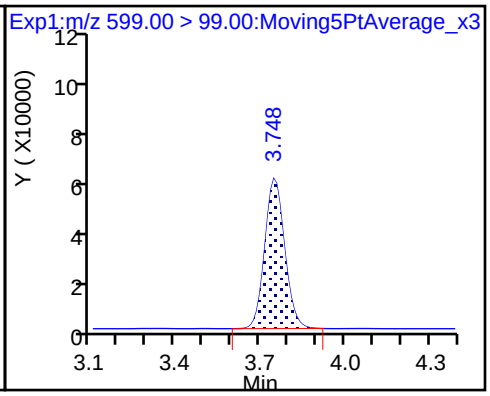
D 27 d3-NMeFOSAA



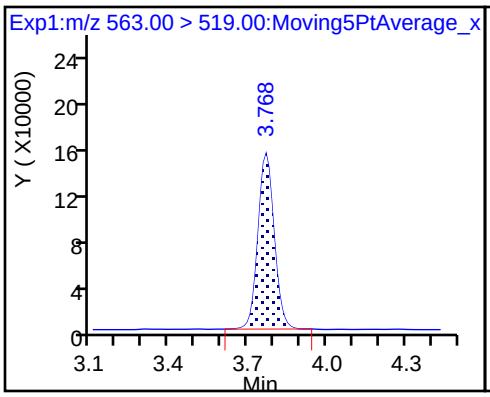
29 Perfluorodecane Sulfonic acid



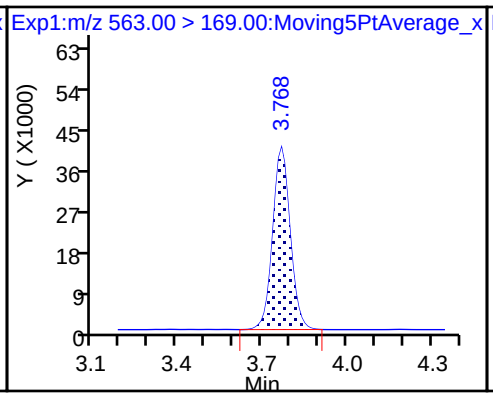
29 Perfluorodecane Sulfonic acid



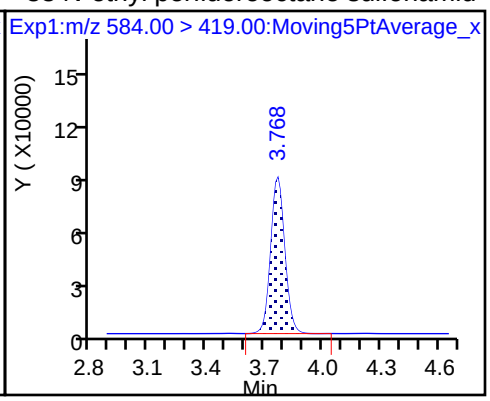
31 Perfluoroundecanoic acid



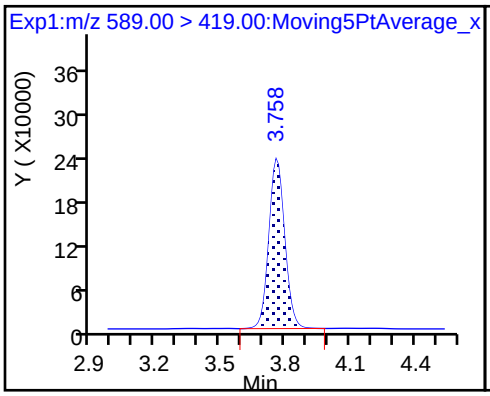
31 Perfluoroundecanoic acid



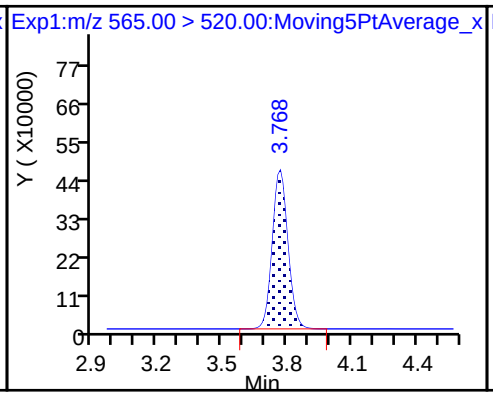
33 N-ethyl perfluorooctane sulfonamid



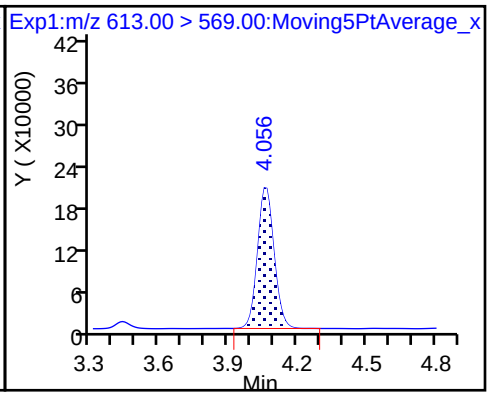
D 32 d5-NEtFOSAA



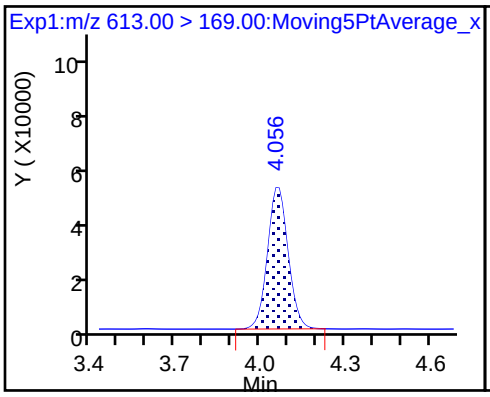
D 30 13C2 PFUnA



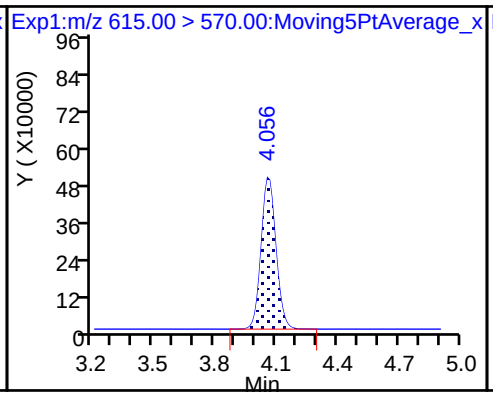
37 Perfluorododecanoic acid



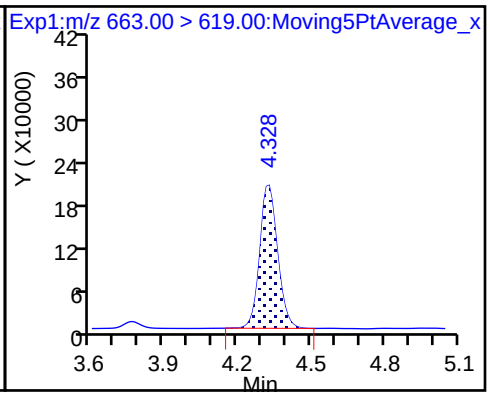
37 Perfluorododecanoic acid



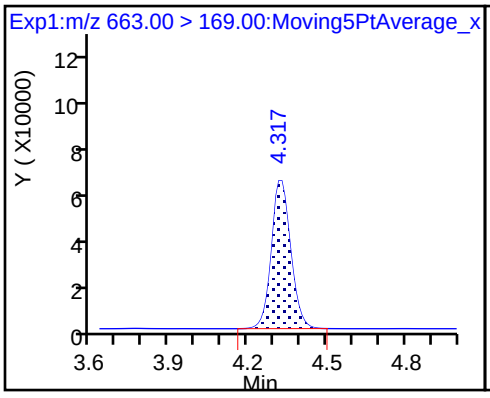
D 36 13C2 PFDoA



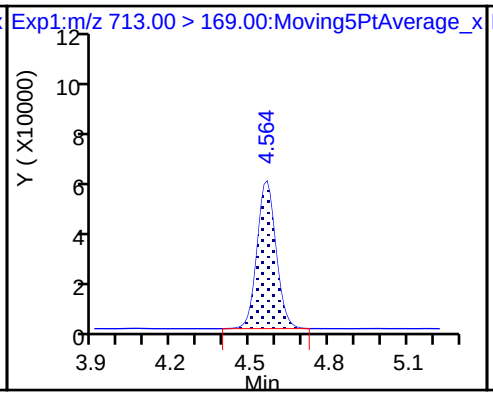
41 Perfluorotridecanoic acid



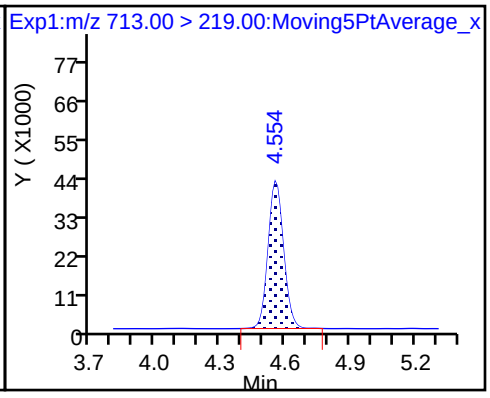
41 Perfluorotridecanoic acid



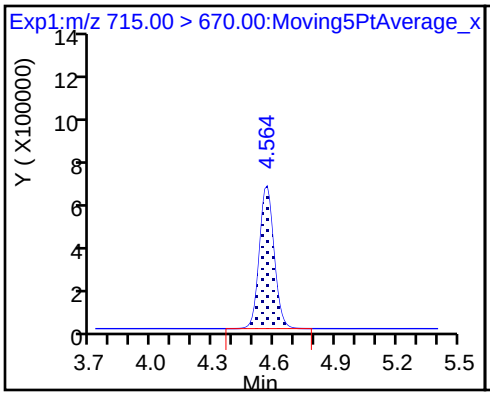
42 Perfluorotetradecanoic acid



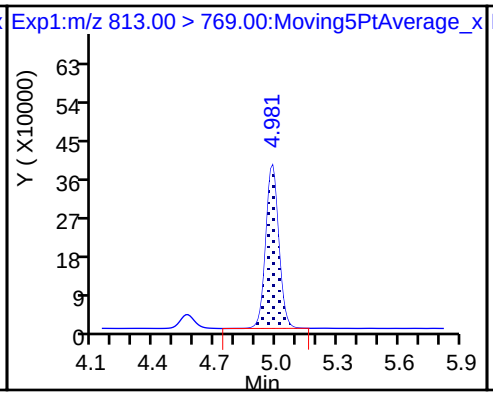
42 Perfluorotetradecanoic acid



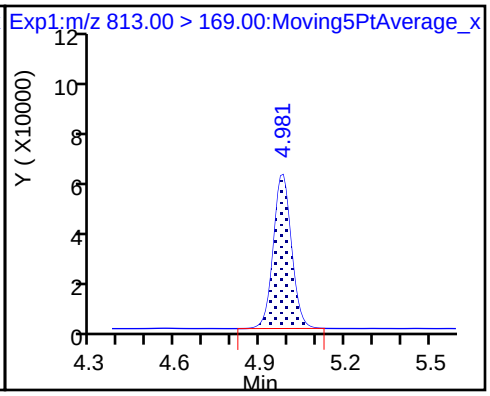
D 43 13C2-PFTeDA



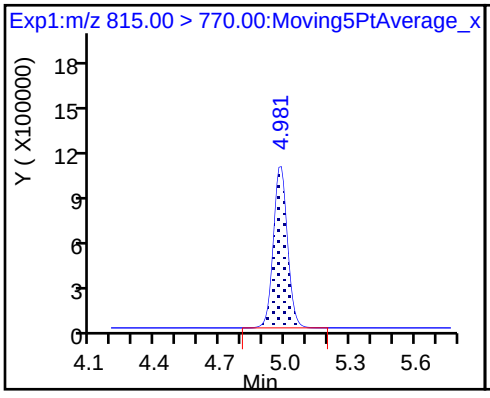
45 Perfluorohexadecanoic acid



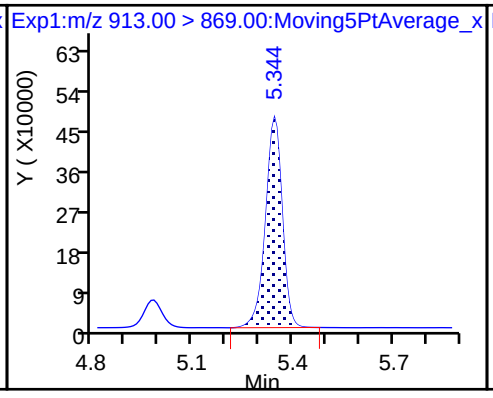
45 Perfluorohexadecanoic acid



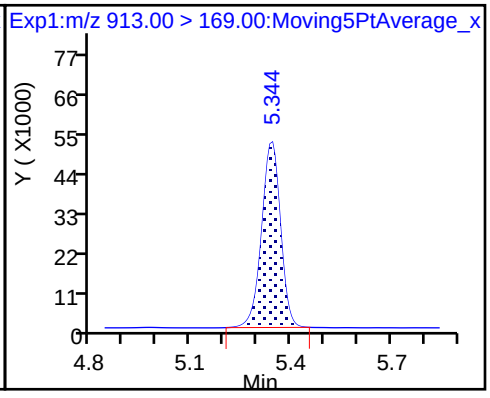
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

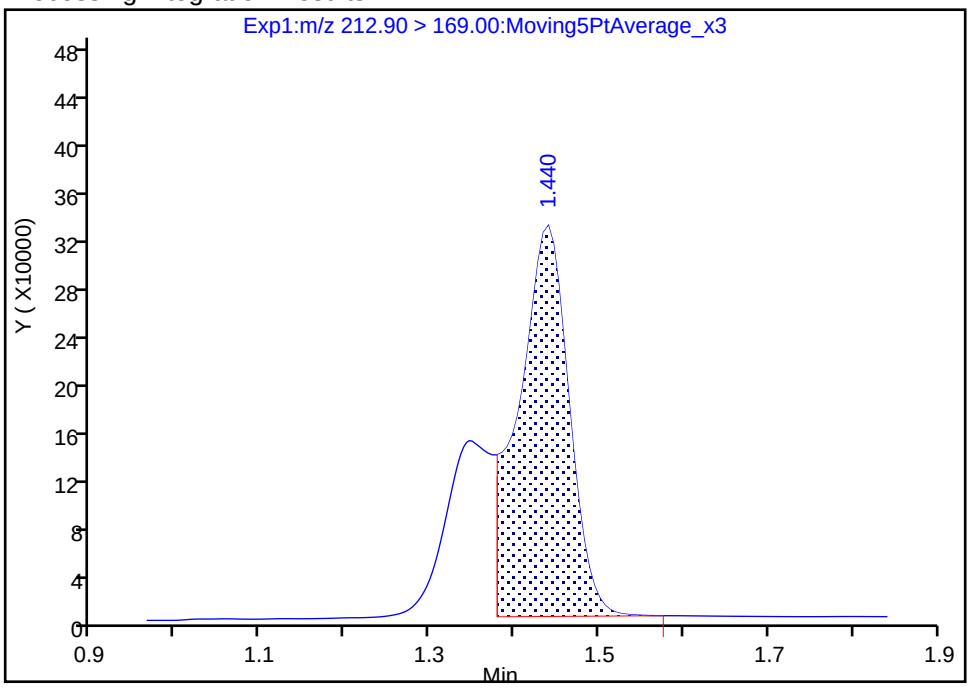
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d
Injection Date: 29-Mar-2018 00:18:08 Instrument ID: A8_N
Lims ID: LCS 320-214600/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

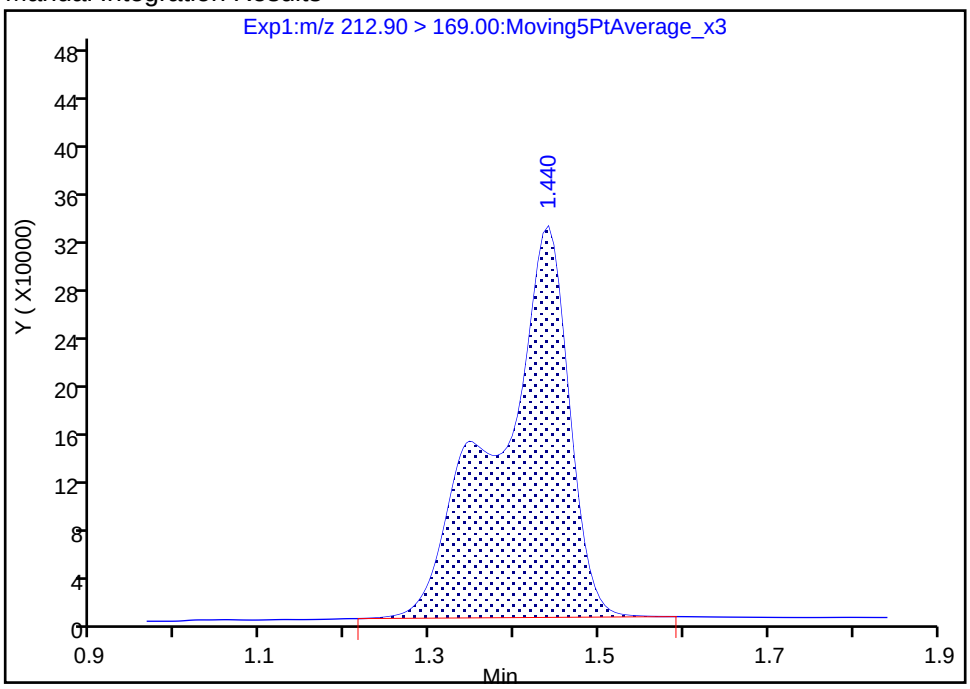
Processing Integration Results

RT: 1.44
Area: 1345544
Amount: 0.671821
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 1922942
Amount: 0.960111
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 08:58:32
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

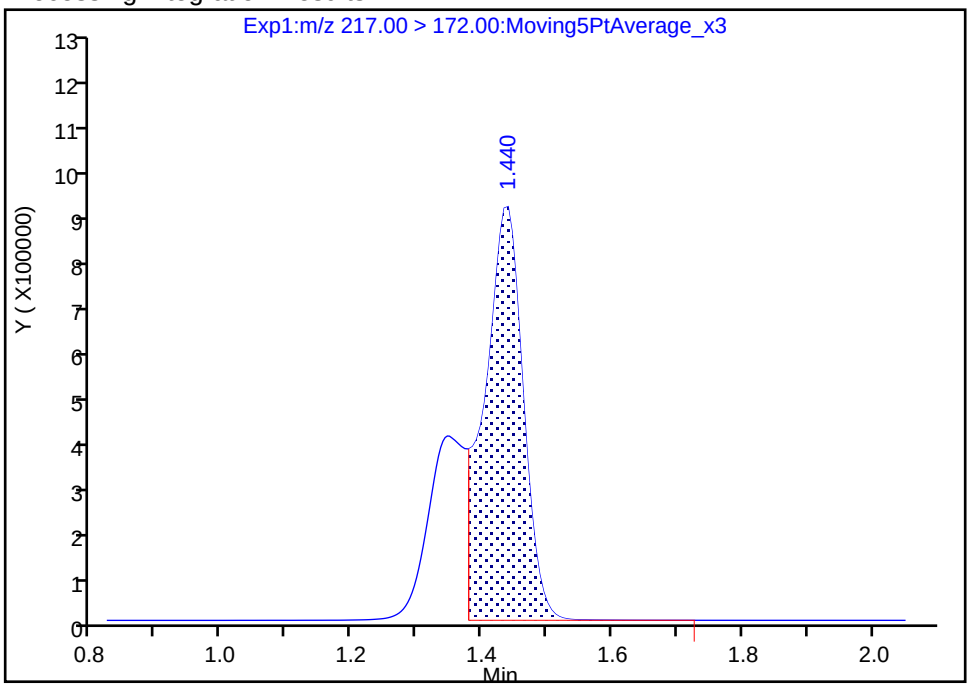
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_008.d
Injection Date: 29-Mar-2018 00:18:08 Instrument ID: A8_N
Lims ID: LCS 320-214600/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

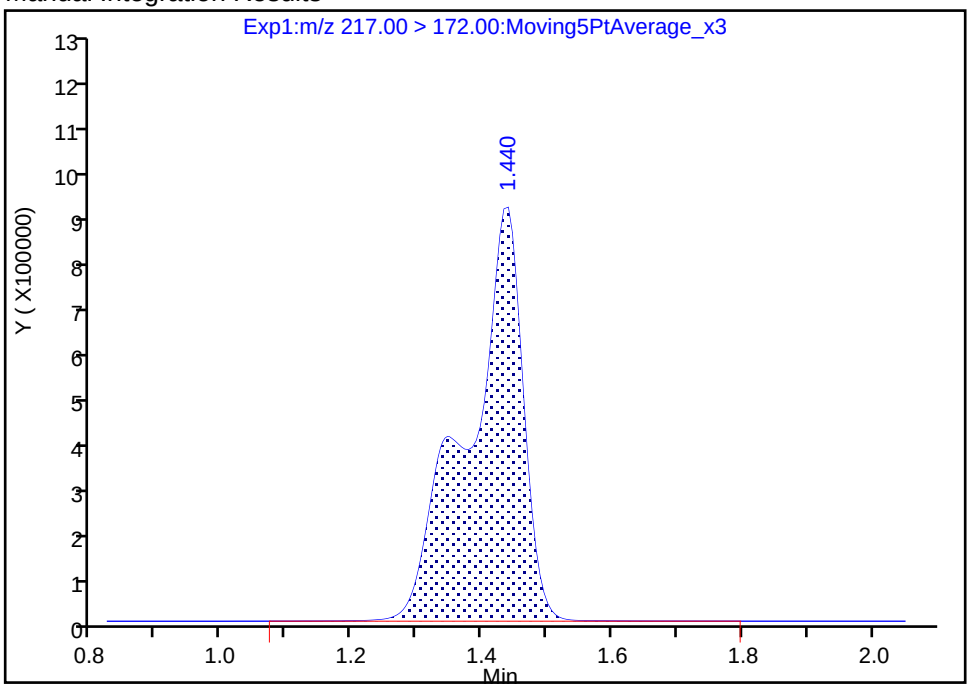
Processing Integration Results

RT: 1.44
Area: 3693440
Amount: 1.440731
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 5314173
Amount: 2.072944
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 08:58:25
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-E MS

Matrix: Solid | Lab File ID: 2018.03.28LLFF_022.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 02:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00207		0.00021	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00204		0.00021	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00241		0.00021	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00201		0.00021	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00297		0.00021	0.000088
375-95-1	Perfluorononanoic acid (PFNA)	0.0176		0.00021	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00213		0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00193		0.00021	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00200		0.00021	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00208		0.00021	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00205		0.00021	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00183		0.00021	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00828		0.00021	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00692		0.00021	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00239		0.00021	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00201		0.00021	0.000084
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00199	J	0.0021	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00205	J	0.0021	0.00038
27619-97-2	6:2FTS	0.00570		0.0021	0.00015
39108-34-4	8:2FTS	0.00225		0.0021	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-E MS

Matrix: Solid | Lab File ID: 2018.03.28LLFF_022.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 02:07

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	87		25-150
STL01893	13C5 PFPeA	89		25-150
STL00993	13C2 PFHxA	82		25-150
STL01892	13C4-PFHpA	88		25-150
STL00990	13C4 PFOA	81		25-150
STL00995	13C5 PFNA	59		25-150
STL00996	13C2 PFDA	76		25-150
STL00997	13C2 PFUnA	66		25-150
STL00998	13C2 PFDoA	64		25-150
STL02116	13C2-PFTeDA	70		25-150
STL02337	13C3-PFBS	87		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	61		25-150
STL01056	13C8 FOSA	75		25-150
STL02118	d3-NMeFOSAA	73		25-150
STL02117	d5-NEtFOSAA	60		25-150
STL02279	M2-6:2FTS	89		25-150
STL02280	M2-8:2FTS	74		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d
Lims ID: 320-36683-A-10-E MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 29-Mar-2018 02:07:40 ALS Bottle#: 25 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-E MS
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.440	1.441	-0.001	0.533	5355696	2.17		86.7	90432	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.446	0.001	1.004	2029687	1.01		101	393	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.709	1.709	0.0	0.632	3642346	2.22		88.8	53416	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.709	1.718	-0.009	1.000	1632656	0.99		99.4	597	M
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.745	-0.001	0.645	75967	2.03		87.3	491	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.753	0.0	1.005	2262754	0.8912		101	1087	
298.90 > 99.00	1.753	1.753	0.0	1.005	938212		2.41(1.25-3.74)		941	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.966	1.966	0.0	1.000	442838	0.8391		89.8	14713	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.997	2.008	-0.011	1.000	1784407	1.17		117	1441	
313.00 > 119.00	1.997	2.008	-0.011	1.000	169524		10.53(5.03-15.10)		1649	
D 7 13C2 PFHxA										
315.00 > 270.00	1.997	2.009	-0.012	0.739	3722239	2.05		82.1	85246	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.341	2.341	0.0	1.000	1598591	0.9794		97.9	793	
363.00 > 169.00	2.341	2.341	0.0	1.000	679861		2.35(1.13-3.40)		1132	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.354	2.354	0.0	1.000	8235617	4.03		443	34086	
399.00 > 99.00	2.354	2.354	0.0	1.000	2504109		3.29(1.50-4.49)		11737	
D 9 13C4-PFHpA										
367.00 > 322.00	2.341	2.354	-0.013	0.866	3944538	2.20		88.2	79216	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.354	2.368	-0.014	0.870	4343250	1.97		83.2	100097	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.680	2.689	-0.009	1.000	1601665	2.78		293	28039	
D 12 M2-6:2FTS										
429.00 > 81.00	2.680	2.697	-0.017	0.991	785758	2.12		89.2	18564	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.704	2.712	-0.008	1.000	2406231	1.44		144	924	
413.00 > 169.00	2.704	2.712	-0.008	1.000	1349034		1.78(0.84-2.52)		3562	
* 62 13C2-PFOA										
415.00 > 370.00	2.704	2.712	-0.008		4882236	2.50			113799	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.712	2.720	-0.008	1.000	4253231	3.37		354	1077	
449.00 > 99.00	2.704	2.720	-0.016	0.997	1110925		3.83(1.94-5.82)		1859	M
D 14 13C4 PFOA										
417.00 > 372.00	2.704	2.721	-0.017	1.000	3686683	2.01		80.6	59039	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.080	3.080	0.0	1.000	116622442	106.3		11451	53072	E
499.00 > 99.00	3.080	3.080	0.0	1.000	34023955		3.43(2.31-6.93)		119593	
20 Perfluorononanoic acid										
463.00 > 419.00	3.080	3.088	-0.008	1.000	8187088	8.56		856	8283	
463.00 > 169.00	3.080	3.088	-0.008	1.000	2055468		3.98(1.90-5.69)		37280	
D 19 13C5 PFNA										
468.00 > 423.00	3.080	3.096	-0.016	1.139	2397623	1.49		59.4	52930	
D 18 13C4 PFOS										
503.00 > 80.00	3.080	3.096	-0.016	1.139	2354591	1.47		61.3	25952	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.416	3.417	0.0	1.003	1562701	0.9766		97.7	13796	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.417	-0.010	1.260	4058001	1.87		74.9	54268	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.435	3.435	0.0	1.000	522540	1.10		115	9440	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.444	3.444	0.0	1.000	1101900	1.03		103	5256	
513.00 > 169.00	3.444	3.444	0.0	1.000	208641		5.28(2.36-7.09)		4021	
D 26 M2-8:2FTS										
529.00 > 81.00	3.435	3.453	-0.018	1.270	893467	1.78		74.5	17678	
D 23 13C2 PFDA										
515.00 > 470.00	3.444	3.462	-0.018	1.273	2694728	1.90		76.2	44842	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.600	3.611	-0.011	1.000	524564	0.9672		96.7	4891	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.600	3.611	-0.011	1.331	1354810	1.82		72.8	28102	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.759	3.758	0.001	1.000	778380	1.16		121	6596	
599.00 > 99.00	3.759	3.758	0.001	1.000	276648		2.81(1.39-4.16)		6961	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.779	3.779	0.0	1.003	678453	0.9396		94.0	3367	
563.00 > 169.00	3.779	3.779	0.0	1.003	186467		3.64(2.12-6.36)		14006	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.769	3.779	-0.010	1.000	475560	1.00		99.6	13471	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.769	3.779	-0.010	1.394	1278195	1.51		60.3	5317	
D 30 13C2 PFUnA										
565.00 > 520.00	3.769	3.790	-0.021	1.394	2093692	1.65		66.2	46331	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.069	4.077	-0.008	1.000	938278	0.9741		97.4	728	
613.00 > 169.00	4.069	4.077	-0.008	1.000	239511		3.92(2.13-6.40)		4817	
D 36 13C2 PFDoA										
615.00 > 570.00	4.069	4.089	-0.020	1.504	2301389	1.60		64.1	20078	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.339	-0.010	1.000	1027279	1.01		101	542	
663.00 > 169.00	4.329	4.339	-0.010	1.000	358566		2.86(1.25-3.76)		5973	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.575	4.575	0.0	1.000	303579	1.00		99.8	5068	
713.00 > 219.00	4.565	4.575	-0.010	0.998	215031		1.41(0.71-2.13)		5403	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.575	4.585	-0.010	1.692	3069028	1.75		70.0	22014	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.990	0.001	1.002	1670899	0.99		99.4	464	
813.00 > 169.00	4.991	4.990	0.001	1.002	274670		6.08(2.86-8.58)		2586	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	5.008	-0.026	1.842	4515540	1.57		62.8	13789	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.351	5.351	0.0	1.000	1565846	0.9376		93.8	347	
913.00 > 169.00	5.351	5.351	0.0	1.000	202966		7.71(3.83-11.48)		2502	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:41 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d

Injection Date: 29-Mar-2018 02:07:40 Instrument ID: A8_N

Lims ID: 320-36683-A-10-E MS

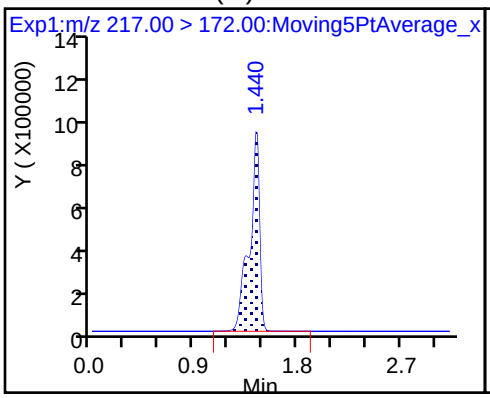
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 19

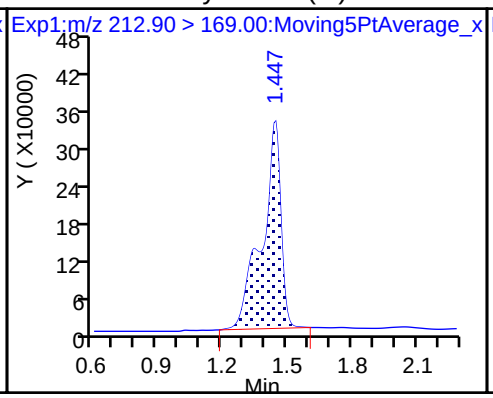
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

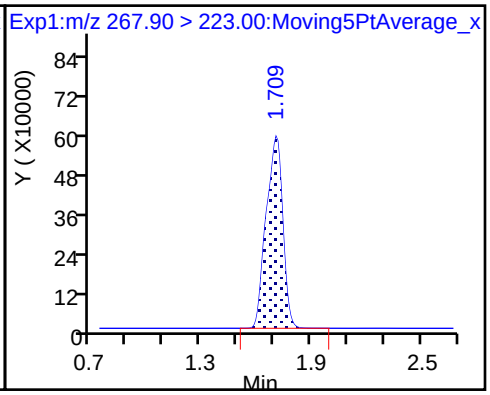
D 1 13C4 PFBA (M)



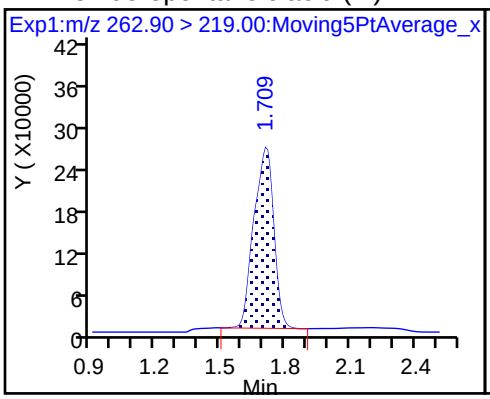
2 Perfluorobutyric acid (M)



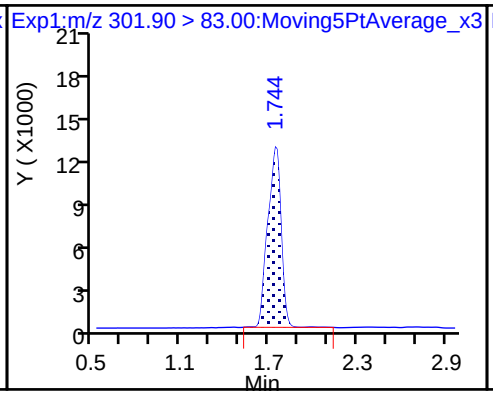
D 3 13C5-PFPeA



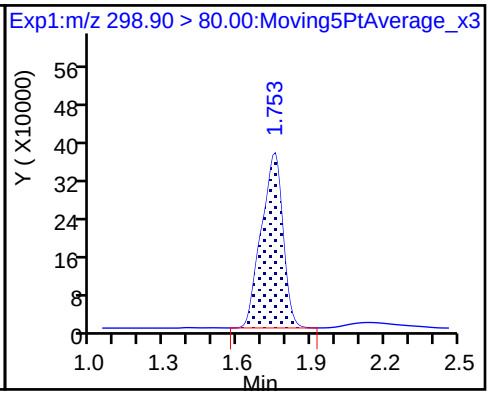
4 Perfluoropentanoic acid (M)



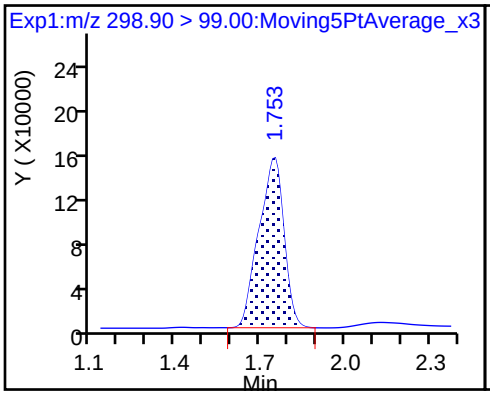
D 47 13C3-PFBS



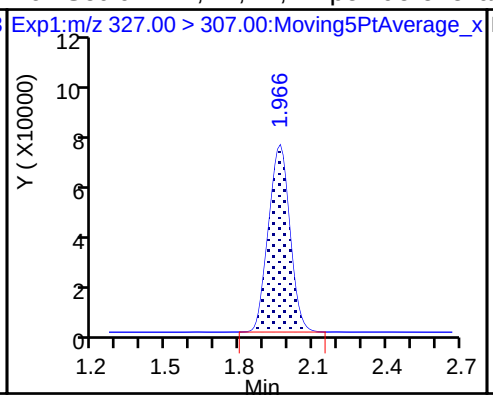
5 Perfluorobutanesulfonic acid



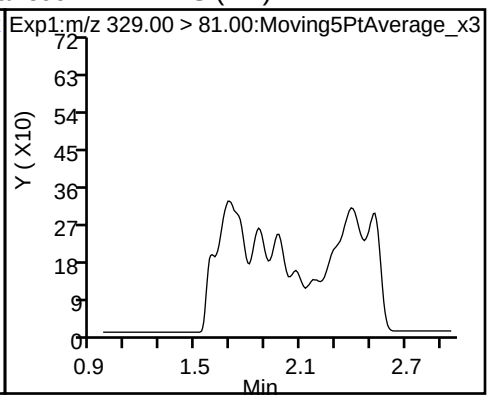
5 Perfluorobutanesulfonic acid



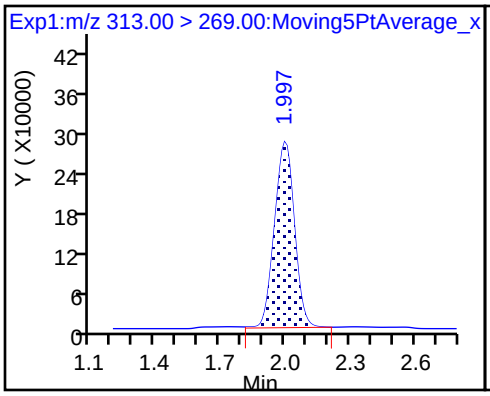
61 Sodium 1H,1H,2H,2H-perfluorohexane



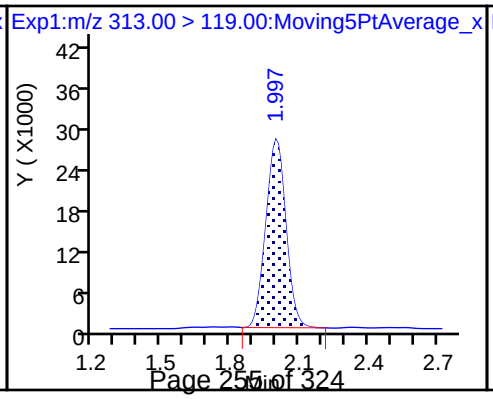
D 60 M2-4:2FTS (ND)



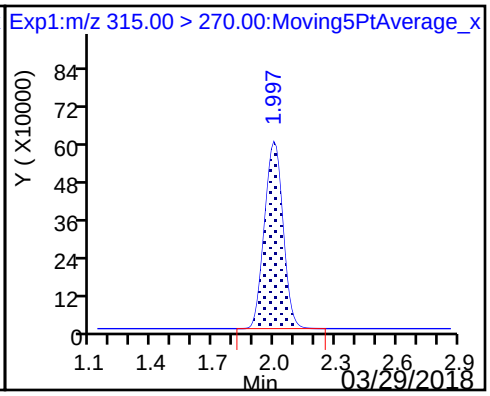
6 Perfluorohexanoic acid



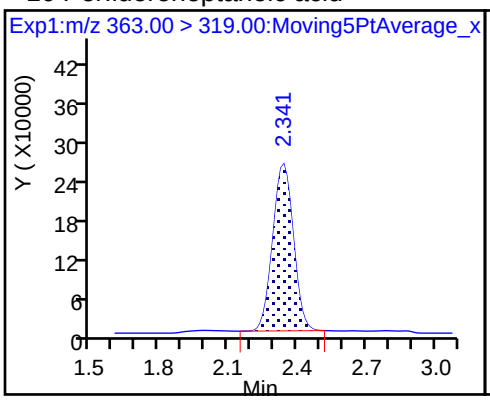
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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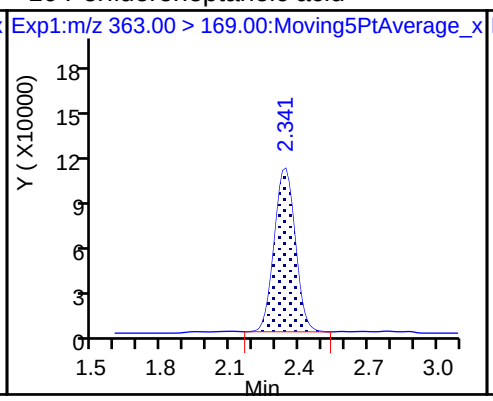
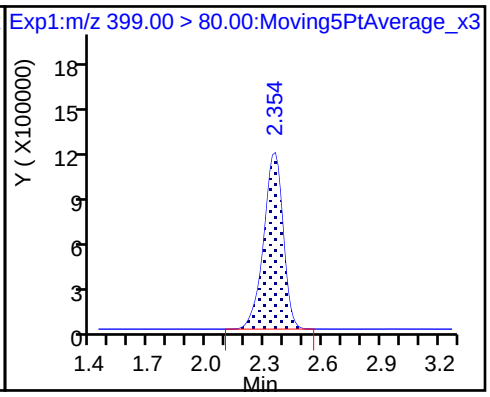
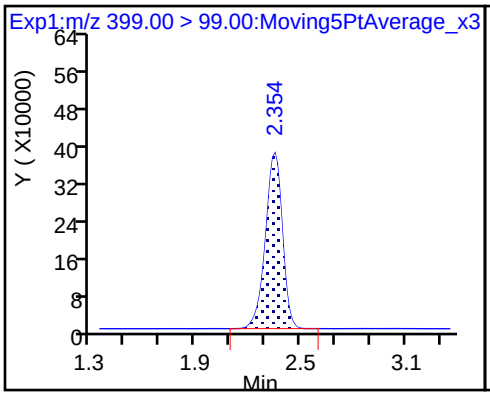


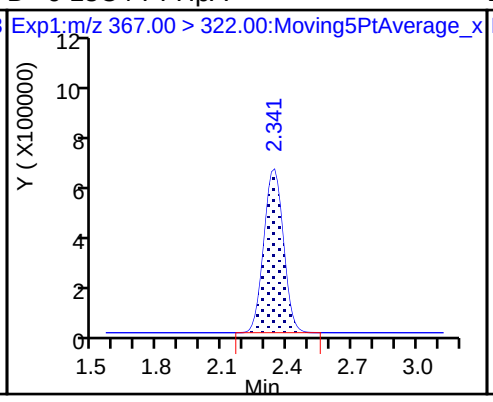
8 Perfluorohexanesulfonic acid



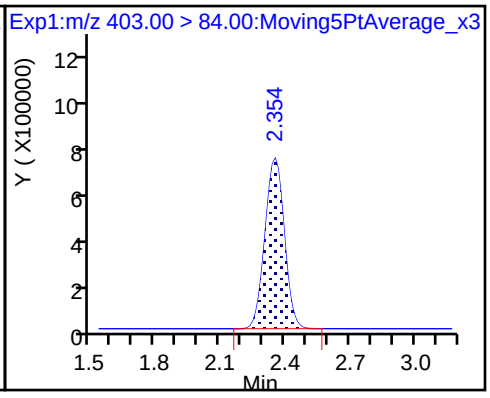
8 Perfluorohexanesulfonic acid



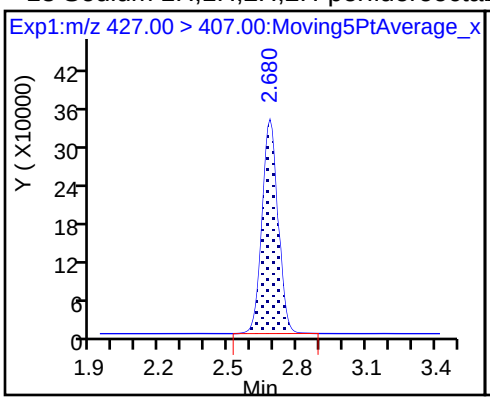
D 9 13C4-PFHpA



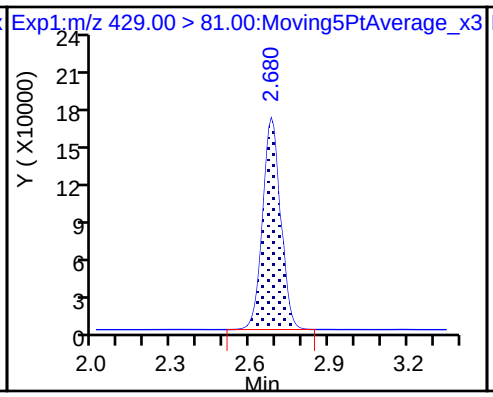
D 11 18O2 PFHxS



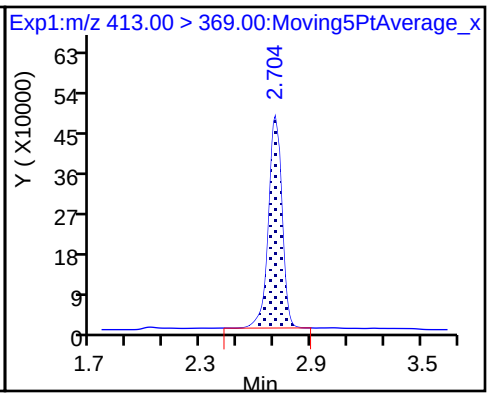
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 12 M2-6:2FTS



15 Perfluorooctanoic acid



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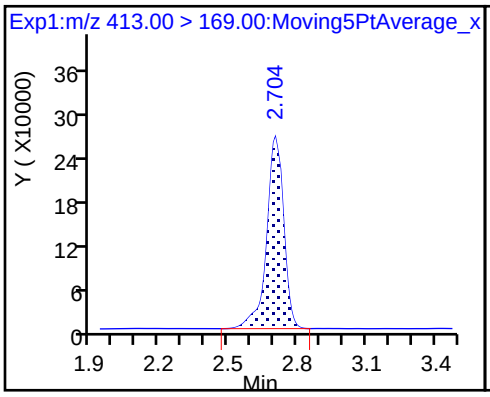
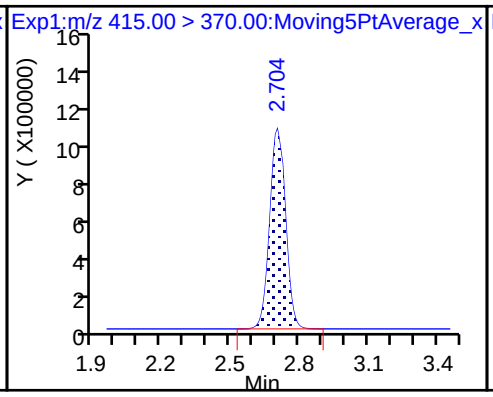
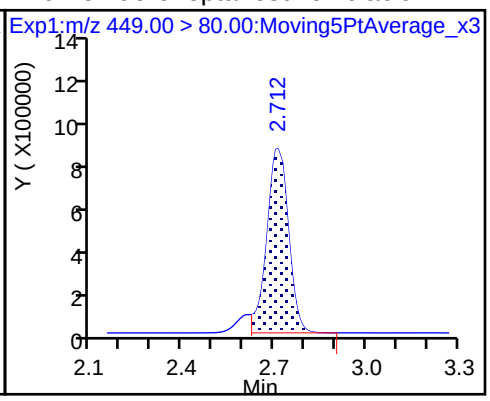


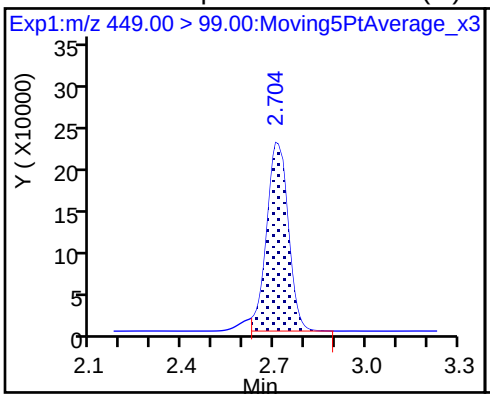
* 62 13C2-PFOA



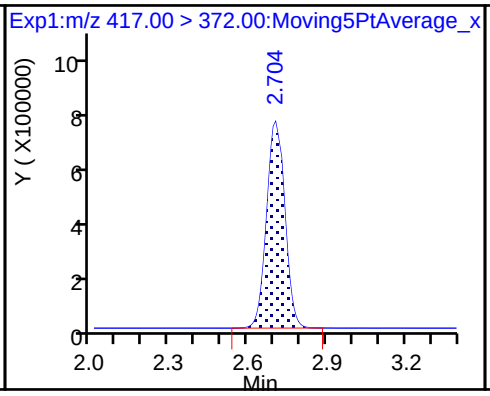
16 Perfluoroheptanesulfonic acid



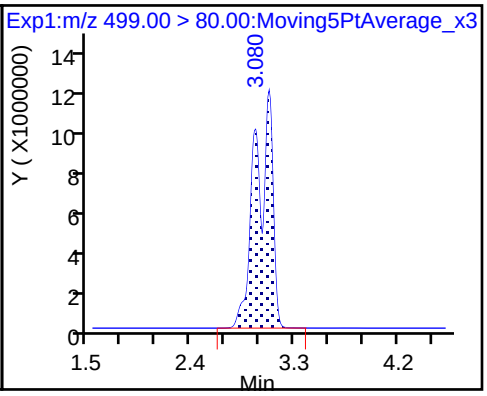
16 Perfluoroheptanesulfonic acid (M)



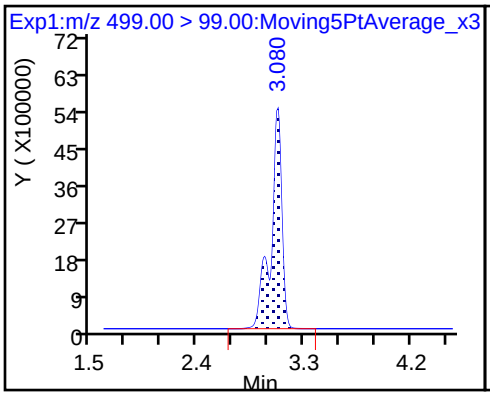
D 14 13C4 PFOA



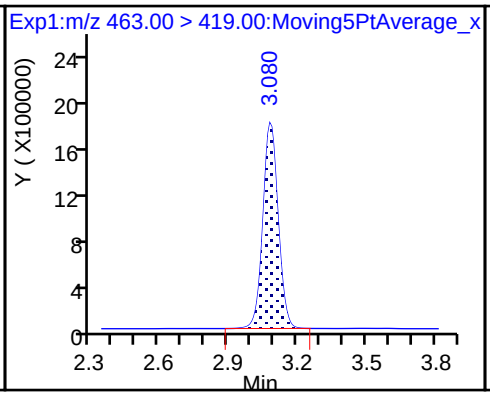
17 Perfluorooctane sulfonic acid



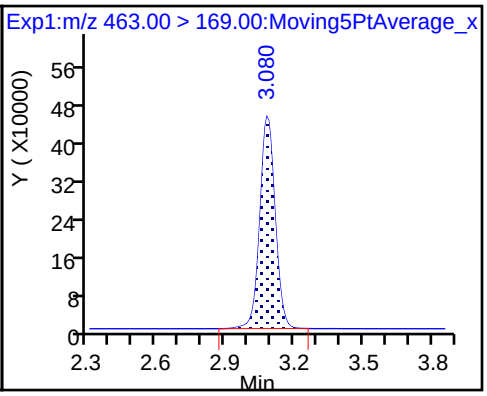
17 Perfluorooctane sulfonic acid



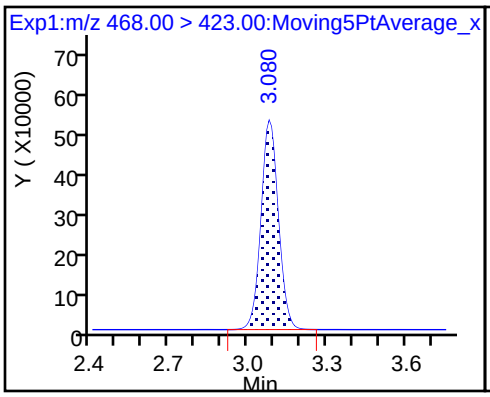
20 Perfluorononanoic acid



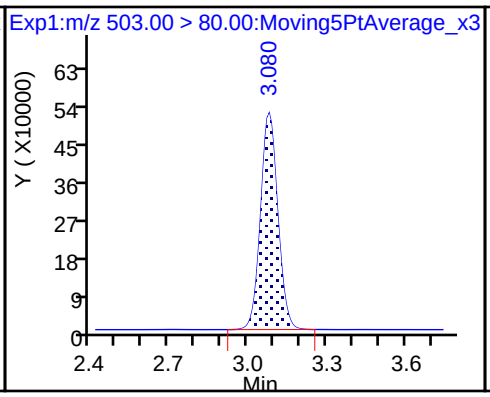
20 Perfluorononanoic acid



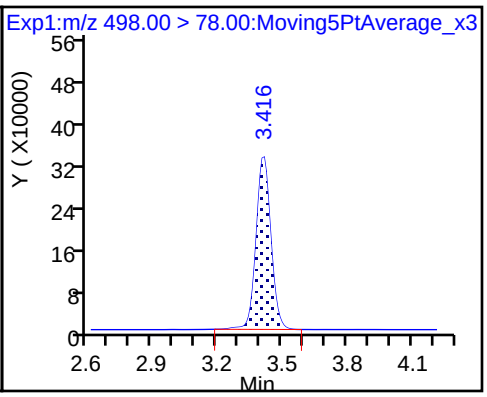
D 19 13C5 PFNA



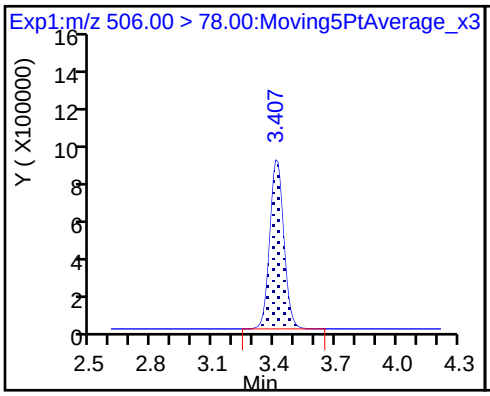
D 18 13C4 PFOS



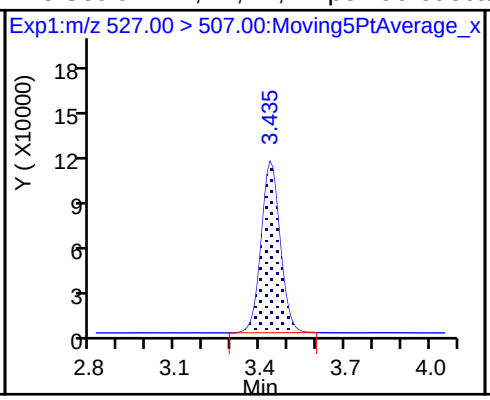
22 Perfluorooctane Sulfonamide



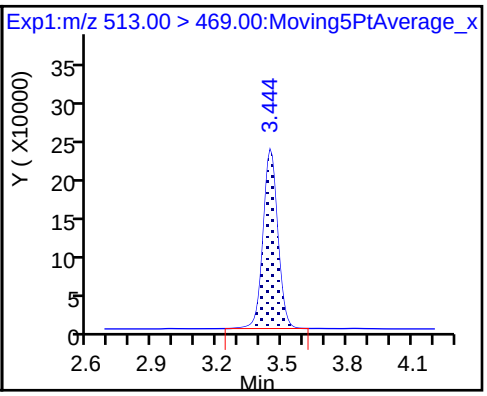
D 21 13C8 FOSA



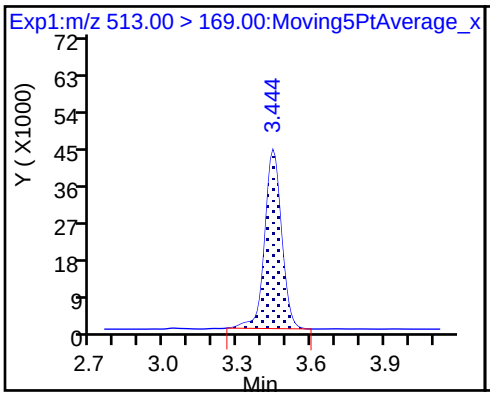
25 Sodium 1H,1H,2H,2H-perfluorodecan



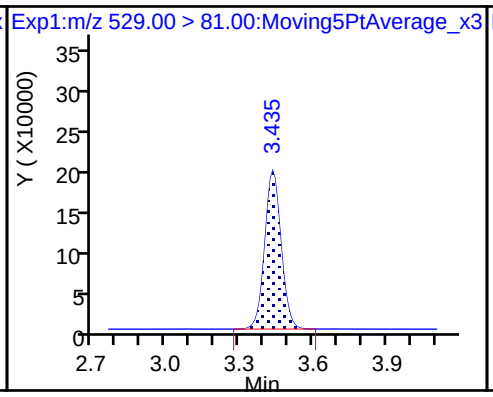
24 Perfluorodecanoic acid



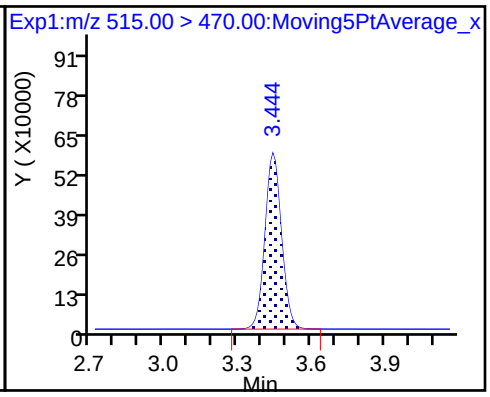
24 Perfluorodecanoic acid



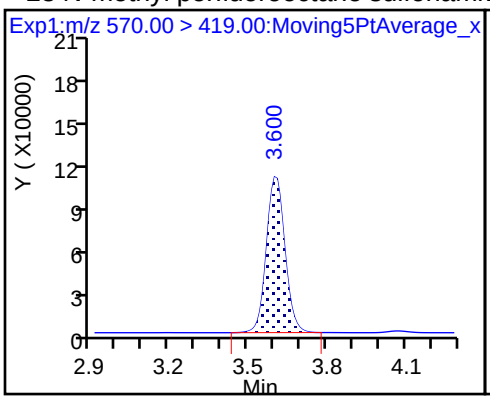
D 26 M2-8:2FTS



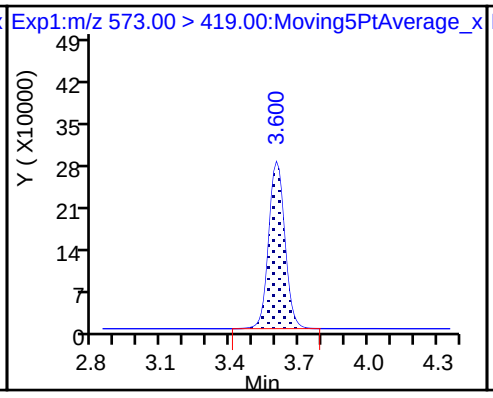
D 23 13C2 PFDA



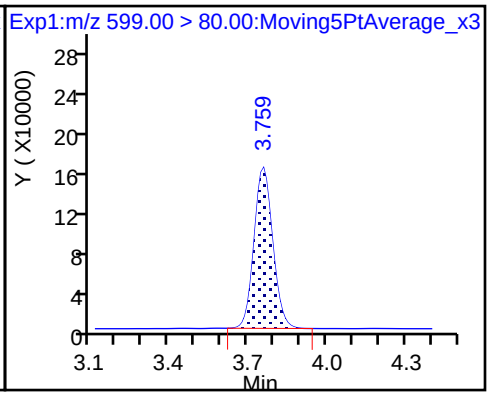
28 N-methyl perfluorooctane sulfonami



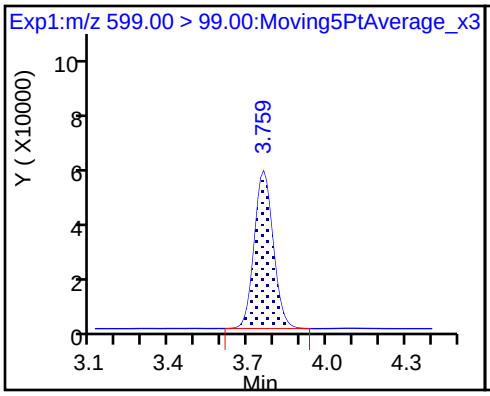
D 27 d3-NMeFOSAA



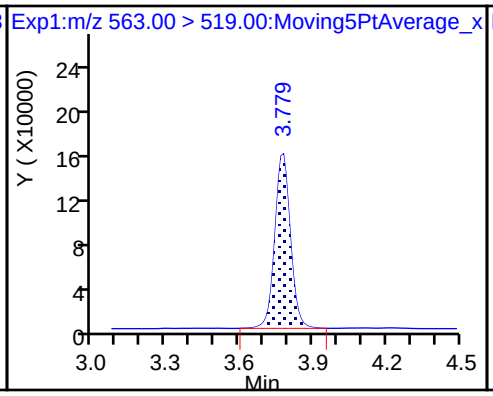
29 Perfluorodecane Sulfonic acid



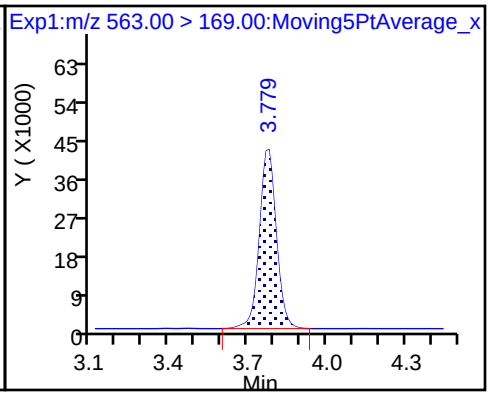
29 Perfluorodecane Sulfonic acid



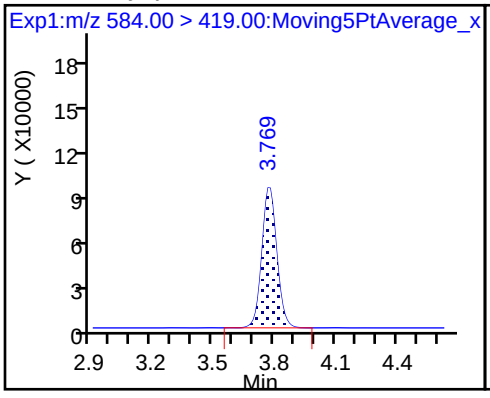
31 Perfluoroundecanoic acid



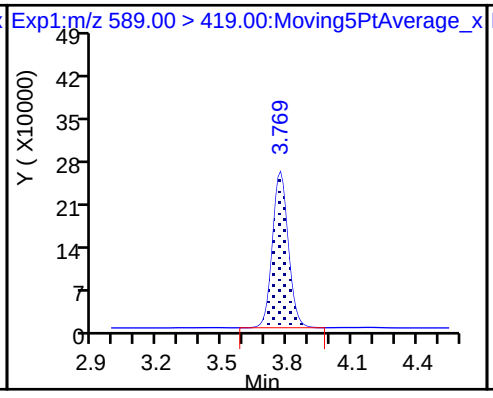
31 Perfluoroundecanoic acid



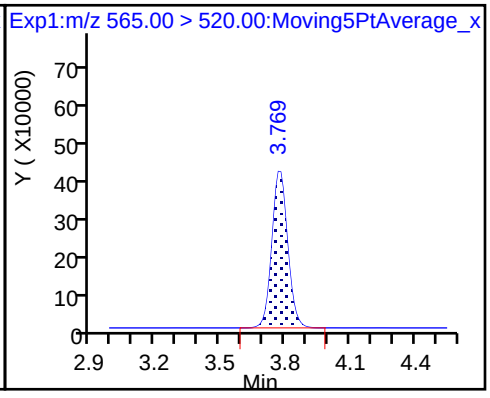
33 N-ethyl perfluorooctane sulfonamid



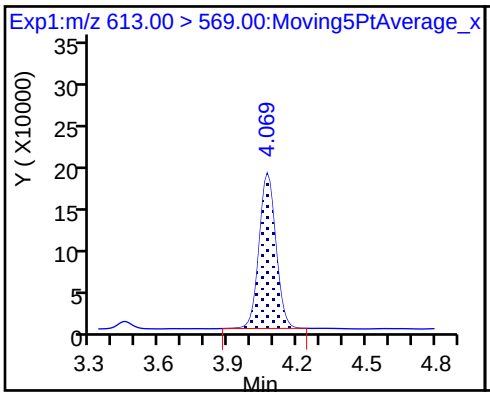
D 32 d5-NEtFOSAA



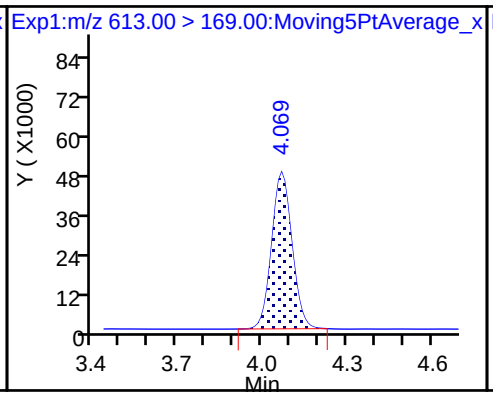
D 30 13C2 PFUnA



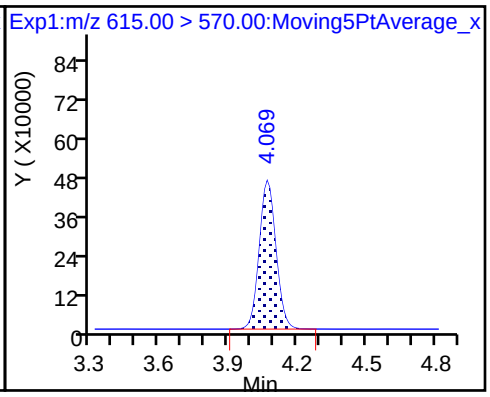
37 Perfluorododecanoic acid



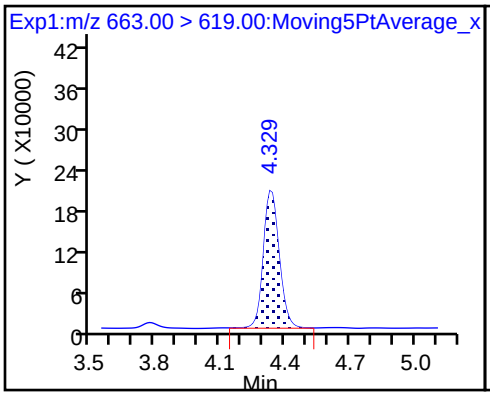
37 Perfluorododecanoic acid



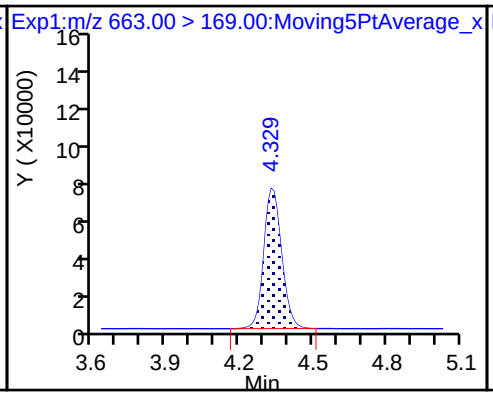
D 36 13C2 PFDoA



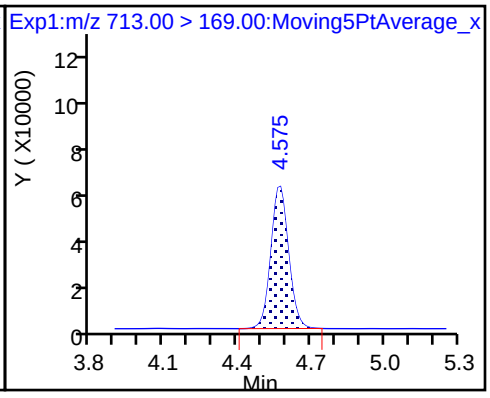
41 Perfluorotridecanoic acid



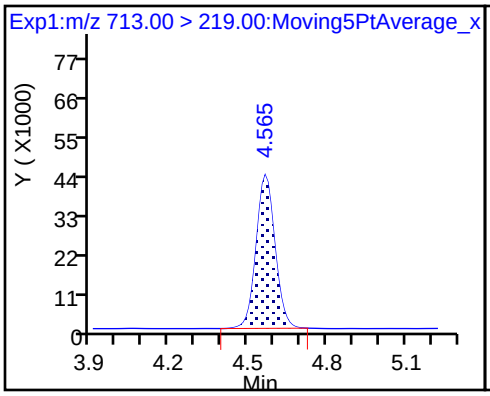
41 Perfluorotridecanoic acid



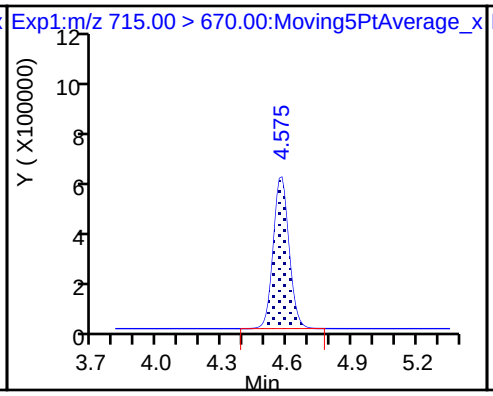
42 Perfluorotetradecanoic acid



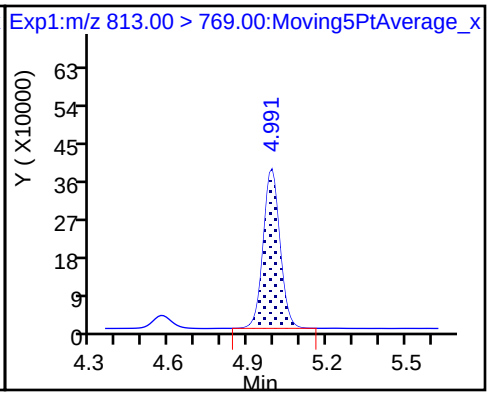
42 Perfluorotetradecanoic acid



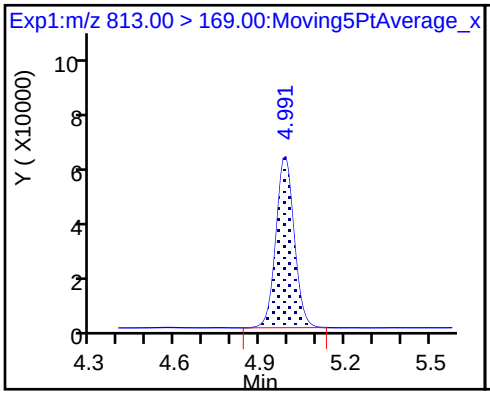
D 43 13C2-PFTeDA



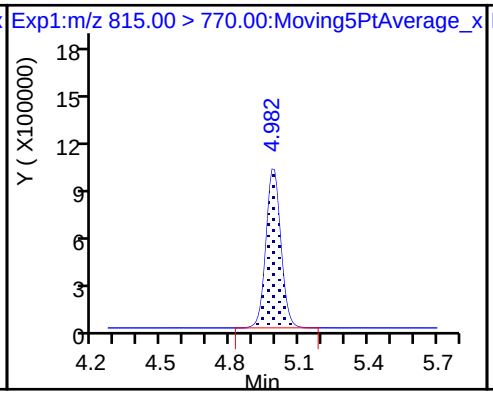
45 Perfluorohexadecanoic acid



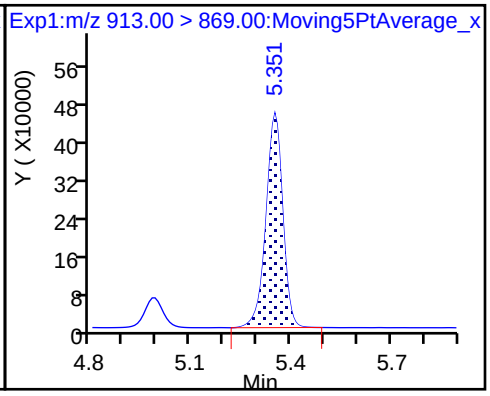
45 Perfluorohexadecanoic acid



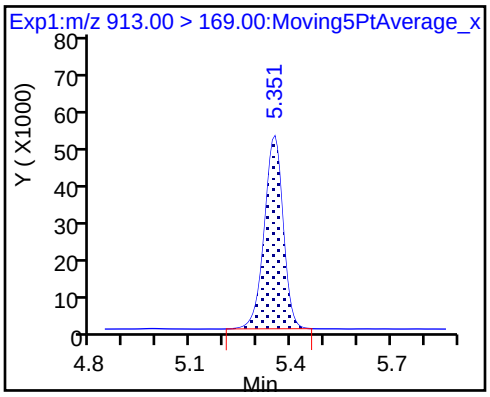
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

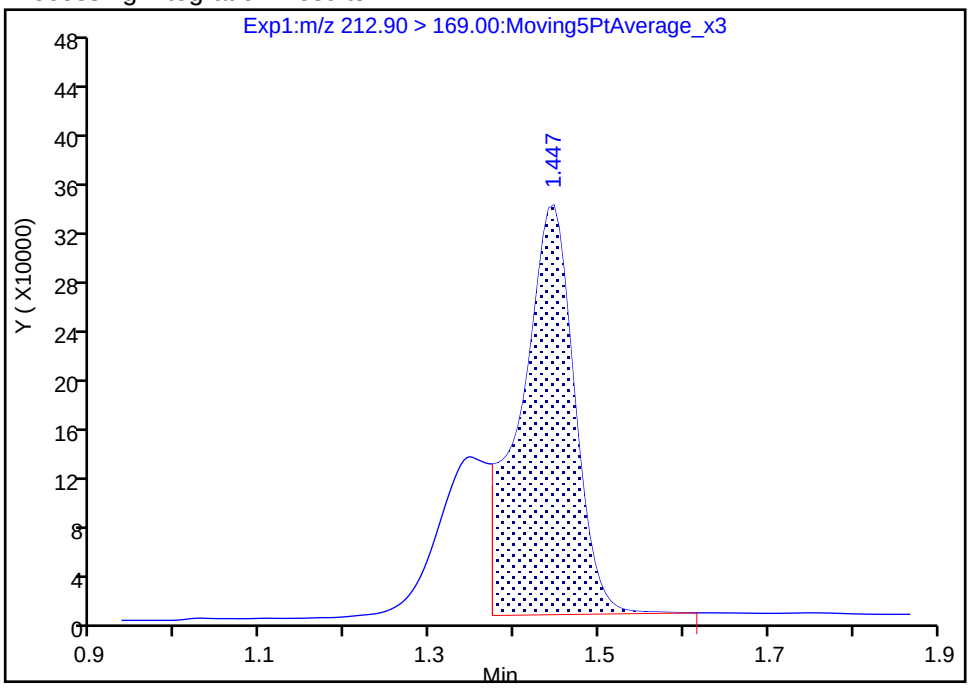
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d				
Injection Date:	29-Mar-2018 02:07:40	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-E MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

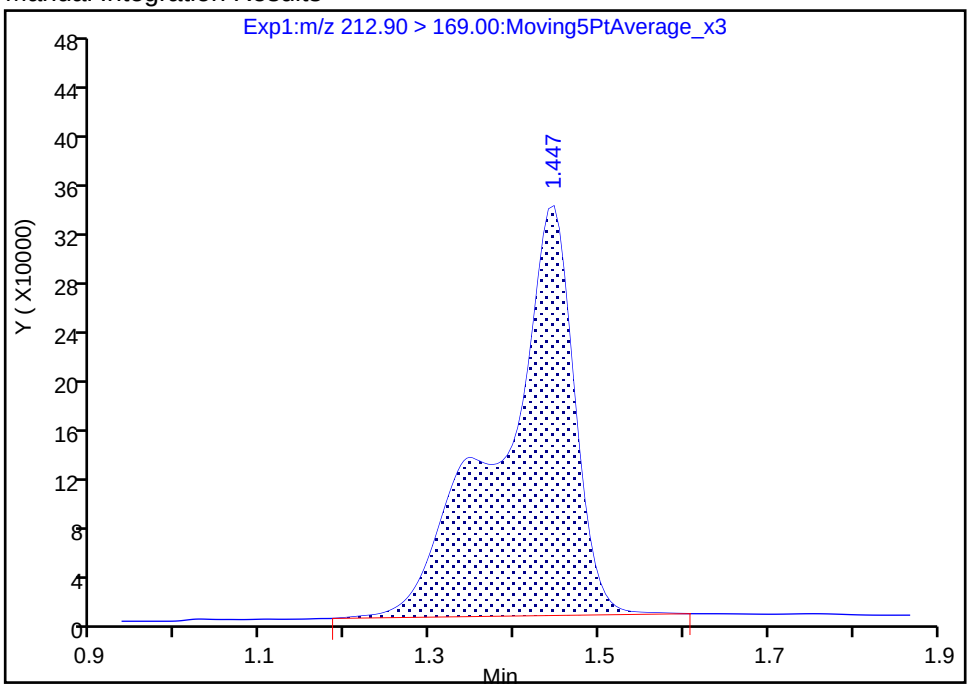
Processing Integration Results

RT: 1.45
Area: 1476170
Amount: 0.731327
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 2029687
Amount: 1.005551
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:07:34

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

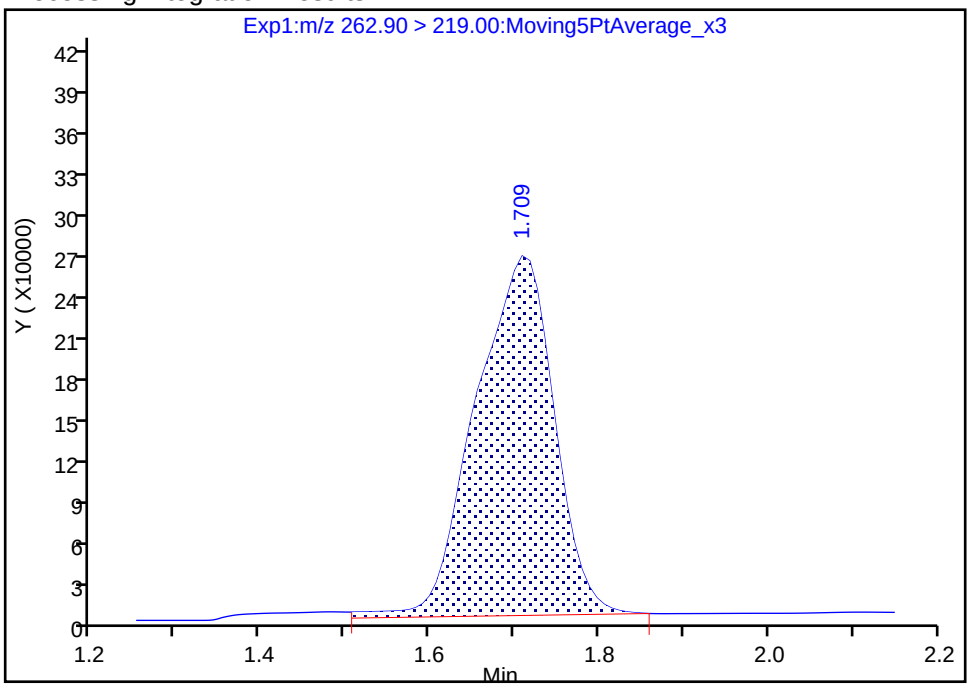
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d				
Injection Date:	29-Mar-2018 02:07:40	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-E MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

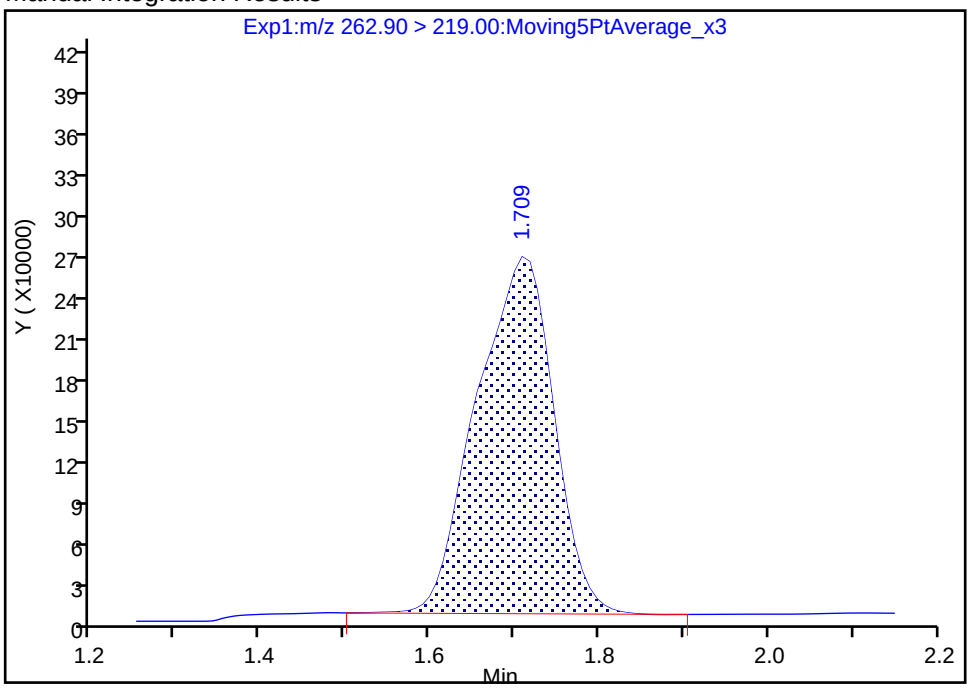
Processing Integration Results

RT: 1.71
Area: 1679638
Amount: 1.022469
Amount Units: ng/ml



Manual Integration Results

RT: 1.71
Area: 1632656
Amount: 0.993869
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:07:39

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

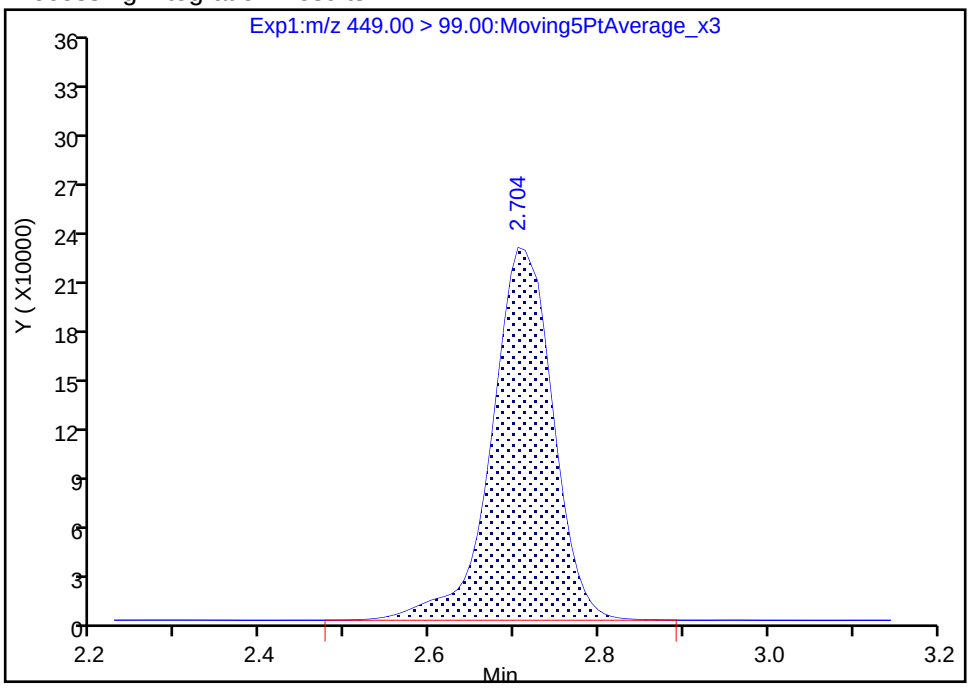
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d				
Injection Date:	29-Mar-2018 02:07:40	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-E MS				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	19
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

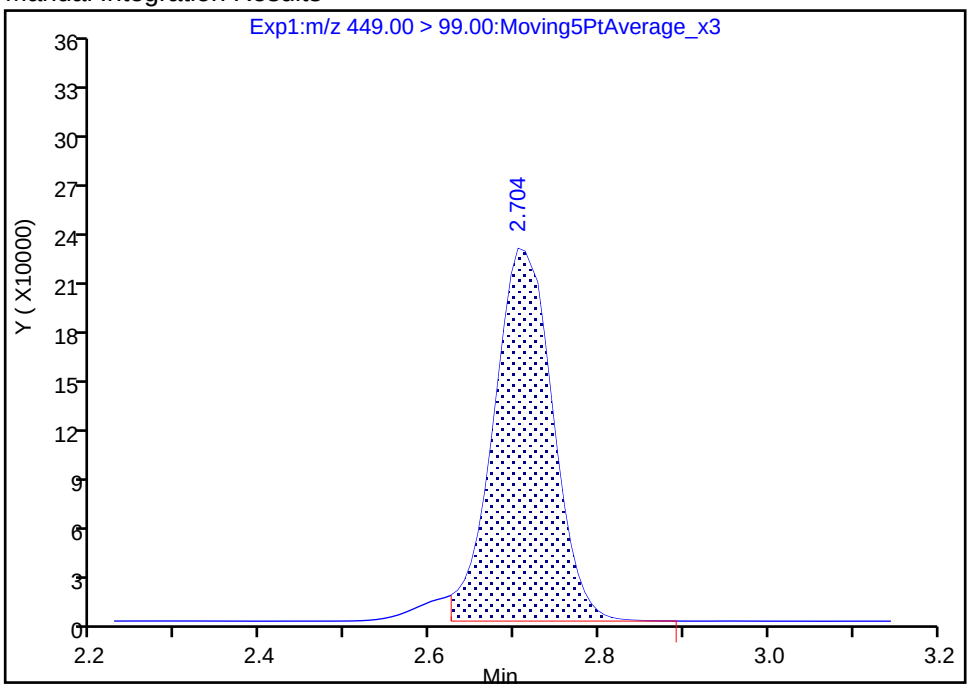
Processing Integration Results

RT: 2.70
Area: 1153170
Amount: 3.369472
Amount Units: ng/ml



Manual Integration Results

RT: 2.70
Area: 1110925
Amount: 3.369472
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:07:53

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

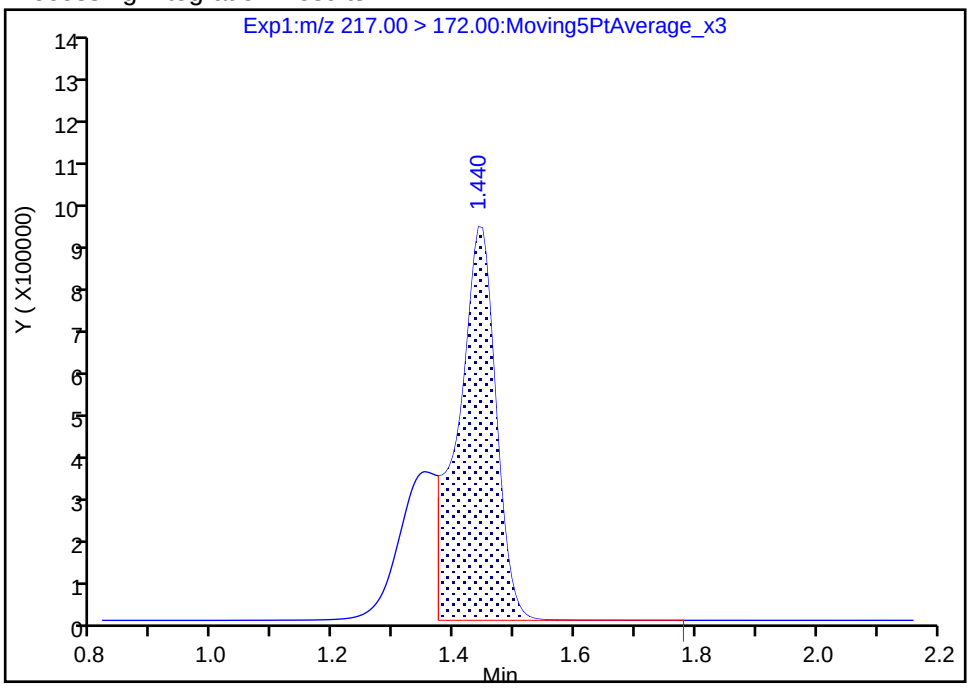
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_022.d
Injection Date: 29-Mar-2018 02:07:40 Instrument ID: A8_N
Lims ID: 320-36683-A-10-E MS
Client ID: SB012(10'-12')
Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 19
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

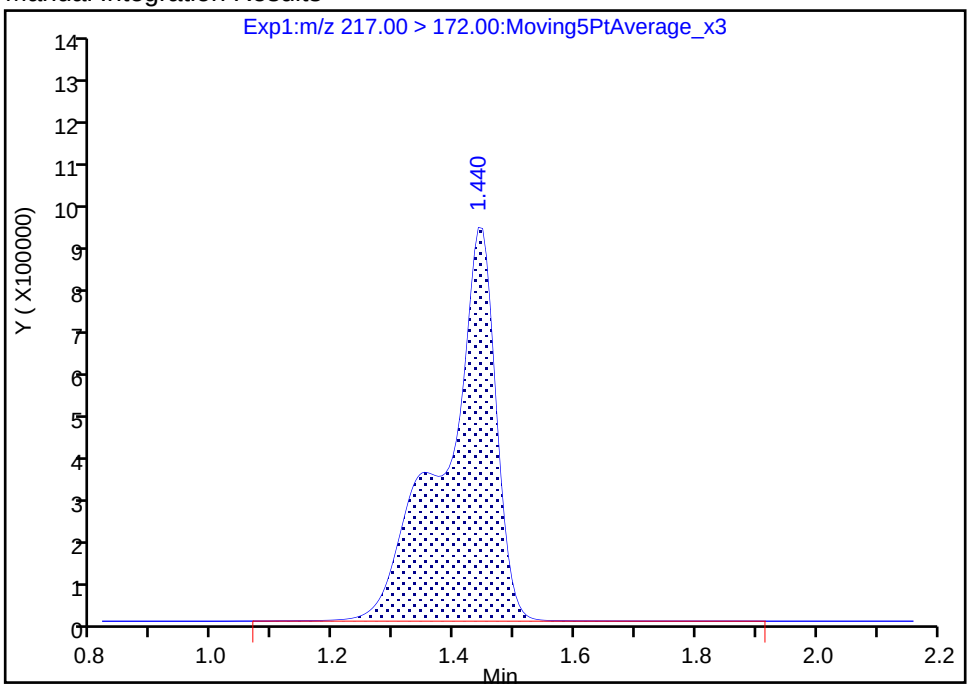
Processing Integration Results

RT: 1.44
Area: 3882459
Amount: 1.570386
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 5355696
Amount: 2.166284
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:07:27
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-E MS DL

Matrix: Solid | Lab File ID: 2018.03.29LLA_010.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.00(g) | Date Analyzed: 03/29/2018 09:35

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215399 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.269		0.026	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	69	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_010.d
Lims ID: 320-36683-A-10-E MS
Client ID: SB012(10'-12')
Sample Type: MS
Inject. Date: 29-Mar-2018 09:35:25 ALS Bottle#: 9 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-10 MS 50X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:35 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:55:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.440	1.429	0.011	1.004	41141	0.0212		106	14.9	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.440	-0.006	0.535	103134	0.0334		66.8	1636	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.700	1.692	0.008	1.000	45323	0.0274		137	15.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.700	1.700	0.0	0.634	73317	0.0358		71.6	2342	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.727	0.008	1.000	50735	NR		0.0	30.8	
298.90 > 99.00	1.735	1.727	0.008	1.000	22095		2.30(1.25-3.74)		31.0	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.955	1.935	0.020	1.000	7950	NR		0.0	523	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.976	0.010	1.000	41777	0.0246		123	62.3	
313.00 > 119.00	1.986	1.976	0.010	1.000	3638		11.48(5.03-15.10)		42.1	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.986	0.0	0.741	82933	0.0366		73.3	3012	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.302	0.013	1.000	34552	0.0225		112	23.1	
363.00 > 169.00	2.315	2.302	0.013	1.000	15528		2.23(1.13-3.40)		37.2	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.315	0.013	1.000	169927	0.0787		433	895	
399.00 > 99.00	2.328	2.315	0.013	1.000	51612		3.29(1.50-4.49)		250	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.328	-0.013	0.864	74325	0.0333		66.5	2482	
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.869	91737	0.0333		70.4	3883	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.664	2.641	0.023	1.000	56958	0.0617		325	840	
D 12 M2-6:2FTS										
429.00 > 81.00	2.664	2.663	0.001	0.994	25168	0.0543		114	933	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.680	2.665	0.015	1.003	69916	0.0362		181	19.1	
413.00 > 169.00	2.672	2.665	0.007	1.000	30014		2.33(0.84-2.52)		113	
* 62 13C2-PFOA										
415.00 > 370.00	2.680	2.665	0.015		121894	0.0500			4026	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.680	2.673	0.007	1.000	89913	0.0508		267	994	
449.00 > 99.00	2.680	2.673	0.007	1.000	25411		3.54(1.94-5.82)		462	M
D 14 13C4 PFOA										
417.00 > 372.00	2.672	2.687	-0.015	0.997	85519	0.0374		74.8	3255	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.044	3.037	0.007	1.000	4024423	2.61		14087	6920	
499.00 > 99.00	3.044	3.037	0.007	1.000	937068		4.29(2.31-6.93)		7196	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.037	0.007	1.000	235723	0.1741		870	256	
463.00 > 169.00	3.051	3.037	0.014	1.002	50425		4.67(1.90-5.69)		1542	
D 19 13C5 PFNA										
468.00 > 423.00	3.044	3.058	-0.014	1.136	67875	0.0337		67.4	2350	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.058	-0.014	1.136	66051	0.0329		68.9	2053	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.373	0.007	1.000	37263	0.0226		113	1036	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.389	3.382	0.007	0.997	9262	0.0154		80.2	82.6	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.388	-0.008	1.261	83756	0.0310		61.9	2600	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.407	3.391	0.016	1.000	25422	0.0219		110	150	R
513.00 > 169.00	3.398	3.391	0.007	0.997	2659		9.56(2.36-7.09)		88.6	
D 26 M2-8:2FTS										
529.00 > 81.00	3.398	3.406	-0.008	1.268	22619	0.0362		75.5	788	
D 23 13C2 PFDA										
515.00 > 470.00	3.407	3.424	-0.017	1.271	58682	0.0332		66.5	903	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.554	0.008	1.000	10247	0.0254		127	541	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.569	-0.007	1.329	20188	0.0217		43.4	1060	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.710	0.007	1.000	16214	0.0173		89.5	551	
599.00 > 99.00	3.717	3.710	0.007	1.000	5092		3.18(1.39-4.16)		174	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.727	3.720	0.007	1.000	9322	0.0176		88.1	170	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.738	3.720	0.018	1.000	17075	0.0256		128	81.4	
563.00 > 169.00	3.738	3.720	0.018	1.000	2689		6.35(2.12-6.36)		114	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.748	-0.021	1.391	28303	0.0267		53.4	73.8	
D 30 13C2 PFUnA										
565.00 > 520.00	3.738	3.748	-0.010	1.395	38647	0.0245		48.9	1307	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.035	4.018	0.017	1.000	19449	0.0209		104	27.4	
613.00 > 169.00	4.025	4.018	0.007	0.997	4515		4.31(2.13-6.40)		102	
D 36 13C2 PFDoA										
615.00 > 570.00	4.035	4.047	-0.012	1.506	44551	0.0248		49.7	368	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.298	4.283	0.015	1.000	22564	0.0230		115	11.4	R
663.00 > 169.00	4.298	4.283	0.015	1.000	5433		4.15(1.25-3.76)		109	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.533	4.524	0.009	1.000	5031	0.0162		80.8	127	
713.00 > 219.00	4.533	4.524	0.009	1.000	4572		1.10(0.71-2.13)		126	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.533	4.554	-0.021	1.691	62794	0.0287		57.3	527	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.955	4.938	0.017	1.000	32499	-0.003770		-18.8	23.5	
813.00 > 169.00	4.955	4.938	0.017	1.000	5201		6.25(2.86-8.58)		83.6	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.955	4.973	-0.018	1.849	87142	0.0243		48.5	560	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.315	5.301	0.014	1.000	28949	0.0180		89.8	21.8	
913.00 > 169.00	5.307	5.301	0.006	0.999	3194		9.06(3.83-11.48)		63.2	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 10:10:45 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_010.d

Injection Date: 29-Mar-2018 09:35:25 Instrument ID: A8_N

Lims ID: 320-36683-A-10-E MS

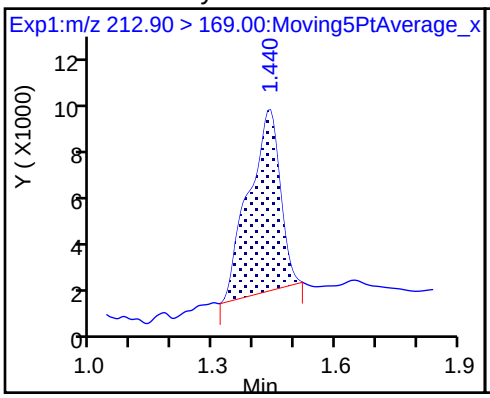
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 9 Worklist Smp#: 7

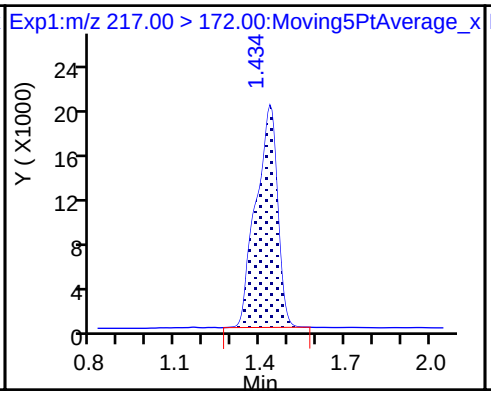
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

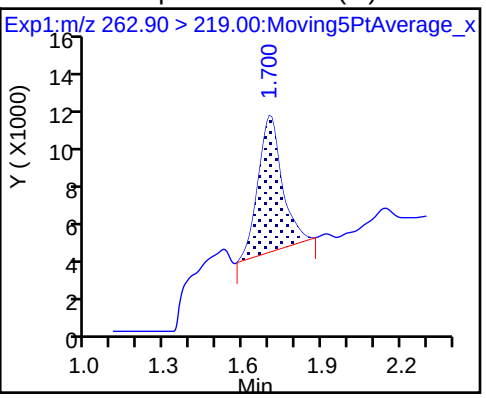
2 Perfluorobutyric acid



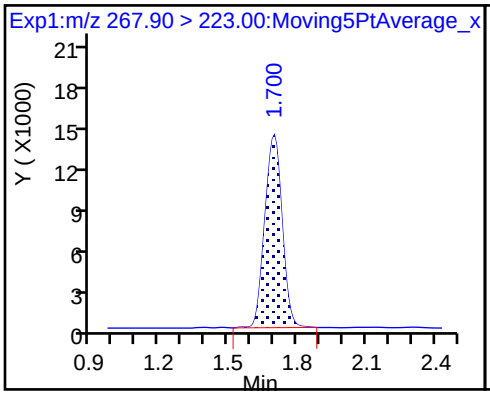
D 1 13C4 PFBA



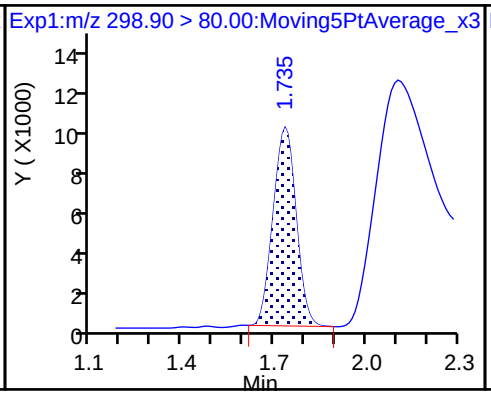
4 Perfluoropentanoic acid (M)



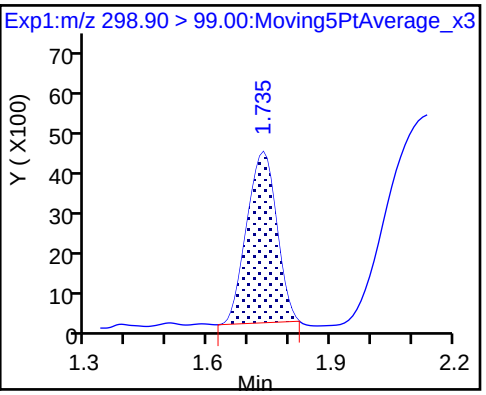
D 3 13C5-PFPeA



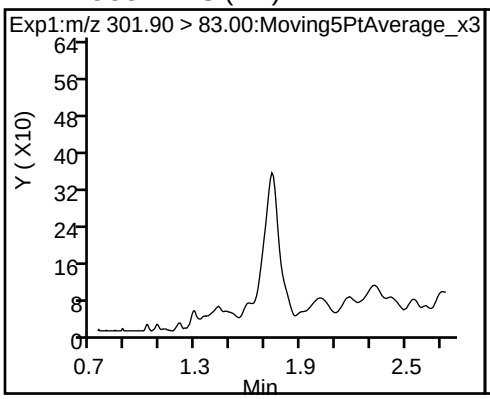
5 Perfluorobutanesulfonic acid



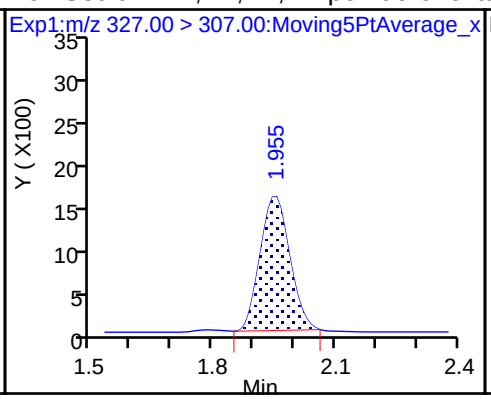
5 Perfluorobutanesulfonic acid



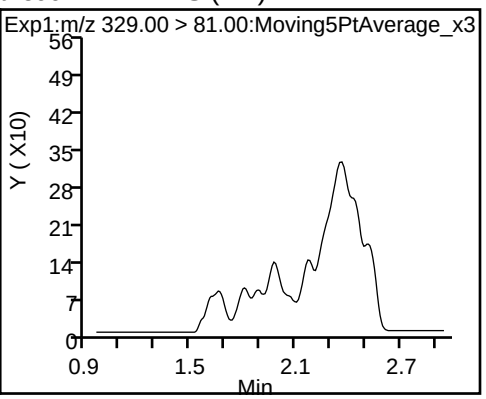
D 47 13C3-PFBS (ND)



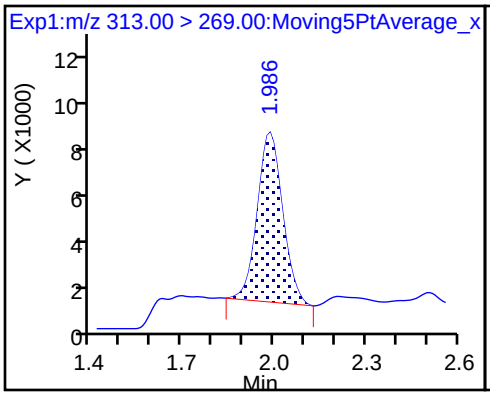
61 Sodium 1H,1H,2H,2H-perfluorohexane



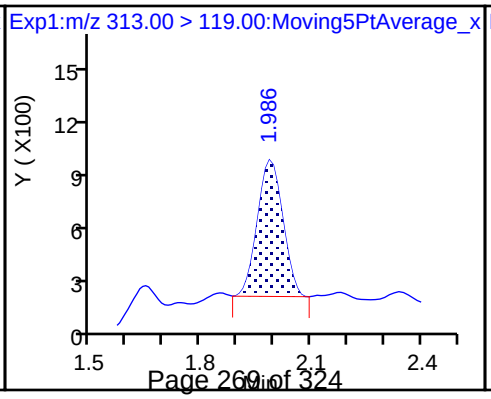
D 60 M2-4:2FTS (ND)



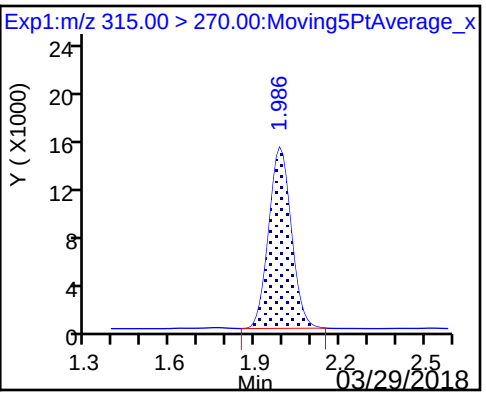
6 Perfluorohexanoic acid



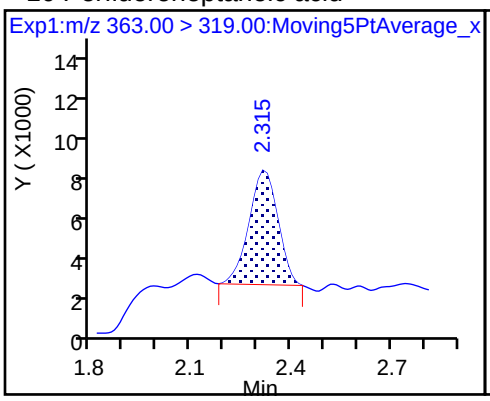
6 Perfluorohexanoic acid



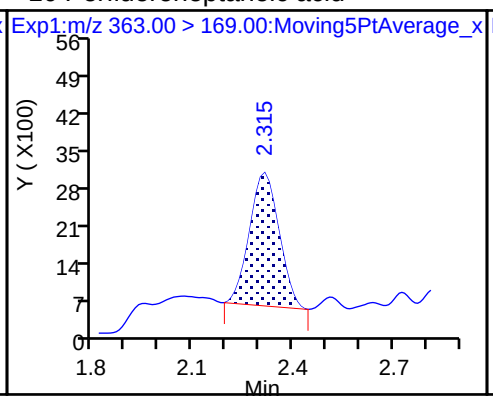
D 7 13C2 PFHxA



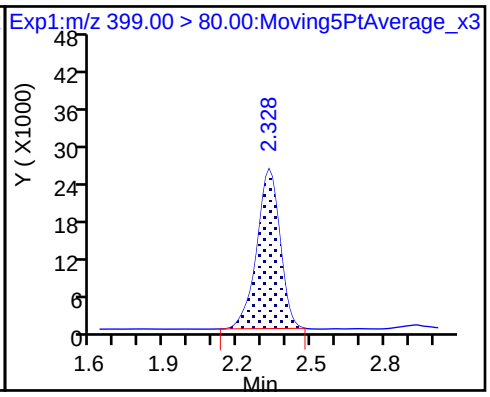
10 Perfluoroheptanoic acid



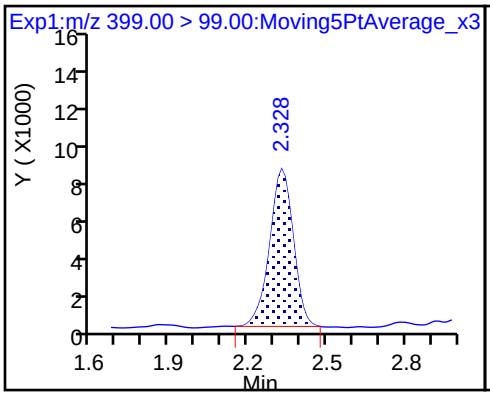
10 Perfluoroheptanoic acid



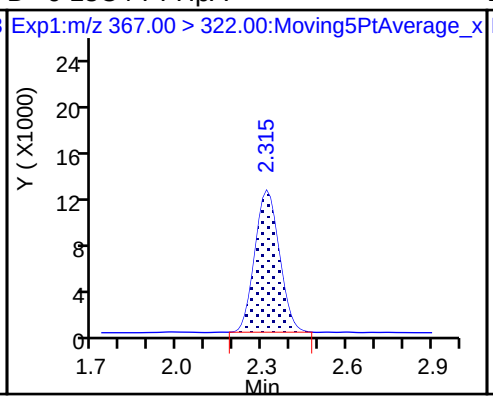
8 Perfluorohexanesulfonic acid



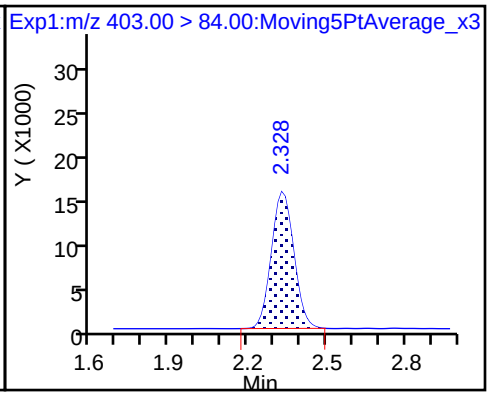
8 Perfluorohexanesulfonic acid



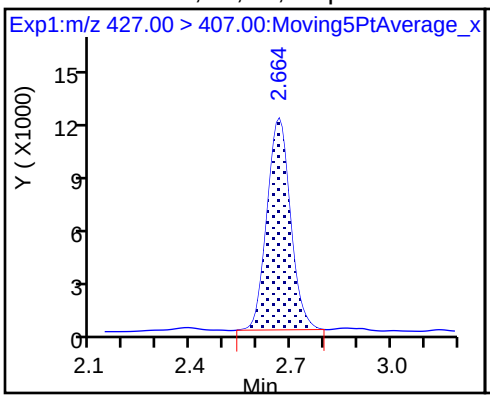
D 9 13C4-PFHpA



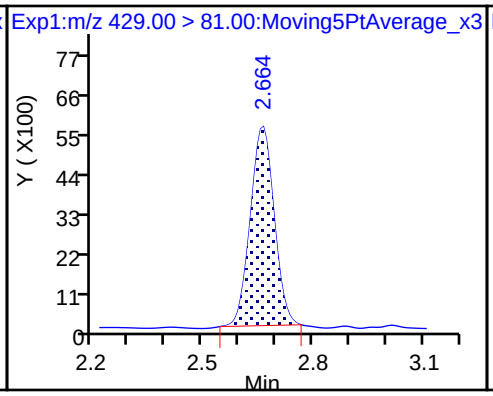
D 11 18O2 PFHxS



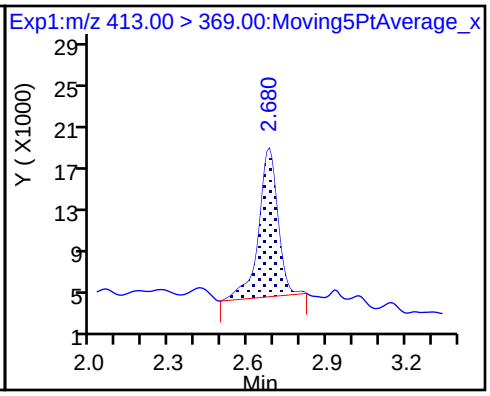
13 Sodium 1H,1H,2H,2H-perfluorooctane



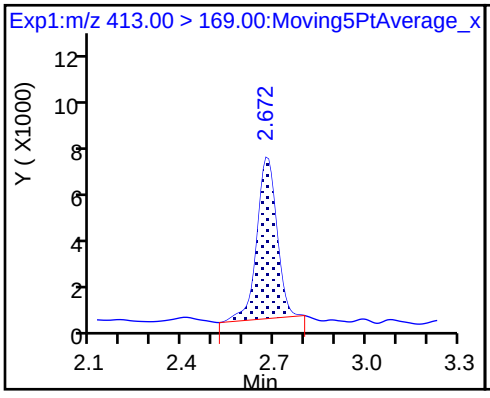
D 12 M2-6:2FTS



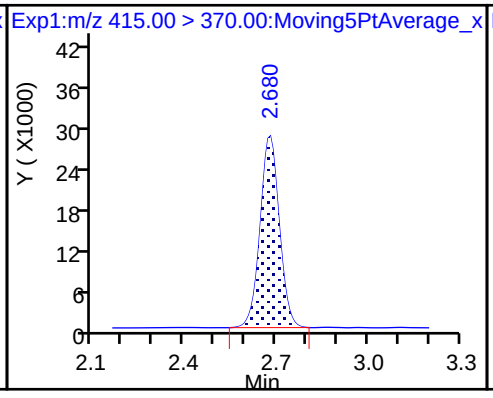
15 Perfluorooctanoic acid



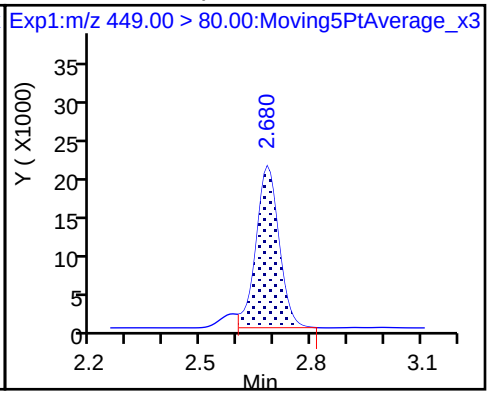
15 Perfluorooctanoic acid



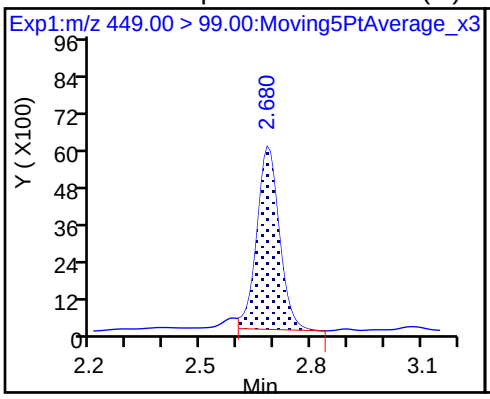
* 62 13C2-PFOA



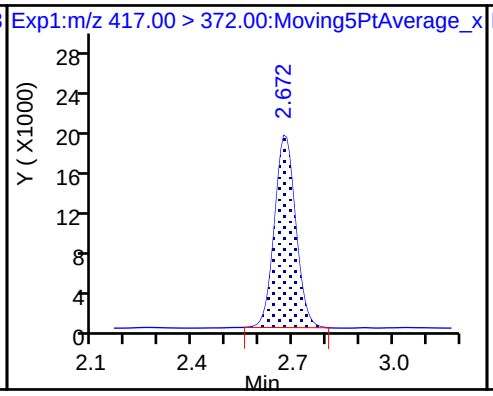
16 Perfluoroheptanesulfonic acid



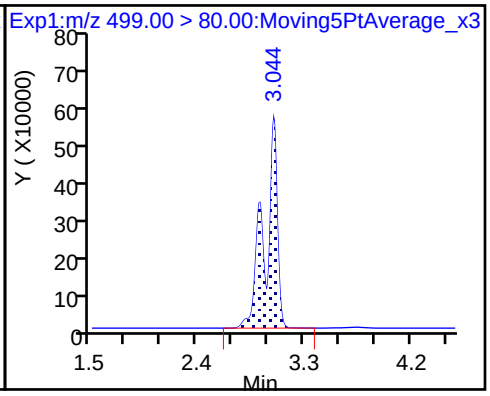
16 Perfluoroheptanesulfonic acid (M)



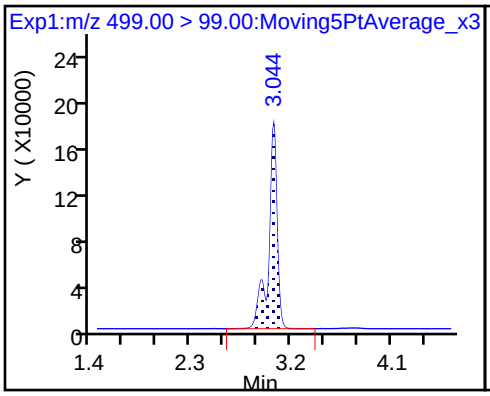
D 14 13C4 PFOA



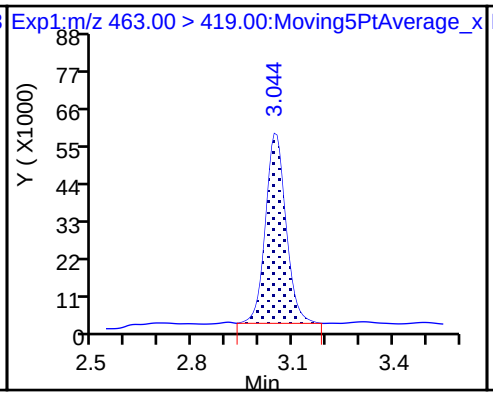
17 Perfluorooctane sulfonic acid



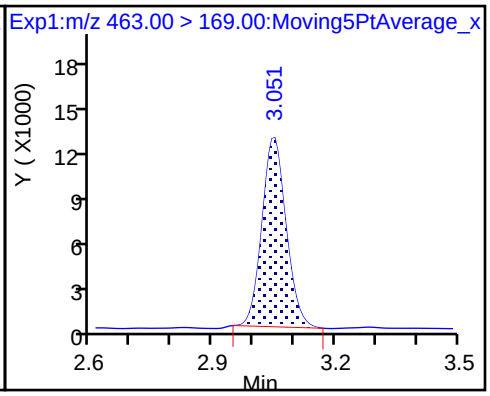
17 Perfluorooctane sulfonic acid



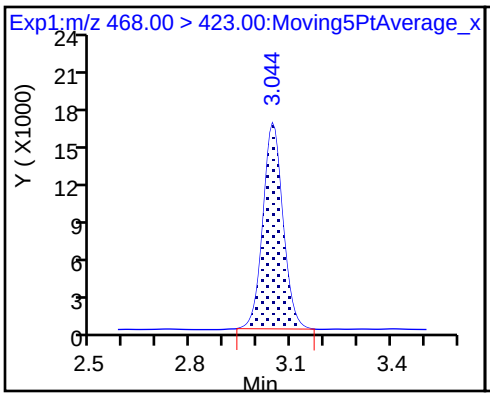
20 Perfluorononanoic acid



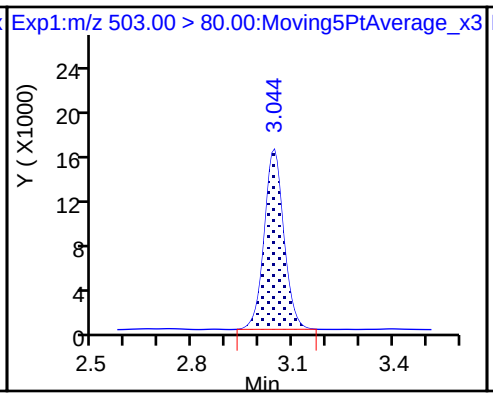
20 Perfluorononanoic acid



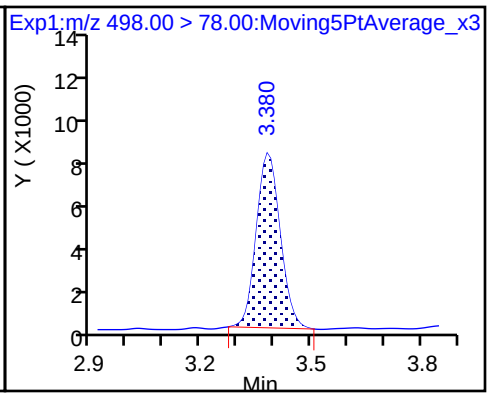
D 19 13C5 PFNA



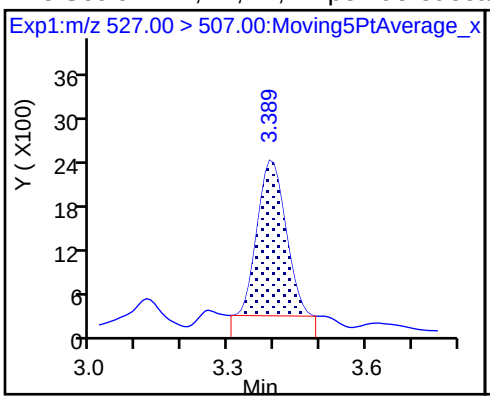
D 18 13C4 PFOS



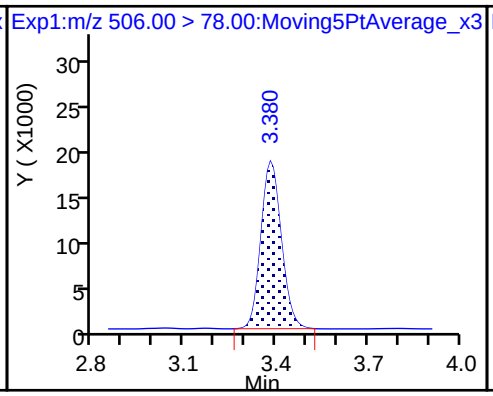
22 Perfluorooctane Sulfonamide



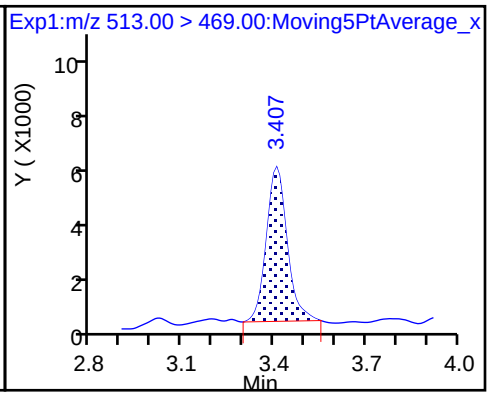
25 Sodium 1H,1H,2H,2H-perfluorodecane



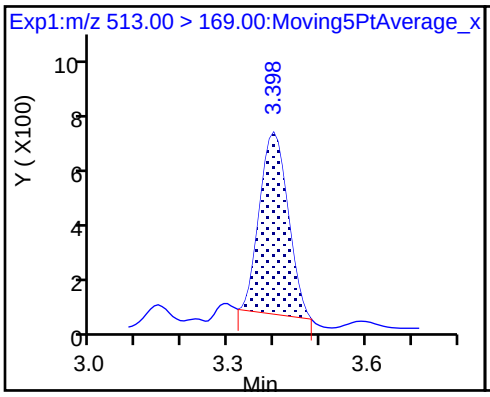
D 21 13C8 FOSA



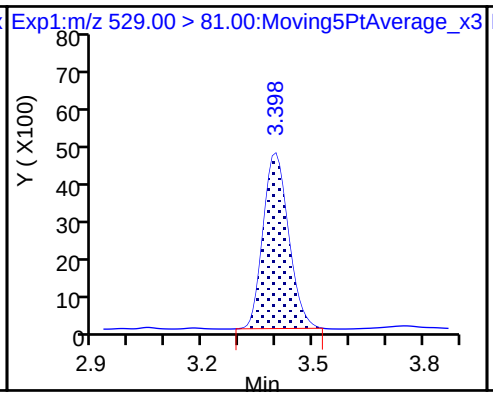
24 Perfluorodecanoic acid



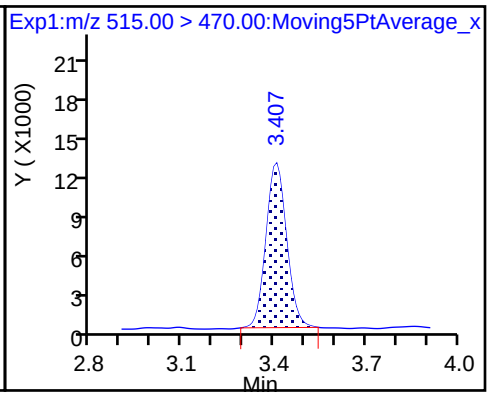
24 Perfluorodecanoic acid



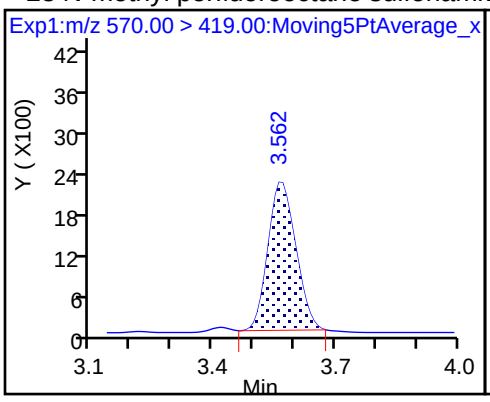
D 26 M2-8:2FTS



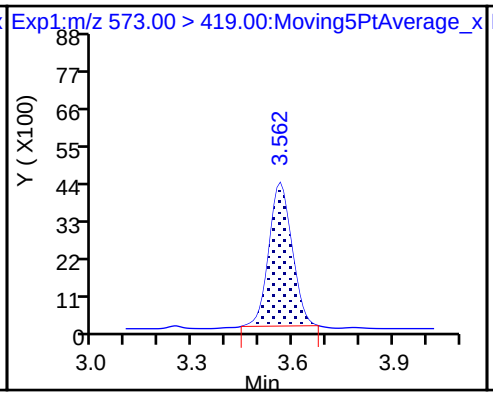
D 23 13C2 PFDA



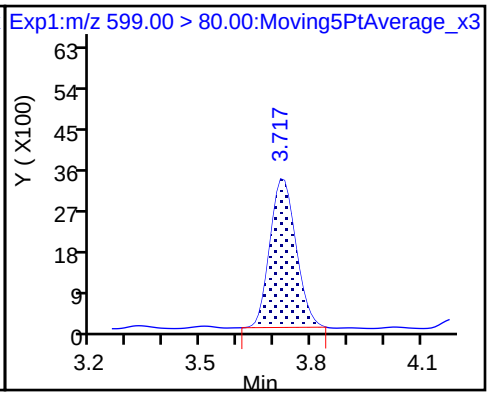
28 N-methyl perfluorooctane sulfonami



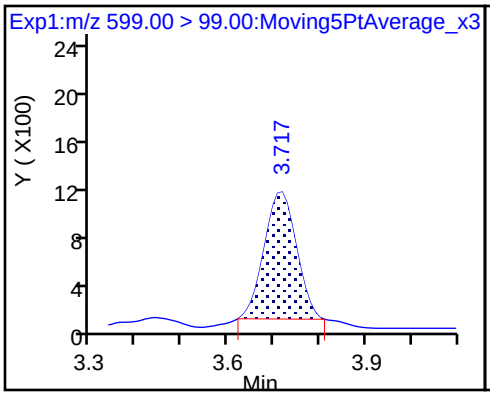
D 27 d3-NMeFOSAA



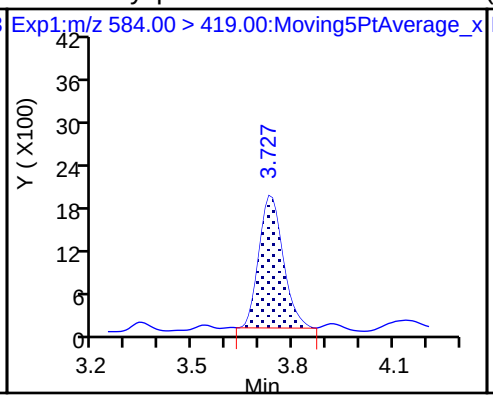
29 Perfluorodecane Sulfonic acid



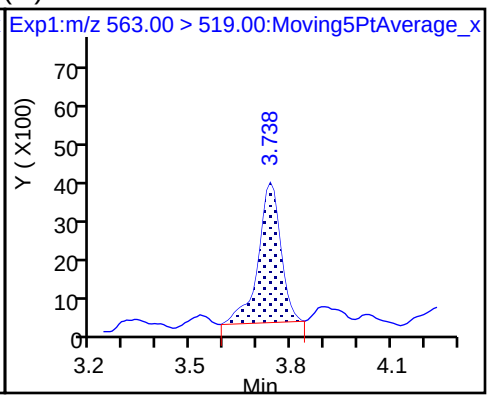
29 Perfluorodecane Sulfonic acid



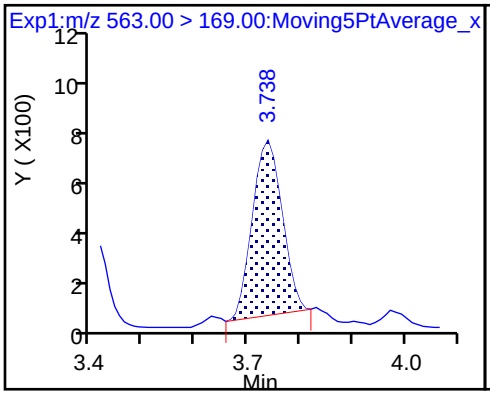
33 N-ethyl perfluorooctane sulfonamid (M)



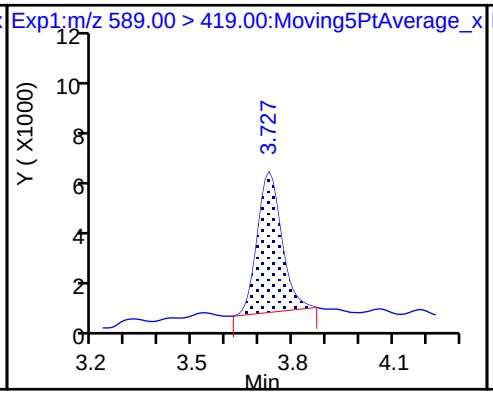
31 Perfluoroundecanoic acid



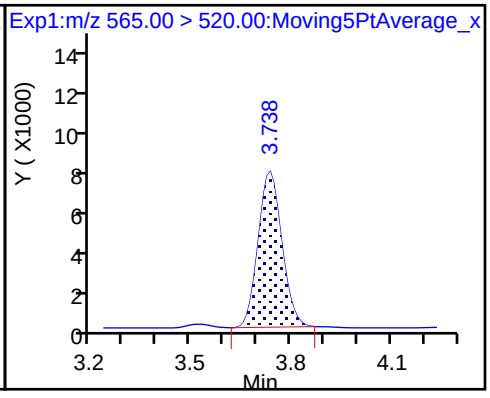
31 Perfluoroundecanoic acid



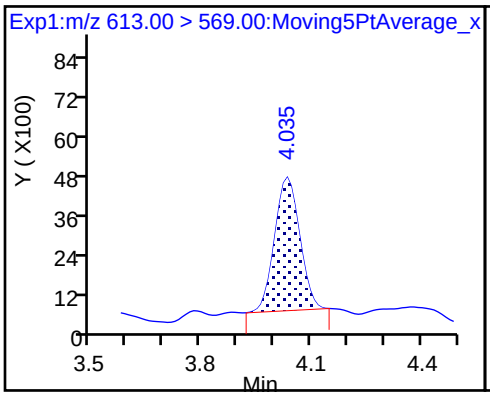
D 32 d5-NEtFOSAA



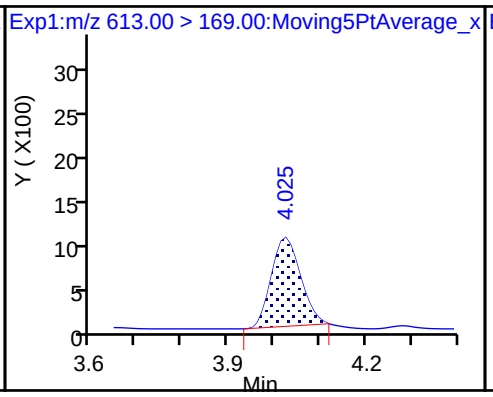
D 30 13C2 PFUnA



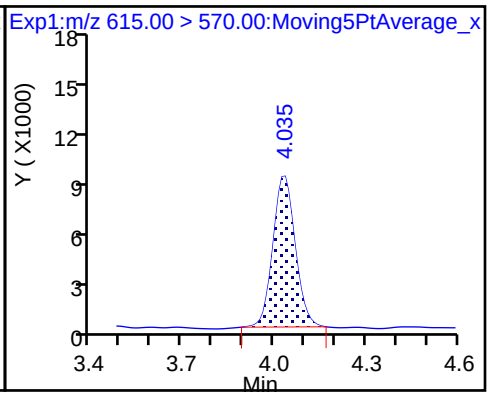
37 Perfluorododecanoic acid



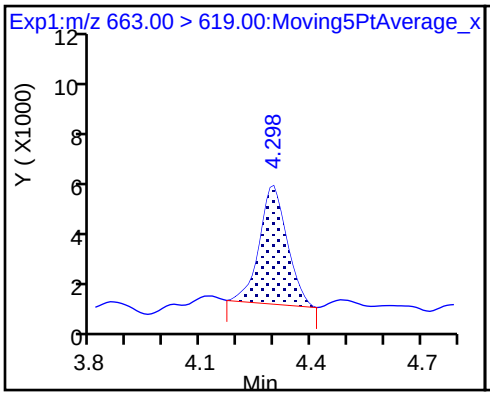
37 Perfluorododecanoic acid



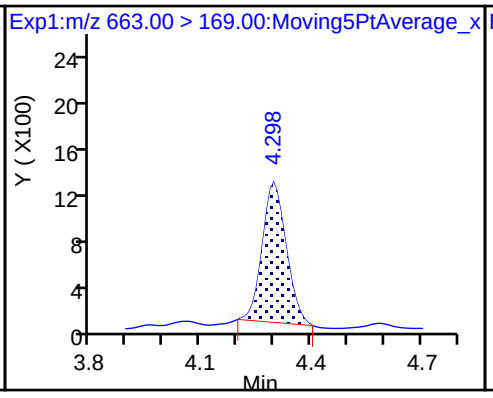
D 36 13C2 PFDoA



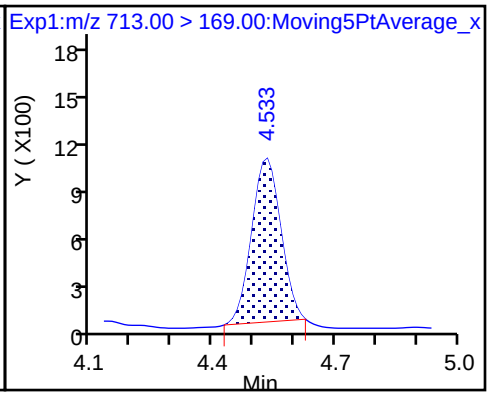
41 Perfluorotridecanoic acid



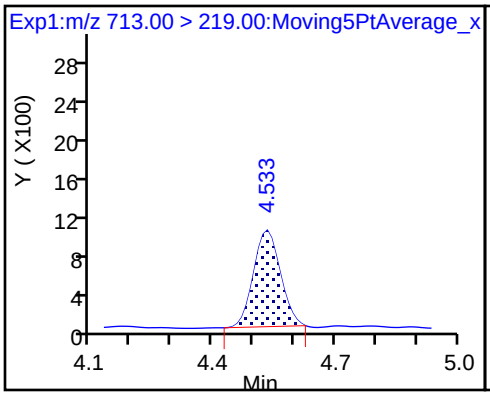
41 Perfluorotridecanoic acid



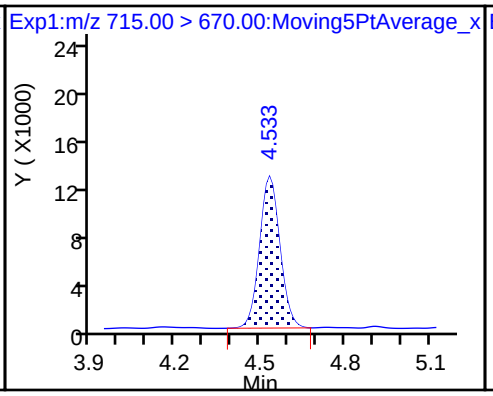
42 Perfluorotetradecanoic acid



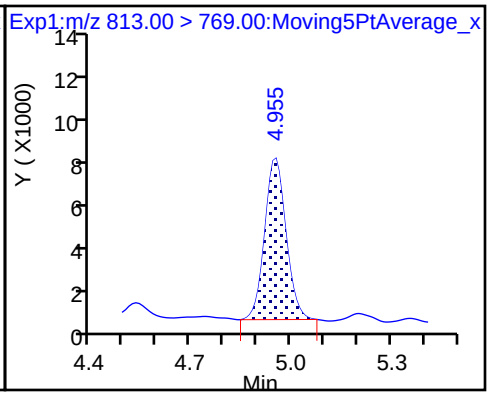
42 Perfluorotetradecanoic acid



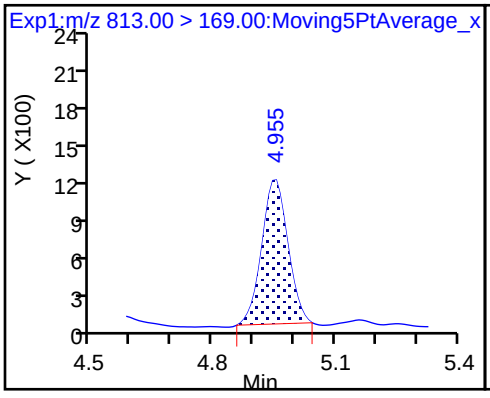
D 43 13C2-PFTeDA



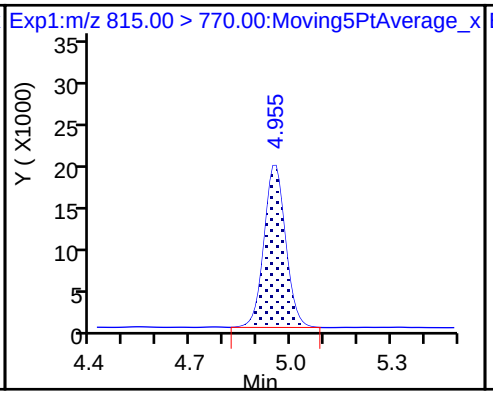
45 Perfluorohexadecanoic acid



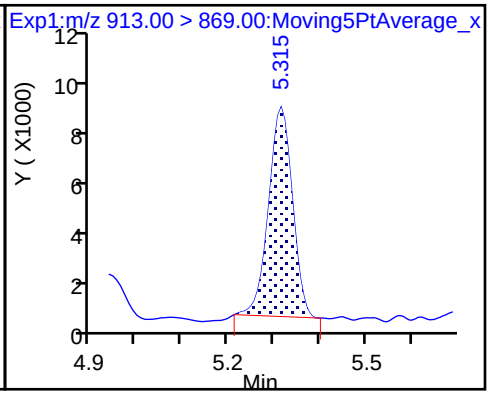
45 Perfluorohexadecanoic acid



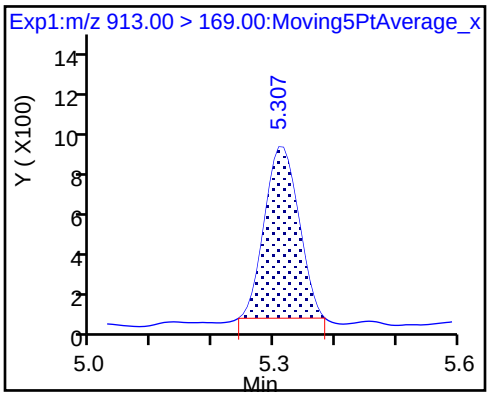
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-F MSD

Matrix: Solid | Lab File ID: 2018.03.28LLFF_023.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) | Date Analyzed: 03/29/2018 02:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00194		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00192		0.00020	0.000078
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00226		0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00198		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00263		0.00020	0.000087
375-95-1	Perfluorononanoic acid (PFNA)	0.0144		0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.00210		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00167		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00183		0.00020	0.000068
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00196		0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00176		0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00172		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00593		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00564		0.00020	0.000035
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00220		0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00186		0.00020	0.000083
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00182	J	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00183	J	0.0020	0.00037
27619-97-2	6:2FTS	0.00488		0.0020	0.00015
39108-34-4	8:2FTS	0.00219		0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-F MSD

Matrix: Solid | Lab File ID: 2018.03.28LLFF_023.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) | Date Analyzed: 03/29/2018 02:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215311 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	78		25-150
STL01893	13C5 PFPeA	78		25-150
STL00993	13C2 PFHxA	72		25-150
STL01892	13C4-PFHpA	78		25-150
STL00990	13C4 PFOA	74		25-150
STL00995	13C5 PFNA	55		25-150
STL00996	13C2 PFDA	67		25-150
STL00997	13C2 PFUnA	63		25-150
STL00998	13C2 PFDoA	59		25-150
STL02116	13C2-PFTeDA	66		25-150
STL02337	13C3-PFBS	76		25-150
STL00994	18O2 PFHxS	76		25-150
STL00991	13C4 PFOS	58		25-150
STL01056	13C8 FOSA	68		25-150
STL02118	d3-NMeFOSAA	66		25-150
STL02117	d5-NEtFOSAA	55		25-150
STL02279	M2-6:2FTS	76		25-150
STL02280	M2-8:2FTS	65		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d
Lims ID: 320-36683-A-10-F MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 29-Mar-2018 02:15:31 ALS Bottle#: 26 Worklist Smp#: 20
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-36683-A-10-F MSD
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 09:09:31 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 09:08:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.438	1.441	-0.003	0.533	5343461	1.94		77.7	181725	M
2 Perfluorobutyric acid										M
212.90 > 169.00	1.438	1.446	-0.008	1.000	1936612	0.9616		96.2	466	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.705	1.709	-0.004	0.632	3560312	1.95		78.1	113466	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.705	1.718	-0.013	1.000	1524477	0.9494		94.9	525	M
D 47 13C3-PFBS										
301.90 > 83.00	1.741	1.745	-0.004	0.645	73500	1.77		75.9	535	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.749	1.753	-0.004	1.005	2091972	0.8516		96.3	1053	
298.90 > 99.00	1.741	1.753	-0.012	1.000	862932		2.42(1.25-3.74)		914	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.966	-0.005	1.000	414565	0.8119		86.9	13389	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	2.008	-0.016	1.000	1655593	1.12		112	1597	
313.00 > 119.00	1.992	2.008	-0.016	1.000	148383		11.16(5.03-15.10)		1784	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	2.009	-0.017	0.738	3623267	1.80		71.9	94966	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.336	2.341	-0.005	1.000	1583204	0.9817		98.2	804	
363.00 > 169.00	2.336	2.341	-0.005	1.000	624426		2.54(1.13-3.40)		1027	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.349	2.354	-0.005	1.000	6140964	2.94		323	22890	
399.00 > 99.00	2.349	2.354	-0.005	1.000	1939795		3.17(1.50-4.49)		8038	
D 9 13C4-PFHpA										
367.00 > 322.00	2.336	2.354	-0.018	0.865	3897242	1.96		78.3	103091	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.349	2.368	-0.019	0.870	4437937	1.81		76.4	101460	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.689	-0.021	1.000	1316249	2.42		255	14033	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.697	-0.029	0.988	741880	1.80		75.7	19842	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.699	2.712	-0.013	1.000	2223686	1.30		130	905	
413.00 > 169.00	2.699	2.712	-0.013	1.000	1141975		1.95(0.84-2.52)		3703	
* 62 13C2-PFOA										
415.00 > 370.00	2.699	2.712	-0.013		5429069	2.50			106315	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.707	2.720	-0.013	1.000	3724302	2.79		294	1236	M
449.00 > 99.00	2.699	2.720	-0.021	0.997	957548		3.89(1.94-5.82)		2036	M
D 14 13C4 PFOA										
417.00 > 372.00	2.699	2.721	-0.022	1.000	3778970	1.86		74.3	116312	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.067	3.080	-0.013	1.000	102792210	88.7		9559	48367	E
499.00 > 99.00	3.067	3.080	-0.013	1.000	28993701		3.55(2.31-6.93)		1578094	
20 Perfluorononanoic acid										
463.00 > 419.00	3.074	3.088	-0.014	1.000	7075815	7.14		714	8114	
463.00 > 169.00	3.074	3.088	-0.014	1.000	1780621		3.97(1.90-5.69)		43844	
D 19 13C5 PFNA										
468.00 > 423.00	3.074	3.096	-0.022	1.139	2484525	1.38		55.4	50190	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.096	-0.029	1.136	2486089	1.39		58.2	26479	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.417	-0.015	1.000	1489868	0.9205		92.0	16050	
D 21 13C8 FOSA										
506.00 > 78.00	3.401	3.417	-0.016	1.260	4104632	1.70		68.2	42163	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.428	3.435	-0.007	1.000	496992	1.08		113	10620	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.437	3.444	-0.007	1.000	1088389	1.04		104	5580	
513.00 > 169.00	3.437	3.444	-0.007	1.000	182695		5.96(2.36-7.09)		3797	
D 26 M2-8:2FTS										
529.00 > 81.00	3.428	3.453	-0.025	1.270	861216	1.55		64.5	18463	
D 23 13C2 PFDA										
515.00 > 470.00	3.437	3.462	-0.025	1.273	2641853	1.68		67.2	37913	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.594	3.611	-0.017	1.000	492961	0.9003		90.0	5037	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.594	3.611	-0.017	1.331	1367741	1.65		66.1	31073	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.758	-0.017	1.000	769554	1.09		113	9086	
599.00 > 99.00	3.741	3.758	-0.017	1.000	261826		2.94(1.39-4.16)		5944	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.779	-0.017	1.000	628685	0.8260		82.6	3581	
563.00 > 169.00	3.762	3.779	-0.017	1.000	164706		3.82(2.12-6.36)		7580	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.779	-0.017	1.003	442635	0.9070		90.7	14352	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.779	-0.027	1.390	1305868	1.38		55.4	5038	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.790	-0.028	1.394	2206985	1.57		62.7	89363	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.077	-0.016	1.000	896893	0.9045		90.5	633	
613.00 > 169.00	4.061	4.077	-0.016	1.000	217323		4.13(2.13-6.40)		4327	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.089	-0.028	1.504	2369029	1.48		59.3	22511	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.323	4.339	-0.016	1.000	1012842	0.9710		97.1	552	
663.00 > 169.00	4.323	4.339	-0.016	1.000	313073		3.24(1.25-3.76)		6938	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.559	4.575	-0.016	1.000	277086	0.8728		87.3	6253	
713.00 > 219.00	4.559	4.575	-0.016	1.000	197381		1.40(0.71-2.13)		5665	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.559	4.585	-0.026	1.689	3203002	1.64		65.7	20941	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.985	4.990	-0.005	1.002	1535014	0.8955		89.6	418	
813.00 > 169.00	4.976	4.990	-0.014	1.000	266848		5.75(2.86-8.58)		2415	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	5.008	-0.032	1.843	4590658	1.44		57.4	14659	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.347	5.351	-0.004	1.000	1349521	0.7948		79.5	298	
913.00 > 169.00	5.347	5.351	-0.004	1.000	167302		8.07(3.83-11.48)		2027	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 29-Mar-2018 09:09:43 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d

Injection Date: 29-Mar-2018 02:15:31 Instrument ID: A8_N

Lims ID: 320-36683-A-10-F MSD

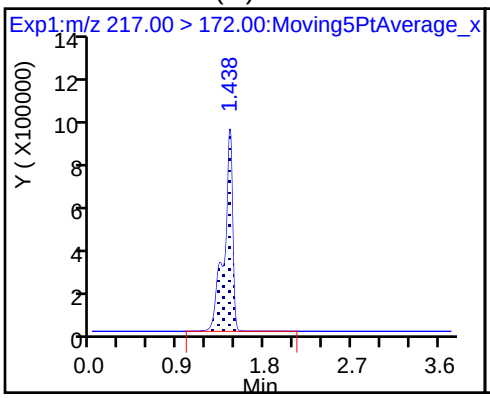
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 20

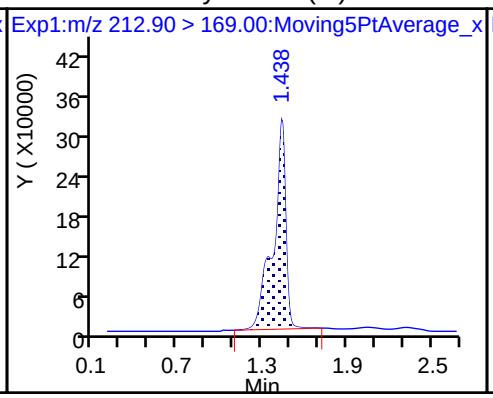
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

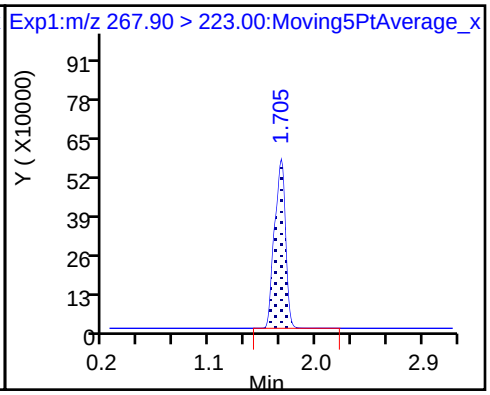
D 1 13C4 PFBA (M)



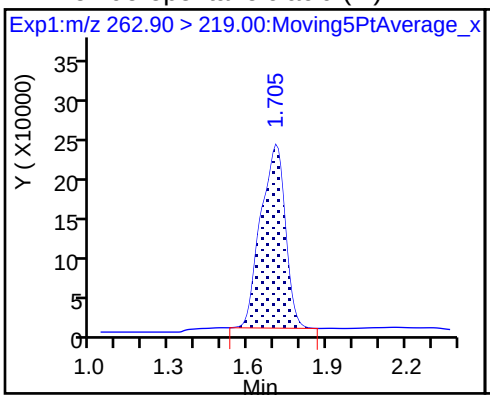
2 Perfluorobutyric acid (M)



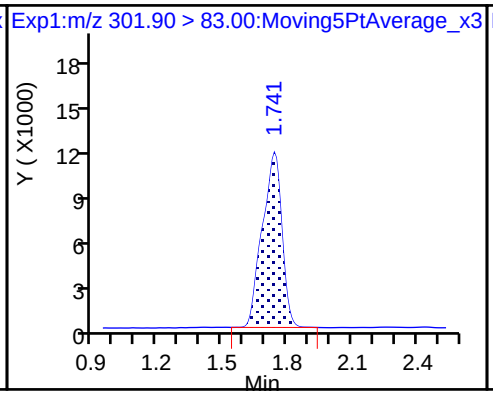
D 3 13C5-PFPeA



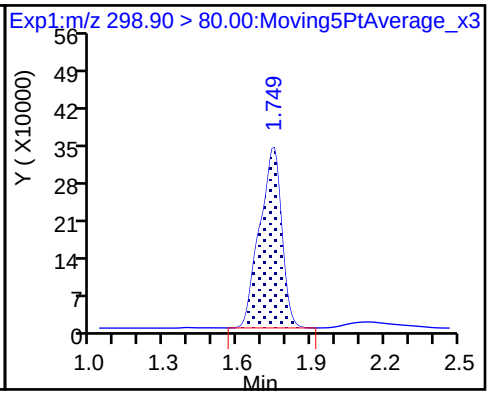
4 Perfluoropentanoic acid (M)



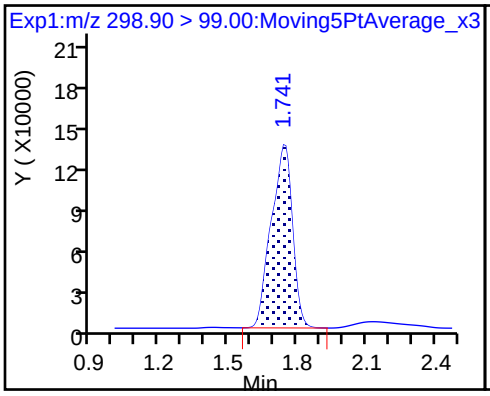
D 47 13C3-PFBS



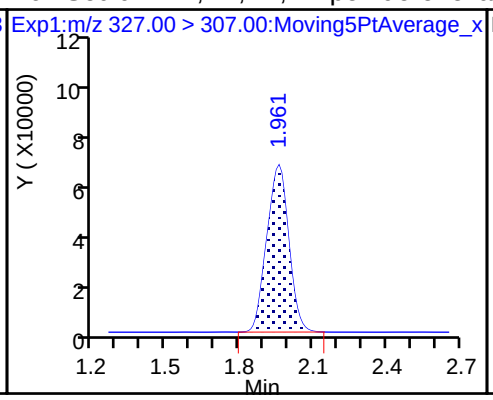
5 Perfluorobutanesulfonic acid



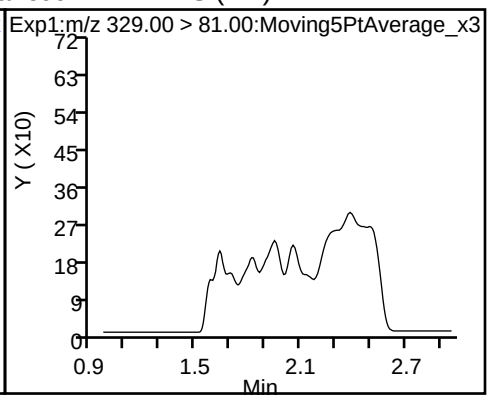
5 Perfluorobutanesulfonic acid



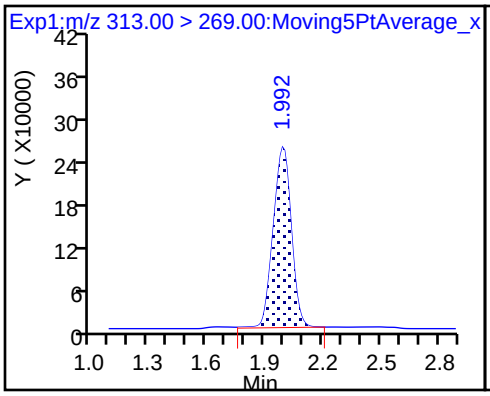
61 Sodium 1H,1H,2H,2H-perfluorohexa



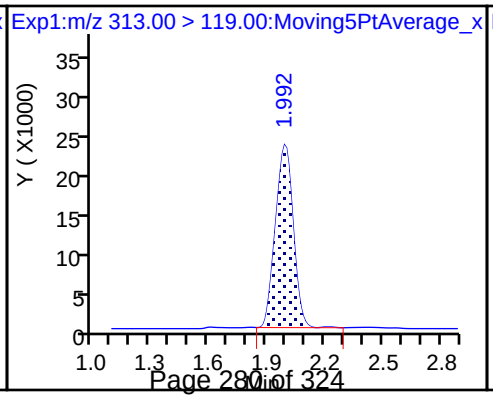
D 60 M2-4:2FTS (ND)



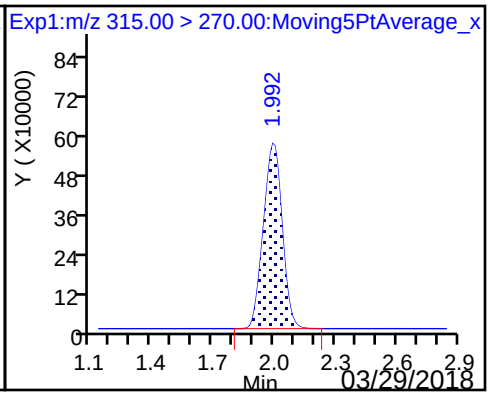
6 Perfluorohexanoic acid



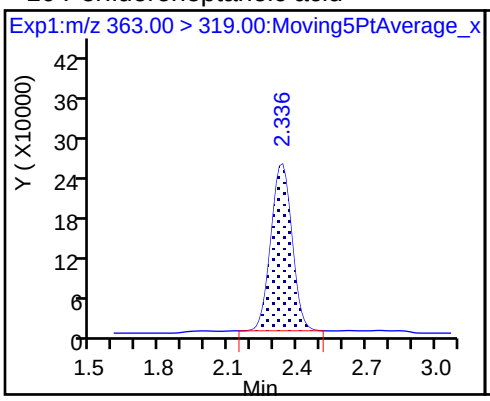
6 Perfluorohexanoic acid



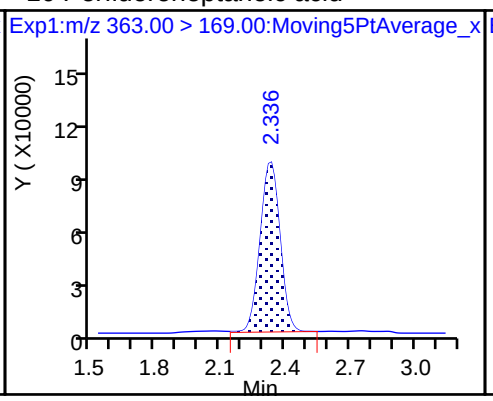
D 7 13C2 PFHxA



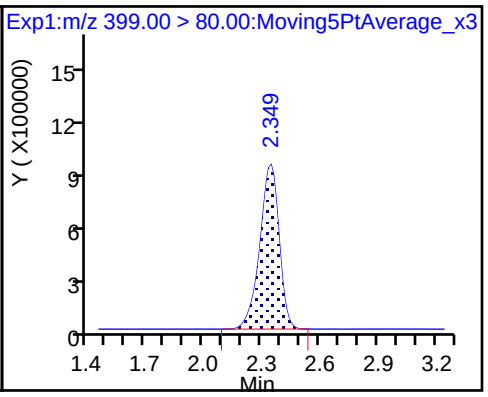
10 Perfluoroheptanoic acid



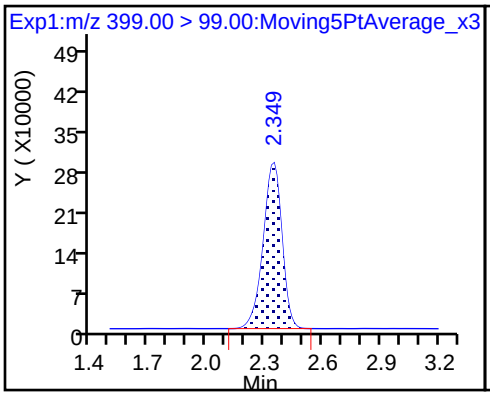
10 Perfluoroheptanoic acid



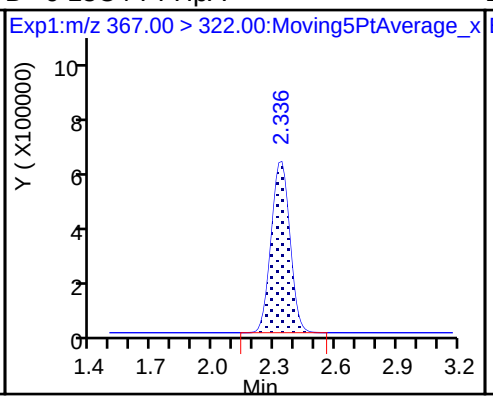
8 Perfluorohexanesulfonic acid



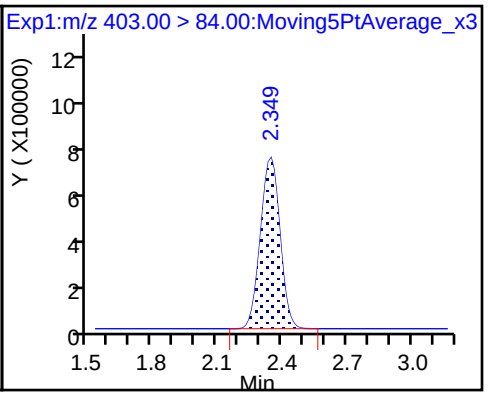
8 Perfluorohexanesulfonic acid



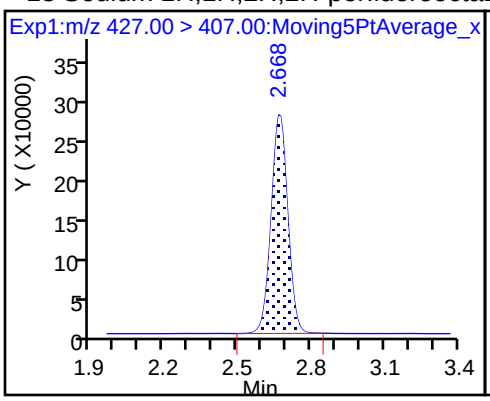
D 9 13C4-PFHpA



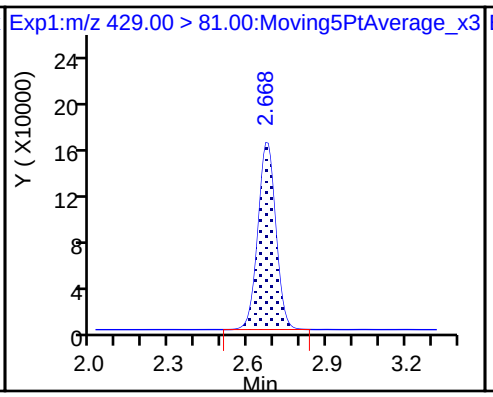
D 11 18O2 PFHxS



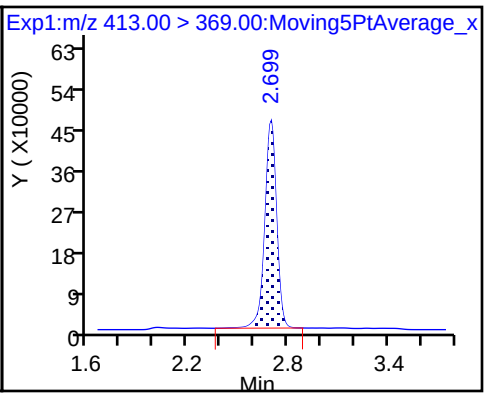
13 Sodium 1H,1H,2H,2H-perfluorooctane



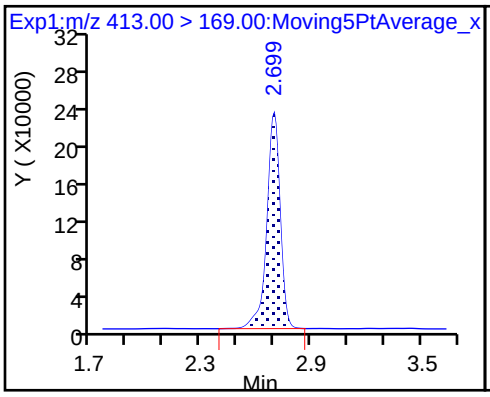
D 12 M2-6:2FTS



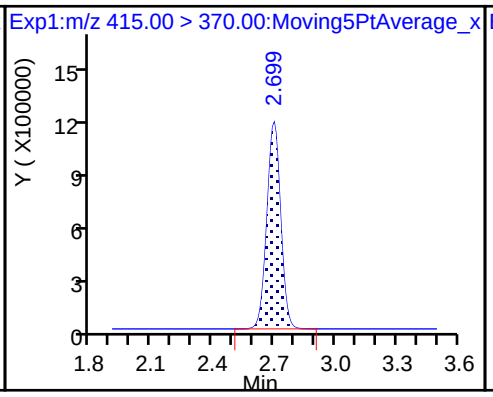
15 Perfluorooctanoic acid



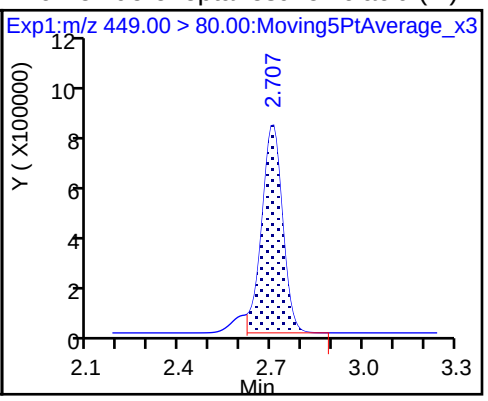
15 Perfluorooctanoic acid



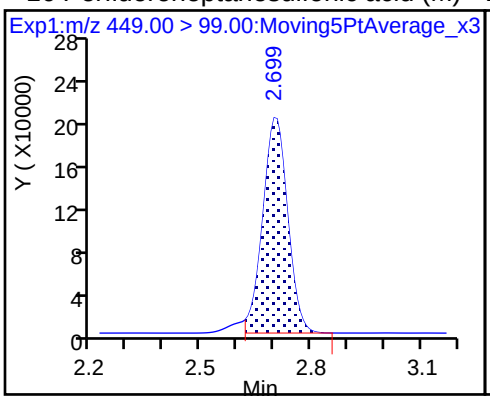
* 62 13C2-PFOA



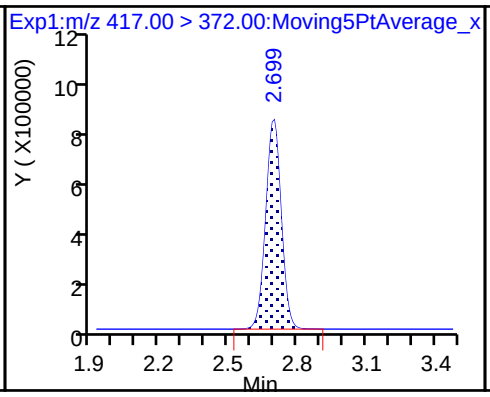
16 Perfluoroheptanesulfonic acid (M)



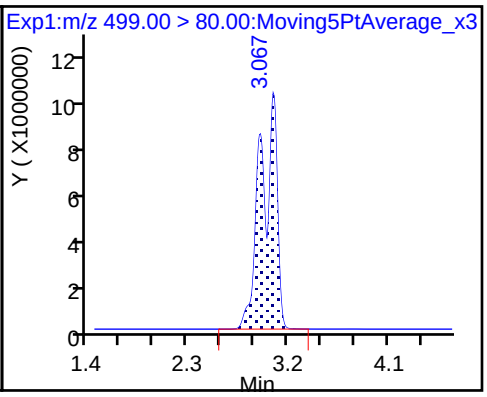
16 Perfluoroheptanesulfonic acid (M)



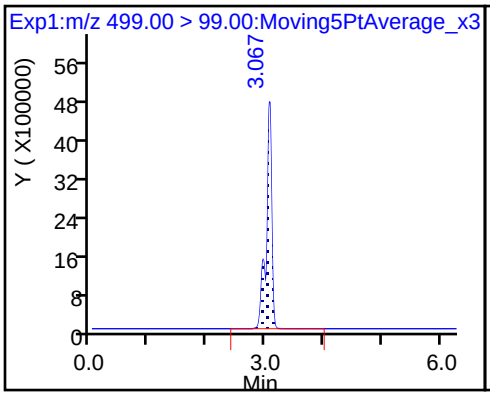
D 14 13C4 PFOA



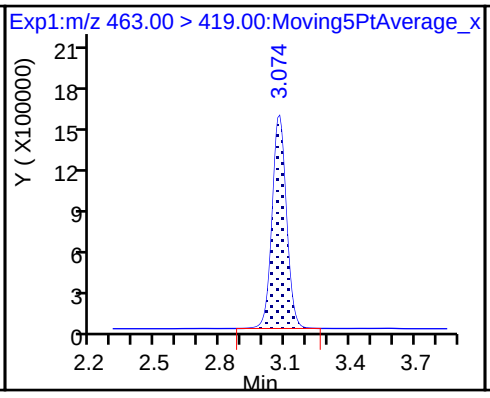
17 Perfluorooctane sulfonic acid



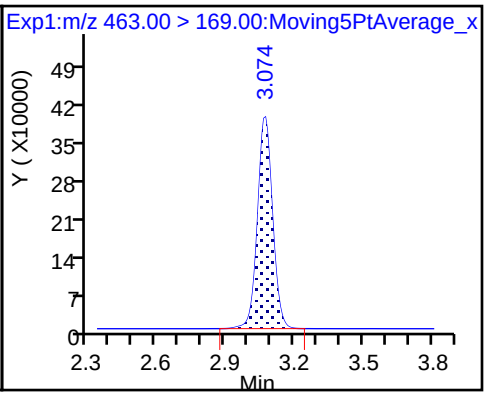
17 Perfluorooctane sulfonic acid



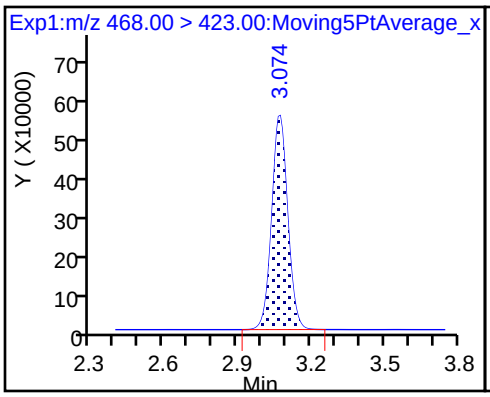
20 Perfluorononanoic acid



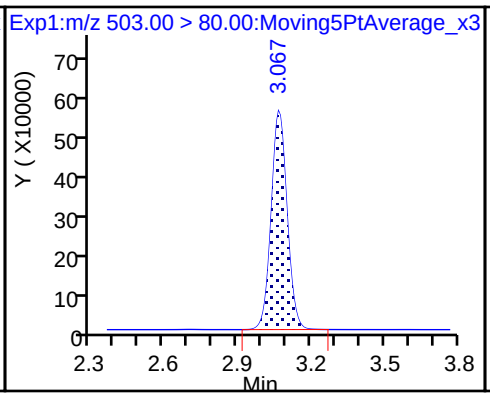
20 Perfluorononanoic acid



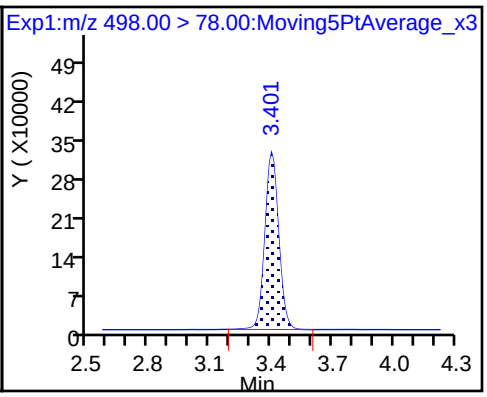
D 19 13C5 PFNA



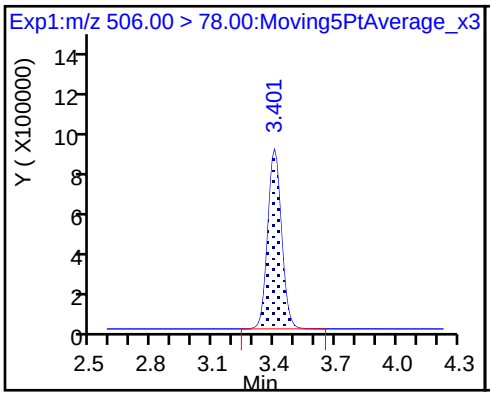
D 18 13C4 PFOS



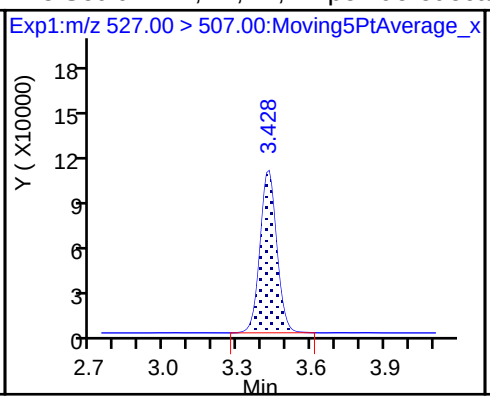
22 Perfluorooctane Sulfonamide



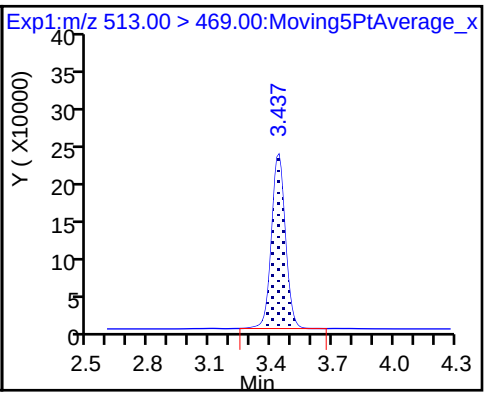
D 21 13C8 FOSA



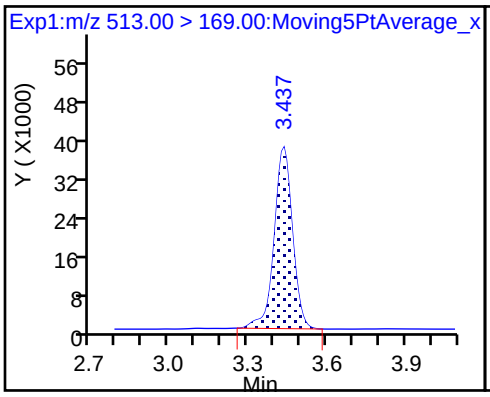
25 Sodium 1H,1H,2H,2H-perfluorodecan



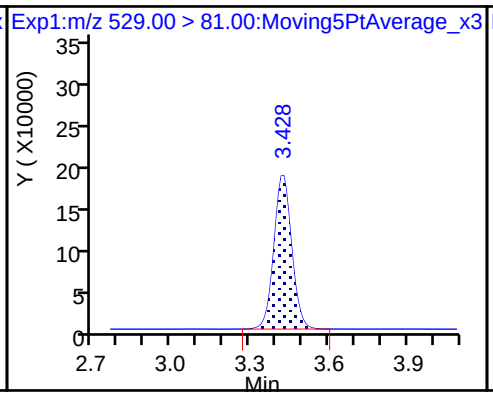
24 Perfluorodecanoic acid



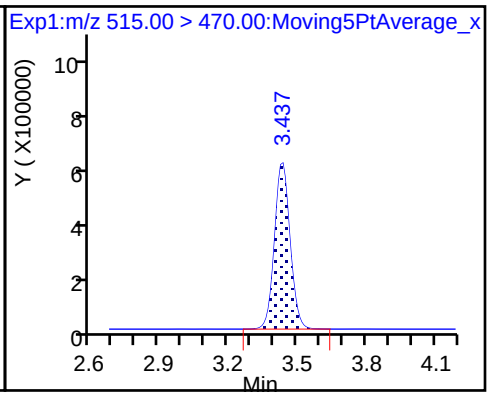
24 Perfluorodecanoic acid



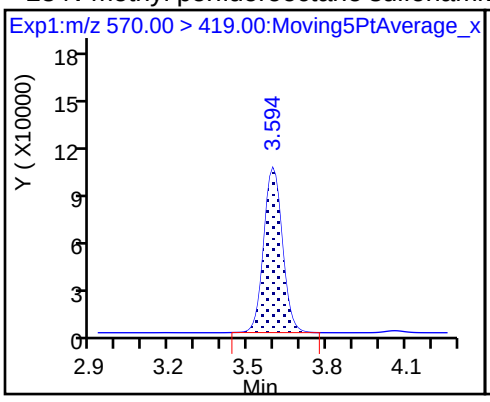
D 26 M2-8:2FTS



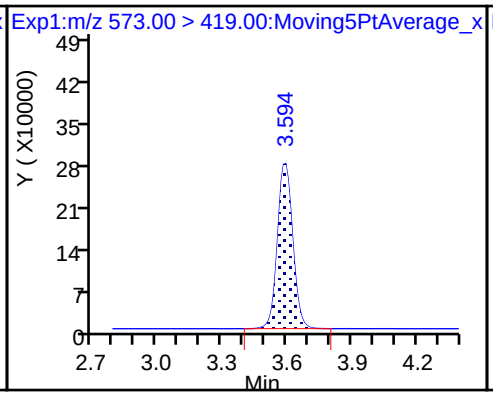
D 23 13C2 PFDA



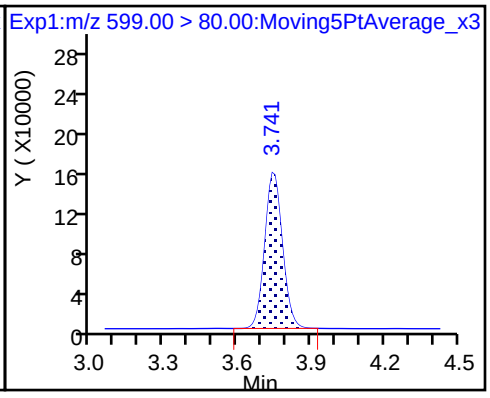
28 N-methyl perfluorooctane sulfonami



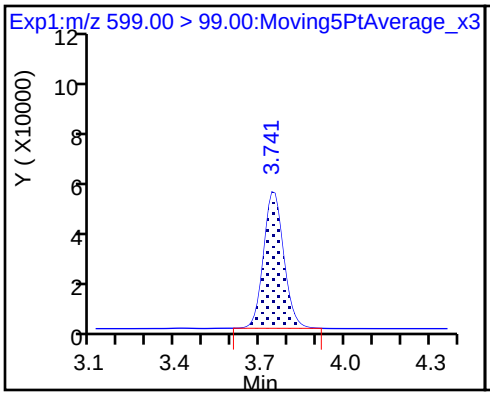
D 27 d3-NMeFOSAA



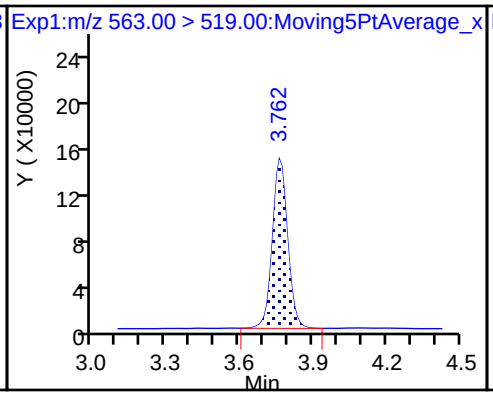
29 Perfluorodecane Sulfonic acid



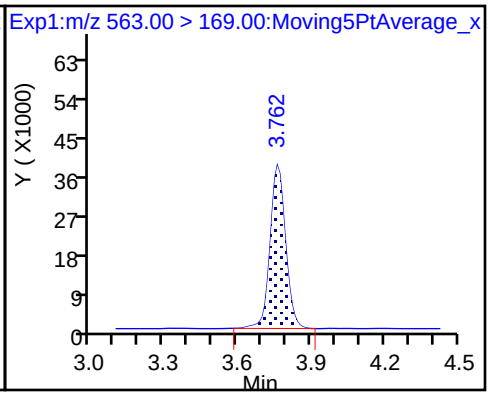
29 Perfluorodecane Sulfonic acid



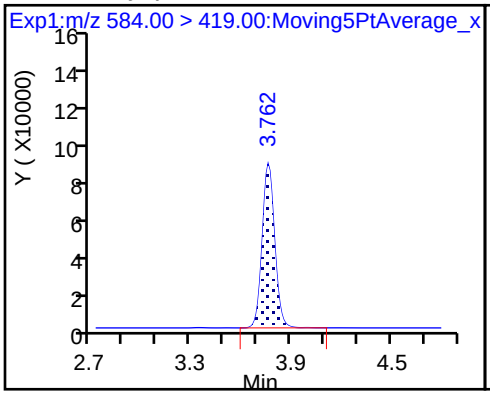
31 Perfluoroundecanoic acid



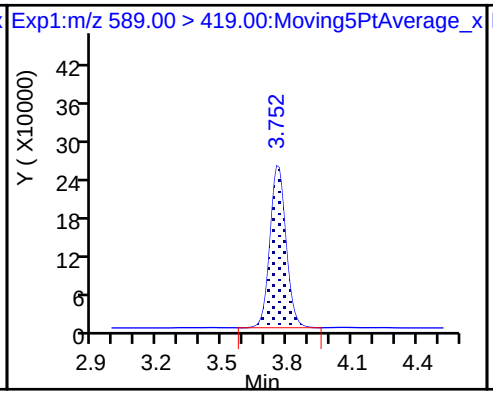
31 Perfluoroundecanoic acid



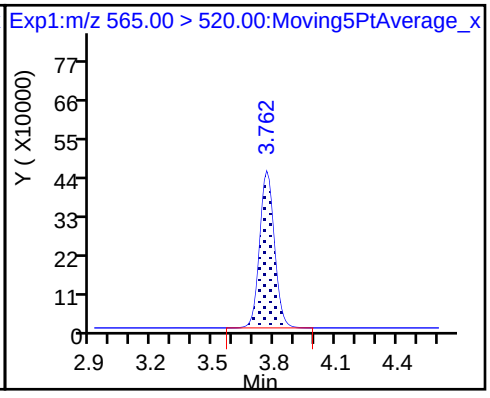
33 N-ethyl perfluorooctane sulfonamid



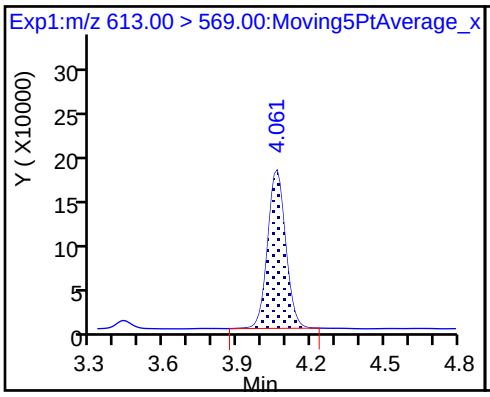
D 32 d5-NEtFOSAA



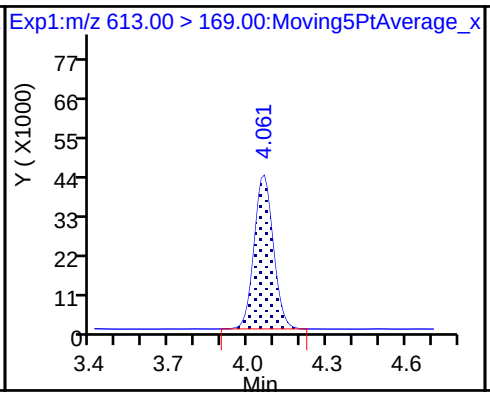
D 30 13C2 PFUnA



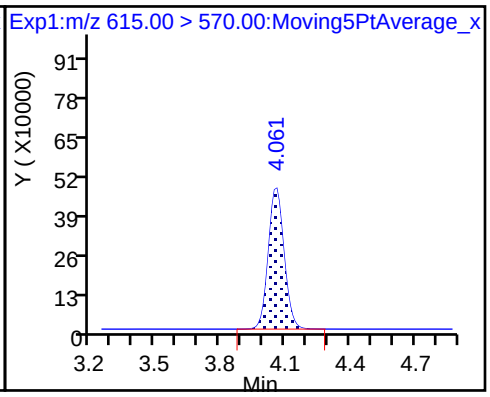
37 Perfluorododecanoic acid



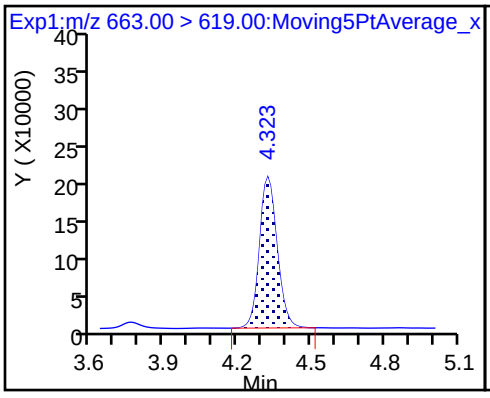
37 Perfluorododecanoic acid



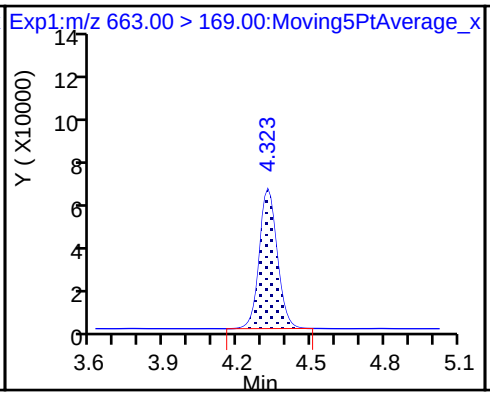
D 36 13C2 PFDoA



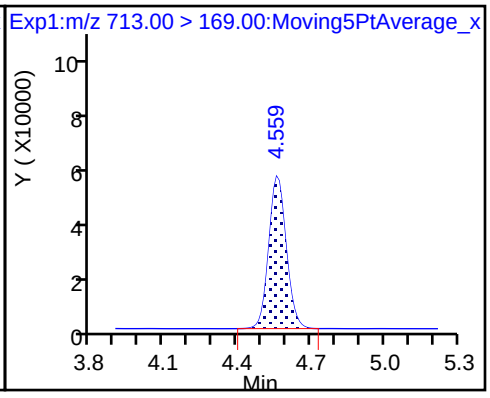
41 Perfluorotridecanoic acid



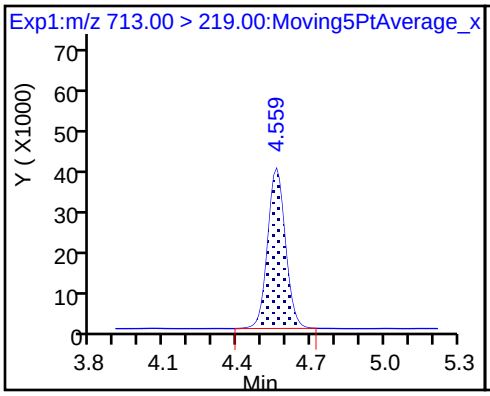
41 Perfluorotridecanoic acid



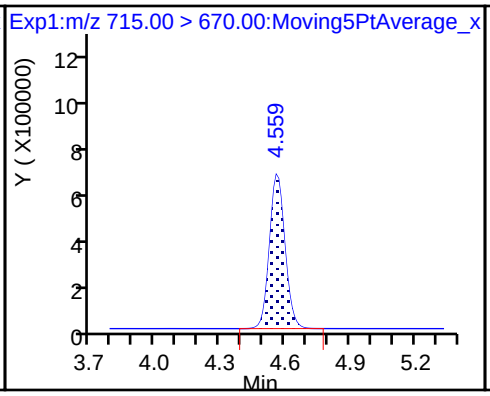
42 Perfluorotetradecanoic acid



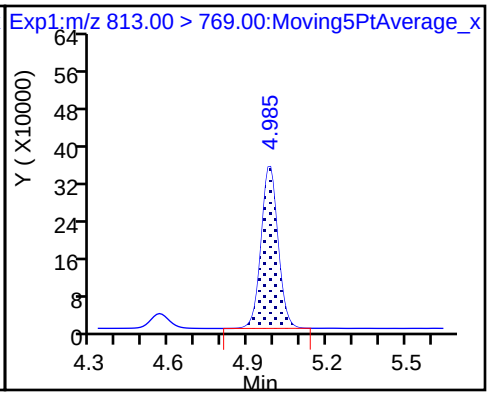
42 Perfluorotetradecanoic acid



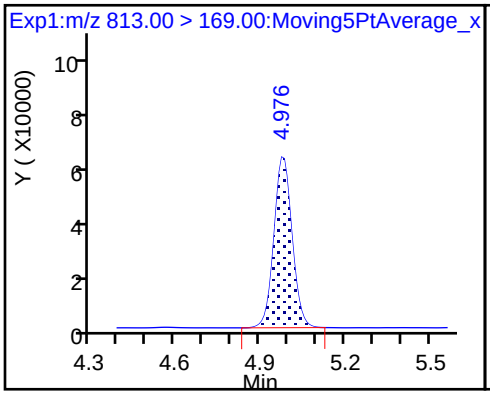
D 43 13C2-PFTeDA



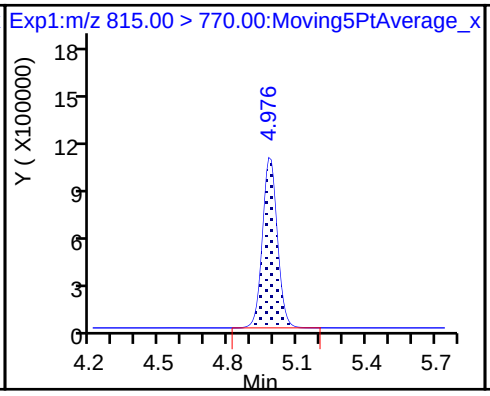
45 Perfluorohexadecanoic acid



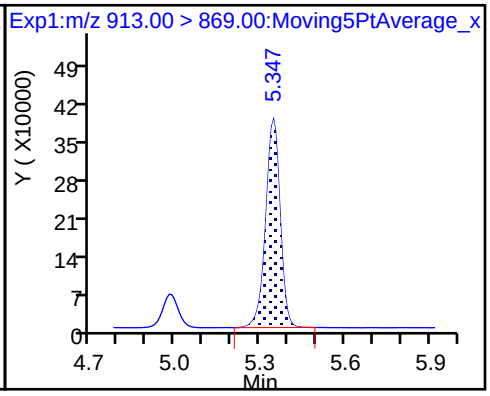
45 Perfluorohexadecanoic acid



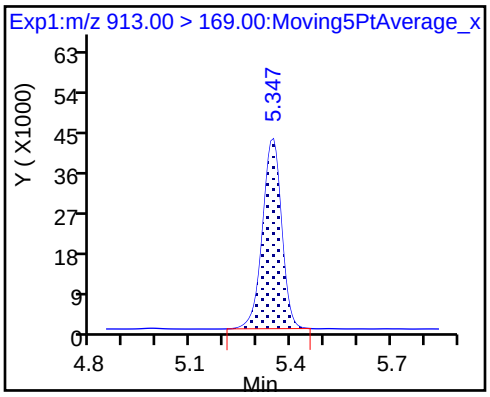
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

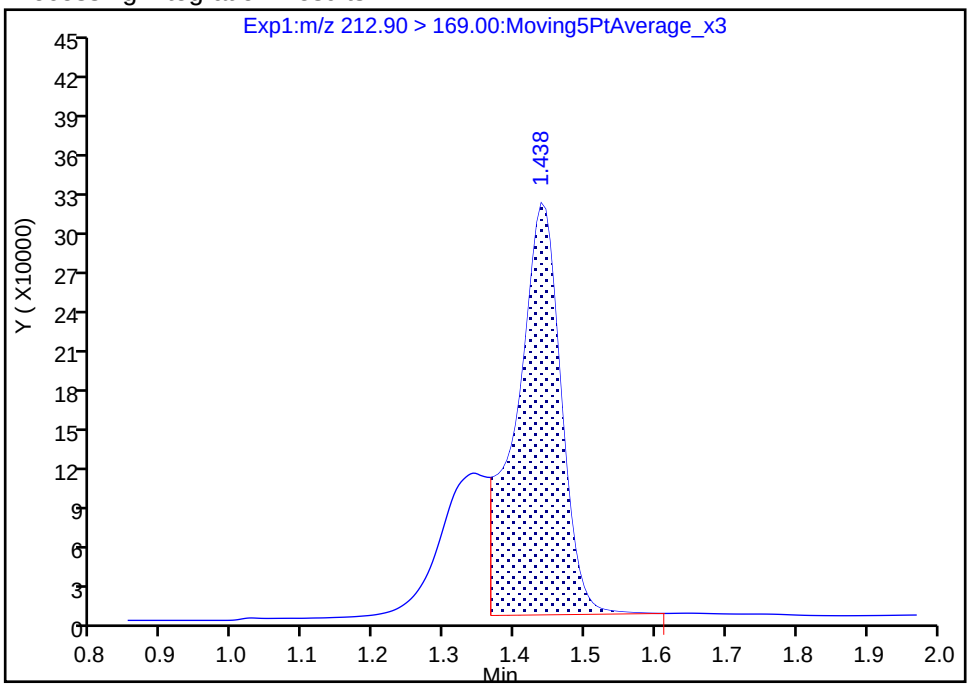
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d				
Injection Date:	29-Mar-2018 02:15:31	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-F MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

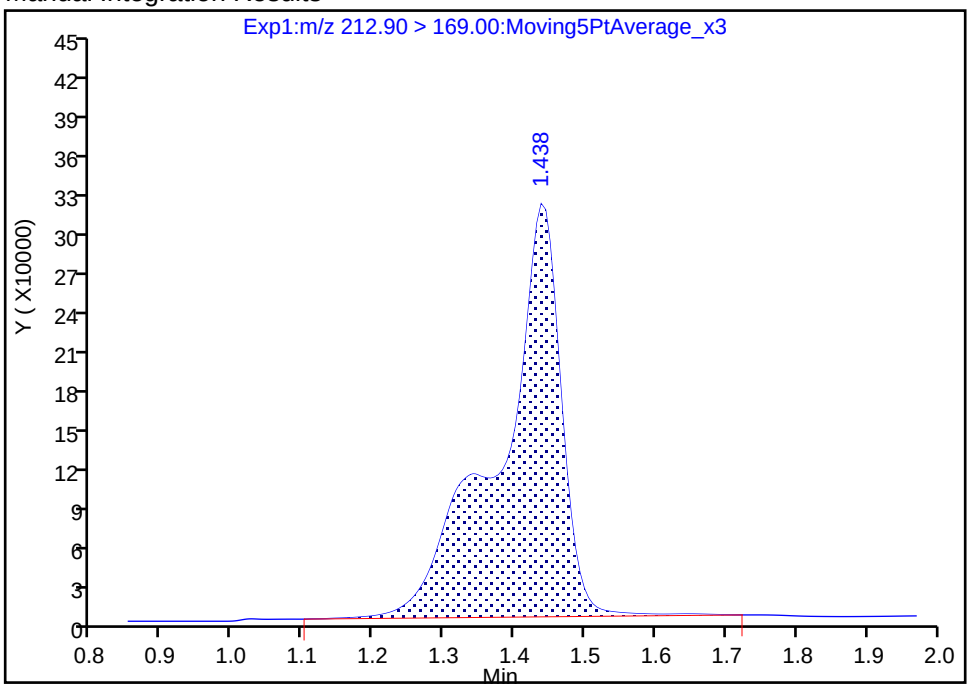
Processing Integration Results

RT: 1.44
Area: 1387900
Amount: 0.935504
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 1936612
Amount: 0.961637
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:08:12

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

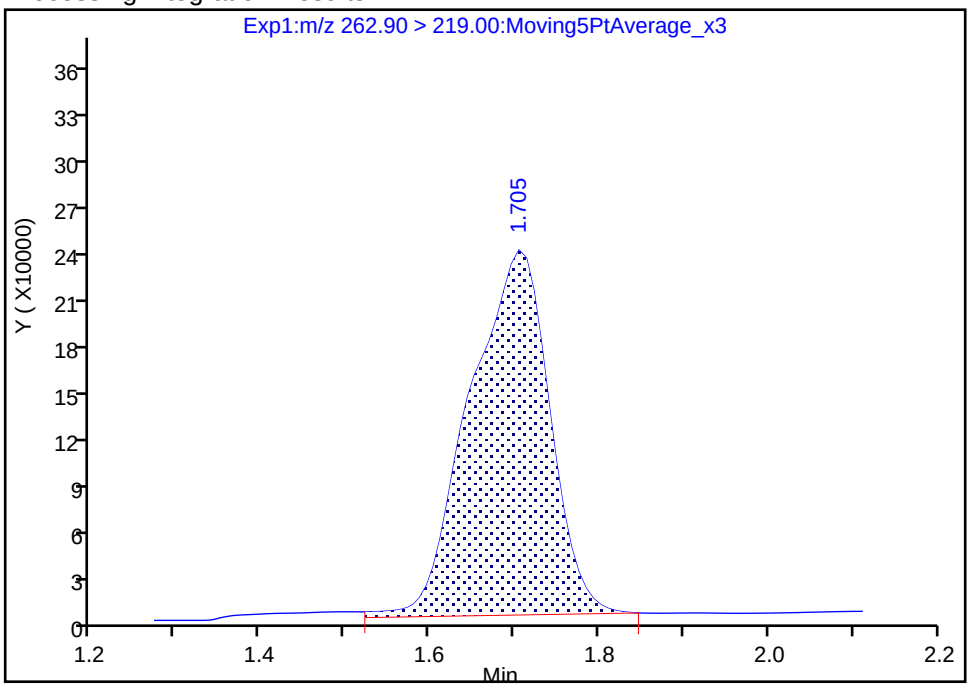
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d				
Injection Date:	29-Mar-2018 02:15:31	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-F MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

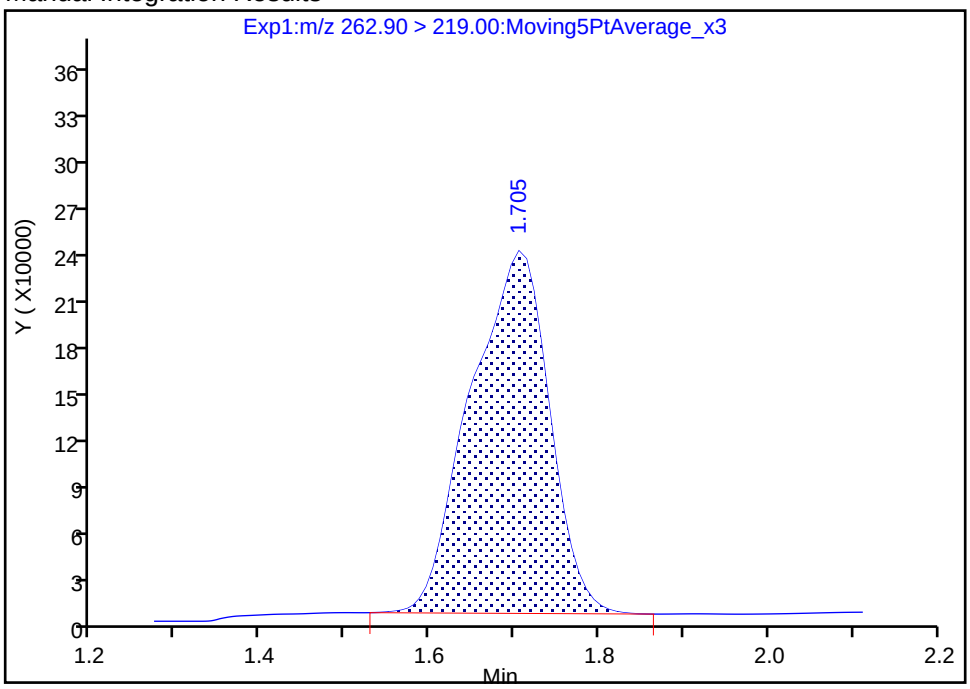
Processing Integration Results

RT: 1.71
Area: 1560163
Amount: 0.971622
Amount Units: ng/ml



Manual Integration Results

RT: 1.71
Area: 1524477
Amount: 0.949398
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:08:27

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

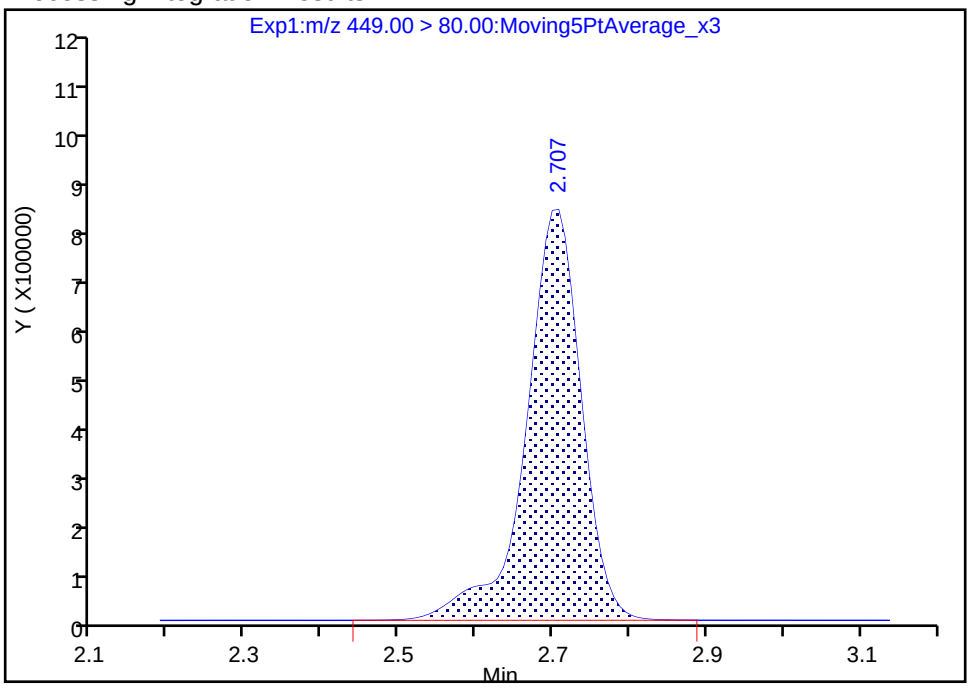
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d				
Injection Date:	29-Mar-2018 02:15:31	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-F MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

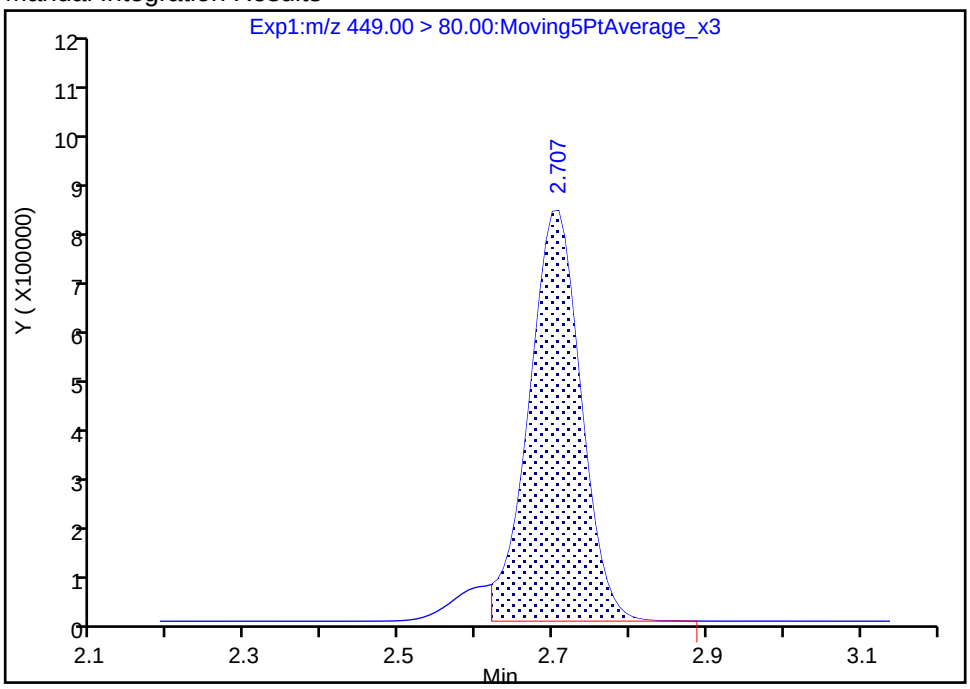
Processing Integration Results

RT: 2.71
Area: 3961942
Amount: 2.972692
Amount Units: ng/ml



Manual Integration Results

RT: 2.71
Area: 3724302
Amount: 2.794388
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:08:39

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

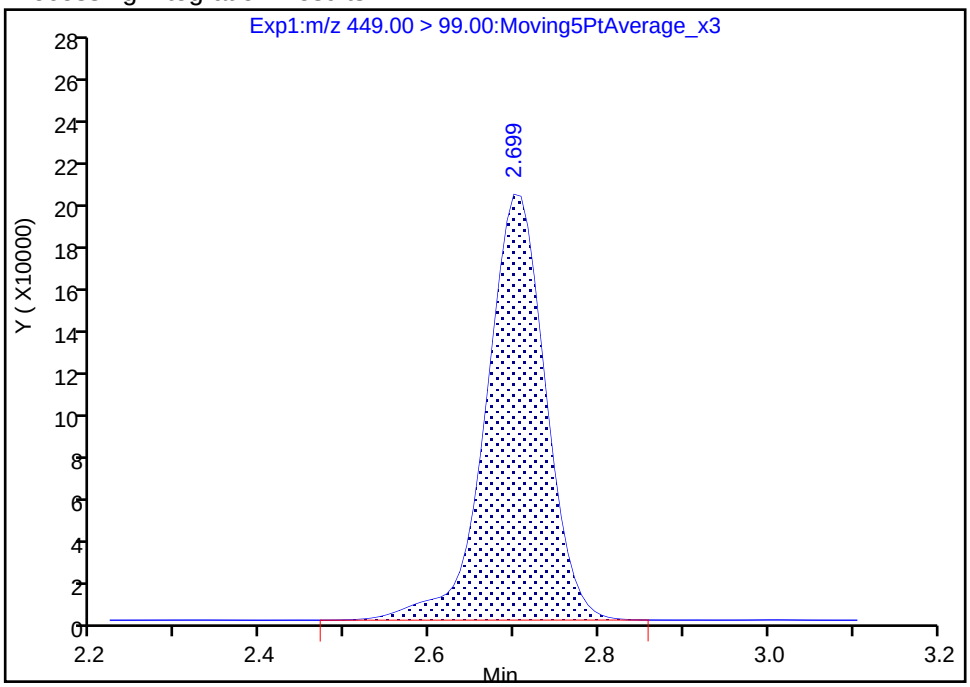
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d				
Injection Date:	29-Mar-2018 02:15:31	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-F MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

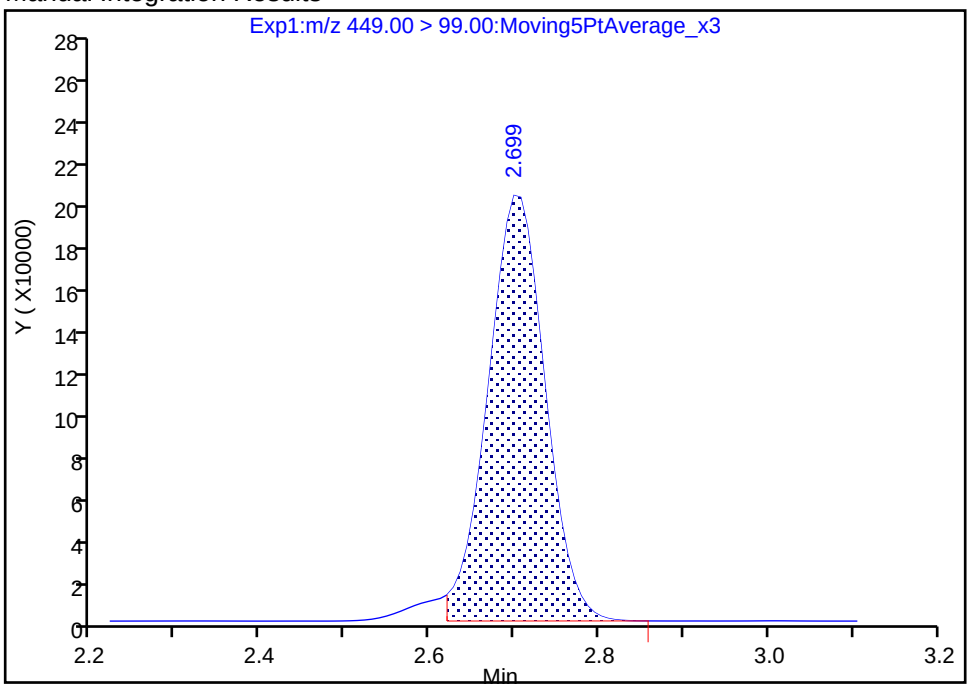
Processing Integration Results

RT: 2.70
Area: 991863
Amount: 2.972692
Amount Units: ng/ml



Manual Integration Results

RT: 2.70
Area: 957548
Amount: 2.794388
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:08:40

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

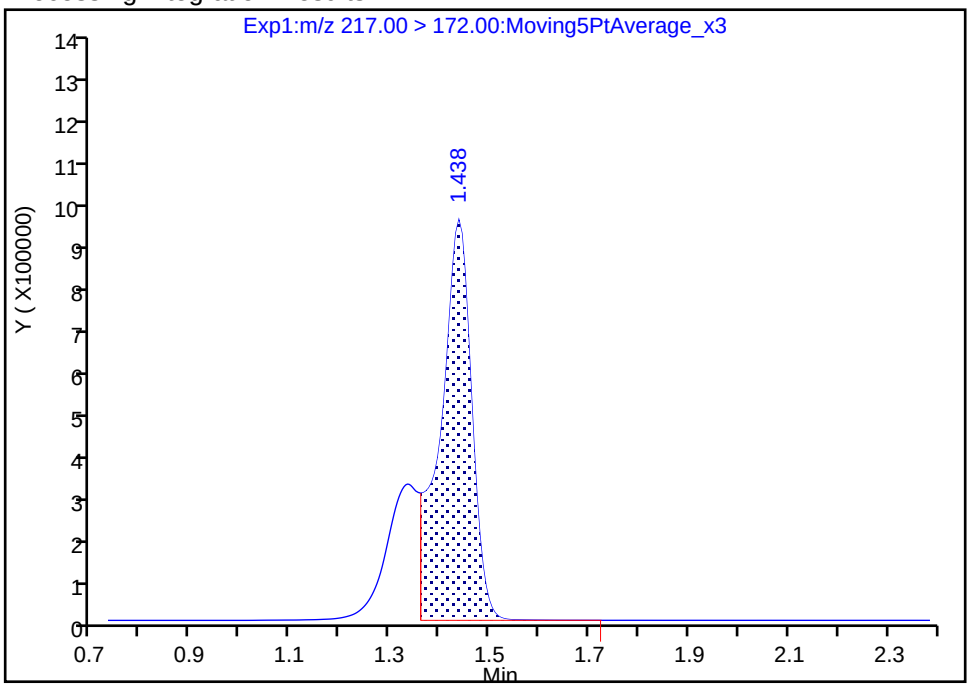
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b\2018.03.28LLFF_023.d				
Injection Date:	29-Mar-2018 02:15:31	Instrument ID:	A8_N		
Lims ID:	320-36683-A-10-F MSD				
Client ID:	SB012(10'-12')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	20
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

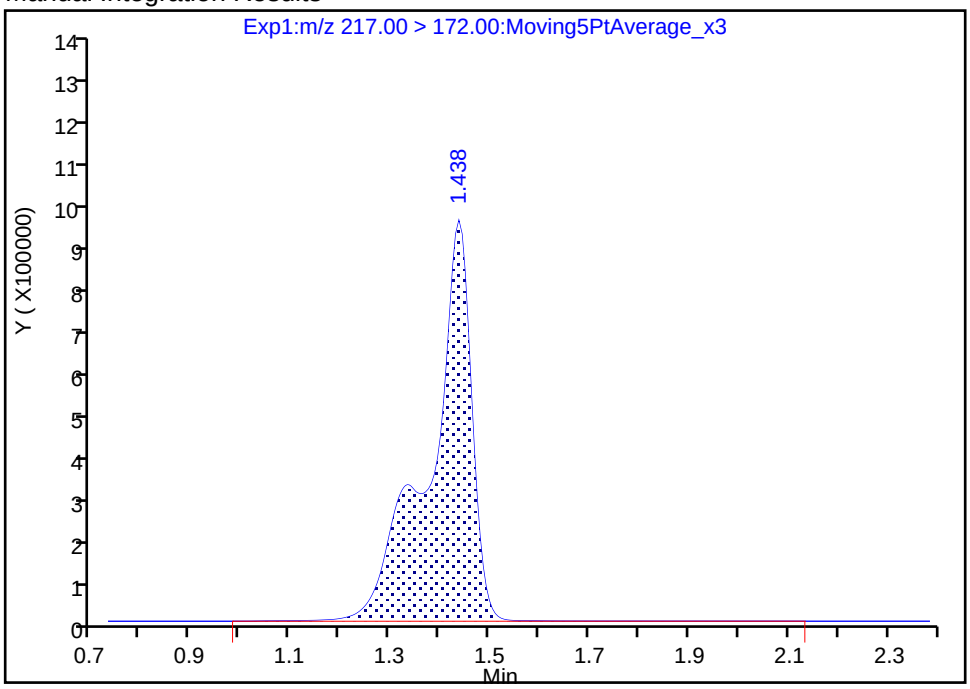
Processing Integration Results

RT: 1.44
Area: 3936440
Amount: 1.431847
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 5343461
Amount: 1.943639
Amount Units: ng/ml



Reviewer: westendorfc, 29-Mar-2018 09:08:17

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-36956-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-36683-A-10-F MSD DL

Matrix: Solid | Lab File ID: 2018.03.29LLA_011.d

Analysis Method: 537 (modified) | Date Collected: 03/01/2018 12:30

Extraction Method: SHAKE | Date Extracted: 03/23/2018 15:02

Sample wt/vol: 5.09(g) | Date Analyzed: 03/29/2018 09:43

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 215399 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.219		0.025	0.010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	67	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_011.d
Lims ID: 320-36683-A-10-F MSD
Client ID: SB012(10'-12')
Sample Type: MSD
Inject. Date: 29-Mar-2018 09:43:13 ALS Bottle#: 10 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-36683-10 MSD 50X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 29-Mar-2018 10:10:35 Calib Date: 21-Mar-2018 19:11:19
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180321-55646.b\2018.03.21LLICALAX_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 29-Mar-2018 10:09:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.429	1.429	0.0	1.000	39224	0.0196		98.0	14.1	
D 1 13C4 PFBA										
217.00 > 172.00	1.429	1.440	-0.011	0.534	106248	0.0340		68.0	1795	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.692	0.0	1.000	25826	0.0166		83.2	9.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.700	-0.008	0.633	68840	0.0332		66.4	2720	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.727	1.727	0.0	1.000	48512	0.0175		98.9	31.5	
298.90 > 99.00	1.727	1.727	0.0	1.000	17962		2.70(1.25-3.74)		27.9	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.735	-0.008	0.646	1660	0.0351		75.4	10.2	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.935	0.011	1.000	9346	0.0162		86.8	453	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	36577	0.0246		123	59.4	
313.00 > 119.00	1.976	1.976	0.0	1.000	3518		10.40(5.03-15.10)		43.3	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.739	72602	0.0317		63.3	2768	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.315	2.302	0.013	1.000	32573	0.0206		103	20.2	
363.00 > 169.00	2.315	2.302	0.013	1.000	12887		2.53(1.13-3.40)		31.4	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.315	0.013	1.000	133504	0.0632		347	702	
399.00 > 99.00	2.328	2.315	0.013	1.000	38614		3.46(1.50-4.49)		206	
D 9 13C4-PFHpA										
367.00 > 322.00	2.315	2.328	-0.013	0.866	76392	0.0338		67.5	2590	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.328	2.341	-0.013	0.871	89787	0.0322		68.0	3848	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.657	2.641	0.016	1.000	54223	0.0506		267	404	
D 12 M2-6:2FTS										
429.00 > 81.00	2.657	2.663	-0.006	0.994	29169	0.0622		131	1284	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.665	0.008	1.003	58192	0.0307		153	15.6	
413.00 > 169.00	2.673	2.665	0.008	1.003	29943		1.94(0.84-2.52)		101	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.665	0.008		123449	0.0500			4805	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.673	2.673	0.0	1.000	78638	0.0453		238	868	
449.00 > 99.00	2.673	2.673	0.0	1.000	19613		4.01(1.94-5.82)		441	
D 14 13C4 PFOA										
417.00 > 372.00	2.665	2.687	-0.022	0.997	83904	0.0363		72.5	3894	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.037	3.037	0.0	1.000	3278461	2.17		11701	5548	
499.00 > 99.00	3.037	3.037	0.0	1.000	784126		4.18(2.31-6.93)		6335	
20 Perfluorononanoic acid										
463.00 > 419.00	3.044	3.037	0.007	1.002	185674	0.1438		719	203	
463.00 > 169.00	3.037	3.037	0.0	1.000	43854		4.23(1.90-5.69)		1571	
D 19 13C5 PFNA										
468.00 > 423.00	3.037	3.058	-0.021	1.136	64709	0.0317		63.4	3205	
D 18 13C4 PFOS										
503.00 > 80.00	3.037	3.058	-0.021	1.136	64777	0.0319		66.7	1802	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.373	0.007	1.003	29873	0.0184		92.1	951	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.390	3.382	0.008	1.000	8385	0.0164		85.7	68.2	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.388	-0.017	1.261	82298	0.0301		60.1	2599	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.399	3.391	0.008	1.000	21459	0.0188		94.0	128	
513.00 > 169.00	3.390	3.391	-0.001	0.997	4529		4.74(2.36-7.09)		150	
D 26 M2-8:2FTS										
529.00 > 81.00	3.390	3.406	-0.016	1.268	19157	0.0302		63.1	597	
D 23 13C2 PFDA										
515.00 > 470.00	3.399	3.424	-0.025	1.271	57764	0.0323		64.6	898	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.554	0.008	1.003	9872	0.0176		88.0	416	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.569	-0.016	1.329	28033	0.0298		59.5	848	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.709	3.710	-0.001	1.000	14175	0.0154		79.8	431	
599.00 > 99.00	3.719	3.710	0.009	1.003	4985		2.84(1.39-4.16)		167	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.729	3.720	0.009	1.003	8534	0.0177		88.5	156	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.729	3.720	0.009	1.000	10285	0.0137		68.5	46.5	
563.00 > 169.00	3.729	3.720	0.009	1.000	2679		3.84(2.12-6.36)		145	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.719	3.748	-0.029	1.391	25798	0.0240		48.1	57.0	
D 30 13C2 PFUnA										
565.00 > 520.00	3.729	3.748	-0.019	1.395	43559	0.0272		54.4	1488	
37 Perfluorododecanoic acid										R
613.00 > 569.00	4.027	4.018	0.009	1.000	21145	0.0207		104	33.8	R
613.00 > 169.00	4.027	4.018	0.009	1.000	2543		8.31(2.13-6.40)		61.8	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.047	-0.020	1.507	48717	0.0268		53.7	417	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.290	4.283	0.007	1.000	19056	0.0178		88.8	10.8	
663.00 > 169.00	4.290	4.283	0.007	1.000	5399		3.53(1.25-3.76)		121	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.523	4.524	-0.001	1.000	5002	0.0157		78.7	116	
713.00 > 219.00	4.523	4.524	-0.001	1.000	2910		1.72(0.71-2.13)		78.6	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.523	4.554	-0.031	1.692	64155	0.0289		57.9	514	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.947	4.938	0.009	1.000	33071	-0.003224		-16.1	22.9	
813.00 > 169.00	4.947	4.938	0.009	1.000	5149		6.42(2.86-8.58)		62.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.947	4.973	-0.026	1.851	86378	0.0238		47.5	505	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.308	5.301	0.007	1.000	24697	0.0155		77.3	17.4	
913.00 > 169.00	5.308	5.301	0.007	1.000	3034		8.14(3.83-11.48)		58.9	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Report Date: 29-Mar-2018 10:10:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b\2018.03.29LLA_011.d

Injection Date: 29-Mar-2018 09:43:13 Instrument ID: A8_N

Lims ID: 320-36683-A-10-F MSD

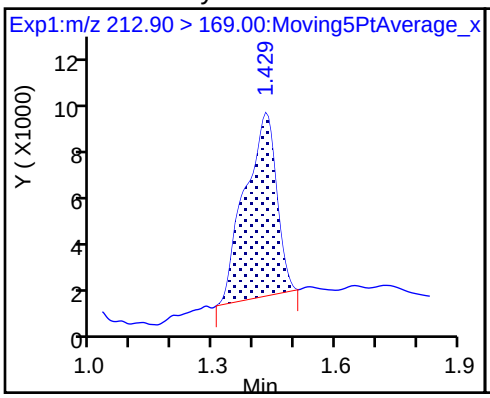
Client ID: SB012(10'-12')

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 8

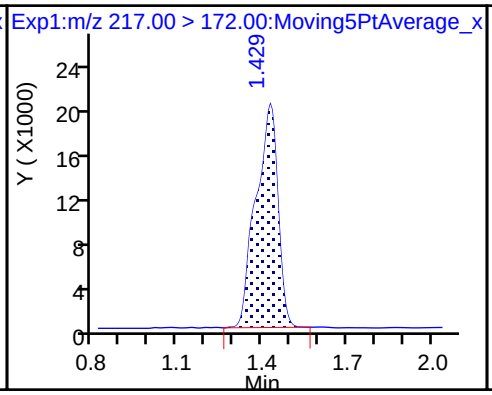
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

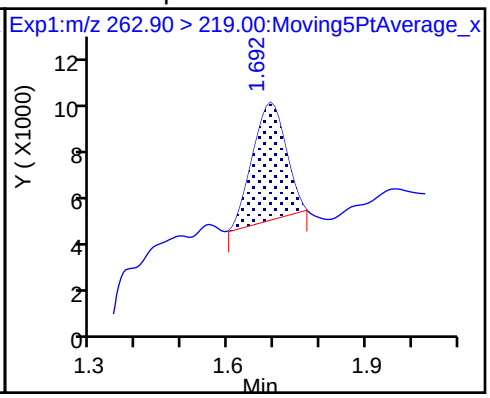
2 Perfluorobutyric acid



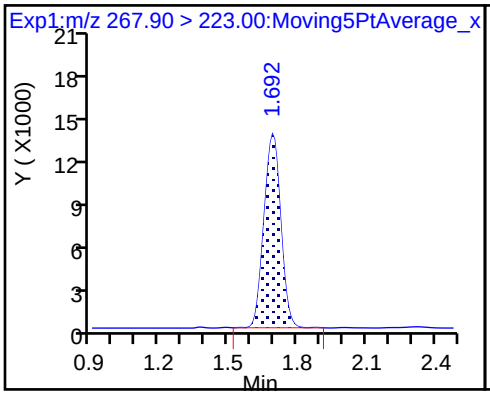
D 1 13C4 PFBA



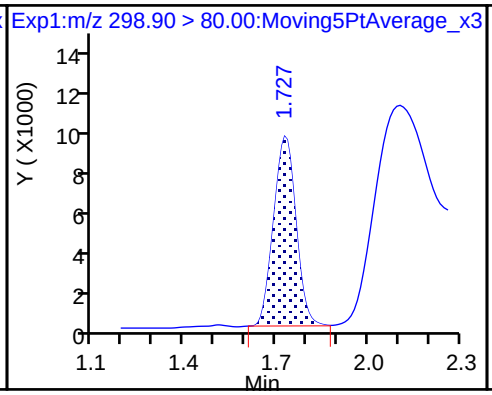
4 Perfluoropentanoic acid



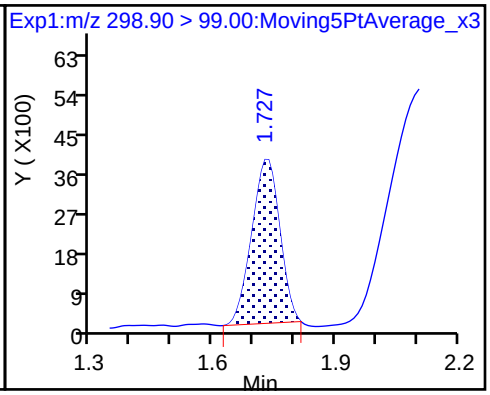
D 3 13C5-PFPeA



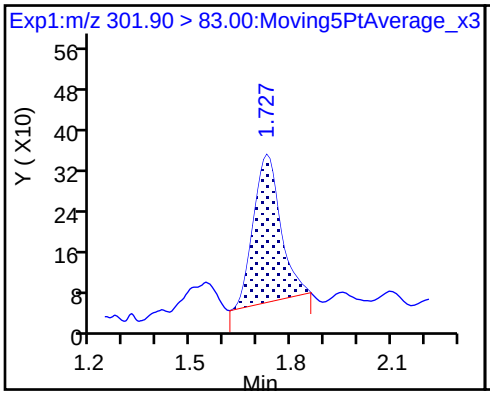
5 Perfluorobutanesulfonic acid



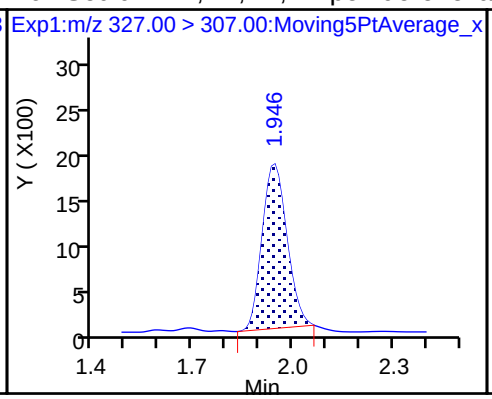
5 Perfluorobutanesulfonic acid



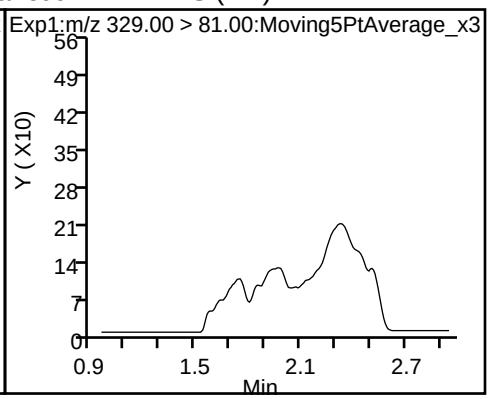
D 47 13C3-PFBS



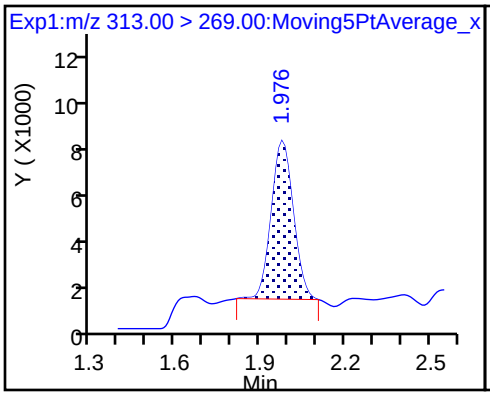
61 Sodium 1H,1H,2H,2H-perfluorohexane



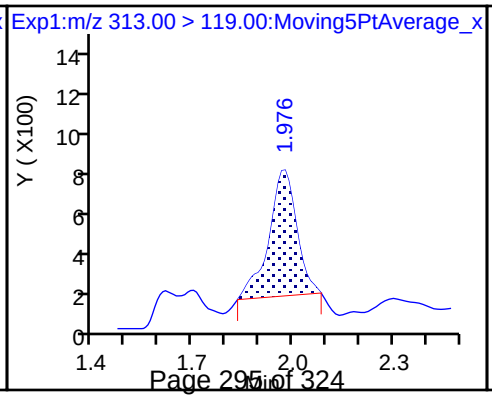
D 60 M2-4:2FTS (ND)



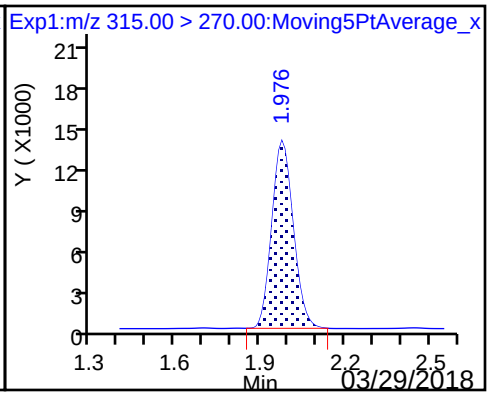
6 Perfluorohexanoic acid



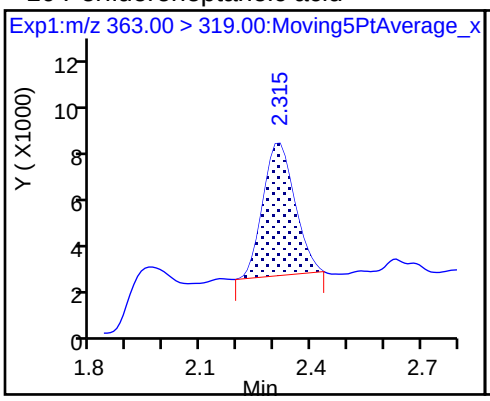
6 Perfluorohexanoic acid



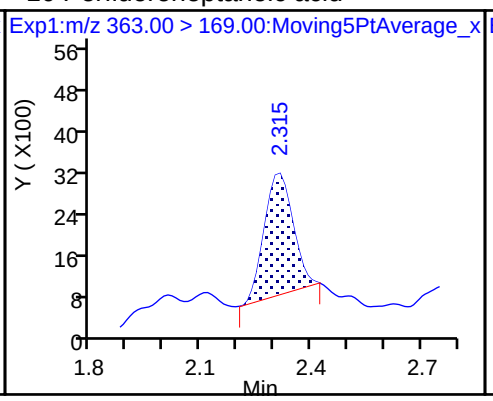
D 7 13C2 PFHxA



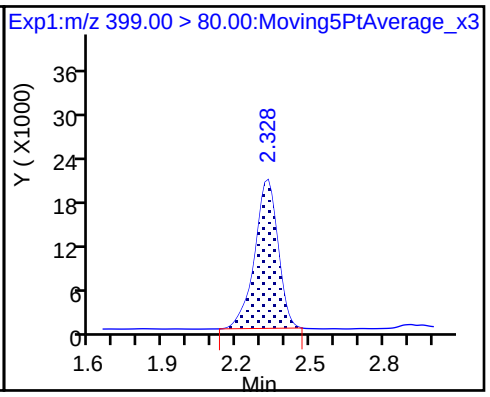
10 Perfluoroheptanoic acid



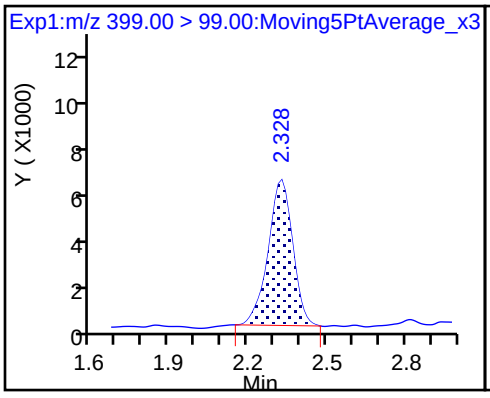
10 Perfluoroheptanoic acid



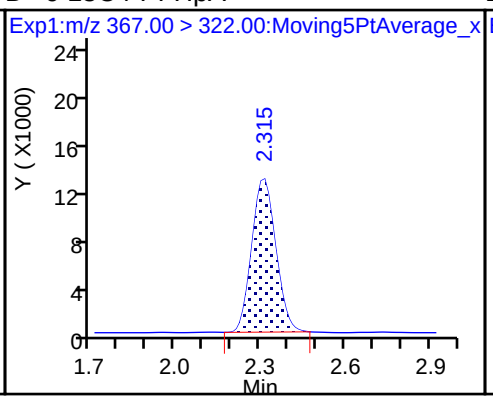
8 Perfluorohexanesulfonic acid



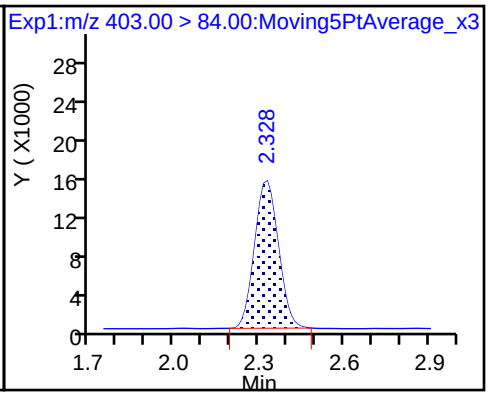
8 Perfluorohexanesulfonic acid



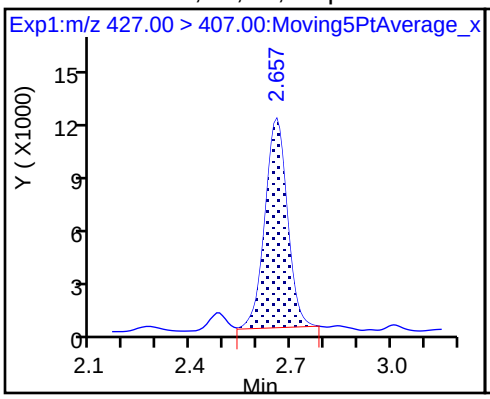
D 9 13C4-PFHpA



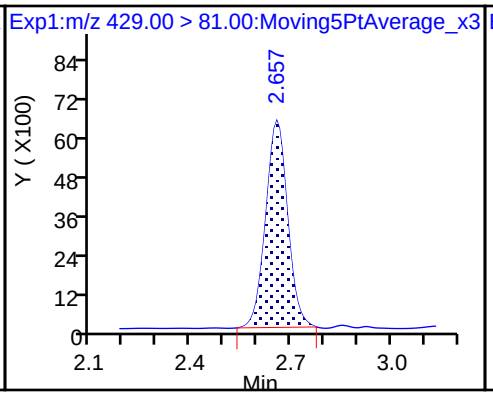
D 11 18O2 PFHxS



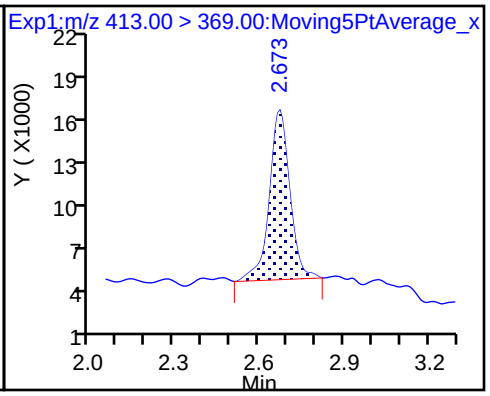
13 Sodium 1H,1H,2H,2H-perfluorooctane



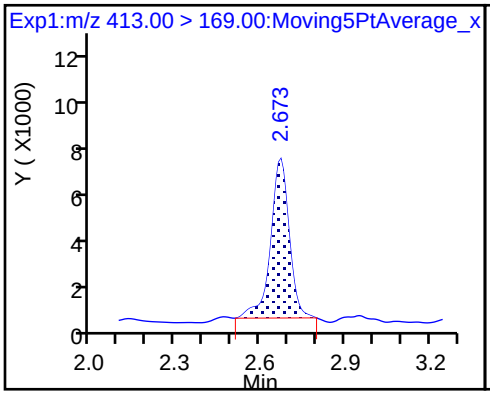
D 12 M2-6:2FTS



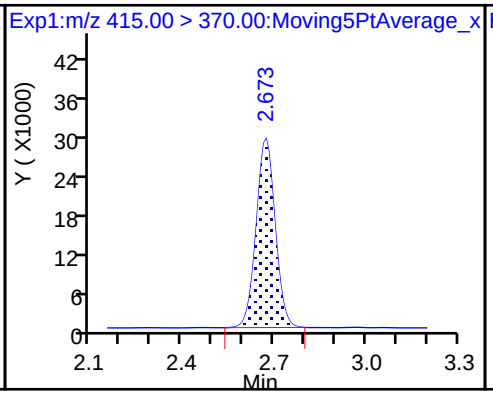
15 Perfluorooctanoic acid



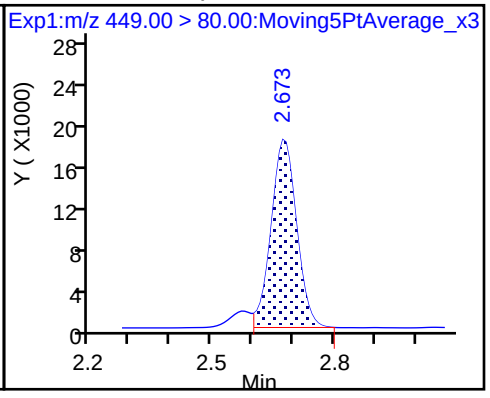
15 Perfluorooctanoic acid



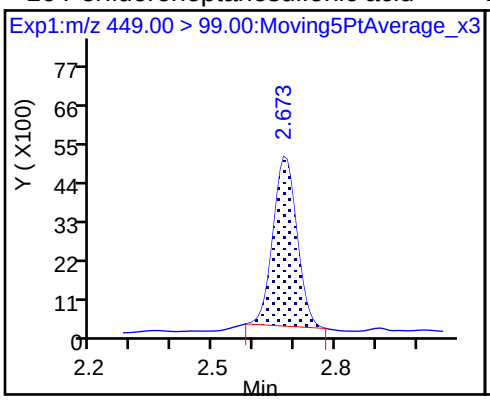
* 62 13C2-PFOA



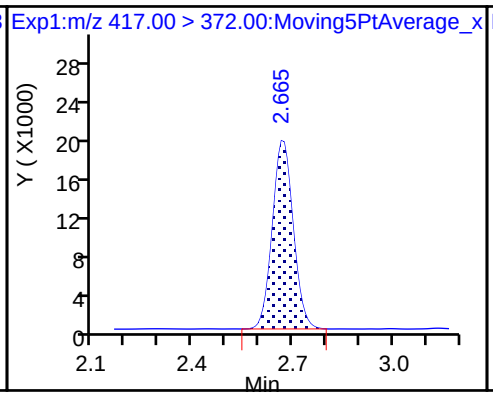
16 Perfluoroheptanesulfonic acid



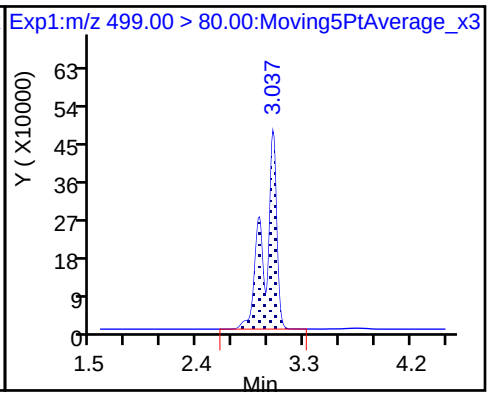
16 Perfluoroheptanesulfonic acid



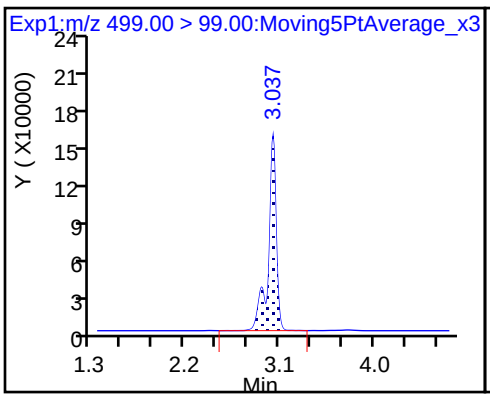
D 14 13C4 PFOA



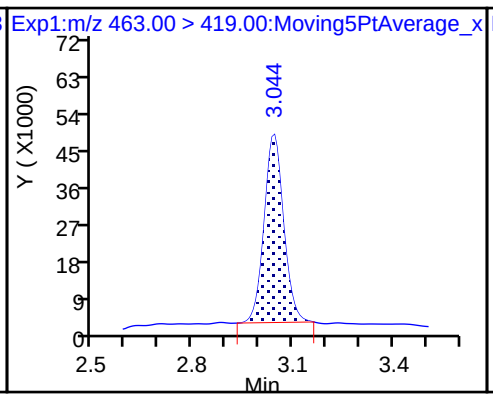
17 Perfluorooctane sulfonic acid



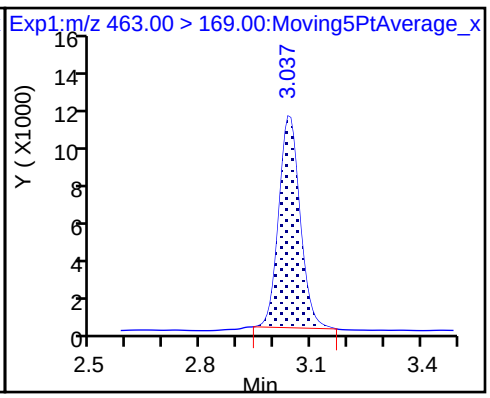
17 Perfluorooctane sulfonic acid



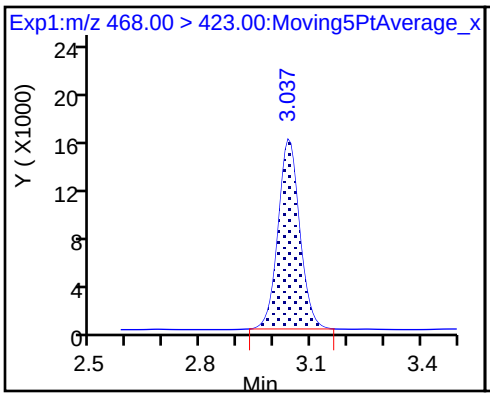
20 Perfluorononanoic acid



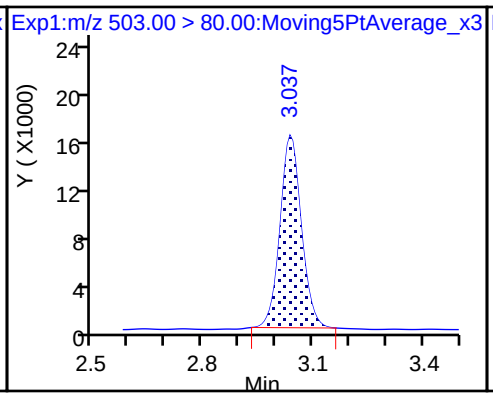
20 Perfluorononanoic acid



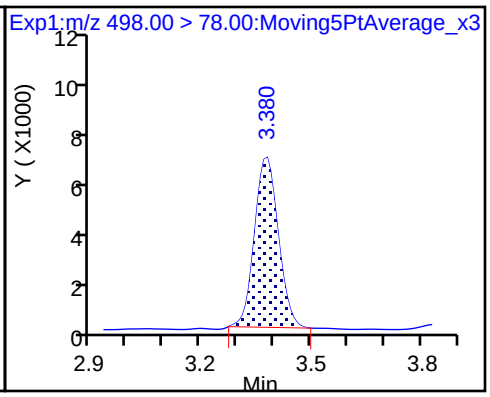
D 19 13C5 PFNA



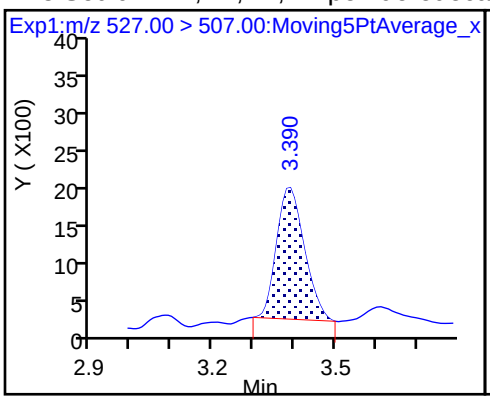
D 18 13C4 PFOS



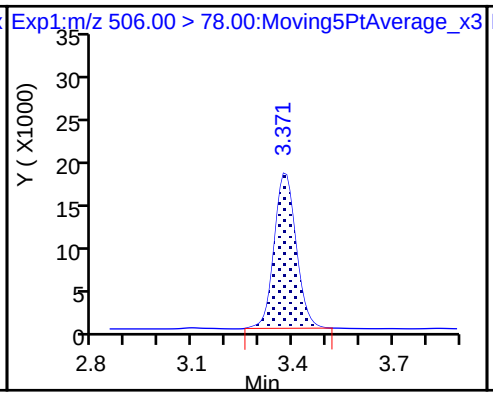
22 Perfluorooctane Sulfonamide



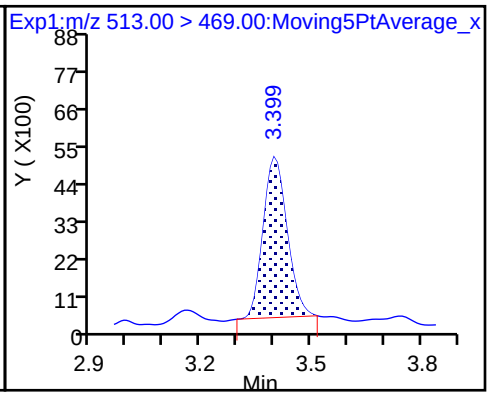
25 Sodium 1H,1H,2H,2H-perfluorodecane



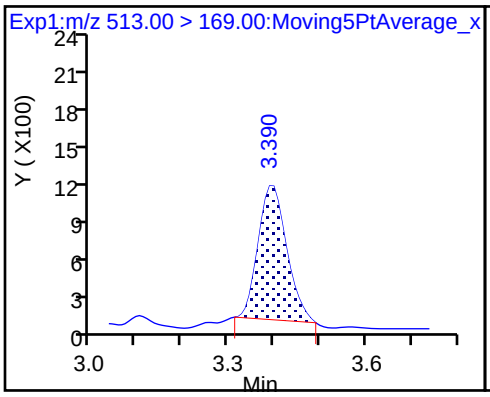
D 21 13C8 FOSA



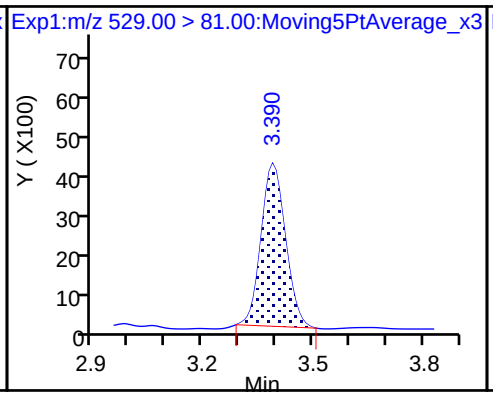
24 Perfluorodecanoic acid



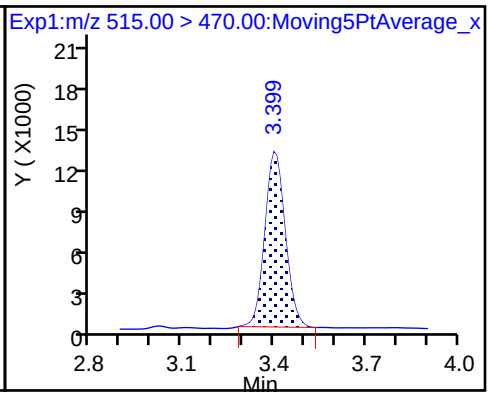
24 Perfluorodecanoic acid



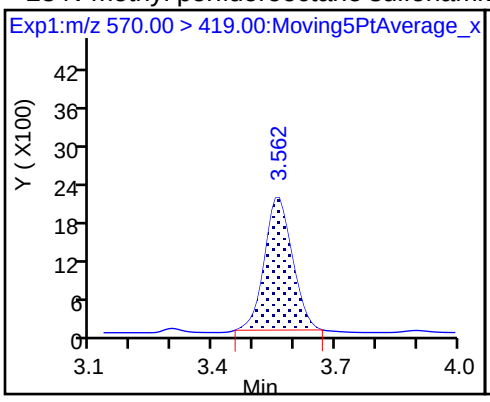
D 26 M2-8:2FTS



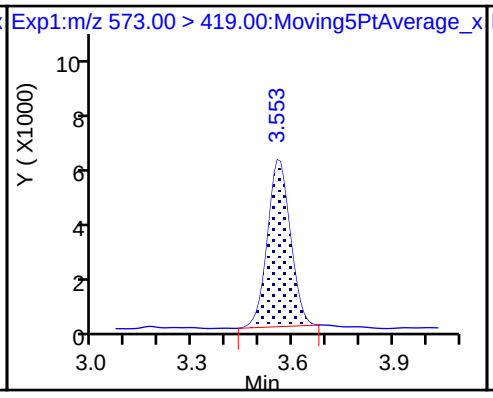
D 23 13C2 PFDA



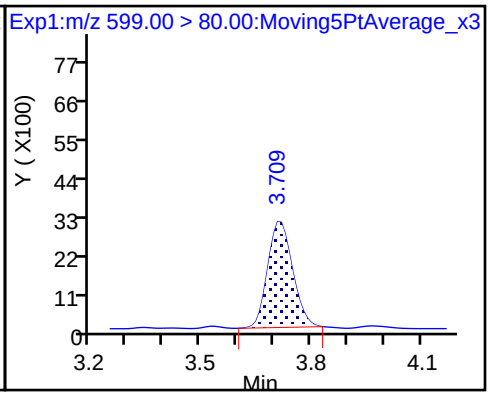
28 N-methyl perfluorooctane sulfonami



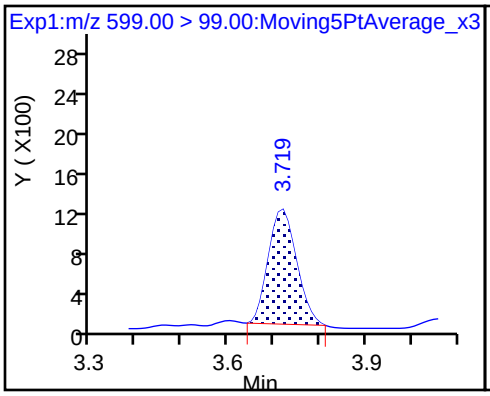
D 27 d3-NMeFOSAA



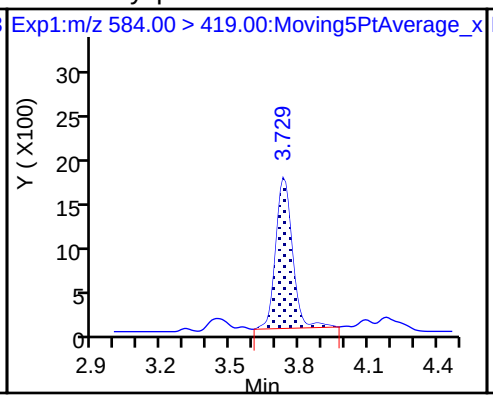
29 Perfluorodecane Sulfonic acid



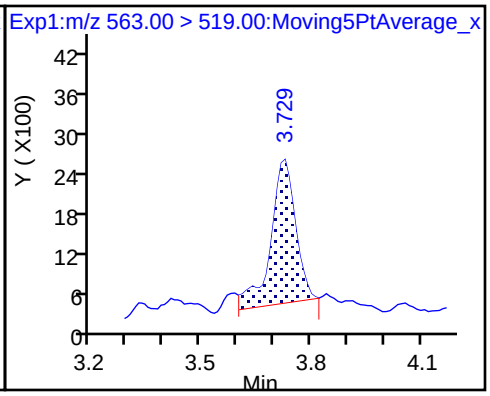
29 Perfluorodecane Sulfonic acid



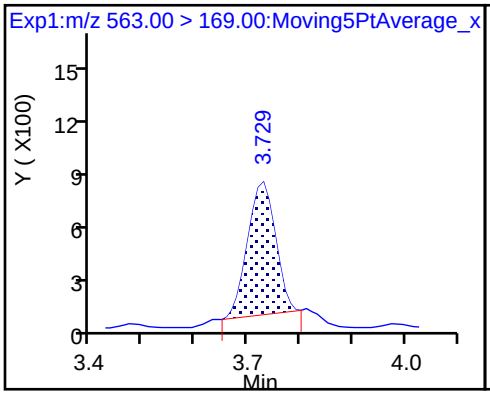
33 N-ethyl perfluorooctane sulfonamid



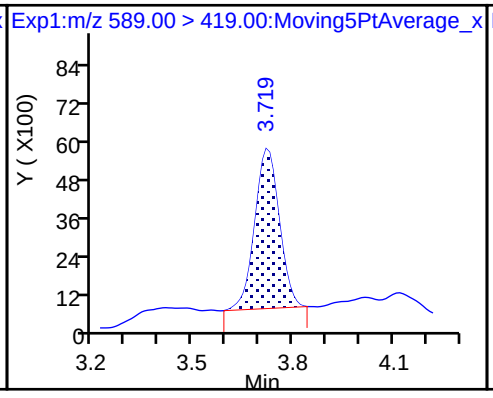
31 Perfluoroundecanoic acid



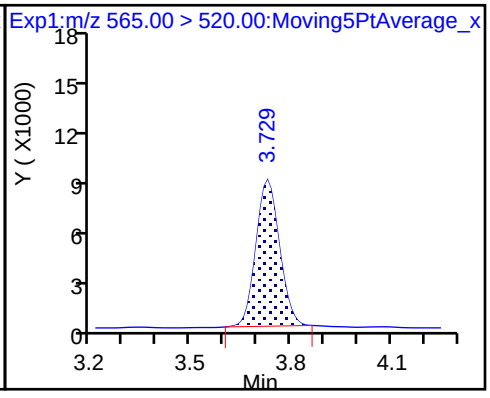
31 Perfluoroundecanoic acid



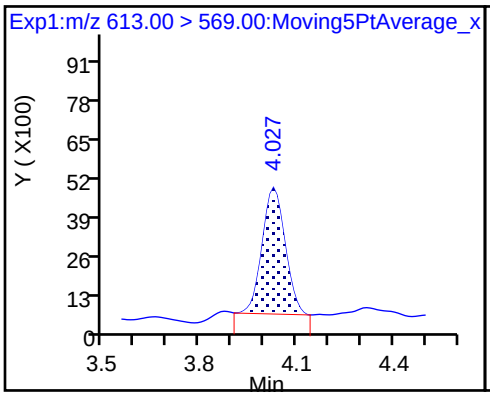
D 32 d5-NEtFOSAA



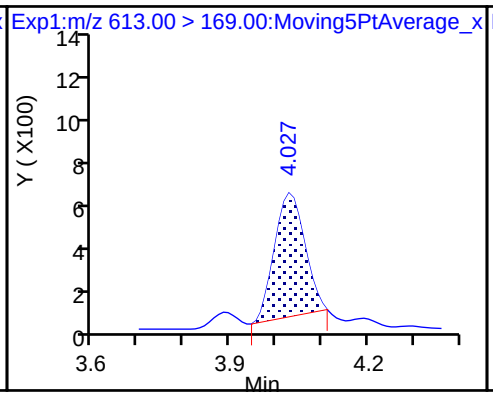
D 30 13C2 PFUnA



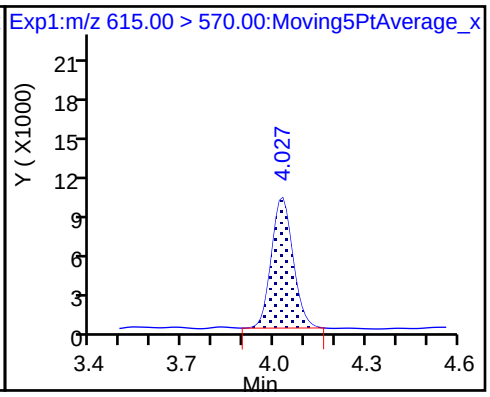
37 Perfluorododecanoic acid



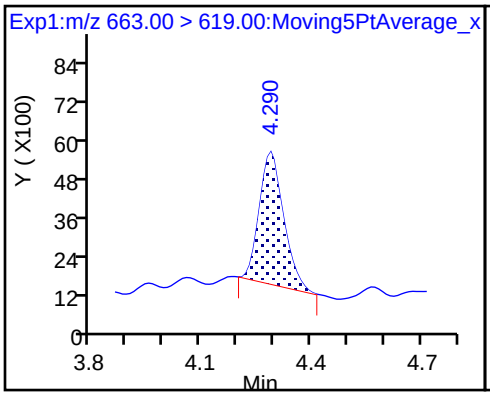
37 Perfluorododecanoic acid



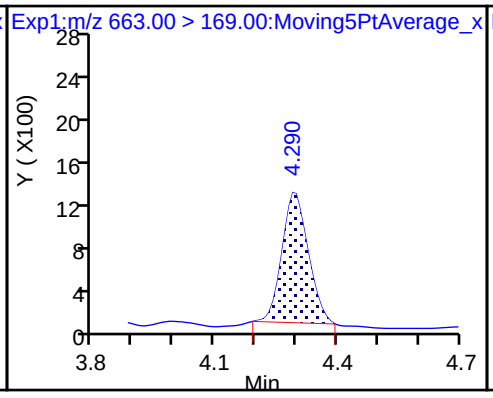
D 36 13C2 PFDoA



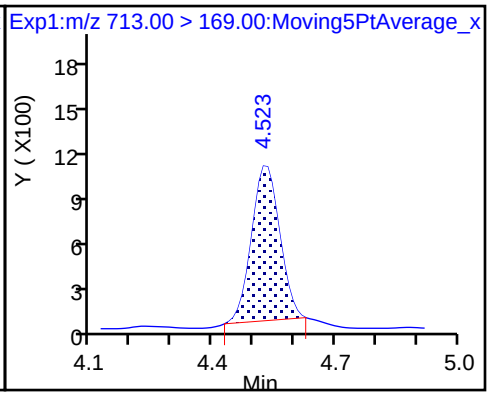
41 Perfluorotridecanoic acid



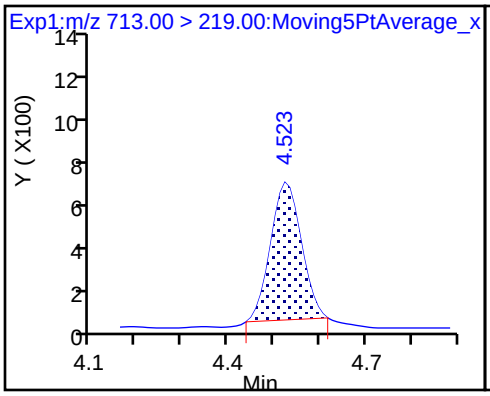
41 Perfluorotridecanoic acid



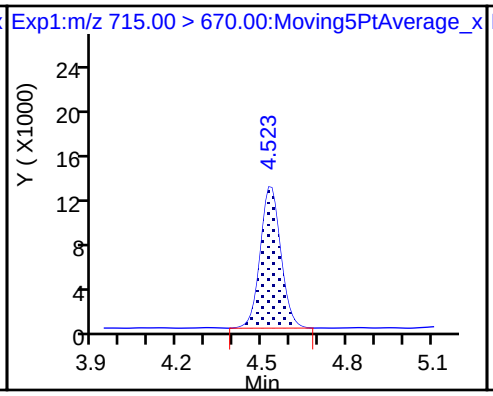
42 Perfluorotetradecanoic acid



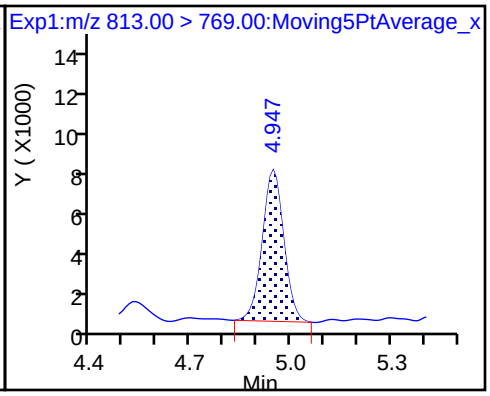
42 Perfluorotetradecanoic acid



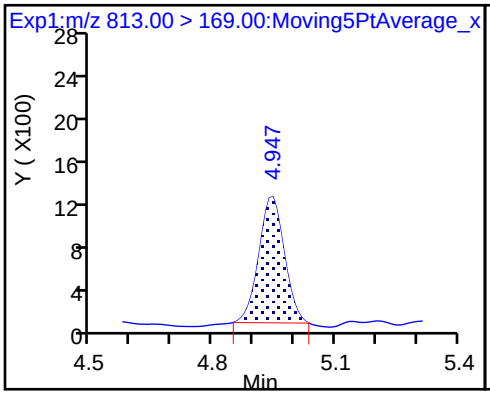
D 43 13C2-PFTeDA



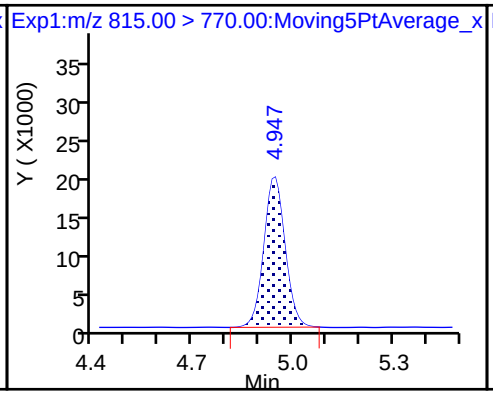
45 Perfluorohexadecanoic acid



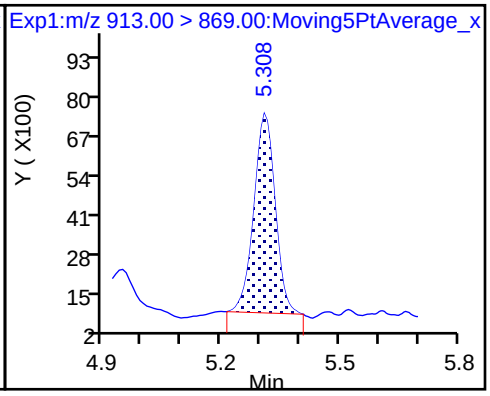
45 Perfluorohexadecanoic acid



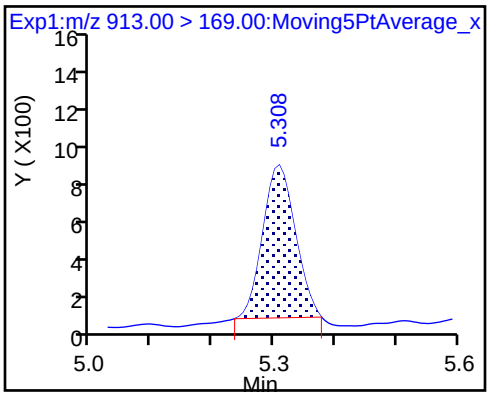
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Instrument ID: A8_N Start Date: 03/21/2018 18:16

Analysis Batch Number: 214175 End Date: 03/21/2018 19:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		03/21/2018 18:16	1		GeminiC18 3x100 3(mm)
IC 320-214175/2		03/21/2018 18:24	1	2018.03.21LLICA LAX 002.d	GeminiC18 3x100 3(mm)
IC 320-214175/3		03/21/2018 18:32	1	2018.03.21LLICA LAX 003.d	GeminiC18 3x100 3(mm)
IC 320-214175/4		03/21/2018 18:39	1	2018.03.21LLICA LAX 004.d	GeminiC18 3x100 3(mm)
IC 320-214175/5 ICIS		03/21/2018 18:47	1	2018.03.21LLICA LAX 005.d	GeminiC18 3x100 3(mm)
IC 320-214175/6		03/21/2018 18:55	1	2018.03.21LLICA LAX 006.d	GeminiC18 3x100 3(mm)
IC 320-214175/7		03/21/2018 19:03	1	2018.03.21LLICA LAX 007.d	GeminiC18 3x100 3(mm)
IC 320-214175/8		03/21/2018 19:11	1	2018.03.21LLICA LAX 008.d	GeminiC18 3x100 3(mm)
ICB 320-214175/9		03/21/2018 19:19	1	2018.03.21LLICA LAX 009.d	GeminiC18 3x100 3(mm)
ICV 320-214175/10		03/21/2018 19:26	1	2018.03.21LLICA LAX 010.d	GeminiC18 3x100 3(mm)
CCB 320-214175/11		03/21/2018 19:34	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Instrument ID: A8_N Start Date: 03/28/2018 23:46

Analysis Batch Number: 215311 End Date: 03/29/2018 02:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-215311/1		03/28/2018 23:46	1	2018.03.28LLFF_004.d	GeminiC18 3x100 3(mm)
CCVL 320-215311/2		03/28/2018 23:54	1	2018.03.28LLFF_005.d	GeminiC18 3x100 3(mm)
CCV 320-215311/3 CCVIS		03/29/2018 00:02	1	2018.03.28LLFF_006.d	GeminiC18 3x100 3(mm)
MB 320-214600/1-A		03/29/2018 00:10	1	2018.03.28LLFF_007.d	GeminiC18 3x100 3(mm)
LCS 320-214600/2-A		03/29/2018 00:18	1	2018.03.28LLFF_008.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:25	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 00:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:05	1		GeminiC18 3x100 3(mm)
320-36956-1		03/29/2018 01:13	1	2018.03.28LLFF_015.d	GeminiC18 3x100 3(mm)
CCV 320-215311/14		03/29/2018 01:28	1	2018.03.28LLFF_017.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 01:59	1		GeminiC18 3x100 3(mm)
320-36683-A-10-E MS		03/29/2018 02:07	1	2018.03.28LLFF_022.d	GeminiC18 3x100 3(mm)
320-36683-A-10-F MSD		03/29/2018 02:15	1	2018.03.28LLFF_023.d	GeminiC18 3x100 3(mm)
CCV 320-215311/23		03/29/2018 02:39	1	2018.03.28LLFF_026.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Instrument ID: A8_N Start Date: 03/29/2018 08:48

Analysis Batch Number: 215399 End Date: 03/29/2018 09:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-215399/1		03/29/2018 08:48	1	2018.03.29LLA_004.d	GeminiC18 3x100 3(mm)
CCVL 320-215399/2		03/29/2018 08:56	1	2018.03.29LLA_005.d	GeminiC18 3x100 3(mm)
CCV 320-215399/3 CCVIS		03/29/2018 09:03	1	2018.03.29LLA_006.d	GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 09:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 09:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		03/29/2018 09:27	50		GeminiC18 3x100 3(mm)
320-36683-A-10-E MS DL		03/29/2018 09:35	50	2018.03.29LLA_010.d	GeminiC18 3x100 3(mm)
320-36683-A-10-F MSD DL		03/29/2018 09:43	50	2018.03.29LLA_011.d	GeminiC18 3x100 3(mm)
320-36956-1 DL		03/29/2018 09:51	100	2018.03.29LLA_012.d	GeminiC18 3x100 3(mm)
CCV 320-215399/10		03/29/2018 09:58	1	2018.03.29LLA_013.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Batch Number: 214600 Batch Start Date: 03/23/18 15:01 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/28/18 19:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00044	LCPFC-IS 00024	LCPFCSP 00138	
MB 320-214600/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-214600/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MS		SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-36683-A-10 MSD		SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL	500 uL	
320-36956-A-1	SB042 (0-2")	SHAKE, 537 (modified)	T	5.06 g	10.00 mL	500 uL	500 uL		

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	JER
Balance ID	QA-078
Batch Comment	Sample labels match client IDs TWL/Envi Carb 97221 Supelco
Analyst ID - Final Volume Step	JER
Hexane ID	1175189
Internal Standard ID#	1140898
Manifold ID	5
Methanol ID	1197667
Methanolic Potassium Hydroxide ID	1188475
Millipore Water Dispense Date	031618
Sodium Hydroxide ID	1178465
Ammonium Hydroxide/MeOH ID	1186517
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	VPM
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	VPM
Blank Sand Lot #	162639
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Batch Number: 214600 Batch Start Date: 03/23/18 15:01 Batch Analyst: Long, Tyrel W

Batch Method: SHAKE Batch End Date: 03/28/18 19:45

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 36761, 36956, 36683 Work List ID(s): 55955, 55978

Extraction Batch: 214600 Analysis Batch(es): 215311, 215399

Delivery Rank 4 Due Date: ———

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 214175	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓	✓	
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1st Level (Analyst): CBW Date: 3/29/18

2nd Level Reviewer: MWW Date: 3/29/2018

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 28MAR2018NCAB_PFC Worklist Num: 55955
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0055955-001	CCB	28-Mar-2018 23:46:56	2018.03.28LLFF_004.d	20	1.0		sv
CCVL	320-0055955-002	CCVL	28-Mar-2018 23:54:44	2018.03.28LLFF_005.d	21	1.0		sv
CCV L4	320-0055955-003	CCVIS	29-Mar-2018 00:02:32	2018.03.28LLFF_006.d	13	1.0		sv
MB 320-214600/1-A	320-0055955-004	MB	29-Mar-2018 00:10:19	2018.03.28LLFF_007.d	14	1.0		sv
LCS 320-214600/2-A	320-0055955-005	LCS	29-Mar-2018 00:18:08	2018.03.28LLFF_008.d	15	1.0		sv
320-36761-A-1-B	320-0055955-006	Client	29-Mar-2018 00:25:58	2018.03.28LLFF_009.d	16	1.0	SB004 (5'-7')	sv
320-36761-A-4-B	320-0055955-007	Client	29-Mar-2018 00:33:50	2018.03.28LLFF_010.d	17	1.0	SB003(5'-7')	sv
320-36761-A-5-B	320-0055955-008	Client	29-Mar-2018 00:41:40	2018.03.28LLFF_011.d	18	1.0	SB003(10'-12')	sv
320-36761-A-6-B	320-0055955-009	Client	29-Mar-2018 00:49:32	2018.03.28LLFF_012.d	19	1.0	SB007(2'-4')	sv
320-36761-A-8-B	320-0055955-010	Client	29-Mar-2018 00:57:23	2018.03.28LLFF_013.d	20	1.0	SB007(4-5')	sv
320-36761-A-9-B	320-0055955-011	Client	29-Mar-2018 01:05:16	2018.03.28LLFF_014.d	21	1.0	SB030(2'-4')	sv
320-36956-A-1-A	320-0055955-012	Client	29-Mar-2018 01:13:04	2018.03.28LLFF_015.d	22	1.0	SB042 (0-2")	sv
Rinse	320-0055955-013	Client	29-Mar-2018 01:20:53	2018.03.28LLFF_016.d	54	1.0		sv
CCV L5	320-0055955-014	CCV	29-Mar-2018 01:28:41	2018.03.28LLFF_017.d	14	1.0		sv
320-36683-A-8-B	320-0055955-015	Client	29-Mar-2018 01:36:29	2018.03.28LLFF_018.d	23	1.0	SB012(5'-7')	sv
Rinse	320-0055955-016	Client	29-Mar-2018 01:44:18	2018.03.28LLFF_019.d	54	1.0		sv
Rinse	320-0055955-017	Client	29-Mar-2018 01:52:06	2018.03.28LLFF_020.d	54	1.0		sv
320-36683-A-10-D	320-0055955-018	Client	29-Mar-2018 01:59:53	2018.03.28LLFF_021.d	24	1.0	SB012(10'-12')	sv
320-36683-A-10-E MS	320-0055955-019	MS	29-Mar-2018 02:07:40	2018.03.28LLFF_022.d	25	1.0	SB012(10'-12')	sv
320-36683-A-10-F MSD	320-0055955-020	MSD	29-Mar-2018 02:15:31	2018.03.28LLFF_023.d	26	1.0	SB012(10'-12')	sv
Rinse	320-0055955-021	Client	29-Mar-2018 02:23:23	2018.03.28LLFF_024.d	54	1.0		sv
Rinse	320-0055955-022	Client	29-Mar-2018 02:31:13	2018.03.28LLFF_025.d	54	1.0		sv
CCV L4	320-0055955-023	CCV	29-Mar-2018 02:39:02	2018.03.28LLFF_026.d	13	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 28MAR2018NCAB_PFC Worklist Number: 55955
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55955.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215310	LC PFC ICAL Raw Batch: 215311	LC PFC_QSM5-1 ICAL Raw Batch: 215312
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 MB 320-214600/1-A		# 4 MB 320-214600/1-A	
# 5 LCS 320-214600/2-A		# 5 LCS 320-214600/2-A	
# 6 320-36761-A-1-B		# 6 320-36761-A-1-B	
# 7 320-36761-A-4-B		# 7 320-36761-A-4-B	
# 8 320-36761-A-5-B		# 8 320-36761-A-5-B	
# 9 320-36761-A-6-B		# 9 320-36761-A-6-B	
#10 320-36761-A-8-B		#10 320-36761-A-8-B	
#11 320-36761-A-9-B		#11 320-36761-A-9-B	
#12 320-36956-A-1-A		#12 320-36956-A-1-A	
#13 Rinse	#13 Rinse	#13 Rinse	#13 Rinse
#14 CCV L5	#14 CCV L5	#14 CCV L5	#14 CCV L5
#15 320-36683-A-8-B		#15 320-36683-A-8-B	
#16 Rinse	#16 Rinse	#16 Rinse	#16 Rinse
#17 Rinse	#17 Rinse	#17 Rinse	#17 Rinse
#18 320-36683-A-10-D		#18 320-36683-A-10-D	
#19 320-36683-A-10-E MS		#19 320-36683-A-10-E MS	
#20 320-36683-A-10-F MSD		#20 320-36683-A-10-F MSD	
#21 Rinse	#21 Rinse	#21 Rinse	#21 Rinse
#22 Rinse	#22 Rinse	#22 Rinse	#22 Rinse
#23 CCV L4	#23 CCV L4	#23 CCV L4	#23 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 29MAR2018NCA_PFC Worklist Number: 55978
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180329-55978.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 215398	LC PFC ICAL Raw Batch: 215399	LC PFC_QSM5-1 ICAL Raw Batch: 215400
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 320-36761-A-6-B		# 4 320-36761-A-6-B	
# 5 320-36761-A-8-B		# 5 320-36761-A-8-B	
# 6 320-36683-A-10-D		# 6 320-36683-A-10-D	
# 7 320-36683-A-10-E MS		# 7 320-36683-A-10-E MS	
# 8 320-36683-A-10-F MSD		# 8 320-36683-A-10-F MSD	
# 9 320-36956-A-1-A		# 9 320-36956-A-1-A	
#10 CCV L5	#10 CCV L5	#10 CCV L5	#10 CCV L5

32

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

AB 3/28/18

Batch Number: 320-214600

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Batch End: 3/28/2018 7:45:00PM

Shake Extraction with Ultrasonic Bath Extraction

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-214600/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-214600/1-A
2	LCS~320-214600/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-214600/2-A
3	320-36683-A-8 (PFC_IDA)	N/A (320-36683-1)	5.09 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-8-B
4	320-36683-A-10 (PFC_IDA)	N/A (320-36683-1)	5.07 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-D
5	320-36683-A-10~MS (PFC_IDA)	N/A (320-36683-1)	5.00 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-E MS
6	320-36683-A-10~MSD (PFC_IDA)	N/A (320-36683-1)	5.09 g	10.00 mL	3/8/18	12_Days	4	-	320-36683-A-10-F MSD
7	320-36761-A-1 (PFC_IDA)	N/A (320-36761-1)	5.05 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-1-B
8	320-36761-A-4 (PFC_IDA)	N/A (320-36761-1)	5.06 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-4-B
9	320-36761-A-5 (PFC_IDA)	N/A (320-36761-1)	5.02 g	10.00 mL	3/12/18	12_Days	4	-	320-36761-A-5-B
10	320-36761-A-6 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-6-B
11	320-36761-A-8 (PFC_IDA)	N/A (320-36761-1)	5.09 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-8-B
12	320-36761-A-9 (PFC_IDA)	N/A (320-36761-1)	5.02 g	10.00 mL	3/12/18	12_Days	4		320-36761-A-9-B
13	320-36956-A-1 (PFC_IDA)	N/A (320-36956-1)	5.06 g	10.00 mL	3/16/18	12_Days	4		320-36956-A-1-A

03/29/2018

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 3/28/2018 7:45:00PM

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	031618
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	1197667
Ammonium Hydroxide/MeOH ID	1186517
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188475
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	VPM
Internal Standard ID#	1140898
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JER

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600 Analyst: Long, Tyrel W Batch Open: 3/23/2018 3:01:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End: 3/28/2018 7:45:00PM

Analyst ID - Final Volume Step JER

Batch Comment Sample labels match client IDs TWL/Envi Carb 97221 Supelco

Comments

320-36683-A-8	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10~MS	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36683-A-10~MSD	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-1	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-4	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-5	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-6	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-8	Rework Comments: Please RX due to LCS failing low for PFDoA
320-36761-A-9	Rework Comments: Please RX due to LCS failing low for PFDoA

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-214600

Method Code: 320-Shake_Bath_14D-320

Analyst: Long, Tyrel W

Batch Open: 3/23/2018 3:01:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-214600/1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL	3/23/18	VPM 3/23/18
LCS 320-214600/2	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
LCS 320-214600/2	LCPFCSP_00138	500 uL	10.00 mL		
320-36683-A-8	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MS	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MS	LCPFCSP_00138	500 uL	10.00 mL		
320-36683-A-10 MSD	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36683-A-10 MSD	LCPFCSP_00138	500 uL	10.00 mL		
320-36761-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-4	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-5	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-6	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-8	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36761-A-9	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		
320-36956-A-1	LCMPFC_ALL_SU_00044	500 uL	10.00 mL		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 214600 Test PFC

Earliest Holding Time 3/12/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	✓	✓
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: _____ Date: 3/28/18

2nd Level Reviewer: CBW Date: 3/29/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC. IDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** 1168592

Date 3/29/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-36761	1	10,000	30	300	10
	4		30	300	10
	5		30	1500	50
	9		30	300	10
320-36956	1		15	1500	100X
320-36683	8		15		100
	10 ms		30		50
	10 msd		30		50
	10		30		50

Comments:

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36956-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB042 (0-2")	320-36956-1

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36956-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-36956-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 03/19/2018 16:34 End Date: 03/19/2018 16:34

Lab Sample ID	D / F	Type	Time	Analytes																			
				% Sol	Moist																		
320-36956-1	1	T	16:34	X	X																		
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
320-37017-A-4 DU	1	T	16:34	X	X																		
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				
ZZZZZZ			16:34																				

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-36956-1

SDG No.:

Batch Number: 213794 Batch Start Date: 03/19/18 16:34 Batch Analyst: Saechao, Tammy C

Batch Method: D 2216 Batch End Date: 03/20/18 08:09

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-36956-A-1	SB042 (0-2")	D 2216	T	1	1.012 g	8.565 g	7.90 g		
320-37017-A-4 DU		D 2216	T	5	1.009 g	8.315 g	5.57 g		

Batch Notes	
Balance ID	QA-076, QA-068
Date and Time Samples in Desiccator	03/20/2018 07:09
Date and Time Samples out of Desiccator	03/20/2018 08:09
Date samples were placed in the oven	03/19/2018
Oven Temp In	110 Degrees C
Time samples were place in the oven	16:34
Date samples were removed from oven	03/20/2018
Oven Temp Out	109 Degrees C
Time Samples were removed from oven	07:09
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Janelle Cooley	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-432-6717.	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:
Address: 630 Johnson Ave Suite 7	Due Date Requested:			
City: Bohemia	TAT Requested (days): 15 days			
State, Zip: NY, 11716				
Phone: 631-589-6353(Tel)	PO #: 5+1D1801			
Email: andyl@pwgrosser.com	WO #: 5+1D1801			
Project Name: Suffolk County Firematics Site	Project #: 46024260			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	SPLP PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N			
SB042 (0-2")	3/4/18	1320	C	S			X			

320-36956 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3/4/18	3/9/18 1540			3/9/18 1513	TA
Relinquished by: 3/8/18 1740	Date/Time:	Company	Received by:	Date/Time: 3/10/18 930	Company TASac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.0c

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-36956-1

Login Number: 36956
List Number: 1
Creator: Her, David A

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 320-37380-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
630 Johnson Ave
Suite 7
Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Approved for release.
Thomas A Chupela
Project Management Assistant I
4/11/2018 9:10 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
04/11/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 320-37380-1

Job Description: Suffolk County Firematics Site

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Approved for release.
Thomas A Chupela
Project Management Assistant I
4/11/2018 9:10 AM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-37380-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 3/22/2018 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.7º C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED HYDROCARBONS (PFC)
Samples SB043 (0-2") (320-37380-1), SB043 (2"-2') (320-37380-2), SB044 (0-2") (320-37380-3), SB044 (2"-2') (320-37380-4), SB045 (0-2") (320-37380-5) and SB045 (2"-2') (320-37380-6) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 04/02/2018 and analyzed on 04/07/2018 and 04/09/2018.

Results for sample SB043 (0-2") (320-37380-1), SB044 (0-2") (320-37380-3), SB044 (2"-2') (320-37380-4), SB045 (0-2") (320-37380-5) and SB045 (2"-2') (320-37380-6) were reported from the analysis of a diluted extract due to high Isotope Dilution Analyte (IDA) recoveries for M2-6:2FTS and M2-8:2FTS in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2FTS in the following samples: (320-37156-A-6-D), (320-37156-A-6-E MS) and (320-37156-A-6-F MSD). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Isotope Dilution Analyte (IDA) recoveries are significantly above the method recommended limit for M2-8:2FTS in the following matrix spike / matrix spike duplicate samples (MS/MSD): (320-37156-A-6-D), (320-37156-A-6-E MS) and (320-37156-A-6-F MSD). These samples were reanalyzed at dilution with improved IDA recoveries; however, the target analyte 8:2FTS was diluted below the level of quantitation and as a result this analyte could not be evaluated for accuracy or precision. The original set of data is reported.

Perfluorobutanoic acid (PFBA) and Perfluorooctanesulfonic acid (PFOS) were detected in method blank MB 320-215980/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Refer to the QC report for details.

Samples SB043 (0-2") (320-37380-1)[10X], SB044 (0-2") (320-37380-3)[10X], SB044 (2"-2') (320-37380-4)[10X], SB045 (0-2") (320-37380-5)[10X] and SB045 (2"-2') (320-37380-6)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE
Samples SB043 (0-2") (320-37380-1), SB043 (2"-2') (320-37380-2), SB044 (0-2") (320-37380-3), SB044 (2"-2') (320-37380-4), SB045

(0-2") (320-37380-5) and SB045 (2"-2') (320-37380-6) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 03/26/2018.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-37380-1	SB043 (0-2")	Solid	03/19/18 12:30	03/22/18 09:05
320-37380-2	SB043 (2"-2')	Solid	03/19/18 12:15	03/22/18 09:05
320-37380-3	SB044 (0-2")	Solid	03/19/18 13:00	03/22/18 09:05
320-37380-4	SB044 (2"-2')	Solid	03/19/18 13:10	03/22/18 09:05
320-37380-5	SB045 (0-2")	Solid	03/19/18 13:30	03/22/18 09:05
320-37380-6	SB045 (2"-2')	Solid	03/19/18 13:40	03/22/18 09:05

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Client Sample ID: SB043 (0-2") — Lab Sample ID: 320-37380-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.0013	B	0.00023	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.000096	J	0.00023	0.000088	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00034		0.00023	0.000048	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000064	J	0.00023	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00035		0.00023	0.000099	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00022	J	0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00036		0.00023	0.000025	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0027		0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00042		0.00023	0.000077	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.0030		0.00023	0.000059	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.00019	J	0.00023	0.000062	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.000038	J	0.00023	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00052		0.00023	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0081	B	0.00057	0.00023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.000099	J	0.00023	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00012	J	0.00023	0.000094	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB043 (2"-2') — Lab Sample ID: 320-37380-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00032	B	0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00021	0.000083	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00016	J	0.00021	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000068	J	0.00021	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00022		0.00021	0.000092	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00013	J	0.00021	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00014	J	0.00021	0.000024	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00041		0.00021	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00029		0.00021	0.000055	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.000071	J	0.00021	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0019	B	0.00054	0.00021	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB044 (0-2") — Lab Sample ID: 320-37380-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00094	B	0.00023	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00016	J	0.00023	0.000089	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00030		0.00023	0.000048	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000052	J	0.00023	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00016	J	0.00023	0.000099	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00028		0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00073		0.00023	0.000025	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0016		0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00079		0.00023	0.000077	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.0022		0.00023	0.000059	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.0011		0.00023	0.000062	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00017	J	0.00023	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0027	B	0.00057	0.00023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.00010	J	0.00023	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Client Sample ID: SB044 (2"-2')

Lab Sample ID: 320-37380-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00048	B	0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00023		0.00022	0.000085	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00019	J	0.00022	0.000046	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000078	J	0.00022	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00015	J	0.00022	0.000094	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00020	J	0.00022	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00049		0.00022	0.000024	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0010		0.00022	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00028		0.00022	0.000074	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00053		0.00022	0.000056	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.00010	J	0.00022	0.000059	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00021	J	0.00022	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0023	B	0.00055	0.00022	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.000077	J	0.00022	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB045 (0-2")

Lab Sample ID: 320-37380-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00048	B	0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00011	J	0.00022	0.000046	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000047	J	0.00022	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.000094	J	0.00022	0.000094	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00011	J	0.00022	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00018	J	0.00022	0.000024	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00054		0.00022	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.00012	J	0.00022	0.000073	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00037		0.00022	0.000056	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00017	J	0.00022	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0015	B	0.00055	0.00022	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB045 (2"-2')

Lab Sample ID: 320-37380-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00027	B	0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00023		0.00022	0.000086	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.000090	J	0.00022	0.000047	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000089	J	0.00022	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00012	J	0.00022	0.000096	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00011	J	0.00022	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00010	J	0.00022	0.000025	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00050		0.00022	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00013	J	0.00022	0.000057	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.000075	J	0.00022	0.000035	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.00090	B	0.00056	0.00022	mg/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB043 (0-2")

Date Collected: 03/19/18 12:30
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-1

Matrix: Solid
Percent Solids: 87.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0013	B	0.00023	0.000032	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluoropentanoic acid (PFPeA)	0.000096	J	0.00023	0.000088	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorohexanoic acid (PFHxA)	0.00034		0.00023	0.000048	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluoroheptanoic acid (PFHpA)	0.000064	J	0.00023	0.000033	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorooctanoic acid (PFOA)	0.00035		0.00023	0.000099	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorononanoic acid (PFNA)	0.00022	J	0.00023	0.000041	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorodecanoic acid (PFDA)	0.00036		0.00023	0.000025	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluoroundecanoic acid (PFUnA)	0.0027		0.00023	0.000041	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorododecanoic acid (PFDoA)	0.00042		0.00023	0.000077	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorotridecanoic Acid (PFTriA)	0.0030		0.00023	0.000059	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorotetradecanoic acid (PFTeA)	0.00019	J	0.00023	0.000062	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorobutanesulfonic acid (PFBS)	0.000038	J	0.00023	0.000029	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorohexanesulfonic acid (PFHxS)	0.00052		0.00023	0.000036	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000040	U	0.00023	0.000040	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorooctanesulfonic acid (PFOS)	0.0081	B	0.00057	0.00023	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorodecanesulfonic acid (PFDS)	0.000099	J	0.00023	0.000045	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
Perfluorooctane Sulfonamide (FOSA)	0.00012	J	0.00023	0.000094	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00045	U	0.0023	0.00045	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00042	U	0.0023	0.00042	mg/Kg	☼	04/02/18 23:18	04/07/18 20:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*60*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C5 PFPeA	*70*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C2 PFHxA	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C4-PFHpA	*70*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C4 PFOA	*79*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C5 PFNA	*84*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C2 PFDA	*101*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C2 PFUnA	*101*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C2 PFDoA	*90*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C2-PFTeDA	*85*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C3-PFBS	*76*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
18O2 PFHxS	*82*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C4 PFOS	*84*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
13C8 FOSA	*70*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
d3-NMeFOSAA	*111*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*
d5-NEtFOSAA	*103*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:29*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	0.0017	U	0.023	0.0017	mg/Kg	☼	04/02/18 23:18	04/09/18 18:26	10

Client Sample ID: SB043 (0-2")

Lab Sample ID: 320-37380-1
Date Collected: 03/19/18 12:30
Matrix: Solid
Date Received: 03/22/18 09:05
Percent Solids: 87.5

Method: 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
8:2FTS	0.0029	U	0.023	0.0029	mg/Kg	☼	04/02/18 23:18	04/09/18 18:26	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*73*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:26*	*10*
M2-8:2FTS	*93*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:26*	*10*

Client Sample ID: SB043 (2"-2')

Lab Sample ID: 320-37380-2
Date Collected: 03/19/18 12:15
Matrix: Solid
Date Received: 03/22/18 09:05
Percent Solids: 93.8

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00032**	**B**	0.00021	0.000030	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluoropentanoic acid (PFPeA)	**0.00015**	**J**	0.00021	0.000083	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorohexanoic acid (PFHxA)	**0.00016**	**J**	0.00021	0.000045	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluoroheptanoic acid (PFHpA)	**0.000068**	**J**	0.00021	0.000031	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorooctanoic acid (PFOA)	**0.00022**		0.00021	0.000092	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorononanoic acid (PFNA)	**0.00013**	**J**	0.00021	0.000039	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorodecanoic acid (PFDA)	**0.00014**	**J**	0.00021	0.000024	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluoroundecanoic acid (PFUnA)	**0.00041**		0.00021	0.000039	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorododecanoic acid (PFDoA)	0.000072	U	0.00021	0.000072	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorotridecanoic Acid (PFTriA)	**0.00029**		0.00021	0.000055	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00021	0.000058	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00021	0.000027	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorohexanesulfonic acid (PFHxS)	**0.000071**	**J**	0.00021	0.000033	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000038	U	0.00021	0.000038	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorooctanesulfonic acid (PFOS)	**0.0019**	**B**	0.00054	0.00021	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorodecanesulfonic acid (PFDS)	0.000042	U	0.00021	0.000042	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
Perfluorooctane Sulfonamide (FOSA)	0.000088	U	0.00021	0.000088	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0021	0.00042	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00040	U	0.0021	0.00040	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
6:2FTS	0.00016	U	0.0021	0.00016	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1
8:2FTS	0.00027	U	0.0021	0.00027	mg/Kg	☼	04/02/18 23:18	04/07/18 20:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*50*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C5 PFPeA	*50*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C2 PFHxA	*44*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C4-PFHpA	*50*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C4 PFOA	*54*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C5 PFNA	*56*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C2 PFDA	*65*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C2 PFUnA	*72*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C2 PFDoA	*76*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C2-PFTeDA	*69*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C3-PFBS	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*

Client Sample ID: SB043 (2"-2')

Date Collected: 03/19/18 12:15
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-2
Matrix: Solid
Percent Solids: 93.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C4 PFOS	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
13C8 FOSA	*53*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
d3-NMeFOSAA	*89*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
d5-NEtFOSAA	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
M2-6:2FTS	*117*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*
M2-8:2FTS	*148*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:37*	*1*

Client Sample ID: SB044 (0-2")

Date Collected: 03/19/18 13:00
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-3
Matrix: Solid
Percent Solids: 87.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00094**	**B**	0.00023	0.000032	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluoropentanoic acid (PFPeA)	**0.00016**	**J**	0.00023	0.000089	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorohexanoic acid (PFHxA)	**0.00030**		0.00023	0.000048	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluoroheptanoic acid (PFHpA)	**0.000052**	**J**	0.00023	0.000033	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorooctanoic acid (PFOA)	**0.00016**	**J**	0.00023	0.000099	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorononanoic acid (PFNA)	**0.00028**		0.00023	0.000041	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorodecanoic acid (PFDA)	**0.00073**		0.00023	0.000025	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluoroundecanoic acid (PFUnA)	**0.0016**		0.00023	0.000041	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorododecanoic acid (PFDoA)	**0.00079**		0.00023	0.000077	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorotridecanoic Acid (PFTriA)	**0.0022**		0.00023	0.000059	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorotetradecanoic acid (PFTeA)	**0.0011**		0.00023	0.000062	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorobutanesulfonic acid (PFBS)	0.000029	U	0.00023	0.000029	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00017**	**J**	0.00023	0.000036	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000040	U	0.00023	0.000040	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorooctanesulfonic acid (PFOS)	**0.0027**	**B**	0.00057	0.00023	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorodecanesulfonic acid (PFDS)	**0.00010**	**J**	0.00023	0.000045	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
Perfluorooctane Sulfonamide (FOSA)	0.000094	U	0.00023	0.000094	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00045	U	0.0023	0.00045	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00043	U	0.0023	0.00043	mg/Kg	☼	04/02/18 23:18	04/07/18 20:45	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C5 PFPeA	*72*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C2 PFHxA	*70*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C4-PFHpA	*74*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C4 PFOA	*85*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C5 PFNA	*90*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C2 PFDA	*98*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C2 PFUnA	*99*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*

Client Sample ID: SB044 (0-2")

Date Collected: 03/19/18 13:00
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-3

Matrix: Solid
Percent Solids: 87.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*90*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C2-PFTeDA	*81*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C3-PFBS	*78*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
18O2 PFHxS	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C4 PFOS	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
13C8 FOSA	*66*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
d3-NMeFOSAA	*92*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*
d5-NEtFOSAA	*78*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:45*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	0.0017	U	0.023	0.0017	mg/Kg	☼	04/02/18 23:18	04/09/18 18:42	10
8:2FTS	0.0029	U	0.023	0.0029	mg/Kg	☼	04/02/18 23:18	04/09/18 18:42	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*80*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:42*	*10*
M2-8:2FTS	*88*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:42*	*10*

Client Sample ID: SB044 (2"-2')

Date Collected: 03/19/18 13:10
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-4

Matrix: Solid
Percent Solids: 91.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00048**	**B**	0.00022	0.000031	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluoropentanoic acid (PFPeA)	**0.00023**		0.00022	0.000085	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorohexanoic acid (PFHxA)	**0.00019**	**J**	0.00022	0.000046	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluoroheptanoic acid (PFHpA)	**0.000078**	**J**	0.00022	0.000032	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorooctanoic acid (PFOA)	**0.00015**	**J**	0.00022	0.000094	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorononanoic acid (PFNA)	**0.00020**	**J**	0.00022	0.000040	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorodecanoic acid (PFDA)	**0.00049**		0.00022	0.000024	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluoroundecanoic acid (PFUnA)	**0.0010**		0.00022	0.000040	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorododecanoic acid (PFDoA)	**0.00028**		0.00022	0.000074	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorotridecanoic Acid (PFTriA)	**0.00053**		0.00022	0.000056	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorotetradecanoic acid (PFTeA)	**0.00010**	**J**	0.00022	0.000059	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00022	0.000027	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00021**	**J**	0.00022	0.000034	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000038	U	0.00022	0.000038	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorooctanesulfonic acid (PFOS)	**0.0023**	**B**	0.00055	0.00022	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorodecanesulfonic acid (PFDS)	**0.000077**	**J**	0.00022	0.000043	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
Perfluorooctane Sulfonamide (FOSA)	0.000090	U	0.00022	0.000090	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00043	U	0.0022	0.00043	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00041	U	0.0022	0.00041	mg/Kg	☼	04/02/18 23:18	04/07/18 20:53	1

Client Sample ID: SB044 (2"-2')

Date Collected: 03/19/18 13:10
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-4

Matrix: Solid
Percent Solids: 91.5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C5 PFPeA	*77*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C2 PFHxA	*69*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C4-PFHpA	*76*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C4 PFOA	*87*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C5 PFNA	*89*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C2 PFDA	*99*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C2 PFUnA	*103*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C2 PFDoA	*95*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C2-PFTeDA	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C3-PFBS	*77*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
18O2 PFHxS	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C4 PFOS	*84*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
13C8 FOSA	*77*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
d3-NMeFOSAA	*126*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*
d5-NEtFOSAA	*120*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:53*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	0.0016	U	0.022	0.0016	mg/Kg	☼	04/02/18 23:18	04/09/18 18:50	10
8:2FTS	0.0027	U	0.022	0.0027	mg/Kg	☼	04/02/18 23:18	04/09/18 18:50	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*67*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:50*	*10*
M2-8:2FTS	*74*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:50*	*10*

Client Sample ID: SB045 (0-2")

Date Collected: 03/19/18 13:30
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-5

Matrix: Solid
Percent Solids: 91.1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00048**	**B**	0.00022	0.000031	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluoropentanoic acid (PFPeA)	0.000084	U	0.00022	0.000084	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorohexanoic acid (PFHxA)	**0.00011**	**J**	0.00022	0.000046	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluoroheptanoic acid (PFHpA)	**0.000047**	**J**	0.00022	0.000032	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorooctanoic acid (PFOA)	**0.000094**	**J**	0.00022	0.000094	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorononanoic acid (PFNA)	**0.00011**	**J**	0.00022	0.000039	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorodecanoic acid (PFDA)	**0.00018**	**J**	0.00022	0.000024	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluoroundecanoic acid (PFUnA)	**0.00054**		0.00022	0.000039	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorododecanoic acid (PFDoA)	**0.00012**	**J**	0.00022	0.000073	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorotridecanoic Acid (PFTriA)	**0.00037**		0.00022	0.000056	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorotetradecanoic acid (PFTeA)	0.000059	U	0.00022	0.000059	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00022	0.000027	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00017**	**J**	0.00022	0.000034	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000038	U	0.00022	0.000038	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorooctanesulfonic acid (PFOS)	**0.0015**	**B**	0.00055	0.00022	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1

Client Sample ID: SB045 (0-2")

Date Collected: 03/19/18 13:30
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-5

Matrix: Solid
Percent Solids: 91.1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	0.000043	U	0.00022	0.000043	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
Perfluorooctane Sulfonamide (FOSA)	0.000090	U	0.00022	0.000090	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00043	U	0.0022	0.00043	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00040	U	0.0022	0.00040	mg/Kg	☼	04/02/18 23:18	04/07/18 21:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C5 PFPeA	*77*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C2 PFHxA	*71*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C4-PFHpA	*74*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C4 PFOA	*85*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C5 PFNA	*88*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C2 PFDA	*100*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C2 PFUnA	*102*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C2 PFDoA	*87*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C2-PFTeDA	*71*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C3-PFBS	*76*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
18O2 PFHxS	*84*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C4 PFOS	*83*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
13C8 FOSA	*65*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
d3-NMeFOSAA	*99*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*
d5-NEtFOSAA	*92*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:01*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	0.0016	U	0.022	0.0016	mg/Kg	☼	04/02/18 23:18	04/09/18 18:58	10
8:2FTS	0.0027	U	0.022	0.0027	mg/Kg	☼	04/02/18 23:18	04/09/18 18:58	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*73*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:58*	*10*
M2-8:2FTS	*85*		*25 - 150*	*04/02/18 23:18*	*04/09/18 18:58*	*10*

Client Sample ID: SB045 (2"-2')

Date Collected: 03/19/18 13:40
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-6

Matrix: Solid
Percent Solids: 89.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00027**	**B**	0.00022	0.000031	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluoropentanoic acid (PFPeA)	**0.00023**		0.00022	0.000086	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorohexanoic acid (PFHxA)	**0.000090**	**J**	0.00022	0.000047	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluoroheptanoic acid (PFHpA)	**0.000089**	**J**	0.00022	0.000032	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorooctanoic acid (PFOA)	**0.00012**	**J**	0.00022	0.000096	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorononanoic acid (PFNA)	**0.00011**	**J**	0.00022	0.000040	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorodecanoic acid (PFDA)	**0.00010**	**J**	0.00022	0.000025	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluoroundecanoic acid (PFUnA)	**0.00050**		0.00022	0.000040	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorododecanoic acid (PFDoA)	0.000075	U	0.00022	0.000075	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorotridecanoic Acid (PFTriA)	**0.00013**	**J**	0.00022	0.000057	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1

Client Sample ID: SB045 (2"-2')

Date Collected: 03/19/18 13:40
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-6

Matrix: Solid
Percent Solids: 89.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	0.000060	U	0.00022	0.000060	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorobutanesulfonic acid (PFBS)	0.000028	U	0.00022	0.000028	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorohexanesulfonic acid (PFHxS)	**0.000075**	**J**	0.00022	0.000035	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000039	U	0.00022	0.000039	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorooctanesulfonic acid (PFOS)	**0.00090**	**B**	0.00056	0.00022	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorodecanesulfonic acid (PFDS)	0.000044	U	0.00022	0.000044	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
Perfluorooctane Sulfonamide (FOSA)	0.000092	U	0.00022	0.000092	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00044	U	0.0022	0.00044	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00041	U	0.0022	0.00041	mg/Kg	☼	04/02/18 23:18	04/07/18 21:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C5 PFPeA	*82*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C2 PFHxA	*75*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C4-PFHpA	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C4 PFOA	*89*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C5 PFNA	*101*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C2 PFDA	*111*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C2 PFUnA	*106*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C2 PFDoA	*101*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C2-PFTeDA	*93*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C3-PFBS	*75*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
18O2 PFHxS	*83*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C4 PFOS	*86*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
13C8 FOSA	*79*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
d3-NMeFOSAA	*142*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*
d5-NEtFOSAA	*126*		*25 - 150*	*04/02/18 23:18*	*04/07/18 21:09*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	0.0017	U	0.022	0.0017	mg/Kg	☼	04/02/18 23:18	04/09/18 19:05	10
8:2FTS	0.0028	U	0.022	0.0028	mg/Kg	☼	04/02/18 23:18	04/09/18 19:05	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*64*		*25 - 150*	*04/02/18 23:18*	*04/09/18 19:05*	*10*
M2-8:2FTS	*74*		*25 - 150*	*04/02/18 23:18*	*04/09/18 19:05*	*10*

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-37156-A-6-E MS	Matrix Spike	52	63	60	66	75	76	84	89
320-37156-A-6-F MSD	Matrix Spike Duplicate	51	62	60	64	71	80	86	85
320-37380-1	SB043 (0-2")	60	70	63	70	79	84	101	101
320-37380-1 - DL	SB043 (0-2")								
320-37380-2	SB043 (2"-2')	50	50	44	50	54	56	65	72
320-37380-3	SB044 (0-2")	63	72	70	74	85	90	98	99
320-37380-3 - DL	SB044 (0-2")								
320-37380-4	SB044 (2"-2')	69	77	69	76	87	89	99	103
320-37380-4 - DL	SB044 (2"-2')								
320-37380-5	SB045 (0-2")	69	77	71	74	85	88	100	102
320-37380-5 - DL	SB045 (0-2")								
320-37380-6	SB045 (2"-2')	80	82	75	86	89	101	111	106
320-37380-6 - DL	SB045 (2"-2')								
LCS 320-215980/2-A	Lab Control Sample	70	71	68	72	73	75	76	82
MB 320-215980/1-A	Method Blank	60	60	58	62	63	64	67	67

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS (25-150)	-NEtFOS (25-150)
320-37156-A-6-E MS	Matrix Spike	78	70	67	70	71	58	93	87
320-37156-A-6-F MSD	Matrix Spike Duplicate	76	71	67	67	72	59	104	96
320-37380-1	SB043 (0-2")	90	85	76	82	84	70	111	103
320-37380-1 - DL	SB043 (0-2")								
320-37380-2	SB043 (2"-2')	76	69	63	63	63	53	89	86
320-37380-3	SB044 (0-2")	90	81	78	86	86	66	92	78
320-37380-3 - DL	SB044 (0-2")								
320-37380-4	SB044 (2"-2')	95	86	77	86	84	77	126	120
320-37380-4 - DL	SB044 (2"-2')								
320-37380-5	SB045 (0-2")	87	71	76	84	83	65	99	92
320-37380-5 - DL	SB045 (0-2")								
320-37380-6	SB045 (2"-2')	101	93	75	83	86	79	142	126
320-37380-6 - DL	SB045 (2"-2')								
LCS 320-215980/2-A	Lab Control Sample	80	81	74	79	77	61	73	78
MB 320-215980/1-A	Method Blank	66	72	63	67	68	50	54	54

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)						
320-37156-A-6-E MS	Matrix Spike	191 *	231 *						
320-37156-A-6-F MSD	Matrix Spike Duplicate	200 *	239 *						
320-37380-1	SB043 (0-2")								
320-37380-1 - DL	SB043 (0-2")	73	93						
320-37380-2	SB043 (2"-2')	117	148						
320-37380-3	SB044 (0-2")								
320-37380-3 - DL	SB044 (0-2")	80	88						
320-37380-4	SB044 (2"-2')								
320-37380-4 - DL	SB044 (2"-2')	67	74						
320-37380-5	SB045 (0-2")								
320-37380-5 - DL	SB045 (0-2")	73	85						
320-37380-6	SB045 (2"-2')								

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		M262FTS	M282FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)
320-37380-6 - DL	SB045 (2"-2')	64	74
LCS 320-215980/2-A	Lab Control Sample	72	75
MB 320-215980/1-A	Method Blank	60	64

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-215980/1-A
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 215980

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0000481	J	0.00020	0.000028	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorooctanesulfonic acid (PFOS)	0.000317	J	0.00050	0.00020	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
6:2FTS	0.00015	U	0.0020	0.00015	mg/Kg		04/02/18 23:18	04/07/18 20:14	1
8:2FTS	0.00025	U	0.0020	0.00025	mg/Kg		04/02/18 23:18	04/07/18 20:14	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*60*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C5 PFPeA	*60*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C2 PFHxA	*58*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C4-PFHpA	*62*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C4 PFOA	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C5 PFNA	*64*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C2 PFDA	*67*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C2 PFUnA	*67*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C2 PFDoA	*66*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C2-PFTeDA	*72*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C3-PFBS	*63*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
18O2 PFHxS	*67*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C4 PFOS	*68*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
13C8 FOSA	*50*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
d3-NMeFOSAA	*54*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
d5-NEtFOSAA	*54*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
M2-6:2FTS	*60*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*
M2-8:2FTS	*64*		*25 - 150*	*04/02/18 23:18*	*04/07/18 20:14*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-215980/2-A
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 215980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00200	0.00208		mg/Kg		104	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00200	0.00188		mg/Kg		94	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00200	0.00201		mg/Kg		101	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00195		mg/Kg		98	76 - 124
Perfluorooctanoic acid (PFOA)	0.00200	0.00186		mg/Kg		93	76 - 121
Perfluorononanoic acid (PFNA)	0.00200	0.00191		mg/Kg		96	74 - 126
Perfluorodecanoic acid (PFDA)	0.00200	0.00193		mg/Kg		97	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00181		mg/Kg		90	74 - 114
Perfluorododecanoic acid (PFDoA)	0.00200	0.00190		mg/Kg		95	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00193		mg/Kg		97	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00187		mg/Kg		94	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00173		mg/Kg		98	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00167		mg/Kg		92	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00179		mg/Kg		94	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00182		mg/Kg		98	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00181		mg/Kg		94	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00196		mg/Kg		98	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00202		mg/Kg		101	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00195	J	mg/Kg		97	65 - 135
6:2FTS	0.00190	0.00172	J	mg/Kg		91	65 - 135
8:2FTS	0.00192	0.00179	J	mg/Kg		93	65 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*70*		*25 - 150*
13C5 PFPeA	*71*		*25 - 150*
13C2 PFHxA	*68*		*25 - 150*
13C4-PFHpA	*72*		*25 - 150*
13C4 PFOA	*73*		*25 - 150*
13C5 PFNA	*75*		*25 - 150*
13C2 PFDA	*76*		*25 - 150*
13C2 PFUnA	*82*		*25 - 150*
13C2 PFDoA	*80*		*25 - 150*
13C2-PFTeDA	*81*		*25 - 150*
13C3-PFBS	*74*		*25 - 150*
18O2 PFHxS	*79*		*25 - 150*
13C4 PFOS	*77*		*25 - 150*
13C8 FOSA	*61*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-215980/2-A
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 215980

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	*73*		*25 - 150*
d5-NEtFOSAA	*78*		*25 - 150*
M2-6:2FTS	*72*		*25 - 150*
M2-8:2FTS	*75*		*25 - 150*

Lab Sample ID: 320-37156-A-6-E MS
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 215980

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.0012	B	0.00274	0.00395		mg/Kg	☼	101	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00010	U	0.00274	0.00239		mg/Kg	☼	87	79 - 120
Perfluorohexanoic acid (PFHxA)	0.000057	U	0.00274	0.00299		mg/Kg	☼	109	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.000039	U	0.00274	0.00250		mg/Kg	☼	91	76 - 124
Perfluorooctanoic acid (PFOA)	0.00012	U	0.00274	0.00245		mg/Kg	☼	89	76 - 121
Perfluorononanoic acid (PFNA)	0.000071	J	0.00274	0.00273		mg/Kg	☼	97	74 - 126
Perfluorodecanoic acid (PFDA)	0.000033	J	0.00274	0.00263		mg/Kg	☼	95	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.000078	J	0.00274	0.00293		mg/Kg	☼	104	74 - 114
Perfluorododecanoic acid (PFDoA)	0.000091	U	0.00274	0.00242		mg/Kg	☼	88	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.000069	U	0.00274	0.00244		mg/Kg	☼	89	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.000073	U	0.00274	0.00259		mg/Kg	☼	95	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.000034	U	0.00242	0.00227		mg/Kg	☼	94	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.000091	J	0.00249	0.00237		mg/Kg	☼	92	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.000047	U	0.00261	0.00255		mg/Kg	☼	98	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.00066	J B	0.00254	0.00297		mg/Kg	☼	91	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.000053	U	0.00264	0.00246		mg/Kg	☼	93	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00011	U	0.00274	0.00257		mg/Kg	☼	94	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00053	U	0.00274	0.00258	J	mg/Kg	☼	94	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00050	U	0.00274	0.00254	J	mg/Kg	☼	93	65 - 135
6:2FTS	0.00020	U	0.00259	0.00235	J	mg/Kg	☼	91	65 - 135
8:2FTS	0.00034	U	0.00262	0.00239	J	mg/Kg	☼	91	65 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	*52*		*25 - 150*
13C5 PFPeA	*63*		*25 - 150*
13C2 PFHxA	*60*		*25 - 150*
13C4-PFHpA	*66*		*25 - 150*
13C4 PFOA	*75*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-37156-A-6-E MS
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 215980

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C5 PFNA	*76*		*25 - 150*
13C2 PFDA	*84*		*25 - 150*
13C2 PFUnA	*89*		*25 - 150*
13C2 PFDoA	*78*		*25 - 150*
13C2-PFTeDA	*70*		*25 - 150*
13C3-PFBS	*67*		*25 - 150*
18O2 PFHxS	*70*		*25 - 150*
13C4 PFOS	*71*		*25 - 150*
13C8 FOSA	*58*		*25 - 150*
d3-NMeFOSAA	*93*		*25 - 150*
d5-NEtFOSAA	*87*		*25 - 150*
M2-6:2FTS	*191*	*	*25 - 150*
M2-8:2FTS	*231*	*	*25 - 150*

Lab Sample ID: 320-37156-A-6-F MSD
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 215980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.0012	B	0.00271	0.00387		mg/Kg	☼	99	81 - 133	2	30
Perfluoropentanoic acid (PFPeA)	0.00010	U	0.00271	0.00235		mg/Kg	☼	87	79 - 120	1	30
Perfluorohexanoic acid (PFHxA)	0.000057	U	0.00271	0.00280		mg/Kg	☼	103	75 - 125	7	30
Perfluoroheptanoic acid (PFHpA)	0.000039	U	0.00271	0.00264		mg/Kg	☼	97	76 - 124	6	30
Perfluorooctanoic acid (PFOA)	0.00012	U	0.00271	0.00259		mg/Kg	☼	95	76 - 121	5	30
Perfluorononanoic acid (PFNA)	0.000071	J	0.00271	0.00253		mg/Kg	☼	91	74 - 126	8	30
Perfluorodecanoic acid (PFDA)	0.000033	J	0.00271	0.00264		mg/Kg	☼	96	74 - 124	0	30
Perfluoroundecanoic acid (PFUnA)	0.000078	J	0.00271	0.00299		mg/Kg	☼	107	74 - 114	2	30
Perfluorododecanoic acid (PFDoA)	0.000091	U	0.00271	0.00252		mg/Kg	☼	93	75 - 123	4	30
Perfluorotridecanoic Acid (PFTriA)	0.000069	U	0.00271	0.00251		mg/Kg	☼	93	43 - 116	3	30
Perfluorotetradecanoic acid (PFTeA)	0.000073	U	0.00271	0.00258		mg/Kg	☼	95	22 - 129	1	30
Perfluorobutanesulfonic acid (PFBS)	0.000034	U	0.00240	0.00222		mg/Kg	☼	93	73 - 142	2	30
Perfluorohexanesulfonic acid (PFHxS)	0.000091	J	0.00247	0.00235		mg/Kg	☼	92	75 - 121	1	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.000047	U	0.00258	0.00253		mg/Kg	☼	98	78 - 146	1	30
Perfluorooctanesulfonic acid (PFOS)	0.00066	J B	0.00251	0.00297		mg/Kg	☼	92	69 - 131	0	30
Perfluorodecanesulfonic acid (PFDS)	0.000053	U	0.00261	0.00238		mg/Kg	☼	91	54 - 113	4	30
Perfluorooctane Sulfonamide (FOSA)	0.00011	U	0.00271	0.00260		mg/Kg	☼	96	62 - 135	1	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00053	U	0.00271	0.00261	J	mg/Kg	☼	96	65 - 135	1	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00050	U	0.00271	0.00260	J	mg/Kg	☼	96	65 - 135	2	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-37156-A-6-F MSD
Matrix: Solid
Analysis Batch: 216866

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 215980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
6:2FTS	0.00020	U	0.00257	0.00217	J	mg/Kg	☼	84	65 - 135	8	30
8:2FTS	0.00034	U	0.00260	0.00239	J	mg/Kg	☼	92	65 - 135	0	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*51*		*25 - 150*
13C5 PFPeA	*62*		*25 - 150*
13C2 PFHxA	*60*		*25 - 150*
13C4-PFHpA	*64*		*25 - 150*
13C4 PFOA	*71*		*25 - 150*
13C5 PFNA	*80*		*25 - 150*
13C2 PFDA	*86*		*25 - 150*
13C2 PFUnA	*85*		*25 - 150*
13C2 PFDoA	*76*		*25 - 150*
13C2-PFTeDA	*71*		*25 - 150*
13C3-PFBS	*67*		*25 - 150*
18O2 PFHxS	*67*		*25 - 150*
13C4 PFOS	*72*		*25 - 150*
13C8 FOSA	*59*		*25 - 150*
d3-NMeFOSAA	*104*		*25 - 150*
d5-NEtFOSAA	*96*		*25 - 150*
M2-6:2FTS	*200*	*	*25 - 150*
M2-8:2FTS	*239*	*	*25 - 150*

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	Isotope Dilution analyte is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Prep Batch: 215980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-37380-1	SB043 (0-2")	Total/NA	Solid	SHAKE	
320-37380-1 - DL	SB043 (0-2")	Total/NA	Solid	SHAKE	
320-37380-2	SB043 (2"-2')	Total/NA	Solid	SHAKE	
320-37380-3 - DL	SB044 (0-2")	Total/NA	Solid	SHAKE	
320-37380-3	SB044 (0-2")	Total/NA	Solid	SHAKE	
320-37380-4 - DL	SB044 (2"-2')	Total/NA	Solid	SHAKE	
320-37380-4	SB044 (2"-2')	Total/NA	Solid	SHAKE	
320-37380-5	SB045 (0-2")	Total/NA	Solid	SHAKE	
320-37380-5 - DL	SB045 (0-2")	Total/NA	Solid	SHAKE	
320-37380-6	SB045 (2"-2')	Total/NA	Solid	SHAKE	
320-37380-6 - DL	SB045 (2"-2')	Total/NA	Solid	SHAKE	
MB 320-215980/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-215980/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-37156-A-6-E MS	Matrix Spike	Total/NA	Solid	SHAKE	
320-37156-A-6-F MSD	Matrix Spike Duplicate	Total/NA	Solid	SHAKE	

Analysis Batch: 216866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-37380-1	SB043 (0-2")	Total/NA	Solid	537 (modified)	215980
320-37380-2	SB043 (2"-2')	Total/NA	Solid	537 (modified)	215980
320-37380-3	SB044 (0-2")	Total/NA	Solid	537 (modified)	215980
320-37380-4	SB044 (2"-2')	Total/NA	Solid	537 (modified)	215980
320-37380-5	SB045 (0-2")	Total/NA	Solid	537 (modified)	215980
320-37380-6	SB045 (2"-2')	Total/NA	Solid	537 (modified)	215980
MB 320-215980/1-A	Method Blank	Total/NA	Solid	537 (modified)	215980
LCS 320-215980/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	215980
320-37156-A-6-E MS	Matrix Spike	Total/NA	Solid	537 (modified)	215980
320-37156-A-6-F MSD	Matrix Spike Duplicate	Total/NA	Solid	537 (modified)	215980

Analysis Batch: 217070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-37380-1 - DL	SB043 (0-2")	Total/NA	Solid	537 (modified)	215980
320-37380-3 - DL	SB044 (0-2")	Total/NA	Solid	537 (modified)	215980
320-37380-4 - DL	SB044 (2"-2')	Total/NA	Solid	537 (modified)	215980
320-37380-5 - DL	SB045 (0-2")	Total/NA	Solid	537 (modified)	215980
320-37380-6 - DL	SB045 (2"-2')	Total/NA	Solid	537 (modified)	215980

General Chemistry

Analysis Batch: 214910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-37380-1	SB043 (0-2")	Total/NA	Solid	D 2216	
320-37380-2	SB043 (2"-2')	Total/NA	Solid	D 2216	
320-37380-3	SB044 (0-2")	Total/NA	Solid	D 2216	
320-37380-4	SB044 (2"-2')	Total/NA	Solid	D 2216	
320-37380-5	SB045 (0-2")	Total/NA	Solid	D 2216	
320-37380-6	SB045 (2"-2')	Total/NA	Solid	D 2216	
320-37442-A-9 DU	Duplicate	Total/NA	Solid	D 2216	

Client Sample ID: SB043 (0-2")
Date Collected: 03/19/18 12:30
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	214910	03/26/18 21:00	SSS	TAL SAC

Client Sample ID: SB043 (0-2")
Date Collected: 03/19/18 12:30
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-1
Matrix: Solid
Percent Solids: 87.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1	216866	04/07/18 20:29	ABH	TAL SAC
Total/NA	Prep	SHAKE	DL		215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	217070	04/09/18 18:26	ABH	TAL SAC

Client Sample ID: SB043 (2"-2')
Date Collected: 03/19/18 12:15
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	214910	03/26/18 21:00	SSS	TAL SAC

Client Sample ID: SB043 (2"-2')
Date Collected: 03/19/18 12:15
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-2
Matrix: Solid
Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1	216866	04/07/18 20:37	ABH	TAL SAC

Client Sample ID: SB044 (0-2")
Date Collected: 03/19/18 13:00
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	214910	03/26/18 21:00	SSS	TAL SAC

Client Sample ID: SB044 (0-2")
Date Collected: 03/19/18 13:00
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-3
Matrix: Solid
Percent Solids: 87.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1	216866	04/07/18 20:45	ABH	TAL SAC
Total/NA	Prep	SHAKE	DL		215980	04/02/18 23:18	JER	TAL SAC

Client Sample ID: SB044 (0-2")
Lab Sample ID: 320-37380-3
Date Collected: 03/19/18 13:00
Matrix: Solid
Date Received: 03/22/18 09:05
Percent Solids: 87.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (modified)	DL	10	217070	04/09/18 18:42	ABH	TAL SAC

Client Sample ID: SB044 (2"-2')
Lab Sample ID: 320-37380-4
Date Collected: 03/19/18 13:10
Matrix: Solid
Date Received: 03/22/18 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	214910	03/26/18 21:00	SSS	TAL SAC

Client Sample ID: SB044 (2"-2')
Lab Sample ID: 320-37380-4
Date Collected: 03/19/18 13:10
Matrix: Solid
Date Received: 03/22/18 09:05
Percent Solids: 91.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1	216866	04/07/18 20:53	ABH	TAL SAC
Total/NA	Prep	SHAKE	DL		215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	217070	04/09/18 18:50	ABH	TAL SAC

Client Sample ID: SB045 (0-2")
Lab Sample ID: 320-37380-5
Date Collected: 03/19/18 13:30
Matrix: Solid
Date Received: 03/22/18 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	214910	03/26/18 21:00	SSS	TAL SAC

Client Sample ID: SB045 (0-2")
Lab Sample ID: 320-37380-5
Date Collected: 03/19/18 13:30
Matrix: Solid
Date Received: 03/22/18 09:05
Percent Solids: 91.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1	216866	04/07/18 21:01	ABH	TAL SAC
Total/NA	Prep	SHAKE	DL		215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	217070	04/09/18 18:58	ABH	TAL SAC

Client Sample ID: SB045 (2"-2')
Lab Sample ID: 320-37380-6
Date Collected: 03/19/18 13:40
Matrix: Solid
Date Received: 03/22/18 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	214910	03/26/18 21:00	SSS	TAL SAC

Lab Chronicle

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-37380-1

Client Sample ID: SB045 (2"-2')
Date Collected: 03/19/18 13:40
Date Received: 03/22/18 09:05

Lab Sample ID: 320-37380-6
Matrix: Solid
Percent Solids: 89.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1	216866	04/07/18 21:09	ABH	TAL SAC
Total/NA	Prep	SHAKE	DL		215980	04/02/18 23:18	JER	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	217070	04/09/18 19:05	ABH	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-37380-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
Arizona	State Program	9	AZ0708	08-11-18
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-18
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18
L-A-B	DoD ELAP		L2468	01-20-21
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-14-18 *
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-18
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	07-31-18
USDA	Federal		P330-11-00436	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
New York	NELAP	2	11452	04-01-18 *
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	M282FTS #
SB043 (0-2") DL	320-37380-1 DL	73	93
SB044 (0-2") DL	320-37380-3 DL	80	88
SB044 (2"-2') DL	320-37380-4 DL	67	74
SB045 (0-2") DL	320-37380-5 DL	73	85
SB045 (2"-2') DL	320-37380-6 DL	64	74

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
M282FTS = M2-8:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB043 (2"-2')	320-37380-2	50	50	63	44	50	63	117	54
	MB 320-215980/1-A	60	60	63	58	62	67	60	63
	LCS 320-215980/2-A	70	71	74	68	72	79	72	73
	320-37156-A-6-E MS	52	63	67	60	66	70	191 *	75
	320-37156-A-6-F MSD	51	62	67	60	64	67	200 *	71

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
SB043 (2"-2')	320-37380-2	56	63	53	148	65	89	86	72
	MB 320-215980/1-A	64	68	50	64	67	54	54	67
	LCS 320-215980/2-A	75	77	61	75	76	73	78	82
	320-37156-A-6-E MS	76	71	58	231 *	84	93	87	89
	320-37156-A-6-F MSD	80	72	59	239 *	86	104	96	85

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
SB043 (2"-2')	320-37380-2	76	69
	MB 320-215980/1-A	66	72
	LCS 320-215980/2-A	80	81
	320-37156-A-6-E MS	78	70
	320-37156-A-6-F MSD	76	71

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFNA #
SB043 (0-2")	320-37380-1	60	70	76	63	70	82	79	84
SB044 (0-2")	320-37380-3	63	72	78	70	74	86	85	90
SB044 (2"-2')	320-37380-4	69	77	77	69	76	86	87	89
SB045 (0-2")	320-37380-5	69	77	76	71	74	84	85	88
SB045 (2"-2')	320-37380-6	80	82	75	75	86	83	89	101

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFOSA #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
SB043 (0-2")	320-37380-1	84	70	101	111	103	101	90	85
SB044 (0-2")	320-37380-3	86	66	98	92	78	99	90	81
SB044 (2"-2')	320-37380-4	84	77	99	126	120	103	95	86
SB045 (0-2")	320-37380-5	83	65	100	99	92	102	87	71
SB045 (2"-2')	320-37380-6	86	79	111	142	126	106	101	93

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.07LLB_023.d

Lab ID: LCS 320-215980/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00200	0.00208	104	81-133	
Perfluoropentanoic acid (PFPeA)	0.00200	0.00188	94	79-120	
Perfluorohexanoic acid (PFHxA)	0.00200	0.00201	101	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00195	98	76-124	
Perfluorooctanoic acid (PFOA)	0.00200	0.00186	93	76-121	
Perfluorononanoic acid (PFNA)	0.00200	0.00191	96	74-126	
Perfluorodecanoic acid (PFDA)	0.00200	0.00193	97	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00181	90	74-114	
Perfluorododecanoic acid (PFDoA)	0.00200	0.00190	95	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00193	97	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00187	94	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00173	98	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00167	92	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00179	94	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00182	98	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00181	94	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00196	98	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00202	101	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00195 J	97	65-135	
6:2FTS	0.00190	0.00172 J	91	65-135	
8:2FTS	0.00192	0.00179 J	93	65-135	
13C4 PFBA	0.00500	0.00351	70	25-150	
13C5 PFPeA	0.00500	0.00355	71	25-150	
13C2 PFHxA	0.00500	0.00338	68	25-150	
13C4-PFHpA	0.00500	0.00361	72	25-150	
13C4 PFOA	0.00500	0.00365	73	25-150	
13C5 PFNA	0.00500	0.00377	75	25-150	
13C2 PFDA	0.00500	0.00382	76	25-150	
13C2 PFUnA	0.00500	0.00408	82	25-150	
13C2 PFDoA	0.00500	0.00398	80	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.07LLB_023.d

Lab ID: LCS 320-215980/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00500	0.00405	81	25-150	
13C3-PFBS	0.00465	0.00345	74	25-150	
18O2 PFHxS	0.00473	0.00373	79	25-150	
13C4 PFOS	0.00478	0.00368	77	25-150	
13C8 FOSA	0.00500	0.00304	61	25-150	
d3-NMeFOSAA	0.00500	0.00366	73	25-150	
d5-NEtFOSAA	0.00500	0.00392	78	25-150	
M2-6:2FTS	0.00475	0.00342	72	25-150	
M2-8:2FTS	0.00479	0.00357	75	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.07LLB_031.d

Lab ID: 320-37156-A-6-E MS Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00274	0.0012	0.00395	101	81-133	
Perfluoropentanoic acid (PFPeA)	0.00274	0.00010 U	0.00239	87	79-120	
Perfluorohexanoic acid (PFHxA)	0.00274	0.000057 U	0.00299	109	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00274	0.000039 U	0.00250	91	76-124	
Perfluorooctanoic acid (PFOA)	0.00274	0.00012 U	0.00245	89	76-121	
Perfluorononanoic acid (PFNA)	0.00274	0.000071 J	0.00273	97	74-126	
Perfluorodecanoic acid (PFDA)	0.00274	0.000033 J	0.00263	95	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00274	0.000078 J	0.00293	104	74-114	
Perfluorododecanoic acid (PFDoA)	0.00274	0.000091 U	0.00242	88	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00274	0.000069 U	0.00244	89	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00274	0.000073 U	0.00259	95	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00242	0.000034 U	0.00227	94	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00249	0.000091 J	0.00237	92	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00261	0.000047 U	0.00255	98	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00254	0.00066 J	0.00297	91	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00264	0.000053 U	0.00246	93	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00274	0.00011 U	0.00257	94	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00274	0.00053 U	0.00258 J	94	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00274	0.00050 U	0.00254 J	93	65-135	
6:2FTS	0.00259	0.00020 U	0.00235 J	91	65-135	
8:2FTS	0.00262	0.00034 U	0.00239 J	91	65-135	
13C4 PFBA	0.00684	0.0036	0.00359	52	25-150	
13C5 PFPeA	0.00684	0.0042	0.00429	63	25-150	
13C2 PFHxA	0.00684	0.0042	0.00410	60	25-150	
13C4-PFHpA	0.00684	0.0044	0.00454	66	25-150	
13C4 PFOA	0.00684	0.0050	0.00514	75	25-150	
13C5 PFNA	0.00684	0.0053	0.00522	76	25-150	
13C2 PFDA	0.00684	0.0058	0.00578	84	25-150	
13C2 PFUnA	0.00684	0.0061	0.00606	89	25-150	
13C2 PFDoA	0.00684	0.0051	0.00533	78	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.07LLB_031.d

Lab ID: 320-37156-A-6-E MS Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00684	0.0051	0.00476	70	25-150	
13C3-PFBS	0.00636	0.0040	0.00429	67	25-150	
18O2 PFHxS	0.00647	0.0048	0.00455	70	25-150	
13C4 PFOS	0.00654	0.0049	0.00467	71	25-150	
13C8 FOSA	0.00684	0.0041	0.00397	58	25-150	
d3-NMeFOSAA	0.00684	0.0060	0.00639	93	25-150	
d5-NEtFOSAA	0.00684	0.0054	0.00593	87	25-150	
M2-6:2FTS	0.00650	0.012	0.0124	191	25-150	*
M2-8:2FTS	0.00655	0.014	0.0151	231	25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.07LLB_033.d

Lab ID: 320-37156-A-6-F MSD Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00271	0.00387	99	2	30	81-133	
Perfluoropentanoic acid (PFPeA)	0.00271	0.00235	87	1	30	79-120	
Perfluorohexanoic acid (PFHxA)	0.00271	0.00280	103	7	30	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00271	0.00264	97	6	30	76-124	
Perfluorooctanoic acid (PFOA)	0.00271	0.00259	95	5	30	76-121	
Perfluorononanoic acid (PFNA)	0.00271	0.00253	91	8	30	74-126	
Perfluorodecanoic acid (PFDA)	0.00271	0.00264	96	0	30	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00271	0.00299	107	2	30	74-114	
Perfluorododecanoic acid (PFDoA)	0.00271	0.00252	93	4	30	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00271	0.00251	93	3	30	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00271	0.00258	95	1	30	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00240	0.00222	93	2	30	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00247	0.00235	92	1	30	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00258	0.00253	98	1	30	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00251	0.00297	92	0	30	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00261	0.00238	91	4	30	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00271	0.00260	96	1	30	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00271	0.00261 J	96	1	30	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00271	0.00260 J	96	2	30	65-135	
6:2FTS	0.00257	0.00217 J	84	8	30	65-135	
8:2FTS	0.00260	0.00239 J	92	0	30	65-135	
13C4 PFBA	0.00677	0.00345	51			25-150	
13C5 PFPeA	0.00677	0.00421	62			25-150	
13C2 PFHxA	0.00677	0.00407	60			25-150	
13C4-PFHpA	0.00677	0.00433	64			25-150	
13C4 PFOA	0.00677	0.00478	71			25-150	
13C5 PFNA	0.00677	0.00540	80			25-150	
13C2 PFDA	0.00677	0.00586	86			25-150	
13C2 PFUnA	0.00677	0.00576	85			25-150	
13C2 PFDoA	0.00677	0.00512	76			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.07LLB_033.d

Lab ID: 320-37156-A-6-F MSD Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C2-PFTeDA	0.00677	0.00478	71			25-150	
13C3-PFBS	0.00630	0.00424	67			25-150	
18O2 PFHxS	0.00641	0.00427	67			25-150	
13C4 PFOS	0.00648	0.00465	72			25-150	
13C8 FOSA	0.00677	0.00400	59			25-150	
d3-NMeFOSAA	0.00677	0.00703	104			25-150	
d5-NEtFOSAA	0.00677	0.00647	96			25-150	
M2-6:2FTS	0.00644	0.0129	200			25-150	*
M2-8:2FTS	0.00649	0.0155	239			25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab File ID: 2018.04.07LLB_022.d Lab Sample ID: MB 320-215980/1-A

Matrix: Solid Date Extracted: 04/02/2018 23:18

Instrument ID: A8_N Date Analyzed: 04/07/2018 20:14

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-215980/2-A	2018.04.07LLB_023.d	04/07/2018 20:22
SB043 (0-2")	320-37380-1	2018.04.07LLB_024.d	04/07/2018 20:29
SB043 (2"-2')	320-37380-2	2018.04.07LLB_025.d	04/07/2018 20:37
SB044 (0-2")	320-37380-3	2018.04.07LLB_026.d	04/07/2018 20:45
SB044 (2"-2')	320-37380-4	2018.04.07LLB_027.d	04/07/2018 20:53
SB045 (0-2")	320-37380-5	2018.04.07LLB_028.d	04/07/2018 21:01
SB045 (2"-2')	320-37380-6	2018.04.07LLB_029.d	04/07/2018 21:09
	320-37156-A-6-E MS	2018.04.07LLB_031.d	04/07/2018 21:24
	320-37156-A-6-F MSD	2018.04.07LLB_033.d	04/07/2018 21:40
SB043 (0-2") DL	320-37380-1 DL	2018.04.09LLA_044.d	04/09/2018 18:26
SB044 (0-2") DL	320-37380-3 DL	2018.04.09LLA_046.d	04/09/2018 18:42
SB044 (2"-2') DL	320-37380-4 DL	2018.04.09LLA_047.d	04/09/2018 18:50
SB045 (0-2") DL	320-37380-5 DL	2018.04.09LLA_048.d	04/09/2018 18:58
SB045 (2"-2') DL	320-37380-6 DL	2018.04.09LLA_049.d	04/09/2018 19:05

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Sample No.: IC 320-215537/5 Date Analyzed: 03/29/2018 17:50

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.03.29A_ICALB_0 Heated Purge: (Y/N) N

Calibration ID: 38353

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4517618	2.69				
UPPER LIMIT		6776427	2.89				
LOWER LIMIT		2258809	2.49				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-215537/9		4317989	2.69				
ICV 320-215537/10		4235745	2.68				
CCV 320-216866/3 CCVIS		4761836	2.67				
CCV 320-216928/3 CCVIS		4451637	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Sample No.: CCV 320-216866/3 Date Analyzed: 04/07/2018 20:06

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.07LLB_021.d Heated Purge: (Y/N) N

Calibration ID: 38353

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4761836	2.67				
UPPER LIMIT		7142754	2.87				
LOWER LIMIT		2380918	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-216866/1		4585054	2.66				
CCVL 320-216866/2		4718869	2.67				
MB 320-215980/1-A		5853710	2.66				
LCS 320-215980/2-A		5446296	2.67				
320-37380-1	SB043 (0-2")	5279908	2.67				
320-37380-2	SB043 (2"-2')	6383530	2.66				
320-37380-3	SB044 (0-2")	5140439	2.65				
320-37380-4	SB044 (2"-2')	5235837	2.65				
320-37380-5	SB045 (0-2")	5310214	2.65				
320-37380-6	SB045 (2"-2')	4857184	2.66				
320-37156-A-6-E MS		5881952	2.65				
CCV 320-216866/14		4573078	2.66				
320-37156-A-6-F MSD		5977621	2.66				
CCV 320-216866/17		4815973	2.66				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Sample No.: CCV 320-216928/3 Date Analyzed: 04/09/2018 08:56

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.09LLA_006.d Heated Purge: (Y/N) N

Calibration ID: 38353

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4451637	2.68				
UPPER LIMIT		6677456	2.88				
LOWER LIMIT		2225819	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-216928/1		4473503	2.70				
CCVL 320-216928/2		4402064	2.68				
CCV 320-217070/1		4482226	2.66				
320-37380-1 DL	SB043 (0-2") DL	521438*	2.68				
320-37380-3 DL	SB044 (0-2") DL	394124*	2.67				
320-37380-4 DL	SB044 (2"-2') DL	473454*	2.68				
320-37380-5 DL	SB045 (0-2") DL	515394*	2.68				
320-37380-6 DL	SB045 (2"-2') DL	403954*	2.67				
CCV 320-217070/11		4317980	2.67				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB043 (0-2") | Lab Sample ID: 320-37380-1

Matrix: Solid | Lab File ID: 2018.04.07LLB_024.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 12:30

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/07/2018 20:29

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 12.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0013	B	0.00023	0.000032
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000096	J	0.00023	0.000088
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00034		0.00023	0.000048
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000064	J	0.00023	0.000033
335-67-1	Perfluorooctanoic acid (PFOA)	0.00035		0.00023	0.000099
375-95-1	Perfluorononanoic acid (PFNA)	0.00022	J	0.00023	0.000041
335-76-2	Perfluorodecanoic acid (PFDA)	0.00036		0.00023	0.000025
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0027		0.00023	0.000041
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00042		0.00023	0.000077
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.0030		0.00023	0.000059
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00019	J	0.00023	0.000062
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000038	J	0.00023	0.000029
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00052		0.00023	0.000036
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000040	U	0.00023	0.000040
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0081	B	0.00057	0.00023
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000099	J	0.00023	0.000045
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00012	J	0.00023	0.000094
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00045	U	0.0023	0.00045
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00042	U	0.0023	0.00042

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Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 12.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	60		25-150
STL01893	13C5 PFPeA	70		25-150
STL00993	13C2 PFHxA	63		25-150
STL01892	13C4-PFHpA	70		25-150
STL00990	13C4 PFOA	79		25-150
STL00995	13C5 PFNA	84		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	101		25-150
STL00998	13C2 PFDoA	90		25-150
STL02116	13C2-PFTeDA	85		25-150
STL02337	13C3-PFBS	76		25-150
STL00994	18O2 PFHxS	82		25-150
STL00991	13C4 PFOS	84		25-150
STL01056	13C8 FOSA	70		25-150
STL02118	d3-NMeFOSAA	111		25-150
STL02117	d5-NEtFOSAA	103		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d
Lims ID: 320-37380-A-1-B
Client ID: SB043 (0-2")
Sample Type: Client
Inject. Date: 07-Apr-2018 20:29:54 ALS Bottle#: 15 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37380-a-1-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 12:37:53 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 09:42:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.424	0.004	1.000	4407361	1.51		60.4	25772	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.305	1.429	-0.124	0.914	912613	0.5601			40.5	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.689	1.692	-0.003	0.995	67035	0.0419			4.3	
D 3 13C5-PFPeA										
267.90 > 223.00	1.698	1.693	0.005	0.560	3338938	1.76		70.3	20642	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.734	1.728	0.006	1.000	42978	0.0165			15.2	M
298.90 > 99.00	1.734	1.728	0.006	1.000	11629		3.70(1.25-3.74)		5.2	M
D 47 13C3-PFBS										
301.90 > 83.00	1.734	1.729	0.005	1.000	76864	1.77		76.0	61.0	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.956	1.980	-0.024	0.989	199969	0.1476			24.9	RM
313.00 > 119.00	1.977	1.980	-0.003	1.000	4386		45.59(5.03-15.10)		13.8	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.977	1.981	-0.004	1.000	3309762	1.58		63.2	35826	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.306	-0.004	1.000	42202	0.0277			11.6	
363.00 > 169.00	2.302	2.306	-0.004	1.000	13340		3.16(1.13-3.40)		38.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.307	-0.005	1.000	3503934	1.74		69.6	49432	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.316	2.319	-0.003	1.000	519269	0.2258			170	
399.00 > 99.00	2.316	2.319	-0.003	1.000	170124		3.05(1.50-4.49)		134	
D 11 18O2 PFHxS										
403.00 > 84.00	2.316	2.320	-0.004	1.000	4868494	1.94		82.0	42660	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.634	2.636	-0.002	1.000	86590	0.0445			251	
D 12 M2-6:2FTS										
429.00 > 81.00	2.634	2.637	-0.003	1.000	2472079	5.31		224	6749	
* 62 13C2-PFOA										
415.00 > 370.00	2.666	2.659	0.007		5279908	2.50			55785	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.658	2.659	-0.001	0.997	281439	0.1509			59.5	
413.00 > 169.00	2.666	2.659	0.007	1.000	178979		1.57(0.84-2.52)		287	
D 14 13C4 PFOA										
417.00 > 372.00	2.666	2.660	0.006	1.000	3930976	1.99		79.4	78617	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.666	2.667	-0.001	1.000	30812	0.0158			27.6	M
449.00 > 99.00	2.673	2.667	0.006	1.003	8752		3.52(1.94-5.82)		17.6	M
20 Perfluorononanoic acid										M
463.00 > 419.00	3.032	3.029	0.003	1.000	141525	0.0974			78.9	
463.00 > 169.00	3.032	3.029	0.003	1.000	28642		4.94(1.90-5.69)		97.4	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.026	3.029	-0.003	1.000	5914902	3.54			5520	
499.00 > 99.00	3.026	3.029	-0.003	1.000	1304256		4.54(2.31-6.93)		4104	
D 19 13C5 PFNA										
468.00 > 423.00	3.032	3.031	0.001	1.000	3530436	2.11		84.3	43373	
D 18 13C4 PFOS										
503.00 > 80.00	3.026	3.031	-0.005	1.000	3491905	2.00		83.8	5754	
D 21 13C8 FOSA										
506.00 > 78.00	3.370	3.360	0.010	1.000	4283436	1.74		69.6	36759	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.370	3.368	0.002	1.000	90571	0.0535			152	M
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.379	3.377	0.002	1.000	245849	0.1280			2862	
D 26 M2-8:2FTS										
529.00 > 81.00	3.379	3.379	0.0	1.000	3410498	6.30		263	6073	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.389	3.386	0.003	1.000	222986	0.1579			99.8	M
513.00 > 169.00	3.389	3.386	0.003	1.000	49300		4.52(2.36-7.09)		355	
D 23 13C2 PFDA										
515.00 > 470.00	3.389	3.388	0.001	1.000	3568011	2.52		101	59448	
28 N-methyl perfluorooctane sulfonami										M
570.00 > 419.00	3.557	3.545	0.012	1.005	1814	0.002049			12.2	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.538	3.547	-0.009	1.000	2099936	2.78		111	20544	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.698	3.706	-0.008	1.000	43772	0.0432			35.2	M
599.00 > 99.00	3.698	3.706	-0.008	1.000	22377		1.96(1.39-4.16)		137	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.719	3.708	0.011	1.000	2038054	2.57		103	21900	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.719	3.717	0.002	1.000	1120902	1.19			980	
563.00 > 169.00	3.719	3.717	0.002	1.000	272813		4.11(2.12-6.36)		3124	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.730	3.717	0.013	1.003	33840	0.0453			457	
D 30 13C2 PFUnA										
565.00 > 520.00	3.719	3.719	0.0	1.000	2924215	2.53		101	41377	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.009	4.006	0.003	1.000	227667	0.1823			57.6	
613.00 > 169.00	4.009	4.006	0.003	1.000	62796		3.63(2.13-6.40)		91.6	M
D 36 13C2 PFDoA										
615.00 > 570.00	4.009	4.009	0.0	1.000	2888708	2.25		89.9	28357	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.262	4.279	-0.017	1.000	1744191	1.31			546	
663.00 > 169.00	4.252	4.279	-0.027	0.998	523293		3.33(1.25-3.76)		102	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.501	4.511	-0.010	1.000	3465717	2.12		84.9	17350	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.490	4.511	-0.021	0.998	29194	0.0843			89.1	
713.00 > 219.00	4.490	4.511	-0.021	0.998	22151		1.32(0.71-2.13)		87.0	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 12:38:02 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d

Injection Date: 07-Apr-2018 20:29:54 Instrument ID: A8_N

Lims ID: 320-37380-A-1-B Lab Sample ID: 320-37380-1

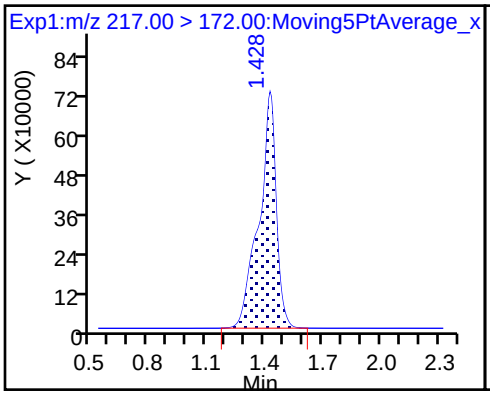
Client ID: SB043 (0-2")

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 6

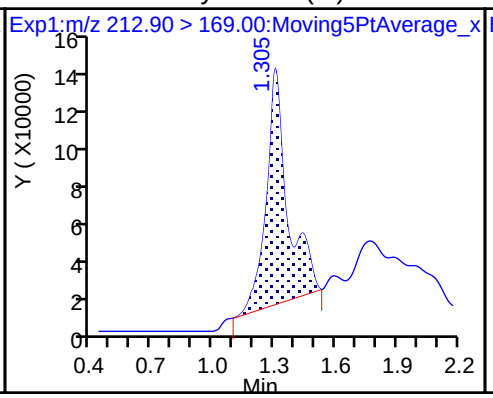
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

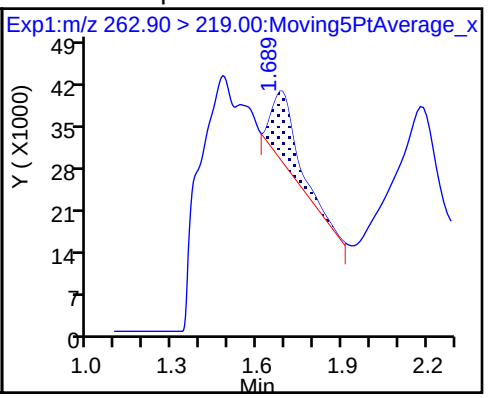
D 1 13C4 PFBA



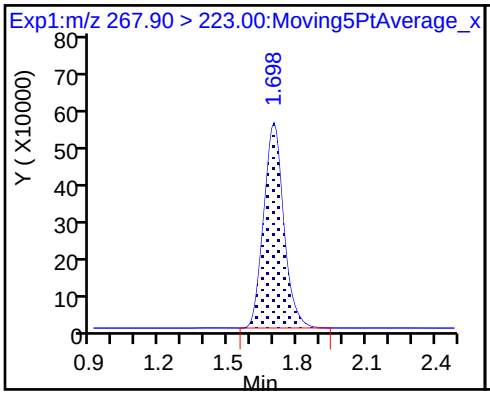
2 Perfluorobutyric acid (M)



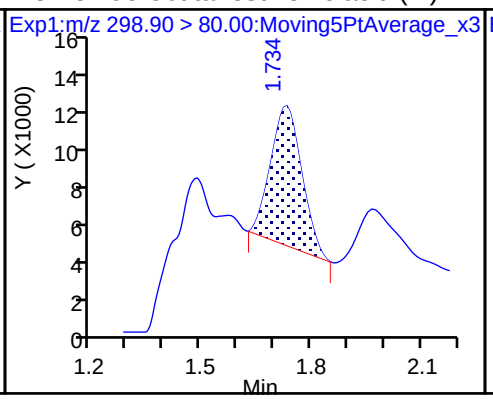
4 Perfluoropentanoic acid



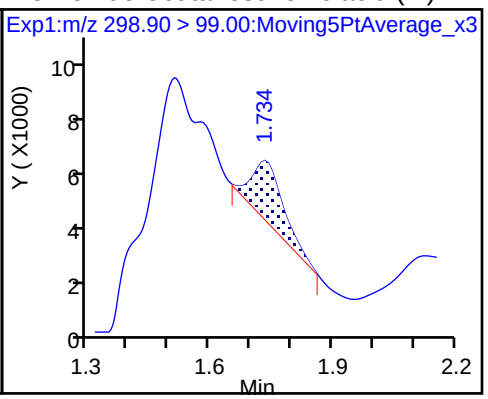
D 3 13C5-PFPeA



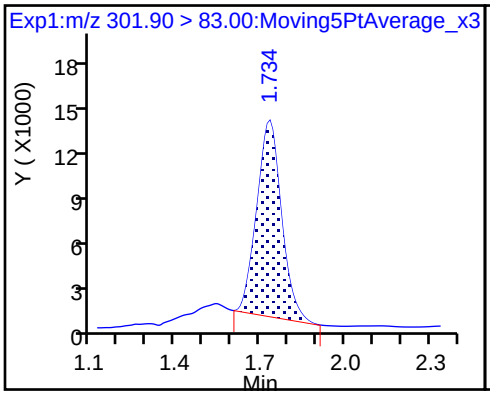
5 Perfluorobutanesulfonic acid (M)



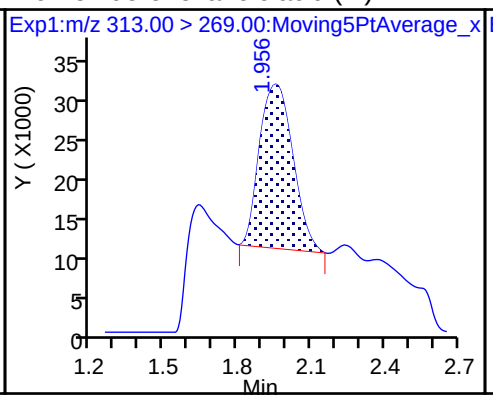
5 Perfluorobutanesulfonic acid (M)



D 47 13C3-PFBS



6 Perfluorohexanoic acid (M)



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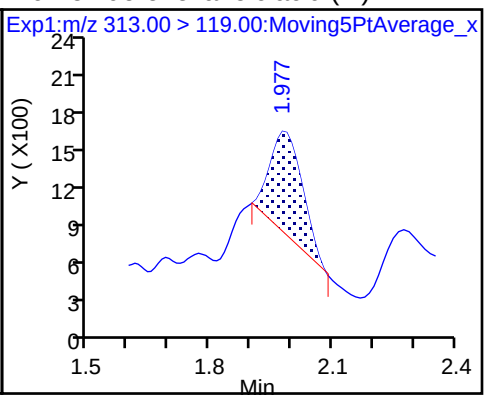
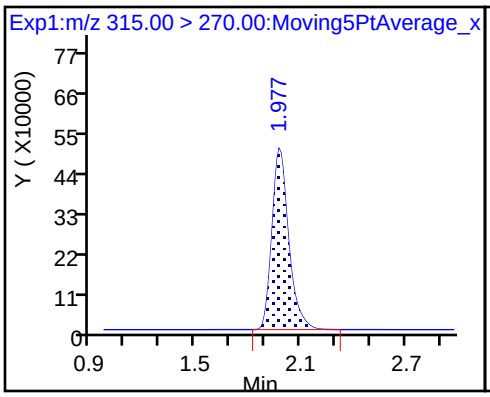
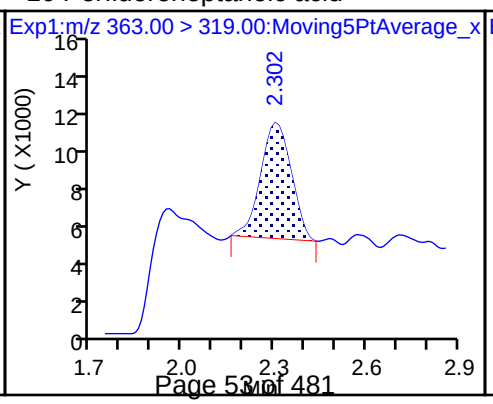


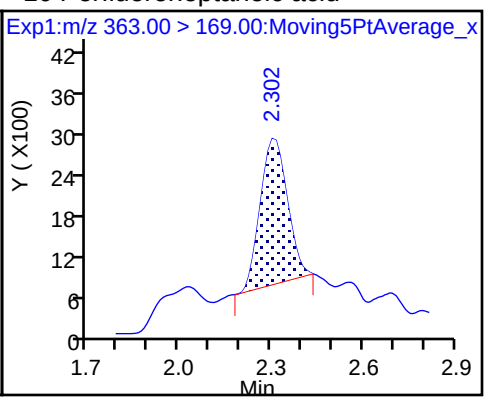
D 7 13C2 PFHxA



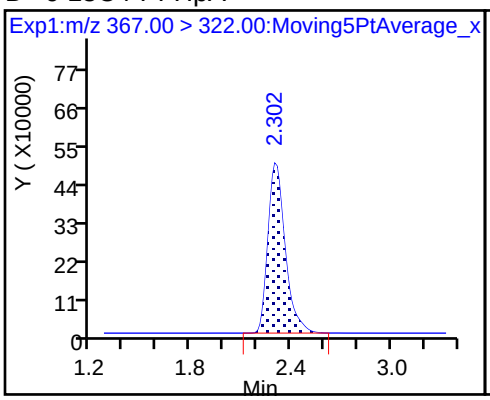
10 Perfluoroheptanoic acid



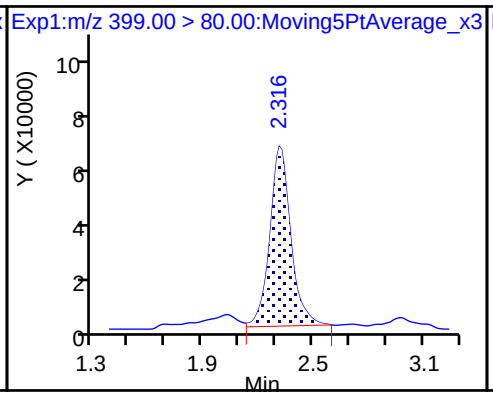
10 Perfluoroheptanoic acid



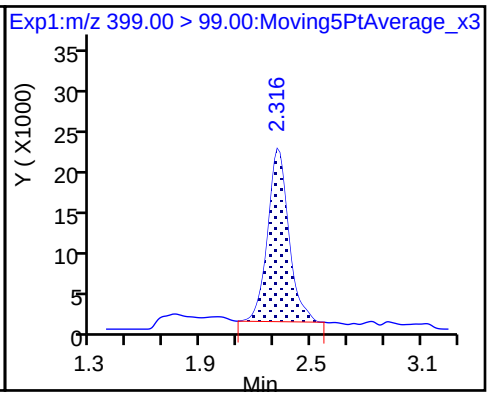
D 9 13C4-PFHpA



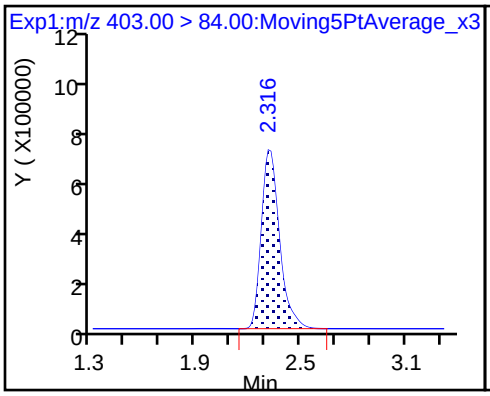
8 Perfluorohexanesulfonic acid



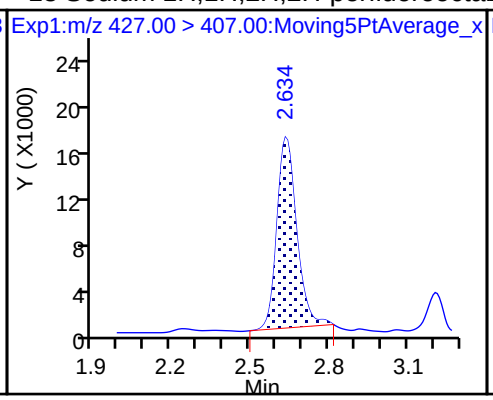
8 Perfluorohexanesulfonic acid



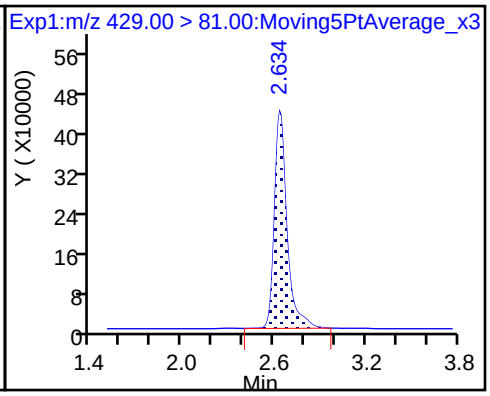
D 11 18O2 PFHxS



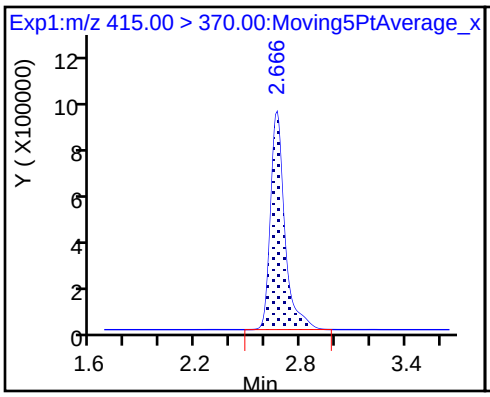
13 Sodium 1H,1H,2H,2H-perfluorooctane



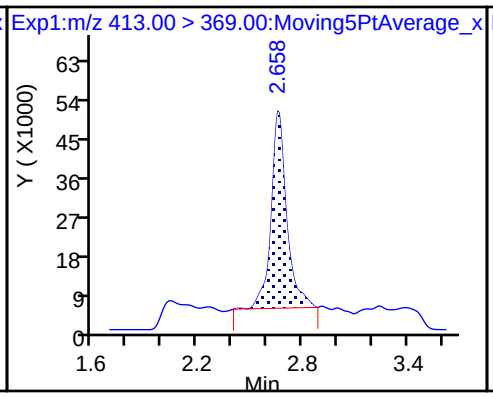
D 12 M2-6:2FTS



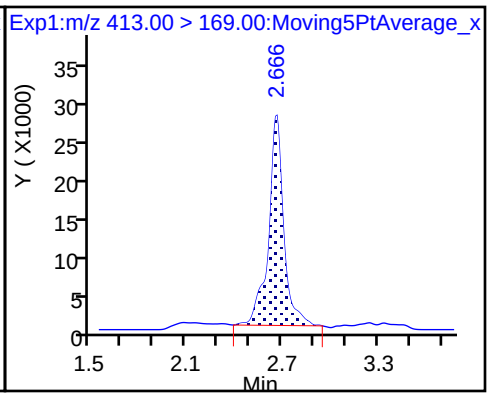
* 62 13C2-PFOA



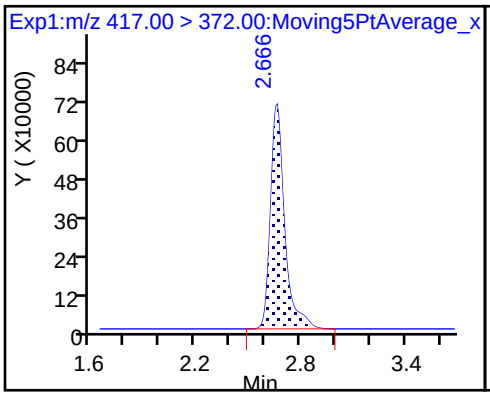
15 Perfluorooctanoic acid



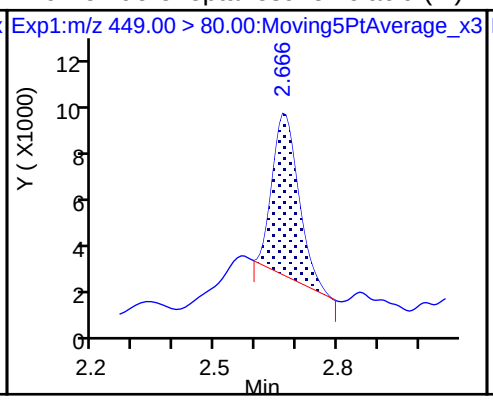
15 Perfluorooctanoic acid



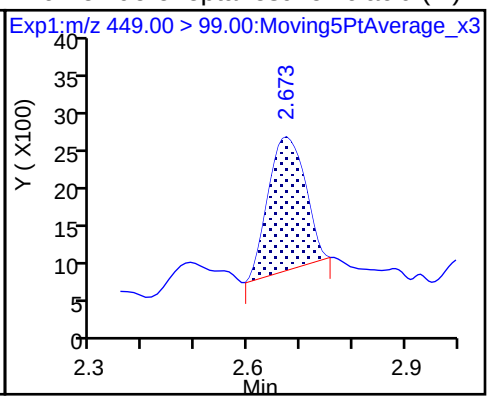
D 14 13C4 PFOA



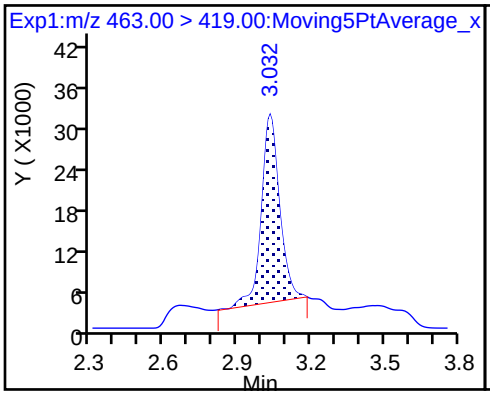
16 Perfluoroheptanesulfonic acid (M)



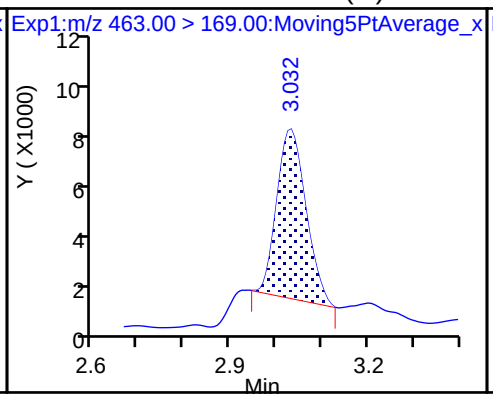
16 Perfluoroheptanesulfonic acid (M)



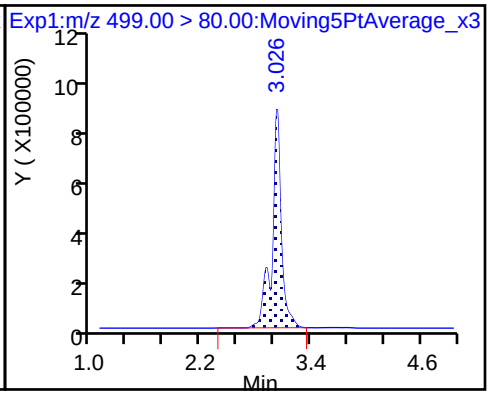
20 Perfluorononanoic acid



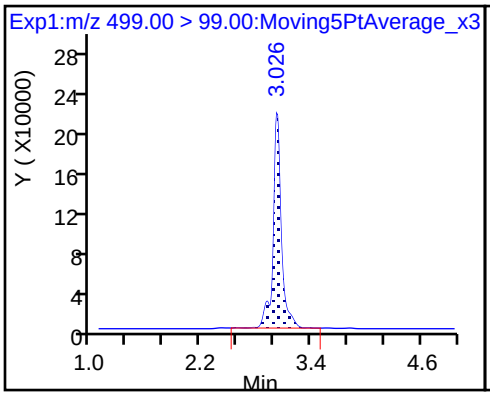
20 Perfluorononanoic acid (M)



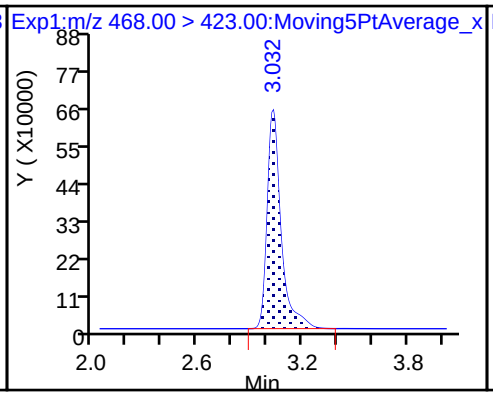
17 Perfluorooctane sulfonic acid



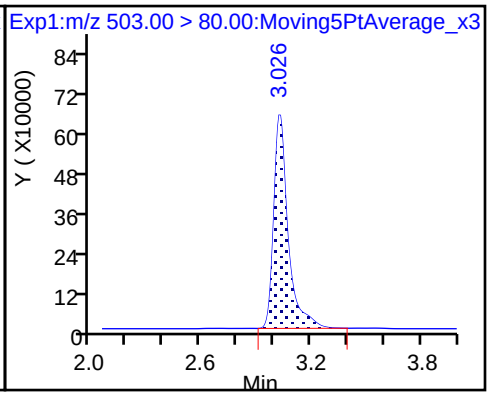
17 Perfluorooctane sulfonic acid



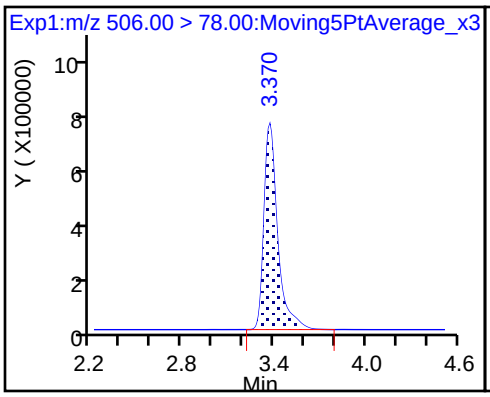
D 19 13C5 PFNA



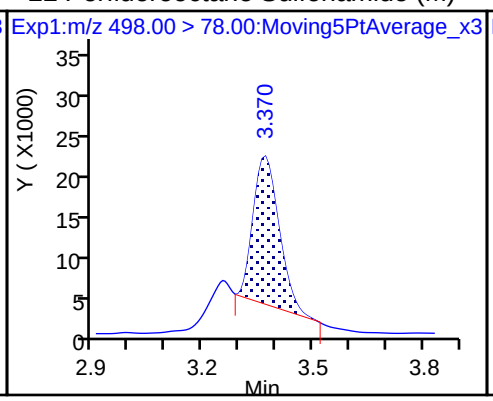
D 18 13C4 PFOS



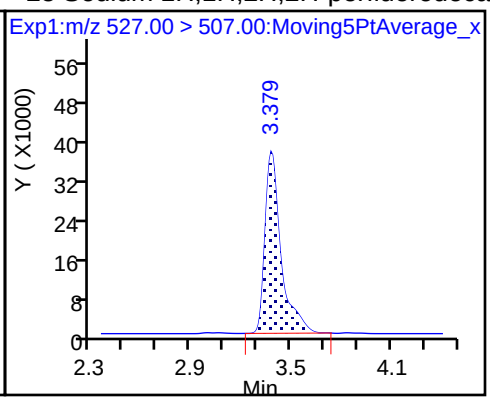
D 21 13C8 FOSA



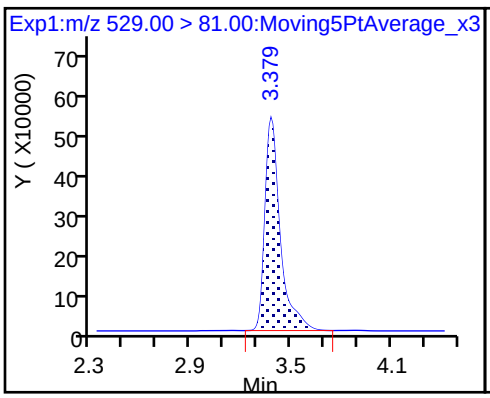
22 Perfluorooctane Sulfonamide (M)



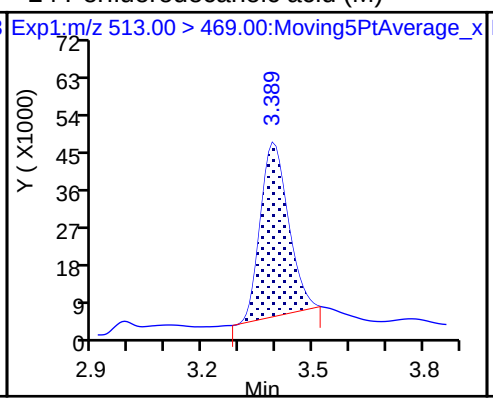
25 Sodium 1H,1H,2H,2H-perfluorodecane



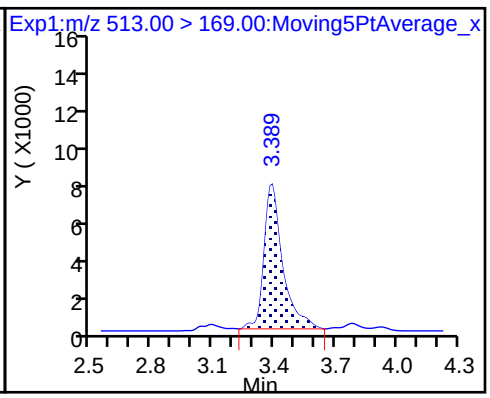
D 26 M2-8:2FTS



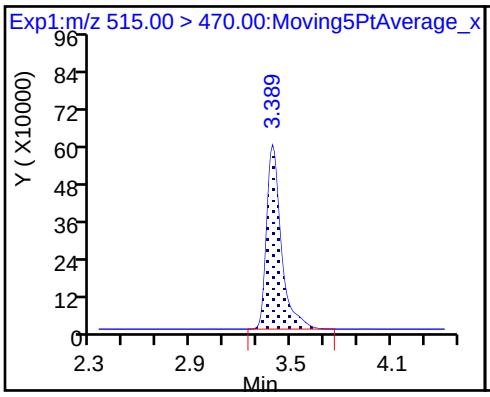
24 Perfluorodecanoic acid (M)



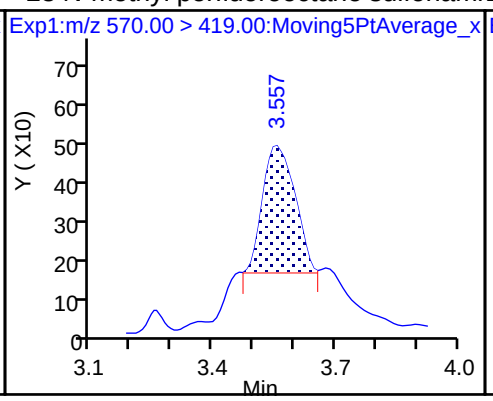
24 Perfluorodecanoic acid



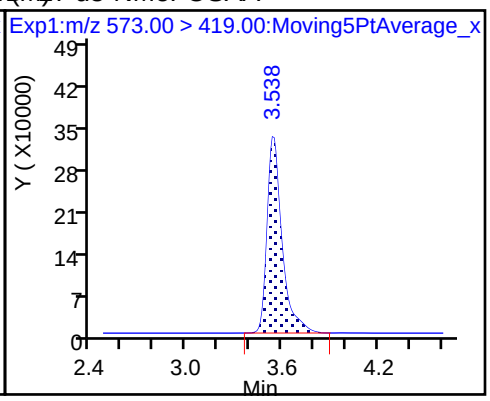
D 23 13C2 PFDA



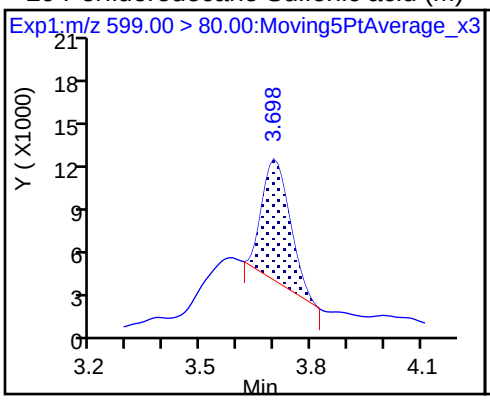
28 N-methyl perfluorooctane sulfonamid (M)



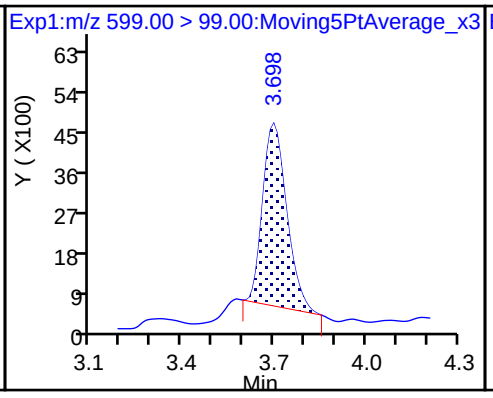
D 27 d3-NMeFOSAA



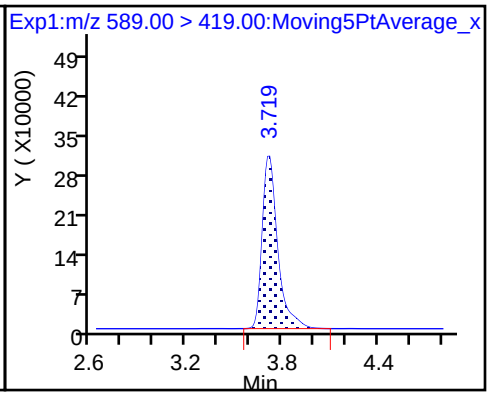
29 Perfluorodecane Sulfonic acid (M)



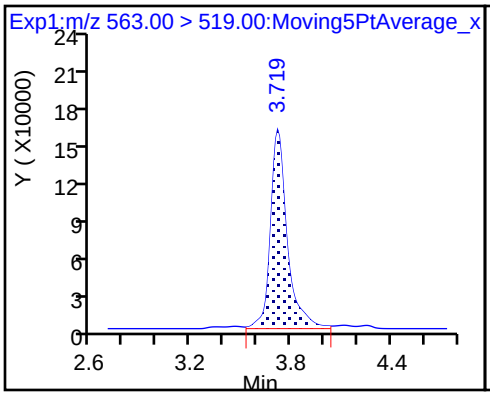
29 Perfluorodecane Sulfonic acid



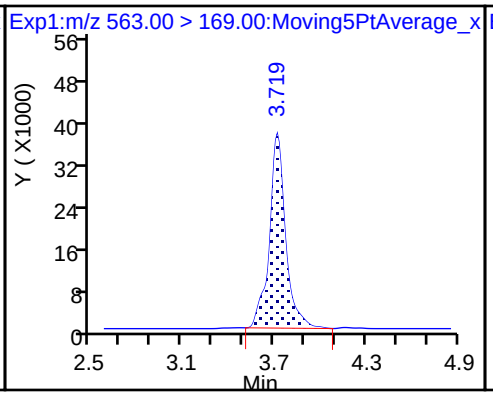
D 32 d5-NEtFOSAA



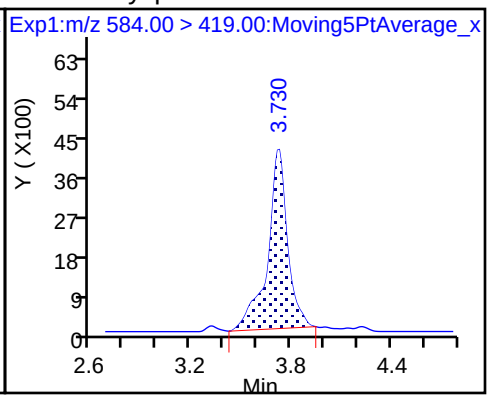
31 Perfluoroundecanoic acid



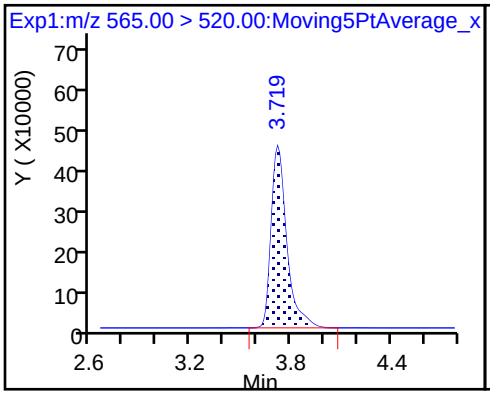
31 Perfluoroundecanoic acid



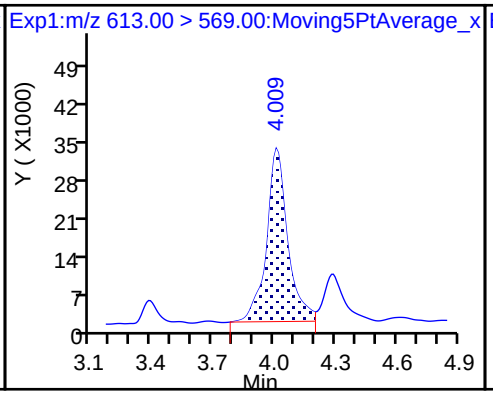
33 N-ethyl perfluorooctane sulfonamid



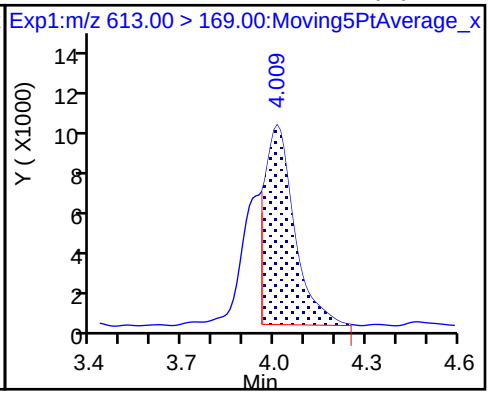
D 30 13C2 PFUnA



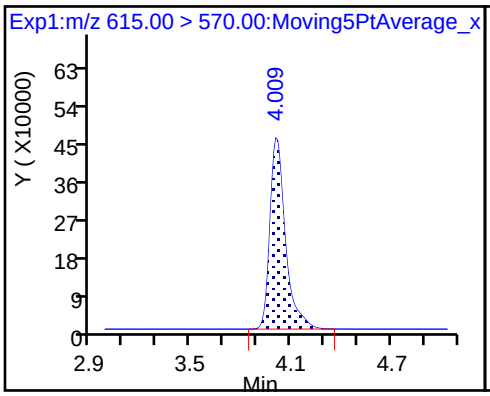
37 Perfluorododecanoic acid



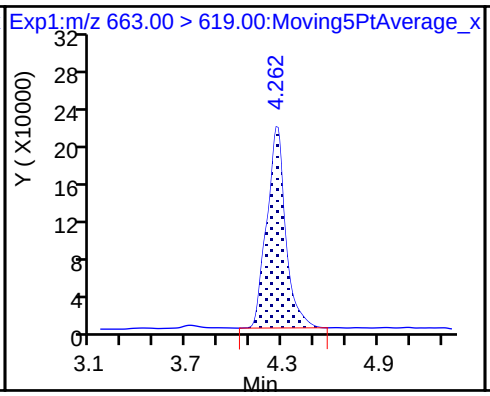
37 Perfluorododecanoic acid (M)



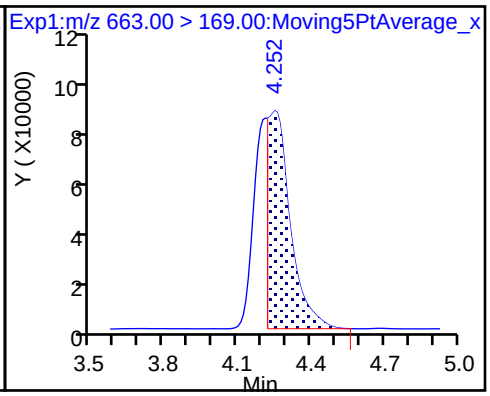
D 36 13C2 PFDoA



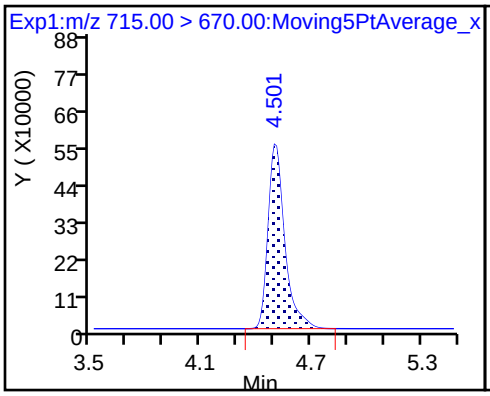
41 Perfluorotridecanoic acid



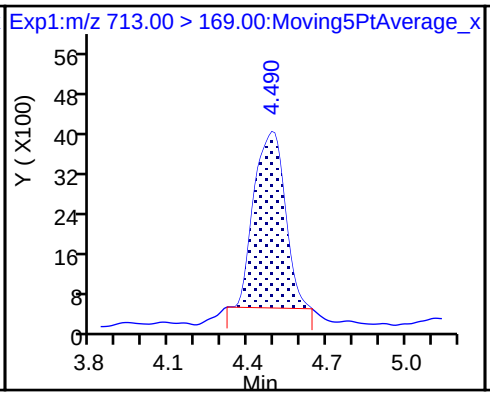
41 Perfluorotridecanoic acid



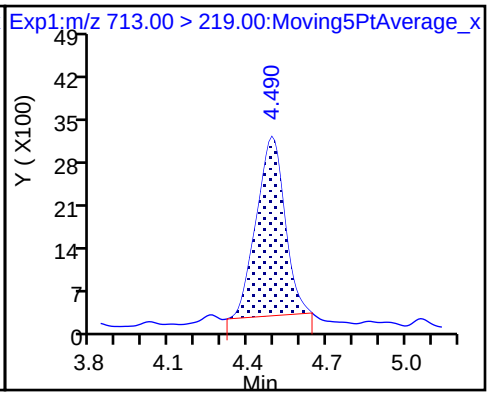
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

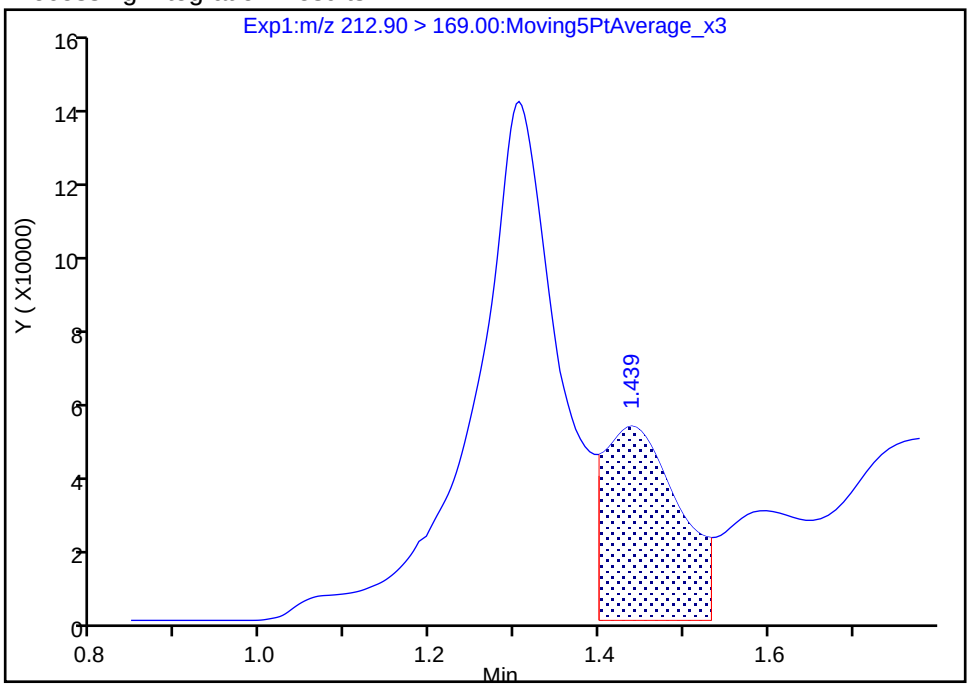
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

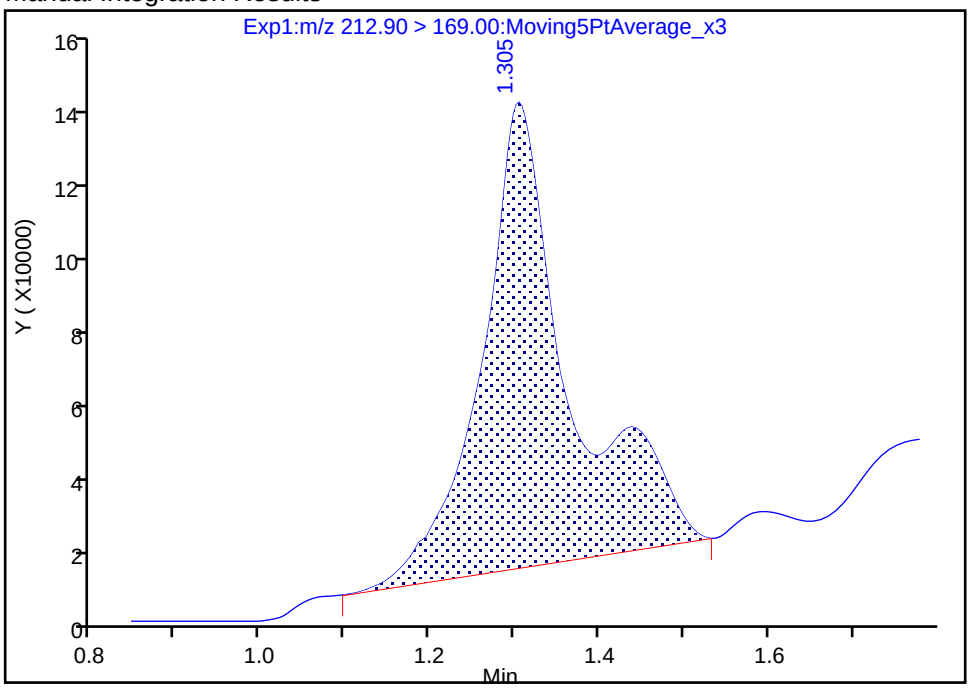
Processing Integration Results

RT: 1.44
Area: 318870
Amount: 0.195713
Amount Units: ng/ml



Manual Integration Results

RT: 1.31
Area: 912613
Amount: 0.560134
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 12:30:32

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

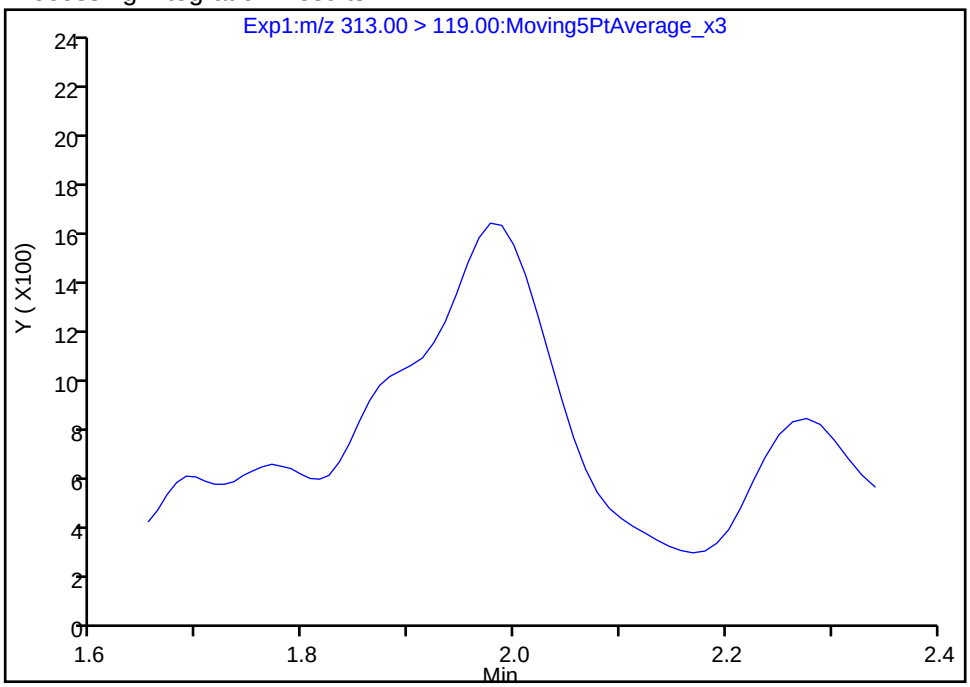
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

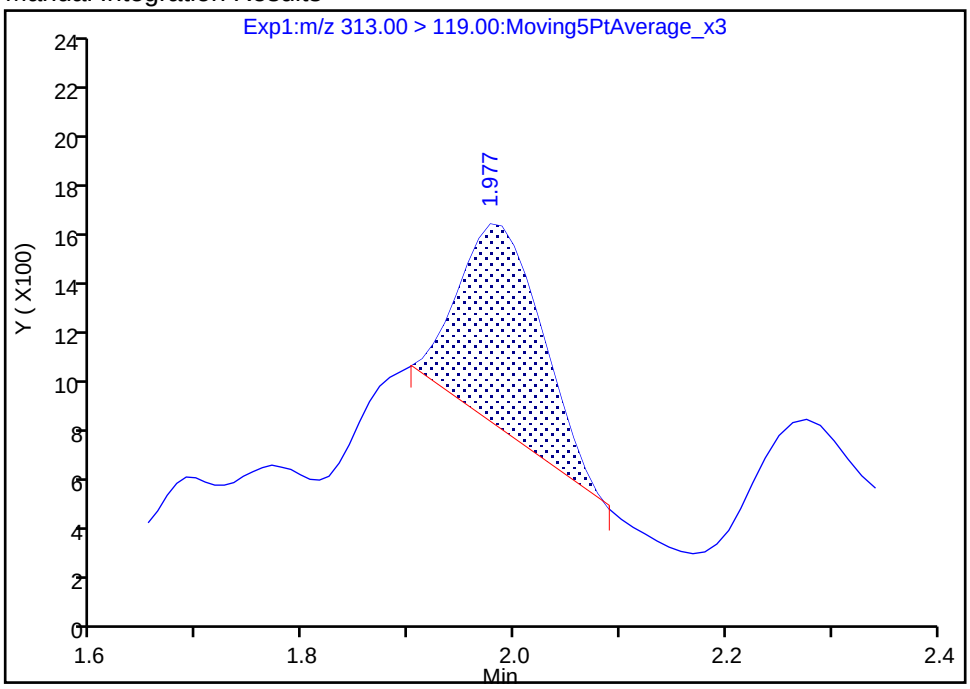
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.98
Area: 4386
Amount: 0.147606
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:40:36
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

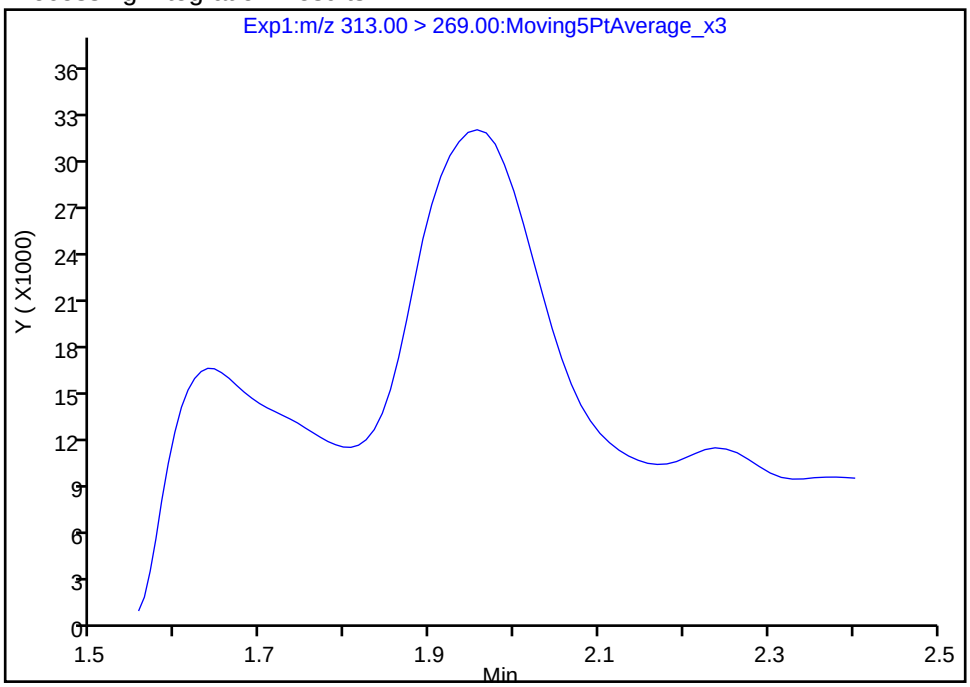
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

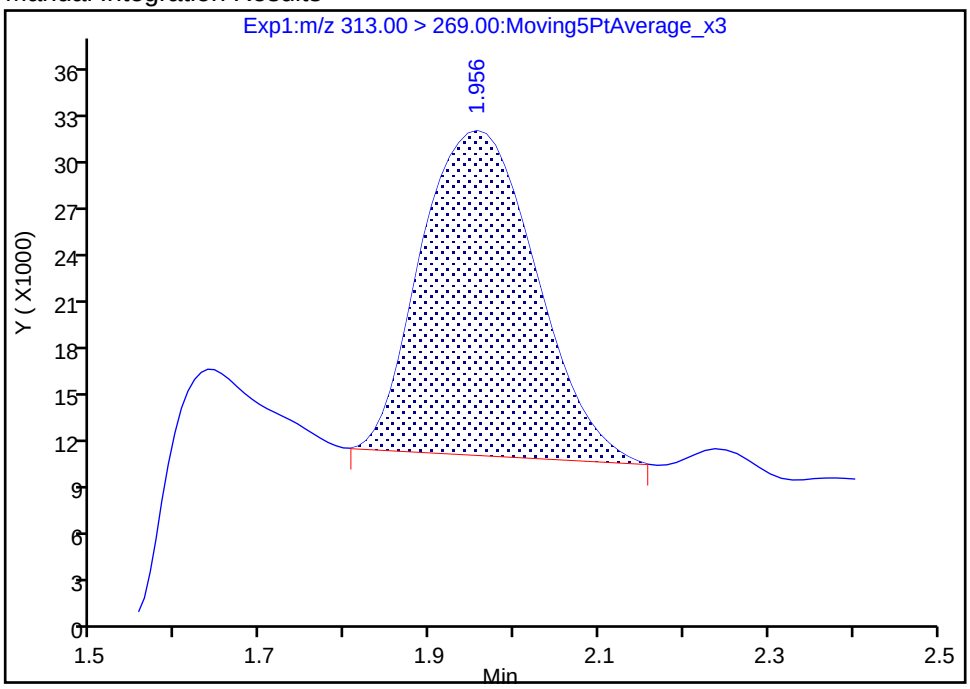
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.96
Area: 199969
Amount: 0.147606
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:40:36
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

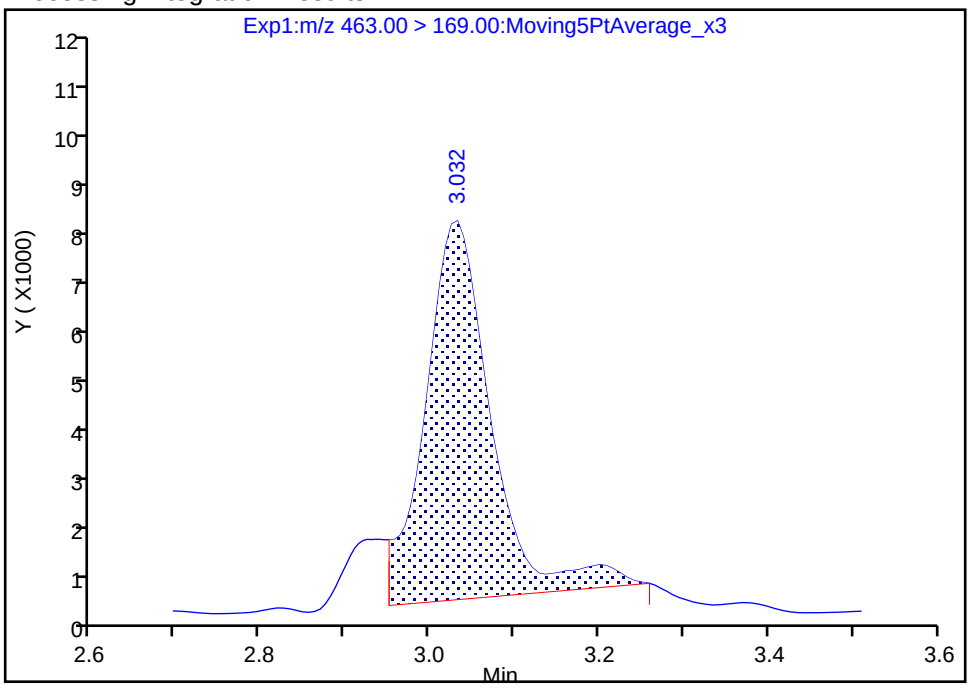
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

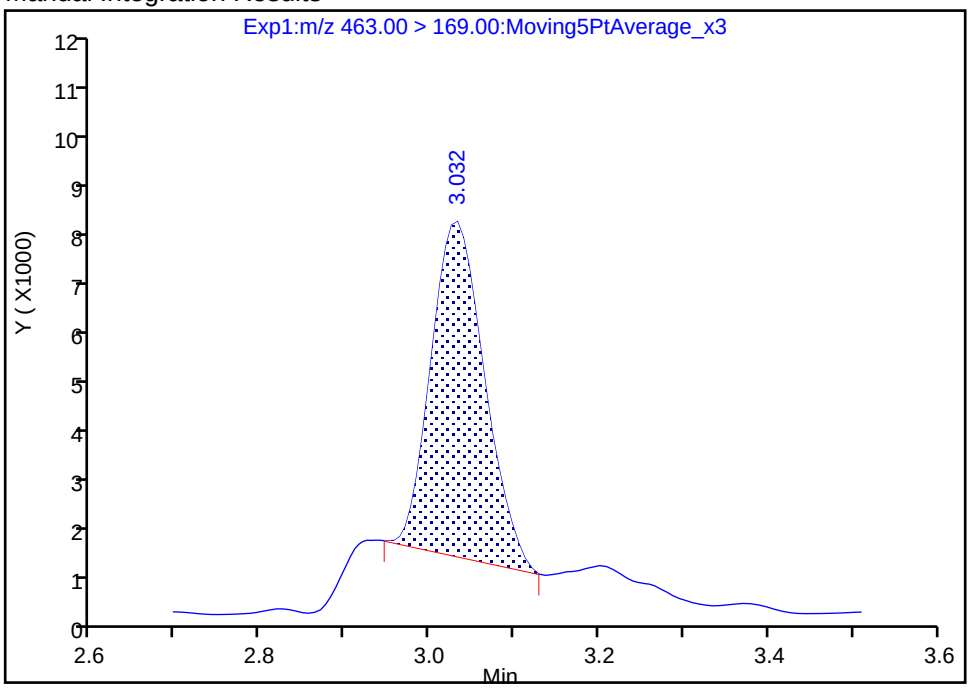
Processing Integration Results

RT: 3.03
Area: 39590
Amount: 0.097392
Amount Units: ng/ml



Manual Integration Results

RT: 3.03
Area: 28642
Amount: 0.097392
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:41:08

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

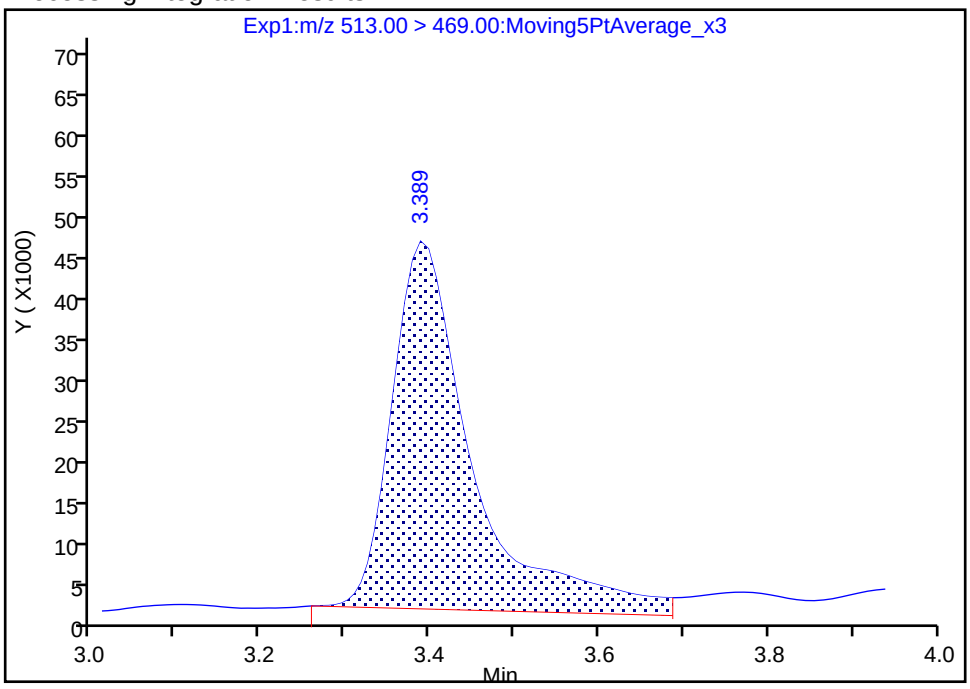
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

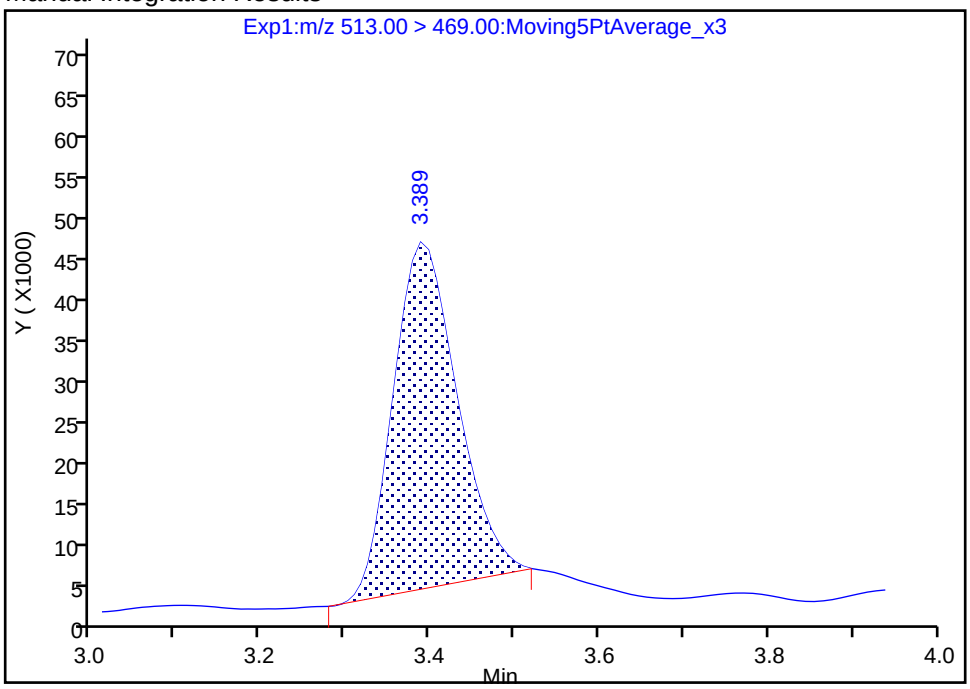
Processing Integration Results

RT: 3.39
Area: 298033
Amount: 0.211091
Amount Units: ng/ml



Manual Integration Results

RT: 3.39
Area: 222986
Amount: 0.157937
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:41:28

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

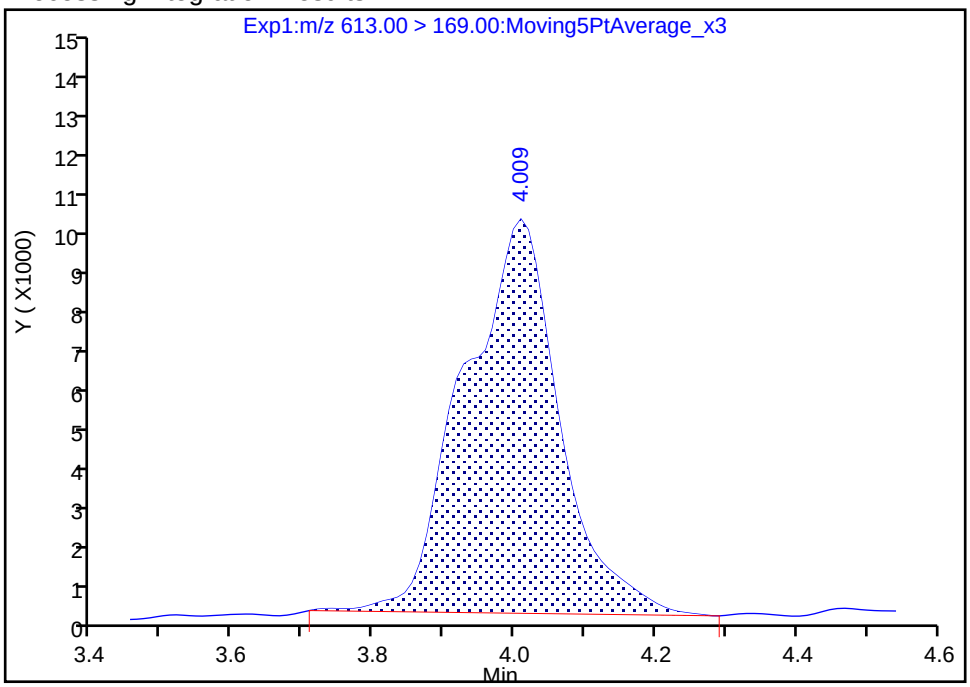
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

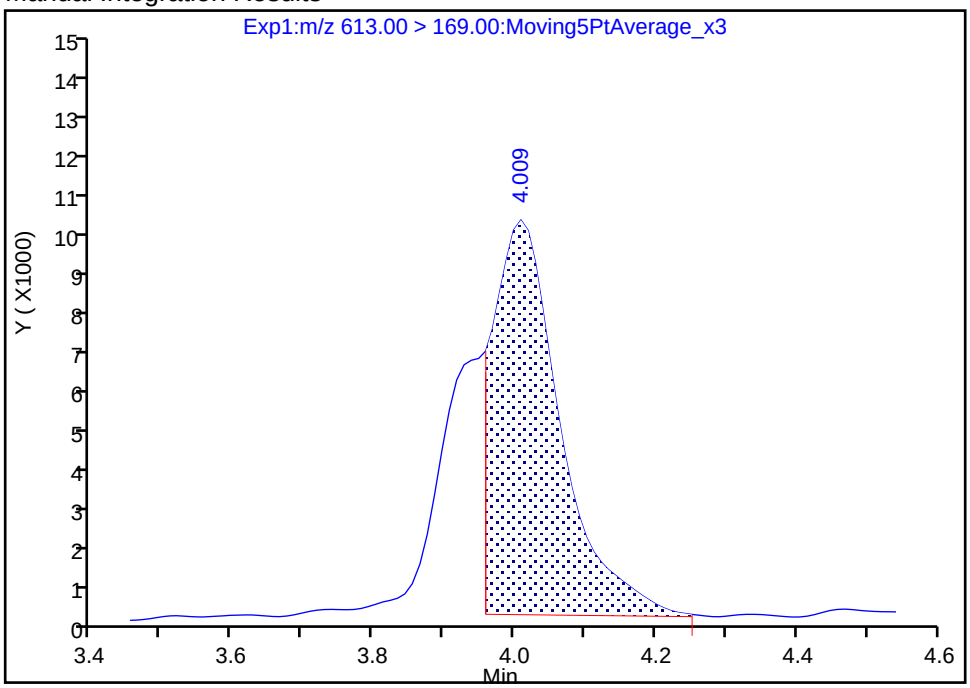
Processing Integration Results

RT: 4.01
Area: 90685
Amount: 0.182304
Amount Units: ng/ml



Manual Integration Results

RT: 4.01
Area: 62796
Amount: 0.182304
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:41:59

Audit Action: Manually Integrated Audit Reason: Split Peak

TestAmerica Sacramento

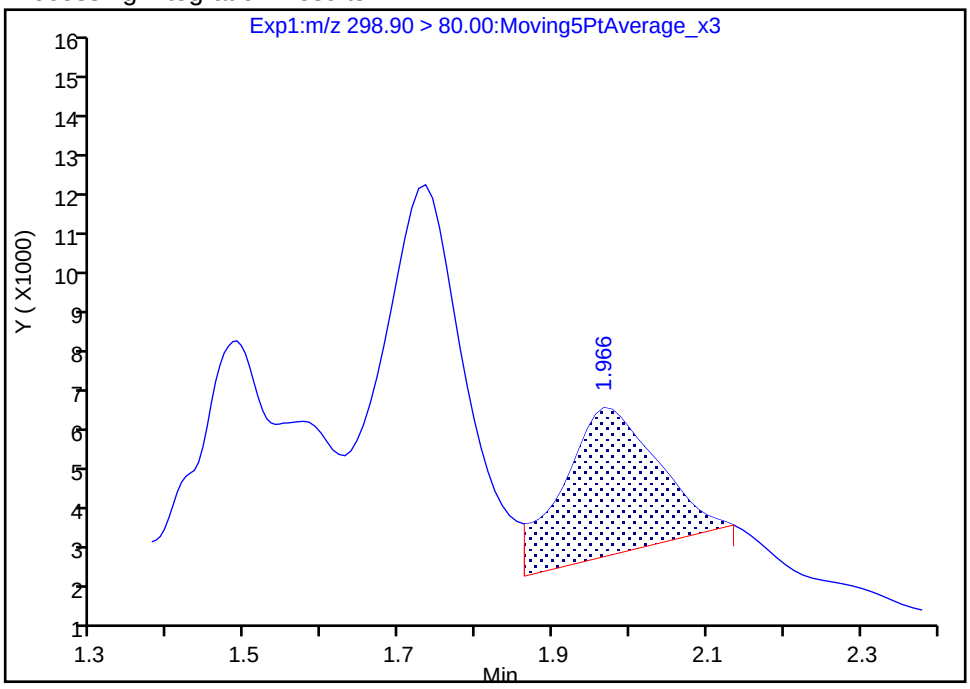
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

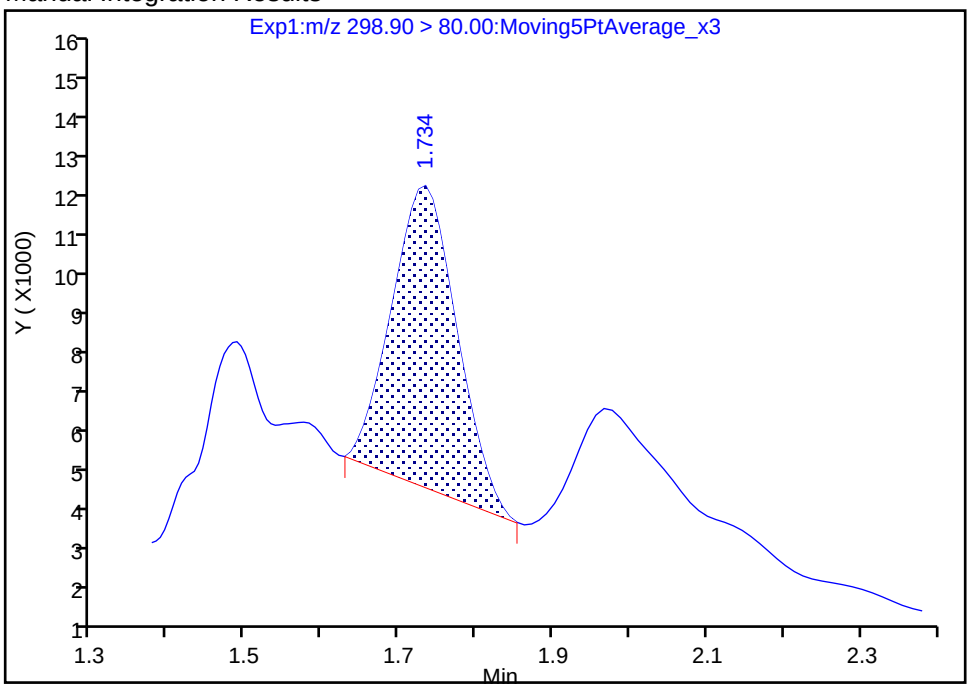
Processing Integration Results

RT: 1.97
Area: 30474
Amount: 0.011684
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 42978
Amount: 0.016478
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:40:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

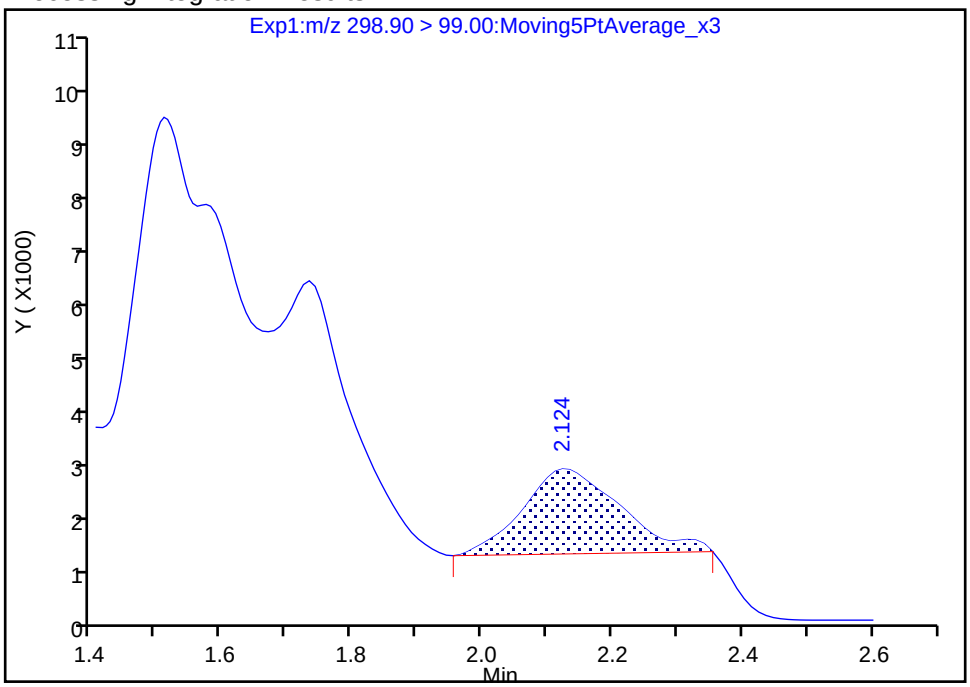
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

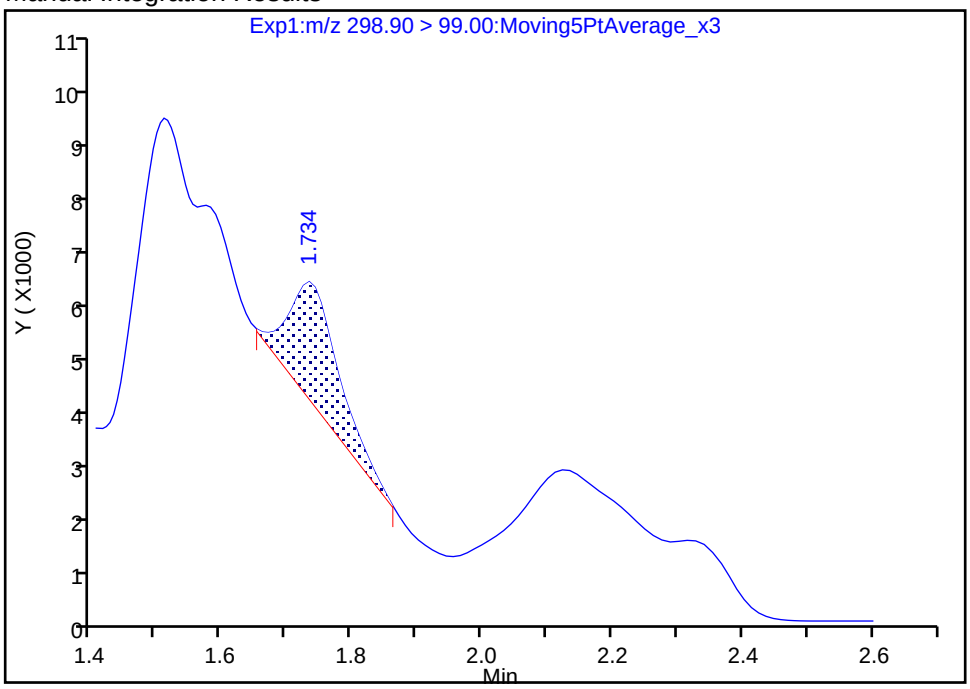
Processing Integration Results

RT: 2.12
Area: 16278
Amount: 0.011684
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 11629
Amount: 0.016478
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:40:21

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

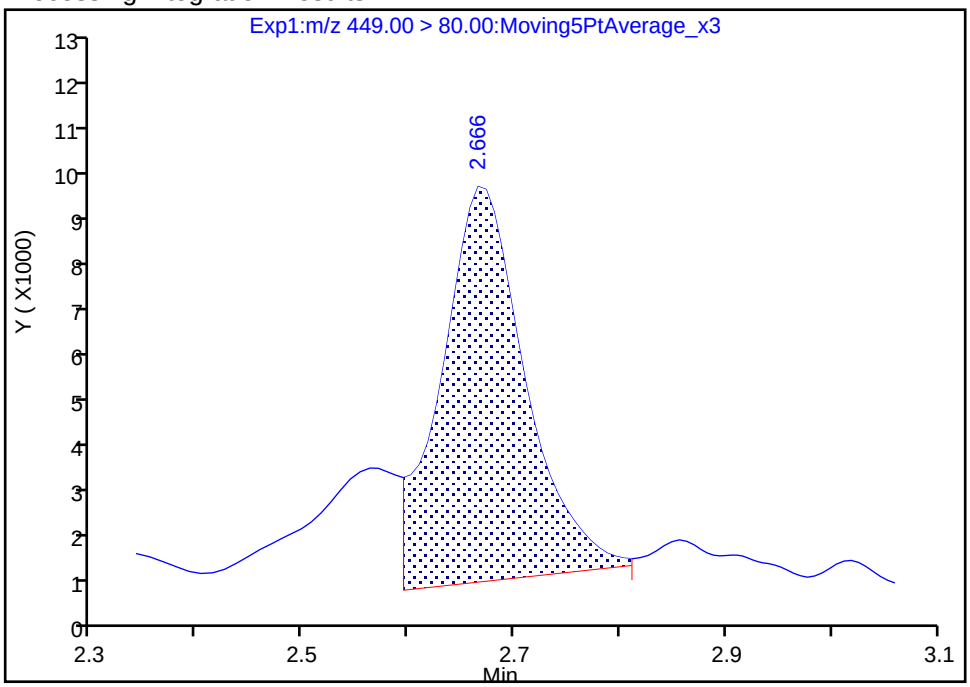
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

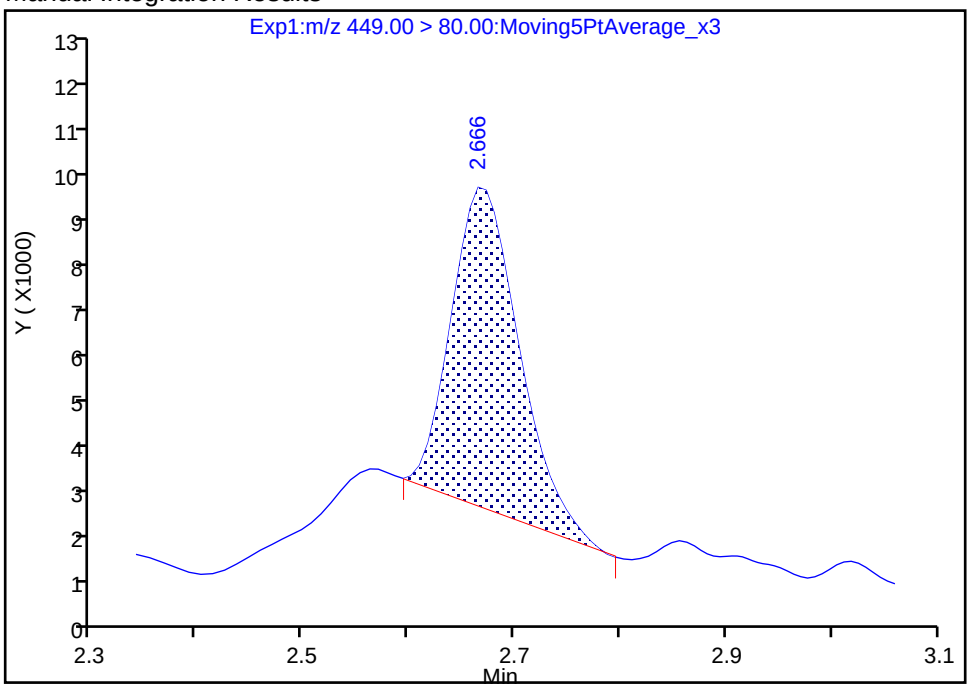
Processing Integration Results

RT: 2.67
Area: 47110
Amount: 0.024195
Amount Units: ng/ml



Manual Integration Results

RT: 2.67
Area: 30812
Amount: 0.015824
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:40:49

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

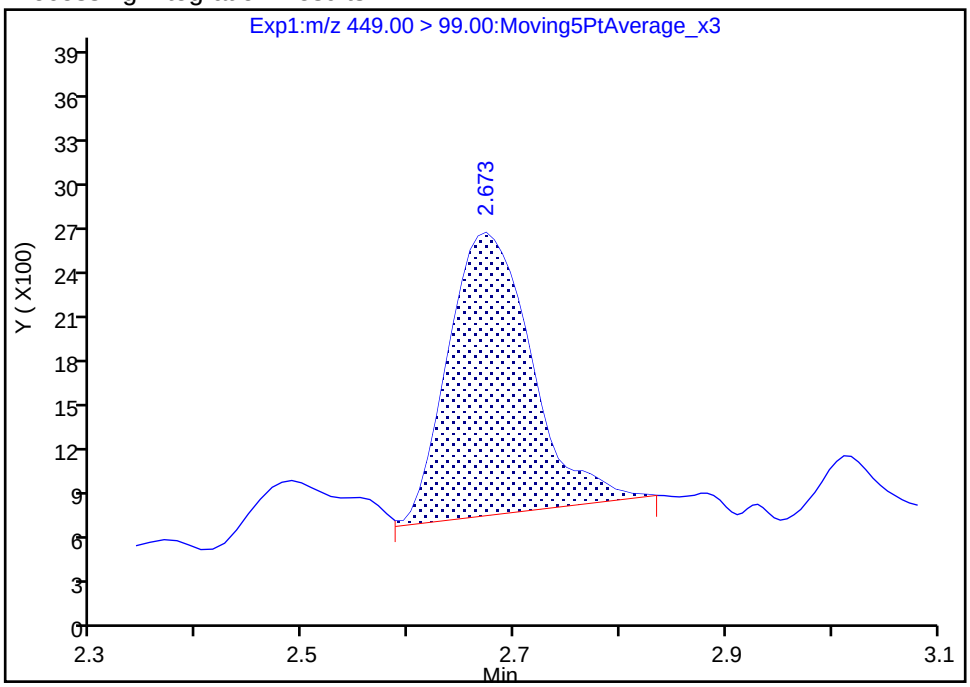
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

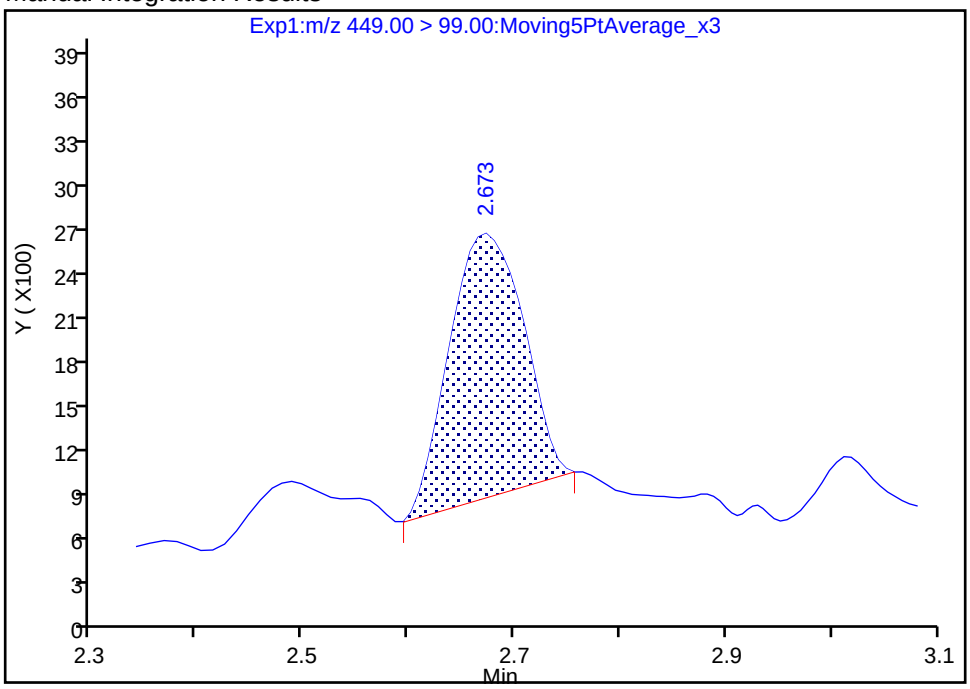
Processing Integration Results

RT: 2.67
Area: 10495
Amount: 0.024195
Amount Units: ng/ml



Manual Integration Results

RT: 2.67
Area: 8752
Amount: 0.015824
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:40:55

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

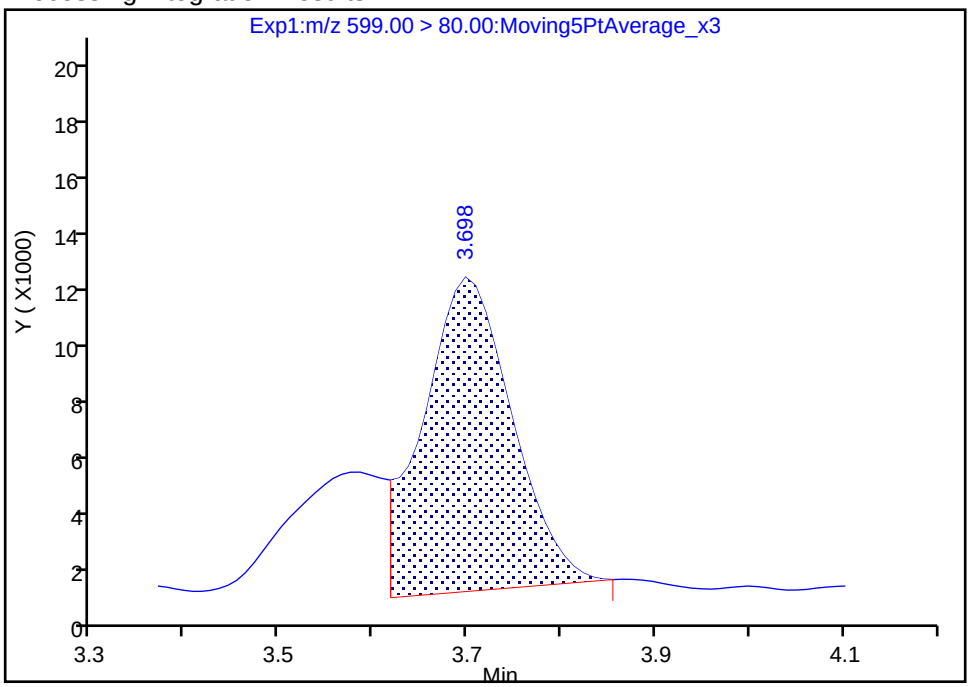
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

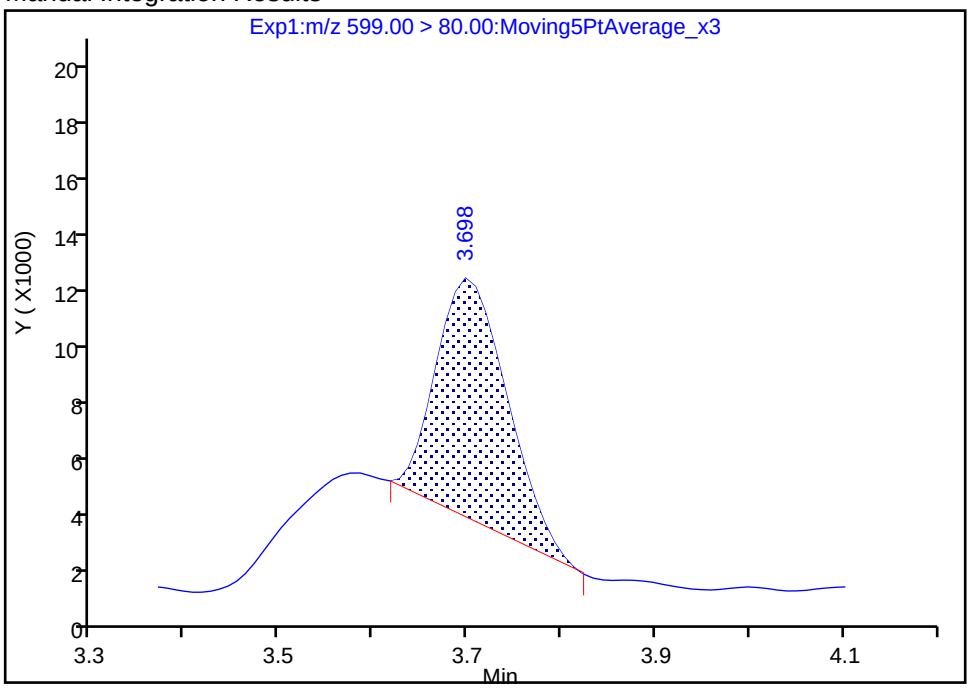
Processing Integration Results

RT: 3.70
Area: 71280
Amount: 0.070318
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 43772
Amount: 0.043181
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:41:37

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

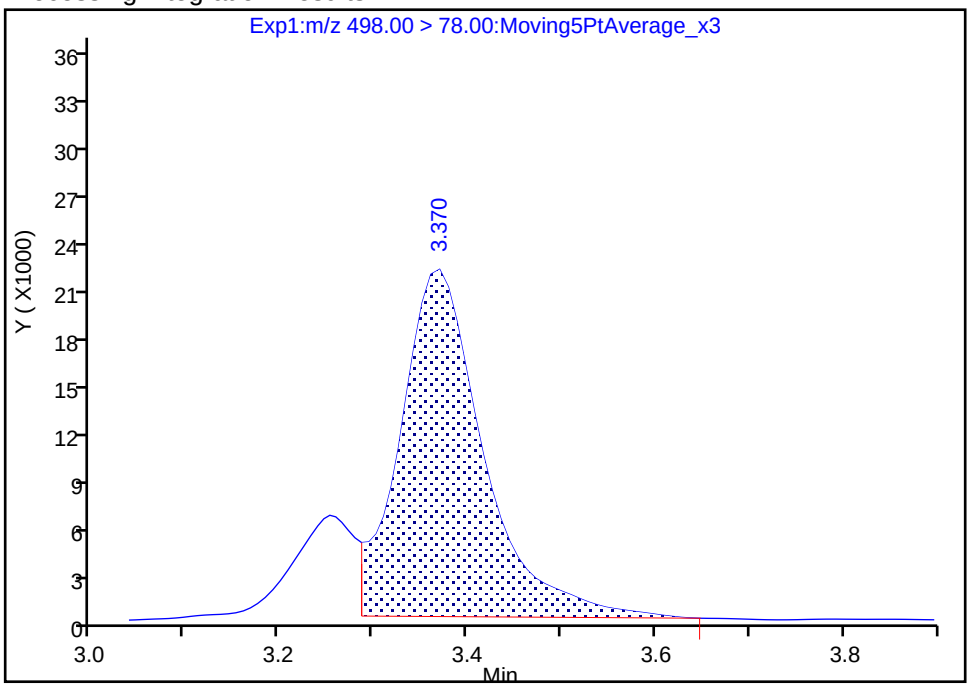
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

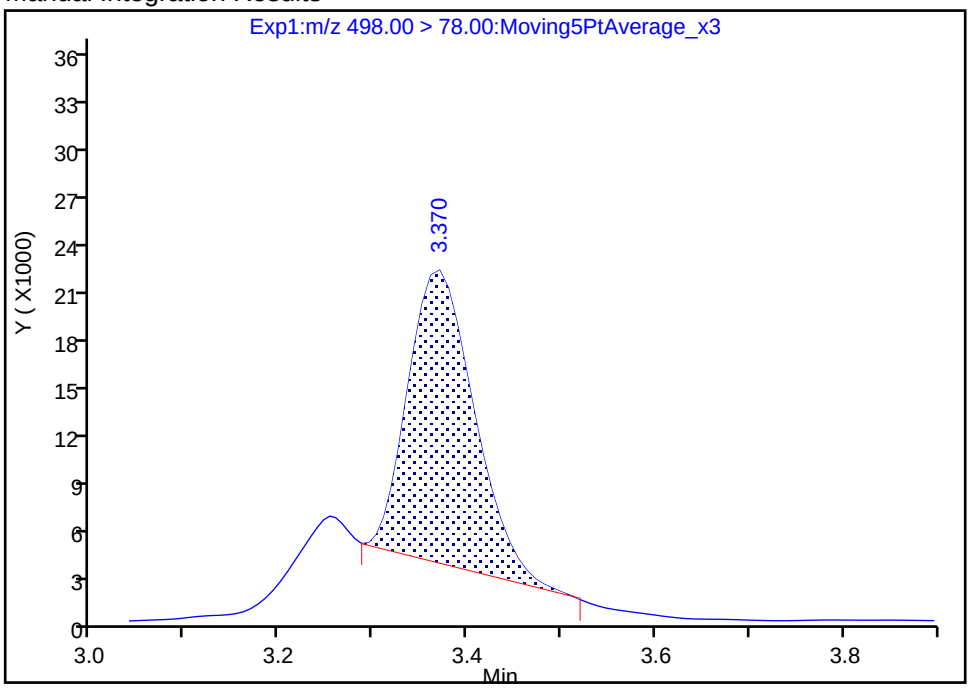
Processing Integration Results

RT: 3.37
Area: 134541
Amount: 0.079500
Amount Units: ng/ml



Manual Integration Results

RT: 3.37
Area: 90571
Amount: 0.053518
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:41:16

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

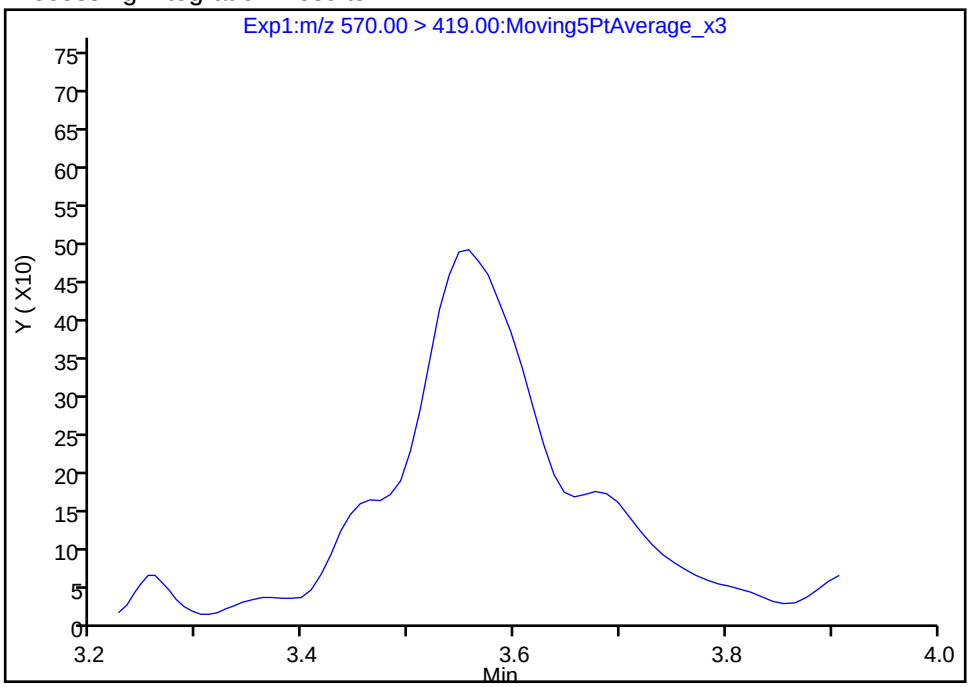
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_024.d				
Injection Date:	07-Apr-2018 20:29:54	Instrument ID:	A8_N		
Lims ID:	320-37380-A-1-B	Lab Sample ID:	320-37380-1		
Client ID:	SB043 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	15	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

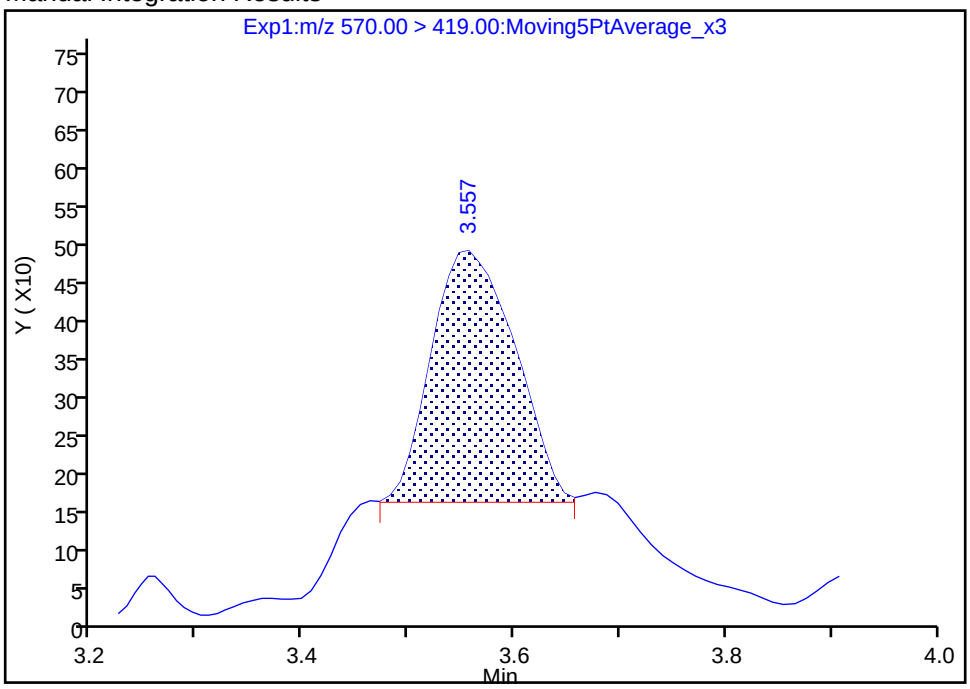
Not Detected
Expected RT: 3.54

Processing Integration Results



Manual Integration Results

RT: 3.56
Area: 1814
Amount: 0.002049
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 12:37:46
Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB043 (0-2") DL | Lab Sample ID: 320-37380-1 DL

Matrix: Solid | Lab File ID: 2018.04.09LLA_044.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 12:30

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/09/2018 18:26

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 12.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 217070 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	0.0017	U	0.023	0.0017
39108-34-4	8:2FTS	0.0029	U	0.023	0.0029

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	73		25-150
STL02280	M2-8:2FTS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_044.d
Lims ID: 320-37380-A-1-B
Client ID: SB043 (0-2")
Sample Type: Client
Inject. Date: 09-Apr-2018 18:26:47 ALS Bottle#: 22 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-37380-a-1-b 10X (215980)
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:36 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 10:52:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.313	1.424	-0.111	0.918	174659	0.0835			21.8	M
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	565698	0.1963		78.5	5054	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.684	1.692	-0.008	0.989	5981	0.003445			1.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	0.0	0.559	362623	0.1933		77.3	5788	
D 47 13C3-PFBS										
301.90 > 83.00	1.747	1.739	0.008	1.000	6715	0.1563		67.2	23.5	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.990	0.002	1.000	388646	0.1879		75.2	8703	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.317	0.003	1.000	372748	0.1875		75.0	10544	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.319	0.014	1.000	50558	0.0218			65.1	
399.00 > 99.00	2.333	2.319	0.014	1.000	12841		3.94(1.50-4.49)		28.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.330	0.003	1.000	490554	0.1979		83.7	9946	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.650	0.003	1.000	79425	0.1728		72.8	371	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.659	0.016		521438	0.2500			11874	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.667	0.008	1.000	30151	0.0165			15.0	
413.00 > 169.00	2.683	2.667	0.016	1.003	16147		1.87(0.84-2.52)		29.3	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	386307	0.1976		79.0	1773	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.029	0.014	1.000	590395	0.3901			258	
499.00 > 99.00	3.043	3.029	0.014	1.000	133281		4.43(2.31-6.93)		313	
20 Perfluorononanoic acid										RM
463.00 > 419.00	3.050	3.036	0.014	1.002	12945	0.009011			19.7	RM
463.00 > 169.00	3.050	3.036	0.014	1.002	2183		5.93(1.90-5.69)		32.8	M
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.042	0.001	1.000	316593	0.1838		76.9	1466	
D 19 13C5 PFNA										
468.00 > 423.00	3.043	3.042	0.001	1.000	349026	0.2110		84.4	10329	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.376	3.357	0.019	1.000	7647	0.004440			58.0	M
D 21 13C8 FOSA										
506.00 > 78.00	3.376	3.365	0.011	1.000	435923	0.1792		71.7	8891	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.385	0.010	1.000	8843	0.0131			329	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.393	0.002	1.000	119436	0.2235		93.3	560	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.413	3.394	0.019	1.003	24392	0.0194			47.1	
513.00 > 169.00	3.413	3.394	0.019	1.003	3996		6.10(2.36-7.09)		56.3	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.402	0.002	1.000	318521	0.2280		91.2	5666	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.560	0.002	1.000	148413	0.1986		79.4	977	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	4194	0.004563			21.2	
599.00 > 99.00	3.726	3.715	0.011	1.003	1920		2.18(1.39-4.16)		32.8	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.726	0.011	1.000	86306	0.1026			241	
563.00 > 169.00	3.737	3.726	0.011	1.000	25017		3.45(2.12-6.36)		821	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.737	3.726	0.011	1.003	1981	0.003592			24.8	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.732	-0.006	1.000	150354	0.1917		76.7	1315	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.732	0.005	1.000	262128	0.2299		91.9	3918	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.027	4.026	0.001	1.000	15525	0.0129			12.9	
613.00 > 169.00	4.027	4.026	0.001	1.000	7188		2.16(2.13-6.40)		42.6	M
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.030	-0.003	1.000	278416	0.2193		87.7	3841	
41 Perfluorotridecanoic acid										RM
663.00 > 619.00	4.289	4.288	0.0	1.000	194948	0.1514			134	R
663.00 > 169.00	4.279	4.288	-0.009	0.998	50403		3.87(1.25-3.76)		82.5	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.530	4.533	-0.003	1.000	371520	0.2304		92.1	3640	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 10-Apr-2018 11:05:40 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_044.d

Injection Date: 09-Apr-2018 18:26:47 Instrument ID: A8_N

Lims ID: 320-37380-A-1-B Lab Sample ID: 320-37380-1

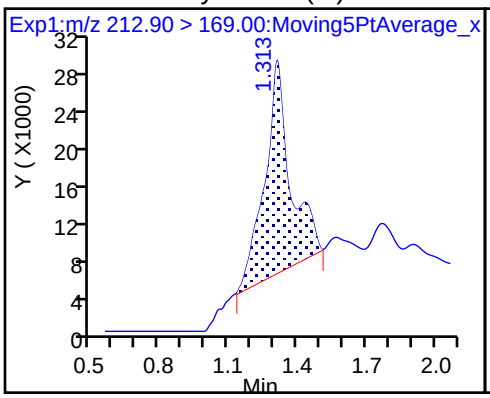
Client ID: SB043 (0-2")

Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 2

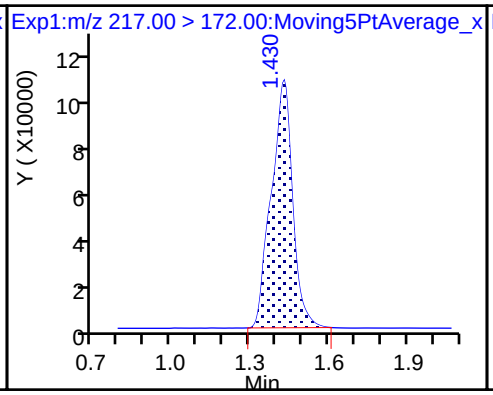
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

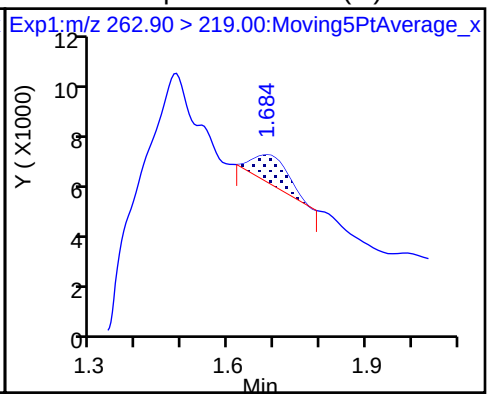
2 Perfluorobutyric acid (M)



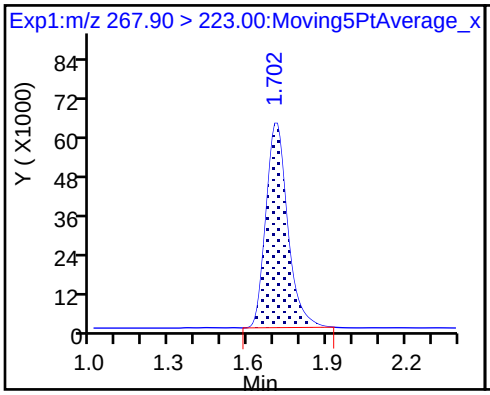
D 1 13C4 PFBA



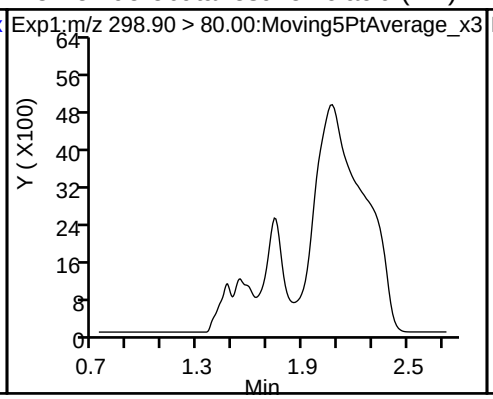
4 Perfluoropentanoic acid (M)



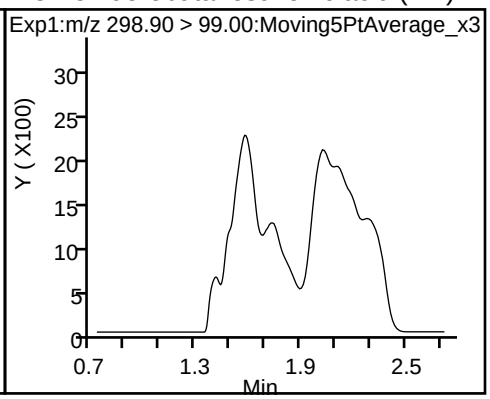
D 3 13C5-PFPeA



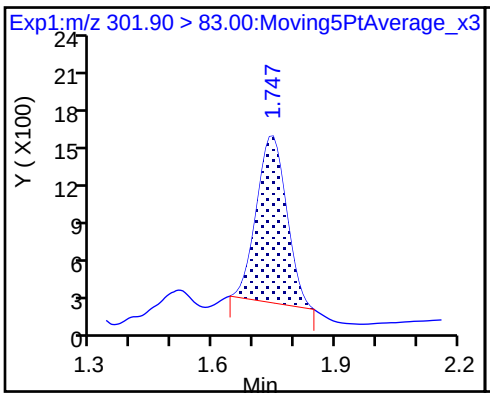
5 Perfluorobutanesulfonic acid (ND)



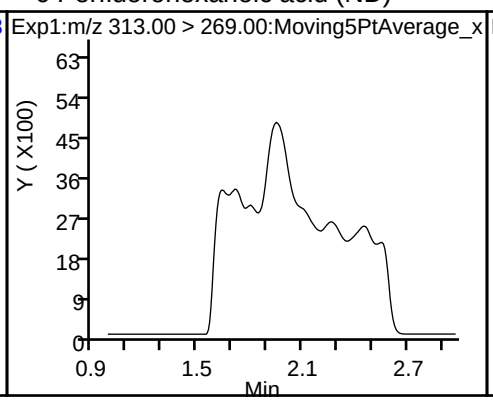
5 Perfluorobutanesulfonic acid (ND)



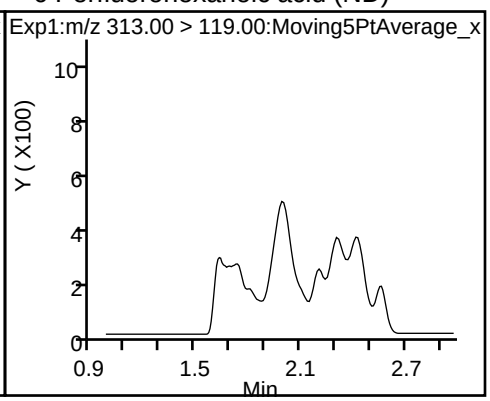
D 47 13C3-PFBS



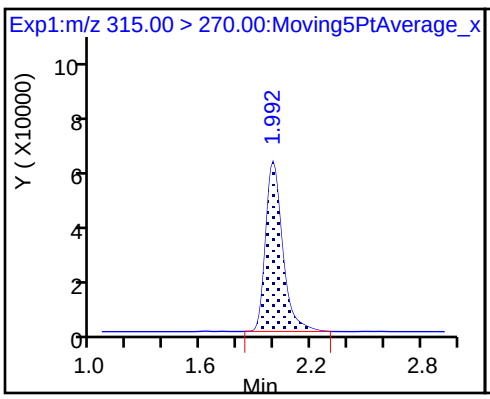
6 Perfluorohexanoic acid (ND)



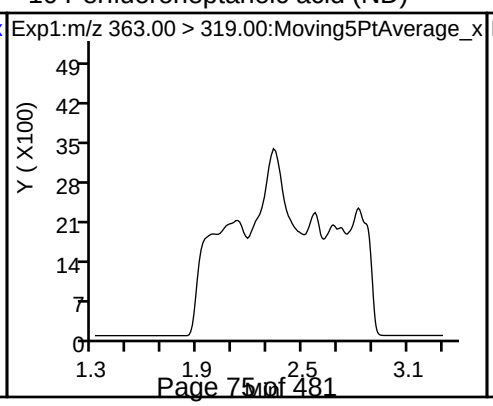
6 Perfluorohexanoic acid (ND)



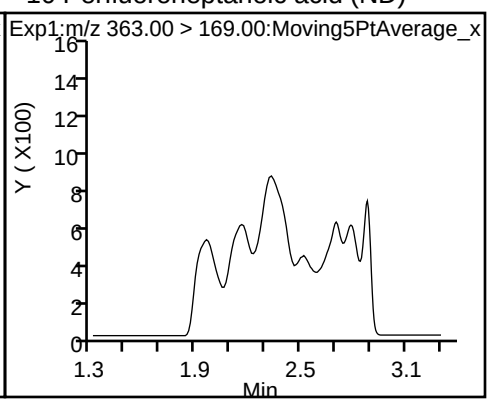
D 7 13C2 PFHxA



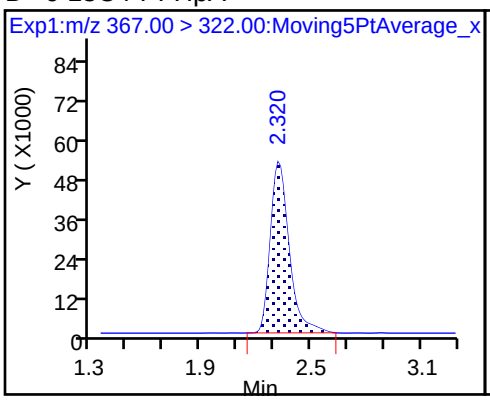
10 Perfluoroheptanoic acid (ND)



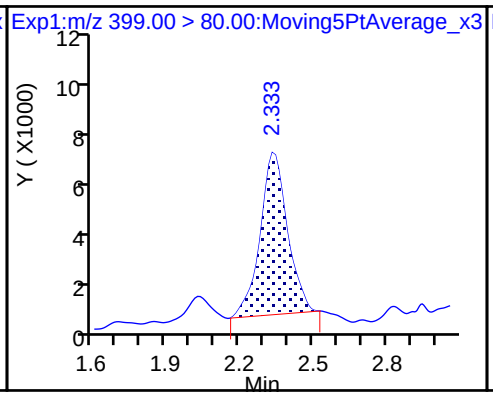
10 Perfluoroheptanoic acid (ND)



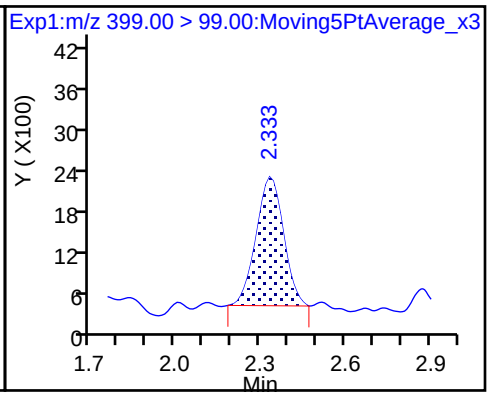
D 9 13C4-PFHpA



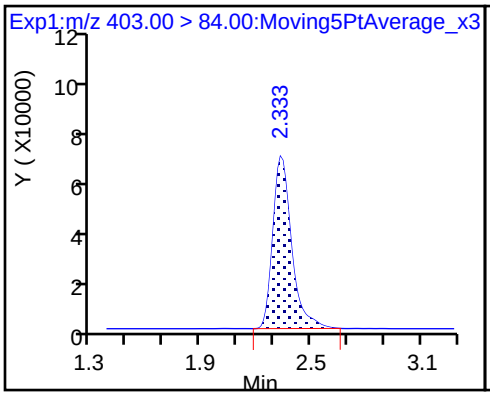
8 Perfluorohexanesulfonic acid



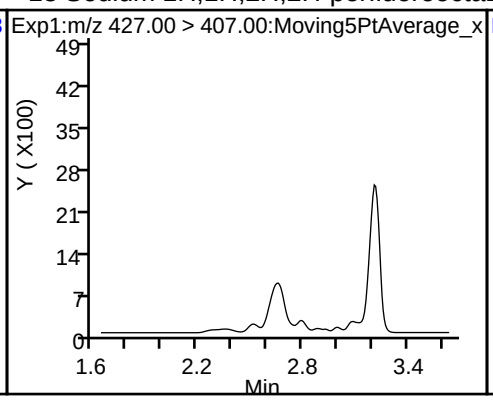
8 Perfluorohexanesulfonic acid



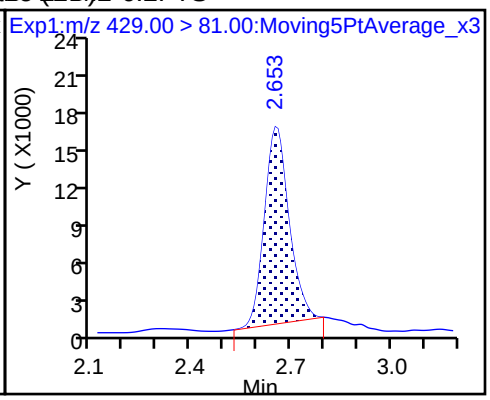
D 11 18O2 PFHxS



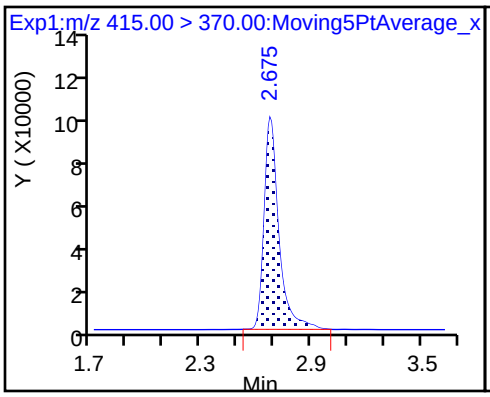
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (NDM



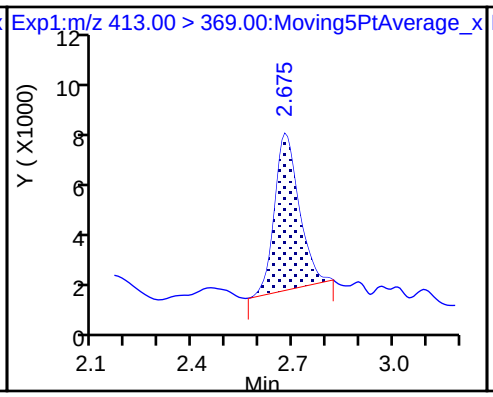
D 12 2-6:2FTS



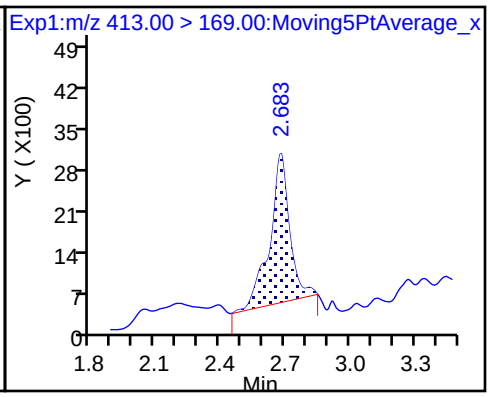
* 62 13C2-PFOA



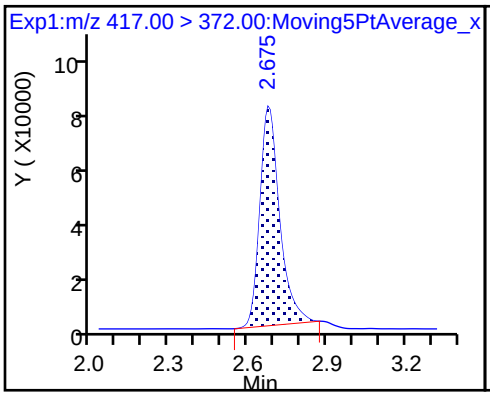
15 Perfluorooctanoic acid



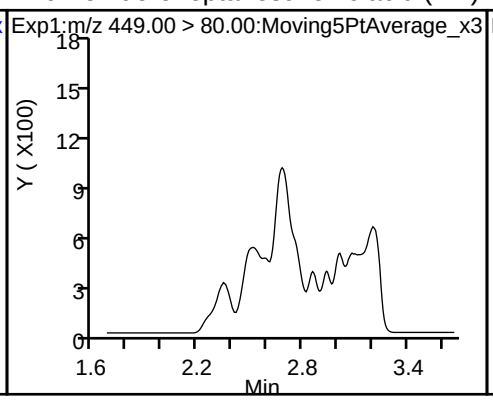
15 Perfluorooctanoic acid



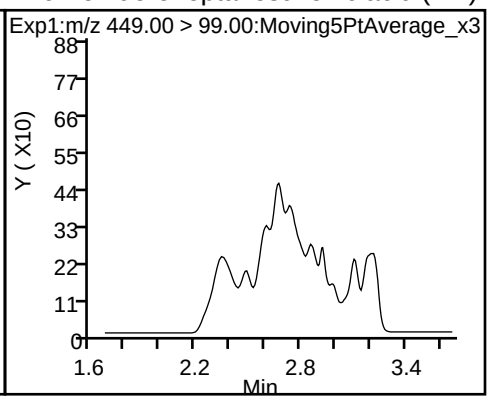
D 14 13C4 PFOA



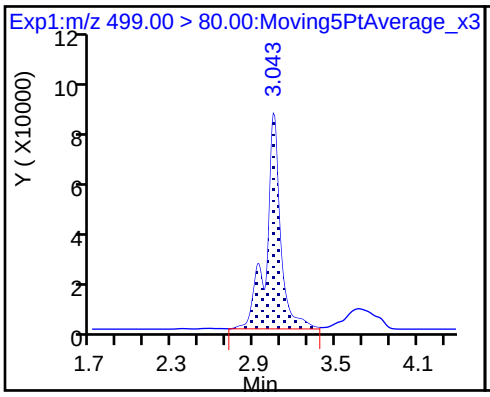
16 Perfluoroheptanesulfonic acid (ND)



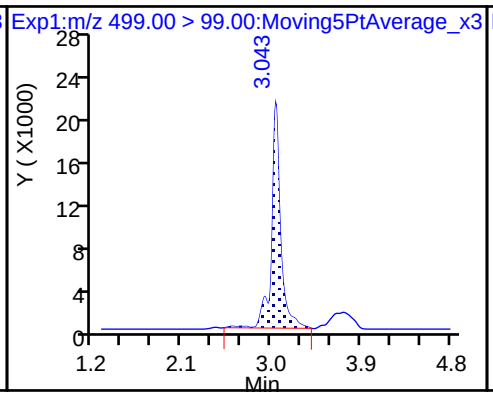
16 Perfluoroheptanesulfonic acid (ND)



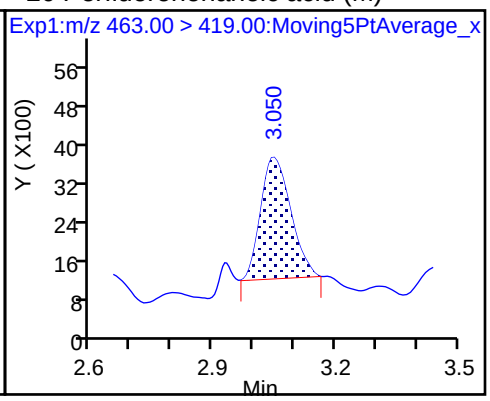
17 Perfluorooctane sulfonic acid



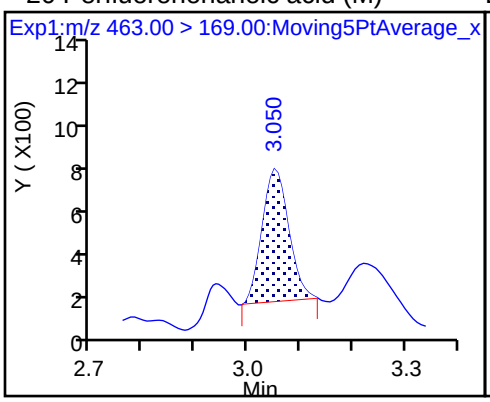
17 Perfluorooctane sulfonic acid



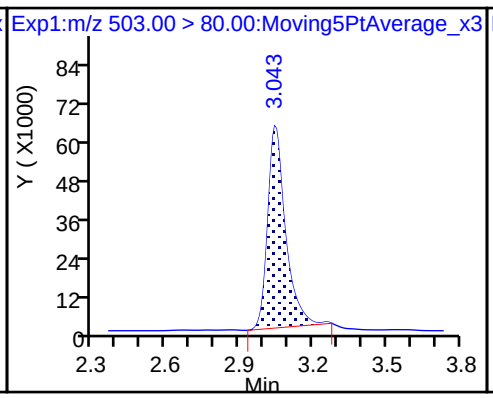
20 Perfluorononanoic acid (M)



20 Perfluorononanoic acid (M)



D 18 13C4 PFOS



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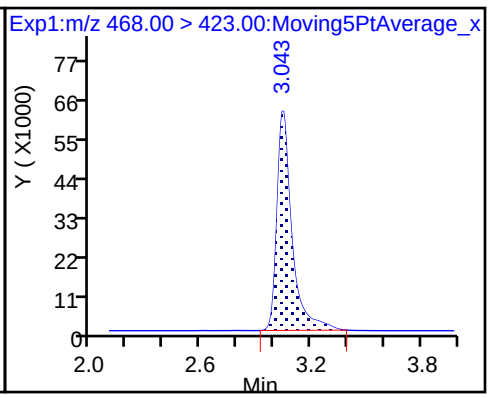
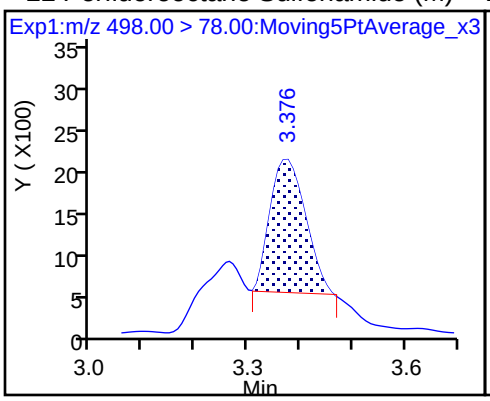
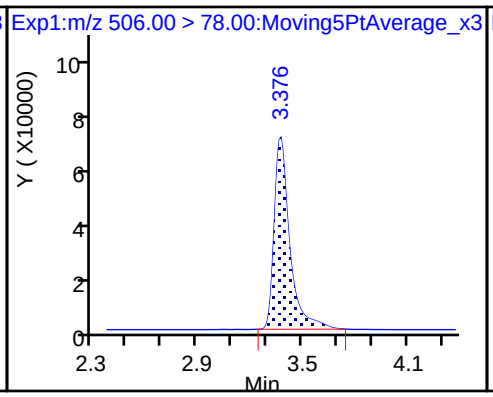


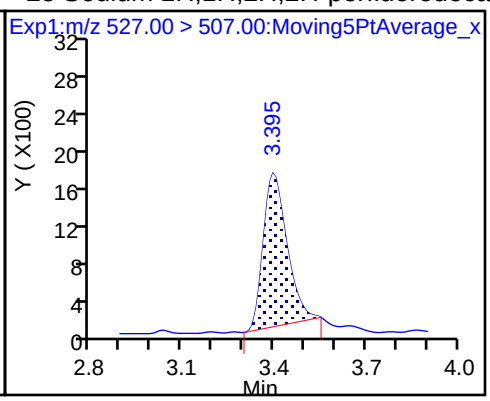
22 Perfluorooctane Sulfonamide (M)



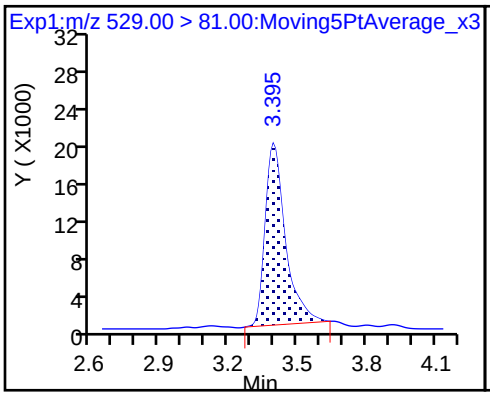
D 21 13C8 FOSA



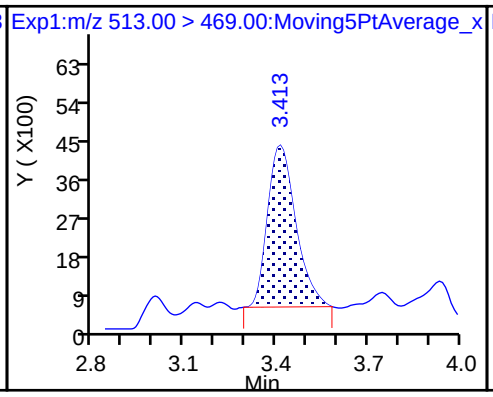
25 Sodium 1H,1H,2H,2H-perfluorodecane



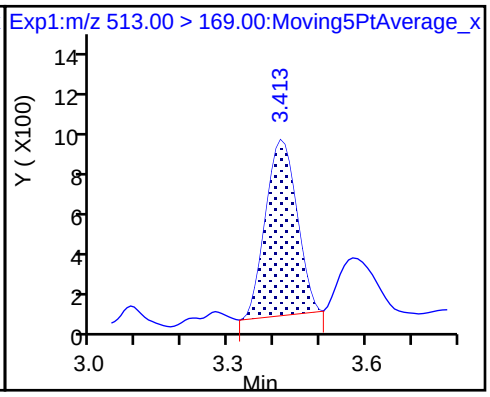
D 26 M2-8:2FTS



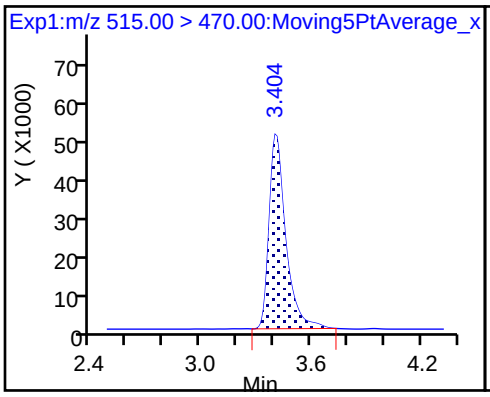
24 Perfluorodecanoic acid



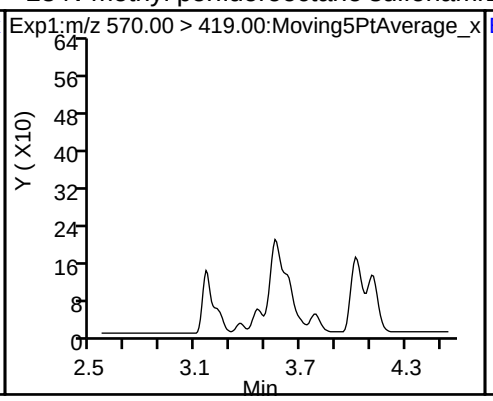
24 Perfluorodecanoic acid



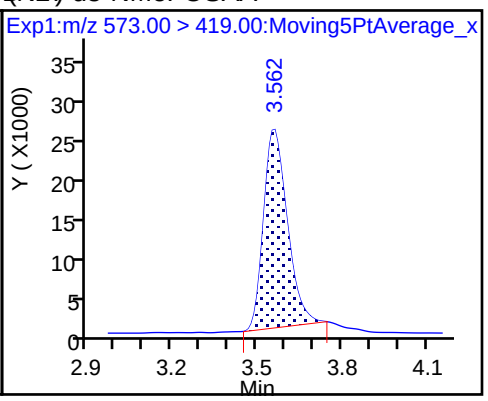
D 23 13C2 PFDA



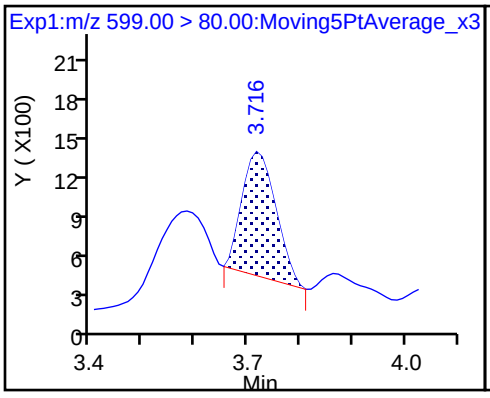
28 N-methyl perfluorooctane sulfonamid (ND)



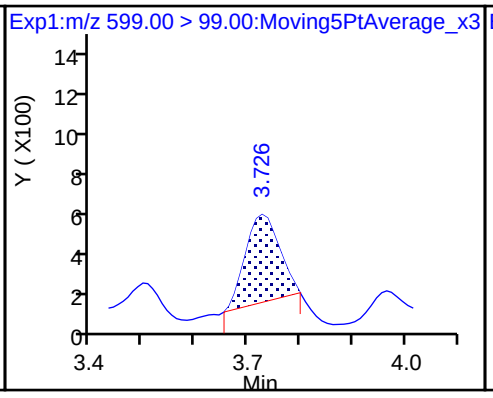
D 27 d3-NMeFOSAA



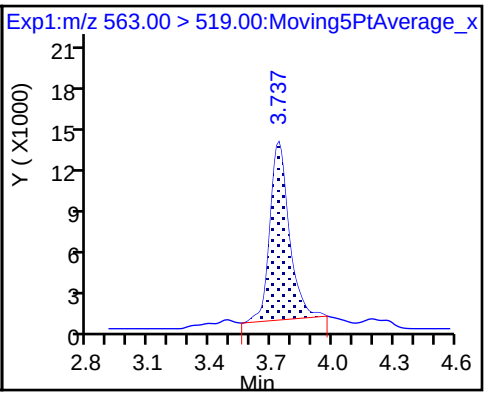
29 Perfluorodecane Sulfonic acid



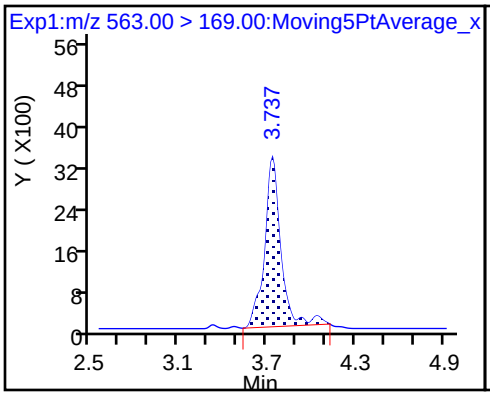
29 Perfluorodecane Sulfonic acid



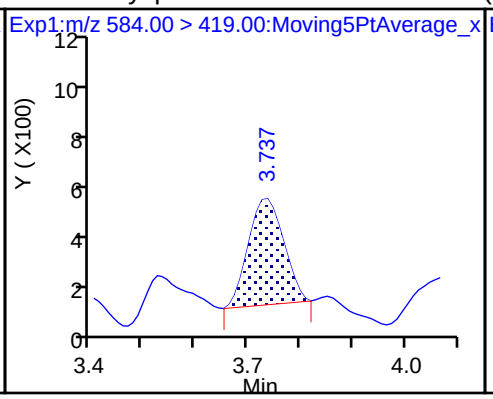
31 Perfluoroundecanoic acid



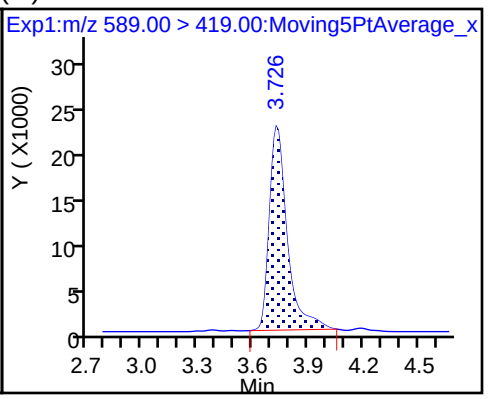
31 Perfluoroundecanoic acid



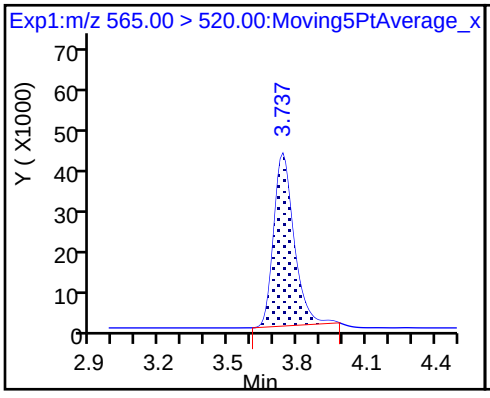
33 N-ethyl perfluorooctane sulfonamid (M)



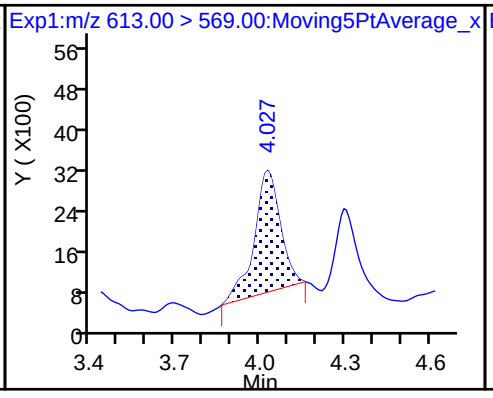
D 32 d5-NEtFOSAA



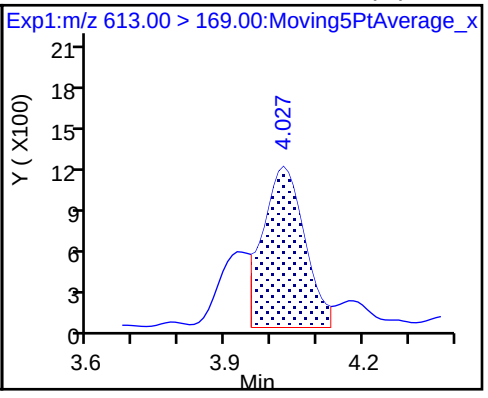
D 30 13C2 PFUnA



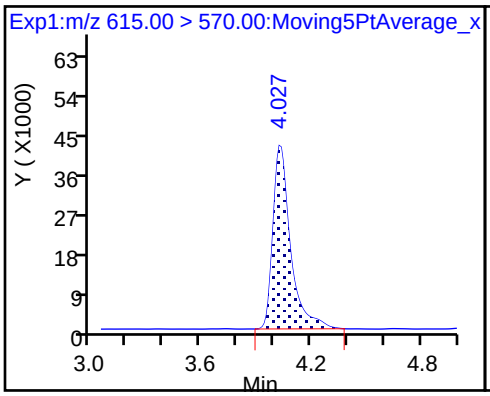
37 Perfluorododecanoic acid



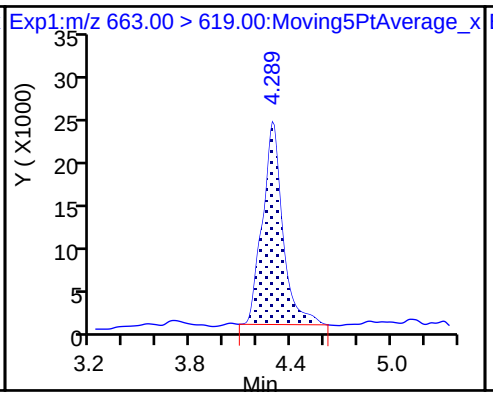
37 Perfluorododecanoic acid (M)



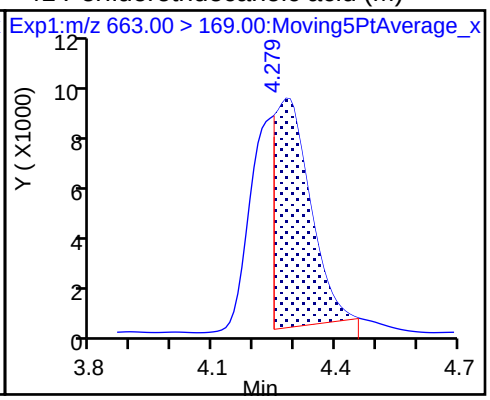
D 36 13C2 PFDoA



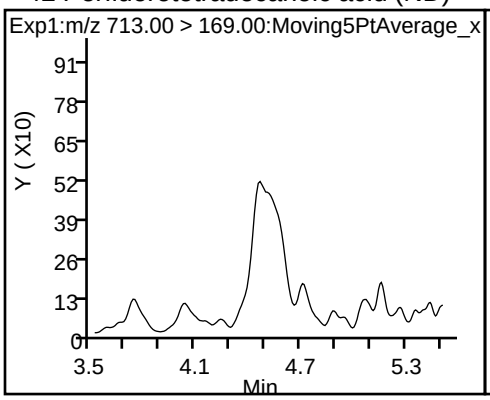
41 Perfluorotridecanoic acid



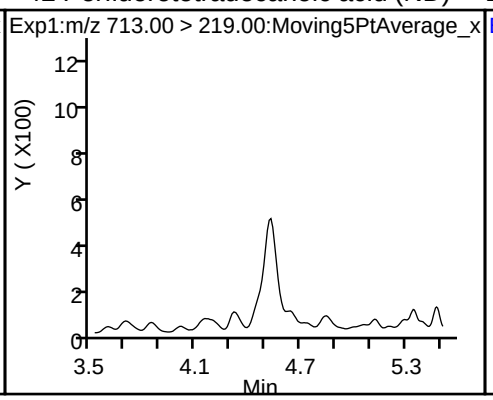
41 Perfluorotridecanoic acid (M)



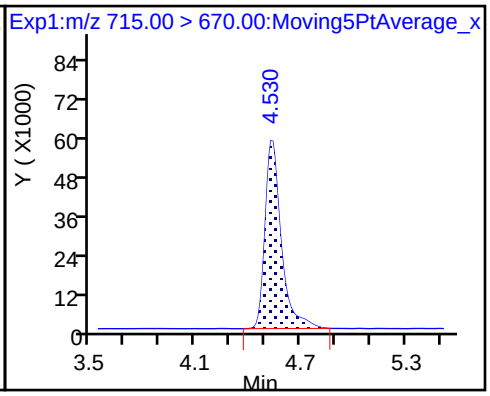
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB043 (2"-2') | Lab Sample ID: 320-37380-2

Matrix: Solid | Lab File ID: 2018.04.07LLB_025.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 12:15

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.97(g) | Date Analyzed: 04/07/2018 20:37

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00032	B	0.00021	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00015	J	0.00021	0.000083
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00016	J	0.00021	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000068	J	0.00021	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.00022		0.00021	0.000092
375-95-1	Perfluorononanoic acid (PFNA)	0.00013	J	0.00021	0.000039
335-76-2	Perfluorodecanoic acid (PFDA)	0.00014	J	0.00021	0.000024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00041		0.00021	0.000039
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000072	U	0.00021	0.000072
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00029		0.00021	0.000055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00021	0.000058
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00021	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000071	J	0.00021	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000038	U	0.00021	0.000038
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0019	B	0.00054	0.00021
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000042	U	0.00021	0.000042
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000088	U	0.00021	0.000088
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0021	0.00042
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00040	U	0.0021	0.00040
27619-97-2	6:2FTS	0.00016	U	0.0021	0.00016
39108-34-4	8:2FTS	0.00027	U	0.0021	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB043 (2"-2') | Lab Sample ID: 320-37380-2

Matrix: Solid | Lab File ID: 2018.04.07LLB_025.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 12:15

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.97(g) | Date Analyzed: 04/07/2018 20:37

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	50		25-150
STL01893	13C5 PFPeA	50		25-150
STL00993	13C2 PFHxA	44		25-150
STL01892	13C4-PFHpA	50		25-150
STL00990	13C4 PFOA	54		25-150
STL00995	13C5 PFNA	56		25-150
STL00996	13C2 PFDA	65		25-150
STL00997	13C2 PFUnA	72		25-150
STL00998	13C2 PFDoA	76		25-150
STL02116	13C2-PFTeDA	69		25-150
STL02337	13C3-PFBS	63		25-150
STL00994	18O2 PFHxS	63		25-150
STL00991	13C4 PFOS	63		25-150
STL01056	13C8 FOSA	53		25-150
STL02118	d3-NMeFOSAA	89		25-150
STL02117	d5-NEtFOSAA	86		25-150
STL02279	M2-6:2FTS	117		25-150
STL02280	M2-8:2FTS	148		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d
Lims ID: 320-37380-A-2-B
Client ID: SB043 (2"-2')
Sample Type: Client
Inject. Date: 07-Apr-2018 20:37:47 ALS Bottle#: 16 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37380-a-2-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 12:36:10 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 08-Apr-2018 14:25:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.424	1.424	0.0	1.000	4415735	1.25		50.1	29003	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.306	1.429	-0.123	0.917	247115	0.1514			23.5	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.693	1.692	0.001	1.000	94276	0.0690			19.2	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.693	0.0	0.560	2855012	1.24		49.7	28718	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.729	0.0	1.000	77268	1.47		63.2	145	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.970	1.980	-0.010	0.995	85926	0.0752			41.0	M
313.00 > 119.00	1.981	1.980	0.001	1.000	6129		14.02(5.03-15.10)		38.6	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.981	0.0	1.000	2791342	1.10		44.1	45884	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.307	2.306	0.001	1.000	41719	0.0316			29.9	
363.00 > 169.00	2.307	2.306	0.001	1.000	19007		2.19(1.13-3.40)		64.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.307	2.307	0.0	1.000	3033010	1.25		49.8	60769	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.322	2.319	0.003	1.000	71086	0.0331			87.2	
399.00 > 99.00	2.322	2.319	0.003	1.000	26687		2.66(1.50-4.49)		47.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.322	2.320	0.002	1.000	4550045	1.50		63.4	105224	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.637	2.636	0.001	1.003	27236	0.0221			87.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.629	2.637	-0.008	1.000	1565904	2.78		117	9112	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.661	2.659	0.002		6383530	2.50			123158	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.661	2.659	0.002	1.000	158421	0.1034			71.4	
413.00 > 169.00	2.661	2.659	0.002	1.000	82092		1.93(0.84-2.52)		193	
D 14 13C4 PFOA										
417.00 > 372.00	2.661	2.660	0.001	1.000	3230663	1.35		54.0	70180	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.030	3.029	0.001	1.002	70531	0.0602			89.4	M
463.00 > 169.00	3.030	3.029	0.001	1.002	20895		3.38(1.90-5.69)		137	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.030	3.029	0.001	1.002	1321579	0.8705			5771	
499.00 > 99.00	3.023	3.029	-0.006	1.000	312663		4.23(2.31-6.93)		1146	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.031	-0.008	1.000	2847156	1.41		56.2	73890	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.031	-0.008	1.000	3175455	1.51		63.0	12481	
D 21 13C8 FOSA										
506.00 > 78.00	3.359	3.360	-0.001	1.000	3930289	1.32		52.8	59659	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.369	3.368	0.001	1.003	16034	0.0103			132	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.378	3.377	0.001	1.000	12153	0.009320			256	
D 26 M2-8:2FTS										
529.00 > 81.00	3.378	3.379	-0.001	1.000	2315470	3.54		148	11152	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.387	3.386	0.001	1.000	73153	0.0669			89.2	
513.00 > 169.00	3.387	3.386	0.001	1.000	12995		5.63(2.36-7.09)		105	
D 23 13C2 PFDA										
515.00 > 470.00	3.387	3.388	-0.001	1.000	2763891	1.62		64.6	76513	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.537	3.547	-0.010	1.000	2040093	2.23		89.2	32791	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.707	3.708	-0.001	1.000	2065639	2.15		86.1	21052	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.718	3.717	0.001	1.000	156374	0.1931			135	
563.00 > 169.00	3.707	3.717	-0.010	0.997	51847		3.02(2.12-6.36)		80.0	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.718	3.717	0.001	1.003	1073	0.001416			21.1	
D 30 13C2 PFUnA										
565.00 > 520.00	3.718	3.719	-0.001	1.000	2523219	1.81		72.3	78592	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.008	4.006	0.002	1.000	22702	0.0177			10.1	M
613.00 > 169.00	4.008	4.006	0.002	1.000	5626		4.04(2.13-6.40)		24.6	M
D 36 13C2 PFDoA										
615.00 > 570.00	4.008	4.009	-0.001	1.000	2971627	1.91		76.5	26384	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.270	4.279	-0.009	1.000	182678	0.1329			75.2	
663.00 > 169.00	4.251	4.279	-0.028	0.995	52711		3.47(1.25-3.76)		72.2	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.510	4.511	-0.001	1.000	3393494	1.72		68.7	21744	

QC Flag Legend

Review Flags

M - Manually Integrated

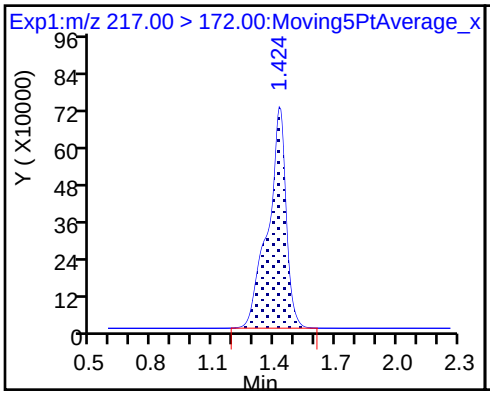
Report Date: 09-Apr-2018 12:36:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

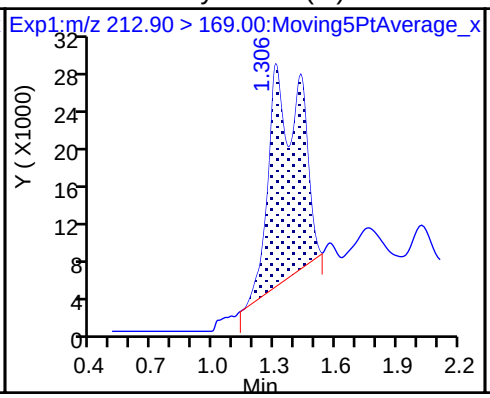
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d

Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

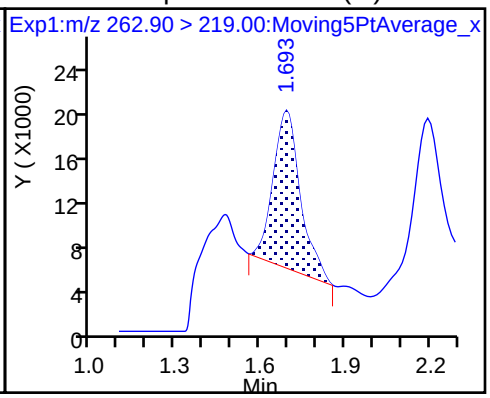
D 1 13C4 PFBA



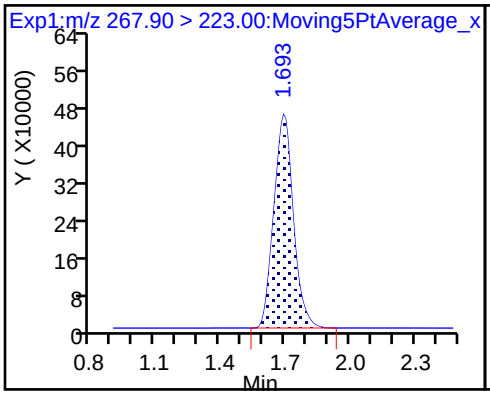
2 Perfluorobutyric acid (M)



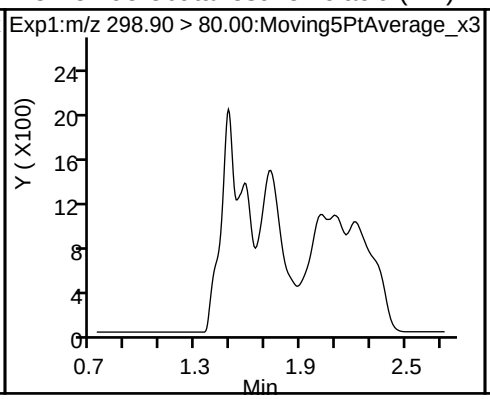
4 Perfluoropentanoic acid (M)



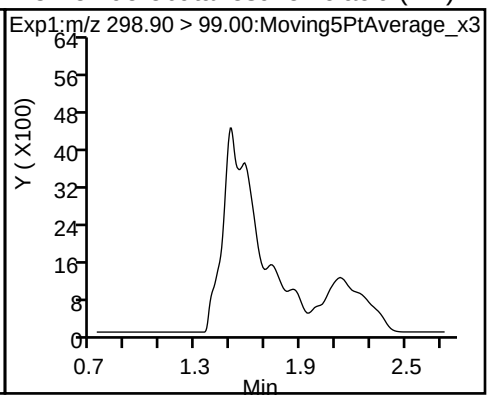
D 3 13C5-PFPeA



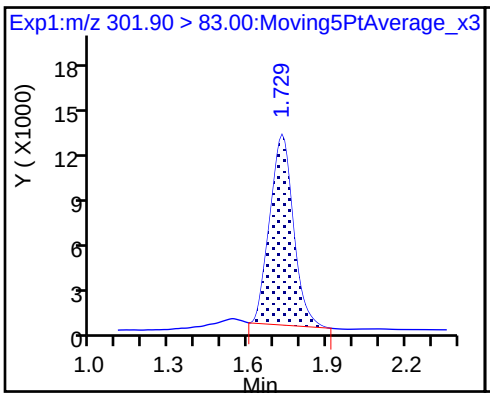
5 Perfluorobutanesulfonic acid (ND)



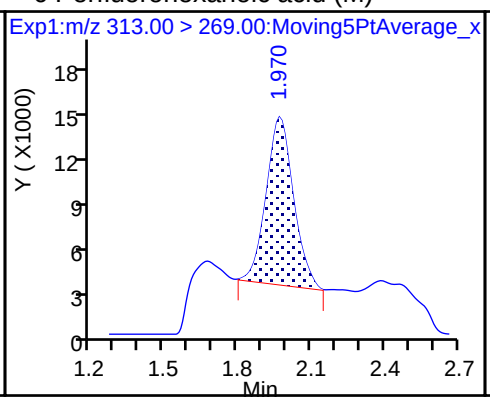
5 Perfluorobutanesulfonic acid (ND)



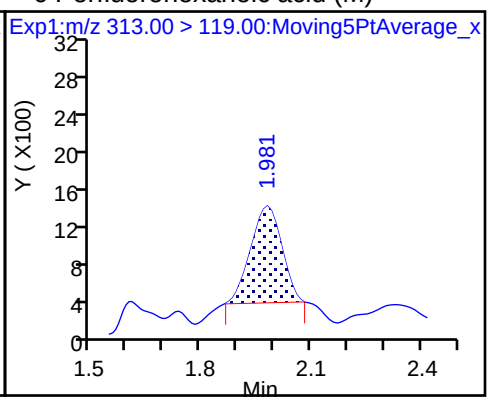
D 47 13C3-PFBS



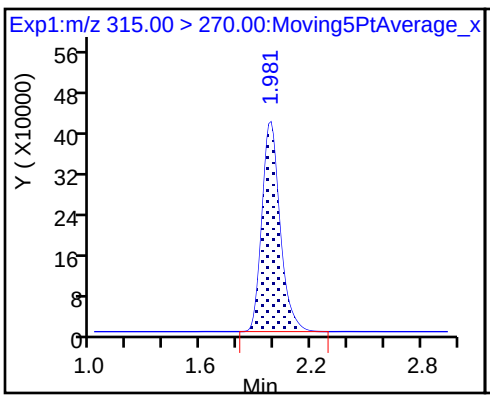
6 Perfluorohexanoic acid (M)



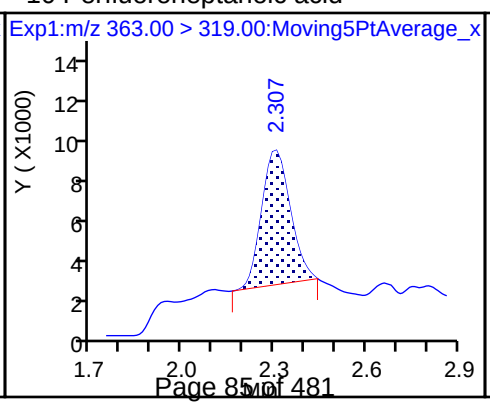
6 Perfluorohexanoic acid (M)



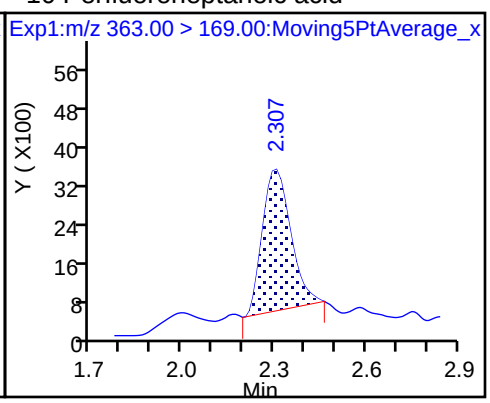
D 7 13C2 PFHxA



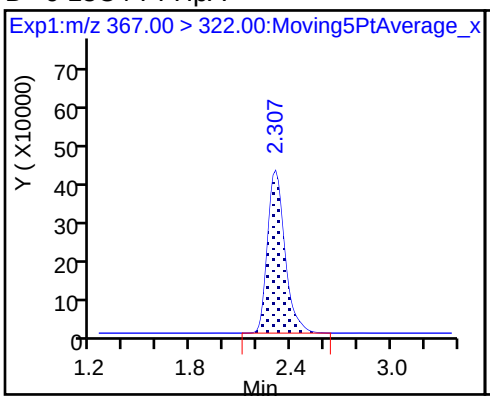
10 Perfluoroheptanoic acid



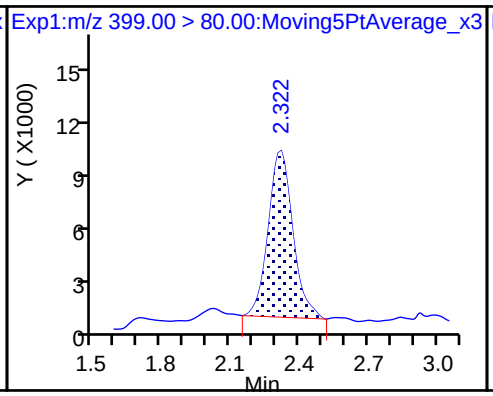
10 Perfluoroheptanoic acid



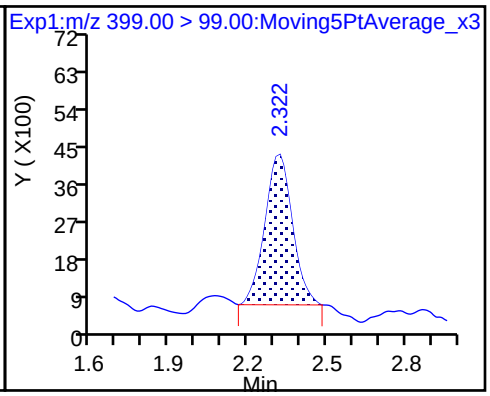
D 9 13C4-PFHpA



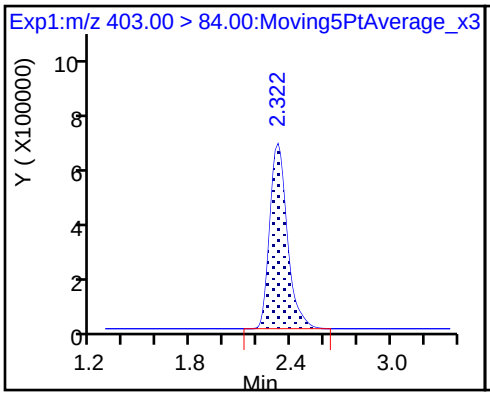
8 Perfluorohexanesulfonic acid



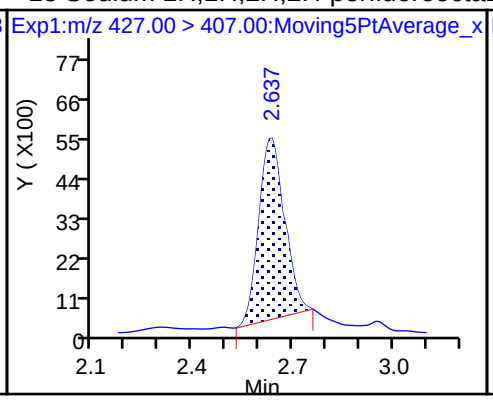
8 Perfluorohexanesulfonic acid



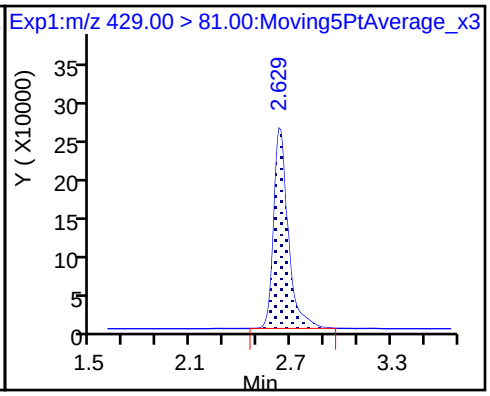
D 11 18O2 PFHxS



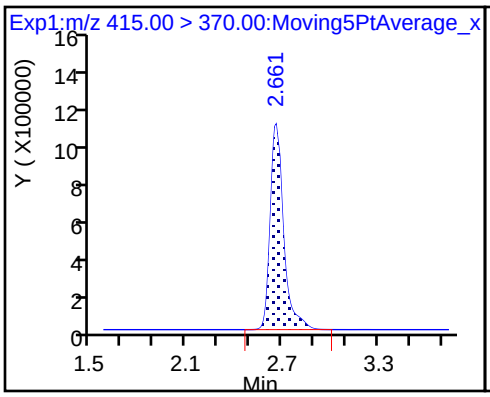
13 Sodium 1H,1H,2H,2H-perfluorooctane



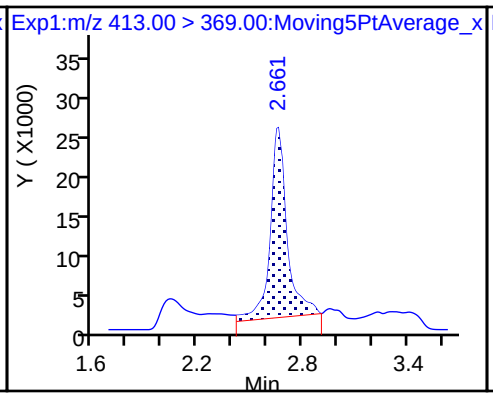
D 12 M2-6:2FTS



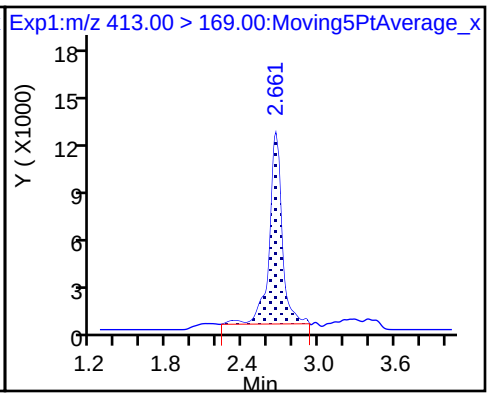
* 62 13C2-PFOA



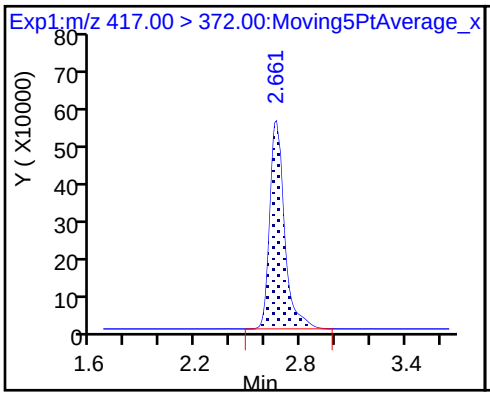
15 Perfluorooctanoic acid



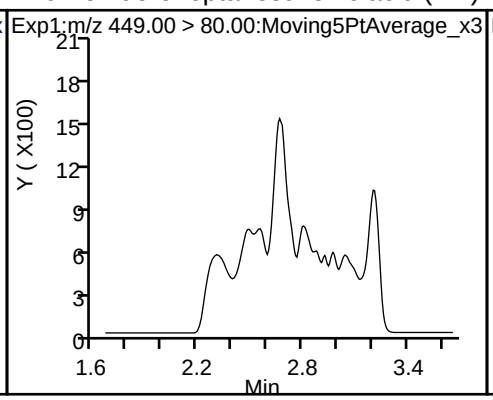
15 Perfluorooctanoic acid



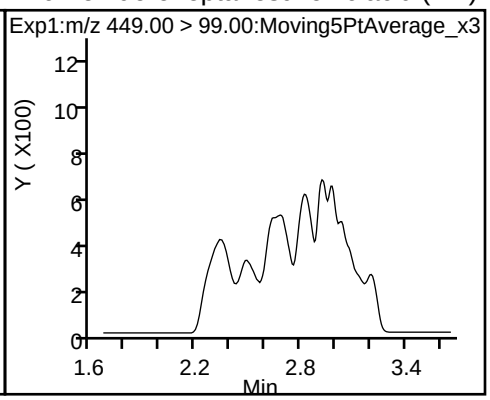
D 14 13C4 PFOA



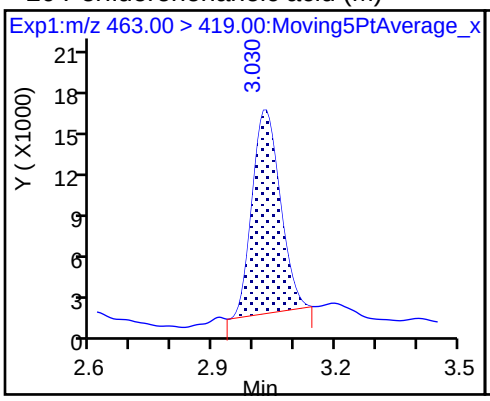
16 Perfluoroheptanesulfonic acid (ND)



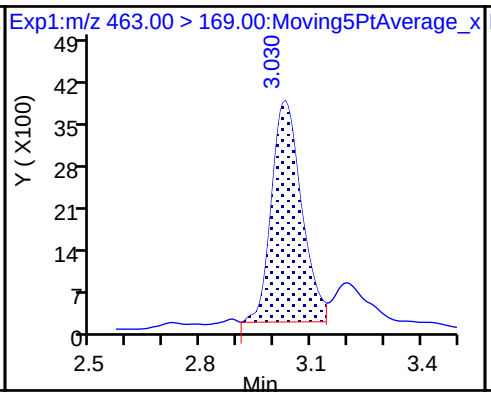
16 Perfluoroheptanesulfonic acid (ND)



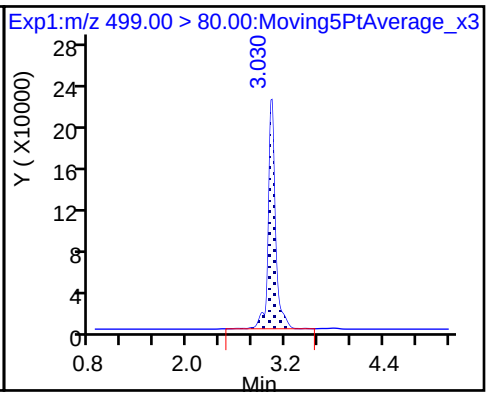
20 Perfluorononanoic acid (M)



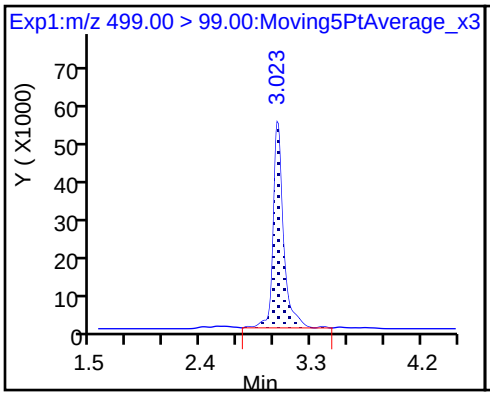
20 Perfluorononanoic acid



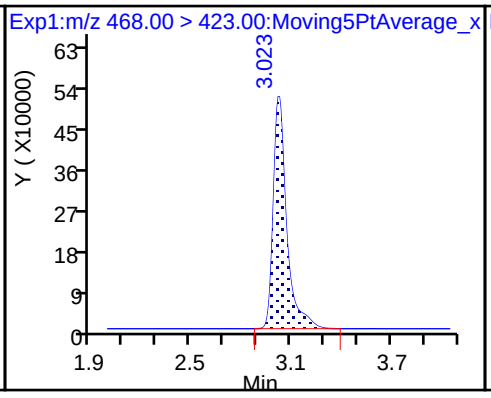
17 Perfluorooctane sulfonic acid



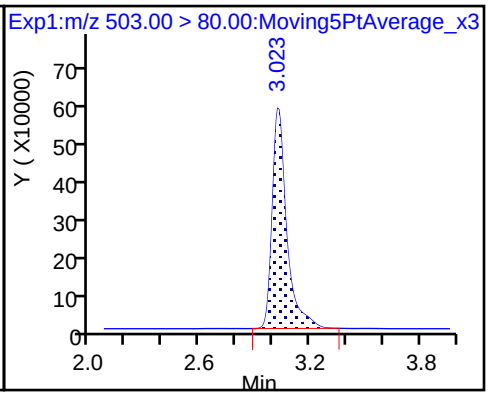
17 Perfluorooctane sulfonic acid



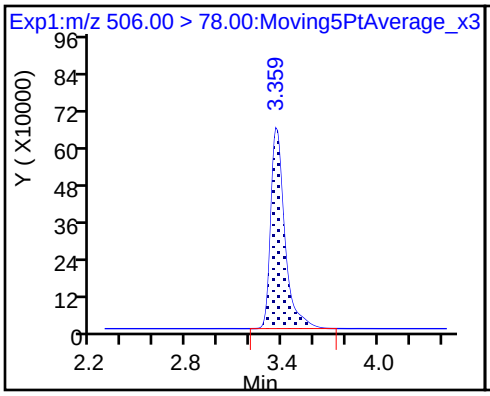
D 19 13C5 PFNA



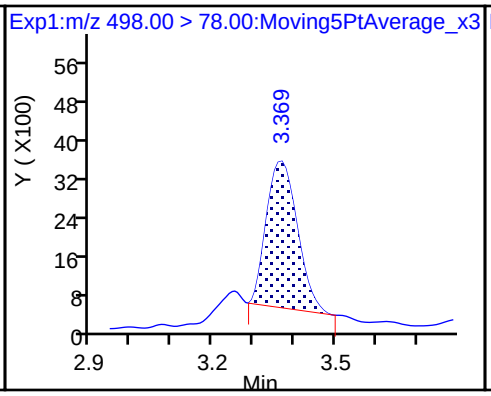
D 18 13C4 PFOS



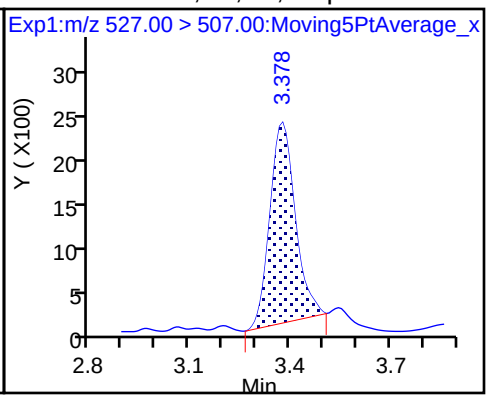
D 21 13C8 FOSA



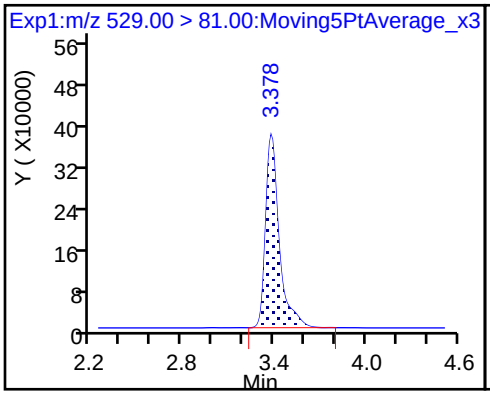
22 Perfluorooctane Sulfonamide



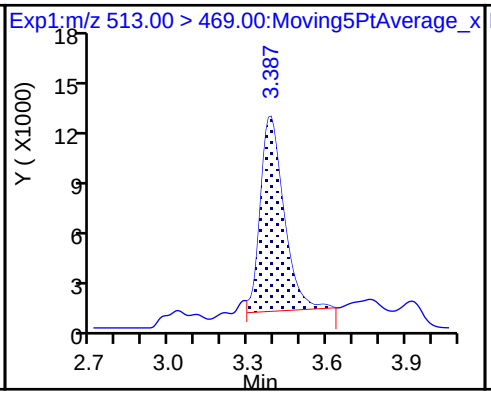
25 Sodium 1H,1H,2H,2H-perfluorodecane



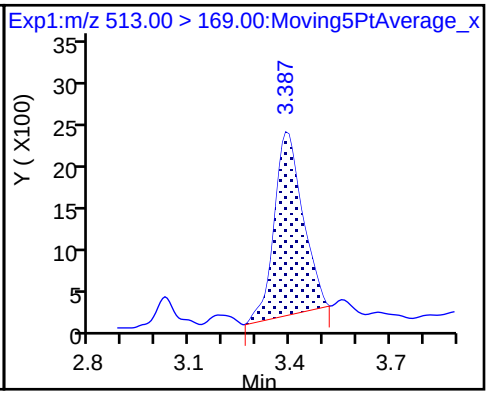
D 26 M2-8:2FTS



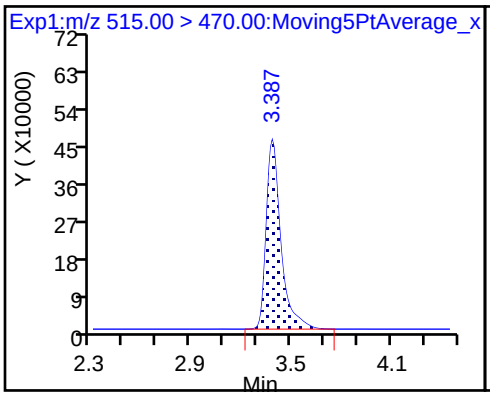
24 Perfluorodecanoic acid



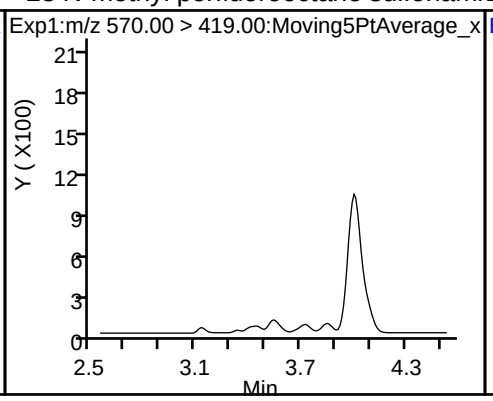
24 Perfluorodecanoic acid



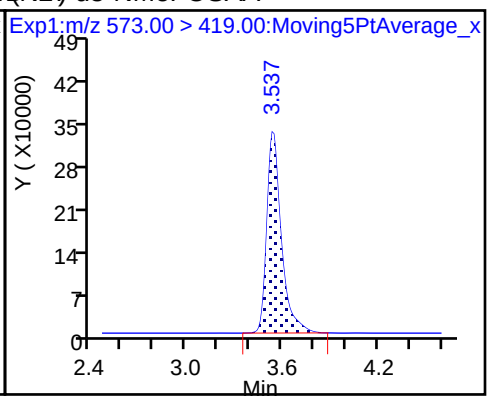
D 23 13C2 PFDA



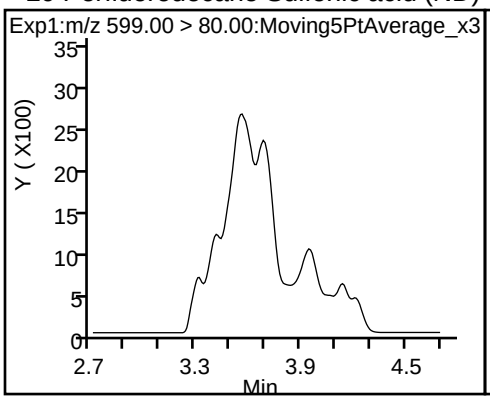
28 N-methyl perfluorooctane sulfonamid (ND)



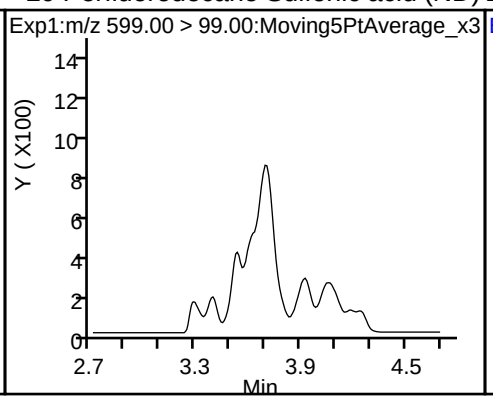
D 27 d3-NMeFOSAA



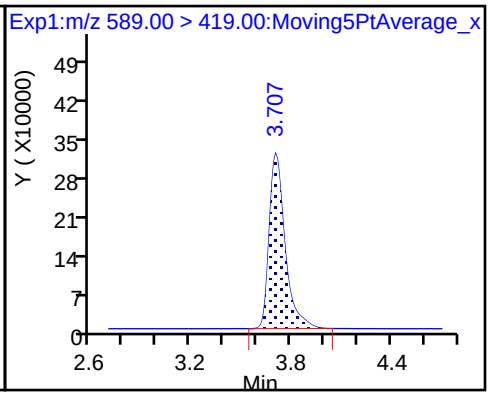
29 Perfluorodecane Sulfonic acid (ND)



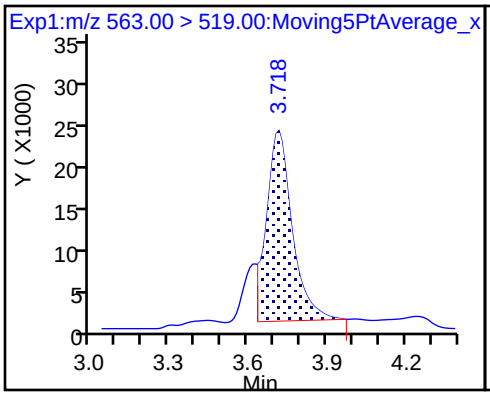
29 Perfluorodecane Sulfonic acid (ND)



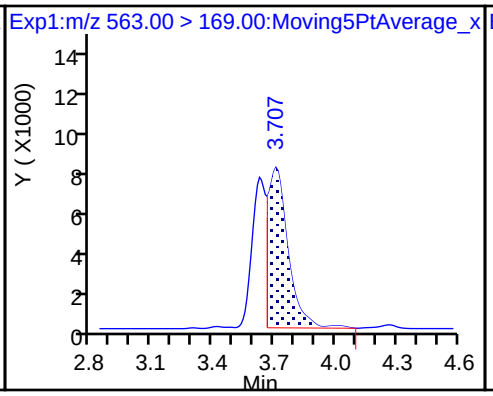
D 32 d5-NEtFOSAA



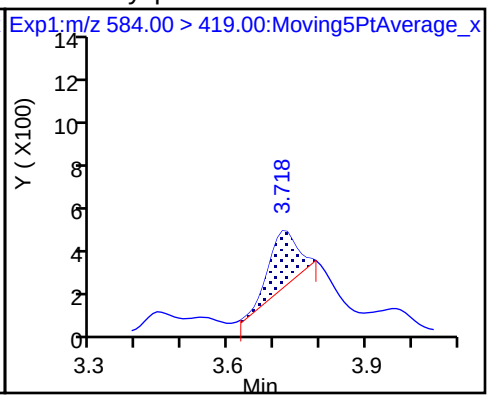
31 Perfluoroundecanoic acid



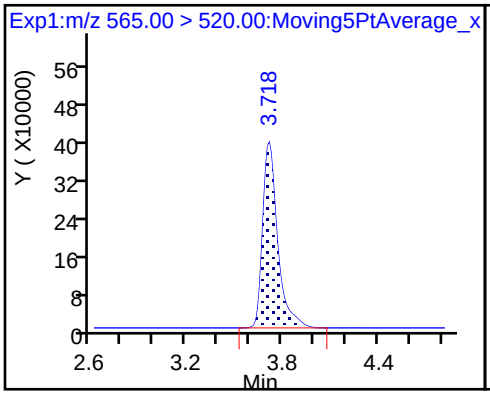
31 Perfluoroundecanoic acid



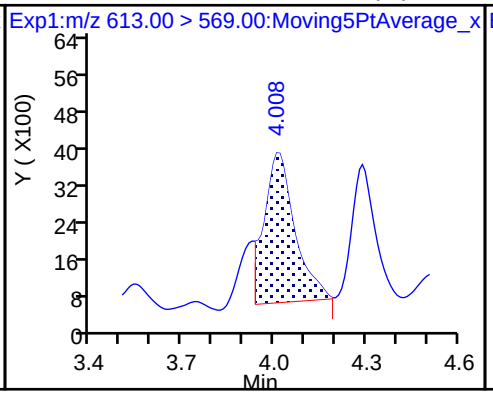
33 N-ethyl perfluorooctane sulfonamid



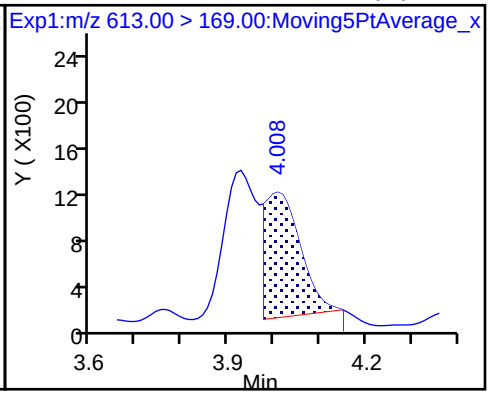
D 30 13C2 PFUnA



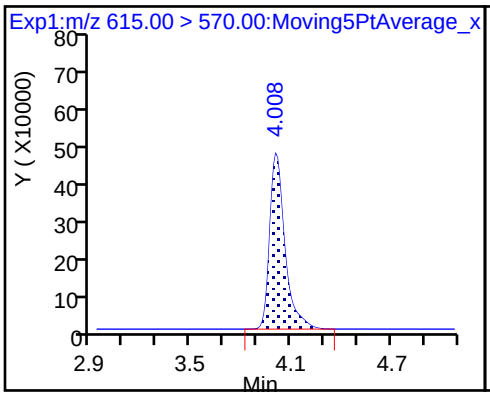
37 Perfluorododecanoic acid (M)



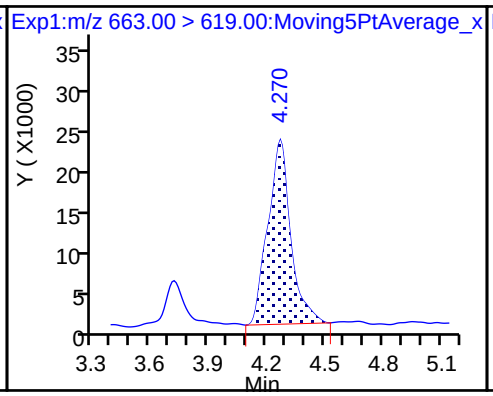
37 Perfluorododecanoic acid (M)



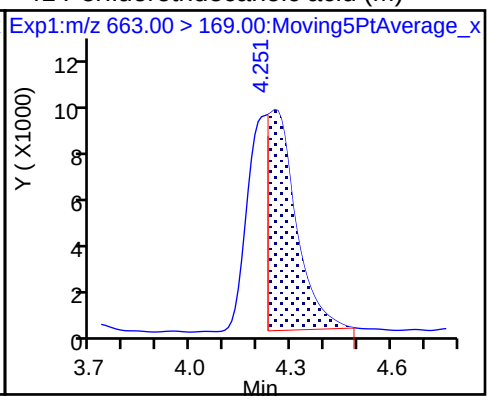
D 36 13C2 PFDoA



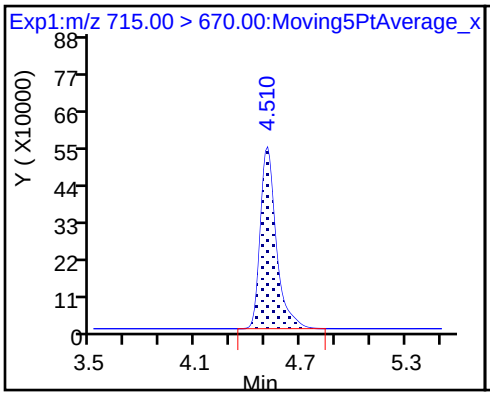
41 Perfluorotridecanoic acid



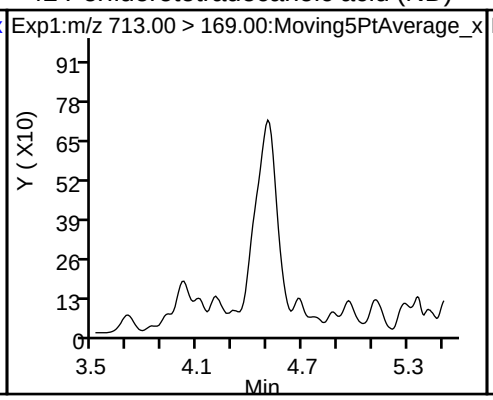
41 Perfluorotridecanoic acid (M)



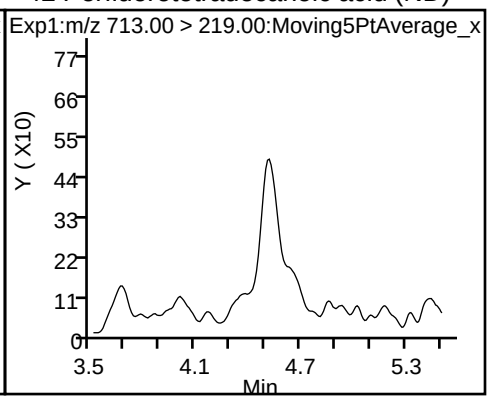
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

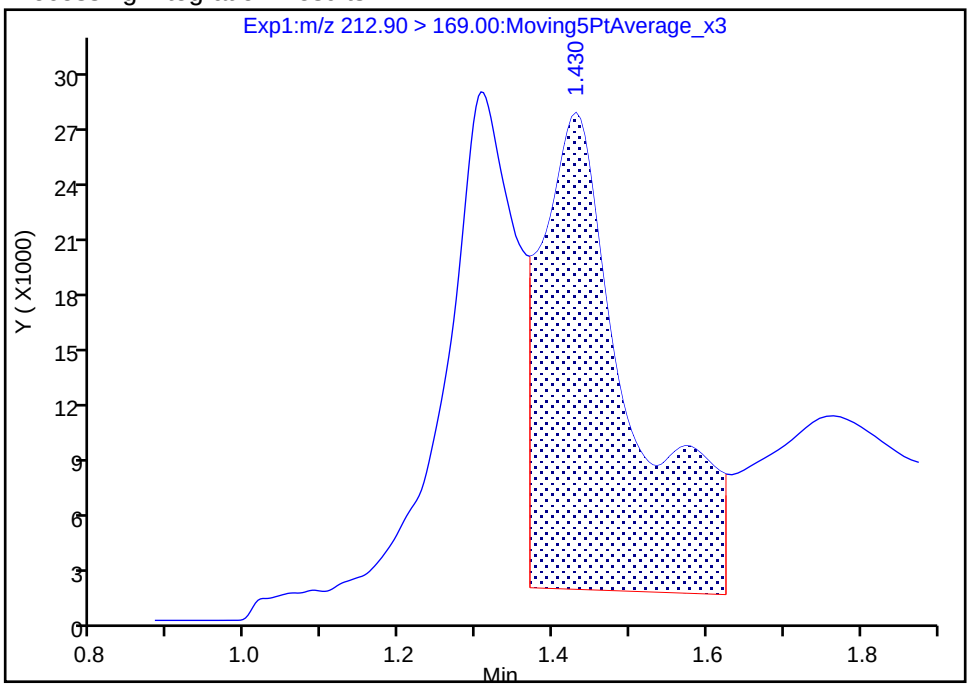
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

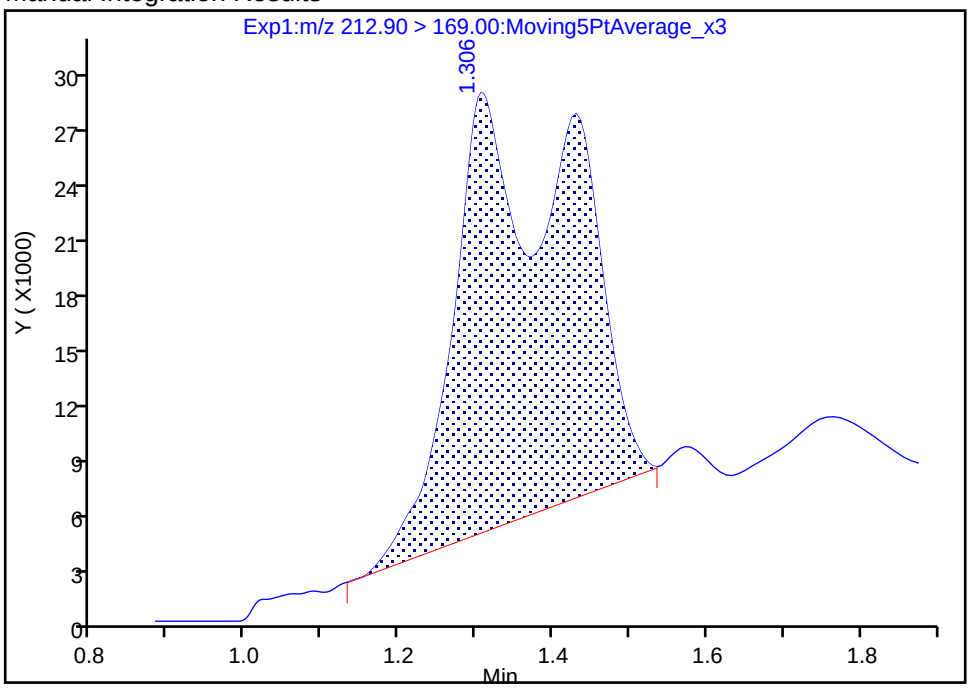
Processing Integration Results

RT: 1.43
Area: 205442
Amount: 0.125855
Amount Units: ng/ml



Manual Integration Results

RT: 1.31
Area: 247115
Amount: 0.151384
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:42:30

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

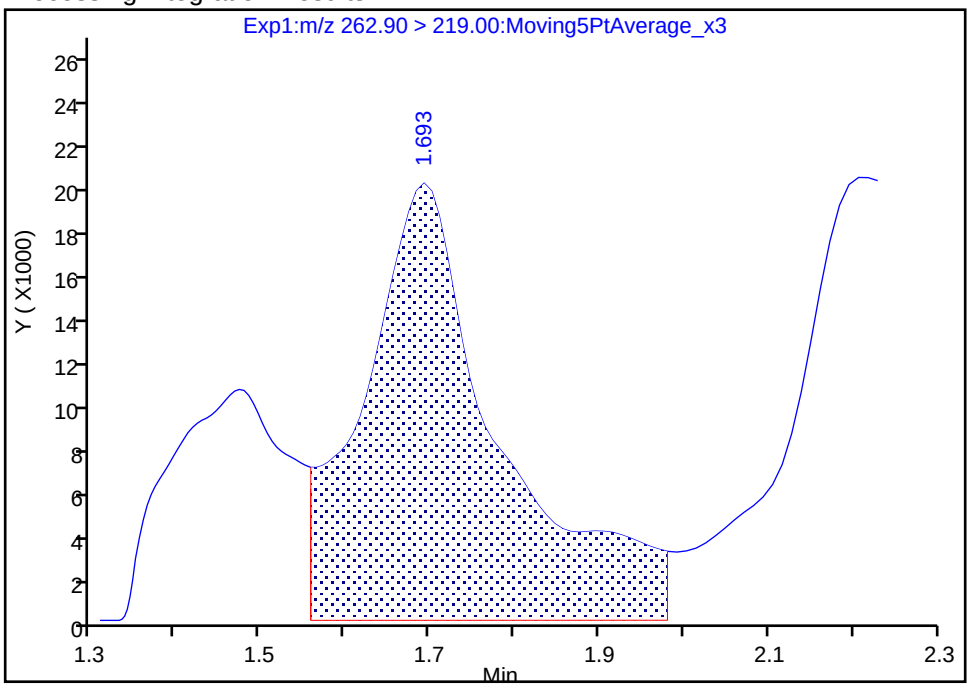
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

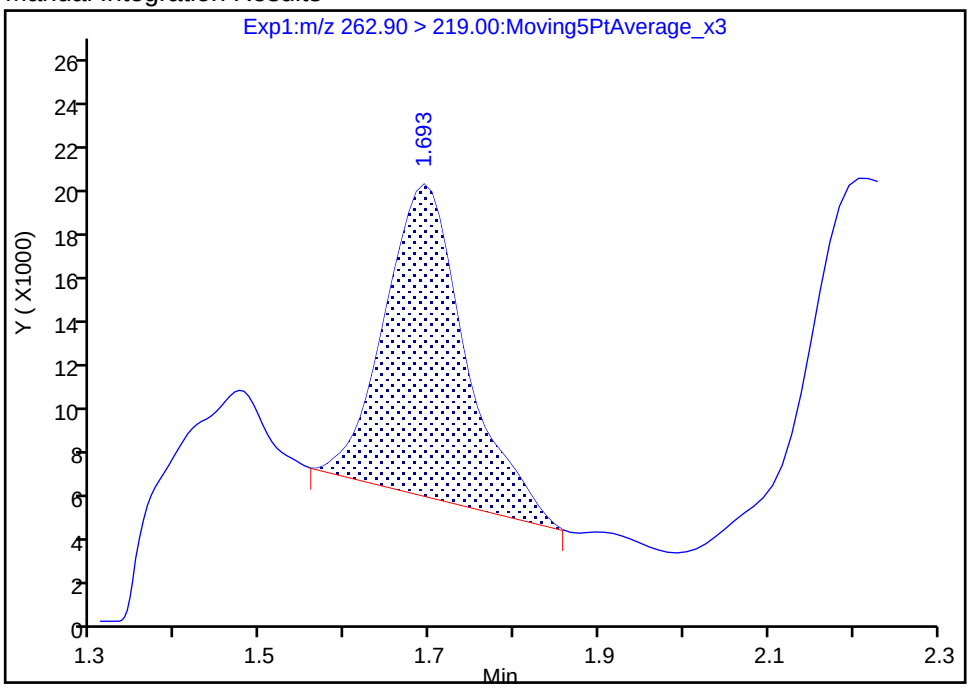
Processing Integration Results

RT: 1.69
Area: 221156
Amount: 0.161797
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 94276
Amount: 0.068972
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:46:08

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

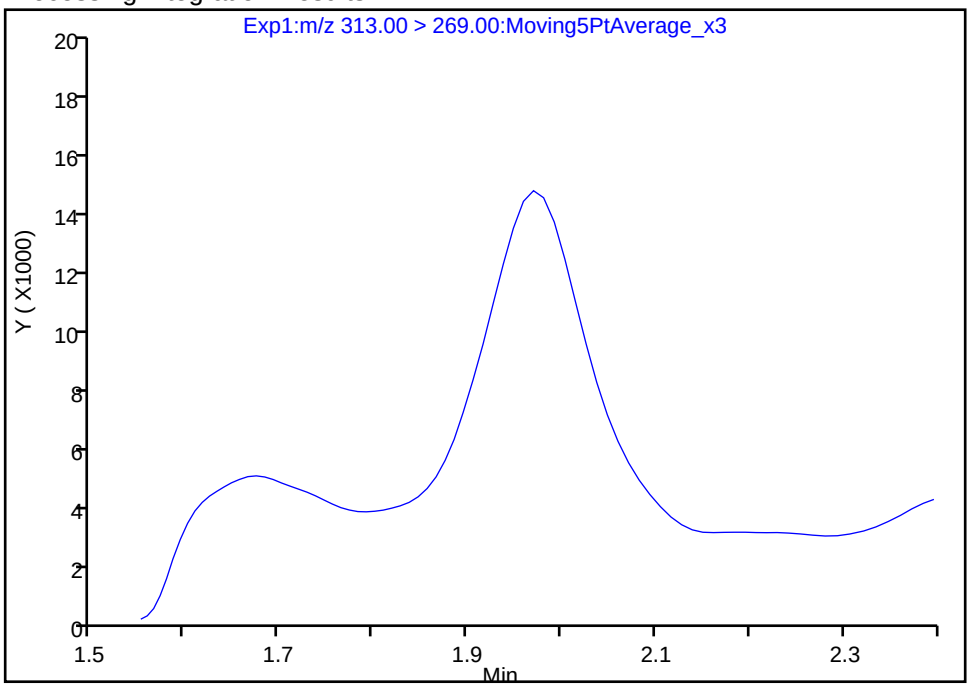
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

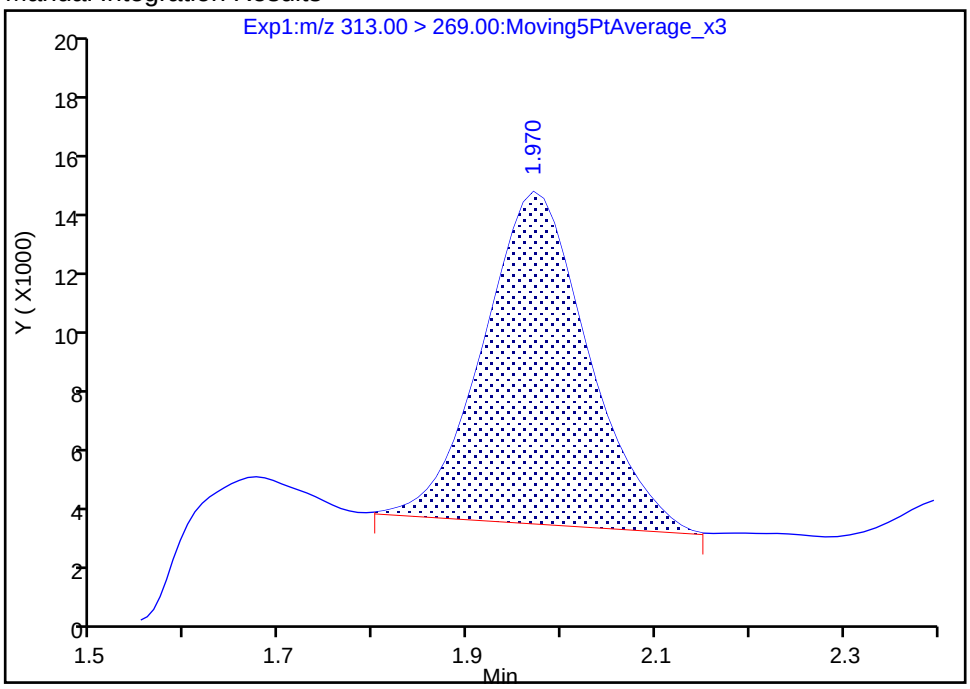
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.97
Area: 85926
Amount: 0.075206
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:46:22
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

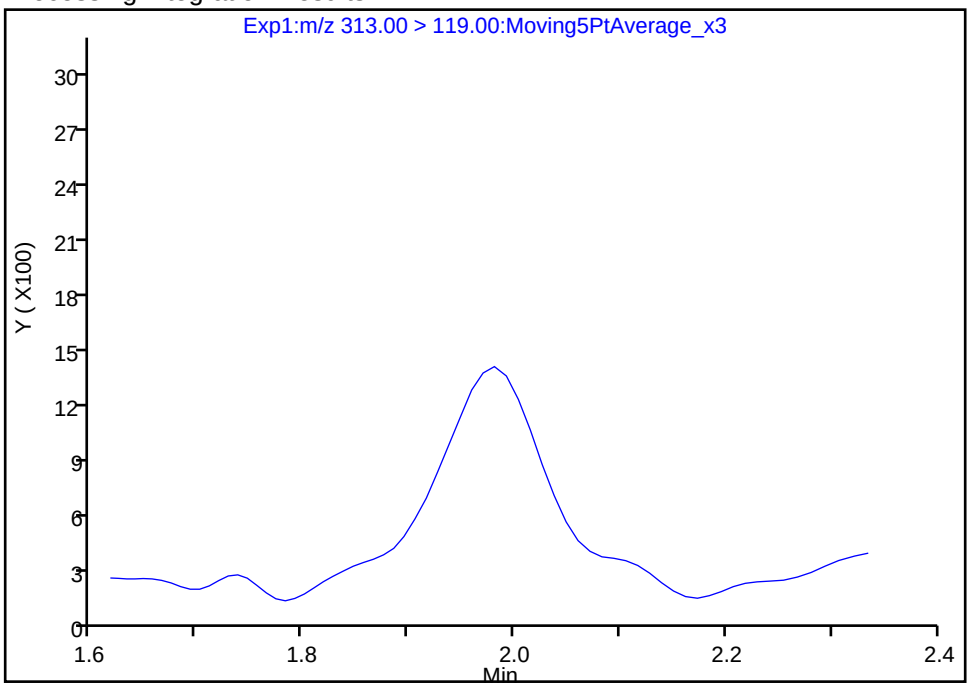
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

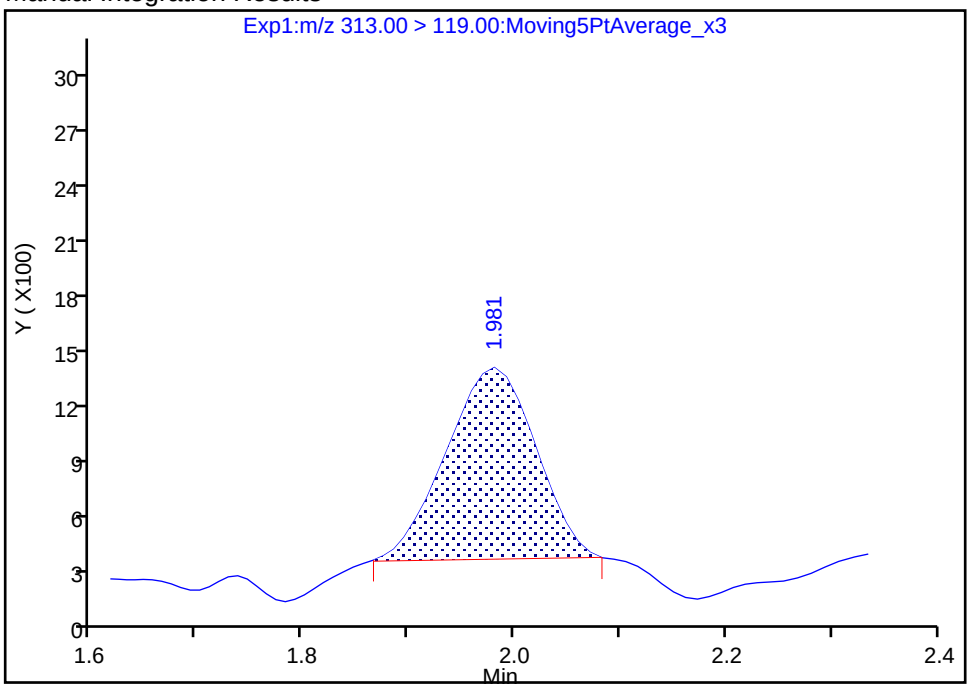
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.98
Area: 6129
Amount: 0.075206
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:47:22
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

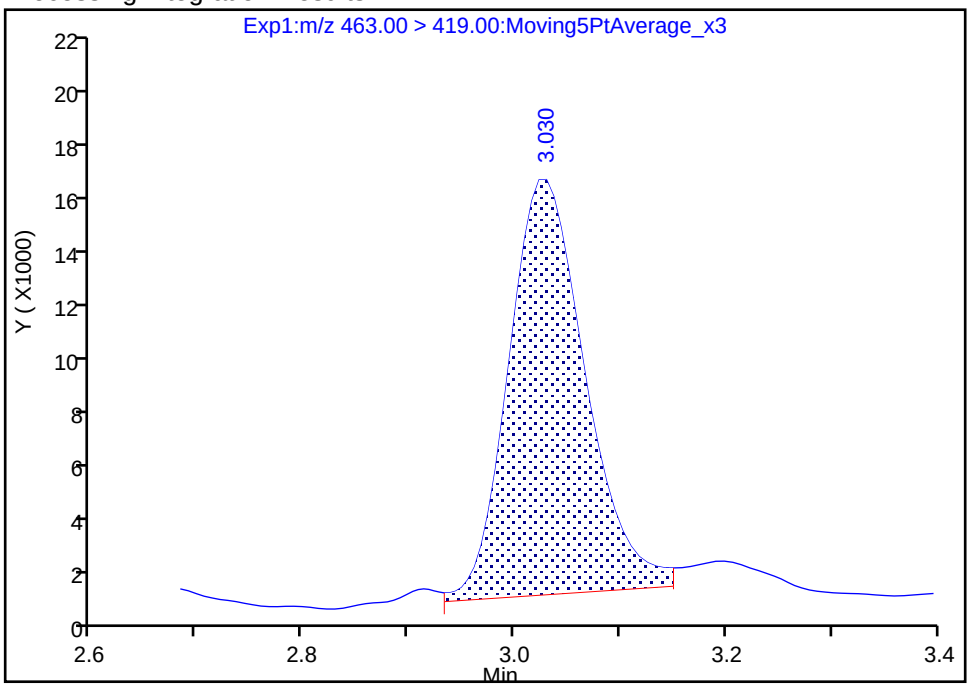
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

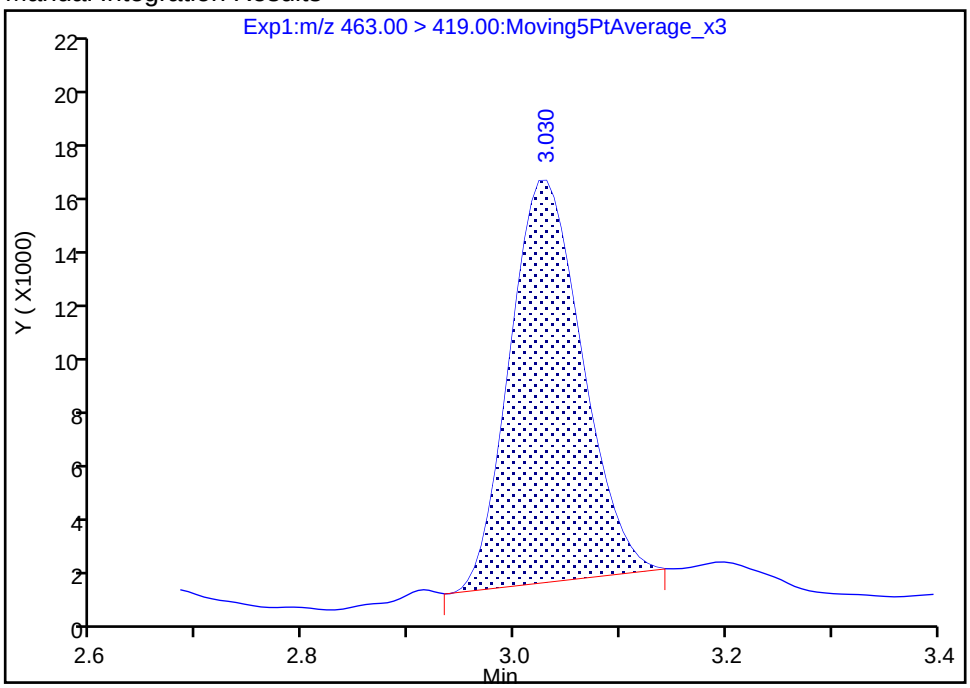
Processing Integration Results

RT: 3.03
Area: 77136
Amount: 0.065821
Amount Units: ng/ml



Manual Integration Results

RT: 3.03
Area: 70531
Amount: 0.060185
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:48:17

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

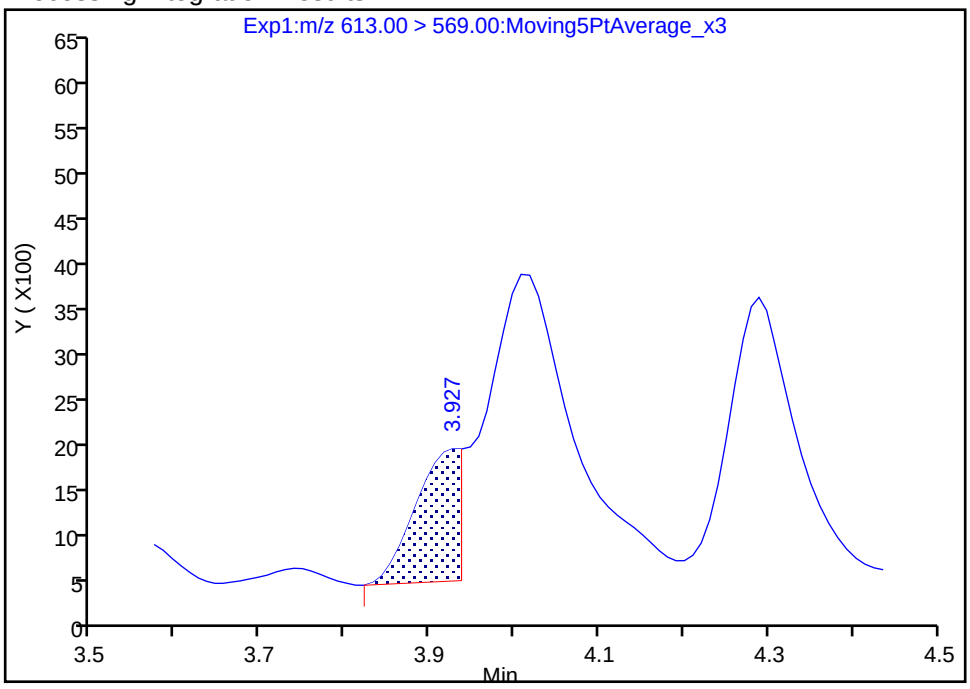
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

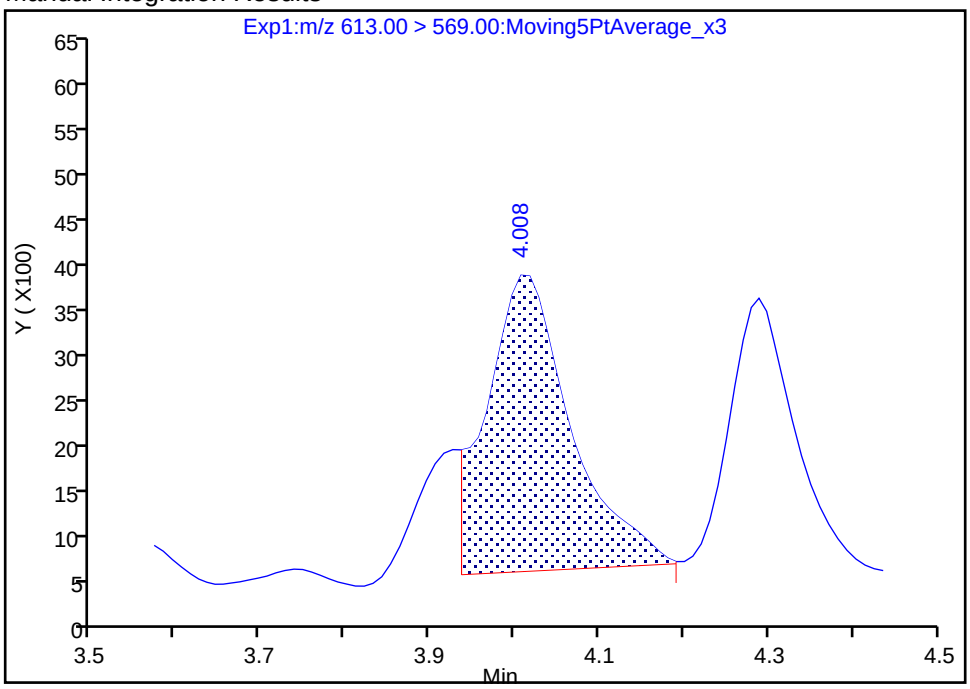
Processing Integration Results

RT: 3.93
Area: 5299
Amount: 0.004125
Amount Units: ng/ml



Manual Integration Results

RT: 4.01
Area: 22702
Amount: 0.017671
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:48:39

Audit Action: Manually Integrated Audit Reason: Wrong peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

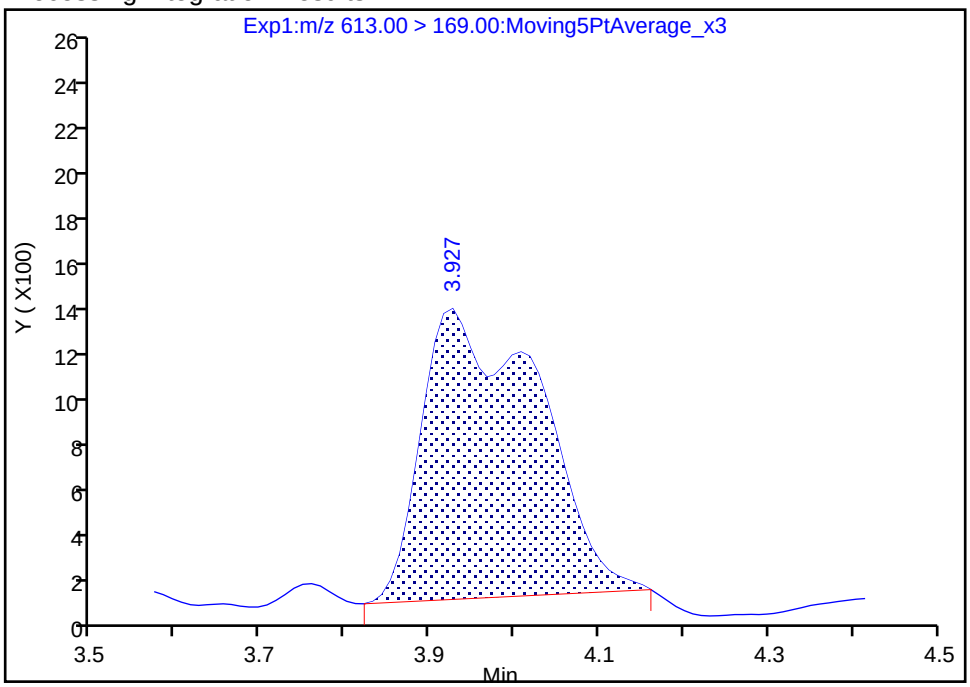
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

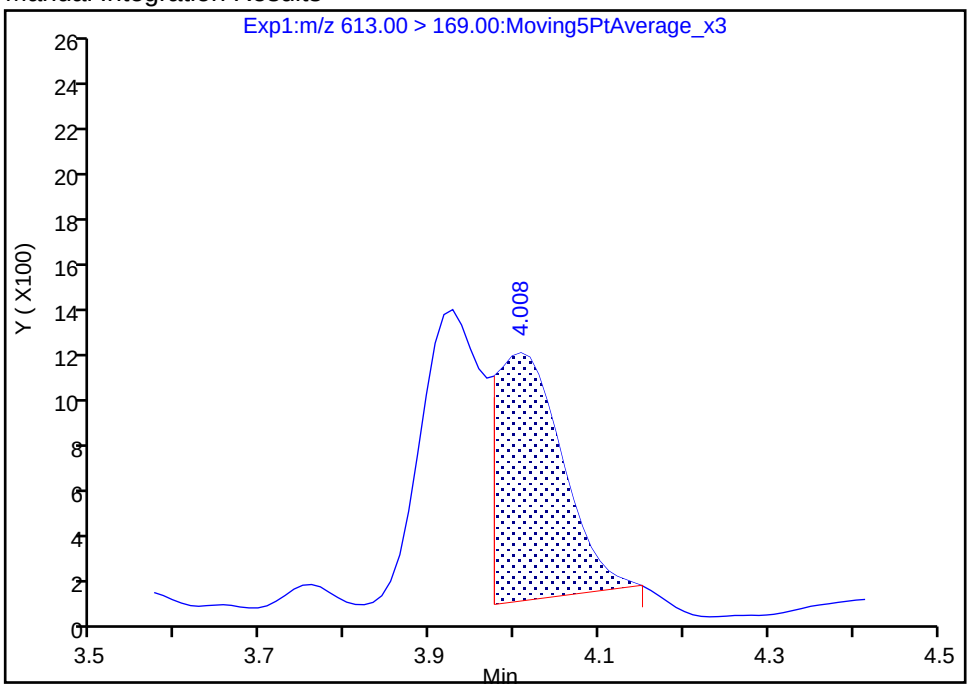
Processing Integration Results

RT: 3.93
Area: 12166
Amount: 0.004125
Amount Units: ng/ml



Manual Integration Results

RT: 4.01
Area: 5626
Amount: 0.017671
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:48:47

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

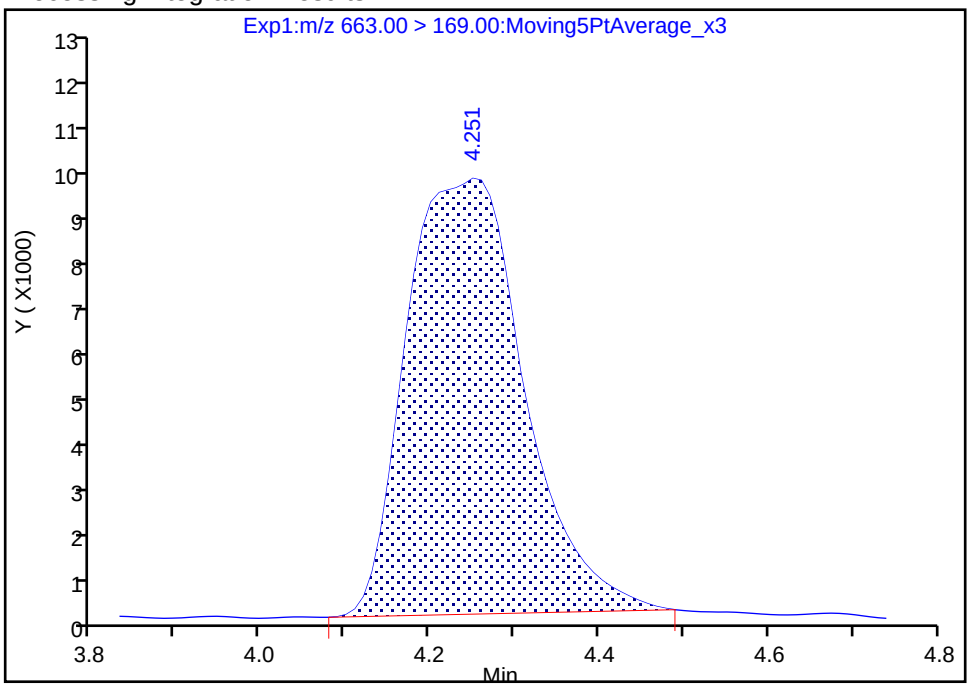
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_025.d				
Injection Date:	07-Apr-2018 20:37:47	Instrument ID:	A8_N		
Lims ID:	320-37380-A-2-B	Lab Sample ID:	320-37380-2		
Client ID:	SB043 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	16	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 2

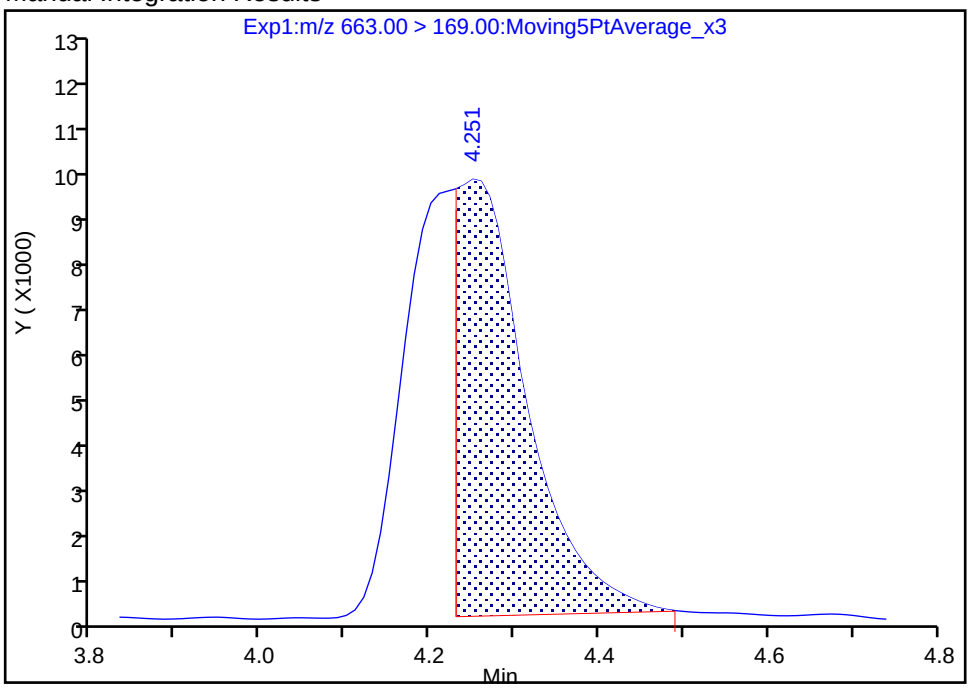
Processing Integration Results

RT: 4.25
Area: 90647
Amount: 0.132945
Amount Units: ng/ml



Manual Integration Results

RT: 4.25
Area: 52711
Amount: 0.132945
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 12:36:04

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB044 (0-2") | Lab Sample ID: 320-37380-3

Matrix: Solid | Lab File ID: 2018.04.07LLB_026.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:00

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.97(g) | Date Analyzed: 04/07/2018 20:45

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 12.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00094	B	0.00023	0.000032
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00016	J	0.00023	0.000089
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00030		0.00023	0.000048
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000052	J	0.00023	0.000033
335-67-1	Perfluorooctanoic acid (PFOA)	0.00016	J	0.00023	0.000099
375-95-1	Perfluorononanoic acid (PFNA)	0.00028		0.00023	0.000041
335-76-2	Perfluorodecanoic acid (PFDA)	0.00073		0.00023	0.000025
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0016		0.00023	0.000041
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00079		0.00023	0.000077
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.0022		0.00023	0.000059
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0011		0.00023	0.000062
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000029	U	0.00023	0.000029
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00017	J	0.00023	0.000036
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000040	U	0.00023	0.000040
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0027	B	0.00057	0.00023
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00010	J	0.00023	0.000045
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000094	U	0.00023	0.000094
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00045	U	0.0023	0.00045
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00043	U	0.0023	0.00043

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB044 (0-2") | Lab Sample ID: 320-37380-3

Matrix: Solid | Lab File ID: 2018.04.07LLB_026.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:00

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.97(g) | Date Analyzed: 04/07/2018 20:45

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 12.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	63		25-150
STL01893	13C5 PFPeA	72		25-150
STL00993	13C2 PFHxA	70		25-150
STL01892	13C4-PFHpA	74		25-150
STL00990	13C4 PFOA	85		25-150
STL00995	13C5 PFNA	90		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	90		25-150
STL02116	13C2-PFTeDA	81		25-150
STL02337	13C3-PFBS	78		25-150
STL00994	18O2 PFHxS	86		25-150
STL00991	13C4 PFOS	86		25-150
STL01056	13C8 FOSA	66		25-150
STL02118	d3-NMeFOSAA	92		25-150
STL02117	d5-NEtFOSAA	78		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d
Lims ID: 320-37380-A-3-B
Client ID: SB044 (0-2")
Sample Type: Client
Inject. Date: 07-Apr-2018 20:45:39 ALS Bottle#: 17 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37380-a-3-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 09:51:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.419	1.424	-0.005	1.000	4485821	1.58		63.1	20566	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.297	1.429	-0.132	0.914	679391	0.4097			38.7	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.685	1.692	-0.007	1.000	111367	0.0694			10.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.685	1.693	-0.008	0.558	3350971	1.81		72.5	20858	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.728	0.002	1.005	27951	0.0107			22.7	
298.90 > 99.00	1.721	1.728	-0.007	1.000	11046		2.53(1.25-3.74)		6.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.721	1.729	-0.008	1.000	77240	1.82		78.4	80.9	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.917	1.980	-0.063	0.973	192424	0.1320			36.0	RM
313.00 > 119.00	1.950	1.980	-0.030	0.989	6068		31.71(5.03-15.10)		19.9	
D 7 13C2 PFHxA										
315.00 > 270.00	1.971	1.981	-0.010	1.000	3562377	1.75		69.9	48618	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.295	2.306	-0.011	1.000	35477	0.0226			10.5	
363.00 > 169.00	2.295	2.306	-0.011	1.000	11317		3.13(1.13-3.40)		30.8	
D 9 13C4-PFHpA										
367.00 > 322.00	2.295	2.307	-0.012	1.000	3613176	1.84		73.7	50959	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.308	2.319	-0.011	1.000	173516	0.0741			36.5	M
399.00 > 99.00	2.308	2.319	-0.011	1.000	73168		2.37(1.50-4.49)		62.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.308	2.320	-0.012	1.000	4960135	2.03		85.8	57996	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.628	2.636	-0.008	1.000	117494	0.0674			260	
D 12 M2-6:2FTS										
429.00 > 81.00	2.628	2.637	-0.009	1.000	2217012	4.89		206	5562	
* 62 13C2-PFOA										
415.00 > 370.00	2.652	2.659	-0.007		5140439	2.50			82169	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.652	2.659	-0.007	1.000	138836	0.0713			30.5	
413.00 > 169.00	2.652	2.659	-0.007	1.000	78304		1.77(0.84-2.52)		136	
D 14 13C4 PFOA										
417.00 > 372.00	2.652	2.660	-0.008	1.000	4107269	2.13		85.3	81497	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.652	2.667	-0.015	1.000	10293	0.005302			10.8	M
449.00 > 99.00	2.652	2.667	-0.015	1.000	2949		3.49(1.94-5.82)		7.1	
20 Perfluorononanoic acid										
463.00 > 419.00	3.022	3.029	-0.007	1.000	184245	0.1219			106	
463.00 > 169.00	3.022	3.029	-0.007	1.000	51486		3.58(1.90-5.69)		421	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.022	3.029	-0.007	1.002	1958737	1.18			74140	
499.00 > 99.00	3.022	3.029	-0.007	1.002	445214		4.40(2.31-6.93)		1642	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.031	-0.009	1.000	3670604	2.25		90.1	55818	
D 18 13C4 PFOS										
503.00 > 80.00	3.015	3.031	-0.016	1.000	3481845	2.05		85.8	6115	
D 21 13C8 FOSA										
506.00 > 78.00	3.357	3.360	-0.003	1.000	3960216	1.65		66.1	50624	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.357	3.368	-0.011	1.000	25301	0.0162			61.7	M
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.367	3.377	-0.010	1.000	1064503	0.6036			23276	
D 26 M2-8:2FTS										
529.00 > 81.00	3.367	3.379	-0.012	1.000	3131736	5.95		248	6119	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.376	3.386	-0.010	1.000	422384	0.3157			215	
513.00 > 169.00	3.376	3.386	-0.010	1.000	70940		5.95(2.36-7.09)		637	
D 23 13C2 PFDA										
515.00 > 470.00	3.376	3.388	-0.012	1.000	3381338	2.46		98.2	68412	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.532	3.547	-0.015	1.000	1689038	2.29		91.7	16385	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.689	3.706	-0.017	1.000	44553	0.0441			46.8	M
599.00 > 99.00	3.689	3.706	-0.017	1.000	18388		2.42(1.39-4.16)		94.1	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.700	3.708	-0.008	1.000	1516605	1.96		78.5	12334	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.710	3.717	-0.007	1.000	638086	0.7142			657	
563.00 > 169.00	3.710	3.717	-0.007	1.000	142490		4.48(2.12-6.36)		2150	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.700	3.717	-0.017	1.000	1467	0.002637			26.2	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.710	3.719	-0.009	1.000	2784000	2.48		99.1	61806	
37 Perfluorododecanoic acid										
613.00 > 569.00	3.999	4.006	-0.007	1.000	418803	0.3439			136	
613.00 > 169.00	3.999	4.006	-0.007	1.000	112853		3.71(2.13-6.40)		735	
D 36 13C2 PFDoA										
615.00 > 570.00	3.999	4.009	-0.010	1.000	2816683	2.25		90.0	21134	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.263	4.279	-0.016	1.000	1245268	0.9561			614	
663.00 > 169.00	4.253	4.279	-0.026	0.998	402697		3.09(1.25-3.76)		1954	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.490	4.511	-0.021	1.000	3229813	2.03		81.3	16431	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.490	4.511	-0.021	1.000	157182	0.4871			653	
713.00 > 219.00	4.490	4.511	-0.021	1.000	117916		1.33(0.71-2.13)		660	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 10:11:11 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d

Injection Date: 07-Apr-2018 20:45:39 Instrument ID: A8_N

Lims ID: 320-37380-A-3-B Lab Sample ID: 320-37380-3

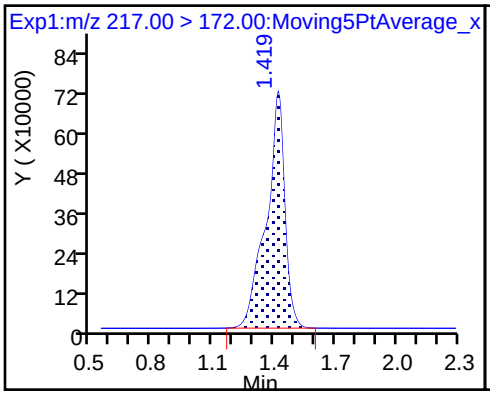
Client ID: SB044 (0-2")

Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 8

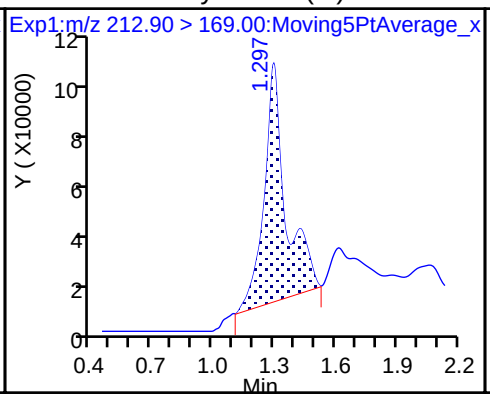
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

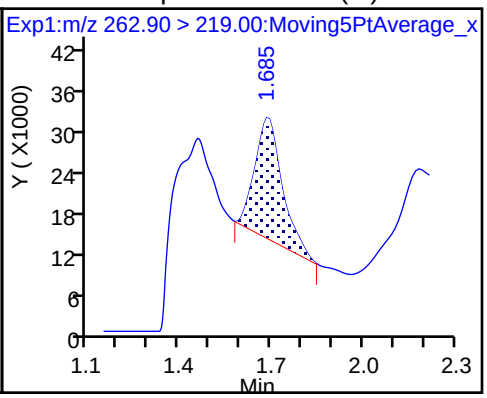
D 1 13C4 PFBA



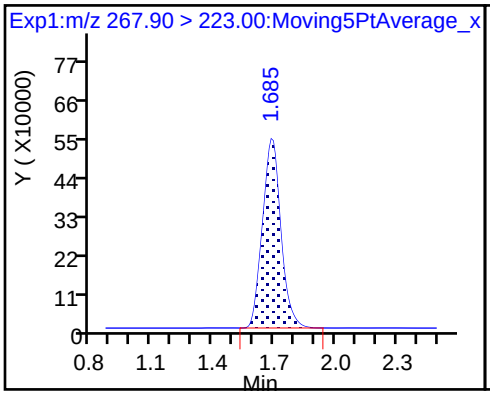
2 Perfluorobutyric acid (M)



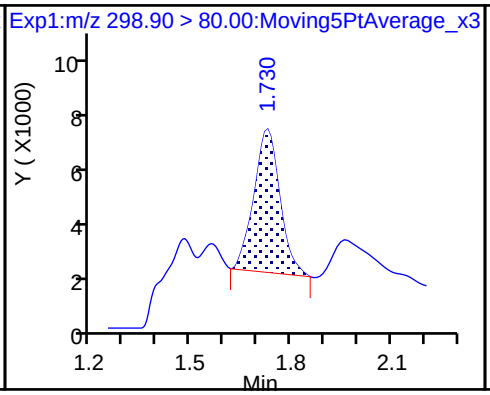
4 Perfluoropentanoic acid (M)



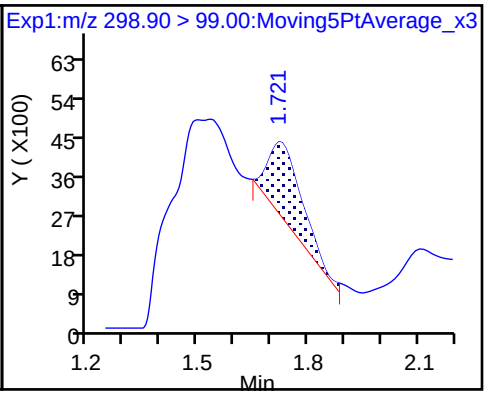
D 3 13C5-PFPeA



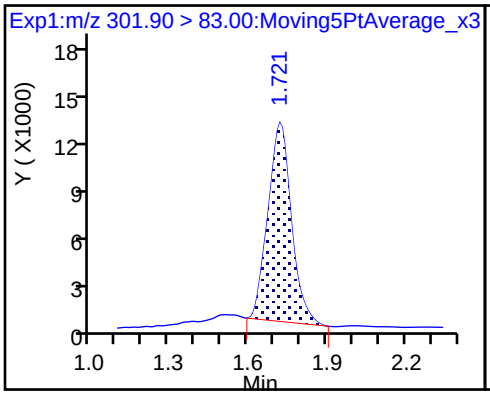
5 Perfluorobutanesulfonic acid



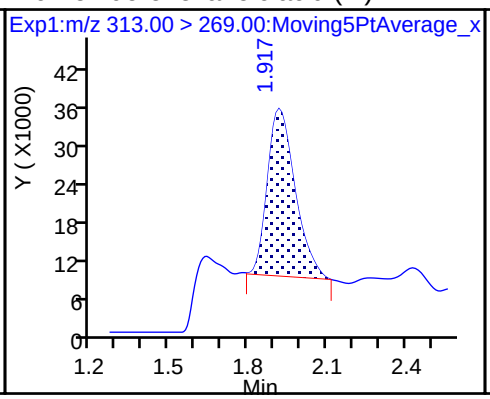
5 Perfluorobutanesulfonic acid



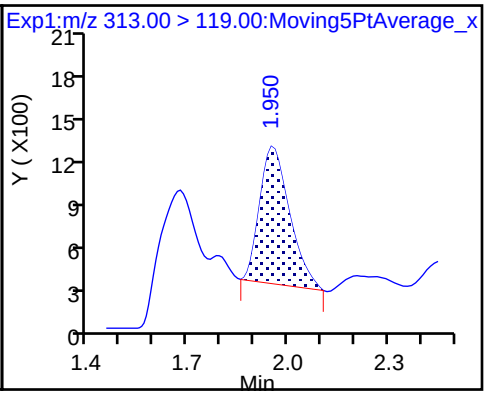
D 47 13C3-PFBS



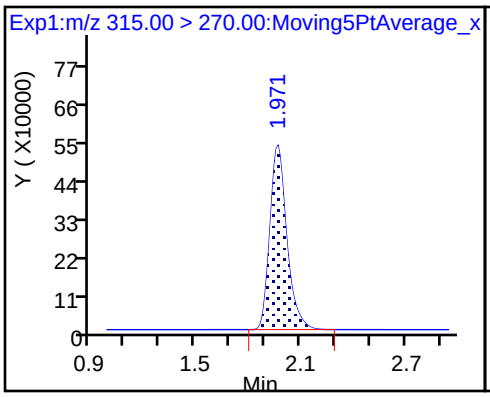
6 Perfluorohexanoic acid (M)



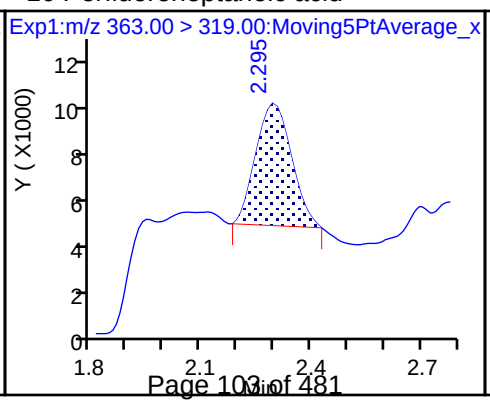
6 Perfluorohexanoic acid



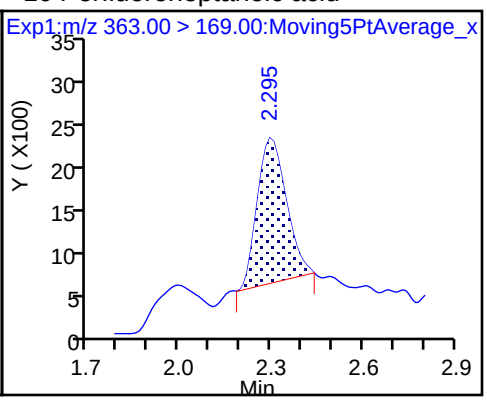
D 7 13C2 PFHxA



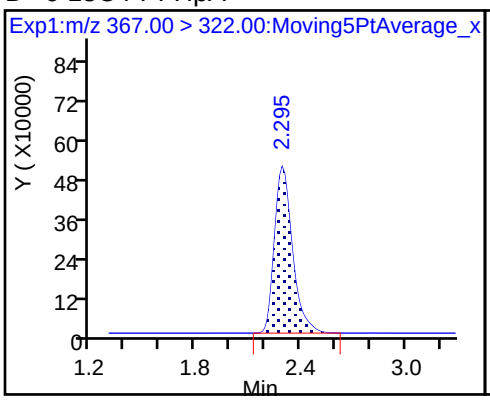
10 Perfluoroheptanoic acid



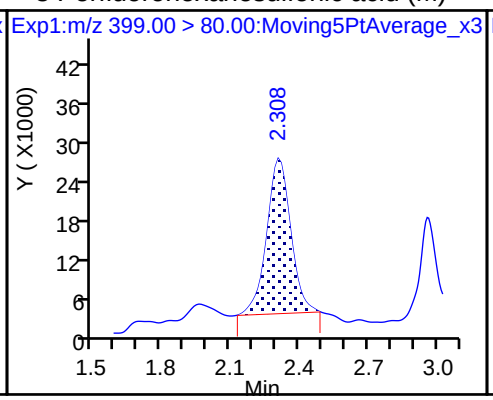
10 Perfluoroheptanoic acid



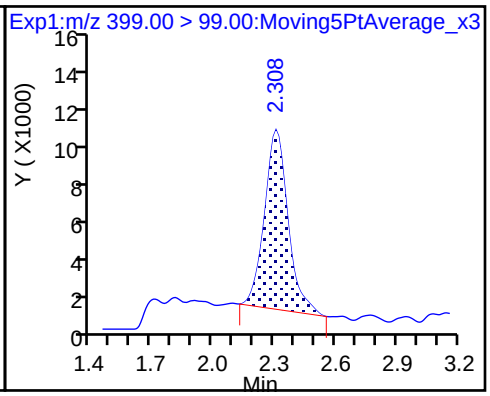
D 9 13C4-PFHpA



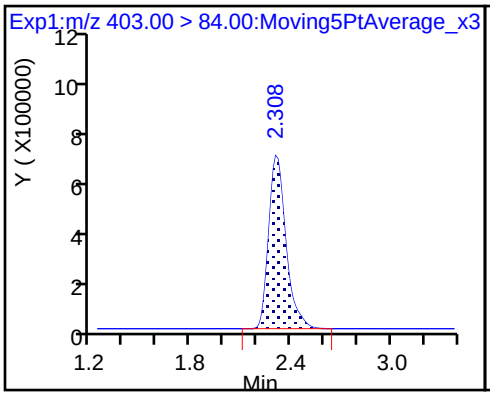
8 Perfluorohexanesulfonic acid (M)



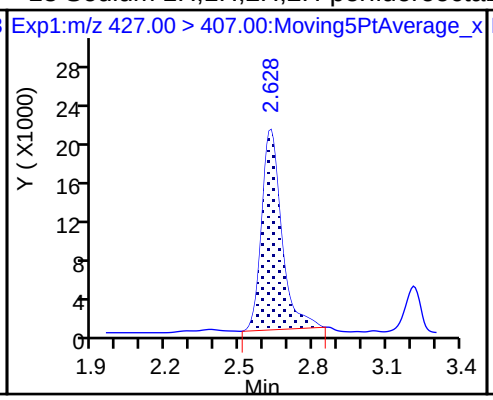
8 Perfluorohexanesulfonic acid



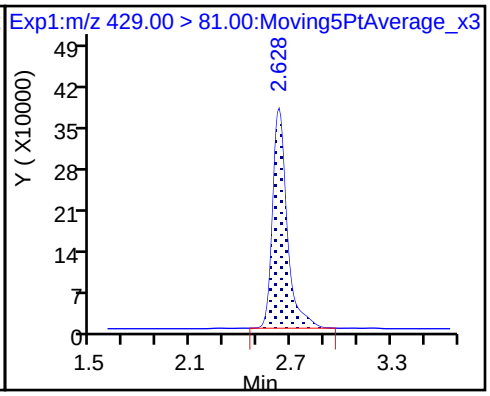
D 11 18O2 PFHxS



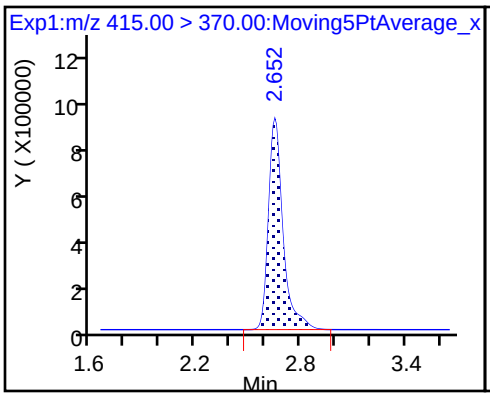
13 Sodium 1H,1H,2H,2H-perfluorooctane



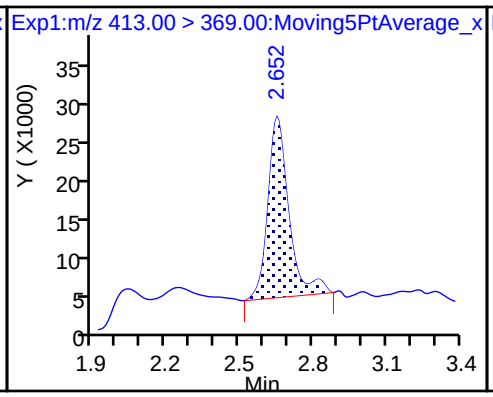
D 12 M2-6:2FTS



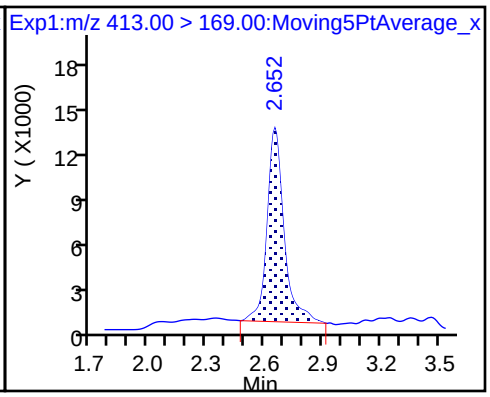
* 62 13C2-PFOA



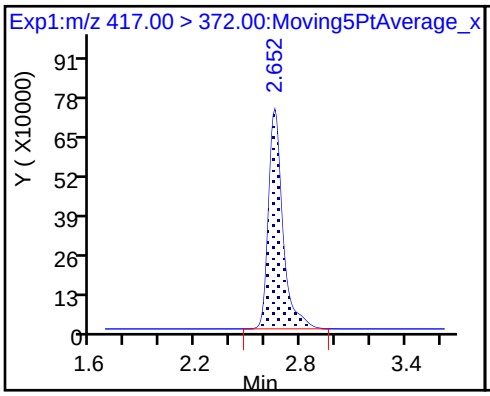
15 Perfluorooctanoic acid



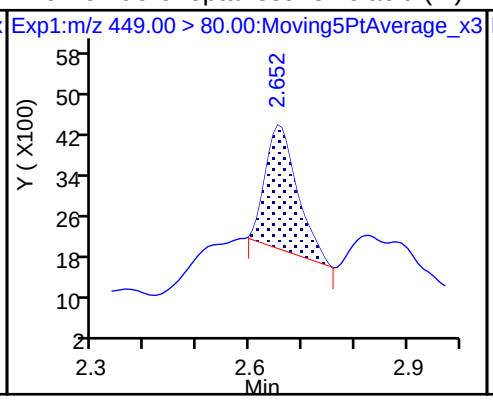
15 Perfluorooctanoic acid



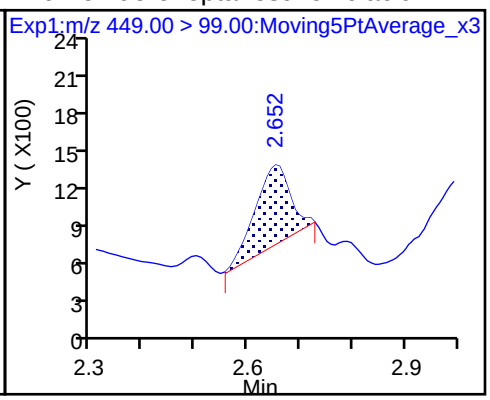
D 14 13C4 PFOA



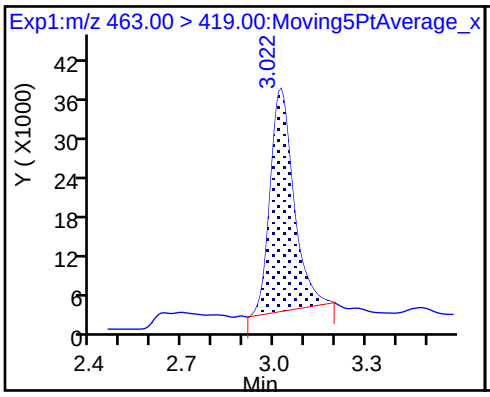
16 Perfluoroheptanesulfonic acid (M)



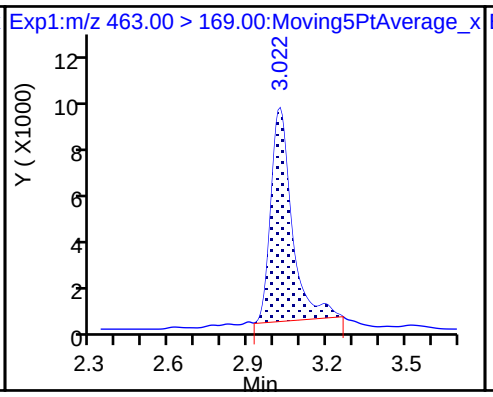
16 Perfluoroheptanesulfonic acid



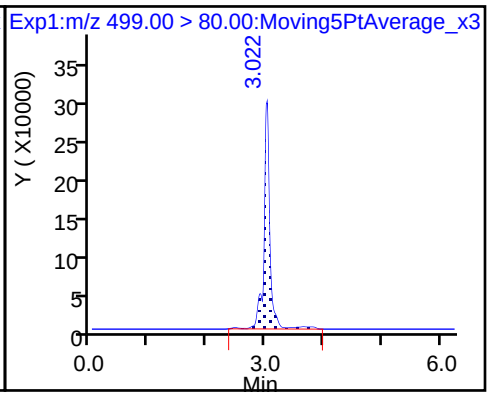
20 Perfluorononanoic acid



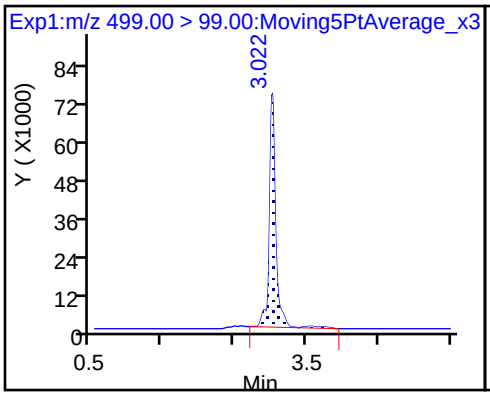
20 Perfluorononanoic acid



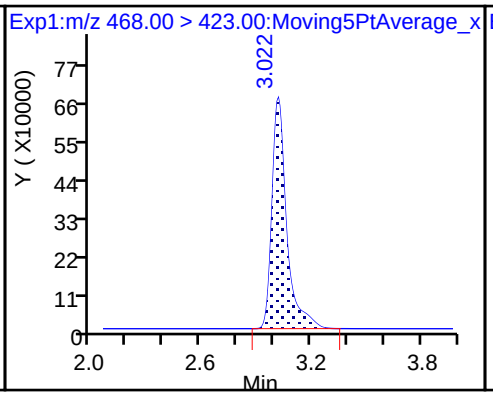
17 Perfluorooctane sulfonic acid



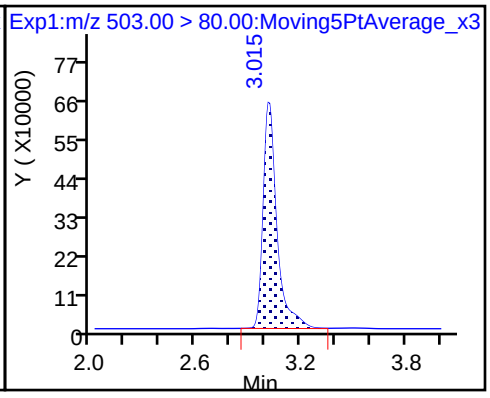
17 Perfluorooctane sulfonic acid



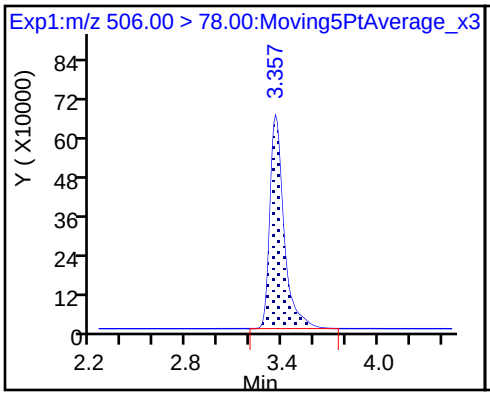
D 19 13C5 PFNA



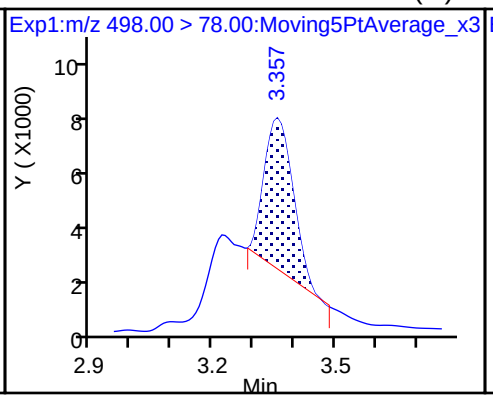
D 18 13C4 PFOS



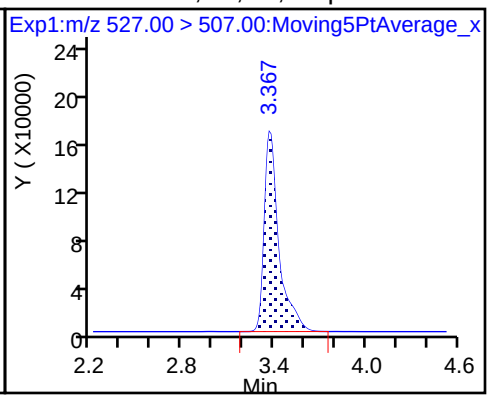
D 21 13C8 FOSA



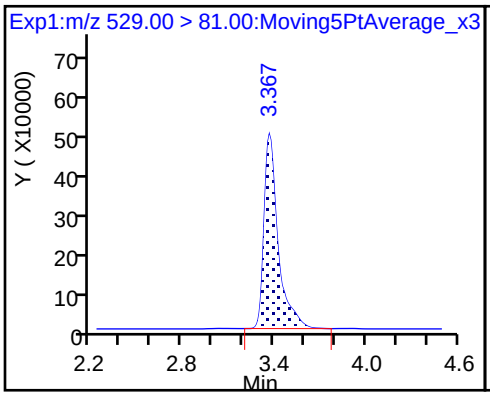
22 Perfluorooctane Sulfonamide (M)



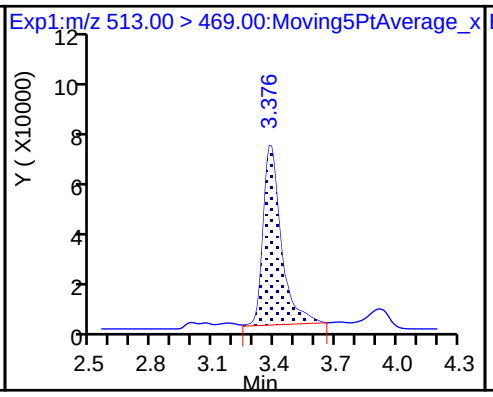
25 Sodium 1H,1H,2H,2H-perfluorodecane



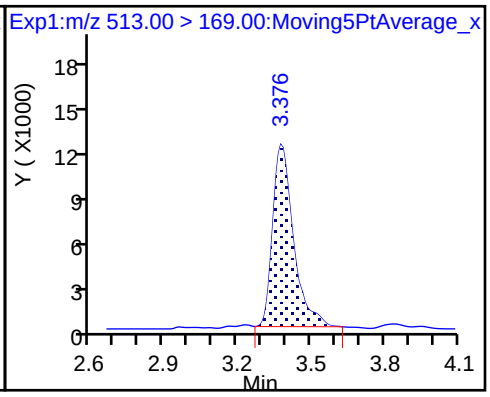
D 26 M2-8:2FTS



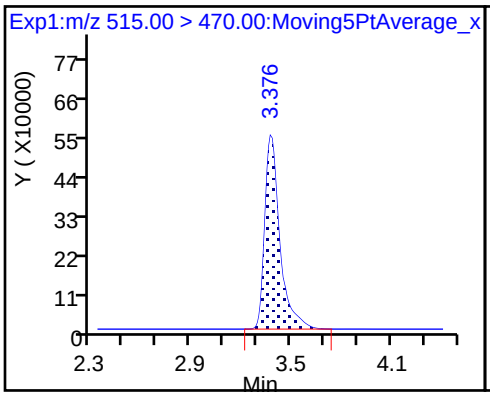
24 Perfluorodecanoic acid



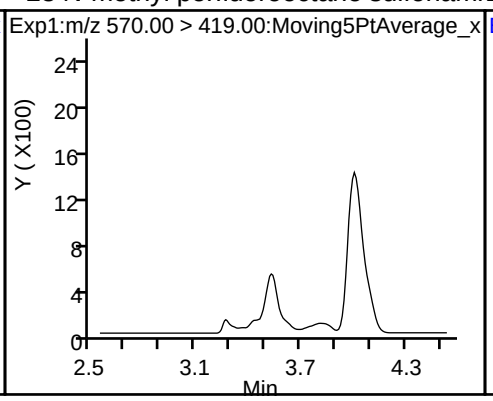
24 Perfluorodecanoic acid



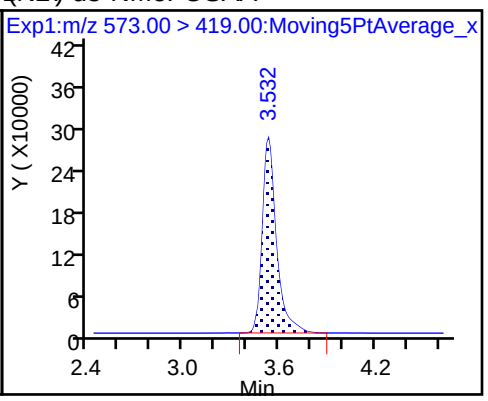
D 23 13C2 PFDA



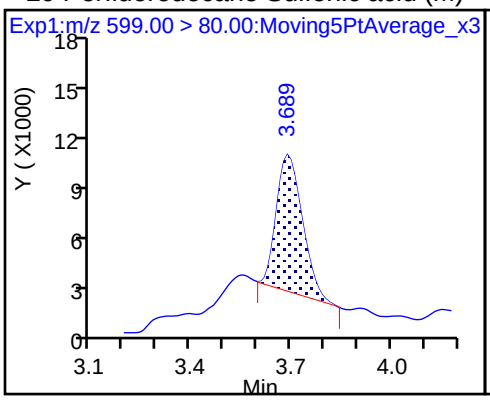
28 N-methyl perfluorooctane sulfonamid (M)



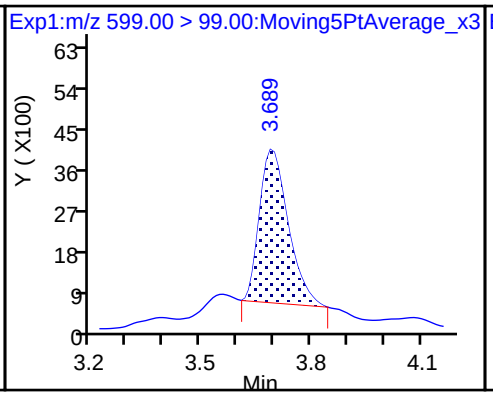
D 27 d3-NMeFOSAA



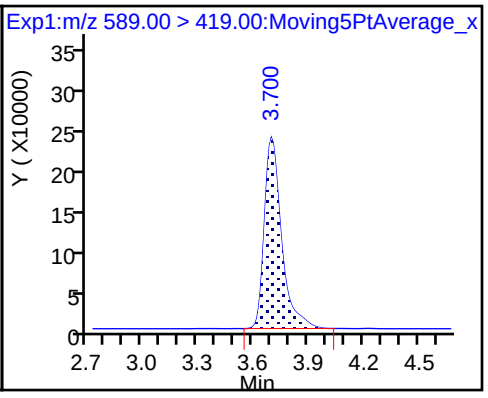
29 Perfluorodecane Sulfonic acid (M)



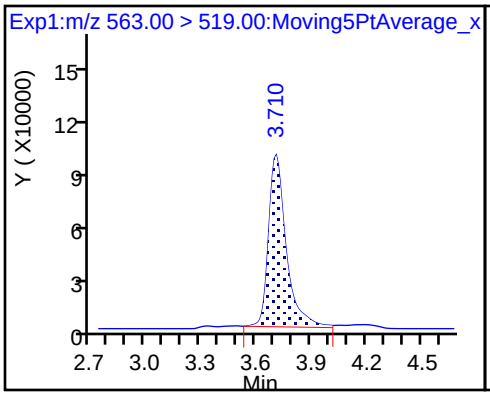
29 Perfluorodecane Sulfonic acid



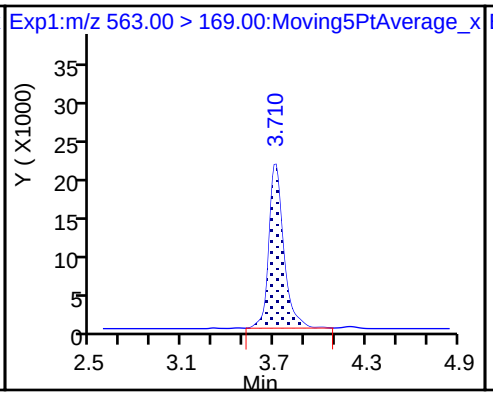
D 32 d5-NEtFOSAA



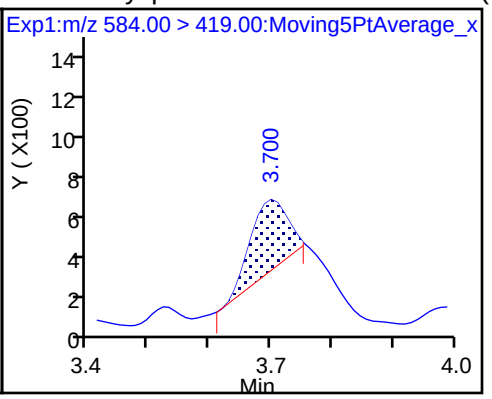
31 Perfluoroundecanoic acid



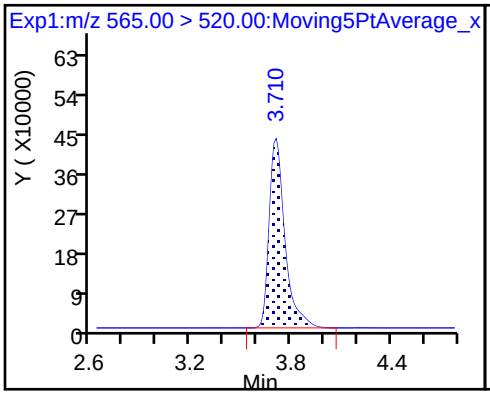
31 Perfluoroundecanoic acid



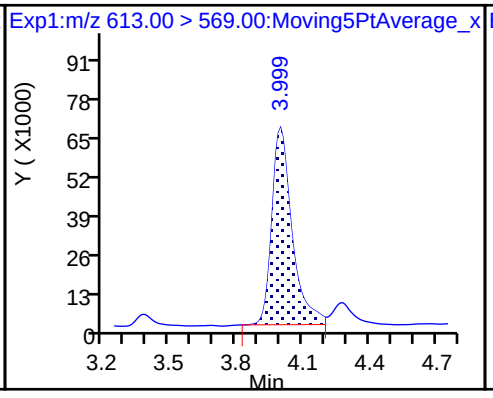
33 N-ethyl perfluorooctane sulfonamid (M)



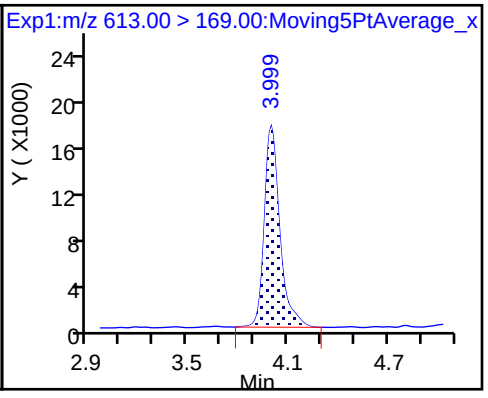
D 30 13C2 PFUnA



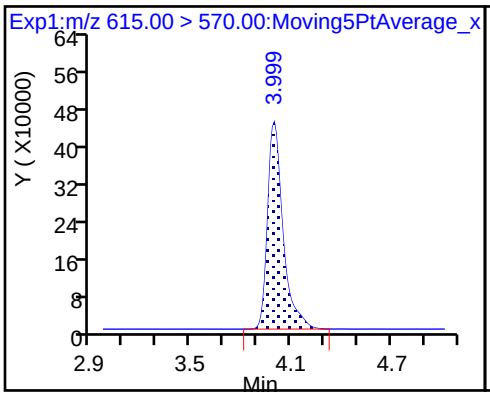
37 Perfluorododecanoic acid



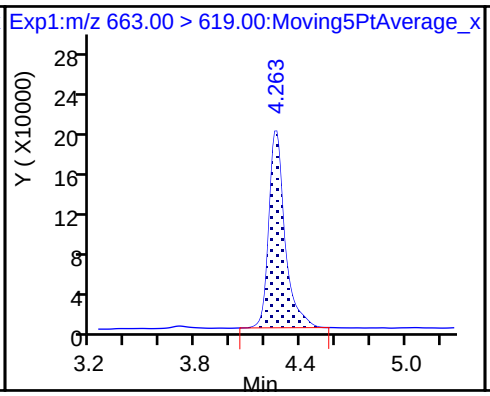
37 Perfluorododecanoic acid



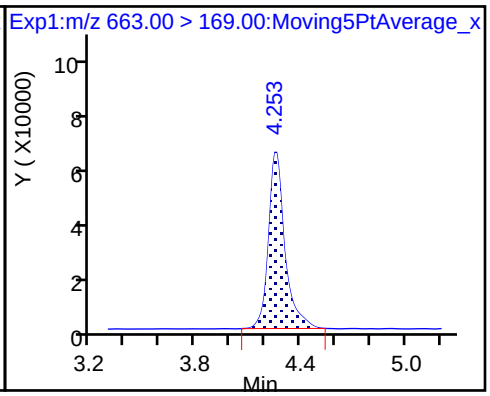
D 36 13C2 PFDoA



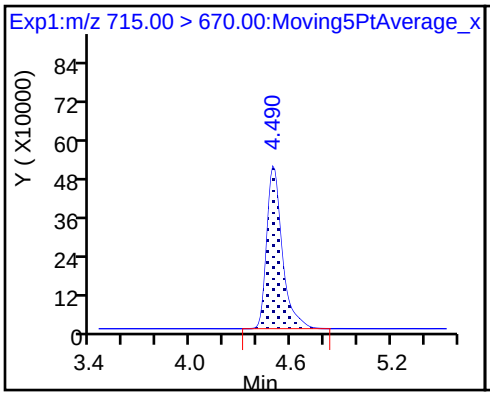
41 Perfluorotridecanoic acid



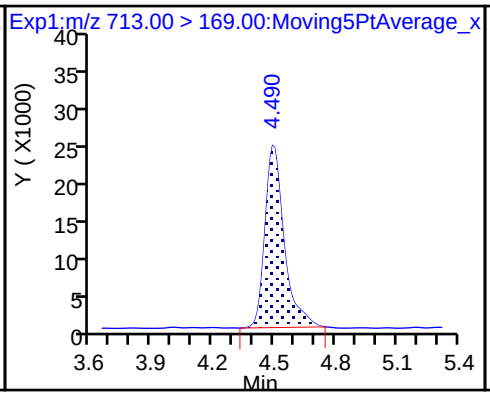
41 Perfluorotridecanoic acid



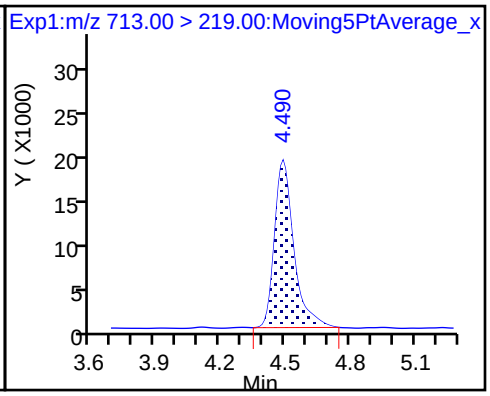
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

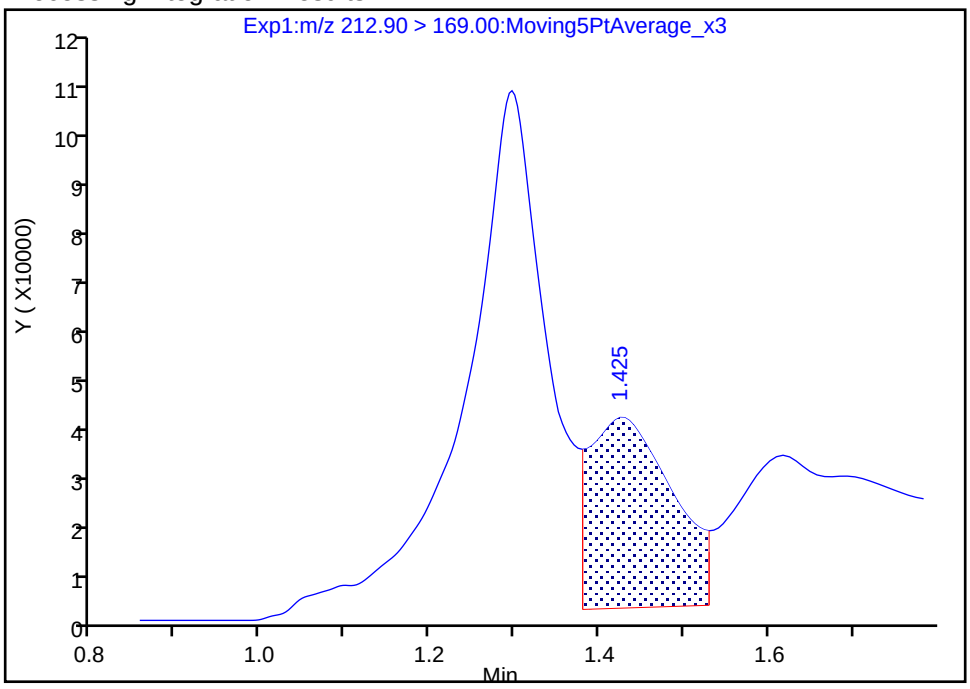
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

Processing Integration Results

RT: 1.42
Area: 255473
Amount: 0.154059
Amount Units: ng/ml



Manual Integration Results

RT: 1.30
Area: 679391
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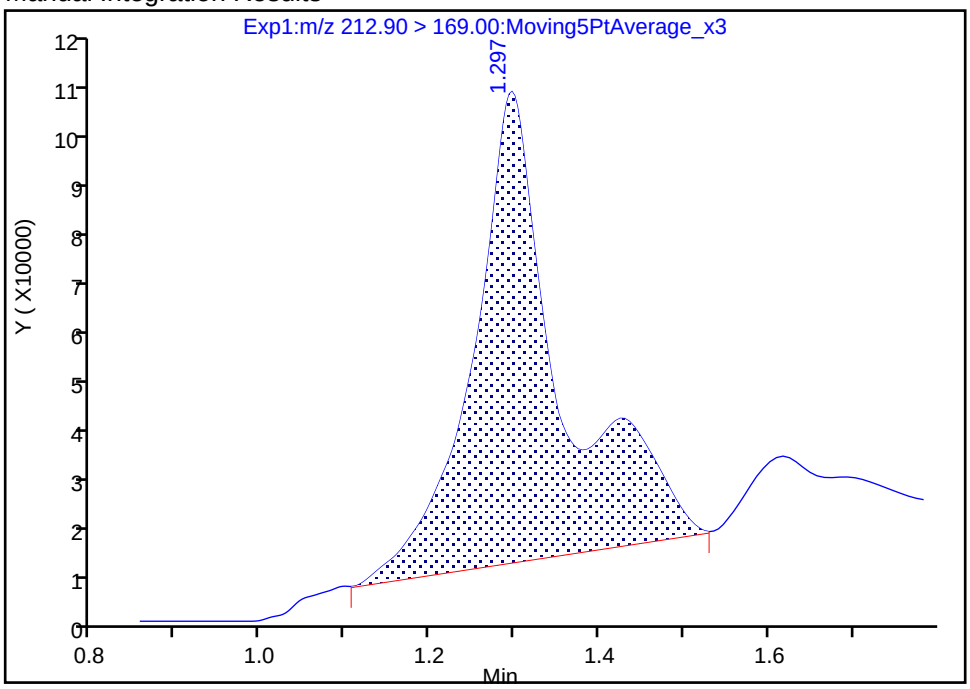
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:49:19

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

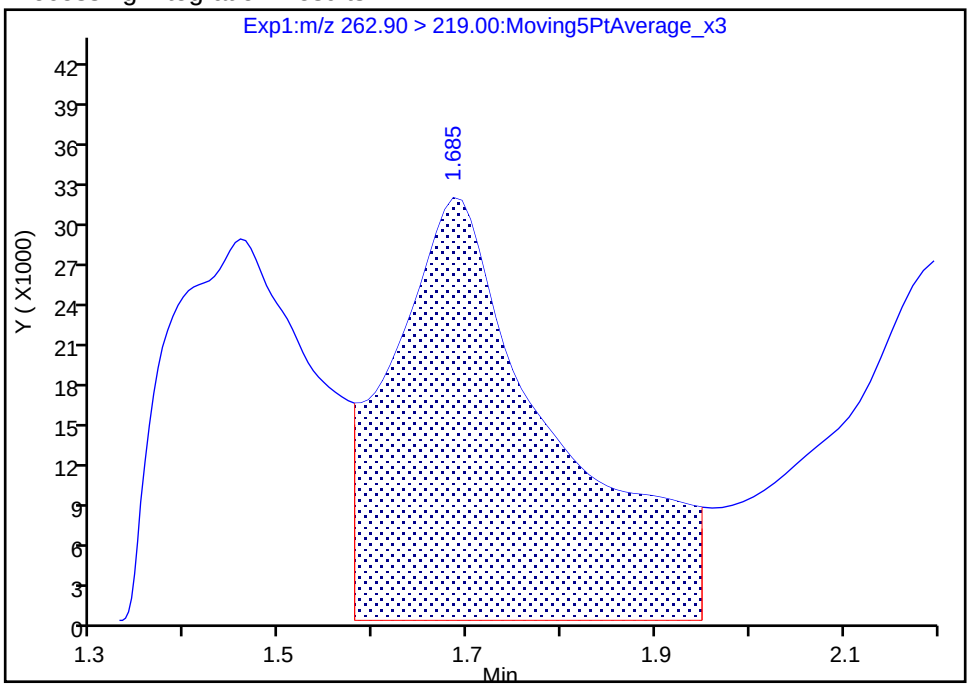
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

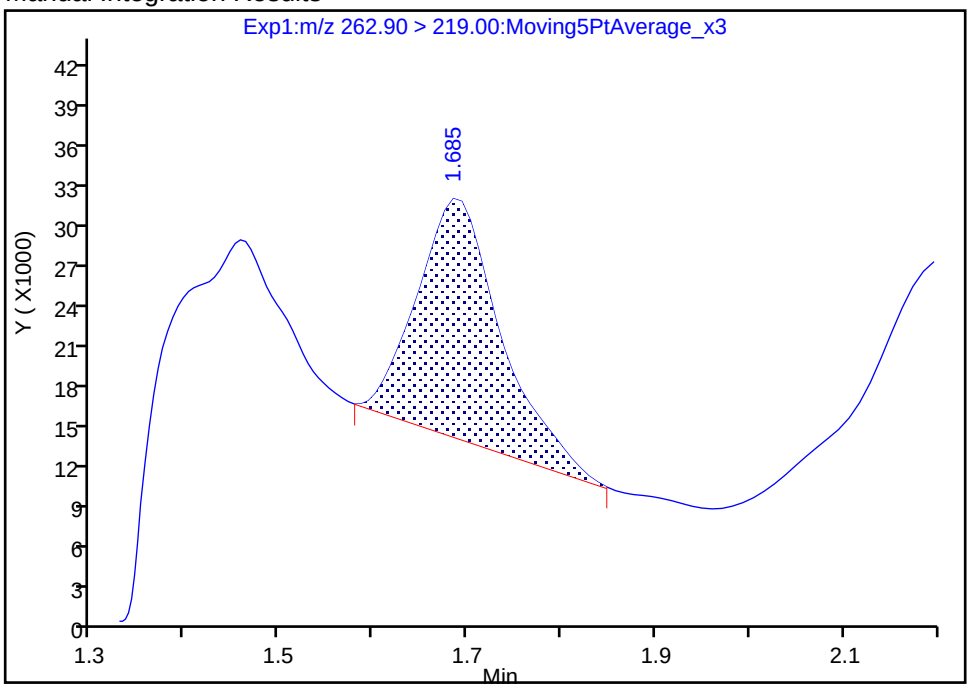
Processing Integration Results

RT: 1.68
Area: 377579
Amount: 0.235351
Amount Units: ng/ml



Manual Integration Results

RT: 1.68
Area: 111367
Amount: 0.069417
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:49:31

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

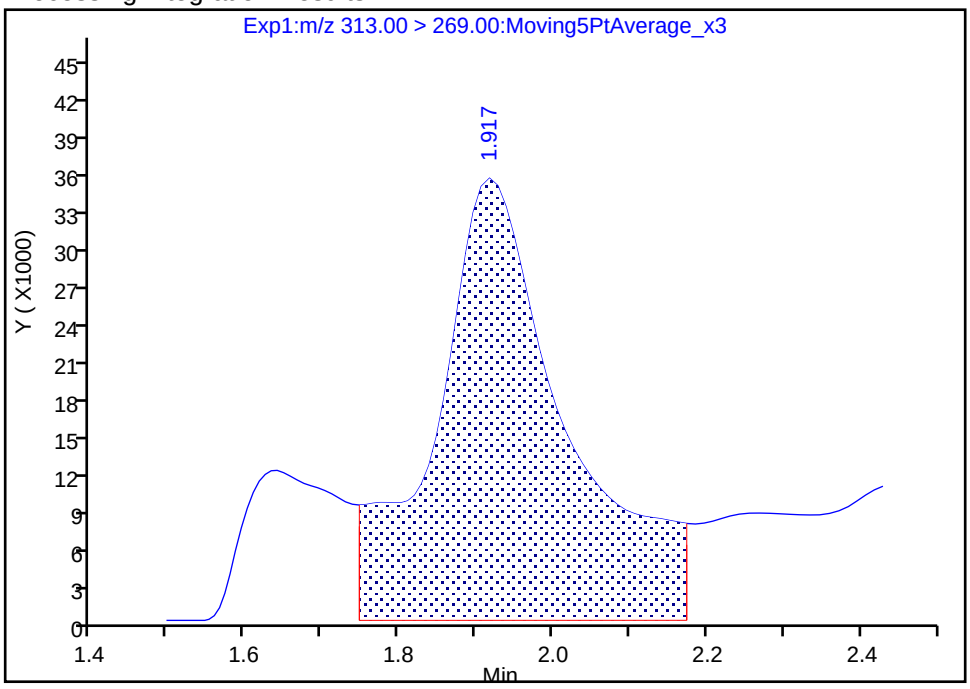
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

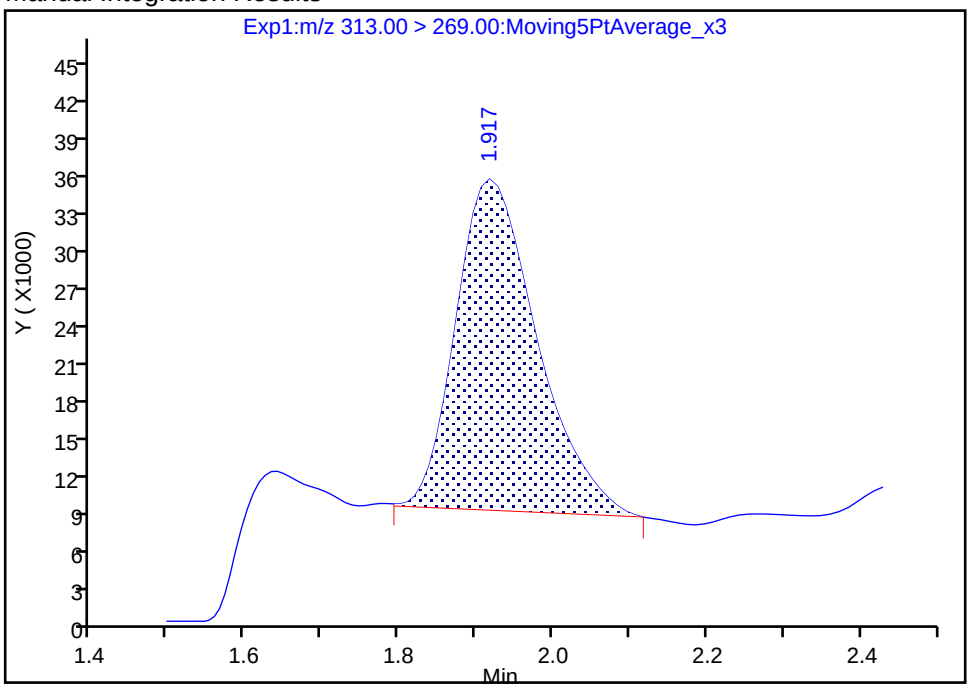
Processing Integration Results

RT: 1.92
Area: 413675
Amount: 0.283700
Amount Units: ng/ml



Manual Integration Results

RT: 1.92
Area: 192424
Amount: 0.131965
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:49:43

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

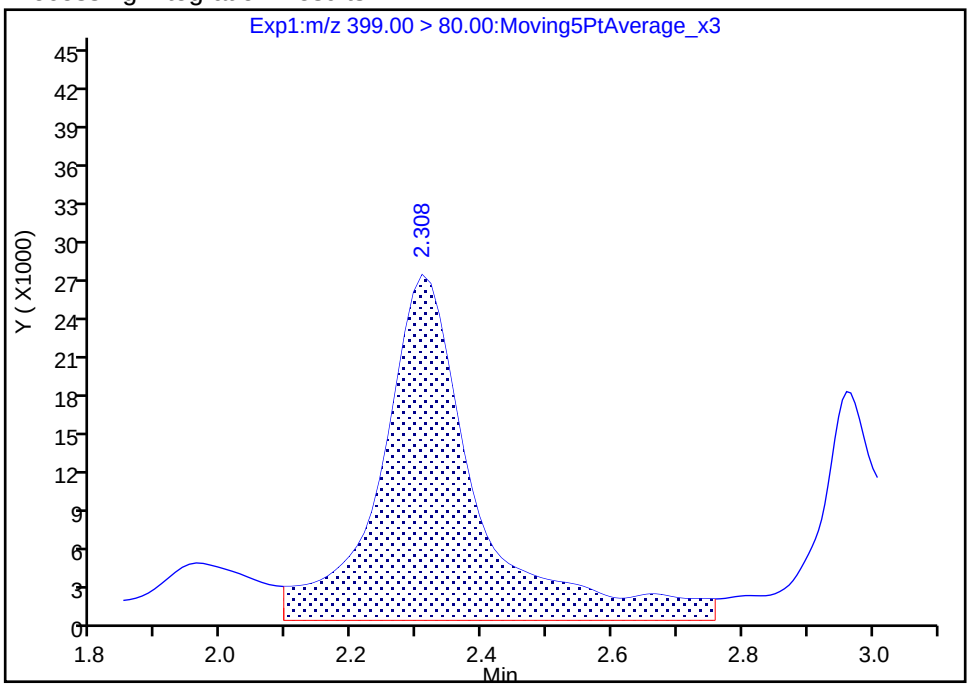
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

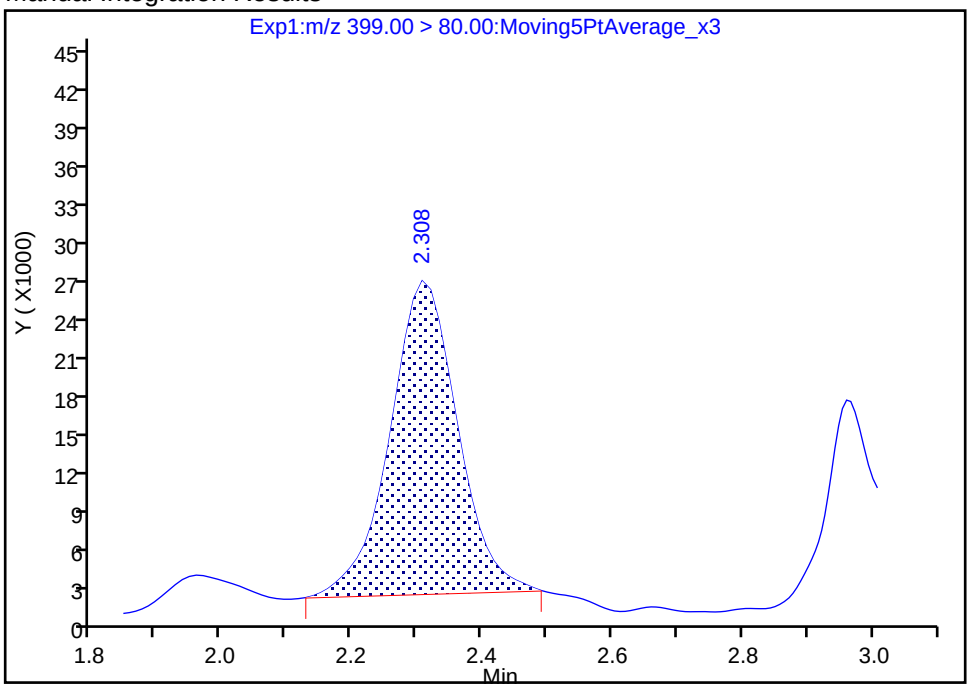
Processing Integration Results

RT: 2.31
Area: 278954
Amount: 0.119081
Amount Units: ng/ml



Manual Integration Results

RT: 2.31
Area: 173516
Amount: 0.074071
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:49:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

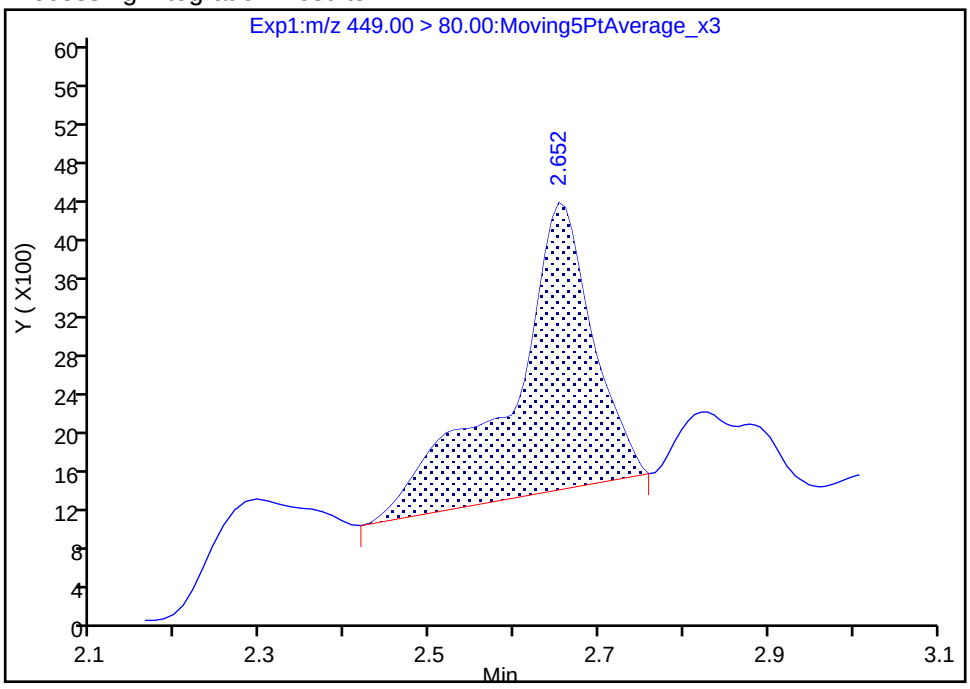
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

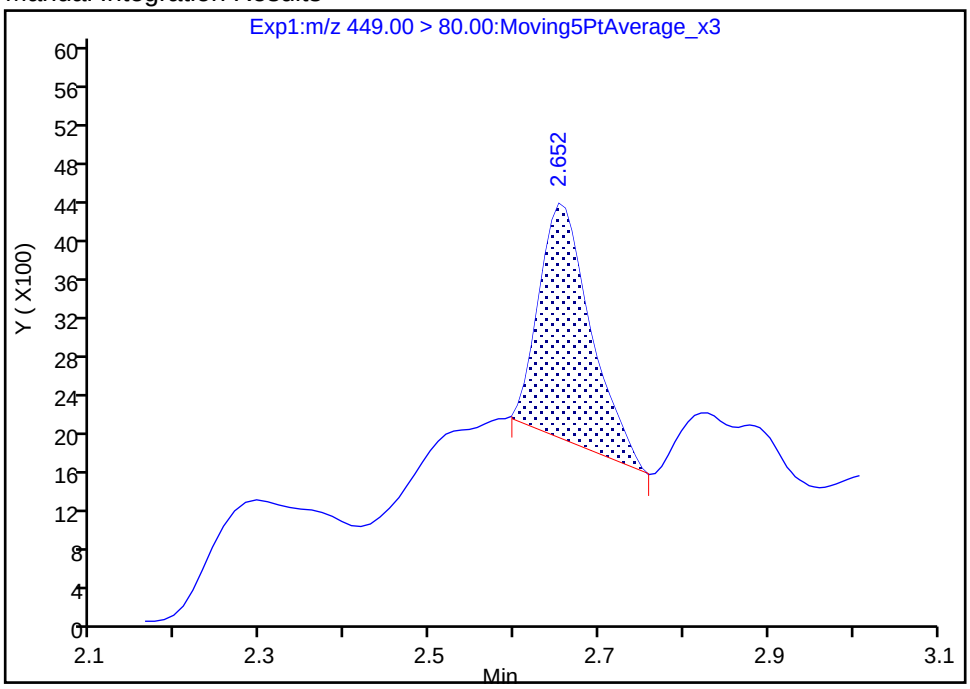
Processing Integration Results

RT: 2.65
Area: 20265
Amount: 0.010438
Amount Units: ng/ml



Manual Integration Results

RT: 2.65
Area: 10293
Amount: 0.005302
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:50:12

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

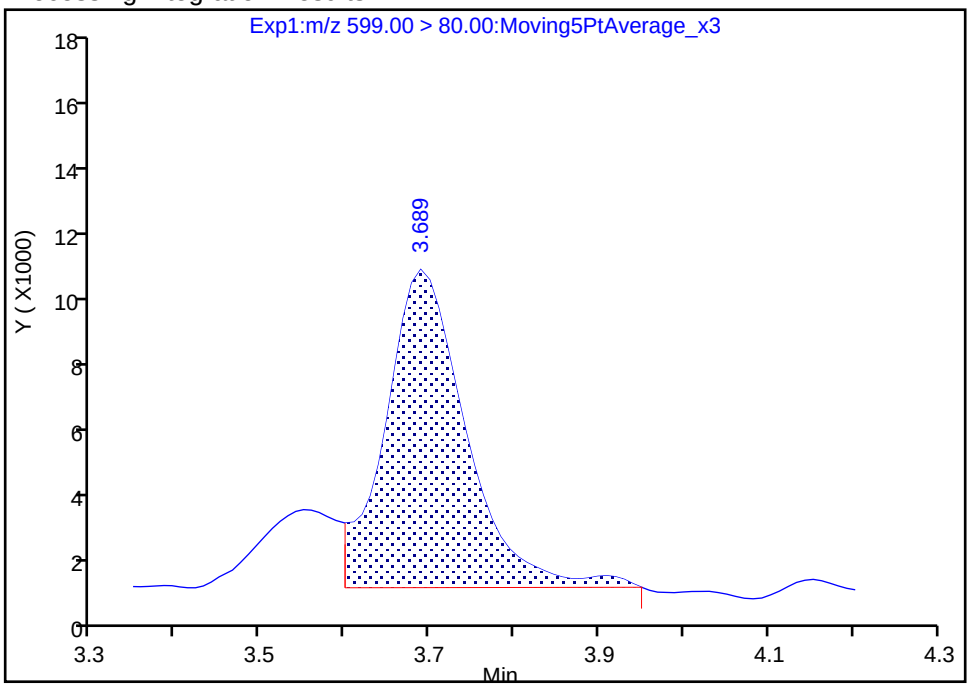
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

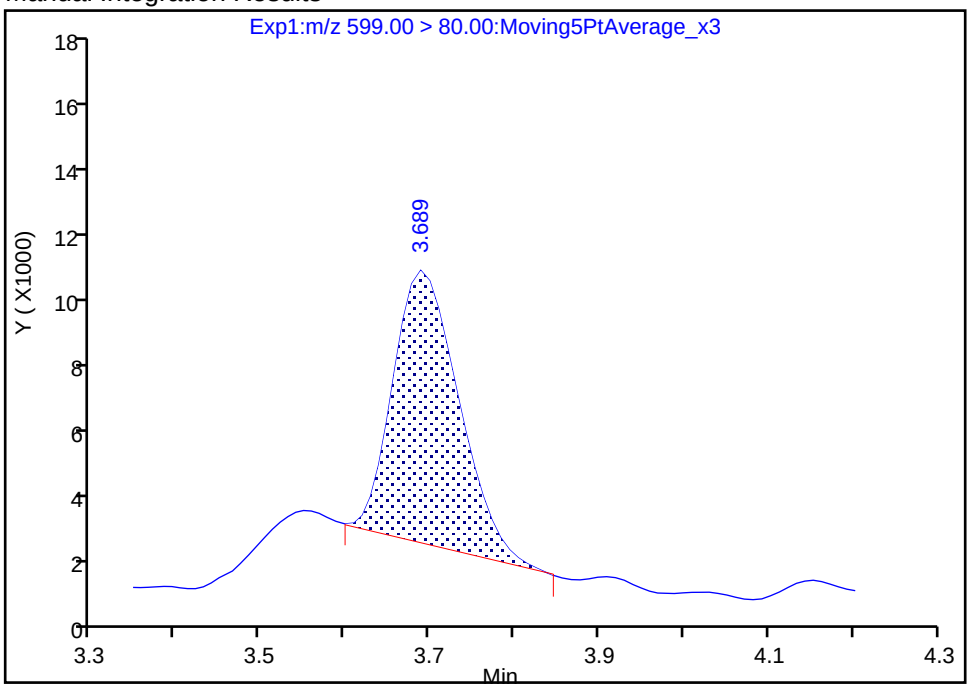
Processing Integration Results

RT: 3.69
Area: 63600
Amount: 0.062923
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 44553
Amount: 0.044079
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:50:49

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

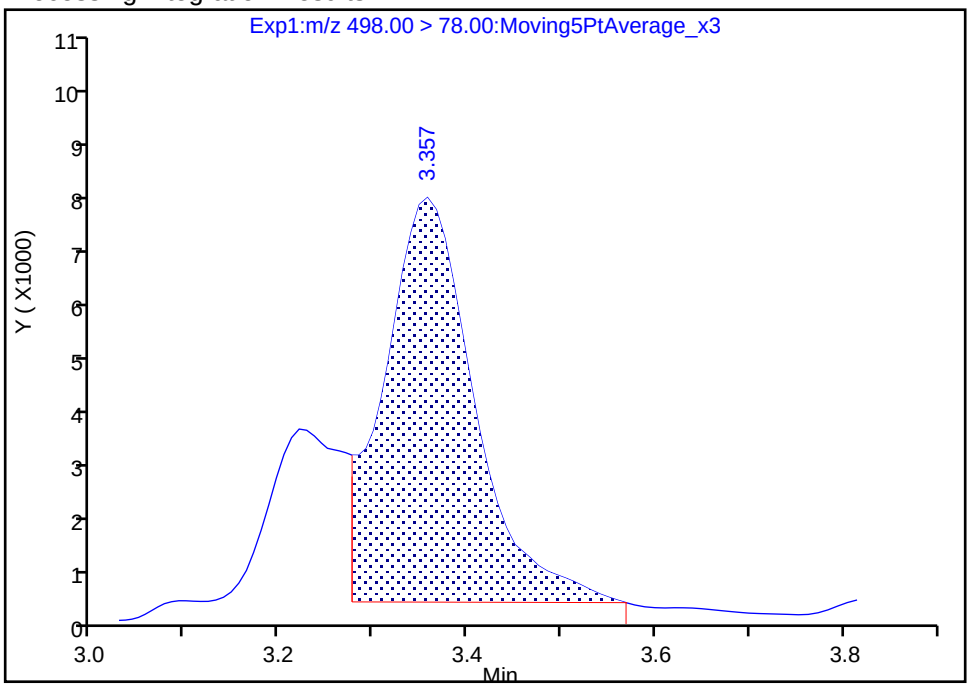
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

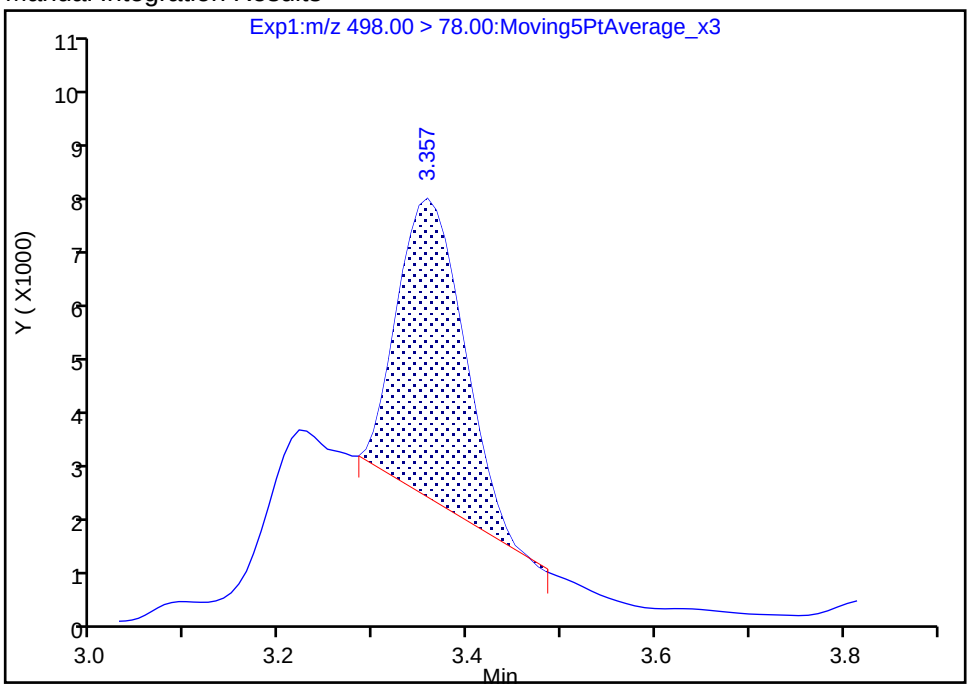
Processing Integration Results

RT: 3.36
Area: 46536
Amount: 0.029742
Amount Units: ng/ml



Manual Integration Results

RT: 3.36
Area: 25301
Amount: 0.016171
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:50:39

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

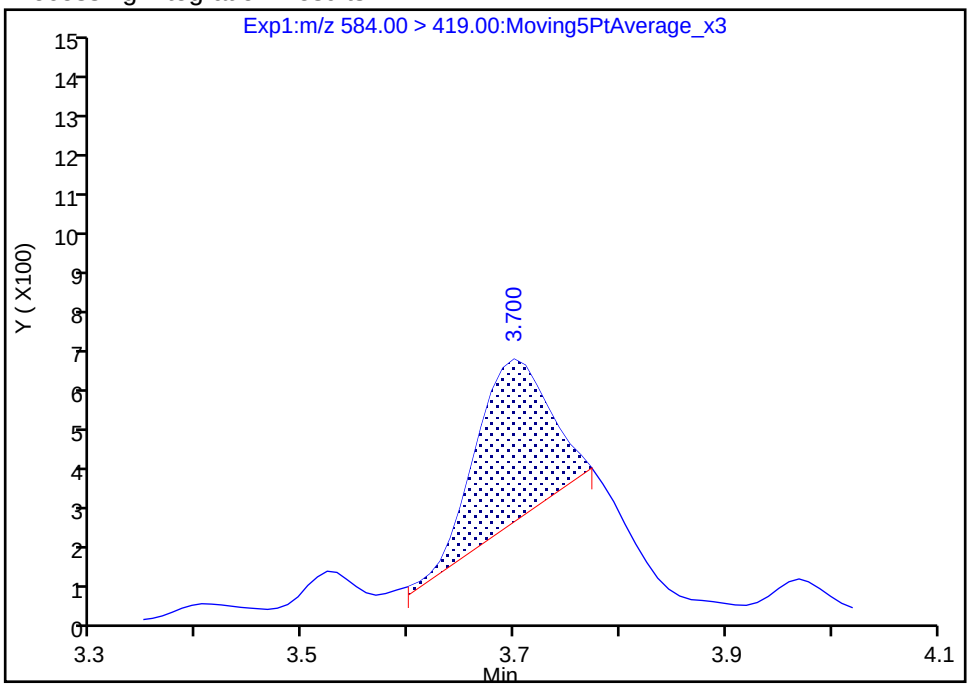
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_026.d				
Injection Date:	07-Apr-2018 20:45:39	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	17	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

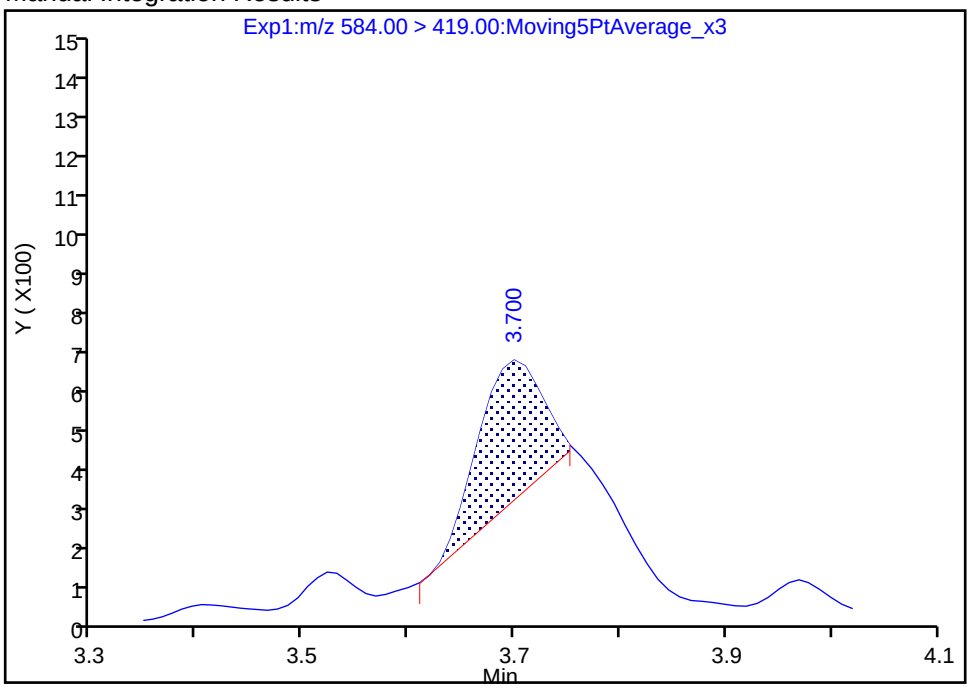
Processing Integration Results

RT: 3.70
Area: 1936
Amount: 0.003480
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 1467
Amount: 0.002637
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:51:08

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB044 (0-2") DL | Lab Sample ID: 320-37380-3 DL

Matrix: Solid | Lab File ID: 2018.04.09LLA_046.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:00

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.97(g) | Date Analyzed: 04/09/2018 18:42

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 12.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 217070 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	0.0017	U	0.023	0.0017
39108-34-4	8:2FTS	0.0029	U	0.023	0.0029

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	80		25-150
STL02280	M2-8:2FTS	88		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_046.d
Lims ID: 320-37380-A-3-B
Client ID: SB044 (0-2")
Sample Type: Client
Inject. Date: 09-Apr-2018 18:42:25 ALS Bottle#: 24 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-37380-a-3- 10X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:36 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 10:55:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.315	1.424	-0.109	0.921	108176	0.0616			18.0	M
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.424	0.004	1.000	475001	0.2180		87.2	4847	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.707	1.692	0.015	1.000	13537	0.009328			4.6	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.707	1.703	0.005	0.562	303121	0.2138		85.5	4924	
D 47 13C3-PFBS										
301.90 > 83.00	1.743	1.739	0.004	1.000	6526	0.2010		86.4	36.5	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.935	1.980	-0.045	0.973	14666	0.0107			10.5	M
313.00 > 119.00	2.067	1.980	0.087	1.040	971		15.10(5.03-15.10)		7.7	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.990	-0.002	1.000	334564	0.2140		85.6	8868	
10 Perfluoroheptanoic acid										RM
363.00 > 319.00	2.316	2.306	0.010	1.000	6199	0.004362			5.7	RM
363.00 > 169.00	2.329	2.306	0.023	1.006	5707		1.09(1.13-3.40)		16.2	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.317	-0.001	1.000	326957	0.2175		87.0	9307	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.342	2.319	0.023	1.006	21393	0.0113			29.2	
399.00 > 99.00	2.329	2.319	0.010	1.000	5490		3.90(1.50-4.49)		13.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.330	-0.001	1.000	402394	0.2147		90.8	14127	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.651	2.644	0.007	1.000	3139	0.006059			20.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.651	2.650	0.001	1.000	65888	0.1897		79.9	340	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.659	0.014		394124	0.2500			2248	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.681	2.667	0.014	1.003	15830	0.0115			7.0	M
413.00 > 169.00	2.673	2.667	0.006	1.000	6972		2.27(0.84-2.52)		16.8	M
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.673	0.0	1.000	289717	0.1961		78.4	2458	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.040	3.029	0.011	1.000	157415	0.1193			76.1	
499.00 > 99.00	3.040	3.029	0.011	1.000	38388		4.10(2.31-6.93)		72.7	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.047	3.036	0.011	1.002	14208	0.0126			30.1	M
463.00 > 169.00	3.047	3.036	0.011	1.002	2546		5.58(1.90-5.69)		41.4	
D 18 13C4 PFOS										
503.00 > 80.00	3.040	3.042	-0.002	1.000	276031	0.2120		88.7	1844	
D 19 13C5 PFNA										
468.00 > 423.00	3.040	3.042	-0.002	1.000	274710	0.2197		87.9	1467	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.365	0.006	1.000	336641	0.1831		73.2	6914	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.389	3.385	0.004	1.000	25233	0.0529			536	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.393	-0.004	1.000	84656	0.2096		87.5	592	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.399	3.394	0.005	1.000	30741	0.0324			53.3	
513.00 > 169.00	3.399	3.394	0.005	1.000	5772		5.33(2.36-7.09)		79.2	
D 23 13C2 PFDA										
515.00 > 470.00	3.399	3.402	-0.003	1.000	239948	0.2272		90.9	6425	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.557	3.560	-0.003	1.000	95974	0.1699		68.0	2388	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.730	3.726	0.004	1.000	39273	0.0590			133	
563.00 > 169.00	3.720	3.726	-0.006	0.997	11675		3.36(2.12-6.36)		227	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.730	3.732	-0.002	1.000	106182	0.1791		71.7	1147	
D 30 13C2 PFUnA										
565.00 > 520.00	3.730	3.732	-0.002	1.000	207419	0.2406		96.3	5243	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.030	4.026	0.004	1.000	32743	0.0351			33.3	
613.00 > 169.00	4.030	4.026	0.004	1.000	8754		3.74(2.13-6.40)		59.1	
D 36 13C2 PFDoA										
615.00 > 570.00	4.030	4.030	0.0	1.000	215566	0.2246		89.9	3067	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.291	4.288	0.003	1.000	107731	0.1081			94.8	
663.00 > 169.00	4.291	4.288	0.003	1.000	34517		3.12(1.25-3.76)		302	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.531	4.520	0.011	1.000	13898	0.0491			111	
713.00 > 219.00	4.531	4.520	0.011	1.000	7815		1.78(0.71-2.13)		91.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.531	4.533	-0.002	1.000	283250	0.2324		92.9	2488	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

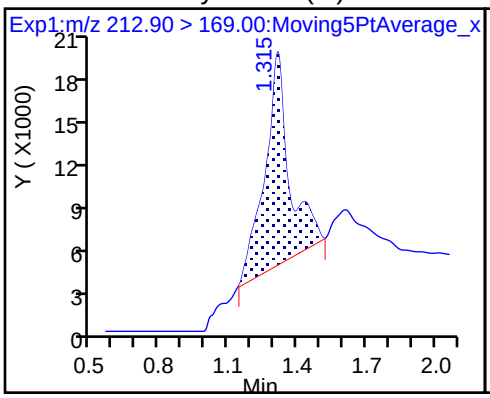
Report Date: 10-Apr-2018 11:05:45 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

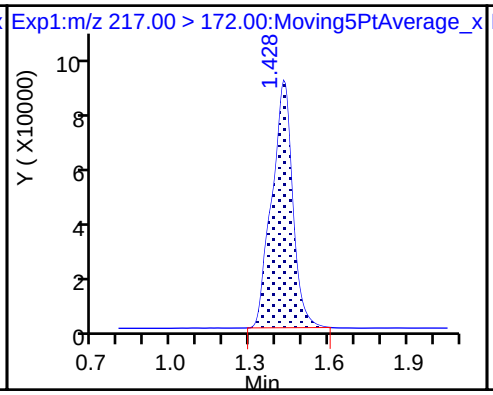
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_046.d

Injection Date:	09-Apr-2018 18:42:25	Instrument ID:	A8_N		
Lims ID:	320-37380-A-3-B	Lab Sample ID:	320-37380-3		
Client ID:	SB044 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

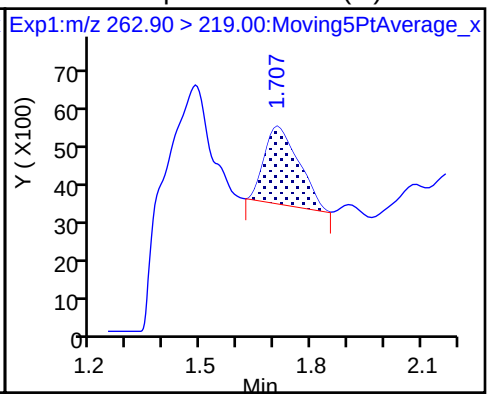
2 Perfluorobutyric acid (M)



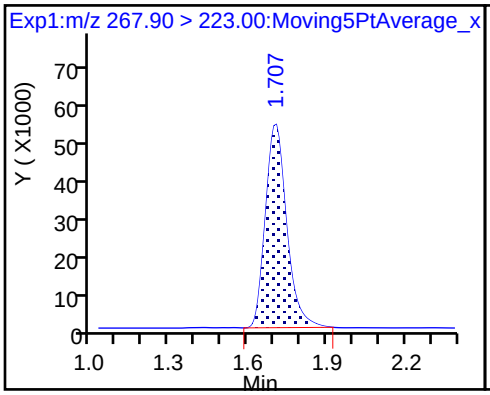
D 1 13C4 PFBA



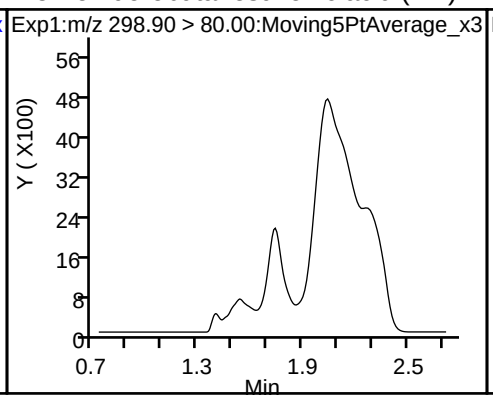
4 Perfluoropentanoic acid (M)



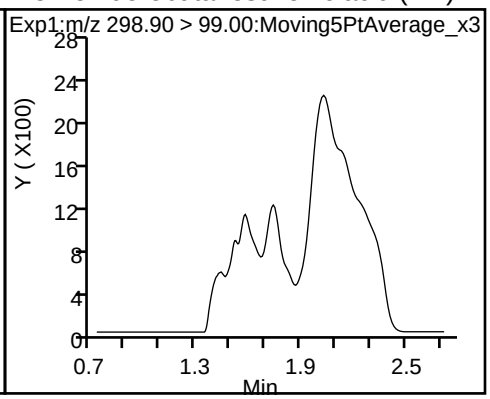
D 3 13C5-PFPeA



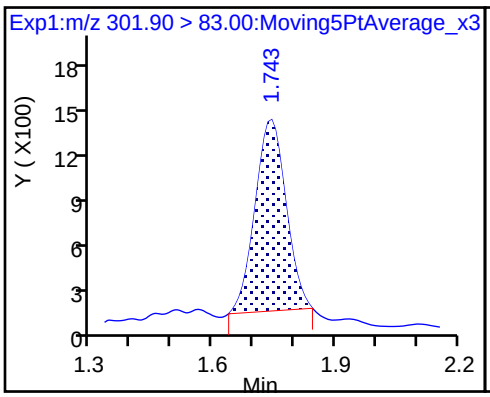
5 Perfluorobutanesulfonic acid (ND)



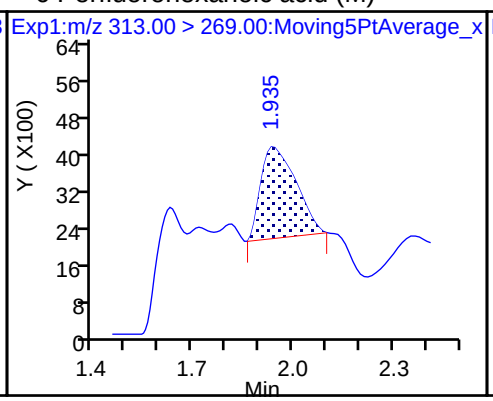
5 Perfluorobutanesulfonic acid (ND)



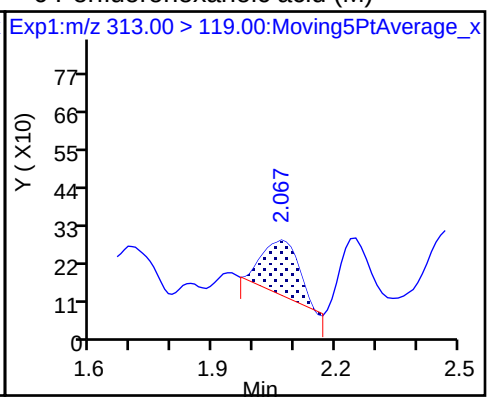
D 47 13C3-PFBS



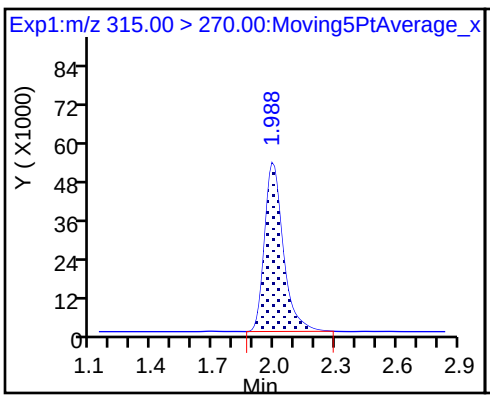
6 Perfluorohexanoic acid (M)



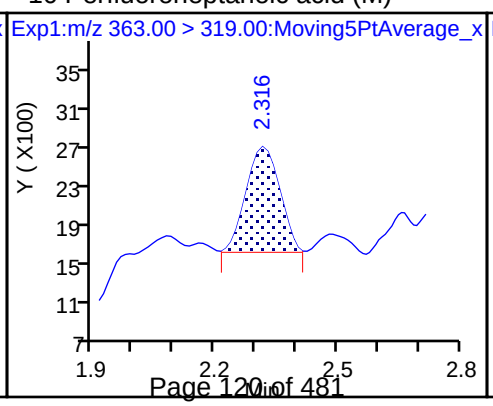
6 Perfluorohexanoic acid (M)



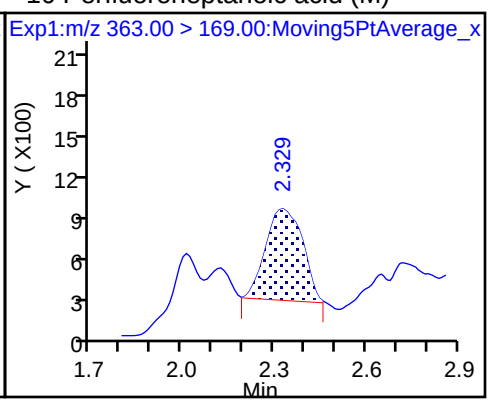
D 7 13C2 PFHxA



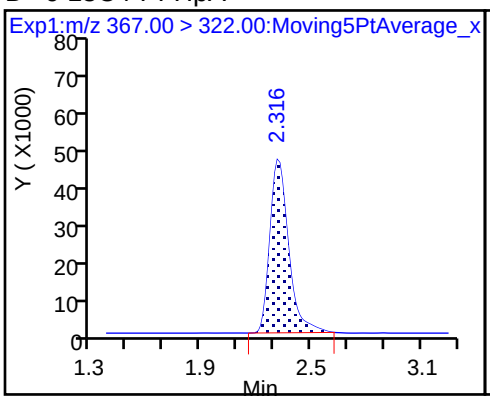
10 Perfluoroheptanoic acid (M)



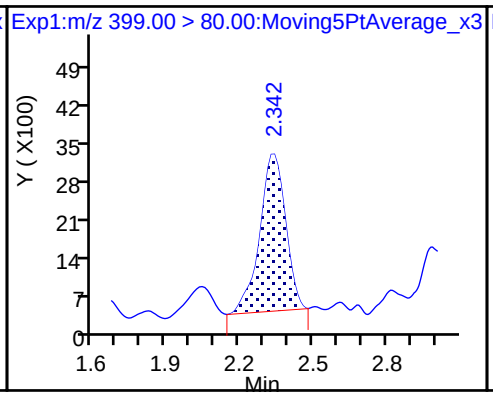
10 Perfluoroheptanoic acid (M)



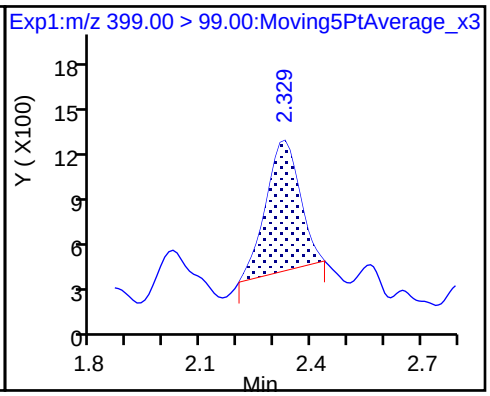
D 9 13C4-PFHpA



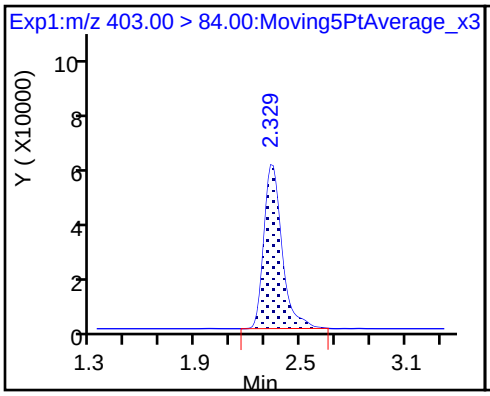
8 Perfluorohexanesulfonic acid



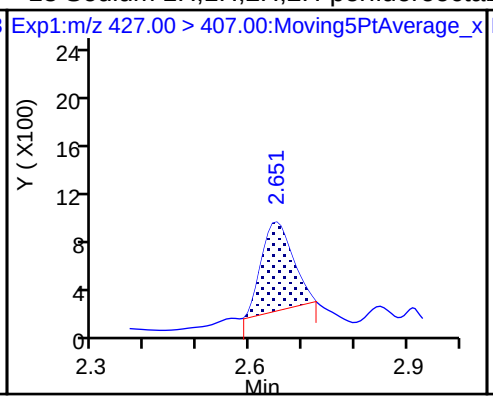
8 Perfluorohexanesulfonic acid



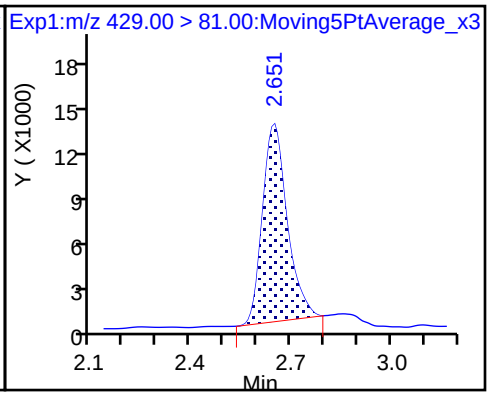
D 11 18O2 PFHxS



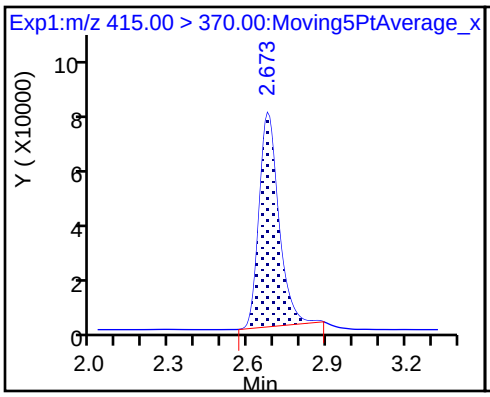
13 Sodium 1H,1H,2H,2H-perfluorooctane



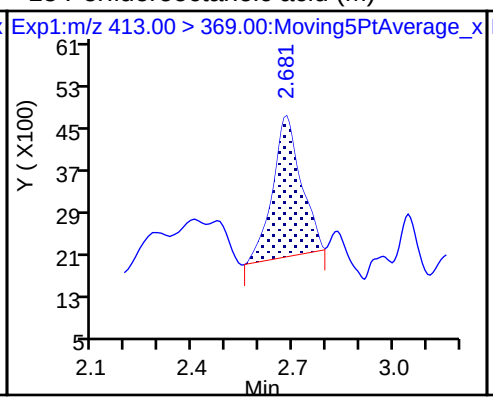
D 12 M2-6:2FTS



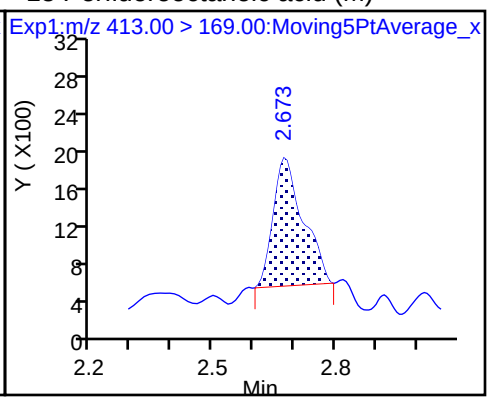
* 62 13C2-PFOA



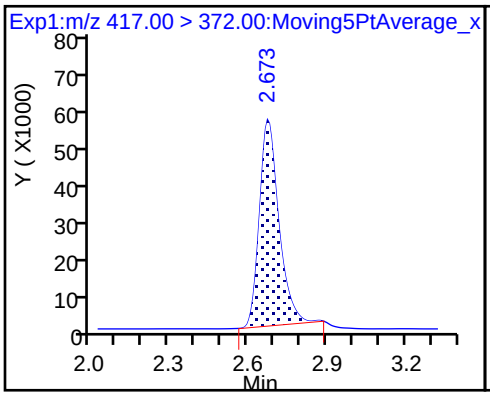
15 Perfluorooctanoic acid (M)



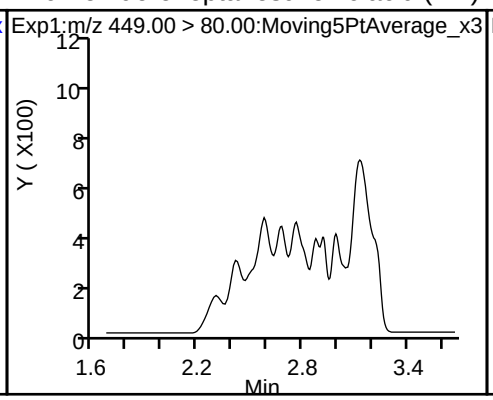
15 Perfluorooctanoic acid (M)



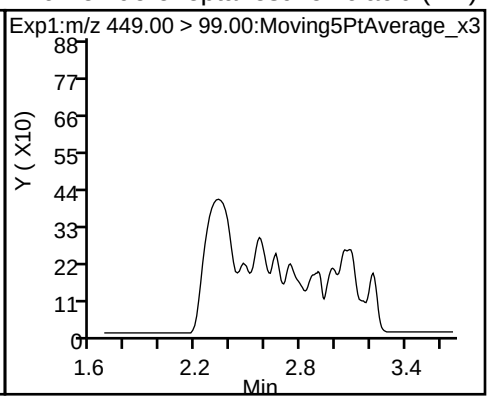
D 14 13C4 PFOA



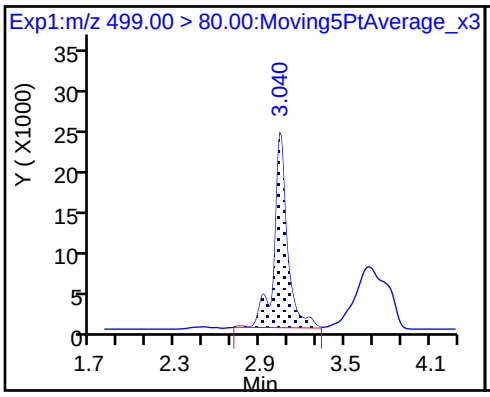
16 Perfluoroheptanesulfonic acid (ND)



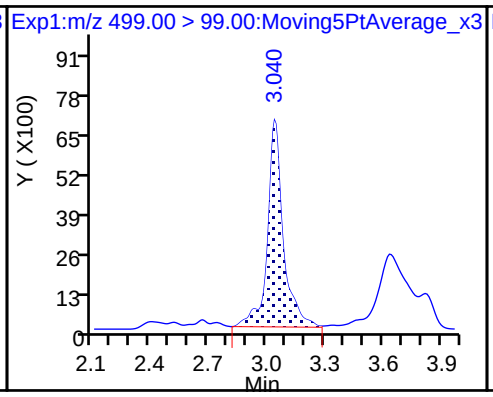
16 Perfluoroheptanesulfonic acid (ND)



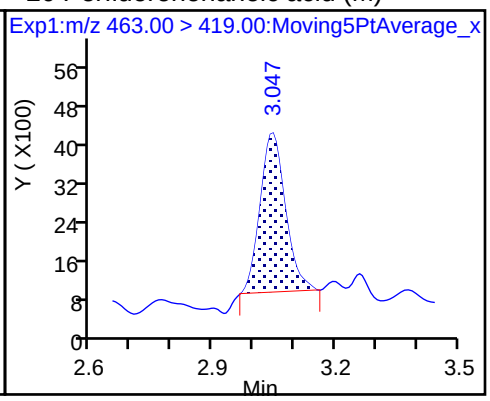
17 Perfluorooctane sulfonic acid



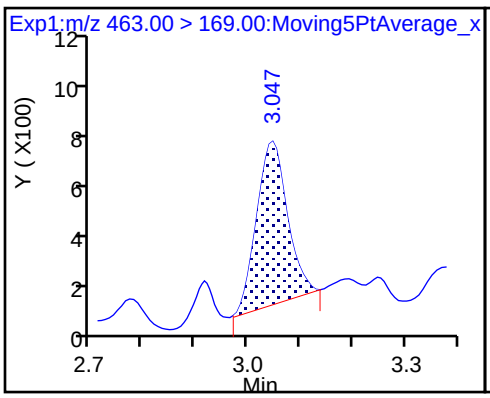
17 Perfluorooctane sulfonic acid



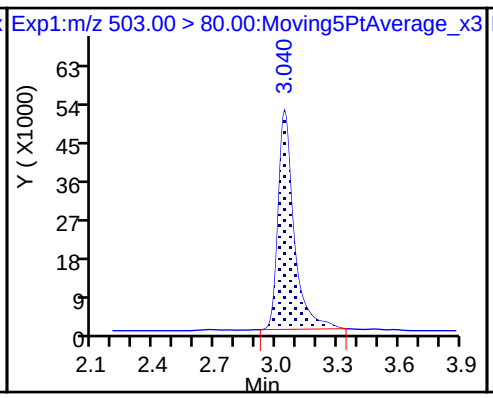
20 Perfluorononanoic acid (M)



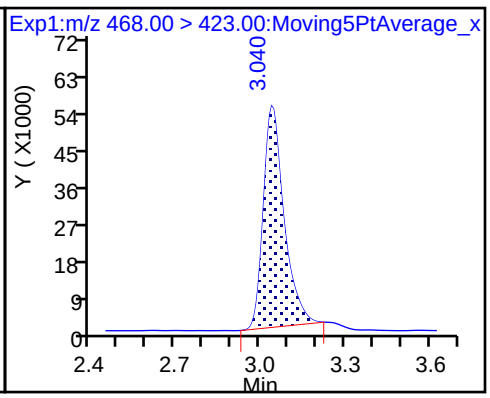
20 Perfluorononanoic acid



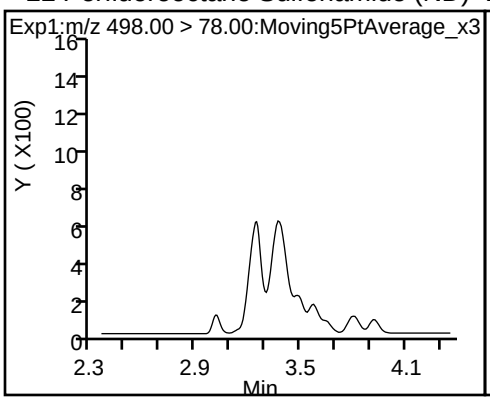
D 18 13C4 PFOS



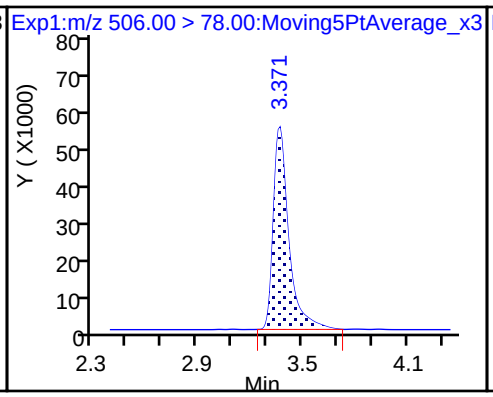
D 19 13C5 PFNA



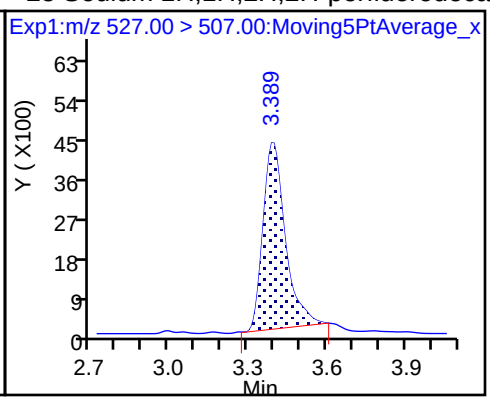
22 Perfluorooctane Sulfonamide (ND)



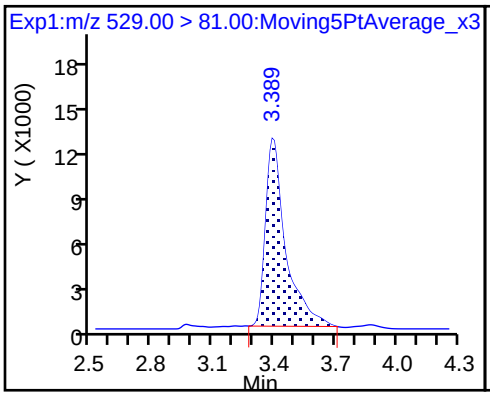
D 21 13C8 FOSA



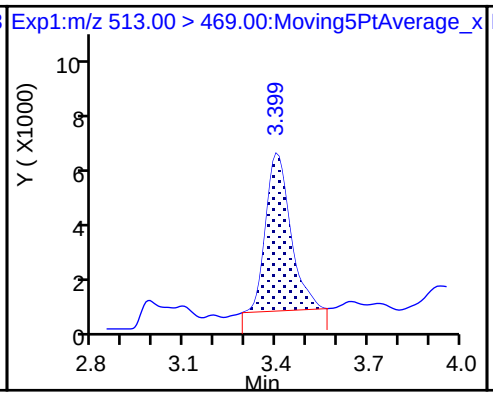
25 Sodium 1H,1H,2H,2H-perfluorodecane



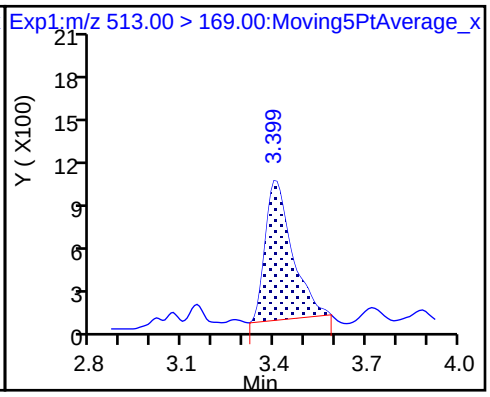
D 26 M2-8:2FTS



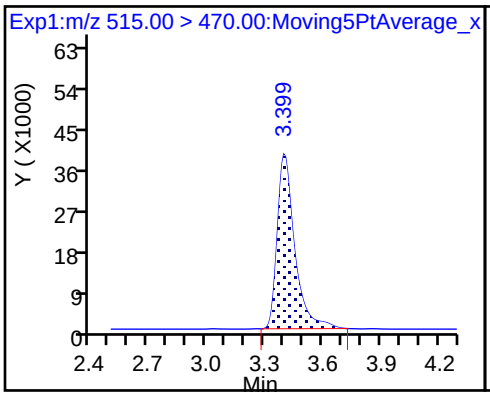
24 Perfluorodecanoic acid



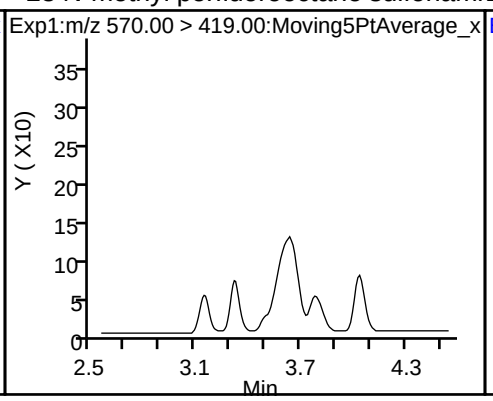
24 Perfluorodecanoic acid



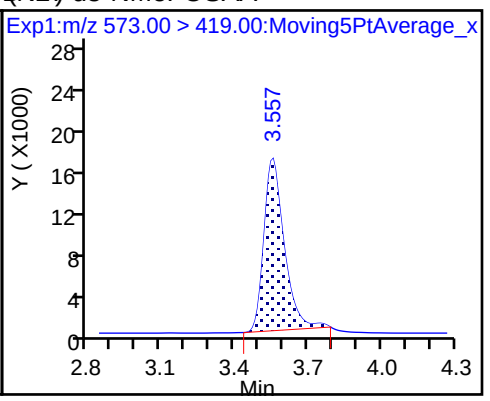
D 23 13C2 PFDA



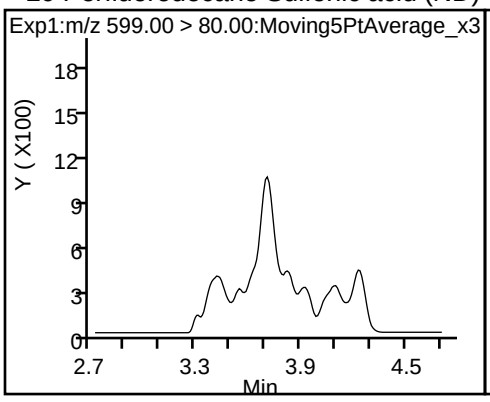
28 N-methyl perfluorooctane sulfonamid (ND)



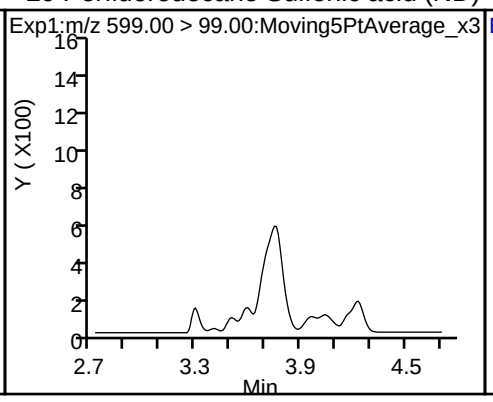
D 27 d3-NMeFOSAA



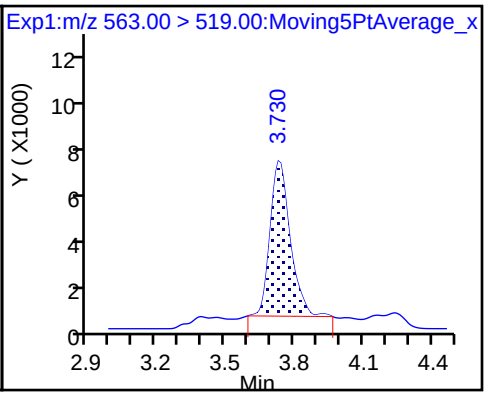
29 Perfluorodecane Sulfonic acid (ND)



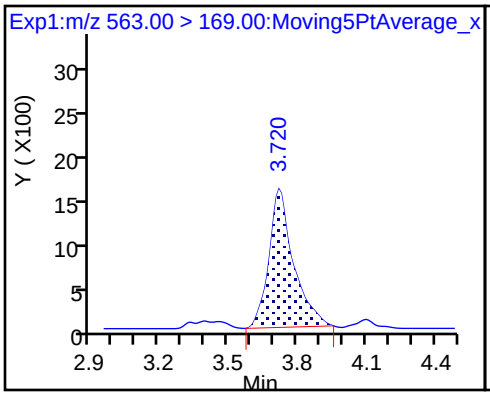
29 Perfluorodecane Sulfonic acid (ND)



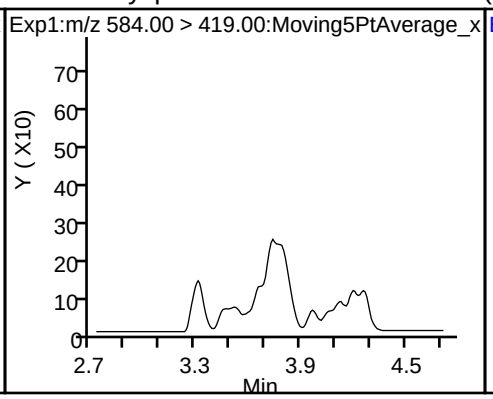
31 Perfluoroundecanoic acid



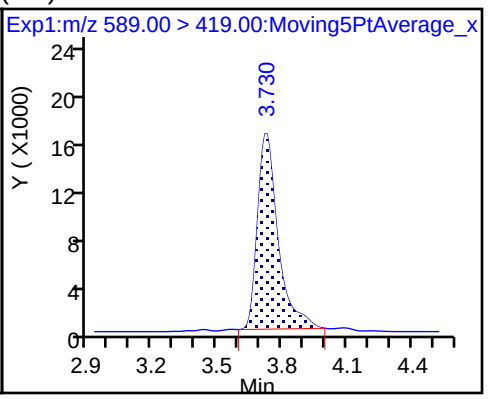
31 Perfluoroundecanoic acid



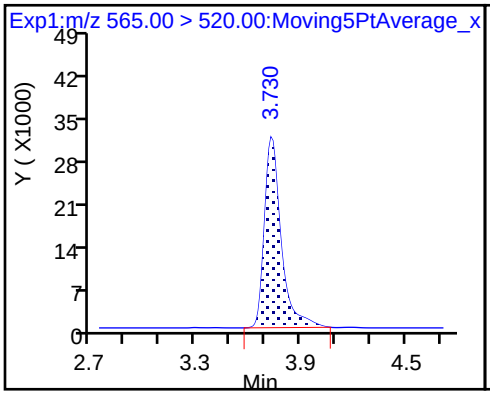
33 N-ethyl perfluorooctane sulfonamid (ND)



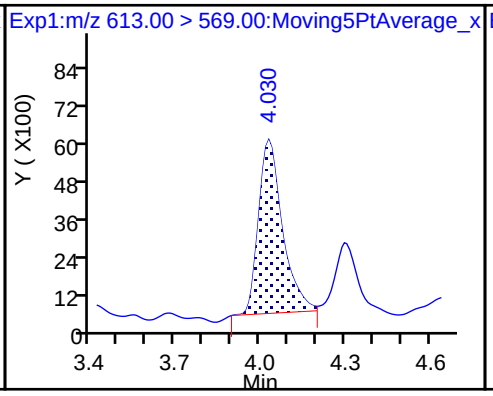
D 32 d5-NEtFOSAA



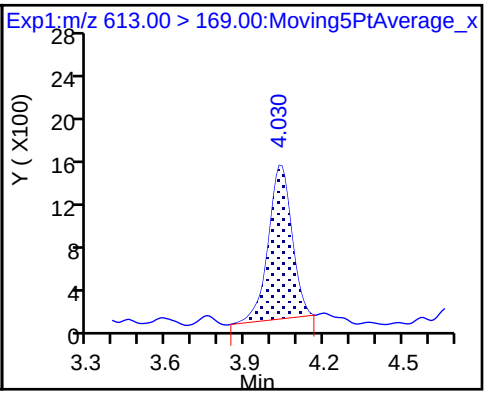
D 30 13C2 PFUnA



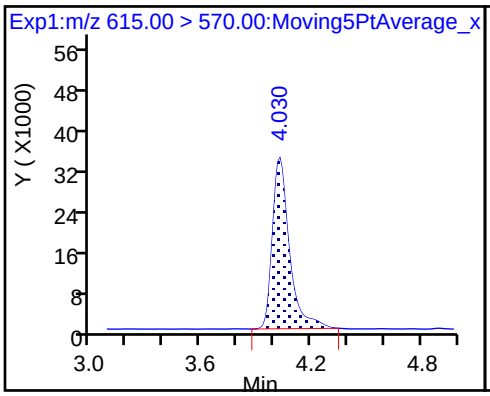
37 Perfluorododecanoic acid



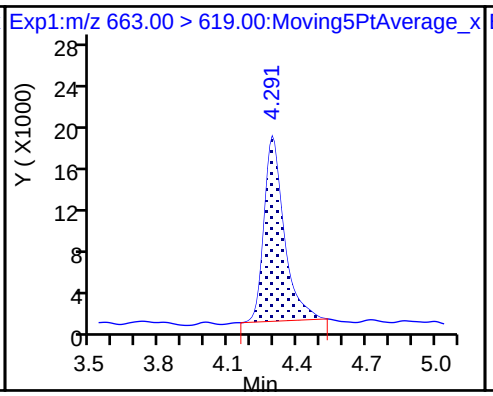
37 Perfluorododecanoic acid



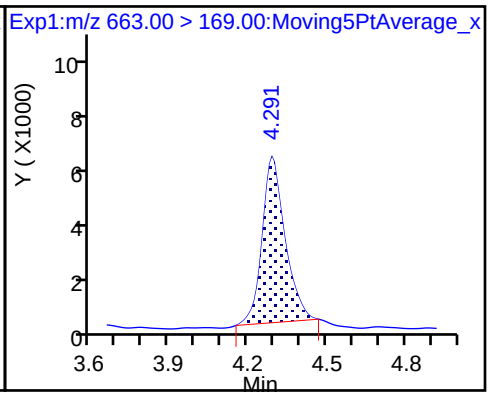
D 36 13C2 PFDoA



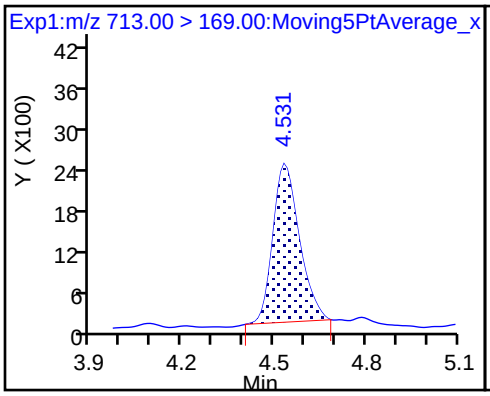
41 Perfluorotridecanoic acid



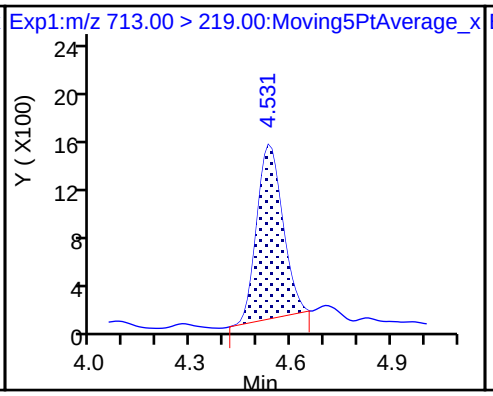
41 Perfluorotridecanoic acid



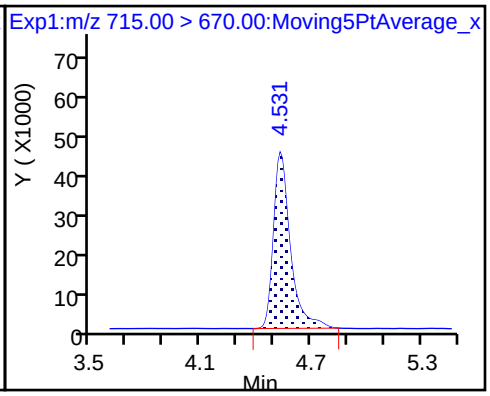
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB044 (2"-2') | Lab Sample ID: 320-37380-4

Matrix: Solid | Lab File ID: 2018.04.07LLB_027.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:10

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/07/2018 20:53

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00048	B	0.00022	0.000031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00023		0.00022	0.000085
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00019	J	0.00022	0.000046
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000078	J	0.00022	0.000032
335-67-1	Perfluorooctanoic acid (PFOA)	0.00015	J	0.00022	0.000094
375-95-1	Perfluorononanoic acid (PFNA)	0.00020	J	0.00022	0.000040
335-76-2	Perfluorodecanoic acid (PFDA)	0.00049		0.00022	0.000024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0010		0.00022	0.000040
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00028		0.00022	0.000074
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00053		0.00022	0.000056
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00010	J	0.00022	0.000059
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00022	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00021	J	0.00022	0.000034
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000038	U	0.00022	0.000038
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0023	B	0.00055	0.00022
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000077	J	0.00022	0.000043
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000090	U	0.00022	0.000090
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00043	U	0.0022	0.00043
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00041	U	0.0022	0.00041

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB044 (2"-2') | Lab Sample ID: 320-37380-4

Matrix: Solid | Lab File ID: 2018.04.07LLB_027.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:10

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/07/2018 20:53

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	69		25-150
STL01893	13C5 PFPeA	77		25-150
STL00993	13C2 PFHxA	69		25-150
STL01892	13C4-PFHpA	76		25-150
STL00990	13C4 PFOA	87		25-150
STL00995	13C5 PFNA	89		25-150
STL00996	13C2 PFDA	99		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2-PFTeDA	86		25-150
STL02337	13C3-PFBS	77		25-150
STL00994	18O2 PFHxS	86		25-150
STL00991	13C4 PFOS	84		25-150
STL01056	13C8 FOSA	77		25-150
STL02118	d3-NMeFOSAA	126		25-150
STL02117	d5-NEtFOSAA	120		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d
Lims ID: 320-37380-A-4-B
Client ID: SB044 (2"-2')
Sample Type: Client
Inject. Date: 07-Apr-2018 20:53:28 ALS Bottle#: 18 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37380-a-4-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 09:56:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.419	1.424	-0.005	1.000	5004993	1.73		69.2	29851	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.297	1.429	-0.132	0.914	408249	0.2207			33.5	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.685	1.692	-0.007	1.000	186436	0.1067			29.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.685	1.693	-0.008	0.558	3649106	1.94		77.5	33571	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.721	1.728	-0.007	1.000	13318	0.005050			16.6	
298.90 > 99.00	1.721	1.728	-0.007	1.000	7751		1.72(1.25-3.74)		5.2	
D 47 13C3-PFBS										
301.90 > 83.00	1.721	1.729	-0.008	1.000	77714	1.80		77.5	117	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.950	1.980	-0.030	0.989	126453	0.0862			35.7	RM
313.00 > 119.00	1.961	1.980	-0.019	0.995	7475		16.92(5.03-15.10)		37.4	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.971	1.981	-0.010	1.000	3584543	1.73		69.0	60860	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.295	2.306	-0.011	1.000	57935	0.0353			25.7	
363.00 > 169.00	2.295	2.306	-0.011	1.000	24327		2.38(1.13-3.40)		70.0	
D 9 13C4-PFHpA										
367.00 > 322.00	2.295	2.307	-0.012	1.000	3775283	1.89		75.6	59510	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.308	2.319	-0.011	1.000	231805	0.0974			134	
399.00 > 99.00	2.308	2.319	-0.011	1.000	72999		3.18(1.50-4.49)		89.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.308	2.320	-0.012	1.000	5036928	2.02		85.6	59607	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.628	2.636	-0.008	1.000	52775	0.0317			131	
D 12 M2-6:2FTS										
429.00 > 81.00	2.628	2.637	-0.009	1.000	2117572	4.59		193	7580	
* 62 13C2-PFOA										
415.00 > 370.00	2.653	2.659	-0.006		5235837	2.50			83322	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.653	2.659	-0.006	1.000	135476	0.0672			46.3	
413.00 > 169.00	2.653	2.659	-0.006	1.000	60343		2.25(0.84-2.52)		112	
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.660	-0.007	1.000	4250250	2.17		86.6	108358	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.660	2.667	-0.007	1.000	9177	0.004765			14.3	M
449.00 > 99.00	2.683	2.667	0.016	1.008	3289		2.79(1.94-5.82)		10.1	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.022	3.029	-0.007	1.000	137085	0.0902			126	
463.00 > 169.00	3.022	3.029	-0.007	1.000	36921		3.71(1.90-5.69)		291	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.015	3.029	-0.014	0.998	1737771	1.05			90260	
499.00 > 99.00	3.015	3.029	-0.014	0.998	394358		4.41(2.31-6.93)		1372	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.031	-0.009	1.000	3693218	2.22		89.0	56164	
D 18 13C4 PFOS										
503.00 > 80.00	3.022	3.031	-0.009	1.000	3454226	2.00		83.6	8069	
D 21 13C8 FOSA										
506.00 > 78.00	3.357	3.360	-0.003	1.000	4728286	1.94		77.4	43835	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.357	3.368	-0.011	1.000	48202	0.0258			94.5	M
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.367	3.377	-0.010	1.000	173564	0.1000			3983	
D 26 M2-8:2FTS										
529.00 > 81.00	3.367	3.379	-0.012	1.000	3080919	5.74		240	9150	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.385	3.386	-0.001	1.003	304426	0.2223			274	
513.00 > 169.00	3.376	3.386	-0.010	1.000	48330		6.30(2.36-7.09)		526	
D 23 13C2 PFDA										
515.00 > 470.00	3.376	3.388	-0.012	1.000	3460714	2.47		98.7	114442	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.535	3.547	-0.012	1.000	2362823	3.15		126	34968	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.695	3.706	-0.012	1.000	34989	0.0349			22.6	M
599.00 > 99.00	3.695	3.706	-0.012	1.000	16270		2.15(1.39-4.16)		70.5	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.708	-0.003	1.000	2364019	3.00		120	27956	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.705	3.717	-0.012	1.000	441406	0.4676			575	
563.00 > 169.00	3.705	3.717	-0.012	1.000	110217		4.00(2.12-6.36)		1885	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.705	3.717	-0.012	1.000	2804	0.003233			32.1	
D 30 13C2 PFUnA										
565.00 > 520.00	3.705	3.719	-0.014	1.000	2941640	2.57		103	76273	
37 Perfluorododecanoic acid										
613.00 > 569.00	3.995	4.006	-0.011	1.000	166428	0.1267			53.9	
613.00 > 169.00	3.995	4.006	-0.011	1.000	43745		3.80(2.13-6.40)		180	
D 36 13C2 PFDoA										
615.00 > 570.00	3.995	4.009	-0.014	1.000	3039308	2.38		95.4	24082	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.259	4.279	-0.020	1.000	337677	0.2403			161	
663.00 > 169.00	4.259	4.279	-0.020	1.000	119465		2.83(1.25-3.76)		586	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.499	4.511	-0.012	1.000	3483963	2.15		86.1	21252	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.499	4.511	-0.012	1.000	15957	0.0458			87.4	
713.00 > 219.00	4.489	4.511	-0.022	0.998	10517		1.52(0.71-2.13)		57.6	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

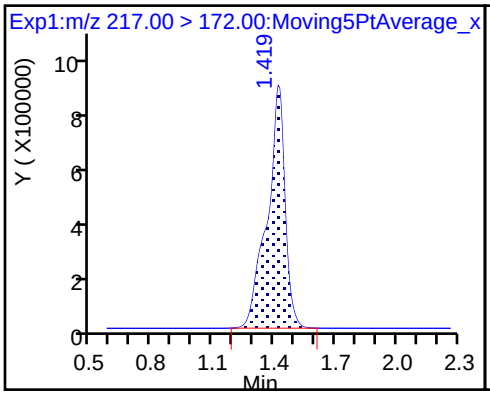
Report Date: 09-Apr-2018 10:11:13 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

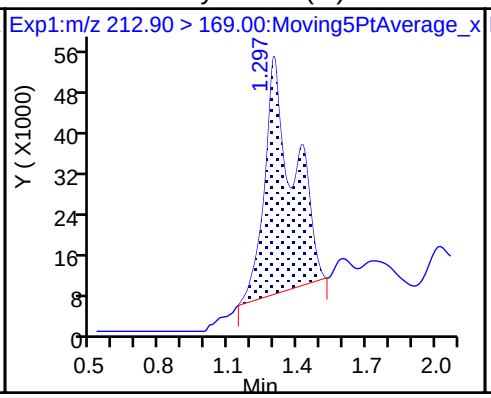
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d

Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

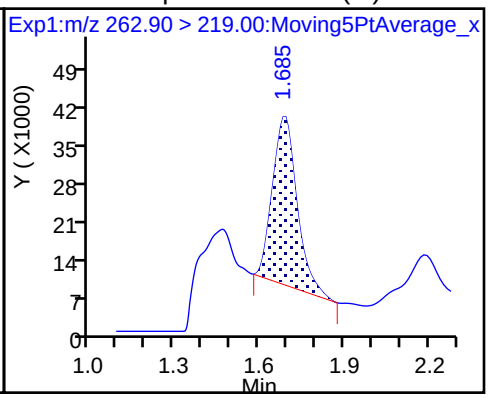
D 1 13C4 PFBA



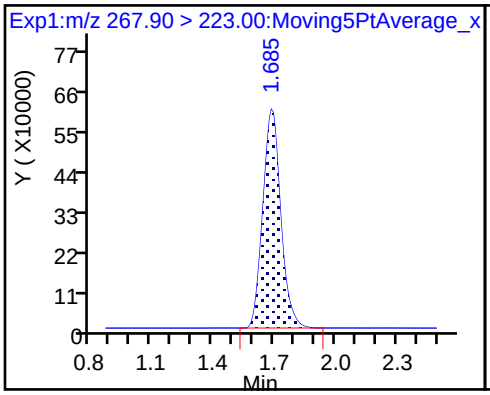
2 Perfluorobutyric acid (M)



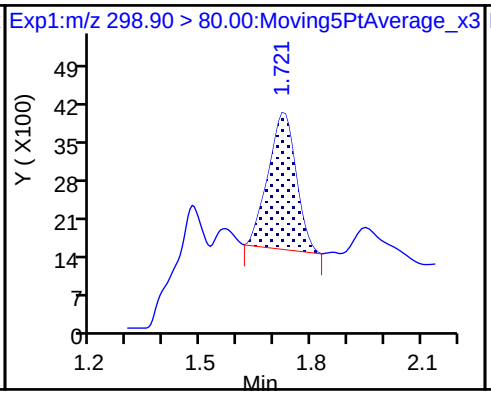
4 Perfluoropentanoic acid (M)



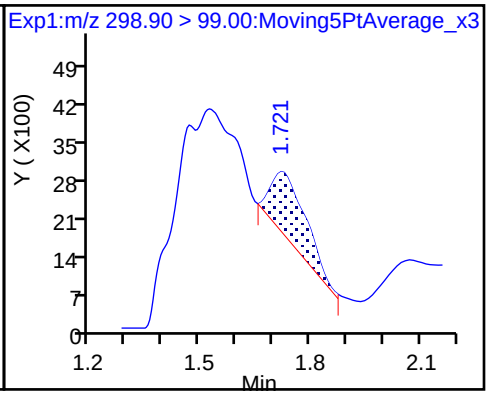
D 3 13C5-PFPeA



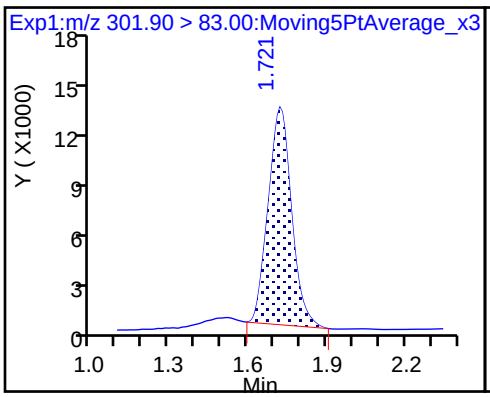
5 Perfluorobutanesulfonic acid



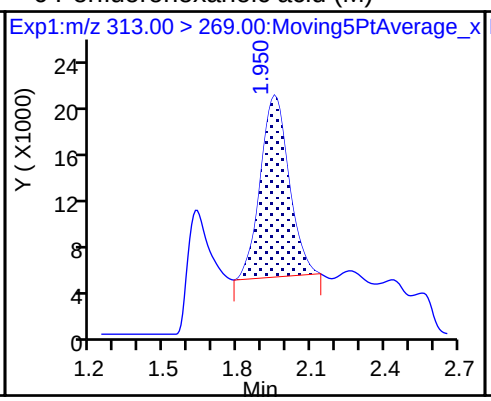
5 Perfluorobutanesulfonic acid



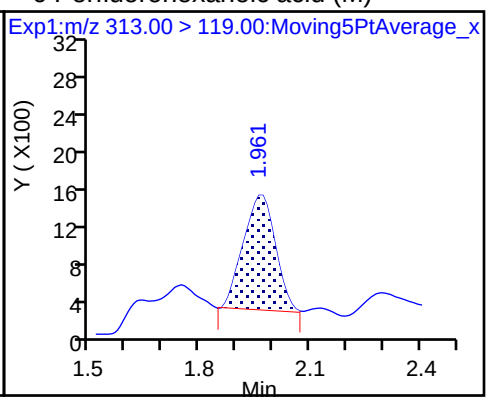
D 47 13C3-PFBS



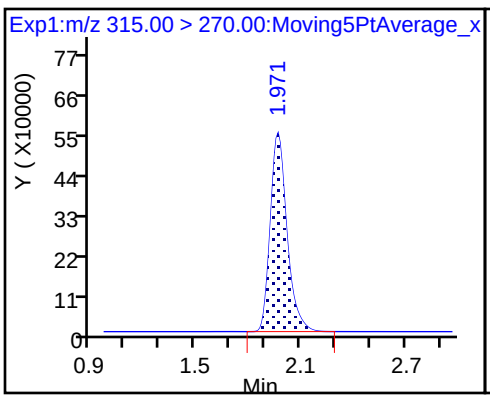
6 Perfluorohexanoic acid (M)



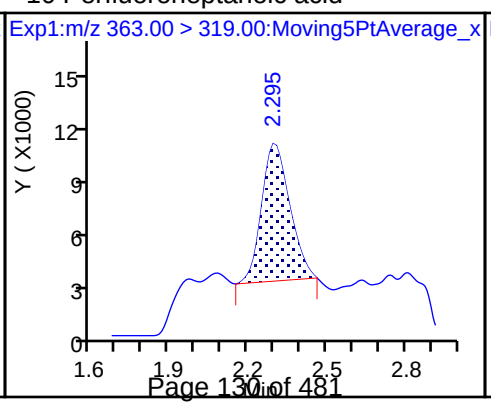
6 Perfluorohexanoic acid (M)



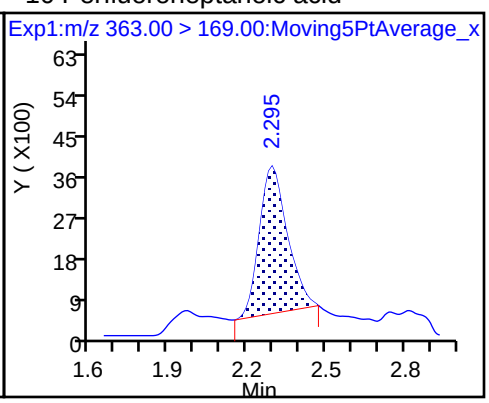
D 7 13C2 PFHxA



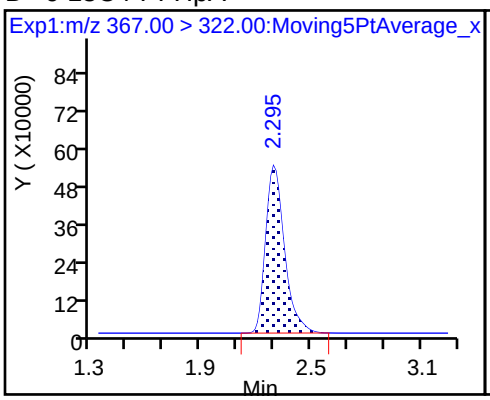
10 Perfluoroheptanoic acid



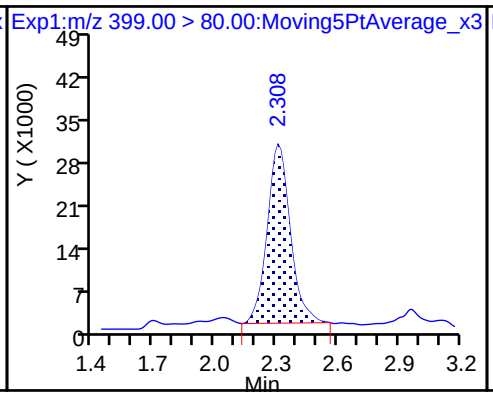
10 Perfluoroheptanoic acid



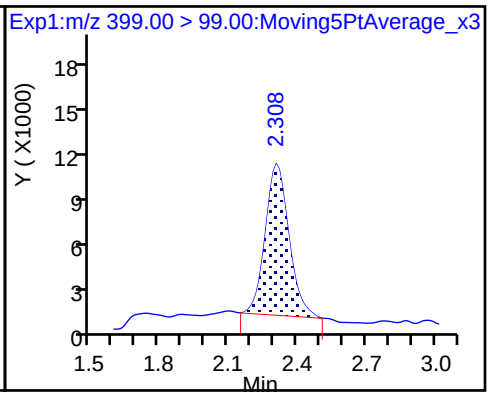
D 9 13C4-PFHpA



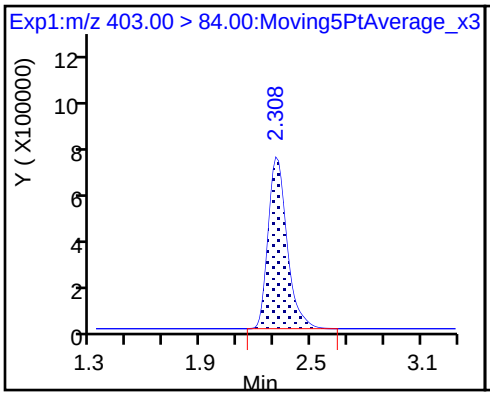
8 Perfluorohexanesulfonic acid



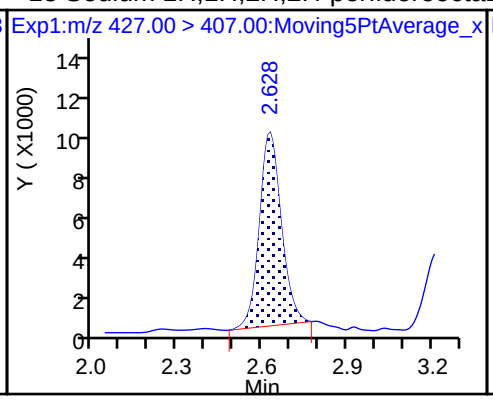
8 Perfluorohexanesulfonic acid



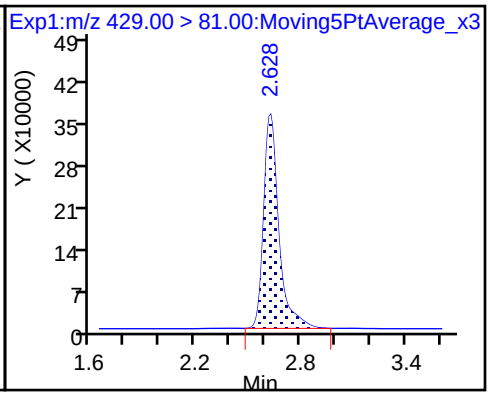
D 11 18O2 PFHxS



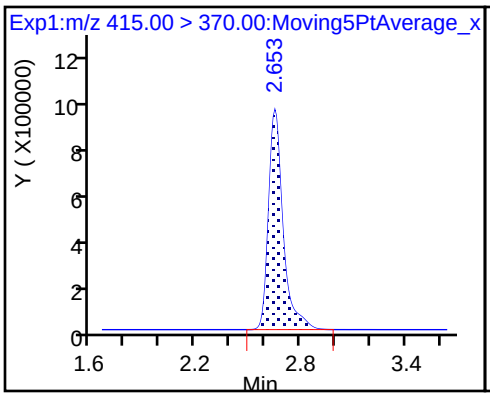
13 Sodium 1H,1H,2H,2H-perfluorooctane



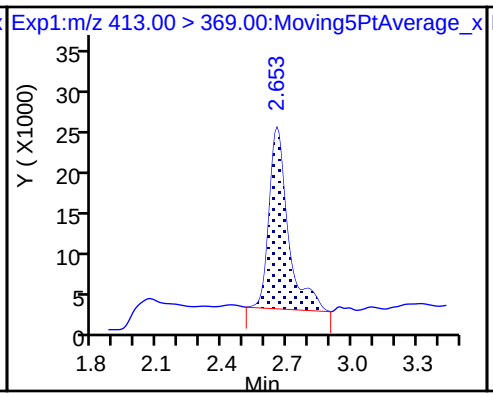
D 12 M2-6:2FTS



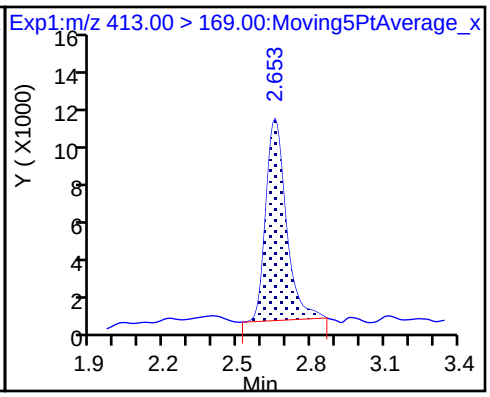
* 62 13C2-PFOA



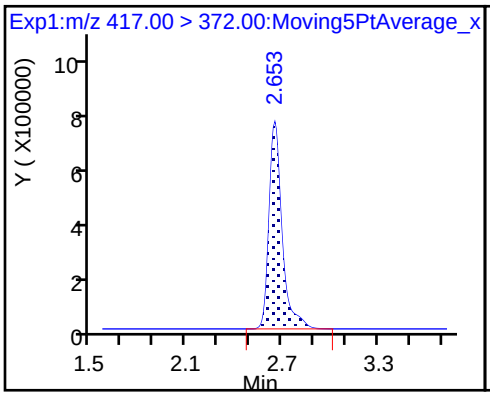
15 Perfluorooctanoic acid



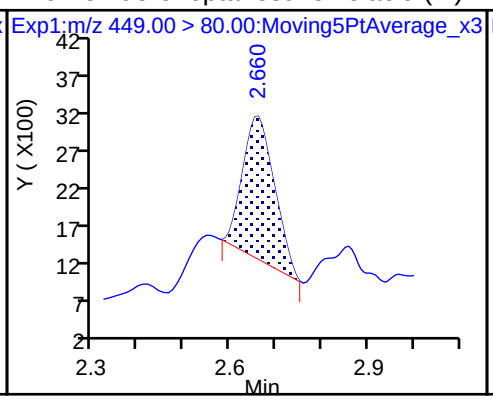
15 Perfluorooctanoic acid



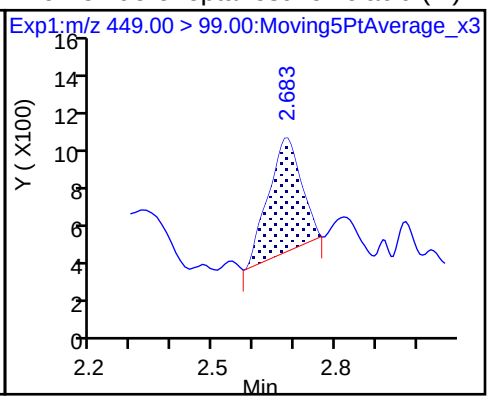
D 14 13C4 PFOA



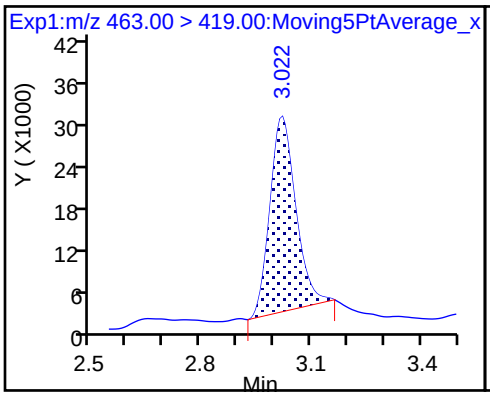
16 Perfluoroheptanesulfonic acid (M)



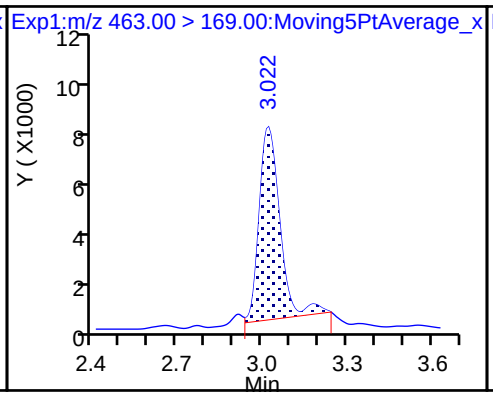
16 Perfluoroheptanesulfonic acid (M)



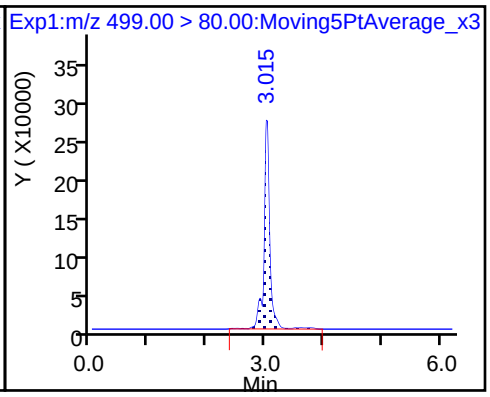
20 Perfluorononanoic acid



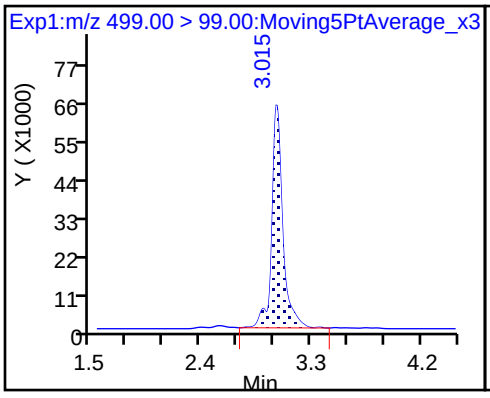
20 Perfluorononanoic acid



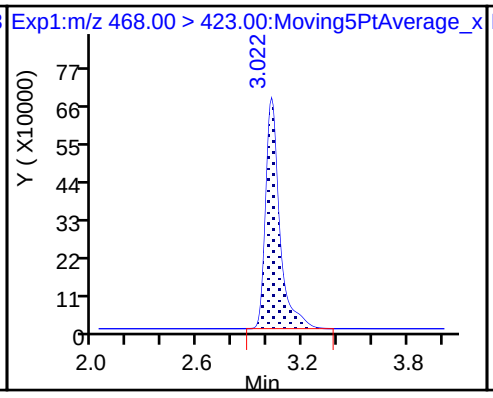
17 Perfluorooctane sulfonic acid



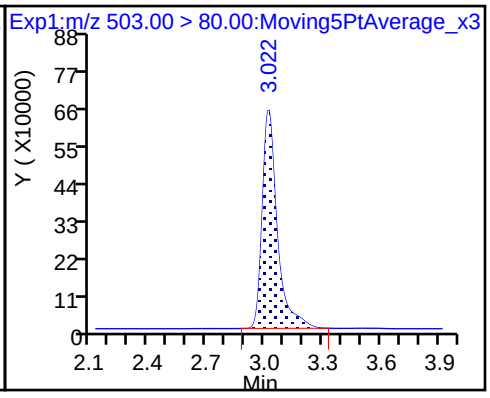
17 Perfluorooctane sulfonic acid



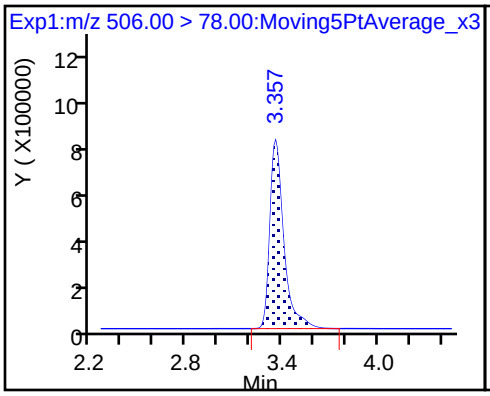
D 19 13C5 PFNA



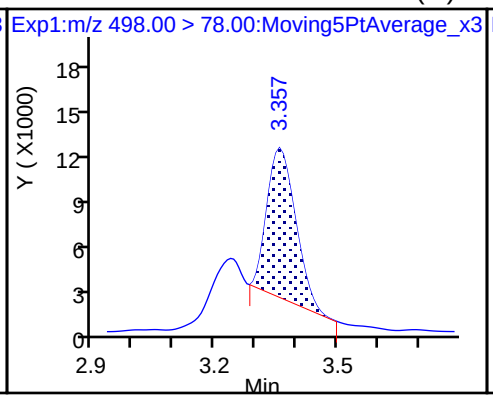
D 18 13C4 PFOS



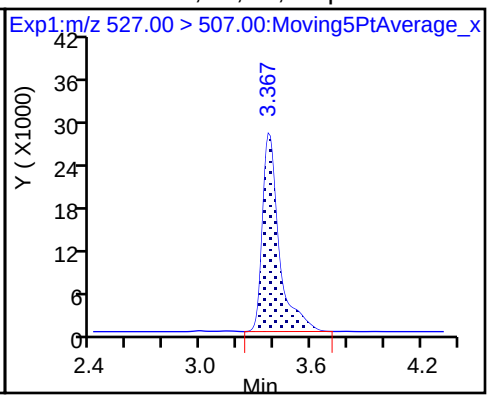
D 21 13C8 FOSA



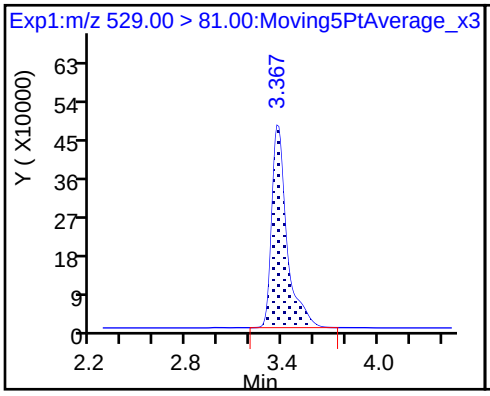
22 Perfluorooctane Sulfonamide (M)



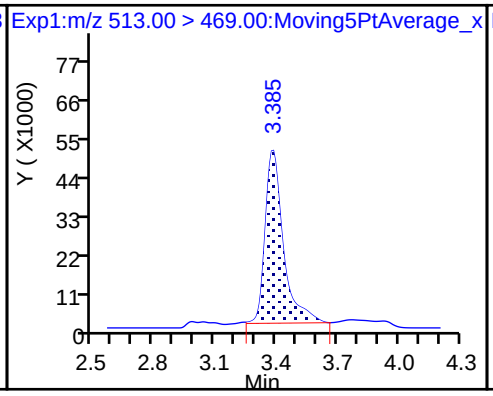
25 Sodium 1H,1H,2H,2H-perfluorodecane



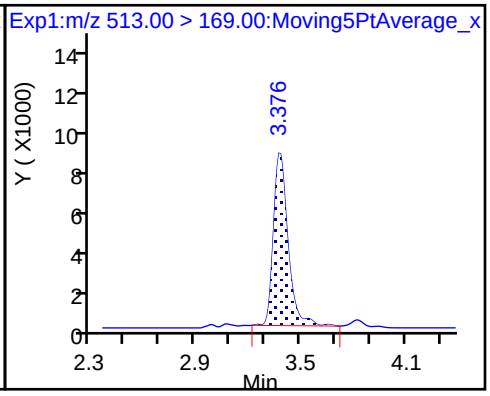
D 26 M2-8:2FTS



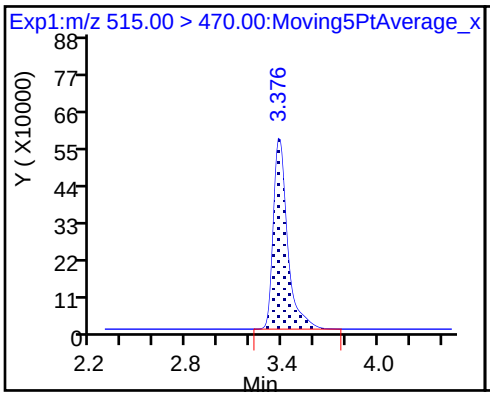
24 Perfluorodecanoic acid



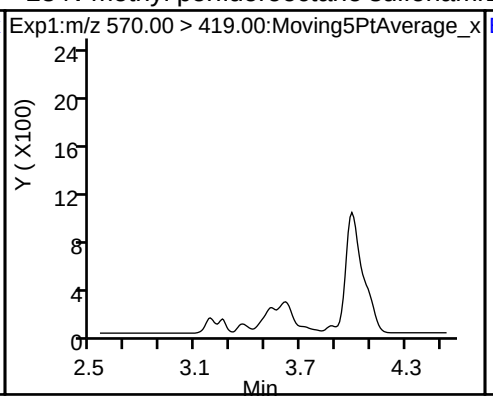
24 Perfluorodecanoic acid



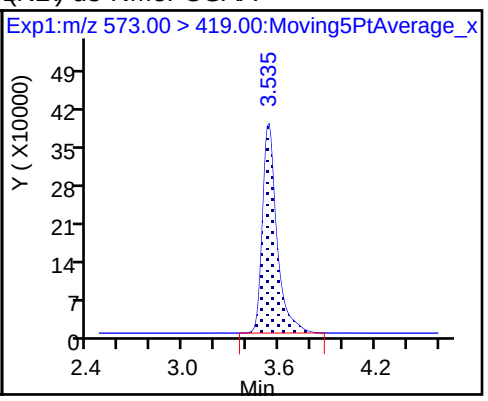
D 23 13C2 PFDA



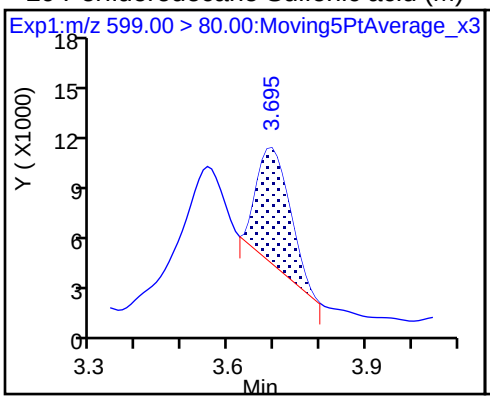
28 N-methyl perfluorooctane sulfonamid (ND)



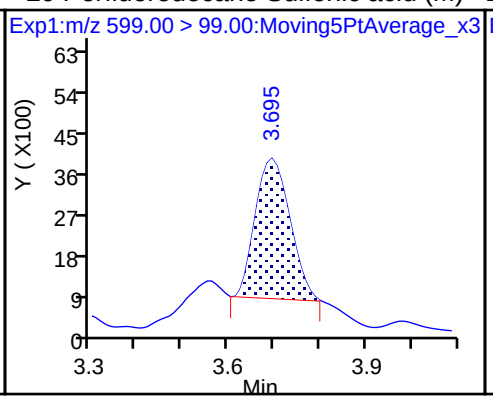
D 27 d3-NMeFOSAA



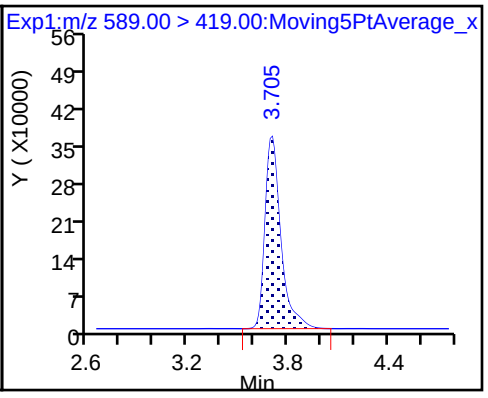
29 Perfluorodecane Sulfonic acid (M)



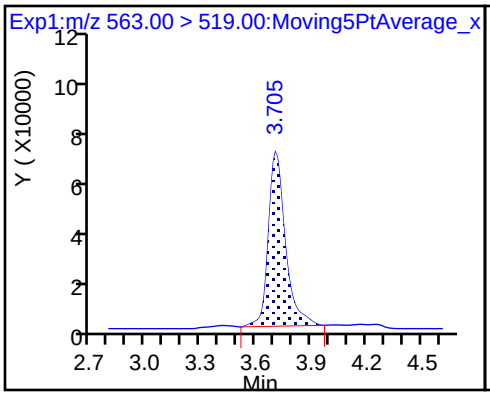
29 Perfluorodecane Sulfonic acid (M)



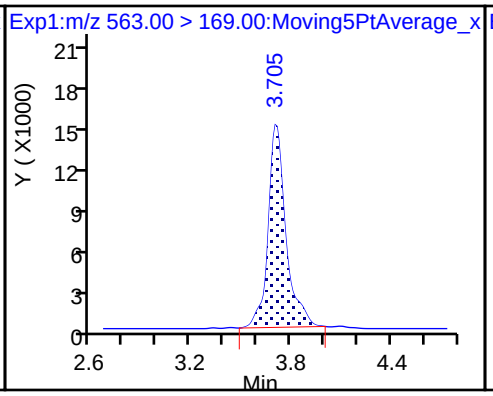
D 32 d5-NEtFOSAA



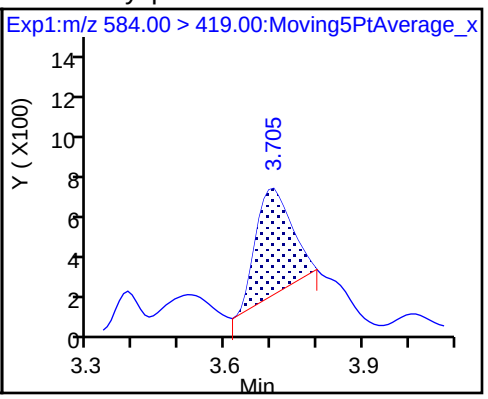
31 Perfluoroundecanoic acid



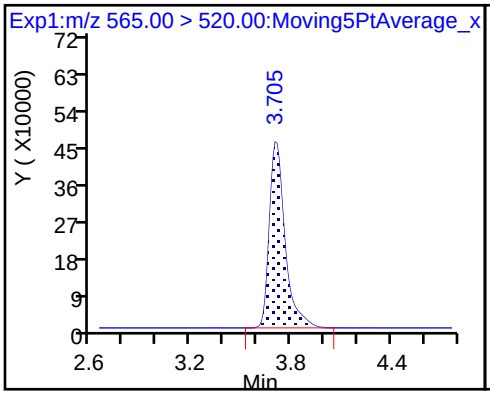
31 Perfluoroundecanoic acid



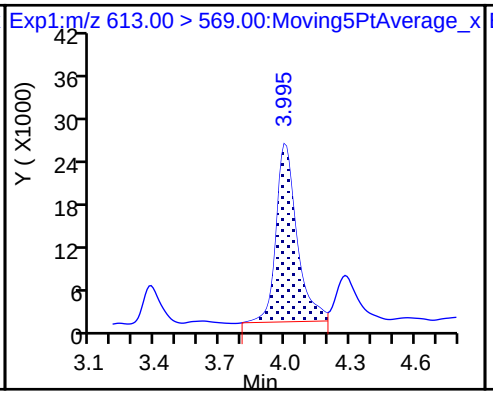
33 N-ethyl perfluorooctane sulfonamid



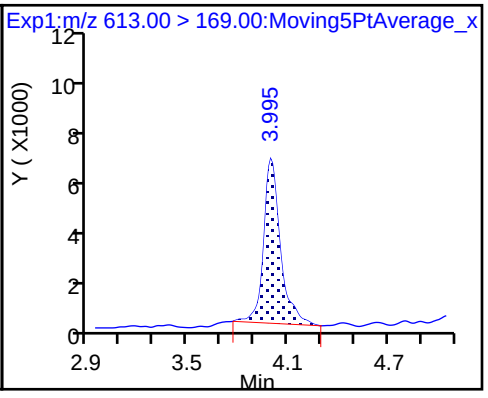
D 30 13C2 PFUnA



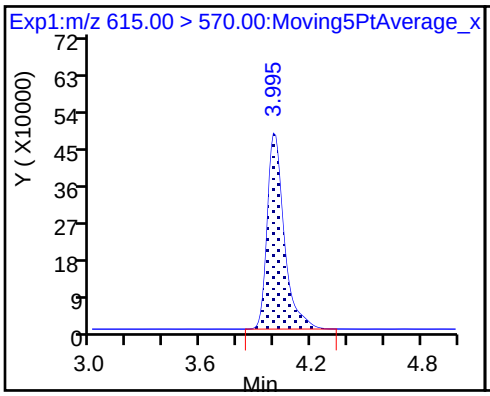
37 Perfluorododecanoic acid



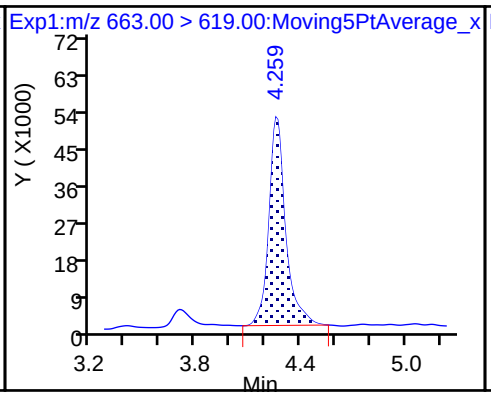
37 Perfluorododecanoic acid



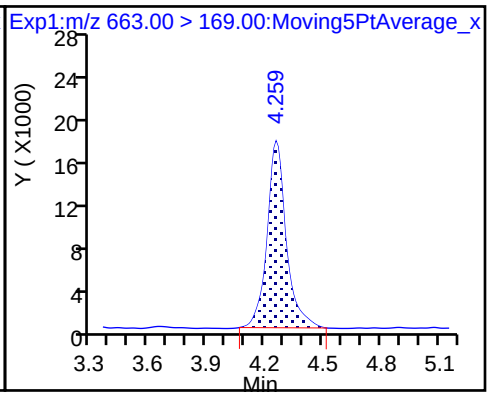
D 36 13C2 PFDoA



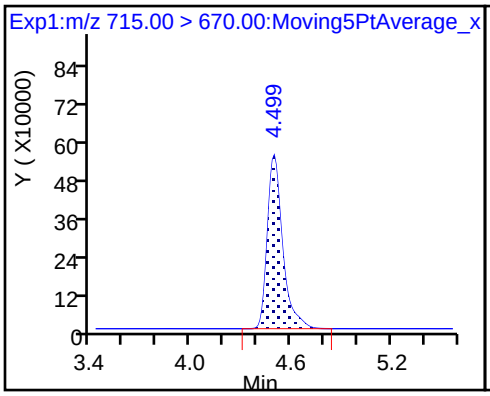
41 Perfluorotridecanoic acid



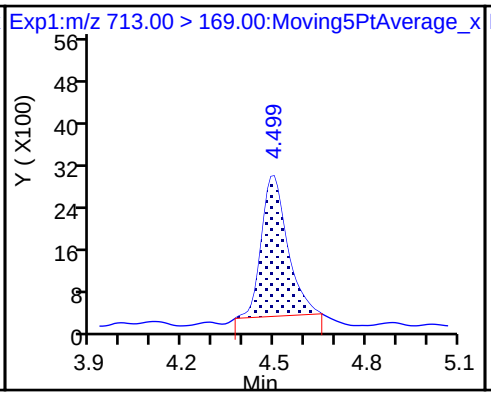
41 Perfluorotridecanoic acid



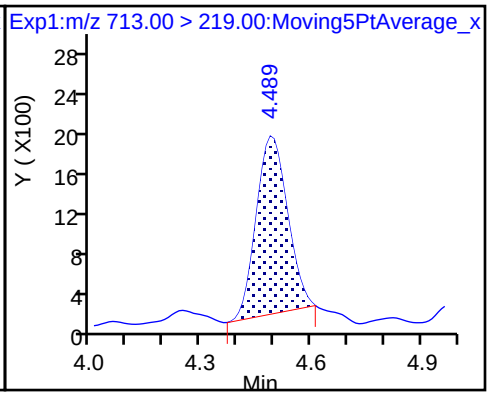
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

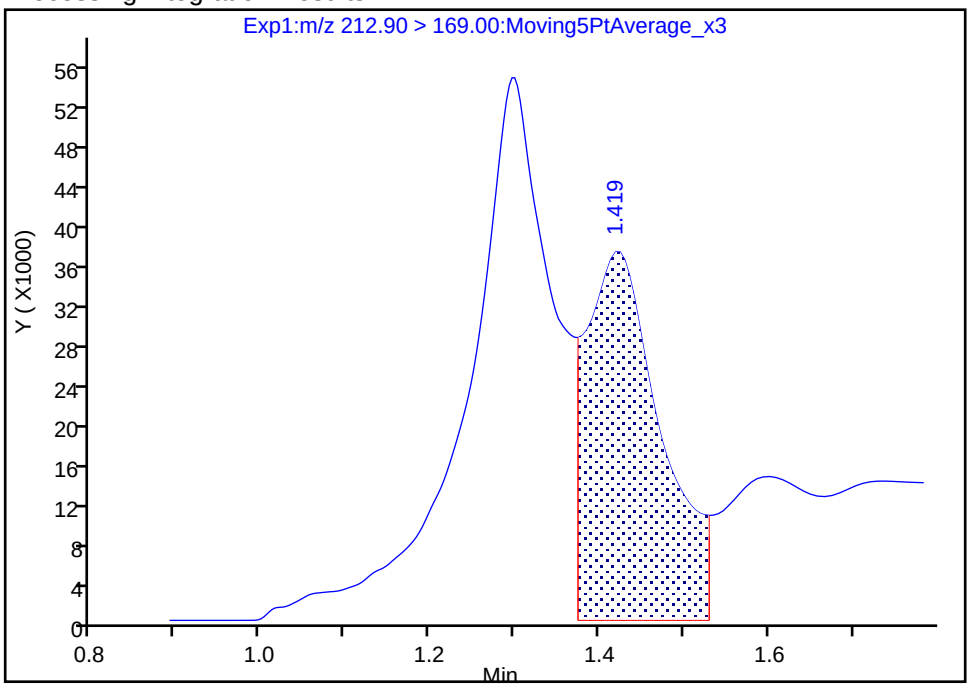
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

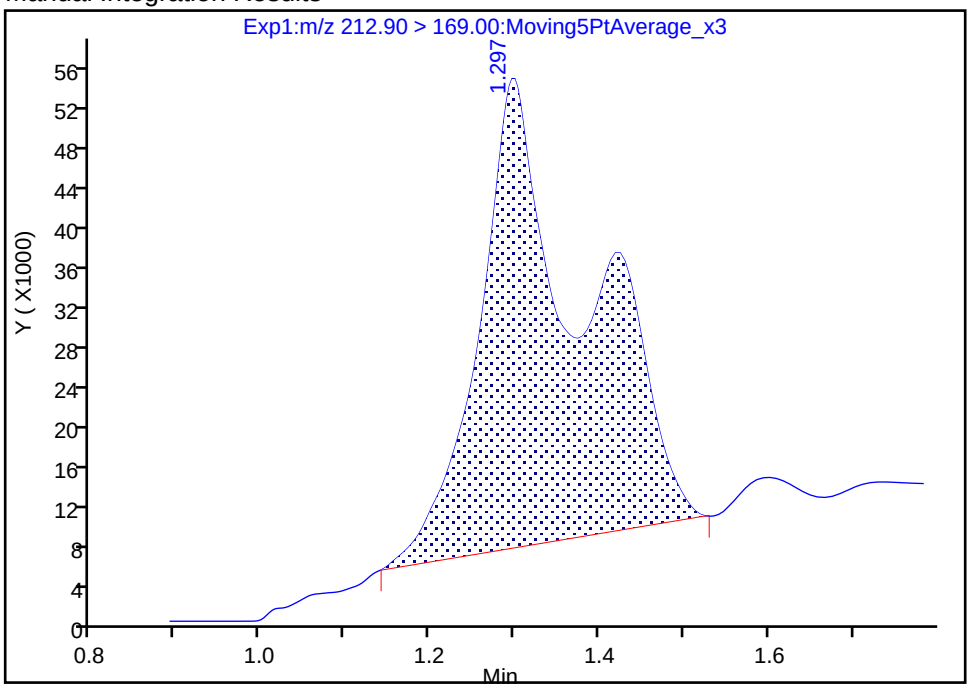
Processing Integration Results

RT: 1.42
Area: 224635
Amount: 0.121411
Amount Units: ng/ml



Manual Integration Results

RT: 1.30
Area: 408249
Amount: 0.220651
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:53:33

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

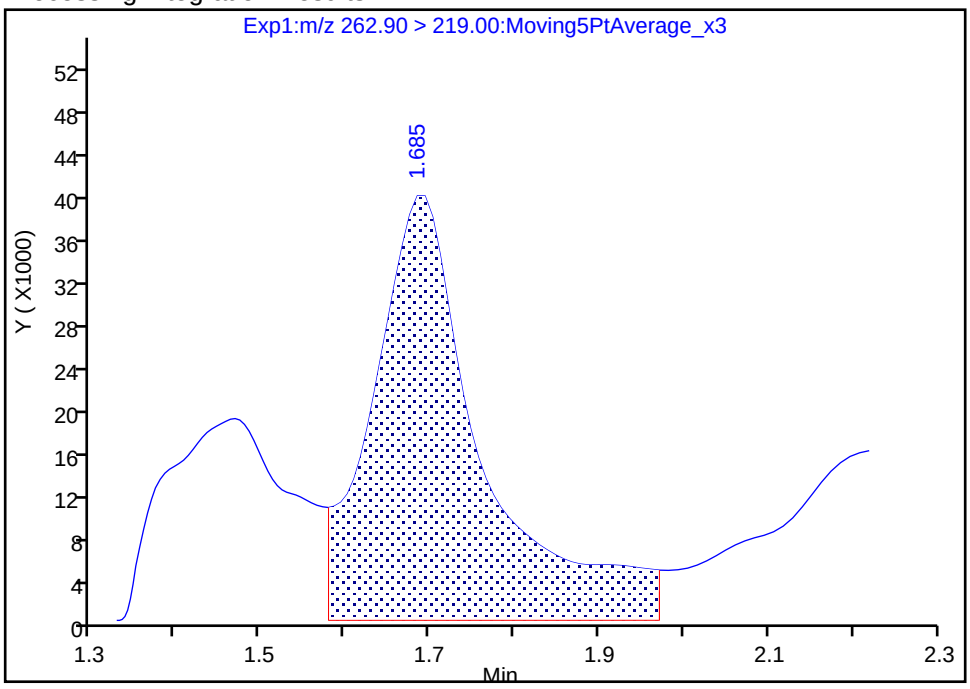
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

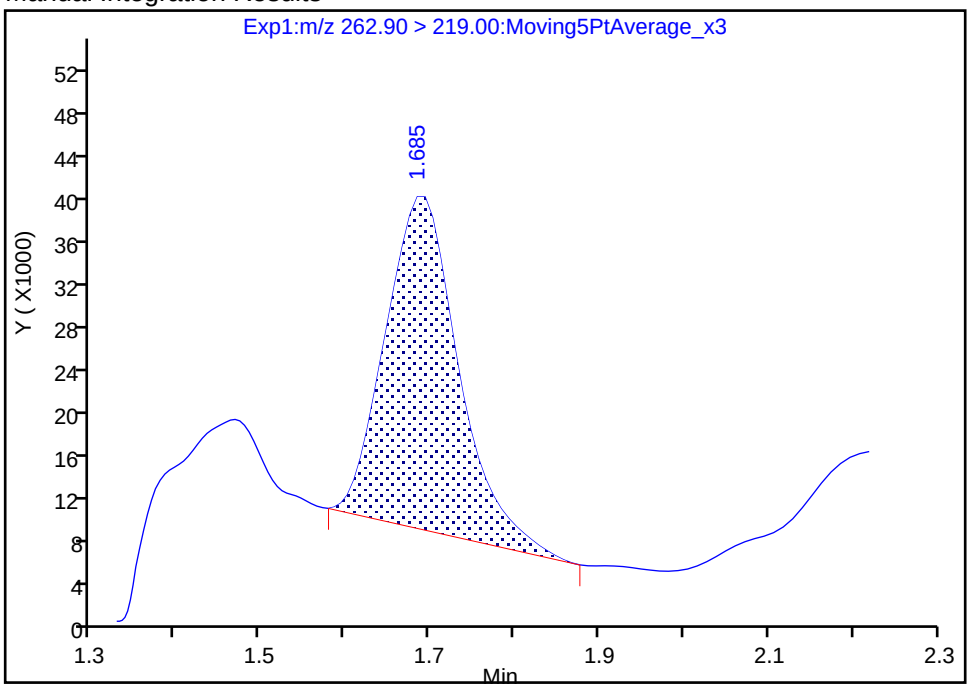
Processing Integration Results

RT: 1.68
Area: 354631
Amount: 0.202988
Amount Units: ng/ml



Manual Integration Results

RT: 1.68
Area: 186436
Amount: 0.106714
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:53:59

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

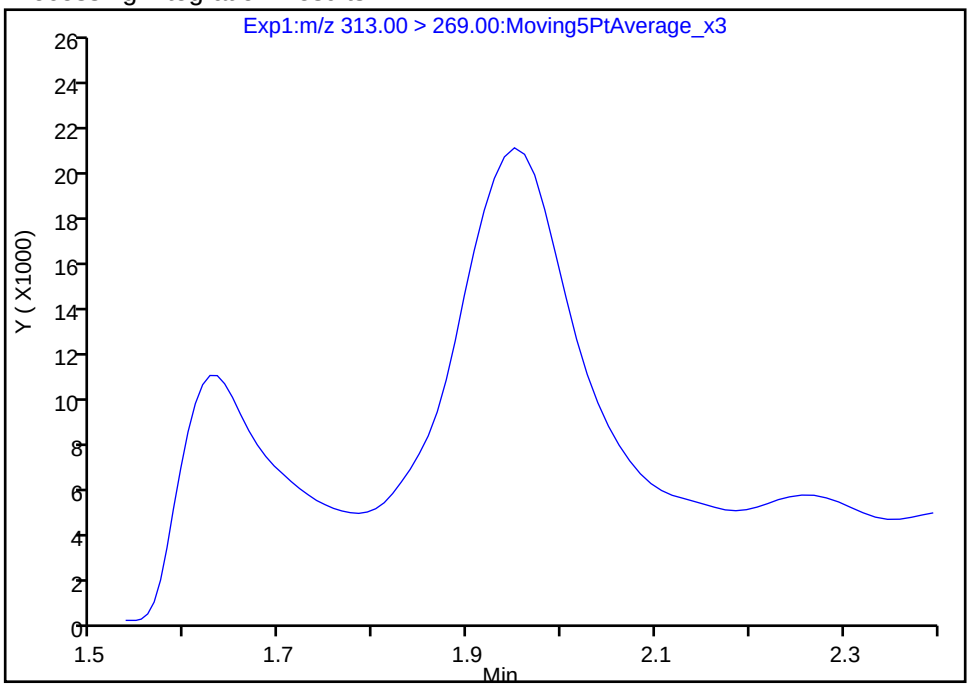
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

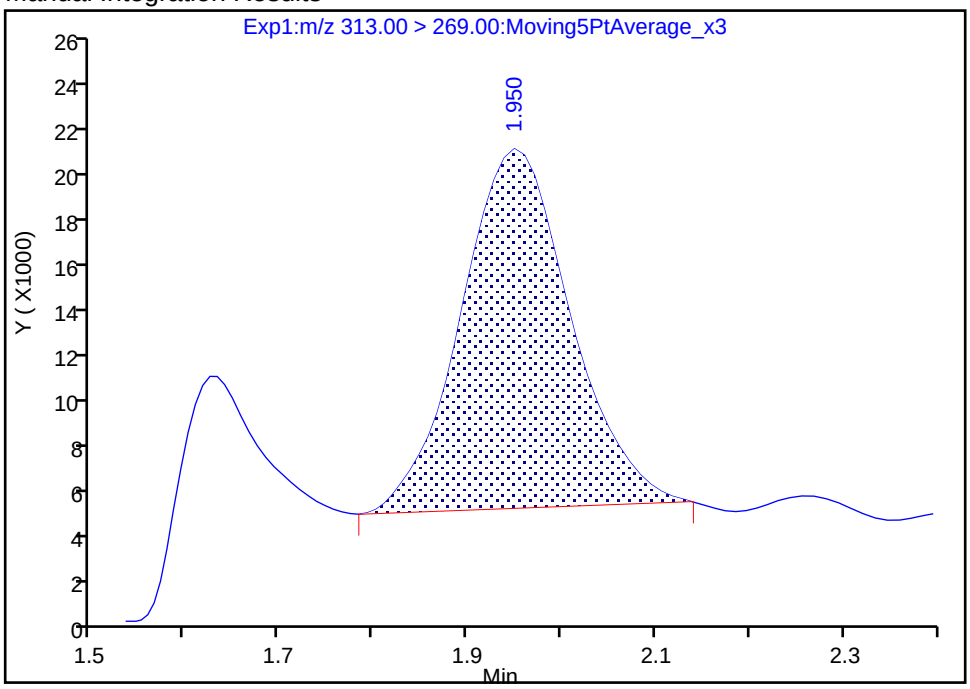
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.95
Area: 126453
Amount: 0.086186
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:54:38
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

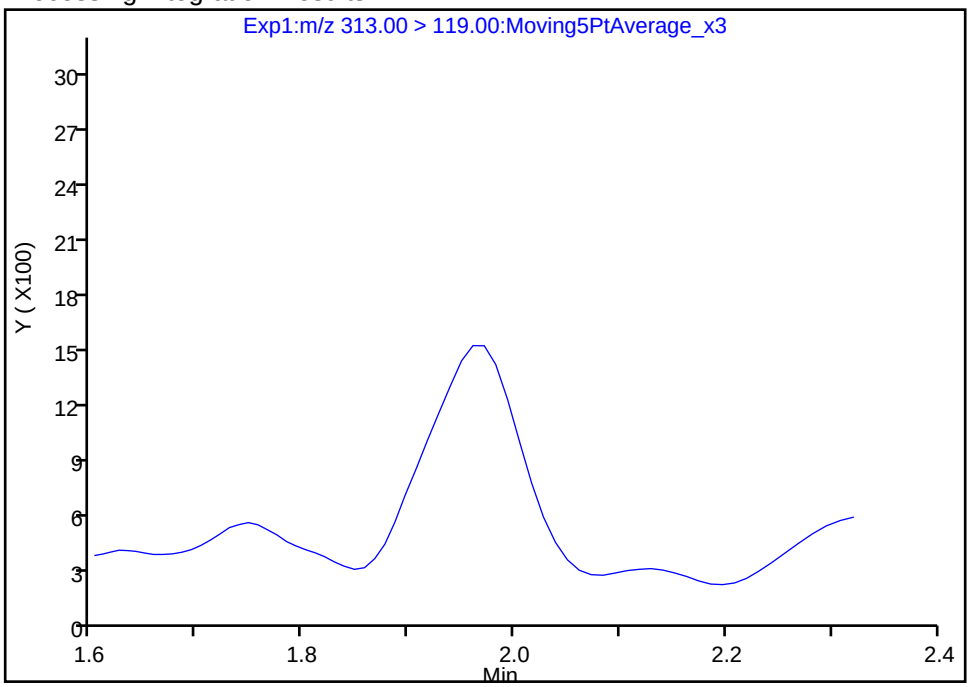
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

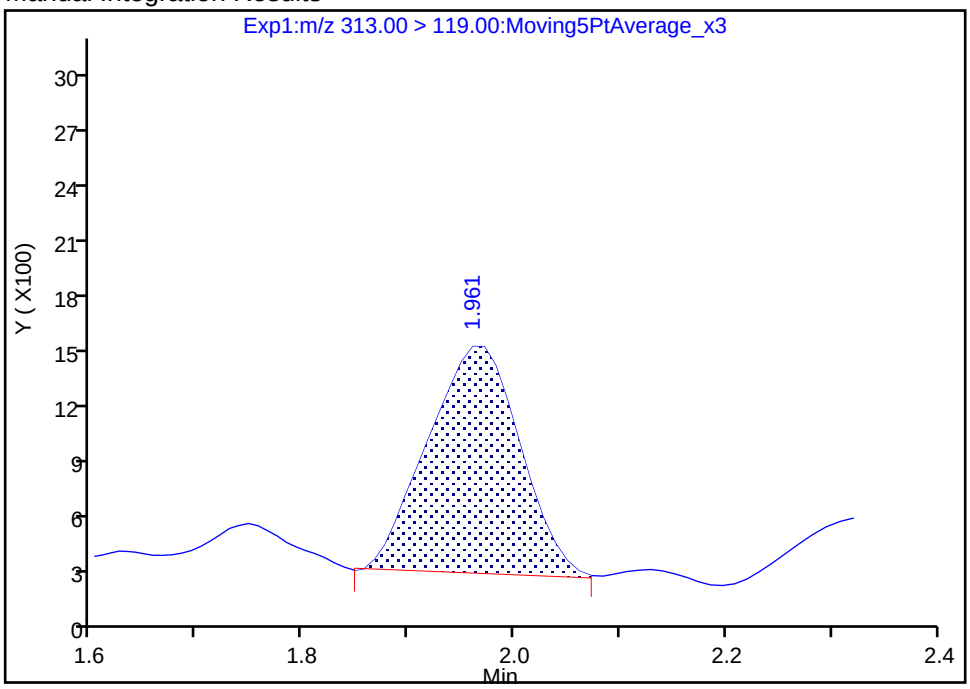
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.96
Area: 7475
Amount: 0.086186
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:54:47
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

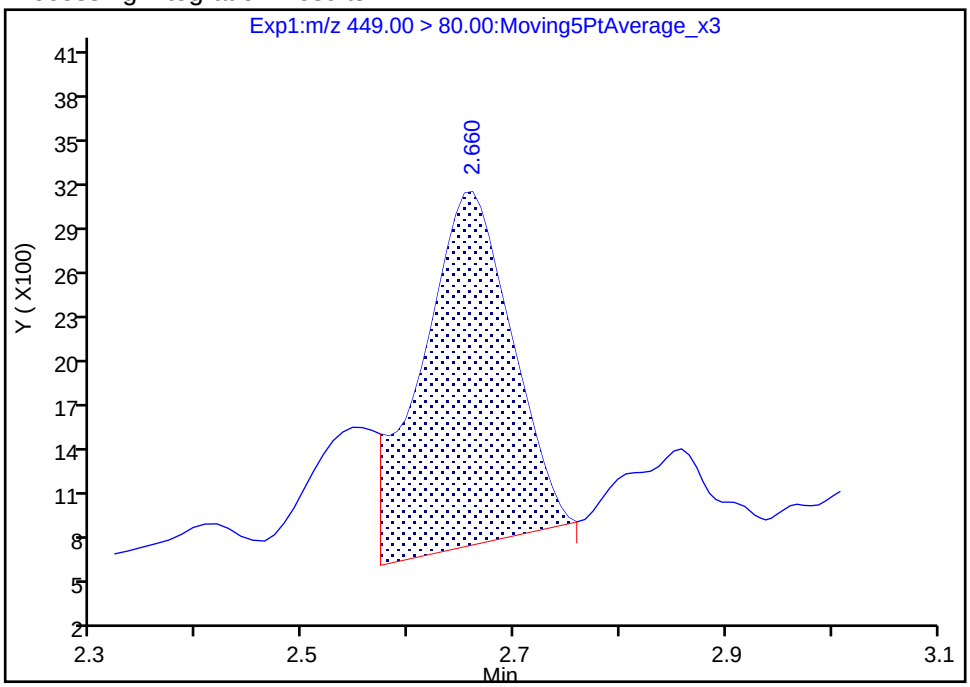
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

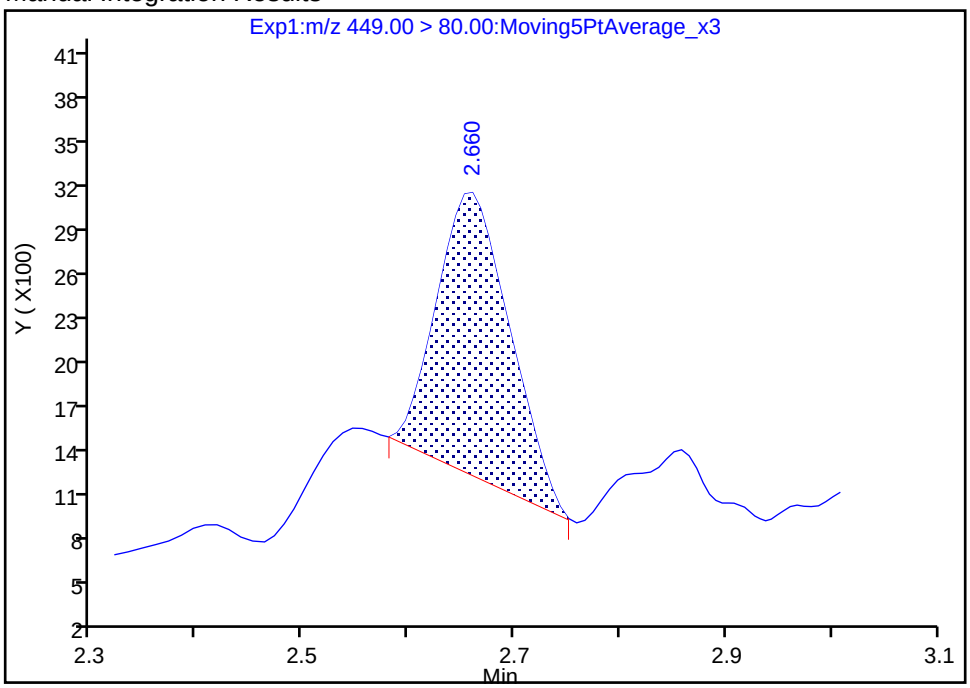
Processing Integration Results

RT: 2.66
Area: 14156
Amount: 0.007350
Amount Units: ng/ml



Manual Integration Results

RT: 2.66
Area: 9177
Amount: 0.004765
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:55:06

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

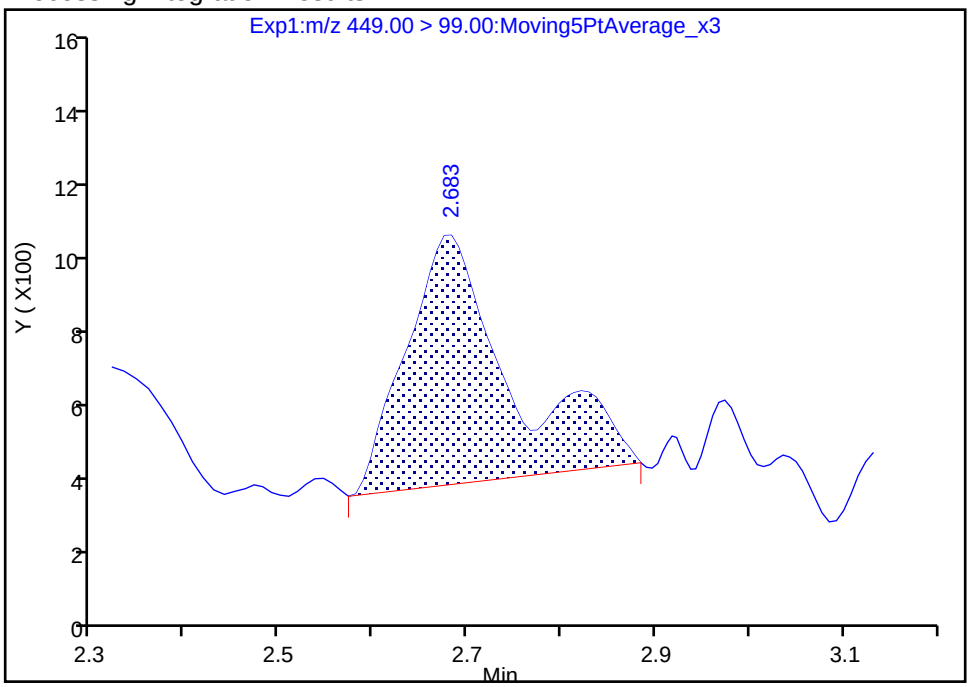
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

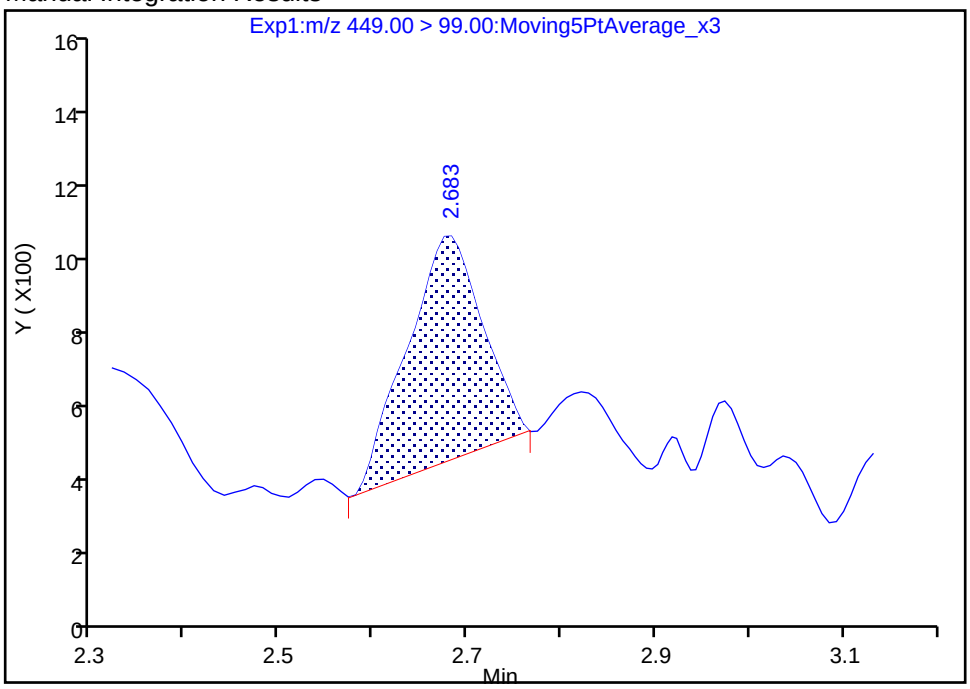
Processing Integration Results

RT: 2.68
Area: 4953
Amount: 0.007350
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 3289
Amount: 0.004765
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:55:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

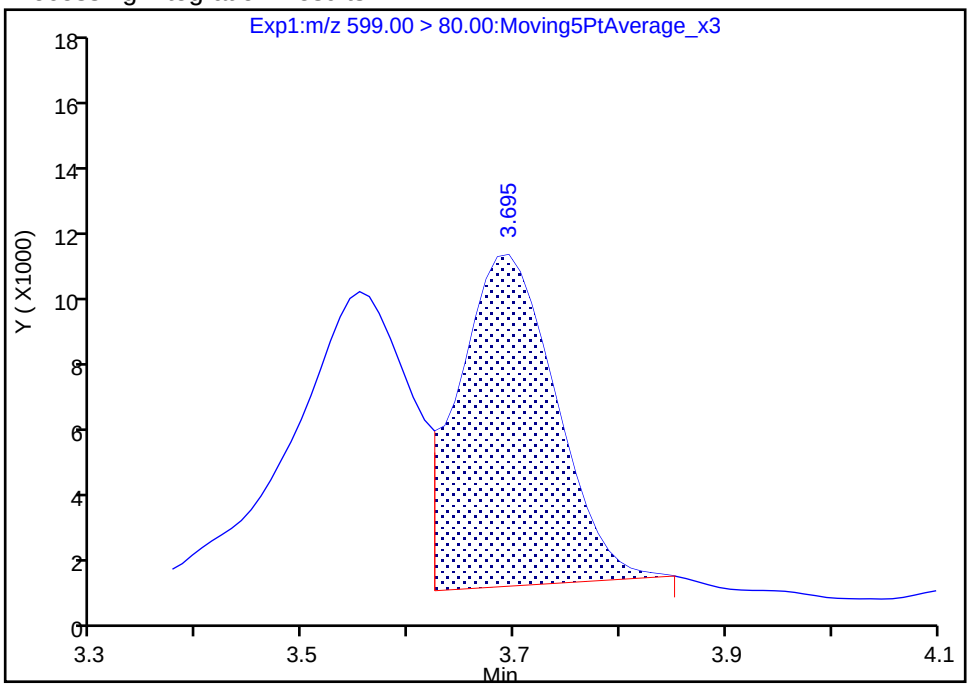
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 1

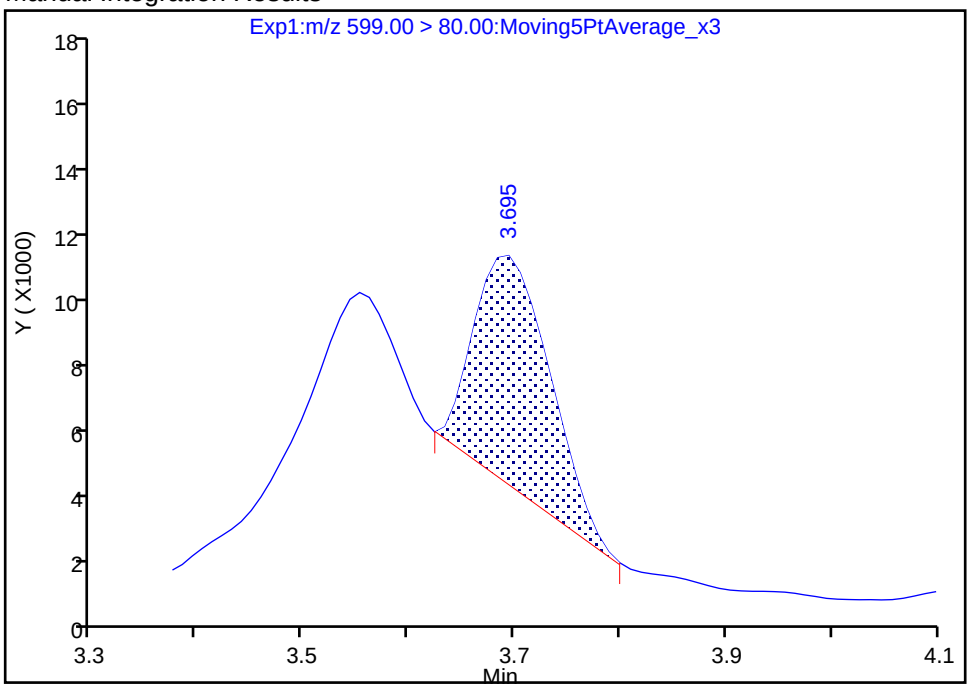
Processing Integration Results

RT: 3.69
Area: 63657
Amount: 0.063483
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 34989
Amount: 0.034893
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:55:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

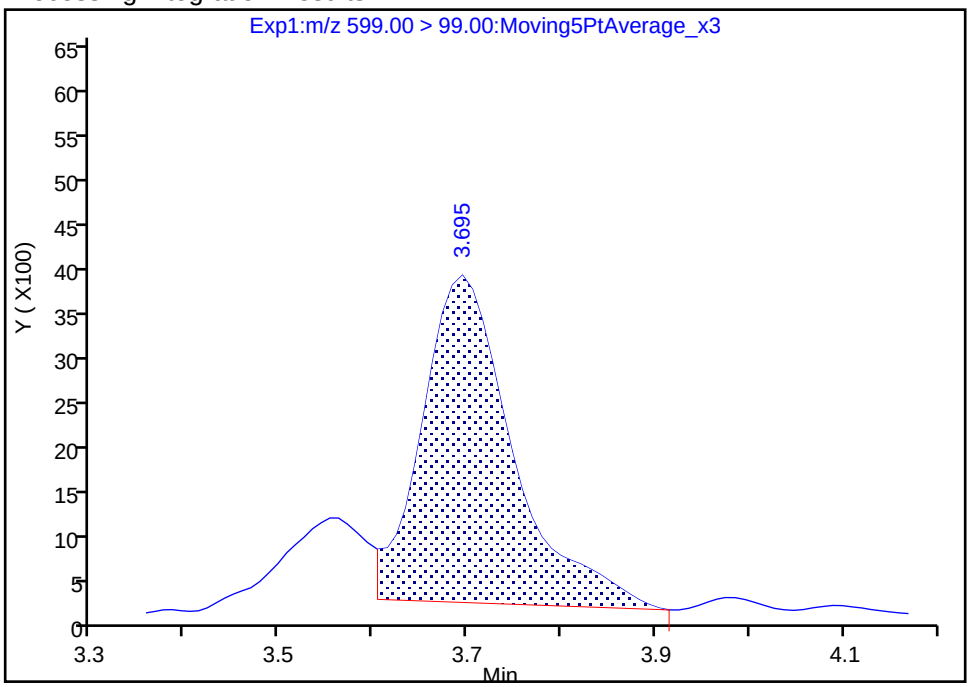
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorodecane Sulfonic acid, CAS: 335-77-3

Signal: 2

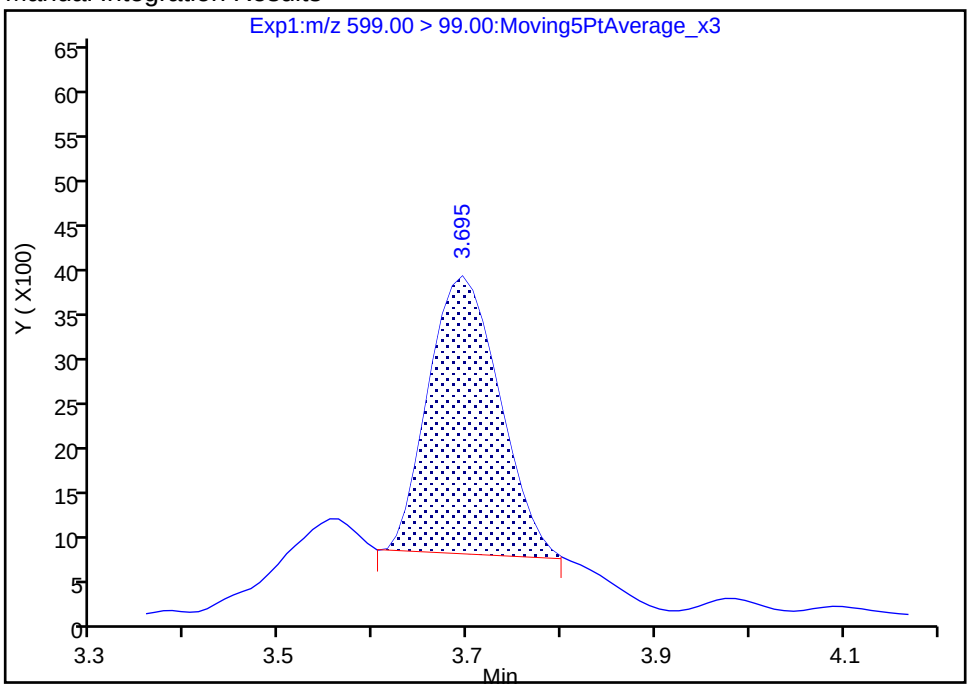
Processing Integration Results

RT: 3.69
Area: 24574
Amount: 0.063483
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 16270
Amount: 0.034893
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:55:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

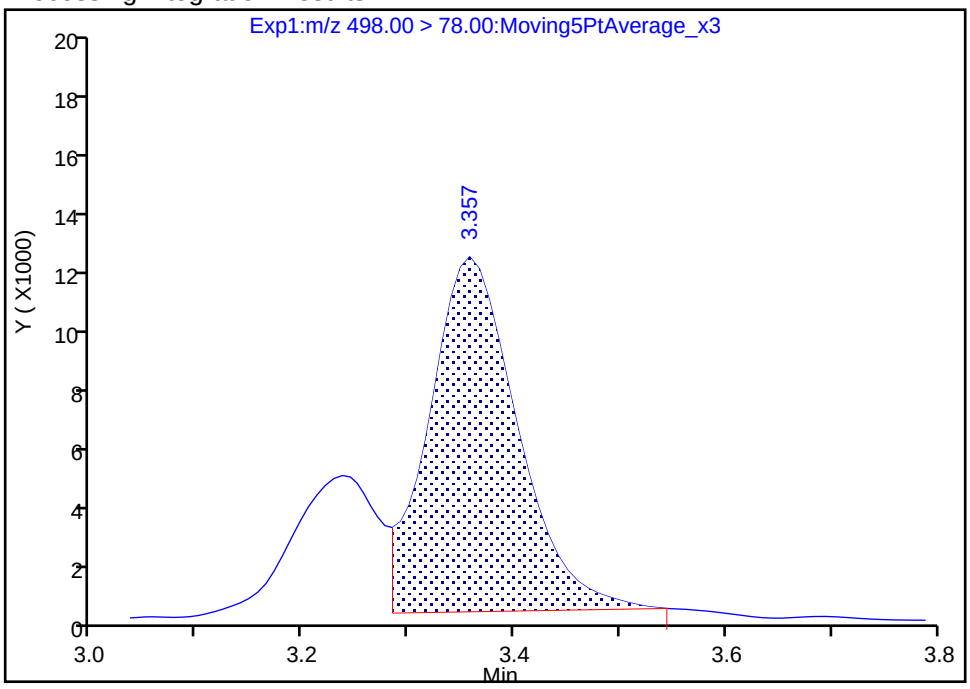
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_027.d				
Injection Date:	07-Apr-2018 20:53:28	Instrument ID:	A8_N		
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4		
Client ID:	SB044 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

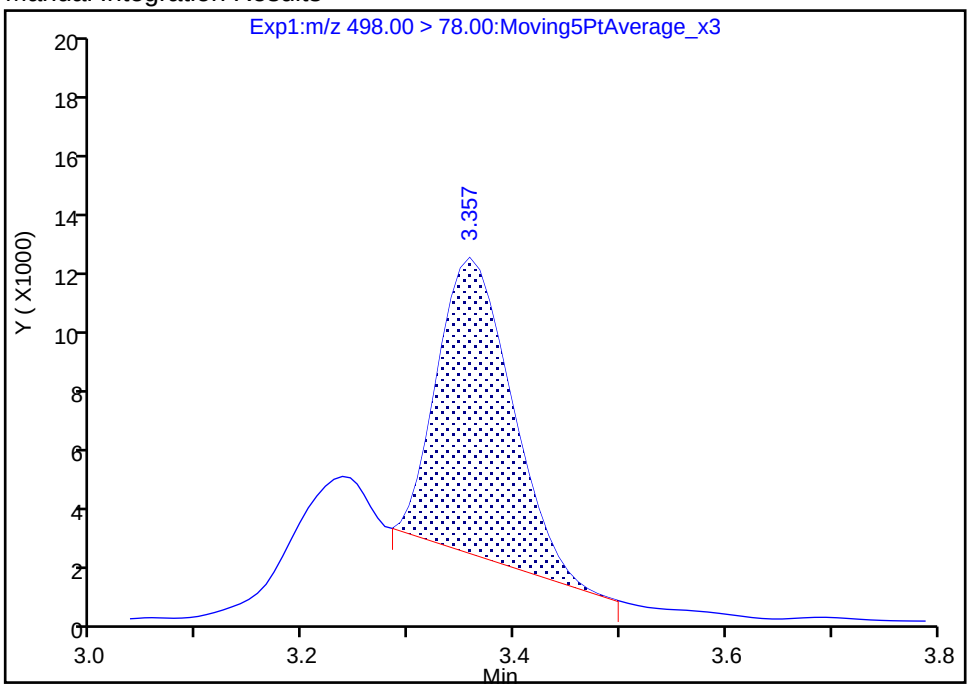
Processing Integration Results

RT: 3.36
Area: 68598
Amount: 0.036721
Amount Units: ng/ml



Manual Integration Results

RT: 3.36
Area: 48202
Amount: 0.025803
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:55:35

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB044 (2"-2') DL | Lab Sample ID: 320-37380-4 DL

Matrix: Solid | Lab File ID: 2018.04.09LLA_047.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:10

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/09/2018 18:50

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 217070 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	0.0016	U	0.022	0.0016
39108-34-4	8:2FTS	0.0027	U	0.022	0.0027

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	67		25-150
STL02280	M2-8:2FTS	74		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_047.d
Lims ID: 320-37380-A-4-B
Client ID: SB044 (2"-2')
Sample Type: Client
Inject. Date: 09-Apr-2018 18:50:15 ALS Bottle#: 25 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-37380-a-4-b 10X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:36 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 10:57:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.315	1.424	-0.109	0.921	33355	0.0170			6.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.424	0.004	1.000	530222	0.2026		81.0	5596	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.708	1.692	0.016	1.000	17540	0.0107			8.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.703	0.006	0.560	343969	0.2019		80.8	6897	
D 47 13C3-PFBS										
301.90 > 83.00	1.744	1.739	0.005	1.000	7549	0.1935		83.2	39.2	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.978	1.980	-0.002	0.995	11183	0.007363			10.7	RM
313.00 > 119.00	1.989	1.980	0.009	1.000	195		57.35(5.03-15.10)		3.7	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.989	1.990	-0.001	1.000	371040	0.1976		79.0	11566	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.317	0.012	1.000	359204	0.1990		79.6	12934	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.342	2.319	0.023	1.000	25036	0.0116			44.1	
399.00 > 99.00	2.342	2.319	0.023	1.000	8420		2.97(1.50-4.49)		19.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.342	2.330	0.012	1.000	455939	0.2026		85.6	10984	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.651	2.644	0.007	0.997	2169	0.004140			17.6	
D 12 M2-6:2FTS										
429.00 > 81.00	2.659	2.650	0.009	1.000	66619	0.1597		67.2	442	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.659	0.022		473454	0.2500			17000	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.681	2.667	0.014	1.000	10208	0.005975			5.7	M
413.00 > 169.00	2.681	2.667	0.014	1.000	8448		1.21(0.84-2.52)		19.1	M
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.673	0.008	1.000	360191	0.2029		81.2	11125	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.047	3.029	0.018	1.000	160269	0.1158			81.4	
499.00 > 99.00	3.047	3.029	0.018	1.000	39079		4.10(2.31-6.93)		85.5	
20 Perfluorononanoic acid										
463.00 > 419.00	3.047	3.036	0.011	1.000	13466	0.0100			21.1	
463.00 > 169.00	3.054	3.036	0.018	1.002	2564		5.25(1.90-5.69)		68.2	
D 18 13C4 PFOS										
503.00 > 80.00	3.047	3.042	0.005	1.000	289491	0.1851		77.5	1001	
D 19 13C5 PFNA										
468.00 > 423.00	3.047	3.042	0.005	1.000	327766	0.2183		87.3	9651	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.372	3.357	0.015	1.000	4925	0.003010			72.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.372	3.365	0.007	1.000	414175	0.1875		75.0	9565	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.400	3.385	0.015	1.000	3019	0.006240			83.0	
D 26 M2-8:2FTS										
529.00 > 81.00	3.400	3.393	0.007	1.000	85907	0.1771		73.9	483	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.419	3.394	0.025	1.003	21177	0.0191			44.8	
513.00 > 169.00	3.400	3.394	0.006	0.997	7350		2.88(2.36-7.09)		149	
D 23 13C2 PFDA										
515.00 > 470.00	3.409	3.402	0.007	1.000	280307	0.2210		88.4	3511	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.558	3.560	-0.002	1.000	134327	0.1980		79.2	1360	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.742	3.726	0.016	1.000	25899	0.0385			58.0	
563.00 > 169.00	3.732	3.726	0.006	0.997	6709		3.86(2.12-6.36)		124	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.732	3.732	0.0	1.000	135670	0.1905		76.2	876	
D 30 13C2 PFUnA										
565.00 > 520.00	3.742	3.732	0.010	1.000	209449	0.2023		80.9	1460	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.041	4.026	0.015	1.003	17082	0.0151			17.2	
613.00 > 169.00	4.030	4.026	0.004	1.000	4055		4.21(2.13-6.40)		42.3	
D 36 13C2 PFDoA										
615.00 > 570.00	4.030	4.030	0.0	1.000	262438	0.2277		91.1	3127	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.291	4.288	0.003	1.000	27838	0.0229			23.6	R
663.00 > 169.00	4.291	4.288	0.003	1.000	5812		4.79(1.25-3.76)		62.1	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.531	4.533	-0.002	1.000	339371	0.2317		92.7	2962	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

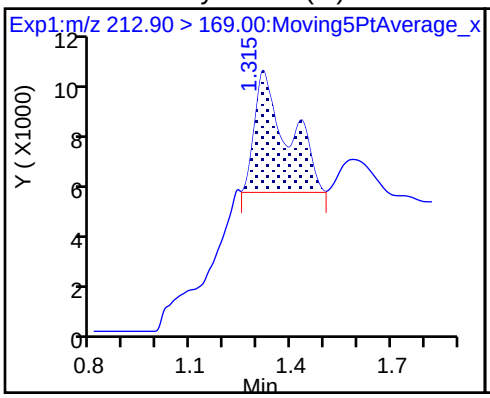
Report Date: 10-Apr-2018 11:05:47 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

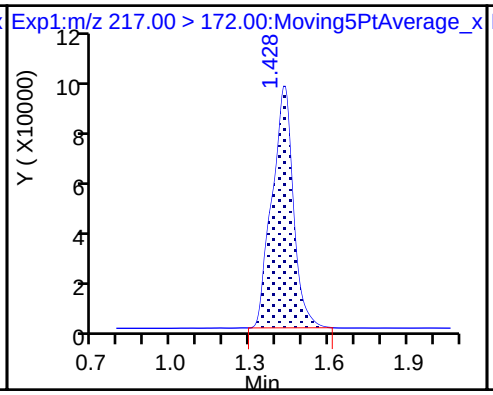
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_047.d

Injection Date:	09-Apr-2018 18:50:15	Instrument ID:	A8_N
Lims ID:	320-37380-A-4-B	Lab Sample ID:	320-37380-4
Client ID:	SB044 (2"-2')		
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25 Worklist Smp#: 5
Injection Vol:	2.0 ul	Dil. Factor:	10.0000
Method:	A8_N	Limit Group:	LC PFC ICAL

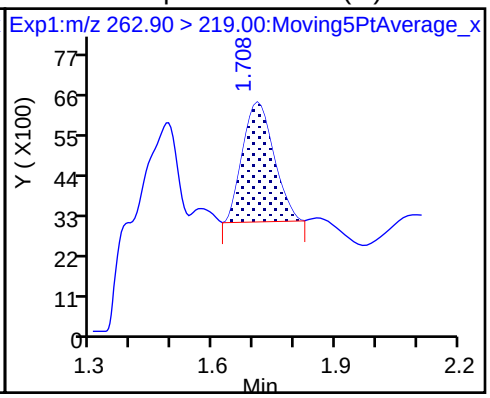
2 Perfluorobutyric acid (M)



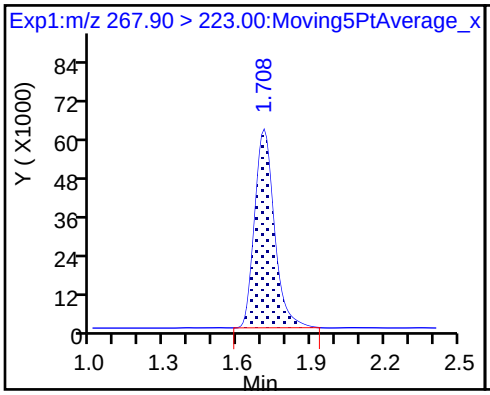
D 1 13C4 PFBA



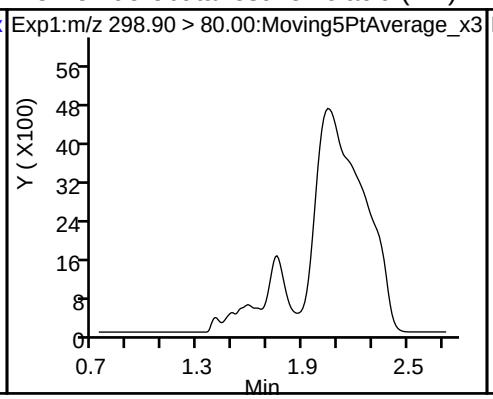
4 Perfluoropentanoic acid (M)



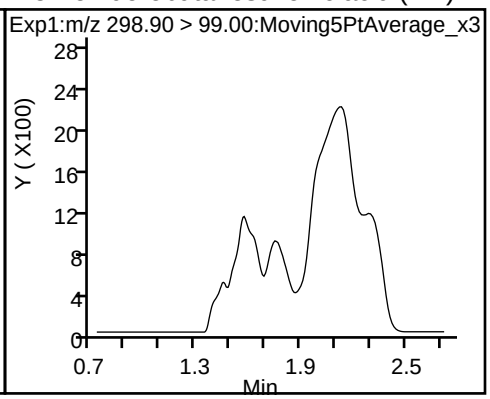
D 3 13C5-PFPeA



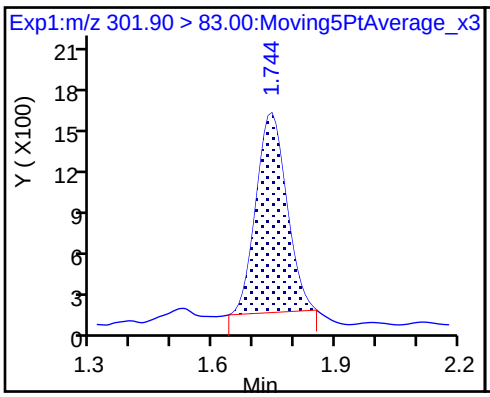
5 Perfluorobutanesulfonic acid (ND)



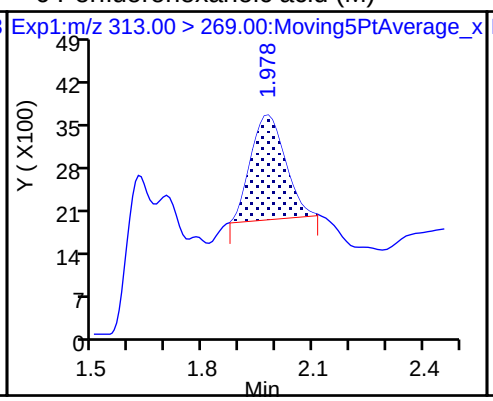
5 Perfluorobutanesulfonic acid (ND)



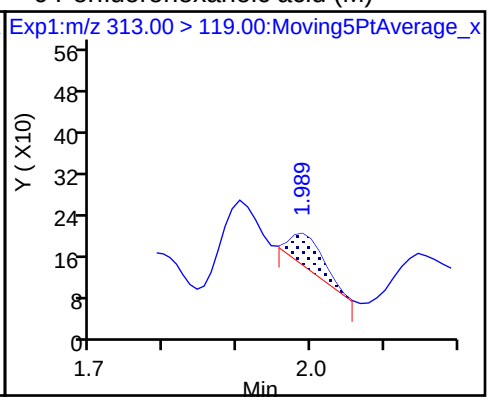
D 47 13C3-PFBS



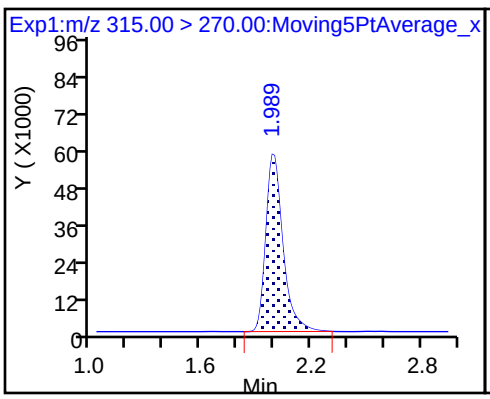
6 Perfluorohexanoic acid (M)



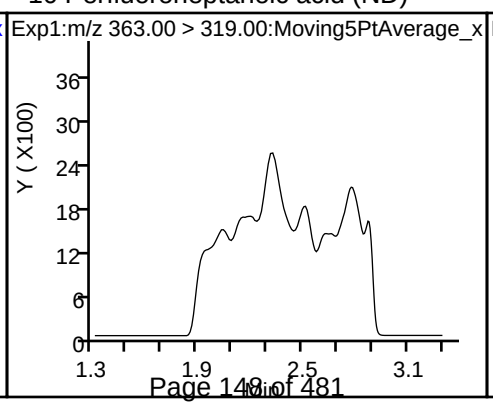
6 Perfluorohexanoic acid (M)



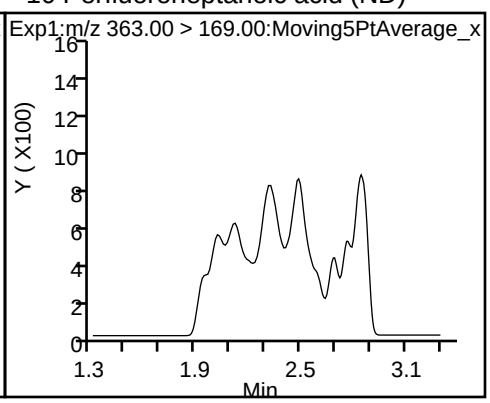
D 7 13C2 PFHxA



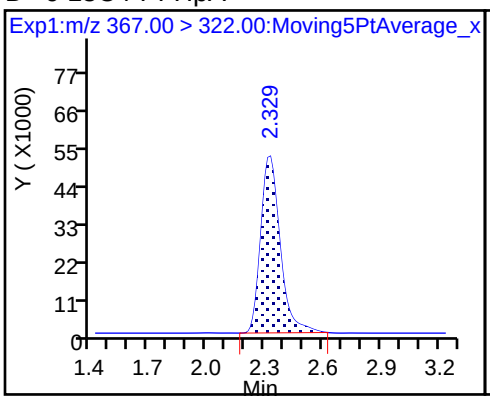
10 Perfluoroheptanoic acid (ND)



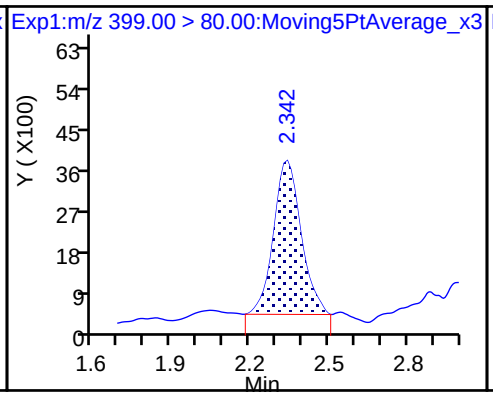
10 Perfluoroheptanoic acid (ND)



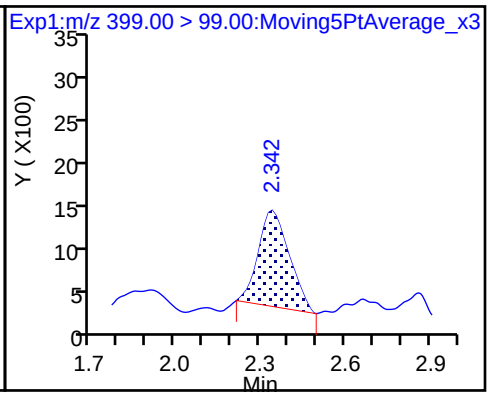
D 9 13C4-PFHpA



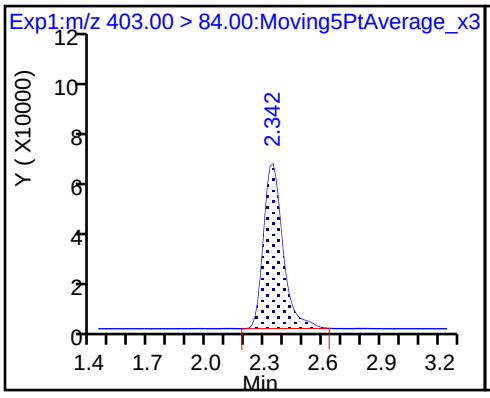
8 Perfluorohexanesulfonic acid



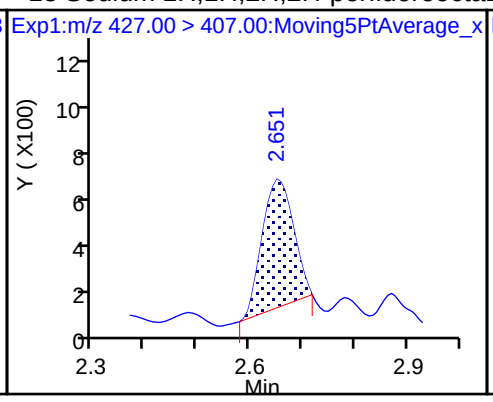
8 Perfluorohexanesulfonic acid



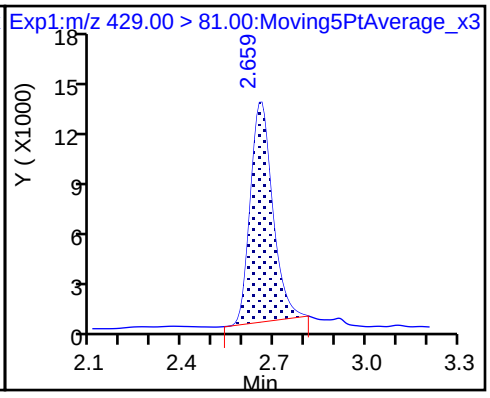
D 11 18O2 PFHxS



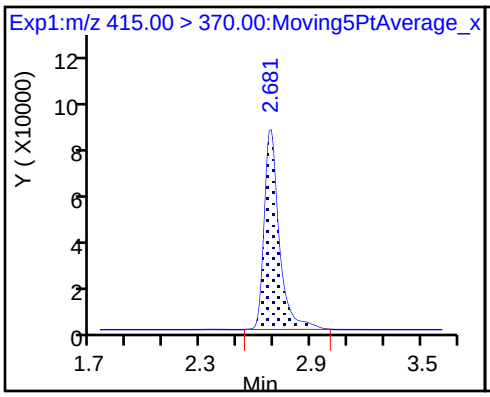
13 Sodium 1H,1H,2H,2H-perfluorooctane



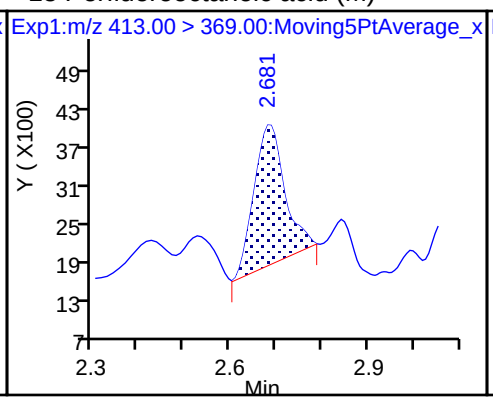
D 12 M2-6:2FTS



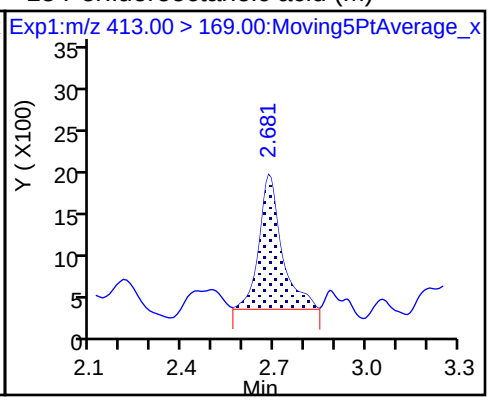
* 62 13C2-PFOA



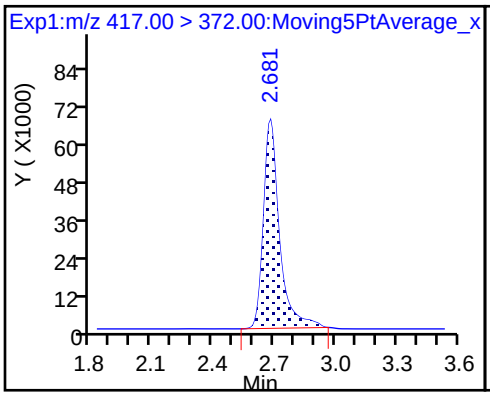
15 Perfluorooctanoic acid (M)



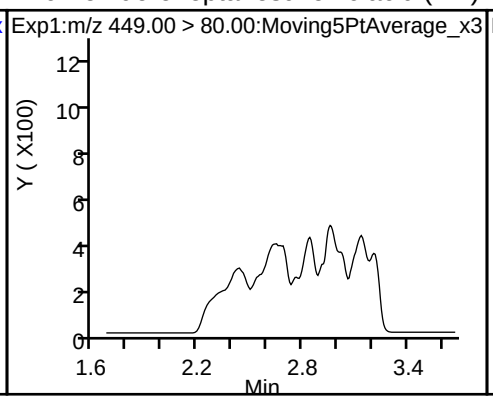
15 Perfluorooctanoic acid (M)



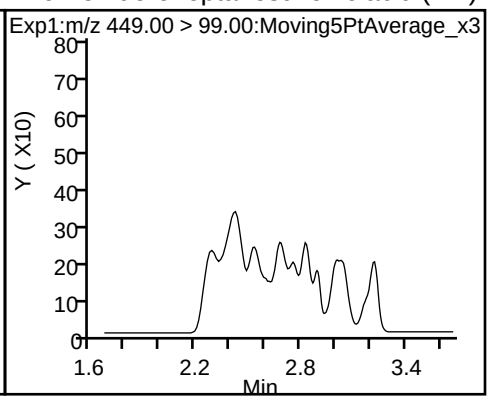
D 14 13C4 PFOA



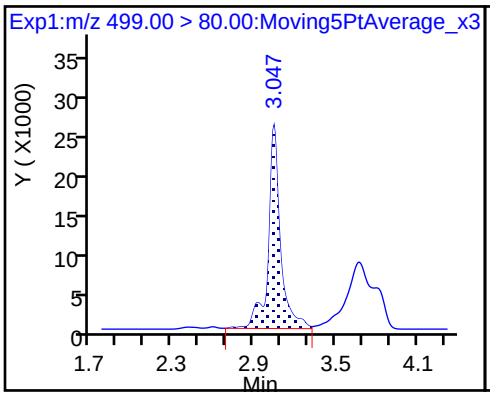
16 Perfluoroheptanesulfonic acid (ND)



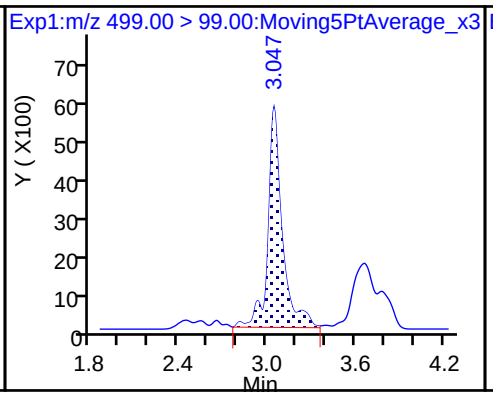
16 Perfluoroheptanesulfonic acid (ND)



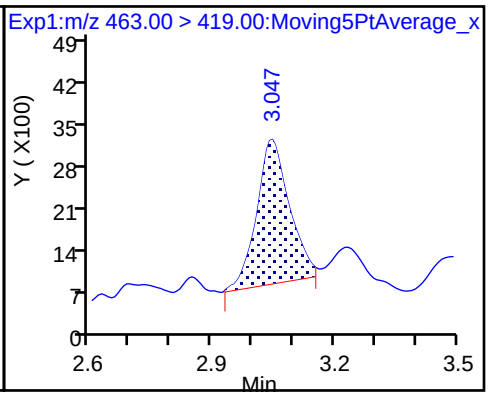
17 Perfluorooctane sulfonic acid



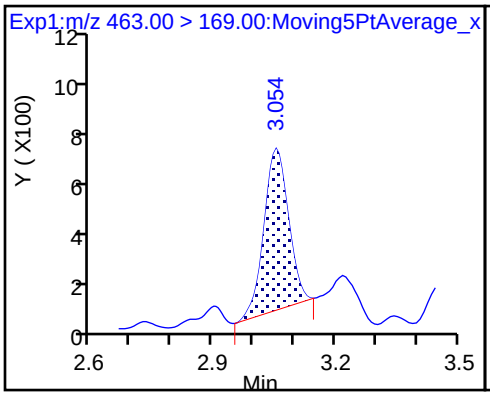
17 Perfluorooctane sulfonic acid



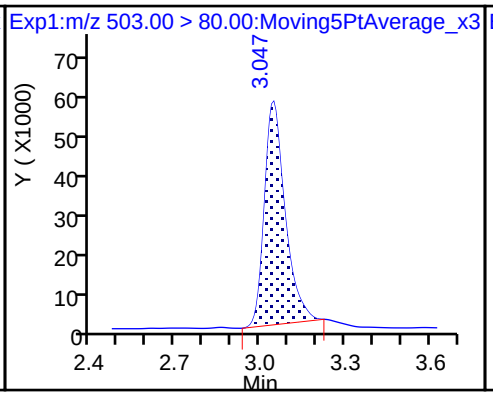
20 Perfluorononanoic acid



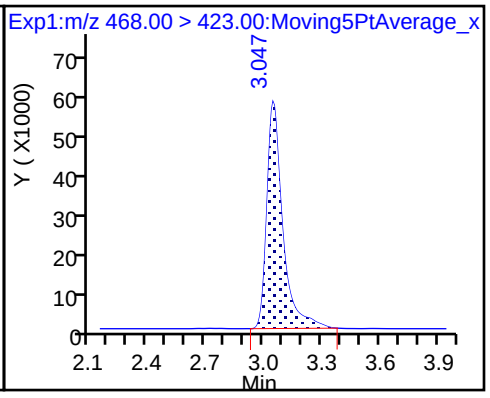
20 Perfluorononanoic acid



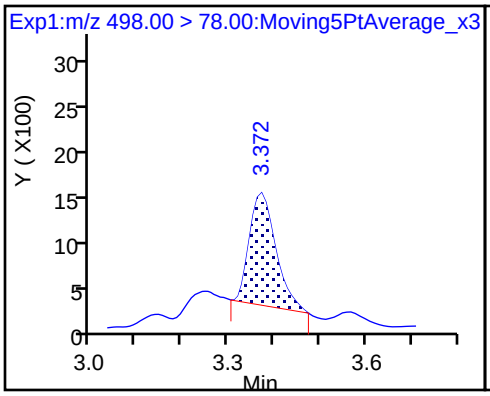
D 18 13C4 PFOS



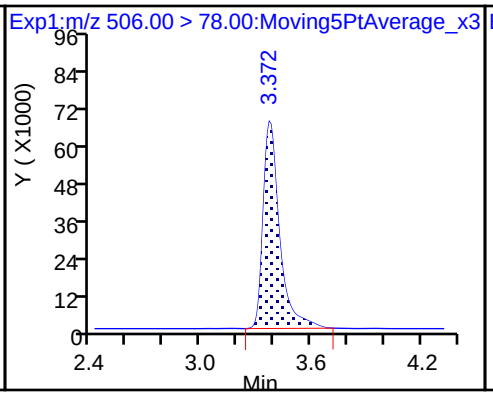
D 19 13C5 PFNA



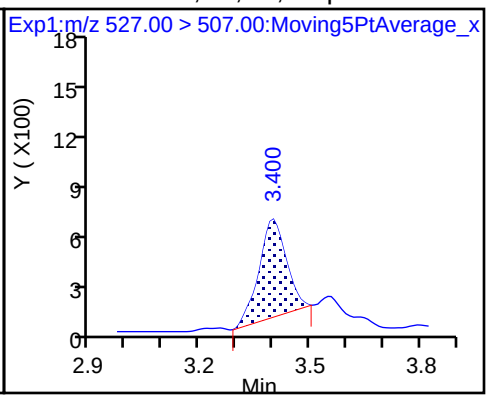
22 Perfluorooctane Sulfonamide



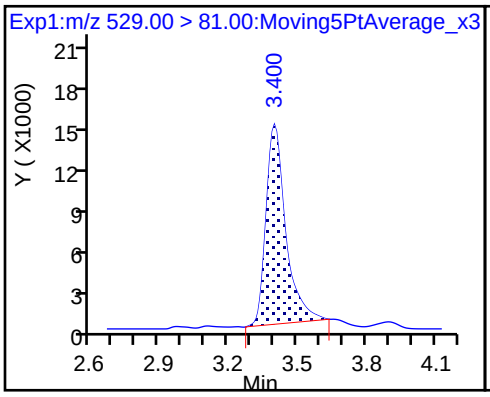
D 21 13C8 FOSA



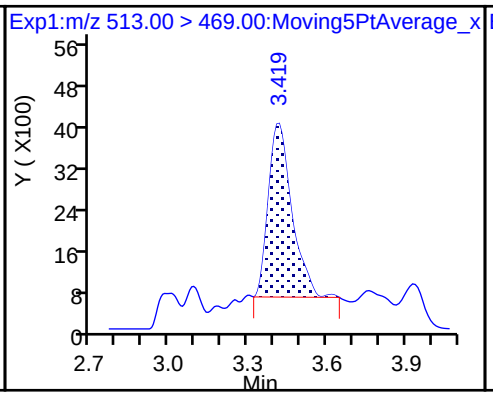
25 Sodium 1H,1H,2H,2H-perfluorodecane



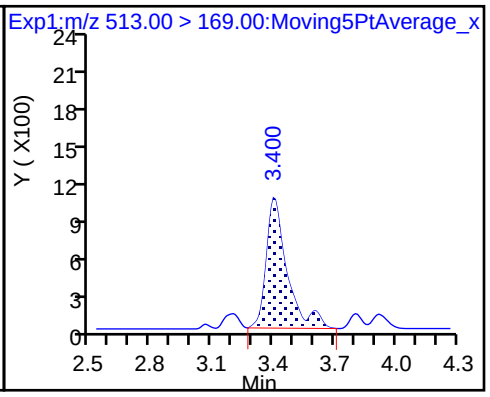
D 26 M2-8:2FTS



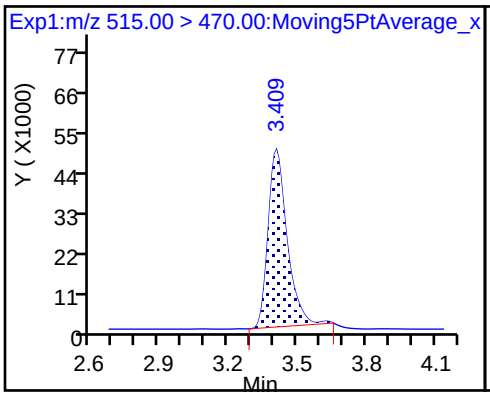
24 Perfluorodecanoic acid



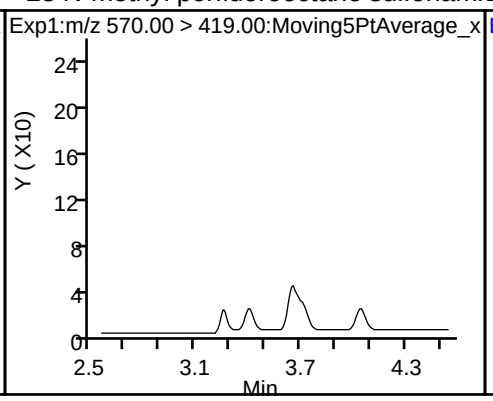
24 Perfluorodecanoic acid



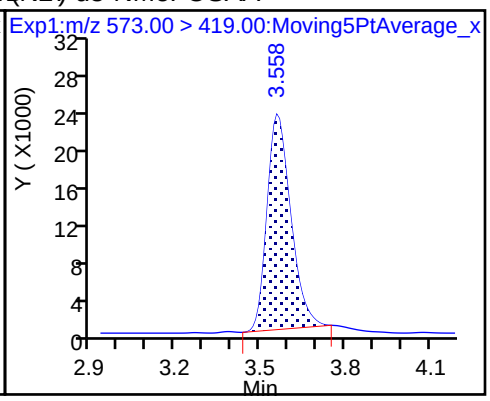
D 23 13C2 PFDA



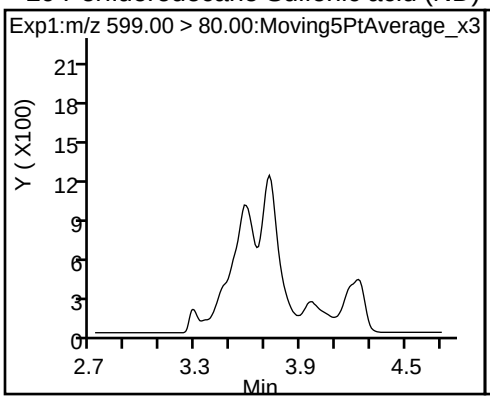
28 N-methyl perfluorooctane sulfonamid (ND)



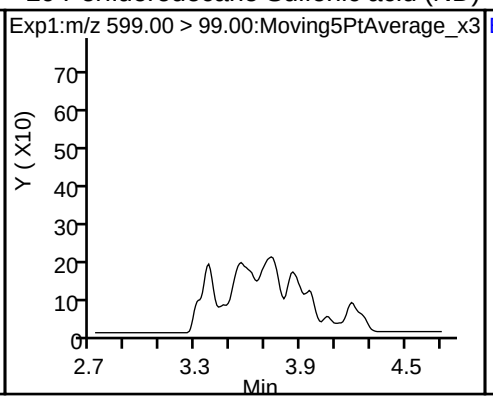
D 27 d3-NMeFOSAA



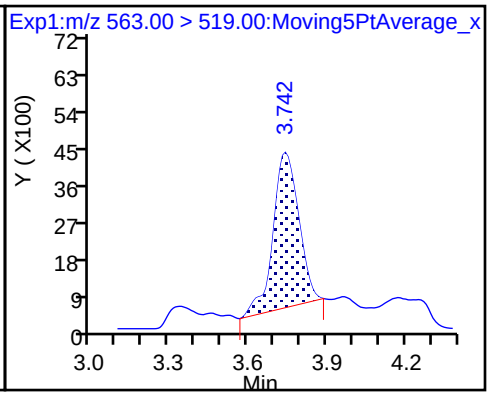
29 Perfluorodecane Sulfonic acid (ND)



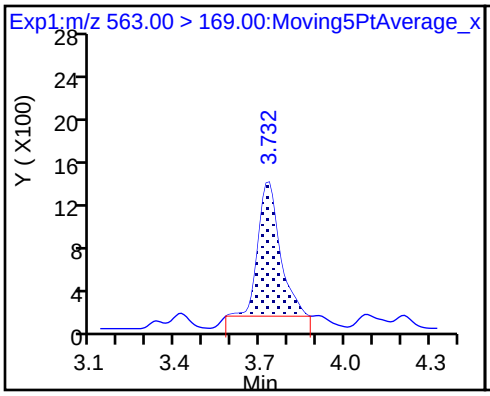
29 Perfluorodecane Sulfonic acid (ND)



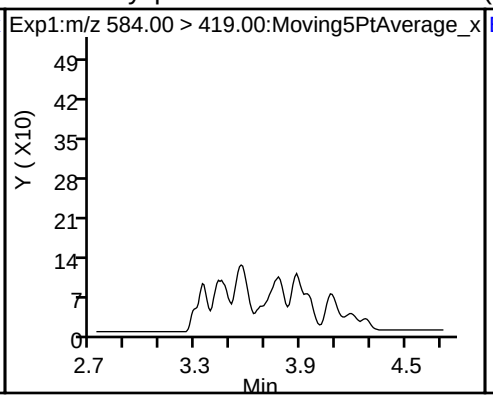
31 Perfluoroundecanoic acid



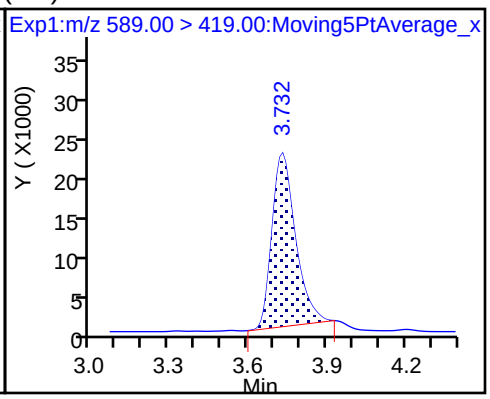
31 Perfluoroundecanoic acid



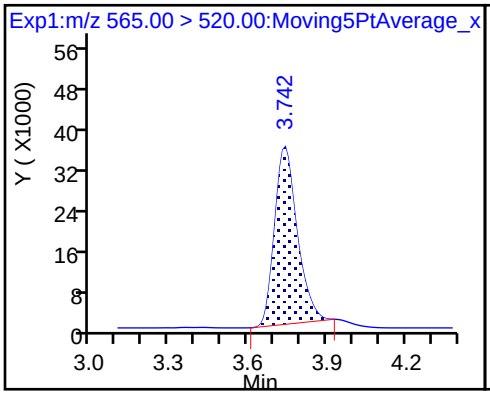
33 N-ethyl perfluorooctane sulfonamid (ND)



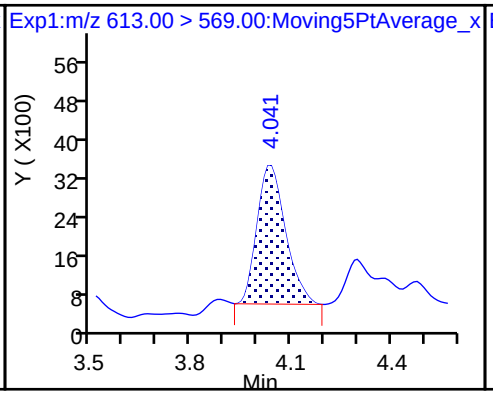
D 32 d5-NEtFOSAA



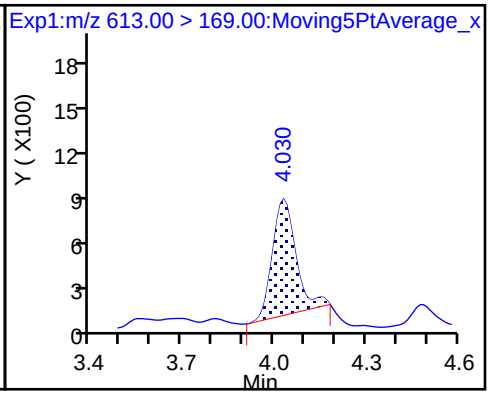
D 30 13C2 PFUnA



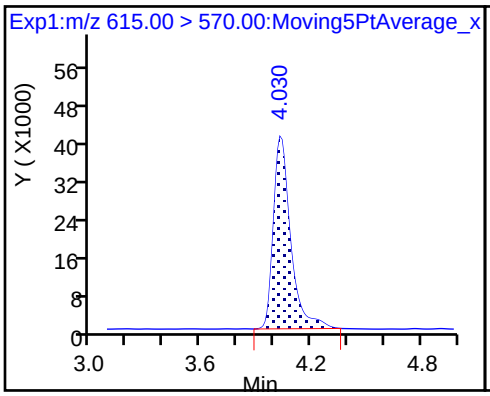
37 Perfluorododecanoic acid



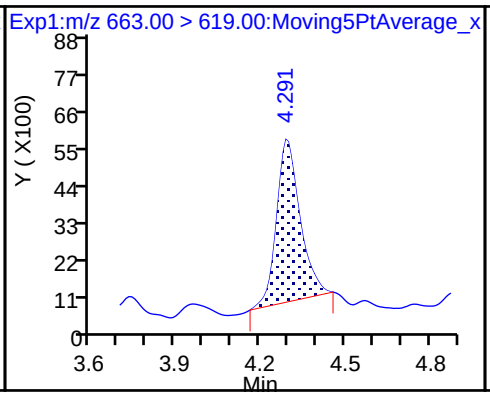
37 Perfluorododecanoic acid



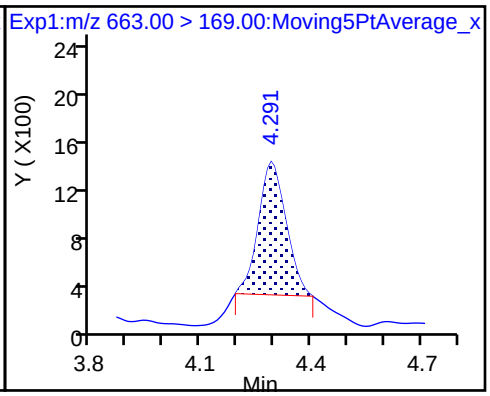
D 36 13C2 PFDoA



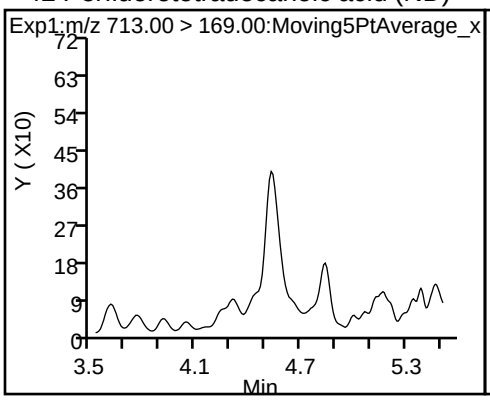
41 Perfluorotridecanoic acid



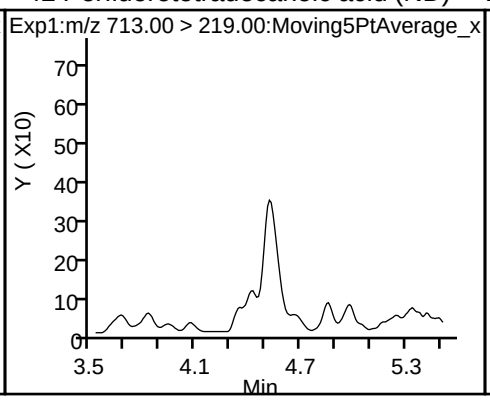
41 Perfluorotridecanoic acid



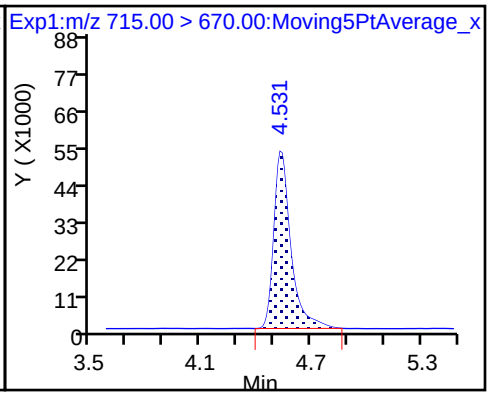
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB045 (0-2") | Lab Sample ID: 320-37380-5

Matrix: Solid | Lab File ID: 2018.04.07LLB_028.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:30

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.02(g) | Date Analyzed: 04/07/2018 21:01

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00048	B	0.00022	0.000031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000084	U	0.00022	0.000084
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00011	J	0.00022	0.000046
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000047	J	0.00022	0.000032
335-67-1	Perfluorooctanoic acid (PFOA)	0.000094	J	0.00022	0.000094
375-95-1	Perfluorononanoic acid (PFNA)	0.00011	J	0.00022	0.000039
335-76-2	Perfluorodecanoic acid (PFDA)	0.00018	J	0.00022	0.000024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00054		0.00022	0.000039
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00012	J	0.00022	0.000073
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00037		0.00022	0.000056
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000059	U	0.00022	0.000059
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00022	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00017	J	0.00022	0.000034
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000038	U	0.00022	0.000038
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0015	B	0.00055	0.00022
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000043	U	0.00022	0.000043
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000090	U	0.00022	0.000090
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00043	U	0.0022	0.00043
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00040	U	0.0022	0.00040

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB045 (0-2") | Lab Sample ID: 320-37380-5

Matrix: Solid | Lab File ID: 2018.04.07LLB_028.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:30

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.02(g) | Date Analyzed: 04/07/2018 21:01

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	69		25-150
STL01893	13C5 PFPeA	77		25-150
STL00993	13C2 PFHxA	71		25-150
STL01892	13C4-PFHpA	74		25-150
STL00990	13C4 PFOA	85		25-150
STL00995	13C5 PFNA	88		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	102		25-150
STL00998	13C2 PFDoA	87		25-150
STL02116	13C2-PFTeDA	71		25-150
STL02337	13C3-PFBS	76		25-150
STL00994	18O2 PFHxS	84		25-150
STL00991	13C4 PFOS	83		25-150
STL01056	13C8 FOSA	65		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	92		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d
Lims ID: 320-37380-A-5-B
Client ID: SB045 (0-2")
Sample Type: Client
Inject. Date: 07-Apr-2018 21:01:17 ALS Bottle#: 19 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37380-a-5-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 10:02:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.419	1.424	-0.005	1.000	5058976	1.72		68.9	28192	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.300	1.429	-0.129	0.916	406824	0.2175			33.0	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.692	0.002	1.005	53830	0.0306			6.8	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.685	1.693	-0.008	0.558	3669080	1.92		76.8	35326	
D 47 13C3-PFBS										
301.90 > 83.00	1.721	1.729	-0.008	1.000	77578	1.77		76.3	99.9	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.917	1.980	-0.063	0.973	77543	0.0506			16.9	RM
313.00 > 119.00	1.971	1.980	-0.009	1.000	1443		53.74(5.03-15.10)		5.0	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.971	1.981	-0.010	1.000	3740829	1.78		71.0	62069	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.295	2.306	-0.011	1.000	35326	0.0216			8.3	R
363.00 > 169.00	2.308	2.306	0.002	1.006	6120		5.77(1.13-3.40)		15.4	
D 9 13C4-PFHpA										
367.00 > 322.00	2.295	2.307	-0.012	1.000	3761822	1.86		74.3	51787	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.308	2.319	-0.011	1.000	178726	0.0755			48.0	
399.00 > 99.00	2.308	2.319	-0.011	1.000	56473		3.16(1.50-4.49)		59.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.308	2.320	-0.012	1.000	5010028	1.98		83.9	64095	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.620	2.636	-0.016	0.997	38247	0.0183			97.7	
D 12 M2-6:2FTS										
429.00 > 81.00	2.628	2.637	-0.009	1.000	2660445	5.69		239	6207	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.652	2.659	-0.007		5310214	2.50			70856	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.652	2.659	-0.007	1.000	85543	0.0428			16.9	
413.00 > 169.00	2.652	2.659	-0.007	1.000	35709		2.40(0.84-2.52)		63.2	
D 14 13C4 PFOA										
417.00 > 372.00	2.652	2.660	-0.008	1.000	4210891	2.12		84.6	61797	
16 Perfluoroheptanesulfonic acid										R
449.00 > 80.00	2.660	2.667	-0.007	1.000	12263	0.006293			7.3	R
449.00 > 99.00	2.660	2.667	-0.007	1.000	1638		7.49(1.94-5.82)		5.3	
20 Perfluorononanoic acid										
463.00 > 419.00	3.022	3.029	-0.007	1.000	76213	0.0502			38.1	
463.00 > 169.00	3.015	3.029	-0.014	0.998	16264		4.69(1.90-5.69)		101	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.022	3.029	-0.007	1.000	1177874	0.7049			726	
499.00 > 99.00	3.022	3.029	-0.007	1.000	277468		4.25(2.31-6.93)		707	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.031	-0.009	1.000	3685054	2.19		87.5	48228	
D 18 13C4 PFOS										
503.00 > 80.00	3.022	3.031	-0.009	1.000	3494884	1.99		83.4	4741	
D 21 13C8 FOSA										
506.00 > 78.00	3.357	3.360	-0.003	1.000	4018569	1.62		64.9	45037	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.357	3.368	-0.011	1.000	14085	0.008871			62.1	M
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.367	3.377	-0.010	1.000	101472	0.0504			3835	
D 26 M2-8:2FTS										
529.00 > 81.00	3.367	3.379	-0.012	1.000	3571762	6.56		274	5587	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.385	3.386	-0.001	1.003	116100	0.0823			58.9	R
513.00 > 169.00	3.385	3.386	-0.001	1.003	15440		7.52(2.36-7.09)		127	
D 23 13C2 PFDA										
515.00 > 470.00	3.376	3.388	-0.012	1.000	3565747	2.51		100	98137	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.535	3.547	-0.012	1.000	1883850	2.48		99.0	25188	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.708	-0.003	1.000	1840272	2.30		92.2	16381	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.705	3.717	-0.012	1.000	236766	0.2481			191	M
563.00 > 169.00	3.705	3.717	-0.012	1.000	64325		3.68(2.12-6.36)		881	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.705	3.717	-0.012	1.000	1261	0.001868			20.9	
D 30 13C2 PFUnA										
565.00 > 520.00	3.705	3.719	-0.014	1.000	2973308	2.56		102	51102	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.005	4.006	-0.001	1.003	69772	0.0571			19.1	
613.00 > 169.00	3.995	4.006	-0.011	1.000	17493		3.99(2.13-6.40)		75.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	3.995	4.009	-0.014	1.000	2824240	2.18		87.4	26190	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.259	4.279	-0.020	1.000	221113	0.1693			66.3	
663.00 > 169.00	4.259	4.279	-0.020	1.000	89920		2.46(1.25-3.76)		336	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.499	4.511	-0.012	1.000	2897716	1.76		70.6	13766	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 10:11:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d

Injection Date: 07-Apr-2018 21:01:17 Instrument ID: A8_N

Lims ID: 320-37380-A-5-B Lab Sample ID: 320-37380-5

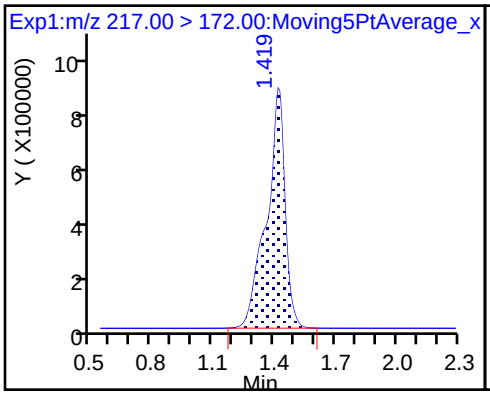
Client ID: SB045 (0-2")

Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 10

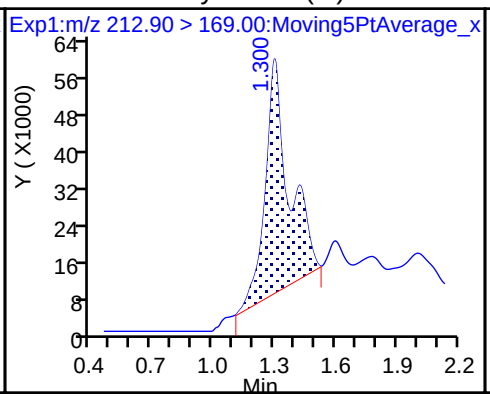
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

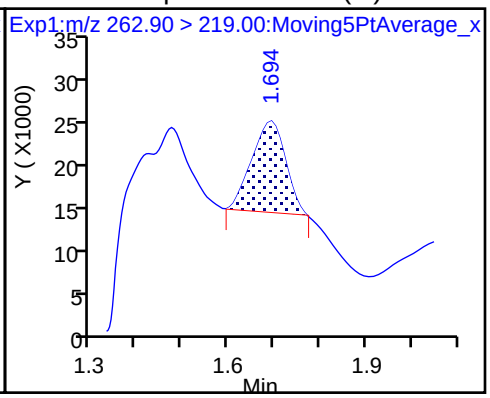
D 1 13C4 PFBA



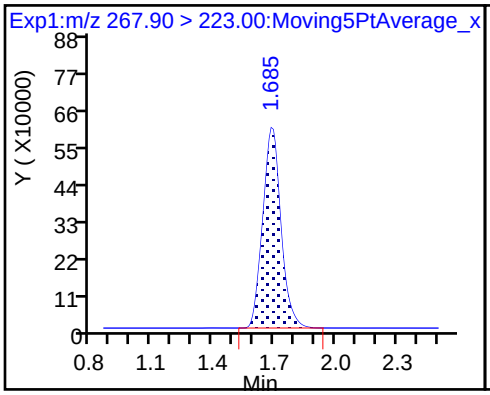
2 Perfluorobutyric acid (M)



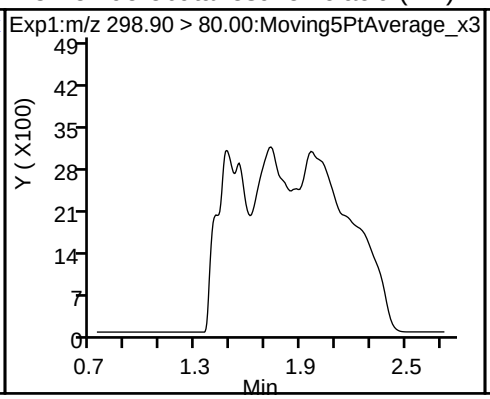
4 Perfluoropentanoic acid (M)



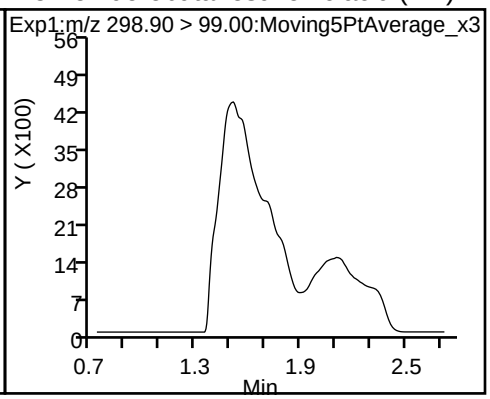
D 3 13C5-PFPeA



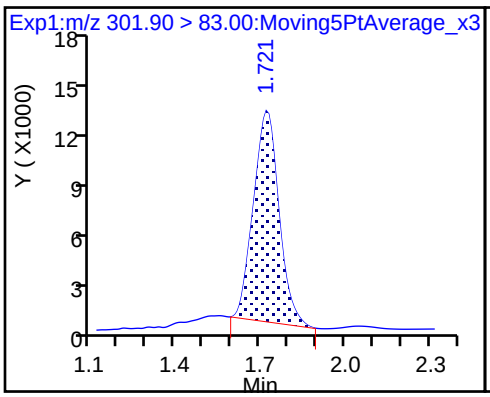
5 Perfluorobutanesulfonic acid (ND)



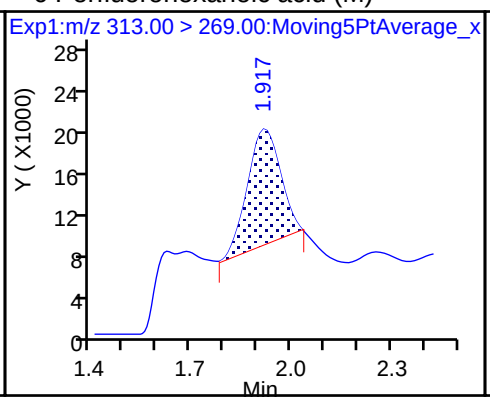
5 Perfluorobutanesulfonic acid (ND)



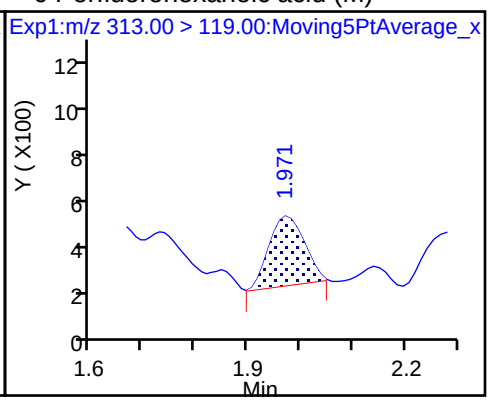
D 47 13C3-PFBS



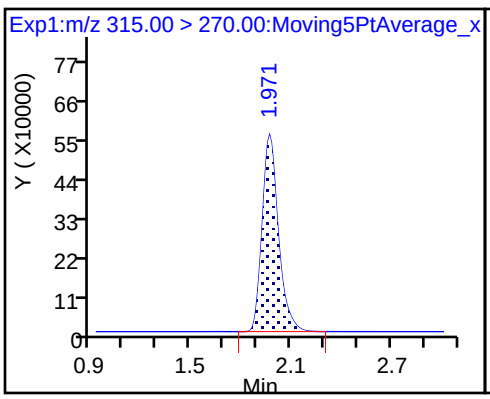
6 Perfluorohexanoic acid (M)



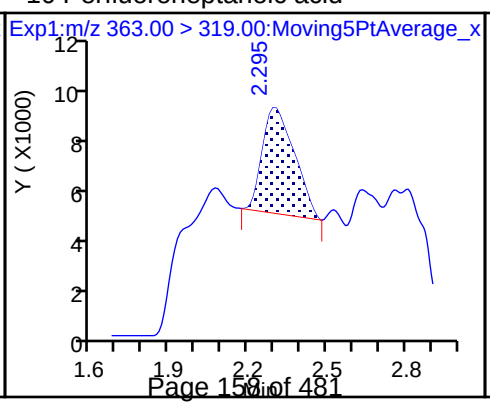
6 Perfluorohexanoic acid (M)



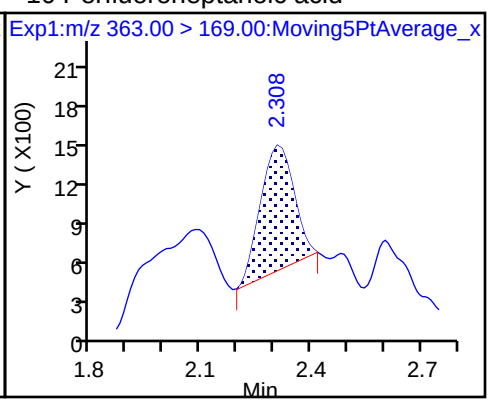
D 7 13C2 PFHxA



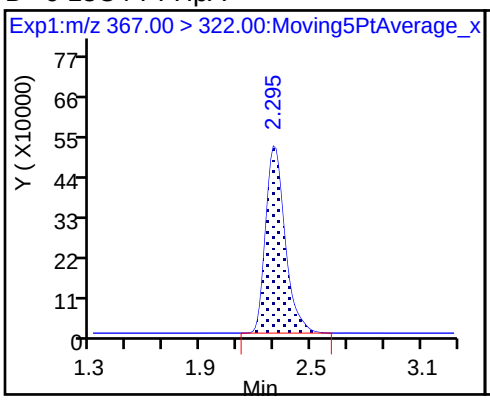
10 Perfluoroheptanoic acid



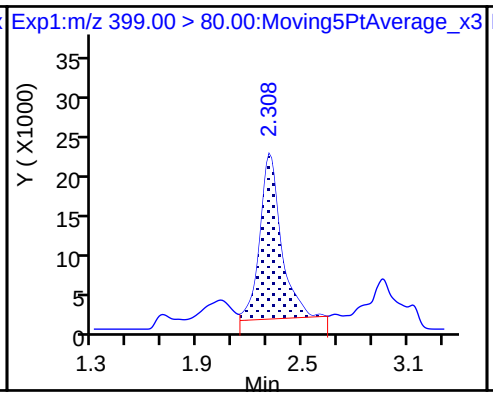
10 Perfluoroheptanoic acid



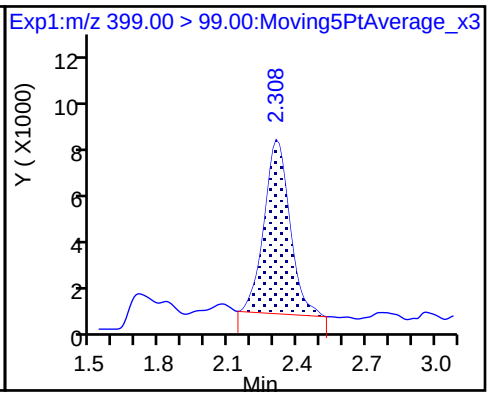
D 9 13C4-PFHpA



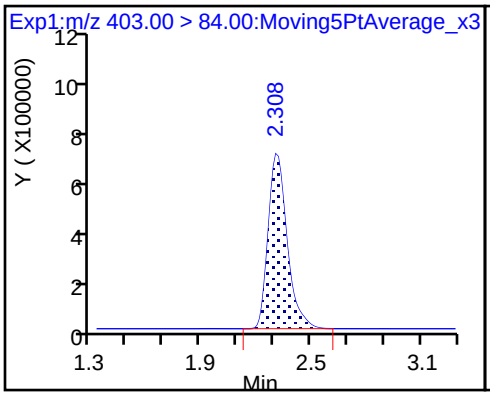
8 Perfluorohexanesulfonic acid



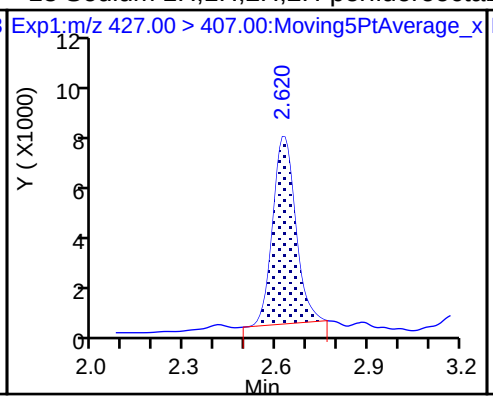
8 Perfluorohexanesulfonic acid



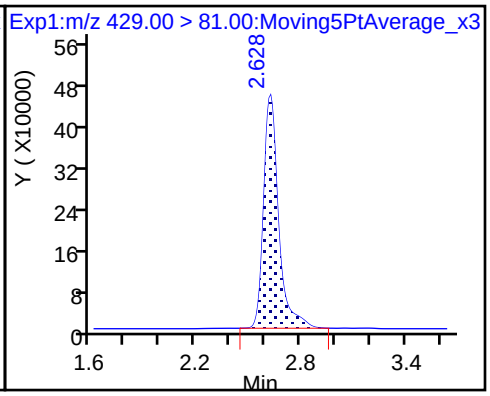
D 11 18O2 PFHxS



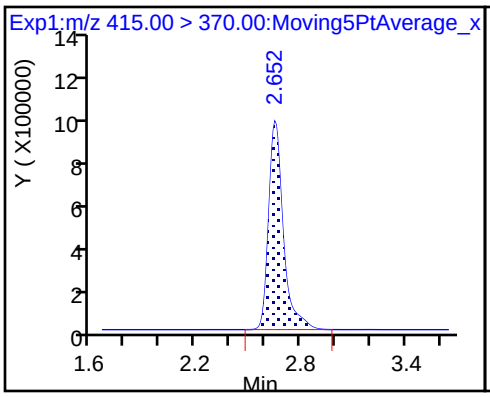
13 Sodium 1H,1H,2H,2H-perfluorooctane



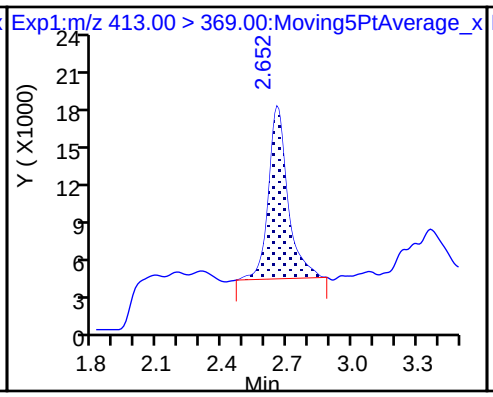
D 12 M2-6:2FTS



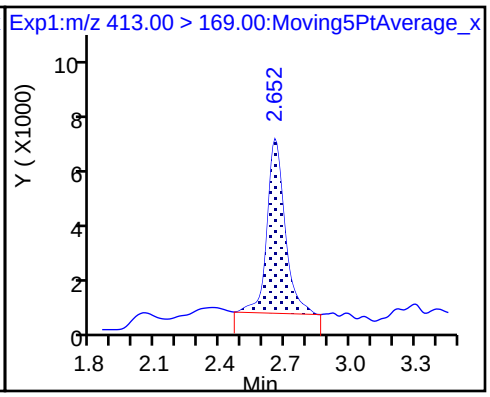
* 62 13C2-PFOA



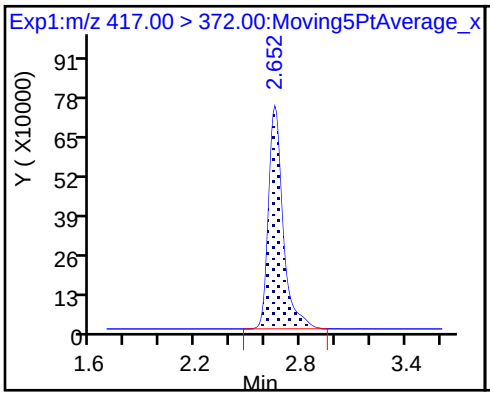
15 Perfluorooctanoic acid



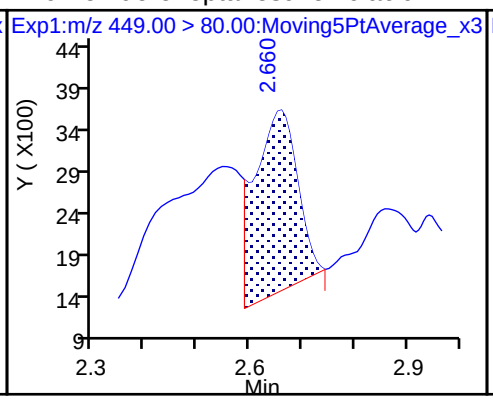
15 Perfluorooctanoic acid



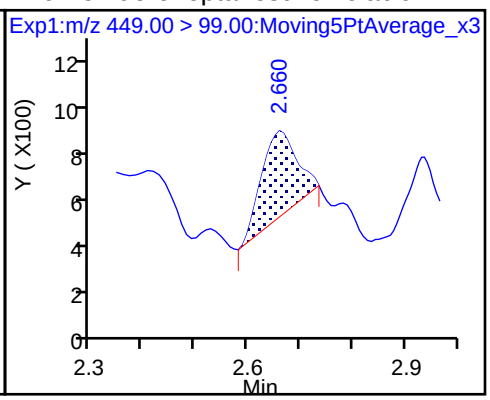
D 14 13C4 PFOA



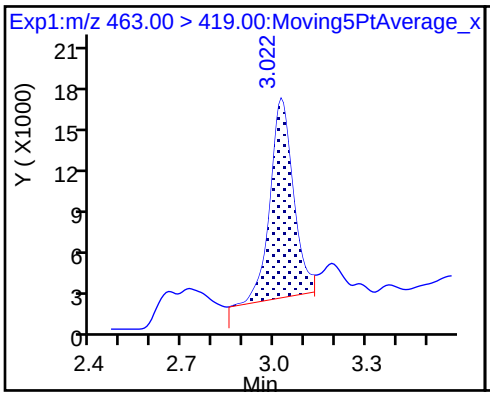
16 Perfluoroheptanesulfonic acid



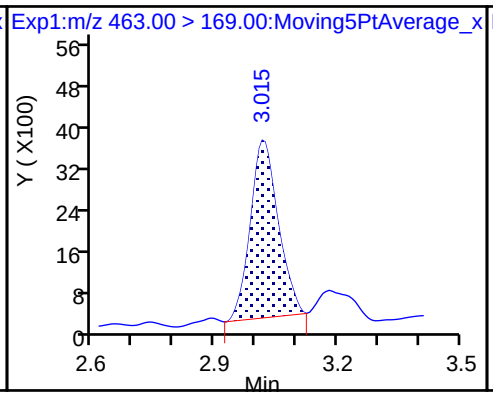
16 Perfluoroheptanesulfonic acid



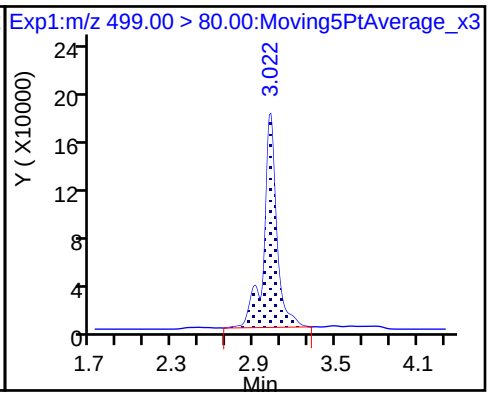
20 Perfluorononanoic acid



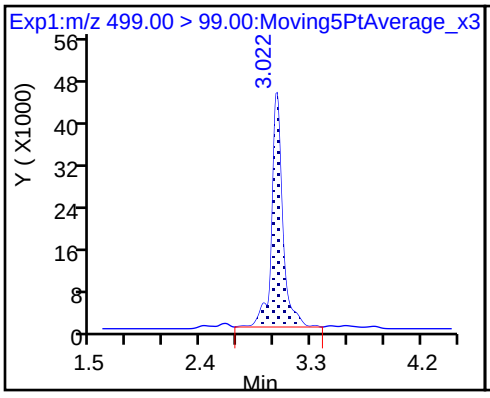
20 Perfluorononanoic acid



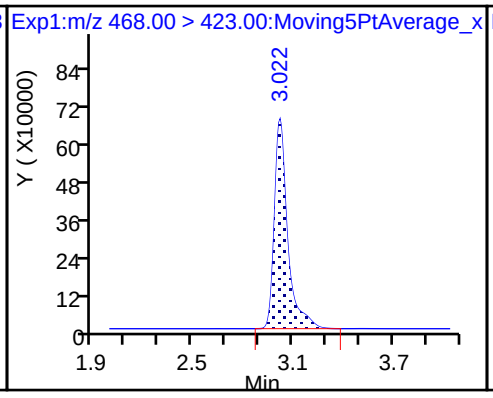
17 Perfluorooctane sulfonic acid



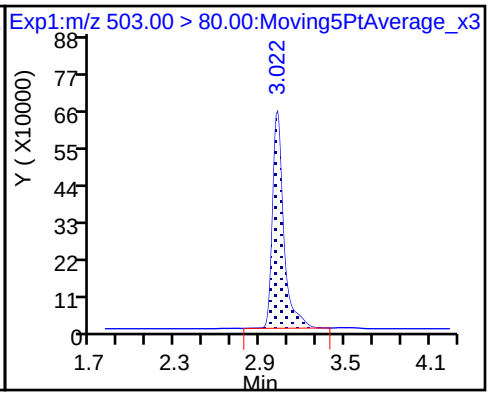
17 Perfluorooctane sulfonic acid



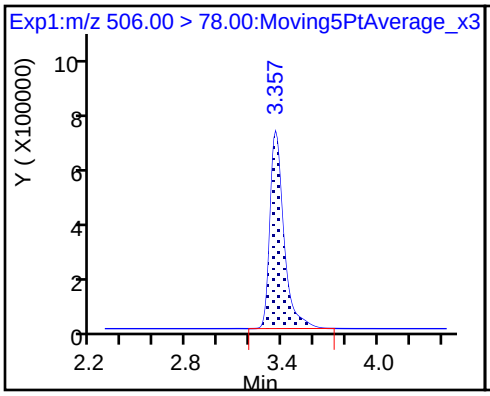
D 19 13C5 PFNA



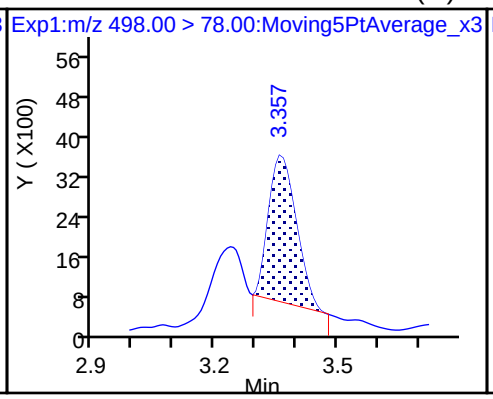
D 18 13C4 PFOS



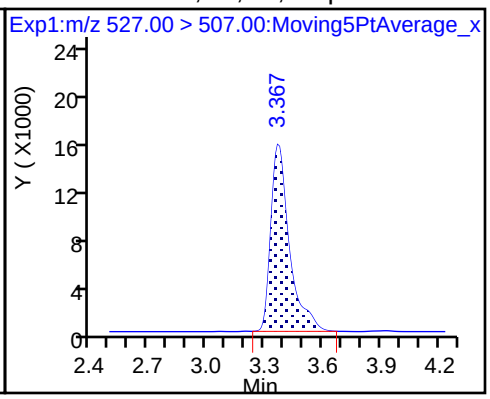
D 21 13C8 FOSA



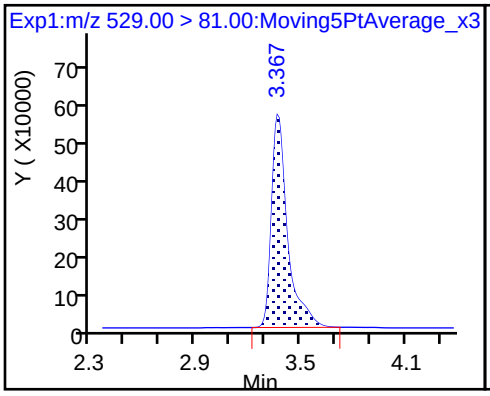
22 Perfluorooctane Sulfonamide (M)



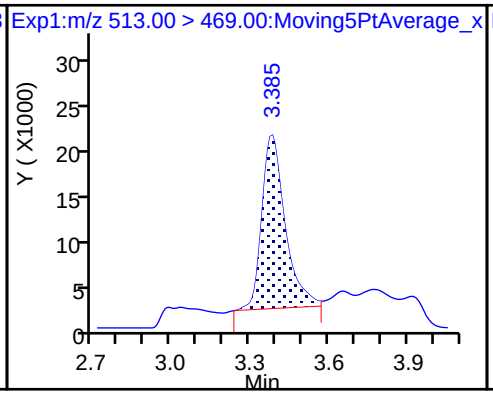
25 Sodium 1H,1H,2H,2H-perfluorodecane



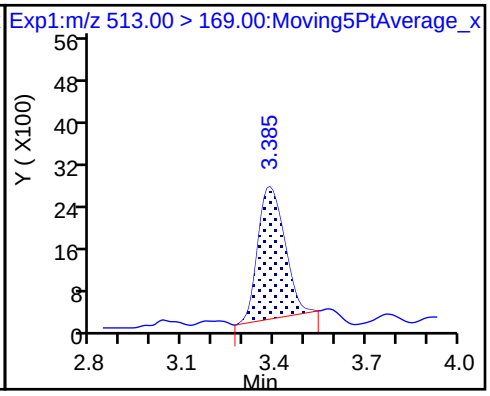
D 26 M2-8:2FTS



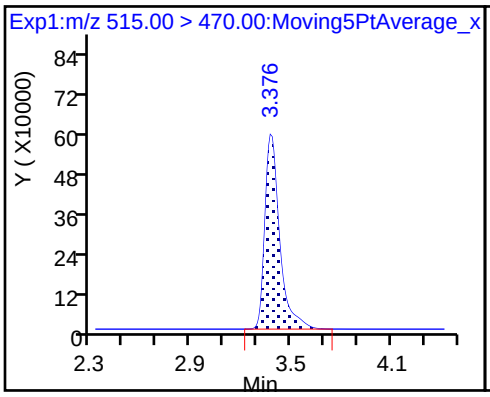
24 Perfluorodecanoic acid



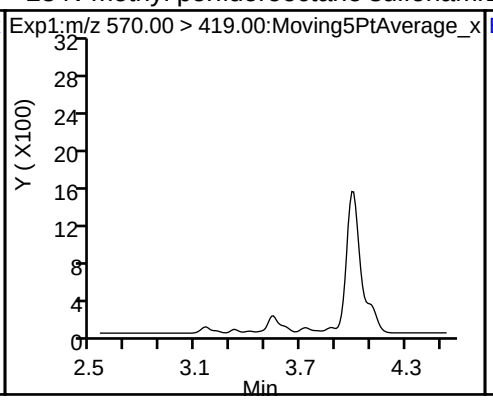
24 Perfluorodecanoic acid



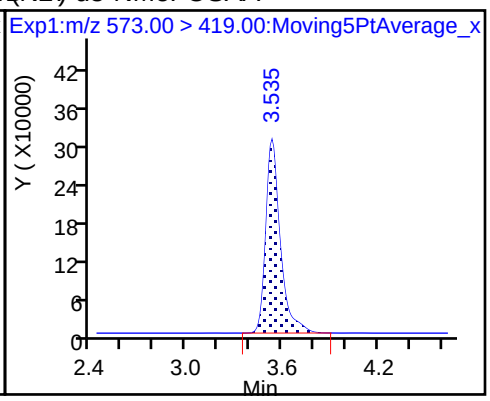
D 23 13C2 PFDA



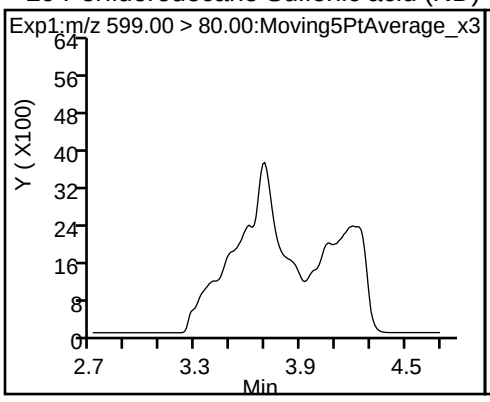
28 N-methyl perfluorooctane sulfonamid (ND)



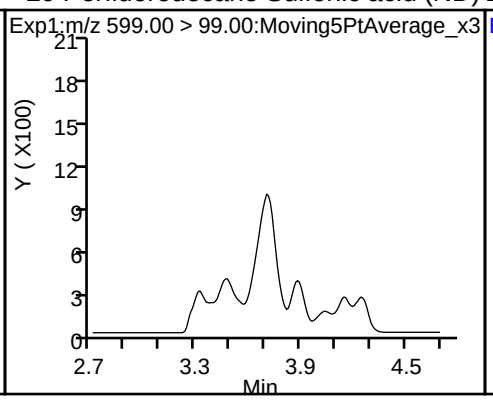
D 27 d3-NMeFOSAA



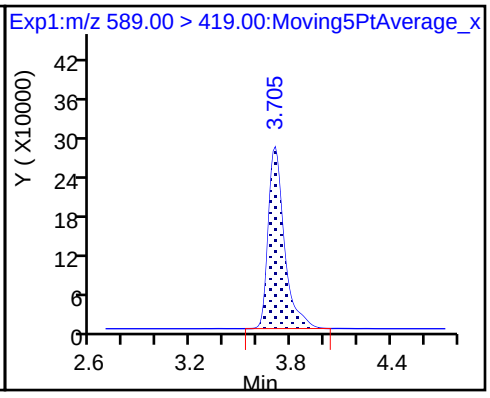
29 Perfluorodecane Sulfonic acid (ND)



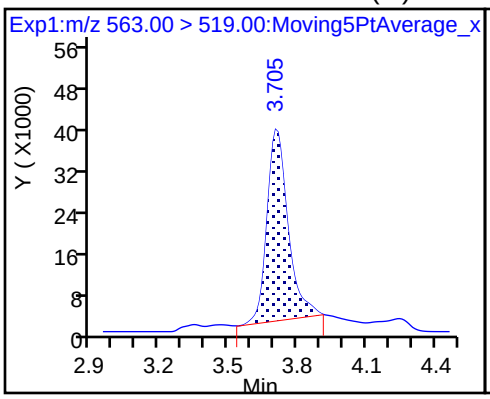
29 Perfluorodecane Sulfonic acid (ND)



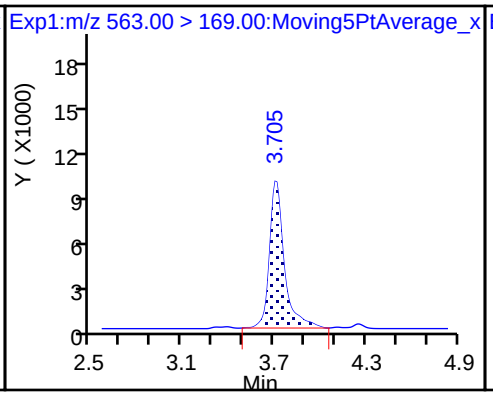
D 32 d5-NEtFOSAA



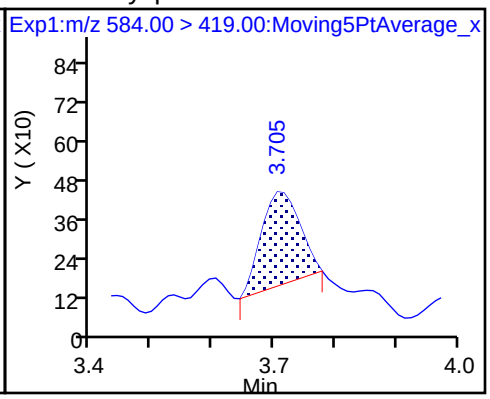
31 Perfluoroundecanoic acid (M)



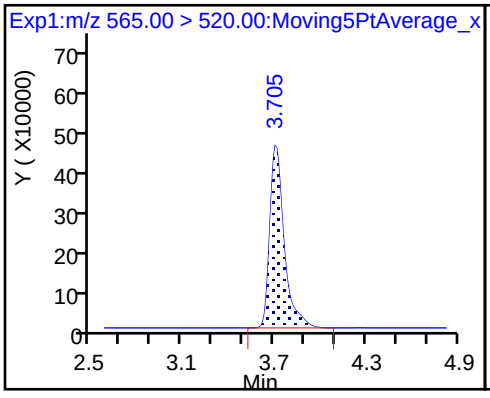
31 Perfluoroundecanoic acid



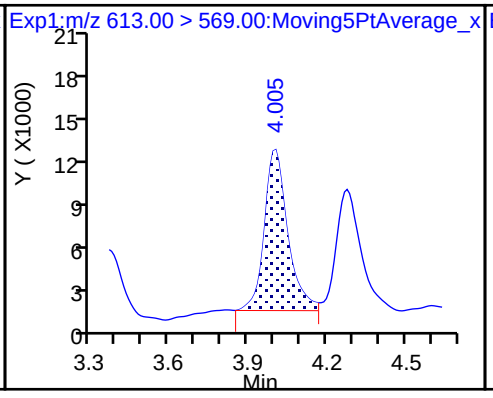
33 N-ethyl perfluorooctane sulfonamid



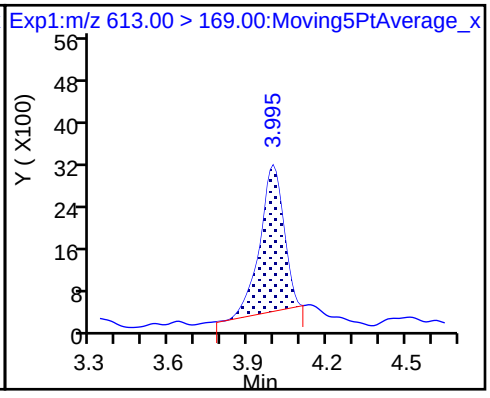
D 30 13C2 PFUnA



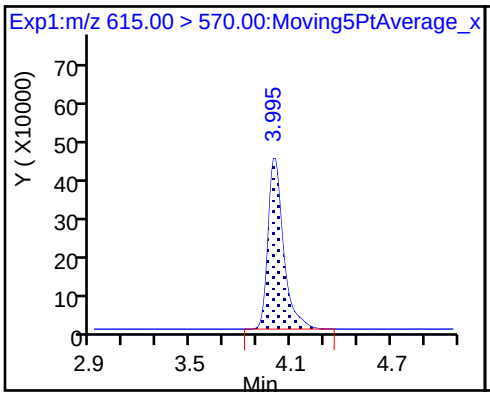
37 Perfluorododecanoic acid



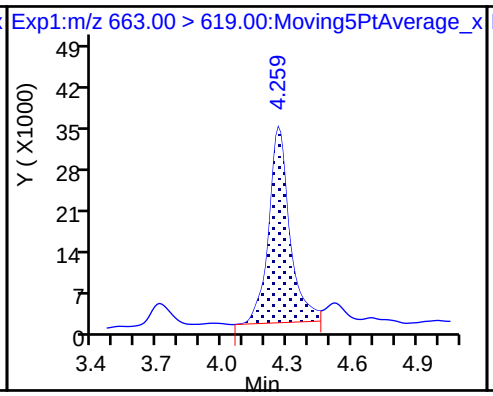
37 Perfluorododecanoic acid



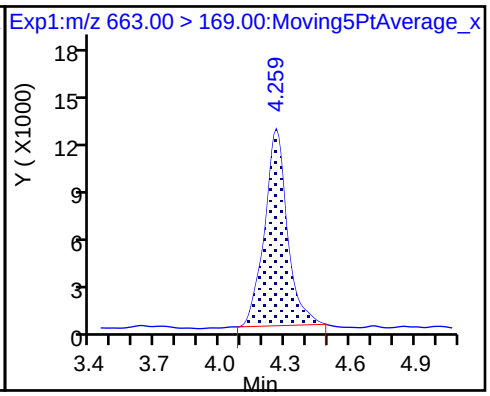
D 36 13C2 PFDoA



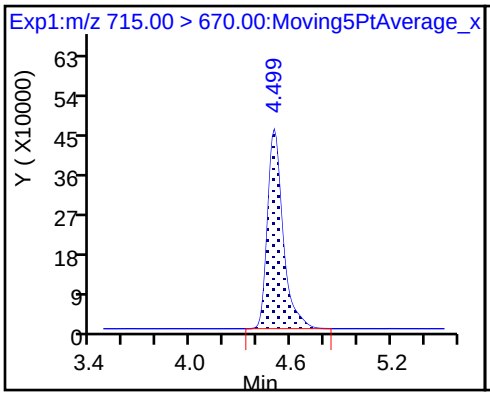
41 Perfluorotridecanoic acid



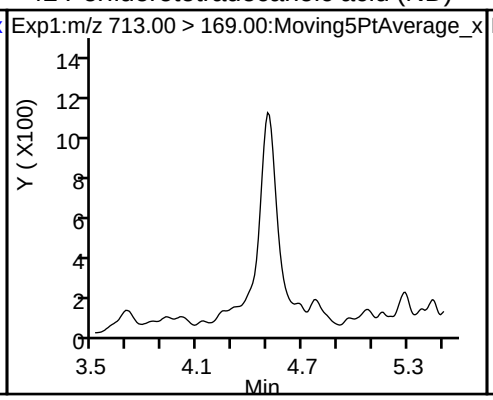
41 Perfluorotridecanoic acid



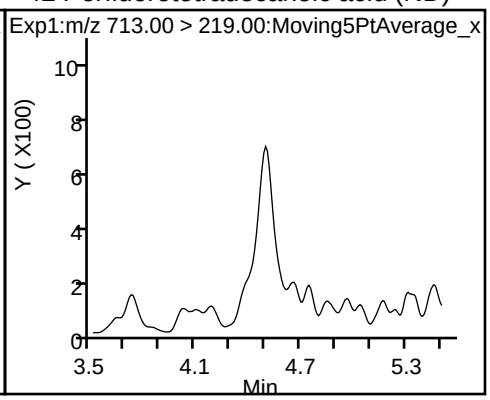
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

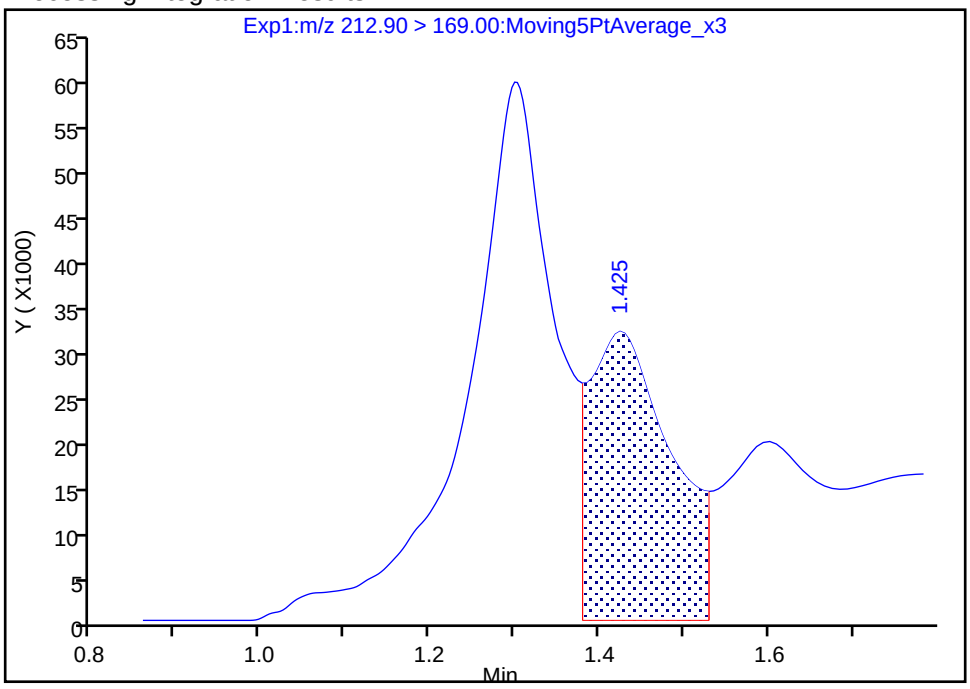
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d				
Injection Date:	07-Apr-2018 21:01:17	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

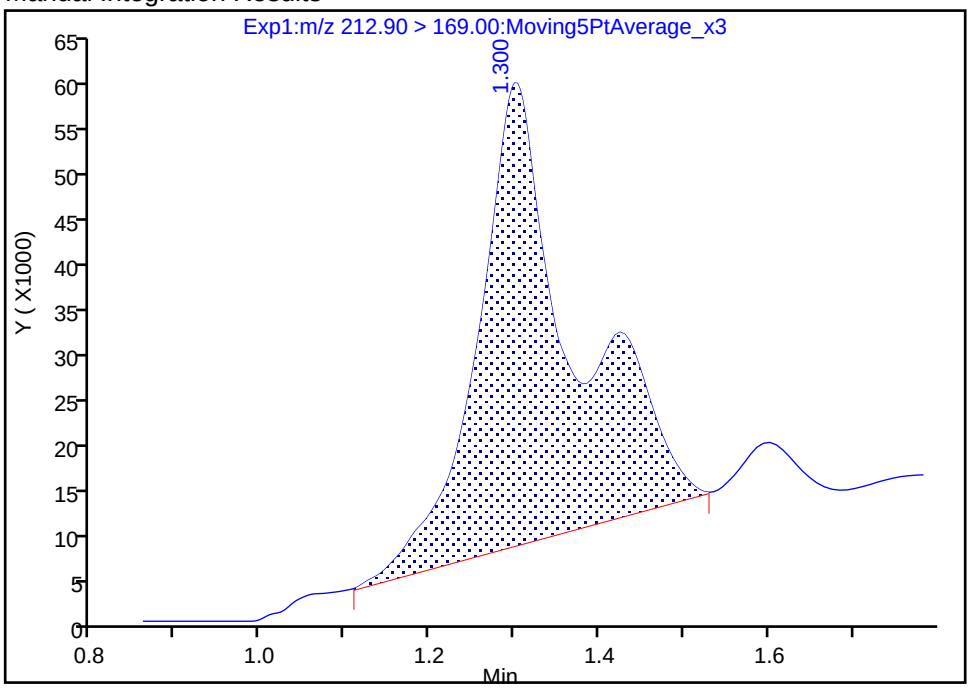
Processing Integration Results

RT: 1.42
Area: 211978
Amount: 0.113348
Amount Units: ng/ml



Manual Integration Results

RT: 1.30
Area: 406824
Amount: 0.217535
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:00:28

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

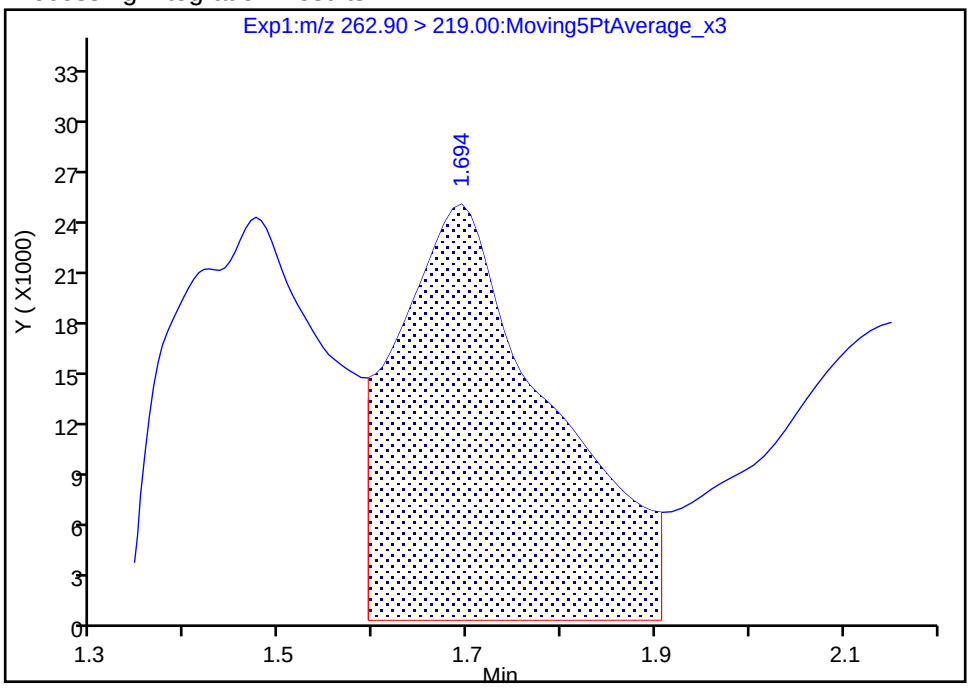
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d				
Injection Date:	07-Apr-2018 21:01:17	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

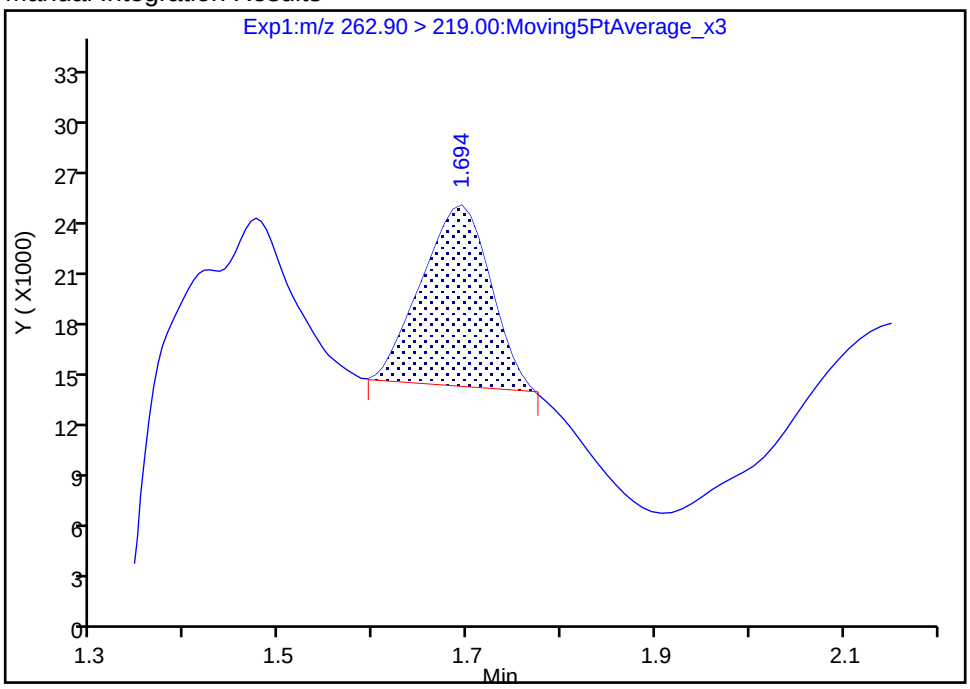
Processing Integration Results

RT: 1.69
Area: 276478
Amount: 0.157392
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 53830
Amount: 0.030644
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:01:01

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

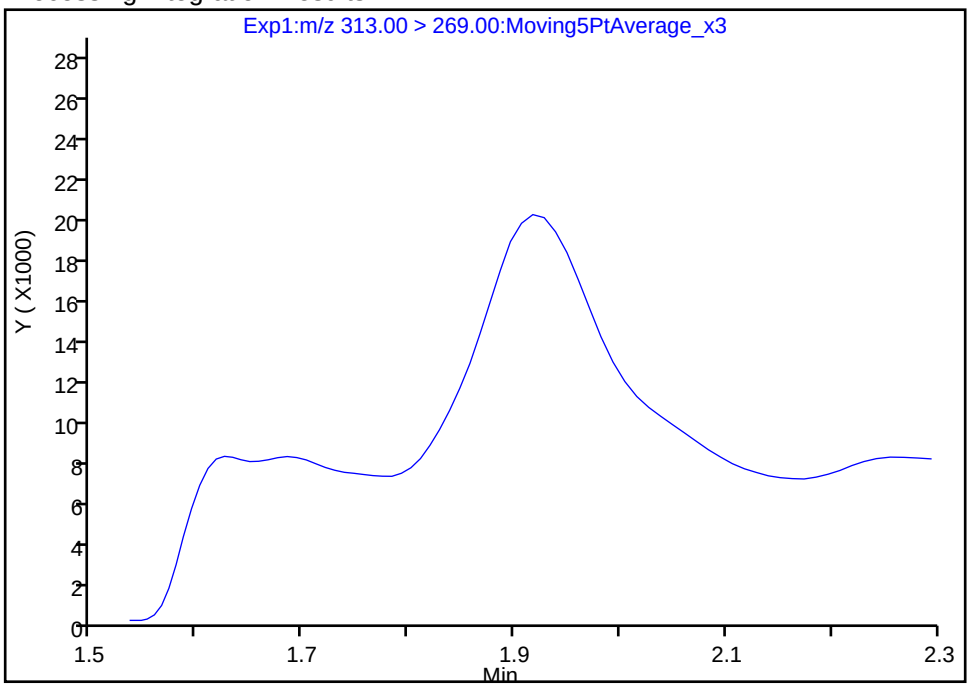
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d				
Injection Date:	07-Apr-2018 21:01:17	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

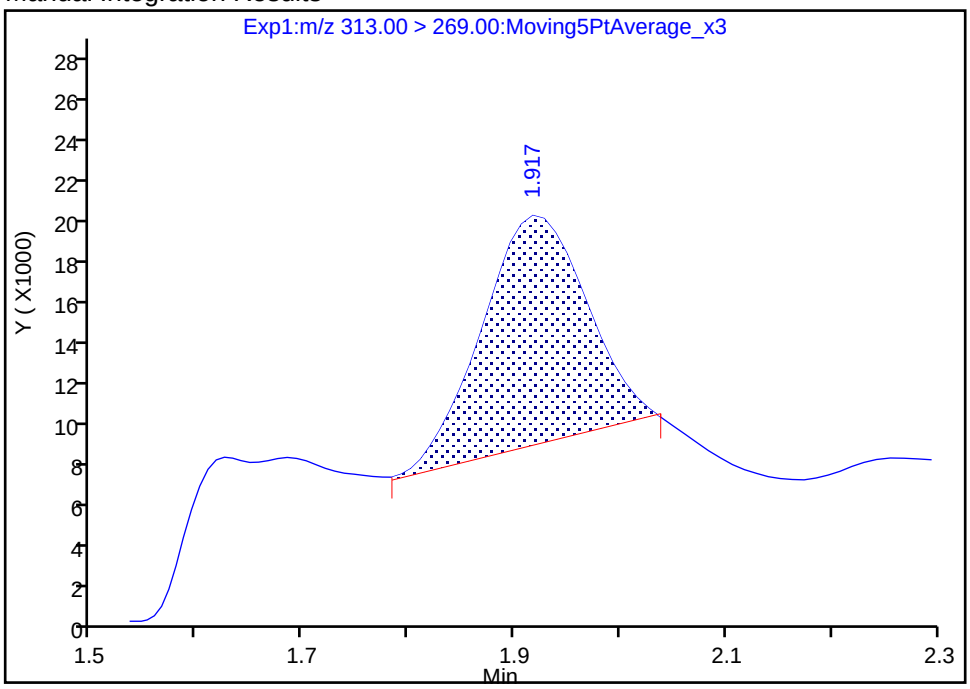
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.92
Area: 77543
Amount: 0.050642
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:01:14
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

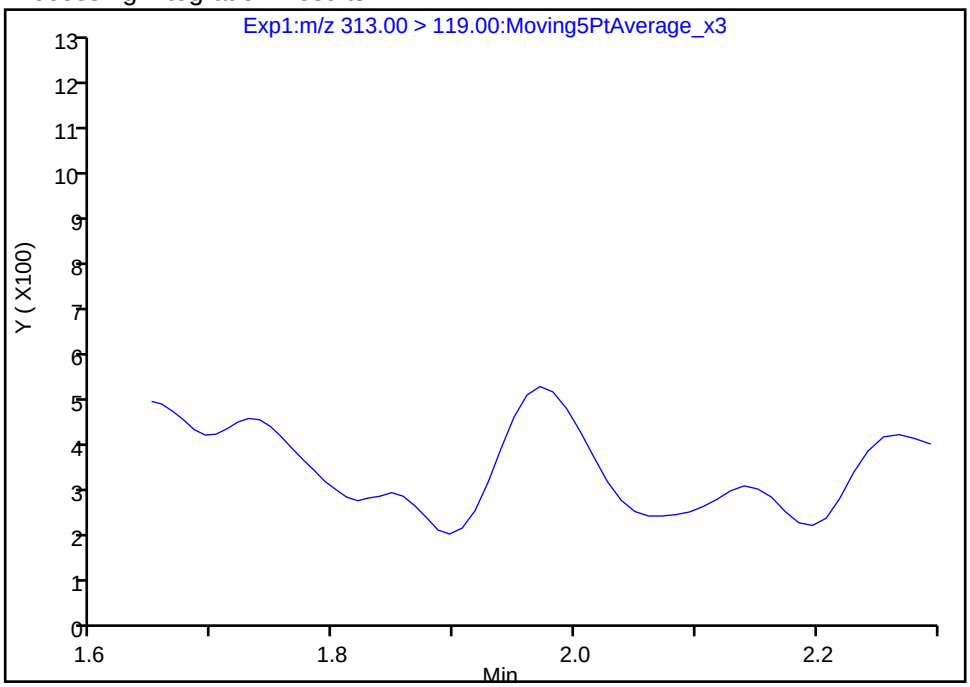
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d				
Injection Date:	07-Apr-2018 21:01:17	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

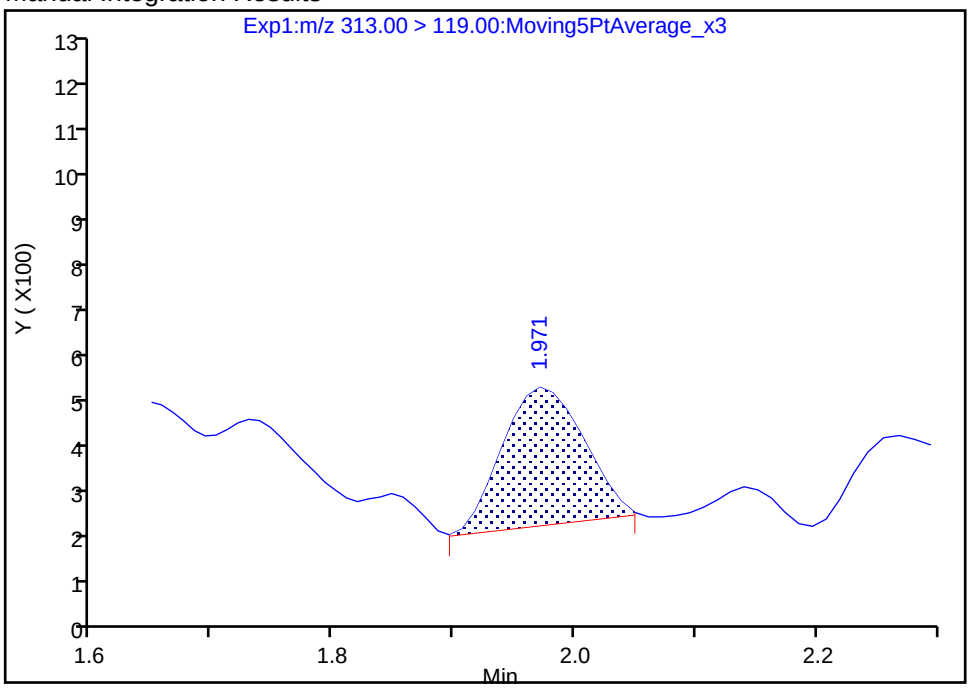
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.97
Area: 1443
Amount: 0.050642
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:01:19
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

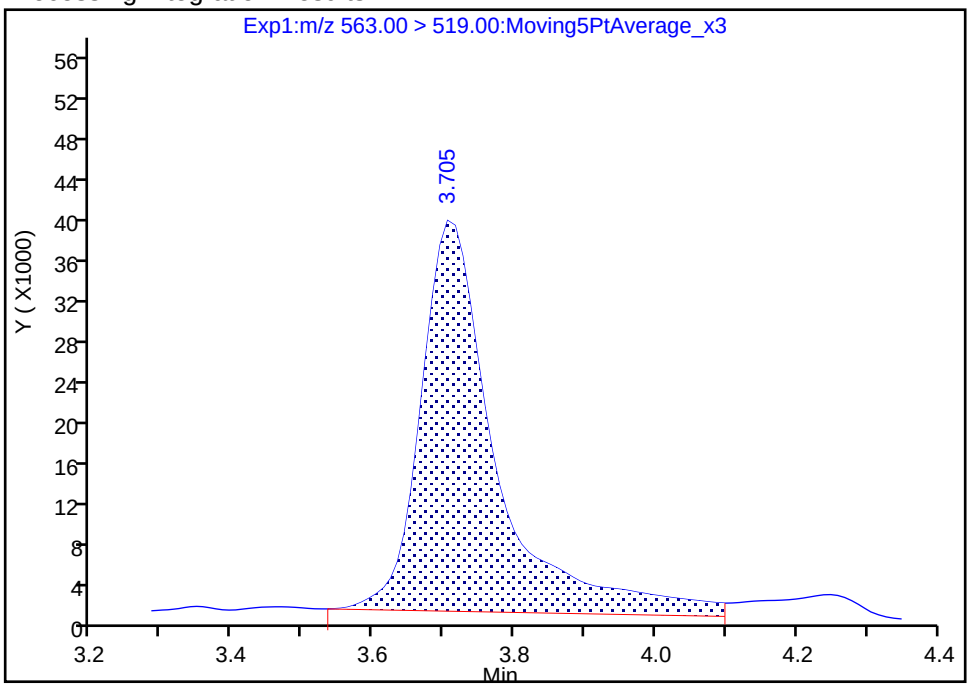
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d				
Injection Date:	07-Apr-2018 21:01:17	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

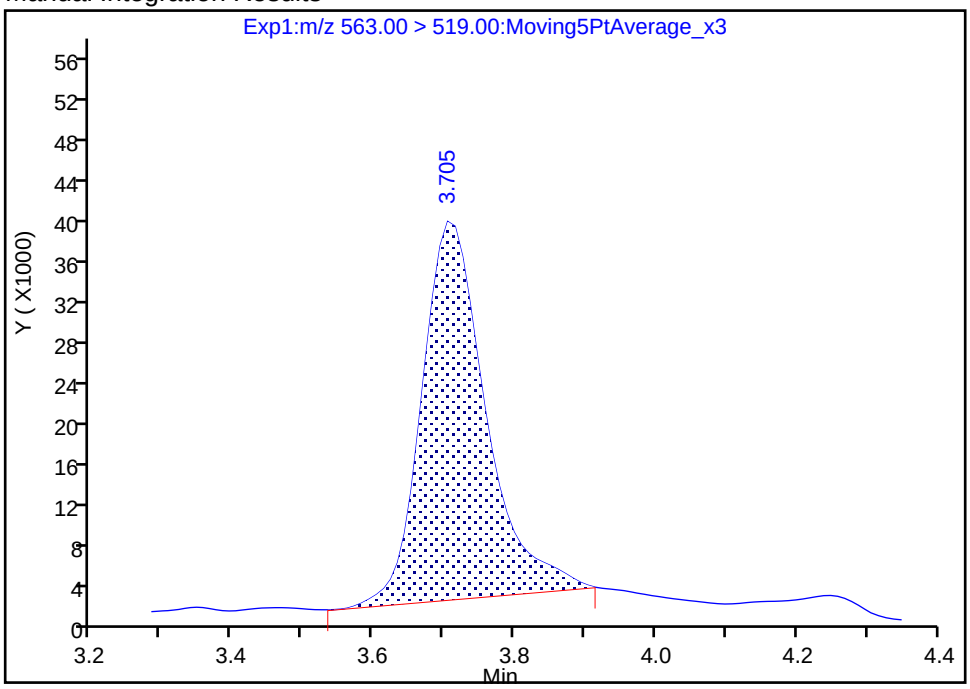
Processing Integration Results

RT: 3.70
Area: 287795
Amount: 0.301594
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 236766
Amount: 0.248118
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:01:53

Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento

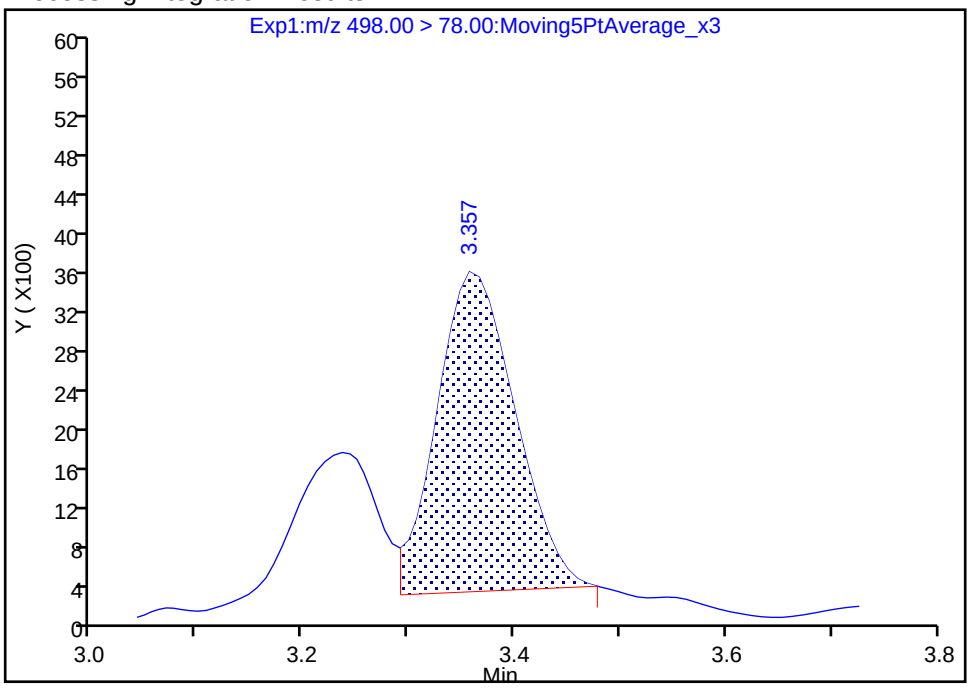
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_028.d				
Injection Date:	07-Apr-2018 21:01:17	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

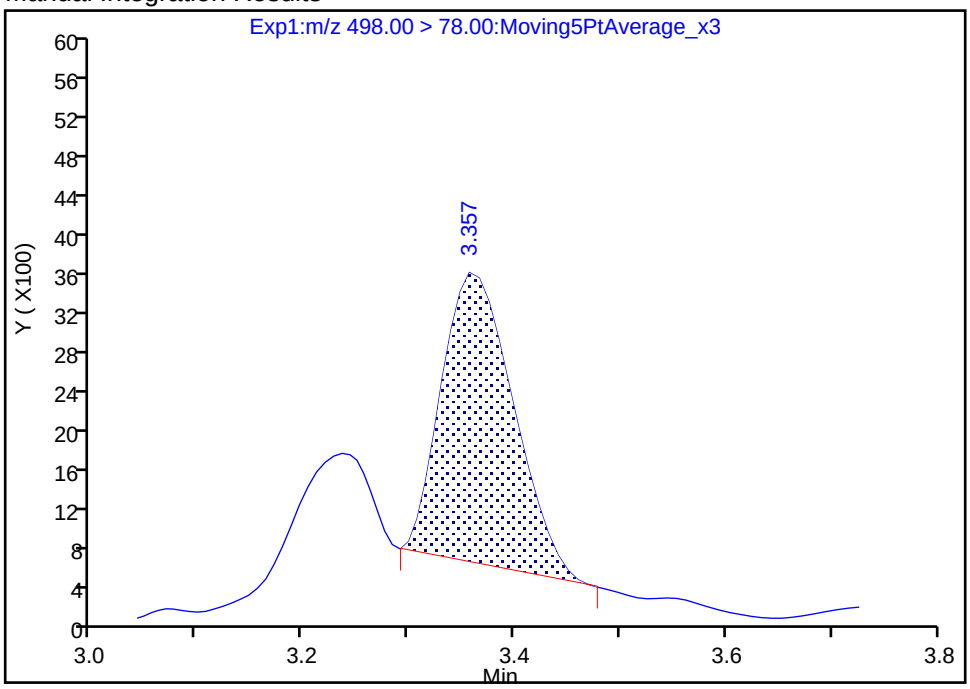
Processing Integration Results

RT: 3.36
Area: 16868
Amount: 0.010624
Amount Units: ng/ml



Manual Integration Results

RT: 3.36
Area: 14085
Amount: 0.008871
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:01:39
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB045 (0-2") DL | Lab Sample ID: 320-37380-5 DL

Matrix: Solid | Lab File ID: 2018.04.09LLA_048.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:30

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.02(g) | Date Analyzed: 04/09/2018 18:58

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 217070 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	0.0016	U	0.022	0.0016
39108-34-4	8:2FTS	0.0027	U	0.022	0.0027

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	73		25-150
STL02280	M2-8:2FTS	85		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_048.d
Lims ID: 320-37380-A-5-B
Client ID: SB045 (0-2")
Sample Type: Client
Inject. Date: 09-Apr-2018 18:58:06 ALS Bottle#: 26 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-37380-a-5-b 10X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:36 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 10:58:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.312	1.424	-0.112	0.918	23480	0.0113			5.3	M
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	561468	0.1971		78.8	5659	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.693	1.692	0.001	0.995	8563	0.004747			3.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	0.0	0.558	376796	0.2032		81.3	7448	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.739	-0.001	1.000	7506	0.1768		76.0	42.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.990	0.001	1.000	391174	0.1913		76.5	10214	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.317	0.002	1.000	393412	0.2002		80.1	9322	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.319	0.013	1.000	17097	0.007697			23.3	
399.00 > 99.00	2.332	2.319	0.013	1.000	7539		2.27(1.50-4.49)		21.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.330	0.002	1.000	470339	0.1919		81.2	11105	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.650	0.002	1.000	78715	0.1733		73.0	415	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.659	0.016		515394	0.2500			9363	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.667	2.667	0.0	0.997	9008	0.005115			4.7	M
413.00 > 169.00	2.682	2.667	0.015	1.003	2162		4.17(0.84-2.52)		6.6	M
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	371251	0.1921		76.9	1423	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.049	3.029	0.020	1.002	119532	0.0808			54.1	
499.00 > 99.00	3.042	3.029	0.013	1.000	30652		3.90(2.31-6.93)		58.0	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.036	0.020	1.002	7154	0.004850			14.7	
463.00 > 169.00	3.035	3.036	-0.001	0.995	1990		3.59(1.90-5.69)		31.4	
D 18 13C4 PFOS										
503.00 > 80.00	3.042	3.042	0.0	1.000	309542	0.1818		76.1	1375	
D 19 13C5 PFNA										
468.00 > 423.00	3.049	3.042	0.007	1.000	358369	0.2192		87.7	13332	
D 21 13C8 FOSA										
506.00 > 78.00	3.375	3.365	0.010	1.000	385221	0.1602		64.1	6343	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.403	3.385	0.018	1.000	2821	0.004644			103	
D 26 M2-8:2FTS										
529.00 > 81.00	3.403	3.393	0.010	1.000	107859	0.2042		85.3	674	
D 23 13C2 PFDA										
515.00 > 470.00	3.403	3.402	0.001	1.000	320741	0.2323		92.9	12732	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.561	3.560	0.001	1.000	145148	0.1965		78.6	1999	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.733	3.726	0.007	1.000	11928	0.0151			32.8	
563.00 > 169.00	3.722	3.726	-0.004	0.997	3674		3.25(2.12-6.36)		52.7	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.722	3.732	-0.010	1.000	144565	0.1865		74.6	1524	
D 30 13C2 PFUnA										
565.00 > 520.00	3.733	3.732	0.001	1.000	246457	0.2187		87.5	7444	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.021	4.026	-0.005	0.997	6485	0.005459			6.1	
613.00 > 169.00	4.021	4.026	-0.005	0.997	1537		4.22(2.13-6.40)		12.4	
D 36 13C2 PFDoA										
615.00 > 570.00	4.031	4.030	0.001	1.000	274777	0.2190		87.6	4640	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.292	4.288	0.004	1.000	24218	0.0191			17.1	R
663.00 > 169.00	4.292	4.288	0.004	1.000	4678		5.18(1.25-3.76)		45.6	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.532	4.533	-0.001	1.000	325500	0.2042		81.7	3183	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

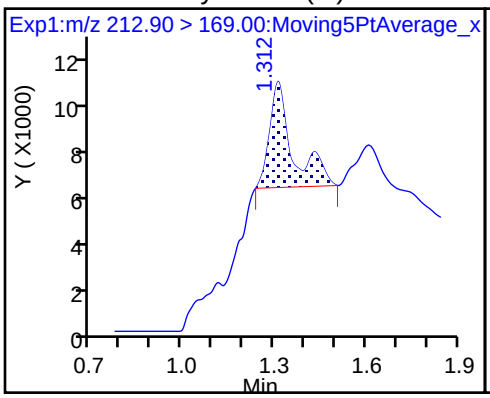
Report Date: 10-Apr-2018 11:05:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

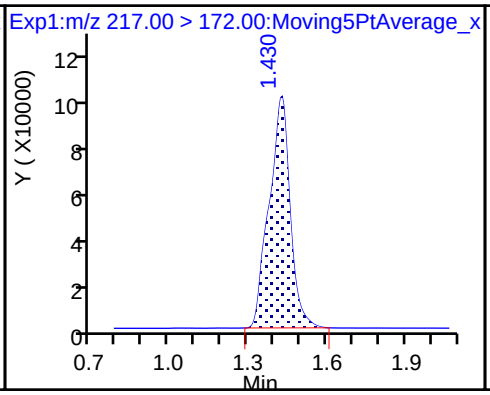
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_048.d

Injection Date:	09-Apr-2018 18:58:06	Instrument ID:	A8_N		
Lims ID:	320-37380-A-5-B	Lab Sample ID:	320-37380-5		
Client ID:	SB045 (0-2")				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

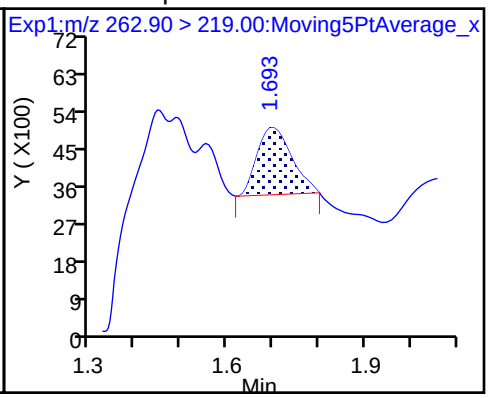
2 Perfluorobutyric acid (M)



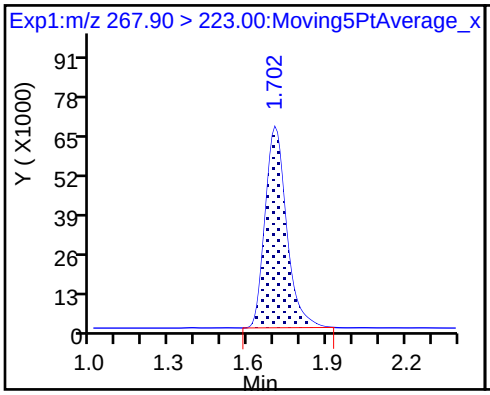
D 1 13C4 PFBA



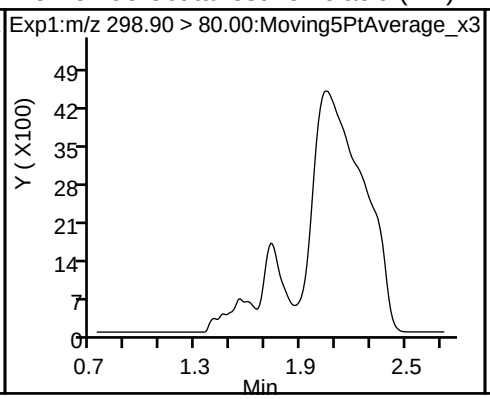
4 Perfluoropentanoic acid



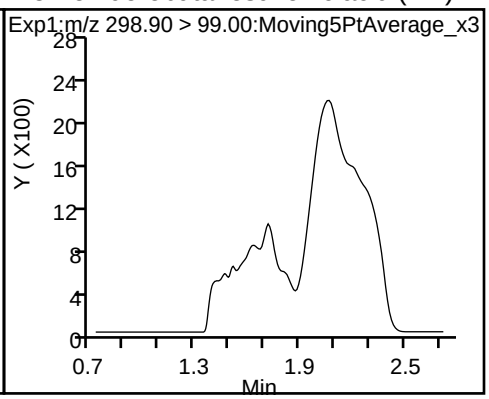
D 3 13C5-PFPeA



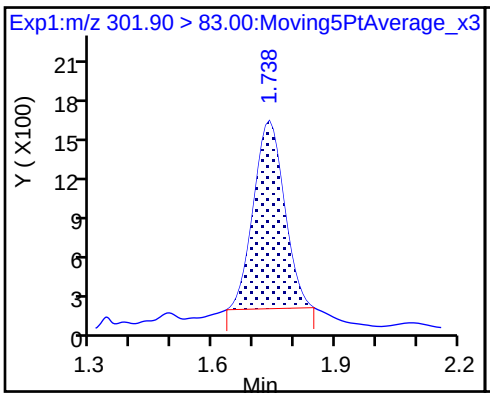
5 Perfluorobutanesulfonic acid (ND)



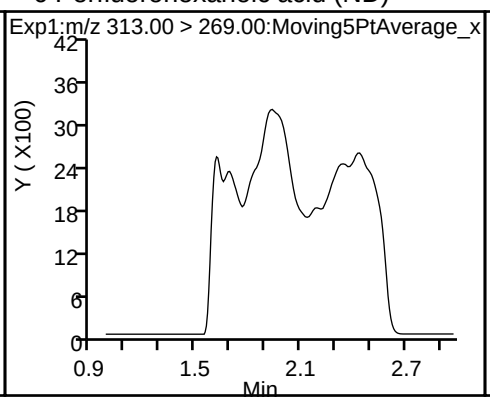
5 Perfluorobutanesulfonic acid (ND)



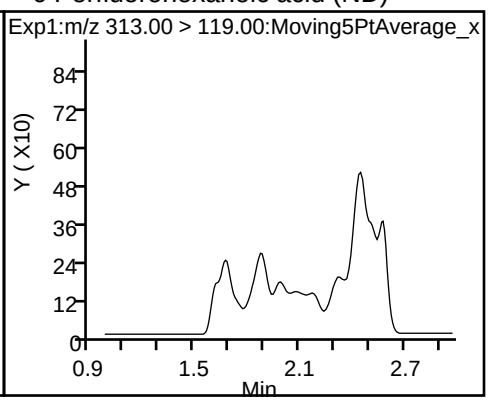
D 47 13C3-PFBS



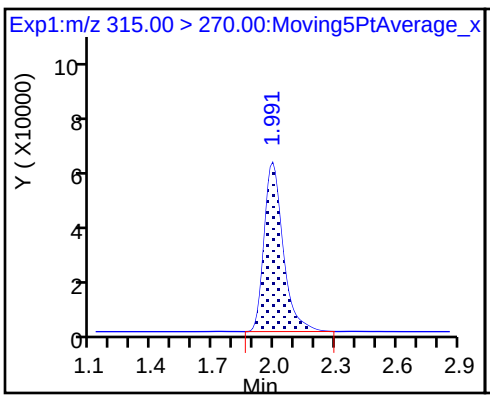
6 Perfluorohexanoic acid (ND)



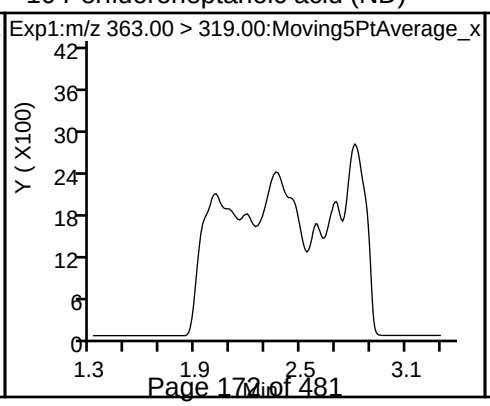
6 Perfluorohexanoic acid (ND)



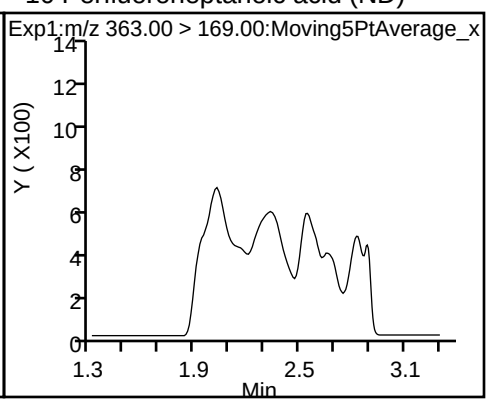
D 7 13C2 PFHxA



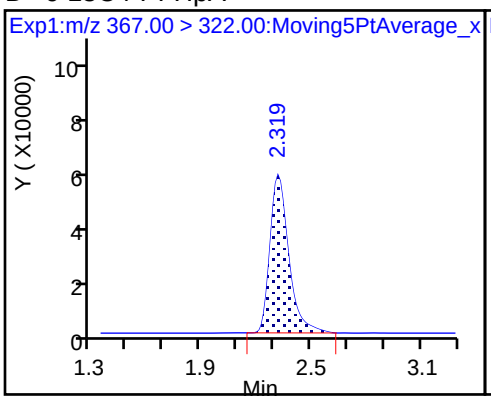
10 Perfluoroheptanoic acid (ND)



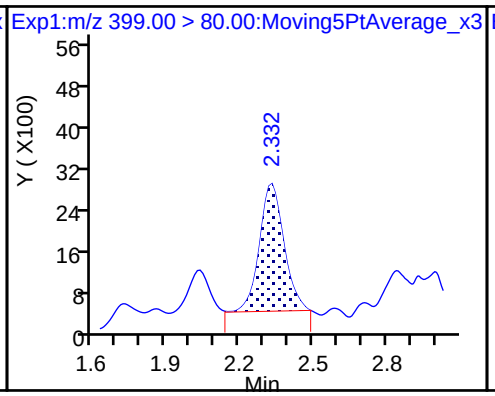
10 Perfluoroheptanoic acid (ND)



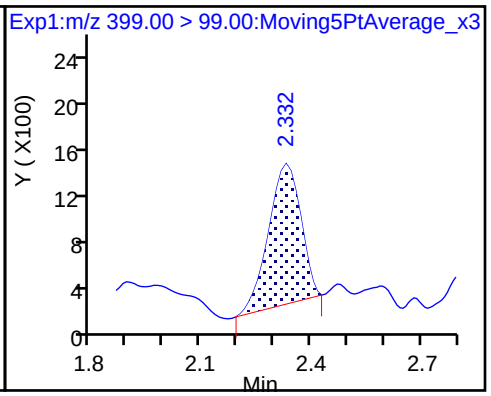
D 9 13C4-PFHpA



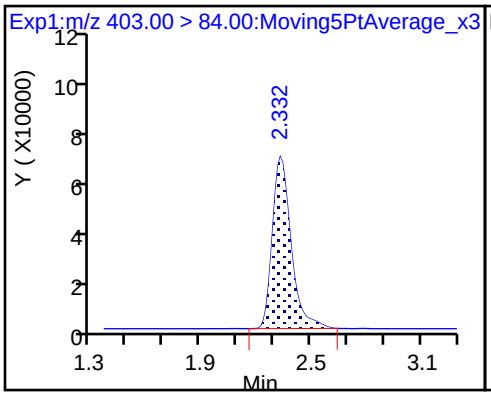
8 Perfluorohexanesulfonic acid



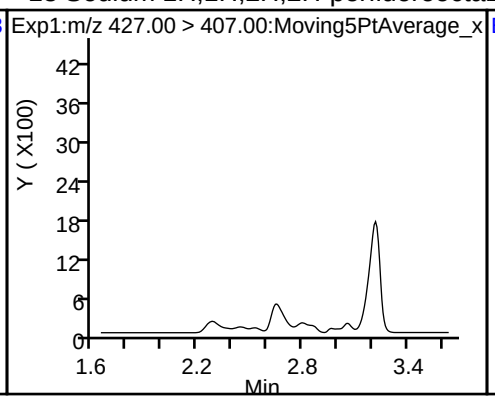
8 Perfluorohexanesulfonic acid



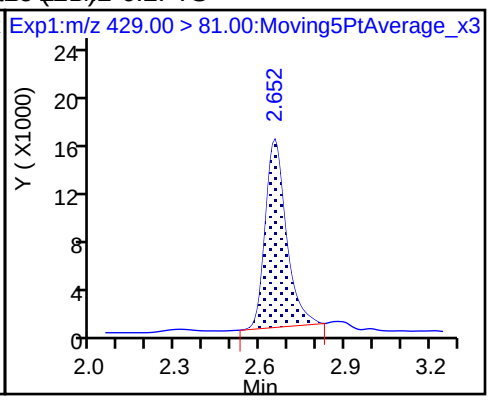
D 11 18O2 PFHxS



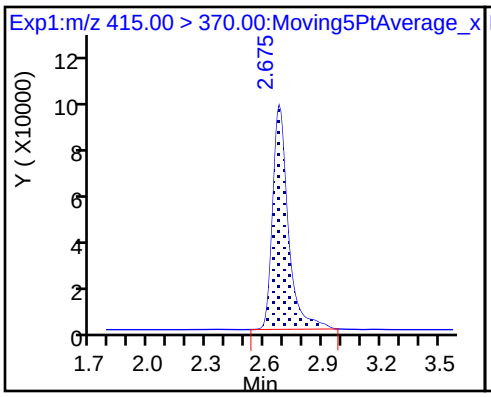
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (M2)



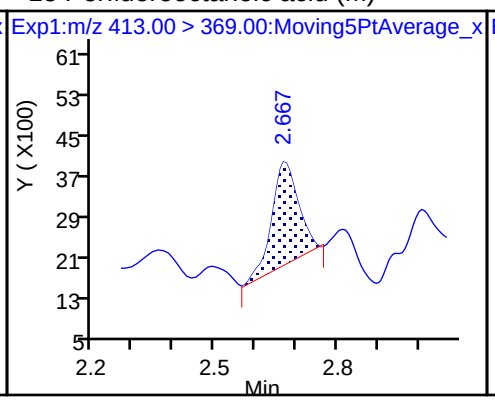
D 12 M2-6:2FTS



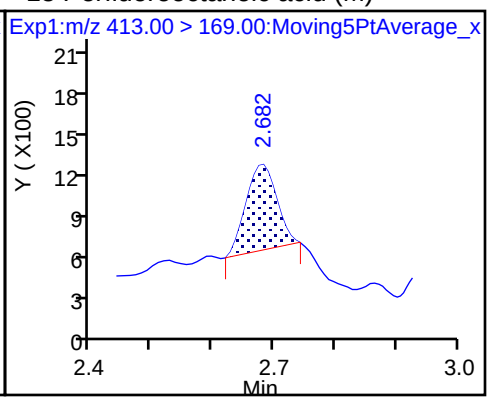
* 62 13C2-PFOA



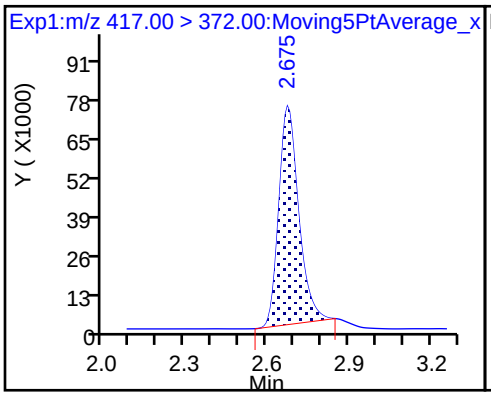
15 Perfluorooctanoic acid (M)



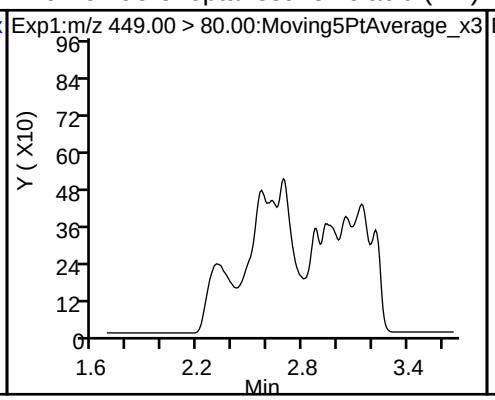
15 Perfluorooctanoic acid (M)



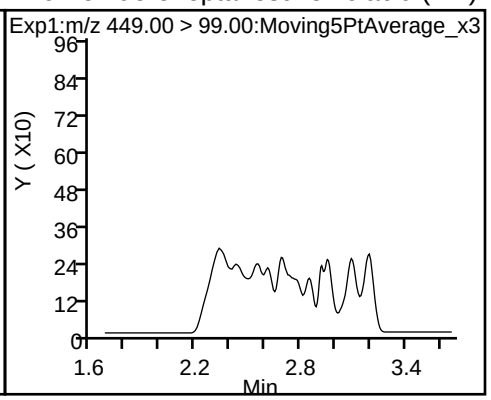
D 14 13C4 PFOA



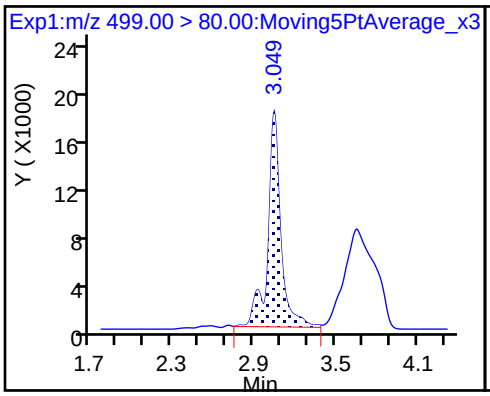
16 Perfluoroheptanesulfonic acid (ND)



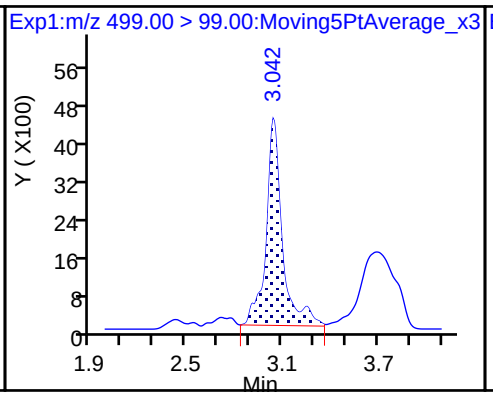
16 Perfluoroheptanesulfonic acid (ND)



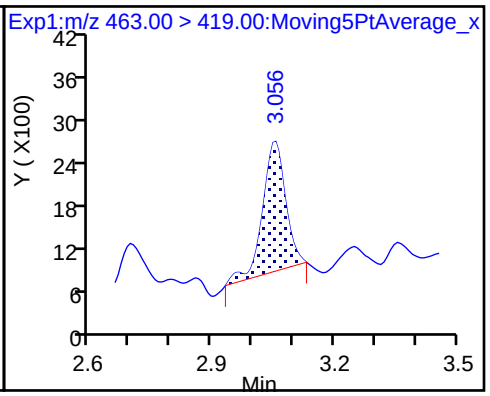
17 Perfluorooctane sulfonic acid



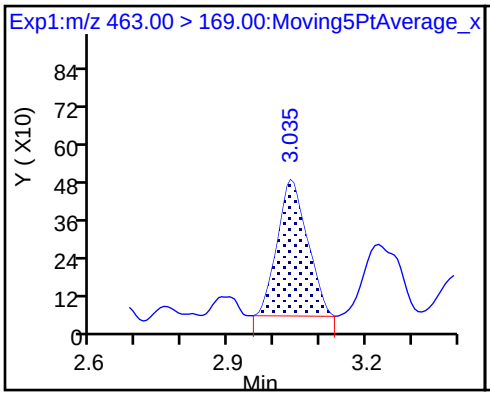
17 Perfluorooctane sulfonic acid



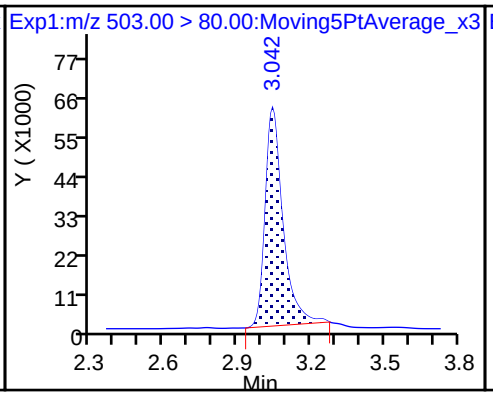
20 Perfluorononanoic acid



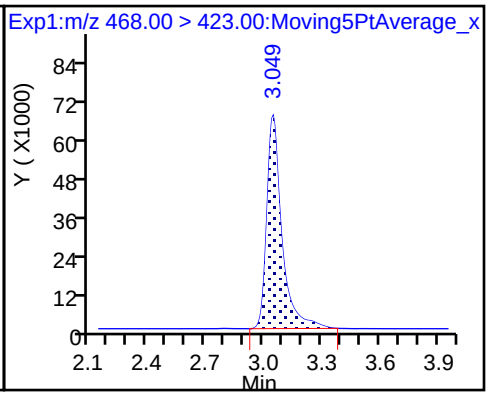
20 Perfluorononanoic acid



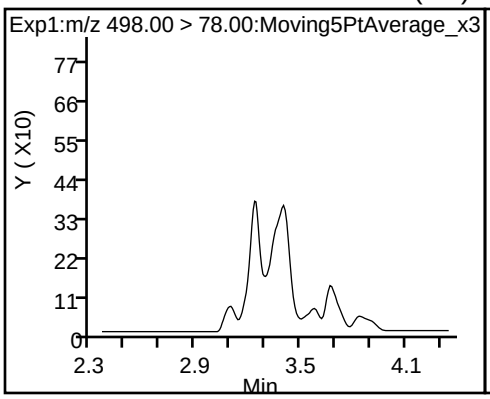
D 18 13C4 PFOS



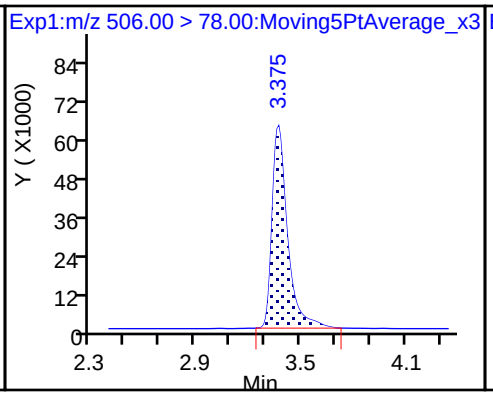
D 19 13C5 PFNA



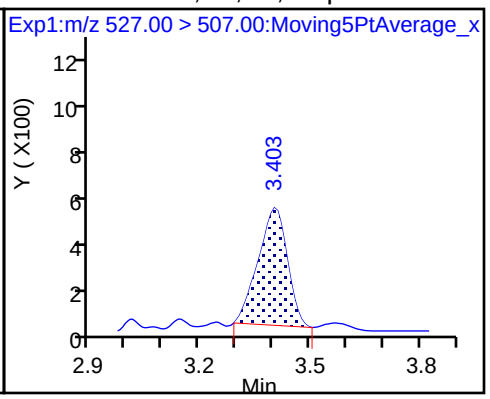
22 Perfluorooctane Sulfonamide (ND)



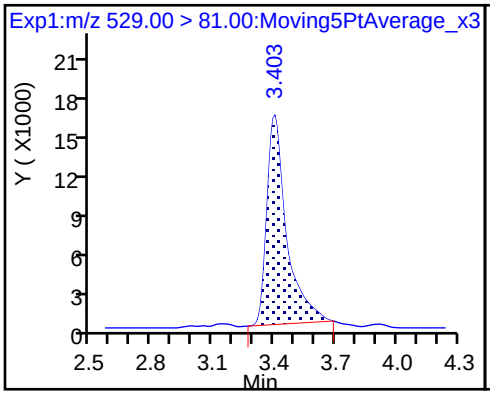
D 21 13C8 FOSA



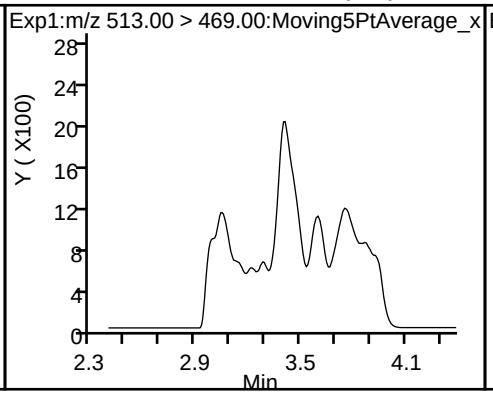
25 Sodium 1H,1H,2H,2H-perfluorodecane



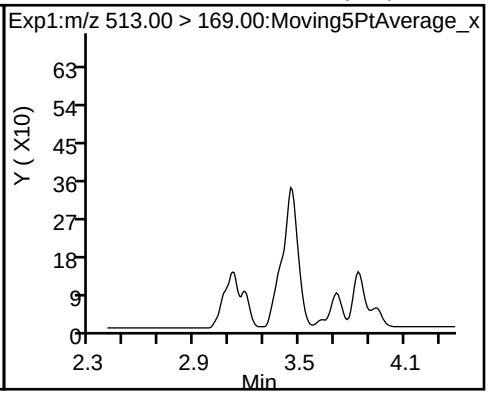
D 26 M2-8:2FTS



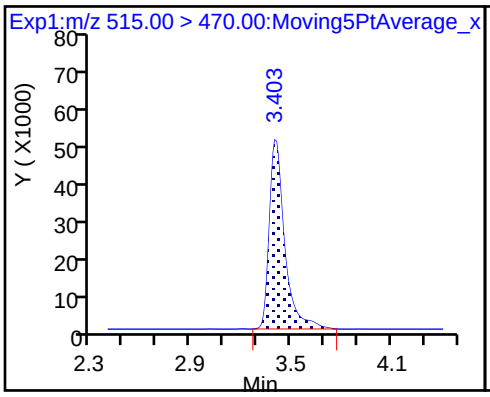
24 Perfluorodecanoic acid (ND)



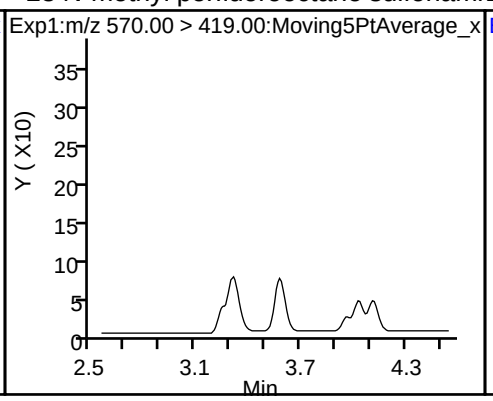
24 Perfluorodecanoic acid (ND)



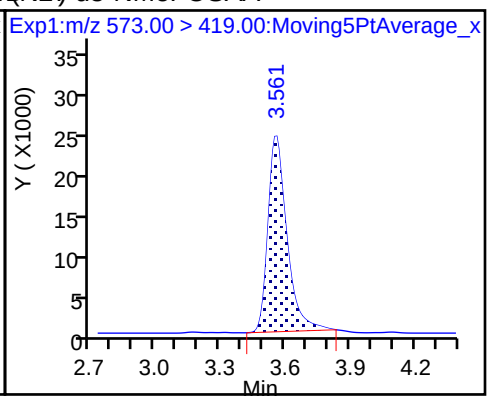
D 23 13C2 PFDA



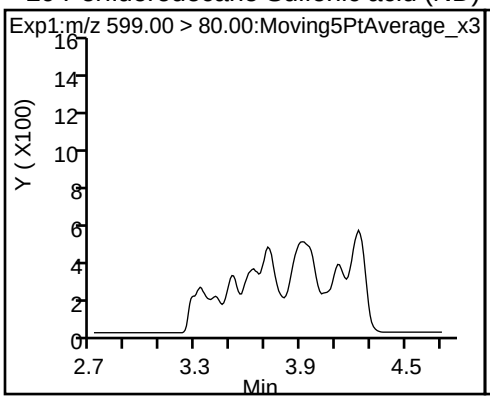
28 N-methyl perfluorooctane sulfonamid (ND)



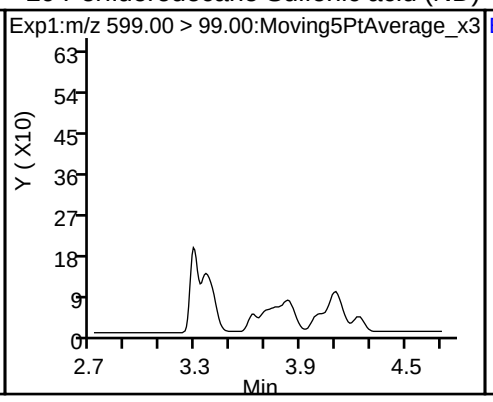
D 27 d3-NMeFOSAA



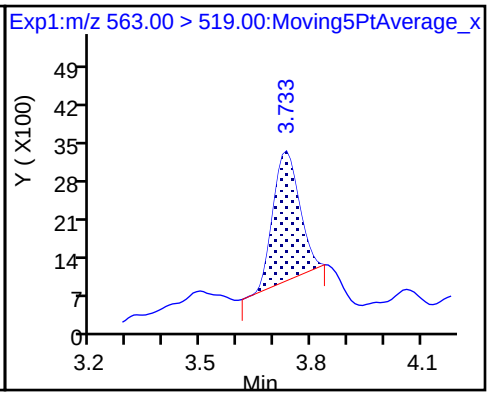
29 Perfluorodecane Sulfonic acid (ND)



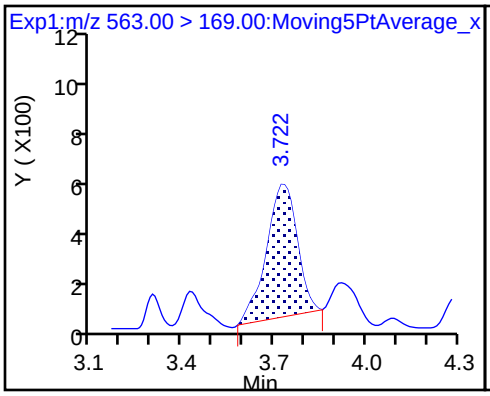
29 Perfluorodecane Sulfonic acid (ND)



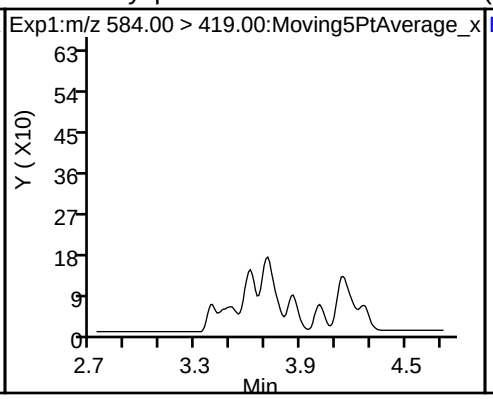
31 Perfluoroundecanoic acid



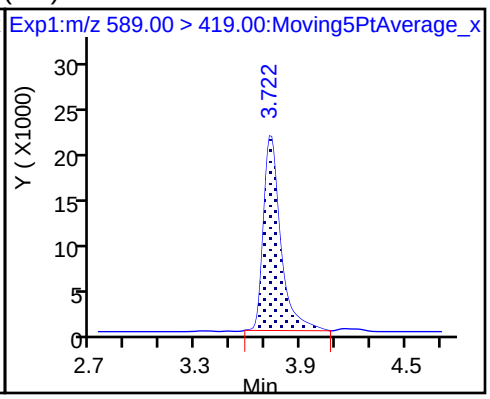
31 Perfluoroundecanoic acid



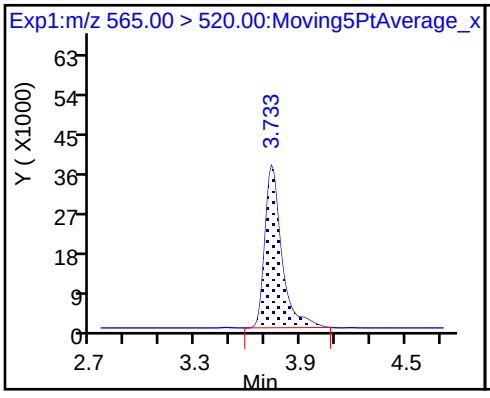
33 N-ethyl perfluorooctane sulfonamid (ND)



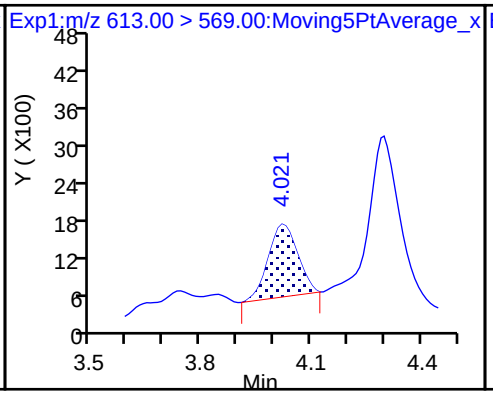
D 32 d5-NEtFOSAA



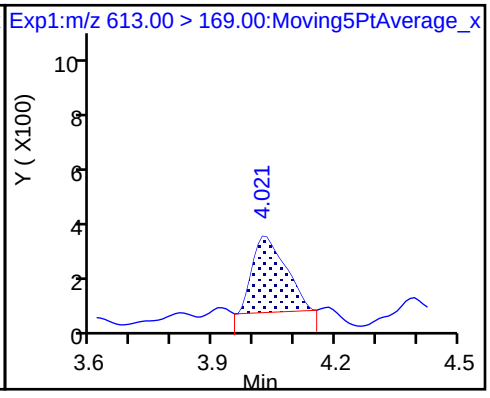
D 30 13C2 PFUnA



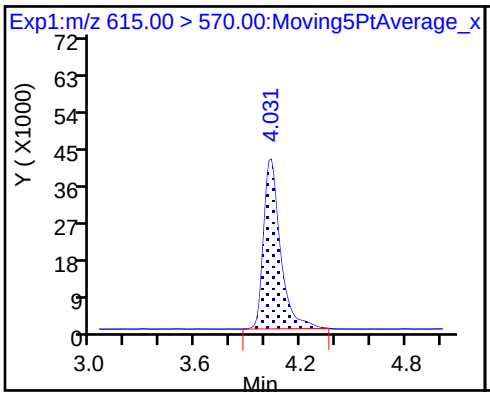
37 Perfluorododecanoic acid



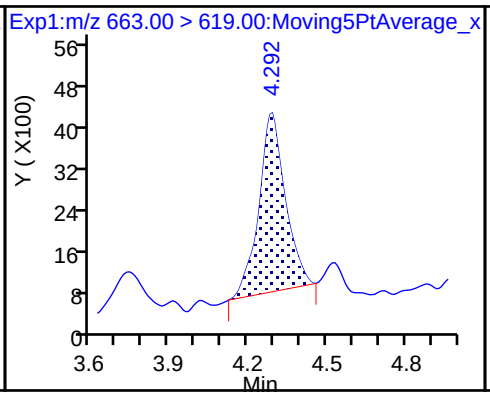
37 Perfluorododecanoic acid



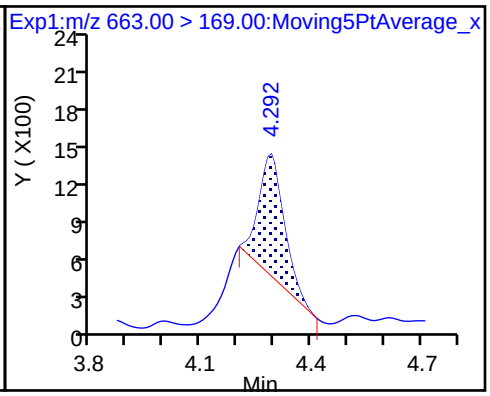
D 36 13C2 PFDoA



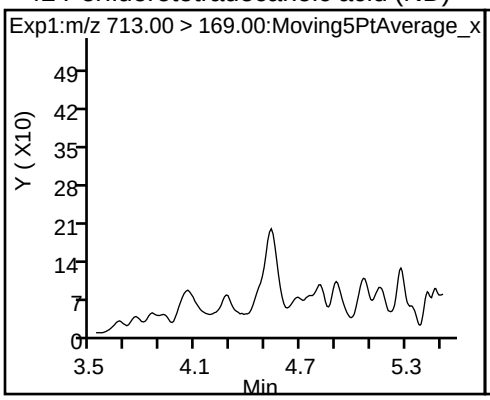
41 Perfluorotridecanoic acid



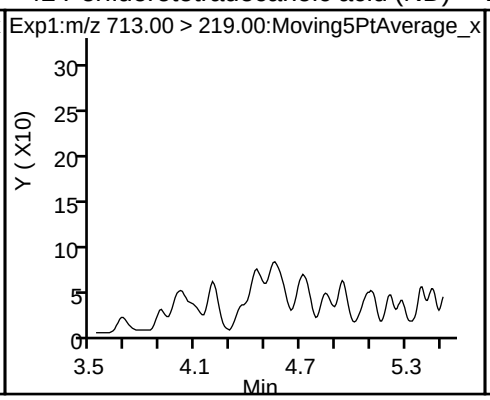
41 Perfluorotridecanoic acid



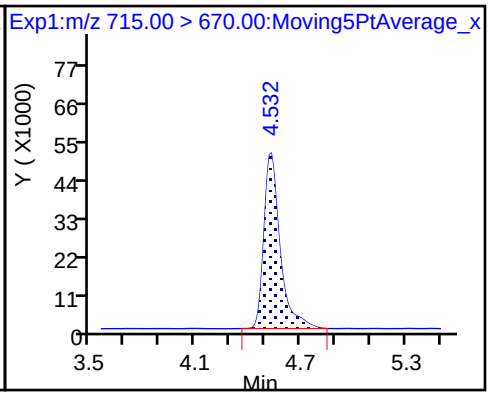
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB045 (2"-2') | Lab Sample ID: 320-37380-6

Matrix: Solid | Lab File ID: 2018.04.07LLB_029.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/07/2018 21:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 10.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00027	B	0.00022	0.000031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00023		0.00022	0.000086
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000090	J	0.00022	0.000047
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000089	J	0.00022	0.000032
335-67-1	Perfluorooctanoic acid (PFOA)	0.00012	J	0.00022	0.000096
375-95-1	Perfluorononanoic acid (PFNA)	0.00011	J	0.00022	0.000040
335-76-2	Perfluorodecanoic acid (PFDA)	0.00010	J	0.00022	0.000025
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00050		0.00022	0.000040
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000075	U	0.00022	0.000075
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00013	J	0.00022	0.000057
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000060	U	0.00022	0.000060
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000028	U	0.00022	0.000028
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000075	J	0.00022	0.000035
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000039	U	0.00022	0.000039
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00090	B	0.00056	0.00022
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000044	U	0.00022	0.000044
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000092	U	0.00022	0.000092
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00044	U	0.0022	0.00044
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00041	U	0.0022	0.00041

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB045 (2"-2') | Lab Sample ID: 320-37380-6

Matrix: Solid | Lab File ID: 2018.04.07LLB_029.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/07/2018 21:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 10.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	80		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	75		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	89		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	111		25-150
STL00997	13C2 PFUnA	106		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2-PFTeDA	93		25-150
STL02337	13C3-PFBS	75		25-150
STL00994	18O2 PFHxS	83		25-150
STL00991	13C4 PFOS	86		25-150
STL01056	13C8 FOSA	79		25-150
STL02118	d3-NMeFOSAA	142		25-150
STL02117	d5-NEtFOSAA	126		25-150

Report Date: 09-Apr-2018 10:11:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d
Lims ID: 320-37380-A-6-B
Client ID: SB045 (2"-2')
Sample Type: Client
Inject. Date: 07-Apr-2018 21:09:07 ALS Bottle#: 20 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37380-a-6-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 10:03:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	5380821	2.00		80.2	27846	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.430	1.429	0.001	1.000	241347	0.1213			35.7	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.703	1.692	0.011	1.000	174513	0.1012			64.3	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.693	0.010	0.562	3603163	2.06		82.5	40241	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.729	0.001	1.000	70231	1.75		75.5	177	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.971	1.980	-0.009	0.995	59721	0.0402			36.1	M
313.00 > 119.00	1.993	1.980	0.013	1.006	5027		11.88(5.03-15.10)		22.8	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.981	0.001	1.000	3626983	1.88		75.3	53691	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.306	0.002	1.000	68971	0.0399			48.8	
363.00 > 169.00	2.308	2.306	0.002	1.000	32503		2.12(1.13-3.40)		113	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.307	0.001	1.000	3981598	2.15		86.0	69296	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.321	2.319	0.002	1.000	71222	0.0335			88.6	M
399.00 > 99.00	2.321	2.319	0.002	1.000	21982		3.24(1.50-4.49)		49.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.320	0.001	1.000	4506924	1.95		82.5	89439	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.628	2.636	-0.008	0.997	11871	0.009558			44.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.636	2.637	-0.001	1.000	1579374	3.69		155	11938	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.660	2.659	0.001		4857184	2.50			122423	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.660	2.659	0.001	0.997	107514	0.0558			46.1	
413.00 > 169.00	2.660	2.659	0.001	0.997	50336		2.14(0.84-2.52)		109	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.660	0.007	1.000	4058946	2.23		89.2	88677	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.029	3.029	0.0	1.000	77455	0.0482			99.7	
463.00 > 169.00	3.029	3.029	0.0	1.000	18224		4.25(1.90-5.69)		145	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.029	3.029	0.0	1.000	636779	0.4034			3246	
499.00 > 99.00	3.029	3.029	0.0	1.000	144028		4.42(2.31-6.93)		732	
D 19 13C5 PFNA										
468.00 > 423.00	3.029	3.031	-0.002	1.000	3907029	2.54		101	80901	
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.031	-0.002	1.000	3302121	2.06		86.1	15255	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.360	0.006	1.000	4473822	1.97		79.0	52887	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.366	3.368	-0.002	1.000	7735	0.004376			77.9	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.376	3.377	-0.001	0.997	20810	0.0151			393	
D 26 M2-8:2FTS										
529.00 > 81.00	3.385	3.379	0.006	1.000	2454839	4.93		206	10688	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.394	3.386	0.008	1.000	65204	0.0458			80.3	
513.00 > 169.00	3.394	3.386	0.008	1.000	15779		4.13(2.36-7.09)		156	
D 23 13C2 PFDA										
515.00 > 470.00	3.394	3.388	0.006	1.000	3596430	2.76		111	84776	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.544	3.547	-0.003	1.000	2475378	3.56		142	56355	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.716	3.708	0.008	1.000	2302377	3.15		126	29326	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.716	3.717	-0.001	1.000	202360	0.2240			304	
563.00 > 169.00	3.716	3.717	-0.001	1.000	55642		3.64(2.12-6.36)		686	
D 30 13C2 PFUnA										
565.00 > 520.00	3.716	3.719	-0.003	1.000	2814841	2.65		106	85089	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.016	4.006	0.010	1.000	16978	0.0131			8.2	
613.00 > 169.00	4.016	4.006	0.010	1.000	7248		2.34(2.13-6.40)		35.0	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.009	0.007	1.000	2987289	2.53		101	38898	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.279	0.0	1.000	80262	0.0581			32.1	
663.00 > 169.00	4.269	4.279	-0.010	0.998	27707		2.90(1.25-3.76)		134	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.509	4.511	-0.002	1.000	3482252	2.32		92.7	18698	

QC Flag Legend

Review Flags

M - Manually Integrated

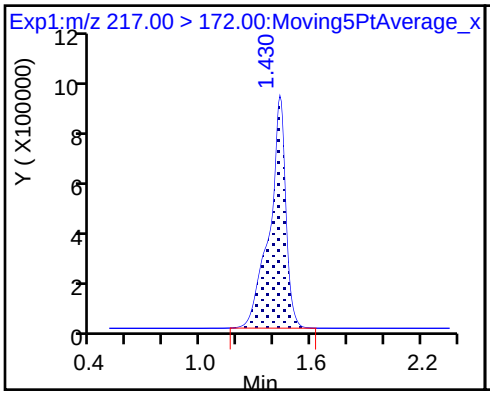
Report Date: 09-Apr-2018 10:11:17 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

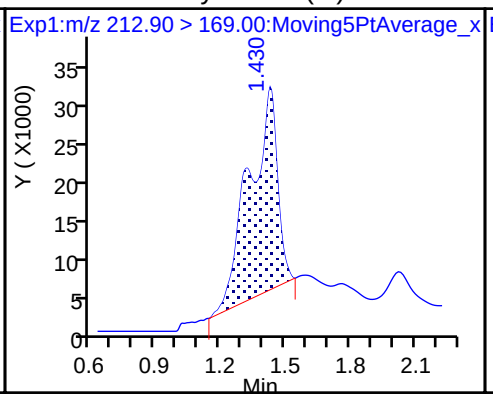
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d

Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

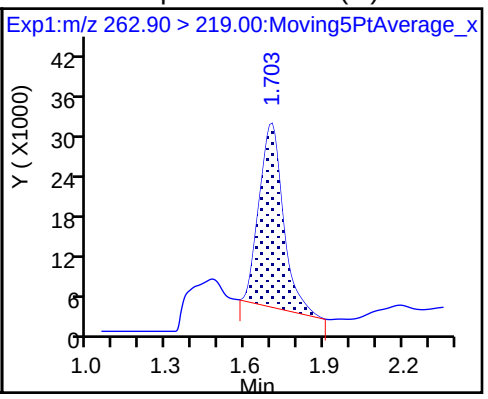
D 1 13C4 PFBA



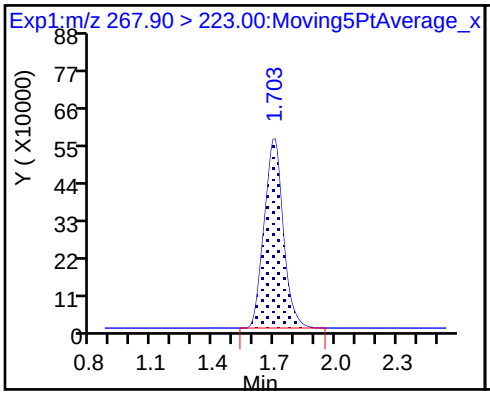
2 Perfluorobutyric acid (M)



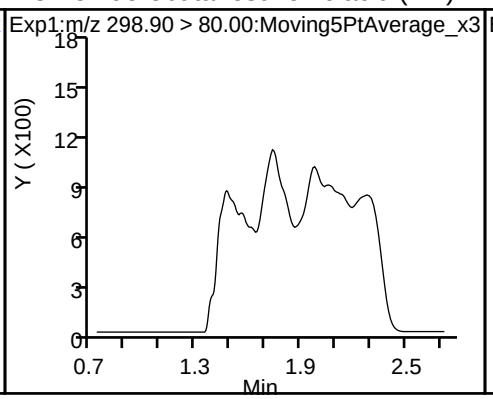
4 Perfluoropentanoic acid (M)



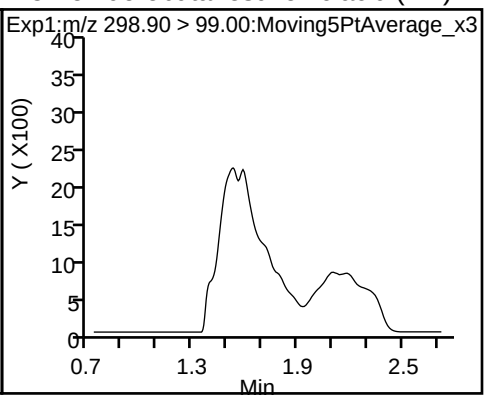
D 3 13C5-PFPeA



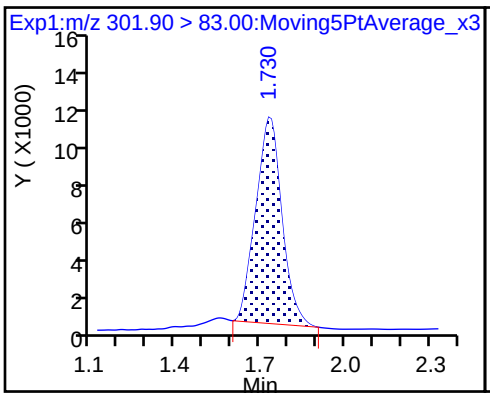
5 Perfluorobutanesulfonic acid (ND)



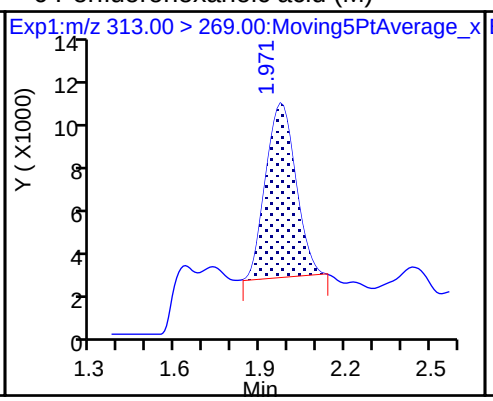
5 Perfluorobutanesulfonic acid (ND)



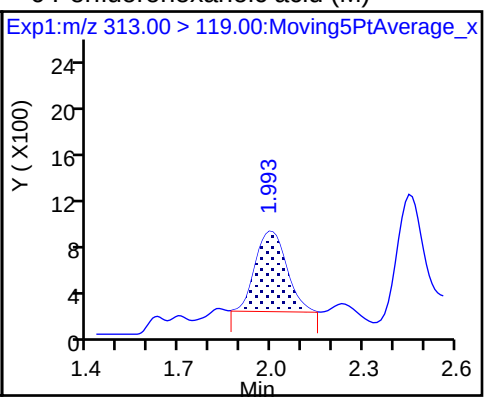
D 47 13C3-PFBS



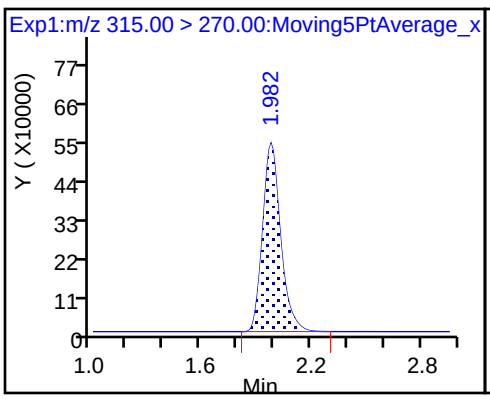
6 Perfluorohexanoic acid (M)



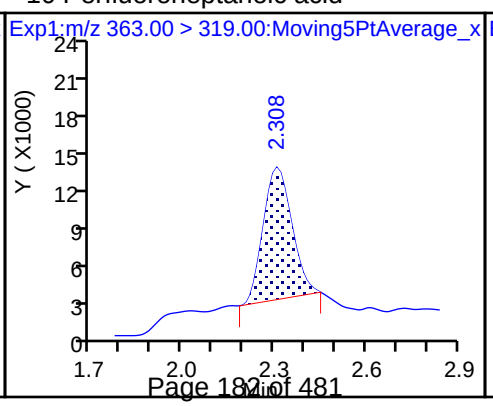
6 Perfluorohexanoic acid (M)



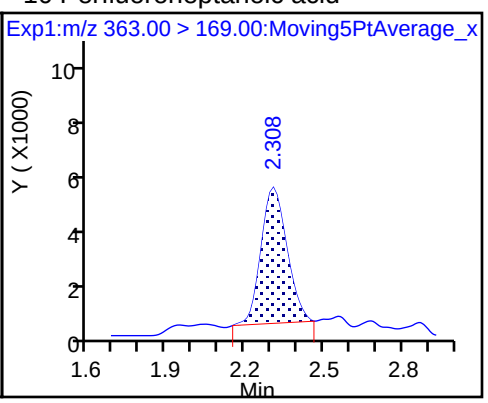
D 7 13C2 PFHxA



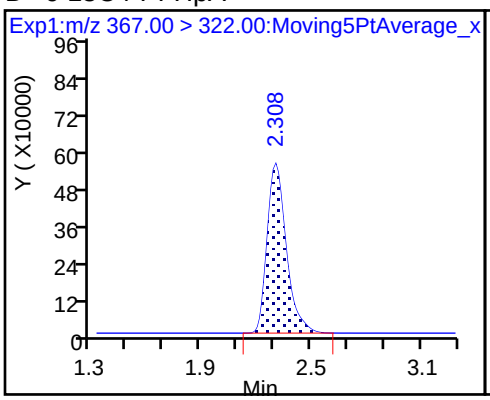
10 Perfluoroheptanoic acid



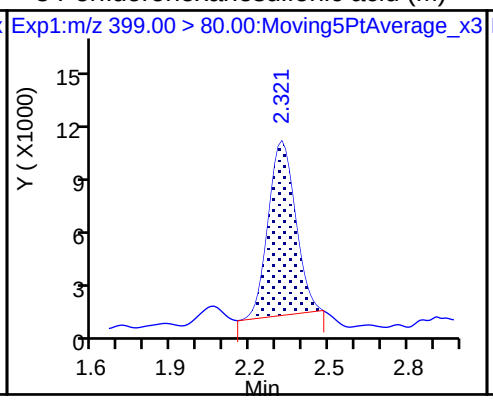
10 Perfluoroheptanoic acid



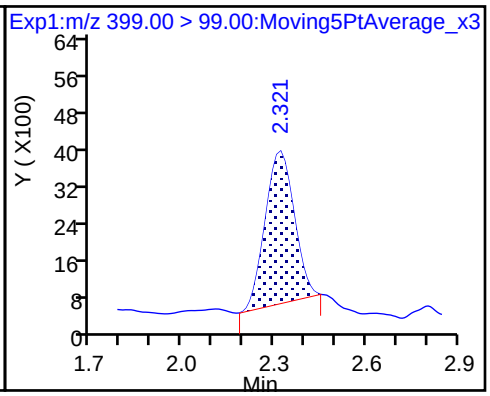
D 9 13C4-PFHpA



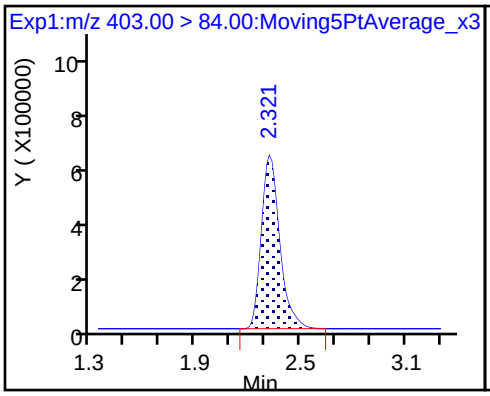
8 Perfluorohexanesulfonic acid (M)



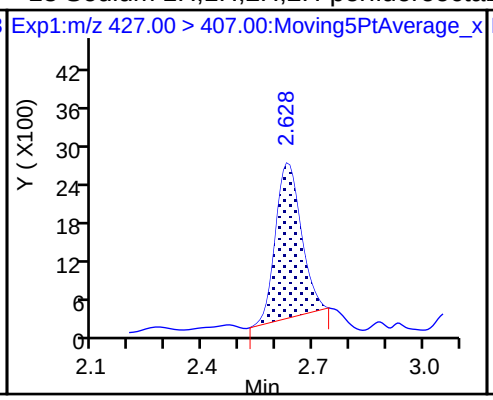
8 Perfluorohexanesulfonic acid



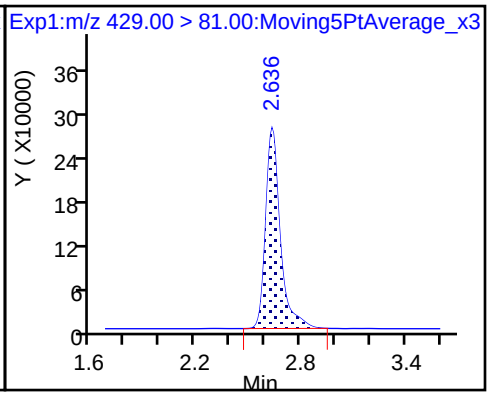
D 11 18O2 PFHxS



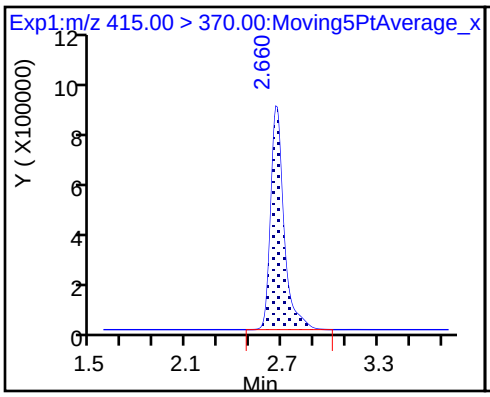
13 Sodium 1H,1H,2H,2H-perfluorooctane



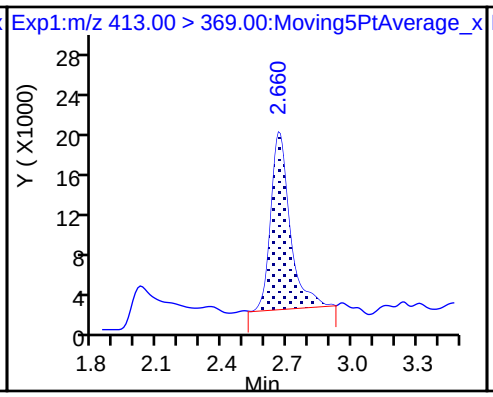
D 12 M2-6:2FTS



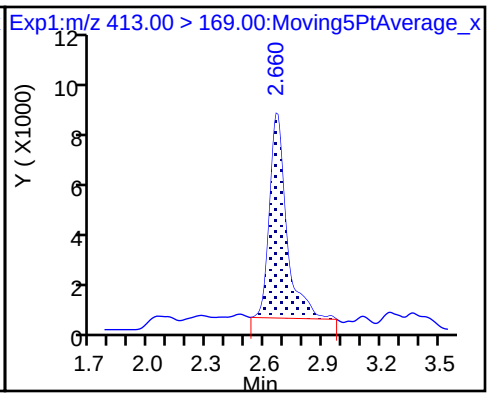
* 62 13C2-PFOA



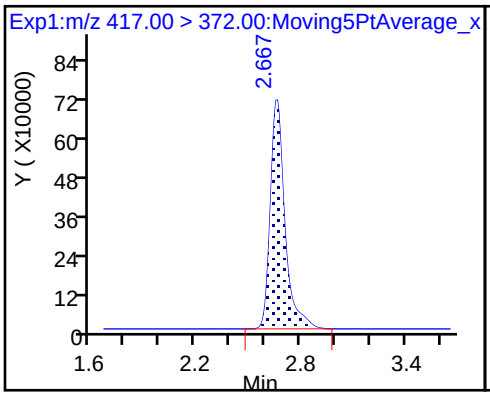
15 Perfluorooctanoic acid



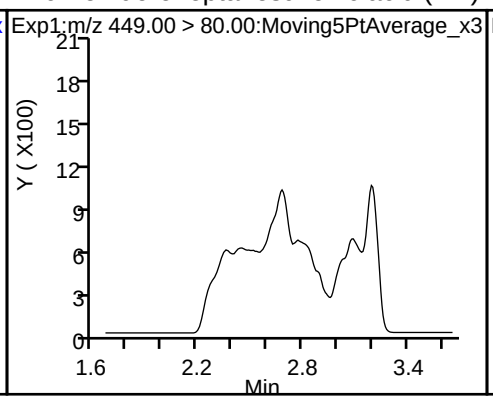
15 Perfluorooctanoic acid



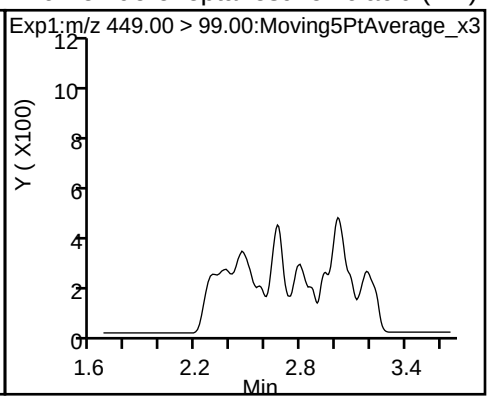
D 14 13C4 PFOA



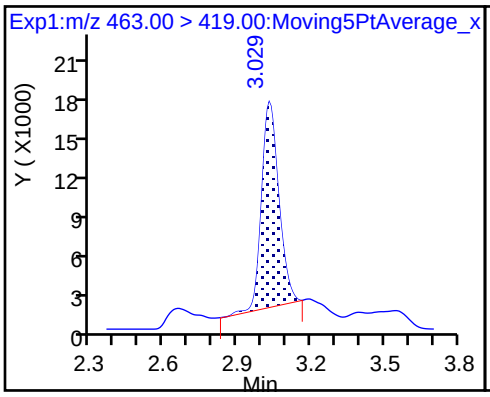
16 Perfluoroheptanesulfonic acid (ND)



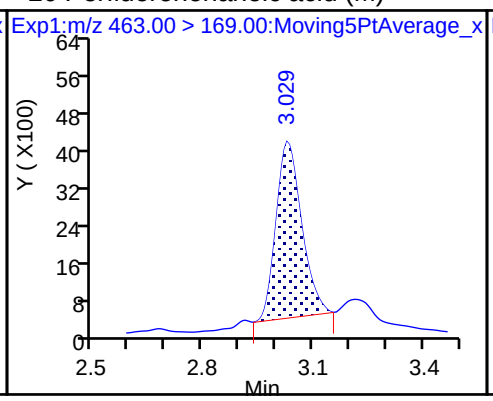
16 Perfluoroheptanesulfonic acid (ND)



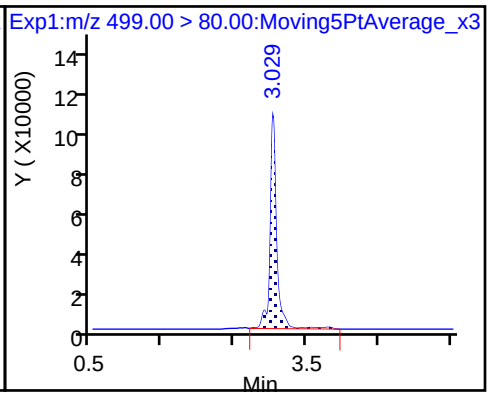
20 Perfluorononanoic acid



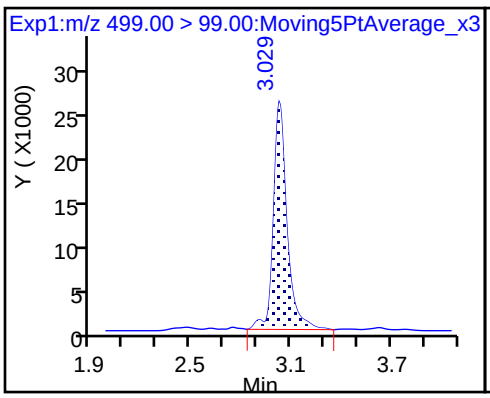
20 Perfluorononanoic acid (M)



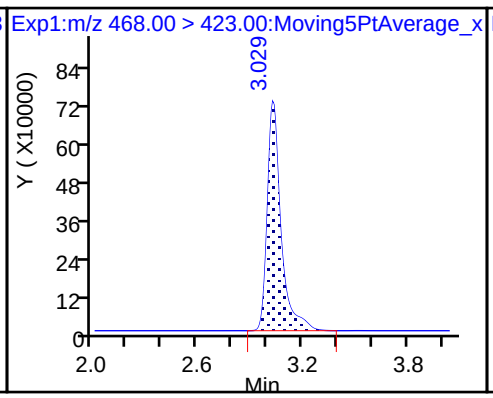
17 Perfluorooctane sulfonic acid



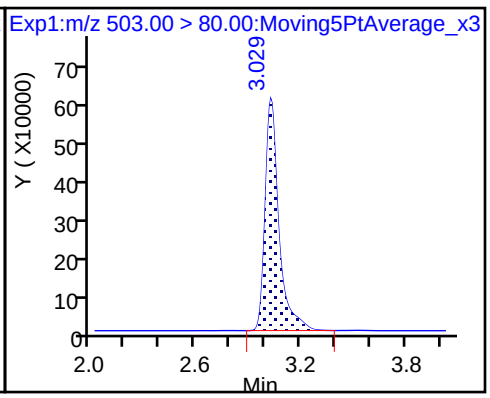
17 Perfluorooctane sulfonic acid



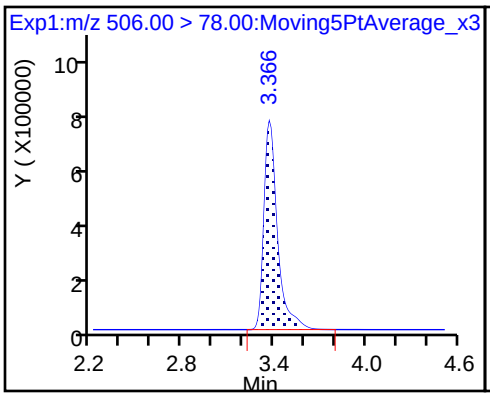
D 19 13C5 PFNA



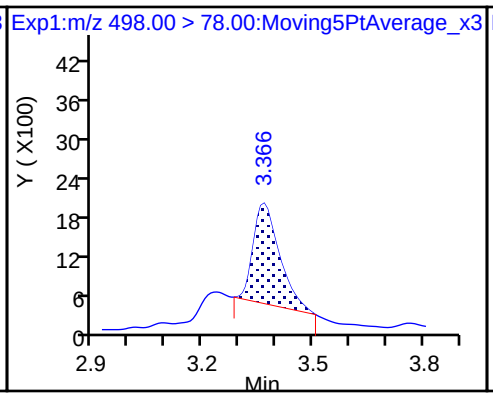
D 18 13C4 PFOS



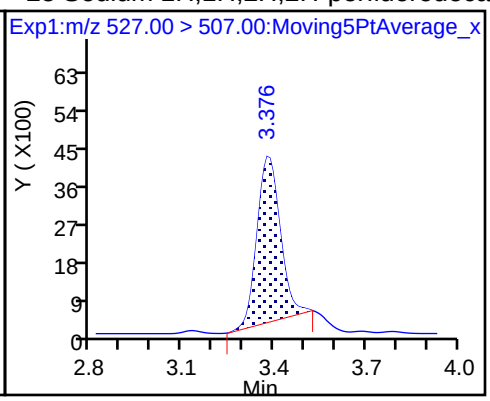
D 21 13C8 FOSA



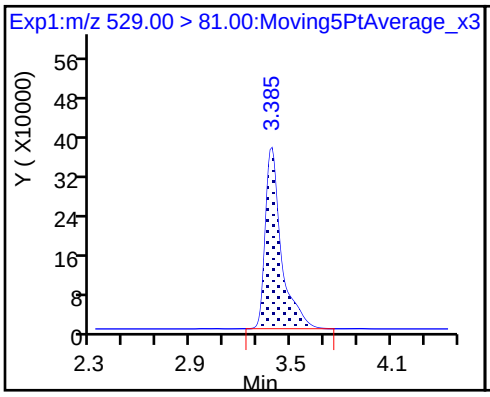
22 Perfluorooctane Sulfonamide



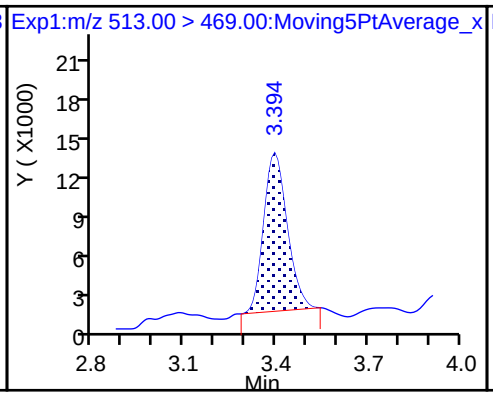
25 Sodium 1H,1H,2H,2H-perfluorodecane



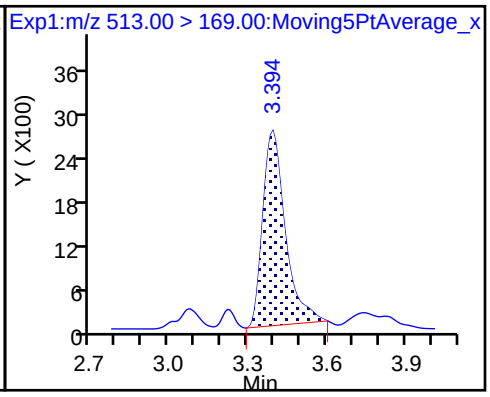
D 26 M2-8:2FTS



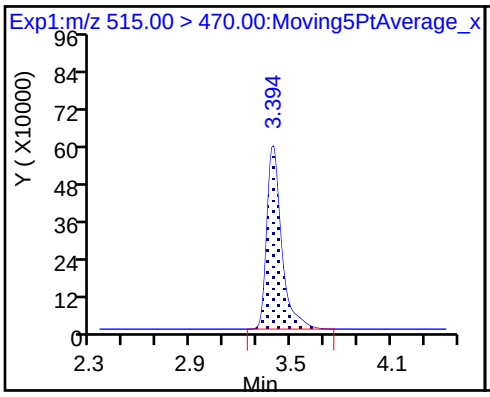
24 Perfluorodecanoic acid



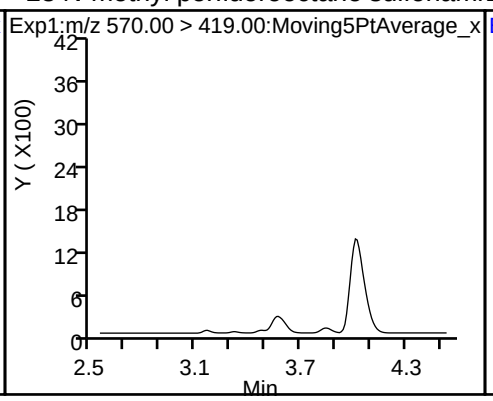
24 Perfluorodecanoic acid



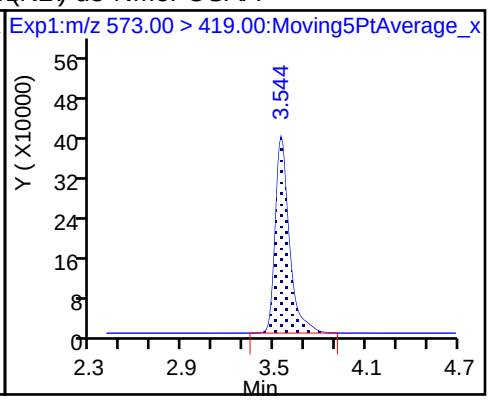
D 23 13C2 PFDA



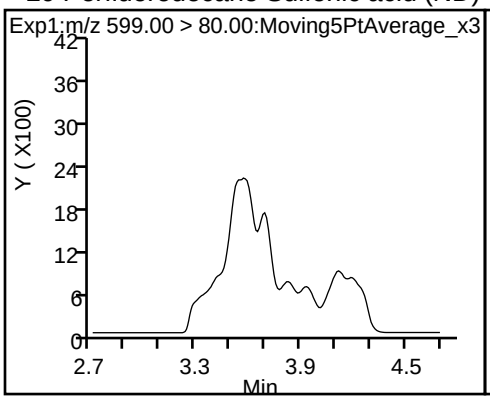
28 N-methyl perfluorooctane sulfonamid (ND)



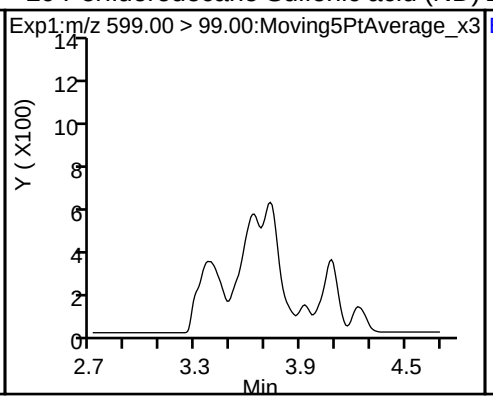
D 27 d3-NMeFOSAA



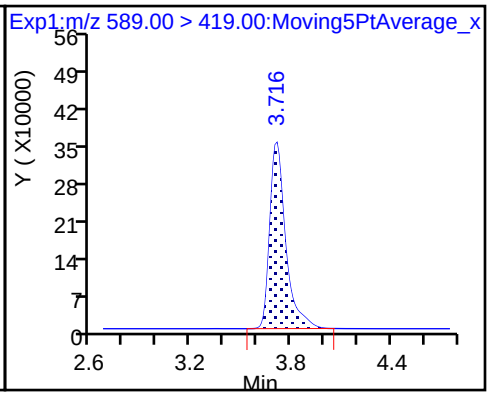
29 Perfluorodecane Sulfonic acid (ND)



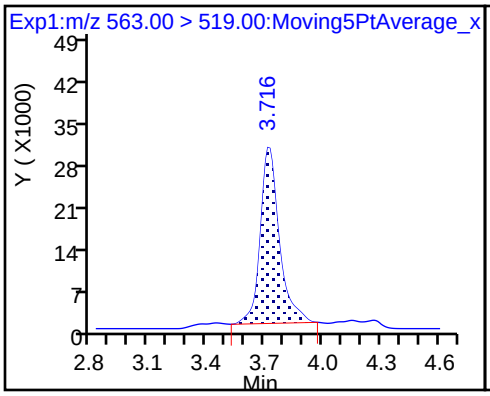
29 Perfluorodecane Sulfonic acid (ND)



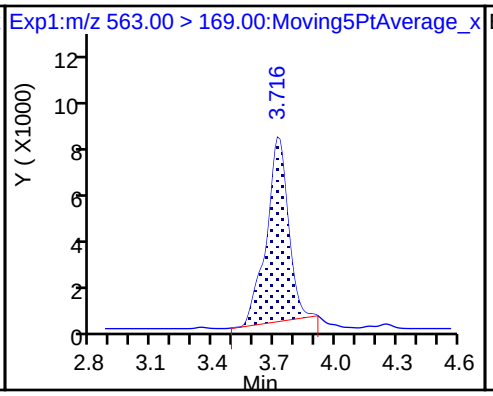
D 32 d5-NEtFOSAA



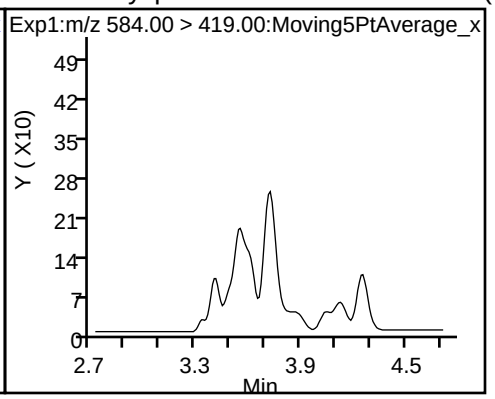
31 Perfluoroundecanoic acid



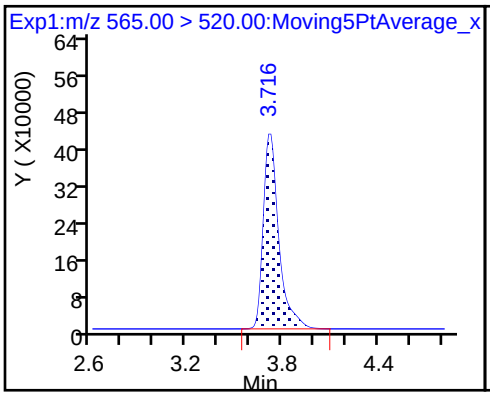
31 Perfluoroundecanoic acid



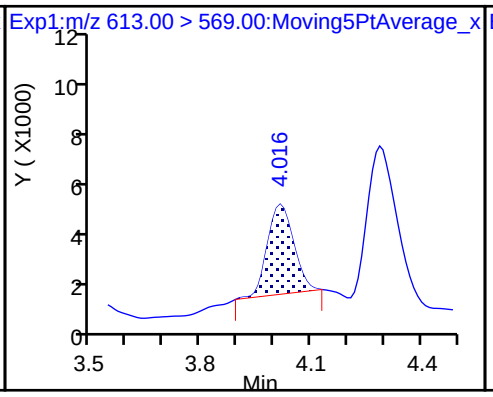
33 N-ethyl perfluorooctane sulfonamid (ND)



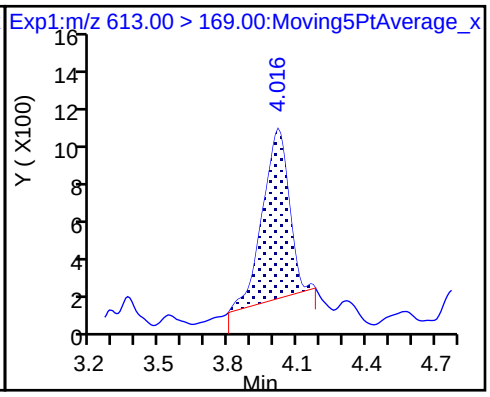
D 30 13C2 PFUnA



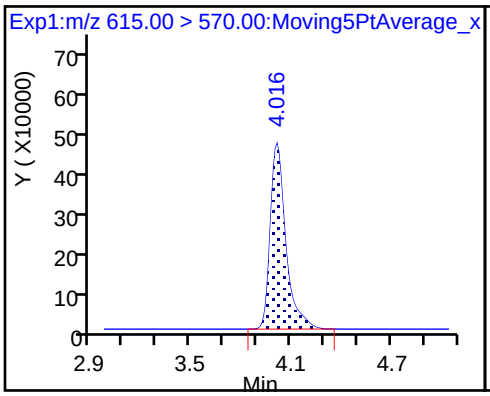
37 Perfluorododecanoic acid



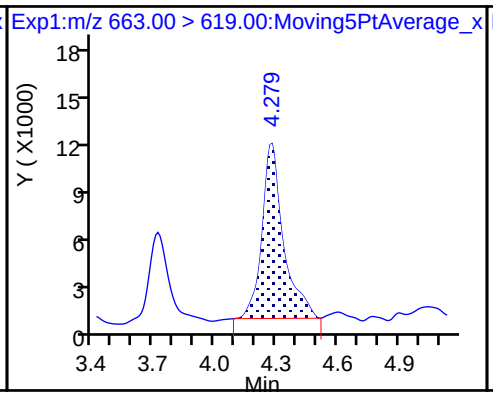
37 Perfluorododecanoic acid



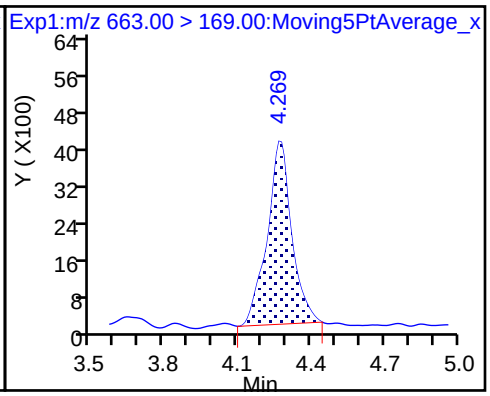
D 36 13C2 PFDoA



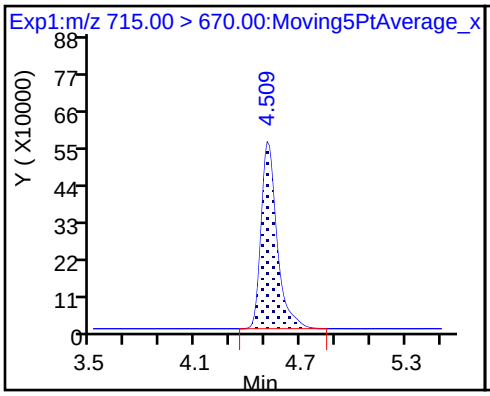
41 Perfluorotridecanoic acid



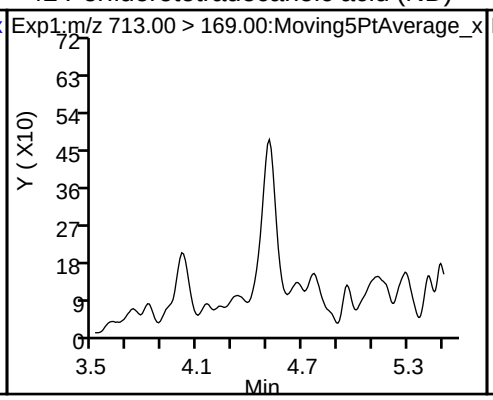
41 Perfluorotridecanoic acid



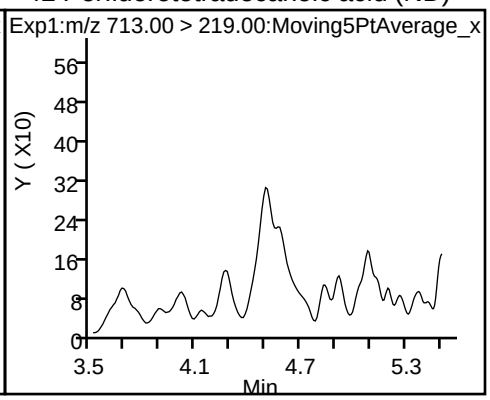
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

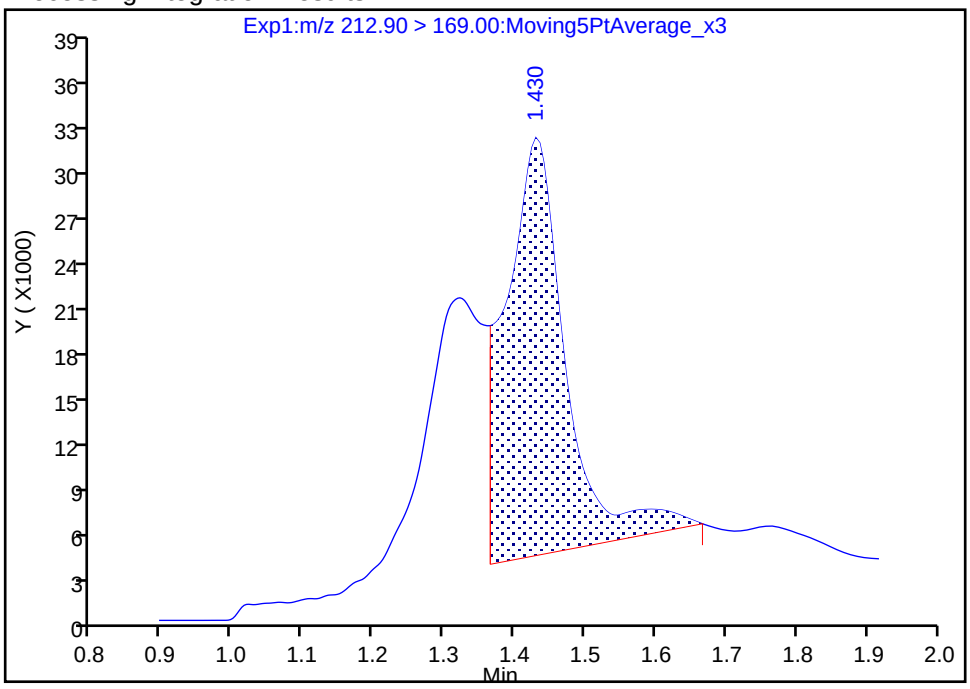
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d				
Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

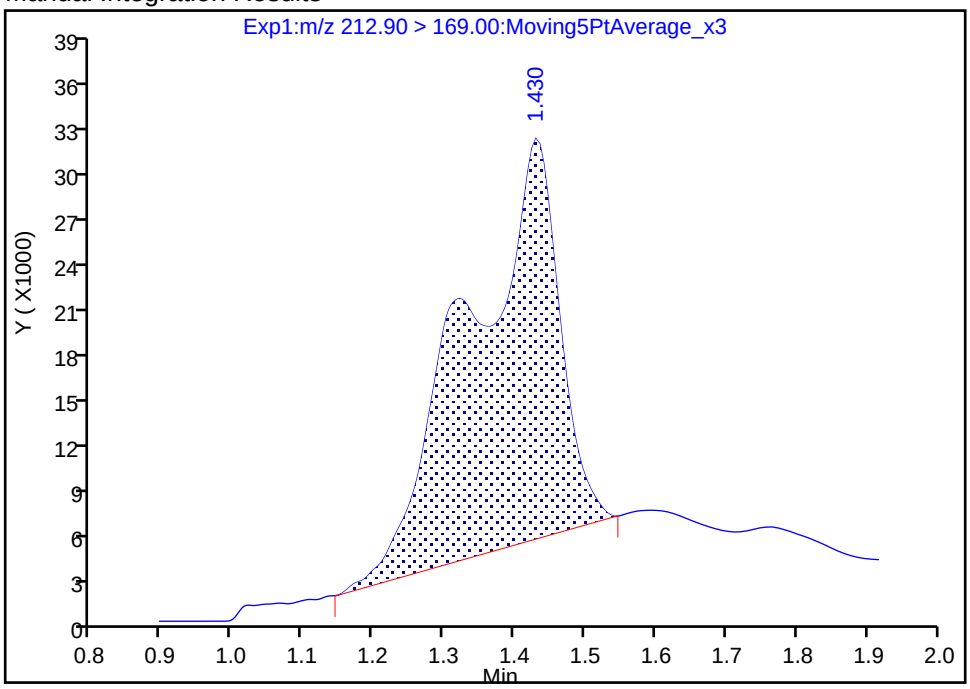
Processing Integration Results

RT: 1.43
Area: 161817
Amount: 0.081350
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 241347
Amount: 0.121333
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:02:25

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

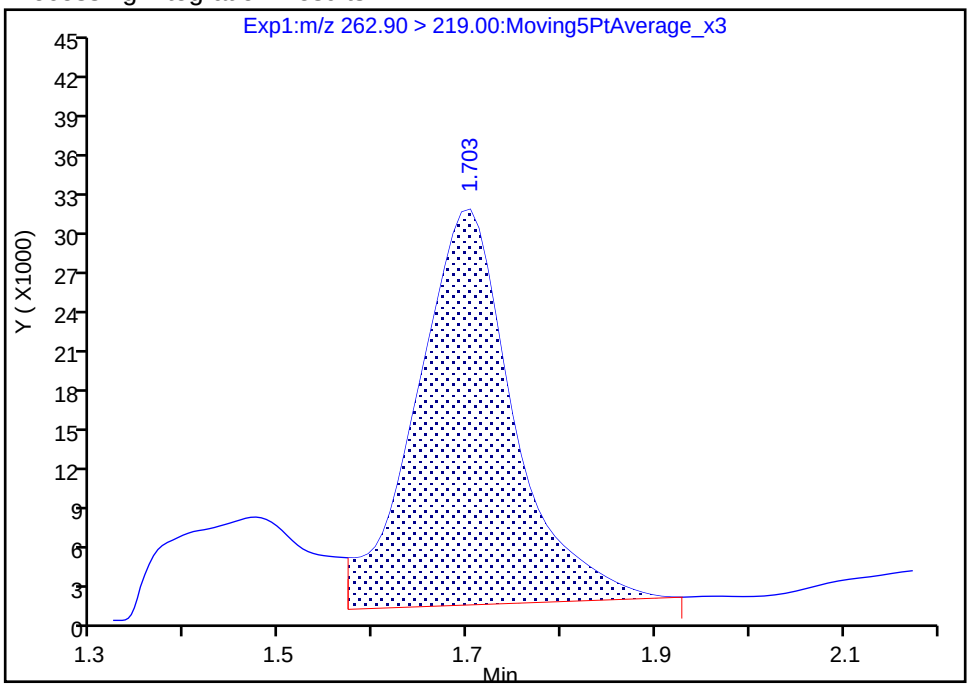
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d				
Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

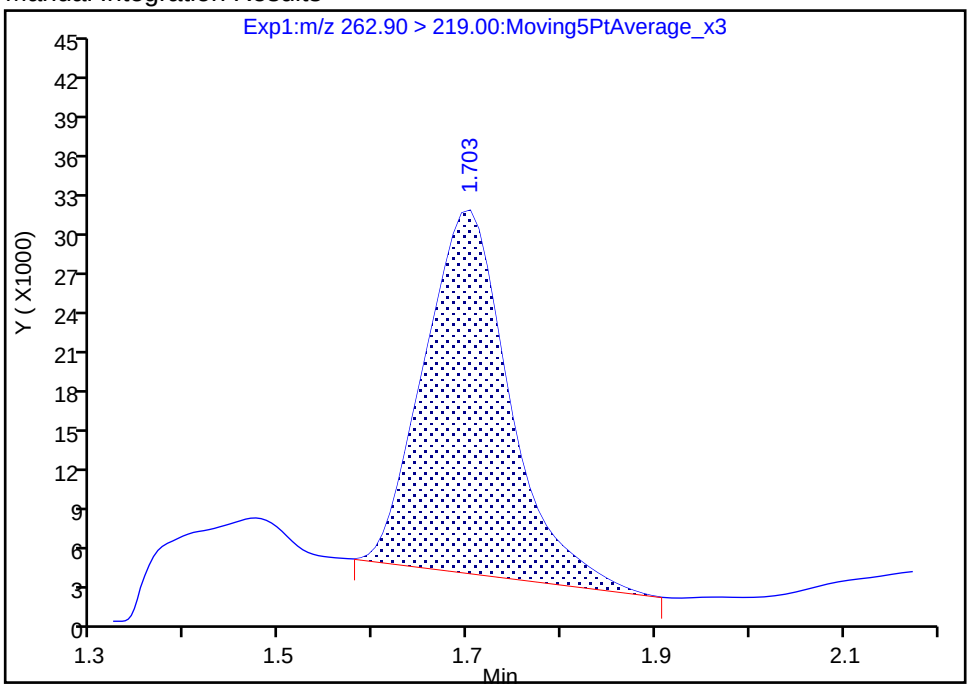
Processing Integration Results

RT: 1.70
Area: 214632
Amount: 0.124420
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 174513
Amount: 0.101163
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:02:33

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

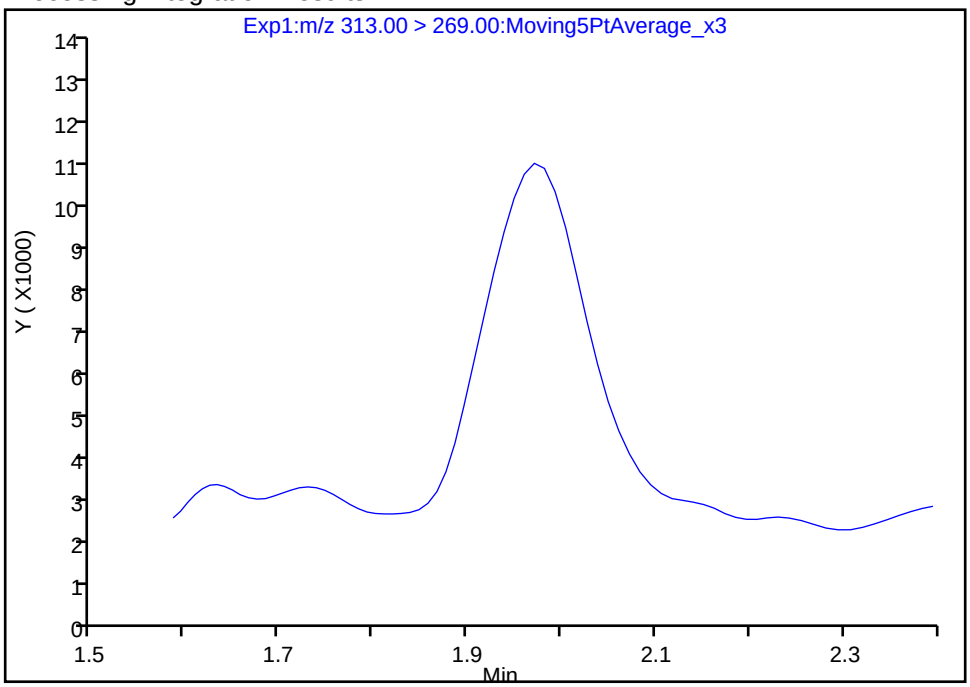
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d				
Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

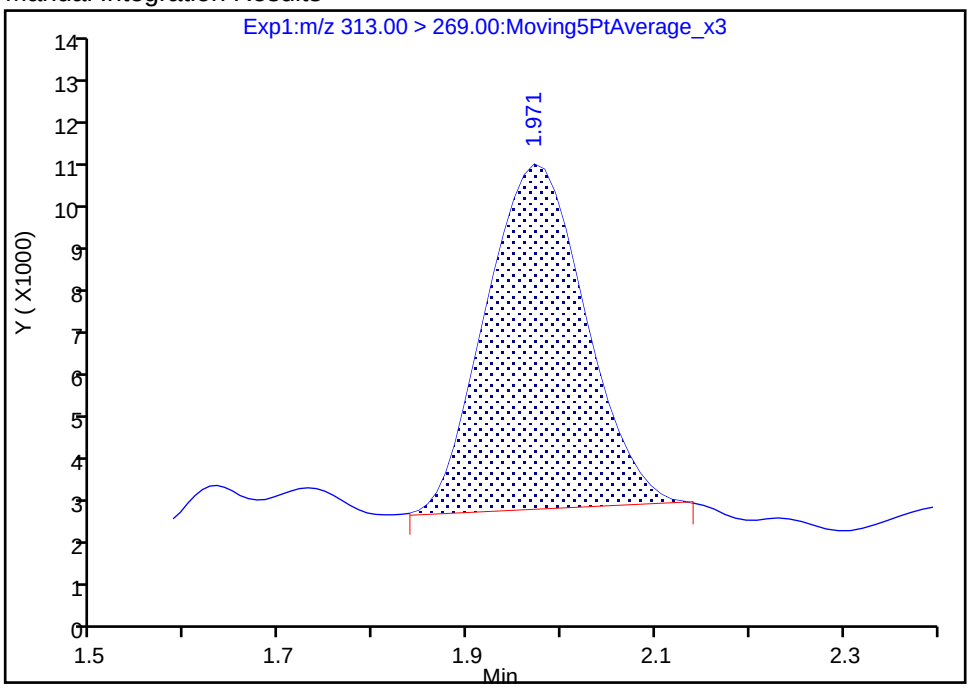
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.97
Area: 59721
Amount: 0.040227
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:02:48
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

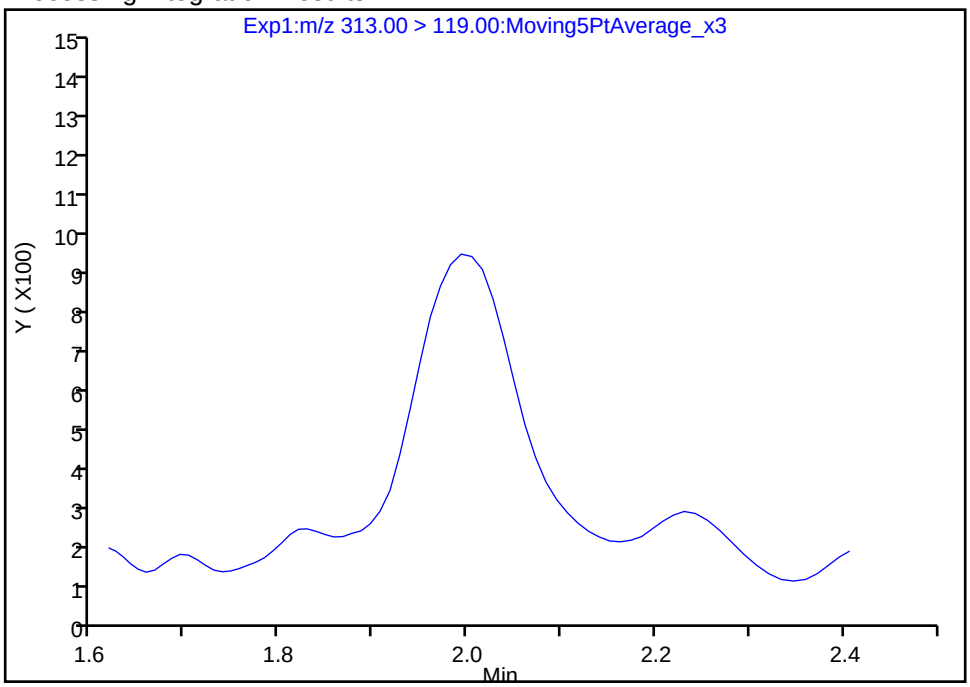
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d				
Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

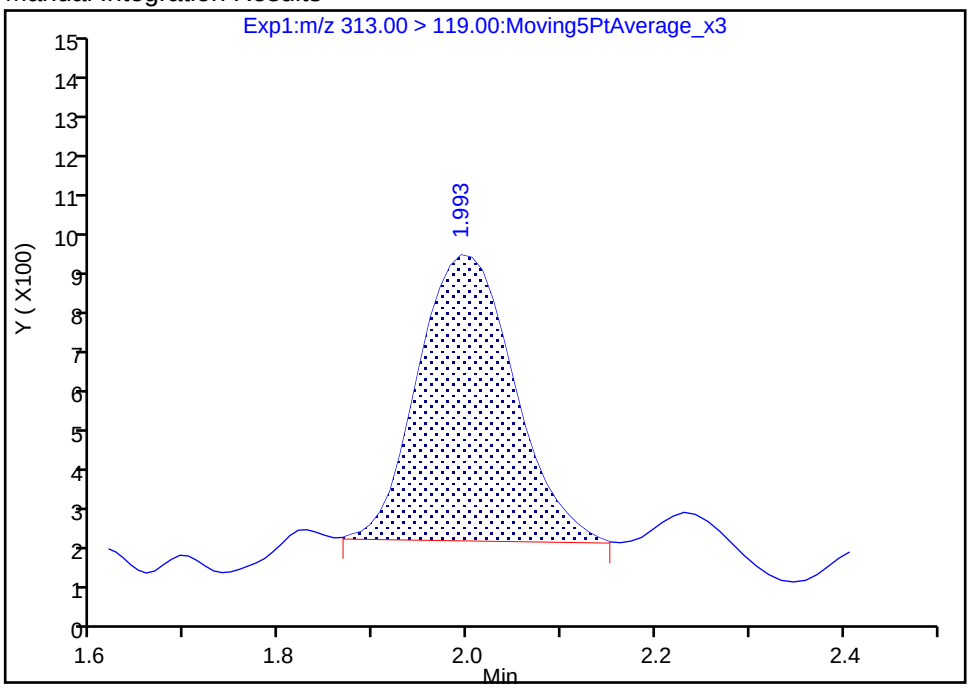
Not Detected
Expected RT: 1.98

Processing Integration Results



Manual Integration Results

RT: 1.99
Area: 5027
Amount: 0.040227
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:02:54
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

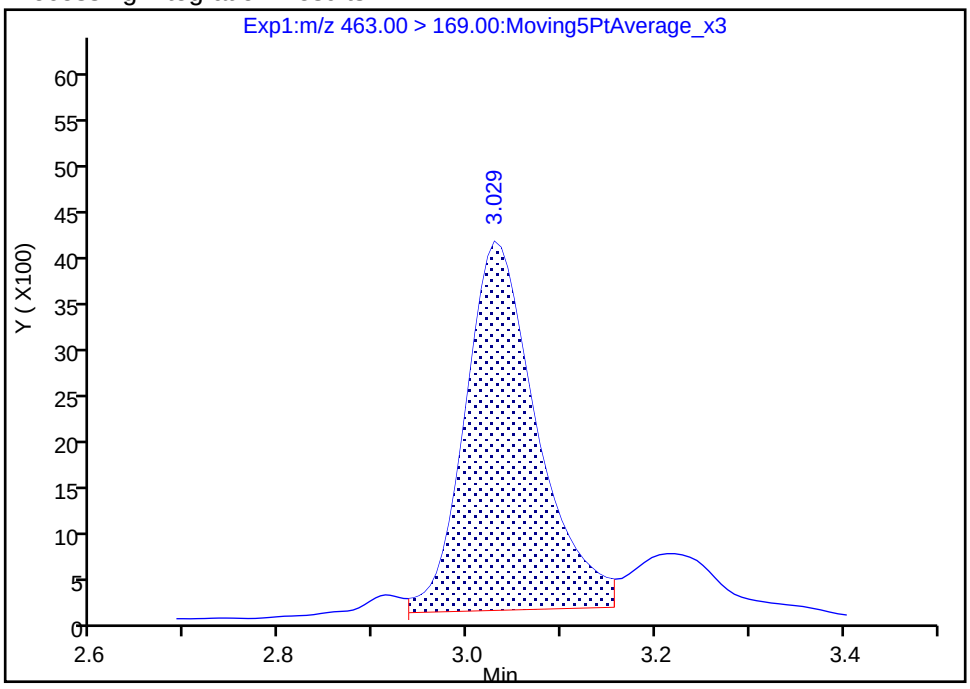
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d				
Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

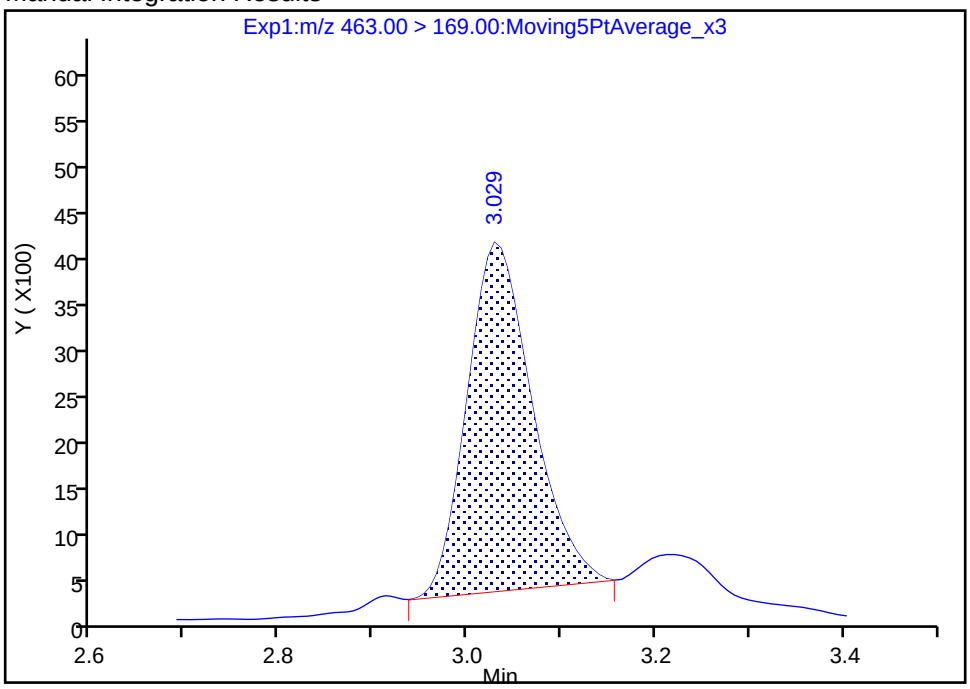
Processing Integration Results

RT: 3.03
Area: 21167
Amount: 0.048164
Amount Units: ng/ml



Manual Integration Results

RT: 3.03
Area: 18224
Amount: 0.048164
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:03:16

Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

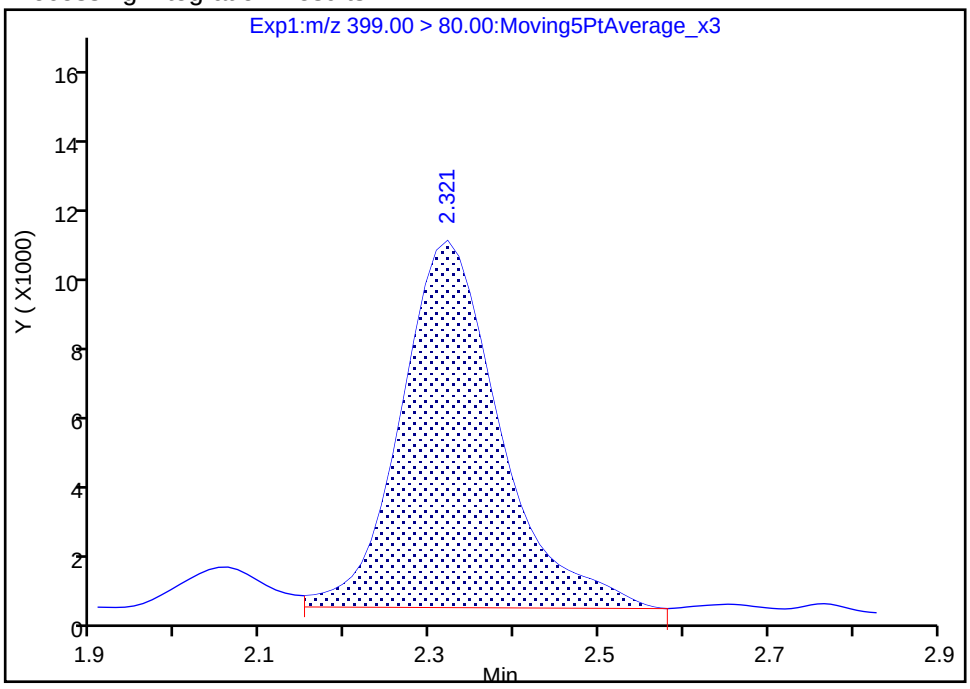
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_029.d				
Injection Date:	07-Apr-2018 21:09:07	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	20	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

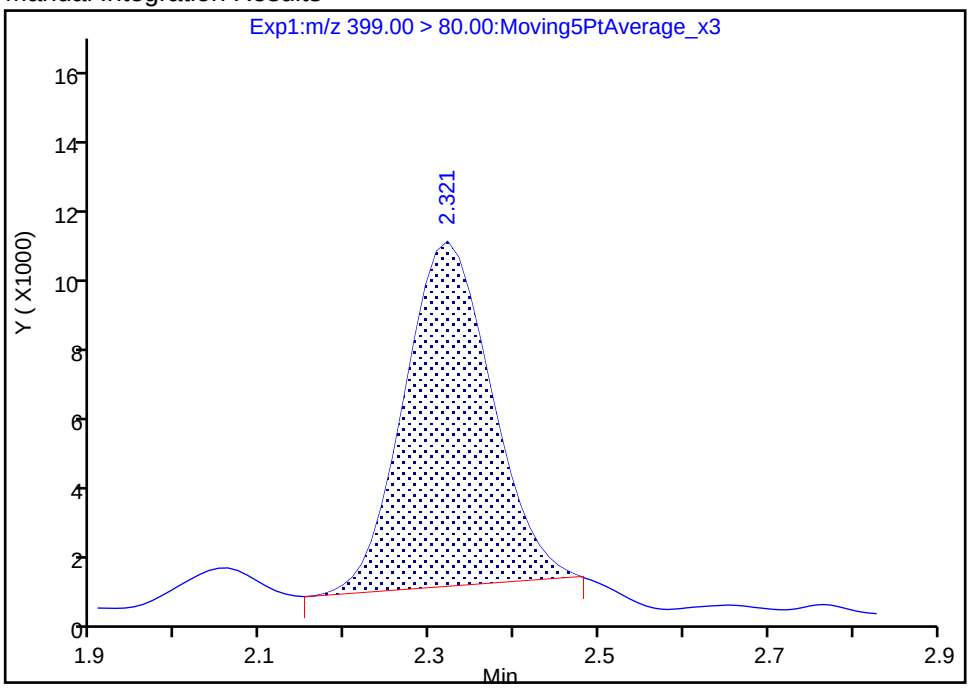
Processing Integration Results

RT: 2.32
Area: 86050
Amount: 0.040427
Amount Units: ng/ml



Manual Integration Results

RT: 2.32
Area: 71222
Amount: 0.033461
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:03:03

Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: SB045 (2"-2') DL | Lab Sample ID: 320-37380-6 DL

Matrix: Solid | Lab File ID: 2018.04.09LLA_049.d

Analysis Method: 537 (modified) | Date Collected: 03/19/2018 13:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 4.98(g) | Date Analyzed: 04/09/2018 19:05

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 10.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 217070 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	0.0017	U	0.022	0.0017
39108-34-4	8:2FTS	0.0028	U	0.022	0.0028

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	64		25-150
STL02280	M2-8:2FTS	74		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_049.d
Lims ID: 320-37380-A-6-B
Client ID: SB045 (2"-2')
Sample Type: Client
Inject. Date: 09-Apr-2018 19:05:56 ALS Bottle#: 27 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-37380-a-6-b 10X
Misc. Info.: Plate: 1 Rack: 5
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:36 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 10:59:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.424	1.424	0.0	1.000	12949	0.006535			3.3	M
D 1 13C4 PFBA										
217.00 > 172.00	1.424	1.424	0.0	1.000	536022	0.2400		96.0	5650	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.692	0.010	1.005	13328	0.007919			8.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.703	-0.009	0.556	351528	0.2419		96.8	7733	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.739	-0.010	1.000	6826	0.2051		88.2	38.1	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.990	-0.009	1.000	367965	0.2296		91.9	9576	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.317	-0.011	1.000	381443	0.2476		99.1	8787	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.319	0.013	1.000	10280	0.005057			21.9	
399.00 > 99.00	2.319	2.319	0.0	0.994	2388		4.30(1.50-4.49)		8.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.330	0.002	1.000	430449	0.2241		94.8	10071	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.650	-0.006	1.000	54169	0.1522		64.1	563	
* 62 13C2-PFOA										
415.00 > 370.00	2.674	2.659	0.015		403954	0.2500			1669	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.674	2.667	0.007	1.003	7542	0.004139			4.2	
413.00 > 169.00	2.667	2.667	0.0	1.000	6901		1.09(0.84-2.52)		15.7	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	384180	0.2537		101	13731	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.042	3.029	0.013	1.002	65602	0.0499			33.4	
499.00 > 99.00	3.035	3.029	0.006	1.000	15701		4.18(2.31-6.93)		31.7	
20 Perfluorononanoic acid										R
463.00 > 419.00	3.042	3.036	0.006	1.000	2747	0.002016			6.6	R
463.00 > 169.00	3.056	3.036	0.020	1.005	1922		1.43(1.90-5.69)		31.1	
D 18 13C4 PFOS										
503.00 > 80.00	3.035	3.042	-0.007	1.000	275004	0.2061		86.2	872	
D 19 13C5 PFNA										
468.00 > 423.00	3.042	3.042	0.0	1.000	330983	0.2583		103	14625	
D 21 13C8 FOSA										
506.00 > 78.00	3.365	3.365	0.0	1.000	396591	0.2104		84.2	12715	
D 26 M2-8:2FTS										
529.00 > 81.00	3.393	3.393	0.0	1.000	73492	0.1776		74.1	339	
D 23 13C2 PFDA										
515.00 > 470.00	3.402	3.402	0.0	1.000	291613	0.2694		108	6155	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.551	3.560	-0.009	1.000	145128	0.2507		100	1593	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.743	3.726	0.017	1.003	15889	0.0202			52.3	
563.00 > 169.00	3.743	3.726	0.017	1.003	6801		2.34(2.12-6.36)		142	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.722	3.732	-0.010	1.000	142583	0.2347		93.9	727	
D 30 13C2 PFUnA										
565.00 > 520.00	3.732	3.732	0.0	1.000	245566	0.2780		111	7384	
D 36 13C2 PFDoA										
615.00 > 570.00	4.031	4.030	0.001	1.000	260980	0.2654		106	3014	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.532	4.533	-0.001	1.000	358494	0.2869		115	3329	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

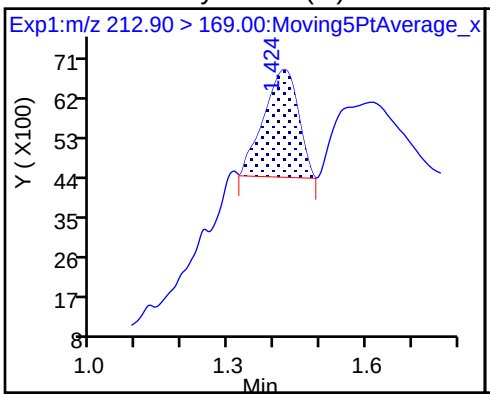
Report Date: 10-Apr-2018 11:05:50 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

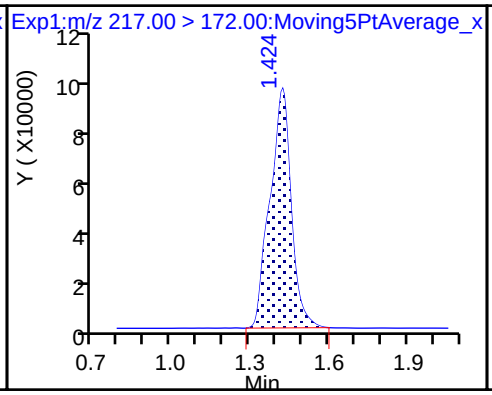
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_049.d

Injection Date:	09-Apr-2018 19:05:56	Instrument ID:	A8_N		
Lims ID:	320-37380-A-6-B	Lab Sample ID:	320-37380-6		
Client ID:	SB045 (2"-2')				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	27	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

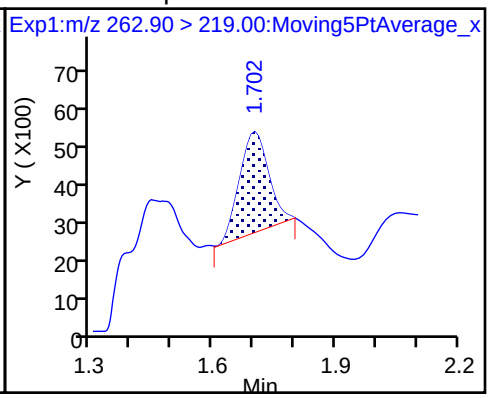
2 Perfluorobutyric acid (M)



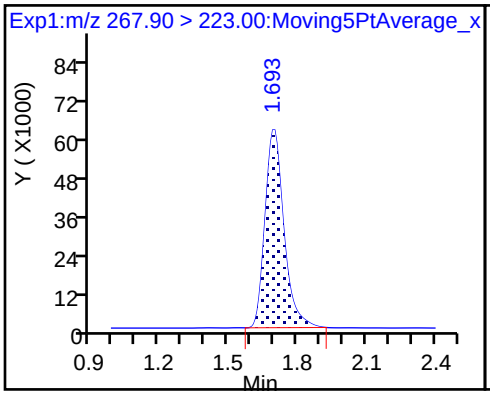
D 1 13C4 PFBA



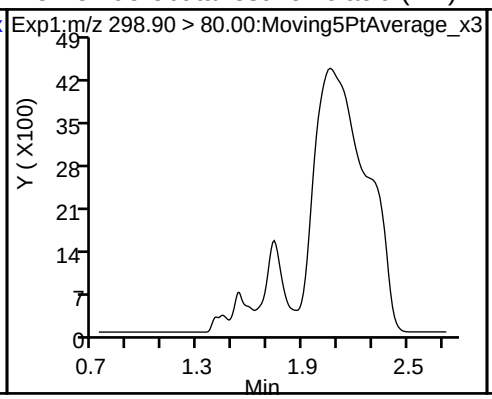
4 Perfluoropentanoic acid



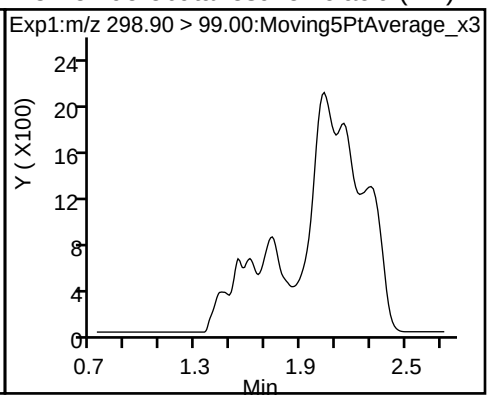
D 3 13C5-PFPeA



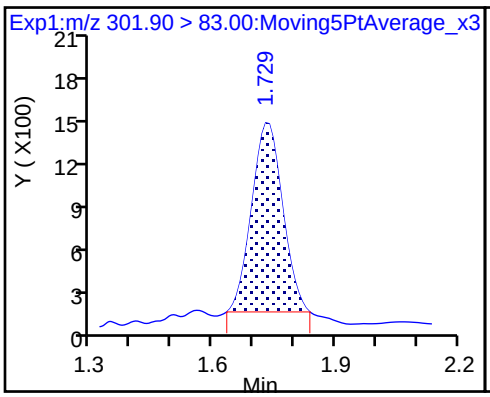
5 Perfluorobutanesulfonic acid (ND)



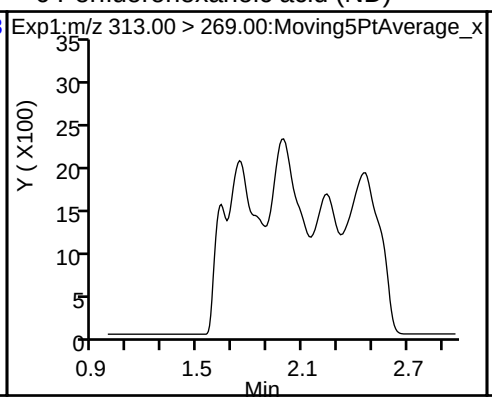
5 Perfluorobutanesulfonic acid (ND)



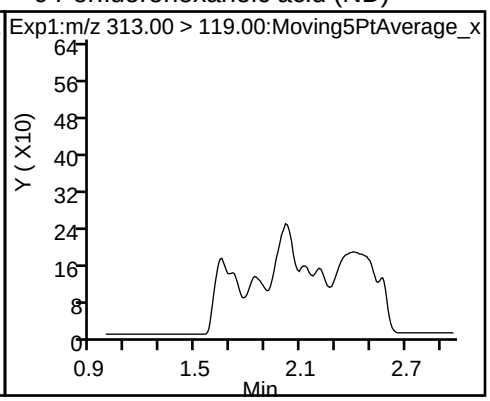
D 47 13C3-PFBS



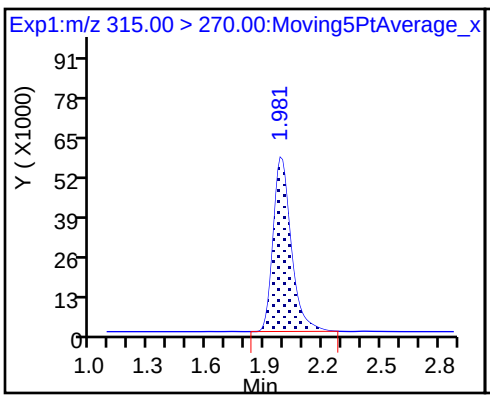
6 Perfluorohexanoic acid (ND)



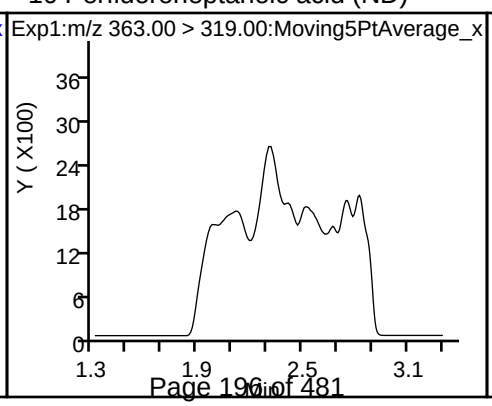
6 Perfluorohexanoic acid (ND)



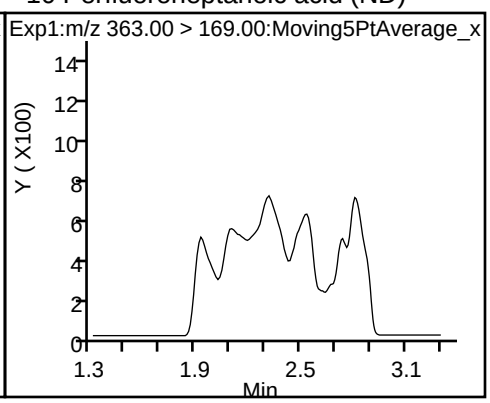
D 7 13C2 PFHxA



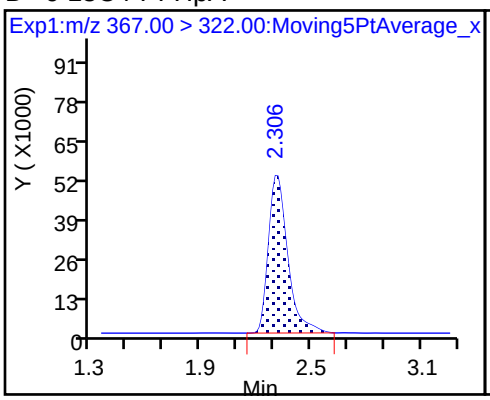
10 Perfluoroheptanoic acid (ND)



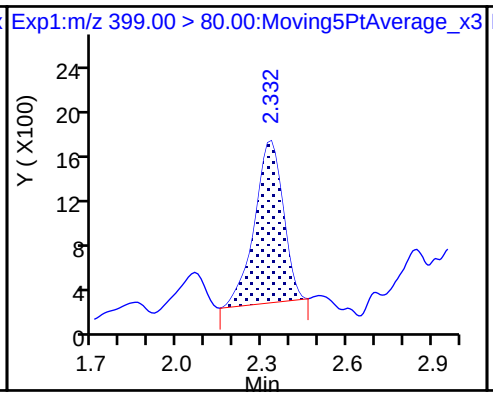
10 Perfluoroheptanoic acid (ND)



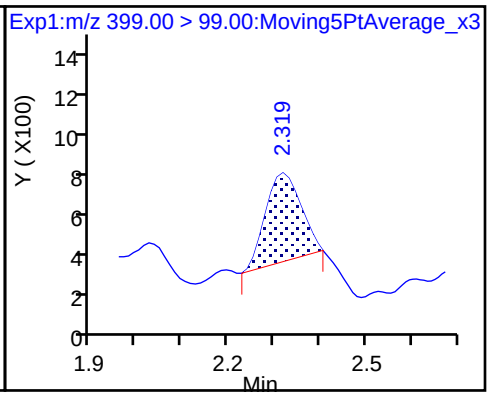
D 9 13C4-PFHpA



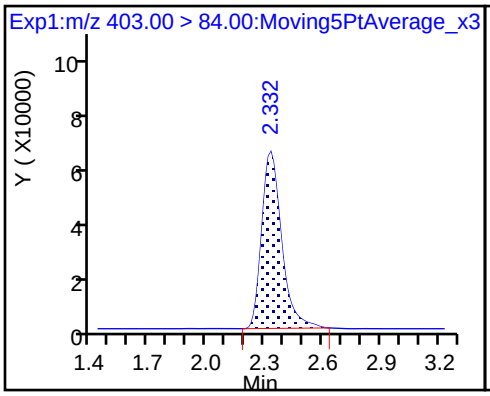
8 Perfluorohexanesulfonic acid



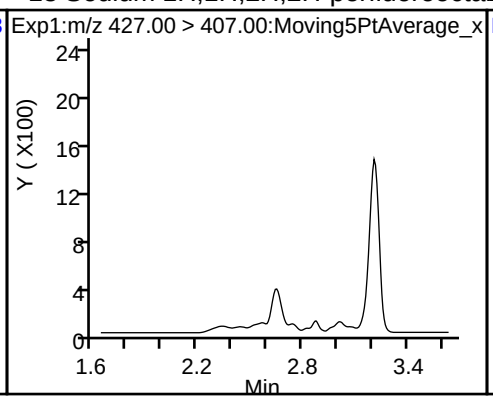
8 Perfluorohexanesulfonic acid



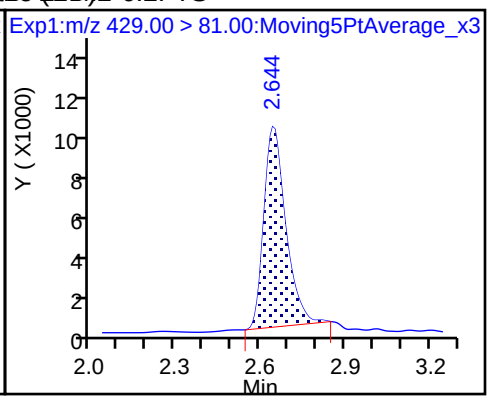
D 11 18O2 PFHxS



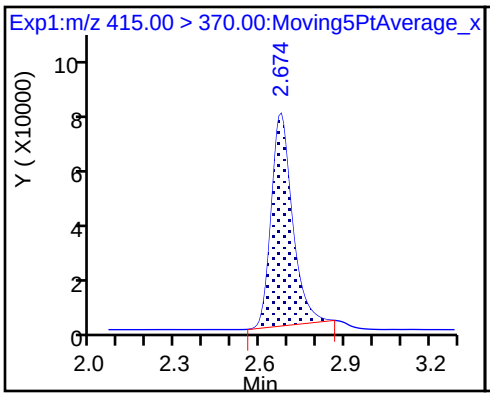
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (ND)



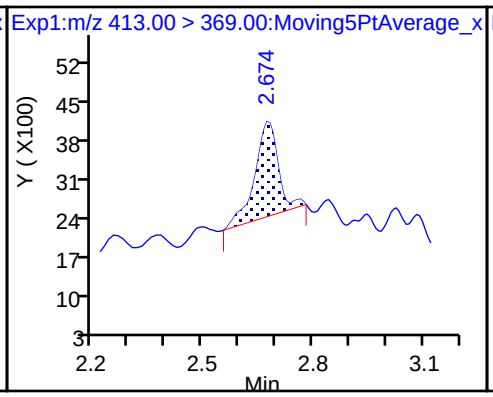
D 12 M2-6:2FTS



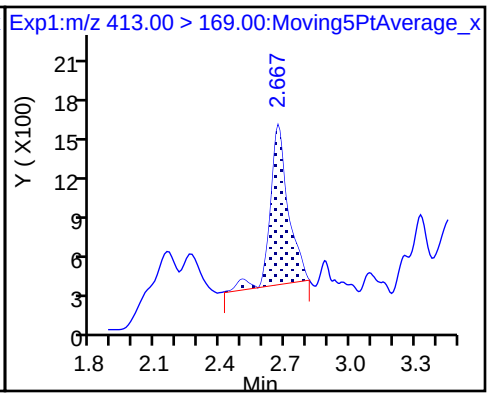
* 62 13C2-PFOA



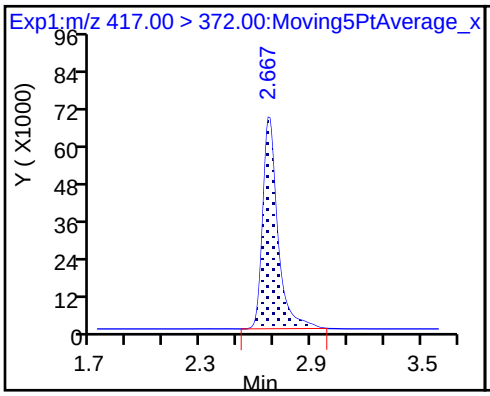
15 Perfluorooctanoic acid



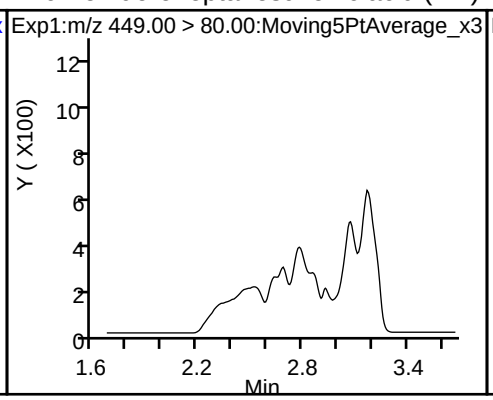
15 Perfluorooctanoic acid



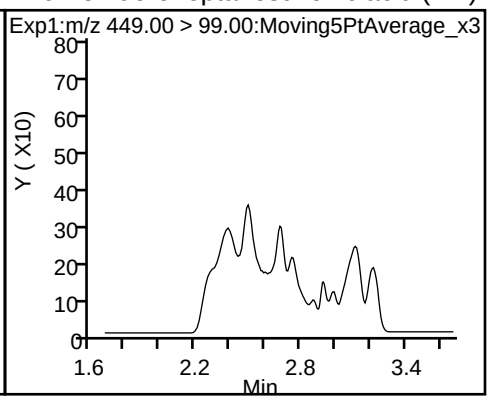
D 14 13C4 PFOA



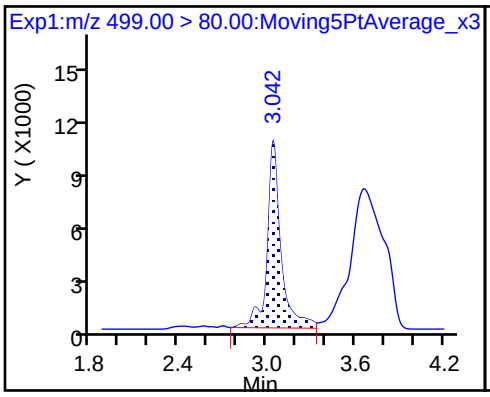
16 Perfluoroheptanesulfonic acid (ND)



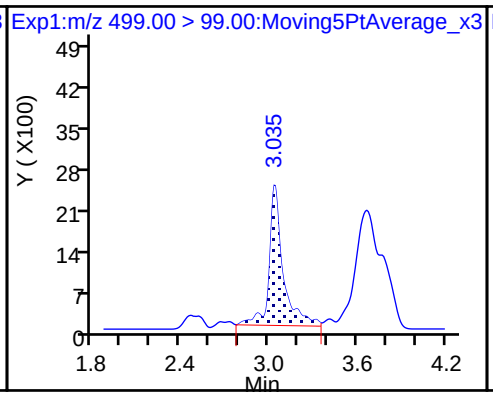
16 Perfluoroheptanesulfonic acid (ND)



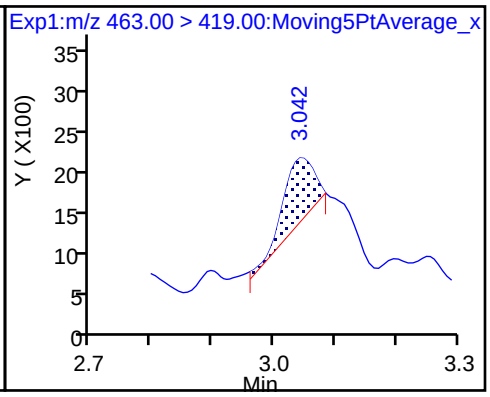
17 Perfluorooctane sulfonic acid



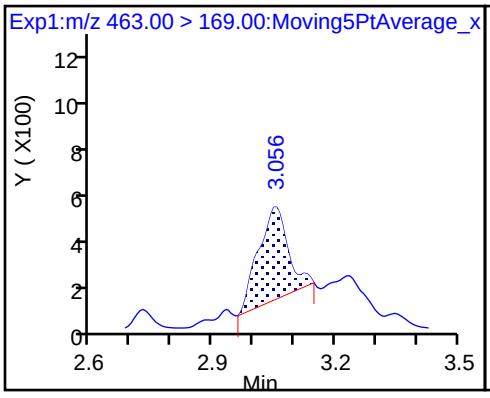
17 Perfluorooctane sulfonic acid



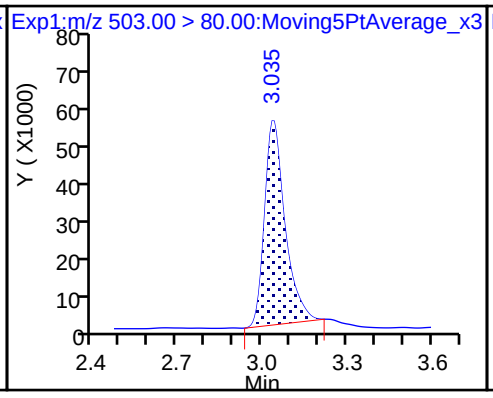
20 Perfluorononanoic acid



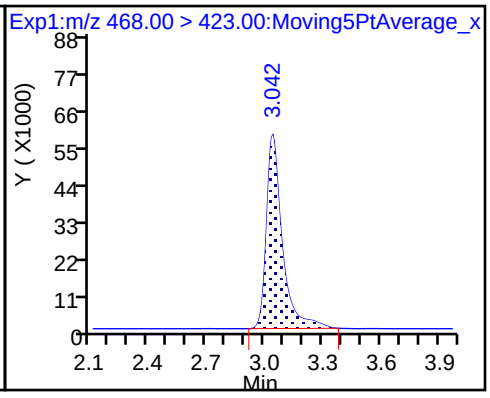
20 Perfluorononanoic acid



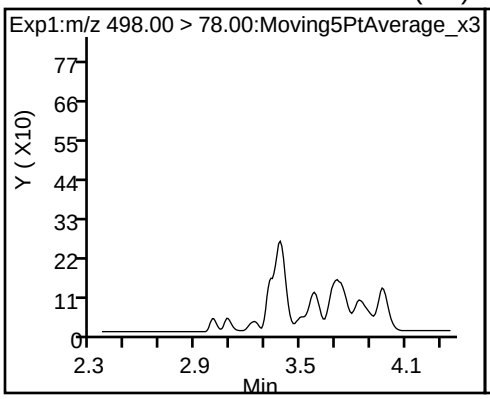
D 18 13C4 PFOS



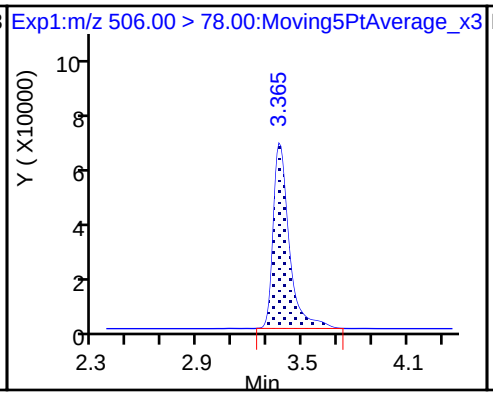
D 19 13C5 PFNA



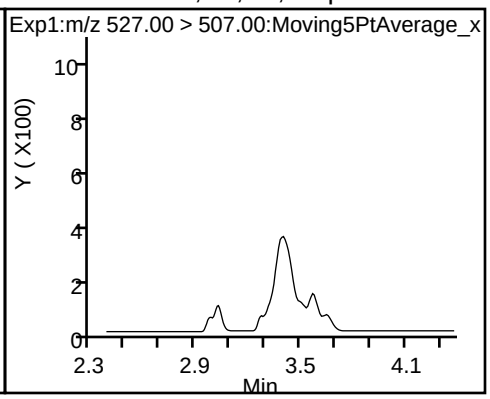
22 Perfluorooctane Sulfonamide (ND)



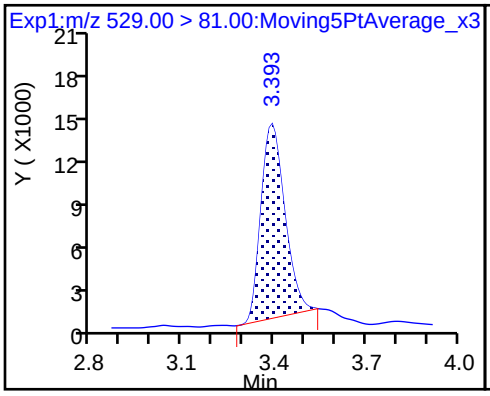
D 21 13C8 FOSA



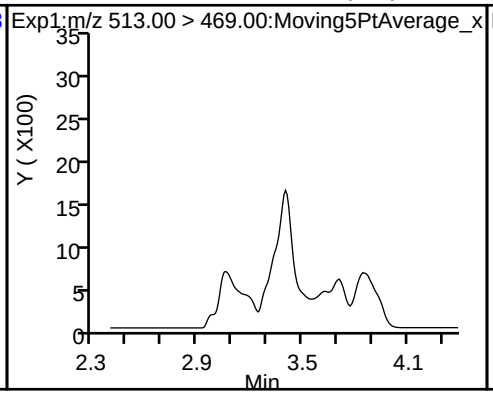
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



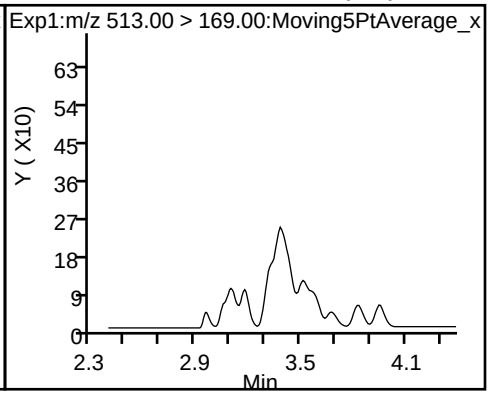
D 26 M2-8:2FTS



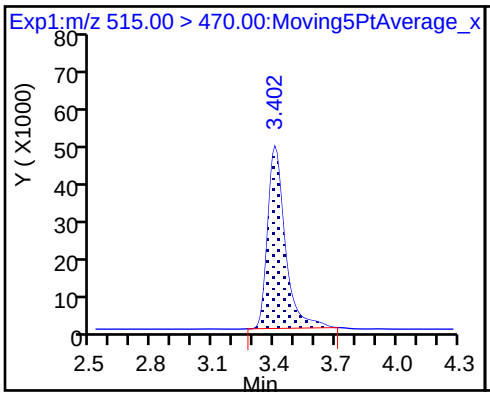
24 Perfluorodecanoic acid (ND)



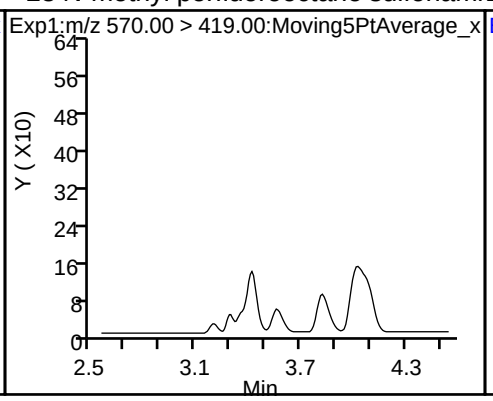
24 Perfluorodecanoic acid (ND)



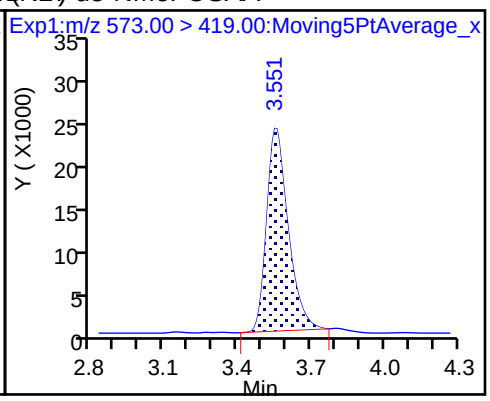
D 23 13C2 PFDA



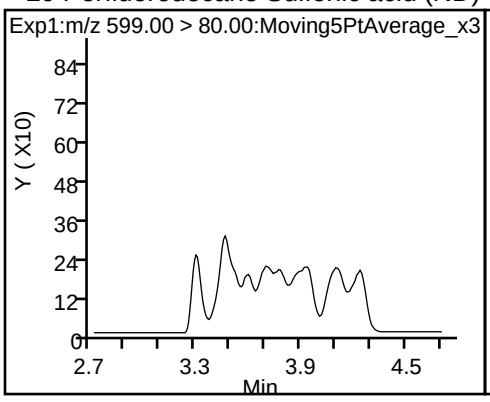
28 N-methyl perfluorooctane sulfonamid (ND)



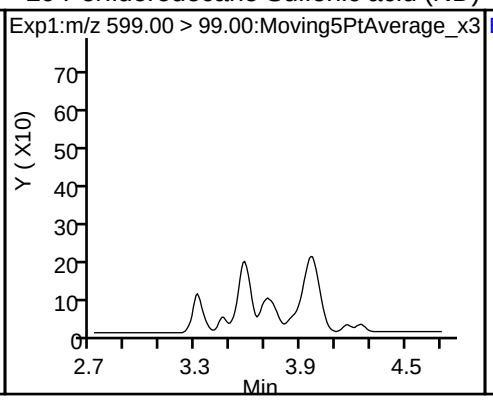
D 27 d3-NMeFOSAA



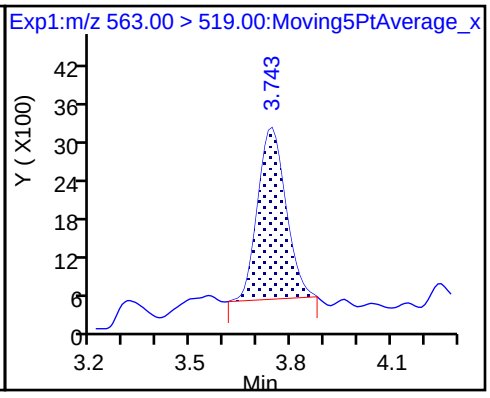
29 Perfluorodecane Sulfonic acid (ND)



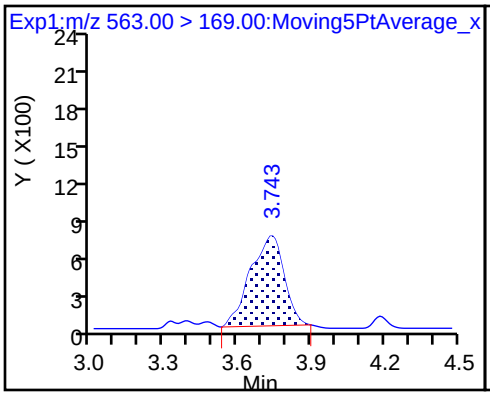
29 Perfluorodecane Sulfonic acid (ND)



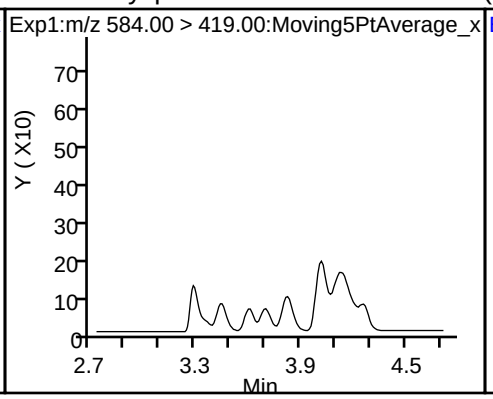
31 Perfluoroundecanoic acid



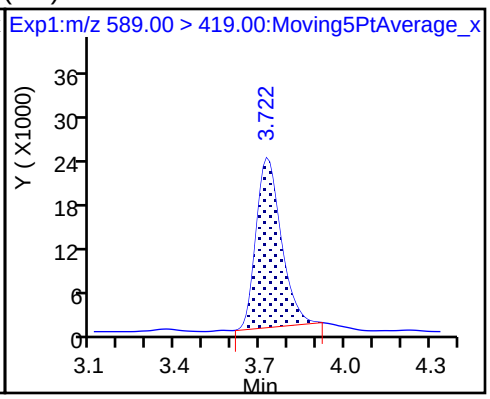
31 Perfluoroundecanoic acid



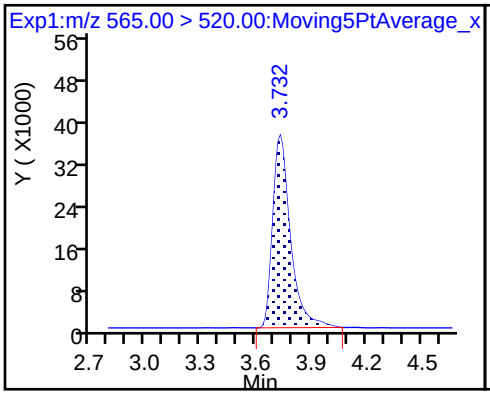
33 N-ethyl perfluorooctane sulfonamid (ND)



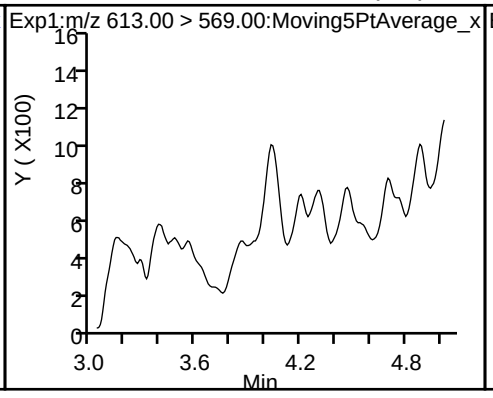
D 32 d5-NEtFOSAA



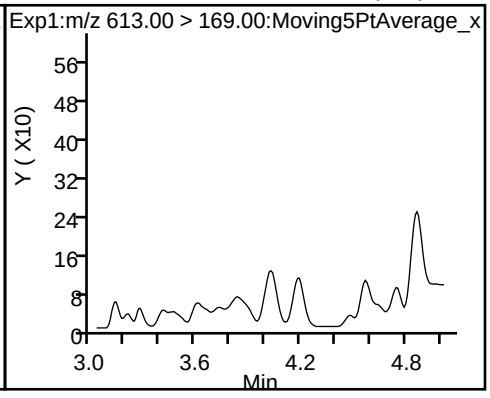
D 30 13C2 PFUnA



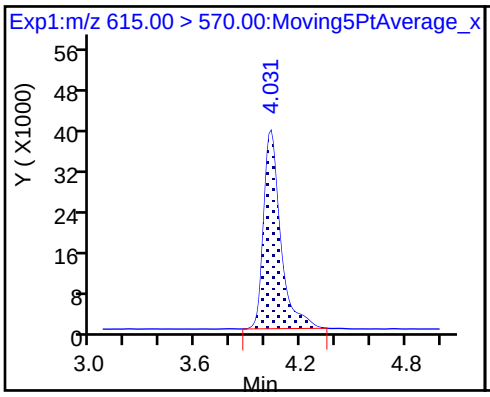
37 Perfluorododecanoic acid (ND)



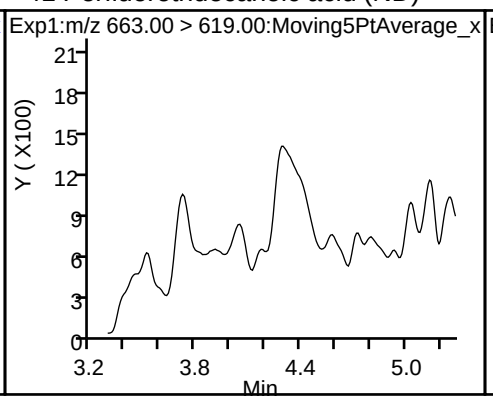
37 Perfluorododecanoic acid (ND)



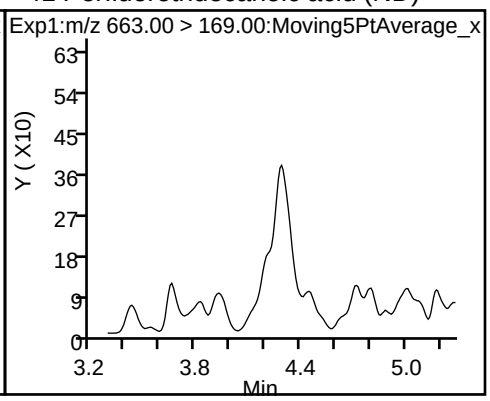
D 36 13C2 PFDoA



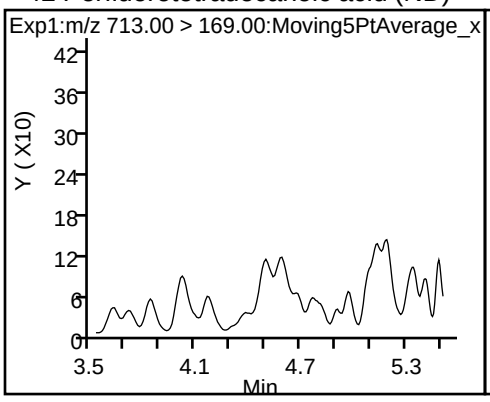
41 Perfluorotridecanoic acid (ND)



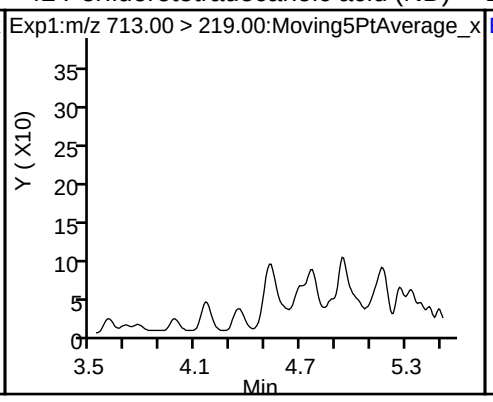
41 Perfluorotridecanoic acid (ND)



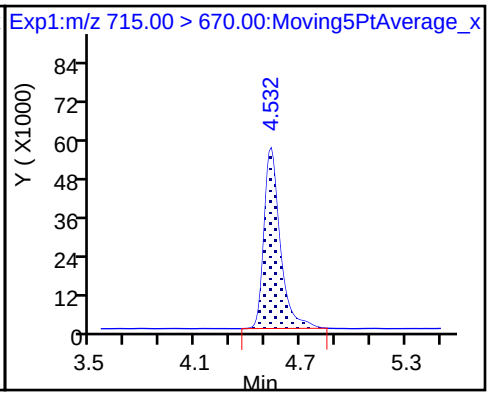
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1 Analy Batch No.: 215537

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-215537/2	2018.03.29A_ICALB_002.d
Level 2	IC 320-215537/3	2018.03.29A_ICALB_003.d
Level 3	IC 320-215537/4	2018.03.29A_ICALB_004.d
Level 4	IC 320-215537/5	2018.03.29A_ICALB_005.d
Level 5	IC 320-215537/6	2018.03.29A_ICALB_006.d
Level 6	IC 320-215537/7	2018.03.29A_ICALB_007.d
Level 7	IC 320-215537/8	2018.03.29A_ICALB_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8915 0.9577	0.9023 0.9406	0.9140	0.9051	0.9581	AveID		0.9242				3.0		35.0			
Perfluoropentanoic acid (PFPeA)	1.2220 1.2408	1.2225 1.1629	1.1904	1.1561	1.1836	AveID		1.1969				2.7		35.0			
Perfluorobutanesulfonic acid (PFBS)	77.330 79.402	79.922 76.189	78.392	76.753	84.255	AveID		78.892				3.5		50.0			
4:2 FTS	17.852 17.231	19.686 16.075	16.275	15.644	18.025	AveID		17.255				8.1		50.0			
Perfluorohexanoic acid (PFHxA)	1.0295 1.0138	1.0079 1.0621	1.0176	0.9811	1.0511	AveID		1.0233				2.7		35.0			
Perfluoropentanesulfonic acid (PFPeS)	73.648 73.909	67.432 67.079	68.106	70.202	78.033	AveID		71.201				5.8		50.0			
HFPO-DA (GenX)	3.2400 3.3850	3.4440 3.4890	4.0163	3.0865	3.1491	AveID		3.4014				9.1		35.0			
Perfluoroheptanoic acid (PFHpA)	1.2984 1.0384	0.9988 1.0329	1.0376	1.0673	1.1322	AveID		1.0865				9.4		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3241 1.0655	1.1881 1.0827	1.0477	0.9728	1.1375	AveID		1.1169				10.2		35.0			
Adona	3.5522 3.5314	3.4555 2.9068	3.8872	3.6399	3.9734	AveID		3.5638				9.7		50.0			
6:2FTS	2.3438 1.7979	2.0189 1.8129	1.7183	1.6359	1.7453	AveID		1.8676				12.9		35.0			
Perfluorooctanoic acid (PFOA)	1.2974 1.2077	1.3221 1.1286	1.1178	1.0855	1.1415	AveID		1.1858				7.8		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.3460 1.4008	1.2410 1.2764	1.3969	1.2914	1.3764	AveID		1.3327				4.8		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.0668 1.1855	1.4058 1.1086	1.0916	1.0163	1.1239	AveID		1.1426				11.1		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1 Analy Batch No.: 215537

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	1.0412 1.0598	0.9957 1.0389	1.0105	1.0188	1.0382	AveID		1.0290				2.1		35.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate	1.8406 1.9724	1.7118 1.8141	1.9877	1.8276	1.9356	AveID		1.8700				5.3		50.0			
Perfluorooctane Sulfonamide (FOSA)	0.9593 0.9958	0.9707 0.9722	1.0050	0.9840	1.0271	AveID		0.9877				2.4		35.0			
Perfluorononanesulfonic acid (PFNS)	0.8034 0.8395	0.8351 0.7725	0.7909	0.7579	0.8131	AveID		0.8018				3.8		50.0			
8:2FTS	1.5521 1.3396	1.3434 1.3264	1.2292	1.3193	1.3317	AveID		1.3488				7.3		35.0			
Perfluorodecanoic acid (PFDA)	0.8917 1.0092	0.9828 1.0289	1.0404	0.9695	1.0022	AveID		0.9893				5.0		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9703 1.1179	1.1967 1.0681	1.0177	0.9690	1.0392	AveID		1.0541				7.8		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7021 0.7404	0.7150 0.6562	0.6887	0.6714	0.6827	AveID		0.6938				4.1		50.0			
Perfluoroundecanoic acid (PFUnA)	0.7928 0.8564	0.8601 0.8106	0.7503	0.7569	0.7893	AveID		0.8023				5.4		35.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.8147 0.9883	0.9741 0.9090	0.9478	0.8654	0.9206	AveID		0.9171				6.7		35.0			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	2.8436 3.0257	2.9980 2.5337	2.9592	2.8831	3.0740	AveID		2.9025				6.2		50.0			
Perfluorododecanoic acid (PFDoA)	1.2686 1.1003	1.0370 1.0802	0.9877	1.0013	1.0904	AveID		1.0808				8.7		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.1081 1.2301	1.0821 1.2394	1.1038	1.1196	1.2088	AveID		1.1560				5.8		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2350 0.2635	0.2284 0.2529	0.2585	0.2561	0.2538	AveID		0.2497				5.2		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7643 0.9483	1.3416 0.9871	1.0187	0.9316	0.9677	L2ID	0.0203	0.9468							0.9990		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.9253 1.0321	0.9519 0.9634	1.0684	0.9831	1.0254	AveID		0.9928				5.1		50.0			
13C4 PFBA	1.3443 1.4161	1.3814 1.4288	1.3330	1.4005	1.3694	Ave		1.3819				2.6		50.0			
13C5 PFPeA	0.8934 0.8816	0.8827 0.9186	0.8869	0.9245	0.9080	Ave		0.8994				2.0		50.0			
13C3-PFBS	0.0196 0.0210	0.0203 0.0210	0.0208	0.0215	0.0201	Ave		0.0206				3.1		50.0			
M2-4:2FTS	0.1565 0.1581	0.1593 0.1522	0.1552	0.1572	0.1627	Ave		0.1573				2.1		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1 Analy Batch No.: 215537

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFHxA	0.9740 1.0498	0.9825 0.9580	0.9718	0.9949	1.0104	Ave		0.9916				3.1		50.0			
13C3 HFPO-DA	0.0503 0.0487	0.0485 0.0516	0.0434	0.0506	0.0526	Ave		0.0494				6.1		50.0			
13C4-PFHpA	0.9616 1.0017	0.9462 0.9550	0.9331	0.9376	0.9381	Ave		0.9533				2.5		50.0			
18O2 PFHxS	1.2098 1.2100	1.1723 1.1489	1.1820	1.2367	1.1603	Ave		1.1886				2.6		50.0			
M2-6:2FTS	0.2228 0.2146	0.2271 0.2099	0.2360	0.2204	0.2114	Ave		0.2203				4.2		50.0			
13C4 PFOA	0.9390 0.9042	0.9446 0.9340	0.9398	0.9524	0.9466	Ave		0.9372				1.7		50.0			
13C4 PFOS	0.8082 0.8127	0.8347 0.8617	0.7901	0.8588	0.8139	Ave		0.8257				3.3		50.0			
13C5 PFNA	0.7800 0.7950	0.8035 0.7975	0.7751	0.7957	0.8039	Ave		0.7930				1.4		50.0			
13C8 FOSA	1.1429 1.1665	1.1806 1.1851	1.1447	1.1790	1.1660	Ave		1.1664				1.5		50.0			
M2-8:2FTS	0.2568 0.2599	0.2742 0.2425	0.2627	0.2471	0.2500	Ave		0.2562				4.2		50.0			
13C2 PFDA	0.6810 0.6901	0.6652 0.6633	0.6388	0.6714	0.6787	Ave		0.6698				2.5		50.0			
d3-NMeFOSAA	0.3500 0.3525	0.3448 0.3896	0.3473	0.3638	0.3600	Ave		0.3583				4.3		50.0			
d5-NEtFOSAA	0.3723 0.3641	0.3815 0.3697	0.3668	0.3972	0.3805	Ave		0.3760				3.0		50.0			
13C2 PFUnA	0.5415 0.5224	0.5653 0.5618	0.5325	0.5567	0.5471	Ave		0.5468				2.9		50.0			
13C2 PFDoA	0.6018 0.5961	0.5995 0.6273	0.6006	0.6258	0.6097	Ave		0.6087				2.1		50.0			
13C2-PFTeDA	0.7165 0.7795	0.7698 0.8064	0.7572	0.7919	0.7914	Ave		0.7733				3.8		50.0			
13C2-PFHxDA	1.1423 1.2360	1.1704 1.2118	1.1297	1.2003	1.2668	Ave		1.1939				4.2		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1 Analy Batch No.: 215537

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-215537/2	2018.03.29A_ICALB_002.d
Level 2	IC 320-215537/3	2018.03.29A_ICALB_003.d
Level 3	IC 320-215537/4	2018.03.29A_ICALB_004.d
Level 4	IC 320-215537/5	2018.03.29A_ICALB_005.d
Level 5	IC 320-215537/6	2018.03.29A_ICALB_006.d
Level 6	IC 320-215537/7	2018.03.29A_ICALB_007.d
Level 7	IC 320-215537/8	2018.03.29A_ICALB_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	54978 12187200	114587 21580046	553955	2290620	5777307	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	50084 9830479	99196 17152403	480043	1931372	4732902	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	61417 13230767	131921 22689760	655502	2631669	6580985	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	14980 3033560	34332 5058050	143786	566727	1487518	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	45998 9564151	91036 16338328	449634	1763768	4676733	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	62066 13067667	118105 21196987	604278	2554091	6467251	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	7478 1481837	15350 2889144	79234	282149	729503	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	57274 9347366	86879 15839255	440174	1808460	4677284	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	66874 10543701	116520 18176626	512387	1978319	5288566	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
Adona		AveID	131706 25789461	265166 40218776	1396340	5648777	14240170	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
6:2FTS		AveID	22713 3287357	39956 5791627	174781	617577	1539946	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	55886 9813194	114806 16926232	477643	1868120	4758293	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	47511 9738630	90656 16813478	477719	1907896	4696005	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	36705 8034226	100111 14234234	363900	1463610	3738022	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	37255 7571474	73551 13303148	356101	1464985	3675243	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1 Analy Batch No.: 215537

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate		AveID	63605 13425151	122429 23393631	665453	2643424	6465289	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctane Sulfonamide (FOSA)		AveID	50297 10438342	105346 18498081	523091	2096455	5273555	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorononanesulfonic acid (PFNS)		AveID	28595 5885424	61518 10261449	272737	1129121	2797665	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2FTS		AveID	17515 2997433	32444 4947631	140627	564315	1404701	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	27858 6258242	60106 10958309	302194	1176291	2995028	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	15580 3541055	37929 6681300	160694	637079	1647643	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	25096 5212375	52893 8752766	238488	1004519	2358750	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	19693 4020256	44699 7311434	181675	761440	1901518	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	13913 3233549	34166 5395434	158064	621160	1542349	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate		AveID	99320 20815228	216712 33023539	1001338	4214763	10377874	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	35020 5893687	57155 10879941	269716	1132386	2927481	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	30591 6588893	59640 12483957	301420	1266253	3245349	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	7726 1845416	16166 3274341	88991	366508	884583	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	92453 10532699	144357 19206042	523255	2020619	5398203	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	48490 11463437	102429 18744405	548804	2132452	5719746	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6166712 6363039	6349810 5735604	6060888	6326878	6030203	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4098537 3961451	4057226 3687266	4032497	4176477	3998575	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	83555 87650	86826 78326	87970	90179	82172	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	670675 663538	683814 570582	659047	663350	669149	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4468019 4716939	4516262 3845737	4418534	4494490	4449369	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PFOA	Ave	230803 218882	222854 207020	197281	228536	231658	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1 Analy Batch No.: 215537

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/29/2018 17:27 Calibration End Date: 03/29/2018 18:14 Calibration ID: 38353

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4-PFHpA	13PF OA	Ave	4411051 4500718	4349189 3833624	4242345	4235886	4131012	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5250229 5143358	5097412 4362929	5084038	5285294	4833301	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PF OA	Ave	971099 916140	991613 800357	1019321	945777	884202	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	4307414 4062703	4341966 3749304	4272950	4302583	4168394	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	3544609 3490802	3668029 3306882	3434108	3709075	3426212	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3578216 3572058	3693528 3201114	3523980	3594883	3540108	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	5242954 5241388	5426551 4756992	5204720	5326321	5134426	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2FTS	13PF OA	Ave	1128441 1118796	1207568 932507	1144081	1069323	1054813	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	3124013 3100672	3057872 2662530	2904523	3033191	2988519	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1605692 1583848	1584763 1563764	1579046	1643657	1585449	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1707772 1635848	1753746 1483924	1667774	1794427	1675412	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2484047 2347134	2598573 2255059	2421277	2514905	2409033	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2760551 2678243	2755722 2518124	2730672	2827344	2684707	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	3287077 3502295	3538364 3237082	3442831	3577558	3484985	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	5240268 5553497	5380000 4864202	5136479	5422645	5578235	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 29-Mar-2018 17:27:24 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:22 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 11:46:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.436	-0.006	1.000	6166712	2.43		97.3	50338	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.437	-0.007	1.000	54978	0.0241		96.5	19.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.702	0.0	0.556	4098537	2.48		99.3	99404	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.706	-0.004	1.000	50084	0.0255		102	18.1	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	83555	2.21		95.1	487	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.742	-0.004	1.000	61417	0.0217		98.0	42.6	
298.90 > 99.00	1.738	1.742	-0.004	1.000	27306		2.25(1.25-3.74)	98.0	43.5	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.955	-0.007	1.000	14980	0.0242		103	890	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.955	-0.007	1.000	670675	2.32		99.5	10023	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.991	0.001	1.000	4468019	2.46		98.2	159424	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.991	1.992	-0.001	1.000	45998	0.0252		101	64.0	
313.00 > 119.00	1.991	1.992	-0.001	1.000	6508		7.07(5.03-15.10)	101	86.2	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.014	2.013	0.001	1.000	62066	0.0243		103	2728	
349.00 > 99.00	2.014	2.013	0.001	1.000	19424		3.20(1.36-4.07)	103	499	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.093	2.092	0.001	1.000	230803	2.55		102	3834	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.093	2.092	0.001	1.000	7478	0.0238		95.3	65.5	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.326	-0.007	1.000	4411051	2.52		101	104151	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.332	2.327	0.005	1.006	57274	0.0299		120	43.4	R
363.00 > 169.00	2.319	2.327	-0.008	1.000	14474		3.96(1.13-3.40)	120	39.5	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.339	-0.007	0.994	66874	0.0270		119	321	
399.00 > 99.00	2.345	2.339	0.006	1.000	24503		2.73(1.50-4.49)	119	141	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.340	0.005	1.000	5250229	2.41		102	72933	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	131706	0.0249		99.7	3848	
377.00 > 85.00	2.372	2.372	0.0	1.000	78395		1.68(0.84-2.53)	99.7	1353	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.664	0.003	1.000	971099	2.40		101	36585	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.664	0.003	1.000	22713	0.0297		126	103	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.688	0.002	1.000	4307414	2.50		100	62635	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.689	0.001		4587408	2.50			82099	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.000	55886	0.0274		109	15.6	
413.00 > 169.00	2.690	2.690	0.0	1.000	29511		1.89(0.84-2.52)	109	137	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.695	0.002	1.000	47511	0.0240		101	2228	
449.00 > 99.00	2.690	2.695	-0.005	0.997	13527		3.51(1.94-5.82)	101	344	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.060	0.003	1.000	3544609	2.34		97.9	57925	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.060	0.003	1.000	36705	0.0217		93.4	95.8	
499.00 > 99.00	3.056	3.060	-0.004	0.998	9133		4.02(2.31-6.93)	93.4	90.5	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.061	0.002	1.000	3578216	2.46		98.4	65837	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.064	-0.001	1.000	37255	0.0253		101	33.6	
463.00 > 169.00	3.063	3.064	-0.001	1.000	8504		4.38(1.90-5.69)	101	156	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.270	3.272	-0.002	1.000	63605	0.0229		98.4	1085	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.388	0.005	1.000	5242954	2.45		98.0	50202	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.389	0.004	1.000	50297	0.0243		97.1	2125	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.412	3.409	0.003	1.000	28595	0.0240		100	1160	
549.00 > 99.00	3.412	3.409	0.003	1.000	11257		2.54(1.33-3.97)	100	233	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.412	3.413	-0.001	1.000	1128441	2.40		100	46885	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.412	3.415	-0.003	1.000	17515	0.0276		115	142	
D 23 13C2 PFDA										
515.00 > 470.00	3.421	3.423	-0.002	1.000	3124013	2.54		102	34604	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.430	3.427	0.003	1.003	27858	0.0225		90.1	153	
513.00 > 169.00	3.421	3.427	-0.006	1.000	5765		4.83(2.36-7.09)	90.1	172	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.578	0.001	1.000	1605692	2.44		97.7	24728	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.581	-0.002	1.000	15580	0.0230		92.0	148	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.743	3.738	0.005	1.000	25096	0.0244		101	720	
599.00 > 99.00	3.733	3.738	-0.005	0.997	6754		3.72(1.39-4.16)	101	273	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.753	3.749	0.004	1.000	1707772	2.48		99.0	4645	
D 30 13C2 PFUnA										
565.00 > 520.00	3.753	3.753	0.0	1.000	2484047	2.48		99.0	53924	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.764	3.755	0.009	1.003	13913	0.0222		88.8	325	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.753	3.755	-0.002	1.000	19693	0.0247		98.8	88.1	
563.00 > 169.00	3.753	3.755	-0.002	1.000	6256		3.15(2.12-6.36)	98.8	230	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.910	3.910	0.0	1.000	99320	0.0231		98.0	3306	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.052	-0.001	1.000	35020	0.0293		117	27.1	
613.00 > 169.00	4.051	4.052	-0.001	1.000	6979		5.02(2.13-6.40)	117	123	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.052	-0.001	1.000	2760551	2.47		98.9	25063	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.316	0.003	1.000	30591	0.0240		95.9	11.5	
663.00 > 169.00	4.308	4.316	-0.008	0.997	9882		3.10(1.25-3.76)	95.9	176	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.558	0.004	1.000	3287077	2.32		92.7	19784	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.562	4.558	0.004	1.000	7726	0.0235		94.1	147	
713.00 > 219.00	4.552	4.558	-0.006	0.998	7671		1.01(0.71-2.13)	94.1	202	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.977	-0.003	1.000	92453	0.0252		101	21.2	
813.00 > 169.00	4.974	4.977	-0.003	1.000	16102		5.74(2.86-8.58)	101	164	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.977	-0.003	1.000	5240268	2.39		95.7	13910	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.344	-0.002	1.000	48490	0.0233		93.2	7.8	
913.00 > 169.00	5.342	5.344	-0.002	1.000	5832		8.31(3.83-11.48)	93.2	96.3	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:47:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_002.d

Injection Date: 29-Mar-2018 17:27:24 Instrument ID: A8_N

Lims ID: IC L1 Full

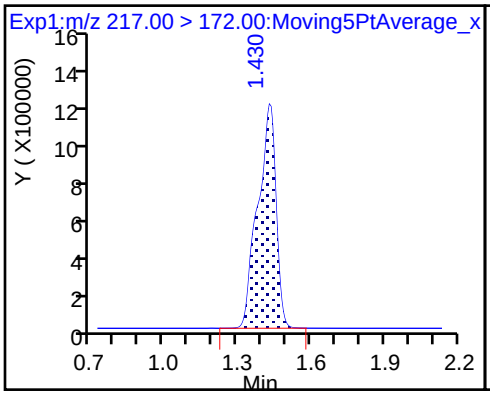
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

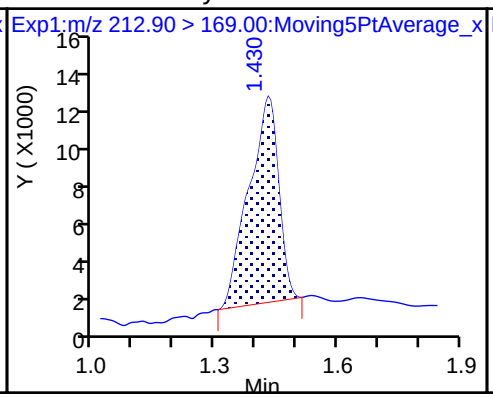
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

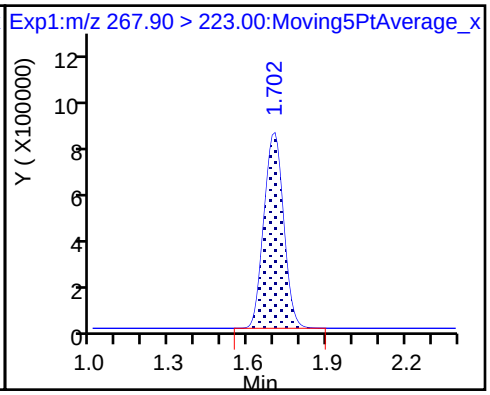
D 1 13C4 PFBA



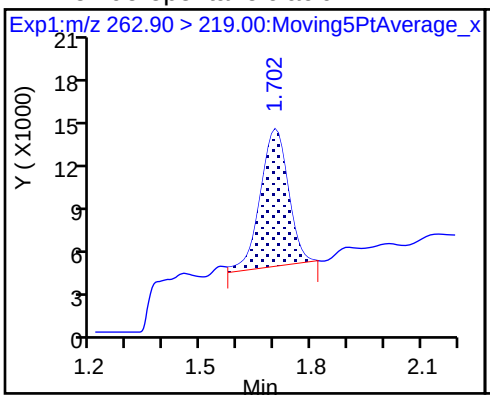
2 Perfluorobutyric acid



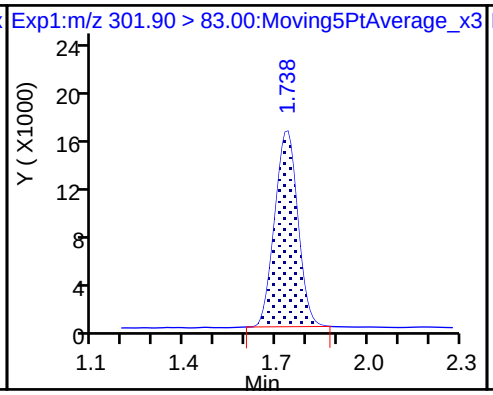
D 3 13C5-PFPeA



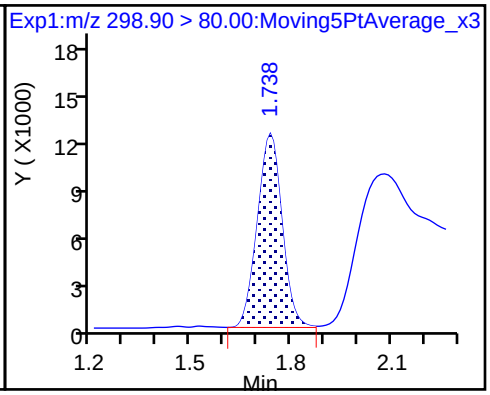
4 Perfluoropentanoic acid



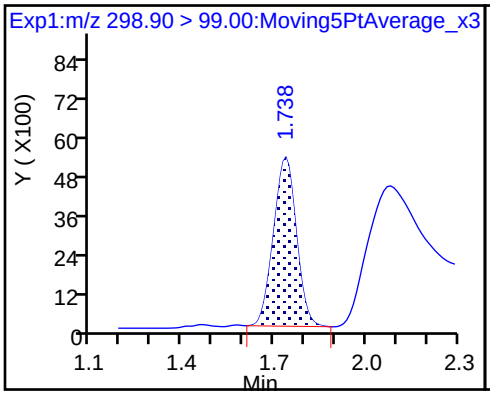
D 47 13C3-PFBS



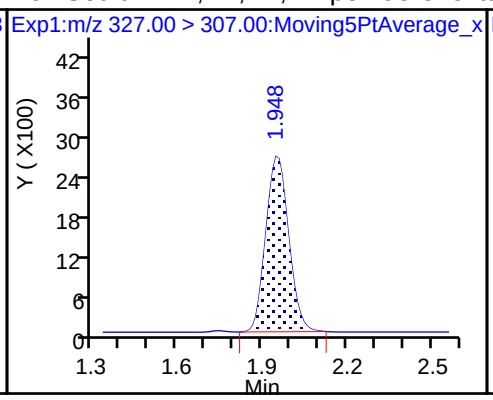
5 Perfluorobutanesulfonic acid



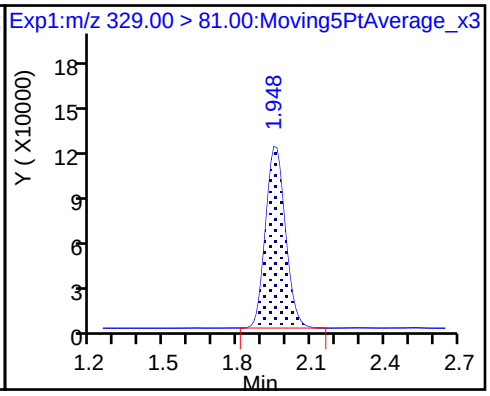
5 Perfluorobutanesulfonic acid



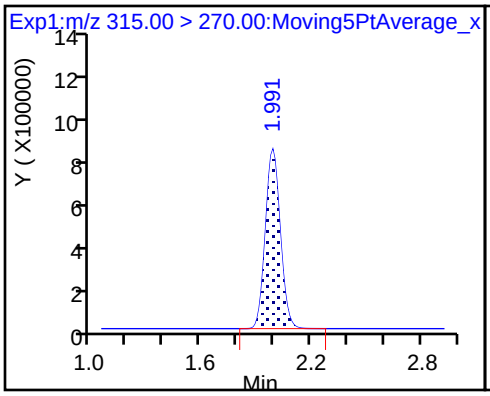
61 Sodium 1H,1H,2H,2H-perfluorohexane



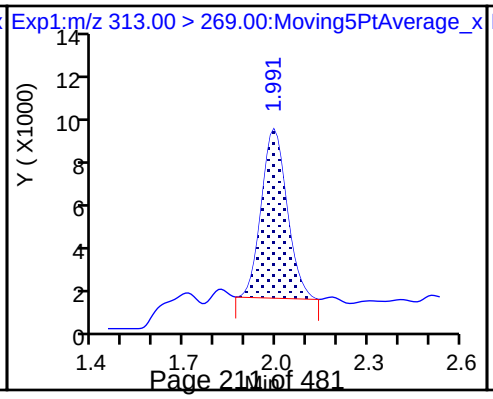
D 60 M2-4:2FTS



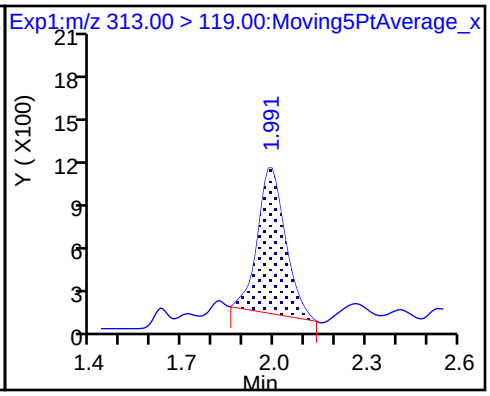
D 7 13C2 PFHxA



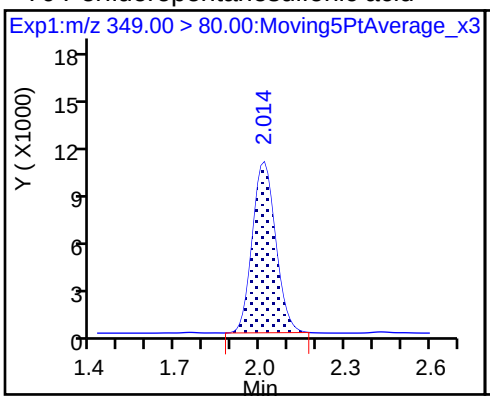
6 Perfluorohexanoic acid



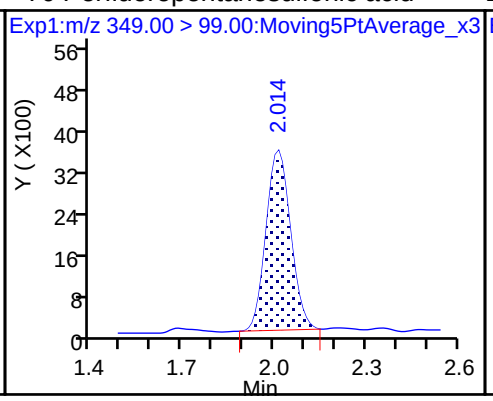
6 Perfluorohexanoic acid



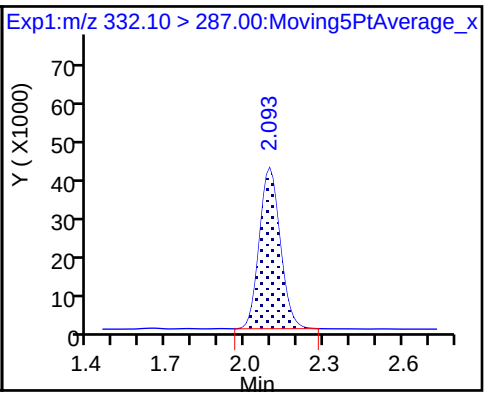
70 Perfluoropentanesulfonic acid



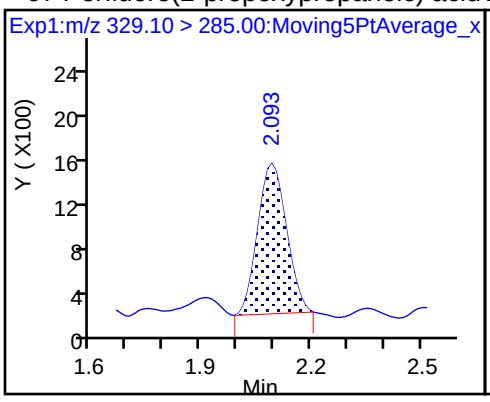
70 Perfluoropentanesulfonic acid



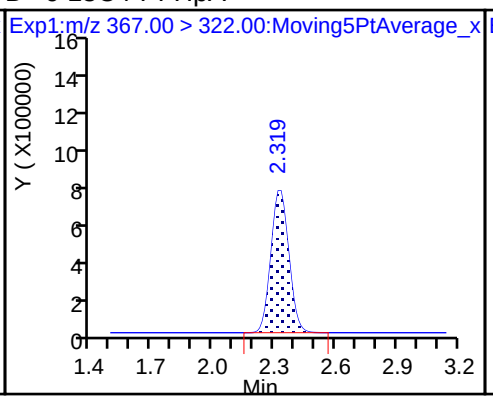
D 64 13C3 HFPO-DA



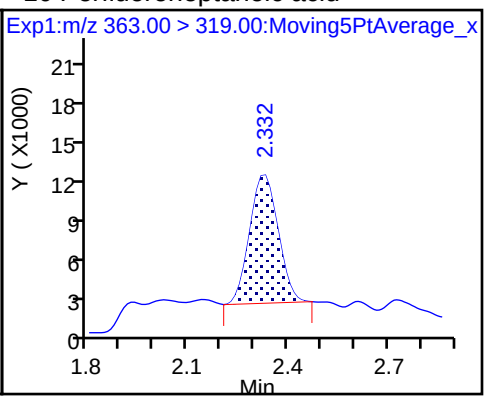
67 Perfluoro(2-propoxypropanoic) acid



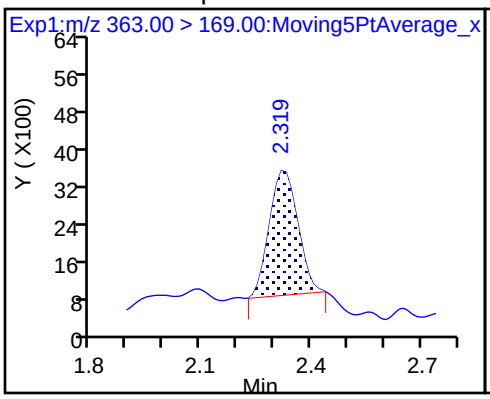
D 9 13C4-PFHpA



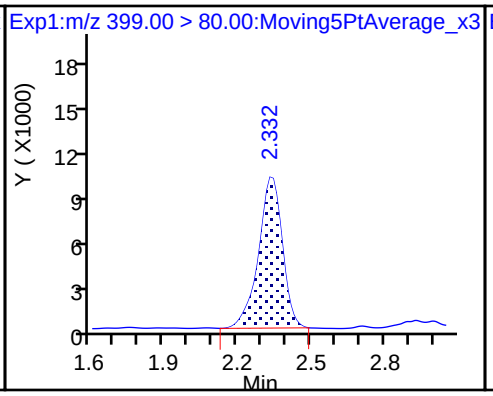
10 Perfluoroheptanoic acid



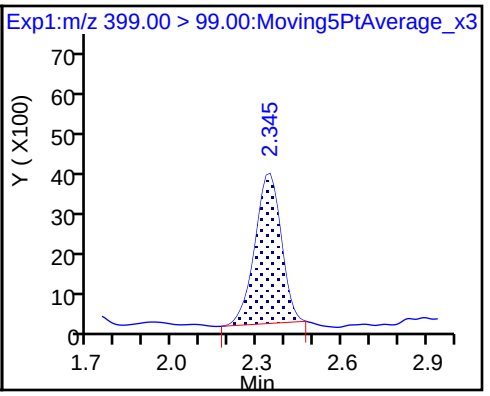
10 Perfluoroheptanoic acid



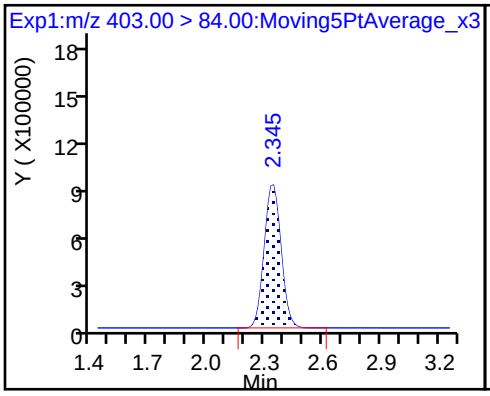
8 Perfluorohexanesulfonic acid



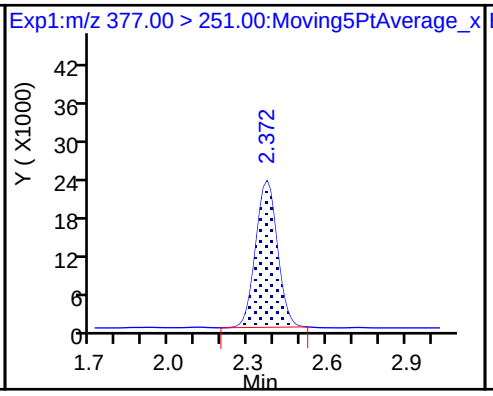
8 Perfluorohexanesulfonic acid



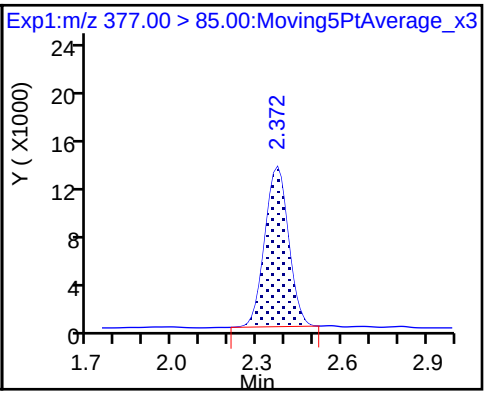
D 11 18O2 PFHxS



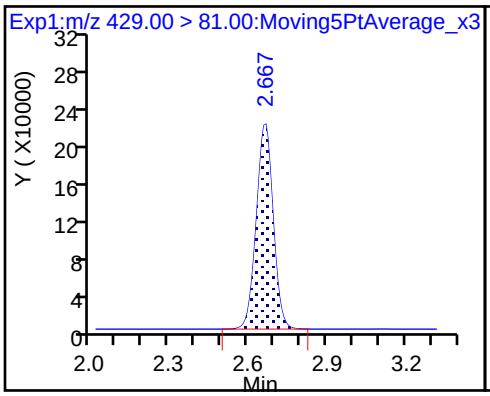
65 Adona



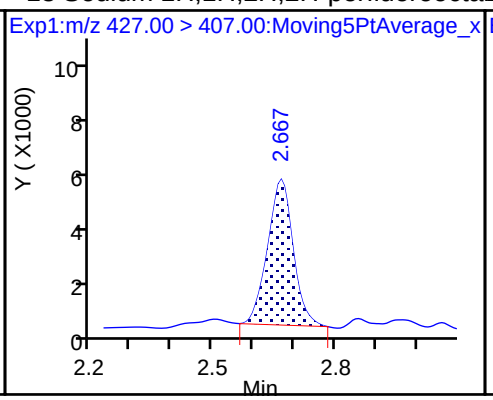
65 Adona



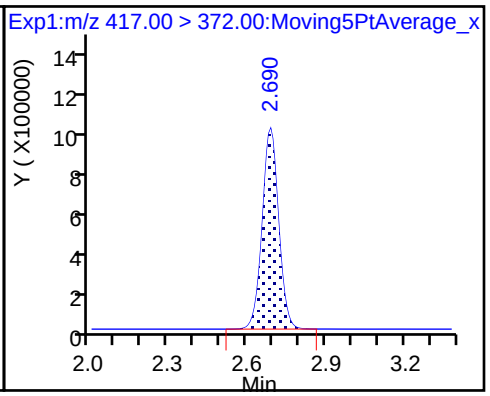
D 12 M2-6:2FTS



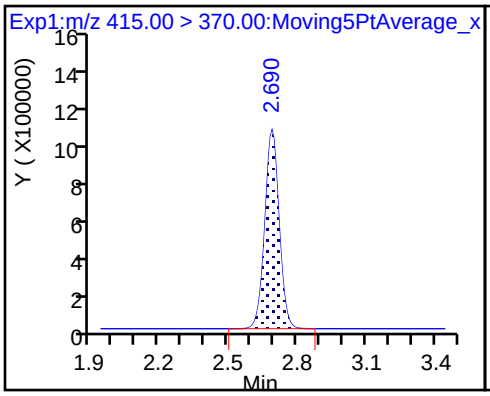
13 Sodium 1H,1H,2H,2H-perfluorooctane



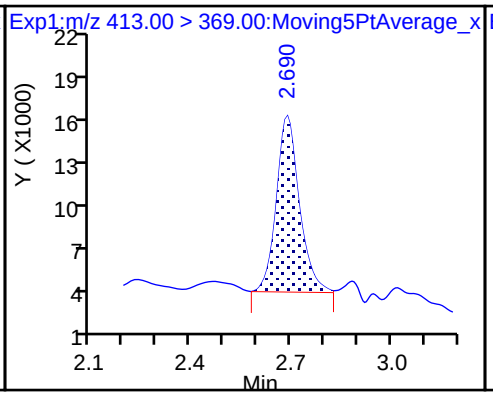
D 14 13C4 PFOA



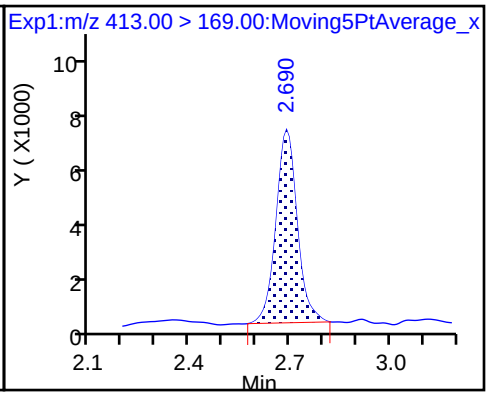
* 62 13C2-PFOA



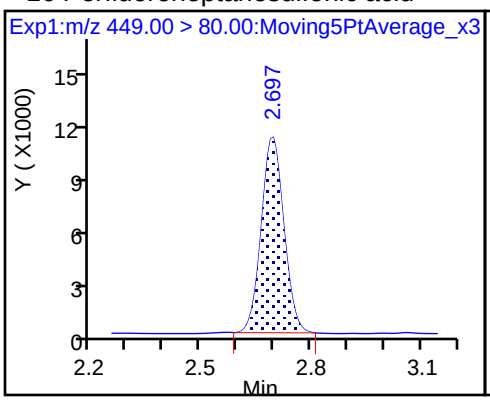
15 Perfluorooctanoic acid



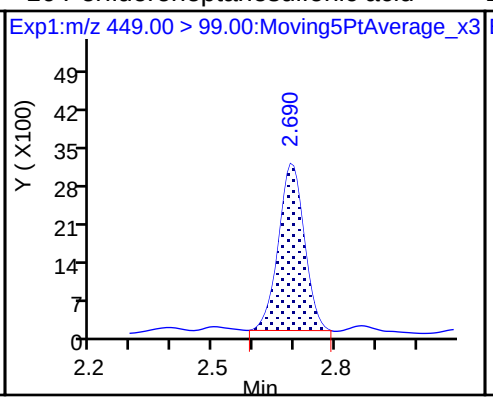
15 Perfluorooctanoic acid



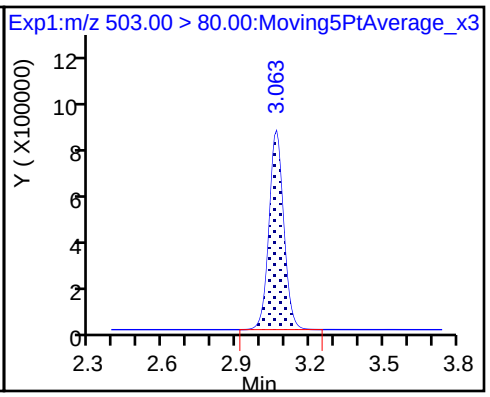
16 Perfluoroheptanesulfonic acid



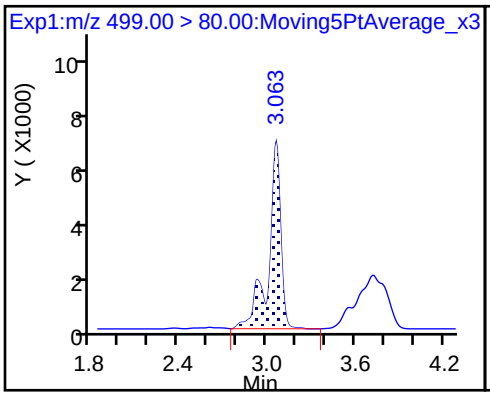
16 Perfluoroheptanesulfonic acid



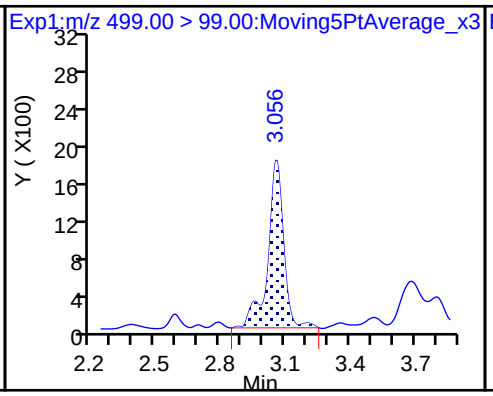
D 18 13C4 PFOS



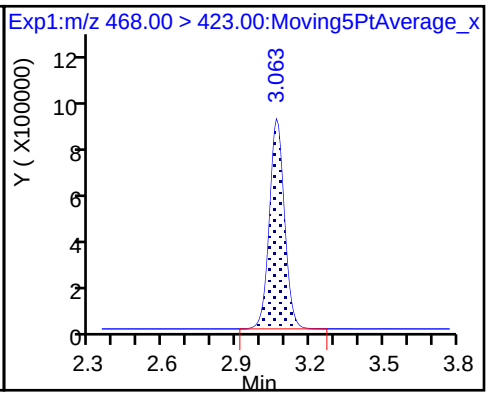
17 Perfluorooctane sulfonic acid



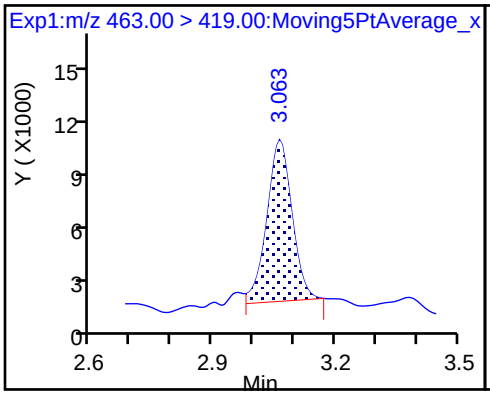
17 Perfluorooctane sulfonic acid



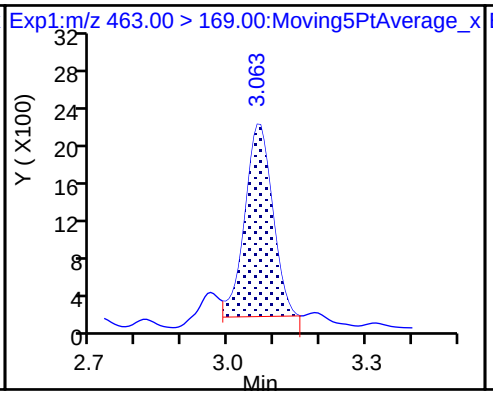
D 19 13C5 PFNA



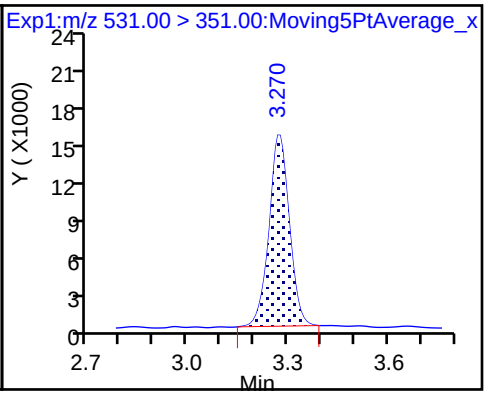
20 Perfluorononanoic acid



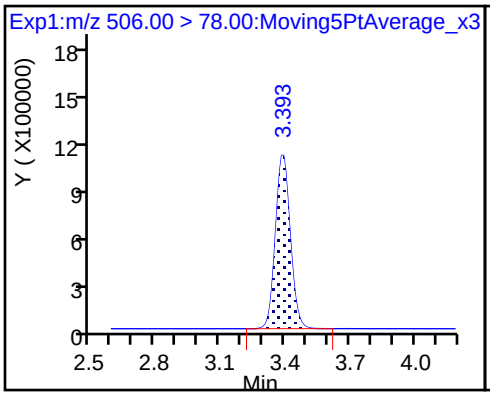
20 Perfluorononanoic acid



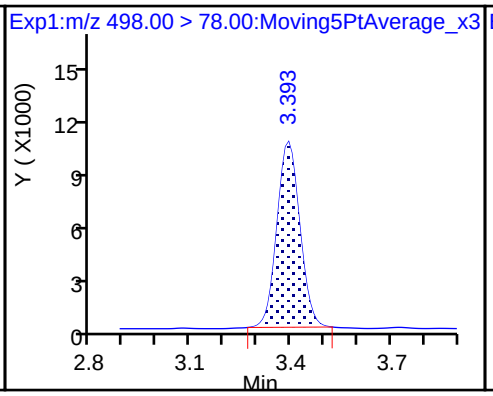
69 9-Chlorohexadecafluoro-3-oxanonane



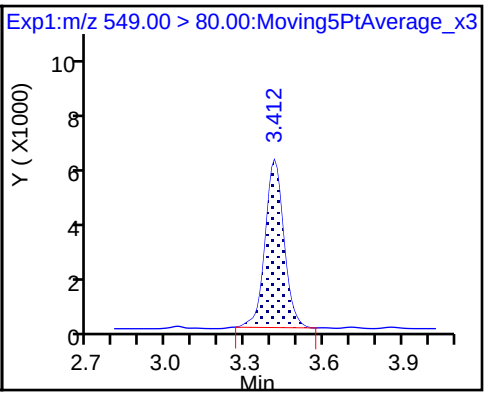
D 21 13C8 FOSA



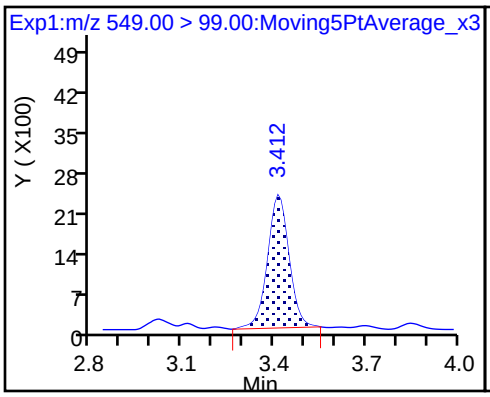
22 Perfluorooctane Sulfonamide



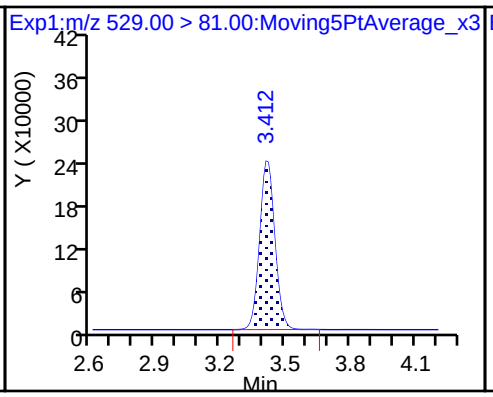
68 Perfluorononanesulfonic acid



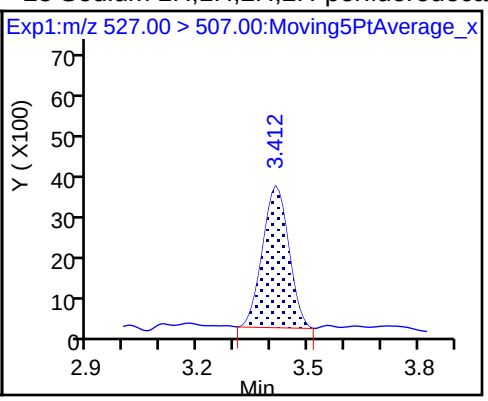
68 Perfluorononanesulfonic acid



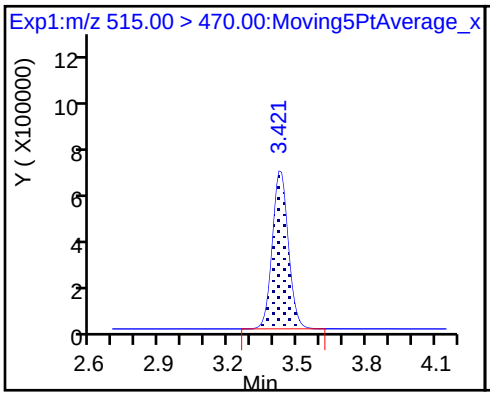
D 26 M2-8:2FTS



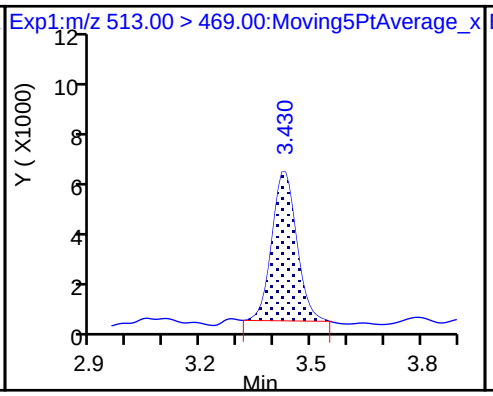
25 Sodium 1H,1H,2H,2H-perfluorodecane



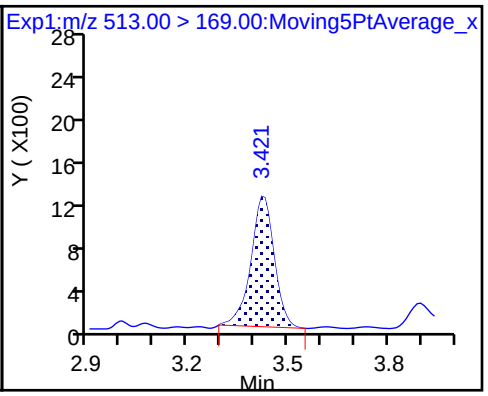
D 23 13C2 PFDA



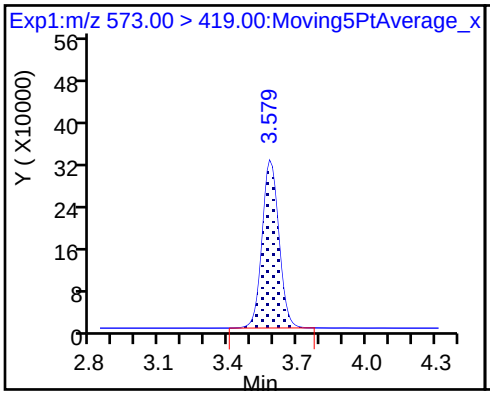
24 Perfluorodecanoic acid



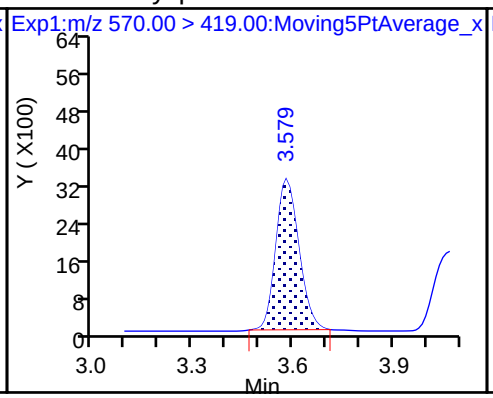
24 Perfluorodecanoic acid



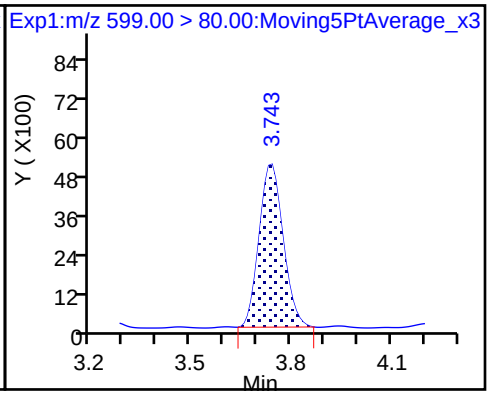
D 27 d3-NMeFOSAA



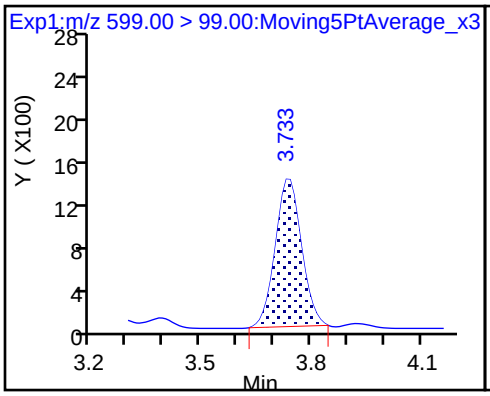
28 N-methyl perfluorooctane sulfonami



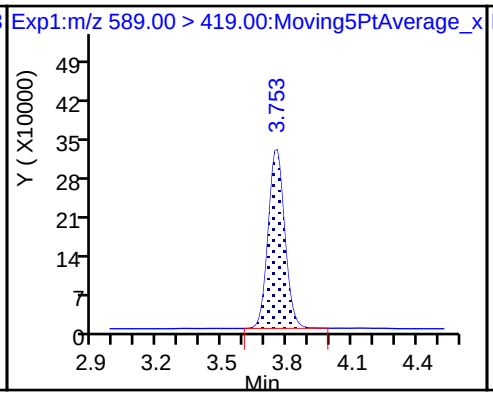
29 Perfluorodecane Sulfonic acid



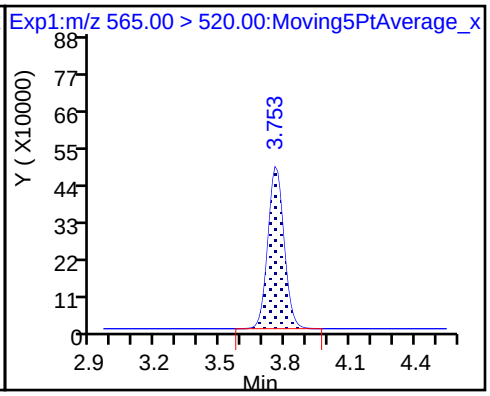
29 Perfluorodecane Sulfonic acid



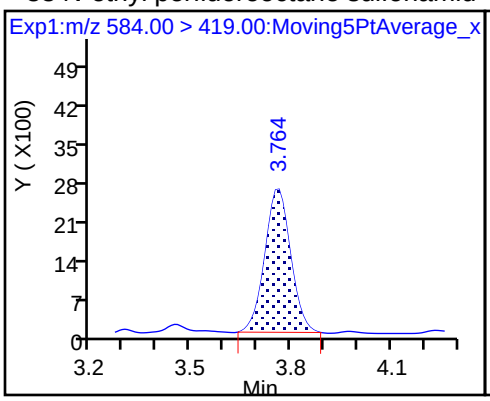
D 32 d5-NEtFOSAA



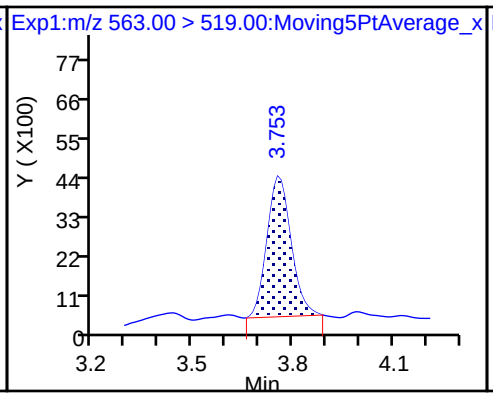
D 30 13C2 PFUnA



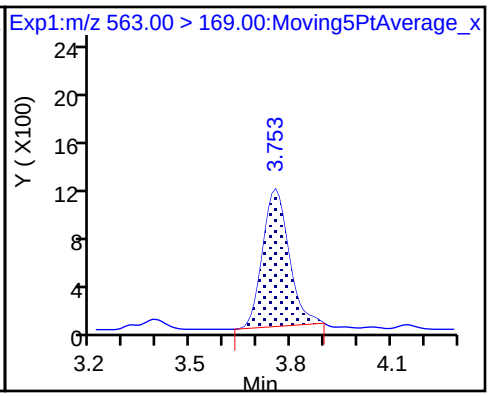
33 N-ethyl perfluorooctane sulfonamid



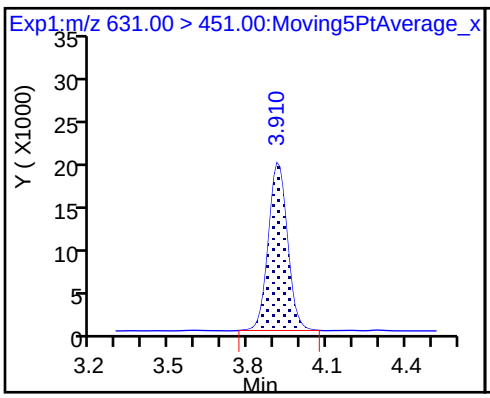
31 Perfluoroundecanoic acid



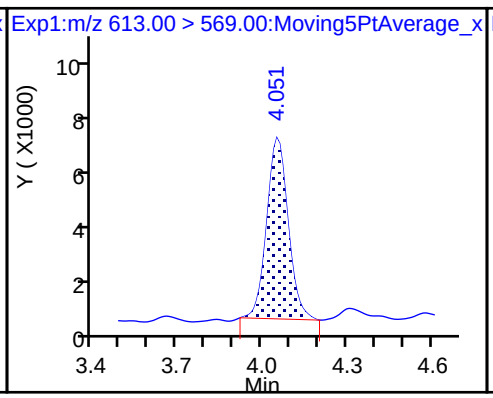
31 Perfluoroundecanoic acid



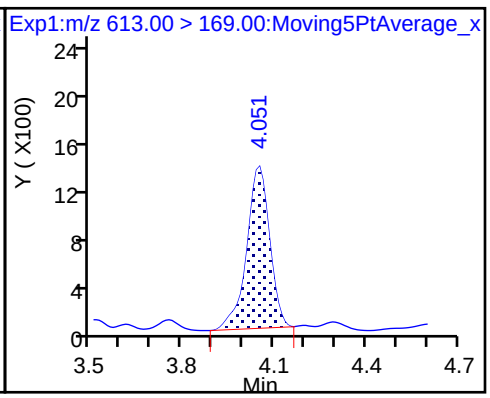
66 11-Chloroeicosafluoro-3-oxaundecan



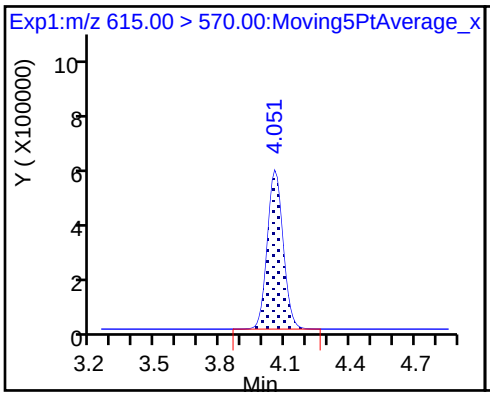
37 Perfluorododecanoic acid



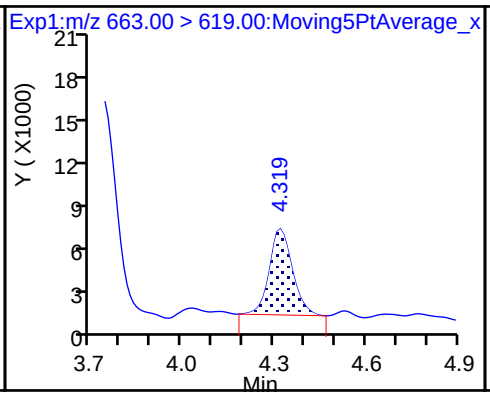
37 Perfluorododecanoic acid



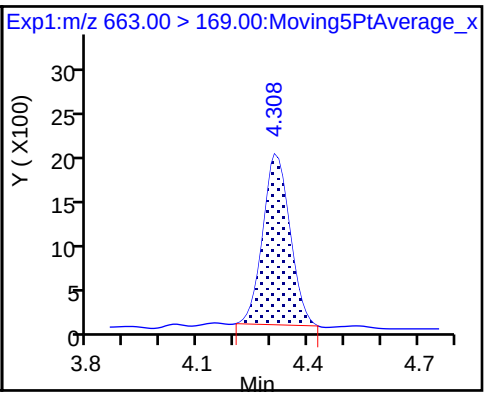
D 36 13C2 PFDoA



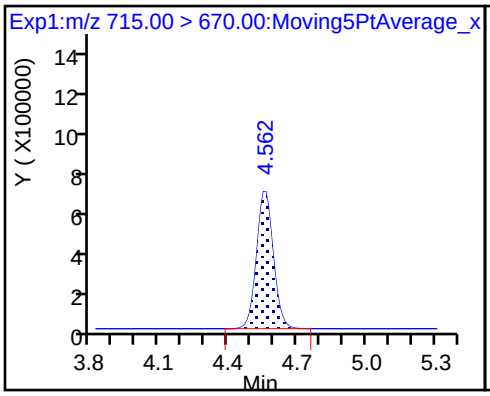
41 Perfluorotridecanoic acid



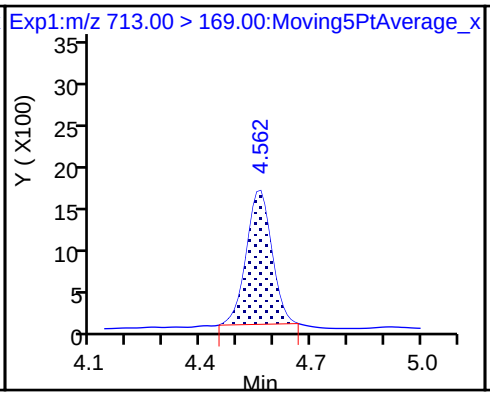
41 Perfluorotridecanoic acid



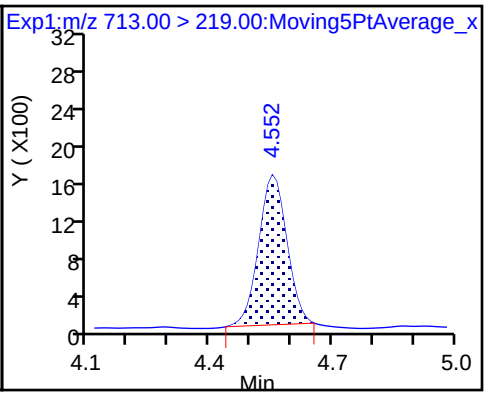
D 43 13C2-PFTeDA



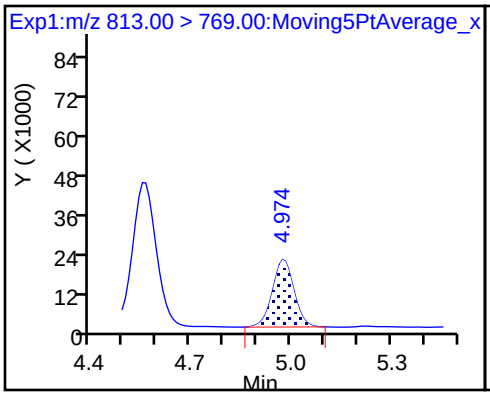
42 Perfluorotetradecanoic acid



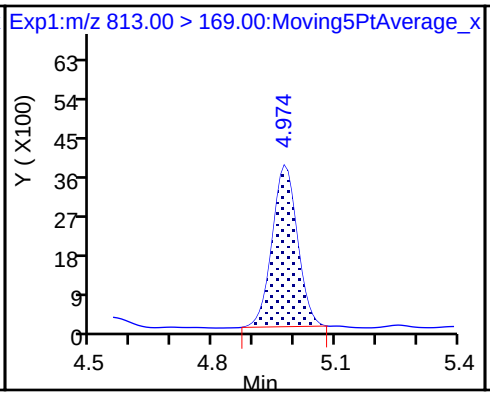
42 Perfluorotetradecanoic acid



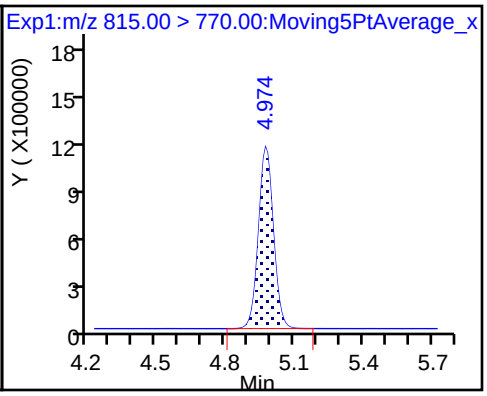
45 Perfluorohexadecanoic acid



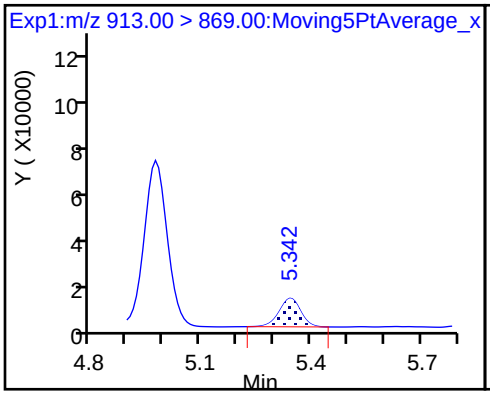
45 Perfluorohexadecanoic acid



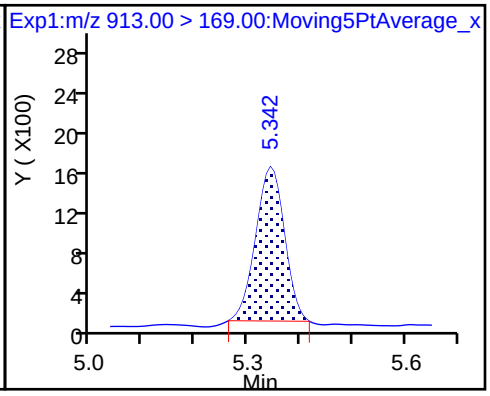
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 29-Mar-2018 17:35:12 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:33 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 08:31:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.436	0.005	1.000	6349810	2.50		100.0	62892	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.437	0.004	1.000	114587	0.0488		97.6	42.3	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.702	0.0	0.556	4057226	2.45		98.1	79100	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.711	1.706	0.005	1.005	99196	0.0511		102	38.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	86826	2.29		98.6	548	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.747	1.742	0.005	1.005	131921	0.0448		101	91.8	
298.90 > 99.00	1.747	1.742	0.005	1.005	61156		2.16(1.25-3.74)	101	95.8	
D 60 M2-4:2FTS										
329.00 > 81.00	1.959	1.955	0.004	1.000	683814	2.36		101	9417	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.959	1.955	0.004	1.000	34332	0.0533		114	1560	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.991	0.002	1.000	4516262	2.48		99.1	114603	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.992	0.0	1.000	91036	0.0492		98.5	123	
313.00 > 119.00	2.004	1.992	0.012	1.006	9683		9.40(5.03-15.10)	98.5	120	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.015	2.013	0.002	1.000	118105	0.0444		94.7	3501	
349.00 > 99.00	2.015	2.013	0.002	1.000	50910		2.32(1.36-4.07)	94.7	1502	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.094	2.092	0.002	1.000	15350	0.0506		101	127	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.094	2.092	0.002	1.000	222854	2.45		98.2	3059	
D 9 13C4-PFHpA										
367.00 > 322.00	2.333	2.326	0.007	1.000	4349189	2.48		99.3	90666	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.333	2.327	0.006	1.000	86879	0.0460		91.9	64.2	
363.00 > 169.00	2.333	2.327	0.006	1.000	32712		2.66(1.13-3.40)	91.9	83.5	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.346	2.339	0.007	1.000	116520	0.0484		106	646	
399.00 > 99.00	2.346	2.339	0.007	1.000	36295		3.21(1.50-4.49)	106	207	
D 11 18O2 PFHxS										
403.00 > 84.00	2.346	2.340	0.006	1.000	5097412	2.33		98.6	84888	
65 Adona										
377.00 > 251.00	2.373	2.372	0.001	1.000	265166	0.0485		97.0	6589	
377.00 > 85.00	2.373	2.372	0.001	1.000	160661		1.65(0.84-2.53)	97.0	2799	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.664	0.004	1.000	39956	0.0512		108	205	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.664	0.004	1.000	991613	2.45		103	32060	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.688	0.002	1.000	4341966	2.52		101	71813	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.689	0.001		4596582	2.50			88523	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.000	114806	0.0557		111	33.8	
413.00 > 169.00	2.690	2.690	0.0	1.000	55627		2.06(0.84-2.52)	111	255	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.695	0.003	1.000	90656	0.0443		93.1	4161	
449.00 > 99.00	2.698	2.695	0.003	1.000	24724		3.67(1.94-5.82)	93.1	644	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.060	0.003	1.000	100111	0.0571		123	243	
499.00 > 99.00	3.063	3.060	0.003	1.000	22757		4.40(2.31-6.93)	123	232	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.060	0.003	1.000	3668029	2.42		101	46995	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.061	0.002	1.000	3693528	2.53		101	88431	
20 Perfluorononanoic acid										
463.00 > 419.00	3.070	3.064	0.006	1.002	73551	0.0484		96.8	69.8	
463.00 > 169.00	3.063	3.064	-0.001	1.000	20050		3.67(1.90-5.69)	96.8	343	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.277	3.272	0.005	1.000	122429	0.0427		91.5	2323	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.388	-0.003	1.000	5426551	2.53		101	71507	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.389	0.006	1.003	105346	0.0491		98.3	2796	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.409	0.004	1.000	61518	0.0500		104	2616	
549.00 > 99.00	3.413	3.409	0.004	1.000	20319		3.03(1.33-3.97)	104	373	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1207568	2.56		107	35673	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.423	3.415	0.008	1.003	32444	0.0477		99.6	331	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.423	0.0	1.000	3057872	2.48		99.3	49113	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.432	3.427	0.005	1.003	60106	0.0497		99.3	222	
513.00 > 169.00	3.423	3.427	-0.004	1.000	10996		5.47(2.36-7.09)	99.3	277	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.578	0.004	1.000	1584763	2.41		96.2	51662	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.582	3.581	0.001	1.000	37929	0.0568		114	356	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.738	-0.001	1.000	52893	0.0497		103	1503	
599.00 > 99.00	3.737	3.738	-0.001	1.000	15830		3.34(1.39-4.16)	103	320	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.749	-0.002	1.000	1753746	2.54		101	4660	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.753	0.005	1.000	2598573	2.58		103	73614	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.755	0.003	1.003	34166	0.0531		106	703	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.755	0.003	1.000	44699	0.0536		107	178	
563.00 > 169.00	3.758	3.755	0.003	1.000	11584		3.86(2.12-6.36)	107	588	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.914	3.910	0.004	1.000	216712	0.0486		103	8713	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.052	0.005	1.000	2755722	2.46		98.5	18105	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.052	0.005	1.000	57155	0.0480		96.0	43.3	
613.00 > 169.00	4.057	4.052	0.005	1.000	15975		3.58(2.13-6.40)	96.0	355	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.316	0.001	1.000	59640	0.0468		93.6	23.5	
663.00 > 169.00	4.317	4.316	0.001	1.000	20700		2.88(1.25-3.76)	93.6	402	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.558	0.003	1.000	16166	0.0457		91.5	253	
713.00 > 219.00	4.550	4.558	-0.008	0.998	13055		1.24(0.71-2.13)	91.5	266	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.558	0.003	1.000	3538364	2.49		99.6	20273	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.982	4.977	0.005	1.000	5380000	2.45		98.0	13437	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.982	4.977	0.005	1.000	144357	0.0494		98.9	34.6	
813.00 > 169.00	4.982	4.977	0.005	1.000	22803		6.33(2.86-8.58)	98.9	235	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.348	5.344	0.004	1.000	102429	0.0479		95.9	17.9	
913.00 > 169.00	5.348	5.344	0.004	1.000	11835		8.65(3.83-11.48)	95.9	167	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:47:39 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_003.d

Injection Date: 29-Mar-2018 17:35:12 Instrument ID: A8_N

Lims ID: IC L2 Full

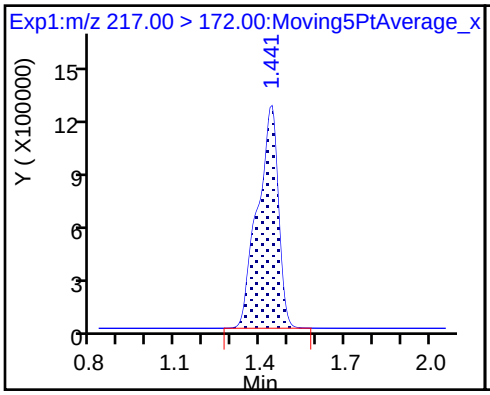
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

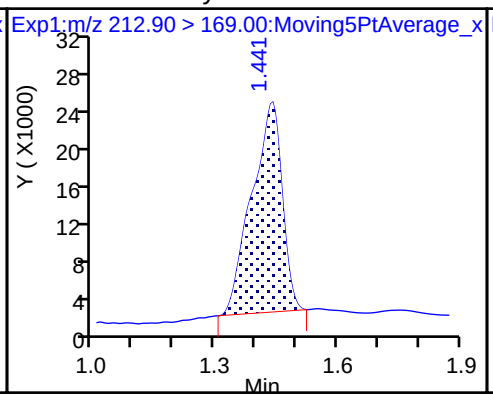
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

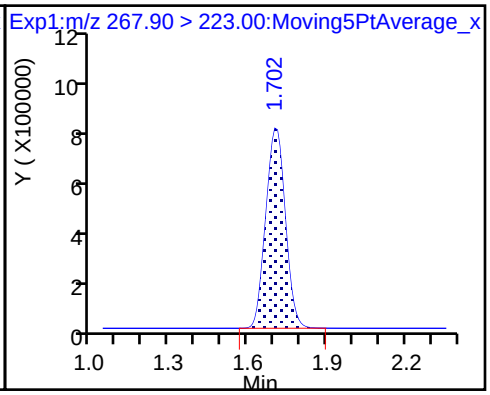
D 1 13C4 PFBA



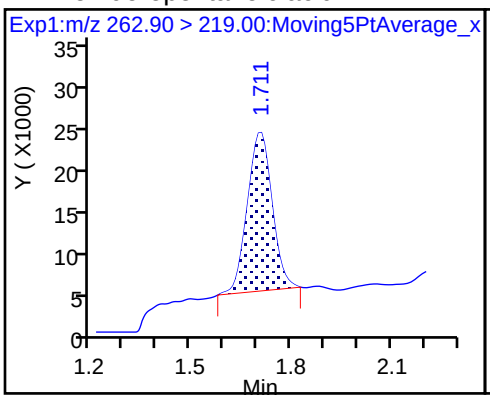
2 Perfluorobutyric acid



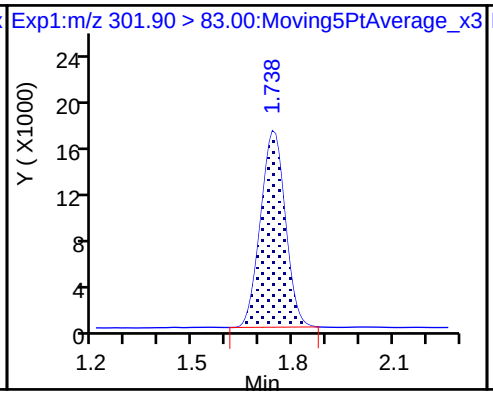
D 3 13C5-PFPeA



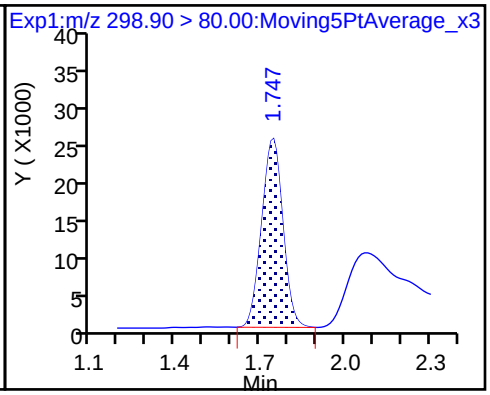
4 Perfluoropentanoic acid



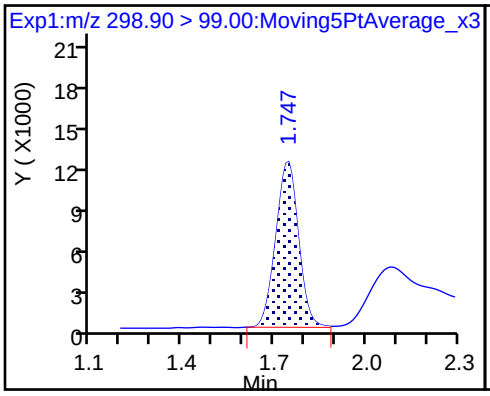
D 47 13C3-PFBS



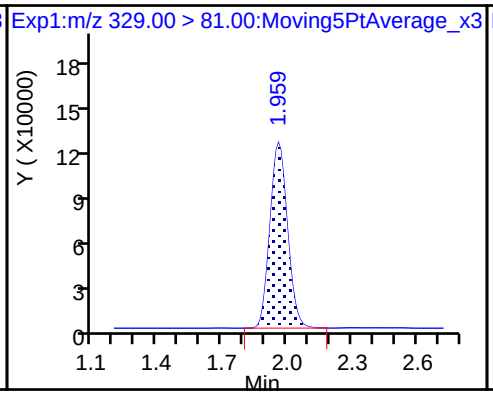
5 Perfluorobutanesulfonic acid



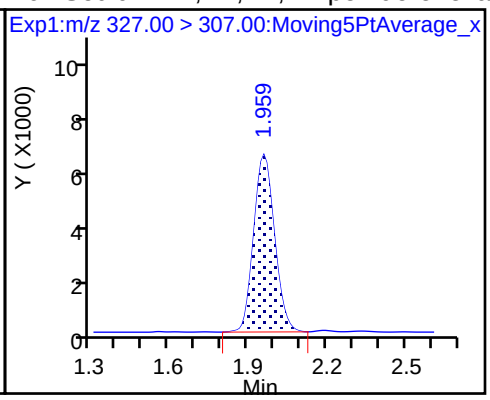
5 Perfluorobutanesulfonic acid



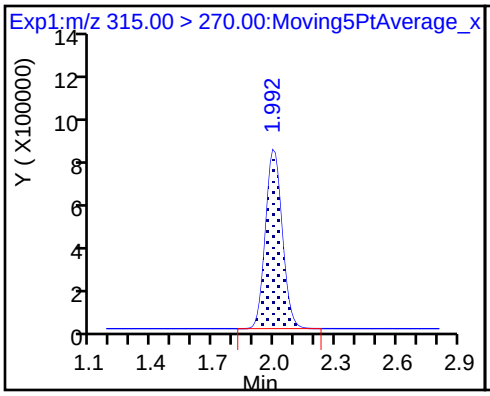
D 60 M2-4:2FTS



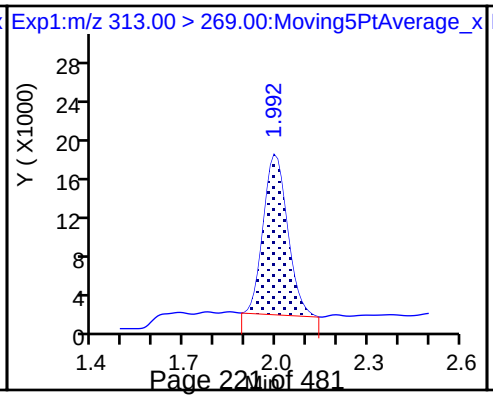
61 Sodium 1H,1H,2H,2H-perfluorohexane



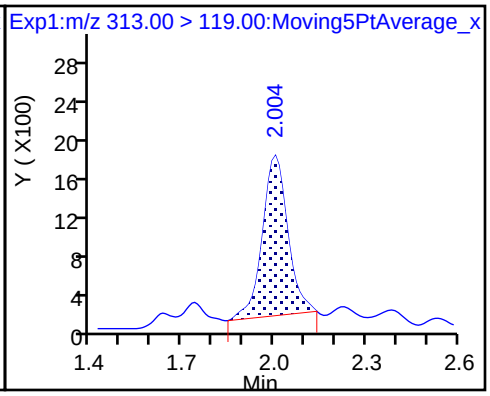
D 7 13C2 PFHxA



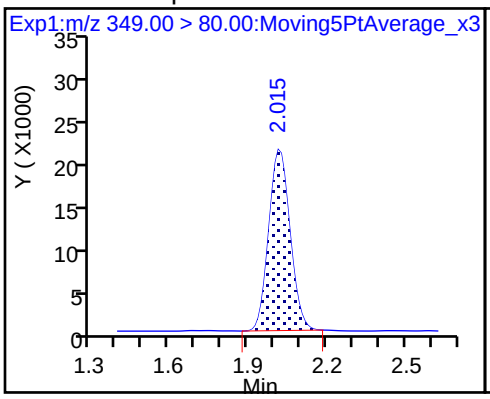
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid



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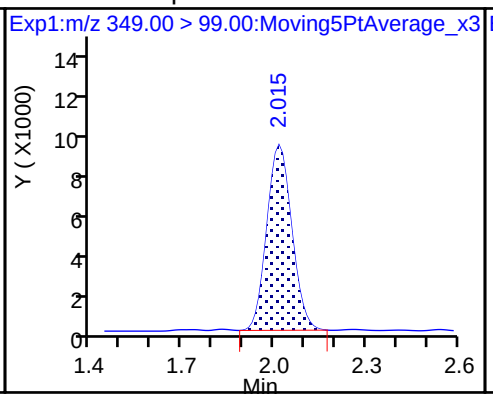
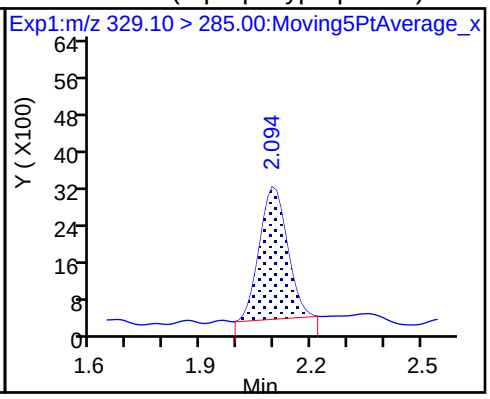
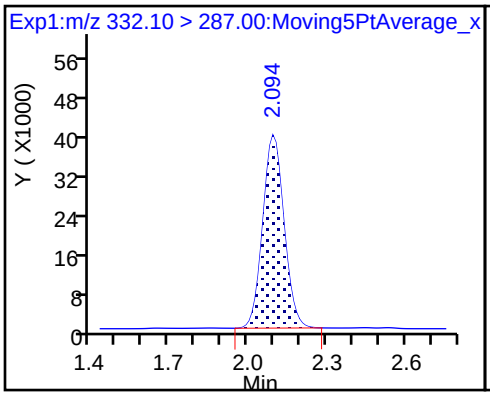


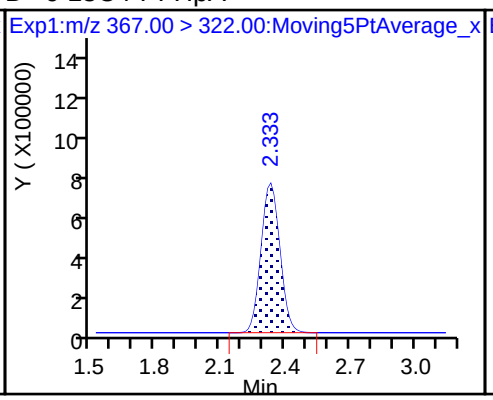
67 Perfluoro(2-propoxypropanoic) acid



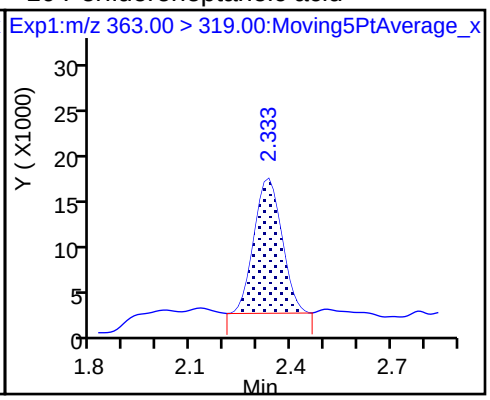
D 64 13C3 HFPO-DA



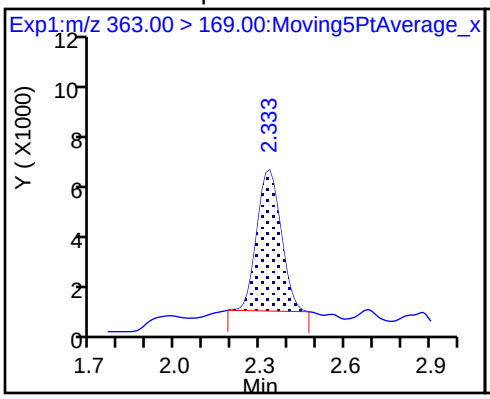
D 9 13C4-PFHpA



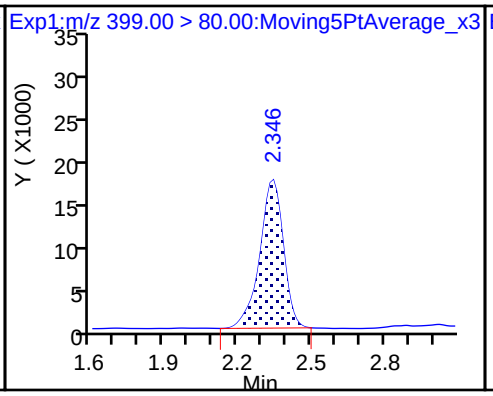
10 Perfluoroheptanoic acid



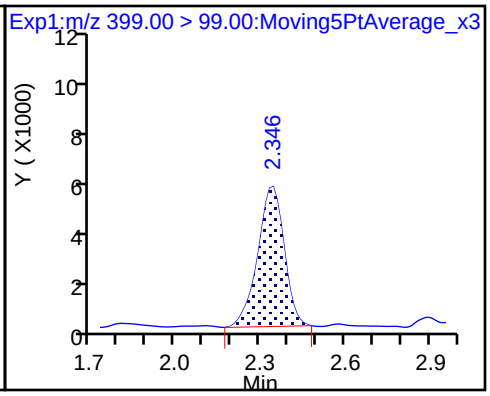
10 Perfluoroheptanoic acid



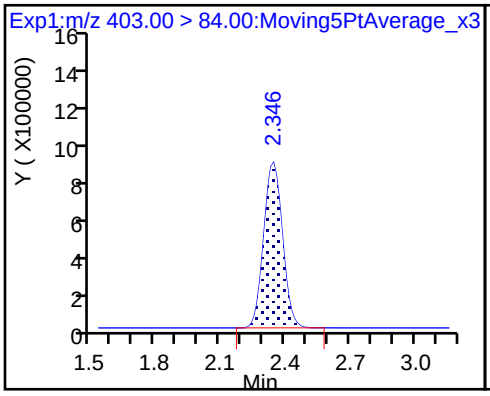
8 Perfluorohexanesulfonic acid



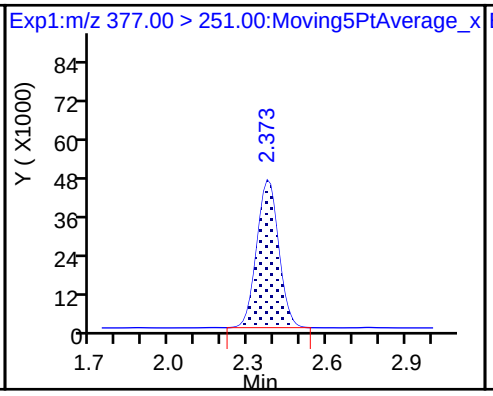
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS



65 Adona



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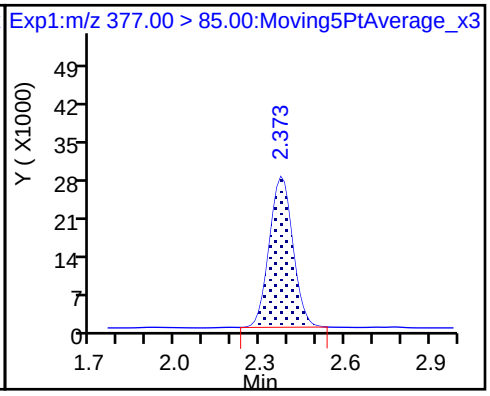
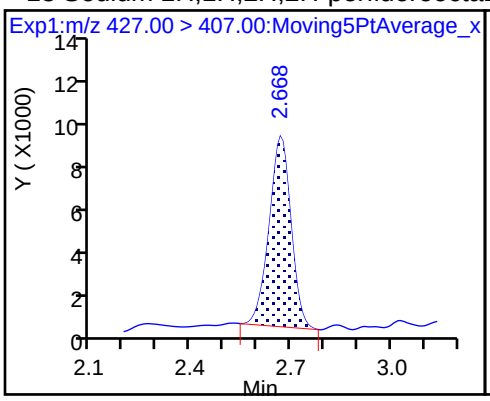
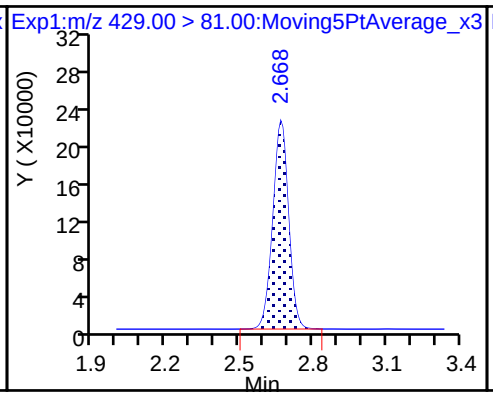


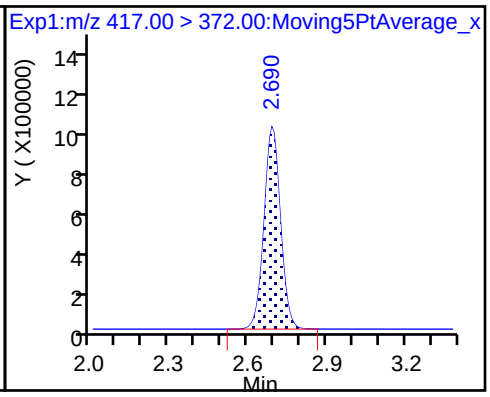
13 Sodium 1H,1H,2H,2H-perfluorooctane



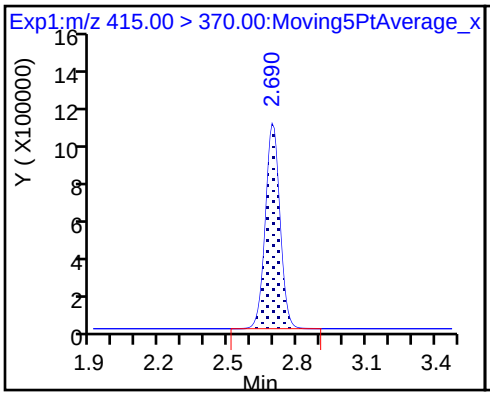
D 12 M2-6:2FTS



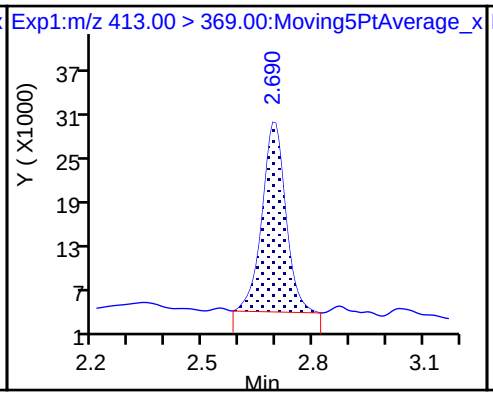
D 14 13C4 PFOA



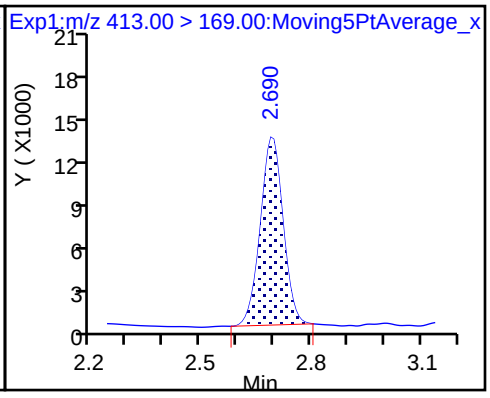
* 62 13C2-PFOA



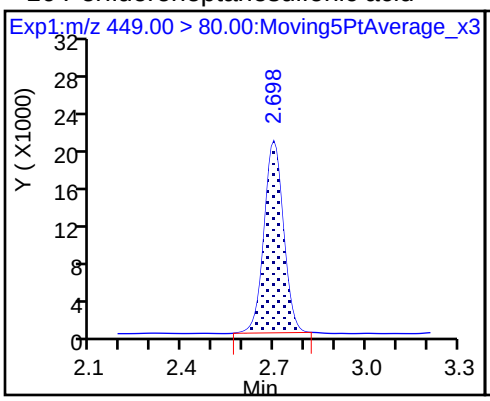
15 Perfluorooctanoic acid



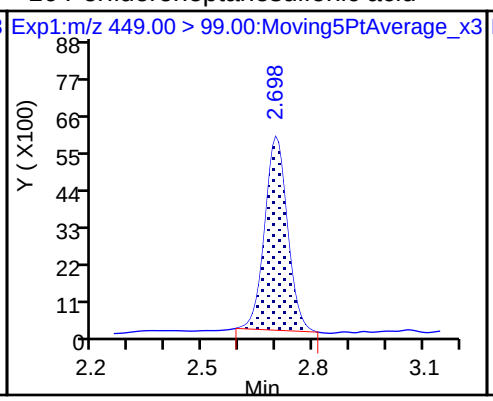
15 Perfluorooctanoic acid



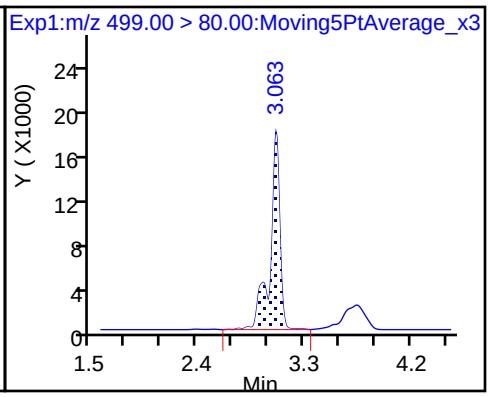
16 Perfluoroheptanesulfonic acid



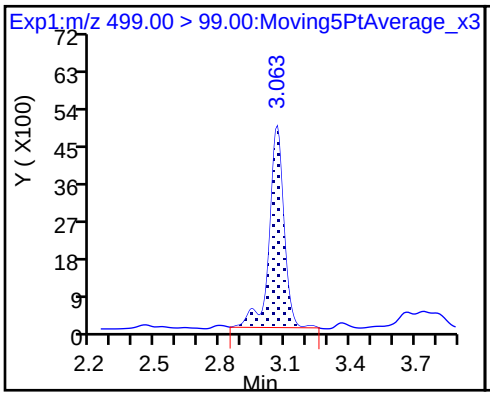
16 Perfluoroheptanesulfonic acid



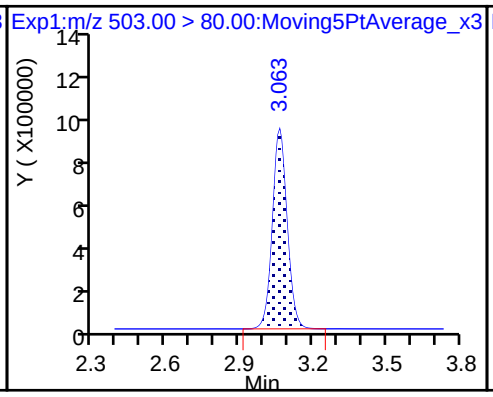
17 Perfluorooctane sulfonic acid



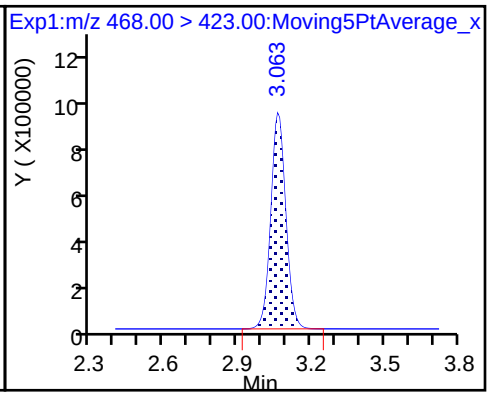
17 Perfluorooctane sulfonic acid



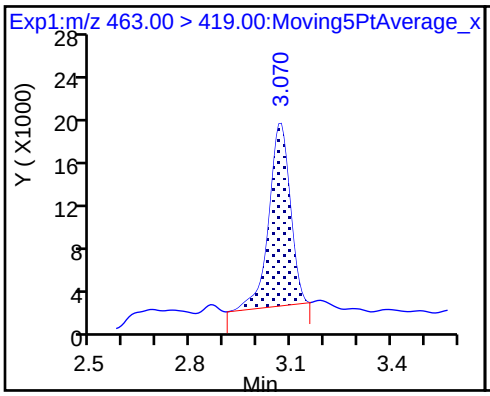
D 18 13C4 PFOS



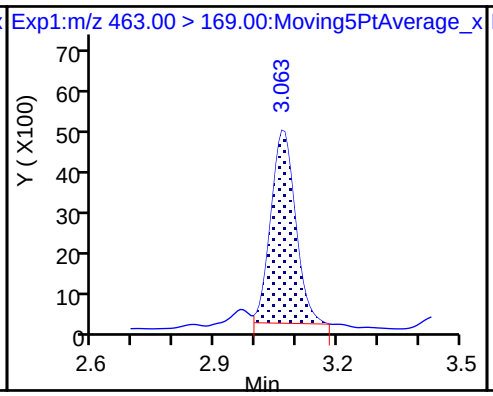
D 19 13C5 PFNA



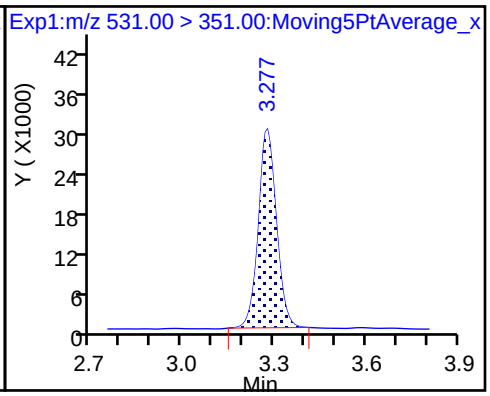
20 Perfluorononanoic acid



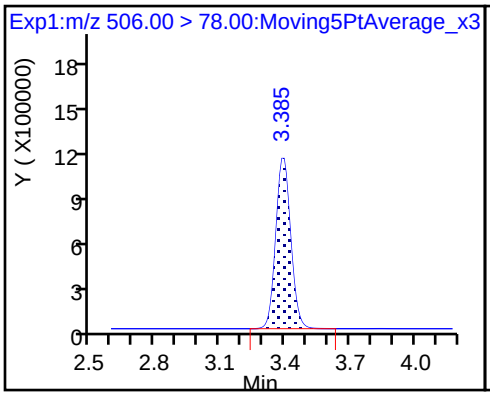
20 Perfluorononanoic acid



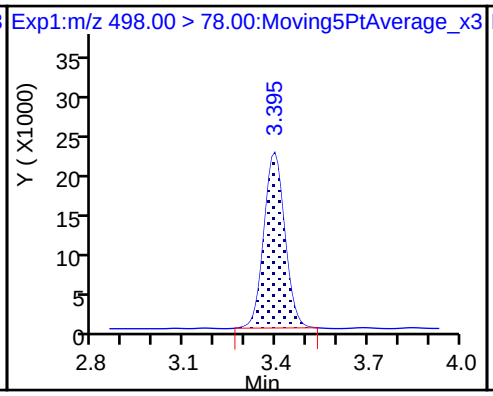
69 9-Chlorohexadecafluoro-3-oxanonane



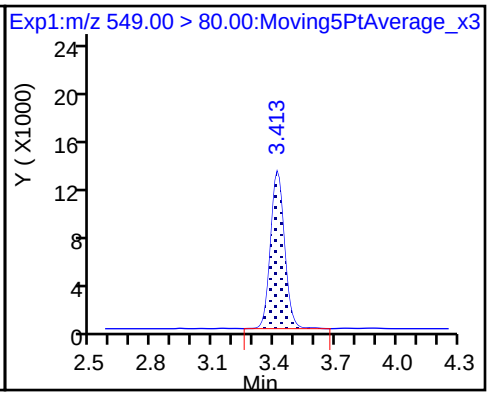
D 21 13C8 FOSA



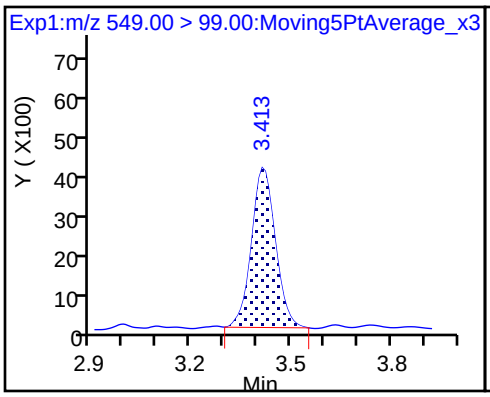
22 Perfluorooctane Sulfonamide



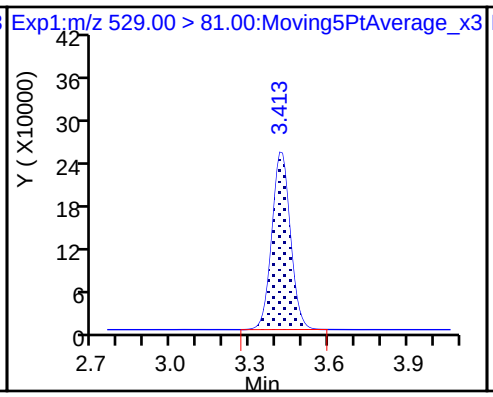
68 Perfluorononanesulfonic acid



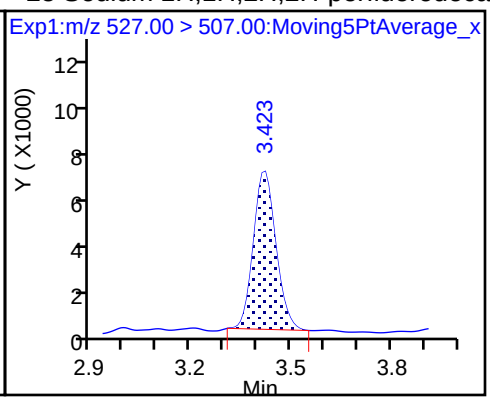
68 Perfluorononanesulfonic acid



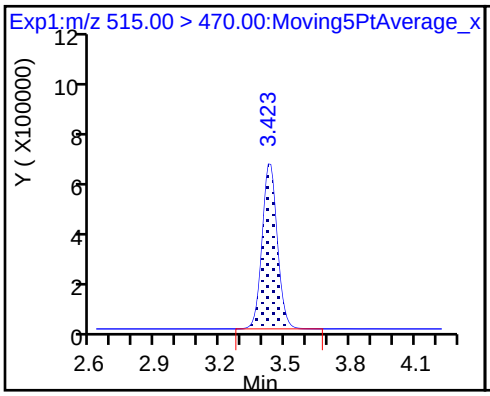
D 26 M2-8:2FTS



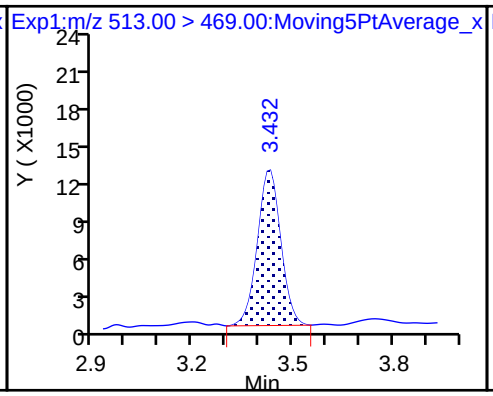
25 Sodium 1H,1H,2H,2H-perfluorodecane



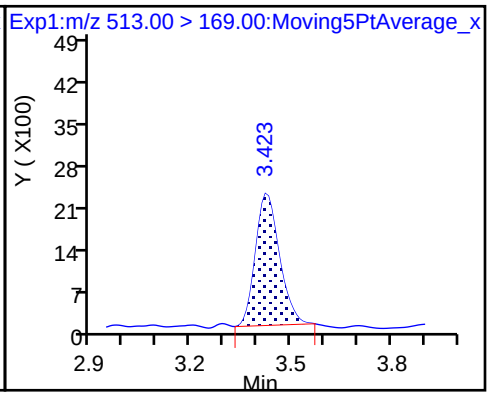
D 23 13C2 PFDA



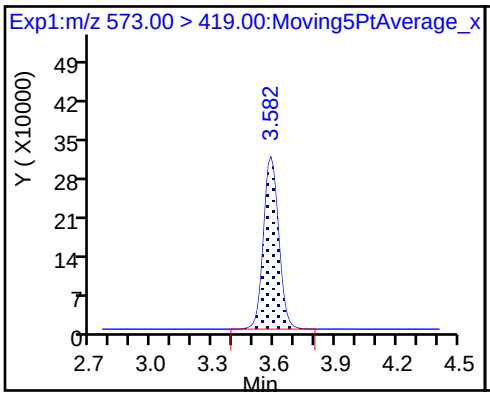
24 Perfluorodecanoic acid



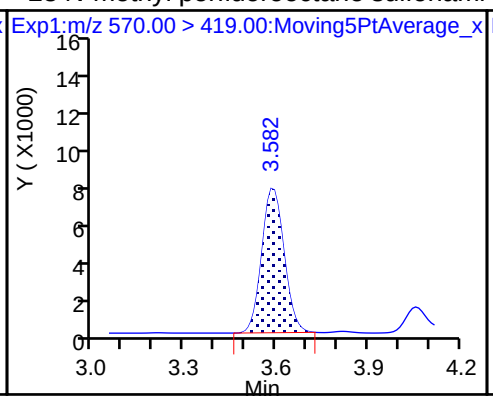
24 Perfluorodecanoic acid



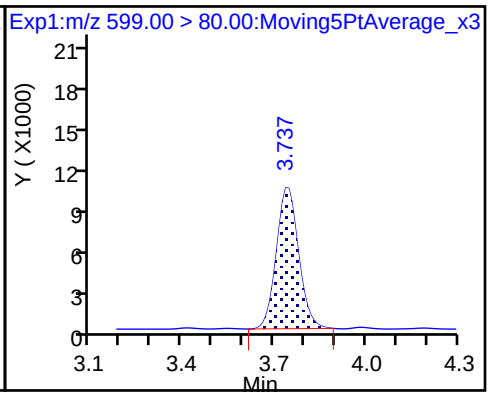
D 27 d3-NMeFOSAA



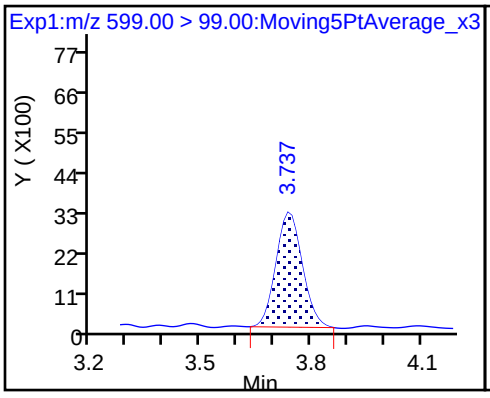
28 N-methyl perfluorooctane sulfonami



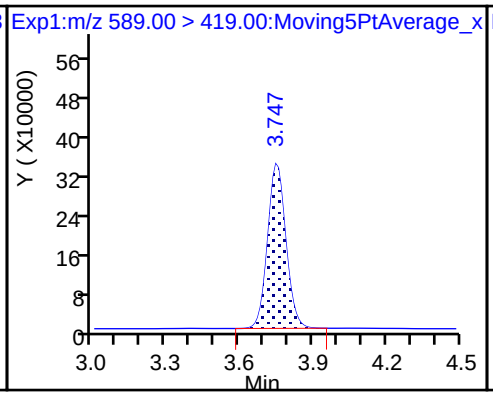
29 Perfluorodecane Sulfonic acid



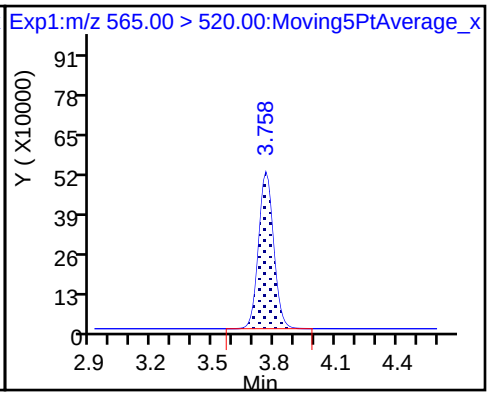
29 Perfluorodecane Sulfonic acid



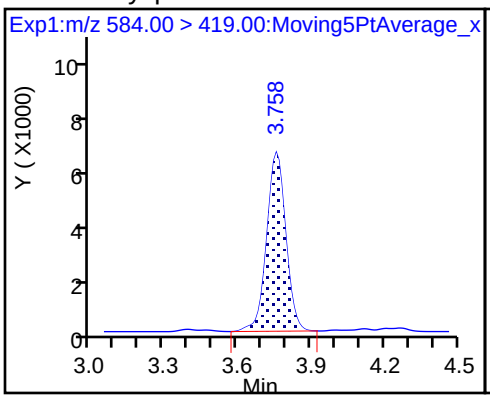
D 32 d5-NEtFOSAA



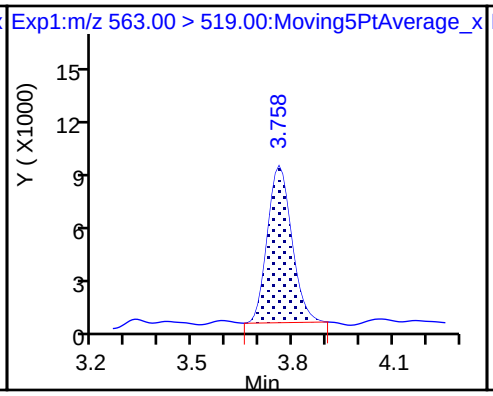
D 30 13C2 PFUnA



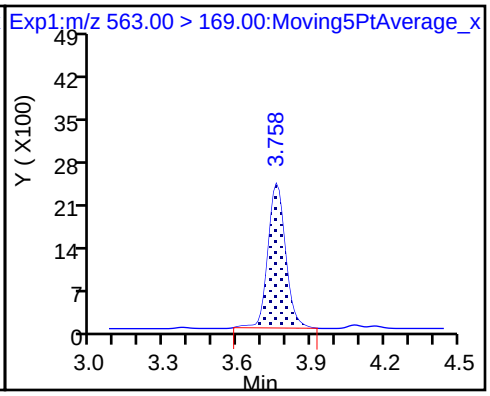
33 N-ethyl perfluorooctane sulfonamid



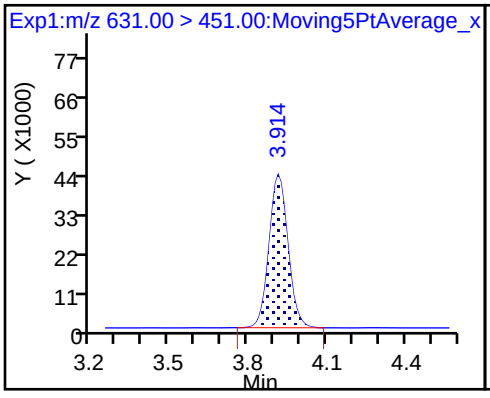
31 Perfluoroundecanoic acid



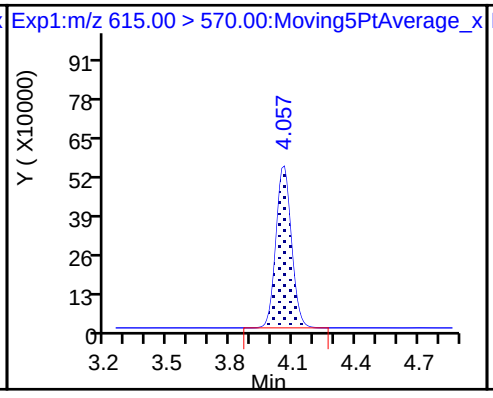
31 Perfluoroundecanoic acid



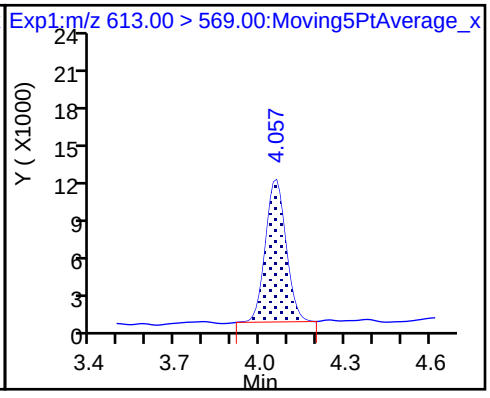
66 11-Chloroeicosafluoro-3-oxaundecan



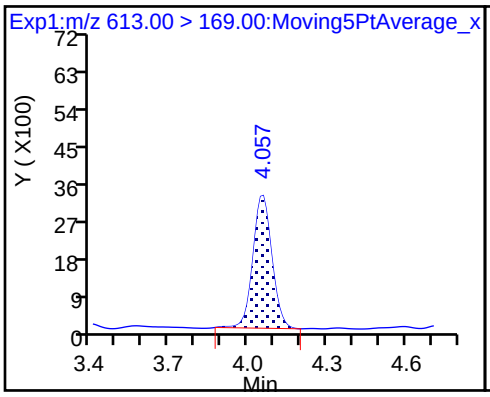
D 36 13C2 PFDoA



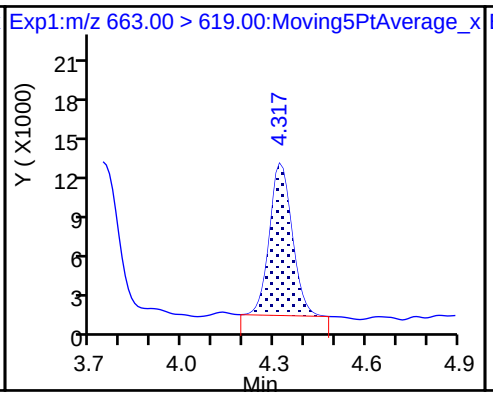
37 Perfluorododecanoic acid



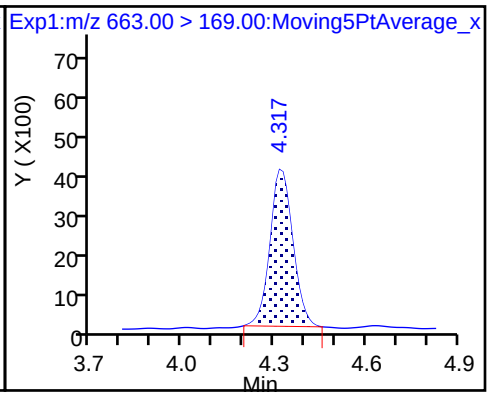
37 Perfluorododecanoic acid



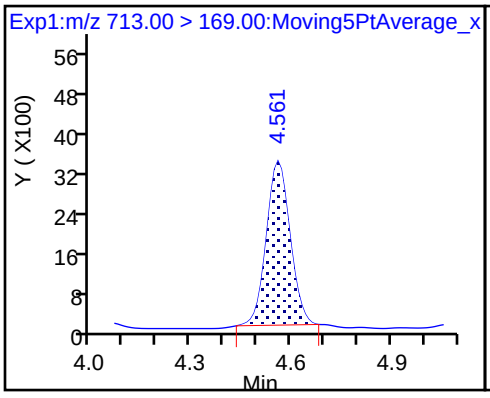
41 Perfluorotridecanoic acid



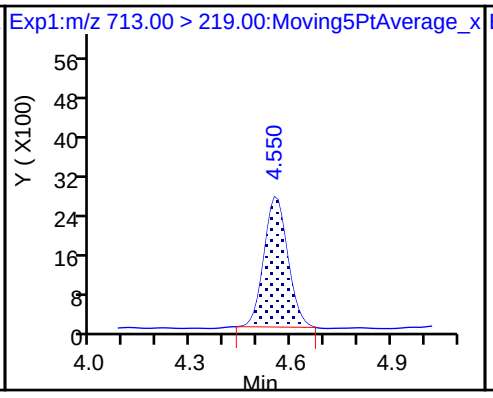
41 Perfluorotridecanoic acid



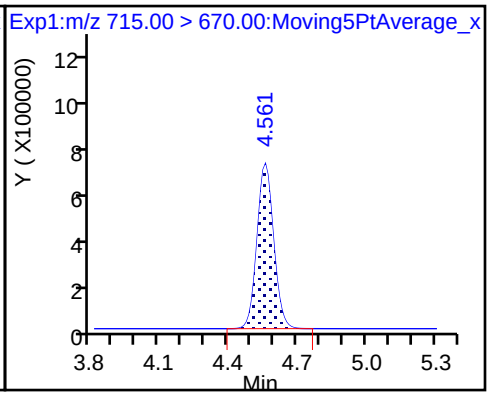
42 Perfluorotetradecanoic acid



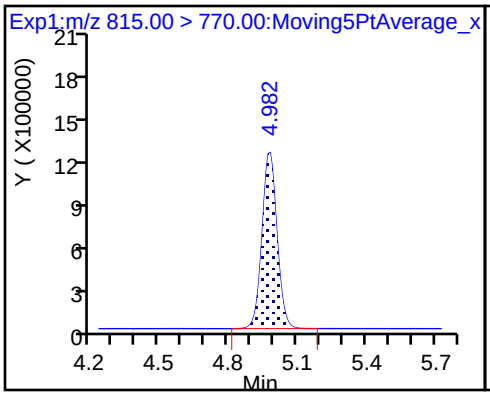
42 Perfluorotetradecanoic acid



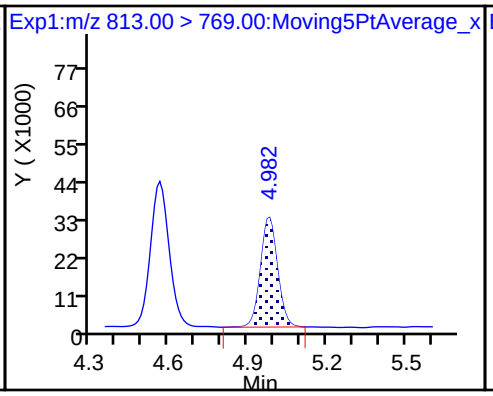
D 43 13C2-PFTeDA



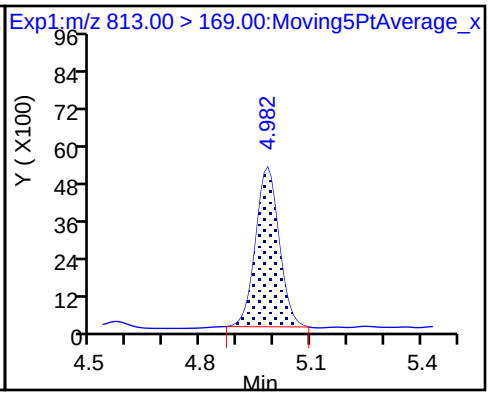
D 44 13C2-PFHxDA



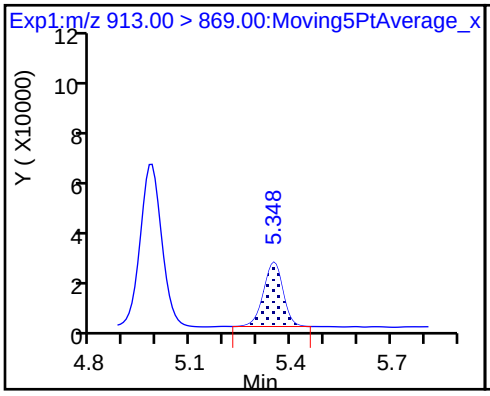
45 Perfluorohexadecanoic acid



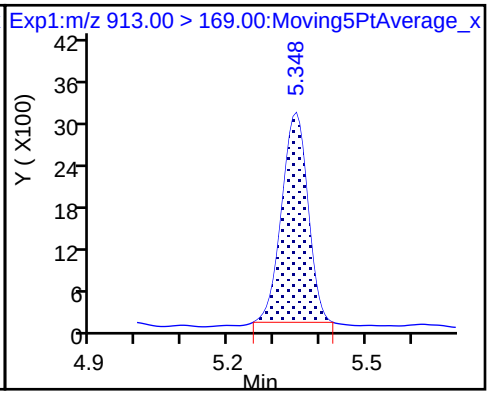
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 29-Mar-2018 17:43:00 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:44 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 08:30:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	1.000	6060888	2.41		96.5	56962	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.437	-0.001	1.000	553955	0.2472		98.9	209	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.702	0.001	0.556	4032497	2.47		98.6	98655	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.706	-0.003	1.000	480043	0.2486		99.5	187	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	87970	2.35		101	533	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.742	-0.003	1.000	655502	0.2196		99.4	452	
298.90 > 99.00	1.739	1.742	-0.003	1.000	270315		2.42(1.25-3.74)	99.4	452	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.955	0.006	1.000	143786	0.2202		94.3	8707	
D 60 M2-4:2FTS										
329.00 > 81.00	1.961	1.955	0.006	1.000	659047	2.30		98.7	8619	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.991	0.003	1.000	4418534	2.45		98.0	132844	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.992	0.001	1.000	449634	0.2486		99.4	672	
313.00 > 119.00	1.993	1.992	0.001	1.000	43865		10.25(5.03-15.10)	99.4	560	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.013	0.003	1.000	604278	0.2243		95.7	15316	
349.00 > 99.00	2.016	2.013	0.003	1.000	229999		2.63(1.36-4.07)	95.7	5859	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.092	0.003	1.000	197281	2.20		87.9	3119	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.092	0.003	1.000	79234	0.2952		118	621	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.326	-0.004	1.000	4242345	2.45		97.9	58841	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.327	-0.005	1.000	440174	0.2387		95.5	382	
363.00 > 169.00	2.322	2.327	-0.005	1.000	167042		2.64(1.13-3.40)	95.5	414	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.339	-0.004	1.000	512387	0.2134		93.8	2668	
399.00 > 99.00	2.335	2.339	-0.004	1.000	182072		2.81(1.50-4.49)	93.8	1118	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.340	-0.005	1.000	5084038	2.35		99.4	70453	
65 Adona										
377.00 > 251.00	2.374	2.372	0.002	1.000	1396340	0.2727		109	30346	
377.00 > 85.00	2.374	2.372	0.002	1.000	777798		1.80(0.84-2.53)	109	15072	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.664	-0.004	1.000	1019321	2.54		107	29794	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.664	-0.004	1.000	174781	0.2181		92.0	926	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.688	0.002	1.000	4272950	2.51		100	76270	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.689	0.001		4546643	2.50			87379	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.690	0.0	1.000	477643	0.2357		94.3	156	
413.00 > 169.00	2.691	2.690	0.0	1.000	240403		1.99(0.84-2.52)	94.3	957	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.695	0.003	1.000	477719	0.2495		105	12384	
449.00 > 99.00	2.698	2.695	0.003	1.000	122111		3.91(1.94-5.82)	105	3153	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.060	-0.003	1.000	3434108	2.29		95.7	54984	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.060	-0.003	1.000	363900	0.2216		95.5	797	
499.00 > 99.00	3.057	3.060	-0.003	1.000	84231		4.32(2.31-6.93)	95.5	698	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.061	0.003	1.000	3523980	2.44		97.7	70645	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.064	0.0	1.000	356101	0.2455		98.2	343	
463.00 > 169.00	3.064	3.064	0.0	1.000	90740		3.92(1.90-5.69)	98.2	3091	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.272	-0.001	1.000	665453	0.2477		106	11650	
D 21 13C8 FOSA										
506.00 > 78.00	3.386	3.388	-0.002	1.000	5204720	2.45		98.1	61555	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.386	3.389	-0.003	1.000	523091	0.2544		102	15875	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.409	0.004	1.000	272737	0.2367		98.6	9533	
549.00 > 99.00	3.413	3.409	0.004	1.000	111781		2.44(1.33-3.97)	98.6	2945	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1144081	2.46		103	33988	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.415	-0.002	1.000	140627	0.2183		91.1	1260	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.423	0.0	1.000	2904523	2.38		95.4	40768	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.427	-0.004	1.000	302194	0.2629		105	1474	
513.00 > 169.00	3.423	3.427	-0.004	1.000	58285		5.18(2.36-7.09)	105	2424	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.578	0.004	1.000	1579046	2.42		96.9	44458	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.583	3.581	0.001	1.000	160694	0.2414		96.5	1665	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.738	-0.001	1.000	238488	0.2392		99.3	7789	
599.00 > 99.00	3.737	3.738	-0.001	1.000	75761		3.15(1.39-4.16)	99.3	2515	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.749	-0.002	1.000	1667774	2.44		97.6	5132	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.753	0.005	1.000	2421277	2.44		97.4	58900	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.755	0.003	1.003	158064	0.2584		103	2333	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.755	0.003	1.000	181675	0.2338		93.5	762	
563.00 > 169.00	3.758	3.755	0.003	1.000	53494		3.40(2.12-6.36)	93.5	2615	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.914	3.910	0.004	1.000	1001338	0.2401		102	22386	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.052	-0.005	1.000	269716	0.2285		91.4	196	
613.00 > 169.00	4.047	4.052	-0.005	1.000	66650		4.05(2.13-6.40)	91.4	1457	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.052	-0.005	1.000	2730672	2.47		98.7	20860	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.316	0.001	1.000	301420	0.2387		95.5	116	
663.00 > 169.00	4.317	4.316	0.001	1.000	102600		2.94(1.25-3.76)	95.5	1837	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.558	0.003	1.000	3442831	2.45		97.9	17673	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.558	0.003	1.000	88991	0.2587		103	1506	
713.00 > 219.00	4.550	4.558	-0.008	0.998	67523		1.32(0.71-2.13)	103	1702	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.977	-0.004	1.000	523255	0.2476		99.0	127	
813.00 > 169.00	4.973	4.977	-0.004	1.000	91462		5.72(2.86-8.58)	99.0	886	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.977	-0.004	1.000	5136479	2.37		94.6	13963	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.348	5.344	0.004	1.000	548804	0.2690		108	95.1	
913.00 > 169.00	5.341	5.344	-0.003	0.999	65998		8.32(3.83-11.48)	108	957	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:47:48 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_004.d

Injection Date: 29-Mar-2018 17:43:00 Instrument ID: A8_N

Lims ID: IC L3 Full

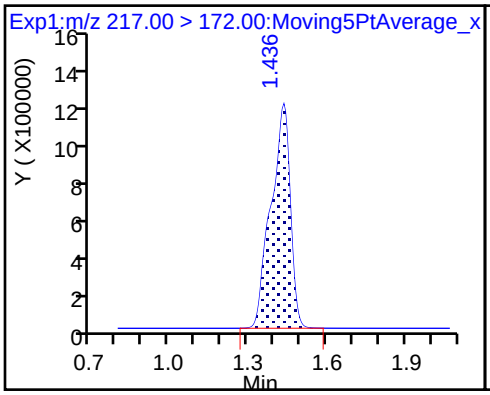
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

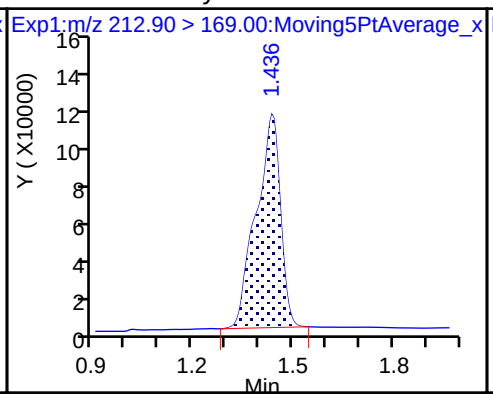
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

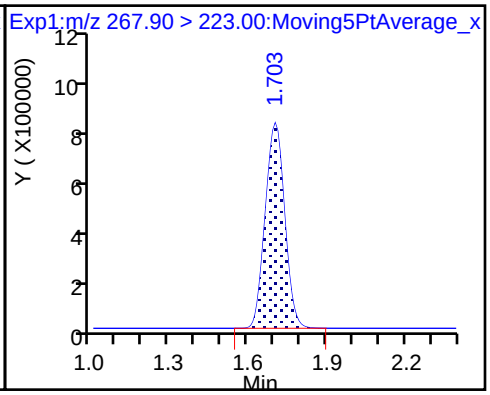
D 1 13C4 PFBA



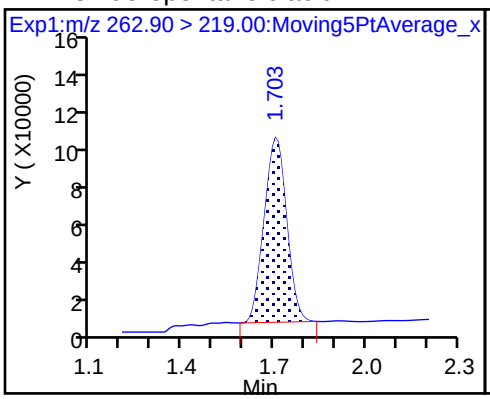
2 Perfluorobutyric acid



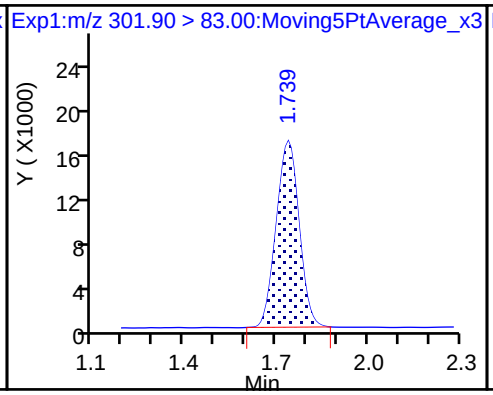
D 3 13C5-PFPeA



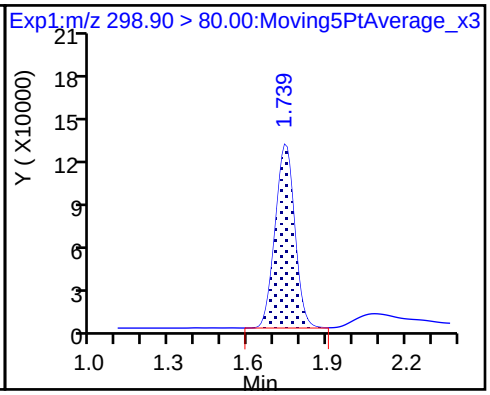
4 Perfluoropentanoic acid



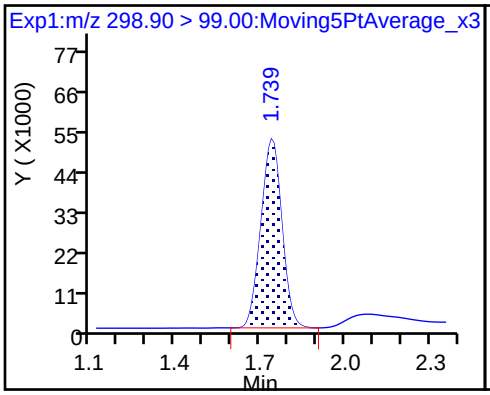
D 47 13C3-PFBS



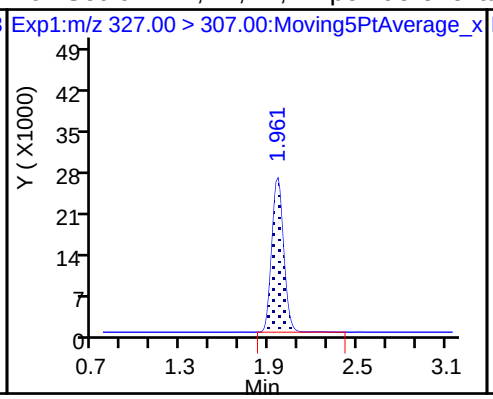
5 Perfluorobutanesulfonic acid



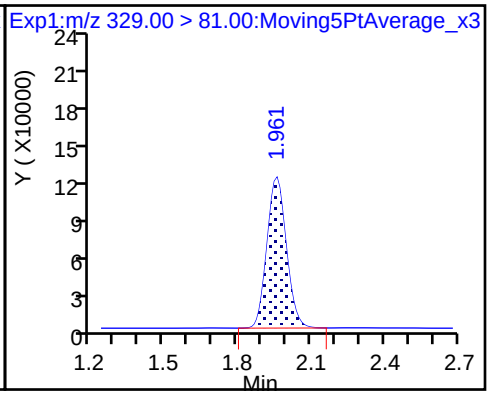
5 Perfluorobutanesulfonic acid



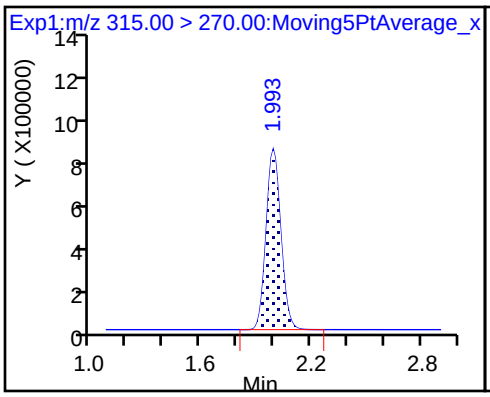
61 Sodium 1H,1H,2H,2H-perfluorohexane



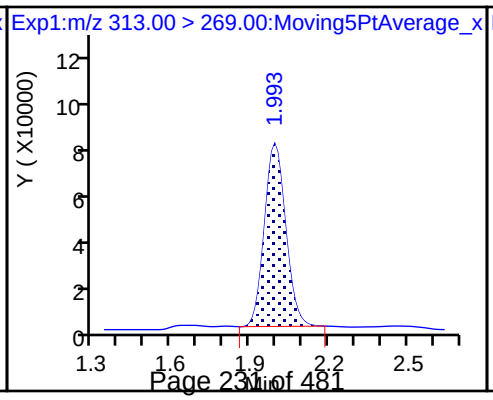
D 60 M2-4:2FTS



D 7 13C2 PFHxA



6 Perfluorohexanoic acid



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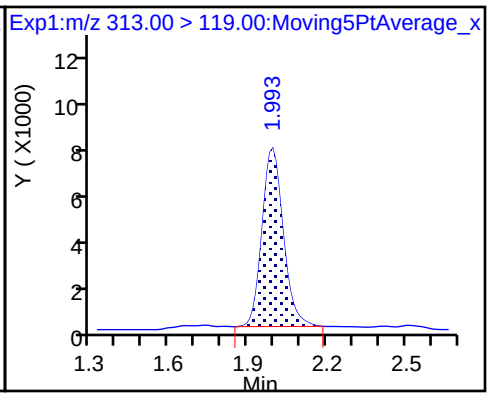
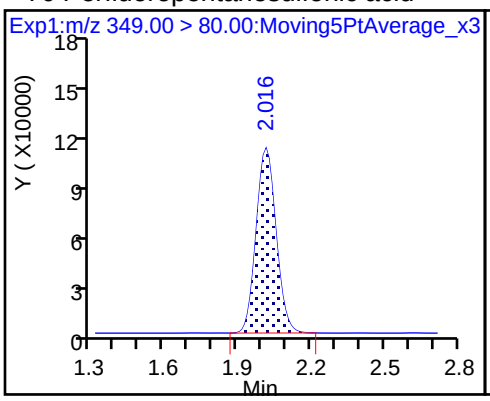


70 Perfluoropentanesulfonic acid



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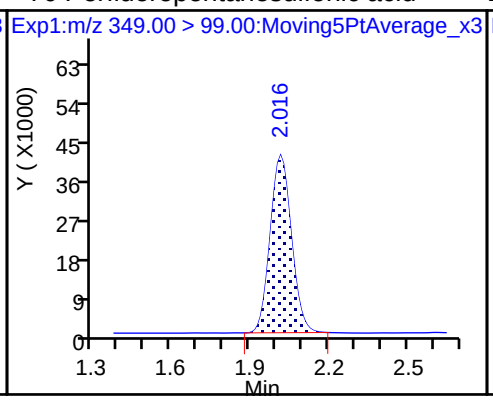
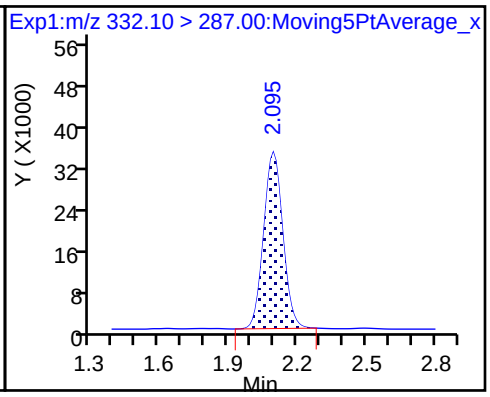
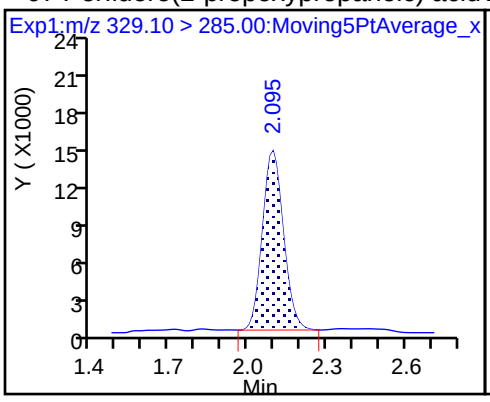


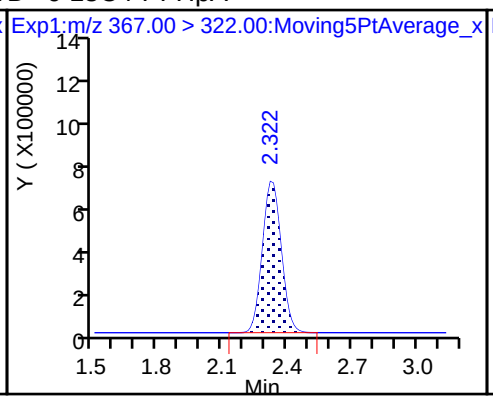
D 64 13C3 HFPO-DA



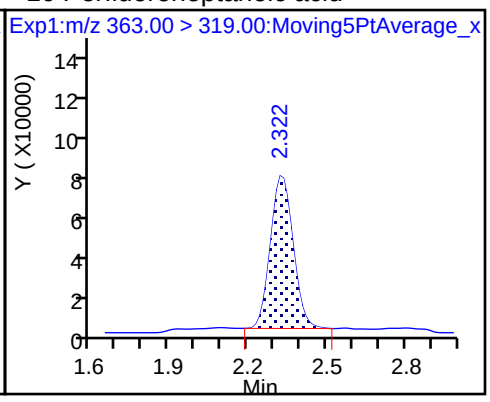
67 Perfluoro(2-propoxypropanoic) acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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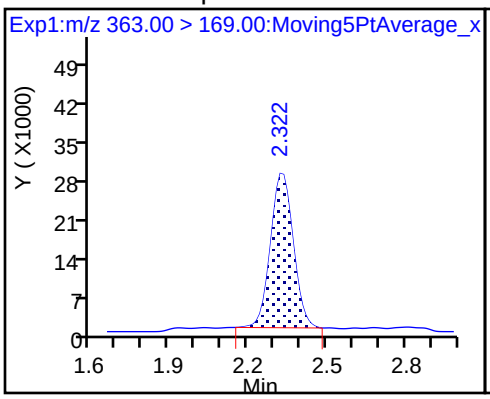
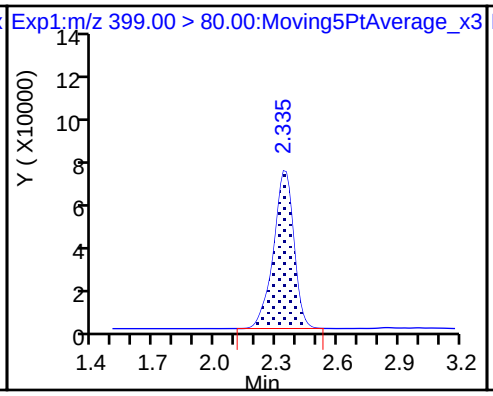


8 Perfluorohexanesulfonic acid



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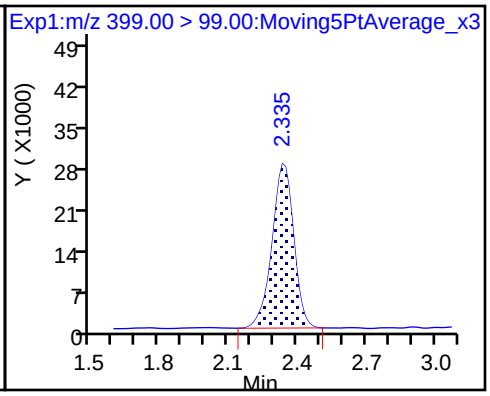
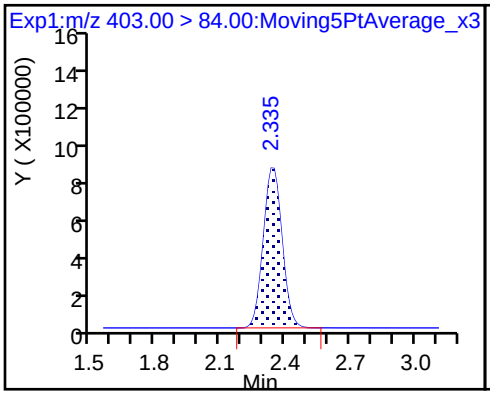
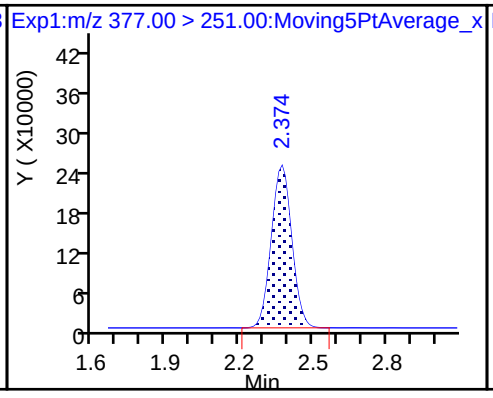


D 11 18O2 PFHxS



65 Adona



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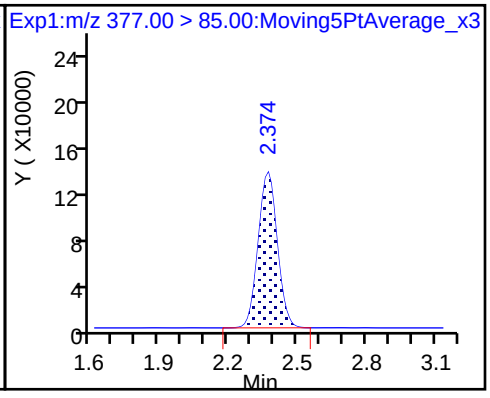
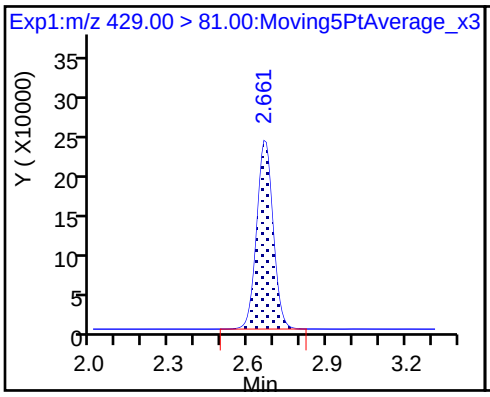
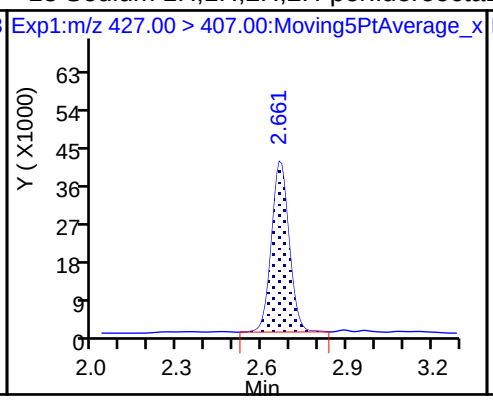


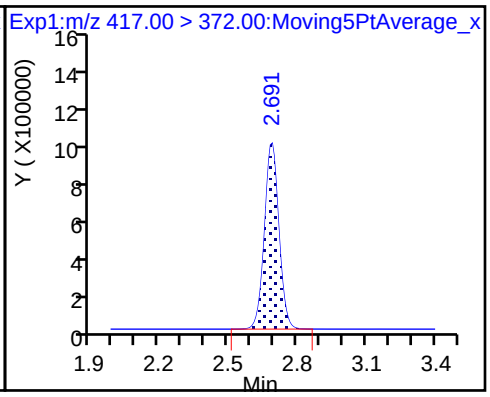
D 12 M2-6:2FTS



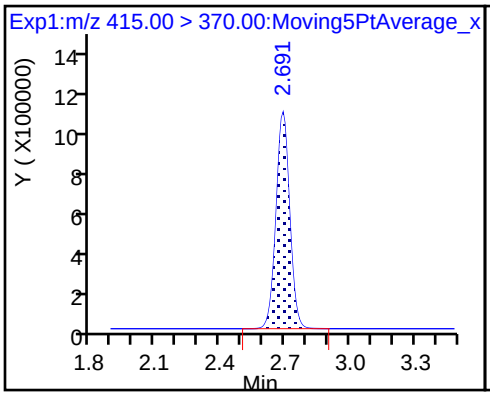
13 Sodium 1H,1H,2H,2H-perfluorooctane



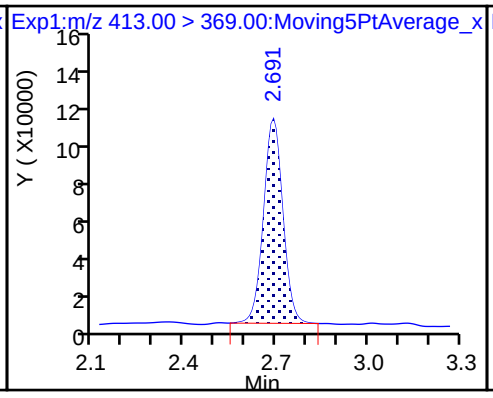
D 14 13C4 PFOA



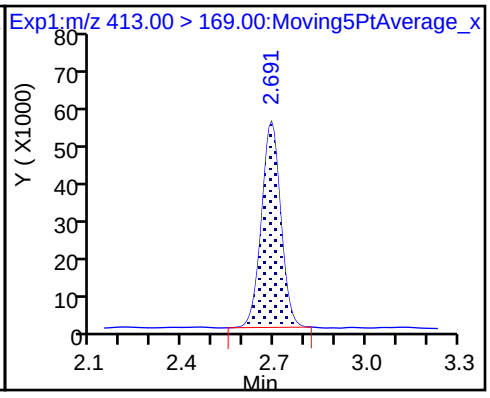
* 62 13C2-PFOA



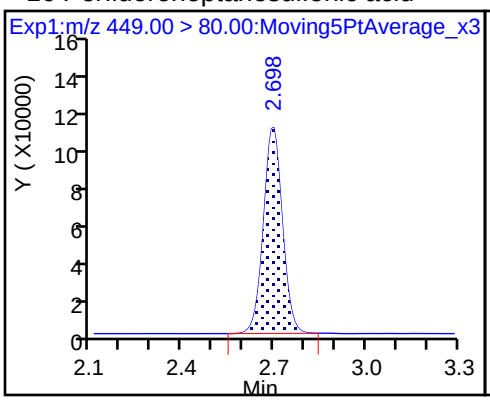
15 Perfluorooctanoic acid



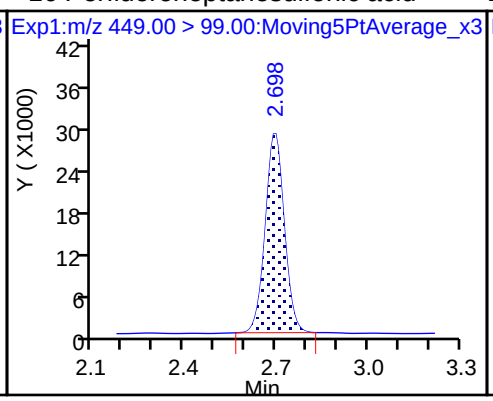
15 Perfluorooctanoic acid



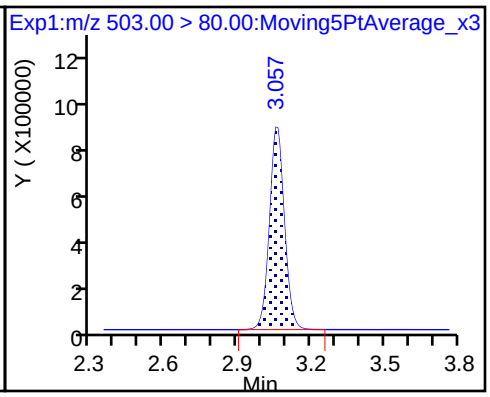
16 Perfluoroheptanesulfonic acid



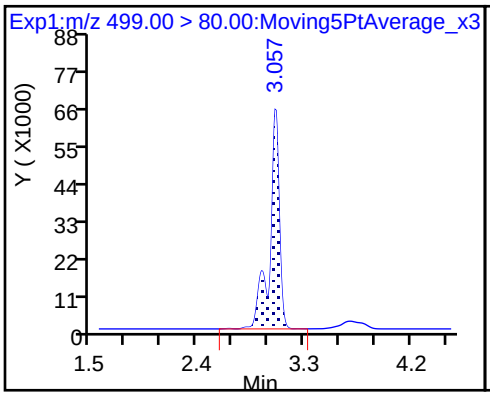
16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid



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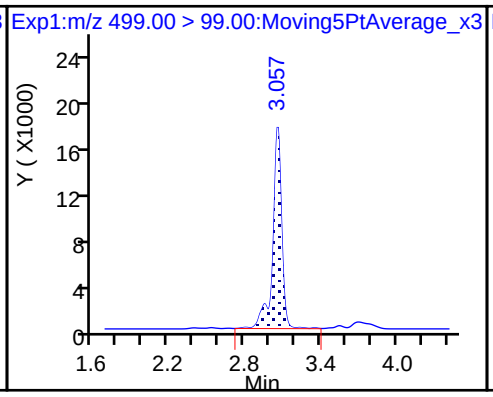
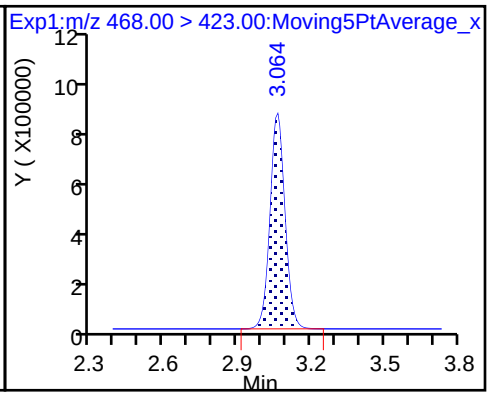
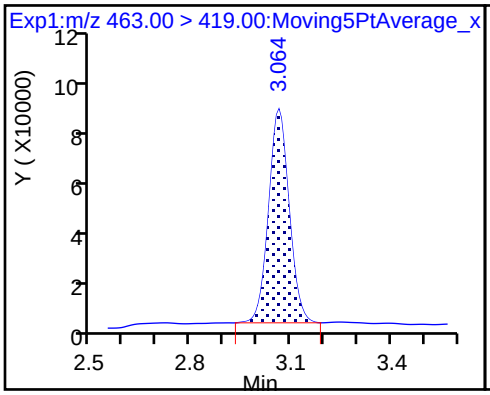


D 19 13C5 PFNA



20 Perfluorononanoic acid



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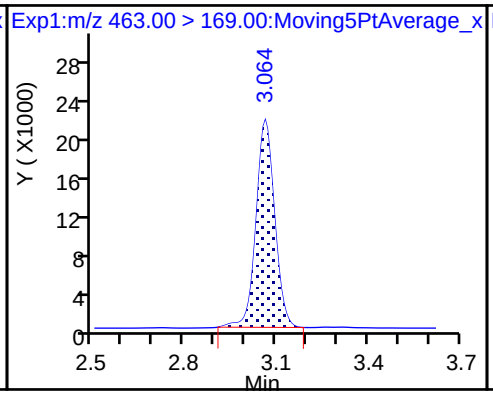
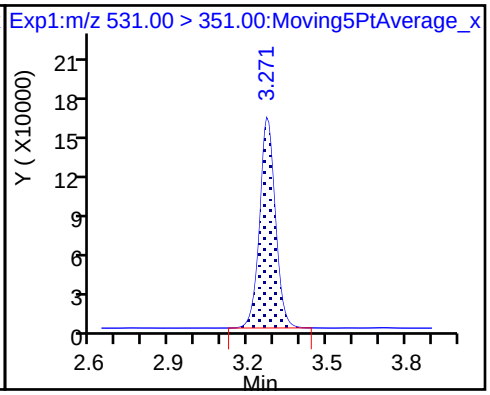
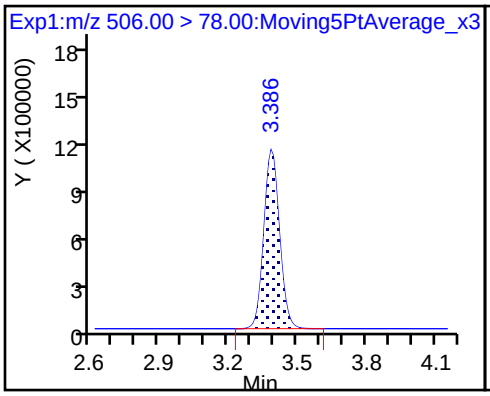


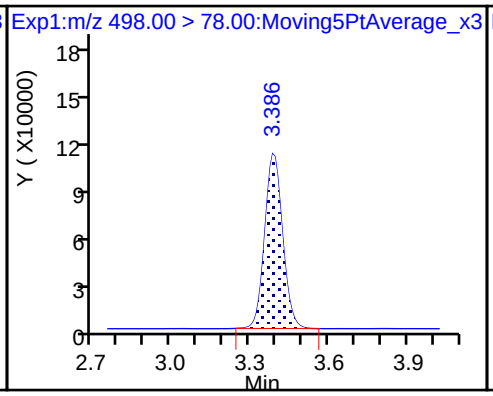
69 9-Chlorohexadecafluoro-3-oxanonane



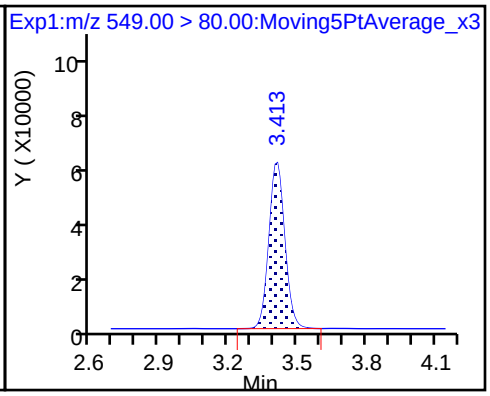
D 21 13C8 FOSA



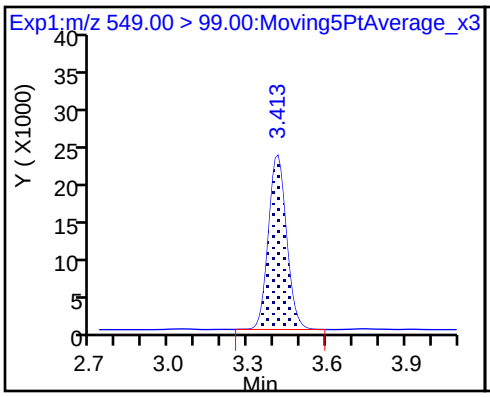
22 Perfluorooctane Sulfonamide



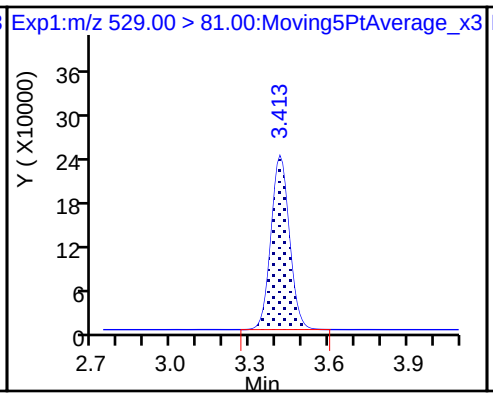
68 Perfluorononanesulfonic acid



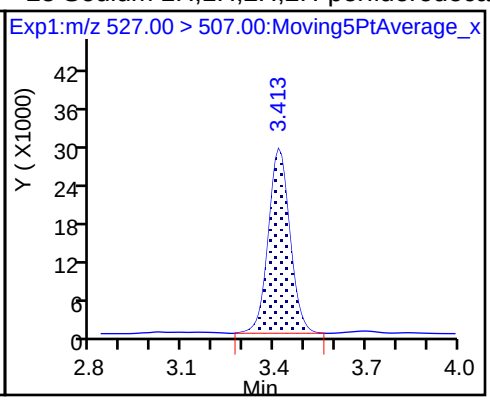
68 Perfluorononanesulfonic acid



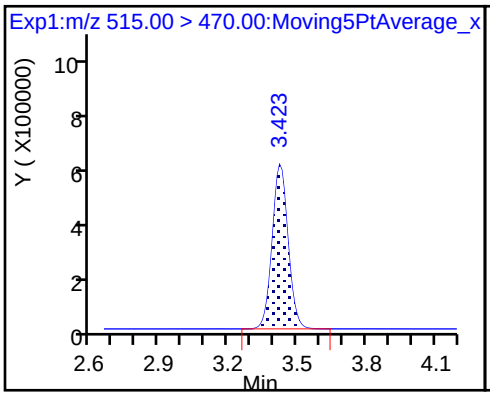
D 26 M2-8:2FTS



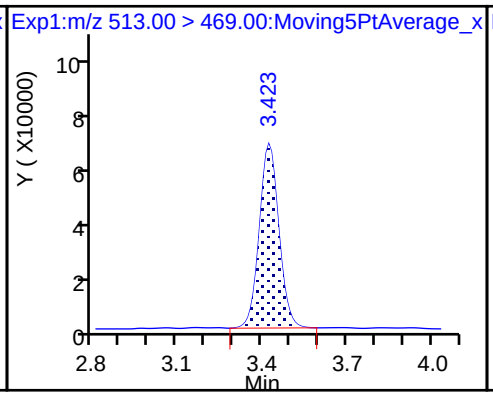
25 Sodium 1H,1H,2H,2H-perfluorodecane



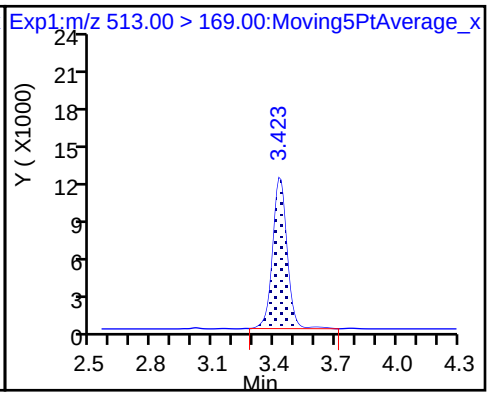
D 23 13C2 PFDA



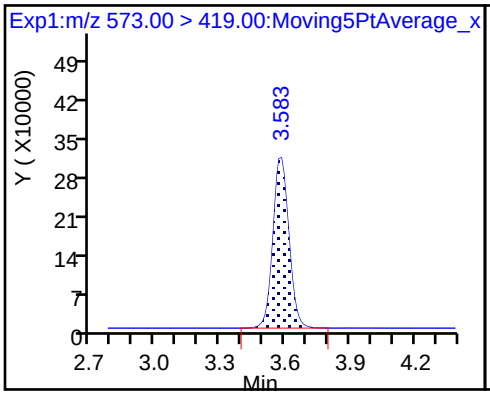
24 Perfluorodecanoic acid



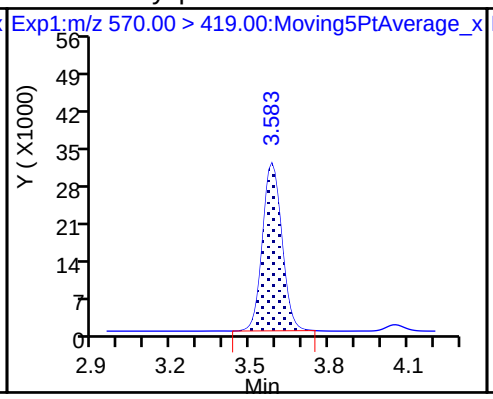
24 Perfluorodecanoic acid



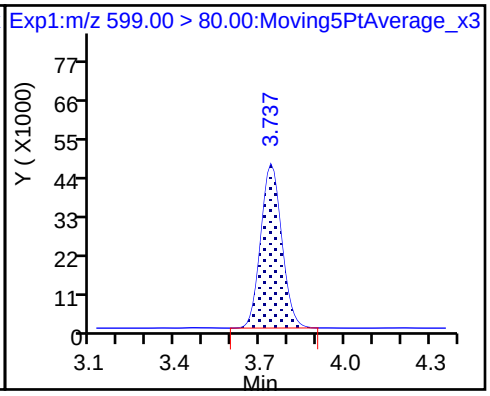
D 27 d3-NMeFOSAA



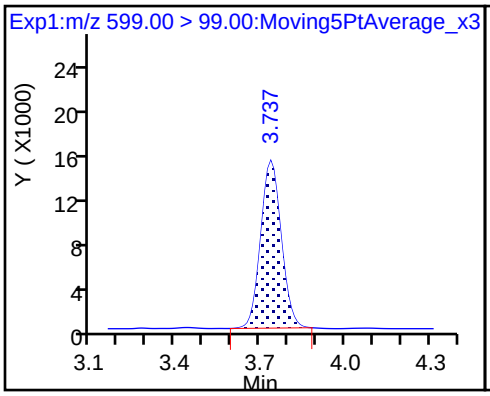
28 N-methyl perfluorooctane sulfonami



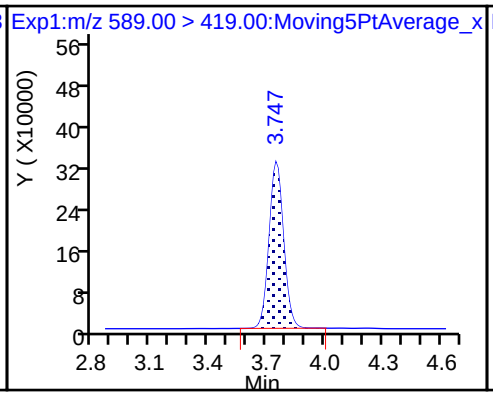
29 Perfluorodecane Sulfonic acid



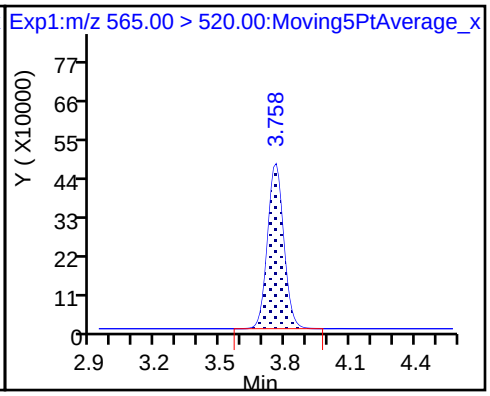
29 Perfluorodecane Sulfonic acid



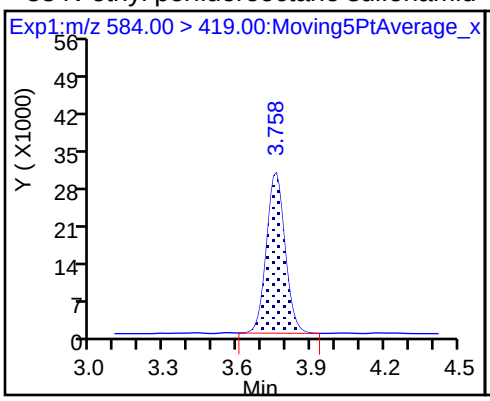
D 32 d5-NEtFOSAA



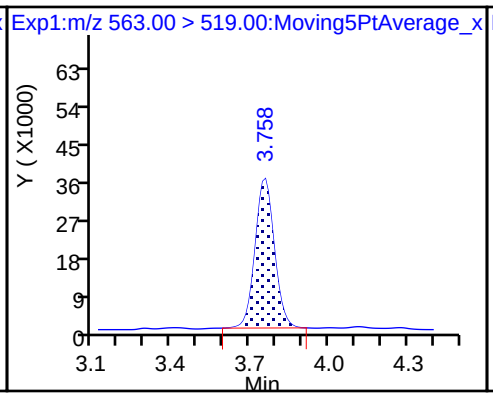
D 30 13C2 PFUnA



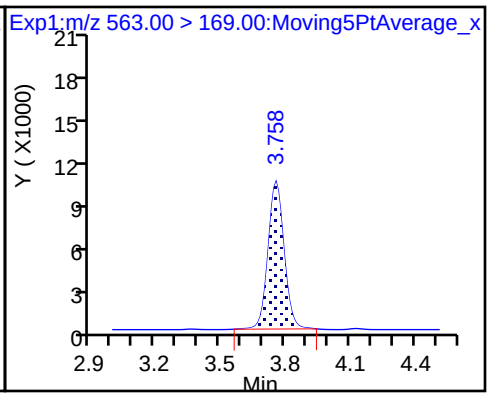
33 N-ethyl perfluorooctane sulfonamid



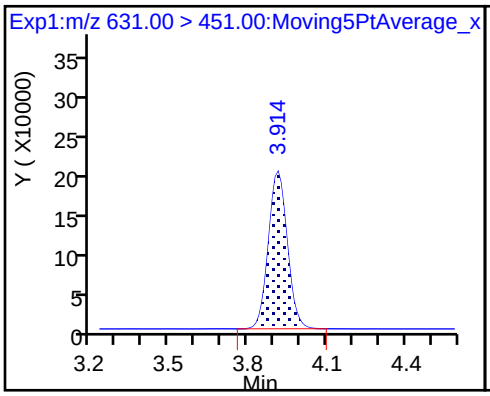
31 Perfluoroundecanoic acid



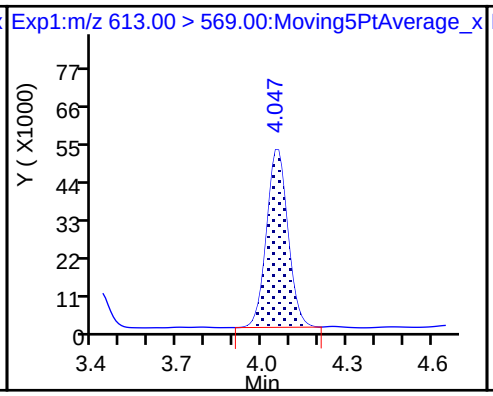
31 Perfluoroundecanoic acid



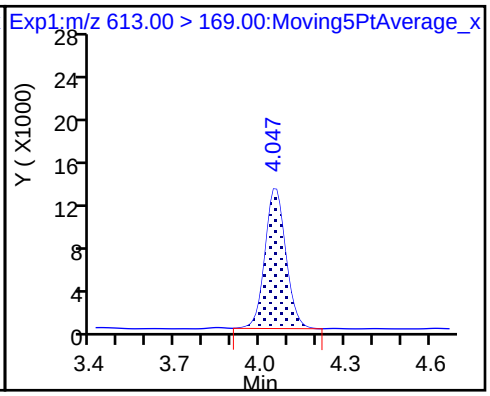
66 11-Chloroeicosafluoro-3-oxaundecan



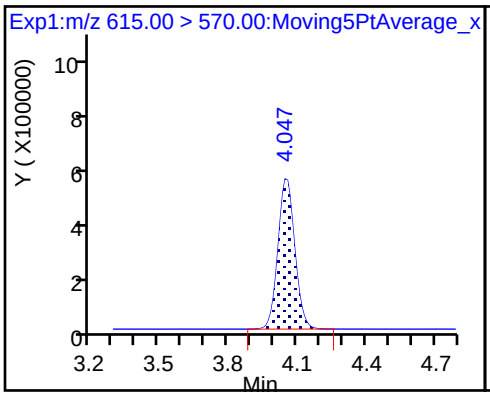
37 Perfluorododecanoic acid



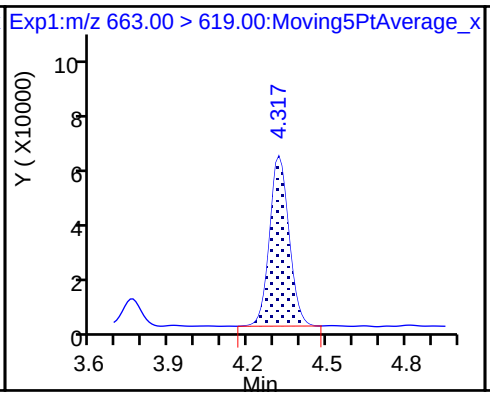
37 Perfluorododecanoic acid



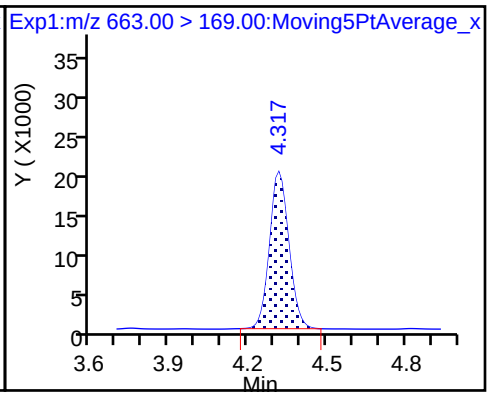
D 36 13C2 PFDoA



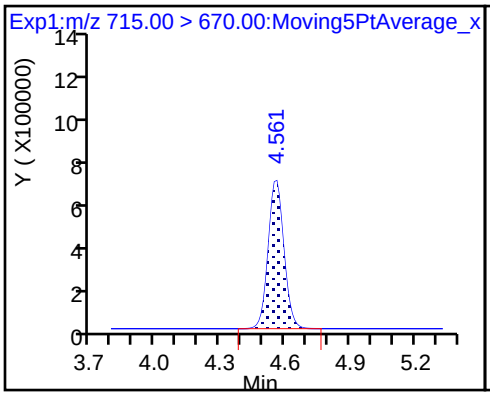
41 Perfluorotridecanoic acid



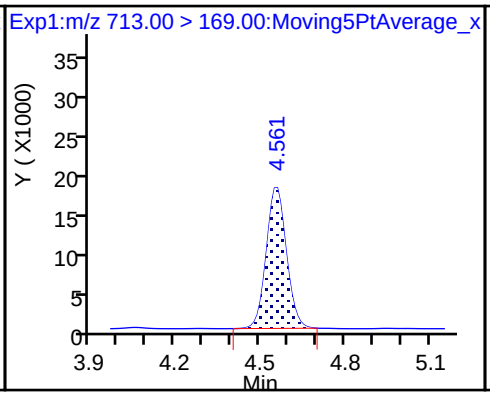
41 Perfluorotridecanoic acid



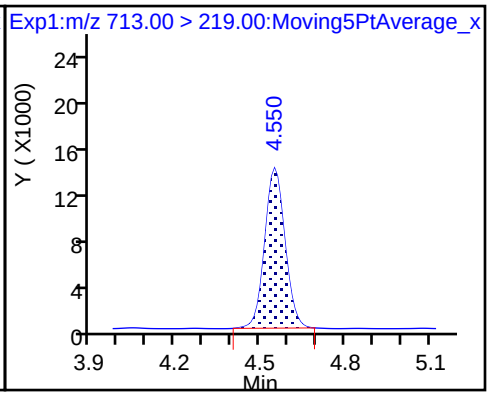
D 43 13C2-PFTeDA



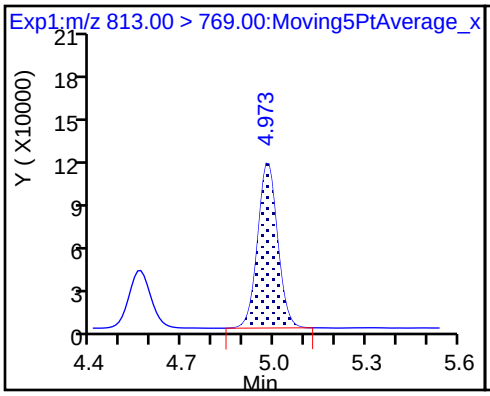
42 Perfluorotetradecanoic acid



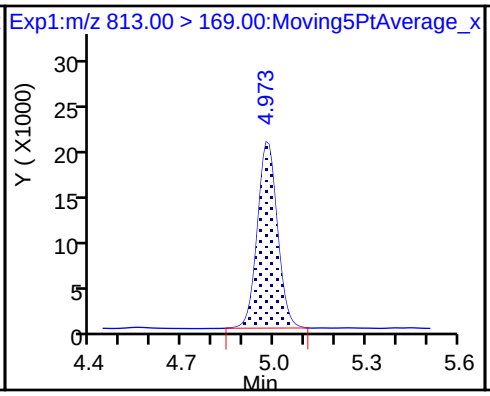
42 Perfluorotetradecanoic acid



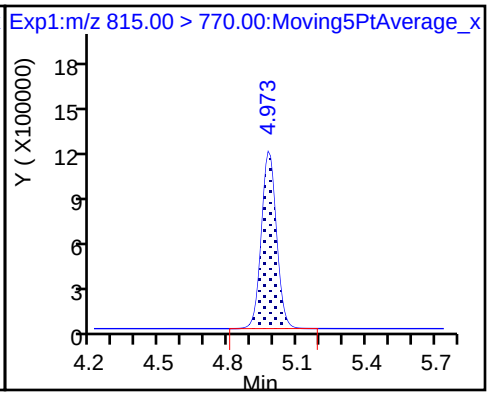
45 Perfluorohexadecanoic acid



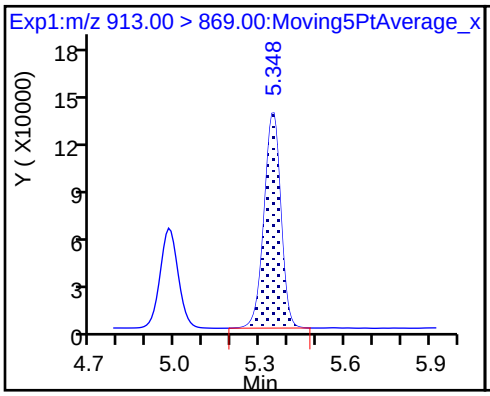
45 Perfluorohexadecanoic acid



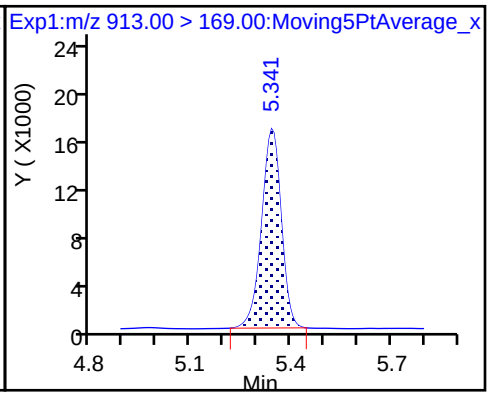
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 29-Mar-2018 17:50:50 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:47:56 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 11:39:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.439	1.436	0.003	1.000	6326878	2.53		101	66086	
2 Perfluorobutyric acid										
212.90 > 169.00	1.439	1.437	0.002	1.000	2290620	0.9794		97.9	809	
D 3 13C5-PFPeA										
267.90 > 223.00	1.698	1.702	-0.004	0.555	4176477	2.57		103	116353	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.707	1.706	0.001	1.005	1931372	0.9659		96.6	805	
D 47 13C3-PFBS										
301.90 > 83.00	1.734	1.738	-0.004	1.000	90179	2.42		104	608	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.743	1.742	0.001	1.005	2631669	0.8600		97.3	1869	
298.90 > 99.00	1.743	1.742	0.001	1.005	1083923		2.43(1.25-3.74)	97.3	1759	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.955	0.001	1.000	663350	2.33		99.9	9283	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.955	0.001	1.000	566727	0.8468		90.7	34287	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.991	-0.002	1.000	4494490	2.51		100	133459	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.992	-0.004	1.000	1763768	0.9587		95.9	2454	
313.00 > 119.00	1.988	1.992	-0.004	1.000	174575		10.10(5.03-15.10)	95.9	1944	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.013	-0.002	1.000	2554091	0.9248		98.6	56514	
349.00 > 99.00	2.011	2.013	-0.002	1.000	949421		2.69(1.36-4.07)	98.6	24112	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.092	-0.002	1.000	282149	0.9074		90.7	2501	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.090	2.092	-0.002	1.000	228536	2.56		102	4106	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.326	0.003	1.000	4235886	2.46		98.4	78022	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.329	2.327	0.002	1.000	1808460	0.9823		98.2	1774	
363.00 > 169.00	2.329	2.327	0.002	1.000	676071		2.67(1.13-3.40)	98.2	1853	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.342	2.339	0.003	1.000	1978319	0.7926		87.1	8809	
399.00 > 99.00	2.342	2.339	0.003	1.000	679646		2.91(1.50-4.49)	87.1	3957	
D 11 18O2 PFHxS										
403.00 > 84.00	2.342	2.340	0.002	1.000	5285294	2.46		104	74091	
65 Adona										
377.00 > 251.00	2.369	2.372	-0.003	1.000	5648777	1.02		102	75524	
377.00 > 85.00	2.369	2.372	-0.003	1.000	3138221		1.80(0.84-2.53)	102	54318	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.666	2.664	0.002	1.000	617577	0.8304		87.6	3087	
D 12 M2-6:2FTS										
429.00 > 81.00	2.666	2.664	0.002	1.000	945777	2.38		100	27031	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.688	0.0	1.000	4302583	2.54		102	91031	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.689	-0.001		4517618	2.50			95988	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.690	-0.002	1.000	1868120	0.9154		91.5	659	
413.00 > 169.00	2.688	2.690	-0.002	1.000	971134		1.92(0.84-2.52)	91.5	3751	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.695	0.001	1.000	1907896	0.9225		96.9	34296	
449.00 > 99.00	2.696	2.695	0.001	1.000	526708		3.62(1.94-5.82)	96.9	12171	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.060	-0.001	1.000	1463610	0.8254		88.9	3157	
499.00 > 99.00	3.059	3.060	-0.001	1.000	340322		4.30(2.31-6.93)	88.9	3568	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.060	-0.001	1.000	3709075	2.49		104	36433	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.061	-0.002	1.000	3594883	2.51		100	66385	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.064	-0.005	1.000	1464985	0.99		99.0	1530	
463.00 > 169.00	3.059	3.064	-0.005	1.000	357225		4.10(1.90-5.69)	99.0	12362	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.273	3.272	0.001	1.000	2643424	0.9109		97.7	30685	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.388	0.001	1.000	5326321	2.53		101	62884	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	2096455	1.00		99.6	44671	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.409	-0.001	1.000	1129121	0.9075		94.5	33891	
549.00 > 99.00	3.408	3.409	-0.001	1.000	441645		2.56(1.33-3.97)	94.5	13287	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.413	0.004	1.000	1069323	2.31		96.5	30865	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.415	0.002	1.000	564315	0.9371		97.8	6369	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.423	0.003	1.000	3033191	2.51		100	42271	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.427	-0.001	1.000	1176291	0.9800		98.0	5989	
513.00 > 169.00	3.426	3.427	-0.001	1.000	221055		5.32(2.36-7.09)	98.0	9212	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.578	-0.003	1.000	1643657	2.54		102	32778	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.581	0.005	1.003	637079	0.9192		91.9	4973	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.738	0.003	1.000	1004519	0.9329		96.8	24501	
599.00 > 99.00	3.741	3.738	0.003	1.000	323257		3.11(1.39-4.16)	96.8	12606	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.749	0.002	1.000	1794427	2.64		106	4050	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.753	-0.002	1.000	2514905	2.55		102	44805	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.755	-0.004	1.000	621160	0.9436		94.4	8623	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.755	-0.004	1.000	761440	0.9434		94.3	3964	
563.00 > 169.00	3.751	3.755	-0.004	1.000	200870		3.79(2.12-6.36)	94.3	9833	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.908	3.910	-0.002	1.000	4214763	0.9357		99.3	70271	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.052	-0.001	1.000	2827344	2.57		103	21719	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.052	-0.001	1.000	1132386	0.9264		92.6	925	
613.00 > 169.00	4.051	4.052	-0.001	1.000	273090		4.15(2.13-6.40)	92.6	6755	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.316	0.002	1.000	1266253	0.9685		96.9	540	
663.00 > 169.00	4.318	4.316	0.002	1.000	420300		3.01(1.25-3.76)	96.9	6383	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.558	-0.005	1.000	366508	1.03		103	5270	
713.00 > 219.00	4.553	4.558	-0.005	1.000	262673		1.40(0.71-2.13)	103	6532	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.558	-0.005	1.000	3577558	2.56		102	21734	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.977	-0.002	1.000	5422645	2.51		101	15201	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.975	4.977	-0.002	1.000	2020619	0.9625		96.2	475	
813.00 > 169.00	4.975	4.977	-0.002	1.000	343500		5.88(2.86-8.58)	96.2	3339	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2132452	0.99		99.0	350	
913.00 > 169.00	5.344	5.344	0.0	1.000	278856		7.65(3.83-11.48)	99.0	3135	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:00 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_005.d

Injection Date: 29-Mar-2018 17:50:50 Instrument ID: A8_N

Lims ID: IC L4 Full

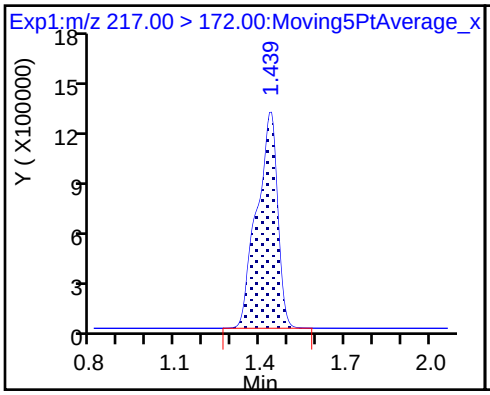
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

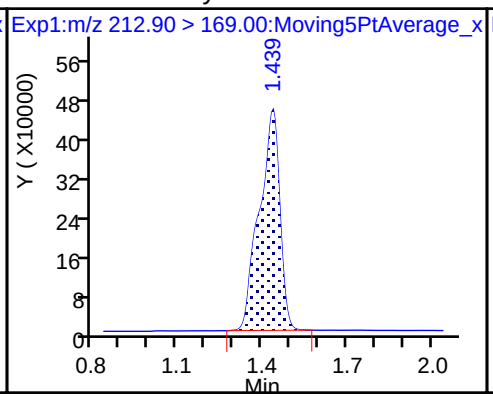
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

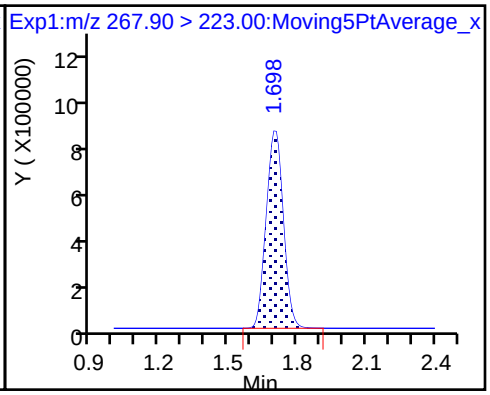
D 1 13C4 PFBA



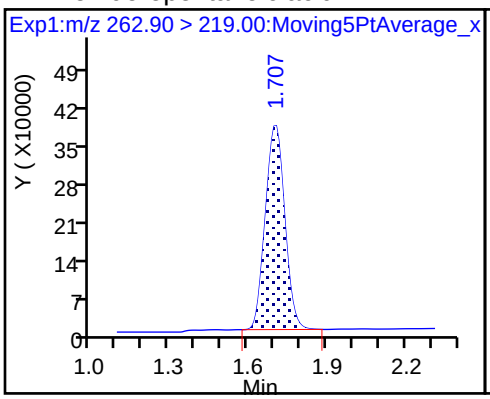
2 Perfluorobutyric acid



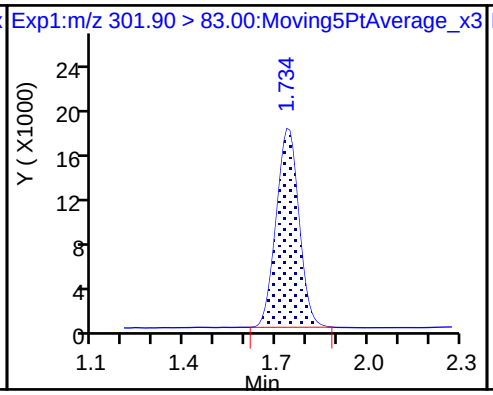
D 3 13C5-PFPeA



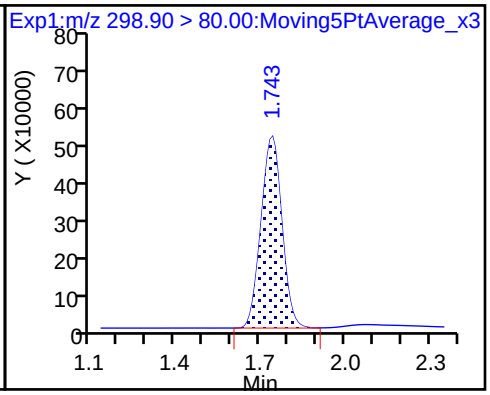
4 Perfluoropentanoic acid



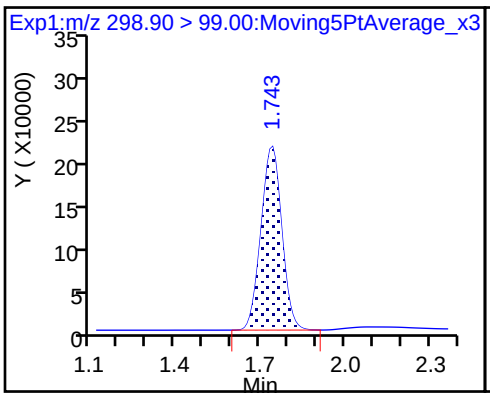
D 47 13C3-PFBS



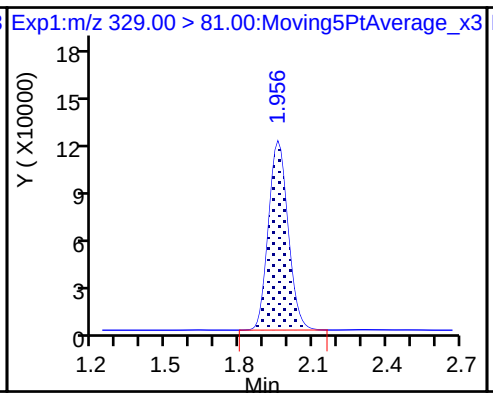
5 Perfluorobutanesulfonic acid



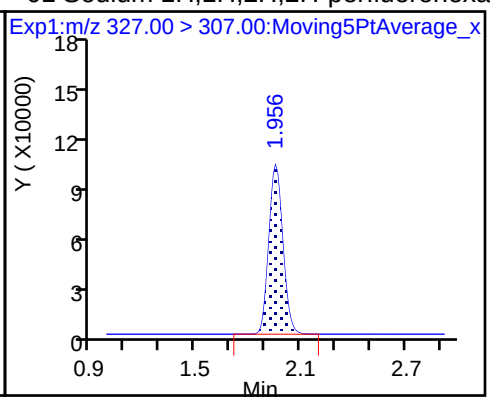
5 Perfluorobutanesulfonic acid



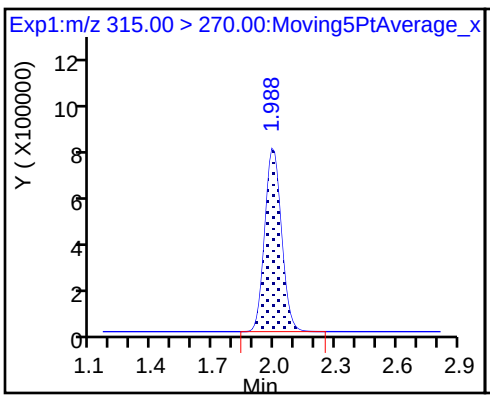
D 60 M2-4:2FTS



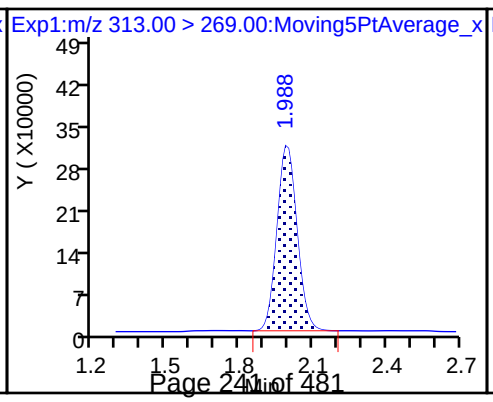
61 Sodium 1H,1H,2H,2H-perfluorohexane



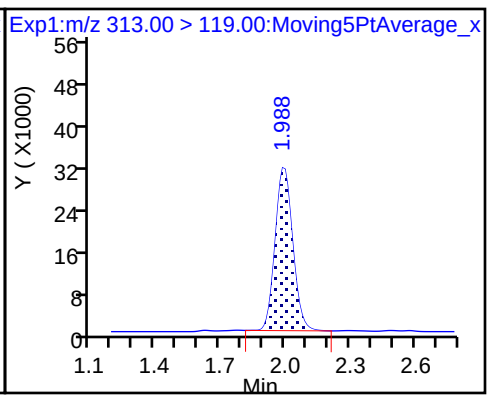
D 7 13C2 PFHxA



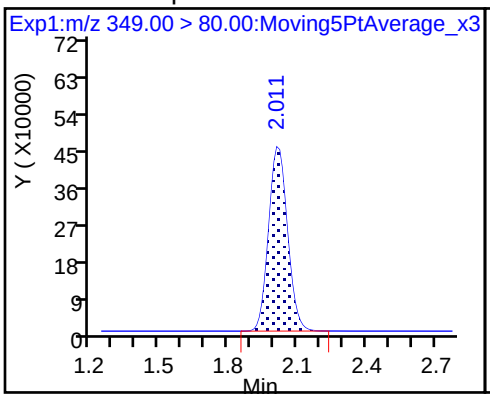
6 Perfluorohexanoic acid



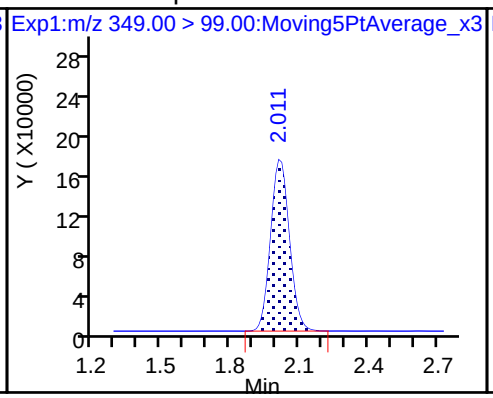
6 Perfluorohexanoic acid



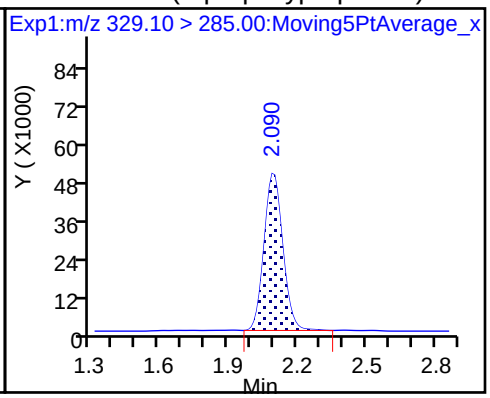
70 Perfluoropentanesulfonic acid



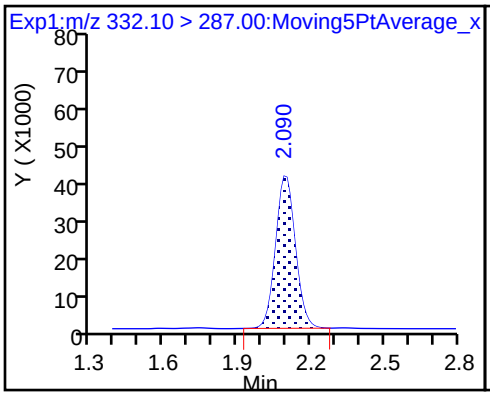
70 Perfluoropentanesulfonic acid



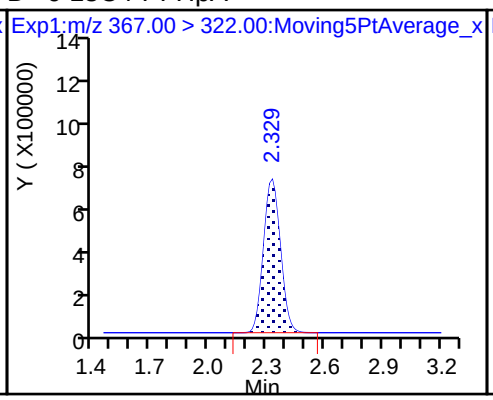
67 Perfluoro(2-propoxypropanoic) acid



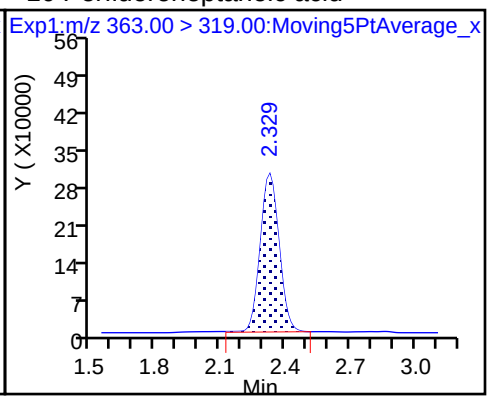
D 64 13C3 HFPO-DA



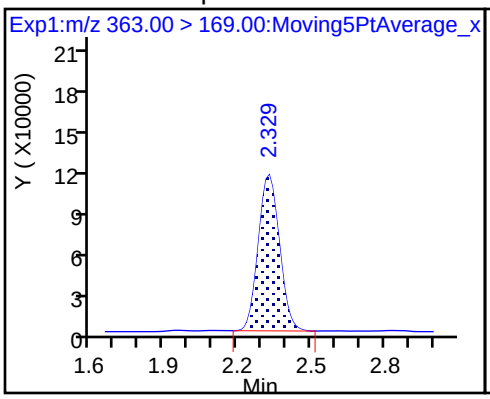
D 9 13C4-PFHpA



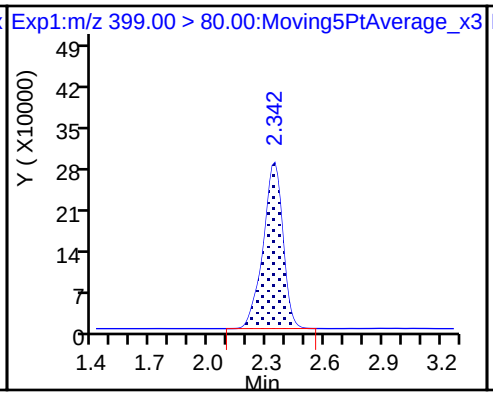
10 Perfluoroheptanoic acid



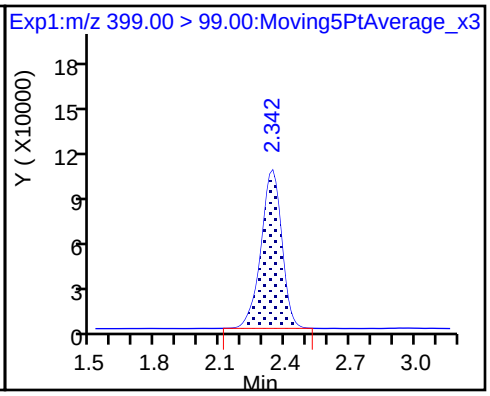
10 Perfluoroheptanoic acid



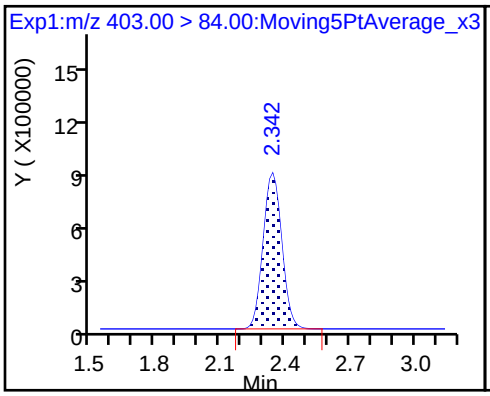
8 Perfluorohexanesulfonic acid



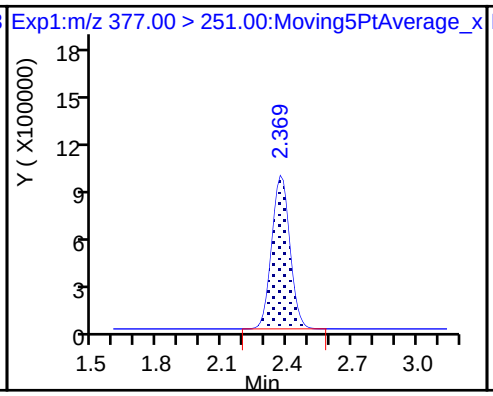
8 Perfluorohexanesulfonic acid



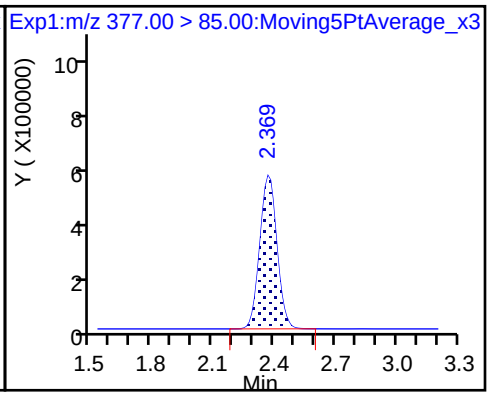
D 11 18O2 PFHxS



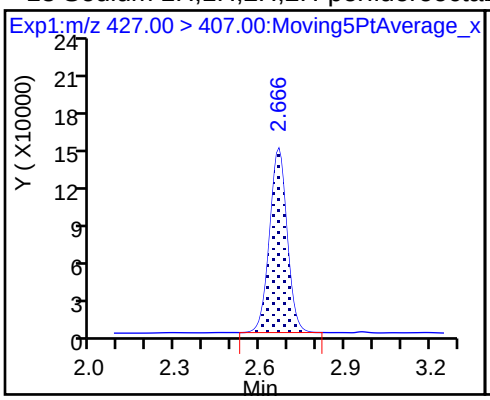
65 Adona



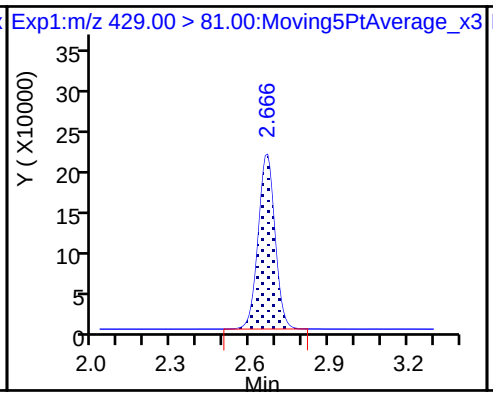
65 Adona



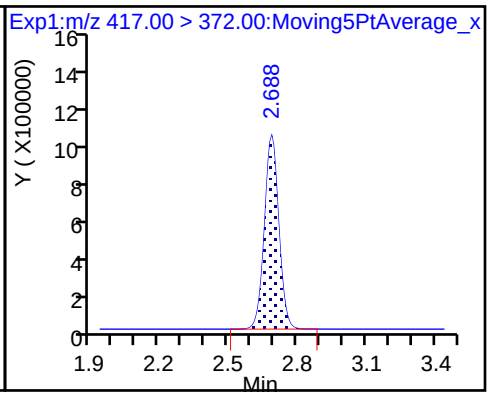
13 Sodium 1H,1H,2H,2H-perfluorooctane



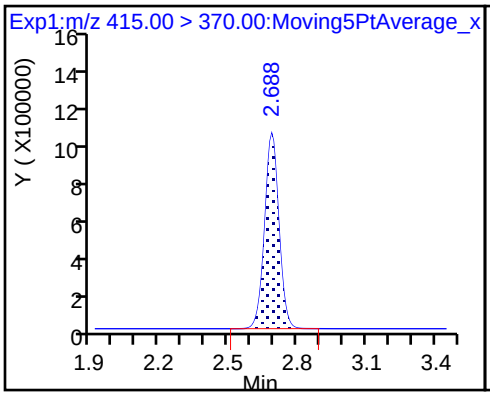
D 12 M2-6:2FTS



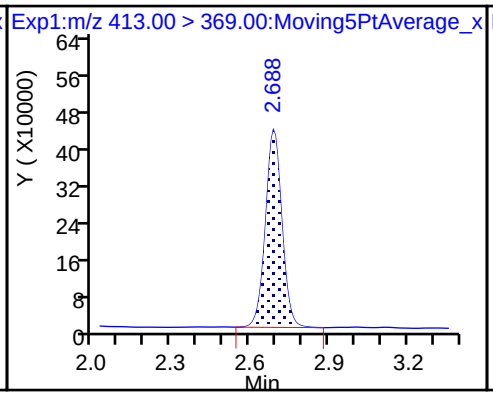
D 14 13C4 PFOA



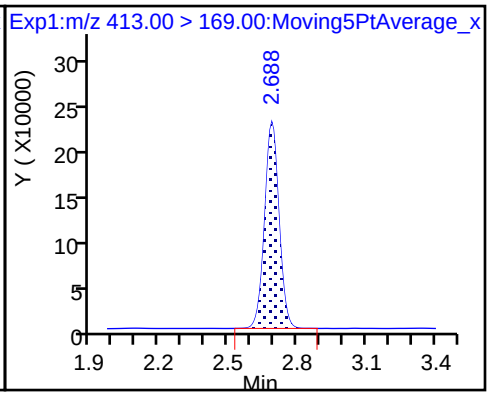
* 62 13C2-PFOA



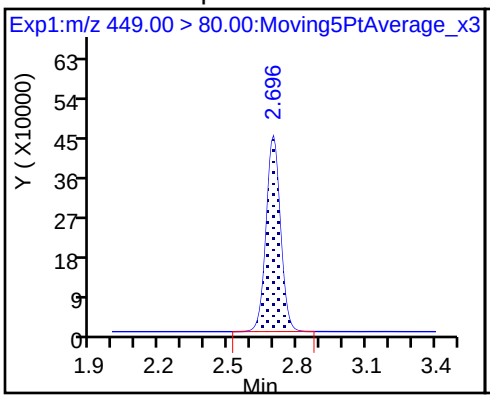
15 Perfluorooctanoic acid



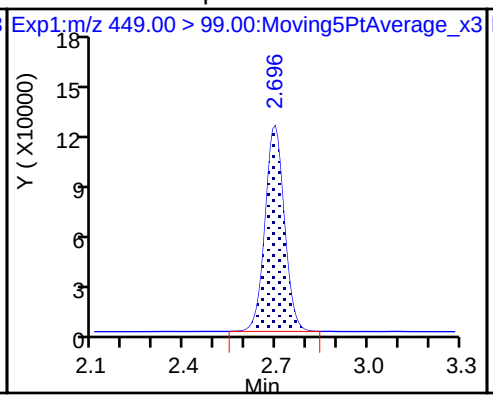
15 Perfluorooctanoic acid



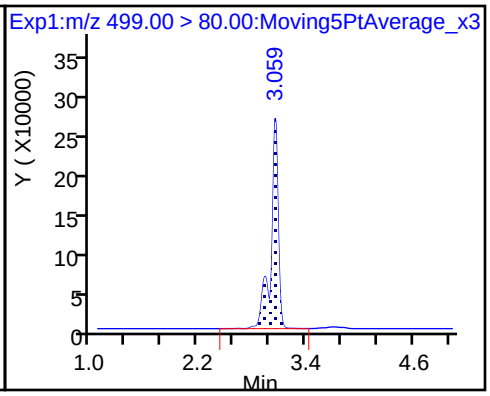
16 Perfluoroheptanesulfonic acid



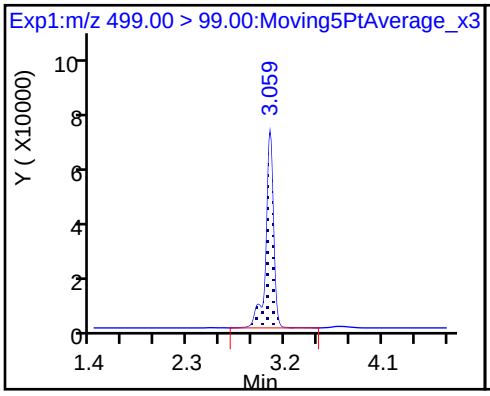
16 Perfluoroheptanesulfonic acid



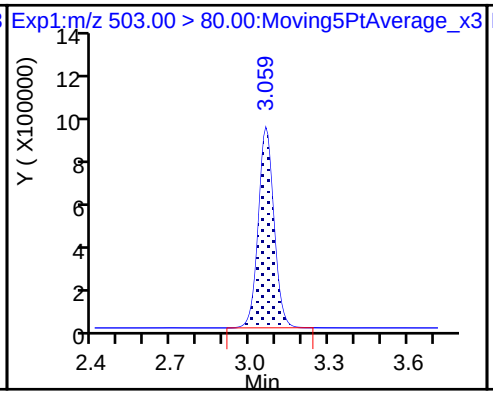
17 Perfluorooctane sulfonic acid



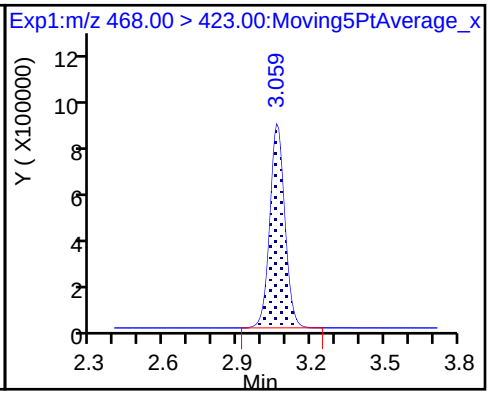
17 Perfluorooctane sulfonic acid



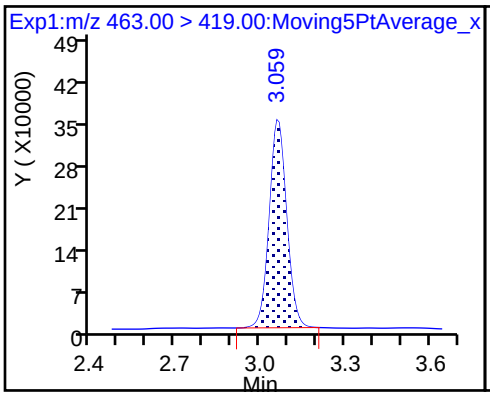
D 18 13C4 PFOS



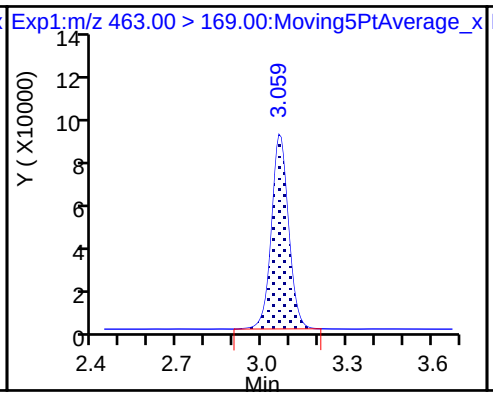
D 19 13C5 PFNA



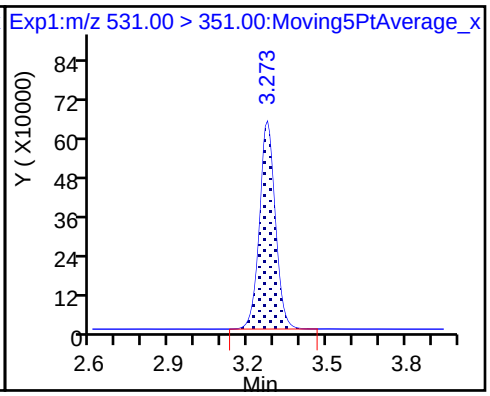
20 Perfluorononanoic acid



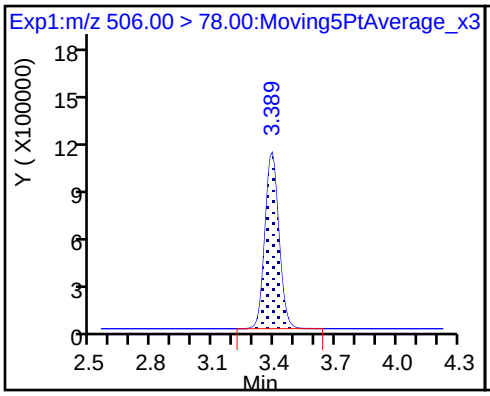
20 Perfluorononanoic acid



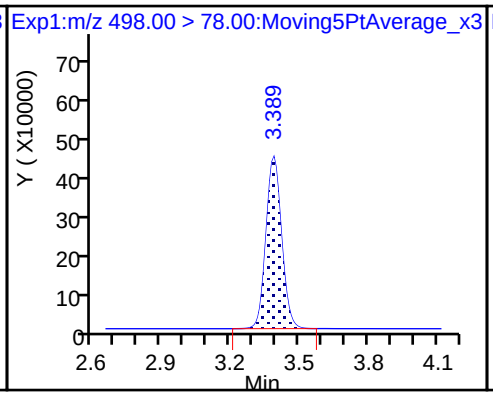
69 9-Chlorohexadecafluoro-3-oxanonane



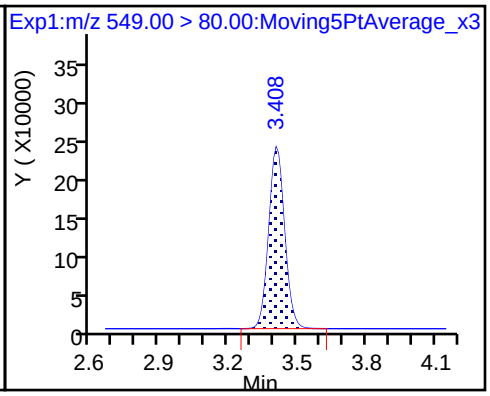
D 21 13C8 FOSA



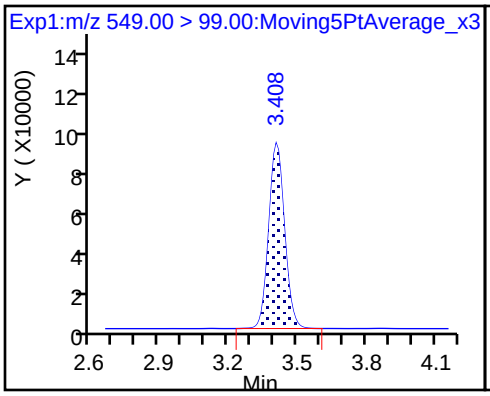
22 Perfluorooctane Sulfonamide



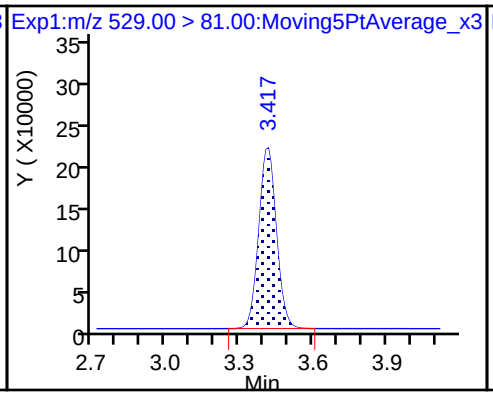
68 Perfluorononanesulfonic acid



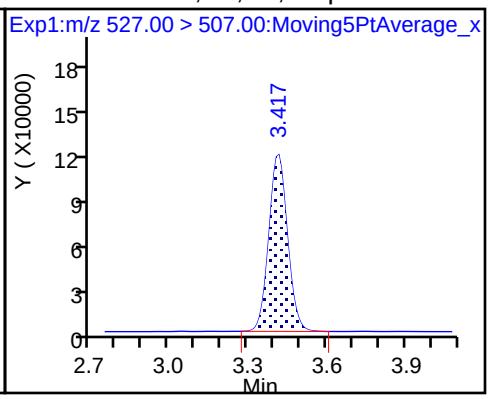
68 Perfluorononanesulfonic acid



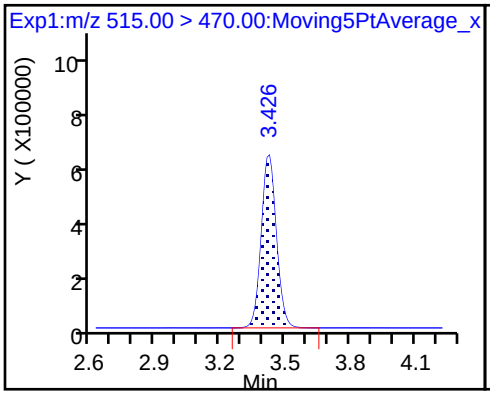
D 26 M2-8:2FTS



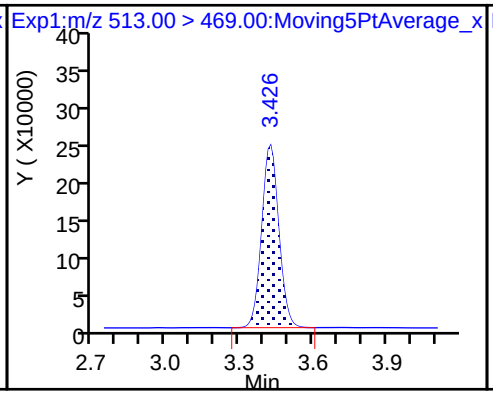
25 Sodium 1H,1H,2H,2H-perfluorodecane



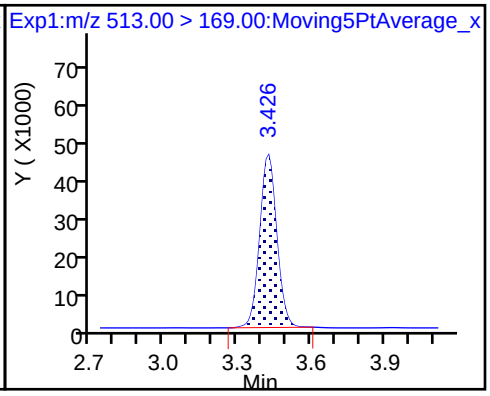
D 23 13C2 PFDA



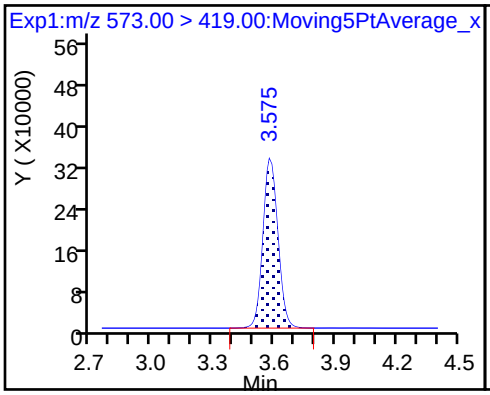
24 Perfluorodecanoic acid



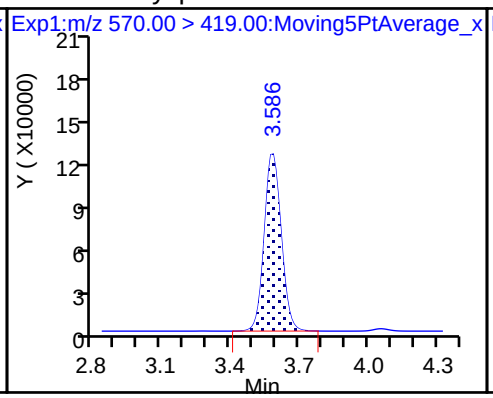
24 Perfluorodecanoic acid



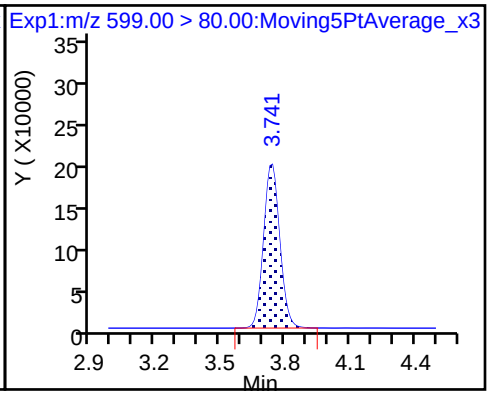
D 27 d3-NMeFOSAA



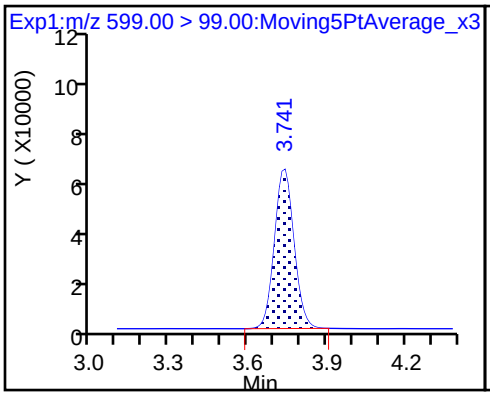
28 N-methyl perfluorooctane sulfonami



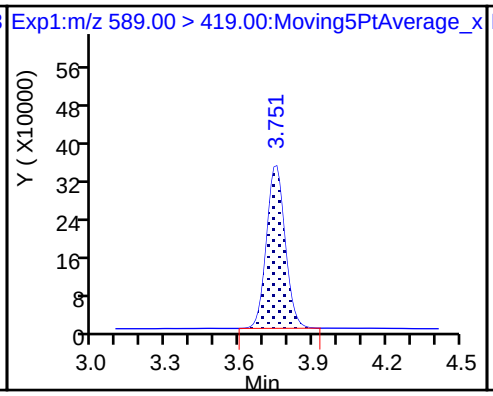
29 Perfluorodecane Sulfonic acid



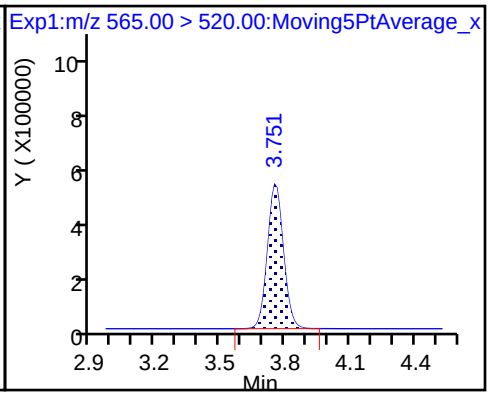
29 Perfluorodecane Sulfonic acid



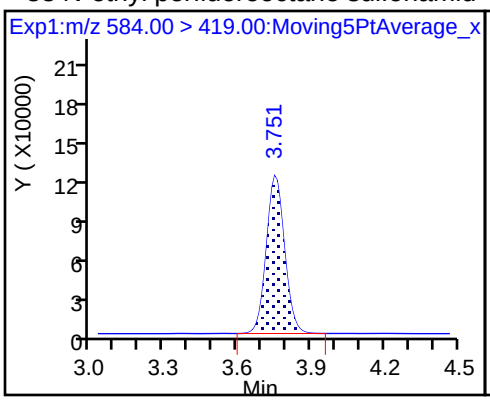
D 32 d5-NEtFOSAA



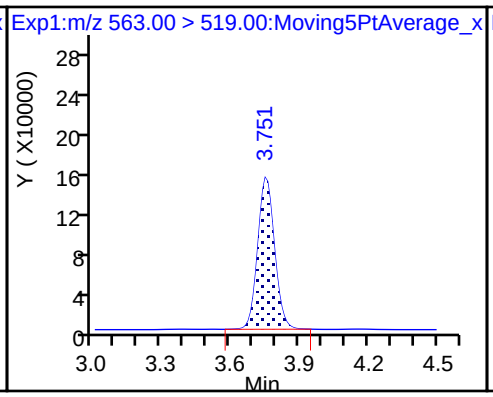
D 30 13C2 PFUnA



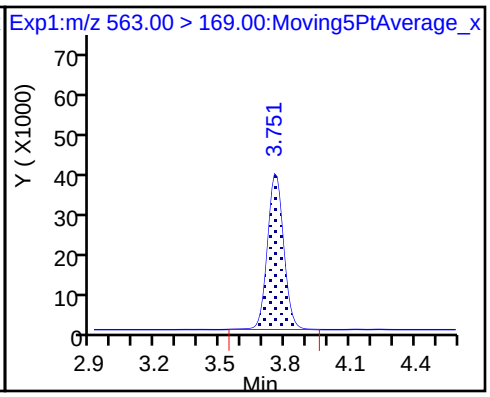
33 N-ethyl perfluorooctane sulfonamid



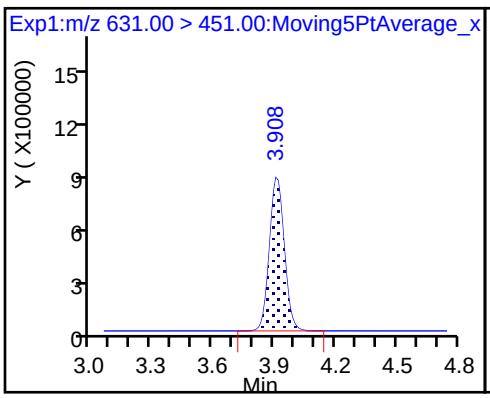
31 Perfluoroundecanoic acid



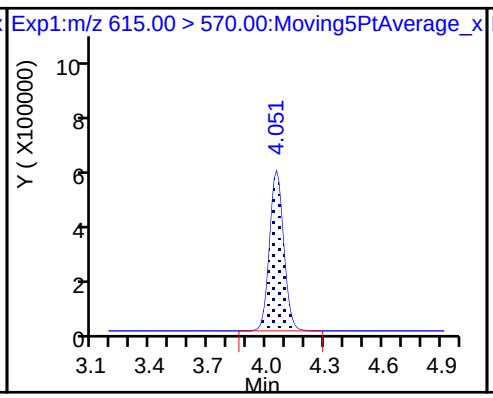
31 Perfluoroundecanoic acid



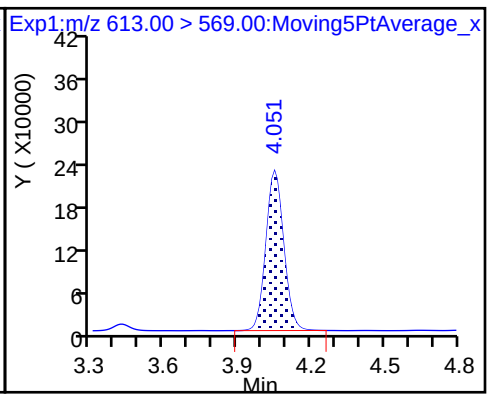
66 11-Chloroeicosafluoro-3-oxaundecan



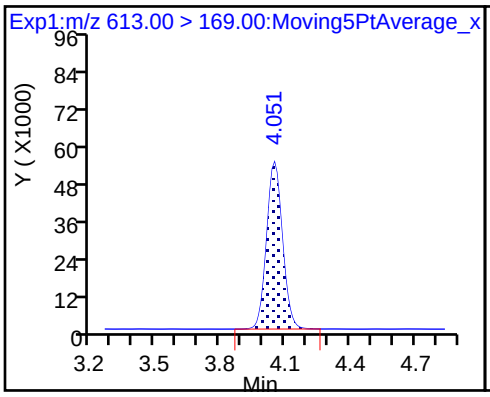
D 36 13C2 PFDoA



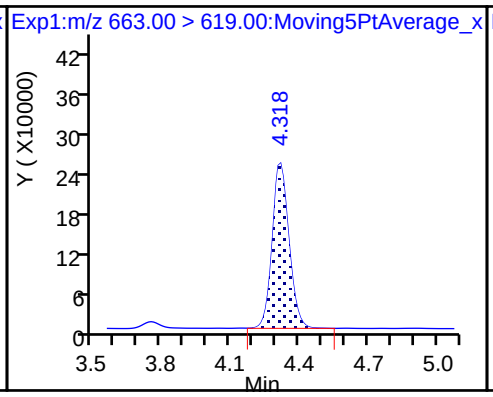
37 Perfluorododecanoic acid



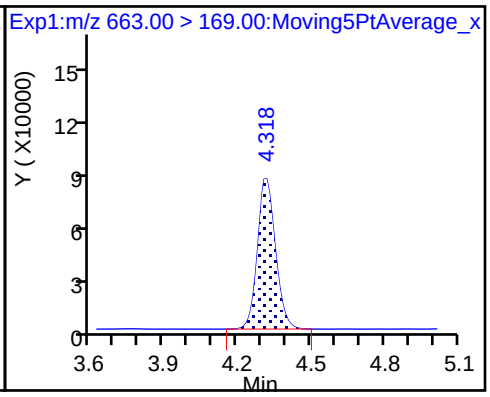
37 Perfluorododecanoic acid



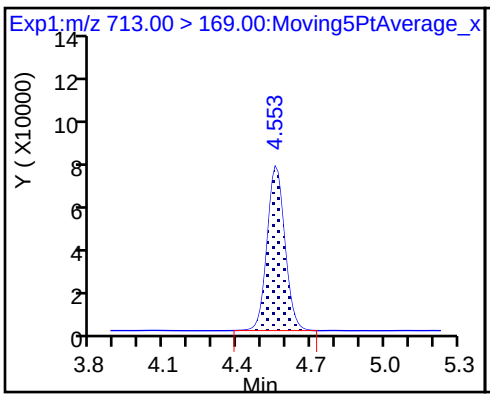
41 Perfluorotridecanoic acid



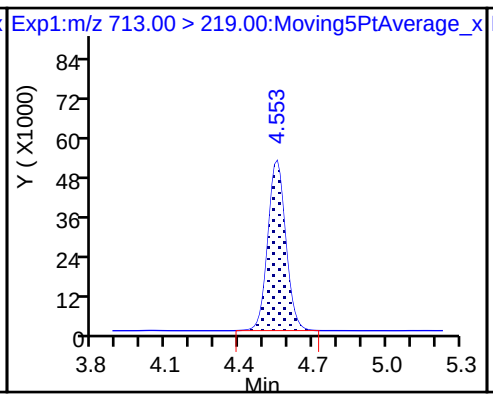
41 Perfluorotridecanoic acid



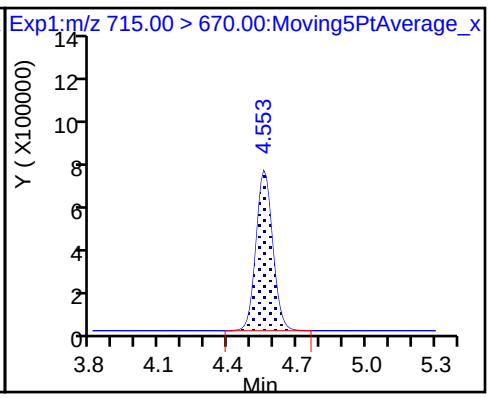
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



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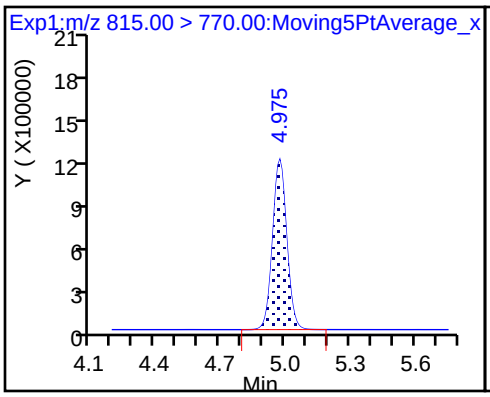
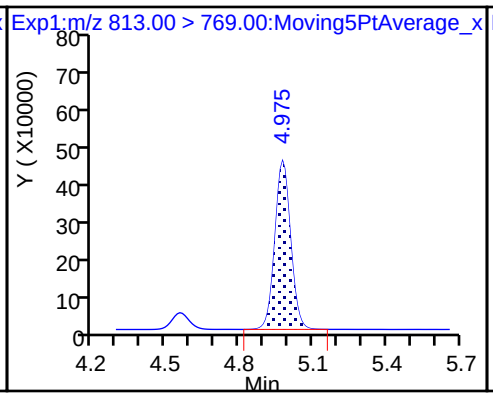
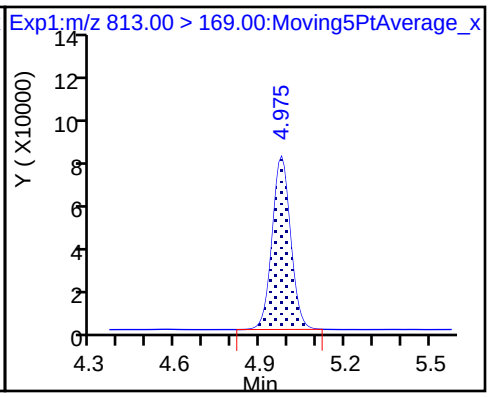


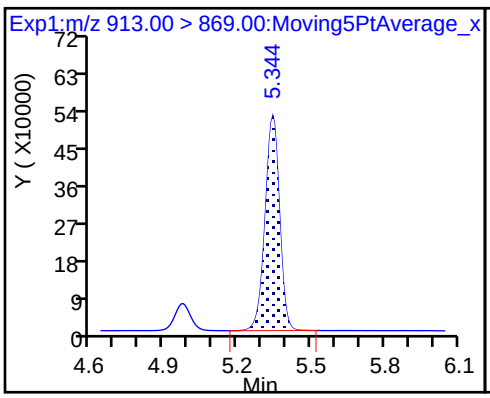
45 Perfluorohexadecanoic acid



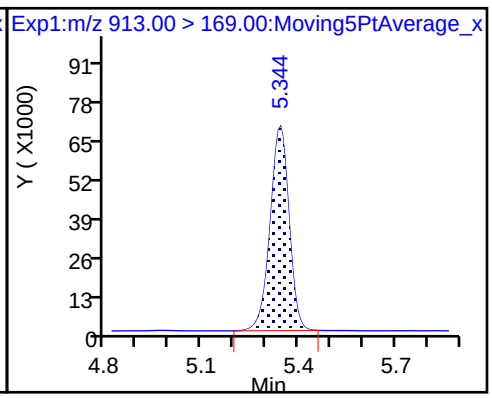
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 29-Mar-2018 17:58:39 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:09 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 09:09:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.436	0.005	1.000	6030203	2.48		99.1	62199	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.437	0.004	1.000	5777307	2.59		104	3457	
D 3 13C5-PFPeA										
267.90 > 223.00	1.712	1.702	0.010	0.559	3998575	2.52		101	86313	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.712	1.706	0.006	1.000	4732902	2.47		98.9	2193	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	82172	2.26		97.4	490	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.748	1.742	0.006	1.005	6580985	2.36		107	4397	
298.90 > 99.00	1.748	1.742	0.006	1.005	2674887		2.46(1.25-3.74)	107	4035	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.955	0.005	1.000	1487518	2.44		104	90099	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.955	0.005	1.000	669149	2.41		103	7608	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.991	0.003	1.000	4449369	2.55		102	111826	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.992	0.001	1.000	4676733	2.57		103	6804	
313.00 > 119.00	1.993	1.992	0.001	1.000	417474		11.20(5.03-15.10)	103	4326	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.013	0.003	1.000	6467251	2.57		110	114345	
349.00 > 99.00	2.016	2.013	0.003	1.000	2239567		2.89(1.36-4.07)	110	49101	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.092	0.003	1.000	231658	2.66		107	4075	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.092	0.003	1.000	729503	2.31		92.6	6426	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.326	0.008	1.000	4131012	2.46		98.4	76582	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.334	2.327	0.007	1.000	4677284	2.61		104	3860	
363.00 > 169.00	2.334	2.327	0.007	1.000	1694031		2.76(1.13-3.40)	104	5125	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.339	0.008	1.000	5288566	2.32		102	18242	
399.00 > 99.00	2.347	2.339	0.008	1.000	1735055		3.05(1.50-4.49)	102	9372	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.340	0.007	1.000	4833301	2.31		97.6	73949	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	14240170	2.79		111	190651	
377.00 > 85.00	2.372	2.372	0.0	1.000	8381192		1.70(0.84-2.53)	111	86770	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.664	0.003	1.000	884202	2.28		95.9	24949	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.664	0.003	1.000	1539946	2.21		93.5	5122	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.688	0.002	1.000	4168394	2.53		101	64136	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.689	0.001		4403513	2.50			72111	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.690	0.007	1.003	4758293	2.41		96.3	1602	
413.00 > 169.00	2.690	2.690	0.0	1.000	2531080		1.88(0.84-2.52)	96.3	10234	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.695	0.002	1.000	4696005	2.46		103	51596	
449.00 > 99.00	2.697	2.695	0.002	1.000	1300851		3.61(1.94-5.82)	103	23065	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.060	0.003	1.000	3426212	2.36		98.6	31614	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.060	0.003	1.000	3738022	2.28		98.4	8399	
499.00 > 99.00	3.063	3.060	0.003	1.000	845589		4.42(2.31-6.93)	98.4	6210	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.061	0.002	1.000	3540108	2.53		101	84407	
20 Perfluorononanoic acid										
463.00 > 419.00	3.070	3.064	0.006	1.002	3675243	2.52		101	3854	
463.00 > 169.00	3.063	3.064	-0.001	1.000	916459		4.01(1.90-5.69)	101	23909	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.277	3.272	0.005	1.000	6465289	2.41		104	57970	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.388	0.006	1.000	5134426	2.50		100.0	38523	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.389	0.005	1.000	5273555	2.60		104	65764	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.409	0.004	1.000	2797665	2.43		101	66092	
549.00 > 99.00	3.413	3.409	0.004	1.000	1086732		2.57(1.33-3.97)	101	32886	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1054813	2.34		97.6	30965	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.415	-0.002	1.000	1404701	2.36		98.7	16955	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.423	-0.001	1.000	2988519	2.53		101	34662	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.432	3.427	0.005	1.003	2995028	2.53		101	18233	
513.00 > 169.00	3.432	3.427	0.005	1.003	534907		5.60(2.36-7.09)	101	12381	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.578	0.004	1.000	1585449	2.51		100	34638	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.582	3.581	0.001	1.000	1647643	2.46		98.6	11941	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.738	-0.001	1.000	2358750	2.37		98.4	65020	
599.00 > 99.00	3.737	3.738	-0.001	1.000	855317		2.76(1.39-4.16)	98.4	33383	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.749	-0.002	1.000	1675412	2.53		101	3712	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.753	0.005	1.000	2409033	2.50		100	42492	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.755	0.003	1.003	1542349	2.51		100	26985	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.755	0.003	1.000	1901518	2.46		98.4	8013	
563.00 > 169.00	3.758	3.755	0.003	1.000	507139		3.75(2.12-6.36)	98.4	24360	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.910	0.006	1.000	10377874	2.49		106	103580	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.059	4.052	0.007	1.000	2927481	2.52		101	2194	
613.00 > 169.00	4.059	4.052	0.007	1.000	732103		4.00(2.13-6.40)	101	11010	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.052	0.007	1.000	2684707	2.50		100	18257	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.316	0.002	1.000	3245349	2.61		105	1291	
663.00 > 169.00	4.318	4.316	0.002	1.000	1056833		3.07(1.25-3.76)	105	17392	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.563	4.558	0.005	1.000	3484985	2.56		102	22350	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.563	4.558	0.005	1.000	884583	2.54		102	13447	
713.00 > 219.00	4.553	4.558	-0.005	0.998	623379		1.42(0.71-2.13)	102	11224	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.983	4.977	0.006	1.000	5398203	2.53		101	1240	
813.00 > 169.00	4.983	4.977	0.006	1.000	886265		6.09(2.86-8.58)	101	6550	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.983	4.977	0.006	1.000	5578235	2.65		106	15602	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.350	5.344	0.006	1.000	5719746	2.58		103	885	
913.00 > 169.00	5.350	5.344	0.006	1.000	729616		7.84(3.83-11.48)	103	5795	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:14 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_006.d

Injection Date: 29-Mar-2018 17:58:39 Instrument ID: A8_N

Lims ID: IC L5 Full

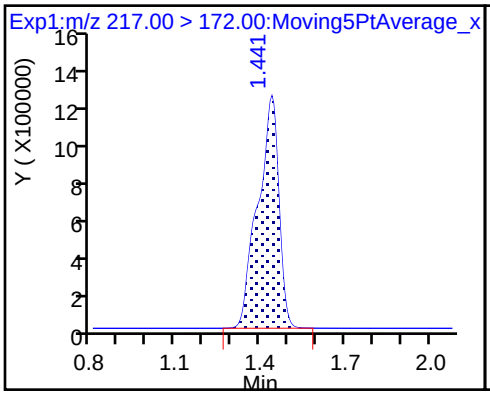
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

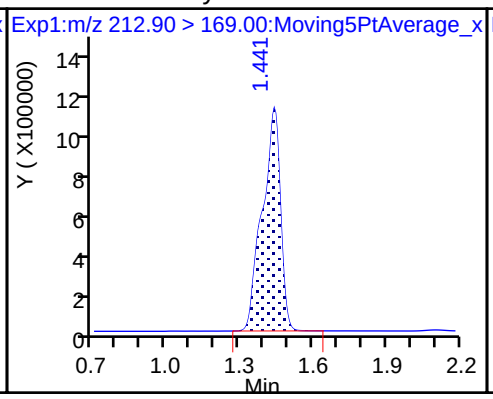
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

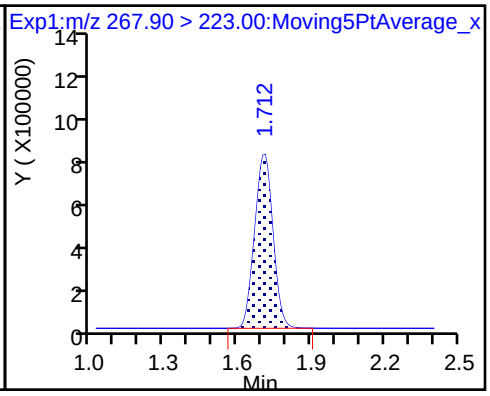
D 1 13C4 PFBA



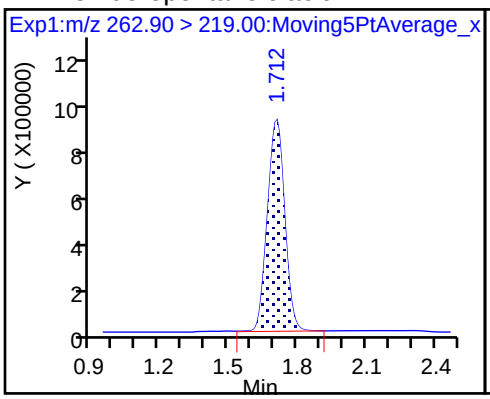
2 Perfluorobutyric acid



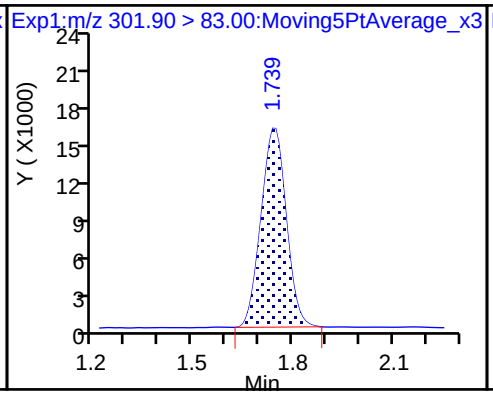
D 3 13C5-PFPeA



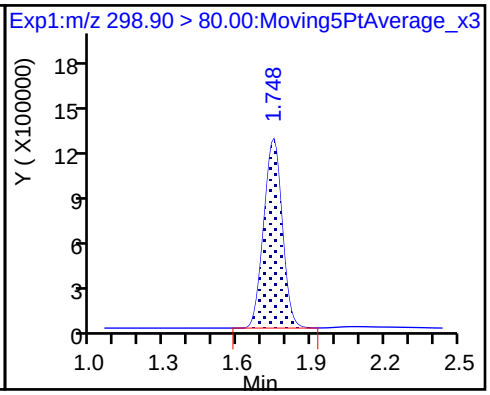
4 Perfluoropentanoic acid



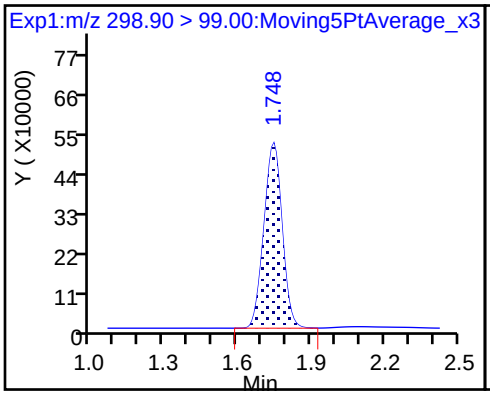
D 47 13C3-PFBS



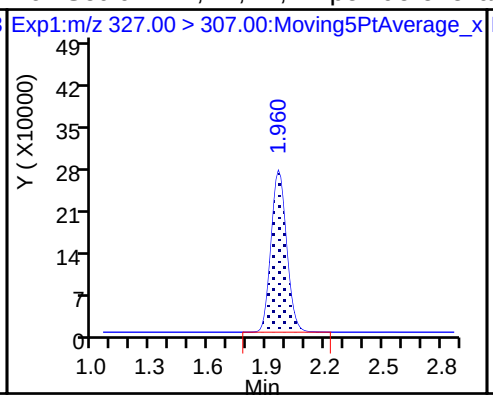
5 Perfluorobutanesulfonic acid



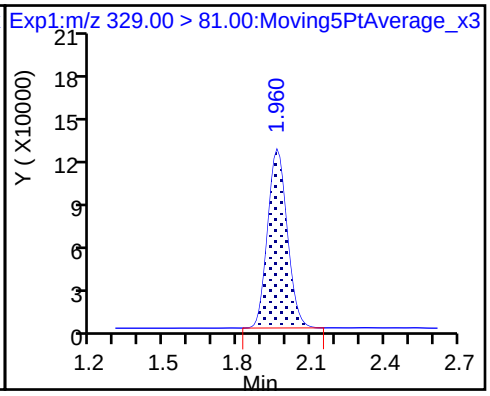
5 Perfluorobutanesulfonic acid



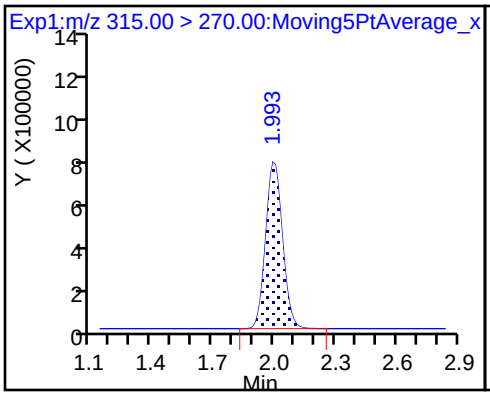
61 Sodium 1H,1H,2H,2H-perfluorohexane



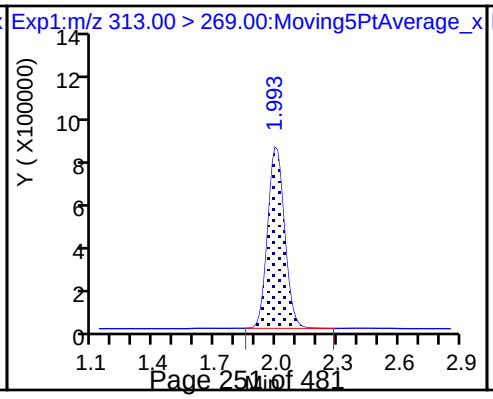
D 60 M2-4:2FTS



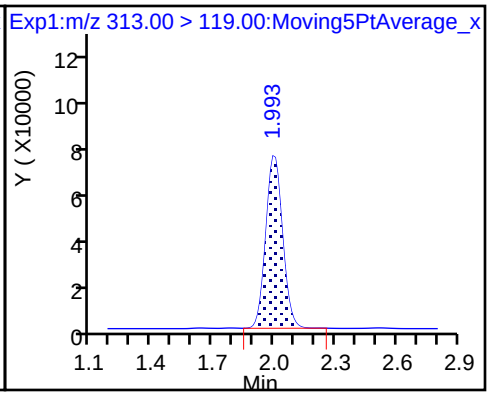
D 7 13C2 PFHxA



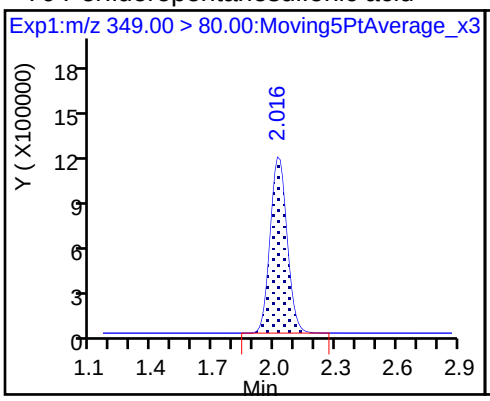
6 Perfluorohexanoic acid



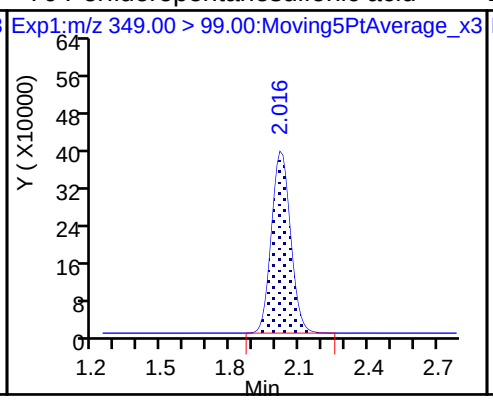
6 Perfluorohexanoic acid



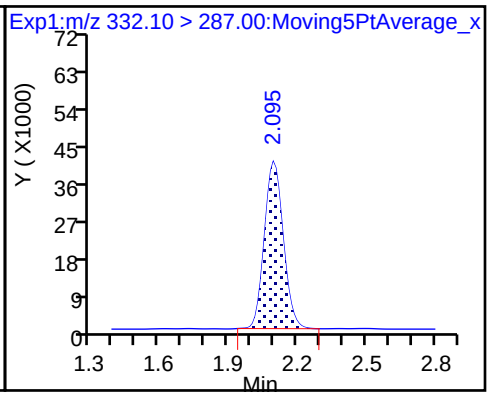
70 Perfluoropentanesulfonic acid



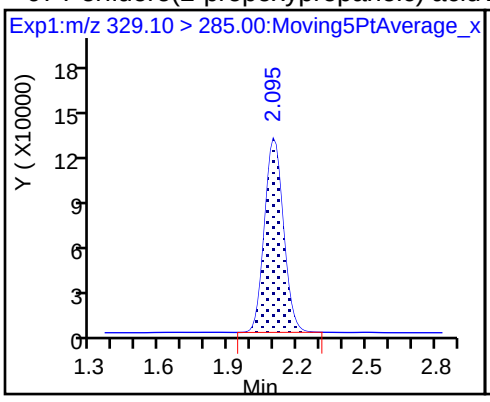
70 Perfluoropentanesulfonic acid



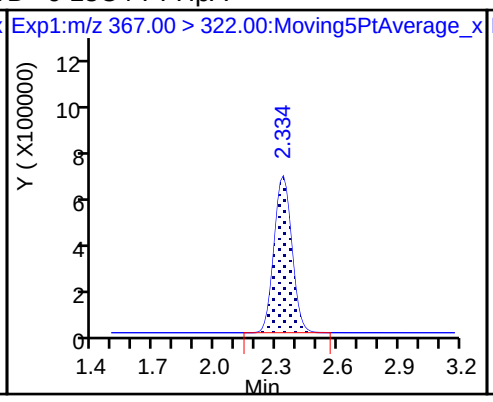
D 64 13C3 HFPO-DA



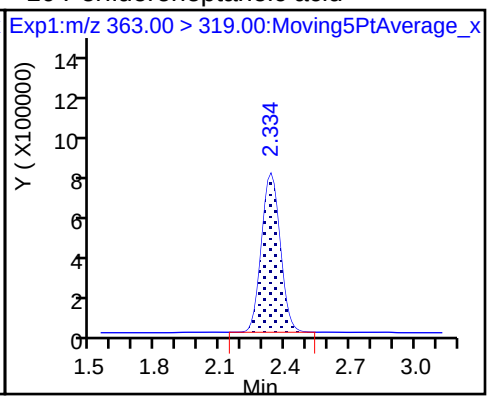
67 Perfluoro(2-propoxypropanoic) acid



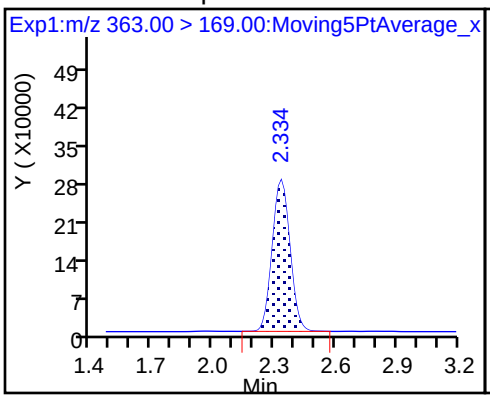
D 9 13C4-PFHpA



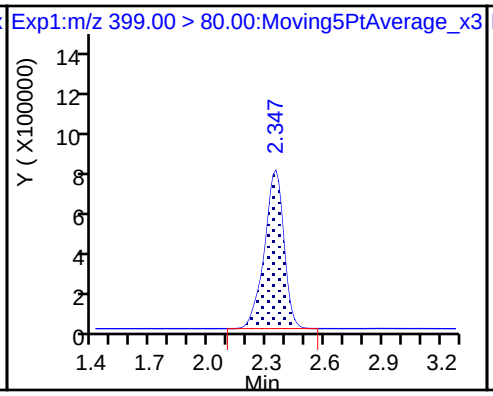
10 Perfluoroheptanoic acid



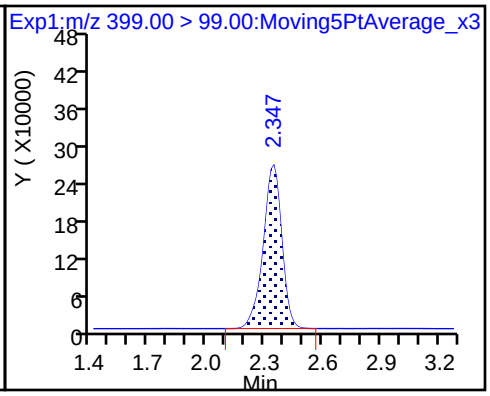
10 Perfluoroheptanoic acid



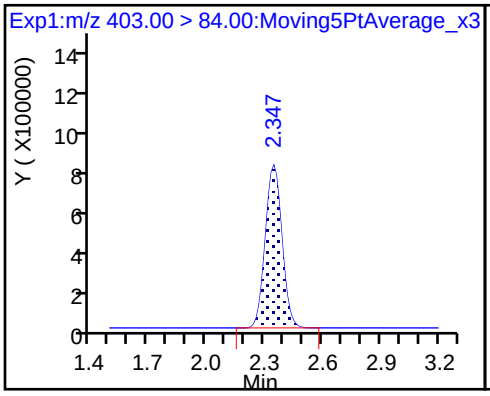
8 Perfluorohexanesulfonic acid



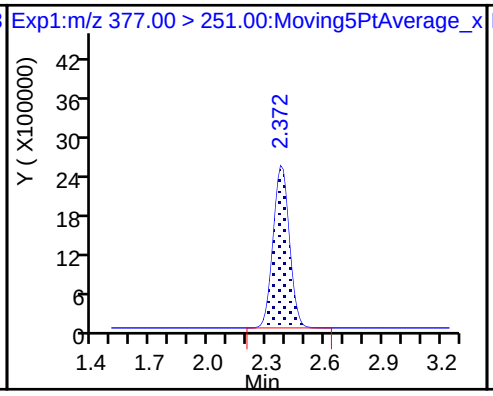
8 Perfluorohexanesulfonic acid



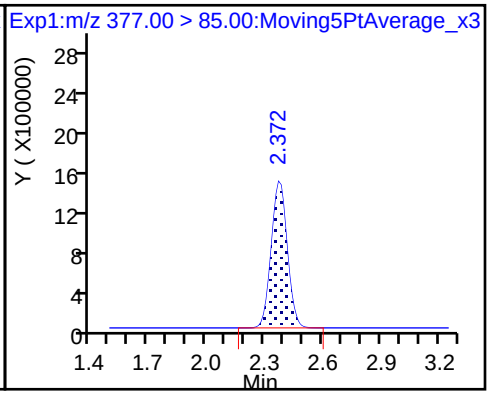
D 11 18O2 PFHxS



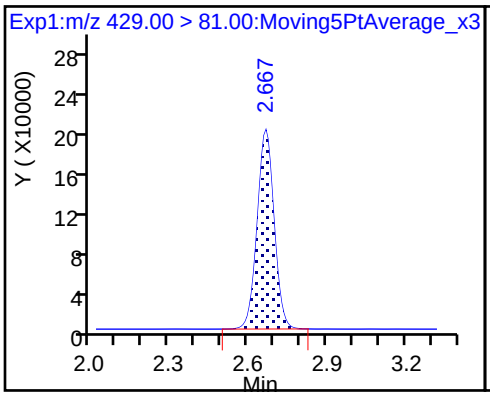
65 Adona



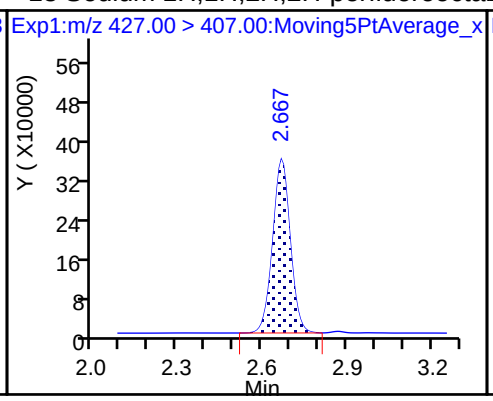
65 Adona



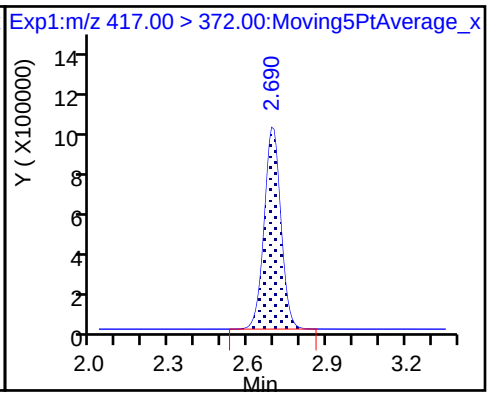
D 12 M2-6:2FTS



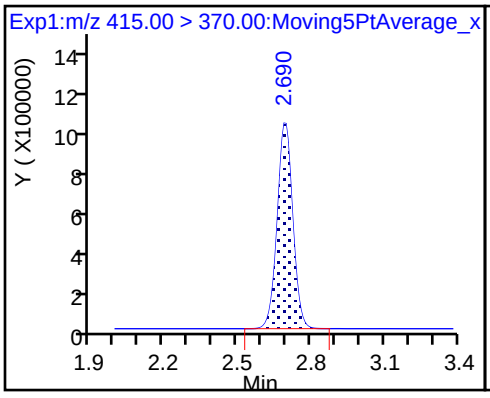
13 Sodium 1H,1H,2H,2H-perfluorooctane



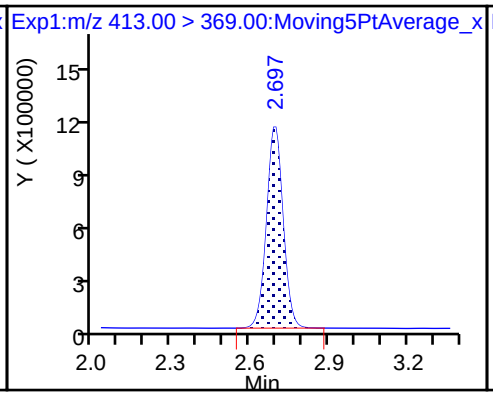
D 14 13C4 PFOA



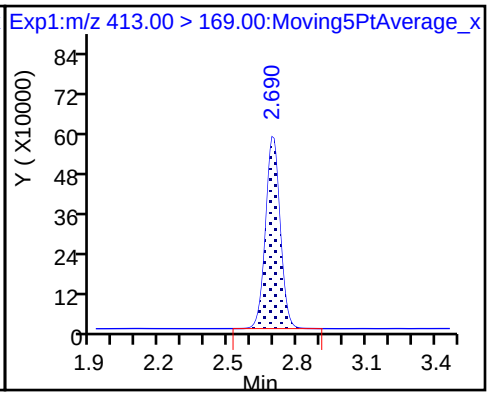
* 62 13C2-PFOA



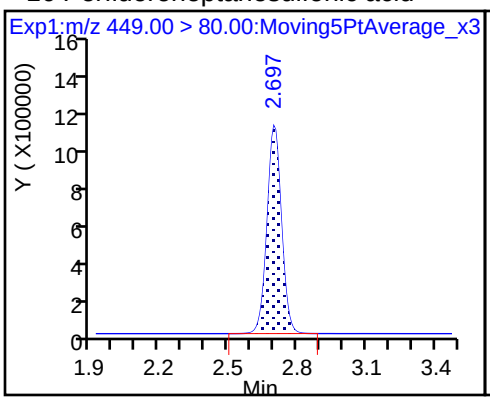
15 Perfluorooctanoic acid



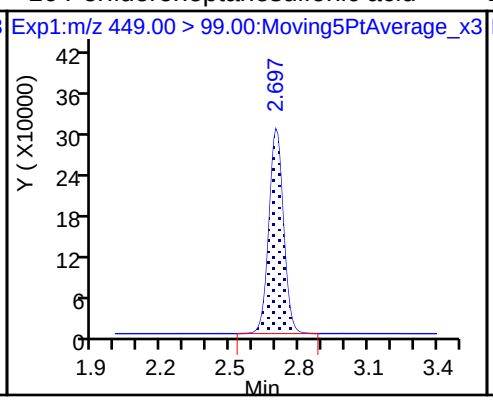
15 Perfluorooctanoic acid



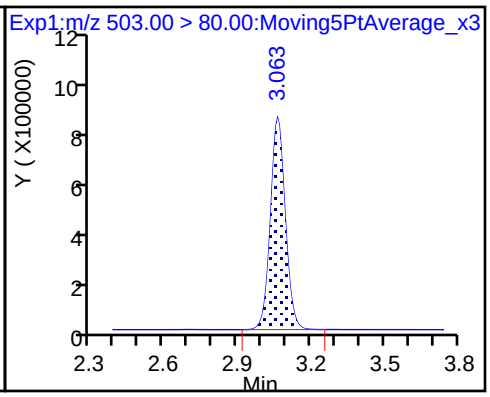
16 Perfluoroheptanesulfonic acid



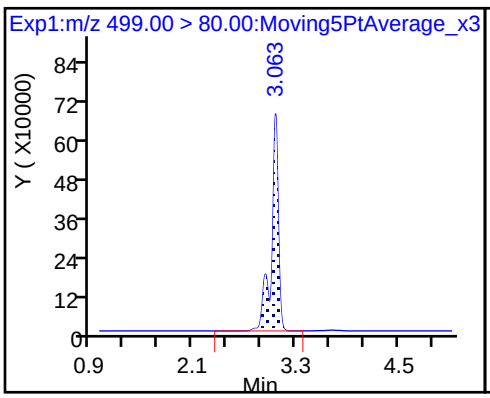
16 Perfluoroheptanesulfonic acid



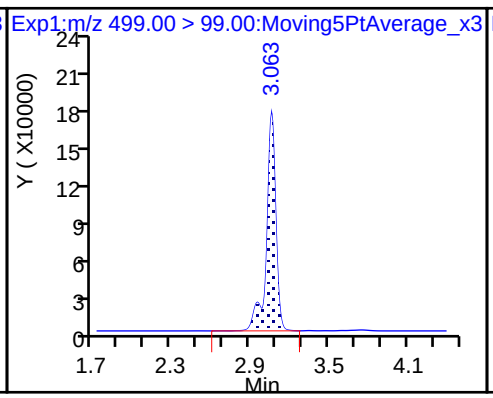
D 18 13C4 PFOS



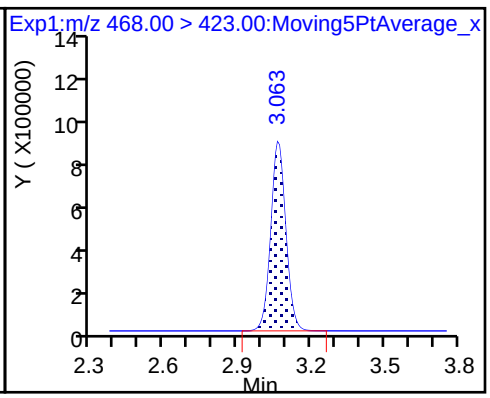
17 Perfluorooctane sulfonic acid



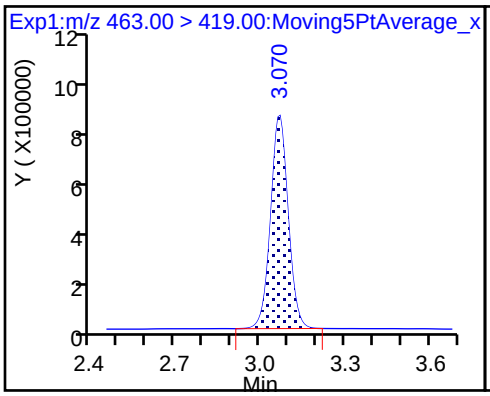
17 Perfluorooctane sulfonic acid



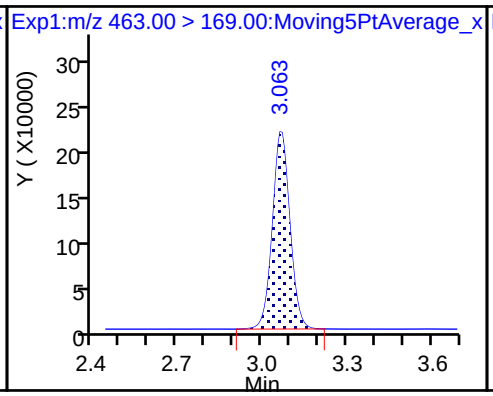
D 19 13C5 PFNA



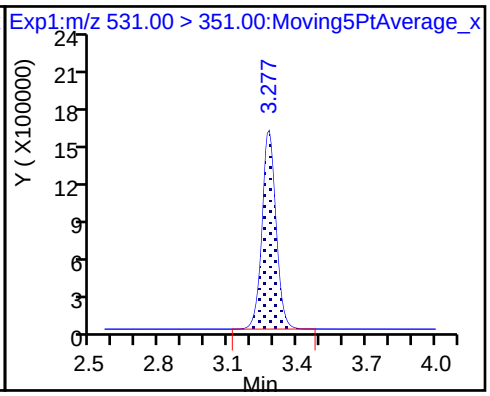
20 Perfluorononanoic acid



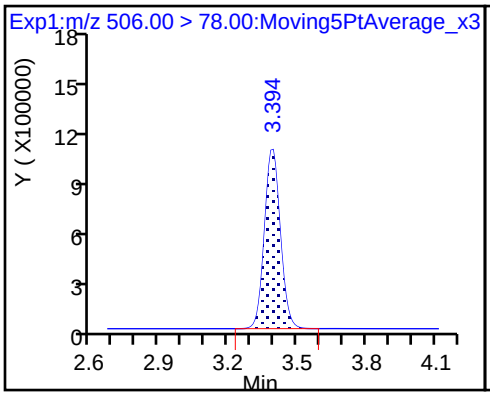
20 Perfluorononanoic acid



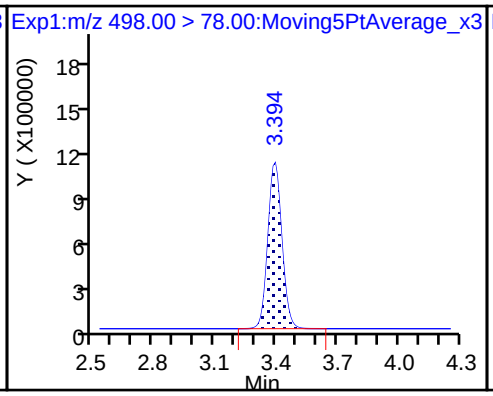
69 9-Chlorohexadecafluoro-3-oxanonane



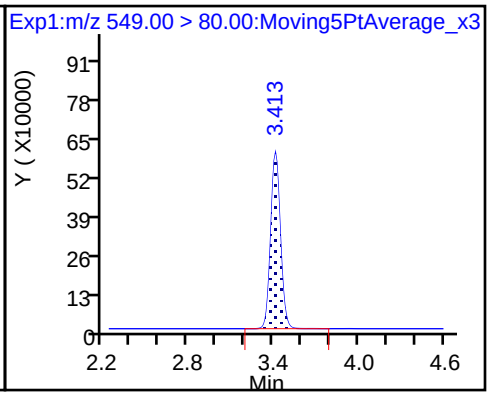
D 21 13C8 FOSA



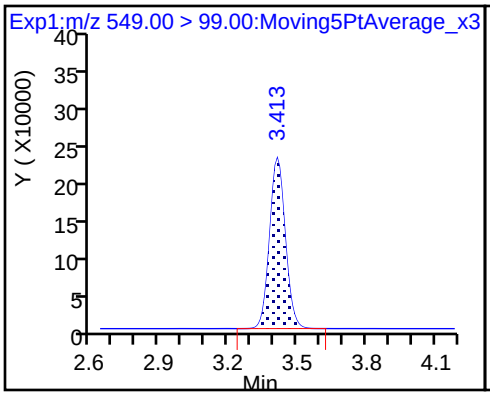
22 Perfluorooctane Sulfonamide



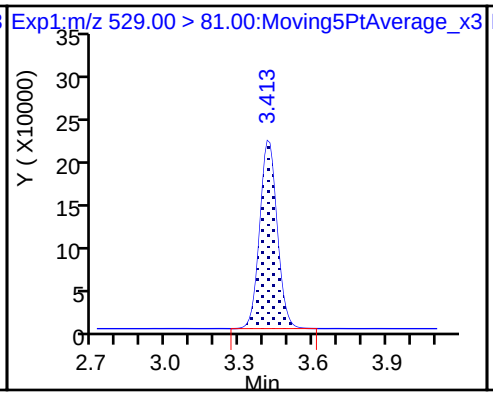
68 Perfluorononanesulfonic acid



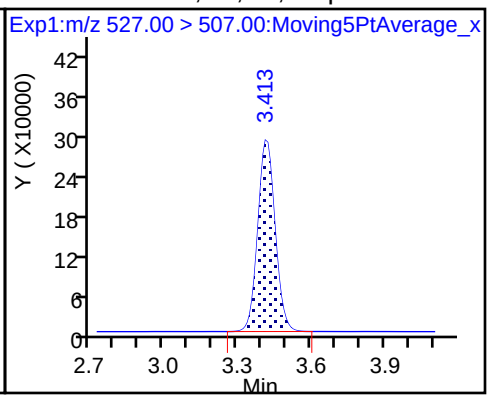
68 Perfluorononanesulfonic acid



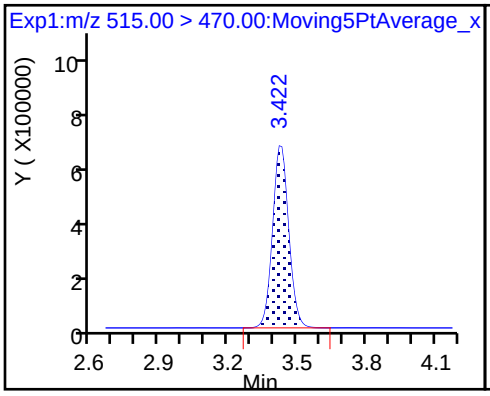
D 26 M2-8:2FTS



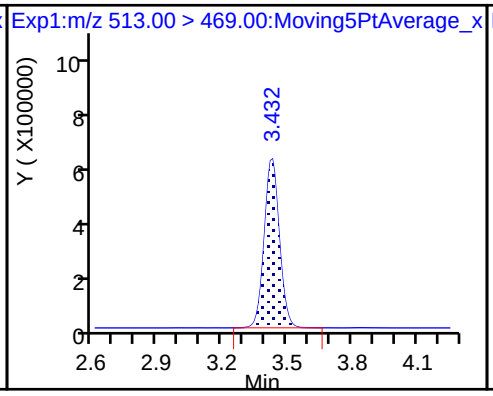
25 Sodium 1H,1H,2H,2H-perfluorodecane



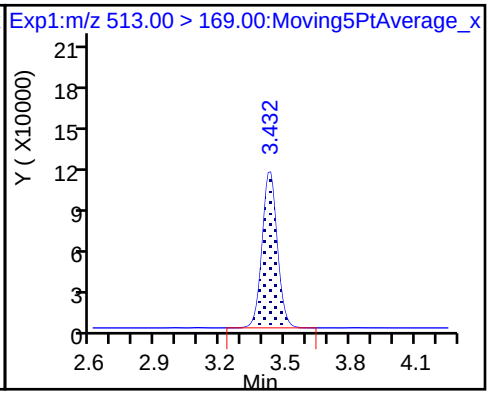
D 23 13C2 PFDA



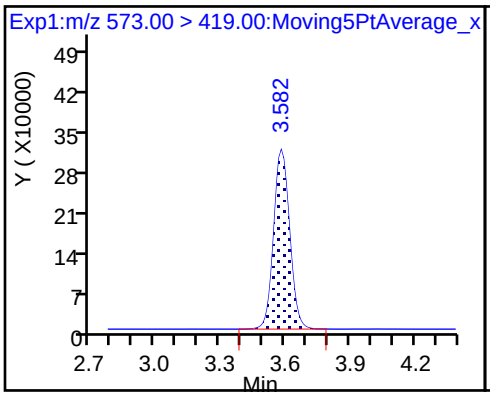
24 Perfluorodecanoic acid



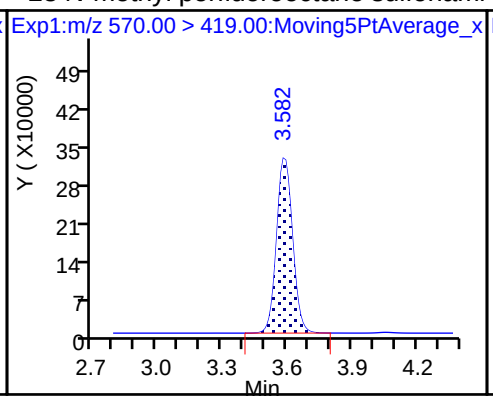
24 Perfluorodecanoic acid



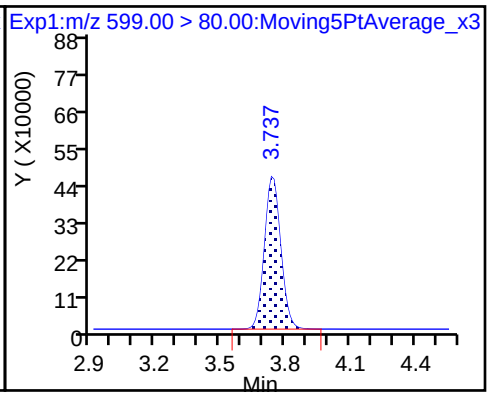
D 27 d3-NMeFOSAA



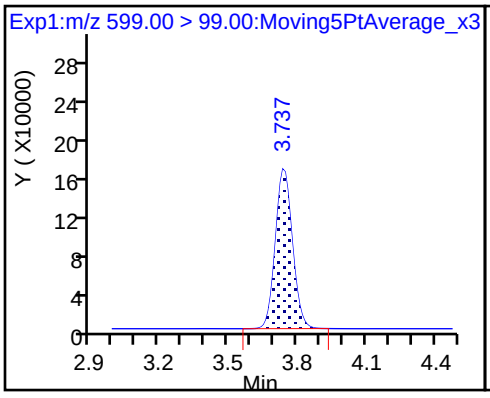
28 N-methyl perfluorooctane sulfonami



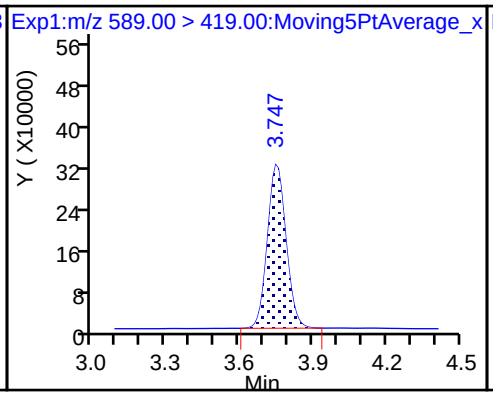
29 Perfluorodecane Sulfonic acid



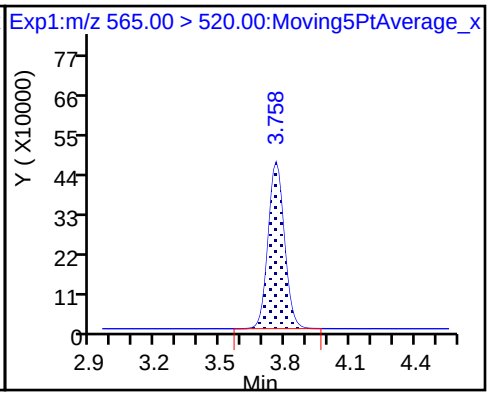
29 Perfluorodecane Sulfonic acid



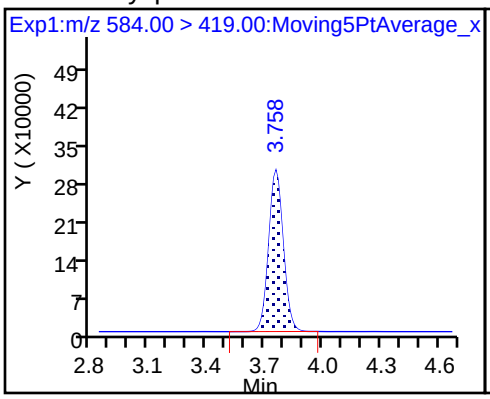
D 32 d5-NEtFOSAA



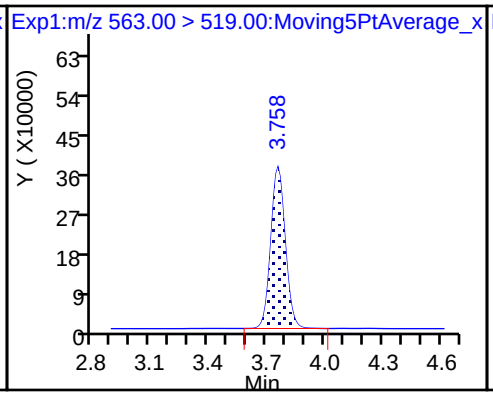
D 30 13C2 PFUnA



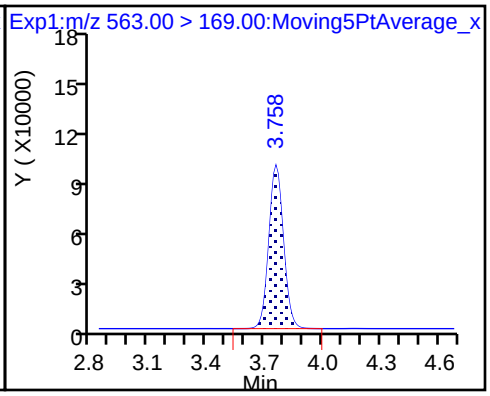
33 N-ethyl perfluorooctane sulfonamid



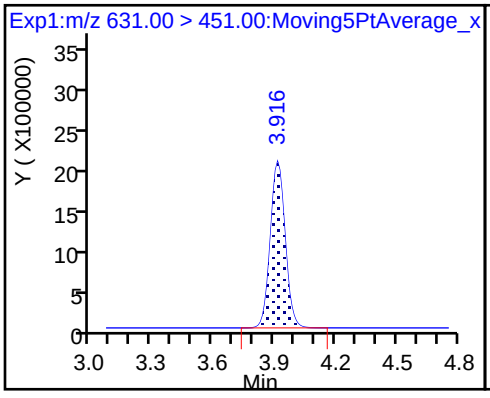
31 Perfluoroundecanoic acid



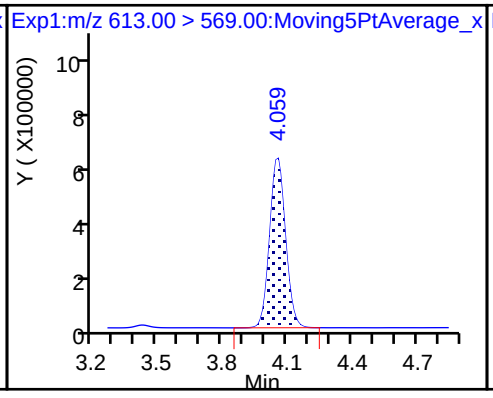
31 Perfluoroundecanoic acid



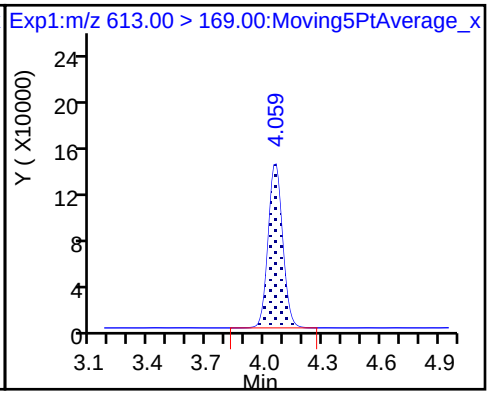
66 11-Chloroeicosafluoro-3-oxaundecan



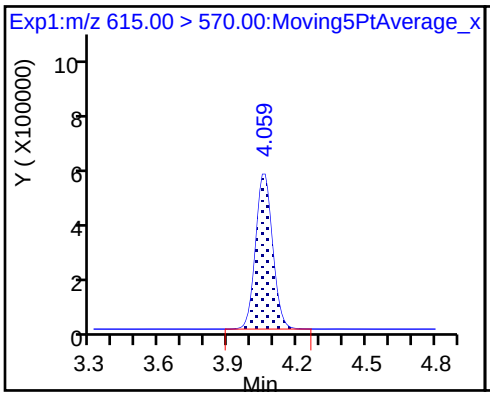
37 Perfluorododecanoic acid



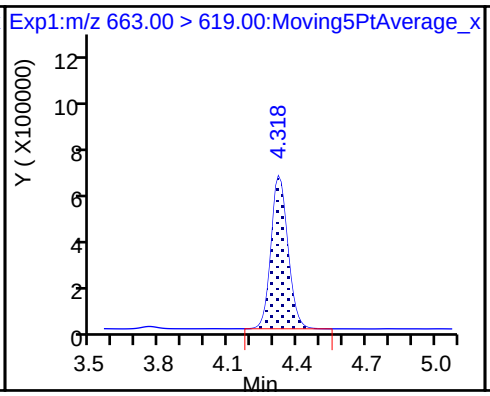
37 Perfluorododecanoic acid



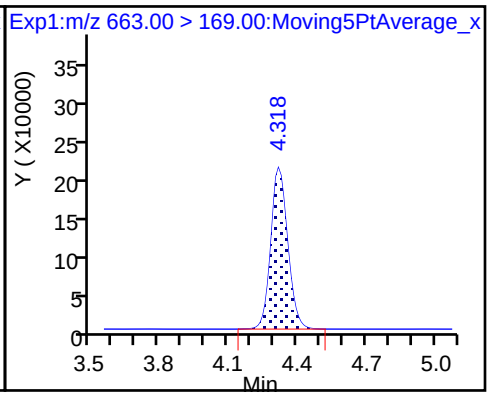
D 36 13C2 PFDoA



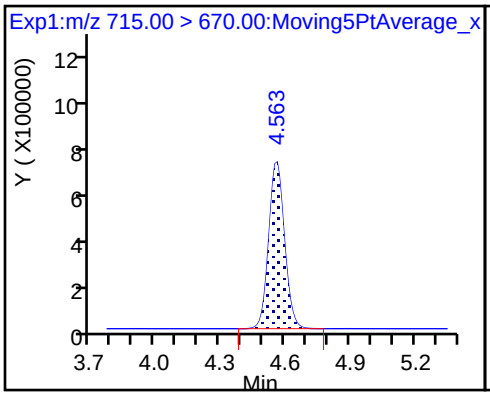
41 Perfluorotridecanoic acid



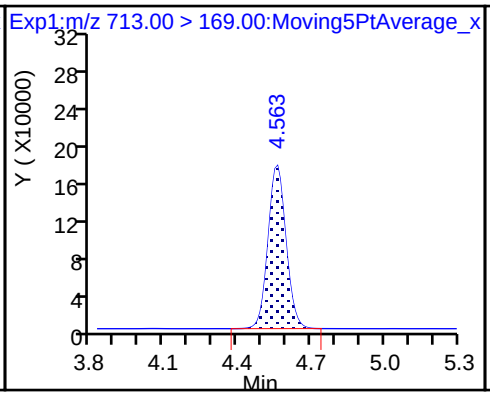
41 Perfluorotridecanoic acid



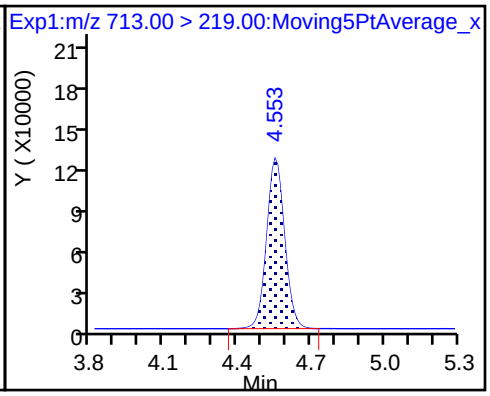
D 43 13C2-PFTeDA



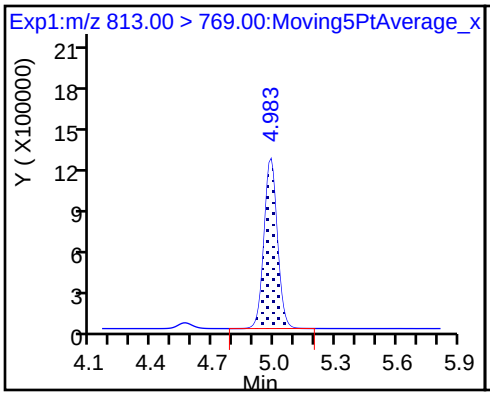
42 Perfluorotetradecanoic acid



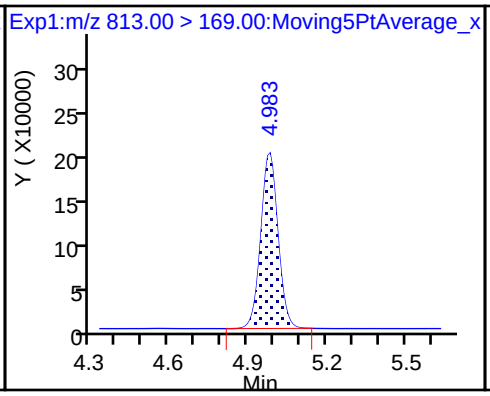
42 Perfluorotetradecanoic acid



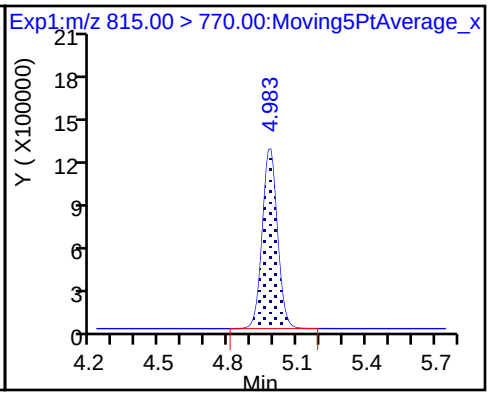
45 Perfluorohexadecanoic acid



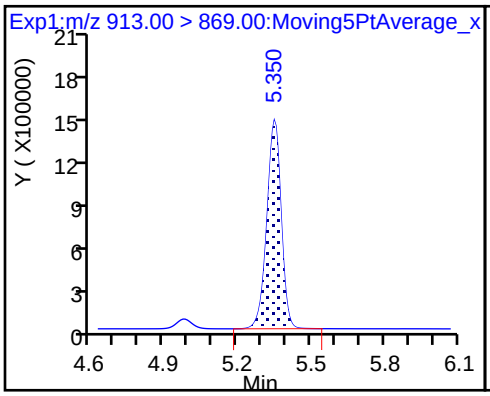
45 Perfluorohexadecanoic acid



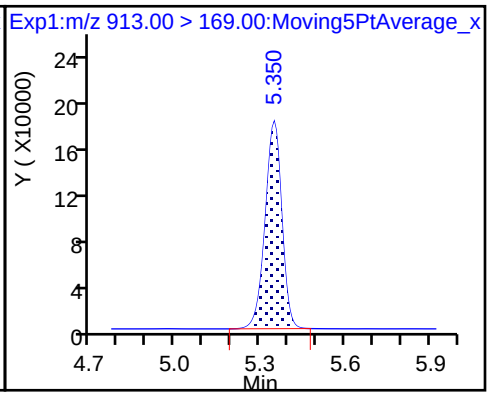
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 29-Mar-2018 18:06:29 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:21 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 09:39:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	1.000	6363039	2.56		102	54816	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.437	-0.001	1.000	12187200	5.18		104	6481	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.702	0.001	0.557	3961451	2.45		98.0	97309	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.706	-0.003	1.000	9830479	5.18		104	4891	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	87650	2.37		102	504	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.742	-0.003	1.000	13230767	4.45		101	8592	
298.90 > 99.00	1.739	1.742	-0.003	1.000	5640052		2.35(1.25-3.74)	101	8383	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.955	-0.005	1.000	663538	2.35		101	9348	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.955	-0.005	1.000	3033560	4.66		99.9	184398	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.991	0.003	1.000	4716939	2.65		106	121152	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.992	0.001	1.000	9564151	4.95		99.1	15110	
313.00 > 119.00	1.993	1.992	0.001	1.000	872950		10.96(5.03-15.10)	99.1	8742	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.013	0.003	1.000	13067667	4.87		104	259659	
349.00 > 99.00	2.016	2.013	0.003	1.000	4761447		2.74(1.36-4.07)	104	77322	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.092	0.003	1.000	1481837	4.98		99.5	13884	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.092	0.003	1.000	218882	2.47		98.6	3534	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.326	-0.005	1.000	4500718	2.63		105	126673	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.327	-0.006	1.000	9347366	4.78		95.6	9088	
363.00 > 169.00	2.321	2.327	-0.006	1.000	3572887		2.62(1.13-3.40)	95.6	9323	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.339	-0.005	1.000	10543701	4.34		95.4	35174	
399.00 > 99.00	2.334	2.339	-0.005	1.000	3551342		2.97(1.50-4.49)	95.4	18598	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.340	-0.006	1.000	5143358	2.41		102	86865	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	25789461	4.95		99.1	221483	
377.00 > 85.00	2.372	2.372	0.0	1.000	15807587		1.63(0.84-2.53)	99.1	105371	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.664	-0.004	1.000	3287357	4.56		96.3	17017	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.664	-0.004	1.000	916140	2.31		97.4	21243	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.688	-0.006	1.000	4062703	2.41		96.5	84227	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.689	0.001		4493229	2.50			64333	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.003	9813194	5.09		102	3288	
413.00 > 169.00	2.682	2.690	-0.008	1.000	5156114		1.90(0.84-2.52)	102	16091	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.695	-0.005	1.000	9738630	5.00		105	86778	
449.00 > 99.00	2.690	2.695	-0.005	1.000	2682283		3.63(1.94-5.82)	105	39216	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.056	3.060	-0.004	1.000	8034226	4.81		104	16486	
499.00 > 99.00	3.056	3.060	-0.004	1.000	1733798		4.63(2.31-6.93)	104	13930	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.060	-0.004	1.000	3490802	2.35		98.4	31167	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.061	-0.005	1.000	3572058	2.51		100	77842	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.064	-0.001	1.002	7571474	5.15		103	11315	
463.00 > 169.00	3.056	3.064	-0.008	1.000	1902565		3.98(1.90-5.69)	103	44805	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.270	3.272	-0.002	1.000	13425151	4.92		105	107518	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.388	-0.003	1.000	5241388	2.50		100	61882	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.385	3.389	-0.004	1.000	10438342	5.04		101	59624	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.403	3.409	-0.006	1.000	5885424	5.03		105	77768	
549.00 > 99.00	3.403	3.409	-0.006	1.000	2251448		2.61(1.33-3.97)	105	39310	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1118796	2.43		101	38584	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.415	-0.002	1.000	2997433	4.76		99.3	31180	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.423	-0.001	1.000	3100672	2.58		103	50163	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.427	-0.005	1.000	6258242	5.10		102	35393	
513.00 > 169.00	3.422	3.427	-0.005	1.000	1123617		5.57(2.36-7.09)	102	33516	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.578	-0.007	1.000	1583848	2.46		98.4	51851	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.582	3.581	0.001	1.003	3541055	5.30		106	21924	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.736	3.738	-0.002	1.000	5212375	5.14		107	67650	
599.00 > 99.00	3.736	3.738	-0.002	1.000	1752151		2.97(1.39-4.16)	107	42671	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.749	-0.002	1.000	1635848	2.42		96.8	4348	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.753	-0.006	1.000	2347134	2.39		95.5	41021	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.755	-0.008	1.000	3233549	5.39		108	38395	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.757	3.755	0.002	1.003	4020256	5.34		107	13507	
563.00 > 169.00	3.747	3.755	-0.008	1.000	1081558		3.72(2.12-6.36)	107	34506	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.910	-0.005	1.000	20815228	4.91		104	177470	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.052	-0.004	1.000	2678243	2.45		97.9	19671	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.052	-0.004	1.000	5893687	5.09		102	4450	
613.00 > 169.00	4.048	4.052	-0.004	1.000	1477794		3.99(2.13-6.40)	102	17225	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.316	0.001	1.000	6588893	5.32		106	2657	
663.00 > 169.00	4.317	4.316	0.001	1.000	2142952		3.07(1.25-3.76)	106	32063	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.558	-0.006	1.000	1845416	5.27		105	23086	
713.00 > 219.00	4.552	4.558	-0.006	1.000	1280490		1.44(0.71-2.13)	105	17866	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.558	-0.006	1.000	3502295	2.52		101	21295	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.977	-0.003	1.000	5553497	2.59		104	14945	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.977	-0.003	1.000	10532699	4.99		99.7	2265	
813.00 > 169.00	4.974	4.977	-0.003	1.000	1838779		5.73(2.86-8.58)	99.7	11748	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.344	-0.002	1.000	11463437	5.20		104	1718	
913.00 > 169.00	5.342	5.344	-0.002	1.000	1443777		7.94(3.83-11.48)	104	8603	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:25 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_007.d

Injection Date: 29-Mar-2018 18:06:29 Instrument ID: A8_N

Lims ID: IC L6 Full

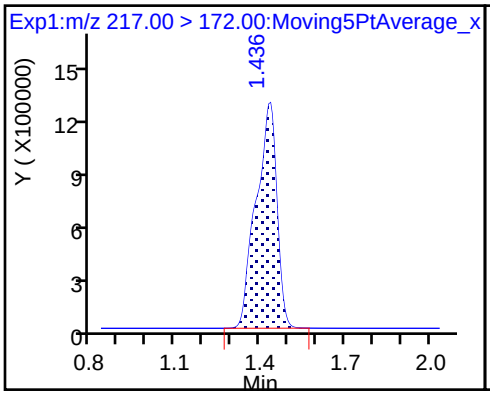
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

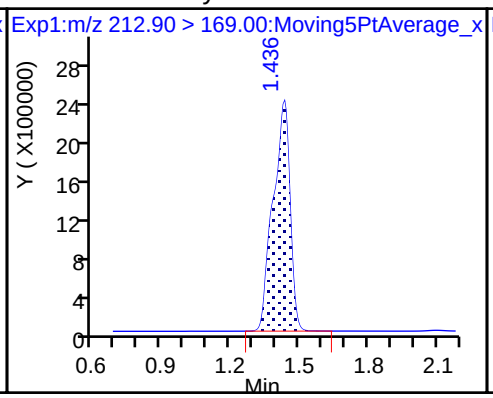
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

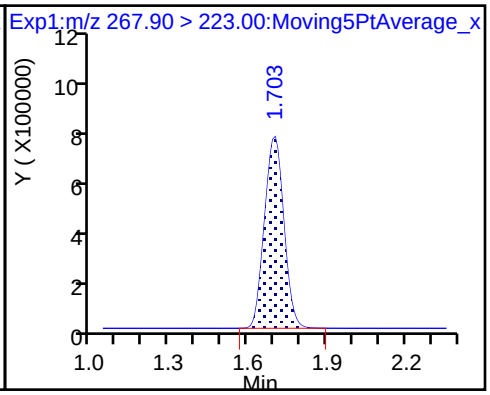
D 1 13C4 PFBA



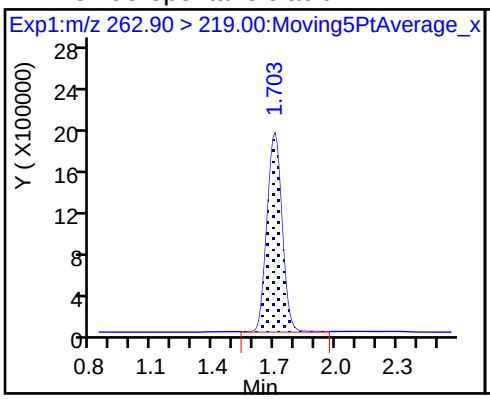
2 Perfluorobutyric acid



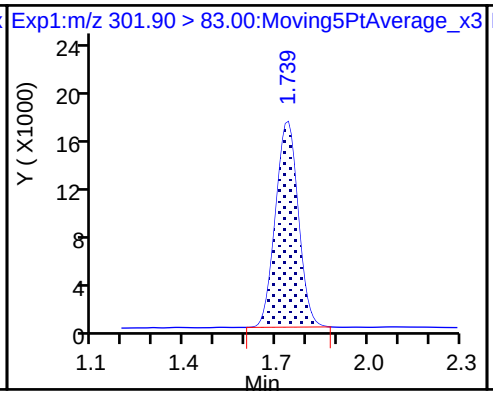
D 3 13C5-PFPeA



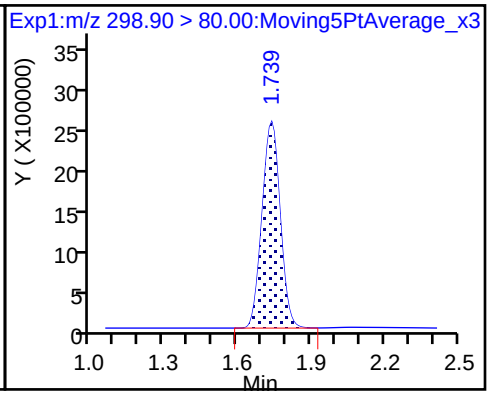
4 Perfluoropentanoic acid



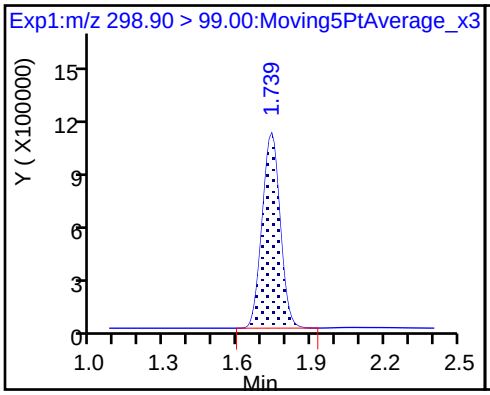
D 47 13C3-PFBS



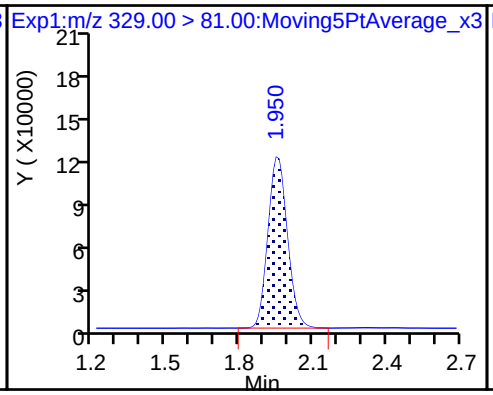
5 Perfluorobutanesulfonic acid



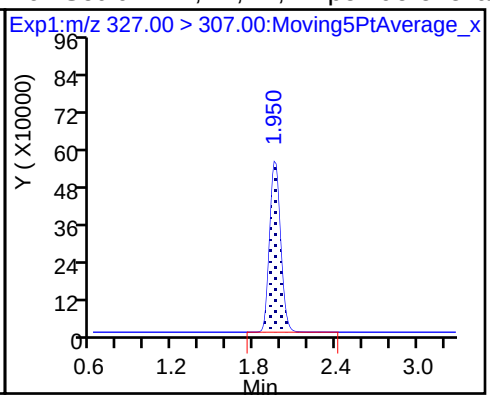
5 Perfluorobutanesulfonic acid



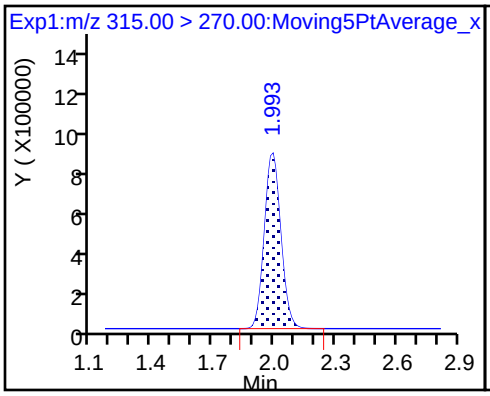
D 60 M2-4:2FTS



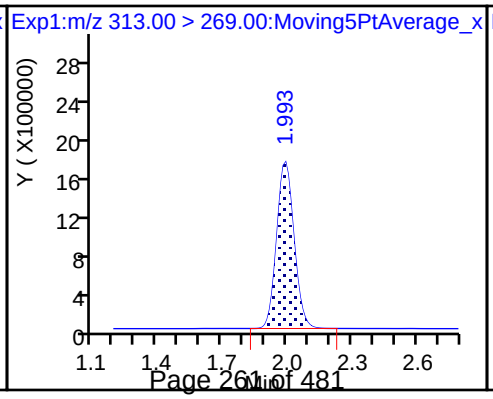
61 Sodium 1H,1H,2H,2H-perfluorohexane



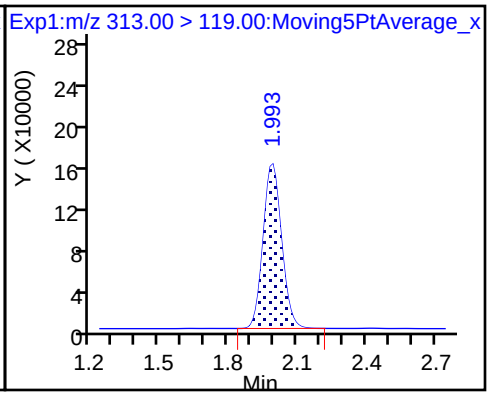
D 7 13C2 PFHxA



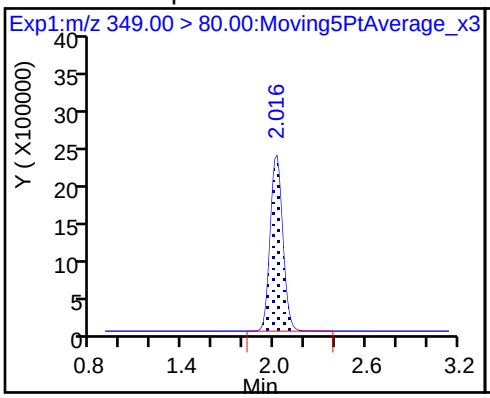
6 Perfluorohexanoic acid



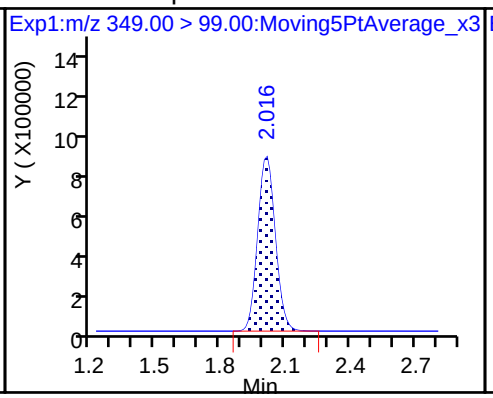
6 Perfluorohexanoic acid



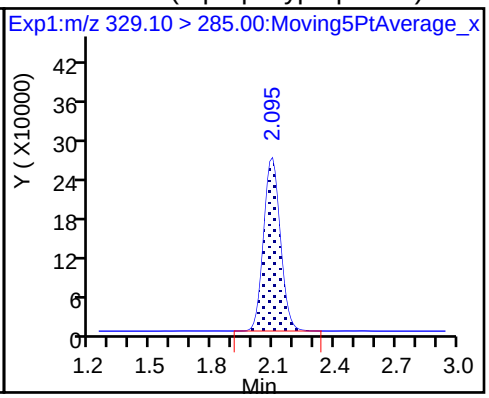
70 Perfluoropentanesulfonic acid



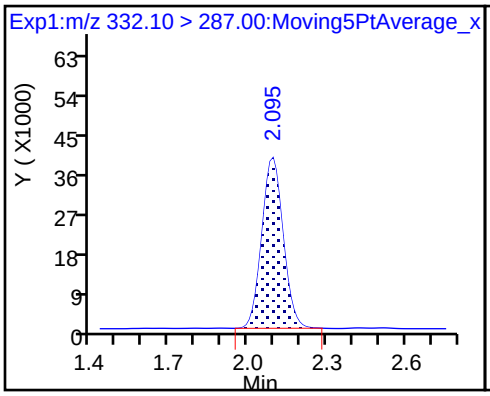
70 Perfluoropentanesulfonic acid



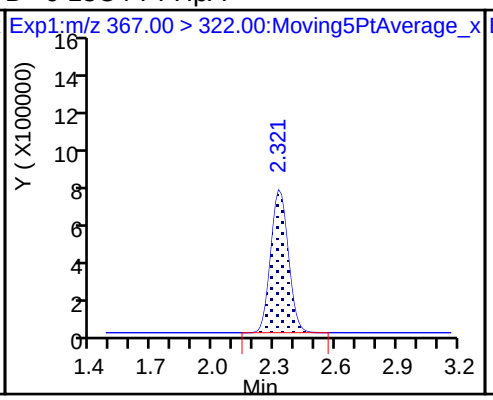
67 Perfluoro(2-propoxypropanoic) acid



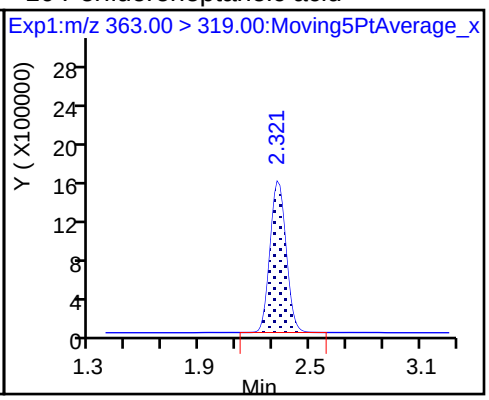
D 64 13C3 HFPO-DA



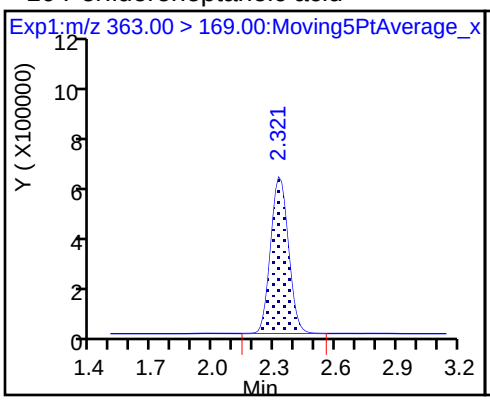
D 9 13C4-PFHpA



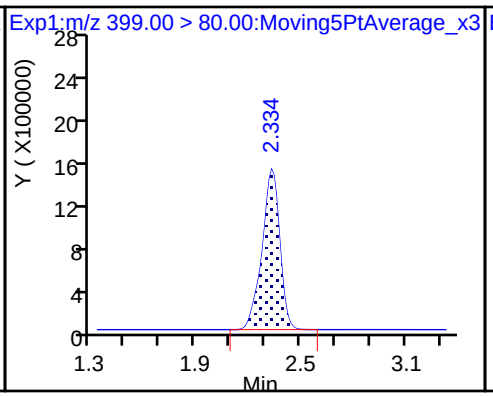
10 Perfluoroheptanoic acid



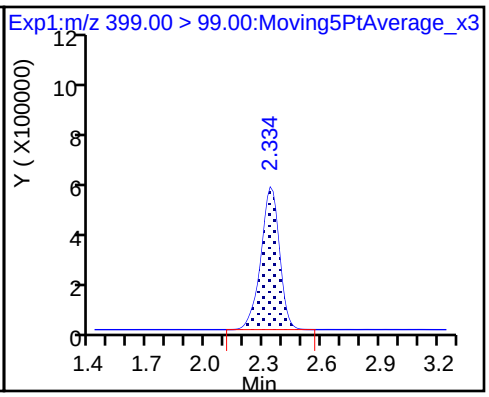
10 Perfluoroheptanoic acid



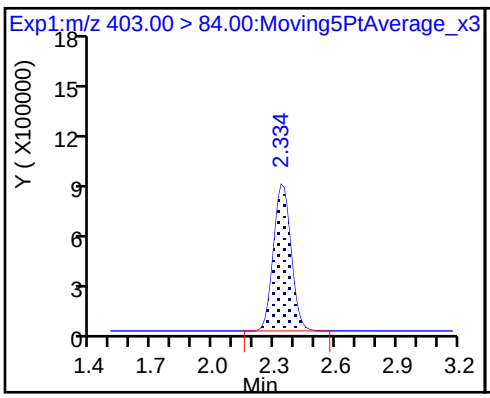
8 Perfluorohexanesulfonic acid



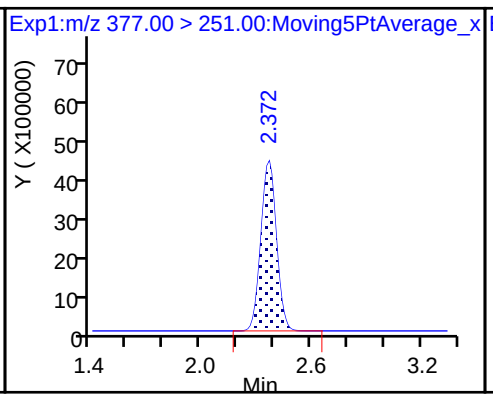
8 Perfluorohexanesulfonic acid



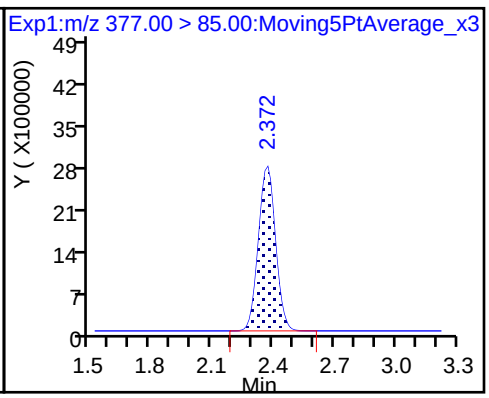
D 11 18O2 PFHxS



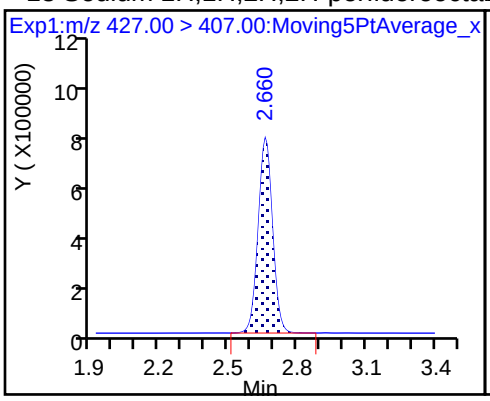
65 Adona



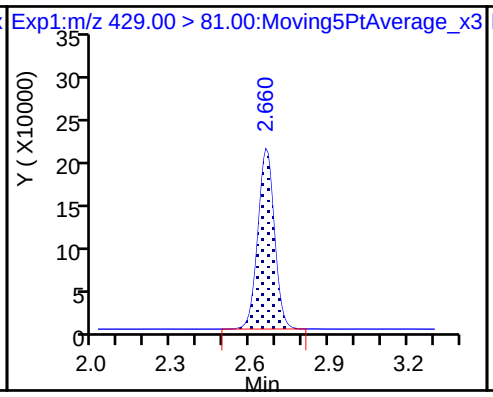
65 Adona



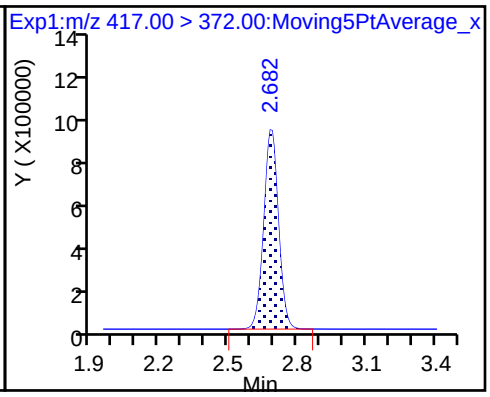
13 Sodium 1H,1H,2H,2H-perfluorooctane



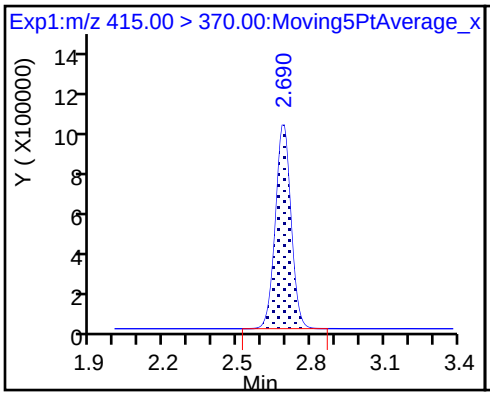
D 12 M2-6:2FTS



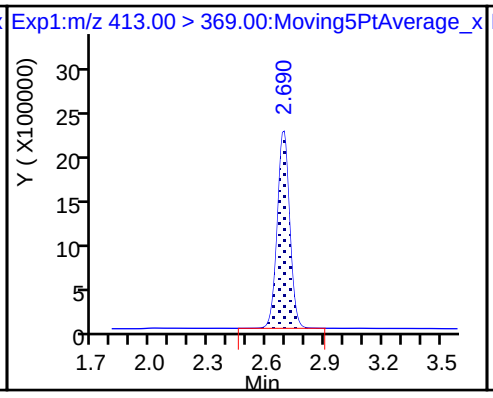
D 14 13C4 PFOA



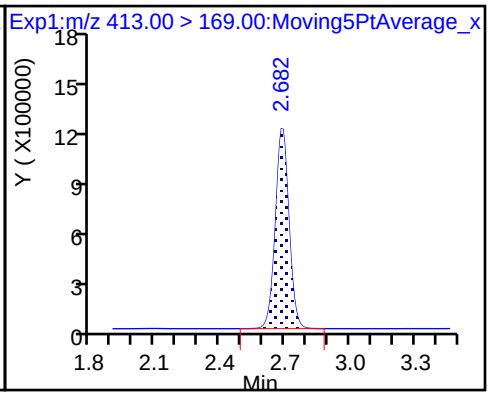
* 62 13C2-PFOA



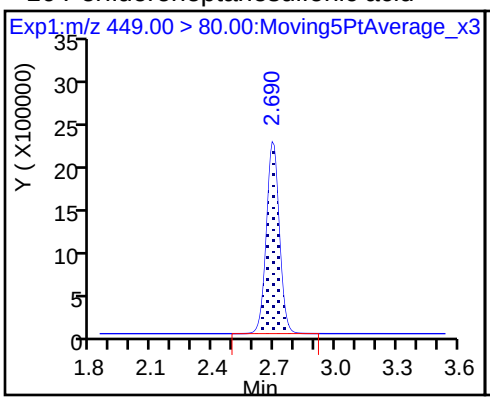
15 Perfluorooctanoic acid



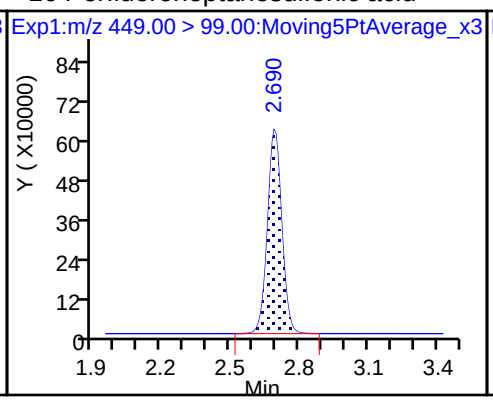
15 Perfluorooctanoic acid



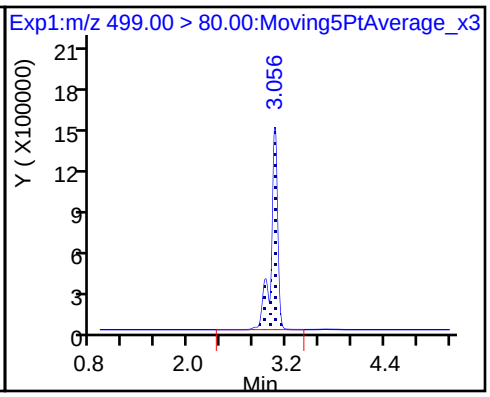
16 Perfluoroheptanesulfonic acid



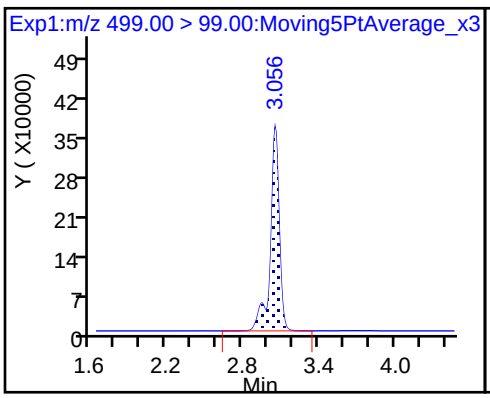
16 Perfluoroheptanesulfonic acid



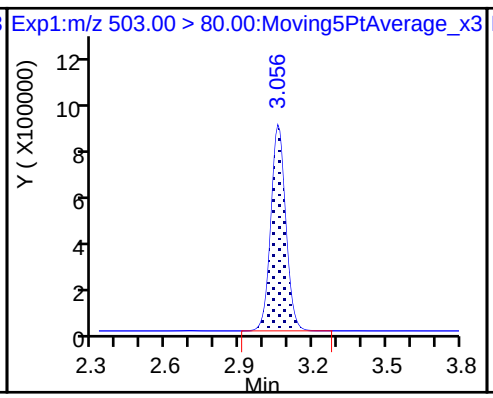
17 Perfluorooctane sulfonic acid



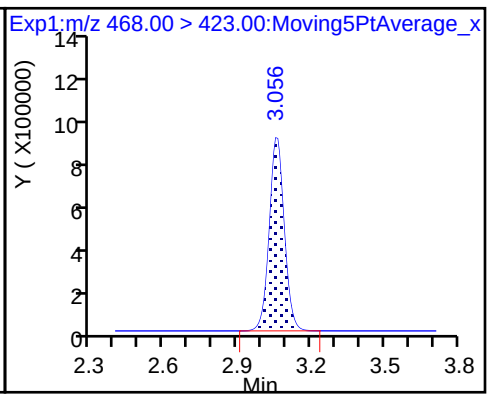
17 Perfluorooctane sulfonic acid



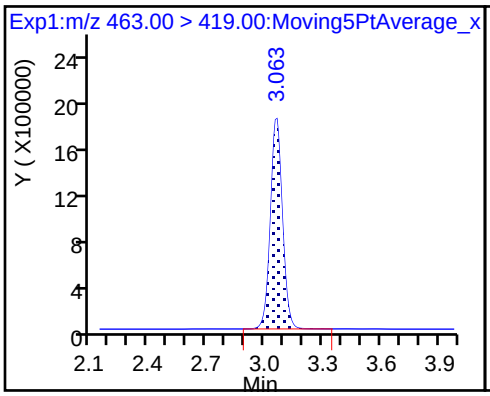
D 18 13C4 PFOS



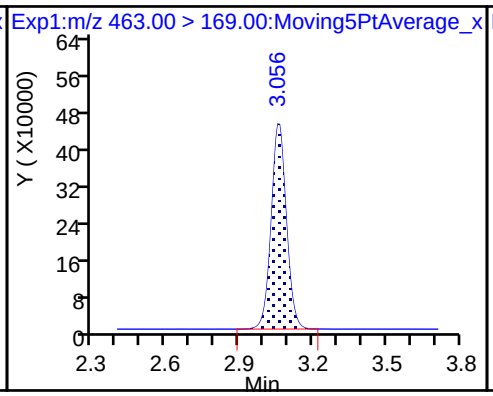
D 19 13C5 PFNA



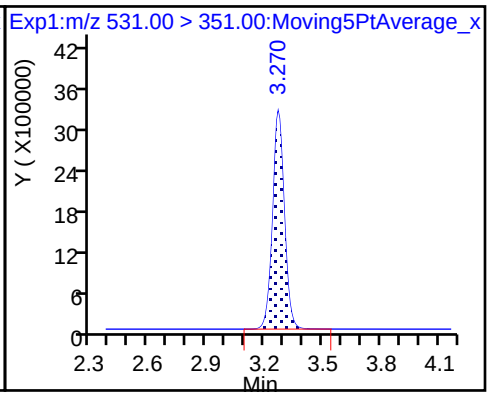
20 Perfluorononanoic acid



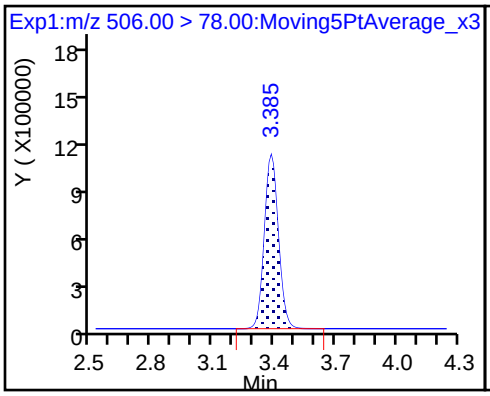
20 Perfluorononanoic acid



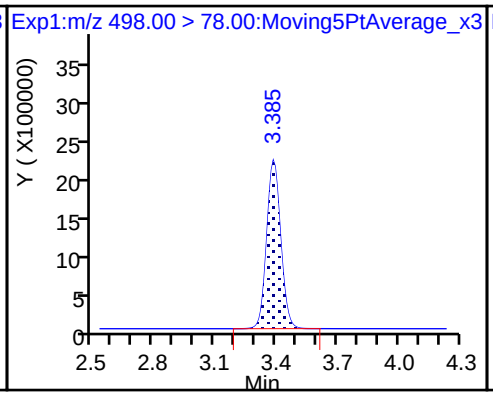
69 9-Chlorohexadecafluoro-3-oxanonane



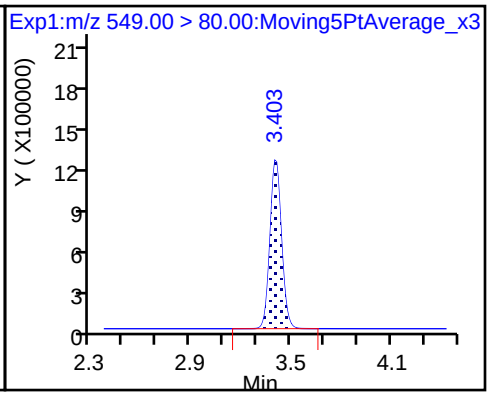
D 21 13C8 FOSA



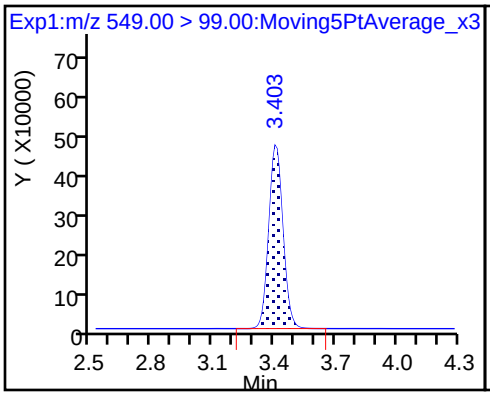
22 Perfluorooctane Sulfonamide



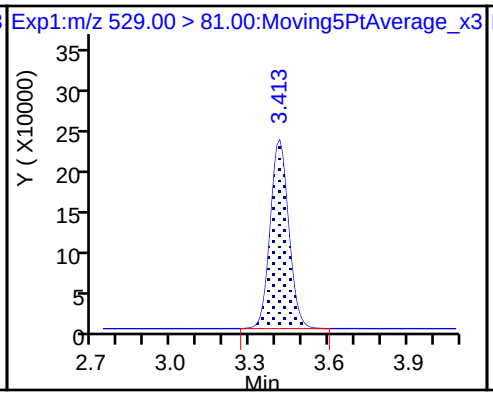
68 Perfluorononanesulfonic acid



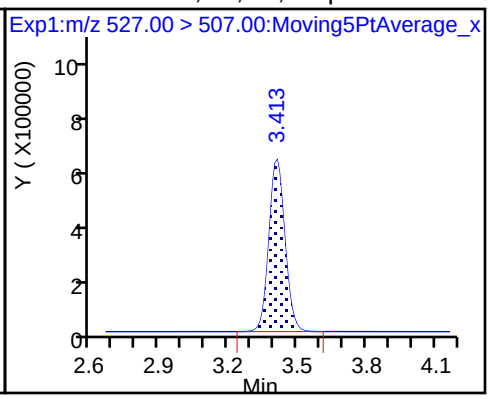
68 Perfluorononanesulfonic acid



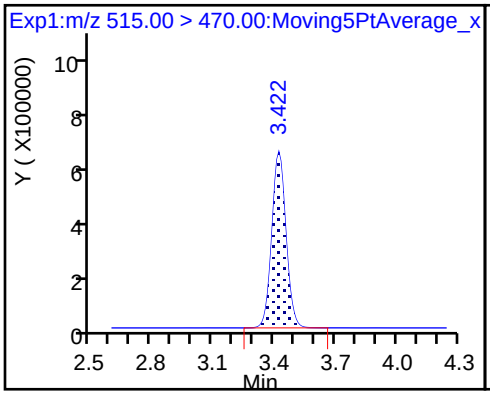
D 26 M2-8:2FTS



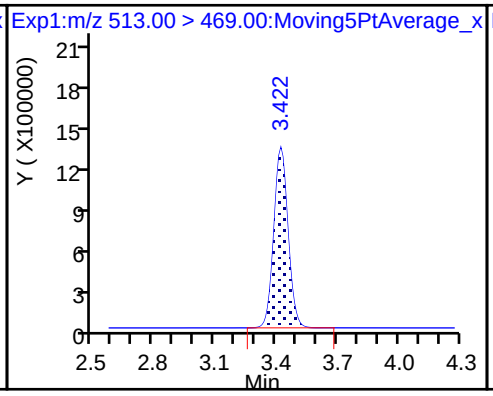
25 Sodium 1H,1H,2H,2H-perfluorodecane



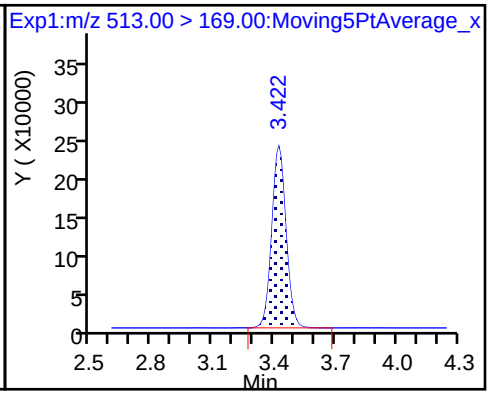
D 23 13C2 PFDA



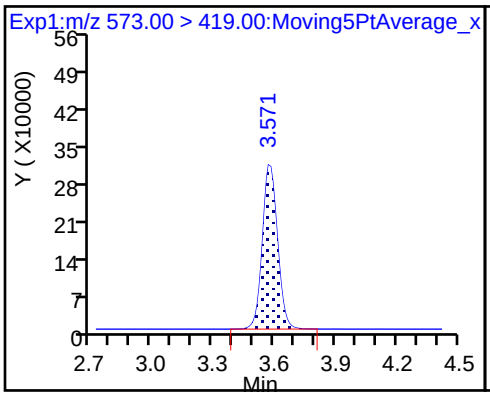
24 Perfluorodecanoic acid



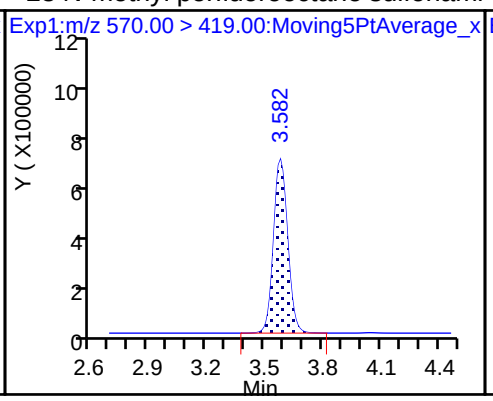
24 Perfluorodecanoic acid



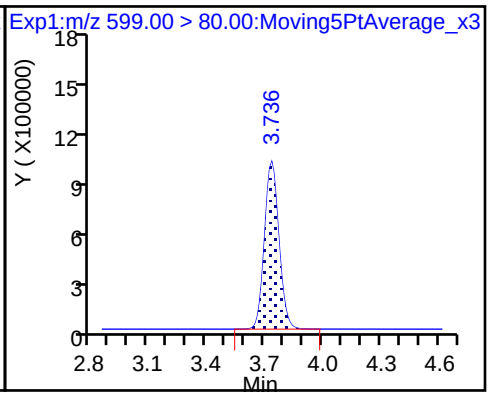
D 27 d3-NMeFOSAA



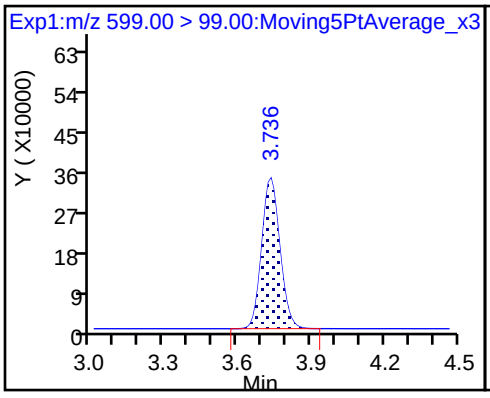
28 N-methyl perfluorooctane sulfonami



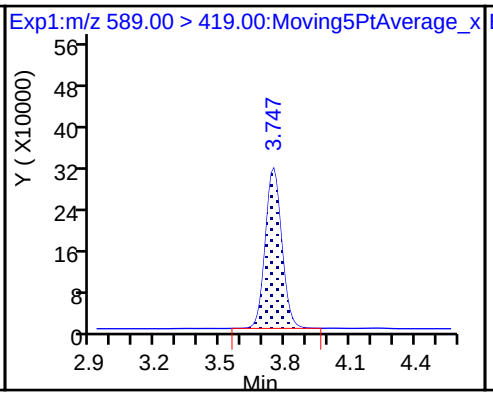
29 Perfluorodecane Sulfonic acid



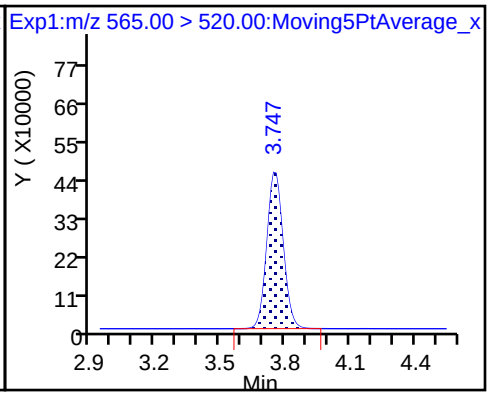
29 Perfluorodecane Sulfonic acid



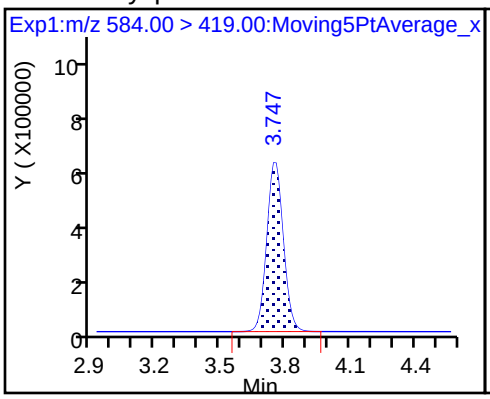
D 32 d5-NEtFOSAA



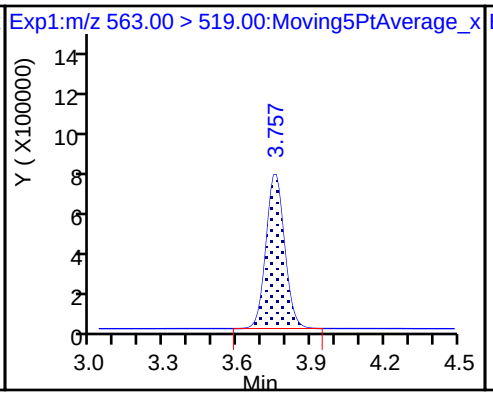
D 30 13C2 PFUnA



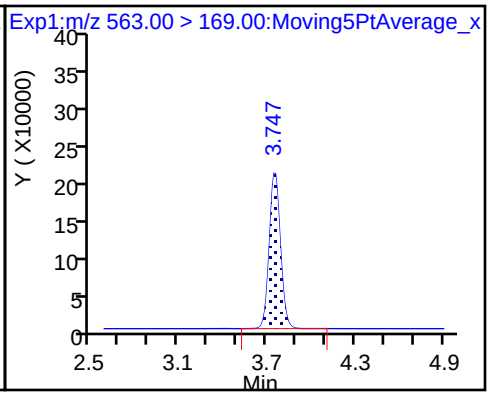
33 N-ethyl perfluorooctane sulfonamid



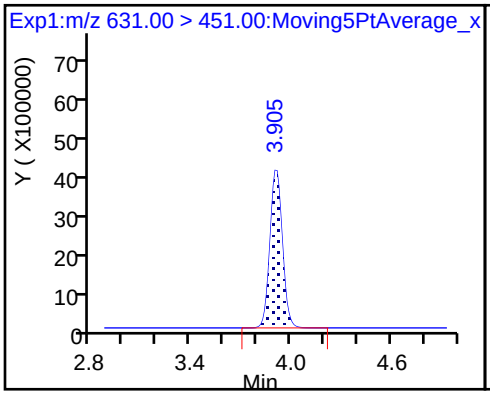
31 Perfluoroundecanoic acid



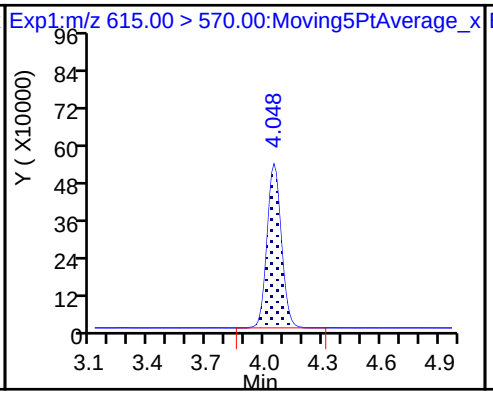
31 Perfluoroundecanoic acid



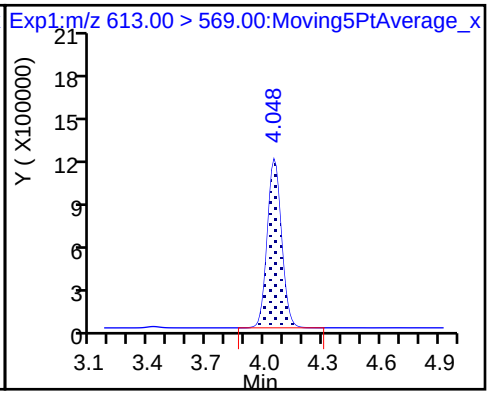
66 11-Chloroeicosafluoro-3-oxaundecan



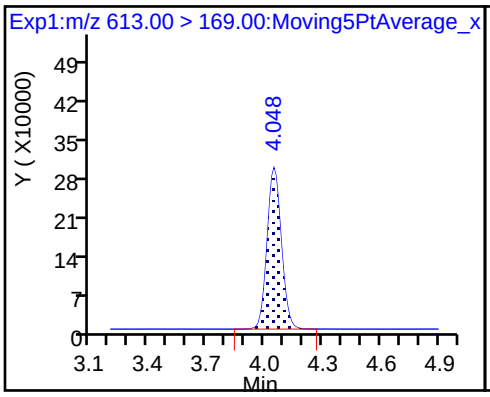
D 36 13C2 PFDoA



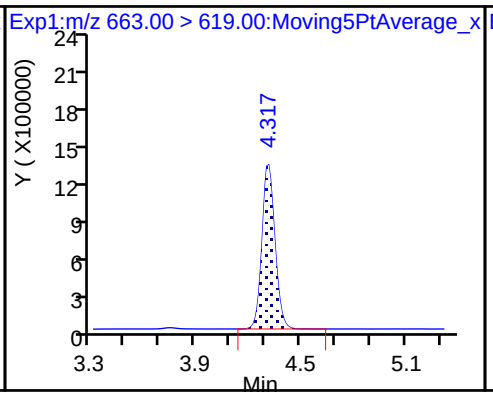
37 Perfluorododecanoic acid



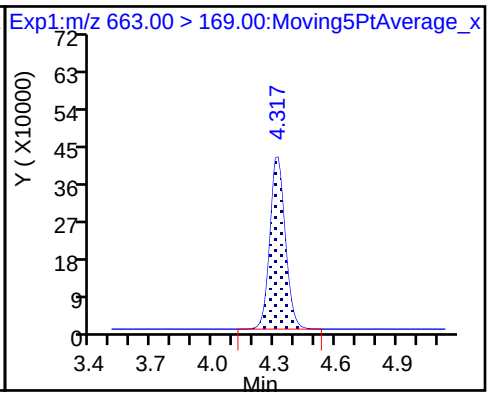
37 Perfluorododecanoic acid



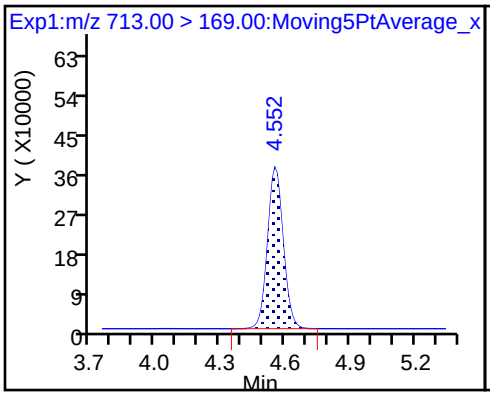
41 Perfluorotridecanoic acid



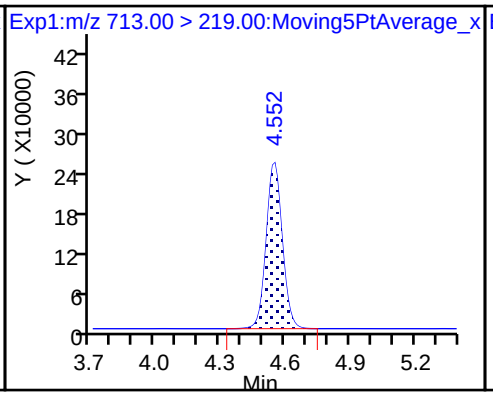
41 Perfluorotridecanoic acid



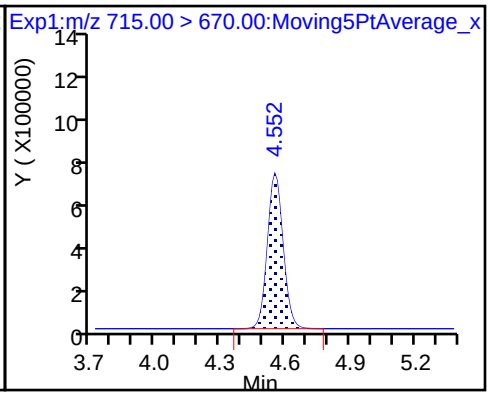
42 Perfluorotetradecanoic acid



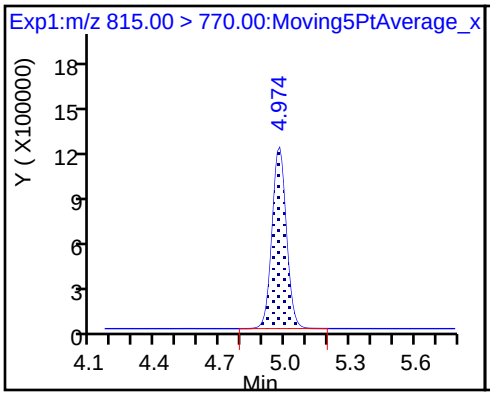
42 Perfluorotetradecanoic acid



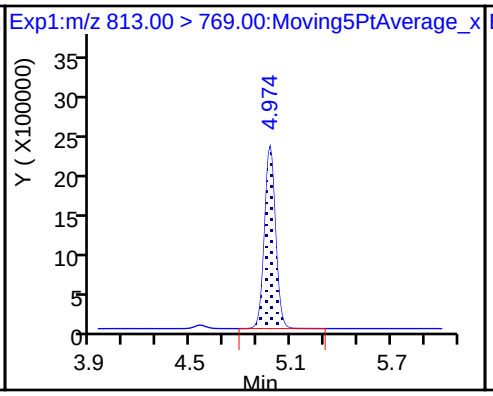
D 43 13C2-PFTeDA



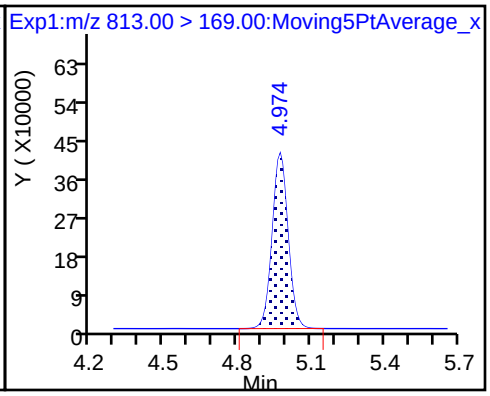
D 44 13C2-PFHxDA



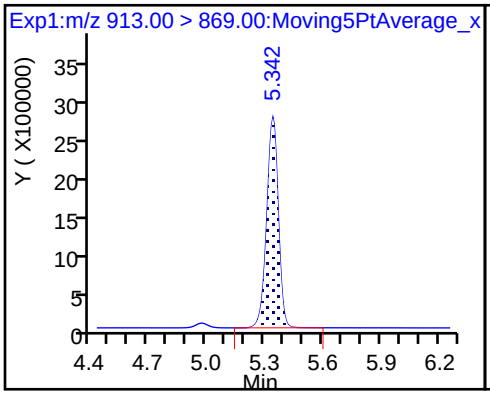
45 Perfluorohexadecanoic acid



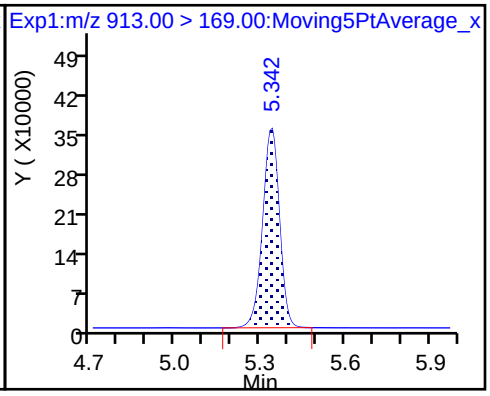
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 29-Mar-2018 18:14:21 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:31 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 30-Mar-2018 09:48:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.436	-0.006	1.000	5735604	2.58		103	58531	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.437	-0.001	1.004	21580046	10.2		102	11632	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.702	-0.008	0.554	3687266	2.55		102	78635	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.706	-0.003	1.005	17152403	9.72		97.2	7365	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	78326	2.37		102	501	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.742	-0.003	1.000	22689760	8.54		96.6	14590	
298.90 > 99.00	1.739	1.742	-0.003	1.000	9957917		2.28(1.25-3.74)	96.6	14342	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.955	-0.005	1.000	5058050	8.70		93.2	228018	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.955	-0.005	1.000	570582	2.26		96.7	8489	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.991	-0.008	1.000	3845737	2.42		96.6	134352	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.992	0.001	1.006	16338328	10.4		104	22572	
313.00 > 119.00	1.982	1.992	-0.010	1.000	1517062		10.77(5.03-15.10)	104	17707	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.013	-0.008	1.000	21196987	8.84		94.2	244099	
349.00 > 99.00	2.005	2.013	-0.008	1.000	8492802		2.50(1.36-4.07)	94.2	186040	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.092	-0.008	1.000	207020	2.61		104	2646	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.092	-0.008	1.000	2889144	10.3		103	25368	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.326	-0.005	1.000	3833624	2.50		100	63922	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.327	-0.006	1.000	15839255	9.51		95.1	14396	
363.00 > 169.00	2.321	2.327	-0.006	1.000	6592946		2.40(1.13-3.40)	95.1	19234	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.339	-0.005	1.000	18176626	8.82		96.9	48609	
399.00 > 99.00	2.334	2.339	-0.005	1.000	6162005		2.95(1.50-4.49)	96.9	26079	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.340	-0.006	1.000	4362929	2.29		96.7	73318	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	40218776	8.16		81.6	276919	
377.00 > 85.00	2.372	2.372	0.0	1.000	25804266		1.56(0.84-2.53)	81.6	154557	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.664	-0.004	1.000	800357	2.26		95.3	22425	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.664	-0.004	1.000	5791627	9.20		97.1	28921	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.688	-0.006	1.000	3749304	2.49		99.7	60903	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.689	-0.007		4014147	2.50			76434	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.690	-0.008	1.000	16926232	9.52		95.2	5748	
413.00 > 169.00	2.682	2.690	-0.008	1.000	8823163		1.92(0.84-2.52)	95.2	19945	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.695	-0.005	1.000	16813478	9.12		95.8	151715	
449.00 > 99.00	2.690	2.695	-0.005	1.000	4717497		3.56(1.94-5.82)	95.8	51657	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.060	-0.004	1.000	3306882	2.49		104	18604	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.056	3.060	-0.004	1.000	14234234	9.00		97.0	26257	
499.00 > 99.00	3.056	3.060	-0.004	1.000	3253738		4.37(2.31-6.93)	97.0	29168	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.061	-0.005	1.000	3201114	2.51		101	68857	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.064	-0.008	1.000	13303148	10.1		101	13860	
463.00 > 169.00	3.056	3.064	-0.008	1.000	3354345		3.97(1.90-5.69)	101	61290	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.270	3.272	-0.002	1.000	23393631	9.04		97.0	229068	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.388	-0.003	1.000	4756992	2.54		102	41758	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.385	3.389	-0.004	1.000	18498081	9.84		98.4	132507	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.403	3.409	-0.006	1.000	10261449	9.25		96.4	89713	
549.00 > 99.00	3.403	3.409	-0.006	1.000	3784203		2.71(1.33-3.97)	96.4	36264	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	932507	2.27		94.7	27454	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.415	-0.002	1.000	4947631	9.42		98.3	45864	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.423	-0.001	1.000	2662530	2.48		99.0	34367	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.427	-0.005	1.000	10958309	10.4		104	51617	
513.00 > 169.00	3.422	3.427	-0.005	1.000	2047409		5.35(2.36-7.09)	104	70662	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.578	-0.007	1.000	1563764	2.72		109	31151	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.581	-0.010	1.000	6681300	10.1		101	34744	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.736	3.738	-0.002	1.000	8752766	9.12		94.6	88915	
599.00 > 99.00	3.736	3.738	-0.002	1.000	3105143		2.82(1.39-4.16)	94.6	75140	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.749	-0.002	1.000	1483924	2.46		98.3	3885	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.753	-0.006	1.000	2255059	2.57		103	43512	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.755	-0.008	1.000	5395434	9.91		99.1	67492	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.747	3.755	-0.008	1.000	7311434	10.1		101	27118	
563.00 > 169.00	3.747	3.755	-0.008	1.000	1915144		3.82(2.12-6.36)	101	40854	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.910	-0.005	1.000	33023539	8.22		87.3	221031	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.052	-0.004	1.000	10879941	10.0		99.9	7960	
613.00 > 169.00	4.048	4.052	-0.004	1.000	2711112		4.01(2.13-6.40)	99.9	35603	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.052	-0.004	1.000	2518124	2.58		103	17246	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.316	-0.010	1.000	12483957	10.7		107	5334	
663.00 > 169.00	4.306	4.316	-0.010	1.000	3993723		3.13(1.25-3.76)	107	49346	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.558	-0.006	1.000	3237082	2.61		104	15279	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.558	-0.006	1.000	3274341	10.1		101	29447	
713.00 > 219.00	4.542	4.558	-0.016	0.998	2448380		1.34(0.71-2.13)	101	26681	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.977	-0.003	1.000	19206042	10.4		104	3791	
813.00 > 169.00	4.974	4.977	-0.003	1.000	3117440		6.16(2.86-8.58)	104	14123	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.977	-0.003	1.000	4864202	2.54		101	13665	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.335	5.344	-0.009	1.000	18744405	9.70		97.0	2469	
913.00 > 169.00	5.335	5.344	-0.009	1.000	2456528		7.63(3.83-11.48)	97.0	10562	

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:35 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Injection Date: 29-Mar-2018 18:14:21 Instrument ID: A8_N

Lims ID: IC L7 Full

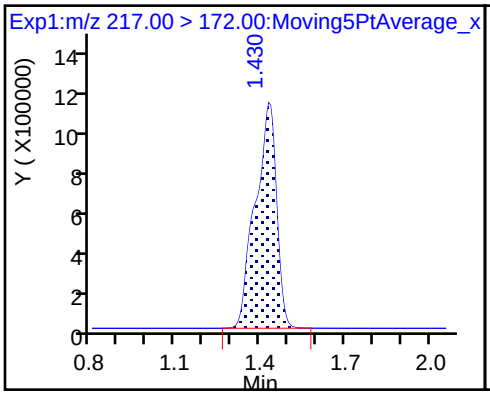
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

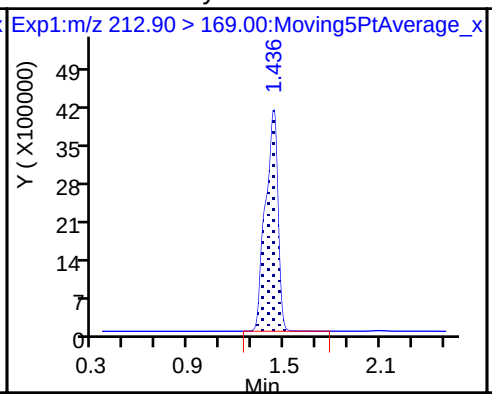
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

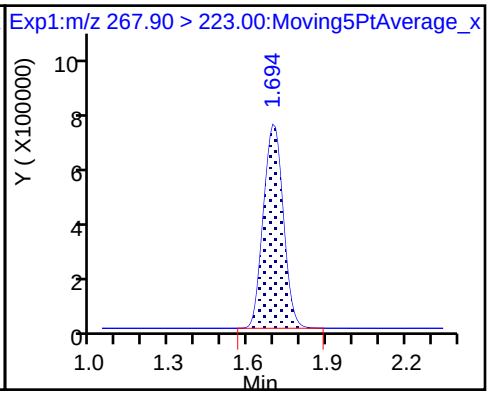
D 1 13C4 PFBA



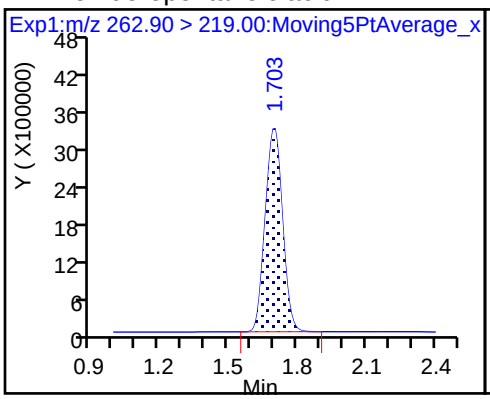
2 Perfluorobutyric acid



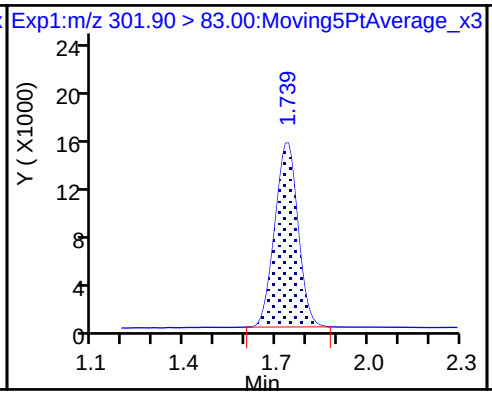
D 3 13C5-PFPeA



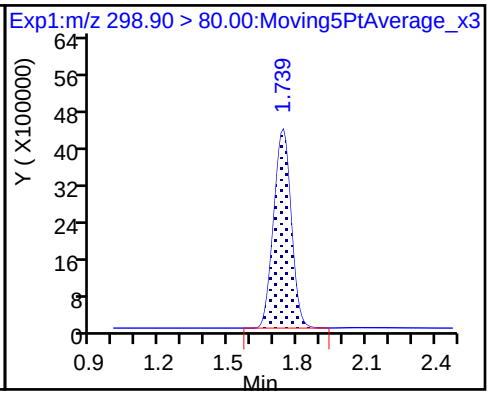
4 Perfluoropentanoic acid



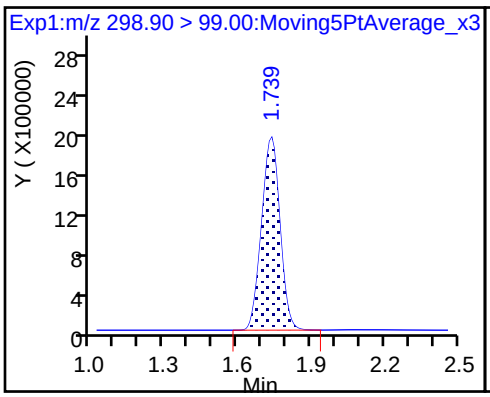
D 47 13C3-PFBS



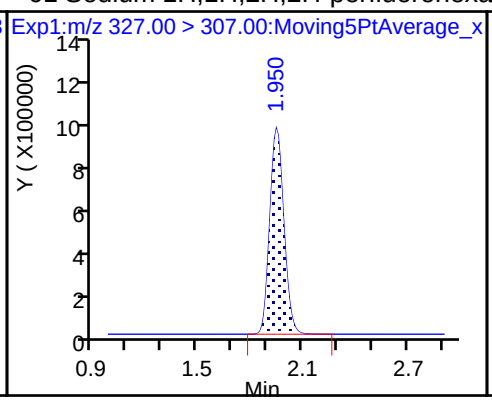
5 Perfluorobutanesulfonic acid



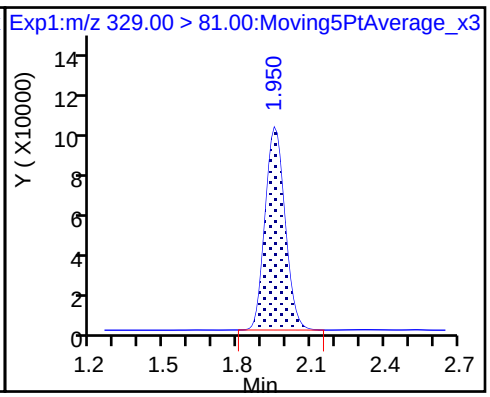
5 Perfluorobutanesulfonic acid



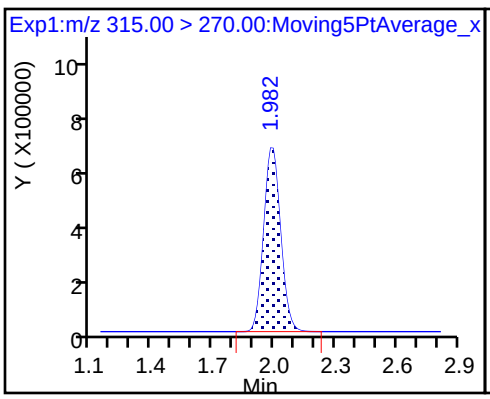
61 Sodium 1H,1H,2H,2H-perfluorohexa



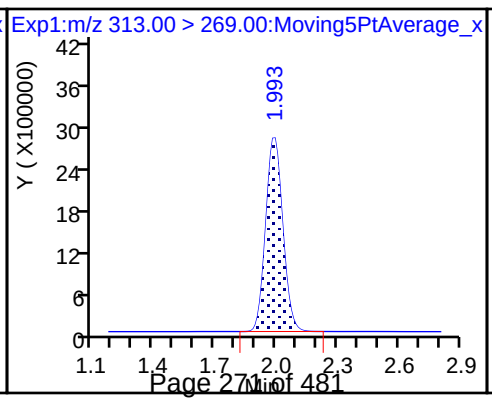
D 60 M2-4:2FTS



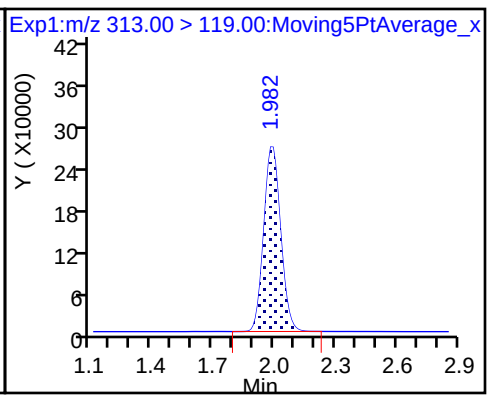
D 7 13C2 PFHxA



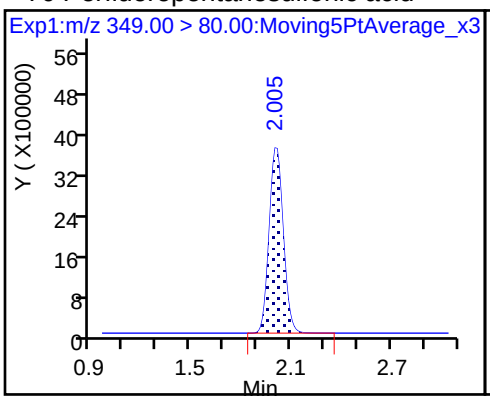
6 Perfluorohexanoic acid



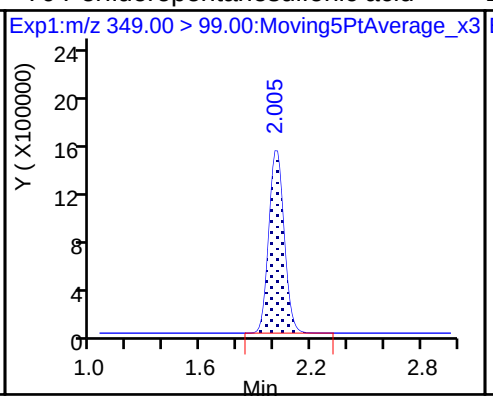
6 Perfluorohexanoic acid



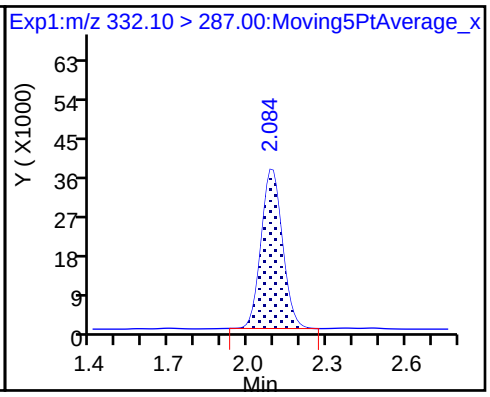
70 Perfluoropentanesulfonic acid



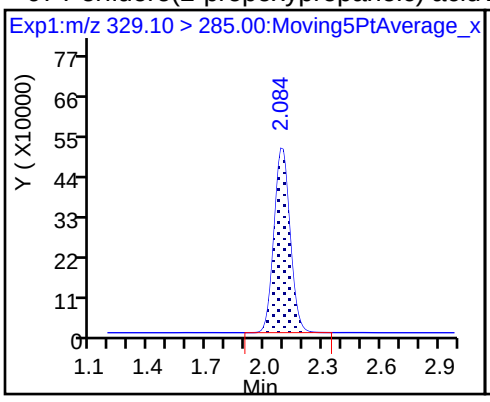
70 Perfluoropentanesulfonic acid



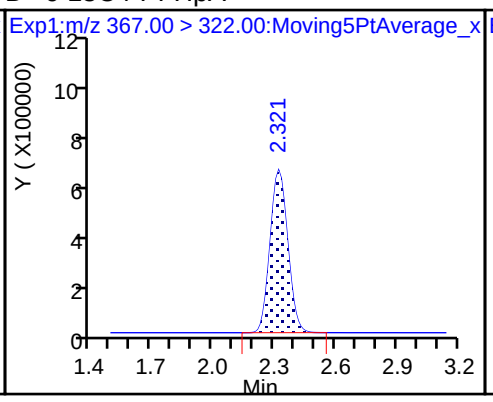
D 64 13C3 HFPO-DA



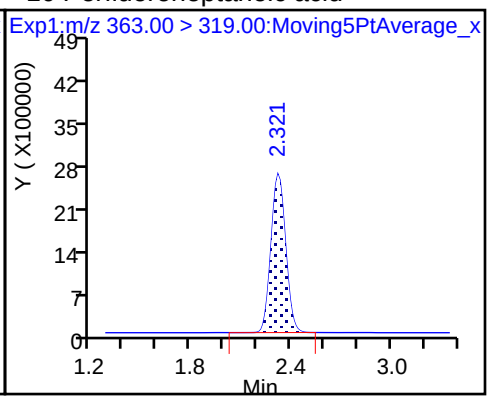
67 Perfluoro(2-propoxypropanoic) acid



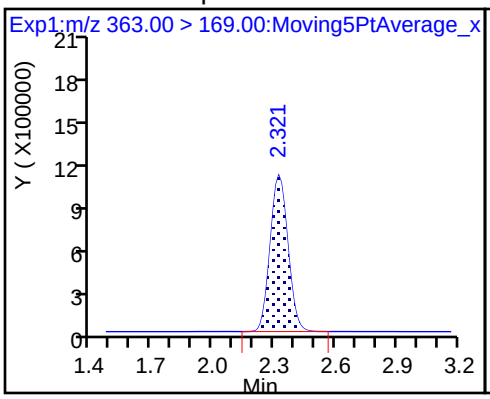
D 9 13C4-PFHpA



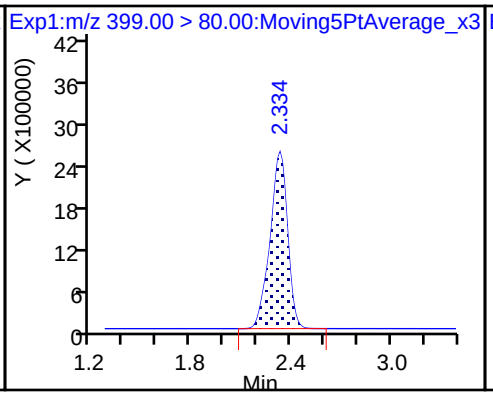
10 Perfluoroheptanoic acid



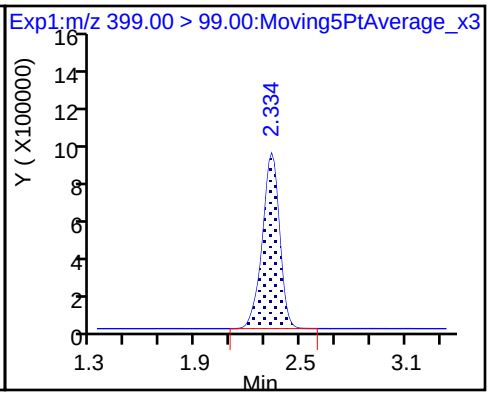
10 Perfluoroheptanoic acid



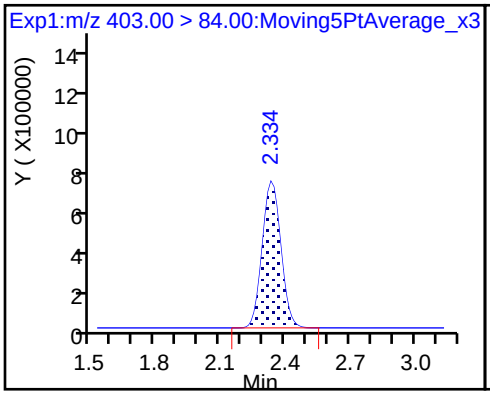
8 Perfluorohexanesulfonic acid



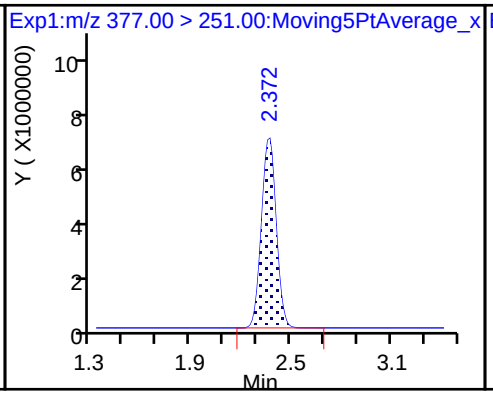
8 Perfluorohexanesulfonic acid



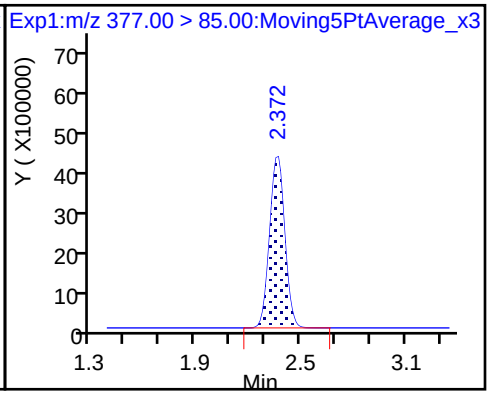
D 11 18O2 PFHxS



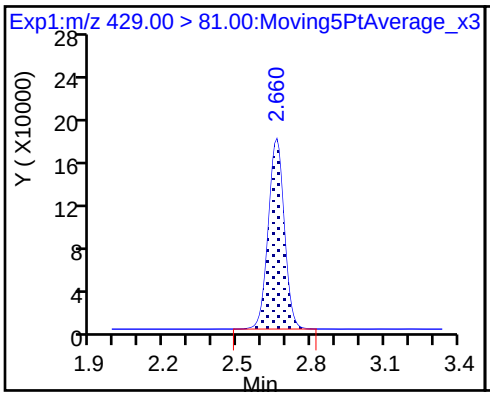
65 Adona



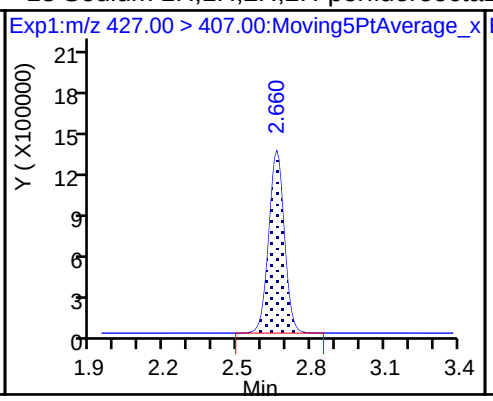
65 Adona



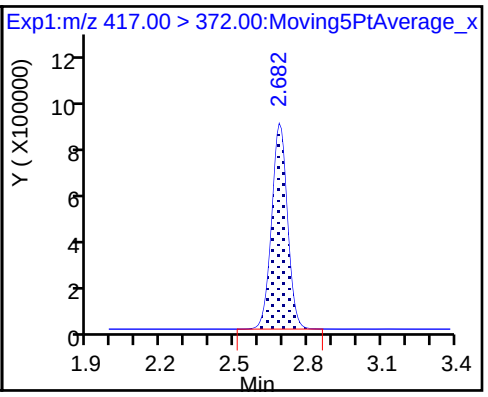
D 12 M2-6:2FTS



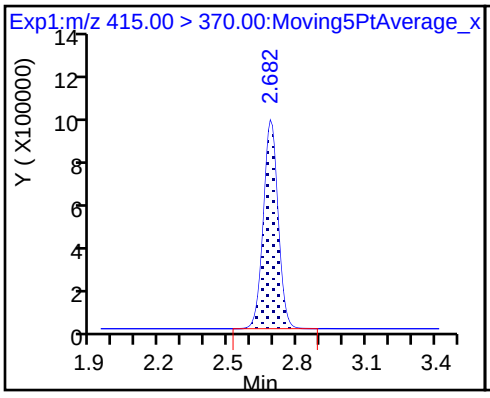
13 Sodium 1H,1H,2H,2H-perfluorooctane



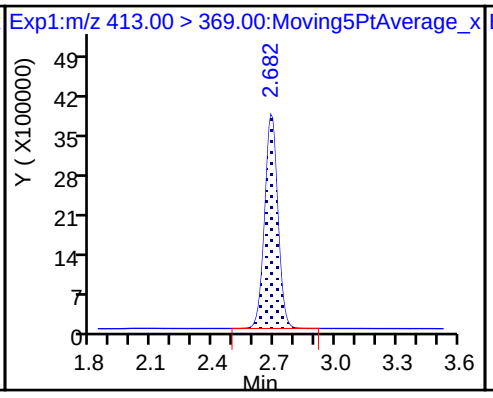
D 14 13C4 PFOA



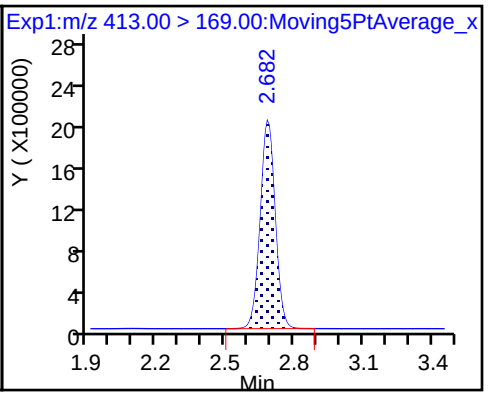
* 62 13C2-PFOA



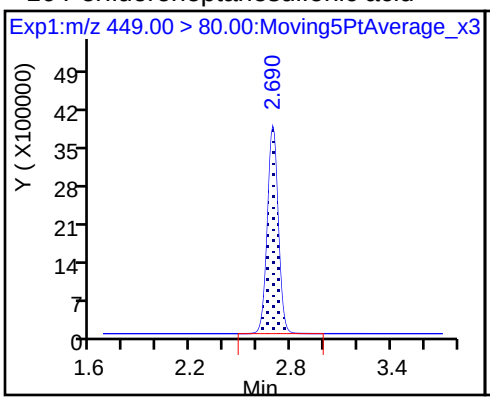
15 Perfluorooctanoic acid



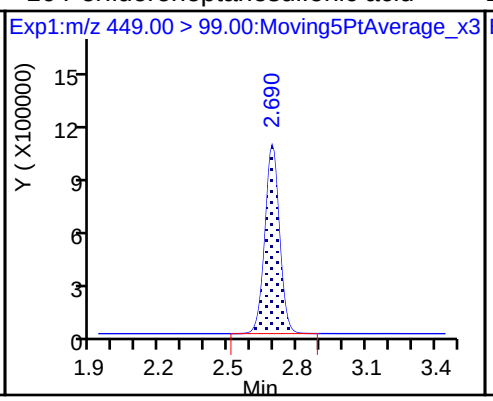
15 Perfluorooctanoic acid



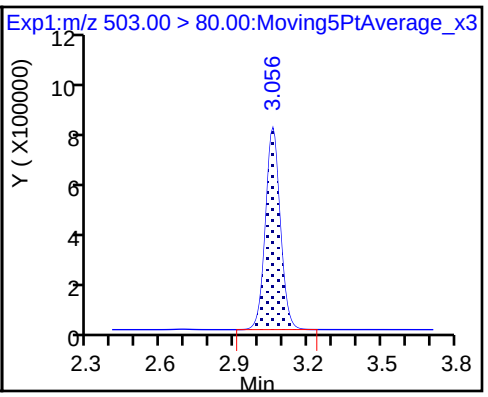
16 Perfluoroheptanesulfonic acid



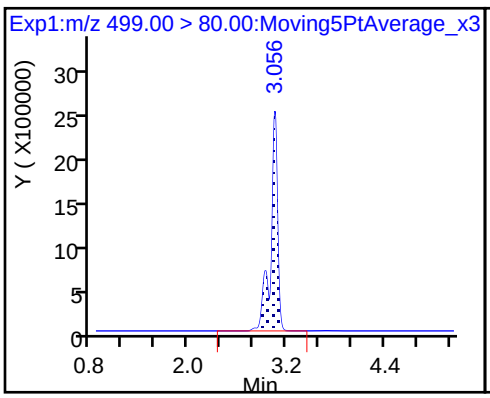
16 Perfluoroheptanesulfonic acid



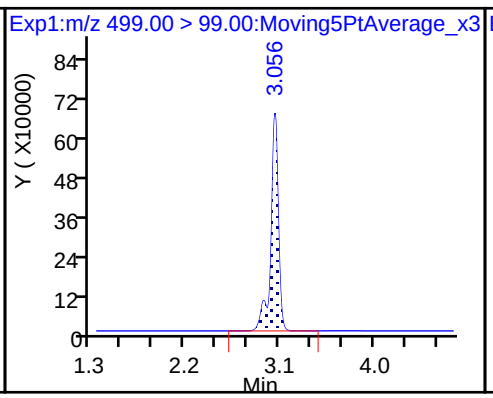
D 18 13C4 PFOS



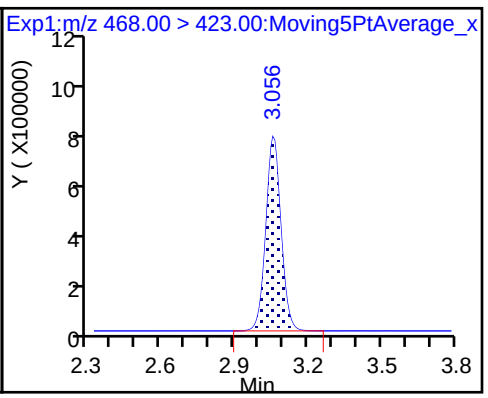
17 Perfluorooctane sulfonic acid



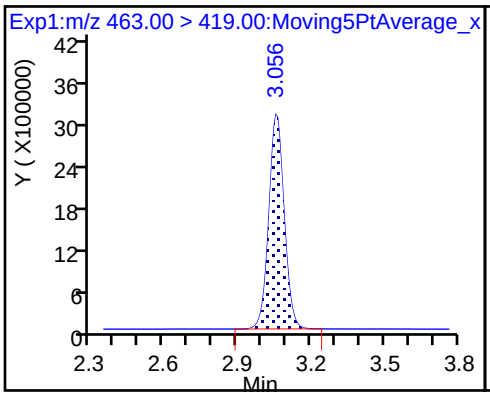
17 Perfluorooctane sulfonic acid



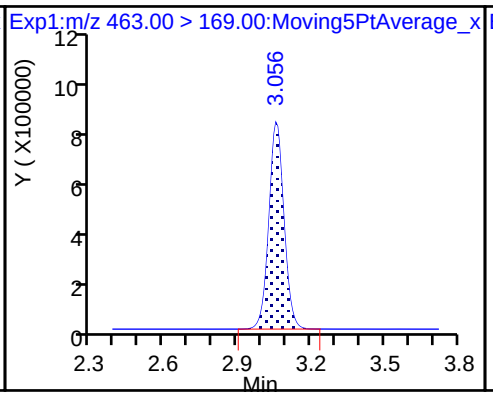
D 19 13C5 PFNA



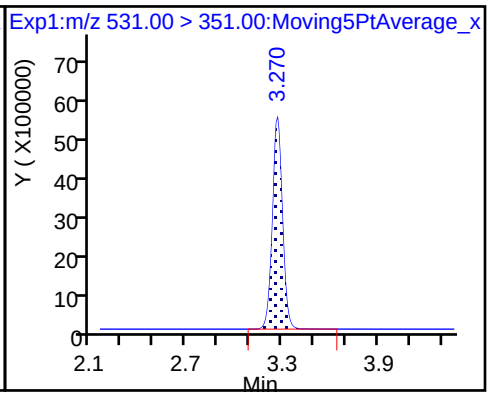
20 Perfluorononanoic acid



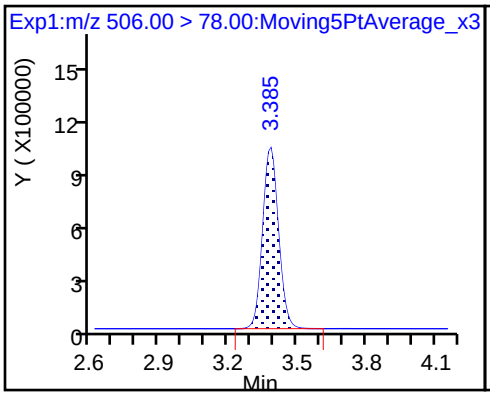
20 Perfluorononanoic acid



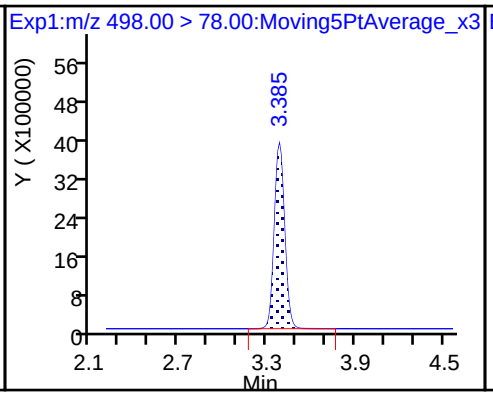
69 9-Chlorohexadecafluoro-3-oxanonane



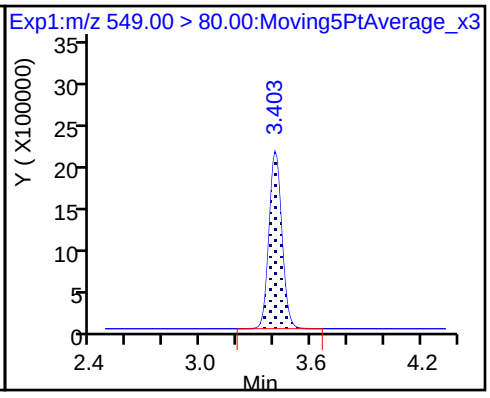
D 21 13C8 FOSA



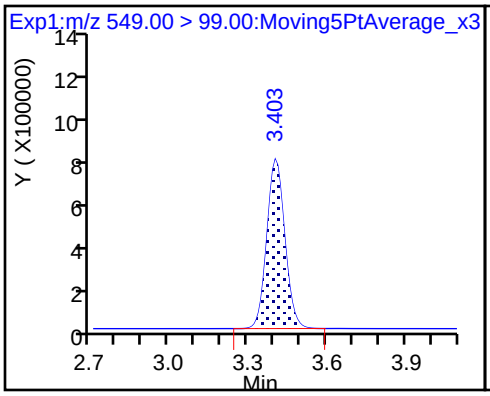
22 Perfluorooctane Sulfonamide



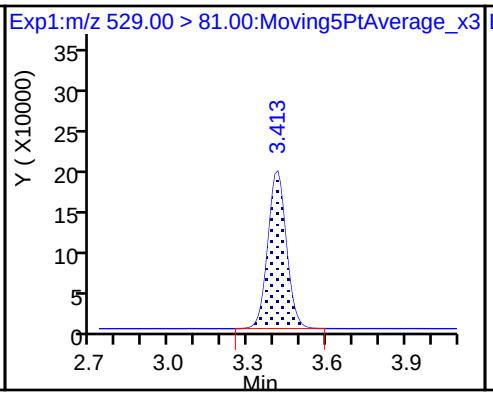
68 Perfluorononanesulfonic acid



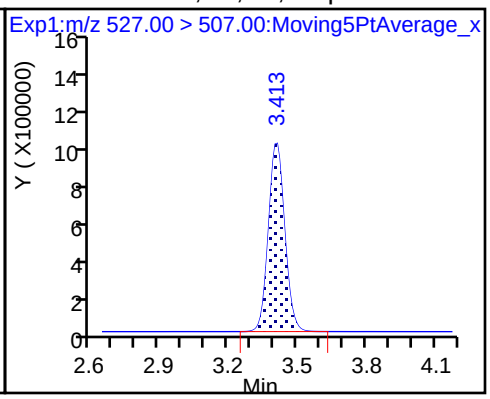
68 Perfluorononanesulfonic acid



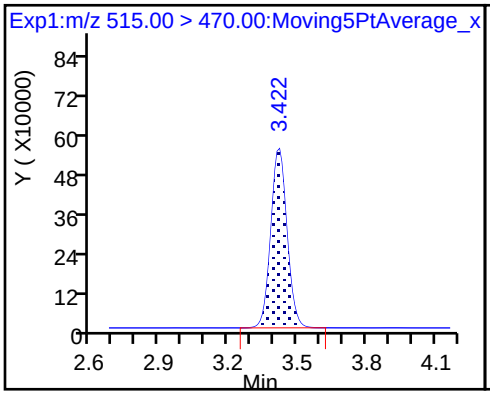
D 26 M2-8:2FTS



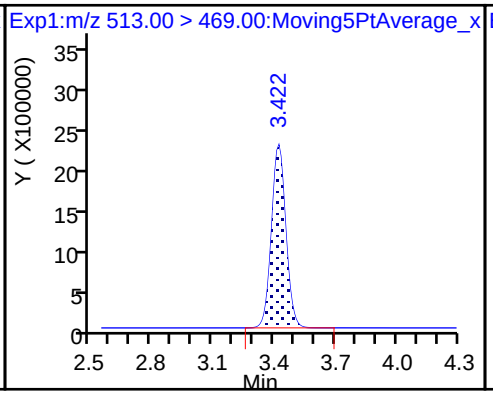
25 Sodium 1H,1H,2H,2H-perfluorodecane



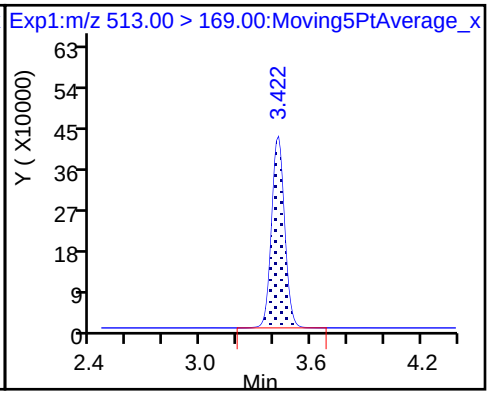
D 23 13C2 PFDA



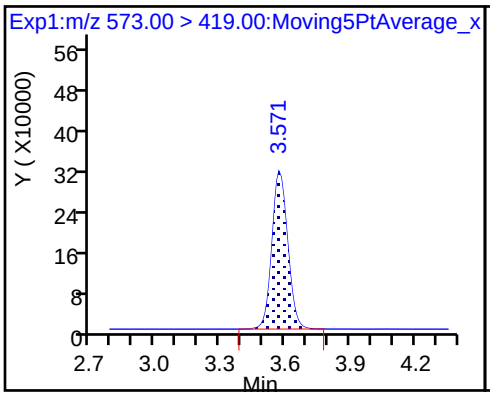
24 Perfluorodecanoic acid



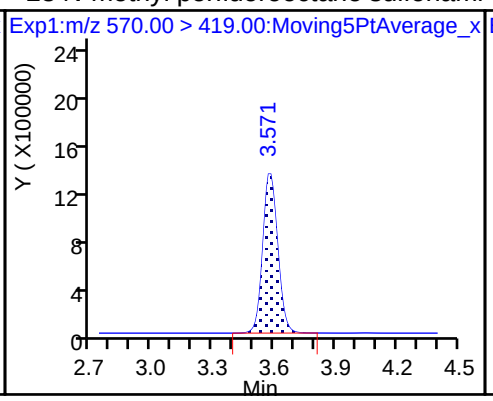
24 Perfluorodecanoic acid



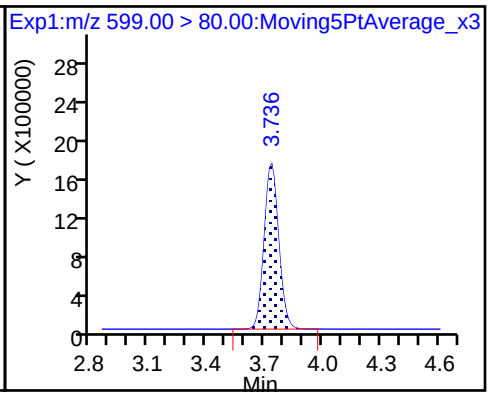
D 27 d3-NMeFOSAA



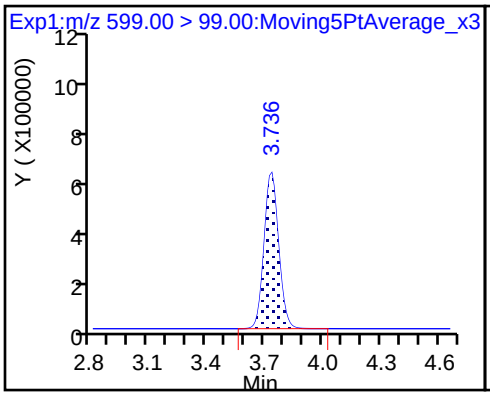
28 N-methyl perfluorooctane sulfonami



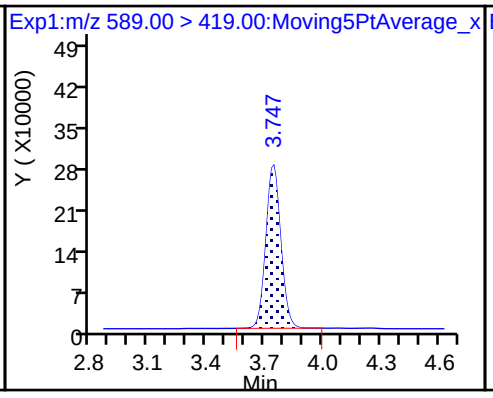
29 Perfluorodecane Sulfonic acid



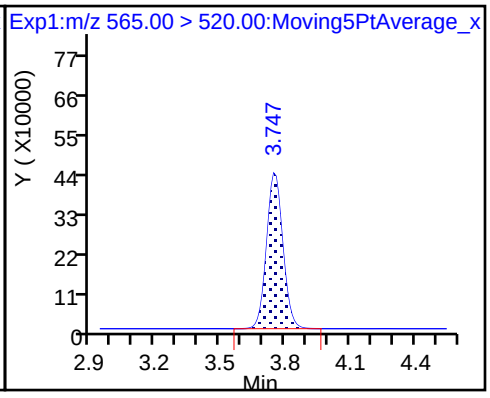
29 Perfluorodecane Sulfonic acid



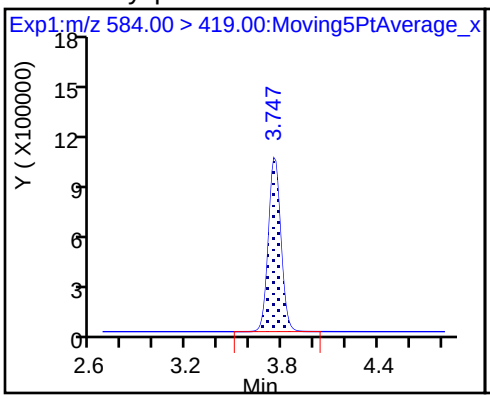
D 32 d5-NEtFOSAA



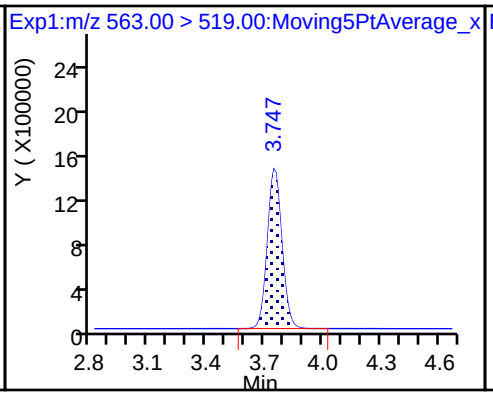
D 30 13C2 PFUnA



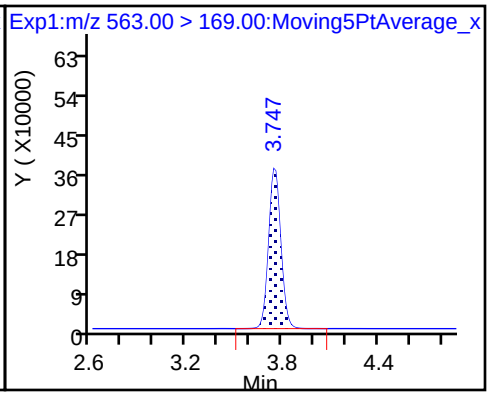
33 N-ethyl perfluorooctane sulfonamid



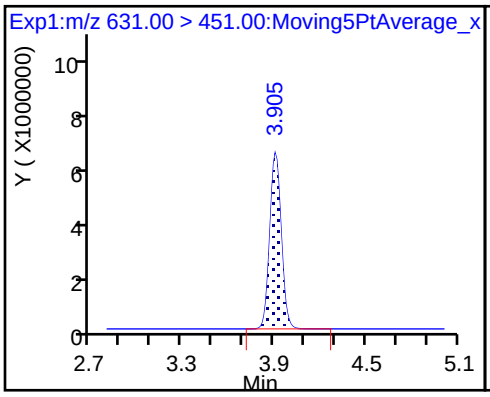
31 Perfluoroundecanoic acid



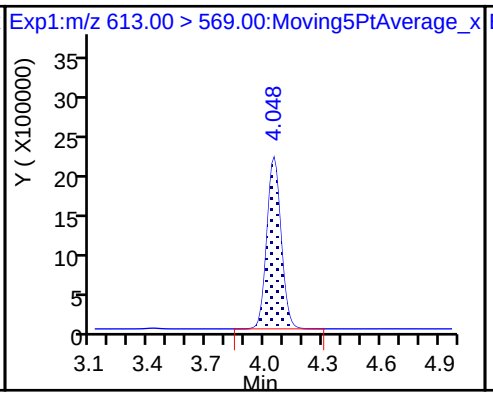
31 Perfluoroundecanoic acid



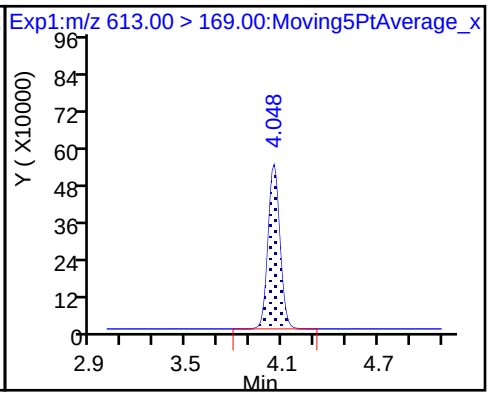
66 11-Chloroeicosafluoro-3-oxaundecan



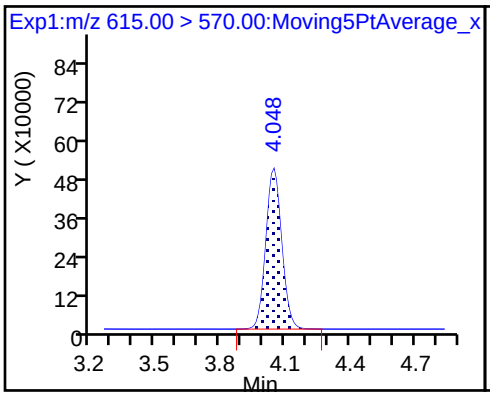
37 Perfluorododecanoic acid



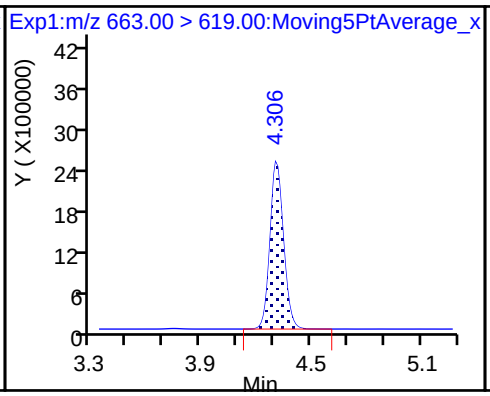
37 Perfluorododecanoic acid



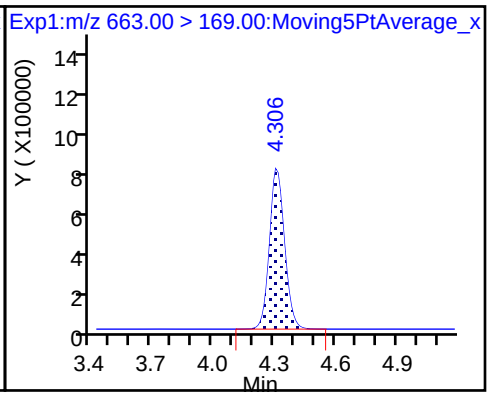
D 36 13C2 PFDoA



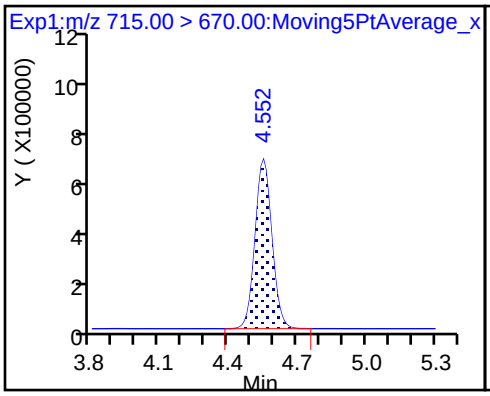
41 Perfluorotridecanoic acid



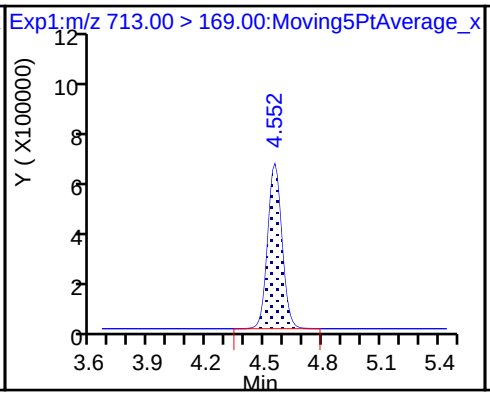
41 Perfluorotridecanoic acid



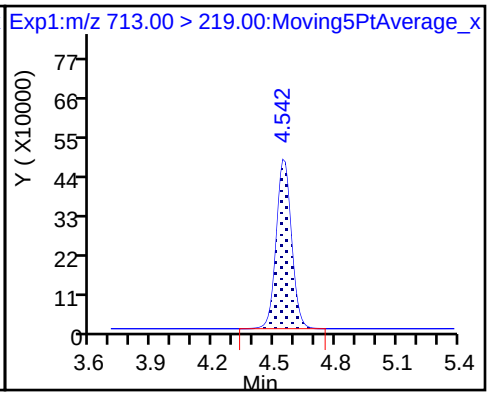
D 43 13C2-PFTeDA



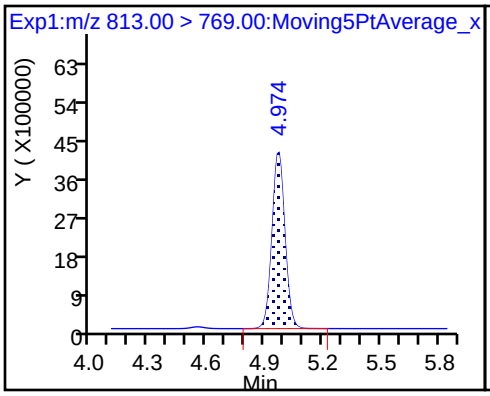
42 Perfluorotetradecanoic acid



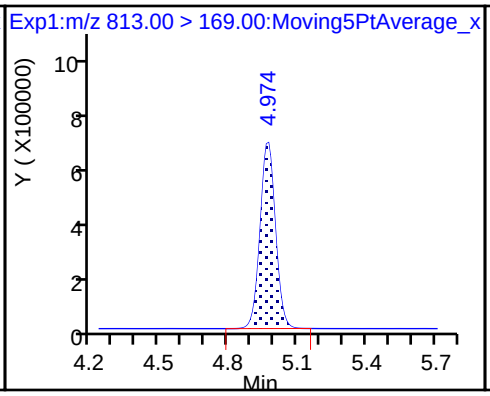
42 Perfluorotetradecanoic acid



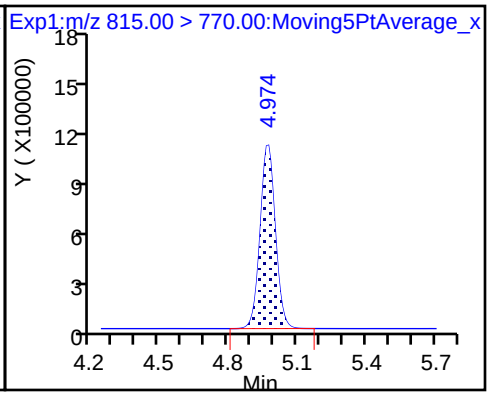
45 Perfluorohexadecanoic acid



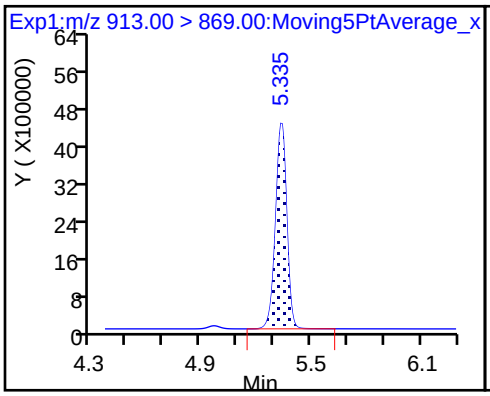
45 Perfluorohexadecanoic acid



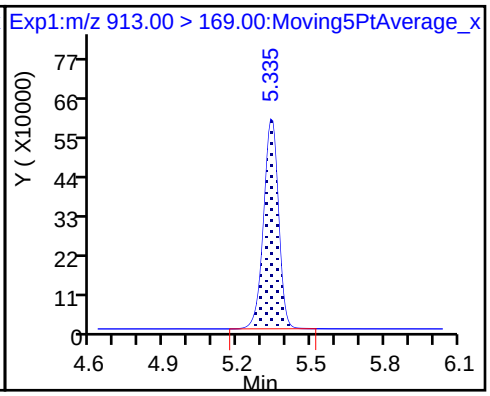
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: ICV 320-215537/10 Calibration Date: 03/29/2018 18:29

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.03.29A_ICALB_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9691		2.62	2.50	4.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.180		2.46	2.50	-1.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	83.68		2.35	2.21	6.1	50.0
4:2 FTS	AveID	17.26	17.19		2.33	2.34	-0.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	0.9907		2.42	2.50	-3.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	73.94		2.44	2.35	3.9	50.0
HFPO-DA (GenX)	AveID	3.401	2.903		2.13	2.50	-14.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.115		2.57	2.50	2.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.043		2.13	2.28	-6.6	40.0
Adona	AveID	3.564	3.450		2.42	2.50	-3.2	50.0
6:2FTS	AveID	1.868	1.701		2.16	2.38	-8.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.133		2.39	2.50	-4.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.324		2.36	2.38	-0.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.006		2.45	2.50	-2.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.095		2.22	2.31	-4.2	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.817		2.27	2.33	-2.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	1.023		2.59	2.50	3.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7863		2.35	2.40	-1.9	50.0
8:2FTS	AveID	1.349	1.180		2.10	2.40	-12.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	1.006		2.54	2.50	1.7	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	1.003		2.38	2.50	-4.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6843		2.38	2.41	-1.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9283		2.53	2.50	1.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.7388		2.30	2.50	-7.9	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	2.846		2.31	2.36	-2.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.021		2.36	2.50	-5.6	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.208		2.61	2.50	4.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2605		2.61	2.50	4.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9134		2.39	2.50	-4.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: ICV 320-215537/10 Calibration Date: 03/29/2018 18:29

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.03.29A_ICALB_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	1.059		2.67	2.50	6.7	50.0
13C4 PFBA	Ave	1.382	1.385		2.51	2.50	0.2	50.0
13C5 PFPeA	Ave	0.8994	0.9172		2.55	2.50	2.0	50.0
13C3-PFBS	Ave	0.0206	0.0204		2.31	2.33	-0.8	50.0
M2-4:2FTS	Ave	0.1573	0.1544		2.29	2.34	-1.9	50.0
13C2 PFHxA	Ave	0.9916	1.056		2.66	2.50	6.5	50.0
13C3 HFPO-DA	Ave	0.0494	0.0554		2.81	2.50	12.2	50.0
13C4-PFHpA	Ave	0.9533	0.9410		2.47	2.50	-1.3	50.0
18O2 PFHxS	Ave	1.189	1.232		2.45	2.37	3.6	50.0
M2-6:2FTS	Ave	0.2203	0.2135		2.30	2.38	-3.1	40.0
13C4 PFOA	Ave	0.9372	0.9746		2.60	2.50	4.0	50.0
13C4 PFOS	Ave	0.8257	0.8710		2.52	2.39	5.5	50.0
13C5 PFNA	Ave	0.7930	0.8274		2.61	2.50	4.3	50.0
13C8 FOSA	Ave	1.166	1.176		2.52	2.50	0.8	50.0
M2-8:2FTS	Ave	0.2562	0.2837		2.65	2.40	10.7	40.0
13C2 PFDA	Ave	0.6698	0.6846		2.56	2.50	2.2	50.0
d3-NMeFOSAA	Ave	0.3583	0.3650		2.55	2.50	1.9	50.0
13C2 PFUnA	Ave	0.5468	0.5737		2.62	2.50	4.9	50.0
d5-NEtFOSAA	Ave	0.3760	0.3766		2.50	2.50	0.2	50.0
13C2 PFDoA	Ave	0.6087	0.6206		2.55	2.50	2.0	50.0
13C2-PFTeDA	Ave	0.7733	0.8183		2.65	2.50	5.8	50.0
13C2-PFHxDA	Ave	1.194	1.281		2.68	2.50	7.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 29-Mar-2018 18:29:58 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Mar-2018 11:48:50 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	1.000	5866875	2.51		100	35721	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.437	-0.001	1.000	5685461	2.62			3043	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.702	0.001	0.557	3884836	2.55		102	94661	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.706	-0.003	1.000	4582257	2.46			1820	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	80528	2.31		99.2	536	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.742	-0.003	1.000	6412695	2.35			4490	
298.90 > 99.00	1.739	1.742	-0.003	1.000	2635203		2.43(1.25-3.74)		4150	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.955	-0.006	1.000	610659	2.29		98.1	9238	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.955	-0.006	1.000	1391984	2.33			62713	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.991	0.003	1.000	4471659	2.66		106	132095	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.992	0.001	1.000	4430163	2.42			6896	
313.00 > 119.00	1.993	1.992	0.001	1.000	399932		11.08(5.03-15.10)		5086	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.013	0.003	1.000	6018666	2.44			131994	
349.00 > 99.00	2.016	2.013	0.003	1.000	2182963		2.76(1.36-4.07)		38268	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.092	0.003	1.005	681292	2.13			6377	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.092	-0.009	1.000	234699	2.81		112	3552	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.326	-0.006	1.000	3985700	2.47		98.7	93843	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.327	-0.007	1.000	4445785	2.57			4554	
363.00 > 169.00	2.320	2.327	-0.007	1.000	1739491		2.56(1.13-3.40)		4797	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.339	-0.006	1.000	4962874	2.13			20045	
399.00 > 99.00	2.333	2.339	-0.006	1.000	1688661		2.94(1.50-4.49)		8480	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.340	-0.007	1.000	4936288	2.45		104	91363	
65 Adona										
377.00 > 251.00	2.360	2.372	-0.012	1.000	12726761	2.42			119055	
377.00 > 85.00	2.360	2.372	-0.012	1.000	7744083		1.64(0.84-2.53)		72762	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.664	-0.003	1.000	1461178	2.16			9796	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.664	-0.003	1.000	859005	2.30		96.9	20963	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.688	-0.005	1.000	4128027	2.60		104	78774	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.689	-0.006		4235745	2.50			87767	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	4677462	2.39			1552	
413.00 > 169.00	2.683	2.690	-0.007	1.000	2409069		1.94(0.84-2.52)		9212	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.695	-0.004	1.000	4639777	2.36			56672	
449.00 > 99.00	2.691	2.695	-0.004	1.000	1202717		3.86(1.94-5.82)		21160	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.060	-0.003	1.000	3737562	2.22			8787	
499.00 > 99.00	3.057	3.060	-0.003	1.000	720418		5.19(2.31-6.93)		464	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.060	-0.003	1.000	3526996	2.52		105	40641	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.061	-0.004	1.000	3504658	2.61		104	83145	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.064	-0.007	1.000	3526566	2.44			4049	
463.00 > 169.00	3.057	3.064	-0.007	1.000	859845		4.10(1.90-5.69)		29311	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.264	3.272	-0.008	1.000	6249227	2.26			55847	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.388	-0.003	1.000	4980134	2.52		101	55607	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.385	3.389	-0.004	1.000	5095974	2.59			40050	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.409	-0.005	1.000	2784756	2.35			74221	
549.00 > 99.00	3.404	3.409	-0.005	1.000	999926		2.78(1.33-3.97)		29756	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.413	-0.009	1.000	1151010	2.65		111	29973	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.415	-0.002	1.003	1361017	2.10			12730	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.423	0.0	1.000	2899919	2.56		102	40184	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.427	-0.004	1.000	2916936	2.54			14399	
513.00 > 169.00	3.423	3.427	-0.004	1.000	530427		5.50(2.36-7.09)		18164	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.578	-0.006	1.000	1546192	2.55		102	51215	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.572	3.581	-0.009	1.000	1550394	2.38			12123	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.738	-0.001	1.000	2436159	2.38			46929	
599.00 > 99.00	3.726	3.738	-0.012	0.997	816763		2.98(1.39-4.16)		17405	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.749	-0.001	1.000	1595099	2.50		100	4398	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.753	-0.005	1.000	2429894	2.62		105	67252	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.755	-0.007	1.000	1480729	2.53			28105	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.755	-0.007	1.000	1795273	2.30			7420	
563.00 > 169.00	3.748	3.755	-0.007	1.000	481282		3.73(2.12-6.36)		11523	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.910	-0.005	1.000	9889084	2.31			180484	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.052	-0.004	1.000	2628521	2.55		102	23455	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.052	-0.004	1.000	2683041	2.36			2117	
613.00 > 169.00	4.048	4.052	-0.004	1.000	683577		3.93(2.13-6.40)		12213	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.316	-0.009	1.000	3176156	2.61			1265	
663.00 > 169.00	4.307	4.316	-0.009	1.000	1022977		3.10(1.25-3.76)		16879	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.558	-0.006	1.000	902844	2.61			12080	
713.00 > 219.00	4.552	4.558	-0.006	1.000	595672		1.52(0.71-2.13)		13000	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.558	-0.006	1.000	3466082	2.65		106	20467	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.977	-0.003	1.000	5424012	2.68		107	13917	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.977	-0.003	1.000	4954065	2.39			1097	
813.00 > 169.00	4.974	4.977	-0.003	1.000	839472		5.90(2.86-8.58)		5486	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.335	5.344	-0.009	1.000	5746232	2.67			862	
913.00 > 169.00	5.335	5.344	-0.009	1.000	687269		8.36(3.83-11.48)		5386	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 30-Mar-2018 11:48:54 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_010.d

Injection Date: 29-Mar-2018 18:29:58 Instrument ID: A8_N

Lims ID: ICV Full

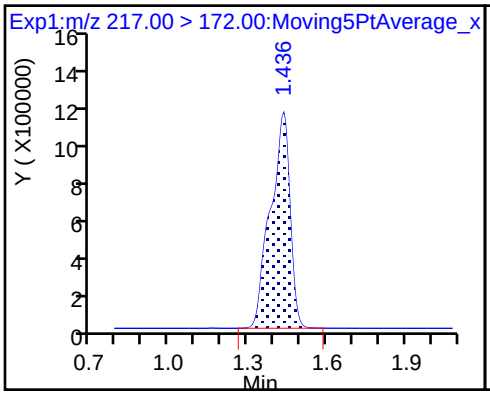
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

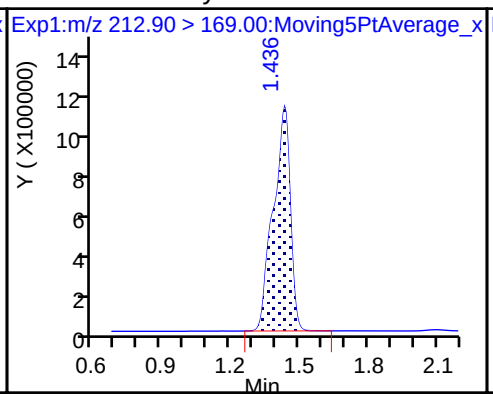
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

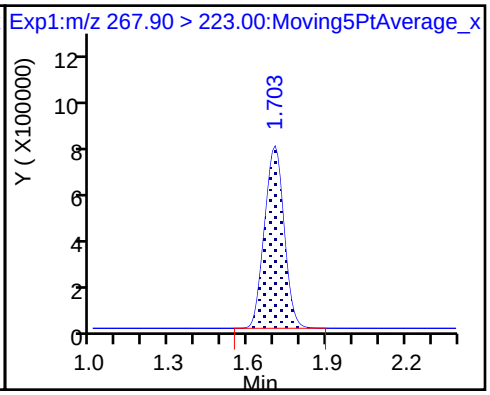
D 1 13C4 PFBA



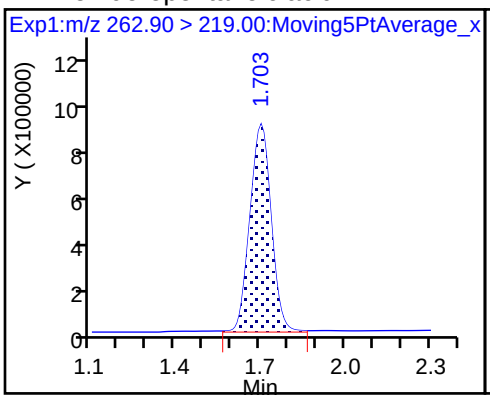
2 Perfluorobutyric acid



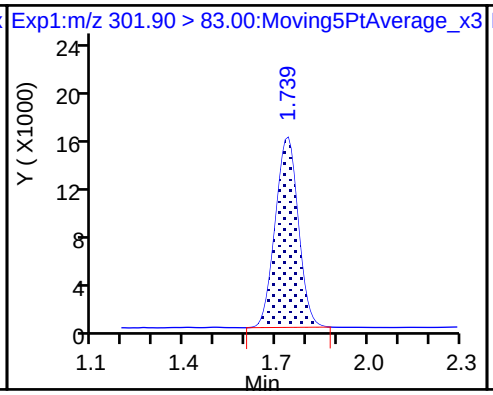
D 3 13C5-PFPeA



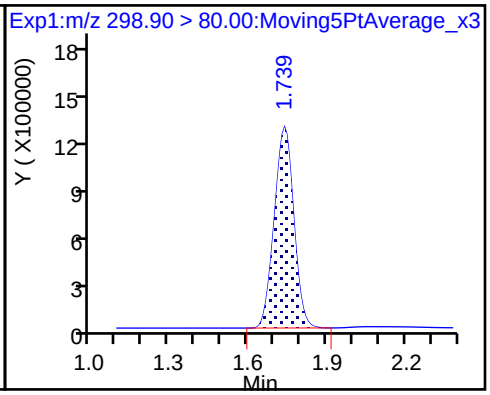
4 Perfluoropentanoic acid



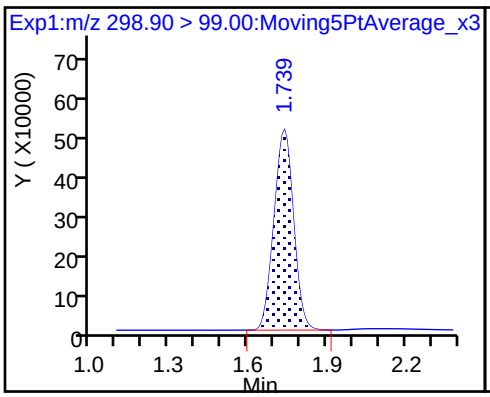
D 47 13C3-PFBS



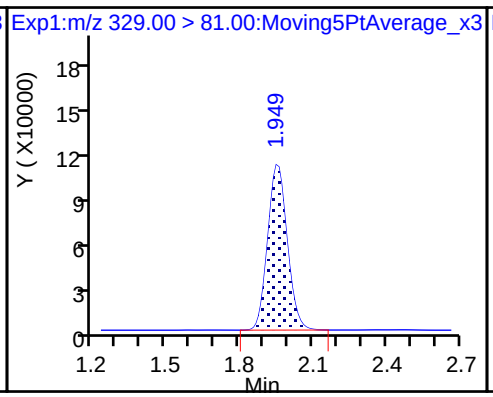
5 Perfluorobutanesulfonic acid



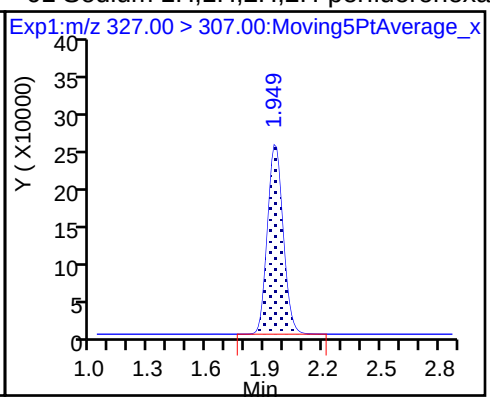
5 Perfluorobutanesulfonic acid



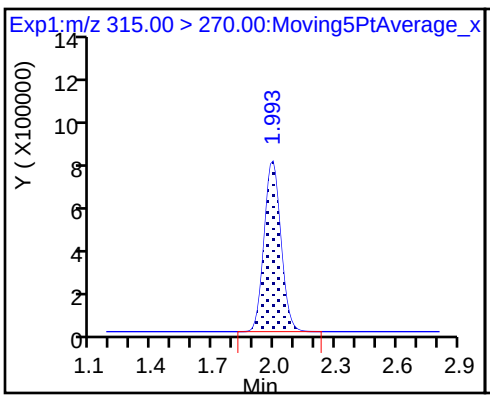
D 60 M2-4:2FTS



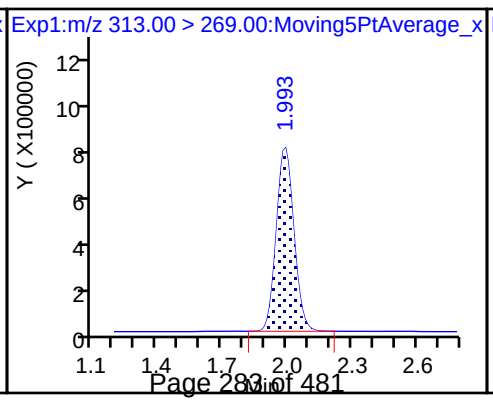
61 Sodium 1H,1H,2H,2H-perfluorohexane



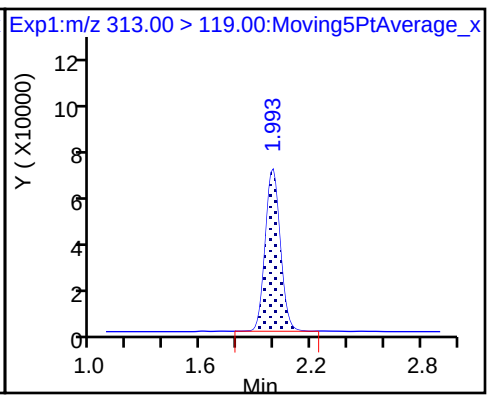
D 7 13C2 PFHxA



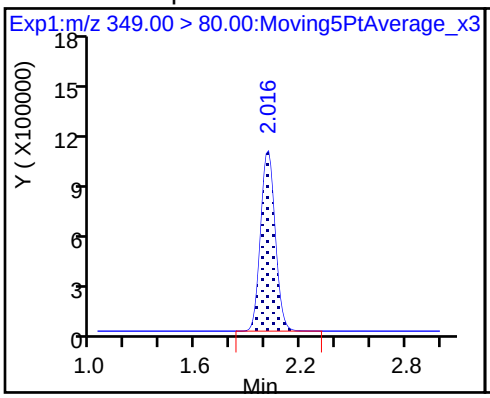
6 Perfluorohexanoic acid



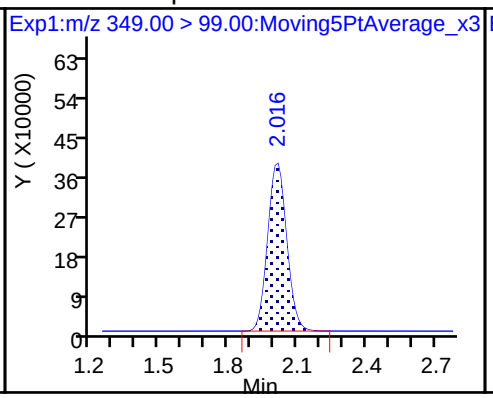
6 Perfluorohexanoic acid



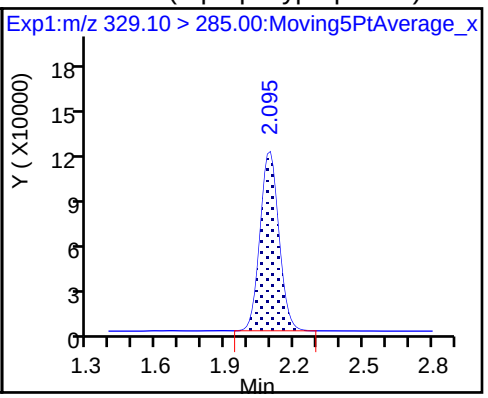
70 Perfluoropentanesulfonic acid



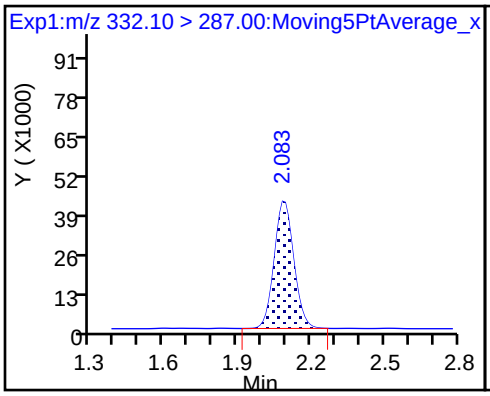
70 Perfluoropentanesulfonic acid



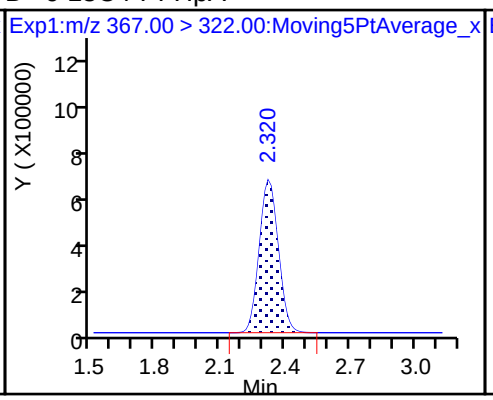
67 Perfluoro(2-propoxypropanoic) acid



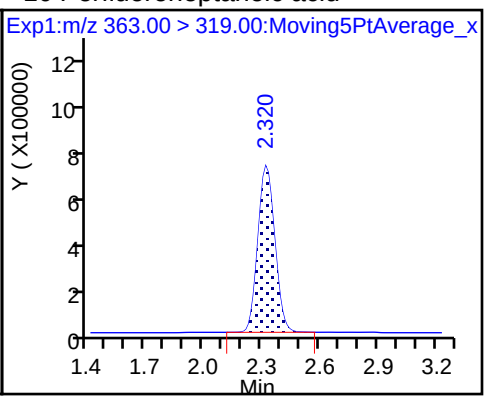
D 64 13C3 HFPO-DA



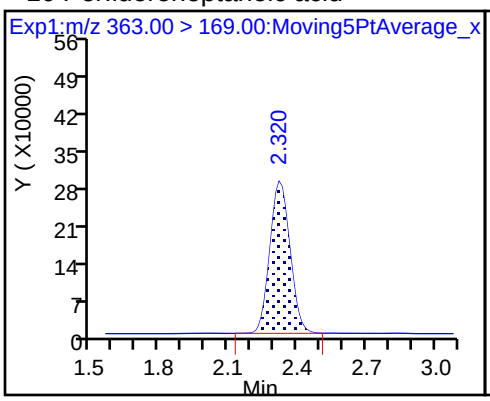
D 9 13C4-PFHpA



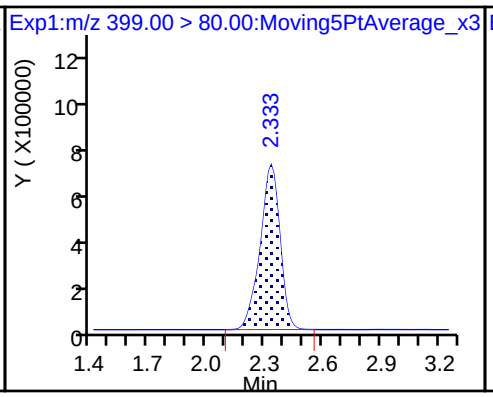
10 Perfluoroheptanoic acid



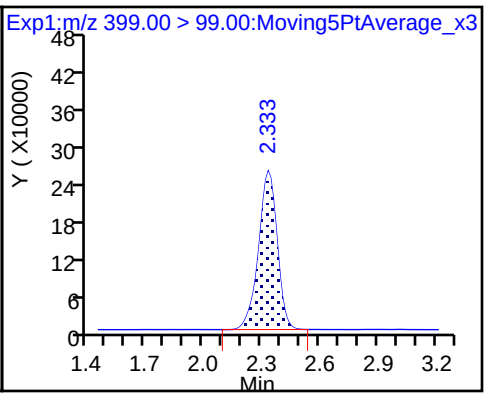
10 Perfluoroheptanoic acid



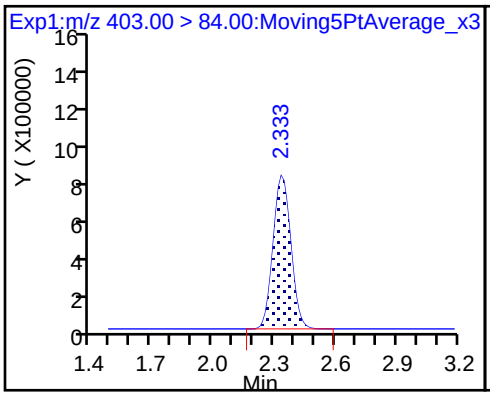
8 Perfluorohexanesulfonic acid



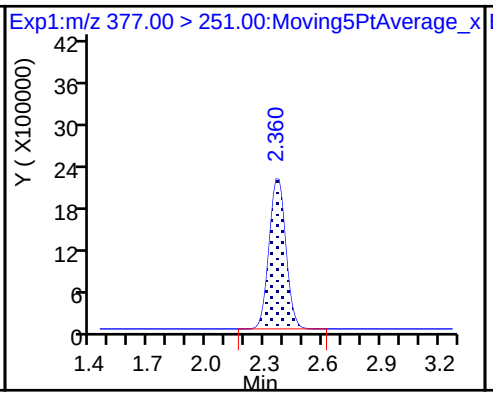
8 Perfluorohexanesulfonic acid



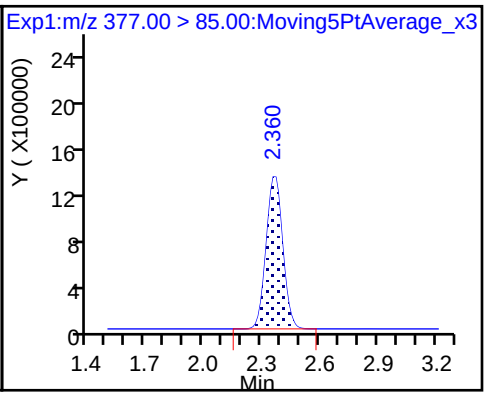
D 11 18O2 PFHxS



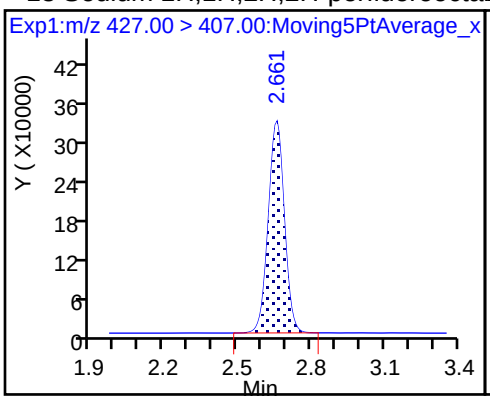
65 Adona



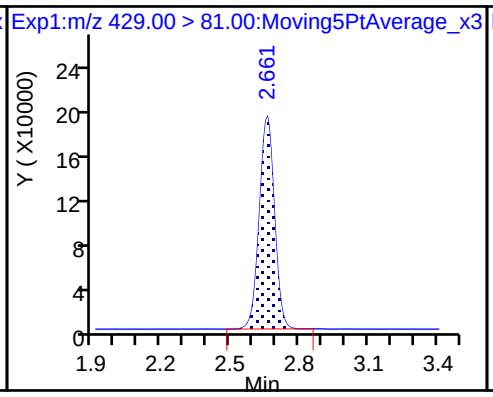
65 Adona



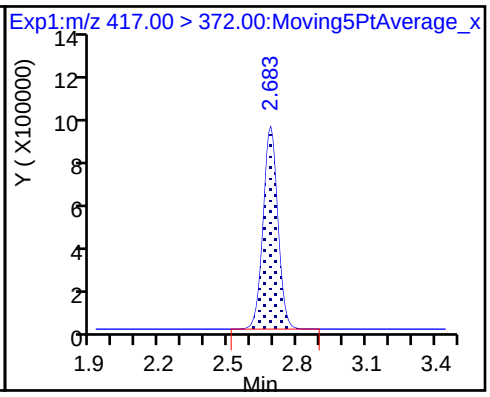
13 Sodium 1H,1H,2H,2H-perfluorooctane



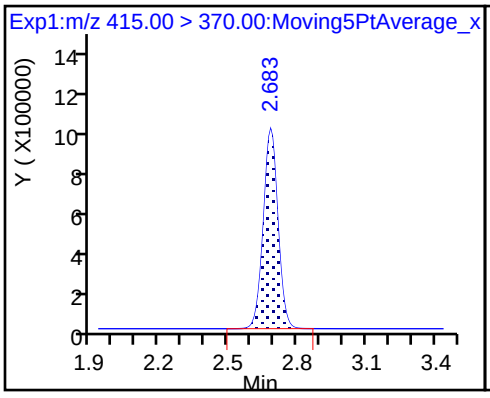
D 12 M2-6:2FTS



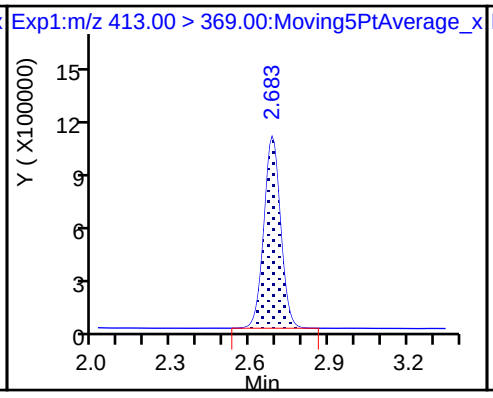
D 14 13C4 PFOA



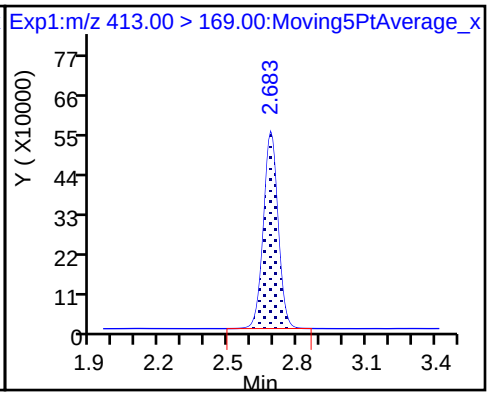
* 62 13C2-PFOA



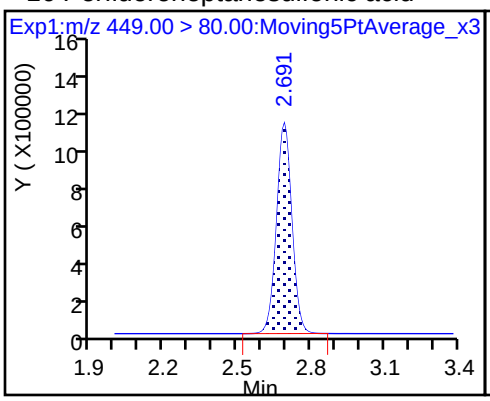
15 Perfluorooctanoic acid



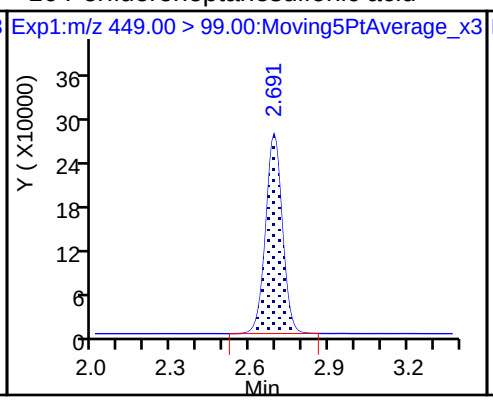
15 Perfluorooctanoic acid



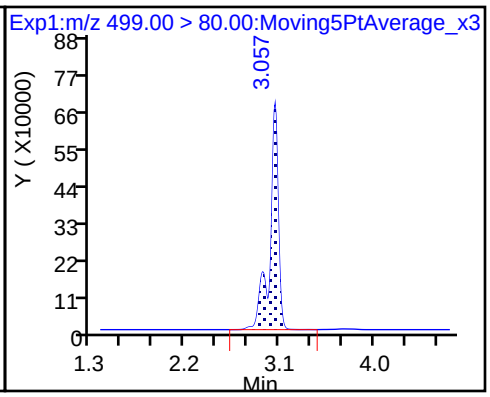
16 Perfluoroheptanesulfonic acid



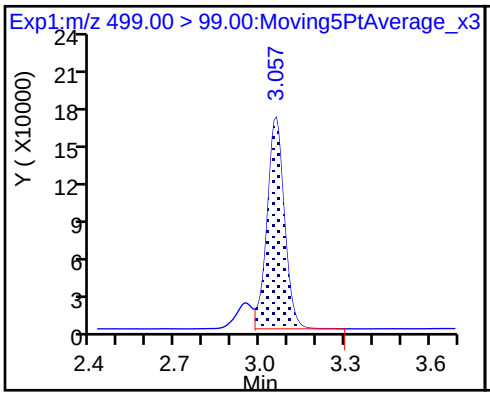
16 Perfluoroheptanesulfonic acid



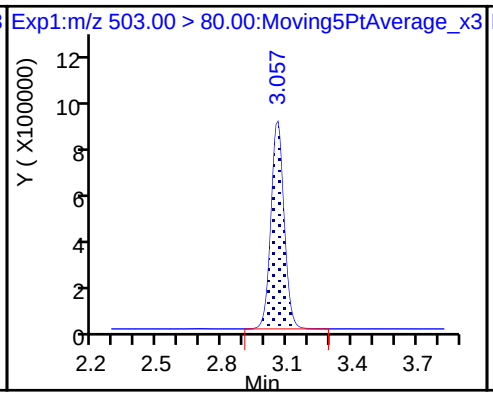
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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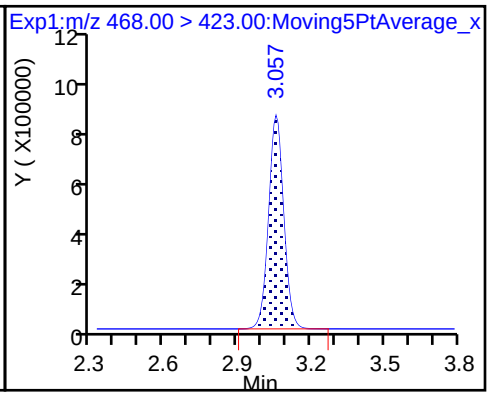
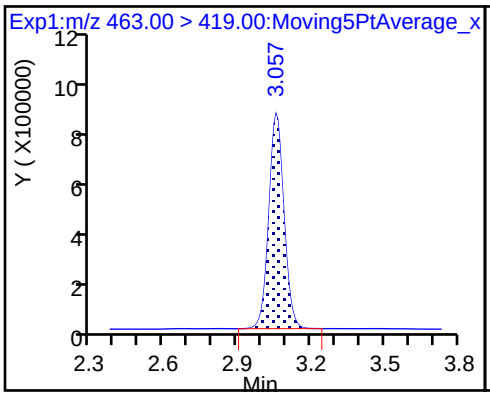
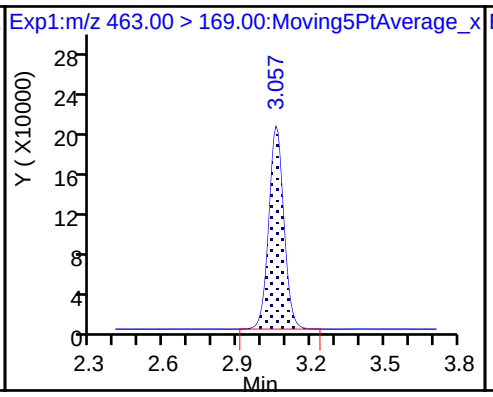


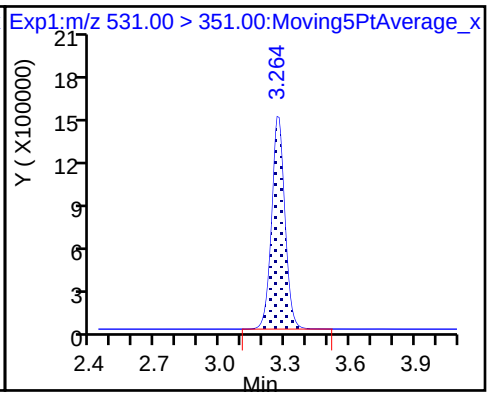
20 Perfluorononanoic acid



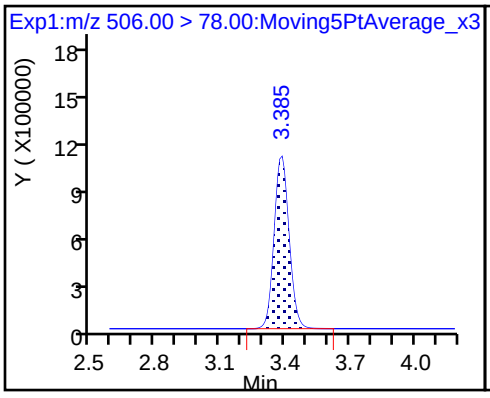
20 Perfluorononanoic acid



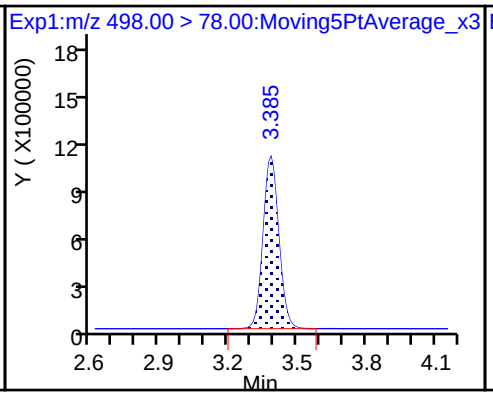
69 9-Chlorohexadecafluoro-3-oxanonane



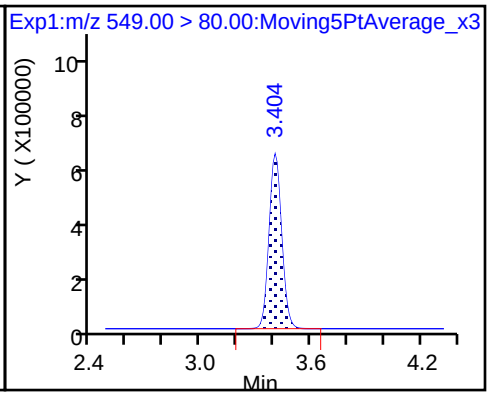
D 21 13C8 FOSA



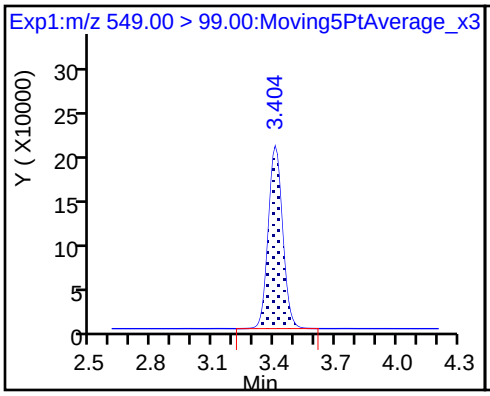
22 Perfluorooctane Sulfonamide



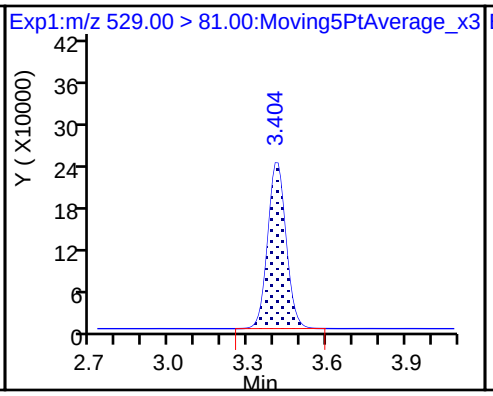
68 Perfluorononanesulfonic acid



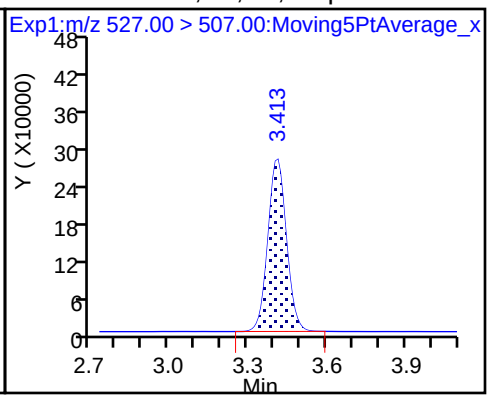
68 Perfluorononanesulfonic acid



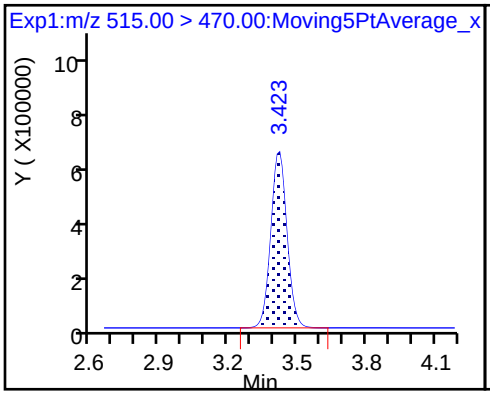
D 26 M2-8:2FTS



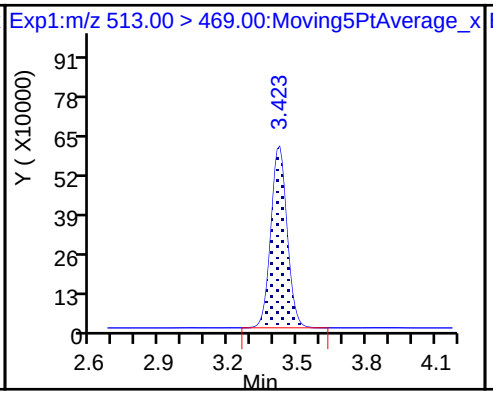
25 Sodium 1H,1H,2H,2H-perfluorodecane



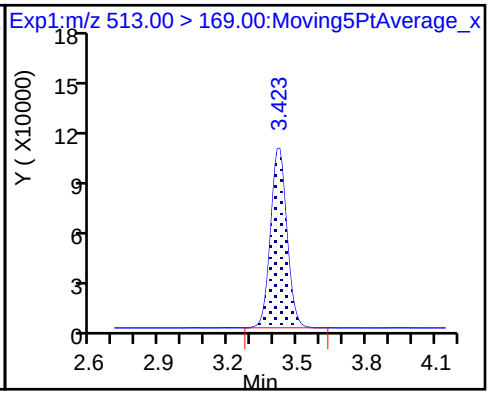
D 23 13C2 PFDA



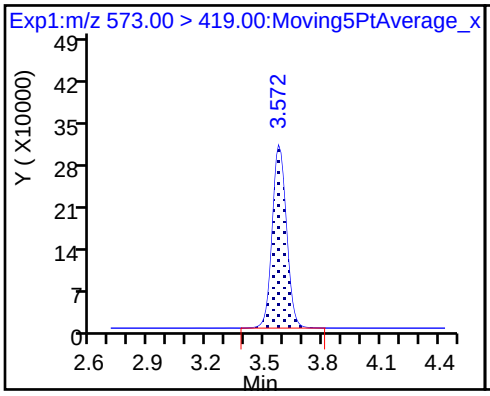
24 Perfluorodecanoic acid



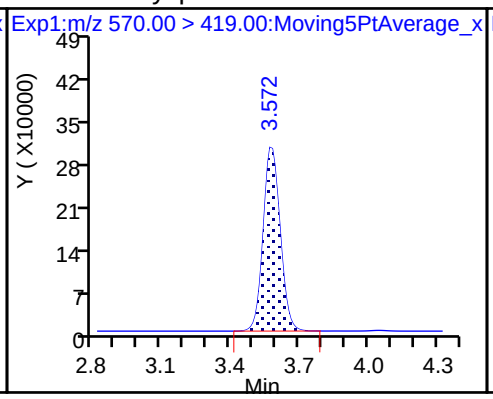
24 Perfluorodecanoic acid



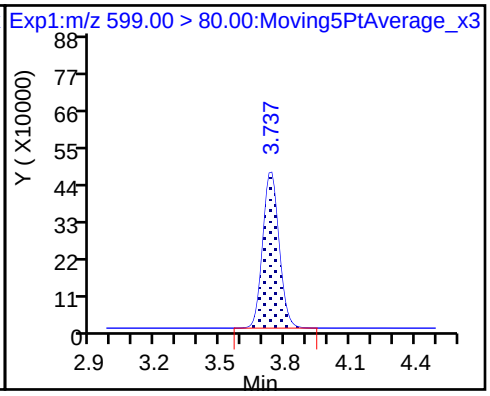
D 27 d3-NMeFOSAA



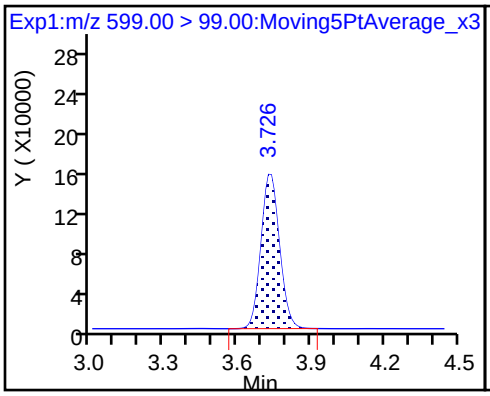
28 N-methyl perfluorooctane sulfonami



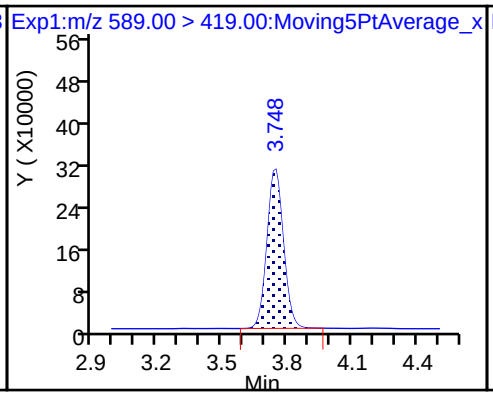
29 Perfluorodecane Sulfonic acid



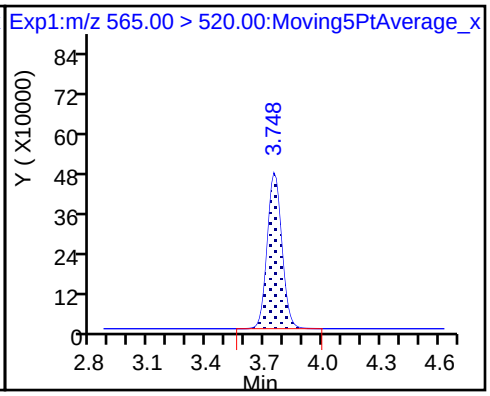
29 Perfluorodecane Sulfonic acid



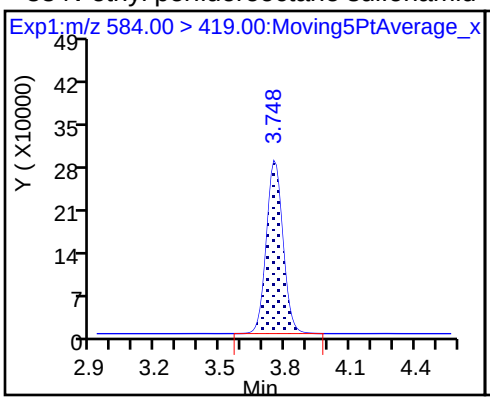
D 32 d5-NEtFOSAA



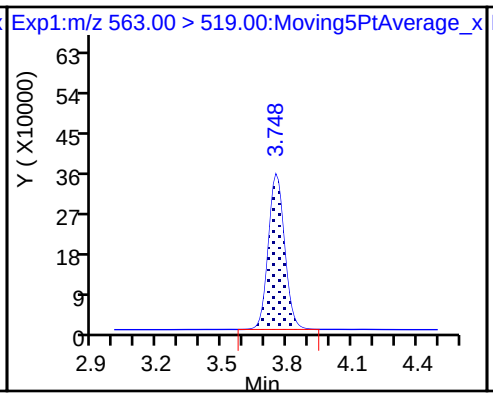
D 30 13C2 PFUnA



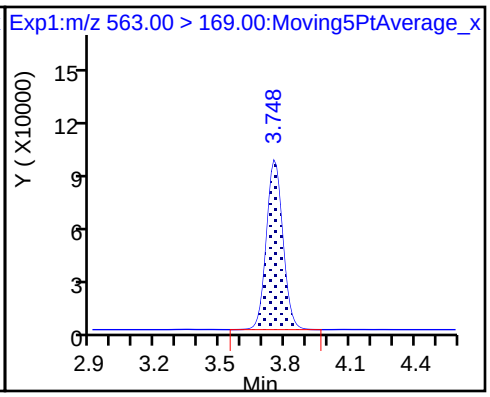
33 N-ethyl perfluorooctane sulfonamid



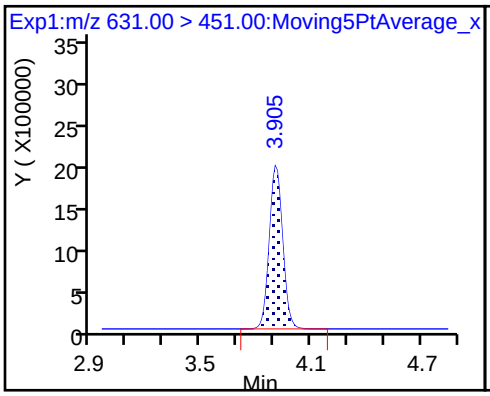
31 Perfluoroundecanoic acid



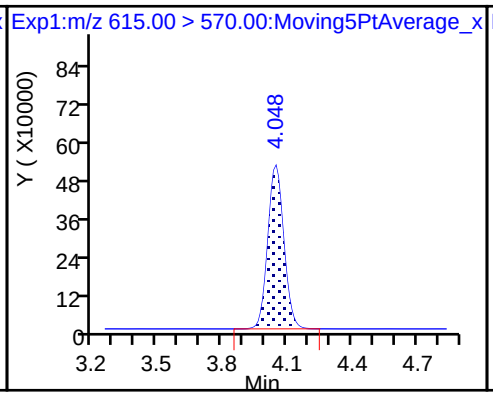
31 Perfluoroundecanoic acid



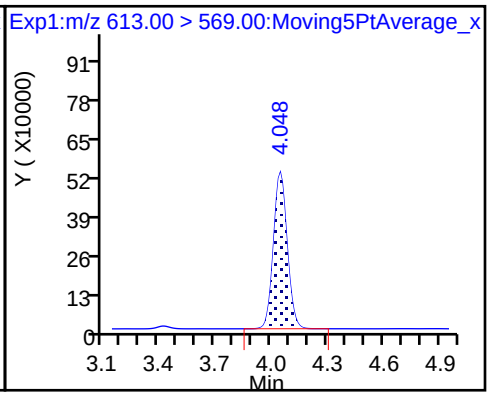
66 11-Chloroeicosafluoro-3-oxaundecan



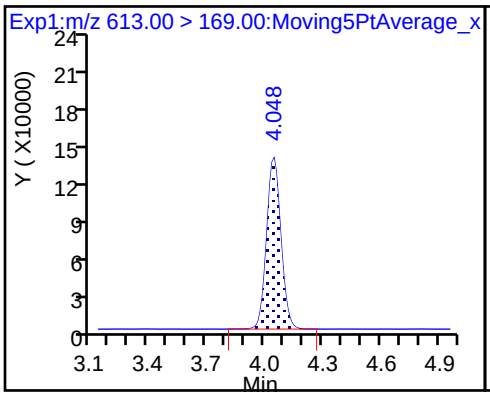
D 36 13C2 PFDoA



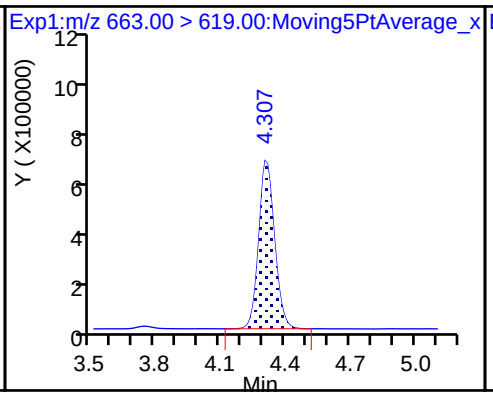
37 Perfluorododecanoic acid



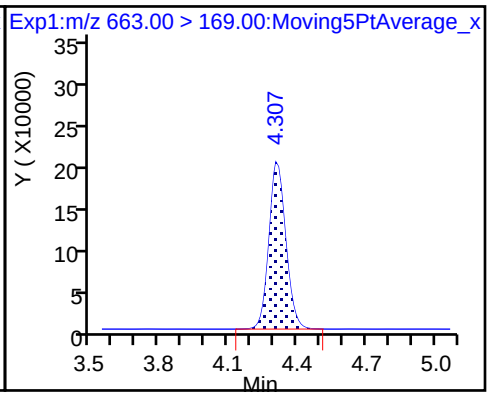
37 Perfluorododecanoic acid



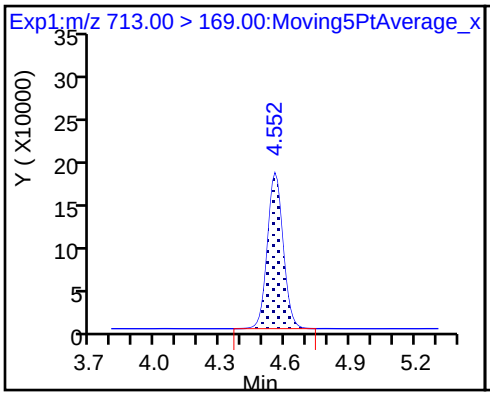
41 Perfluorotridecanoic acid



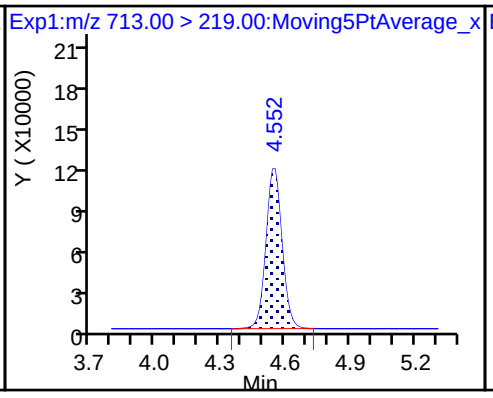
41 Perfluorotridecanoic acid



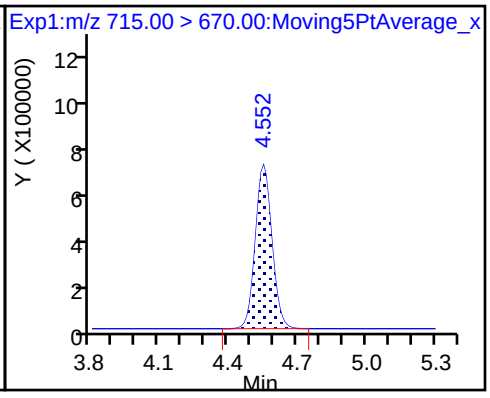
42 Perfluorotetradecanoic acid



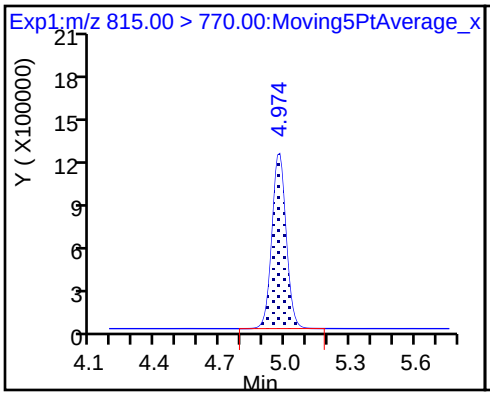
42 Perfluorotetradecanoic acid



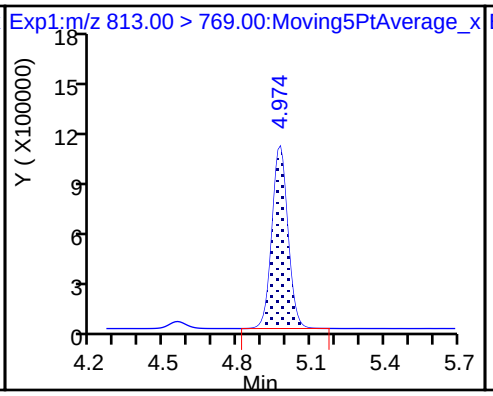
D 43 13C2-PFTeDA



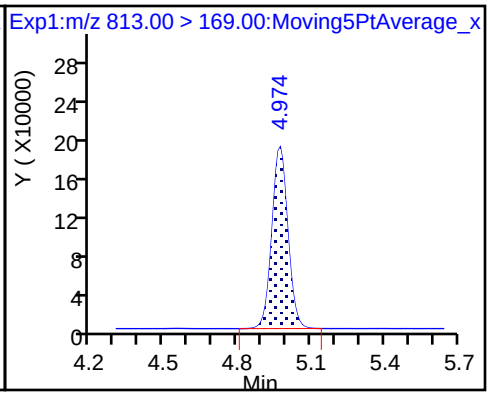
D 44 13C2-PFHxDA



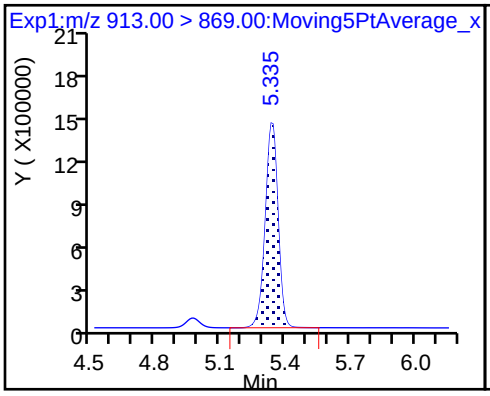
45 Perfluorohexadecanoic acid



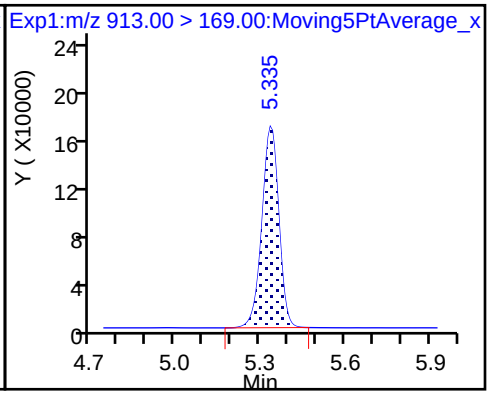
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCVL 320-216866/2 Calibration Date: 04/07/2018 19:58

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9468		0.0512	0.0500	2.4	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.268		0.0530	0.0500	6.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	81.60		0.0457	0.0442	3.4	50.0
4:2 FTS	AveID	17.26	18.44		0.130	0.0467	6.9	
Perfluorohexanoic acid (PFHxA)	AveID	1.023	1.081		0.0528	0.0500	5.6	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	68.05		0.0448	0.0469	-4.4	50.0
HFPO-DA (GenX)	AveID	3.401	3.151		0.0463	0.0500	-7.4	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	0.9826		0.0452	0.0500	-9.6	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.119		0.0456	0.0455	0.1	50.0
Adona	AveID	3.564	3.721		0.0522	0.0500	4.4	50.0
6:2FTS	AveID	1.868	1.361		0.0500	0.0474	-27.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.253		0.0528	0.0500	5.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.231		0.0440	0.0476	-7.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.129		0.0458	0.0464	-1.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	0.9384		0.0456	0.0500	-8.8	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.876		0.0467	0.0466	0.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	0.9299		0.0471	0.0500	-5.9	50.0
8:2FTS	AveID	1.349	1.118		0.0500	0.0479	-17.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.8213		0.0492	0.0480	2.4	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	1.064		0.0538	0.0500	7.6	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	0.7401		0.0780	0.0500	-29.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.8433		0.0480	0.0500	-8.0	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.5450		0.0379	0.0482	-21.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8308		0.0518	0.0500	3.5	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	2.784		0.0452	0.0471	-4.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	0.9918		0.0459	0.0500	-8.2	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.129		0.0488	0.0500	-2.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.1934		0.0387	0.0500	-22.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.377		0.0513	0.0500	2.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCVL 320-216866/2 Calibration Date: 04/07/2018 19:58

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.8700		0.0438	0.0500	-12.4	50.0
13C4 PFBA	Ave	1.382	1.345		2.43	2.50	-2.7	50.0
13C5 PFPeA	Ave	0.8994	0.8770		2.44	2.50	-2.5	50.0
13C3-PFBS	Ave	0.0206	0.0197		2.23	2.33	-4.3	50.0
M2-4:2FTS	Ave	0.1573	0.1579		2.34	2.34	0.4	50.0
13C2 PFHxA	Ave	0.9916	1.000		2.52	2.50	0.8	50.0
13C3 HFPO-DA	Ave	0.0494	0.0488		2.47	2.50	-1.1	50.0
13C4-PFHpA	Ave	0.9533	0.9790		2.57	2.50	2.7	50.0
18O2 PFHxS	Ave	1.189	1.217		2.42	2.37	2.4	50.0
M2-6:2FTS	Ave	0.2203	0.2189		2.36	2.38	-0.7	50.0
13C4 PFOA	Ave	0.9372	0.9390		2.51	2.50	0.2	50.0
13C4 PFOS	Ave	0.8257	0.8251		2.39	2.39	-0.0	50.0
13C5 PFNA	Ave	0.7930	0.8130		2.56	2.50	2.5	50.0
13C8 FOSA	Ave	1.166	1.086		2.33	2.50	-6.9	50.0
M2-8:2FTS	Ave	0.2562	0.2592		2.42	2.40	1.2	50.0
13C2 PFDA	Ave	0.6698	0.7337		2.74	2.50	9.5	50.0
d3-NMeFOSAA	Ave	0.3583	0.4175		2.91	2.50	16.5	50.0
d5-NEtFOSAA	Ave	0.3760	0.4406		2.93	2.50	17.2	50.0
13C2 PFUnA	Ave	0.5468	0.6301		2.88	2.50	15.3	50.0
13C2 PFDoA	Ave	0.6087	0.6482		2.66	2.50	6.5	50.0
13C2-PFTeDA	Ave	0.7733	0.8096		2.62	2.50	4.7	50.0
13C2-PFHxDA	Ave	1.194	1.242		2.60	2.50	4.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 07-Apr-2018 19:58:28 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 09:36:32 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 09:32:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	6345868	2.43		97.3	45323	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.430	0.0	1.000	120159	0.0512		102	43.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.693	0.010	0.561	4138271	2.44		97.5	71786	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.694	0.009	1.000	104986	0.0530		106	60.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.729	0.001	1.000	86490	2.22		95.7	540	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	134178	0.0457		103	541	
298.90 > 99.00	1.739	1.739	0.0	1.005	56384		2.38(1.25-3.74)		356	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.949	0.0	1.000	695999	2.34		100	6197	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	32037	0.0499		107	1685	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.981	0.001	1.000	4717116	2.52		101	104651	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	101956	0.0528		106	151	
313.00 > 119.00	1.982	1.982	0.0	1.000	9363		10.89(5.03-15.10)		89.4	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	118722	0.0448		95.6	824	
349.00 > 99.00	2.004	2.004	0.0	1.000	46873		2.53(1.36-4.07)		471	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.083	0.0	1.000	230354	2.47		98.9	5015	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.084	-0.001	1.000	14516	0.0463		92.6	103	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.307	0.001	1.000	4619924	2.57		103	94980	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.308	0.0	1.000	90787	0.0452		90.4	89.8	
363.00 > 169.00	2.308	2.308	0.0	1.000	35674		2.54(1.13-3.40)		120	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.320	0.001	1.000	5432599	2.42		102	85762	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	1.000	116903	0.0456		100	298	
399.00 > 99.00	2.321	2.321	0.0	1.000	40819		2.86(1.50-4.49)		157	
65 Adona										
377.00 > 251.00	2.347	2.347	0.0	1.000	289785	0.0522		104	6912	
377.00 > 85.00	2.360	2.347	0.013	1.006	160167		1.81(0.84-2.53)		1547	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.636	0.008	1.000	26643	0.0345		72.9	169	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.637	0.007	1.000	981192	2.36		99.3	13006	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.660	0.007	1.000	4431015	2.50		100	86743	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.667	0.0		4718869	2.50			64773	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.667	0.0	1.000	111059	0.0528		106	42.0	
413.00 > 169.00	2.667	2.667	0.0	1.000	60241		1.84(0.84-2.52)		151	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.667	0.008	1.000	91221	0.0440		92.3	606	
449.00 > 99.00	2.675	2.667	0.008	1.000	20889		4.37(1.94-5.82)		244	
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.031	-0.002	1.000	3722153	2.39		99.9	25261	
D 19 13C5 PFNA										
468.00 > 423.00	3.036	3.031	0.005	1.000	3836392	2.56		103	117713	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.029	3.032	-0.003	1.000	81583	0.0458		98.8	423	
499.00 > 99.00	3.036	3.032	0.004	1.002	15531		5.25(2.31-6.93)		119	
20 Perfluorononanoic acid										
463.00 > 419.00	3.036	3.032	0.004	1.000	72001	0.0456		91.2	107	
463.00 > 169.00	3.036	3.032	0.004	1.000	18520		3.89(1.90-5.69)		271	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.244	3.246	-0.002	1.000	136148	0.0467		100	2843	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.360	0.006	1.000	5125279	2.33		93.1	49934	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.376	3.370	0.006	1.003	95318	0.0471		94.1	2059	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.385	3.379	0.006	1.000	26199	0.0397		82.9	626	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.379	0.006	1.000	61394	0.0492		102	685	
549.00 > 99.00	3.376	3.379	-0.003	0.997	16111		3.81(1.33-3.97)		245	
D 26 M2-8:2FTS										
529.00 > 81.00	3.385	3.379	0.006	1.000	1171611	2.42		101	13605	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.394	3.388	0.006	1.000	73674	0.0538		108	248	
513.00 > 169.00	3.394	3.388	0.006	1.000	12725		5.79(2.36-7.09)		231	
D 23 13C2 PFDA										
515.00 > 470.00	3.394	3.388	0.006	1.000	3462189	2.74		110	58307	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.553	3.547	0.006	1.003	29157	0.0351		70.2	178	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.544	3.547	-0.003	1.000	1969873	2.91		117	28608	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.715	3.708	0.007	1.000	40912	0.0379		78.6	270	
599.00 > 99.00	3.705	3.708	-0.003	0.997	13774		2.97(1.39-4.16)		218	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.708	0.007	1.000	2079016	2.93		117	15222	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.718	0.008	1.000	49408	0.0518		104	167	
563.00 > 169.00	3.726	3.718	0.008	1.000	10557		4.68(2.12-6.36)		195	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.715	3.718	-0.003	1.000	35065	0.0460		92.0	380	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.719	0.007	1.000	2973525	2.88		115	65200	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.875	0.008	1.000	204186	0.0452		95.9	2748	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.009	0.007	1.000	3058519	2.66		106	22911	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.016	4.019	-0.003	1.000	60670	0.0459		91.8	50.0	
613.00 > 169.00	4.016	4.019	-0.003	1.000	16438		3.69(2.13-6.40)		184	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.281	-0.002	1.000	69057	0.0488		97.7	41.7	
663.00 > 169.00	4.279	4.281	-0.002	1.000	20226		3.41(1.25-3.76)		186	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.520	4.511	0.009	1.000	3820598	2.62		105	20310	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.520	4.521	-0.001	1.000	14777	0.0387		77.4	156	
713.00 > 219.00	4.509	4.521	-0.012	0.998	13190		1.12(0.71-2.13)		134	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.929	4.930	-0.001	1.000	5860898	2.60		104	12402	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.938	4.930	0.008	1.002	161447	0.0513		103	37.0	
813.00 > 169.00	4.929	4.930	-0.001	1.000	23474		6.88(2.86-8.58)		127	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.290	5.291	-0.001	1.000	101980	0.0438		87.6	19.6	
913.00 > 169.00	5.290	5.291	-0.001	1.000	10369		9.84(3.83-11.48)		48.4	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 09:36:33 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_005.d

Injection Date: 07-Apr-2018 19:58:28 Instrument ID: A8_N

Lims ID: CCVL

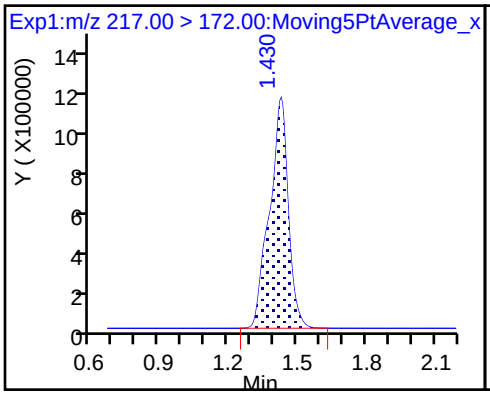
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

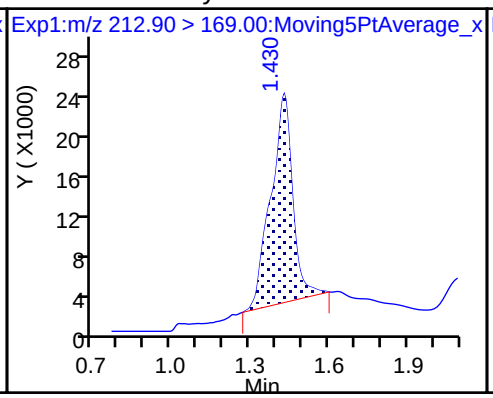
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

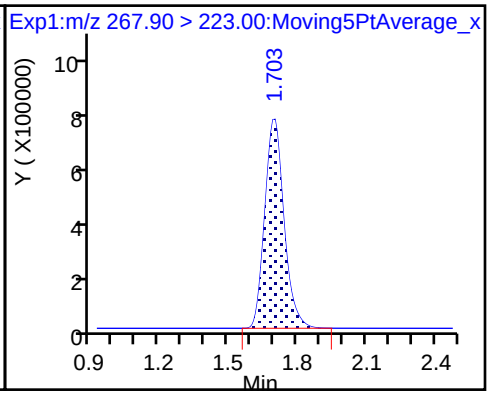
D 1 13C4 PFBA



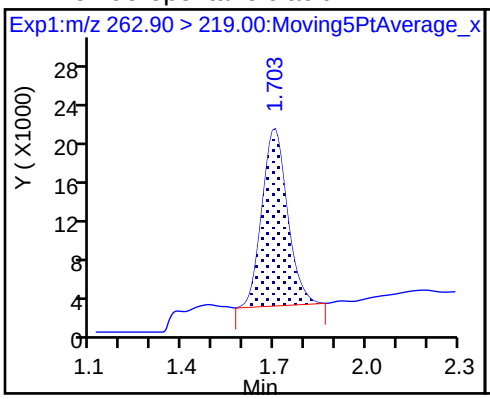
2 Perfluorobutyric acid



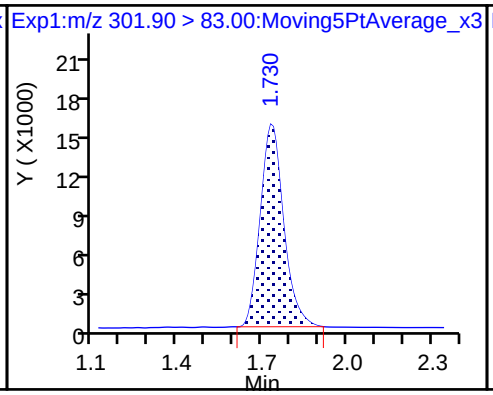
D 3 13C5-PFPeA



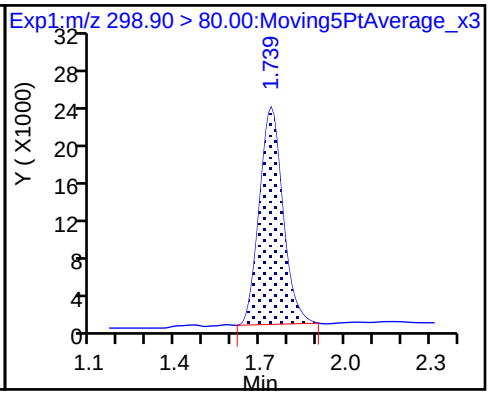
4 Perfluoropentanoic acid



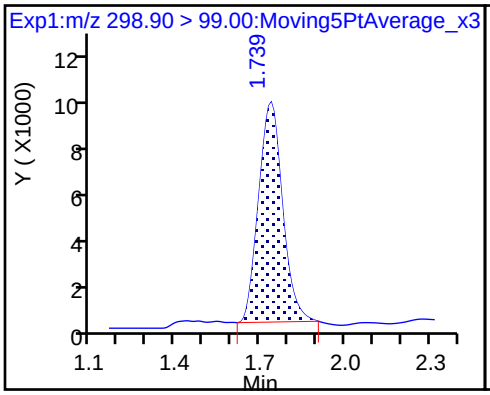
D 47 13C3-PFBS



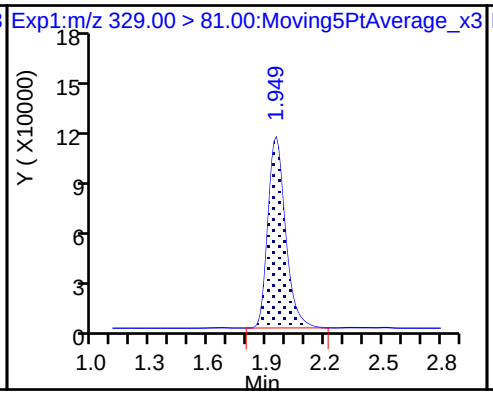
5 Perfluorobutanesulfonic acid



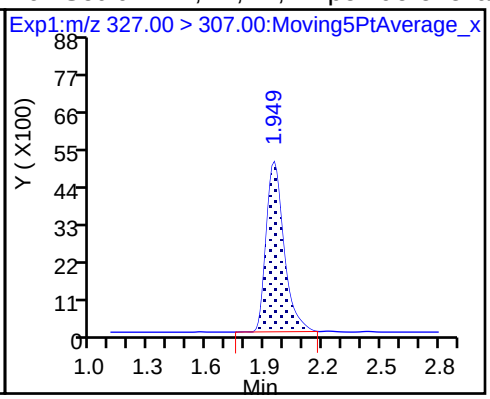
5 Perfluorobutanesulfonic acid



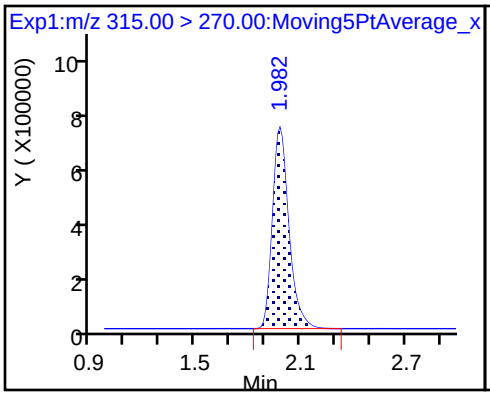
D 60 M2-4:2FTS



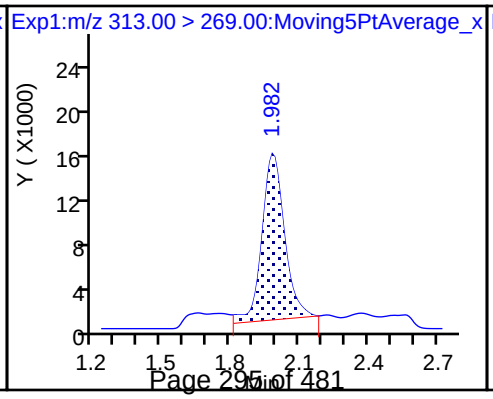
61 Sodium 1H,1H,2H,2H-perfluorohexane



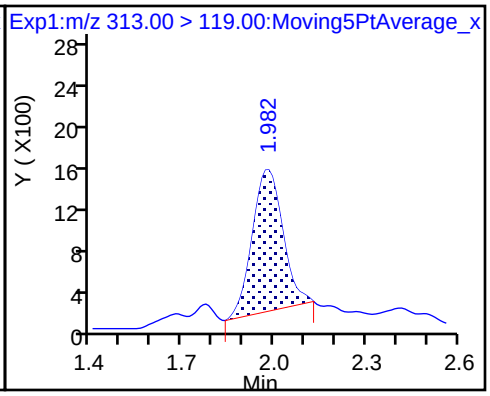
D 7 13C2 PFHxA



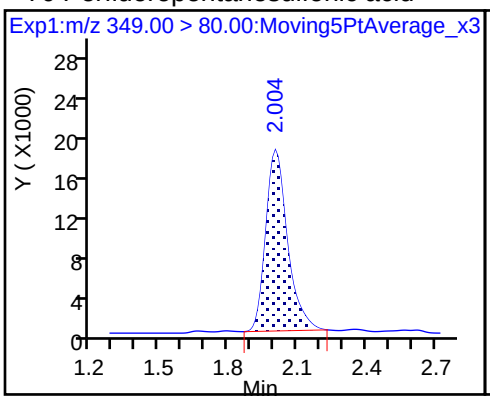
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid



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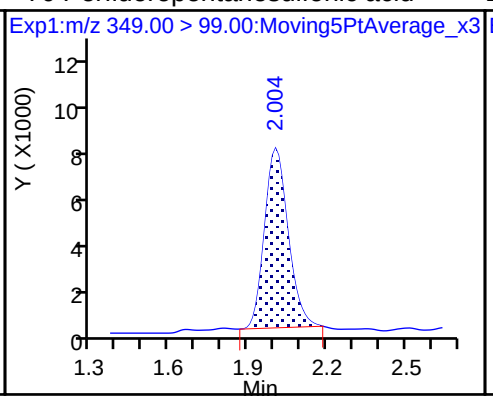
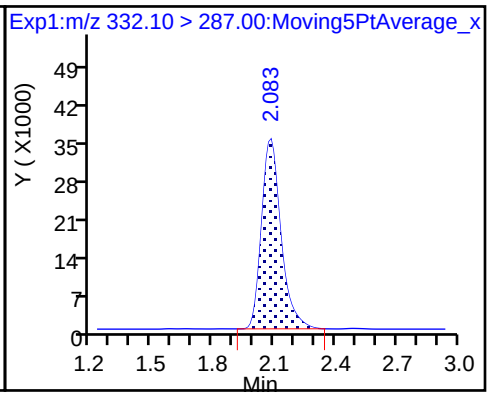
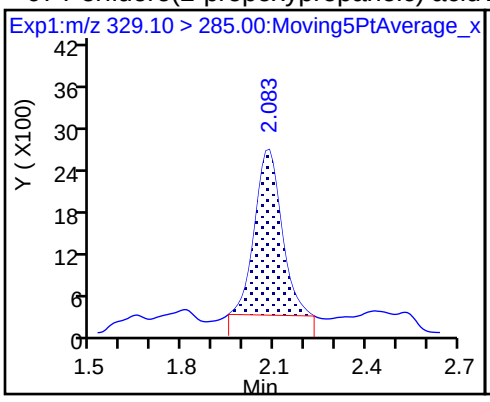


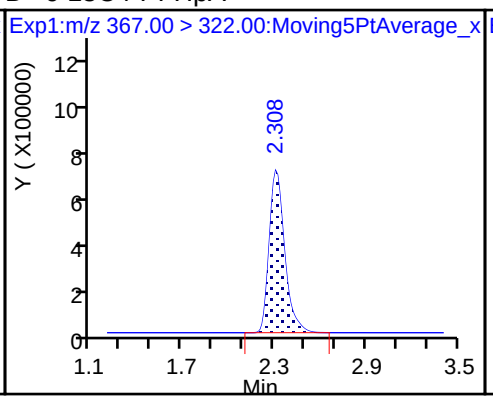
D 64 13C3 HFPO-DA



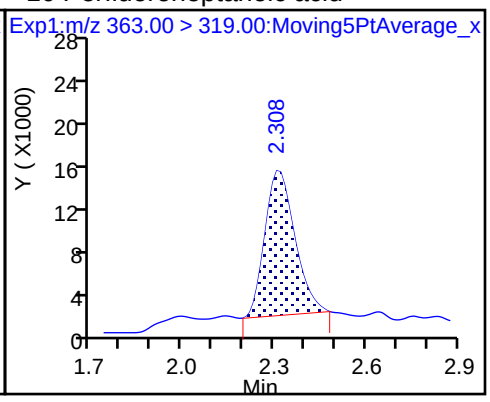
67 Perfluoro(2-propoxypropanoic) acid



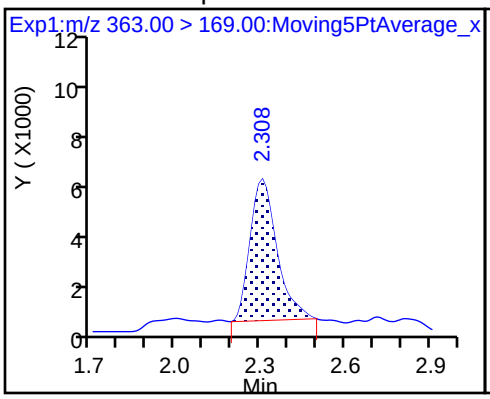
D 9 13C4-PFHpA



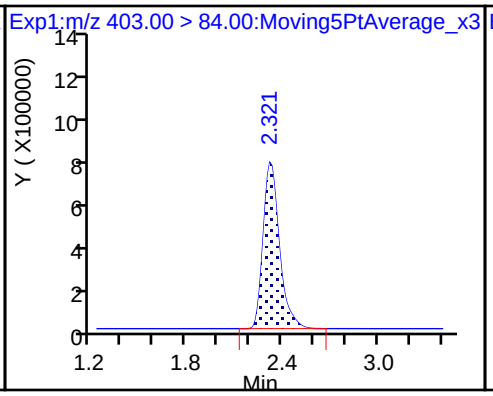
10 Perfluoroheptanoic acid



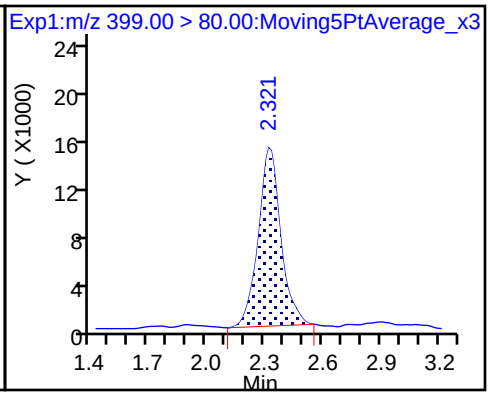
10 Perfluoroheptanoic acid



D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid



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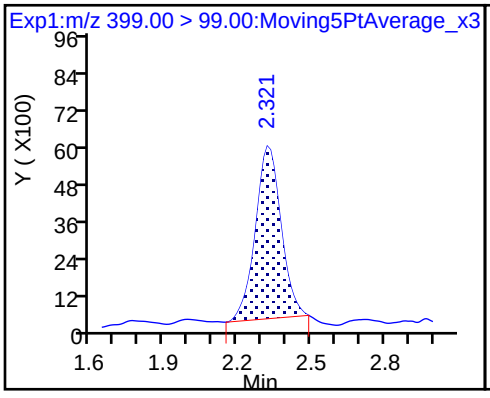
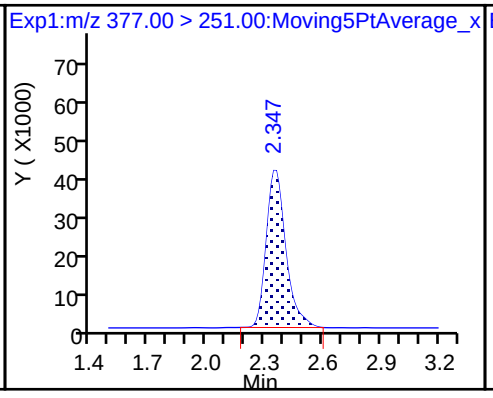


65 Adona



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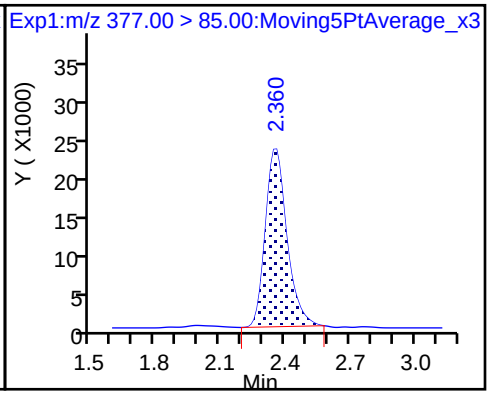
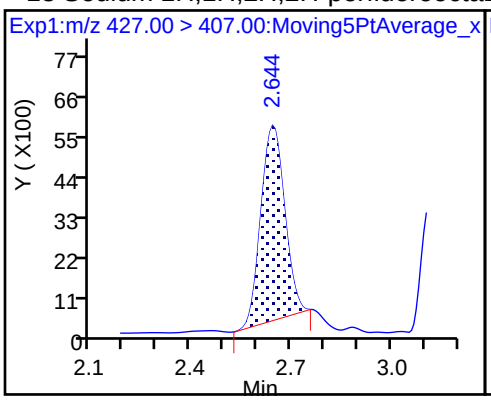
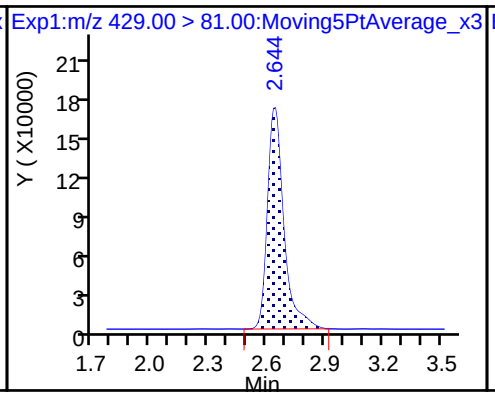


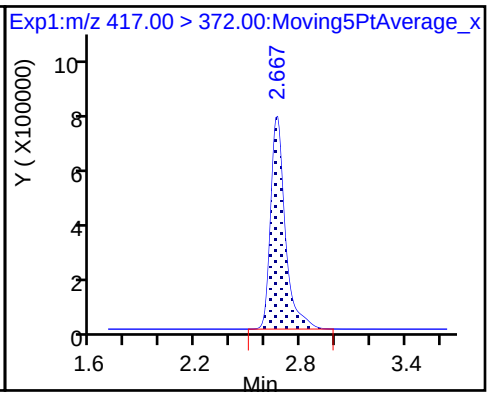
13 Sodium 1H,1H,2H,2H-perfluorooctane



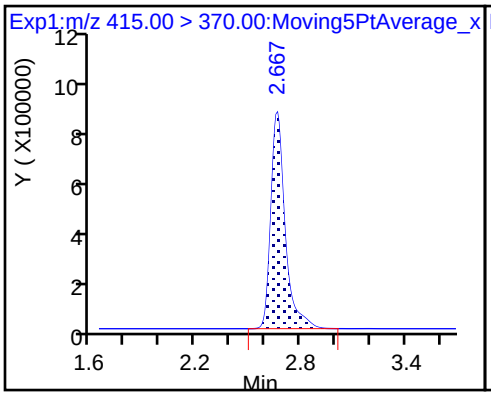
D 12 M2-6:2FTS



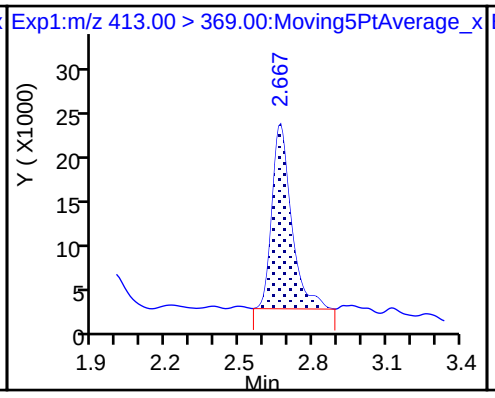
D 14 13C4 PFOA



* 62 13C2-PFOA



15 Perfluorooctanoic acid



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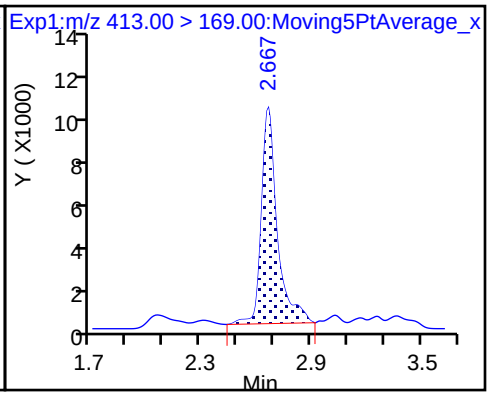
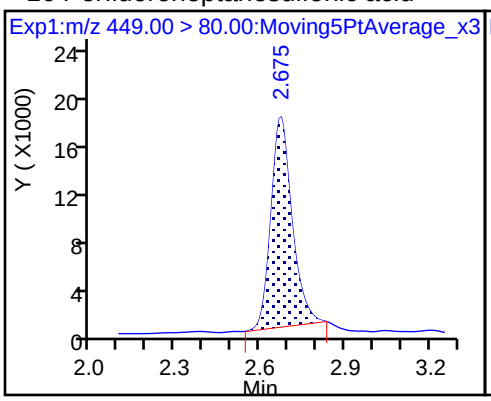
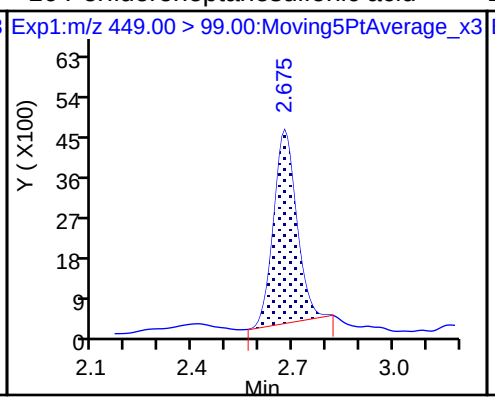


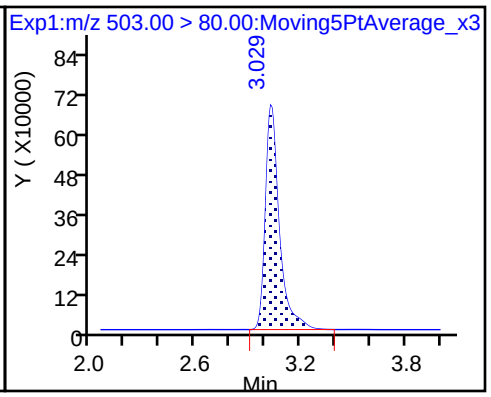
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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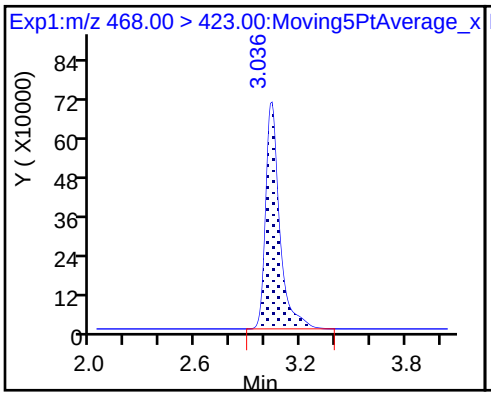
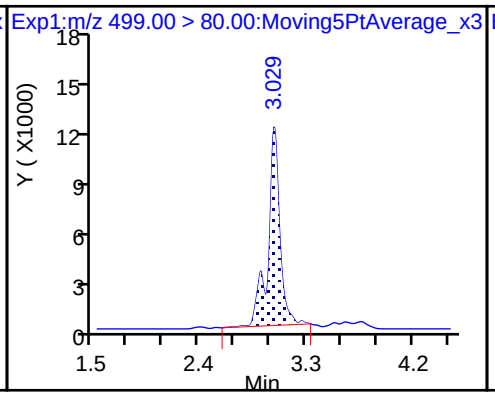
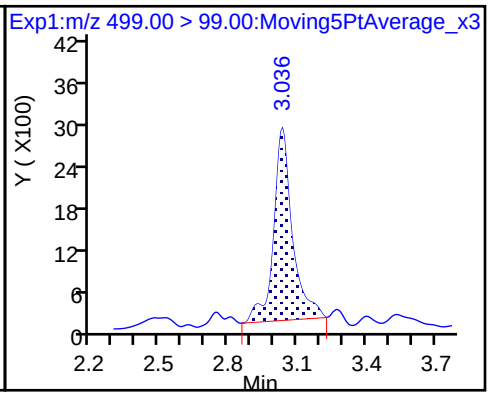


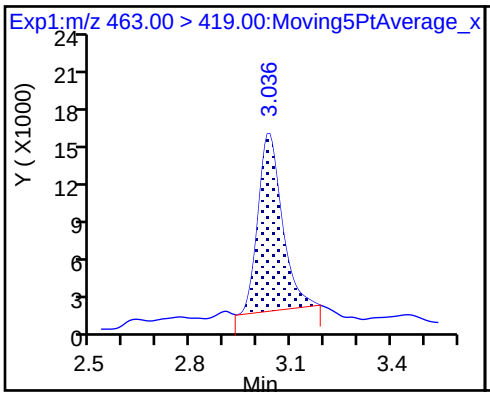
17 Perfluorooctane sulfonic acid



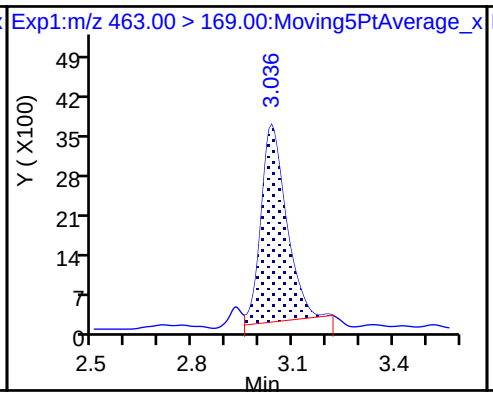
17 Perfluorooctane sulfonic acid



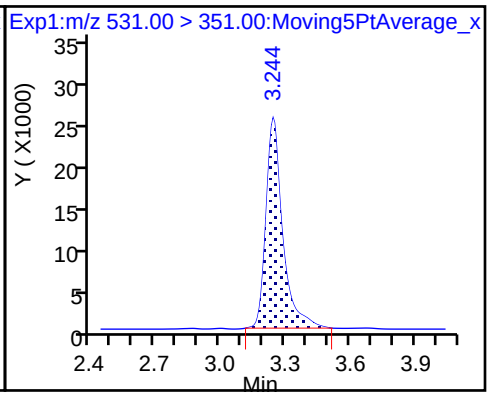
20 Perfluorononanoic acid



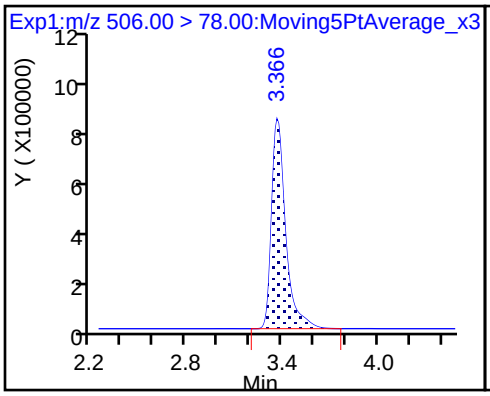
20 Perfluorononanoic acid



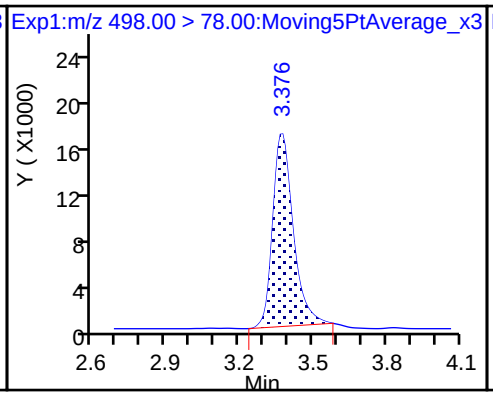
69 9-Chlorohexadecafluoro-3-oxanonane



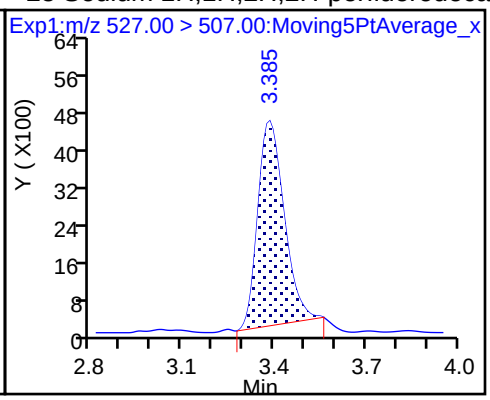
D 21 13C8 FOSA



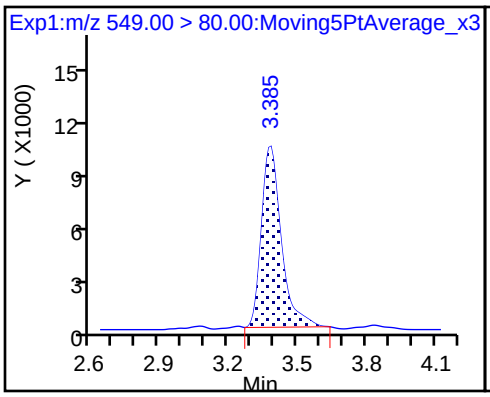
22 Perfluorooctane Sulfonamide



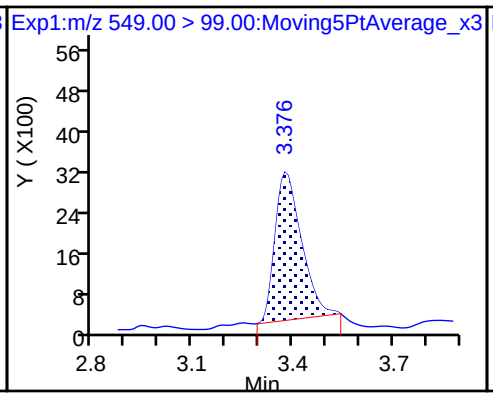
25 Sodium 1H,1H,2H,2H-perfluorodecane



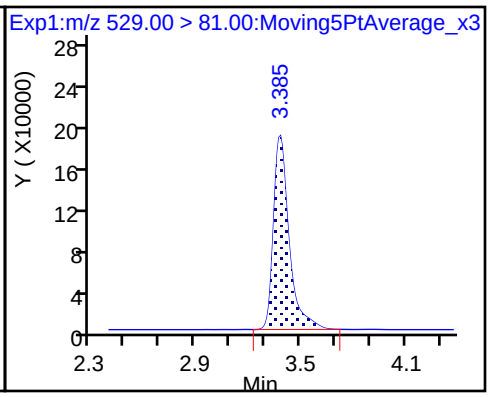
68 Perfluorononanesulfonic acid



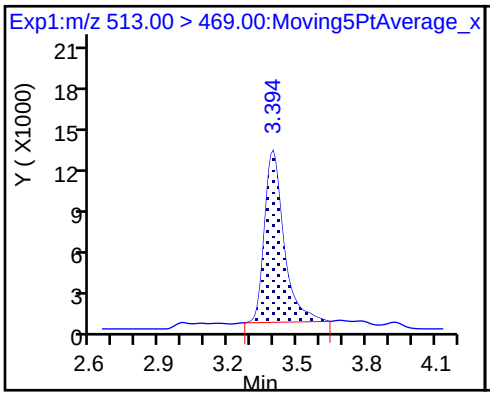
68 Perfluorononanesulfonic acid



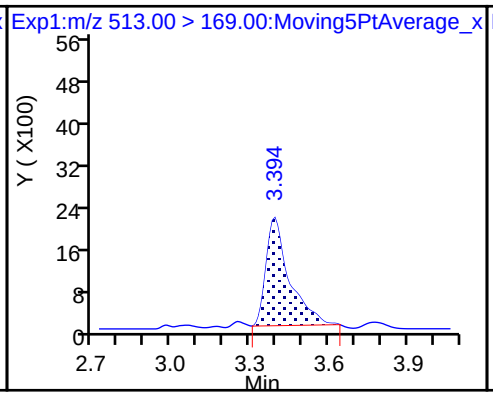
D 26 M2-8:2FTS



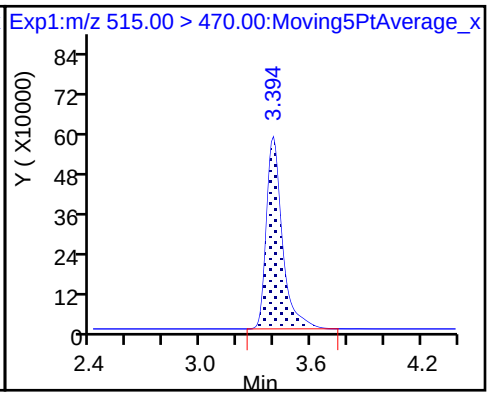
24 Perfluorodecanoic acid



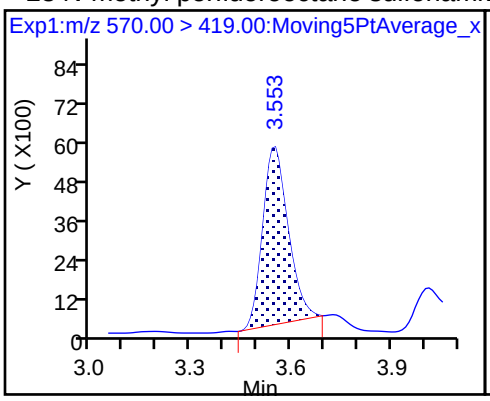
24 Perfluorodecanoic acid



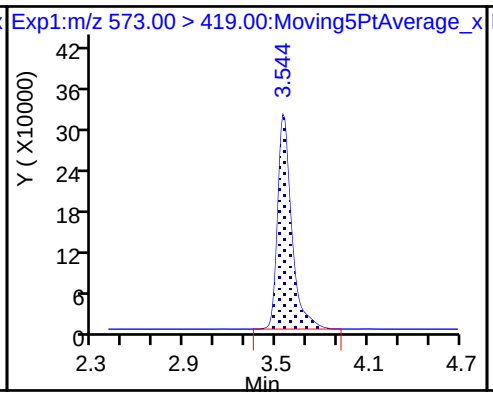
D 23 13C2 PFDA



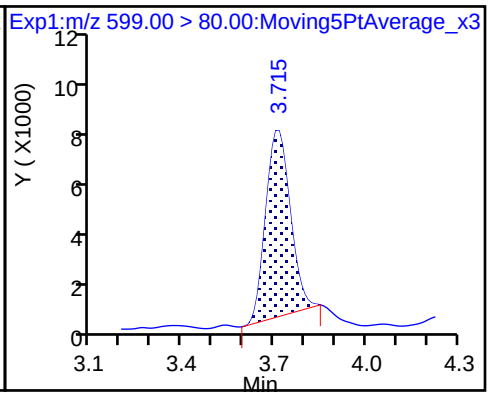
28 N-methyl perfluorooctane sulfonami



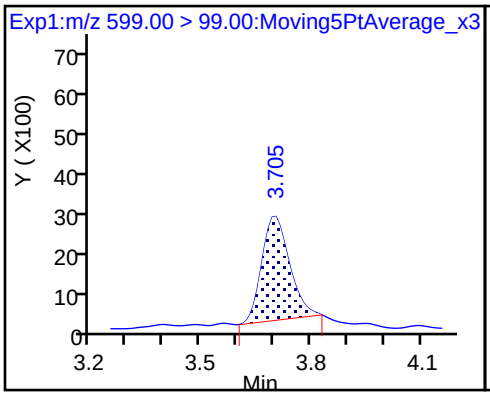
D 27 d3-NMeFOSAA



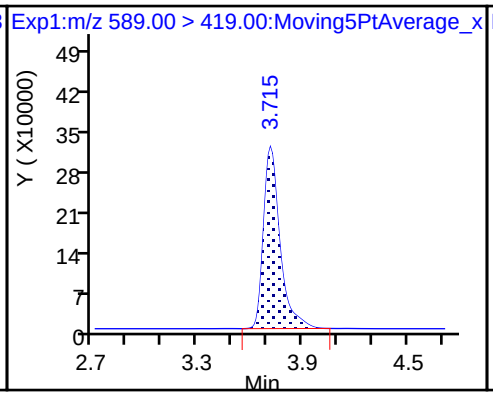
29 Perfluorodecane Sulfonic acid



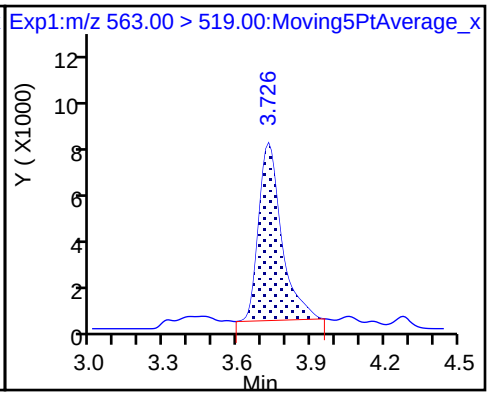
29 Perfluorodecane Sulfonic acid



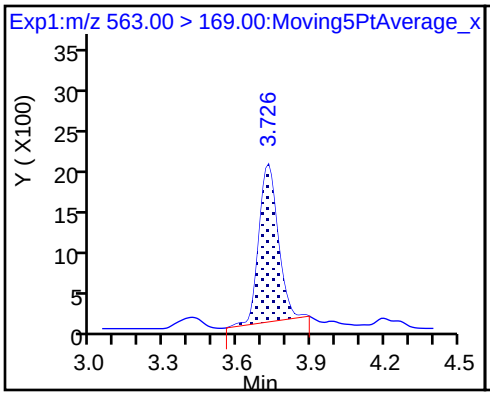
D 32 d5-NEtFOSAA



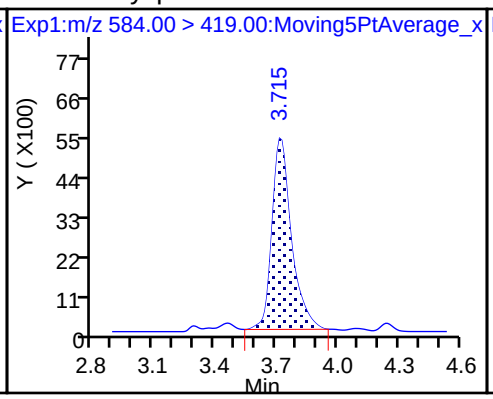
31 Perfluoroundecanoic acid



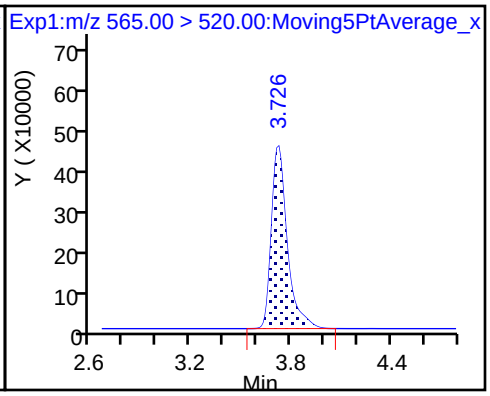
31 Perfluoroundecanoic acid



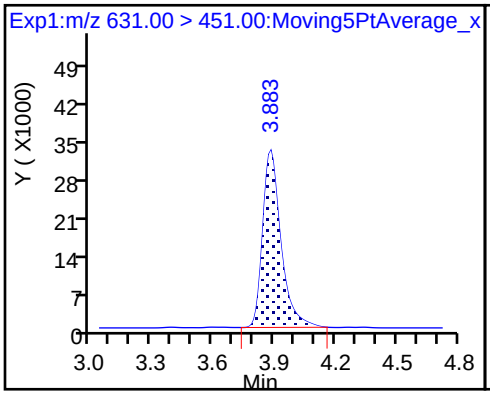
33 N-ethyl perfluorooctane sulfonamid



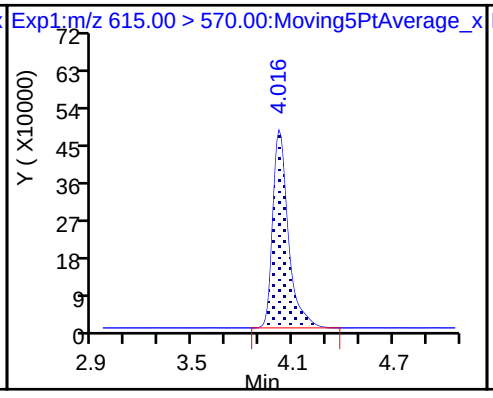
D 30 13C2 PFUnA



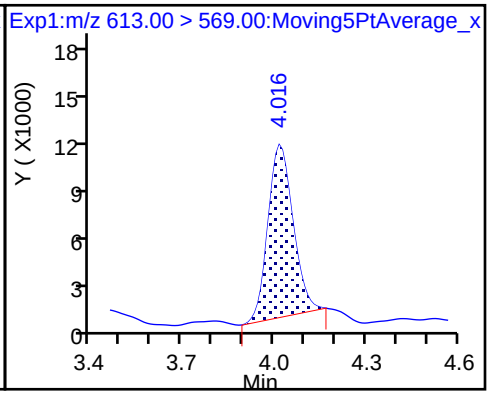
66 11-Chloroeicosafluoro-3-oxaundecan



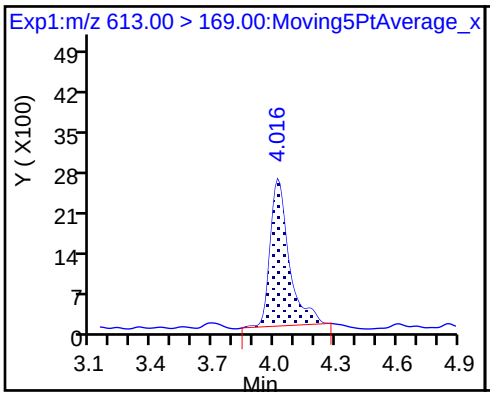
D 36 13C2 PFDoA



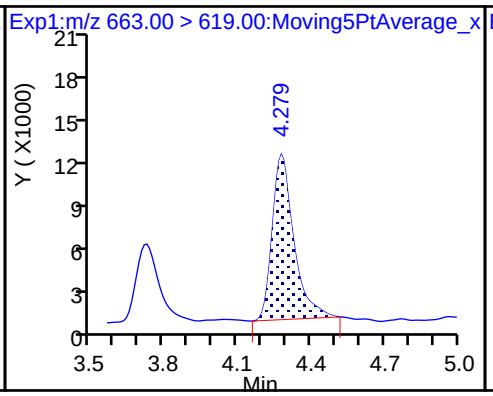
37 Perfluorododecanoic acid



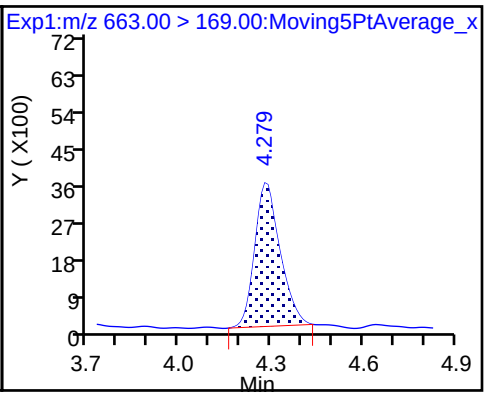
37 Perfluorododecanoic acid



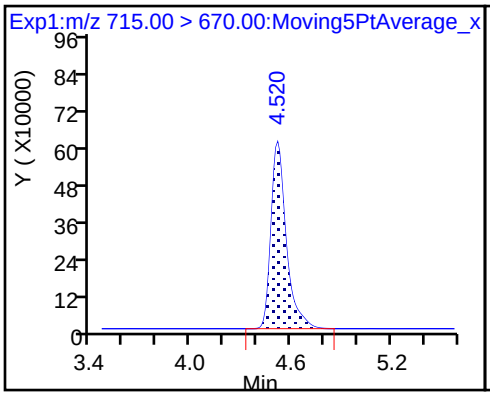
41 Perfluorotridecanoic acid



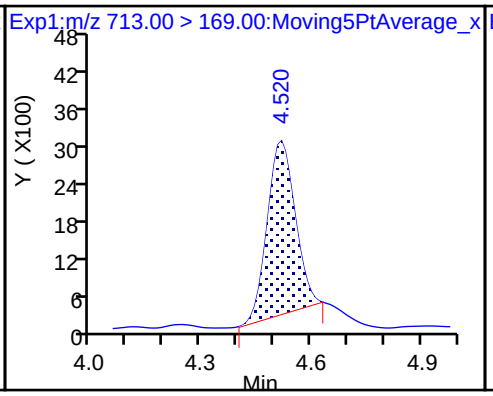
41 Perfluorotridecanoic acid



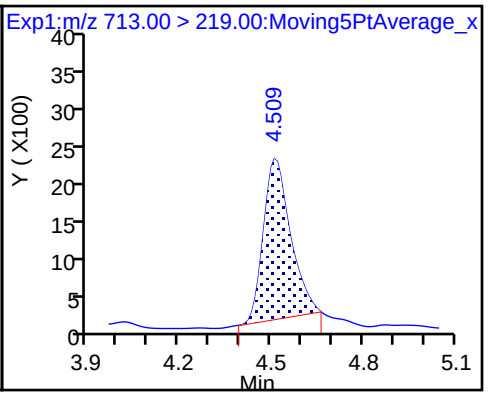
D 43 13C2-PFTeDA



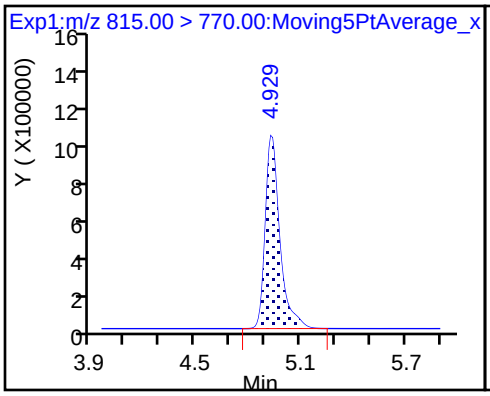
42 Perfluorotetradecanoic acid



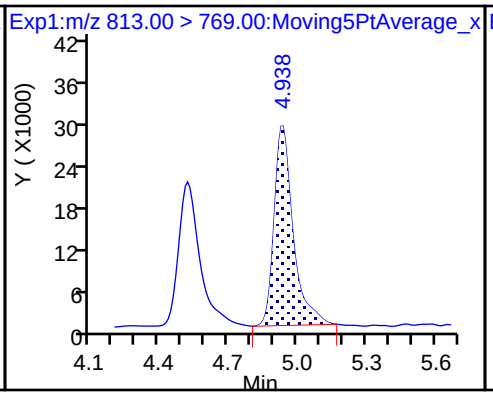
42 Perfluorotetradecanoic acid



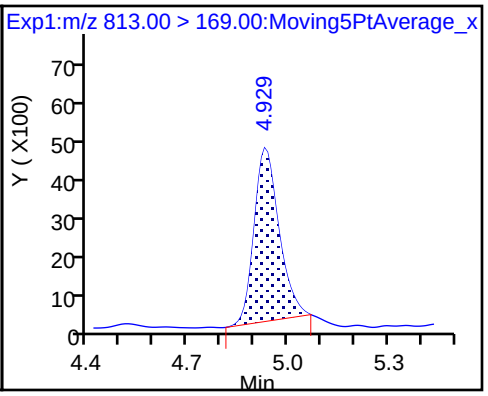
D 44 13C2-PFHxDA



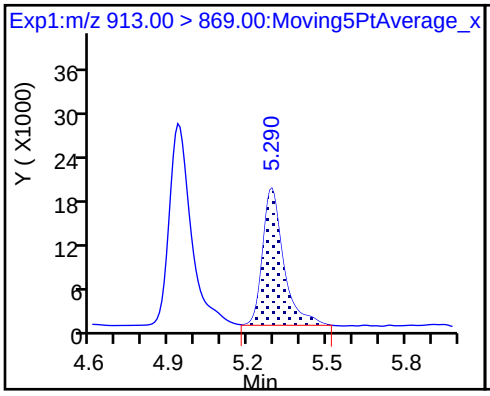
45 Perfluorohexadecanoic acid



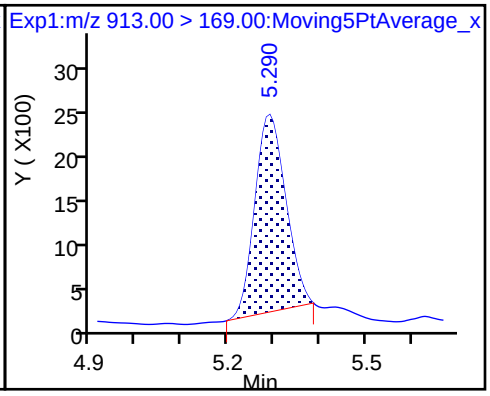
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216866/3 Calibration Date: 04/07/2018 20:06

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_021.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9292		1.01	1.00	0.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.150		0.961	1.00	-3.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	76.53		0.858	0.884	-3.0	50.0
4:2 FTS	AveID	17.26	15.56		0.842	0.934	-9.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	1.003		0.981	1.00	-1.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	70.69		0.931	0.938	-0.7	50.0
HFPO-DA (GenX)	AveID	3.401	3.562		1.05	1.00	4.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.004		0.924	1.00	-7.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.024		0.834	0.910	-8.3	40.0
Adona	AveID	3.564	3.485		0.978	1.00	-2.2	50.0
6:2FTS	AveID	1.868	1.838		0.933	0.948	-1.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.316		0.940	0.952	-1.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.099		0.927	1.00	-7.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.011		0.983	1.00	-1.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.062		0.863	0.928	-7.1	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.857		0.925	0.932	-0.7	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	0.9852		0.997	1.00	-0.3	40.0
8:2FTS	AveID	1.349	1.253		0.890	0.958	-7.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7685		0.920	0.960	-4.2	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	0.9602		0.971	1.00	-2.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	0.997		0.946	1.00	-5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6636		0.922	0.964	-4.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9260		1.01	1.00	1.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8439		1.05	1.00	5.2	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	2.876		0.933	0.942	-0.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.008		0.933	1.00	-6.7	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.152		0.996	1.00	-0.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2550		1.02	1.00	2.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9076		0.937	1.00	-6.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216866/3 Calibration Date: 04/07/2018 20:06

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_021.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.9461		0.953	1.00	-4.7	50.0
13C4 PFBA	Ave	1.382	1.357		2.46	2.50	-1.8	50.0
13C5 PFPeA	Ave	0.8994	0.8963		2.49	2.50	-0.3	50.0
13C3-PFBS	Ave	0.0206	0.0209		2.36	2.33	1.3	50.0
M2-4:2FTS	Ave	0.1573	0.1578		2.34	2.34	0.3	50.0
13C2 PFHxA	Ave	0.9916	0.9560		2.41	2.50	-3.6	50.0
13C3 HFPO-DA	Ave	0.0494	0.0460		2.33	2.50	-6.9	50.0
13C4-PFHpA	Ave	0.9533	0.9283		2.43	2.50	-2.6	50.0
18O2 PFHxS	Ave	1.189	1.198		2.38	2.37	0.8	50.0
M2-6:2FTS	Ave	0.2203	0.2279		2.46	2.38	3.4	40.0
13C4 PFOA	Ave	0.9372	0.9395		2.51	2.50	0.2	50.0
13C4 PFOS	Ave	0.8257	0.8346		2.42	2.39	1.1	50.0
13C5 PFNA	Ave	0.7930	0.8221		2.59	2.50	3.7	50.0
13C8 FOSA	Ave	1.166	1.100		2.36	2.50	-5.7	50.0
M2-8:2FTS	Ave	0.2562	0.2640		2.47	2.40	3.1	40.0
13C2 PFDA	Ave	0.6698	0.7216		2.69	2.50	7.7	50.0
d3-NMeFOSAA	Ave	0.3583	0.4127		2.88	2.50	15.2	50.0
13C2 PFUnA	Ave	0.5468	0.5928		2.71	2.50	8.4	50.0
d5-NEtFOSAA	Ave	0.3760	0.4390		2.92	2.50	16.8	50.0
13C2 PFDoA	Ave	0.6087	0.6466		2.66	2.50	6.2	50.0
13C2-PFTeDA	Ave	0.7733	0.7720		2.50	2.50	-0.2	50.0
13C2-PFHxDA	Ave	1.194	1.215		2.54	2.50	1.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_021.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 07-Apr-2018 20:06:19 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 09:36:35 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 09:32:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	6462808	2.46		98.2	48266	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.430	0.0	1.000	2402052	1.01		101	1075	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.693	0.001	0.559	4267930	2.49		99.7	82938	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.694	0.0	1.000	1963548	0.9610		96.1	1237	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.729	0.001	1.000	92442	2.36		101	521	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	2689921	0.8576		97.0	11459	
298.90 > 99.00	1.739	1.739	0.0	1.005	1094873		2.46(1.25-3.74)		7570	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.949	0.001	1.000	701949	2.34		100	5599	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	577831	0.8422		90.2	30412	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.981	0.001	1.000	4552424	2.41		96.4	117489	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	1827116	0.9805		98.1	3529	
313.00 > 119.00	1.982	1.982	0.0	1.000	166186		10.99(5.03-15.10)		2588	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	2636466	0.9313		99.3	20593	
349.00 > 99.00	2.004	2.004	0.0	1.000	954735		2.76(1.36-4.07)		11450	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.083	0.001	1.000	218867	2.33		93.1	5727	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	311839	1.05		105	2168	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.307	0.001	1.000	4420304	2.43		97.4	88945	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.308	0.0	1.000	1775576	0.9242		92.4	1899	
363.00 > 169.00	2.308	2.308	0.0	1.000	722281		2.46(1.13-3.40)		2625	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.320	0.001	1.000	5397769	2.38		101	85443	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	1.000	2126412	0.8341		91.7	5265	
399.00 > 99.00	2.321	2.321	0.0	1.000	722857		2.94(1.50-4.49)		3404	
65 Adona										
377.00 > 251.00	2.347	2.347	0.0	1.000	5539770	0.9778		97.8	72701	
377.00 > 85.00	2.347	2.347	0.0	1.000	3290744		1.68(0.84-2.53)		39536	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.636	2.636	0.0	1.000	756029	0.9327		98.4	8754	
D 12 M2-6:2FTS										
429.00 > 81.00	2.636	2.637	-0.001	1.000	1030766	2.46		103	11227	
D 14 13C4 PFOA										
417.00 > 372.00	2.660	2.660	0.0	1.000	4473723	2.51		100	79303	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.667	0.0		4761836	2.50			105385	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.667	0.0	1.003	1966813	0.9269		92.7	879	
413.00 > 169.00	2.667	2.667	0.0	1.003	1026969		1.92(0.84-2.52)		3182	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.667	2.667	0.0	1.000	1991119	0.9398		98.7	14982	
449.00 > 99.00	2.667	2.667	0.0	1.000	548498		3.63(1.94-5.82)		5722	
D 18 13C4 PFOS										
503.00 > 80.00	3.032	3.031	0.001	1.000	3799408	2.42		101	25673	
D 19 13C5 PFNA										
468.00 > 423.00	3.032	3.031	0.001	1.000	3914691	2.59		104	100918	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.032	3.032	0.0	1.000	1566828	0.8626		92.9	7673	
499.00 > 99.00	3.032	3.032	0.0	1.000	360172		4.35(2.31-6.93)		4259	
20 Perfluorononanoic acid										
463.00 > 419.00	3.032	3.032	0.0	1.000	1583136	0.9825		98.3	4105	
463.00 > 169.00	3.032	3.032	0.0	1.000	393987		4.02(1.90-5.69)		10188	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.246	3.246	0.0	1.000	2750998	0.9254		99.3	42038	
D 21 13C8 FOSA										
506.00 > 78.00	3.370	3.360	0.010	1.000	5237180	2.36		94.3	61765	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.370	3.370	0.0	1.000	2063825	1.00		99.7	42560	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.379	3.379	0.0	1.000	603407	0.8896		92.9	15840	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.379	3.379	0.0	1.000	1172808	0.9202		95.8	13815	
549.00 > 99.00	3.379	3.379	0.0	1.000	466878		2.51(1.33-3.97)		7836	
D 26 M2-8:2FTS										
529.00 > 81.00	3.379	3.379	0.0	1.000	1204334	2.47		103	11170	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.388	3.388	0.0	1.000	1319769	0.9706		97.1	4878	
513.00 > 169.00	3.388	3.388	0.0	1.000	251439		5.25(2.36-7.09)		5927	
D 23 13C2 PFDA										
515.00 > 470.00	3.388	3.388	0.0	1.000	3436138	2.69		108	71529	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.547	3.547	0.0	1.000	783759	0.9458		94.6	4726	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.547	3.547	0.0	1.000	1965355	2.88		115	24132	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.708	3.708	0.0	1.000	1016964	0.9220		95.6	10628	
599.00 > 99.00	3.708	3.708	0.0	1.000	352843		2.88(1.39-4.16)		8987	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.718	3.708	0.010	1.000	2090639	2.92		117	10862	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.718	3.718	0.0	1.000	952898	1.05		105	3687	
563.00 > 169.00	3.718	3.718	0.0	1.000	257416		3.70(2.12-6.36)		6542	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.718	3.718	0.0	1.000	774397	1.01		101	10789	
D 30 13C2 PFUnA										
565.00 > 520.00	3.718	3.719	-0.001	1.000	2822981	2.71		108	71056	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.875	3.875	0.0	1.000	4306942	0.9334		99.1	62566	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.009	0.010	1.000	3078873	2.66		106	20957	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.019	0.0	1.000	1241356	0.9326		93.3	888	
613.00 > 169.00	4.019	4.019	0.0	1.000	327396		3.79(2.13-6.40)		5081	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.281	0.0	1.000	1418593	1.00		99.6	798	
663.00 > 169.00	4.281	4.281	0.0	1.000	447023		3.17(1.25-3.76)		4305	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.511	0.010	1.000	3676033	2.50		99.8	16741	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.521	0.0	1.000	374961	1.02		102	2880	
713.00 > 219.00	4.511	4.521	-0.010	0.998	275227		1.36(0.71-2.13)		2801	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.930	4.930	0.0	1.000	5785650	2.54		102	13225	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.930	4.930	0.0	1.000	2100308	0.9371		93.7	487	
813.00 > 169.00	4.930	4.930	0.0	1.000	353127		5.95(2.86-8.58)		1692	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.291	5.291	0.0	1.000	2189443	0.9529		95.3	425	
913.00 > 169.00	5.284	5.291	-0.007	0.999	277627		7.89(3.83-11.48)		1172	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 09:36:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_021.d

Injection Date: 07-Apr-2018 20:06:19 Instrument ID: A8_N

Lims ID: CCV L4

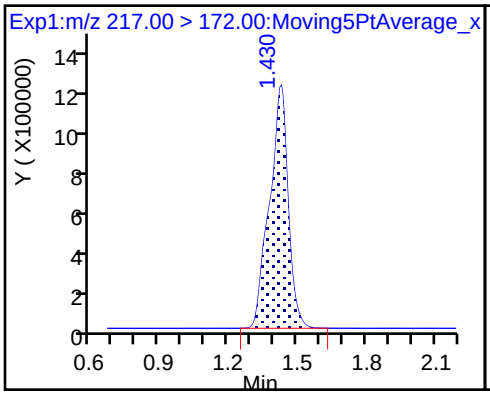
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

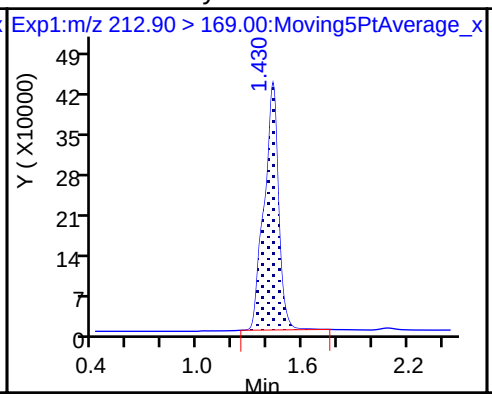
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

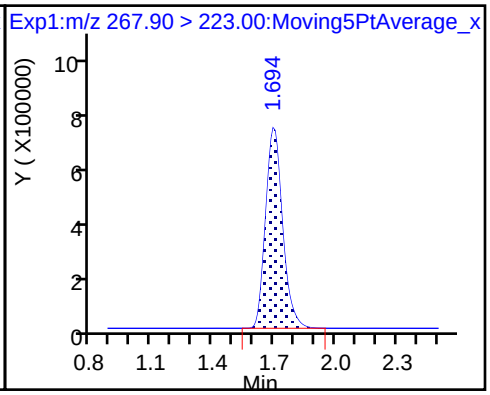
D 1 13C4 PFBA



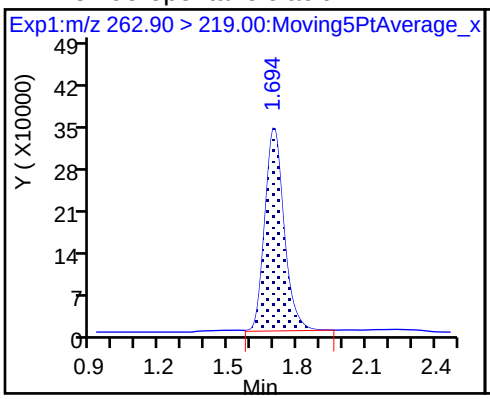
2 Perfluorobutyric acid



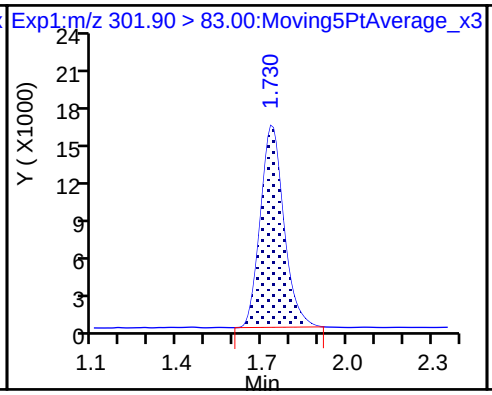
D 3 13C5-PFPeA



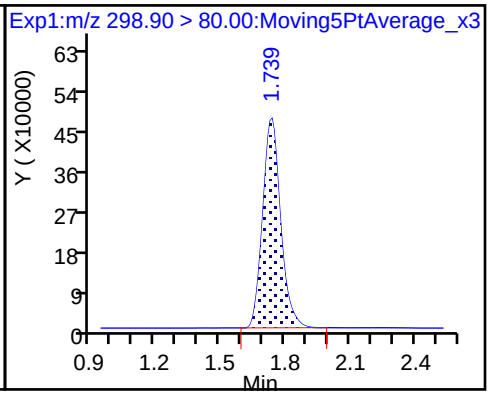
4 Perfluoropentanoic acid



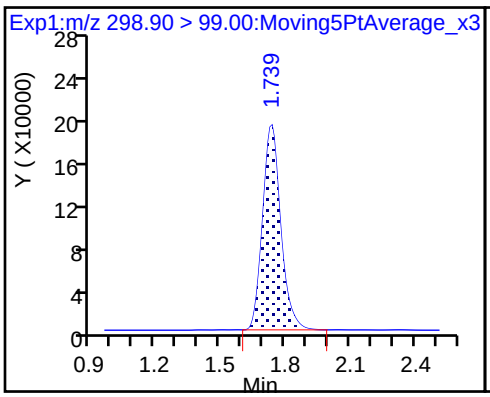
D 47 13C3-PFBS



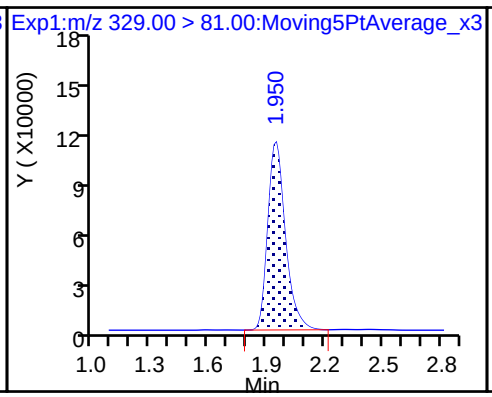
5 Perfluorobutanesulfonic acid



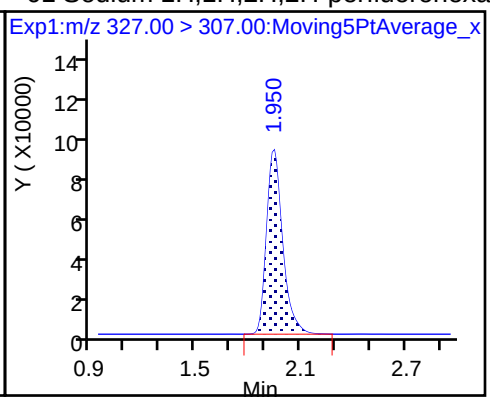
5 Perfluorobutanesulfonic acid



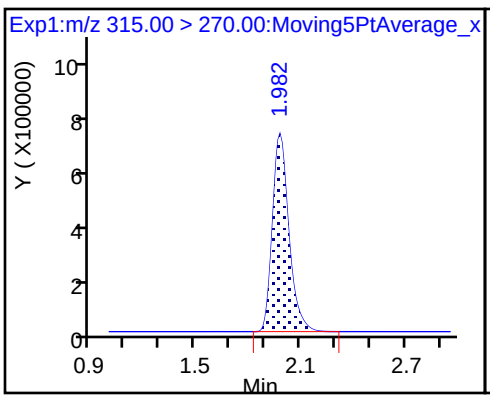
D 60 M2-4:2FTS



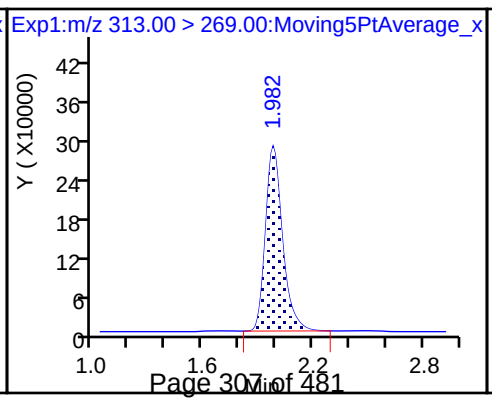
61 Sodium 1H,1H,2H,2H-perfluorohexane



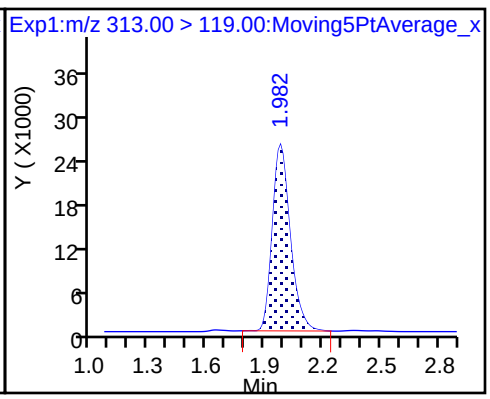
D 7 13C2 PFHxA



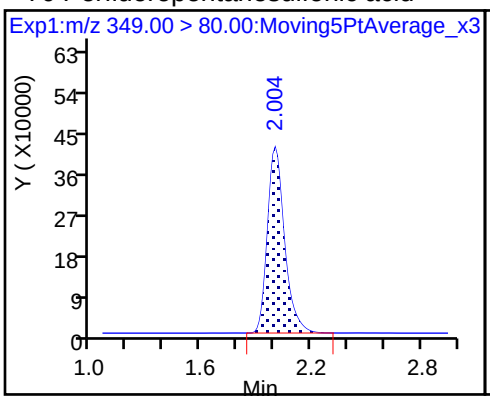
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid



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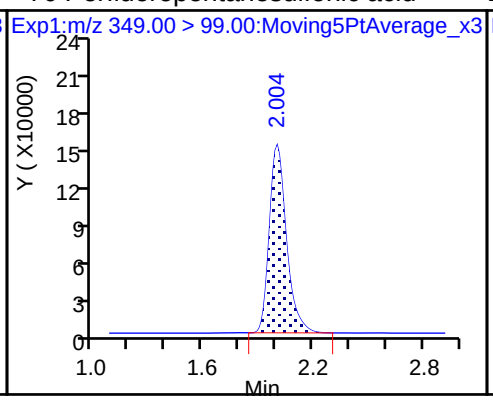
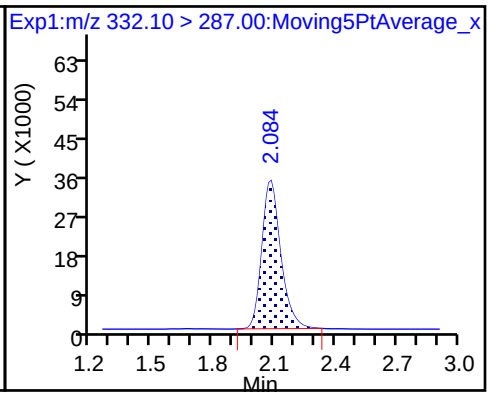
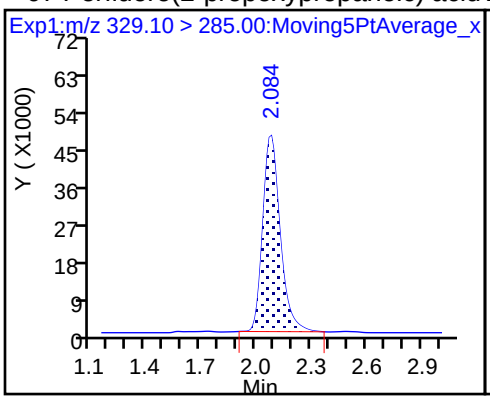


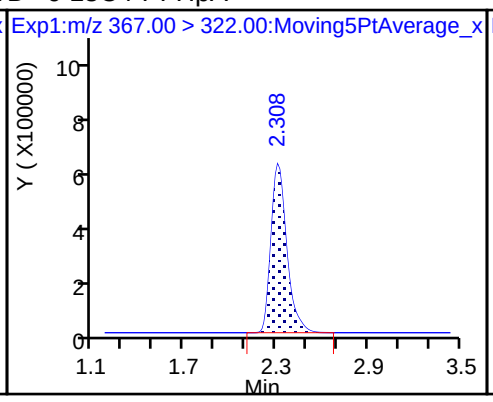
D 64 13C3 HFPO-DA



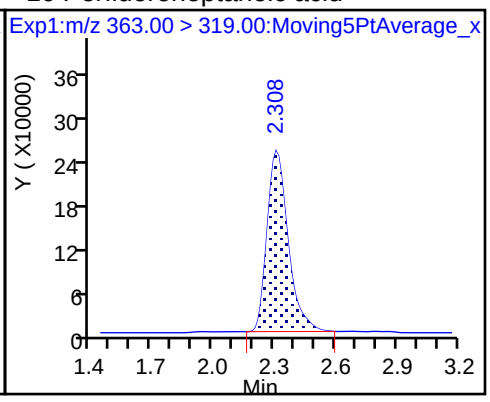
67 Perfluoro(2-propoxypropanoic) acid



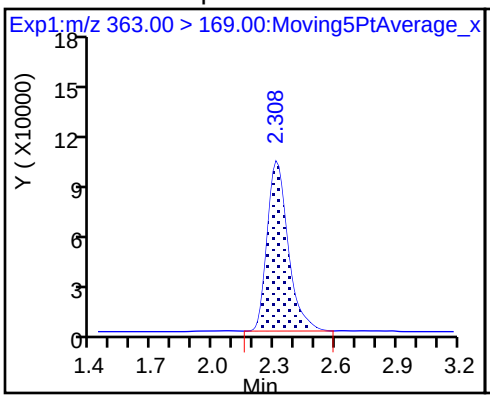
D 9 13C4-PFHpA



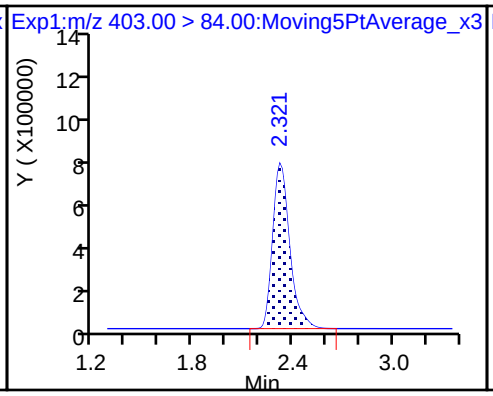
10 Perfluoroheptanoic acid



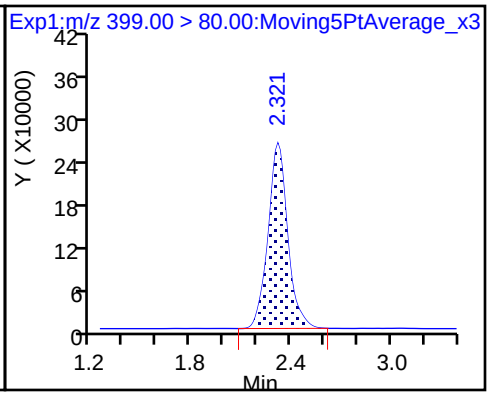
10 Perfluoroheptanoic acid



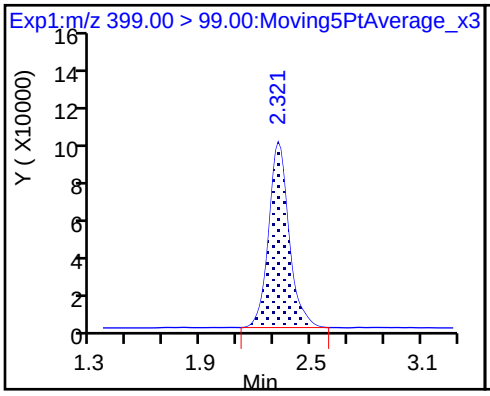
D 11 18O2 PFHxS



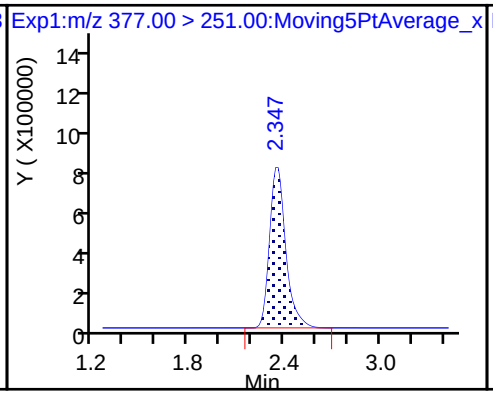
8 Perfluorohexanesulfonic acid



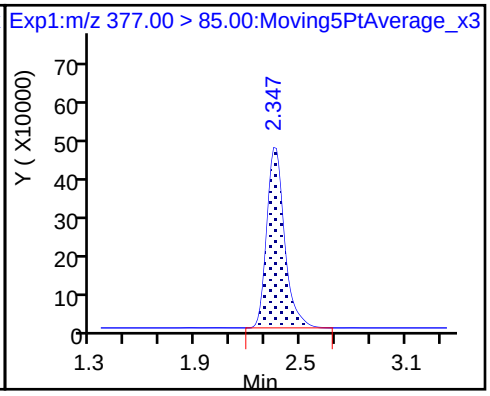
8 Perfluorohexanesulfonic acid



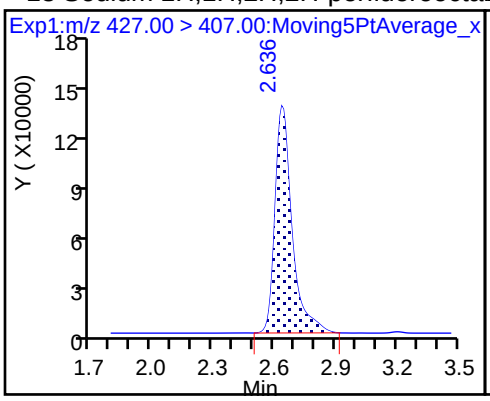
65 Adona



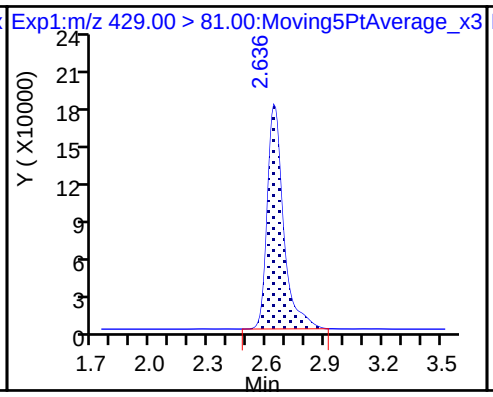
65 Adona



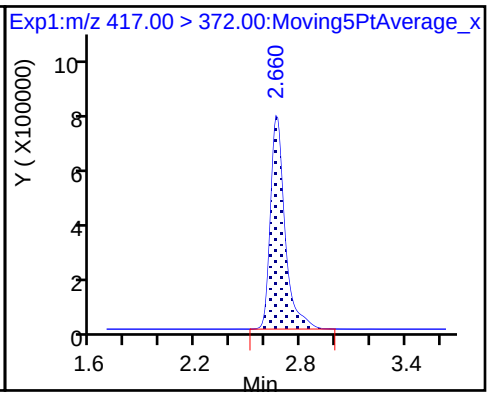
13 Sodium 1H,1H,2H,2H-perfluorooctane



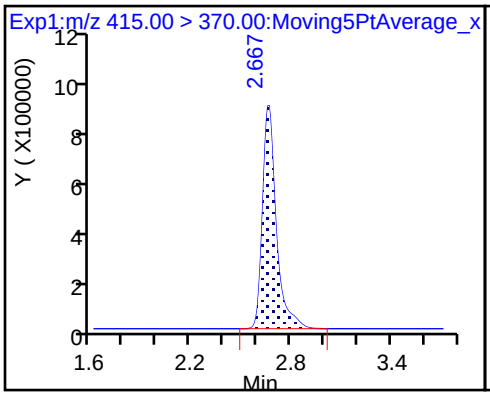
D 12 M2-6:2FTS



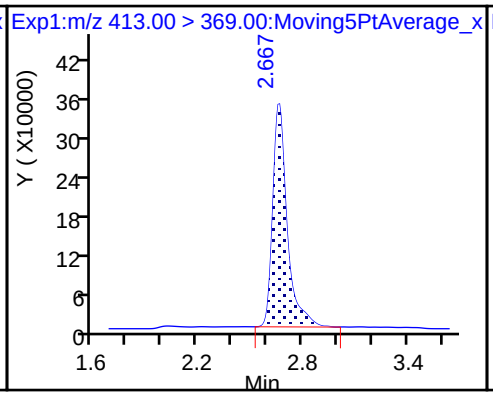
D 14 13C4 PFOA



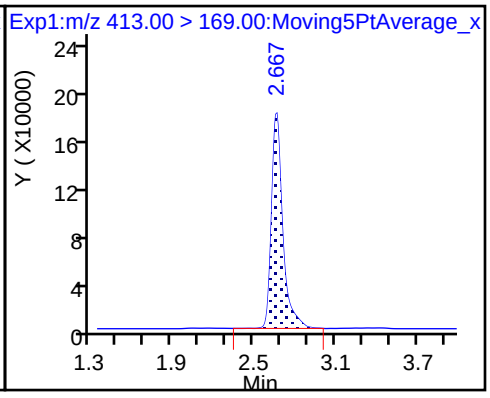
* 62 13C2-PFOA



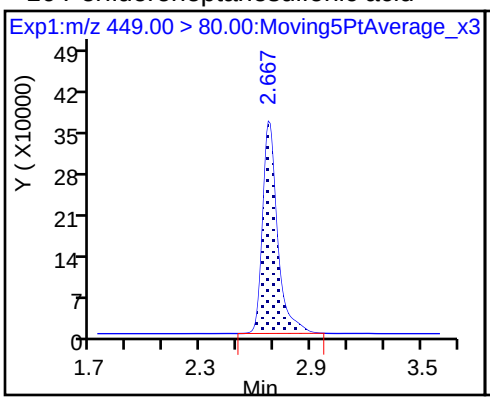
15 Perfluorooctanoic acid



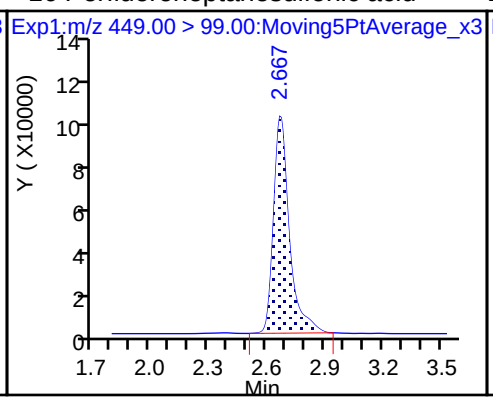
15 Perfluorooctanoic acid



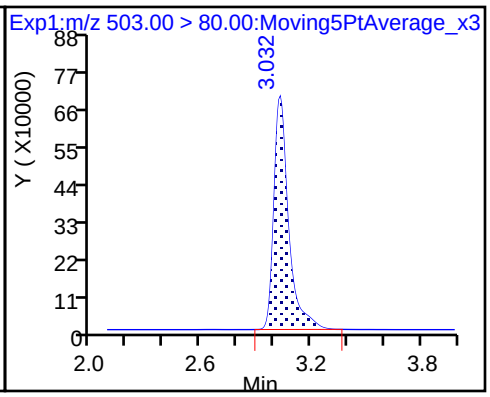
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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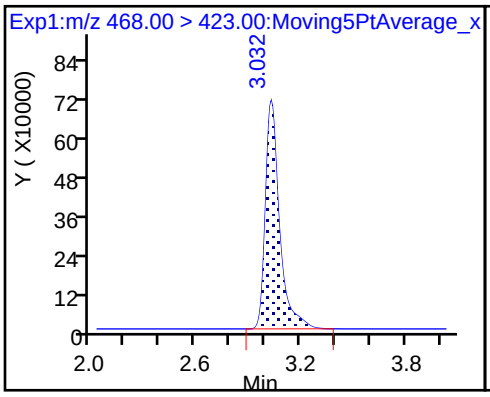
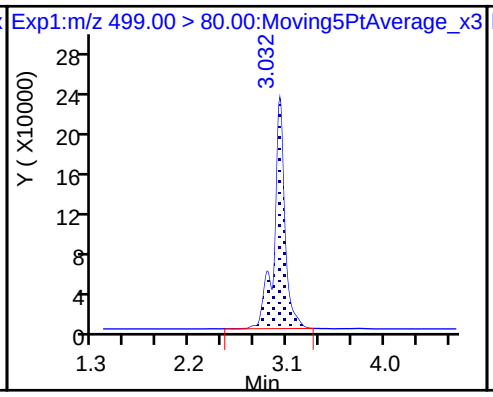
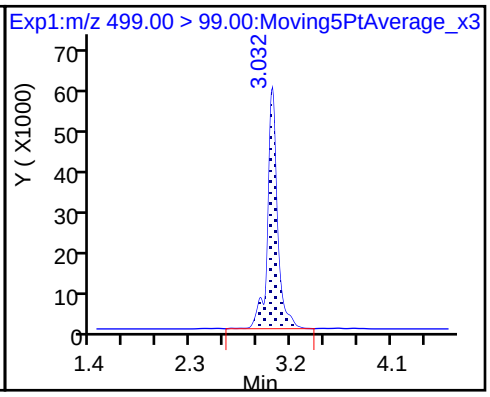


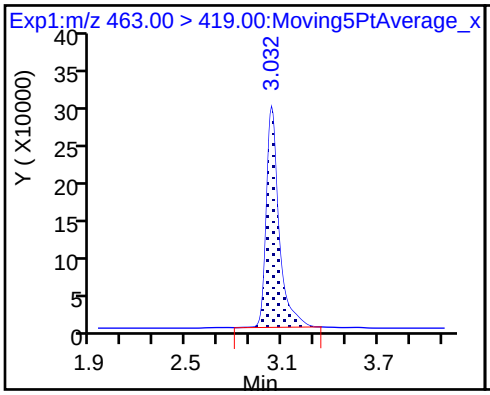
17 Perfluorooctane sulfonic acid



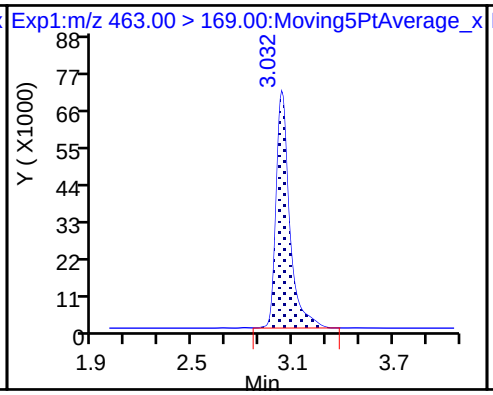
17 Perfluorooctane sulfonic acid



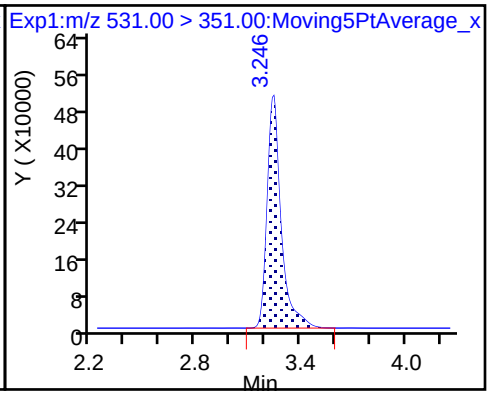
20 Perfluorononanoic acid



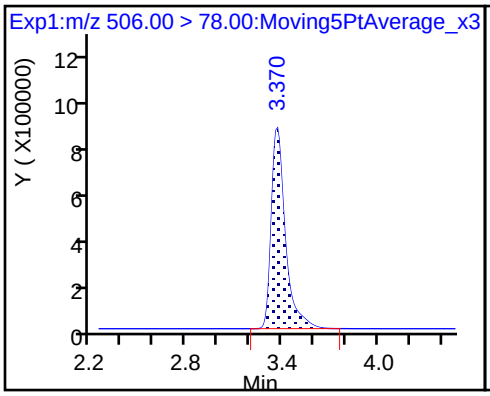
20 Perfluorononanoic acid



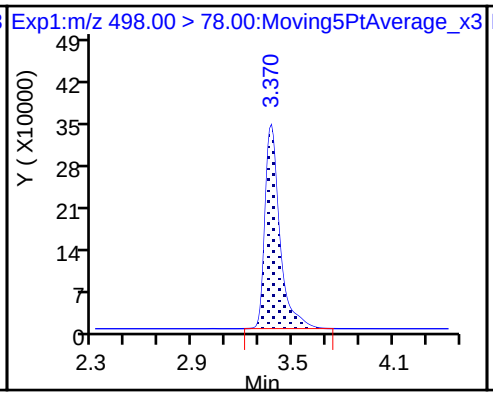
69 9-Chlorohexadecafluoro-3-oxanonane



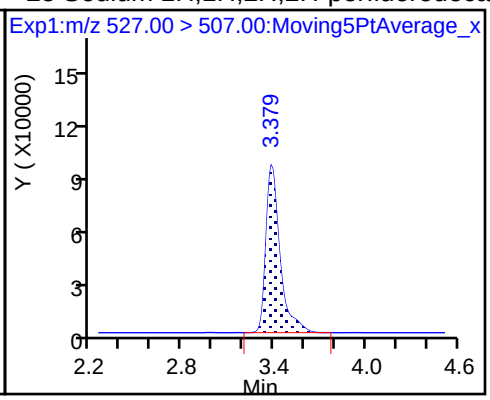
D 21 13C8 FOSA



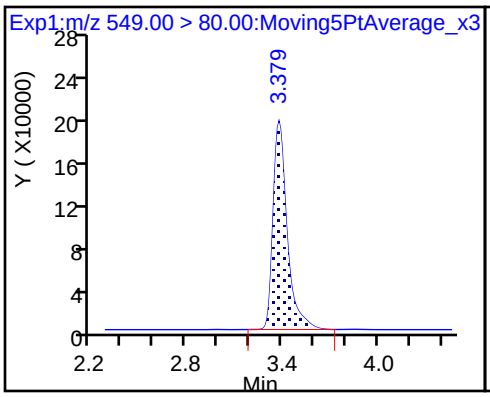
22 Perfluorooctane Sulfonamide



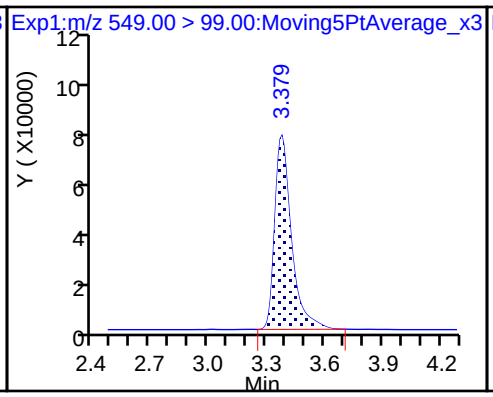
25 Sodium 1H,1H,2H,2H-perfluorodecane



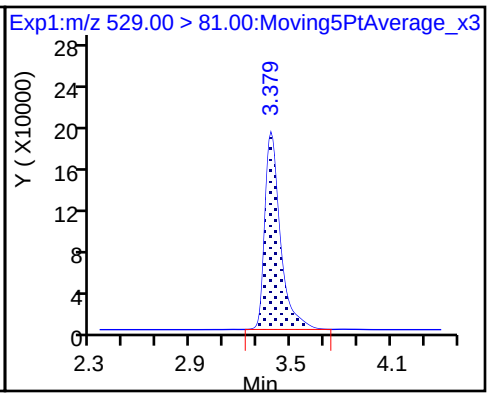
68 Perfluorononanesulfonic acid



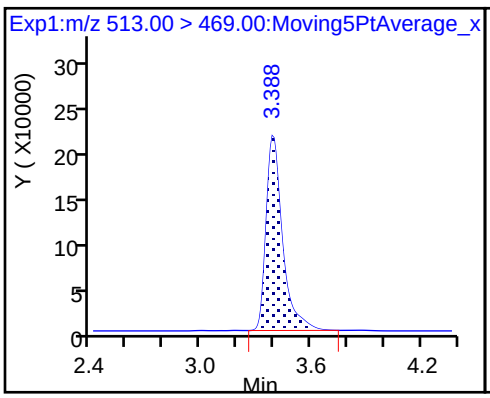
68 Perfluorononanesulfonic acid



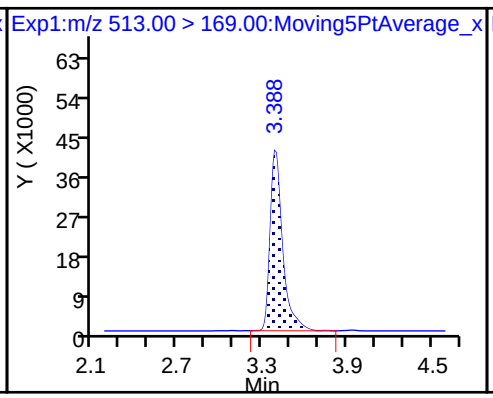
D 26 M2-8:2FTS



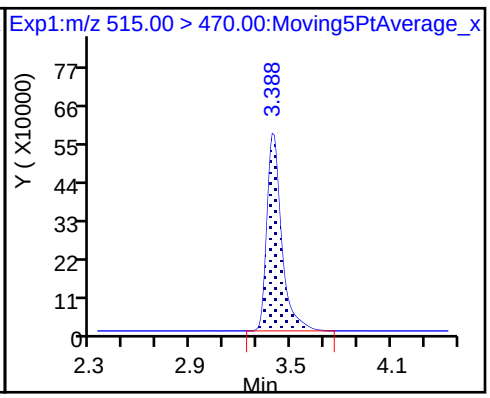
24 Perfluorodecanoic acid



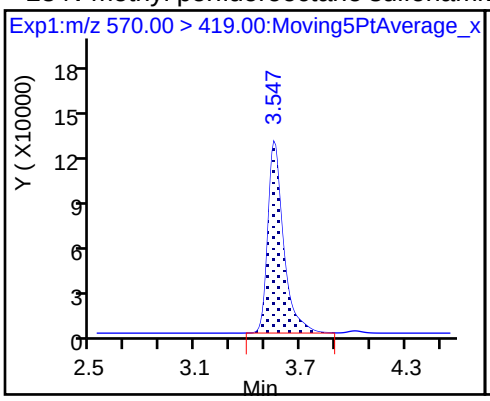
24 Perfluorodecanoic acid



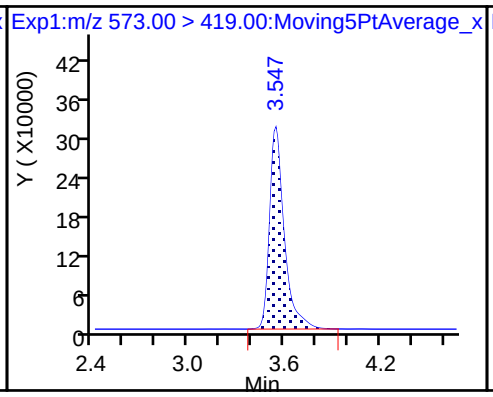
D 23 13C2 PFDA



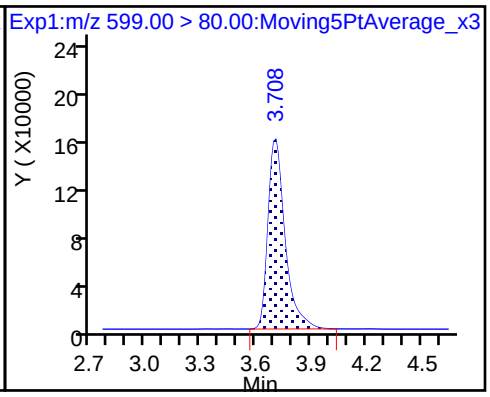
28 N-methyl perfluorooctane sulfonami



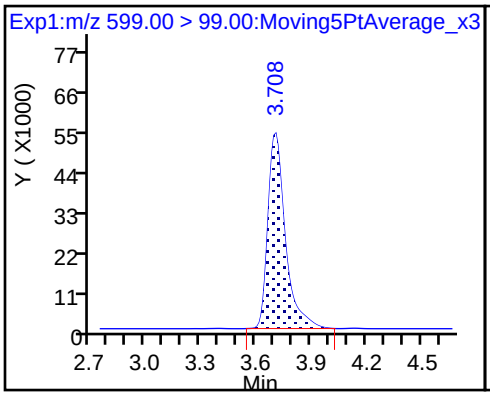
D 27 d3-NMeFOSAA



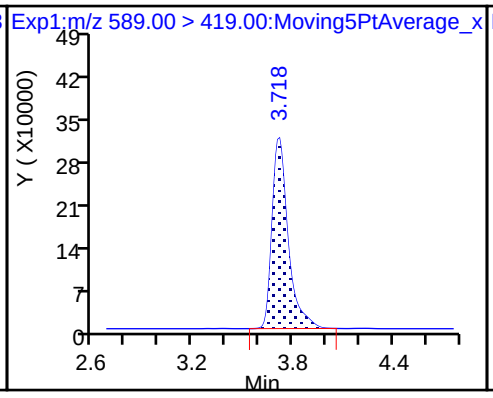
29 Perfluorodecane Sulfonic acid



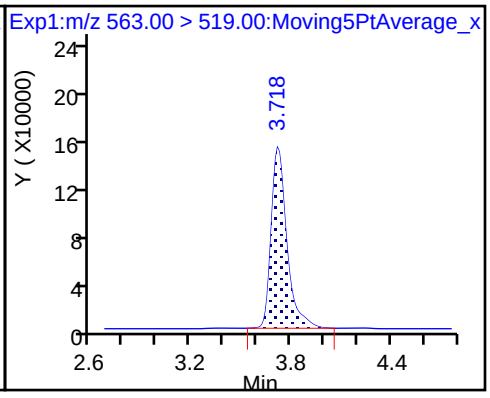
29 Perfluorodecane Sulfonic acid



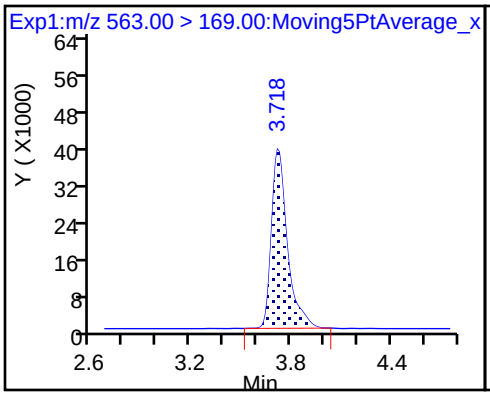
D 32 d5-NEtFOSAA



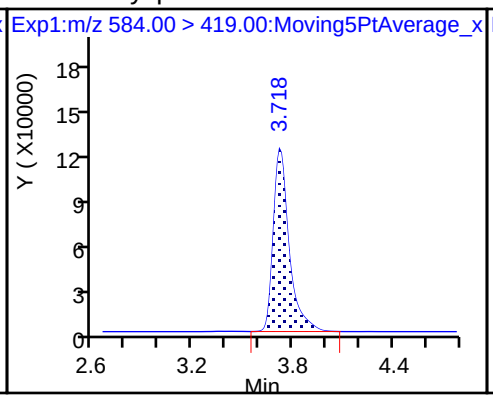
31 Perfluoroundecanoic acid



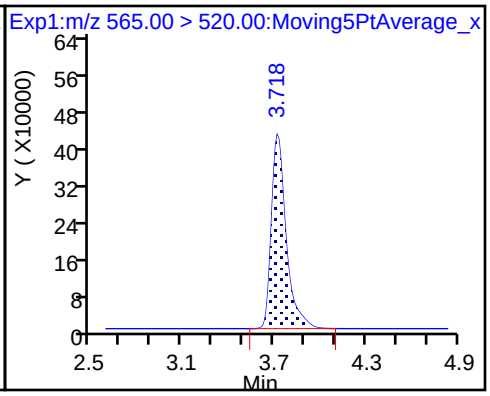
31 Perfluoroundecanoic acid



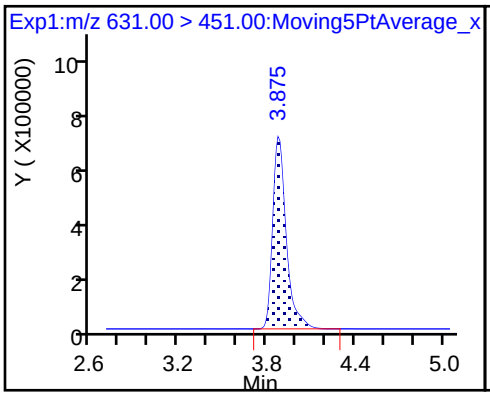
33 N-ethyl perfluorooctane sulfonamid



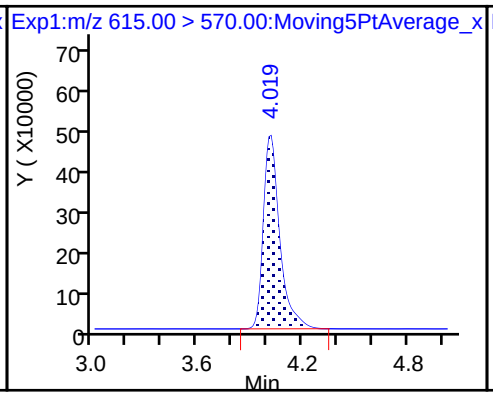
D 30 13C2 PFUnA



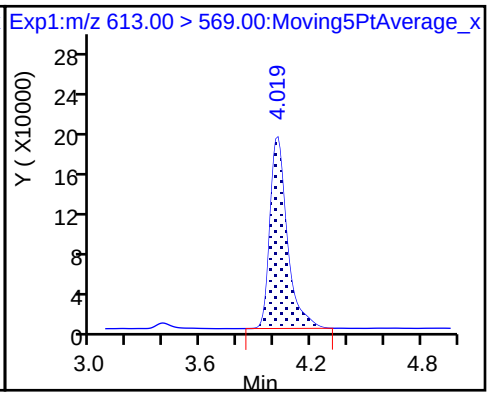
66 11-Chloroeicosafluoro-3-oxaundecan



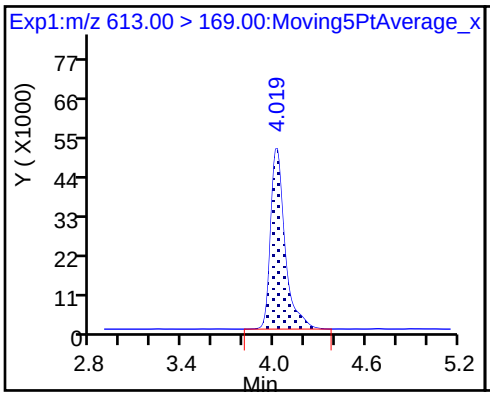
D 36 13C2 PFDoA



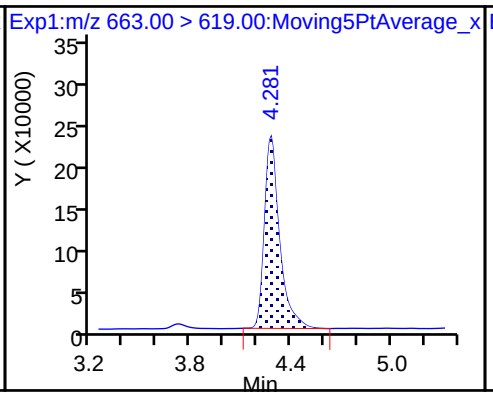
37 Perfluorododecanoic acid



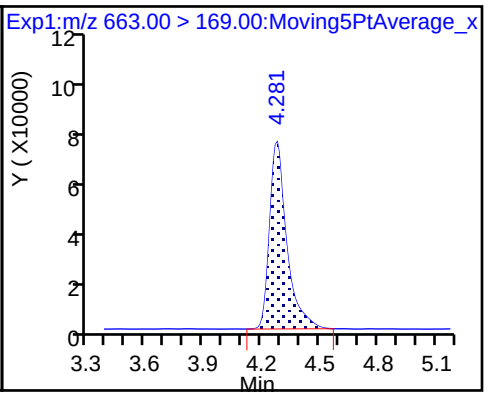
37 Perfluorododecanoic acid



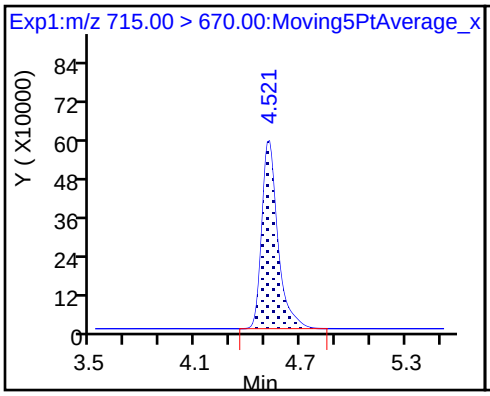
41 Perfluorotridecanoic acid



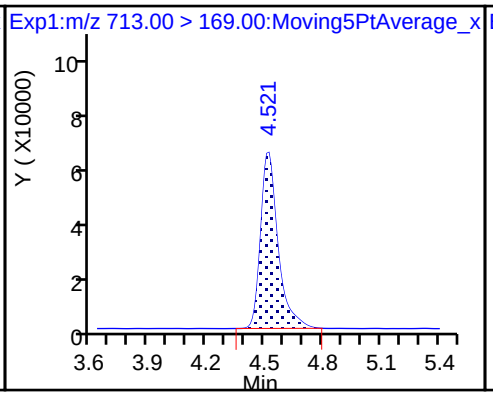
41 Perfluorotridecanoic acid



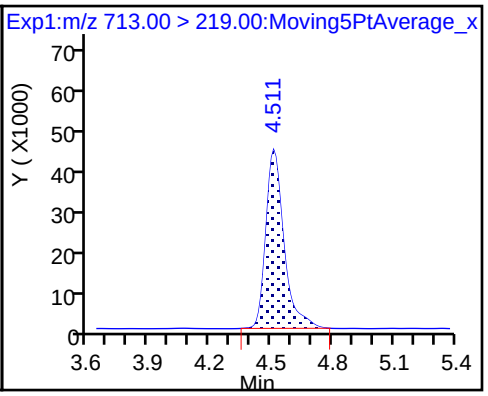
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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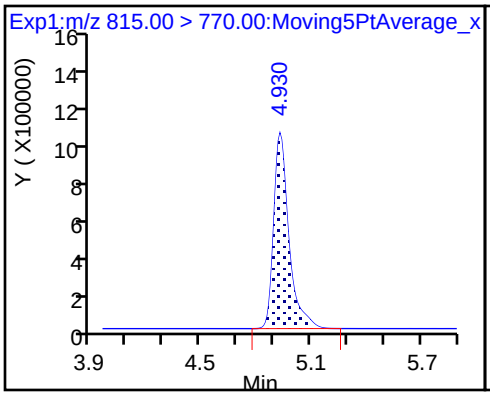
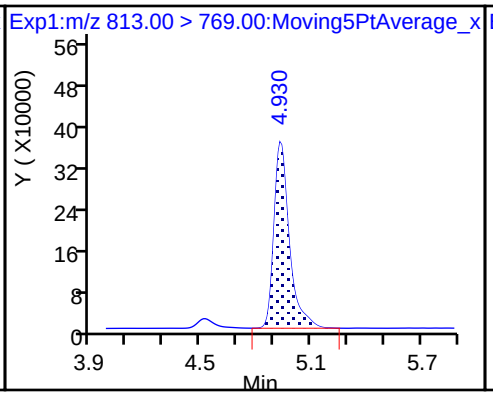
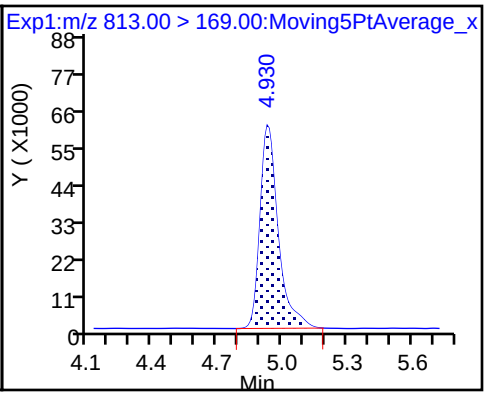


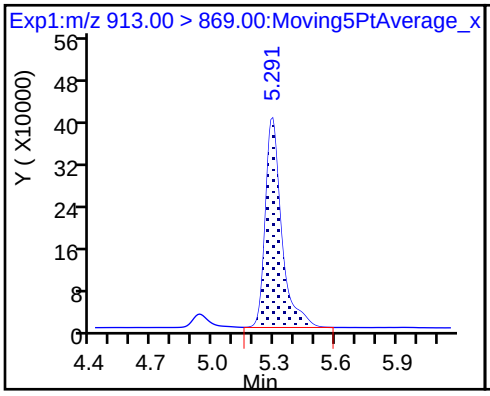
45 Perfluorohexadecanoic acid



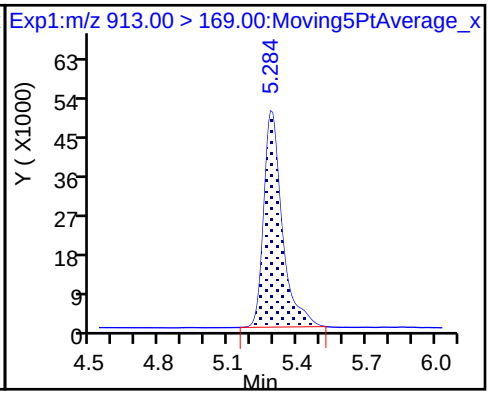
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216866/14 Calibration Date: 04/07/2018 21:32

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_032.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9555		2.59	2.50	3.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.166		2.44	2.50	-2.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	81.35		2.28	2.21	3.1	50.0
4:2 FTS	AveID	17.26	17.88		2.42	2.34	3.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	0.9652		2.36	2.50	-5.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	75.32		2.48	2.35	5.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.101		2.53	2.50	1.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.104		2.25	2.28	-1.2	40.0
6:2FTS	AveID	1.868	1.931		2.45	2.37	3.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.149		2.42	2.50	-3.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.335		2.38	2.38	0.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.012		2.46	2.50	-1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.096		2.23	2.32	-4.1	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	1.043		2.64	2.50	5.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7996		2.39	2.40	-0.3	50.0
8:2FTS	AveID	1.349	1.323		2.35	2.40	-1.9	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	0.9638		2.44	2.50	-2.6	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	1.076		2.55	2.50	2.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6689		2.32	2.41	-3.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9777		2.67	2.50	6.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8315		2.59	2.50	3.6	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.096		2.54	2.50	1.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.198		2.59	2.50	3.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2570		2.57	2.50	2.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9586		2.51	2.50	0.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.9211		2.32	2.50	-7.2	50.0
13C4 PFBA	Ave	1.382	1.366		2.47	2.50	-1.2	50.0
13C5 PFPeA	Ave	0.8994	0.8818		2.45	2.50	-2.0	50.0
13C3-PFBS	Ave	0.0206	0.0201		2.26	2.33	-2.6	50.0
M2-4:2FTS	Ave	0.1573	0.1565		2.32	2.34	-0.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216866/14 Calibration Date: 04/07/2018 21:32

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_032.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFHxA	Ave	0.9916	1.016		2.56	2.50	2.5	50.0
13C4-PFHpA	Ave	0.9533	0.9455		2.48	2.50	-0.8	50.0
18O2 PFHxS	Ave	1.189	1.196		2.38	2.37	0.6	50.0
M2-6:2FTS	Ave	0.2203	0.2147		2.31	2.38	-2.6	40.0
13C4 PFOA	Ave	0.9372	0.9654		2.58	2.50	3.0	50.0
13C4 PFOS	Ave	0.8257	0.8578		2.48	2.39	3.9	50.0
13C5 PFNA	Ave	0.7930	0.8384		2.64	2.50	5.7	50.0
13C8 FOSA	Ave	1.166	1.110		2.38	2.50	-4.8	50.0
M2-8:2FTS	Ave	0.2562	0.2832		2.65	2.40	10.5	40.0
13C2 PFDA	Ave	0.6698	0.7745		2.89	2.50	15.6	50.0
d3-NMeFOSAA	Ave	0.3583	0.4312		3.01	2.50	20.3	50.0
d5-NEtFOSAA	Ave	0.3760	0.4576		3.04	2.50	21.7	50.0
13C2 PFUnA	Ave	0.5468	0.6704		3.07	2.50	22.6	50.0
13C2 PFDoA	Ave	0.6087	0.7036		2.89	2.50	15.6	50.0
13C2-PFTeDA	Ave	0.7733	0.8424		2.72	2.50	8.9	50.0
13C2-PFHxDA	Ave	1.194	1.302		2.73	2.50	9.0	50.0

Report Date: 09-Apr-2018 10:11:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_032.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2018 21:32:34 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub30

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:11:23 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 10:07:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.424	1.424	0.0	1.000	6244987	2.47		98.8	45947	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.429	0.001	1.004	5967241	2.58		103	2348	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.693	1.692	0.001	1.000	4701516	2.44		97.4	3502	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.693	0.0	0.560	4032689	2.45		98.0	69122	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.728	0.001	1.000	6596008	2.28		103	30438	
298.90 > 99.00	1.729	1.728	0.001	1.000	2728125		2.42(1.25-3.74)		20265	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.729	0.0	1.000	85296	2.26		97.4	475	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.938	1.948	-0.010	1.000	1531735	2.42		104	81327	
D 60 M2-4:2FTS										
329.00 > 81.00	1.938	1.949	-0.011	1.000	668535	2.32		99.5	6282	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.980	0.001	1.000	4485687	2.36		94.3	8973	
313.00 > 119.00	1.981	1.980	0.001	1.000	417315		10.75(5.03-15.10)		5022	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.981	0.0	1.000	4647524	2.56		102	90459	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.002	0.001	1.000	6479992	2.48		106	41434	
349.00 > 99.00	2.003	2.002	0.001	1.000	2296139		2.82(1.36-4.07)		27022	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.307	2.306	0.001	1.000	4762730	2.53		101	5669	
363.00 > 169.00	2.307	2.306	0.001	1.000	1824287		2.61(1.13-3.40)		8276	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.307	2.307	0.0	1.000	4324013	2.48		99.2	75607	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.319	0.001	1.000	5491174	2.25		98.8	15294	
399.00 > 99.00	2.320	2.319	0.001	1.000	1810612		3.03(1.50-4.49)		7087	
D 11 18O2 PFHxS										
403.00 > 84.00	2.320	2.320	0.0	1.000	5172798	2.38		101	65968	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.629	2.636	-0.007	1.000	1797145	2.45		103	14826	
D 12 M2-6:2FTS										
429.00 > 81.00	2.629	2.637	-0.008	1.000	932641	2.31		97.4	12127	
* 62 13C2-PFOA										
415.00 > 370.00	2.660	2.659	0.001		4573078	2.50			100850	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.660	2.659	0.001	1.000	5072623	2.42		96.9	2856	
413.00 > 169.00	2.660	2.659	0.001	1.000	2564632		1.98(0.84-2.52)		8182	
D 14 13C4 PFOA										
417.00 > 372.00	2.660	2.660	0.0	1.000	4414905	2.58		103	86401	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.668	2.667	0.001	1.000	4985708	2.38		100	52668	
449.00 > 99.00	2.668	2.667	0.001	1.000	1350810		3.69(1.94-5.82)		22006	
20 Perfluorononanoic acid										
463.00 > 419.00	3.025	3.029	-0.004	1.000	3880709	2.46		98.4	10394	
463.00 > 169.00	3.025	3.029	-0.004	1.000	981725		3.95(1.90-5.69)		44517	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.025	3.029	-0.004	1.000	3989372	2.23		95.9	13889	
499.00 > 99.00	3.025	3.029	-0.004	1.000	881830		4.52(2.31-6.93)		12734	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.031	-0.006	1.000	3834125	2.64		106	68931	
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.031	-0.006	1.000	3750155	2.48		104	19899	
D 21 13C8 FOSA										
506.00 > 78.00	3.361	3.360	0.001	1.000	5077318	2.38		95.2	52600	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.361	3.368	-0.007	1.000	5294851	2.64		106	58078	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.379	3.377	0.002	1.000	1641091	2.35		98.1	51634	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.370	3.377	-0.007	1.000	3011060	2.39		99.7	27782	
549.00 > 99.00	3.370	3.377	-0.007	1.000	1133650		2.66(1.33-3.97)		10425	
D 26 M2-8:2FTS										
529.00 > 81.00	3.379	3.379	0.0	1.000	1240550	2.65		111	12097	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.389	3.386	0.003	1.000	3413576	2.44		97.4	12355	
513.00 > 169.00	3.389	3.386	0.003	1.000	627229		5.44(2.36-7.09)		16643	
D 23 13C2 PFDA										
515.00 > 470.00	3.389	3.388	0.001	1.000	3541948	2.89		116	58382	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.547	3.545	0.002	1.003	2121819	2.55		102	11625	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.538	3.547	-0.009	1.000	1971860	3.01		120	30710	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.698	3.706	-0.008	1.000	2529295	2.32		96.4	16494	
599.00 > 99.00	3.698	3.706	-0.008	1.000	878379		2.88(1.39-4.16)		17130	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.708	3.708	0.0	1.000	2092782	3.04		122	16295	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.719	3.717	0.002	1.000	2548946	2.59		104	6765	
563.00 > 169.00	3.719	3.717	0.002	1.000	623635		4.09(2.12-6.36)		16151	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.719	3.717	0.002	1.003	2046026	2.67		107	31063	
D 30 13C2 PFUnA										
565.00 > 520.00	3.719	3.719	0.0	1.000	3065661	3.07		123	52535	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.009	4.006	0.003	1.000	3527752	2.54		101	1959	
613.00 > 169.00	4.009	4.006	0.003	1.000	877879		4.02(2.13-6.40)		8083	
D 36 13C2 PFDoA										
615.00 > 570.00	4.009	4.009	0.0	1.000	3217425	2.89		116	31067	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.272	4.279	-0.007	1.000	3854895	2.59		104	2242	
663.00 > 169.00	4.272	4.279	-0.007	1.000	1197128		3.22(1.25-3.76)		9453	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.511	0.001	1.000	3852476	2.72		109	18606	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.511	0.001	1.000	990160	2.57		103	7150	
713.00 > 219.00	4.502	4.511	-0.009	0.998	707338		1.40(0.71-2.13)		5643	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.923	4.930	-0.007	1.000	5953534	2.73		109	13936	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.923	4.931	-0.007	1.000	5707168	2.51		100	1389	
813.00 > 169.00	4.923	4.931	-0.007	1.000	960055		5.94(2.86-8.58)		3402	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.278	5.284	-0.006	1.000	5483909	2.32		92.8	1312	
913.00 > 169.00	5.278	5.284	-0.006	1.000	702431		7.81(3.83-11.48)		2472	

Reagents:

LCPFC_LL5_00003 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 10:11:23 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_032.d

Injection Date: 07-Apr-2018 21:32:34 Instrument ID: A8_N

Lims ID: CCV L5

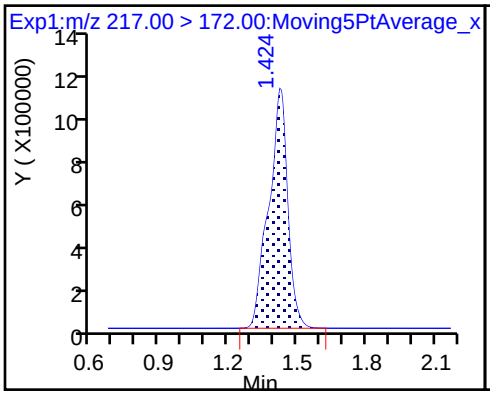
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 14

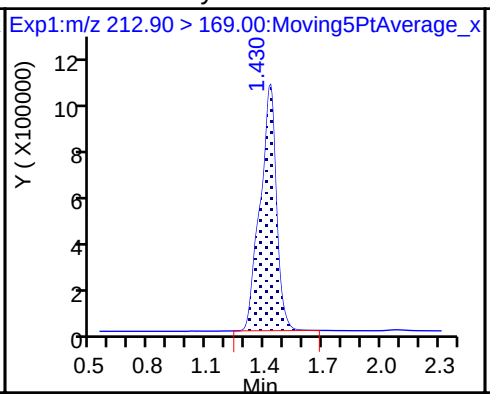
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

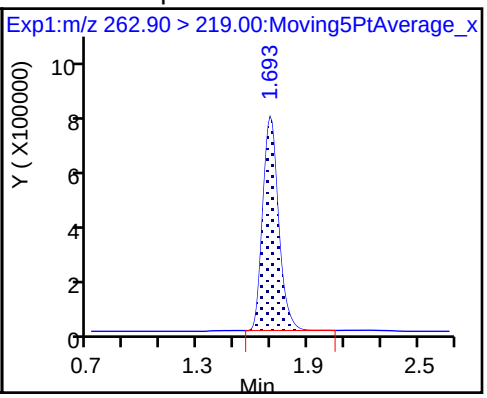
D 1 13C4 PFBA



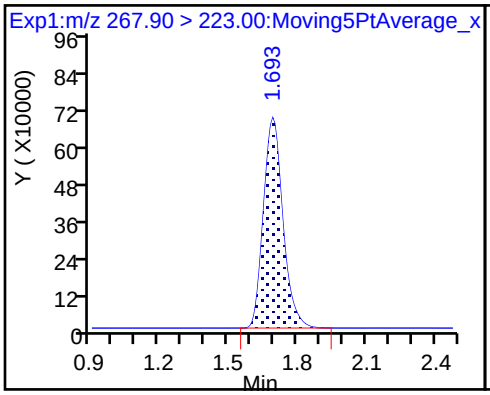
2 Perfluorobutyric acid



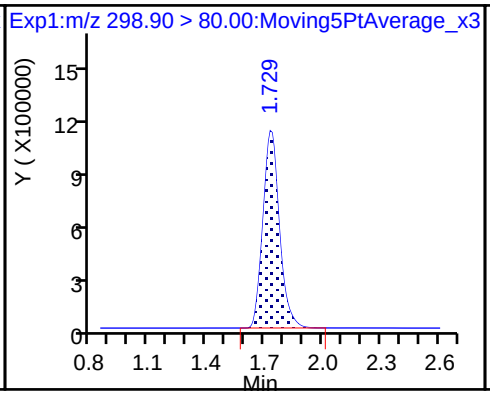
4 Perfluoropentanoic acid



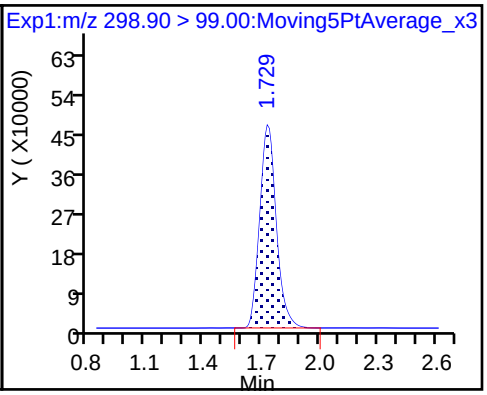
D 3 13C5-PFPeA



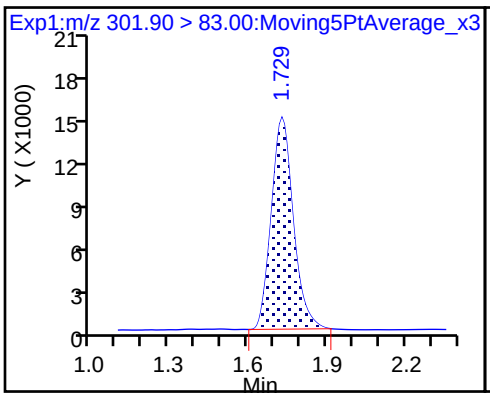
5 Perfluorobutanesulfonic acid



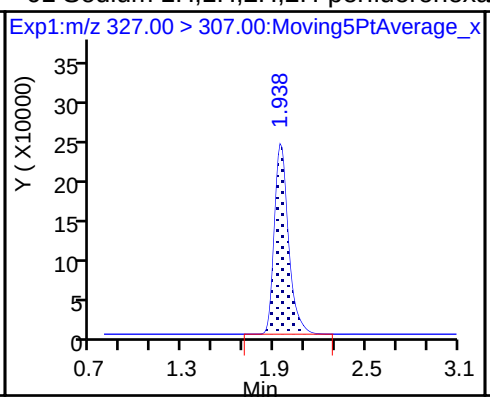
5 Perfluorobutanesulfonic acid



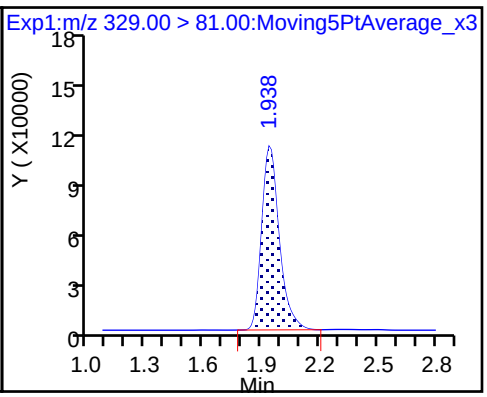
D 47 13C3-PFBS



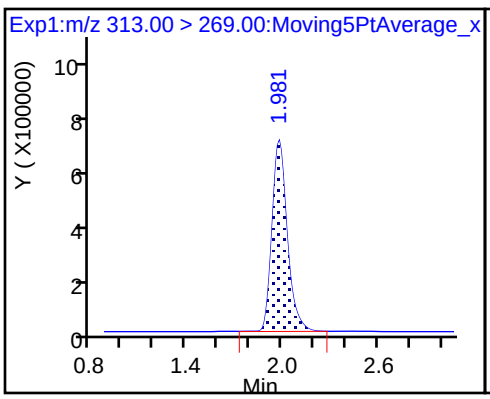
61 Sodium 1H,1H,2H,2H-perfluorohexa



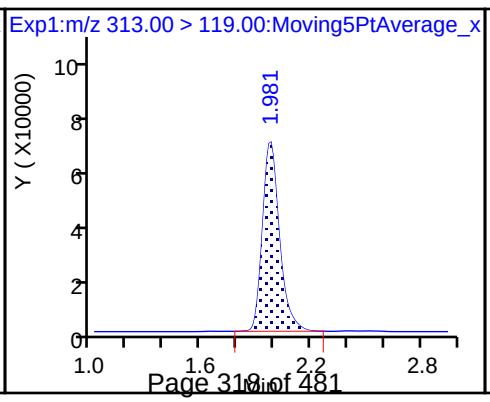
D 60 M2-4:2FTS



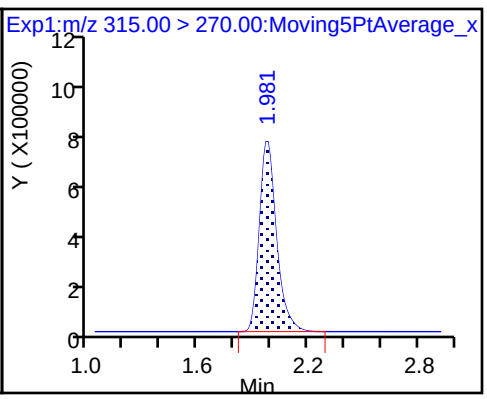
6 Perfluorohexanoic acid



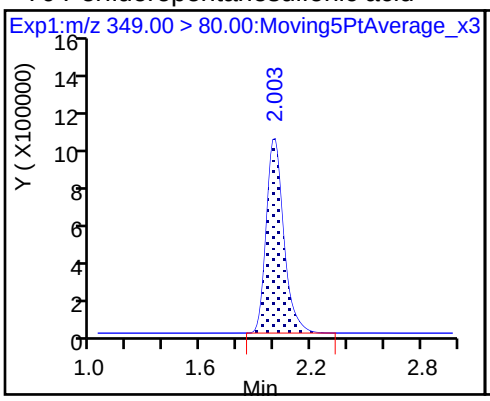
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



70 Perfluoropentanesulfonic acid



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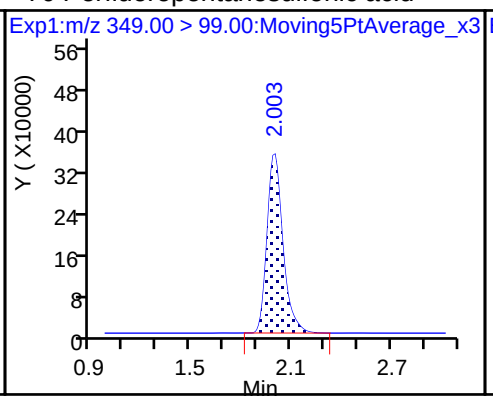
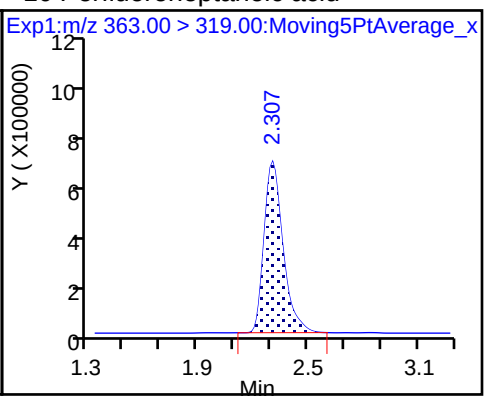
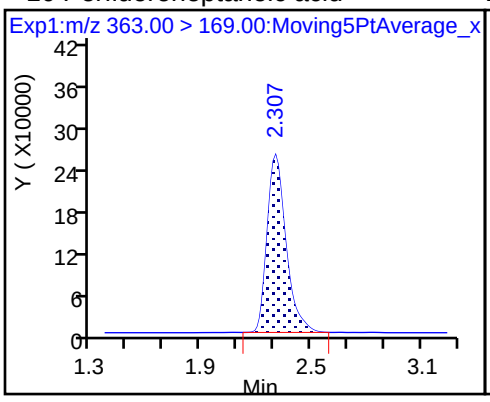


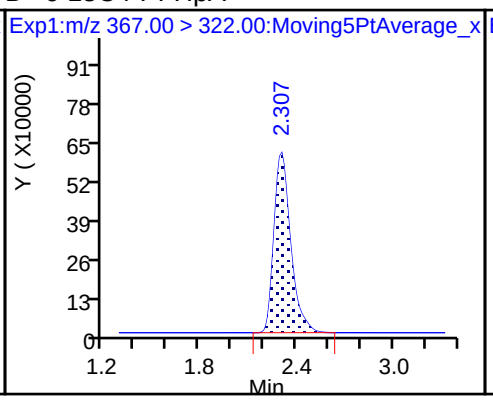
10 Perfluoroheptanoic acid



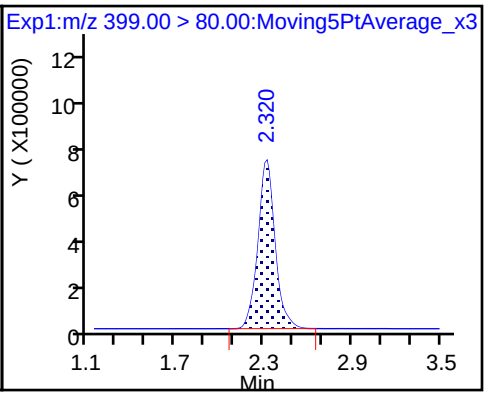
10 Perfluoroheptanoic acid



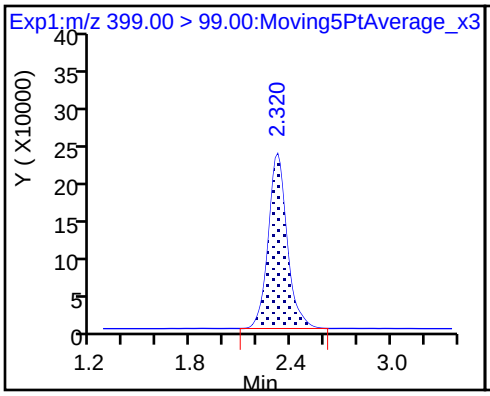
D 9 13C4-PFHpA



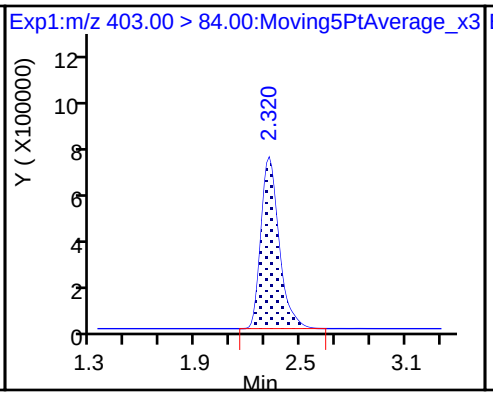
8 Perfluorohexanesulfonic acid



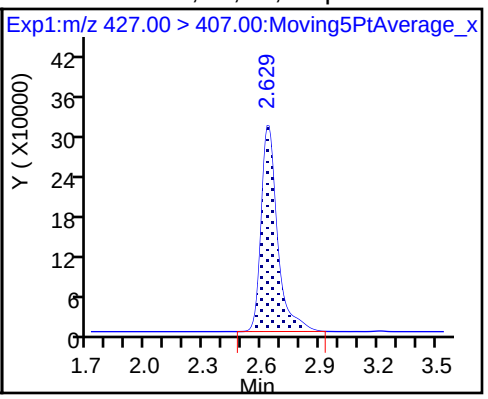
8 Perfluorohexanesulfonic acid



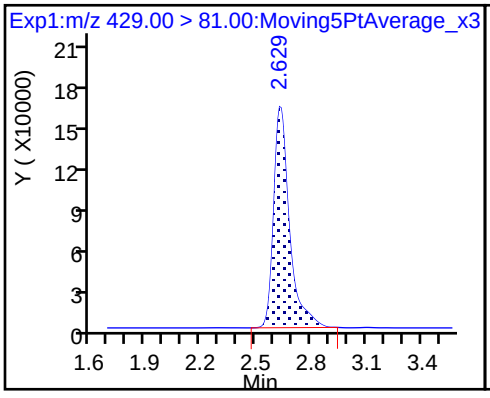
D 11 18O2 PFHxS



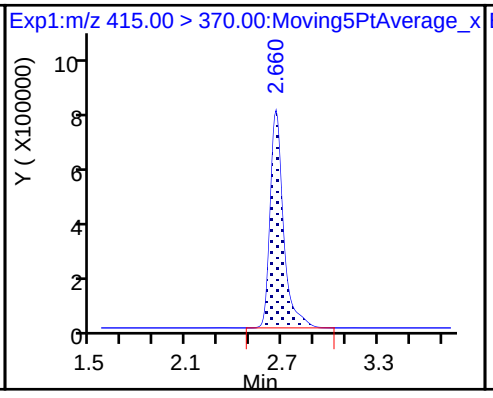
13 Sodium 1H,1H,2H,2H-perfluorooctane



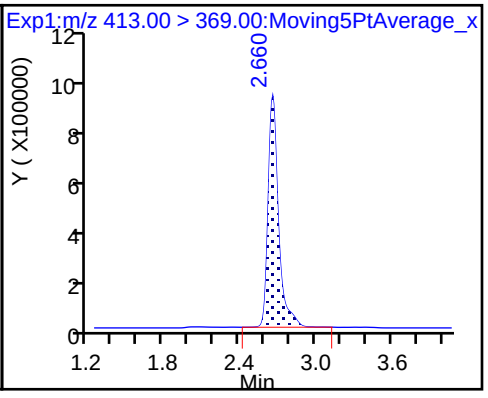
D 12 M2-6:2FTS



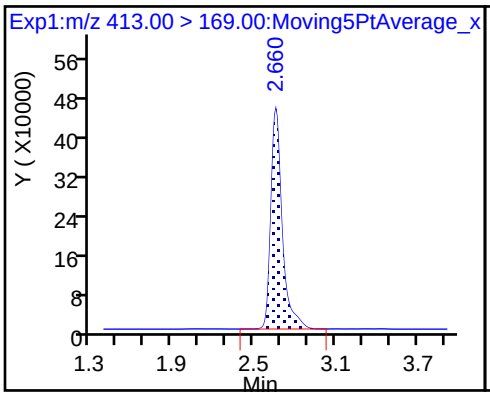
* 62 13C2-PFOA



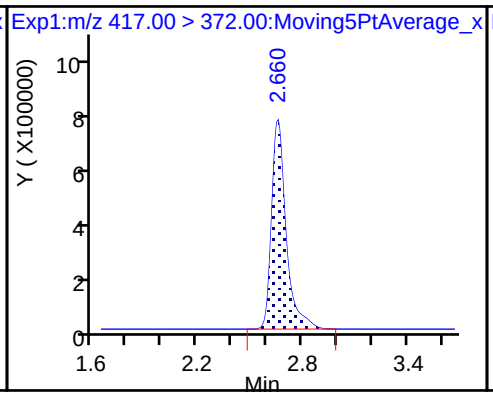
15 Perfluorooctanoic acid



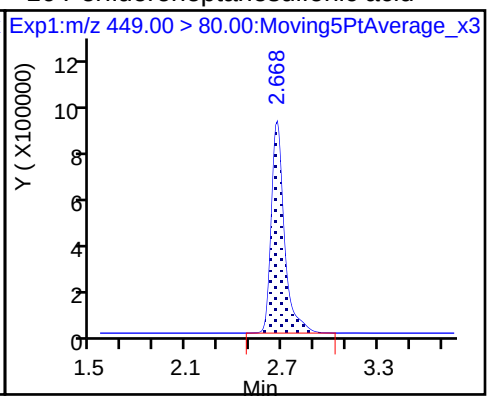
15 Perfluorooctanoic acid



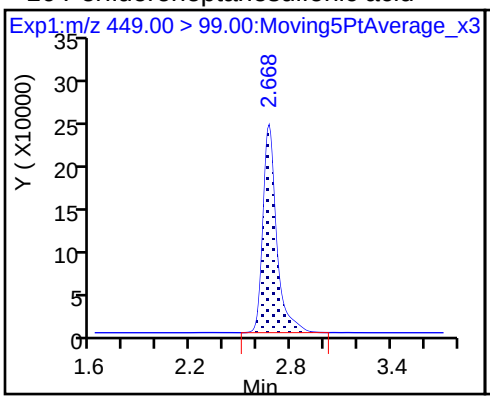
D 14 13C4 PFOA



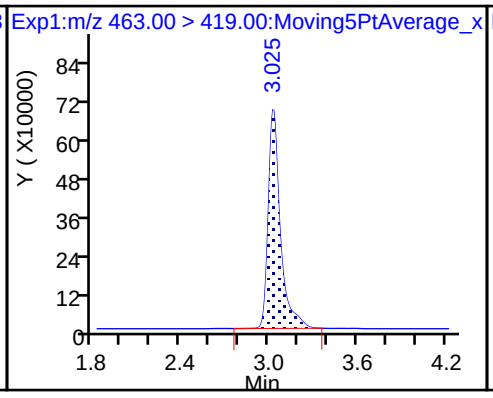
16 Perfluoroheptanesulfonic acid



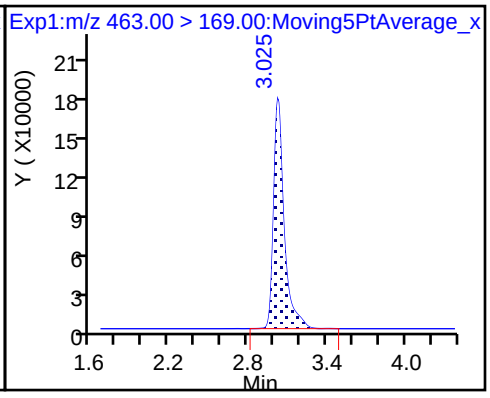
16 Perfluoroheptanesulfonic acid



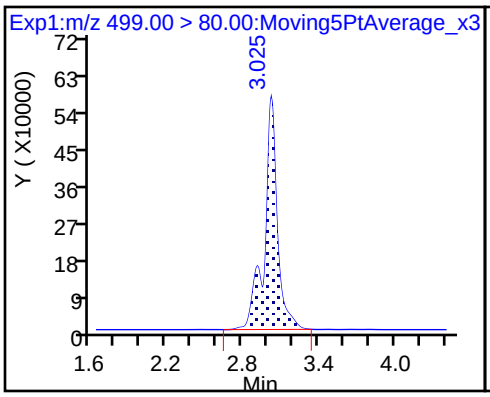
20 Perfluorononanoic acid



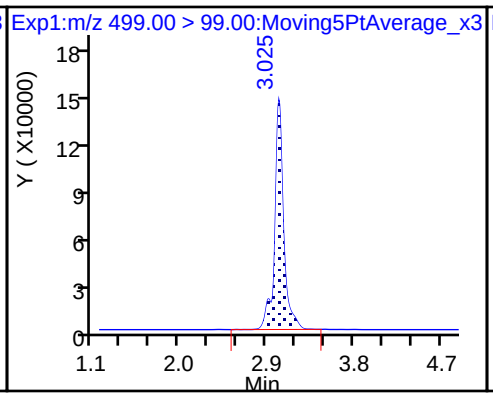
20 Perfluorononanoic acid



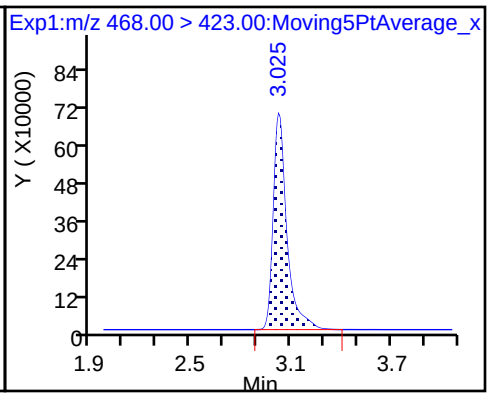
17 Perfluorooctane sulfonic acid



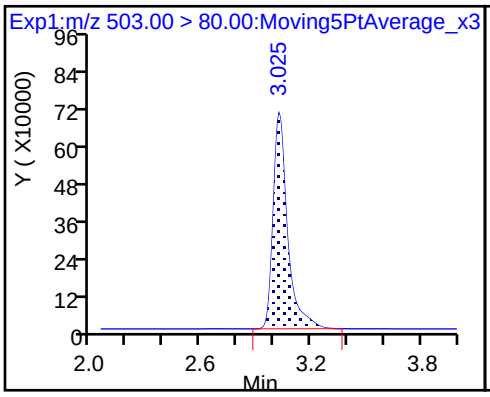
17 Perfluorooctane sulfonic acid



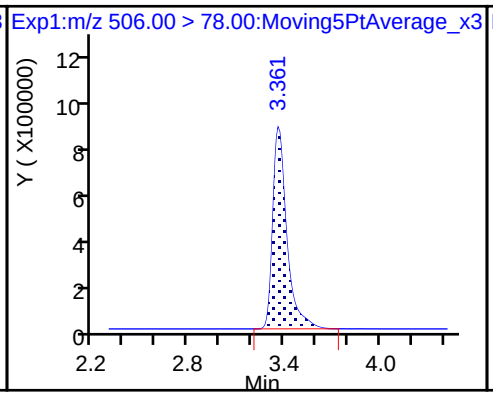
D 19 13C5 PFNA



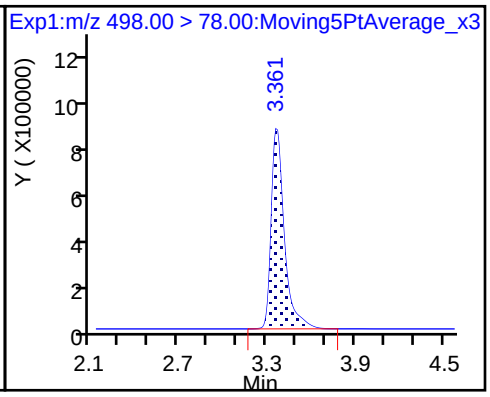
D 18 13C4 PFOS



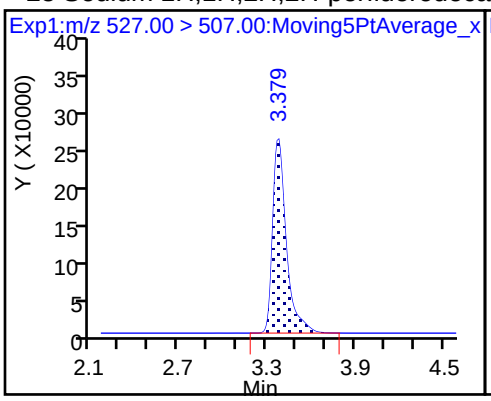
D 21 13C8 FOSA



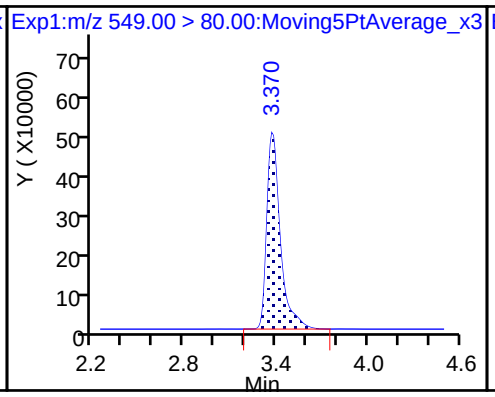
22 Perfluorooctane Sulfonamide



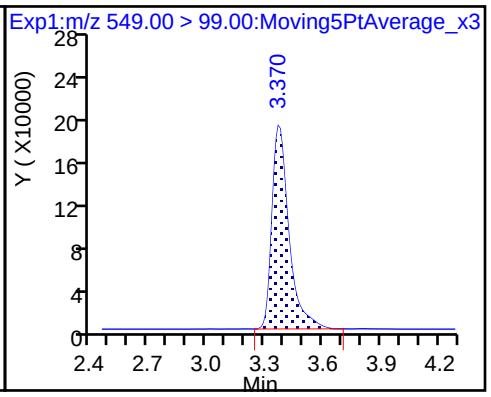
25 Sodium 1H,1H,2H,2H-perfluorodecane



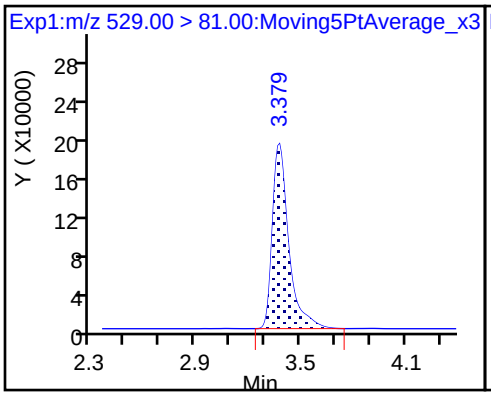
68 Perfluorononanesulfonic acid



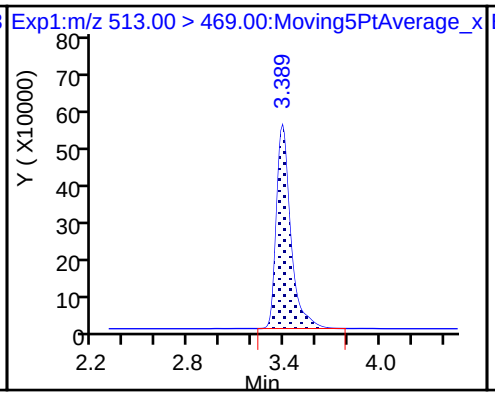
68 Perfluorononanesulfonic acid



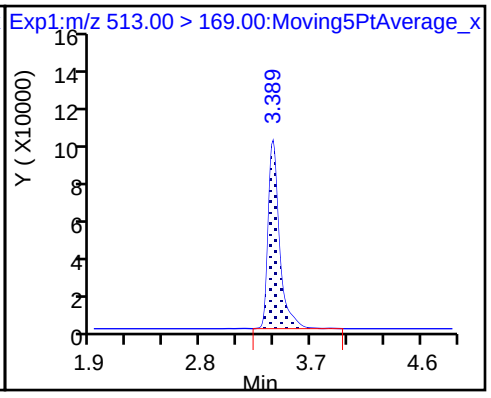
D 26 M2-8:2FTS



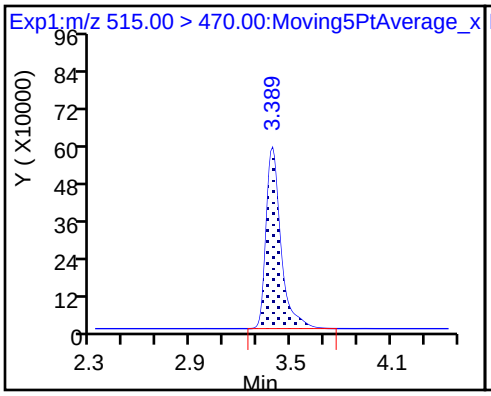
24 Perfluorodecanoic acid



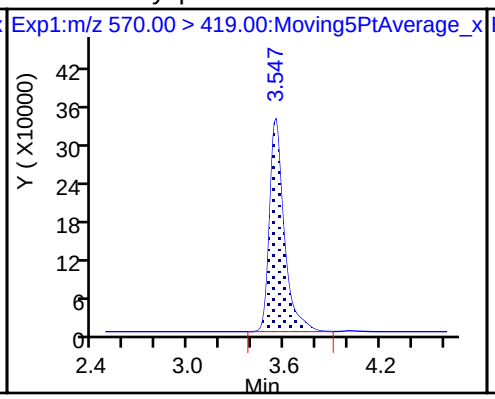
24 Perfluorodecanoic acid



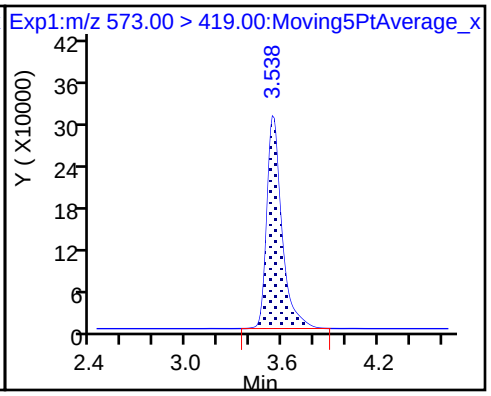
D 23 13C2 PFDA



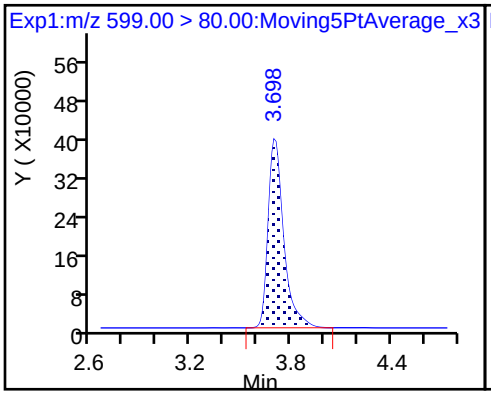
28 N-methyl perfluorooctane sulfonami



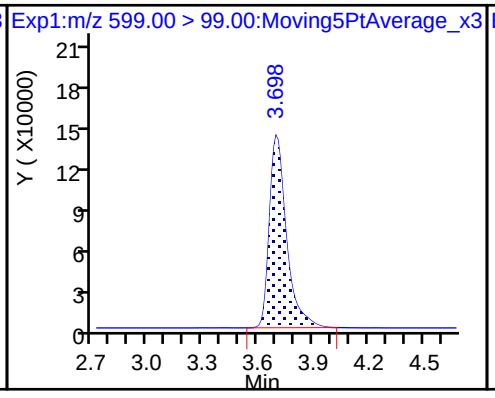
D 27 d3-NMeFOSAA



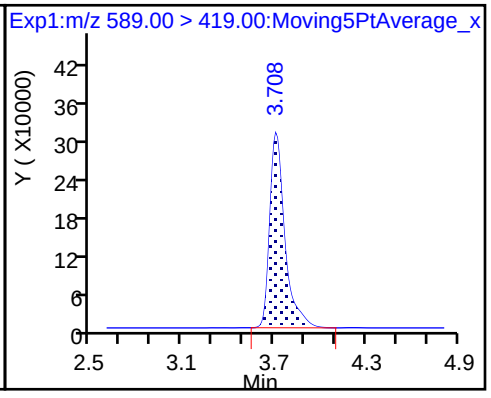
29 Perfluorodecane Sulfonic acid



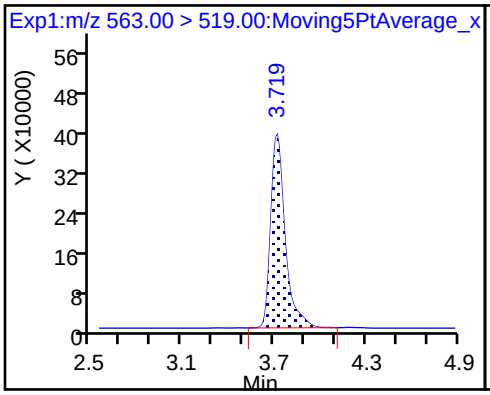
29 Perfluorodecane Sulfonic acid



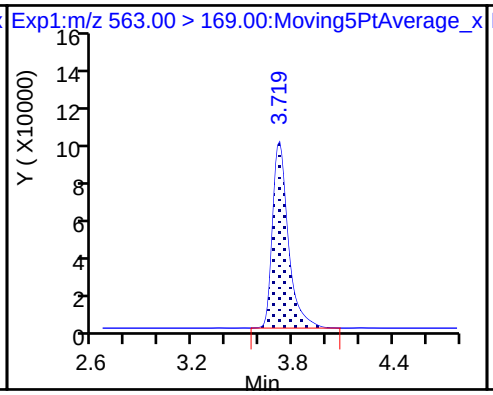
D 32 d5-NEtFOSAA



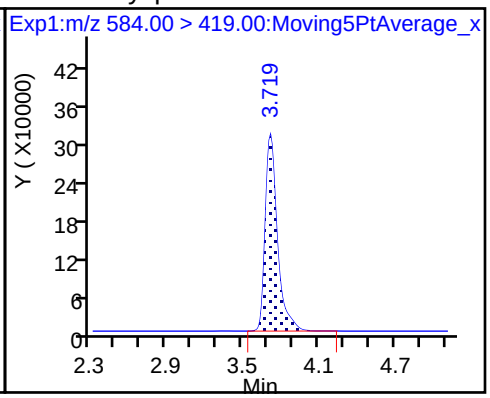
31 Perfluoroundecanoic acid



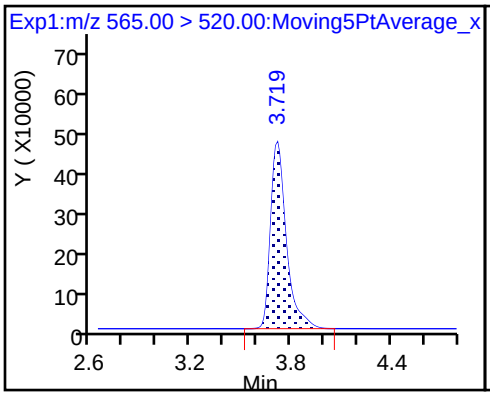
31 Perfluoroundecanoic acid



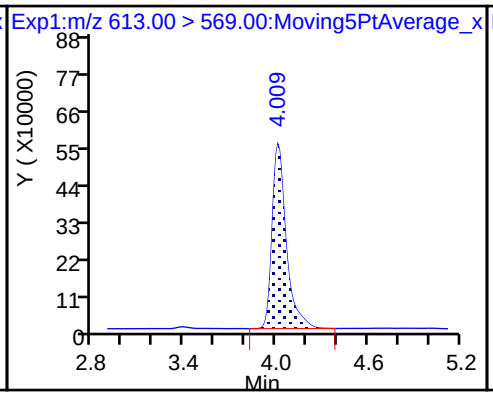
33 N-ethyl perfluorooctane sulfonamid



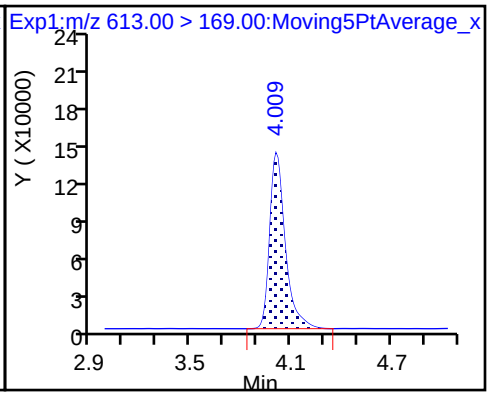
D 30 13C2 PFUnA



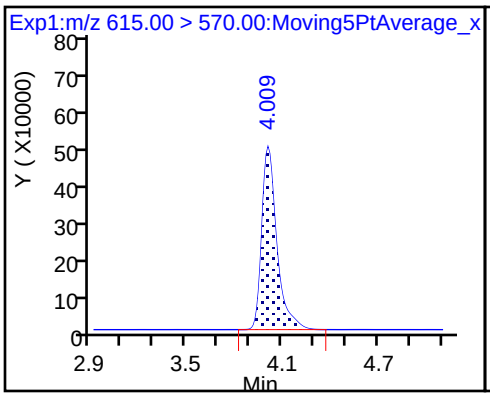
37 Perfluorododecanoic acid



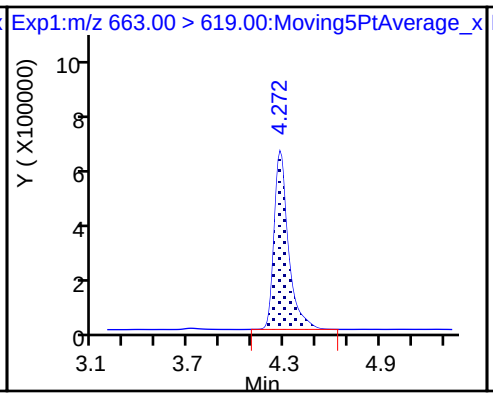
37 Perfluorododecanoic acid



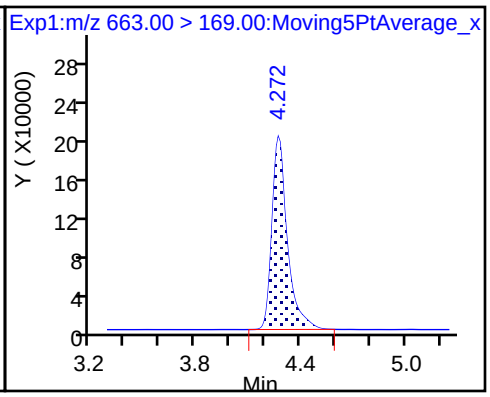
D 36 13C2 PFDoA



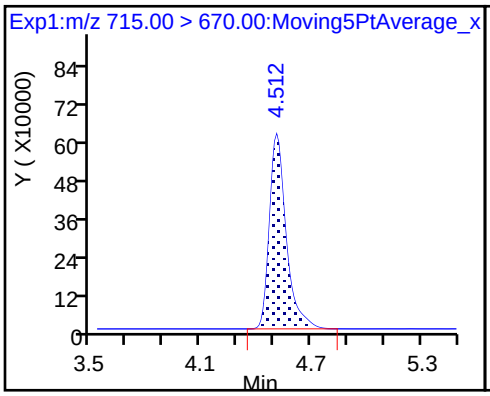
41 Perfluorotridecanoic acid



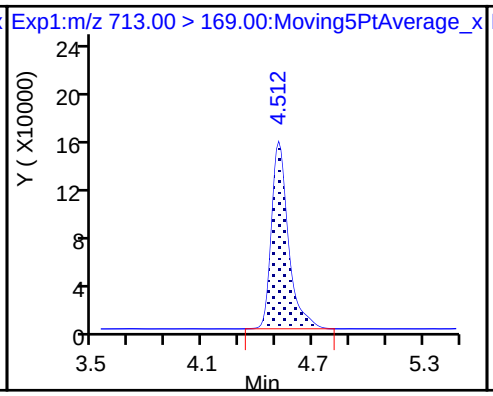
41 Perfluorotridecanoic acid



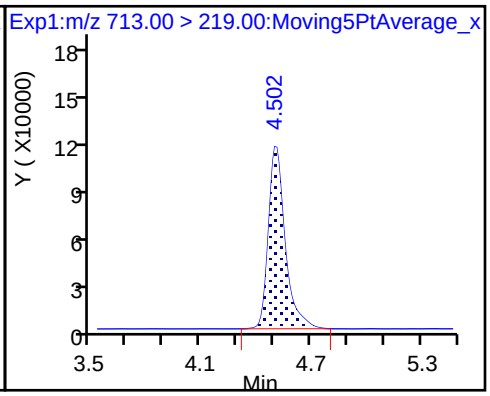
D 43 13C2-PFTeDA



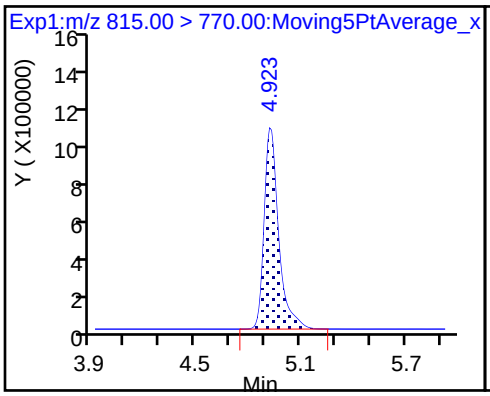
42 Perfluorotetradecanoic acid



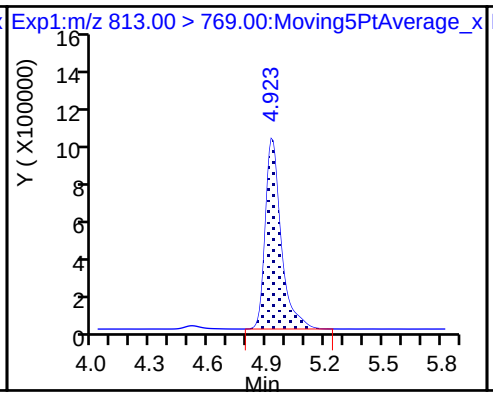
42 Perfluorotetradecanoic acid



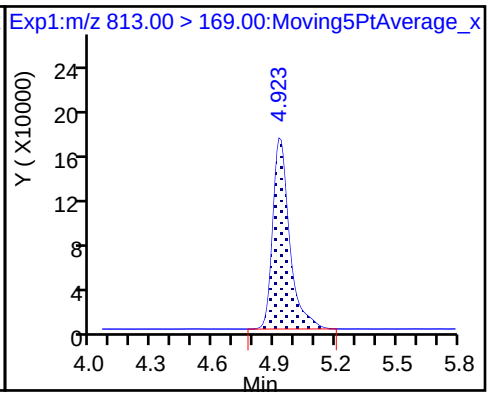
D 44 13C2-PFHxDA



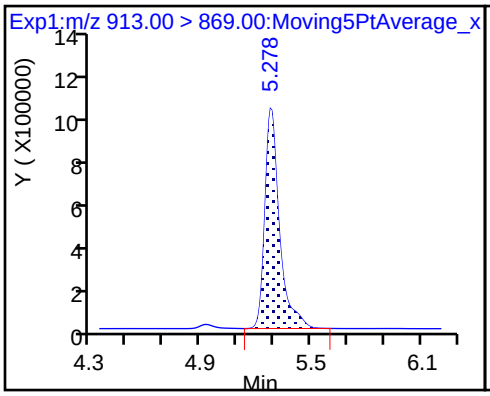
45 Perfluorohexadecanoic acid



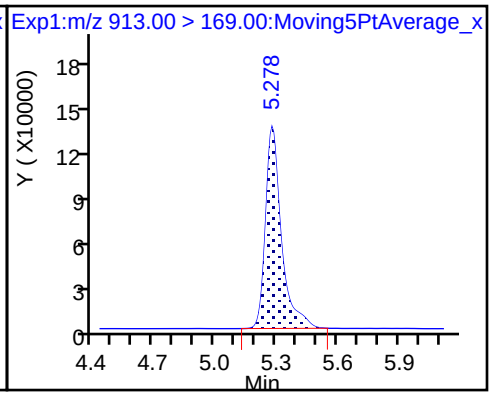
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216866/17 Calibration Date: 04/07/2018 21:56

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9081		0.983	1.00	-1.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.129		0.943	1.00	-5.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	75.91		0.851	0.884	-3.8	50.0
4:2 FTS	AveID	17.26	16.96		0.918	0.934	-1.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	1.001		0.979	1.00	-2.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	68.74		0.906	0.938	-3.5	50.0
HFPO-DA (GenX)	AveID	3.401	3.411		1.00	1.00	0.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.038		0.955	1.00	-4.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.035		0.843	0.910	-7.4	40.0
Adona	AveID	3.564	3.485		0.978	1.00	-2.2	50.0
6:2FTS	AveID	1.868	1.899		0.964	0.948	1.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.126		0.949	1.00	-5.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.282		0.916	0.952	-3.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.025		0.996	1.00	-0.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.017		0.826	0.928	-11.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.857		0.925	0.932	-0.7	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	0.9809		0.993	1.00	-0.7	40.0
8:2FTS	AveID	1.349	1.228		0.872	0.958	-9.0	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7471		0.895	0.960	-6.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	0.9855		0.996	1.00	-0.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	1.071		1.02	1.00	1.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6588		0.915	0.964	-5.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9026		0.984	1.00	-1.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8057		1.00	1.00	0.4	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	2.804		0.910	0.942	-3.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.076		0.996	1.00	-0.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.069		0.925	1.00	-7.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2484		0.995	1.00	-0.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9139		0.944	1.00	-5.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216866/17 Calibration Date: 04/07/2018 21:56

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.07LLB_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.8980		0.905	1.00	-9.5	50.0
13C4 PFBA	Ave	1.382	1.332		2.41	2.50	-3.6	50.0
13C5 PFPeA	Ave	0.8994	0.8668		2.41	2.50	-3.6	50.0
13C3-PFBS	Ave	0.0206	0.0200		2.26	2.33	-2.8	50.0
M2-4:2FTS	Ave	0.1573	0.1493		2.22	2.34	-5.1	50.0
13C2 PFHxA	Ave	0.9916	0.9301		2.35	2.50	-6.2	50.0
13C3 HFPO-DA	Ave	0.0494	0.0473		2.40	2.50	-4.1	50.0
13C4-PFHpA	Ave	0.9533	0.9652		2.53	2.50	1.2	50.0
18O2 PFHxS	Ave	1.189	1.167		2.32	2.37	-1.8	50.0
M2-6:2FTS	Ave	0.2203	0.2318		2.50	2.38	5.2	40.0
13C4 PFOA	Ave	0.9372	0.9241		2.47	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8257	0.8485		2.46	2.39	2.8	50.0
13C5 PFNA	Ave	0.7930	0.8186		2.58	2.50	3.2	50.0
13C8 FOSA	Ave	1.166	1.080		2.32	2.50	-7.4	50.0
M2-8:2FTS	Ave	0.2562	0.2881		2.69	2.40	12.5	40.0
13C2 PFDA	Ave	0.6698	0.7326		2.73	2.50	9.4	50.0
d3-NMeFOSAA	Ave	0.3583	0.4246		2.96	2.50	18.5	50.0
d5-NEtFOSAA	Ave	0.3760	0.4563		3.03	2.50	21.4	50.0
13C2 PFUnA	Ave	0.5468	0.6488		2.97	2.50	18.7	50.0
13C2 PFDoA	Ave	0.6087	0.6884		2.83	2.50	13.1	50.0
13C2-PFTeDA	Ave	0.7733	0.7720		2.50	2.50	-0.2	50.0
13C2-PFHxDA	Ave	1.194	1.121		2.35	2.50	-6.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_035.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 07-Apr-2018 21:56:08 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:13:22 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 10:13:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.424	1.424	0.0	1.000	6416237	2.41		96.4	51915	
2 Perfluorobutyric acid										
212.90 > 169.00	1.429	1.429	0.0	1.004	2330634	0.9826		98.3	768	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.692	0.0	1.000	1884685	0.9431		94.3	1345	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.693	-0.001	0.559	4174247	2.41		96.4	71552	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.728	1.728	0.0	1.000	2588833	0.8505		96.2	10470	
298.90 > 99.00	1.728	1.728	0.0	1.000	1091548		2.37(1.25-3.74)		7318	
D 47 13C3-PFBS										
301.90 > 83.00	1.728	1.729	-0.001	1.000	89701	2.26		97.2	539	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.948	0.0	1.000	611072	0.9179		98.3	23818	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.949	-0.001	1.000	671665	2.22		94.9	6615	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.980	1.980	0.0	1.000	1794054	0.9786		97.9	3587	
313.00 > 119.00	1.980	1.980	0.0	1.000	161667		11.10(5.03-15.10)		2780	
D 7 13C2 PFHxA										
315.00 > 270.00	1.980	1.981	-0.001	1.000	4479107	2.34		93.8	99227	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.002	2.002	0.0	1.000	2487790	0.9056		96.5	20235	
349.00 > 99.00	2.002	2.002	0.0	1.000	924234		2.69(1.36-4.07)		12996	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.082	2.082	0.0	1.000	311062	1.00		100	1804	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.083	-0.001	1.000	227989	2.40		95.9	4250	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.306	2.306	0.0	1.000	1930272	0.9555		95.5	2278	
363.00 > 169.00	2.306	2.306	0.0	1.000	738329		2.61(1.13-3.40)		3561	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.307	-0.001	1.000	4648319	2.53		101	94521	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.319	0.0	1.000	2116105	0.8430		92.6	4932	
399.00 > 99.00	2.319	2.319	0.0	1.000	698787		3.03(1.50-4.49)		2676	
D 11 18O2 PFHxS										
403.00 > 84.00	2.319	2.320	-0.001	1.000	5314932	2.32		98.2	74904	
65 Adona										
377.00 > 251.00	2.345	2.345	0.0	1.000	5695509	0.9778		97.8	67295	
377.00 > 85.00	2.345	2.345	0.0	1.000	3306672		1.72(0.84-2.53)		42930	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.636	2.636	0.0	1.000	803736	0.9638		102	7122	
D 12 M2-6:2FTS										
429.00 > 81.00	2.636	2.637	-0.001	1.000	1060488	2.50		105	14549	
* 62 13C2-PFOA										
415.00 > 370.00	2.659	2.659	0.0		4815973	2.50			96242	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.659	2.659	0.0	1.000	2004129	0.9494		94.9	932	
413.00 > 169.00	2.659	2.659	0.0	1.000	1023393		1.96(0.84-2.52)		2919	
D 14 13C4 PFOA										
417.00 > 372.00	2.659	2.660	-0.001	1.000	4450600	2.47		98.6	88008	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.667	2.667	0.0	1.000	1995269	0.9160		96.2	16526	
449.00 > 99.00	2.667	2.667	0.0	1.000	517248		3.86(1.94-5.82)		8496	
20 Perfluorononanoic acid										
463.00 > 419.00	3.029	3.029	0.0	1.000	1615856	1.00		99.6	7025	
463.00 > 169.00	3.029	3.029	0.0	1.000	388472		4.16(1.90-5.69)		11628	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.029	3.029	0.0	1.000	1543216	0.8263		89.0	8789	
499.00 > 99.00	3.022	3.029	-0.007	0.998	353299		4.37(2.31-6.93)		3176	
D 19 13C5 PFNA										
468.00 > 423.00	3.029	3.031	-0.002	1.000	3942488	2.58		103	118456	
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.031	-0.002	1.000	3906336	2.46		103	24614	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.237	0.0	1.000	2828381	0.9254		99.3	51281	
D 21 13C8 FOSA										
506.00 > 78.00	3.368	3.360	0.008	1.000	5202846	2.32		92.6	47324	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.368	3.368	0.0	1.000	2041444	0.99		99.3	36916	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.377	3.377	0.0	1.000	652659	0.8719		91.0	21001	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.377	3.377	0.0	1.000	1172258	0.8945		93.2	10390	
549.00 > 99.00	3.377	3.377	0.0	1.000	462452		2.53(1.33-3.97)		7736	
D 26 M2-8:2FTS										
529.00 > 81.00	3.377	3.379	-0.002	1.000	1329095	2.69		112	9600	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.386	3.386	0.0	1.000	1390788	1.00		99.6	4622	
513.00 > 169.00	3.386	3.386	0.0	1.000	251471		5.53(2.36-7.09)		4194	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.388	-0.002	1.000	3528217	2.73		109	83638	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.545	3.545	0.0	1.000	876083	1.02		102	5543	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.545	3.547	-0.002	1.000	2044750	2.96		119	29748	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.706	3.706	0.0	1.000	1038063	0.9154		95.0	7364	
599.00 > 99.00	3.706	3.706	0.0	1.000	346563		3.00(1.39-4.16)		4860	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.706	3.708	-0.002	1.000	2197616	3.03		121	16522	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.717	3.717	0.0	1.000	1006899	1.00		100	2288	
563.00 > 169.00	3.717	3.717	0.0	1.000	241486		4.17(2.12-6.36)		4662	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.717	3.717	0.0	1.003	793414	0.9842		98.4	8038	
D 30 13C2 PFUnA										
565.00 > 520.00	3.717	3.719	-0.002	1.000	3124469	2.97		119	80148	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.874	3.874	0.0	1.000	4316496	0.9099		96.6	69744	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.006	4.006	0.0	1.000	1427240	1.00		99.6	844	
613.00 > 169.00	4.017	4.006	0.011	1.003	334119		4.27(2.13-6.40)		3041	
D 36 13C2 PFDoA										
615.00 > 570.00	4.006	4.009	-0.003	1.000	3315520	2.83		113	26025	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.279	0.0	1.000	1418106	0.9250		92.5	778	
663.00 > 169.00	4.279	4.279	0.0	1.000	466615		3.04(1.25-3.76)		4228	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.511	4.511	0.0	1.000	3718085	2.50		99.8	19689	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.511	4.511	0.0	1.000	369470	0.99		99.5	2946	
713.00 > 219.00	4.511	4.511	0.0	1.000	262320		1.41(0.71-2.13)		2288	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.931	4.930	0.0	1.000	5399730	2.35		93.9	11214	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.931	4.931	0.0	1.000	1973938	0.9438		94.4	495	
813.00 > 169.00	4.931	4.931	0.0	1.000	335185		5.89(2.86-8.58)		1319	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.284	5.284	0.0	1.000	1939638	0.9045		90.5	519	
913.00 > 169.00	5.277	5.284	-0.007	0.999	254871		7.61(3.83-11.48)		895	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 10:13:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_035.d

Injection Date: 07-Apr-2018 21:56:08 Instrument ID: A8_N

Lims ID: CCV L4

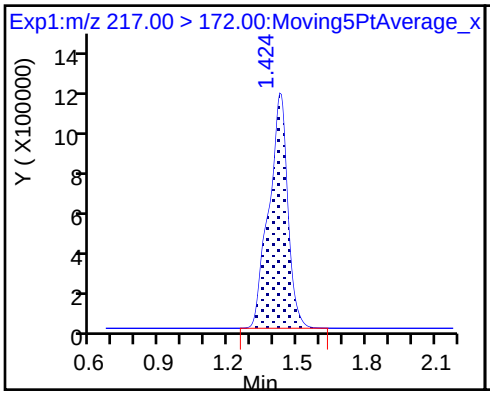
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 17

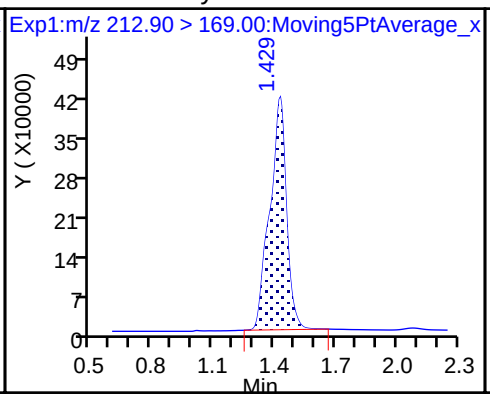
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

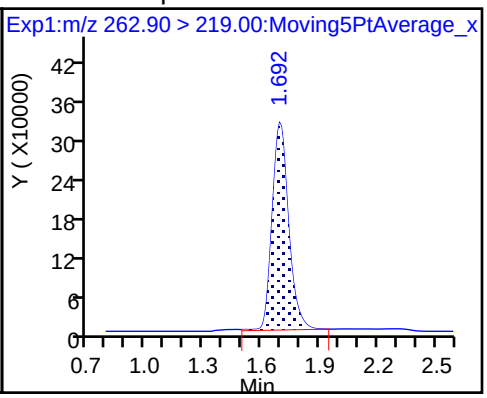
D 1 13C4 PFBA



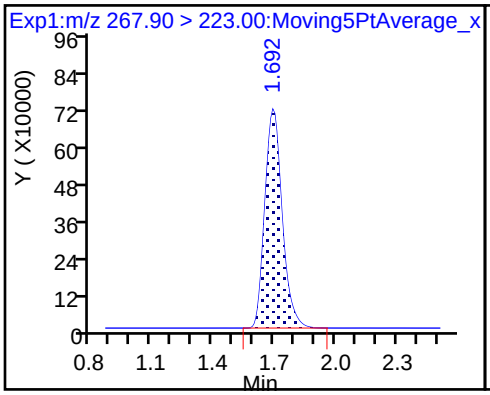
2 Perfluorobutyric acid



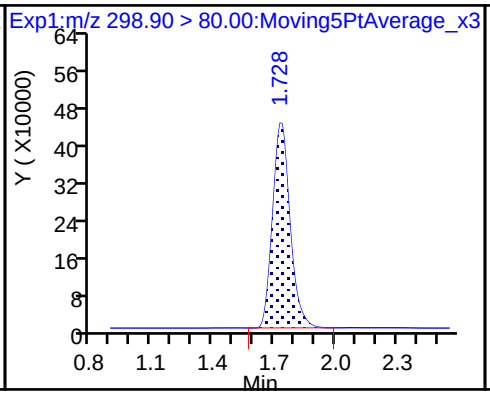
4 Perfluoropentanoic acid



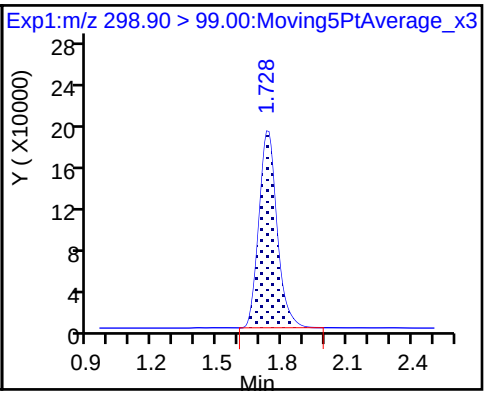
D 3 13C5-PFPeA



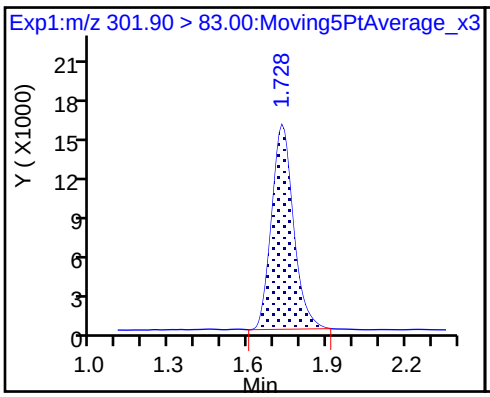
5 Perfluorobutanesulfonic acid



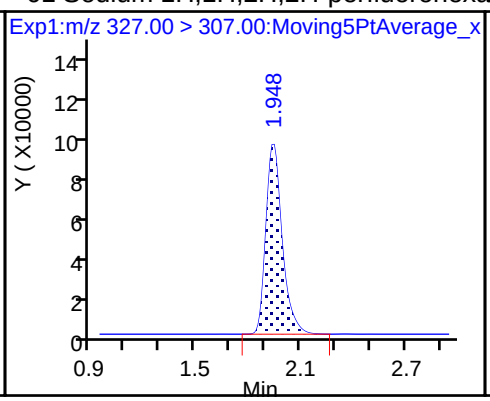
5 Perfluorobutanesulfonic acid



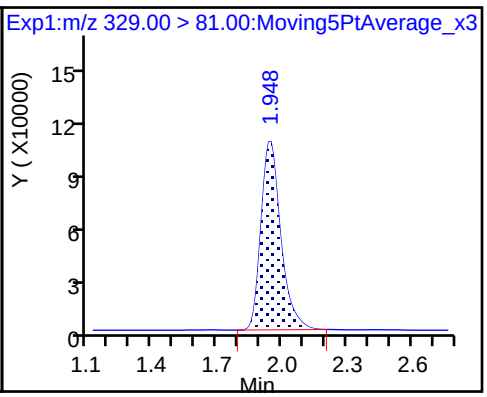
D 47 13C3-PFBS



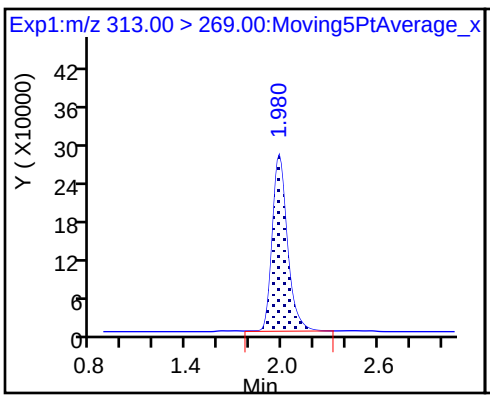
61 Sodium 1H,1H,2H,2H-perfluorohexane



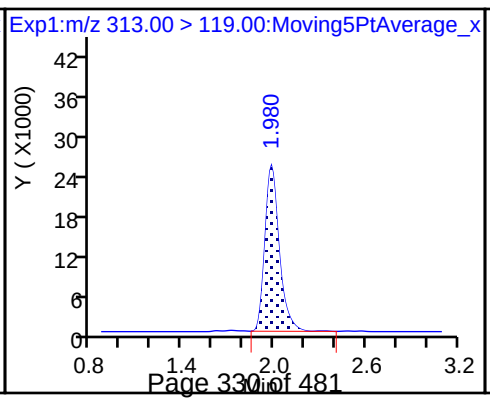
D 60 M2-4:2FTS



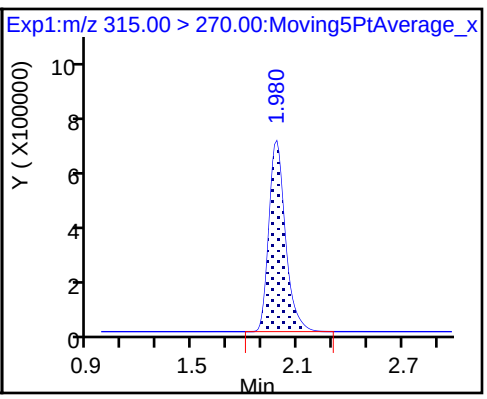
6 Perfluorohexanoic acid



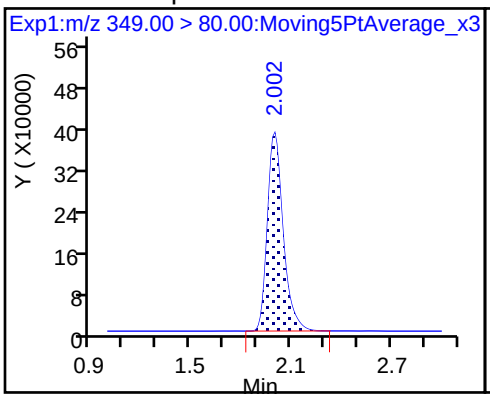
6 Perfluorohexanoic acid



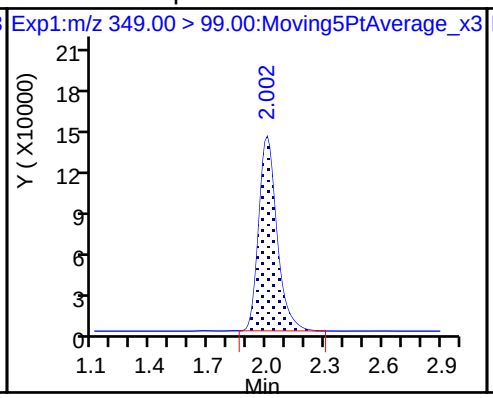
D 7 13C2 PFHxA



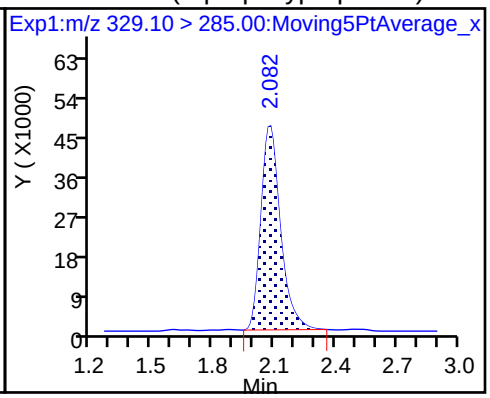
70 Perfluoropentanesulfonic acid



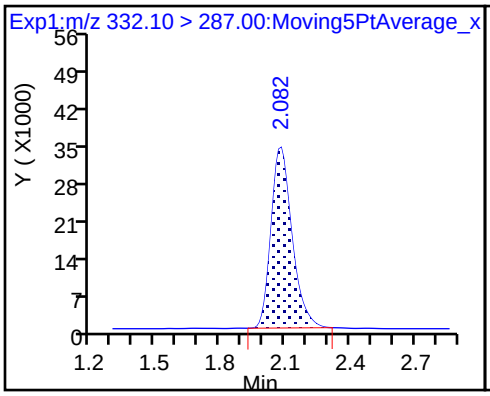
70 Perfluoropentanesulfonic acid



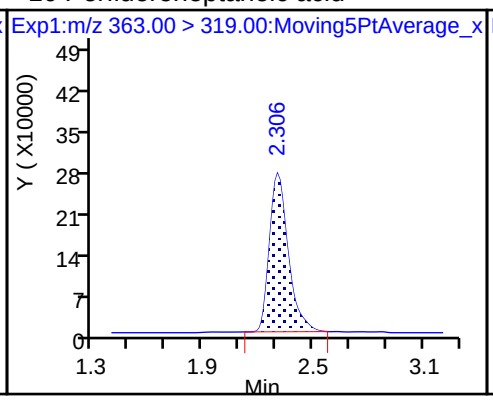
67 Perfluoro(2-propoxypropanoic) acid



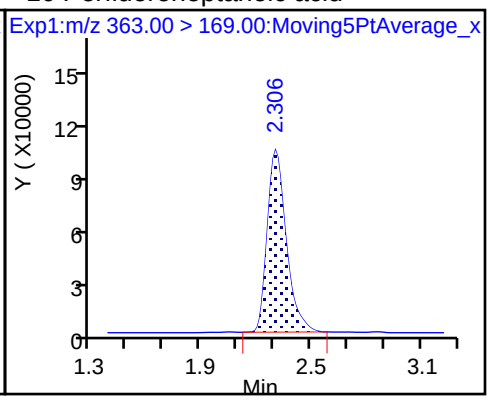
D 64 13C3 HFPO-DA



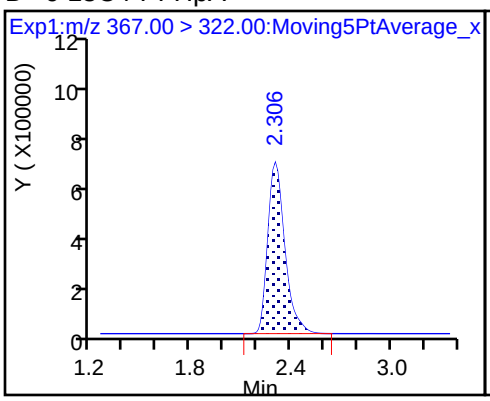
10 Perfluoroheptanoic acid



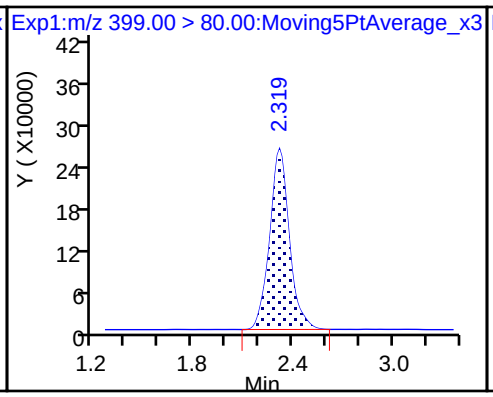
10 Perfluoroheptanoic acid



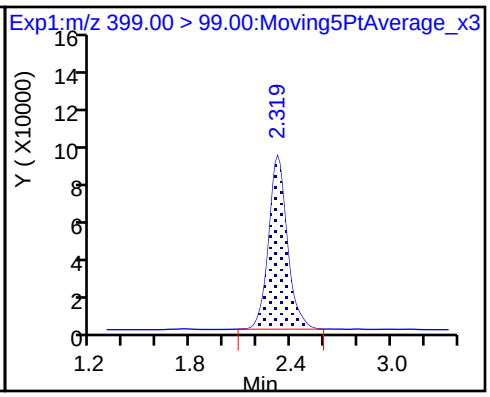
D 9 13C4-PFHpA



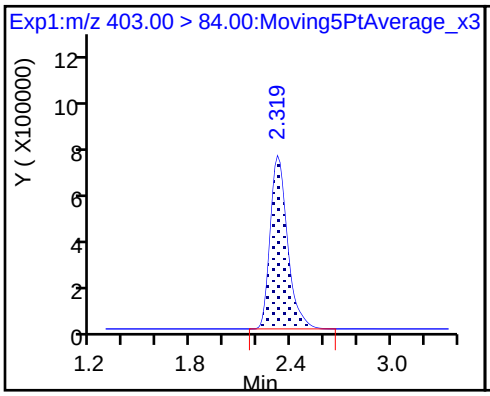
8 Perfluorohexanesulfonic acid



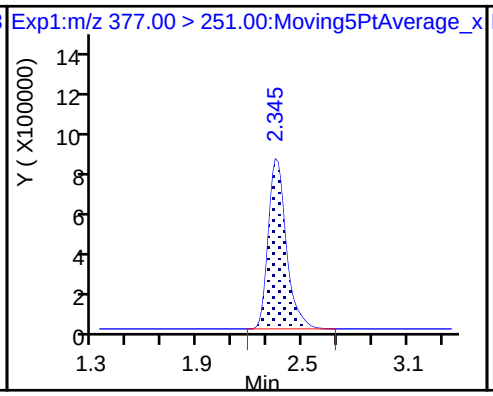
8 Perfluorohexanesulfonic acid



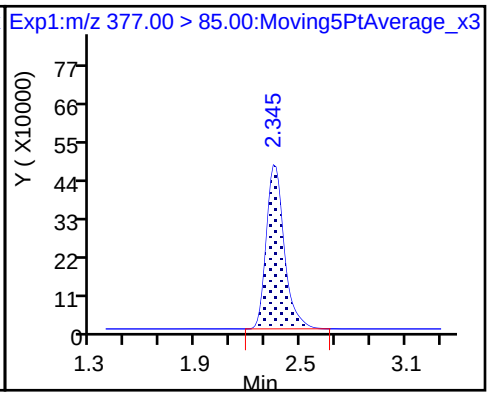
D 11 18O2 PFHxS



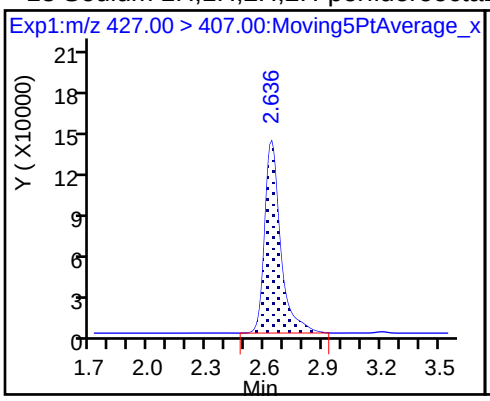
65 Adona



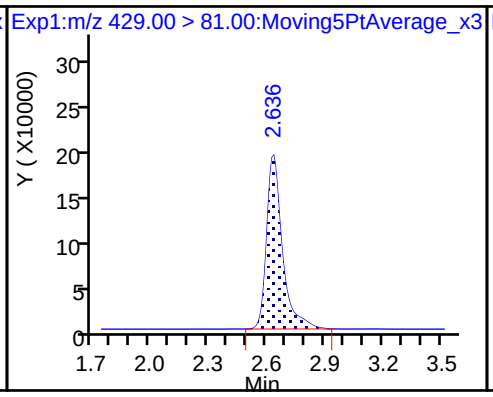
65 Adona



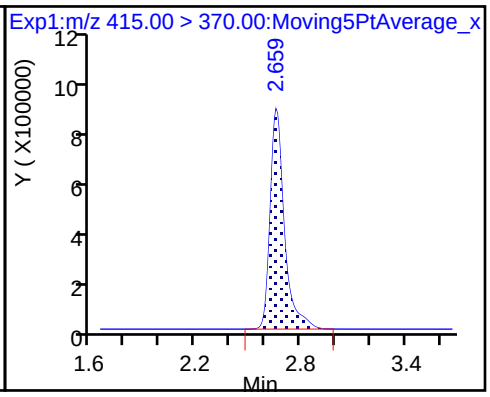
13 Sodium 1H,1H,2H,2H-perfluorooctane



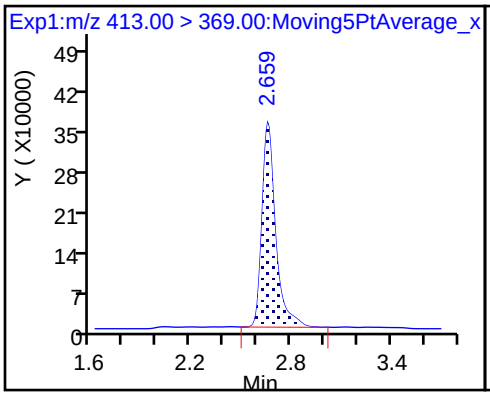
D 12 M2-6:2FTS



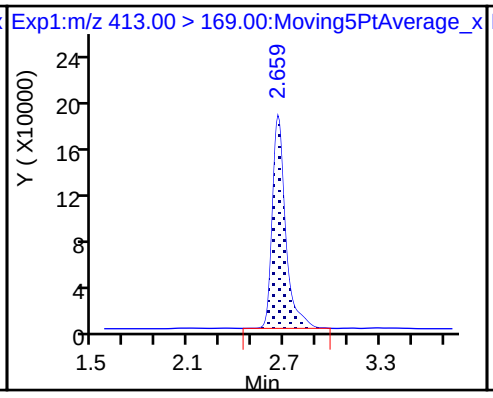
* 62 13C2-PFOA



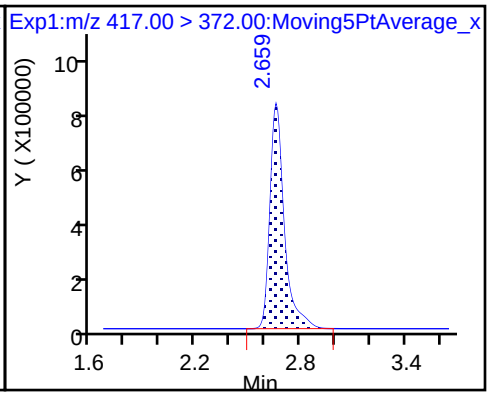
15 Perfluorooctanoic acid



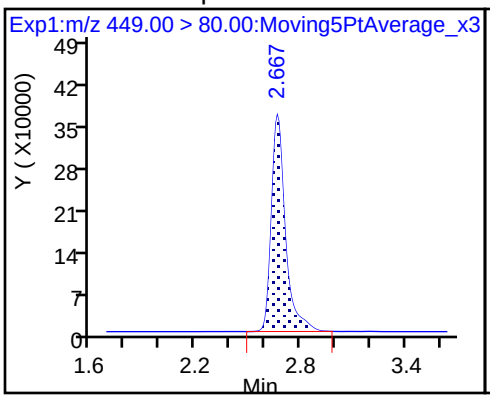
15 Perfluorooctanoic acid



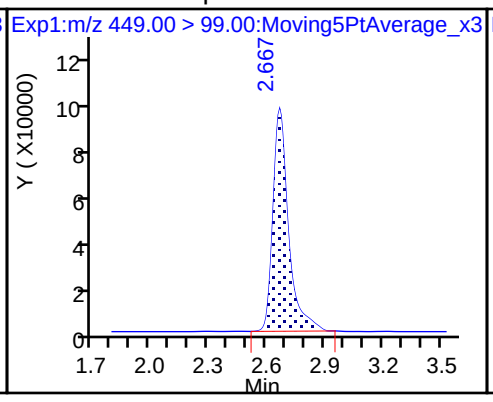
D 14 13C4 PFOA



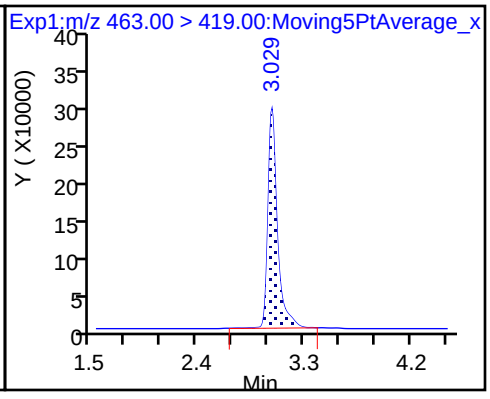
16 Perfluoroheptanesulfonic acid



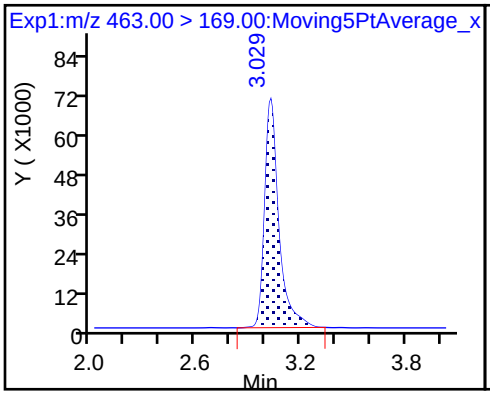
16 Perfluoroheptanesulfonic acid



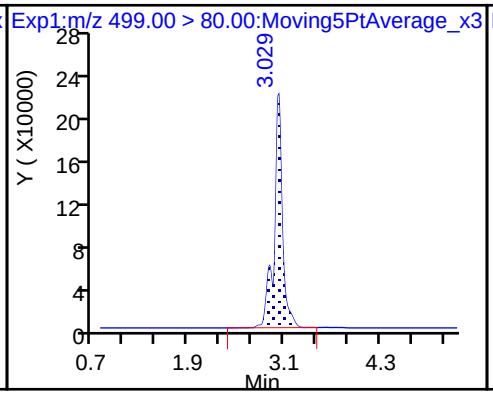
20 Perfluorononanoic acid



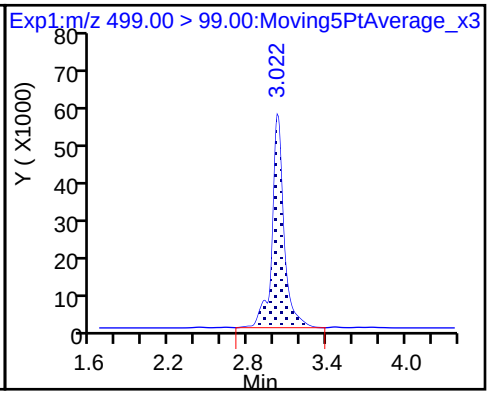
20 Perfluorononanoic acid



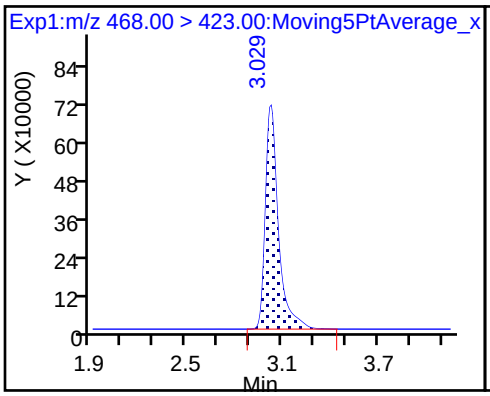
17 Perfluorooctane sulfonic acid



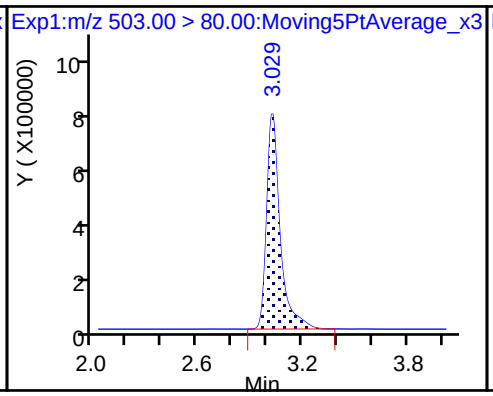
17 Perfluorooctane sulfonic acid



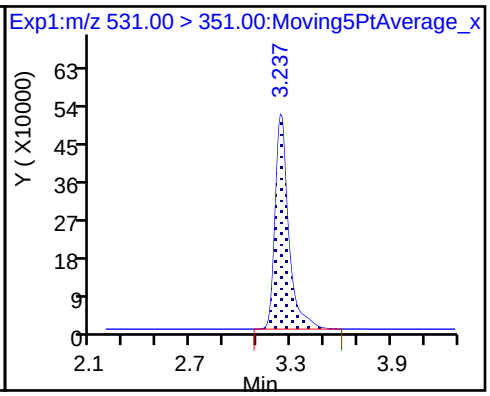
D 19 13C5 PFNA



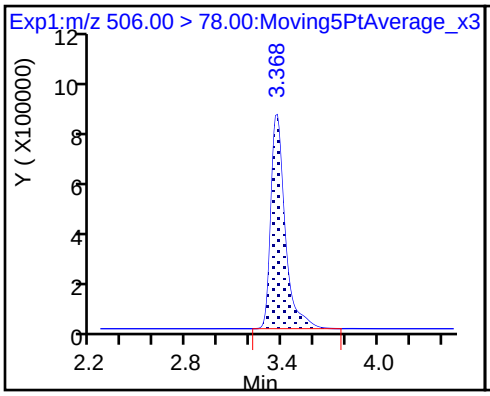
D 18 13C4 PFOS



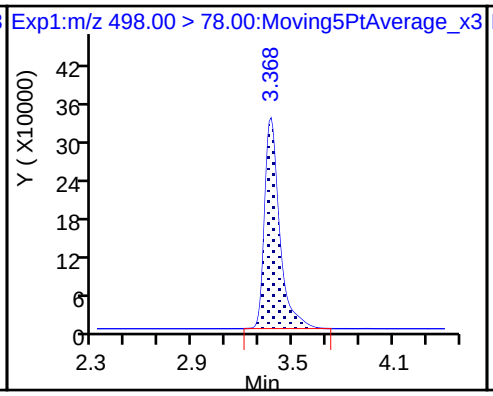
69 9-Chlorohexadecafluoro-3-oxanonane



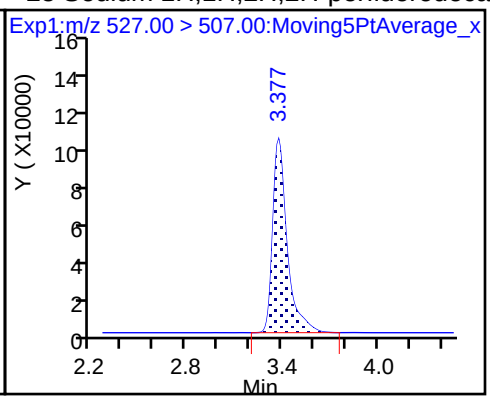
D 21 13C8 FOSA



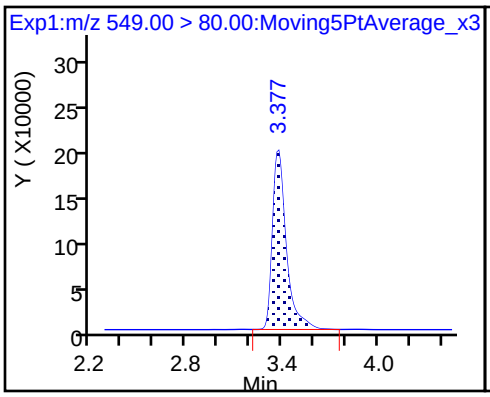
22 Perfluorooctane Sulfonamide



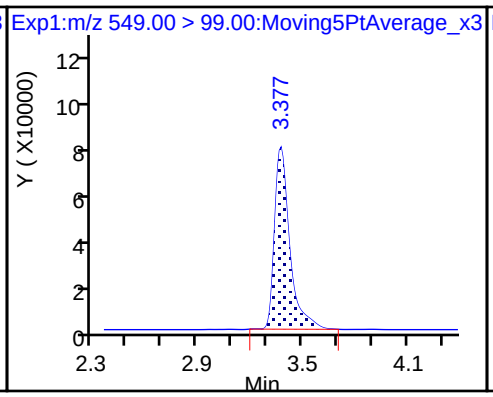
25 Sodium 1H,1H,2H,2H-perfluorodecane



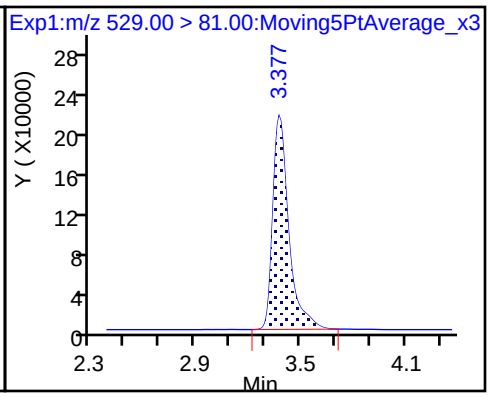
68 Perfluorononanesulfonic acid



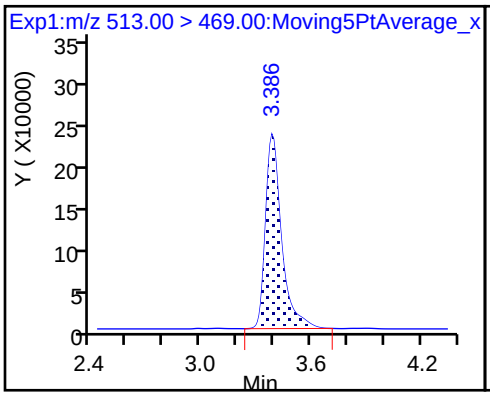
68 Perfluorononanesulfonic acid



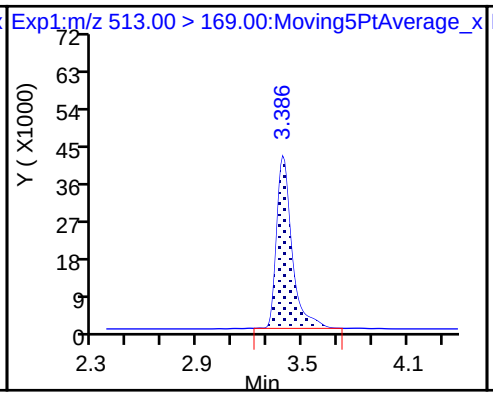
D 26 M2-8:2FTS



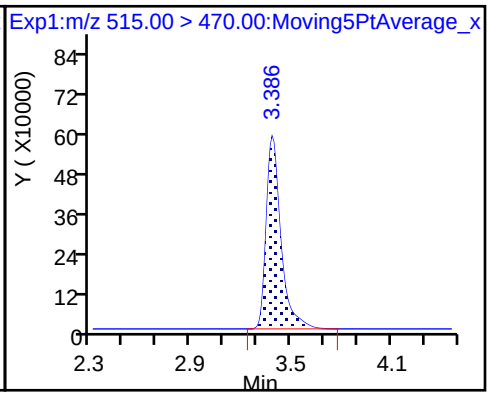
24 Perfluorodecanoic acid



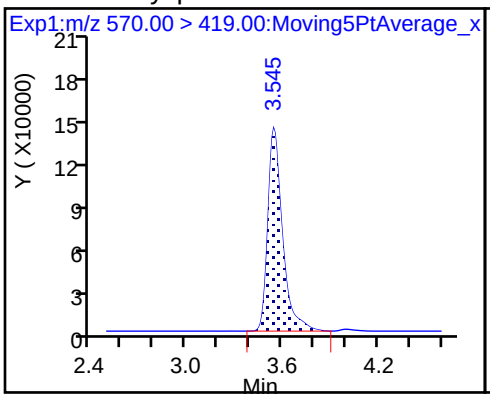
24 Perfluorodecanoic acid



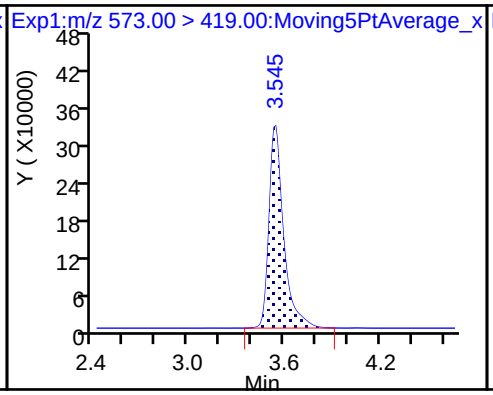
D 23 13C2 PFDA



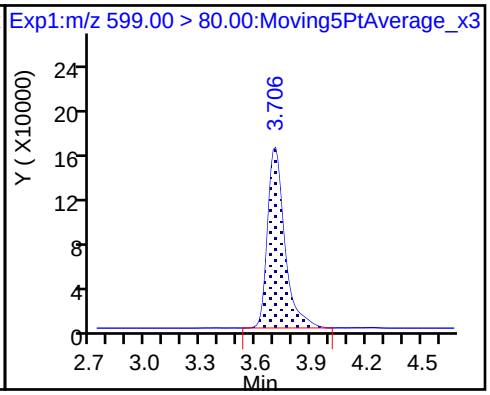
28 N-methyl perfluorooctane sulfonami



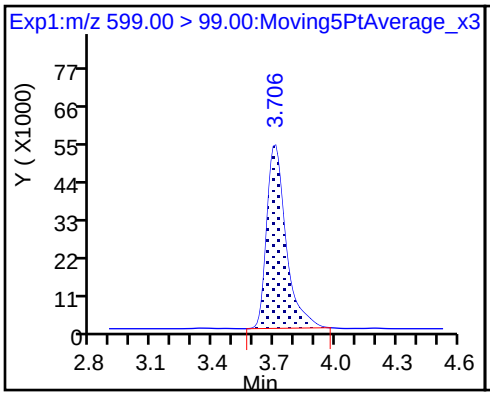
D 27 d3-NMeFOSAA



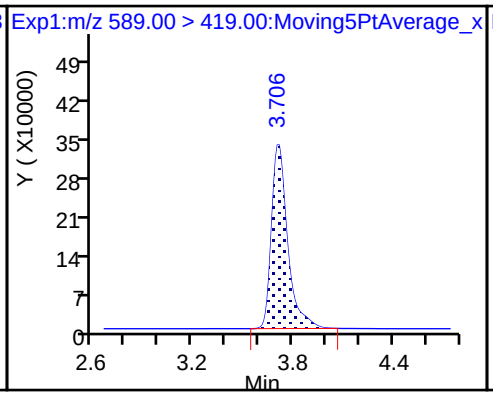
29 Perfluorodecane Sulfonic acid



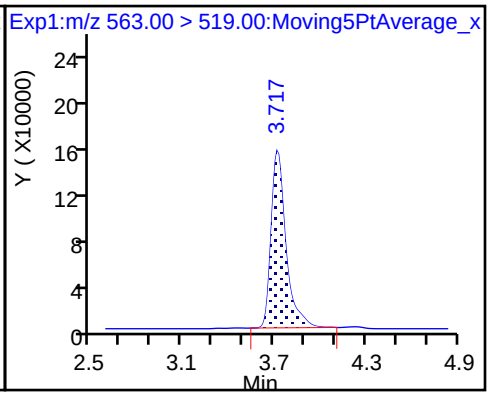
29 Perfluorodecane Sulfonic acid



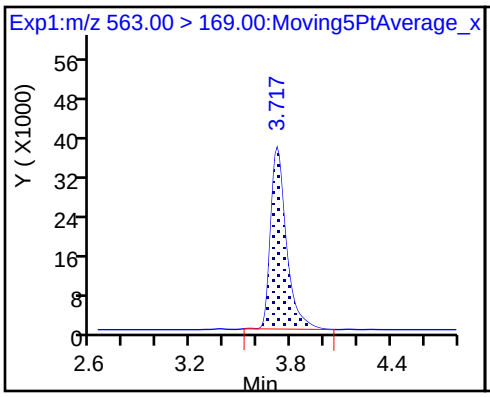
D 32 d5-NEtFOSAA



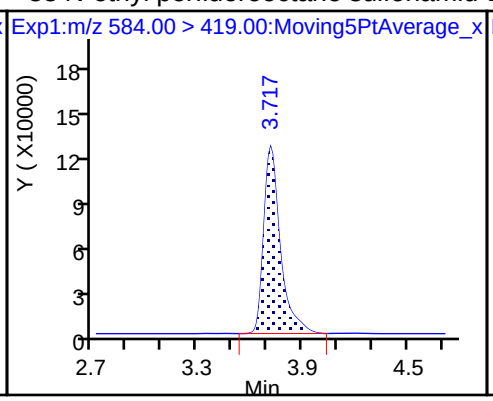
31 Perfluoroundecanoic acid



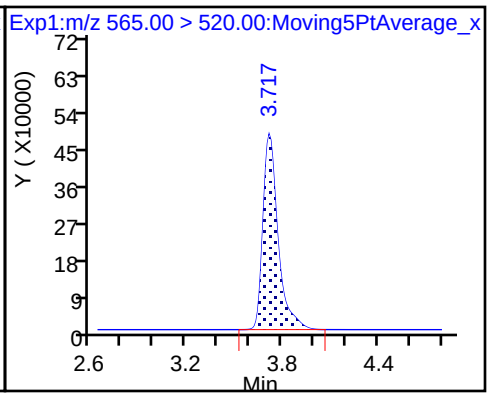
31 Perfluoroundecanoic acid



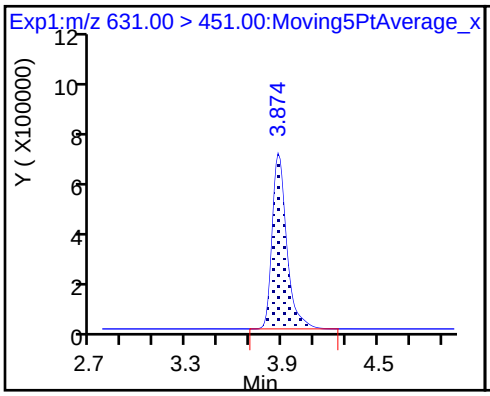
33 N-ethyl perfluorooctane sulfonamid



D 30 13C2 PFUnA



66 11-Chloroeicosafluoro-3-oxaundecan



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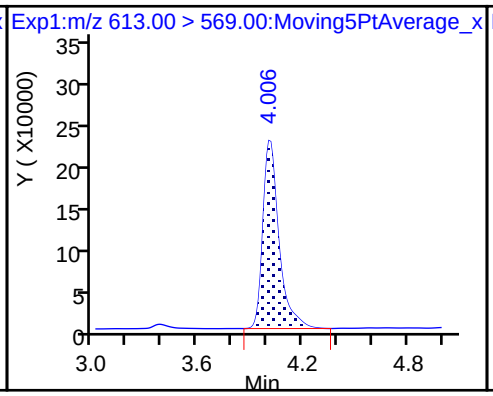
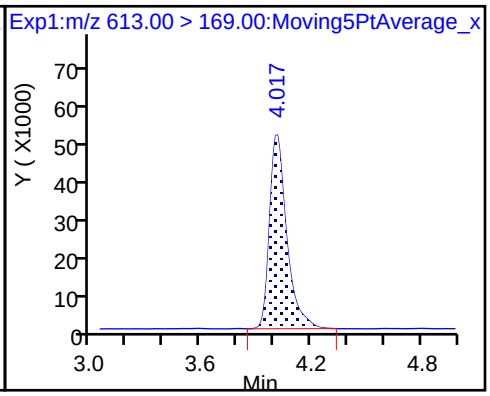
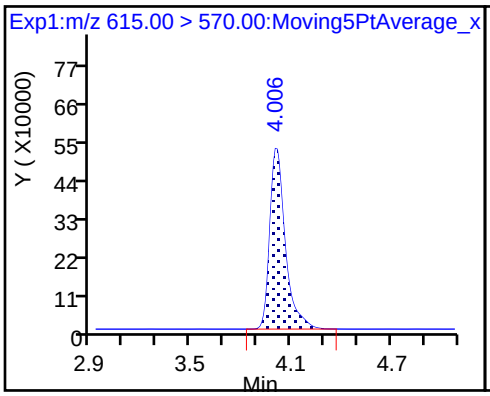


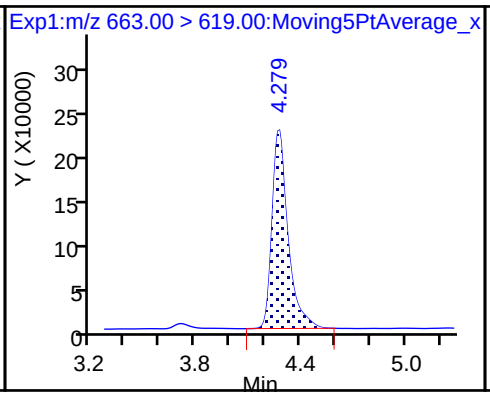
37 Perfluorododecanoic acid



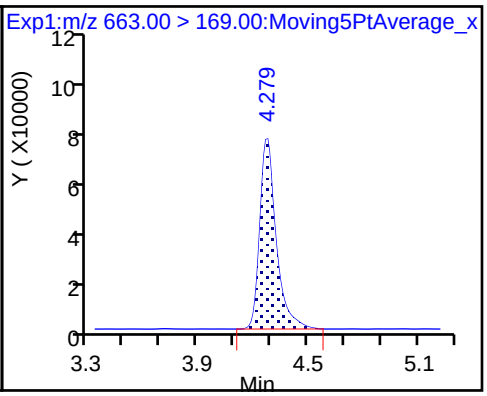
D 36 13C2 PFDoA



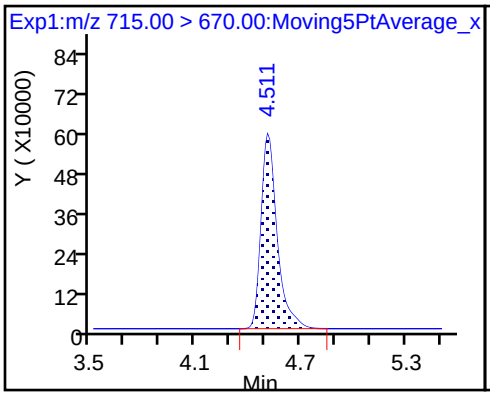
41 Perfluorotridecanoic acid



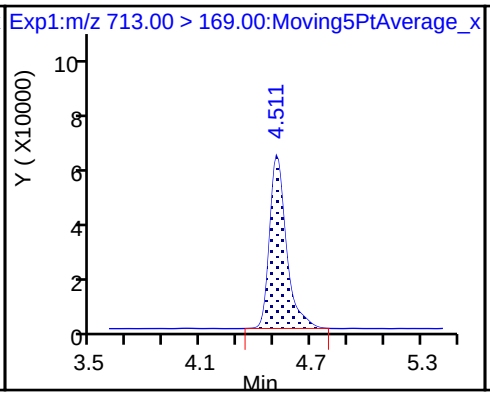
41 Perfluorotridecanoic acid



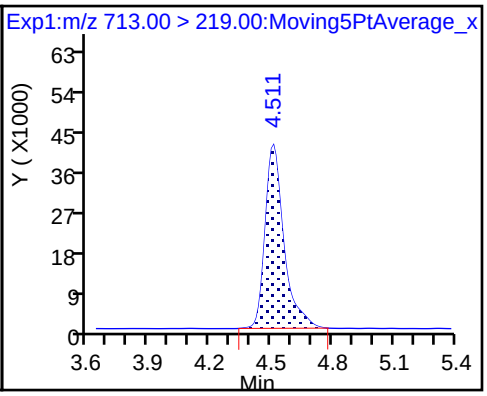
D 43 13C2-PFTeDA



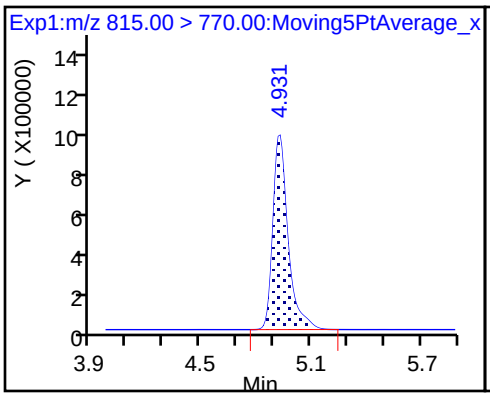
42 Perfluorotetradecanoic acid



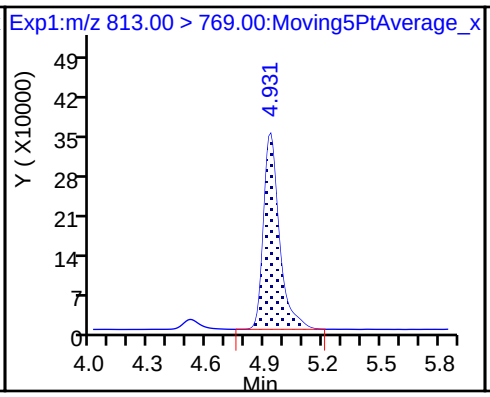
42 Perfluorotetradecanoic acid



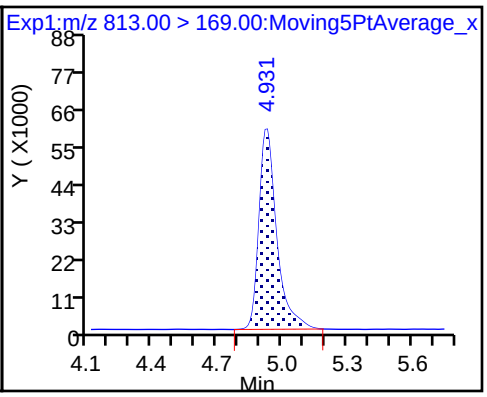
D 44 13C2-PFHxDA



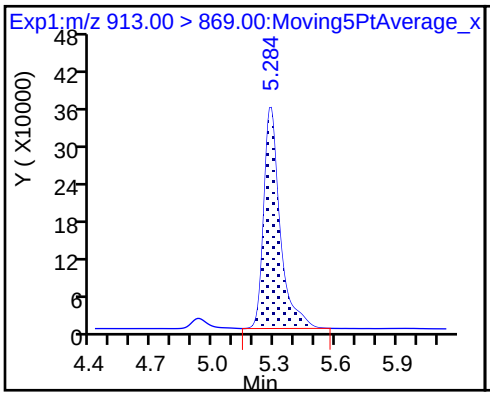
45 Perfluorohexadecanoic acid



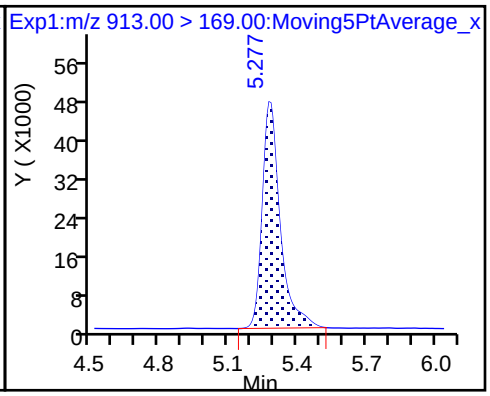
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCVL 320-216928/2 Calibration Date: 04/09/2018 08:49

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.8932		0.0483	0.0500	-3.3	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.232		0.0515	0.0500	3.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	75.34		0.0422	0.0442	-4.5	50.0
4:2 FTS	AveID	17.26	13.99		0.130	0.0467	-18.9	
Perfluorohexanoic acid (PFHxA)	AveID	1.023	0.9750		0.0476	0.0500	-4.7	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	72.21		0.0476	0.0469	1.4	50.0
HFPO-DA (GenX)	AveID	3.401	2.725		0.0401	0.0500	-19.9	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.126		0.0518	0.0500	3.6	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.236		0.0504	0.0455	10.7	50.0
Adona	AveID	3.564	3.470		0.0487	0.0500	-2.6	50.0
6:2FTS	AveID	1.868	1.833		0.0500	0.0474	-1.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.113		0.0469	0.0500	-6.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.237		0.0442	0.0476	-7.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	0.9263		0.0450	0.0500	-10.0	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.132		0.0459	0.0464	-1.0	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.757		0.0438	0.0466	-6.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	0.9669		0.0489	0.0500	-2.1	50.0
8:2FTS	AveID	1.349	1.444		0.0513	0.0479	7.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7000		0.0419	0.0480	-12.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	1.045		0.0528	0.0500	5.7	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	1.049		0.0780	0.0500	-0.5	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.5387		0.0374	0.0482	-22.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9687		0.0528	0.0500	5.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8298		0.0517	0.0500	3.4	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	3.093		0.0502	0.0471	6.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.200		0.0555	0.0500	11.1	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	0.9902		0.0428	0.0500	-14.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2215		0.0443	0.0500	-11.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.212		0.0426	0.0500	-14.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCVL 320-216928/2 Calibration Date: 04/09/2018 08:49

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.7741		0.0390	0.0500	-22.0	50.0
13C4 PFBA	Ave	1.382	1.382		2.50	2.50	0.0	50.0
13C5 PFPeA	Ave	0.8994	0.8889		2.47	2.50	-1.2	50.0
13C3-PFBS	Ave	0.0206	0.0210		2.37	2.33	1.9	50.0
M2-4:2FTS	Ave	0.1573	0.1304		1.94	2.34	-17.1	50.0
13C2 PFHxA	Ave	0.9916	0.9791		2.47	2.50	-1.3	50.0
13C3 HFPO-DA	Ave	0.0494	0.0661		3.35	2.50	33.9	50.0
13C4-PFHpA	Ave	0.9533	0.9252		2.43	2.50	-3.0	50.0
18O2 PFHxS	Ave	1.189	1.189		2.37	2.37	0.0	50.0
M2-6:2FTS	Ave	0.2203	0.1807		1.95	2.38	-18.0	50.0
13C4 PFOA	Ave	0.9372	0.9662		2.58	2.50	3.1	50.0
13C4 PFOS	Ave	0.8257	0.8393		2.43	2.39	1.6	50.0
13C5 PFNA	Ave	0.7930	0.7921		2.50	2.50	-0.1	50.0
13C8 FOSA	Ave	1.166	1.101		2.36	2.50	-5.6	50.0
M2-8:2FTS	Ave	0.2562	0.2233		2.09	2.40	-12.8	50.0
13C2 PFDA	Ave	0.6698	0.6855		2.56	2.50	2.4	50.0
d3-NMeFOSAA	Ave	0.3583	0.3913		2.73	2.50	9.2	50.0
d5-NEtFOSAA	Ave	0.3760	0.4354		2.90	2.50	15.8	50.0
13C2 PFUnA	Ave	0.5468	0.6267		2.87	2.50	14.6	50.0
13C2 PFDoA	Ave	0.6087	0.6553		2.69	2.50	7.7	50.0
13C2-PFTeDA	Ave	0.7733	0.8624		2.79	2.50	11.5	50.0
13C2-PFHxDA	Ave	1.194	1.350		2.83	2.50	13.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 09-Apr-2018 08:49:02 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:48:22 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: hannigana Date: 09-Apr-2018 09:14:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.425	1.425	0.0	1.000	6085309	2.50		100	53744	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.428	0.002	1.004	108713	0.0483		96.7	32.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.694	0.009	0.557	3913055	2.47		98.8	97389	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.712	1.699	0.014	1.005	96446	0.0515		103	62.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.730	0.009	1.000	85949	2.37		102	653	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.748	1.744	0.004	1.005	123095	0.0422		95.5	142	
298.90 > 99.00	1.739	1.744	-0.005	1.000	52259		2.36(1.25-3.74)		117	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.939	0.021	1.000	535997	1.93		82.9	4037	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.956	0.004	1.000	24150	0.0379		81.1	1357	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.982	0.011	1.000	4310121	2.47		98.7	95616	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.988	0.005	1.000	84046	0.0476		95.3	138	
313.00 > 119.00	2.004	1.988	0.016	1.006	6858		12.26(5.03-15.10)		82.9	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.011	0.005	1.000	125187	0.0476		101	1353	
349.00 > 99.00	2.016	2.011	0.005	1.000	42431		2.95(1.36-4.07)		373	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.084	0.011	1.000	291051	3.35		134	6469	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.090	0.005	1.000	15862	0.0401		80.1	109	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.309	0.025	1.000	4072658	2.43		97.0	70720	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.322	0.025	1.000	4952494	2.37		100	114765	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.334	2.329	0.005	1.000	91717	0.0518		104	100	
363.00 > 169.00	2.321	2.329	-0.008	0.994	38098		2.41(1.13-3.40)		141	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.329	0.018	1.000	117785	0.0504		111	260	
399.00 > 99.00	2.347	2.329	0.018	1.000	34627		3.40(1.50-4.49)		113	
65 Adona										
377.00 > 251.00	2.373	2.369	0.004	1.000	256380	0.0487		97.4	6099	
377.00 > 85.00	2.373	2.369	0.004	1.000	150511		1.70(0.84-2.53)		1654	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.629	0.032	1.000	755573	1.95		82.0	8247	
13 Sodium 1H,1H,2H,2H-perfluorooctane										M
427.00 > 407.00	2.661	2.658	0.003	1.000	27647	0.0465		98.2	363	M
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.660	0.024	1.000	4253357	2.58		103	109063	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.681	0.003		4402064	2.50			154701	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.681	0.010	1.003	94707	0.0469		93.9	41.1	
413.00 > 169.00	2.691	2.681	0.010	1.003	52336		1.81(0.84-2.52)		146	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.688	0.011	1.000	86995	0.0442		92.8	582	
449.00 > 99.00	2.691	2.688	0.003	0.997	24145		3.60(1.94-5.82)		219	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.022	0.036	1.000	3487041	2.50		99.9	87961	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.022	0.036	1.000	3531996	2.43		102	35284	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.057	0.001	1.000	64604	0.0450		90.0	125	
463.00 > 169.00	3.058	3.057	0.001	1.000	16021		4.03(1.90-5.69)		236	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.057	0.001	1.000	77592	0.0459		99.0	37.3	
499.00 > 99.00	3.058	3.057	0.001	1.000	16224		4.78(2.31-6.93)		39.5	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.272	3.264	0.008	1.000	121029	0.0438		94.0	2107	
D 21 13C8 FOSA										
506.00 > 78.00	3.369	3.358	0.011	1.000	4847371	2.36		94.4	61324	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.369	3.368	0.001	1.000	93742	0.0489		97.9	2552	M
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.377	0.038	1.000	941494	2.09		87.2	11175	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.386	0.038	1.000	3017774	2.56		102	59673	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.415	3.405	0.010	1.000	49651	0.0419		87.3	450	
549.00 > 99.00	3.406	3.405	0.001	0.997	18439		2.69(1.33-3.97)		317	
25 Sodium 1H,1H,2H,2H-perfluorodecane										M
527.00 > 507.00	3.415	3.414	0.001	1.000	27192	0.0513		107	879	M
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.424	0.0	1.000	63088	0.0528		106	195	
513.00 > 169.00	3.424	3.424	0.0	1.000	10389		6.07(2.36-7.09)		211	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.536	0.048	1.000	1722710	2.73		109	37540	
28 N-methyl perfluorooctane sulfonami										M
570.00 > 419.00	3.595	3.584	0.011	1.003	36132	0.0497		99.5	254	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.706	0.043	1.000	1916479	2.89		116	14432	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.717	0.042	1.000	2758788	2.87		115	104214	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.739	3.738	0.001	1.000	38370	0.0374		77.6	326	
599.00 > 99.00	3.739	3.738	0.001	1.000	15984		2.40(1.39-4.16)		302	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.749	0.011	1.003	37128	0.0528		106	461	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.759	0.0	1.000	45786	0.0517		103	183	
563.00 > 169.00	3.759	3.759	0.0	1.000	9375		4.88(2.12-6.36)		224	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.915	0.001	1.000	215304	0.0502		107	3340	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.007	0.052	1.000	2884648	2.69		108	22857	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.059	4.048	0.011	1.000	69248	0.0555		111	50.4	M
613.00 > 169.00	4.059	4.048	0.011	1.000	18605		3.72(2.13-6.40)		210	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.317	0.001	1.000	57125	0.0428		85.7	33.9	
663.00 > 169.00	4.318	4.317	0.001	1.000	20996		2.72(1.25-3.76)		146	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.572	4.510	0.062	1.000	3796441	2.79		112	16939	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.572	4.562	0.010	1.000	16816	0.0443		88.7	126	
713.00 > 219.00	4.561	4.562	-0.001	0.998	10981		1.53(0.71-2.13)		116	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.991	4.930	0.061	1.000	5942629	2.83		113	12965	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.983	0.008	1.000	144058	0.0426		85.2	36.5	
813.00 > 169.00	5.000	4.983	0.017	1.002	24562		5.87(2.86-8.58)		128	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.368	5.362	0.006	1.000	92006	0.0390		78.0	20.0	
913.00 > 169.00	5.368	5.362	0.006	1.000	11285		8.15(3.83-11.48)		81.9	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 14:48:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d

Injection Date: 09-Apr-2018 08:49:02 Instrument ID: A8_N

Lims ID: CCVL

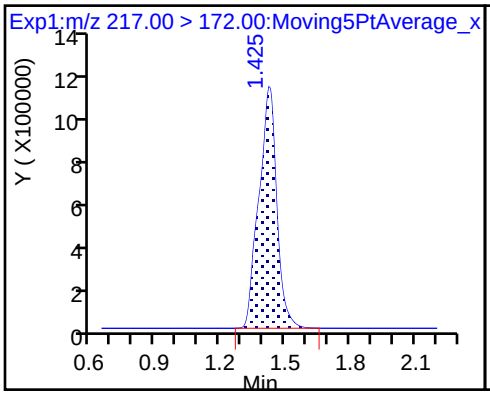
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

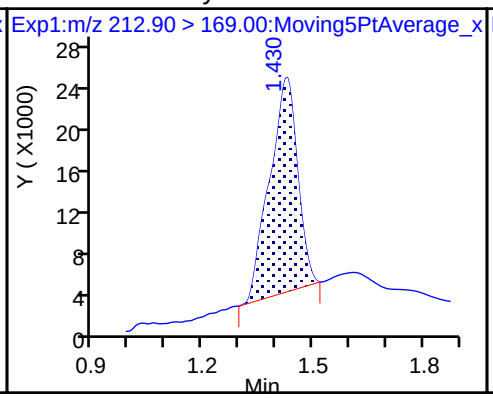
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

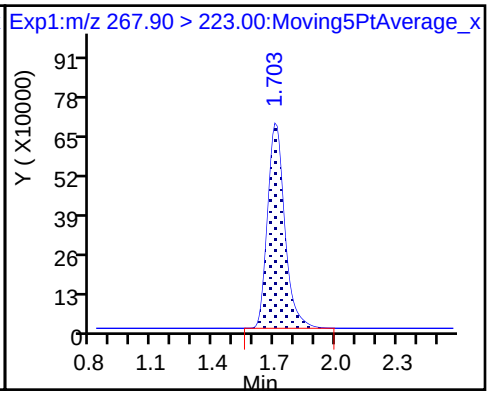
D 1 13C4 PFBA



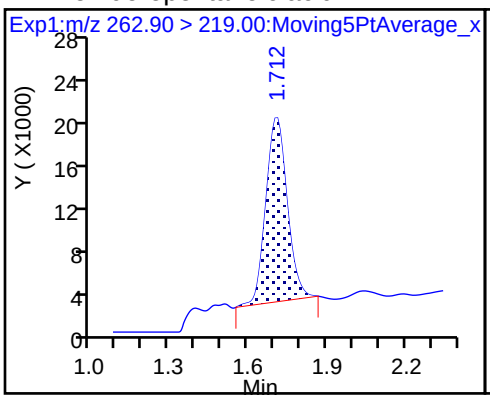
2 Perfluorobutyric acid



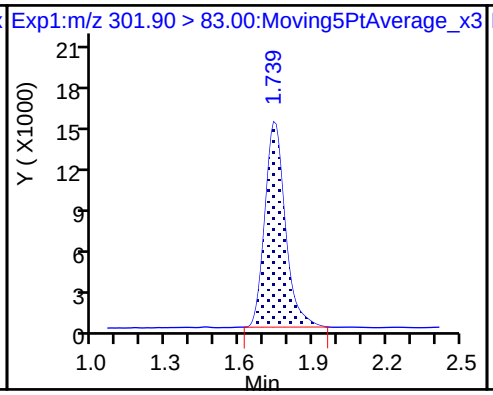
D 3 13C5-PFPeA



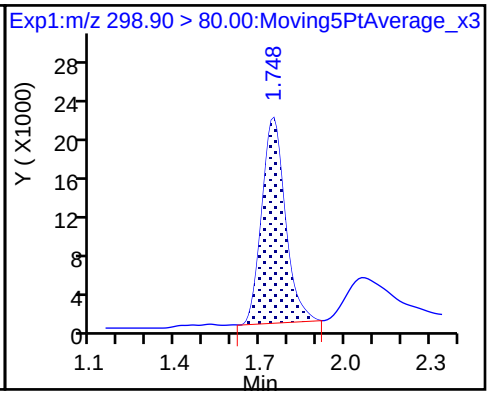
4 Perfluoropentanoic acid



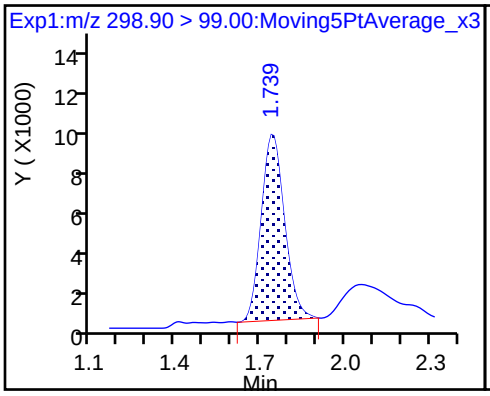
D 47 13C3-PFBS



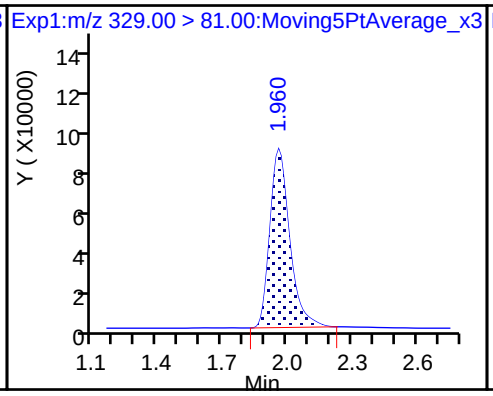
5 Perfluorobutanesulfonic acid



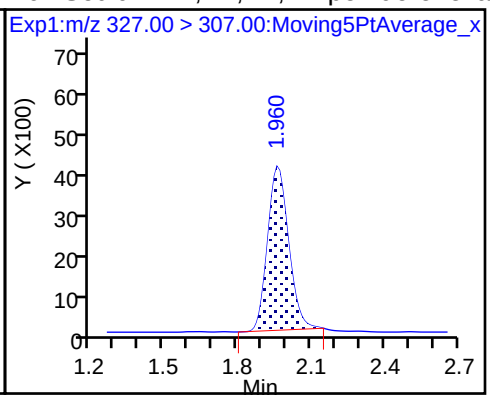
5 Perfluorobutanesulfonic acid



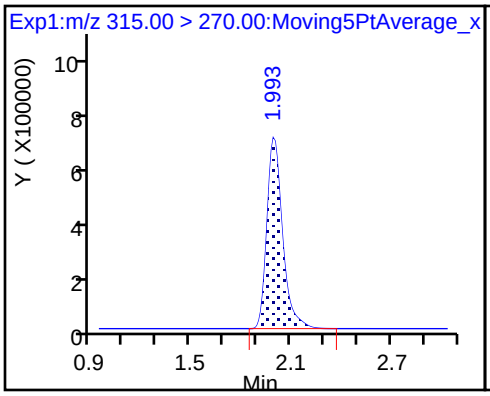
D 60 M2-4:2FTS



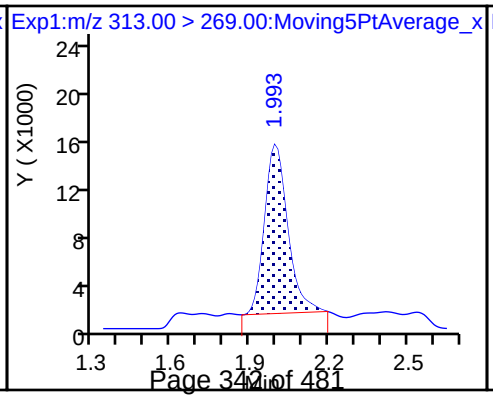
61 Sodium 1H,1H,2H,2H-perfluorohexane



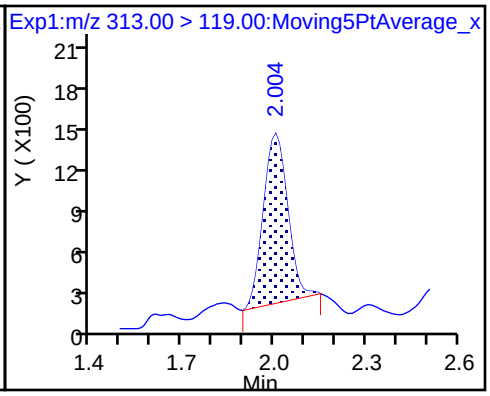
D 7 13C2 PFHxA



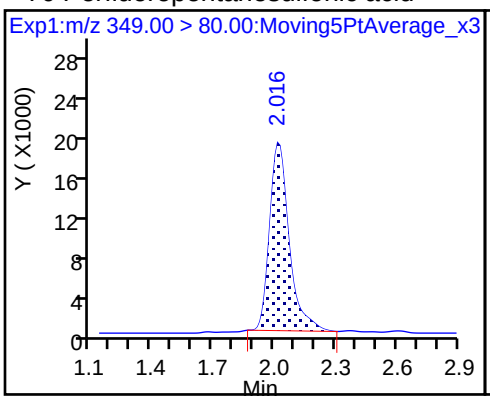
6 Perfluorohexanoic acid



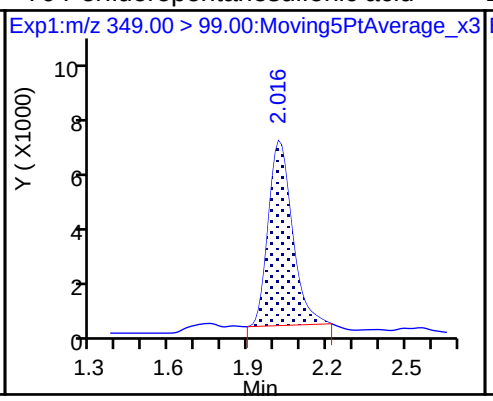
6 Perfluorohexanoic acid



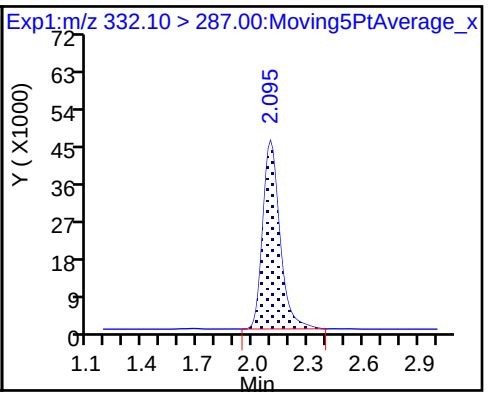
70 Perfluoropentanesulfonic acid



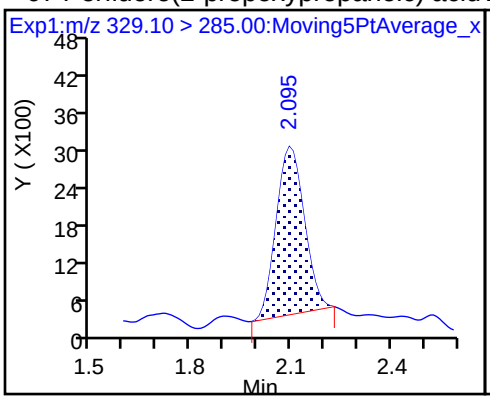
70 Perfluoropentanesulfonic acid



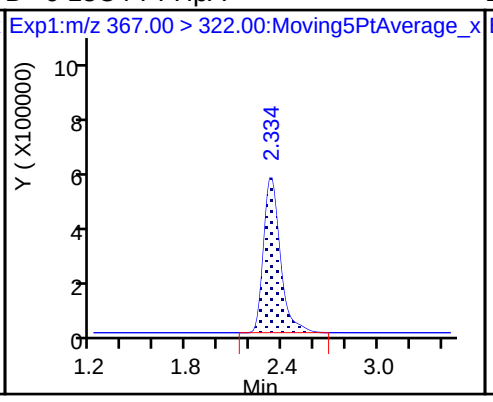
D 64 13C3 HFPO-DA



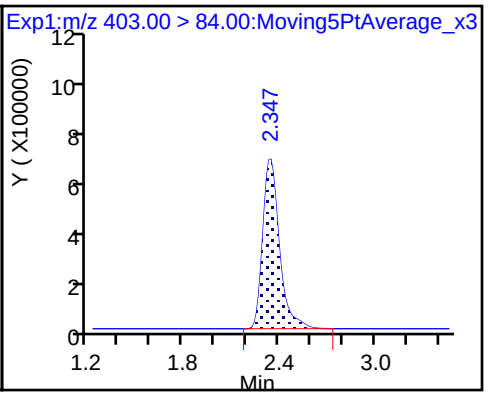
67 Perfluoro(2-propoxypropanoic) acid



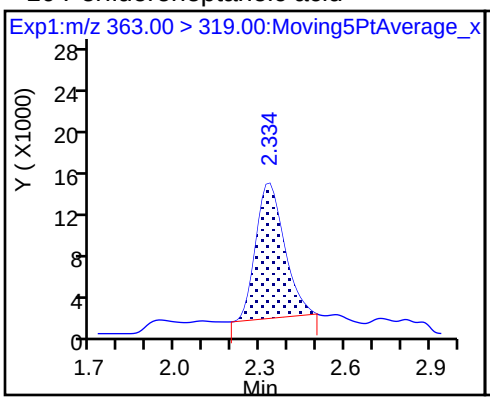
D 9 13C4-PFHpA



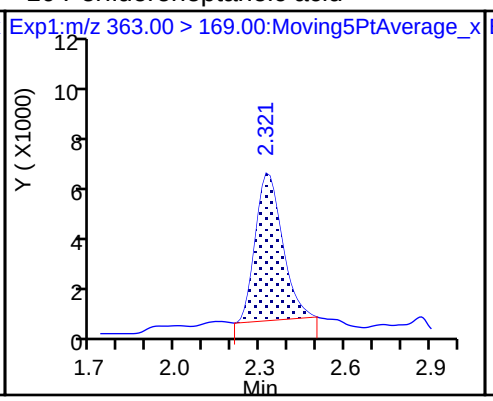
D 11 18O2 PFHxS



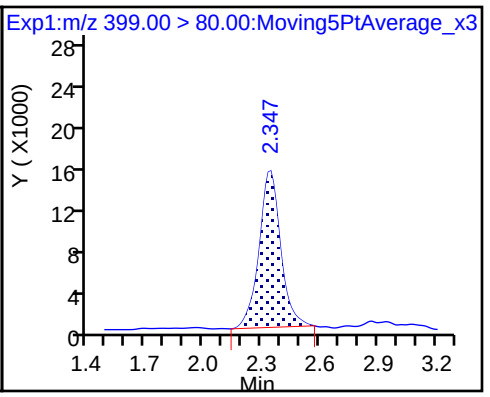
10 Perfluoroheptanoic acid



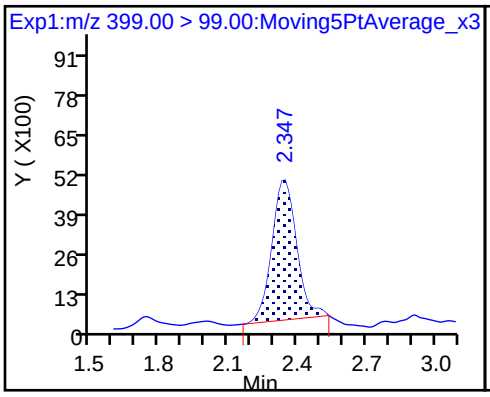
10 Perfluoroheptanoic acid



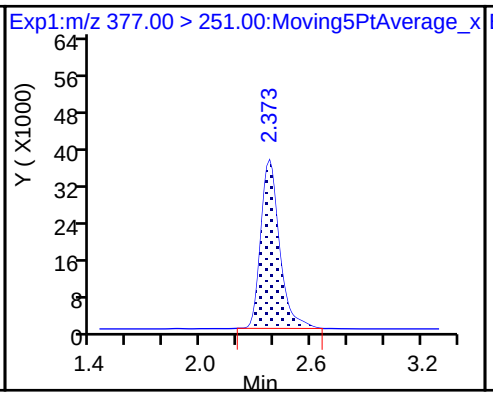
8 Perfluorohexanesulfonic acid



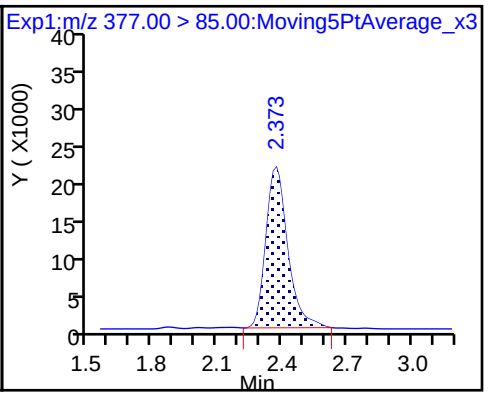
8 Perfluorohexanesulfonic acid



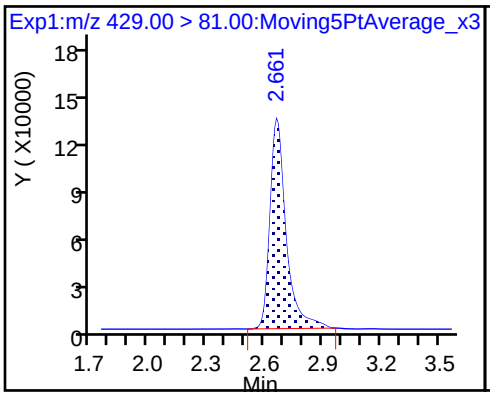
65 Adona



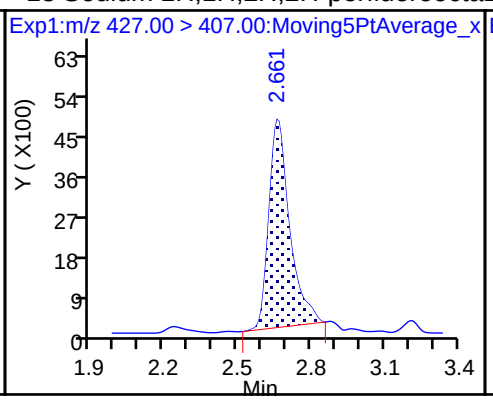
65 Adona



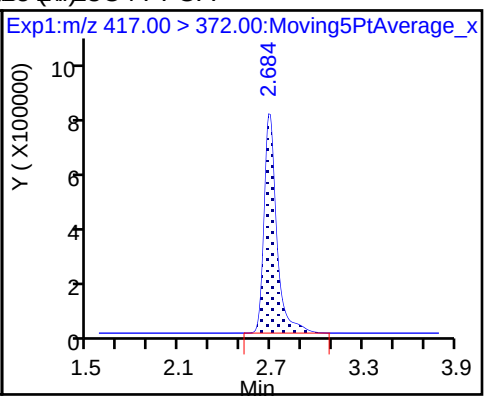
D 12 M2-6:2FTS



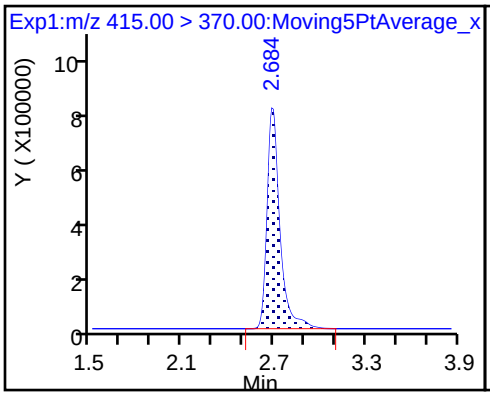
13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (M1)



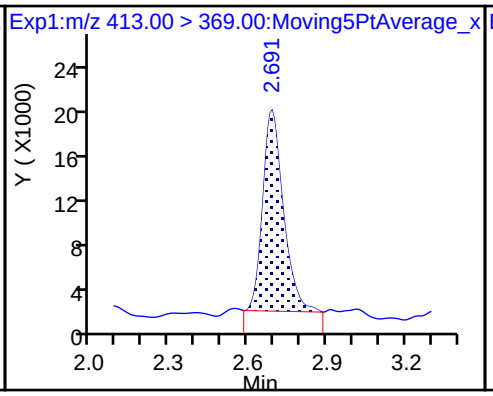
D 14 13C4 PFOA



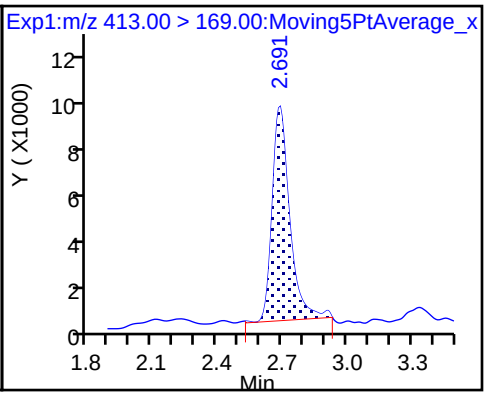
* 62 13C2-PFOA



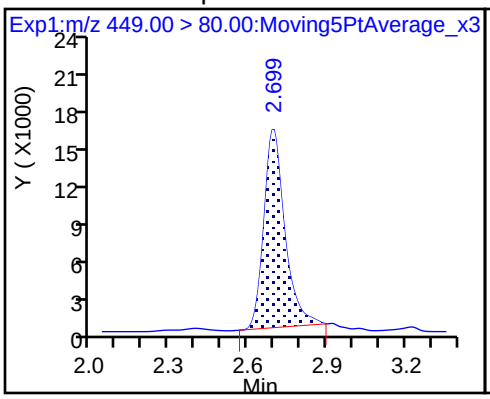
15 Perfluorooctanoic acid



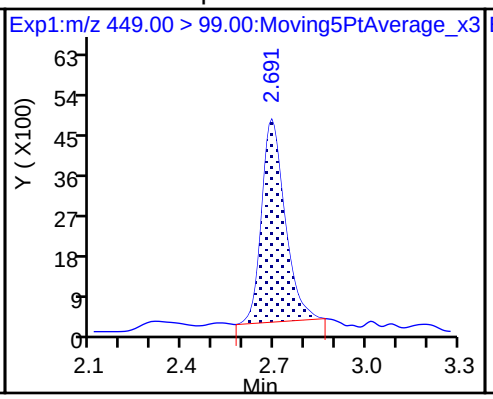
15 Perfluorooctanoic acid



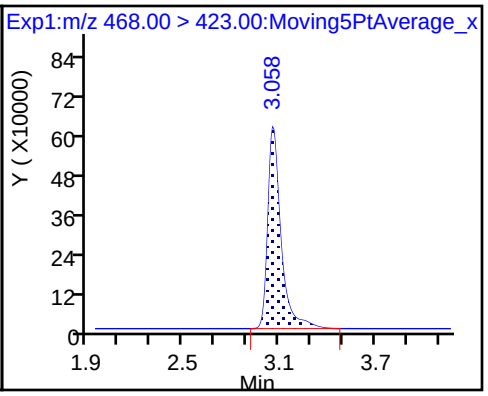
16 Perfluoroheptanesulfonic acid



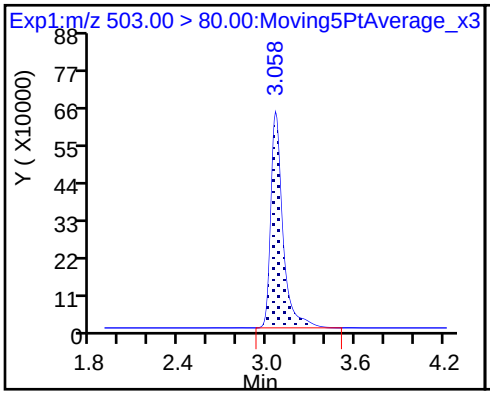
16 Perfluoroheptanesulfonic acid



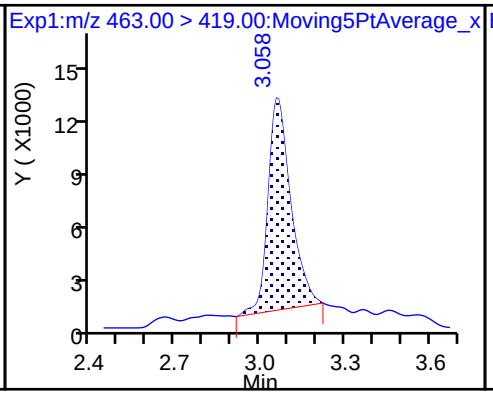
D 19 13C5 PFNA



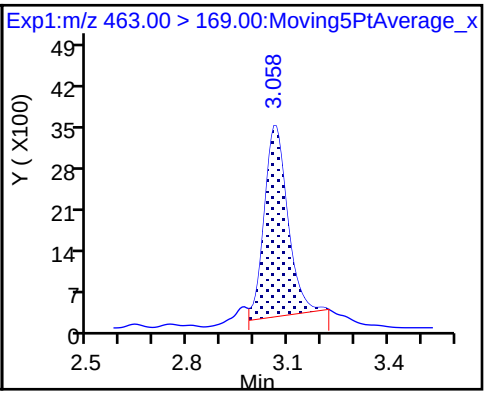
D 18 13C4 PFOS



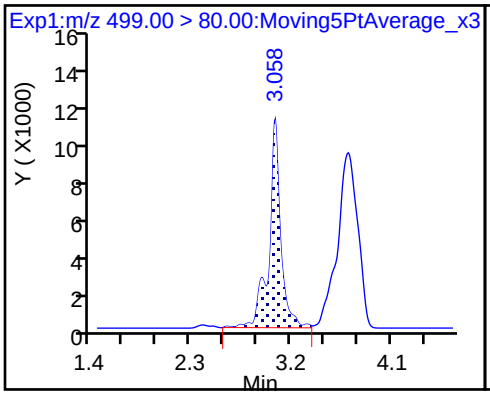
20 Perfluorononanoic acid



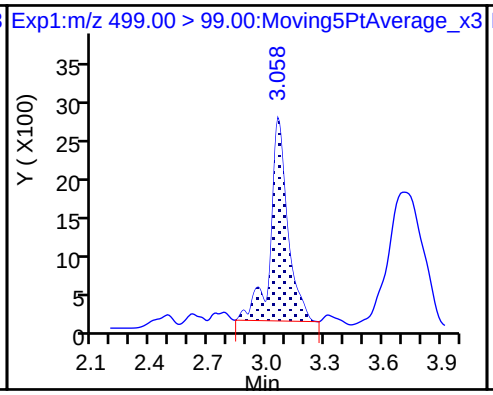
20 Perfluorononanoic acid



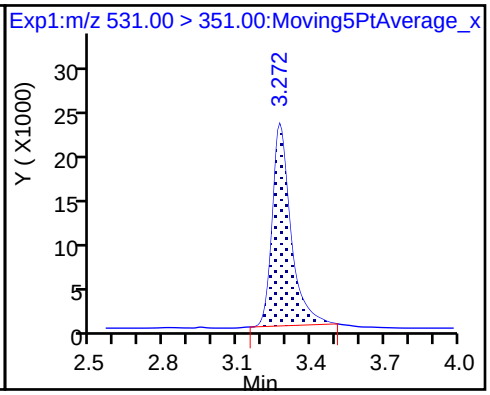
17 Perfluorooctane sulfonic acid



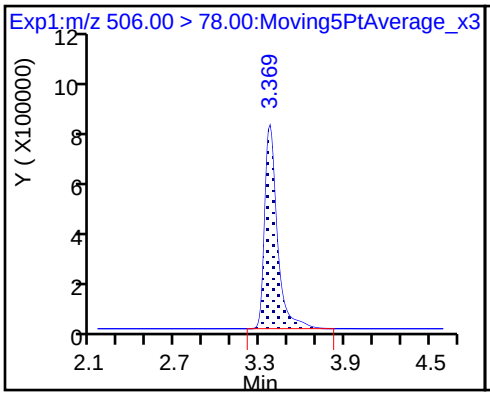
17 Perfluorooctane sulfonic acid



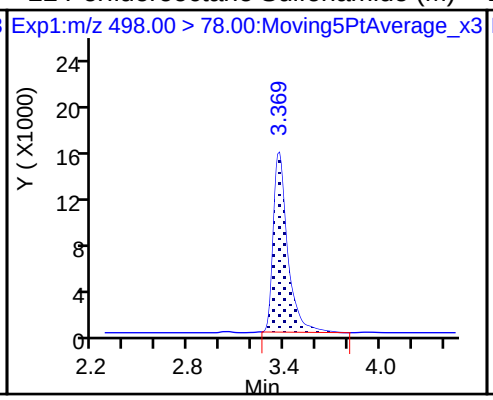
69 9-Chlorohexadecafluoro-3-oxanonane



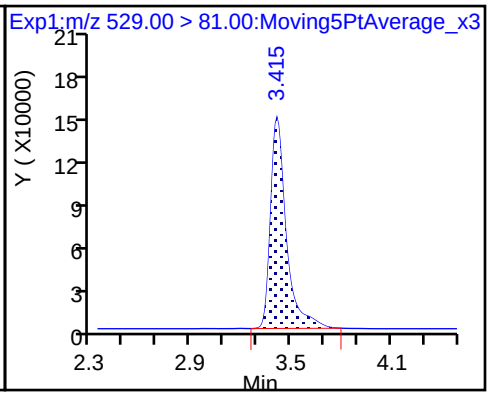
D 21 13C8 FOSA



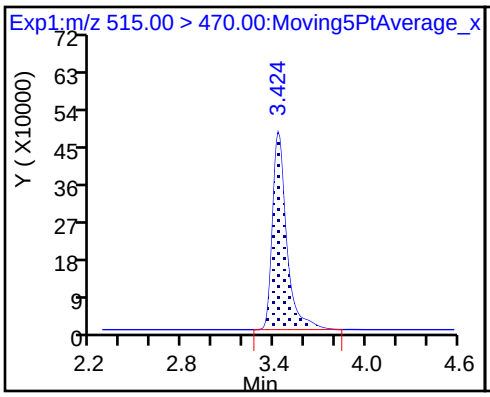
22 Perfluorooctane Sulfonamide (M)



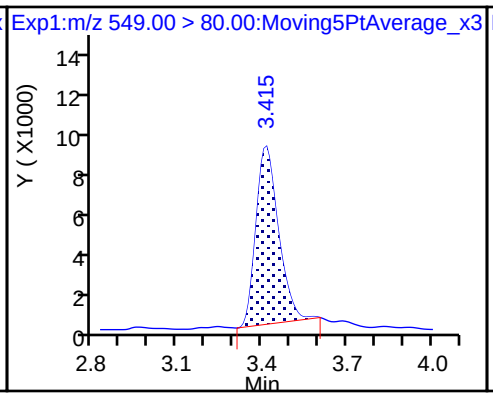
D 26 M2-8:2FTS



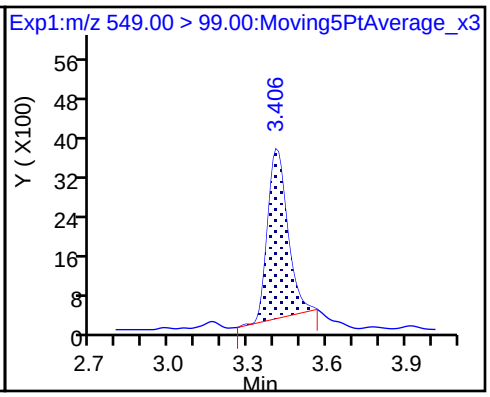
D 23 13C2 PFDA



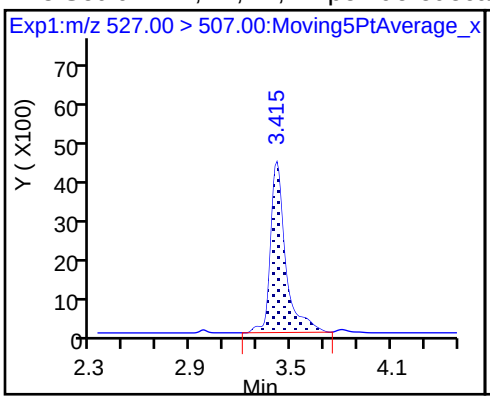
68 Perfluorononanesulfonic acid



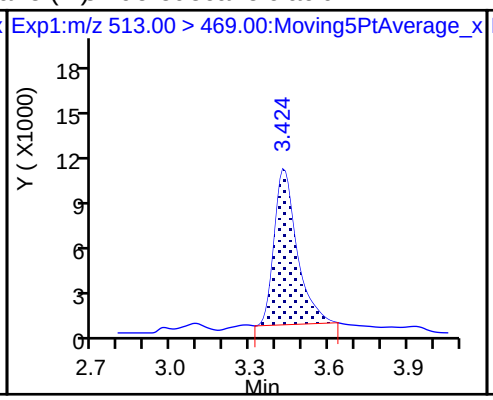
68 Perfluorononanesulfonic acid



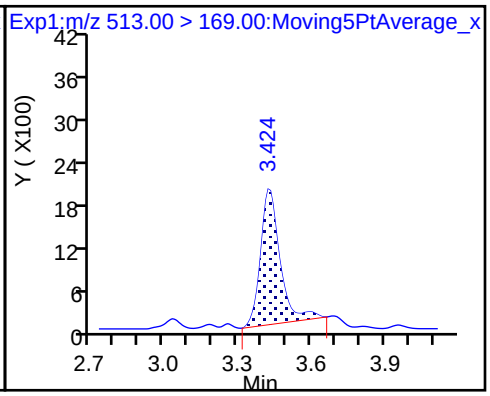
25 Sodium 1H,1H,2H,2H-perfluorodecane 24 (M)



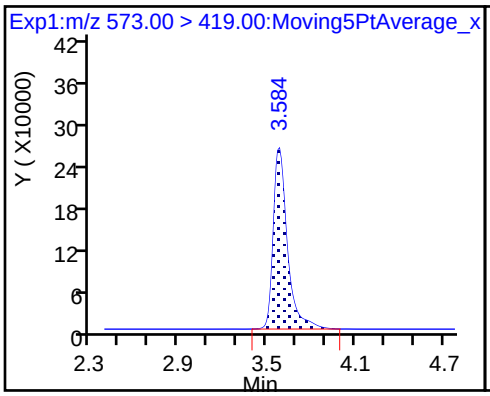
24 Perfluorodecanoic acid



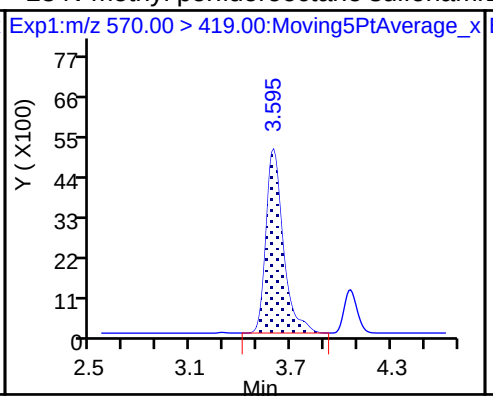
24 Perfluorodecanoic acid



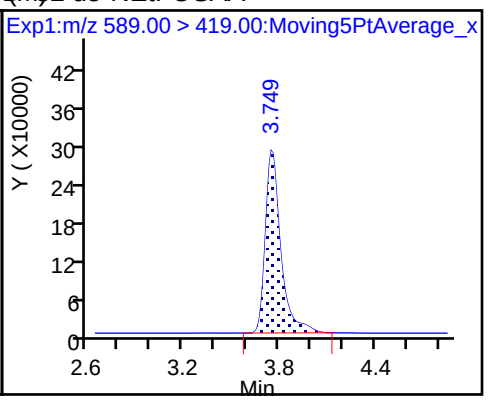
D 27 d3-NMeFOSAA



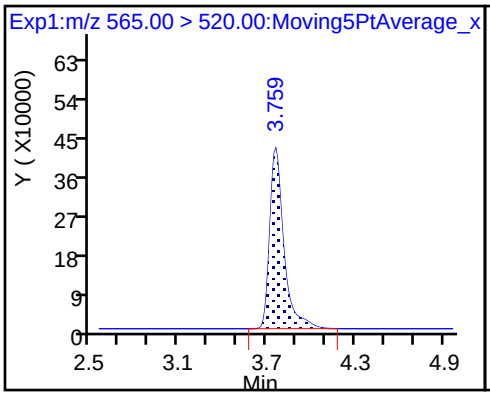
28 N-methyl perfluorooctane sulfonamid (M)



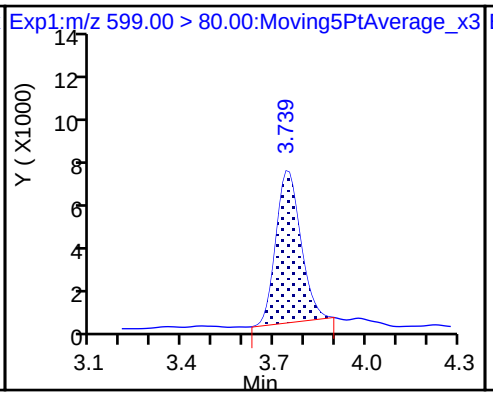
D 32 d5-NEtFOSAA



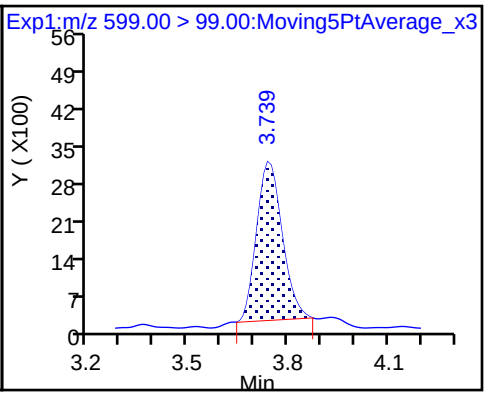
D 30 13C2 PFUnA



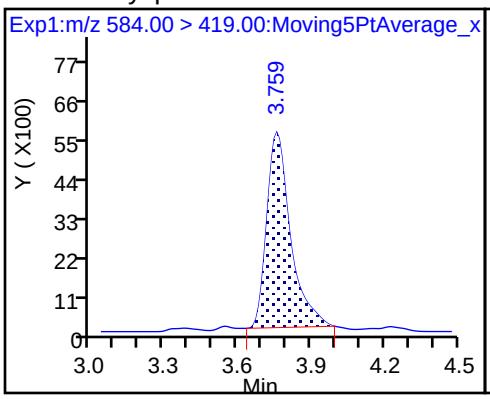
29 Perfluorodecane Sulfonic acid



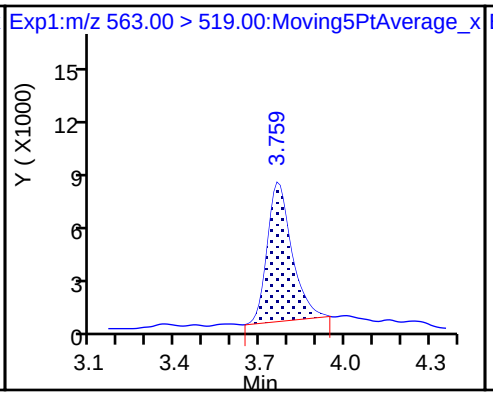
29 Perfluorodecane Sulfonic acid



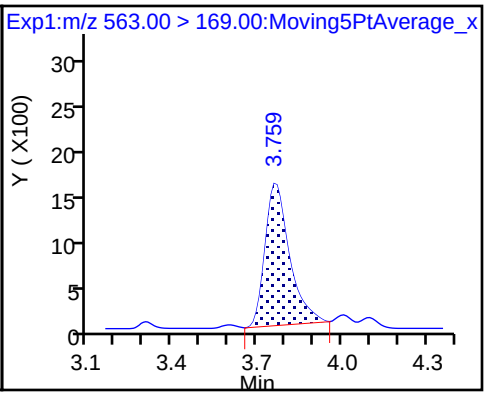
33 N-ethyl perfluorooctane sulfonamid



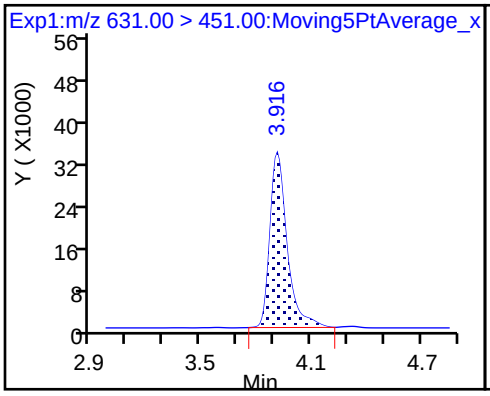
31 Perfluoroundecanoic acid



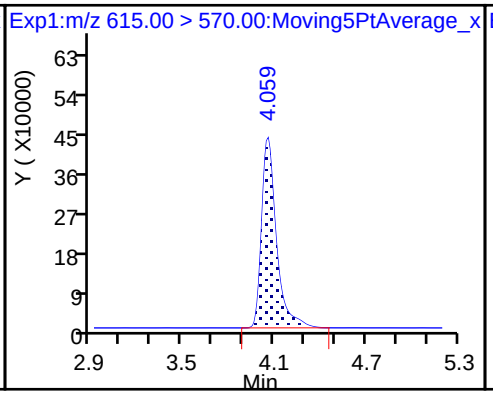
31 Perfluoroundecanoic acid



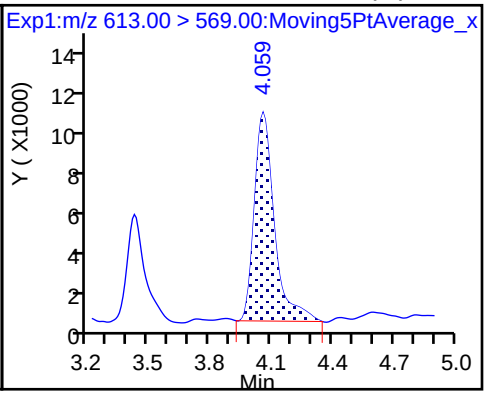
66 11-Chloroeicosafluoro-3-oxaundecan



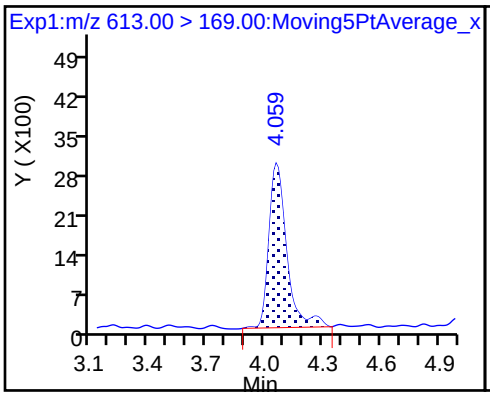
D 36 13C2 PFDoA



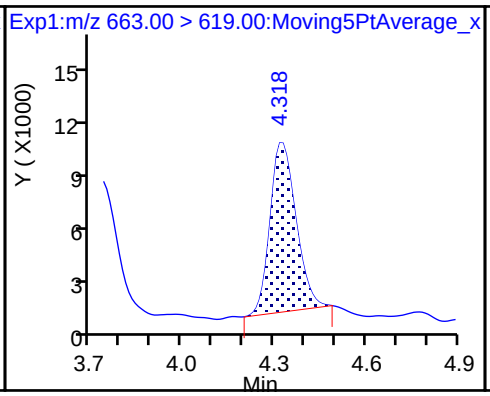
37 Perfluorododecanoic acid (M)



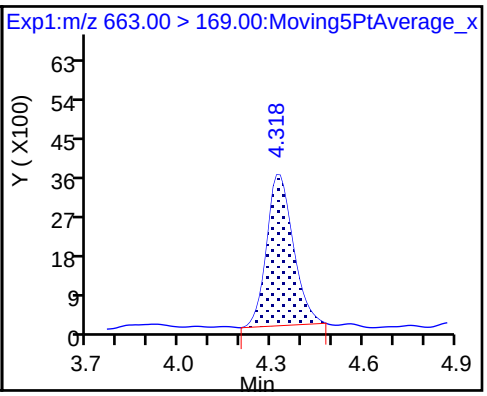
37 Perfluorododecanoic acid



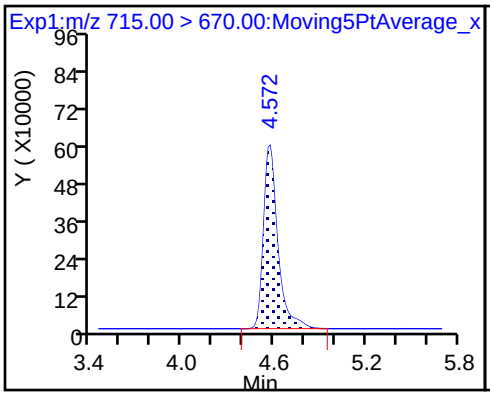
41 Perfluorotridecanoic acid



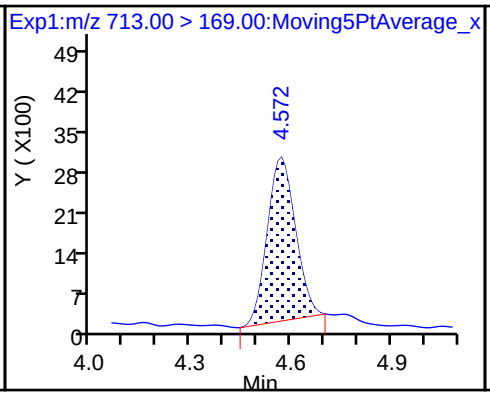
41 Perfluorotridecanoic acid



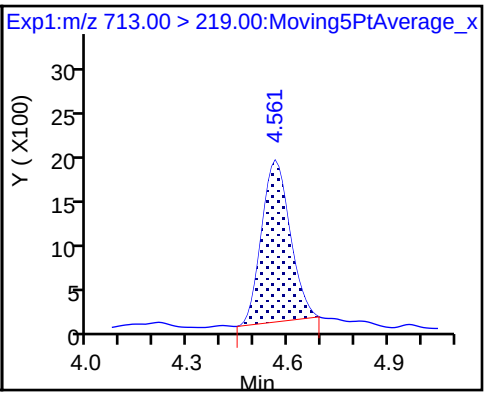
D 43 13C2-PFTeDA



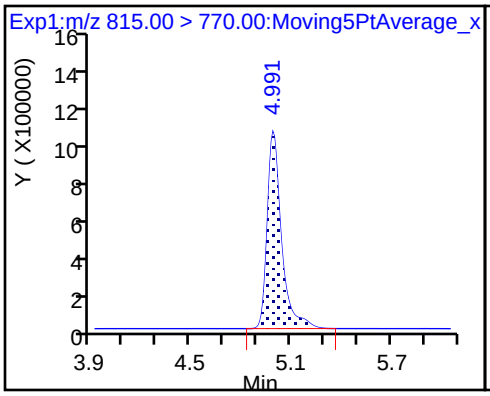
42 Perfluorotetradecanoic acid



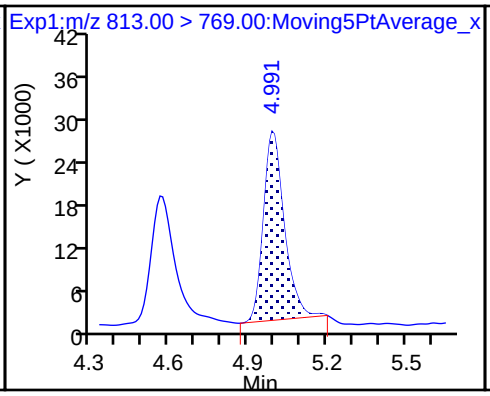
42 Perfluorotetradecanoic acid



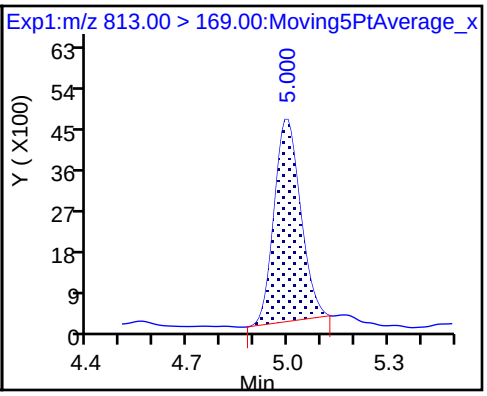
D 44 13C2-PFHxDA



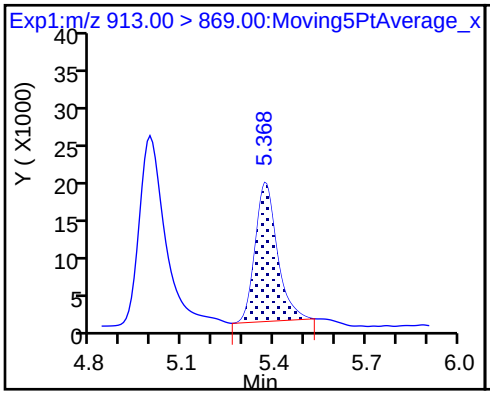
45 Perfluorohexadecanoic acid



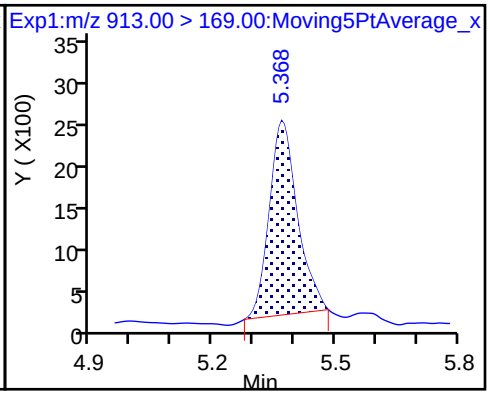
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

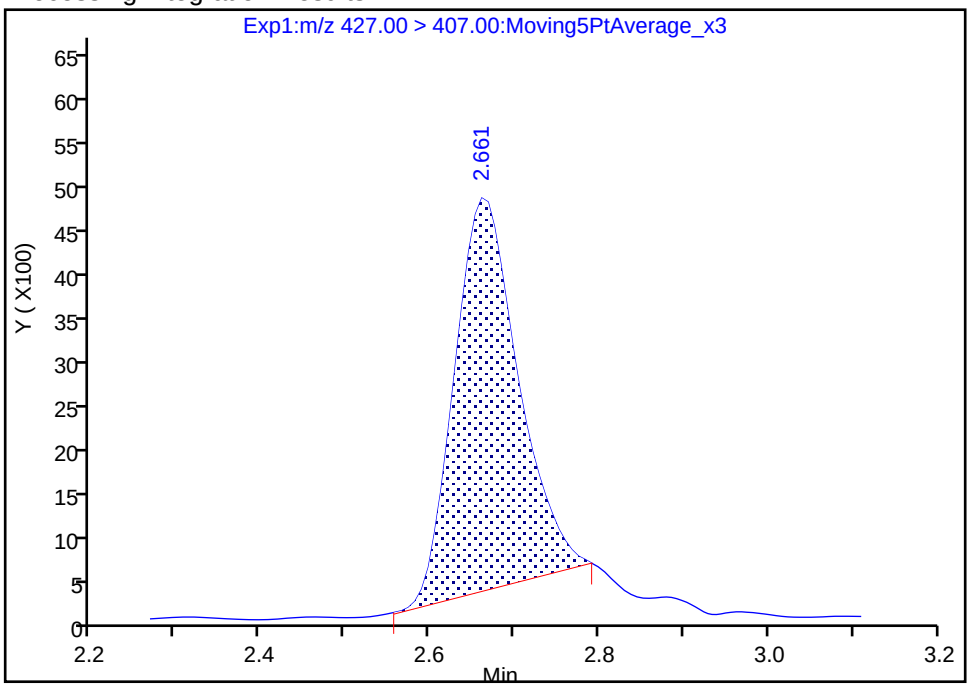
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d				
Injection Date:	09-Apr-2018 08:49:02	Instrument ID:	A8_N		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

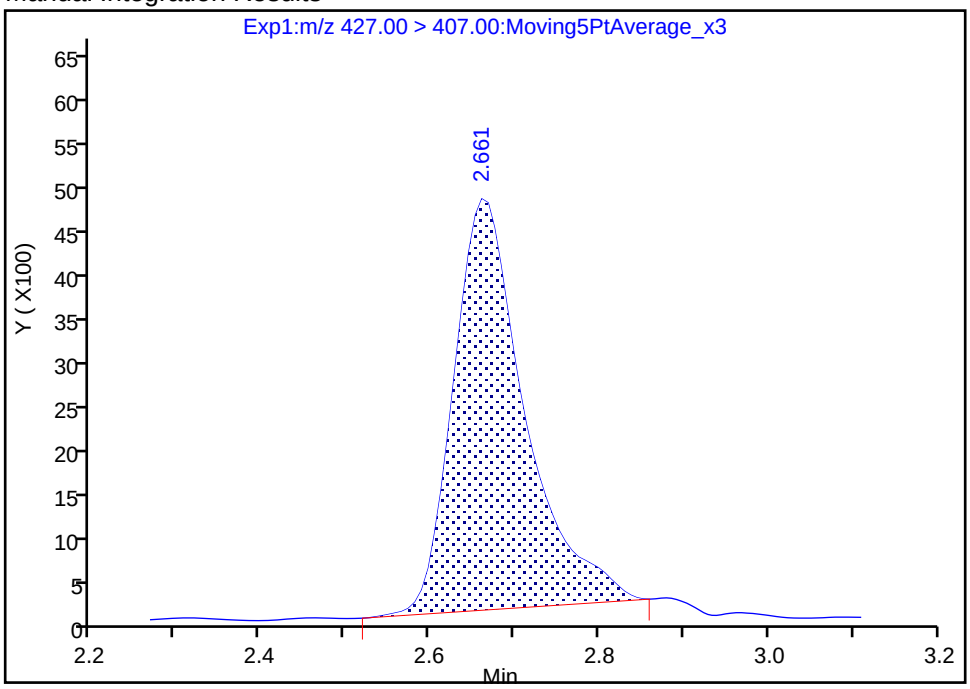
Processing Integration Results

RT: 2.66
Area: 23658
Amount: 0.039819
Amount Units: ng/ml



Manual Integration Results

RT: 2.66
Area: 27647
Amount: 0.046532
Amount Units: ng/ml



Reviewer: westendorfc, 09-Apr-2018 14:46:53

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

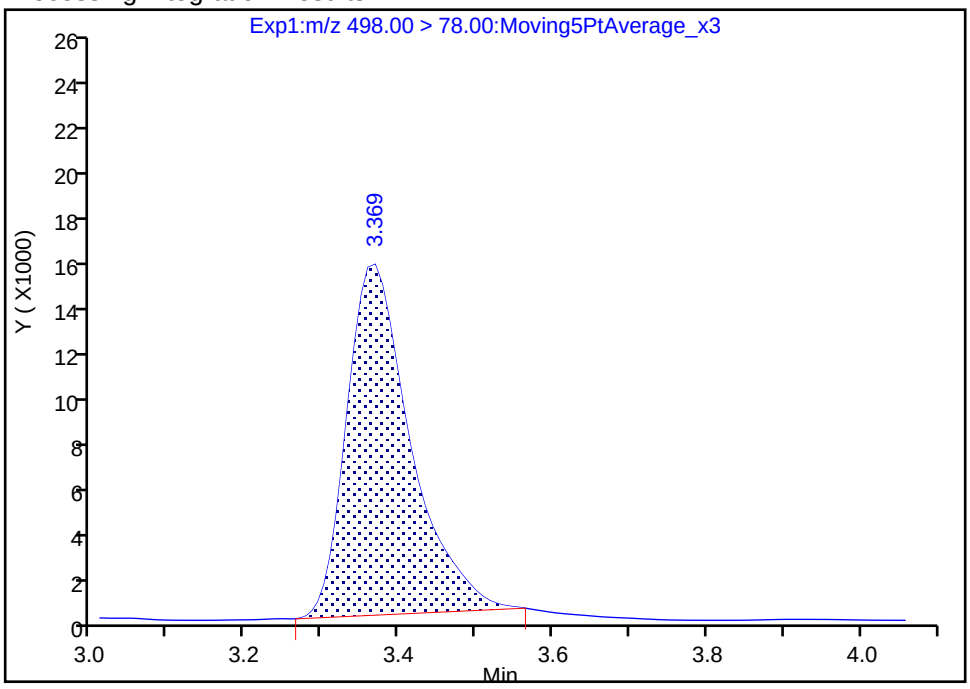
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d
Injection Date: 09-Apr-2018 08:49:02 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

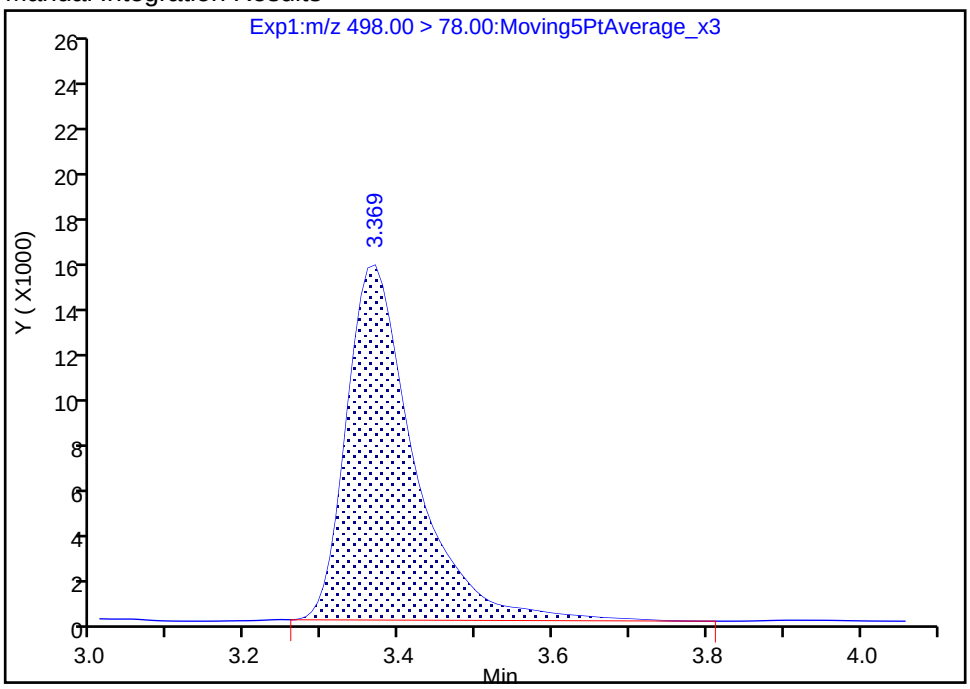
Processing Integration Results

RT: 3.37
Area: 87217
Amount: 0.045541
Amount Units: ng/ml



Manual Integration Results

RT: 3.37
Area: 93742
Amount: 0.048948
Amount Units: ng/ml



Reviewer: westendorfc, 09-Apr-2018 14:47:05
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

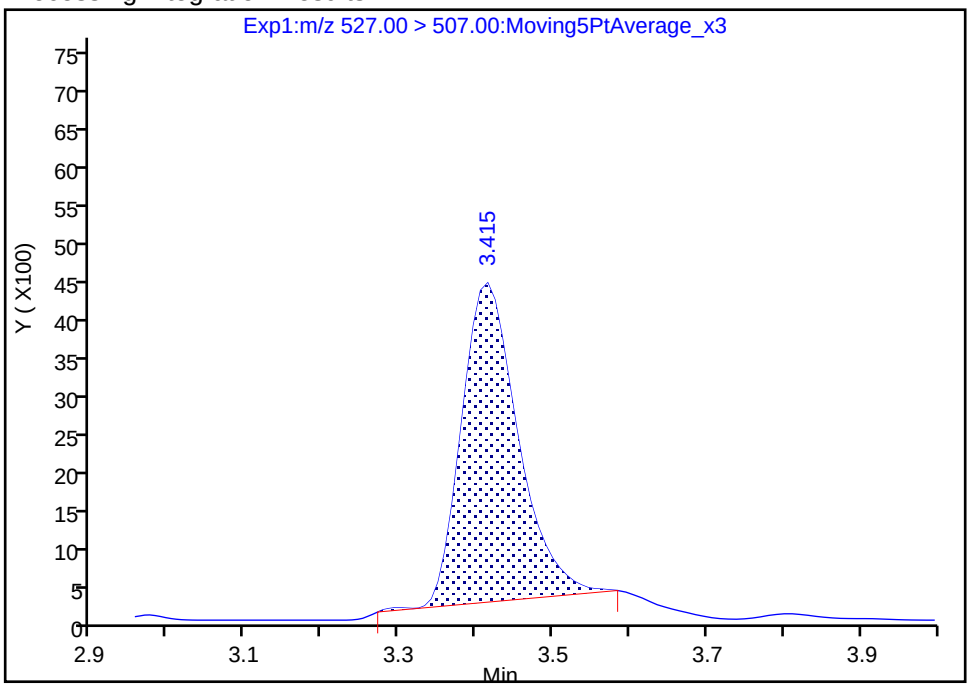
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d
Injection Date: 09-Apr-2018 08:49:02 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

25 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

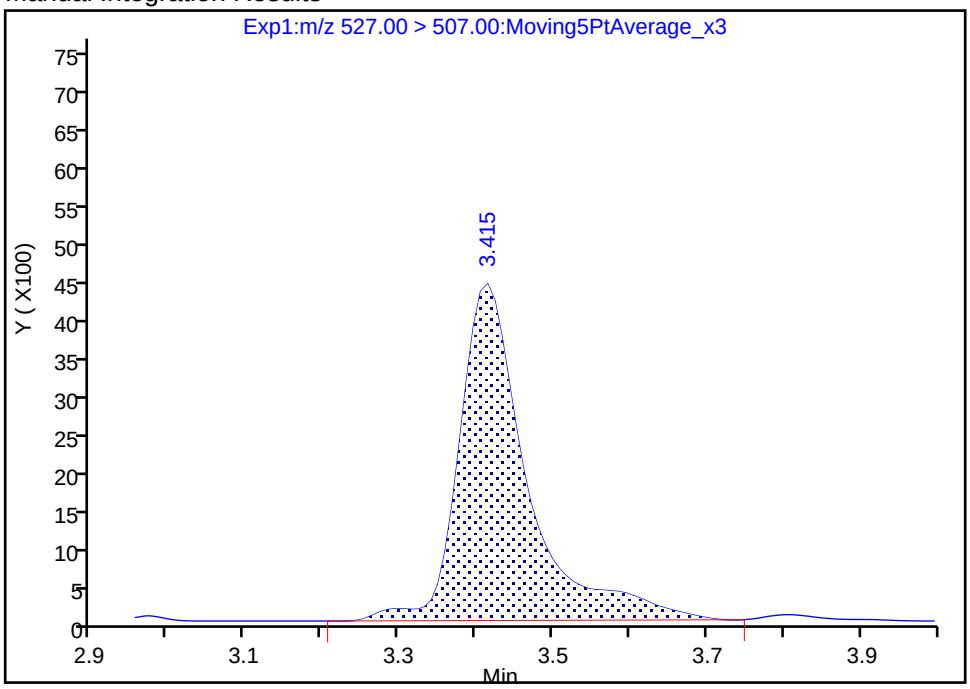
Processing Integration Results

RT: 3.42
Area: 21308
Amount: 0.040186
Amount Units: ng/ml



Manual Integration Results

RT: 3.42
Area: 27192
Amount: 0.051283
Amount Units: ng/ml



Reviewer: westendorfc, 09-Apr-2018 14:47:13
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

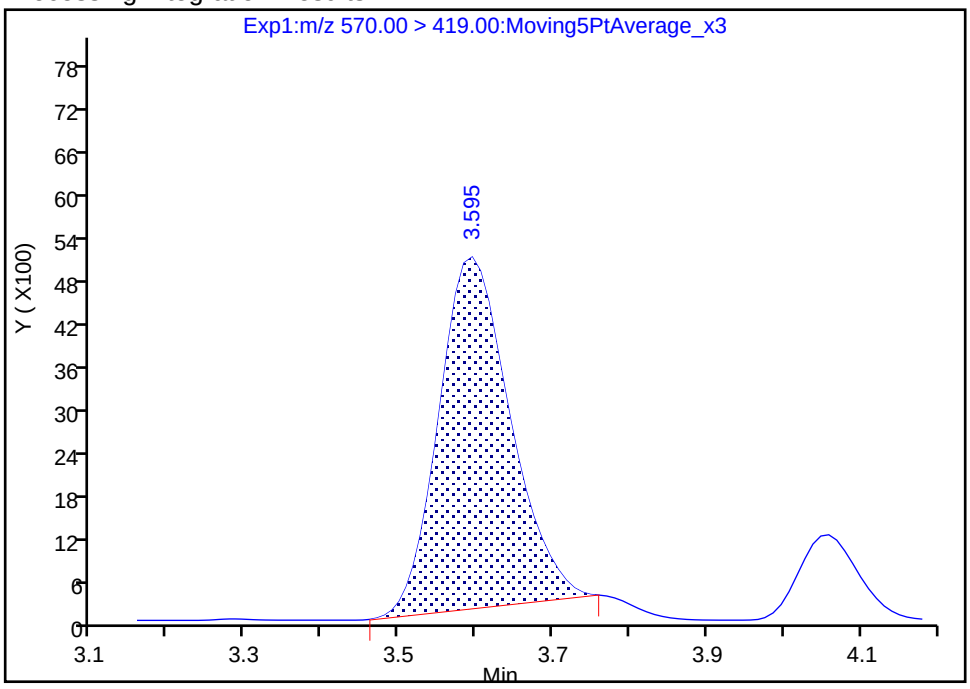
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d
Injection Date: 09-Apr-2018 08:49:02 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

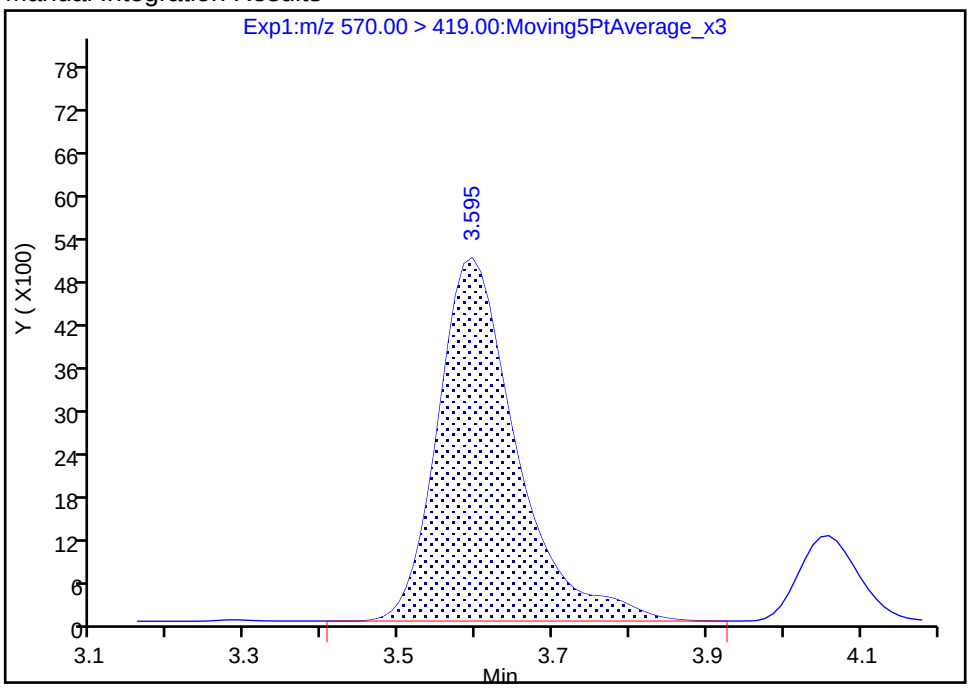
Processing Integration Results

RT: 3.59
Area: 31857
Amount: 0.043857
Amount Units: ng/ml



Manual Integration Results

RT: 3.59
Area: 36132
Amount: 0.049743
Amount Units: ng/ml



Reviewer: westendorfc, 09-Apr-2018 14:47:25
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

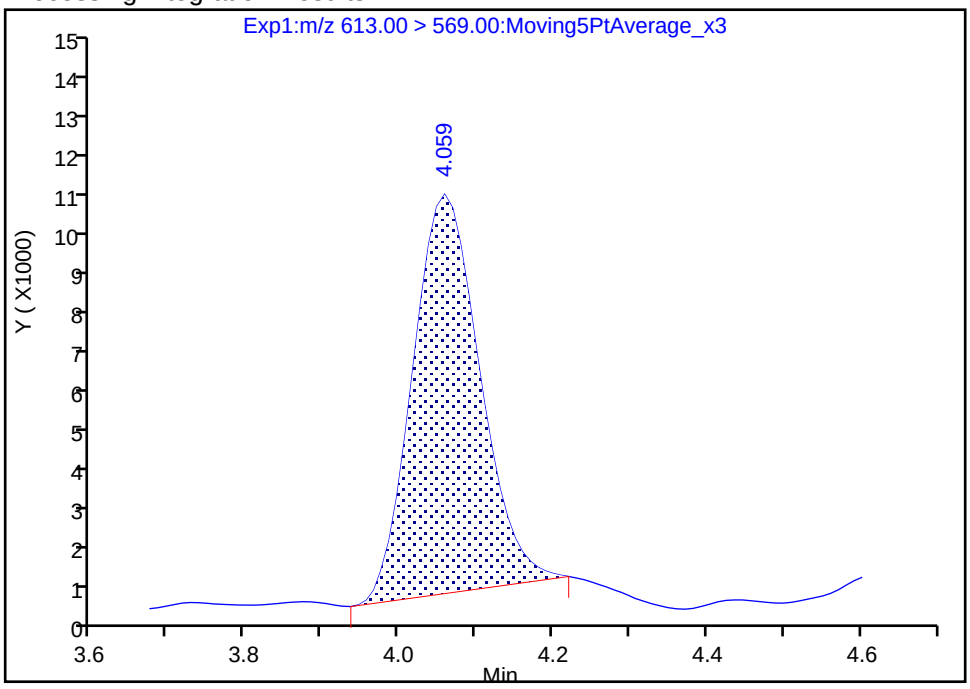
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_005.d
Injection Date: 09-Apr-2018 08:49:02 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

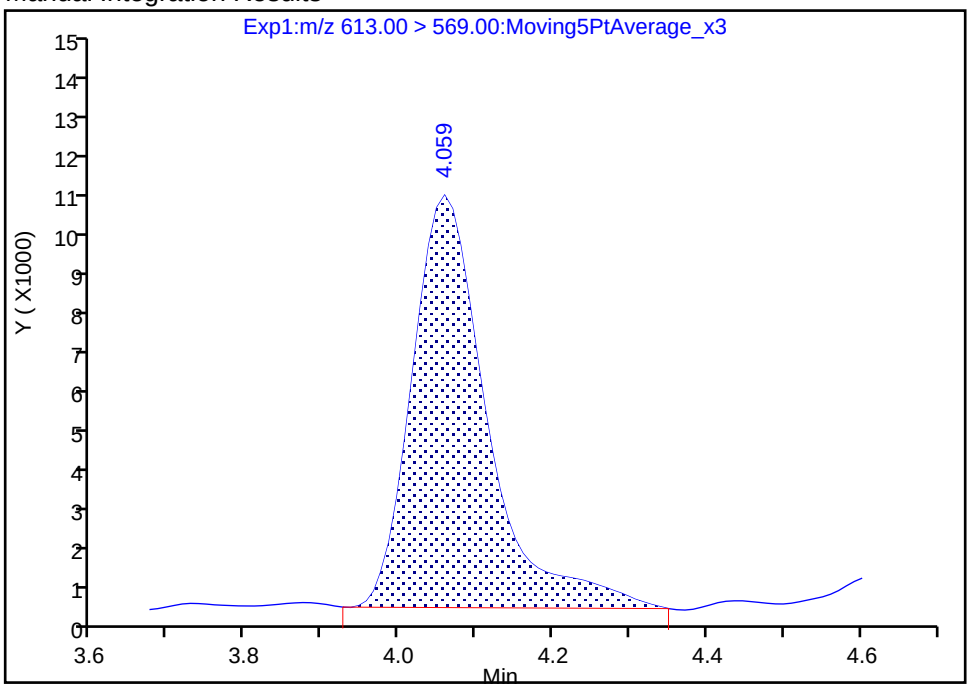
Processing Integration Results

RT: 4.06
Area: 59836
Amount: 0.047981
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 69248
Amount: 0.055528
Amount Units: ng/ml



Reviewer: westendorfc, 09-Apr-2018 14:47:34
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216928/3 Calibration Date: 04/09/2018 08:56

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9622		1.04	1.00	4.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.126		0.941	1.00	-5.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	72.81		0.816	0.884	-7.7	50.0
4:2 FTS	AveID	17.26	13.37		0.724	0.934	-22.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	1.016		0.992	1.00	-0.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	67.51		0.889	0.938	-5.2	50.0
HFPO-DA (GenX)	AveID	3.401	2.656		0.781	1.00	-21.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.026		0.944	1.00	-5.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.049		0.854	0.910	-6.1	40.0
Adona	AveID	3.564	3.480		0.977	1.00	-2.3	50.0
6:2FTS	AveID	1.868	1.888		0.958	0.948	1.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.089		0.919	1.00	-8.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.249		0.892	0.952	-6.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.002		0.974	1.00	-2.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.059		0.860	0.928	-7.3	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.798		0.896	0.932	-3.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	0.9791		0.991	1.00	-0.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7554		0.904	0.960	-5.8	50.0
8:2FTS	AveID	1.349	1.250		0.888	0.958	-7.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	0.9842		0.995	1.00	-0.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	0.999		0.948	1.00	-5.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6648		0.924	0.964	-4.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9119		0.994	1.00	-0.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8020		1.00	1.00	-0.0	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	3.020		0.980	0.942	4.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.007		0.932	1.00	-6.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.149		0.994	1.00	-0.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2515		1.01	1.00	0.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9350		0.966	1.00	-3.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-216928/3 Calibration Date: 04/09/2018 08:56

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.8601		0.866	1.00	-13.4	50.0
13C4 PFBA	Ave	1.382	1.353		2.45	2.50	-2.1	50.0
13C5 PFPeA	Ave	0.8994	0.9130		2.54	2.50	1.5	50.0
13C3-PFBS	Ave	0.0206	0.0213		2.40	2.33	3.3	50.0
M2-4:2FTS	Ave	0.1573	0.1332		1.98	2.34	-15.3	50.0
13C2 PFHxA	Ave	0.9916	0.9520		2.40	2.50	-4.0	50.0
13C3 HFPO-DA	Ave	0.0494	0.0632		3.20	2.50	28.1	50.0
13C4-PFHpA	Ave	0.9533	0.9387		2.46	2.50	-1.5	50.0
18O2 PFHxS	Ave	1.189	1.189		2.37	2.37	0.0	50.0
M2-6:2FTS	Ave	0.2203	0.1782		1.92	2.38	-19.1	40.0
13C4 PFOA	Ave	0.9372	0.9382		2.50	2.50	0.1	50.0
13C4 PFOS	Ave	0.8257	0.8573		2.48	2.39	3.8	50.0
13C5 PFNA	Ave	0.7930	0.7982		2.52	2.50	0.7	50.0
13C8 FOSA	Ave	1.166	1.122		2.41	2.50	-3.8	50.0
M2-8:2FTS	Ave	0.2562	0.2300		2.15	2.40	-10.2	40.0
13C2 PFDA	Ave	0.6698	0.7063		2.64	2.50	5.4	50.0
d3-NMeFOSAA	Ave	0.3583	0.3876		2.71	2.50	8.2	50.0
13C2 PFUnA	Ave	0.5468	0.5978		2.73	2.50	9.3	50.0
d5-NEtFOSAA	Ave	0.3760	0.4177		2.78	2.50	11.1	50.0
13C2 PFDoA	Ave	0.6087	0.6688		2.75	2.50	9.9	50.0
13C2-PFTeDA	Ave	0.7733	0.8236		2.66	2.50	6.5	50.0
13C2-PFHxDA	Ave	1.194	1.192		2.50	2.50	-0.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 09-Apr-2018 08:56:49 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 14:48:28 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: hannigana Date: 09-Apr-2018 09:15:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.422	1.425	-0.003	1.000	6023391	2.45		97.9	49418	
2 Perfluorobutyric acid										
212.90 > 169.00	1.428	1.428	0.0	1.004	2318275	1.04		104	1101	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.694	0.004	0.556	4064139	2.54		102	78884	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.699	0.0	1.000	1830115	0.9406		94.1	1272	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.730	0.005	1.000	88067	2.40		103	663	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2437947	0.8158		92.3	2817	
298.90 > 99.00	1.744	1.744	0.0	1.005	1072353		2.27(1.25-3.74)		2347	
D 60 M2-4:2FTS										
329.00 > 81.00	1.956	1.939	0.017	1.000	553980	1.98		84.7	6332	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.956	1.956	0.0	1.000	472918	0.7236		77.5	25227	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.982	0.006	1.000	4238030	2.40		96.0	108612	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.988	0.0	1.000	1721628	0.99		99.2	3091	
313.00 > 119.00	1.988	1.988	0.0	1.000	159165		10.82(5.03-15.10)		2261	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.011	0.0	1.000	2398488	0.8893		94.8	23029	
349.00 > 99.00	2.011	2.011	0.0	1.000	929545		2.58(1.36-4.07)		8117	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.090	2.084	0.006	1.000	281503	3.20		128	7244	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.090	0.0	1.000	299025	0.7807		78.1	2391	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.309	0.020	1.000	4178822	2.46		98.5	72185	
D 11 18O2 PFHxS										
403.00 > 84.00	2.342	2.322	0.020	1.000	5005328	2.36		100	100377	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.329	2.329	0.0	1.000	1714435	0.9440		94.4	2214	
363.00 > 169.00	2.329	2.329	0.0	1.000	668472		2.56(1.13-3.40)		3002	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.329	0.0	0.994	2019854	0.8545		93.9	4887	
399.00 > 99.00	2.342	2.329	0.013	1.000	645955		3.13(1.50-4.49)		2070	
65 Adona										
377.00 > 251.00	2.369	2.369	0.0	1.000	5312532	0.9765		97.7	76671	
377.00 > 85.00	2.369	2.369	0.0	1.000	3014912		1.76(0.84-2.53)		31134	
D 12 M2-6:2FTS										
429.00 > 81.00	2.658	2.629	0.029	1.000	753526	1.92		80.9	14517	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.658	2.658	0.0	1.000	567827	0.9583		101	8964	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.660	0.021	1.000	4176676	2.50		100	91962	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4451637	2.50			111463	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	1820019	0.9187		91.9	1126	
413.00 > 169.00	2.688	2.681	0.007	1.003	1007879		1.81(0.84-2.52)		3363	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	1815403	0.8923		93.7	17640	
449.00 > 99.00	2.688	2.688	0.0	1.000	514003		3.53(1.94-5.82)		7581	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.022	0.035	1.000	3553074	2.52		101	125084	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.022	0.035	1.000	3648501	2.48		104	34566	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.057	0.0	1.000	1423736	0.9735		97.4	4692	
463.00 > 169.00	3.057	3.057	0.0	1.000	337534		4.22(1.90-5.69)		11561	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.057	0.0	1.000	1500851	0.8604		92.7	754	
499.00 > 99.00	3.057	3.057	0.0	1.000	339891		4.42(2.31-6.93)		855	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.264	3.264	0.0	1.000	2558732	0.8963		96.2	77751	
D 21 13C8 FOSA										
506.00 > 78.00	3.368	3.358	0.010	1.000	4994768	2.40		96.2	58526	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.368	3.368	0.0	1.000	1956097	0.99		99.1	45477	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.377	0.037	1.000	980899	2.15		89.8	7957	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.386	0.038	1.000	3144058	2.64		105	101864	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.405	3.405	0.0	1.000	1107046	0.9045		94.2	16303	
549.00 > 99.00	3.405	3.405	0.0	1.000	417256		2.65(1.33-3.97)		8363	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.414	0.0	1.000	490465	0.8878		92.7	15080	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.424	0.0	1.000	1237742	0.99		99.5	4797	
513.00 > 169.00	3.424	3.424	0.0	1.000	223775		5.53(2.36-7.09)		4471	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.536	0.037	1.000	1725595	2.70		108	21916	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.584	0.0	1.003	689729	0.9480		94.8	4686	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.706	0.042	1.000	1859298	2.78		111	23139	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.717	0.031	1.000	2661248	2.73		109	66060	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.738	0.0	1.000	978327	0.9237		95.8	10653	
599.00 > 99.00	3.738	3.738	0.0	1.000	343070		2.85(1.39-4.16)		7506	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.749	3.749	0.0	1.000	678199	0.99		99.4	9218	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.759	0.0	1.003	853755	1.00		100.0	3441	
563.00 > 169.00	3.749	3.759	-0.011	1.000	218337		3.91(2.12-6.36)		6621	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.915	3.915	0.0	1.000	4343399	0.9803		104	62174	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.007	0.041	1.000	2977154	2.75		110	25410	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.048	0.0	1.000	1199525	0.9320		93.2	962	
613.00 > 169.00	4.048	4.048	0.0	1.000	292507		4.10(2.13-6.40)		3009	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.317	0.0	1.000	1368399	0.99		99.4	783	
663.00 > 169.00	4.317	4.317	0.0	1.000	425852		3.21(1.25-3.76)		4667	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.510	0.052	1.000	3666211	2.66		107	18424	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.562	4.562	0.0	1.000	368766	1.01		101	3801	
713.00 > 219.00	4.552	4.562	-0.010	0.998	254805		1.45(0.71-2.13)		3056	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.983	4.930	0.053	1.000	5306128	2.50		99.8	12409	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.983	4.983	0.0	1.000	1984581	0.9661		96.6	461	
813.00 > 169.00	4.983	4.983	0.0	1.000	328416		6.04(2.86-8.58)		1740	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.362	5.362	0.0	1.000	1825421	0.8663		86.6	391	
913.00 > 169.00	5.362	5.362	0.0	1.000	207375		8.80(3.83-11.48)		665	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 09-Apr-2018 14:48:30 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b\2018.04.09LLA_006.d

Injection Date: 09-Apr-2018 08:56:49 Instrument ID: A8_N

Lims ID: CCV L4

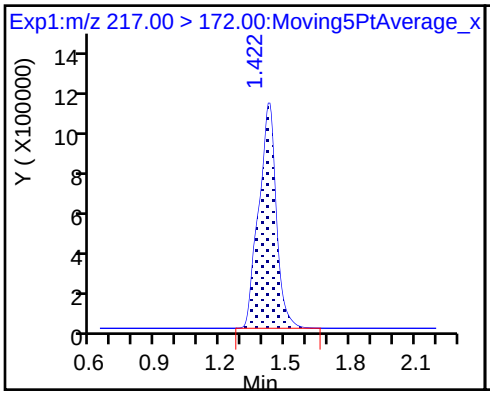
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

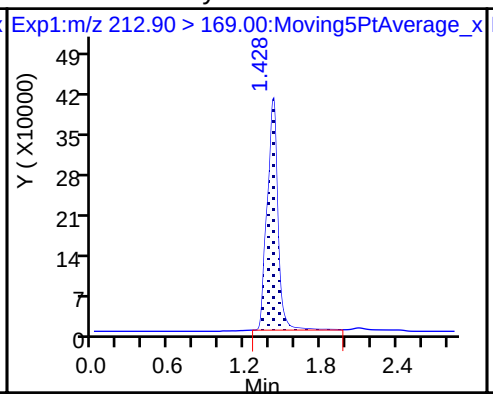
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

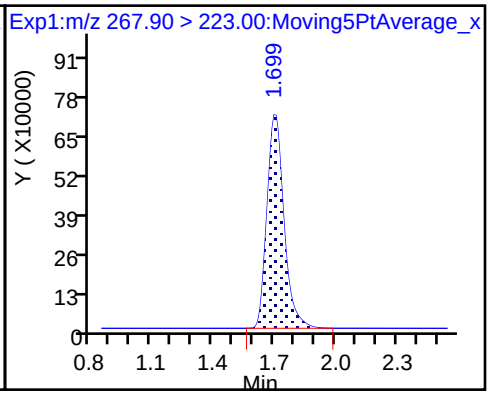
D 1 13C4 PFBA



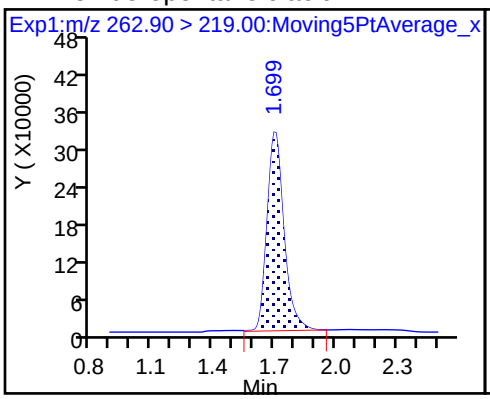
2 Perfluorobutyric acid



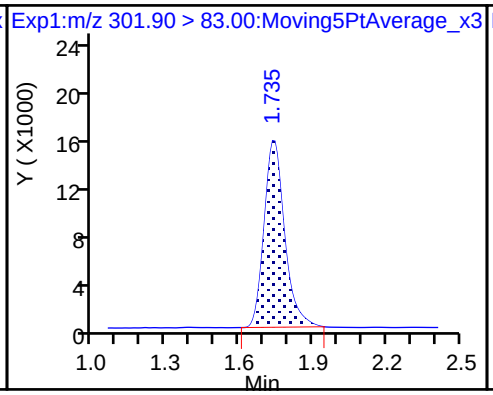
D 3 13C5-PFPeA



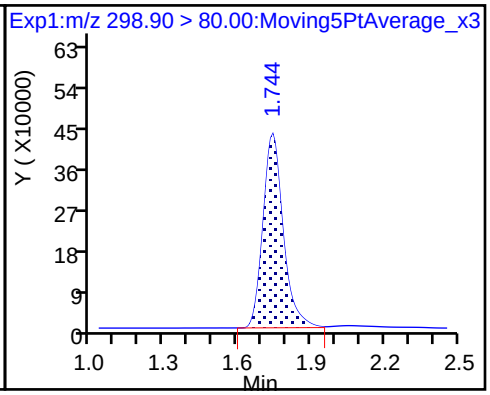
4 Perfluoropentanoic acid



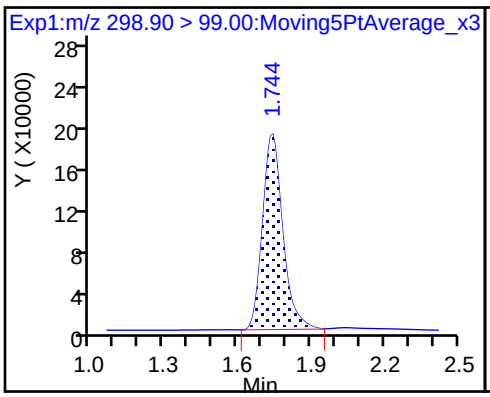
D 47 13C3-PFBS



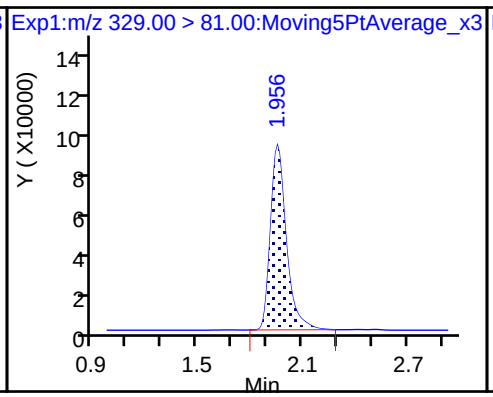
5 Perfluorobutanesulfonic acid



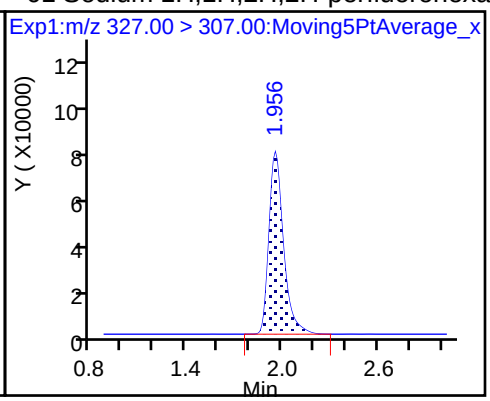
5 Perfluorobutanesulfonic acid



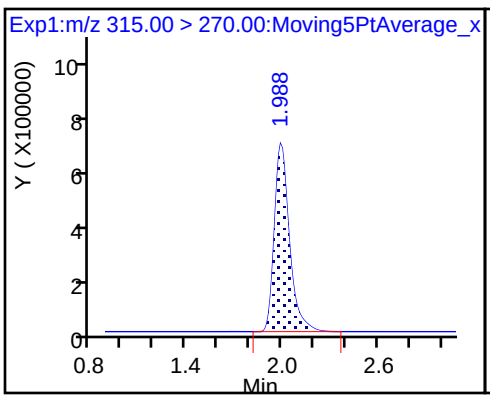
D 60 M2-4:2FTS



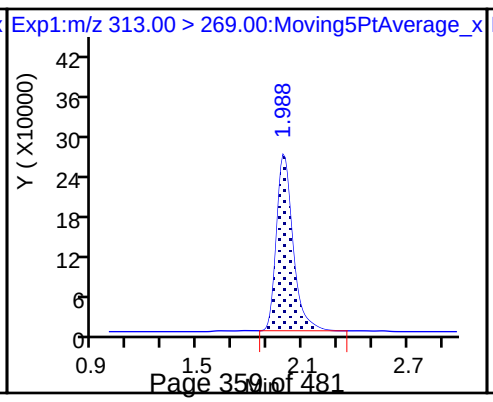
61 Sodium 1H,1H,2H,2H-perfluorohexane



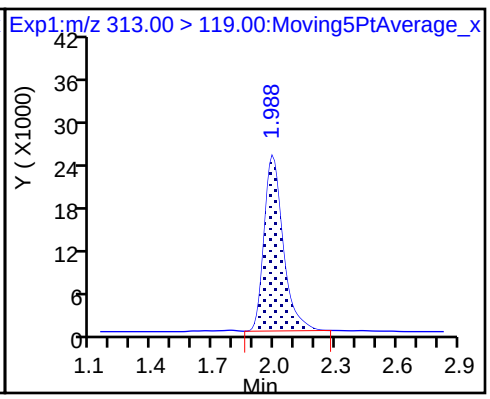
D 7 13C2 PFHxA



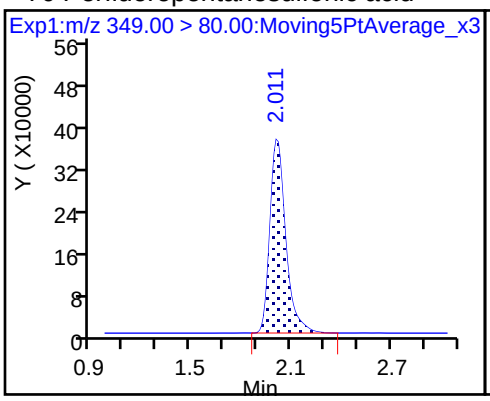
6 Perfluorohexanoic acid



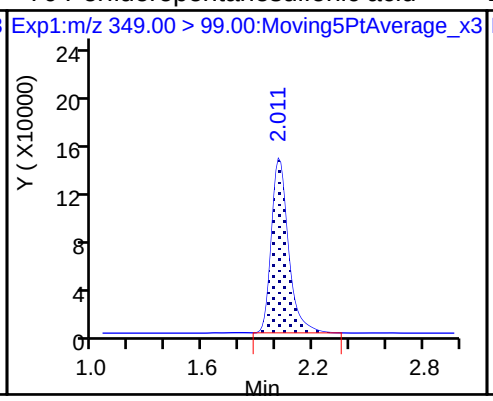
6 Perfluorohexanoic acid



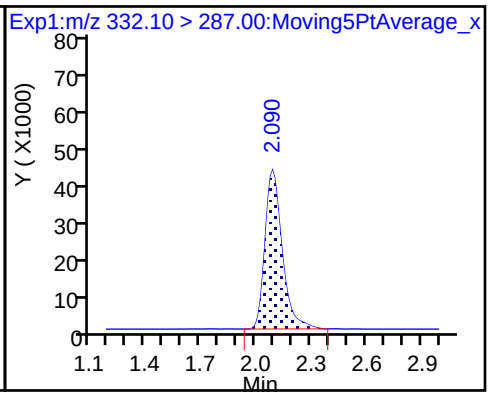
70 Perfluoropentanesulfonic acid



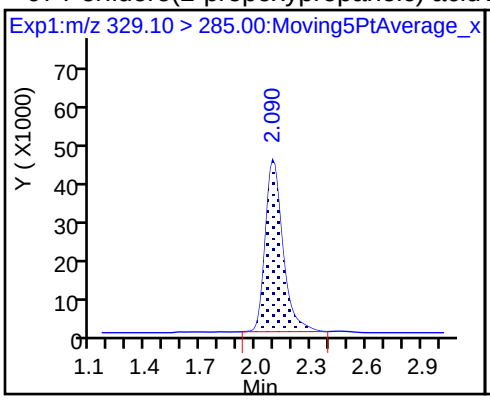
70 Perfluoropentanesulfonic acid



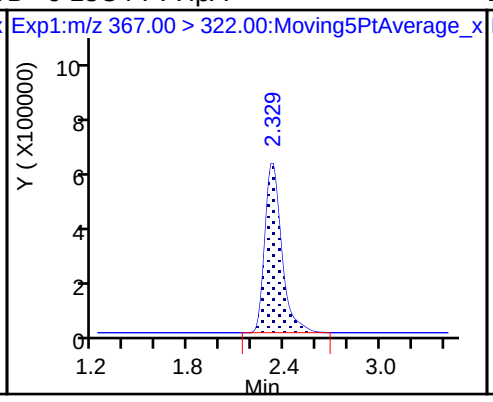
D 64 13C3 HFPO-DA



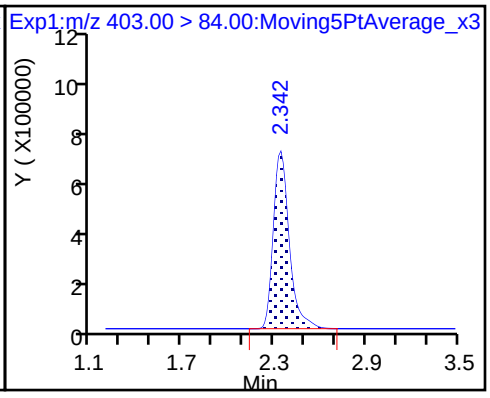
67 Perfluoro(2-propoxypropanoic) acid



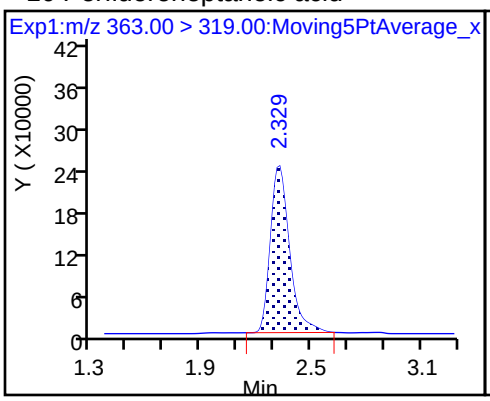
D 9 13C4-PFHpA



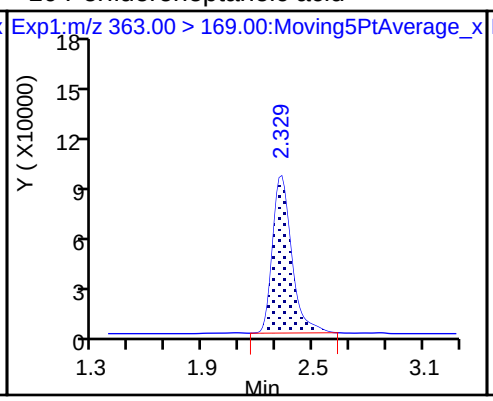
D 11 18O2 PFHxS



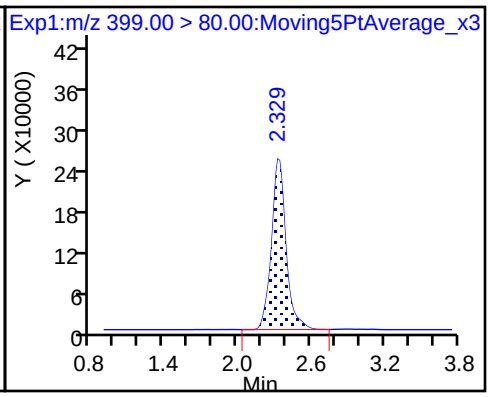
10 Perfluoroheptanoic acid



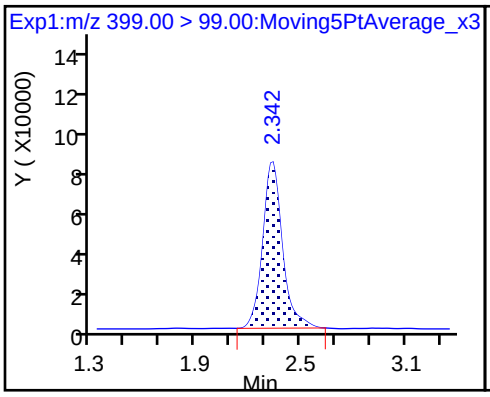
10 Perfluoroheptanoic acid



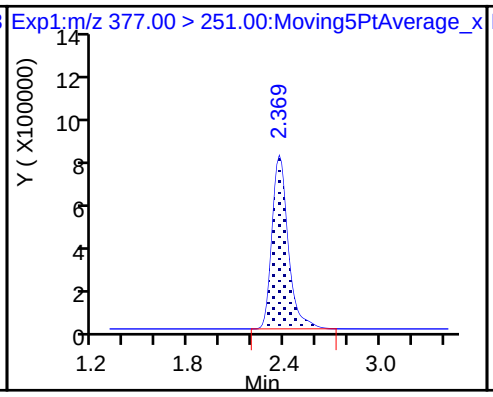
8 Perfluorohexanesulfonic acid



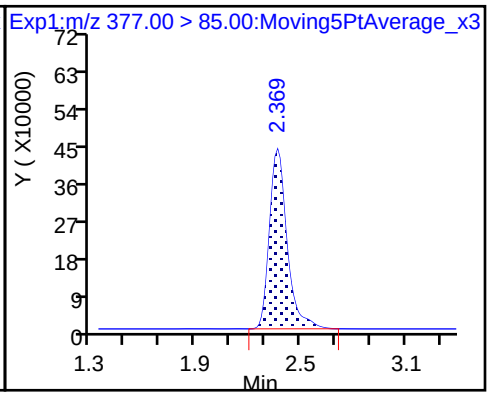
8 Perfluorohexanesulfonic acid



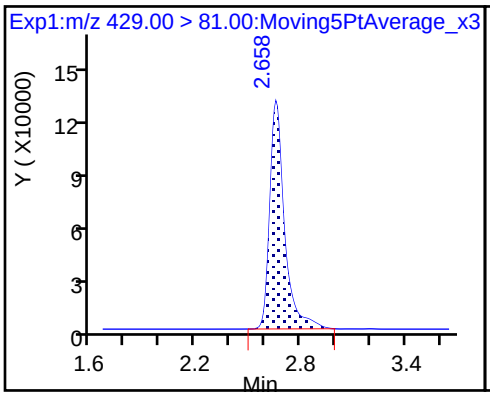
65 Adona



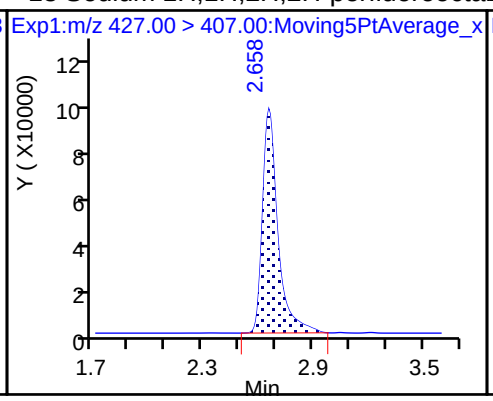
65 Adona



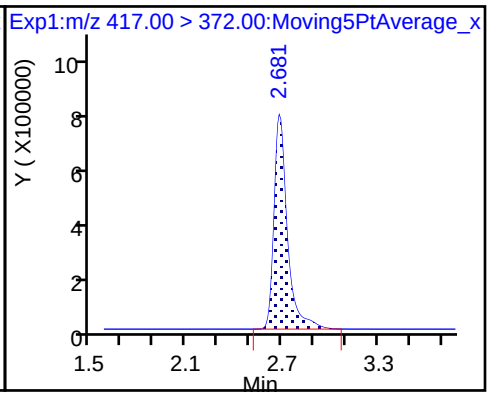
D 12 M2-6:2FTS



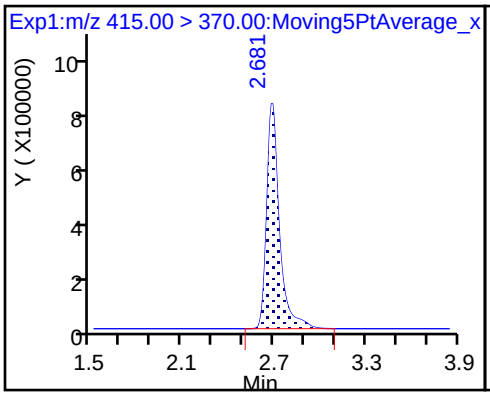
13 Sodium 1H,1H,2H,2H-perfluorooctane



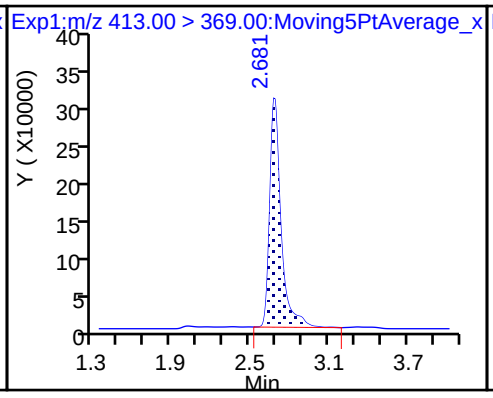
D 14 13C4 PFOA



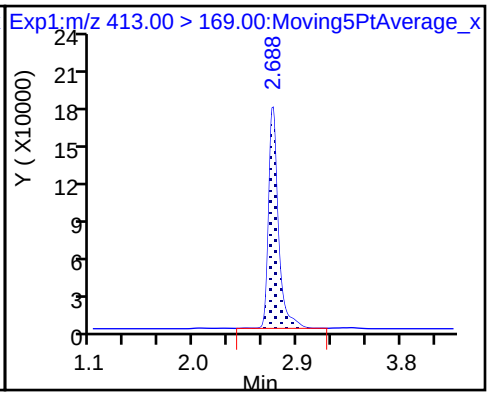
* 62 13C2-PFOA



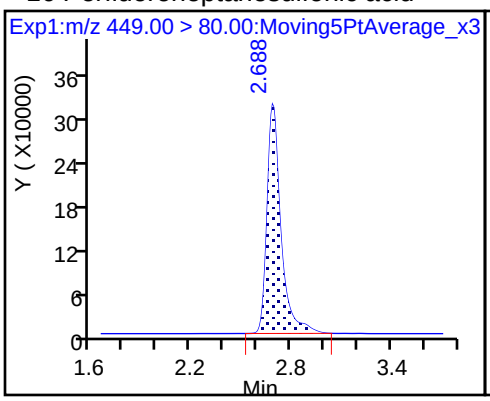
15 Perfluorooctanoic acid



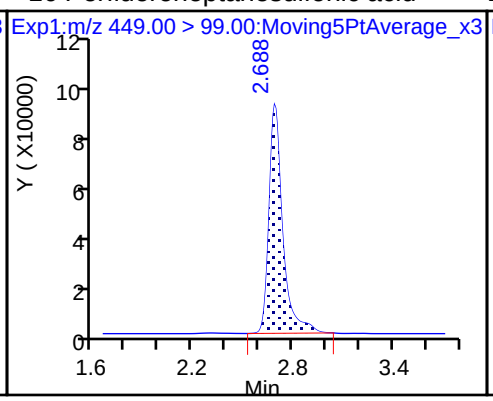
15 Perfluorooctanoic acid



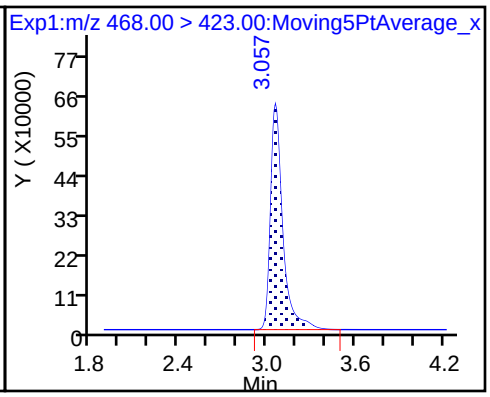
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 19 13C5 PFNA



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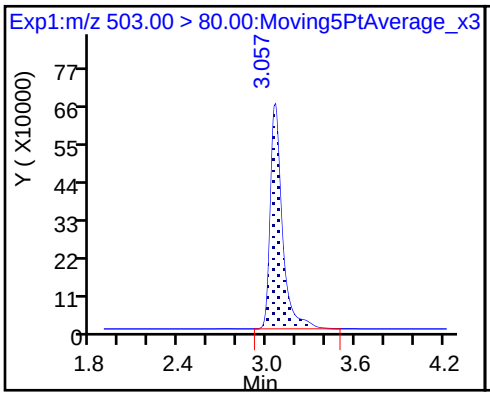
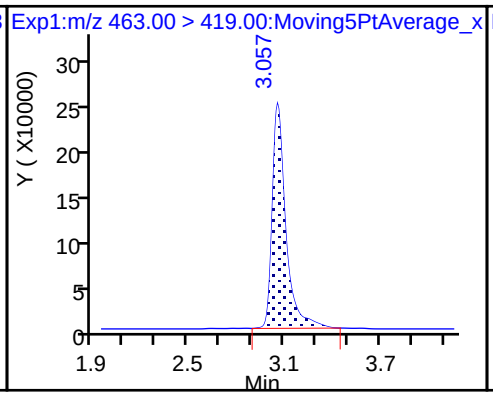
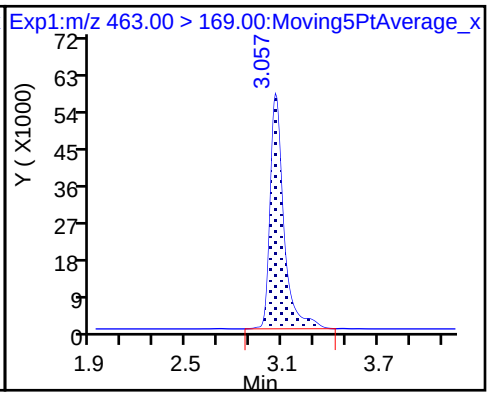


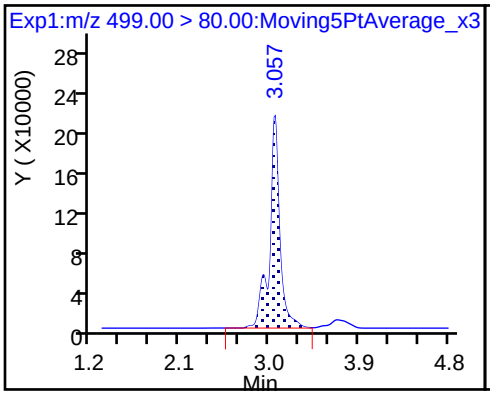
20 Perfluorononanoic acid



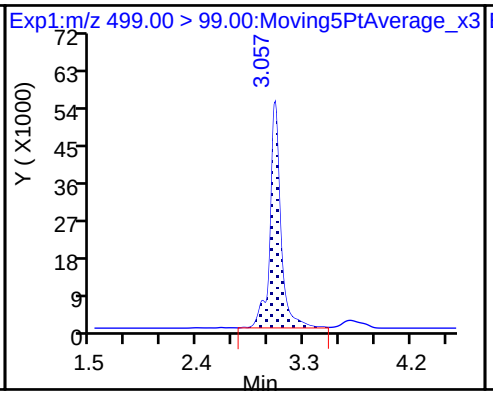
20 Perfluorononanoic acid



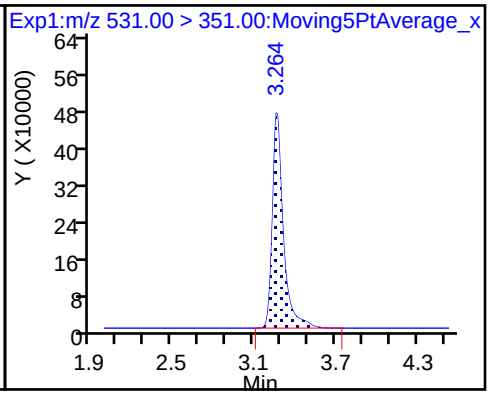
17 Perfluorooctane sulfonic acid



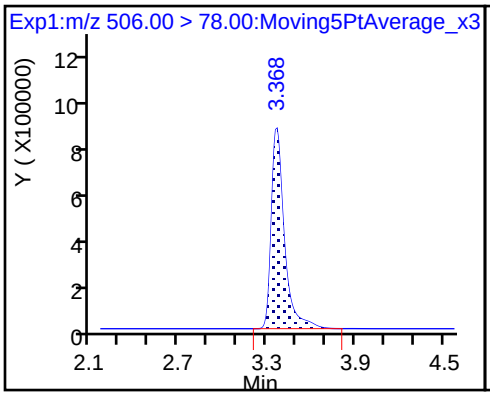
17 Perfluorooctane sulfonic acid



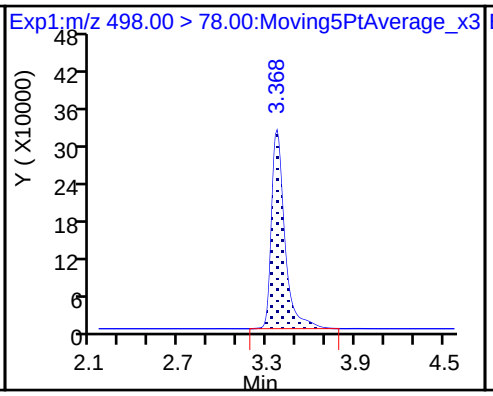
69 9-Chlorohexadecafluoro-3-oxanonane



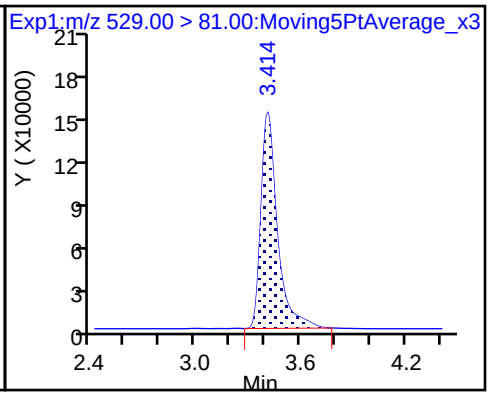
D 21 13C8 FOSA



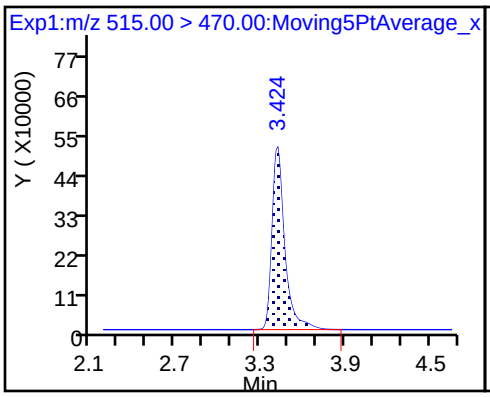
22 Perfluorooctane Sulfonamide



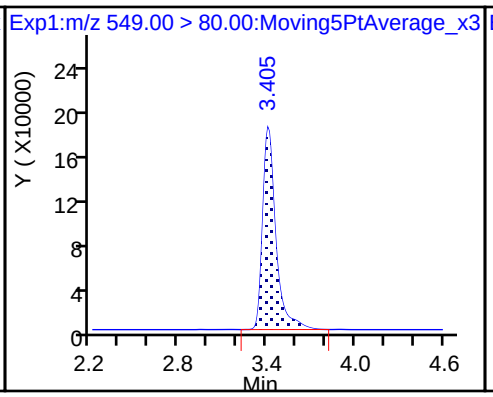
D 26 M2-8:2FTS



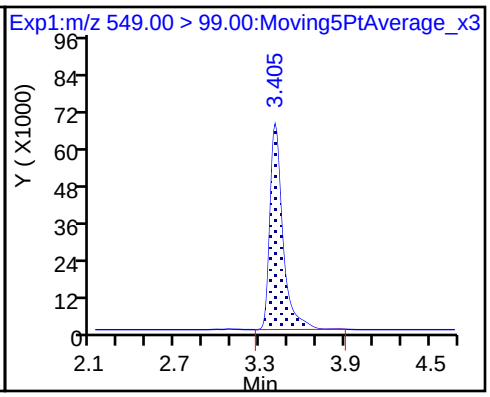
D 23 13C2 PFDA



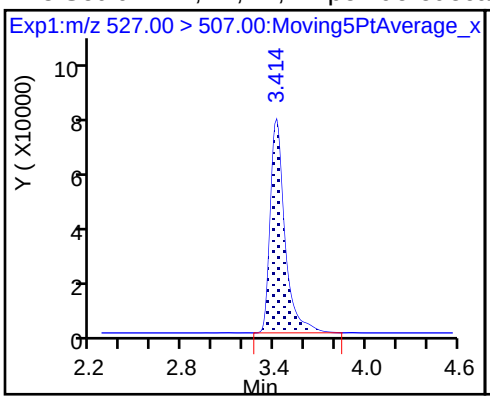
68 Perfluorononanesulfonic acid



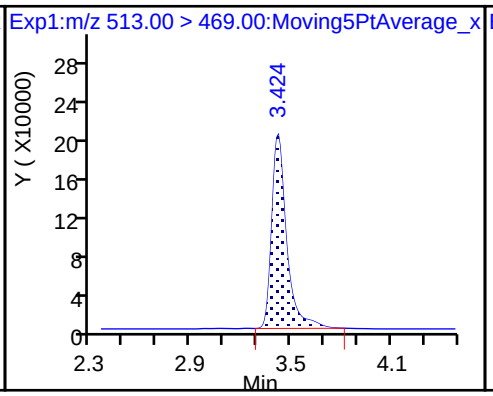
68 Perfluorononanesulfonic acid



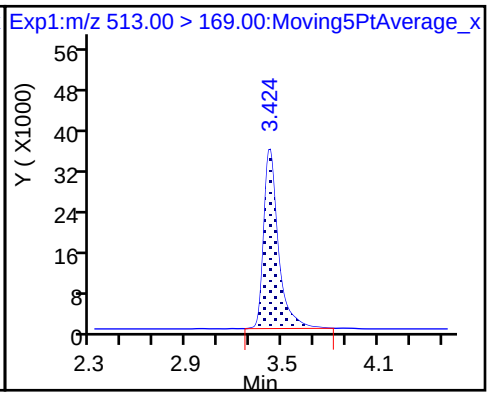
25 Sodium 1H,1H,2H,2H-perfluorodecane



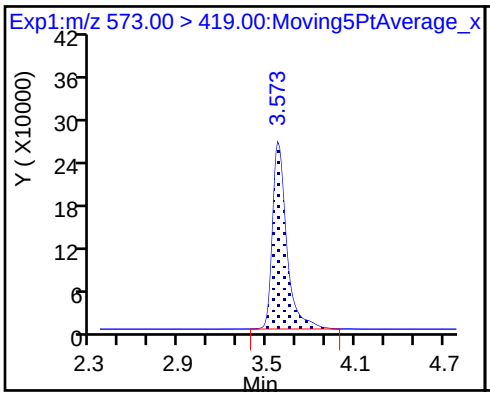
24 Perfluorodecanoic acid



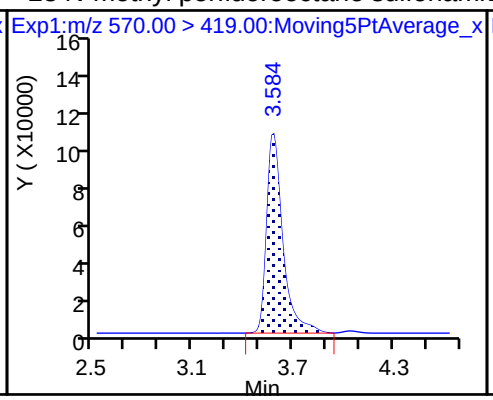
24 Perfluorodecanoic acid



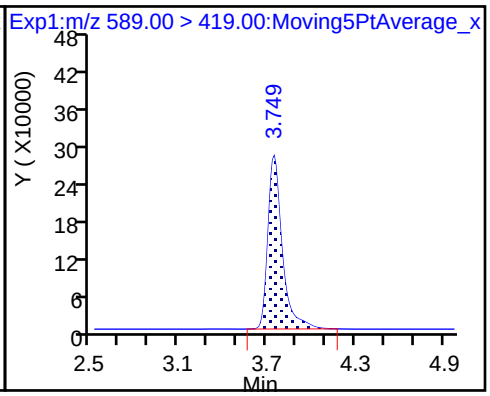
D 27 d3-NMeFOSAA



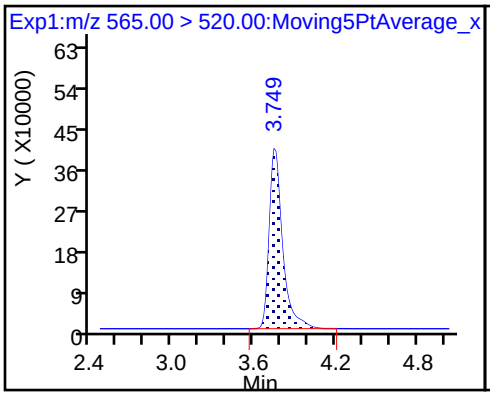
28 N-methyl perfluorooctane sulfonami



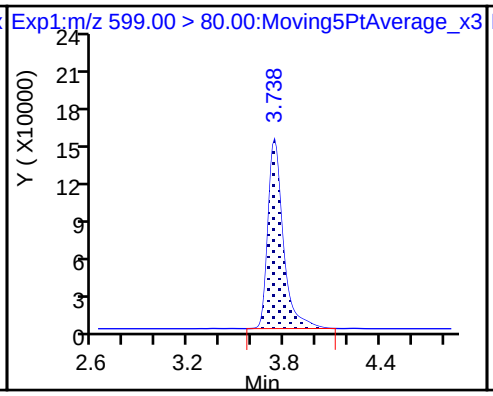
D 32 d5-NEtFOSAA



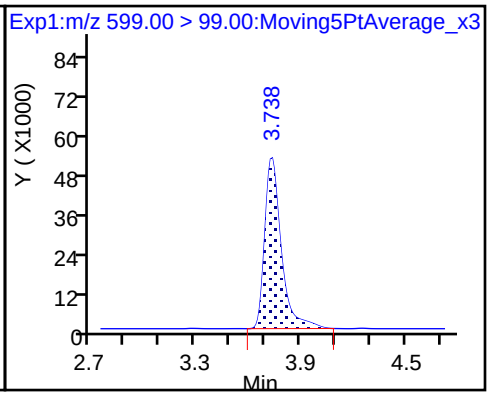
D 30 13C2 PFUnA



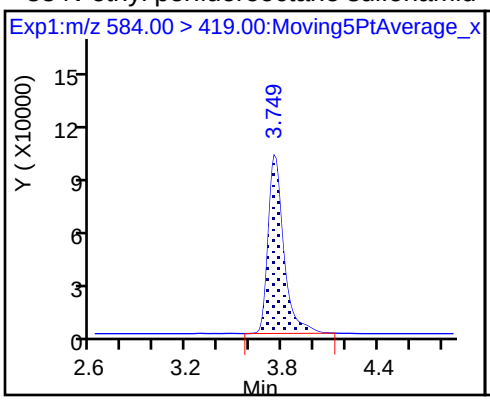
29 Perfluorodecane Sulfonic acid



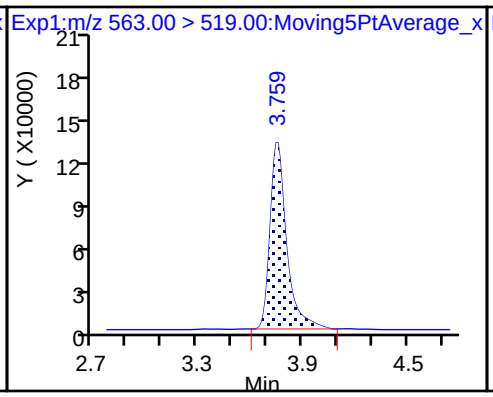
29 Perfluorodecane Sulfonic acid



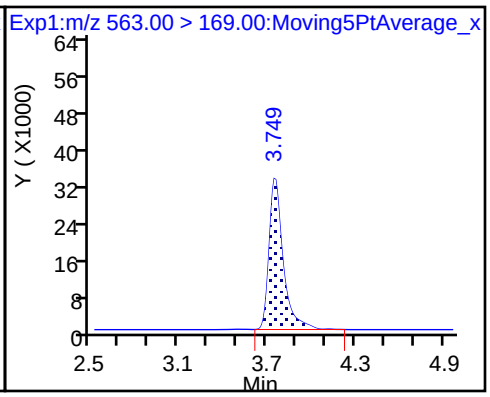
33 N-ethyl perfluorooctane sulfonamid



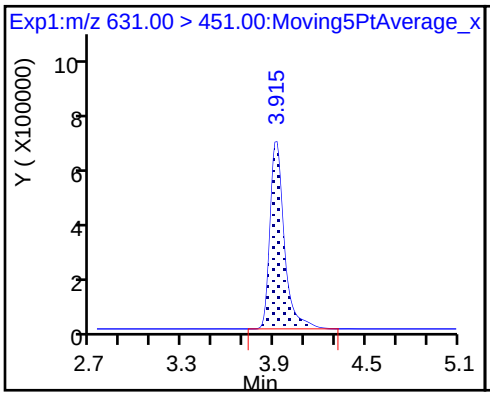
31 Perfluoroundecanoic acid



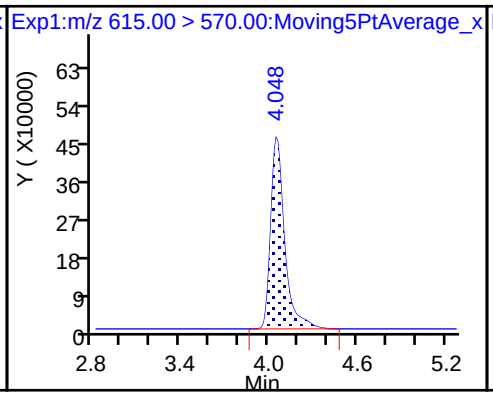
31 Perfluoroundecanoic acid



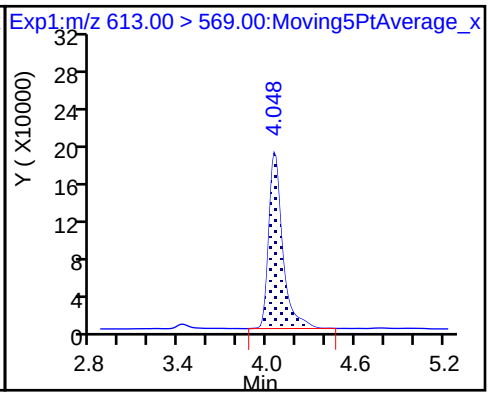
66 11-Chloroeicosafluoro-3-oxaundecan



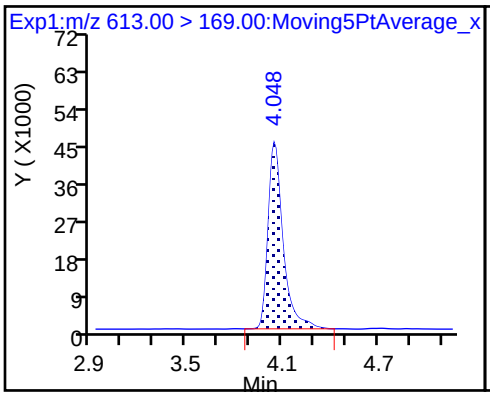
D 36 13C2 PFDoA



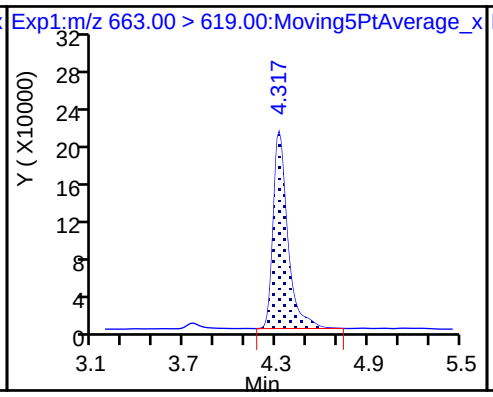
37 Perfluorododecanoic acid



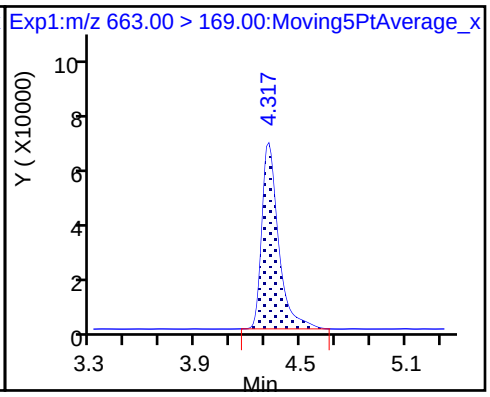
37 Perfluorododecanoic acid



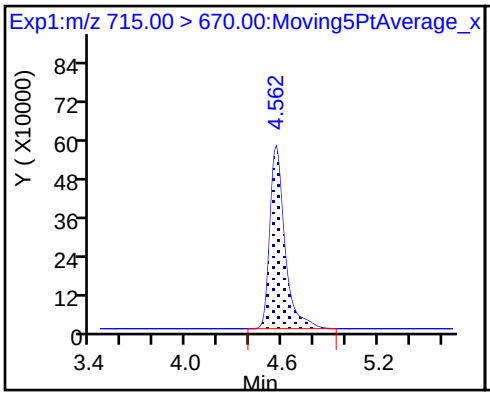
41 Perfluorotridecanoic acid



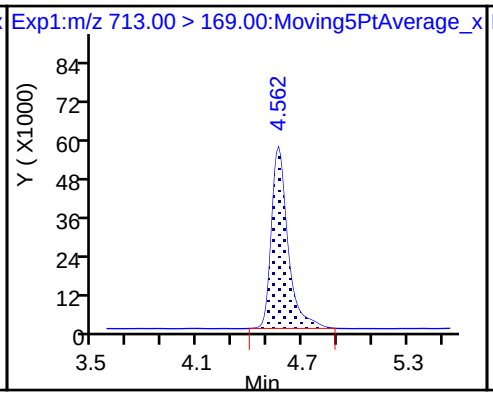
41 Perfluorotridecanoic acid



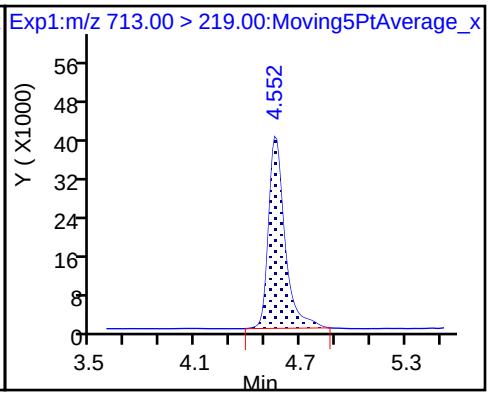
D 43 13C2-PFTeDA



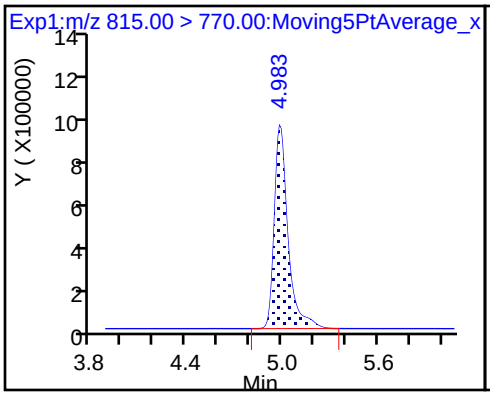
42 Perfluorotetradecanoic acid



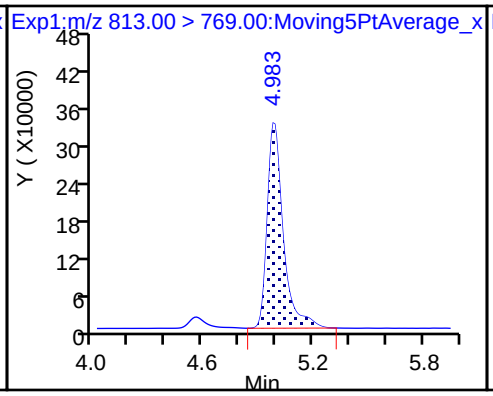
42 Perfluorotetradecanoic acid



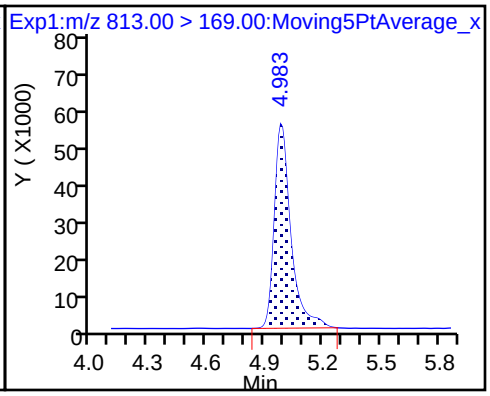
D 44 13C2-PFHxDA



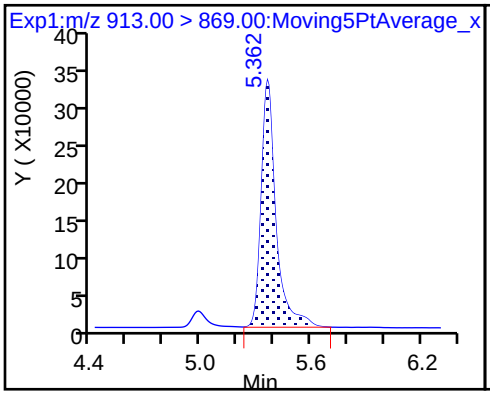
45 Perfluorohexadecanoic acid



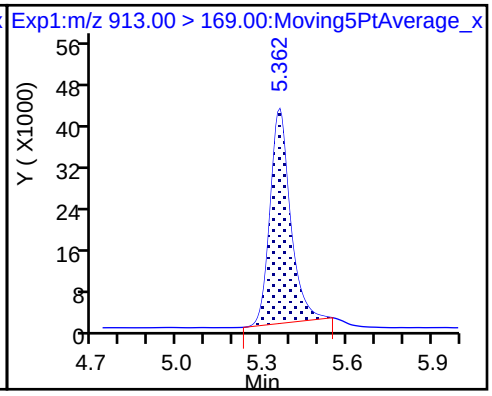
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-217070/1 Calibration Date: 04/09/2018 18:18

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_043.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9389		1.02	1.00	1.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.178		0.984	1.00	-1.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	78.53		0.880	0.884	-0.5	50.0
4:2 FTS	AveID	17.26	13.73		0.743	0.934	-20.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	0.9696		0.947	1.00	-5.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	71.98		0.948	0.938	1.1	50.0
HFPO-DA (GenX)	AveID	3.401	2.898		0.852	1.00	-14.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	0.9857		0.907	1.00	-9.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	0.9942		0.810	0.910	-11.0	40.0
Adona	AveID	3.564	3.356		0.942	1.00	-5.8	50.0
6:2FTS	AveID	1.868	1.660		0.842	0.948	-11.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.108		0.934	1.00	-6.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.273		0.909	0.952	-4.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.051		0.853	0.928	-8.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.026		0.997	1.00	-0.3	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.870	1.773		0.884	0.932	-5.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	0.9781		0.990	1.00	-1.0	40.0
8:2FTS	AveID	1.349	1.244		0.884	0.958	-7.8	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7312		0.876	0.960	-8.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	1.012		1.02	1.00	2.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	1.003		0.951	1.00	-4.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6302		0.876	0.964	-9.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.8426		0.919	1.00	-8.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.7760		0.967	1.00	-3.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.902	2.835		0.920	0.942	-2.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.038		0.961	1.00	-3.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.154		0.998	1.00	-0.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2539		1.02	1.00	1.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9361		0.967	1.00	-3.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-217070/1 Calibration Date: 04/09/2018 18:18

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_043.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.9912		0.998	1.00	-0.2	50.0
13C4 PFBA	Ave	1.382	1.335		2.42	2.50	-3.4	50.0
13C5 PFPeA	Ave	0.8994	0.8569		2.38	2.50	-4.7	50.0
13C3-PFBS	Ave	0.0206	0.0197		2.23	2.33	-4.3	50.0
M2-4:2FTS	Ave	0.1573	0.1277		1.90	2.34	-18.8	50.0
13C2 PFHxA	Ave	0.9916	0.9506		2.40	2.50	-4.1	50.0
13C3 HFPO-DA	Ave	0.0494	0.0587		2.97	2.50	18.8	50.0
13C4-PFHpA	Ave	0.9533	0.9675		2.54	2.50	1.5	50.0
18O2 PFHxS	Ave	1.189	1.211		2.41	2.37	1.9	50.0
M2-6:2FTS	Ave	0.2203	0.1775		1.91	2.38	-19.4	40.0
13C4 PFOA	Ave	0.9372	0.9172		2.45	2.50	-2.1	50.0
13C4 PFOS	Ave	0.8257	0.8457		2.45	2.39	2.4	50.0
13C5 PFNA	Ave	0.7930	0.8055		2.54	2.50	1.6	50.0
13C8 FOSA	Ave	1.166	1.084		2.32	2.50	-7.1	50.0
M2-8:2FTS	Ave	0.2562	0.2269		2.12	2.40	-11.4	40.0
13C2 PFDA	Ave	0.6698	0.6764		2.53	2.50	1.0	50.0
d3-NMeFOSAA	Ave	0.3583	0.3670		2.56	2.50	2.4	50.0
d5-NEtFOSAA	Ave	0.3760	0.4091		2.72	2.50	8.8	50.0
13C2 PFUnA	Ave	0.5468	0.5801		2.65	2.50	6.1	50.0
13C2 PFDoA	Ave	0.6087	0.6434		2.64	2.50	5.7	50.0
13C2-PFTeDA	Ave	0.7733	0.8108		2.62	2.50	4.9	50.0
13C2-PFHxDA	Ave	1.194	1.409		2.95	2.50	18.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_043.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 09-Apr-2018 18:18:59 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:36 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 10:49:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.424	1.424	0.0	1.000	5984994	2.42		96.6	52862	
2 Perfluorobutyric acid										
212.90 > 169.00	1.424	1.424	0.0	1.000	2247652	1.02		102	880	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.692	1.692	0.0	1.000	1810185	0.9844		98.4	1212	
D 3 13C5-PFPeA										
267.90 > 223.00	1.692	1.703	-0.010	0.557	3840714	2.38		95.3	74200	
D 47 13C3-PFBS										
301.90 > 83.00	1.728	1.739	-0.011	1.000	82164	2.22		95.7	590	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.728	1.728	0.0	1.000	2453274	0.8799		99.5	2788	
298.90 > 99.00	1.728	1.728	0.0	1.000	1046712		2.34(1.25-3.74)		4584	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.948	0.0	1.000	453133	0.7431		79.6	23540	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.958	-0.010	1.000	534448	1.89		81.2	5731	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.980	1.980	0.0	1.000	1652403	0.9475		94.7	2944	
313.00 > 119.00	1.980	1.980	0.0	1.000	150584		10.97(5.03-15.10)		2131	
D 7 13C2 PFHxA										
315.00 > 270.00	1.980	1.990	-0.010	1.000	4260677	2.40		95.9	132971	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.002	2.002	0.0	1.000	2386142	0.9483		101	22744	
349.00 > 99.00	2.002	2.002	0.0	1.000	908716		2.63(1.36-4.07)		10186	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.081	2.081	0.0	1.000	304935	0.8521		85.2	2305	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.081	2.091	-0.010	1.000	263022	2.97		119	5468	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.317	-0.011	1.000	4336653	2.54		101	102738	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.306	2.306	0.0	1.000	1709869	0.9072		90.7	1994	
363.00 > 169.00	2.306	2.306	0.0	1.000	691582		2.47(1.13-3.40)		2559	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.319	0.0	1.000	1963962	0.8100		89.0	4244	
399.00 > 99.00	2.319	2.319	0.0	1.000	658266		2.98(1.50-4.49)		2037	
D 11 18O2 PFHxS										
403.00 > 84.00	2.319	2.330	-0.011	1.000	5133749	2.41		102	89738	
65 Adona										
377.00 > 251.00	2.358	2.358	0.0	1.000	5088495	0.9417		94.2	102352	
377.00 > 85.00	2.358	2.358	0.0	1.000	3019225		1.69(0.84-2.53)		42250	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.644	0.0	1.003	500840	0.8425		88.9	3681	
D 12 M2-6:2FTS										
429.00 > 81.00	2.635	2.650	-0.015	1.000	755989	1.91		80.6	8167	
* 62 13C2-PFOA										
415.00 > 370.00	2.659	2.659	0.0		4482226	2.50			88671	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.667	0.0	1.000	1821420	0.9341		93.4	998	
413.00 > 169.00	2.667	2.667	0.0	1.000	969226		1.88(0.84-2.52)		3419	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4111170	2.45		97.9	89887	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.674	2.674	0.0	1.000	1837145	0.9092		95.5	18055	
449.00 > 99.00	2.674	2.674	0.0	1.000	498764		3.68(1.94-5.82)		6860	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.029	3.029	0.0	1.000	1478556	0.8534		92.0	701	
499.00 > 99.00	3.029	3.029	0.0	1.000	356015		4.15(2.31-6.93)		8685	
20 Perfluorononanoic acid										
463.00 > 419.00	3.036	3.036	0.0	1.000	1482196	1.00		99.7	6210	
463.00 > 169.00	3.036	3.036	0.0	1.000	355622		4.17(1.90-5.69)		7949	
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.042	-0.013	1.000	3623803	2.45		102	30614	
D 19 13C5 PFNA										
468.00 > 423.00	3.036	3.042	-0.006	1.000	3610544	2.54		102	94072	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.244	3.244	0.0	1.000	2505438	0.8836		94.8	56073	
D 21 13C8 FOSA										
506.00 > 78.00	3.357	3.365	-0.008	1.000	4858632	2.32		92.9	88535	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.357	3.357	0.0	1.000	1900872	0.99		99.0	34589	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.385	0.0	1.000	1064334	0.8755		91.2	17213	
549.00 > 99.00	3.385	3.385	0.0	1.000	393870		2.70(1.33-3.97)		7055	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.385	3.385	0.0	1.000	484874	0.8837		92.2	19268	
D 26 M2-8:2FTS										
529.00 > 81.00	3.385	3.393	-0.008	1.000	974241	2.12		88.6	10013	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.394	3.394	0.0	1.000	1226845	1.02		102	6031	
513.00 > 169.00	3.394	3.394	0.0	1.000	217822		5.63(2.36-7.09)		3888	
D 23 13C2 PFDA										
515.00 > 470.00	3.394	3.402	-0.008	1.000	3031569	2.52		101	80244	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.553	3.553	0.0	1.003	659726	0.9512		95.1	4699	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.544	3.560	-0.016	1.000	1644866	2.56		102	28807	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.715	3.715	0.0	1.000	921115	0.8756		90.8	7333	
599.00 > 99.00	3.705	3.715	-0.010	0.997	314696		2.93(1.39-4.16)		5862	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.726	0.0	1.000	807137	0.9672		96.7	3689	
563.00 > 169.00	3.726	3.726	0.0	1.000	208785		3.87(2.12-6.36)		4485	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.726	3.726	0.0	1.003	618001	0.9187		91.9	8374	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.732	-0.017	1.000	1833697	2.72		109	15382	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.732	-0.006	1.000	2600201	2.65		106	77788	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	4049617	0.9202		97.7	63383	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.026	4.026	0.0	1.003	1197649	0.9606		96.1	959	
613.00 > 169.00	4.026	4.026	0.0	1.003	284669		4.21(2.13-6.40)		3999	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.030	-0.014	1.000	2884052	2.64		106	26349	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.288	4.288	0.0	1.000	1331384	1.00		99.8	924	
663.00 > 169.00	4.288	4.288	0.0	1.000	418403		3.18(1.25-3.76)		4441	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.520	4.520	0.0	1.000	369036	1.02		102	3201	
713.00 > 219.00	4.520	4.520	0.0	1.000	257327		1.43(0.71-2.13)		3598	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.520	4.533	-0.013	1.000	3634232	2.62		105	17119	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.947	4.947	0.0	1.002	2364210	0.9672		96.7	576	
813.00 > 169.00	4.947	4.947	0.0	1.002	394571		5.99(2.86-8.58)		1992	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.938	4.949	-0.011	1.000	6314346	2.95		118	15550	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.305	5.305	0.0	1.000	2503414	1.00		99.8	462	
913.00 > 169.00	5.305	5.305	0.0	1.000	283211		8.84(3.83-11.48)		659	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 10-Apr-2018 11:05:37 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_043.d

Injection Date: 09-Apr-2018 18:18:59 Instrument ID: A8_N

Lims ID: CCV L4

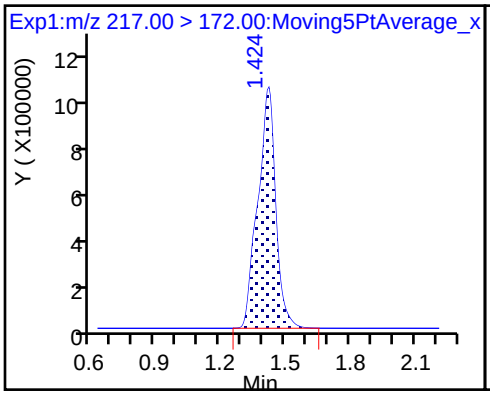
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

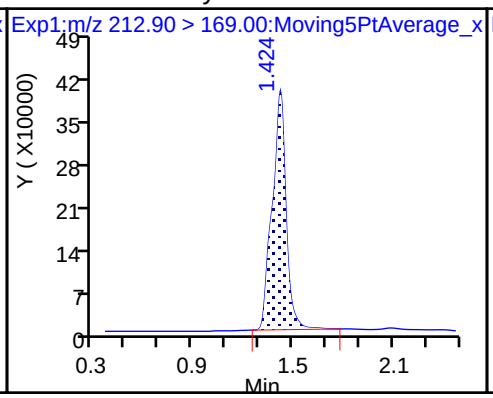
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

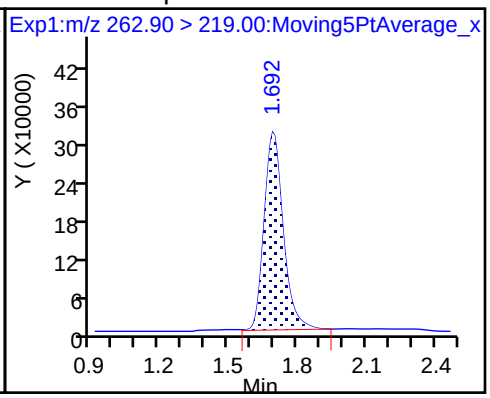
D 1 13C4 PFBA



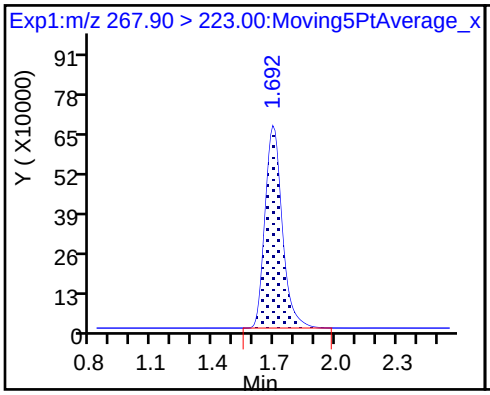
2 Perfluorobutyric acid



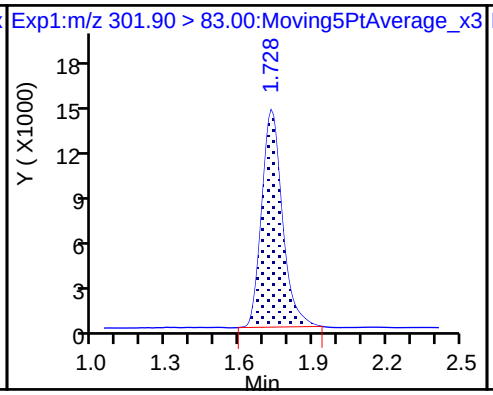
4 Perfluoropentanoic acid



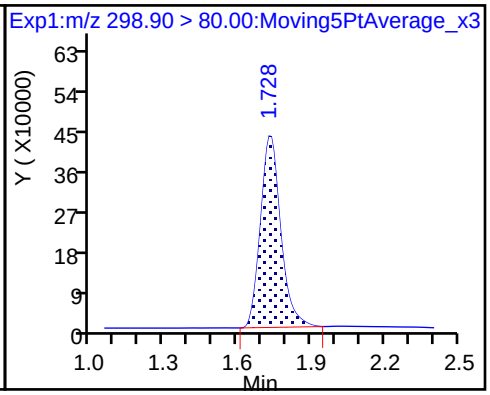
D 3 13C5-PFPeA



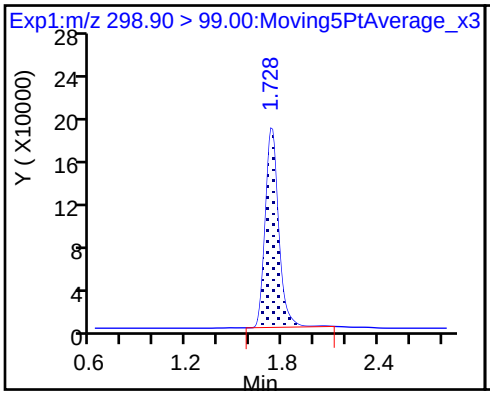
D 47 13C3-PFBS



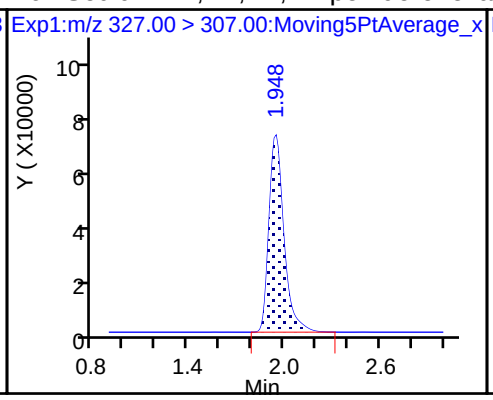
5 Perfluorobutanesulfonic acid



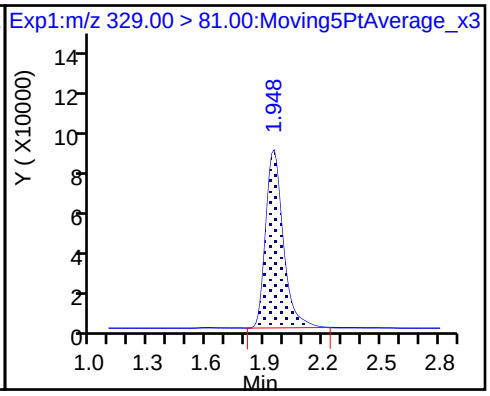
5 Perfluorobutanesulfonic acid



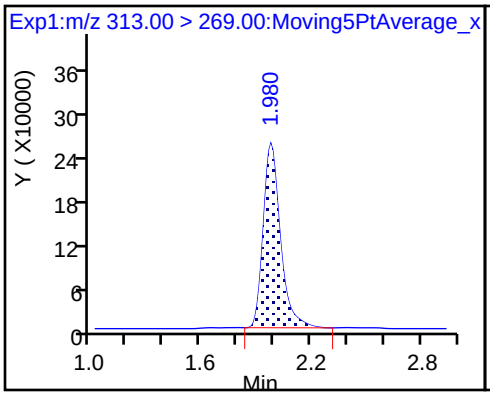
61 Sodium 1H,1H,2H,2H-perfluorohexane



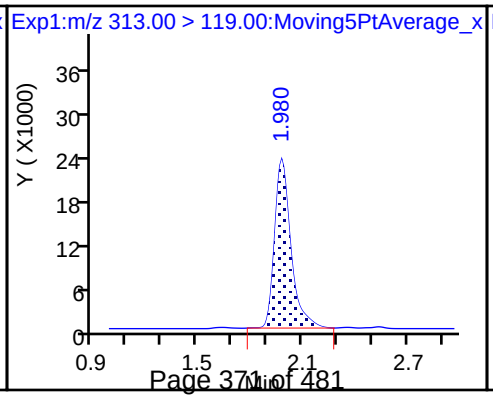
D 60 M2-4:2FTS



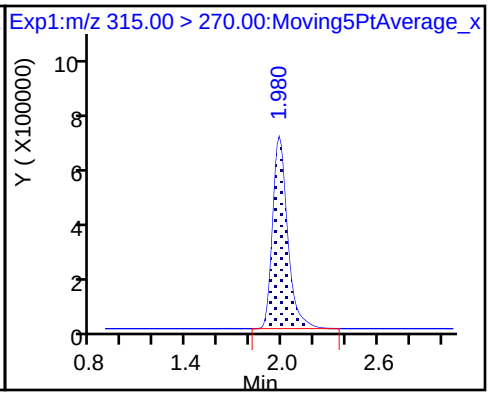
6 Perfluorohexanoic acid



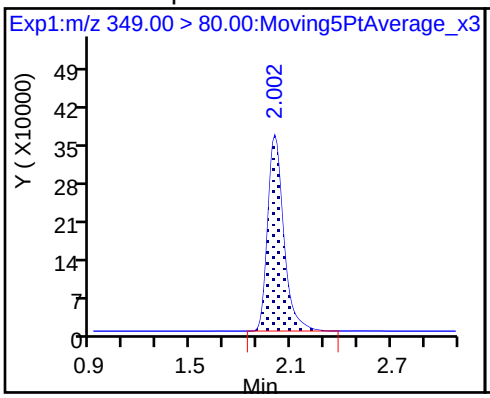
6 Perfluorohexanoic acid



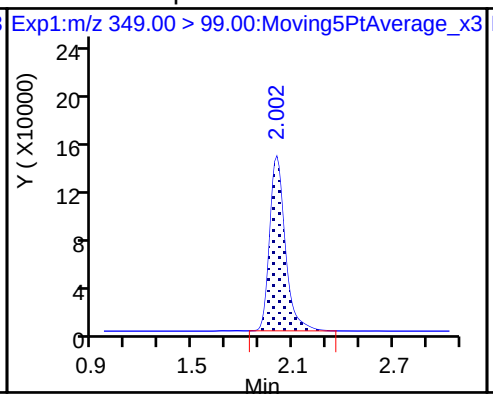
D 7 13C2 PFHxA



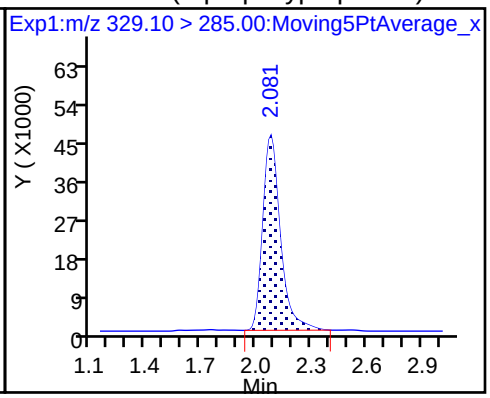
70 Perfluoropentanesulfonic acid



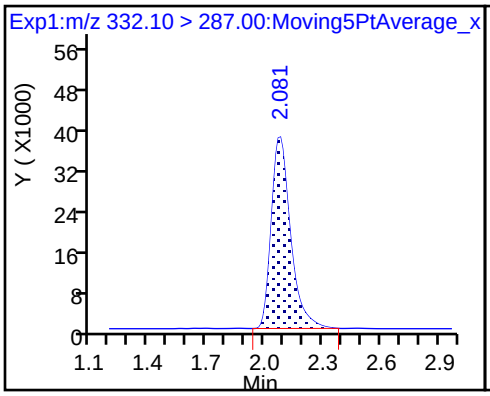
70 Perfluoropentanesulfonic acid



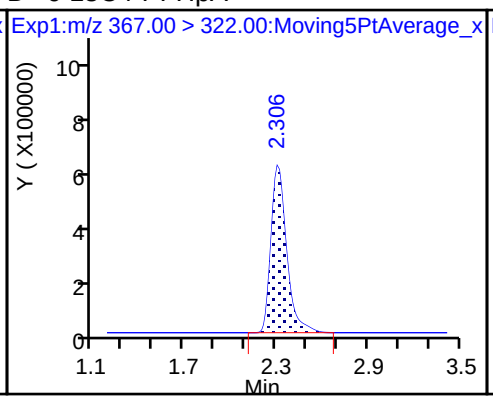
67 Perfluoro(2-propoxypropanoic) acid



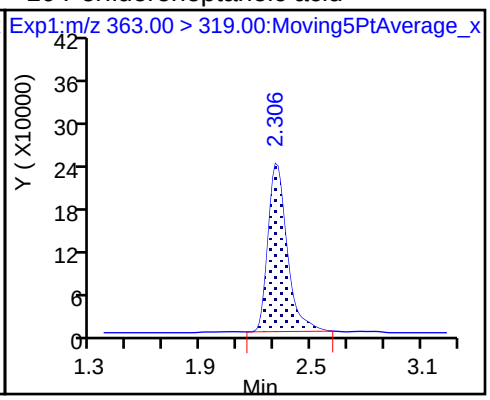
D 64 13C3 HFPO-DA



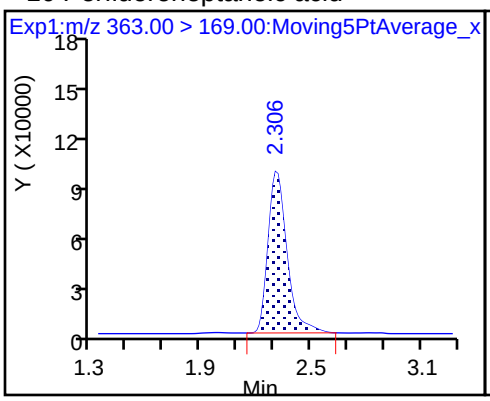
D 9 13C4-PFHpA



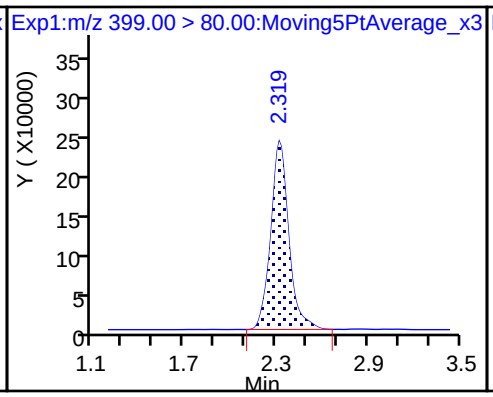
10 Perfluoroheptanoic acid



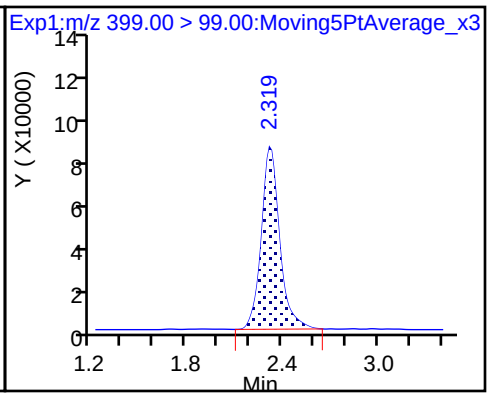
10 Perfluoroheptanoic acid



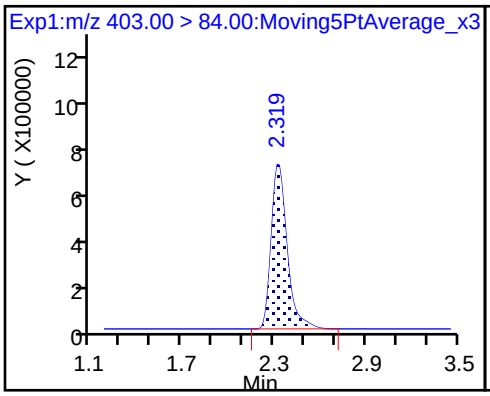
8 Perfluorohexanesulfonic acid



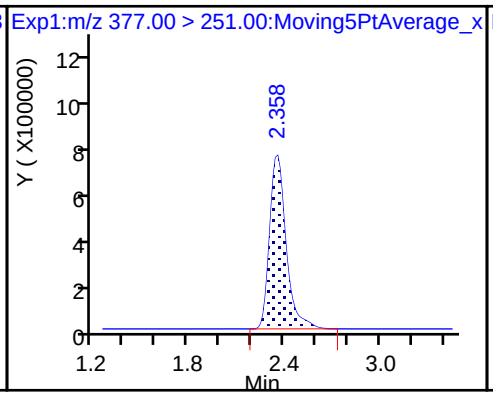
8 Perfluorohexanesulfonic acid



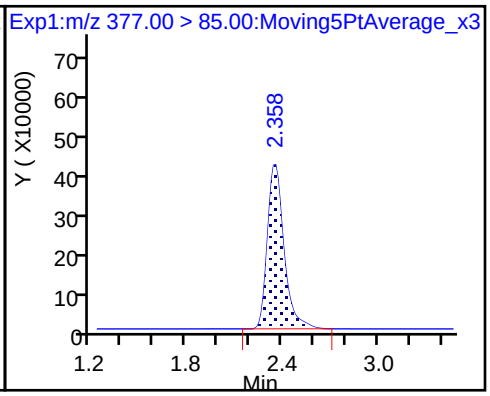
D 11 18O2 PFHxS



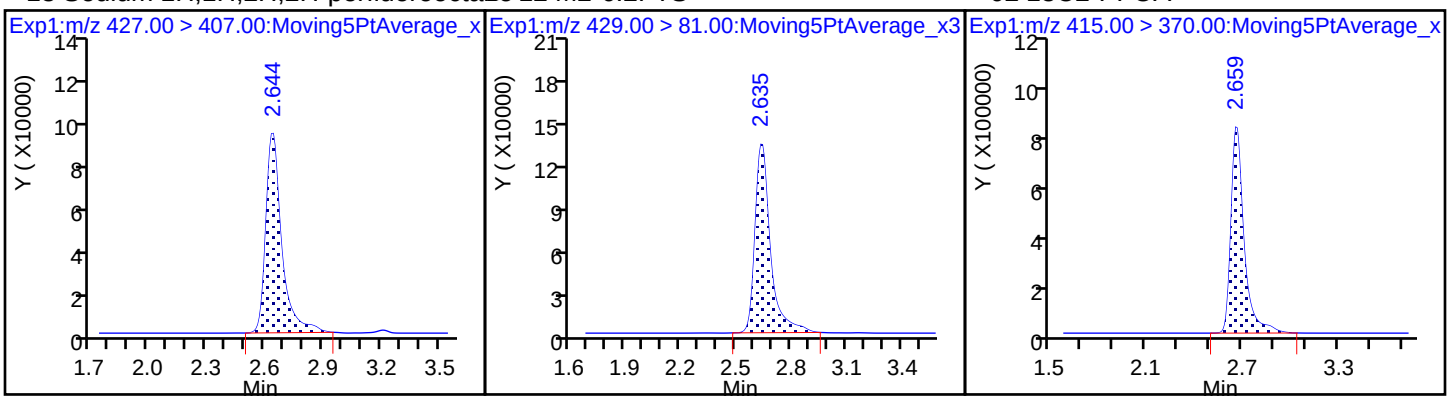
65 Adona



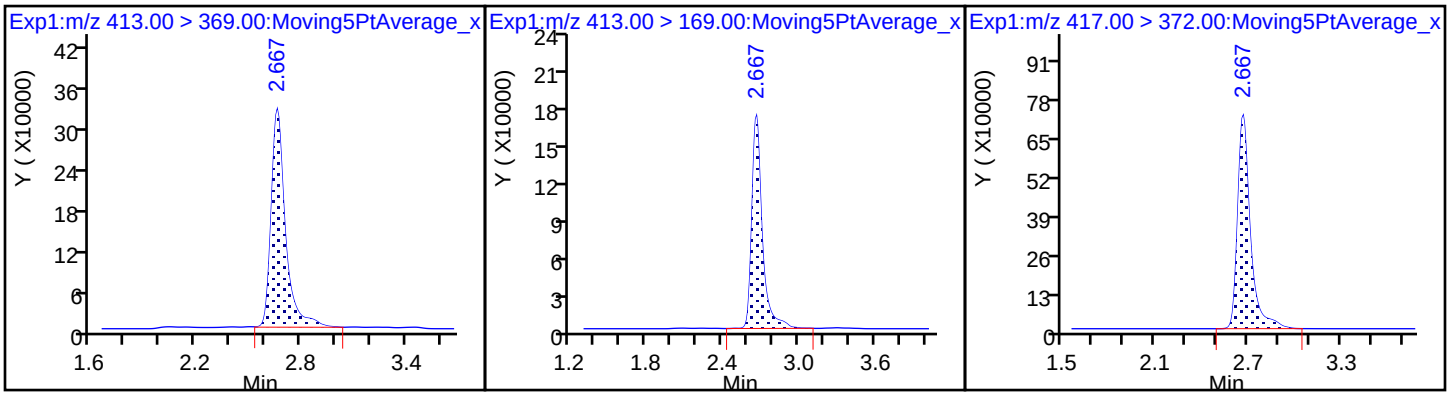
65 Adona



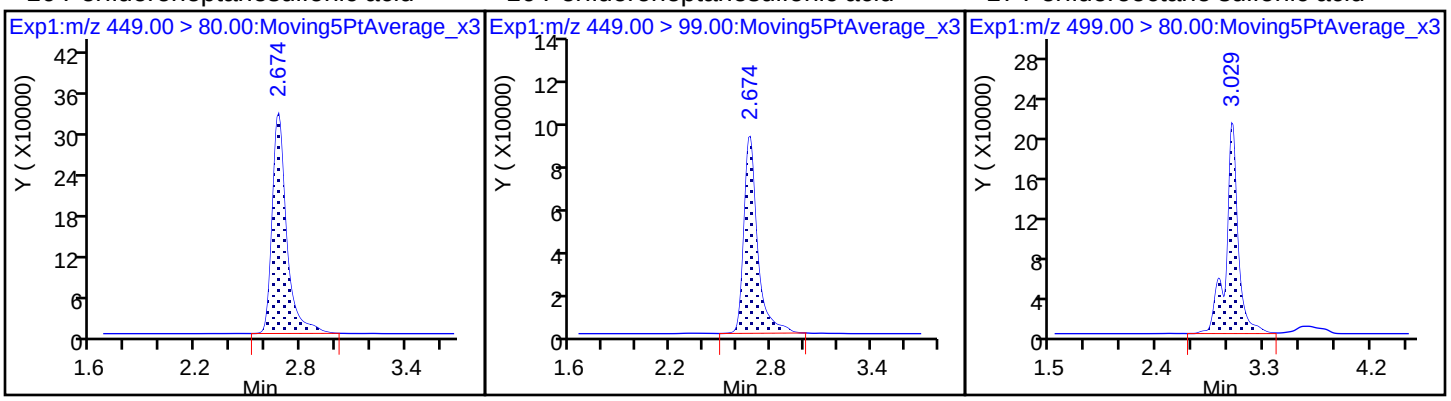
13 Sodium 1H,1H,2H,2H-perfluorooctane D 12 M2-6:2FTS * 62 13C2-PFOA



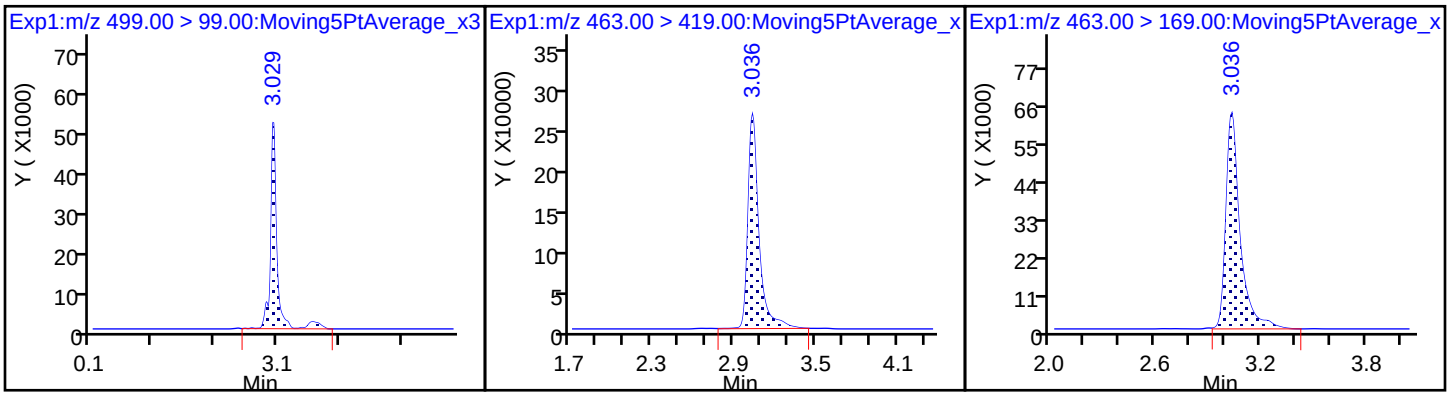
15 Perfluorooctanoic acid 15 Perfluorooctanoic acid D 14 13C4 PFOA



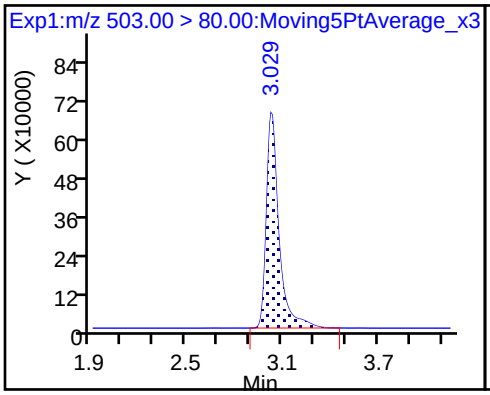
16 Perfluoroheptanesulfonic acid 16 Perfluoroheptanesulfonic acid 17 Perfluorooctane sulfonic acid



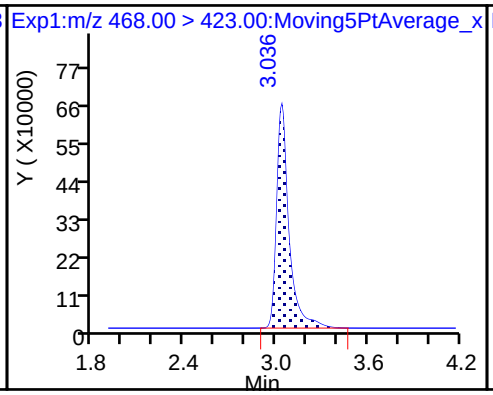
17 Perfluorooctane sulfonic acid 20 Perfluorononanoic acid 20 Perfluorononanoic acid



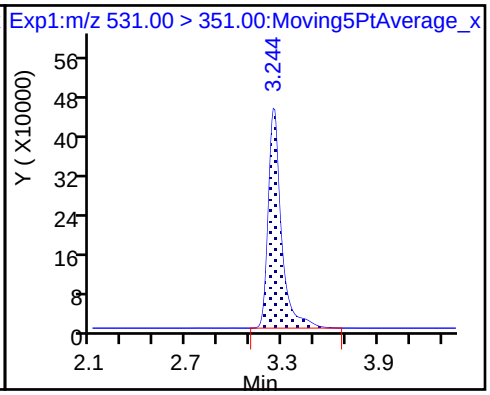
D 18 13C4 PFOS



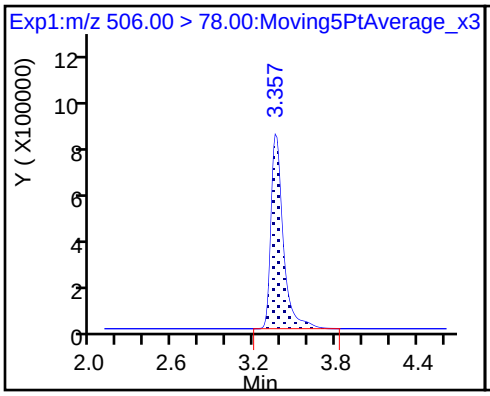
D 19 13C5 PFNA



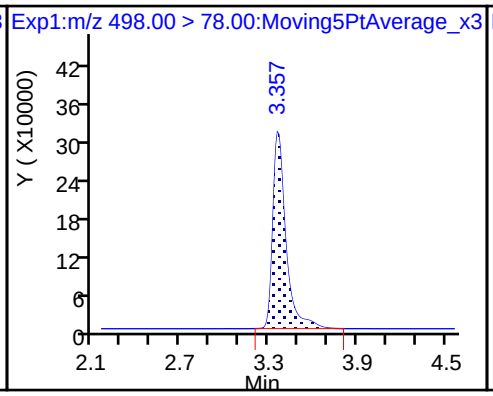
69 9-Chlorohexadecafluoro-3-oxanonane



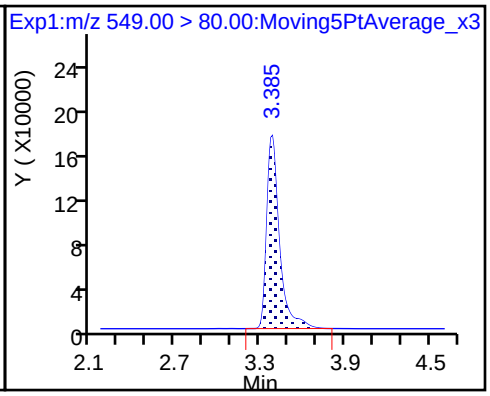
D 21 13C8 FOSA



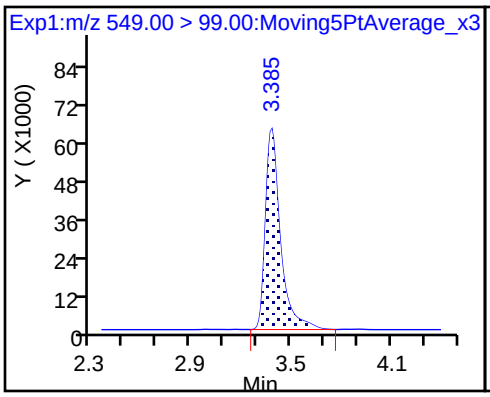
22 Perfluorooctane Sulfonamide



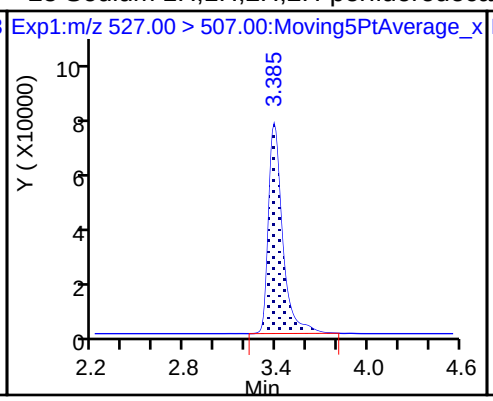
68 Perfluorononanesulfonic acid



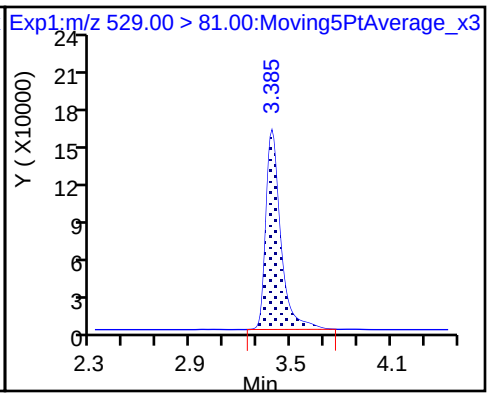
68 Perfluorononanesulfonic acid



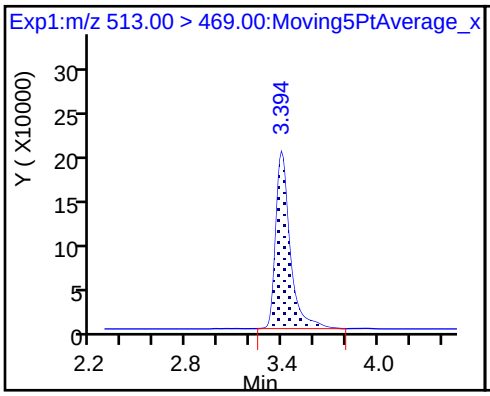
25 Sodium 1H,1H,2H,2H-perfluorodecane



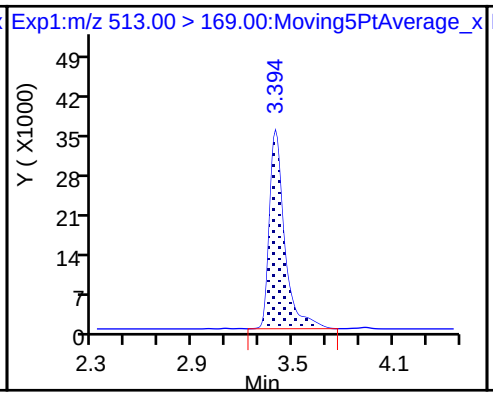
D 26 M2-8:2FTS



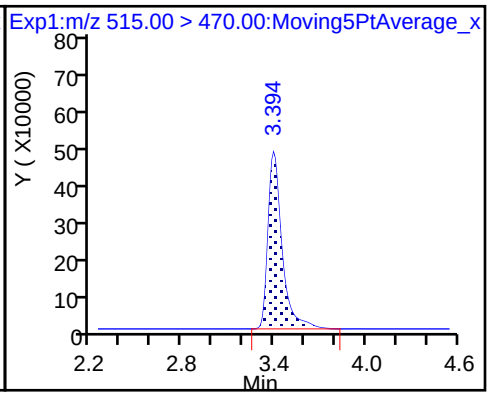
24 Perfluorodecanoic acid



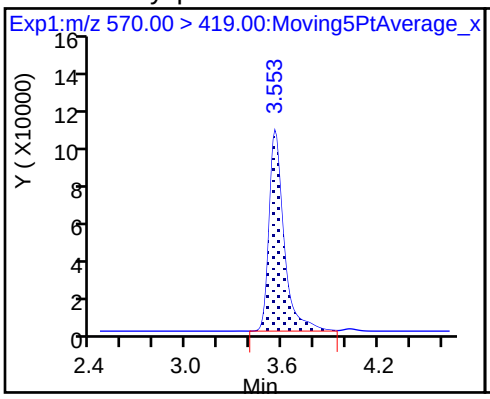
24 Perfluorodecanoic acid



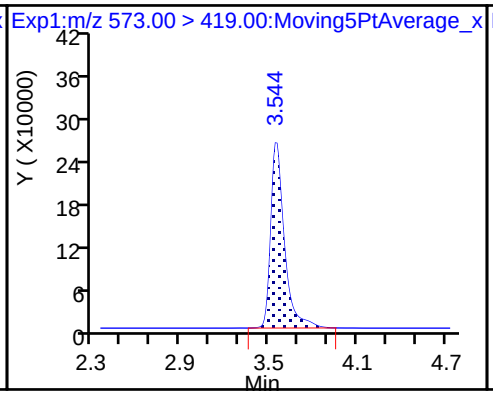
D 23 13C2 PFDA



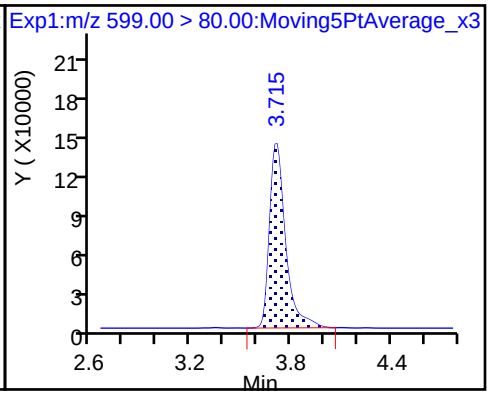
28 N-methyl perfluorooctane sulfonami



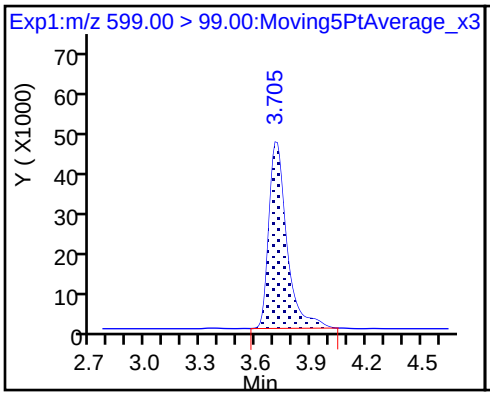
D 27 d3-NMeFOSAA



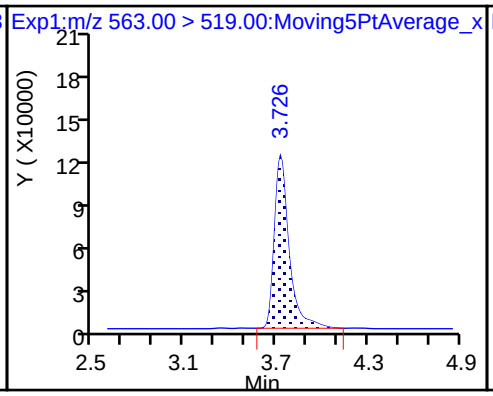
29 Perfluorodecane Sulfonic acid



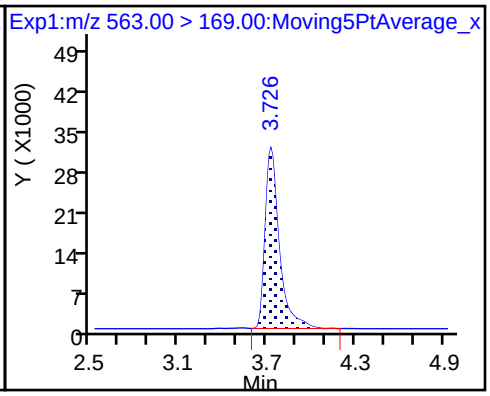
29 Perfluorodecane Sulfonic acid



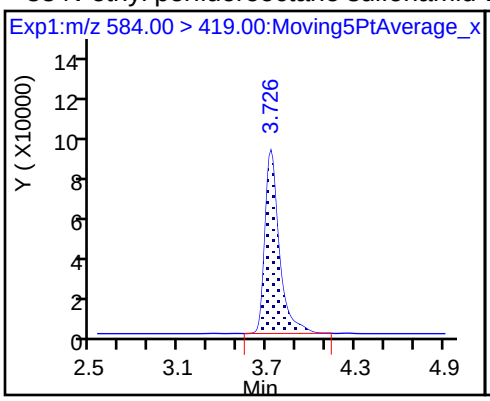
31 Perfluoroundecanoic acid



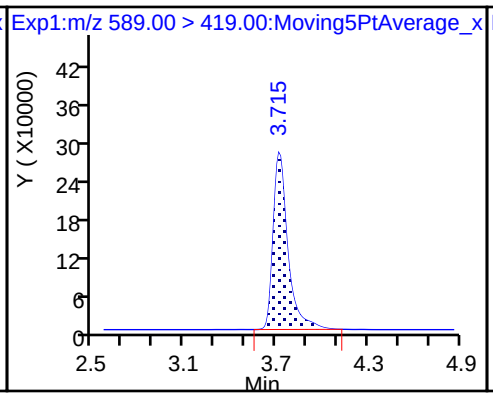
31 Perfluoroundecanoic acid



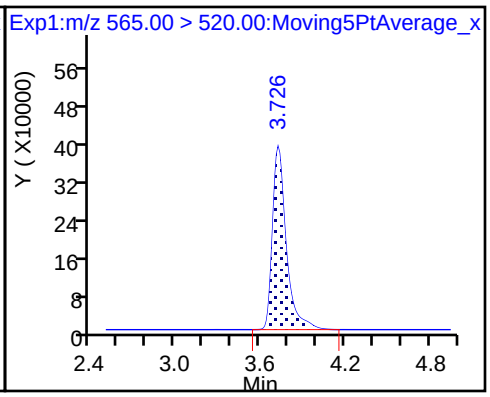
33 N-ethyl perfluorooctane sulfonamid



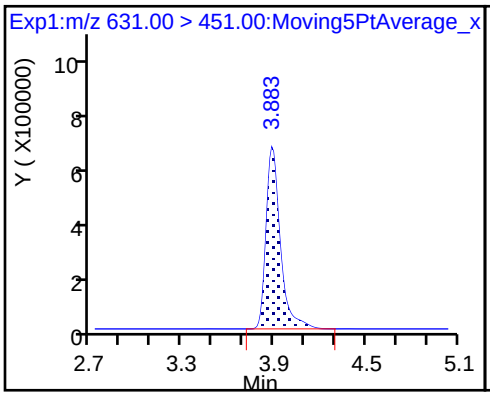
D 32 d5-NEtFOSAA



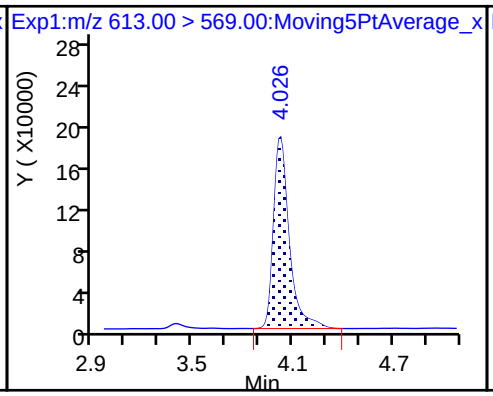
D 30 13C2 PFUnA



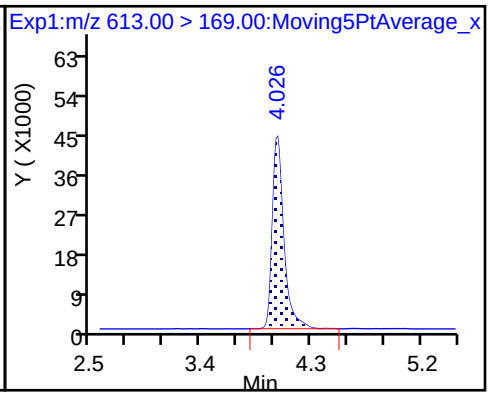
66 11-Chloroeicosafluoro-3-oxaundecan



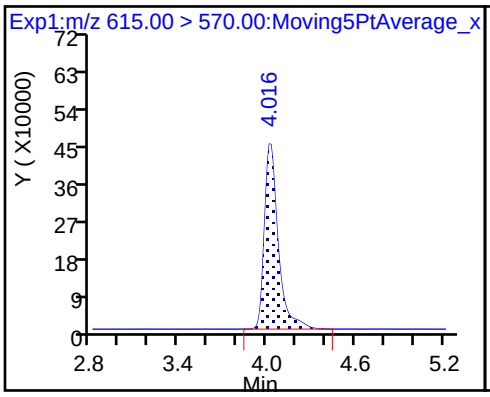
37 Perfluorododecanoic acid



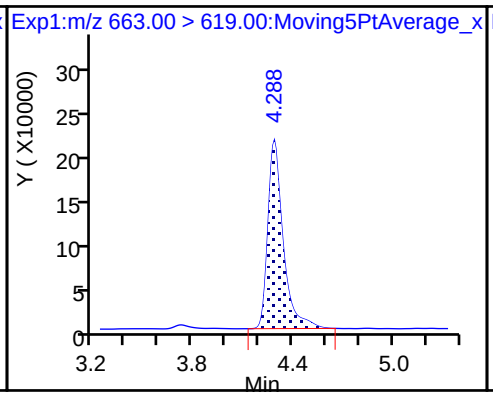
37 Perfluorododecanoic acid



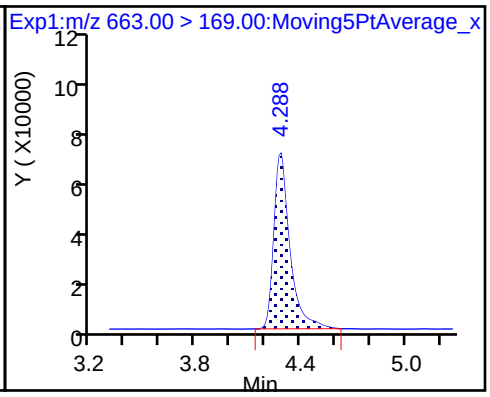
D 36 13C2 PFDoA



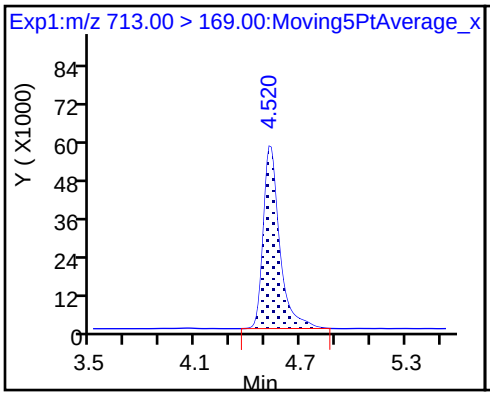
41 Perfluorotridecanoic acid



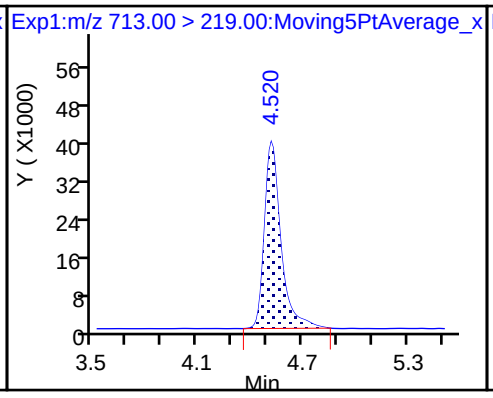
41 Perfluorotridecanoic acid



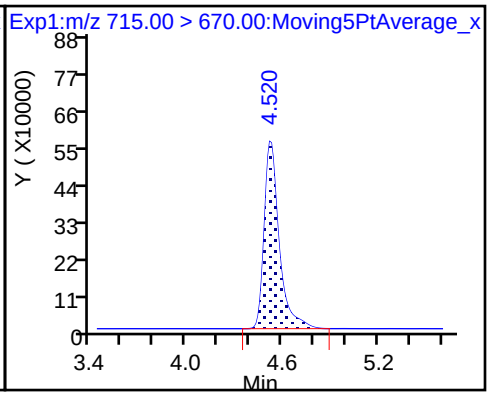
42 Perfluorotetradecanoic acid



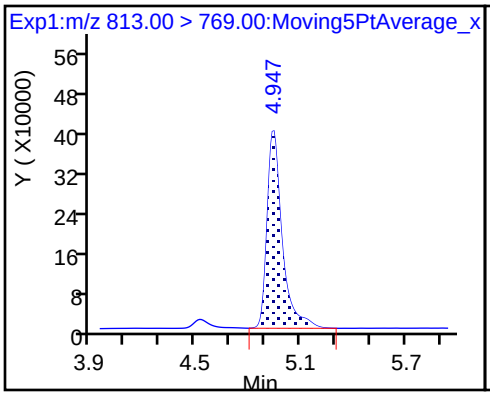
42 Perfluorotetradecanoic acid



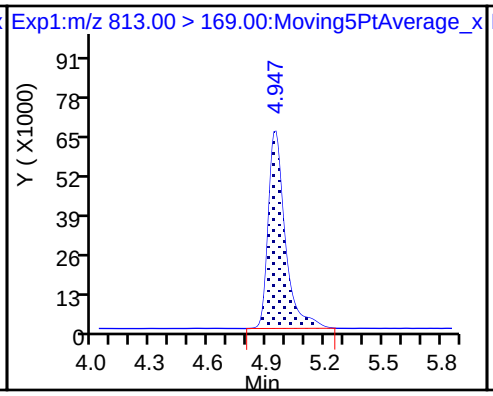
D 43 13C2-PFTeDA



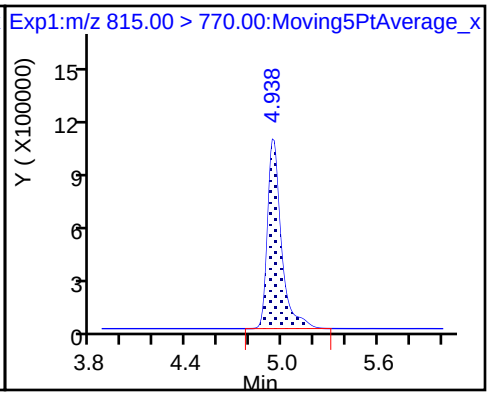
45 Perfluorohexadecanoic acid



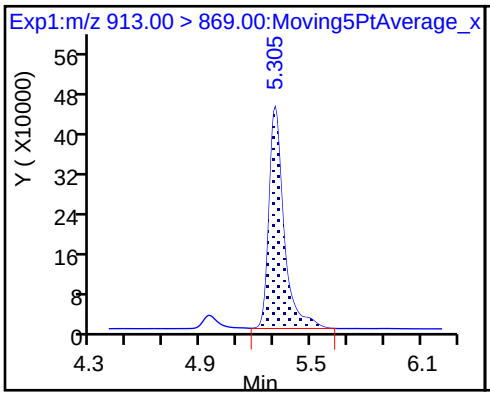
45 Perfluorohexadecanoic acid



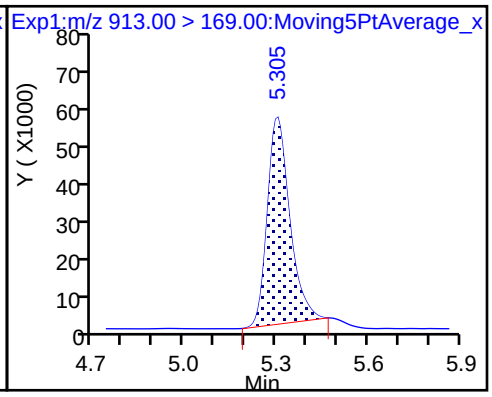
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-217070/11 Calibration Date: 04/09/2018 19:37

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_053.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9242	0.9660		2.61	2.50	4.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.197	1.181		2.47	2.50	-1.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.89	78.28		2.19	2.21	-0.8	50.0
4:2 FTS	AveID	17.26	13.88		1.88	2.34	-19.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.023	1.048		2.56	2.50	2.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.20	72.24		2.38	2.35	1.5	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.087	1.118		2.57	2.50	2.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.117	1.087		2.21	2.28	-2.7	40.0
6:2FTS	AveID	1.868	1.693		2.15	2.37	-9.3	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.186	1.166		2.46	2.50	-1.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.333	1.367		2.44	2.38	2.6	50.0
Perfluorononanoic acid (PFNA)	AveID	1.029	1.061		2.58	2.50	3.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.143	1.137		2.31	2.32	-0.5	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9877	1.030		2.61	2.50	4.3	40.0
8:2FTS	AveID	1.349	1.220		2.17	2.40	-9.5	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8018	0.7738		2.32	2.40	-3.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9893	1.059		2.68	2.50	7.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.054	1.068		2.53	2.50	1.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6938	0.6970		2.42	2.41	0.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9171	0.9216		2.51	2.50	0.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8023	0.8907		2.78	2.50	11.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	1.081	1.087		2.51	2.50	0.6	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.156	1.217		2.63	2.50	5.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2497	0.2471		2.47	2.50	-1.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9357		2.45	2.50	-2.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.9928	0.999		2.52	2.50	0.6	50.0
13C4 PFBA	Ave	1.382	1.376		2.49	2.50	-0.5	50.0
13C5 PFPeA	Ave	0.8994	0.8955		2.49	2.50	-0.4	50.0
13C3-PFBS	Ave	0.0206	0.0208		2.35	2.33	1.1	50.0
M2-4:2FTS	Ave	0.1573	0.1247		1.85	2.34	-20.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Lab Sample ID: CCV 320-217070/11 Calibration Date: 04/09/2018 19:37

Instrument ID: A8_N Calib Start Date: 03/29/2018 17:27

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 03/29/2018 18:14

Lab File ID: 2018.04.09LLA_053.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C2 PFHxA	Ave	0.9916	0.9722		2.45	2.50	-2.0	50.0
13C4-PFHpA	Ave	0.9533	0.9330		2.45	2.50	-2.1	50.0
18O2 PFHxS	Ave	1.189	1.186		2.36	2.37	-0.2	50.0
M2-6:2FTS	Ave	0.2203	0.1876		2.02	2.38	-14.9	40.0
13C4 PFOA	Ave	0.9372	0.9312		2.48	2.50	-0.6	50.0
13C4 PFOS	Ave	0.8257	0.8289		2.40	2.39	0.4	50.0
13C5 PFNA	Ave	0.7930	0.8038		2.53	2.50	1.4	50.0
13C8 FOSA	Ave	1.166	1.090		2.34	2.50	-6.6	50.0
M2-8:2FTS	Ave	0.2562	0.2324		2.17	2.40	-9.3	40.0
13C2 PFDA	Ave	0.6698	0.6858		2.56	2.50	2.4	50.0
d3-NMeFOSAA	Ave	0.3583	0.3747		2.62	2.50	4.6	50.0
d5-NEtFOSAA	Ave	0.3760	0.4042		2.69	2.50	7.5	50.0
13C2 PFUnA	Ave	0.5468	0.5662		2.59	2.50	3.6	50.0
13C2 PFDoA	Ave	0.6087	0.6535		2.68	2.50	7.4	50.0
13C2-PFTeDA	Ave	0.7733	0.8484		2.74	2.50	9.7	50.0
13C2-PFHxDA	Ave	1.194	1.411		2.96	2.50	18.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_053.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 09-Apr-2018 19:37:14 ALS Bottle#: 14 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub30

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 10-Apr-2018 11:05:57 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK038

First Level Reviewer: hannigana Date: 10-Apr-2018 11:05:11

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.425	1.425	0.0	1.000	5737494	2.61		105	2608	
D 1 13C4 PFBA										
217.00 > 172.00	1.425	1.424	0.001	1.000	5939744	2.49		99.5	58292	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.694	0.0	1.000	4564801	2.47		98.6	3457	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.008	0.558	3866580	2.49		99.6	74723	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	6224319	2.19		99.2	14564	
298.90 > 99.00	1.730	1.739	-0.009	1.000	2599272		2.39(1.25-3.74)		7055	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	83646	2.35		101	548	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	1165888	1.88		80.4	61054	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.958	-0.008	1.000	502827	1.85		79.3	4986	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	4398901	2.56		102	12370	
313.00 > 119.00	1.982	1.982	0.0	1.000	405903		10.84(5.03-15.10)		6189	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.990	-0.008	1.000	4198029	2.45		98.0	107499	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	6094406	2.38		101	44649	
349.00 > 99.00	2.004	2.004	0.0	1.000	2169843		2.81(1.36-4.07)		25403	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.006	4505991	2.57		103	4901	
363.00 > 169.00	2.308	2.321	-0.013	1.000	1719290		2.62(1.13-3.40)		7419	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.317	-0.009	1.000	4028767	2.45		97.9	79592	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	0.994	5064194	2.21		97.3	10812	
399.00 > 99.00	2.321	2.321	0.0	0.994	1632426		3.10(1.50-4.49)		4924	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.330	0.004	1.000	4843249	2.36		99.8	83684	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.645	0.0	1.000	1300113	2.15		90.7	9763	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.650	-0.005	1.000	769365	2.02		85.1	10354	
* 62 13C2-PFOA										
415.00 > 370.00	2.669	2.669	0.0		4317980	2.50			96160	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.669	2.669	0.0	1.000	4689526	2.46		98.3	2628	
413.00 > 169.00	2.669	2.669	0.0	1.000	2405384		1.95(0.84-2.52)		6373	
D 14 13C4 PFOA										
417.00 > 372.00	2.669	2.673	-0.004	1.000	4021074	2.48		99.4	100371	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.676	2.676	0.0	1.000	4658143	2.44		103	46234	
449.00 > 99.00	2.676	2.676	0.0	1.000	1242137		3.75(1.94-5.82)		22208	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.036	3.036	0.0	1.000	3777792	2.31		99.5	1791	M
499.00 > 99.00	3.036	3.036	0.0	1.000	852197		4.43(2.31-6.93)		9502	
20 Perfluorononanoic acid										
463.00 > 419.00	3.036	3.036	0.0	1.000	3683171	2.58		103	15497	
463.00 > 169.00	3.036	3.036	0.0	1.000	901130		4.09(1.90-5.69)		23133	
D 18 13C4 PFOS										
503.00 > 80.00	3.036	3.042	-0.006	1.000	3421852	2.40		100	23242	
D 19 13C5 PFNA										
468.00 > 423.00	3.036	3.042	-0.006	1.000	3470853	2.53		101	155355	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.366	3.366	0.0	1.000	4847531	2.61		104	131055	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.365	0.001	1.000	4704665	2.34		93.4	77423	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.385	0.0	1.000	2658866	2.32		96.5	24989	
549.00 > 99.00	3.385	3.385	0.0	1.000	1042377		2.55(1.33-3.97)		15490	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.385	3.385	0.0	1.000	1173072	2.17		90.5	47030	
D 26 M2-8:2FTS										
529.00 > 81.00	3.385	3.393	-0.008	1.000	961197	2.17		90.7	12898	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.394	3.394	0.0	1.000	3137005	2.68		107	15758	
513.00 > 169.00	3.394	3.394	0.0	1.000	573550		5.47(2.36-7.09)		18681	
D 23 13C2 PFDA										
515.00 > 470.00	3.394	3.402	-0.008	1.000	2961151	2.56		102	60056	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.553	3.553	0.0	1.000	1727409	2.53		101	10838	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.560	-0.007	1.000	1617992	2.61		105	35814	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.705	3.705	0.0	1.000	2404804	2.42		100	24531	
599.00 > 99.00	3.705	3.705	0.0	1.000	809636		2.97(1.39-4.16)		13626	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.726	0.0	1.000	2177760	2.78		111	12118	
563.00 > 169.00	3.726	3.726	0.0	1.000	511899		4.25(2.12-6.36)		15485	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.726	3.726	0.0	1.003	1608632	2.51		100	24004	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.732	-0.017	1.000	1745431	2.69		108	18474	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.732	-0.006	1.000	2445003	2.59		104	51826	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.016	4.016	0.0	1.000	3067225	2.51		101	2357	
613.00 > 169.00	4.016	4.016	0.0	1.000	757760		4.05(2.13-6.40)		5575	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.030	-0.014	1.000	2821602	2.68		107	23963	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.289	4.289	0.0	1.000	3434018	2.63		105	2165	
663.00 > 169.00	4.289	4.289	0.0	1.000	1074704		3.20(1.25-3.76)		9827	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.521	0.0	1.000	905330	2.47		98.9	6774	
713.00 > 219.00	4.521	4.521	0.0	1.000	657490		1.38(0.71-2.13)		9331	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.533	-0.012	1.000	3663508	2.74		110	19143	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.939	4.939	0.0	1.000	5701978	2.45		98.0	1355	
813.00 > 169.00	4.939	4.939	0.0	1.000	948473		6.01(2.86-8.58)		4539	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.939	4.949	-0.010	1.000	6093603	2.96		118	19121	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.298	5.298	0.0	1.000	6085429	2.51		101	1143	
913.00 > 169.00	5.298	5.298	0.0	1.000	779849		7.80(3.83-11.48)		4121	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00003 Amount Added: 1.00 Units: mL

Report Date: 10-Apr-2018 11:05:58 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_053.d

Injection Date: 09-Apr-2018 19:37:14 Instrument ID: A8_N

Lims ID: CCV L5

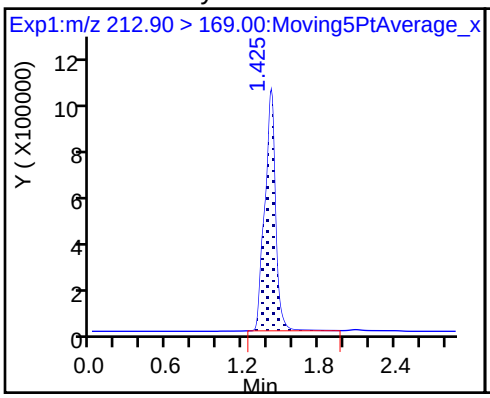
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 11

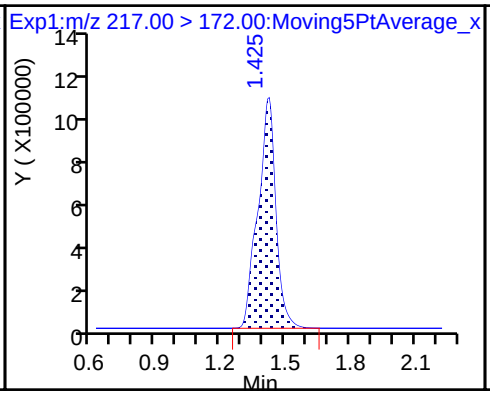
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

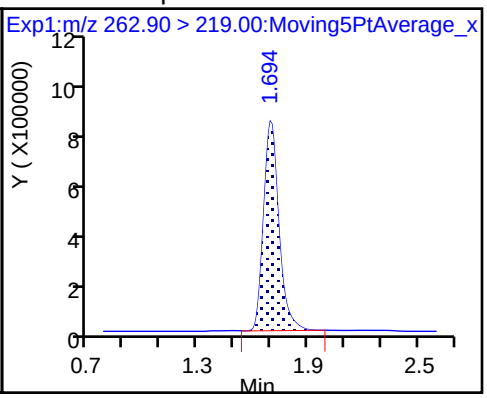
2 Perfluorobutyric acid



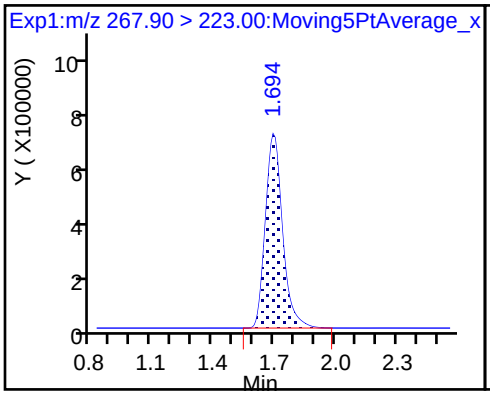
D 1 13C4 PFBA



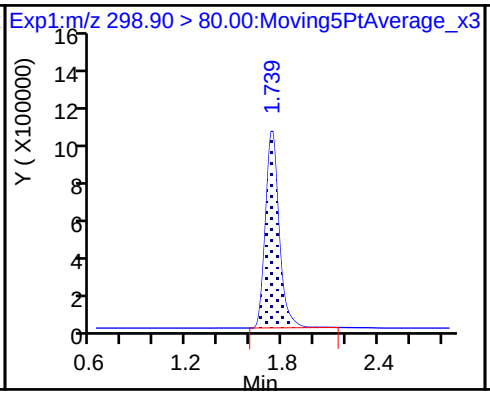
4 Perfluoropentanoic acid



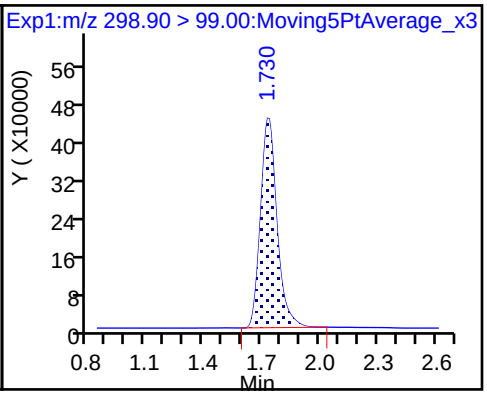
D 3 13C5-PFPeA



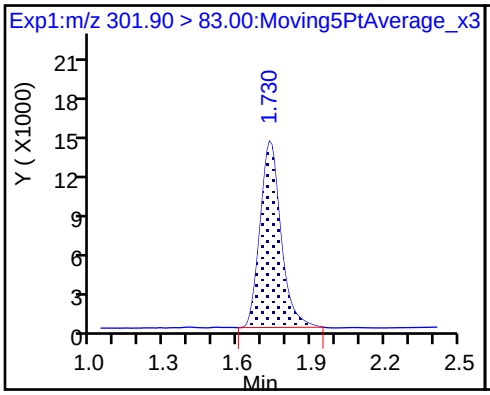
5 Perfluorobutanesulfonic acid



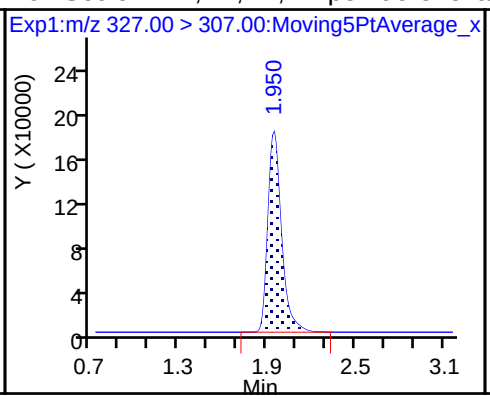
5 Perfluorobutanesulfonic acid



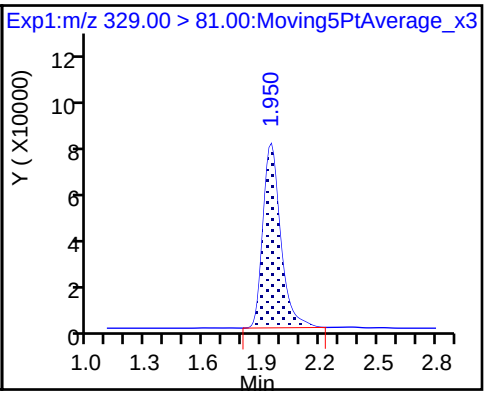
D 47 13C3-PFBS



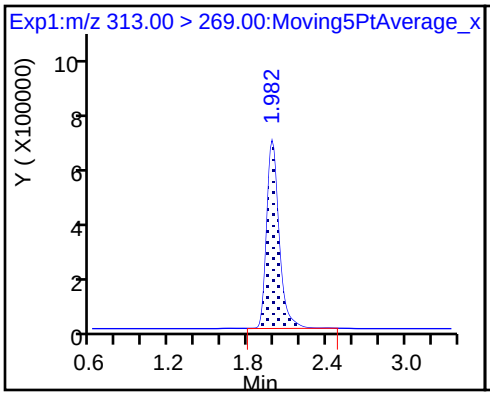
61 Sodium 1H,1H,2H,2H-perfluorohexane



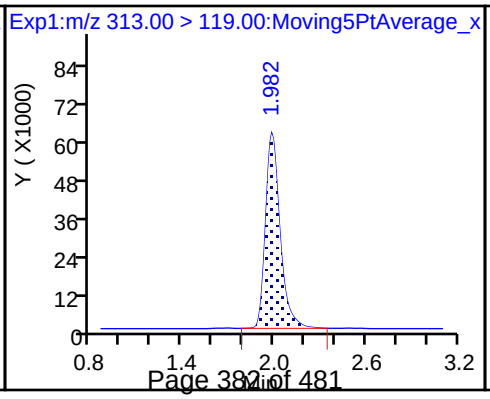
D 60 M2-4:2FTS



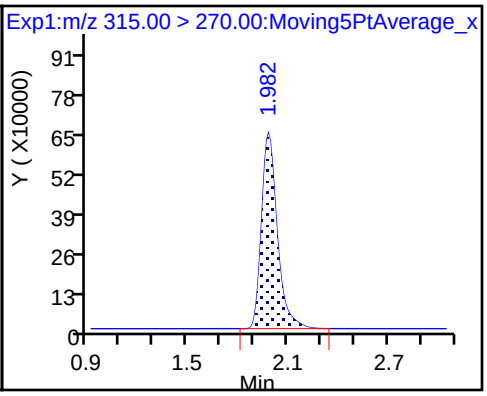
6 Perfluorohexanoic acid



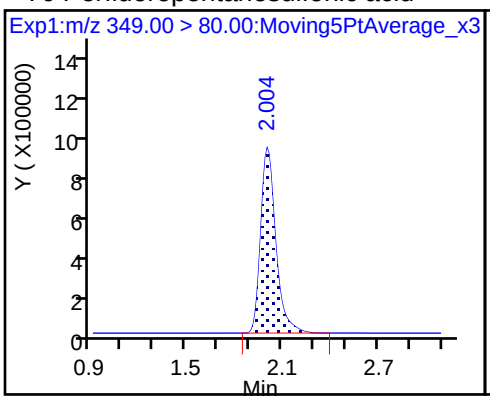
6 Perfluorohexanoic acid



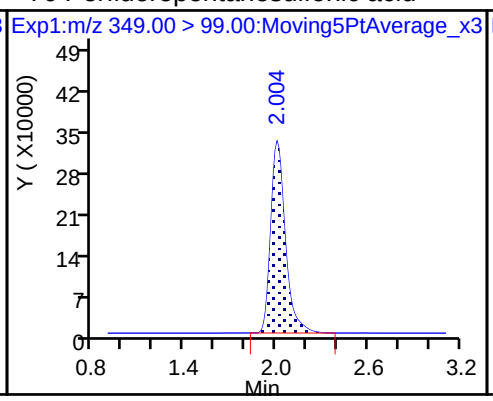
D 7 13C2 PFHxA



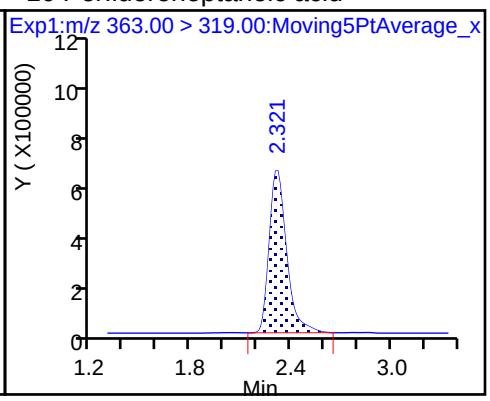
70 Perfluoropentanesulfonic acid



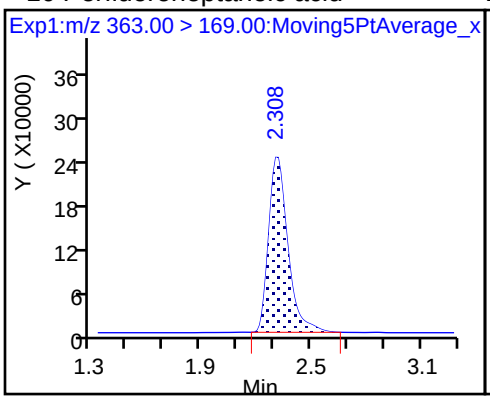
70 Perfluoropentanesulfonic acid



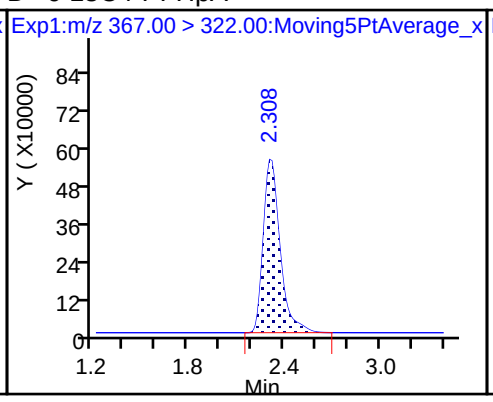
10 Perfluoroheptanoic acid



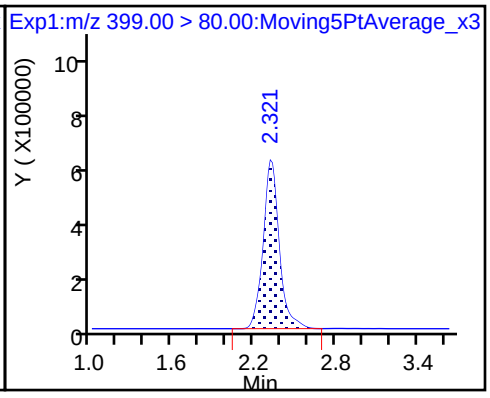
10 Perfluoroheptanoic acid



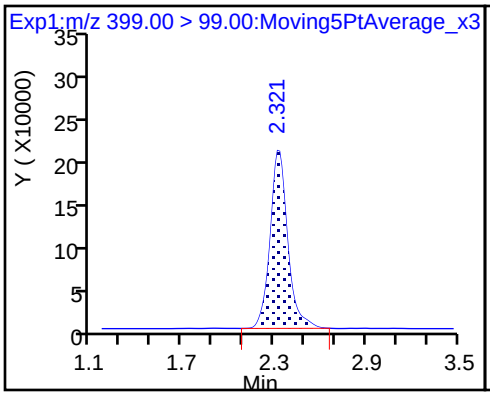
D 9 13C4-PFHpA



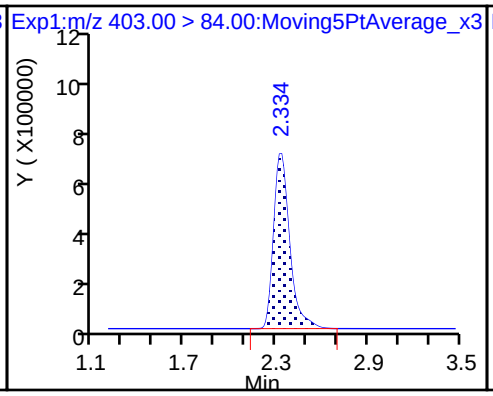
8 Perfluorohexanesulfonic acid



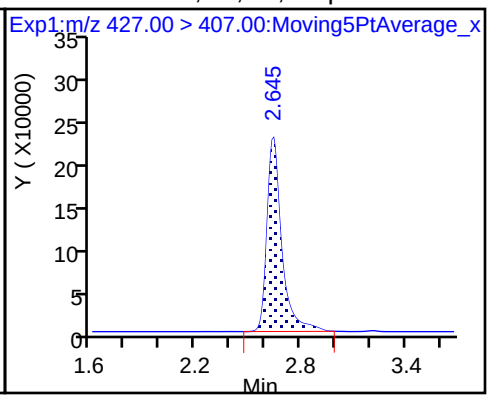
8 Perfluorohexanesulfonic acid



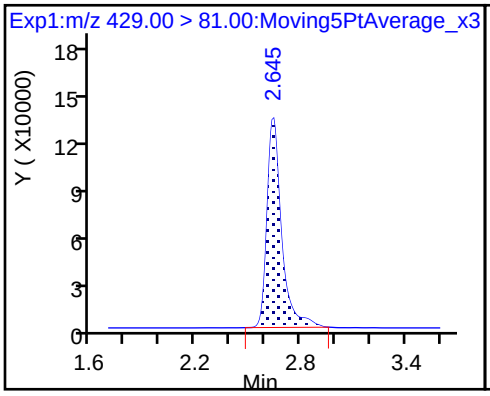
D 11 18O2 PFHxS



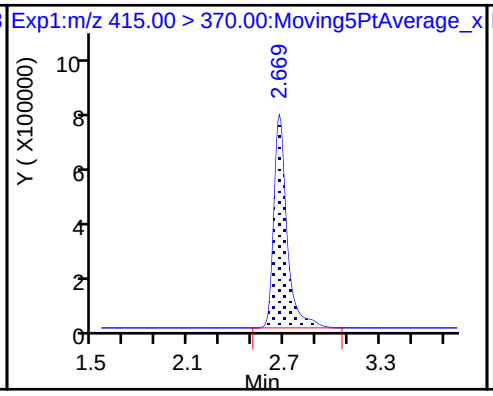
13 Sodium 1H,1H,2H,2H-perfluorooctane



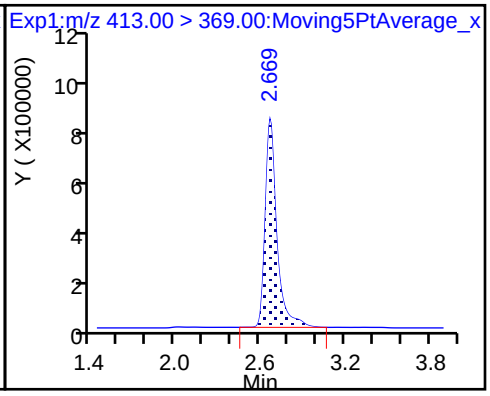
D 12 M2-6:2FTS



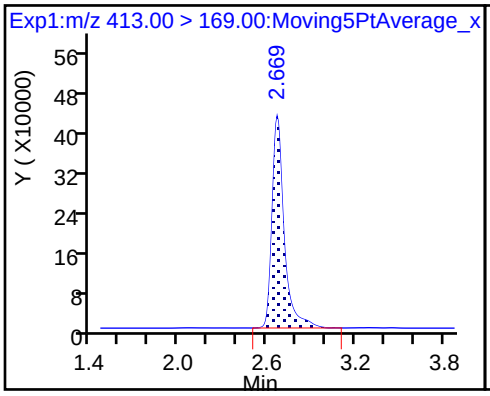
* 62 13C2-PFOA



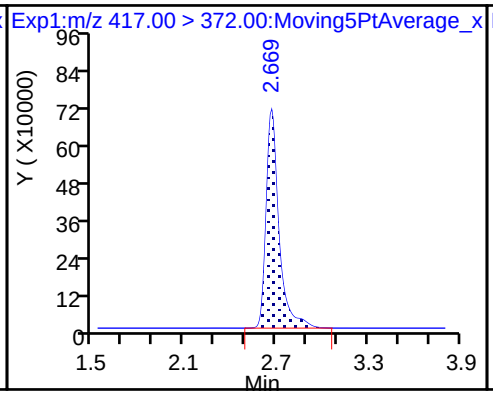
15 Perfluorooctanoic acid



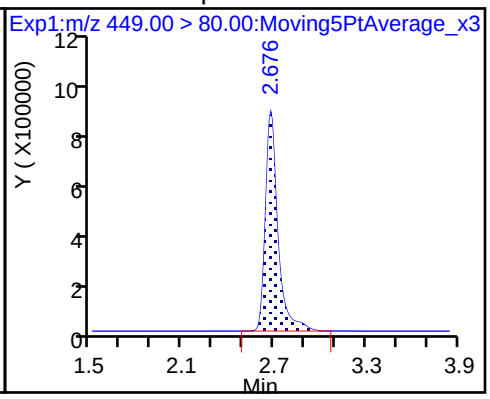
15 Perfluorooctanoic acid



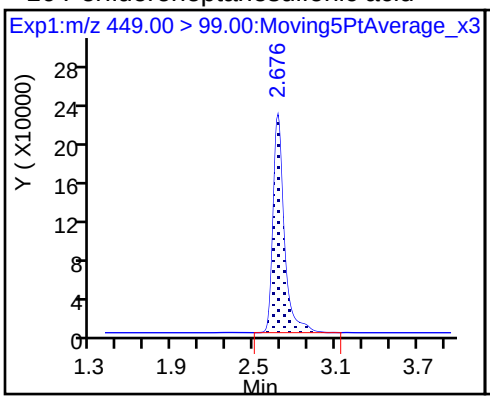
D 14 13C4 PFOA



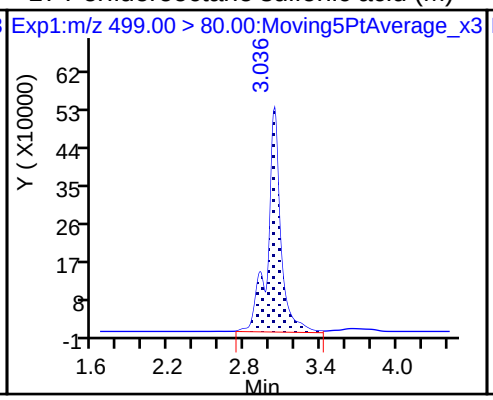
16 Perfluoroheptanesulfonic acid



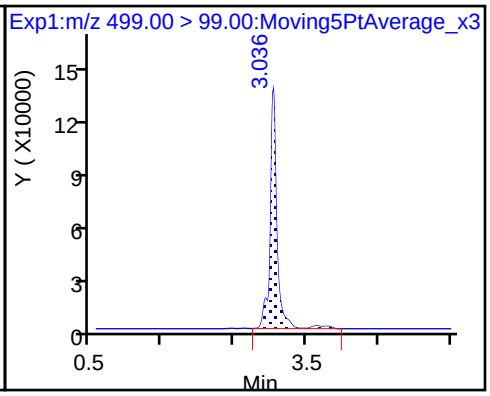
16 Perfluoroheptanesulfonic acid



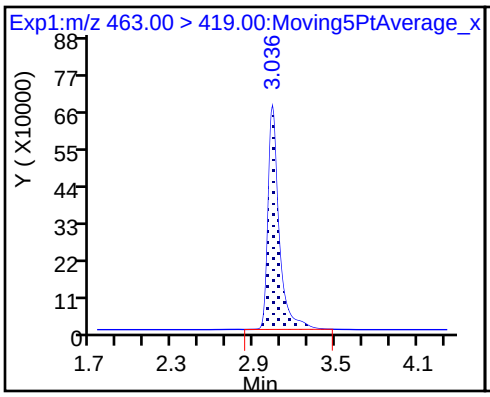
17 Perfluorooctane sulfonic acid (M)



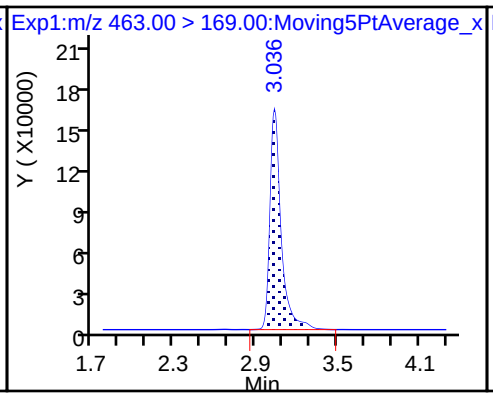
17 Perfluorooctane sulfonic acid



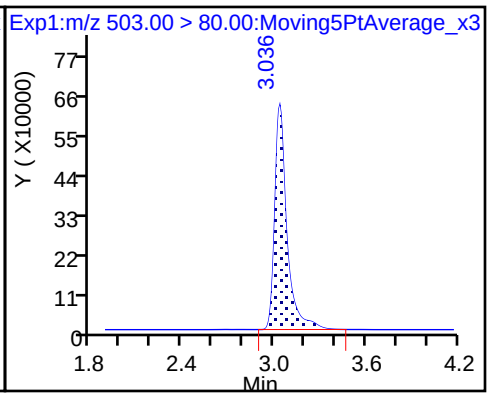
20 Perfluorononanoic acid



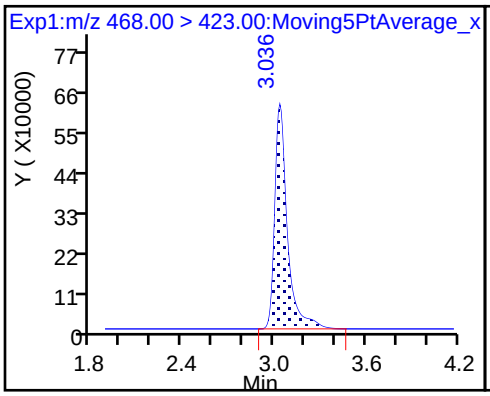
20 Perfluorononanoic acid



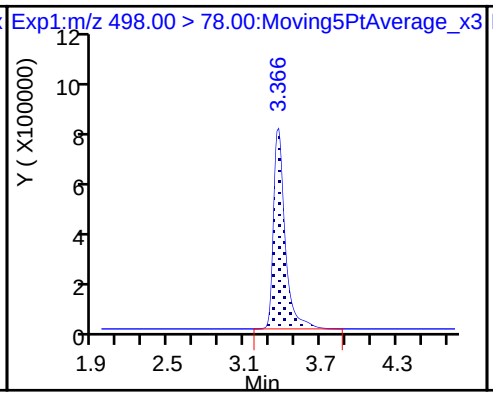
D 18 13C4 PFOS



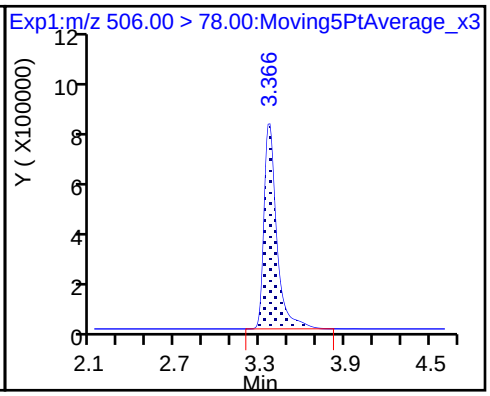
D 19 13C5 PFNA



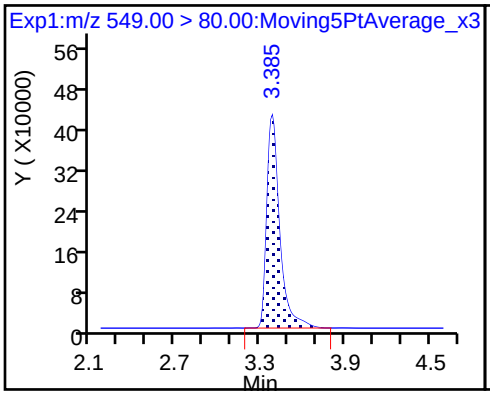
22 Perfluorooctane Sulfonamide



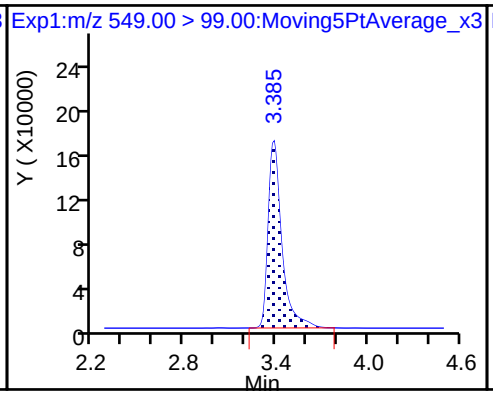
D 21 13C8 FOSA



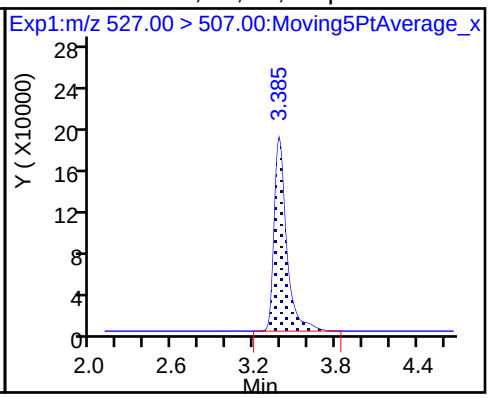
68 Perfluorononanesulfonic acid



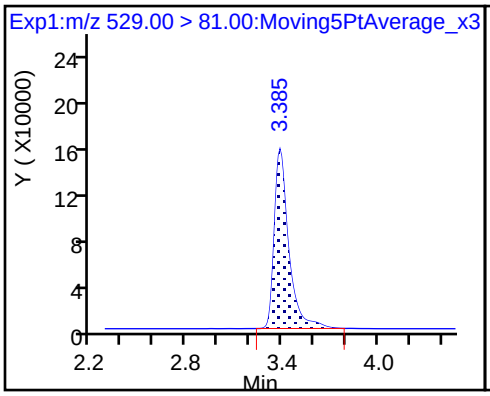
68 Perfluorononanesulfonic acid



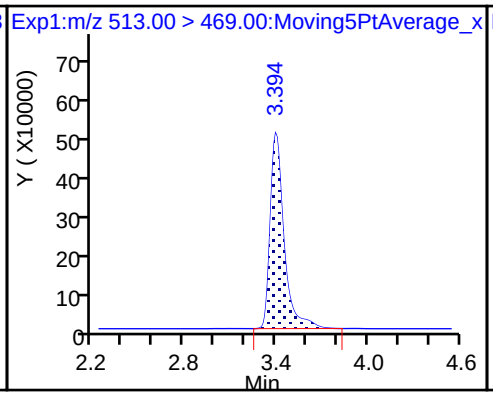
25 Sodium 1H,1H,2H,2H-perfluorodecane



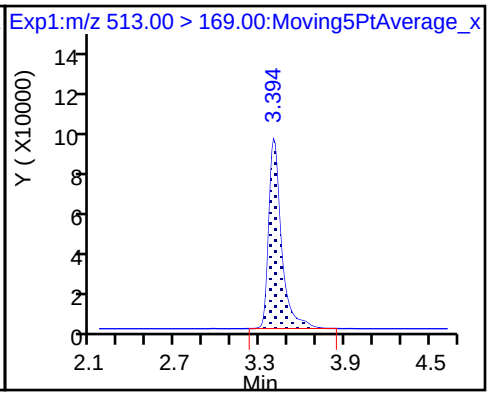
D 26 M2-8:2FTS



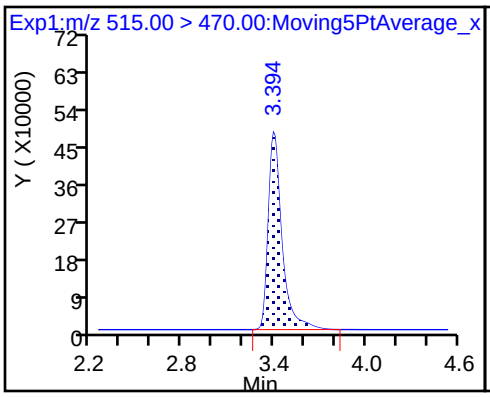
24 Perfluorodecanoic acid



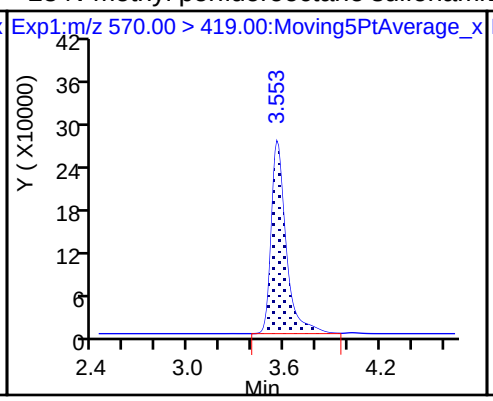
24 Perfluorodecanoic acid



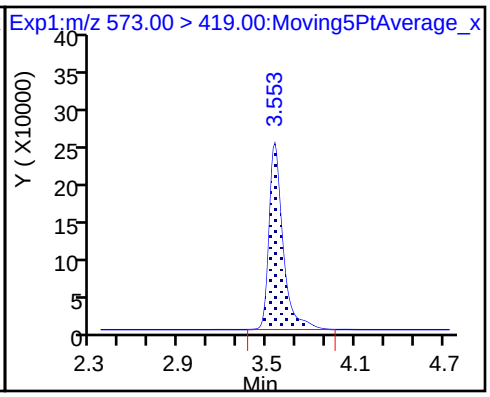
D 23 13C2 PFDA



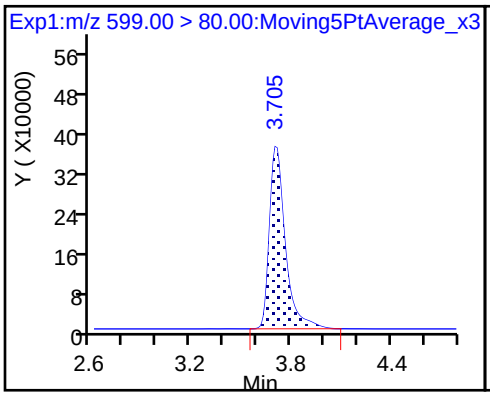
28 N-methyl perfluorooctane sulfonami



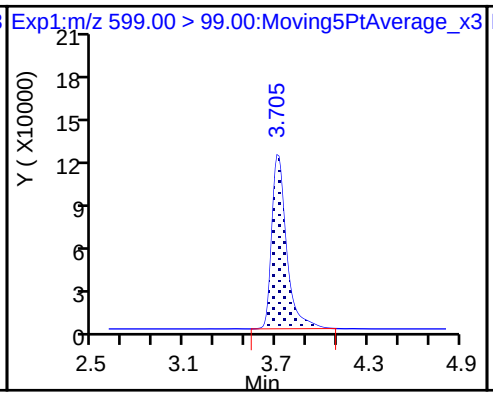
D 27 d3-NMeFOSAA



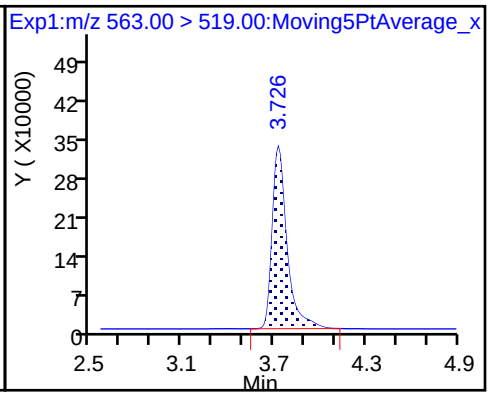
29 Perfluorodecane Sulfonic acid



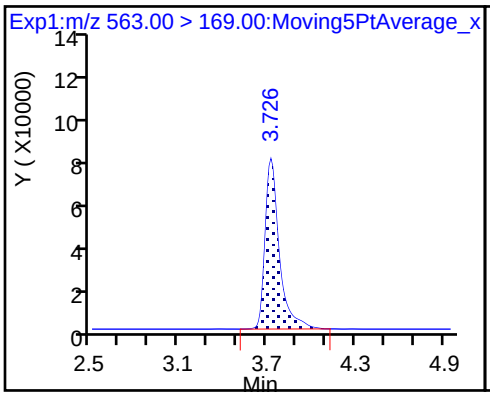
29 Perfluorodecane Sulfonic acid



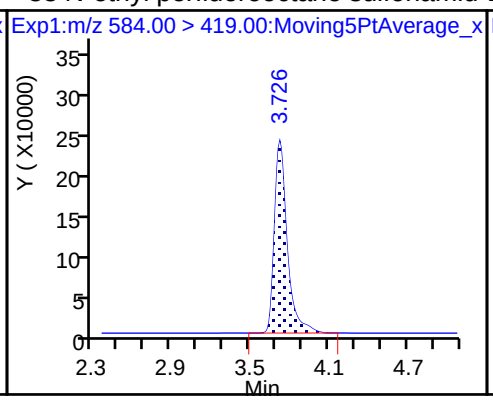
31 Perfluoroundecanoic acid



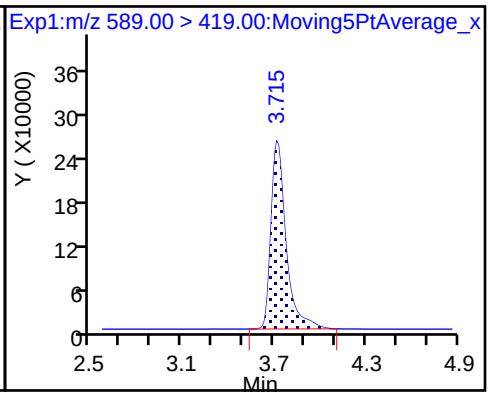
31 Perfluoroundecanoic acid



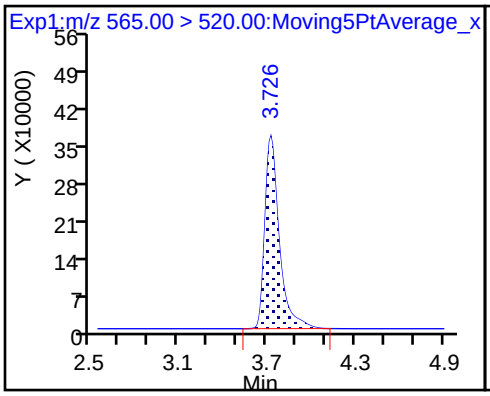
33 N-ethyl perfluorooctane sulfonamid



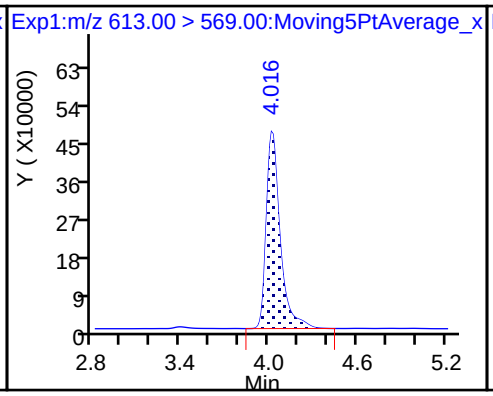
D 32 d5-NEtFOSAA



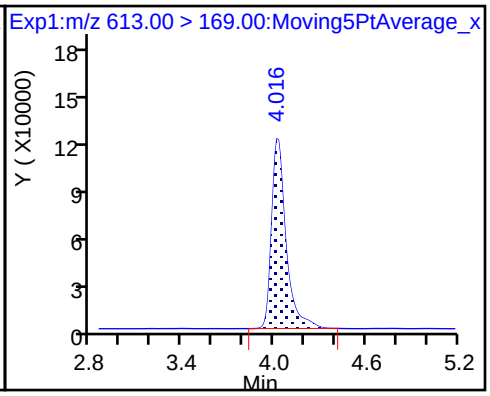
D 30 13C2 PFUnA



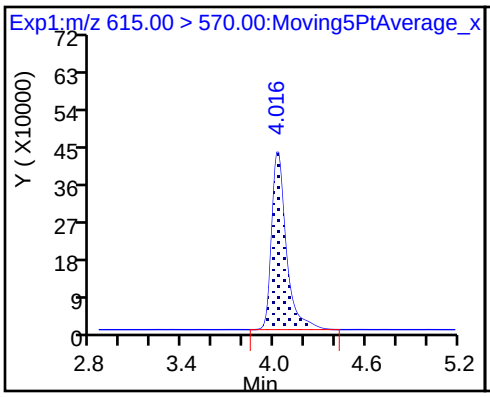
37 Perfluorododecanoic acid



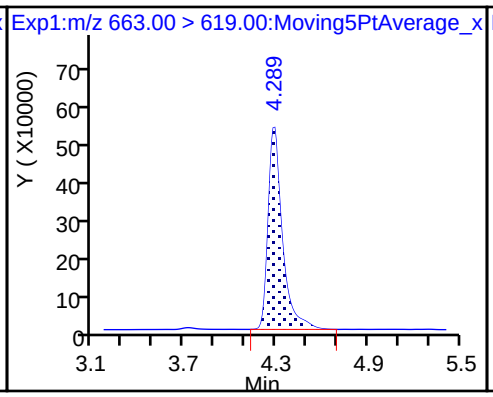
37 Perfluorododecanoic acid



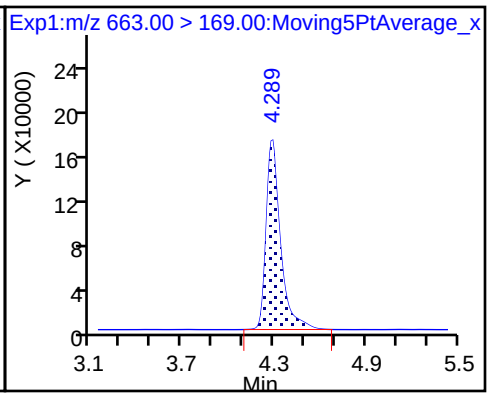
D 36 13C2 PFDoA



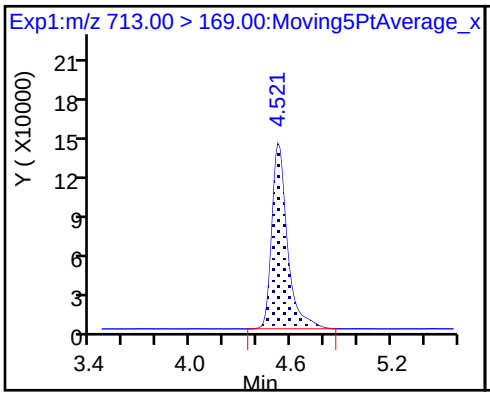
41 Perfluorotridecanoic acid



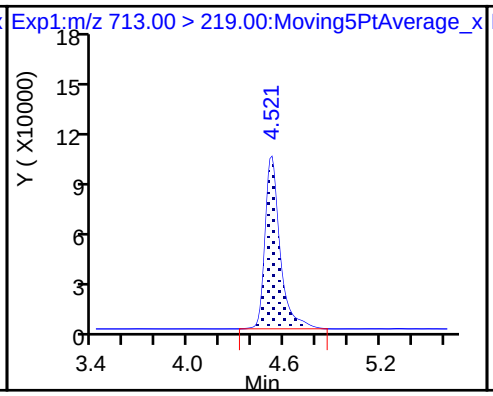
41 Perfluorotridecanoic acid



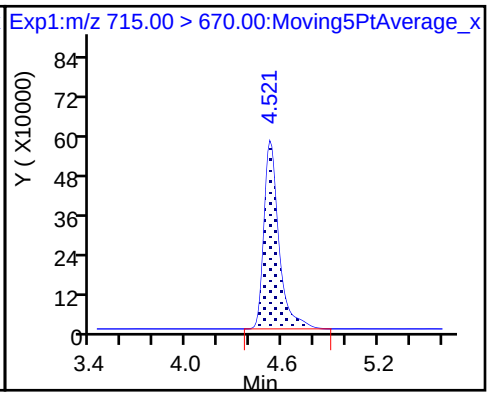
42 Perfluorotetradecanoic acid



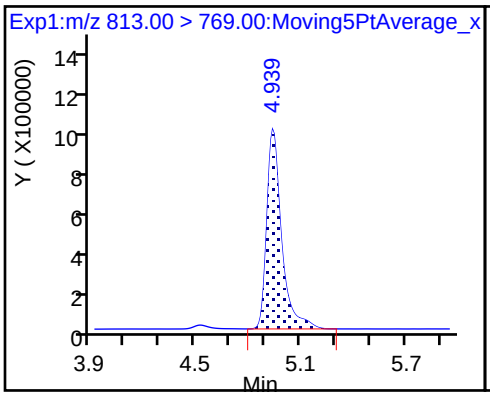
42 Perfluorotetradecanoic acid



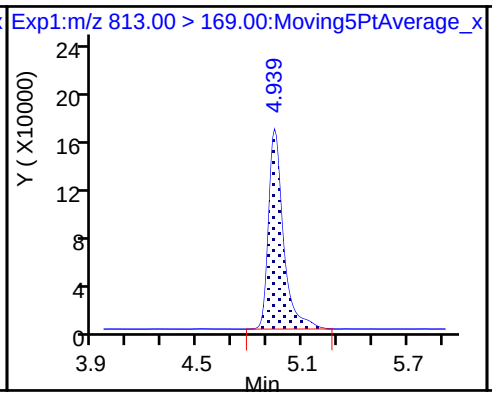
D 43 13C2-PFTeDA



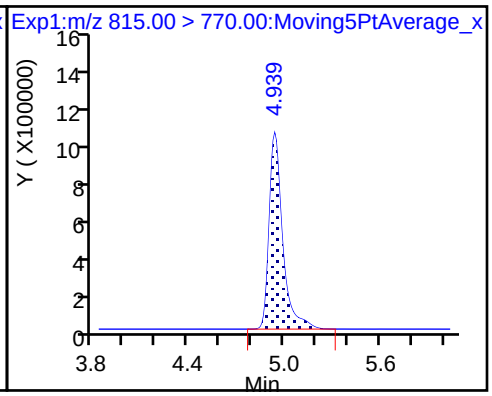
45 Perfluorohexadecanoic acid



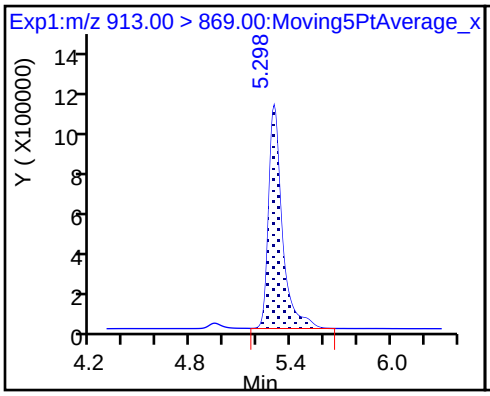
45 Perfluorohexadecanoic acid



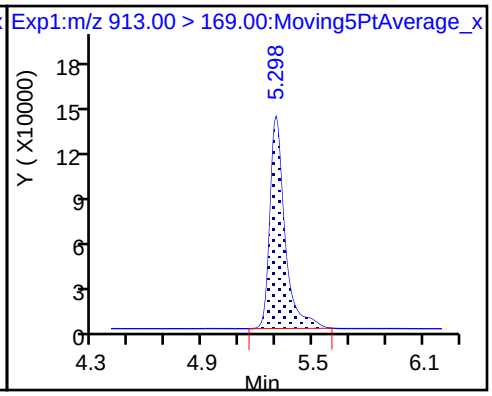
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

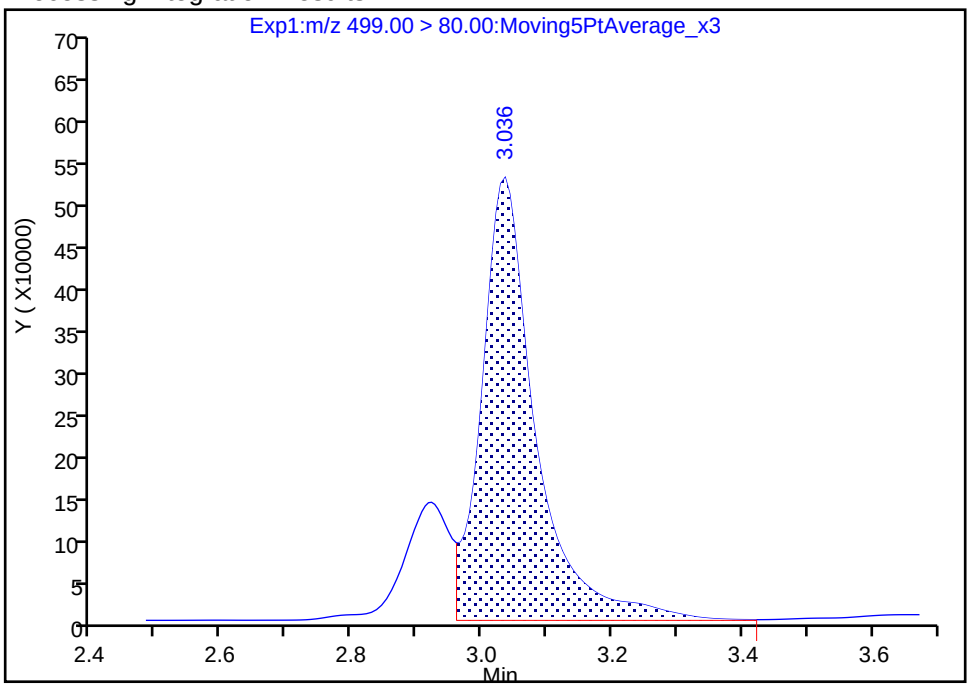
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b\2018.04.09LLA_053.d
Injection Date: 09-Apr-2018 19:37:14 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

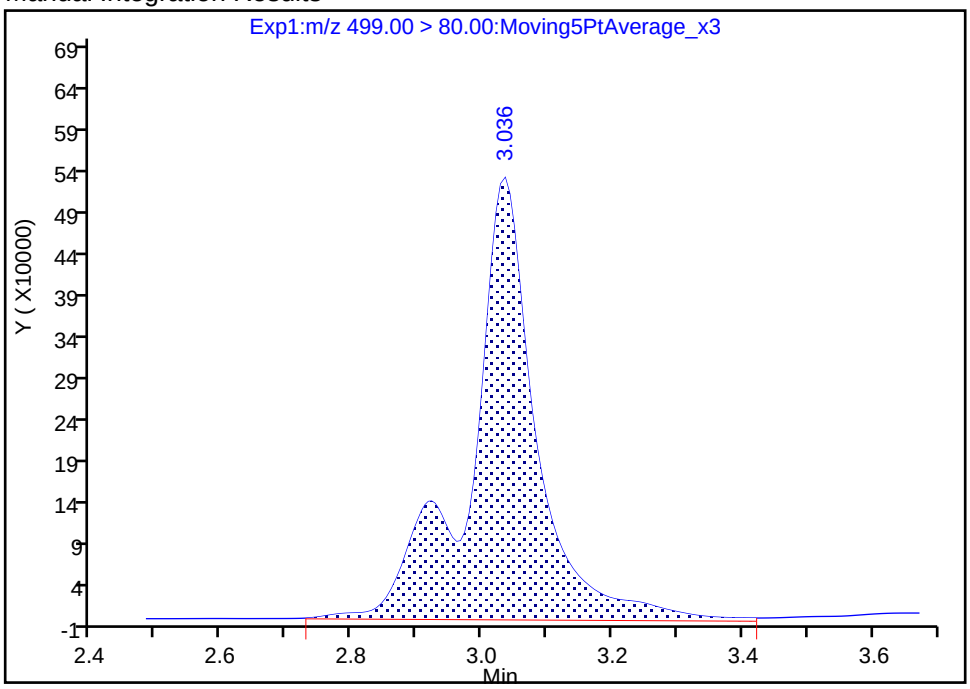
Processing Integration Results

RT: 3.04
Area: 3024889
Amount: 1.848999
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 3777792
Amount: 2.309220
Amount Units: ng/ml



Reviewer: hannigana, 10-Apr-2018 11:05:05
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-215980/1-A

Matrix: Solid | Lab File ID: 2018.04.07LLB_022.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.00(g) | Date Analyzed: 04/07/2018 20:14

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0000481	J	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.000317	J	0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037
27619-97-2	6:2FTS	0.00015	U	0.0020	0.00015
39108-34-4	8:2FTS	0.00025	U	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-215980/1-A

Matrix: Solid | Lab File ID: 2018.04.07LLB_022.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.00(g) | Date Analyzed: 04/07/2018 20:14

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	60		25-150
STL01893	13C5 PFPeA	60		25-150
STL00993	13C2 PFHxA	58		25-150
STL01892	13C4-PFHpA	62		25-150
STL00990	13C4 PFOA	63		25-150
STL00995	13C5 PFNA	64		25-150
STL00996	13C2 PFDA	67		25-150
STL00997	13C2 PFUnA	67		25-150
STL00998	13C2 PFDoA	66		25-150
STL02116	13C2-PFTeDA	72		25-150
STL02337	13C3-PFBS	63		25-150
STL00994	18O2 PFHxS	67		25-150
STL00991	13C4 PFOS	68		25-150
STL01056	13C8 FOSA	50		25-150
STL02118	d3-NMeFOSAA	54		25-150
STL02117	d5-NEtFOSAA	54		25-150
STL02279	M2-6:2FTS	60		25-150
STL02280	M2-8:2FTS	64		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_022.d
Lims ID: MB 320-215980/1-A
Client ID:
Sample Type: MB
Inject. Date: 07-Apr-2018 20:14:09 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-215980/1-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 08-Apr-2018 14:24:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	4825291	1.49		59.6	27209	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.429	0.001	1.000	42901	0.0241			9.3	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.692	0.010	1.005	4790	0.003152			2.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.693	0.0	0.559	3173964	1.51		60.3	41492	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.729	0.0	1.000	70355	1.46		62.7	1375	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.981	0.0	1.000	3360452	1.45		57.9	80322	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.307	-0.001	1.000	3471336	1.56		62.2	80602	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.319	0.0	1.000	12152	0.005817			34.4	
399.00 > 99.00	2.319	2.319	0.0	1.000	5052		2.41(1.50-4.49)		18.9	
D 11 18O2 PFHxS										
403.00 > 84.00	2.319	2.320	-0.001	1.000	4423229	1.59		67.2	87040	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.628	2.636	-0.008	0.997	2137	0.003728			18.4	
D 12 M2-6:2FTS										
429.00 > 81.00	2.636	2.637	-0.001	1.000	729014	1.41		59.5	7171	
* 62 13C2-PFOA										
415.00 > 370.00	2.660	2.659	0.001		5853710	2.50			129825	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.660	2.659	0.001	1.000	35096	0.0216			14.1	M
413.00 > 169.00	2.660	2.659	0.001	1.000	15825		2.22(0.84-2.52)		39.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.660	2.660	0.0	1.000	3428918	1.56		62.5	75262	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.028	3.029	-0.001	1.000	236481	0.1584			2293	
499.00 > 99.00	3.028	3.029	-0.001	1.000	56342		4.20(2.31-6.93)		528	
D 19 13C5 PFNA										
468.00 > 423.00	3.028	3.031	-0.003	1.000	2990931	1.61		64.4	90525	
D 18 13C4 PFOS										
503.00 > 80.00	3.028	3.031	-0.003	1.000	3122491	1.62		67.6	24330	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.360	0.006	1.000	3433852	1.26		50.3	51530	
D 26 M2-8:2FTS										
529.00 > 81.00	3.375	3.379	-0.004	1.000	913472	1.52		63.6	9746	
D 23 13C2 PFDA										
515.00 > 470.00	3.385	3.388	-0.003	1.000	2609028	1.66		66.5	70687	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.543	3.547	-0.004	1.000	1141170	1.36		54.4	20446	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.708	0.007	1.000	1186560	1.35		53.9	8613	
D 30 13C2 PFUnA										
565.00 > 520.00	3.715	3.719	-0.004	1.000	2139702	1.67		66.9	54014	
D 36 13C2 PFDoA										
615.00 > 570.00	4.015	4.009	0.006	1.000	2350212	1.65		66.0	21559	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.509	4.511	-0.002	1.000	3248881	1.79		71.8	17382	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.929	4.930	-0.001	1.000	5001187	1.79		71.6	10711	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.929	4.931	-0.001	1.000	40849	0.000164			11.5	
813.00 > 169.00	4.929	4.931	-0.001	1.000	5734		7.12(2.86-8.58)		36.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 10:11:02 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_022.d

Injection Date: 07-Apr-2018 20:14:09 Instrument ID: A8_N

Lims ID: MB 320-215980/1-A

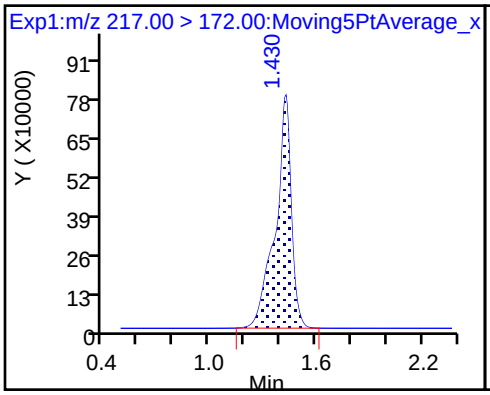
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4

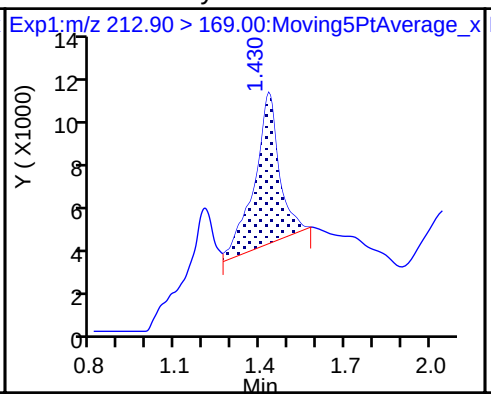
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

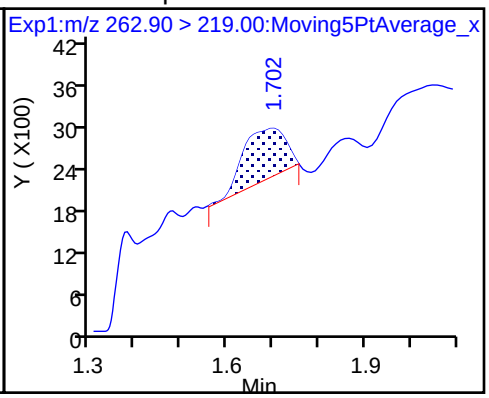
D 1 13C4 PFBA



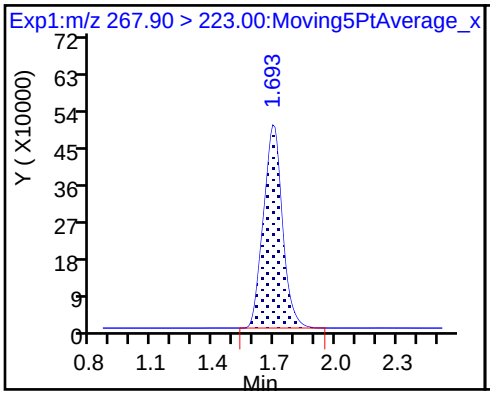
2 Perfluorobutyric acid



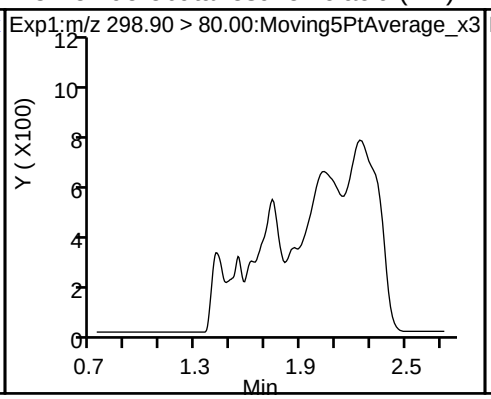
4 Perfluoropentanoic acid



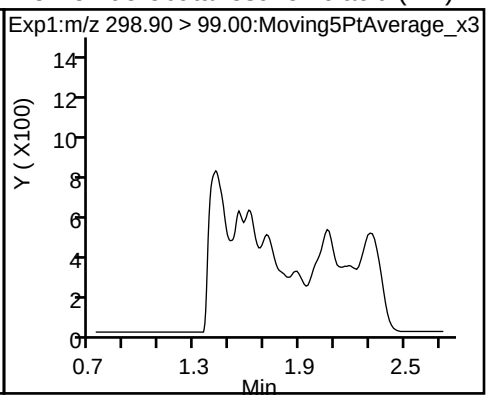
D 3 13C5-PFPeA



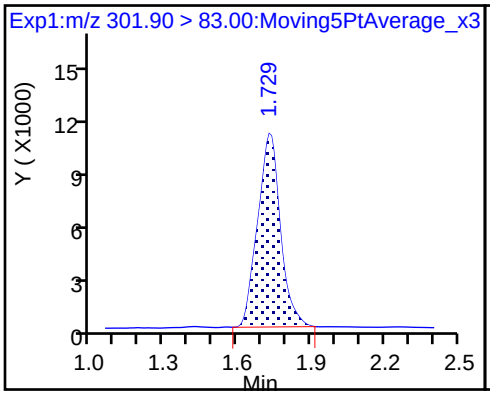
5 Perfluorobutanesulfonic acid (ND)



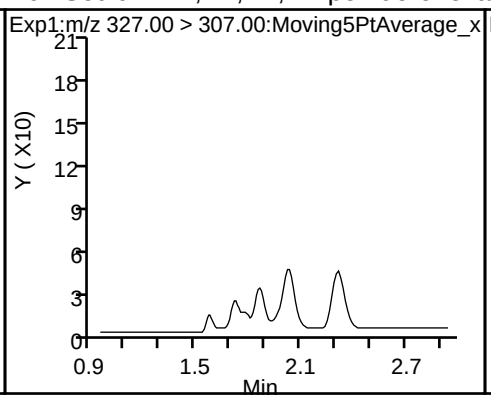
5 Perfluorobutanesulfonic acid (ND)



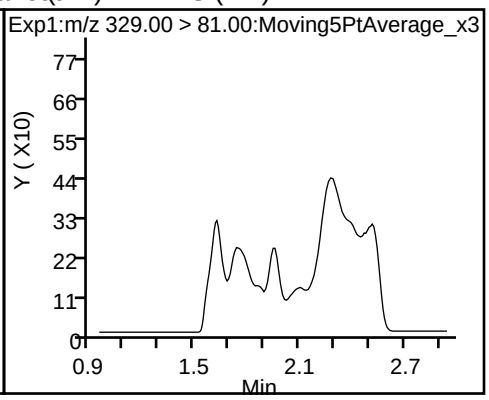
D 47 13C3-PFBS



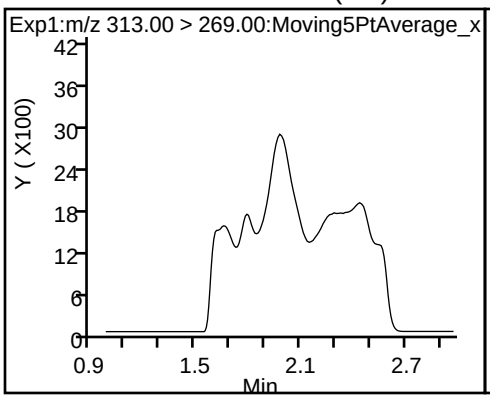
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



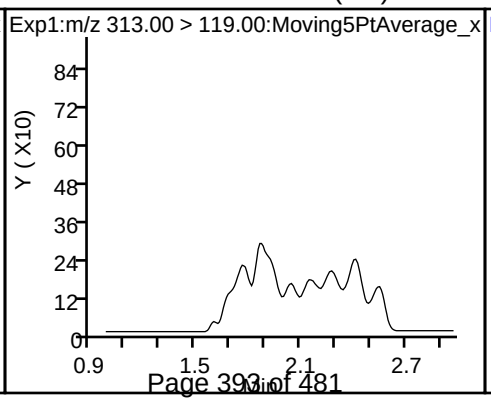
D 60 M2-4:2FTS (ND)



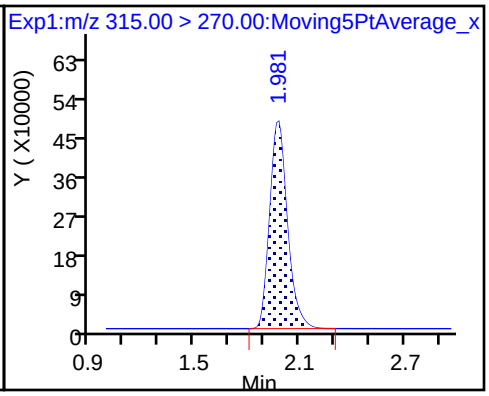
6 Perfluorohexanoic acid (ND)



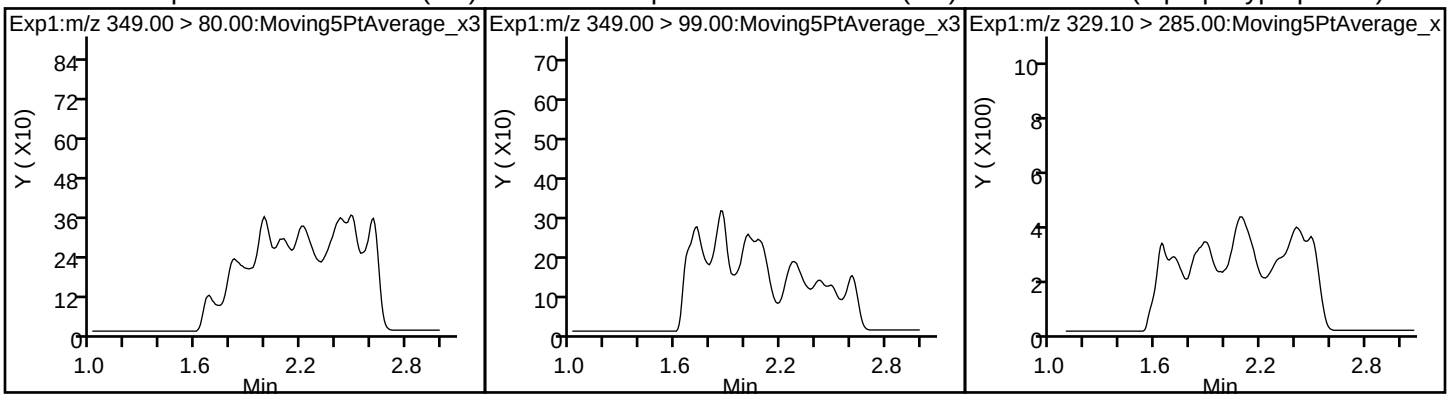
6 Perfluorohexanoic acid (ND)



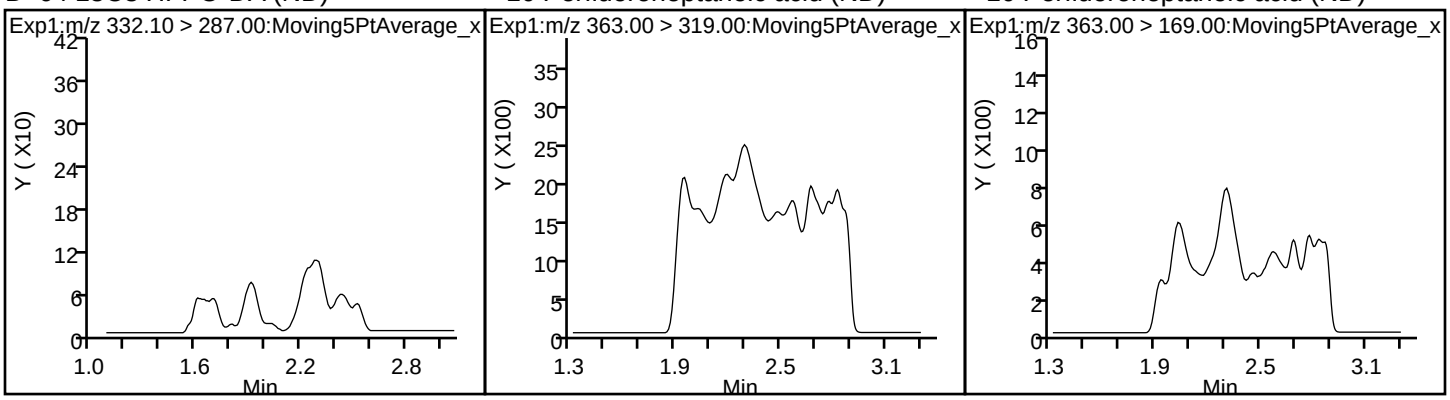
D 7 13C2 PFHxA



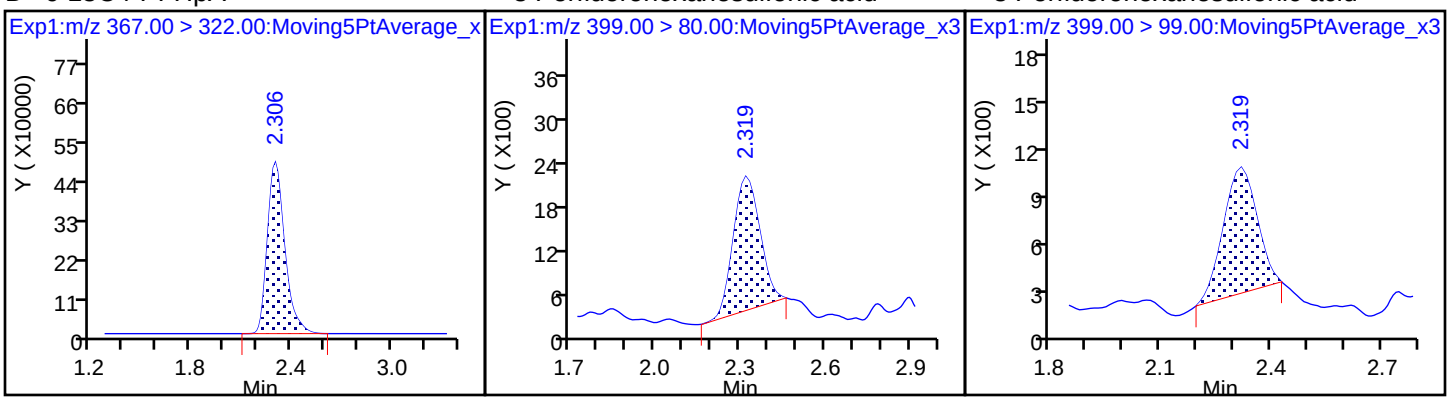
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) 67 Perfluoro(2-propoxypropanoic) acid (ND)



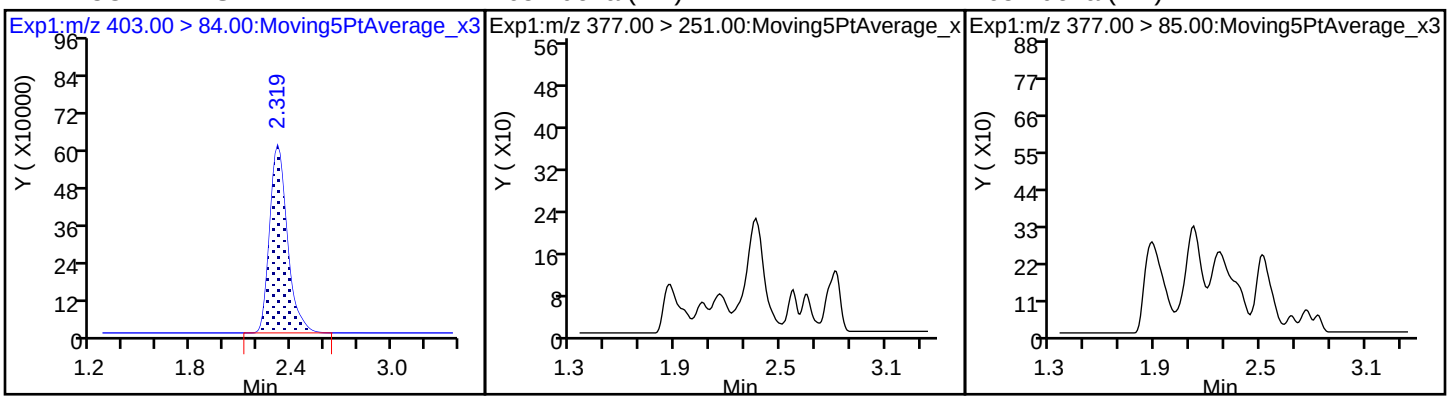
D 64 13C3 HFPO-DA (ND) 10 Perfluoroheptanoic acid (ND) 10 Perfluoroheptanoic acid (ND)



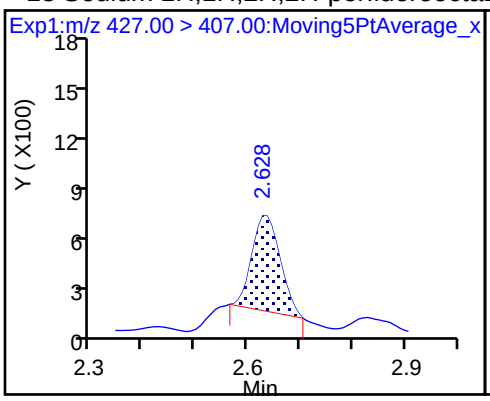
D 9 13C4-PFHpA 8 Perfluorohexanesulfonic acid 8 Perfluorohexanesulfonic acid



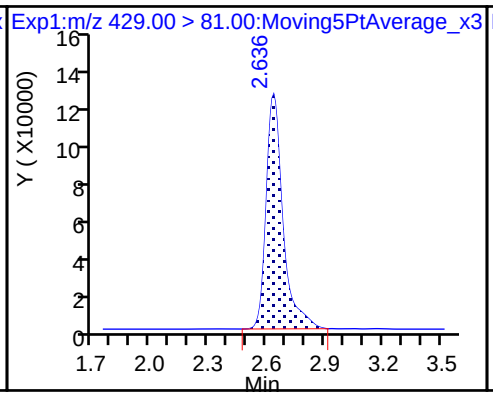
D 11 18O2 PFHxS 65 Adona (ND) 65 Adona (ND)



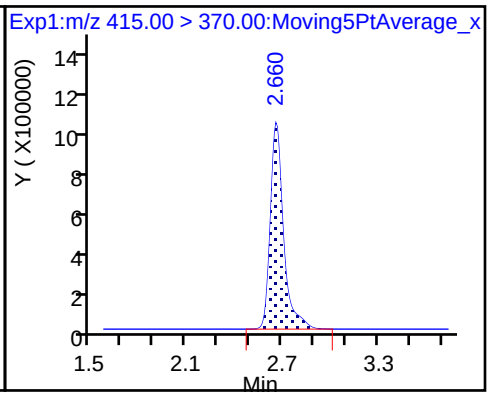
13 Sodium 1H,1H,2H,2H-perfluorooctane



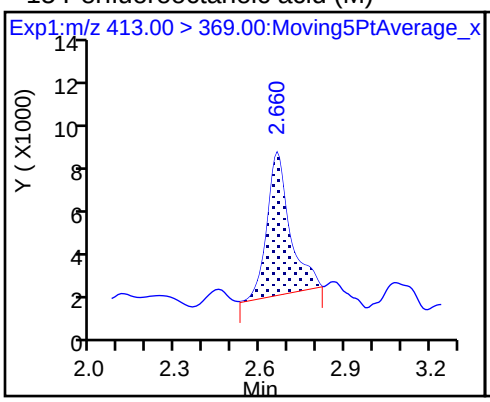
D 12 M2-6:2FTS



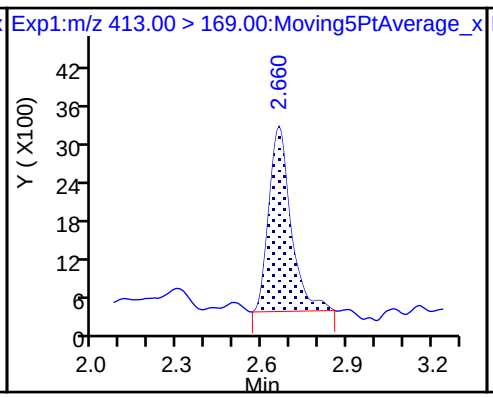
* 62 13C2-PFOA



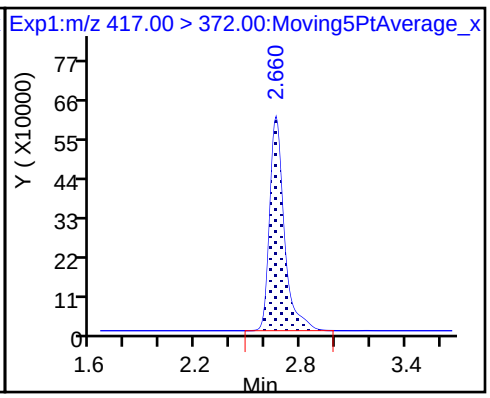
15 Perfluorooctanoic acid (M)



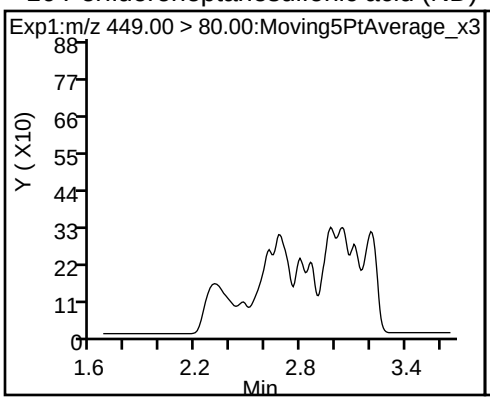
15 Perfluorooctanoic acid



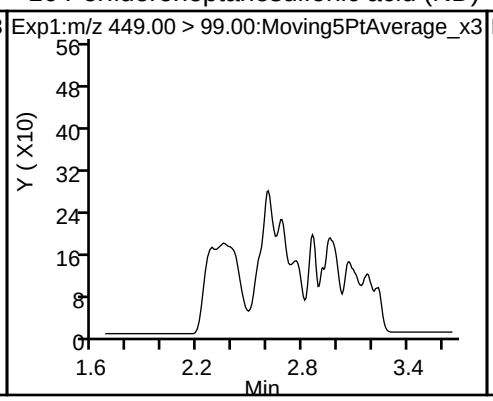
D 14 13C4 PFOA



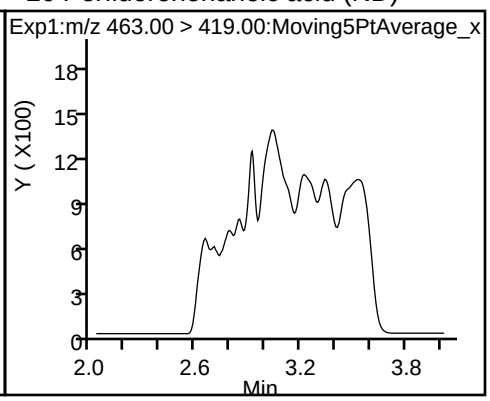
16 Perfluoroheptanesulfonic acid (ND)



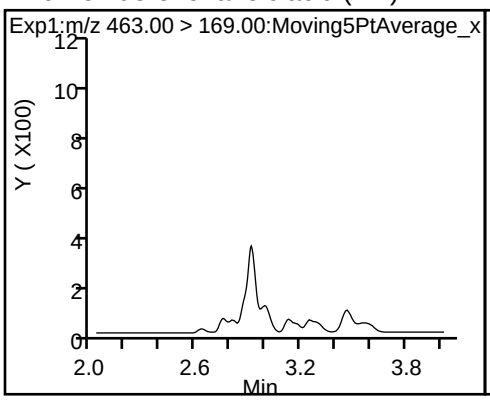
16 Perfluoroheptanesulfonic acid (ND)



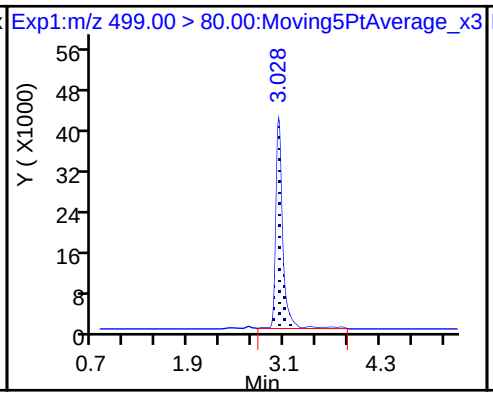
20 Perfluorononanoic acid (ND)



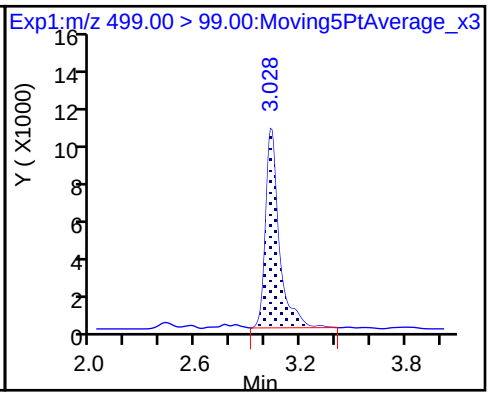
20 Perfluorononanoic acid (ND)



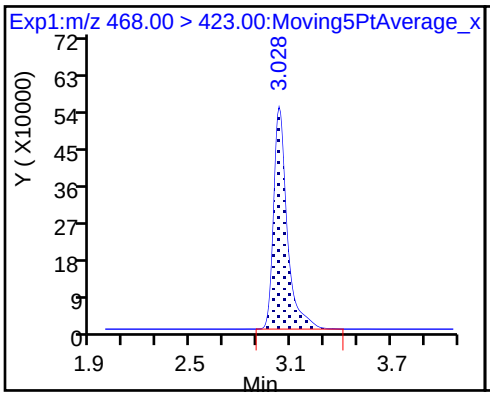
17 Perfluorooctane sulfonic acid



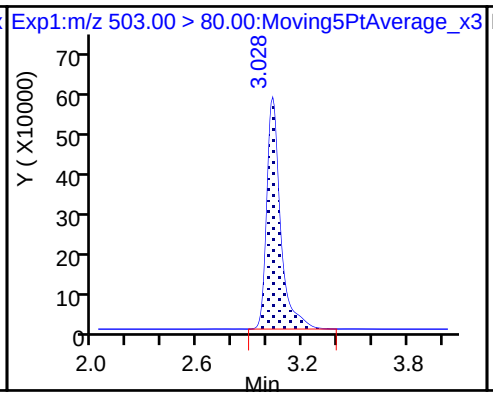
17 Perfluorooctane sulfonic acid



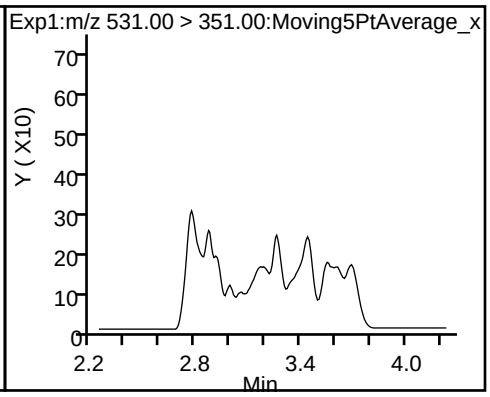
D 19 13C5 PFNA



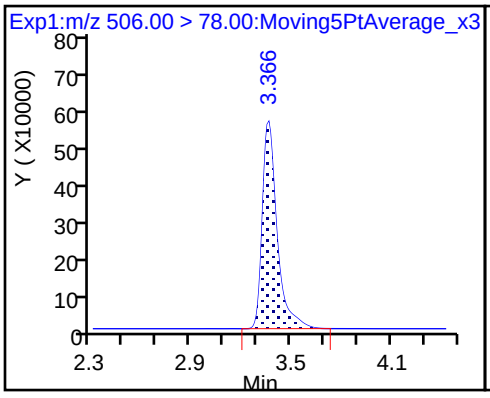
D 18 13C4 PFOS



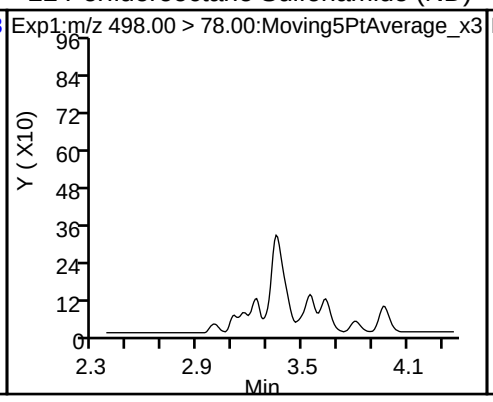
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



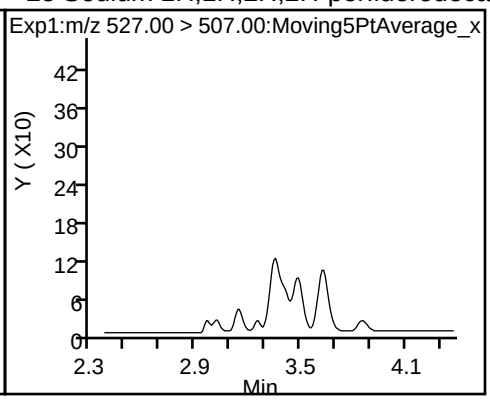
D 21 13C8 FOSA



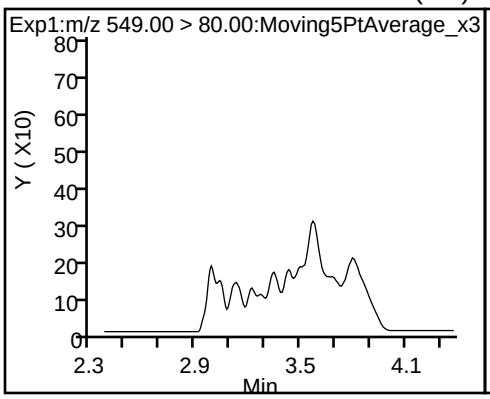
22 Perfluorooctane Sulfonamide (ND)



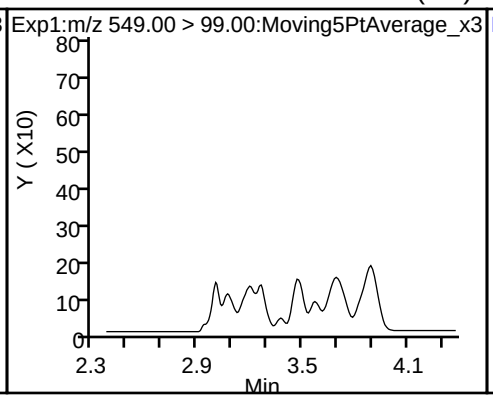
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



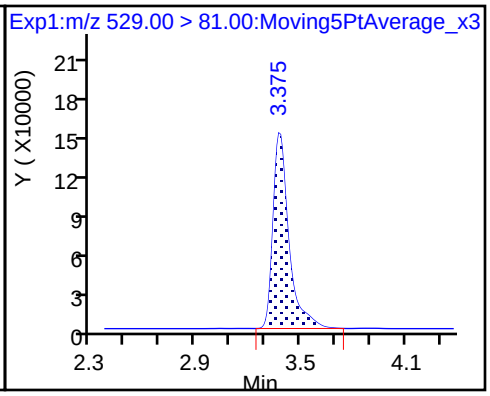
68 Perfluorononanesulfonic acid (ND)



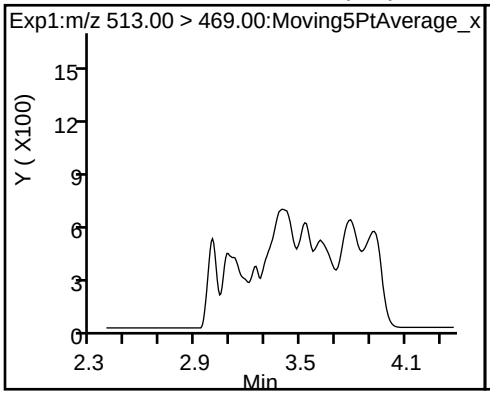
68 Perfluorononanesulfonic acid (ND)



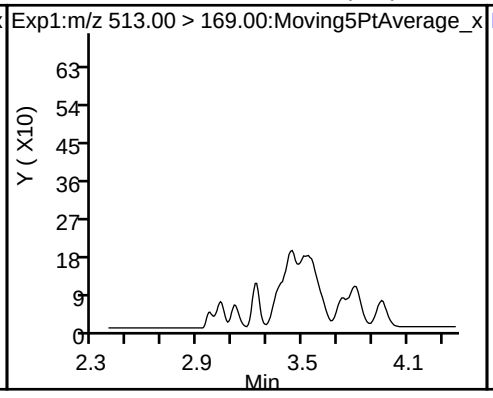
D 26 M2-8:2FTS



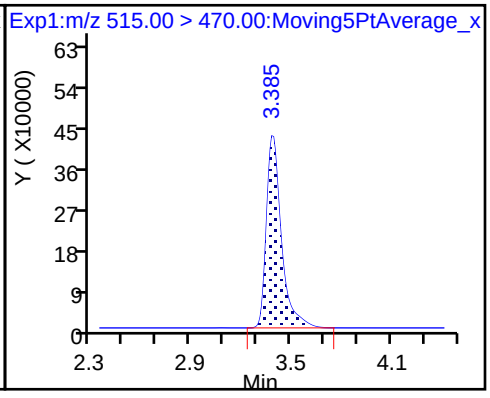
24 Perfluorodecanoic acid (ND)



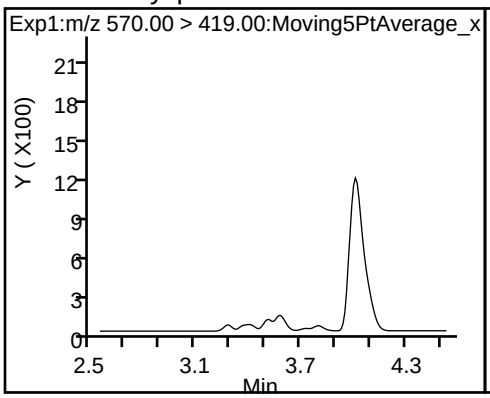
24 Perfluorodecanoic acid (ND)



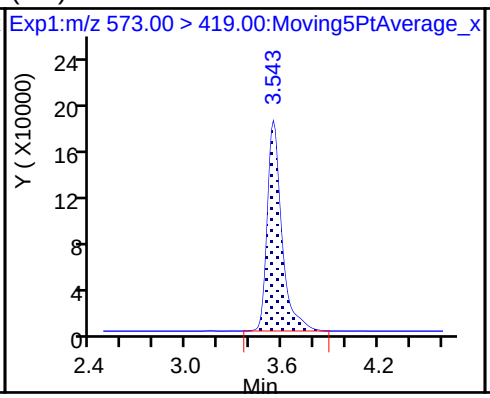
D 23 13C2 PFDA



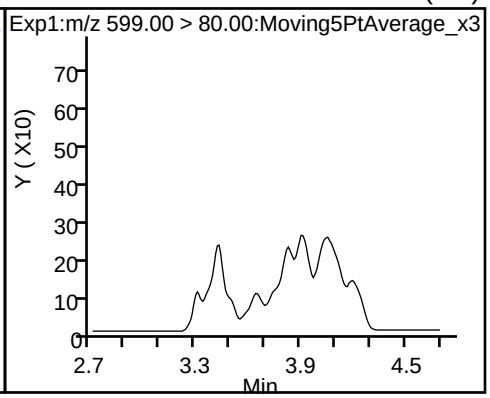
28 N-methyl perfluorooctane sulfonamid (ND)



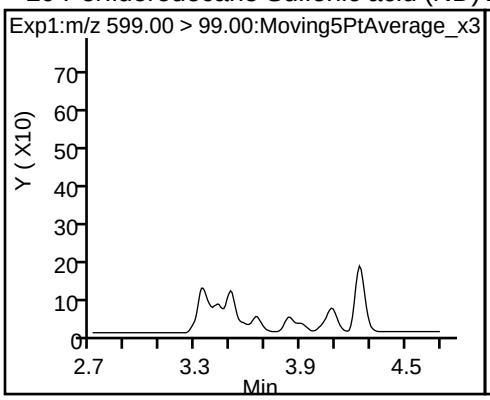
D 27 d3-NMeFOSAA



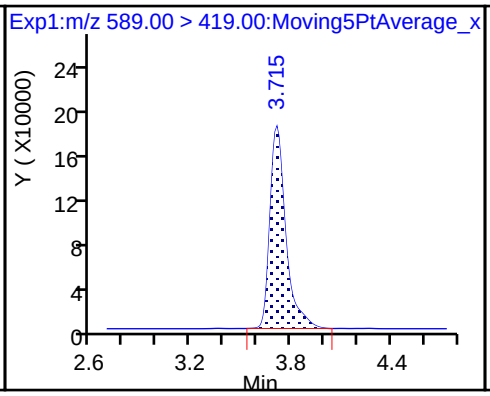
29 Perfluorodecane Sulfonic acid (ND)



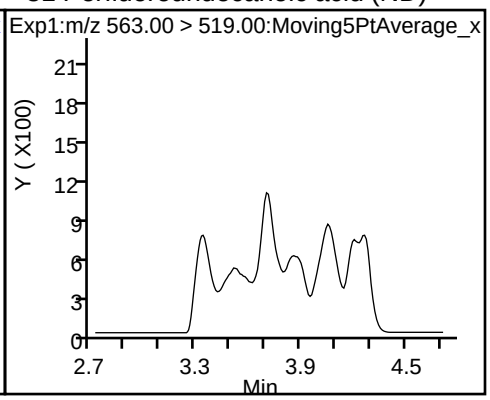
29 Perfluorodecane Sulfonic acid (ND)



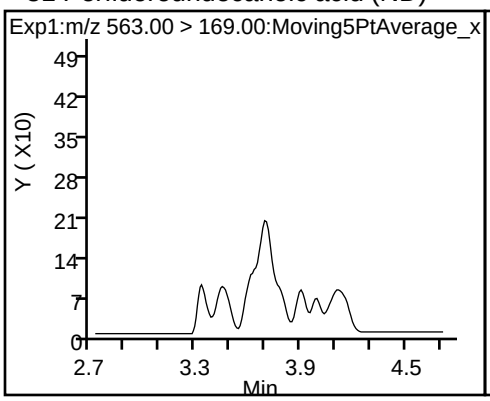
D 32 d5-NEtFOSAA



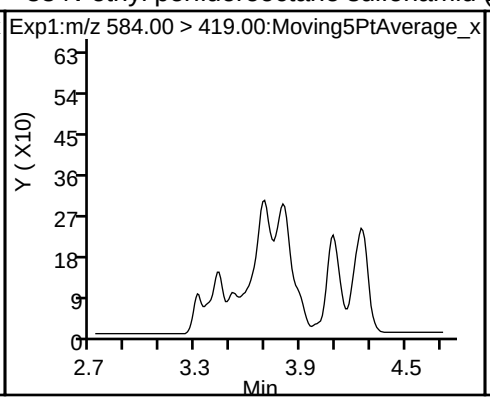
31 Perfluoroundecanoic acid (ND)



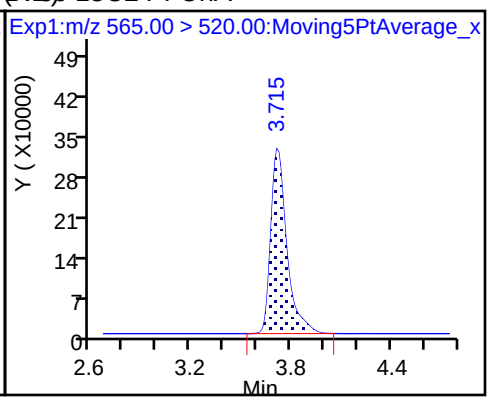
31 Perfluoroundecanoic acid (ND)



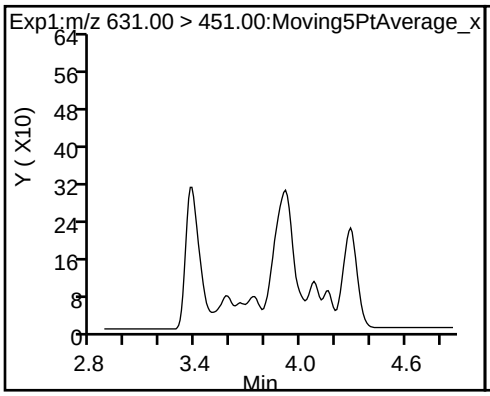
33 N-ethyl perfluorooctane sulfonamid (ND)



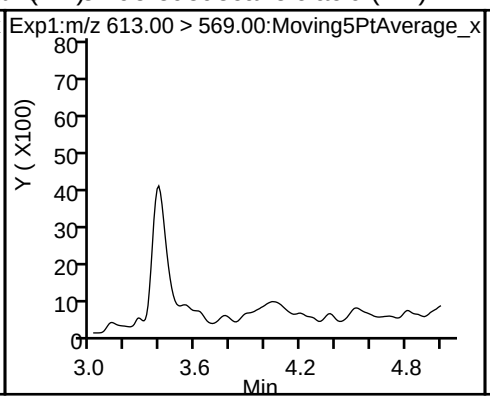
M3 13C2 PFUnA



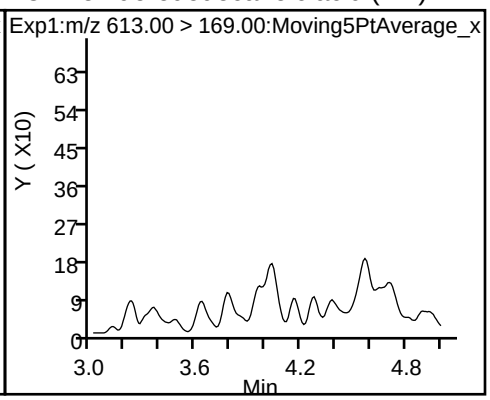
66 11-Chloroeicosafluoro-3-oxaundecan (ND)



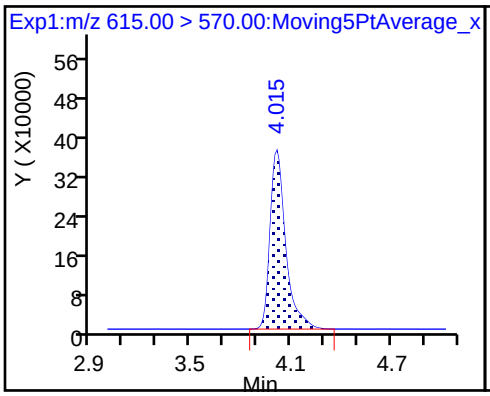
M8 Perfluorododecanoic acid (ND)



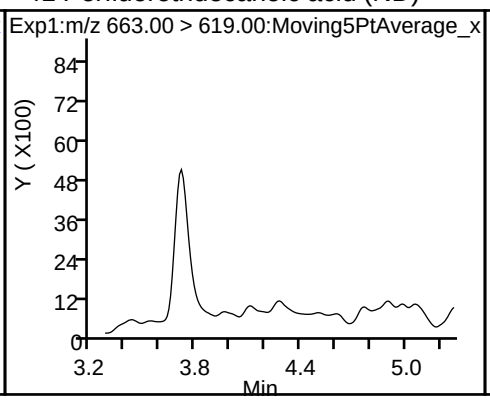
37 Perfluorododecanoic acid (ND)



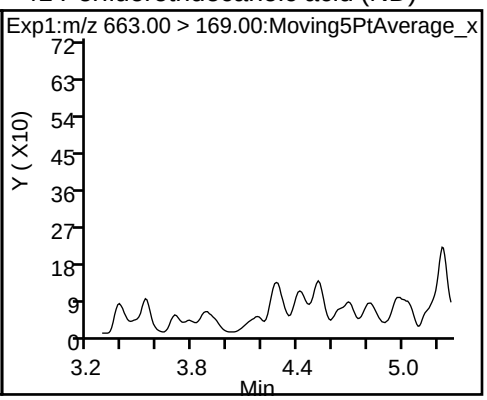
D 36 13C2 PFDoA



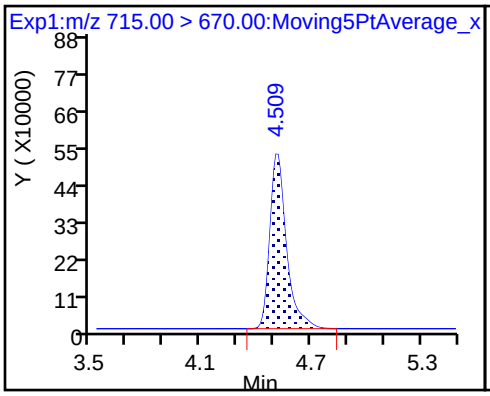
41 Perfluorotridecanoic acid (ND)



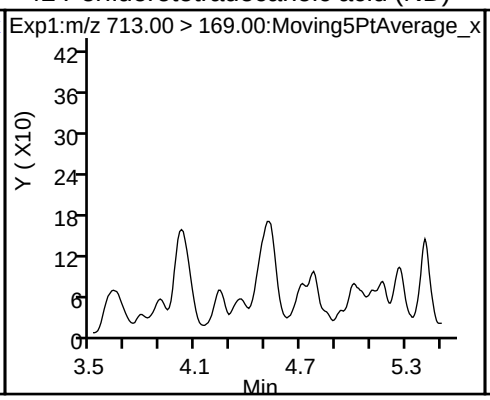
41 Perfluorotridecanoic acid (ND)



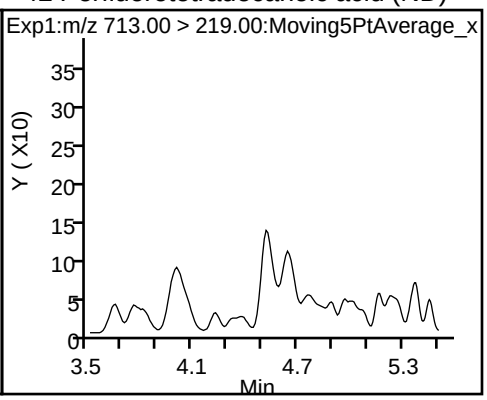
D 43 13C2-PFTeDA



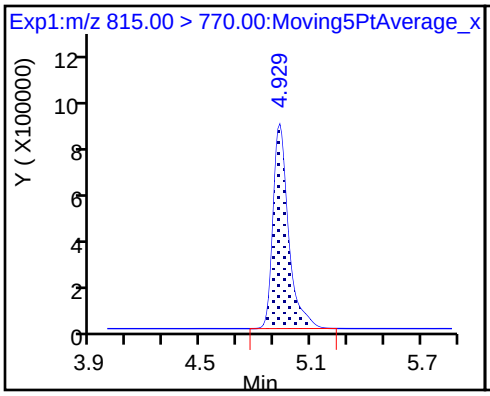
42 Perfluorotetradecanoic acid (ND)



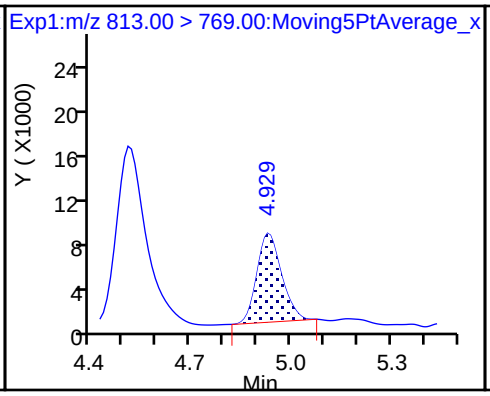
42 Perfluorotetradecanoic acid (ND)



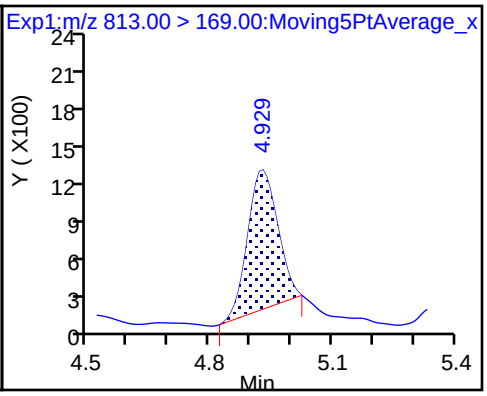
D 44 13C2-PFHxDA



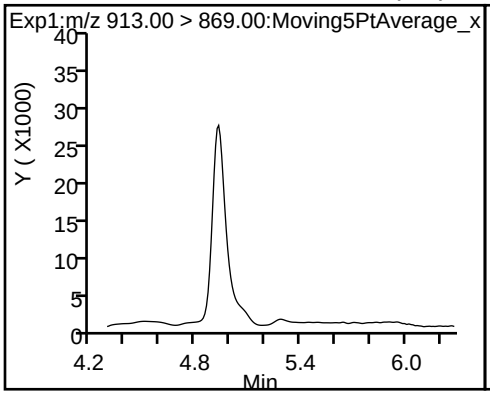
45 Perfluorohexadecanoic acid



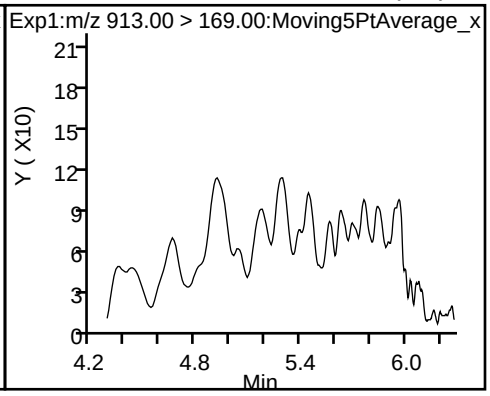
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

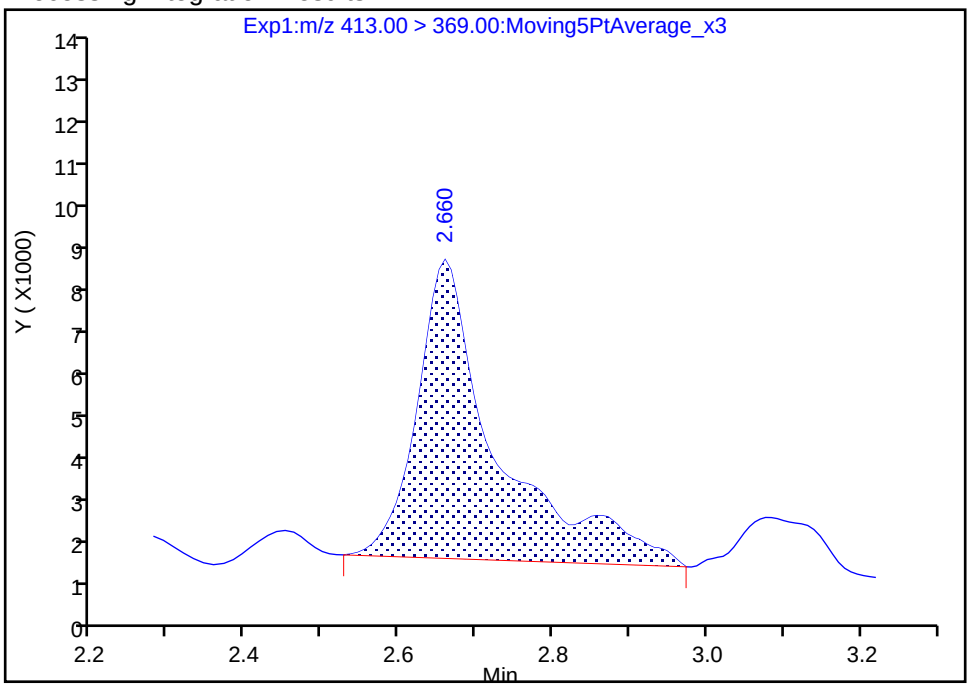
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_022.d
Injection Date: 07-Apr-2018 20:14:09 Instrument ID: A8_N
Lims ID: MB 320-215980/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

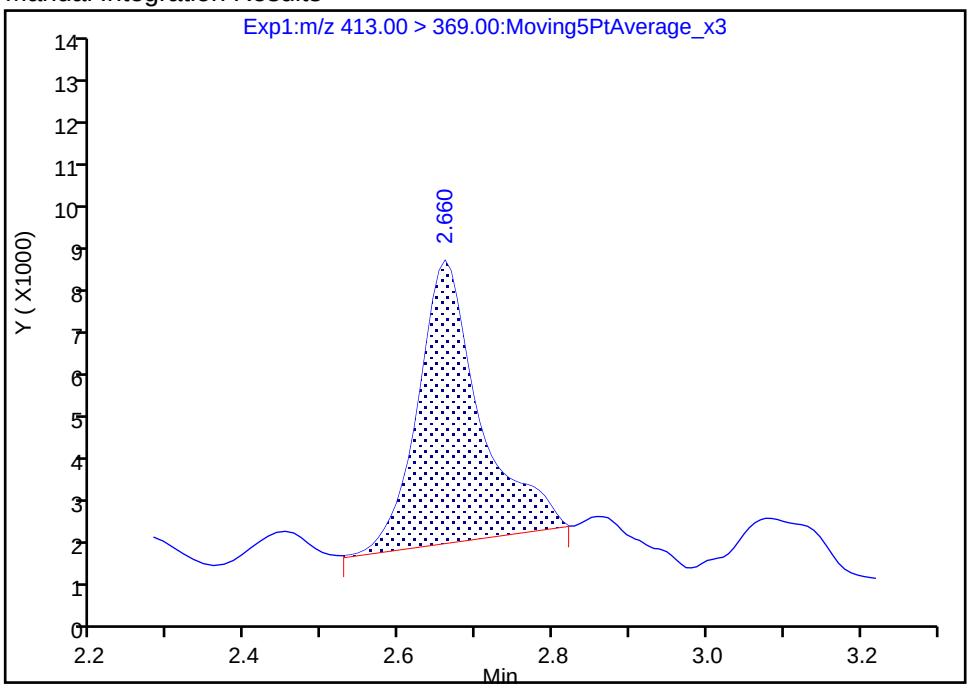
Processing Integration Results

RT: 2.66
Area: 47987
Amount: 0.029505
Amount Units: ng/ml



Manual Integration Results

RT: 2.66
Area: 35096
Amount: 0.021579
Amount Units: ng/ml



Reviewer: hannigana, 08-Apr-2018 14:23:57
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-215980/2-A

Matrix: Solid | Lab File ID: 2018.04.07LLB_023.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.00(g) | Date Analyzed: 04/07/2018 20:22

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00208		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00188		0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00201		0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00195		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00186		0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.00191		0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.00193		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00181		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00190		0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00193		0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00187		0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00173		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00167		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00179		0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00182		0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00181		0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00196		0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00202		0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00195	J	0.0020	0.00037
27619-97-2	6:2FTS	0.00172	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00179	J	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-215980/2-A

Matrix: Solid | Lab File ID: 2018.04.07LLB_023.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.00(g) | Date Analyzed: 04/07/2018 20:22

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	70		25-150
STL01893	13C5 PFPeA	71		25-150
STL00993	13C2 PFHxA	68		25-150
STL01892	13C4-PFHpA	72		25-150
STL00990	13C4 PFOA	73		25-150
STL00995	13C5 PFNA	75		25-150
STL00996	13C2 PFDA	76		25-150
STL00997	13C2 PFUnA	82		25-150
STL00998	13C2 PFDoA	80		25-150
STL02116	13C2-PFTeDA	81		25-150
STL02337	13C3-PFBS	74		25-150
STL00994	18O2 PFHxS	79		25-150
STL00991	13C4 PFOS	77		25-150
STL01056	13C8 FOSA	61		25-150
STL02118	d3-NMeFOSAA	73		25-150
STL02117	d5-NEtFOSAA	78		25-150
STL02279	M2-6:2FTS	72		25-150
STL02280	M2-8:2FTS	75		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_023.d
Lims ID: LCS 320-215980/2-A
Client ID:
Sample Type: LCS
Inject. Date: 07-Apr-2018 20:22:02 ALS Bottle#: 14 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-215980/2-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 09:38:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.424	0.006	1.000	5287099	1.76		70.2	35008	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.429	0.001	1.000	2030959	1.04		104	720	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.692	0.010	1.000	1565739	0.9415		94.1	1959	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.693	0.009	0.561	3473606	1.77		70.9	50793	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.728	0.010	1.000	2266111	0.8639		97.7	10592	
298.90 > 99.00	1.738	1.728	0.010	1.000	946521		2.39(1.25-3.74)		3803	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.729	0.009	1.000	77303	1.72		74.1	479	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.948	0.001	1.000	466089	0.8124		87.0	17904	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.980	0.001	1.000	1505721	1.01		101	2257	
313.00 > 119.00	1.981	1.980	0.001	1.000	143519		10.49(5.03-15.10)		2138	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.981	0.0	1.000	3656105	1.69		67.7	77729	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.002	0.002	1.000	2107595	0.8903		94.9	15609	
349.00 > 99.00	2.004	2.002	0.002	1.000	755496		2.79(1.36-4.07)		6285	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.082	0.001	1.000	234603	NR		0.0	1764	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.307	2.306	0.001	1.000	1588661	0.9759		97.6	1605	
363.00 > 169.00	2.307	2.306	0.001	1.000	605840		2.62(1.13-3.40)		2569	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.307	2.307	0.0	1.000	3745548	1.80		72.1	104337	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.319	0.001	1.000	1899682	0.8338		91.6	5106	
399.00 > 99.00	2.320	2.319	0.001	1.000	644519		2.95(1.50-4.49)		2122	
D 11 18O2 PFHxS										
403.00 > 84.00	2.320	2.320	0.0	1.000	4824467	1.86		78.8	84138	
65 Adona										
377.00 > 251.00	2.346	2.345	0.001	1.000	4324335	0.8751		87.5	74777	
377.00 > 85.00	2.346	2.345	0.001	1.000	2584617		1.67(0.84-2.53)		27789	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.636	0.009	1.003	556853	0.8619		90.9	5746	
D 12 M2-6:2FTS										
429.00 > 81.00	2.637	2.637	0.0	1.000	821637	1.71		72.1	8967	
* 62 13C2-PFOA										
415.00 > 370.00	2.668	2.659	0.009		5446296	2.50			119708	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.668	2.659	0.009	1.003	1638090	0.9280		92.8	832	
413.00 > 169.00	2.668	2.659	0.009	1.003	866934		1.89(0.84-2.52)		2476	
D 14 13C4 PFOA										
417.00 > 372.00	2.660	2.660	0.0	1.000	3721425	1.82		72.9	83355	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.667	0.008	1.000	1654667	0.8955		94.1	13766	
449.00 > 99.00	2.675	2.667	0.008	1.000	454598		3.64(1.94-5.82)		6763	
20 Perfluorononanoic acid										
463.00 > 419.00	3.036	3.029	0.007	1.000	1281503	0.9567		95.7	2844	
463.00 > 169.00	3.036	3.029	0.007	1.000	312132		4.11(1.90-5.69)		9278	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.029	3.029	0.0	1.000	1441672	0.9100		98.1	5395	M
499.00 > 99.00	3.029	3.029	0.0	1.000	327800		4.40(2.31-6.93)		4759	
D 19 13C5 PFNA										
468.00 > 423.00	3.036	3.031	0.005	1.000	3254194	1.88		75.4	97269	
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.031	-0.002	1.000	3313881	1.84		77.1	30929	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.245	3.237	0.008	1.000	2279733	0.8792		94.3	16497	
D 21 13C8 FOSA										
506.00 > 78.00	3.367	3.360	0.007	1.000	3867445	1.52		60.9	48652	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.367	3.368	-0.001	1.000	1494573	0.9781		97.8	40514	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.385	3.377	0.008	1.000	502284	0.8955		93.5	13671	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.377	0.008	1.000	1004557	0.9036		94.1	11181	
549.00 > 99.00	3.376	3.377	-0.001	0.997	397008		2.53(1.33-3.97)		4969	
D 26 M2-8:2FTS										
529.00 > 81.00	3.385	3.379	0.006	1.000	995929	1.78		74.5	9209	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.395	3.386	0.009	1.000	1065834	0.9661		96.6	3842	
513.00 > 169.00	3.395	3.386	0.009	1.000	179225		5.95(2.36-7.09)		3228	
D 23 13C2 PFDA										
515.00 > 470.00	3.395	3.388	0.007	1.000	2787908	1.91		76.4	76199	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.553	3.545	0.008	1.003	608905	1.01		101	4168	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.544	3.547	-0.003	1.000	1429568	1.83		73.3	20295	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.705	3.706	-0.001	1.000	869759	0.9041		93.8	9784	
599.00 > 99.00	3.705	3.706	-0.001	1.000	315829		2.75(1.39-4.16)		5607	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.716	3.708	0.008	1.000	1606719	1.96		78.5	12061	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.717	0.009	1.000	704698	0.9029		90.3	2718	
563.00 > 169.00	3.726	3.717	0.009	1.000	191915		3.67(2.12-6.36)		5970	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.726	3.717	0.009	1.003	574434	0.9746		97.5	12397	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.719	0.007	1.000	2431768	2.04		81.7	62745	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.874	0.009	1.000	3646538	0.9061		96.2	45564	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.016	4.006	0.010	1.000	1084779	0.9510		95.1	885	
613.00 > 169.00	4.016	4.006	0.010	1.000	265361		4.09(2.13-6.40)		2444	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.009	0.007	1.000	2638544	1.99		79.6	22097	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.279	0.0	1.000	1178778	0.9662		96.6	813	
663.00 > 169.00	4.279	4.279	0.0	1.000	365258		3.23(1.25-3.76)		3637	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.511	0.010	1.000	3409576	2.02		81.0	21709	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.511	0.010	1.000	318611	0.9354		93.5	2630	
713.00 > 219.00	4.510	4.511	-0.001	0.998	232643		1.37(0.71-2.13)		2834	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.930	4.930	0.0	1.000	5568652	2.14		85.6	13220	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.930	4.931	0.0	1.000	1983141	0.9189		91.9	481	
813.00 > 169.00	4.930	4.931	0.0	1.000	341456		5.81(2.86-8.58)		1869	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.291	5.284	0.007	1.000	2260900	1.02		102	427	
913.00 > 169.00	5.283	5.284	-0.001	0.999	280640		8.06(3.83-11.48)		1554	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 10:11:04 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_023.d

Injection Date: 07-Apr-2018 20:22:02 Instrument ID: A8_N

Lims ID: LCS 320-215980/2-A

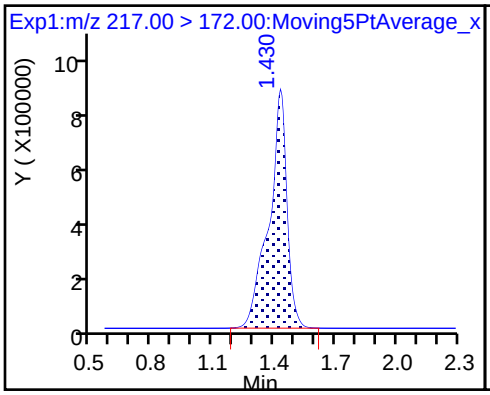
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 5

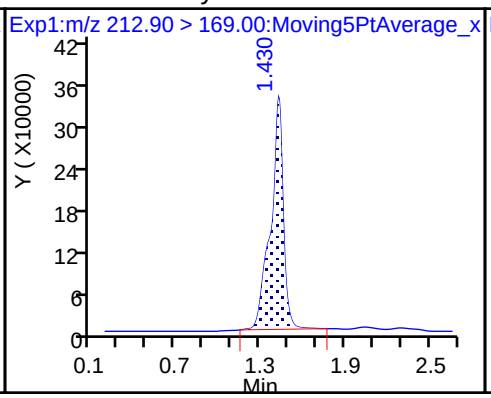
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

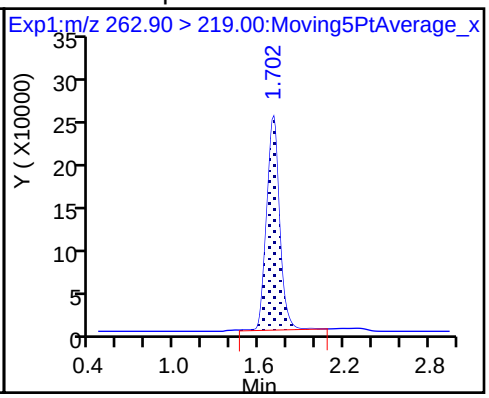
D 1 13C4 PFBA



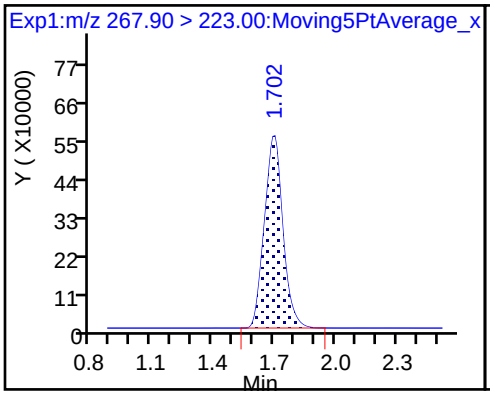
2 Perfluorobutyric acid



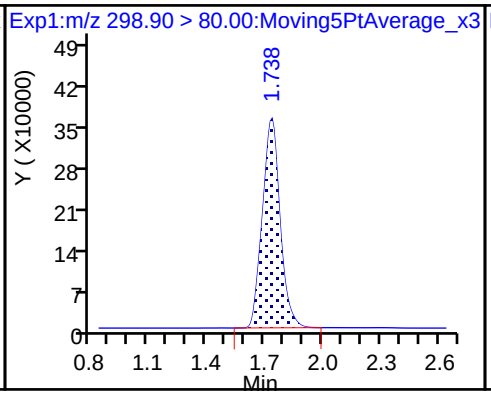
4 Perfluoropentanoic acid



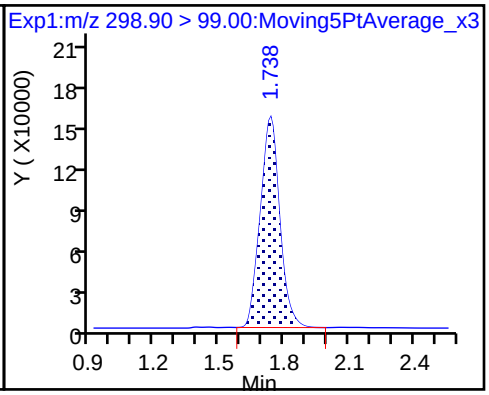
D 3 13C5-PFPeA



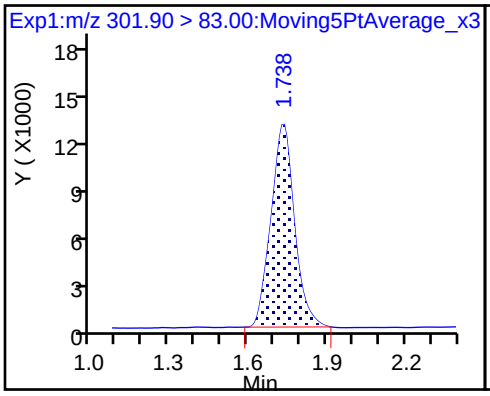
5 Perfluorobutanesulfonic acid



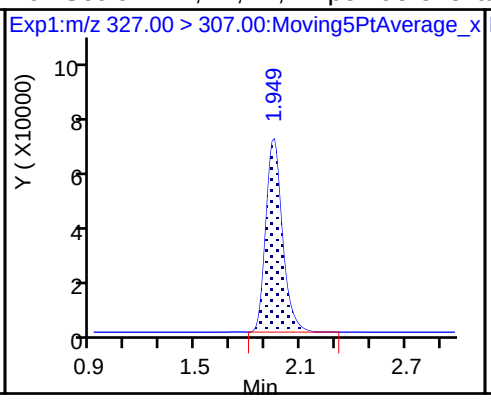
5 Perfluorobutanesulfonic acid



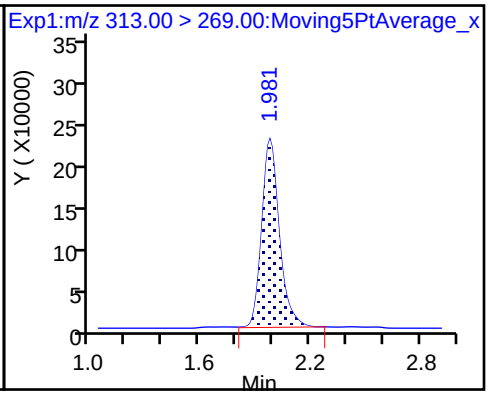
D 47 13C3-PFBS



61 Sodium 1H,1H,2H,2H-perfluorohexane



6 Perfluorohexanoic acid



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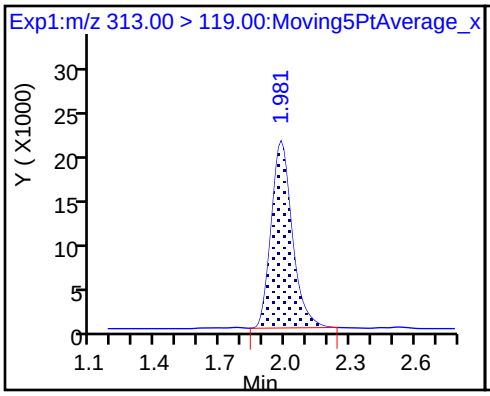
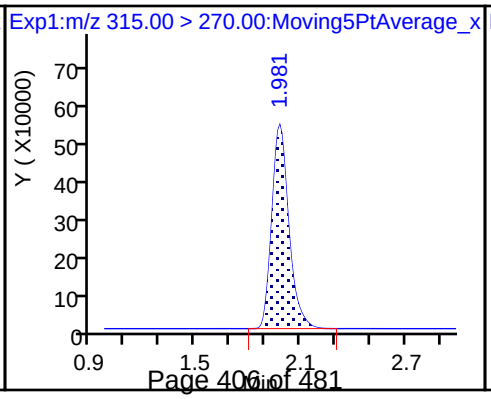
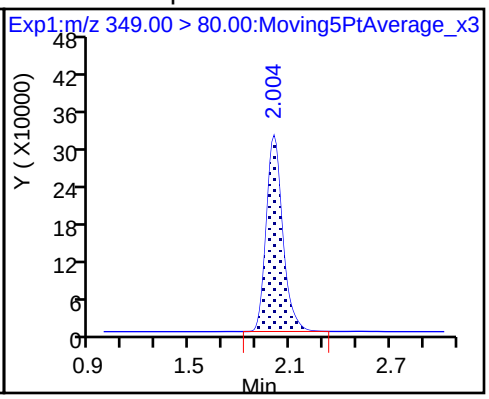


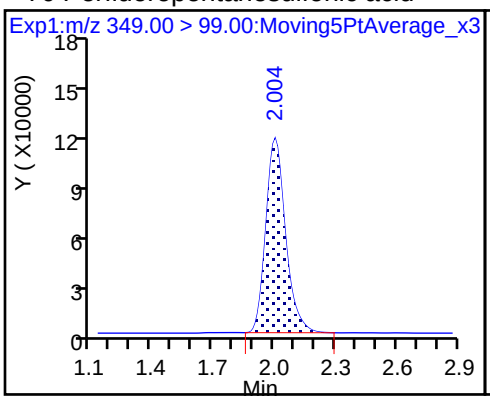
D 7 13C2 PFHxA



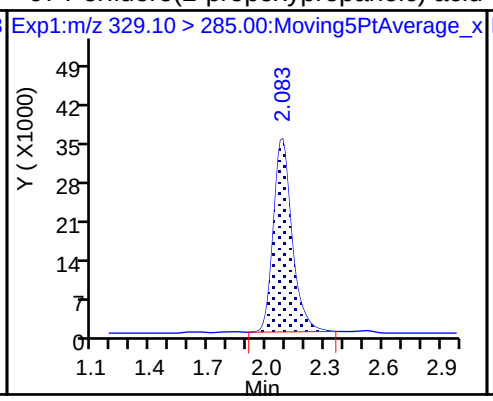
70 Perfluoropentanesulfonic acid



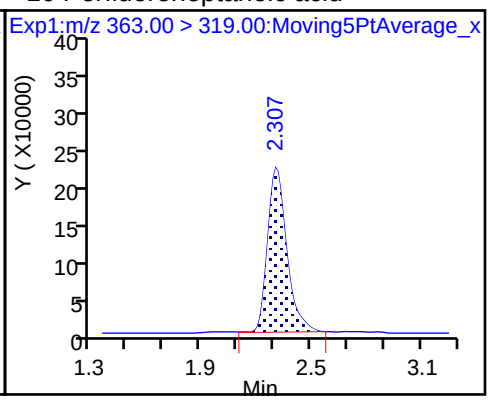
70 Perfluoropentanesulfonic acid



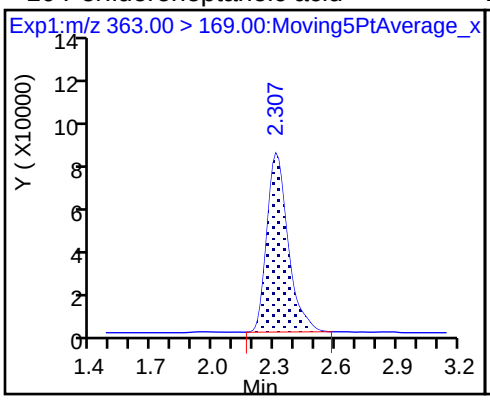
67 Perfluoro(2-propoxypropanoic) acid



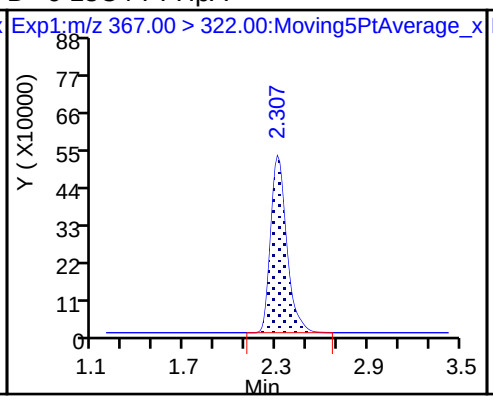
10 Perfluoroheptanoic acid



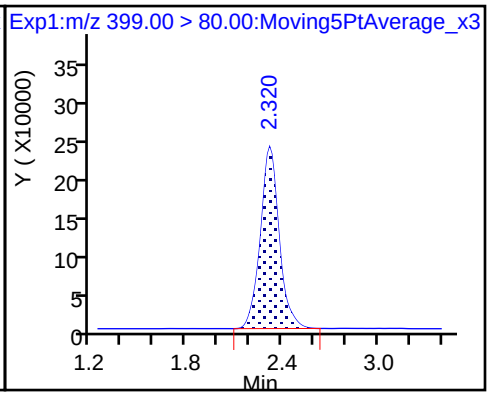
10 Perfluoroheptanoic acid



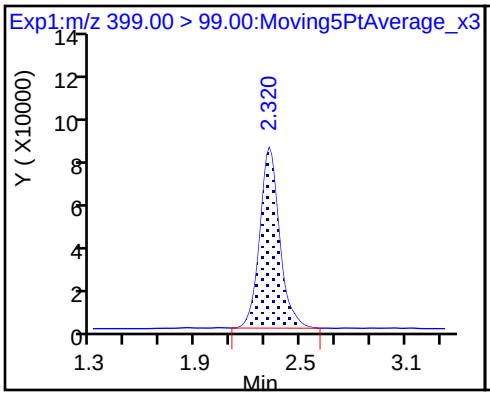
D 9 13C4-PFHpA



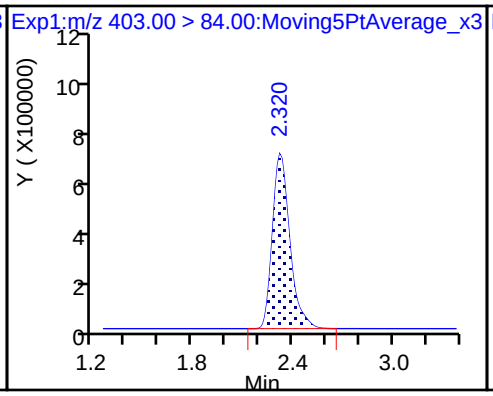
8 Perfluorohexanesulfonic acid



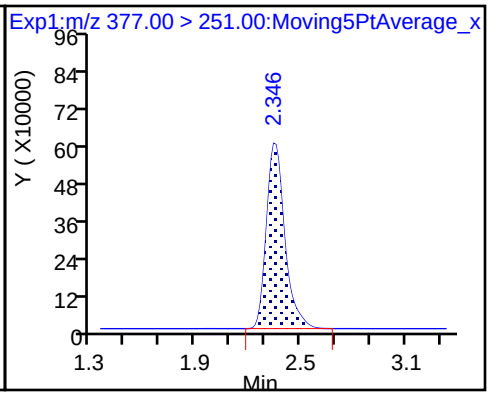
8 Perfluorohexanesulfonic acid



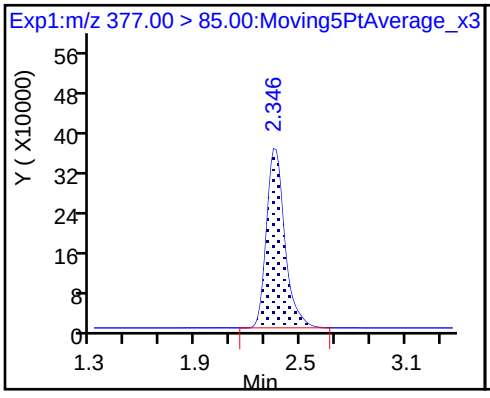
D 11 18O2 PFHxS



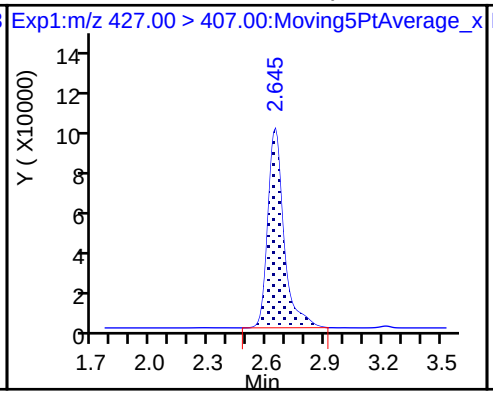
65 Adona



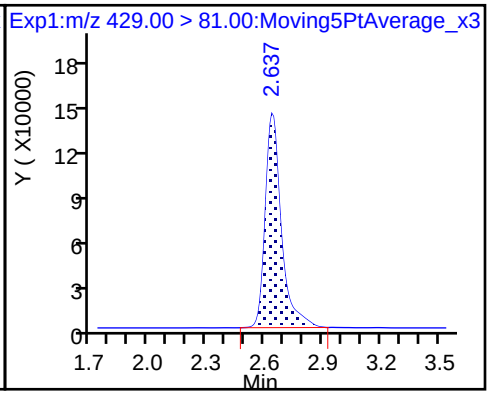
65 Adona



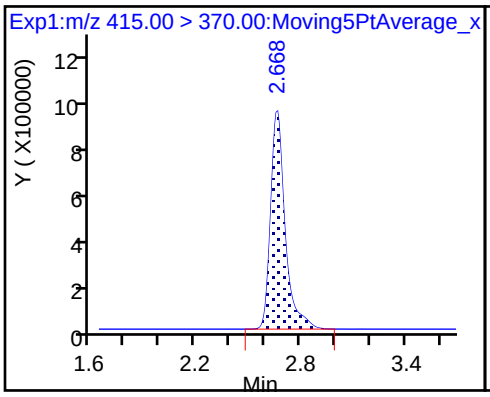
13 Sodium 1H,1H,2H,2H-perfluorooctane



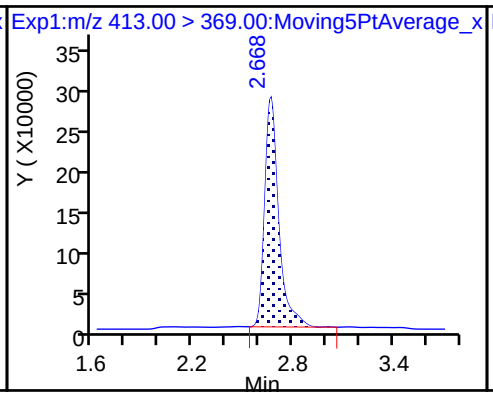
D 12 M2-6:2FTS



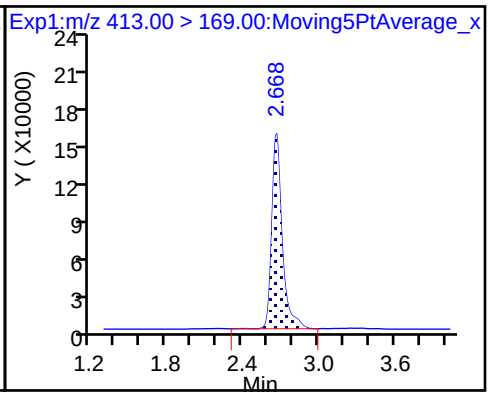
* 62 13C2-PFOA



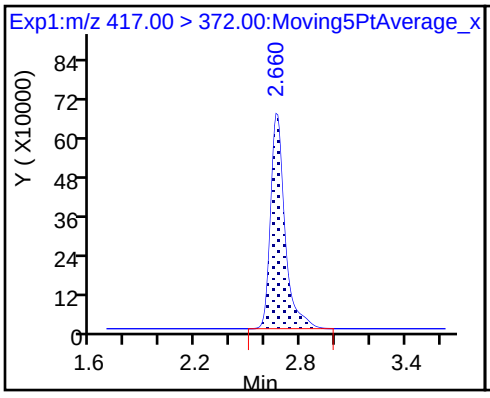
15 Perfluorooctanoic acid



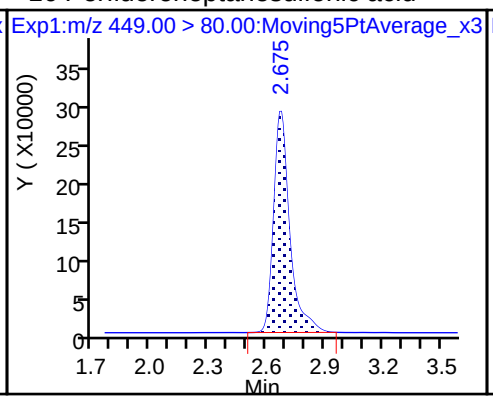
15 Perfluorooctanoic acid



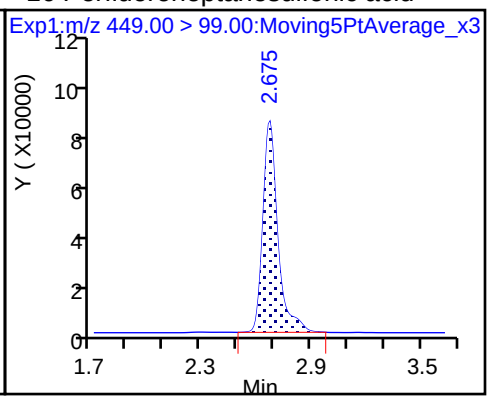
D 14 13C4 PFOA



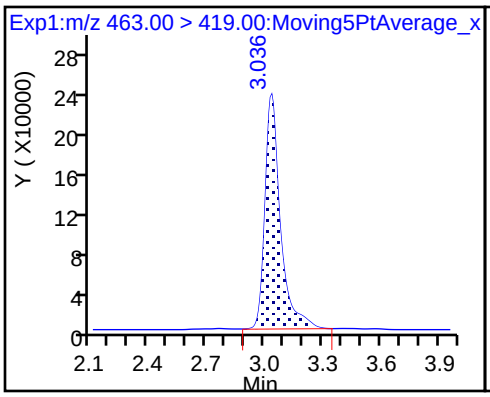
16 Perfluoroheptanesulfonic acid



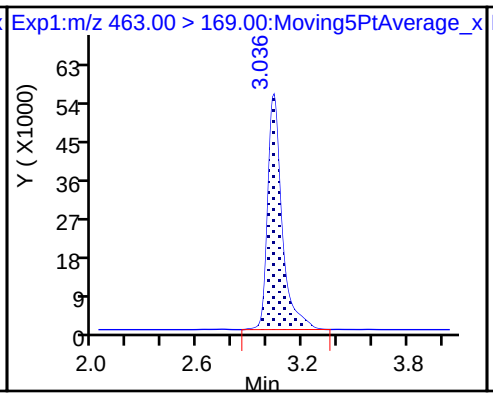
16 Perfluoroheptanesulfonic acid



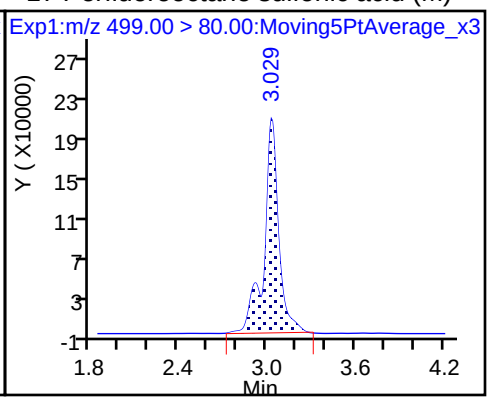
20 Perfluorononanoic acid



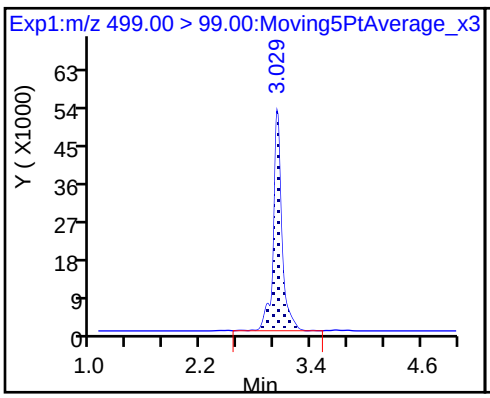
20 Perfluorononanoic acid



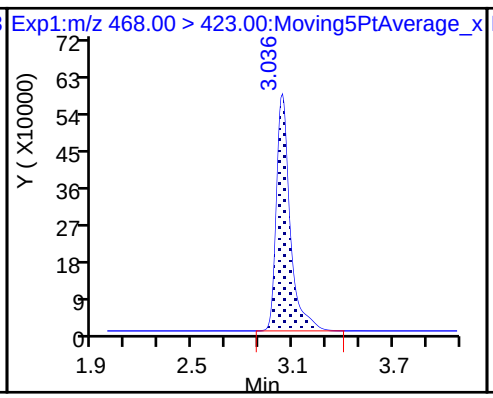
17 Perfluorooctane sulfonic acid (M)



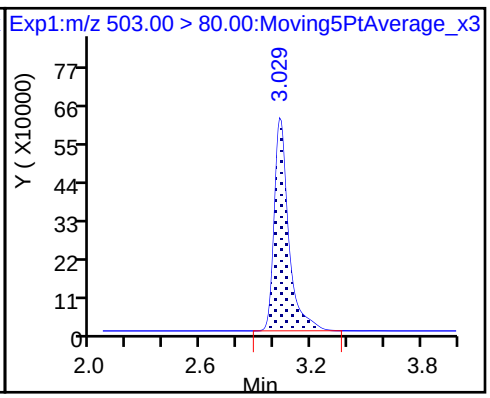
17 Perfluorooctane sulfonic acid



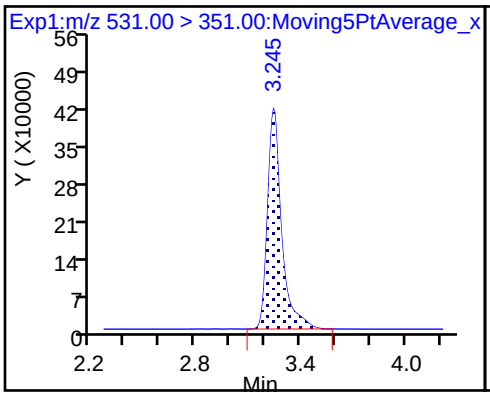
D 19 13C5 PFNA



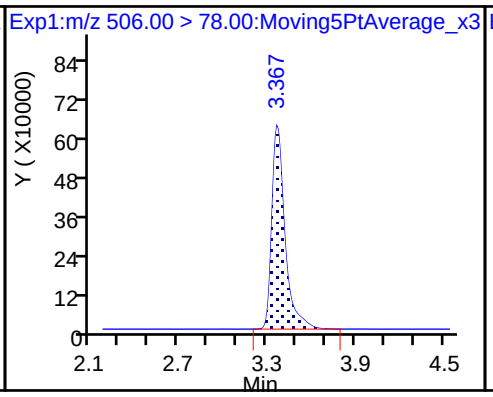
D 18 13C4 PFOS



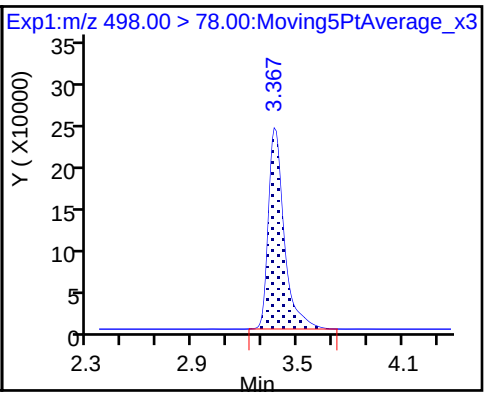
69 9-Chlorohexadecafluoro-3-oxanonane



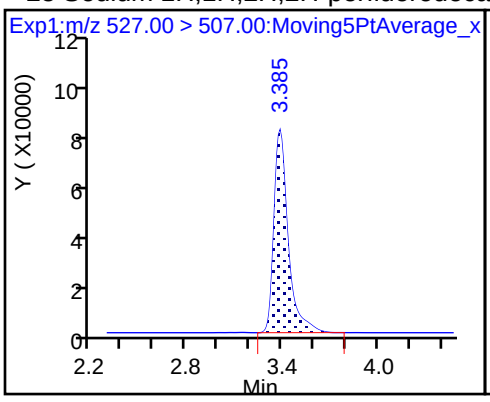
D 21 13C8 FOSA



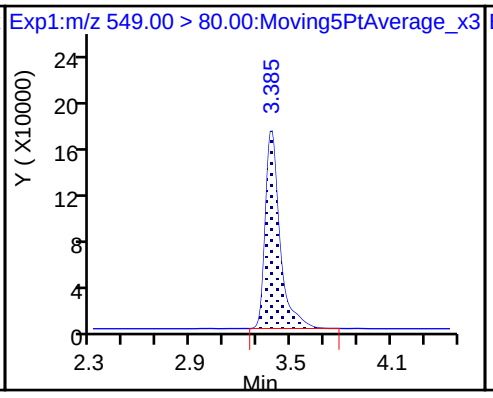
22 Perfluorooctane Sulfonamide



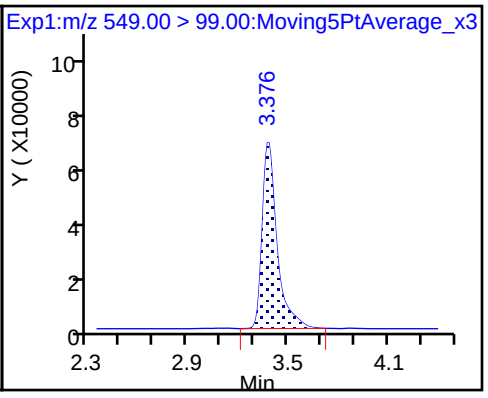
25 Sodium 1H,1H,2H,2H-perfluorodecane



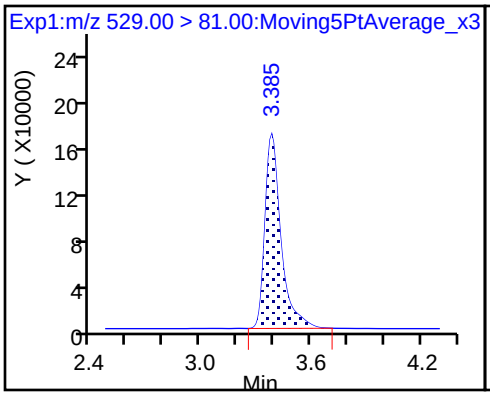
68 Perfluorononanesulfonic acid



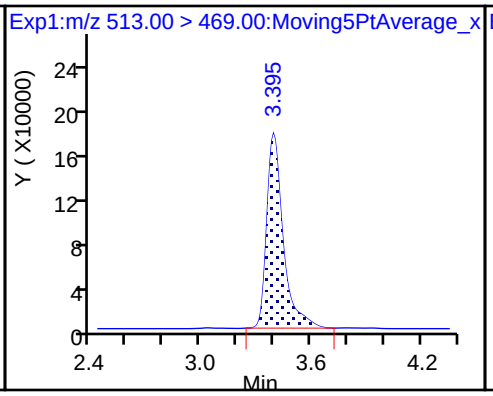
68 Perfluorononanesulfonic acid



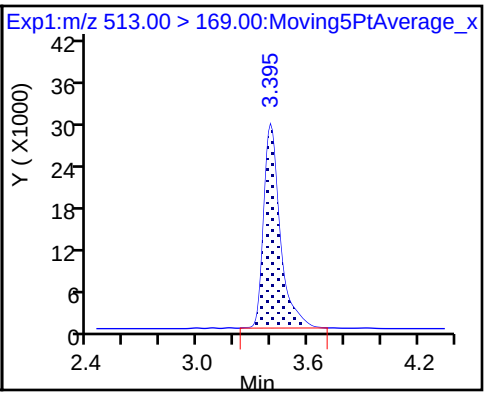
D 26 M2-8:2FTS



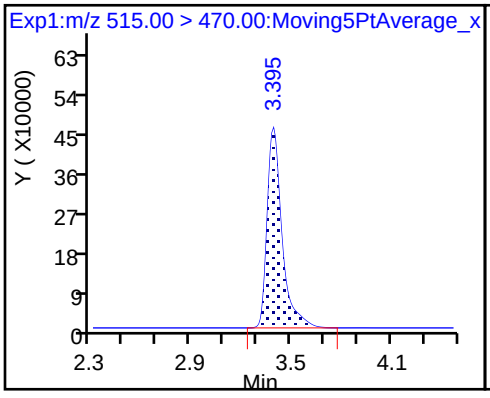
24 Perfluorodecanoic acid



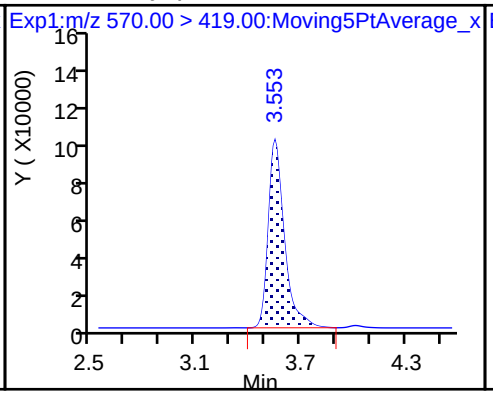
24 Perfluorodecanoic acid



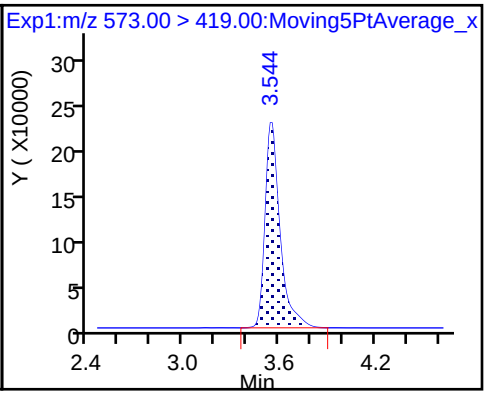
D 23 13C2 PFDA



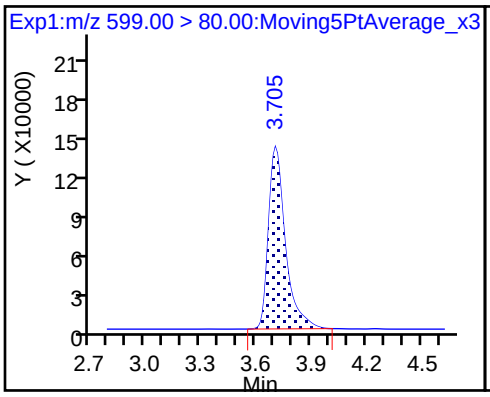
28 N-methyl perfluorooctane sulfonami



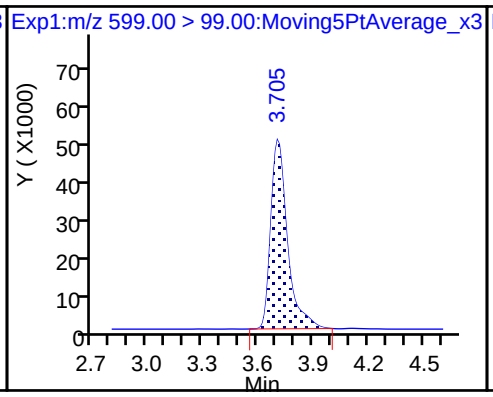
D 27 d3-NMeFOSAA



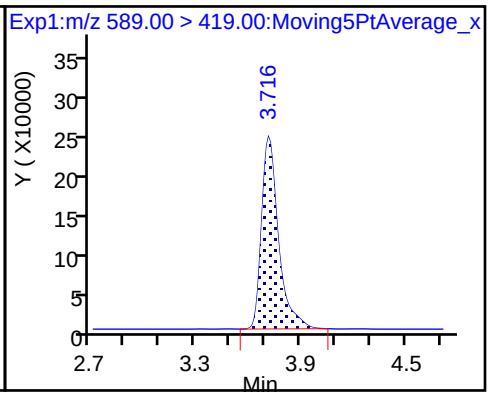
29 Perfluorodecane Sulfonic acid



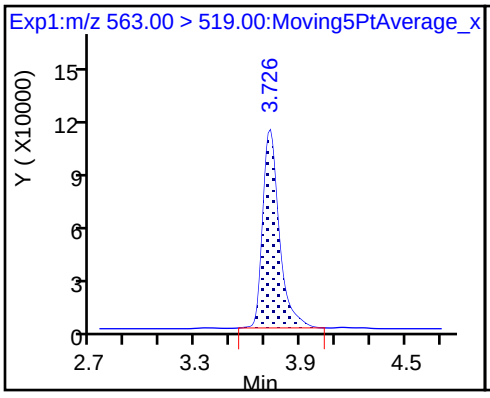
29 Perfluorodecane Sulfonic acid



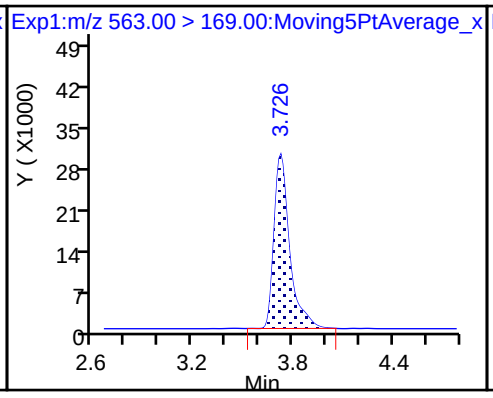
D 32 d5-NEtFOSAA



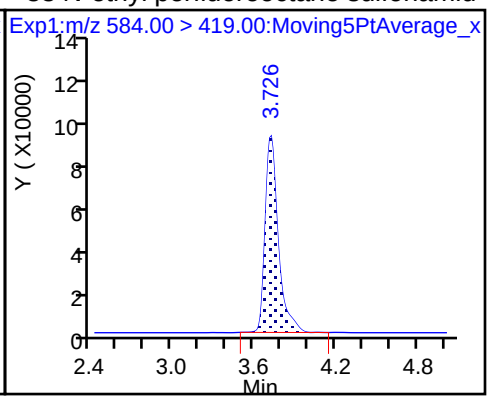
31 Perfluoroundecanoic acid



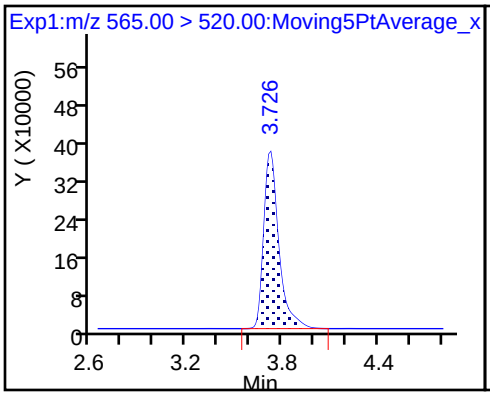
31 Perfluoroundecanoic acid



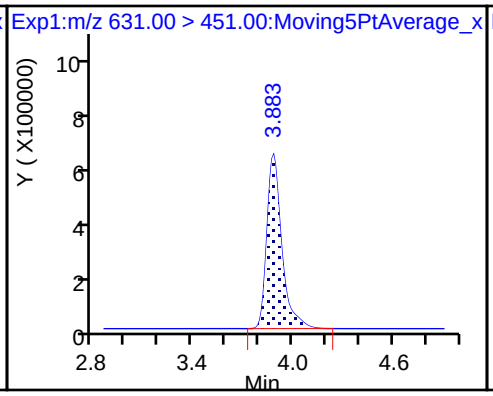
33 N-ethyl perfluorooctane sulfonamid



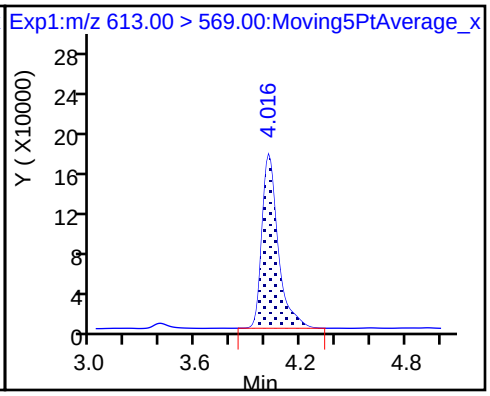
D 30 13C2 PFUnA



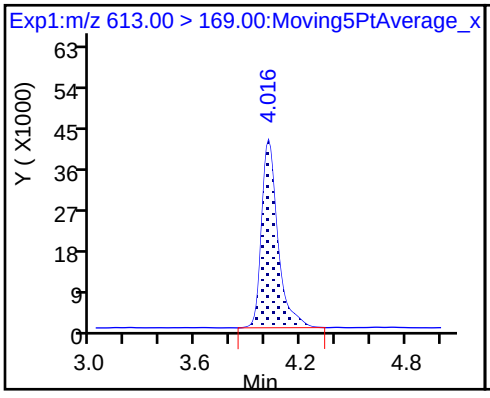
66 11-Chloroeicosafluoro-3-oxaundecan



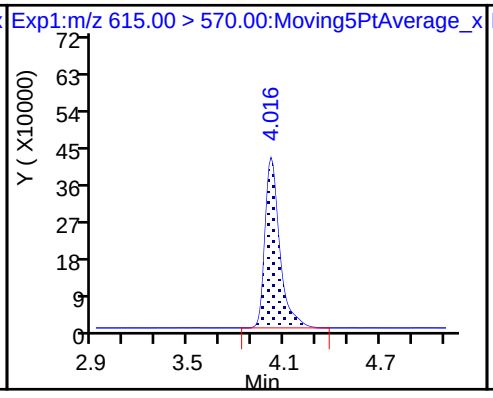
37 Perfluorododecanoic acid



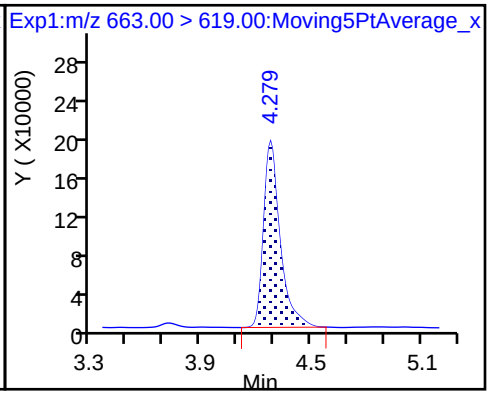
37 Perfluorododecanoic acid



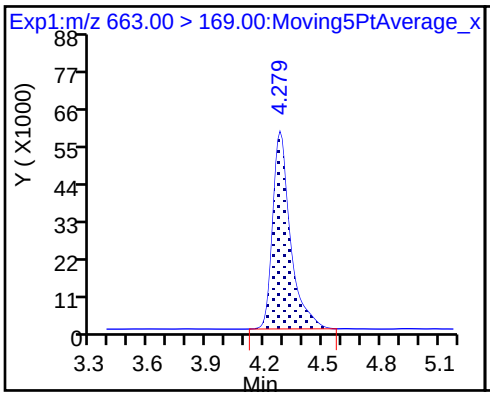
D 36 13C2 PFDoA



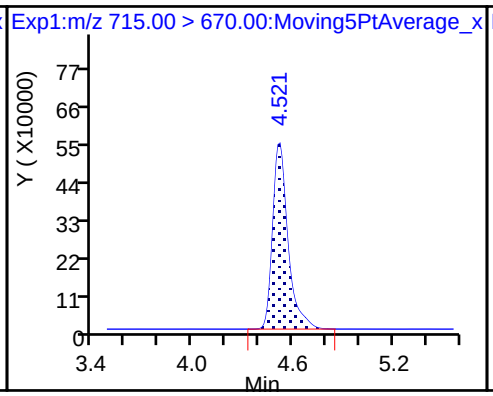
41 Perfluorotridecanoic acid



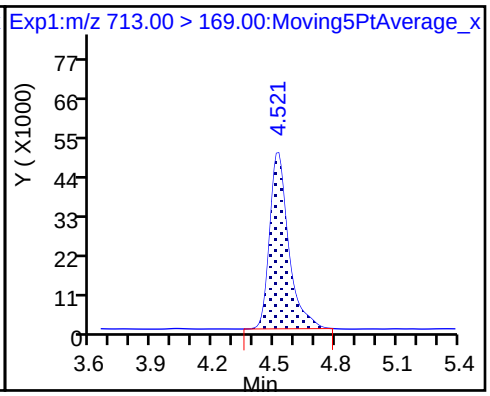
41 Perfluorotridecanoic acid



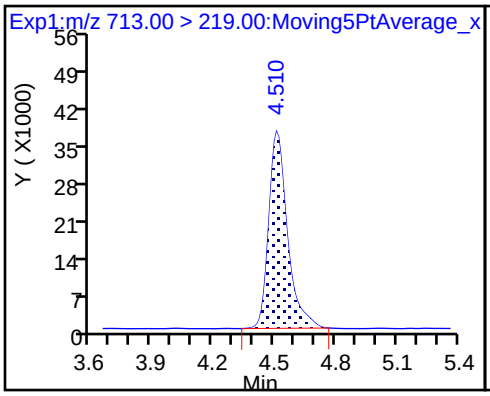
D 43 13C2-PFTeDA



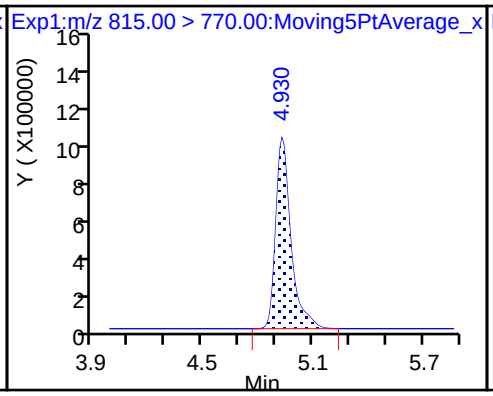
42 Perfluorotetradecanoic acid



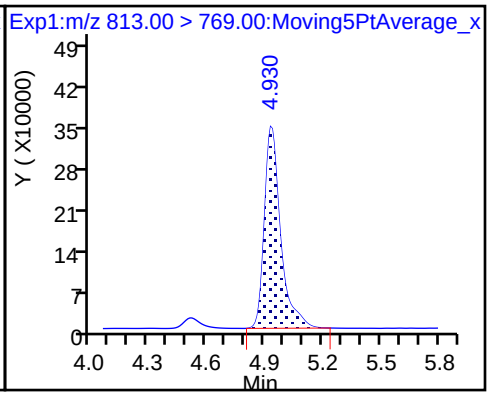
42 Perfluorotetradecanoic acid



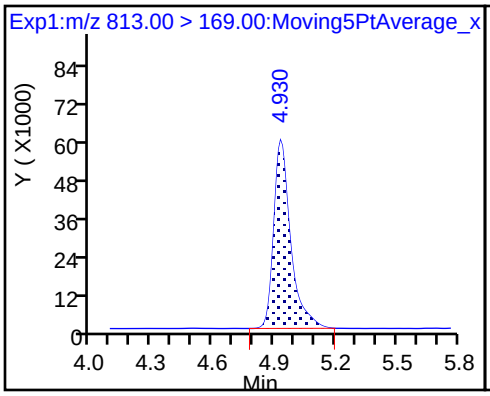
D 44 13C2-PFHxDA



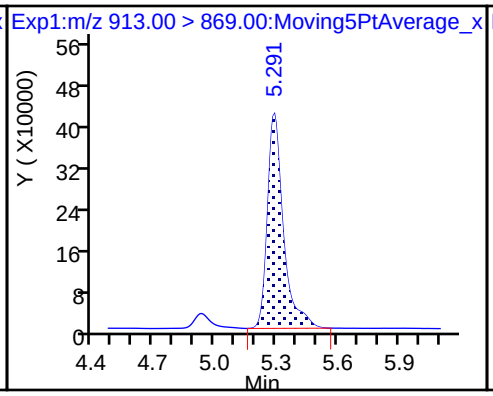
45 Perfluorohexadecanoic acid



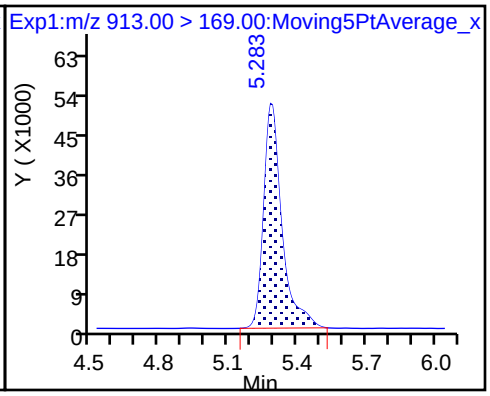
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

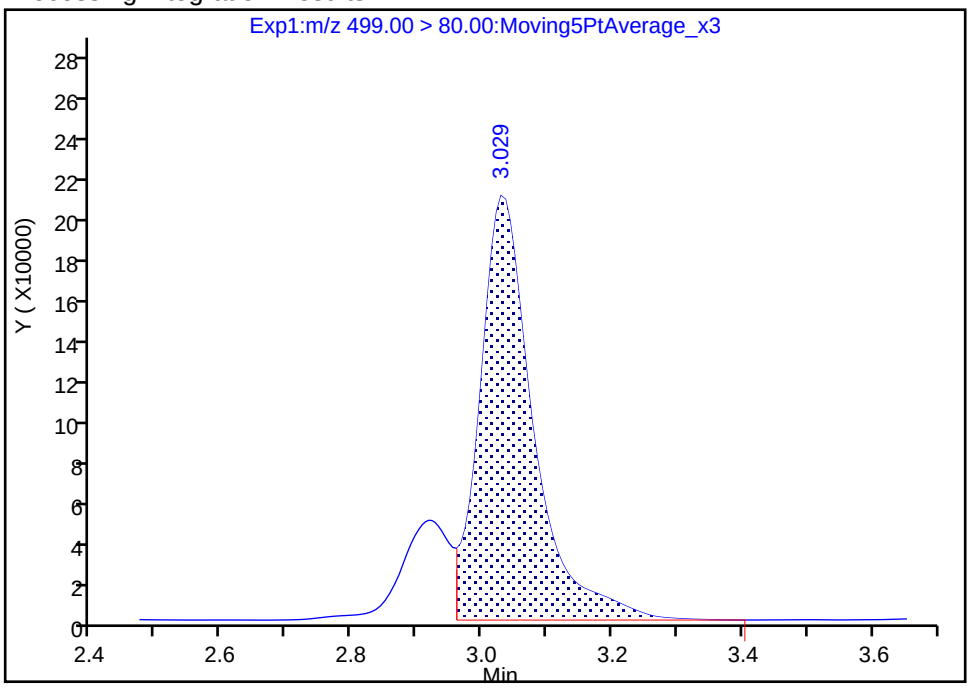
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_023.d
Injection Date: 07-Apr-2018 20:22:02 Instrument ID: A8_N
Lims ID: LCS 320-215980/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

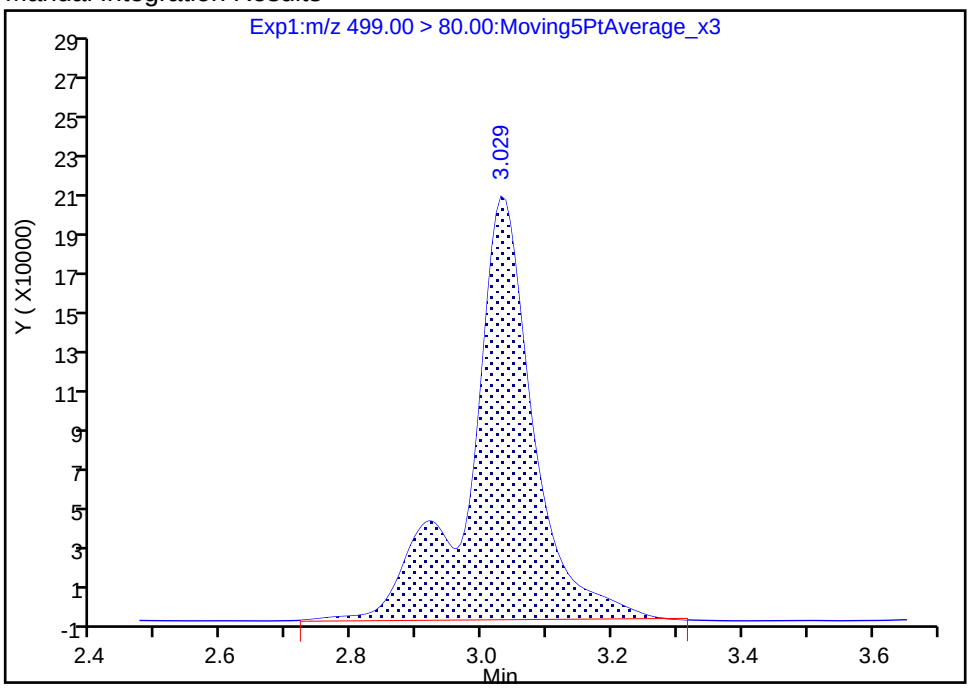
Processing Integration Results

RT: 3.03
Area: 1201984
Amount: 0.758665
Amount Units: ng/ml



Manual Integration Results

RT: 3.03
Area: 1441672
Amount: 0.909951
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 09:38:05
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-37156-A-6-E MS

Matrix: Solid | Lab File ID: 2018.04.07LLB_031.d

Analysis Method: 537 (modified) | Date Collected: 03/15/2018 10:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.04(g) | Date Analyzed: 04/07/2018 21:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 27.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00395		0.00027	0.000038
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00239		0.00027	0.00011
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00299		0.00027	0.000057
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00250		0.00027	0.000040
335-67-1	Perfluorooctanoic acid (PFOA)	0.00245		0.00027	0.00012
375-95-1	Perfluorononanoic acid (PFNA)	0.00273		0.00027	0.000049
335-76-2	Perfluorodecanoic acid (PFDA)	0.00263		0.00027	0.000030
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00293		0.00027	0.000049
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00242		0.00027	0.000092
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00244		0.00027	0.000070
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00259		0.00027	0.000074
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00227		0.00027	0.000034
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00237		0.00027	0.000042
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00255		0.00027	0.000048
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00297		0.00068	0.00027
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00246		0.00027	0.000053
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00257		0.00027	0.00011
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00258	J	0.0027	0.00053
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00254	J	0.0027	0.00051
27619-97-2	6:2FTS	0.00235	J	0.0027	0.00021
39108-34-4	8:2FTS	0.00239	J	0.0027	0.00034

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-37156-A-6-E MS

Matrix: Solid | Lab File ID: 2018.04.07LLB_031.d

Analysis Method: 537 (modified) | Date Collected: 03/15/2018 10:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.04(g) | Date Analyzed: 04/07/2018 21:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 27.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	52		25-150
STL01893	13C5 PFPeA	63		25-150
STL00993	13C2 PFHxA	60		25-150
STL01892	13C4-PFHpA	66		25-150
STL00990	13C4 PFOA	75		25-150
STL00995	13C5 PFNA	76		25-150
STL00996	13C2 PFDA	84		25-150
STL00997	13C2 PFUnA	89		25-150
STL00998	13C2 PFDoA	78		25-150
STL02116	13C2-PFTeDA	70		25-150
STL02337	13C3-PFBS	67		25-150
STL00994	18O2 PFHxS	70		25-150
STL00991	13C4 PFOS	71		25-150
STL01056	13C8 FOSA	58		25-150
STL02118	d3-NMeFOSAA	93		25-150
STL02117	d5-NEtFOSAA	87		25-150
STL02279	M2-6:2FTS	191	*	25-150
STL02280	M2-8:2FTS	231	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_031.d
Lims ID: 320-37156-A-6-E MS
Client ID:
Sample Type: MS
Inject. Date: 07-Apr-2018 21:24:44 ALS Bottle#: 22 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37156-a-6-e ms
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 10:10:27 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 10:07:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.425	1.424	0.001	1.000	4261876	1.31		52.4	20117	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.425	1.429	-0.004	1.000	2273412	1.44		144	175	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.692	0.002	1.000	1386389	0.8731		87.3	139	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.693	0.001	0.561	3316818	1.57		62.7	25595	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.728	0.002	1.000	2138067	0.8288		93.8	2439	
298.90 > 99.00	1.730	1.728	0.002	1.000	922010		2.32(1.25-3.74)		582	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.729	0.001	1.000	76027	1.57		67.5	90.3	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.939	1.948	-0.009	1.000	1502748	2.66		285	18294	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.949	0.001	1.000	6184	0.0167		0.0	6.6	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.971	1.980	-0.009	1.000	1562569	1.09		109	426	
313.00 > 119.00	1.971	1.980	-0.009	1.000	131453		11.89(5.03-15.10)		368	
D 7 13C2 PFHxA										
315.00 > 270.00	1.971	1.981	-0.010	1.000	3490928	1.50		59.9	47731	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.994	2.002	-0.008	1.000	2035619	0.8743		93.2	2541	
349.00 > 99.00	1.994	2.002	-0.008	1.000	699612		2.91(1.36-4.07)		2321	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.073	2.082	-0.009	1.000	206944	NR		0.0	378	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.295	2.306	-0.011	1.000	1476016	0.9130		91.3	870	
363.00 > 169.00	2.308	2.306	0.002	1.006	591977		2.49(1.13-3.40)		2152	
D 9 13C4-PFHpA										
367.00 > 322.00	2.295	2.307	-0.012	1.000	3719821	1.66		66.3	52160	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.308	2.319	-0.011	0.994	1903708	0.8675		95.3	595	
399.00 > 99.00	2.308	2.319	-0.011	0.994	639085		2.98(1.50-4.49)		553	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.320	0.001	1.000	4646350	1.66		70.3	46060	
65 Adona										
377.00 > 251.00	2.347	2.345	0.002	1.000	4218857	0.8532		85.3	66256	
377.00 > 85.00	2.347	2.345	0.002	1.000	2459883		1.72(0.84-2.53)		10981	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.628	2.636	-0.008	1.000	1588730	0.8590		90.6	3796	
D 12 M2-6:2FTS										
429.00 > 81.00	2.628	2.637	-0.009	1.000	2352062	4.54		191	6949	
* 62 13C2-PFOA										
415.00 > 370.00	2.653	2.659	-0.006		5881952	2.50			106323	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.653	2.659	-0.006	1.000	1757922	0.8945		89.4	826	
413.00 > 169.00	2.653	2.659	-0.006	1.000	929547		1.89(0.84-2.52)		1899	
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.660	-0.007	1.000	4143456	1.88		75.2	92271	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.660	2.667	-0.007	1.000	1724817	0.9328		98.0	3105	
449.00 > 99.00	2.660	2.667	-0.007	1.000	455474		3.79(1.94-5.82)		1749	
20 Perfluorononanoic acid										
463.00 > 419.00	3.022	3.029	-0.007	1.000	1461989	1.00		99.7	2412	
463.00 > 169.00	3.022	3.029	-0.007	1.000	365564		4.00(1.90-5.69)		7530	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.015	3.029	-0.014	1.000	1718503	1.08		117	2545	
499.00 > 99.00	3.015	3.029	-0.014	1.000	383856		4.48(2.31-6.93)		780	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.031	-0.009	1.000	3561786	1.91		76.4	54664	
D 18 13C4 PFOS										
503.00 > 80.00	3.015	3.031	-0.016	1.000	3316071	1.71		71.4	7382	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.229	3.237	-0.008	1.000	2344488	0.9036		97.0	21034	
D 21 13C8 FOSA										
506.00 > 78.00	3.358	3.360	-0.002	1.000	3985115	1.45		58.1	48261	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.358	3.368	-0.010	1.000	1480193	0.9401		94.0	27048	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.367	3.377	-0.010	1.000	1640722	0.8743		91.3	44018	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.367	3.377	-0.010	1.000	944492	0.8490		88.4	2134	
549.00 > 99.00	3.367	3.377	-0.010	1.000	370858		2.55(1.33-3.97)		1899	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.367	3.379	-0.012	1.000	3332105	5.53		231	11422	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.376	3.386	-0.010	1.000	1266279	0.9619		96.2	1330	
513.00 > 169.00	3.376	3.386	-0.010	1.000	245143		5.17(2.36-7.09)		2691	
D 23 13C2 PFDA										
515.00 > 470.00	3.376	3.388	-0.012	1.000	3326850	2.11		84.4	91483	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.535	3.545	-0.010	1.000	781452	0.9411		94.1	5260	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.535	3.547	-0.012	1.000	1969218	2.34		93.4	32292	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.695	3.706	-0.011	1.000	865836	0.8994		93.3	2114	
599.00 > 99.00	3.695	3.706	-0.011	1.000	269345		3.21(1.39-4.16)		1683	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.708	-0.003	1.000	1918161	2.17		86.7	24199	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.705	3.717	-0.012	1.000	978504	1.07		107	2052	
563.00 > 169.00	3.705	3.717	-0.012	1.000	222795		4.39(2.12-6.36)		4335	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.705	3.717	-0.012	1.000	652888	0.9278		92.8	11004	
D 30 13C2 PFUnA										
565.00 > 520.00	3.705	3.719	-0.014	1.000	2846835	2.21		88.5	55092	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.863	3.874	-0.011	1.000	3398320	0.8439		89.6	16446	
37 Perfluorododecanoic acid										
613.00 > 569.00	3.996	4.006	-0.010	1.000	1065727	0.8843		88.4	499	
613.00 > 169.00	3.996	4.006	-0.010	1.000	282479		3.77(2.13-6.40)		1357	
D 36 13C2 PFDoA										
615.00 > 570.00	3.996	4.009	-0.013	1.000	2787687	1.95		77.9	24703	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.259	4.279	-0.020	1.000	1149346	0.8916		89.2	774	
663.00 > 169.00	4.259	4.279	-0.020	1.000	367497		3.13(1.25-3.76)		1712	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.489	4.511	-0.022	1.000	3161844	1.74		69.5	14243	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.489	4.511	-0.022	1.000	299031	0.9467		94.7	1323	
713.00 > 219.00	4.489	4.511	-0.022	1.000	223899		1.34(0.71-2.13)		1402	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.913	4.930	-0.017	1.000	4760918	1.69		67.8	9415	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.913	4.931	-0.017	1.000	1783148	0.9675		96.8	707	
813.00 > 169.00	4.913	4.931	-0.017	1.000	287988		6.19(2.86-8.58)		916	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.284	-0.015	1.000	1576361	0.8338		83.4	566	
913.00 > 169.00	5.269	5.284	-0.015	1.000	194113		8.12(3.83-11.48)		543	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 10:11:21 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_031.d

Injection Date: 07-Apr-2018 21:24:44 Instrument ID: A8_N

Lims ID: 320-37156-A-6-E MS

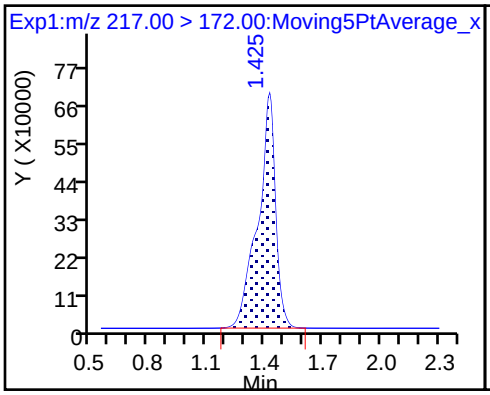
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 13

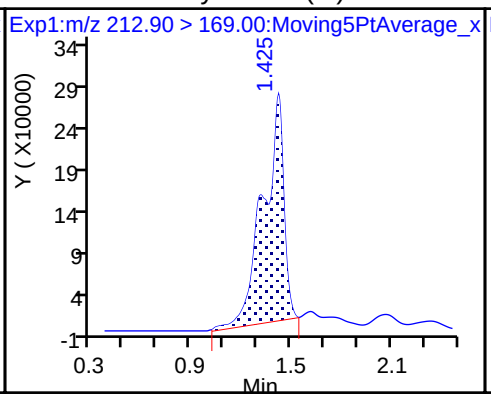
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

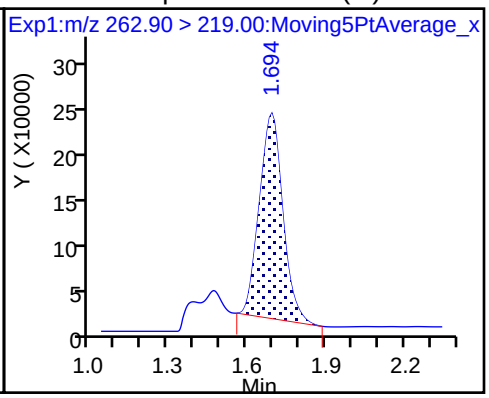
D 1 13C4 PFBA



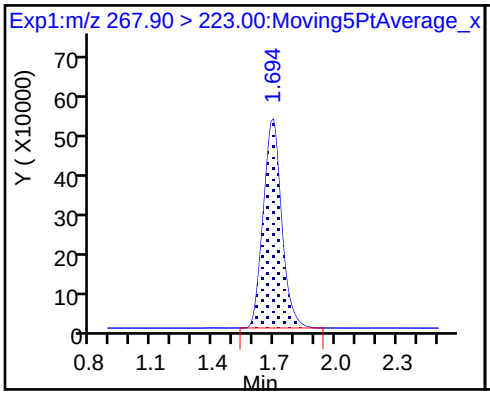
2 Perfluorobutyric acid (M)



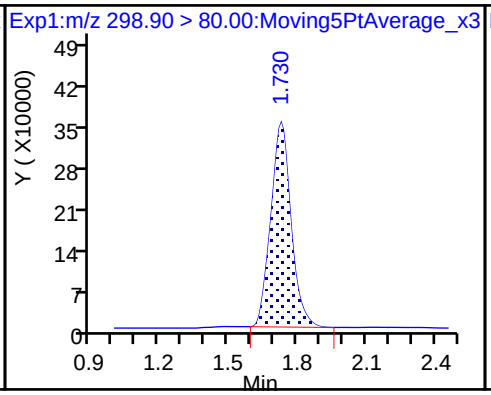
4 Perfluoropentanoic acid (M)



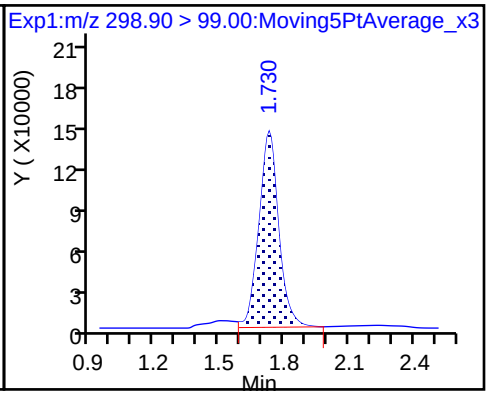
D 3 13C5-PFPeA



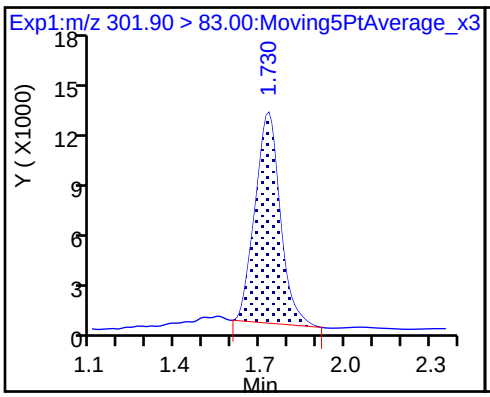
5 Perfluorobutanesulfonic acid



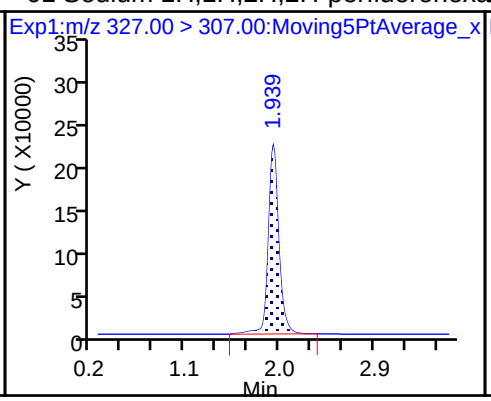
5 Perfluorobutanesulfonic acid



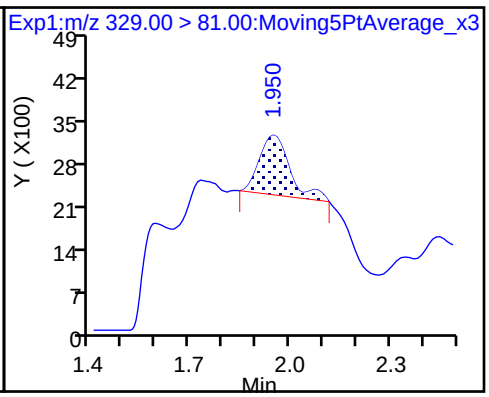
D 47 13C3-PFBS



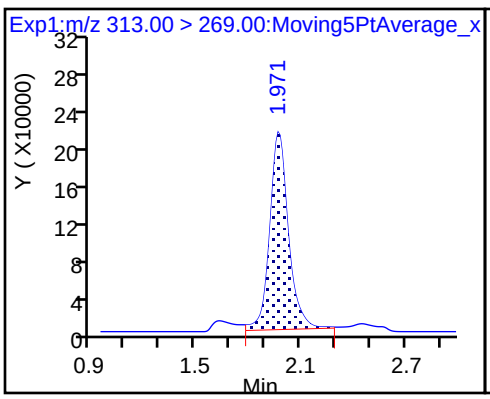
61 Sodium 1H,1H,2H,2H-perfluorohexane



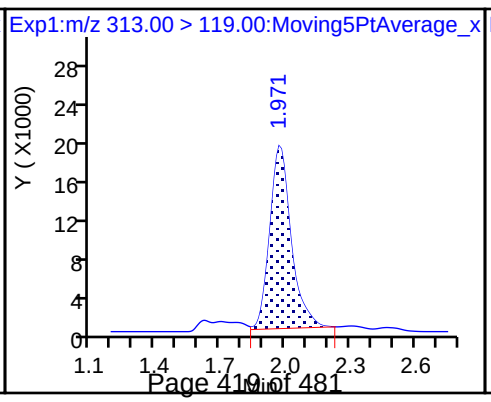
D 60 M2-4:2FTS



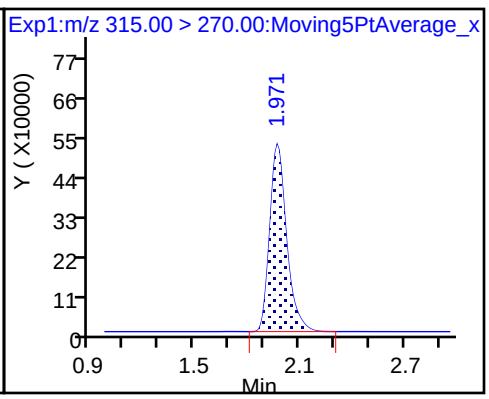
6 Perfluorohexanoic acid



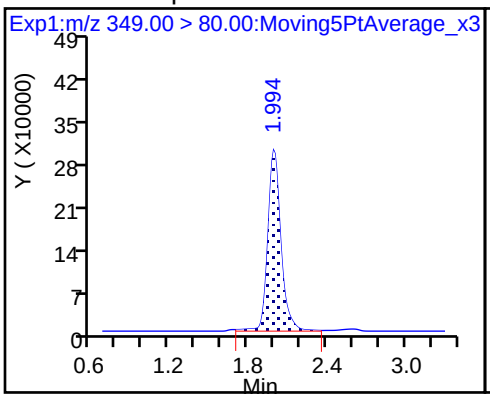
6 Perfluorohexanoic acid



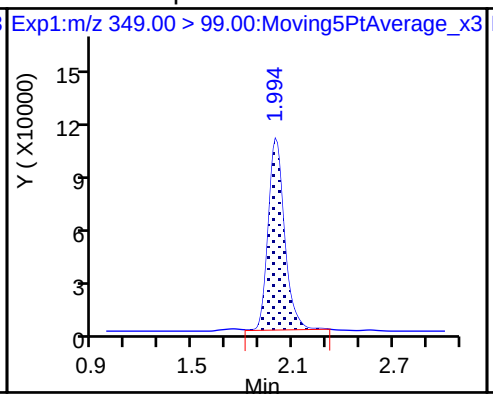
D 7 13C2 PFHxA



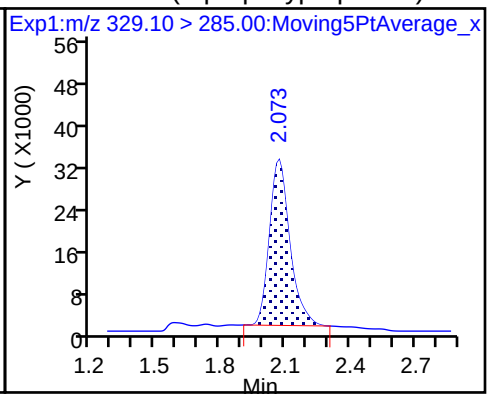
70 Perfluoropentanesulfonic acid



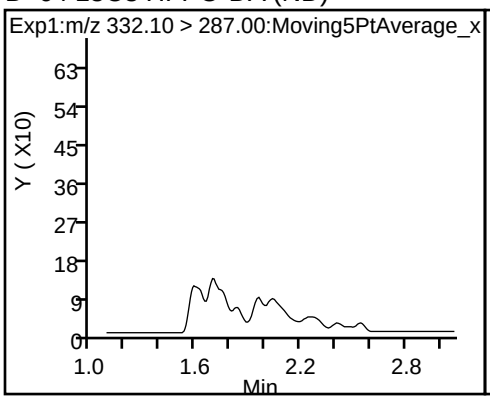
70 Perfluoropentanesulfonic acid



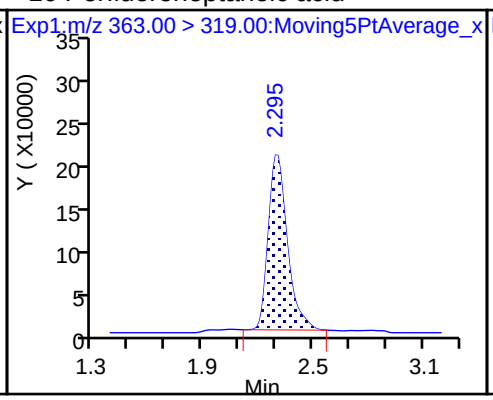
67 Perfluoro(2-propoxypropanoic) acid



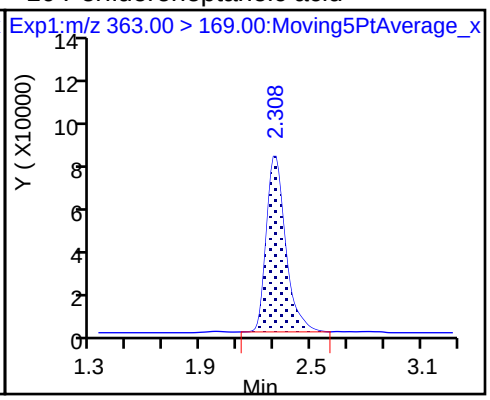
D 64 13C3 HFPO-DA (ND)



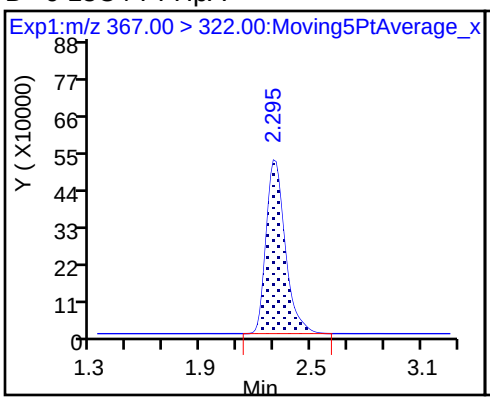
10 Perfluoroheptanoic acid



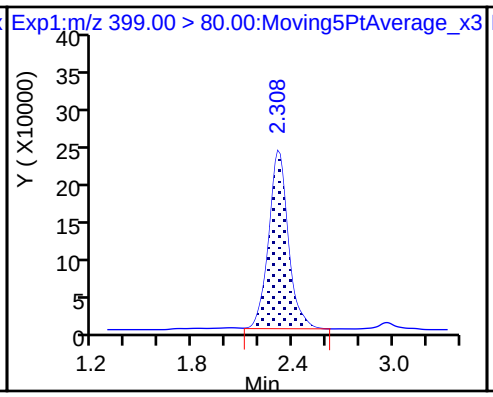
10 Perfluoroheptanoic acid



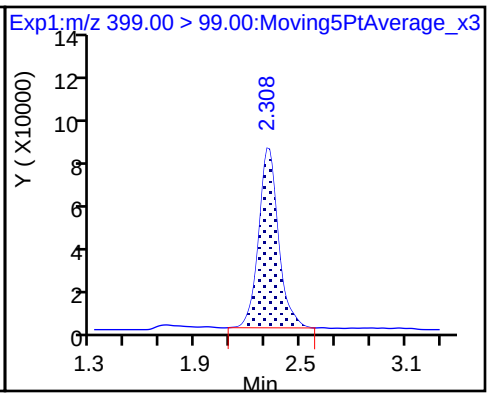
D 9 13C4-PFHpA



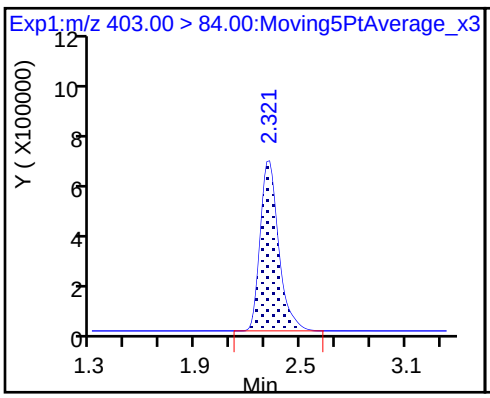
8 Perfluorohexanesulfonic acid



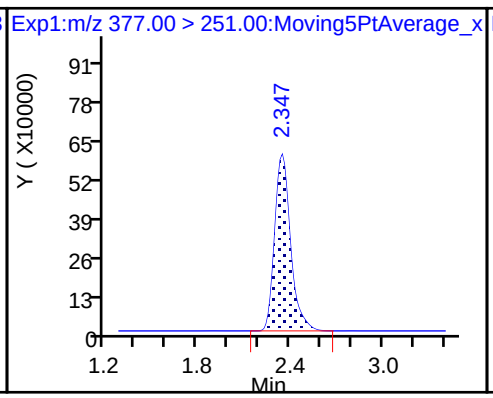
8 Perfluorohexanesulfonic acid



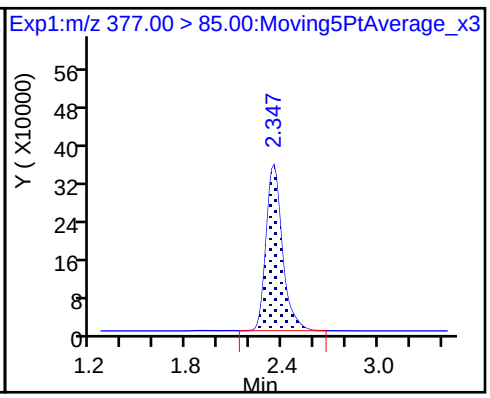
D 11 18O2 PFHxS



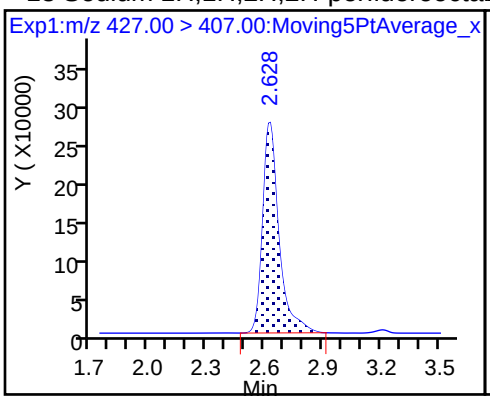
65 Adona



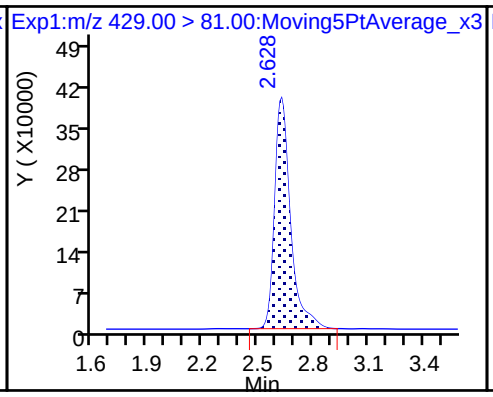
65 Adona



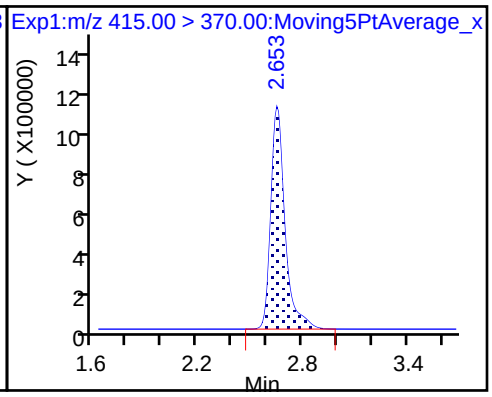
13 Sodium 1H,1H,2H,2H-perfluorooctane



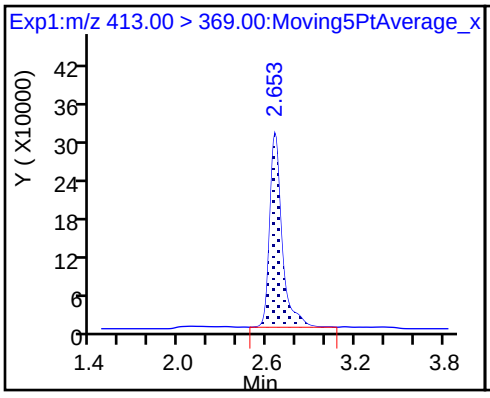
D 12 M2-6:2FTS



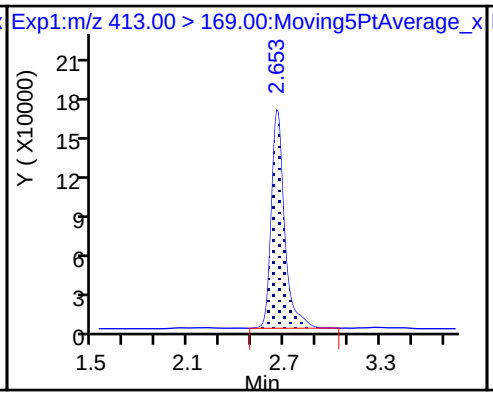
* 62 13C2-PFOA



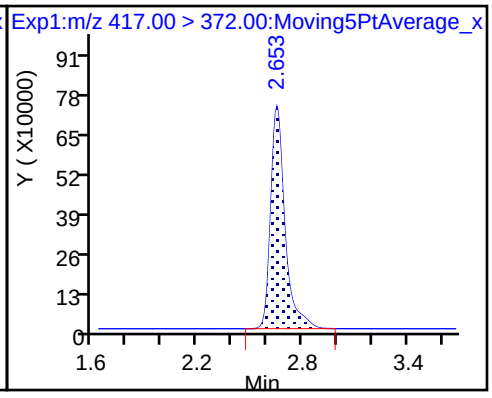
15 Perfluorooctanoic acid



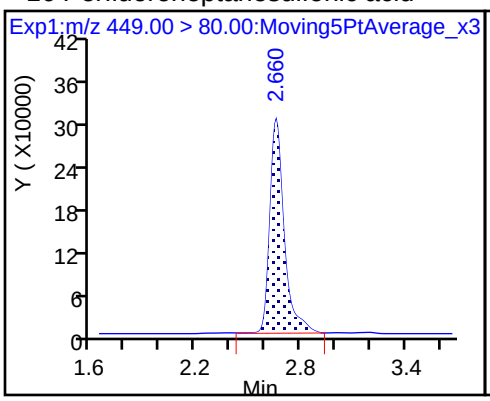
15 Perfluorooctanoic acid



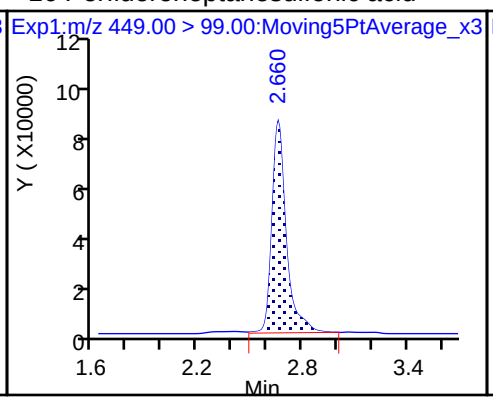
D 14 13C4 PFOA



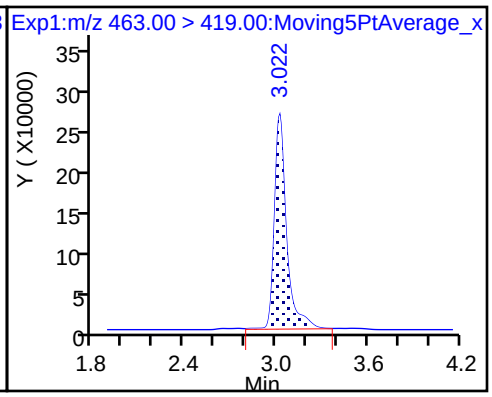
16 Perfluoroheptanesulfonic acid



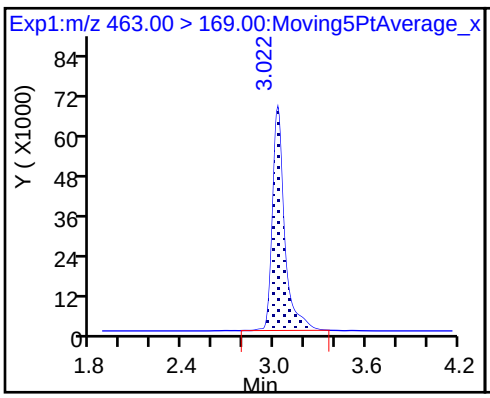
16 Perfluoroheptanesulfonic acid



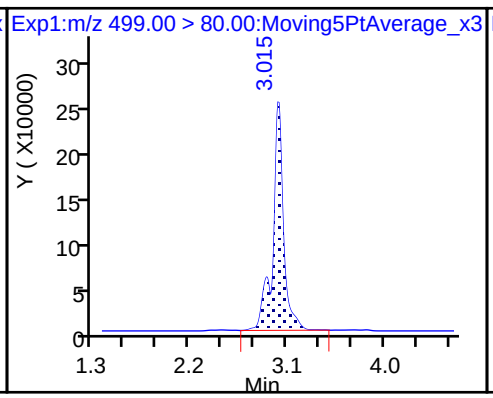
20 Perfluorononanoic acid



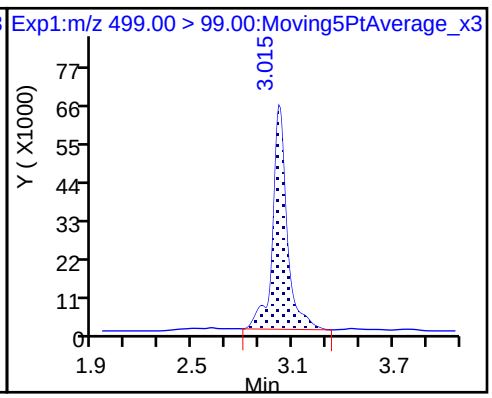
20 Perfluorononanoic acid



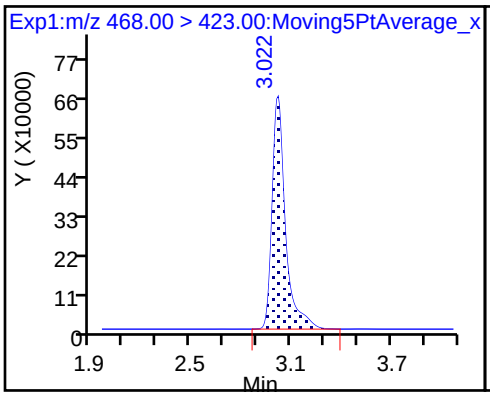
17 Perfluorooctane sulfonic acid



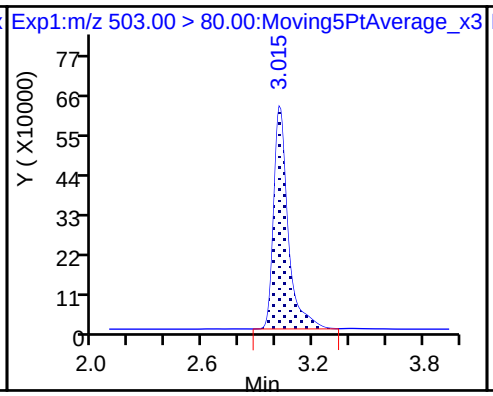
17 Perfluorooctane sulfonic acid



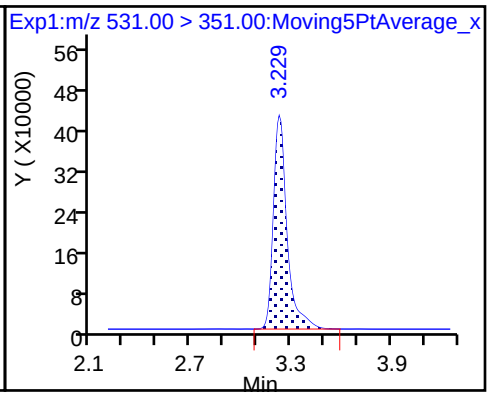
D 19 13C5 PFNA



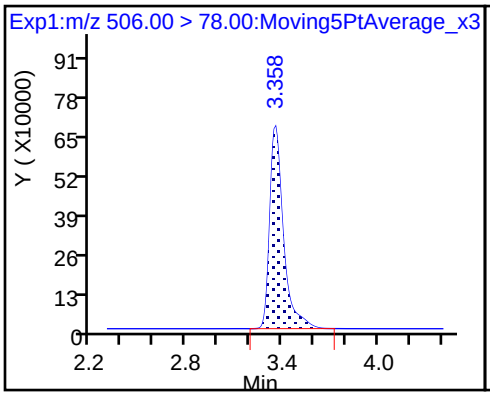
D 18 13C4 PFOS



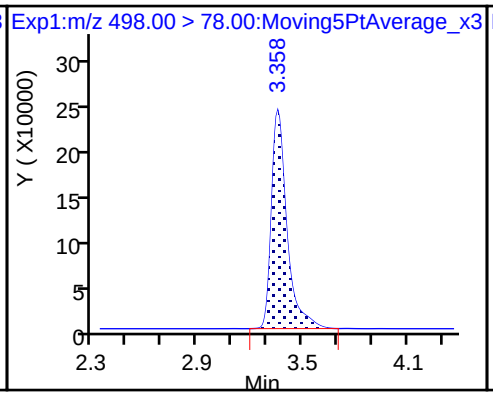
69 9-Chlorohexadecafluoro-3-oxanonane



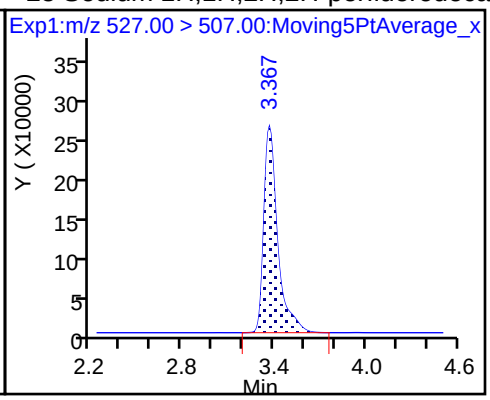
D 21 13C8 FOSA



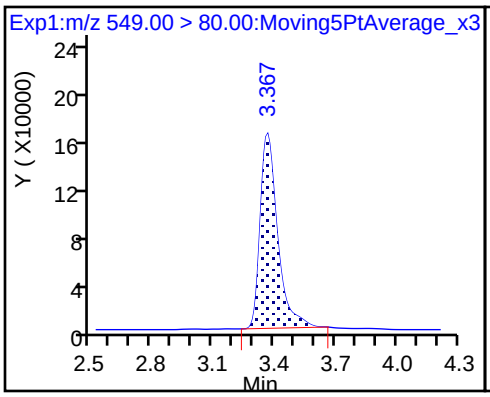
22 Perfluorooctane Sulfonamide



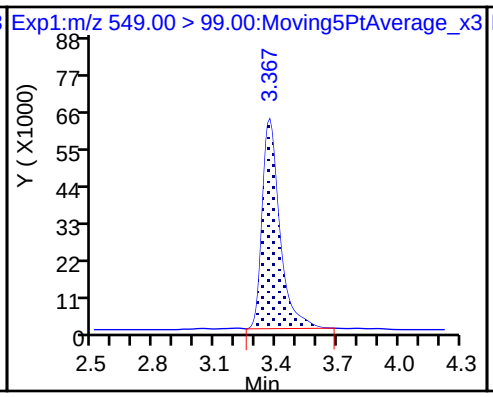
25 Sodium 1H,1H,2H,2H-perfluorodecane



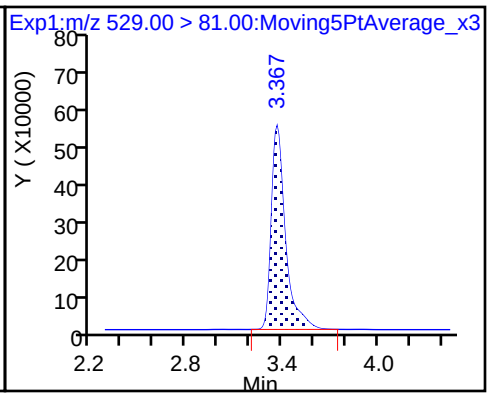
68 Perfluorononanesulfonic acid



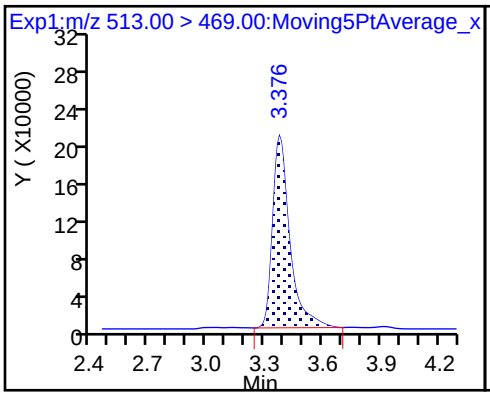
68 Perfluorononanesulfonic acid



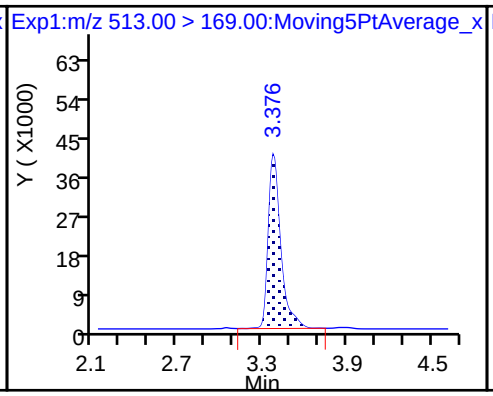
D 26 M2-8:2FTS



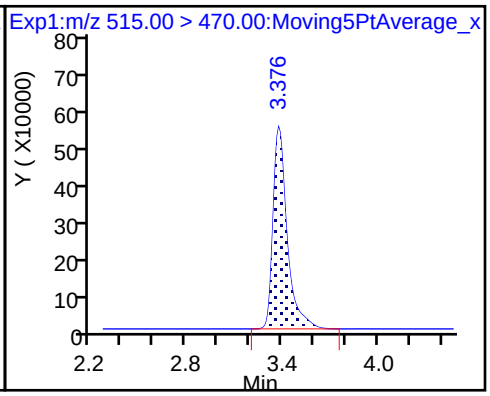
24 Perfluorodecanoic acid



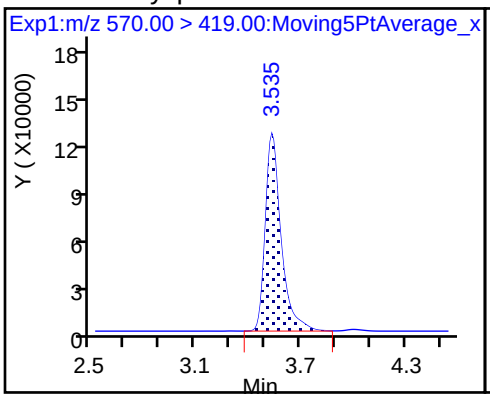
24 Perfluorodecanoic acid



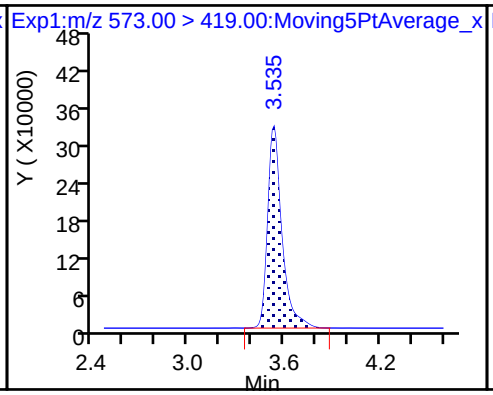
D 23 13C2 PFDA



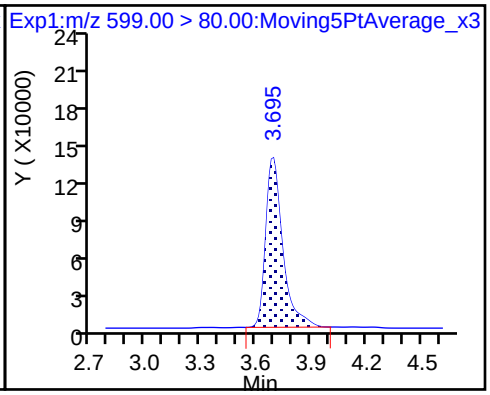
28 N-methyl perfluorooctane sulfonami



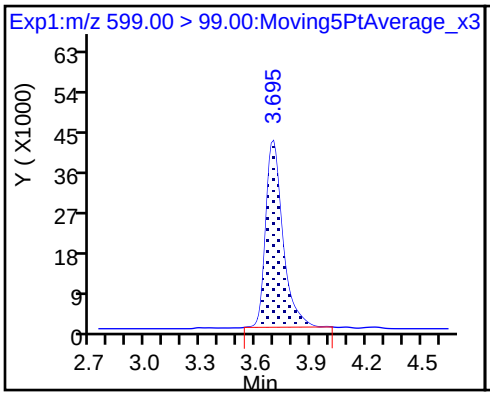
D 27 d3-NMeFOSAA



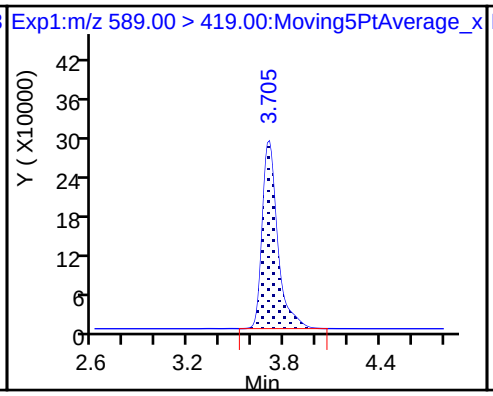
29 Perfluorodecane Sulfonic acid



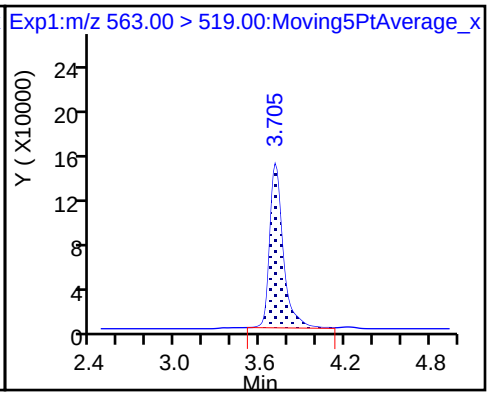
29 Perfluorodecane Sulfonic acid



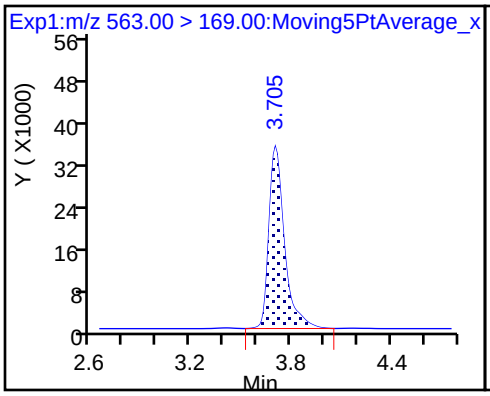
D 32 d5-NEtFOSAA



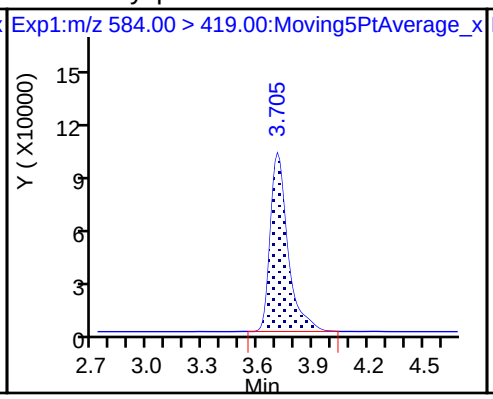
31 Perfluoroundecanoic acid



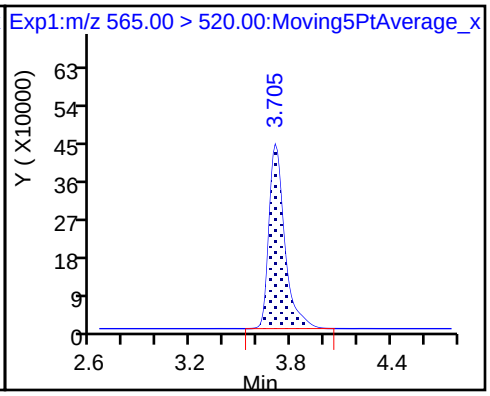
31 Perfluoroundecanoic acid



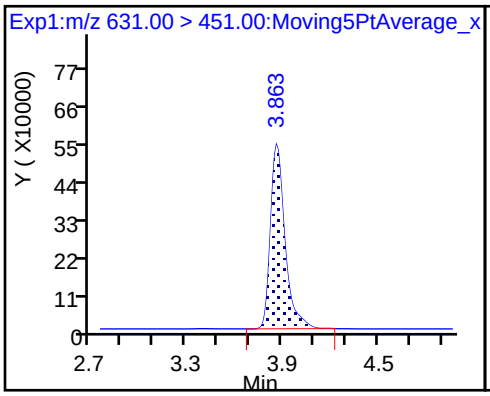
33 N-ethyl perfluorooctane sulfonamid



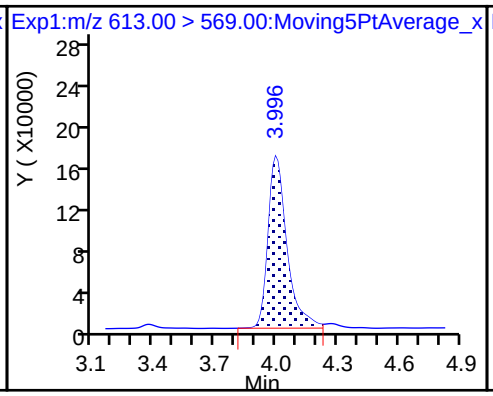
D 30 13C2 PFUnA



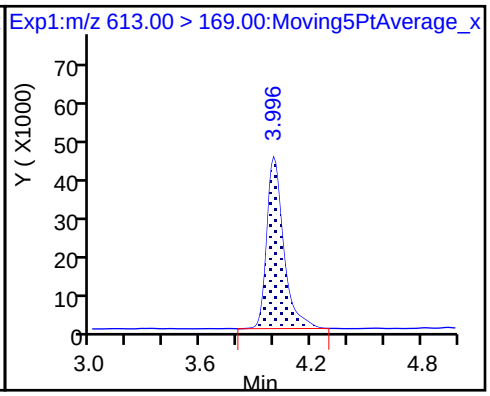
66 11-Chloroeicosafluoro-3-oxaundecan



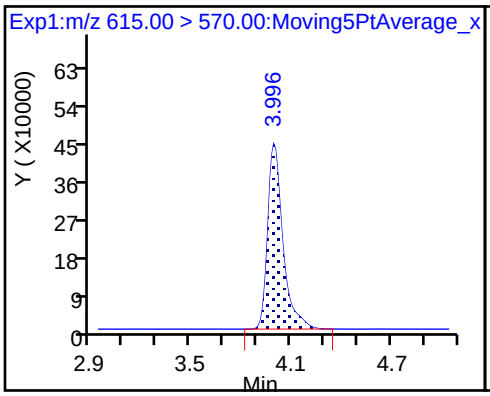
37 Perfluorododecanoic acid



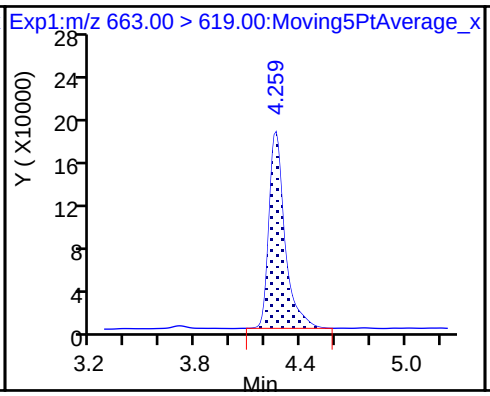
37 Perfluorododecanoic acid



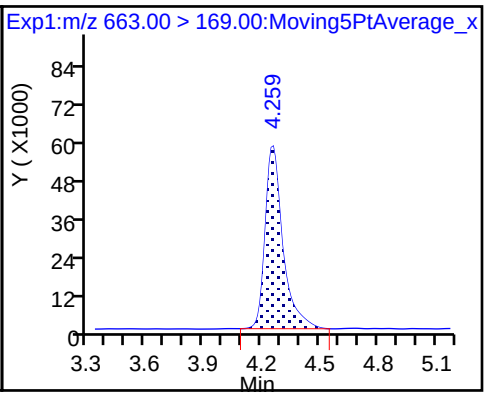
D 36 13C2 PFDoA



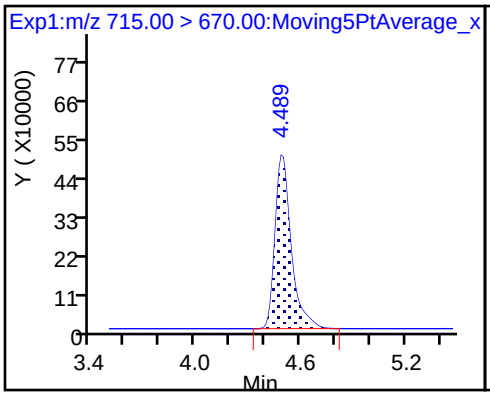
41 Perfluorotridecanoic acid



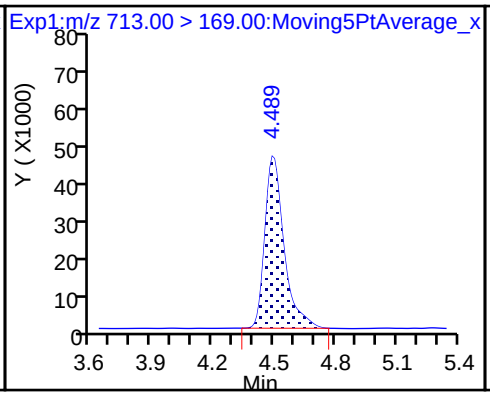
41 Perfluorotridecanoic acid



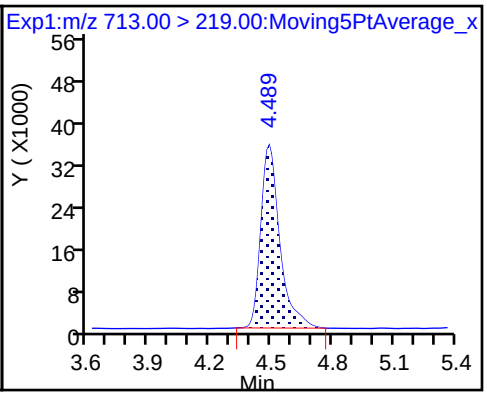
D 43 13C2-PFTeDA



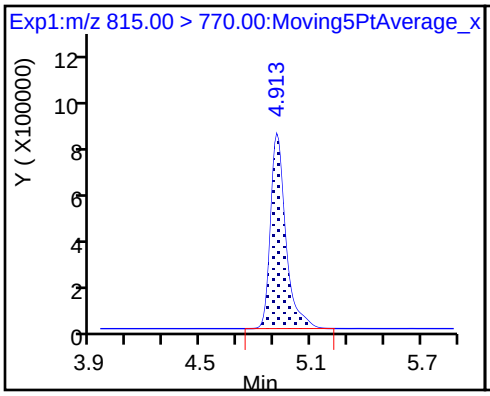
42 Perfluorotetradecanoic acid



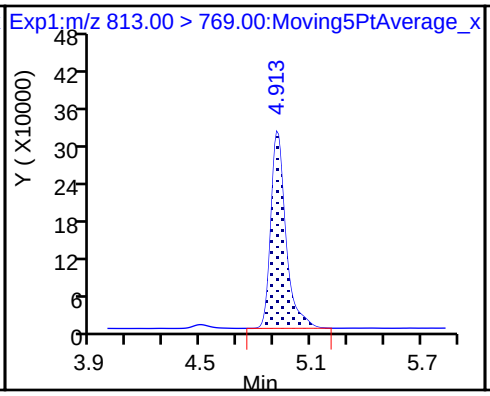
42 Perfluorotetradecanoic acid



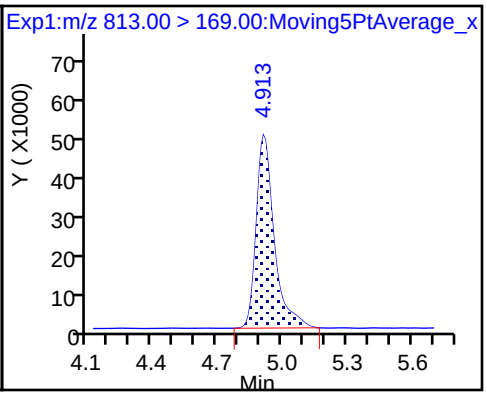
D 44 13C2-PFHxDA



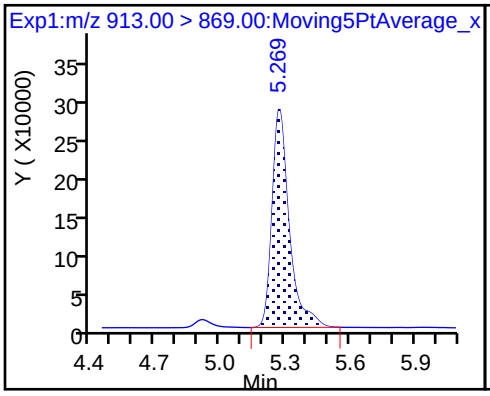
45 Perfluorohexadecanoic acid



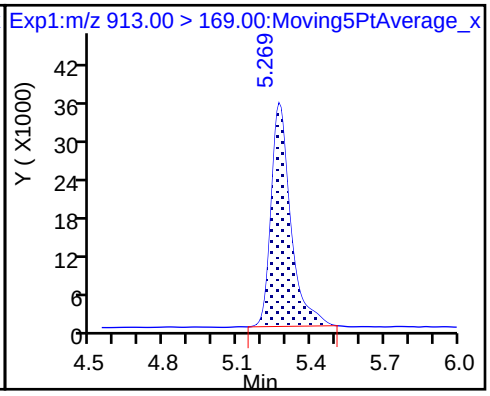
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

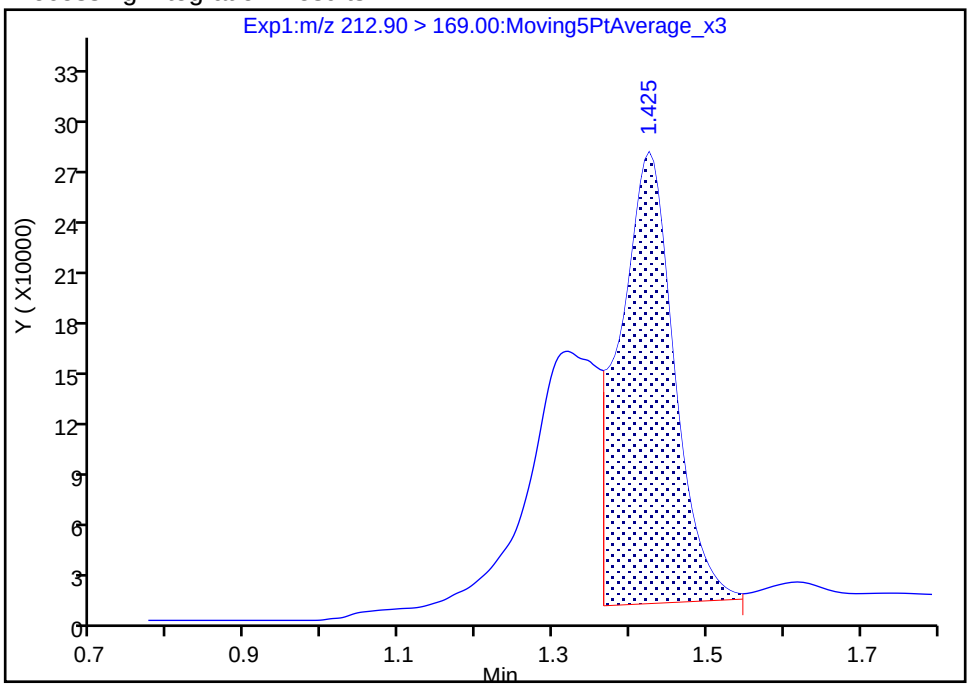
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_031.d
Injection Date: 07-Apr-2018 21:24:44 Instrument ID: A8_N
Lims ID: 320-37156-A-6-E MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

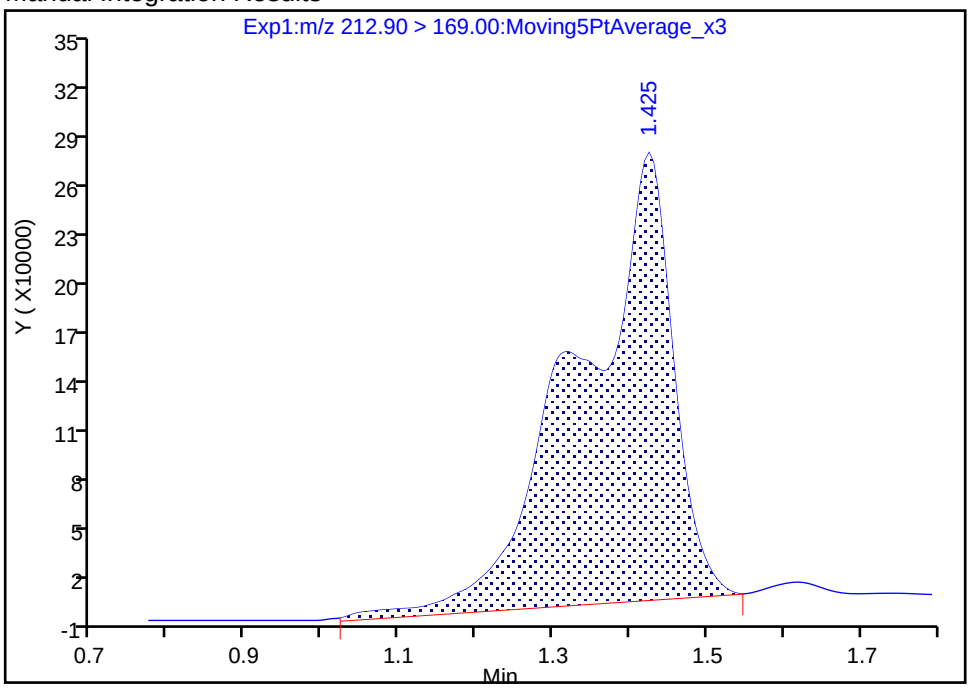
Processing Integration Results

RT: 1.43
Area: 1299026
Amount: 0.824520
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 2273412
Amount: 1.442984
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:06:57
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

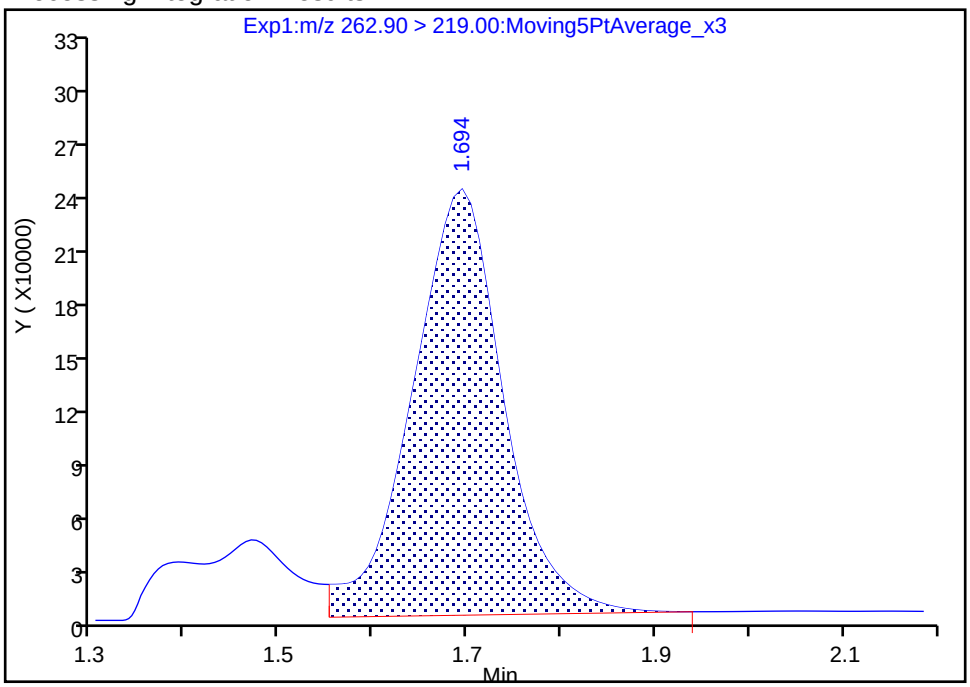
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_031.d				
Injection Date:	07-Apr-2018 21:24:44	Instrument ID:	A8_N		
Lims ID:	320-37156-A-6-E MS				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

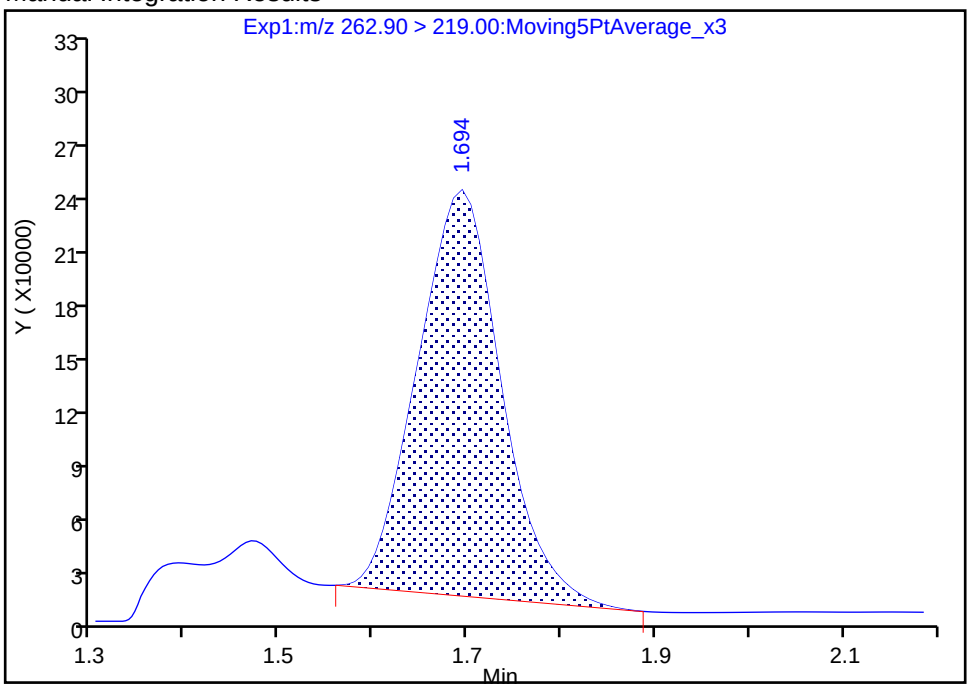
Processing Integration Results

RT: 1.69
Area: 1580781
Amount: 0.995472
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 1386389
Amount: 0.873057
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:07:08

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-37156-A-6-F MSD

Matrix: Solid | Lab File ID: 2018.04.07LLB_033.d

Analysis Method: 537 (modified) | Date Collected: 03/15/2018 10:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.09(g) | Date Analyzed: 04/07/2018 21:40

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 27.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00387		0.00027	0.000038
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00235		0.00027	0.00010
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00280		0.00027	0.000057
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00264		0.00027	0.000039
335-67-1	Perfluorooctanoic acid (PFOA)	0.00259		0.00027	0.00012
375-95-1	Perfluorononanoic acid (PFNA)	0.00253		0.00027	0.000049
335-76-2	Perfluorodecanoic acid (PFDA)	0.00264		0.00027	0.000030
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00299		0.00027	0.000049
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00252		0.00027	0.000091
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00251		0.00027	0.000069
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00258		0.00027	0.000073
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00222		0.00027	0.000034
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00235		0.00027	0.000042
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00253		0.00027	0.000047
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00297		0.00068	0.00027
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00238		0.00027	0.000053
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00260		0.00027	0.00011
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00261	J	0.0027	0.00053
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00260	J	0.0027	0.00050
27619-97-2	6:2FTS	0.00217	J	0.0027	0.00020
39108-34-4	8:2FTS	0.00239	J	0.0027	0.00034

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-37380-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-37156-A-6-F MSD

Matrix: Solid | Lab File ID: 2018.04.07LLB_033.d

Analysis Method: 537 (modified) | Date Collected: 03/15/2018 10:40

Extraction Method: SHAKE | Date Extracted: 04/02/2018 23:18

Sample wt/vol: 5.09(g) | Date Analyzed: 04/07/2018 21:40

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 27.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 216866 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	51		25-150
STL01893	13C5 PFPeA	62		25-150
STL00993	13C2 PFHxA	60		25-150
STL01892	13C4-PFHpA	64		25-150
STL00990	13C4 PFOA	71		25-150
STL00995	13C5 PFNA	80		25-150
STL00996	13C2 PFDA	86		25-150
STL00997	13C2 PFUnA	85		25-150
STL00998	13C2 PFDoA	76		25-150
STL02116	13C2-PFTeDA	71		25-150
STL02337	13C3-PFBS	67		25-150
STL00994	18O2 PFHxS	67		25-150
STL00991	13C4 PFOS	72		25-150
STL01056	13C8 FOSA	59		25-150
STL02118	d3-NMeFOSAA	104		25-150
STL02117	d5-NEtFOSAA	96		25-150
STL02279	M2-6:2FTS	200	*	25-150
STL02280	M2-8:2FTS	239	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_033.d
Lims ID: 320-37156-A-6-F MSD
Client ID:
Sample Type: MSD
Inject. Date: 07-Apr-2018 21:40:25 ALS Bottle#: 23 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-37156-a-6-f msd
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 09-Apr-2018 12:37:53 Calib Date: 29-Mar-2018 18:14:21
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180330-56010.b\2018.03.29A_ICALB_008.d

Column 1 : Det: EXP1
Process Host: XAWRK034

First Level Reviewer: hannigana Date: 09-Apr-2018 10:09:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.424	0.004	1.000	4206749	1.27		50.9	18782	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.428	1.429	-0.001	1.000	2220117	1.43		143	178	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.699	1.692	0.007	1.000	1389828	0.8687		86.9	124	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.693	0.006	0.562	3341678	1.55		62.2	26563	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.728	0.007	1.000	2144220	0.8210		92.9	2756	
298.90 > 99.00	1.735	1.728	0.007	1.000	948054		2.26(1.25-3.74)		540	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.729	0.006	1.000	76970	1.56		67.2	77.4	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.948	-0.002	1.000	1510430	2.64		283	16887	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.949	-0.003	1.000	11358	0.0302		0.0	8.2	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.978	1.980	-0.002	1.000	1504685	1.03		103	393	M
313.00 > 119.00	1.978	1.980	-0.002	1.000	136357		11.03(5.03-15.10)		435	
D 7 13C2 PFHxA										
315.00 > 270.00	1.978	1.981	-0.003	1.000	3560116	1.50		60.1	48459	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.000	2.002	-0.002	1.000	2097970	0.8900		94.9	2535	
349.00 > 99.00	2.000	2.002	-0.002	1.000	705715		2.97(1.36-4.07)		2114	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.082	-0.003	1.000	217763	NR		0.0	358	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.303	2.306	-0.003	1.000	1542380	0.9744		97.4	830	
363.00 > 169.00	2.303	2.306	-0.003	1.000	591253		2.61(1.13-3.40)		1982	
D 9 13C4-PFHpA										
367.00 > 322.00	2.303	2.307	-0.004	1.000	3642274	1.60		63.9	49692	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.316	2.319	-0.003	1.000	1833609	0.8672		95.3	571	
399.00 > 99.00	2.316	2.319	-0.003	1.000	626207		2.93(1.50-4.49)		430	
D 11 18O2 PFHxS										
403.00 > 84.00	2.316	2.320	-0.004	1.000	4477108	1.58		66.6	40192	
65 Adona										
377.00 > 251.00	2.349	2.345	0.004	1.000	3908671	0.7744		77.4	48739	
377.00 > 85.00	2.349	2.345	0.004	1.000	2362559		1.65(0.84-2.53)		8992	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.629	2.636	-0.007	0.997	1575996	0.8005		84.4	4708	
D 12 M2-6:2FTS										
429.00 > 81.00	2.637	2.637	0.0	1.000	2503756	4.75		200	9081	
* 62 13C2-PFOA										
415.00 > 370.00	2.661	2.659	0.002		5977621	2.50			106512	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.661	2.659	0.002	1.000	1789132	0.9542		95.4	718	
413.00 > 169.00	2.661	2.659	0.002	1.000	943120		1.90(0.84-2.52)		1811	
D 14 13C4 PFOA										
417.00 > 372.00	2.661	2.660	0.001	1.000	3952900	1.76		70.6	63794	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.668	2.667	0.001	1.000	1764707	0.9349		98.2	3095	
449.00 > 99.00	2.668	2.667	0.001	1.000	435170		4.06(1.94-5.82)		1164	
20 Perfluorononanoic acid										
463.00 > 419.00	3.030	3.029	0.001	1.002	1449213	0.9324		93.2	1700	
463.00 > 169.00	3.030	3.029	0.001	1.002	390865		3.71(1.90-5.69)		5476	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.023	3.029	-0.006	1.000	1770946	1.09		118	2874	
499.00 > 99.00	3.023	3.029	-0.006	1.000	393379		4.50(2.31-6.93)		671	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.031	-0.008	1.000	3776006	1.99		79.7	68981	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.031	-0.008	1.000	3384982	1.71		71.7	9500	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.238	3.237	0.001	1.000	2472315	0.9335		100	23333	
D 21 13C8 FOSA										
506.00 > 78.00	3.368	3.360	0.008	1.000	4116767	1.48		59.0	45530	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.368	3.368	0.0	1.000	1559930	0.9591		95.9	21551	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.377	3.377	0.0	1.000	1736486	0.8806		91.9	46809	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.377	3.377	0.0	1.000	1055045	0.9291		96.8	4463	
549.00 > 99.00	3.368	3.377	-0.009	0.997	401078		2.63(1.33-3.97)		2486	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.377	3.379	-0.002	1.000	3501278	5.72		239	9291	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.387	3.386	0.001	1.000	1336837	0.9759		97.6	1449	
513.00 > 169.00	3.387	3.386	0.001	1.000	242174		5.52(2.36-7.09)		2242	
D 23 13C2 PFDA										
515.00 > 470.00	3.387	3.388	-0.001	1.000	3461903	2.16		86.5	82949	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.545	3.545	0.0	1.003	902362	0.9629		96.3	7274	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.536	3.547	-0.011	1.000	2222543	2.59		104	27648	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.696	3.706	-0.010	1.000	861354	0.8766		90.9	2914	
599.00 > 99.00	3.696	3.706	-0.010	1.000	279807		3.08(1.39-4.16)		1825	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.706	3.708	-0.002	1.000	2147723	2.39		95.6	24617	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.717	3.717	0.0	1.000	984206	1.10		110	1791	
563.00 > 169.00	3.717	3.717	0.0	1.000	221908		4.44(2.12-6.36)		2828	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.717	3.717	0.0	1.003	756302	0.9599		96.0	11430	
D 30 13C2 PFUnA										
565.00 > 520.00	3.717	3.719	-0.002	1.000	2780548	2.13		85.1	84894	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.874	3.874	0.0	1.000	3374241	0.8208		87.1	13572	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.007	4.006	0.001	1.000	1104806	0.9303		93.0	567	
613.00 > 169.00	4.007	4.006	0.001	1.000	291769		3.79(2.13-6.40)		1525	
D 36 13C2 PFDoA										
615.00 > 570.00	4.007	4.009	-0.002	1.000	2747137	1.89		75.5	32908	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.270	4.279	-0.009	1.000	1177961	0.9273		92.7	791	
663.00 > 169.00	4.260	4.279	-0.019	0.998	385319		3.06(1.25-3.76)		1950	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.500	4.511	-0.011	1.000	3264456	1.77		70.6	14814	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.500	4.511	-0.011	1.000	310093	0.9509		95.1	1309	
713.00 > 219.00	4.500	4.511	-0.011	1.000	215935		1.44(0.71-2.13)		1115	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.930	-0.009	1.000	4987043	1.75		69.9	9827	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.931	-0.009	1.000	1790461	0.9265		92.7	633	
813.00 > 169.00	4.921	4.931	-0.009	1.000	305105		5.87(2.86-8.58)		1024	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.276	5.284	-0.008	1.000	1705759	0.8613		86.1	554	
913.00 > 169.00	5.276	5.284	-0.008	1.000	216144		7.89(3.83-11.48)		708	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 09-Apr-2018 12:39:45 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_033.d

Injection Date: 07-Apr-2018 21:40:25 Instrument ID: A8_N

Lims ID: 320-37156-A-6-F MSD

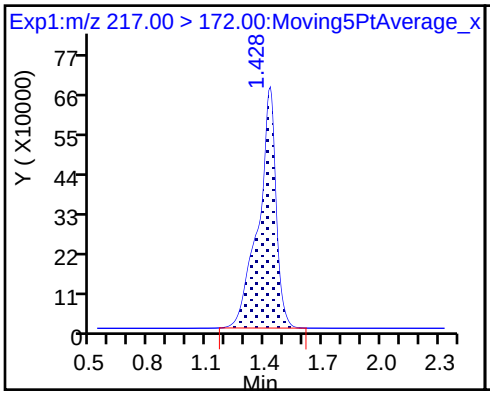
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 15

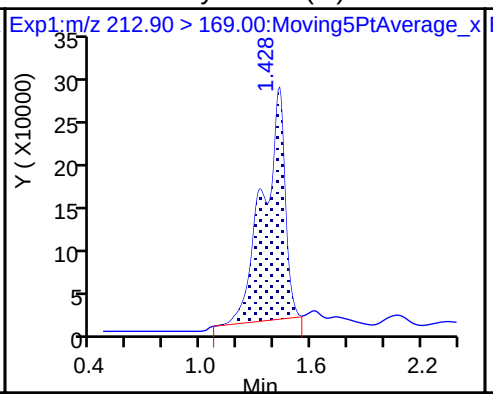
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

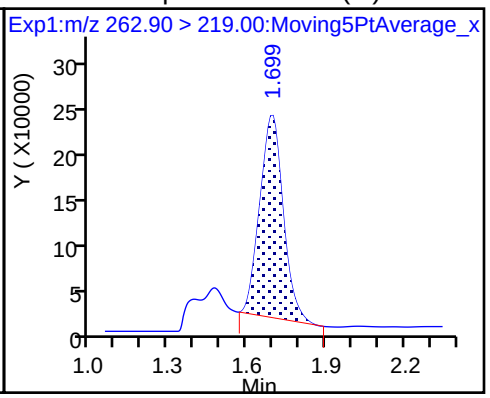
D 1 13C4 PFBA



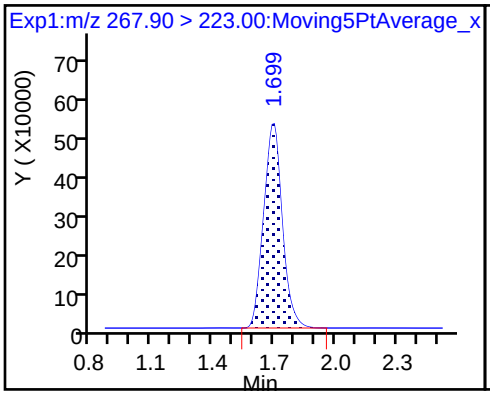
2 Perfluorobutyric acid (M)



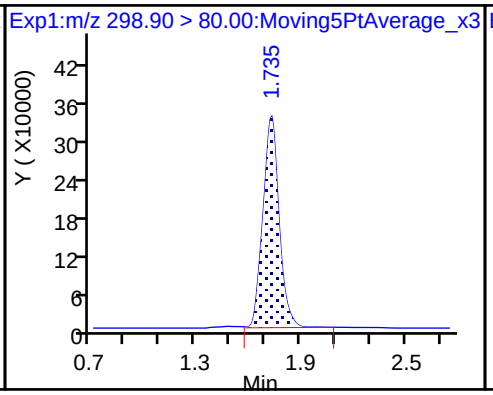
4 Perfluoropentanoic acid (M)



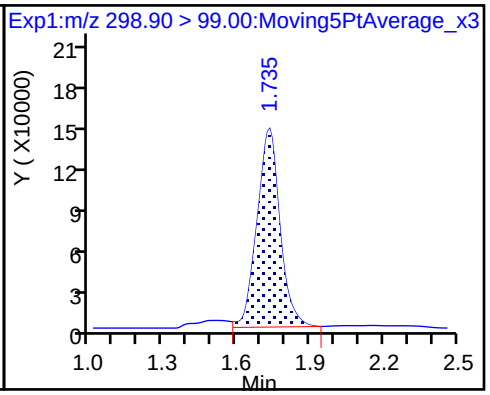
D 3 13C5-PFPeA



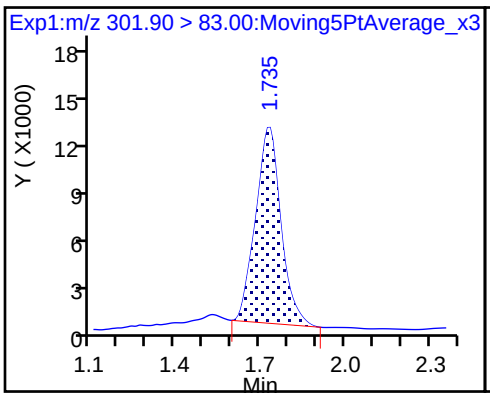
5 Perfluorobutanesulfonic acid



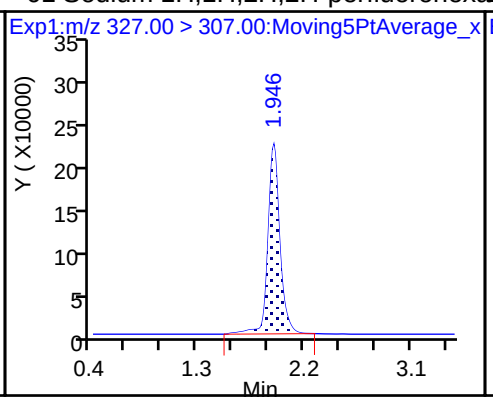
5 Perfluorobutanesulfonic acid



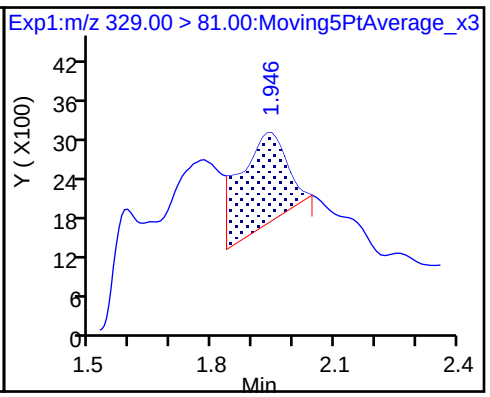
D 47 13C3-PFBS



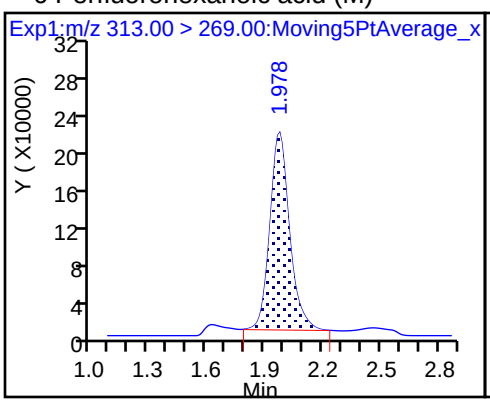
61 Sodium 1H,1H,2H,2H-perfluorohexane



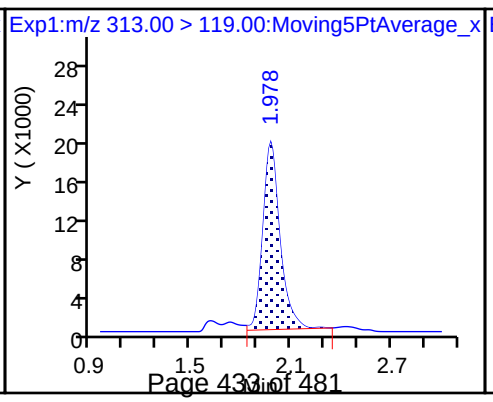
D 60 M2-4:2FTS



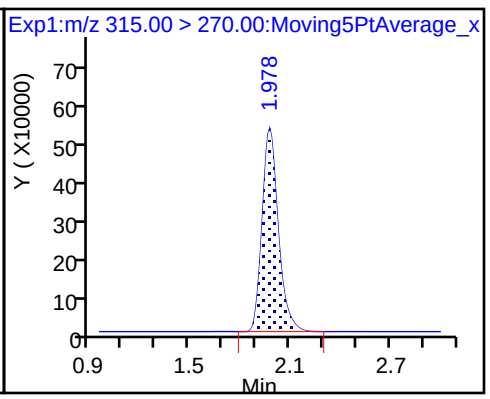
6 Perfluorohexanoic acid (M)



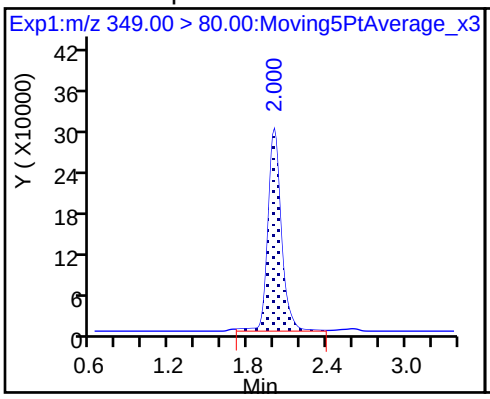
6 Perfluorohexanoic acid



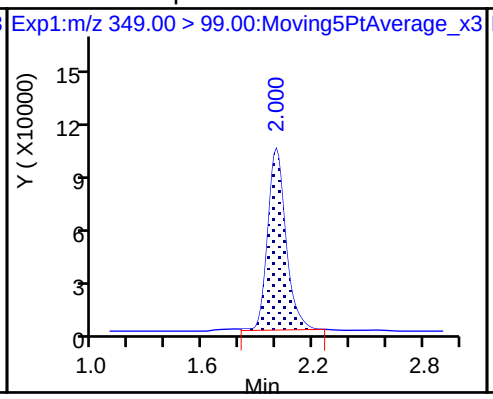
D 7 13C2 PFHxA



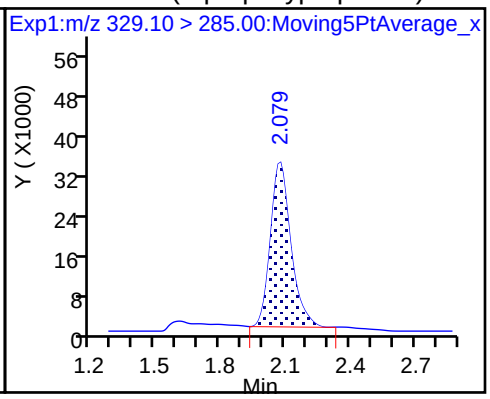
70 Perfluoropentanesulfonic acid



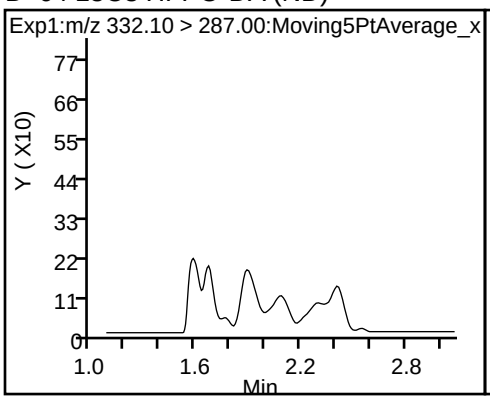
70 Perfluoropentanesulfonic acid



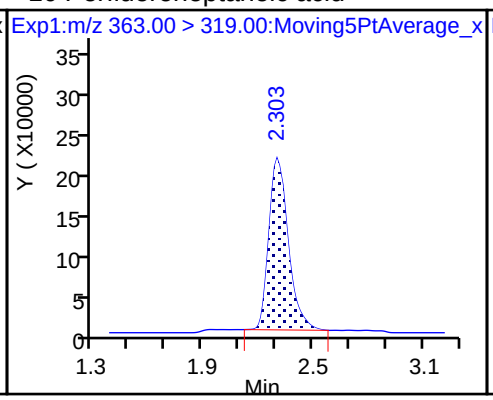
67 Perfluoro(2-propoxypropanoic) acid



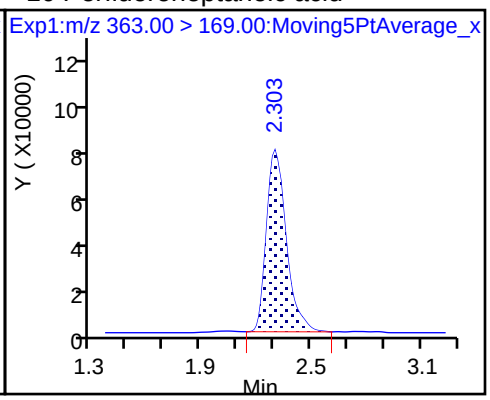
D 64 13C3 HFPO-DA (ND)



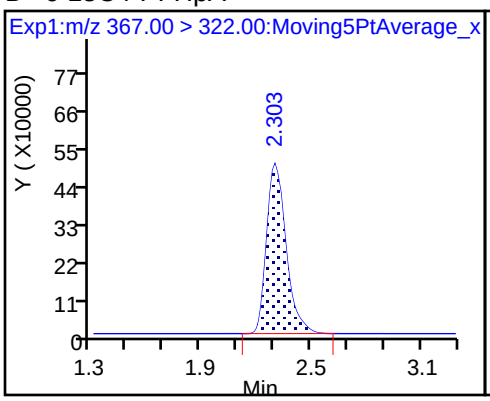
10 Perfluoroheptanoic acid



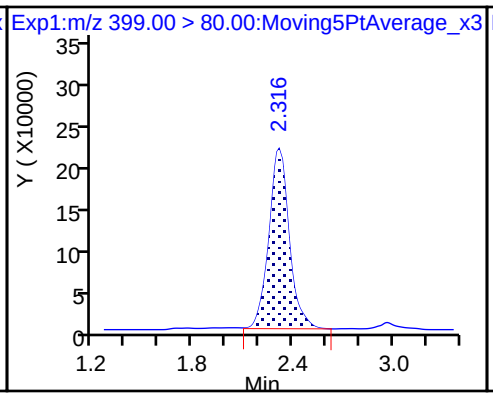
10 Perfluoroheptanoic acid



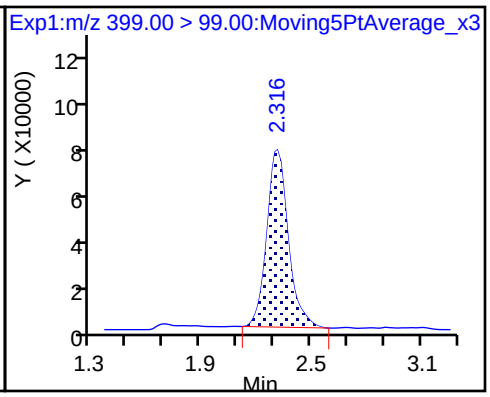
D 9 13C4-PFHpA



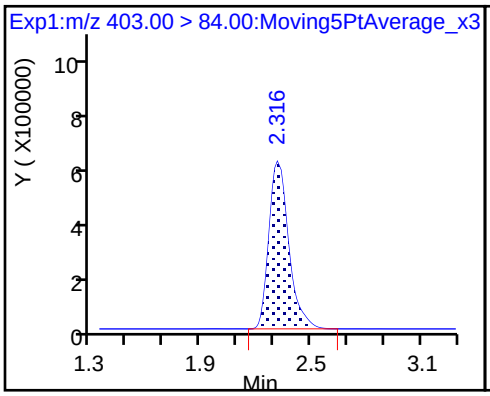
8 Perfluorohexanesulfonic acid



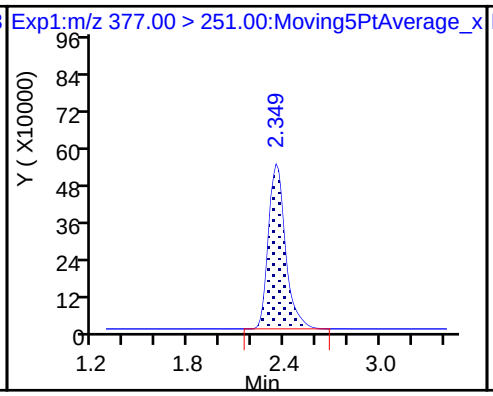
8 Perfluorohexanesulfonic acid



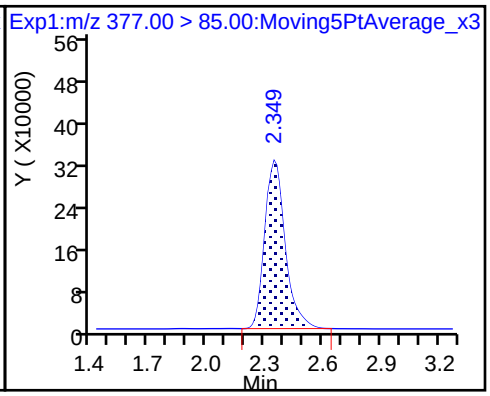
D 11 18O2 PFHxS



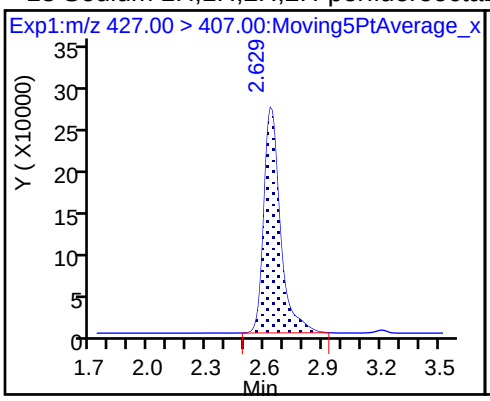
65 Adona



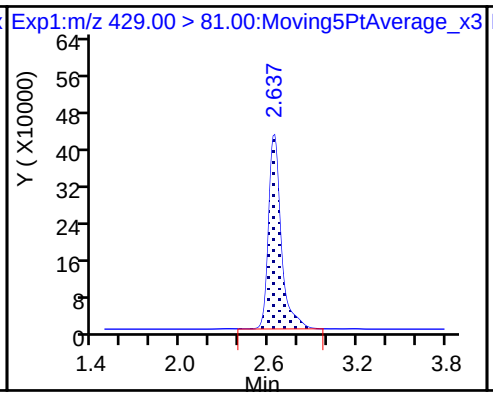
65 Adona



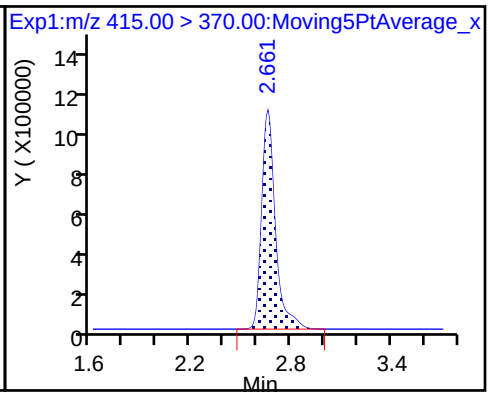
13 Sodium 1H,1H,2H,2H-perfluorooctane



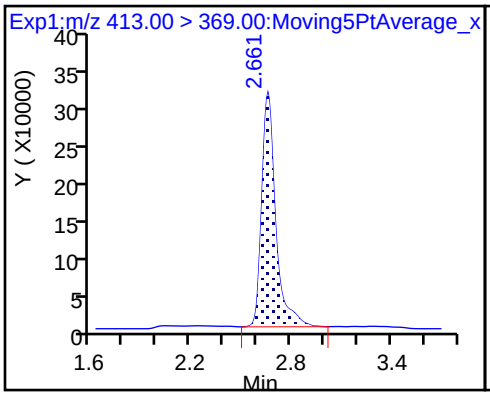
D 12 M2-6:2FTS



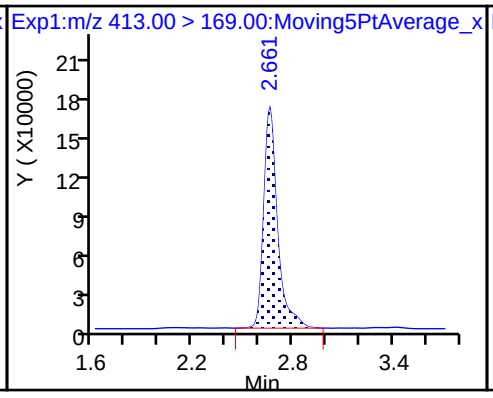
* 62 13C2-PFOA



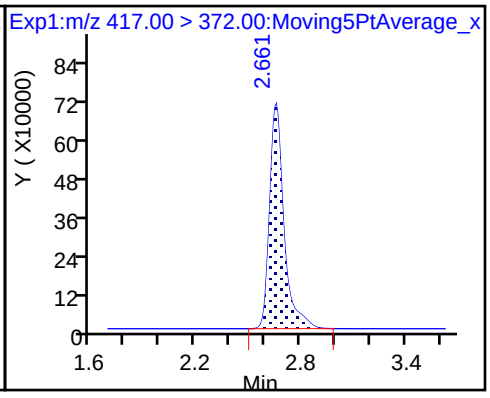
15 Perfluorooctanoic acid



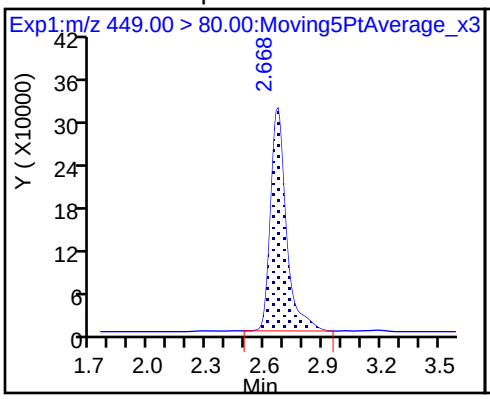
15 Perfluorooctanoic acid



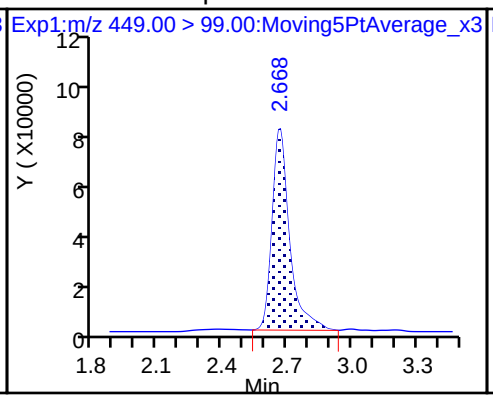
D 14 13C4 PFOA



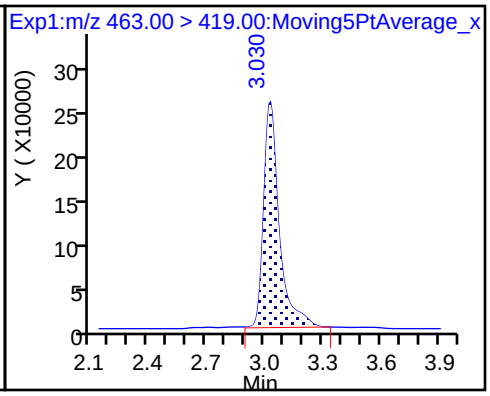
16 Perfluoroheptanesulfonic acid



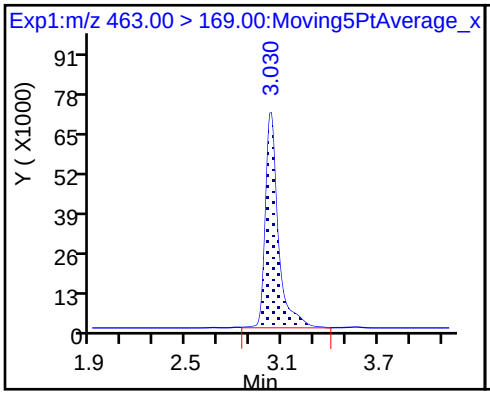
16 Perfluoroheptanesulfonic acid



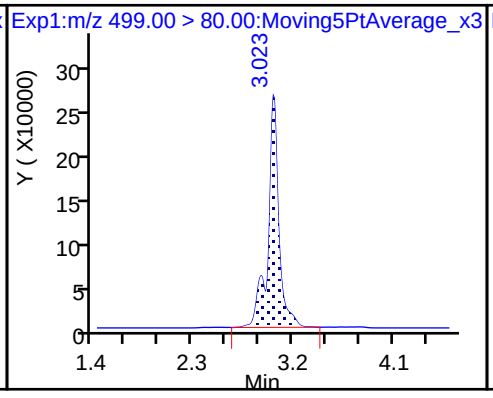
20 Perfluorononanoic acid



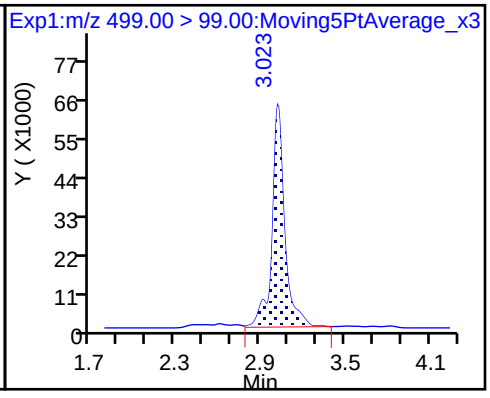
20 Perfluorononanoic acid



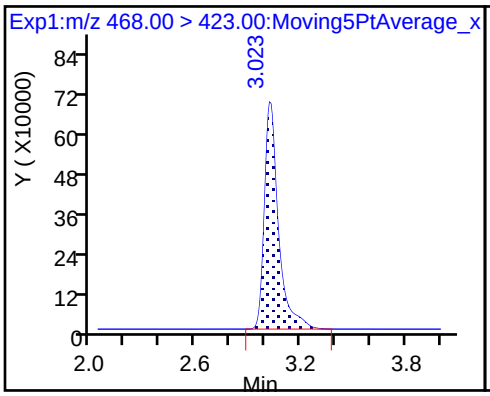
17 Perfluorooctane sulfonic acid



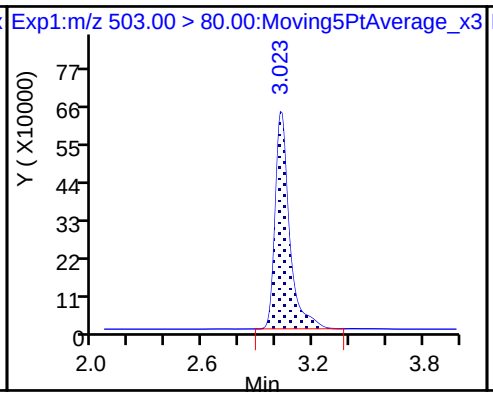
17 Perfluorooctane sulfonic acid



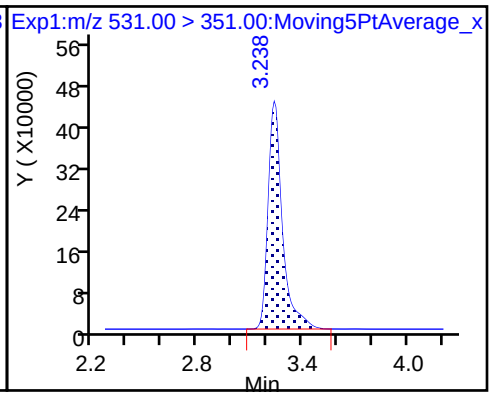
D 19 13C5 PFNA



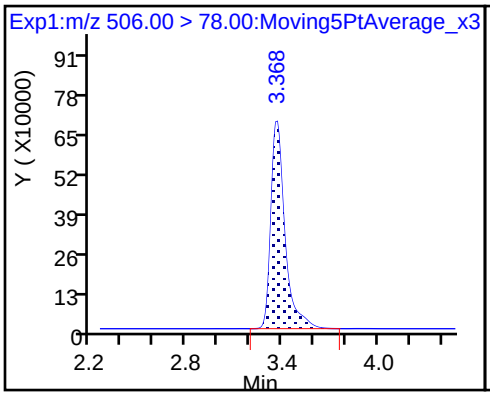
D 18 13C4 PFOS



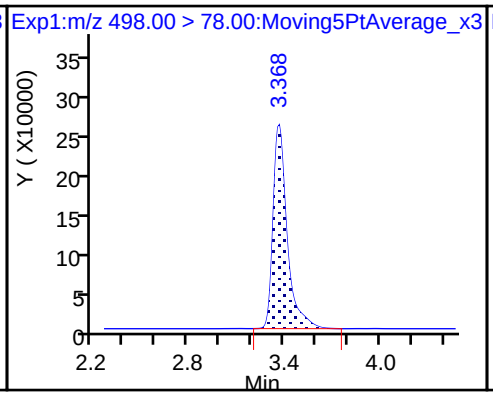
69 9-Chlorohexadecafluoro-3-oxanonane



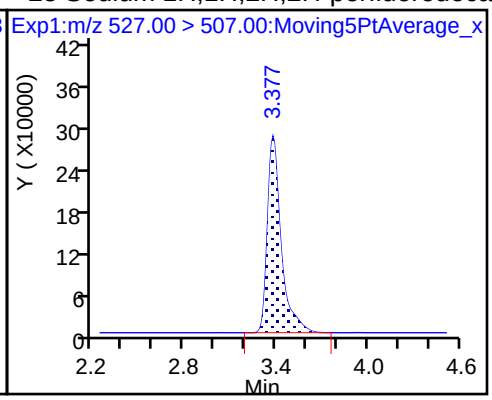
D 21 13C8 FOSA



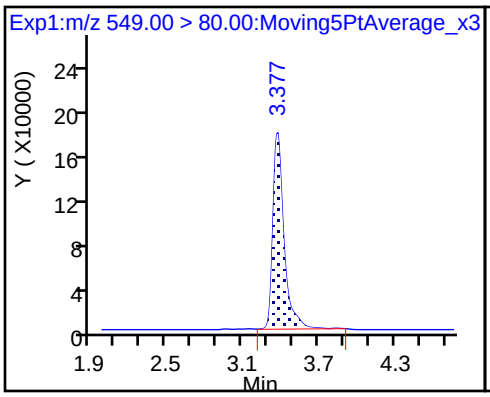
22 Perfluorooctane Sulfonamide



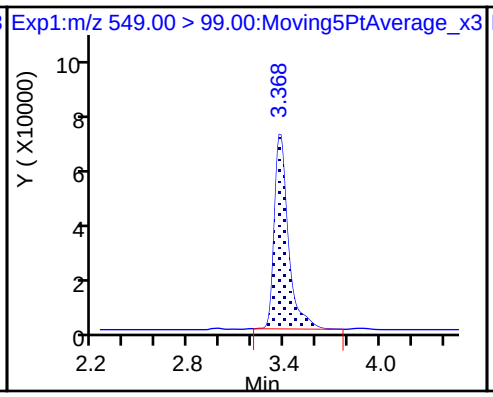
25 Sodium 1H,1H,2H,2H-perfluorodecane



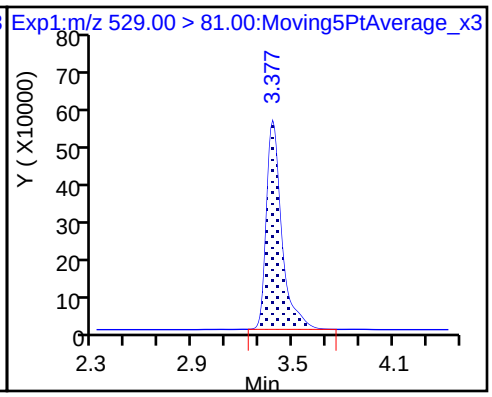
68 Perfluorononanesulfonic acid



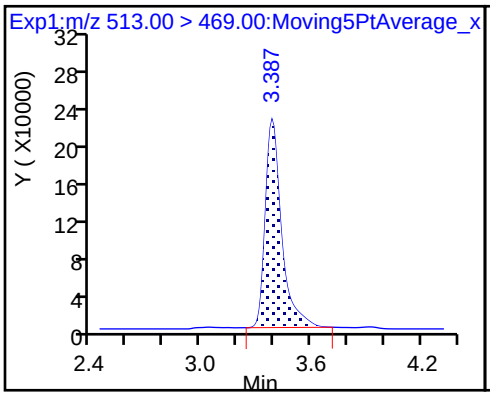
68 Perfluorononanesulfonic acid



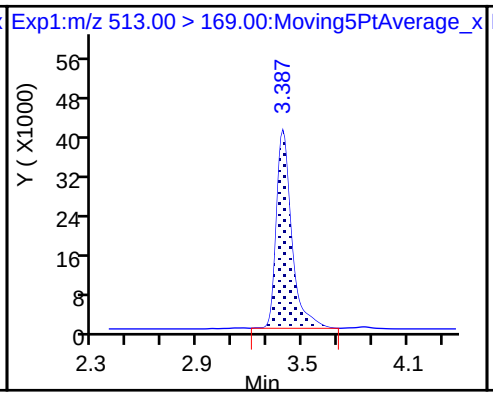
D 26 M2-8:2FTS



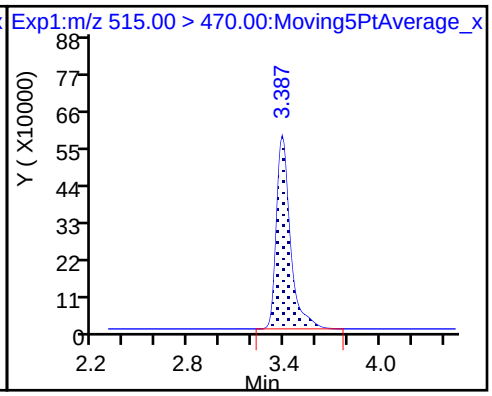
24 Perfluorodecanoic acid



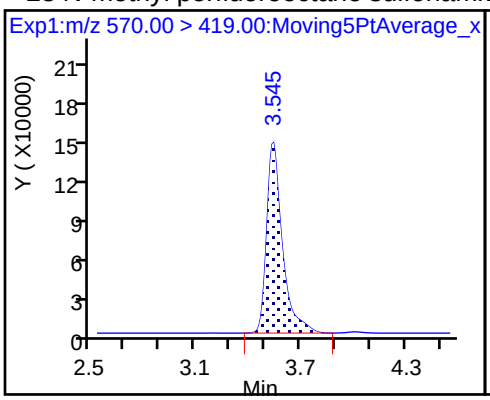
24 Perfluorodecanoic acid



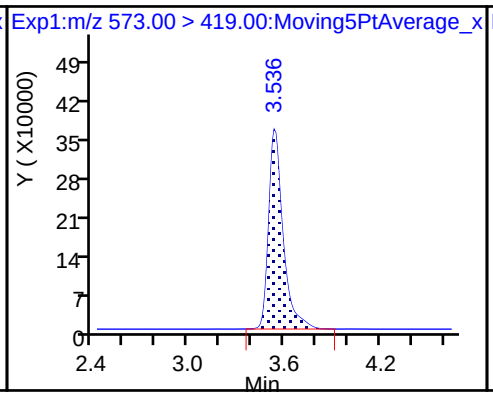
D 23 13C2 PFDA



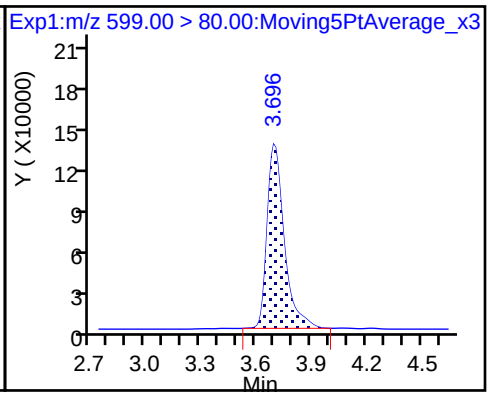
28 N-methyl perfluorooctane sulfonami



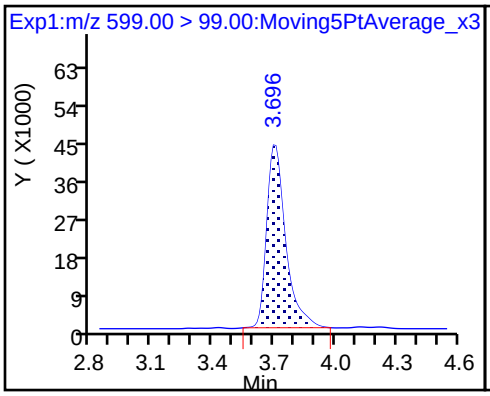
D 27 d3-NMeFOSAA



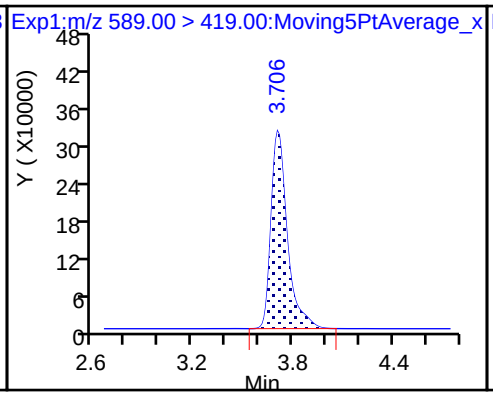
29 Perfluorodecane Sulfonic acid



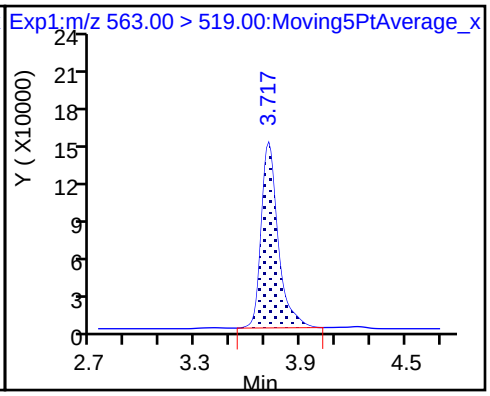
29 Perfluorodecane Sulfonic acid



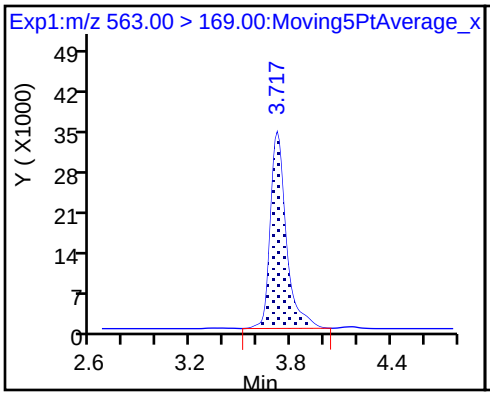
D 32 d5-NEtFOSAA



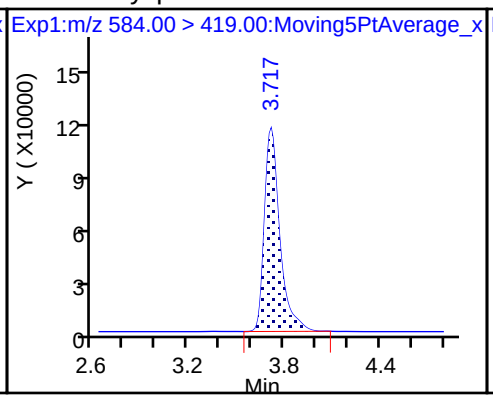
31 Perfluoroundecanoic acid



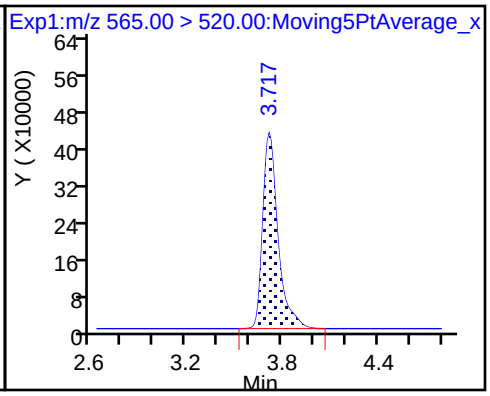
31 Perfluoroundecanoic acid



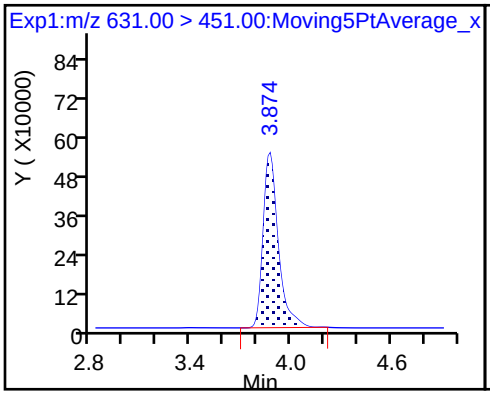
33 N-ethyl perfluorooctane sulfonamid



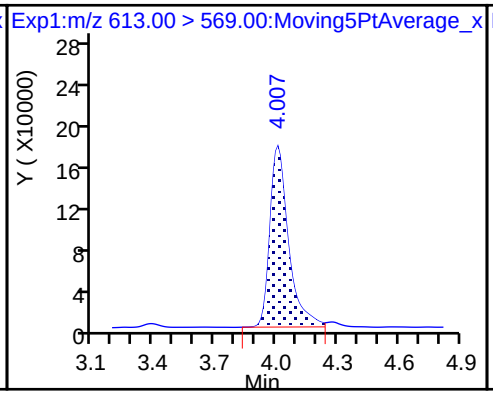
D 30 13C2 PFUnA



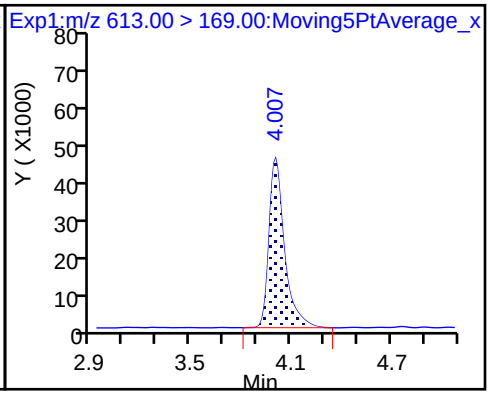
66 11-Chloroeicosafluoro-3-oxaundecan



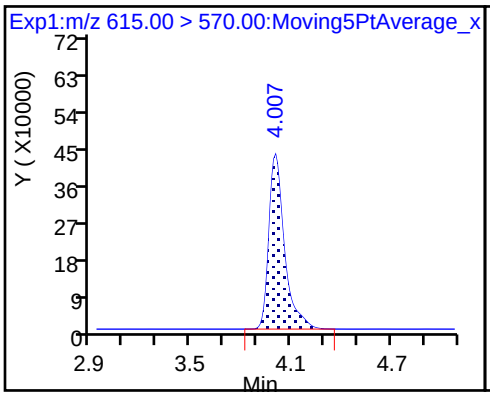
37 Perfluorododecanoic acid



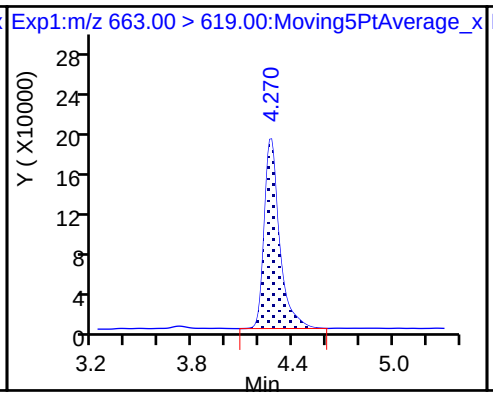
37 Perfluorododecanoic acid



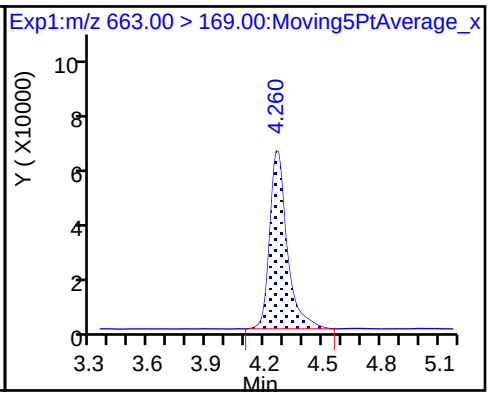
D 36 13C2 PFDoA



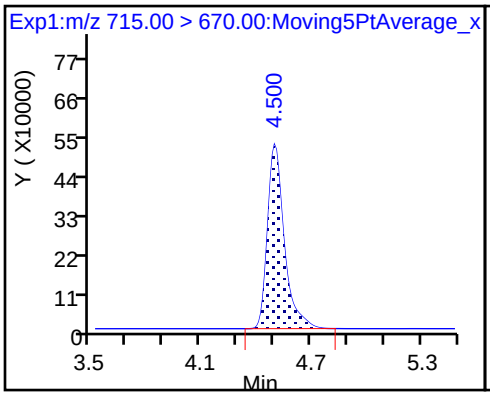
41 Perfluorotridecanoic acid



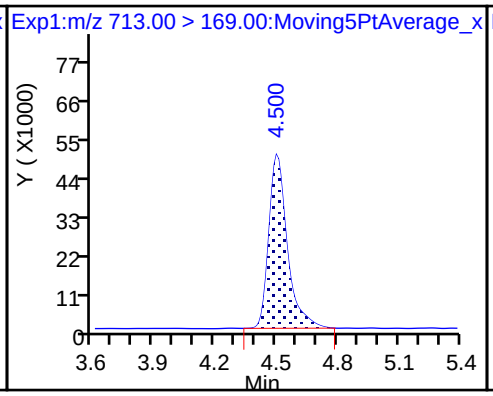
41 Perfluorotridecanoic acid



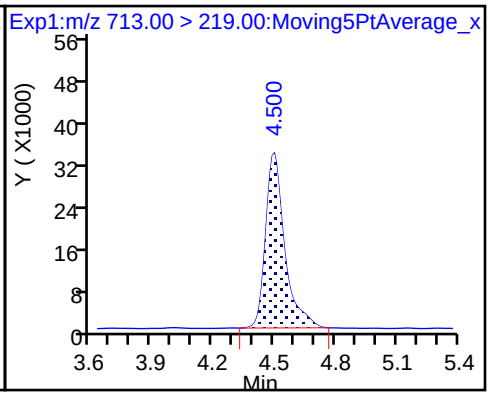
D 43 13C2-PFTeDA



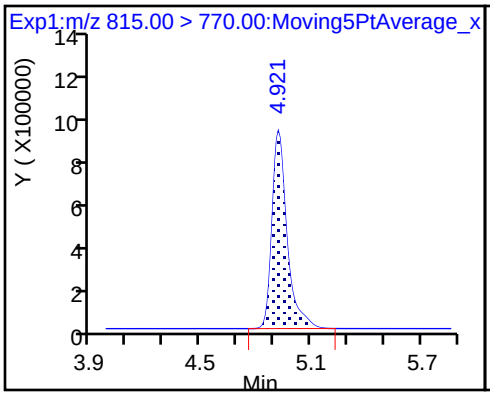
42 Perfluorotetradecanoic acid



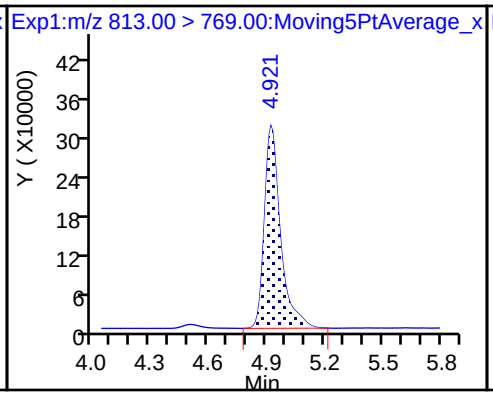
42 Perfluorotetradecanoic acid



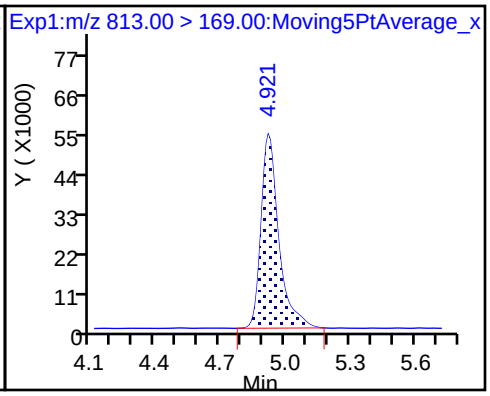
D 44 13C2-PFHxDA



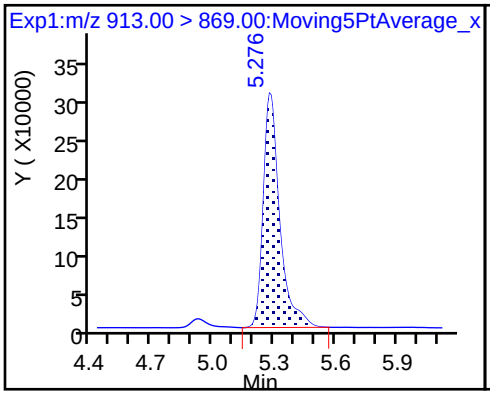
45 Perfluorohexadecanoic acid



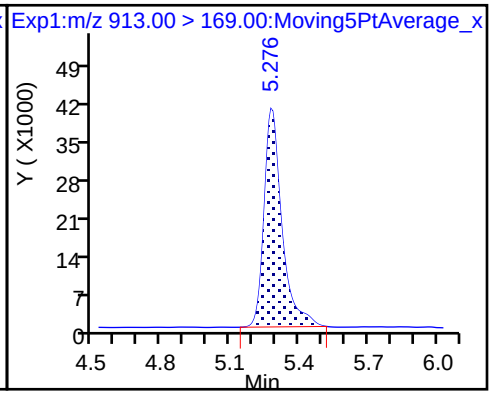
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

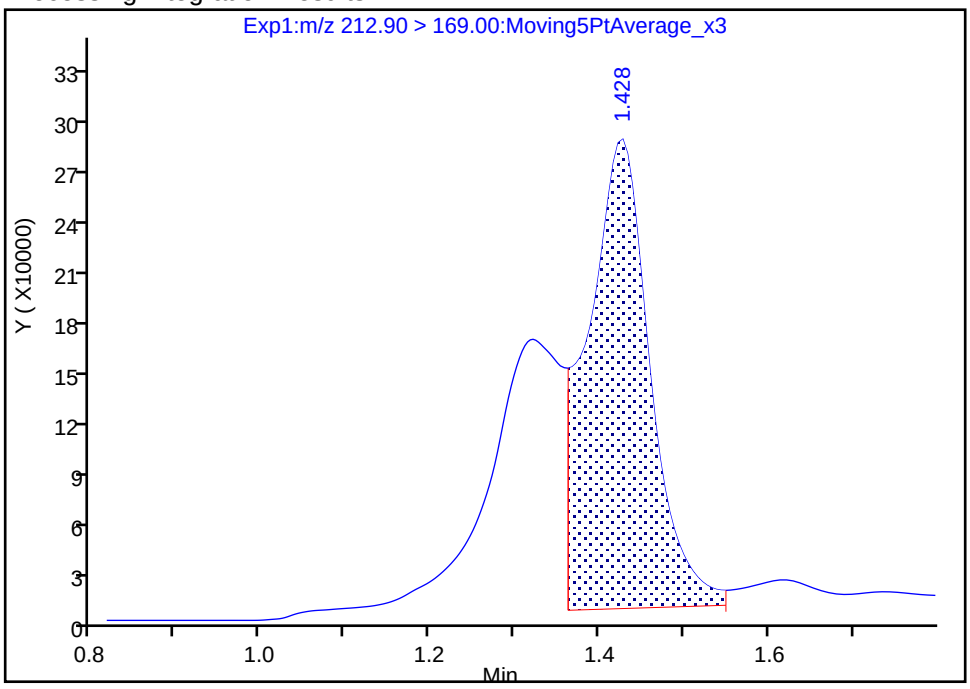
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_033.d				
Injection Date:	07-Apr-2018 21:40:25	Instrument ID:	A8_N		
Lims ID:	320-37156-A-6-F MSD				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	15
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

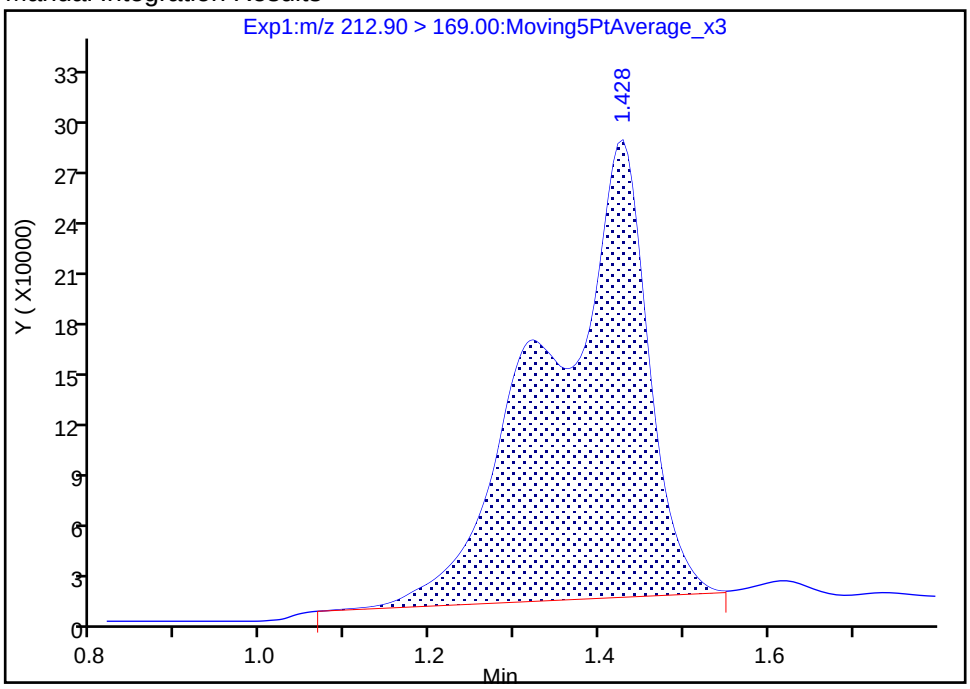
Processing Integration Results

RT: 1.43
Area: 1402407
Amount: 0.901803
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 2220117
Amount: 1.427623
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:08:20

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

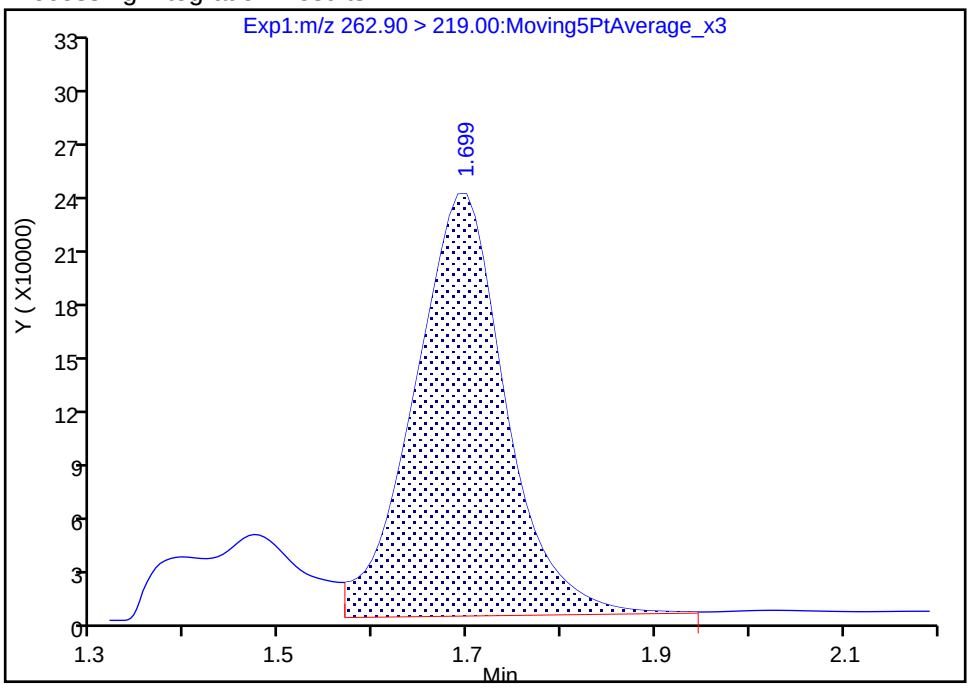
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_033.d
Injection Date: 07-Apr-2018 21:40:25 Instrument ID: A8_N
Lims ID: 320-37156-A-6-F MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

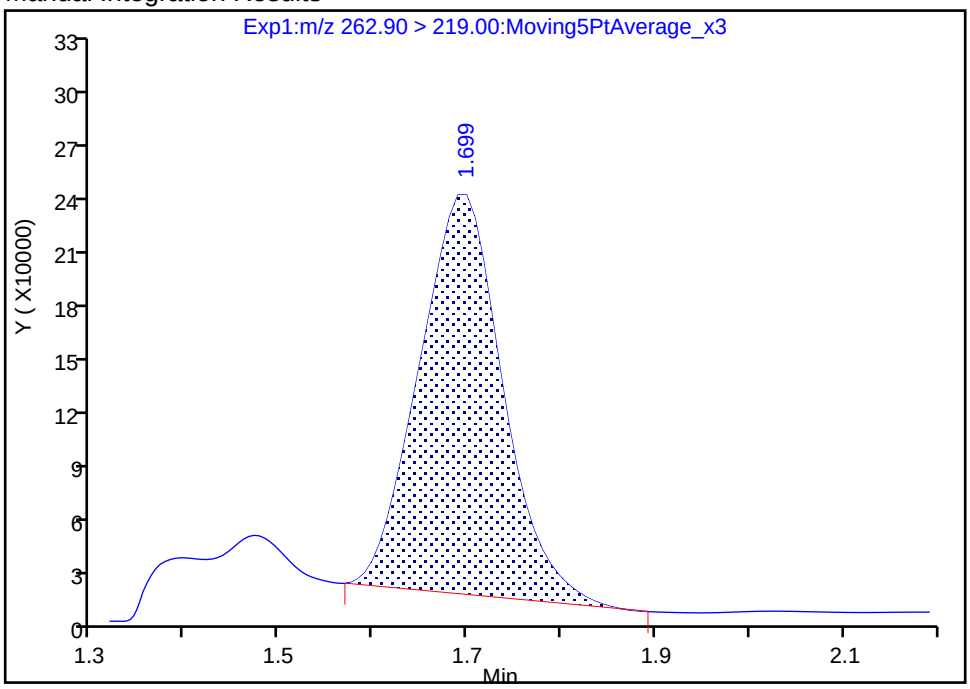
Processing Integration Results

RT: 1.70
Area: 1603822
Amount: 1.002468
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 1389828
Amount: 0.868712
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:08:29
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

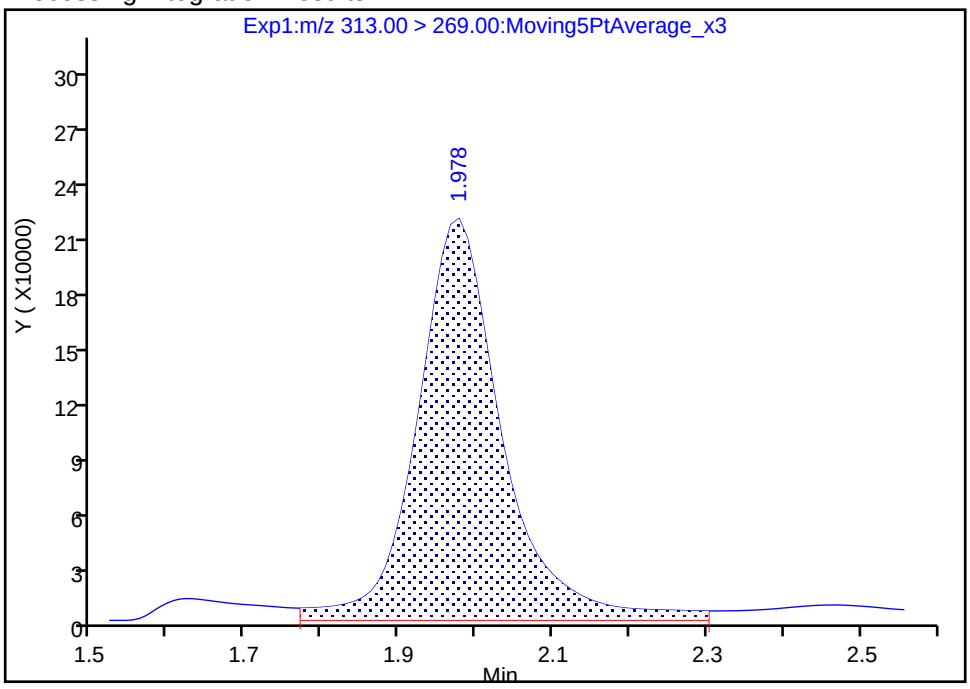
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b\2018.04.07LLB_033.d
Injection Date: 07-Apr-2018 21:40:25 Instrument ID: A8_N
Lims ID: 320-37156-A-6-F MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

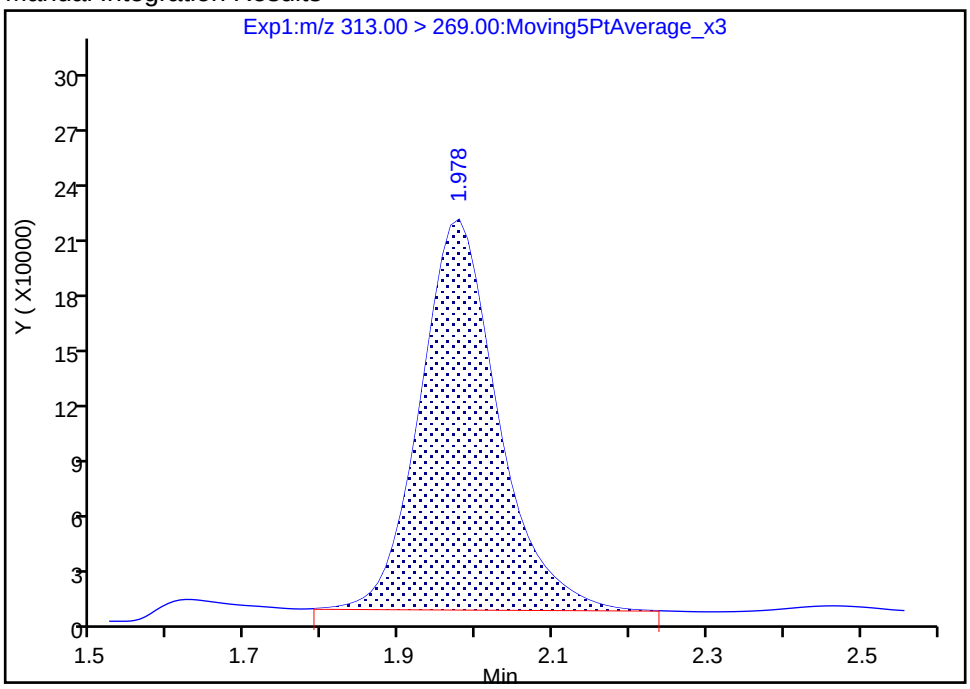
Processing Integration Results

RT: 1.98
Area: 1695386
Amount: 1.163440
Amount Units: ng/ml



Manual Integration Results

RT: 1.98
Area: 1504685
Amount: 1.032573
Amount Units: ng/ml



Reviewer: hannigana, 09-Apr-2018 10:08:42
Audit Action: Manually Integrated Audit Reason: Baseline

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Instrument ID: A8_N Start Date: 03/29/2018 17:19

Analysis Batch Number: 215537 End Date: 03/29/2018 18:37

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		03/29/2018 17:19	1		GeminiC18 3x100 3(mm)
IC 320-215537/2		03/29/2018 17:27	1	2018.03.29A_ICA LB 002.d	GeminiC18 3x100 3(mm)
IC 320-215537/3		03/29/2018 17:35	1	2018.03.29A_ICA LB 003.d	GeminiC18 3x100 3(mm)
IC 320-215537/4		03/29/2018 17:43	1	2018.03.29A_ICA LB 004.d	GeminiC18 3x100 3(mm)
IC 320-215537/5 ICIS		03/29/2018 17:50	1	2018.03.29A_ICA LB 005.d	GeminiC18 3x100 3(mm)
IC 320-215537/6		03/29/2018 17:58	1	2018.03.29A_ICA LB 006.d	GeminiC18 3x100 3(mm)
IC 320-215537/7		03/29/2018 18:06	1	2018.03.29A_ICA LB 007.d	GeminiC18 3x100 3(mm)
IC 320-215537/8		03/29/2018 18:14	1	2018.03.29A_ICA LB 008.d	GeminiC18 3x100 3(mm)
ICB 320-215537/9		03/29/2018 18:22	1	2018.03.29A_ICA LB 009.d	GeminiC18 3x100 3(mm)
ICV 320-215537/10		03/29/2018 18:29	1	2018.03.29A_ICA LB 010.d	GeminiC18 3x100 3(mm)
CCB 320-215537/11		03/29/2018 18:37	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Instrument ID: A8_N Start Date: 04/07/2018 19:50

Analysis Batch Number: 216866 End Date: 04/07/2018 21:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-216866/1		04/07/2018 19:50	1	2018.04.07LLB_004.d	GeminiC18 3x100 3(mm)
CCVL 320-216866/2		04/07/2018 19:58	1	2018.04.07LLB_005.d	GeminiC18 3x100 3(mm)
CCV 320-216866/3 CCVIS		04/07/2018 20:06	1	2018.04.07LLB_021.d	GeminiC18 3x100 3(mm)
MB 320-215980/1-A		04/07/2018 20:14	1	2018.04.07LLB_022.d	GeminiC18 3x100 3(mm)
LCS 320-215980/2-A		04/07/2018 20:22	1	2018.04.07LLB_023.d	GeminiC18 3x100 3(mm)
320-37380-1		04/07/2018 20:29	1	2018.04.07LLB_024.d	GeminiC18 3x100 3(mm)
320-37380-2		04/07/2018 20:37	1	2018.04.07LLB_025.d	GeminiC18 3x100 3(mm)
320-37380-3		04/07/2018 20:45	1	2018.04.07LLB_026.d	GeminiC18 3x100 3(mm)
320-37380-4		04/07/2018 20:53	1	2018.04.07LLB_027.d	GeminiC18 3x100 3(mm)
320-37380-5		04/07/2018 21:01	1	2018.04.07LLB_028.d	GeminiC18 3x100 3(mm)
320-37380-6		04/07/2018 21:09	1	2018.04.07LLB_029.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/07/2018 21:16	1		GeminiC18 3x100 3(mm)
320-37156-A-6-E MS		04/07/2018 21:24	1	2018.04.07LLB_031.d	GeminiC18 3x100 3(mm)
CCV 320-216866/14		04/07/2018 21:32	1	2018.04.07LLB_032.d	GeminiC18 3x100 3(mm)
320-37156-A-6-F MSD		04/07/2018 21:40	1	2018.04.07LLB_033.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/07/2018 21:48	1		GeminiC18 3x100 3(mm)
CCV 320-216866/17		04/07/2018 21:56	1	2018.04.07LLB_035.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Instrument ID: A8_N Start Date: 04/09/2018 08:41

Analysis Batch Number: 216928 End Date: 04/09/2018 08:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-216928/1		04/09/2018 08:41	1	2018.04.09LLA_004.d	GeminiC18 3x100 3(mm)
CCVL 320-216928/2		04/09/2018 08:49	1	2018.04.09LLA_005.d	GeminiC18 3x100 3(mm)
CCV 320-216928/3 CCVIS		04/09/2018 08:56	1	2018.04.09LLA_006.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Instrument ID: A8_N Start Date: 04/09/2018 18:18

Analysis Batch Number: 217070 End Date: 04/09/2018 20:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-217070/1		04/09/2018 18:18	1	2018.04.09LLA_043.d	GeminiC18 3x100 3(mm)
320-37380-1 DL		04/09/2018 18:26	10	2018.04.09LLA_044.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 18:34	10		GeminiC18 3x100 3(mm)
320-37380-3 DL		04/09/2018 18:42	10	2018.04.09LLA_046.d	GeminiC18 3x100 3(mm)
320-37380-4 DL		04/09/2018 18:50	10	2018.04.09LLA_047.d	GeminiC18 3x100 3(mm)
320-37380-5 DL		04/09/2018 18:58	10	2018.04.09LLA_048.d	GeminiC18 3x100 3(mm)
320-37380-6 DL		04/09/2018 19:05	10	2018.04.09LLA_049.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 19:13	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 19:21	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 19:29	10		GeminiC18 3x100 3(mm)
CCV 320-217070/11		04/09/2018 19:37	1	2018.04.09LLA_053.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 19:45	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 19:52	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:00	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:08	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:16	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:24	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:32	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:39	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/09/2018 20:47	100		GeminiC18 3x100 3(mm)
CCV 320-217070/21		04/09/2018 20:55	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Batch Number: 215980 Batch Start Date: 04/02/18 23:17 Batch Analyst: Reed, Jonathan E

Batch Method: SHAKE Batch End Date: 04/04/18 02:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00046	LCPFC-IS 00033	LCPFCSP 00138	
MB 320-215980/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-215980/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-37380-A-1	SB043 (0-2")	SHAKE, 537 (modified)	T	4.98 g	10.00 mL	500 uL	500 uL		
320-37380-A-2	SB043 (2"-2')	SHAKE, 537 (modified)	T	4.97 g	10.00 mL	500 uL	500 uL		
320-37380-A-3	SB044 (0-2")	SHAKE, 537 (modified)	T	4.97 g	10.00 mL	500 uL	500 uL		
320-37380-A-4	SB044 (2"-2')	SHAKE, 537 (modified)	T	4.98 g	10.00 mL	500 uL	500 uL		
320-37380-A-5	SB045 (0-2")	SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL		
320-37380-A-6	SB045 (2"-2')	SHAKE, 537 (modified)	T	4.98 g	10.00 mL	500 uL	500 uL		
320-37156-A-6 MS		SHAKE, 537 (modified)	T	5.04 g	10.00 mL	500 uL	500 uL	500 uL	
320-37156-A-6 MSD		SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL	500 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Batch Number: 215980 Batch Start Date: 04/02/18 23:17 Batch Analyst: Reed, Jonathan E

Batch Method: SHAKE Batch End Date: 04/04/18 02:00

Batch Notes	
Acetic Acid ID	985732
Analyst ID - Aliquot Step	JER
Balance ID	QA-070
Batch Comment	Sample labels match client IDs JER 3/31/18
Analyst ID - Final Volume Step	JER
Hexane ID	1175189
Internal Standard ID#	1178675
Manifold ID	12
Methanol ID	1197668
Methanolic Potassium Hydroxide ID	1199078
Millipore Water Dispense Date	3/31/18
Sodium Hydroxide ID	1196582
Ammonium Hydroxide/MeOH ID	1195172
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	ALM
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	MEL
Blank Sand Lot #	162639
SPE Cartridge Lot ID	017637348A
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 37880, 37156 Work List ID(s): 560390, 560891, 560452

Extraction Batch: 215514, 215980 Analysis Batch(es): 216803, 216866, 217070

Delivery Rank 2, 4 Due Date: 4/5/2018

A Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 215537	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓	✓	
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?	~~4/10/18~~		✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D Documentation NCMs: 121825, 121826, 121829			
1. Are all non-conformances documented/attached? NCM# 121823, 121824	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?	✓	✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): ABH Date: 4/10/18

2nd Level Reviewer: MRW Date: 4/10/2018

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 07APR2018NCG_PFC Worklist Number: 56390
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56390.b
QC Batching: Disabled Limit Group Batching: Enabled

CCVL: 216820

QC Batch 1	LC PFC_DOD ICAL Raw Batch 216862	LC PFC ICAL Raw Batch 216863	LC PFC_QSM5-1 ICAL Raw Batch 216864
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 MB 320-215514/1-A		# 2 MB 320-215514/1-A	
# 3 LCS 320-215514/2-A		# 3 LCS 320-215514/2-A	
# 4 320-37380-A-1-A		# 4 320-37380-A-1-A	
# 5 320-37380-A-2-A		# 5 320-37380-A-2-A	
# 6 320-37380-A-3-A		# 6 320-37380-A-3-A	
# 7 320-37380-A-4-A		# 7 320-37380-A-4-A	
# 8 320-37380-A-5-A		# 8 320-37380-A-5-A	
# 9 320-37380-A-6-A		# 9 320-37380-A-6-A	
#10 320-37156-A-6-A		#10 320-37156-A-6-A	
#11 320-37156-A-6-B MS		#11 320-37156-A-6-B MS	
#12 CCV L5	#12 CCV L5	#12 CCV L5	#12 CCV L5
#13 320-37156-A-6-C MSD		#13 320-37156-A-6-C MSD	
#14 320-37156-A-7-A		#14 320-37156-A-7-A	
#15 CCV L4	#15 CCV L4	#15 CCV L4	#15 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 07APR2018NC_2A_PFC Worklist Number: 56391
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch 1	LC PFC_DOD ICAL Raw Batch: 216865	LC PFC ICAL Raw Batch: 216866	LC PFC_QSM5-1 ICAL Raw Batch: 216867
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 MB 320-215980/1-A		# 4 MB 320-215980/1-A	
# 5 LCS 320-215980/2-A		# 5 LCS 320-215980/2-A	
# 6 320-37380-A-1-B		# 6 320-37380-A-1-B	
# 7 320-37380-A-2-B		# 7 320-37380-A-2-B	
# 8 320-37380-A-3-B		# 8 320-37380-A-3-B	
# 9 320-37380-A-4-B		# 9 320-37380-A-4-B	
#10 320-37380-A-5-B		#10 320-37380-A-5-B	
#11 320-37380-A-6-B		#11 320-37380-A-6-B	
#12 320-37156-A-6-D		#12 320-37156-A-6-D	
#13 320-37156-A-6-E MS		#13 320-37156-A-6-E MS	
#14 CCV L5	#14 CCV L5	#14 CCV L5	#14 CCV L5
#15 320-37156-A-6-F MSD		#15 320-37156-A-6-F MSD	
#16 320-37156-A-7-B		#16 320-37156-A-7-B	
#17 CCV L4	#17 CCV L4	#17 CCV L4	#17 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 09APR2018NCH_PFC Worklist Number: 56452
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b
QC Batching: Disabled Limit Group Batching: Enabled

CCVL 216928

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 217069	LC PFC ICAL Raw Batch: 217070	LC PFC_QSM5-1 ICAL Raw Batch: 217071
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 320-37380-A-1-B		# 2 320-37380-A-1-B	
# 3 320-37380-A-2-B		# 3 320-37380-A-2-B	
# 4 320-37380-A-3-B		# 4 320-37380-A-3-B	
# 5 320-37380-A-4-B		# 5 320-37380-A-4-B	
# 6 320-37380-A-5-B		# 6 320-37380-A-5-B	
# 7 320-37380-A-6-B		# 7 320-37380-A-6-B	
# 8 320-37156-A-6-D		# 8 320-37156-A-6-D	
# 9 320-37156-A-6-E MS		# 9 320-37156-A-6-E MS	
#10 320-37156-A-6-F MSD		#10 320-37156-A-6-F MSD	
#11 CCV L5	#11 CCV L5	#11 CCV L5	#11 CCV L5
#12 320-37380-A-1-B		#12 320-37380-A-1-B	
#13 320-37380-A-2-B		#13 320-37380-A-2-B	
#14 320-37380-A-3-B		#14 320-37380-A-3-B	
#15 320-37380-A-4-B		#15 320-37380-A-4-B	
#16 320-37380-A-5-B		#16 320-37380-A-5-B	
#17 320-37380-A-6-B		#17 320-37380-A-6-B	
#18 320-37156-A-6-D		#18 320-37156-A-6-D	
#19 320-37156-A-6-E MS		#19 320-37156-A-6-E MS	
#20 320-37156-A-6-F MSD		#20 320-37156-A-6-F MSD	
#21 CCV L4	#21 CCV L4	#21 CCV L4	#21 CCV L4

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07APR2018NCA_PFC Worklist Num: 56376
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180407-56376.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0056376-001	CCB	07-Apr-2018 09:01:11	2018.04.07LLA_004.d	20	1.0		sv
CCVL	320-0056376-002	CCVL	07-Apr-2018 09:08:59	2018.04.07LLA_005.d	21	1.0		sv
CCV L4	320-0056376-003	CCVIS	07-Apr-2018 09:16:48	2018.04.07LLA_006.d	13	1.0		sv
MB 320-213404/1-A	320-0056376-004	MB	07-Apr-2018 09:24:36	2018.04.07LLA_007.d	1	1.0		sv
LCS 320-213404/2-A	320-0056376-005	LCS	07-Apr-2018 09:32:24	2018.04.07LLA_008.d	2	1.0		sv
320-36960-A-4-A	320-0056376-006	Client	07-Apr-2018 09:40:14	2018.04.07LLA_009.d	3	1.0	BNA01-SB1-01	sv
320-36960-A-4-B MS	320-0056376-007	MS	07-Apr-2018 09:48:06	2018.04.07LLA_010.d	4	1.0	BNA01-SB1-01	sv
320-36960-A-4-C MSD	320-0056376-008	MSD	07-Apr-2018 09:55:57	2018.04.07LLA_011.d	5	1.0	BNA01-SB1-01	sv
320-36960-A-5-A	320-0056376-009	Client	07-Apr-2018 10:03:50	2018.04.07LLA_012.d	6	1.0	BNA01-SB1-02	sv
320-36960-A-6-A	320-0056376-010	Client	07-Apr-2018 10:11:38	2018.04.07LLA_013.d	7	1.0	BNA03-SB1-01	sv
320-36960-A-7-A	320-0056376-011	Client	07-Apr-2018 10:19:27	2018.04.07LLA_014.d	8	1.0	BNA03-SB1-01D	sv
320-36960-A-8-A	320-0056376-012	Client	07-Apr-2018 10:27:15	2018.04.07LLA_015.d	9	1.0	BNA03-SB1-02	sv
320-36960-A-9-A	320-0056376-013	Client	07-Apr-2018 10:35:03	2018.04.07LLA_016.d	10	1.0	BNA03-SB2-01	sv
CCV L5	320-0056376-014	CCV	07-Apr-2018 10:42:53	2018.04.07LLA_017.d	14	1.0		sv
320-36960-A-10-A	320-0056376-015	Client	07-Apr-2018 10:50:40	2018.04.07LLA_018.d	11	1.0	BNA03-SB2-01D	sv
320-36960-A-11-A	320-0056376-016	Client	07-Apr-2018 10:58:29	2018.04.07LLA_019.d	12	1.0	BNA03-SB2-02	sv
320-36960-A-12-A	320-0056376-017	Client	07-Apr-2018 11:06:21	2018.04.07LLA_020.d	13	1.0	BNA04-SB1-01	sv
320-36960-A-13-A	320-0056376-018	Client	07-Apr-2018 11:14:11	2018.04.07LLA_021.d	14	1.0	BNA04-SB1-02	sv
320-36960-A-14-A	320-0056376-019	Client	07-Apr-2018 11:22:01	2018.04.07LLA_022.d	15	1.0	BNA05-SB1-01	sv
320-36960-A-15-A	320-0056376-020	Client	07-Apr-2018 11:29:55	2018.04.07LLA_023.d	16	1.0	BNA05-SB1-02	sv
320-36960-A-18-A	320-0056376-021	Client	07-Apr-2018 11:37:45	2018.04.07LLA_024.d	17	1.0	BNA05-SD1-01	sv
CCV L4	320-0056376-022	CCV	07-Apr-2018 11:45:36	2018.04.07LLA_025.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07APR2018NCG_PFC Worklist Num: 56390
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56390.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0056390-001	CCV	07-Apr-2018 17:37:34	2018.04.07LLB_006.d	13	1.0		sv
MB 320-215514/1-A	320-0056390-002	MB	07-Apr-2018 17:45:23	2018.04.07LLB_007.d	1	1.0		sv
LCS 320-215514/2-A	320-0056390-003	LCS	07-Apr-2018 17:53:11	2018.04.07LLB_008.d	2	1.0		sv
320-37380-A-1-A	320-0056390-004	Client	07-Apr-2018 18:01:00	2018.04.07LLB_009.d	3	1.0	SB043 (0-2")	sv
320-37380-A-2-A	320-0056390-005	Client	07-Apr-2018 18:08:49	2018.04.07LLB_010.d	4	1.0	SB043 (2"-2')	sv
320-37380-A-3-A	320-0056390-006	Client	07-Apr-2018 18:16:38	2018.04.07LLB_011.d	5	1.0	SB044 (0-2")	sv
320-37380-A-4-A	320-0056390-007	Client	07-Apr-2018 18:24:30	2018.04.07LLB_012.d	6	1.0	SB044 (2"-2')	sv
320-37380-A-5-A	320-0056390-008	Client	07-Apr-2018 18:32:22	2018.04.07LLB_013.d	7	1.0	SB045 (0-2")	sv
320-37380-A-6-A	320-0056390-009	Client	07-Apr-2018 18:40:13	2018.04.07LLB_014.d	8	1.0	SB045 (2"-2')	sv
320-37156-A-6-A	320-0056390-010	Client	07-Apr-2018 18:48:05	2018.04.07LLB_015.d	9	1.0	SS-1	sv
320-37156-A-6-B MS	320-0056390-011	MS	07-Apr-2018 18:55:55	2018.04.07LLB_016.d	10	1.0		sv
CCV L5	320-0056390-012	CCV	07-Apr-2018 19:03:45	2018.04.07LLB_017.d	14	1.0		sv
320-37156-A-6-C MSD	320-0056390-013	MSD	07-Apr-2018 19:11:35	2018.04.07LLB_018.d	11	1.0		sv
320-37156-A-7-A	320-0056390-014	Client	07-Apr-2018 19:19:26	2018.04.07LLB_019.d	12	1.0	SS-2	sv
CCV L4	320-0056390-015	CCV	07-Apr-2018 19:27:15	2018.04.07LLB_020.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 07APR2018NC_2A_PFC Worklist Num: 56391
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180408-56391.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0056391-001	CCB	07-Apr-2018 19:50:38	2018.04.07LLB_004.d	20	1.0		sv
CCVL	320-0056391-002	CCVL	07-Apr-2018 19:58:28	2018.04.07LLB_005.d	21	1.0		sv
CCV L4	320-0056391-003	CCVIS	07-Apr-2018 20:06:19	2018.04.07LLB_021.d	13	1.0		sv
MB 320-215980/1-A	320-0056391-004	MB	07-Apr-2018 20:14:09	2018.04.07LLB_022.d	13	1.0		sv
LCS 320-215980/2-A	320-0056391-005	LCS	07-Apr-2018 20:22:02	2018.04.07LLB_023.d	14	1.0		sv
320-37380-A-1-B	320-0056391-006	Client	07-Apr-2018 20:29:54	2018.04.07LLB_024.d	15	1.0	SB043 (0-2")	sv
320-37380-A-2-B	320-0056391-007	Client	07-Apr-2018 20:37:47	2018.04.07LLB_025.d	16	1.0	SB043 (2"-2')	sv
320-37380-A-3-B	320-0056391-008	Client	07-Apr-2018 20:45:39	2018.04.07LLB_026.d	17	1.0	SB044 (0-2")	sv
320-37380-A-4-B	320-0056391-009	Client	07-Apr-2018 20:53:28	2018.04.07LLB_027.d	18	1.0	SB044 (2"-2')	sv
320-37380-A-5-B	320-0056391-010	Client	07-Apr-2018 21:01:17	2018.04.07LLB_028.d	19	1.0	SB045 (0-2")	sv
320-37380-A-6-B	320-0056391-011	Client	07-Apr-2018 21:09:07	2018.04.07LLB_029.d	20	1.0	SB045 (2"-2')	sv
320-37156-A-6-D	320-0056391-012	Client	07-Apr-2018 21:16:56	2018.04.07LLB_030.d	21	1.0	SS-1	sv
320-37156-A-6-E MS	320-0056391-013	MS	07-Apr-2018 21:24:44	2018.04.07LLB_031.d	22	1.0		sv
CCV L5	320-0056391-014	CCV	07-Apr-2018 21:32:34	2018.04.07LLB_032.d	14	1.0		sv
320-37156-A-6-F MSD	320-0056391-015	MSD	07-Apr-2018 21:40:25	2018.04.07LLB_033.d	23	1.0		sv
320-37156-A-7-B	320-0056391-016	Client	07-Apr-2018 21:48:16	2018.04.07LLB_034.d	24	1.0	SS-2	sv
CCV L4	320-0056391-017	CCV	07-Apr-2018 21:56:08	2018.04.07LLB_035.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 09APR2018NCA_PFC Worklist Num: 56411
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56411.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Fract
CCB	320-0056411-001	CCB	09-Apr-2018 08:41:13	2018.04.09LLA_004.d	20	1.0	sv
CCVL	320-0056411-002	CCVL	09-Apr-2018 08:49:02	2018.04.09LLA_005.d	21	1.0	sv
CCV L4	320-0056411-003	CCVIS	09-Apr-2018 08:56:49	2018.04.09LLA_006.d	13	1.0	sv
MB 320-215980/1-A	320-0056411-004	MB	09-Apr-2018 09:04:38	2018.04.09LLA_007.d	1	1.0	sv
CCV L5	320-0056411-005	CCV	09-Apr-2018 09:12:28	2018.04.09LLA_008.d	14	1.0	sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 09APR2018NCH_PFC Worklist Num: 56452
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180409-56452.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0056452-001	CCV	09-Apr-2018 18:18:59	2018.04.09LLA_043.d	13	1.0		sv
320-37380-A-1-B	320-0056452-002	Client	09-Apr-2018 18:26:47	2018.04.09LLA_044.d	22	10.0	SB043 (0-2")	sv
320-37380-A-2-B	320-0056452-003	Client	09-Apr-2018 18:34:36	2018.04.09LLA_045.d	23	10.0	SB043 (2"-2')	sv
320-37380-A-3-B	320-0056452-004	Client	09-Apr-2018 18:42:25	2018.04.09LLA_046.d	24	10.0	SB044 (0-2")	sv
320-37380-A-4-B	320-0056452-005	Client	09-Apr-2018 18:50:15	2018.04.09LLA_047.d	25	10.0	SB044 (2"-2')	sv
320-37380-A-5-B	320-0056452-006	Client	09-Apr-2018 18:58:06	2018.04.09LLA_048.d	26	10.0	SB045 (0-2")	sv
320-37380-A-6-B	320-0056452-007	Client	09-Apr-2018 19:05:56	2018.04.09LLA_049.d	27	10.0	SB045 (2"-2')	sv
320-37156-A-6-D	320-0056452-008	Client	09-Apr-2018 19:13:46	2018.04.09LLA_050.d	28	10.0	SS-1	sv
320-37156-A-6-E MS	320-0056452-009	MS	09-Apr-2018 19:21:35	2018.04.09LLA_051.d	29	10.0		sv
320-37156-A-6-F MSD	320-0056452-010	MSD	09-Apr-2018 19:29:25	2018.04.09LLA_052.d	30	10.0		sv
CCV L5	320-0056452-011	CCV	09-Apr-2018 19:37:14	2018.04.09LLA_053.d	14	1.0		sv
320-37380-A-1-B	320-0056452-012	Client	09-Apr-2018 19:45:02	2018.04.09LLA_054.d	31	100.	SB043 (0-2")	sv
320-37380-A-2-B	320-0056452-013	Client	09-Apr-2018 19:52:51	2018.04.09LLA_055.d	32	100.	SB043 (2"-2')	sv
320-37380-A-3-B	320-0056452-014	Client	09-Apr-2018 20:00:41	2018.04.09LLA_056.d	33	100.	SB044 (0-2")	sv
320-37380-A-4-B	320-0056452-015	Client	09-Apr-2018 20:08:32	2018.04.09LLA_057.d	34	100.	SB044 (2"-2')	sv
320-37380-A-5-B	320-0056452-016	Client	09-Apr-2018 20:16:23	2018.04.09LLA_058.d	35	100.	SB045 (0-2")	sv
320-37380-A-6-B	320-0056452-017	Client	09-Apr-2018 20:24:14	2018.04.09LLA_059.d	36	100.	SB045 (2"-2')	sv
320-37156-A-6-D	320-0056452-018	Client	09-Apr-2018 20:32:04	2018.04.09LLA_060.d	37	100.	SS-1	sv
320-37156-A-6-E MS	320-0056452-019	MS	09-Apr-2018 20:39:58	2018.04.09LLA_061.d	38	100.		sv
320-37156-A-6-F MSD	320-0056452-020	MSD	09-Apr-2018 20:47:46	2018.04.09LLA_062.d	39	100.		sv
CCV L4	320-0056452-021	CCV	09-Apr-2018 20:55:37	2018.04.09LLA_063.d	13	1.0		sv

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AS 4/7/18
AS 4/9/18

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514 ✓

Method Code: 320-Shake_Bath_14D-320

Analyst: Melnik, Veronika P

Batch Open: 3/29/2018 3:39:00PM

Batch End: 4/3/2018 1:00:00AM

Shake Extraction with Ultrasonic Bath Extraction

Due: 4/5

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-215514/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-215514/1-A
2	LCS-320-215514/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-215514/2-A
3	320-37380-A-1 (PFC_IDA) 4/12	N/A (320-37380-1)	4.96 g	10.00 mL	3/28/18	12_Days	4	10X, 100X	320-37380-A-1-A
4	320-37380-A-2 (PFC_IDA)	N/A (320-37380-1)	5.06 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-2-A
5	320-37380-A-3 (PFC_IDA)	N/A (320-37380-1)	5.02 g	10.00 mL	3/28/18	12_Days	4	10X, 100X	320-37380-A-3-A
6	320-37380-A-4 (PFC_IDA)	N/A (320-37380-1)	5.04 g	10.00 mL	3/28/18	12_Days	4	10X, 100X	320-37380-A-4-A
7	320-37380-A-5 (PFC_IDA)	N/A (320-37380-1)	4.97 g	10.00 mL	3/28/18	12_Days	4	10X, 100X	320-37380-A-5-A
8	320-37380-A-6 (PFC_IDA)	N/A (320-37380-1)	5.04 g	10.00 mL	3/28/18	12_Days	4	10X, 100X	320-37380-A-6-A
9	320-37156-A-6 (PFC_IDA) 4/5	N/A (320-37156-1)	4.99 g	10.00 mL	3/21/18	12_Days	2	10X, 100X	320-37156-A-6-A
10	320-37156-A-6-MS (PFC_IDA)	N/A (320-37156-1)	4.98 g	10.00 mL	3/21/18	12_Days	2	10X, 100X	320-37156-A-6-B MS
11	320-37156-A-6-MSD (PFC_IDA)	N/A (320-37156-1)	5.05 g	10.00 mL	3/21/18	12_Days	2	10X, 100X	320-37156-A-6-C MSD
12	320-37156-A-7 (PFC_IDA)	N/A (320-37156-1)	5.02 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-7-A

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514

Analyst: Melnik, Veronika P

Batch Open: 3/29/2018 3:39:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Shake Extraction with Ultrasonic Bath Extraction

Due: 4/5

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-215514/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-215514/1-A
2	LCS~320-215514/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-215514/2-A
3	320-37380-A-1 (PFC_IDA) 4/12	N/A (320-37380-1)	4.96 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-1-A
4	320-37380-A-2 (PFC_IDA)	N/A (320-37380-1)	5.06 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-2-A
5	320-37380-A-3 (PFC_IDA)	N/A (320-37380-1)	5.02 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-3-A
6	320-37380-A-4 (PFC_IDA)	N/A (320-37380-1)	5.04 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-4-A
7	320-37380-A-5 (PFC_IDA)	N/A (320-37380-1)	4.97 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-5-A
8	320-37380-A-6 (PFC_IDA)	N/A (320-37380-1)	5.04 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-6-A
9	320-37156-A-6 (PFC_IDA) 4/5	N/A (320-37156-1)	4.99 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-6-A
10	320-37156-A-6~MS (PFC_IDA)	N/A (320-37156-1)	4.98 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-6-B MS
11	320-37156-A-6~MSD (PFC_IDA)	N/A (320-37156-1)	5.05 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-6-C MSD
12	320-37156-A-7 (PFC_IDA)	N/A (320-37156-1)	5.02 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-7-A

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514

Analyst: Melnik, Veronika P

Batch Open: 3/29/2018 3:39:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	031618
Analyst ID - Reagent Drop Witness	
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	120971
Ammonium Hydroxide/MeOH ID	1186517
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188475
Manifold ID	S
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER 4/02/18
Analyst ID - IS Reagent Drop Witness	*ALM 4-02-18
Internal Standard ID#	1178676 / 500µL
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JLN

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514 Analyst: Melnik, Veronika P Batch Open: 3/29/2018 3:39:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Analyst ID - Final Volume Step JER

Batch Comment Client labels match:

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514
Method Code: 320-Shake_Bath_14D-320

Analyst: Melnik, Veronika P

Batch Open: 3/29/2018 3:39:00PM
Batch End: 4/3/2018 1:00:00AM

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	031618
Analyst ID - Reagent Drop Witness	VPM
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	120971
Ammonium Hydroxide/MeOH ID	1186517
Sodium Hydroxide ID	1178465
Methanolic Potassium Hydroxide ID	1188475
Manifold ID	5
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	ALM
Internal Standard ID#	1178676
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JER

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514 Analyst: Melnik, Veronika P Batch Open: 3/29/2018 3:39:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End: 4/3/2018 1:00:00AM

Analyst ID - Final Volume Step	JER
Batch Comment	Client labels match:

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215514

Analyst: Melnik, Veronika P

Batch Open: 3/29/2018 3:39:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-215514/1	LCMPFC_ALL_SU_00045	500 uL	10.00 mL	3/29/18	VPM 3/29/18
LCS 320-215514/2	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
LCS 320-215514/2	LCPFCSP_00139	500 uL	10.00 mL		
320-37380-A-1	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37380-A-2	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37380-A-3	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37380-A-4	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37380-A-5	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37380-A-6	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37156-A-6	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37156-A-6 MS	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37156-A-6 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-37156-A-6 MSD	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		
320-37156-A-6 MSD	LCPFCSP_00139	500 uL	10.00 mL		
320-37156-A-7	LCMPFC_ALL_SU_00045	500 uL	10.00 mL		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 215514 Test PFC (S)

Earliest Holding Time 3/29/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	✓	✓
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	~~NA~~ ✓	✓
Batch contains no more than 20 live samples	~~NA~~ ✓	✓
Worksheet Tab	1st Level Reviewer	2nd Level Reviewer
All samples properly preserved	4/4/18 ✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	1st Level Reviewer	2nd Level Reviewer
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: [signature] Date: 4/4/18

2nd Level Reviewer: VPM Date: 4/4/18

Comments: _____

43 (RX)

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

AS 4/7/18
AS 4/9/18

Batch Number: 320-215980 ✓

Method Code: 320-Shake_Bath_14D-320

Analyst: Reed, Jonathan E

Batch Open: 4/2/2018 11:17:00PM

Batch End: 4/4/2018 2:00:00AM

Shake Extraction with Ultrasonic Bath Extraction

Due: 4/5

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-215980/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A	K1	MB 320-215980/1-A
2	LCS-320-215980/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-215980/2-A
3	320-37380-A-1 (PFC_IDA) 4/12	N/A (320-37380-1)	4.98 g	10.00 mL	3/28/18	12_Days	4	10X, 100X	320-37380-A-1-B
4	320-37380-A-2 (PFC_IDA)	N/A (320-37380-1)	4.97 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-2-B
5	320-37380-A-3 (PFC_IDA)	N/A (320-37380-1)	4.97 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-3-B
6	320-37380-A-4 (PFC_IDA)	N/A (320-37380-1)	4.98 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-4-B
7	320-37380-A-5 (PFC_IDA)	N/A (320-37380-1)	5.02 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-5-B
8	320-37380-A-6 (PFC_IDA)	N/A (320-37380-1)	4.98 g	10.00 mL	3/28/18	12_Days	4		320-37380-A-6-B
9	320-37156-A-6 (PFC_IDA) 4/5	N/A (320-37156-1)	5.10 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-6-D
10	320-37156-A-6-MS (PFC_IDA)	N/A (320-37156-1)	5.04 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-6-E MS
11	320-37156-A-6-MSD (PFC_IDA)	N/A (320-37156-1)	5.09 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-6-F MSD
12	320-37156-A-7 (PFC_IDA)	N/A (320-37156-1)	5.06 g	10.00 mL	3/21/18	12_Days	2		320-37156-A-7-B

past HT

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215980

Analyst: Reed, Jonathan E

Batch Open: 4/2/2018 11:17:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 4/4/2018 2:00:00AM

Batch Notes

Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	3/31/18
Analyst ID - Reagent Drop Witness	ALM
SPE Cartridge Lot ID	017637348A
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	1197668
Ammonium Hydroxide/MeOH ID	1195172
Sodium Hydroxide ID	1196582
Methanolic Potassium Hydroxide ID	1199078
Manifold ID	12
Interference check solution ID	NA
Acetic Acid ID	985732
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	MEL
Internal Standard ID#	1178675
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JER

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215980

Analyst: Reed, Jonathan E

Batch Open: 4/2/2018 11:17:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End: 4/4/2018 2:00:00AM

Analyst ID - Final Volume Step	JER
Batch Comment	Sample labels match client IDs JER 3/31/18

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215980 Analyst: Reed, Jonathan E Batch Open: 4/2/2018 11:17:00PM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Batch Notes

Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	3/31/18
Analyst ID - Reagent Drop Witness	ALM
SPE Cartridge Lot ID	0176373484
SPE Cartridge Type	WAX 150mg
Hexane ID	1175189
Methanol ID	1197668
Ammonium Hydroxide/MeOH ID	1195172
Sodium Hydroxide ID	1196582
Methanolic Potassium Hydroxide ID	1199078
Manifold ID	12
Interference check solution ID	NA
Acetic Acid ID	985732
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	~~K78675~~ 4/04/18 MEL
Internal Standard ID#	L178675
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	JER

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215980

Analyst: Reed, Jonathan E

Batch Open: 4/2/2018 11:17:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Analyst ID - Final Volume Step JER

Batch Comment Sample labels match client IDs JER 3/31/18

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-215980

Analyst: Reed, Jonathan E

Batch Open: 4/2/2018 11:17:00PM

Method Code: 320-Shake_Bath_14D-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-215980/1	LCMPFC_ALL_SU_00046	500 uL	10.00 mL	4/02/18	ALM 4-02-18
LCS 320-215980/2	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
LCS 320-215980/2	LCPFCSP_00138	500 uL	10.00 mL		
320-37380-A-1	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37380-A-2	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37380-A-3	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37380-A-4	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37380-A-5	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37380-A-6	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37156-A-6	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37156-A-6 MS	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37156-A-6 MS	LCPFCSP_00138	500 uL	10.00 mL		
320-37156-A-6 MSD	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		
320-37156-A-6 MSD	LCPFCSP_00138	500 uL	10.00 mL		
320-37156-A-7	LCMPFC_ALL_SU_00046	500 uL	10.00 mL		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 215980 Test PFC(S)

Earliest Holding Time 3/29/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	✓	✓
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: [signature] Date: 4/04/18

2nd Level Reviewer: VPM Date: 4/4/18

Comments: _____

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Test America – Sacramento

Sample Dilution Record

Method ID 6PFC_LDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** LC_80:20_00001

Date 4/9/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-37380	1	10,000	30	300	10
	2				
	3				
	4				
	5				
	6				
320-37156	6				
	6MS				
	6MSD				
320-37380	1		15	150	100
	2				
	3				
	4				
	5				
	6				
320-37156	6				
	6MS				
	6MSD				
			ABH 4/9/18		

Comments:

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-37380-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB043 (0-2")	320-37380-1
SB043 (2"-2')	320-37380-2
SB044 (0-2")	320-37380-3
SB044 (2"-2')	320-37380-4
SB045 (0-2")	320-37380-5
SB045 (2"-2')	320-37380-6

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-37380-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-37380-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 03/26/2018 21:00 End Date: 03/26/2018 21:00

Lab Sample ID	D / F	Type	Time	Analytes																				
				% Sol	Moist																			
ZZZZZZ			21:00																					
320-37442-A-9 DU	1	T	21:00	X	X																			
ZZZZZZ			21:00																					
ZZZZZZ			21:00																					
ZZZZZZ			21:00																					
ZZZZZZ			21:00																					
ZZZZZZ			21:00																					
ZZZZZZ			21:00																					
ZZZZZZ			21:00																					
320-37380-1	1	T	21:00	X	X																			
320-37380-2	1	T	21:00	X	X																			
320-37380-3	1	T	21:00	X	X																			
320-37380-4	1	T	21:00	X	X																			
320-37380-5	1	T	21:00	X	X																			
320-37380-6	1	T	21:00	X	X																			

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-37380-1

SDG No.:

Batch Number: 214910 Batch Start Date: 03/26/18 21:00 Batch Analyst: Sabala, Stephanee S

Batch Method: D 2216 Batch End Date: 03/28/18 11:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-37442-A-9 DU		D 2216	T	2	1.05 g	8.57 g	7.68 g		
320-37380-A-1	SB043 (0-2")	D 2216	T	11	1.02 g	6.55 g	5.86 g		
320-37380-A-2	SB043 (2"-2')	D 2216	T	12	1.00 g	13.03 g	12.28 g		
320-37380-A-3	SB044 (0-2")	D 2216	T	13	1.03 g	8.16 g	7.27 g		
320-37380-A-4	SB044 (2"-2')	D 2216	T	14	1.00 g	8.16 g	7.55 g		
320-37380-A-5	SB045 (0-2")	D 2216	T	15	0.99 g	7.88 g	7.27 g		
320-37380-A-6	SB045 (2"-2')	D 2216	T	16	0.98 g	8.38 g	7.62 g		

Batch Notes	
Balance ID	qa-068
Date and Time Samples in Desiccator	03/28/2018 09:28
Date and Time Samples out of Desiccator	03/28/2018 11:45
Date samples were placed in the oven	03/26/2018
Oven Temp In	115 Degrees C
Time samples were place in the oven	21:00
Date samples were removed from oven	03/28/2018
Oven Temp Out	112 Degrees C
Time Samples were removed from oven	09:28
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Janelle Cooley	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-432-6717	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:
Address: 630 Johnson Ave Suite 7	Due Date Requested:			
City: Bohemia	TAT Requested (days): 15 days			
State, Zip: NY, 11716				
Phone: 631-589-6353(Tel)	PO #: SHD1801			
Email: andyl@pwgrosser.com	WO #: SHD1801			
Project Name: Suffolk County Firematics Site	Project #: 46024260			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
SB043 (0-2')	3/19/18	1230	G	S			X	1	
SB043 (2'-2')	3/19/18	1215	G	S			X	1	
SB044 (0-2')	3/19/18	1300	G	S			X	1	
SB044 (2'-2')	3/19/18	1310	G	S			X	1	
SB043 (0-2')	3/19/18	1330	G	S			X	1	
SB045 (2'-2')	3/19/18	1340	G	S			X	1	

320-37380 Chain of Custody

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 3/19/18 1630	Company	Received by:	Date/Time: 3/19/18 1640	Company TA
Relinquished by:	Date/Time: 3/19/18 1940	Company	Received by:	Date/Time: 3/19/18 1945	Company TAEdi
Relinquished by:	Date/Time: 3/20/18 1800	Company TAEdi	Received by:	Date/Time: 3/20/18 905	Company TA-Sac

Custody Seals Intact: | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.7c AK3

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-37380-1

Login Number: 37380
List Number: 1
Creator: Her, David A

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-38054-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
630 Johnson Ave
Suite 7
Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
4/30/2018 2:08 PM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
04/30/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 320-38054-1

Job Description: Suffolk County Firematics Site

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
4/30/2018 2:08 PM

Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-38054-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 04/11/2018; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.7 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The following information was missing from the COC: sample type, matrix.

LCMS
Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C4 PFBA: SB007(2-4)-TOP (320-38054-1). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recoveries associated with the following samples are below the method recommended limit for 13C4-PFBA and 13C2-PFTeDA: SB003(0-2)-TOP (320-38054-2), (320-38054-A-2-B MS) and (320-38054-A-2-C MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): The labeled analyte M2-4:2FTS is employed in this analysis as a “Reverse Surrogate”. It is used to monitor the oxidation efficiency of the TOP assay. This analyte is fortified into all sample fractions prior to any processing. The recovery of this analyte should be <10% in Post-Treatment fractions, indicating oxidation of the sample. SB007(2-4)-TOP (320-38054-1), SB003(0-2)-TOP (320-38054-2), (LCS 320-218876/2-A), (LCS 320-218884/2-A), (MB 320-218876/1-A), (MB 320-218884/1-A), (320-38054-A-2-B MS), (320-38054-A-2-E MS), (320-38054-A-2-C MSD) and (320-38054-A-2-F MSD)

Method(s) 537 (modified): M2-4:2FTS is above the method recommended limit for the following samples: SB003(0-2)-TOP (320-38054-2), (320-38054-A-2-B MS) and (320-38054-A-2-C MSD). This analyte is employed in this analysis as a “Reverse Surrogate” to monitor the oxidation efficiency of the TOP assay. There is no impact to the data as a result of elevated recovery for this analyte.

Method(s) 537 (modified): The labeled analyte M2-4:2FTS is converted to PFBA during the oxidation step of the TOP assay. The PFBA result in the Post-Treatment Method Blank (MB) indicates how much of a field sample’s Post-Treatment PFBA result is contributed by the Reverse Surrogate, when adjusted for dilution factors. SB007(2-4)-TOP (320-38054-1), SB003(0-2)-TOP (320-38054-2), (MB 320-218884/1-A), (320-38054-A-2-E MS) and (320-38054-A-2-F MSD)

Method(s) 537 (modified): Zero percent recovery of precursor analytes (6:2FTS, 8:2FTS, FOSA, NMeFOSAA, and NEtFOSAA) and enhanced recoveries of PFCAs is observed in the Post-Treatment Laboratory Control Sample (LCS), Matrix Spike (MS) and Matrix Spike Duplicate (MSD) associated with these samples, consistent with the expected oxidation of precursor analytes.

Method(s) 537 (modified): The following analyte was not detected above the level of quantitation in the matrix spike / matrix spike

duplicate (MS/MSD) for preparation batch 320-218876 and analytical batch 320-219700: N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA). As a result, recoveries and precision could not be calculated for this analyte. The associated laboratory control sample (LCS) recovery was within acceptance limits. (320-38054-A-2-B MS) and (320-38054-A-2-C MSD)

Method(s) 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 320-218876 and 320-218884 and analytical batch 320-219700 were outside control limits for several analytes. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): The matrix spike has a detection for Perfluorobutanoic acid (PFBA) which exceeded the instrument calibration range as a result of fortification with standard solution. The parent sample result was within the calibration range. (320-38054-A-2-B MS)

Method(s) 537 (modified): Due to the high concentration of several analytes, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-218876 and 320-218884 and analytical batch 320-220090 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit for 13C2-PFTeDA: SB003(0-2)-TOP (320-38054-2), (320-38054-A-2-B MS) and (320-38054-A-2-C MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples.

Method(s) 537 (modified): Results for samples SB003(0-2)-TOP (320-38054-2), (320-38054-A-2-B MS), (320-38054-A-2-E MS), (320-38054-A-2-C MSD) and (320-38054-A-2-F MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method(s) 537 (modified): Due to the high concentration of several analytes, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-218884 and analytical batch 320-220224 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 537 (modified): Precursor analytes 6:2FTS and 8:2FTS were not completely oxidized in the following sample: SB003(0-2)-TOP (320-38054-2). The reverse surrogate, M2-4:2FTS, had 4% recovery, indicating sufficient oxidation of the sample; therefore, the results were reported.

Method(s) 537 (modified): Results for samples SB007(2-4)-TOP (320-38054-1), SB003(0-2)-TOP (320-38054-2), (320-38054-A-2-E MS) and (320-38054-A-2-F MSD) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38054-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-38054-1	SB007(2-4)-TOP	Solid	04/10/18 10:50	04/11/18 08:45
320-38054-2	SB003(0-2)-TOP	Solid	04/10/18 11:11	04/11/18 08:45

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38054-1

Client Sample ID: SB007(2-4)-TOP

Lab Sample ID: 320-38054-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00090		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorohexanoic acid (PFHxA)	0.0010		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluoroheptanoic acid (PFHpA)	0.00062		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorooctanoic acid (PFOA)	0.00090		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorononanoic acid (PFNA)	0.00065		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluoroundecanoic acid (PFUnA)	0.00080		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorododecanoic acid (PFDoA)	0.0037		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorotridecanoic Acid (PFTriA)	0.033		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorotetradecanoic acid (PFTeA)	0.0015		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorooctane Sulfonamide (FOSA)	0.0033		0.00061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
8:2FTS	0.0080		0.0061		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorobutanoic acid (PFBA)	0.021	B *	0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluoropentanoic acid (PFPeA)	0.033		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorohexanoic acid (PFHxA)	0.046		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluoroheptanoic acid (PFHpA)	0.059		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorodecanoic acid (PFDA)	0.058		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluoroundecanoic acid (PFUnA)	0.026		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorododecanoic acid (PFDoA)	0.021		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorotridecanoic Acid (PFTriA)	0.035		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorotetradecanoic acid (PFTeA)	0.0057		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorohexanesulfonic acid (PFHxS)	0.00061		0.00061		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorooctanesulfonic acid (PFOS)	0.0019		0.0015		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorooctanoic acid (PFOA) - DL	0.072	*	0.0030		mg/Kg	5	☼	537 (modified)	Post-Treatment
Perfluorononanoic acid (PFNA) - DL	0.11		0.0030		mg/Kg	5	☼	537 (modified)	Post-Treatment
Perfluorobutanoic acid (PFBA)	0.020				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluoropentanoic acid (PFPeA)	0.033				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluorohexanoic acid (PFHxA)	0.045				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.058				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluorooctanoic acid (PFOA)	0.071				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluorononanoic acid (PFNA)	0.11				mg/Kg	1		Total PFCA-Dif	Total/NA
Total Perfluoroalkyl carboxylic acid	0.34				mg/Kg	1		Total PFCA-Dif	Total/NA
Total Perfluoroalkyl carboxylic acid	0.0041				mg/Kg	1		Total PFCA-Sum	Pre-Treatment

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB007(2-4)-TOP (Continued)

Lab Sample ID: 320-38054-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Total Perfluoroalkyl carboxylic acid	0.34				mg/Kg	1		Total PFCA-Sum	Post-Treatment

Client Sample ID: SB003(0-2)-TOP

Lab Sample ID: 320-38054-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.035	F2	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluoropentanoic acid (PFPeA)	0.011	F1 F2	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorohexanoic acid (PFHxA)	0.015	F1 F2	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluoroheptanoic acid (PFHpA)	0.0066	F1 F2	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorooctanoic acid (PFOA)	0.010	F1	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorododecanoic acid (PFDoA)	0.034		0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorotetradecanoic acid (PFTeA)	0.017	F1	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorohexanesulfonic acid (PFHxS)	0.0054		0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluoroheptanesulfonic Acid (PFHpS)	0.0012		0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorodecanesulfonic acid (PFDS)	0.012	F1	0.00055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0059	F1	0.0055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
6:2FTS	0.048		0.0055		mg/Kg	1	☼	537 (modified)	Pre-Treatment
Perfluorononanoic acid (PFNA) - DL	0.073		0.055		mg/Kg	100	☼	537 (modified)	Pre-Treatment
Perfluorodecanoic acid (PFDA) - DL	0.074		0.055		mg/Kg	100	☼	537 (modified)	Pre-Treatment
Perfluoroundecanoic acid (PFUnA) - DL	0.91		0.055		mg/Kg	100	☼	537 (modified)	Pre-Treatment
Perfluorotridecanoic Acid (PFTriA) - DL	0.13		0.055		mg/Kg	100	☼	537 (modified)	Pre-Treatment
Perfluorooctanesulfonic acid (PFOS) - DL	0.86		0.14		mg/Kg	100	☼	537 (modified)	Pre-Treatment
Perfluorooctane Sulfonamide (FOSA) - DL	0.35		0.055		mg/Kg	100	☼	537 (modified)	Pre-Treatment
8:2FTS - DL	0.69		0.55		mg/Kg	100	☼	537 (modified)	Pre-Treatment
Perfluorobutanesulfonic acid (PFBS)	0.0074	F1	0.00055		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluoroheptanesulfonic Acid (PFHpS)	0.010	F1	0.00055		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorodecanesulfonic acid (PFDS)	0.021	F1	0.00055		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorooctane Sulfonamide (FOSA)	0.0095	F1 *	0.00055		mg/Kg	1	☼	537 (modified)	Post-Treatment
Perfluorododecanoic acid (PFDoA) - DL	0.33		0.0055		mg/Kg	10	☼	537 (modified)	Post-Treatment
Perfluorotridecanoic Acid (PFTriA) - DL	0.37		0.0055		mg/Kg	10	☼	537 (modified)	Post-Treatment

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB003(0-2)-TOP (Continued)

Lab Sample ID: 320-38054-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA) - DL	0.15		0.0055		mg/Kg	10	☼	537 (modified)	Post-Treatment
Perfluorohexanesulfonic acid (PFHxS) - DL	0.21	F2	0.0055		mg/Kg	10	☼	537 (modified)	Post-Treatment
6:2FTS - DL	0.057	*	0.055		mg/Kg	10	☼	537 (modified)	Post-Treatment
8:2FTS - DL	0.27	*	0.055		mg/Kg	10	☼	537 (modified)	Post-Treatment
Perfluorobutanoic acid (PFBA) - DL2	1.8	B *	0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluoropentanoic acid (PFPeA) - DL2	3.4		0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluorohexanoic acid (PFHxA) - DL2	3.5		0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluoroheptanoic acid (PFHpA) - DL2	3.4		0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluorooctanoic acid (PFOA) - DL2	3.0	*	0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluorononanoic acid (PFNA) - DL2	1.3		0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluorodecanoic acid (PFDA) - DL2	0.86		0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluoroundecanoic acid (PFUnA) - DL2	1.2		0.055		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluorooctanesulfonic acid (PFOS) - DL2	0.99		0.14		mg/Kg	100	☼	537 (modified)	Post-Treatment
Perfluorobutanoic acid (PFBA)	1.8				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluoropentanoic acid (PFPeA)	3.4				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluorohexanoic acid (PFHxA)	3.5				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.4				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluorooctanoic acid (PFOA)	3.0				mg/Kg	1		Total PFCA-Dif	Total/NA
Perfluorononanoic acid (PFNA)	1.3				mg/Kg	1		Total PFCA-Dif	Total/NA
Total Perfluoroalkyl carboxylic acid	16				mg/Kg	1		Total PFCA-Dif	Total/NA
Total Perfluoroalkyl carboxylic acid	0.15				mg/Kg	1		Total PFCA-Sum	Pre-Treatment
Total Perfluoroalkyl carboxylic acid	16				mg/Kg	1		Total PFCA-Sum	Post-Treatment

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38054-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
Total PFCA-Dif	Total PFCA (Treatment Difference)	TAL SOP	TAL SAC
Total PFCA-Sum	Total PFCA (Summary)	TAL SOP	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
TOPS Post-Prep	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC
TOPS Pre-Prep	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB007(2-4)-TOP

Date Collected: 04/10/18 10:50
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-1

Matrix: Solid
Percent Solids: 80.6

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00090**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluoropentanoic acid (PFPeA)	ND		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorohexanoic acid (PFHxA)	**0.0010**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluoroheptanoic acid (PFHpA)	**0.00062**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorooctanoic acid (PFOA)	**0.00090**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorononanoic acid (PFNA)	**0.00065**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorodecanoic acid (PFDA)	ND		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluoroundecanoic acid (PFUnA)	**0.00080**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorododecanoic acid (PFDoA)	**0.0037**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorotridecanoic Acid (PFTriA)	**0.033**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorotetradecanoic acid (PFTeA)	**0.0015**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.0015		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
Perfluorooctane Sulfonamide (FOSA)	**0.0033**		0.00061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
6:2FTS	ND		0.0061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1
8:2FTS	**0.0080**		0.0061		mg/Kg	☼	04/19/18 18:33	04/24/18 23:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*13*	*	*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C5 PFPeA	*61*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C2 PFHxA	*61*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C4-PFHpA	*60*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C4 PFOA	*62*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C5 PFNA	*64*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C2 PFDA	*63*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C2 PFUnA	*61*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C2 PFDoA	*60*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C2-PFTeDA	*49*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C3-PFBS	*63*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
18O2 PFHxS	*63*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C4 PFOS	*62*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
13C8 FOSA	*60*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
d3-NMeFOSAA	*62*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
d5-NEtFOSAA	*68*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
M2-6:2FTS	*67*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
M2-8:2FTS	*68*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*
M2-4:2FTS	*83*		*0 - 150*	*04/19/18 18:33*	*04/24/18 23:28*	*1*

Client Sample ID: SB007(2-4)-TOP

Date Collected: 04/10/18 10:50
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-1

Matrix: Solid
Percent Solids: 80.6

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.021**	**B ***	0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluoropentanoic acid (PFPeA)	**0.033**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorohexanoic acid (PFHxA)	**0.046**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluoroheptanoic acid (PFHpA)	**0.059**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorodecanoic acid (PFDA)	**0.058**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluoroundecanoic acid (PFUnA)	**0.026**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorododecanoic acid (PFDoA)	**0.021**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorotridecanoic Acid (PFTriA)	**0.035**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorotetradecanoic acid (PFTeA)	**0.0057**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00061**		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorooctanesulfonic acid (PFOS)	**0.0019**		0.0015		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
Perfluorooctane Sulfonamide (FOSA)	ND	*	0.00061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	*	0.0061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	*	0.0061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
6:2FTS	ND	*	0.0061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1
8:2FTS	ND	*	0.0061		mg/Kg	☼	04/19/18 19:05	04/25/18 00:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C5 PFPeA	*71*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C2 PFHxA	*67*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C4-PFHpA	*68*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C2 PFDA	*63*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C2 PFUnA	*64*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C2 PFDoA	*64*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C2-PFTeDA	*65*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C3-PFBS	*73*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
18O2 PFHxS	*70*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C4 PFOS	*63*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
13C8 FOSA	*56*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
d3-NMeFOSAA	*64*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
d5-NEtFOSAA	*68*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
M2-6:2FTS	*64*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
M2-8:2FTS	*68*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*
M2-4:2FTS	*0*		*0 - 150*	*04/19/18 19:05*	*04/25/18 00:38*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment - DL

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	**0.072**	*****	0.0030		mg/Kg	☼	04/19/18 19:05	04/27/18 11:41	5
Perfluorononanoic acid (PFNA)	**0.11**		0.0030		mg/Kg	☼	04/19/18 19:05	04/27/18 11:41	5

Client Sample ID: SB007(2-4)-TOP

Lab Sample ID: 320-38054-1
Date Collected: 04/10/18 10:50
Matrix: Solid
Date Received: 04/11/18 08:45
Percent Solids: 80.6

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOA	*67*		*25 - 150*	*04/19/18 19:05*	*04/27/18 11:41*	*5*
13C5 PFNA	*63*		*25 - 150*	*04/19/18 19:05*	*04/27/18 11:41*	*5*

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.020**			mg/Kg			04/27/18 15:47	1
Perfluoropentanoic acid (PFPeA)	**0.033**			mg/Kg			04/27/18 15:47	1
Perfluorohexanoic acid (PFHxA)	**0.045**			mg/Kg			04/27/18 15:47	1
Perfluoroheptanoic acid (PFHpA)	**0.058**			mg/Kg			04/27/18 15:47	1
Perfluorooctanoic acid (PFOA)	**0.071**			mg/Kg			04/27/18 15:47	1
Perfluorononanoic acid (PFNA)	**0.11**			mg/Kg			04/27/18 15:47	1
Total Perfluoroalkyl carboxylic acid	**0.34**			mg/Kg			04/27/18 15:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Perfluoroalkyl carboxylic acid	**0.0041**			mg/Kg			04/27/18 15:44	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Perfluoroalkyl carboxylic acid	**0.34**			mg/Kg			04/27/18 15:44	1

Client Sample ID: SB003(0-2)-TOP

Lab Sample ID: 320-38054-2
Date Collected: 04/10/18 11:11
Matrix: Solid
Date Received: 04/11/18 08:45
Percent Solids: 90.2

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.035**	**F2**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluoropentanoic acid (PFPeA)	**0.011**	**F1 F2**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorohexanoic acid (PFHxA)	**0.015**	**F1 F2**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluoroheptanoic acid (PFHpA)	**0.0066**	**F1 F2**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorooctanoic acid (PFOA)	**0.010**	**F1**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorododecanoic acid (PFDoA)	**0.034**		0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorotetradecanoic acid (PFTeA)	**0.017**	**F1**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0054**		0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.0012**		0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
Perfluorodecanesulfonic acid (PFDS)	**0.012**	**F1**	0.00055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	**0.0059**	**F1**	0.0055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1
6:2FTS	**0.048**		0.0055	mg/Kg	☼	04/19/18 18:33	04/24/18 23:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*7*	*	*25 - 150*	*04/19/18 18:33*	*04/24/18 23:36*	*1*

Client Sample ID: SB003(0-2)-TOP

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-2

Matrix: Solid
Percent Solids: 90.2

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	57		25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C2 PFHxA	57		25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C4-PFHpA	62		25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C4 PFOA	58		25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C2 PFDoA	51		25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C2-PFTeDA	17	*	25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C3-PFBS	68		25 - 150	04/19/18 18:33	04/24/18 23:36	1
18O2 PFHxS	67		25 - 150	04/19/18 18:33	04/24/18 23:36	1
13C4 PFOS	49		25 - 150	04/19/18 18:33	04/24/18 23:36	1
d3-NMeFOSAA	52		25 - 150	04/19/18 18:33	04/24/18 23:36	1
d5-NEtFOSAA	42		25 - 150	04/19/18 18:33	04/24/18 23:36	1
M2-6:2FTS	102		25 - 150	04/19/18 18:33	04/24/18 23:36	1
M2-4:2FTS	210	*	0 - 150	04/19/18 18:33	04/24/18 23:36	1

Method: 537 (modified) - Fluorinated Alkyl Substances - Pre-Treatment - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**0.073**		0.055	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100
Perfluorodecanoic acid (PFDA)	**0.074**		0.055	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100
Perfluoroundecanoic acid (PFUnA)	**0.91**		0.055	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100
Perfluorotridecanoic Acid (PFTriA)	**0.13**		0.055	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100
Perfluorooctanesulfonic acid (PFOS)	**0.86**		0.14	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100
Perfluorooctane Sulfonamide (FOSA)	**0.35**		0.055	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100
8:2FTS	**0.69**		0.55	mg/Kg	☼	04/19/18 18:33	04/26/18 18:12	100

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	59		25 - 150	04/19/18 18:33	04/26/18 18:12	100
13C2 PFDA	53		25 - 150	04/19/18 18:33	04/26/18 18:12	100
13C2 PFUnA	61		25 - 150	04/19/18 18:33	04/26/18 18:12	100
13C2 PFDoA	46		25 - 150	04/19/18 18:33	04/26/18 18:12	100
13C2-PFTeDA	18	*	25 - 150	04/19/18 18:33	04/26/18 18:12	100
13C4 PFOS	49		25 - 150	04/19/18 18:33	04/26/18 18:12	100
13C8 FOSA	54		25 - 150	04/19/18 18:33	04/26/18 18:12	100
M2-8:2FTS	109		25 - 150	04/19/18 18:33	04/26/18 18:12	100

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	**0.0074**	**F1**	0.00055	mg/Kg	☼	04/19/18 19:05	04/25/18 00:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.010**	**F1**	0.00055	mg/Kg	☼	04/19/18 19:05	04/25/18 00:46	1
Perfluorodecanesulfonic acid (PFDS)	**0.021**	**F1**	0.00055	mg/Kg	☼	04/19/18 19:05	04/25/18 00:46	1
Perfluorooctane Sulfonamide (FOSA)	**0.0095**	**F1 ***	0.00055	mg/Kg	☼	04/19/18 19:05	04/25/18 00:46	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	F1 *	0.0055	mg/Kg	☼	04/19/18 19:05	04/25/18 00:46	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	F1 *	0.0055	mg/Kg	☼	04/19/18 19:05	04/25/18 00:46	1

Client Sample ID: SB003(0-2)-TOP

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-2

Matrix: Solid
Percent Solids: 90.2

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3-PFBS	99		25 - 150	04/19/18 19:05	04/25/18 00:46	1
13C4 PFOS	68		25 - 150	04/19/18 19:05	04/25/18 00:46	1
13C8 FOSA	87		25 - 150	04/19/18 19:05	04/25/18 00:46	1
d3-NMeFOSAA	114		25 - 150	04/19/18 19:05	04/25/18 00:46	1
d5-NEtFOSAA	69		25 - 150	04/19/18 19:05	04/25/18 00:46	1
M2-4:2FTS	6		0 - 150	04/19/18 19:05	04/25/18 00:46	1

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment - DL

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanoic acid (PFDoA)	0.33		0.0055	mg/Kg	☼	04/19/18 19:05	04/27/18 11:49	10
Perfluorotridecanoic Acid (PFTriA)	0.37		0.0055	mg/Kg	☼	04/19/18 19:05	04/27/18 11:49	10
Perfluorotetradecanoic acid (PFTeA)	0.15		0.0055	mg/Kg	☼	04/19/18 19:05	04/27/18 11:49	10
Perfluorohexanesulfonic acid (PFHxS)	0.21	F2	0.0055	mg/Kg	☼	04/19/18 19:05	04/27/18 11:49	10
6:2FTS	0.057	*	0.055	mg/Kg	☼	04/19/18 19:05	04/27/18 11:49	10
8:2FTS	0.27	*	0.055	mg/Kg	☼	04/19/18 19:05	04/27/18 11:49	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	58		25 - 150	04/19/18 19:05	04/27/18 11:49	10
13C2-PFTeDA	56		25 - 150	04/19/18 19:05	04/27/18 11:49	10
18O2 PFHxS	59		25 - 150	04/19/18 19:05	04/27/18 11:49	10
M2-6:2FTS	61		25 - 150	04/19/18 19:05	04/27/18 11:49	10
M2-8:2FTS	68		25 - 150	04/19/18 19:05	04/27/18 11:49	10

Method: 537 (modified) - Fluorinated Alkyl Substances - Post-Treatment - DL2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.8	B *	0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluoropentanoic acid (PFPeA)	3.4		0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluorohexanoic acid (PFHxA)	3.5		0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluoroheptanoic acid (PFHpA)	3.4		0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluorooctanoic acid (PFOA)	3.0	*	0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluorononanoic acid (PFNA)	1.3		0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluorodecanoic acid (PFDA)	0.86		0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluoroundecanoic acid (PFUnA)	1.2		0.055	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100
Perfluorooctanesulfonic acid (PFOS)	0.99		0.14	mg/Kg	☼	04/19/18 19:05	04/26/18 18:36	100

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	55		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C5 PFPeA	50		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C2 PFHxA	61		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C4-PFHpA	62		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C4 PFOA	58		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C5 PFNA	60		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C2 PFDA	52		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C2 PFUnA	60		25 - 150	04/19/18 19:05	04/26/18 18:36	100
13C4 PFOS	51		25 - 150	04/19/18 19:05	04/26/18 18:36	100

Client Sample ID: SB003(0-2)-TOP

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-2

Matrix: Solid

Method: Total PFCA-Dif - Total PFCA (Treatment Difference)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.8				mg/Kg			04/27/18 15:47	1
Perfluoropentanoic acid (PFPeA)	3.4				mg/Kg			04/27/18 15:47	1
Perfluorohexanoic acid (PFHxA)	3.5				mg/Kg			04/27/18 15:47	1
Perfluoroheptanoic acid (PFHpA)	3.4				mg/Kg			04/27/18 15:47	1
Perfluorooctanoic acid (PFOA)	3.0				mg/Kg			04/27/18 15:47	1
Perfluorononanoic acid (PFNA)	1.3				mg/Kg			04/27/18 15:47	1
Total Perfluoroalkyl carboxylic acid	16				mg/Kg			04/27/18 15:47	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Pre-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Perfluoroalkyl carboxylic acid	0.15				mg/Kg			04/27/18 15:44	1

Method: Total PFCA-Sum - Total PFCA (Summary) - Post-Treatment

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Perfluoroalkyl carboxylic acid	16				mg/Kg			04/27/18 15:44	1

Total Oxidation Precursors

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38054-1

Client Sample ID: SB007(2-4)-TOP

Lab Sample ID: 320-38054-1
Matrix: Solid

Analyte	Pre - Treatment Method: 537 (modified) Result	Qualifier	Unit	Post - Treatment Method: 537 (modified) Result	Qualifier	Unit	Difference [1] Result	Unit
Perfluorobutanoic acid (PFBA)	0.00090		mg/Kg	0.021		mg/Kg	0.020	mg/Kg
Perfluoropentanoic acid (PFPeA)	ND		mg/Kg	0.033		mg/Kg	0.033	mg/Kg
Perfluorohexanoic acid (PFHxA)	0.0010		mg/Kg	0.046		mg/Kg	0.045	mg/Kg
Perfluoroheptanoic acid (PFHpA)	0.00062		mg/Kg	0.059		mg/Kg	0.058	mg/Kg
Perfluorooctanoic acid (PFOA)	0.00090		mg/Kg	0.072		mg/Kg	0.071	mg/Kg
Perfluorononanoic acid (PFNA)	0.00065		mg/Kg	0.11		mg/Kg	0.11	mg/Kg
Total Perfluoroalkyl carboxylic acid	0.0041		mg/Kg	0.34		mg/Kg	0.34	mg/Kg

Client Sample ID: SB003(0-2)-TOP

Lab Sample ID: 320-38054-2
Matrix: Solid

Analyte	Pre - Treatment Method: 537 (modified) Result	Qualifier	Unit	Post - Treatment Method: 537 (modified) Result	Qualifier	Unit	Difference [1] Result	Unit
Perfluorobutanoic acid (PFBA)	0.035		mg/Kg	1.8		mg/Kg	1.8	mg/Kg
Perfluoropentanoic acid (PFPeA)	0.011		mg/Kg	3.4		mg/Kg	3.4	mg/Kg
Perfluorohexanoic acid (PFHxA)	0.015		mg/Kg	3.5		mg/Kg	3.5	mg/Kg
Perfluoroheptanoic acid (PFHpA)	0.0066		mg/Kg	3.4		mg/Kg	3.4	mg/Kg
Perfluorooctanoic acid (PFOA)	0.010		mg/Kg	3.0		mg/Kg	3.0	mg/Kg
Perfluorononanoic acid (PFNA)	0.073		mg/Kg	1.3		mg/Kg	1.3	mg/Kg
Total Perfluoroalkyl carboxylic acid	0.15		mg/Kg	16		mg/Kg	16	mg/Kg

[1] Difference = Post-Treatment - Pre-Treament

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38054-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Pre-Treatment

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38054-1	SB007(2-4)-TOP	13 *	61	61	60	62	64	63	61
320-38054-2	SB003(0-2)-TOP	7 *	57	57	62	58			
320-38054-2 - DL	SB003(0-2)-TOP						59	53	61
320-38054-2 MS	SB003(0-2)-TOP	7 *	62	64	67	63			
320-38054-2 MS - DL	SB003(0-2)-TOP						61	64	62
320-38054-2 MSD	SB003(0-2)-TOP	9 *	70	72	74	67			
320-38054-2 MSD - DL	SB003(0-2)-TOP						63	64	73
LCS 320-218876/2-A	Lab Control Sample	15 *	64	64	62	64	66	64	65
MB 320-218876/1-A	Method Blank	18 *	72	69	71	70	70	69	71

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOSA	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38054-1	SB007(2-4)-TOP	60	49	63	63	62	60	62	68
320-38054-2	SB003(0-2)-TOP	51	17 *	68	67	49		52	42
320-38054-2 - DL	SB003(0-2)-TOP	46	18 *			49	54		
320-38054-2 MS	SB003(0-2)-TOP	51	14 *	75	71	51		56	45
320-38054-2 MS - DL	SB003(0-2)-TOP	45				53	58		
320-38054-2 MSD	SB003(0-2)-TOP	58	21 *	80	74	54		51	48
320-38054-2 MSD - DL	SB003(0-2)-TOP	54				56	66		
LCS 320-218876/2-A	Lab Control Sample	62	67	66	66	63	63	62	69
MB 320-218876/1-A	Method Blank	66	74	72	73	70	68	70	74

		Percent Isotope Dilution Recovery (Acceptance Limits)		
		M262FTS	M282FTS	M242FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(0-150)
320-38054-1	SB007(2-4)-TOP	67	68	83
320-38054-2	SB003(0-2)-TOP	102		210 *
320-38054-2 - DL	SB003(0-2)-TOP		109	
320-38054-2 MS	SB003(0-2)-TOP	112		245 *
320-38054-2 MS - DL	SB003(0-2)-TOP		104	
320-38054-2 MSD	SB003(0-2)-TOP	110		264 *
320-38054-2 MSD - DL	SB003(0-2)-TOP		136	
LCS 320-218876/2-A	Lab Control Sample	67	67	66
MB 320-218876/1-A	Method Blank	77	73	65

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA

d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS
M242FTS = M2-4:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Post-Treatment**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-38054-1	SB007(2-4)-TOP	71	71	67	68			63	64
320-38054-1 - DL	SB007(2-4)-TOP					67	63		
320-38054-2	SB003(0-2)-TOP								
320-38054-2 - DL2	SB003(0-2)-TOP	55	50	61	62	58	60	52	60
320-38054-2 - DL	SB003(0-2)-TOP								
320-38054-2 MS	SB003(0-2)-TOP								
320-38054-2 MS - DL2	SB003(0-2)-TOP	56	59	70	56	62	53	56	58
320-38054-2 MS - DL	SB003(0-2)-TOP								
320-38054-2 MSD	SB003(0-2)-TOP								
320-38054-2 MSD - DL2	SB003(0-2)-TOP	59	57	64	58	68	56	61	75
320-38054-2 MSD - DL	SB003(0-2)-TOP								
LCS 320-218884/2-A	Lab Control Sample	77	77	74	74	72	75	71	72
MB 320-218884/1-A	Method Blank	65	64	62	62	61	62	60	62

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
320-38054-1	SB007(2-4)-TOP	64	65	73	70	63	56	64	68
320-38054-1 - DL	SB007(2-4)-TOP								
320-38054-2	SB003(0-2)-TOP			99		68	87	114	69
320-38054-2 - DL2	SB003(0-2)-TOP					51			
320-38054-2 - DL	SB003(0-2)-TOP	58	56		59				
320-38054-2 MS	SB003(0-2)-TOP			87		62	86	96	58
320-38054-2 MS - DL2	SB003(0-2)-TOP					55			
320-38054-2 MS - DL	SB003(0-2)-TOP	55	58		62				
320-38054-2 MSD	SB003(0-2)-TOP			84		64	94	120	72
320-38054-2 MSD - DL2	SB003(0-2)-TOP					63			
320-38054-2 MSD - DL	SB003(0-2)-TOP	76	70		64				
LCS 320-218884/2-A	Lab Control Sample	67	75	75	75	72	60	71	75
MB 320-218884/1-A	Method Blank	58	61	67	64	63	50	60	67

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	M242FTS (0-150)					
320-38054-1	SB007(2-4)-TOP	64	68	0					
320-38054-1 - DL	SB007(2-4)-TOP								
320-38054-2	SB003(0-2)-TOP			6					
320-38054-2 - DL2	SB003(0-2)-TOP								
320-38054-2 - DL	SB003(0-2)-TOP	61	68						
320-38054-2 MS	SB003(0-2)-TOP			0					
320-38054-2 MS - DL2	SB003(0-2)-TOP								
320-38054-2 MS - DL	SB003(0-2)-TOP	62	63						
320-38054-2 MSD	SB003(0-2)-TOP			0					
320-38054-2 MSD - DL2	SB003(0-2)-TOP								

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38054-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid

Prep Type: Post-Treatment

		Percent Isotope Dilution Recovery (Acceptance Limits)								
Lab Sample ID	**Client Sample ID**	**M262FTS (25-150)**	**M282FTS (25-150)**	**M242FTS (0-150)**						
320-38054-2 MSD - DL	SB003(0-2)-TOP	72	70							
LCS 320-218884/2-A	Lab Control Sample	73	71	0						
MB 320-218884/1-A	Method Blank	66	62	0						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS
M242FTS = M2-4:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-218876/1-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Method Blank
Prep Type: Pre-Treatment
Prep Batch: 218876

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluoropentanoic acid (PFPeA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorohexanoic acid (PFHxA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluoroheptanoic acid (PFHpA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorooctanoic acid (PFOA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorononanoic acid (PFNA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorodecanoic acid (PFDA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluoroundecanoic acid (PFUnA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorododecanoic acid (PFDoA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorotridecanoic Acid (PFTriA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.0013		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
Perfluorooctane Sulfonamide (FOSA)	ND		0.00050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
6:2FTS	ND		0.0050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1
8:2FTS	ND		0.0050		mg/Kg		04/19/18 18:33	04/24/18 23:12	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*18*	*	*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C5 PFPeA	*72*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C2 PFHxA	*69*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C4-PFHpA	*71*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C4 PFOA	*70*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C5 PFNA	*70*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C2 PFDA	*69*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C2 PFUnA	*71*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C2 PFDoA	*66*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C2-PFTeDA	*74*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C3-PFBS	*72*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
18O2 PFHxS	*73*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C4 PFOS	*70*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
13C8 FOSA	*68*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
d3-NMeFOSAA	*70*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
d5-NEtFOSAA	*74*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
M2-6:2FTS	*77*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
M2-8:2FTS	*73*		*25 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*
M2-4:2FTS	*65*		*0 - 150*	*04/19/18 18:33*	*04/24/18 23:12*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-218876/2-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Lab Control Sample
Prep Type: Pre-Treatment
Prep Batch: 218876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00500	0.00531		mg/Kg		106	81 - 133
Perfluoropentanoic acid (PFPeA)	0.00500	0.00473		mg/Kg		95	79 - 120
Perfluorohexanoic acid (PFHxA)	0.00500	0.00490		mg/Kg		98	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.00500	0.00528		mg/Kg		106	76 - 124
Perfluorooctanoic acid (PFOA)	0.00500	0.00471		mg/Kg		94	76 - 121
Perfluorononanoic acid (PFNA)	0.00500	0.00466		mg/Kg		93	74 - 126
Perfluorodecanoic acid (PFDA)	0.00500	0.00472		mg/Kg		94	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.00500	0.00425		mg/Kg		85	74 - 114
Perfluorododecanoic acid (PFDoA)	0.00500	0.00514		mg/Kg		103	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.00500	0.00449		mg/Kg		90	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.00500	0.00472		mg/Kg		94	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.00442	0.00426		mg/Kg		96	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.00455	0.00410		mg/Kg		90	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.00476	0.00469		mg/Kg		99	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.00464	0.00484		mg/Kg		104	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.00482	0.00454		mg/Kg		94	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00500	0.00475		mg/Kg		95	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00500	0.00534		mg/Kg		107	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00500	ND		mg/Kg		99	65 - 135
6:2FTS	0.00474	0.00603		mg/Kg		127	65 - 135
8:2FTS	0.00479	ND		mg/Kg		100	65 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*15*	*	*25 - 150*
13C5 PFPeA	*64*		*25 - 150*
13C2 PFHxA	*64*		*25 - 150*
13C4-PFHpA	*62*		*25 - 150*
13C4 PFOA	*64*		*25 - 150*
13C5 PFNA	*66*		*25 - 150*
13C2 PFDA	*64*		*25 - 150*
13C2 PFUnA	*65*		*25 - 150*
13C2 PFDoA	*62*		*25 - 150*
13C2-PFTeDA	*67*		*25 - 150*
13C3-PFBS	*66*		*25 - 150*
18O2 PFHxS	*66*		*25 - 150*
13C4 PFOS	*63*		*25 - 150*
13C8 FOSA	*63*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-218876/2-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Lab Control Sample
Prep Type: Pre-Treatment
Prep Batch: 218876

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	62		25 - 150
d5-NEtFOSAA	69		25 - 150
M2-6:2FTS	67		25 - 150
M2-8:2FTS	67		25 - 150
M2-4:2FTS	66		0 - 150

Lab Sample ID: 320-38054-2 MS
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: SB003(0-2)-TOP
Prep Type: Pre-Treatment
Prep Batch: 218876

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.035	F2	0.00546	0.0622	E 4	mg/Kg	☼	503	81 - 133
Perfluoropentanoic acid (PFPeA)	0.011	F1 F2	0.00546	0.0261	F1	mg/Kg	☼	281	79 - 120
Perfluorohexanoic acid (PFHxA)	0.015	F1 F2	0.00546	0.0326	F1	mg/Kg	☼	316	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.0066	F1 F2	0.00546	0.0204	F1	mg/Kg	☼	252	76 - 124
Perfluorooctanoic acid (PFOA)	0.010	F1	0.00546	0.0185	F1	mg/Kg	☼	155	76 - 121
Perfluorododecanoic acid (PFDoA)	0.034		0.00546	0.0458	4	mg/Kg	☼	212	75 - 123
Perfluorotetradecanoic acid (PFTeA)	0.017	F1	0.00546	0.0330	F1	mg/Kg	☼	299	22 - 129
Perfluorobutanesulfonic acid (PFBS)	ND		0.00483	0.00503		mg/Kg	☼	104	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.0054		0.00497	0.00986		mg/Kg	☼	90	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.0012		0.00520	0.00810		mg/Kg	☼	132	78 - 146
Perfluorodecanesulfonic acid (PFDS)	0.012	F1	0.00527	0.0183	F1	mg/Kg	☼	126	54 - 113
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.00546	0.00633		mg/Kg	☼	NC	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0059	F1	0.00546	0.00847	F1	mg/Kg	☼	47	65 - 135
6:2FTS	0.048		0.00518	0.0449	4	mg/Kg	☼	-52	65 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	7	*	25 - 150
13C5 PFPeA	62		25 - 150
13C2 PFHxA	64		25 - 150
13C4-PFHpA	67		25 - 150
13C4 PFOA	63		25 - 150
13C2 PFDoA	51		25 - 150
13C2-PFTeDA	14	*	25 - 150
13C3-PFBS	75		25 - 150
18O2 PFHxS	71		25 - 150
13C4 PFOS	51		25 - 150
d3-NMeFOSAA	56		25 - 150
d5-NEtFOSAA	45		25 - 150
M2-6:2FTS	112		25 - 150
M2-4:2FTS	245	*	0 - 150

Lab Sample ID: 320-38054-2 MSD
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: SB003(0-2)-TOP
Prep Type: Pre-Treatment
Prep Batch: 218876

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.035	F2	0.00549	0.0299	4 F2	mg/Kg	☼	-88	81 - 133	70	30
Perfluoropentanoic acid (PFPeA)	0.011	F1 F2	0.00549	0.0147	F1 F2	mg/Kg	☼	72	79 - 120	56	30
Perfluorohexanoic acid (PFHxA)	0.015	F1 F2	0.00549	0.0178	F1 F2	mg/Kg	☼	45	75 - 125	59	30
Perfluoroheptanoic acid (PFHpA)	0.0066	F1 F2	0.00549	0.0117	F2	mg/Kg	☼	94	76 - 124	54	30
Perfluorooctanoic acid (PFOA)	0.010	F1	0.00549	0.0144		mg/Kg	☼	78	76 - 121	25	30
Perfluorododecanoic acid (PFDoA)	0.034		0.00549	0.0381	4	mg/Kg	☼	71	75 - 123	18	30
Perfluorotetradecanoic acid (PFTeA)	0.017	F1	0.00549	0.0269	F1	mg/Kg	☼	187	22 - 129	20	30
Perfluorobutanesulfonic acid (PFBS)	ND		0.00485	0.00483		mg/Kg	☼	100	73 - 142	4	30
Perfluorohexanesulfonic acid (PFHxS)	0.0054		0.00500	0.0102		mg/Kg	☼	97	75 - 121	4	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.0012		0.00523	0.00788		mg/Kg	☼	127	78 - 146	3	30
Perfluorodecanesulfonic acid (PFDS)	0.012	F1	0.00529	0.0166		mg/Kg	☼	94	54 - 113	9	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.00549	0.00739		mg/Kg	☼	NC	65 - 135	16	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0059	F1	0.00549	0.00895	F1	mg/Kg	☼	55	65 - 135	5	30
6:2FTS	0.048		0.00520	0.0484	4	mg/Kg	☼	16	65 - 135	8	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*9*	*	*25 - 150*
13C5 PFPeA	*70*		*25 - 150*
13C2 PFHxA	*72*		*25 - 150*
13C4-PFHpA	*74*		*25 - 150*
13C4 PFOA	*67*		*25 - 150*
13C2 PFDoA	*58*		*25 - 150*
13C2-PFTeDA	*21*	*	*25 - 150*
13C3-PFBS	*80*		*25 - 150*
18O2 PFHxS	*74*		*25 - 150*
13C4 PFOS	*54*		*25 - 150*
d3-NMeFOSAA	*51*		*25 - 150*
d5-NEtFOSAA	*48*		*25 - 150*
M2-6:2FTS	*110*		*25 - 150*
M2-4:2FTS	*264*	*	*0 - 150*

Lab Sample ID: MB 320-218884/1-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Method Blank
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.00151		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluoropentanoic acid (PFPeA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorohexanoic acid (PFHxA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluoroheptanoic acid (PFHpA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorooctanoic acid (PFOA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorononanoic acid (PFNA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorodecanoic acid (PFDA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-218884/1-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Method Blank
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorododecanoic acid (PFDoA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorotridecanoic Acid (PFTriA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorotetradecanoic acid (PFTeA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		0.0013		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorodecanesulfonic acid (PFDS)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
Perfluorooctane Sulfonamide (FOSA)	ND		0.00050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
6:2FTS	ND		0.0050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1
8:2FTS	ND		0.0050		mg/Kg		04/19/18 19:05	04/25/18 00:23	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*65*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C5 PFPeA	*64*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C2 PFHxA	*62*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C4-PFHpA	*62*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C4 PFOA	*61*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C5 PFNA	*62*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C2 PFDA	*60*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C2 PFUnA	*62*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C2 PFDoA	*58*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C2-PFTeDA	*61*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C3-PFBS	*67*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
18O2 PFHxS	*64*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C4 PFOS	*63*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
13C8 FOSA	*50*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
d3-NMeFOSAA	*60*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
d5-NEtFOSAA	*67*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
M2-6:2FTS	*66*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
M2-8:2FTS	*62*		*25 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*
M2-4:2FTS	*0*		*0 - 150*	*04/19/18 19:05*	*04/25/18 00:23*	*1*

Lab Sample ID: LCS 320-218884/2-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Lab Control Sample
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.00500	0.00729	*	mg/Kg		146	70 - 130
Perfluoropentanoic acid (PFPeA)	0.00500	0.00565		mg/Kg		113	70 - 130
Perfluorohexanoic acid (PFHxA)	0.00500	0.00584		mg/Kg		117	70 - 130
Perfluoroheptanoic acid (PFHpA)	0.00500	0.00611		mg/Kg		122	70 - 130
Perfluorooctanoic acid (PFOA)	0.00500	0.0116	*	mg/Kg		232	70 - 130

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-218884/2-A
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: Lab Control Sample
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorononanoic acid (PFNA)	0.00500	0.00466		mg/Kg		93	70 - 130
Perfluorodecanoic acid (PFDA)	0.00500	0.00481		mg/Kg		96	70 - 130
Perfluoroundecanoic acid (PFUnA)	0.00500	0.00395		mg/Kg		79	70 - 130
Perfluorododecanoic acid (PFDoA)	0.00500	0.00500		mg/Kg		100	70 - 130
Perfluorotridecanoic Acid (PFTriA)	0.00500	0.00474		mg/Kg		95	70 - 130
Perfluorotetradecanoic acid (PFTeA)	0.00500	0.00414		mg/Kg		83	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.00442	0.00463		mg/Kg		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	0.00455	0.00417		mg/Kg		92	70 - 130
Perfluoroheptanesulfonic Acid (PFHpS)	0.00476	0.00444		mg/Kg		93	70 - 130
Perfluorooctanesulfonic acid (PFOS)	0.00464	0.00487		mg/Kg		105	70 - 130
Perfluorodecanesulfonic acid (PFDS)	0.00482	0.00465		mg/Kg		96	70 - 130
Perfluorooctane Sulfonamide (FOSA)	0.00500	ND	*	mg/Kg		0	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00500	ND	*	mg/Kg		0	70 - 130
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00500	ND	*	mg/Kg		0	70 - 130
6:2FTS	0.00474	ND	*	mg/Kg		1	70 - 130
8:2FTS	0.00479	ND	*	mg/Kg		0	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*77*		*25 - 150*
13C5 PFPeA	*77*		*25 - 150*
13C2 PFHxA	*74*		*25 - 150*
13C4-PFHpA	*74*		*25 - 150*
13C4 PFOA	*72*		*25 - 150*
13C5 PFNA	*75*		*25 - 150*
13C2 PFDA	*71*		*25 - 150*
13C2 PFUnA	*72*		*25 - 150*
13C2 PFDoA	*67*		*25 - 150*
13C2-PFTeDA	*75*		*25 - 150*
13C3-PFBS	*75*		*25 - 150*
18O2 PFHxS	*75*		*25 - 150*
13C4 PFOS	*72*		*25 - 150*
13C8 FOSA	*60*		*25 - 150*
d3-NMeFOSAA	*71*		*25 - 150*
d5-NEtFOSAA	*75*		*25 - 150*
M2-6:2FTS	*73*		*25 - 150*
M2-8:2FTS	*71*		*25 - 150*
M2-4:2FTS	*0*		*0 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-38054-2 MS
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	0.0074	F1	0.00481	0.00723	F1	mg/Kg	☼	-3	70 - 130
Perfluoroheptanesulfonic Acid (PFHpS)	0.010	F1	0.00517	0.00965	F1	mg/Kg	☼	-8	70 - 130
Perfluorodecanesulfonic acid (PFDS)	0.021	F1	0.00524	0.0230	F1	mg/Kg	☼	47	70 - 130
Perfluorooctane Sulfonamide (FOSA)	0.0095	F1 *	0.00544	0.000768	F1	mg/Kg	☼	-161	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	F1 *	0.00544	ND	F1	mg/Kg	☼	0	70 - 130
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	F1 *	0.00544	ND	F1	mg/Kg	☼	0	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C3-PFBS	*87*		*25 - 150*
13C4 PFOS	*62*		*25 - 150*
13C8 FOSA	*86*		*25 - 150*
d3-NMeFOSAA	*96*		*25 - 150*
d5-NEtFOSAA	*58*		*25 - 150*
M2-4:2FTS	*0*		*0 - 150*

Lab Sample ID: 320-38054-2 MSD
Matrix: Solid
Analysis Batch: 219700

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	0.0074	F1	0.00478	0.00549	F1	mg/Kg	☼	-40	70 - 130	27	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.010	F1	0.00515	0.00729	F1	mg/Kg	☼	-54	70 - 130	28	30
Perfluorodecanesulfonic acid (PFDS)	0.021	F1	0.00521	0.0228	F1	mg/Kg	☼	44	70 - 130	1	30
Perfluorooctane Sulfonamide (FOSA)	0.0095	F1 *	0.00541	ND	F1	mg/Kg	☼	0	70 - 130	NC	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	F1 *	0.00541	ND	F1	mg/Kg	☼	0	70 - 130	NC	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	F1 *	0.00541	ND	F1	mg/Kg	☼	0	70 - 130	NC	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C3-PFBS	*84*		*25 - 150*
13C4 PFOS	*64*		*25 - 150*
13C8 FOSA	*94*		*25 - 150*
d3-NMeFOSAA	*120*		*25 - 150*
d5-NEtFOSAA	*72*		*25 - 150*
M2-4:2FTS	*0*		*0 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Lab Sample ID: 320-38054-2 MS
Matrix: Solid
Analysis Batch: 220090

Client Sample ID: SB003(0-2)-TOP
Prep Type: Pre-Treatment
Prep Batch: 218876

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorononanoic acid (PFNA) - DL	0.073		0.00546	0.0888	4	mg/Kg	☼	291	74 - 126
Perfluorodecanoic acid (PFDA) - DL	0.074		0.00546	0.0743	4	mg/Kg	☼	2	74 - 124
Perfluoroundecanoic acid (PFUnA) - DL	0.91		0.00546	0.993	4	mg/Kg	☼	1502	74 - 114
Perfluorotridecanoic Acid (PFTriA) - DL	0.13		0.00546	0.178	4	mg/Kg	☼	809	43 - 116
Perfluorooctanesulfonic acid (PFOS) - DL	0.86		0.00507	0.926	4	mg/Kg	☼	1337	69 - 131
Perfluorooctane Sulfonamide (FOSA) - DL	0.35		0.00546	0.371	4	mg/Kg	☼	461	62 - 135
8:2FTS - DL	0.69		0.00523	0.837	4	mg/Kg	☼	2820	65 - 135

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C5 PFNA - DL	*61*		*25 - 150*
13C2 PFDA - DL	*64*		*25 - 150*
13C2 PFUnA - DL	*62*		*25 - 150*
13C2 PFDoA - DL	*45*		*25 - 150*
13C4 PFOS - DL	*53*		*25 - 150*
13C8 FOSA - DL	*58*		*25 - 150*
M2-8:2FTS - DL	*104*		*25 - 150*

Lab Sample ID: 320-38054-2 MSD
Matrix: Solid
Analysis Batch: 220090

Client Sample ID: SB003(0-2)-TOP
Prep Type: Pre-Treatment
Prep Batch: 218876

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA) - DL	0.073		0.00549	0.0939	4	mg/Kg	☼	382	74 - 126	6	30
Perfluorodecanoic acid (PFDA) - DL	0.074		0.00549	0.0856	4	mg/Kg	☼	208	74 - 124	14	30
Perfluoroundecanoic acid (PFUnA) - DL	0.91		0.00549	0.894	4	mg/Kg	☼	-305	74 - 114	10	30
Perfluorotridecanoic Acid (PFTriA) - DL	0.13		0.00549	0.160	4	mg/Kg	☼	492	43 - 116	10	30
Perfluorooctanesulfonic acid (PFOS) - DL	0.86		0.00509	0.903	4	mg/Kg	☼	872	69 - 131	3	30
Perfluorooctane Sulfonamide (FOSA) - DL	0.35		0.00549	0.344	4	mg/Kg	☼	-41	62 - 135	8	30
8:2FTS - DL	0.69		0.00526	0.719	4	mg/Kg	☼	552	65 - 135	15	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C5 PFNA - DL	*63*		*25 - 150*
13C2 PFDA - DL	*64*		*25 - 150*
13C2 PFUnA - DL	*73*		*25 - 150*
13C2 PFDoA - DL	*54*		*25 - 150*
13C4 PFOS - DL	*56*		*25 - 150*
13C8 FOSA - DL	*66*		*25 - 150*
M2-8:2FTS - DL	*136*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Lab Sample ID: 320-38054-2 MS
Matrix: Solid
Analysis Batch: 220224

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorododecanoic acid (PFDoA) - DL	0.33		0.00544	0.409	4	mg/Kg	☼	1457	70 - 130
Perfluorotridecanoic Acid (PFTriA) - DL	0.37		0.00544	0.400	4	mg/Kg	☼	499	70 - 130
Perfluorotetradecanoic acid (PFTeA) - DL	0.15		0.00544	0.182	4	mg/Kg	☼	668	70 - 130
Perfluorohexanesulfonic acid (PFHxS) - DL	0.21	F2	0.00495	0.0809	4	mg/Kg	☼	-2682	70 - 130
6:2FTS - DL	0.057	*	0.00515	ND	4	mg/Kg	☼	0	70 - 130
8:2FTS - DL	0.27	*	0.00521	ND	4	mg/Kg	☼	0	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C2 PFDoA - DL	*55*		*25 - 150*
13C2-PFTeDA - DL	*58*		*25 - 150*
18O2 PFHxS - DL	*62*		*25 - 150*
M2-6:2FTS - DL	*62*		*25 - 150*
M2-8:2FTS - DL	*63*		*25 - 150*

Lab Sample ID: 320-38054-2 MSD
Matrix: Solid
Analysis Batch: 220224

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorododecanoic acid (PFDoA) - DL	0.33		0.00541	0.422	4	mg/Kg	☼	1699	70 - 130	3	30
Perfluorotridecanoic Acid (PFTriA) - DL	0.37		0.00541	0.371	4	mg/Kg	☼	-23	70 - 130	7	30
Perfluorotetradecanoic acid (PFTeA) - DL	0.15		0.00541	0.230	4	mg/Kg	☼	1558	70 - 130	23	30
Perfluorohexanesulfonic acid (PFHxS) - DL	0.21	F2	0.00492	0.0257	4 F2	mg/Kg	☼	-3816	70 - 130	104	30
6:2FTS - DL	0.057	*	0.00513	ND	4	mg/Kg	☼	0	70 - 130	NC	30
8:2FTS - DL	0.27	*	0.00518	ND	4	mg/Kg	☼	0	70 - 130	NC	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFDoA - DL	*76*		*25 - 150*
13C2-PFTeDA - DL	*70*		*25 - 150*
18O2 PFHxS - DL	*64*		*25 - 150*
M2-6:2FTS - DL	*72*		*25 - 150*
M2-8:2FTS - DL	*70*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL2

Lab Sample ID: 320-38054-2 MS
Matrix: Solid
Analysis Batch: 220090

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA) - DL2	1.8	B *	0.00544	1.87	4	mg/Kg	☼	410	70 - 130

Method: 537 (modified) - Fluorinated Alkyl Substances - DL2 (Continued)

Lab Sample ID: 320-38054-2 MS
Matrix: Solid
Analysis Batch: 220090

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanoic acid (PFPeA) - DL2	3.4		0.00544	2.93	4	mg/Kg	☼	-8520	70 - 130
Perfluorohexanoic acid (PFHxA) - DL2	3.5		0.00544	2.63	4	mg/Kg	☼	-16112	70 - 130
Perfluoroheptanoic acid (PFHpA) - DL2	3.4		0.00544	3.81	4	mg/Kg	☼	8225	70 - 130
Perfluorooctanoic acid (PFOA) - DL2	3.0	*	0.00544	2.02	4	mg/Kg	☼	-17291	70 - 130
Perfluorononanoic acid (PFNA) - DL2	1.3		0.00544	1.47	4	mg/Kg	☼	2378	70 - 130
Perfluorodecanoic acid (PFDA) - DL2	0.86		0.00544	0.682	4	mg/Kg	☼	-3278	70 - 130
Perfluoroundecanoic acid (PFUnA) - DL2	1.2		0.00544	1.23	4	mg/Kg	☼	1029	70 - 130
Perfluorooctanesulfonic acid (PFOS) - DL2	0.99		0.00504	0.836	4	mg/Kg	☼	-3038	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA - DL2	*56*		*25 - 150*
13C5 PFPeA - DL2	*59*		*25 - 150*
13C2 PFHxA - DL2	*70*		*25 - 150*
13C4-PFHpA - DL2	*56*		*25 - 150*
13C4 PFOA - DL2	*62*		*25 - 150*
13C5 PFNA - DL2	*53*		*25 - 150*
13C2 PFDA - DL2	*56*		*25 - 150*
13C2 PFUnA - DL2	*58*		*25 - 150*
13C4 PFOS - DL2	*55*		*25 - 150*

Lab Sample ID: 320-38054-2 MSD
Matrix: Solid
Analysis Batch: 220090

Client Sample ID: SB003(0-2)-TOP
Prep Type: Post-Treatment
Prep Batch: 218884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA) - DL2	1.8	B *	0.00541	1.88	4	mg/Kg	☼	642	70 - 130	1	30
Perfluoropentanoic acid (PFPeA) - DL2	3.4		0.00541	3.36	4	mg/Kg	☼	-472	70 - 130	14	30
Perfluorohexanoic acid (PFHxA) - DL2	3.5		0.00541	2.97	4	mg/Kg	☼	-9952	70 - 130	12	30
Perfluoroheptanoic acid (PFHpA) - DL2	3.4		0.00541	4.01	4	mg/Kg	☼	12022	70 - 130	5	30
Perfluorooctanoic acid (PFOA) - DL2	3.0	*	0.00541	1.83	4	mg/Kg	☼	-20939	70 - 130	10	30
Perfluorononanoic acid (PFNA) - DL2	1.3		0.00541	1.59	4	mg/Kg	☼	4528	70 - 130	8	30
Perfluorodecanoic acid (PFDA) - DL2	0.86		0.00541	0.833	4	mg/Kg	☼	-497	70 - 130	20	30
Perfluoroundecanoic acid (PFUnA) - DL2	1.2		0.00541	1.10	4	mg/Kg	☼	-1485	70 - 130	12	30
Perfluorooctanesulfonic acid (PFOS) - DL2	0.99		0.00502	0.693	4	mg/Kg	☼	-5911	70 - 130	19	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C4 PFBA - DL2	59		25 - 150
13C5 PFPeA - DL2	57		25 - 150
13C2 PFHxA - DL2	64		25 - 150
13C4-PFHpA - DL2	58		25 - 150
13C4 PFOA - DL2	68		25 - 150
13C5 PFNA - DL2	56		25 - 150
13C2 PFDA - DL2	61		25 - 150
13C2 PFUnA - DL2	75		25 - 150
13C4 PFOS - DL2	63		25 - 150

Qualifiers

LCMS

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
B	Compound was found in the blank and sample.
*	Isotope Dilution analyte is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Prep Batch: 218876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1	SB007(2-4)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	
320-38054-2	SB003(0-2)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	
320-38054-2 - DL	SB003(0-2)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	
MB 320-218876/1-A	Method Blank	Pre-Treatment	Solid	TOPS Pre-Prep	
LCS 320-218876/2-A	Lab Control Sample	Pre-Treatment	Solid	TOPS Pre-Prep	
320-38054-2 MS	SB003(0-2)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	
320-38054-2 MS - DL	SB003(0-2)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	
320-38054-2 MSD	SB003(0-2)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	
320-38054-2 MSD - DL	SB003(0-2)-TOP	Pre-Treatment	Solid	TOPS Pre-Prep	

Prep Batch: 218884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1	SB007(2-4)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-1 - DL	SB007(2-4)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 - DL	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 - DL2	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
MB 320-218884/1-A	Method Blank	Post-Treatment	Solid	TOPS Post-Prep	
LCS 320-218884/2-A	Lab Control Sample	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 MS - DL2	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 MS - DL	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 MS	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 MSD - DL	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 MSD - DL2	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	
320-38054-2 MSD	SB003(0-2)-TOP	Post-Treatment	Solid	TOPS Post-Prep	

Analysis Batch: 219700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1	SB007(2-4)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-1	SB007(2-4)-TOP	Pre-Treatment	Solid	537 (modified)	218876
320-38054-2	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2	SB003(0-2)-TOP	Pre-Treatment	Solid	537 (modified)	218876
MB 320-218876/1-A	Method Blank	Pre-Treatment	Solid	537 (modified)	218876
MB 320-218884/1-A	Method Blank	Post-Treatment	Solid	537 (modified)	218884
LCS 320-218876/2-A	Lab Control Sample	Pre-Treatment	Solid	537 (modified)	218876
LCS 320-218884/2-A	Lab Control Sample	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MS	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MS	SB003(0-2)-TOP	Pre-Treatment	Solid	537 (modified)	218876
320-38054-2 MSD	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MSD	SB003(0-2)-TOP	Pre-Treatment	Solid	537 (modified)	218876

Analysis Batch: 220090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-2 - DL2	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 - DL	SB003(0-2)-TOP	Pre-Treatment	Solid	537 (modified)	218876
320-38054-2 MS - DL2	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MS - DL	SB003(0-2)-TOP	Pre-Treatment	Solid	537 (modified)	218876
320-38054-2 MSD - DL2	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MSD - DL	SB003(0-2)-TOP	Pre-Treatment	Solid	537 (modified)	218876

LCMS (Continued)

Analysis Batch: 220224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1 - DL	SB007(2-4)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 - DL	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MS - DL	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884
320-38054-2 MSD - DL	SB003(0-2)-TOP	Post-Treatment	Solid	537 (modified)	218884

Analysis Batch: 220272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1	SB007(2-4)-TOP	Post-Treatment	Solid	Total PFCA-Sum	
320-38054-1	SB007(2-4)-TOP	Pre-Treatment	Solid	Total PFCA-Sum	
320-38054-2	SB003(0-2)-TOP	Post-Treatment	Solid	Total PFCA-Sum	
320-38054-2	SB003(0-2)-TOP	Pre-Treatment	Solid	Total PFCA-Sum	

Analysis Batch: 220275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1	SB007(2-4)-TOP	Total/NA	Solid	Total PFCA-Dif	
320-38054-2	SB003(0-2)-TOP	Total/NA	Solid	Total PFCA-Dif	

General Chemistry

Analysis Batch: 218606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38054-1	SB007(2-4)-TOP	Total/NA	Solid	D 2216	
320-38054-2	SB003(0-2)-TOP	Total/NA	Solid	D 2216	
320-38061-A-1 DU	Duplicate	Total/NA	Solid	D 2216	

Client Sample ID: SB007(2-4)-TOP
Date Collected: 04/10/18 10:50
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Total PFCA-Dif		1	220275	04/27/18 15:47	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	220272	04/27/18 15:44	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	220272	04/27/18 15:44	MKW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB007(2-4)-TOP
Date Collected: 04/10/18 10:50
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-1
Matrix: Solid
Percent Solids: 80.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOPS Post-Prep			218884	04/19/18 19:05	JER	TAL SAC
Post-Treatment	Analysis	537 (modified)		1	219700	04/25/18 00:38	CBW	TAL SAC
Post-Treatment	Prep	TOPS Post-Prep	DL		218884	04/19/18 19:05	JER	TAL SAC
Post-Treatment	Analysis	537 (modified)	DL	5	220224	04/27/18 11:41	CBW	TAL SAC
Pre-Treatment	Prep	TOPS Pre-Prep			218876	04/19/18 18:33	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		1	219700	04/24/18 23:28	CBW	TAL SAC

Client Sample ID: SB003(0-2)-TOP
Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Total PFCA-Dif		1	220275	04/27/18 15:47	MKW	TAL SAC
Post-Treatment	Analysis	Total PFCA-Sum		1	220272	04/27/18 15:44	MKW	TAL SAC
Pre-Treatment	Analysis	Total PFCA-Sum		1	220272	04/27/18 15:44	MKW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB003(0-2)-TOP
Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38054-2
Matrix: Solid
Percent Solids: 90.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Post-Treatment	Prep	TOPS Post-Prep			218884	04/19/18 19:05	JER	TAL SAC
Post-Treatment	Analysis	537 (modified)		1	219700	04/25/18 00:46	CBW	TAL SAC
Post-Treatment	Prep	TOPS Post-Prep	DL2		218884	04/19/18 19:05	JER	TAL SAC
Post-Treatment	Analysis	537 (modified)	DL2	100	220090	04/26/18 18:36	CBW	TAL SAC
Post-Treatment	Prep	TOPS Post-Prep	DL		218884	04/19/18 19:05	JER	TAL SAC
Post-Treatment	Analysis	537 (modified)	DL	10	220224	04/27/18 11:49	CBW	TAL SAC
Pre-Treatment	Prep	TOPS Pre-Prep			218876	04/19/18 18:33	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)		1	219700	04/24/18 23:36	CBW	TAL SAC
Pre-Treatment	Prep	TOPS Pre-Prep	DL		218876	04/19/18 18:33	JER	TAL SAC
Pre-Treatment	Analysis	537 (modified)	DL	100	220090	04/26/18 18:12	CBW	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-38054-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11666	03-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	TOPS Post-Prep	Solid	6:2FTS
537 (modified)	TOPS Post-Prep	Solid	8:2FTS
537 (modified)	TOPS Post-Prep	Solid	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
537 (modified)	TOPS Post-Prep	Solid	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	TOPS Post-Prep	Solid	Perfluorobutanoic acid (PFBA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	TOPS Post-Prep	Solid	Perfluorodecanoic acid (PFDA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorododecanoic acid (PFDoA)
537 (modified)	TOPS Post-Prep	Solid	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	TOPS Post-Prep	Solid	Perfluoroheptanoic acid (PFHpA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	TOPS Post-Prep	Solid	Perfluorohexanoic acid (PFHxA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorononanoic acid (PFNA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorooctane Sulfonamide (FOSA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	TOPS Post-Prep	Solid	Perfluorooctanoic acid (PFOA)
537 (modified)	TOPS Post-Prep	Solid	Perfluoropentanoic acid (PFPeA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	TOPS Post-Prep	Solid	Perfluorotridecanoic Acid (PFTriA)
537 (modified)	TOPS Post-Prep	Solid	Perfluoroundecanoic acid (PFUnA)
537 (modified)	TOPS Pre-Prep	Solid	6:2FTS
537 (modified)	TOPS Pre-Prep	Solid	8:2FTS
537 (modified)	TOPS Pre-Prep	Solid	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
537 (modified)	TOPS Pre-Prep	Solid	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorobutanoic acid (PFBA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorodecanoic acid (PFDA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorododecanoic acid (PFDoA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	TOPS Pre-Prep	Solid	Perfluoroheptanoic acid (PFHpA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorohexanoic acid (PFHxA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorononanoic acid (PFNA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorooctane Sulfonamide (FOSA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorooctanoic acid (PFOA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluoropentanoic acid (PFPeA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluorotridecanoic Acid (PFTriA)
537 (modified)	TOPS Pre-Prep	Solid	Perfluoroundecanoic acid (PFUnA)
D 2216		Solid	Percent Moisture

Laboratory: TestAmerica Sacramento (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11666	03-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
D 2216		Solid	Percent Solids
Total PFCA-Dif		Solid	Perfluorobutanoic acid (PFBA)
Total PFCA-Dif		Solid	Perfluoroheptanoic acid (PFHpA)
Total PFCA-Dif		Solid	Perfluorohexanoic acid (PFHxA)
Total PFCA-Dif		Solid	Perfluorononanoic acid (PFNA)
Total PFCA-Dif		Solid	Perfluorooctanoic acid (PFOA)
Total PFCA-Dif		Solid	Perfluoropentanoic acid (PFPeA)
Total PFCA-Dif		Solid	Total Perfluoroalkyl carboxylic acid
Total PFCA-Sum		Solid	Total Perfluoroalkyl carboxylic acid

Laboratory: TestAmerica Edison

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11452	04-01-19

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M242FTS #	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #
	MB 320-218884/1-A	0	65	64	67	62	62	64	66
	LCS 320-218884/2-A	0	77	77	75	74	74	75	73

	QC LIMITS
M242FTS = M2-4:2FTS	0-150
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHxS = 18O2 PFHxS	25-150
PFHpA = 13C4-PFHpA	25-150
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOA #	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #
	MB 320-218884/1-A	61	62	63	50	62	60	60	67
	LCS 320-218884/2-A	72	75	72	60	71	71	71	75

	QC LIMITS
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFUnA #	PFDoA #	PFTDA #
	MB 320-218884/1-A	62	58	61
	LCS 320-218884/2-A	72	67	75

	QC LIMITS
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M242FTS #	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #
SB007(2-4)-TOP	320-38054-1	0	71	71	73	67	68	70	64

	QC LIMITS
M242FTS = M2-4:2FTS	0-150
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHxS = 18O2 PFHxS	25-150
PFHpA = 13C4-PFHpA	25-150
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #
SB007(2-4)-TOP	320-38054-1	63	56	68	63	64	68	64	64

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFTDA #
SB007(2-4)-TOP	320-38054-1	65

	QC LIMITS
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M242FTS #	PFBS #	PFOS #	PFOSA #	d3NMFOS #	d5NEFOS #
SB003(0-2)-TOP	320-38054-2	6	99	68	87	114	69
SB003(0-2)-TOP MS	320-38054-2 MS	0	87	62	86	96	58
SB003(0-2)-TOP MSD	320-38054-2 MSD	0	84	64	94	120	72

	QC LIMITS
M242FTS = M2-4:2FTS	0-150
PFBS = 13C3-PFBS	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFHxA #	PFHpA #	PFOA #	PFNA #	PFOS #	PFDA #
SB003(0-2)-TOP DL2	320-38054-2 DL2	55	50	61	62	58	60	51	52
SB003(0-2)-TOP MS DL2	320-38054-2 MS DL2	56	59	70	56	62	53	55	56
SB003(0-2)-TOP MSD DL2	320-38054-2 MSD DL2	59	57	64	58	68	56	63	61

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFDA = 13C2 PFDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFUnA #
SB003(0-2)-TOP DL2	320-38054-2 DL2	60
SB003(0-2)-TOP MS DL2	320-38054-2 MS DL2	58
SB003(0-2)-TOP MSD DL2	320-38054-2 MSD DL2	75

	QC LIMITS
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	M262FTS #	M282FTS #	PFDoA #	PFTDA #
SB003(0-2)-TOP DL	320-38054-2 DL	59	61	68	58	56
SB003(0-2)-TOP MS DL	320-38054-2 MS DL	62	62	63	55	58
SB003(0-2)-TOP MSD DL	320-38054-2 MSD DL	64	72	70	76	70

	QC LIMITS
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
M282FTS = M2-8:2FTS	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOA #	PFNA #
SB007(2-4)-TOP DL	320-38054-1 DL	67	63

	QC LIMITS
PFOA = 13C4 PFOA	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	M242FTS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #
SB007(2-4)-TOP	320-38054-1	13 *	61	63	83	61	60	63	67
	MB 320-218876/1-A	18 *	72	72	65	69	71	73	77
	LCS 320-218876/2-A	15 *	64	66	66	64	62	66	67

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
M242FTS = M2-4:2FTS	0-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOA #	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #
SB007(2-4)-TOP	320-38054-1	62	64	62	60	68	63	62	68
	MB 320-218876/1-A	70	70	70	68	73	69	70	74
	LCS 320-218876/2-A	64	66	63	63	67	64	62	69

	QC LIMITS
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFUnA #	PFDoA #	PFTDA #
SB007(2-4)-TOP	320-38054-1	61	60	49
	MB 320-218876/1-A	71	66	74
	LCS 320-218876/2-A	65	62	67

	QC LIMITS
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA	#	PFPeA	#	PFBS	#	M242FTS	#	PFHxA	#	PFHpA	#	PFHxS	#	M262FTS	#
SB003(0-2)-TOP	320-38054-2	7	*	57		68		210	*	57		62		67		102	
SB003(0-2)-TOP MS	320-38054-2 MS	7	*	62		75		245	*	64		67		71		112	
SB003(0-2)-TOP MSD	320-38054-2 MSD	9	*	70		80		264	*	72		74		74		110	

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
M242FTS = M2-4:2FTS	0-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOA #	PFOS #	d3NMFOS #	d5NEFOS #	PFDoA #	PFTDA #
SB003(0-2)-TOP	320-38054-2	58	49	52	42	51	17 *
SB003(0-2)-TOP MS	320-38054-2 MS	63	51	56	45	51	14 *
SB003(0-2)-TOP MSD	320-38054-2 MSD	67	54	51	48	58	21 *

	QC LIMITS
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	PFUnA #	PFDoA #
SB003(0-2)-TOP MS DL	320-38054-2 MS DL	61	53	58	104	64	62	45
SB003(0-2)-TOP MSD DL	320-38054-2 MSD DL	63	56	66	136	64	73	54

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treatment) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	PFUnA #	PFDoA #	PFTDA #
SB003(0-2)-TOP DL	320-38054-2 DL	59	49	54	109	53	61	46	18 *

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treat Level: Low Lab File ID: 2018.04.24LLC_044.d

Lab ID: LCS 320-218876/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00500	0.00531	106	81-133	
Perfluoropentanoic acid (PFPeA)	0.00500	0.00473	95	79-120	
Perfluorohexanoic acid (PFHxA)	0.00500	0.00490	98	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00500	0.00528	106	76-124	
Perfluorooctanoic acid (PFOA)	0.00500	0.00471	94	76-121	
Perfluorononanoic acid (PFNA)	0.00500	0.00466	93	74-126	
Perfluorodecanoic acid (PFDA)	0.00500	0.00472	94	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00500	0.00425	85	74-114	
Perfluorododecanoic acid (PFDoA)	0.00500	0.00514	103	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00500	0.00449	90	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00500	0.00472	94	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00442	0.00426	96	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00455	0.00410	90	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00476	0.00469	99	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00464	0.00484	104	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00482	0.00454	94	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00500	0.00475	95	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00500	0.00534	107	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00500	ND	99	65-135	
6:2FTS	0.00474	0.00603	127	65-135	
8:2FTS	0.00479	ND	100	65-135	
13C4 PFBA	0.0125	0.00186	15	25-150	*
13C5 PFPeA	0.0125	0.00797	64	25-150	
13C2 PFHxA	0.0125	0.00796	64	25-150	
13C4-PFHpA	0.0125	0.00775	62	25-150	
13C4 PFOA	0.0125	0.00800	64	25-150	
13C5 PFNA	0.0125	0.00825	66	25-150	
13C2 PFDA	0.0125	0.00794	64	25-150	
13C2 PFUnA	0.0125	0.00812	65	25-150	
13C2 PFDoA	0.0125	0.00773	62	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treat Level: Low Lab File ID: 2018.04.24LLC_044.d

Lab ID: LCS 320-218876/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.0125	0.00841	67	25-150	
13C3-PFBS	0.0116	0.00771	66	25-150	
18O2 PFHxS	0.0118	0.00779	66	25-150	
13C4 PFOS	0.0120	0.00751	63	25-150	
13C8 FOSA	0.0125	0.00792	63	25-150	
d3-NMeFOSAA	0.0125	0.00772	62	25-150	
d5-NEtFOSAA	0.0125	0.00858	69	25-150	
M2-6:2FTS	0.0119	0.00795	67	25-150	
M2-8:2FTS	0.0120	0.00797	67	25-150	
M2-4:2FTS	0.0117	0.00771	66	0-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.24LLC_053.d

Lab ID: LCS 320-218884/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00500	0.00729	146	70-130	*
Perfluoropentanoic acid (PFPeA)	0.00500	0.00565	113	70-130	
Perfluorohexanoic acid (PFHxA)	0.00500	0.00584	117	70-130	
Perfluoroheptanoic acid (PFHpA)	0.00500	0.00611	122	70-130	
Perfluorooctanoic acid (PFOA)	0.00500	0.0116	232	70-130	*
Perfluorononanoic acid (PFNA)	0.00500	0.00466	93	70-130	
Perfluorodecanoic acid (PFDA)	0.00500	0.00481	96	70-130	
Perfluoroundecanoic acid (PFUnA)	0.00500	0.00395	79	70-130	
Perfluorododecanoic acid (PFDoA)	0.00500	0.00500	100	70-130	
Perfluorotridecanoic Acid (PFTriA)	0.00500	0.00474	95	70-130	
Perfluorotetradecanoic acid (PFTeA)	0.00500	0.00414	83	70-130	
Perfluorobutanesulfonic acid (PFBS)	0.00442	0.00463	105	70-130	
Perfluorohexanesulfonic acid (PFHxS)	0.00455	0.00417	92	70-130	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00476	0.00444	93	70-130	
Perfluorooctanesulfonic acid (PFOS)	0.00464	0.00487	105	70-130	
Perfluorodecanesulfonic acid (PFDS)	0.00482	0.00465	96	70-130	
Perfluorooctane Sulfonamide (FOSA)	0.00500	ND	0	70-130	*
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00500	ND	0	70-130	*
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00500	ND	0	70-130	*
6:2FTS	0.00474	ND	1	70-130	*
8:2FTS	0.00479	ND	0	70-130	*
13C4 PFBA	0.0125	0.00958	77	25-150	
13C5 PFPeA	0.0125	0.00967	77	25-150	
13C2 PFHxA	0.0125	0.00930	74	25-150	
13C4-PFHpA	0.0125	0.00925	74	25-150	
13C4 PFOA	0.0125	0.00895	72	25-150	
13C5 PFNA	0.0125	0.00941	75	25-150	
13C2 PFDA	0.0125	0.00882	71	25-150	
13C2 PFUnA	0.0125	0.00905	72	25-150	
13C2 PFDoA	0.0125	0.00837	67	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.24LLC_053.d

Lab ID: LCS 320-218884/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.0125	0.00943	75	25-150	
13C3-PFBS	0.0116	0.00866	75	25-150	
18O2 PFHxS	0.0118	0.00889	75	25-150	
13C4 PFOS	0.0120	0.00864	72	25-150	
13C8 FOSA	0.0125	0.00754	60	25-150	
d3-NMeFOSAA	0.0125	0.00885	71	25-150	
d5-NEtFOSAA	0.0125	0.00942	75	25-150	
M2-6:2FTS	0.0119	0.00872	73	25-150	
M2-8:2FTS	0.0120	0.00853	71	25-150	
M2-4:2FTS	0.0117	0.000	0	0-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treat Level: Low Lab File ID: 2018.04.24LLC_047.d

Lab ID: 320-38054-2 MS Client ID: SB003(0-2)-TOP MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00546	0.035	0.0622	503	81-133	E 4
Perfluoropentanoic acid (PFPeA)	0.00546	0.011	0.0261	281	79-120	F1
Perfluorohexanoic acid (PFHxA)	0.00546	0.015	0.0326	316	75-125	F1
Perfluoroheptanoic acid (PFHpA)	0.00546	0.0066	0.0204	252	76-124	F1
Perfluorooctanoic acid (PFOA)	0.00546	0.010	0.0185	155	76-121	F1
Perfluorododecanoic acid (PFDoA)	0.00546	0.034	0.0458	212	75-123	4
Perfluorotetradecanoic acid (PFTeA)	0.00546	0.017	0.0330	299	22-129	F1
Perfluorobutanesulfonic acid (PFBS)	0.00483	ND	0.00503	104	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00497	0.0054	0.00986	90	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00520	0.0012	0.00810	132	78-146	
Perfluorodecanesulfonic acid (PFDS)	0.00527	0.012	0.0183	126	54-113	F1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00546	ND	0.00633	NC	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00546	0.0059	0.00847	47	65-135	F1
6:2FTS	0.00518	0.048	0.0449	-52	65-135	4
13C4 PFBA	0.0137	0.00094	0.00100	7	25-150	*
13C5 PFPeA	0.0137	0.0079	0.00845	62	25-150	
13C2 PFHxA	0.0137	0.0078	0.00870	64	25-150	
13C4-PFHpA	0.0137	0.0085	0.00919	67	25-150	
13C4 PFOA	0.0137	0.0079	0.00865	63	25-150	
13C2 PFDoA	0.0137	0.0070	0.00701	51	25-150	
13C2-PFTeDA	0.0137	0.0024	0.00185	14	25-150	*
13C3-PFBS	0.0127	0.0087	0.00947	75	25-150	
18O2 PFHxS	0.0129	0.0087	0.00915	71	25-150	
13C4 PFOS	0.0131	0.0064	0.00670	51	25-150	
d3-NMeFOSAA	0.0137	0.0071	0.00764	56	25-150	
d5-NEtFOSAA	0.0137	0.0057	0.00621	45	25-150	
M2-6:2FTS	0.0130	0.013	0.0145	112	25-150	
M2-4:2FTS	0.0128	0.027	0.0313	245	0-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.24LLC_056.d

Lab ID: 320-38054-2 MS Client ID: SB003(0-2)-TOP MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanesulfonic acid (PFBS)	0.00481	0.0074	0.00723	-3	70-130	F1
Perfluoroheptanesulfonic Acid (PFHpS)	0.00517	0.010	0.00965	-8	70-130	F1
Perfluorodecanesulfonic acid (PFDS)	0.00524	0.021	0.0230	47	70-130	F1
Perfluorooctane Sulfonamide (FOSA)	0.00544	0.0095	0.000768	-161	70-130	F1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00544	ND	ND	0	70-130	F1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00544	ND	ND	0	70-130	F1
13C3-PFBS	0.0126	0.013	0.0110	87	25-150	
13C4 PFOS	0.0130	0.0090	0.00802	62	25-150	
13C8 FOSA	0.0136	0.012	0.0117	86	25-150	
d3-NMeFOSAA	0.0136	0.016	0.0131	96	25-150	
d5-NEtFOSAA	0.0136	0.0096	0.00795	58	25-150	
M2-4:2FTS	0.0127	0.00081	0.000	0	0-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.26LLC_070.d

Lab ID: 320-38054-2 MS DL Client ID: SB003(0-2)-TOP MS DL

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorododecanoic acid (PFDoA)	0.00544	0.33	0.409	1457	70-130	4
Perfluorotridecanoic Acid (PFTriA)	0.00544	0.37	0.400	499	70-130	4
Perfluorotetradecanoic acid (PFTeA)	0.00544	0.15	0.182	668	70-130	4
Perfluorohexanesulfonic acid (PFHxS)	0.00495	0.21	0.0809	-2682	70-130	4
6:2FTS	0.00515	0.057	ND	0	70-130	4
8:2FTS	0.00521	0.27	ND	0	70-130	4
13C2 PFDoA	0.0136	0.0080	0.00746	55	25-150	
13C2-PFTeDA	0.0136	0.0078	0.00785	58	25-150	
18O2 PFHxS	0.0129	0.0077	0.00801	62	25-150	
M2-6:2FTS	0.0129	0.0080	0.00795	62	25-150	
M2-8:2FTS	0.0130	0.0090	0.00825	63	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treat Level: Low Lab File ID: 2018.04.26LLA_055.d

Lab ID: 320-38054-2 MS DL Client ID: SB003(0-2)-TOP MS DL

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorononanoic acid (PFNA)	0.00546	0.073	0.0888	291	74-126	4
Perfluorodecanoic acid (PFDA)	0.00546	0.074	0.0743	2	74-124	4
Perfluoroundecanoic acid (PFUnA)	0.00546	0.91	0.993	1502	74-114	4
Perfluorotridecanoic Acid (PFTriA)	0.00546	0.13	0.178	809	43-116	4
Perfluorooctanesulfonic acid (PFOS)	0.00507	0.86	0.926	1337	69-131	4
Perfluorooctane Sulfonamide (FOSA)	0.00546	0.35	0.371	461	62-135	4
8:2FTS	0.00523	0.69	0.837	2820	65-135	4
13C5 PFNA	0.0137	0.0081	0.00834	61	25-150	
13C2 PFDA	0.0137	0.0072	0.00875	64	25-150	
13C2 PFUnA	0.0137	0.0084	0.00847	62	25-150	
13C2 PFDoA	0.0137	0.0064	0.00608	45	25-150	
13C4 PFOS	0.0131	0.0064	0.00687	53	25-150	
13C8 FOSA	0.0137	0.0074	0.00788	58	25-150	
M2-8:2FTS	0.0131	0.014	0.0136	104	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.26LLA_058.d

Lab ID: 320-38054-2 MS DL2 Client ID: SB003(0-2)-TOP MS DL2

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00544	1.8	1.87	410	70-130	4
Perfluoropentanoic acid (PFPeA)	0.00544	3.4	2.93	-8520	70-130	4
Perfluorohexanoic acid (PFHxA)	0.00544	3.5	2.63	-16112	70-130	4
Perfluoroheptanoic acid (PFHpA)	0.00544	3.4	3.81	8225	70-130	4
Perfluorooctanoic acid (PFOA)	0.00544	3.0	2.02	-17291	70-130	4
Perfluorononanoic acid (PFNA)	0.00544	1.3	1.47	2378	70-130	4
Perfluorodecanoic acid (PFDA)	0.00544	0.86	0.682	-3278	70-130	4
Perfluoroundecanoic acid (PFUnA)	0.00544	1.2	1.23	1029	70-130	4
Perfluorooctanesulfonic acid (PFOS)	0.00504	0.99	0.836	-3038	70-130	4
13C4 PFBA	0.0136	0.0076	0.00764	56	25-150	
13C5 PFPeA	0.0136	0.0069	0.00806	59	25-150	
13C2 PFHxA	0.0136	0.0084	0.00945	70	25-150	
13C4-PFHpA	0.0136	0.0086	0.00758	56	25-150	
13C4 PFOA	0.0136	0.0080	0.00838	62	25-150	
13C5 PFNA	0.0136	0.0082	0.00715	53	25-150	
13C2 PFDA	0.0136	0.0071	0.00759	56	25-150	
13C2 PFUnA	0.0136	0.0083	0.00791	58	25-150	
13C4 PFOS	0.0130	0.0067	0.00714	55	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treat Level: Low Lab File ID: 2018.04.24LLC_048.d

Lab ID: 320-38054-2 MSD Client ID: SB003(0-2)-TOP MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00549	0.0299	-88	70	30	81-133	4 F2
Perfluoropentanoic acid (PFPeA)	0.00549	0.0147	72	56	30	79-120	F1 F2
Perfluorohexanoic acid (PFHxA)	0.00549	0.0178	45	59	30	75-125	F1 F2
Perfluoroheptanoic acid (PFHpA)	0.00549	0.0117	94	54	30	76-124	F2
Perfluorooctanoic acid (PFOA)	0.00549	0.0144	78	25	30	76-121	
Perfluorododecanoic acid (PFDoA)	0.00549	0.0381	71	18	30	75-123	4
Perfluorotetradecanoic acid (PFTeA)	0.00549	0.0269	187	20	30	22-129	F1
Perfluorobutanesulfonic acid (PFBS)	0.00485	0.00483	100	4	30	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00500	0.0102	97	4	30	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00523	0.00788	127	3	30	78-146	
Perfluorodecanesulfonic acid (PFDS)	0.00529	0.0166	94	9	30	54-113	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00549	0.00739	NC	16	30	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00549	0.00895	55	5	30	65-135	F1
6:2FTS	0.00520	0.0484	16	8	30	65-135	4
13C4 PFBA	0.0137	0.00124	9			25-150	*
13C5 PFPeA	0.0137	0.00962	70			25-150	
13C2 PFHxA	0.0137	0.00985	72			25-150	
13C4-PFHpA	0.0137	0.0101	74			25-150	
13C4 PFOA	0.0137	0.00917	67			25-150	
13C2 PFDoA	0.0137	0.00796	58			25-150	
13C2-PFTeDA	0.0137	0.00288	21			25-150	*
13C3-PFBS	0.0128	0.0101	80			25-150	
18O2 PFHxS	0.0130	0.00965	74			25-150	
13C4 PFOS	0.0131	0.00710	54			25-150	
d3-NMeFOSAA	0.0137	0.00705	51			25-150	
d5-NEtFOSAA	0.0137	0.00662	48			25-150	
M2-6:2FTS	0.0130	0.0143	110			25-150	
M2-4:2FTS	0.0128	0.0339	264			0-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.24LLC_057.d

Lab ID: 320-38054-2 MSD Client ID: SB003(0-2)-TOP MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanesulfonic acid (PFBS)	0.00478	0.00549	-40	27	30	70-130	F1
Perfluoroheptanesulfonic Acid (PFHpS)	0.00515	0.00729	-54	28	30	70-130	F1
Perfluorodecanesulfonic acid (PFDS)	0.00521	0.0228	44	1	30	70-130	F1
Perfluorooctane Sulfonamide (FOSA)	0.00541	ND	0	NC	30	70-130	F1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00541	ND	0	NC	30	70-130	F1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00541	ND	0	NC	30	70-130	F1
13C3-PFBS	0.0126	0.0105	84			25-150	
13C4 PFOS	0.0129	0.00834	64			25-150	
13C8 FOSA	0.0135	0.0127	94			25-150	
d3-NMeFOSAA	0.0135	0.0162	120			25-150	
d5-NEtFOSAA	0.0135	0.00979	72			25-150	
M2-4:2FTS	0.0126	0.000	0			0-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.26LLC_071.d

Lab ID: 320-38054-2 MSD DL Client ID: SB003(0-2)-TOP MSD DL

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorododecanoic acid (PFDoA)	0.00541	0.422	1699	3	30	70-130	4
Perfluorotridecanoic Acid (PFTriA)	0.00541	0.371	-23	7	30	70-130	4
Perfluorotetradecanoic acid (PFTeA)	0.00541	0.230	1558	23	30	70-130	4
Perfluorohexanesulfonic acid (PFHxS)	0.00492	0.0257	-3816	104	30	70-130	4 F2
6:2FTS	0.00513	ND	0	NC	30	70-130	4
8:2FTS	0.00518	ND	0	NC	30	70-130	4
13C2 PFDoA	0.0135	0.0103	76			25-150	
13C2-PFTeDA	0.0135	0.00953	70			25-150	
18O2 PFHxS	0.0128	0.00822	64			25-150	
M2-6:2FTS	0.0128	0.00920	72			25-150	
M2-8:2FTS	0.0130	0.00907	70			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Pre-Treat Level: Low Lab File ID: 2018.04.26LLA_056.d

Lab ID: 320-38054-2 MSD DL Client ID: SB003(0-2)-TOP MSD DL

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorononanoic acid (PFNA)	0.00549	0.0939	382	6	30	74-126	4
Perfluorodecanoic acid (PFDA)	0.00549	0.0856	208	14	30	74-124	4
Perfluoroundecanoic acid (PFUnA)	0.00549	0.894	-305	10	30	74-114	4
Perfluorotridecanoic Acid (PFTriA)	0.00549	0.160	492	10	30	43-116	4
Perfluorooctanesulfonic acid (PFOS)	0.00509	0.903	872	3	30	69-131	4
Perfluorooctane Sulfonamide (FOSA)	0.00549	0.344	-41	8	30	62-135	4
8:2FTS	0.00526	0.719	552	15	30	65-135	4
13C5 PFNA	0.0137	0.00860	63			25-150	
13C2 PFDA	0.0137	0.00872	64			25-150	
13C2 PFUnA	0.0137	0.0101	73			25-150	
13C2 PFDoA	0.0137	0.00741	54			25-150	
13C4 PFOS	0.0131	0.00729	56			25-150	
13C8 FOSA	0.0137	0.00909	66			25-150	
M2-8:2FTS	0.0131	0.0179	136			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Matrix: Solid (Post-Trea Level: Low Lab File ID: 2018.04.26LLA_059.d

Lab ID: 320-38054-2 MSD DL2 Client ID: SB003(0-2)-TOP MSD DL2

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00541	1.88	642	1	30	70-130	4
Perfluoropentanoic acid (PFPeA)	0.00541	3.36	-472	14	30	70-130	4
Perfluorohexanoic acid (PFHxA)	0.00541	2.97	-9952	12	30	70-130	4
Perfluoroheptanoic acid (PFHpA)	0.00541	4.01	12022	5	30	70-130	4
Perfluorooctanoic acid (PFOA)	0.00541	1.83	-20939	10	30	70-130	4
Perfluorononanoic acid (PFNA)	0.00541	1.59	4528	8	30	70-130	4
Perfluorodecanoic acid (PFDA)	0.00541	0.833	-497	20	30	70-130	4
Perfluoroundecanoic acid (PFUnA)	0.00541	1.10	-1485	12	30	70-130	4
Perfluorooctanesulfonic acid (PFOS)	0.00502	0.693	-5911	19	30	70-130	4
13C4 PFBA	0.0135	0.00795	59			25-150	
13C5 PFPeA	0.0135	0.00776	57			25-150	
13C2 PFHxA	0.0135	0.00865	64			25-150	
13C4-PFHpA	0.0135	0.00786	58			25-150	
13C4 PFOA	0.0135	0.00923	68			25-150	
13C5 PFNA	0.0135	0.00760	56			25-150	
13C2 PFDA	0.0135	0.00828	61			25-150	
13C2 PFUnA	0.0135	0.0101	75			25-150	
13C4 PFOS	0.0129	0.00815	63			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab File ID: 2018.04.24LLC_043.d Lab Sample ID: MB 320-218876/1-A

Matrix: Solid (Pre-Treatment) Date Extracted: 04/19/2018 18:33

Instrument ID: A8_N Date Analyzed: 04/24/2018 23:12

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-218876/2-A	2018.04.24LLC_044.d	04/24/2018 23:20
SB007(2-4)-TOP	320-38054-1	2018.04.24LLC_045.d	04/24/2018 23:28
SB003(0-2)-TOP	320-38054-2	2018.04.24LLC_046.d	04/24/2018 23:36
SB003(0-2)-TOP MS	320-38054-2 MS	2018.04.24LLC_047.d	04/24/2018 23:44
SB003(0-2)-TOP MSD	320-38054-2 MSD	2018.04.24LLC_048.d	04/24/2018 23:51
SB003(0-2)-TOP DL	320-38054-2 DL	2018.04.26LLA_054.d	04/26/2018 18:12
SB003(0-2)-TOP MS DL	320-38054-2 MS DL	2018.04.26LLA_055.d	04/26/2018 18:20
SB003(0-2)-TOP MSD DL	320-38054-2 MSD DL	2018.04.26LLA_056.d	04/26/2018 18:28

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab File ID: 2018.04.24LLC_052.d Lab Sample ID: MB 320-218884/1-A

Matrix: Solid (Post-Treatment) Date Extracted: 04/19/2018 19:05

Instrument ID: A8_N Date Analyzed: 04/25/2018 00:23

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-218884/2-A	2018.04.24LLC_053.d	04/25/2018 00:30
SB007(2-4)-TOP	320-38054-1	2018.04.24LLC_054.d	04/25/2018 00:38
SB003(0-2)-TOP	320-38054-2	2018.04.24LLC_055.d	04/25/2018 00:46
SB003(0-2)-TOP MS	320-38054-2 MS	2018.04.24LLC_056.d	04/25/2018 00:54
SB003(0-2)-TOP MSD	320-38054-2 MSD	2018.04.24LLC_057.d	04/25/2018 01:02
SB003(0-2)-TOP DL2	320-38054-2 DL2	2018.04.26LLA_057.d	04/26/2018 18:36
SB003(0-2)-TOP MS DL2	320-38054-2 MS DL2	2018.04.26LLA_058.d	04/26/2018 18:44
SB003(0-2)-TOP MSD DL2	320-38054-2 MSD DL2	2018.04.26LLA_059.d	04/26/2018 18:51
SB007(2-4)-TOP DL	320-38054-1 DL	2018.04.26LLC_068.d	04/27/2018 11:41
SB003(0-2)-TOP DL	320-38054-2 DL	2018.04.26LLC_069.d	04/27/2018 11:49
SB003(0-2)-TOP MS DL	320-38054-2 MS DL	2018.04.26LLC_070.d	04/27/2018 11:56
SB003(0-2)-TOP MSD DL	320-38054-2 MSD DL	2018.04.26LLC_071.d	04/27/2018 12:04

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Sample No.: IC 320-217359/5 Date Analyzed: 04/10/2018 19:03

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.10LLICAL_00 Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4623888	2.67				
UPPER LIMIT		6935832	2.87				
LOWER LIMIT		2311944	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-217359/9		4390532	2.67				
ICV 320-217359/10		4377627	2.68				
CCV 320-219693/3 CCVIS		4762957	2.69				
CCV 320-219909/3 CCVIS		4697624	2.68				
CCV 320-220104/3 CCVIS		4648517	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Sample No.: CCV 320-219693/3 Date Analyzed: 04/24/2018 18:23

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.24LLC_006.d Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4762957	2.69				
UPPER LIMIT		7144436	2.89				
LOWER LIMIT		2381479	2.49				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-219693/1		4257844	2.69				
CCVL 320-219693/2		4165426	2.69				
CCV 320-219700/1		4788493	2.69				
MB 320-218876/1-A		5590323	2.68				
LCS 320-218876/2-A		5864115	2.68				
320-38054-1	SB007(2-4)-TOP	5574167	2.68				
320-38054-2	SB003(0-2)-TOP	5291172	2.68				
320-38054-2 MS	SB003(0-2)-TOP MS	5010045	2.68				
320-38054-2 MSD	SB003(0-2)-TOP MSD	5138915	2.68				
CCV 320-219700/10		4379549	2.68				
MB 320-218884/1-A		6151851	2.67				
LCS 320-218884/2-A		5517816	2.68				
320-38054-1	SB007(2-4)-TOP	5668332	2.68				
CCV 320-219700/17		4966943	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Sample No.: CCV 320-219909/3 Date Analyzed: 04/26/2018 06:09

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.25LLBX_070. Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4697624	2.68				
UPPER LIMIT		7046436	2.88				
LOWER LIMIT		2348812	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-219909/1		4591124	2.68				
CCVL 320-219909/2		4680051	2.68				
CCV 320-220090/1		4645653	2.68				
320-38054-2 DL	SB003(0-2)-TOP DL	59955*	2.69				
320-38054-2 MS DL	SB003(0-2)-TOP MS DL	60428*	2.68				
320-38054-2 MSD DL	SB003(0-2)-TOP MSD DL	59917*	2.68				
320-38054-2 DL2	SB003(0-2)-TOP DL2	65895*	2.68				
320-38054-2 MS DL2	SB003(0-2)-TOP MS DL2	65329*	2.69				
320-38054-2 MSD DL2	SB003(0-2)-TOP MSD DL2	58718*	2.69				
CCV 320-220090/8		4618311	2.69				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Sample No.: CCV 320-220104/3 Date Analyzed: 04/27/2018 06:51

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.26LLBX_034. Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4648517	2.68				
UPPER LIMIT		6972776	2.88				
LOWER LIMIT		2324259	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-220104/1		4084746	2.68				
CCVL 320-220104/2		4465597	2.68				
CCV 320-220224/1		4836261	2.68				
320-38054-1 DL	SB007(2-4)-TOP DL	1300683*	2.68				
320-38054-2 DL	SB003(0-2)-TOP DL	592911*	2.68				
320-38054-2 MS DL	SB003(0-2)-TOP MS DL	547663*	2.68				
320-38054-2 MSD DL	SB003(0-2)-TOP MSD DL	507387*	2.67				
CCV 320-220224/6		4692374	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP | Lab Sample ID: 320-38054-1

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_045.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:50

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.02(g) | Date Analyzed: 04/24/2018 23:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 19.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00090		0.00061
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		0.00061
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0010		0.00061
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00062		0.00061
335-67-1	Perfluorooctanoic acid (PFOA)	0.00090		0.00061
375-95-1	Perfluorononanoic acid (PFNA)	0.00065		0.00061
335-76-2	Perfluorodecanoic acid (PFDA)	ND		0.00061
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00080		0.00061
307-55-1	Perfluorododecanoic acid (PFDoA)	0.0037		0.00061
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.033		0.00061
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0015		0.00061
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.00061
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		0.00061
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00061
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		0.0015
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		0.00061
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.0033		0.00061
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0061
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0061
27619-97-2	6:2FTS	ND		0.0061
39108-34-4	8:2FTS	0.0080		0.0061

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP | Lab Sample ID: 320-38054-1

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_045.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:50

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.02(g) | Date Analyzed: 04/24/2018 23:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 19.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	13	*	25-150
STL01893	13C5 PFPeA	61		25-150
STL00993	13C2 PFHxA	61		25-150
STL01892	13C4-PFHpA	60		25-150
STL00990	13C4 PFOA	62		25-150
STL00995	13C5 PFNA	64		25-150
STL00996	13C2 PFDA	63		25-150
STL00997	13C2 PFUnA	61		25-150
STL00998	13C2 PFDoA	60		25-150
STL02116	13C2-PFTeDA	49		25-150
STL02337	13C3-PFBS	63		25-150
STL00994	18O2 PFHxS	63		25-150
STL00991	13C4 PFOS	62		25-150
STL01056	13C8 FOSA	60		25-150
STL02118	d3-NMeFOSAA	62		25-150
STL02117	d5-NEtFOSAA	68		25-150
STL02279	M2-6:2FTS	67		25-150
STL02280	M2-8:2FTS	68		25-150
STL02395	M2-4:2FTS	83		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_045.d
Lims ID: 320-38054-A-1-A
Client ID: SB007(2-4)-TOP
Sample Type: Client
Inject. Date: 24-Apr-2018 23:28:25 ALS Bottle#: 31 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: barnettj Date: 25-Apr-2018 14:22:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.435	1.441	-0.006	1.000	54009	0.1460			16.7	M
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.442	-0.007	1.000	996084	0.3320		13.3	8108	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.702	0.0	1.005	134439	0.0953			90.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.703	-0.010	0.553	2959674	1.53		61.2	42116	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.738	-0.009	1.000	8932	0.004061			29.4	
298.90 > 99.00	1.729	1.738	-0.009	1.000	4256		2.10(1.25-3.74)		25.3	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.739	-0.010	1.000	65324	1.47		63.3	614	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.961	-0.012	1.000	618169	1.95		83.3	4378	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.992	-0.011	1.000	224736	0.1706			258	
313.00 > 119.00	1.981	1.992	-0.011	1.000	22708		9.90(5.03-15.10)		184	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.993	-0.012	1.000	3240479	1.52		60.6	75595	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.319	-0.005	1.000	127005	0.1015			134	
363.00 > 169.00	2.314	2.319	-0.005	1.000	47767		2.66(1.13-3.40)		195	
D 9 13C4-PFHpA										
367.00 > 322.00	2.314	2.322	-0.008	1.000	3126221	1.50		60.1	53813	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.327	2.332	-0.005	1.000	107881	0.0588			196	
399.00 > 99.00	2.327	2.332	-0.005	1.000	30418		3.55(1.50-4.49)		147	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.327	2.335	-0.008	1.000	3834369	1.49		63.1	85610	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.658	2.660	-0.002	1.000	442772	0.8753			6430	
D 12 M2-6:2FTS										
429.00 > 81.00	2.658	2.668	-0.010	1.000	710715	1.59		67.1	6868	
* 62 13C2-PFOA										
415.00 > 370.00	2.680	2.690	-0.010		5574167	2.50			59076	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.680	2.690	-0.010	1.000	218262	0.1470			145	
413.00 > 169.00	2.680	2.690	-0.010	1.000	107587		2.03(0.84-2.52)		330	
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.691	-0.011	1.000	3212924	1.55		62.1	75367	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.053	3.060	-0.007	1.000	222980	0.1839			815	M
499.00 > 99.00	3.053	3.060	-0.007	1.000	46683		4.78(2.31-6.93)		729	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.067	-0.007	1.000	125404	0.1064			378	
463.00 > 169.00	3.060	3.067	-0.007	1.000	30853		4.06(1.90-5.69)		1142	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.067	-0.007	1.000	2824973	1.59		63.6	56012	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.067	-0.014	1.000	2663646	1.48		62.0	18930	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	1.000	724200	0.5338			440	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.399	-0.010	1.000	3353343	1.49		59.7	1695	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.417	-0.010	1.000	597697	1.30			23049	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.417	-0.010	1.000	871138	1.62		67.7	5044	
24 Perfluorodecanoic acid										RM
513.00 > 469.00	3.417	3.426	-0.009	1.000	52576	0.0538			173	R
513.00 > 169.00	3.426	3.426	0.0	1.003	7264		7.24(2.36-7.09)		86.8	M
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.427	-0.010	1.000	2369776	1.59		63.4	59195	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.586	-0.011	1.000	1314552	1.55		62.1	19360	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.740	-0.010	1.000	16729	0.0231			97.3	
599.00 > 99.00	3.730	3.740	-0.010	1.000	4408		3.80(1.39-4.16)		88.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.751	-0.011	1.000	1429802	1.71		68.4	18673	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.761	-0.010	1.000	86121	0.1295			354	
563.00 > 169.00	3.751	3.761	-0.010	1.000	22822		3.77(2.12-6.36)		752	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.761	-0.010	1.003	4951	0.009264			51.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.762	-0.011	1.000	1968009	1.53		61.1	41263	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.050	0.0	1.000	521543	0.6034			707	
613.00 > 169.00	4.050	4.050	0.0	1.000	121700		4.29(2.13-6.40)		963	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.061	-0.011	1.000	2072175	1.49		59.6	24885	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.318	-0.011	1.000	5465253	5.43			6624	
663.00 > 169.00	4.307	4.318	-0.011	1.000	1676075		3.26(1.25-3.76)		14154	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.553	-0.001	1.000	55011	0.2517			481	
713.00 > 219.00	4.542	4.553	-0.011	0.998	39400		1.40(0.71-2.13)		497	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.564	-0.012	1.000	2175666	1.23		49.3	21319	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:08 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_045.d

Injection Date: 24-Apr-2018 23:28:25 Instrument ID: A8_N

Lims ID: 320-38054-A-1-A Lab Sample ID: 320-38054-1

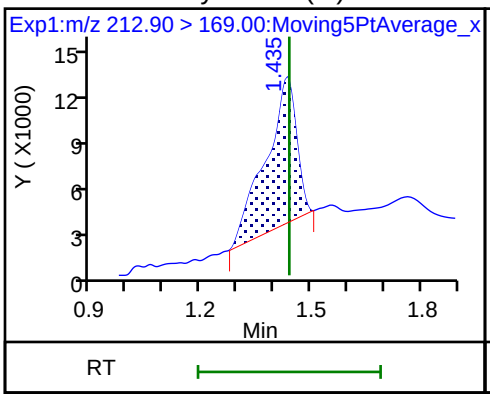
Client ID: SB007(2-4)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 31 Worklist Smp#: 4

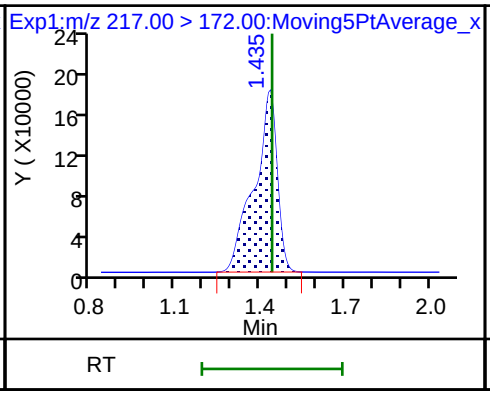
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

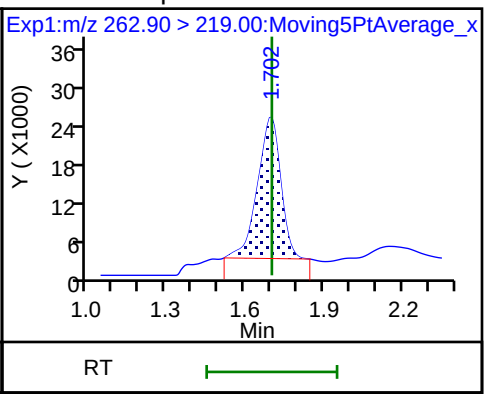
2 Perfluorobutyric acid (M)



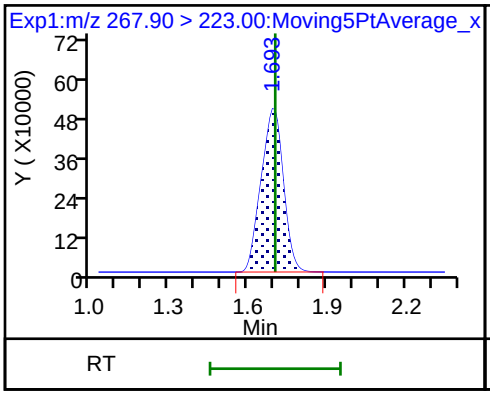
D 1 13C4 PFBA



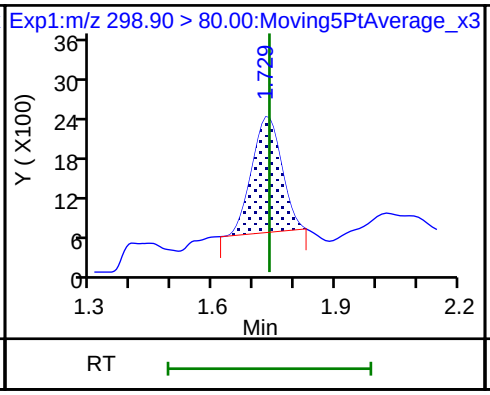
4 Perfluoropentanoic acid



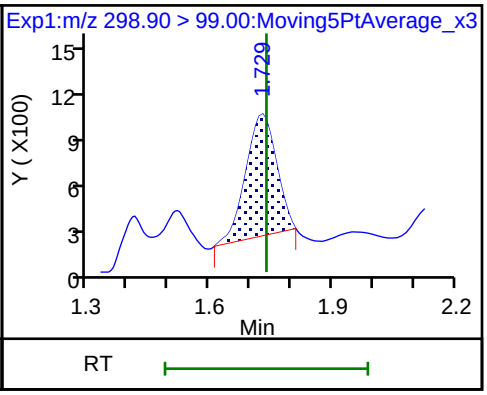
D 3 13C5-PFPeA



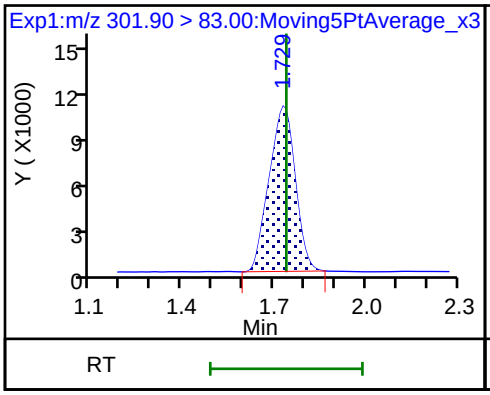
5 Perfluorobutanesulfonic acid



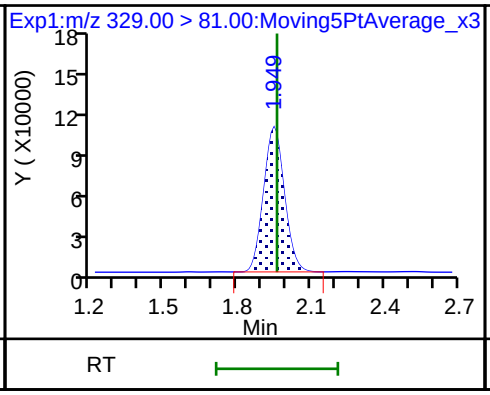
5 Perfluorobutanesulfonic acid



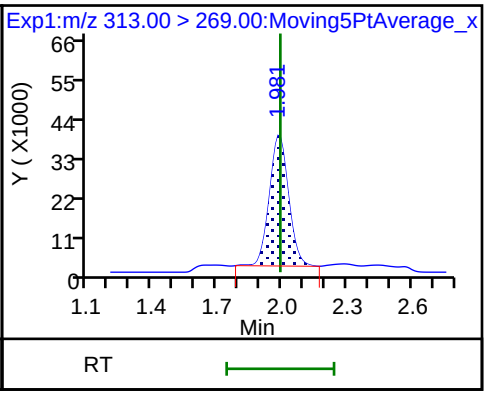
D 47 13C3-PFBS



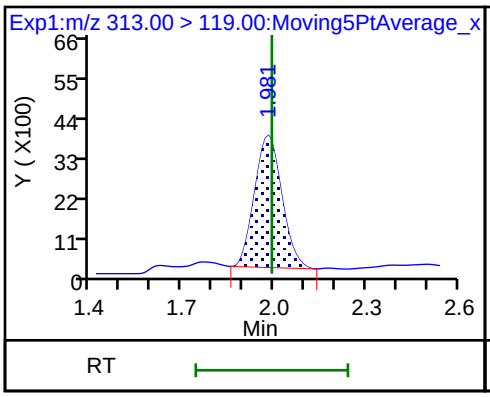
D 60 M2-4:2FTS



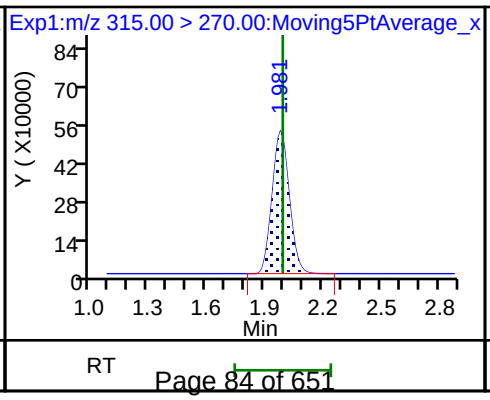
6 Perfluorohexanoic acid



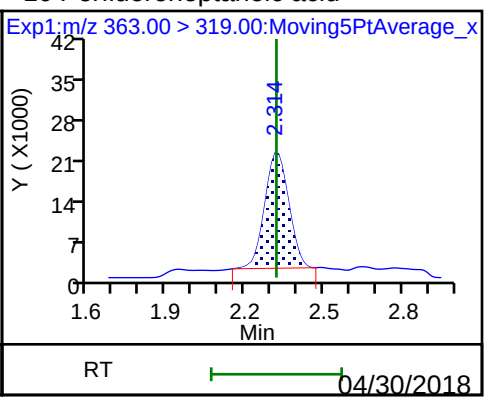
6 Perfluorohexanoic acid



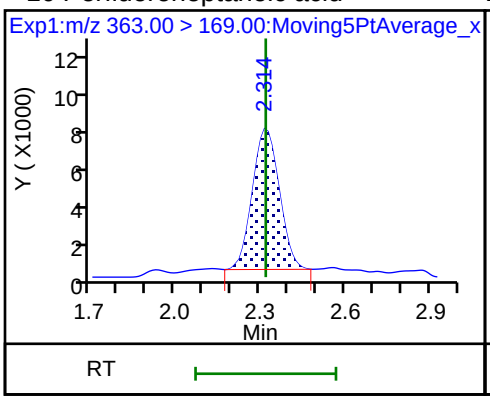
D 7 13C2 PFHxA



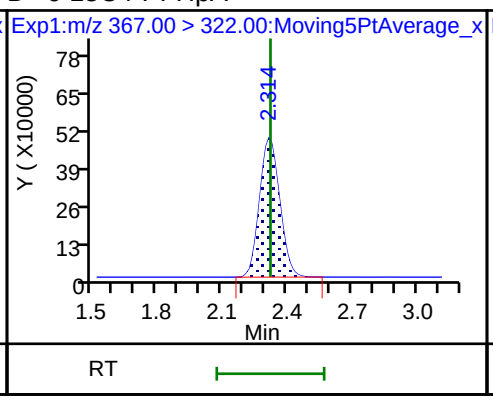
10 Perfluoroheptanoic acid



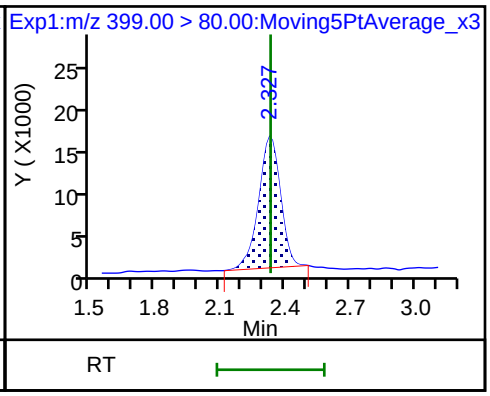
10 Perfluoroheptanoic acid



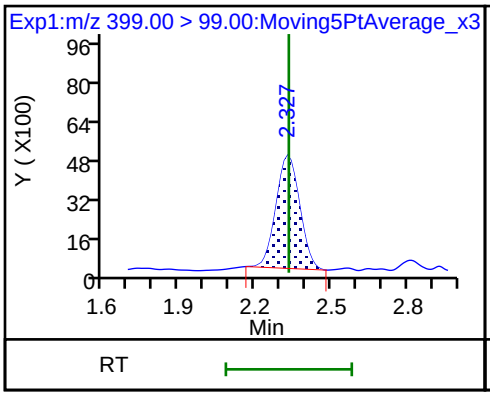
D 9 13C4-PFHpA



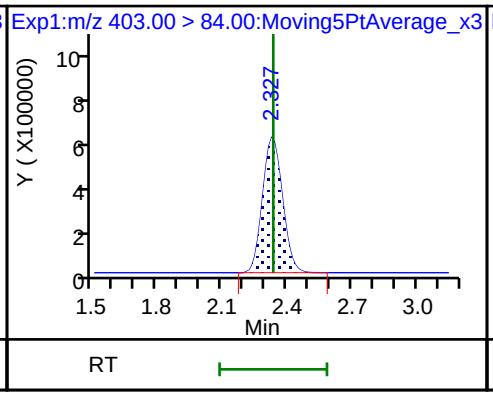
8 Perfluorohexanesulfonic acid



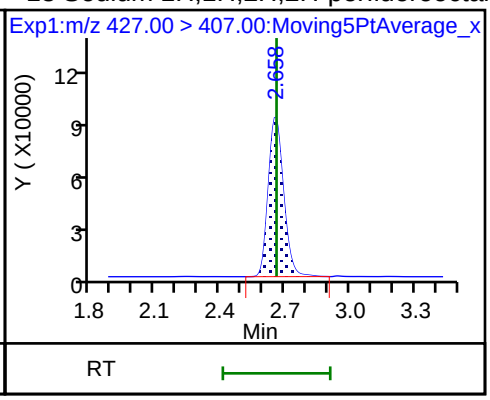
8 Perfluorohexanesulfonic acid



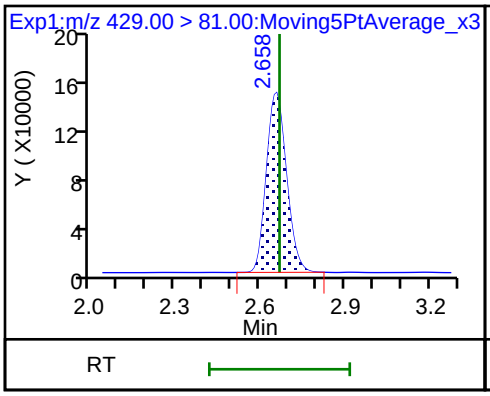
D 11 18O2 PFHxS



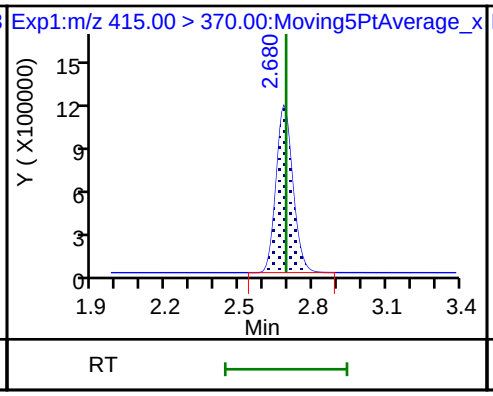
13 Sodium 1H,1H,2H,2H-perfluorooctane



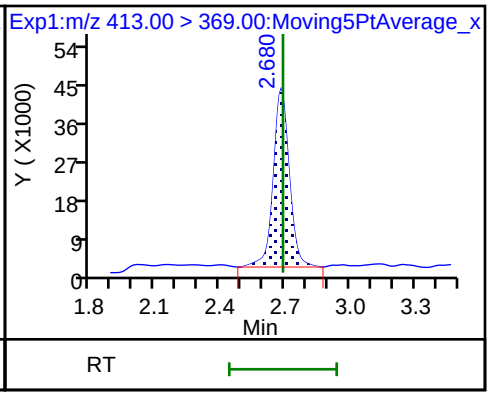
D 12 M2-6:2FTS



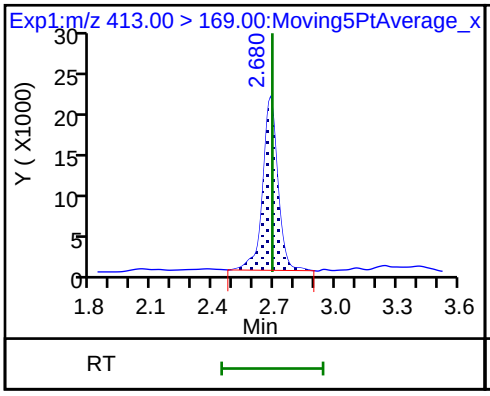
* 62 13C2-PFOA



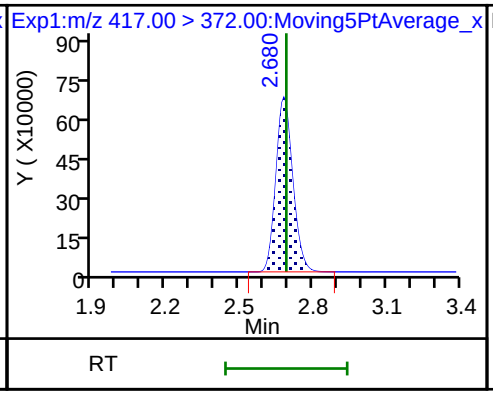
15 Perfluorooctanoic acid



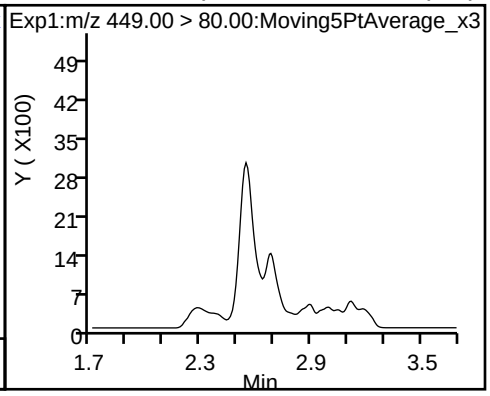
15 Perfluorooctanoic acid



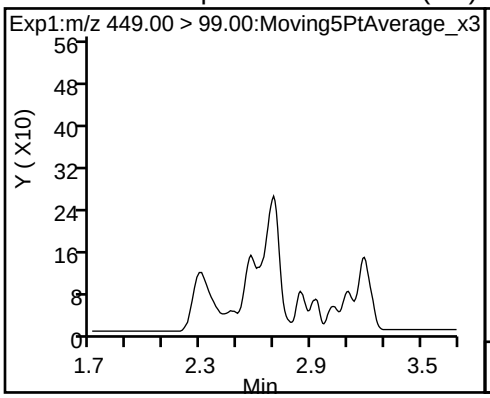
D 14 13C4 PFOA



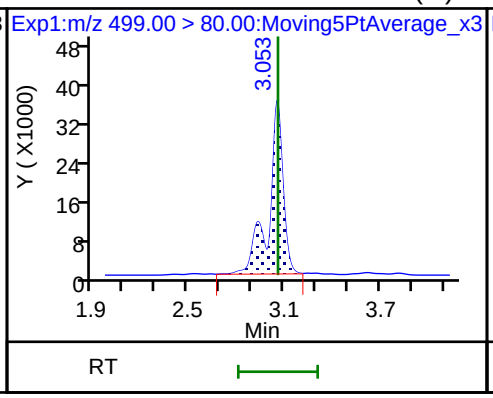
16 Perfluoroheptanesulfonic acid (ND)



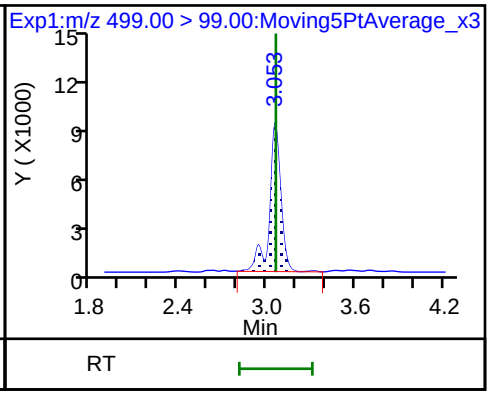
16 Perfluoroheptanesulfonic acid (ND)



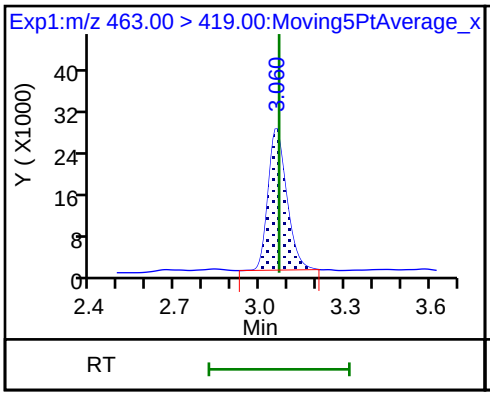
17 Perfluorooctane sulfonic acid (M)



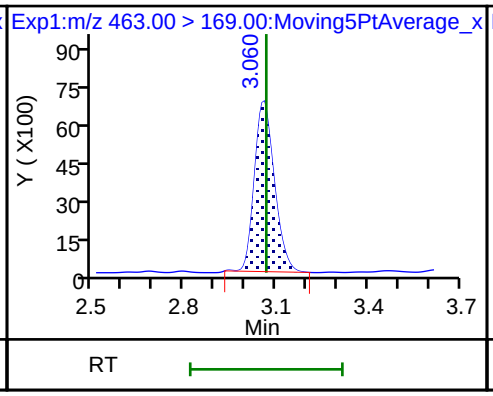
17 Perfluorooctane sulfonic acid



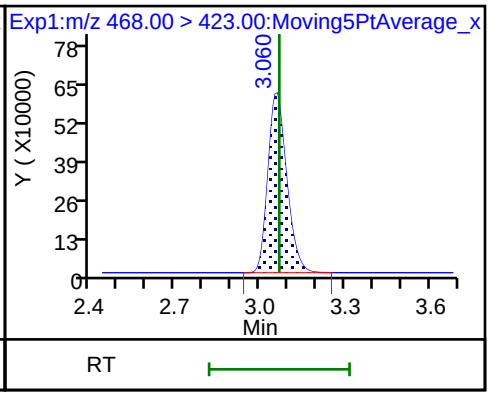
20 Perfluorononanoic acid



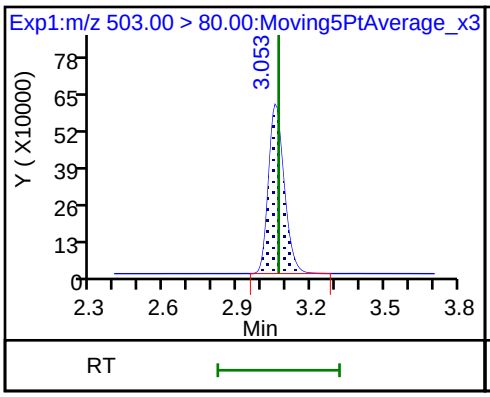
20 Perfluorononanoic acid



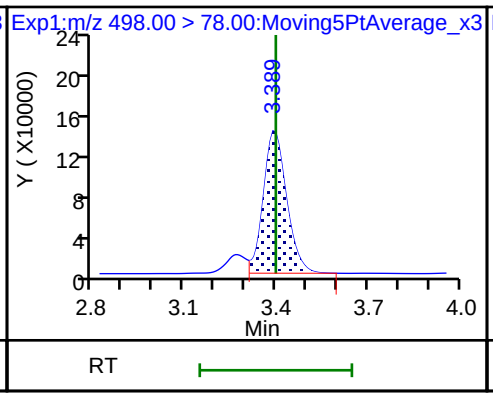
D 19 13C5 PFNA



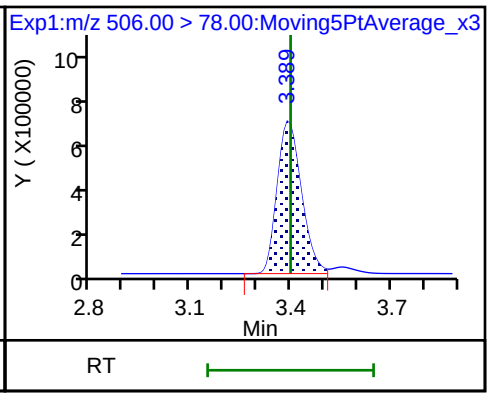
D 18 13C4 PFOS



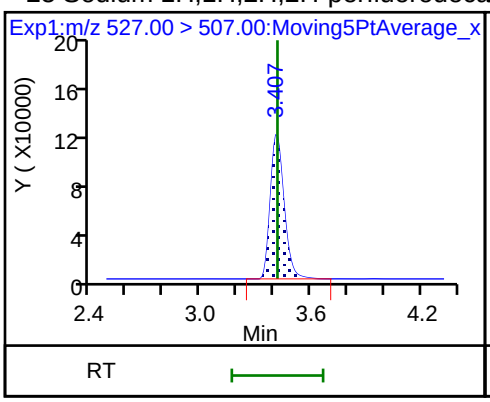
22 Perfluorooctane Sulfonamide



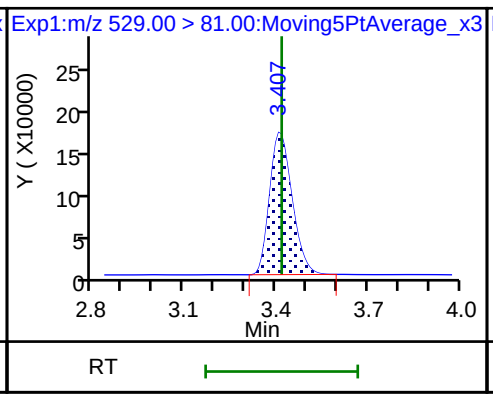
D 21 13C8 FOSA



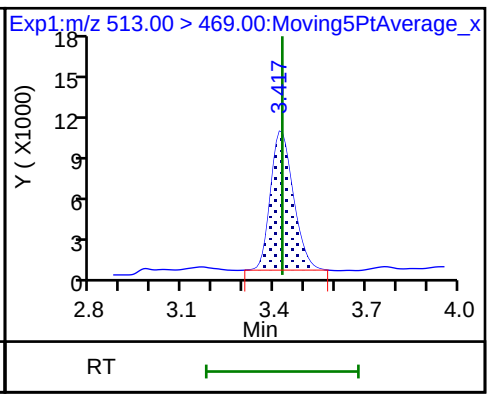
25 Sodium 1H,1H,2H,2H-perfluorodecane



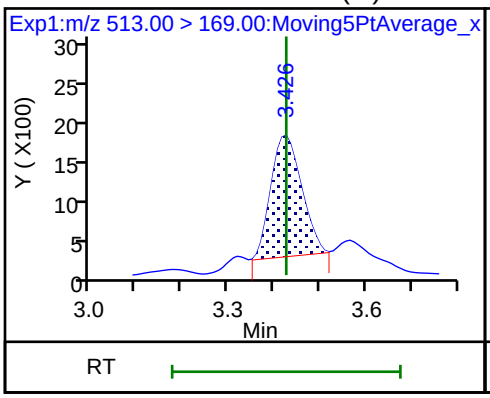
D26 M2-8:2FTS



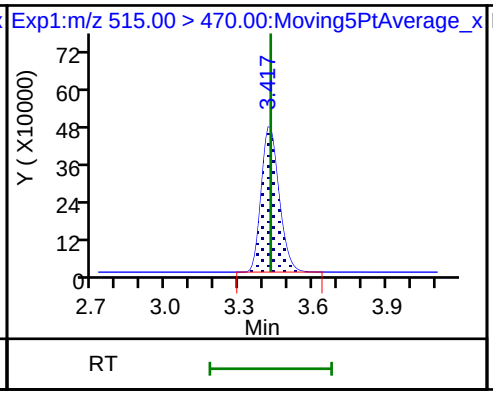
24 Perfluorodecanoic acid



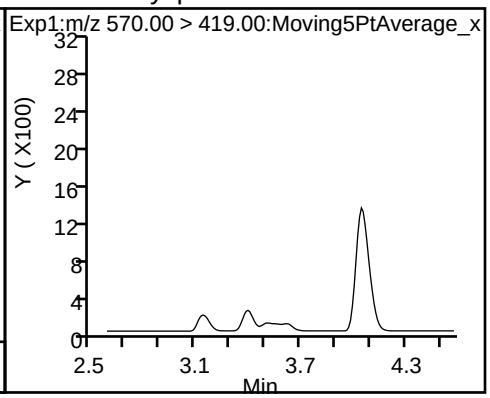
24 Perfluorodecanoic acid (M)



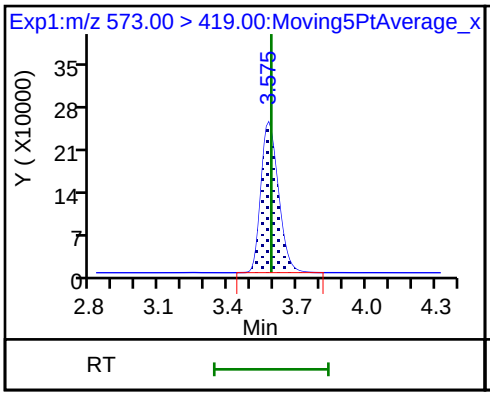
D 23 13C2 PFDA



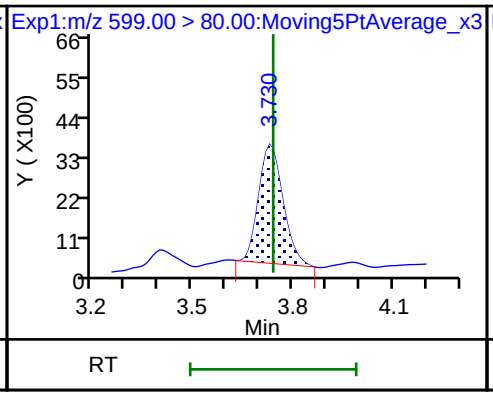
28 N-methyl perfluorooctane sulfonami (ND)



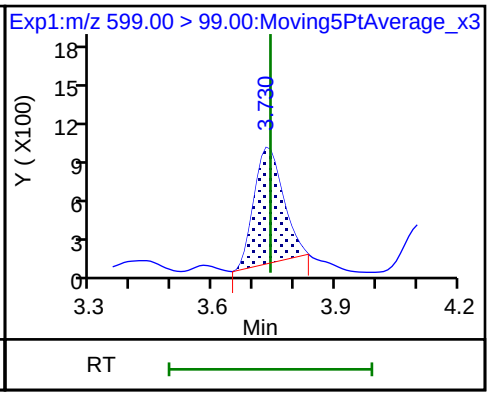
D 27 d3-NMeFOSAA



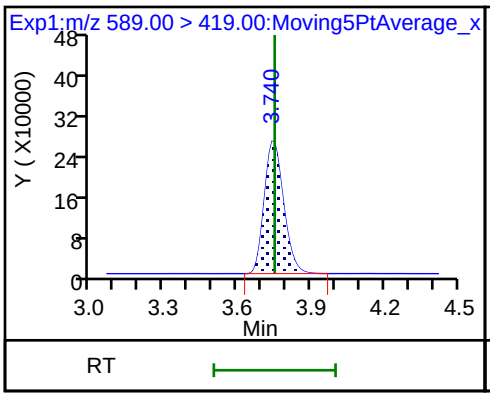
29 Perfluorodecane Sulfonic acid



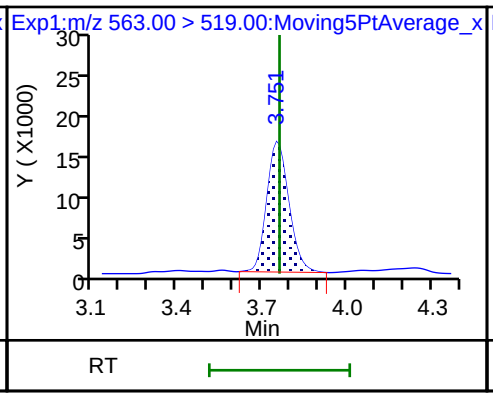
29 Perfluorodecane Sulfonic acid



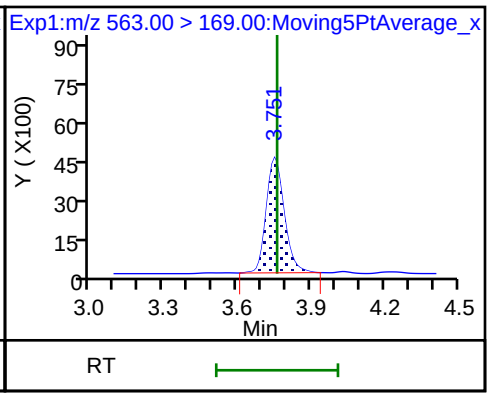
D 32 d5-NEtFOSAA



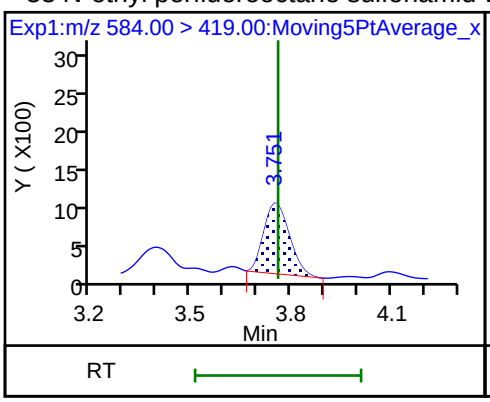
31 Perfluoroundecanoic acid



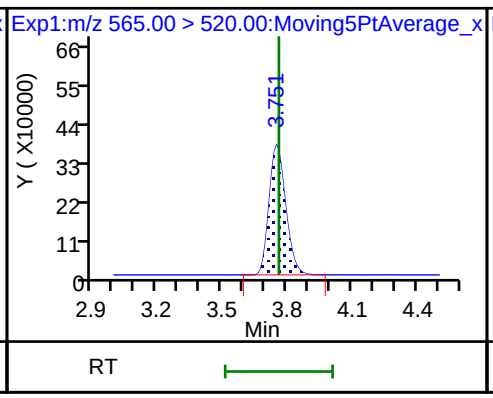
31 Perfluoroundecanoic acid



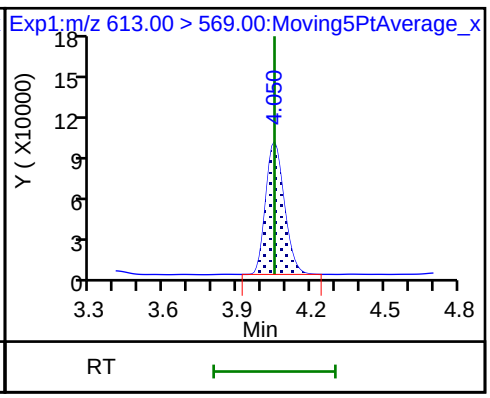
33 N-ethyl perfluorooctane sulfonamid



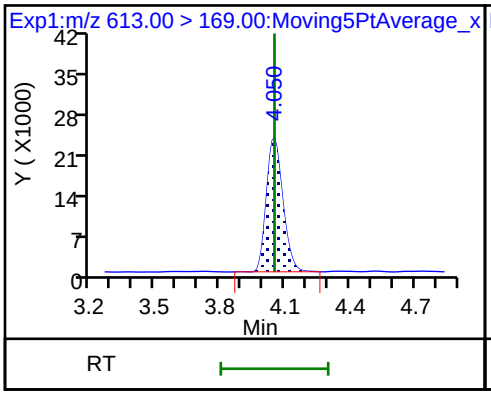
D 30 13C2 PFUnA



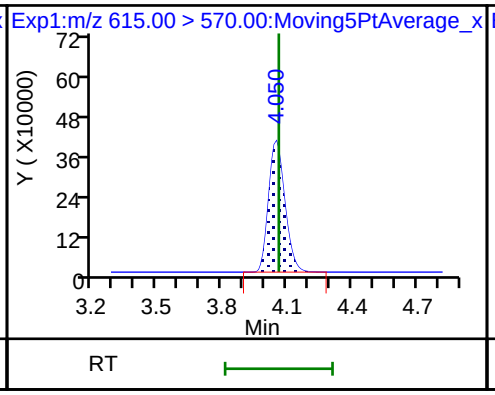
37 Perfluorododecanoic acid



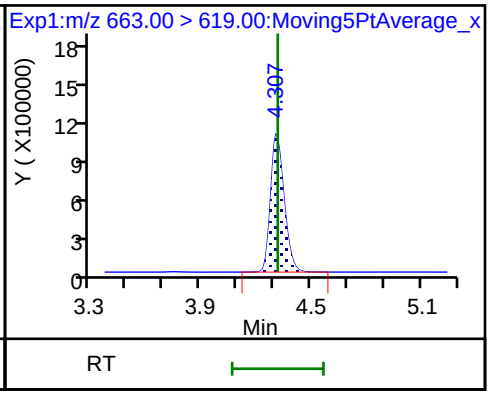
37 Perfluorododecanoic acid



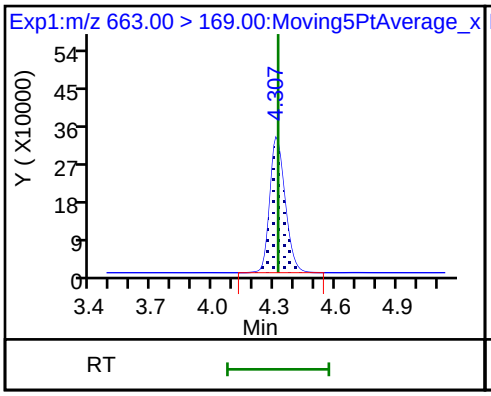
D 36 13C2 PFDoA



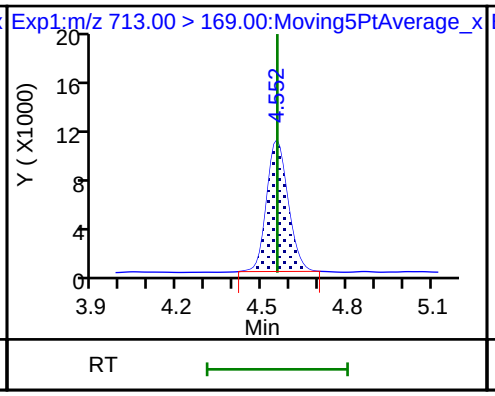
41 Perfluorotridecanoic acid



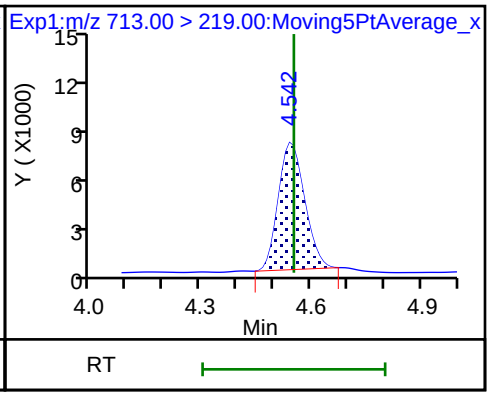
41 Perfluorotridecanoic acid



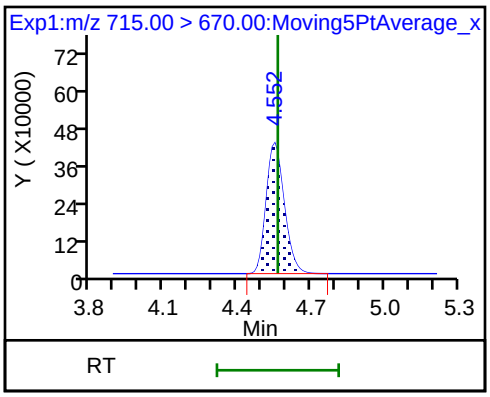
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

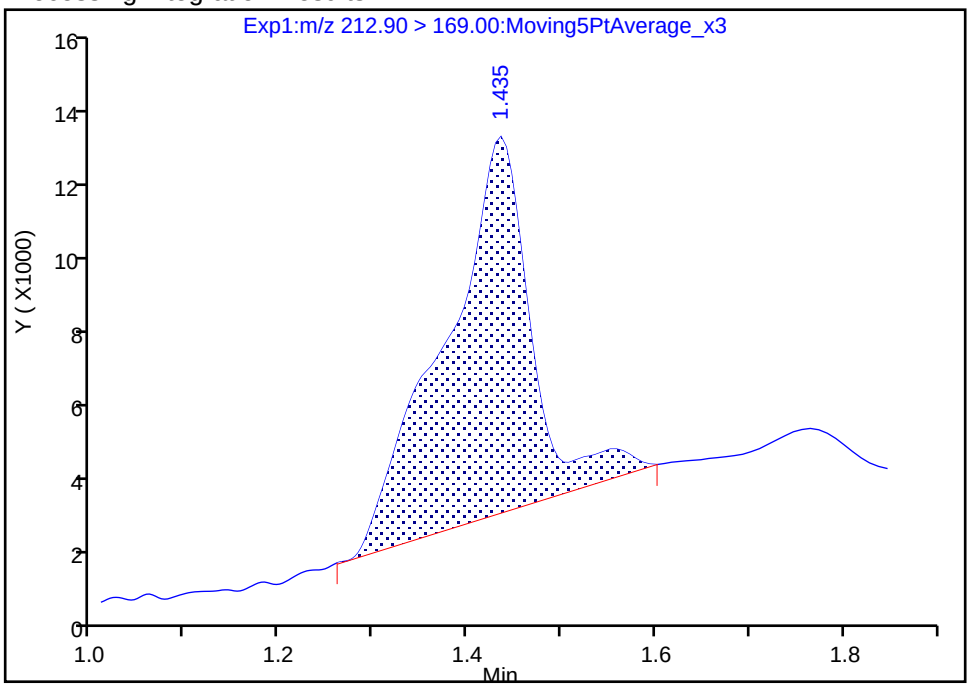
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_045.d				
Injection Date:	24-Apr-2018 23:28:25	Instrument ID:	A8_N		
Lims ID:	320-38054-A-1-A	Lab Sample ID:	320-38054-1		
Client ID:	SB007(2-4)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

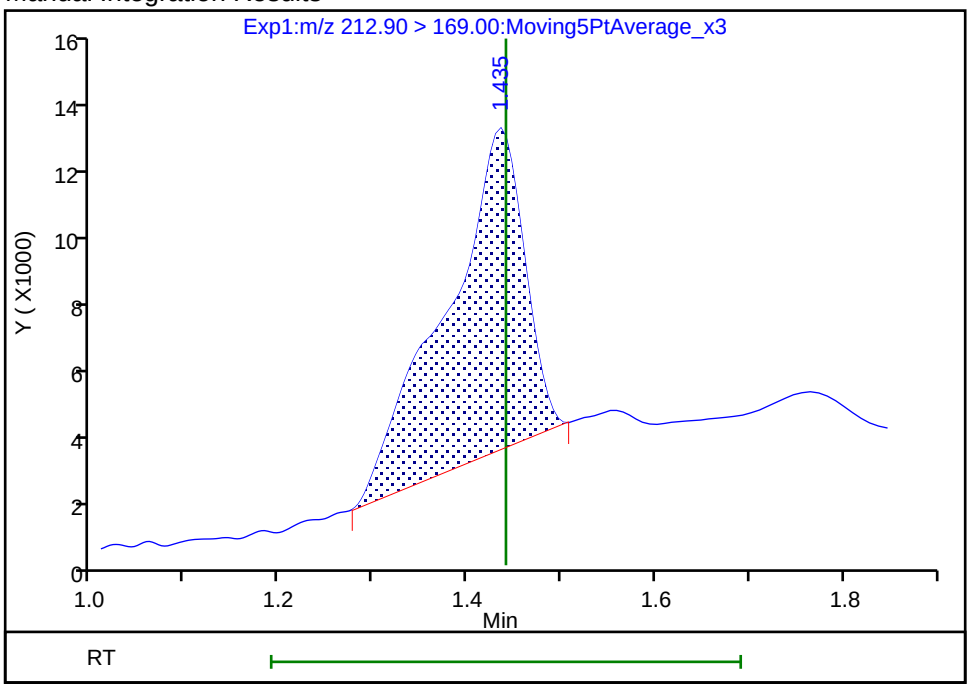
Processing Integration Results

RT: 1.44
Area: 62639
Amount: 0.169309
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 54009
Amount: 0.145982
Amount Units: ng/ml



Reviewer: barnettj, 25-Apr-2018 14:20:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

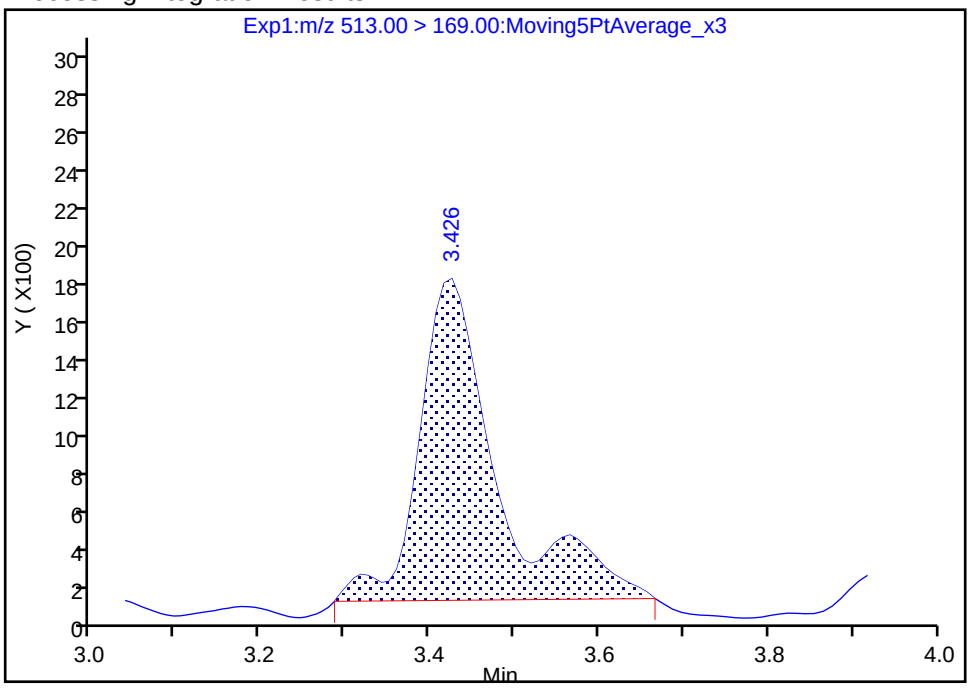
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_045.d				
Injection Date:	24-Apr-2018 23:28:25	Instrument ID:	A8_N		
Lims ID:	320-38054-A-1-A	Lab Sample ID:	320-38054-1		
Client ID:	SB007(2-4)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 2

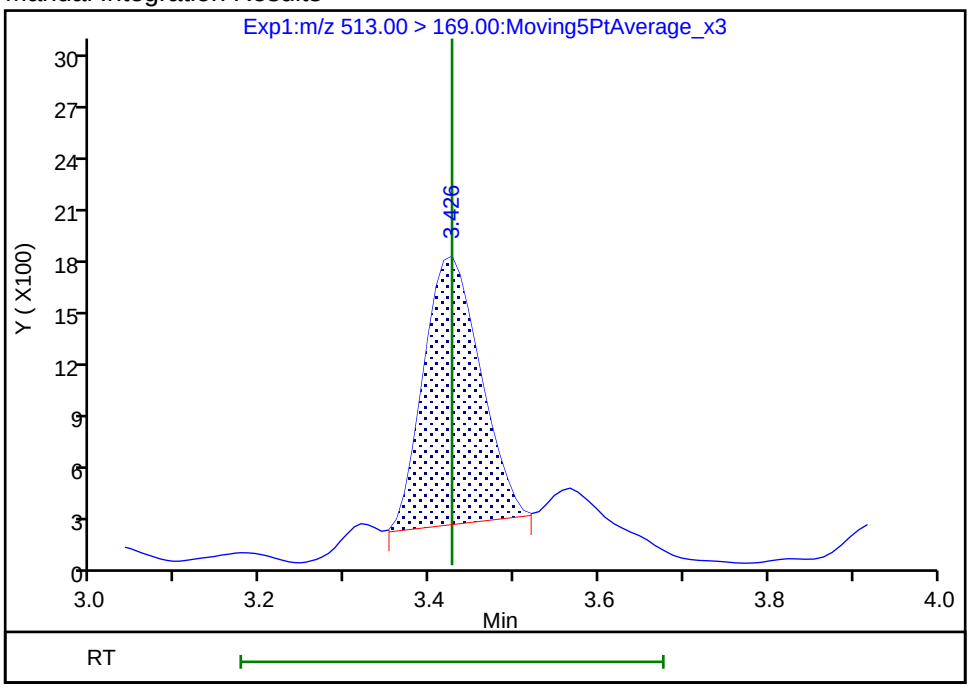
Processing Integration Results

RT: 3.43
Area: 10705
Amount: 0.053767
Amount Units: ng/ml



Manual Integration Results

RT: 3.43
Area: 7264
Amount: 0.053767
Amount Units: ng/ml



Reviewer: barnettj, 25-Apr-2018 14:22:00

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

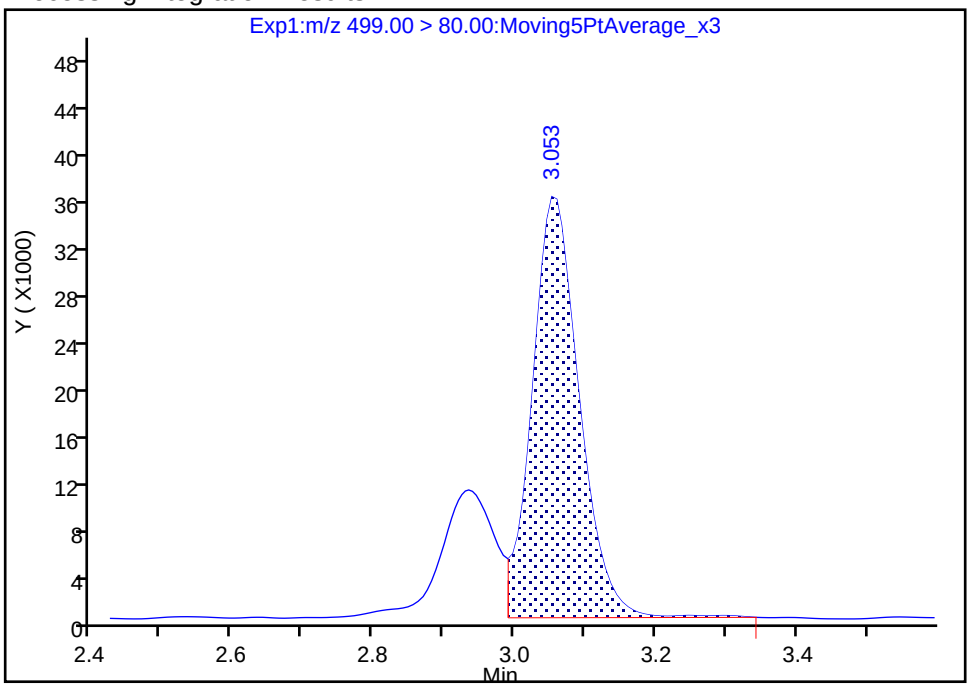
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_045.d				
Injection Date:	24-Apr-2018 23:28:25	Instrument ID:	A8_N		
Lims ID:	320-38054-A-1-A	Lab Sample ID:	320-38054-1		
Client ID:	SB007(2-4)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

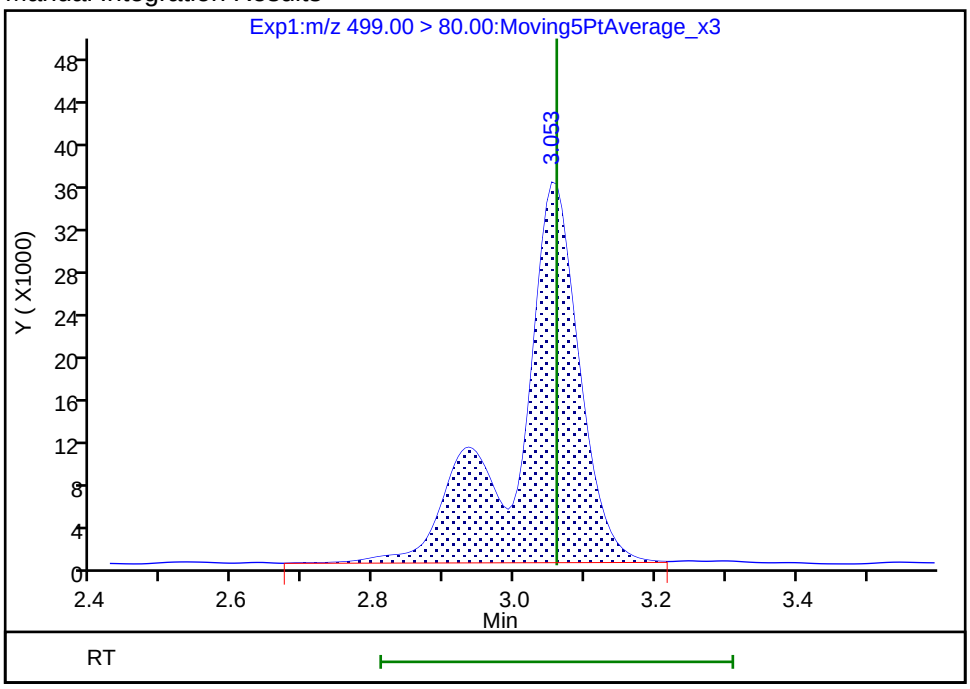
Processing Integration Results

RT: 3.05
Area: 165893
Amount: 0.136832
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 222980
Amount: 0.183918
Amount Units: ng/ml



Reviewer: barnettj, 25-Apr-2018 14:21:36

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP | Lab Sample ID: 320-38054-1

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_054.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:50

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.05(g) | Date Analyzed: 04/25/2018 00:38

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 19.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.021	B *	0.00061
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.033		0.00061
307-24-4	Perfluorohexanoic acid (PFHxA)	0.046		0.00061
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.059		0.00061
335-76-2	Perfluorodecanoic acid (PFDA)	0.058		0.00061
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.026		0.00061
307-55-1	Perfluorododecanoic acid (PFDoA)	0.021		0.00061
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.035		0.00061
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0057		0.00061
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.00061
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00061		0.00061
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00061
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0019		0.0015
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		0.00061
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND	*	0.00061
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	*	0.0061
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	*	0.0061
27619-97-2	6:2FTS	ND	*	0.0061
39108-34-4	8:2FTS	ND	*	0.0061

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP | Lab Sample ID: 320-38054-1

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_054.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:50

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.05(g) | Date Analyzed: 04/25/2018 00:38

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 19.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	71		25-150
STL01893	13C5 PFPeA	71		25-150
STL00993	13C2 PFHxA	67		25-150
STL01892	13C4-PFHpA	68		25-150
STL00996	13C2 PFDA	63		25-150
STL00997	13C2 PFUnA	64		25-150
STL00998	13C2 PFDoA	64		25-150
STL02116	13C2-PFTeDA	65		25-150
STL02337	13C3-PFBS	73		25-150
STL00994	18O2 PFHxS	70		25-150
STL00991	13C4 PFOS	63		25-150
STL01056	13C8 FOSA	56		25-150
STL02118	d3-NMeFOSAA	64		25-150
STL02117	d5-NEtFOSAA	68		25-150
STL02279	M2-6:2FTS	64		25-150
STL02280	M2-8:2FTS	68		25-150
STL02395	M2-4:2FTS	0		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_054.d
Lims ID: 320-38054-A-1-B
Client ID: SB007(2-4)-TOP
Sample Type: Client
Inject. Date: 25-Apr-2018 00:38:46 ALS Bottle#: 37 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-1-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:21:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	7121658	3.53			3232	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	5426952	1.78		71.2	36444	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.694	0.0	1.000	9113687	5.47			9274	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.555	3493967	1.78		71.1	53050	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	76126	1.69		72.6	544	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	11168803	7.53			15688	
313.00 > 119.00	1.982	1.982	0.0	1.000	983950		11.35(5.03-15.10)		9229	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	3646937	1.68		67.1	65151	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.321	-0.013	1.000	13927805	9.74			17497	
363.00 > 169.00	2.308	2.321	-0.013	1.000	5566946		2.50(1.13-3.40)		26558	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	1.000	209549	0.1014			242	
399.00 > 99.00	2.334	2.321	0.013	1.006	64929		3.23(1.50-4.49)		224	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.322	-0.014	1.000	3573541	1.69		67.6	68213	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.335	-0.014	1.000	4320089	1.65		69.9	73272	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.652	0.001	1.000	6113	0.0125			158	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.668	-0.015	1.000	689392	1.52		64.0	7048	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.675	0.0		5668332	2.50			72893	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.675	2.675	0.0	1.000	19030223	11.7			16448	E
413.00 > 169.00	2.675	2.675	0.0	1.000	10471448		1.82(0.84-2.52)		32465	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.691	-0.016	1.000	3515671	1.67		66.9	73457	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.050	3.048	0.002	1.000	392693	0.3134			421	
499.00 > 99.00	3.050	3.048	0.002	1.000	72891		5.39(2.31-6.93)		341	M
20 Perfluorononanoic acid										E
463.00 > 419.00	3.057	3.055	0.002	1.002	19664902	15.7			69136	E
463.00 > 169.00	3.057	3.055	0.002	1.002	4993838		3.94(1.90-5.69)		122103	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.067	-0.017	1.000	3005674	1.66		66.5	66377	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.067	-0.017	1.000	2752504	1.51		63.0	16260	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.386	3.391	-0.005	1.000	10285	0.007997			61.3	
D 21 13C8 FOSA										
506.00 > 78.00	3.386	3.399	-0.013	1.000	3178752	1.39		55.7	35152	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.404	3.410	-0.006	1.000	2320	0.004904			117	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.417	-0.013	1.000	895394	1.64		68.5	8892	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.419	0.004	1.003	9355835	9.55			33937	
513.00 > 169.00	3.423	3.419	0.004	1.003	1582880		5.91(2.36-7.09)		17212	
D 23 13C2 PFDA										
515.00 > 470.00	3.414	3.427	-0.013	1.000	2374112	1.56		62.5	57712	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.586	-0.014	1.000	1368566	1.59		63.6	18744	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.732	-0.005	1.000	15974	0.0214			111	
599.00 > 99.00	3.737	3.732	0.005	1.003	6480		2.47(1.39-4.16)		154	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.751	-0.003	1.000	1448308	1.70		68.2	15429	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.754	-0.006	1.000	3084541	4.37			13888	
563.00 > 169.00	3.748	3.754	-0.006	1.000	777433		3.97(2.12-6.36)		18140	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.762	-0.014	1.000	2088767	1.59		63.7	43282	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.054	-0.007	1.000	3354794	3.54			4637	
613.00 > 169.00	4.047	4.054	-0.007	1.000	811490		4.13(2.13-6.40)		8970	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.061	-0.014	1.000	2272261	1.61		64.2	36298	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.314	-0.008	1.000	6322905	5.72			7192	
663.00 > 169.00	4.306	4.314	-0.008	1.000	2016251		3.14(1.25-3.76)		14879	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.549	0.002	1.000	279337	0.9480			2245	
713.00 > 219.00	4.541	4.549	-0.008	0.998	196810		1.42(0.71-2.13)		2731	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.564	-0.013	1.000	2933236	1.63		65.4	20975	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:20 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_054.d

Injection Date: 25-Apr-2018 00:38:46 Instrument ID: A8_N

Lims ID: 320-38054-A-1-B Lab Sample ID: 320-38054-1

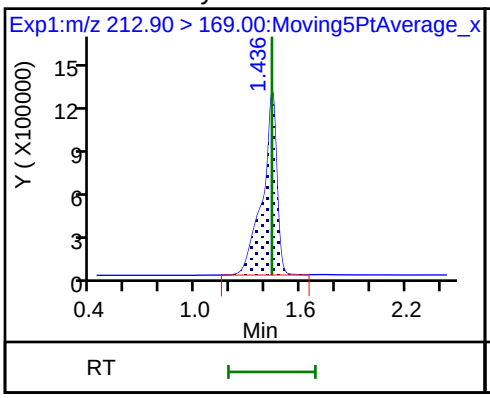
Client ID: SB007(2-4)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 37 Worklist Smp#: 13

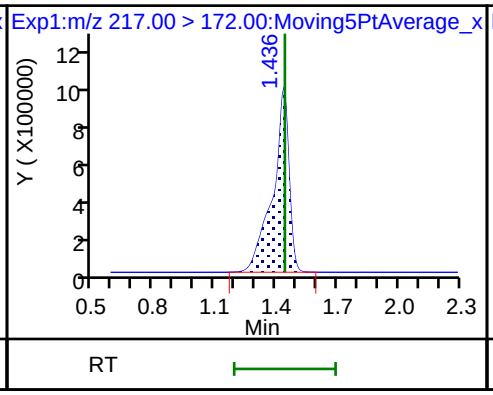
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

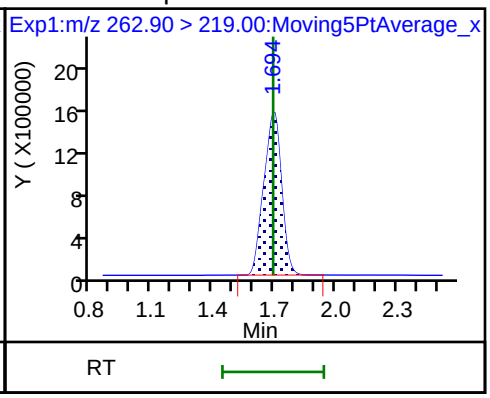
2 Perfluorobutyric acid



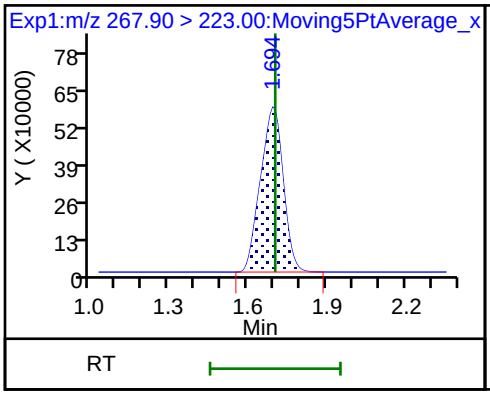
D 1 13C4 PFBA



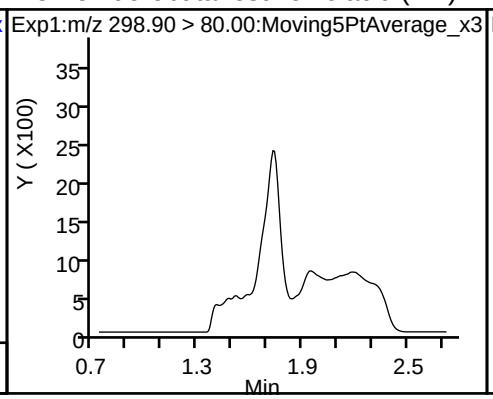
4 Perfluoropentanoic acid



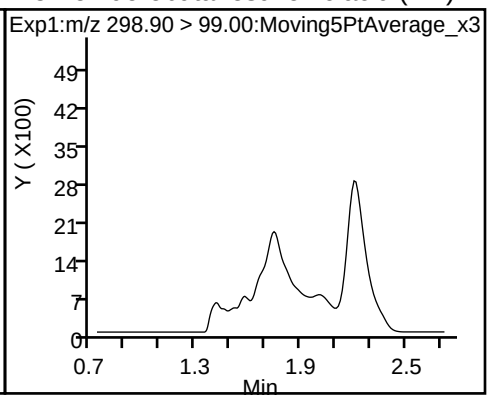
D 3 13C5-PFPeA



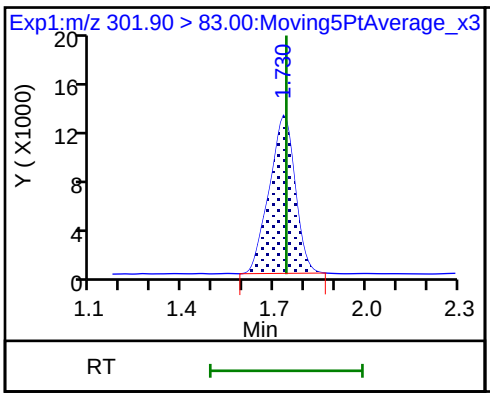
5 Perfluorobutanesulfonic acid (ND)



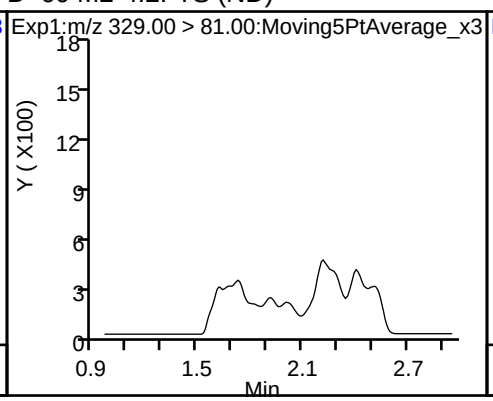
5 Perfluorobutanesulfonic acid (ND)



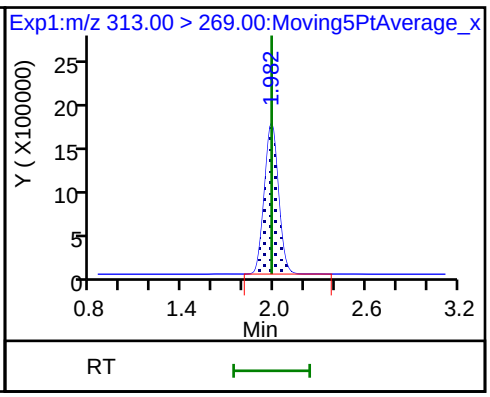
D 47 13C3-PFBS



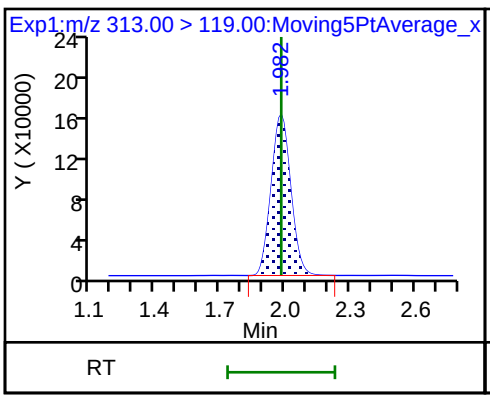
D 60 M2-4:2FTS (ND)



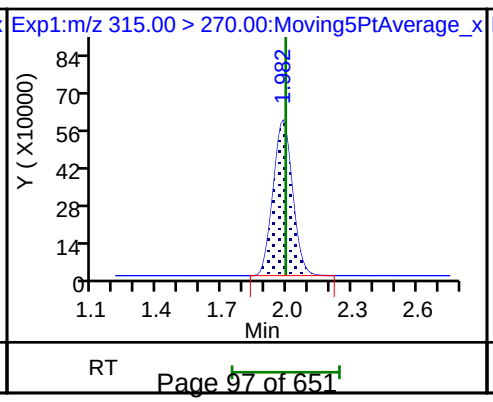
6 Perfluorohexanoic acid



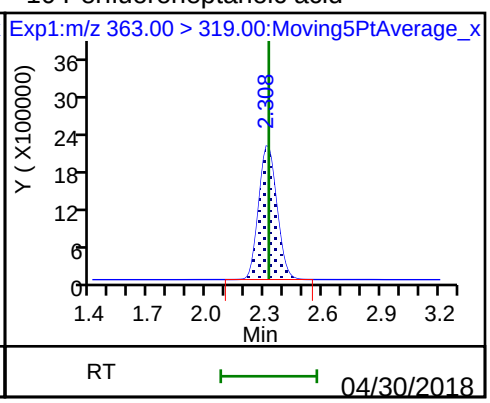
6 Perfluorohexanoic acid



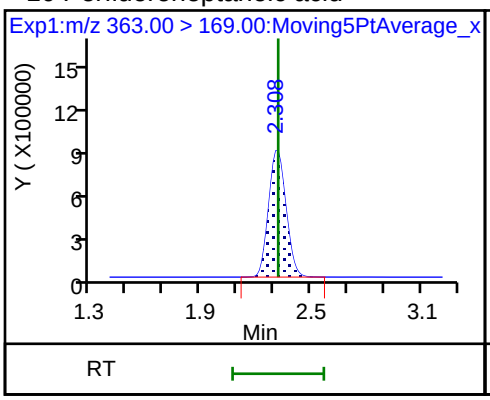
D 7 13C2 PFHxA



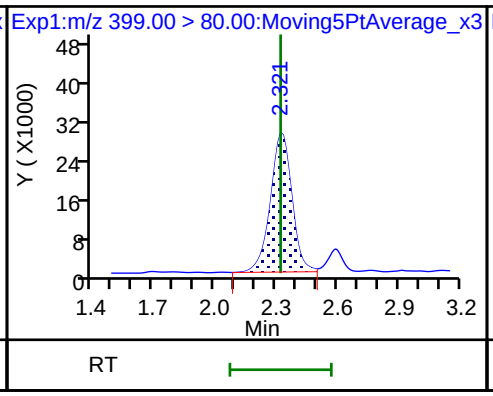
10 Perfluoroheptanoic acid



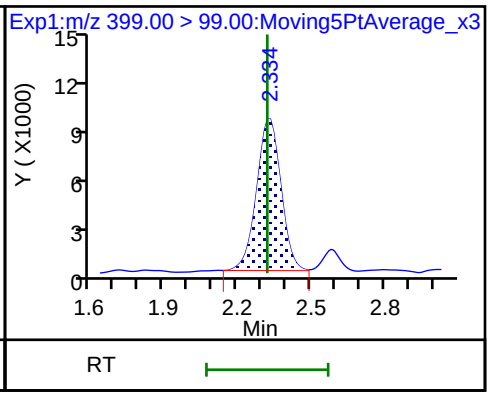
10 Perfluoroheptanoic acid



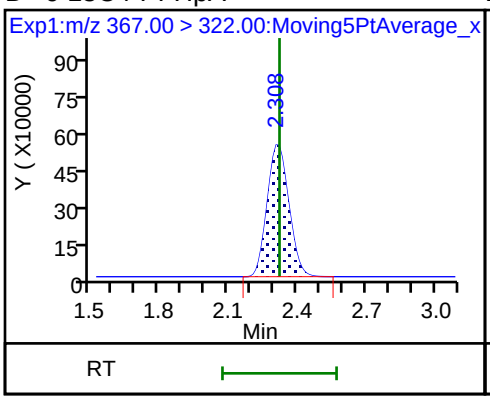
8 Perfluorohexanesulfonic acid



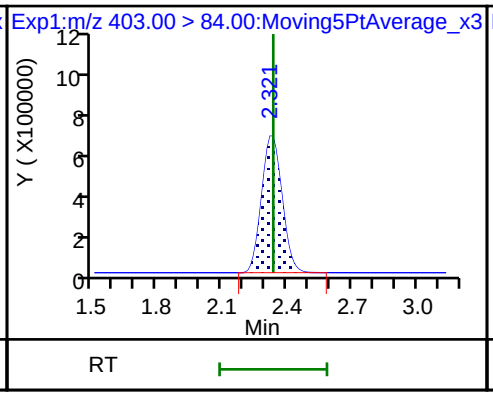
8 Perfluorohexanesulfonic acid



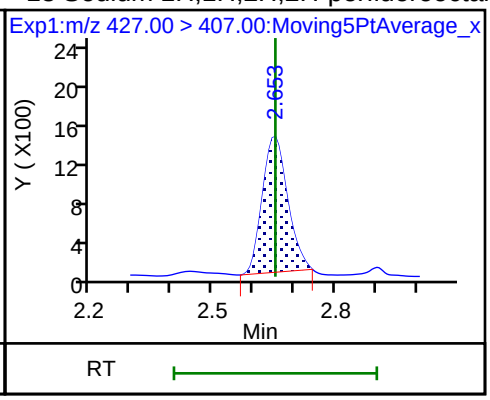
D 9 13C4-PFHpA



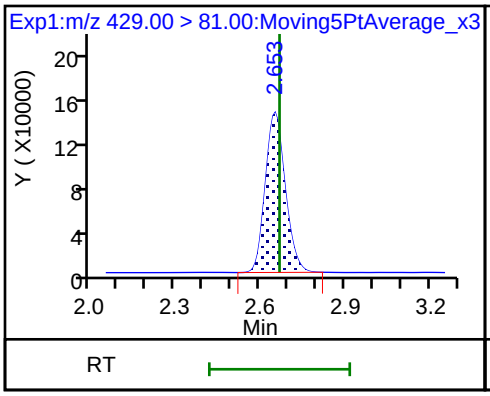
D 11 18O2 PFHxS



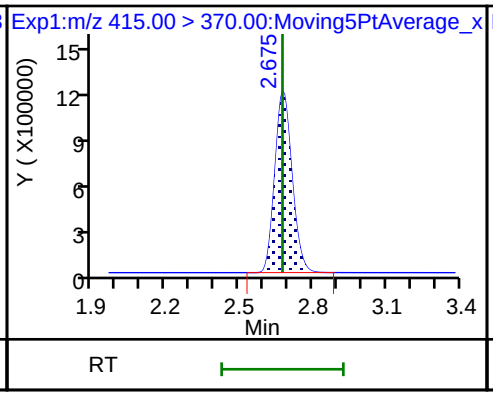
13 Sodium 1H,1H,2H,2H-perfluorooctane



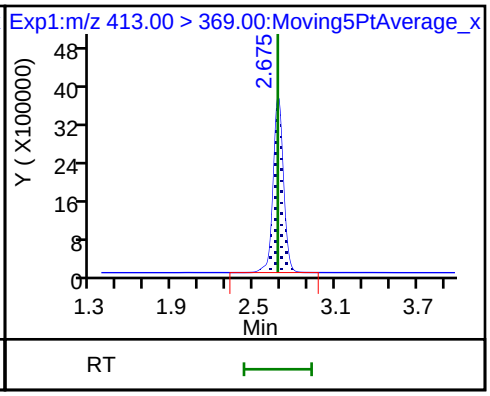
D 12 M2-6:2FTS



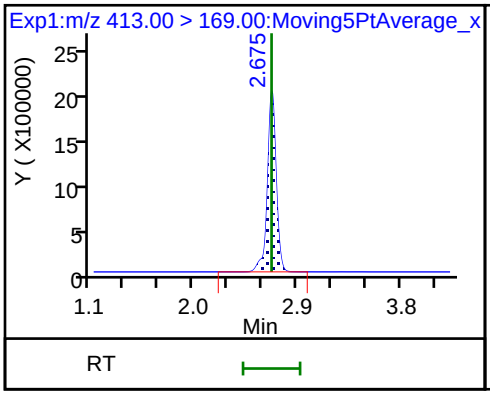
* 62 13C2-PFOA



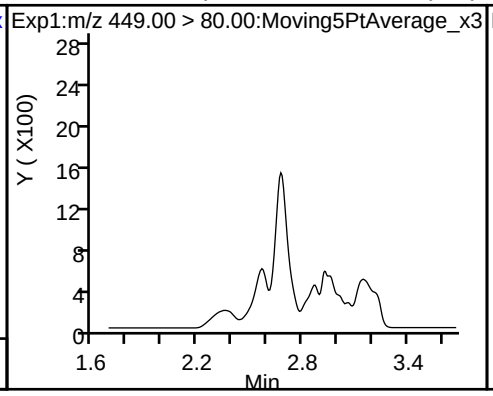
15 Perfluorooctanoic acid



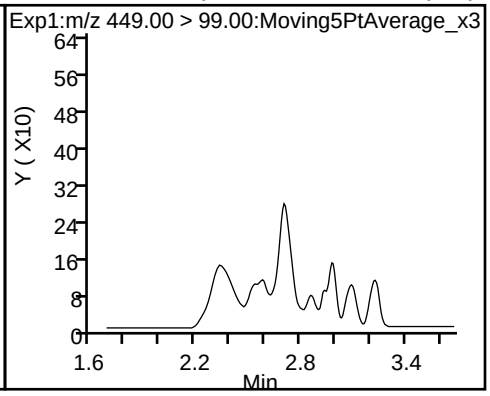
15 Perfluorooctanoic acid



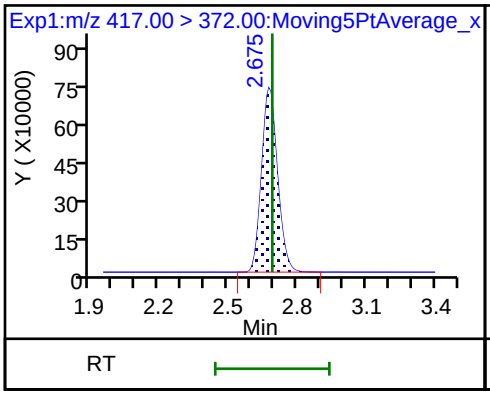
16 Perfluoroheptanesulfonic acid (ND)



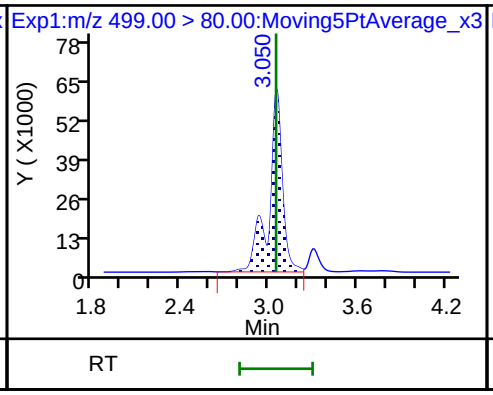
16 Perfluoroheptanesulfonic acid (ND)



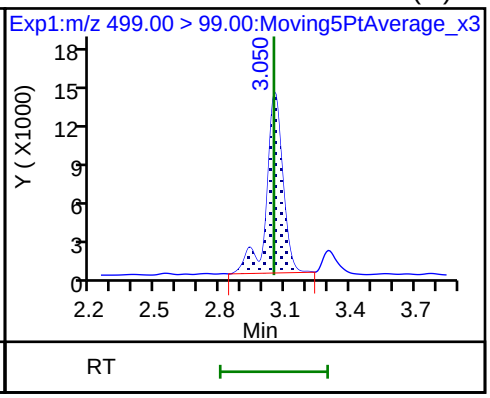
D 14 13C4 PFOA



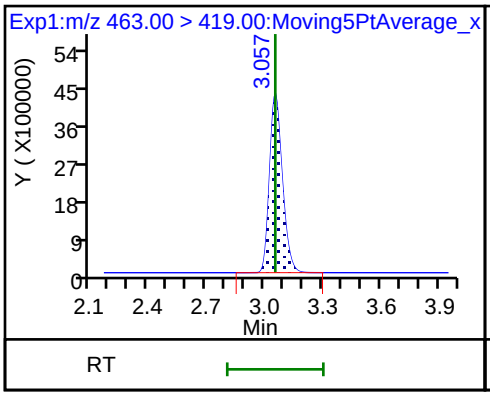
17 Perfluorooctane sulfonic acid



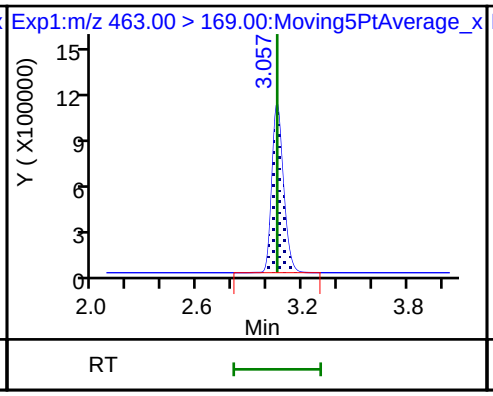
17 Perfluorooctane sulfonic acid (M)



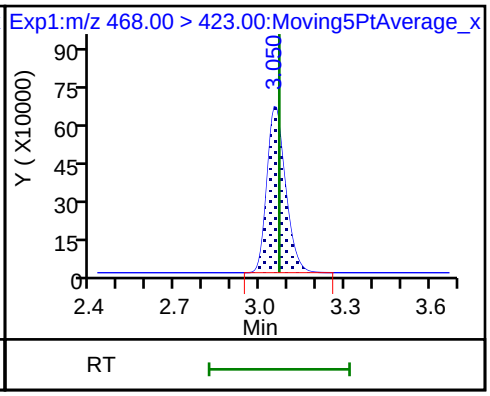
20 Perfluorononanoic acid



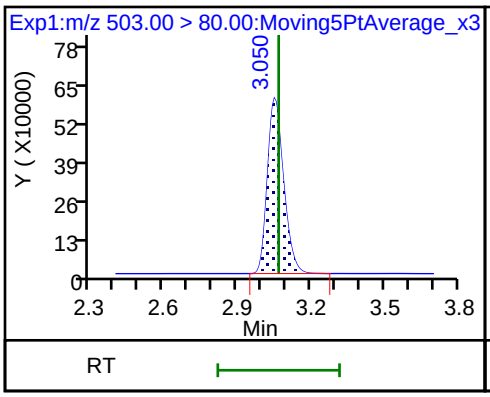
20 Perfluorononanoic acid



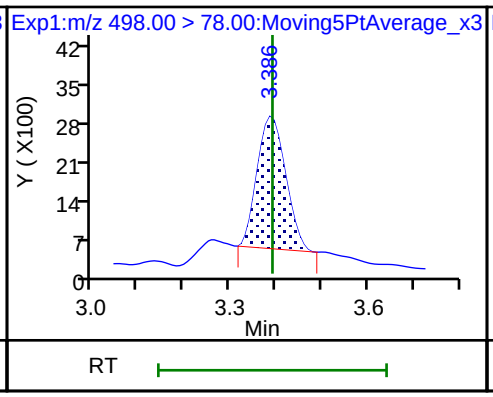
D 19 13C5 PFNA



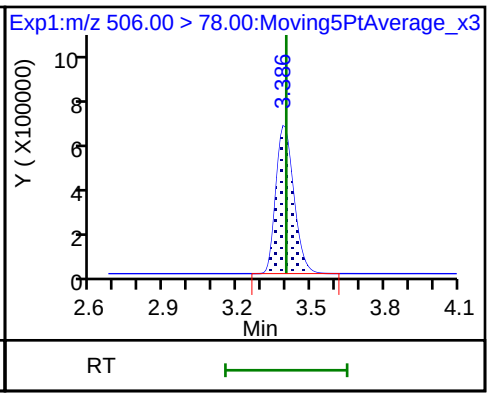
D 18 13C4 PFOS



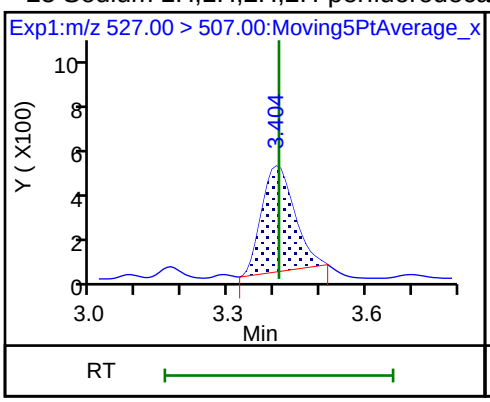
22 Perfluorooctane Sulfonamide



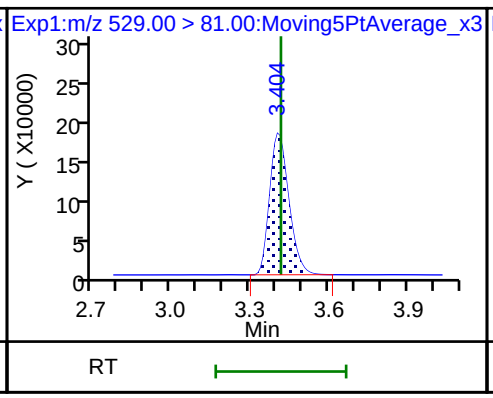
D 21 13C8 FOSA



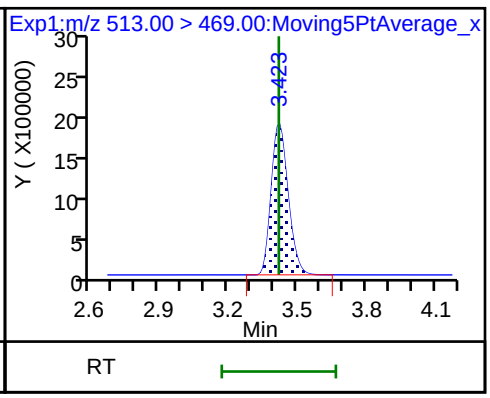
25 Sodium 1H,1H,2H,2H-perfluorodecane



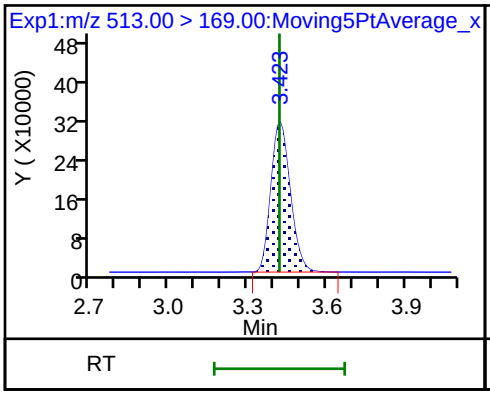
D 26 M2-8:2FTS



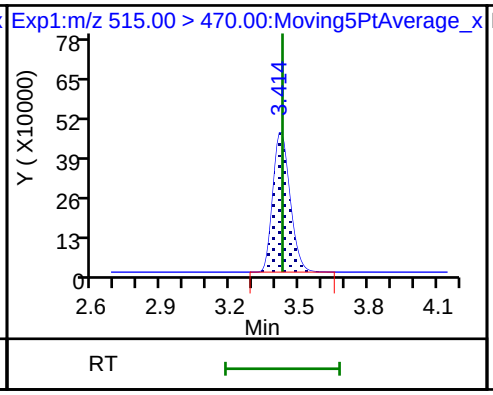
24 Perfluorodecanoic acid



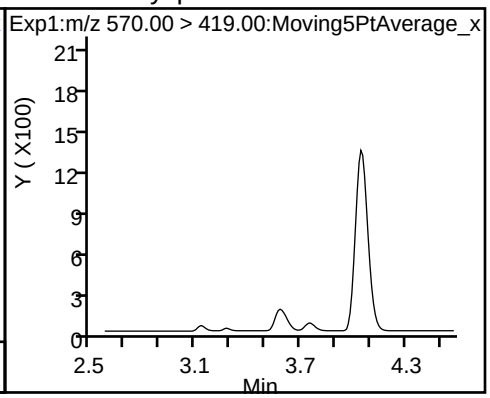
24 Perfluorodecanoic acid



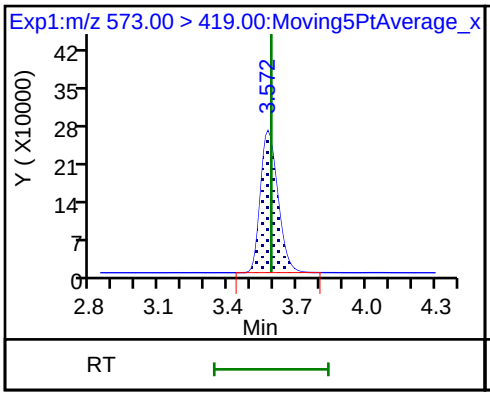
D 23 13C2 PFDA



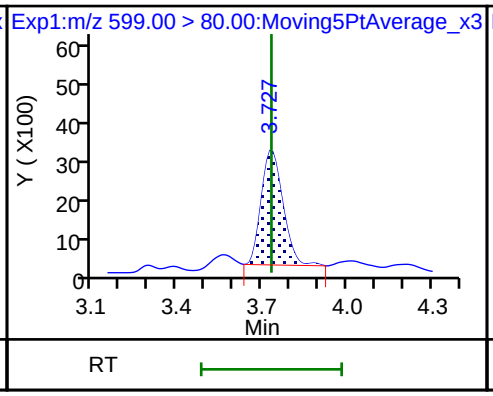
28 N-methyl perfluorooctane sulfonami (ND)



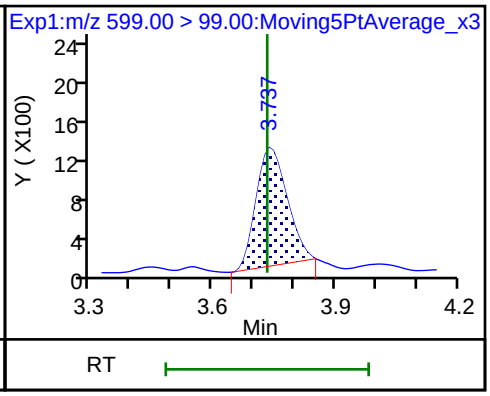
D 27 d3-NMeFOSAA



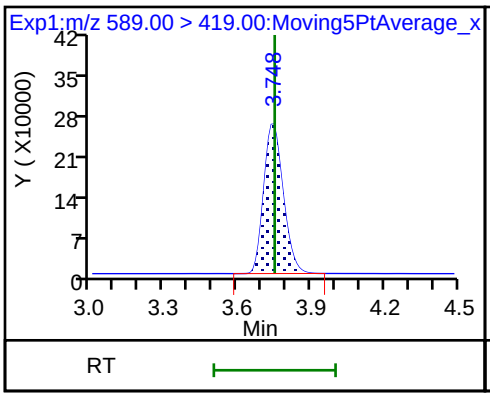
29 Perfluorodecane Sulfonic acid



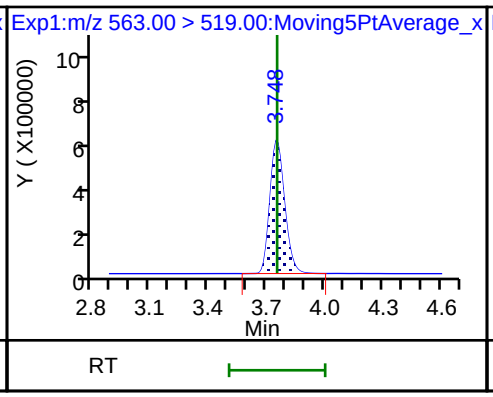
29 Perfluorodecane Sulfonic acid



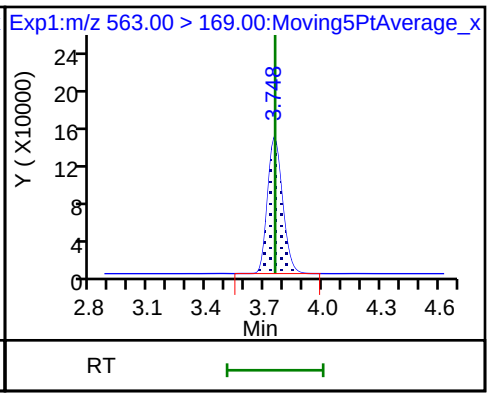
D 32 d5-NEtFOSAA



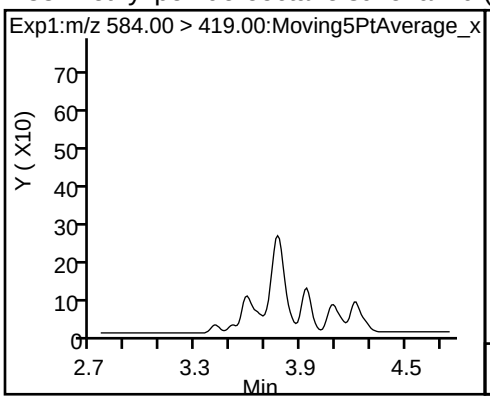
31 Perfluoroundecanoic acid



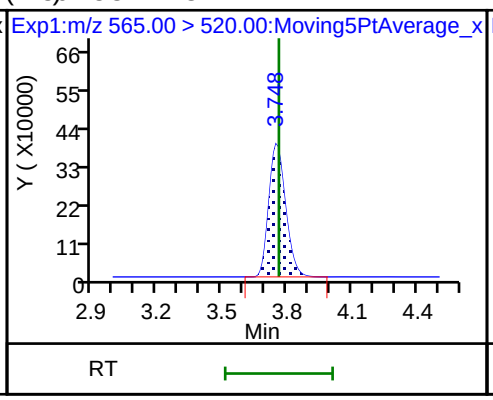
31 Perfluoroundecanoic acid



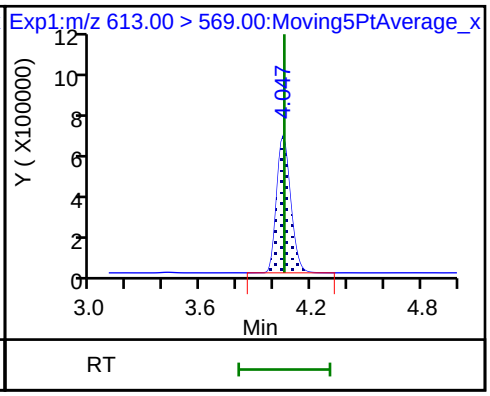
33 N-ethyl perfluorooctane sulfonamid (ND)



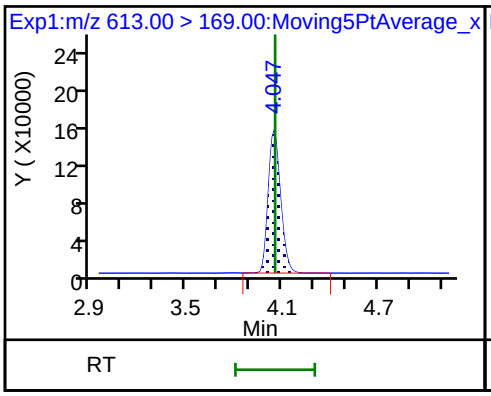
D 30 13C2 PFUnA



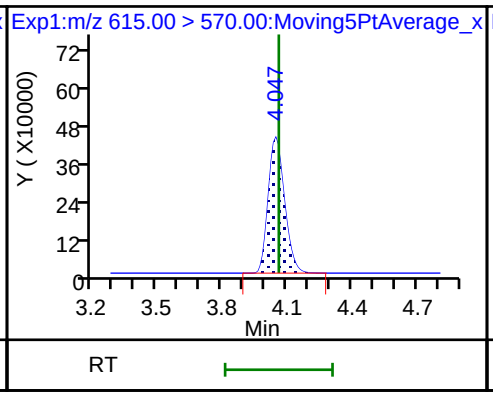
37 Perfluorododecanoic acid



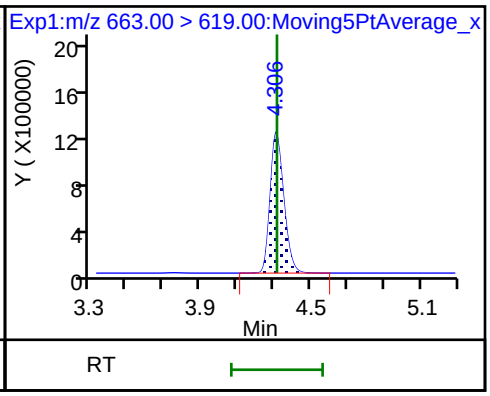
37 Perfluorododecanoic acid



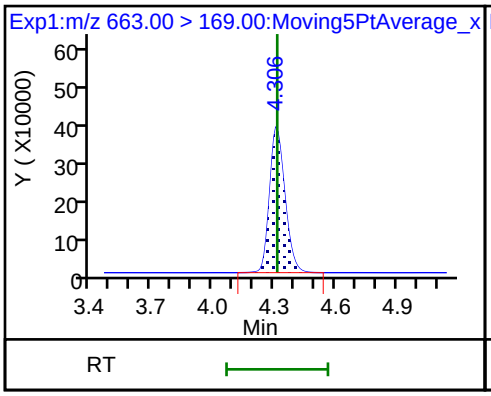
D 36 13C2 PFDoA



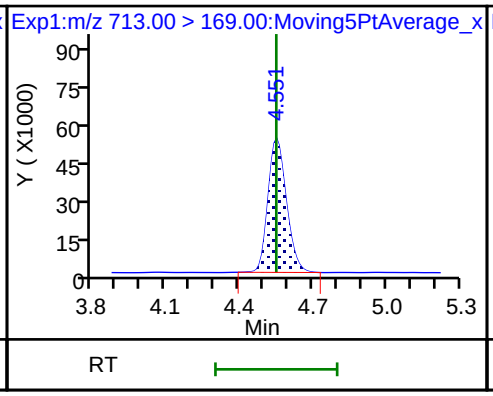
41 Perfluorotridecanoic acid



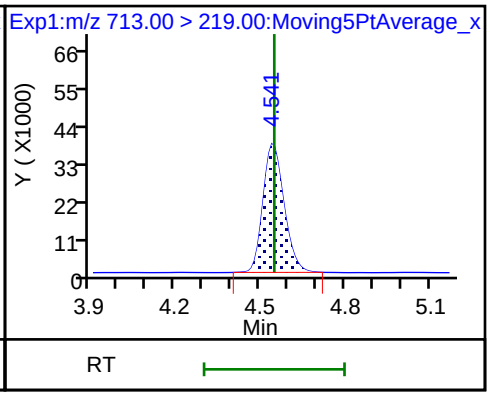
41 Perfluorotridecanoic acid



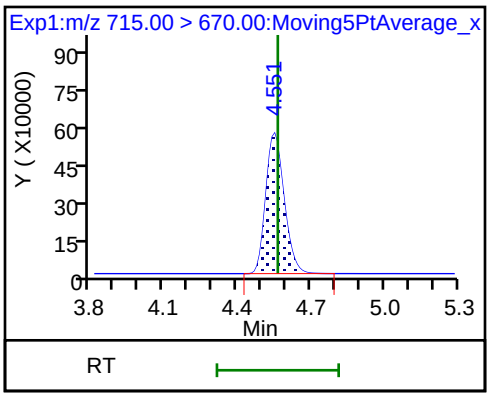
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

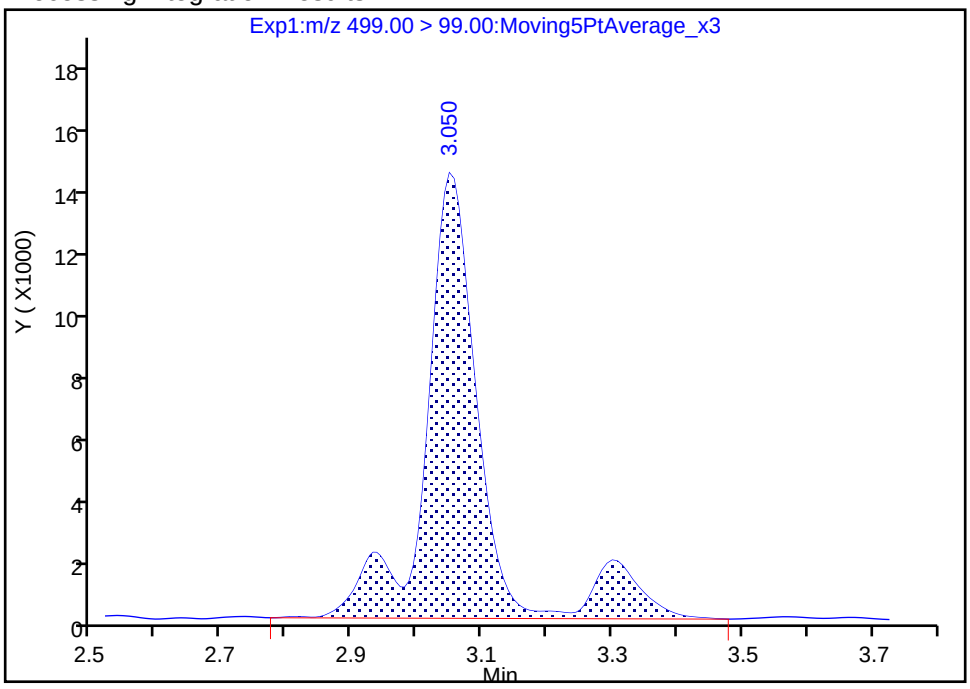
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_054.d				
Injection Date:	25-Apr-2018 00:38:46	Instrument ID:	A8_N		
Lims ID:	320-38054-A-1-B	Lab Sample ID:	320-38054-1		
Client ID:	SB007(2-4)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	37	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

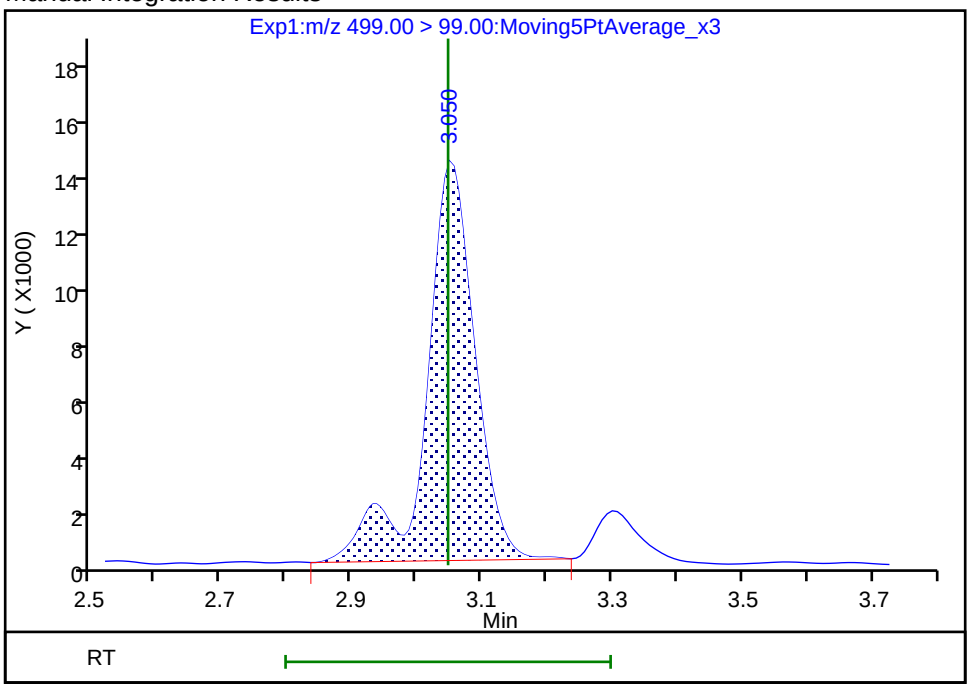
Processing Integration Results

RT: 3.05
Area: 84439
Amount: 0.313444
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 72891
Amount: 0.313444
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:21:26

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP DL | Lab Sample ID: 320-38054-1 DL

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLC_068.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:50

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.05(g) | Date Analyzed: 04/27/2018 11:41

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 5

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 19.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220224 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
335-67-1	Perfluorooctanoic acid (PFOA)	0.072	*	0.0030
375-95-1	Perfluorononanoic acid (PFNA)	0.11		0.0030

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	67		25-150
STL00995	13C5 PFNA	63		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_068.d
Lims ID: 320-38054-A-1-B
Client ID: SB007(2-4)-TOP
Sample Type: Client
Inject. Date: 27-Apr-2018 11:41:21 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-38054-a-1-b 5X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 13:06:02 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 12:53:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	1.000	1140215	0.3258		65.2	7646	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.441	-0.005	1.000	1461657	0.6903			518	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.694	0.0	0.555	741476	0.3287		65.7	11902	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.703	-0.009	1.000	1930358	1.09			1866	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.730	0.0	1.000	16638	0.3214		69.1	136	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	2442992	1.49			3963	
313.00 > 119.00	1.982	1.982	0.0	1.000	225707		10.82(5.03-15.10)		1952	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.982	0.0	1.000	806377	0.3232		64.6	16883	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.006	3035680	1.95			4340	
363.00 > 169.00	2.321	2.321	0.0	1.006	1184973		2.56(1.13-3.40)		6297	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.323	-0.015	1.000	779625	0.3211		64.2	15065	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.334	-0.013	0.994	43696	0.0201			93.1	
399.00 > 99.00	2.321	2.334	-0.013	0.994	14826		2.95(1.50-4.49)		97.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.336	-0.002	1.000	908931	0.3033		64.1	23335	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.653	0.0	1.000	185577	0.3567		75.1	2562	
13 Sodium 1H,1H,2H,2H-perfluorooctane										M
427.00 > 407.00	2.653	2.660	-0.007	1.000	3311	0.005013			76.3	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.676	-0.001	1.000	809586	0.3355		67.1	19126	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.683	-0.008		1300683	0.5000			30800	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.683	-0.008	1.000	4437293	2.37			3494	
413.00 > 169.00	2.675	2.683	-0.008	1.000	2402549		1.85(0.84-2.52)		9069	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.056	-0.006	1.000	614121	0.2927		61.2	4387	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.056	-0.006	1.000	651794	0.3143		62.9	17791	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.050	3.056	-0.006	1.000	87487	0.0626			229	M
499.00 > 99.00	3.050	3.056	-0.006	1.000	17167		5.10(2.31-6.93)		173	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.056	-0.006	1.000	4802654	3.53			17002	
463.00 > 169.00	3.050	3.056	-0.006	1.000	1139517		4.21(1.90-5.69)		22560	
D 21 13C8 FOSA										
506.00 > 78.00	3.386	3.394	-0.008	1.000	679590	0.2594		51.9	8868	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.386	3.394	-0.008	1.000	3756	0.002732			42.6	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.413	-0.009	1.000	199577	0.3185		66.5	2551	
D 23 13C2 PFDA										
515.00 > 470.00	3.413	3.422	-0.009	1.000	532862	0.3057		61.1	14812	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.413	3.422	-0.009	1.000	2005130	1.82			8390	
513.00 > 169.00	3.413	3.422	-0.009	1.000	378571		5.30(2.36-7.09)		7559	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.571	0.001	1.000	300131	0.3037		60.7	3824	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.747	-0.010	1.000	326629	0.3349		67.0	7270	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.758	-0.010	1.000	483336	0.3214		64.3	11163	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.758	-0.010	1.000	626209	0.7665			3565	
563.00 > 169.00	3.748	3.758	-0.010	1.000	167446		3.74(2.12-6.36)		2764	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.048	-0.001	1.000	475205	0.2926		58.5	5915	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.049	-0.002	1.000	703582	0.7099			1308	
613.00 > 169.00	4.047	4.049	-0.002	1.000	183481		3.83(2.13-6.40)		1596	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.318	-0.011	1.000	1345474	1.16			2153	
663.00 > 169.00	4.307	4.318	-0.011	1.000	447550		3.01(1.25-3.76)		3311	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.553	-0.002	1.000	60153	0.1867			564	
713.00 > 219.00	4.541	4.553	-0.012	0.998	44658		1.35(0.71-2.13)		932	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.553	-0.002	1.000	641349	0.3115		62.3	5271	

QC Flag Legend

Review Flags

M - Manually Integrated

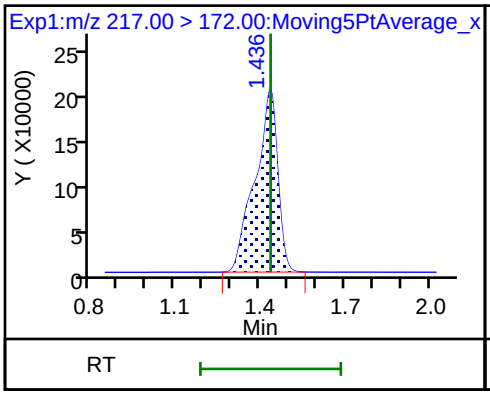
Report Date: 27-Apr-2018 13:06:06 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

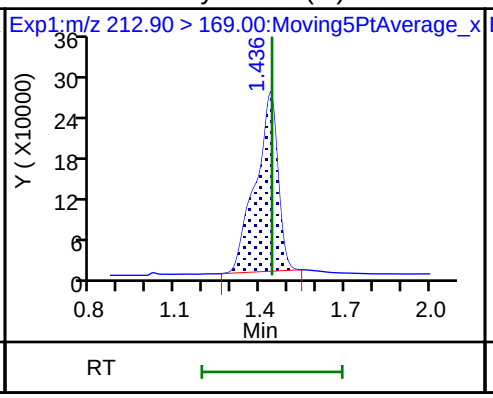
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_068.d

Injection Date:	27-Apr-2018 11:41:21	Instrument ID:	A8_N		
Lims ID:	320-38054-A-1-B	Lab Sample ID:	320-38054-1		
Client ID:	SB007(2-4)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	5.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

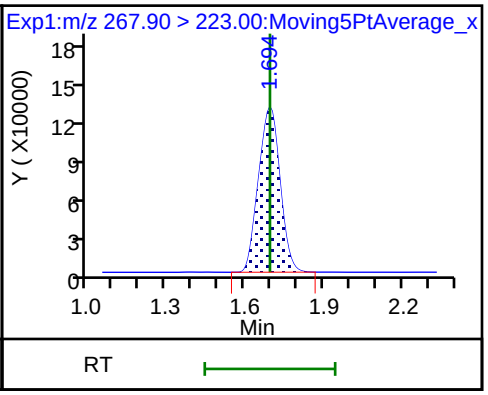
D 1 13C4 PFBA



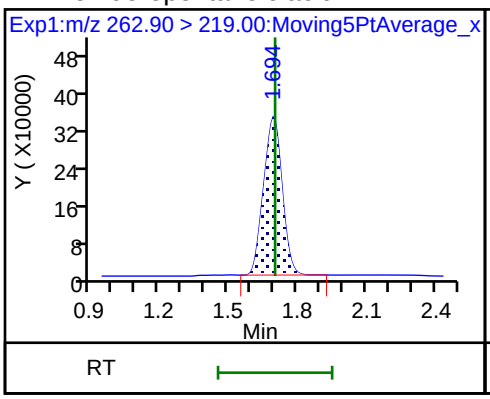
2 Perfluorobutyric acid (M)



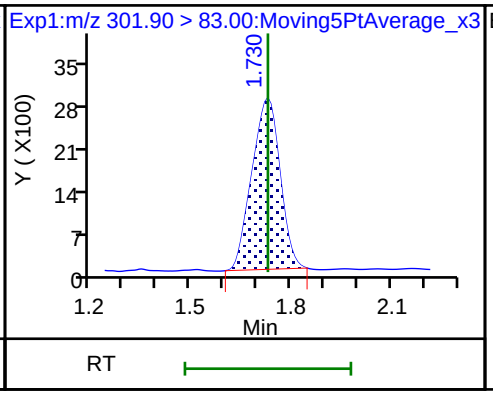
D 3 13C5-PFPeA



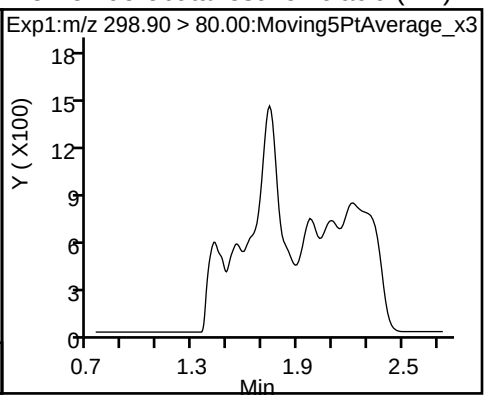
4 Perfluoropentanoic acid



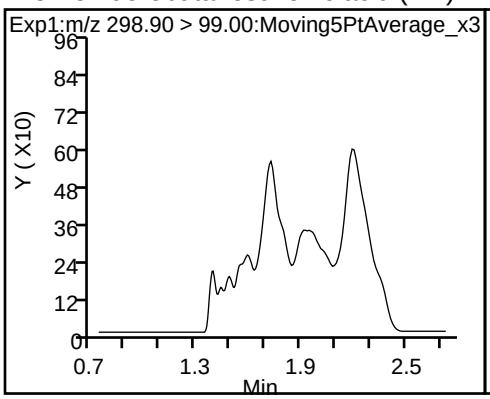
D 47 13C3-PFBS



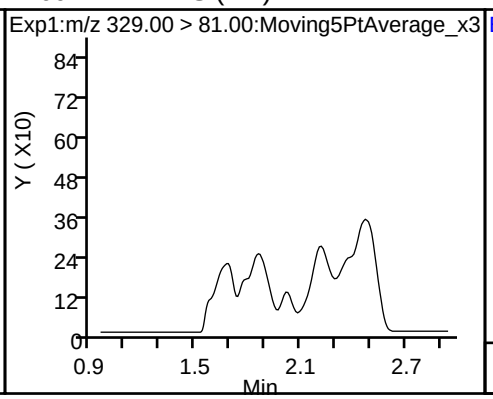
5 Perfluorobutanesulfonic acid (ND)



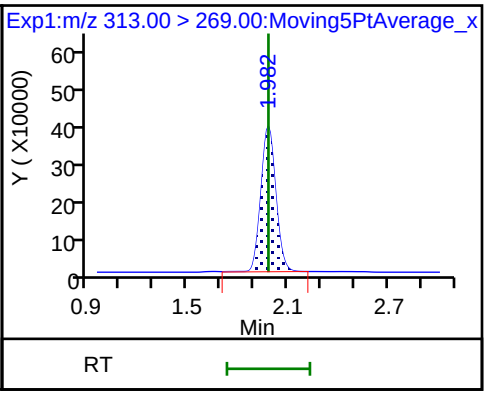
5 Perfluorobutanesulfonic acid (ND)



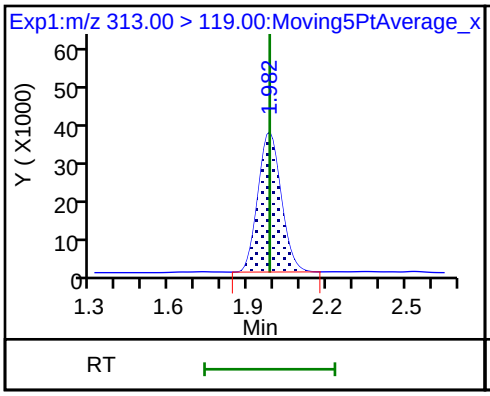
D 60 M2-4:2FTS (ND)



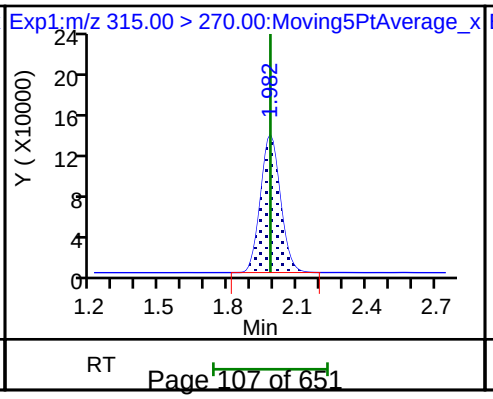
6 Perfluorohexanoic acid



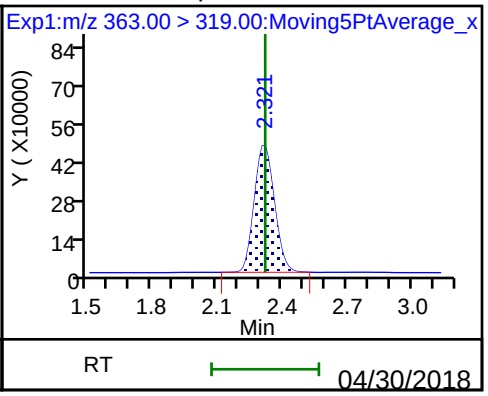
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



10 Perfluoroheptanoic acid



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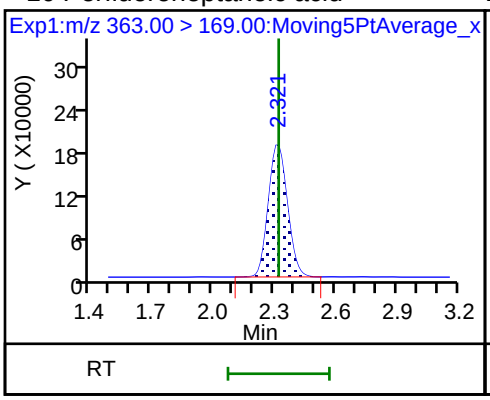
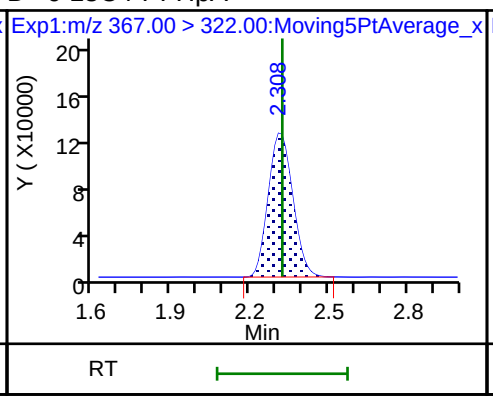
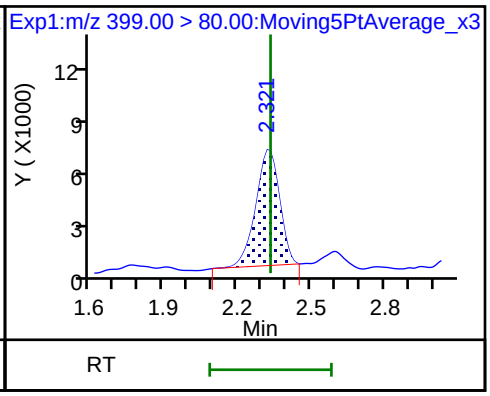


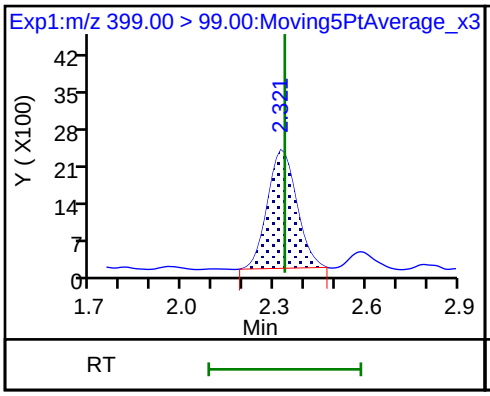
D 9 13C4-PFHpA



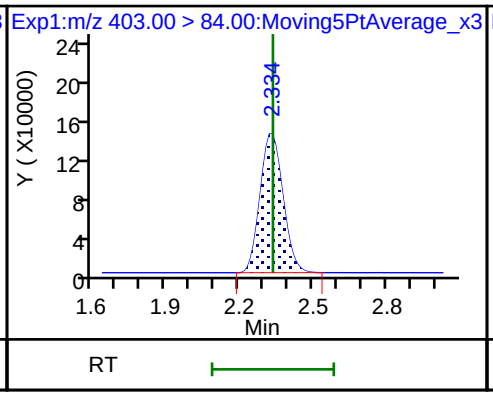
8 Perfluorohexanesulfonic acid



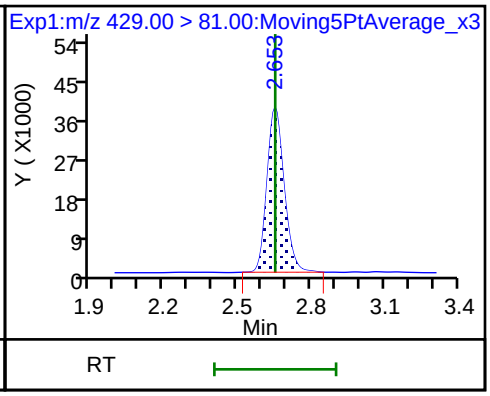
8 Perfluorohexanesulfonic acid



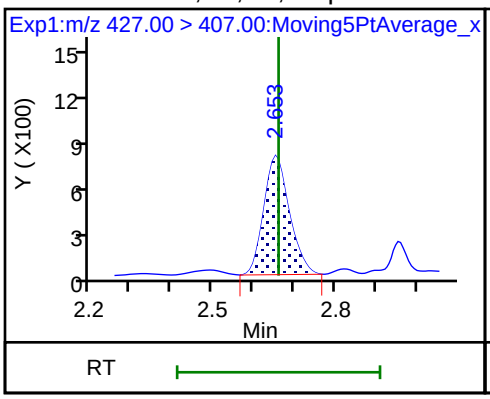
D 11 18O2 PFHxS



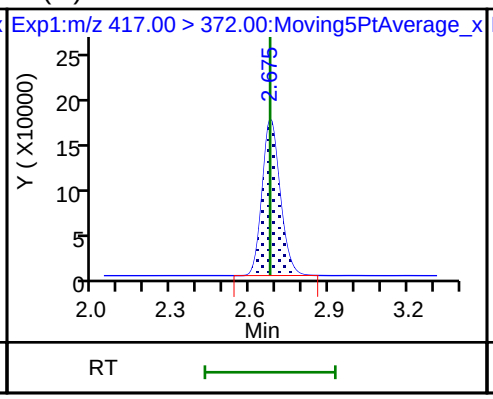
D 12 M2-6:2FTS



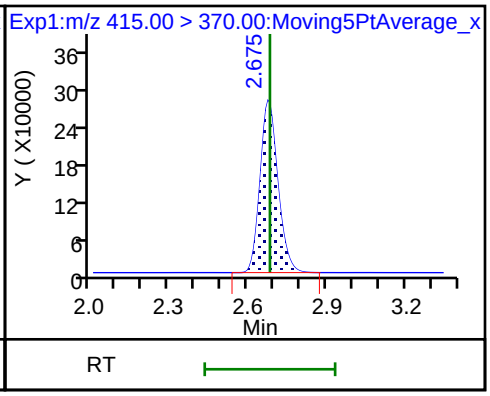
13 Sodium 1H,1H,2H,2H-perfluorooctane (M)



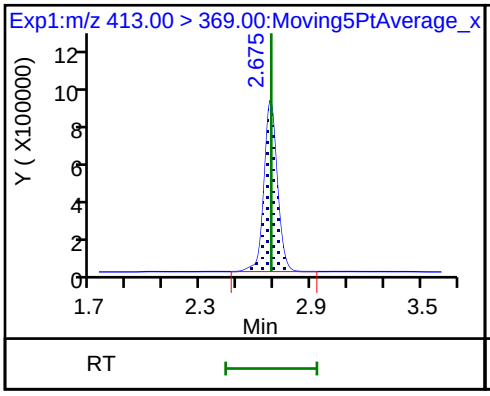
D 14 13C4 PFOA



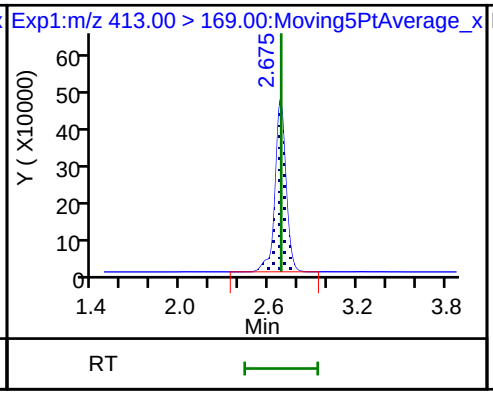
* 62 13C2-PFOA



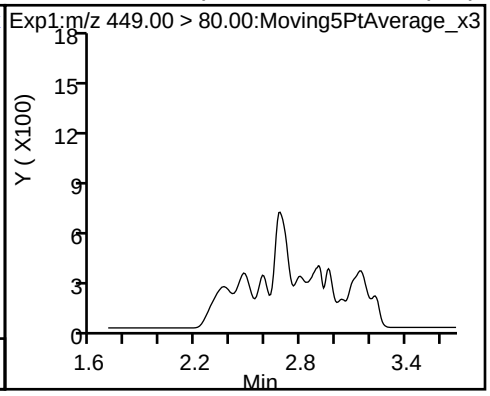
15 Perfluorooctanoic acid



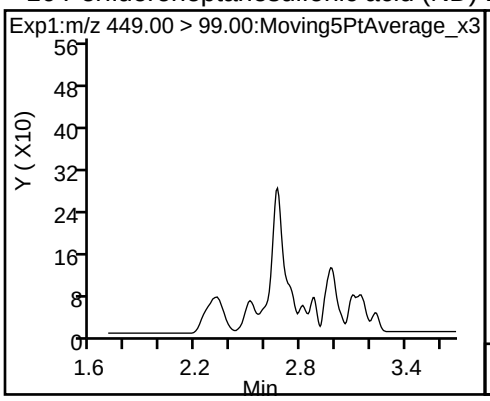
15 Perfluorooctanoic acid



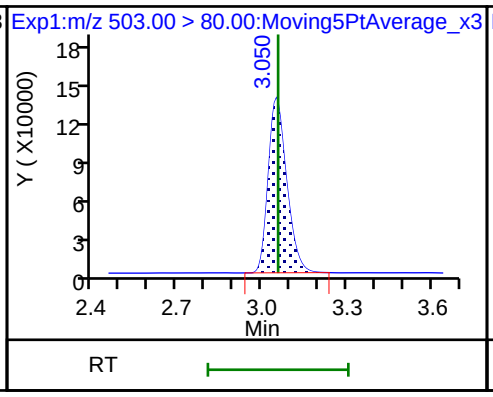
16 Perfluoroheptanesulfonic acid (ND)



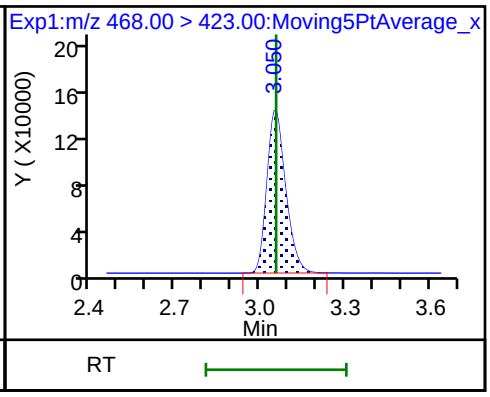
16 Perfluoroheptanesulfonic acid (ND)



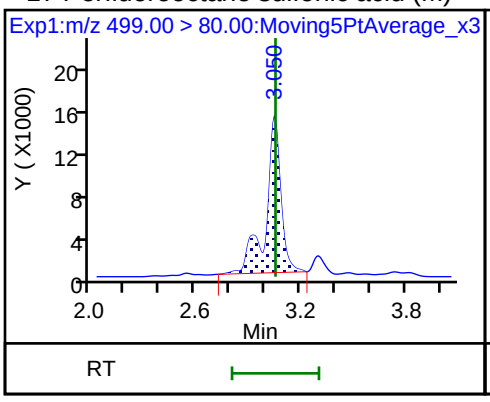
D 18 13C4 PFOS



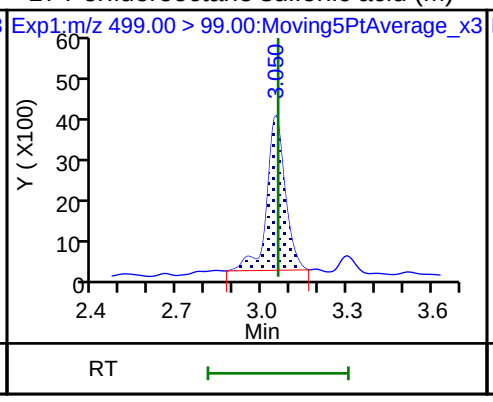
D 19 13C5 PFNA



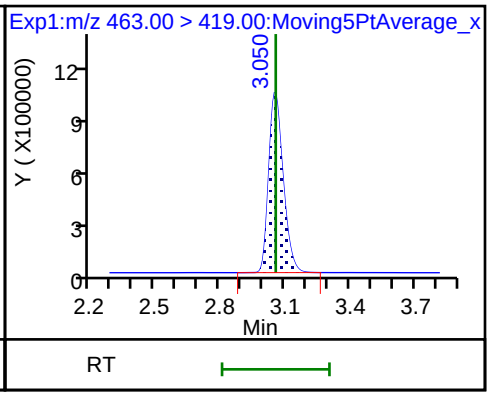
17 Perfluorooctane sulfonic acid (M)



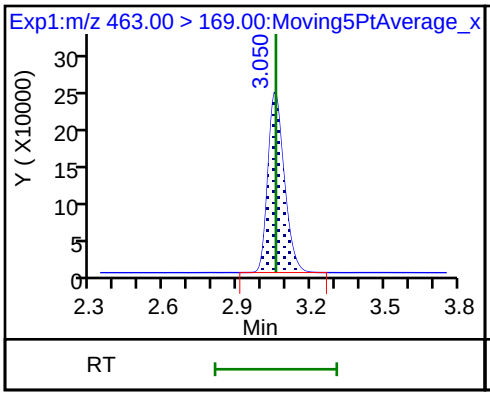
17 Perfluorooctane sulfonic acid (M)



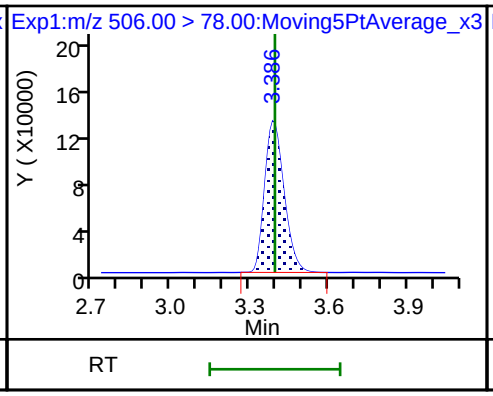
20 Perfluorononanoic acid



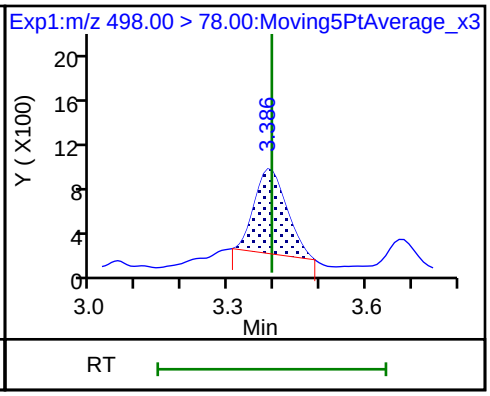
20 Perfluorononanoic acid



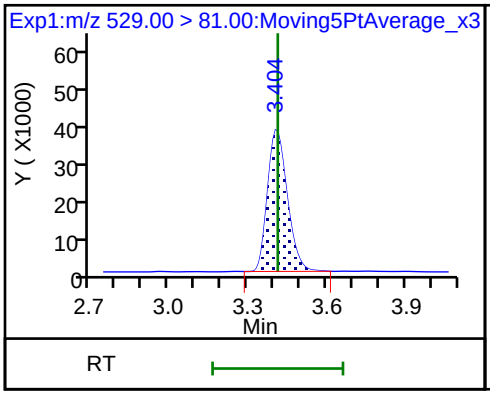
D 21 13C8 FOSA



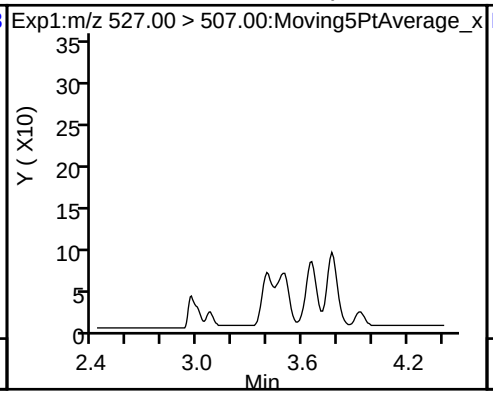
22 Perfluorooctane Sulfonamide



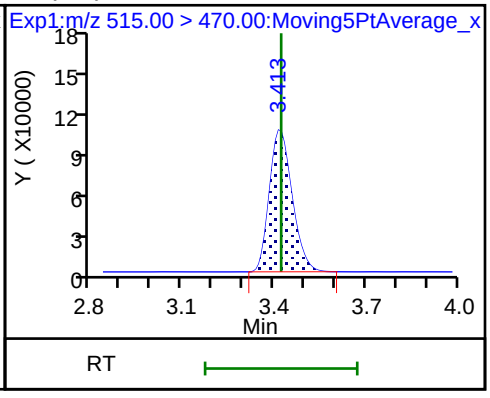
D 26 M2-8:2FTS



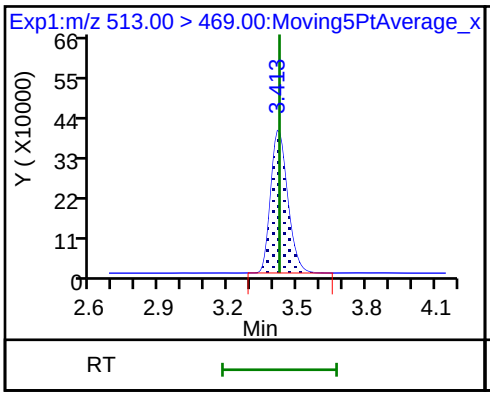
25 Sodium 1H,1H,2H,2H-perfluorodecane



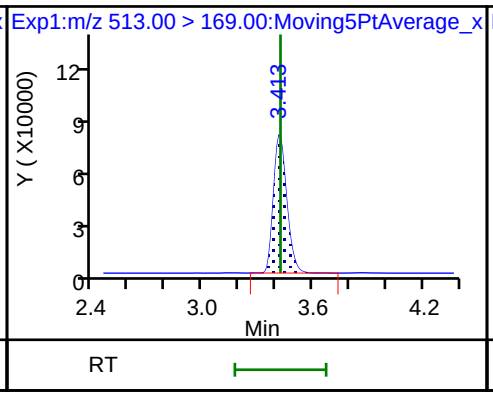
D 23 13C2 PFDA



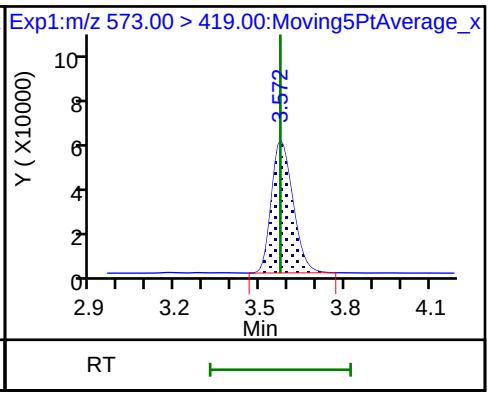
24 Perfluorodecanoic acid



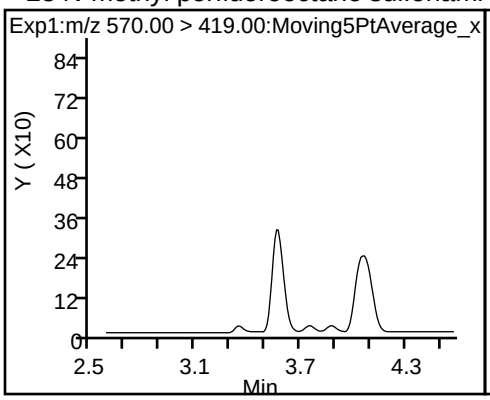
24 Perfluorodecanoic acid



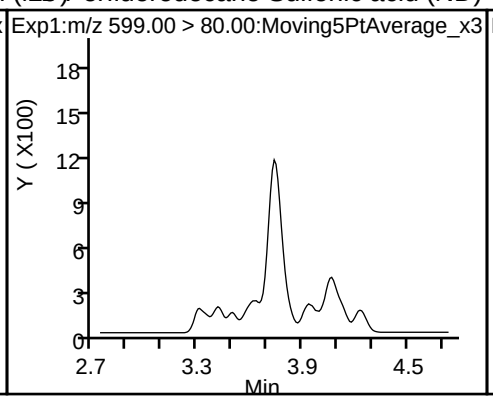
D 27 d3-NMeFOSAA



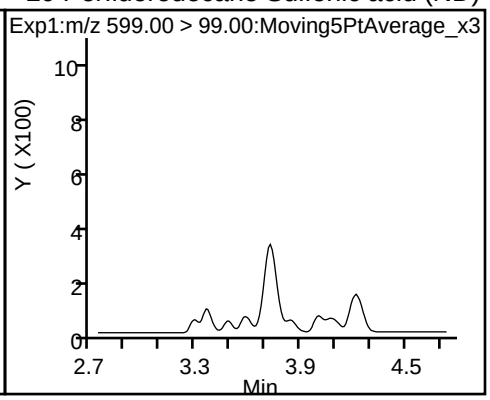
28 N-methyl perfluorooctane sulfonami (ND)



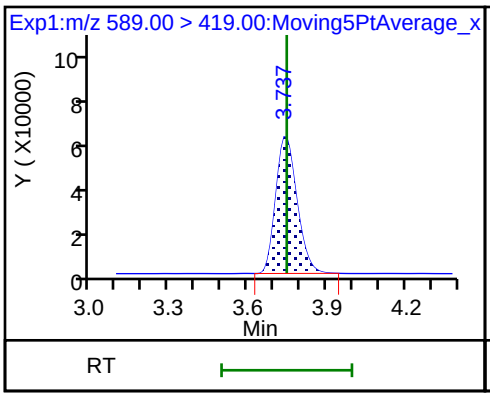
29 Perfluorodecane Sulfonic acid (ND)



29 Perfluorodecane Sulfonic acid (ND)



D 32 d5-NEtFOSAA



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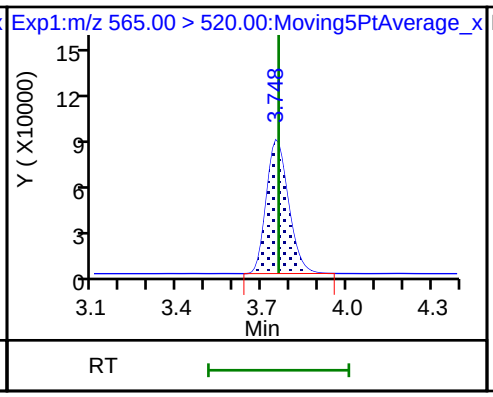
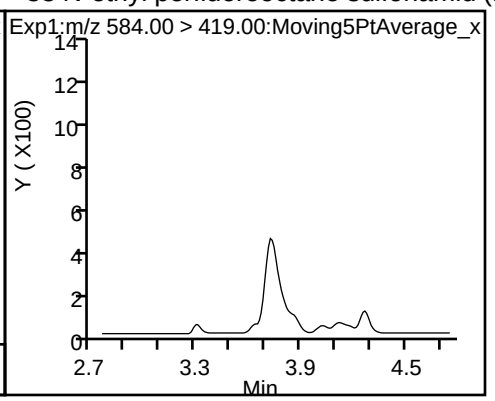
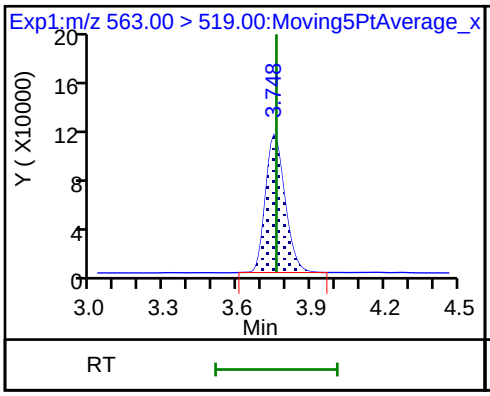


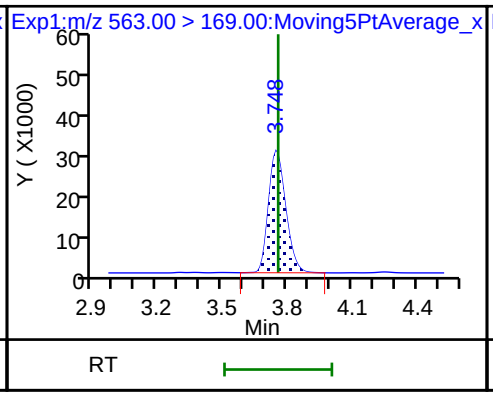
33 N-ethyl perfluorooctane sulfonamid (ND)



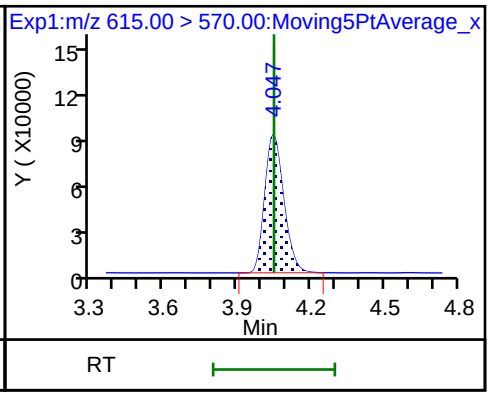
31 Perfluoroundecanoic acid



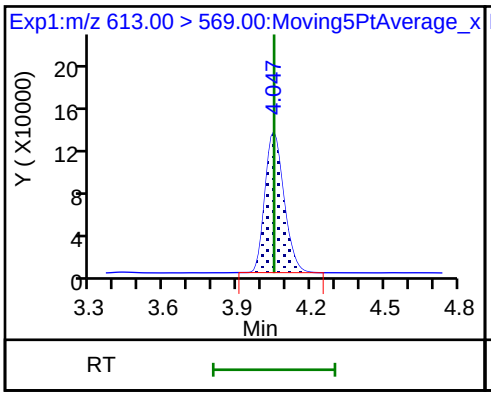
31 Perfluoroundecanoic acid



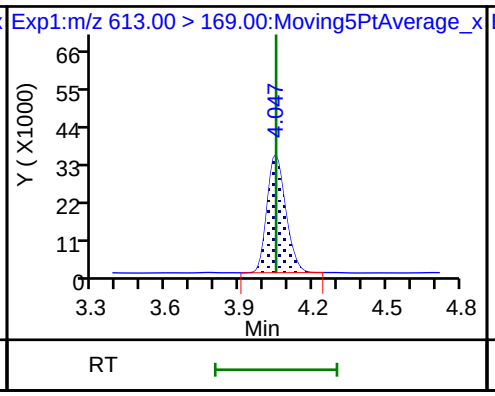
D 36 13C2 PFDoA



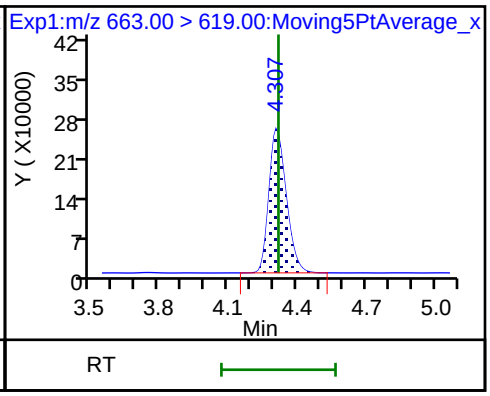
37 Perfluorododecanoic acid



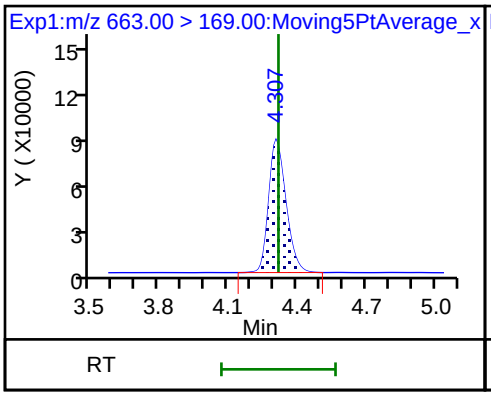
37 Perfluorododecanoic acid



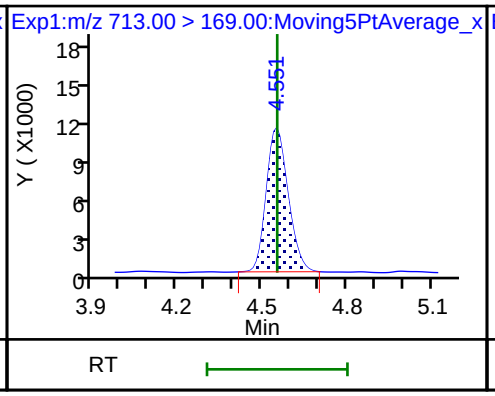
41 Perfluorotridecanoic acid



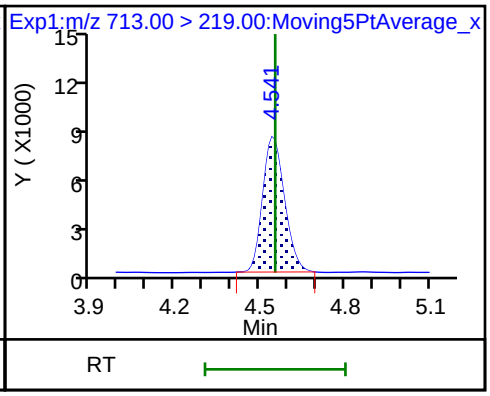
41 Perfluorotridecanoic acid



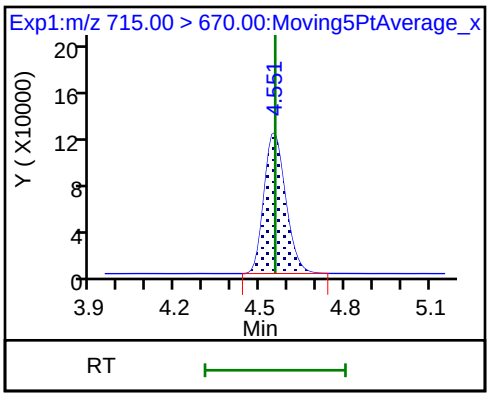
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP | Lab Sample ID: 320-38054-2

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_046.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.02(g) | Date Analyzed: 04/24/2018 23:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.035	F2	0.00055
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.011	F1 F2	0.00055
307-24-4	Perfluorohexanoic acid (PFHxA)	0.015	F1 F2	0.00055
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.0066	F1 F2	0.00055
335-67-1	Perfluorooctanoic acid (PFOA)	0.010	F1	0.00055
307-55-1	Perfluorododecanoic acid (PFDoA)	0.034		0.00055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.017	F1	0.00055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.00055
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0054		0.00055
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.0012		0.00055
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.012	F1	0.00055
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0055
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.0059	F1	0.0055
27619-97-2	6:2FTS	0.048		0.0055

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	7	*	25-150
STL01893	13C5 PFPeA	57		25-150
STL00993	13C2 PFHxA	57		25-150
STL01892	13C4-PFHpA	62		25-150
STL00990	13C4 PFOA	58		25-150
STL00998	13C2 PFDoA	51		25-150
STL02116	13C2-PFTeDA	17	*	25-150
STL02337	13C3-PFBS	68		25-150
STL00994	18O2 PFHxS	67		25-150
STL00991	13C4 PFOS	49		25-150
STL02118	d3-NMeFOSAA	52		25-150
STL02117	d5-NEtFOSAA	42		25-150
STL02279	M2-6:2FTS	102		25-150
STL02395	M2-4:2FTS	210	*	0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_046.d
Lims ID: 320-38054-A-2-A
Client ID: SB003(0-2)-TOP
Sample Type: Client
Inject. Date: 24-Apr-2018 23:36:14 ALS Bottle#: 32 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: barnettj Date: 25-Apr-2018 14:24:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.441	-0.005	1.000	1151297	6.33			376	M
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	489674	0.1720		6.9	3780	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.695	1.702	-0.007	1.000	2457289	1.96			1804	
D 3 13C5-PFPeA										
267.90 > 223.00	1.695	1.703	-0.008	0.554	2625095	1.43		57.2	35455	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.731	1.738	-0.007	1.000	85779	0.0381			210	
298.90 > 99.00	1.731	1.738	-0.007	1.000	34197		2.51(1.25-3.74)		86.1	
D 47 13C3-PFBS										
301.90 > 83.00	1.731	1.739	-0.008	1.000	66805	1.59		68.2	177	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.940	1.959	-0.019	1.000	12070	0.0262			33.6	
D 60 M2-4:2FTS										M
329.00 > 81.00	1.950	1.961	-0.011	1.000	1480993	4.91		210	3373	M
6 Perfluorohexanoic acid										
313.00 > 269.00	1.983	1.992	-0.009	1.000	3255714	2.79			2657	
313.00 > 119.00	1.983	1.992	-0.009	1.000	292693		11.12(5.03-15.10)		2294	
D 7 13C2 PFHxA										
315.00 > 270.00	1.983	1.993	-0.010	1.000	2875783	1.42		56.7	52438	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.014	-0.009	1.000	131764	0.0641			410	
349.00 > 99.00	2.005	2.014	-0.009	1.000	47483		2.77(1.36-4.07)		321	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.039	2.093	-0.054	1.000	1982	NR			3.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.323	2.319	0.004	1.000	1475777	1.20			1595	
363.00 > 169.00	2.323	2.319	0.004	1.000	567008		2.60(1.13-3.40)		2609	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.322	0.001	1.000	3066947	1.55		62.1	59551	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.332	0.004	1.000	1810439	0.9777			1902	
399.00 > 99.00	2.336	2.332	0.004	1.000	584035		3.10(1.50-4.49)		1630	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.335	0.001	1.000	3869577	1.59		67.1	67665	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.660	0.001	1.000	6333874	8.67			2117	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.668	-0.007	1.000	1026266	2.42		102	2045	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.690	-0.007		5291172	2.50			66310	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	2401419	1.83			1708	
413.00 > 169.00	2.683	2.690	-0.007	1.000	1365877		1.76(0.84-2.52)		2028	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.691	-0.008	1.000	2836665	1.44		57.8	59839	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.697	-0.006	1.000	250742	0.2274			56.4	
449.00 > 99.00	2.691	2.697	-0.006	1.000	62211		4.03(1.94-5.82)		396	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.058	3.060	-0.002	1.000	84671844	93.7			41765	E
499.00 > 99.00	3.058	3.060	-0.002	1.000	27940524		3.03(2.31-6.93)		95299	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.058	3.067	-0.009	1.000	11635113	14.4			23815	E
463.00 > 169.00	3.058	3.067	-0.009	1.000	2807282		4.14(1.90-5.69)		11972	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.067	-0.009	1.000	1934139	1.15		45.8	48348	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.067	-0.009	1.000	1984914	1.16		48.6	1345	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.397	3.398	-0.002	1.000	50850346	51.2			104	E
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.399	-0.003	1.000	2452904	1.15		46.0	27.0	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.406	3.417	-0.011	1.000	1492190	2.25			34.0	
549.00 > 99.00	3.406	3.417	-0.011	1.000	537208		2.78(1.33-3.97)		166	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.415	3.417	-0.002	1.000	76246429	97.2			99522	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.417	-0.002	1.000	1484362	2.91		122	1934	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.424	3.426	-0.002	1.000	10291864	13.5			21408	E
513.00 > 169.00	3.424	3.426	-0.002	1.000	1923757		5.35(2.36-7.09)		10258	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.427	-0.003	1.000	1842008	1.30		52.0	40443	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.586	-0.002	1.000	63547	0.1534			31.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.586	-0.002	1.000	1038348	1.29		51.7	11979	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.740	-0.012	1.000	1144818	2.12			16.8	
599.00 > 99.00	3.728	3.740	-0.012	1.000	483382		2.37(1.39-4.16)		92.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.739	3.751	-0.012	1.000	823310	1.04		41.5	6385	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.760	3.761	-0.001	1.000	65710533	135.9			1500	EM
563.00 > 169.00	3.749	3.761	-0.012	0.997	24268544		2.71(2.12-6.36)		517	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.749	3.761	-0.012	1.003	331898	1.08			310	
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.762	-0.002	1.000	1429888	1.17		46.7	30930	
35 MeFOSA										
512.00 > 169.00	3.886	3.875	0.011		237223	NC			75.3	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.042	4.050	-0.008	1.000	4356989	6.24			4100	
613.00 > 169.00	4.042	4.050	-0.008	1.000	1258096		3.46(2.13-6.40)		5730	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.061	-0.019	1.000	1674515	1.27		50.7	20716	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.302	4.318	-0.016	1.000	21032171	25.8			17763	E
663.00 > 169.00	4.302	4.318	-0.016	1.000	7967914		2.64(1.25-3.76)		16205	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.548	4.553	-0.005	1.000	221796	3.03			396	
713.00 > 219.00	4.537	4.553	-0.016	0.998	150322		1.48(0.71-2.13)		464	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.548	4.564	-0.016	1.000	728525	0.4349		17.4	7890	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.962	4.975	-0.013	1.000	417695	1.48			270	
813.00 > 169.00	4.962	4.975	-0.013	1.000	69735		5.99(2.86-8.58)		269	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.962	4.976	-0.014	1.000	735491	0.2698		10.8	5129	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.332	5.344	-0.012	1.000	191640	0.6488			151	
913.00 > 169.00	5.332	5.344	-0.012	1.000	24076		7.96(3.83-11.48)		189	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:10 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_046.d

Injection Date: 24-Apr-2018 23:36:14 Instrument ID: A8_N

Lims ID: 320-38054-A-2-A Lab Sample ID: 320-38054-2

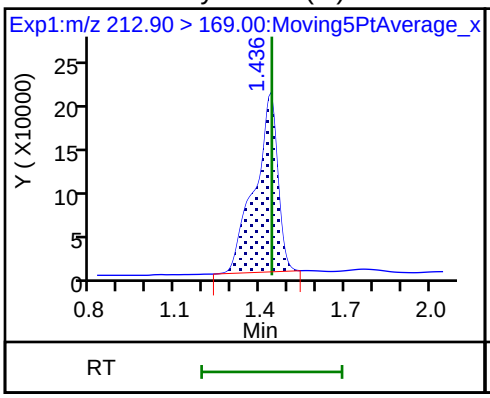
Client ID: SB003(0-2)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 32 Worklist Smp#: 5

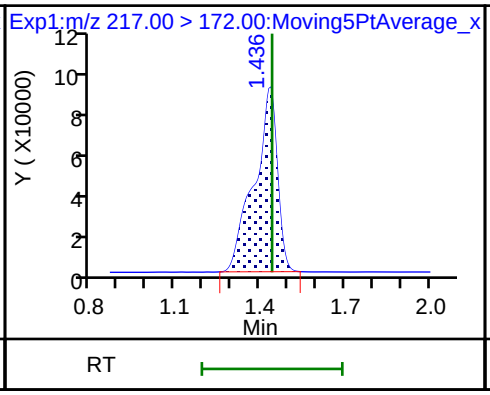
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

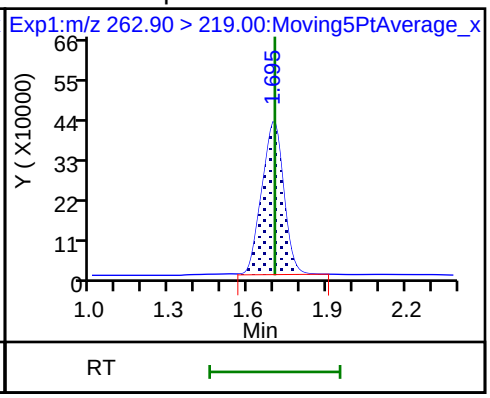
2 Perfluorobutyric acid (M)



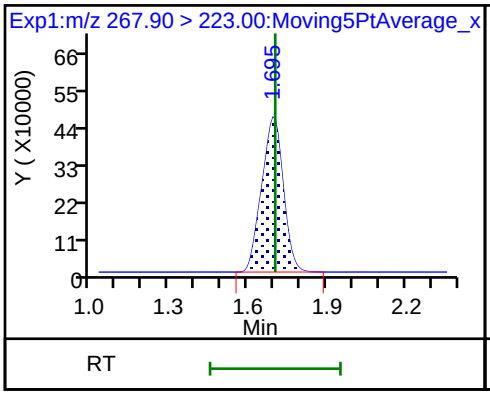
D 1 13C4 PFBA



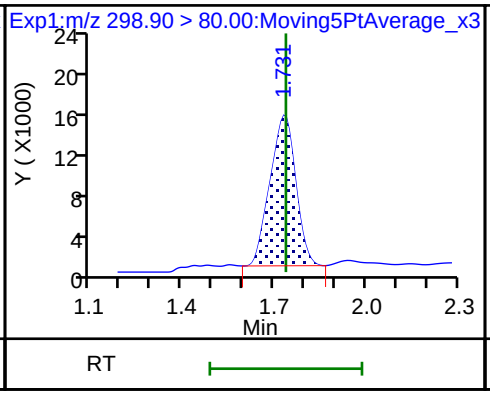
4 Perfluoropentanoic acid



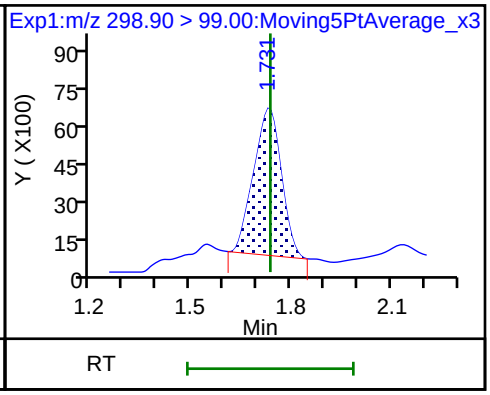
D 3 13C5-PFPeA



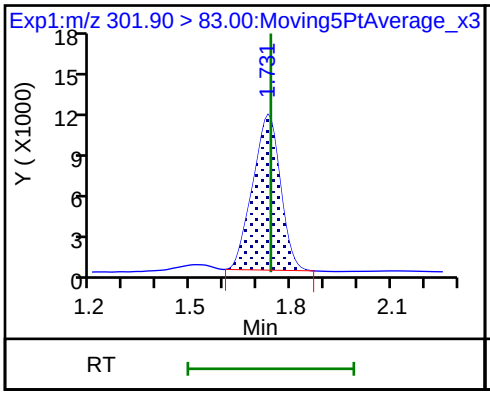
5 Perfluorobutanesulfonic acid



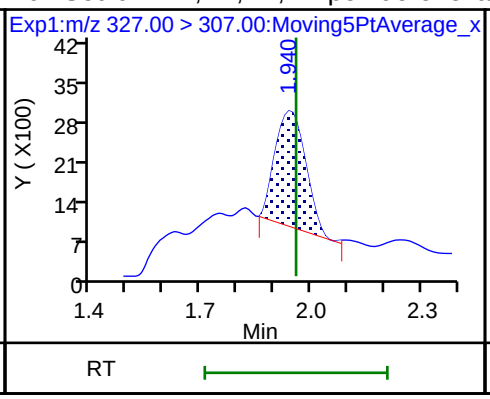
5 Perfluorobutanesulfonic acid



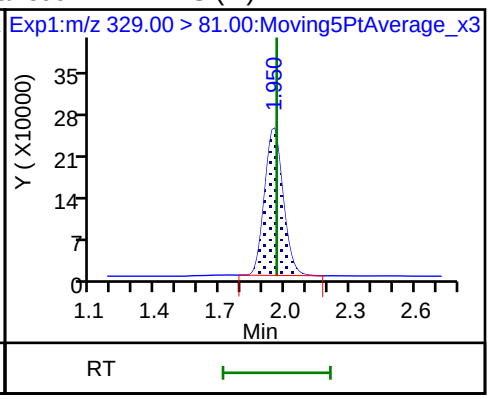
D 47 13C3-PFBS



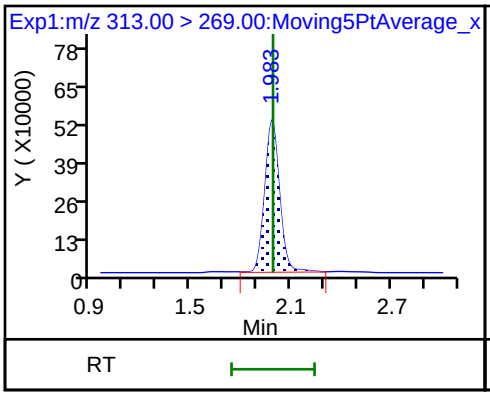
61 Sodium 1H,1H,2H,2H-perfluorohexa



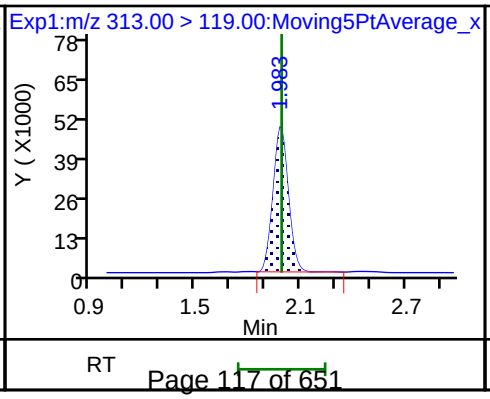
D 60 M2-4:2FTS (M)



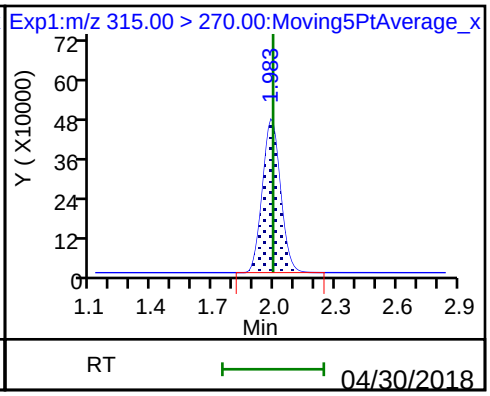
6 Perfluorohexanoic acid



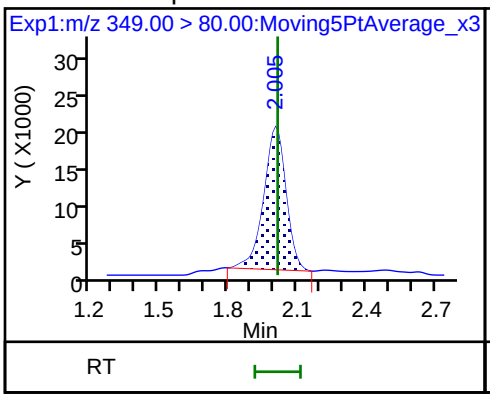
6 Perfluorohexanoic acid



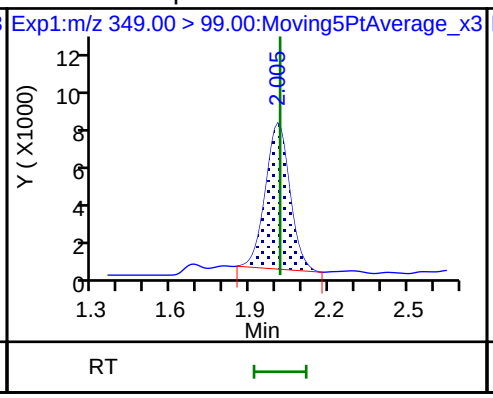
D 7 13C2 PFHxA



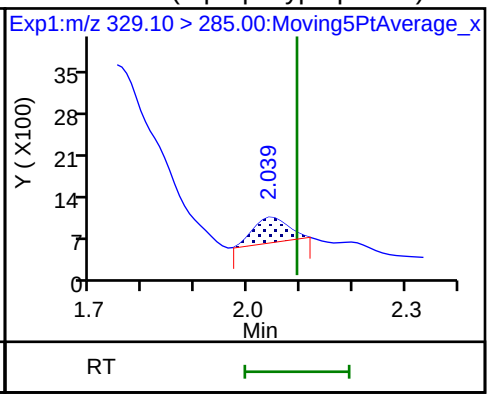
70 Perfluoropentanesulfonic acid



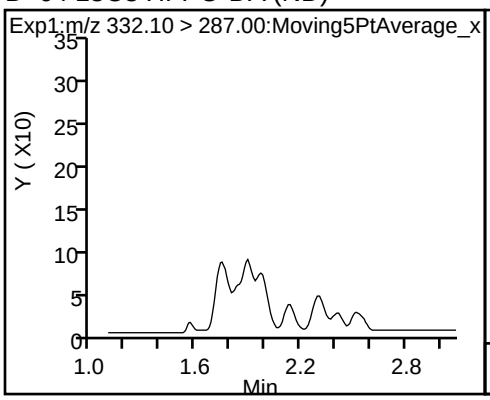
70 Perfluoropentanesulfonic acid



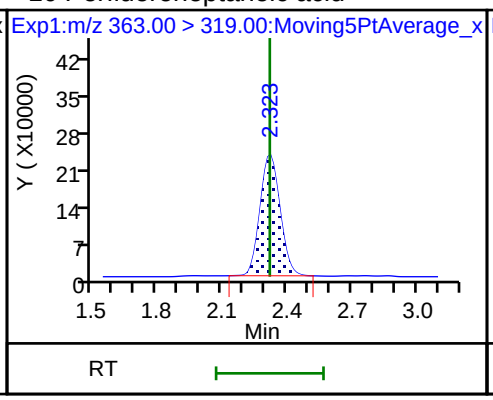
67 Perfluoro(2-propoxypropanoic) acid



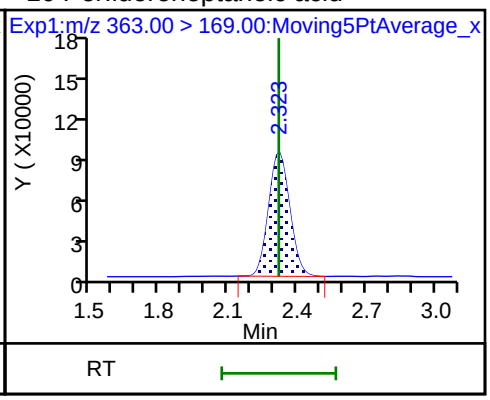
D 64 13C3 HFPO-DA (ND)



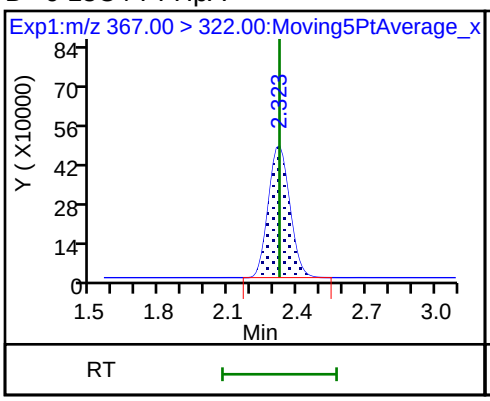
10 Perfluoroheptanoic acid



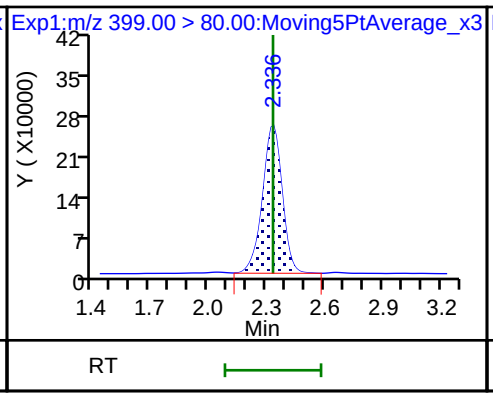
10 Perfluoroheptanoic acid



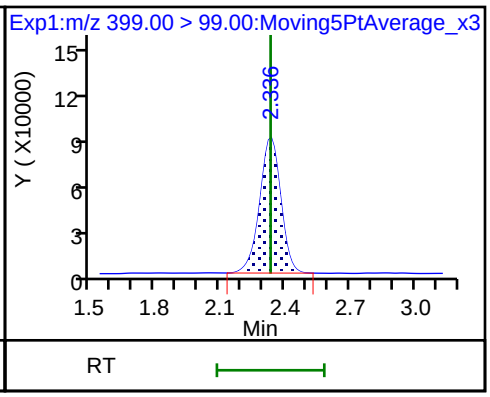
D 9 13C4-PFHpA



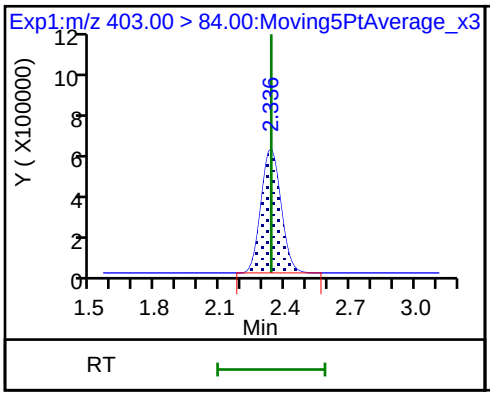
8 Perfluorohexanesulfonic acid



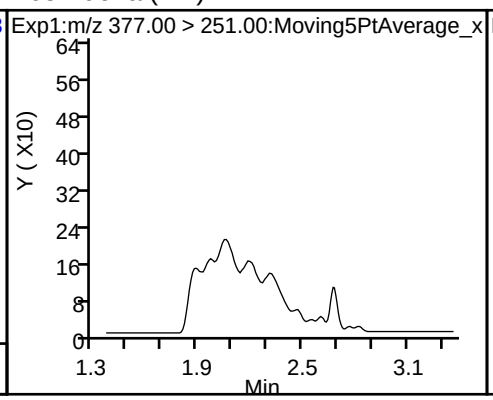
8 Perfluorohexanesulfonic acid



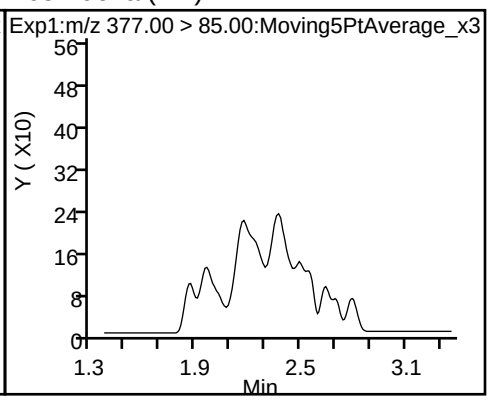
D 11 18O2 PFHxS



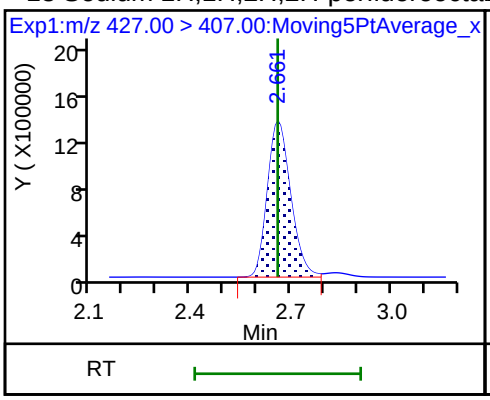
65 Adona (ND)



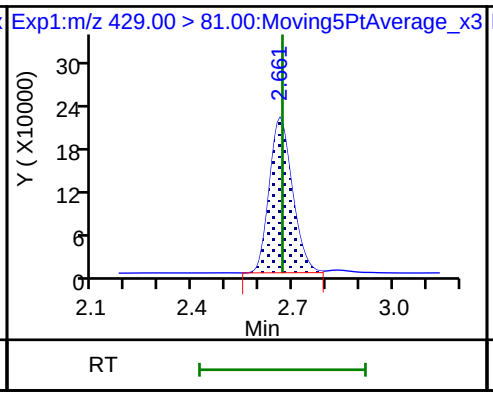
65 Adona (ND)



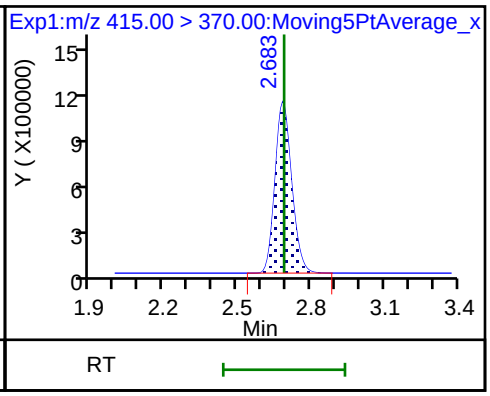
13 Sodium 1H,1H,2H,2H-perfluorooctane



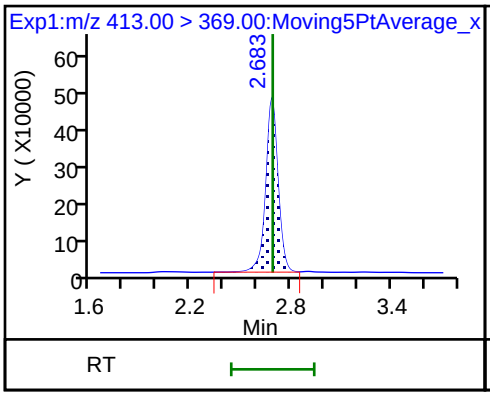
D 12 M2-6:2FTS



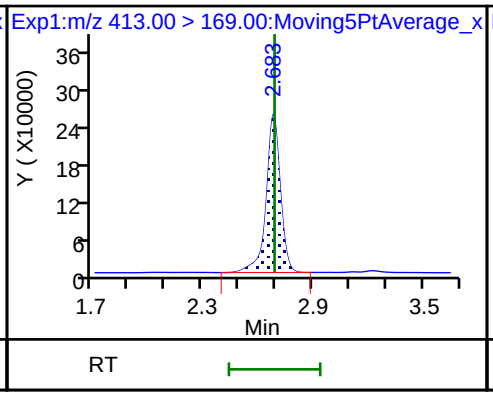
* 62 13C2-PFOA



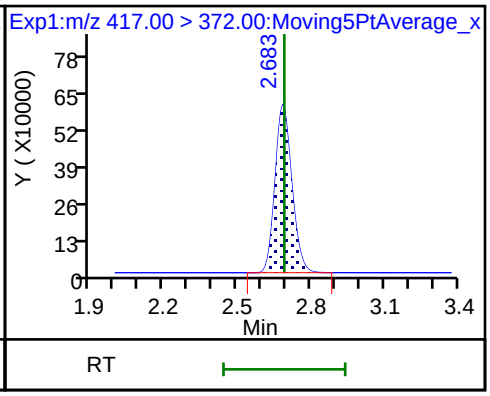
15 Perfluorooctanoic acid



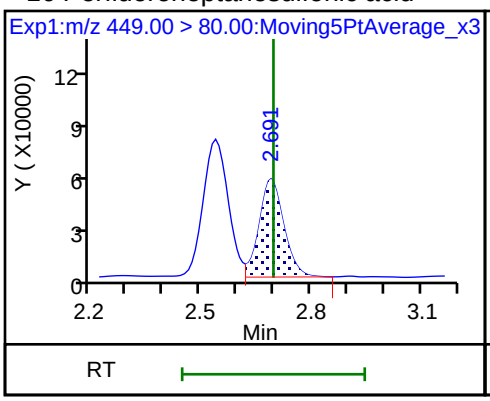
15 Perfluorooctanoic acid



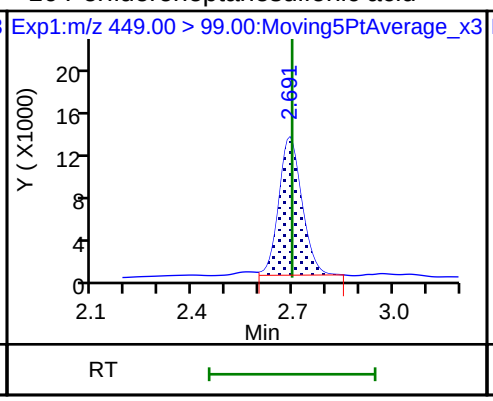
D 14 13C4 PFOA



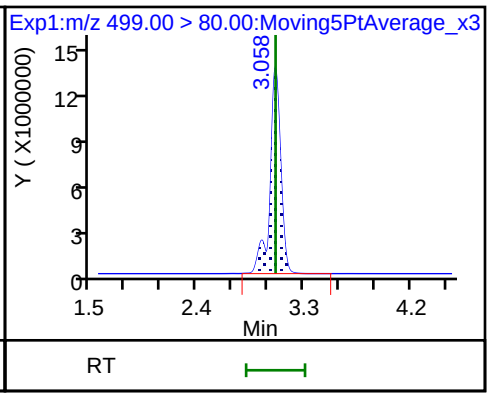
16 Perfluoroheptanesulfonic acid



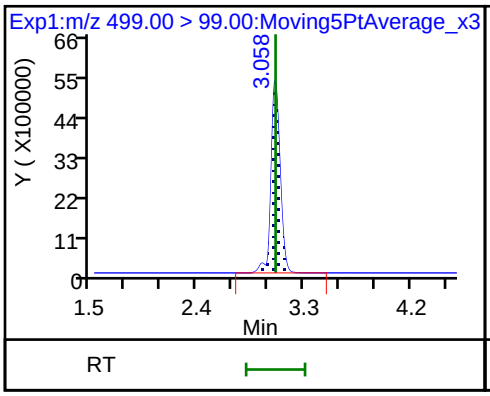
16 Perfluoroheptanesulfonic acid



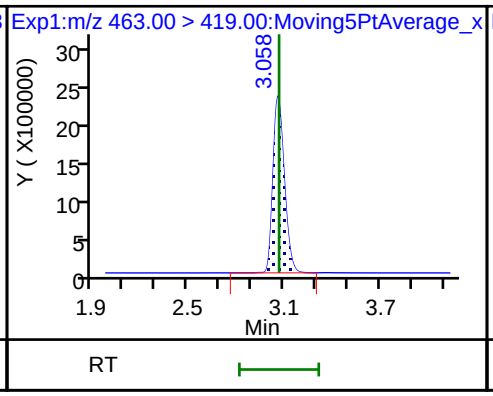
17 Perfluorooctane sulfonic acid



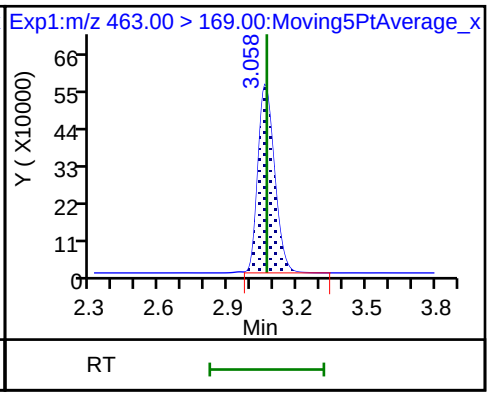
17 Perfluorooctane sulfonic acid



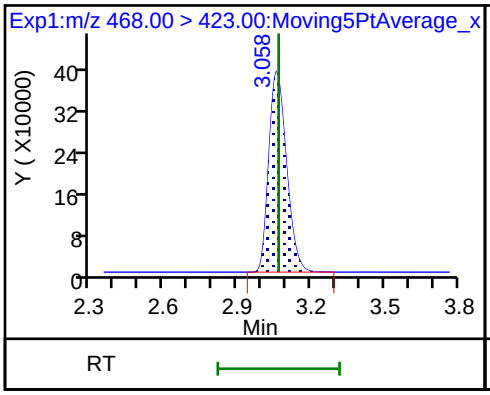
20 Perfluorononanoic acid



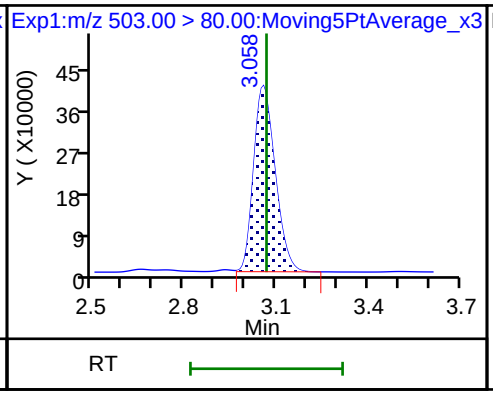
20 Perfluorononanoic acid



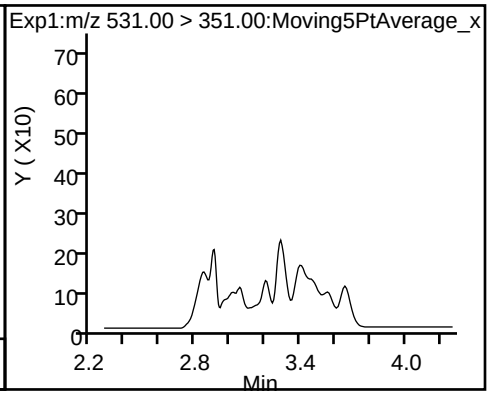
D 19 13C5 PFNA



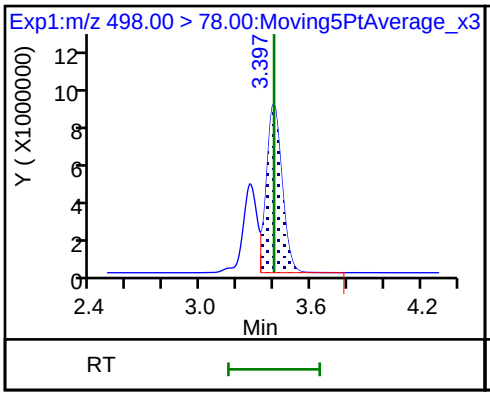
D 18 13C4 PFOS



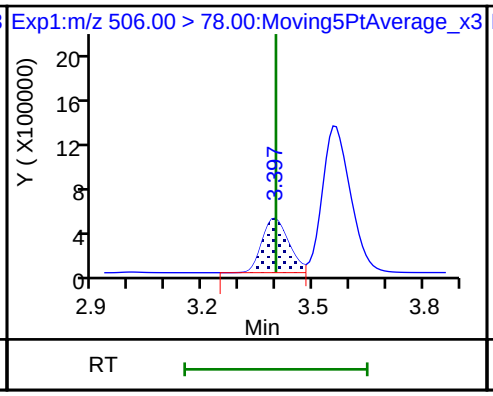
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



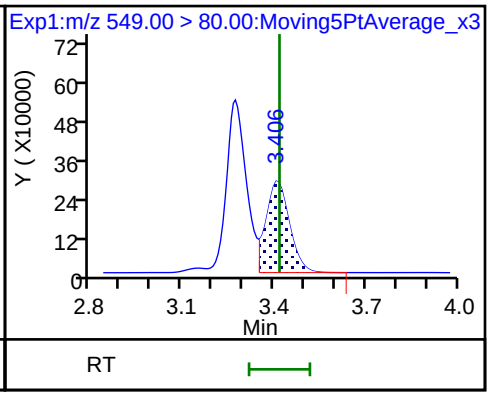
22 Perfluorooctane Sulfonamide



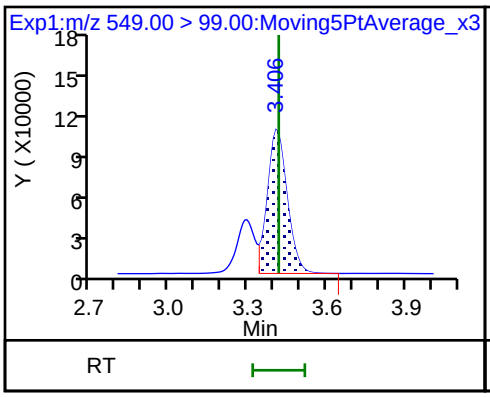
D 21 13C8 FOSA



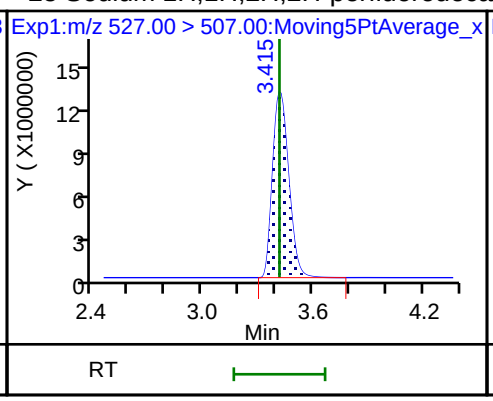
68 Perfluorononanesulfonic acid



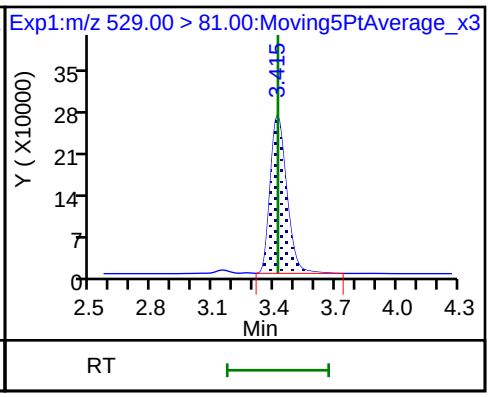
68 Perfluorononanesulfonic acid



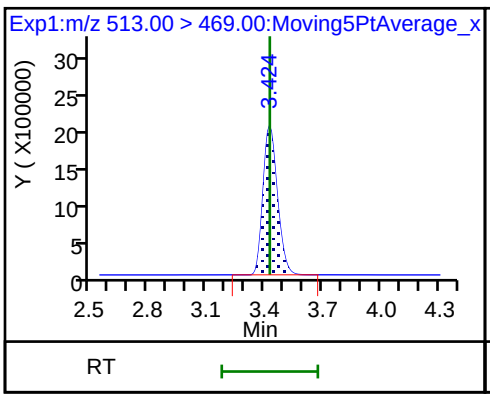
25 Sodium 1H,1H,2H,2H-perfluorodecane



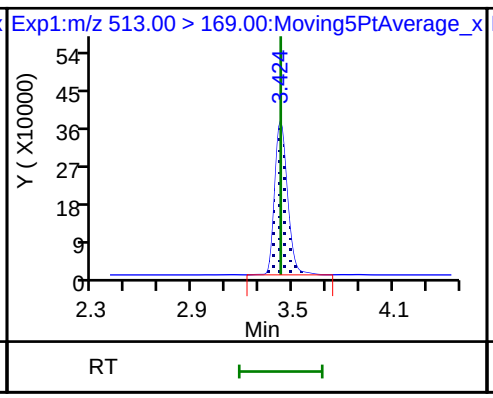
D 26 M2-8:2FTS



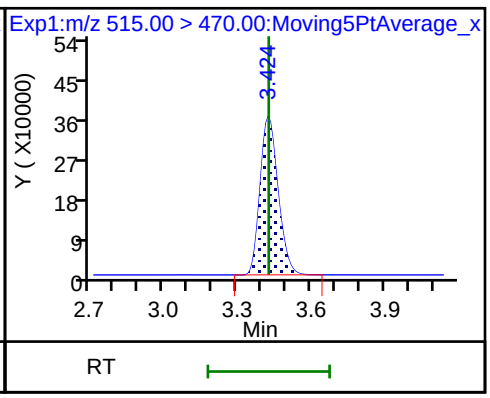
24 Perfluorodecanoic acid



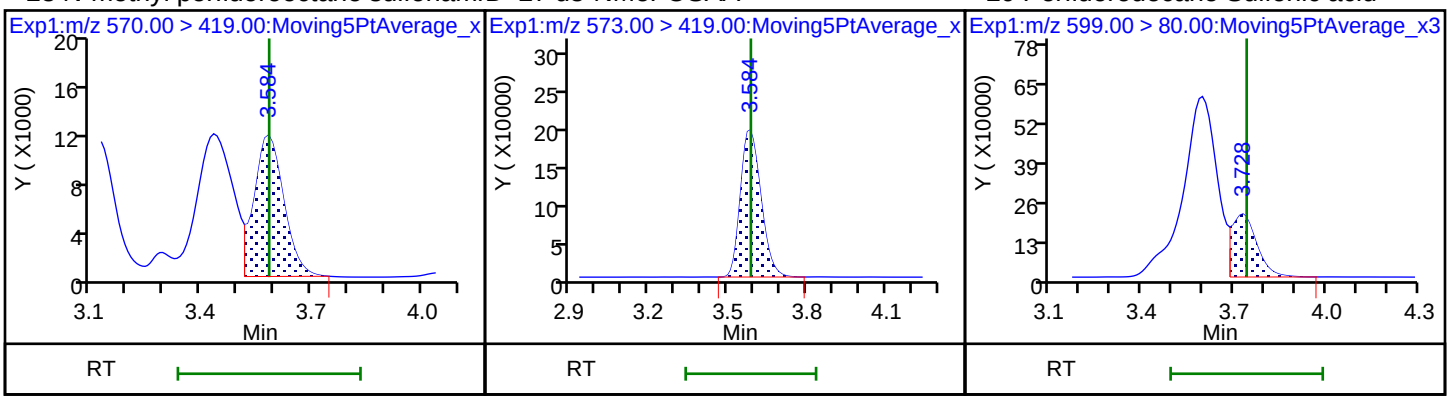
24 Perfluorodecanoic acid



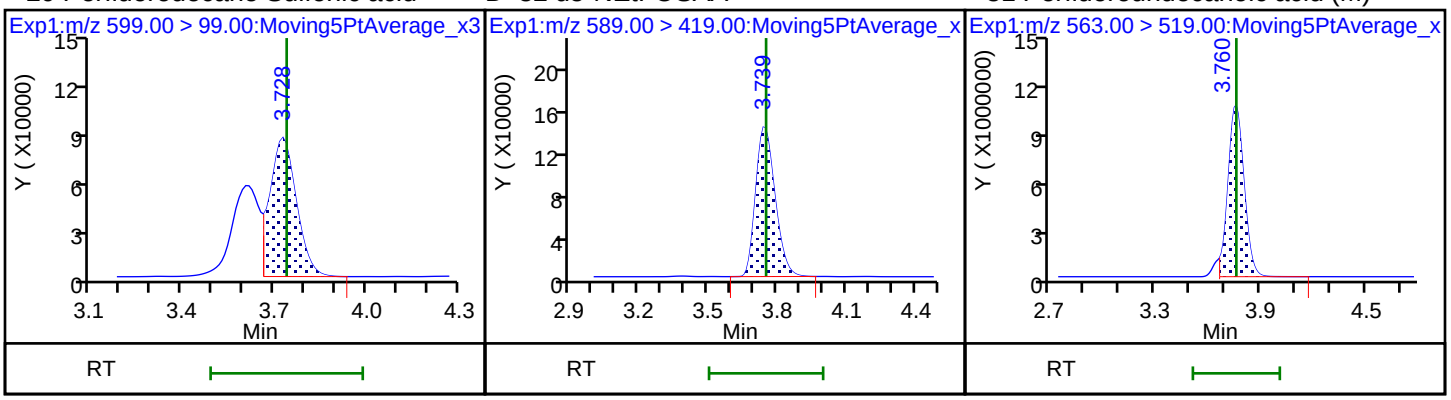
D 23 13C2 PFDA



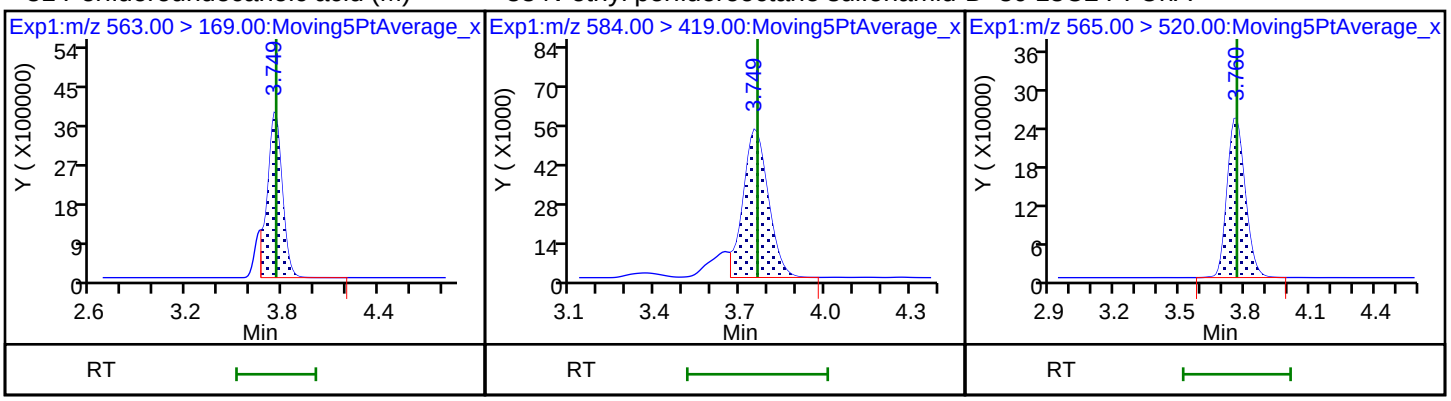
28 N-methyl perfluorooctane sulfonamiD 27 d3-NMeFOSAA 29 Perfluorodecane Sulfonic acid



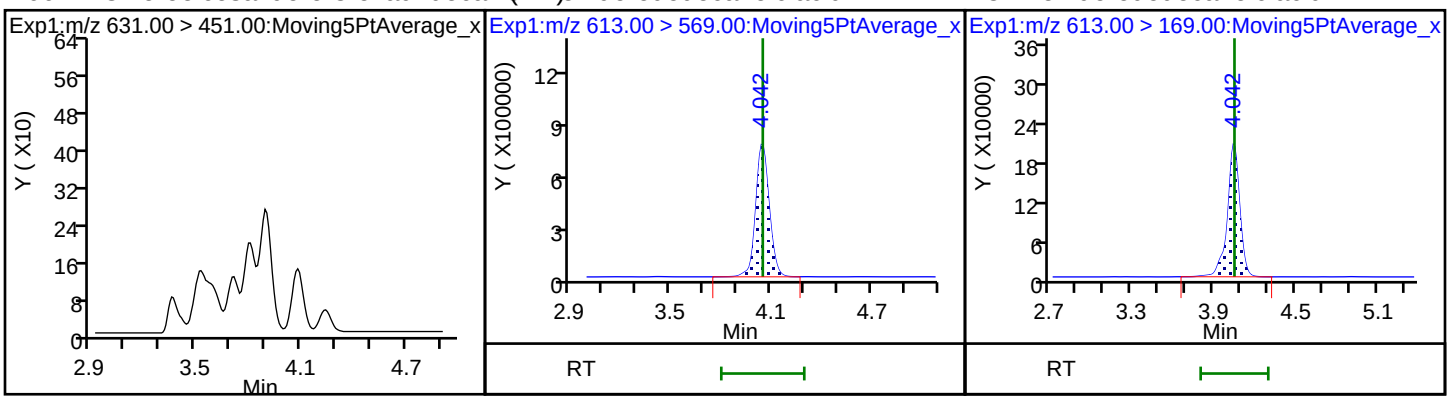
29 Perfluorodecane Sulfonic acid D 32 d5-NEtFOSAA 31 Perfluoroundecanoic acid (M)



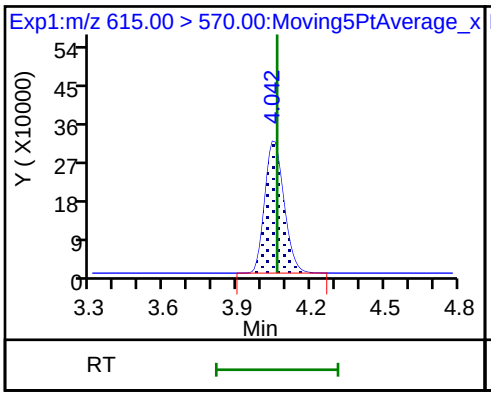
31 Perfluoroundecanoic acid (M) 33 N-ethyl perfluorooctane sulfonamid D 30 13C2 PFUnA



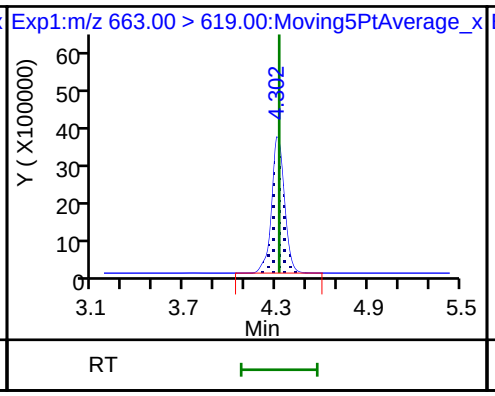
66 11-Chloroeicosafluoro-3-oxaundecan 37 Perfluorododecanoic acid (M) 37 Perfluorododecanoic acid



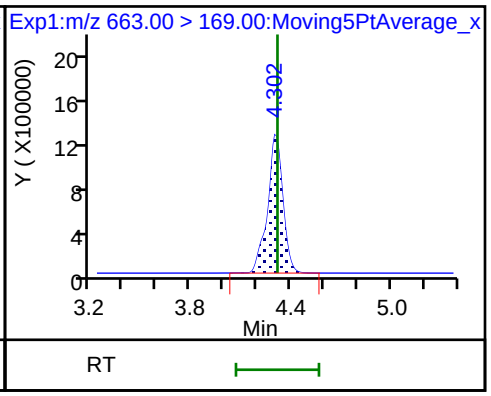
D 36 13C2 PFDoA



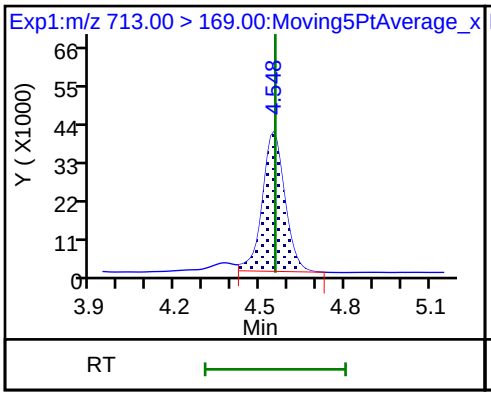
41 Perfluorotridecanoic acid



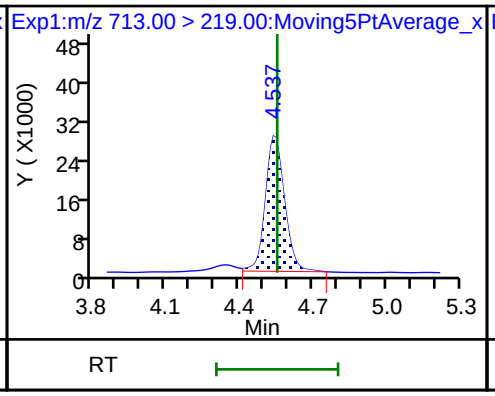
41 Perfluorotridecanoic acid



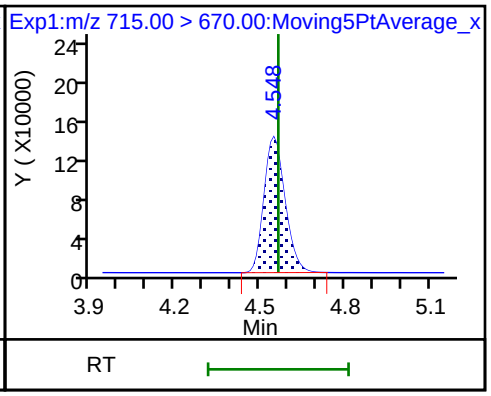
42 Perfluorotetradecanoic acid



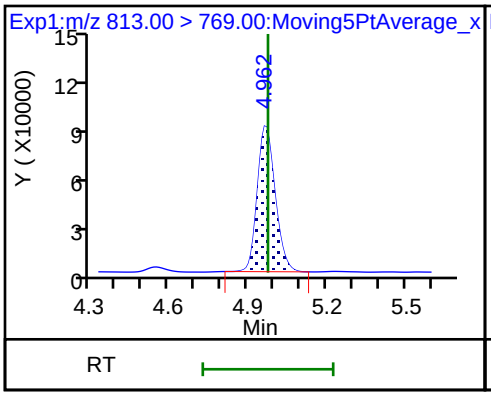
42 Perfluorotetradecanoic acid



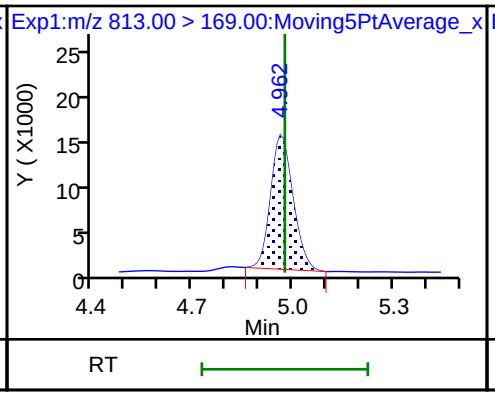
D 43 13C2-PFTeDA



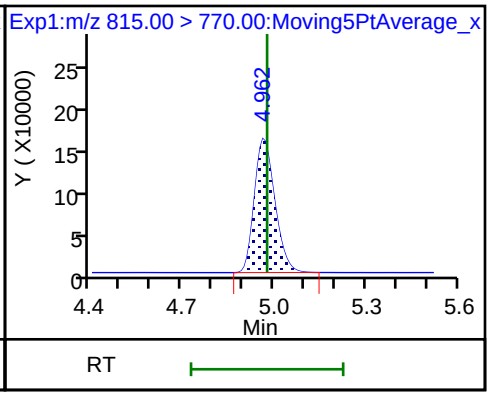
45 Perfluorohexadecanoic acid



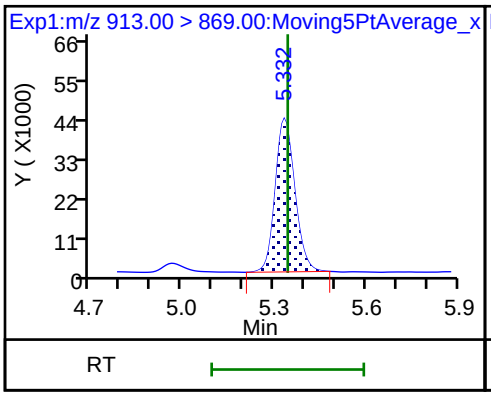
45 Perfluorohexadecanoic acid



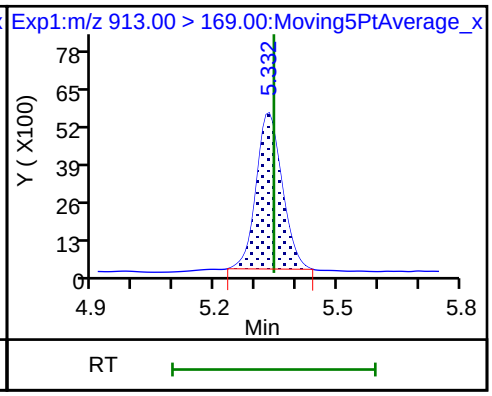
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

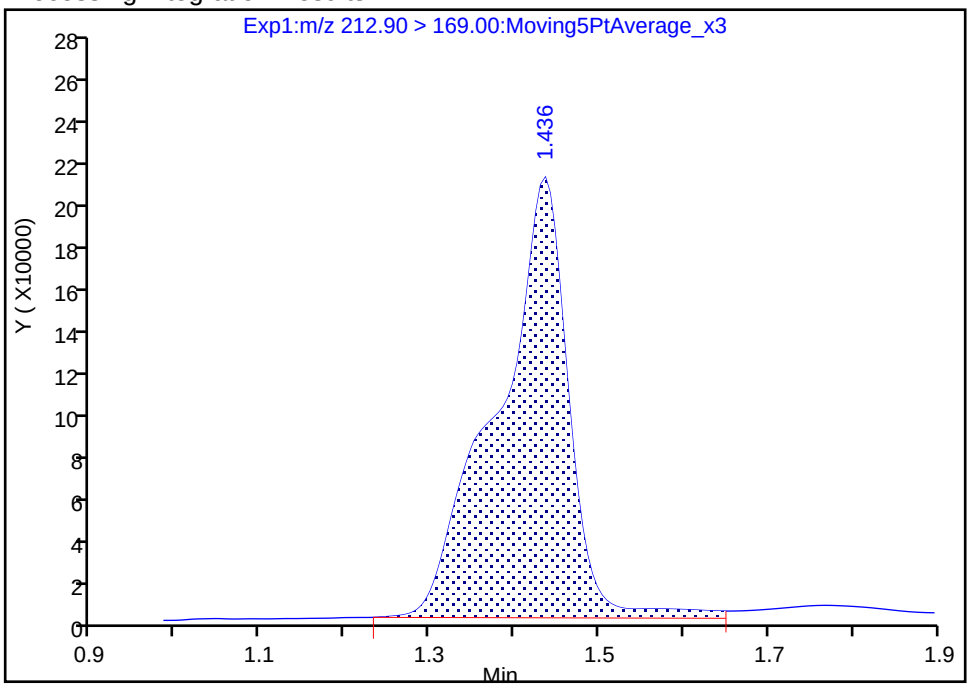
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_046.d				
Injection Date:	24-Apr-2018 23:36:14	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-A	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	32	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

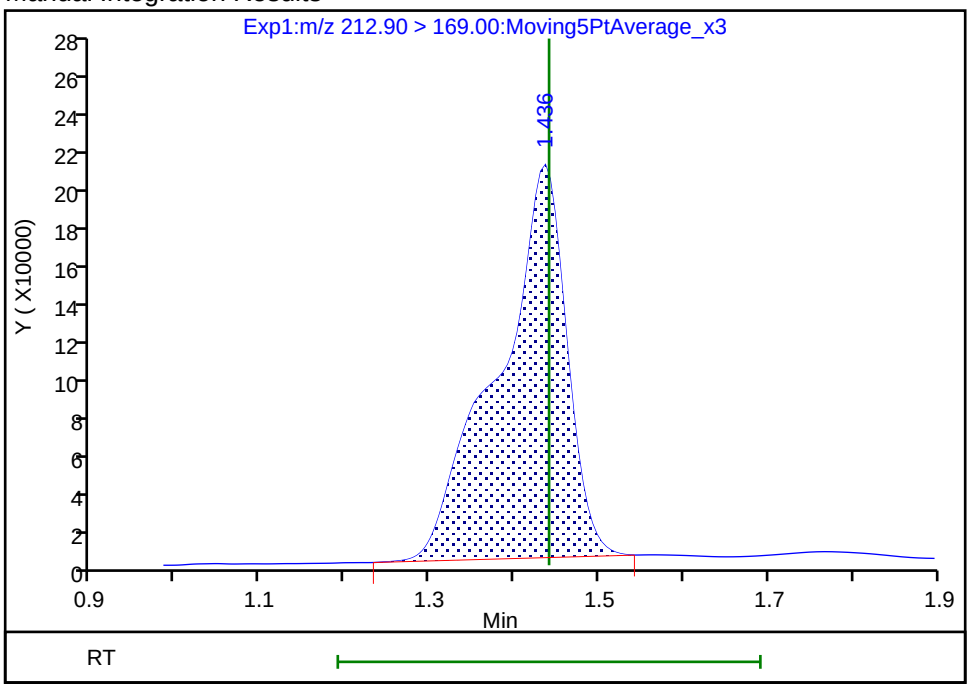
Processing Integration Results

RT: 1.44
Area: 1216021
Amount: 6.685964
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 1151297
Amount: 6.330096
Amount Units: ng/ml



Reviewer: barnettj, 25-Apr-2018 14:22:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

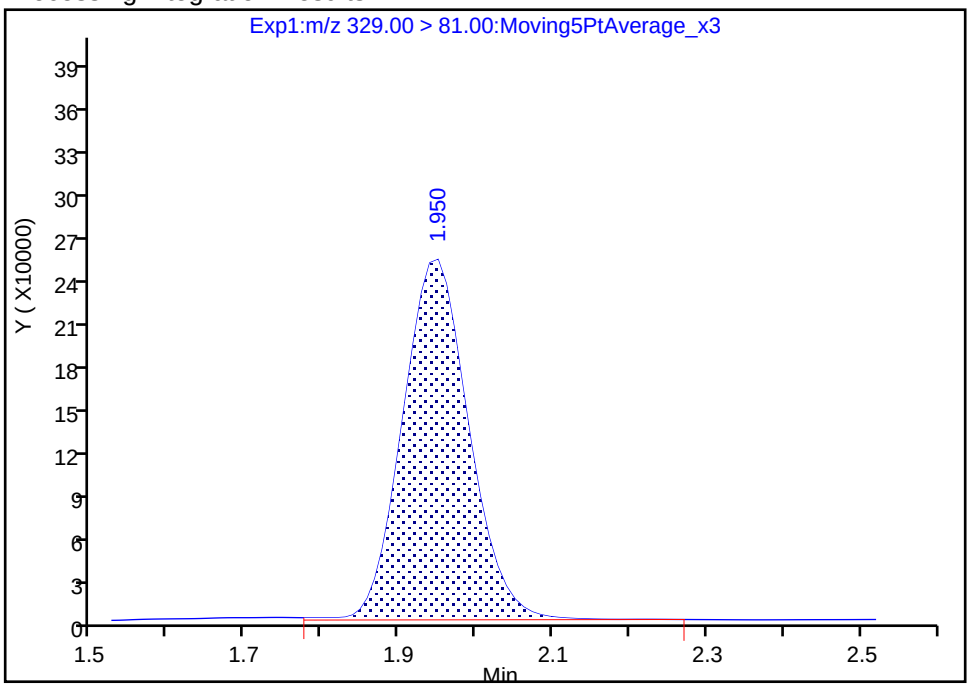
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_046.d				
Injection Date:	24-Apr-2018 23:36:14	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-A	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	32	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

D 60 M2-4:2FTS, CAS: STL02395

Signal: 1

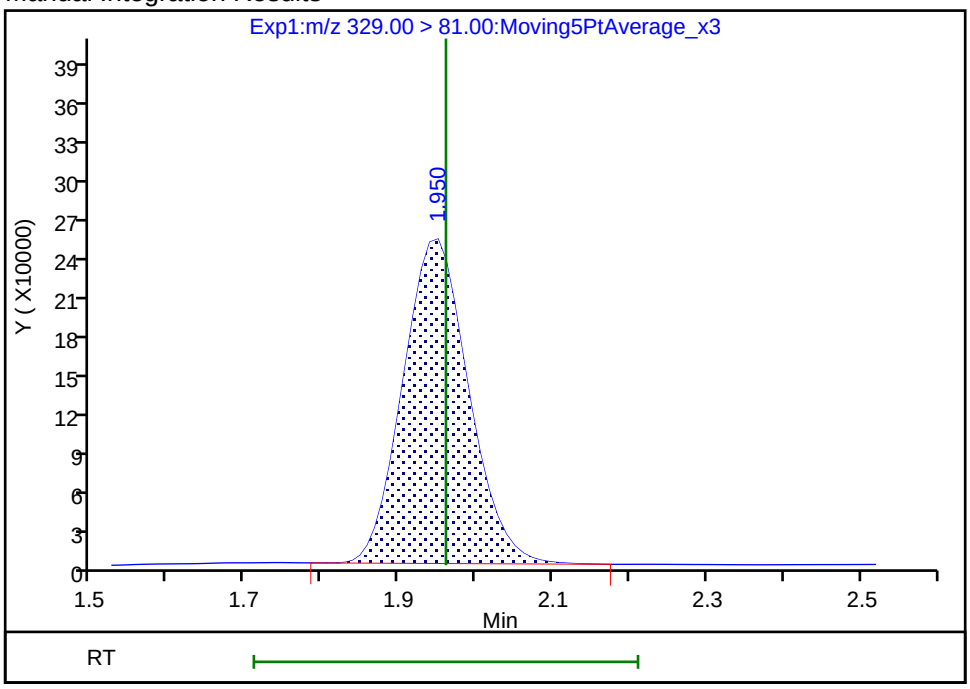
Processing Integration Results

RT: 1.95
Area: 1503343
Amount: 4.983968
Amount Units: ng/ml



Manual Integration Results

RT: 1.95
Area: 1480993
Amount: 4.909872
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:15:38

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP | Lab Sample ID: 320-38054-2

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_055.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.01(g) | Date Analyzed: 04/25/2018 00:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.0074	F1	0.00055
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.010	F1	0.00055
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.021	F1	0.00055
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.0095	F1 *	0.00055
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	F1 *	0.0055
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	F1 *	0.0055

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02337	13C3-PFBS	99		25-150
STL00991	13C4 PFOS	68		25-150
STL01056	13C8 FOSA	87		25-150
STL02118	d3-NMeFOSAA	114		25-150
STL02117	d5-NEtFOSAA	69		25-150
STL02395	M2-4:2FTS	6		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_055.d
Lims ID: 320-38054-A-2-D
Client ID: SB003(0-2)-TOP
Sample Type: Client
Inject. Date: 25-Apr-2018 00:46:34 ALS Bottle#: 38 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-2-d
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:22:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										E
212.90 > 169.00	1.436	1.436	0.0	1.000	177513133	151.7			26313	E
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	3150970	2.17		86.6	17011	
4 Perfluoropentanoic acid										E
262.90 > 219.00	1.694	1.694	0.0	1.000	145057304	194.8			52571	E
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.555	1561823	1.67		66.6	23780	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.730	0.009	1.000	2233785	1.34			1756	
298.90 > 99.00	1.739	1.730	0.009	1.000	936716		2.38(1.25-3.74)		1158	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	49504	2.30		98.9	360	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.939	1.950	-0.011	1.000	3717	0.0109			87.4	
D 60 M2-4:2FTS										
329.00 > 81.00	1.939	1.961	-0.022	1.000	22767	0.1477		6.3	140	
6 Perfluorohexanoic acid										RE
313.00 > 269.00	1.982	1.982	0.0	1.000	149474378	207.9			48755	RE
313.00 > 119.00	1.982	1.982	0.0	1.000	37433125		3.99(5.03-15.10)		146335	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	1768874	1.71		68.2	32654	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	2767490	1.82			1469	
349.00 > 99.00	2.004	2.004	0.0	1.000	1064850		2.60(1.36-4.07)		1574	
10 Perfluoroheptanoic acid										E
363.00 > 319.00	2.321	2.321	0.0	1.006	134980146	252.1			48845	E
363.00 > 169.00	2.321	2.321	0.0	1.006	90645539		1.49(1.13-3.40)		83826	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										E
399.00 > 80.00	2.334	2.321	0.013	1.000	34561253	37.8			739	E
399.00 > 99.00	2.334	2.321	0.013	1.000	11443276		3.02(1.50-4.49)		828	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.322	-0.014	1.000	1337332	1.32		53.0	31786	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	1910714	1.53		64.8	40126	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.645	2.652	-0.007	1.000	2791658	10.9			877	E
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.668	-0.023	1.000	359169	1.66		69.9	4529	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.675	0.0		2703846	2.50			54736	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.683	2.675	0.008	1.003	138685767	206.9			34845	E
413.00 > 169.00	2.675	2.675	0.0	1.000	111801715		1.24(0.84-2.52)		63404	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.682	0.001	1.000	1445070	1.82			121	
449.00 > 99.00	2.690	2.682	0.008	1.003	409944		3.53(1.94-5.82)		259	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.691	-0.016	1.000	1450118	1.45		57.8	26484	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	2.938	3.048	-0.110	0.963	19153032	29.5			1414	E
499.00 > 99.00	3.050	3.048	0.002	1.000	26148228		0.73(2.31-6.93)		7038	M
20 Perfluorononanoic acid										E
463.00 > 419.00	3.057	3.055	0.002	1.002	89100720	153.7			139112	E
463.00 > 169.00	3.057	3.055	0.002	1.002	34892010		2.55(1.90-5.69)		19529	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.067	-0.017	1.000	1390191	1.61		64.5	33045	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.067	-0.017	1.000	1428180	1.64		68.5	9377	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.391	-0.004	1.000	1657704	1.73			186	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.399	-0.012	1.000	2374676	2.18		87.2	33775	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.396	3.401	-0.005	1.000	1408777	2.95			44.3	
549.00 > 99.00	3.396	3.401	-0.005	1.000	542898		2.59(1.33-3.97)		98.7	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.405	3.410	-0.005	1.000	14594657	43.9			195393	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.405	3.417	-0.012	1.000	629569	2.42		101	6291	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.424	3.419	0.005	1.003	64893843	91.3			137375	E
513.00 > 169.00	3.424	3.419	0.005	1.003	18172332		3.57(2.36-7.09)		82600	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.427	-0.012	1.000	1721864	2.38		95.0	29592	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.586	-0.012	1.000	1168350	2.84		114	13106	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.720	3.732	-0.012	1.000	1445756	3.73			22.6	
599.00 > 99.00	3.720	3.732	-0.012	1.000	604340		2.39(1.39-4.16)		117	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.751	-0.010	1.000	701966	1.73		69.3	10139	
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.751	3.754	-0.003	1.000	74592997	164.6			716061	E
563.00 > 169.00	3.751	3.754	-0.003	1.000	29594363		2.52(2.12-6.36)		182189	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.762	-0.011	1.000	1340632	2.14		85.8	33793	
37 Perfluorododecanoic acid										E
613.00 > 569.00	4.052	4.054	-0.002	1.000	33632248	51.5			31892	E
613.00 > 169.00	4.042	4.054	-0.012	0.997	9864831		3.41(2.13-6.40)		44461	
D 36 13C2 PFDoA										
615.00 > 570.00	4.052	4.061	-0.009	1.000	1564649	2.32		92.7	20540	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.313	4.314	-0.001	1.000	41660399	54.8			29112	E
663.00 > 169.00	4.313	4.314	-0.001	1.000	16326533		2.55(1.25-3.76)		34021	
42 Perfluorotetradecanoic acid										E
713.00 > 169.00	4.547	4.549	-0.002	1.000	5357380	25.6			19880	E
713.00 > 219.00	4.547	4.549	-0.002	1.000	3734534		1.43(0.71-2.13)		9839	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.547	4.564	-0.017	1.000	2083627	2.43		97.4	14222	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.970	4.972	-0.002	1.002	10162934	6.33			4746	
813.00 > 169.00	4.970	4.972	-0.002	1.002	1814736		5.60(2.86-8.58)		4272	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.961	4.976	-0.015	1.000	4227196	3.03		121	15984	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.332	5.333	-0.001	1.000	2486118	1.46			1013	
913.00 > 169.00	5.332	5.333	-0.001	1.000	319504		7.78(3.83-11.48)		1646	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:22 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_055.d

Injection Date: 25-Apr-2018 00:46:34 Instrument ID: A8_N

Lims ID: 320-38054-A-2-D Lab Sample ID: 320-38054-2

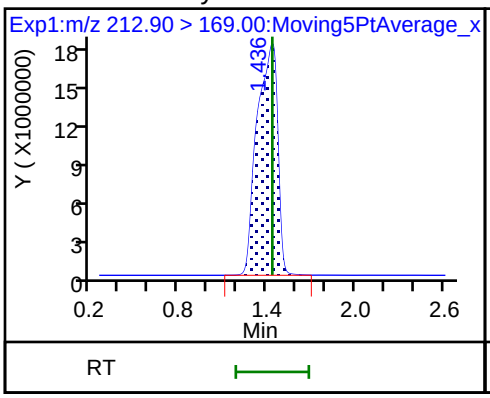
Client ID: SB003(0-2)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 38 Worklist Smp#: 14

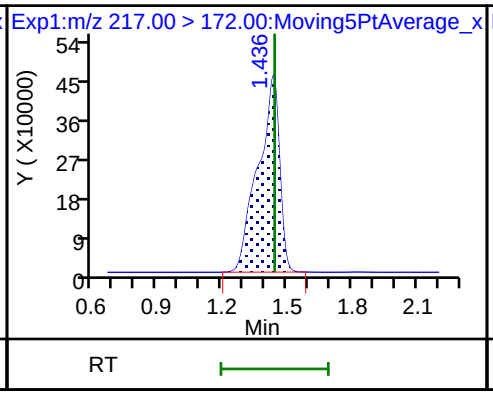
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

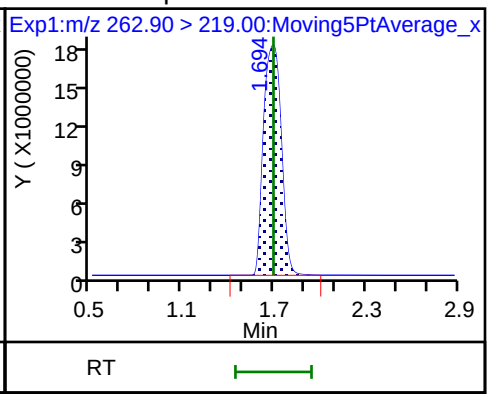
2 Perfluorobutyric acid



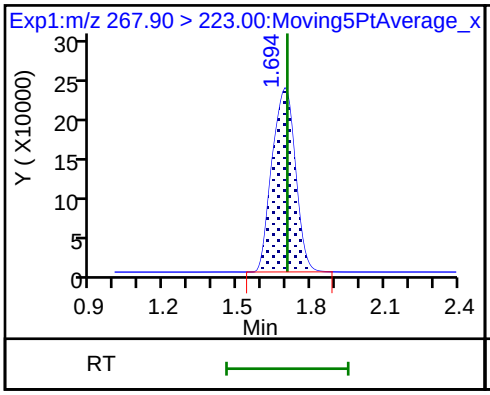
D 1 13C4 PFBA



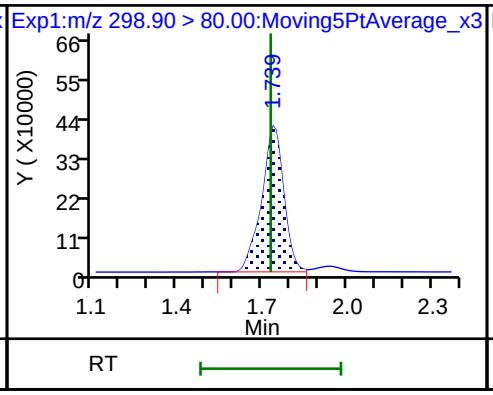
4 Perfluoropentanoic acid



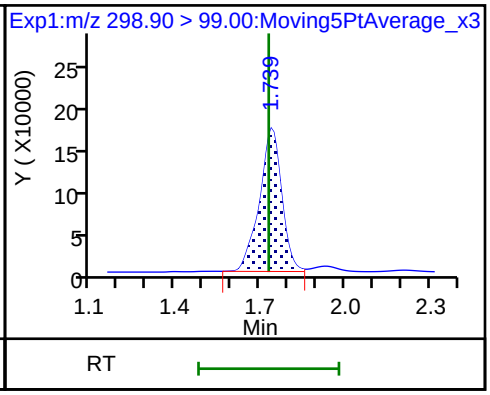
D 3 13C5-PFPeA



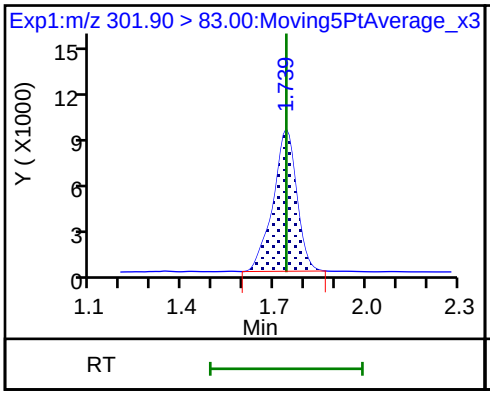
5 Perfluorobutanesulfonic acid



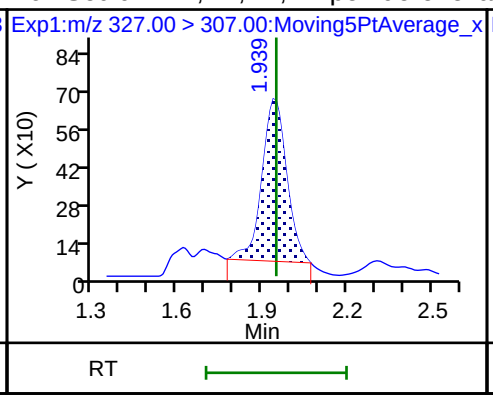
5 Perfluorobutanesulfonic acid



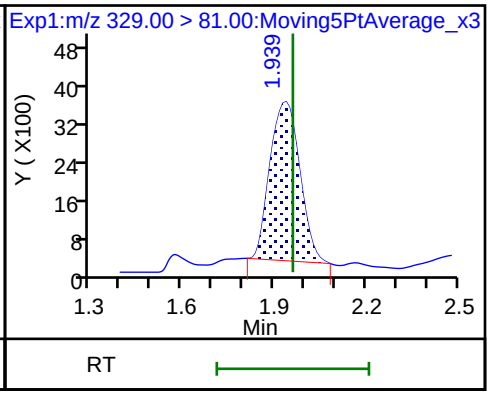
D 47 13C3-PFBS



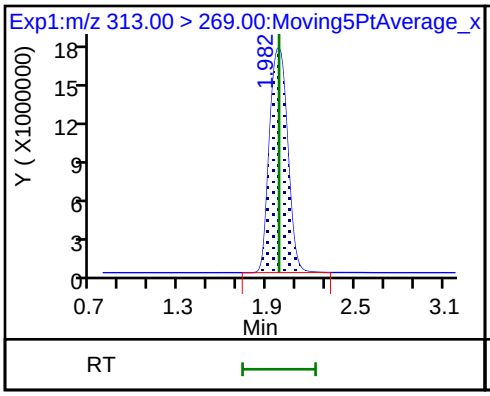
61 Sodium 1H,1H,2H,2H-perfluorohexane



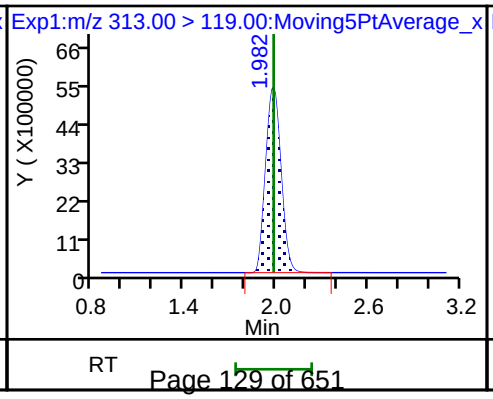
D 60 M2-4:2FTS



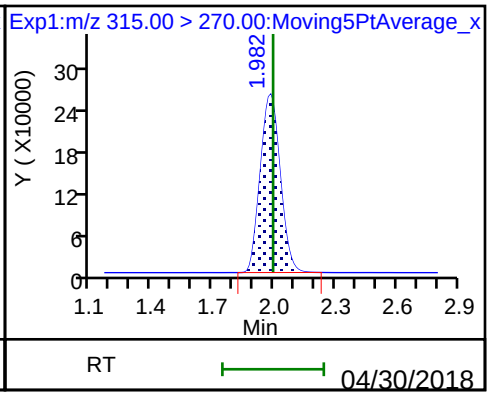
6 Perfluorohexanoic acid



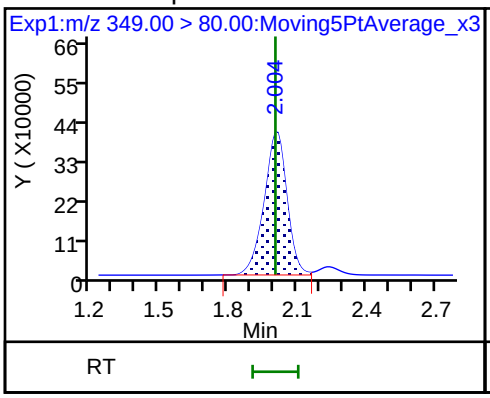
6 Perfluorohexanoic acid



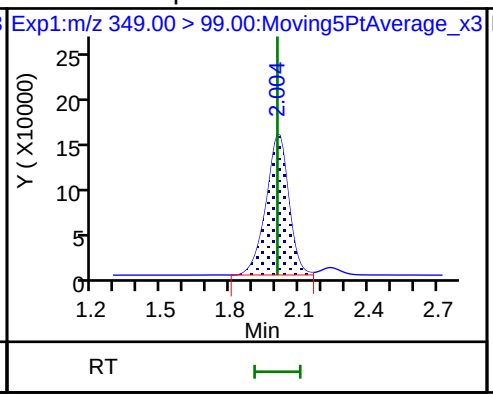
D 7 13C2 PFHxA



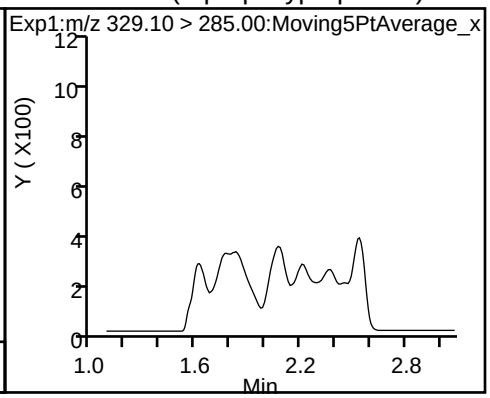
70 Perfluoropentanesulfonic acid



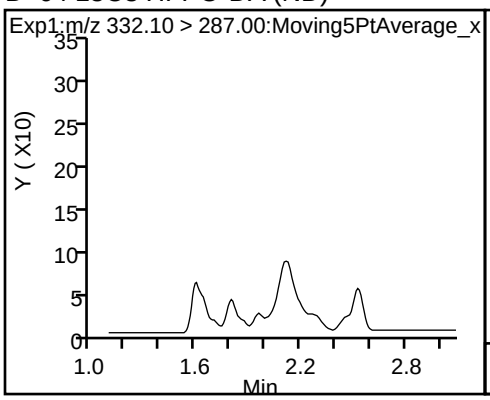
70 Perfluoropentanesulfonic acid



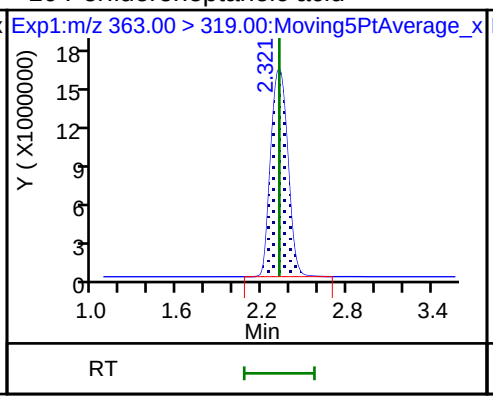
67 Perfluoro(2-propoxypropanoic) acid (ND)



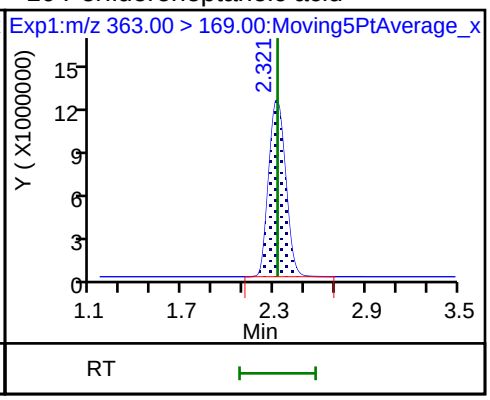
D 64 13C3 HFPO-DA (ND)



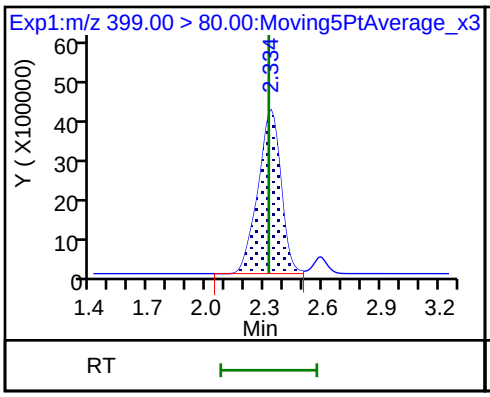
10 Perfluoroheptanoic acid



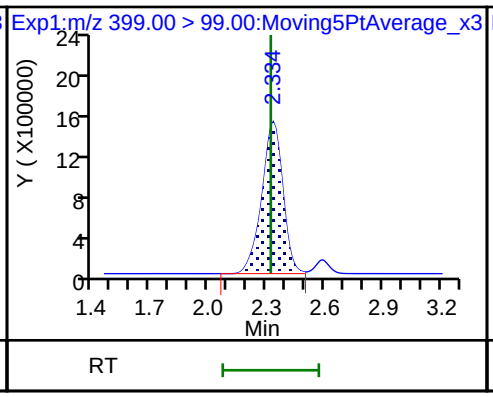
10 Perfluoroheptanoic acid



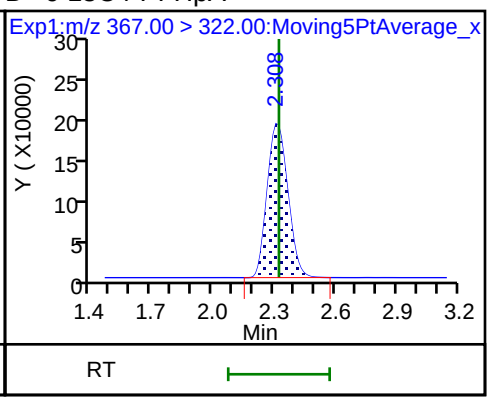
8 Perfluorohexanesulfonic acid



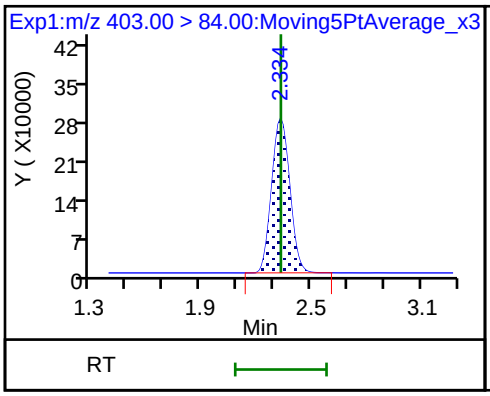
8 Perfluorohexanesulfonic acid



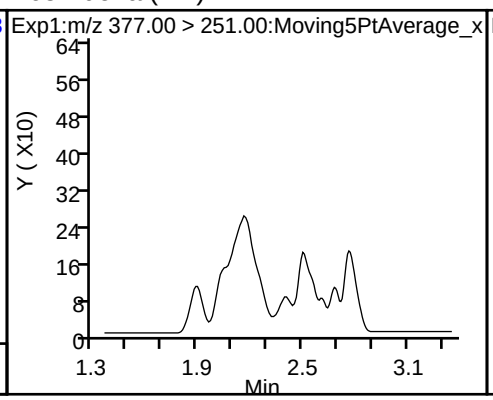
D 9 13C4-PFHpA



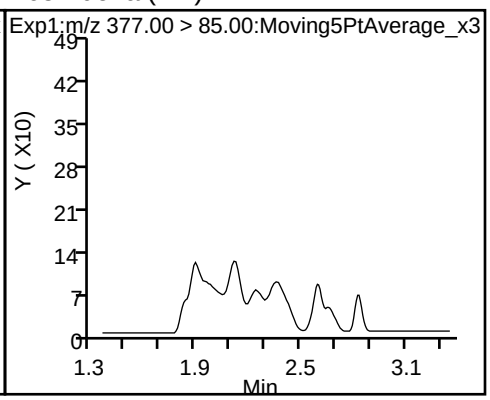
D 11 18O2 PFHxS



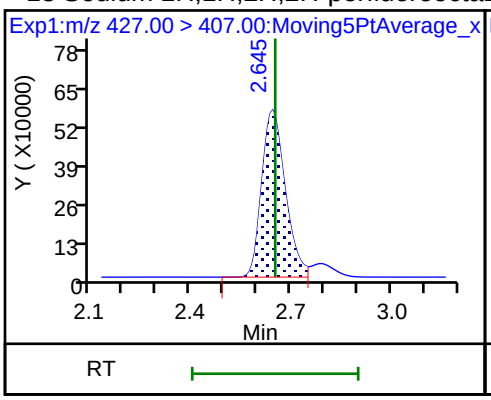
65 Adona (ND)



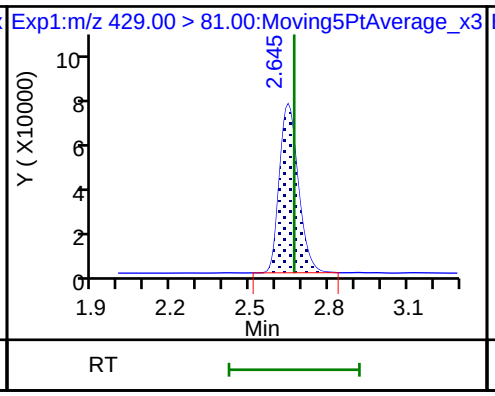
65 Adona (ND)



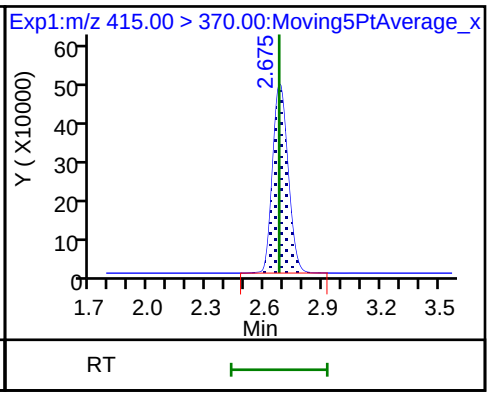
13 Sodium 1H,1H,2H,2H-perfluorooctane



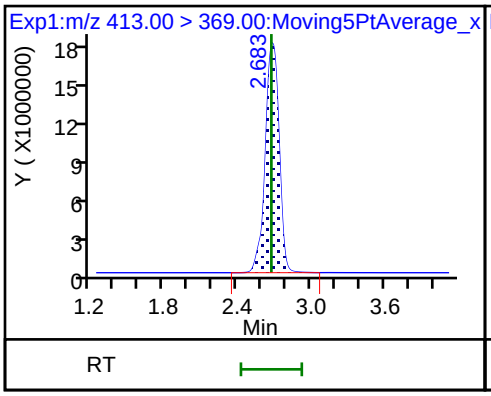
D 12 M2-6:2FTS



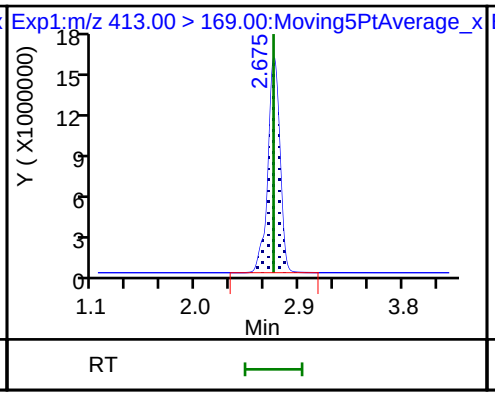
* 62 13C2-PFOA



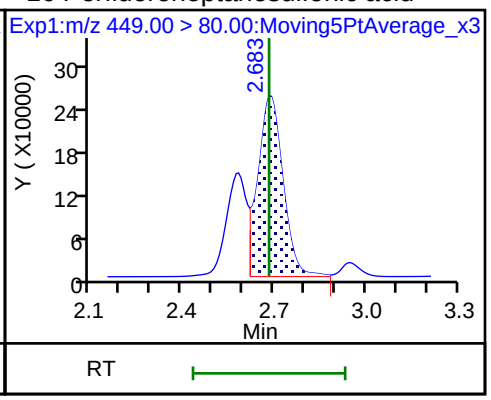
15 Perfluorooctanoic acid



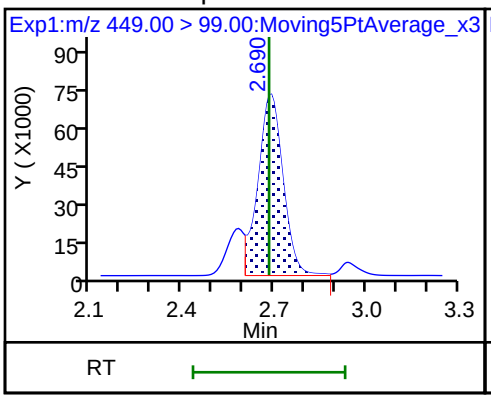
15 Perfluorooctanoic acid



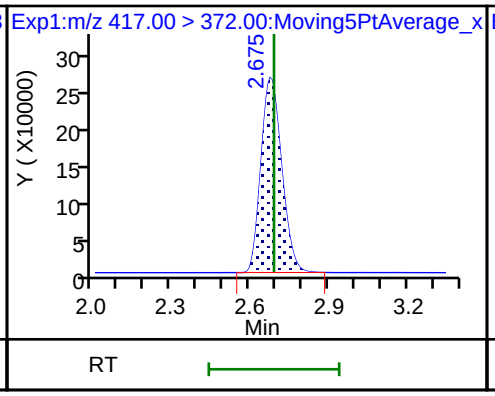
16 Perfluoroheptanesulfonic acid



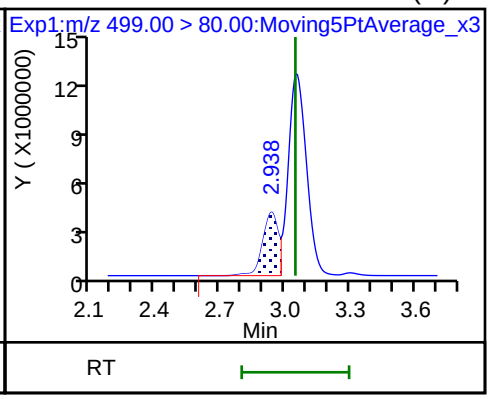
16 Perfluoroheptanesulfonic acid



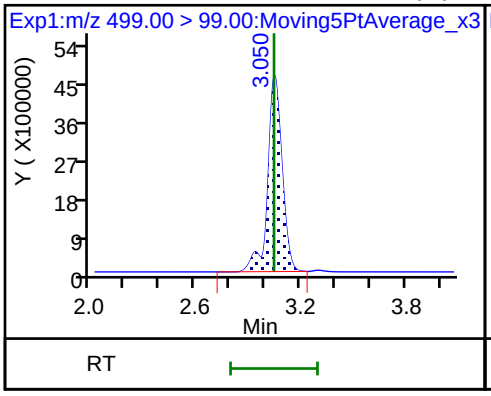
D 14 13C4 PFOA



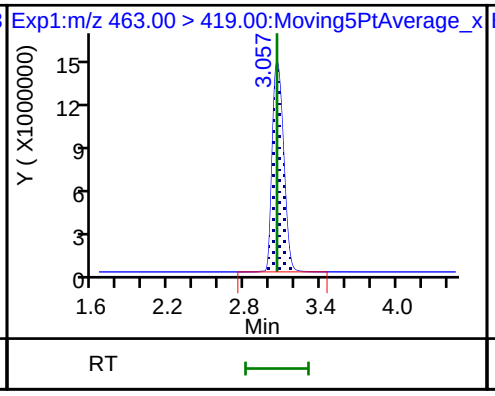
17 Perfluorooctane sulfonic acid (M)



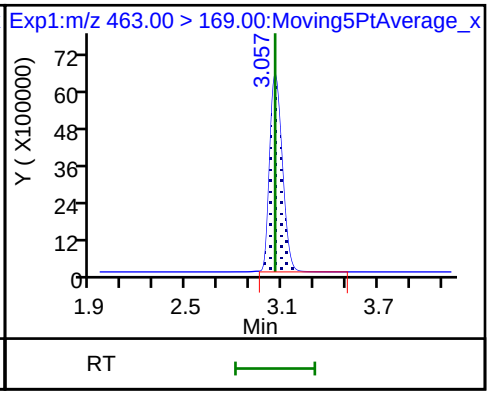
17 Perfluorooctane sulfonic acid (M)



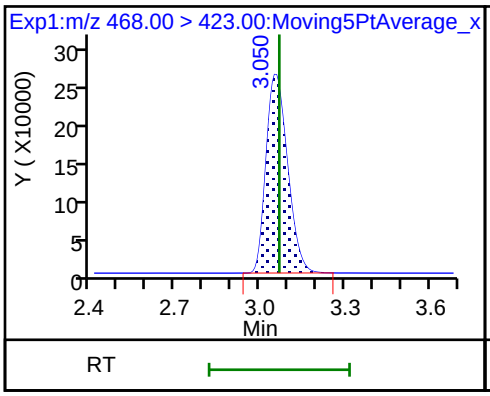
20 Perfluorononanoic acid



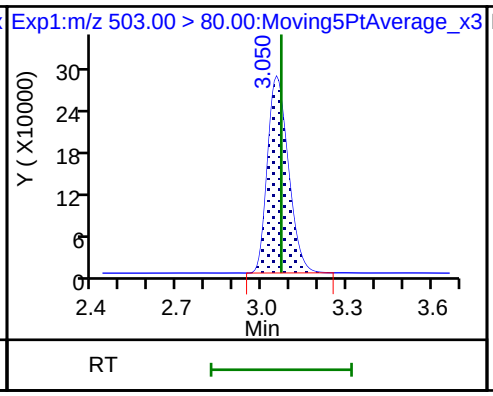
20 Perfluorononanoic acid



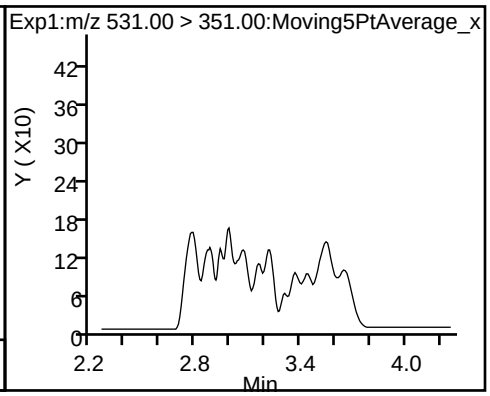
D 19 13C5 PFNA



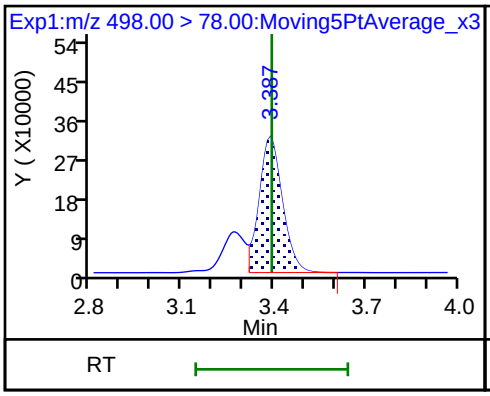
D 18 13C4 PFOS



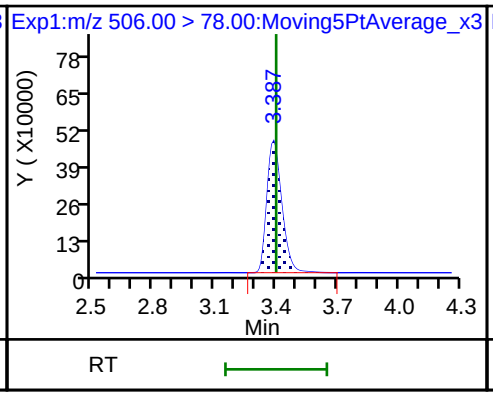
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



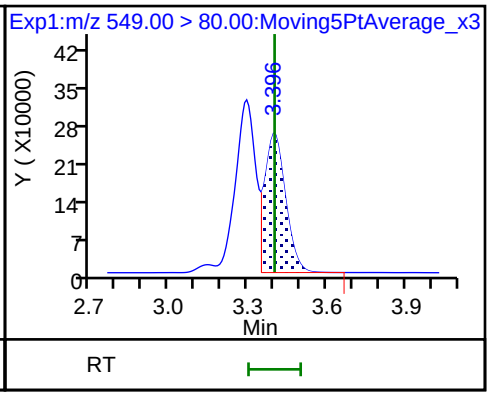
22 Perfluorooctane Sulfonamide



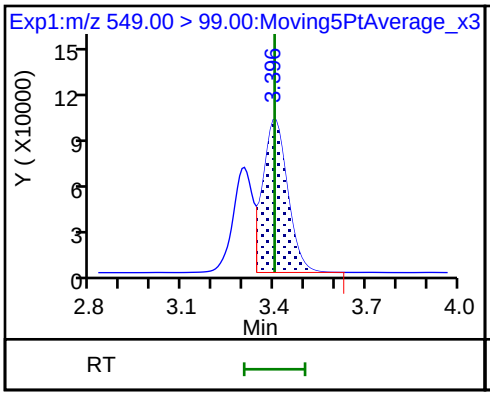
D 21 13C8 FOSA



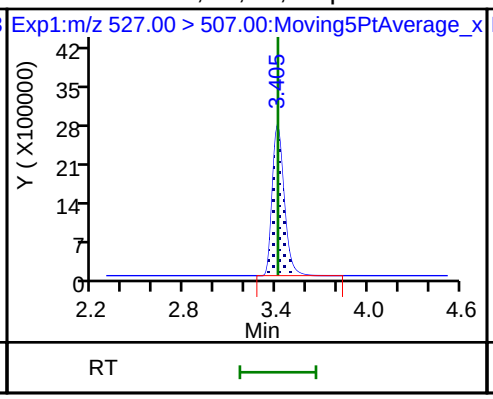
68 Perfluorononanesulfonic acid



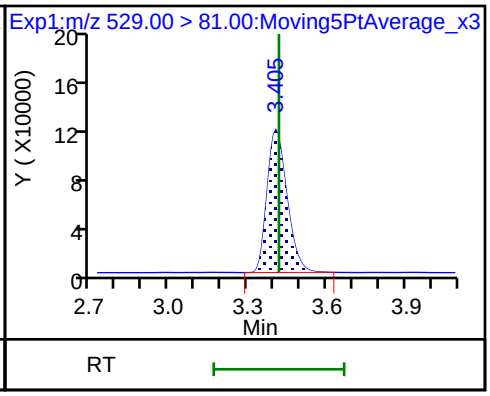
68 Perfluorononanesulfonic acid



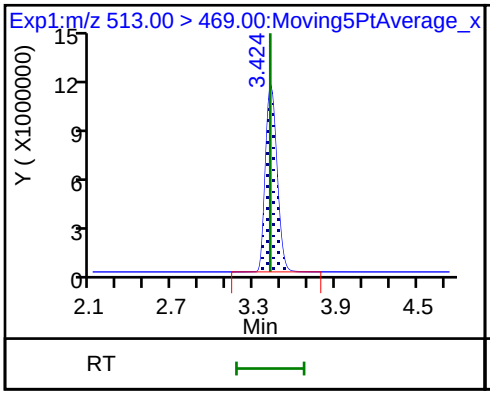
25 Sodium 1H,1H,2H,2H-perfluorodecane



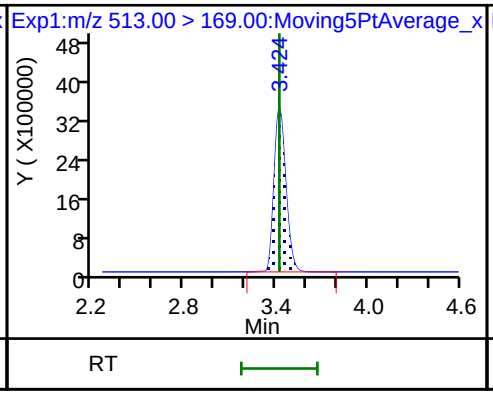
D 26 M2-8:2FTS



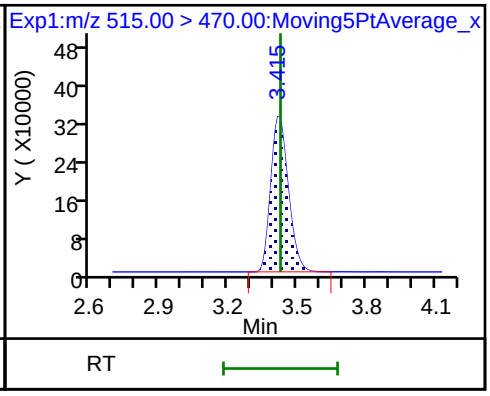
24 Perfluorodecanoic acid



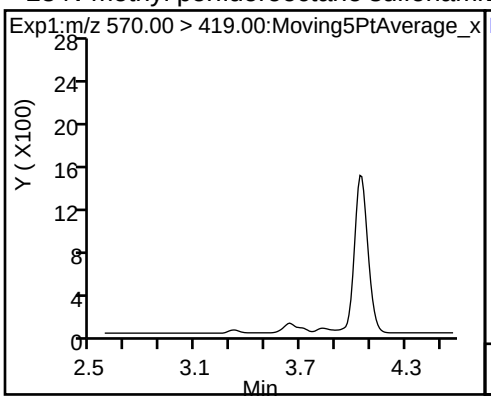
24 Perfluorodecanoic acid

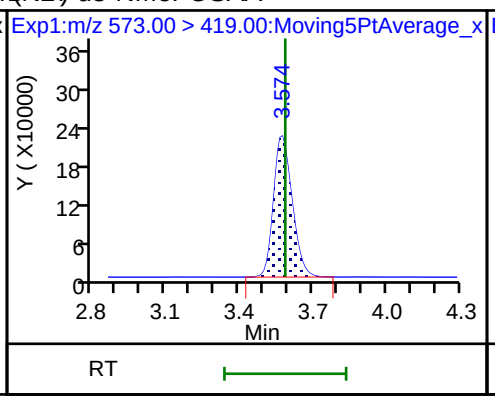


D 23 13C2 PFDA

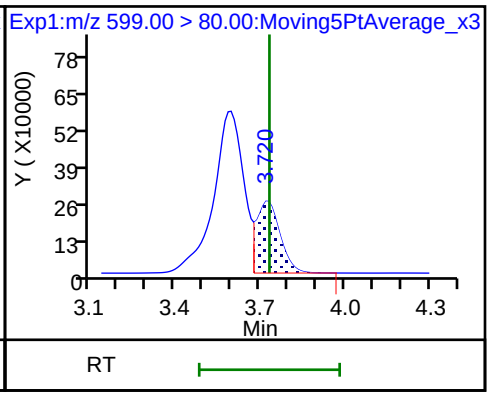


28 N-methyl perfluorooctane sulfonamid (ND) D 27 d3-NMeFOSAA

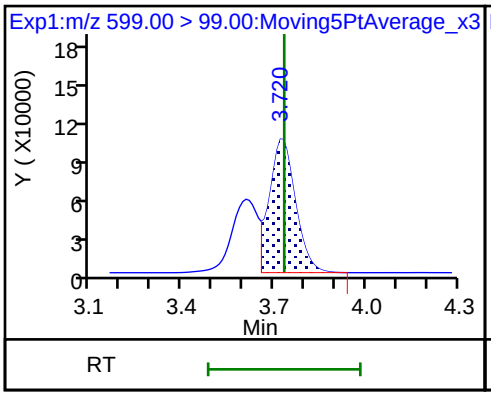


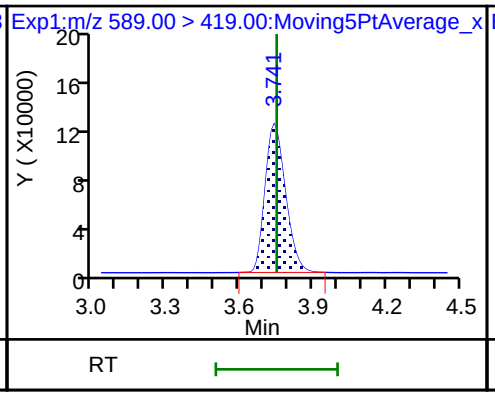


29 Perfluorodecane Sulfonic acid

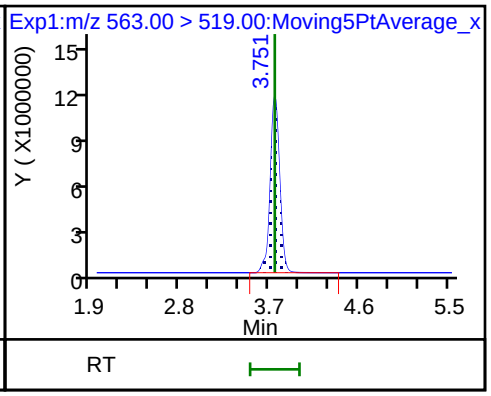


29 Perfluorodecane Sulfonic acid D 32 d5-NEtFOSAA

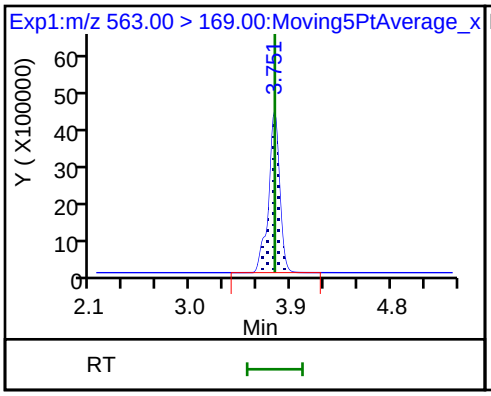


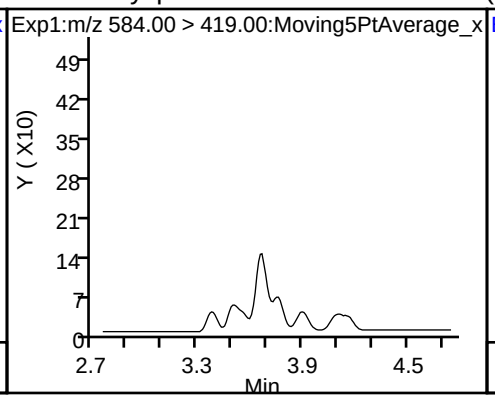


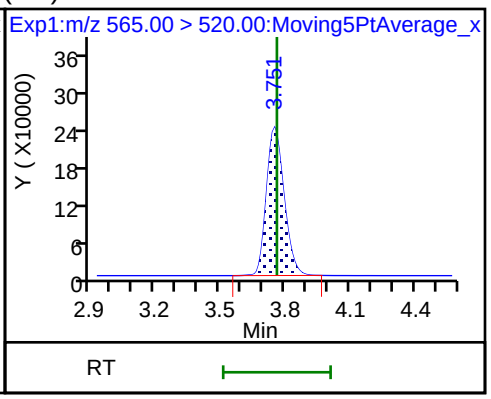
31 Perfluoroundecanoic acid



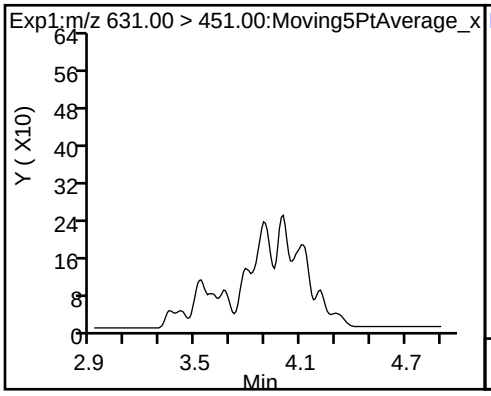
31 Perfluoroundecanoic acid 33 N-ethyl perfluorooctane sulfonamid (ND) C 13C2 PFUnA

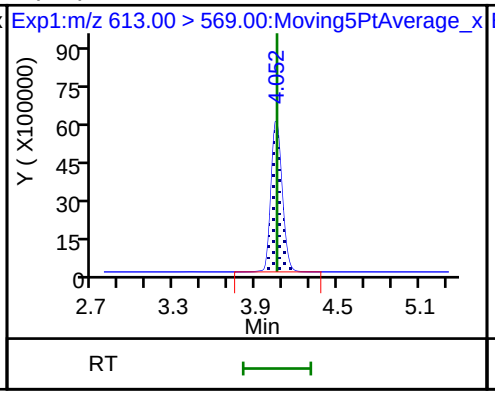




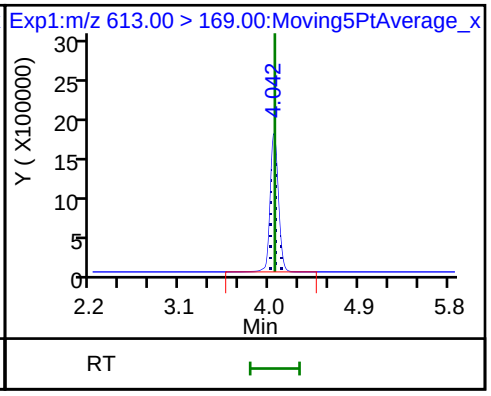


66 11-Chloroeicosafluoro-3-oxaundecan (ND) 37 Perfluorododecanoic acid

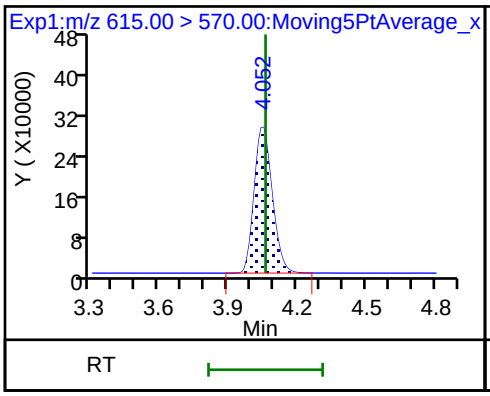




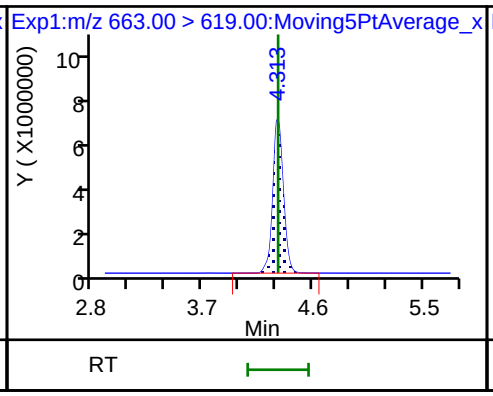
37 Perfluorododecanoic acid



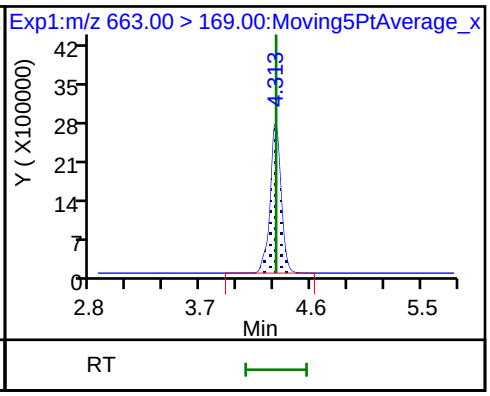
D 36 13C2 PFDoA



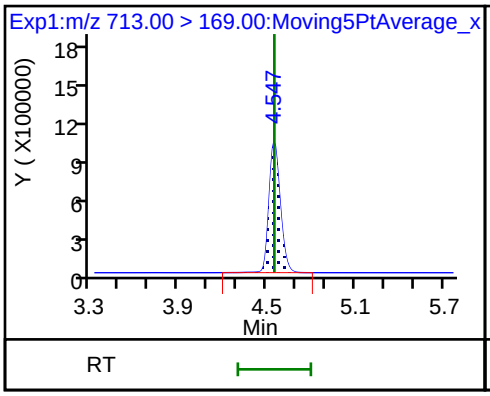
41 Perfluorotridecanoic acid



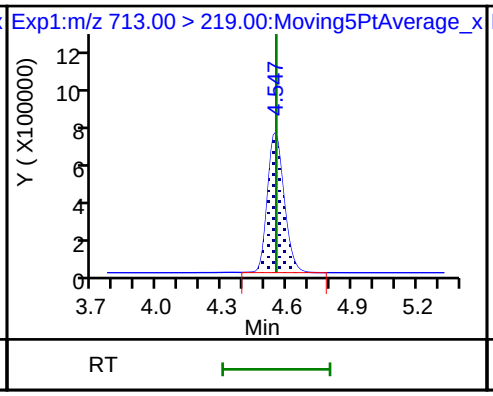
41 Perfluorotridecanoic acid



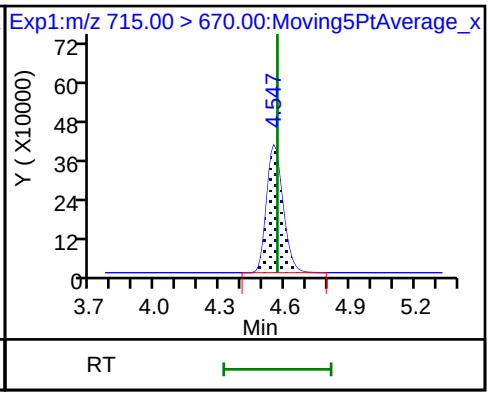
42 Perfluorotetradecanoic acid



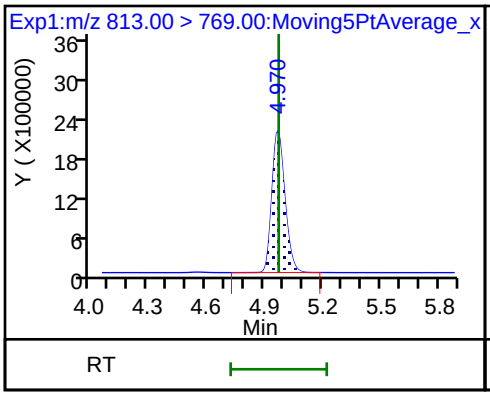
42 Perfluorotetradecanoic acid



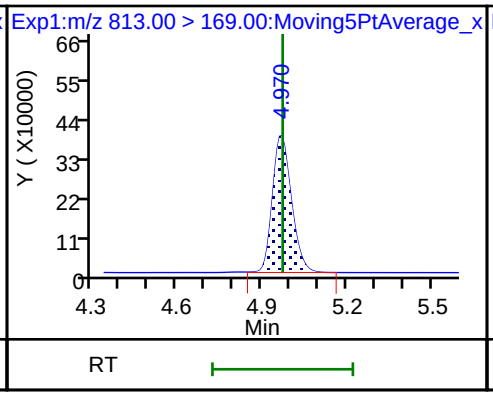
D 43 13C2-PFTeDA



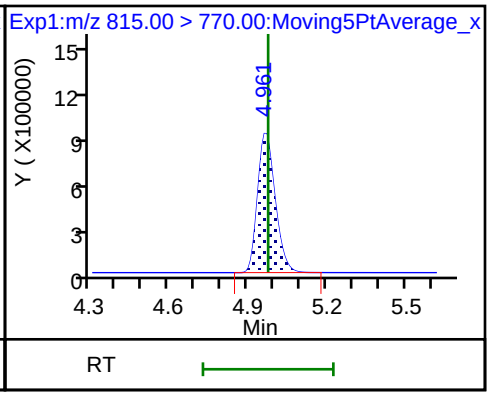
45 Perfluorohexadecanoic acid



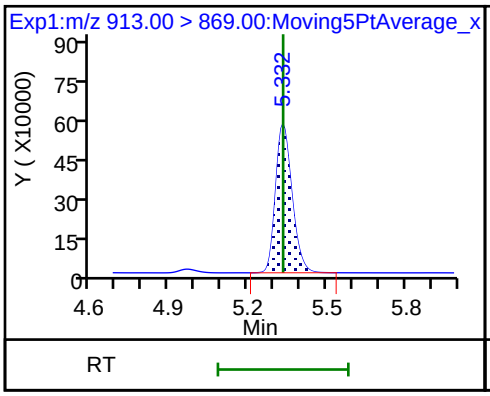
45 Perfluorohexadecanoic acid



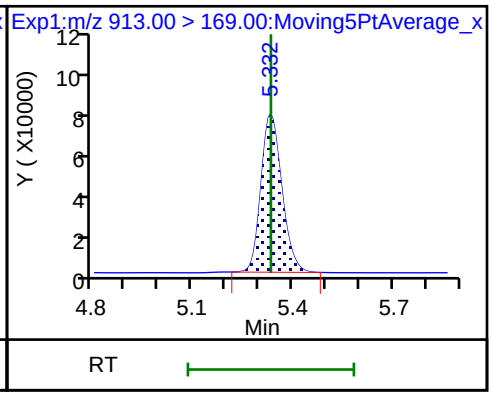
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP DL | Lab Sample ID: 320-38054-2 DL

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLC_069.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.01(g) | Date Analyzed: 04/27/2018 11:49

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220224 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
307-55-1	Perfluorododecanoic acid (PFDoA)	0.33		0.0055
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.37		0.0055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.15		0.0055
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.21	F2	0.0055
27619-97-2	6:2FTS	0.057	*	0.055
39108-34-4	8:2FTS	0.27	*	0.055

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00998	13C2 PFDoA	58		25-150
STL02116	13C2-PFTeDA	56		25-150
STL00994	18O2 PFHxS	59		25-150
STL02279	M2-6:2FTS	61		25-150
STL02280	M2-8:2FTS	68		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_069.d
Lims ID: 320-38054-A-2-D
Client ID: SB003(0-2)-TOP
Sample Type: Client
Inject. Date: 27-Apr-2018 11:49:10 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38054-a-2-d 10X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 13:33:39 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 13:33:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	1.000	527301	0.1653		66.1	3808	
2 Perfluorobutyric acid										E
212.90 > 169.00	1.436	1.441	-0.005	1.000	53981227	27.6			25104	E
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.694	0.0	0.555	310396	0.1509		60.4	5119	
4 Perfluoropentanoic acid										E
262.90 > 219.00	1.694	1.703	-0.009	1.000	58655479	39.6			56844	E
D 47 13C3-PFBS										
301.90 > 83.00	1.731	1.730	0.0	1.000	7997	0.1695		72.9	211	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.731	1.739	-0.009	1.000	337698	0.1254			876	M
298.90 > 99.00	1.731	1.739	-0.009	1.000	151755		2.23(1.25-3.74)		867	M
D 60 M2-4:2FTS										M
329.00 > 81.00	1.950	1.950	0.0	1.000	3435	0.0102		4.4	24.9	M
6 Perfluorohexanoic acid										E
313.00 > 269.00	1.982	1.982	0.0	1.000	66163794	43.5			112450	E
313.00 > 119.00	1.982	1.982	0.0	1.000	8780026		7.54(5.03-15.10)		72231	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.982	0.0	1.000	374450	0.1646		65.9	10204	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.004	0.001	1.000	504683	0.2052			1456	
349.00 > 99.00	2.005	2.004	0.001	1.000	193894		2.60(1.36-4.07)		1922	
10 Perfluoroheptanoic acid										E
363.00 > 319.00	2.323	2.321	0.002	1.000	61339277	50.7			56148	E
363.00 > 169.00	2.323	2.321	0.002	1.000	31160286		1.97(1.13-3.40)		89747	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.323	0.0	1.000	301975	0.1364		54.6	5161	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.334	0.002	1.000	7085514	3.87			1413	
399.00 > 99.00	2.336	2.334	0.002	1.000	2250730		3.15(1.50-4.49)		1331	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.336	0.0	1.000	382521	0.1400		59.2	10153	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.653	0.0	1.003	510256	1.04			1023	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.653	-0.008	1.000	68970	0.1454		61.2	896	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.676	0.0	1.000	319435	0.1452		58.1	8230	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.683	-0.007		592911	0.2500			12150	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.683	2.683	0.0	1.003	55569983	37.6			48644	E
413.00 > 169.00	2.676	2.683	-0.007	1.000	35292416		1.57(0.84-2.52)		77657	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.690	-0.007	1.000	284516	0.1877			219	
449.00 > 99.00	2.683	2.690	-0.007	1.000	71752		3.97(1.94-5.82)		329	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.056	-0.006	1.000	272877	0.1426		59.7	1882	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.056	-0.006	1.000	265584	0.1405		56.2	9076	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.050	3.059	-0.009	1.000	20860939	16.8			127942	E
499.00 > 99.00	3.050	3.059	-0.009	1.000	5030980		4.15(2.31-6.93)		85372	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.057	3.059	-0.002	1.002	28390213	25.6			108683	E
463.00 > 169.00	3.050	3.059	-0.009	1.000	7673661		3.70(1.90-5.69)		133458	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.389	-0.002	1.000	203720	0.1626			180	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.394	-0.007	1.000	309628	0.1296		51.8	6144	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.408	-0.002	1.000	2376705	4.81			57260	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.396	3.408	-0.012	1.000	224723	0.2462			68.9	
549.00 > 99.00	3.406	3.408	-0.002	1.003	80845		2.78(1.33-3.97)		129	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.413	-0.007	1.000	93427	0.1635		68.3	922	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.415	3.417	-0.002	1.000	15812338	14.6			91117	E
513.00 > 169.00	3.415	3.417	-0.002	1.000	2811024		5.63(2.36-7.09)		22675	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.422	-0.007	1.000	262346	0.1651		66.0	7257	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.571	0.003	1.000	135188	0.1501		60.0	2133	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.729	3.741	-0.012	1.000	212444	0.2866			29.2	
599.00 > 99.00	3.729	3.741	-0.012	1.000	89705		2.37(1.39-4.16)		148	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.739	3.747	-0.008	1.000	127424	0.1433		57.3	1868	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.750	3.751	-0.001	1.000	17743864	22.7			4139	EM
563.00 > 169.00	3.750	3.751	-0.001	1.000	4742080		3.74(2.12-6.36)		1064	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.758	-0.008	1.000	231627	0.1689		67.6	7209	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.048	0.002	1.000	214215	0.1447		57.9	3356	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.051	-0.001	1.000	5339511	5.98			8777	
613.00 > 169.00	4.050	4.051	-0.001	1.000	1355127		3.94(2.13-6.40)		10789	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.308	-0.001	1.000	7031790	6.75			10929	
663.00 > 169.00	4.307	4.308	-0.001	1.000	2343030		3.00(1.25-3.76)		12410	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.553	-0.001	1.000	263735	0.1405		56.2	2346	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.553	-0.001	1.000	699636	2.64			4253	
713.00 > 219.00	4.541	4.553	-0.012	0.998	482964		1.45(0.71-2.13)		5104	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.966	-0.001	1.000	442627	0.1449		58.0	2608	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.967	-0.002	1.000	1050528	0.6043			912	
813.00 > 169.00	4.965	4.967	-0.002	1.000	179637		5.85(2.86-8.58)		1117	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.328	5.329	-0.001	1.000	230525	0.1297			207	
913.00 > 169.00	5.328	5.329	-0.001	1.000	26817		8.60(3.83-11.48)		231	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 13:33:40 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_069.d

Injection Date: 27-Apr-2018 11:49:10 Instrument ID: A8_N

Lims ID: 320-38054-A-2-D Lab Sample ID: 320-38054-2

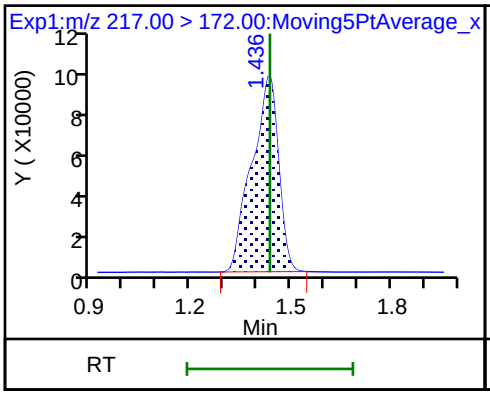
Client ID: SB003(0-2)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 52 Worklist Smp#: 3

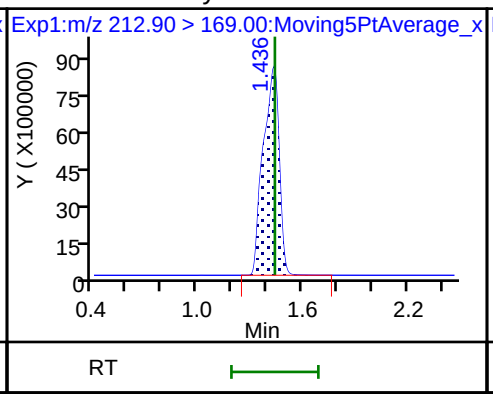
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

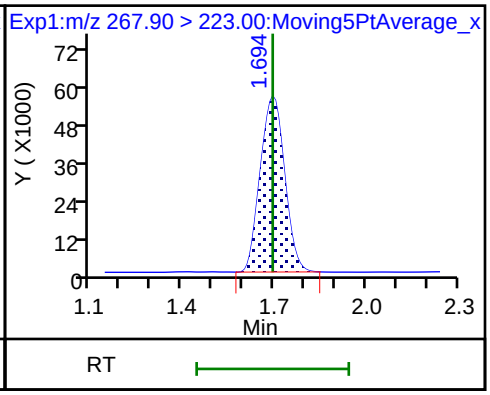
D 1 13C4 PFBA



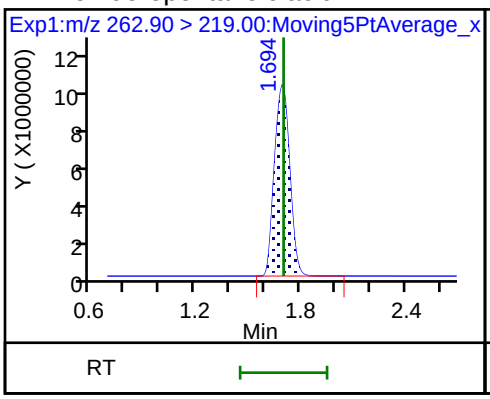
2 Perfluorobutyric acid



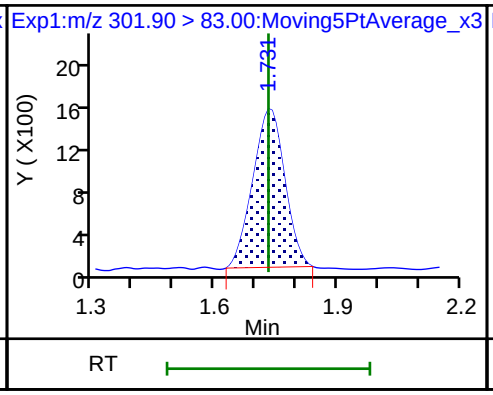
D 3 13C5-PFPeA



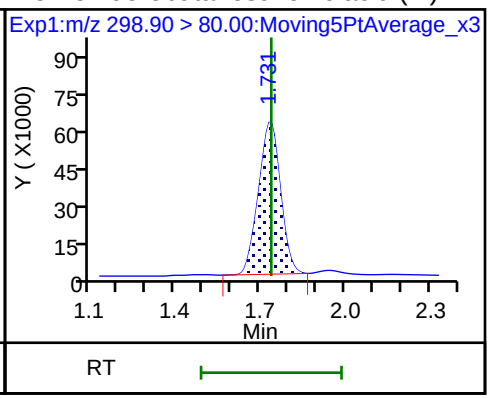
4 Perfluoropentanoic acid



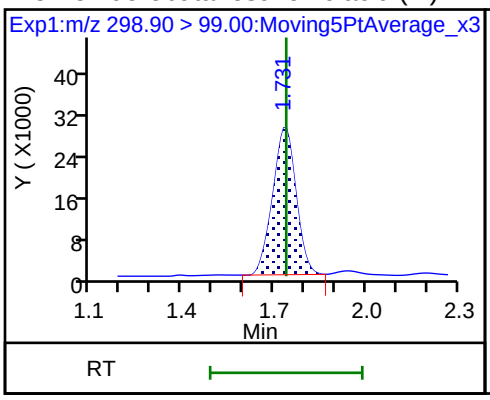
D 47 13C3-PFBS



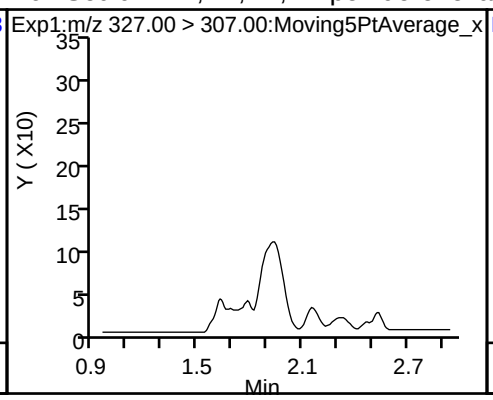
5 Perfluorobutanesulfonic acid (M)



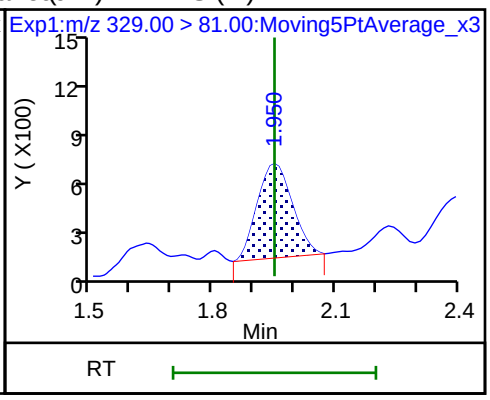
5 Perfluorobutanesulfonic acid (M)



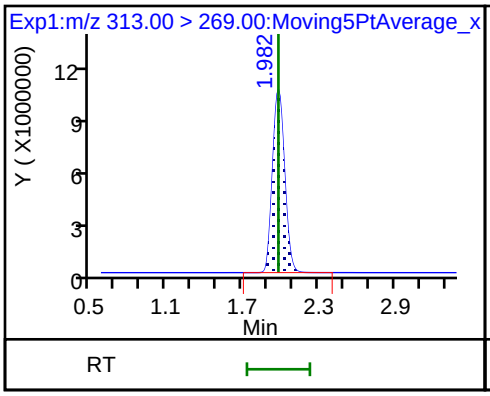
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (M)



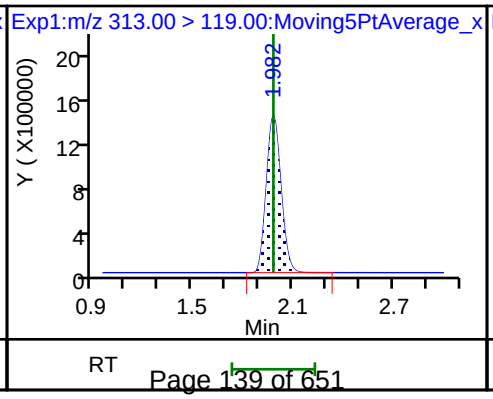
D 60 (M)2-4:2FTS (M)



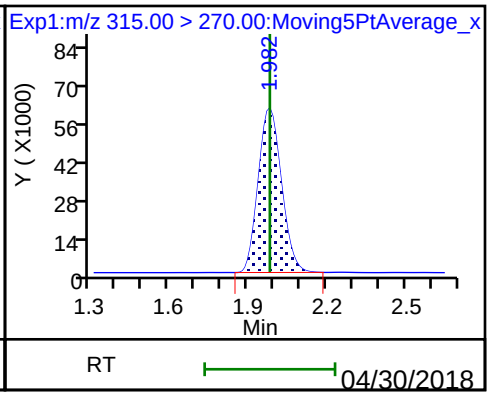
6 Perfluorohexanoic acid



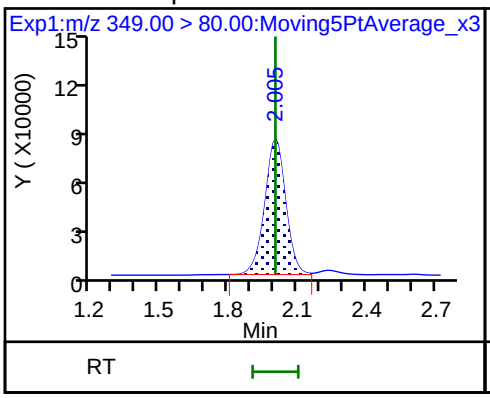
6 Perfluorohexanoic acid



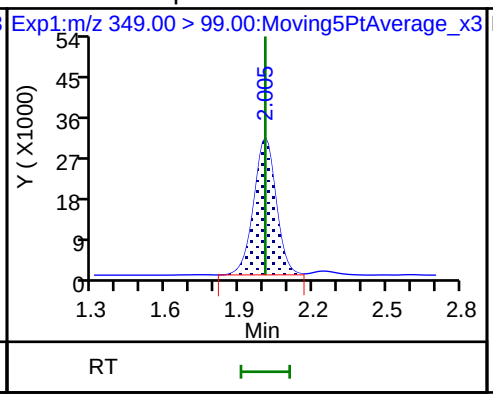
D 7 13C2 PFHxA



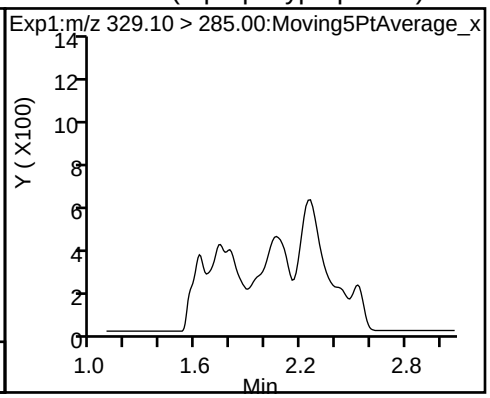
70 Perfluoropentanesulfonic acid



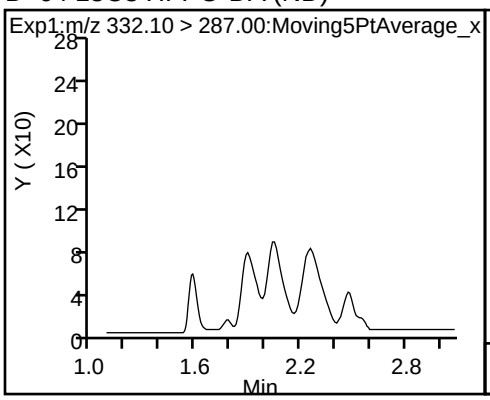
70 Perfluoropentanesulfonic acid



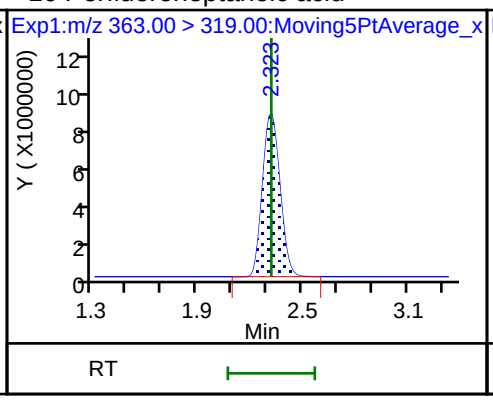
67 Perfluoro(2-propoxypropanoic) acid (ND)



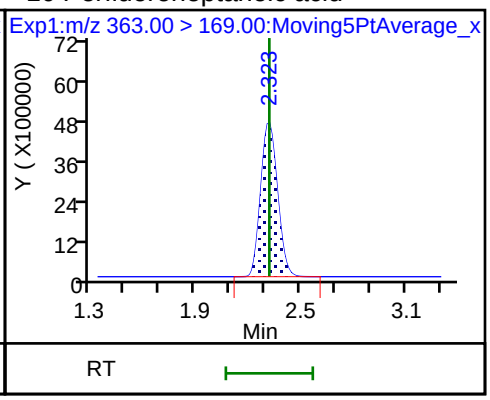
D 64 13C3 HFPO-DA (ND)



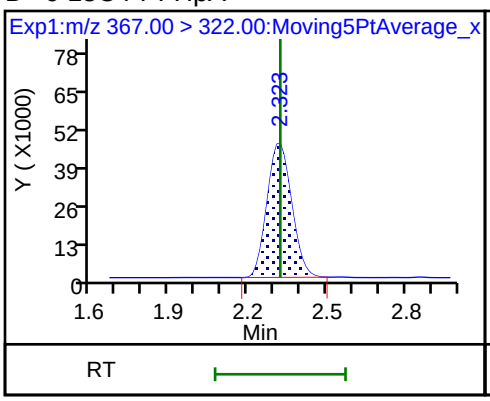
10 Perfluoroheptanoic acid



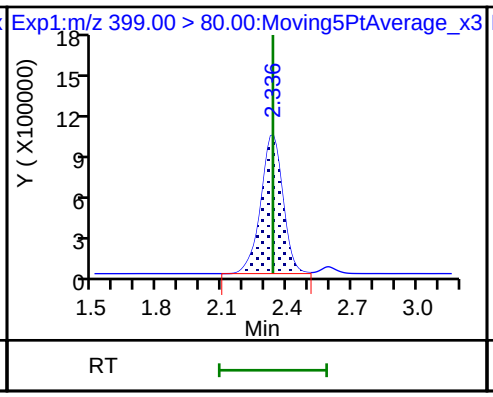
10 Perfluoroheptanoic acid



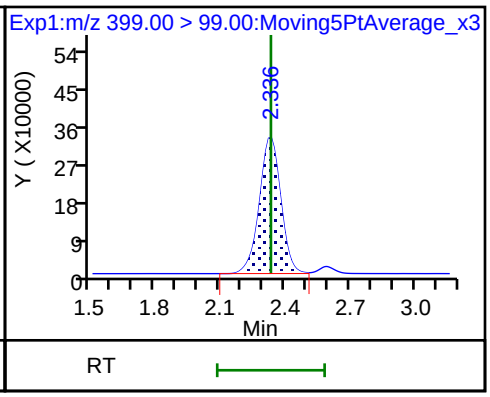
D 9 13C4-PFHpA



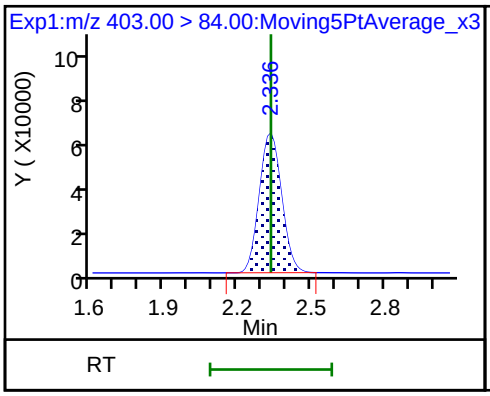
8 Perfluorohexanesulfonic acid



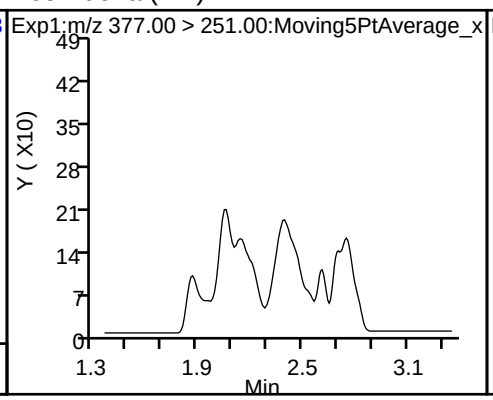
8 Perfluorohexanesulfonic acid



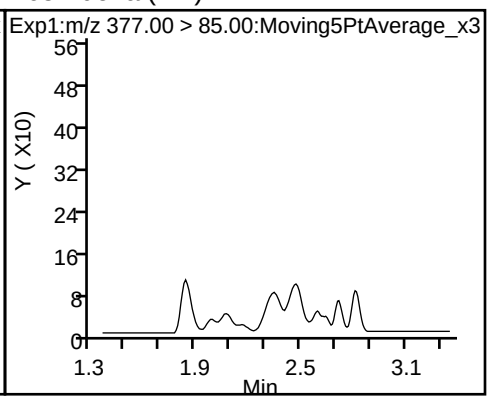
D 11 18O2 PFHxS



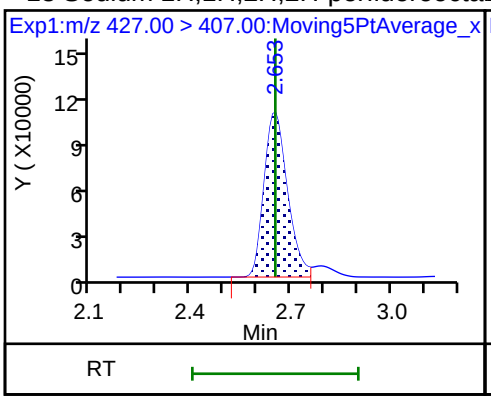
65 Adona (ND)



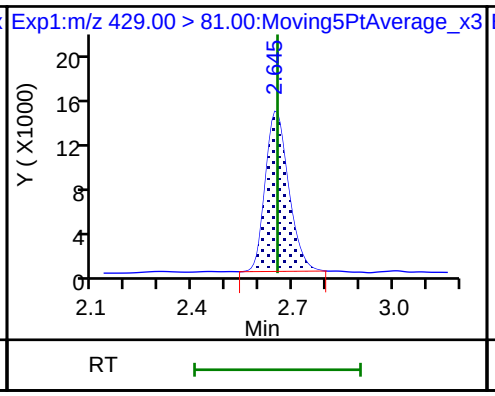
65 Adona (ND)



13 Sodium 1H,1H,2H,2H-perfluorooctane



D 12 M2-6:2FTS



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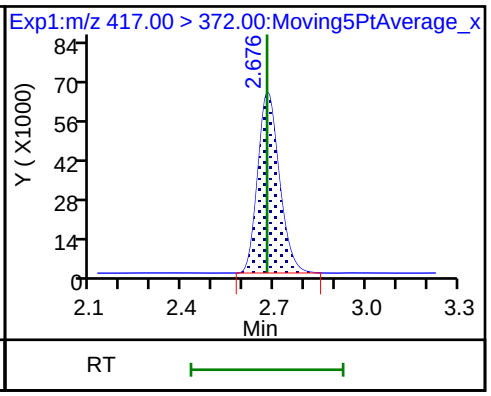
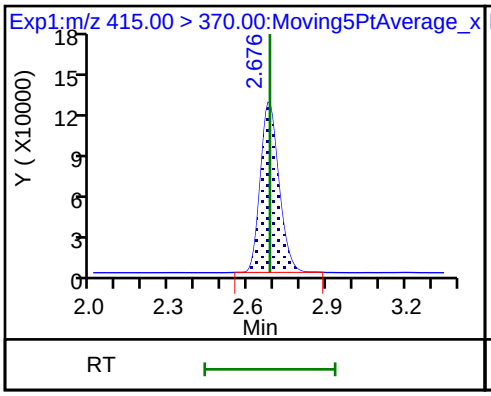
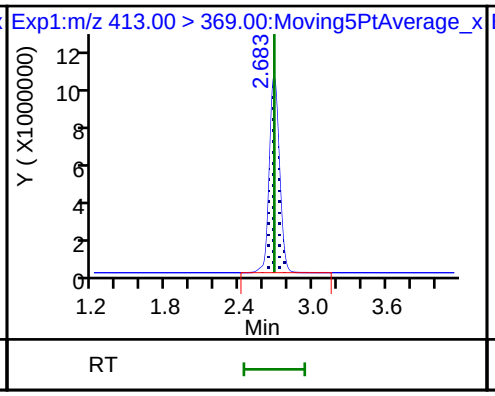


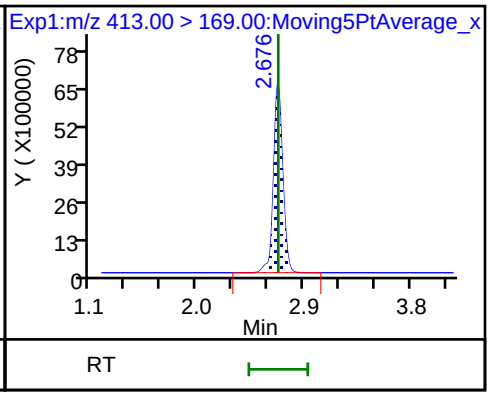
* 62 13C2-PFOA



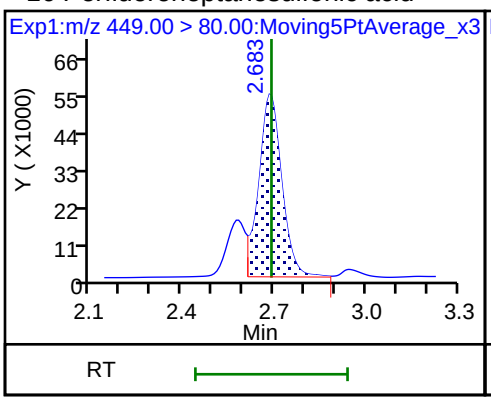
15 Perfluorooctanoic acid



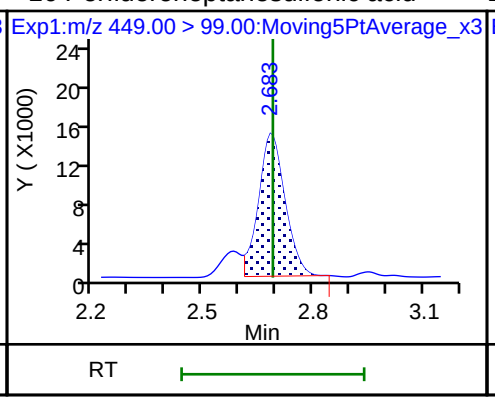
15 Perfluorooctanoic acid



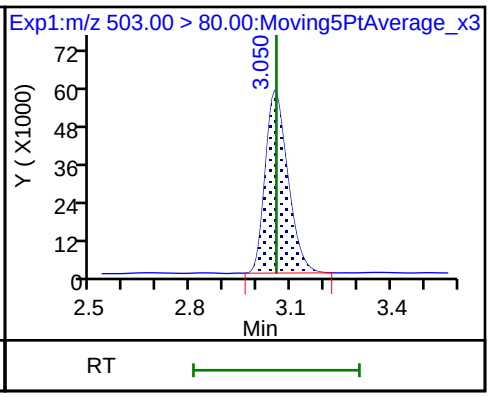
16 Perfluoroheptanesulfonic acid



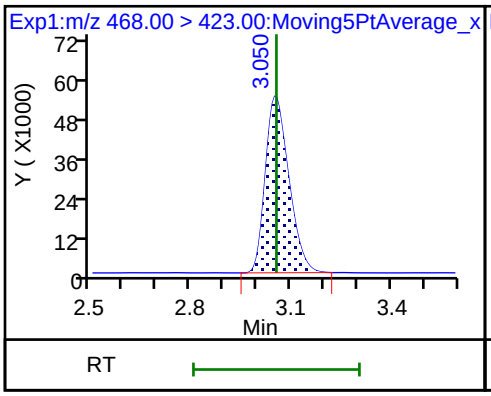
16 Perfluoroheptanesulfonic acid



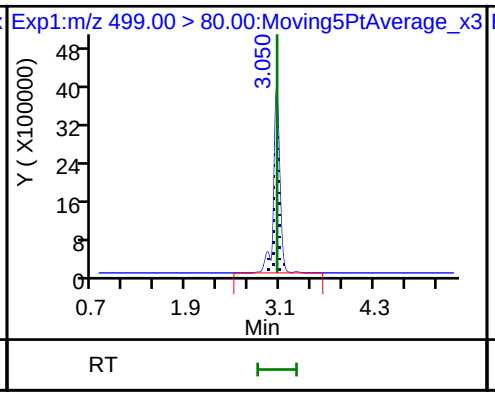
D 18 13C4 PFOS



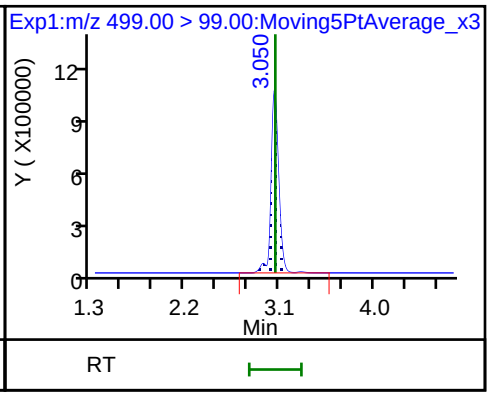
D 19 13C5 PFNA



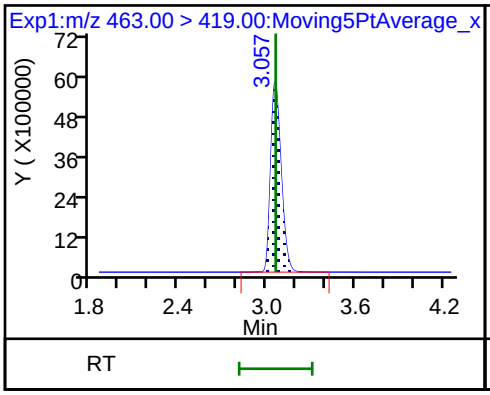
17 Perfluorooctane sulfonic acid



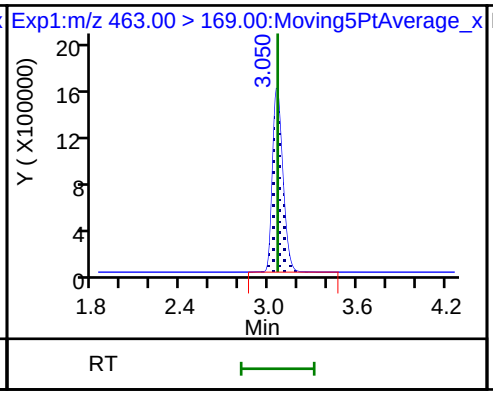
17 Perfluorooctane sulfonic acid



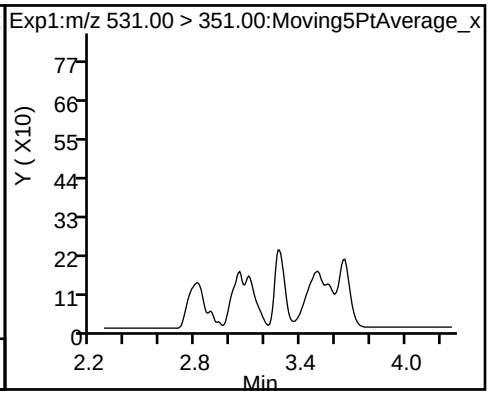
20 Perfluorononanoic acid



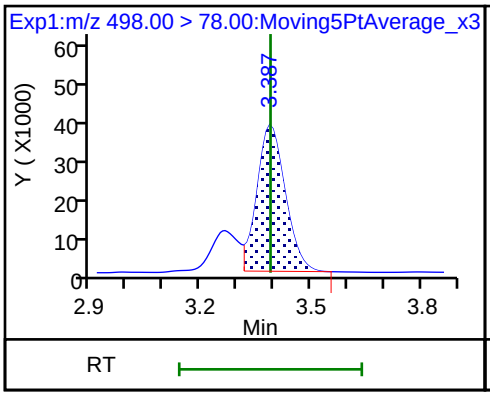
20 Perfluorononanoic acid



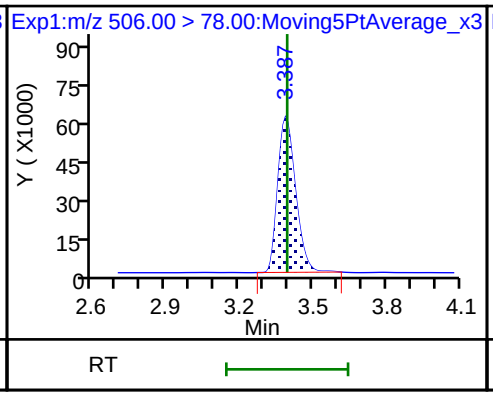
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



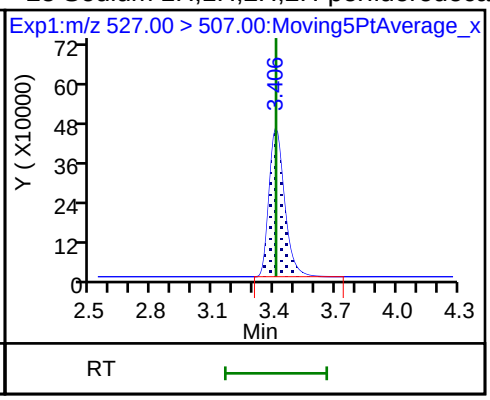
22 Perfluorooctane Sulfonamide



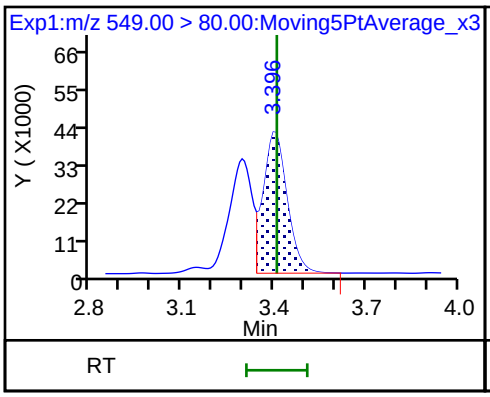
D 21 13C8 FOSA



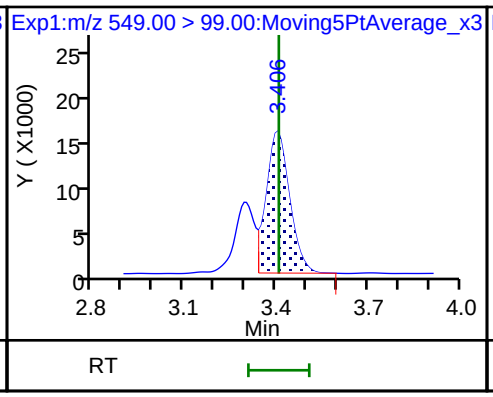
25 Sodium 1H,1H,2H,2H-perfluorodecane



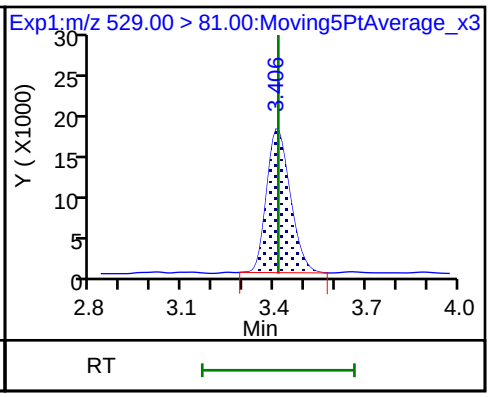
68 Perfluorononanesulfonic acid



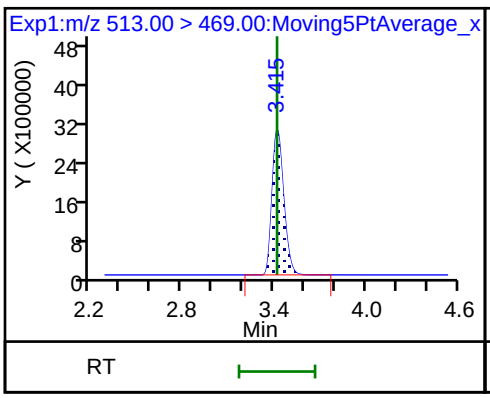
68 Perfluorononanesulfonic acid



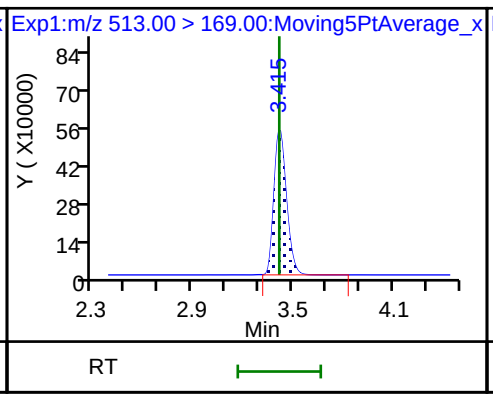
D 26 M2-8:2FTS



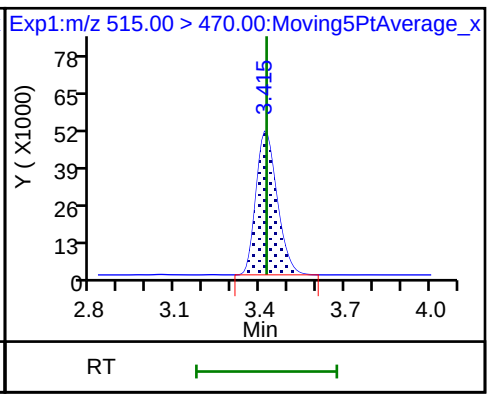
24 Perfluorodecanoic acid



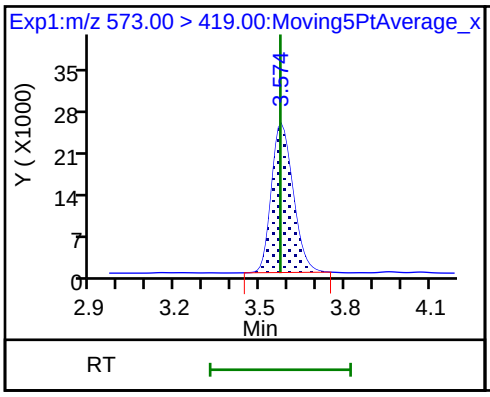
24 Perfluorodecanoic acid



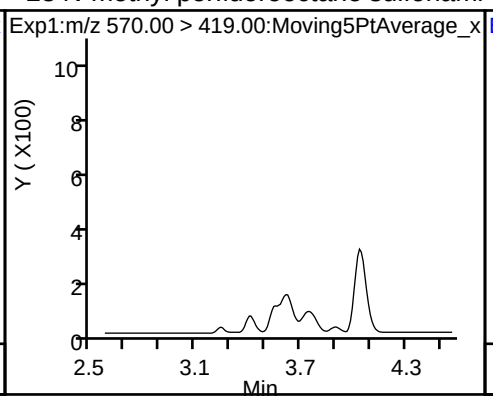
D 23 13C2 PFDA



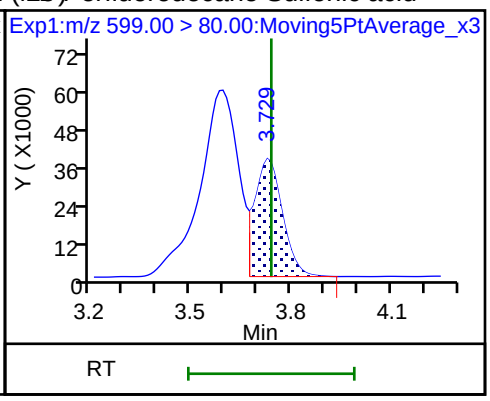
D 27 d3-NMeFOSAA



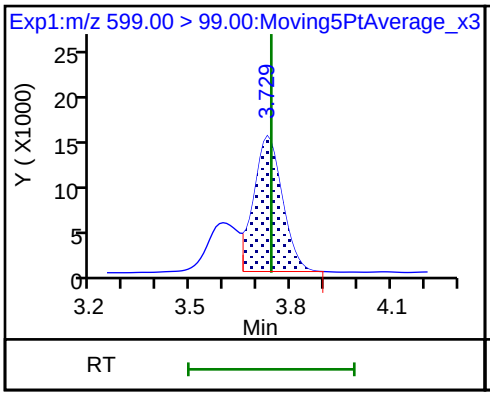
28 N-methyl perfluorooctane sulfonami (M)



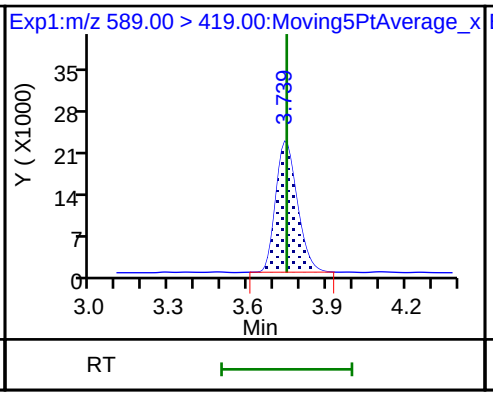
29 Perfluorodecane Sulfonic acid



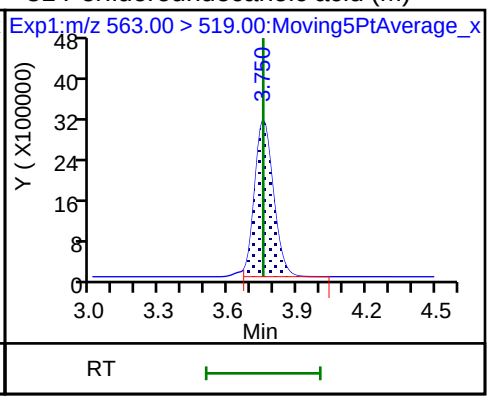
29 Perfluorodecane Sulfonic acid



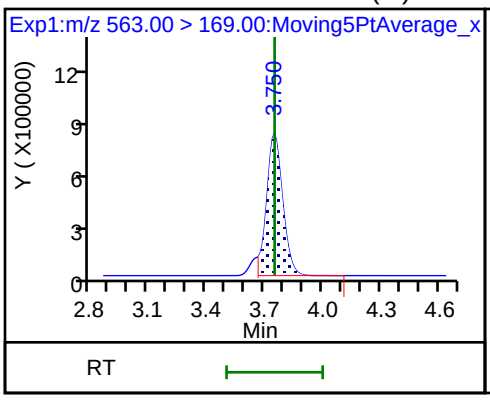
D 32 d5-NEtFOSAA



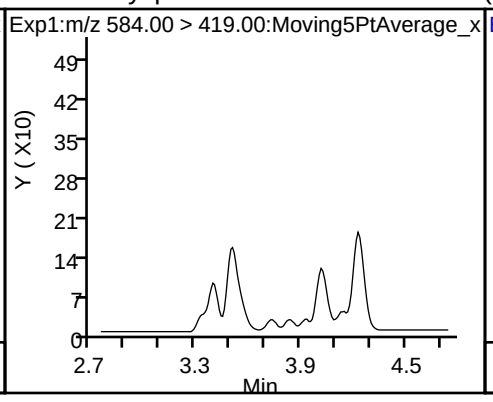
31 Perfluoroundecanoic acid (M)



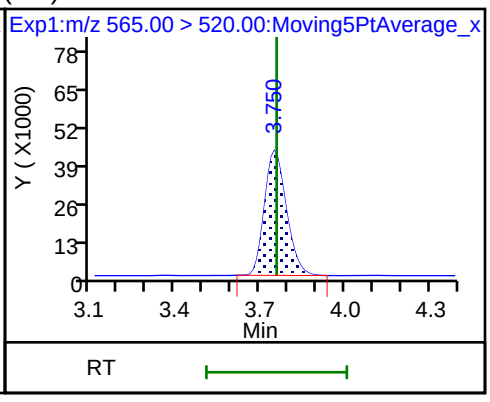
31 Perfluoroundecanoic acid (M)



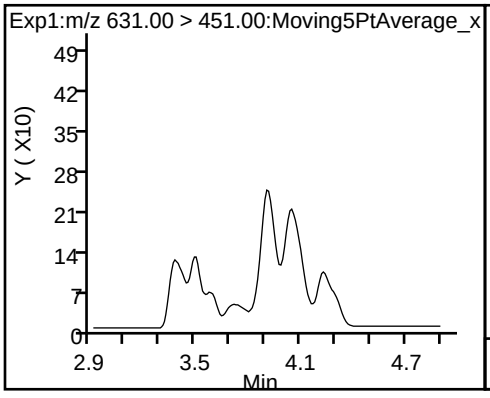
33 N-ethyl perfluorooctane sulfonamid (M)



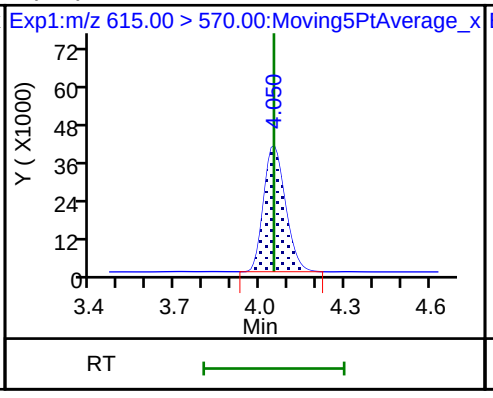
D 30 13C2 PFUnA



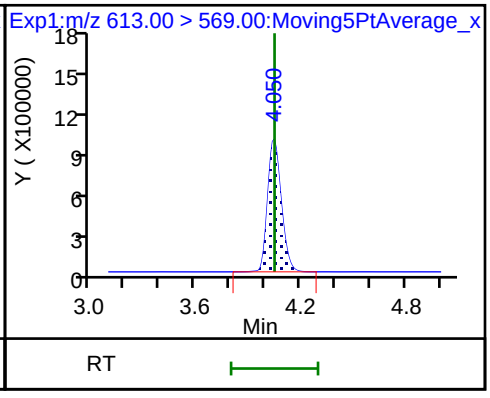
66 11-Chloroeicosafluoro-3-oxaundecan (M)



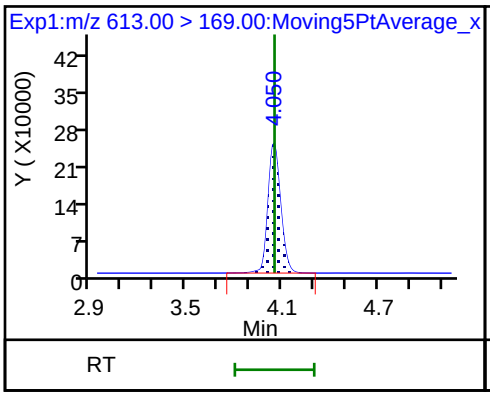
D 36 13C2 PFDoA



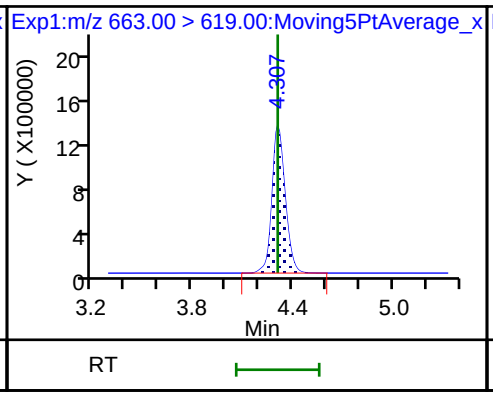
37 Perfluorododecanoic acid



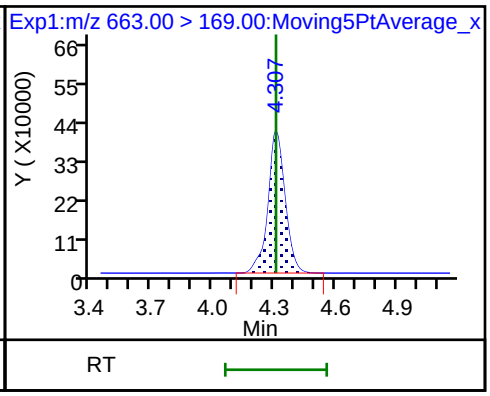
37 Perfluorododecanoic acid



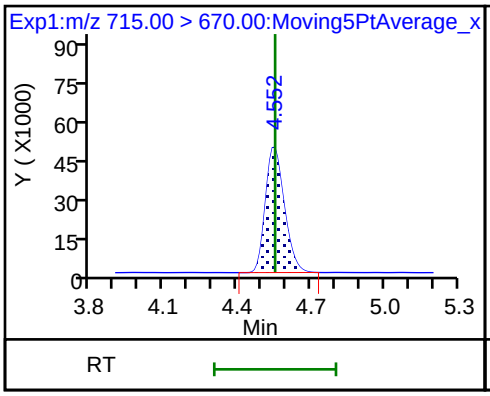
41 Perfluorotridecanoic acid



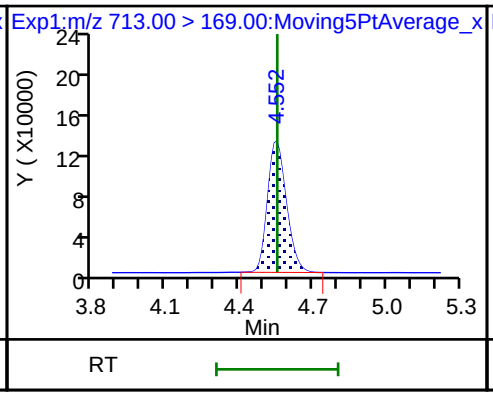
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



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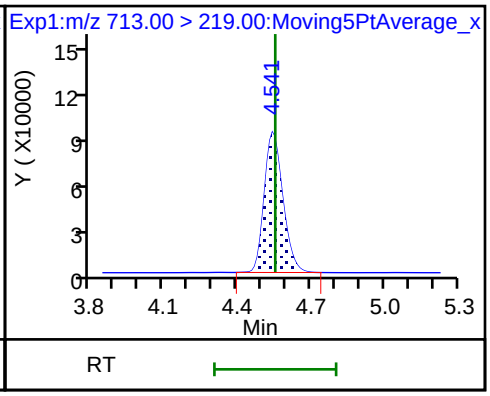
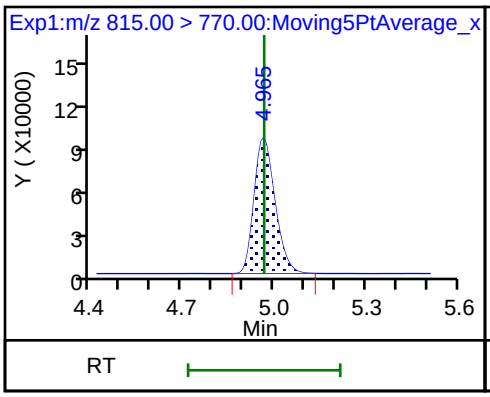
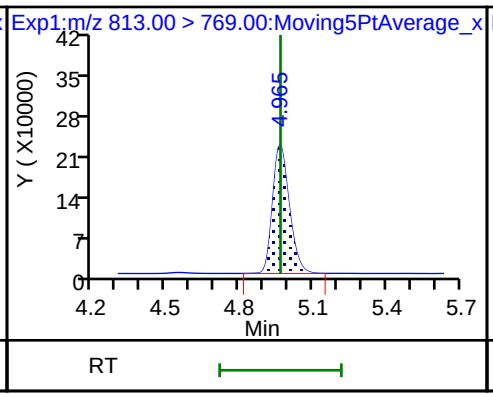


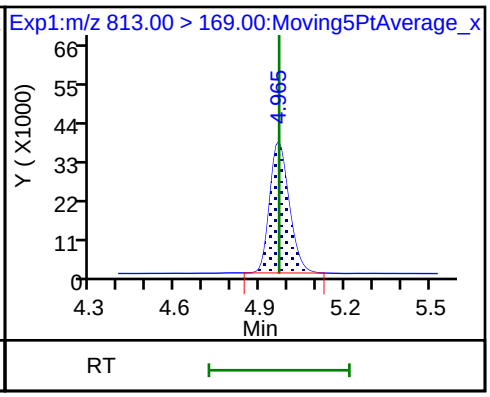
D 44 13C2-PFHxDA



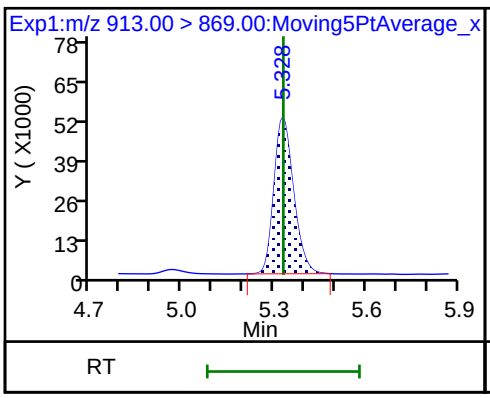
45 Perfluorohexadecanoic acid



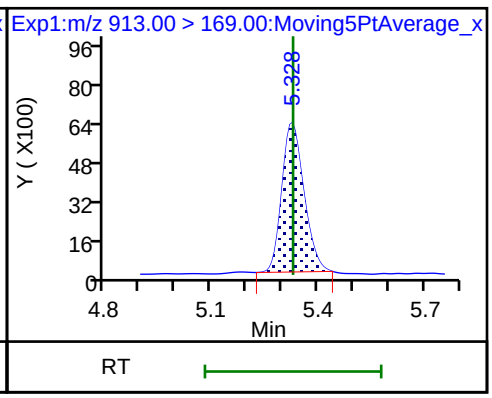
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP DL | Lab Sample ID: 320-38054-2 DL

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.26LLA_054.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.02(g) | Date Analyzed: 04/26/2018 18:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220090 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-95-1	Perfluorononanoic acid (PFNA)	0.073		0.055
335-76-2	Perfluorodecanoic acid (PFDA)	0.074		0.055
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.91		0.055
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.13		0.055
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.86		0.14
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35		0.055
39108-34-4	8:2FTS	0.69		0.55

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	59		25-150
STL00996	13C2 PFDA	53		25-150
STL00997	13C2 PFUnA	61		25-150
STL00998	13C2 PFDoA	46		25-150
STL02116	13C2-PFTeDA	18	*	25-150
STL00991	13C4 PFOS	49		25-150
STL01056	13C8 FOSA	54		25-150
STL02280	M2-8:2FTS	109		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_054.d
Lims ID: 320-38054-A-2-A
Client ID: SB003(0-2)-TOP
Sample Type: Client
Inject. Date: 26-Apr-2018 18:12:50 ALS Bottle#: 39 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38054-a-2-a 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:33:52 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:25:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.442	0.0	1.000	15120	0.0725			6.9	
D 1 13C4 PFBA										M
217.00 > 172.00	1.442	1.446	-0.004	1.000	5618	0.001741		7.0	52.1	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	20809	0.0183			19.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.711	-0.008	0.556	23891	0.0115		46.0	470	
D 47 13C3-PFBS										M
301.90 > 83.00	1.730	1.747	-0.017	1.000	650	0.0136		58.6	4.9	M
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.959	-0.009	1.000	7097	0.0208		88.9	70.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	2.003	-0.021	1.000	32083	0.0140		55.8	816	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.334	2.322	0.012	1.000	20247	0.0177			24.9	
363.00 > 169.00	2.321	2.322	-0.001	0.994	7678		2.64(1.13-3.40)		28.5	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.332	0.002	1.000	28563	0.0128		51.0	770	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.335	0.012	1.006	18189	0.0119			37.5	
399.00 > 99.00	2.347	2.335	0.012	1.006	5155		3.53(1.50-4.49)		35.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.345	-0.011	1.000	31952	0.0116		48.9	883	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.683	2.661	0.022	1.000	124167	0.0864			1602	
D 12 M2-6:2FTS										
429.00 > 81.00	2.683	2.667	0.016	1.000	20189	0.0421		177	243	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.691	-0.001		59955	0.0250			1903	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.691	-0.001	1.000	30427	0.0197			18.0	
413.00 > 169.00	2.690	2.691	-0.001	1.000	17665		1.72(0.84-2.52)		47.7	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.697	-0.007	1.000	33483	0.0151		60.2	1869	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.061	0.002	1.000	156622	0.1328			631	
463.00 > 169.00	3.063	3.061	0.002	1.000	39358		3.98(1.90-5.69)		1056	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.061	0.002	1.002	1611184	1.56			7917	
499.00 > 99.00	3.063	3.061	0.002	1.002	383136		4.21(2.31-6.93)		7348	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.065	-0.008	1.000	22641	0.0117		49.0	128	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.072	-0.009	1.000	28281	0.0148		59.2	1020	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.400	-0.005	1.000	833271	0.6306			206	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.408	-0.013	1.000	32659	0.0135		54.1	30.0	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.409	-0.005	1.000	19090	0.0252			44.3	
549.00 > 99.00	3.414	3.409	0.005	1.003	7135		2.68(1.33-3.97)		63.4	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.418	-0.004	1.000	999017	1.26			32850	
D 26 M2-8:2FTS										M
529.00 > 81.00	3.414	3.426	-0.012	1.000	15050	0.0261		109	135	M
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.427	-0.004	1.000	117834	0.1351			536	
513.00 > 169.00	3.423	3.427	-0.004	1.000	20154		5.85(2.36-7.09)		306	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.436	-0.013	1.000	21130	0.0131		52.6	692	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.586	-0.003	1.000	13984	0.0154		61.4	187	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.572	3.587	-0.015	0.997	2093	0.003752			55.6	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.737	3.742	-0.005	1.000	16802	0.0273			22.7	
599.00 > 99.00	3.748	3.742	0.006	1.003	7715		2.18(1.39-4.16)		67.1	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.752	0.006	1.003	5865	0.0109			69.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.761	-0.013	1.000	14357	0.0160		63.9	273	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.761	-0.003	1.000	21283	0.0154		61.4	833	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.758	3.762	-0.004	1.000	1193345	1.66			2749	M
563.00 > 169.00	3.758	3.762	-0.004	1.000	323912		3.68(2.12-6.36)		779	M
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.915	3.919	-0.004	1.000	1754	0.000636			42.0	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.051	-0.004	0.997	44861	0.0621			98.1	
613.00 > 169.00	4.058	4.051	0.007	1.000	11390		3.94(2.13-6.40)		115	
D 36 13C2 PFDoA										
615.00 > 570.00	4.058	4.061	-0.003	1.000	17318	0.0116		46.3	331	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.319	-0.002	1.000	204757	0.2432			335	
663.00 > 169.00	4.317	4.319	-0.002	1.000	70270		2.91(1.25-3.76)		527	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.564	-0.013	1.000	8774	0.004622		18.5	102	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.976	-0.002	1.000	8449	0.002735		10.9	60.9	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 08:33:57 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_054.d

Injection Date: 26-Apr-2018 18:12:50 Instrument ID: A8_N

Lims ID: 320-38054-A-2-A Lab Sample ID: 320-38054-2

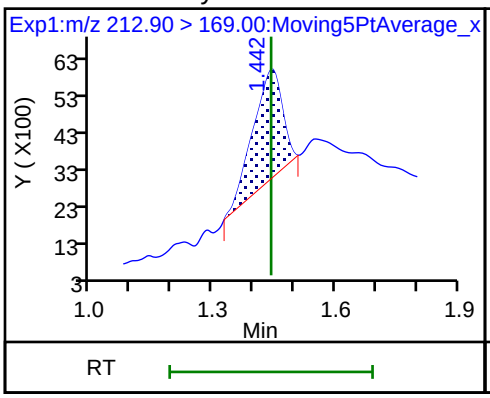
Client ID: SB003(0-2)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 39 Worklist Smp#: 2

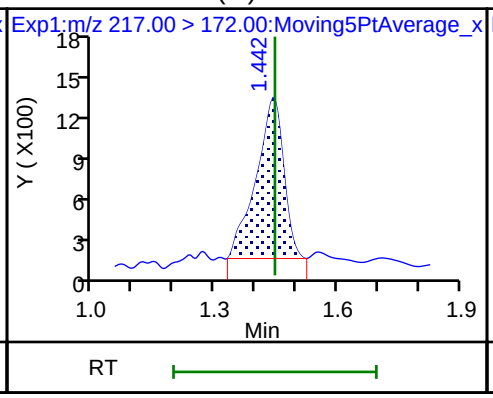
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

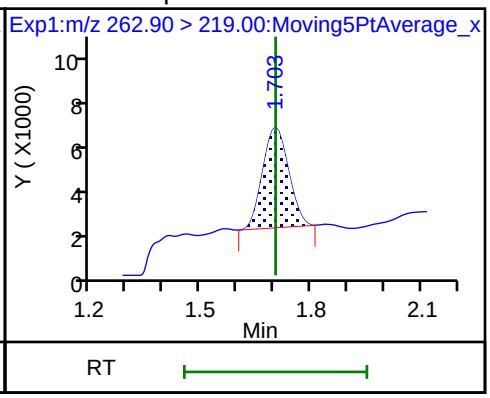
2 Perfluorobutyric acid



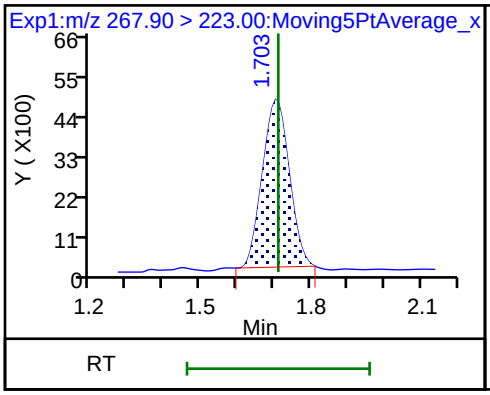
D 1 13C4 PFBA (M)



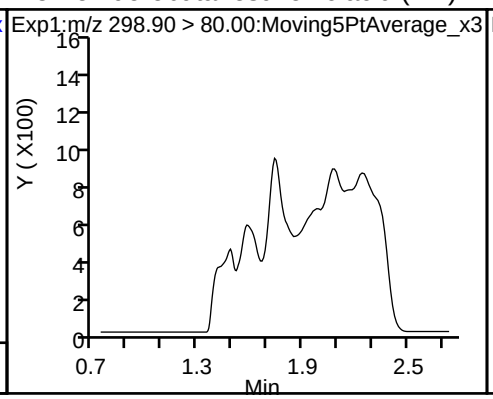
4 Perfluoropentanoic acid



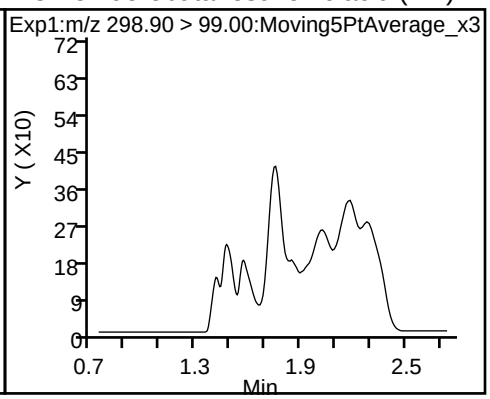
D 3 13C5-PFPeA



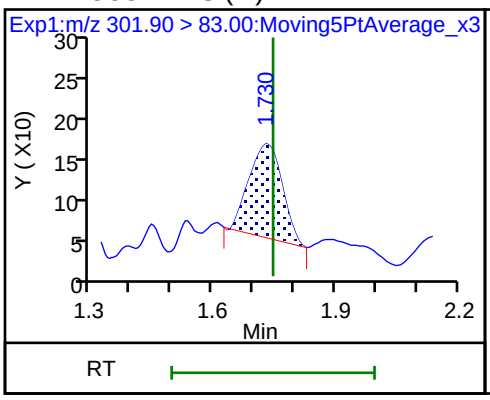
5 Perfluorobutanesulfonic acid (ND)



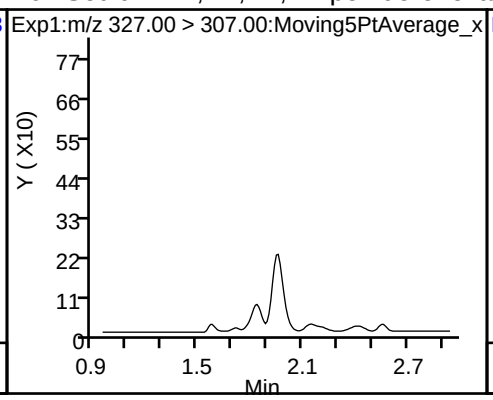
5 Perfluorobutanesulfonic acid (ND)



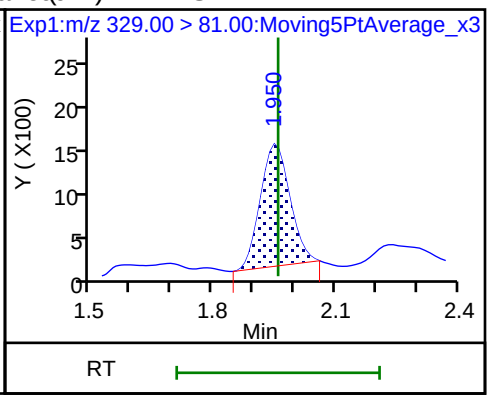
D 47 13C3-PFBS (M)



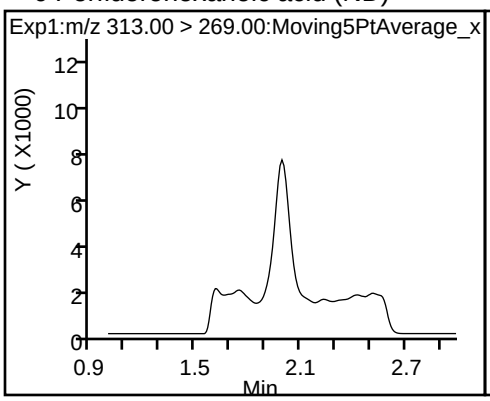
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



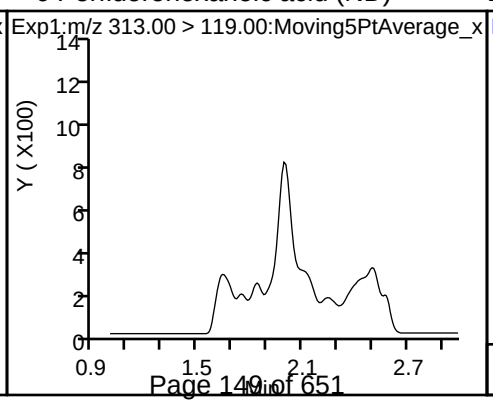
D 60 M2-4:2FTS



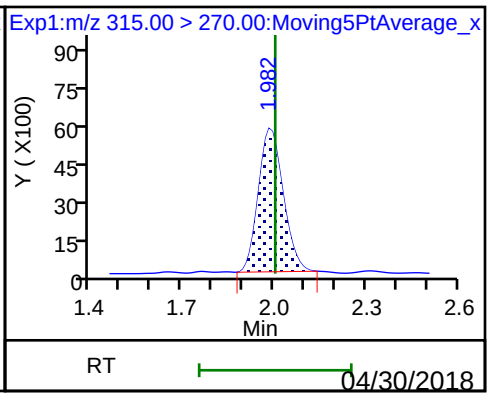
6 Perfluorohexanoic acid (ND)



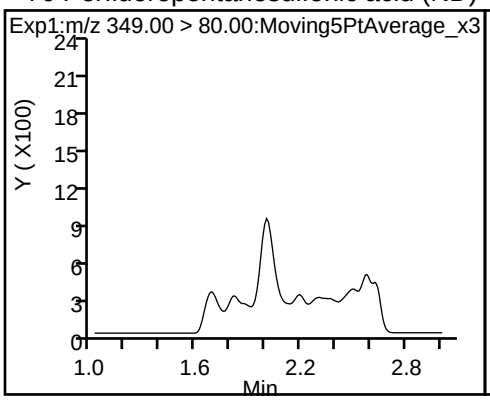
6 Perfluorohexanoic acid (ND)



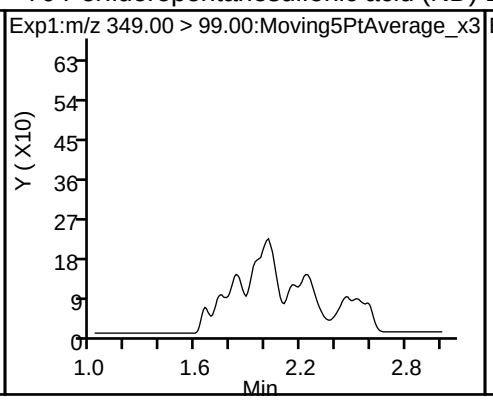
D 7 13C2 PFHxA



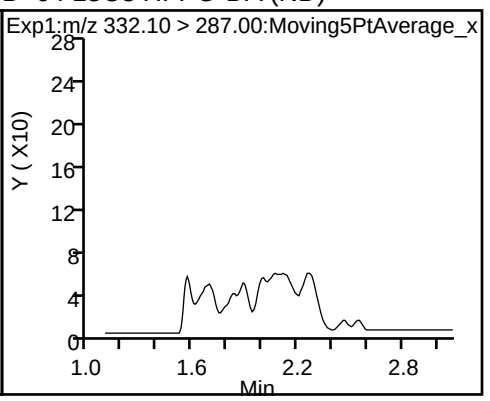
70 Perfluoropentanesulfonic acid (ND)



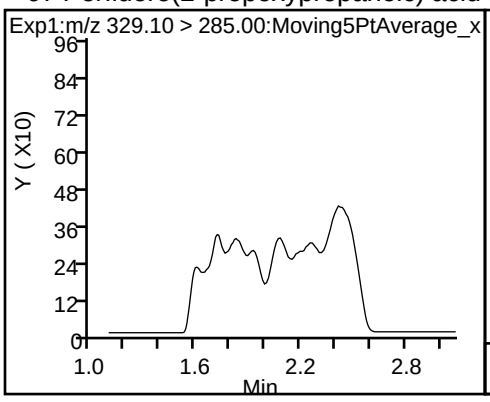
70 Perfluoropentanesulfonic acid (ND)



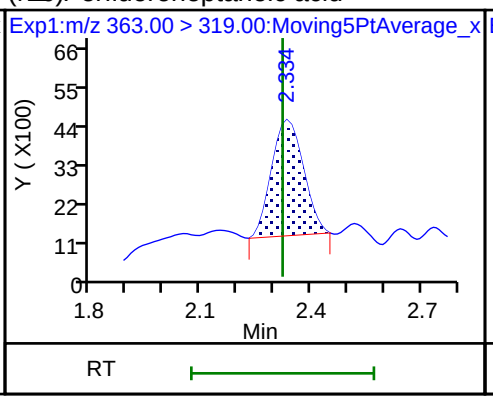
D 64 13C3 HFPO-DA (ND)



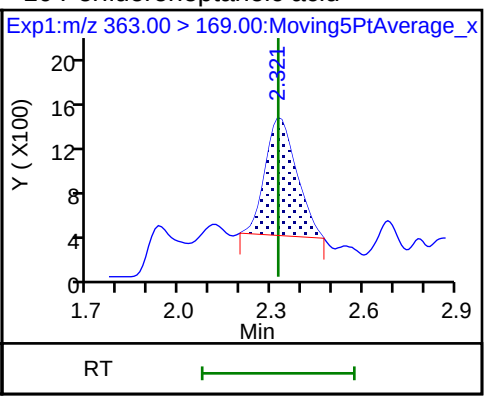
67 Perfluoro(2-propoxypropanoic) acid (ND)



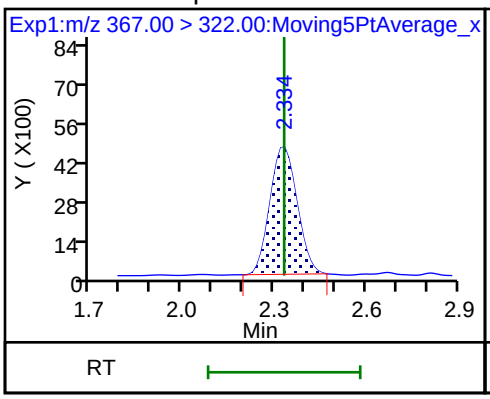
10 Perfluoroheptanoic acid



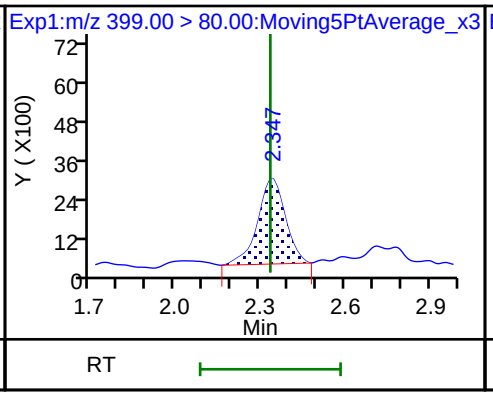
10 Perfluoroheptanoic acid



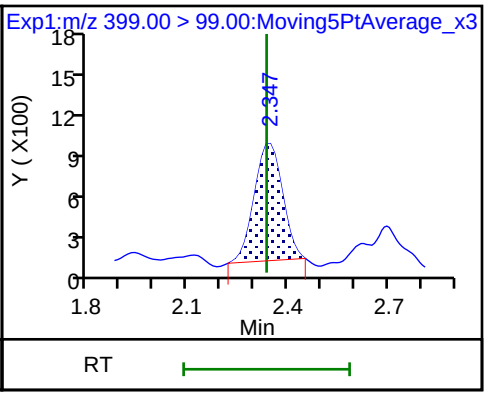
D 9 13C4-PFHpA



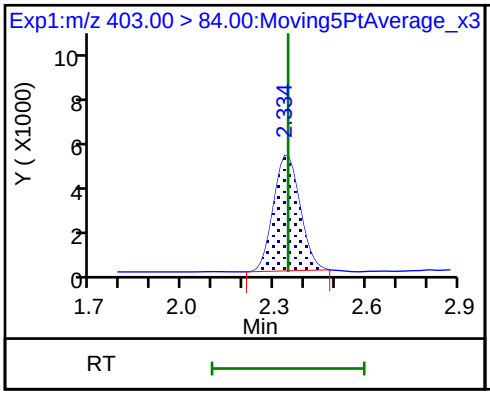
8 Perfluorohexanesulfonic acid



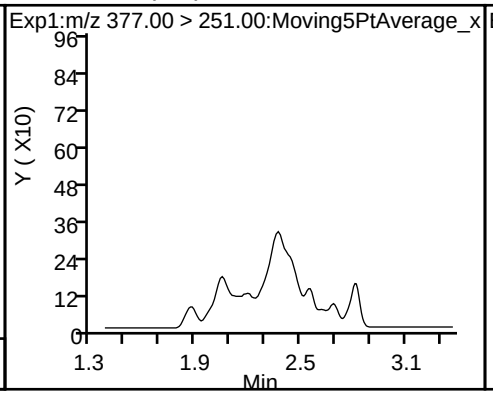
8 Perfluorohexanesulfonic acid



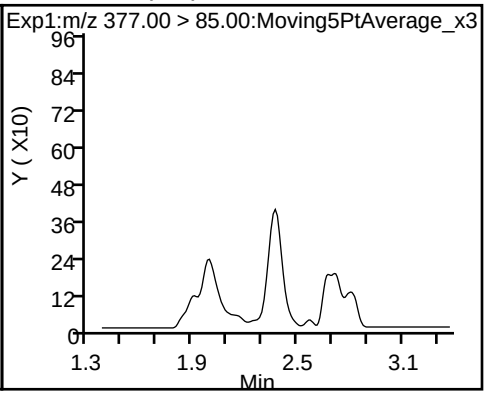
D 11 18O2 PFHxS



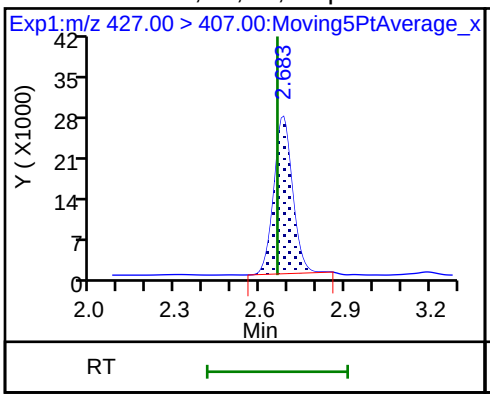
65 Adona (ND)



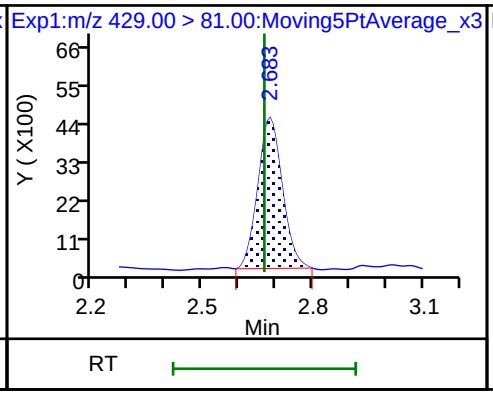
65 Adona (ND)



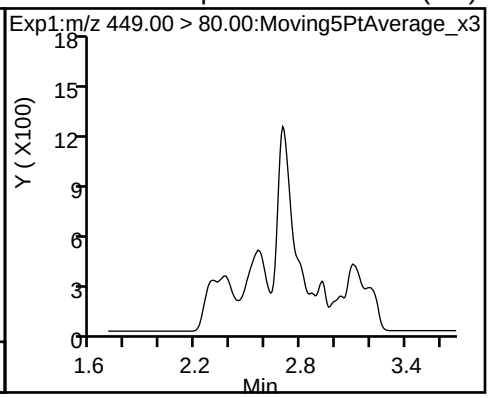
13 Sodium 1H,1H,2H,2H-perfluorooctane



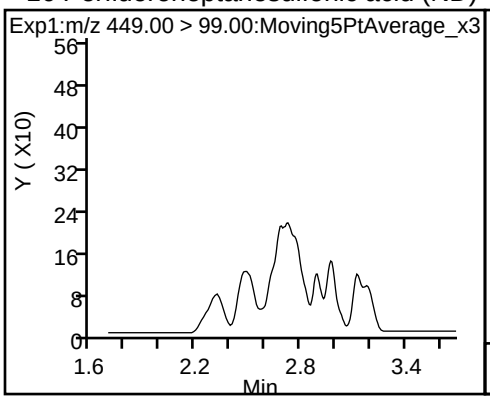
D 12 M2-6:2FTS



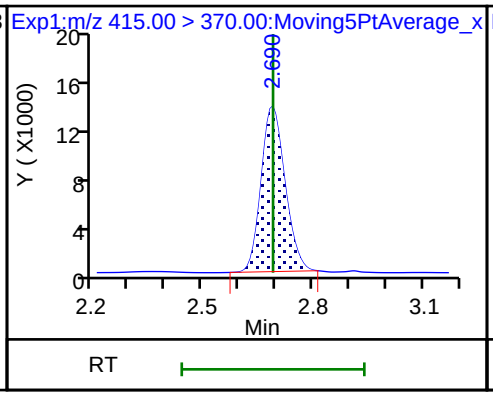
16 Perfluoroheptanesulfonic acid (ND)



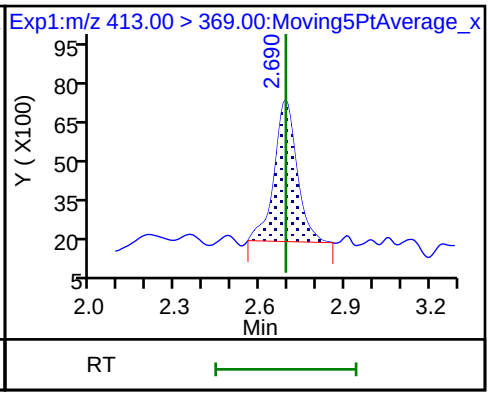
16 Perfluoroheptanesulfonic acid (ND) *



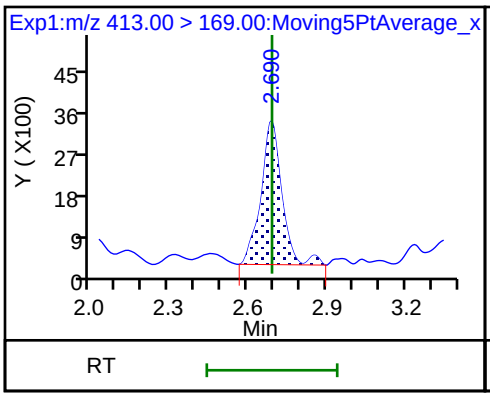
62 13C2-PFOA



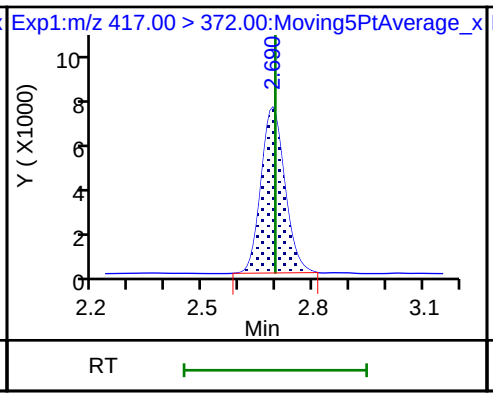
15 Perfluorooctanoic acid



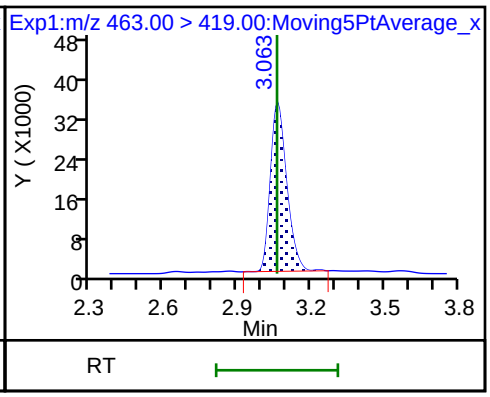
15 Perfluorooctanoic acid



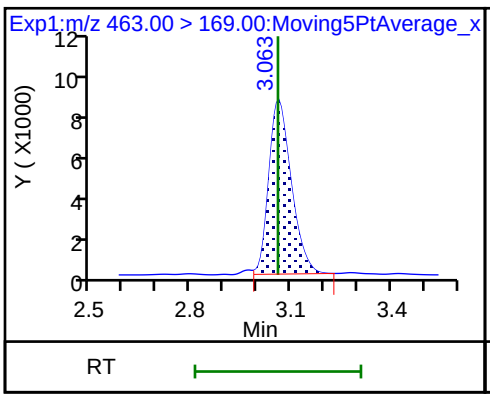
D 14 13C4 PFOA



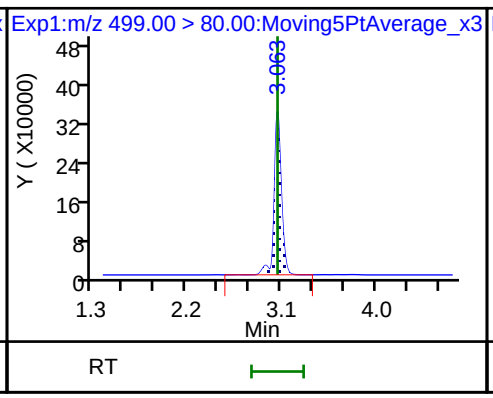
20 Perfluorononanoic acid



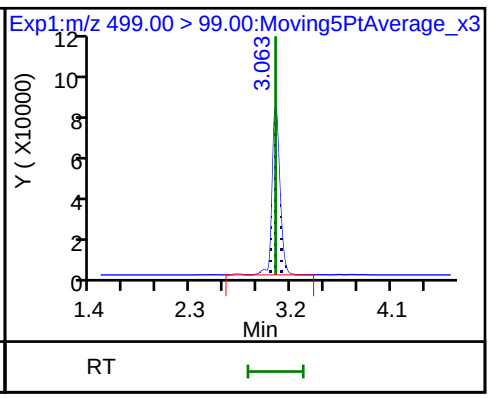
20 Perfluorononanoic acid



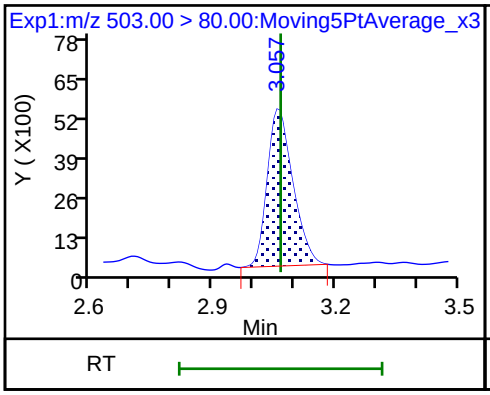
17 Perfluorooctane sulfonic acid



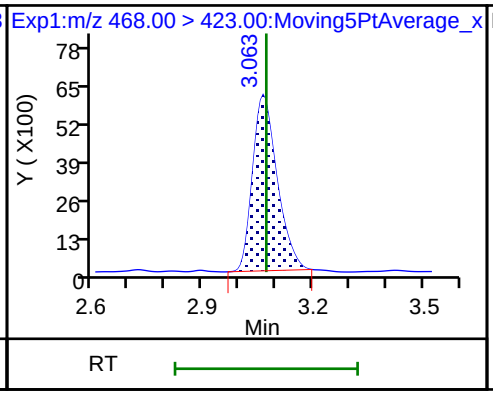
17 Perfluorooctane sulfonic acid



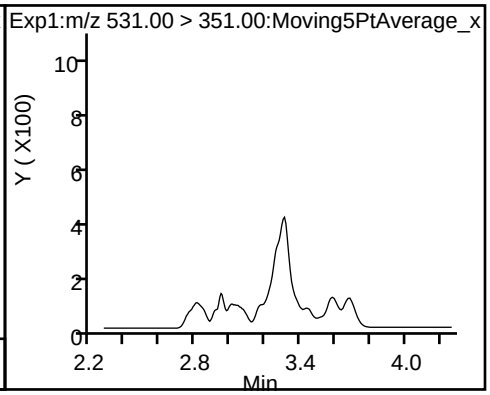
D 18 13C4 PFOS



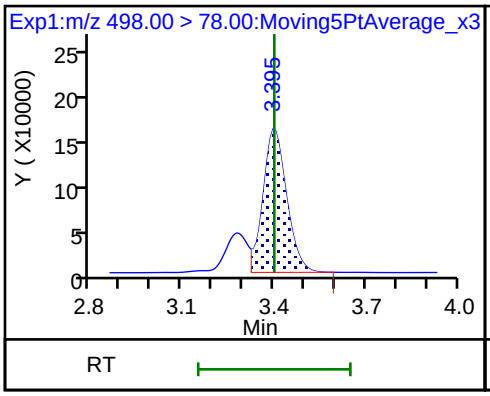
D 19 13C5 PFNA



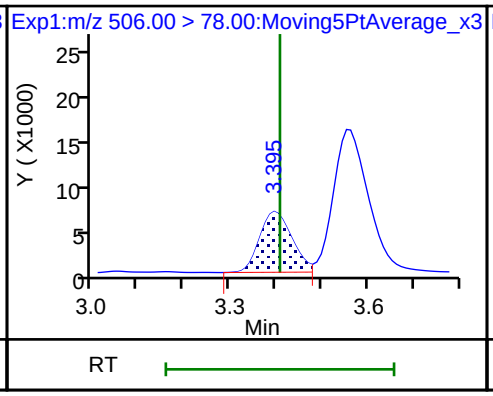
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



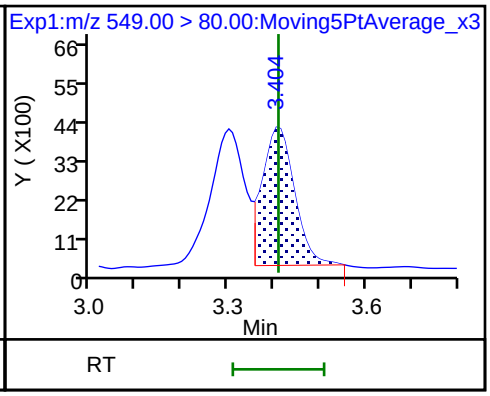
22 Perfluorooctane Sulfonamide



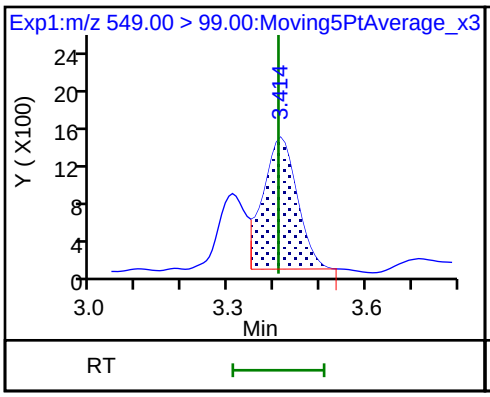
D 21 13C8 FOSA



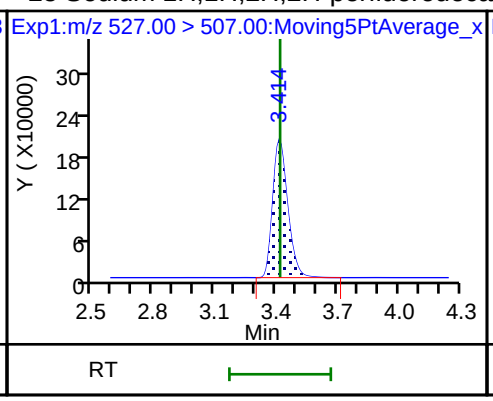
68 Perfluorononanesulfonic acid



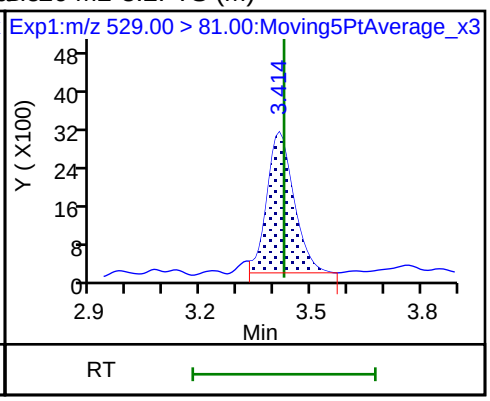
68 Perfluorononanesulfonic acid



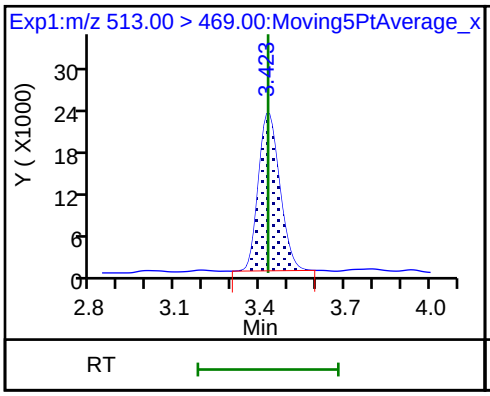
25 Sodium 1H,1H,2H,2H-perfluorodecane



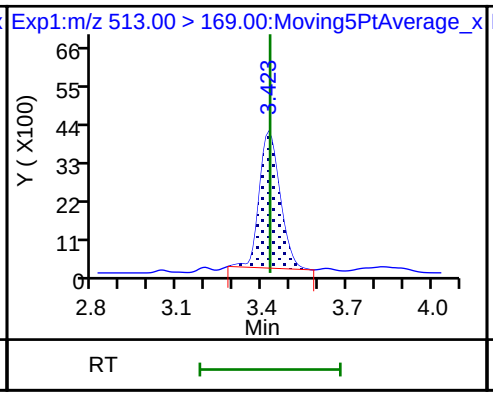
D 26 M2-8:2FTS (M)



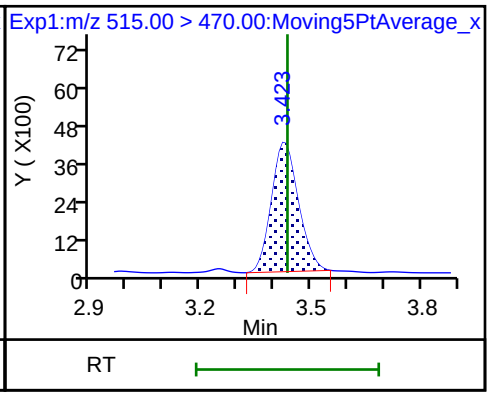
24 Perfluorodecanoic acid



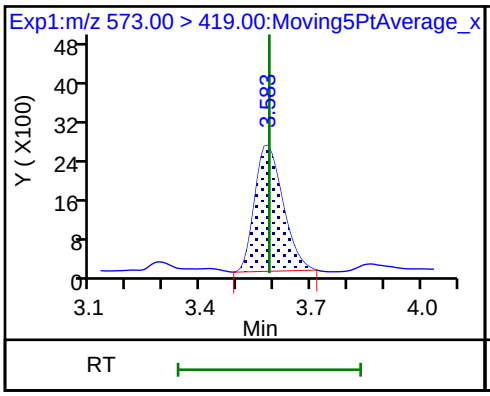
24 Perfluorodecanoic acid



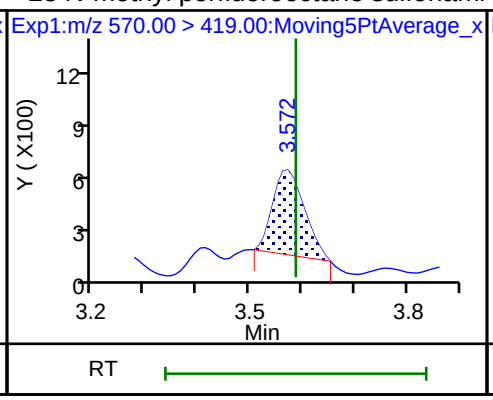
D 23 13C2 PFDA



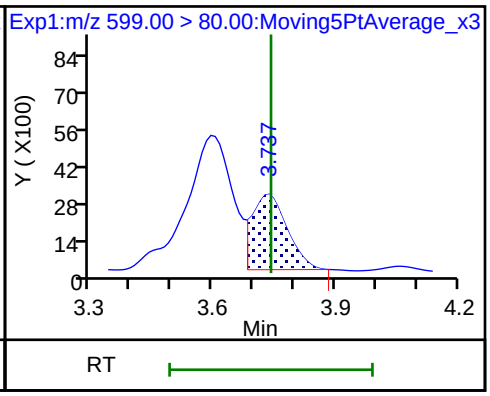
D 27 d3-NMeFOSAA



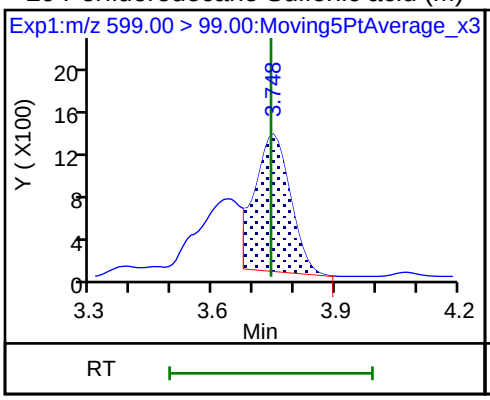
28 N-methyl perfluorooctane sulfonami



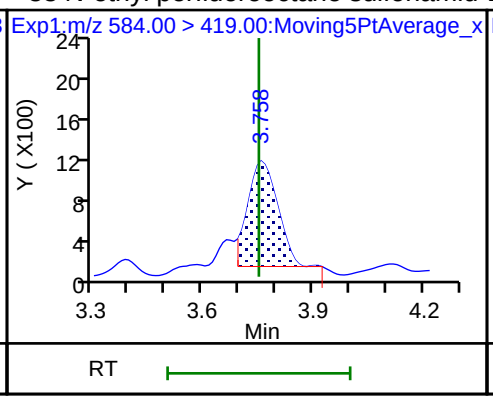
29 Perfluorodecane Sulfonic acid



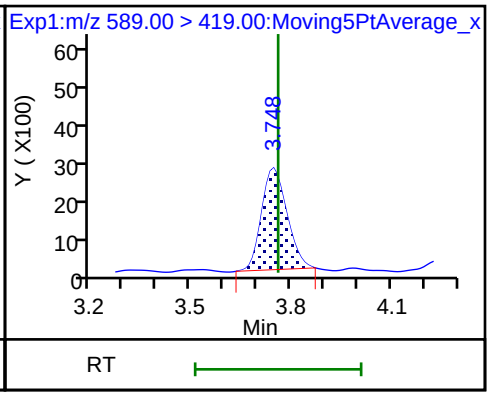
29 Perfluorodecane Sulfonic acid (M)



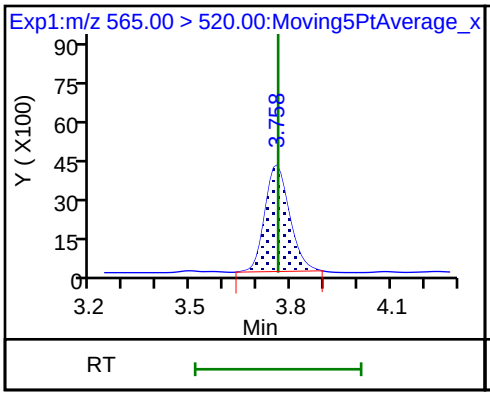
33 N-ethyl perfluorooctane sulfonamid



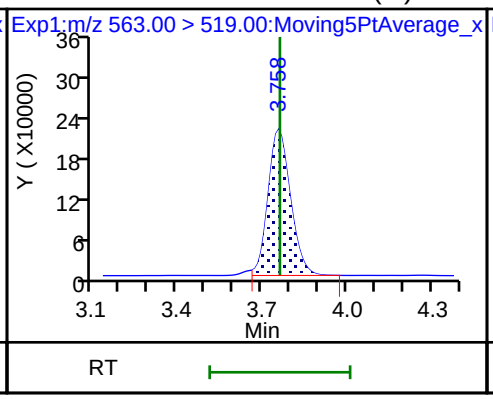
D 32 d5-NEtFOSAA



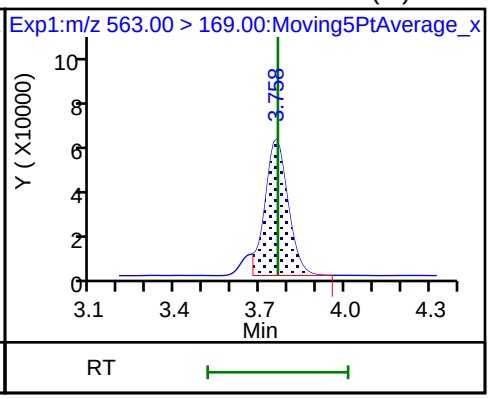
D 30 13C2 PFUnA



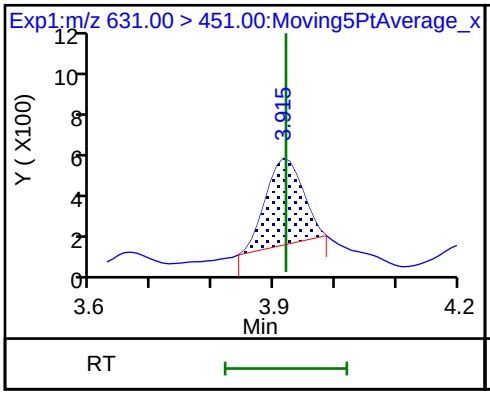
31 Perfluoroundecanoic acid (M)



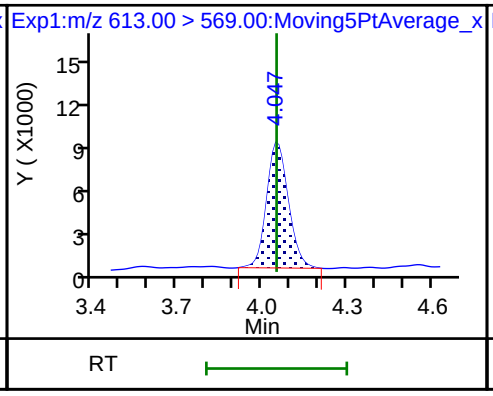
31 Perfluoroundecanoic acid (M)



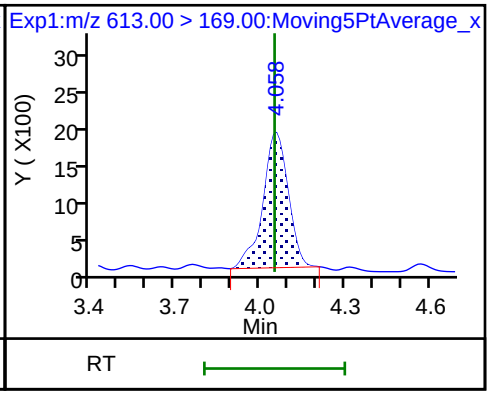
66 11-Chloroeicosafluoro-3-oxaundecan



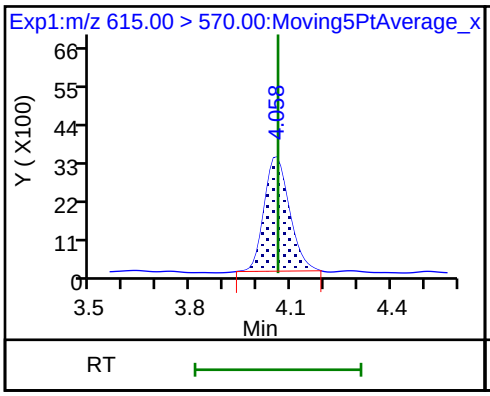
37 Perfluorododecanoic acid



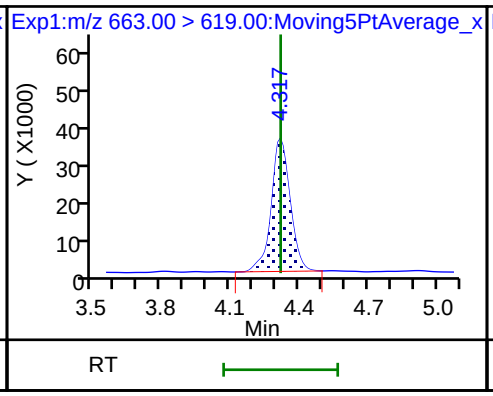
37 Perfluorododecanoic acid



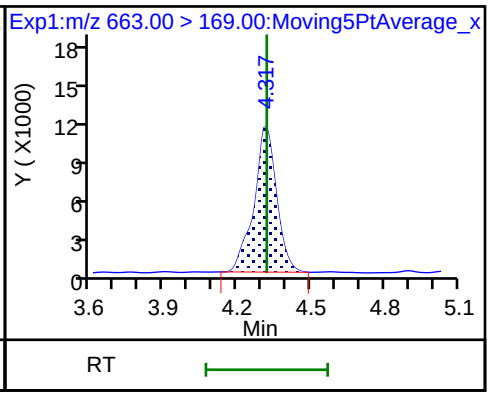
D 36 13C2 PFDoA



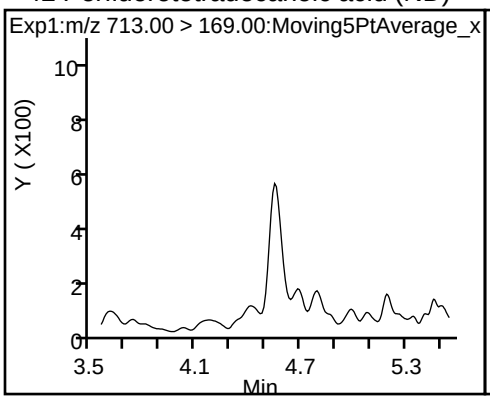
41 Perfluorotridecanoic acid



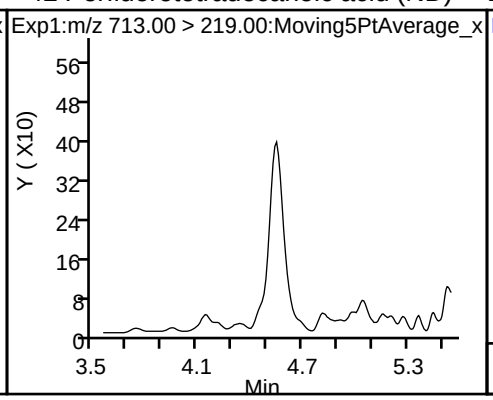
41 Perfluorotridecanoic acid



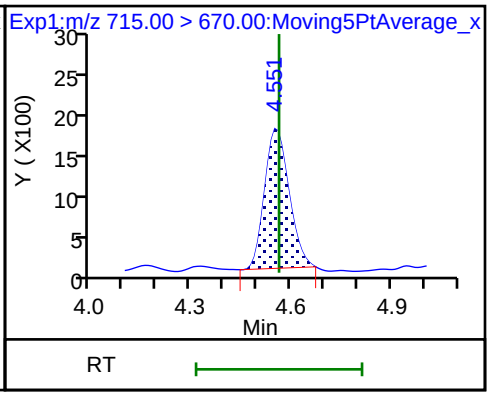
42 Perfluorotetradecanoic acid (ND)



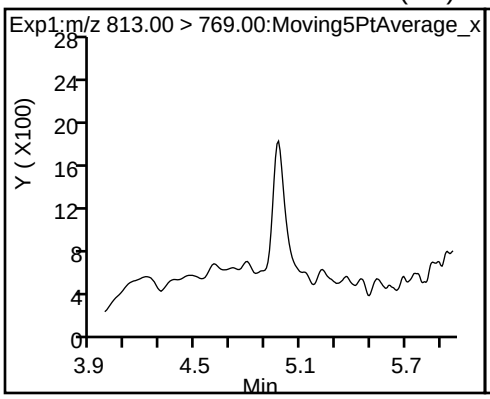
42 Perfluorotetradecanoic acid (ND)



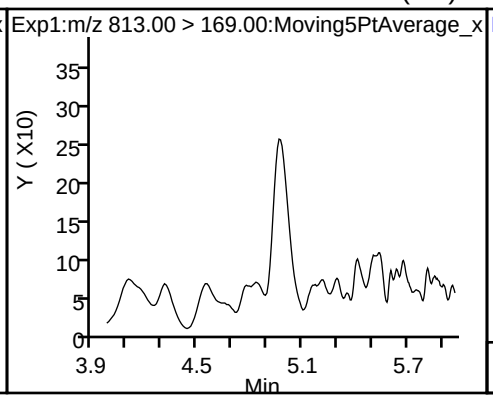
D 43 13C2-PFTeDA



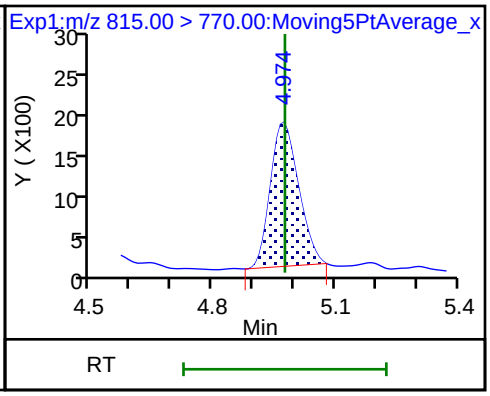
45 Perfluorohexadecanoic acid (ND)



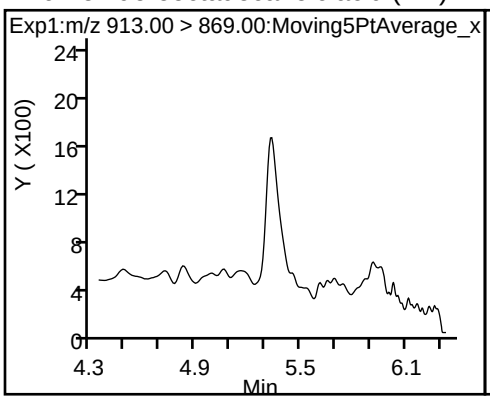
45 Perfluorohexadecanoic acid (ND)



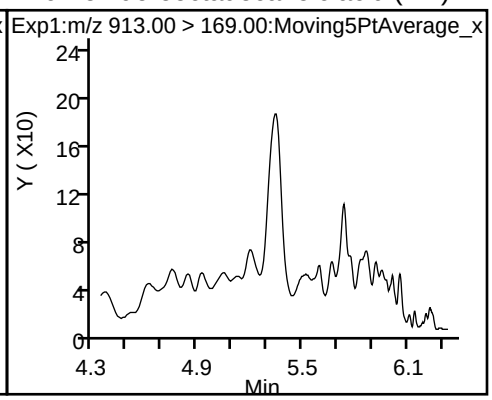
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

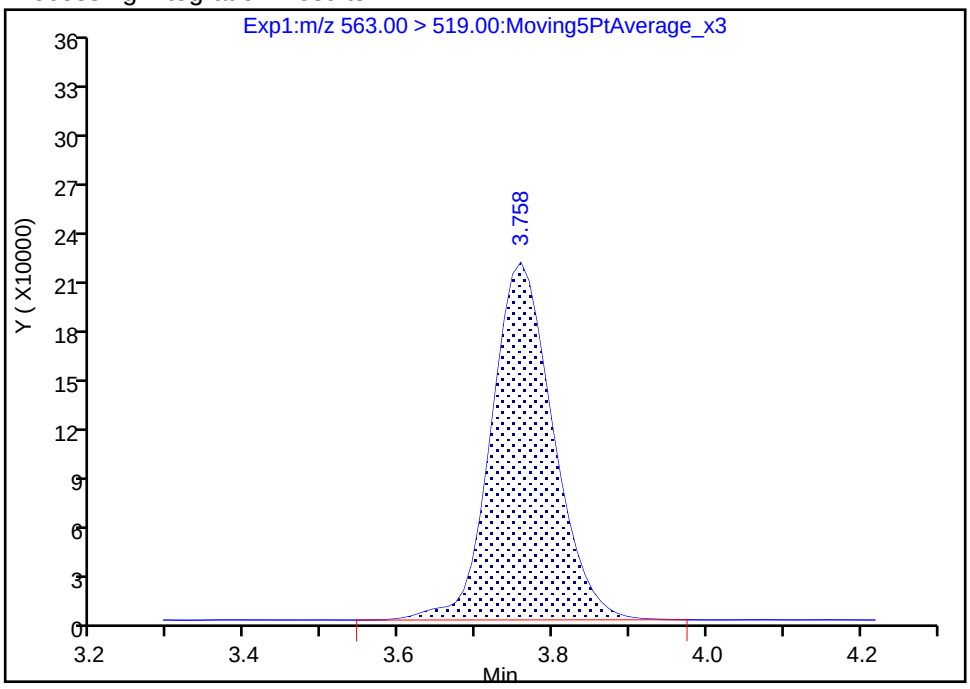
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_054.d				
Injection Date:	26-Apr-2018 18:12:50	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-A	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

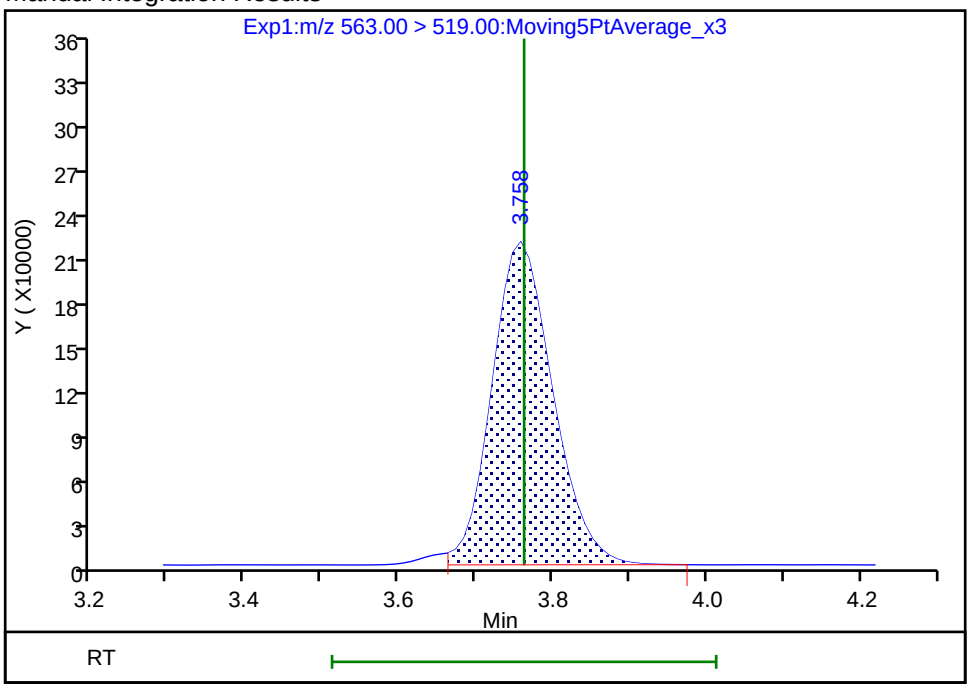
Processing Integration Results

RT: 3.76
Area: 1211683
Amount: 1.684181
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 1193345
Amount: 1.658692
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:25:12

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

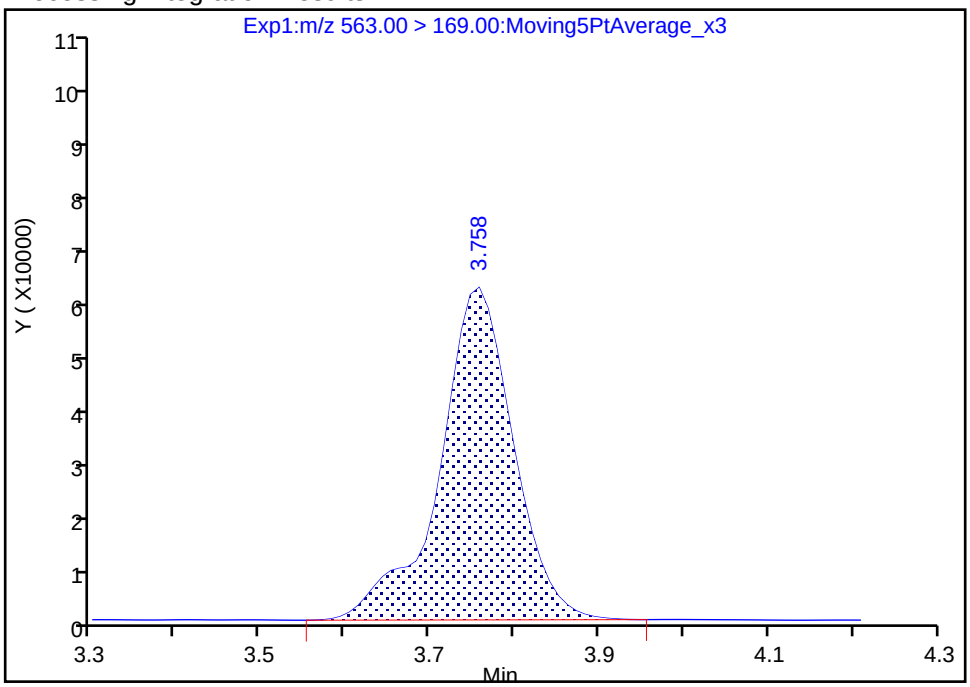
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_054.d				
Injection Date:	26-Apr-2018 18:12:50	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-A	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

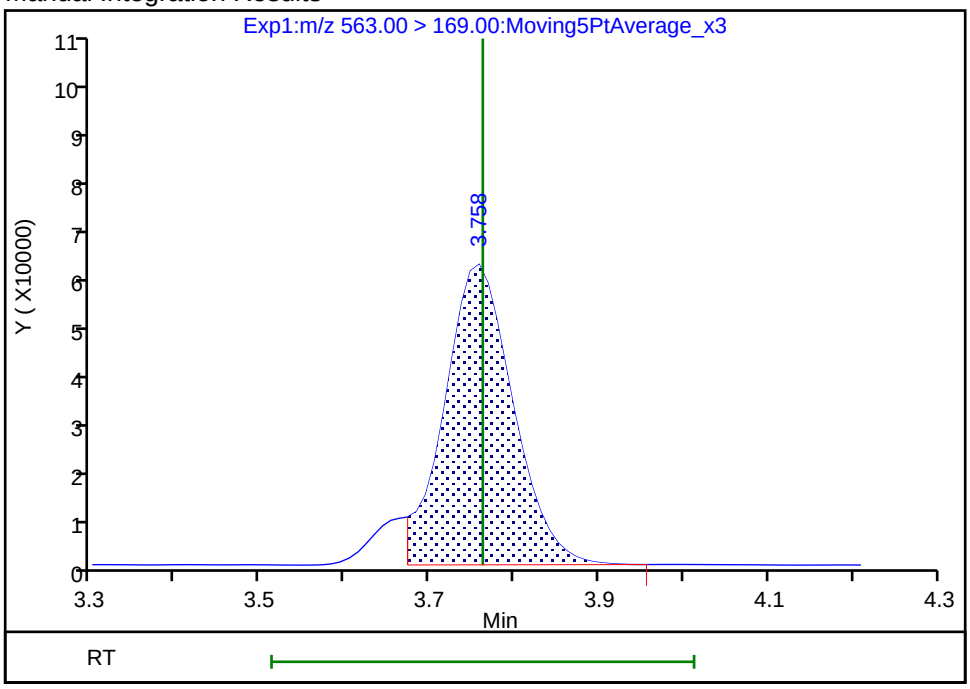
Processing Integration Results

RT: 3.76
Area: 350221
Amount: 1.684181
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 323912
Amount: 1.658692
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:25:13

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

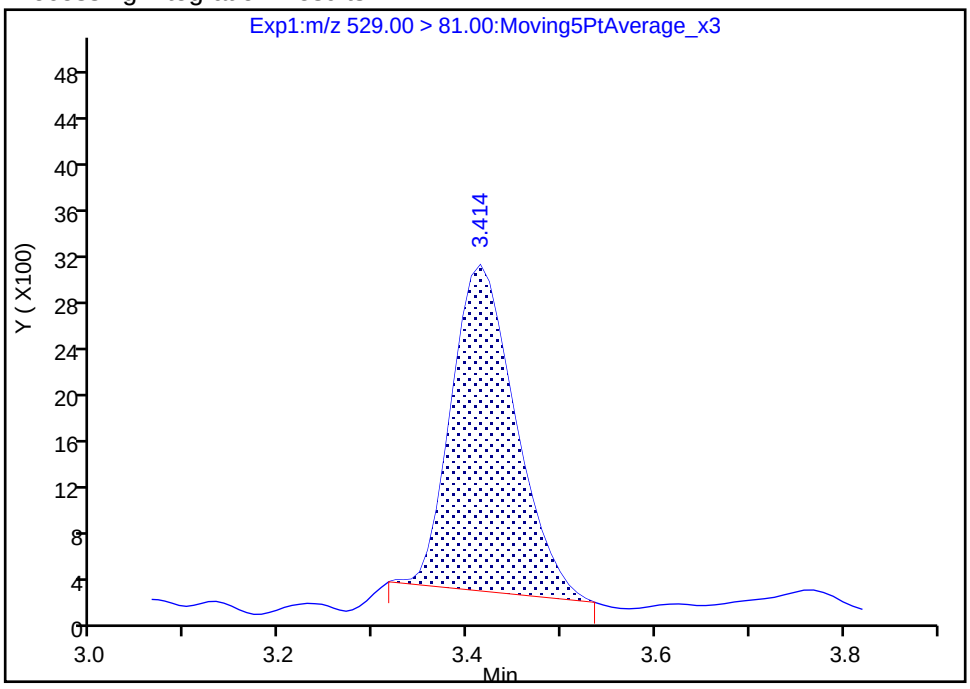
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_054.d				
Injection Date:	26-Apr-2018 18:12:50	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-A	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	39	Worklist Smp#:	2
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

D 26 M2-8:2FTS, CAS: STL02280

Signal: 1

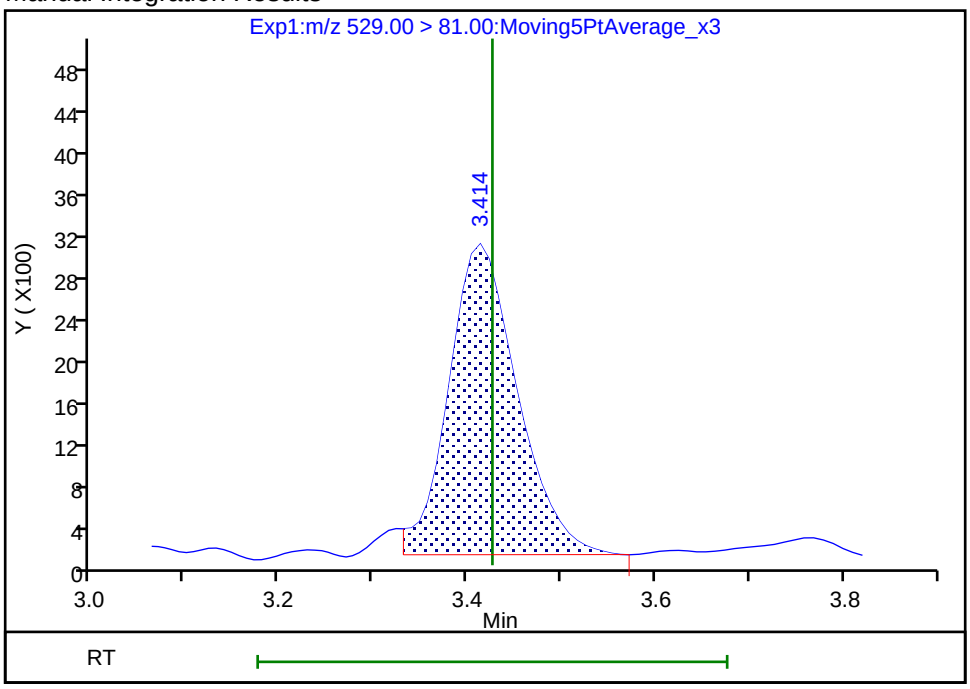
Processing Integration Results

RT: 3.41
Area: 13355
Amount: 0.023120
Amount Units: ng/ml



Manual Integration Results

RT: 3.41
Area: 15050
Amount: 0.026054
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:23:41

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP DL2 | Lab Sample ID: 320-38054-2 DL2

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLA_057.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.01(g) | Date Analyzed: 04/26/2018 18:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220090 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	1.8	B *	0.055
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.4		0.055
307-24-4	Perfluorohexanoic acid (PFHxA)	3.5		0.055
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.4		0.055
335-67-1	Perfluorooctanoic acid (PFOA)	3.0	*	0.055
375-95-1	Perfluorononanoic acid (PFNA)	1.3		0.055
335-76-2	Perfluorodecanoic acid (PFDA)	0.86		0.055
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.2		0.055
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.99		0.14

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	55		25-150
STL01893	13C5 PFPeA	50		25-150
STL00993	13C2 PFHxA	61		25-150
STL01892	13C4-PFHpA	62		25-150
STL00990	13C4 PFOA	58		25-150
STL00995	13C5 PFNA	60		25-150
STL00996	13C2 PFDA	52		25-150
STL00997	13C2 PFUnA	60		25-150
STL00991	13C4 PFOS	51		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_057.d
Lims ID: 320-38054-A-2-D
Client ID: SB003(0-2)-TOP
Sample Type: Client
Inject. Date: 26-Apr-2018 18:36:17 ALS Bottle#: 42 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38054-a-2-d 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:33:52 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:30:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.442	-0.007	1.000	6089201	3.35			3361	
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.446	-0.011	1.000	48938	0.0138		55.2	464	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.703	-0.001	1.000	8383766	6.14			9846	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.711	-0.009	0.557	28633	0.0125		50.1	690	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.739	-0.001	1.000	31031	0.0140			92.1	
298.90 > 99.00	1.738	1.739	-0.001	1.000	13384		2.32(1.25-3.74)		128	
D 47 13C3-PFBS										M
301.90 > 83.00	1.738	1.747	-0.009	1.000	657	0.0125		53.9	5.4	M
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.994	-0.013	0.995	10003734	6.36			13602	
313.00 > 119.00	1.991	1.994	-0.003	1.000	886909		11.28(5.03-15.10)		10158	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	2.003	-0.012	1.000	38693	0.0153		61.2	1063	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.016	-0.013	1.000	53256	0.0264			261	
349.00 > 99.00	2.014	2.016	-0.002	1.006	19361		2.75(1.36-4.07)		287	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.322	-0.003	1.000	9360365	6.09			11767	
363.00 > 169.00	2.319	2.322	-0.003	1.000	3809476		2.46(1.13-3.40)		20204	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.332	-0.013	1.000	38410	0.0156		62.5	1171	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.335	-0.003	1.000	748659	0.4038			862	
399.00 > 99.00	2.332	2.335	-0.003	1.000	225415		3.32(1.50-4.49)		857	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.345	-0.013	1.000	38745	0.0128		54.0	1578	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.661	0.014	1.000	155866	0.1147			2654	
D 12 M2-6:2FTS										
429.00 > 81.00	2.675	2.667	0.008	1.000	19092	0.0362		152	243	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	33996	0.0238			132	
449.00 > 99.00	2.697	2.691	0.006	1.003	8925		3.81(1.94-5.82)		123	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.691	-0.009		65895	0.0250			1747	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.691	-0.009	0.997	8757039	5.37			5905	
413.00 > 169.00	2.682	2.691	-0.009	0.997	4683622		1.87(0.84-2.52)		16740	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.697	-0.007	1.000	35292	0.0144		57.7	1553	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.061	0.002	1.002	3183195	2.43			11396	
463.00 > 169.00	3.056	3.061	-0.005	1.000	764982		4.16(1.90-5.69)		24383	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.056	3.061	-0.005	1.000	2097184	1.79			24275	
499.00 > 99.00	3.056	3.061	-0.005	1.000	498343		4.21(2.31-6.93)		10385	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.065	-0.009	1.000	25693	0.0121		50.6	169	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.072	-0.016	1.000	31380	0.0149		59.7	870	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.394	3.400	-0.006	1.000	18911	0.0176			109	M
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.408	-0.014	1.000	26598	0.0100		40.1	649	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.409	-0.005	1.000	17966	0.0209			49.2	
549.00 > 99.00	3.404	3.409	-0.005	1.000	5818		3.09(1.33-3.97)		57.8	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.418	-0.005	0.997	215383	0.3917			10020	
D 26 M2-8:2FTS										
529.00 > 81.00	3.422	3.426	-0.004	1.000	10408	0.0164		68.5	82.6	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.427	-0.005	1.000	1469744	1.56			6187	
513.00 > 169.00	3.422	3.427	-0.005	1.000	255737		5.75(2.36-7.09)		6343	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.436	-0.014	1.000	22853	0.0129		51.8	632	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.586	-0.015	1.000	14096	0.0141		56.3	200	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.742	-0.005	1.000	21654	0.0310			31.8	
599.00 > 99.00	3.737	3.742	-0.005	1.000	7282		2.97(1.39-4.16)		72.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.761	-0.014	1.000	13501	0.0137		54.7	303	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.761	-0.003	1.000	22891	0.0150		60.1	847	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.758	3.762	-0.004	1.000	1653697	2.14			3610	M
563.00 > 169.00	3.758	3.762	-0.004	1.000	459058		3.60(2.12-6.36)		1270	M
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.051	-0.004	1.000	486815	0.5154			1082	
613.00 > 169.00	4.047	4.051	-0.004	1.000	121305		4.01(2.13-6.40)		1196	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.061	-0.014	1.000	22642	0.0138		55.0	395	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.319	-0.013	1.000	656700	0.5966			1075	
663.00 > 169.00	4.306	4.319	-0.013	1.000	213792		3.07(1.25-3.76)		1862	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.553	-0.003	1.000	64858	0.2768			538	
713.00 > 219.00	4.550	4.553	-0.003	1.000	42201		1.54(0.71-2.13)		796	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.564	-0.014	1.000	23321	0.0112		44.7	245	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.976	-0.012	1.000	93932	0.0464			89.5	
813.00 > 169.00	4.964	4.976	-0.012	1.000	16330		5.75(2.86-8.58)		117	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.976	-0.012	1.000	36095	0.0106		42.5	271	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 08:34:08 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_057.d

Injection Date: 26-Apr-2018 18:36:17 Instrument ID: A8_N

Lims ID: 320-38054-A-2-D Lab Sample ID: 320-38054-2

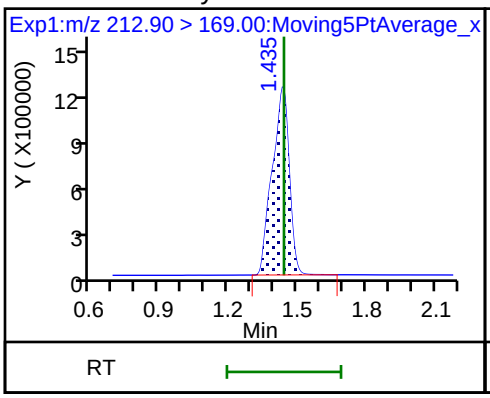
Client ID: SB003(0-2)-TOP

Operator ID: SACINSTLCMS01 ALS Bottle#: 42 Worklist Smp#: 5

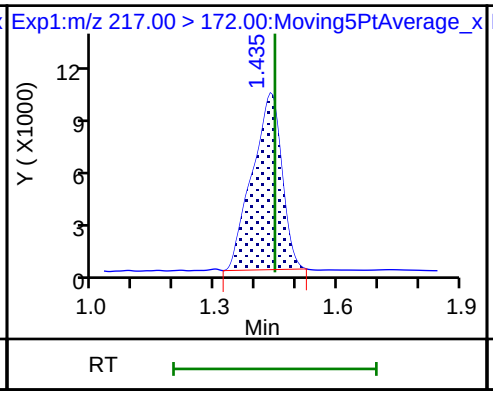
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

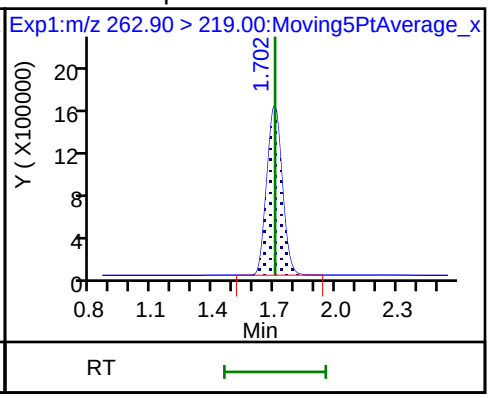
2 Perfluorobutyric acid



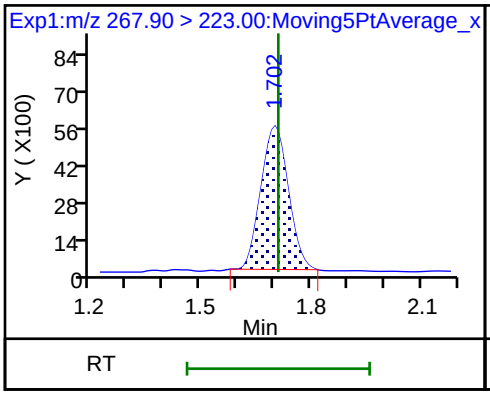
D 1 13C4 PFBA



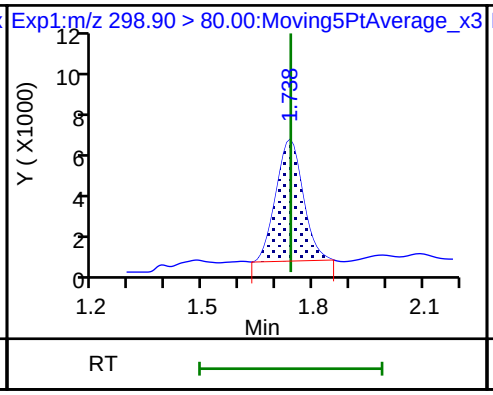
4 Perfluoropentanoic acid



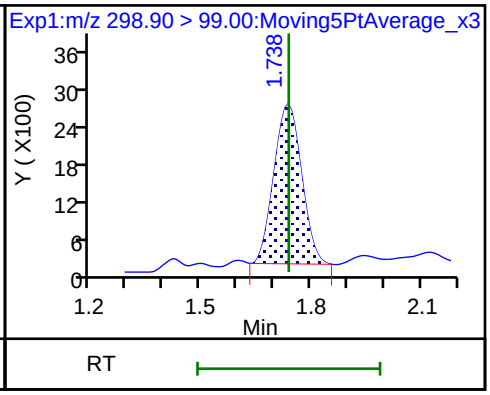
D 3 13C5-PFPeA



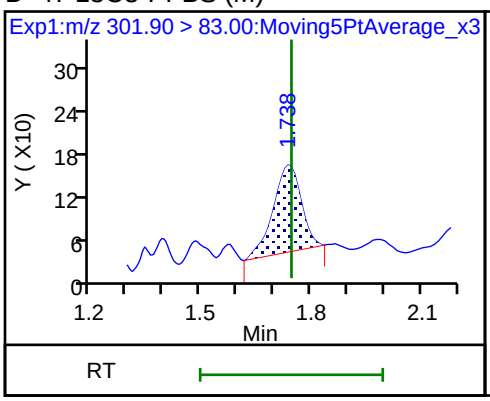
5 Perfluorobutanesulfonic acid



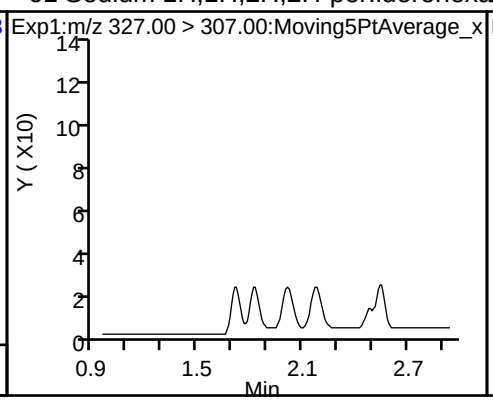
5 Perfluorobutanesulfonic acid



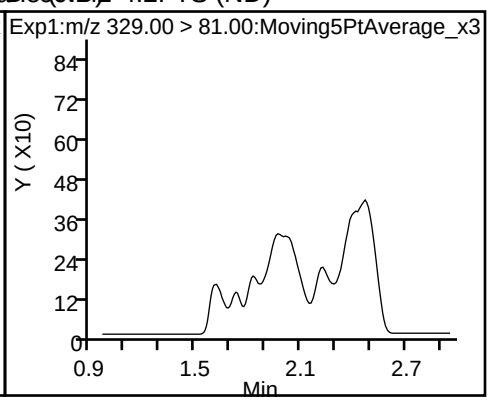
D 47 13C3-PFBS (M)



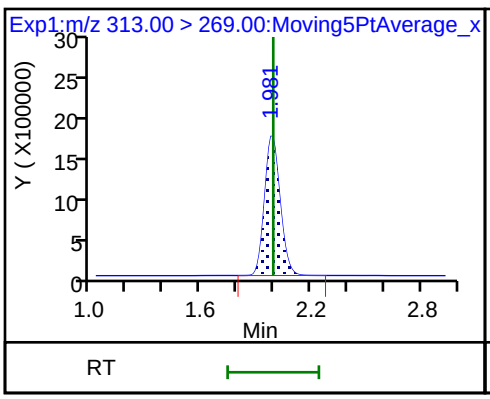
61 Sodium 1H,1H,2H,2H-perfluorohexane (NM)



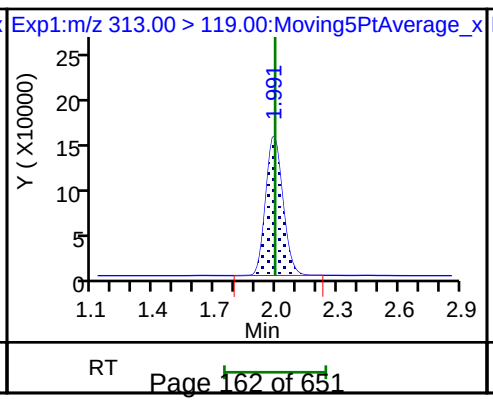
D 60 (NM) 4:2FTS (ND)



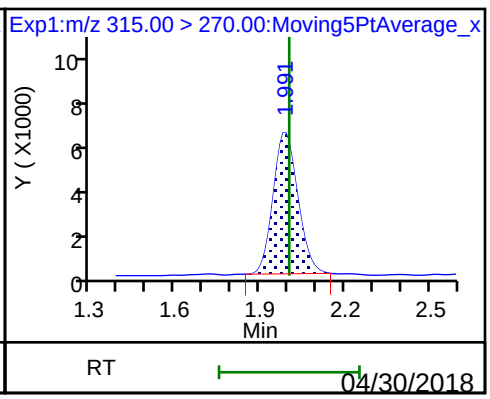
6 Perfluorohexanoic acid



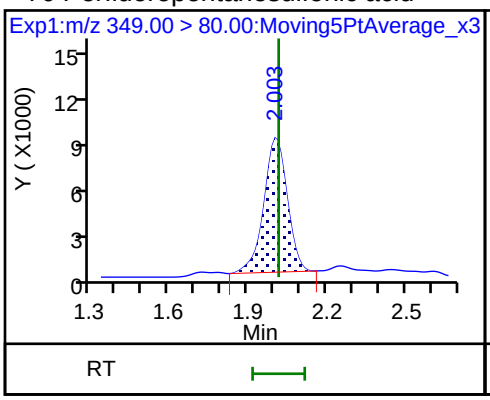
6 Perfluorohexanoic acid



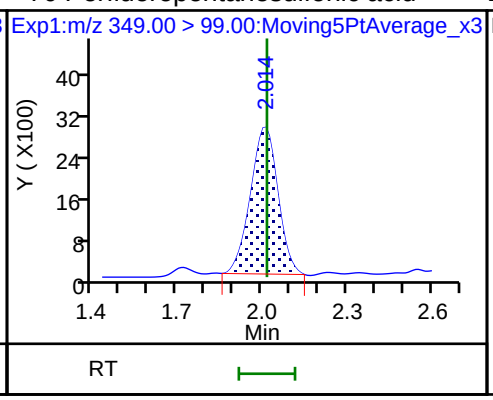
D 7 13C2 PFHxA



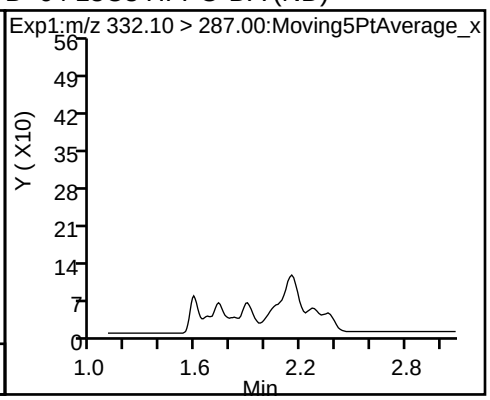
70 Perfluoropentanesulfonic acid



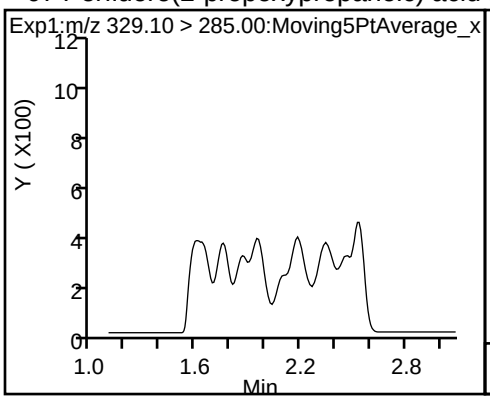
70 Perfluoropentanesulfonic acid



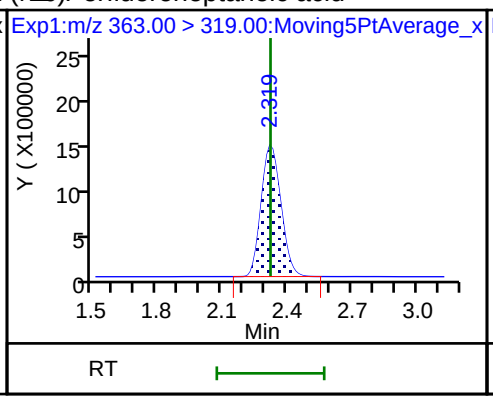
D 64 13C3 HFPO-DA (ND)



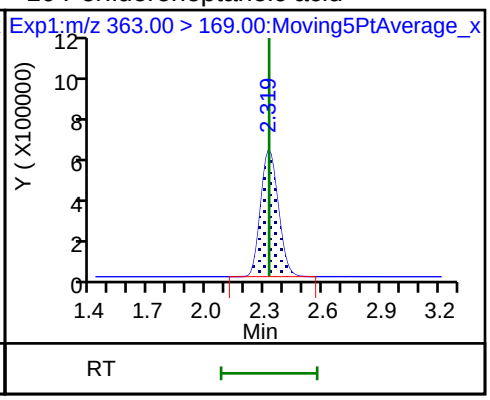
67 Perfluoro(2-propoxypropanoic) acid (ND)



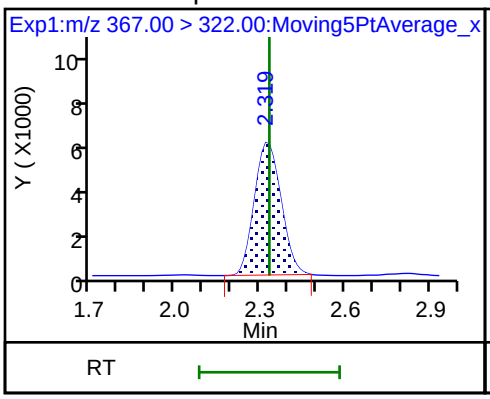
10 Perfluoroheptanoic acid



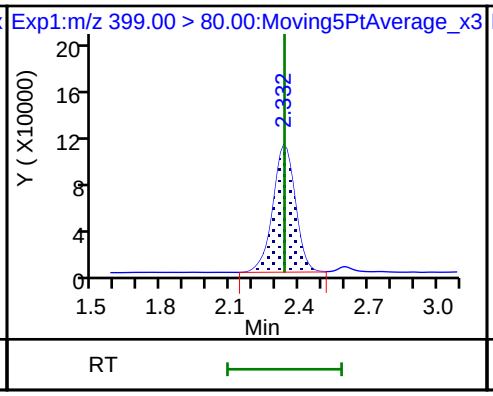
10 Perfluoroheptanoic acid



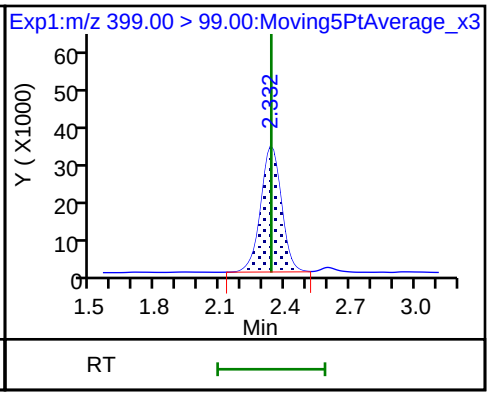
D 9 13C4-PFHpA



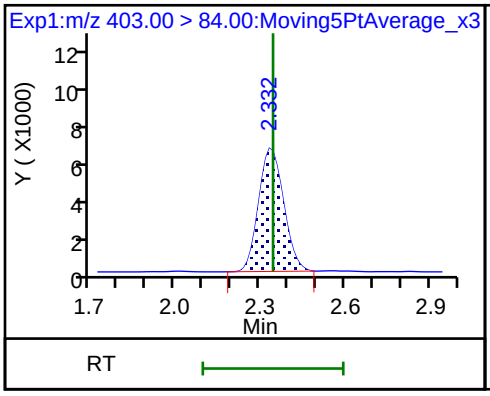
8 Perfluorohexanesulfonic acid



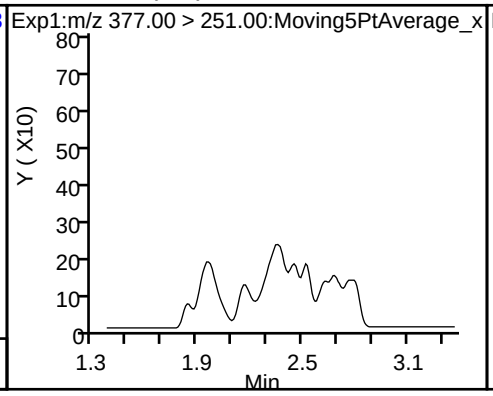
8 Perfluorohexanesulfonic acid



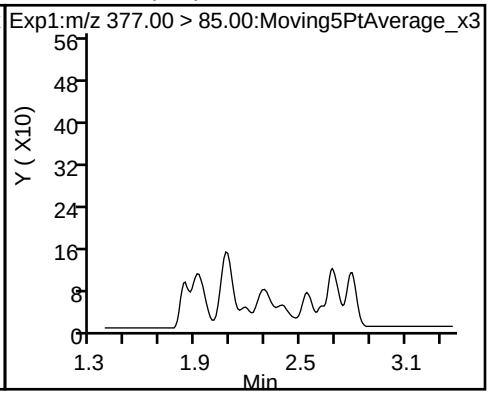
D 11 18O2 PFHxS



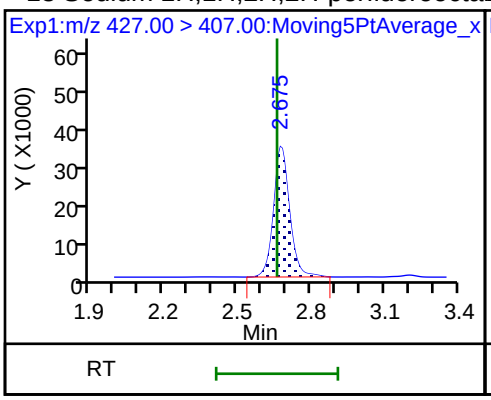
65 Adona (ND)



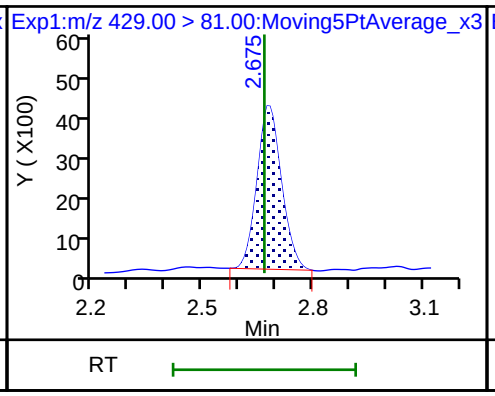
65 Adona (ND)



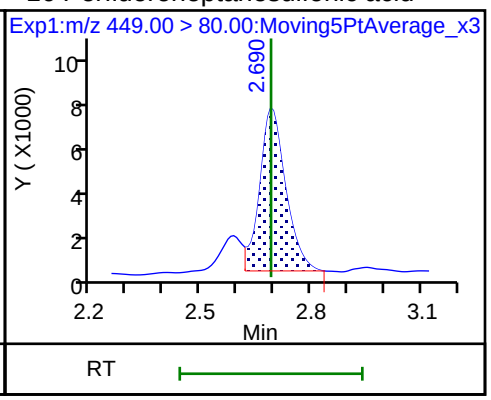
13 Sodium 1H,1H,2H,2H-perfluorooctane



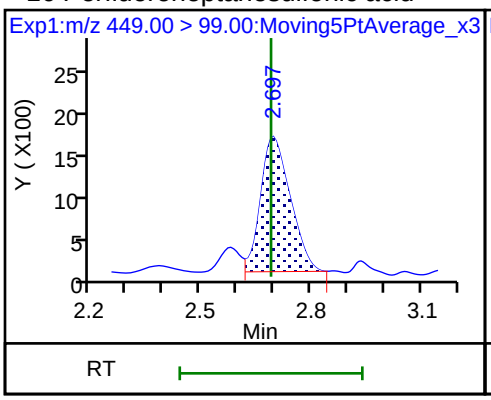
D 12 M2-6:2FTS



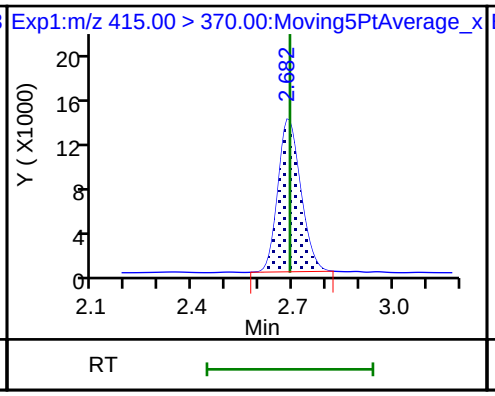
16 Perfluoroheptanesulfonic acid



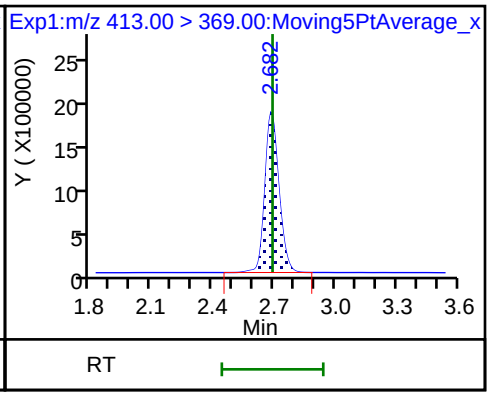
16 Perfluoroheptanesulfonic acid



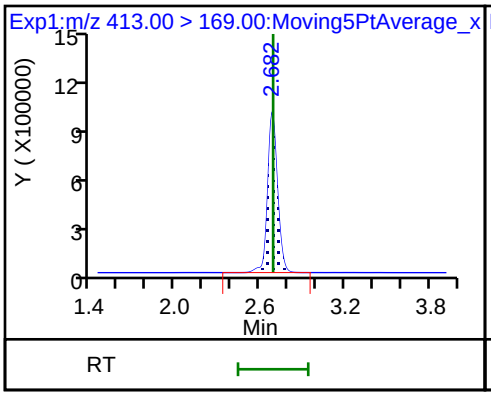
* 62 13C2-PFOA



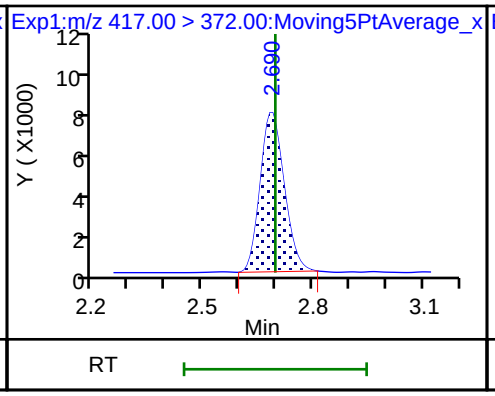
15 Perfluorooctanoic acid



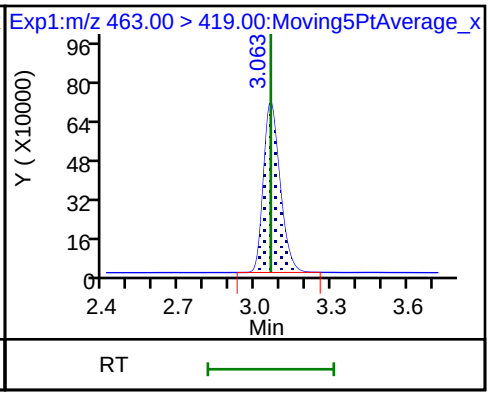
15 Perfluorooctanoic acid



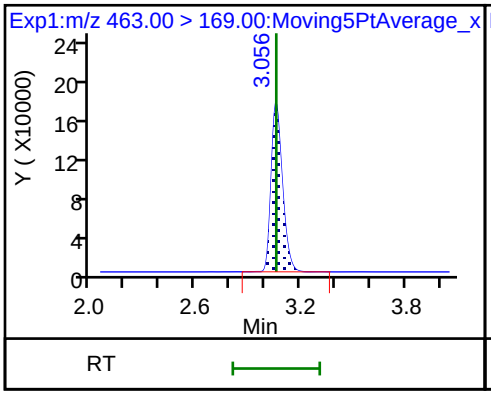
D 14 13C4 PFOA



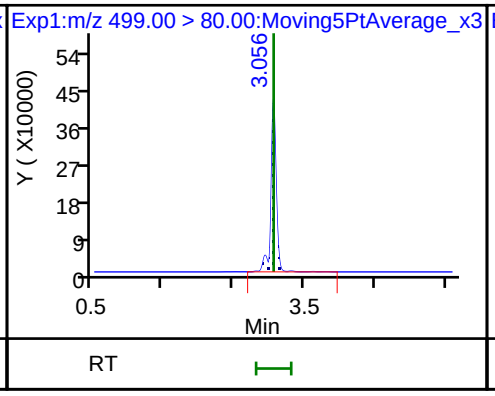
20 Perfluorononanoic acid



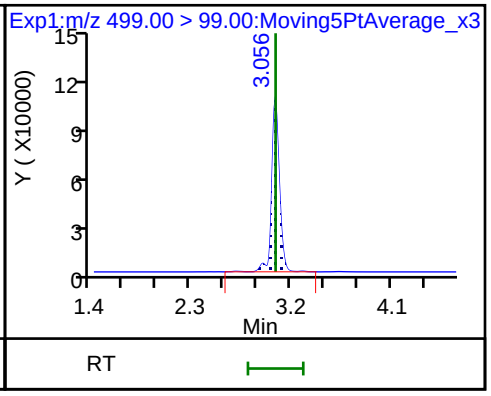
20 Perfluorononanoic acid



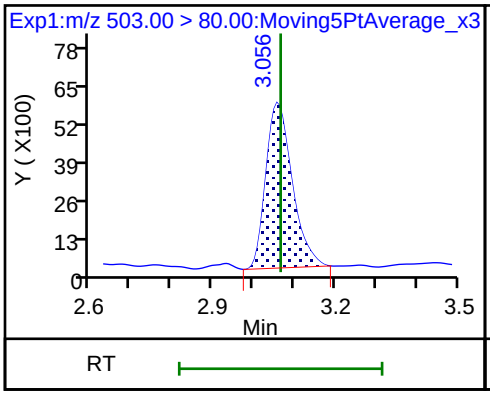
17 Perfluorooctane sulfonic acid



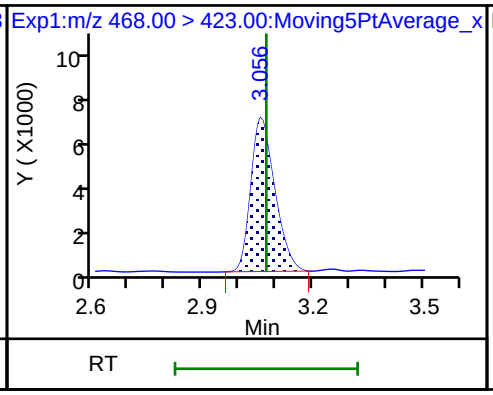
17 Perfluorooctane sulfonic acid



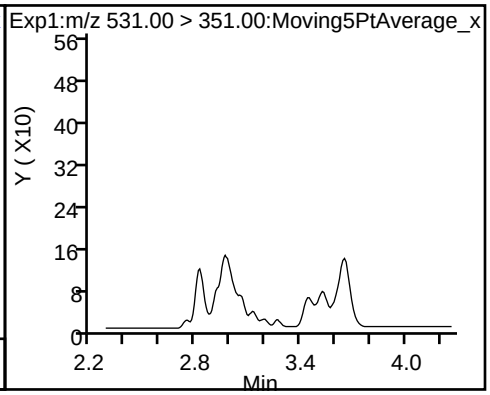
D 18 13C4 PFOS



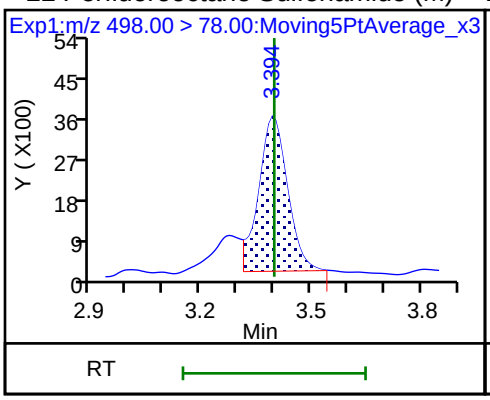
D 19 13C5 PFNA



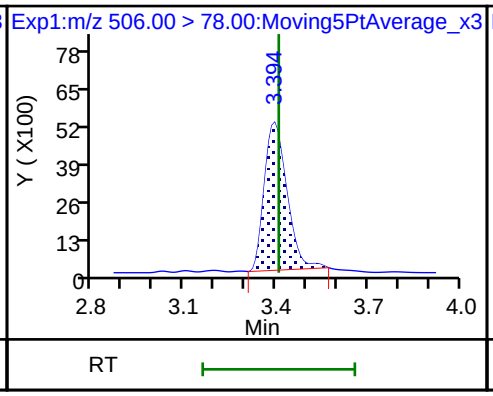
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



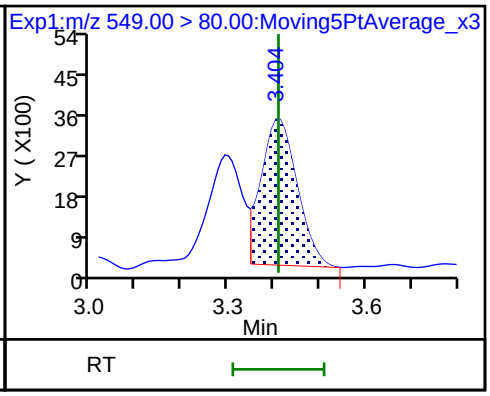
22 Perfluorooctane Sulfonamide (M)



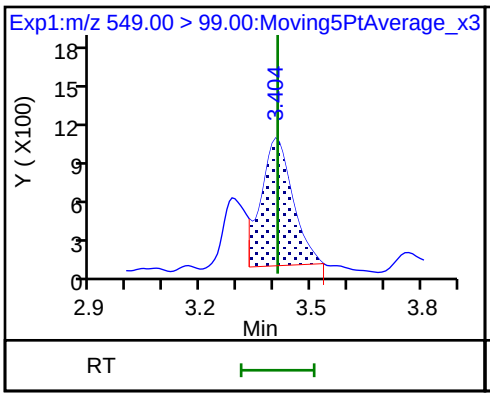
D 21 13C8 FOSA



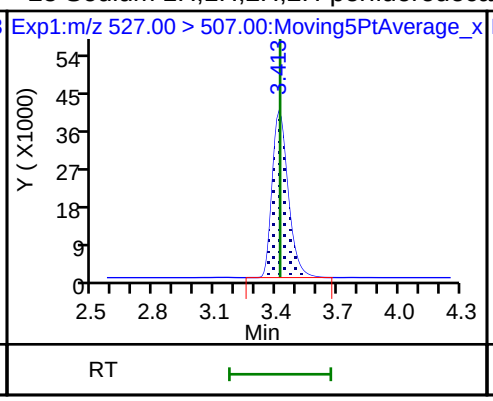
68 Perfluorononanesulfonic acid



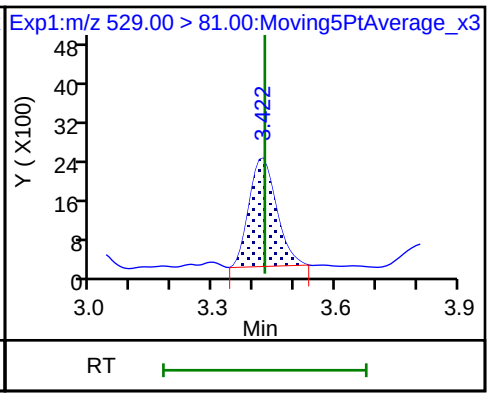
68 Perfluorononanesulfonic acid



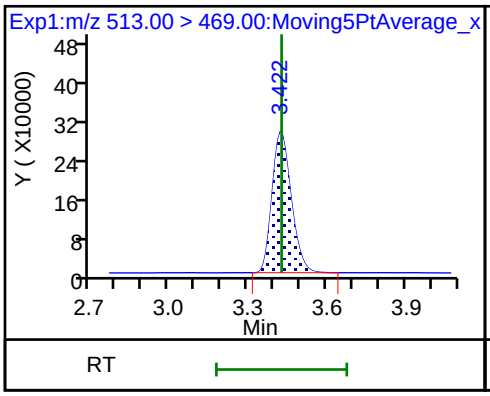
25 Sodium 1H,1H,2H,2H-perfluorodecane



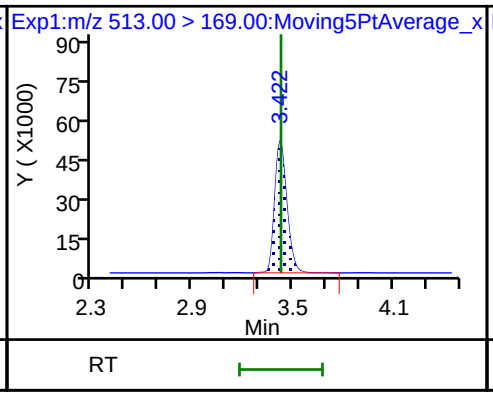
D 26 M2-8:2FTS



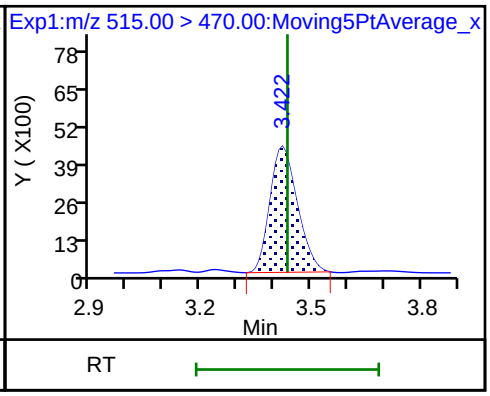
24 Perfluorodecanoic acid



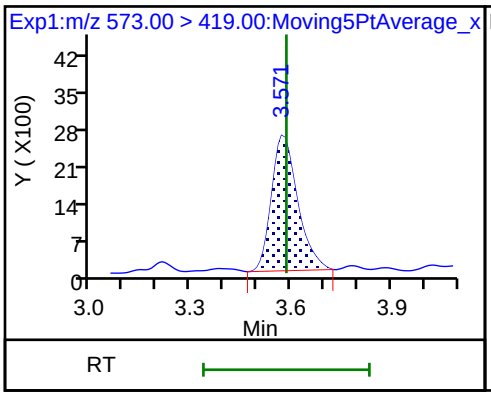
24 Perfluorodecanoic acid



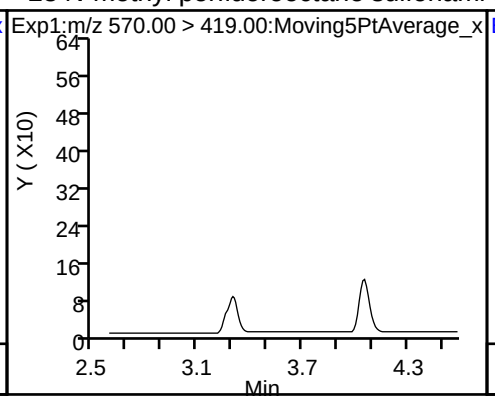
D 23 13C2 PFDA



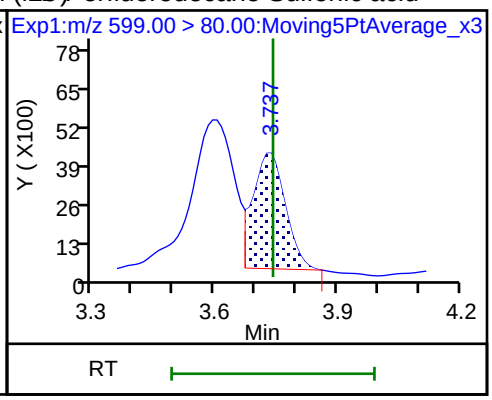
D 27 d3-NMeFOSAA



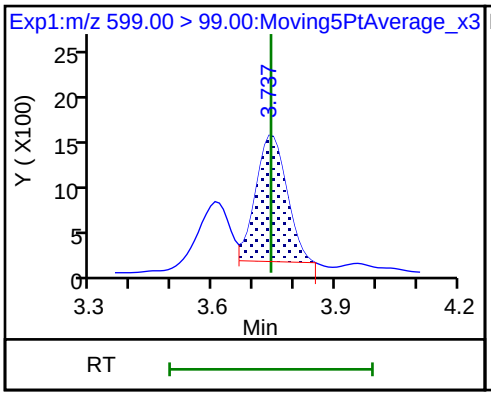
28 N-methyl perfluorooctane sulfonami (M)



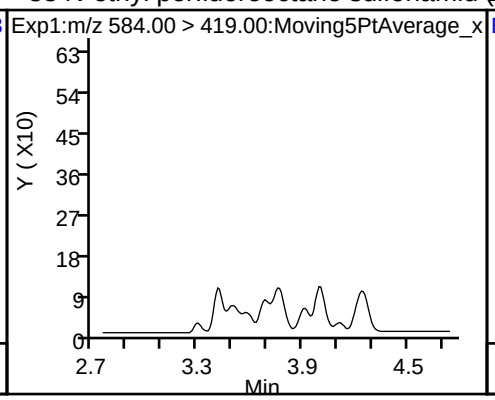
29 Perfluorodecane Sulfonic acid



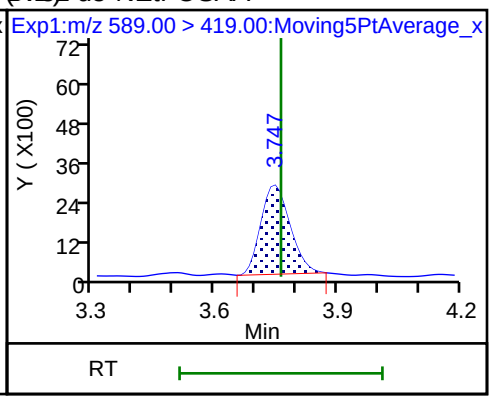
29 Perfluorodecane Sulfonic acid



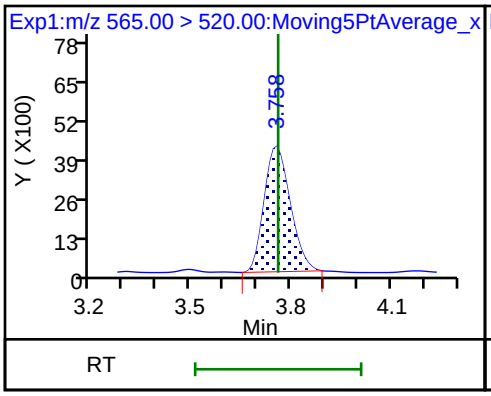
33 N-ethyl perfluorooctane sulfonamid (M)



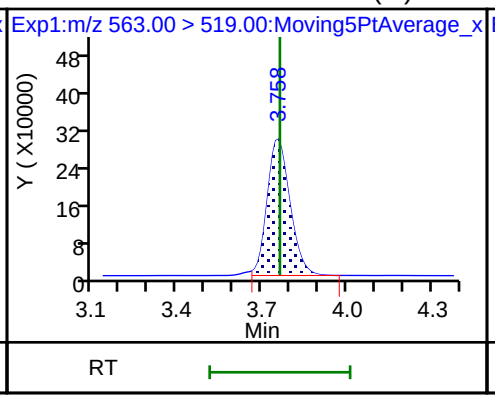
D 32 d5-NEtFOSAA



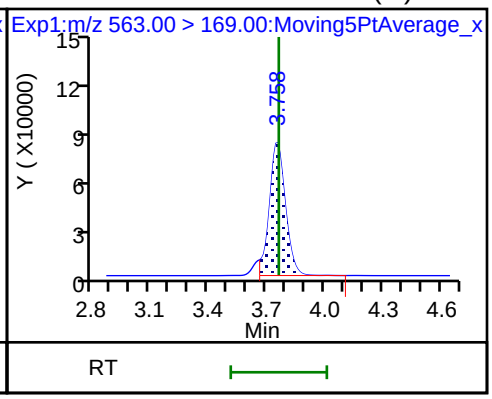
D 30 13C2 PFUnA



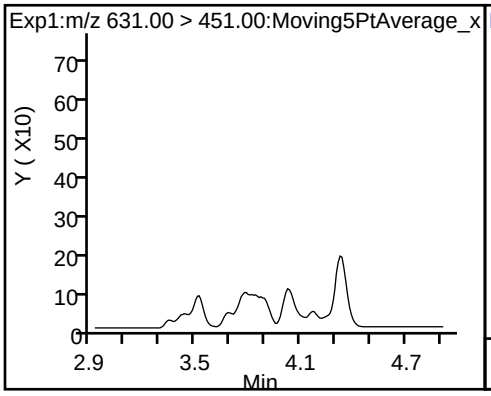
31 Perfluoroundecanoic acid (M)



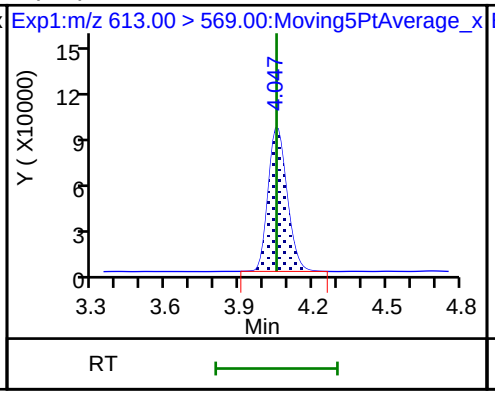
31 Perfluoroundecanoic acid (M)



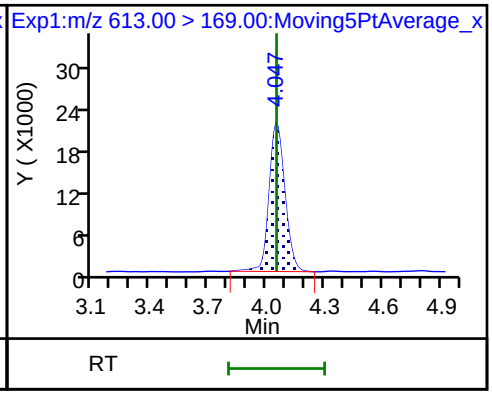
66 11-Chloroeicosafluoro-3-oxaundecan (M)



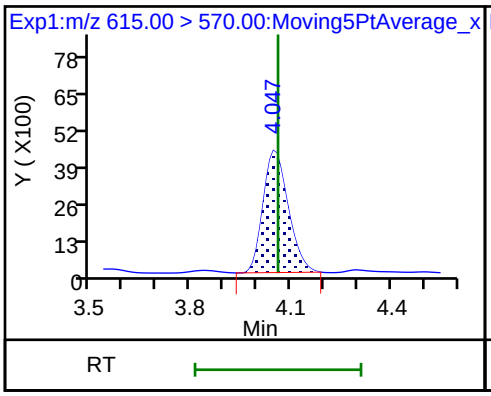
37 Perfluorododecanoic acid (M)



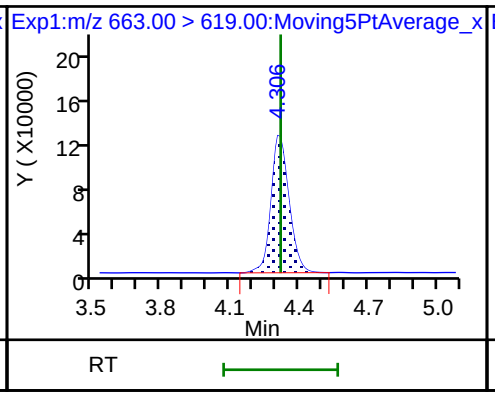
37 Perfluorododecanoic acid



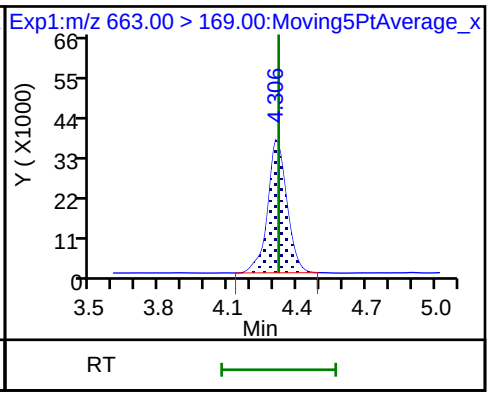
D 36 13C2 PFDoA



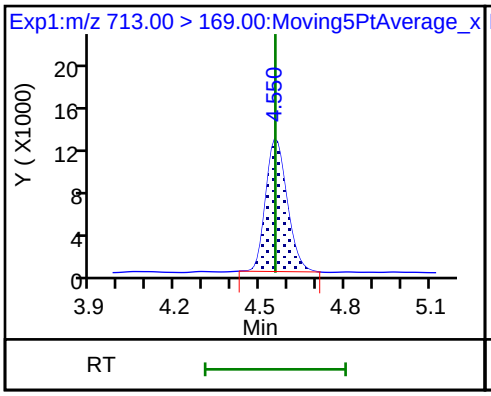
41 Perfluorotridecanoic acid



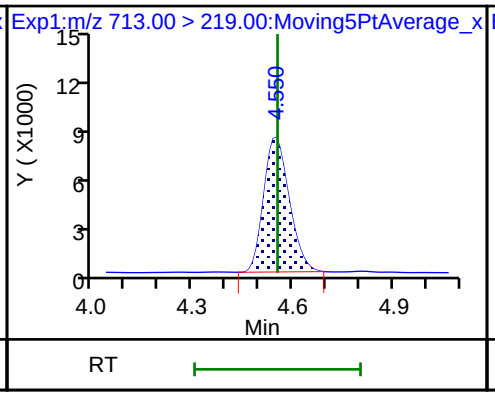
41 Perfluorotridecanoic acid



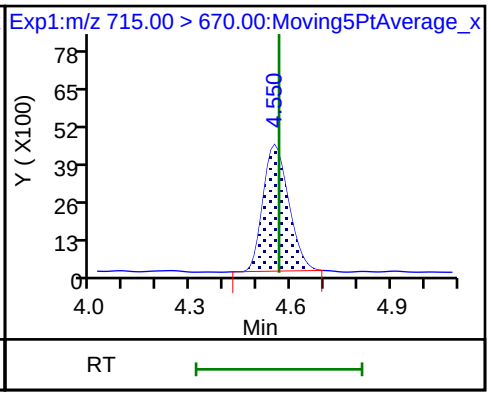
42 Perfluorotetradecanoic acid



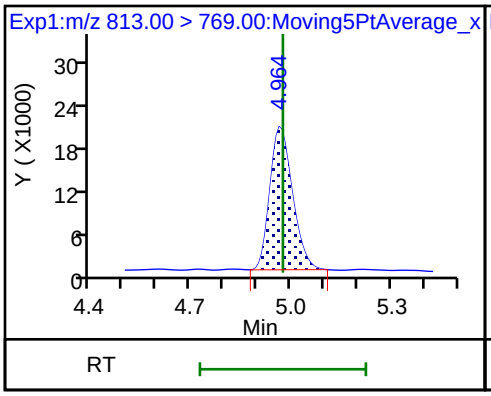
42 Perfluorotetradecanoic acid



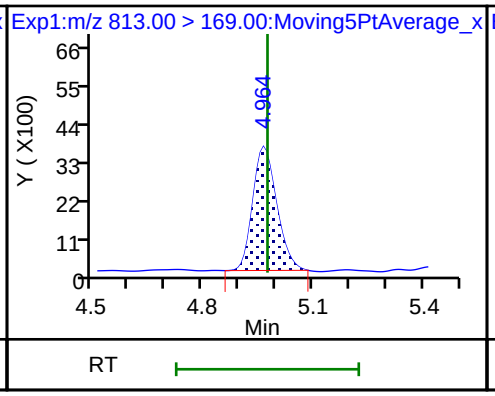
D 43 13C2-PFTeDA



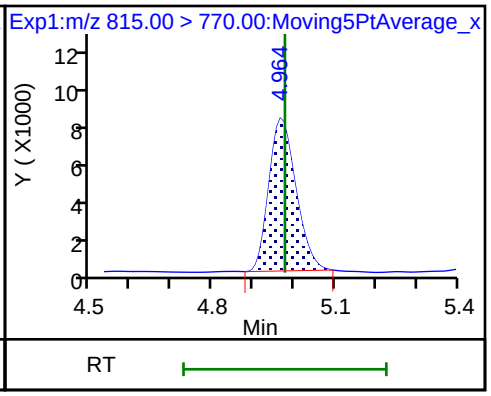
45 Perfluorohexadecanoic acid



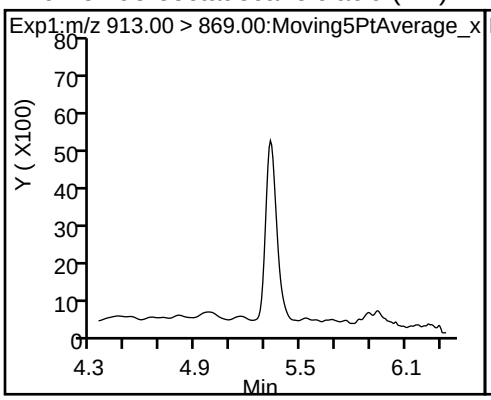
45 Perfluorohexadecanoic acid



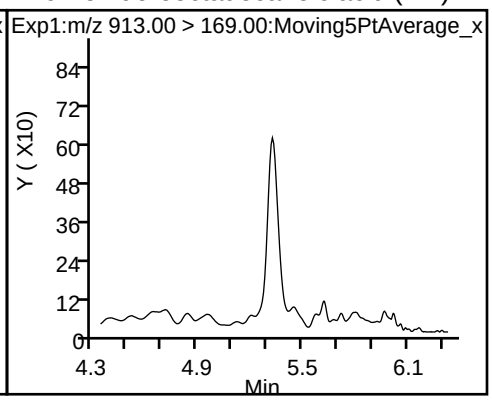
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

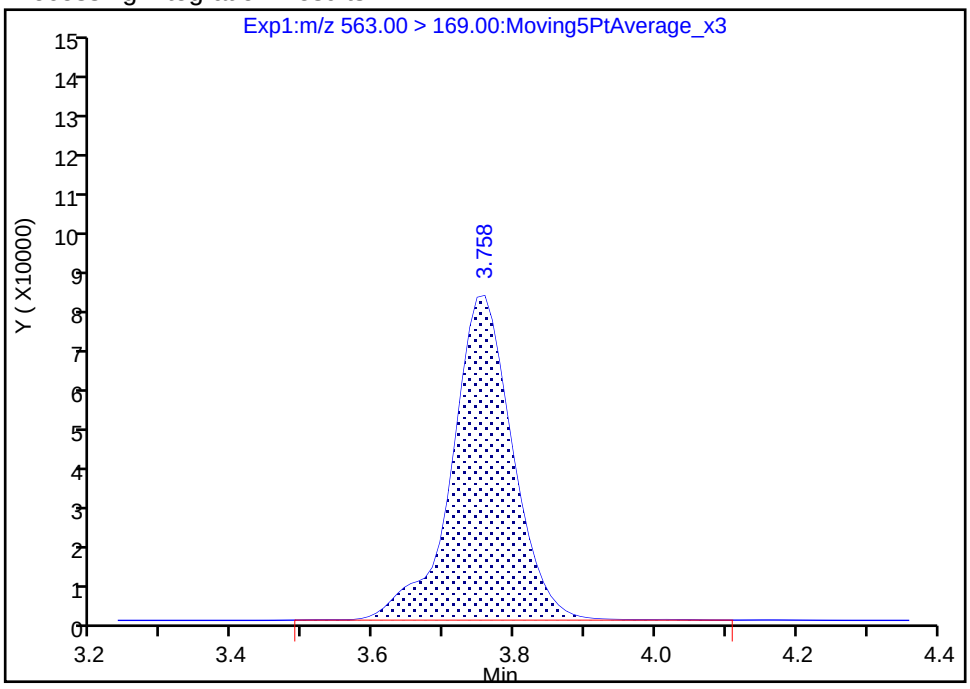
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_057.d				
Injection Date:	26-Apr-2018 18:36:17	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-D	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	42	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

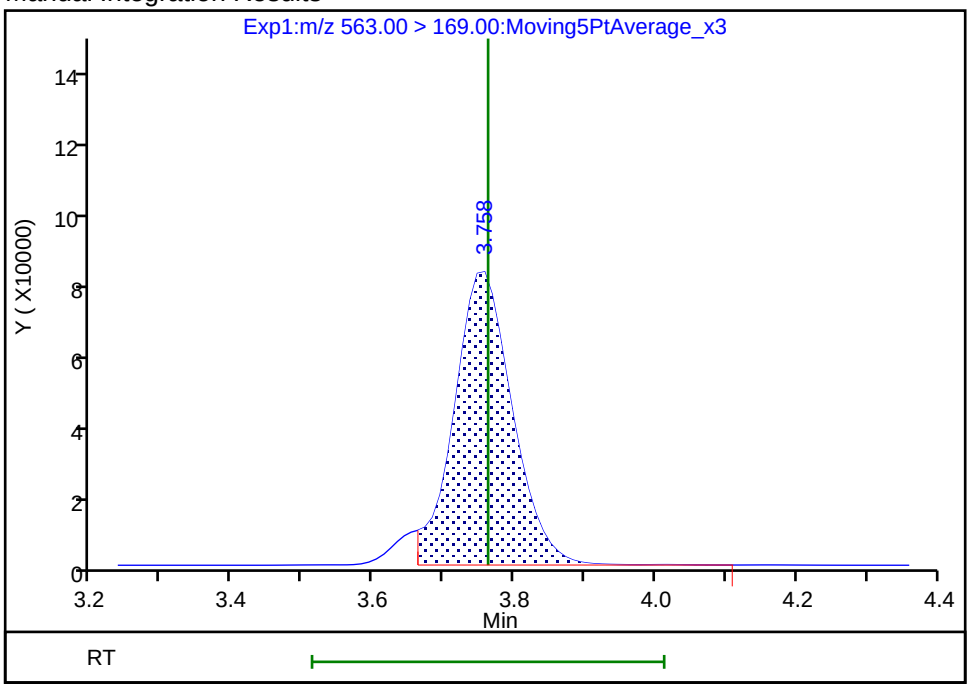
Processing Integration Results

RT: 3.76
Area: 481984
Amount: 2.164006
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 459058
Amount: 2.137095
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:30:46

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

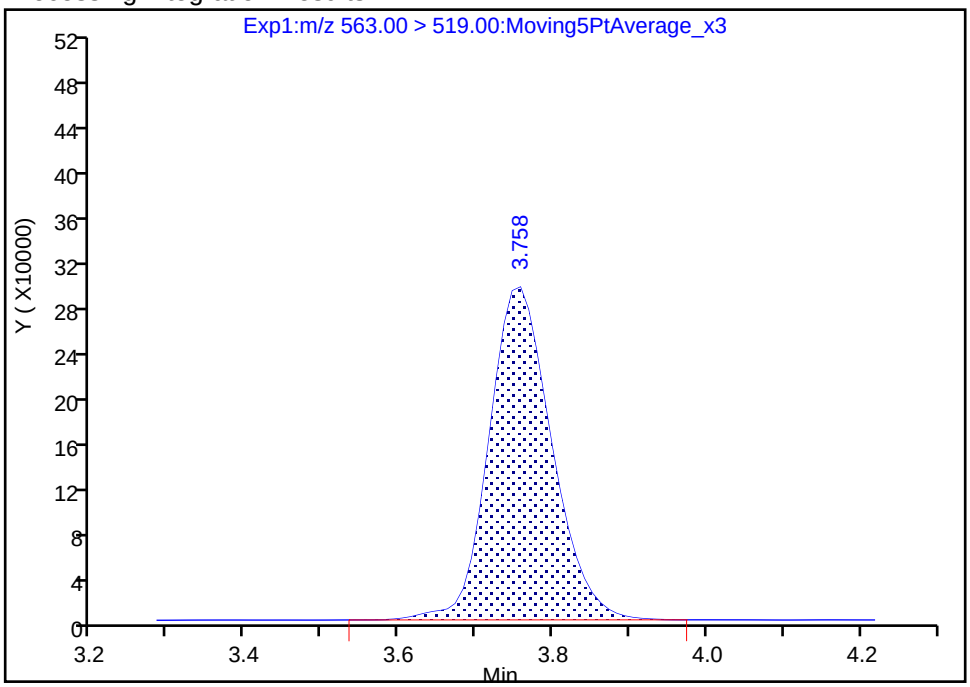
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_057.d				
Injection Date:	26-Apr-2018 18:36:17	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-D	Lab Sample ID:	320-38054-2		
Client ID:	SB003(0-2)-TOP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	42	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

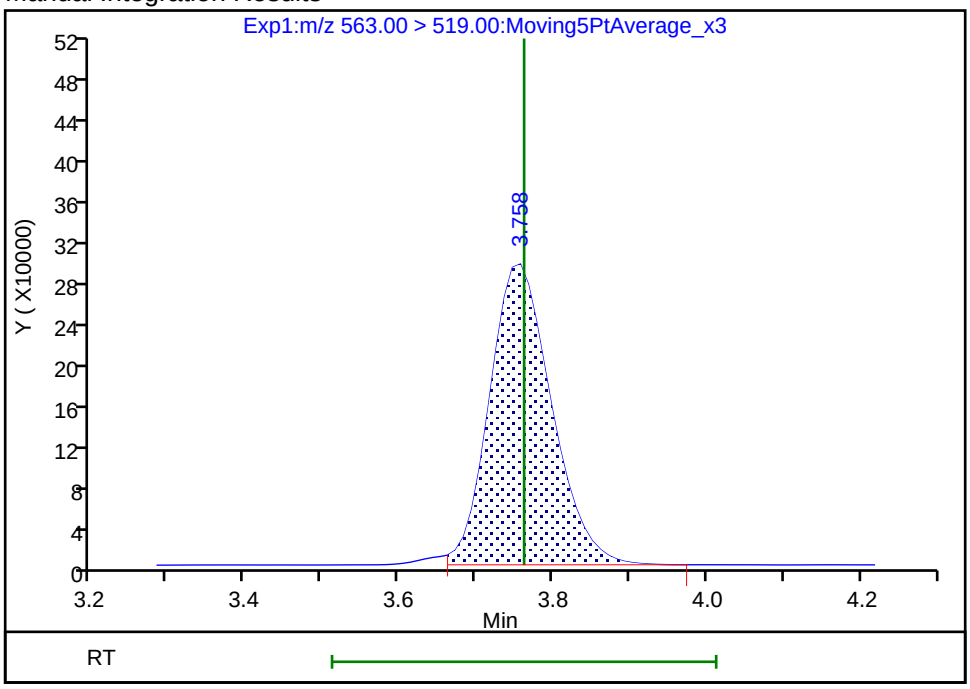
Processing Integration Results

RT: 3.76
Area: 1674521
Amount: 2.164006
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 1653697
Amount: 2.137095
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:30:48

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-217359/2	2018.04.10LLICAL_002.d
Level 2	IC 320-217359/3	2018.04.10LLICAL_003.d
Level 3	IC 320-217359/4	2018.04.10LLICAL_004.d
Level 4	IC 320-217359/5	2018.04.10LLICAL_005.d
Level 5	IC 320-217359/6	2018.04.10LLICAL_006.d
Level 6	IC 320-217359/7	2018.04.10LLICAL_007.d
Level 7	IC 320-217359/8	2018.04.10LLICAL_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9087 0.9558	0.9215 0.9254	0.9250	0.9115	0.9520	AveID		0.9286				2.0		35.0			
Perfluoropentanoic acid (PFPeA)	1.2578 1.1682	1.2108 1.1732	1.1604	1.1461	1.2257	AveID		1.1918				3.4		35.0			
Perfluorobutanesulfonic acid (PFBS)	76.893 81.717	82.786 71.544	78.801	75.066	81.197	AveID		78.286				5.2		50.0			
4:2 FTS	14.379 16.335	17.388 16.450	16.158	15.381	16.133	AveID		16.032				5.9		50.0			
Perfluorohexanoic acid (PFHxA)	0.9165 1.0971	1.0419 0.9805	0.9871	1.0324	1.0575	AveID		1.0161				5.9		35.0			
Perfluoropentanesulfonic acid (PFPeS)	72.651 73.152	73.718 66.574	72.295	69.587	72.578	AveID		71.508				3.6		50.0			
HFPO-DA (GenX)	2.6776 3.4120	2.2053 2.8850	2.9463	2.6401	2.7314	AveID		2.7854				13.1		35.0			
Perfluoroheptanoic acid (PFHpA)	0.8886 1.0632	0.8961 1.0895	1.0153	1.0044	1.0491	AveID		1.0009				7.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3313 1.0960	1.2076 1.0563	1.0824	1.0501	1.0988	AveID		1.1318				9.0		35.0			
Adona	3.4574 3.3221	3.5134 2.9110	3.4665	3.8310	3.7468	AveID		3.4640				8.7		50.0			
6:2FTS	1.5421 1.7475	1.9455 1.7701	1.5586	1.6684	1.6013	AveID		1.6905				8.5		35.0			
Perfluorooctanoic acid (PFOA)	1.2196 1.1748	1.2108 1.1155	1.1409	1.0810	1.1452	AveID		1.1554				4.3		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2050 1.3855	1.3067 1.3134	1.3594	1.3058	1.4180	AveID		1.3277				5.2		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.0579 1.1424	1.0586 1.1443	1.0560	1.0546	1.1010	AveID		1.0878				3.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	0.9233 1.1269	1.1068 1.0188	1.0452	1.0400	1.0380	AveID		1.0427				6.3		35.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate	1.6407 2.0236	1.8519 1.8739	1.8303	1.9058	2.0694	AveID		1.8851				7.4		50.0			
Perfluorononanesulfonic acid (PFNS)	0.8421 0.8194	0.8119 0.7979	0.7759	0.7194	0.8292	AveID		0.7994				5.2		50.0			
8:2FTS	1.4631 1.3212	1.2394 1.2657	1.1167	1.2298	1.2217	AveID		1.2654				8.4		35.0			
Perfluorooctane Sulfonamide (FOSA)	0.9307 1.0709	1.0441 0.9800	1.0023	1.0041	1.0484	AveID		1.0115				4.7		35.0			
Perfluorodecanoic acid (PFDA)	1.0885 0.9859	1.1057 1.0134	0.9627	1.0005	1.0643	AveID		1.0316				5.3		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9083 1.1043	0.8872 1.0603	1.0109	0.9545	1.0557	AveID		0.9973				8.3		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.5294 0.7137	0.6184 0.7022	0.6496	0.6477	0.6837	AveID		0.6492				9.6		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.7913 0.9588	0.9928 0.9829	0.9228	0.9274	0.9655	AveID		0.9345				7.3		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9440 0.8695	0.9150 0.8330	0.7542	0.7914	0.8086	AveID		0.8451				8.1		35.0			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	2.7334 2.8552	3.0246 2.5419	3.0187	3.1256	3.0878	AveID		2.9125				7.3		50.0			
Perfluorododecanoic acid (PFDoA)	1.0500 1.0844	0.9584 1.0838	1.0669	0.9590	1.0976	AveID		1.0429				5.7		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.2989 1.2824	1.2093 1.2168	1.1646	1.1001	1.2353	AveID		1.2153				5.6		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2445 0.2592	0.2707 0.2509	0.2469	0.2461	0.2397	AveID		0.2511				4.2		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.8074 0.9223	1.3282 0.9137	1.0648	0.9768	1.0014	L2ID	0.0211	0.9469							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.0226 0.9916	0.9945 0.9873	1.0118	0.9863	1.0342	AveID		1.0041				1.9		50.0			
13C4 PFBA	1.2940 1.4238	1.3269 1.4303	1.2929	1.3278	1.3223	Ave		1.3454				4.3		50.0			
13C5 PFPeA	0.8504 0.9141	0.8510 0.9065	0.8296	0.8639	0.8548	Ave		0.8672				3.6		50.0			
13C3-PFBS	0.0195 0.0202	0.0192 0.0216	0.0190	0.0203	0.0195	Ave		0.0199				4.6		50.0			
M2-4:2FTS	0.1407 0.1456	0.1400 0.1466	0.1378	0.1445	0.1424	Ave		0.1425				2.3		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFHxA	0.9705 0.9727	0.9235 1.0286	0.9450	0.9498	0.9228	Ave		0.9590				3.8		50.0			
13C3 HFPO-DA	0.0607 0.0558	0.0645 0.0590	0.0536	0.0606	0.0611	Ave		0.0593				6.1		50.0			
13C4-PFHpA	0.9512 0.9245	0.9580 0.9305	0.9001	0.9261	0.9425	Ave		0.9333				2.1		50.0			
18O2 PFHxS	1.1389 1.1679	1.1640 1.1715	1.1515	1.1448	1.1247	Ave		1.1519				1.5		50.0			
M2-6:2FTS	0.2013 0.2035	0.1892 0.1970	0.2051	0.2032	0.2005	Ave		0.2000				2.7		50.0			
13C4 PFOA	0.9343 0.9540	0.9073 0.9397	0.9043	0.9264	0.9275	Ave		0.9276				1.9		50.0			
13C4 PFOS	0.7935 0.8268	0.8168 0.8235	0.7958	0.8102	0.7798	Ave		0.8066				2.2		50.0			
13C5 PFNA	0.8203 0.7821	0.8002 0.8169	0.7761	0.7954	0.7901	Ave		0.7973				2.1		50.0			
M2-8:2FTS	0.2407 0.2360	0.2491 0.2358	0.2375	0.2469	0.2400	Ave		0.2409				2.2		50.0			
13C8 FOSA	1.0076 1.0108	1.0097 1.0199	0.9999	1.0220	0.9804	Ave		1.0072				1.4		50.0			
13C2 PFDA	0.6589 0.7306	0.6313 0.6919	0.6468	0.6894	0.6418	Ave		0.6701				5.3		50.0			
d3-NMeFOSAA	0.3521 0.3880	0.3703 0.4138	0.3721	0.3933	0.3693	Ave		0.3798				5.3		50.0			
d5-NEtFOSAA	0.3917 0.3803	0.3750 0.3593	0.3725	0.3713	0.3740	Ave		0.3749				2.6		50.0			
13C2 PFUnA	0.5883 0.5911	0.5771 0.5697	0.5957	0.5619	0.5626	Ave		0.5781				2.4		50.0			
13C2 PFDoA	0.5964 0.6225	0.6348 0.6364	0.6241	0.6615	0.5939	Ave		0.6242				3.8		50.0			
13C2-PFTeDA	0.7749 0.7948	0.7757 0.8130	0.7679	0.8272	0.7873	Ave		0.7915				2.8		50.0			
13C2-PFHxDA	1.2936 1.3188	1.2730 1.3422	1.2549	1.2935	1.2397	Ave		1.2879				2.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-217359/2	2018.04.10LLICAL_002.d
Level 2	IC 320-217359/3	2018.04.10LLICAL_003.d
Level 3	IC 320-217359/4	2018.04.10LLICAL_004.d
Level 4	IC 320-217359/5	2018.04.10LLICAL_005.d
Level 5	IC 320-217359/6	2018.04.10LLICAL_006.d
Level 6	IC 320-217359/7	2018.04.10LLICAL_007.d
Level 7	IC 320-217359/8	2018.04.10LLICAL_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	56172 13377174	112834 21784128	580880	2238331	5819896	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	51097 10497161	95082 17503102	467549	1831380	4844578	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	63156 14347107	129549 22532715	642890	2489261	6477140	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	12478 3030208	28749 5473778	139275	538908	1359770	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	42489 10489823	88785 16596765	453023	1813678	4512177	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	63317 13627914	122406 22248169	625836	2448518	6143254	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	7766 1870994	13126 2803143	76650	295687	771939	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	40376 9662627	79218 16683281	443829	1720489	4571563	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	65909 11450464	118037 18531754	550837	2023389	5199428	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
Adona		AveID	131051 26999565	264804 39451342	1339859	5740779	13509817	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
6:2FTS		AveID	14055 3314359	32205 5439954	147222	594490	1407564	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	54434 11016957	101372 17251700	501075	1852208	4910933	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	43482 10719572	93755 16945821	500192	1862796	4867309	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	37213 8615775	74043 14391699	378769	1466540	3684174	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	36180 8663453	81721 13696835	394004	1529838	3792206	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate		AveID	57962 15327887	130088 23669204	659333	2661617	6954333	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	30641 6392773	58744 10381596	287902	1034931	2870093	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2FTS		AveID	16119 2936296	27294 4704229	123407	537990	1298898	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorooctane Sulfonamide (FOSA)		AveID	44800 10640158	97271 16450280	486733	1898032	4752476	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanoic acid (PFDA)		AveID	34262 7080425	64415 11538792	302427	1275776	3158094	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	15277 4211279	30316 7221428	182686	694281	1802851	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	19344 5591516	44930 9173589	242056	935700	2376399	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	14805 3584245	34358 5812610	166943	636880	1669717	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	26530 5051597	48726 7810732	218231	822546	2103252	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate		AveID	97600 21858692	214741 32450794	1099095	4412145	10487942	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	29913 6635970	56140 11350274	323392	1173427	3013785	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	37004 7847307	70835 12743041	353030	1346073	3391923	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	9052 2025257	19373 3357209	92073	376531	872520	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	111692 11955765	156018 20182542	648936	2337041	5739538	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	63194 12855038	116814 21808387	616691	2359770	5927518	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6181350 6997865	6122262 5884851	6279614	6139471	6113537	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4062250 4492903	3926283 3729652	4029236	3994638	3952401	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	86409 92353	82315 82834	85829	87216	83922	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	627830 668373	603123 563434	625222	623892	615130	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4636047 4780636	4260718 4231897	4589544	4391788	4266668	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PFOA	Ave	290038 274179	297607 242908	260156	279991	282614	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4-PFHpA	13PF OA	Ave	4543661 4543925	4420246 3828332	4371595	4282212	4357585	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5146760 5430236	5080567 4559710	5290521	5007633	4919272	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PF OA	Ave	913336 950305	829435 769923	946554	892700	880882	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	4463374 4688766	4186198 3866213	4391971	4283435	4288230	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	3623690 3884830	3602676 3239063	3695054	3581436	3447017	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3918358 3844023	3691890 3361051	3769499	3677661	3653281	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2FTS	13PF OA	Ave	1101720 1111203	1101099 929210	1105113	1093693	1063168	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C8 FOSA	13PF OA	Ave	4813462 4967723	4658336 4196317	4856180	4725832	4533137	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	3147491 3590754	2912736 2846573	3141564	3187733	2967373	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1681961 1906740	1708589 1702670	1807153	1818526	1707705	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1870983 1869135	1730407 1478400	1809132	1716798	1729345	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2810450 2905024	2662627 2344065	2893419	2598322	2601195	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2848895 3059706	2928766 2618174	3031255	3058842	2745849	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	3701548 3906384	3578927 3344927	3729686	3824690	3639964	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	6179539 6481798	5873165 5522067	6094708	5981114	5731595	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-Apr-2018 18:39:37 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:50:57 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:12:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.432	1.431	0.001	1.000	6181350	2.40		96.2	51986	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.432	1.432	0.0	1.000	56172	0.0245		97.9	31.7	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.706	1.699	0.007	1.000	51097	0.0264		106	41.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.706	1.699	0.007	0.560	4062250	2.45		98.1	95308	
D 47 13C3-PFBS										
301.90 > 83.00	1.742	1.735	0.007	1.000	86409	2.27		97.7	767	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.736	0.006	1.000	63156	0.0217		98.2	279	
298.90 > 99.00	1.742	1.736	0.006	1.000	27507		2.30(1.25-3.74)	98.2	389	
D 60 M2-4:2FTS										
329.00 > 81.00	1.953	1.950	0.003	1.000	627830	2.31		98.7	7913	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.953	1.950	0.003	1.000	12478	0.0209		89.7	710	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.985	0.001	1.000	4636047	2.53		101	101202	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.985	0.001	1.000	42489	0.0225		90.2	86.3	
313.00 > 119.00	1.986	1.985	0.001	1.000	5567		7.63(5.03-15.10)	90.2	74.7	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.008	2.008	0.0	1.000	63317	0.0238		102	545	
349.00 > 99.00	2.008	2.008	0.0	1.000	22154		2.86(1.36-4.07)	102	547	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.087	2.084	0.003	1.000	290038	2.56		102	7460	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.087	2.087	0.0	1.000	7766	0.0240		96.1	49.1	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.313	2.314	-0.001	1.000	40376	0.0222		88.8	47.6	
363.00 > 169.00	2.313	2.314	-0.001	1.000	16255		2.48(1.13-3.40)	88.8	62.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.313	2.314	-0.001	1.000	4543661	2.55		102	82661	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.326	2.323	0.003	1.000	65909	0.0268		118	260	
399.00 > 99.00	2.326	2.323	0.003	1.000	23111		2.85(1.50-4.49)	118	253	
D 11 18O2 PFHxS										
403.00 > 84.00	2.326	2.327	-0.001	1.000	5146760	2.34		98.9	93287	
65 Adona										
377.00 > 251.00	2.366	2.360	0.006	1.000	131051	0.0250		99.8	1983	
377.00 > 85.00	2.352	2.360	-0.008	0.994	76139		1.72(0.84-2.53)	99.8	2103	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.648	2.649	-0.001	1.000	14055	0.0216		91.2	251	
D 12 M2-6:2FTS										
429.00 > 81.00	2.648	2.649	-0.001	1.000	913336	2.39		101	13873	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.673	0.006	1.000	4463374	2.52		101	72271	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.679	2.674	0.005	1.000	54434	0.0264		106	31.2	
413.00 > 169.00	2.679	2.674	0.005	1.000	29641		1.84(0.84-2.52)	106	116	M
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.674	0.005		4776998	2.50			72796	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.679	2.680	-0.001	1.000	43482	0.0216		90.8	413	
449.00 > 99.00	2.686	2.680	0.006	1.003	12993		3.35(1.94-5.82)	90.8	376	
D 18 13C4 PFOS										
503.00 > 80.00	3.039	3.041	-0.002	1.000	3623690	2.35		98.4	29511	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.039	3.042	-0.003	1.000	37213	0.0226		97.3	125	
499.00 > 99.00	3.039	3.042	-0.003	1.000	9288		4.01(2.31-6.93)	97.3	122	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.046	3.043	0.003	1.000	36180	0.0221		88.6	86.3	
463.00 > 169.00	3.046	3.043	0.003	1.000	9677		3.74(1.90-5.69)	88.6	183	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.045	0.001	1.000	3918358	2.57		103	96245	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.253	3.253	0.0	1.000	57962	0.0203		87.0	1598	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.389	3.388	0.001	1.000	30641	0.0253		105	390	
549.00 > 99.00	3.389	3.388	0.001	1.000	9777		3.13(1.33-3.97)	105	297	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.390	-0.001	1.000	1101720	2.39		99.9	9765	
25 Sodium 1H,1H,2H,2H-perfluorodecane										M
527.00 > 507.00	3.398	3.393	0.005	1.003	16119	0.0277		116	867	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.397	0.001	1.000	4813462	2.50		100	67909	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.401	0.006	1.003	44800	0.0230		92.0	1056	
D 23 13C2 PFDA										
515.00 > 470.00	3.398	3.401	-0.003	1.000	3147491	2.46		98.3	66677	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.402	0.005	1.003	34262	0.0264		106	145	
513.00 > 169.00	3.407	3.402	0.005	1.003	5026		6.82(2.36-7.09)	106	79.2	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.557	3.553	0.004	1.000	1681961	2.32		92.7	20302	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.557	3.558	-0.001	1.000	15277	0.0228		91.1	111	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.719	3.715	0.004	1.000	19344	0.0197		81.5	163	
599.00 > 99.00	3.708	3.715	-0.007	0.997	6967		2.78(1.39-4.16)	81.5	357	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.719	3.722	-0.003	1.000	1870983	2.61		104	18488	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.730	3.727	0.003	1.003	14805	0.0212		84.7	220	
D 30 13C2 PFUnA										
565.00 > 520.00	3.730	3.727	0.003	1.000	2810450	2.54		102	70104	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.730	3.727	0.003	1.000	26530	0.0279		112	97.5	
563.00 > 169.00	3.730	3.727	0.003	1.000	6718		3.95(2.12-6.36)	112	163	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.886	3.883	0.003	1.000	97600	0.0221		93.9	2230	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.017	0.002	1.000	2848895	2.39		95.5	25147	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.020	-0.001	1.000	29913	0.0252		101	33.4	
613.00 > 169.00	4.019	4.020	-0.001	1.000	6518		4.59(2.13-6.40)	101	83.8	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.281	4.278	0.003	1.000	37004	0.0267		107	34.1	
663.00 > 169.00	4.281	4.278	0.003	1.000	11098		3.33(1.25-3.76)	107	130	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.511	4.513	-0.002	1.000	3701548	2.45		97.9	26989	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.513	0.008	1.002	9052	0.0243		97.4	86.8	
713.00 > 219.00	4.511	4.513	-0.002	1.000	5901		1.53(0.71-2.13)	97.4	99.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.913	4.918	-0.005	1.000	6179539	2.51		100	17318	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.922	4.920	0.002	1.002	111692	0.0254		102	37.2	
813.00 > 169.00	4.913	4.920	-0.007	1.000	18001		6.20(2.86-8.58)	102	160	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.262	5.268	-0.006	1.000	63194	0.0255		102	18.7	
913.00 > 169.00	5.262	5.268	-0.006	1.000	7131		8.86(3.83-11.48)	102	64.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:50:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d

Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N

Lims ID: IC L1 Full

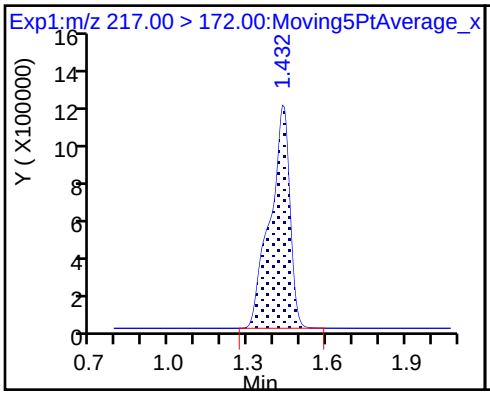
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

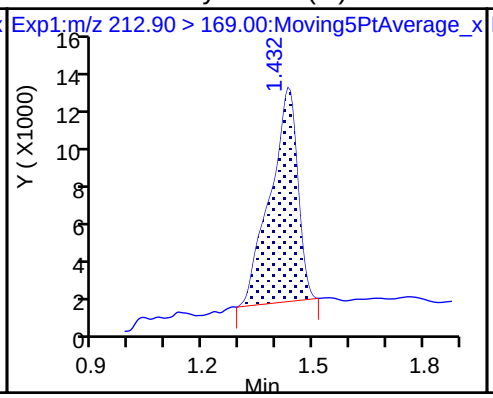
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

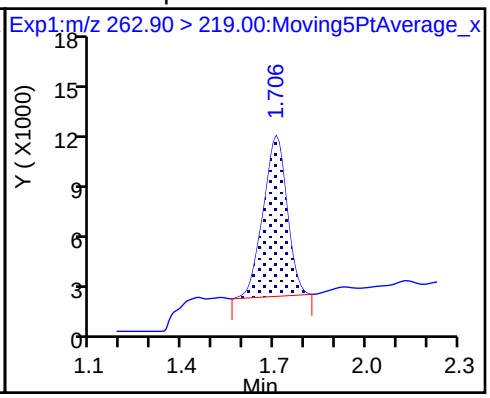
D 1 13C4 PFBA



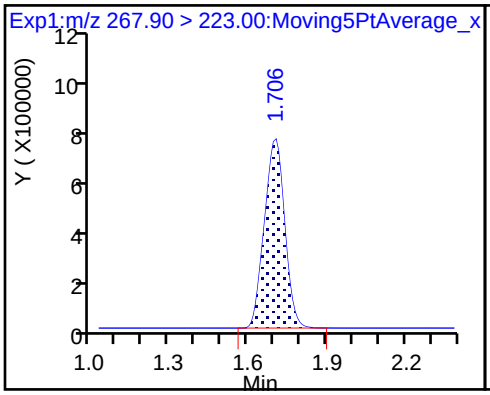
2 Perfluorobutyric acid (M)



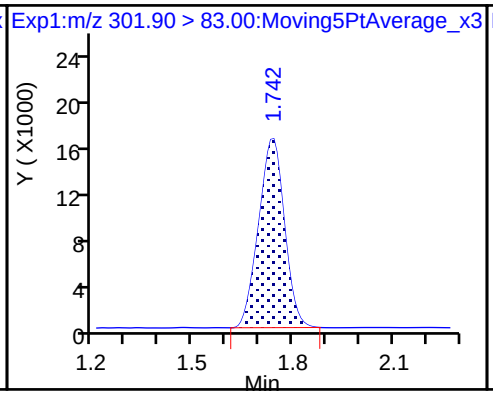
4 Perfluoropentanoic acid



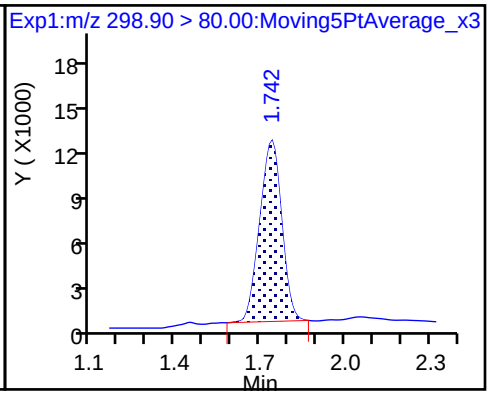
D 3 13C5-PFPeA



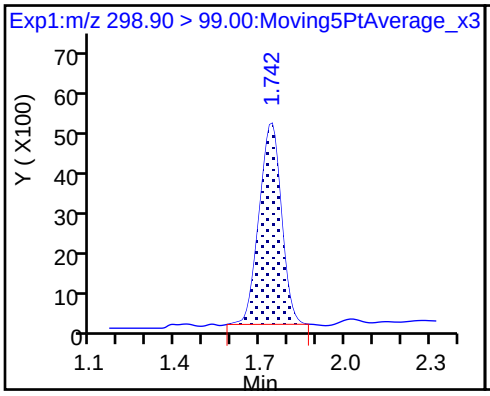
D 47 13C3-PFBS



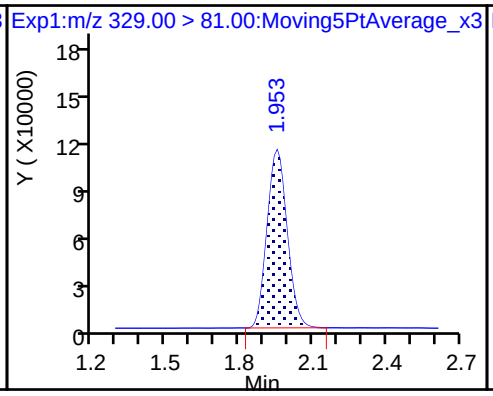
5 Perfluorobutanesulfonic acid



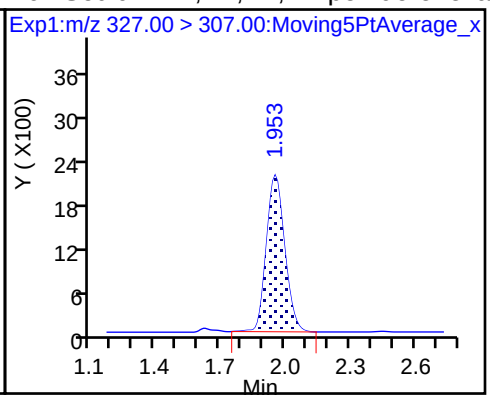
5 Perfluorobutanesulfonic acid



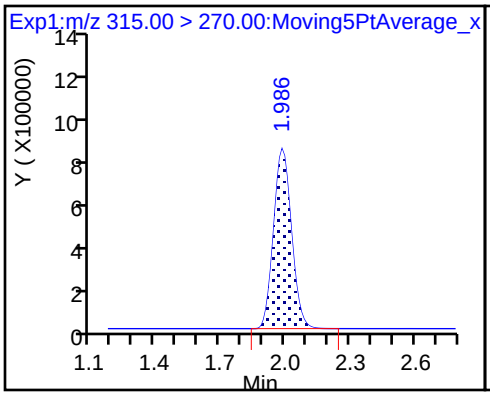
D 60 M2-4:2FTS



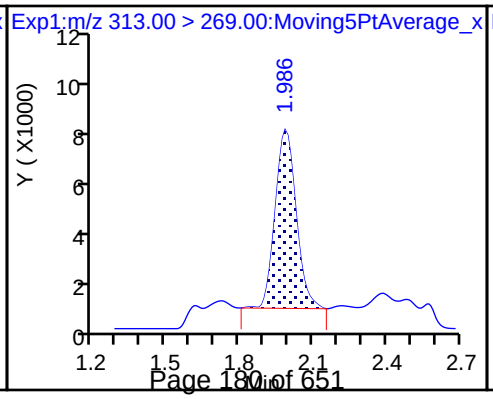
61 Sodium 1H,1H,2H,2H-perfluorohexane



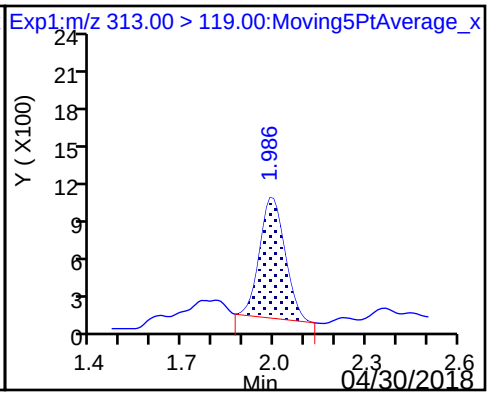
D 7 13C2 PFHxA



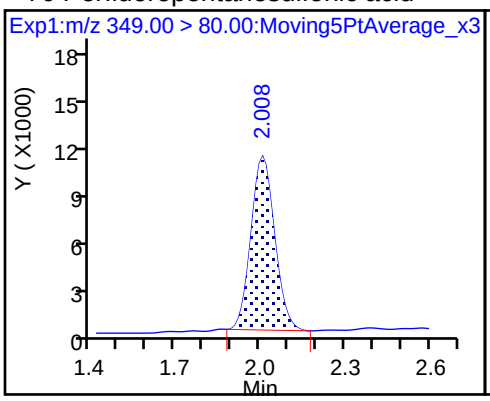
6 Perfluorohexanoic acid



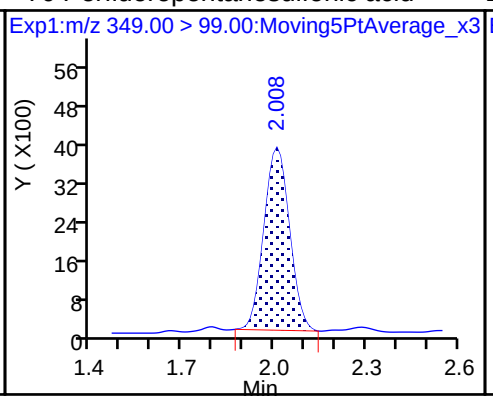
6 Perfluorohexanoic acid



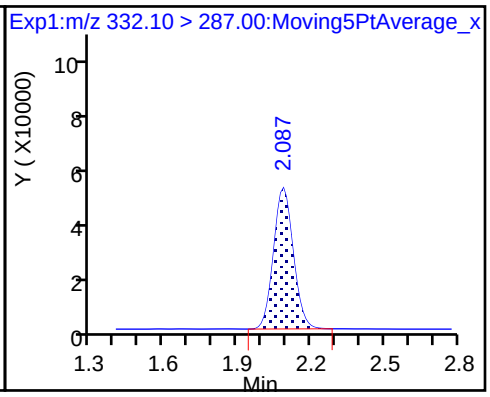
70 Perfluoropentanesulfonic acid



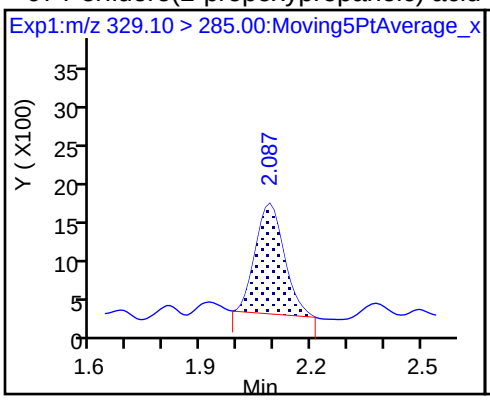
70 Perfluoropentanesulfonic acid



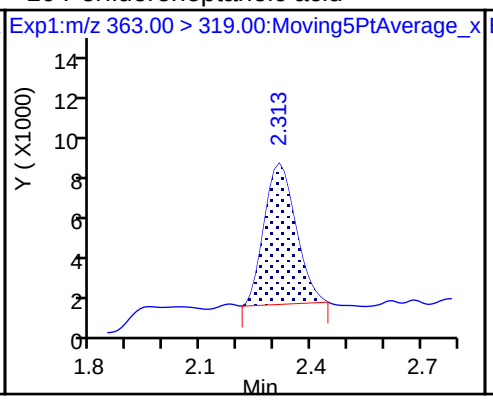
D 64 13C3 HFPO-DA



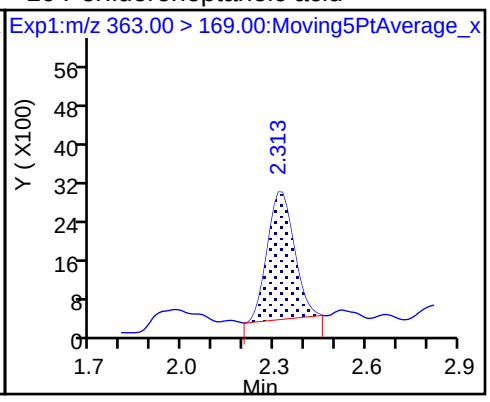
67 Perfluoro(2-propoxypropanoic) acid



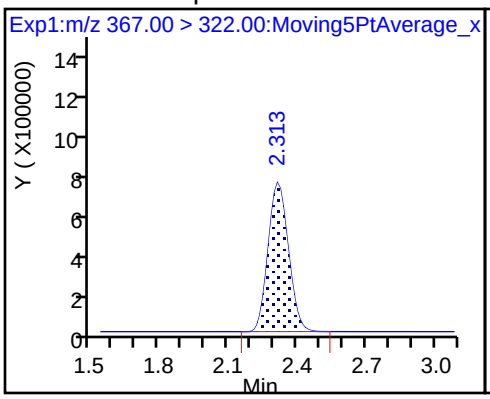
10 Perfluoroheptanoic acid



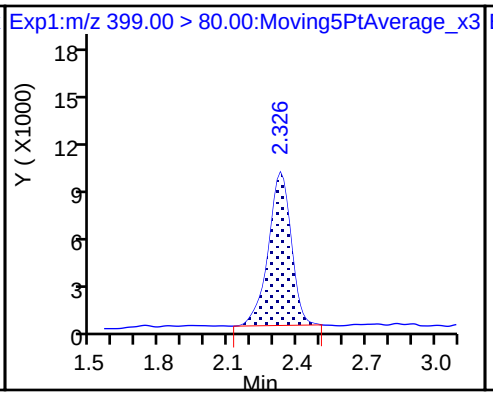
10 Perfluoroheptanoic acid



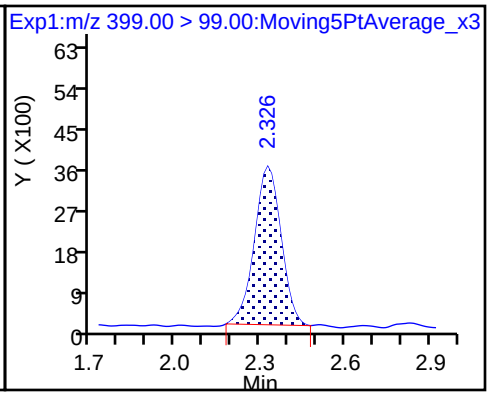
D 9 13C4-PFHpA



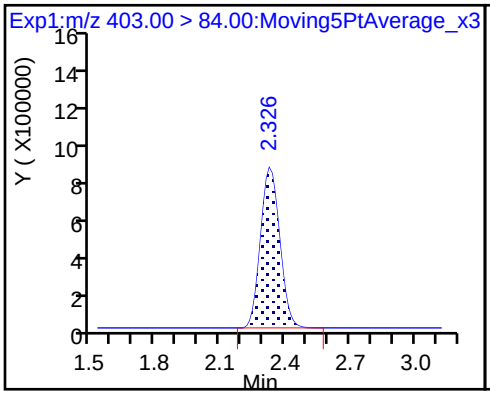
8 Perfluorohexanesulfonic acid



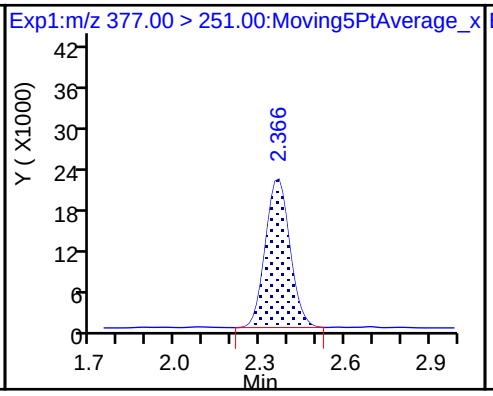
8 Perfluorohexanesulfonic acid



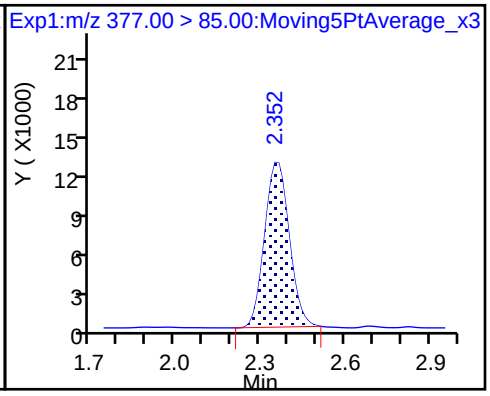
D 11 18O2 PFHxS



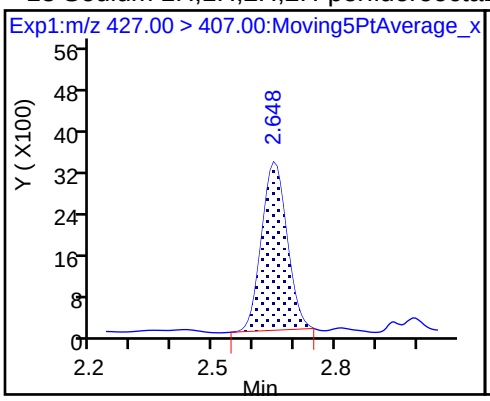
65 Adona



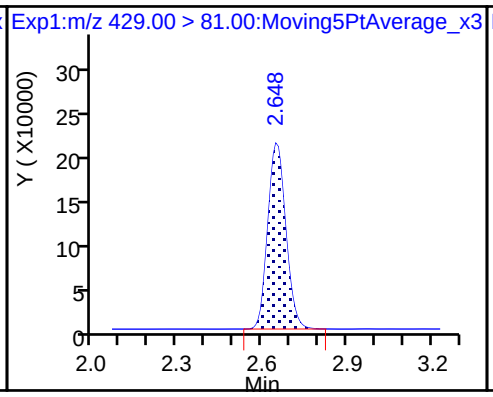
65 Adona



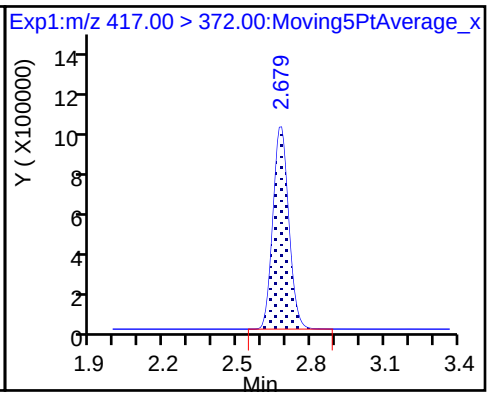
13 Sodium 1H,1H,2H,2H-perfluorooctane



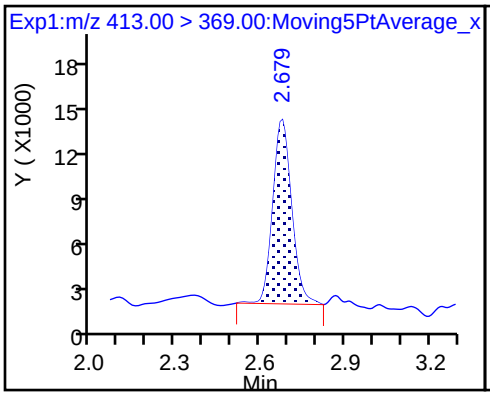
D 12 M2-6:2FTS



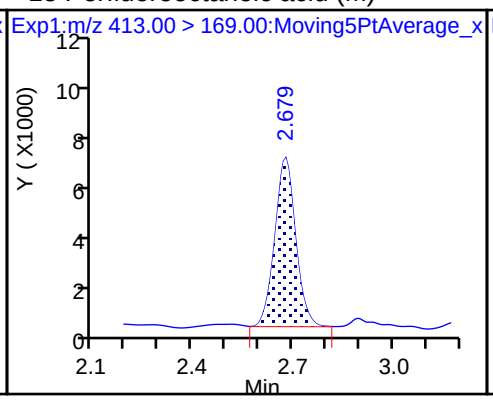
D 14 13C4 PFOA



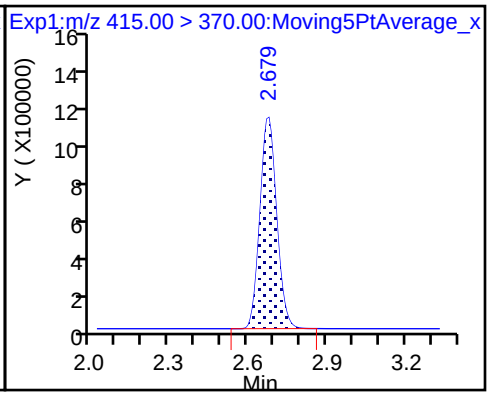
15 Perfluorooctanoic acid



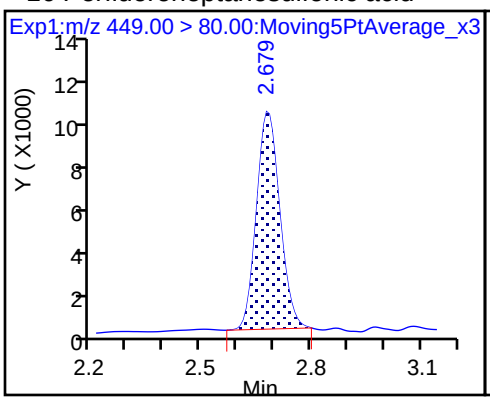
15 Perfluorooctanoic acid (M)



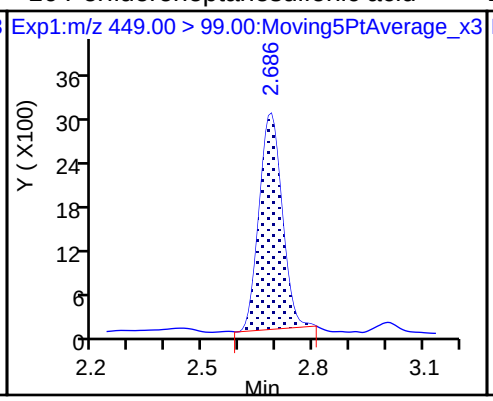
* 62 13C2-PFOA



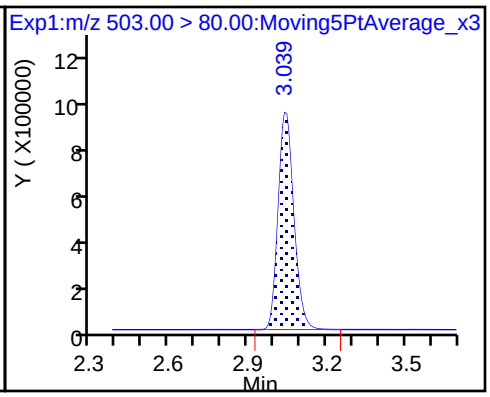
16 Perfluoroheptanesulfonic acid



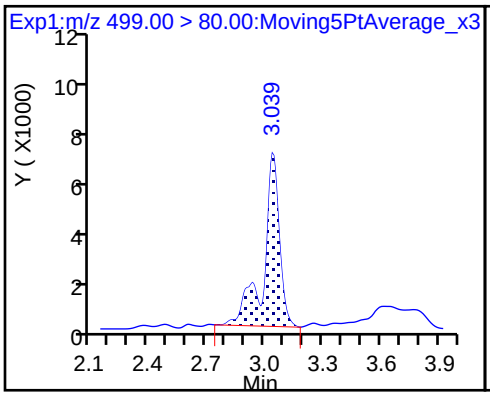
16 Perfluoroheptanesulfonic acid



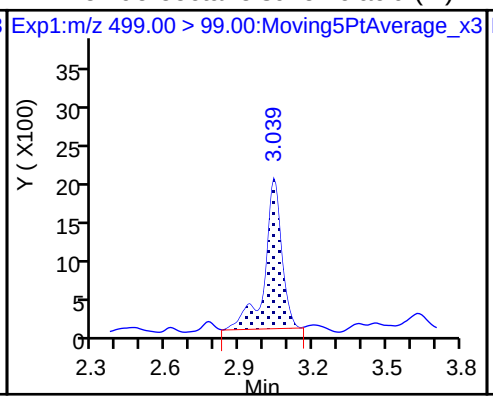
D 18 13C4 PFOS



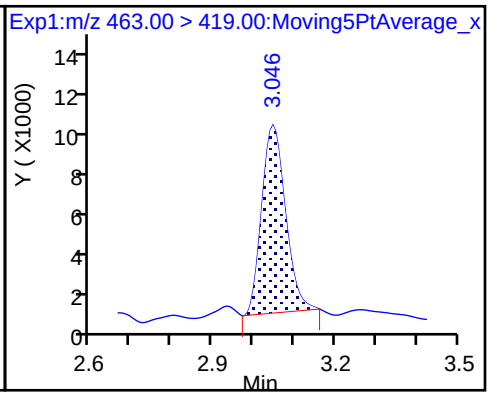
17 Perfluorooctane sulfonic acid



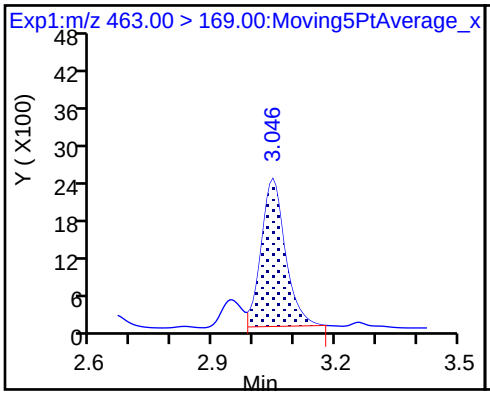
17 Perfluorooctane sulfonic acid (M)



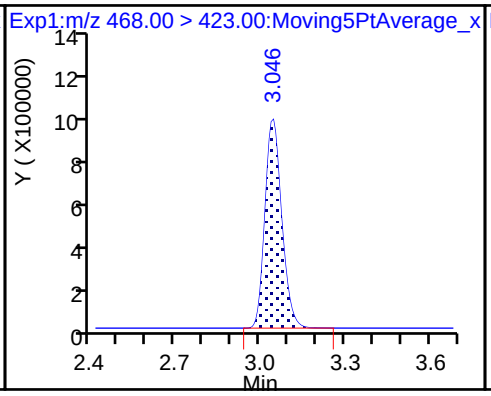
20 Perfluorononanoic acid



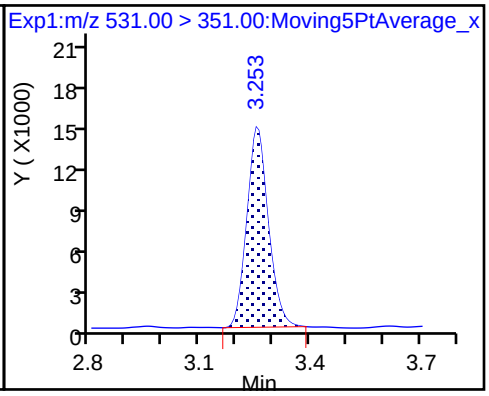
20 Perfluorononanoic acid



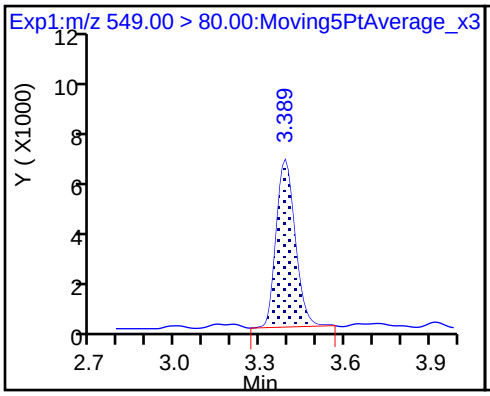
D 19 13C5 PFNA



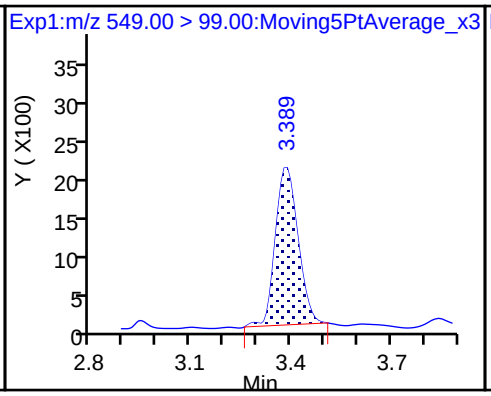
69 9-Chlorohexadecafluoro-3-oxanonane



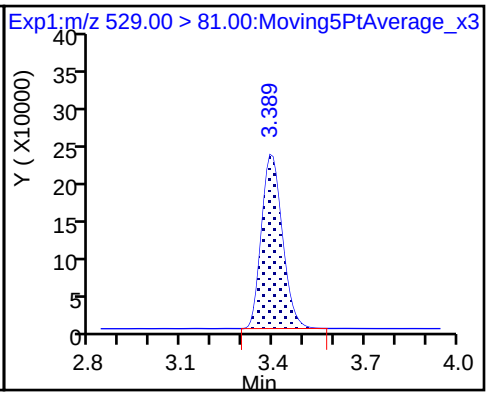
68 Perfluorononanesulfonic acid



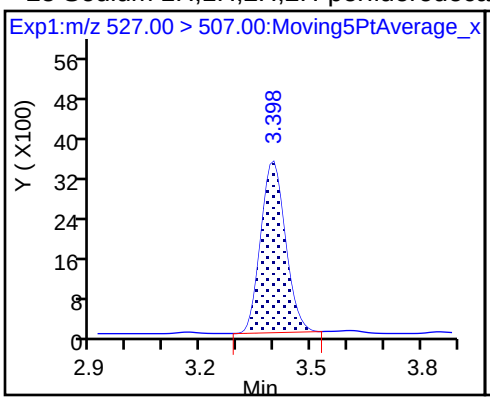
68 Perfluorononanesulfonic acid



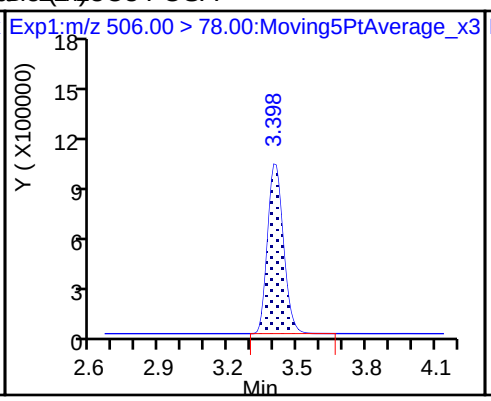
D 26 M2-8:2FTS



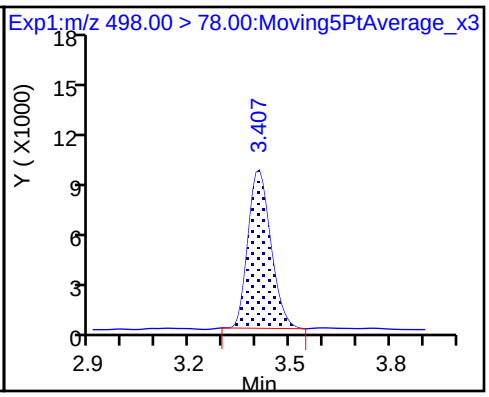
25 Sodium 1H,1H,2H,2H-perfluorodecane(1)



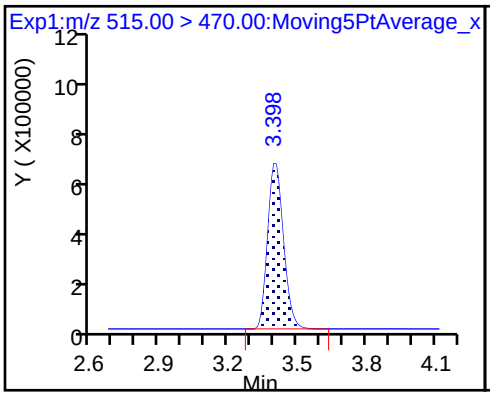
D 21 13C8 FOSA



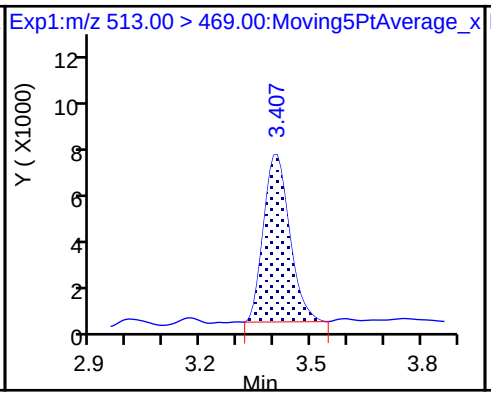
22 Perfluorooctane Sulfonamide



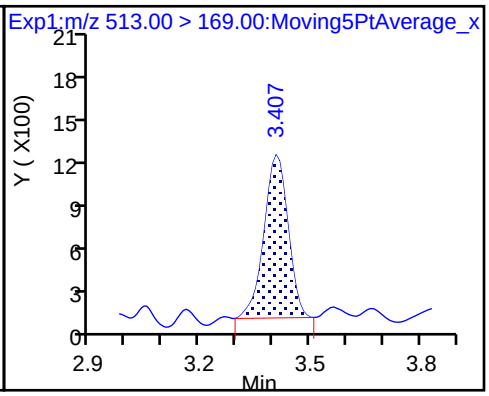
D 23 13C2 PFDA



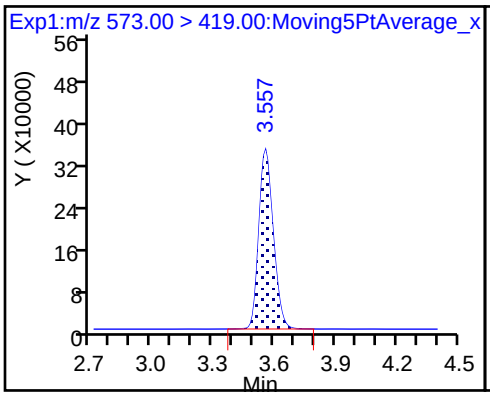
24 Perfluorodecanoic acid



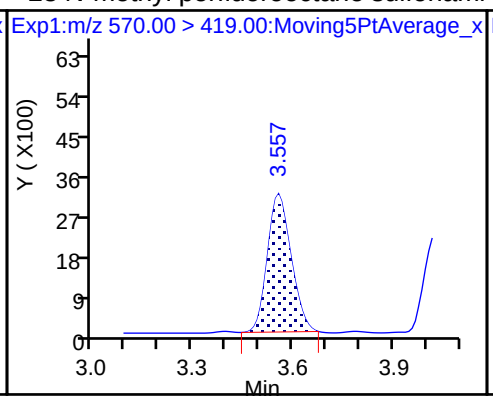
24 Perfluorodecanoic acid



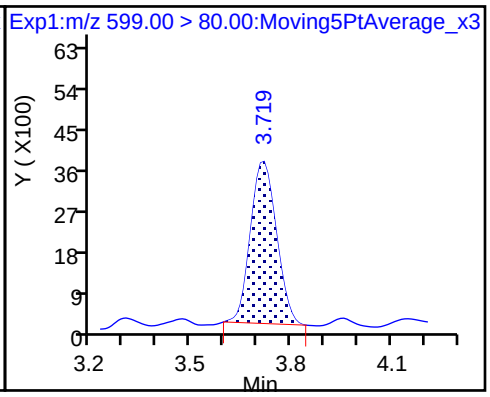
D 27 d3-NMeFOSAA



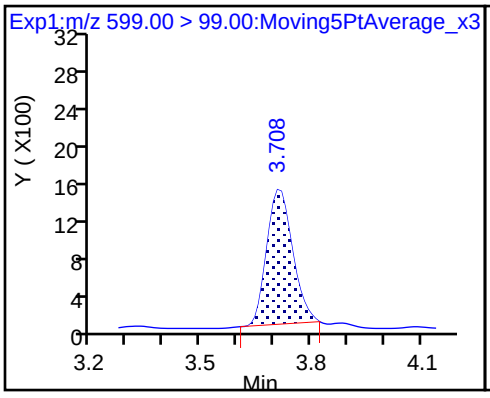
28 N-methyl perfluorooctane sulfonami



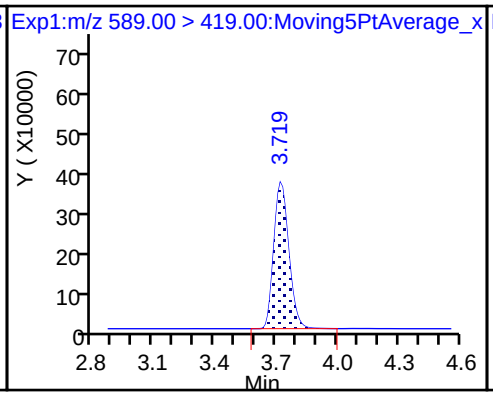
29 Perfluorodecane Sulfonic acid



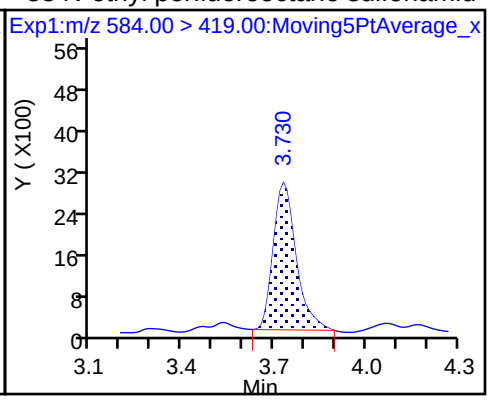
29 Perfluorodecane Sulfonic acid



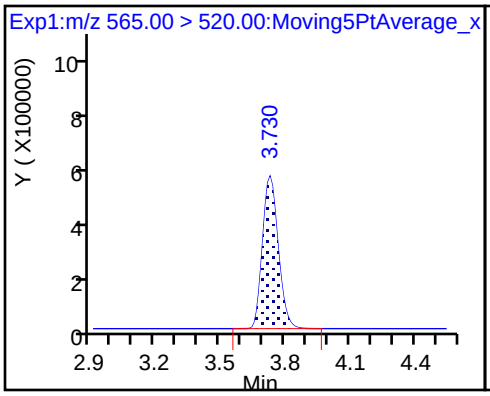
D 32 d5-NEtFOSAA



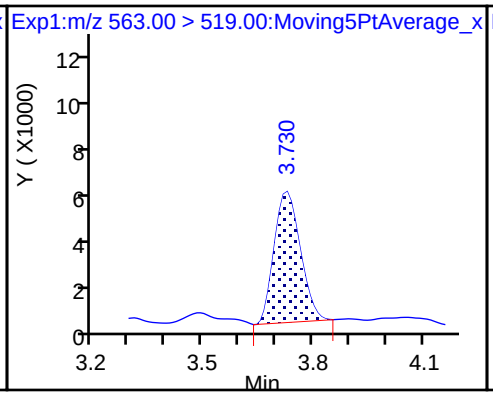
33 N-ethyl perfluorooctane sulfonamid



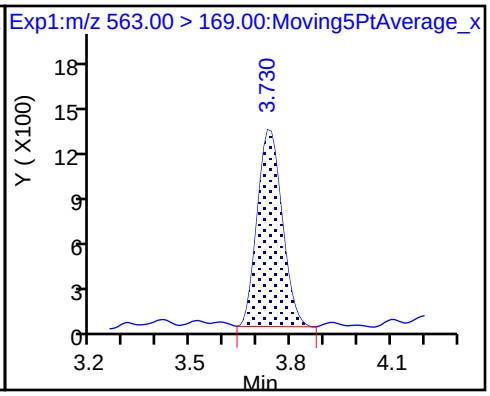
D 30 13C2 PFUnA



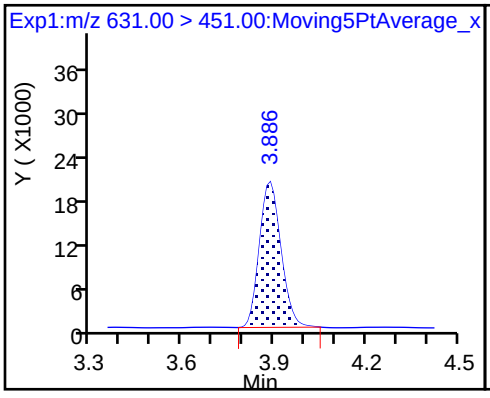
31 Perfluoroundecanoic acid



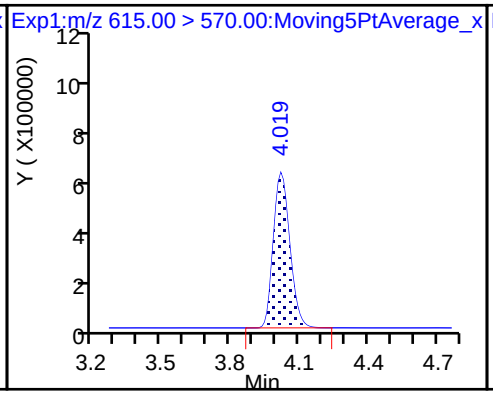
31 Perfluoroundecanoic acid



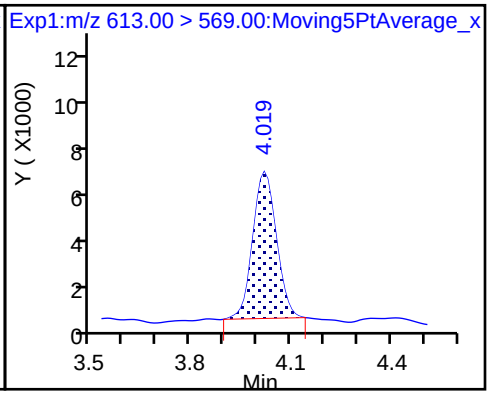
66 11-Chloroeicosafluoro-3-oxaundecan



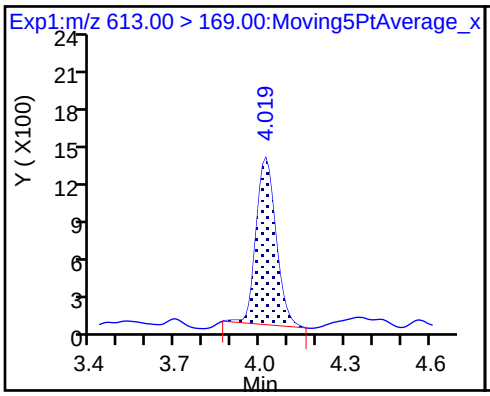
D 36 13C2 PFDoA



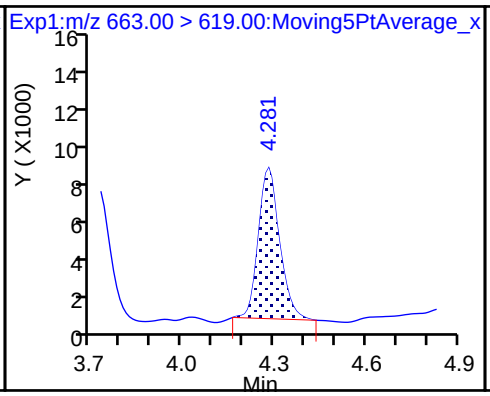
37 Perfluorododecanoic acid



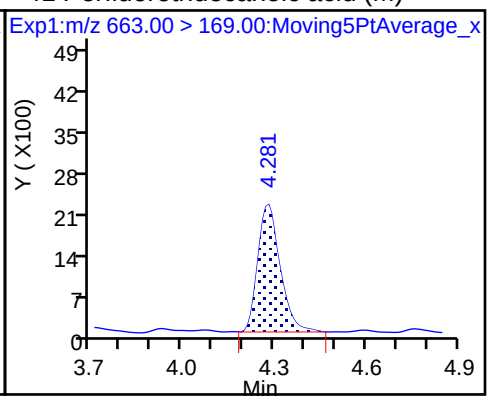
37 Perfluorododecanoic acid



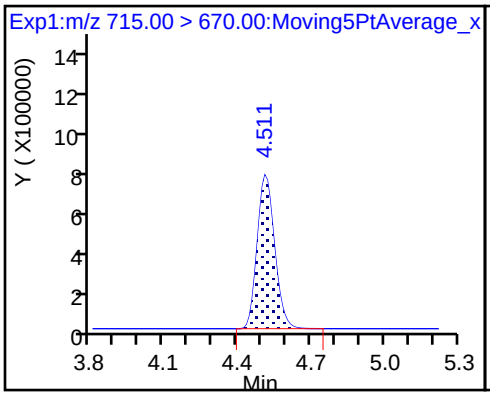
41 Perfluorotridecanoic acid



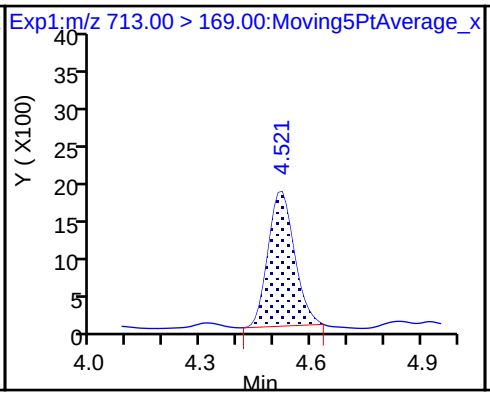
41 Perfluorotridecanoic acid (M)



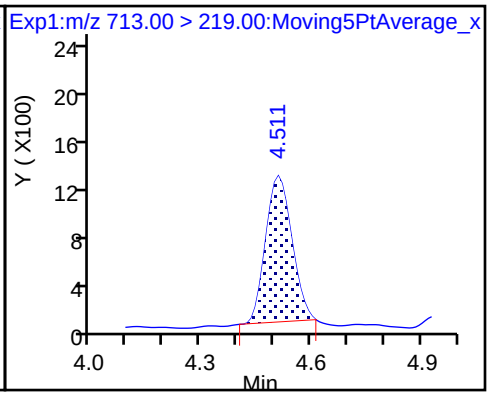
D 43 13C2-PFTeDA



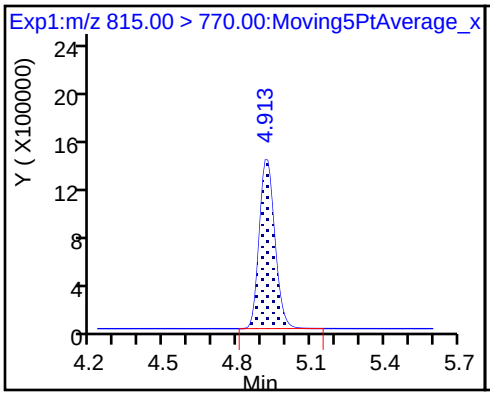
42 Perfluorotetradecanoic acid



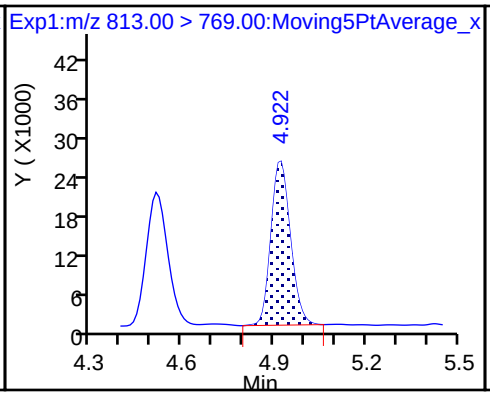
42 Perfluorotetradecanoic acid



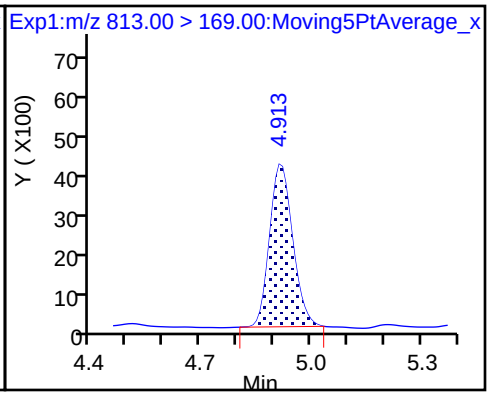
D 44 13C2-PFHxDA



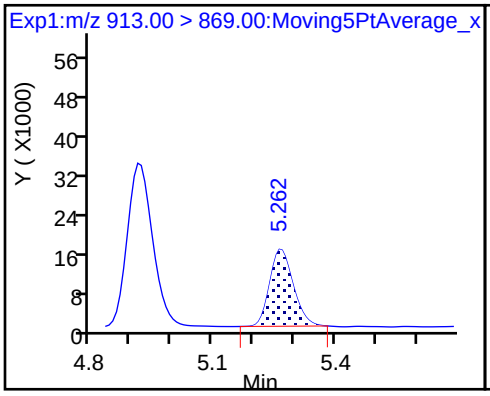
45 Perfluorohexadecanoic acid



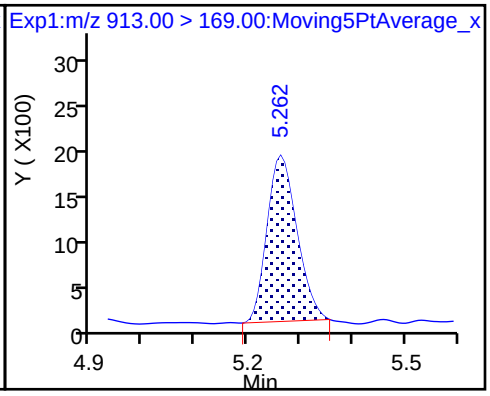
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

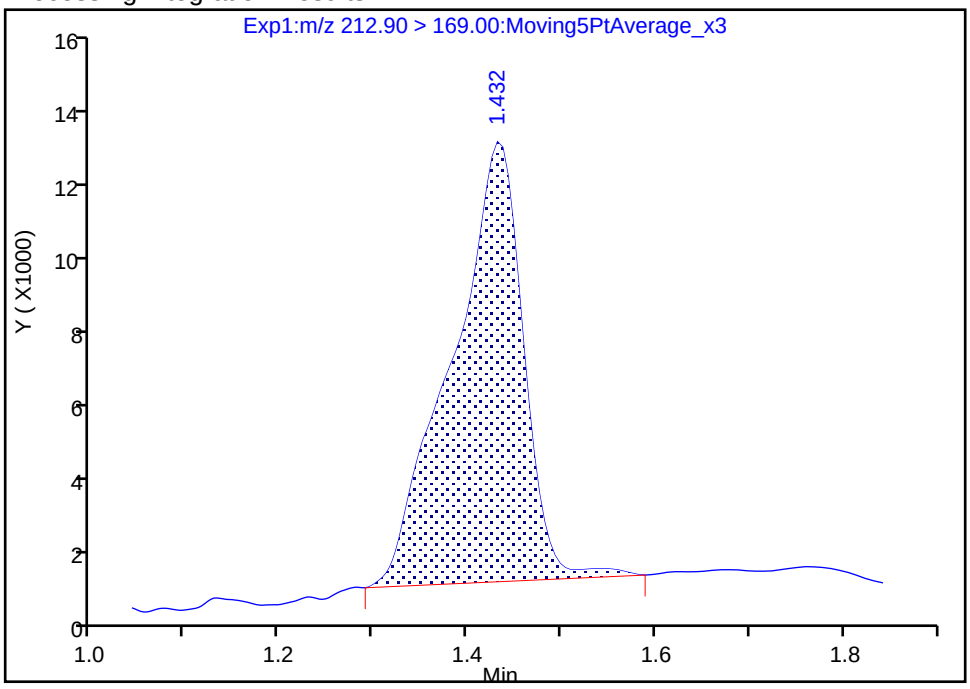
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

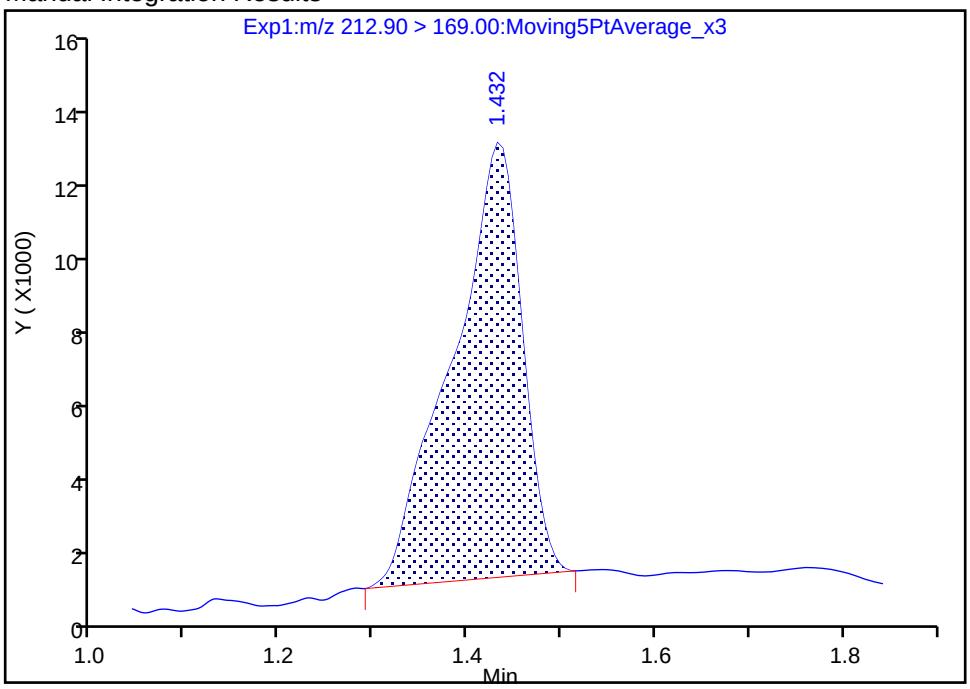
Processing Integration Results

RT: 1.43
Area: 58250
Amount: 0.025241
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 56172
Amount: 0.024466
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:46
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

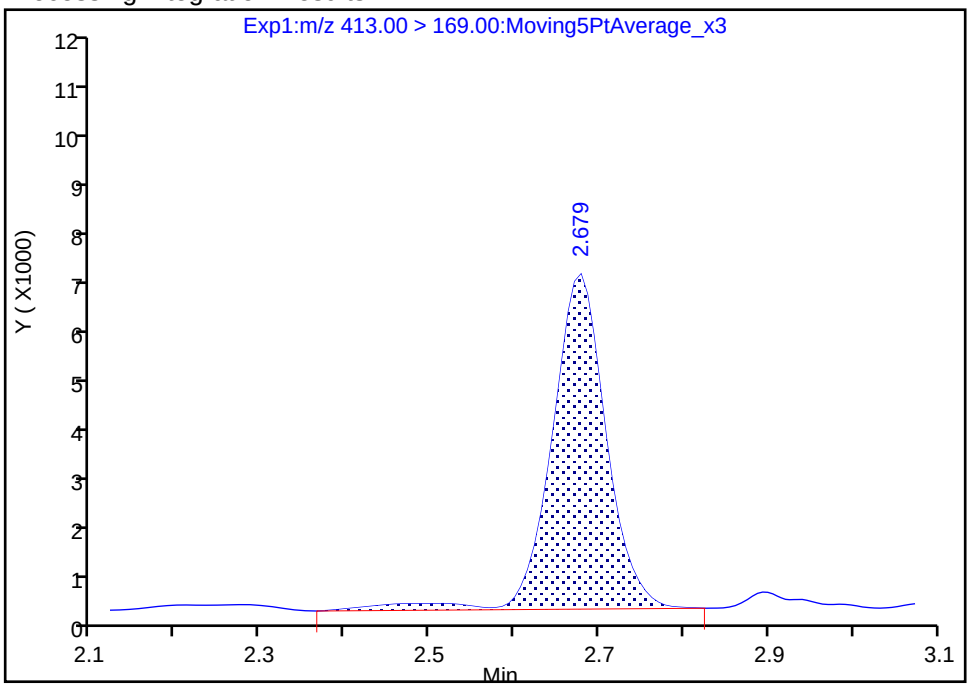
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

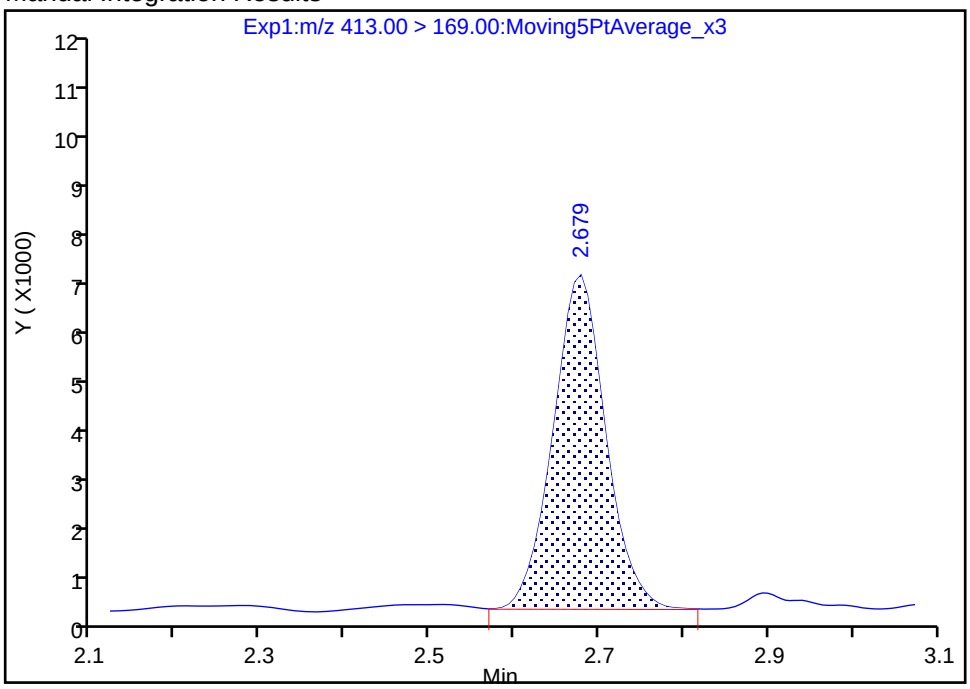
Processing Integration Results

RT: 2.68
Area: 30899
Amount: 0.026388
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 29641
Amount: 0.026388
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

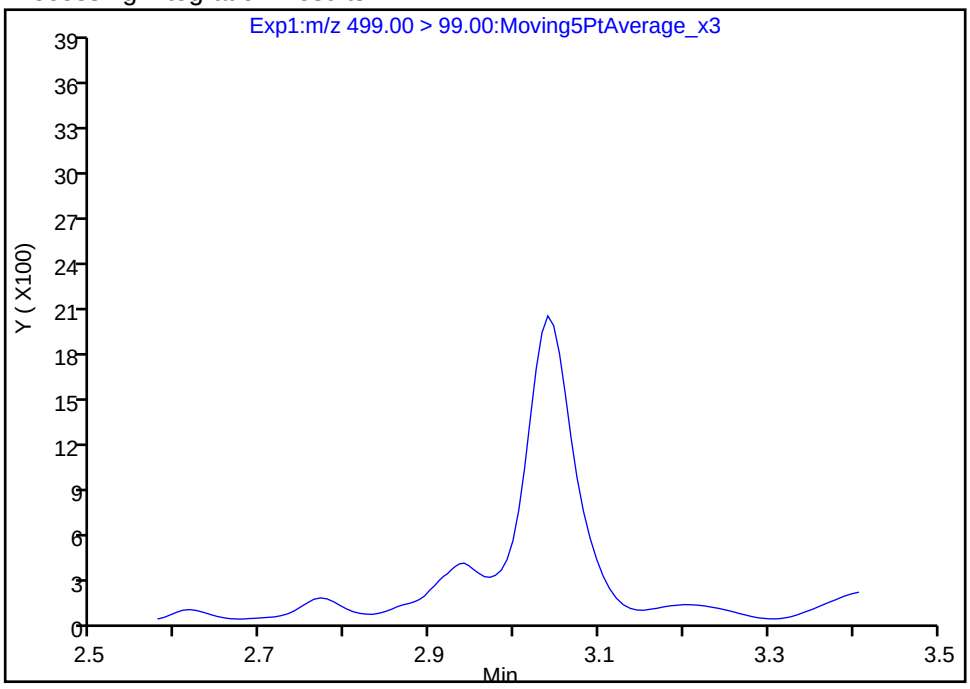
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

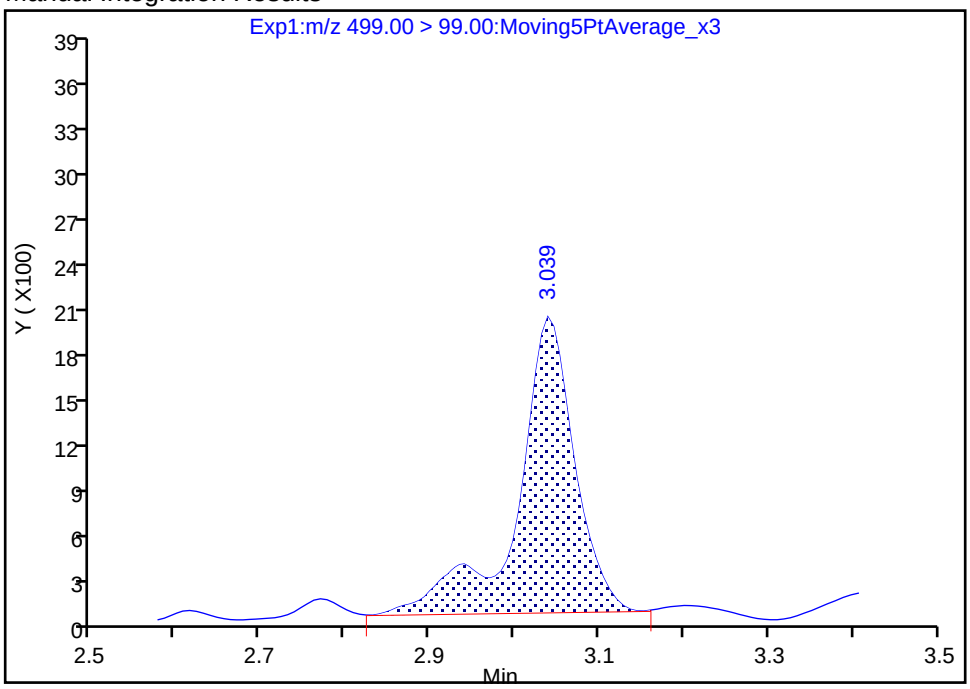
Processing Integration Results

RT: 3.04
Area: 0
Amount: 0.022562
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 9288
Amount: 0.022562
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:29
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

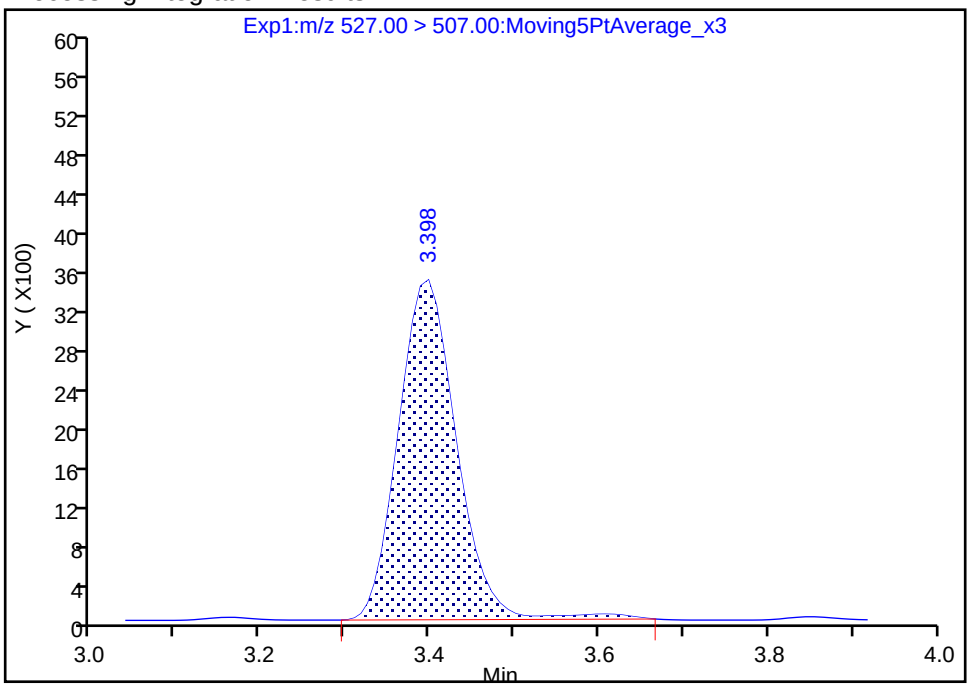
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

25 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

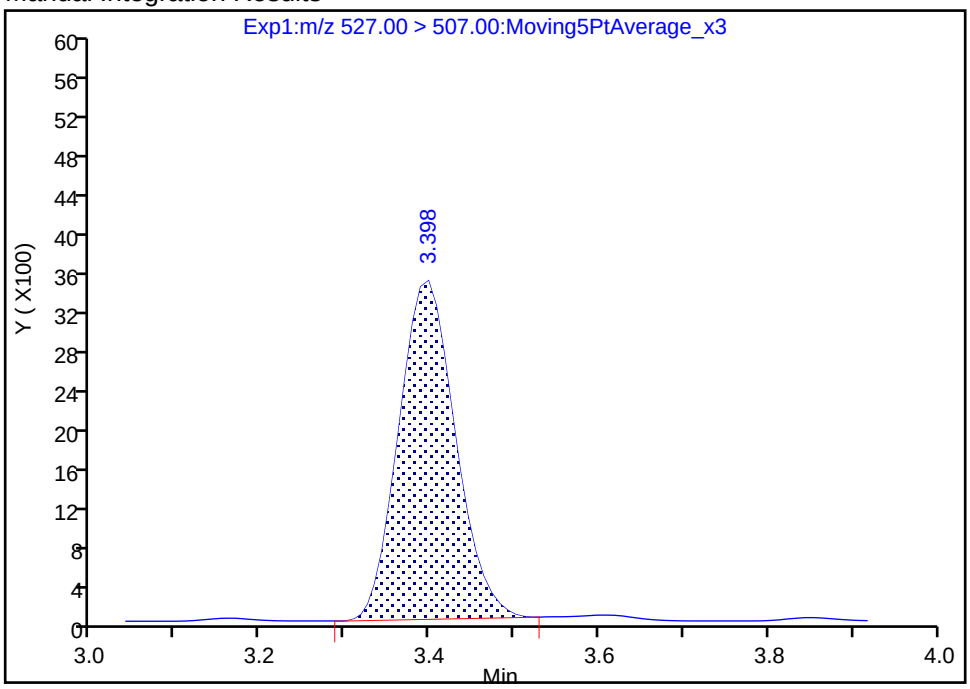
Processing Integration Results

RT: 3.40
Area: 16622
Amount: 0.028410
Amount Units: ng/ml



Manual Integration Results

RT: 3.40
Area: 16119
Amount: 0.027692
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:11:26
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

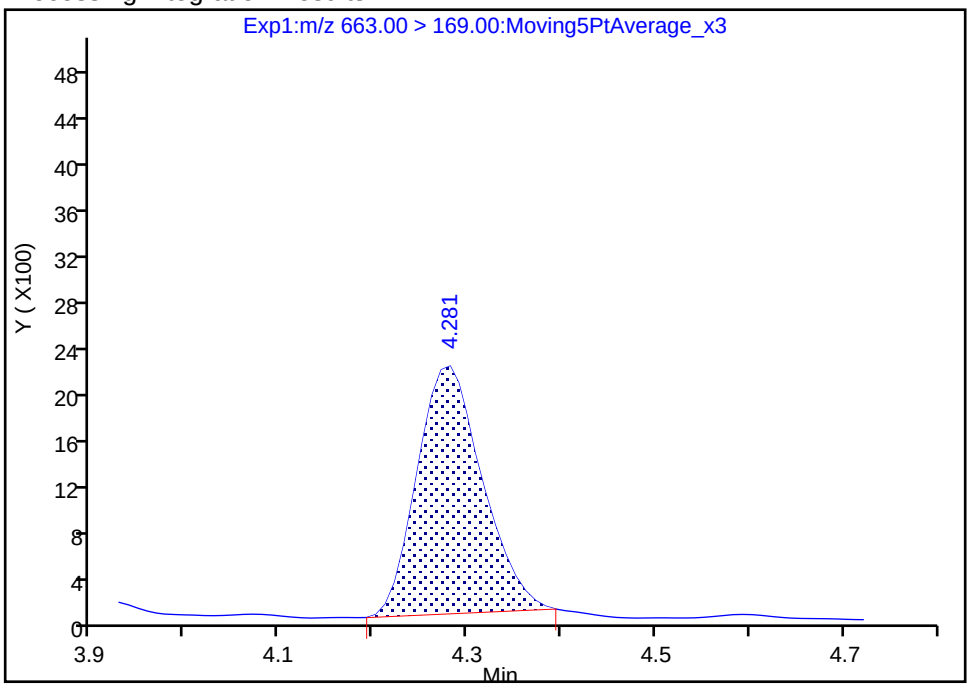
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 2

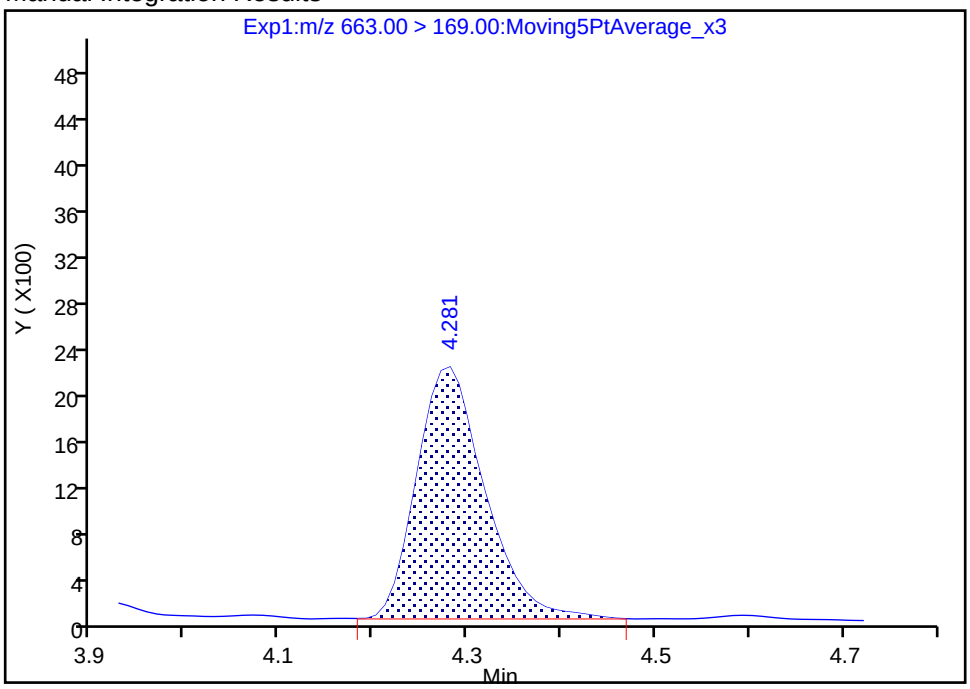
Processing Integration Results

RT: 4.28
Area: 10435
Amount: 0.026719
Amount Units: ng/ml



Manual Integration Results

RT: 4.28
Area: 11098
Amount: 0.026719
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:11:49
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-Apr-2018 18:47:28 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:01 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:13:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.431	0.005	1.000	6122262	2.47		98.6	45490	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.432	0.004	1.000	112834	0.0496		99.2	64.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.699	0.004	0.558	3926283	2.45		98.1	81057	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.699	0.004	1.000	95082	0.0508		102	82.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.735	0.004	1.000	82315	2.24		96.4	726	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.003	1.000	129549	0.0467		106	581	
298.90 > 99.00	1.739	1.736	0.003	1.000	54808		2.36(1.25-3.74)	106	750	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	28749	0.0506		108	1649	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	603123	2.29		98.2	6638	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.985	0.008	1.000	88785	0.0513		103	187	
313.00 > 119.00	1.993	1.985	0.008	1.000	8724		10.18(5.03-15.10)	103	121	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.985	0.008	1.000	4260718	2.41		96.3	104826	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.008	0.008	1.000	122406	0.0483		103	896	
349.00 > 99.00	2.004	2.008	-0.004	0.994	46264		2.65(1.36-4.07)	103	913	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	297607	2.72		109	6443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.087	0.008	1.005	13126	0.0396		79.2	93.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.314	0.007	1.000	4420246	2.57		103	71318	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.314	0.007	1.000	79218	0.0448		89.5	85.7	
363.00 > 169.00	2.321	2.314	0.007	1.000	35808		2.21(1.13-3.40)	89.5	164	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.323	-0.002	0.994	118037	0.0485		107	408	
399.00 > 99.00	2.334	2.323	0.011	1.000	37872		3.12(1.50-4.49)	107	437	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.327	0.007	1.000	5080567	2.39		101	118670	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	264804	0.0507		101	3382	
377.00 > 85.00	2.360	2.360	0.0	1.000	154875		1.71(0.84-2.53)	101	3689	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	829435	2.25		94.6	10696	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	32205	0.0545		115	547	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	4186198	2.45		97.8	105368	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4613805	2.50			88596	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	101372	0.0524		105	60.7	
413.00 > 169.00	2.675	2.674	0.001	1.000	56802		1.78(0.84-2.52)	105	205	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	93755	0.0468		98.4	815	
449.00 > 99.00	2.683	2.680	0.003	1.000	23808		3.94(1.94-5.82)	98.4	554	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3602676	2.42		101	24509	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.043	3.042	0.001	1.000	74043	0.0452		97.3	267	
499.00 > 99.00	3.050	3.042	0.008	1.002	15924		4.65(2.31-6.93)	97.3	249	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.043	0.007	1.000	81721	0.0531		106	203	
463.00 > 169.00	3.050	3.043	0.007	1.000	20435		4.00(1.90-5.69)	106	366	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3691890	2.51		100	88911	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	130088	0.0458		98.2	3608	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.395	3.388	0.007	1.000	58744	0.0488		102	794	
549.00 > 99.00	3.395	3.388	0.007	1.000	21166		2.78(1.33-3.97)	102	527	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	1101099	2.48		103	10682	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	27294	0.0469		97.9	1136	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4658336	2.51		100	52005	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	97271	0.0516		103	2312	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	2912736	2.36		94.2	67644	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	64415	0.0536		107	275	
513.00 > 169.00	3.404	3.402	0.002	1.000	11191		5.76(2.36-7.09)	107	302	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1708589	2.44		97.5	20700	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.563	3.558	0.005	1.003	30316	0.0445		89.0	308	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	44930	0.0459		95.2	493	
599.00 > 99.00	3.716	3.715	0.001	1.000	14514		3.10(1.39-4.16)	95.2	960	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.722	0.005	1.000	1730407	2.50		100	16886	
D 30 13C2 PFUnA										
565.00 > 520.00	3.727	3.727	0.0	1.000	2662627	2.50		99.8	58782	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.727	3.727	0.0	1.000	34358	0.0531		106	684	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.727	0.010	1.003	48726	0.0541		108	200	
563.00 > 169.00	3.727	3.727	0.0	1.000	13759		3.54(2.12-6.36)	108	342	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	214741	0.0489		104	3908	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.017	0.010	1.000	2928766	2.54		102	34702	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.027	4.020	0.007	1.000	56140	0.0460		91.9	63.9	
613.00 > 169.00	4.027	4.020	0.007	1.000	16582		3.39(2.13-6.40)	91.9	256	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.278	0.001	1.000	70835	0.0498		99.5	65.7	
663.00 > 169.00	4.279	4.278	0.001	1.000	22777		3.11(1.25-3.76)	99.5	277	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.520	4.513	0.007	1.000	3578927	2.45		98.0	23308	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.510	4.513	-0.003	0.998	19373	0.0539		108	235	
713.00 > 219.00	4.510	4.513	-0.003	0.998	13443		1.44(0.71-2.13)	108	289	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.918	0.003	1.000	5873165	2.47		98.8	20125	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.920	0.001	1.000	156018	0.0479		95.7	51.2	
813.00 > 169.00	4.921	4.920	0.001	1.000	25268		6.17(2.86-8.58)	95.7	222	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.268	0.001	1.000	116814	0.0495		99.0	34.4	
913.00 > 169.00	5.269	5.268	0.001	1.000	14479		8.07(3.83-11.48)	99.0	141	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:02 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d

Injection Date: 10-Apr-2018 18:47:28 Instrument ID: A8_N

Lims ID: IC L2 Full

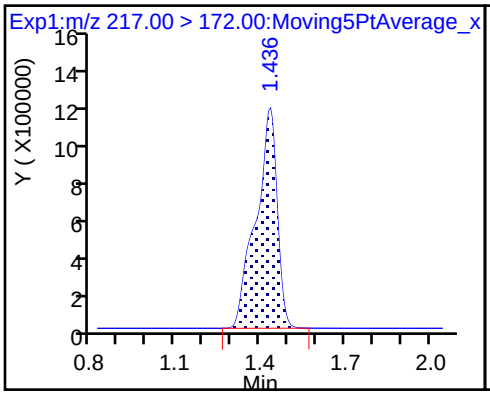
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

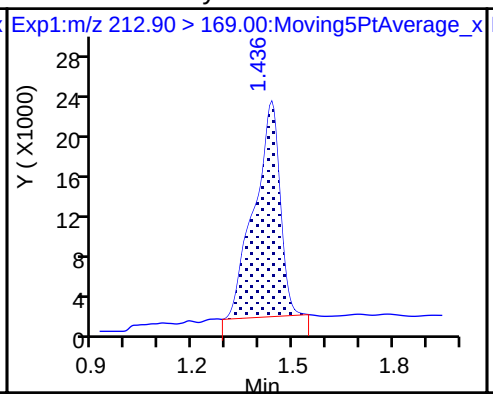
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

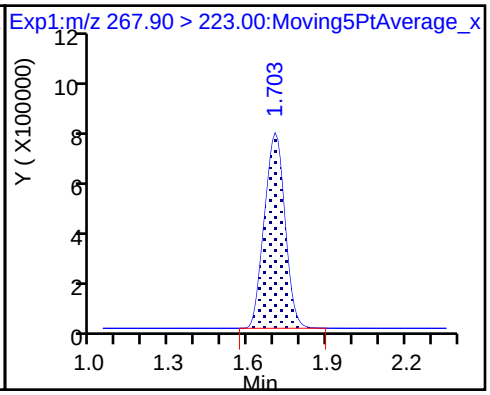
D 1 13C4 PFBA



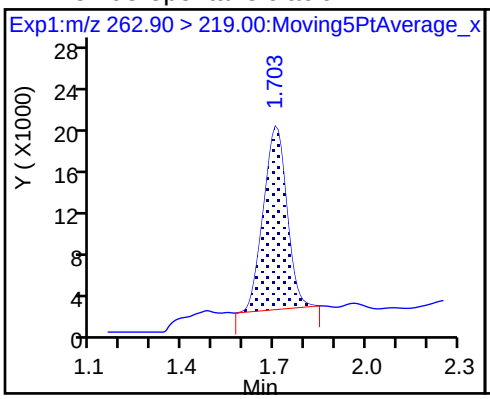
2 Perfluorobutyric acid



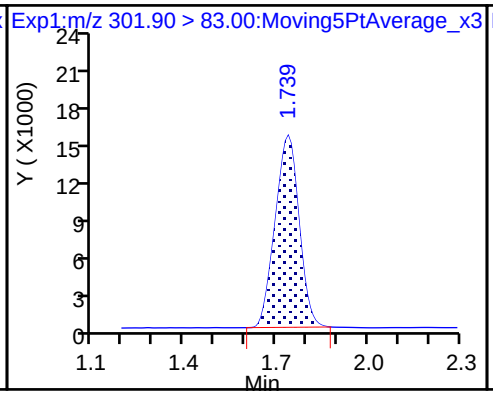
D 3 13C5-PFPeA



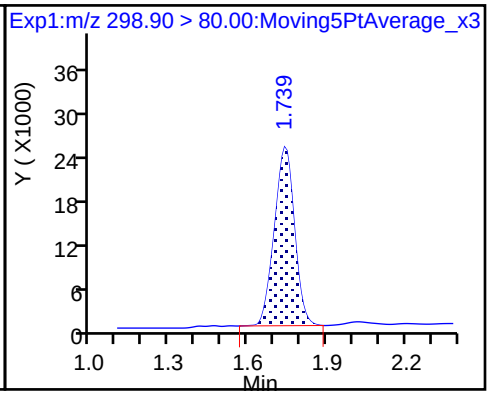
4 Perfluoropentanoic acid



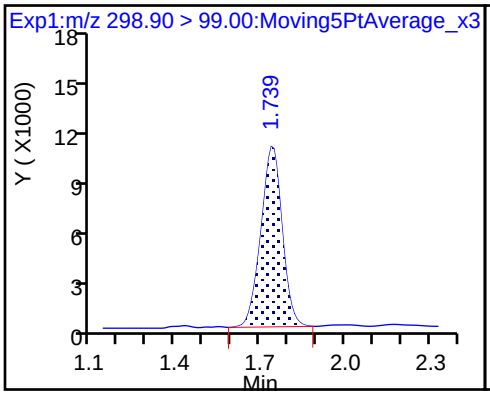
D 47 13C3-PFBS



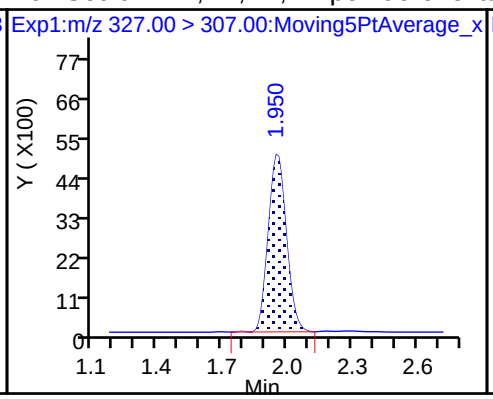
5 Perfluorobutanesulfonic acid



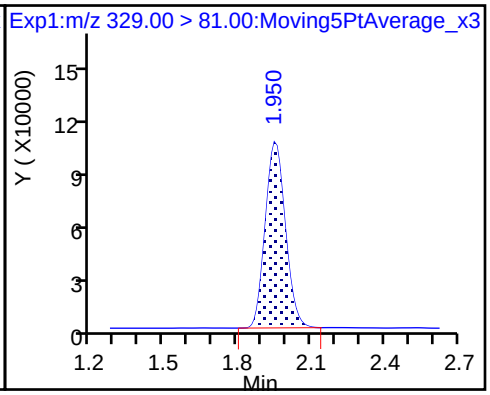
5 Perfluorobutanesulfonic acid



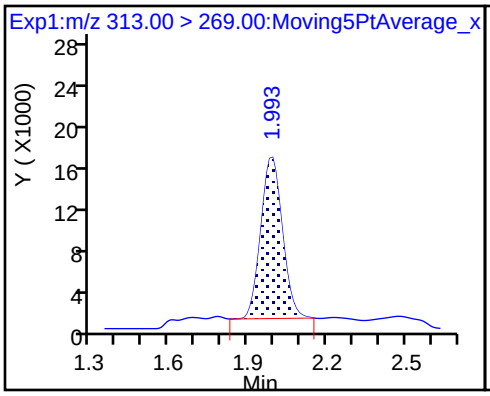
61 Sodium 1H,1H,2H,2H-perfluorohexane



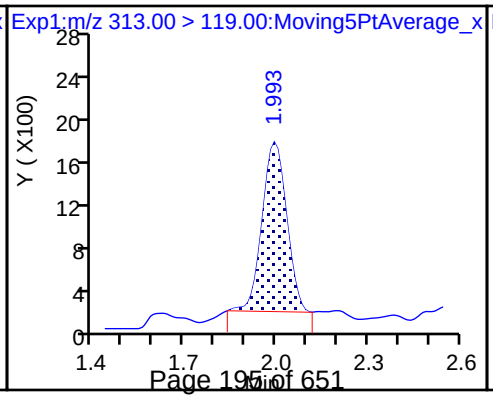
D 60 M2-4:2FTS



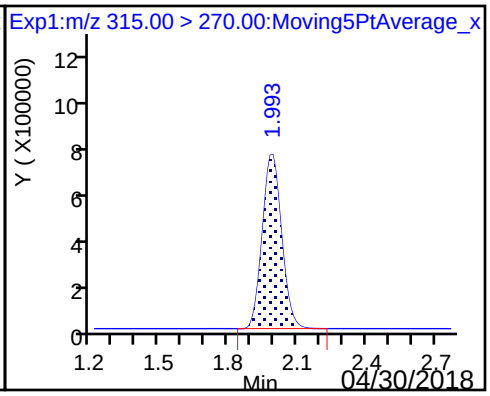
6 Perfluorohexanoic acid



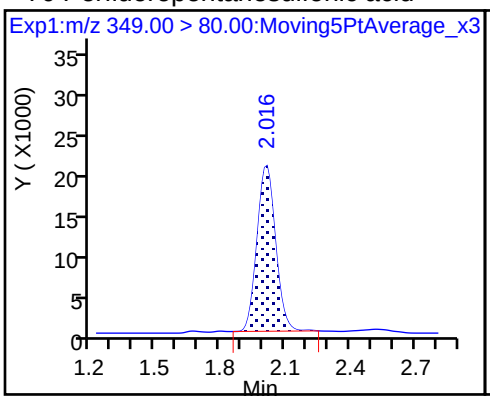
6 Perfluorohexanoic acid



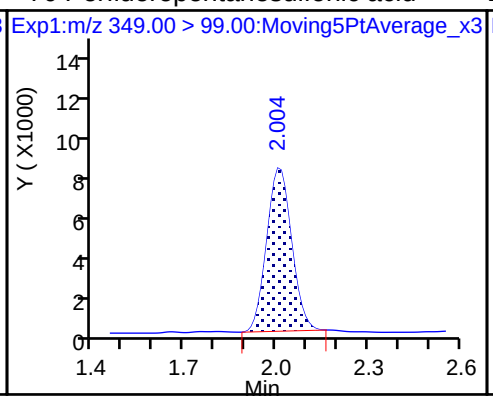
D 7 13C2 PFHxA



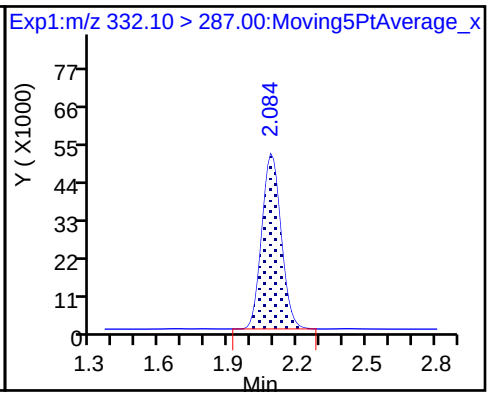
70 Perfluoropentanesulfonic acid



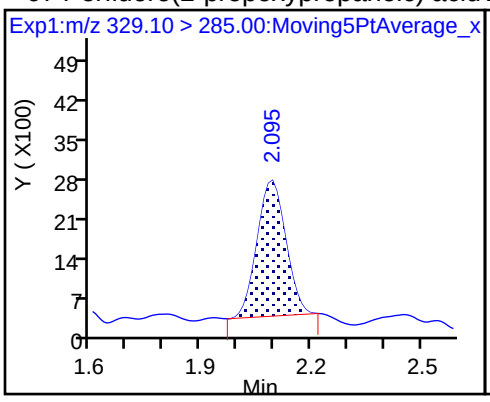
70 Perfluoropentanesulfonic acid



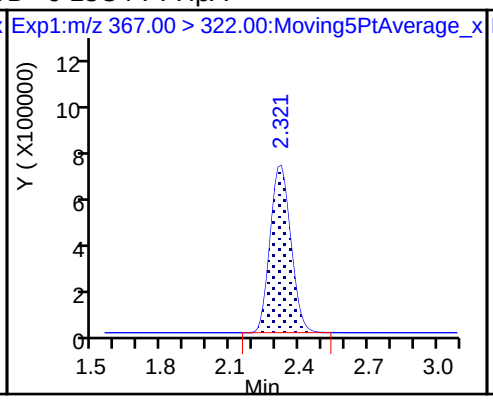
D 64 13C3 HFPO-DA



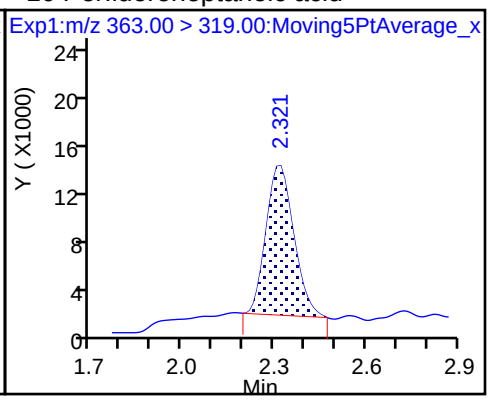
67 Perfluoro(2-propoxypropanoic) acid



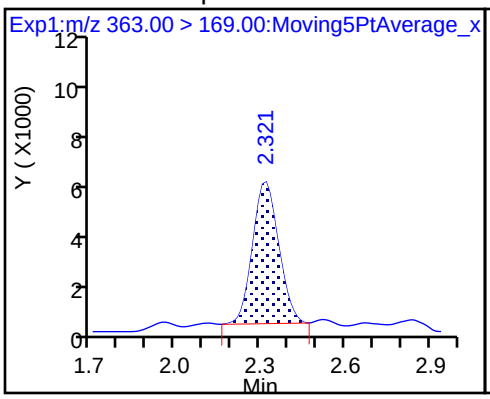
D 9 13C4-PFHpA



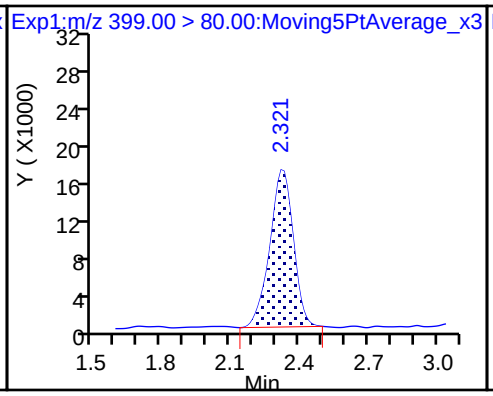
10 Perfluoroheptanoic acid



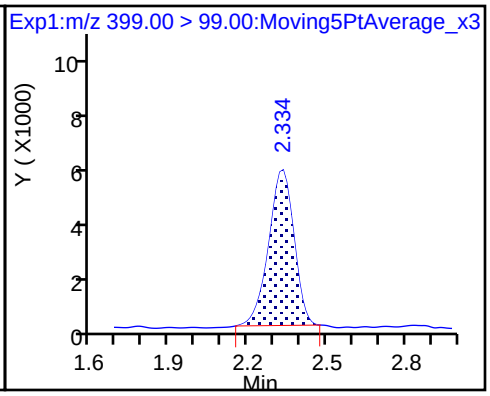
10 Perfluoroheptanoic acid



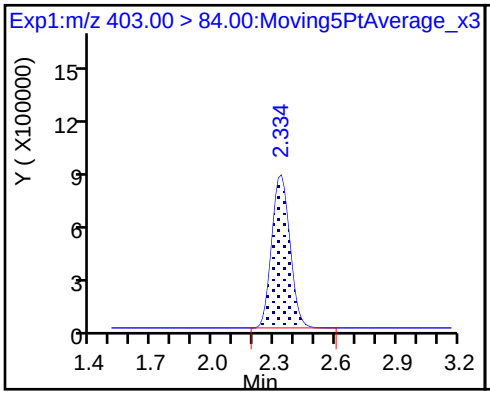
8 Perfluorohexanesulfonic acid



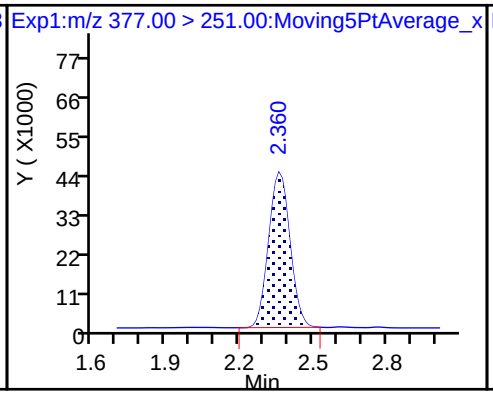
8 Perfluorohexanesulfonic acid



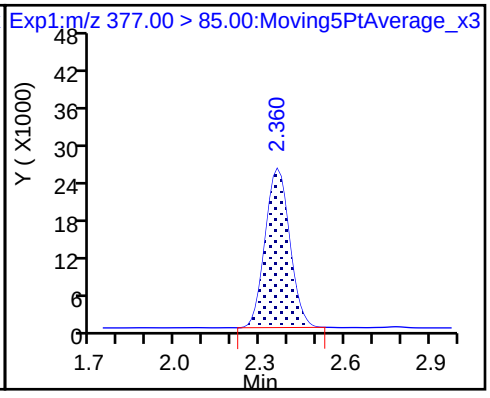
D 11 18O2 PFHxS



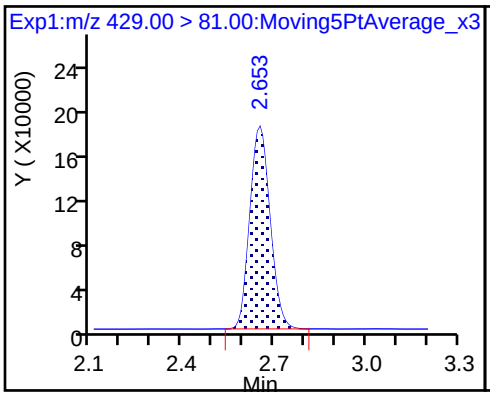
65 Adona



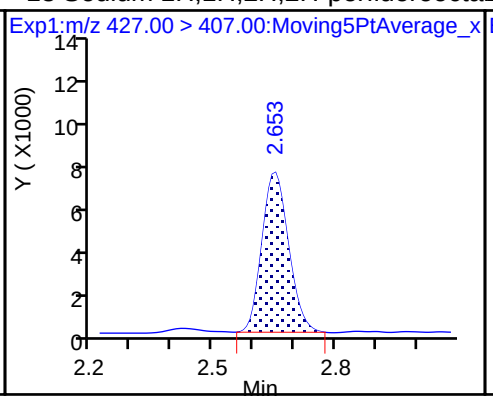
65 Adona



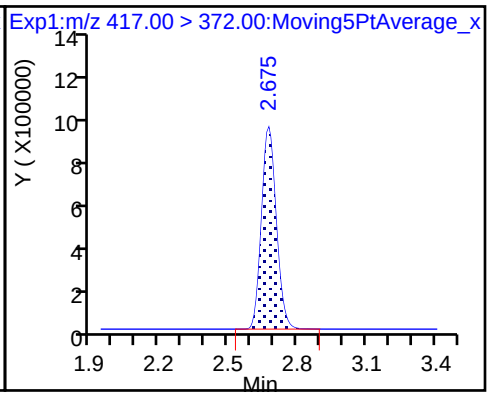
D 12 M2-6:2FTS



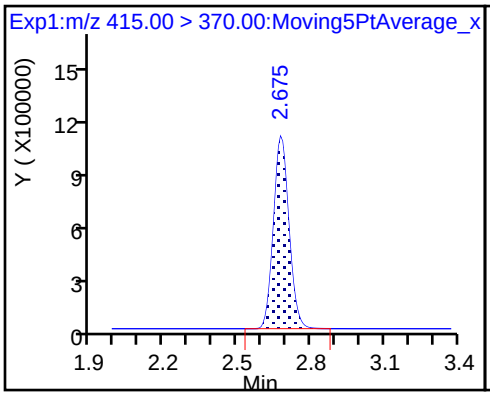
13 Sodium 1H,1H,2H,2H-perfluorooctane



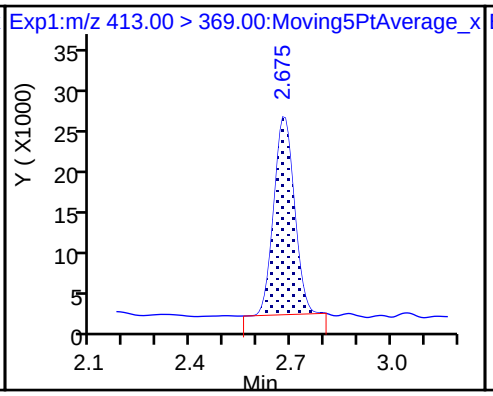
D 14 13C4 PFOA



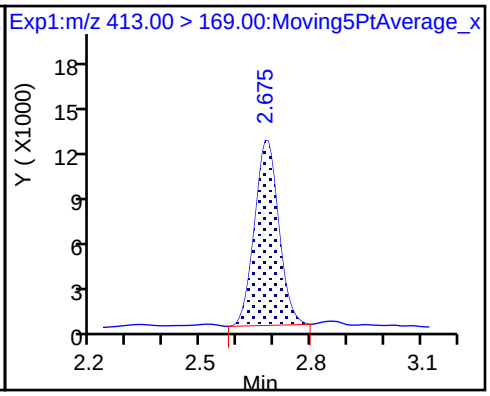
* 62 13C2-PFOA



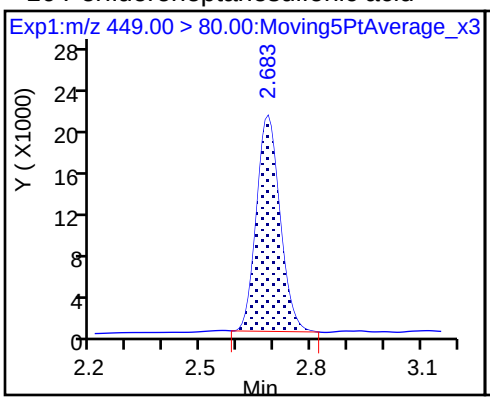
15 Perfluorooctanoic acid



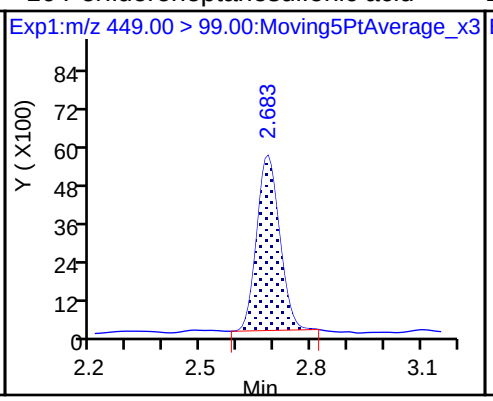
15 Perfluorooctanoic acid



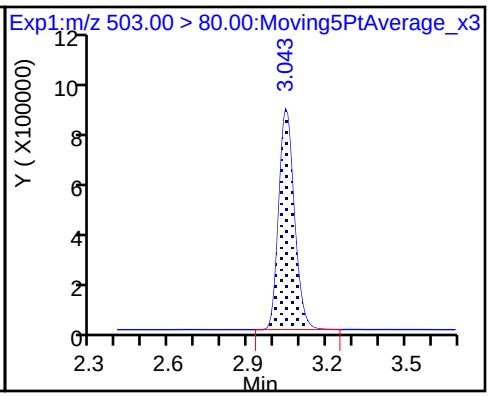
16 Perfluoroheptanesulfonic acid



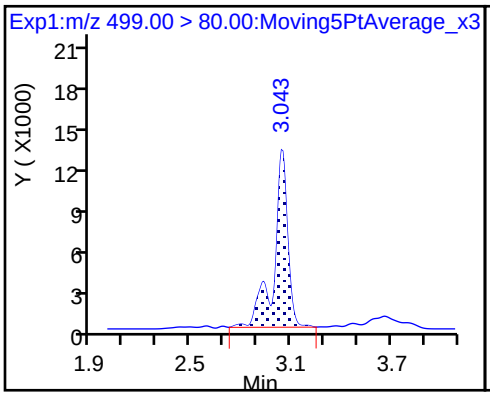
16 Perfluoroheptanesulfonic acid



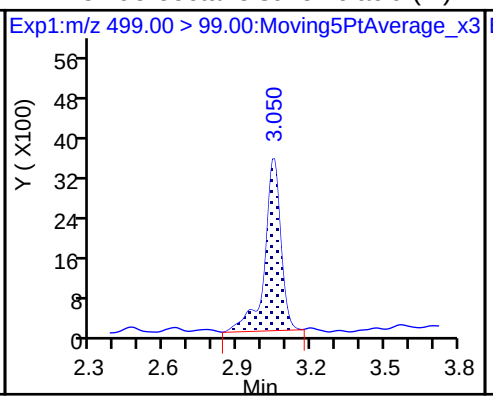
D 18 13C4 PFOS



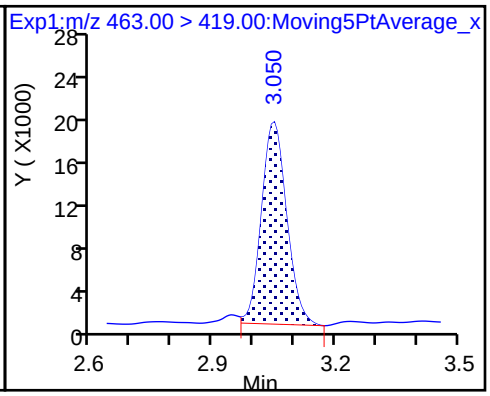
17 Perfluorooctane sulfonic acid



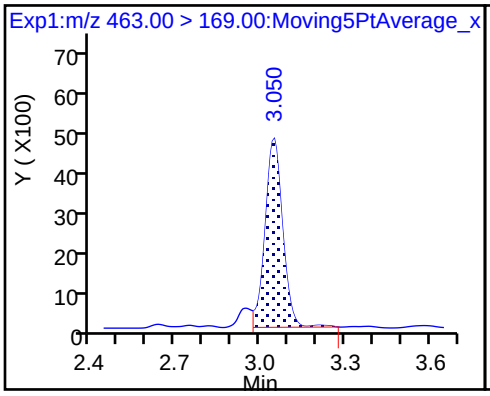
17 Perfluorooctane sulfonic acid (M)



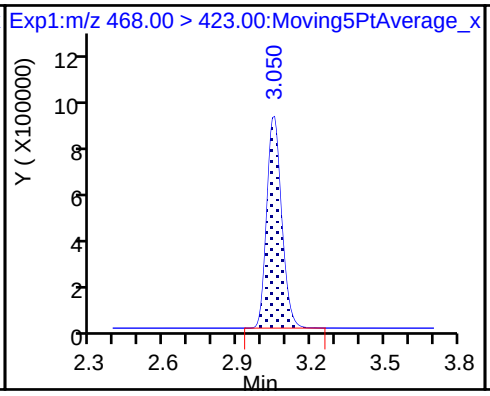
20 Perfluorononanoic acid



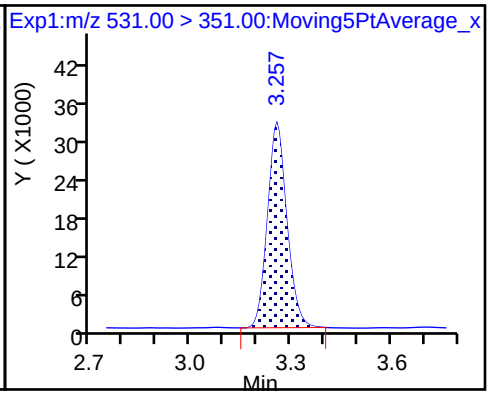
20 Perfluorononanoic acid



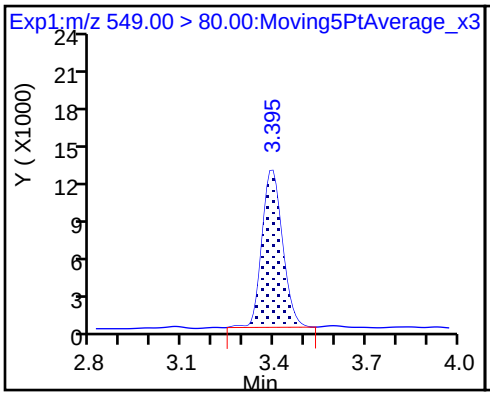
D 19 13C5 PFNA



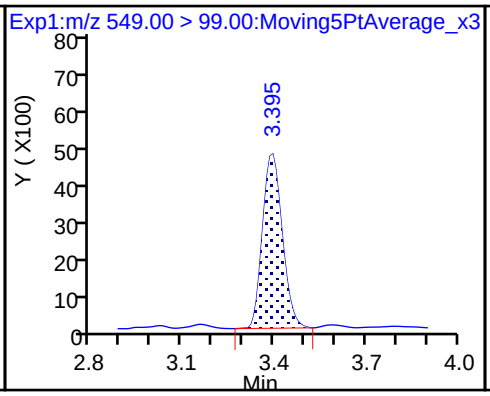
69 9-Chlorohexadecafluoro-3-oxanonane



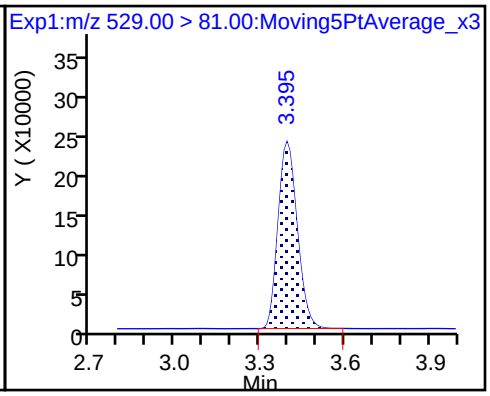
68 Perfluorononanesulfonic acid



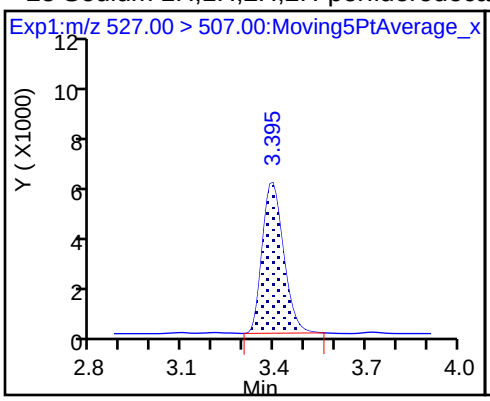
68 Perfluorononanesulfonic acid



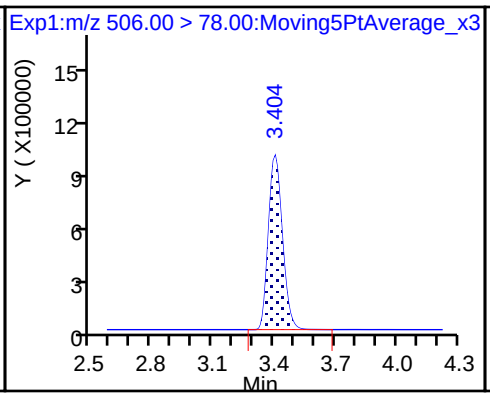
D 26 M2-8:2FTS



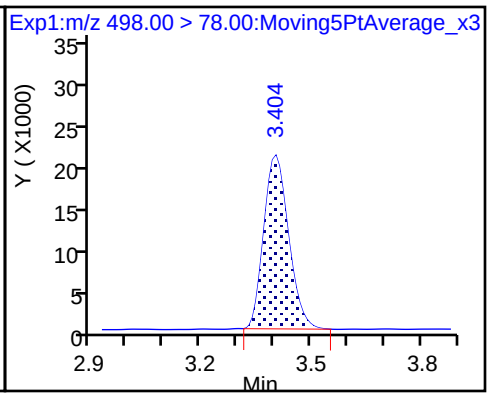
25 Sodium 1H,1H,2H,2H-perfluorodecane



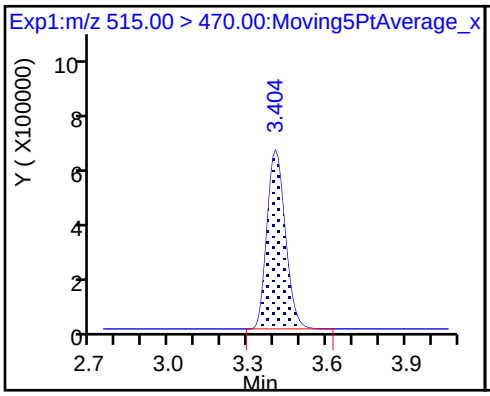
D 21 13C8 FOSA



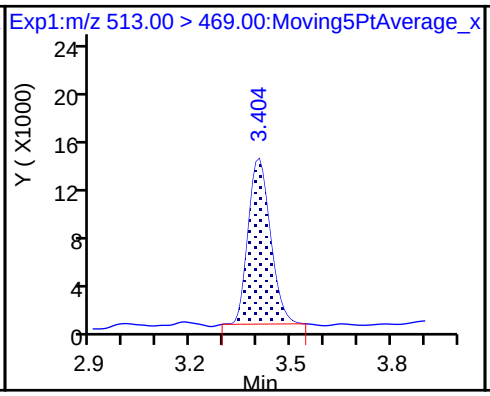
22 Perfluorooctane Sulfonamide



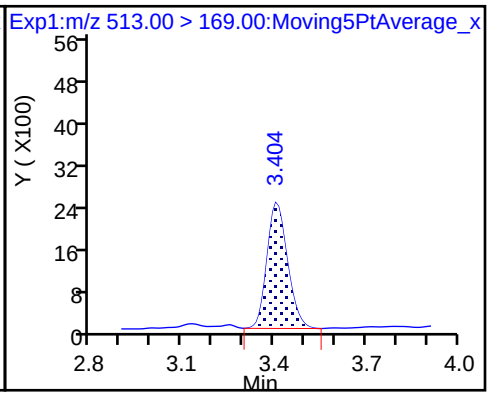
D 23 13C2 PFDA



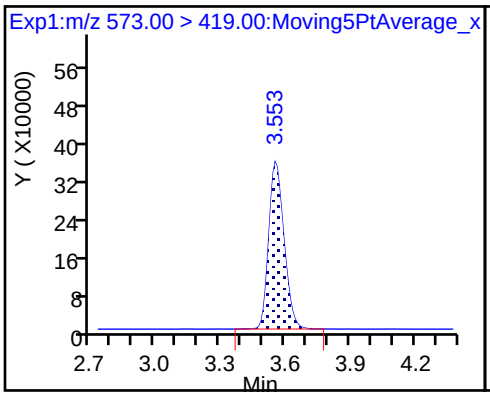
24 Perfluorodecanoic acid



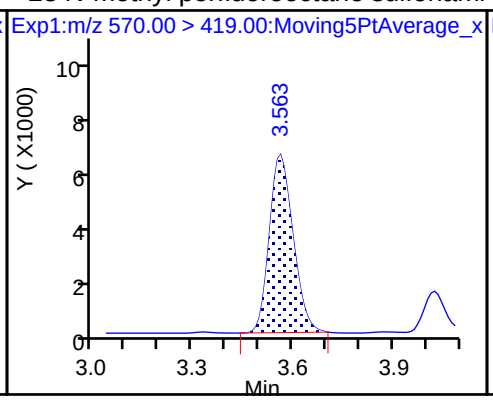
24 Perfluorodecanoic acid



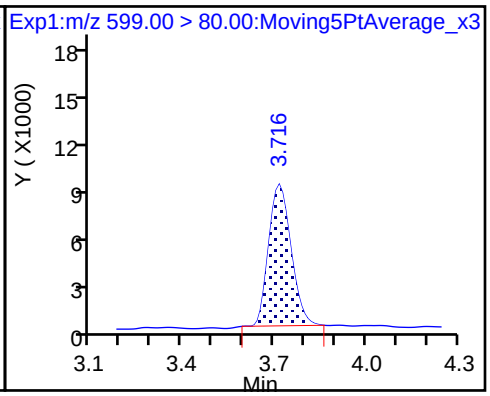
D 27 d3-NMeFOSAA



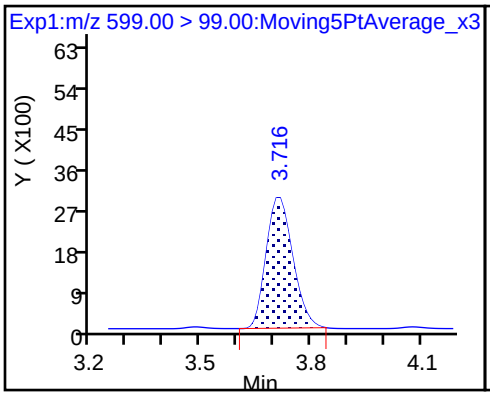
28 N-methyl perfluorooctane sulfonami



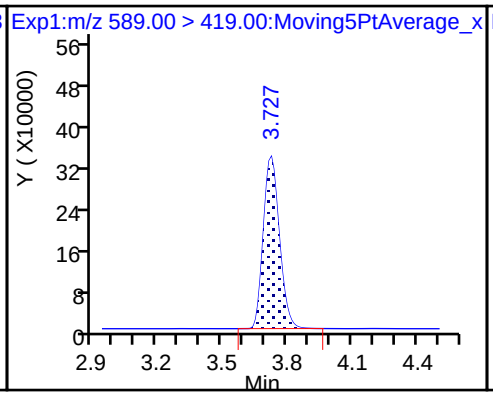
29 Perfluorodecane Sulfonic acid



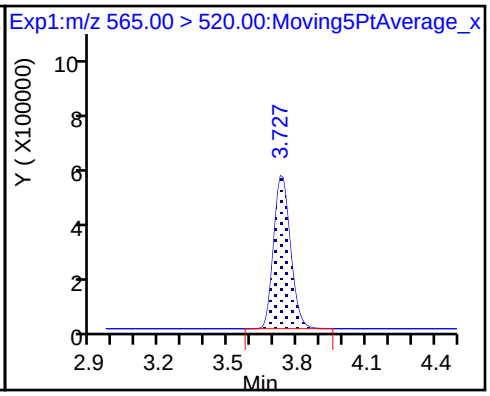
29 Perfluorodecane Sulfonic acid



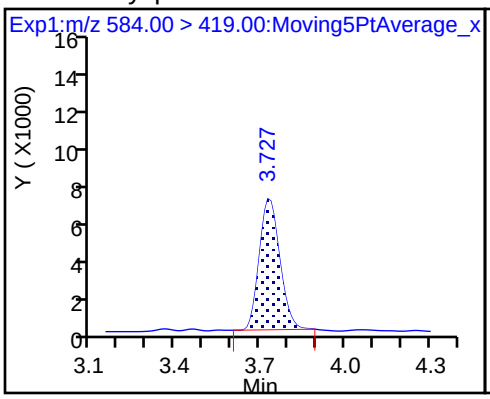
D 32 d5-NEtFOSAA



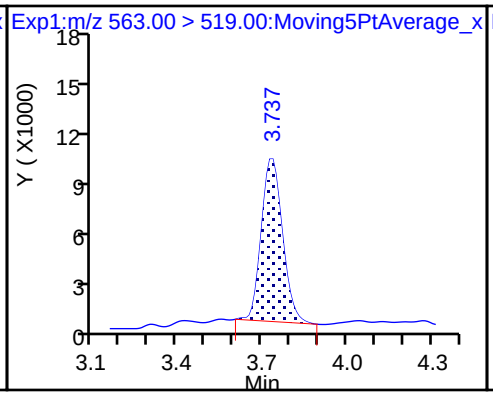
D 30 13C2 PFUnA



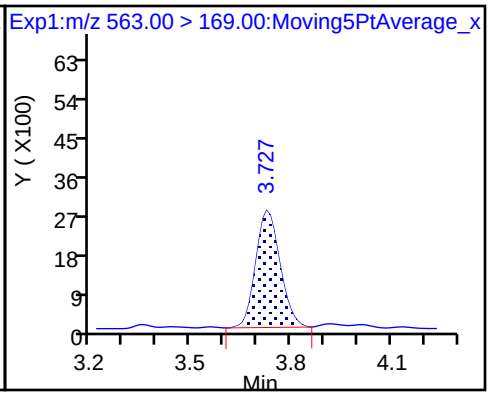
33 N-ethyl perfluorooctane sulfonamid



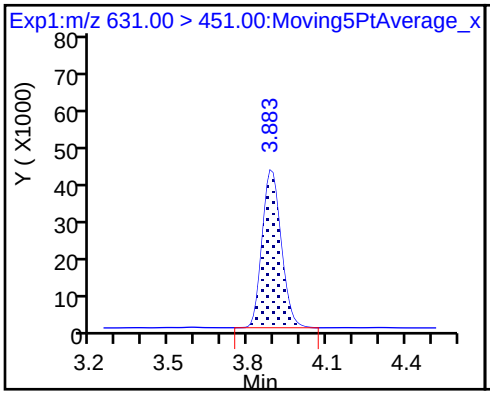
31 Perfluoroundecanoic acid



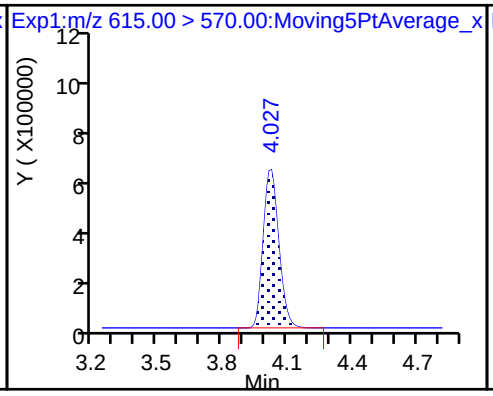
31 Perfluoroundecanoic acid



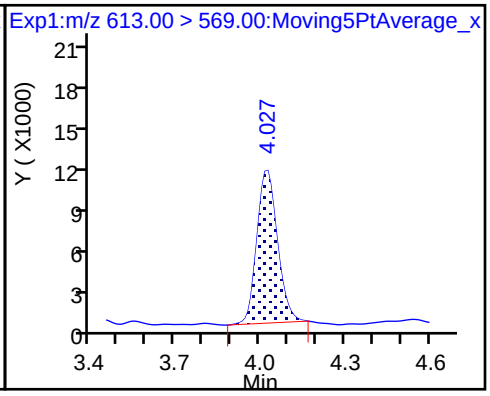
66 11-Chloroeicosafluoro-3-oxaundecan



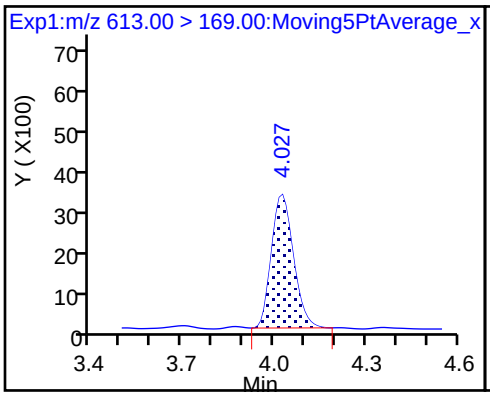
D 36 13C2 PFDoA



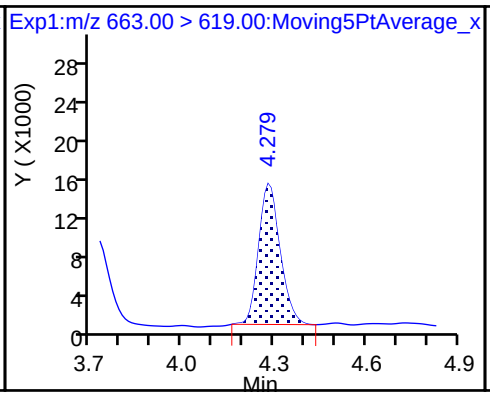
37 Perfluorododecanoic acid



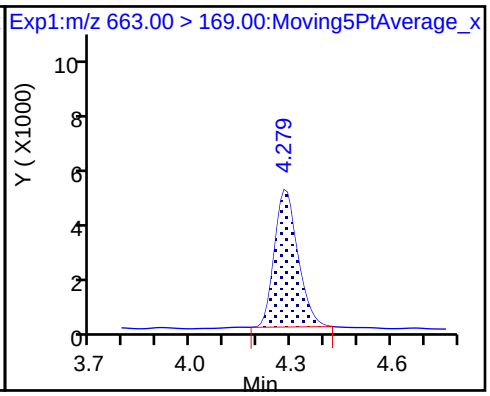
37 Perfluorododecanoic acid



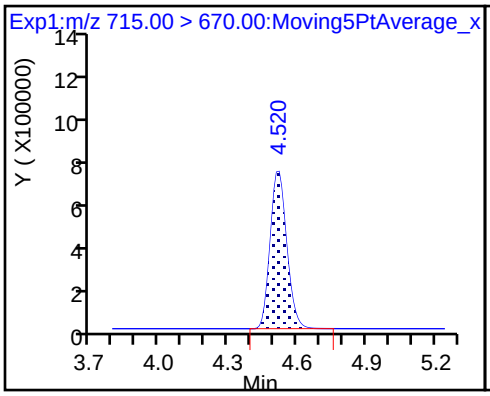
41 Perfluorotridecanoic acid



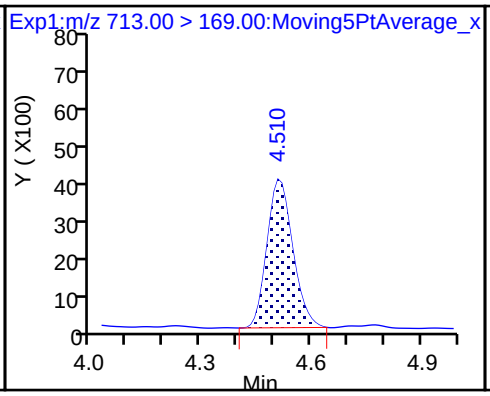
41 Perfluorotridecanoic acid



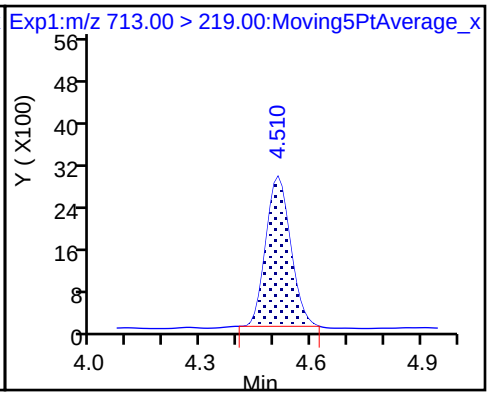
D 43 13C2-PFTeDA



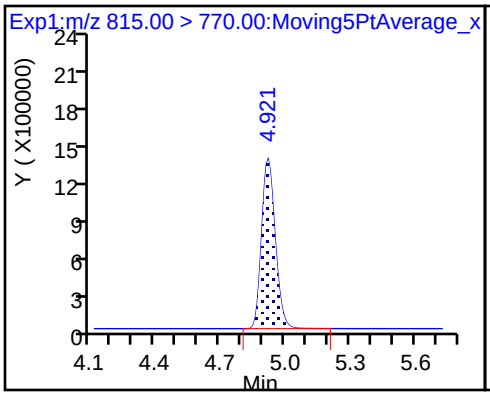
42 Perfluorotetradecanoic acid



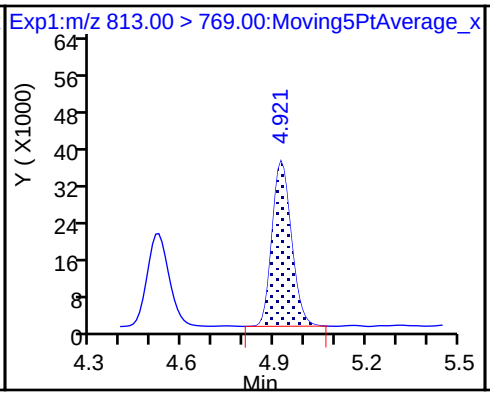
42 Perfluorotetradecanoic acid



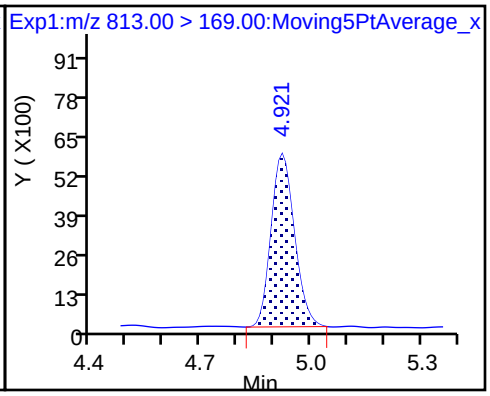
D 44 13C2-PFHxDA



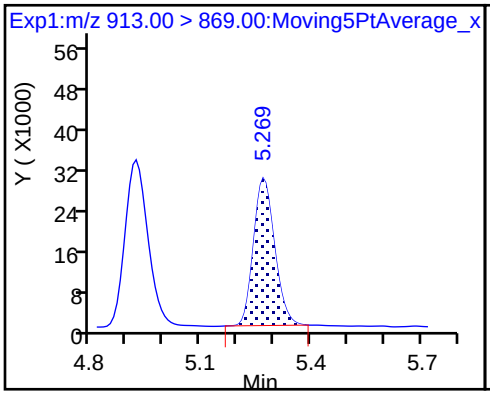
45 Perfluorohexadecanoic acid



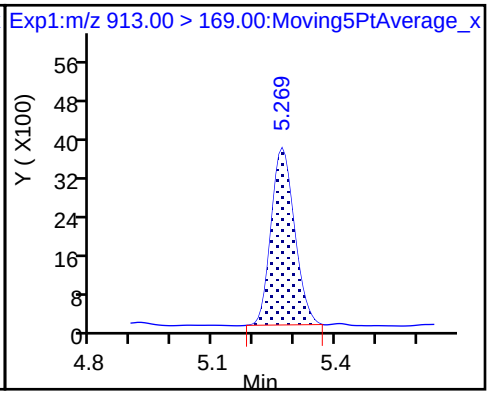
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

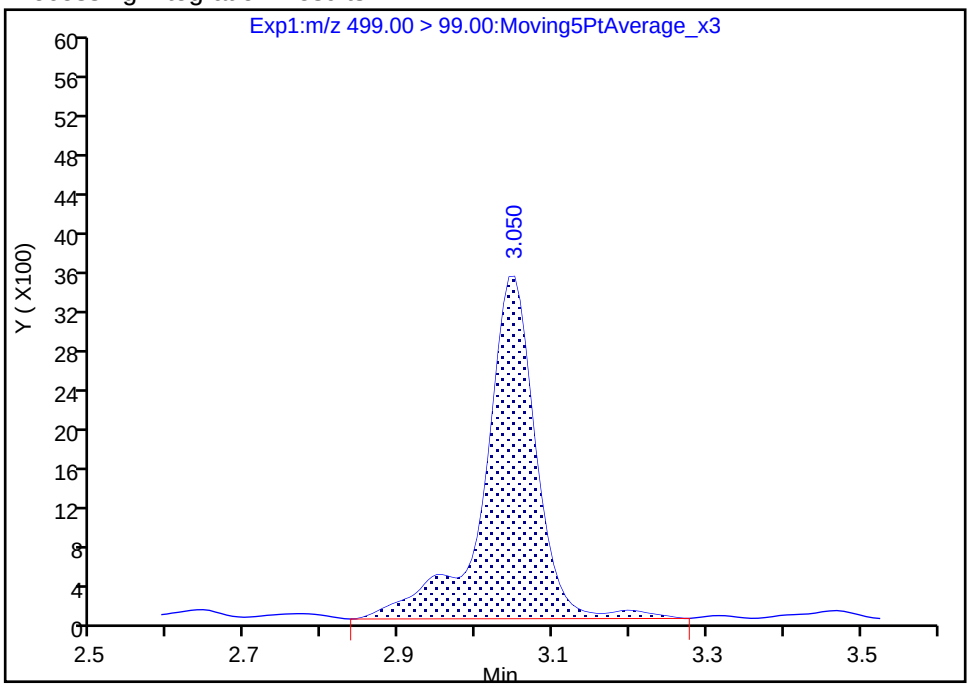
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d
Injection Date: 10-Apr-2018 18:47:28 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

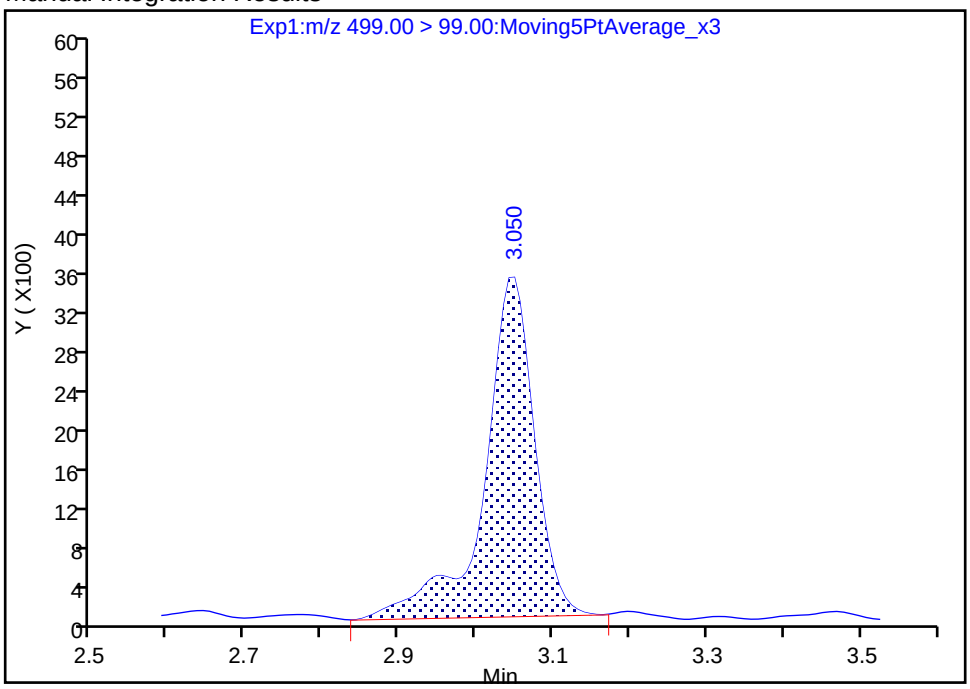
Processing Integration Results

RT: 3.05
Area: 16662
Amount: 0.045154
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 15924
Amount: 0.045154
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:13:05
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-Apr-2018 18:55:18 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:15:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.431	0.004	1.000	6279614	2.40		96.1	48122	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.432	0.003	1.000	580880	0.2490		99.6	342	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	467549	0.2434		97.4	427	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	4029236	2.39		95.7	84337	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.735	0.003	1.000	85829	2.22		95.5	892	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.736	0.002	1.000	642890	0.2225		101	3140	
298.90 > 99.00	1.738	1.736	0.002	1.000	274212		2.34(1.25-3.74)	101	4317	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.950	-0.002	1.000	625222	2.26		96.7	5849	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.950	-0.002	1.000	139275	0.2353		101	8215	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.985	0.007	1.000	4589544	2.46		98.5	114865	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.985	0.007	1.000	453023	0.2428		97.1	1126	
313.00 > 119.00	1.992	1.985	0.007	1.000	45129		10.04(5.03-15.10)	97.1	510	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.015	2.008	0.007	1.000	625836	0.2371		101	5727	
349.00 > 99.00	2.003	2.008	-0.005	0.994	236948		2.64(1.36-4.07)	101	6870	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.084	-0.002	1.000	260156	2.26		90.3	6351	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.094	2.087	0.007	1.005	76650	0.2644		106	612	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	443829	0.2536		101	594	
363.00 > 169.00	2.320	2.314	0.006	1.000	183548		2.42(1.13-3.40)	101	819	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	4371595	2.41		96.4	64932	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.323	0.010	1.000	550837	0.2176		95.6	1709	
399.00 > 99.00	2.333	2.323	0.010	1.000	175057		3.15(1.50-4.49)	95.6	1638	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	5290521	2.36		100.0	79356	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	1339859	0.2502		100	20372	
377.00 > 85.00	2.359	2.360	-0.001	1.000	772157		1.74(0.84-2.53)	100	16304	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	147222	0.2185		92.2	3008	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	946554	2.44		103	15607	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	4391971	2.44		97.5	89680	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	501075	0.2469		98.7	266	
413.00 > 169.00	2.675	2.674	0.001	1.000	260669		1.92(0.84-2.52)	98.7	1136	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4856867	2.50			62253	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	500192	0.2437		102	4655	
449.00 > 99.00	2.683	2.680	0.003	1.000	131175		3.81(1.94-5.82)	102	3786	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3695054	2.36		98.7	32380	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.042	0.008	1.002	378769	0.2252		97.1	1651	
499.00 > 99.00	3.043	3.042	0.001	1.000	94059		4.03(2.31-6.93)	97.1	1374	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	0.998	394004	0.2506		100	1139	
463.00 > 169.00	3.050	3.043	0.007	1.000	89167		4.42(1.90-5.69)	100	1764	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3769499	2.43		97.3	82628	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	659333	0.2262		97.1	17883	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.388	-0.003	1.000	287902	0.2330		97.1	4091	
549.00 > 99.00	3.395	3.388	0.007	1.003	106966		2.69(1.33-3.97)	97.1	2580	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	1105113	2.36		98.6	11270	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	123407	0.2114		88.3	6419	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4856180	2.48		99.3	57058	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	486733	0.2477		99.1	17148	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	3141564	2.41		96.5	74258	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	302427	0.2333		93.3	1146	
513.00 > 169.00	3.404	3.402	0.002	1.000	51441		5.88(2.36-7.09)	93.3	1188	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1807153	2.45		98.0	18609	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.558	0.004	1.003	182686	0.2534		101	1647	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	242056	0.2411		100	3016	
599.00 > 99.00	3.716	3.715	0.001	1.000	77912		3.11(1.39-4.16)	100	1891	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.722	0.004	1.000	1809132	2.48		99.4	15271	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.726	3.727	-0.001	1.000	166943	0.2469		98.7	2050	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.727	-0.001	1.000	2893419	2.58		103	82331	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.727	-0.001	1.000	218231	0.2231		89.2	981	
563.00 > 169.00	3.726	3.727	-0.001	1.000	53370		4.09(2.12-6.36)	89.2	1795	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	1099095	0.2441		104	17279	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.017	-0.001	1.000	3031255	2.50		100.0	32020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.026	4.020	0.006	1.003	323392	0.2558		102	356	
613.00 > 169.00	4.026	4.020	0.006	1.003	76615		4.22(2.13-6.40)	102	964	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.278	0.001	1.000	353030	0.2396		95.8	325	
663.00 > 169.00	4.279	4.278	0.001	1.000	109952		3.21(1.25-3.76)	95.8	1133	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.510	4.513	-0.003	1.000	3729686	2.43		97.0	27846	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.510	4.513	-0.003	1.000	92073	0.2457		98.3	961	
713.00 > 219.00	4.510	4.513	-0.003	1.000	66153		1.39(0.71-2.13)	98.3	1347	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.918	0.003	1.000	6094708	2.44		97.4	18710	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.920	0.001	1.000	648936	0.2588		104	210	
813.00 > 169.00	4.921	4.920	0.001	1.000	100021		6.49(2.86-8.58)	104	777	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.268	0.001	1.000	616691	0.2519		101	178	
913.00 > 169.00	5.269	5.268	0.001	1.000	75406		8.18(3.83-11.48)	101	660	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:06 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_004.d

Injection Date: 10-Apr-2018 18:55:18 Instrument ID: A8_N

Lims ID: IC L3 Full

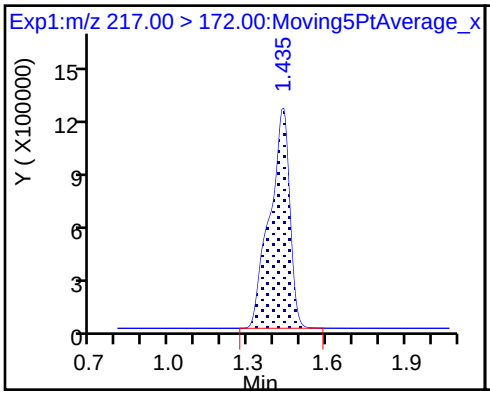
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

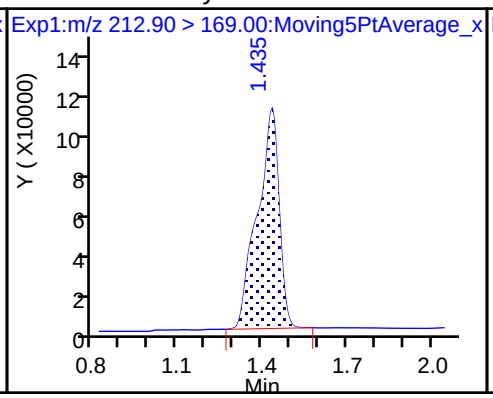
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

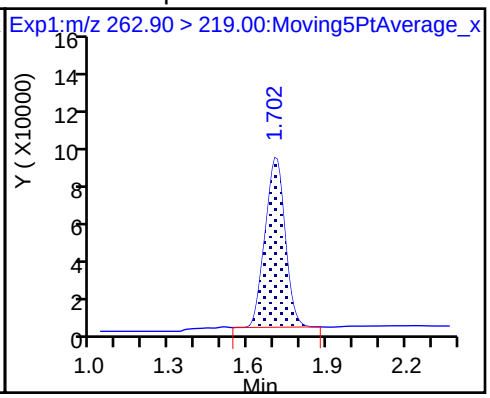
D 1 13C4 PFBA



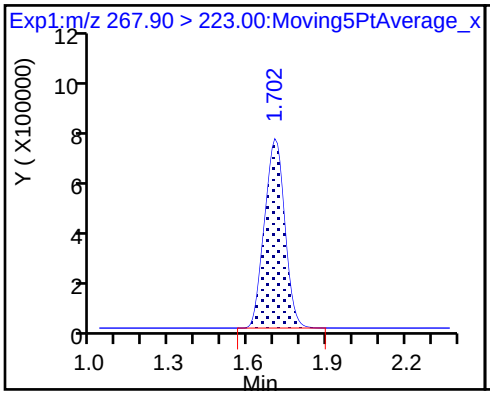
2 Perfluorobutyric acid



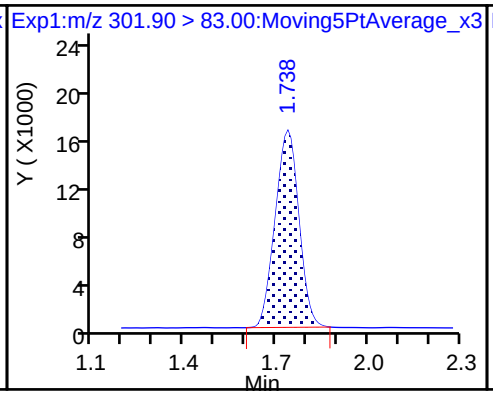
4 Perfluoropentanoic acid



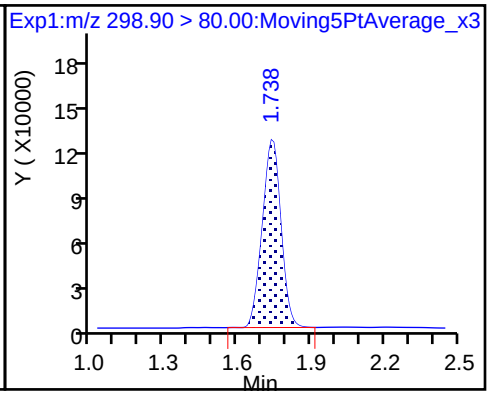
D 3 13C5-PFPeA



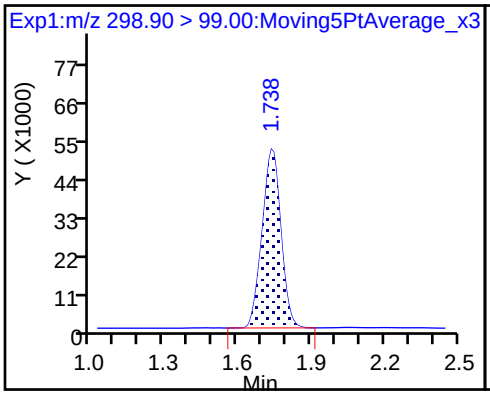
D 47 13C3-PFBS



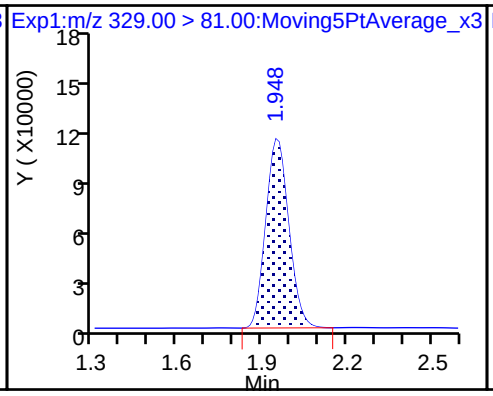
5 Perfluorobutanesulfonic acid



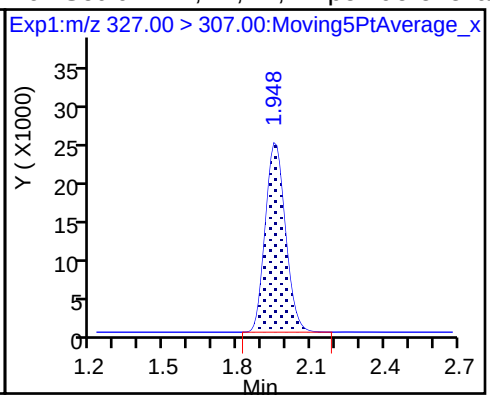
5 Perfluorobutanesulfonic acid



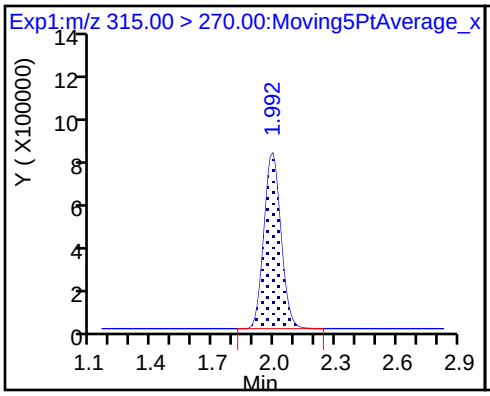
D 60 M2-4:2FTS



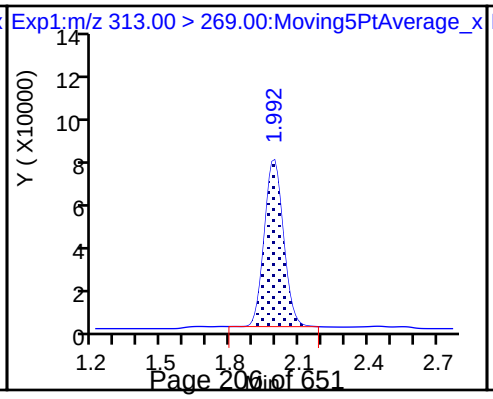
61 Sodium 1H,1H,2H,2H-perfluorohexane



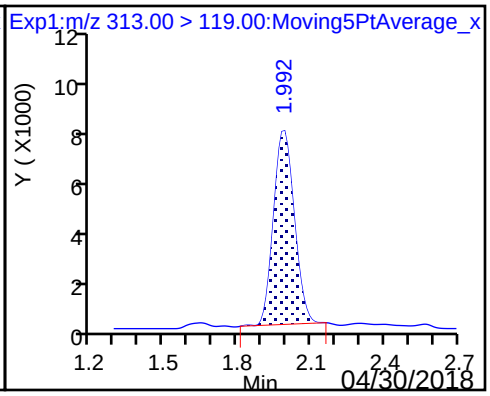
D 7 13C2 PFHxA



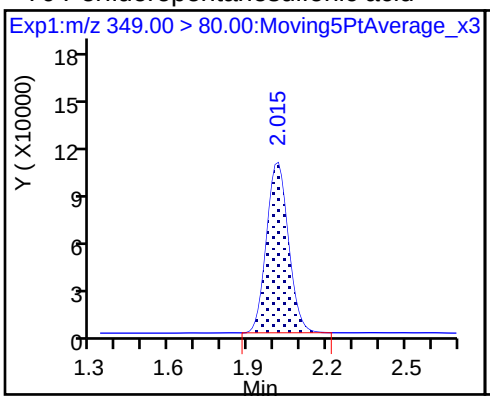
6 Perfluorohexanoic acid



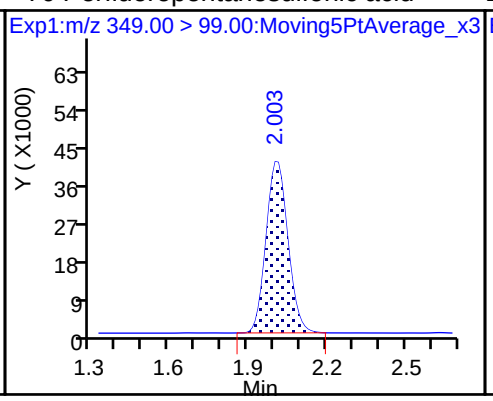
6 Perfluorohexanoic acid



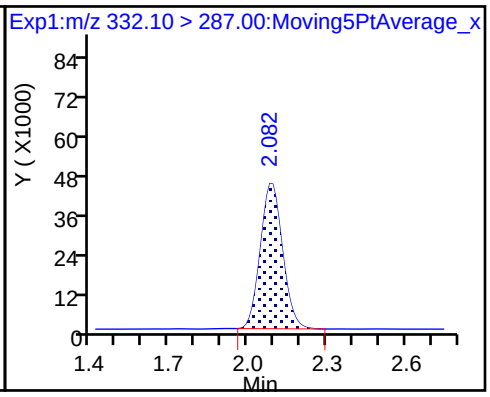
70 Perfluoropentanesulfonic acid



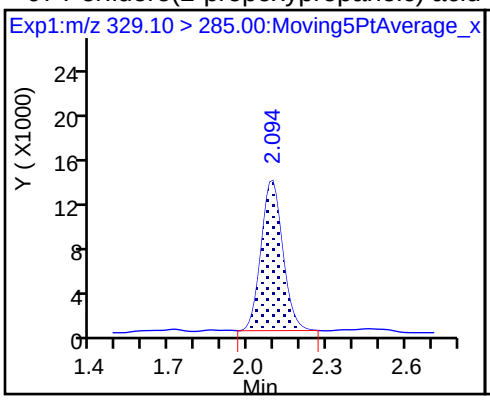
70 Perfluoropentanesulfonic acid



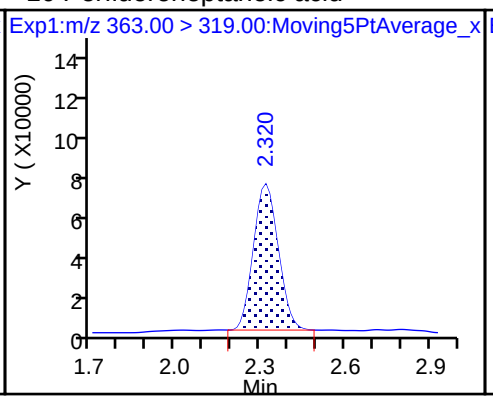
D 64 13C3 HFPO-DA



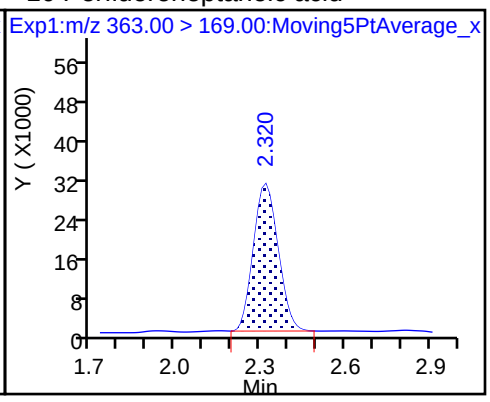
67 Perfluoro(2-propoxypropanoic) acid



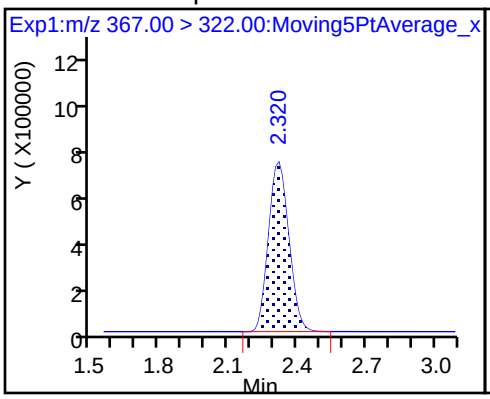
10 Perfluoroheptanoic acid



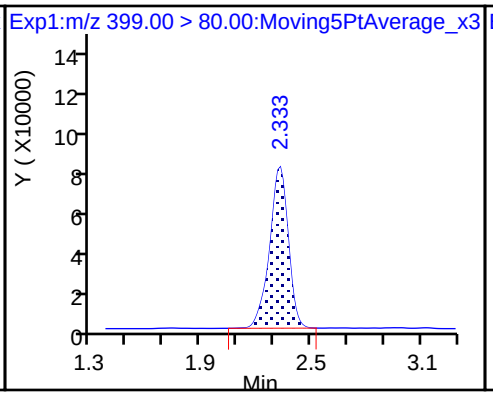
10 Perfluoroheptanoic acid



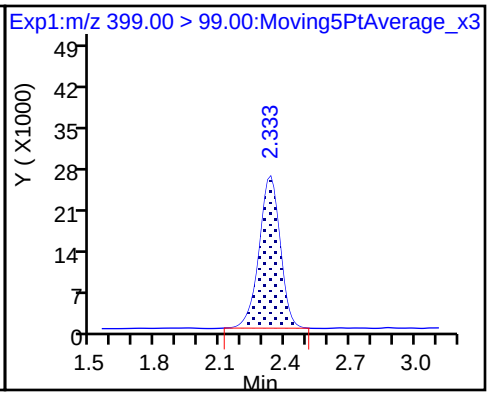
D 9 13C4-PFHpA



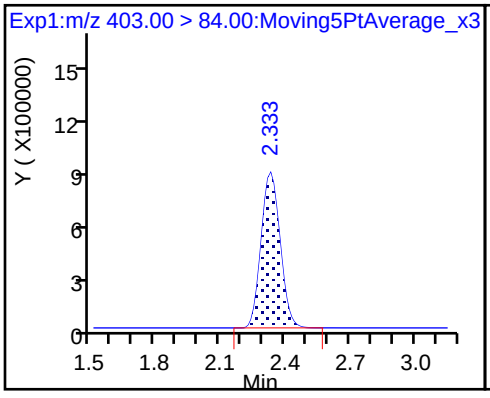
8 Perfluorohexanesulfonic acid



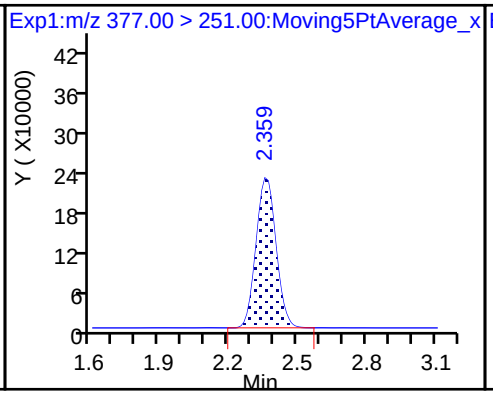
8 Perfluorohexanesulfonic acid



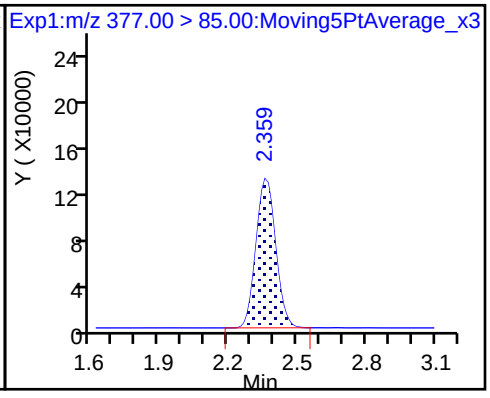
D 11 18O2 PFHxS



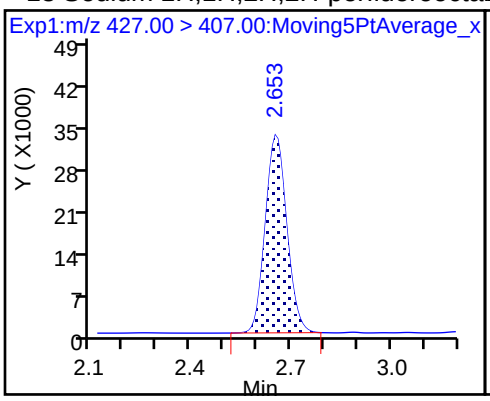
65 Adona



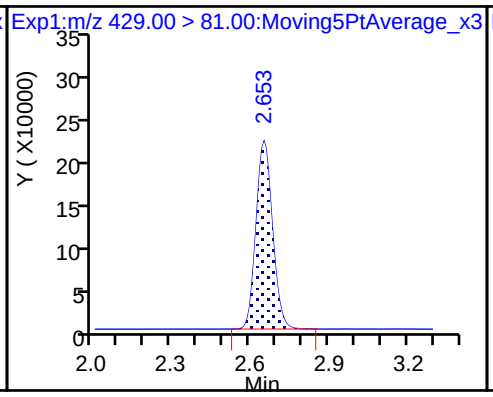
65 Adona



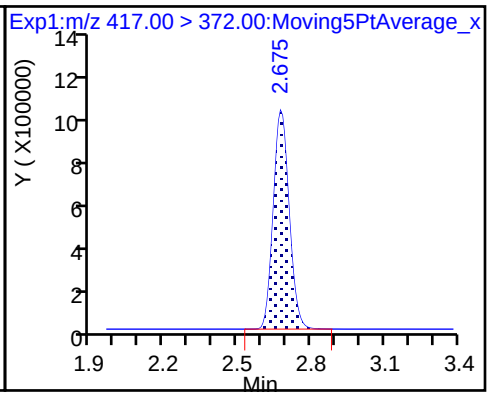
13 Sodium 1H,1H,2H,2H-perfluorooctane



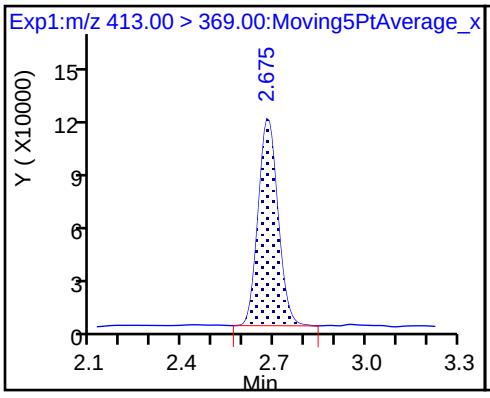
D 12 M2-6:2FTS



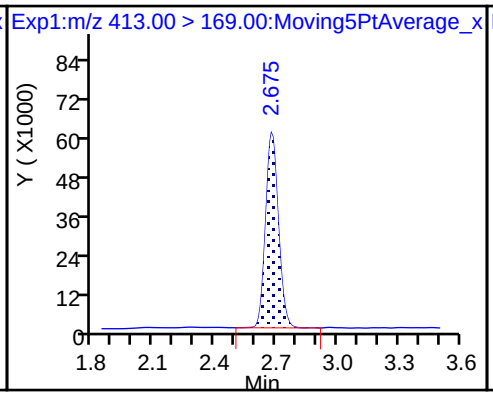
D 14 13C4 PFOA



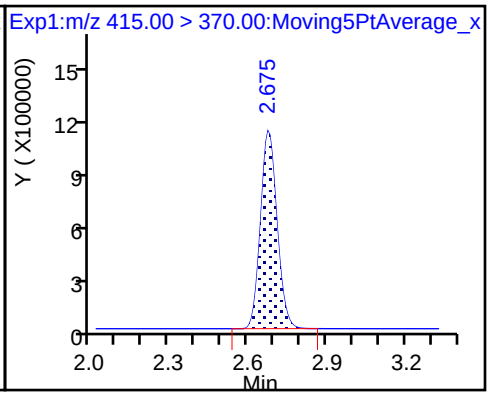
15 Perfluorooctanoic acid



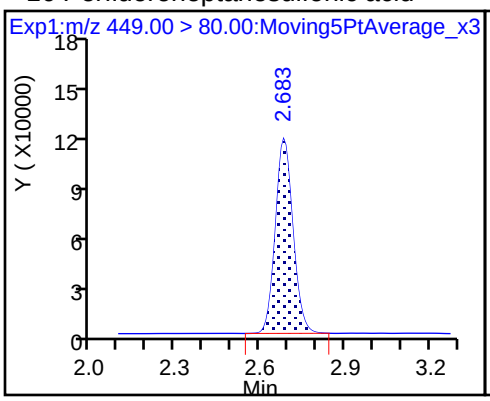
15 Perfluorooctanoic acid



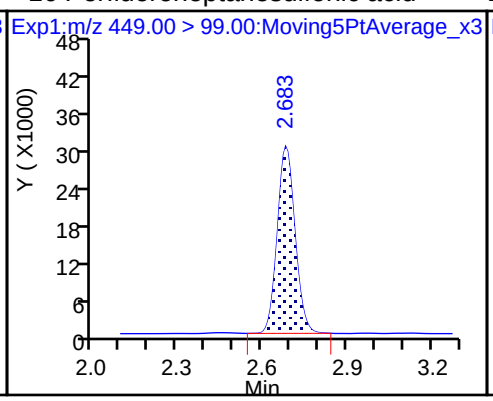
* 62 13C2-PFOA



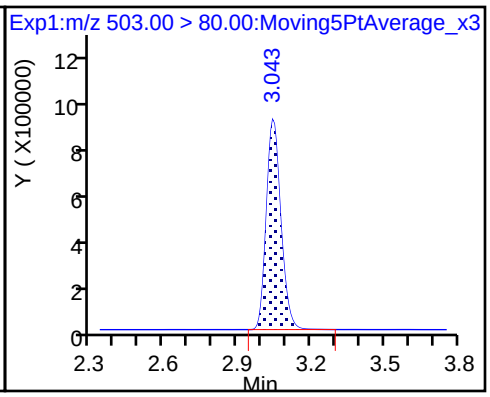
16 Perfluoroheptanesulfonic acid



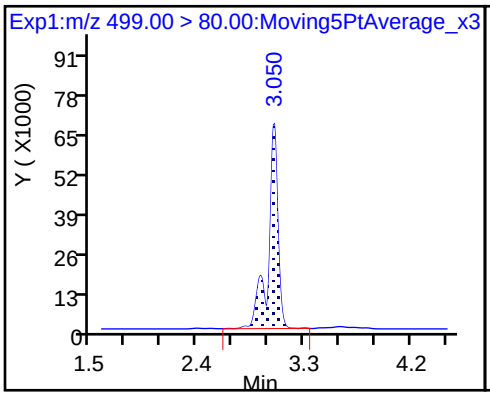
16 Perfluoroheptanesulfonic acid



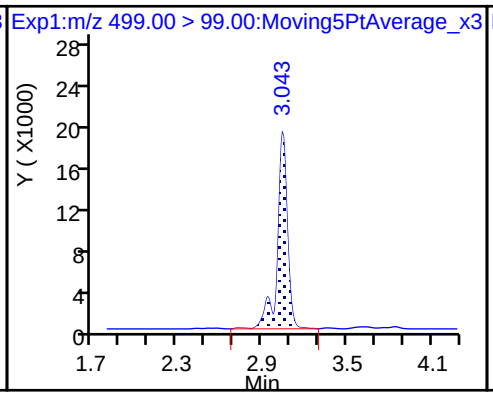
D 18 13C4 PFOS



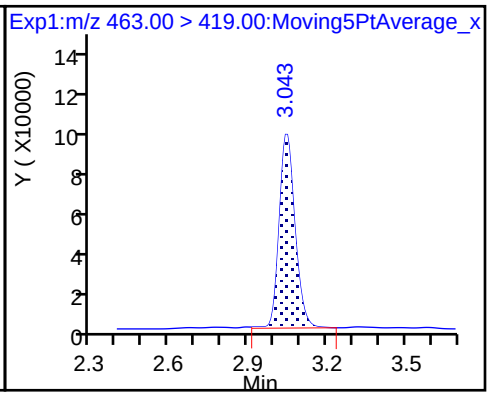
17 Perfluorooctane sulfonic acid



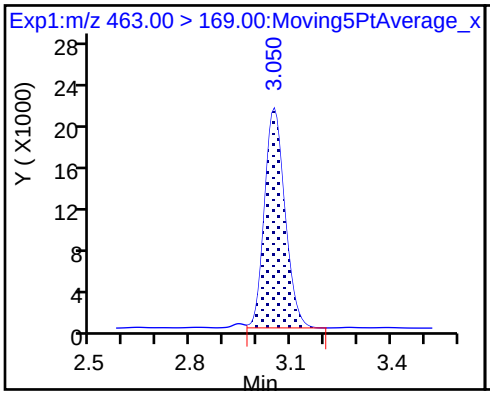
17 Perfluorooctane sulfonic acid



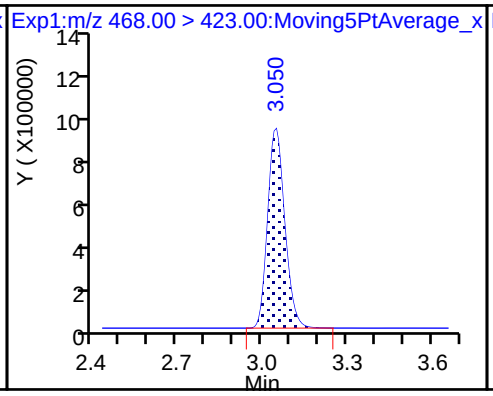
20 Perfluorononanoic acid



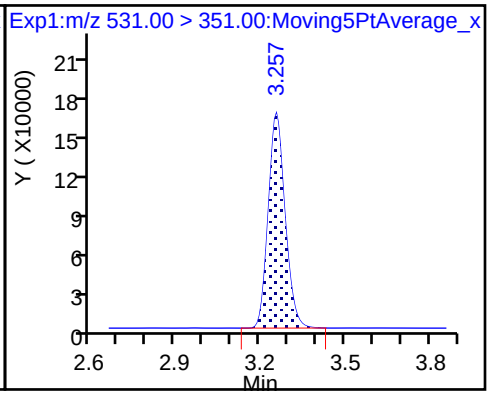
20 Perfluorononanoic acid



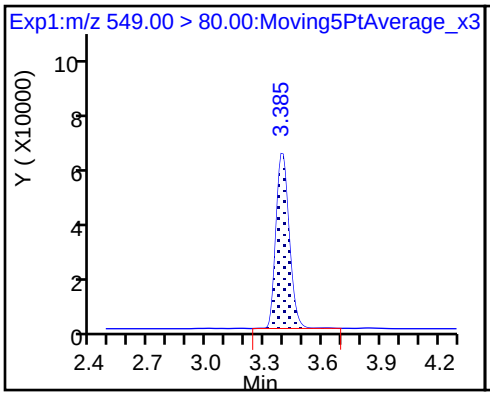
D 19 13C5 PFNA



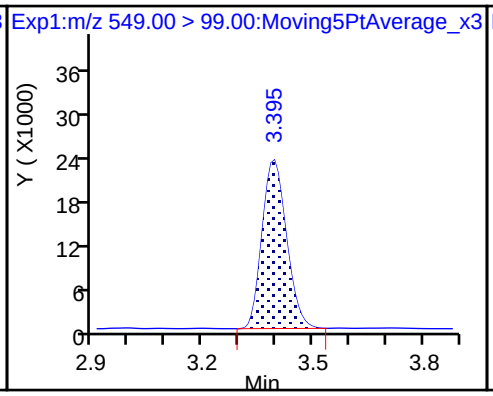
69 9-Chlorohexadecafluoro-3-oxanonane



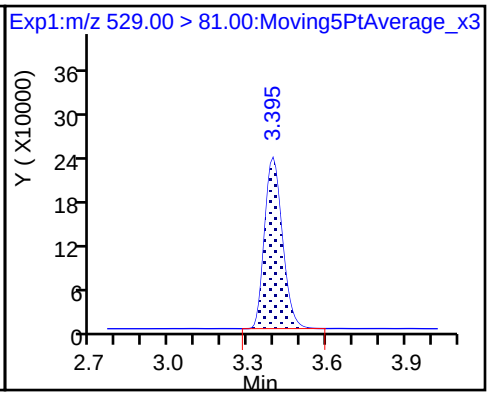
68 Perfluorononanesulfonic acid



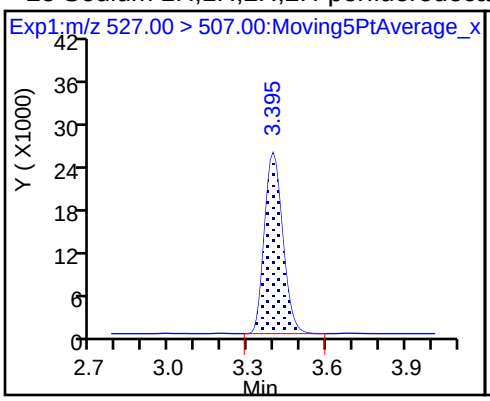
68 Perfluorononanesulfonic acid



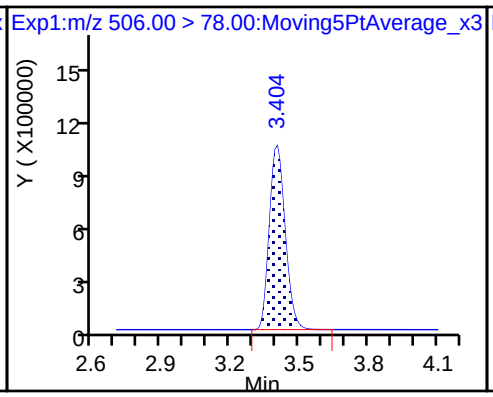
D 26 M2-8:2FTS



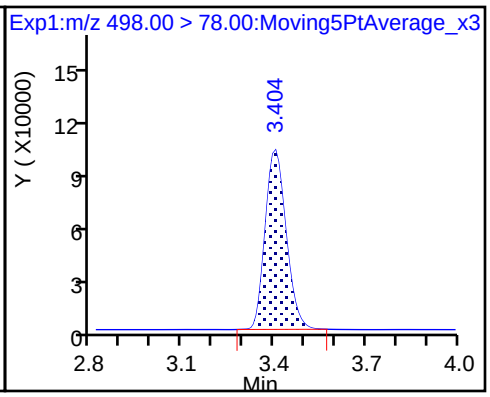
25 Sodium 1H,1H,2H,2H-perfluorodecane



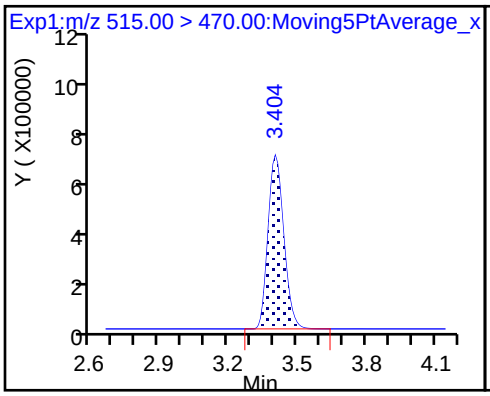
D 21 13C8 FOSA



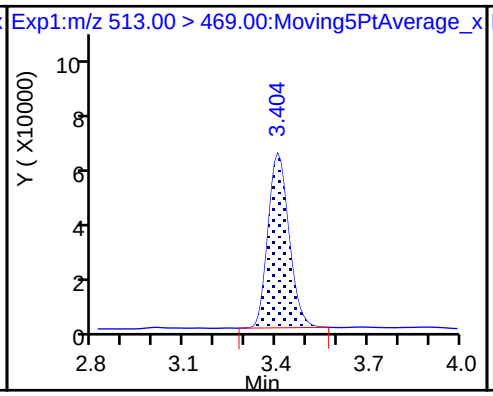
22 Perfluorooctane Sulfonamide



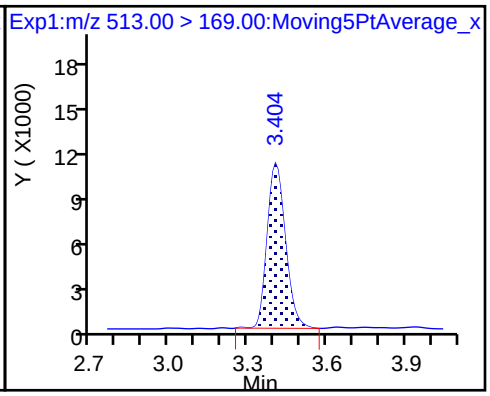
D 23 13C2 PFDA



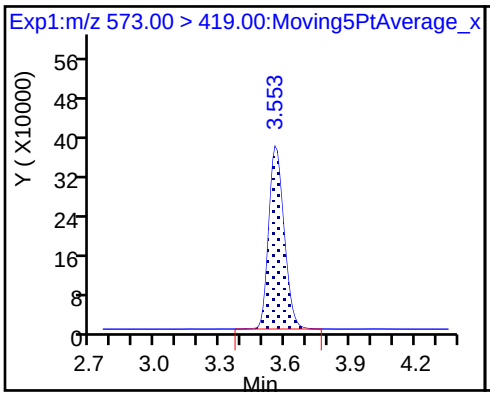
24 Perfluorodecanoic acid



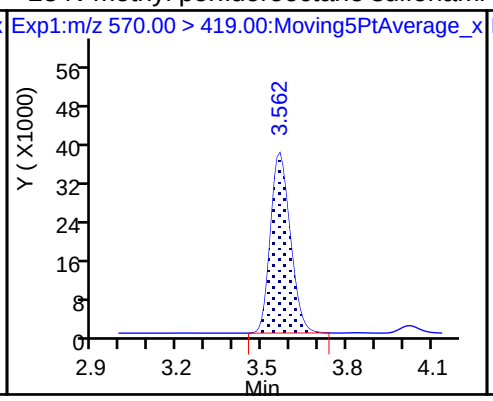
24 Perfluorodecanoic acid



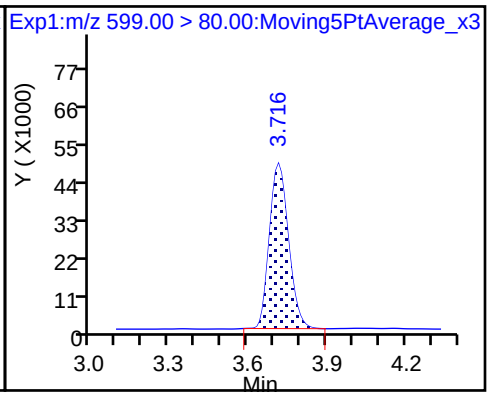
D 27 d3-NMeFOSAA



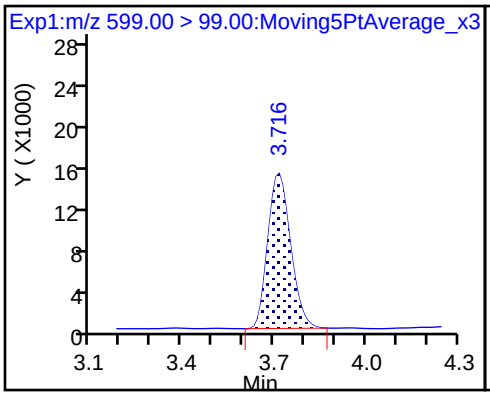
28 N-methyl perfluorooctane sulfonami



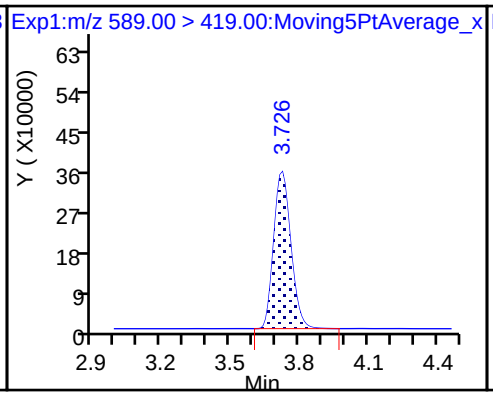
29 Perfluorodecane Sulfonic acid



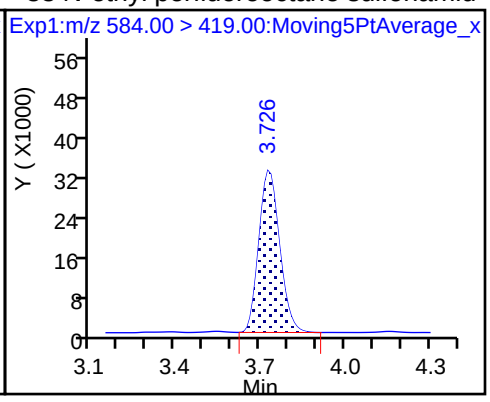
29 Perfluorodecane Sulfonic acid



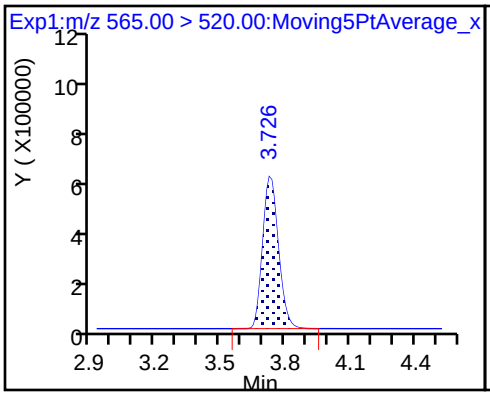
D 32 d5-NEtFOSAA



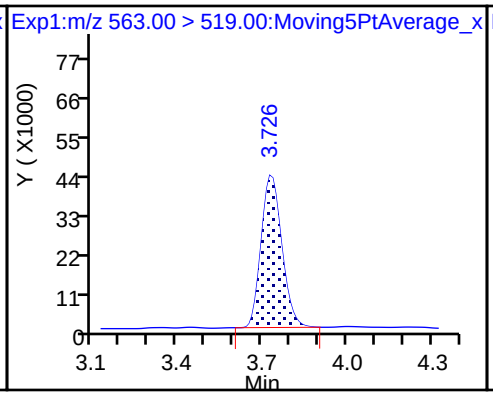
33 N-ethyl perfluorooctane sulfonamid



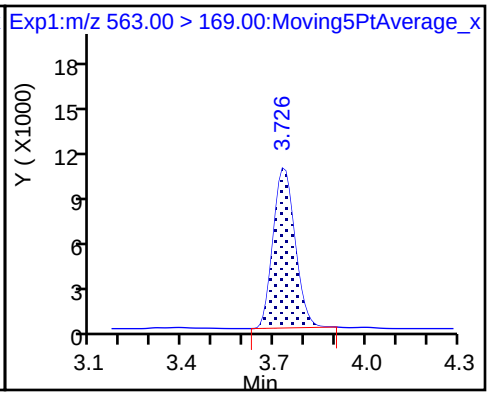
D 30 13C2 PFUnA



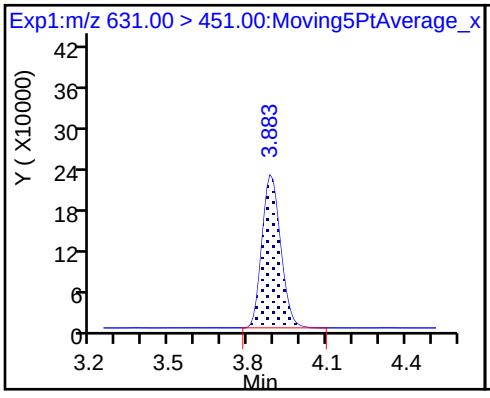
31 Perfluoroundecanoic acid



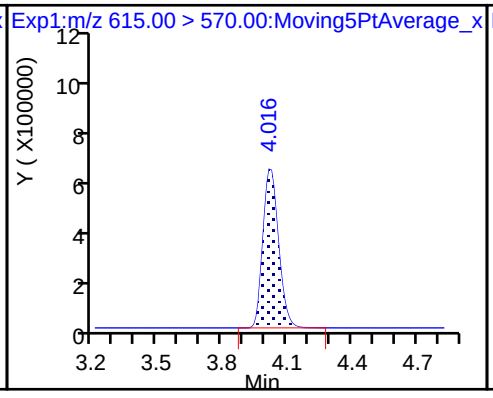
31 Perfluoroundecanoic acid



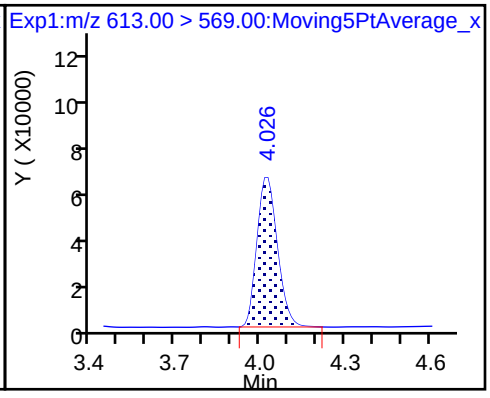
66 11-Chloroeicosafluoro-3-oxaundecan



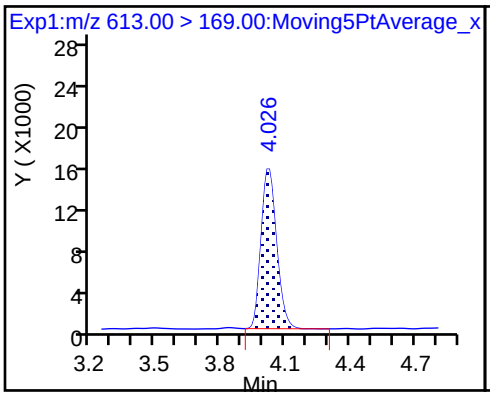
D 36 13C2 PFDoA



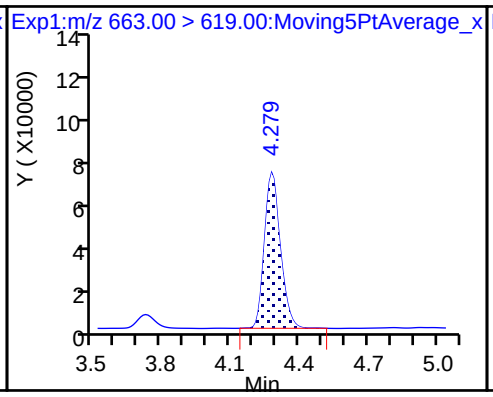
37 Perfluorododecanoic acid



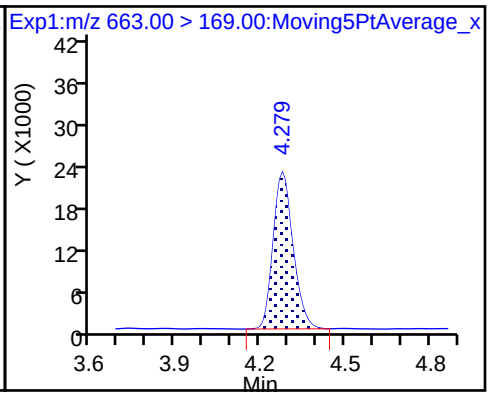
37 Perfluorododecanoic acid



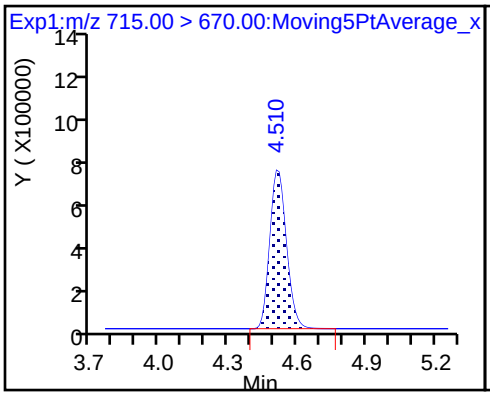
41 Perfluorotridecanoic acid



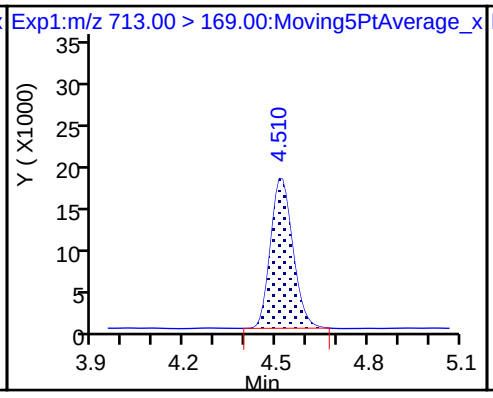
41 Perfluorotridecanoic acid



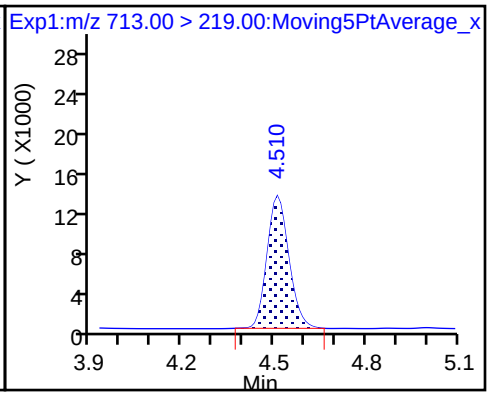
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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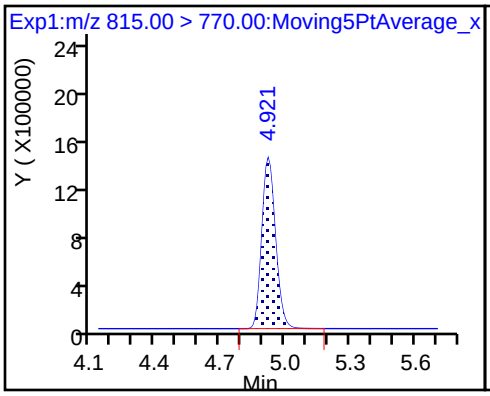
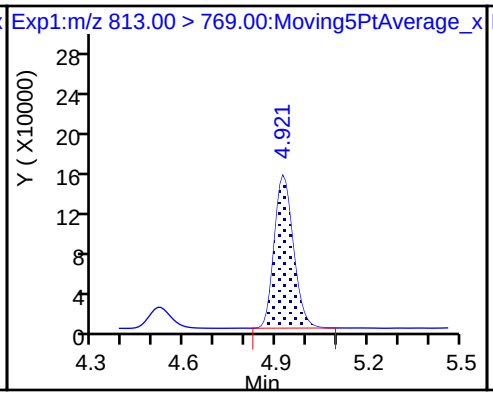
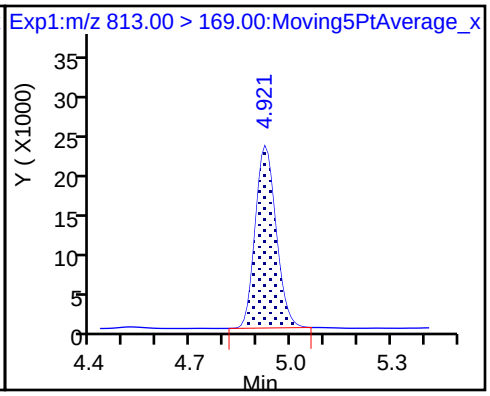


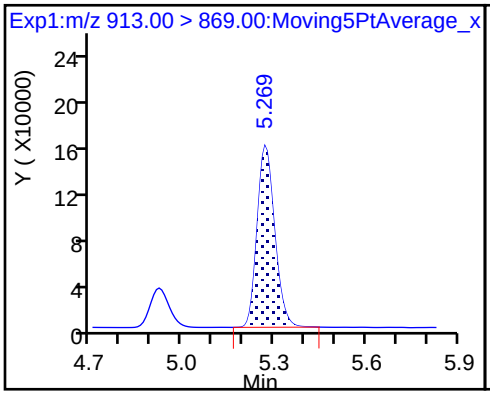
45 Perfluorohexadecanoic acid



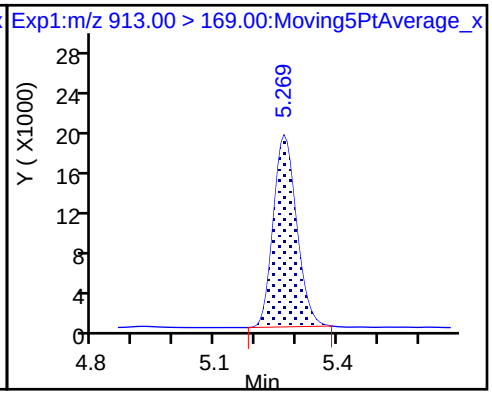
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 10-Apr-2018 19:03:10 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:08 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:18:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	6139471	2.47		98.7	48680	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	2238331	0.9816		98.2	1326	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.699	-0.005	0.557	3994638	2.49		99.6	84241	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.699	-0.005	1.000	1831380	0.9617		96.2	1761	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.735	-0.005	1.000	87216	2.37		102	926	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.003	1.005	2489261	0.8476		95.9	14542	
298.90 > 99.00	1.730	1.736	-0.006	1.000	1026363		2.43(1.25-3.74)	95.9	13875	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	538908	0.8961		95.9	32256	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	623892	2.37		101	7451	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.985	-0.003	1.000	1813678	1.02		102	3998	
313.00 > 119.00	1.982	1.985	-0.003	1.000	170514		10.64(5.03-15.10)	102	2276	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4391788	2.48		99.0	110601	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.008	-0.003	1.000	2448518	0.9128		97.3	20312	
349.00 > 99.00	2.005	2.008	-0.003	1.000	889950		2.75(1.36-4.07)	97.3	22028	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	279991	2.55		102	7988	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.087	-0.003	1.000	295687	0.9479		94.8	2375	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.314	-0.006	1.000	4282212	2.48		99.2	70470	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.314	-0.006	1.000	1720489	1.00		100	2264	
363.00 > 169.00	2.308	2.314	-0.006	1.000	645805		2.66(1.13-3.40)	100	2862	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.323	-0.002	1.000	2023389	0.8443		92.8	6640	
399.00 > 99.00	2.321	2.323	-0.002	1.000	680836		2.97(1.50-4.49)	92.8	7311	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.327	-0.006	1.000	5007633	2.35		99.4	102844	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	5740779	1.11		111	74377	
377.00 > 85.00	2.360	2.360	0.0	1.000	3274137		1.75(0.84-2.53)	111	78247	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.649	-0.005	1.000	892700	2.41		102	13338	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.649	-0.005	1.000	594490	0.9356		98.7	14992	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4283435	2.50		99.9	79564	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.674	-0.007		4623888	2.50			81419	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.674	-0.007	1.000	1852208	0.9356		93.6	1057	
413.00 > 169.00	2.667	2.674	-0.007	1.000	965583		1.92(0.84-2.52)	93.6	3850	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.680	-0.005	1.000	1862796	0.9363		98.4	15147	
449.00 > 99.00	2.675	2.680	-0.005	1.000	507863		3.67(1.94-5.82)	98.4	12696	
D 18 13C4 PFOS										
503.00 > 80.00	3.039	3.041	-0.002	1.000	3581436	2.40		100	25084	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.039	3.042	-0.003	1.000	1466540	0.8996		96.9	6157	
499.00 > 99.00	3.039	3.042	-0.003	1.000	330120		4.44(2.31-6.93)	96.9	8806	
20 Perfluorononanoic acid										
463.00 > 419.00	3.039	3.043	-0.004	1.000	1529838	1.00		99.7	3704	
463.00 > 169.00	3.039	3.043	-0.004	1.000	361461		4.23(1.90-5.69)	99.7	8802	
D 19 13C5 PFNA										
468.00 > 423.00	3.039	3.045	-0.006	1.000	3677661	2.49		99.8	74488	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.247	3.253	-0.006	1.000	2661617	0.9422		101	59184	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.380	3.388	-0.008	1.000	1034931	0.8640		90.0	11093	
549.00 > 99.00	3.380	3.388	-0.008	1.000	415423		2.49(1.33-3.97)	90.0	9871	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.390	-0.001	1.000	1093693	2.46		103	11489	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.389	3.393	-0.004	1.000	537990	0.9310		97.2	28178	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.397	-0.008	1.000	4725832	2.54		101	62563	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.401	-0.002	1.003	1898032	0.99		99.3	33374	
D 23 13C2 PFDA										
515.00 > 470.00	3.399	3.401	-0.002	1.000	3187733	2.57		103	83926	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.399	3.402	-0.003	1.000	1275776	0.9699		97.0	5989	
513.00 > 169.00	3.399	3.402	-0.003	1.000	223055		5.72(2.36-7.09)	97.0	4231	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.548	3.553	-0.005	1.000	1818526	2.59		104	25217	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.557	3.558	-0.001	1.003	694281	0.9570		95.7	4614	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.709	3.715	-0.006	1.000	935700	0.9618		99.8	9931	
599.00 > 99.00	3.709	3.715	-0.006	1.000	313308		2.99(1.39-4.16)	99.8	9034	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.720	3.722	-0.002	1.000	1716798	2.48		99.0	15143	
D 30 13C2 PFUnA										
565.00 > 520.00	3.720	3.727	-0.007	1.000	2598322	2.43		97.2	73211	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.720	3.727	-0.007	1.000	636880	0.99		99.2	12406	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.720	3.727	-0.007	1.000	822546	0.9365		93.6	3940	
563.00 > 169.00	3.720	3.727	-0.007	1.000	193601		4.25(2.12-6.36)	93.6	4746	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.876	3.883	-0.007	1.000	4412145	1.01		107	64014	
D 36 13C2 PFDoA										
615.00 > 570.00	4.009	4.017	-0.008	1.000	3058842	2.65		106	28121	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.020	4.020	0.0	1.003	1173427	0.9196		92.0	1328	
613.00 > 169.00	4.009	4.020	-0.011	1.000	277484		4.23(2.13-6.40)	92.0	3949	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.272	4.278	-0.006	1.000	1346073	0.9052		90.5	1176	
663.00 > 169.00	4.272	4.278	-0.006	1.000	415749		3.24(1.25-3.76)	90.5	4126	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.513	-0.001	1.000	3824690	2.61		105	24410	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.513	-0.001	1.000	376531	0.9800		98.0	4038	
713.00 > 219.00	4.502	4.513	-0.011	0.998	255558		1.47(0.71-2.13)	98.0	4003	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.914	4.918	-0.004	1.000	5981114	2.51		100	18136	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.914	4.920	-0.006	1.000	2337041	1.01		101	753	
813.00 > 169.00	4.914	4.920	-0.006	1.000	365367		6.40(2.86-8.58)	101	2438	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.263	5.268	-0.005	1.000	2359770	0.9824		98.2	640	
913.00 > 169.00	5.263	5.268	-0.005	1.000	281134		8.39(3.83-11.48)	98.2	1988	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_005.d

Injection Date: 10-Apr-2018 19:03:10 Instrument ID: A8_N

Lims ID: IC L4 Full

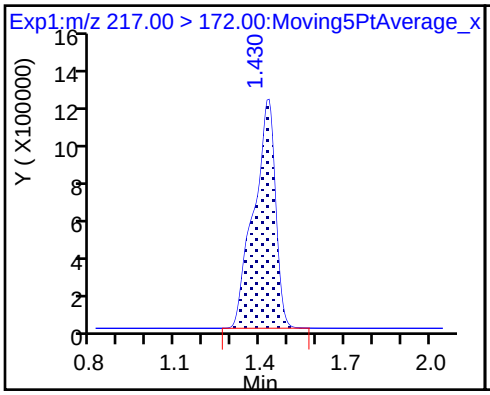
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

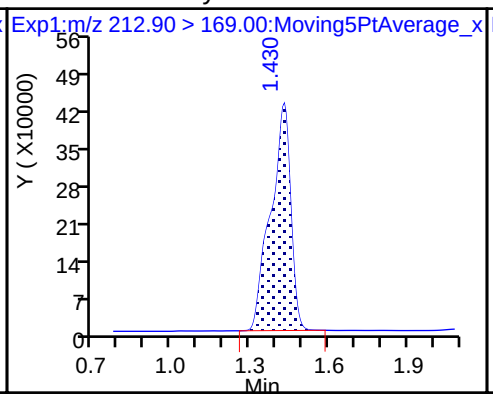
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

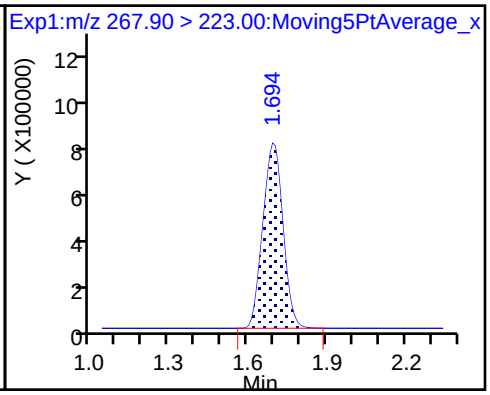
D 1 13C4 PFBA



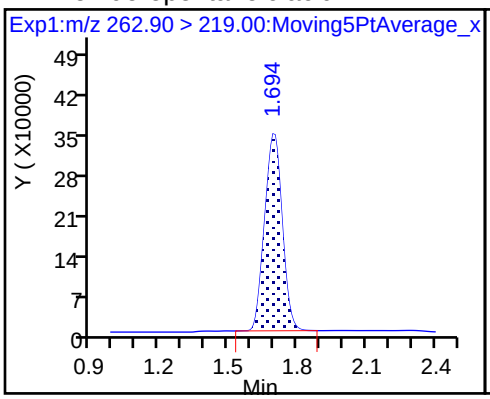
2 Perfluorobutyric acid



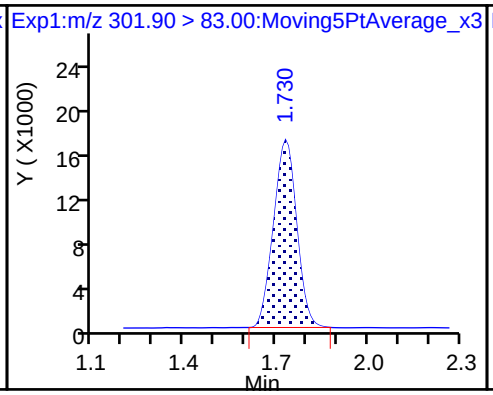
D 3 13C5-PFPeA



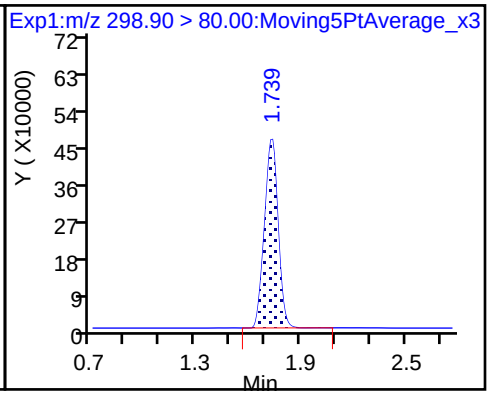
4 Perfluoropentanoic acid



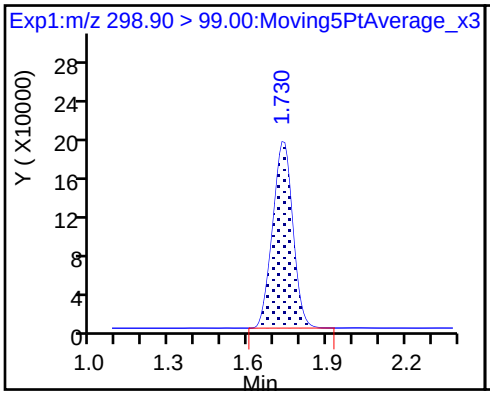
D 47 13C3-PFBS



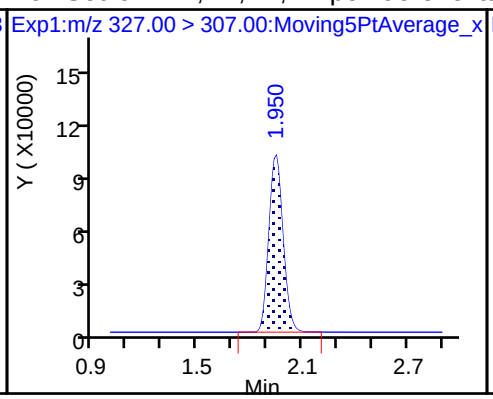
5 Perfluorobutanesulfonic acid



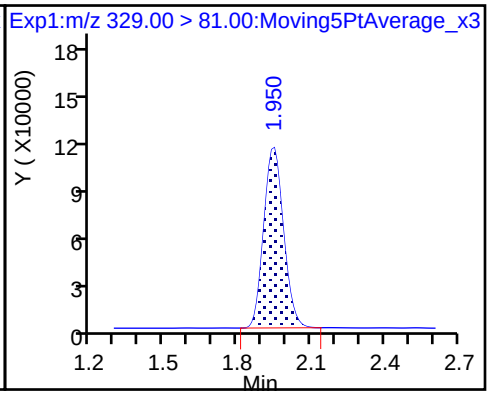
5 Perfluorobutanesulfonic acid



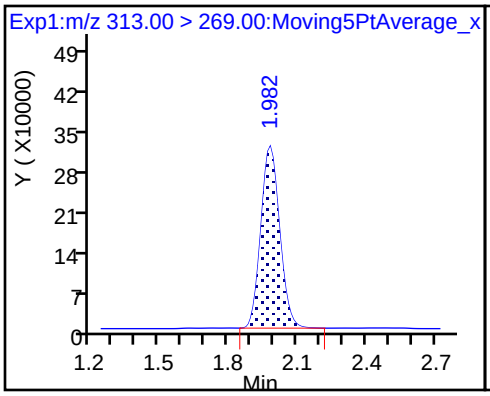
61 Sodium 1H,1H,2H,2H-perfluorohexane



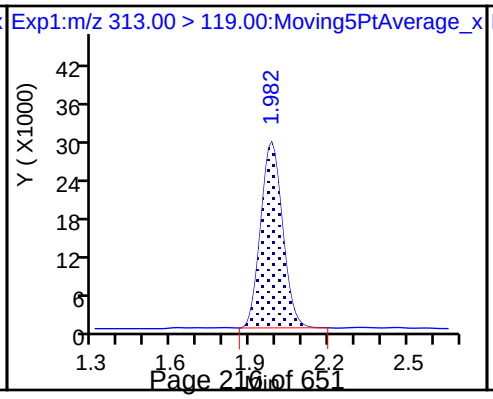
D 60 M2-4:2FTS



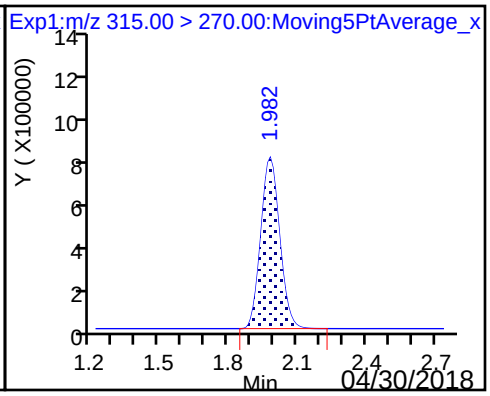
6 Perfluorohexanoic acid



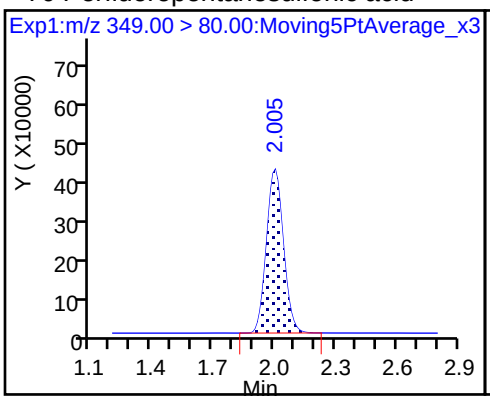
6 Perfluorohexanoic acid



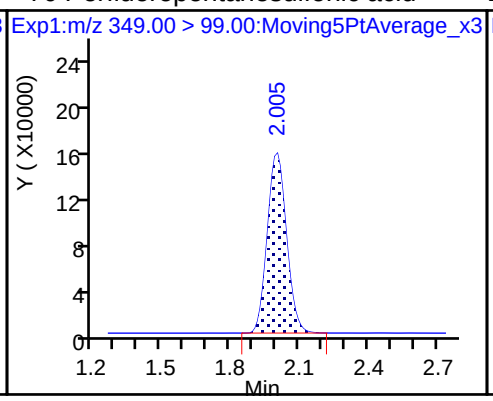
D 7 13C2 PFHxA



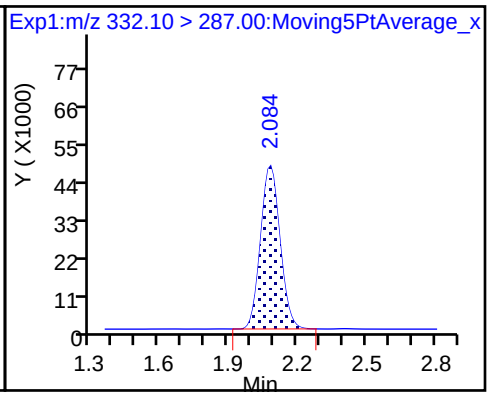
70 Perfluoropentanesulfonic acid



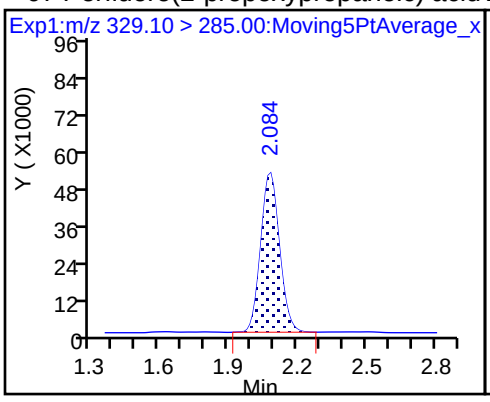
70 Perfluoropentanesulfonic acid



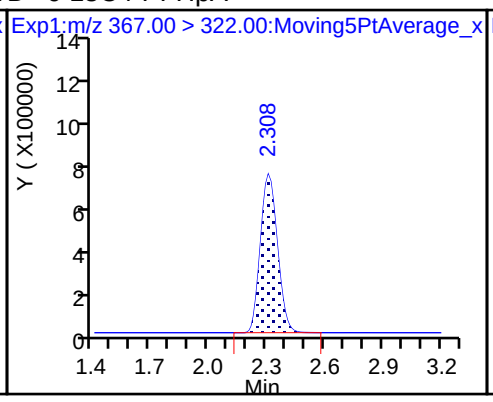
D 64 13C3 HFPO-DA



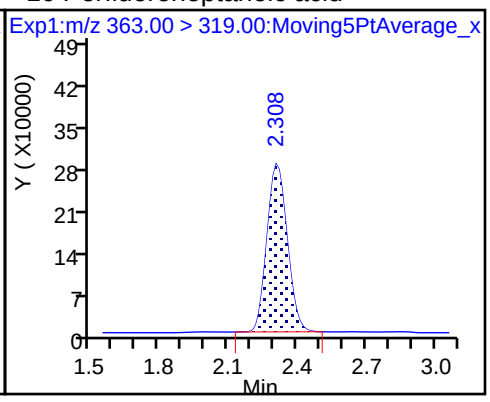
67 Perfluoro(2-propoxypropanoic) acid



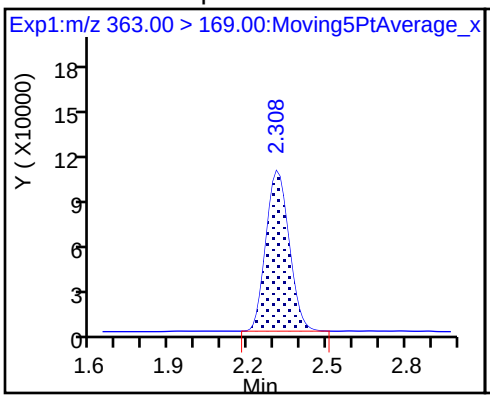
D 9 13C4-PFHpA



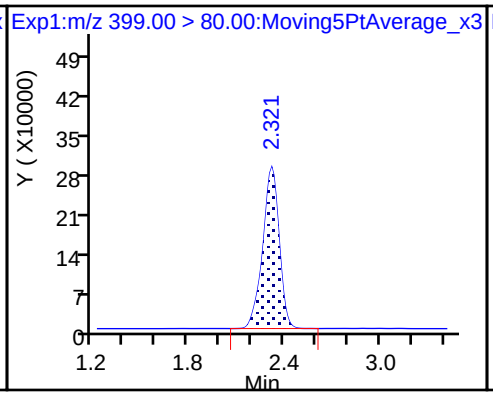
10 Perfluoroheptanoic acid



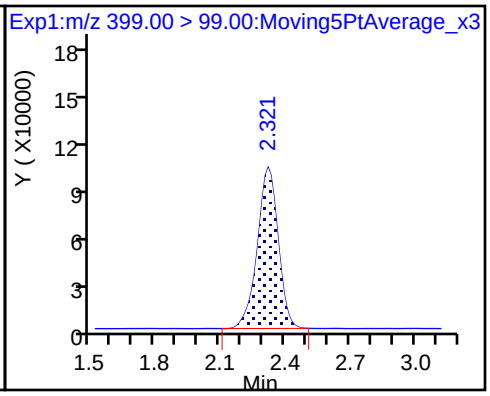
10 Perfluoroheptanoic acid



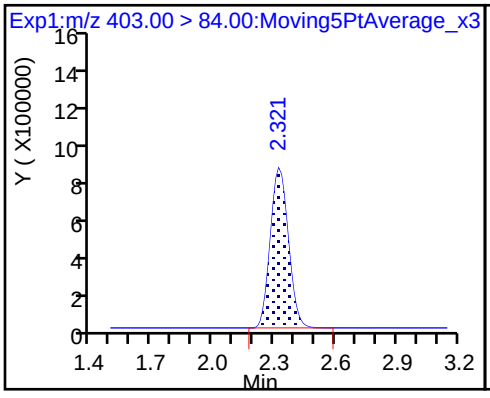
8 Perfluorohexanesulfonic acid



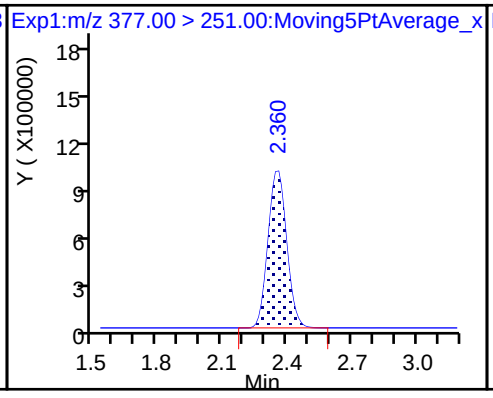
8 Perfluorohexanesulfonic acid



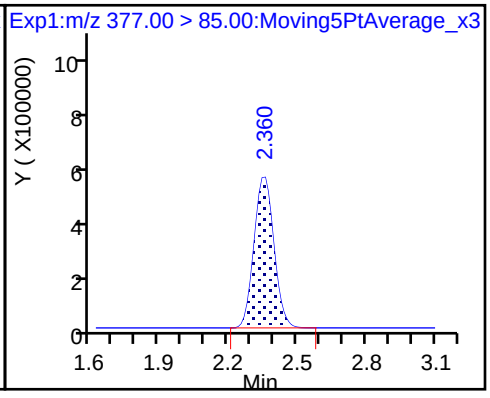
D 11 18O2 PFHxS



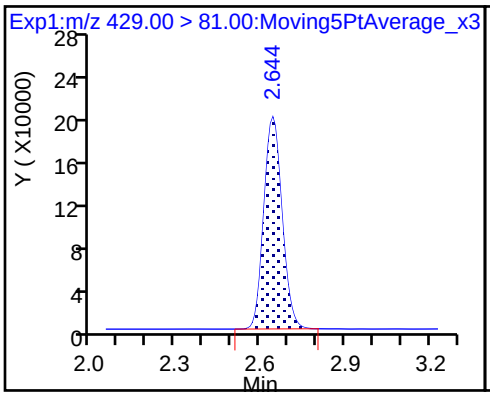
65 Adona



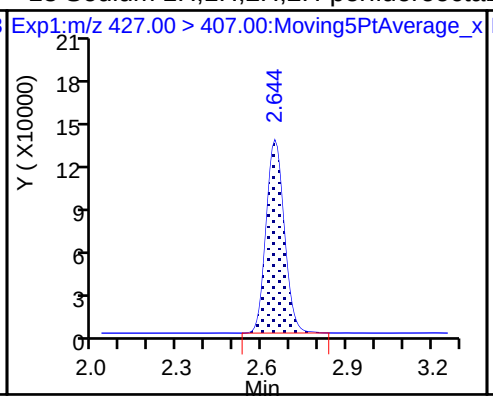
65 Adona



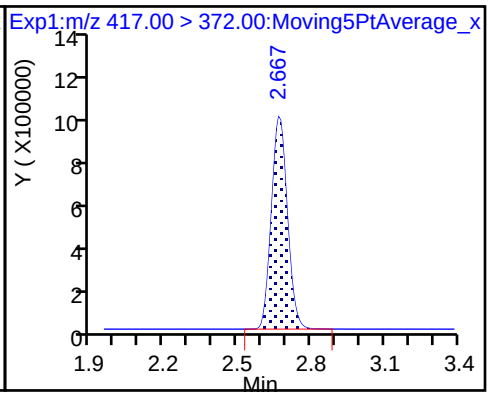
D 12 M2-6:2FTS



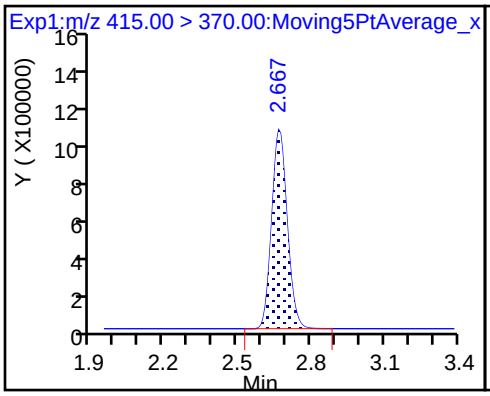
13 Sodium 1H,1H,2H,2H-perfluorooctane



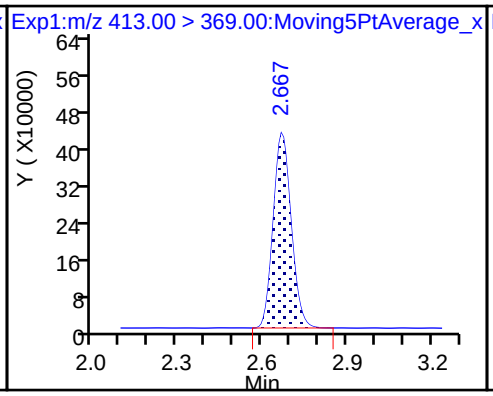
D 14 13C4 PFOA



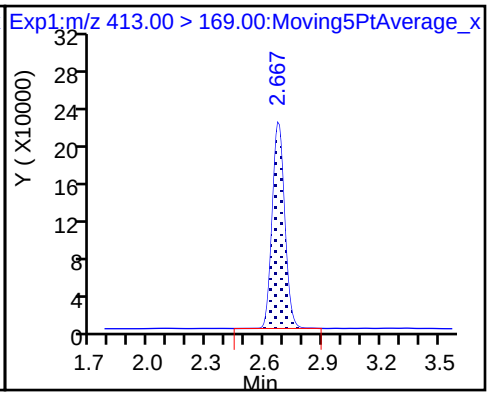
* 62 13C2-PFOA



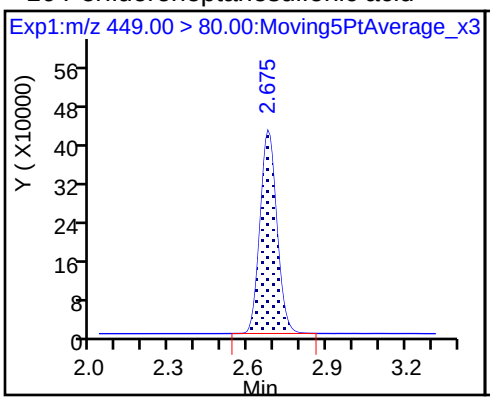
15 Perfluorooctanoic acid



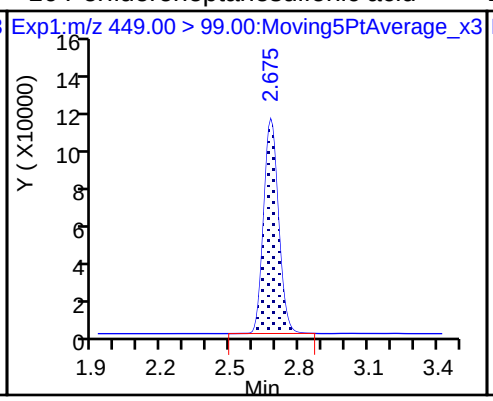
15 Perfluorooctanoic acid



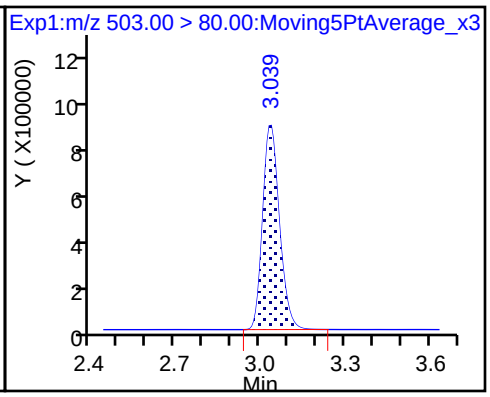
16 Perfluoroheptanesulfonic acid



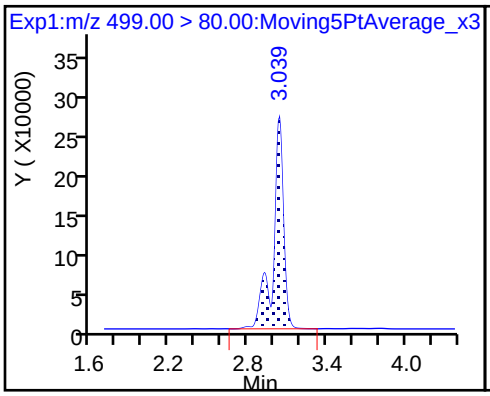
16 Perfluoroheptanesulfonic acid



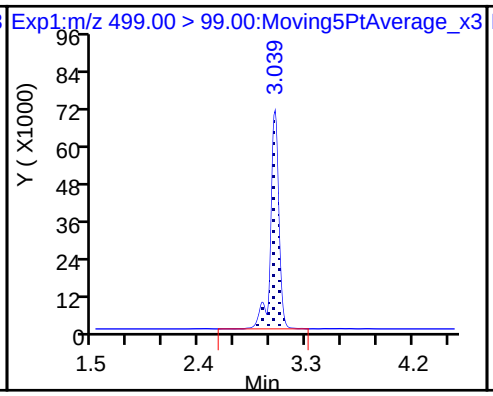
D 18 13C4 PFOS



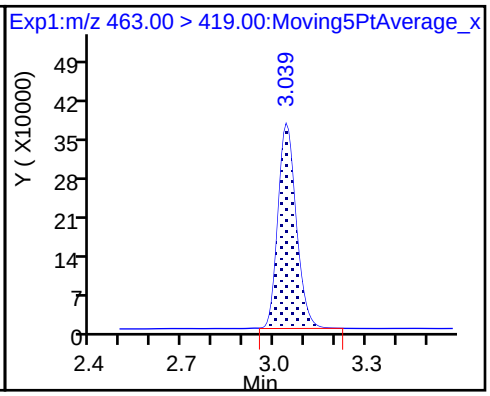
17 Perfluorooctane sulfonic acid



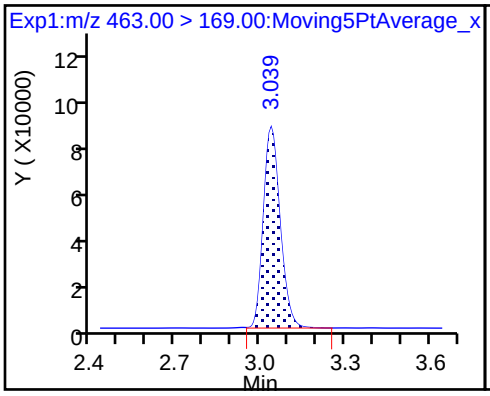
17 Perfluorooctane sulfonic acid



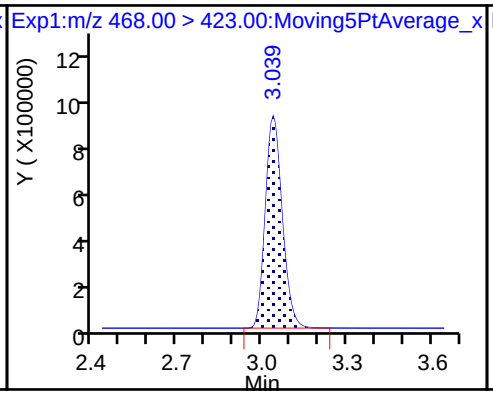
20 Perfluorononanoic acid



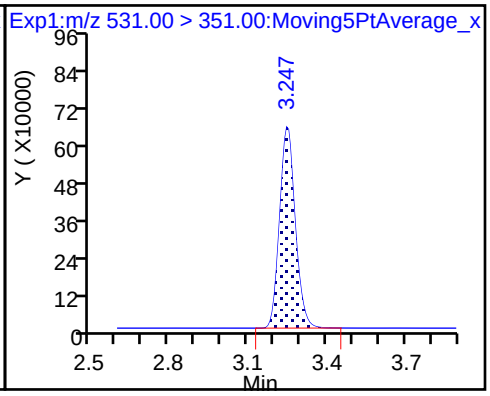
20 Perfluorononanoic acid



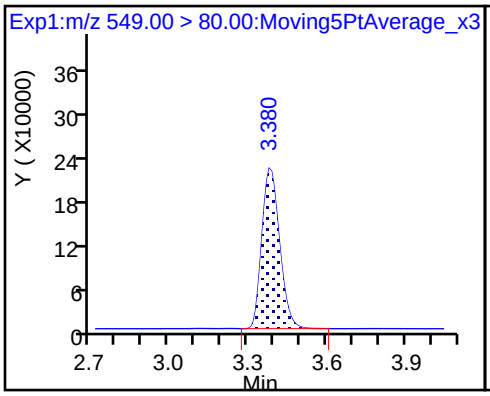
D 19 13C5 PFNA



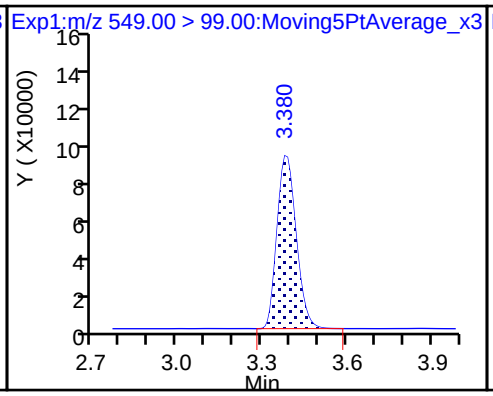
69 9-Chlorohexadecafluoro-3-oxanonane



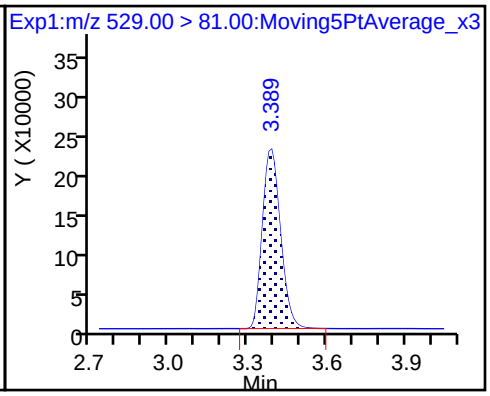
68 Perfluorononanesulfonic acid



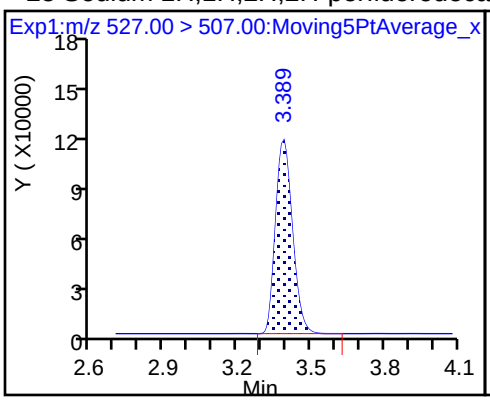
68 Perfluorononanesulfonic acid



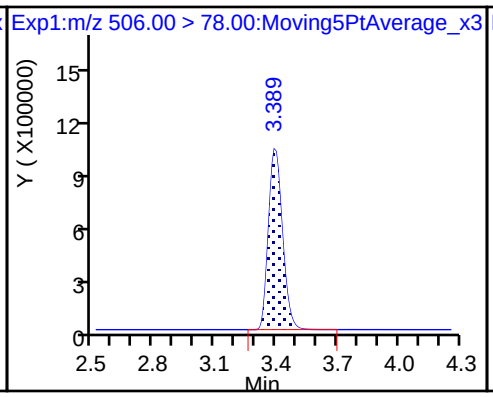
D 26 M2-8:2FTS



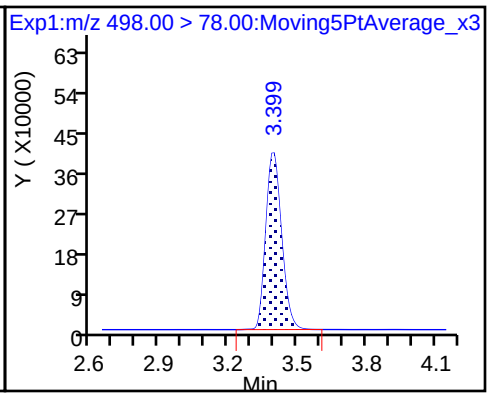
25 Sodium 1H,1H,2H,2H-perfluorodecane



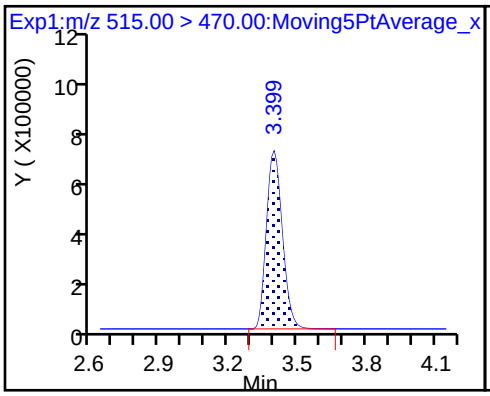
D 21 13C8 FOSA



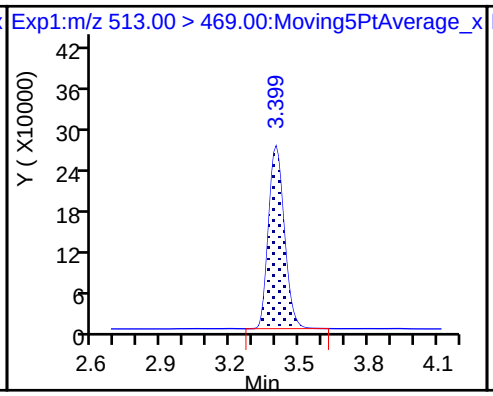
22 Perfluorooctane Sulfonamide



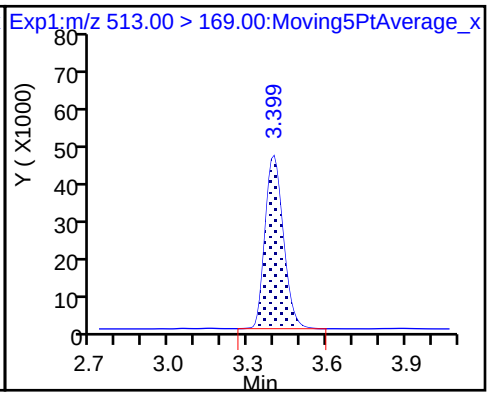
D 23 13C2 PFDA



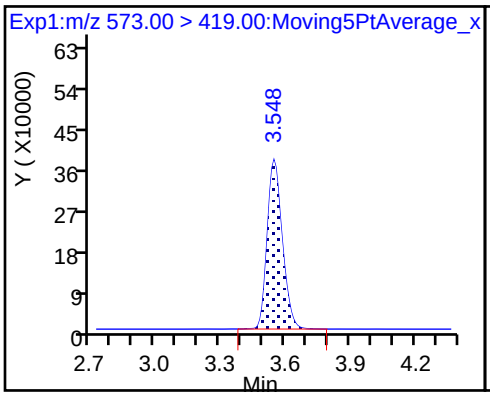
24 Perfluorodecanoic acid



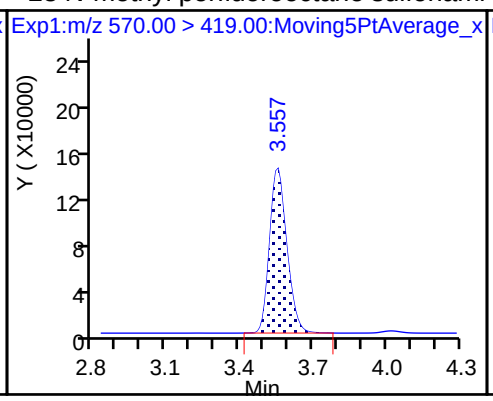
24 Perfluorodecanoic acid



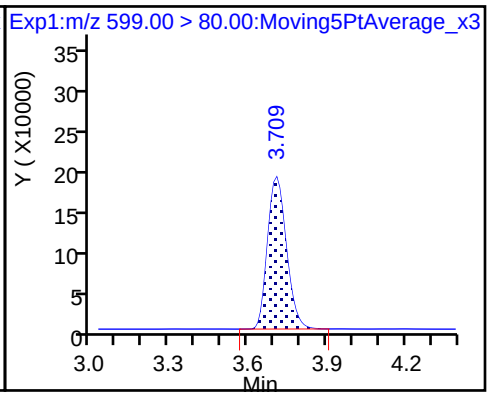
D 27 d3-NMeFOSAA



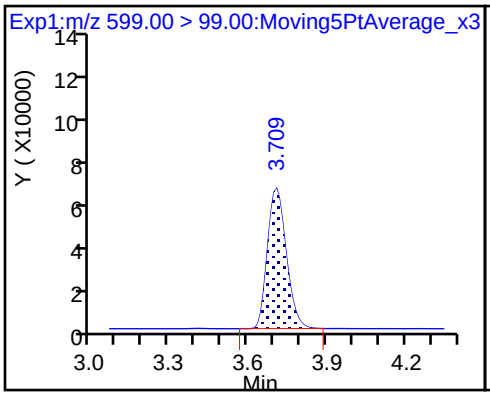
28 N-methyl perfluorooctane sulfonami



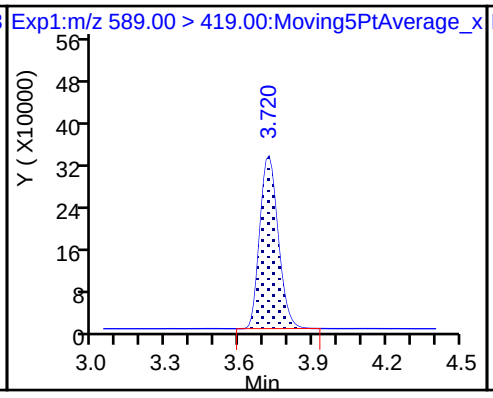
29 Perfluorodecane Sulfonic acid



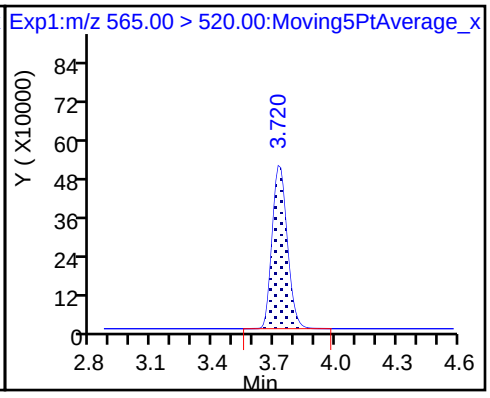
29 Perfluorodecane Sulfonic acid



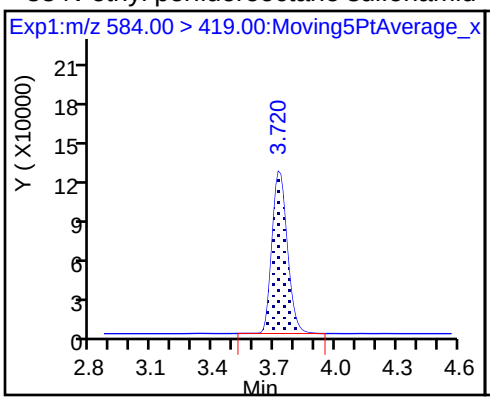
D 32 d5-NEtFOSAA



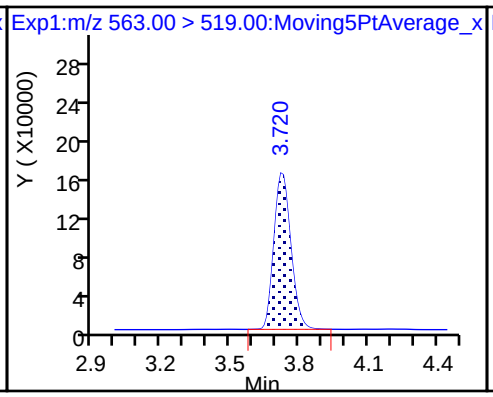
D 30 13C2 PFUnA



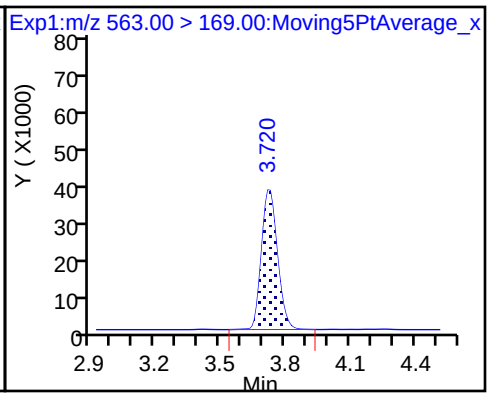
33 N-ethyl perfluorooctane sulfonamid



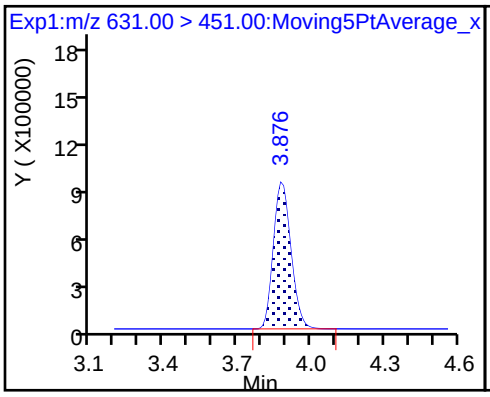
31 Perfluoroundecanoic acid



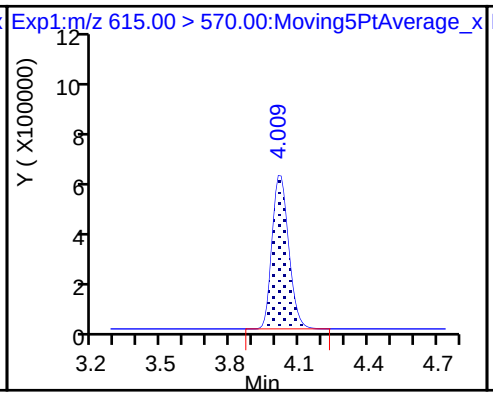
31 Perfluoroundecanoic acid



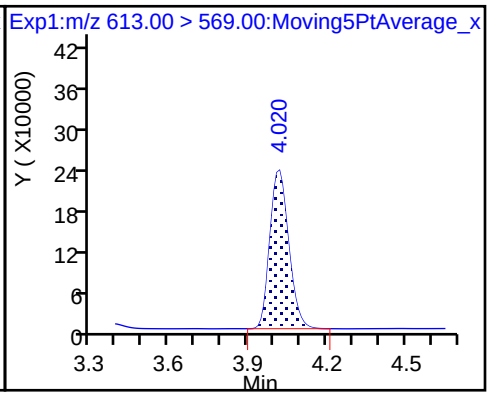
66 11-Chloroeicosafluoro-3-oxaundecan



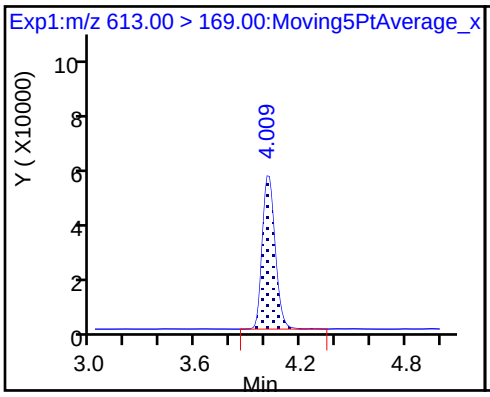
D 36 13C2 PFDoA



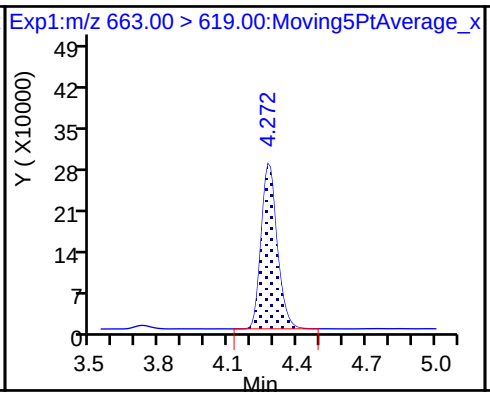
37 Perfluorododecanoic acid



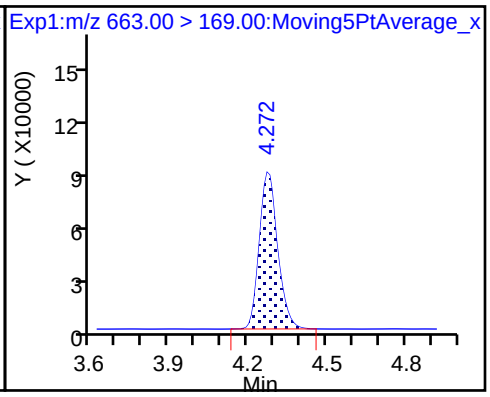
37 Perfluorododecanoic acid



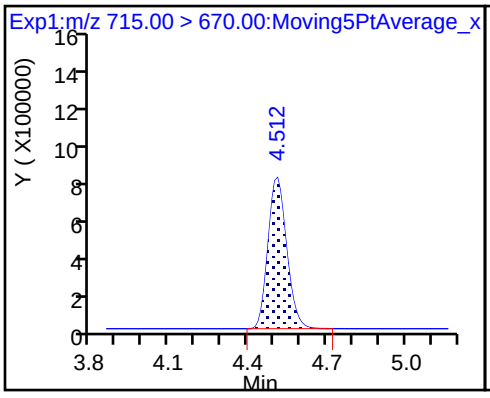
41 Perfluorotridecanoic acid



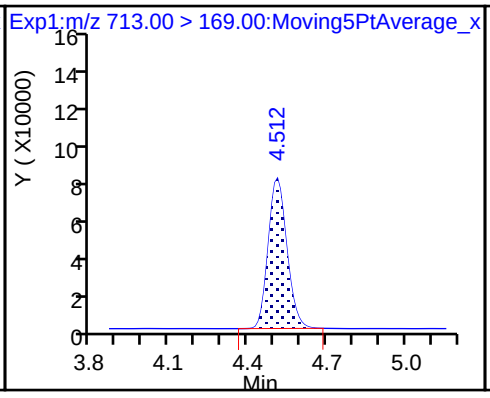
41 Perfluorotridecanoic acid



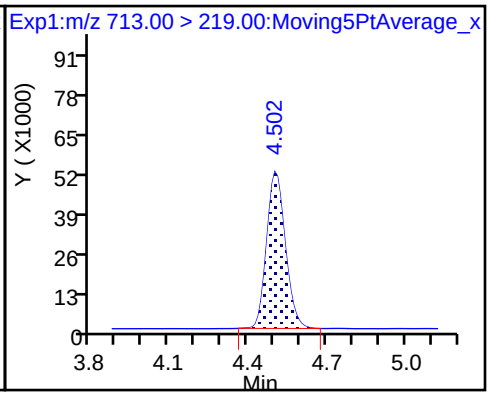
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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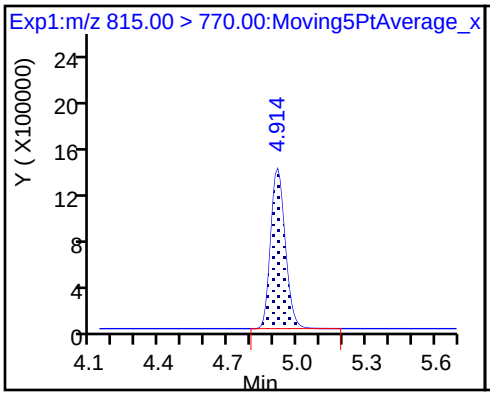
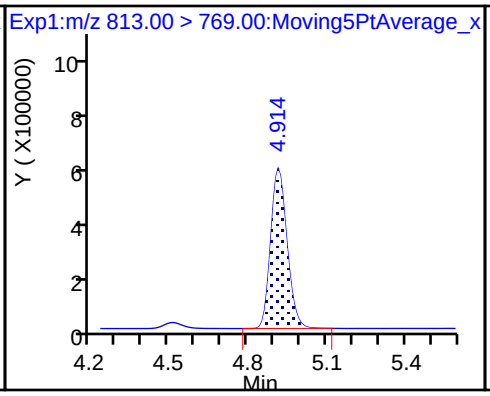
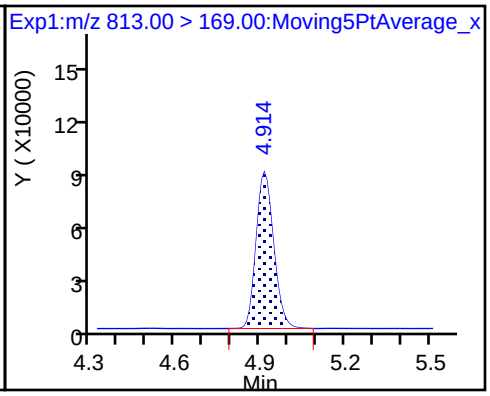


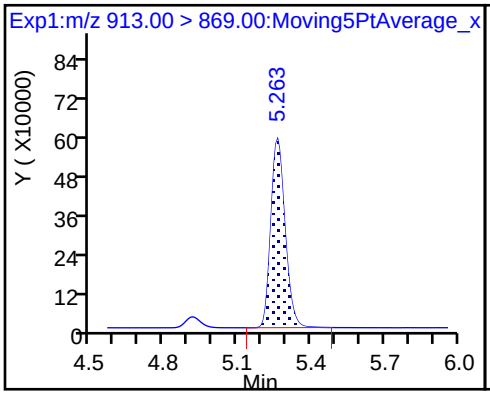
45 Perfluorohexadecanoic acid



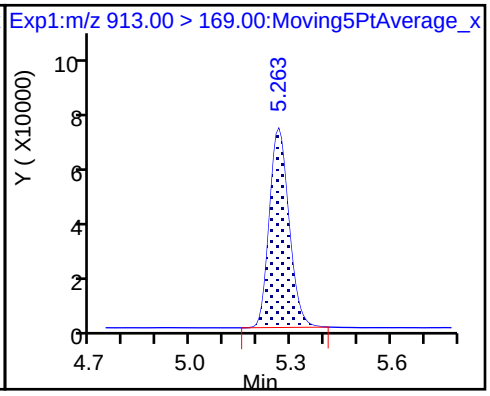
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 10-Apr-2018 19:10:58 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:11 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:19:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	6113537	2.46		98.3	50691	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	5819896	2.56		103	2506	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.693	1.699	-0.006	1.000	4844578	2.57		103	4840	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.699	-0.006	0.558	3952401	2.46		98.6	74416	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.735	-0.006	1.000	83922	2.28		98.1	740	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.736	-0.007	1.000	6477140	2.29		104	28669	
298.90 > 99.00	1.729	1.736	-0.007	1.000	2643044		2.45(1.25-3.74)	104	34961	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.950	-0.002	1.000	615130	2.33		99.9	6761	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.950	-0.002	1.000	1359770	2.35		101	79419	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4266668	2.41		96.2	93064	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.985	-0.004	1.000	4512177	2.60		104	11165	
313.00 > 119.00	1.981	1.985	-0.004	1.000	415818		10.85(5.03-15.10)	104	4827	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.008	-0.005	1.000	6143254	2.38		101	39164	
349.00 > 99.00	2.003	2.008	-0.005	1.000	2304917		2.67(1.36-4.07)	101	57041	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.084	-0.002	1.000	282614	2.58		103	8102	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.082	2.087	-0.005	1.000	771939	2.45		98.1	6105	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.306	2.314	-0.008	1.000	4571563	2.62		105	6057	
363.00 > 169.00	2.306	2.314	-0.008	1.000	1750162		2.61(1.13-3.40)	105	10592	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.314	-0.008	1.000	4357585	2.52		101	88768	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.323	-0.004	1.000	5199428	2.21		97.1	17064	
399.00 > 99.00	2.319	2.323	-0.004	1.000	1684954		3.09(1.50-4.49)	97.1	15461	
D 11 18O2 PFHxS										
403.00 > 84.00	2.319	2.327	-0.008	1.000	4919272	2.31		97.6	100471	
65 Adona										
377.00 > 251.00	2.358	2.360	-0.002	1.000	13509817	2.70		108	130340	
377.00 > 85.00	2.345	2.360	-0.015	0.994	7737038		1.75(0.84-2.53)	108	141597	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.649	-0.005	1.000	1407564	2.24		94.7	22058	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.649	-0.005	1.000	880882	2.38		100	13167	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4288230	2.50		100.0	57314	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.674	-0.007	1.000	4910933	2.48		99.1	2984	
413.00 > 169.00	2.667	2.674	-0.007	1.000	2476515		1.98(0.84-2.52)	99.1	13949	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.674	-0.007		4623543	2.50			75604	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.680	-0.005	1.000	4867309	2.54		107	34655	
449.00 > 99.00	2.675	2.680	-0.005	1.000	1250756		3.89(1.94-5.82)	107	35350	
D 18 13C4 PFOS										
503.00 > 80.00	3.035	3.041	-0.006	1.000	3447017	2.31		96.7	25534	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.035	3.042	-0.007	1.000	3684174	2.35		101	15653	
499.00 > 99.00	3.035	3.042	-0.007	1.000	824846		4.47(2.31-6.93)	101	12600	
20 Perfluorononanoic acid										
463.00 > 419.00	3.035	3.043	-0.008	1.000	3792206	2.49		99.6	9277	
463.00 > 169.00	3.042	3.043	-0.001	1.002	865580		4.38(1.90-5.69)	99.6	18899	
D 19 13C5 PFNA										
468.00 > 423.00	3.035	3.045	-0.010	1.000	3653281	2.48		99.1	80277	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.250	3.253	-0.003	1.000	6954333	2.56		110	142943	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.384	3.388	-0.004	1.000	2870093	2.49		104	29938	
549.00 > 99.00	3.384	3.388	-0.004	1.000	1016002		2.82(1.33-3.97)	104	24257	
D 26 M2-8:2FTS										
529.00 > 81.00	3.384	3.390	-0.006	1.000	1063168	2.39		99.7	11071	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.384	3.393	-0.009	1.000	1298898	2.31		96.6	67638	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.397	-0.004	1.000	4533137	2.43		97.3	60119	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.401	-0.008	1.000	4752476	2.59		104	78074	
D 23 13C2 PFDA										
515.00 > 470.00	3.393	3.401	-0.008	1.000	2967373	2.39		95.8	61893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.393	3.402	-0.009	1.000	3158094	2.58		103	14590	
513.00 > 169.00	3.393	3.402	-0.009	1.000	519040		6.08(2.36-7.09)	103	12013	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.551	3.553	-0.002	1.000	1707705	2.43		97.2	23521	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.551	3.558	-0.007	1.000	1802851	2.65		106	12762	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.711	3.715	-0.004	1.000	2376399	2.54		105	29437	
599.00 > 99.00	3.711	3.715	-0.004	1.000	777508		3.06(1.39-4.16)	105	25627	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.722	3.722	0.0	1.000	1729345	2.49		99.8	19661	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.722	3.727	-0.005	1.000	1669717	2.58		103	29608	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.727	-0.005	1.000	2601195	2.43		97.3	36634	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.727	-0.005	1.000	2103252	2.39		95.7	10698	
563.00 > 169.00	3.722	3.727	-0.005	1.000	525073		4.01(2.12-6.36)	95.7	20485	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.880	3.883	-0.003	1.000	10487942	2.50		106	87880	
D 36 13C2 PFDoA										
615.00 > 570.00	4.013	4.017	-0.004	1.000	2745849	2.38		95.1	29081	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.013	4.020	-0.007	1.000	3013785	2.63		105	3414	
613.00 > 169.00	4.013	4.020	-0.007	1.000	730770		4.12(2.13-6.40)	105	9810	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.276	4.278	-0.002	1.000	3391923	2.54		102	3159	
663.00 > 169.00	4.276	4.278	-0.002	1.000	1004489		3.38(1.25-3.76)	102	9947	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.508	4.513	-0.005	1.000	3639964	2.49		99.5	25555	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.508	4.513	-0.005	1.000	872520	2.39		95.4	8442	
713.00 > 219.00	4.508	4.513	-0.005	1.000	674330		1.29(0.71-2.13)	95.4	11267	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.910	4.918	-0.008	1.000	5731595	2.41		96.3	16637	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.919	4.920	-0.001	1.002	5739538	2.62		105	1768	
813.00 > 169.00	4.919	4.920	-0.001	1.002	919527		6.24(2.86-8.58)	105	5404	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.267	5.268	-0.001	1.000	5927518	2.57		103	1545	
913.00 > 169.00	5.260	5.268	-0.008	0.999	709210		8.36(3.83-11.48)	103	3575	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_006.d

Injection Date: 10-Apr-2018 19:10:58 Instrument ID: A8_N

Lims ID: IC L5 Full

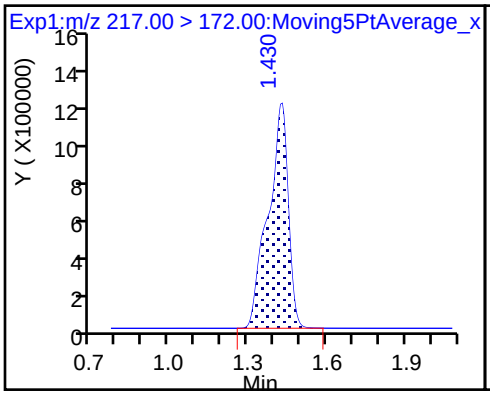
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

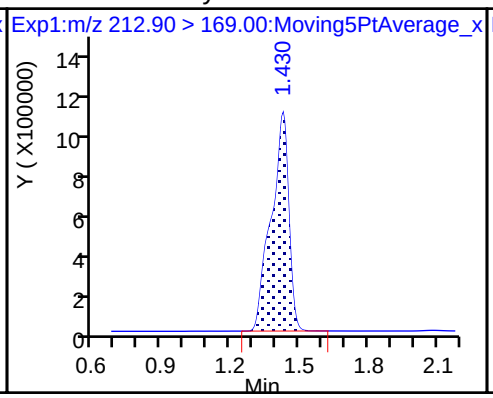
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

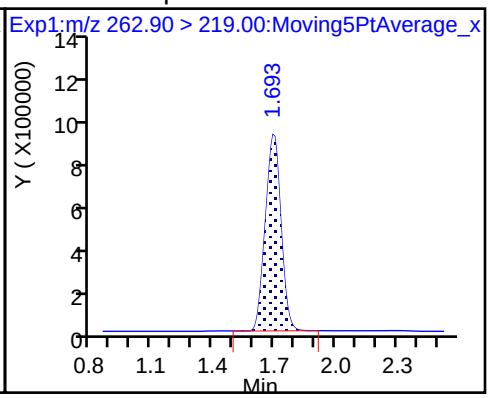
D 1 13C4 PFBA



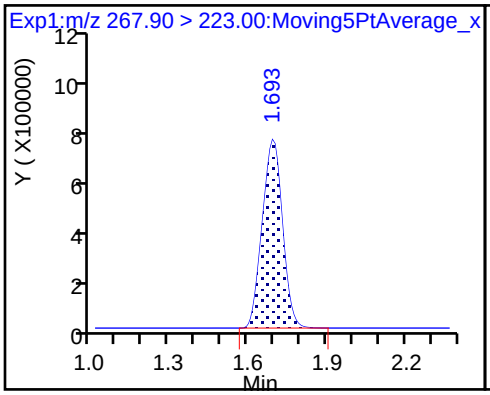
2 Perfluorobutyric acid



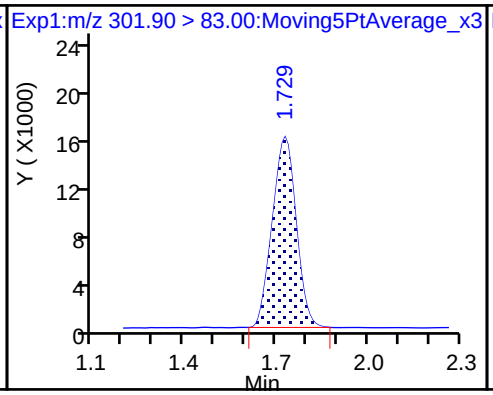
4 Perfluoropentanoic acid



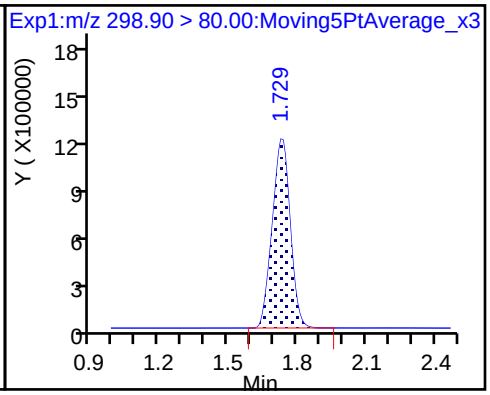
D 3 13C5-PFPeA



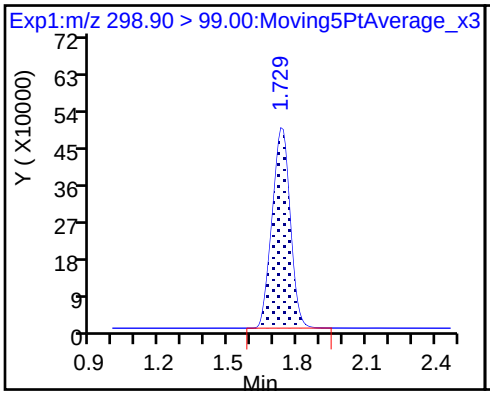
D 47 13C3-PFBS



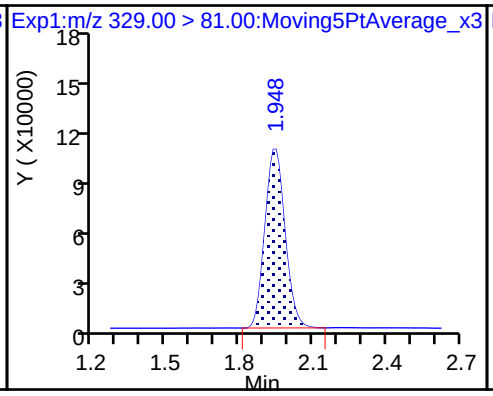
5 Perfluorobutanesulfonic acid



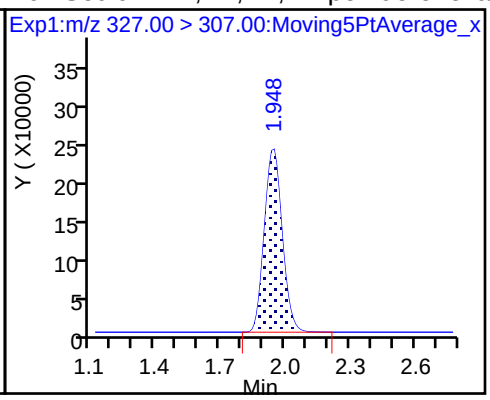
5 Perfluorobutanesulfonic acid



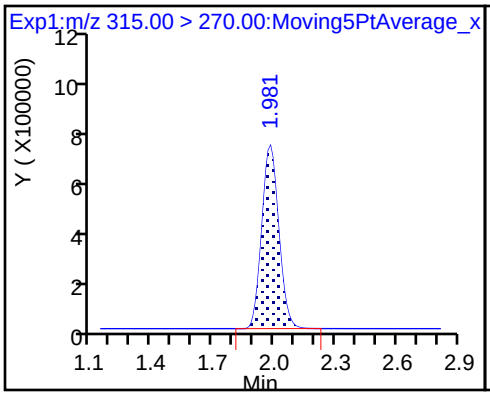
D 60 M2-4:2FTS



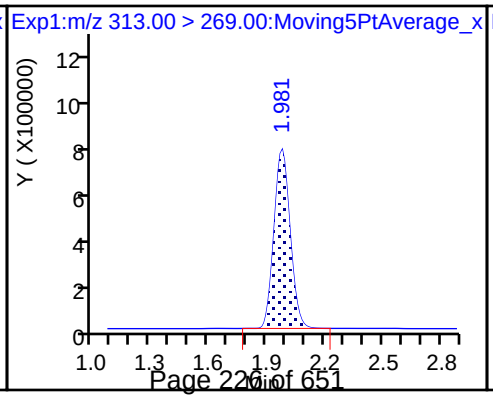
61 Sodium 1H,1H,2H,2H-perfluorohexane



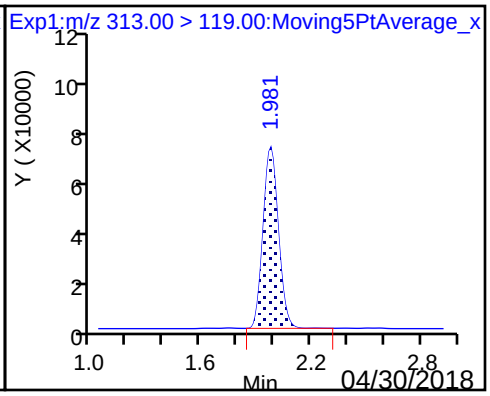
D 7 13C2 PFHxA



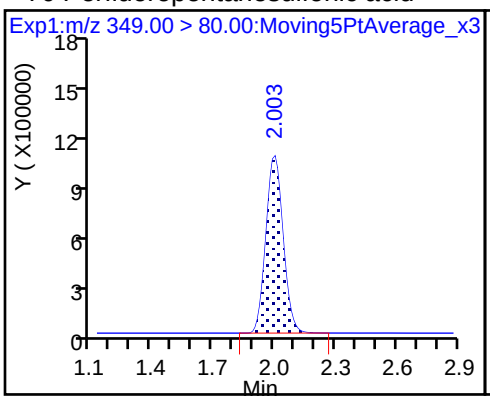
6 Perfluorohexanoic acid



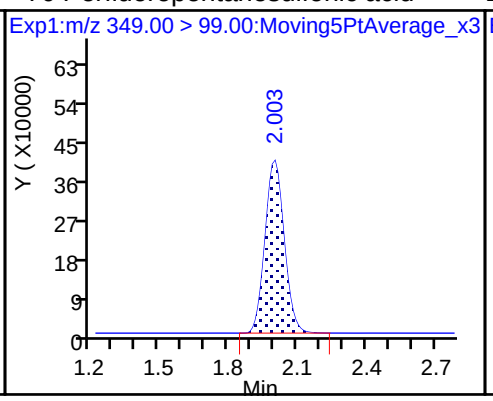
6 Perfluorohexanoic acid



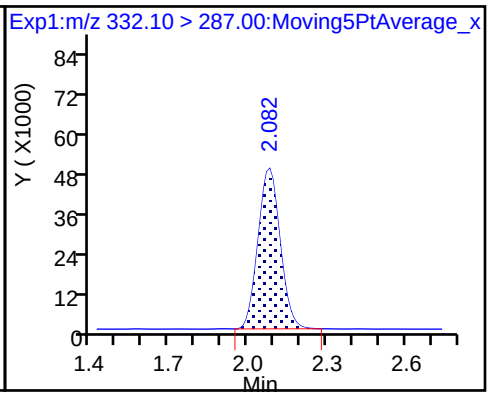
70 Perfluoropentanesulfonic acid



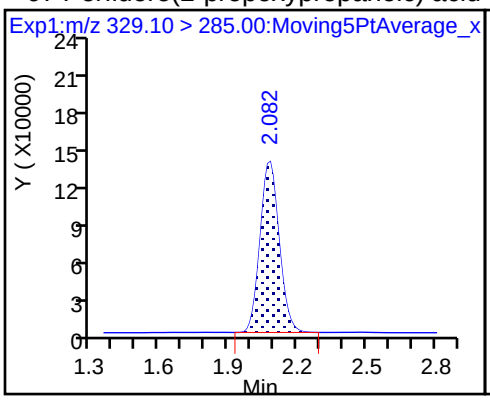
70 Perfluoropentanesulfonic acid



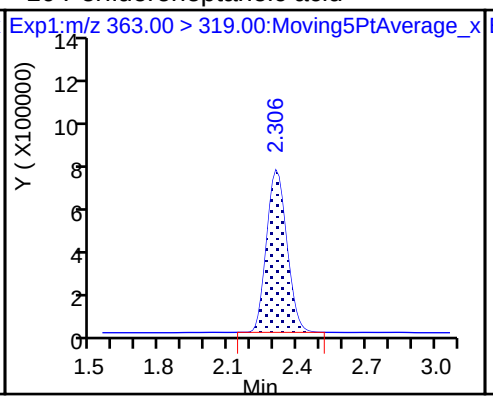
D 64 13C3 HFPO-DA



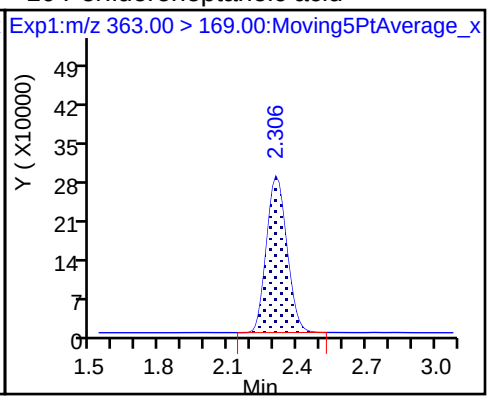
67 Perfluoro(2-propoxypropanoic) acid



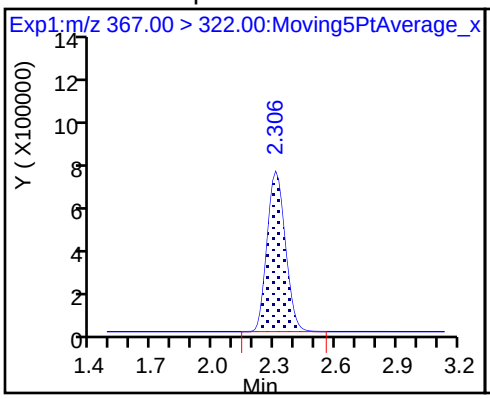
10 Perfluoroheptanoic acid



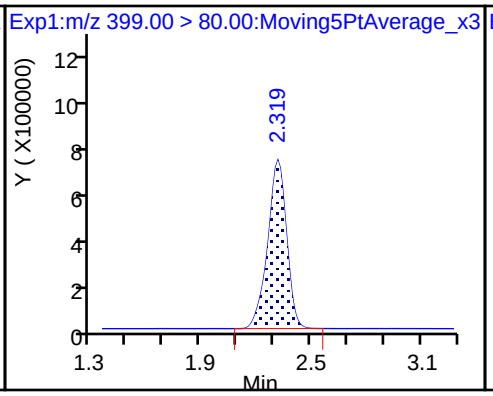
10 Perfluoroheptanoic acid



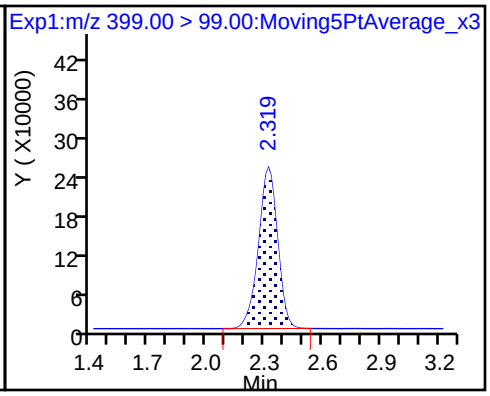
D 9 13C4-PFHpA



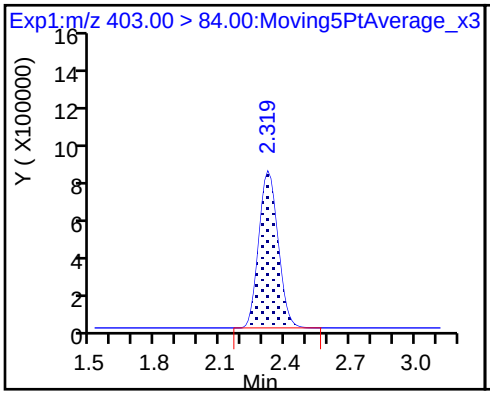
8 Perfluorohexanesulfonic acid



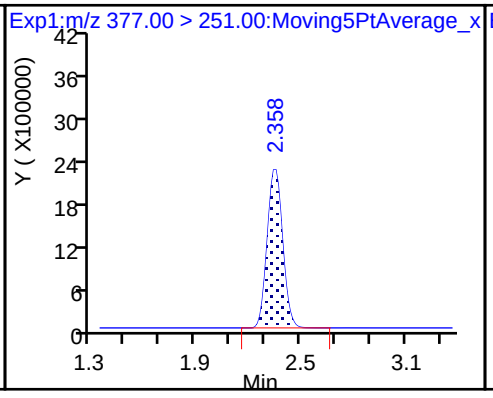
8 Perfluorohexanesulfonic acid



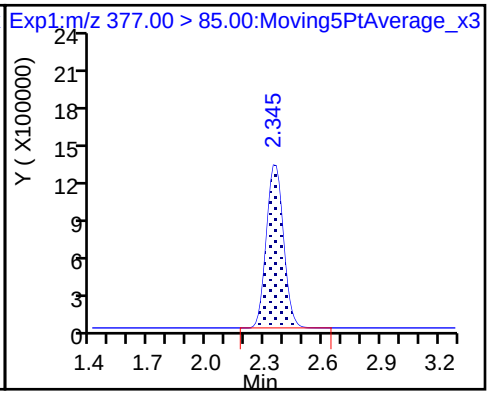
D 11 18O2 PFHxS



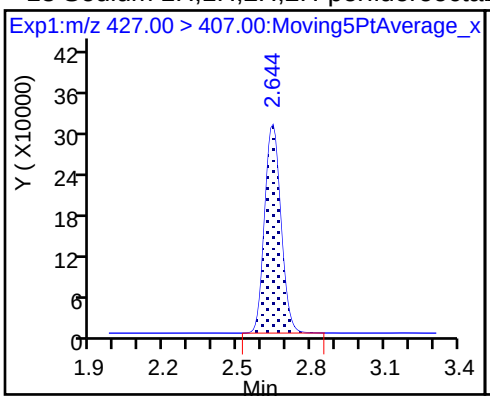
65 Adona



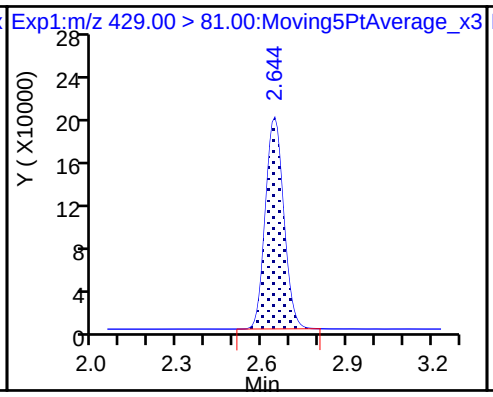
65 Adona



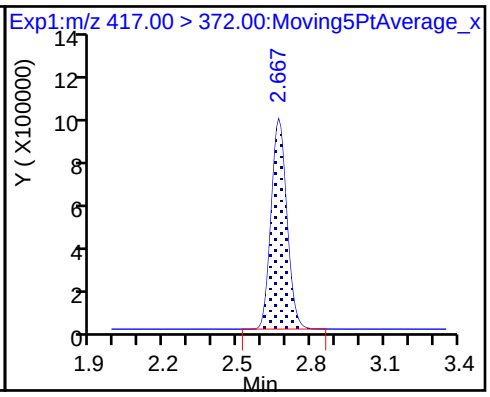
13 Sodium 1H,1H,2H,2H-perfluorooctane



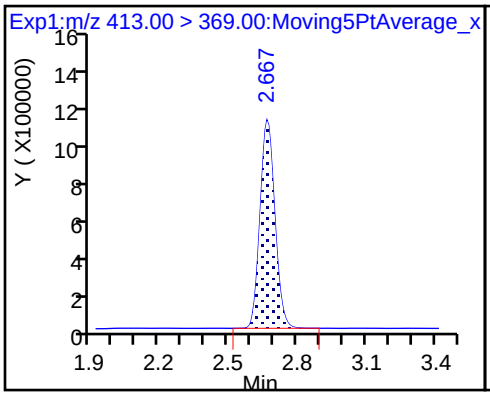
D 12 M2-6:2FTS



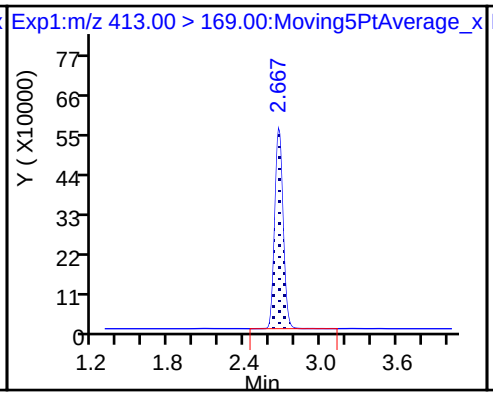
D 14 13C4 PFOA



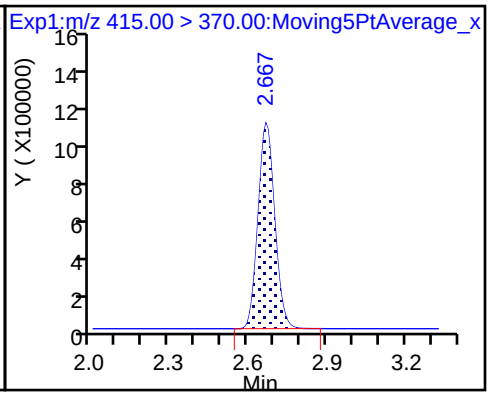
15 Perfluorooctanoic acid



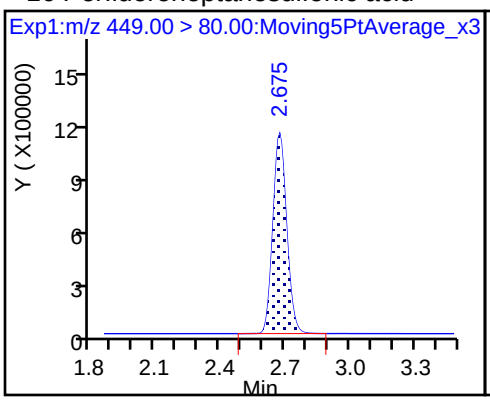
15 Perfluorooctanoic acid



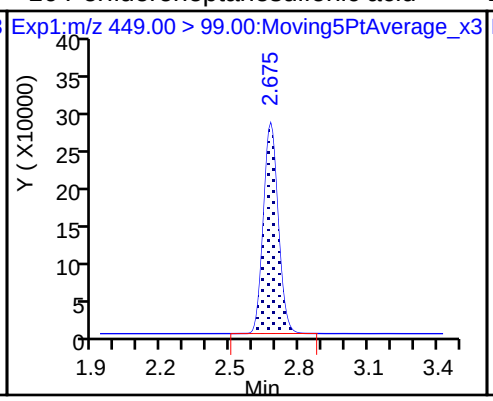
* 62 13C2-PFOA



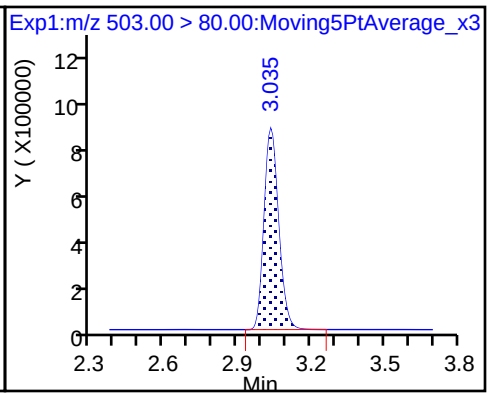
16 Perfluoroheptanesulfonic acid



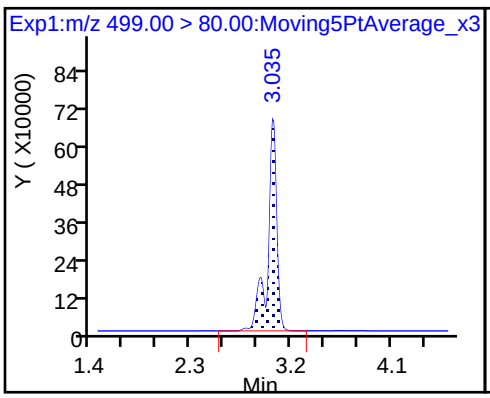
16 Perfluoroheptanesulfonic acid



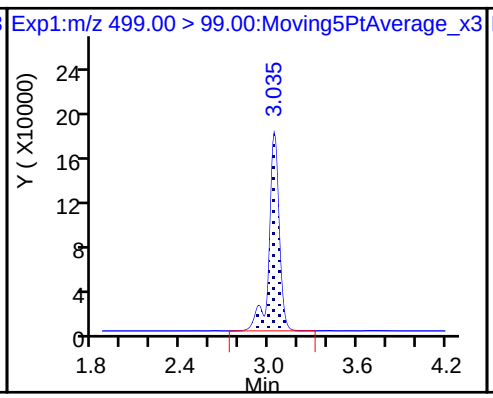
D 18 13C4 PFOS



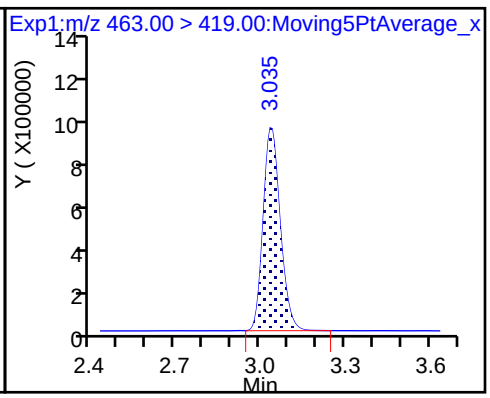
17 Perfluorooctane sulfonic acid



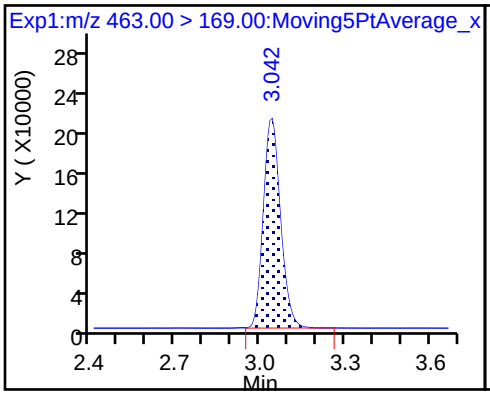
17 Perfluorooctane sulfonic acid



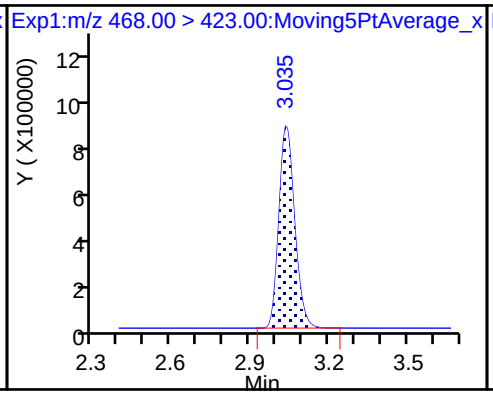
20 Perfluorononanoic acid



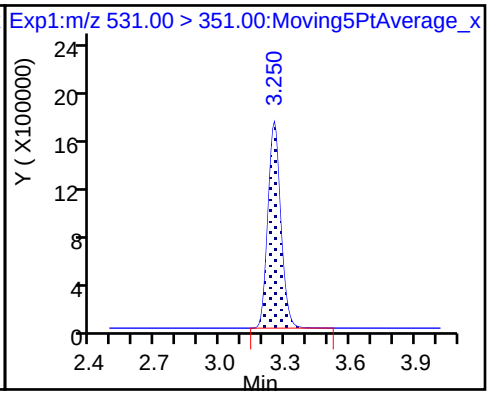
20 Perfluorononanoic acid



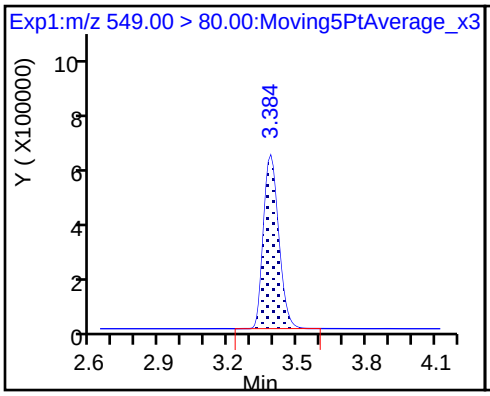
D 19 13C5 PFNA



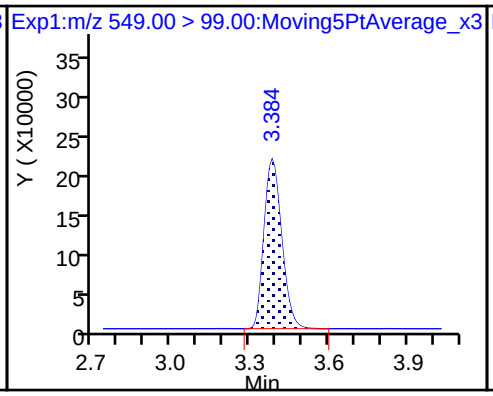
69 9-Chlorohexadecafluoro-3-oxanonane



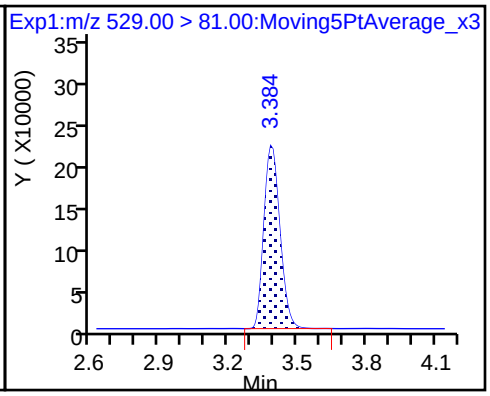
68 Perfluorononanesulfonic acid



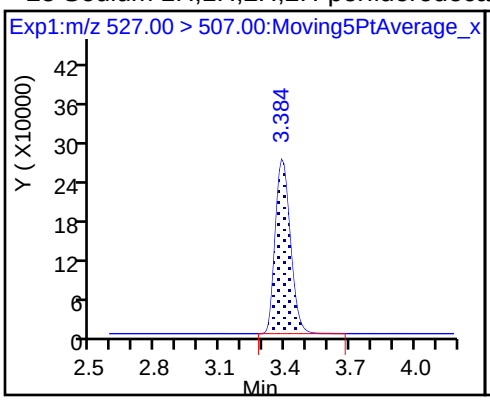
68 Perfluorononanesulfonic acid



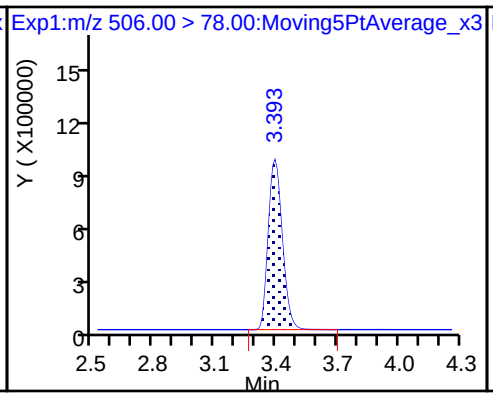
D 26 M2-8:2FTS



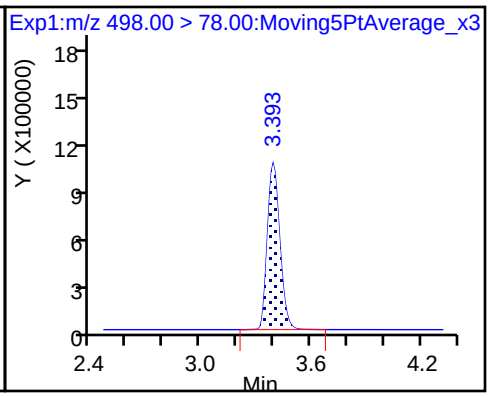
25 Sodium 1H,1H,2H,2H-perfluorodecane



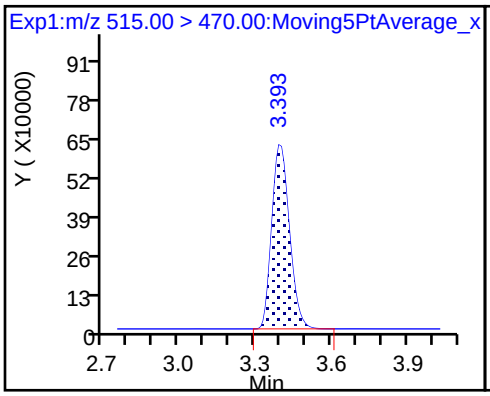
D 21 13C8 FOSA



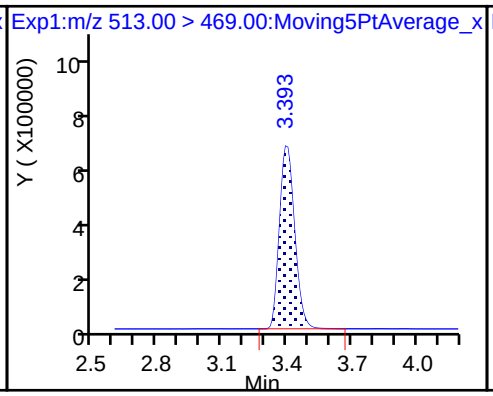
22 Perfluorooctane Sulfonamide



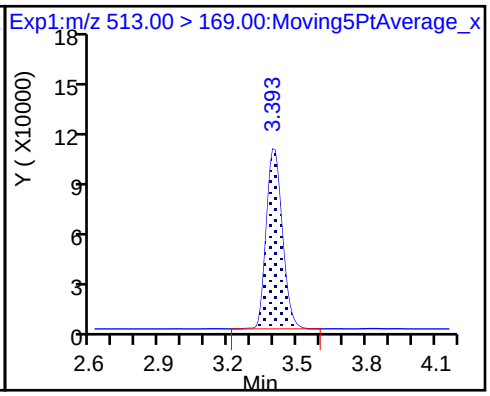
D 23 13C2 PFDA



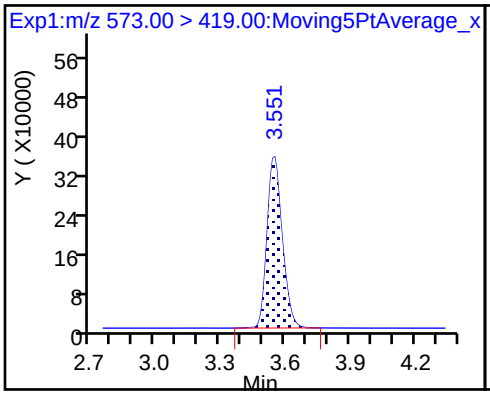
24 Perfluorodecanoic acid



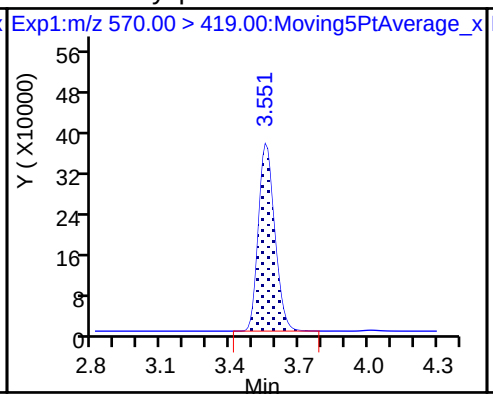
24 Perfluorodecanoic acid



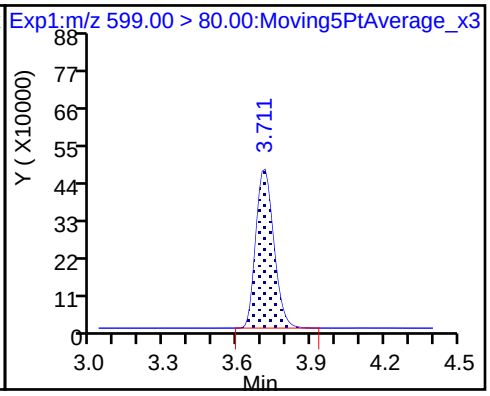
D 27 d3-NMeFOSAA



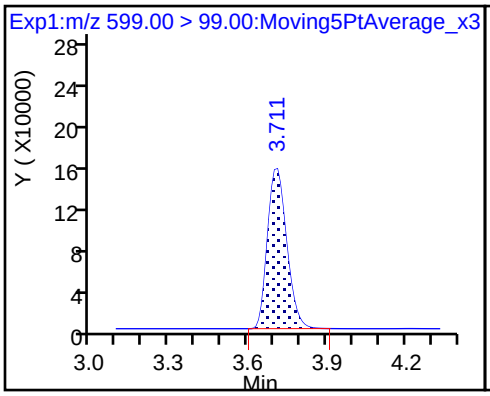
28 N-methyl perfluorooctane sulfonami



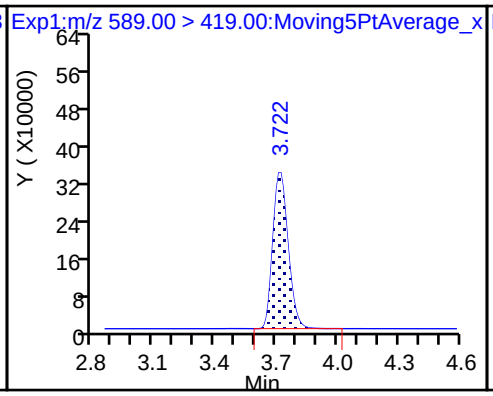
29 Perfluorodecane Sulfonic acid



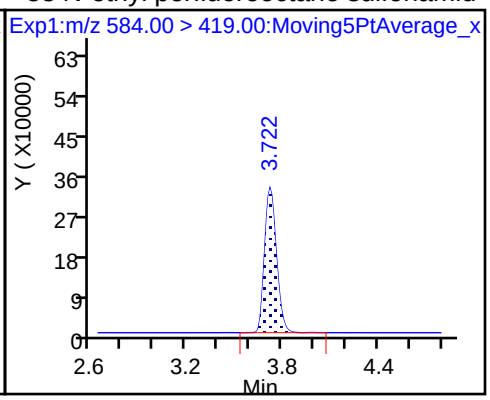
29 Perfluorodecane Sulfonic acid



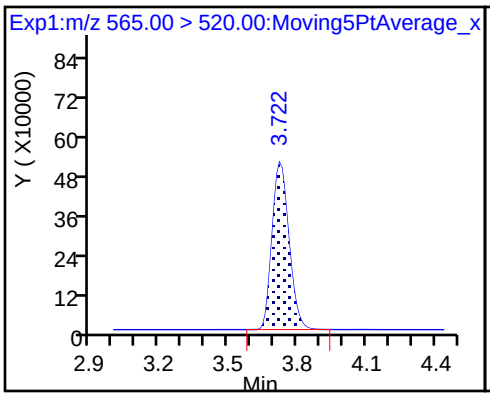
D 32 d5-NEtFOSAA



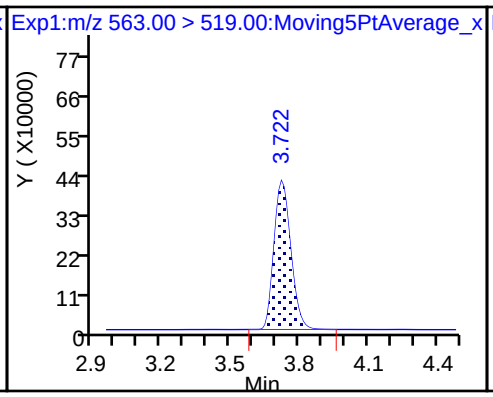
33 N-ethyl perfluorooctane sulfonamid



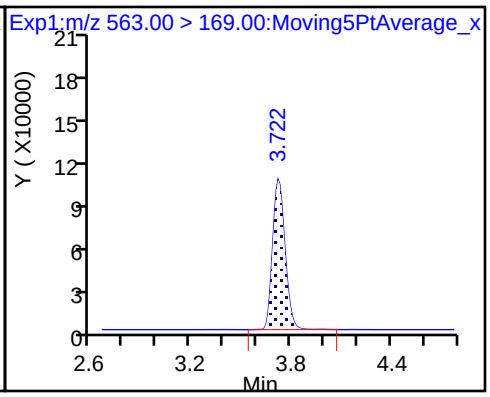
D 30 13C2 PFUnA



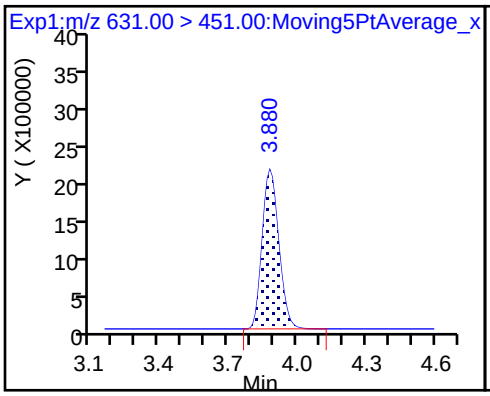
31 Perfluoroundecanoic acid



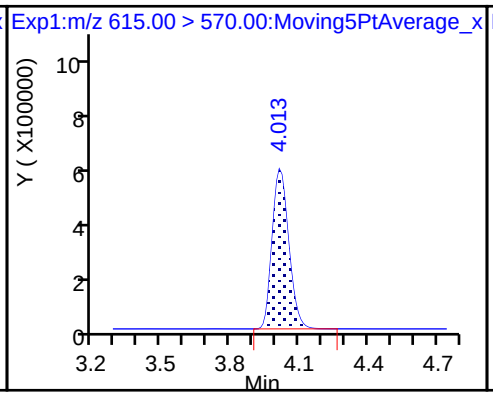
31 Perfluoroundecanoic acid



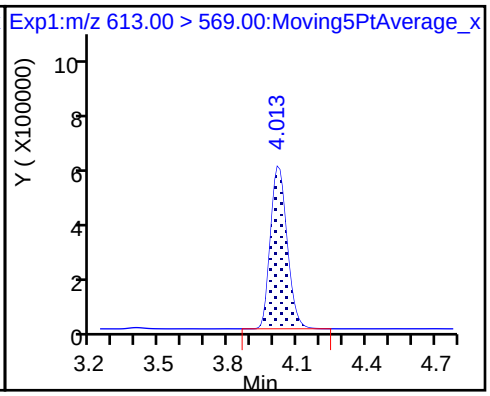
66 11-Chloroeicosafluoro-3-oxaundecan



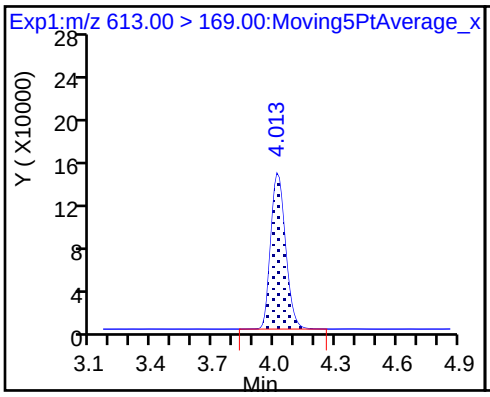
D 36 13C2 PFDoA



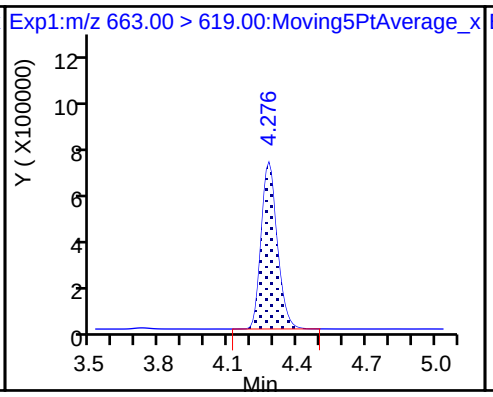
37 Perfluorododecanoic acid



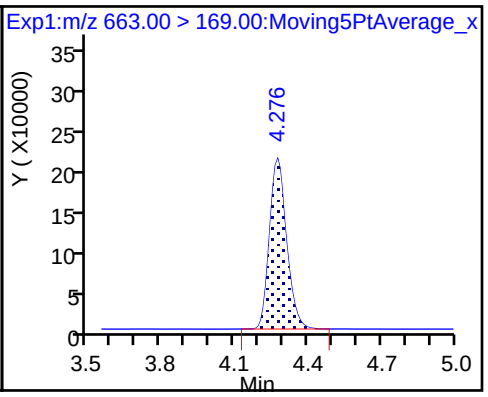
37 Perfluorododecanoic acid



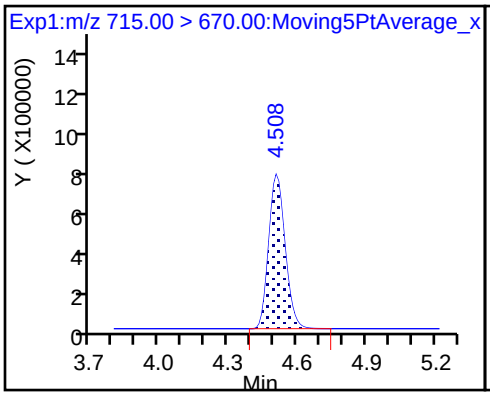
41 Perfluorotridecanoic acid



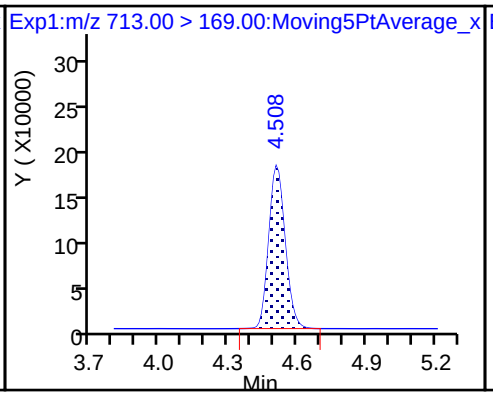
41 Perfluorotridecanoic acid



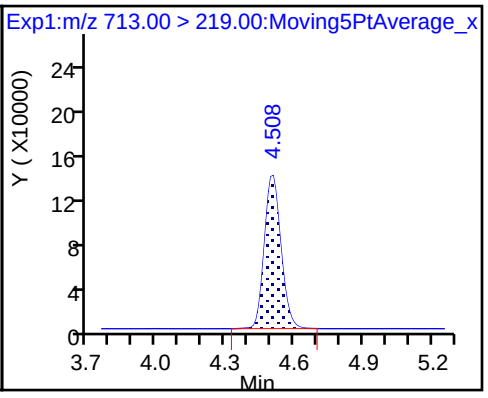
D 43 13C2-PFTeDA



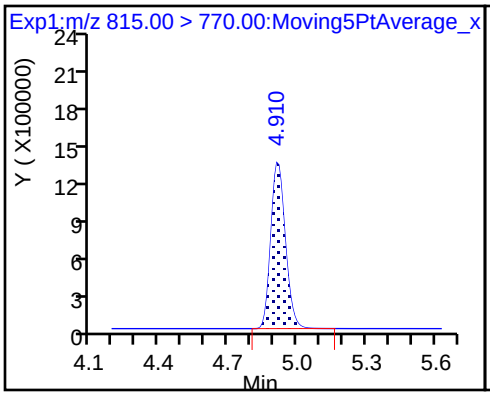
42 Perfluorotetradecanoic acid



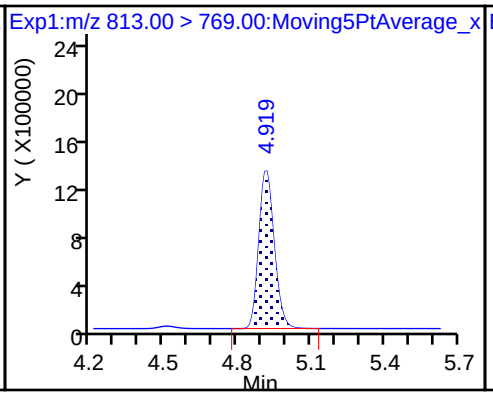
42 Perfluorotetradecanoic acid



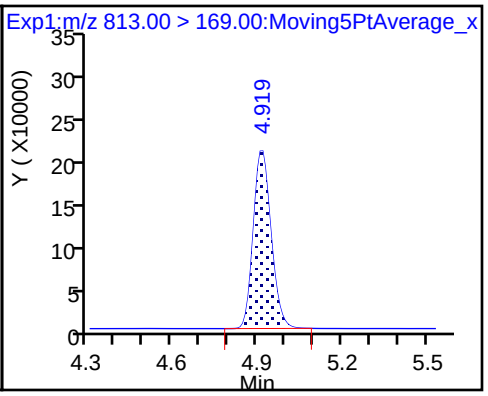
D 44 13C2-PFHxDA



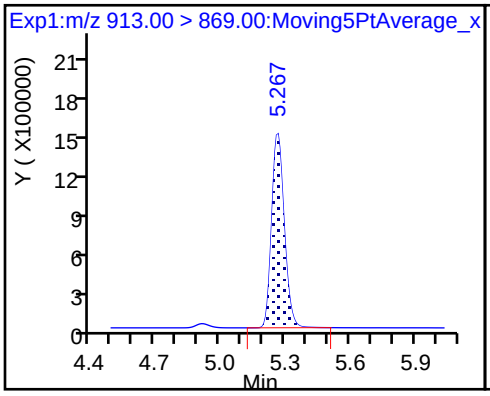
45 Perfluorohexadecanoic acid



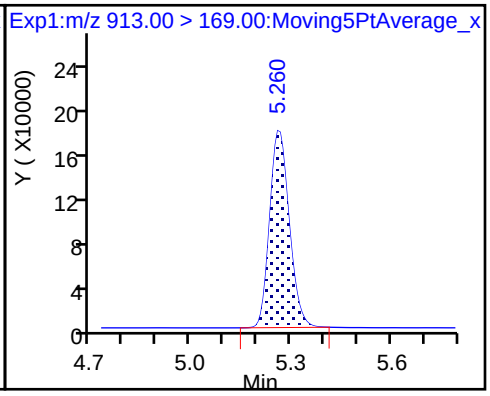
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-Apr-2018 19:18:46 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:14 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:20:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.425	1.431	-0.006	1.000	6997865	2.65		106	49847	
2 Perfluorobutyric acid										
212.90 > 169.00	1.431	1.432	-0.001	1.004	13377174	5.15		103	7717	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.699	-0.005	0.557	4492903	2.64		105	81359	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.699	-0.005	1.000	10497161	4.90		98.0	10563	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.735	-0.005	1.000	92353	2.36		102	1083	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.736	-0.006	1.000	14347107	4.61		104	64269	
298.90 > 99.00	1.730	1.736	-0.006	1.000	6127625		2.34(1.25-3.74)	104	70987	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	3030208	4.76		102	141069	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	668373	2.39		102	7685	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.985	-0.003	1.000	10489823	5.40		108	24333	
313.00 > 119.00	1.982	1.985	-0.003	1.000	894344		11.73(5.03-15.10)	108	11532	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4780636	2.54		101	96741	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.008	-0.003	1.000	13627914	4.80		102	98334	
349.00 > 99.00	2.005	2.008	-0.003	1.000	5231254		2.61(1.36-4.07)	102	95005	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	274179	2.35		94.0	8284	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.087	-0.003	1.000	1870994	6.12		122	12525	
D 9 13C4-PFHpA										
367.00 > 322.00	2.310	2.314	-0.004	1.000	4543925	2.48		99.1	68671	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.314	-0.004	1.000	9662627	5.31		106	14097	
363.00 > 169.00	2.310	2.314	-0.004	1.000	4011641		2.41(1.13-3.40)	106	22953	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.323	0.0	1.000	11450464	4.41		96.8	31512	
399.00 > 99.00	2.323	2.323	0.0	1.000	3849777		2.97(1.50-4.49)	96.8	34232	
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.327	-0.004	1.000	5430236	2.40		101	91039	
65 Adona										
377.00 > 251.00	2.362	2.360	0.002	1.000	26999565	4.80		95.9	217494	
377.00 > 85.00	2.362	2.360	0.002	1.000	16841301		1.60(0.84-2.53)	95.9	159720	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.649	-0.004	1.000	950305	2.42		102	15598	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.649	-0.004	1.000	3314359	4.90		103	51474	
D 14 13C4 PFOA										
417.00 > 372.00	2.668	2.673	-0.005	1.000	4688766	2.57		103	76247	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.674	0.002		4914871	2.50			59774	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.674	0.002	1.003	11016957	5.08		102	7204	
413.00 > 169.00	2.676	2.674	0.002	1.003	5404594		2.04(0.84-2.52)	102	21416	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	10719572	4.97		104	63342	
449.00 > 99.00	2.676	2.680	-0.004	0.997	2882422		3.72(1.94-5.82)	104	51468	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3884830	2.45		103	25175	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.042	0.001	1.000	8615775	4.87		105	37504	
499.00 > 99.00	3.043	3.042	0.001	1.000	1907418		4.52(2.31-6.93)	105	40242	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	1.000	8663453	5.40		108	21881	
463.00 > 169.00	3.043	3.043	0.0	1.000	1977379		4.38(1.90-5.69)	108	42954	
D 19 13C5 PFNA										
468.00 > 423.00	3.043	3.045	-0.002	1.000	3844023	2.45		98.1	71022	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.252	3.253	-0.001	1.000	15327887	5.00		107	237615	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.387	3.388	-0.001	1.000	6392773	4.92		102	46125	
549.00 > 99.00	3.387	3.388	-0.001	1.000	2379569		2.69(1.33-3.97)	102	42811	
D 26 M2-8:2FTS										
529.00 > 81.00	3.387	3.390	-0.003	1.000	1111203	2.35		98.0	12960	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.396	3.393	0.003	1.003	2936296	5.00		104	87146	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.397	-0.001	1.000	4967723	2.51		100	59122	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.401	-0.005	1.000	10640158	5.29		106	83571	
D 23 13C2 PFDA										
515.00 > 470.00	3.405	3.401	0.004	1.000	3590754	2.73		109	63551	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.405	3.402	0.003	1.000	7080425	4.78		95.6	42943	
513.00 > 169.00	3.405	3.402	0.003	1.000	1224285		5.78(2.36-7.09)	95.6	19818	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.555	3.553	0.002	1.000	1906740	2.55		102	32484	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.555	3.558	-0.003	1.000	4211279	5.54		111	24793	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.715	0.002	1.000	5591516	5.30		110	68704	
599.00 > 99.00	3.717	3.715	0.002	1.000	1873892		2.98(1.39-4.16)	110	41042	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.717	3.722	-0.005	1.000	1869135	2.54		101	18949	
D 30 13C2 PFUnA										
565.00 > 520.00	3.728	3.727	0.001	1.000	2905024	2.56		102	63455	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.728	3.727	0.001	1.003	3584245	5.13		103	43487	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.728	3.727	0.001	1.000	5051597	5.14		103	23183	
563.00 > 169.00	3.728	3.727	0.001	1.000	1197755		4.22(2.12-6.36)	103	29187	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.886	3.883	0.003	1.000	21858692	4.62		98.0	132441	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.017	0.002	1.000	3059706	2.49		99.7	34585	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.020	-0.001	1.000	6635970	5.20		104	7407	
613.00 > 169.00	4.019	4.020	-0.001	1.000	1580285		4.20(2.13-6.40)	104	18694	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.278	0.003	1.000	7847307	5.28		106	6944	
663.00 > 169.00	4.281	4.278	0.003	1.000	2374861		3.30(1.25-3.76)	106	19843	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.513	-0.001	1.000	3906384	2.51		100	23277	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.513	-0.001	1.000	2025257	5.16		103	14592	
713.00 > 219.00	4.512	4.513	-0.001	1.000	1435695		1.41(0.71-2.13)	103	15337	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.923	4.918	0.005	1.000	6481798	2.56		102	19589	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.923	4.920	0.003	1.000	11955765	4.85		97.0	3378	
813.00 > 169.00	4.923	4.920	0.003	1.000	2040197		5.86(2.86-8.58)	97.0	10211	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.270	5.268	0.002	1.000	12855038	4.94		98.8	2871	
913.00 > 169.00	5.270	5.268	0.002	1.000	1566786		8.20(3.83-11.48)	98.8	6806	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_007.d

Injection Date: 10-Apr-2018 19:18:46 Instrument ID: A8_N

Lims ID: IC L6 Full

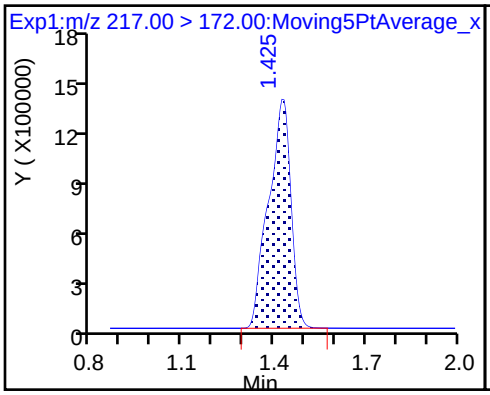
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

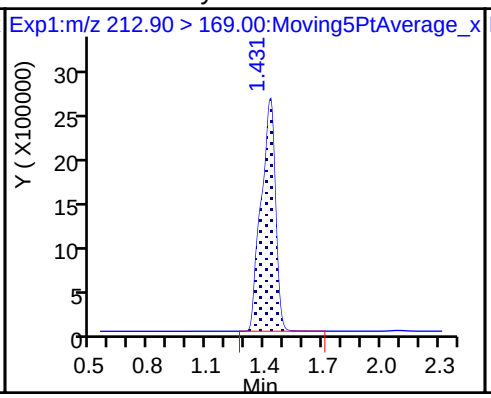
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

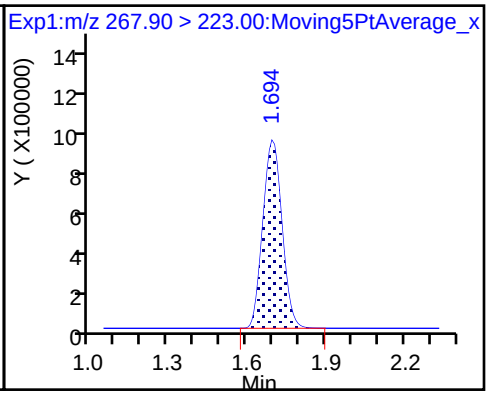
D 1 13C4 PFBA



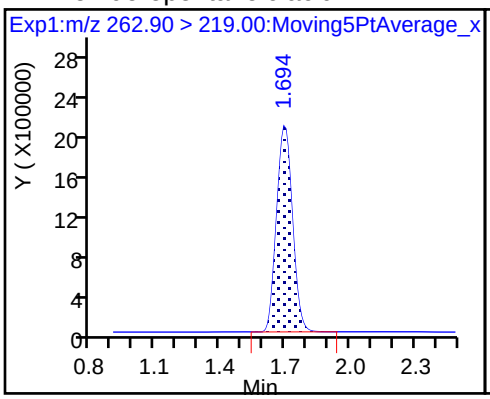
2 Perfluorobutyric acid



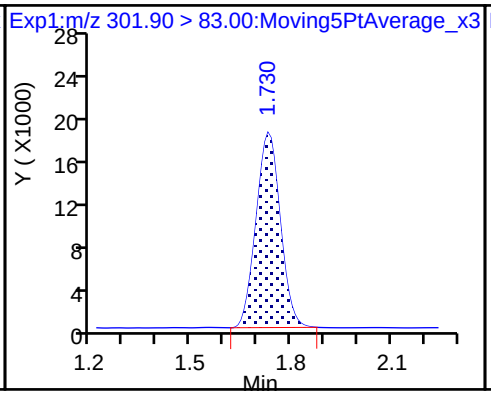
D 3 13C5-PFPeA



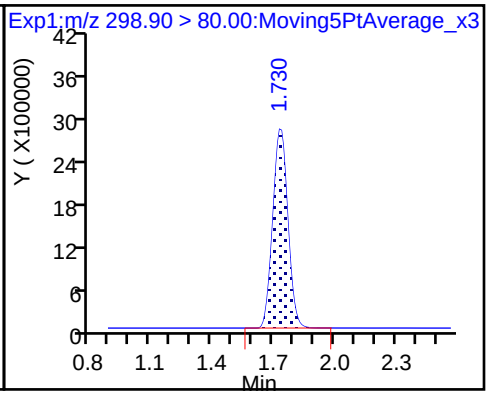
4 Perfluoropentanoic acid



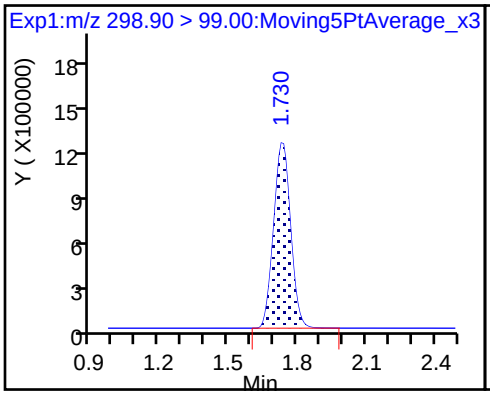
D 47 13C3-PFBS



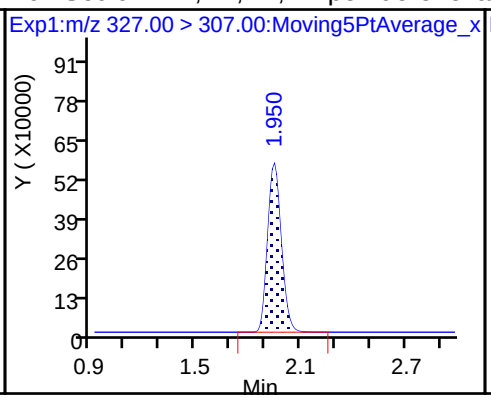
5 Perfluorobutanesulfonic acid



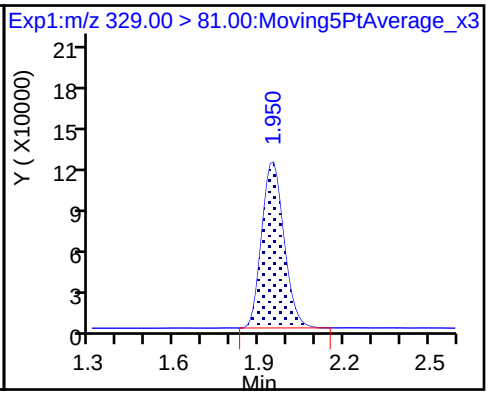
5 Perfluorobutanesulfonic acid



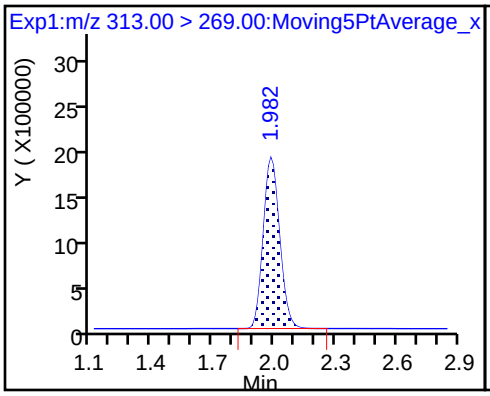
61 Sodium 1H,1H,2H,2H-perfluorohexane



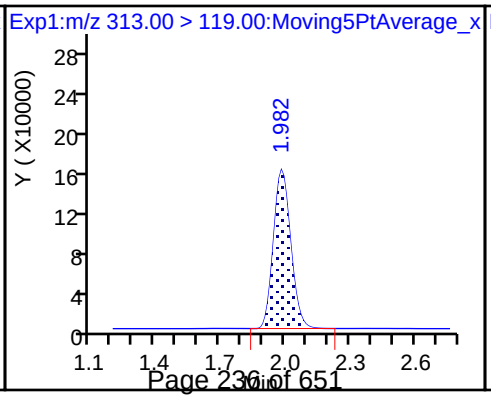
D 60 M2-4:2FTS



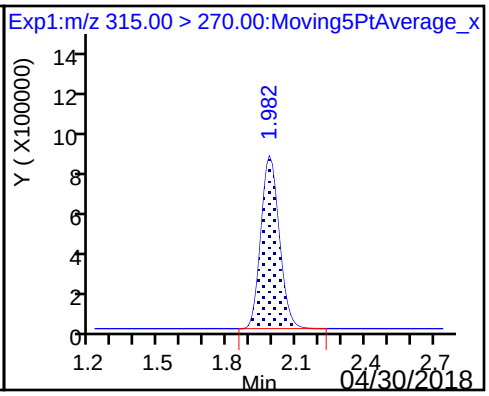
6 Perfluorohexanoic acid



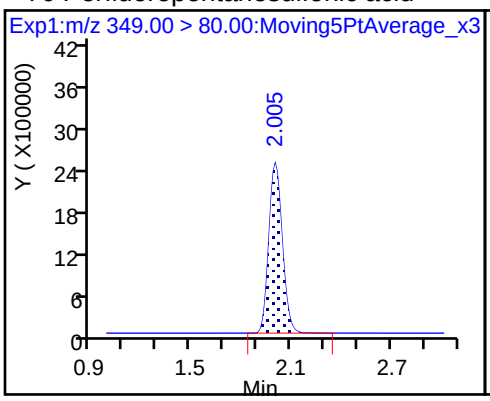
6 Perfluorohexanoic acid



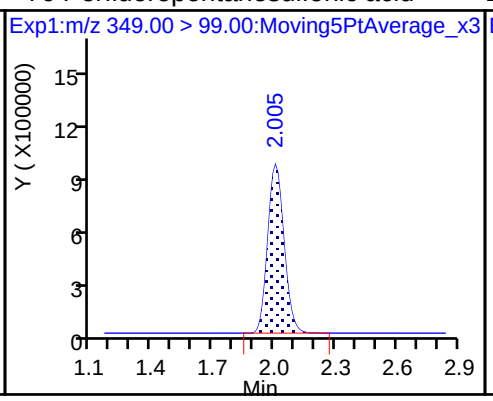
D 7 13C2 PFHxA



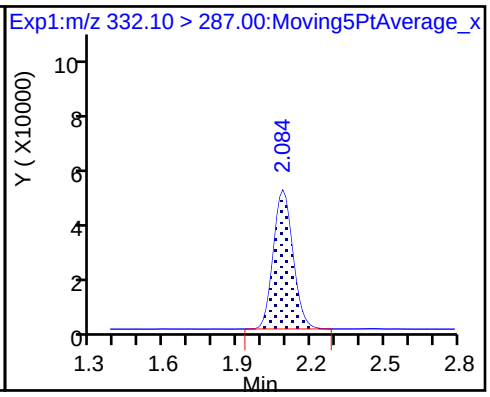
70 Perfluoropentanesulfonic acid



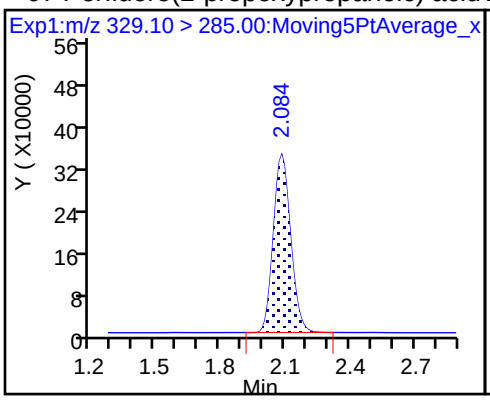
70 Perfluoropentanesulfonic acid



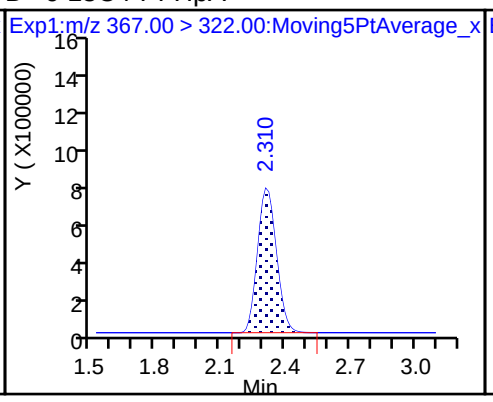
D 64 13C3 HFPO-DA



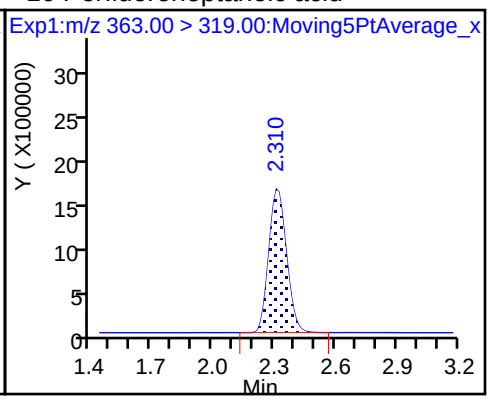
67 Perfluoro(2-propoxypropanoic) acid



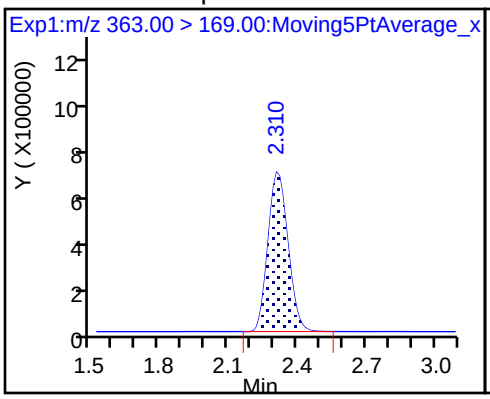
D 9 13C4-PFHpA



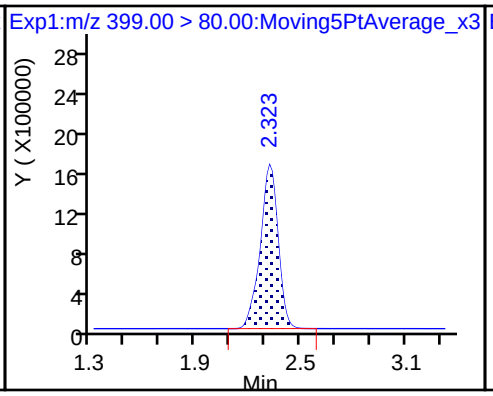
10 Perfluoroheptanoic acid



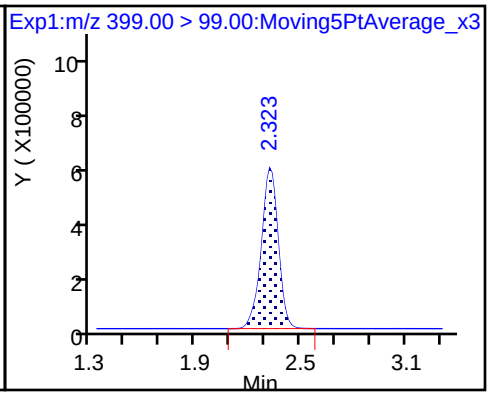
10 Perfluoroheptanoic acid



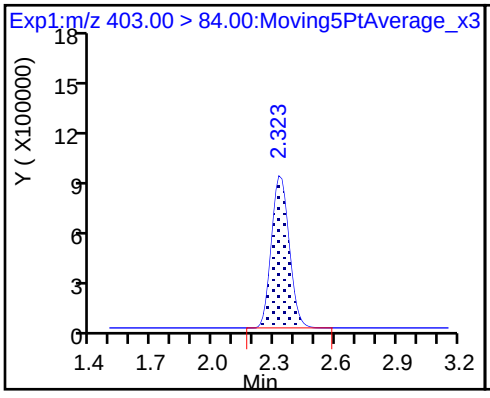
8 Perfluorohexanesulfonic acid



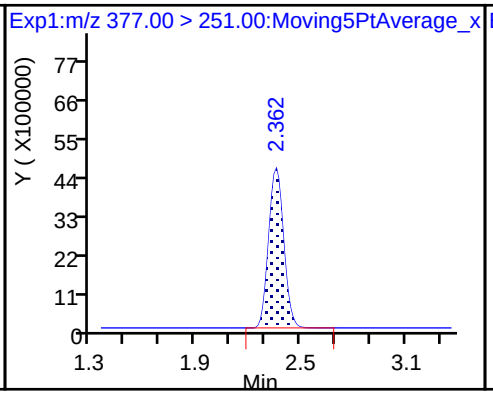
8 Perfluorohexanesulfonic acid



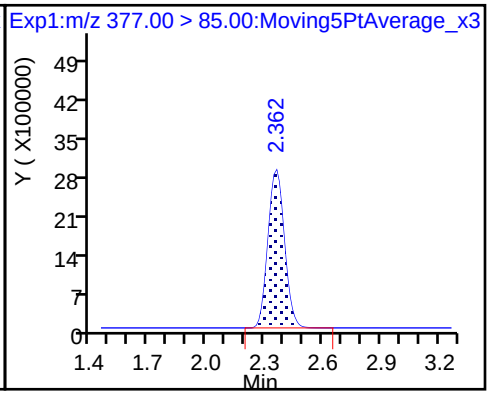
D 11 18O2 PFHxS



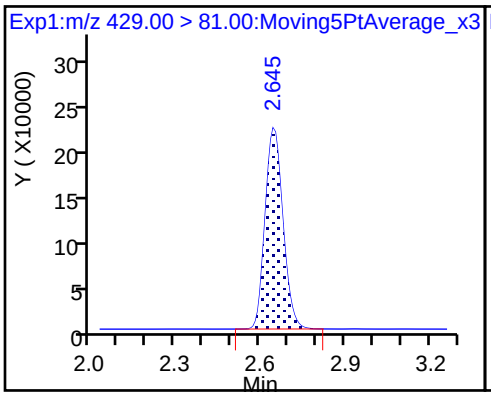
65 Adona



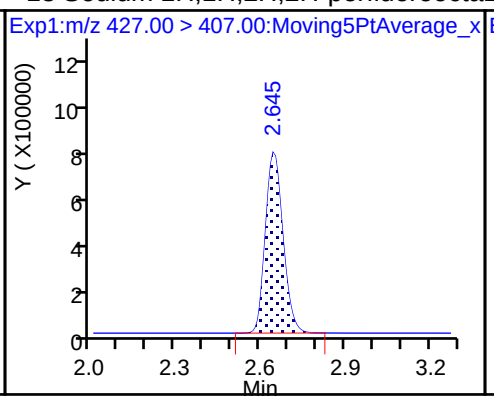
65 Adona



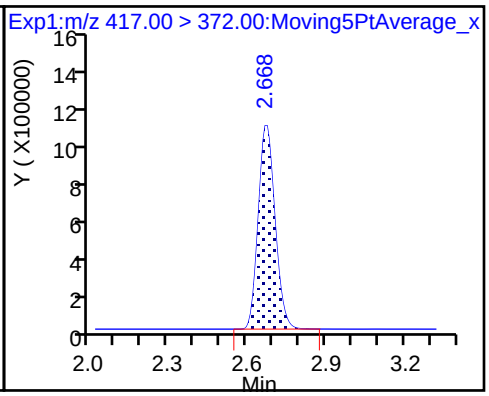
D 12 M2-6:2FTS



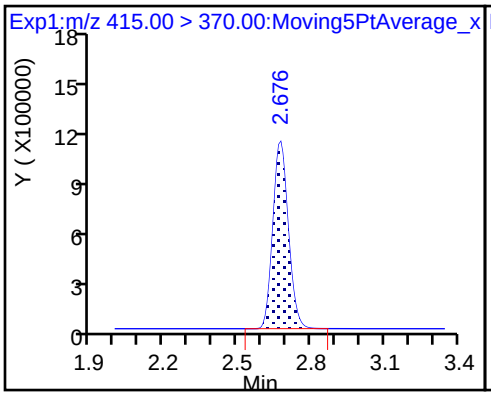
13 Sodium 1H,1H,2H,2H-perfluorooctane



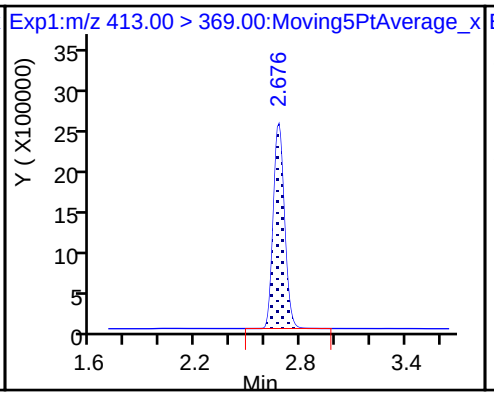
D 14 13C4 PFOA



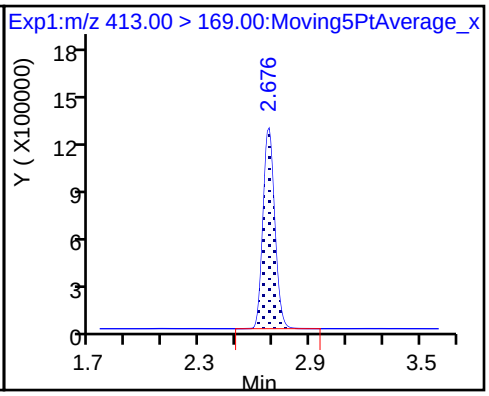
* 62 13C2-PFOA



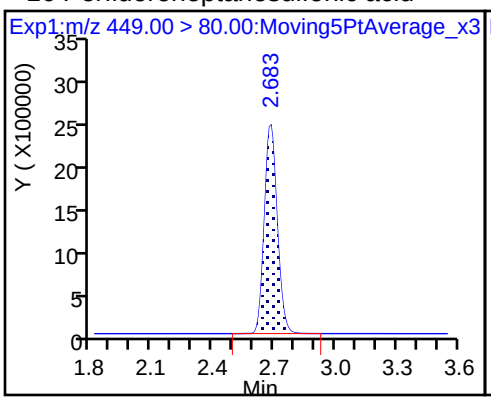
15 Perfluorooctanoic acid



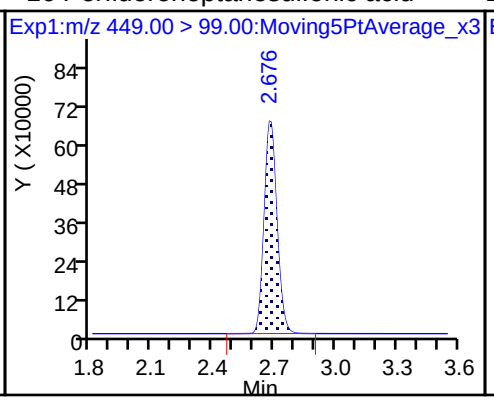
15 Perfluorooctanoic acid



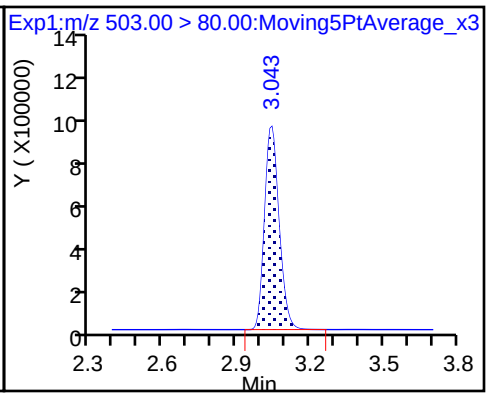
16 Perfluoroheptanesulfonic acid



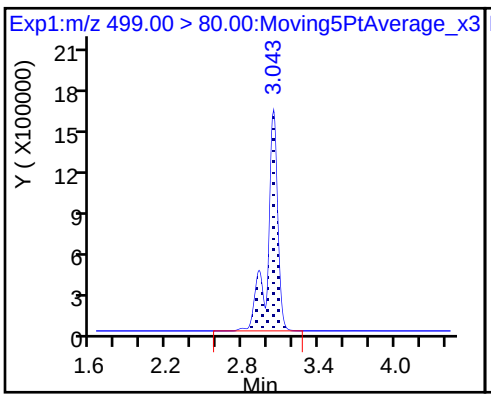
16 Perfluoroheptanesulfonic acid



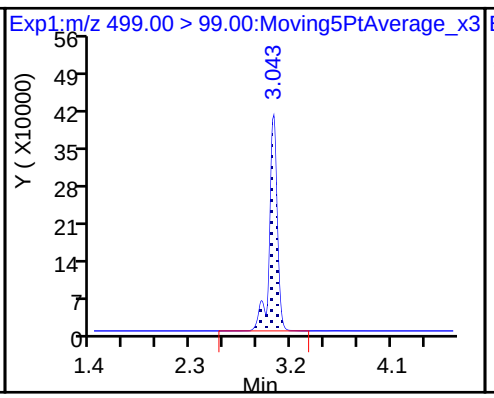
D 18 13C4 PFOS



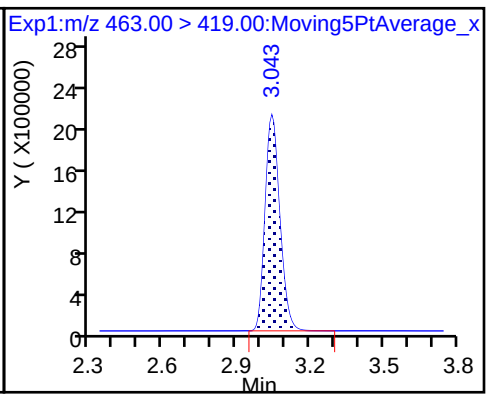
17 Perfluorooctane sulfonic acid



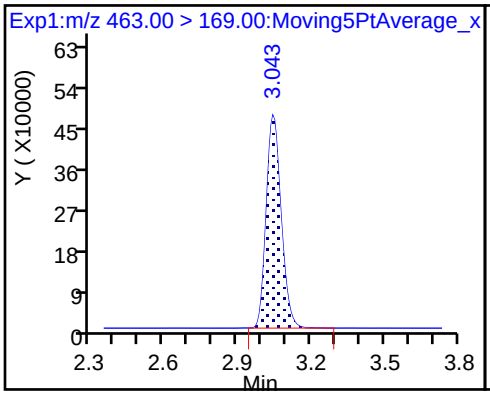
17 Perfluorooctane sulfonic acid



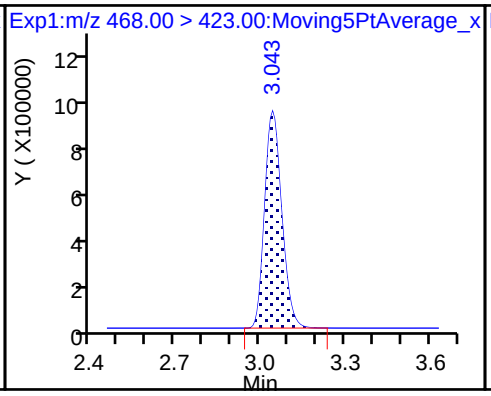
20 Perfluorononanoic acid



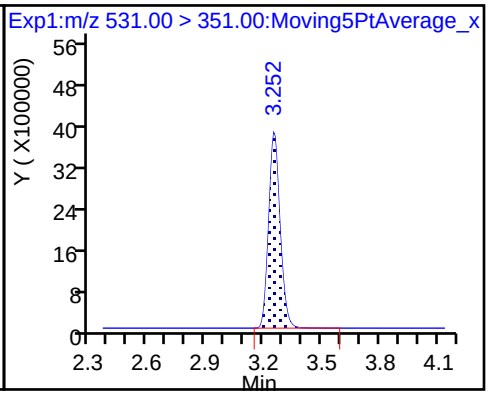
20 Perfluorononanoic acid



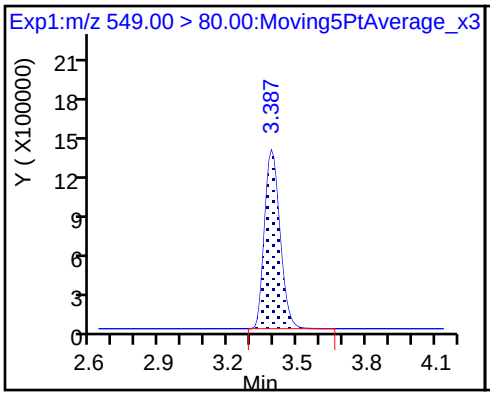
D 19 13C5 PFNA



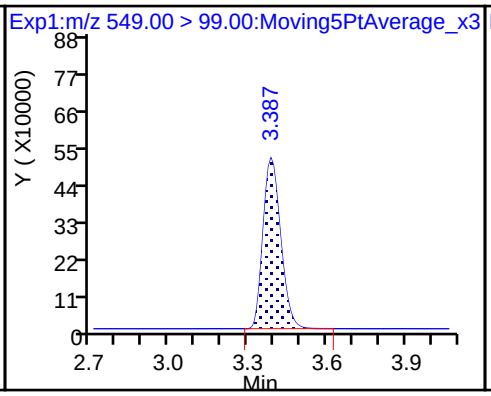
69 9-Chlorohexadecafluoro-3-oxanonane



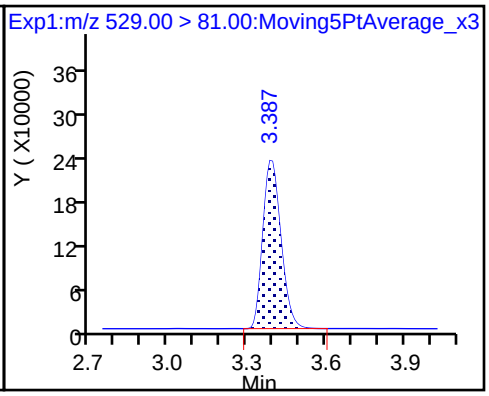
68 Perfluorononanesulfonic acid



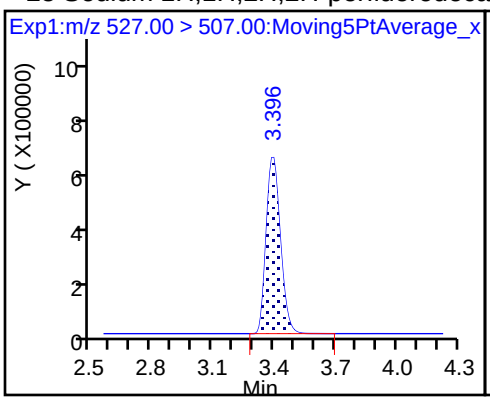
68 Perfluorononanesulfonic acid



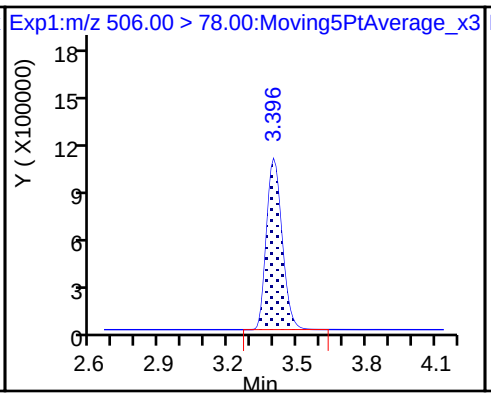
D 26 M2-8:2FTS



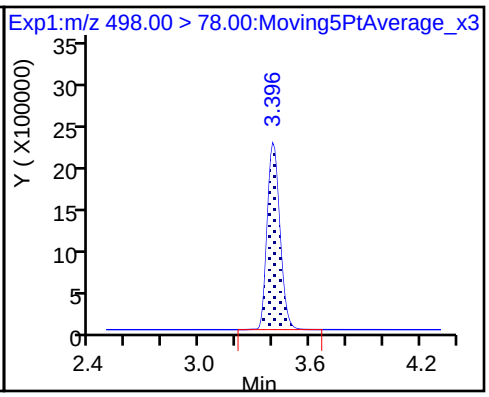
25 Sodium 1H,1H,2H,2H-perfluorodecane



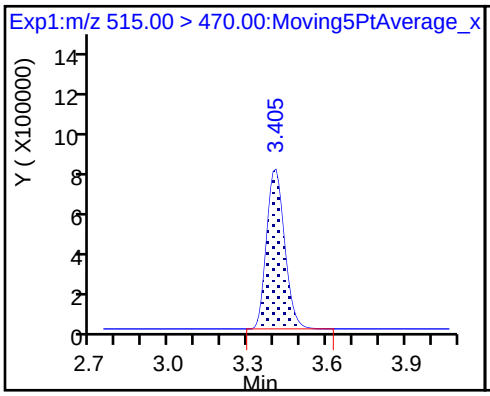
D 21 13C8 FOSA



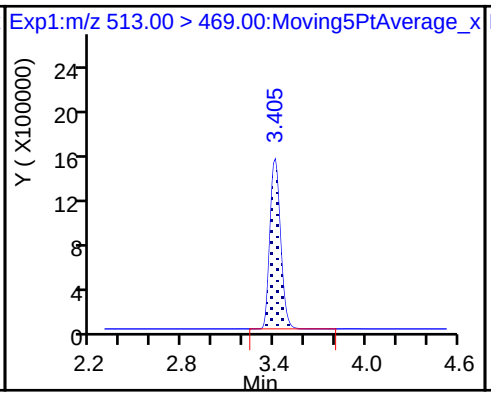
22 Perfluorooctane Sulfonamide



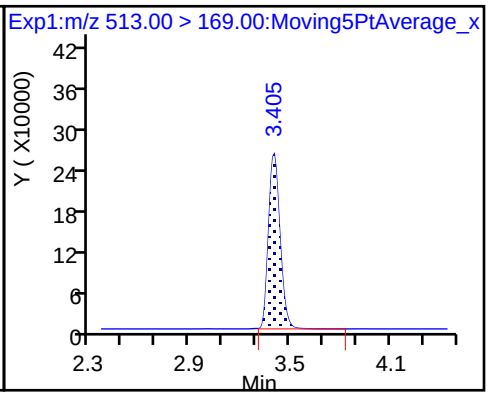
D 23 13C2 PFDA



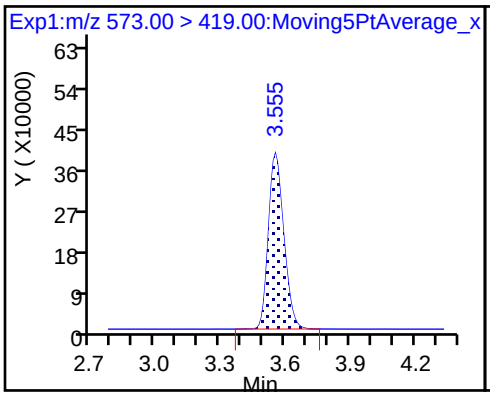
24 Perfluorodecanoic acid



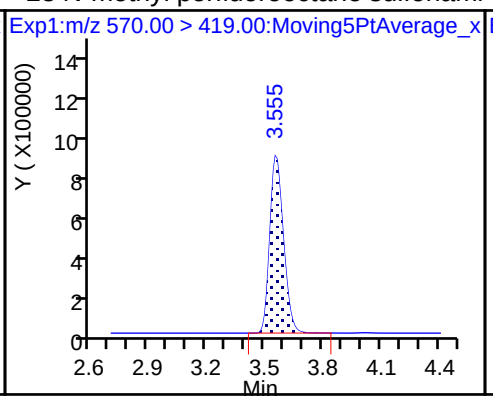
24 Perfluorodecanoic acid



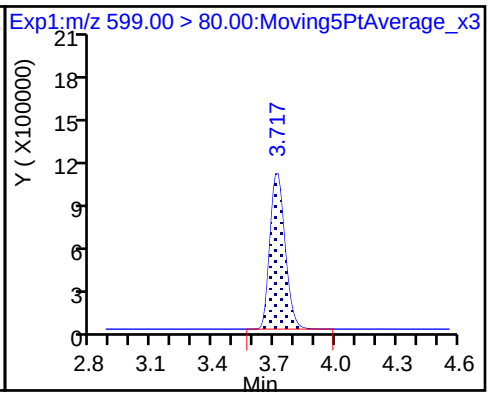
D 27 d3-NMeFOSAA



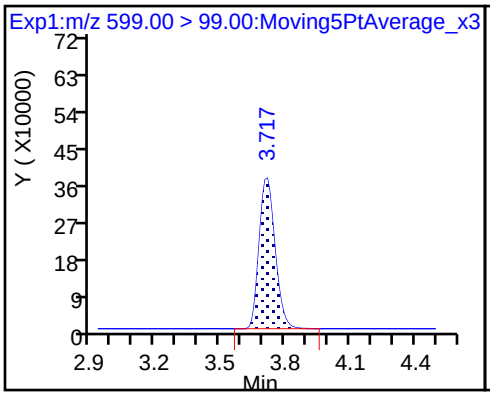
28 N-methyl perfluorooctane sulfonami



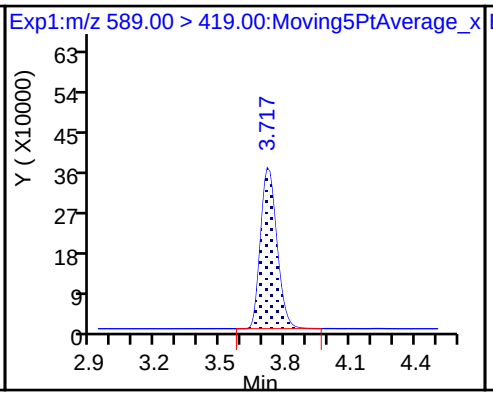
29 Perfluorodecane Sulfonic acid



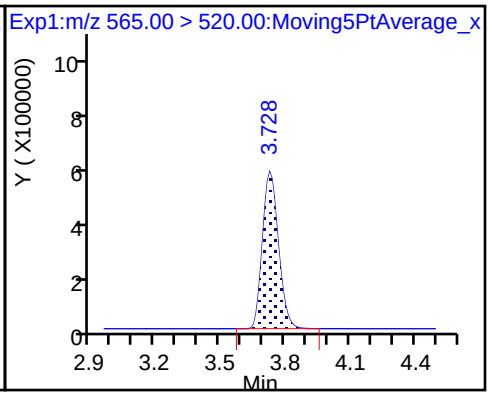
29 Perfluorodecane Sulfonic acid



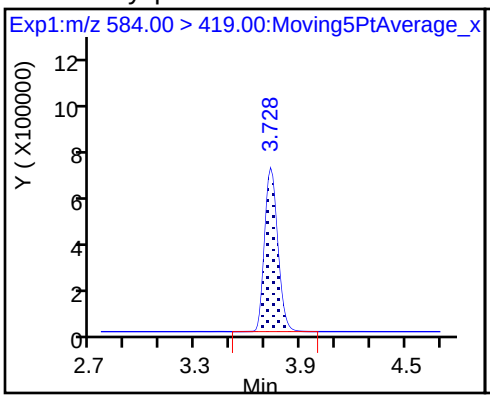
D 32 d5-NEtFOSAA



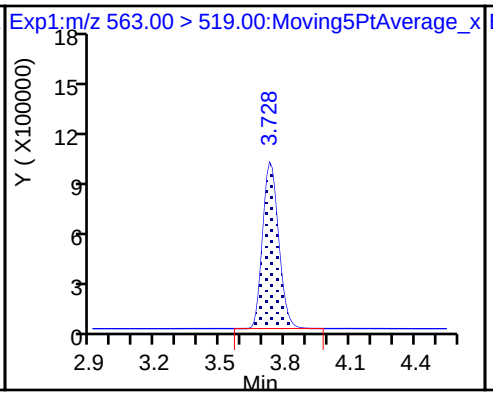
D 30 13C2 PFUnA



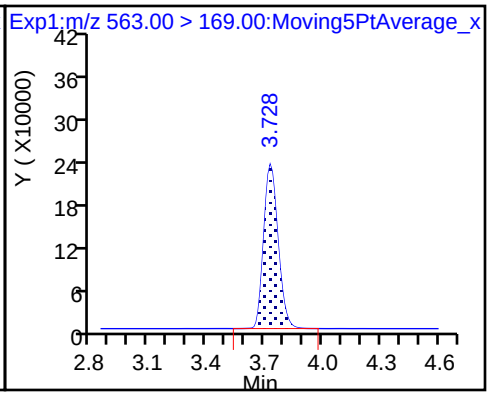
33 N-ethyl perfluorooctane sulfonamid



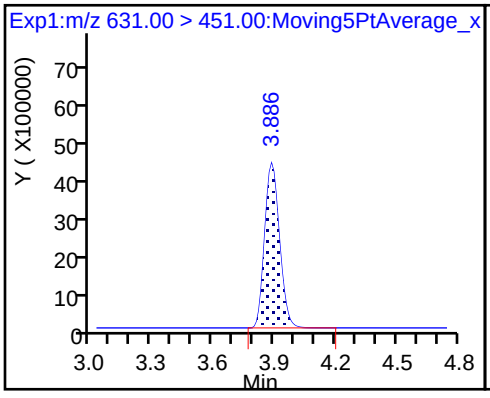
31 Perfluoroundecanoic acid



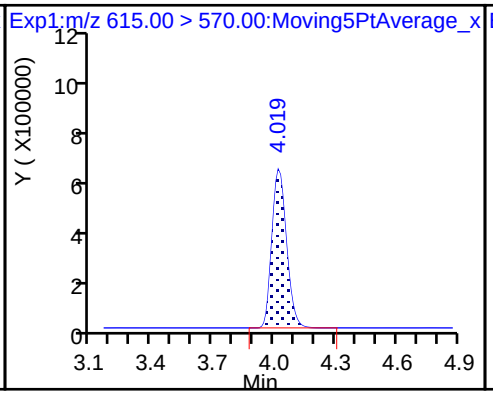
31 Perfluoroundecanoic acid



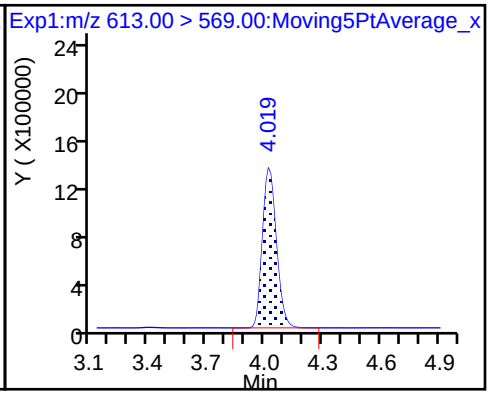
66 11-Chloroeicosafluoro-3-oxaundecan



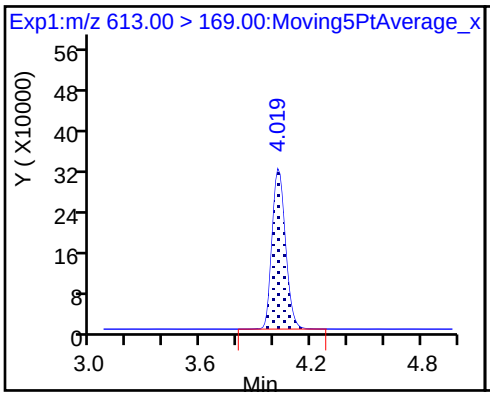
D 36 13C2 PFDoA



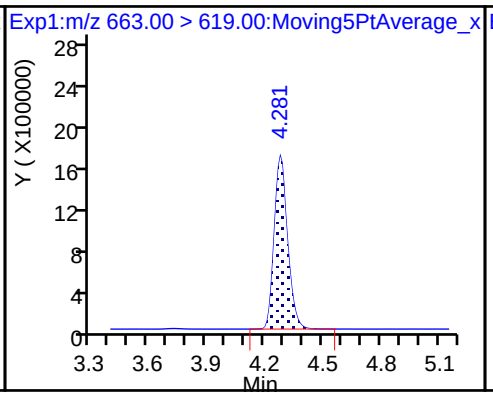
37 Perfluorododecanoic acid



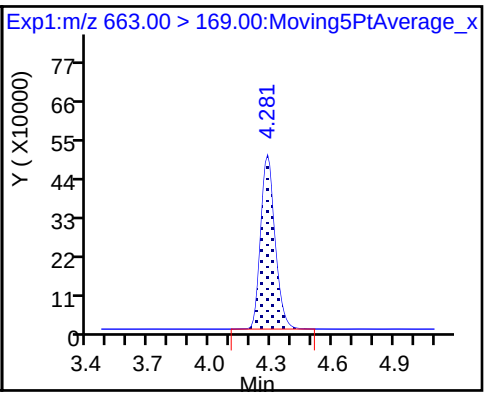
37 Perfluorododecanoic acid



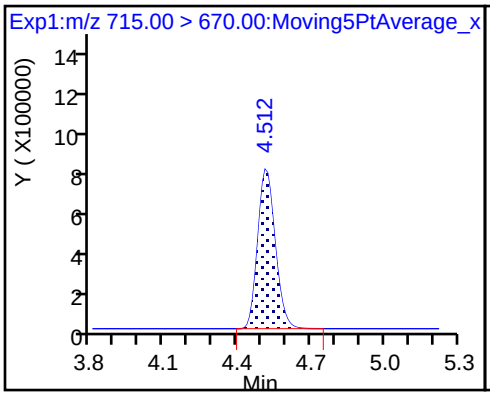
41 Perfluorotridecanoic acid



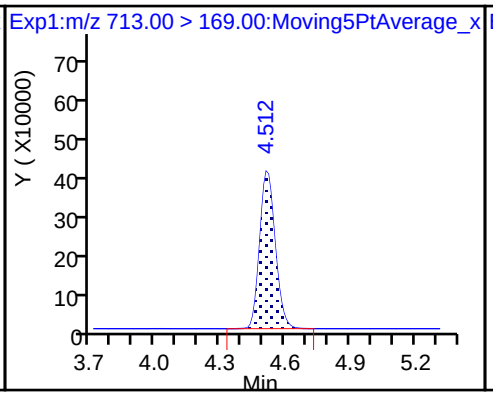
41 Perfluorotridecanoic acid



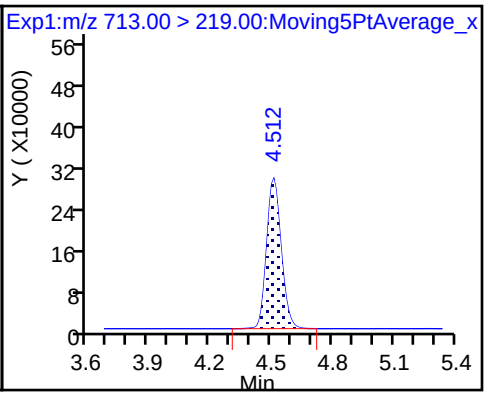
D 43 13C2-PFTeDA



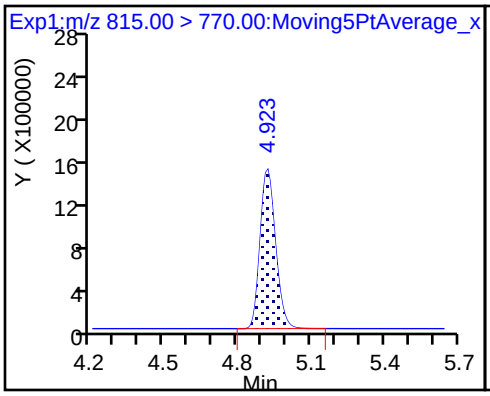
42 Perfluorotetradecanoic acid



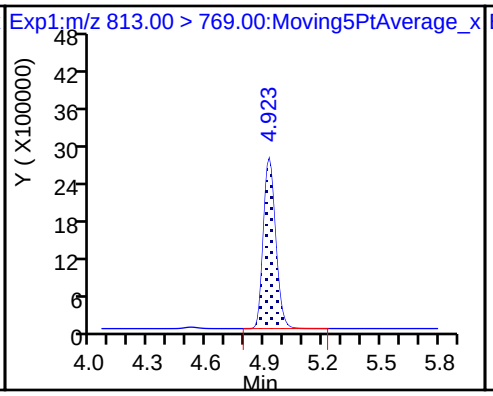
42 Perfluorotetradecanoic acid



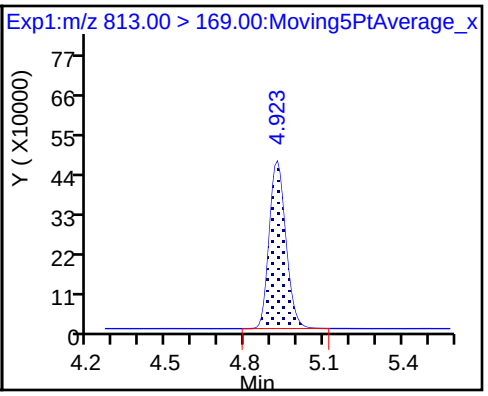
D 44 13C2-PFHxDA



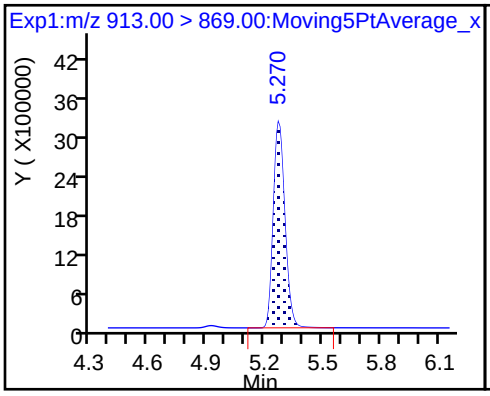
45 Perfluorohexadecanoic acid



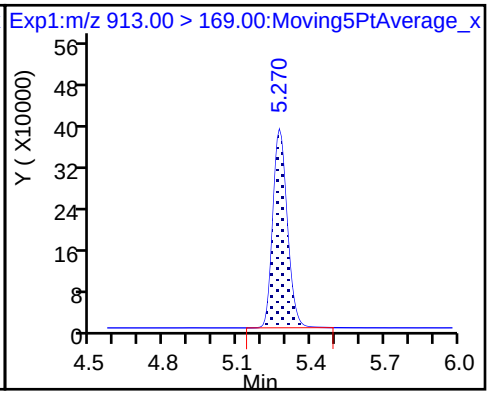
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 10-Apr-2018 19:26:34 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:18 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:20:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	5884851	2.66		106	46581	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	21784128	9.97		99.7	11333	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	17503102	9.84		98.4	16746	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	3729652	2.61		105	78108	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.735	0.003	1.000	82834	2.53		109	829	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.736	0.002	1.000	22532715	8.08		91.4	76780	
298.90 > 99.00	1.738	1.736	0.002	1.000	10095018		2.23(1.25-3.74)	91.4	146676	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.950	-0.001	1.000	563434	2.40		103	6225	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	5473778	9.58		103	195589	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4231897	2.68		107	122911	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.985	-0.004	1.000	16596765	9.65		96.5	37407	
313.00 > 119.00	1.981	1.985	-0.004	1.000	1629067		10.19(5.03-15.10)	96.5	18942	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.008	-0.005	1.000	22248169	8.73		93.1	165195	
349.00 > 99.00	2.003	2.008	-0.005	1.000	8727242		2.55(1.36-4.07)	93.1	125798	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	242908	2.49		99.5	8616	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.087	-0.004	1.000	2803143	10.4		104	17925	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	16683281	10.9		109	20962	
363.00 > 169.00	2.320	2.314	0.006	1.000	6590526		2.53(1.13-3.40)	109	34535	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	3828332	2.49		99.7	77251	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.323	-0.003	0.994	18531754	8.49		93.3	42607	
399.00 > 99.00	2.320	2.323	-0.003	0.994	6460937		2.87(1.50-4.49)	93.3	47012	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	4559710	2.41		102	82801	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	39451342	8.40		84.0	277885	
377.00 > 85.00	2.359	2.360	-0.001	1.000	26259771		1.50(0.84-2.53)	84.0	255143	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	5439954	9.93		105	66881	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	769923	2.34		98.5	9054	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	3866213	2.53		101	50638	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	17251700	9.65		96.5	9651	
413.00 > 169.00	2.675	2.674	0.001	1.000	9097235		1.90(0.84-2.52)	96.5	29224	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4114287	2.50			76246	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	16945821	9.42		98.9	66065	
449.00 > 99.00	2.683	2.680	0.003	1.000	4841116		3.50(1.94-5.82)	98.9	91269	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3239063	2.44		102	17414	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.042	0.001	1.000	14391699	9.76		105	52846	
499.00 > 99.00	3.043	3.042	0.001	1.000	3174442		4.53(2.31-6.93)	105	34754	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	0.998	13696835	9.77		97.7	34474	
463.00 > 169.00	3.043	3.043	0.0	0.998	3462437		3.96(1.90-5.69)	97.7	45718	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3361051	2.56		102	67264	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	23669204	9.26		99.4	298503	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.395	3.388	0.007	1.000	10381596	9.58		99.8	64461	
549.00 > 99.00	3.395	3.388	0.007	1.000	3993295		2.60(1.33-3.97)	99.8	65048	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	929210	2.34		97.9	9349	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	4704229	9.58		100	196732	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.397	-0.002	1.000	4196317	2.53		101	46250	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.003	16450280	9.69		96.9	74333	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	2846573	2.58		103	67167	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	11538792	9.82		98.2	37953	
513.00 > 169.00	3.404	3.402	0.002	1.000	2042111		5.65(2.36-7.09)	98.2	47982	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1702670	2.72		109	20225	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.563	3.558	0.005	1.003	7221428	10.6		106	41843	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	9173589	10.4		108	56586	
599.00 > 99.00	3.716	3.715	0.001	1.000	3114281		2.95(1.39-4.16)	108	76561	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.722	0.005	1.000	1478400	2.40		95.9	16640	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.727	0.010	1.003	5812610	10.5		105	50290	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.727	0.010	1.000	2344065	2.46		98.6	49963	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.727	3.727	0.0	0.997	7810732	9.86		98.6	36756	
563.00 > 169.00	3.727	3.727	0.0	0.997	1900318		4.11(2.12-6.36)	98.6	52722	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.885	3.883	0.002	1.000	32450794	8.22		87.3	180198	
D 36 13C2 PFDoA										
615.00 > 570.00	4.018	4.017	0.001	1.000	2618174	2.55		102	22873	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.020	-0.002	1.000	11350274	10.4		104	14082	
613.00 > 169.00	4.028	4.020	0.008	1.003	2800305		4.05(2.13-6.40)	104	29481	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.278	0.002	1.000	12743041	10.0		100	11764	
663.00 > 169.00	4.280	4.278	0.002	1.000	3998604		3.19(1.25-3.76)	100	28384	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.522	4.513	0.009	1.000	3344927	2.57		103	23122	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.513	0.009	1.000	3357209	10.0		99.9	21100	
713.00 > 219.00	4.512	4.513	-0.001	0.998	2463893		1.36(0.71-2.13)	99.9	21721	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.922	4.918	0.004	1.000	5522067	2.61		104	17481	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.922	4.920	0.002	1.000	20182542	9.63		96.3	5657	
813.00 > 169.00	4.922	4.920	0.002	1.000	3386021		5.96(2.86-8.58)	96.3	12815	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.277	5.268	0.009	1.000	21808387	9.83		98.3	4861	
913.00 > 169.00	5.277	5.268	0.009	1.000	2810004		7.76(3.83-11.48)	98.3	7858	

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:19 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Injection Date: 10-Apr-2018 19:26:34 Instrument ID: A8_N

Lims ID: IC L7 Full

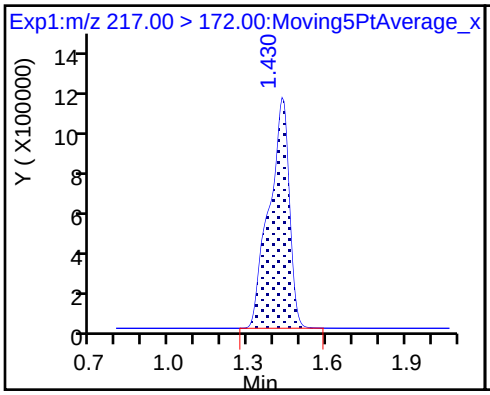
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

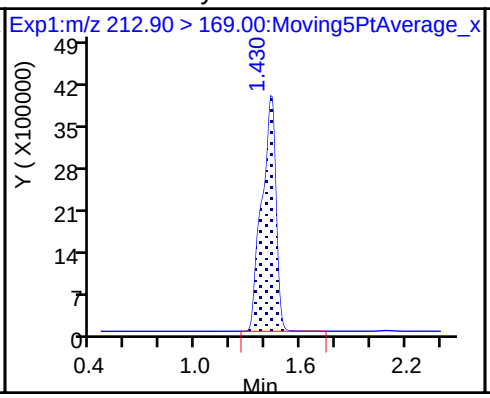
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

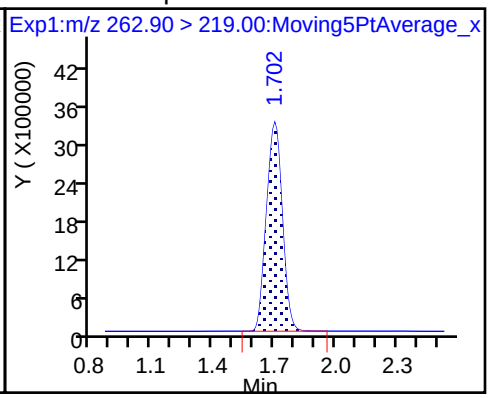
D 1 13C4 PFBA



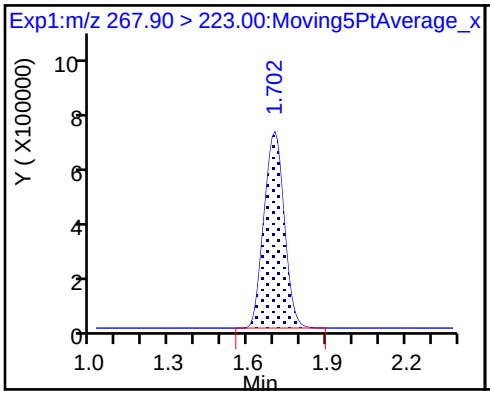
2 Perfluorobutyric acid



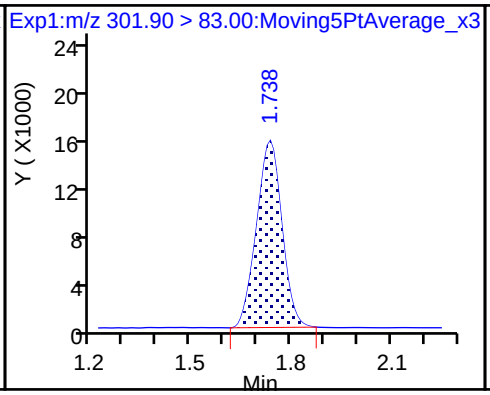
4 Perfluoropentanoic acid



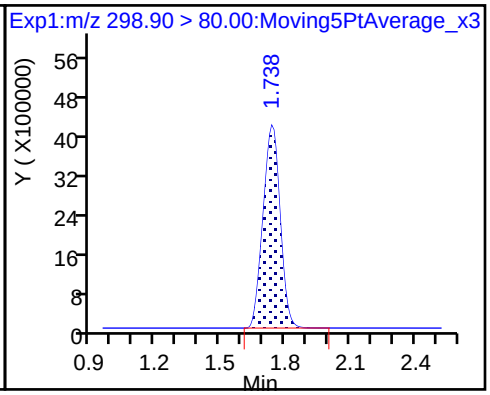
D 3 13C5-PFPeA



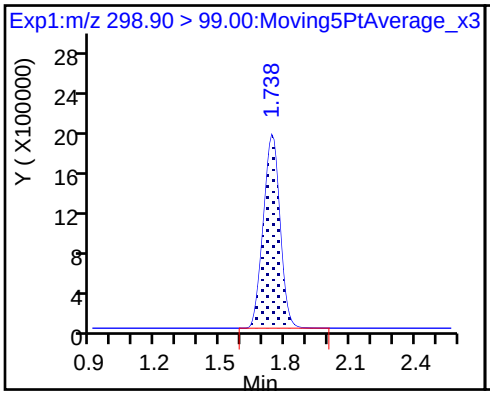
D 47 13C3-PFBS



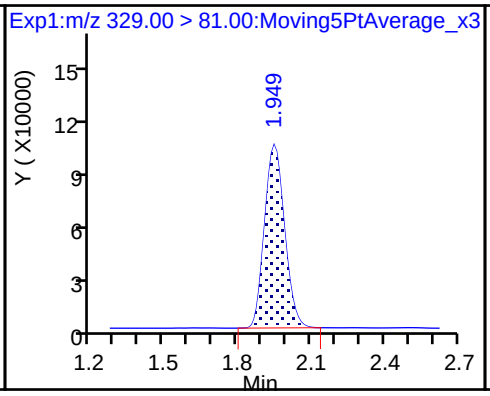
5 Perfluorobutanesulfonic acid



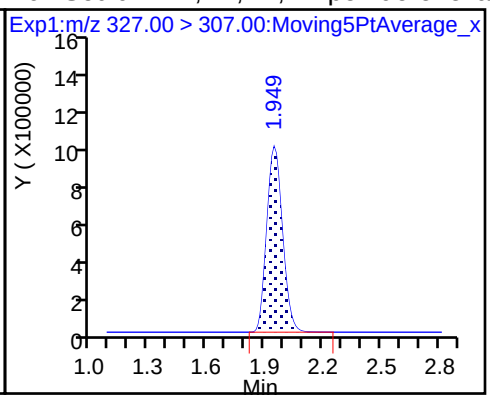
5 Perfluorobutanesulfonic acid



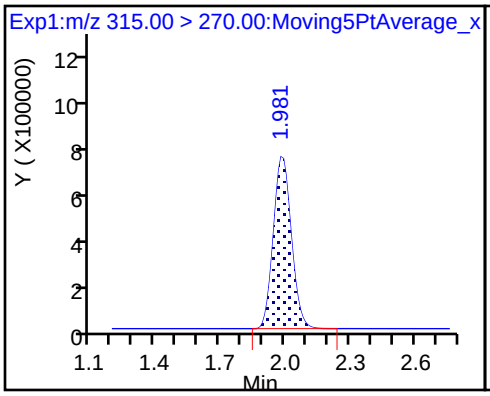
D 60 M2-4:2FTS



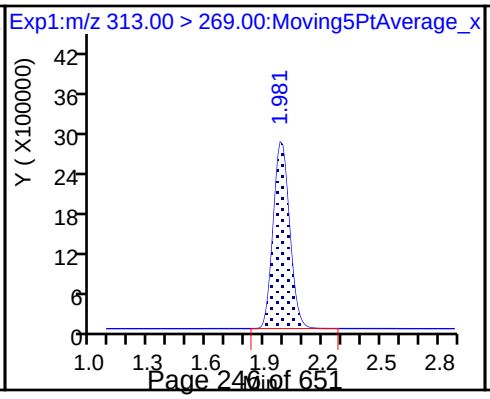
61 Sodium 1H,1H,2H,2H-perfluorohexane



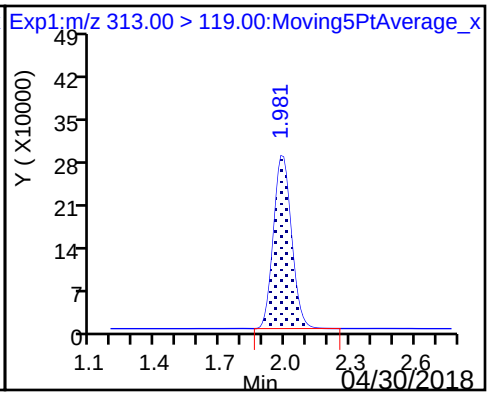
D 7 13C2 PFHxA



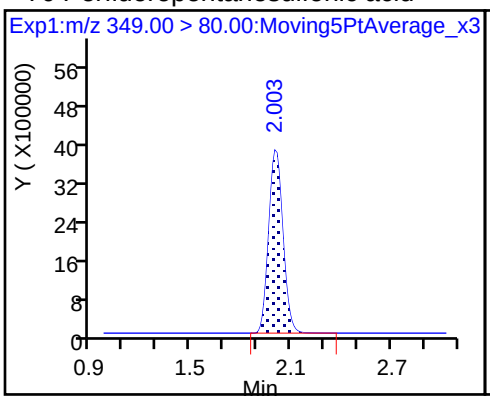
6 Perfluorohexanoic acid



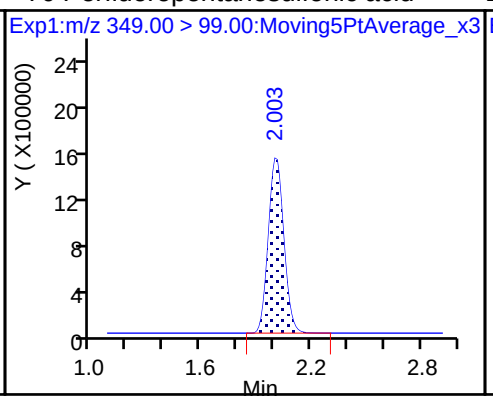
6 Perfluorohexanoic acid



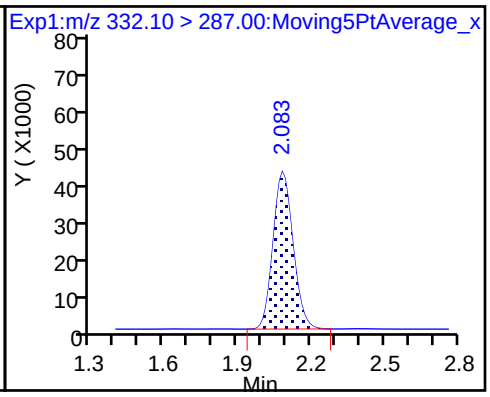
70 Perfluoropentanesulfonic acid



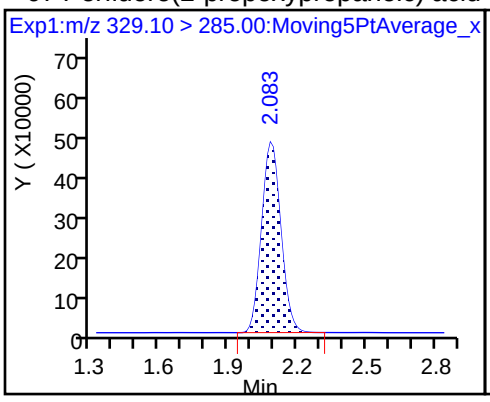
70 Perfluoropentanesulfonic acid



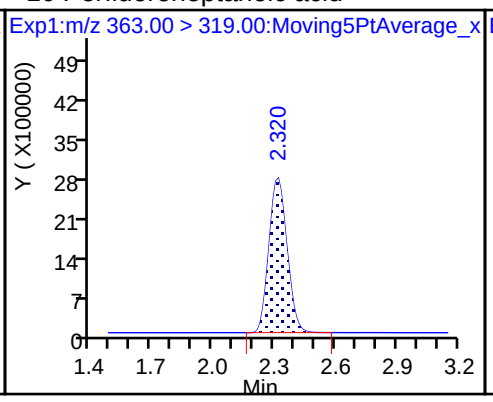
D 64 13C3 HFPO-DA



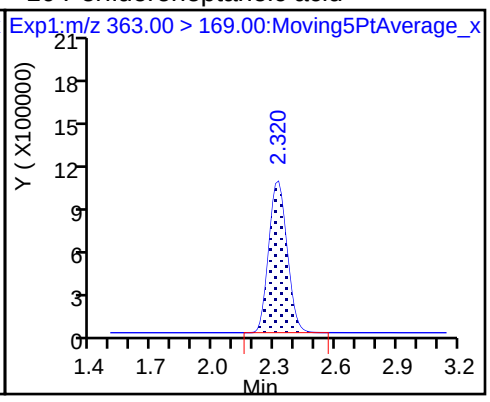
67 Perfluoro(2-propoxypropanoic) acid



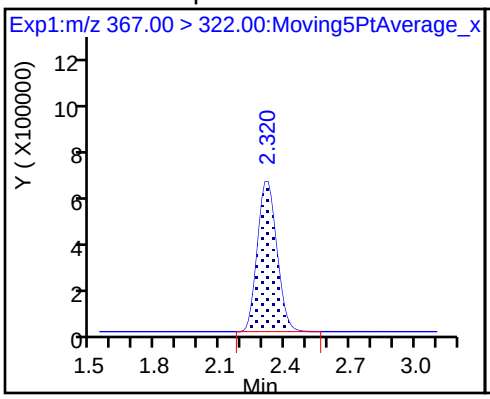
10 Perfluoroheptanoic acid



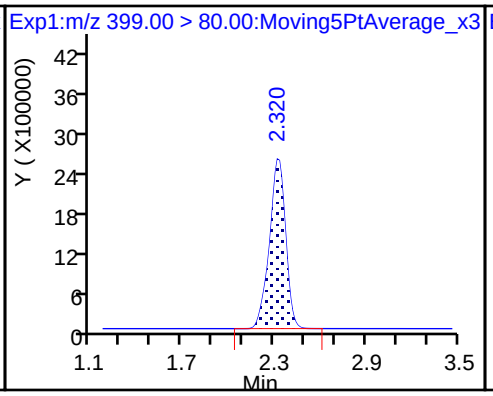
10 Perfluoroheptanoic acid



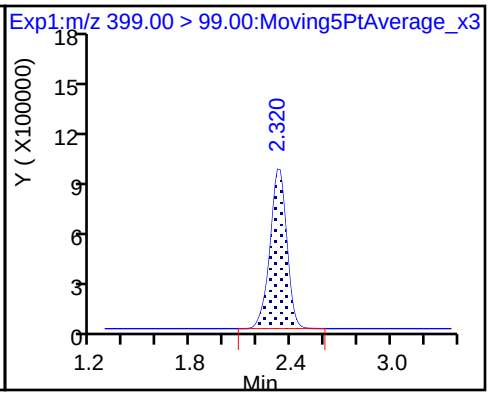
D 9 13C4-PFHpA



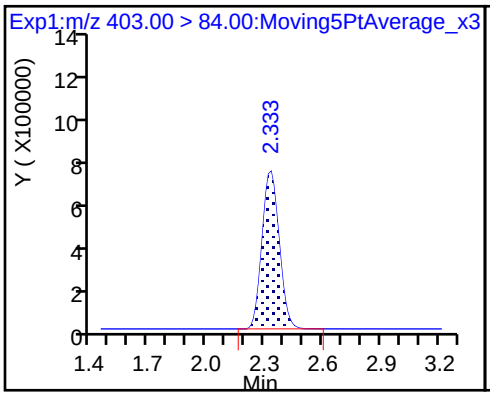
8 Perfluorohexanesulfonic acid



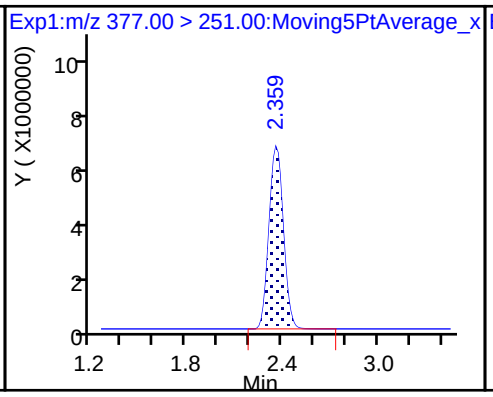
8 Perfluorohexanesulfonic acid



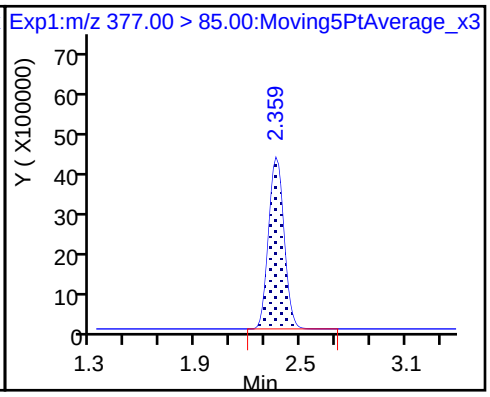
D 11 18O2 PFHxS



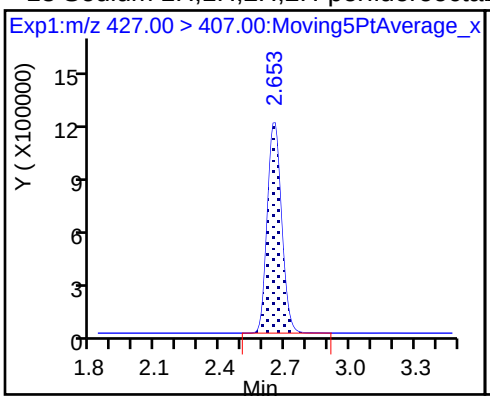
65 Adona



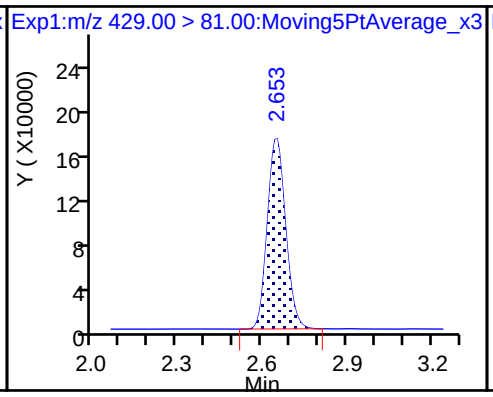
65 Adona



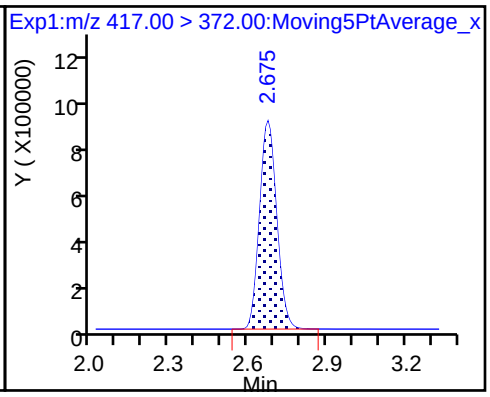
13 Sodium 1H,1H,2H,2H-perfluorooctane



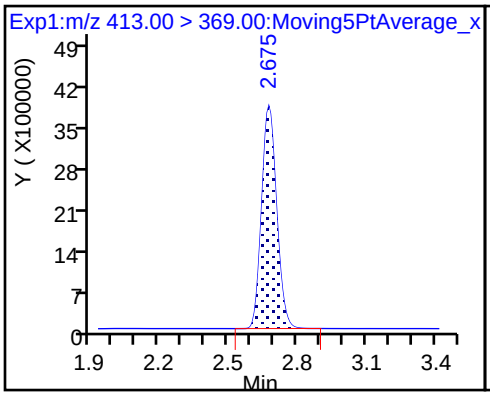
D 12 M2-6:2FTS



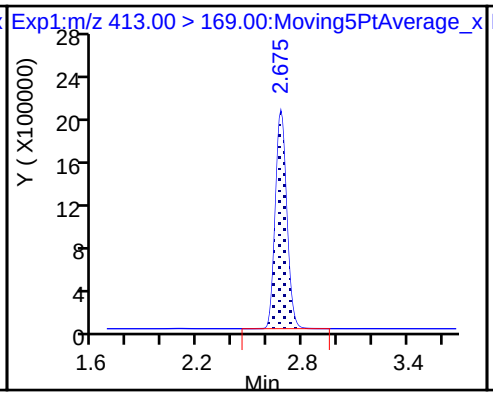
D 14 13C4 PFOA



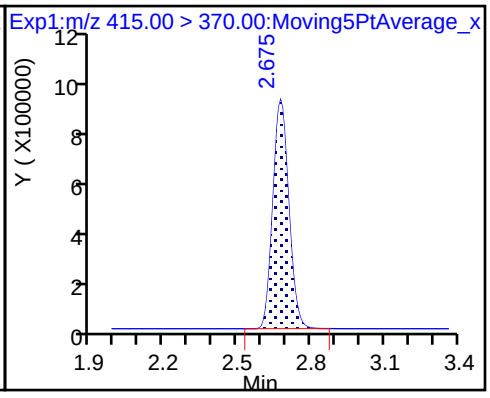
15 Perfluorooctanoic acid



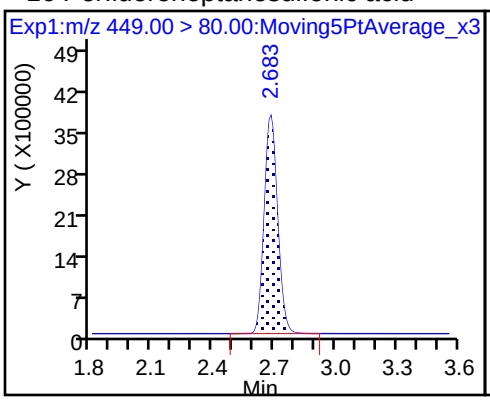
15 Perfluorooctanoic acid



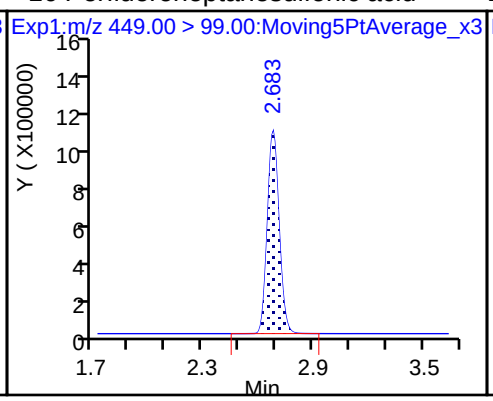
* 62 13C2-PFOA



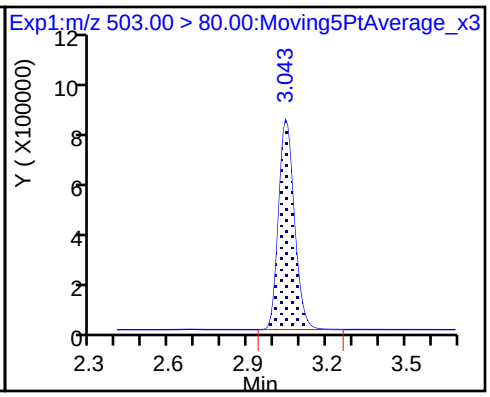
16 Perfluoroheptanesulfonic acid



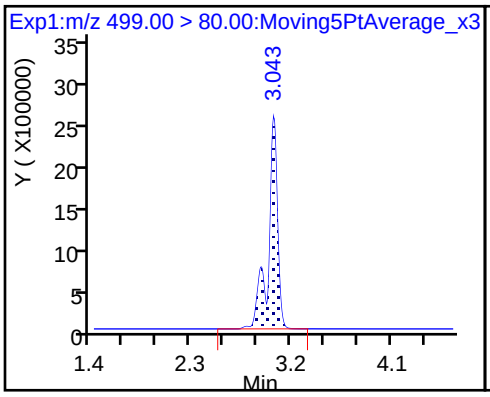
16 Perfluoroheptanesulfonic acid



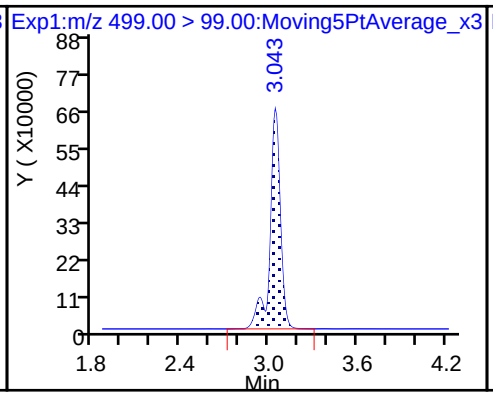
D 18 13C4 PFOS



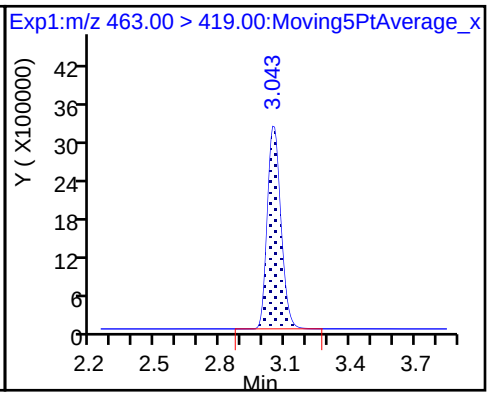
17 Perfluorooctane sulfonic acid



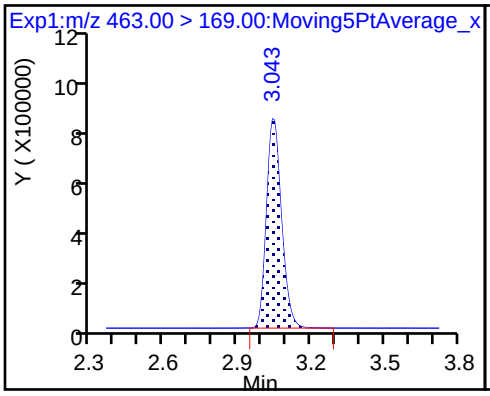
17 Perfluorooctane sulfonic acid



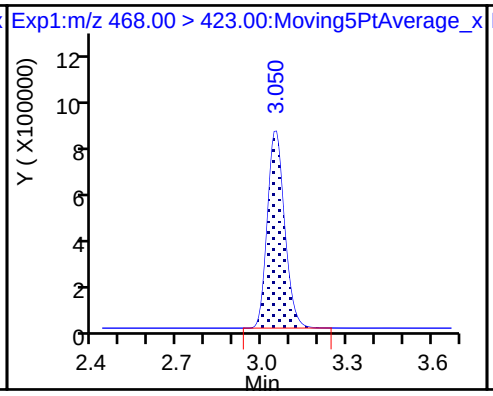
20 Perfluorononanoic acid



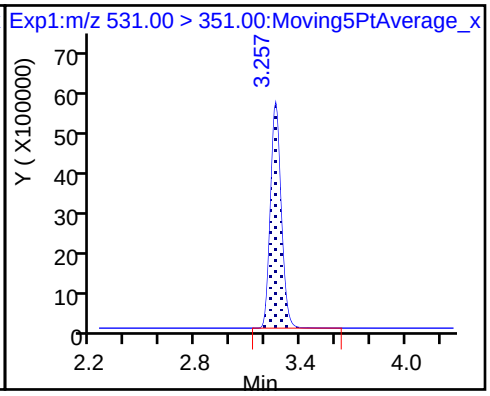
20 Perfluorononanoic acid



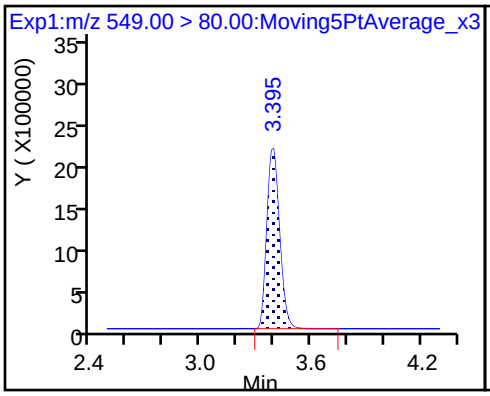
D 19 13C5 PFNA



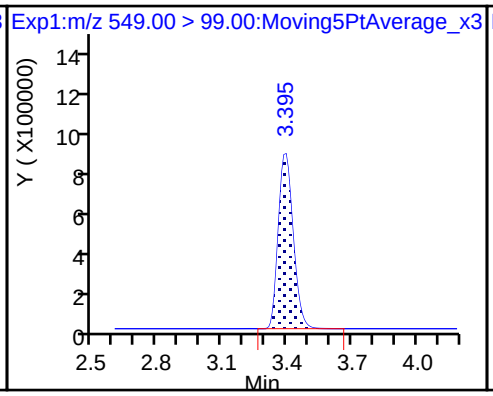
69 9-Chlorohexadecafluoro-3-oxanonane



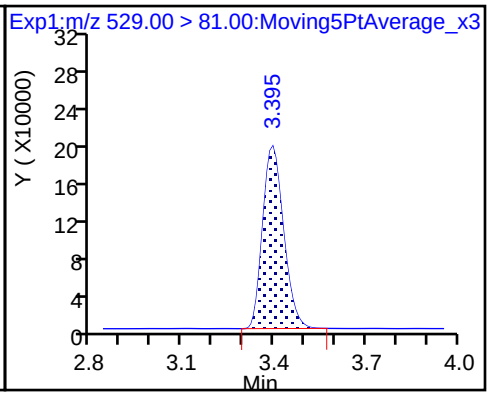
68 Perfluorononanesulfonic acid



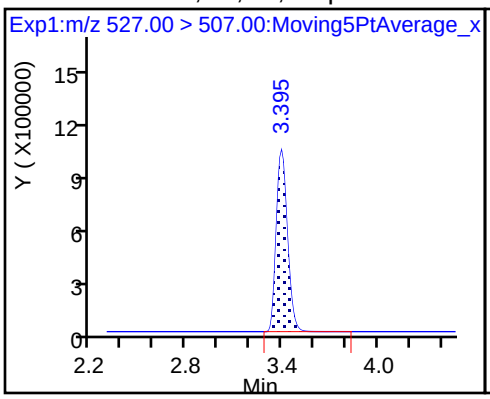
68 Perfluorononanesulfonic acid



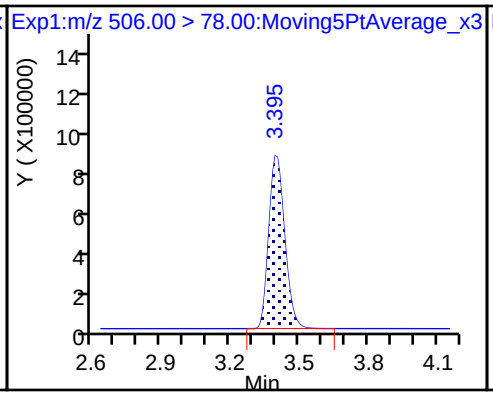
D 26 M2-8:2FTS



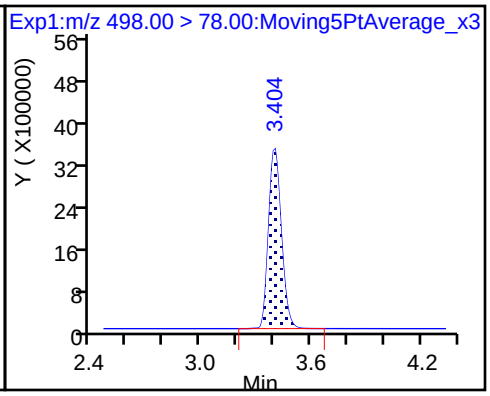
25 Sodium 1H,1H,2H,2H-perfluorodecane



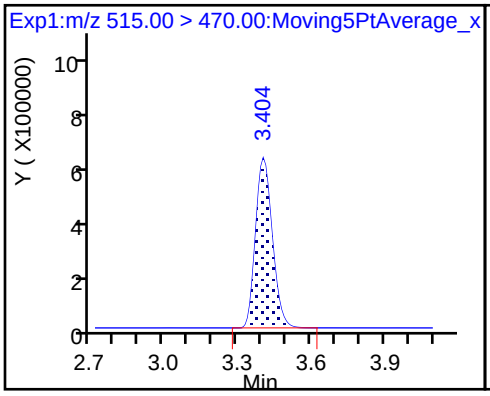
D 21 13C8 FOSA



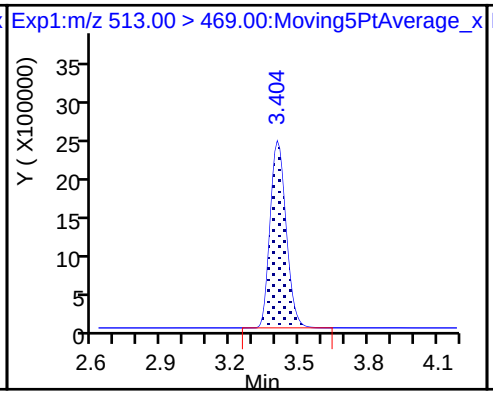
22 Perfluorooctane Sulfonamide



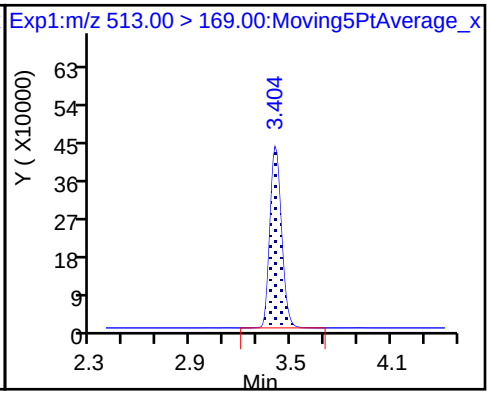
D 23 13C2 PFDA



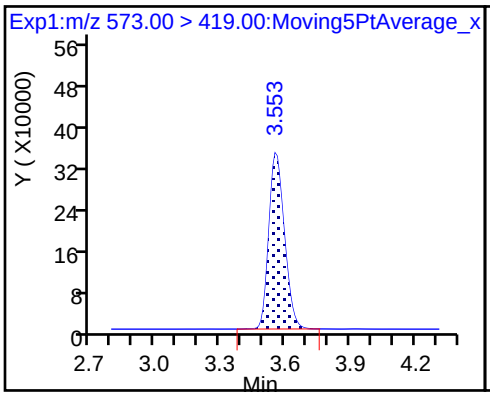
24 Perfluorodecanoic acid



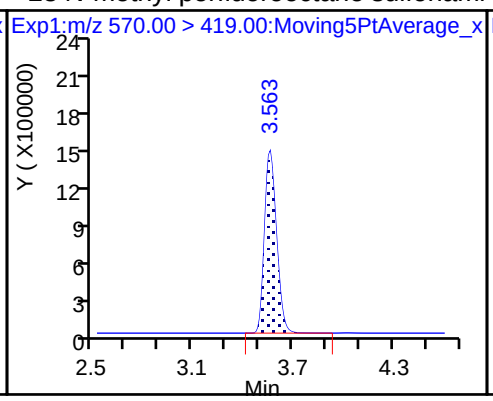
24 Perfluorodecanoic acid



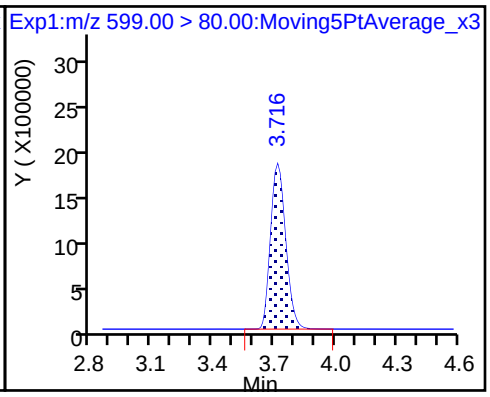
D 27 d3-NMeFOSAA



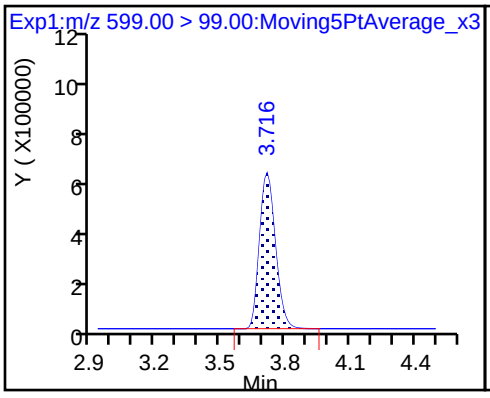
28 N-methyl perfluorooctane sulfonami



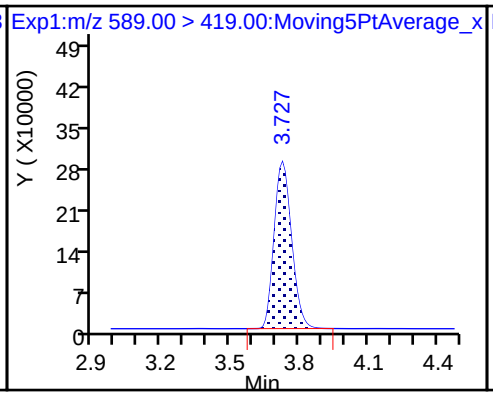
29 Perfluorodecane Sulfonic acid



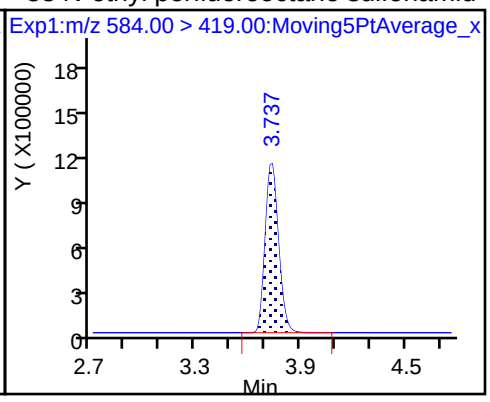
29 Perfluorodecane Sulfonic acid



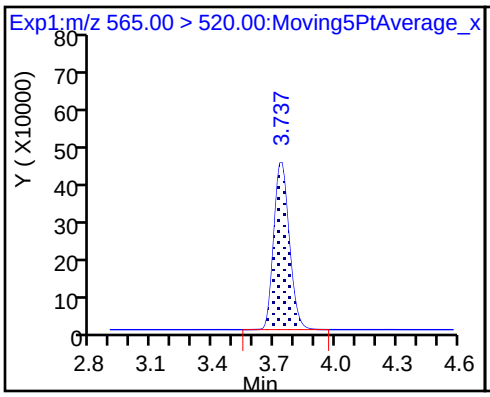
D 32 d5-NEtFOSAA



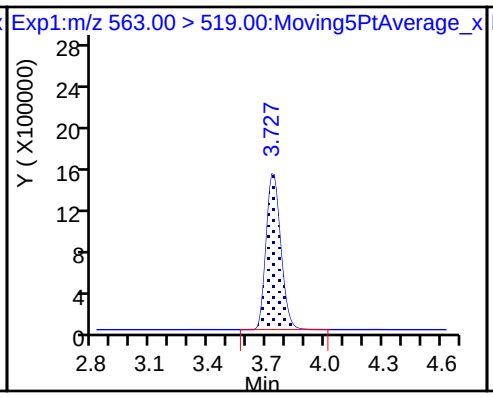
33 N-ethyl perfluorooctane sulfonamid



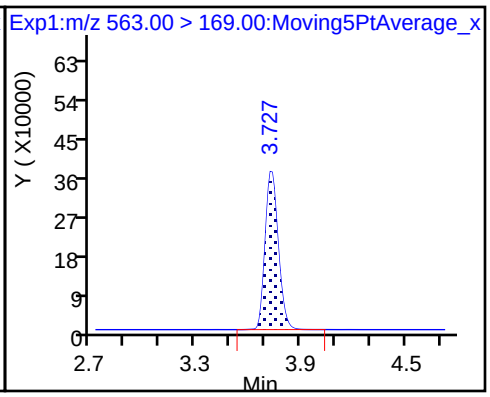
D 30 13C2 PFUnA



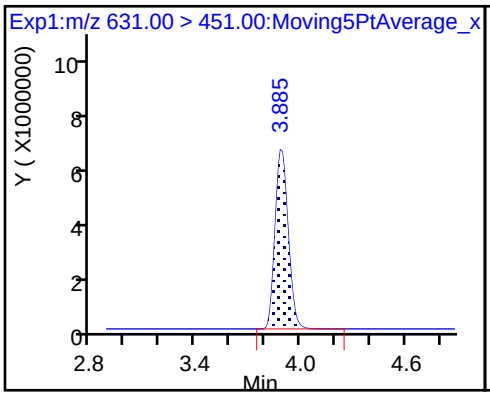
31 Perfluoroundecanoic acid



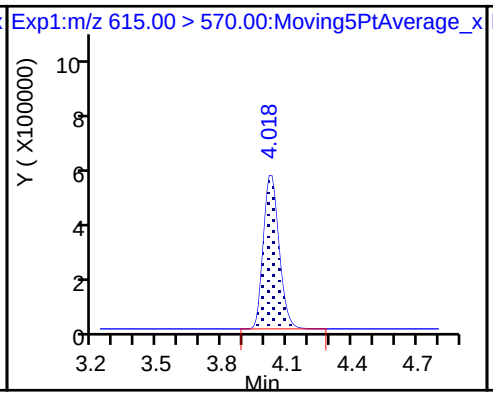
31 Perfluoroundecanoic acid



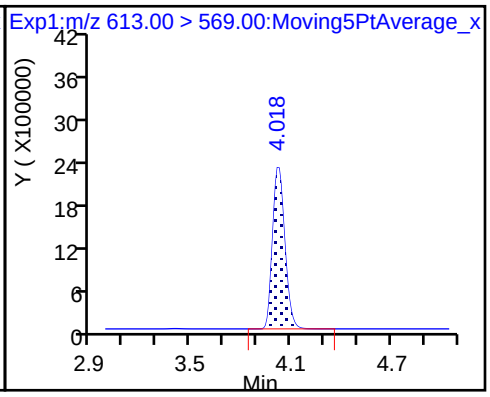
66 11-Chloroeicosafluoro-3-oxaundecan



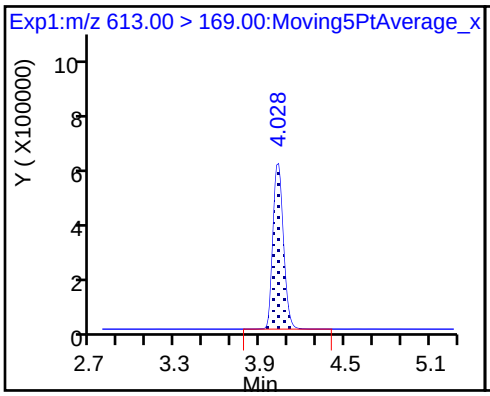
D 36 13C2 PFDoA



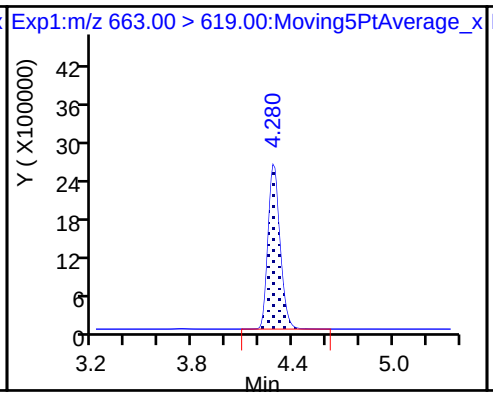
37 Perfluorododecanoic acid



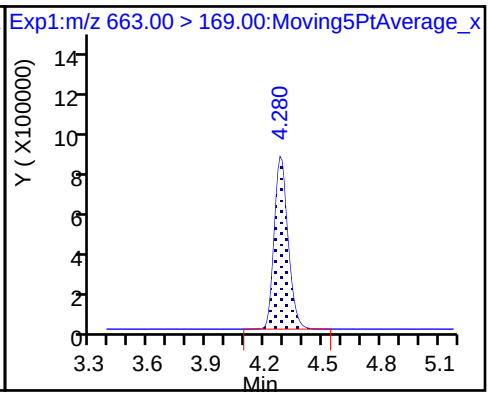
37 Perfluorododecanoic acid



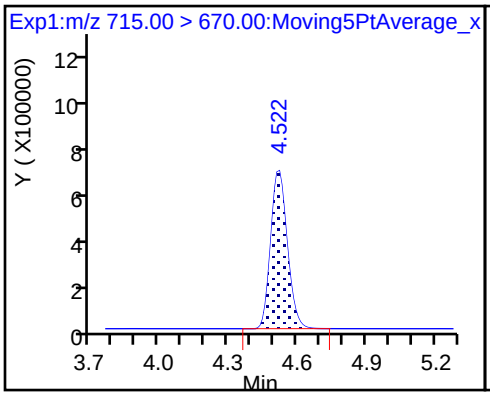
41 Perfluorotridecanoic acid



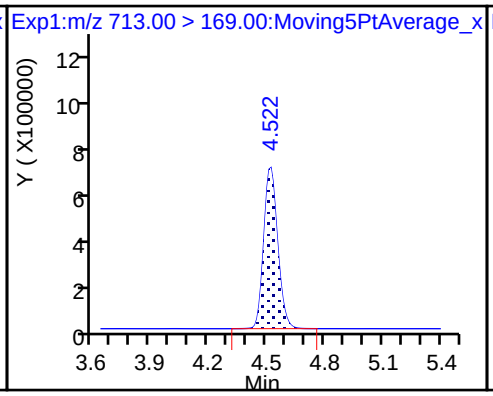
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



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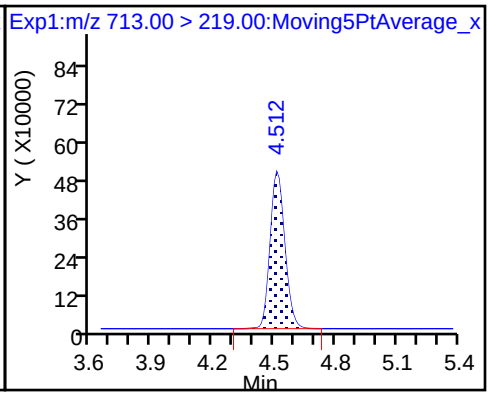
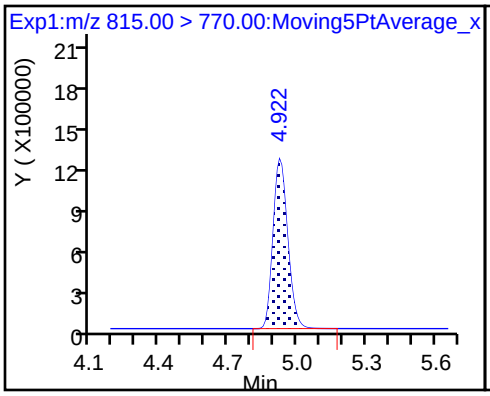
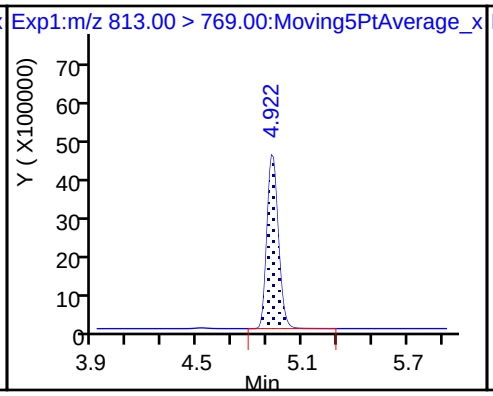


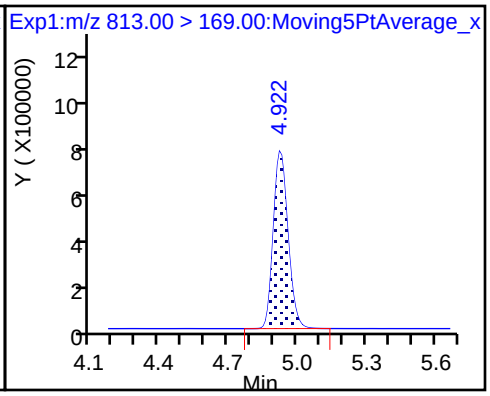
D 44 13C2-PFHxDA



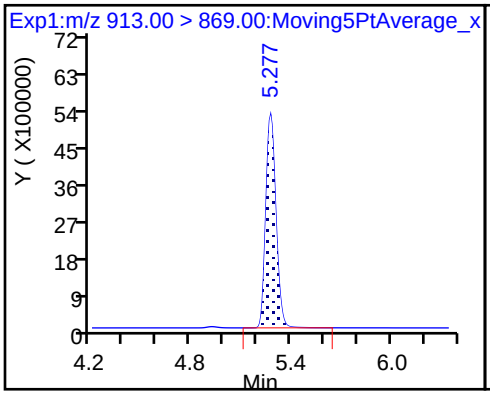
45 Perfluorohexadecanoic acid



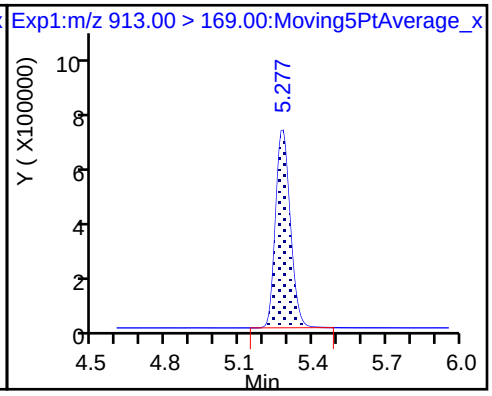
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: ICV 320-217359/10 Calibration Date: 04/10/2018 19:42

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.10LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9456		2.55	2.50	1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.133		2.38	2.50	-5.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	82.79		2.34	2.21	5.8	50.0
4:2 FTS	AveID	16.03	17.79		2.59	2.34	11.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.124		2.77	2.50	10.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	72.96			2.35	2.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.549			2.50	-8.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.015		2.54	2.50	1.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.112		2.24	2.28	-1.7	40.0
Adona	AveID	3.464	3.350			2.50	-3.3	50.0
6:2FTS	AveID	1.691	1.750		2.46	2.38	3.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.174		2.54	2.50	1.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.287		2.30	2.38	-3.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.033		2.48	2.50	-0.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.066		2.27	2.31	-2.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.806			2.33	-4.2	50.0
8:2FTS	AveID	1.265	1.321		2.51	2.40	4.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7710			2.40	-3.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.008		2.44	2.50	-2.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.087		2.69	2.50	7.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.055		2.65	2.50	5.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6537		2.43	2.41	0.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9922		2.65	2.50	6.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8169		2.42	2.50	-3.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.801			2.36	-3.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.064		2.55	2.50	2.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.212		2.49	2.50	-0.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2481		2.47	2.50	-1.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9405		2.46	2.50	-1.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: ICV 320-217359/10 Calibration Date: 04/10/2018 19:42

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.10LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.011		2.52	2.50	0.7	50.0
13C4 PFBA	Ave	1.345	1.348		2.51	2.50	0.2	50.0
13C5 PFPeA	Ave	0.8672	0.8855		2.55	2.50	2.1	50.0
13C3-PFBS	Ave	0.0199	0.0197		2.31	2.33	-0.8	50.0
M2-4:2FTS	Ave	0.1425	0.1499		2.46	2.34	5.1	50.0
13C2 PFHxA	Ave	0.9590	0.9273		2.42	2.50	-3.3	50.0
13C3 HFPO-DA	Ave	0.0593	0.0610		2.57	2.50	2.9	50.0
13C4-PFHpA	Ave	0.9333	0.9503		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	1.152	1.130		2.32	2.37	-1.9	50.0
M2-6:2FTS	Ave	0.2000	0.1936		2.30	2.38	-3.2	40.0
13C4 PFOA	Ave	0.9276	0.9247		2.49	2.50	-0.3	50.0
13C4 PFOS	Ave	0.8066	0.8532		2.53	2.39	5.8	50.0
13C5 PFNA	Ave	0.7973	0.8279		2.60	2.50	3.8	50.0
M2-8:2FTS	Ave	0.2409	0.2384		2.37	2.40	-1.0	40.0
13C2 PFDA	Ave	0.6701	0.6944		2.59	2.50	3.6	50.0
13C8 FOSA	Ave	1.007	1.012		2.51	2.50	0.5	50.0
d3-NMeFOSAA	Ave	0.3798	0.3981		2.62	2.50	4.8	50.0
d5-NEtFOSAA	Ave	0.3749	0.3684		2.46	2.50	-1.7	50.0
13C2 PFUnA	Ave	0.5781	0.5516		2.39	2.50	-4.6	50.0
13C2 PFDoA	Ave	0.6242	0.6257		2.51	2.50	0.2	50.0
13C2-PFTeDA	Ave	0.7915	0.8266		2.61	2.50	4.4	50.0
13C2-PFHxDA	Ave	1.288	1.382		2.68	2.50	7.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 10-Apr-2018 19:42:10 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:23:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.431	0.004	1.000	5903140	2.51		100	42897	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.432	0.003	1.000	5582092	2.55			3157	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	3876443	2.55		102	71438	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	4390263	2.38			3574	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.735	0.003	1.000	80328	2.31		99.2	737	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.002	1.000	6328944	2.34			26552	
298.90 > 99.00	1.739	1.736	0.002	1.000	2603286		2.43(1.25-3.74)		34374	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	1436925	2.59			63389	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.950	-0.001	1.000	612715	2.46		105	5966	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.985	0.008	1.006	4562329	2.77			12399	
313.00 > 119.00	1.981	1.985	-0.004	1.000	384388		11.87(5.03-15.10)		6555	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4059281	2.42		96.7	114705	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.008	-0.004	1.000	5923371	2.40			37471	
349.00 > 99.00	2.004	2.008	-0.004	1.000	2141440		2.77(1.36-4.07)		32919	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	267167	2.57		103	7732	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.087	-0.004	1.000	680925	2.29			4640	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	4159917	2.55		102	83647	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	4222004	2.54			5555	
363.00 > 169.00	2.320	2.314	0.006	1.000	1656229		2.55(1.13-3.40)		8075	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.323	0.010	1.000	5017849	2.24			13906	
399.00 > 99.00	2.333	2.323	0.010	1.000	1647913		3.04(1.50-4.49)		14109	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	4679824	2.32		98.1	94921	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	12510918	2.42			98964	
377.00 > 85.00	2.359	2.360	-0.001	1.000	7623155		1.64(0.84-2.53)		115527	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	805312	2.30		96.8	15934	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	1408901	2.46			22533	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.673	0.003	1.000	4047870	2.49		99.7	60383	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.674	0.002		4377627	2.50			57743	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.674	0.002	1.000	4752903	2.54			3234	
413.00 > 169.00	2.676	2.674	0.002	1.000	2366488		2.01(0.84-2.52)		10676	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	4566459	2.30			32288	
449.00 > 99.00	2.683	2.680	0.003	1.000	1249476		3.65(1.94-5.82)		23451	
D 18 13C4 PFOS										
503.00 > 80.00	3.049	3.041	0.008	1.000	3570537	2.53		106	24066	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.049	3.042	0.007	1.000	3685601	2.27			15600	
499.00 > 99.00	3.049	3.042	0.007	1.000	812986		4.53(2.31-6.93)		15657	
20 Perfluorononanoic acid										
463.00 > 419.00	3.049	3.043	0.006	1.000	3743693	2.48			9400	
463.00 > 169.00	3.049	3.043	0.006	1.000	898645		4.17(1.90-5.69)		36471	
D 19 13C5 PFNA										
468.00 > 423.00	3.049	3.045	0.004	1.000	3624090	2.60		104	67532	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	6286262	2.23			103380	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.394	3.388	0.006	1.000	2764509	2.31			32991	
549.00 > 99.00	3.394	3.388	0.006	1.000	1003388		2.76(1.33-3.97)		19714	
D 26 M2-8:2FTS										
529.00 > 81.00	3.394	3.390	0.004	1.000	999777	2.37		99.0	10613	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.394	3.393	0.001	1.000	1323882	2.51			55023	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4432045	2.51		101	58050	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	4817944	2.69			67785	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	3039987	2.59		104	79981	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	3064833	2.44			12447	
513.00 > 169.00	3.404	3.402	0.002	1.000	528428		5.80(2.36-7.09)		18431	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.553	0.009	1.000	1742858	2.62		105	25420	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.558	0.004	1.000	1839262	2.65			12104	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.715	3.715	0.0	1.000	2356067	2.43			29098	
599.00 > 99.00	3.715	3.715	0.0	1.000	795988		2.96(1.39-4.16)		22459	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.722	0.004	1.000	1612562	2.46		98.3	9989	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.727	0.010	1.000	2414889	2.39		95.4	67805	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.727	0.010	1.003	1599970	2.65			18023	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.727	0.010	1.000	1972744	2.42			8361	
563.00 > 169.00	3.737	3.727	0.010	1.000	467144		4.22(2.12-6.36)		11394	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.894	3.883	0.011	1.000	9854892	2.26			104542	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.017	0.010	1.000	2739185	2.51		100	21240	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.027	4.020	0.007	1.000	2914311	2.55			3322	
613.00 > 169.00	4.027	4.020	0.007	1.000	731402		3.98(2.13-6.40)		7033	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.289	4.278	0.011	1.000	3318610	2.49			3147	
663.00 > 169.00	4.289	4.278	0.011	1.000	1033553		3.21(1.25-3.76)		10706	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.513	0.008	1.000	3618492	2.61		104	23098	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.513	0.008	1.000	897606	2.47			8678	
713.00 > 219.00	4.511	4.513	-0.002	0.998	658771		1.36(0.71-2.13)		10322	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.930	4.918	0.012	1.000	6051317	2.68		107	16293	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.930	4.920	0.010	1.000	5691508	2.46			1760	
813.00 > 169.00	4.930	4.920	0.010	1.000	909536		6.26(2.86-8.58)		5961	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.277	5.268	0.009	1.000	6120324	2.52			1552	
913.00 > 169.00	5.277	5.268	0.009	1.000	734463		8.33(3.83-11.48)		3317	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_010.d

Injection Date: 10-Apr-2018 19:42:10 Instrument ID: A8_N

Lims ID: ICV Full

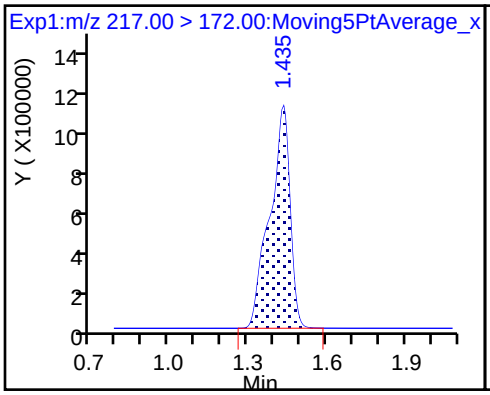
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

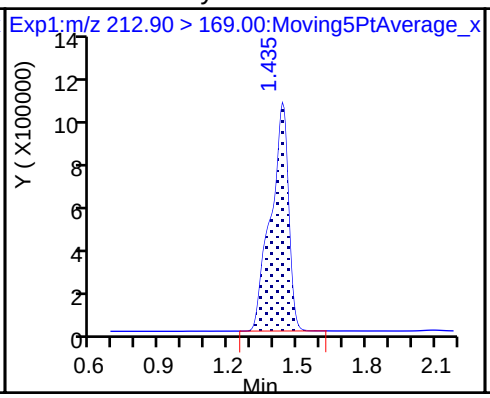
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

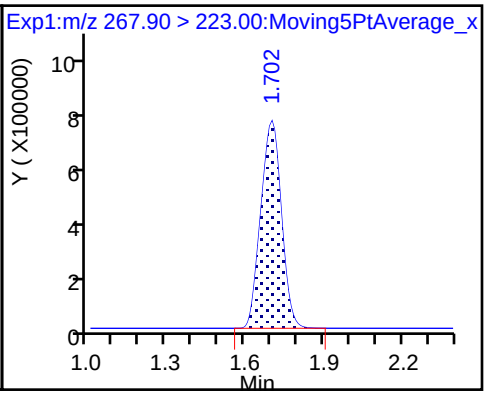
D 1 13C4 PFBA



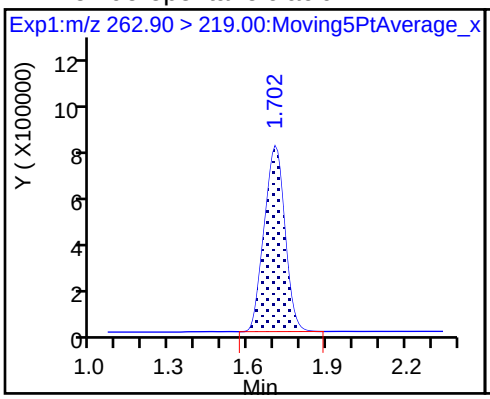
2 Perfluorobutyric acid



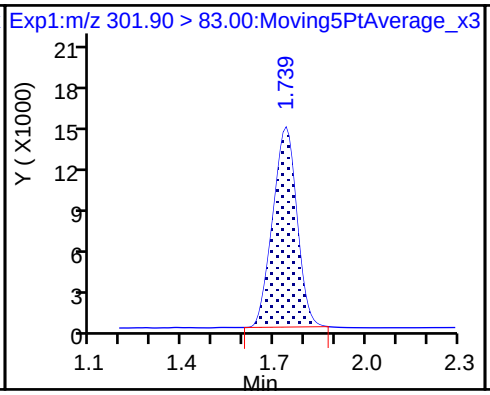
D 3 13C5-PFPeA



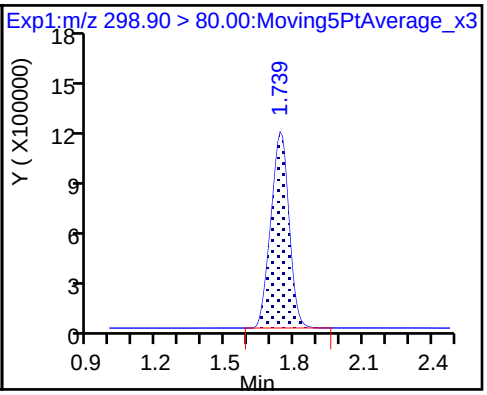
4 Perfluoropentanoic acid



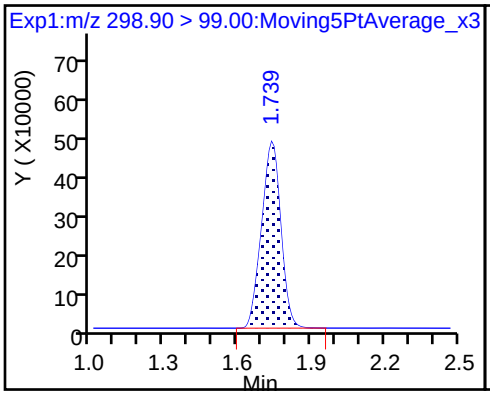
D 47 13C3-PFBS



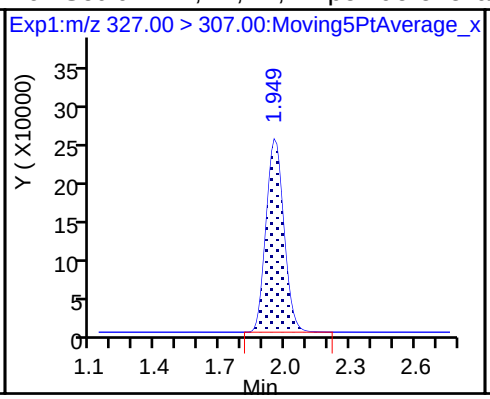
5 Perfluorobutanesulfonic acid



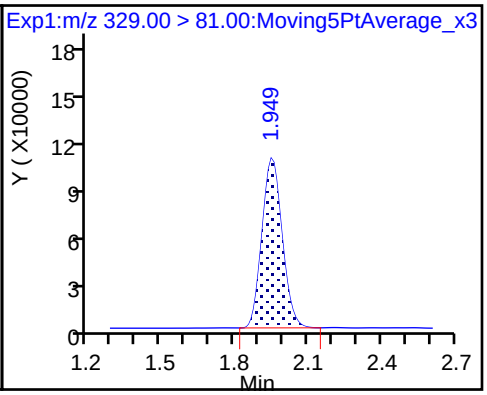
5 Perfluorobutanesulfonic acid



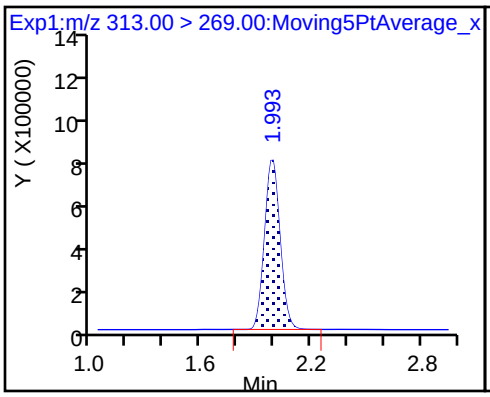
61 Sodium 1H,1H,2H,2H-perfluorohexane



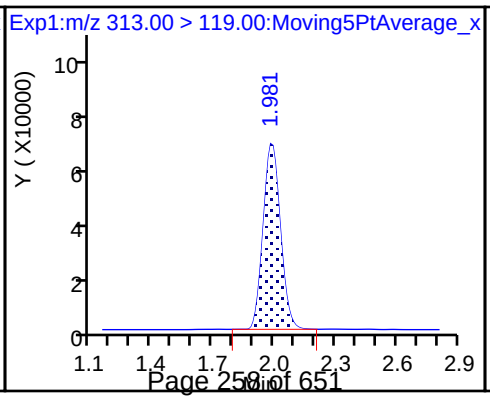
D 60 M2-4:2FTS



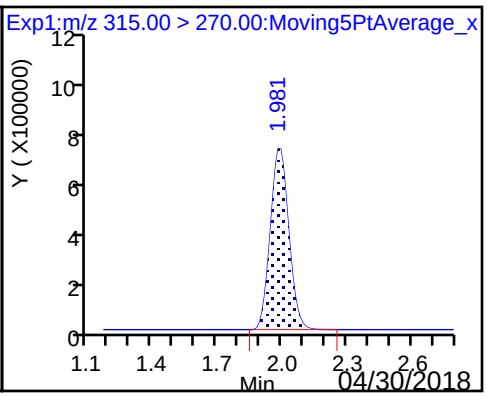
6 Perfluorohexanoic acid



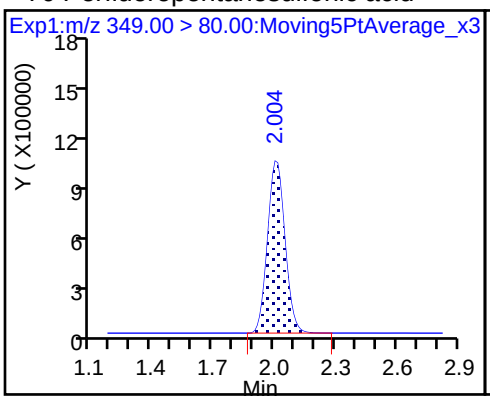
6 Perfluorohexanoic acid



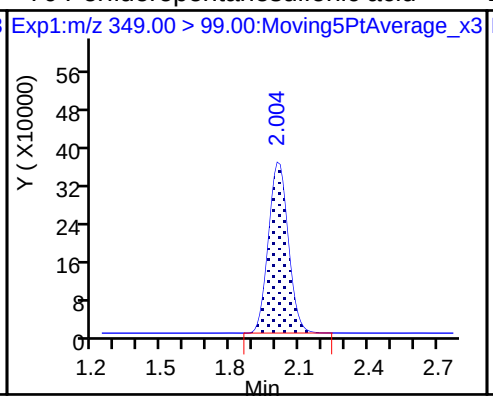
D 7 13C2 PFHxA



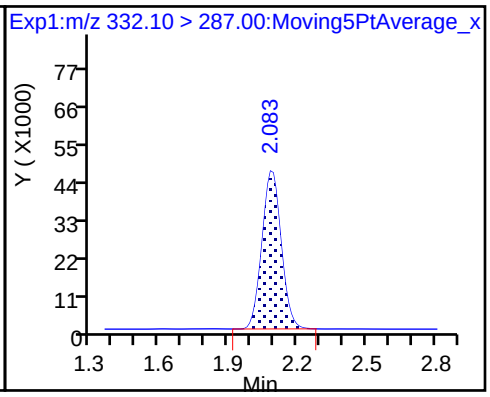
70 Perfluoropentanesulfonic acid



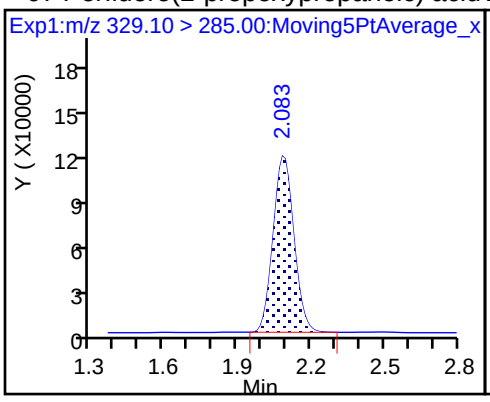
70 Perfluoropentanesulfonic acid



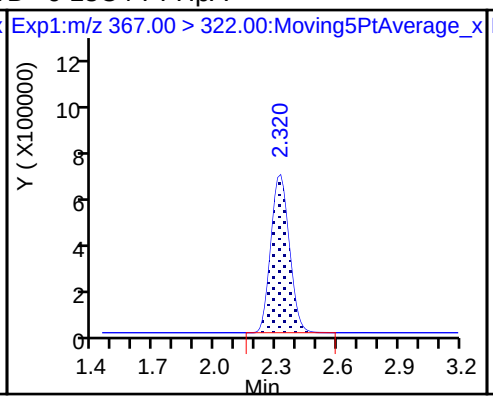
D 64 13C3 HFPO-DA



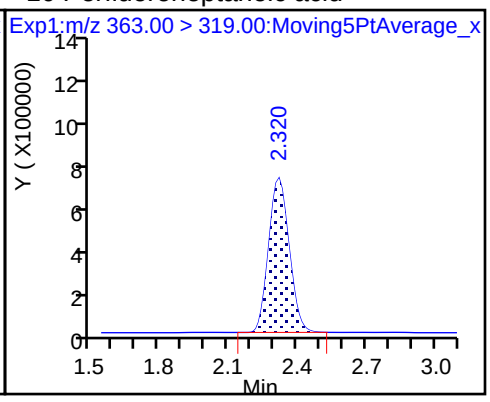
67 Perfluoro(2-propoxypropanoic) acid



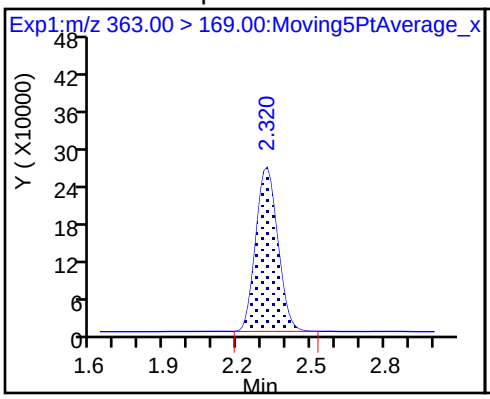
D 9 13C4-PFHpA



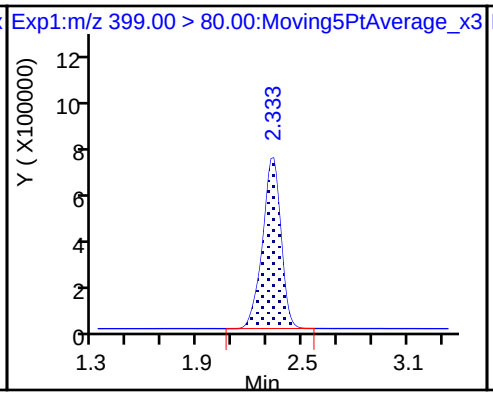
10 Perfluoroheptanoic acid



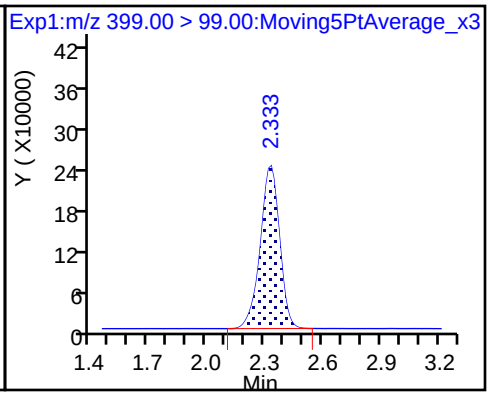
10 Perfluoroheptanoic acid



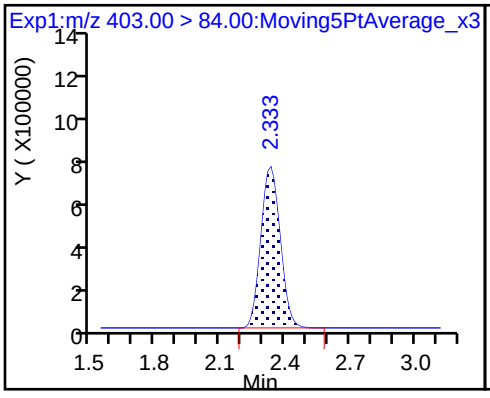
8 Perfluorohexanesulfonic acid



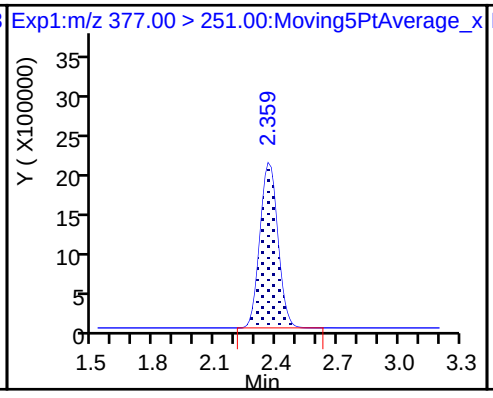
8 Perfluorohexanesulfonic acid



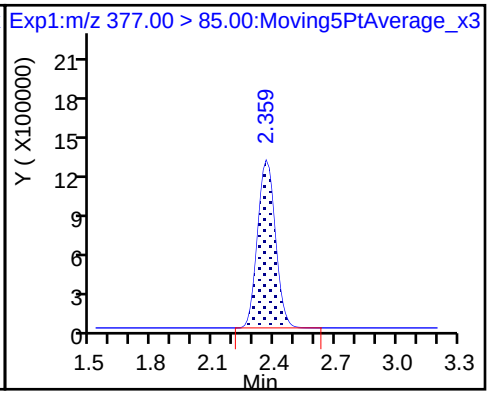
D 11 18O2 PFHxS



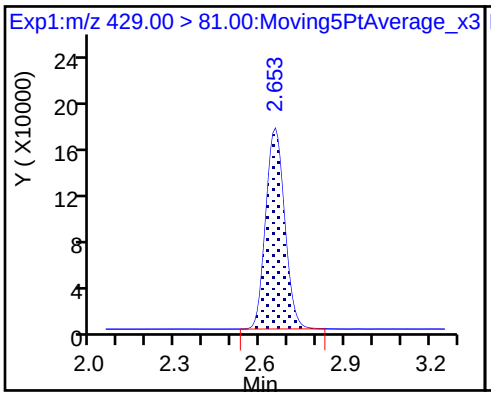
65 Adona



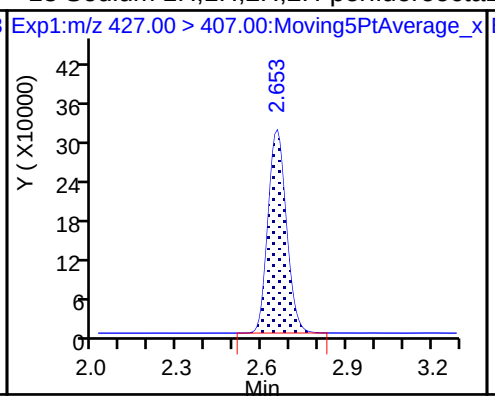
65 Adona



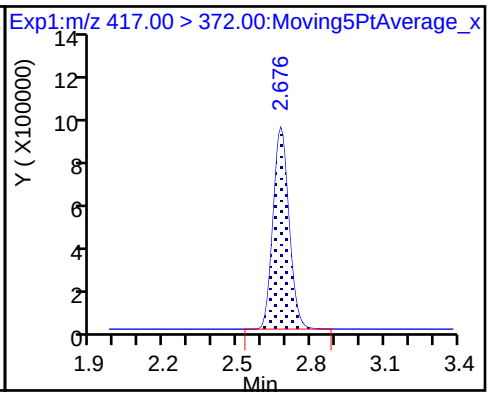
D 12 M2-6:2FTS



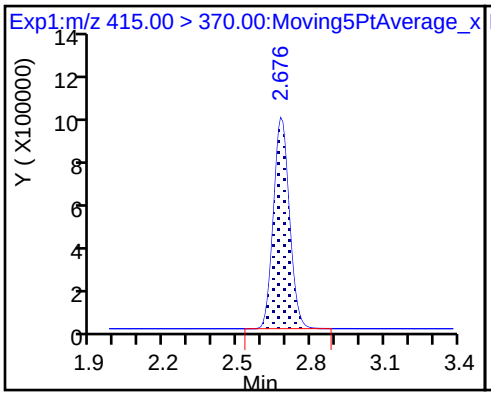
13 Sodium 1H,1H,2H,2H-perfluorooctane



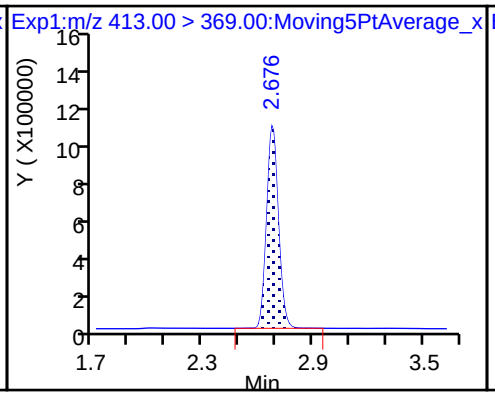
D 14 13C4 PFOA



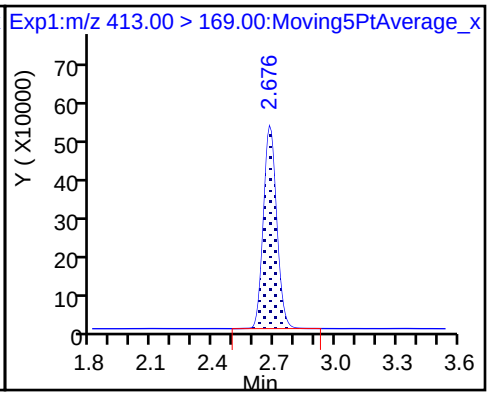
* 62 13C2-PFOA



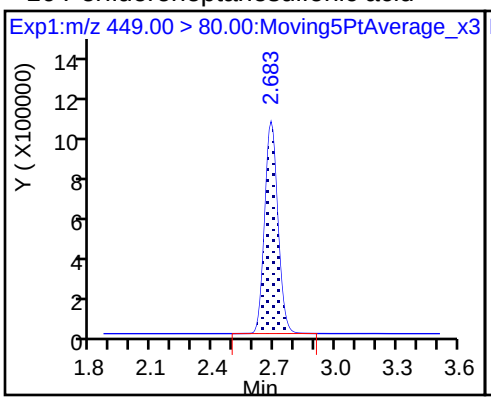
15 Perfluorooctanoic acid



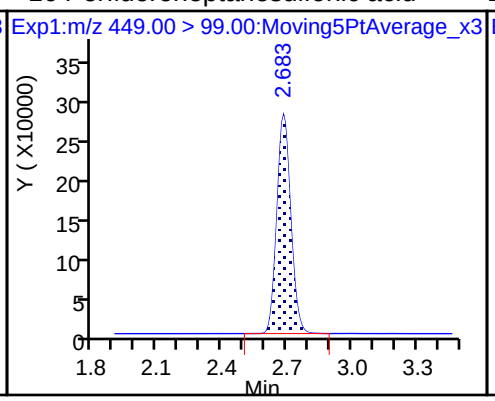
15 Perfluorooctanoic acid



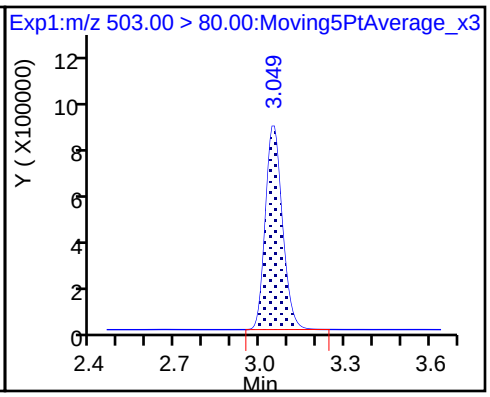
16 Perfluoroheptanesulfonic acid



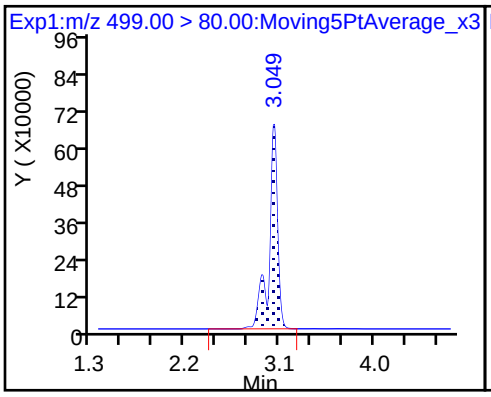
16 Perfluoroheptanesulfonic acid



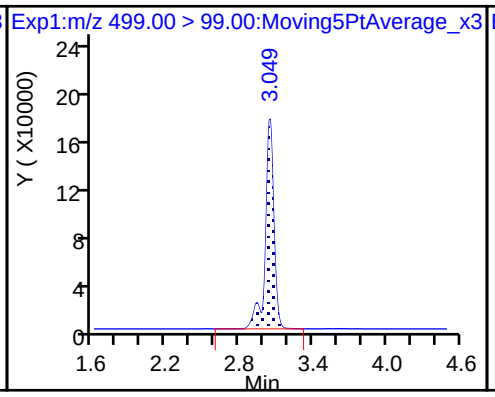
D 18 13C4 PFOS



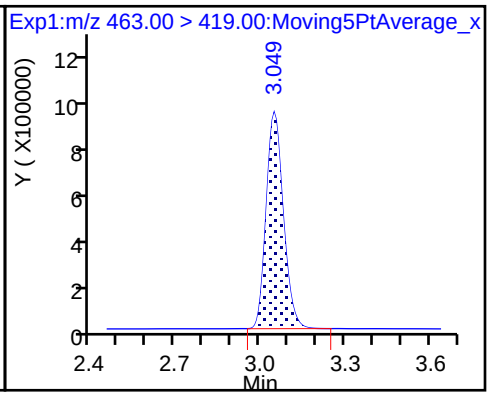
17 Perfluorooctane sulfonic acid



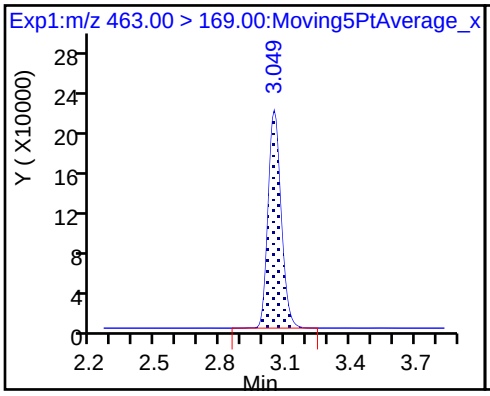
17 Perfluorooctane sulfonic acid



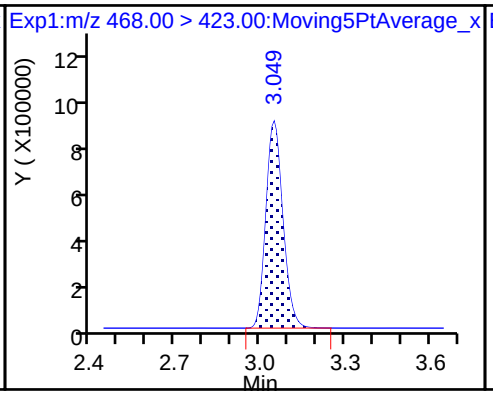
20 Perfluorononanoic acid



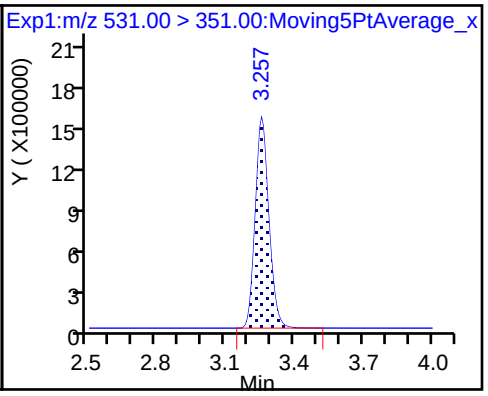
20 Perfluorononanoic acid



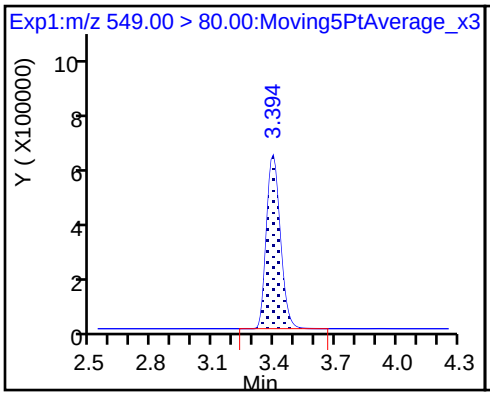
D 19 13C5 PFNA



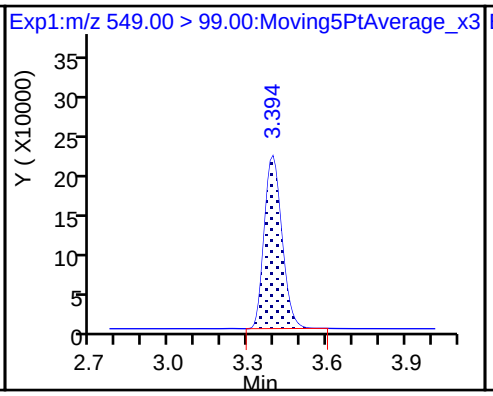
69 9-Chlorohexadecafluoro-3-oxanonane



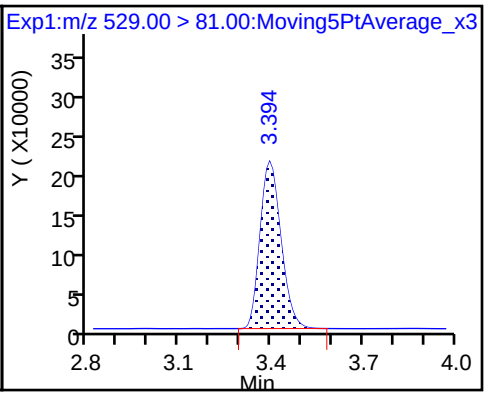
68 Perfluorononanesulfonic acid



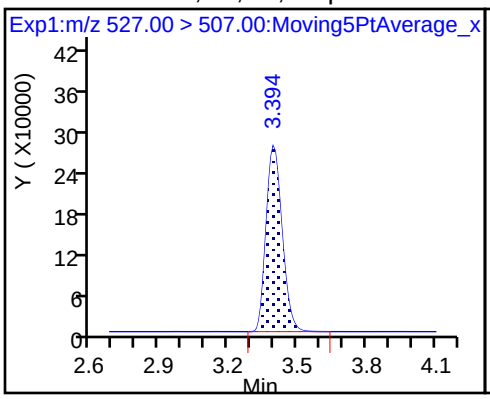
68 Perfluorononanesulfonic acid



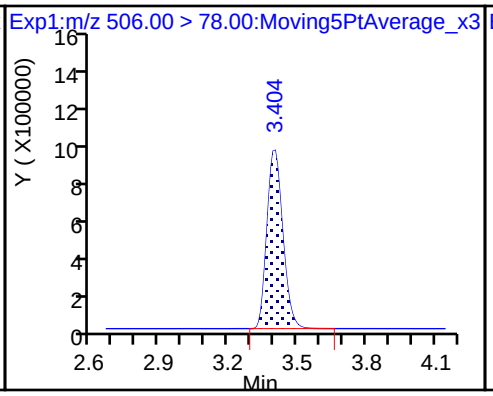
D 26 M2-8:2FTS



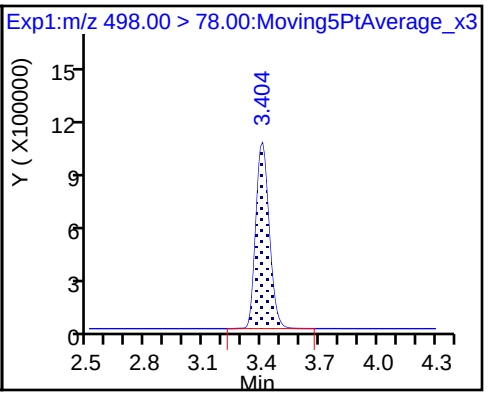
25 Sodium 1H,1H,2H,2H-perfluorodecane



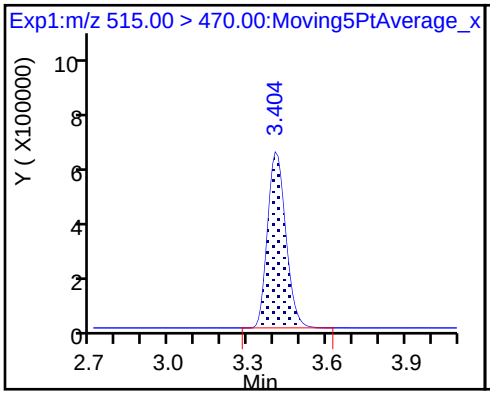
D 21 13C8 FOSA



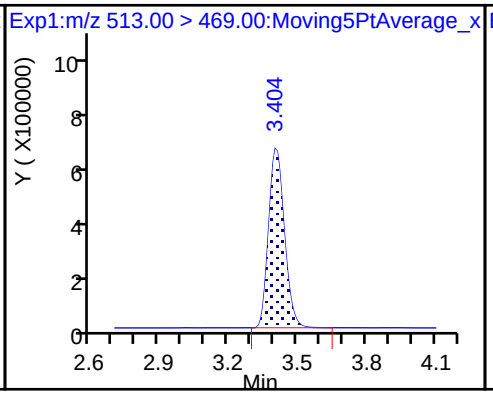
22 Perfluorooctane Sulfonamide



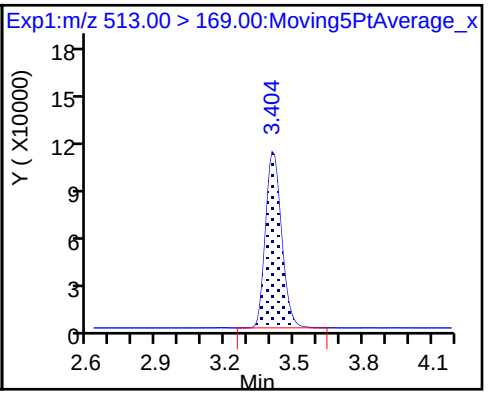
D 23 13C2 PFDA



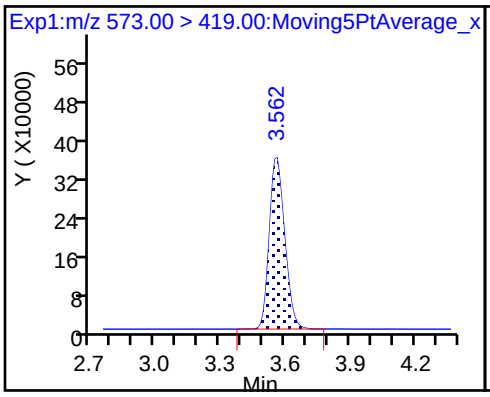
24 Perfluorodecanoic acid



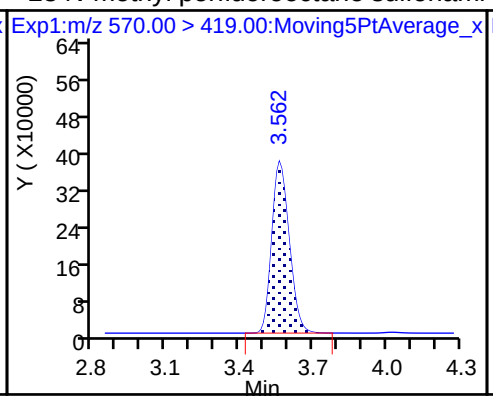
24 Perfluorodecanoic acid



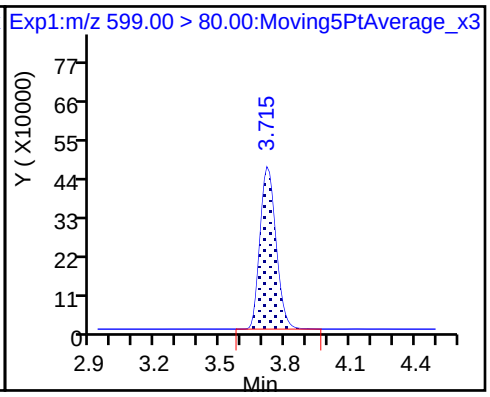
D 27 d3-NMeFOSAA



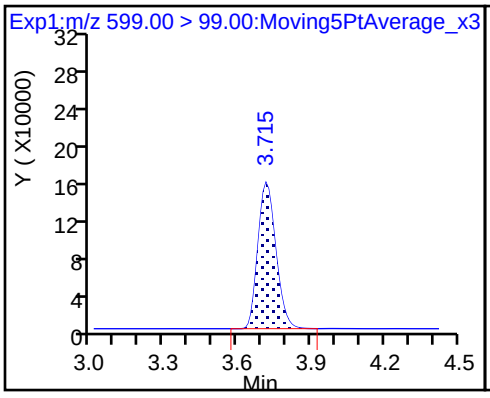
28 N-methyl perfluorooctane sulfonami



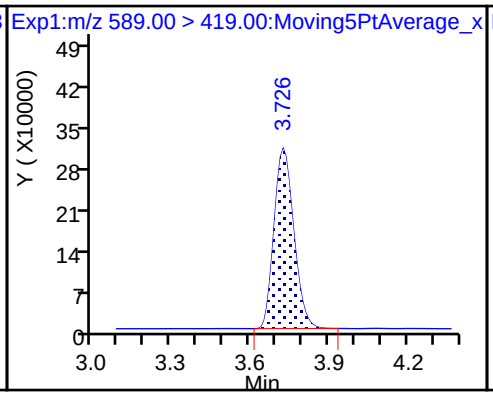
29 Perfluorodecane Sulfonic acid



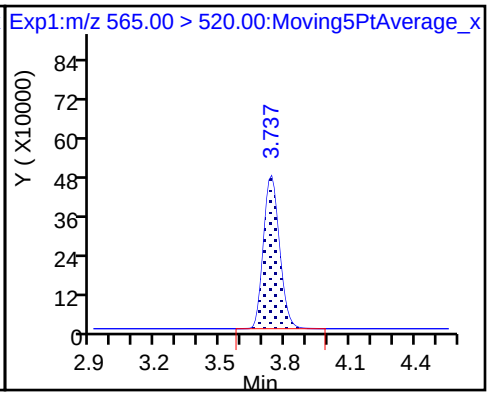
29 Perfluorodecane Sulfonic acid



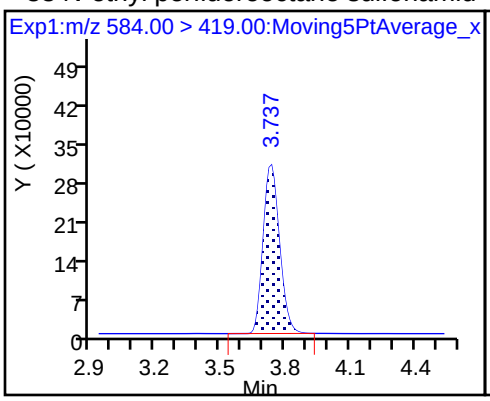
D 32 d5-NEtFOSAA



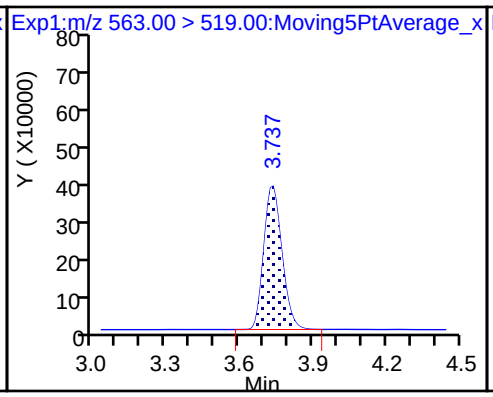
D 30 13C2 PFUnA



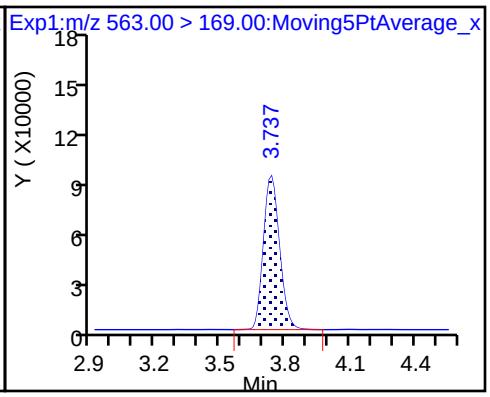
33 N-ethyl perfluorooctane sulfonamid



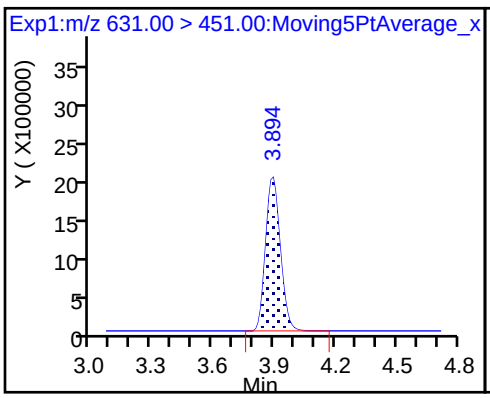
31 Perfluoroundecanoic acid



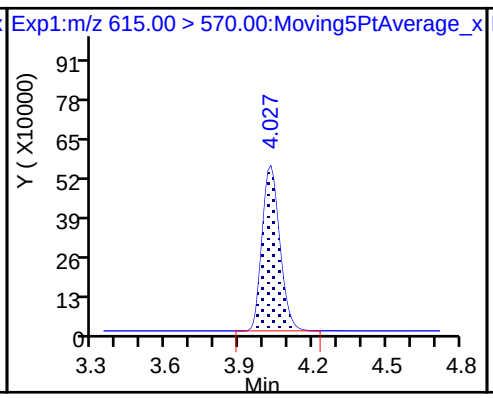
31 Perfluoroundecanoic acid



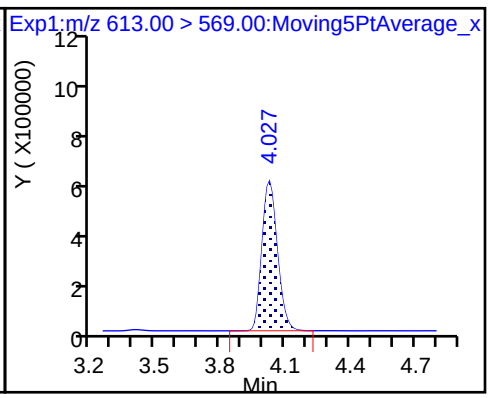
66 11-Chloroeicosafluoro-3-oxaundecan



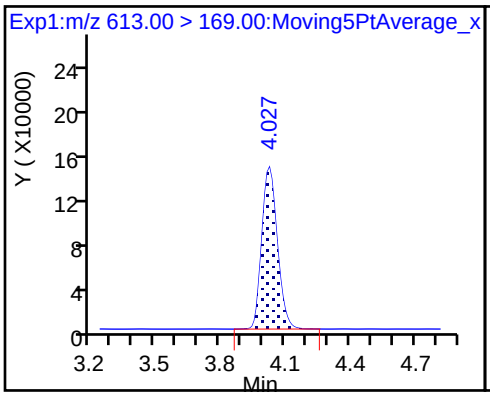
D 36 13C2 PFDoA



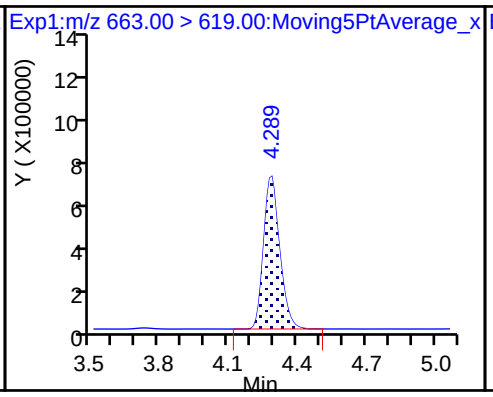
37 Perfluorododecanoic acid



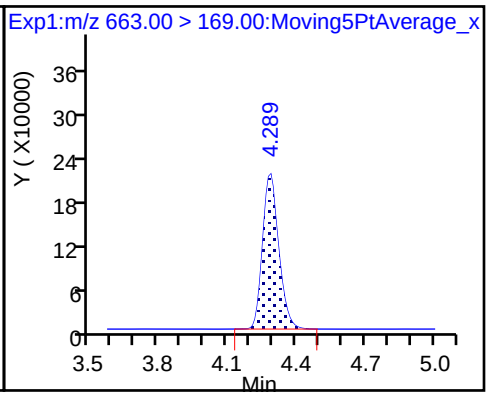
37 Perfluorododecanoic acid



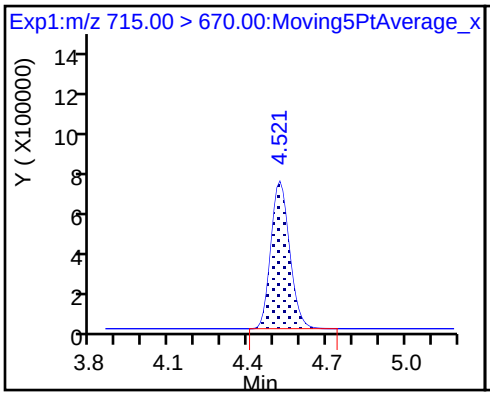
41 Perfluorotridecanoic acid



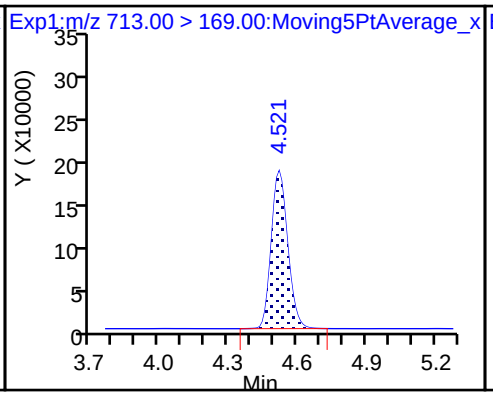
41 Perfluorotridecanoic acid



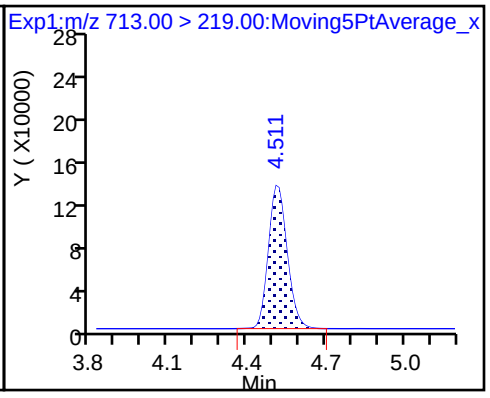
D 43 13C2-PFTeDA



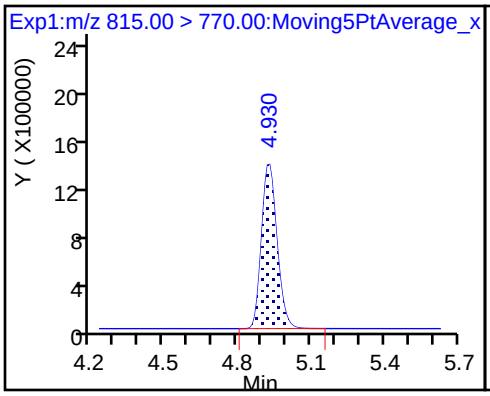
42 Perfluorotetradecanoic acid



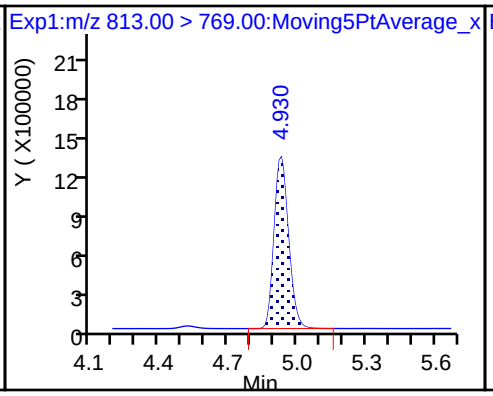
42 Perfluorotetradecanoic acid



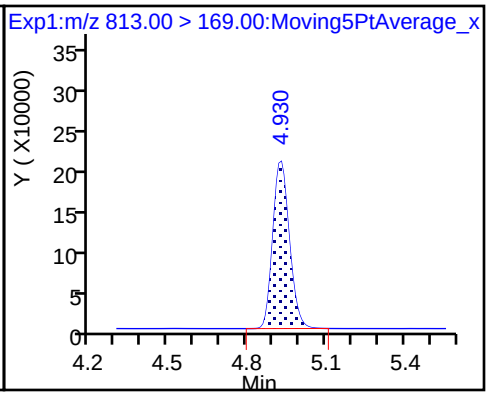
D 44 13C2-PFHxDA



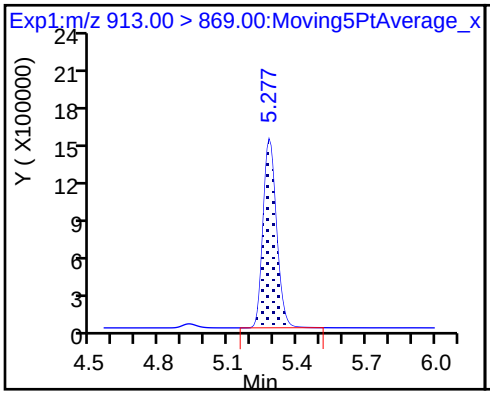
45 Perfluorohexadecanoic acid



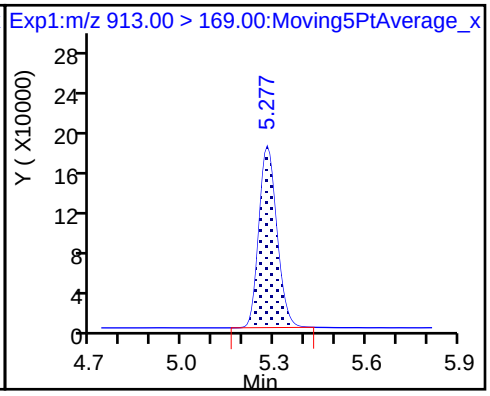
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCVL 320-219693/2 Calibration Date: 04/24/2018 18:15

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.8955			0.0500	-3.6	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.226		0.0514	0.0500	2.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	79.88			0.0442	2.0	50.0
4:2 FTS	AveID	16.03	17.98			0.0467	12.2	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.049		0.0516	0.0500	3.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	67.84			0.0469	-5.1	50.0
HFPO-DA (GenX)	AveID	2.785	2.933			0.0500	5.3	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.153		0.0576	0.0500	15.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.181			0.0455	4.3	50.0
Adona	AveID	3.464	3.561			0.0500	2.8	50.0
6:2FTS	AveID	1.691	1.893			0.0474	12.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.212		0.0524	0.0500	4.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.302			0.0476	-1.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.034			0.0464	-5.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.166		0.0559	0.0500	11.9	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.641			0.0466	-12.9	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.010			0.0500	-0.1	50.0
8:2FTS	AveID	1.265	1.212			0.0479	-4.2	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7916			0.0480	-1.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9824			0.0500	-4.8	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9772			0.0500	-2.0	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6394			0.0482	-1.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8743			0.0500	-6.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.9314		0.0551	0.0500	10.2	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.621			0.0471	-10.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.028			0.0500	-1.4	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.242		0.0511	0.0500	2.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2741		0.0546	0.0500	9.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.288			0.0500	-8.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCVL 320-219693/2 Calibration Date: 04/24/2018 18:15

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9124			0.0500	-9.1	50.0
13C4 PFBA	Ave	1.345	1.470		2.73	2.50	9.2	50.0
13C5 PFPeA	Ave	0.8672	0.9307		2.68	2.50	7.3	50.0
13C3-PFBS	Ave	0.0199	0.0210		2.46	2.33	5.7	50.0
M2-4:2FTS	Ave	0.1425	0.1551		2.54	2.34	8.9	50.0
13C2 PFHxA	Ave	0.9590	1.030		2.68	2.50	7.4	50.0
13C3 HFPO-DA	Ave	0.0593	0.0577		2.43	2.50	-2.8	50.0
13C4-PFHpA	Ave	0.9333	0.9730		2.61	2.50	4.3	50.0
18O2 PFHxS	Ave	1.152	1.222		2.51	2.37	6.1	50.0
M2-6:2FTS	Ave	0.2000	0.2300		2.73	2.38	15.0	50.0
13C4 PFOA	Ave	0.9276	0.9482		2.56	2.50	2.2	50.0
13C4 PFOS	Ave	0.8066	0.8642		2.56	2.39	7.1	50.0
13C5 PFNA	Ave	0.7973	0.8140		2.55	2.50	2.1	50.0
13C8 FOSA	Ave	1.007	1.099		2.73	2.50	9.1	50.0
M2-8:2FTS	Ave	0.2409	0.2682		2.67	2.40	11.4	50.0
13C2 PFDA	Ave	0.6701	0.6886		2.57	2.50	2.8	50.0
d3-NMeFOSAA	Ave	0.3798	0.4121		2.71	2.50	8.5	50.0
d5-NEtFOSAA	Ave	0.3749	0.4578		3.05	2.50	22.1	50.0
13C2 PFUnA	Ave	0.5781	0.6052		2.62	2.50	4.7	50.0
13C2 PFDoA	Ave	0.6242	0.6376		2.55	2.50	2.1	50.0
13C2-PFTeDA	Ave	0.7915	0.8079		2.55	2.50	2.1	50.0
13C2-PFHxDA	Ave	1.288	1.451		2.82	2.50	12.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\2018.04.24LLC_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 24-Apr-2018 18:15:42 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 25-Apr-2018 08:52:55 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK008

First Level Reviewer: roycea Date: 25-Apr-2018 08:34:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.436	0.005	1.000	109652	0.0482		96.4	50.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	6122500	2.73		109	44891	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.694	0.008	1.000	95071	0.0514		103	87.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.702	0.0	0.554	3876620	2.68		107	56344	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.730	0.008	1.000	123734	0.0451		102	396	
298.90 > 99.00	1.738	1.730	0.008	1.000	47887		2.58(1.25-3.74)		526	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	81480	2.46		106	819	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.959	1.950	0.009	1.000	29428	0.0524		112	1669	
D 60 M2-4:2FTS										
329.00 > 81.00	1.959	1.959	0.0	1.000	603578	2.54		109	5238	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.991	1.982	0.009	1.000	89984	0.0516		103	132	
313.00 > 119.00	1.991	1.982	0.009	1.000	8653		10.40(5.03-15.10)		100	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.992	-0.001	1.000	4288851	2.68		107	92907	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.014	2.005	0.009	1.000	111504	0.0445		94.9	706	
349.00 > 99.00	2.014	2.005	0.009	1.000	40507		2.75(1.36-4.07)		1154	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.093	2.084	0.009	1.000	14087	0.0527		105	86.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.093	2.094	-0.001	1.000	240135	2.43		97.2	6909	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.332	2.321	0.011	1.000	93422	0.0576		115	123	
363.00 > 169.00	2.332	2.321	0.011	1.000	33939		2.75(1.13-3.40)		169	
D 9 13C4-PFHpA										
367.00 > 322.00	2.332	2.333	-0.001	1.000	4052947	2.61		104	71910	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.334	-0.002	0.994	109354	0.0475		104	291	
399.00 > 99.00	2.345	2.334	0.011	1.000	38473		2.84(1.50-4.49)		320	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.346	-0.001	1.000	4814208	2.51		106	55162	
65 Adona										
377.00 > 251.00	2.372	2.360	0.012	1.000	256366	0.0514		103	3258	
377.00 > 85.00	2.372	2.360	0.012	1.000	151449		1.69(0.84-2.53)		3656	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.660	0.007	1.000	34382	0.0531		112	959	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.668	-0.001	1.000	910099	2.73		115	12099	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.683	0.007	1.000	95721	0.0524		105	64.5	
413.00 > 169.00	2.690	2.683	0.007	1.000	49903		1.92(0.84-2.52)		175	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.683	0.007		4165426	2.50			63753	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.690	0.007	1.000	89220	0.0467		98.1	636	
449.00 > 99.00	2.697	2.690	0.007	1.000	25767		3.46(1.94-5.82)		711	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.698	-0.008	1.000	3949713	2.56		102	53319	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.056	0.007	1.000	69071	0.0441		95.0	322	
499.00 > 99.00	3.063	3.056	0.007	1.000	16050		4.30(2.31-6.93)		182	
20 Perfluorononanoic acid										
463.00 > 419.00	3.070	3.063	0.007	1.000	79092	0.0559		112	248	
463.00 > 169.00	3.070	3.063	0.007	1.000	18385		4.30(1.90-5.69)		340	
D 19 13C5 PFNA										
468.00 > 423.00	3.070	3.073	-0.003	1.000	3390785	2.55		102	62950	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.073	-0.010	1.000	3441180	2.56		107	18161	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.284	3.270	0.014	1.000	110134	0.0406		87.1	2382	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.393	0.011	1.000	92506	0.0499		99.9	1815	
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.407	-0.003	1.000	4578508	2.73		109	48982	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.412	0.001	0.997	25943	0.0459		95.8	1275	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.422	3.412	0.010	1.000	54710	0.0475		99.0	528	
549.00 > 99.00	3.413	3.412	0.001	0.997	23414		2.34(1.33-3.97)		568	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.432	3.421	0.011	1.000	56355	0.0476		95.2	272	
513.00 > 169.00	3.432	3.421	0.011	1.000	13331		4.23(2.36-7.09)		262	
D 26 M2-8:2FTS										
529.00 > 81.00	3.422	3.426	-0.004	1.000	1070275	2.67		111	7526	
D 23 13C2 PFDA										
515.00 > 470.00	3.432	3.435	-0.003	1.000	2868170	2.57		103	57637	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.593	3.579	0.014	1.003	33546	0.0490		98.0	255	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.596	-0.014	1.000	1716384	2.71		108	18969	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.747	3.744	0.003	1.000	44372	0.0475		98.5	517	
599.00 > 99.00	3.747	3.744	0.003	1.000	13689		3.24(1.39-4.16)		402	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.754	0.014	1.000	46954	0.0551		110	281	
563.00 > 169.00	3.768	3.754	0.014	1.000	10721		4.38(2.12-6.36)		256	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.754	0.004	1.000	33347	0.0468		93.6	525	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.761	-0.003	1.000	1907023	3.05		122	20935	
D 30 13C2 PFUnA										
565.00 > 520.00	3.768	3.771	-0.003	1.000	2520755	2.62		105	43100	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.925	3.912	0.013	1.000	177773	0.0424		90.0	4357	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.057	4.055	0.002	1.000	54598	0.0493		98.6	76.7	
613.00 > 169.00	4.057	4.055	0.002	1.000	11896		4.59(2.13-6.40)		117	M
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.061	-0.004	1.000	2655742	2.55		102	25401	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.328	4.315	0.014	1.000	65987	0.0511		102	73.9	
663.00 > 169.00	4.328	4.315	0.014	1.000	21491		3.07(1.25-3.76)		219	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.560	0.001	1.000	18446	0.0546		109	176	
713.00 > 219.00	4.561	4.560	0.001	1.000	12965		1.42(0.71-2.13)		229	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.564	-0.003	1.000	3365123	2.55		102	23343	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.982	4.973	0.009	1.002	155646	0.0457		91.4	74.6	
813.00 > 169.00	4.982	4.973	0.009	1.002	28342		5.49(2.86-8.58)		240	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.984	-0.011	1.000	6042501	2.82		113	18034	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.341	0.001	1.000	110264	0.0454		90.9	46.2	
913.00 > 169.00	5.342	5.341	0.001	1.000	13874		7.95(3.83-11.48)		124	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 25-Apr-2018 08:52:56 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\2018.04.24LLC_005.d

Injection Date: 24-Apr-2018 18:15:42 Instrument ID: A8_N

Lims ID: CCVL

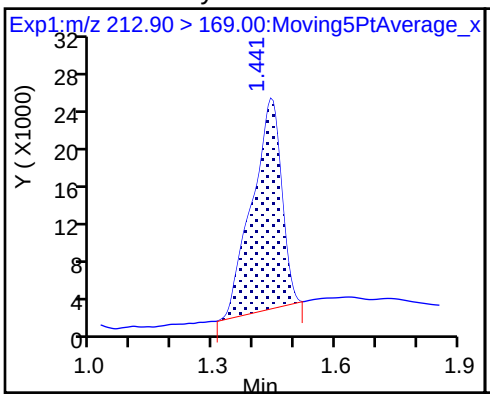
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

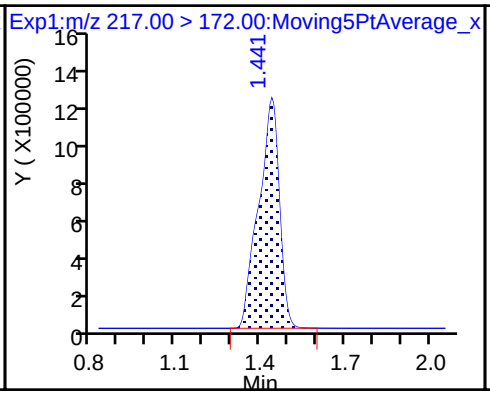
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

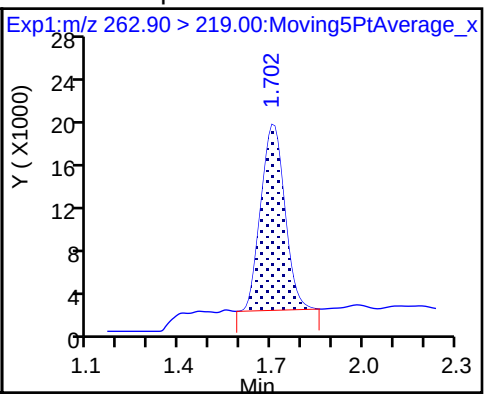
2 Perfluorobutyric acid



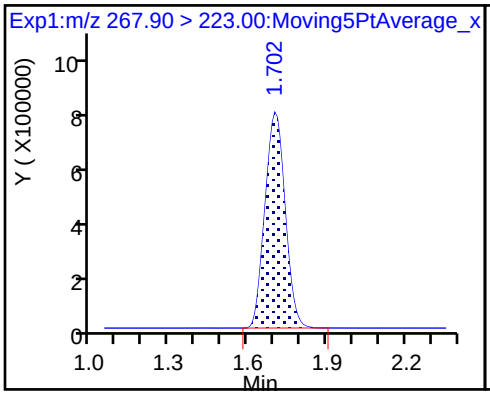
D 1 13C4 PFBA



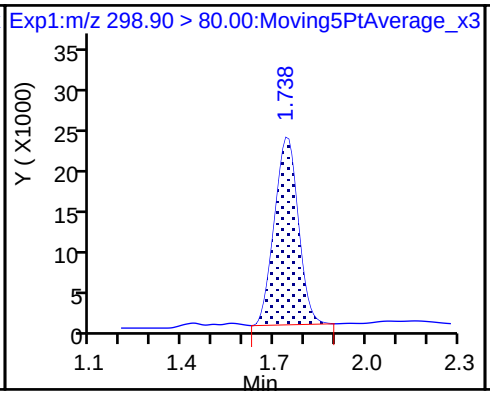
4 Perfluoropentanoic acid



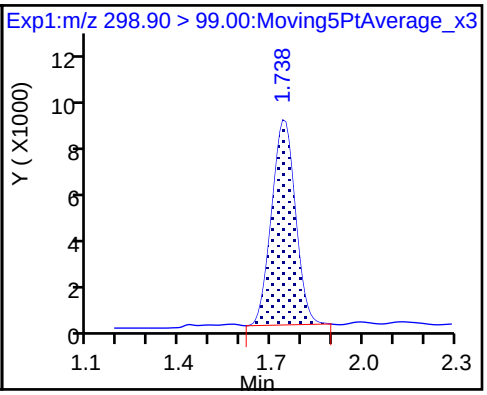
D 3 13C5-PFPeA



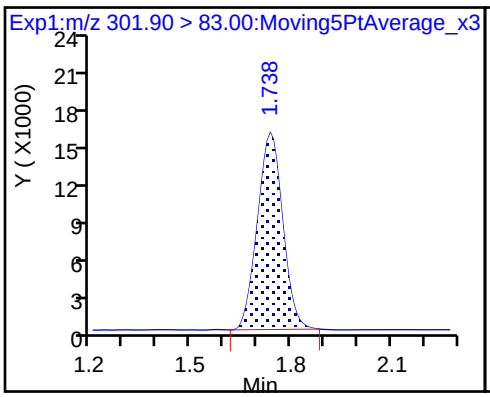
5 Perfluorobutanesulfonic acid



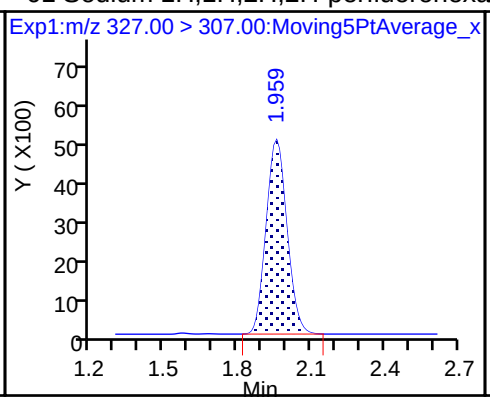
5 Perfluorobutanesulfonic acid



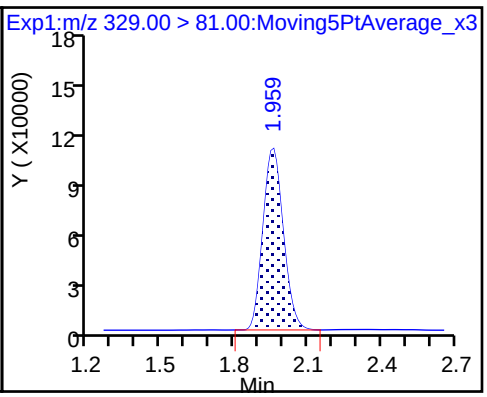
D 47 13C3-PFBS



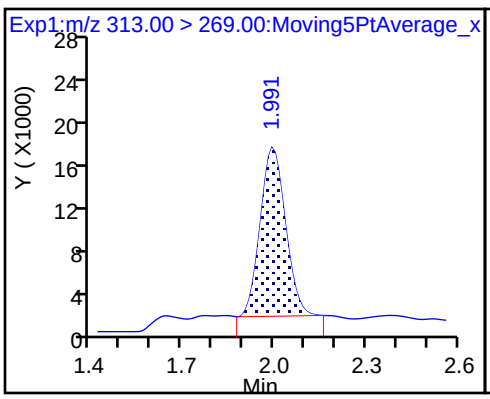
61 Sodium 1H,1H,2H,2H-perfluorohexane



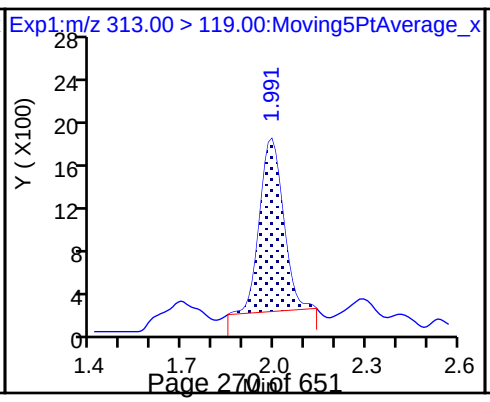
D 60 M2-4:2FTS



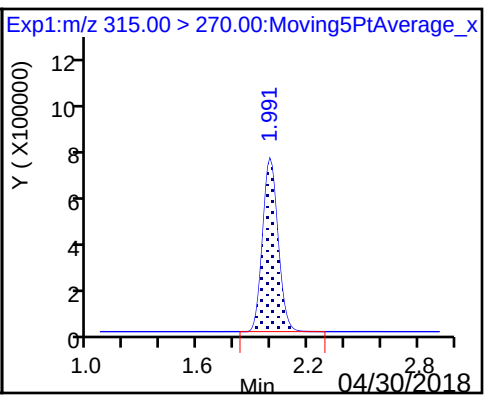
6 Perfluorohexanoic acid



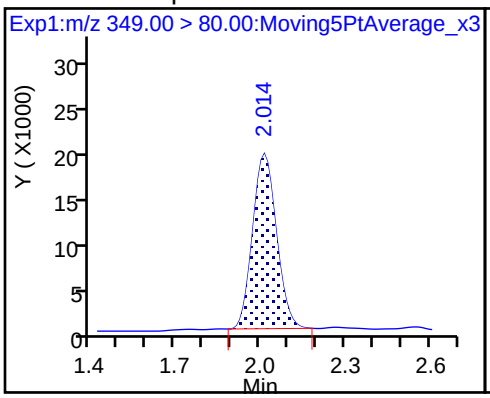
6 Perfluorohexanoic acid



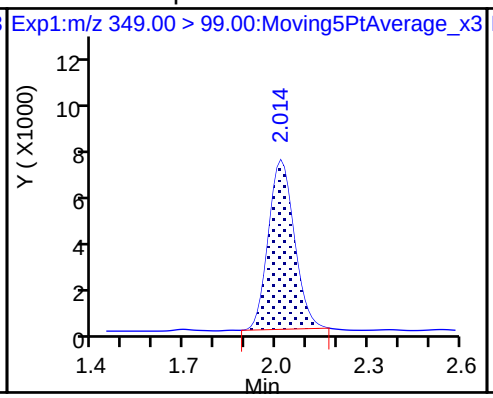
D 7 13C2 PFHxA



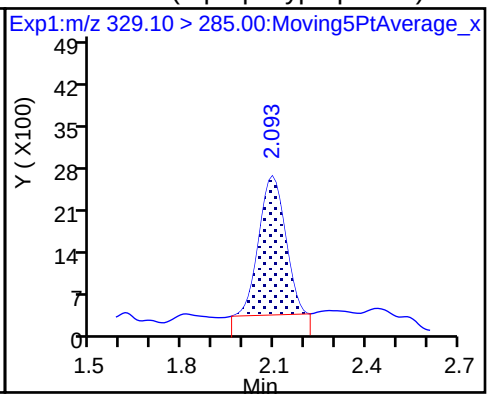
70 Perfluoropentanesulfonic acid



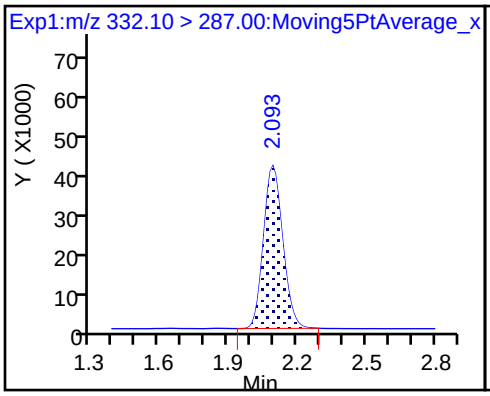
70 Perfluoropentanesulfonic acid



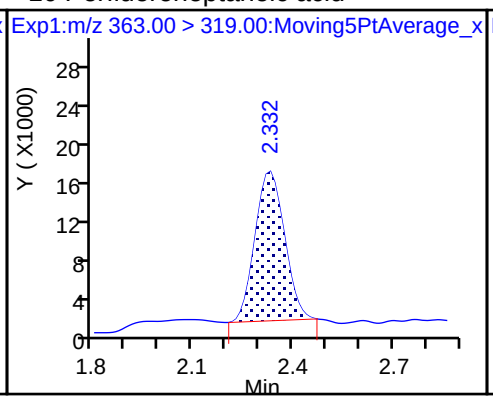
67 Perfluoro(2-propoxypropanoic) acid



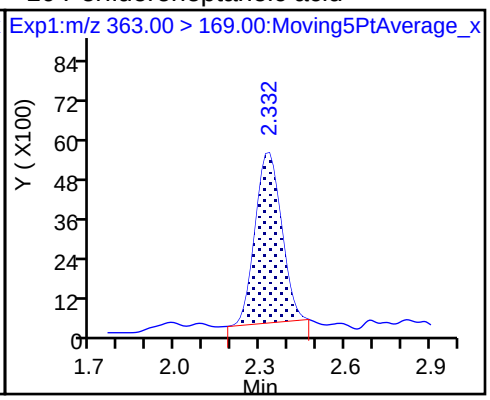
D 64 13C3 HFPO-DA



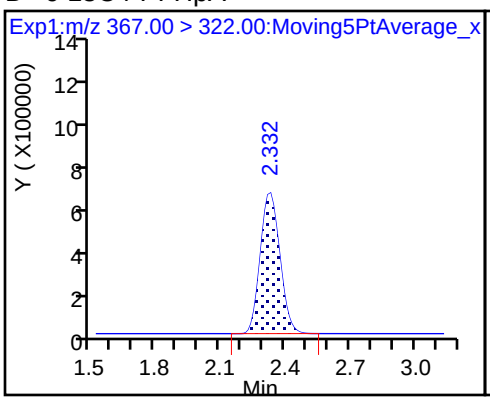
10 Perfluoroheptanoic acid



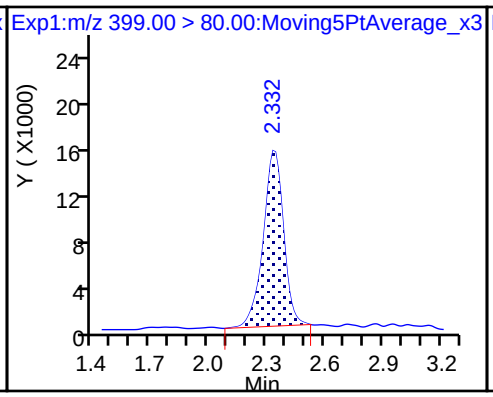
10 Perfluoroheptanoic acid



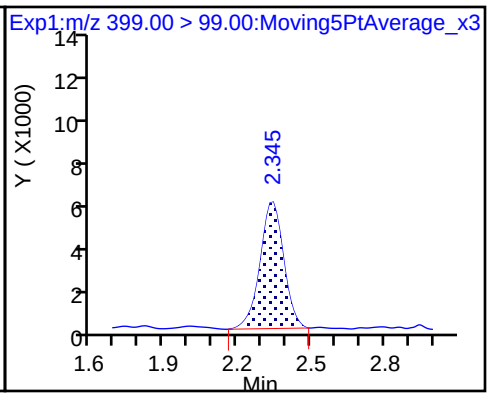
D 9 13C4-PFHpA



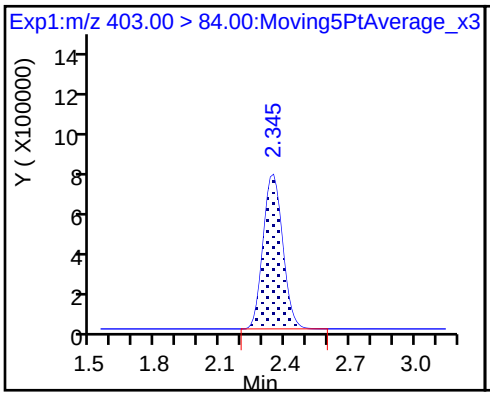
8 Perfluorohexanesulfonic acid



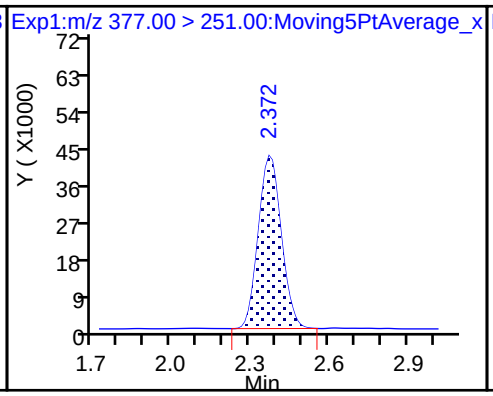
8 Perfluorohexanesulfonic acid



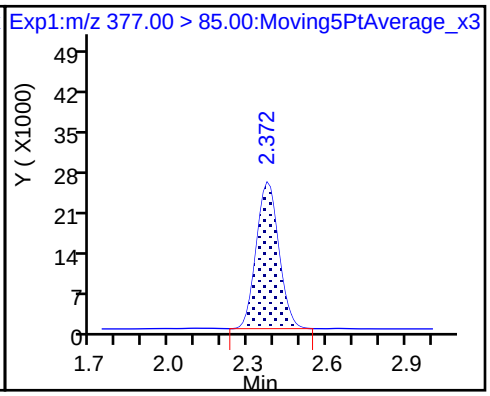
D 11 18O2 PFHxS



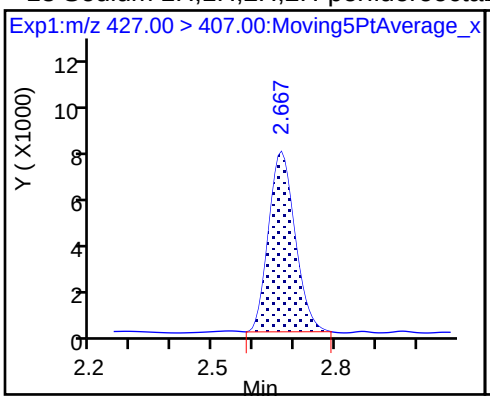
65 Adona



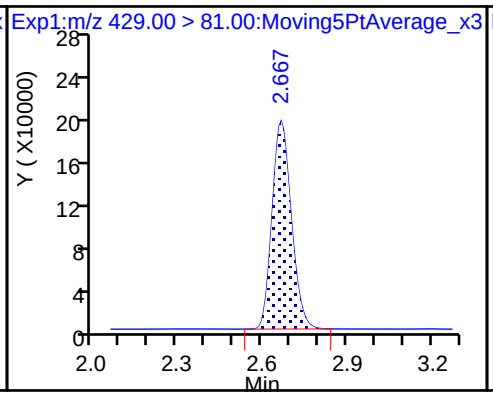
65 Adona



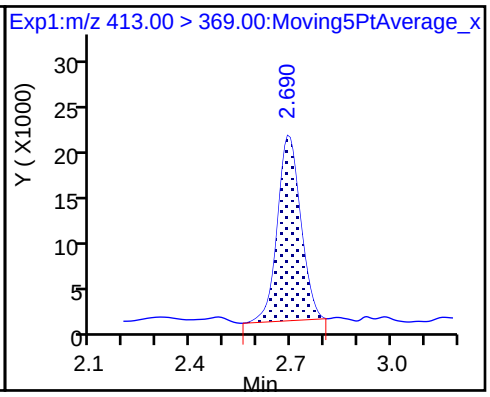
13 Sodium 1H,1H,2H,2H-perfluorooctane



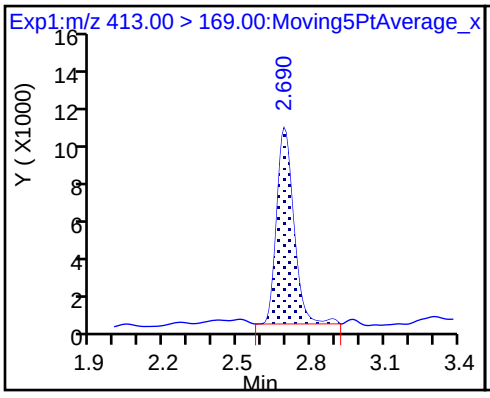
D 12 M2-6:2FTS



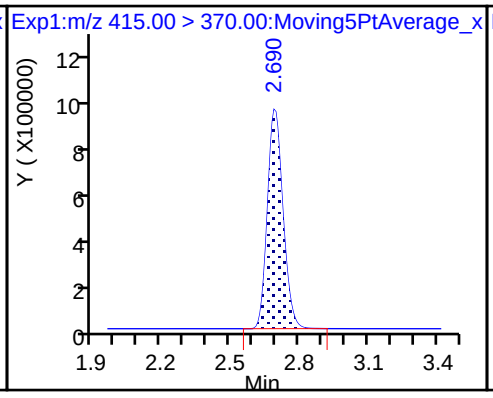
15 Perfluorooctanoic acid



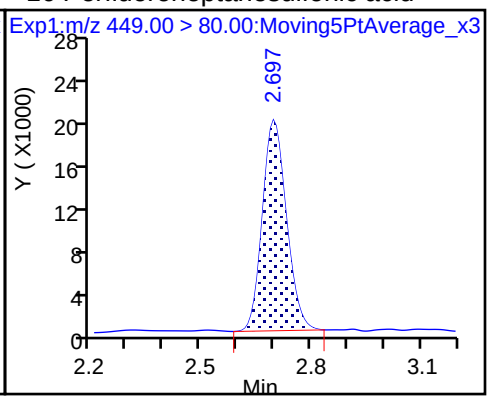
15 Perfluorooctanoic acid



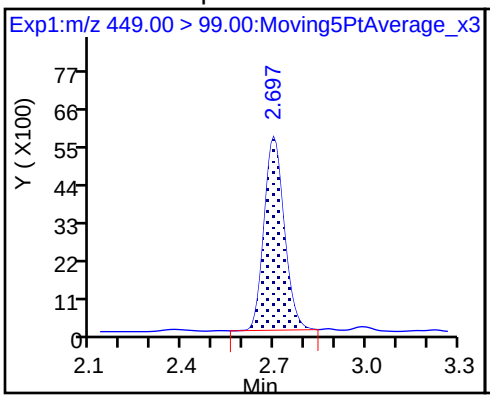
* 62 13C2-PFOA



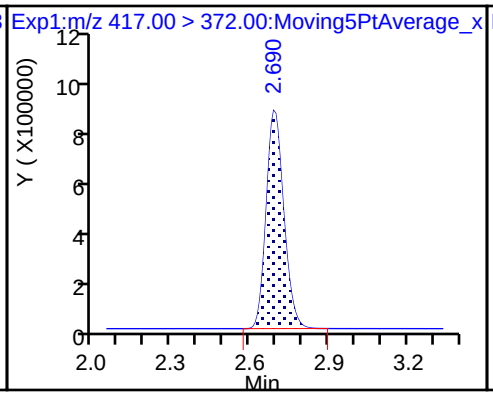
16 Perfluoroheptanesulfonic acid



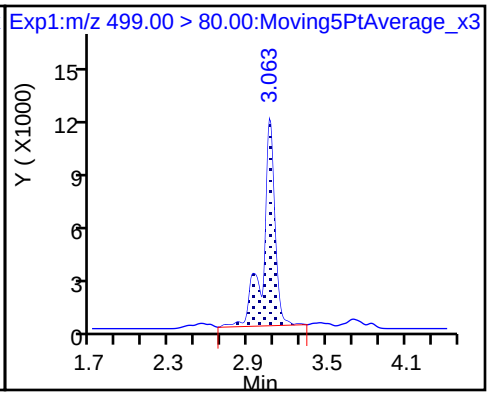
16 Perfluoroheptanesulfonic acid



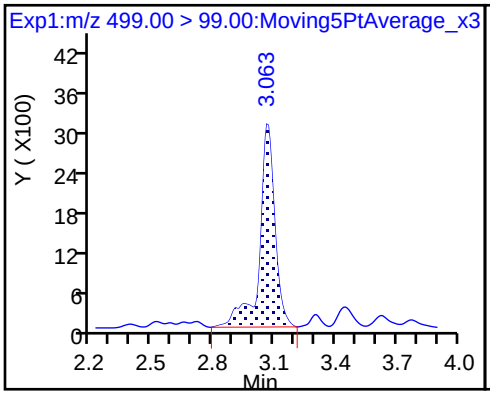
D 14 13C4 PFOA



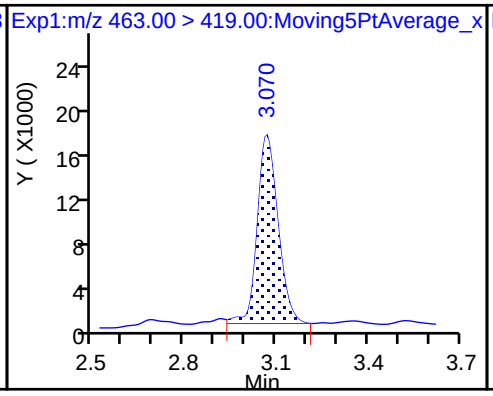
17 Perfluorooctane sulfonic acid



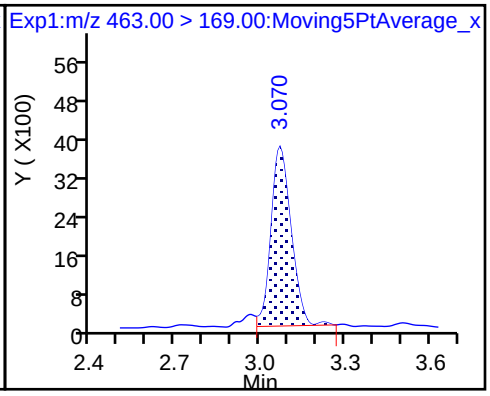
17 Perfluorooctane sulfonic acid



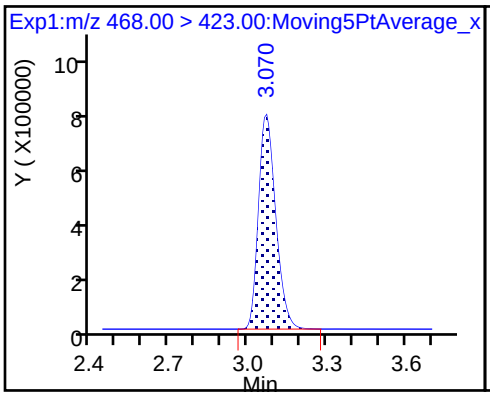
20 Perfluorononanoic acid



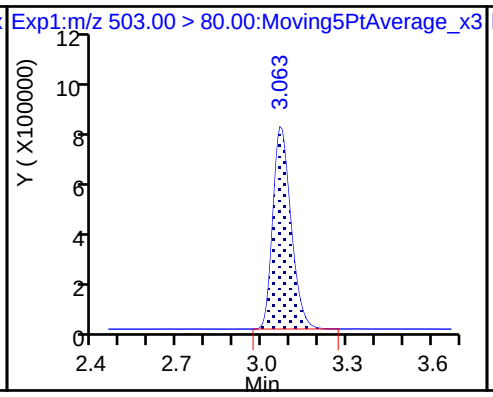
20 Perfluorononanoic acid



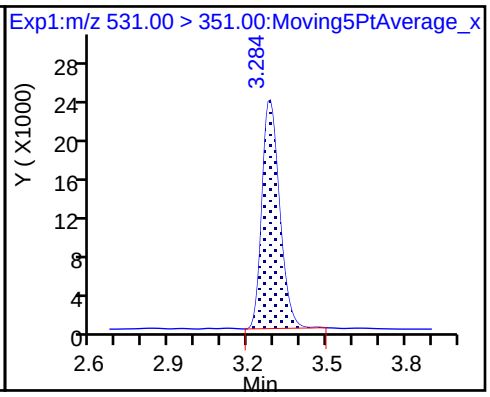
D 19 13C5 PFNA



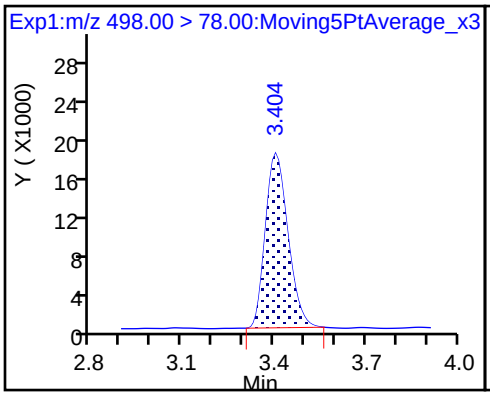
D 18 13C4 PFOS



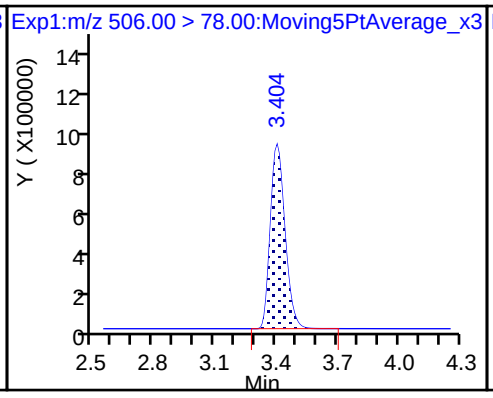
69 9-Chlorohexadecafluoro-3-oxanonane



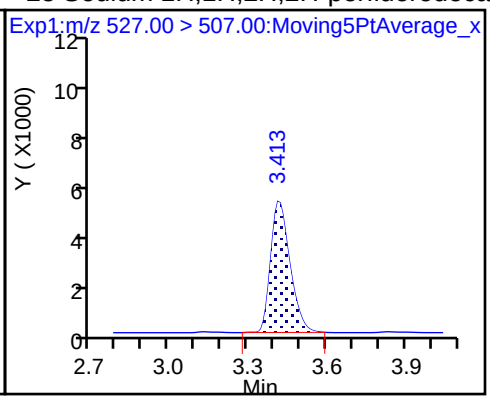
22 Perfluorooctane Sulfonamide



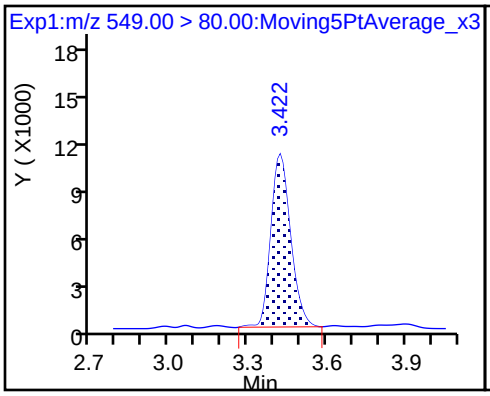
D 21 13C8 FOSA



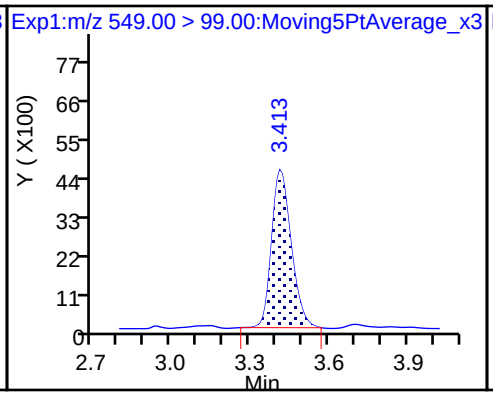
25 Sodium 1H,1H,2H,2H-perfluorodecane



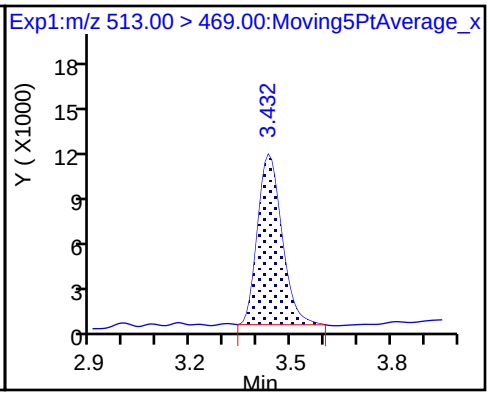
68 Perfluorononanesulfonic acid



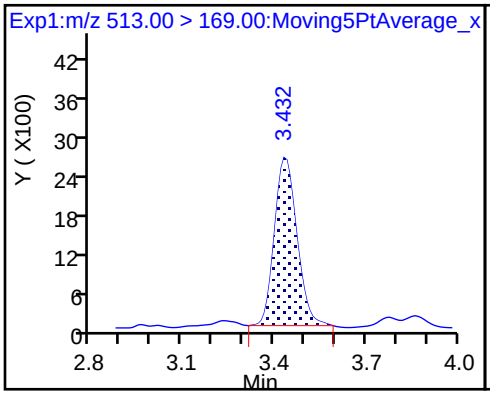
68 Perfluorononanesulfonic acid



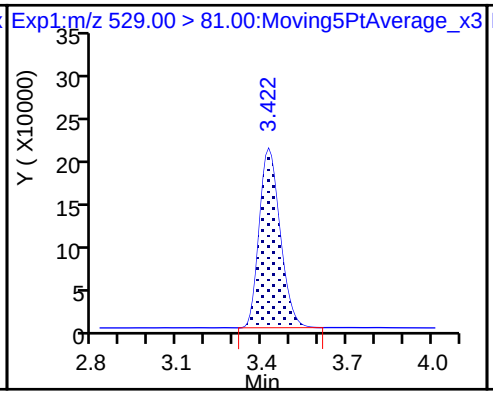
24 Perfluorodecanoic acid



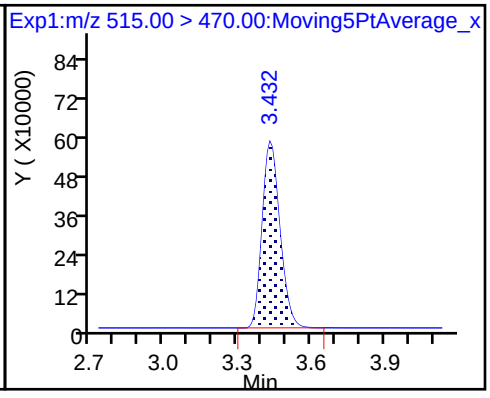
24 Perfluorodecanoic acid



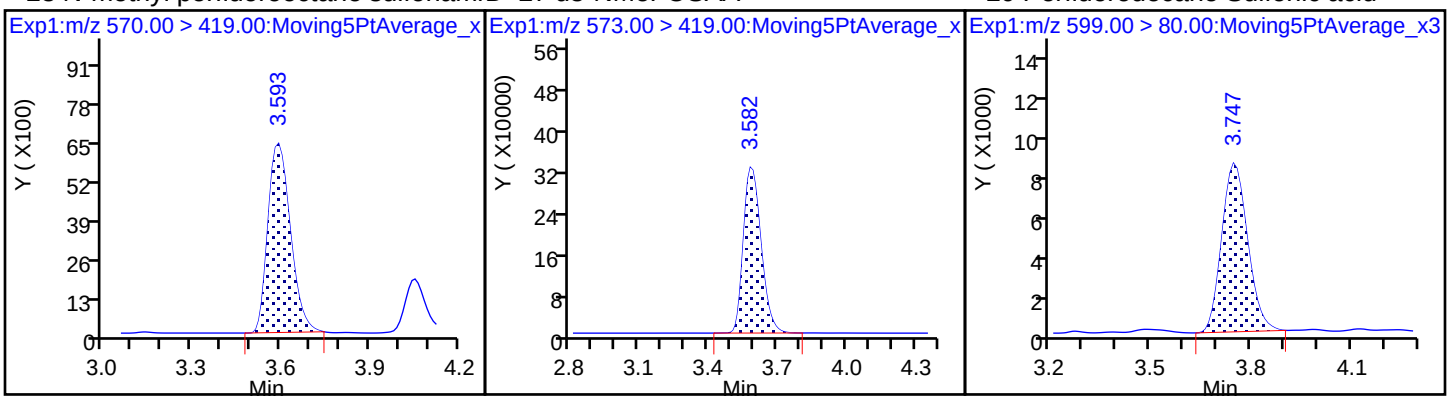
D 26 M2-8:2FTS



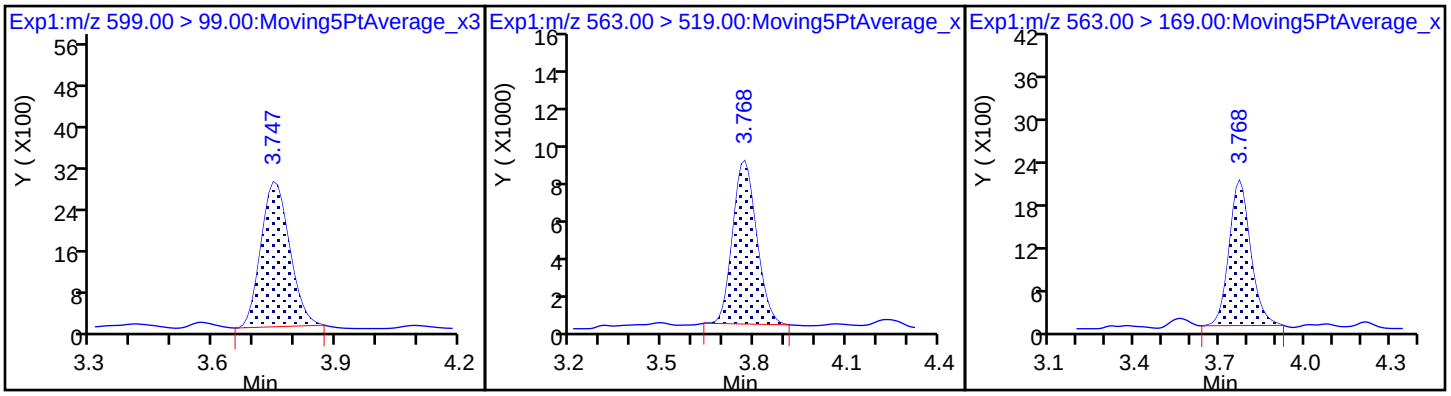
D 23 13C2 PFDA



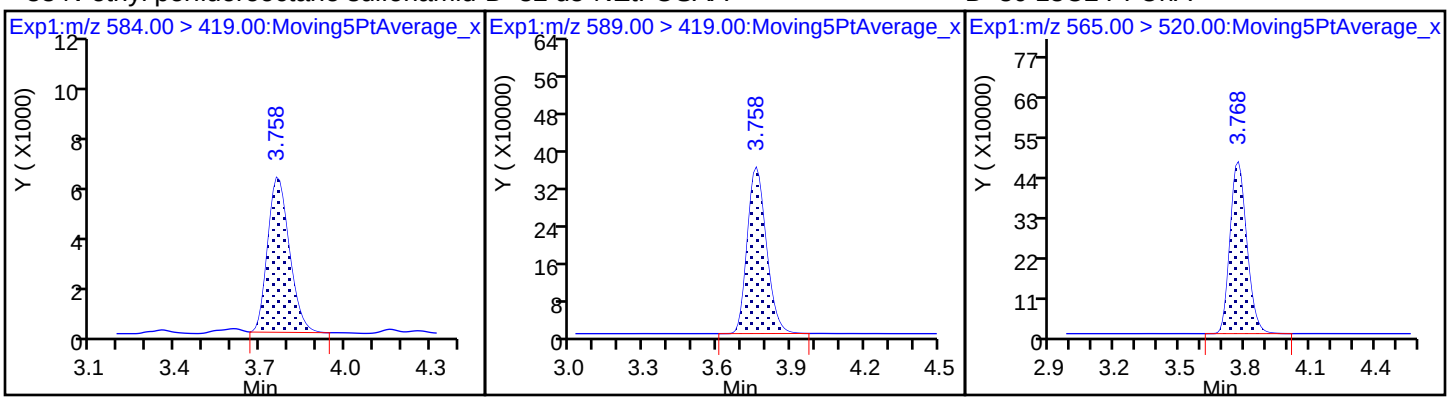
28 N-methyl perfluorooctane sulfonamiD 27 d3-NMeFOSAA 29 Perfluorodecane Sulfonic acid



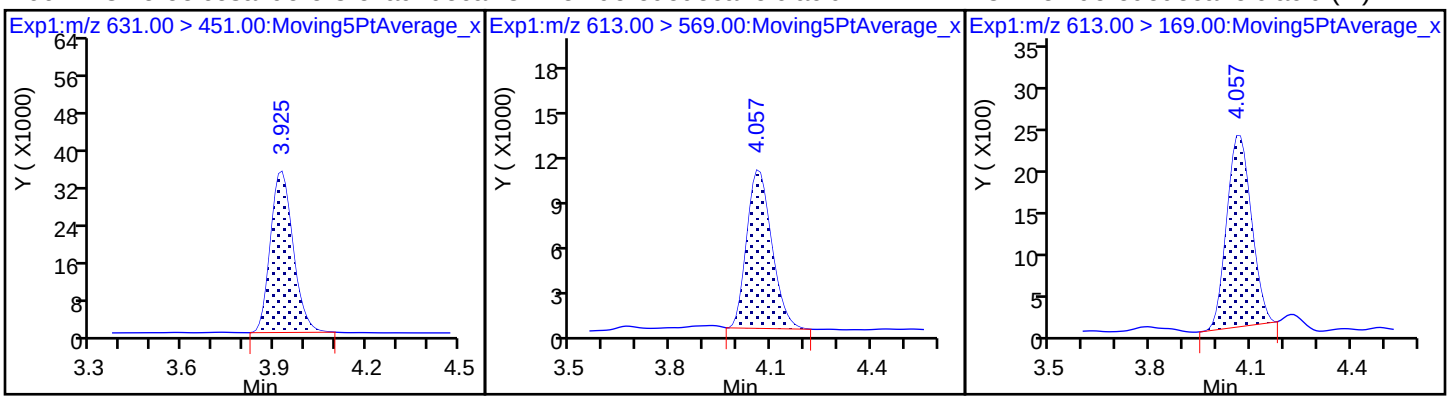
29 Perfluorodecane Sulfonic acid 31 Perfluoroundecanoic acid 31 Perfluoroundecanoic acid



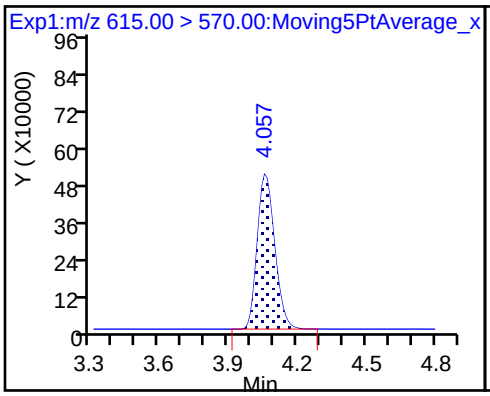
33 N-ethyl perfluorooctane sulfonamid D 32 d5-NEtFOSAA D 30 13C2 PFUnA



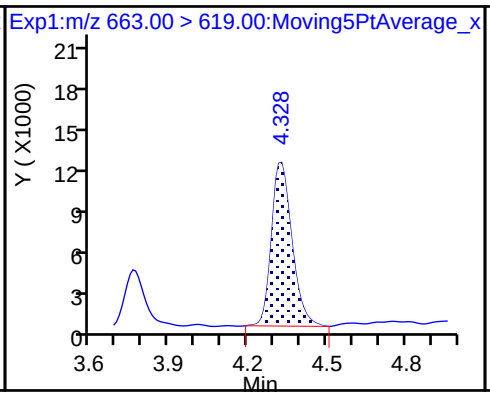
66 11-Chloroeicosafluoro-3-oxaundecan 37 Perfluorododecanoic acid 37 Perfluorododecanoic acid (M)



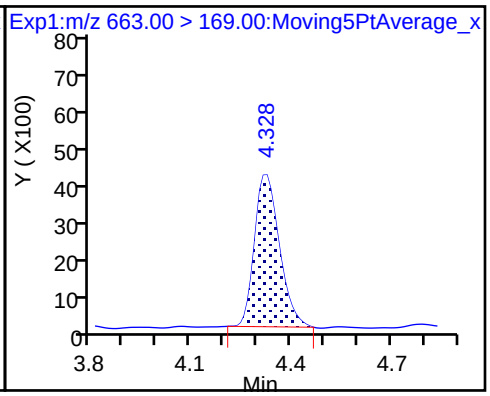
D 36 13C2 PFDoA



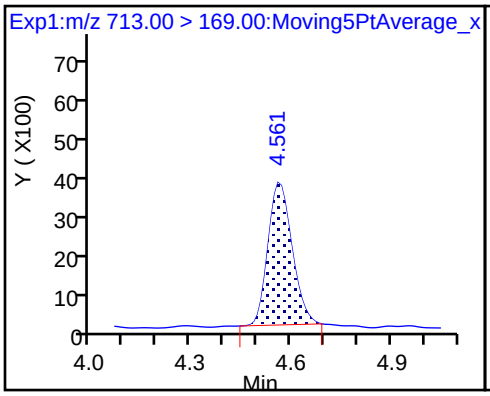
41 Perfluorotridecanoic acid



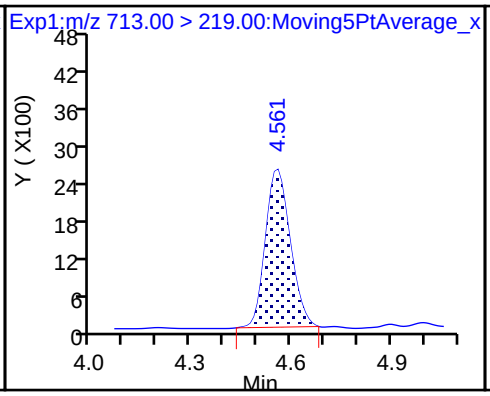
41 Perfluorotridecanoic acid



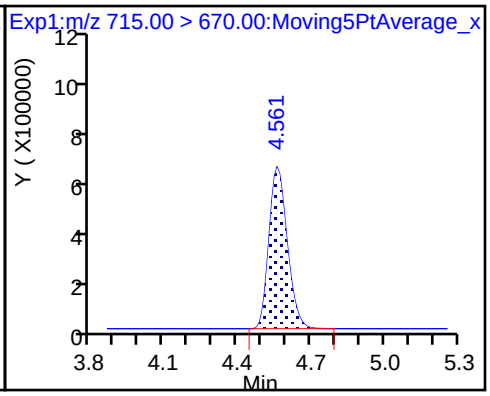
42 Perfluorotetradecanoic acid



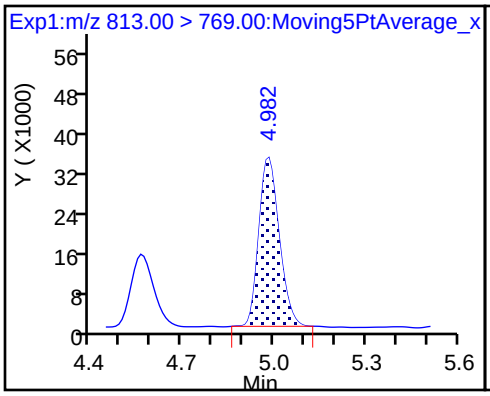
42 Perfluorotetradecanoic acid



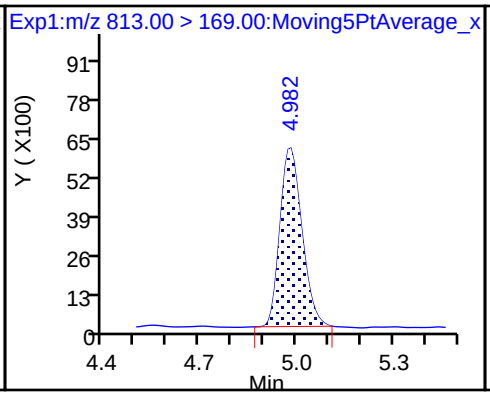
D 43 13C2-PFTeDA



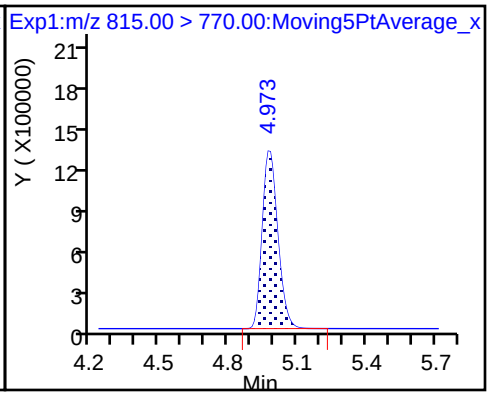
45 Perfluorohexadecanoic acid



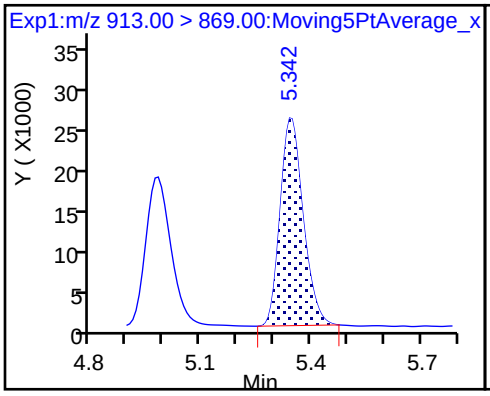
45 Perfluorohexadecanoic acid



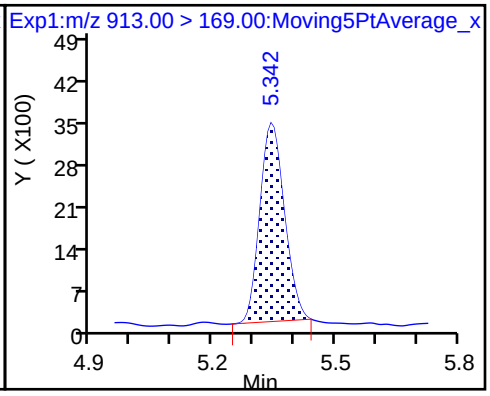
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

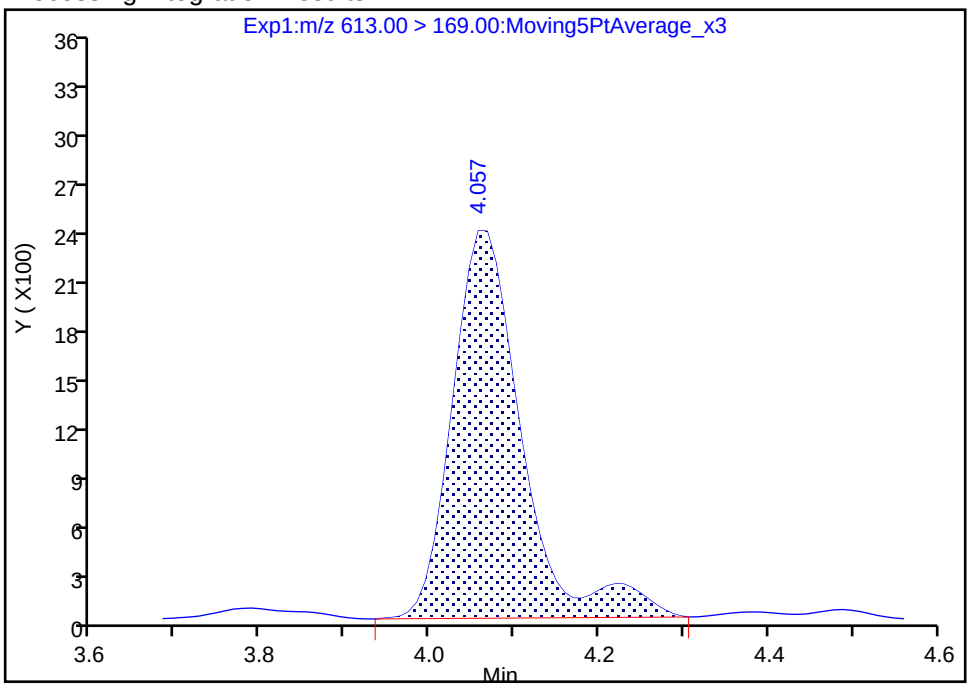
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\2018.04.24LLC_005.d
Injection Date: 24-Apr-2018 18:15:42 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

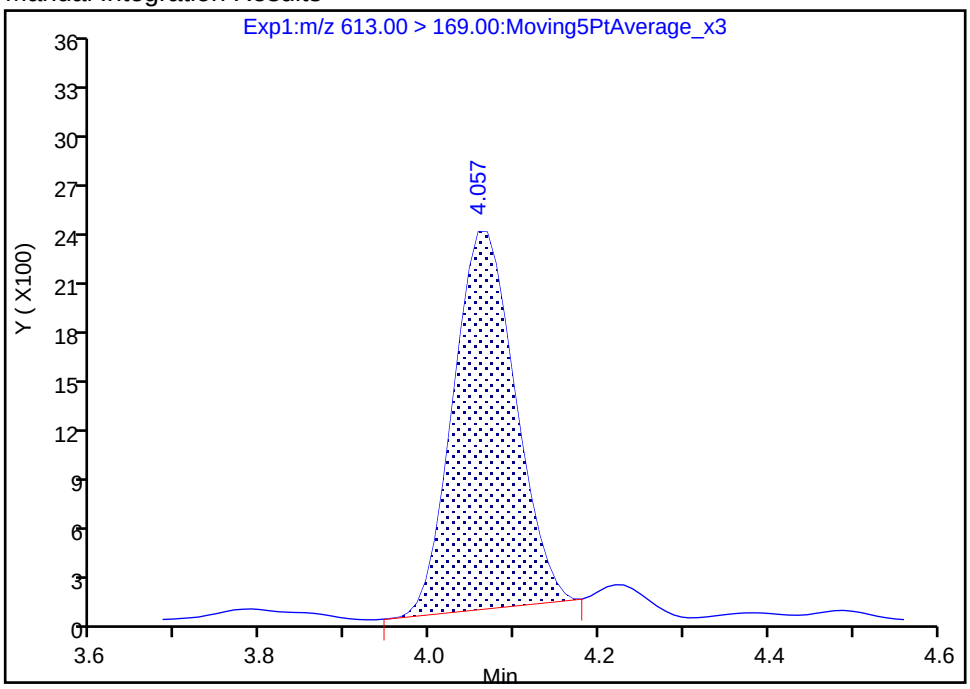
Processing Integration Results

RT: 4.06
Area: 13666
Amount: 0.049283
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 11896
Amount: 0.049283
Amount Units: ng/ml



Reviewer: roycea, 25-Apr-2018 08:34:42
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219693/3 Calibration Date: 04/24/2018 18:23

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9174		0.988	1.00	-1.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.140		0.957	1.00	-4.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	80.88		0.913	0.884	3.3	50.0
4:2 FTS	AveID	16.03	16.89		0.984	0.934	5.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.013		0.997	1.00	-0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	72.57			0.938	1.5	50.0
HFPO-DA (GenX)	AveID	2.785	2.661			1.00	-4.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	0.9727		0.972	1.00	-2.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.023		0.822	0.910	-9.6	40.0
Adona	AveID	3.464	3.694			1.00	6.6	50.0
6:2FTS	AveID	1.691	1.665		0.934	0.948	-1.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.019		0.882	1.00	-11.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.253		0.898	0.952	-5.7	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.047		0.893	0.928	-3.8	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.028		0.986	1.00	-1.4	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.748			0.932	-7.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9569		0.946	1.00	-5.4	40.0
8:2FTS	AveID	1.265	1.238		0.937	0.958	-2.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7324			0.960	-8.4	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9402		0.911	1.00	-8.9	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9646		0.967	1.00	-3.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.5983		0.888	0.964	-7.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9068		0.970	1.00	-3.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8175		0.967	1.00	-3.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.907			0.942	-0.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	0.998		0.957	1.00	-4.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.143		0.940	1.00	-6.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2446		0.974	1.00	-2.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9281		0.958	1.00	-4.2	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219693/3 Calibration Date: 04/24/2018 18:23

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9859		0.982	1.00	-1.8	50.0
13C4 PFBA	Ave	1.345	1.411		2.62	2.50	4.9	50.0
13C5 PFPeA	Ave	0.8672	0.9034		2.60	2.50	4.2	50.0
13C3-PFBS	Ave	0.0199	0.0195		2.28	2.33	-2.0	50.0
M2-4:2FTS	Ave	0.1425	0.1510		2.47	2.34	5.9	50.0
13C2 PFHxA	Ave	0.9590	0.9709		2.53	2.50	1.2	50.0
13C3 HFPO-DA	Ave	0.0593	0.0599		2.52	2.50	0.9	50.0
13C4-PFHpA	Ave	0.9333	0.995		2.67	2.50	6.7	50.0
18O2 PFHxS	Ave	1.152	1.144		2.35	2.37	-0.7	50.0
M2-6:2FTS	Ave	0.2000	0.2117		2.51	2.38	5.8	40.0
13C4 PFOA	Ave	0.9276	0.9807		2.64	2.50	5.7	50.0
13C4 PFOS	Ave	0.8066	0.8271		2.45	2.39	2.5	50.0
13C5 PFNA	Ave	0.7973	0.8026		2.52	2.50	0.7	50.0
13C8 FOSA	Ave	1.007	1.025		2.55	2.50	1.8	50.0
M2-8:2FTS	Ave	0.2409	0.2488		2.47	2.40	3.3	40.0
13C2 PFDA	Ave	0.6701	0.6906		2.58	2.50	3.1	50.0
d3-NMeFOSAA	Ave	0.3798	0.3886		2.56	2.50	2.3	50.0
d5-NEtFOSAA	Ave	0.3749	0.4059		2.71	2.50	8.3	50.0
13C2 PFUnA	Ave	0.5781	0.5589		2.42	2.50	-3.3	50.0
13C2 PFDoA	Ave	0.6242	0.6105		2.44	2.50	-2.2	50.0
13C2-PFTeDA	Ave	0.7915	0.7569		2.39	2.50	-4.4	50.0
13C2-PFHxDA	Ave	1.288	1.289		2.50	2.50	0.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\2018.04.24LLC_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 24-Apr-2018 18:23:32 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 25-Apr-2018 08:52:59 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK008

First Level Reviewer: roycea Date: 25-Apr-2018 08:38:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2465700	0.9880		98.8	1377	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	6719361	2.62		105	51374	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1962807	0.9569		95.7	2115	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.702	0.001	0.555	4302903	2.60		104	83474	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2655448	0.9132		103	11273	
298.90 > 99.00	1.739	1.739	0.0	1.000	1101034		2.41(1.25-3.74)		13011	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	86355	2.28		98.0	786	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.949	0.0	1.000	586002	0.9841		105	25935	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.959	-0.010	1.000	671513	2.47		106	6571	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.993	0.0	1.000	1873241	1.00		99.7	3371	
313.00 > 119.00	1.993	1.993	0.0	1.000	174675		10.72(5.03-15.10)		2033	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.992	0.001	1.000	4624557	2.53		101	100283	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2528172	0.9519		101	20567	
349.00 > 99.00	2.016	2.016	0.0	1.000	906174		2.79(1.36-4.07)		17150	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.000	303591	0.9553		95.5	2391	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.094	0.001	1.000	285249	2.52		101	10127	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1844843	0.9719		97.2	2499	
363.00 > 169.00	2.321	2.321	0.0	1.000	718325		2.57(1.13-3.40)		4552	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.333	-0.012	1.000	4741375	2.67		107	84726	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	0.994	2029307	0.8224		90.4	4627	
399.00 > 99.00	2.334	2.334	0.0	0.994	694974		2.92(1.50-4.49)		5942	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.346	0.001	1.000	5156084	2.35		99.3	68595	
65 Adona										
377.00 > 251.00	2.373	2.373	0.0	1.000	5820912	1.07		107	88514	
377.00 > 85.00	2.373	2.373	0.0	1.000	3181822		1.83(0.84-2.53)		65898	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.661	0.0	1.000	636457	0.9336		98.5	15183	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.668	-0.007	1.000	957716	2.51		106	12860	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.691	0.0	1.000	1903024	0.8815		88.2	1396	
413.00 > 169.00	2.691	2.691	0.0	1.000	1026791		1.85(0.84-2.52)		4073	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.691	0.0		4762957	2.50			64648	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.699	2.699	0.0	1.000	1879202	0.8982		94.3	11707	
449.00 > 99.00	2.699	2.699	0.0	1.000	533687		3.52(1.94-5.82)		14564	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.698	-0.007	1.000	4670980	2.64		106	101881	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.061	3.061	0.0	1.000	1530886	0.8930		96.2	9285	
499.00 > 99.00	3.061	3.061	0.0	1.000	340250		4.50(2.31-6.93)		7670	
20 Perfluorononanoic acid										
463.00 > 419.00	3.068	3.068	0.0	1.000	1571910	0.9858		98.6	4512	
463.00 > 169.00	3.068	3.068	0.0	1.000	376744		4.17(1.90-5.69)		6454	
D 19 13C5 PFNA										
468.00 > 423.00	3.068	3.073	-0.005	1.000	3822899	2.52		101	71137	
D 18 13C4 PFOS										
503.00 > 80.00	3.061	3.073	-0.012	1.000	3766240	2.45		103	19392	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.281	3.281	0.0	1.000	2567038	0.8641		92.7	53513	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.399	0.0	1.000	1869269	0.9460		94.6	24833	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.407	-0.008	1.000	4883699	2.55		102	47115	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	562008	0.9369		97.8	21714	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.417	3.417	0.0	1.000	1108012	0.8796		91.6	12420	
549.00 > 99.00	3.417	3.417	0.0	1.000	409559		2.71(1.33-3.97)		9135	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.436	3.436	0.0	1.000	1237104	0.9114		91.1	5972	
513.00 > 169.00	3.436	3.436	0.0	1.000	238138		5.19(2.36-7.09)		3890	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.426	-0.009	1.000	1135328	2.47		103	10568	
D 23 13C2 PFDA										
515.00 > 470.00	3.436	3.435	0.001	1.000	3289463	2.58		103	53651	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.586	0.0	1.000	714241	0.9672		96.7	5134	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.586	3.596	-0.010	1.000	1851092	2.56		102	21881	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.751	3.751	0.0	1.000	908809	0.8883		92.1	9951	
599.00 > 99.00	3.751	3.751	0.0	1.000	312643		2.91(1.39-4.16)		8367	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	870566	0.9674		96.7	4476	
563.00 > 169.00	3.762	3.762	0.0	1.000	217756		4.00(2.12-6.36)		5745	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.762	0.0	1.003	701188	0.9704		97.0	18576	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.761	-0.010	1.000	1933103	2.71		108	20966	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.771	-0.009	1.000	2662173	2.42		96.7	55547	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.918	0.0	1.000	4314692	0.9401		99.8	52605	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	1160542	0.9568		95.7	1677	
613.00 > 169.00	4.061	4.061	0.0	1.000	274125		4.23(2.13-6.40)		2756	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.061	0.0	1.000	2907583	2.44		97.8	34678	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	1328934	0.9402		94.0	1620	
663.00 > 169.00	4.319	4.319	0.0	1.000	419041		3.17(1.25-3.76)		3688	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	352671	0.9737		97.4	3393	
713.00 > 219.00	4.554	4.564	-0.010	0.998	244404		1.44(0.71-2.13)		4248	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.564	0.0	1.000	3605248	2.39		95.6	22628	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.976	4.976	0.0	1.000	2278710	0.9578		95.8	1022	
813.00 > 169.00	4.976	4.976	0.0	1.000	393014		5.80(2.86-8.58)		2820	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.984	-0.008	1.000	6138310	2.50		100	17593	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2420678	0.9819		98.2	874	
913.00 > 169.00	5.344	5.344	0.0	1.000	300942		8.04(3.83-11.48)		1939	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 25-Apr-2018 08:53:00 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b\2018.04.24LLC_006.d

Injection Date: 24-Apr-2018 18:23:32 Instrument ID: A8_N

Lims ID: CCV L4

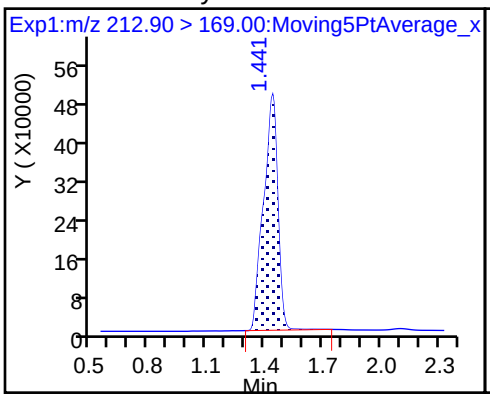
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

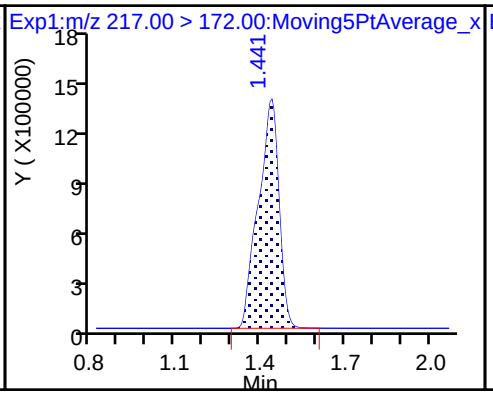
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

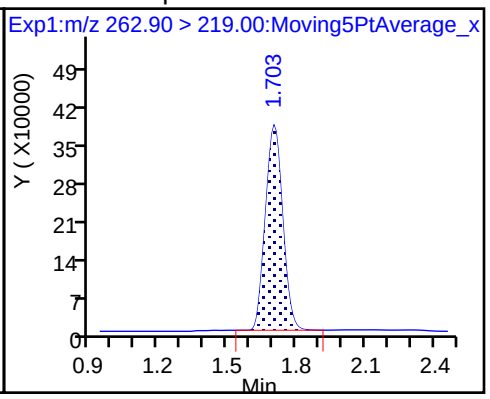
2 Perfluorobutyric acid



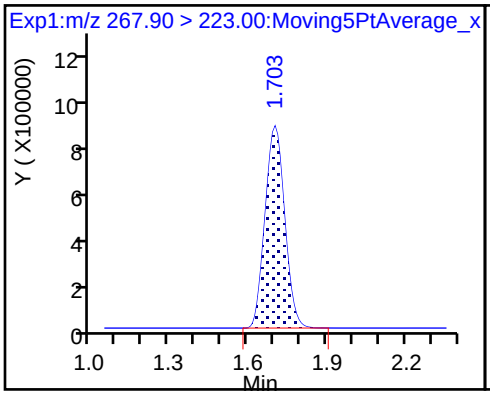
D 1 13C4 PFBA



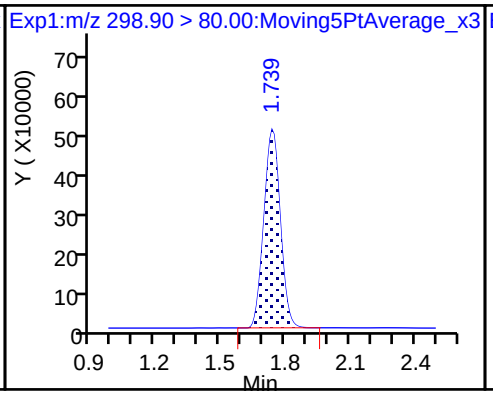
4 Perfluoropentanoic acid



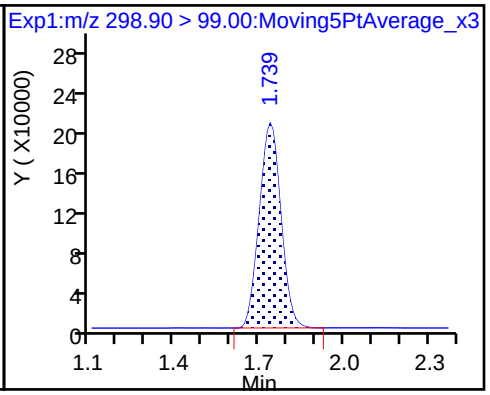
D 3 13C5-PFPeA



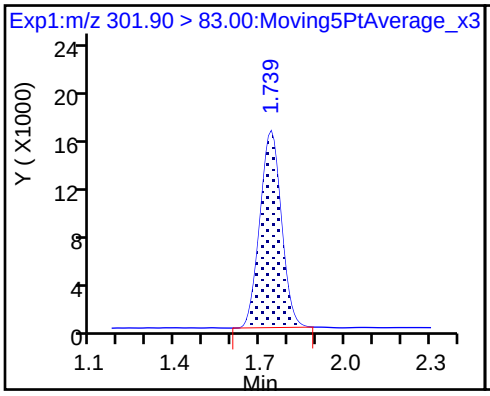
5 Perfluorobutanesulfonic acid



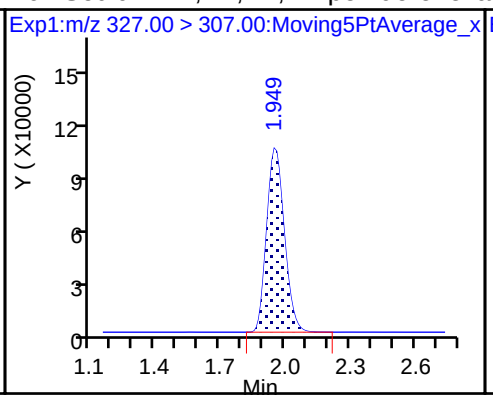
5 Perfluorobutanesulfonic acid



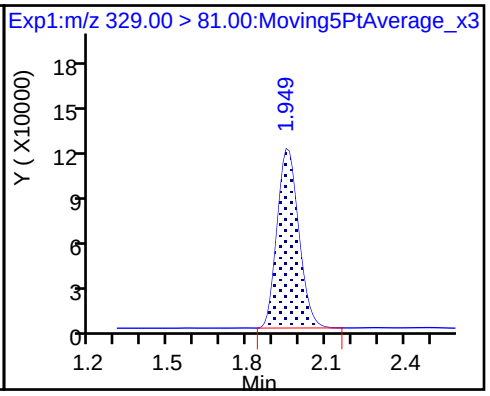
D 47 13C3-PFBS



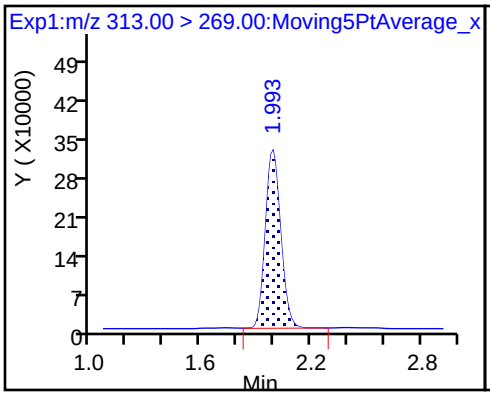
61 Sodium 1H,1H,2H,2H-perfluorohexane



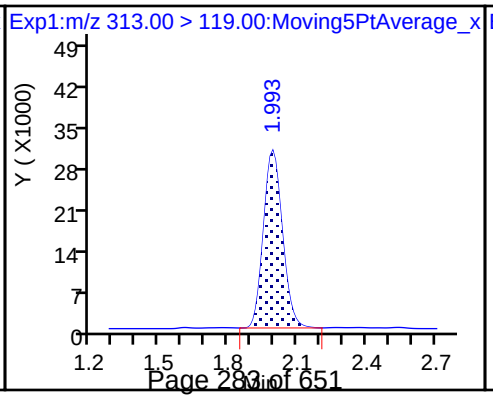
D 60 M2-4:2FTS



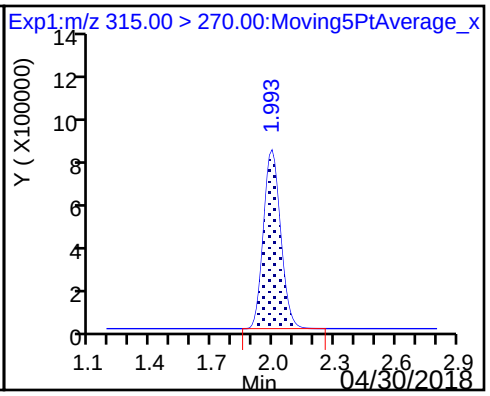
6 Perfluorohexanoic acid



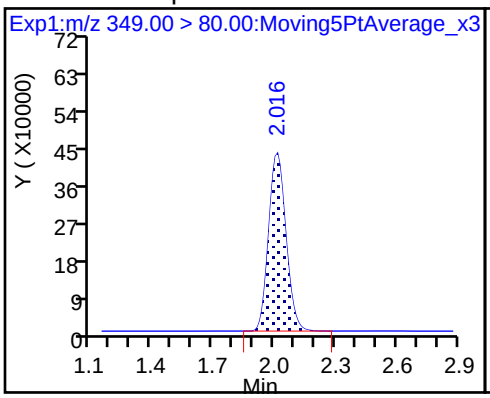
6 Perfluorohexanoic acid



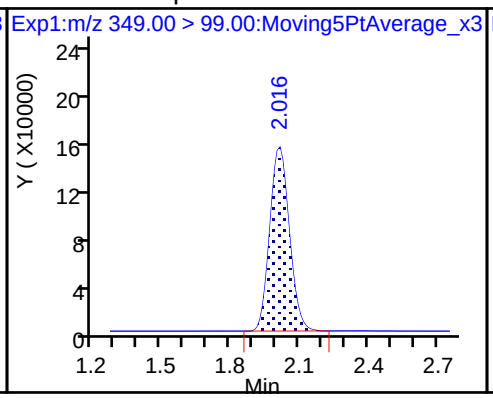
D 7 13C2 PFHxA



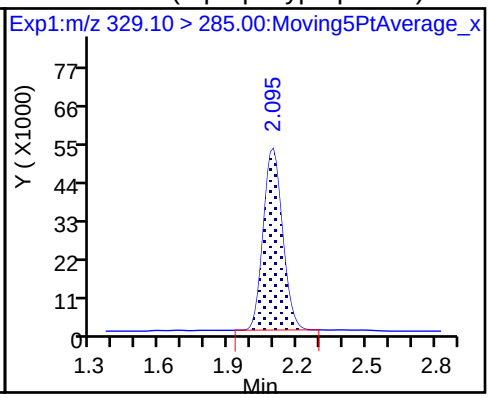
70 Perfluoropentanesulfonic acid



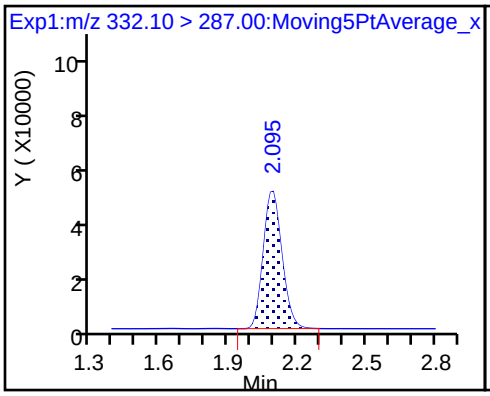
70 Perfluoropentanesulfonic acid



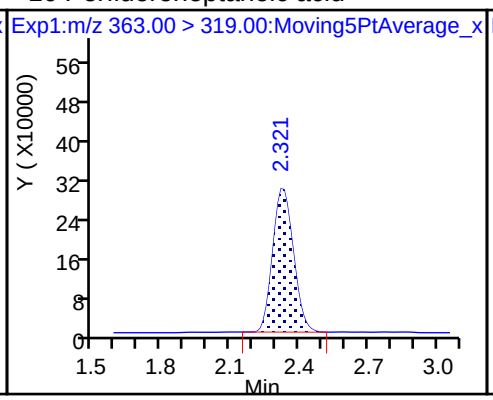
67 Perfluoro(2-propoxypropanoic) acid



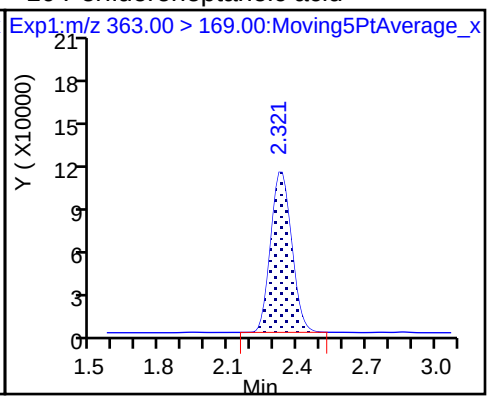
D 64 13C3 HFPO-DA



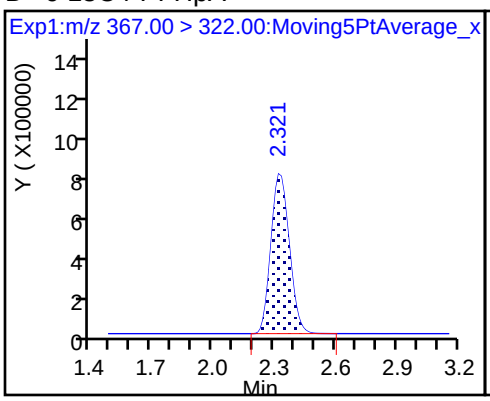
10 Perfluoroheptanoic acid



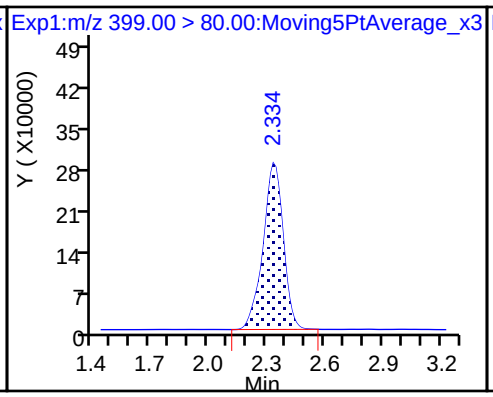
10 Perfluoroheptanoic acid



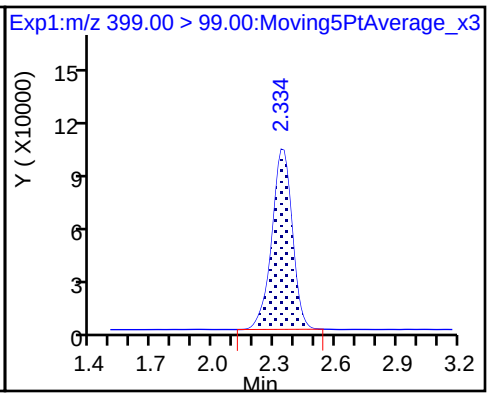
D 9 13C4-PFHpA



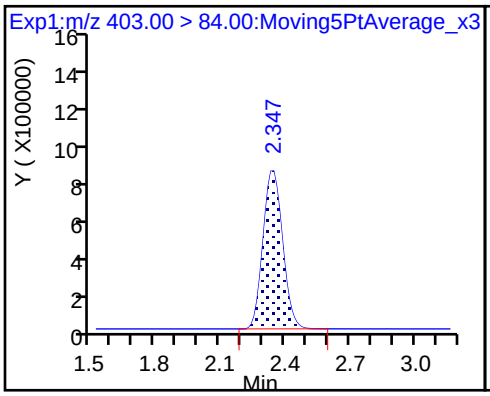
8 Perfluorohexanesulfonic acid



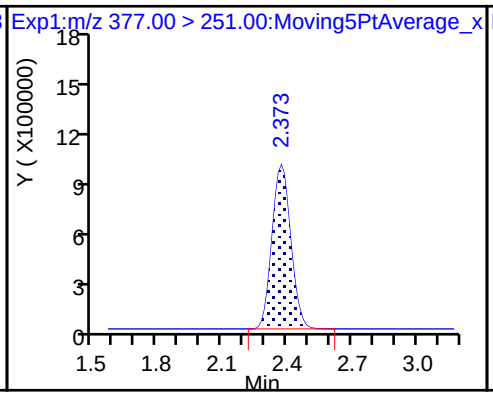
8 Perfluorohexanesulfonic acid



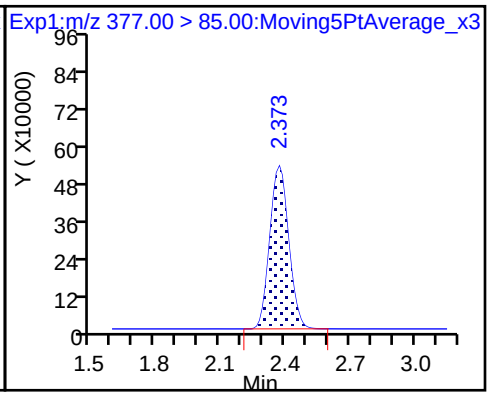
D 11 18O2 PFHxS



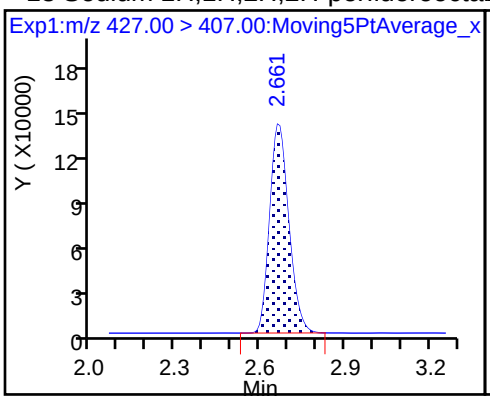
65 Adona



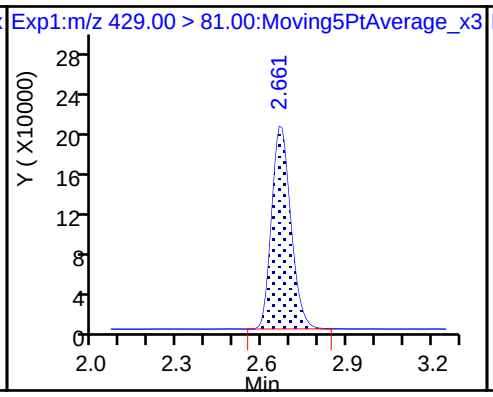
65 Adona



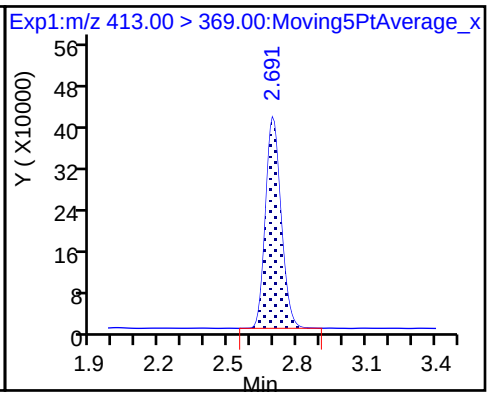
13 Sodium 1H,1H,2H,2H-perfluorooctane



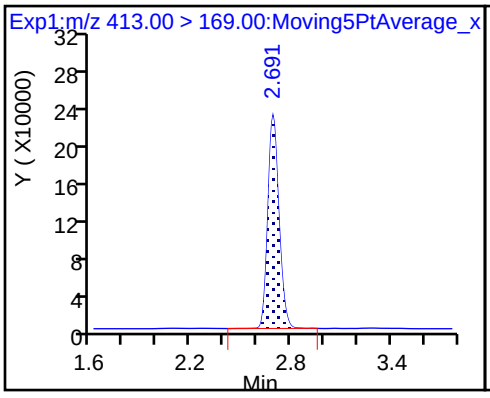
D 12 M2-6:2FTS



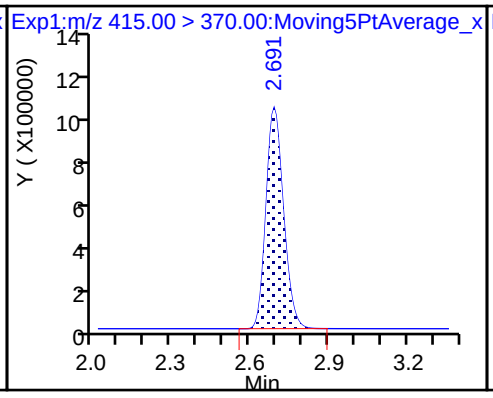
15 Perfluorooctanoic acid



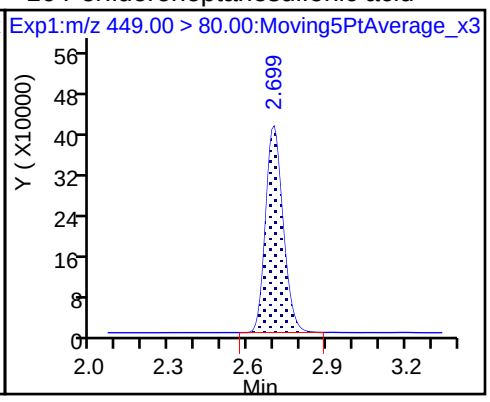
15 Perfluorooctanoic acid



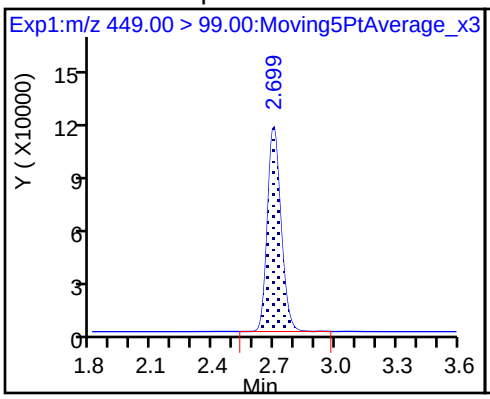
* 62 13C2-PFOA



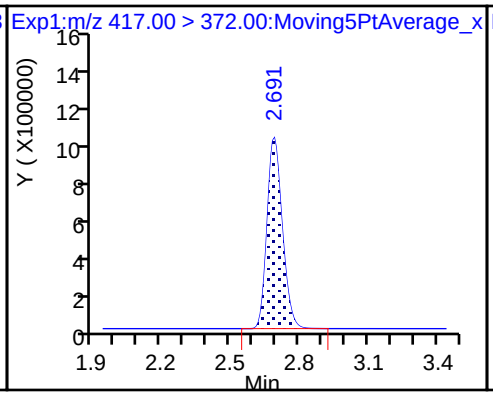
16 Perfluoroheptanesulfonic acid



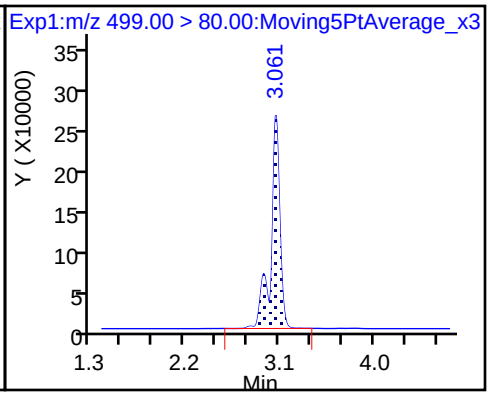
16 Perfluoroheptanesulfonic acid



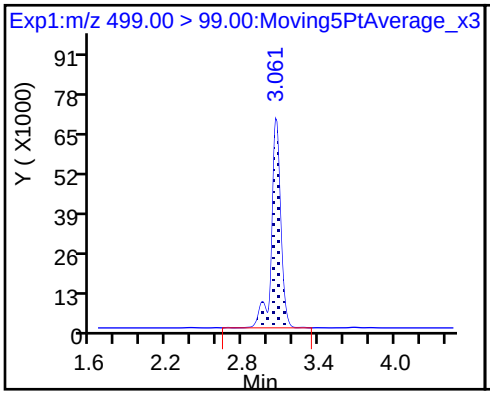
D 14 13C4 PFOA



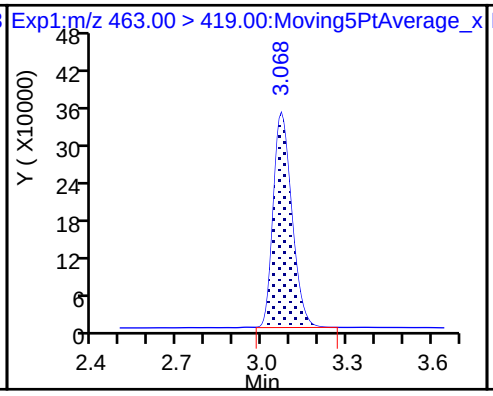
17 Perfluorooctane sulfonic acid



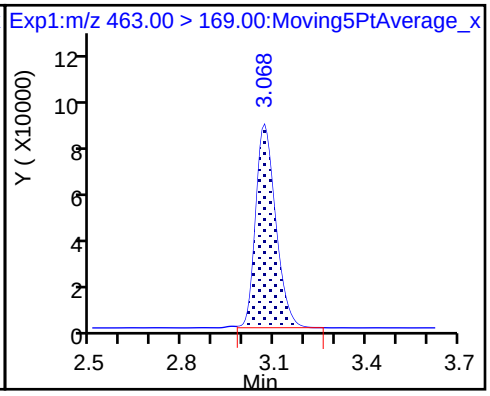
17 Perfluorooctane sulfonic acid



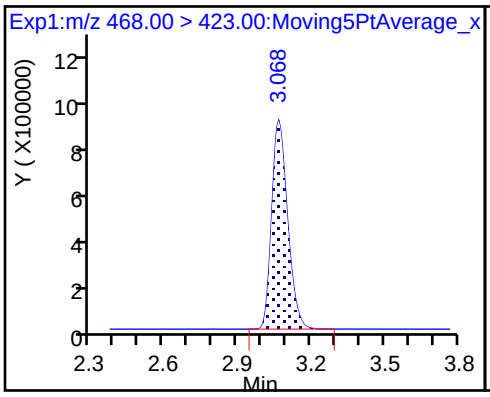
20 Perfluorononanoic acid



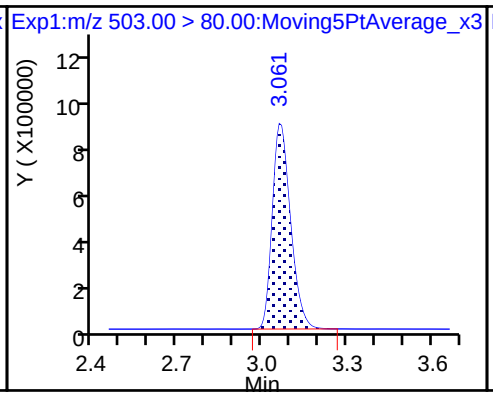
20 Perfluorononanoic acid



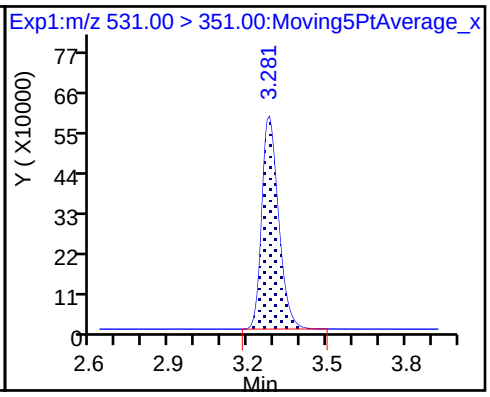
D 19 13C5 PFNA



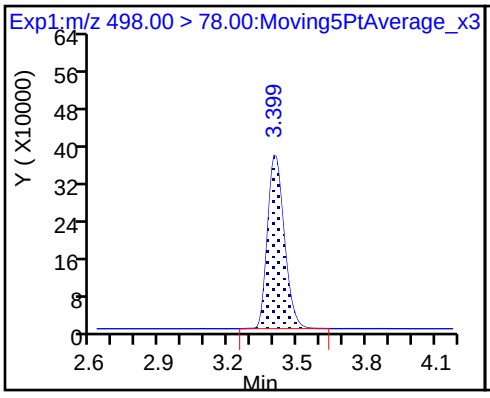
D 18 13C4 PFOS



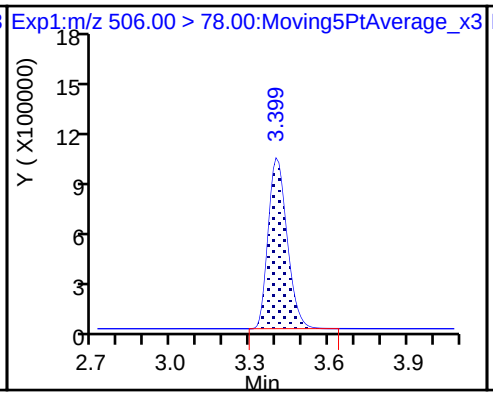
69 9-Chlorohexadecafluoro-3-oxanonane



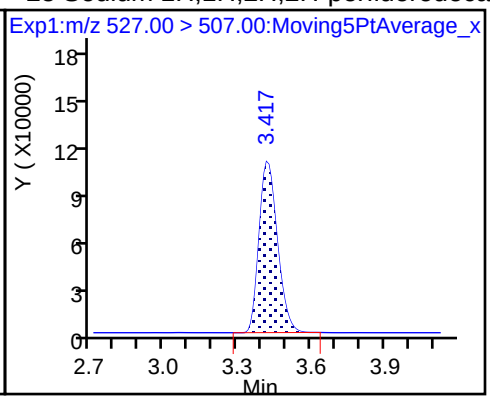
22 Perfluorooctane Sulfonamide



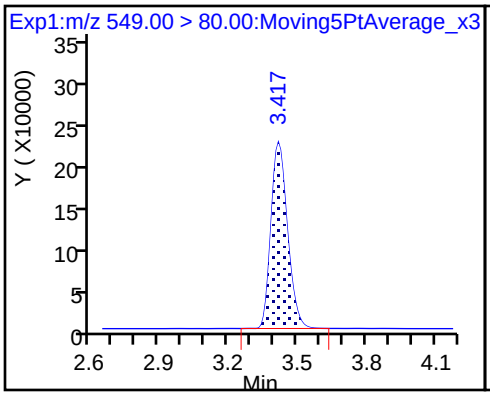
D 21 13C8 FOSA



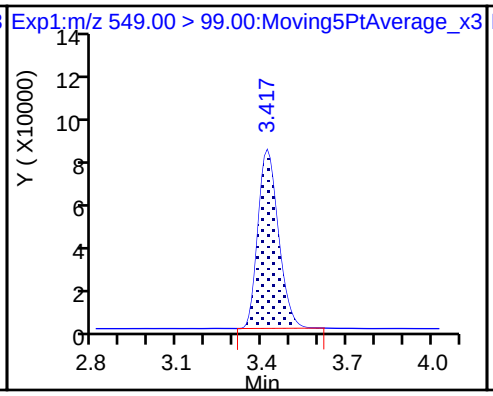
25 Sodium 1H,1H,2H,2H-perfluorodecane



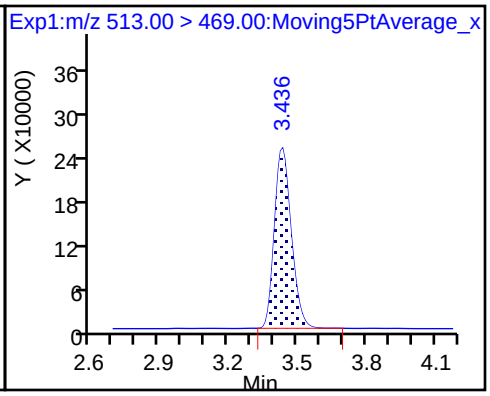
68 Perfluorononanesulfonic acid



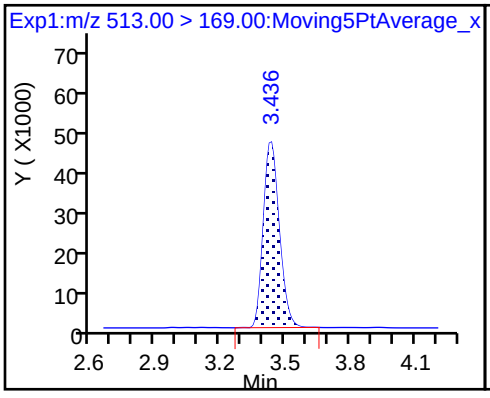
68 Perfluorononanesulfonic acid



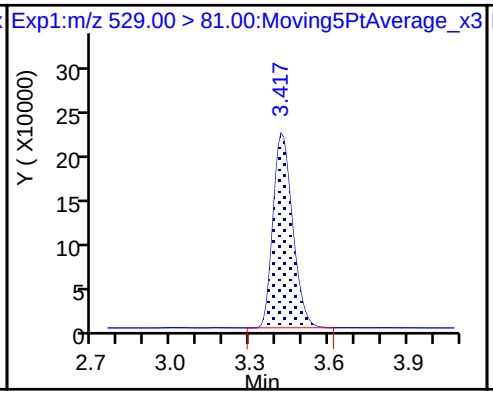
24 Perfluorodecanoic acid



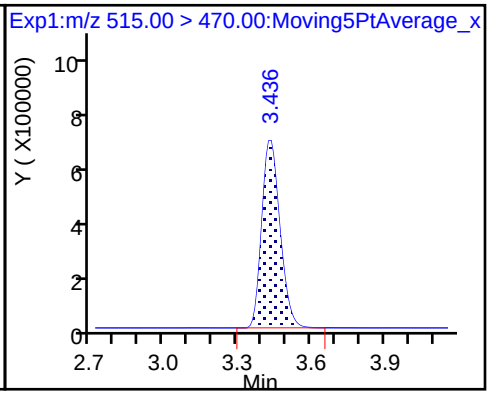
24 Perfluorodecanoic acid



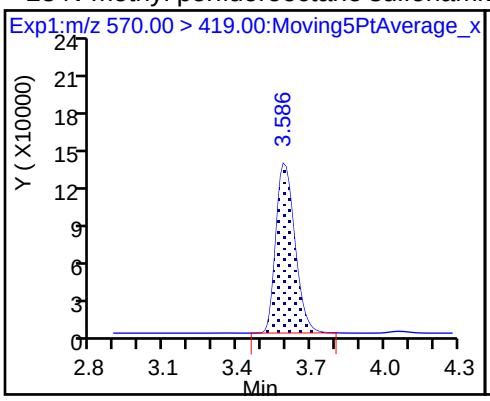
D 26 M2-8:2FTS



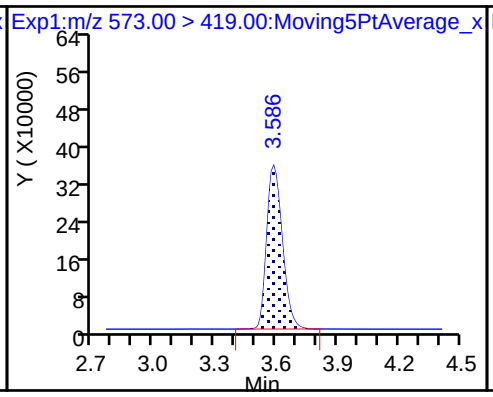
D 23 13C2 PFDA



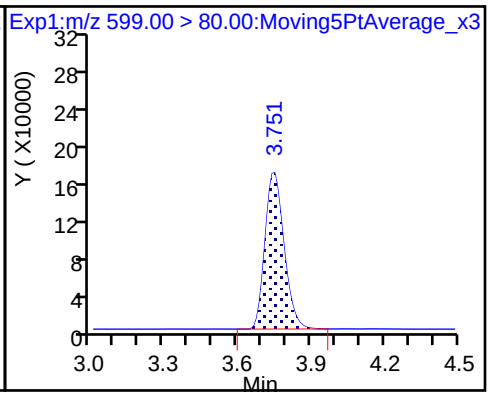
28 N-methyl perfluorooctane sulfonami



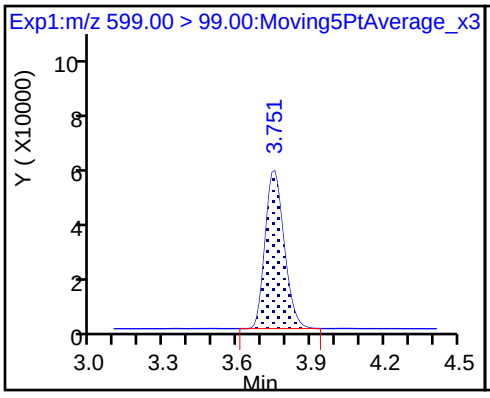
D 27 d3-NMeFOSAA



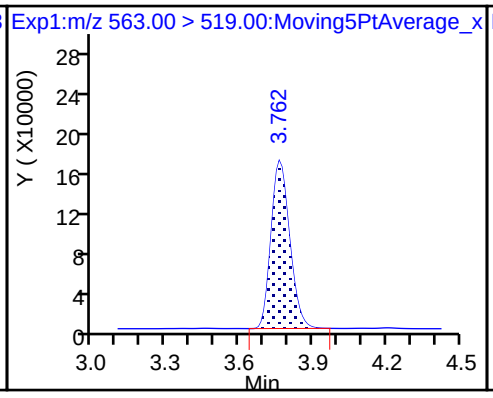
29 Perfluorodecane Sulfonic acid



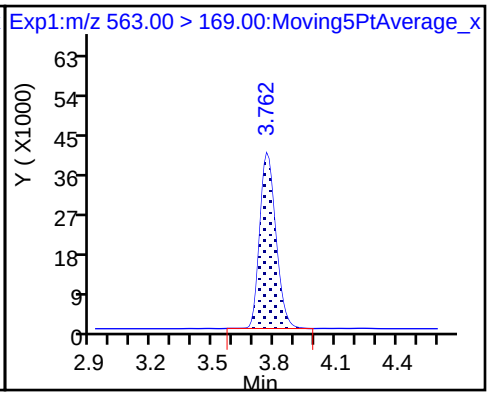
29 Perfluorodecane Sulfonic acid



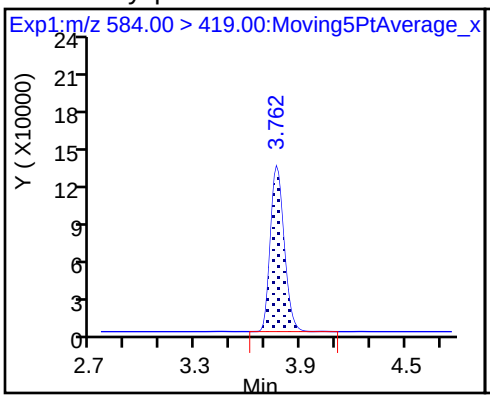
31 Perfluoroundecanoic acid



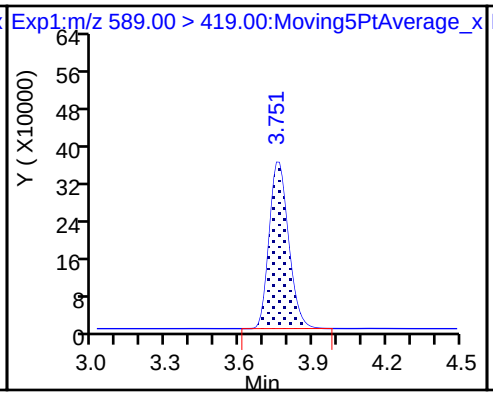
31 Perfluoroundecanoic acid



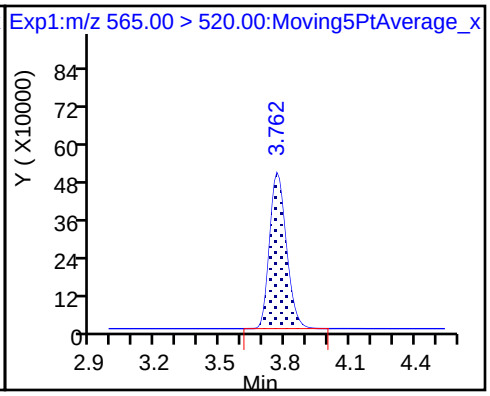
33 N-ethyl perfluorooctane sulfonamid



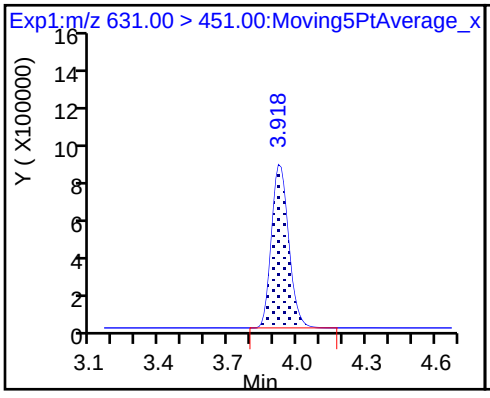
D 32 d5-NEtFOSAA



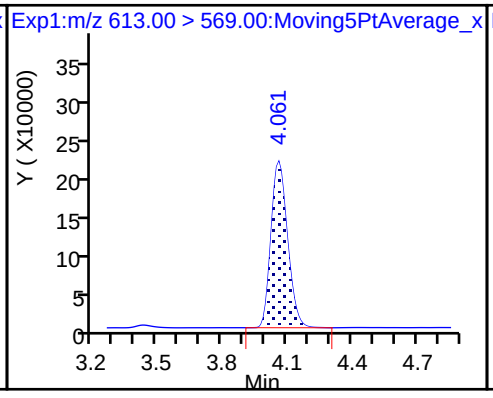
D 30 13C2 PFUnA



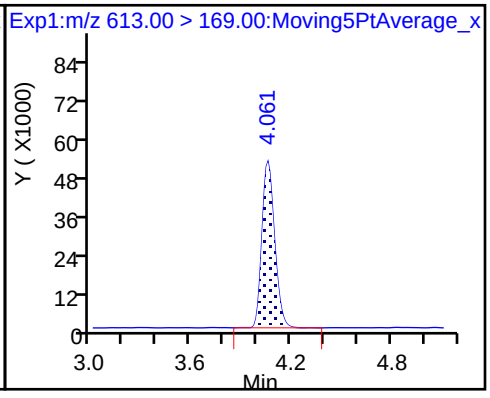
66 11-Chloroeicosafluoro-3-oxaundecan



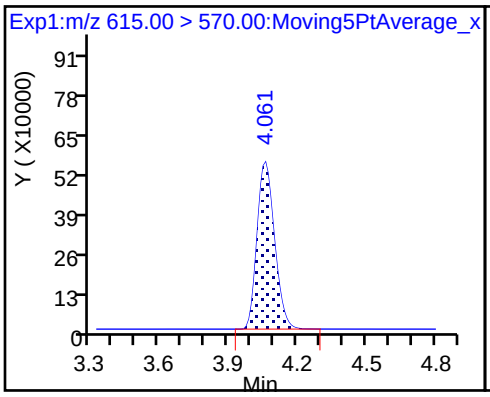
37 Perfluorododecanoic acid



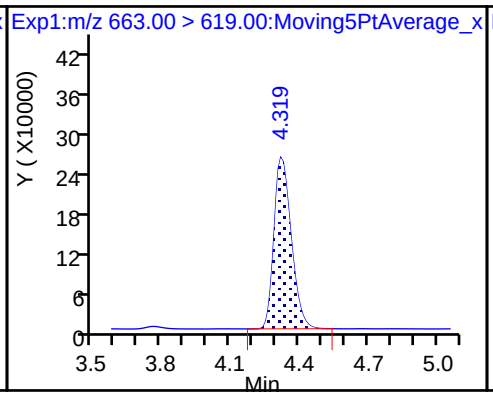
37 Perfluorododecanoic acid



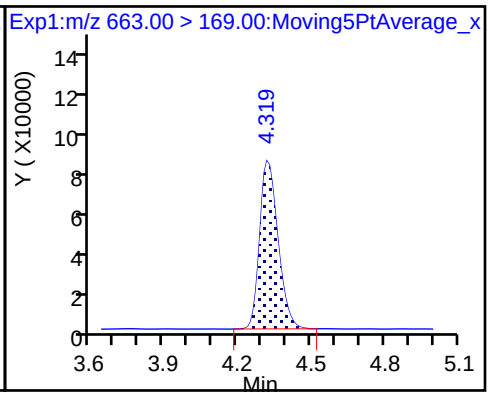
D 36 13C2 PFDoA



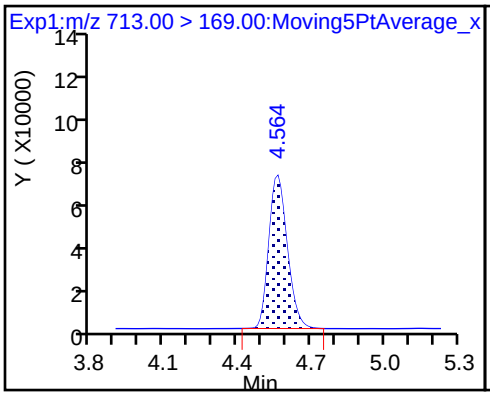
41 Perfluorotridecanoic acid



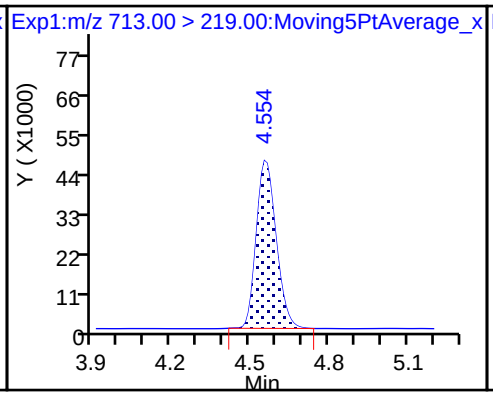
41 Perfluorotridecanoic acid



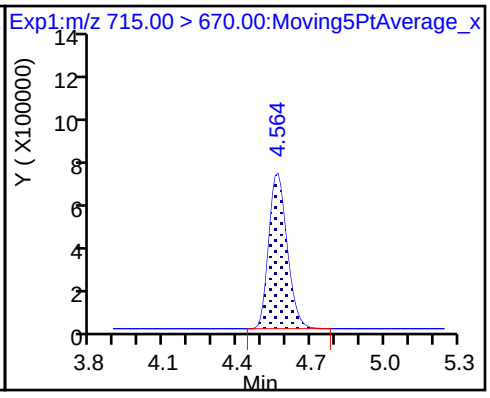
42 Perfluorotetradecanoic acid



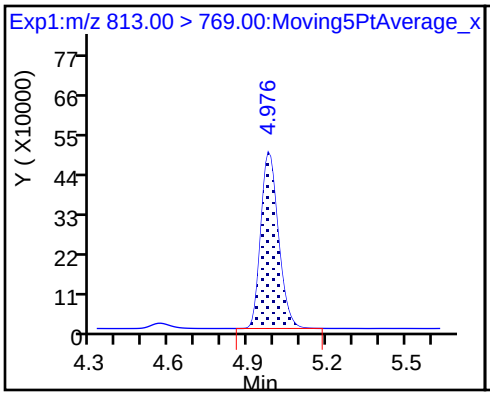
42 Perfluorotetradecanoic acid



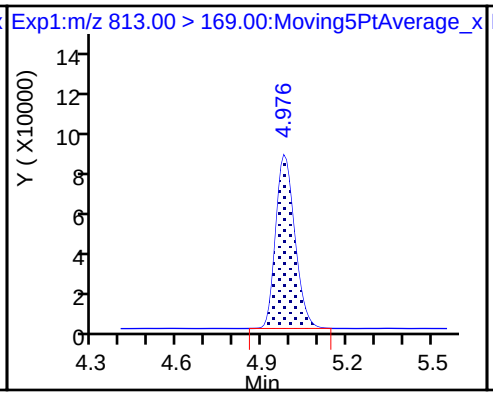
D 43 13C2-PFTeDA



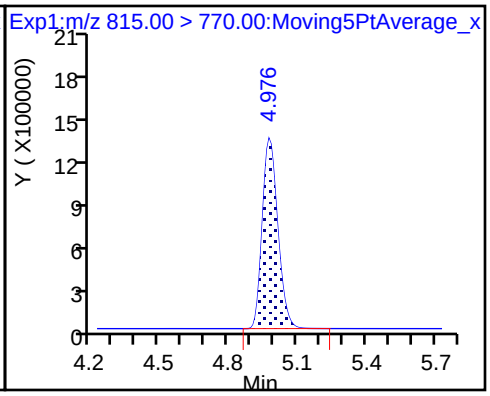
45 Perfluorohexadecanoic acid



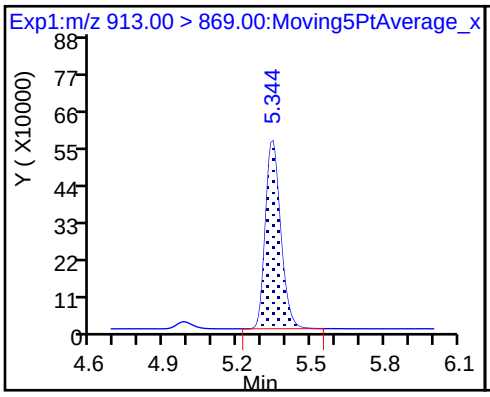
45 Perfluorohexadecanoic acid



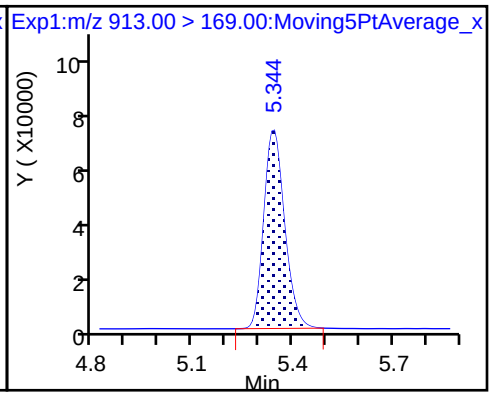
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219700/1 Calibration Date: 04/24/2018 23:04

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_042.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9102		0.980	1.00	-2.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.132		0.950	1.00	-5.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	79.17		0.894	0.884	1.1	50.0
4:2 FTS	AveID	16.03	16.37		0.954	0.934	2.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9474		0.932	1.00	-6.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	69.39			0.938	-3.0	50.0
HFPO-DA (GenX)	AveID	2.785	3.051			1.00	9.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.057		1.06	1.00	5.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.043		0.839	0.910	-7.8	40.0
Adona	AveID	3.464	3.665			1.00	5.8	50.0
6:2FTS	AveID	1.691	1.646		0.923	0.948	-2.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.066		0.923	1.00	-7.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.276		0.915	0.952	-3.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.054		0.899	0.928	-3.1	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.020		0.979	1.00	-2.1	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.827			0.932	-3.1	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9794		0.968	1.00	-3.2	40.0
8:2FTS	AveID	1.265	1.242		0.940	0.958	-1.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7651			0.960	-4.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9262		0.898	1.00	-10.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9729		0.975	1.00	-2.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6617		0.982	0.964	1.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9656		1.03	1.00	3.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8328		0.985	1.00	-1.5	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.767			0.942	-5.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.035		0.992	1.00	-0.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.103		0.908	1.00	-9.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2405		0.957	1.00	-4.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9193		0.949	1.00	-5.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219700/1 Calibration Date: 04/24/2018 23:04

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_042.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9561		0.952	1.00	-4.8	50.0
13C4 PFBA	Ave	1.345	1.452		2.70	2.50	7.9	50.0
13C5 PFPeA	Ave	0.8672	0.9251		2.67	2.50	6.7	50.0
13C3-PFBS	Ave	0.0199	0.0202		2.36	2.33	1.7	50.0
M2-4:2FTS	Ave	0.1425	0.1522		2.49	2.34	6.8	50.0
13C2 PFHxA	Ave	0.9590	1.031		2.69	2.50	7.5	50.0
13C3 HFPO-DA	Ave	0.0593	0.0564		2.38	2.50	-5.0	50.0
13C4-PFHpA	Ave	0.9333	0.9684		2.59	2.50	3.8	50.0
18O2 PFHxS	Ave	1.152	1.164		2.39	2.37	1.0	50.0
M2-6:2FTS	Ave	0.2000	0.2155		2.56	2.38	7.7	40.0
13C4 PFOA	Ave	0.9276	0.9915		2.67	2.50	6.9	50.0
13C4 PFOS	Ave	0.8066	0.8320		2.47	2.39	3.1	50.0
13C5 PFNA	Ave	0.7973	0.8273		2.59	2.50	3.8	50.0
13C8 FOSA	Ave	1.007	1.016		2.52	2.50	0.8	50.0
M2-8:2FTS	Ave	0.2409	0.2496		2.48	2.40	3.6	40.0
13C2 PFDA	Ave	0.6701	0.7247		2.70	2.50	8.2	50.0
d3-NMeFOSAA	Ave	0.3798	0.3946		2.60	2.50	3.9	50.0
d5-NEtFOSAA	Ave	0.3749	0.4131		2.75	2.50	10.2	50.0
13C2 PFUnA	Ave	0.5781	0.5749		2.49	2.50	-0.5	50.0
13C2 PFDoA	Ave	0.6242	0.6084		2.44	2.50	-2.5	50.0
13C2-PFTeDA	Ave	0.7915	0.7520		2.38	2.50	-5.0	50.0
13C2-PFHxDA	Ave	1.288	1.312		2.55	2.50	1.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_042.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 24-Apr-2018 23:04:59 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:13:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2530473	0.9802		98.0	1203	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.442	-0.001	1.000	6950687	2.70		108	44818	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.702	0.0	1.000	2005686	0.9498		95.0	2160	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	-0.001	0.556	4429911	2.67		107	77439	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.738	0.0	1.000	2712250	0.8940		101	10346	
298.90 > 99.00	1.738	1.738	0.0	1.000	1150907		2.36(1.25-3.74)		11599	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.739	-0.001	1.000	90099	2.36		102	806	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.959	1.959	0.0	1.000	592631	0.9539		102	25951	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.961	-0.013	1.000	680554	2.49		107	6297	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.992	0.0	1.000	1870275	0.9323		93.2	2987	
313.00 > 119.00	1.992	1.992	0.0	1.000	165165		11.32(5.03-15.10)		1774	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.993	-0.001	1.000	4935558	2.69		107	122972	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.014	2.014	0.0	1.000	2522120	0.9102		97.0	19641	
349.00 > 99.00	2.014	2.014	0.0	1.000	909378		2.77(1.36-4.07)		19469	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.093	2.093	0.0	1.000	329472	1.10		110	2264	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.093	2.095	-0.002	1.000	269997	2.38		95.0	11706	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.319	0.0	1.000	1960744	1.06		106	2382	
363.00 > 169.00	2.319	2.319	0.0	1.000	745743		2.63(1.13-3.40)		2715	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.332	0.0	1.000	2116497	0.8388		92.2	4974	
399.00 > 99.00	2.332	2.332	0.0	1.000	697796		3.03(1.50-4.49)		6341	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.322	-0.003	1.000	4637206	2.59		104	82028	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.335	-0.003	1.000	5272520	2.39		101	55769	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	5840932	1.06		106	64318	
377.00 > 85.00	2.372	2.372	0.0	1.000	3362453		1.74(0.84-2.53)		55477	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	644109	0.9233		97.4	13673	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.668	-0.008	1.000	980098	2.56		108	11740	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.690	0.0		4788493	2.50			51323	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.000	2024587	0.9227		92.3	1454	
413.00 > 169.00	2.690	2.690	0.0	1.000	1071757		1.89(0.84-2.52)		4285	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.697	0.0	1.000	1936528	0.9152		96.1	11593	
449.00 > 99.00	2.697	2.697	0.0	1.000	538146		3.60(1.94-5.82)		16609	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.691	-0.001	1.000	4747789	2.67		107	86107	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.060	3.060	0.0	1.000	1558490	0.8990		96.9	6782	
499.00 > 99.00	3.060	3.060	0.0	1.000	351481		4.43(2.31-6.93)		5001	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.067	0.0	1.002	1616965	0.9786		97.9	4922	
463.00 > 169.00	3.060	3.067	-0.007	1.000	385979		4.19(1.90-5.69)		7085	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.067	-0.007	1.000	3961704	2.59		104	67387	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.067	-0.007	1.000	3808858	2.47		103	21557	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.273	3.273	0.0	1.000	2714366	0.9035		96.9	44727	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1905284	0.9683		96.8	22424	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.399	-0.001	1.000	4863290	2.52		101	54549	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.417	3.417	0.0	1.000	1170461	0.9188		95.7	11671	
549.00 > 99.00	3.417	3.417	0.0	1.000	438772		2.67(1.33-3.97)		12637	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	568690	0.9402		98.1	37111	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.426	0.0	1.000	1285692	0.8978		89.8	6349	
513.00 > 169.00	3.426	3.426	0.0	1.000	231723		5.55(2.36-7.09)		3545	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.417	0.0	1.000	1144845	2.48		104	11285	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.427	-0.001	1.000	3470314	2.70		108	77131	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.586	0.0	1.000	735332	0.9755		97.5	5532	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.586	3.586	0.0	1.000	1889604	2.60		104	29693	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.740	0.0	1.000	1016557	0.9825		102	9675	
599.00 > 99.00	3.740	3.740	0.0	1.000	333400		3.05(1.39-4.16)		6975	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.000	917023	0.9854		98.5	4958	
563.00 > 169.00	3.761	3.761	0.0	1.000	224537		4.08(2.12-6.36)		4723	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.003	763974	1.03		103	15501	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.751	0.0	1.000	1978006	2.75		110	28070	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.762	-0.001	1.000	2752952	2.49		99.5	51708	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.918	0.0	1.000	4153266	0.8948		95.0	44823	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.050	0.0	1.000	1206116	0.99		99.2	1623	
613.00 > 169.00	4.061	4.050	0.011	1.003	300947		4.01(2.13-6.40)		3773	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.061	-0.011	1.000	2913225	2.44		97.5	34455	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1285667	0.9078		90.8	1413	
663.00 > 169.00	4.318	4.318	0.0	1.000	418618		3.07(1.25-3.76)		4271	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	346341	0.9575		95.7	3327	
713.00 > 219.00	4.553	4.553	0.0	1.000	250633		1.38(0.71-2.13)		4802	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.564	-0.011	1.000	3600770	2.38		95.0	25947	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.975	4.975	0.0	1.000	2310791	0.9485		94.9	979	
813.00 > 169.00	4.975	4.975	0.0	1.000	372675		6.20(2.86-8.58)		2239	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.976	-0.001	1.000	6284453	2.55		102	17435	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2403456	0.9522		95.2	817	
913.00 > 169.00	5.344	5.344	0.0	1.000	301531		7.97(3.83-11.48)		1629	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 11:25:04 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_042.d

Injection Date: 24-Apr-2018 23:04:59 Instrument ID: A8_N

Lims ID: CCV L4

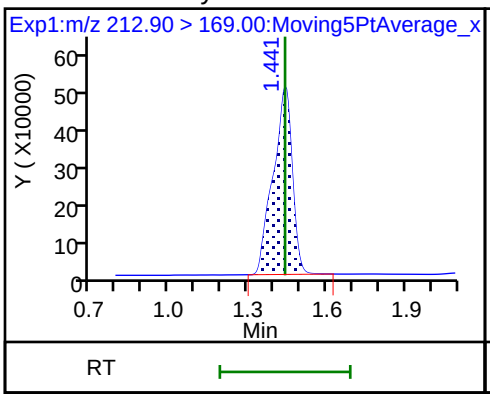
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

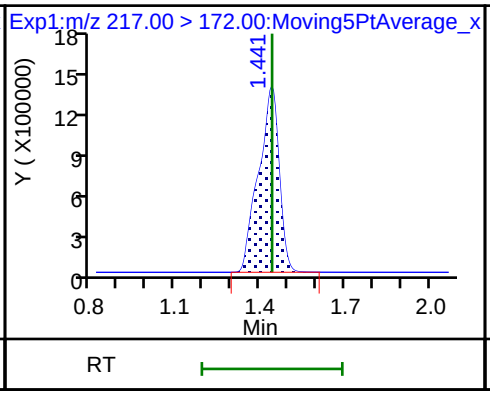
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

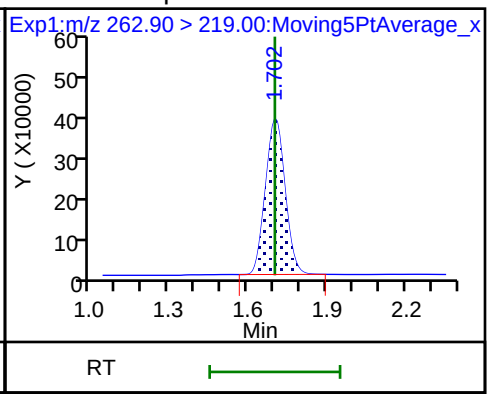
2 Perfluorobutyric acid



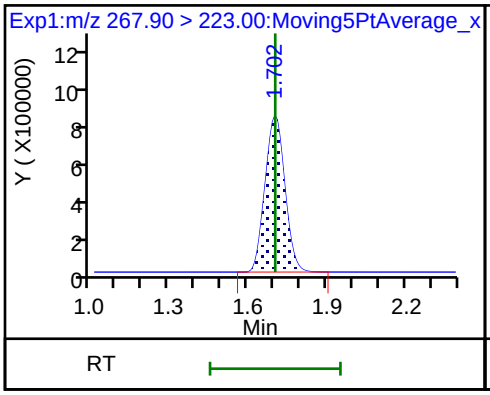
D 1 13C4 PFBA



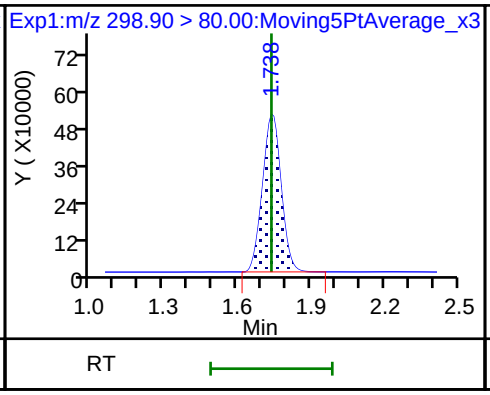
4 Perfluoropentanoic acid



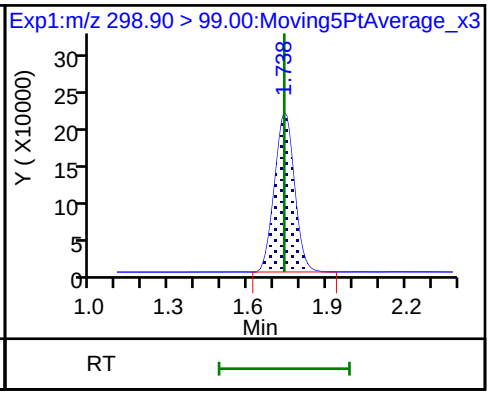
D 3 13C5-PFPeA



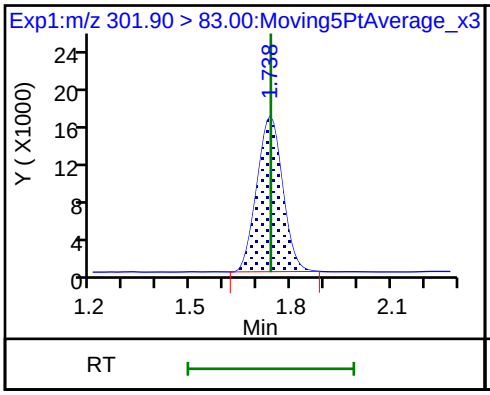
5 Perfluorobutanesulfonic acid



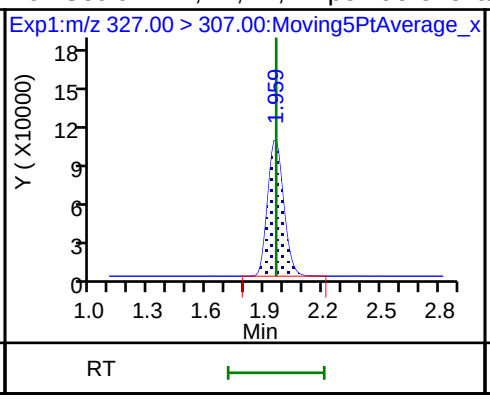
5 Perfluorobutanesulfonic acid



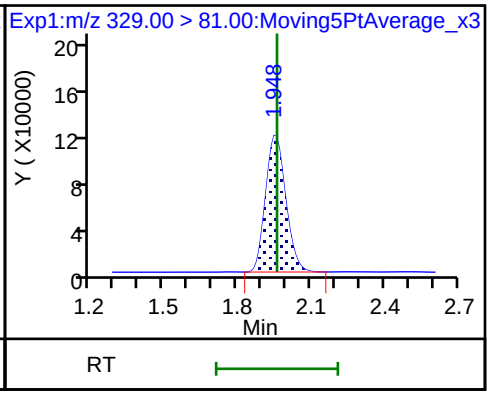
D 47 13C3-PFBS



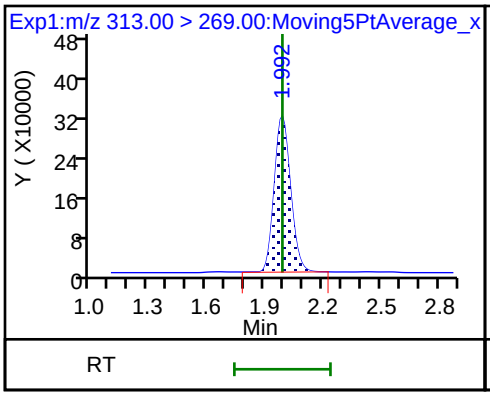
61 Sodium 1H,1H,2H,2H-perfluorohexa



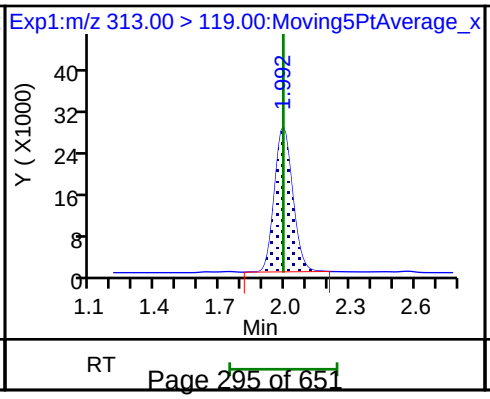
D 60 M2-4:2FTS



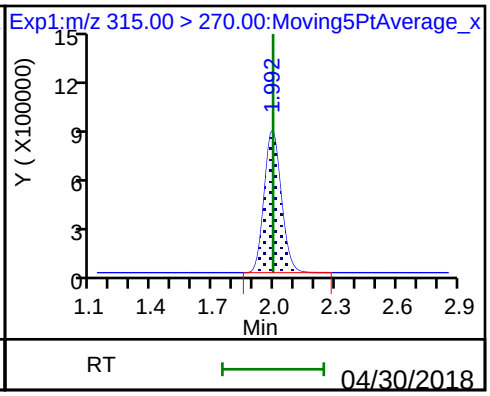
6 Perfluorohexanoic acid



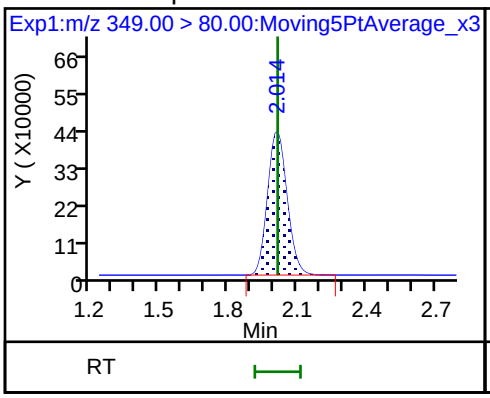
6 Perfluorohexanoic acid



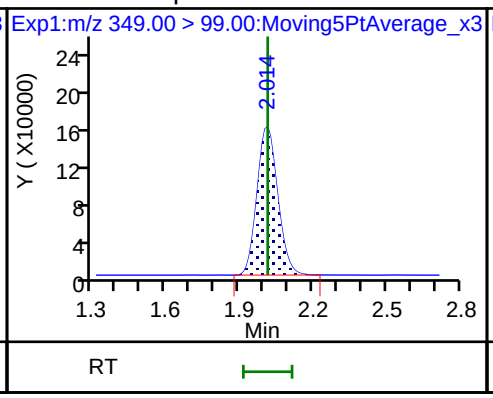
D 7 13C2 PFHxA



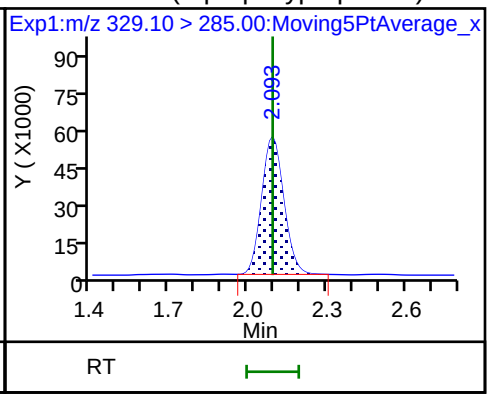
70 Perfluoropentanesulfonic acid



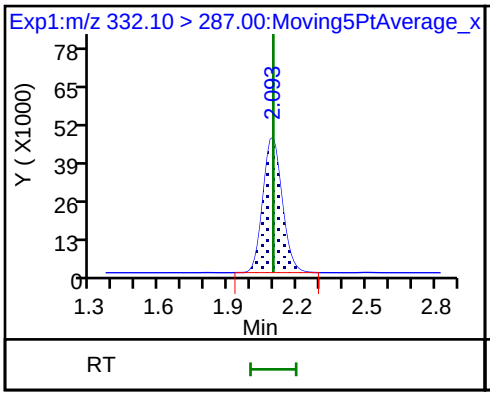
70 Perfluoropentanesulfonic acid



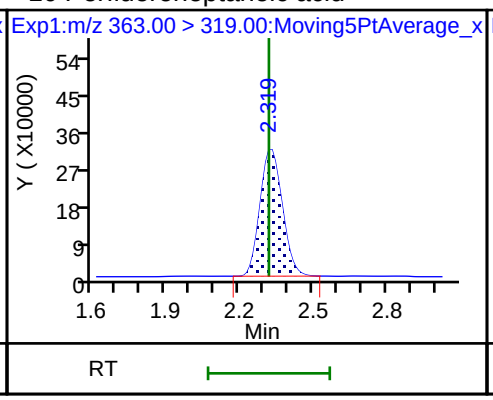
67 Perfluoro(2-propoxypropanoic) acid



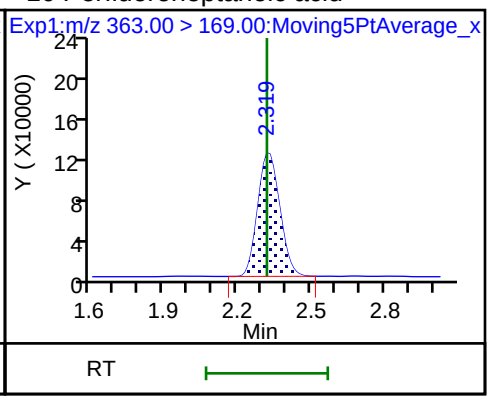
D 64 13C3 HFPO-DA



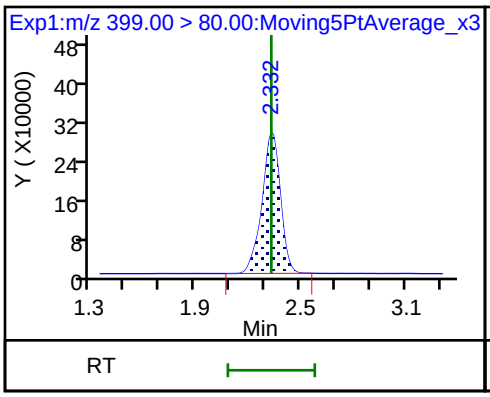
10 Perfluoroheptanoic acid



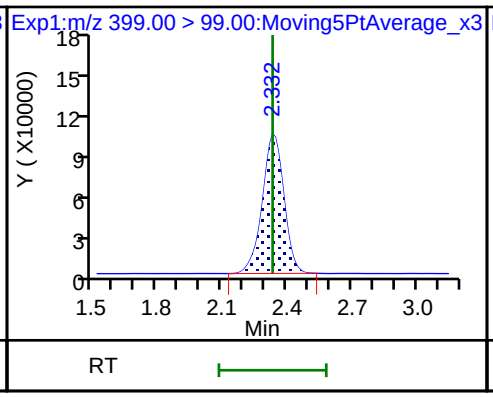
10 Perfluoroheptanoic acid



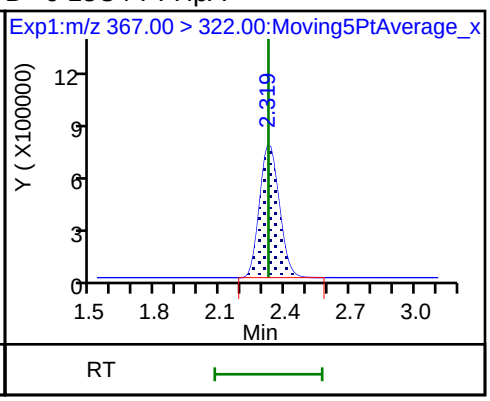
8 Perfluorohexanesulfonic acid



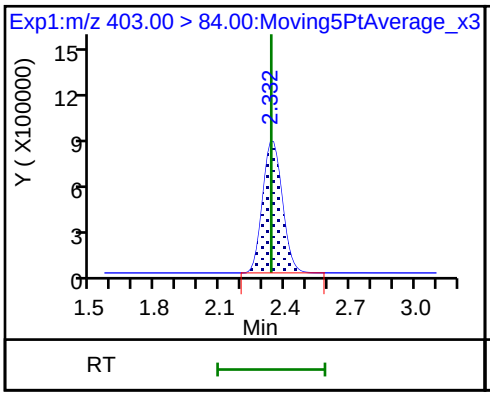
8 Perfluorohexanesulfonic acid



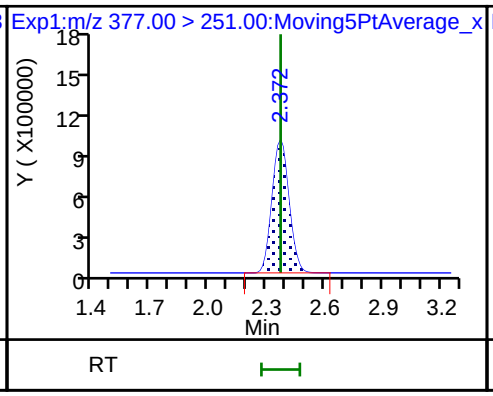
D 9 13C4-PFHpA



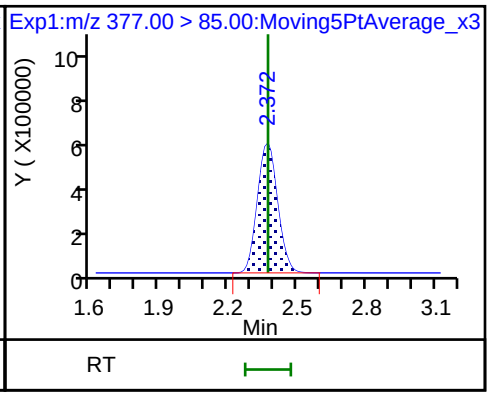
D 11 18O2 PFHxS



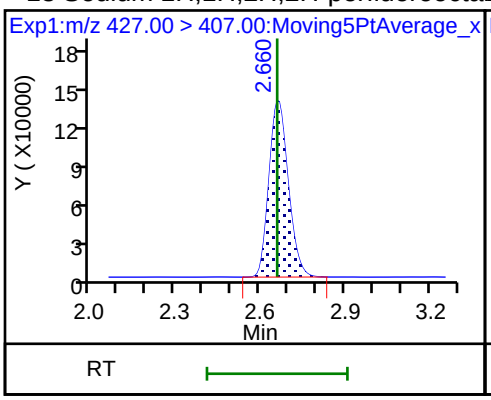
65 Adona



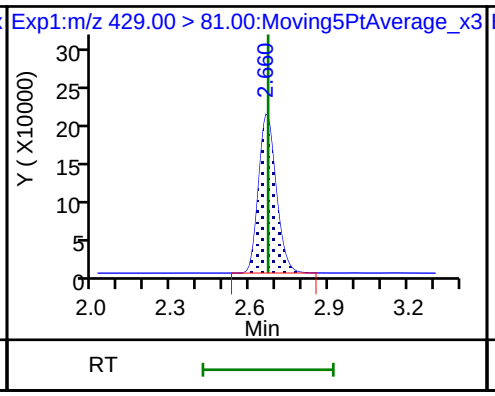
65 Adona



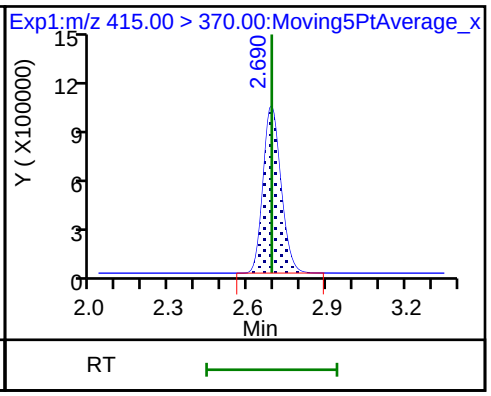
13 Sodium 1H,1H,2H,2H-perfluorooctane



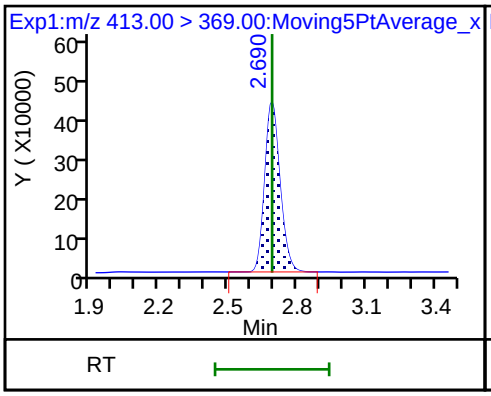
D 12 M2-6:2FTS



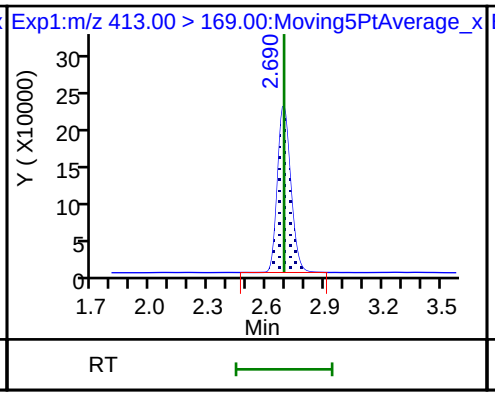
* 62 13C2-PFOA



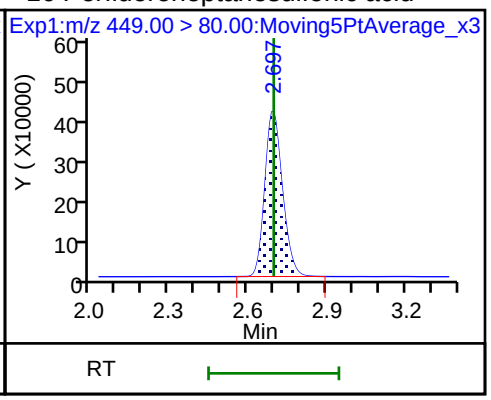
15 Perfluorooctanoic acid



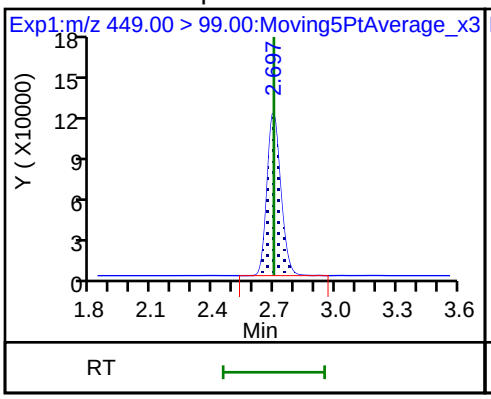
15 Perfluorooctanoic acid



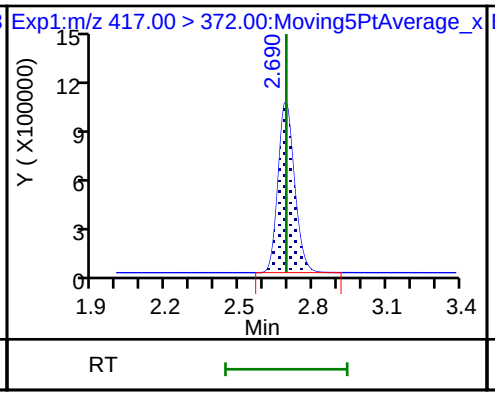
16 Perfluoroheptanesulfonic acid



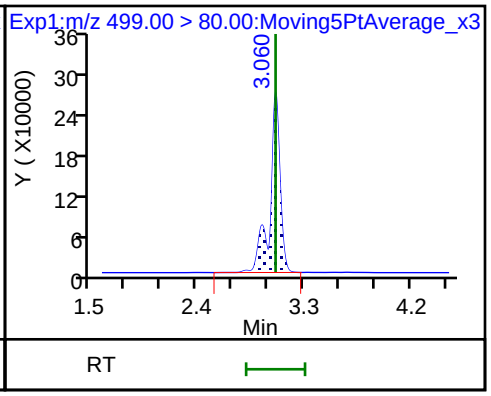
16 Perfluoroheptanesulfonic acid



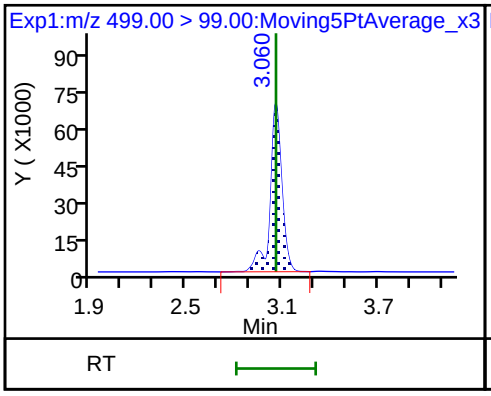
D 14 13C4 PFOA



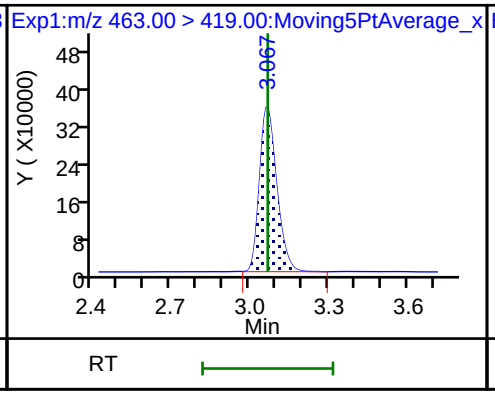
17 Perfluorooctane sulfonic acid



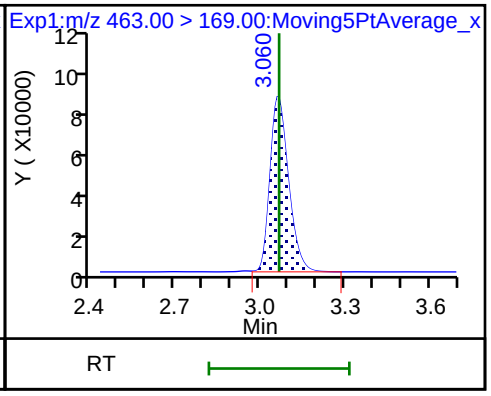
17 Perfluorooctane sulfonic acid



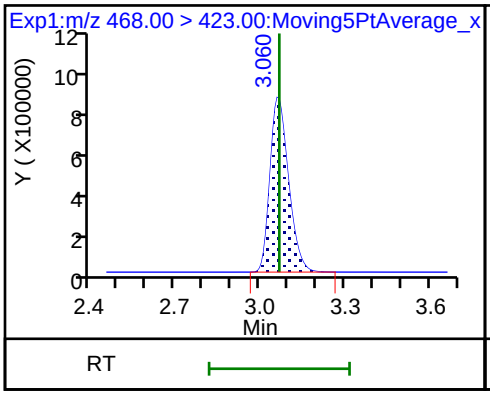
20 Perfluorononanoic acid



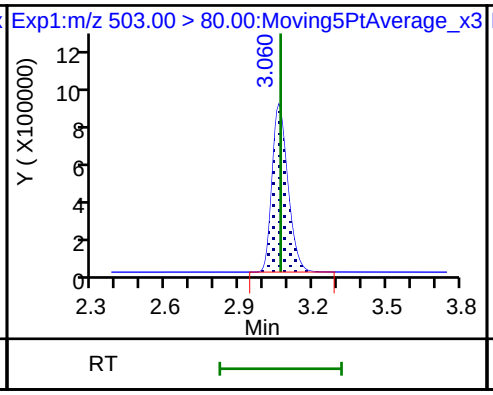
20 Perfluorononanoic acid



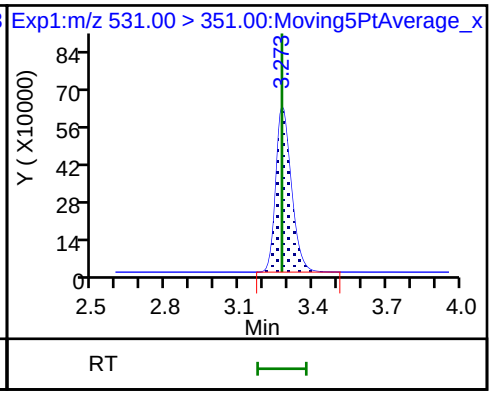
D 19 13C5 PFNA



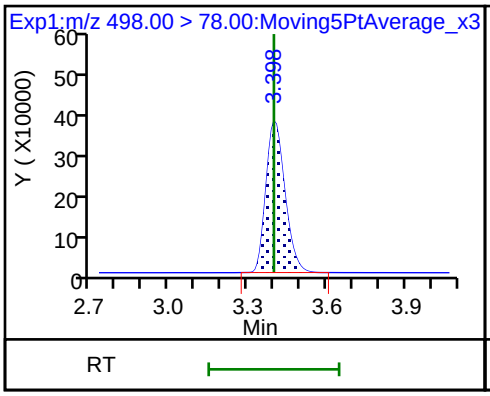
D 18 13C4 PFOS



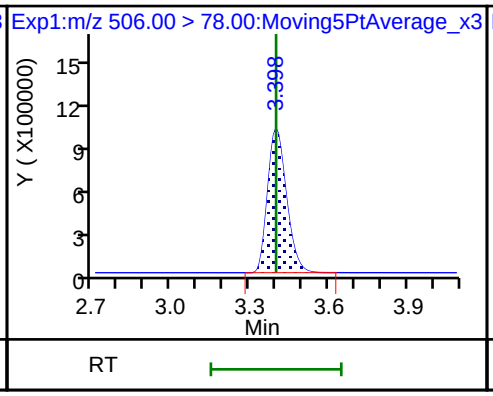
69 9-Chlorohexadecafluoro-3-oxanonane



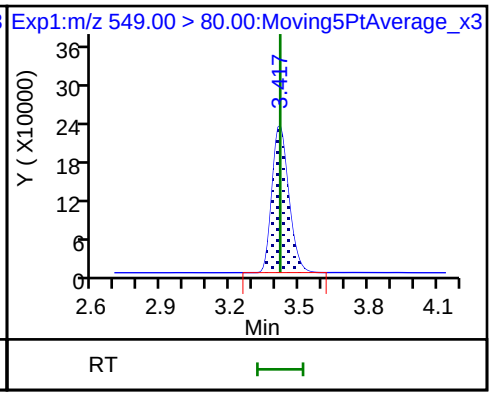
22 Perfluorooctane Sulfonamide



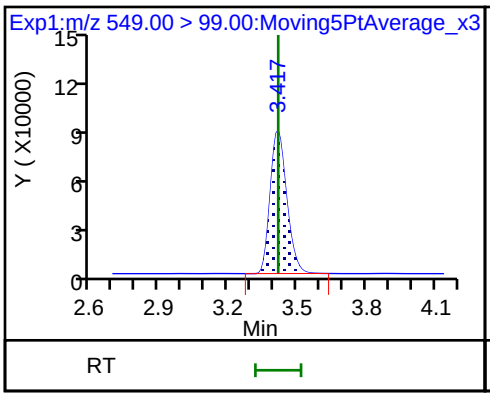
D 21 13C8 FOSA



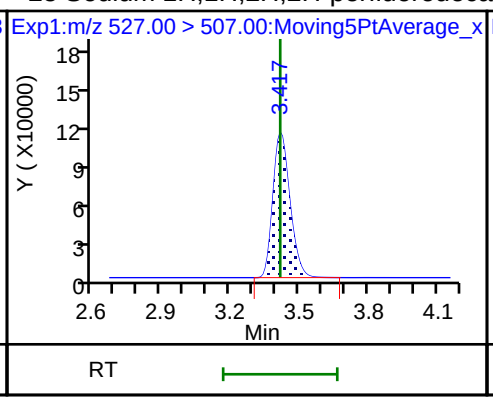
68 Perfluorononanesulfonic acid



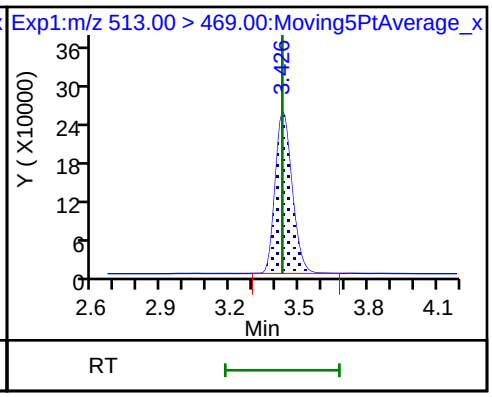
68 Perfluorononanesulfonic acid



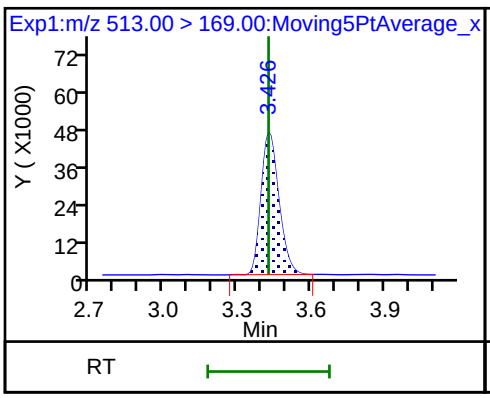
25 Sodium 1H,1H,2H,2H-perfluorodecane



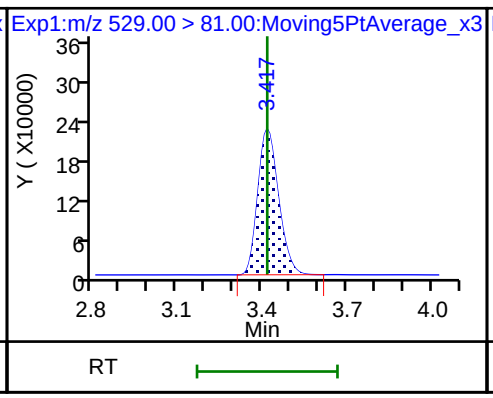
24 Perfluorodecanoic acid



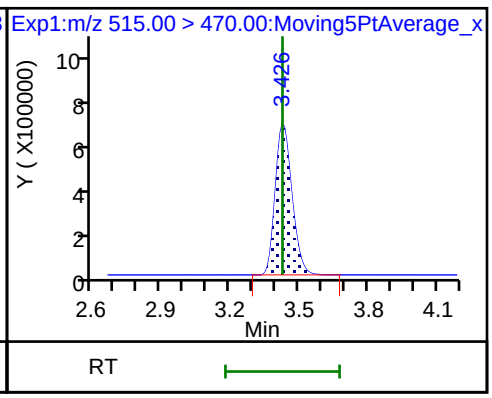
24 Perfluorodecanoic acid



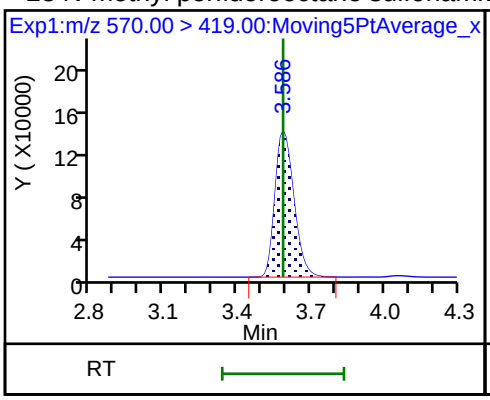
D 26 M2-8:2FTS



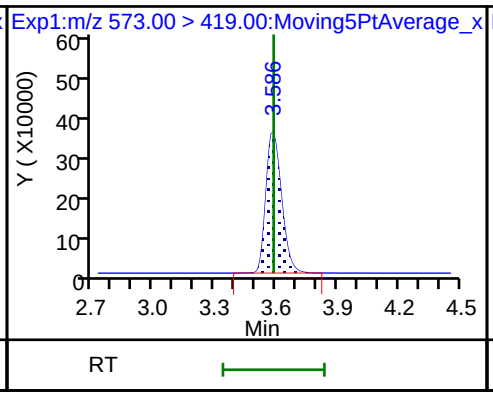
D 23 13C2 PFDA



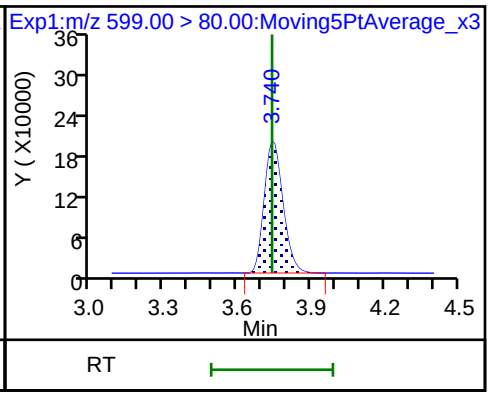
28 N-methyl perfluorooctane sulfonami



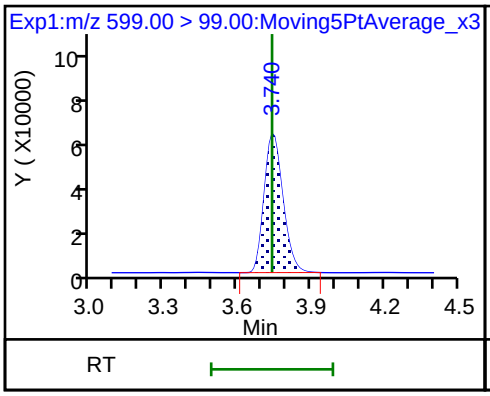
D 27 d3-NMeFOSAA



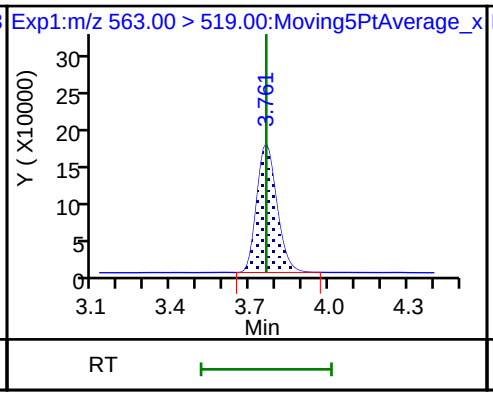
29 Perfluorodecane Sulfonic acid



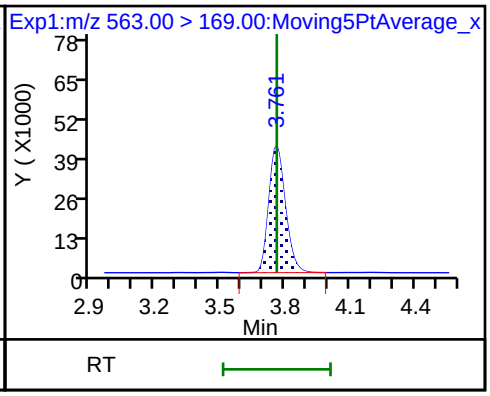
29 Perfluorodecane Sulfonic acid



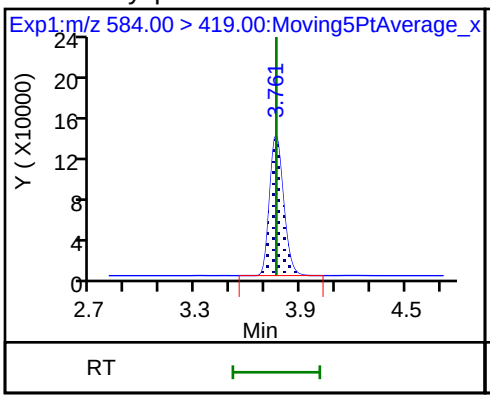
31 Perfluoroundecanoic acid



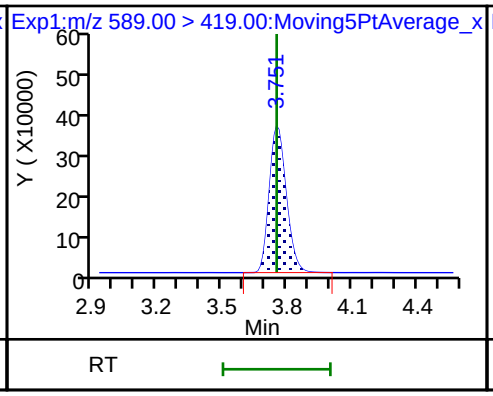
31 Perfluoroundecanoic acid



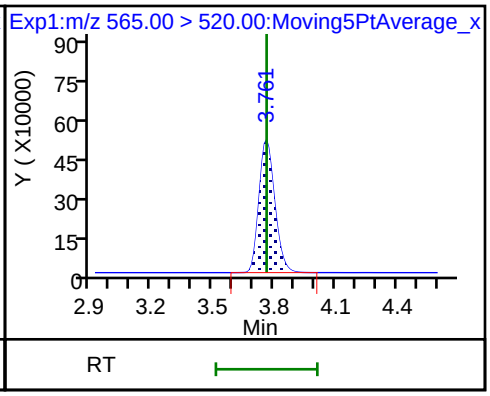
33 N-ethyl perfluorooctane sulfonamid



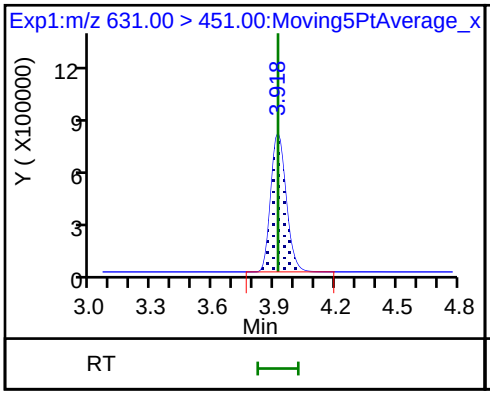
D 32 d5-NEtFOSAA



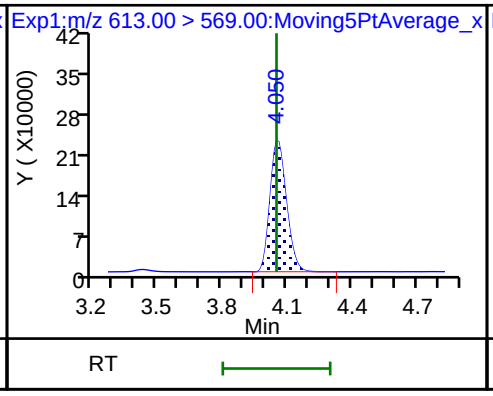
D 30 13C2 PFUnA



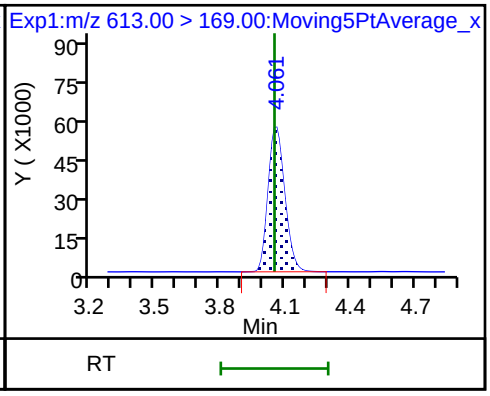
66 11-Chloroeicosafluoro-3-oxaundecan



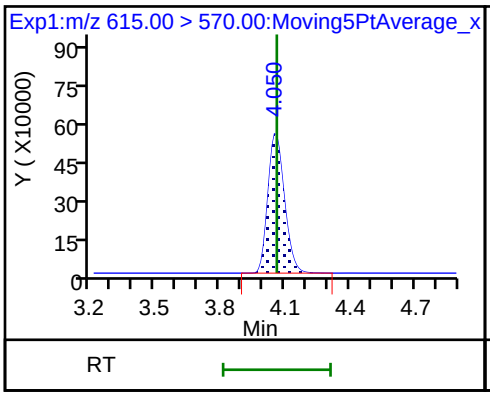
37 Perfluorododecanoic acid



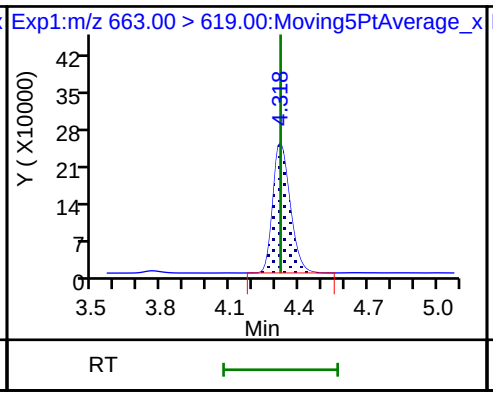
37 Perfluorododecanoic acid



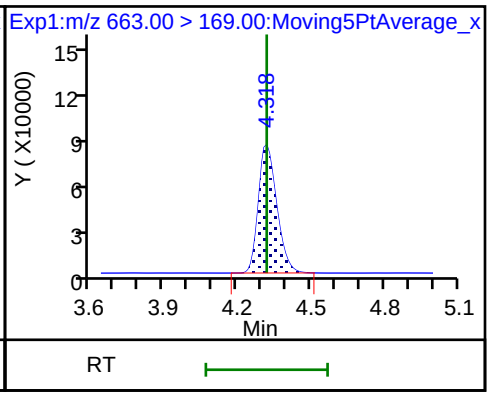
D 36 13C2 PFDoA



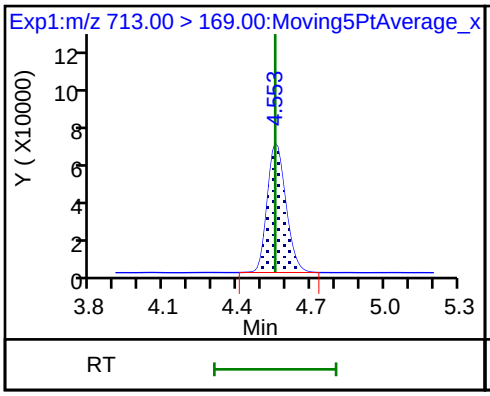
41 Perfluorotridecanoic acid



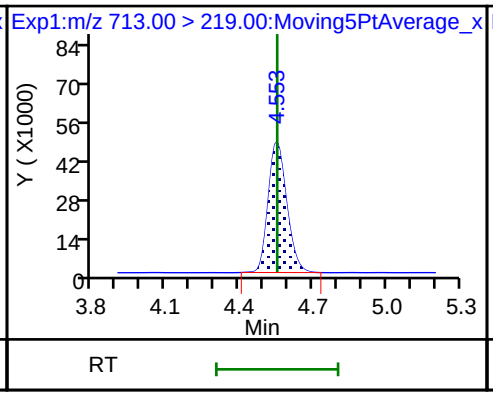
41 Perfluorotridecanoic acid



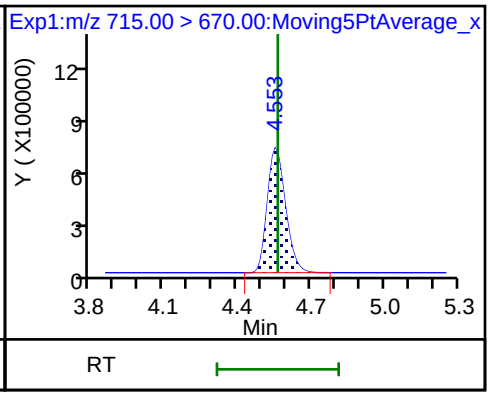
42 Perfluorotetradecanoic acid



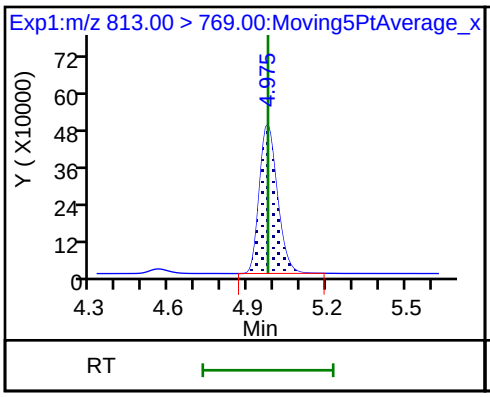
42 Perfluorotetradecanoic acid



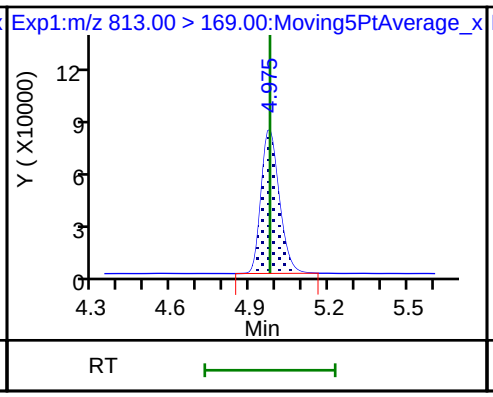
D 43 13C2-PFTeDA



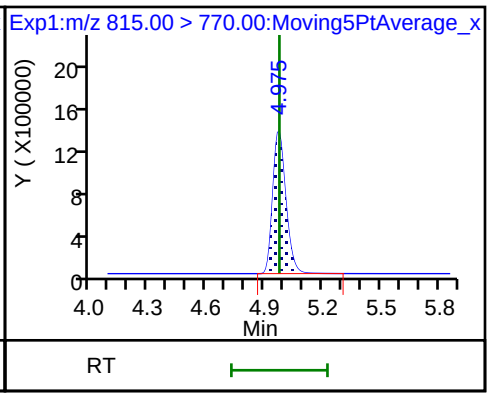
45 Perfluorohexadecanoic acid



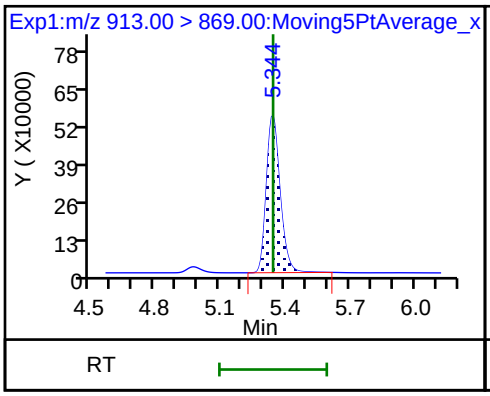
45 Perfluorohexadecanoic acid



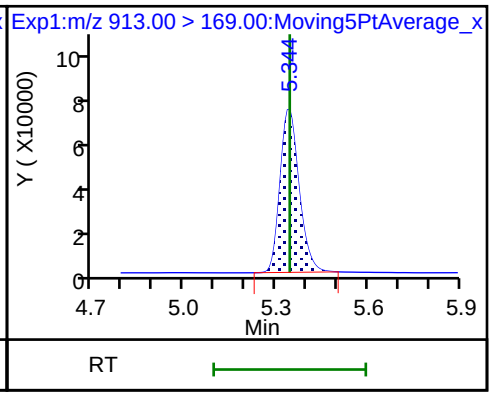
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219700/10 Calibration Date: 04/25/2018 00:15

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9524		2.56	2.50	2.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.192		2.50	2.50	0.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	80.76		2.28	2.21	3.2	50.0
4:2 FTS	AveID	16.03	16.10		2.35	2.34	0.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.005		2.47	2.50	-1.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	69.75			2.35	-2.5	50.0
HFPO-DA (GenX)	AveID	2.785	3.099			2.50	11.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.074		2.68	2.50	7.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.105		2.22	2.28	-2.3	40.0
Adona	AveID	3.464	3.751			2.50	8.3	50.0
6:2FTS	AveID	1.691	1.661		2.33	2.37	-1.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.145		2.48	2.50	-0.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.362		2.44	2.38	2.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.095		2.34	2.32	0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.036		2.48	2.50	-0.6	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.932			2.33	2.5	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.018		2.52	2.50	0.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7822			2.40	-2.2	50.0
8:2FTS	AveID	1.265	1.263		2.39	2.40	-0.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.019		2.47	2.50	-1.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.043		2.61	2.50	4.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6677		2.48	2.41	2.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9630		2.58	2.50	3.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8009		2.37	2.50	-5.2	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	3.018			2.36	3.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.055		2.53	2.50	1.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.233		2.54	2.50	1.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2501		2.49	2.50	-0.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9949		2.60	2.50	4.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219700/10 Calibration Date: 04/25/2018 00:15

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.035		2.58	2.50	3.1	50.0
13C4 PFBA	Ave	1.345	1.424		2.65	2.50	5.8	50.0
13C5 PFPeA	Ave	0.8672	0.8938		2.58	2.50	3.1	50.0
13C3-PFBS	Ave	0.0199	0.0207		2.42	2.33	4.2	50.0
M2-4:2FTS	Ave	0.1425	0.1501		2.46	2.34	5.3	50.0
13C2 PFHxA	Ave	0.9590	1.015		2.65	2.50	5.9	50.0
13C3 HFPO-DA	Ave	0.0593	0.0563		2.37	2.50	-5.2	50.0
13C4-PFHpA	Ave	0.9333	0.9627		2.58	2.50	3.1	50.0
18O2 PFHxS	Ave	1.152	1.124		2.31	2.37	-2.4	50.0
M2-6:2FTS	Ave	0.2000	0.2111		2.51	2.38	5.6	40.0
13C4 PFOA	Ave	0.9276	0.9151		2.47	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8066	0.8180		2.42	2.39	1.4	50.0
13C5 PFNA	Ave	0.7973	0.8149		2.56	2.50	2.2	50.0
13C8 FOSA	Ave	1.007	0.998		2.48	2.50	-1.0	50.0
M2-8:2FTS	Ave	0.2409	0.2426		2.41	2.40	0.7	40.0
13C2 PFDA	Ave	0.6701	0.6773		2.53	2.50	1.1	50.0
d3-NMeFOSAA	Ave	0.3798	0.4076		2.68	2.50	7.3	50.0
d5-NEtFOSAA	Ave	0.3749	0.3924		2.62	2.50	4.7	50.0
13C2 PFUnA	Ave	0.5781	0.5761		2.49	2.50	-0.3	50.0
13C2 PFDoA	Ave	0.6242	0.5926		2.37	2.50	-5.1	50.0
13C2-PFTeDA	Ave	0.7915	0.7598		2.40	2.50	-4.0	50.0
13C2-PFHxDA	Ave	1.288	1.295		2.51	2.50	0.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_051.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 25-Apr-2018 00:15:21 ALS Bottle#: 14 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: barnettj Date: 25-Apr-2018 14:24:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	5939805	2.56		103	3198	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	6236933	2.65		106	40756	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.694	0.0	1.000	4666405	2.50		100	5139	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.554	3914323	2.58		103	66855	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.730	0.0	1.000	6483104	2.28		103	23575	
298.90 > 99.00	1.730	1.730	0.0	1.000	2635112		2.46(1.25-3.74)		25573	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	84458	2.42		104	881	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	1365989	2.35		100	59515	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.961	-0.011	1.000	613821	2.46		105	4867	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	4469716	2.47		98.9	6357	
313.00 > 119.00	1.982	1.982	0.0	1.000	399149		11.20(5.03-15.10)		4488	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4447052	2.65		106	85758	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	5941309	2.29		97.5	35949	
349.00 > 99.00	2.004	2.004	0.0	1.000	2106527		2.82(1.36-4.07)		35384	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	763663	2.78		111	5417	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.095	-0.011	1.000	246406	2.37		94.8	8420	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.006	4526506	2.68		107	5373	
363.00 > 169.00	2.321	2.321	0.0	1.006	1783359		2.54(1.13-3.40)		8605	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.322	-0.014	1.000	4216049	2.58		103	74202	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	0.994	4953519	2.22		97.7	10910	
399.00 > 99.00	2.321	2.321	0.0	0.994	1622626		3.05(1.50-4.49)		11165	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	4658795	2.31		97.6	66656	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	13438670	2.71		108	130036	
377.00 > 85.00	2.360	2.360	0.0	1.000	7822639		1.72(0.84-2.53)		98653	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.652	0.0	1.000	1455692	2.33		98.2	23809	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.668	-0.016	1.000	878391	2.51		106	9241	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.675	0.0		4379549	2.50			62566	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.675	0.0	1.000	4586997	2.48		99.1	3655	
413.00 > 169.00	2.675	2.675	0.0	1.000	2442842		1.88(0.84-2.52)		7143	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.691	-0.016	1.000	4007713	2.47		98.6	78265	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.682	2.682	0.0	1.000	4645949	2.44		103	24561	
449.00 > 99.00	2.682	2.682	0.0	1.000	1244539		3.73(1.94-5.82)		22282	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.048	3.048	0.0	1.000	3641852	2.34		101	13224	
499.00 > 99.00	3.048	3.048	0.0	1.000	797669		4.57(2.31-6.93)		12912	
20 Perfluorononanoic acid										
463.00 > 419.00	3.055	3.055	0.0	1.000	3697263	2.48		99.4	14208	
463.00 > 169.00	3.048	3.055	-0.007	0.998	917842		4.03(1.90-5.69)		25408	
D 19 13C5 PFNA										
468.00 > 423.00	3.055	3.067	-0.012	1.000	3568850	2.56		102	61708	
D 18 13C4 PFOS										
503.00 > 80.00	3.048	3.067	-0.019	1.000	3424797	2.42		101	17130	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.261	3.261	0.0	1.000	6452126	2.39		103	76468	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.391	3.391	0.0	1.000	4448667	2.52		101	14377	
D 21 13C8 FOSA										
506.00 > 78.00	3.391	3.399	-0.008	1.000	4368724	2.48		99.0	32404	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.401	3.401	0.0	1.000	2690019	2.35		97.8	20666	
549.00 > 99.00	3.401	3.401	0.0	1.000	993296		2.71(1.33-3.97)		28567	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.410	0.0	1.000	1286222	2.39		99.9	50157	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.417	-0.007	1.000	1017993	2.41		101	11598	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.419	3.419	0.0	1.000	3022254	2.47		98.8	13652	
513.00 > 169.00	3.419	3.419	0.0	1.000	546776		5.53(2.36-7.09)		10886	
D 23 13C2 PFDA										
515.00 > 470.00	3.419	3.427	-0.008	1.000	2966136	2.53		101	65866	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.578	3.578	0.0	1.003	1860786	2.61		105	13698	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.568	3.586	-0.018	1.000	1784868	2.68		107	19131	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.732	3.732	0.0	1.000	2305864	2.48		103	24156	
599.00 > 99.00	3.732	3.732	0.0	1.000	769690		3.00(1.39-4.16)		20460	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.751	-0.008	1.000	1718526	2.62		105	22184	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.754	3.754	0.0	1.000	2020707	2.37		94.8	9628	
563.00 > 169.00	3.754	3.754	0.0	1.000	501466		4.03(2.12-6.36)		13171	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.754	0.0	1.003	1654964	2.58		103	23195	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.762	-0.008	1.000	2523203	2.49		99.7	42258	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.911	3.911	0.0	1.000	10183889	2.44		104	81867	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.054	4.054	0.0	1.003	2739195	2.53		101	3475	
613.00 > 169.00	4.044	4.054	-0.010	1.000	672424		4.07(2.13-6.40)		11474	
D 36 13C2 PFDoA										
615.00 > 570.00	4.044	4.061	-0.017	1.000	2595203	2.37		94.9	25554	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.314	4.314	0.0	1.000	3198869	2.54		101	3834	
663.00 > 169.00	4.314	4.314	0.0	1.000	975566		3.28(1.25-3.76)		9269	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.549	4.549	0.0	1.000	832064	2.49		99.6	7203	
713.00 > 219.00	4.549	4.549	0.0	1.000	606721		1.37(0.71-2.13)		8372	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.549	4.564	-0.015	1.000	3327579	2.40		96.0	22921	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.972	4.972	0.0	1.000	5643620	2.60		104	2455	
813.00 > 169.00	4.972	4.972	0.0	1.000	880171		6.41(2.86-8.58)		4956	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.972	4.976	-0.004	1.000	5672757	2.51		101	16794	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.333	5.333	0.0	1.000	5872806	2.58		103	1893	
913.00 > 169.00	5.333	5.333	0.0	1.000	719398		8.16(3.83-11.48)		4386	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 11:25:16 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_051.d

Injection Date: 25-Apr-2018 00:15:21 Instrument ID: A8_N

Lims ID: CCV L5

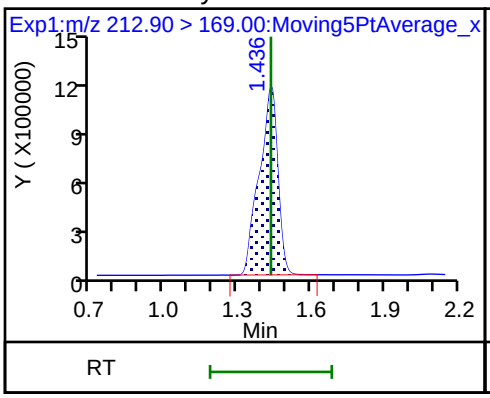
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 10

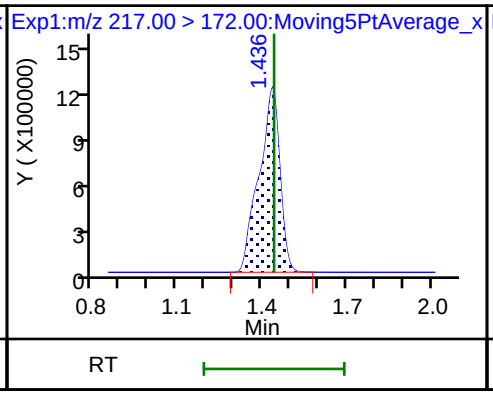
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

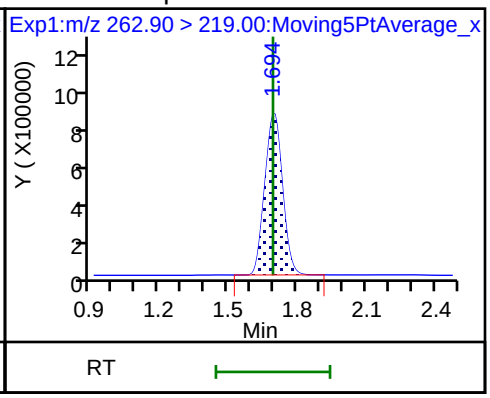
2 Perfluorobutyric acid



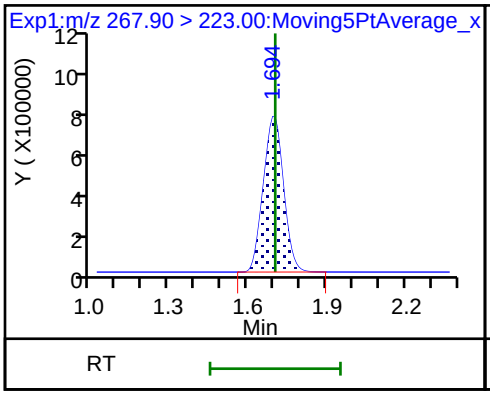
D 1 13C4 PFBA



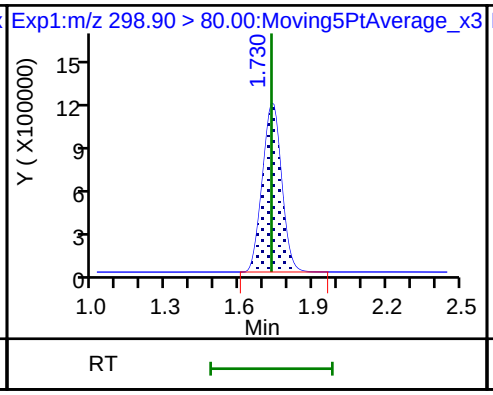
4 Perfluoropentanoic acid



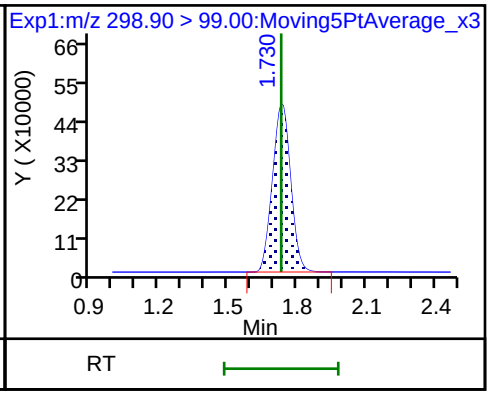
D 3 13C5-PFPeA



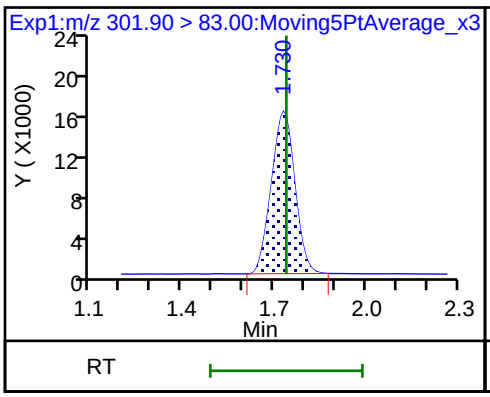
5 Perfluorobutanesulfonic acid



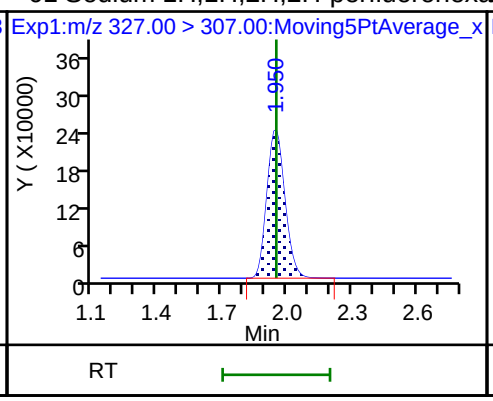
5 Perfluorobutanesulfonic acid



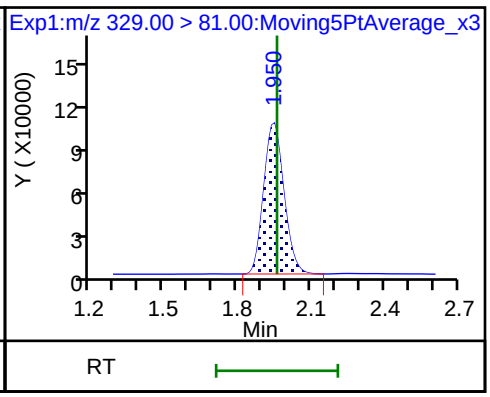
D 47 13C3-PFBS



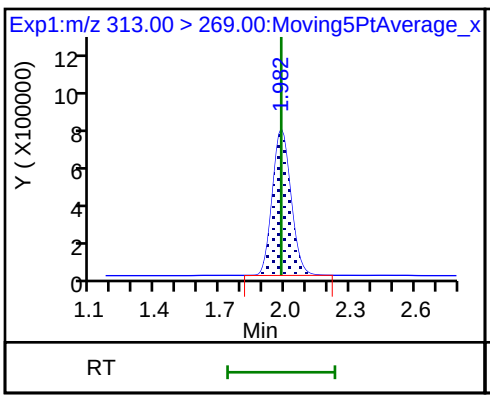
61 Sodium 1H,1H,2H,2H-perfluorohexane



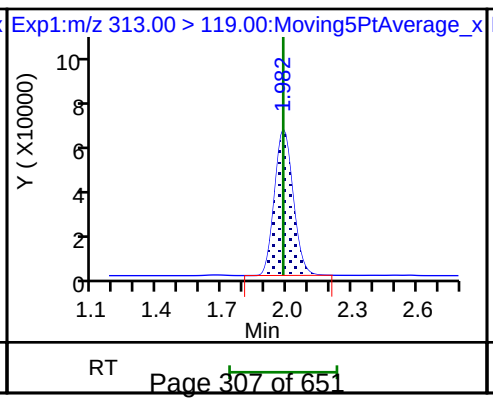
D 60 M2-4:2FTS



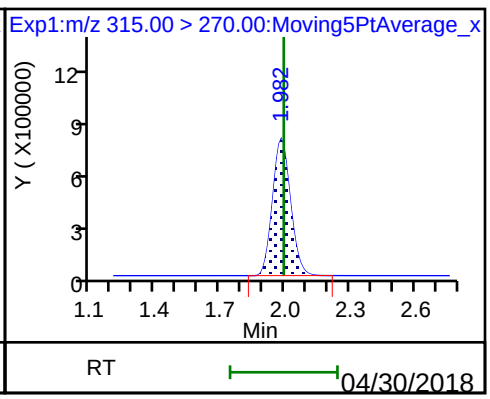
6 Perfluorohexanoic acid



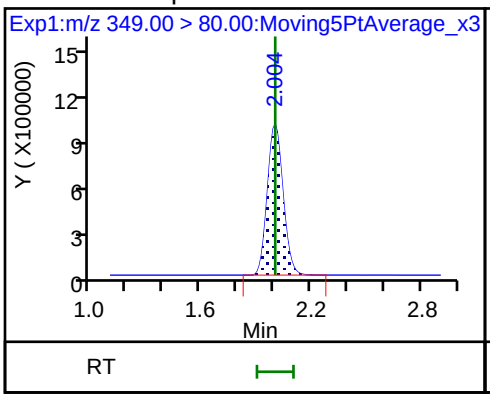
6 Perfluorohexanoic acid



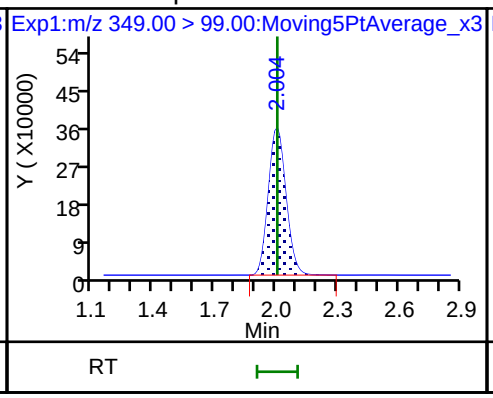
D 7 13C2 PFHxA



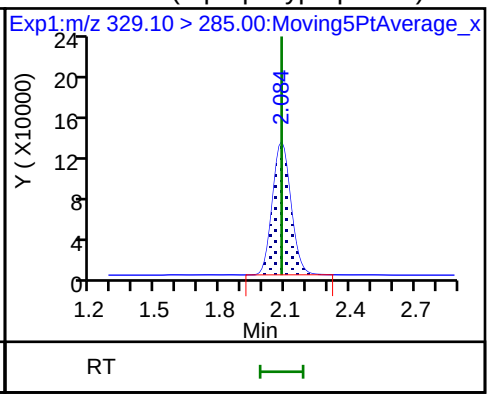
70 Perfluoropentanesulfonic acid



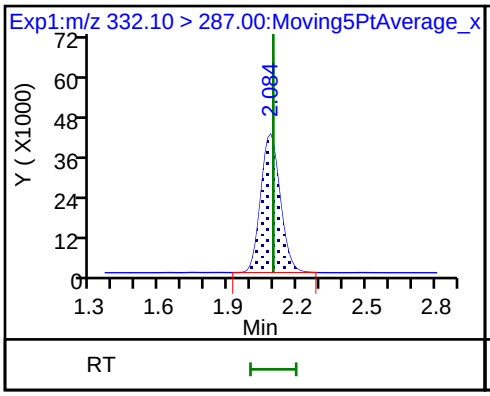
70 Perfluoropentanesulfonic acid



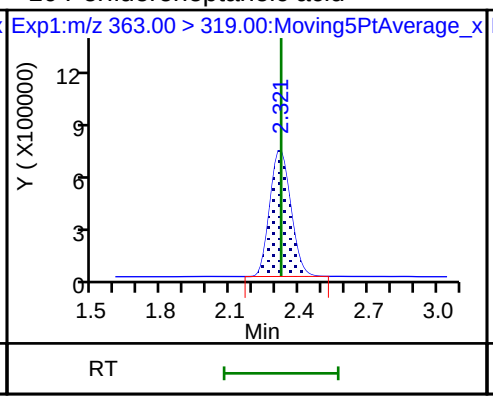
67 Perfluoro(2-propoxypropanoic) acid



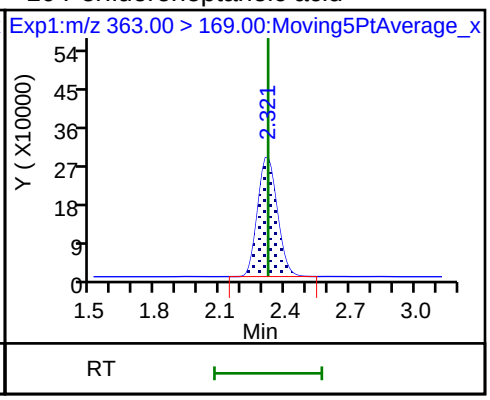
D 64 13C3 HFPO-DA



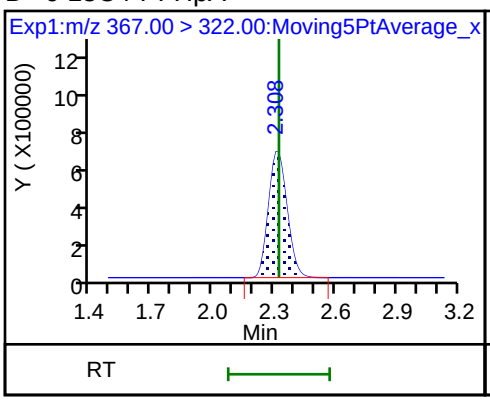
10 Perfluoroheptanoic acid



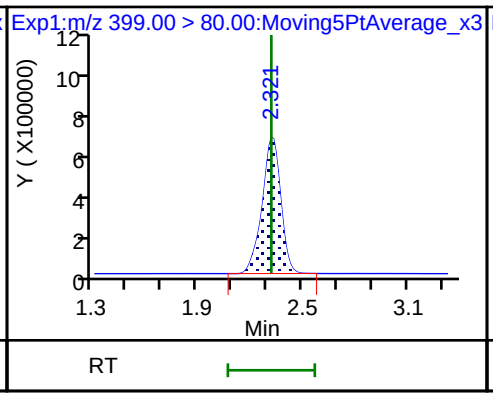
10 Perfluoroheptanoic acid



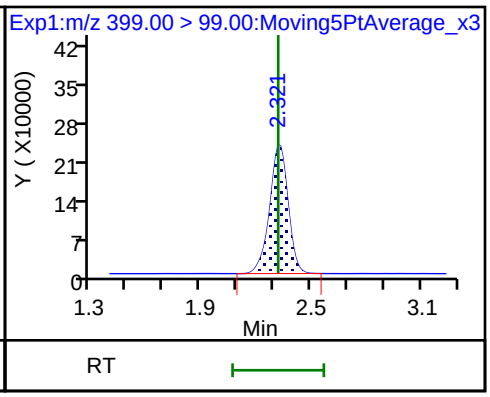
D 9 13C4-PFHpA



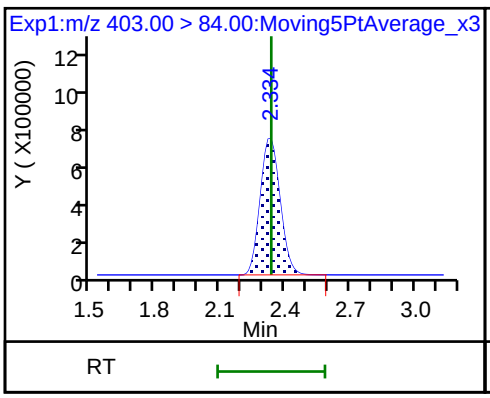
8 Perfluorohexanesulfonic acid



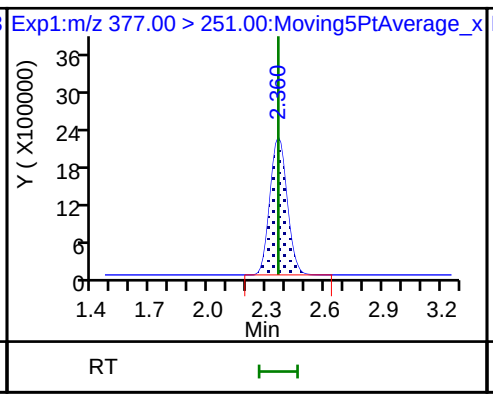
8 Perfluorohexanesulfonic acid



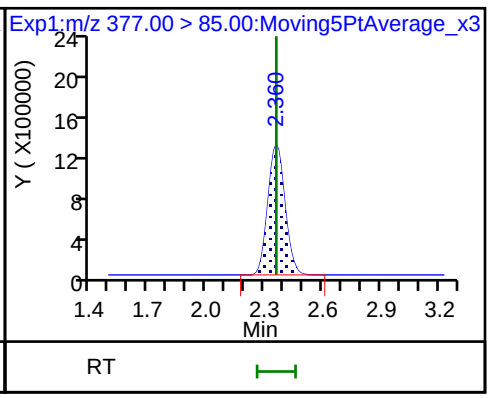
D 11 18O2 PFHxS



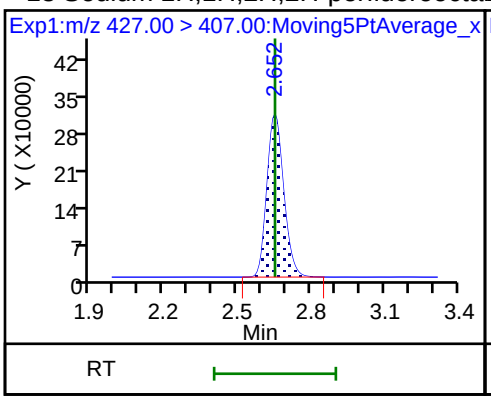
65 Adona



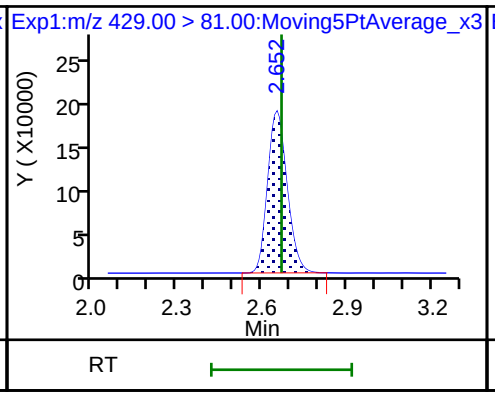
65 Adona



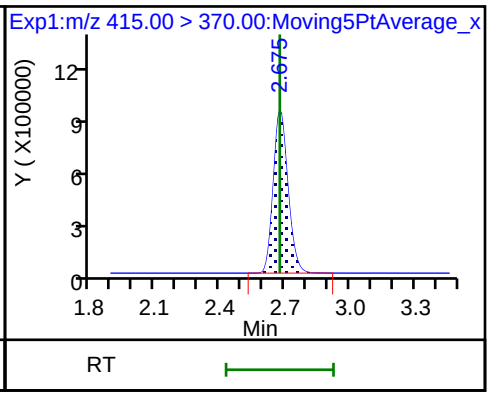
13 Sodium 1H,1H,2H,2H-perfluorooctane



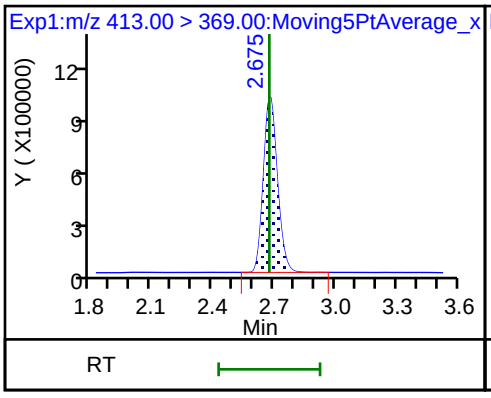
D 12 M2-6:2FTS



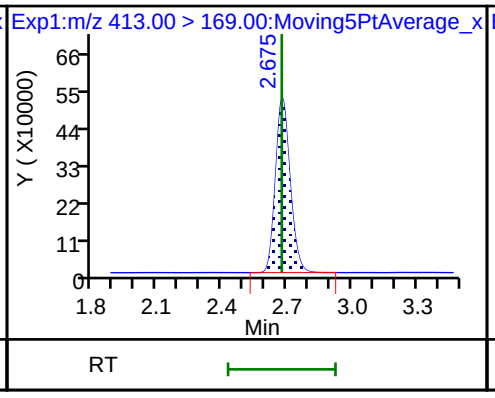
* 62 13C2-PFOA



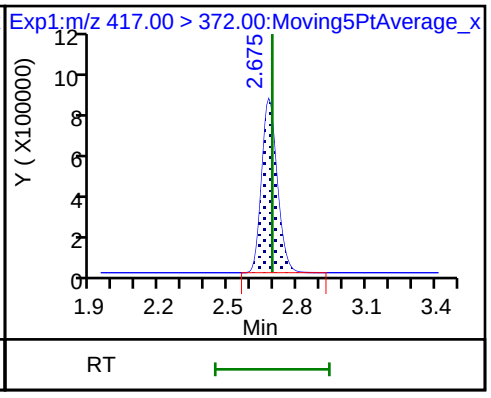
15 Perfluorooctanoic acid



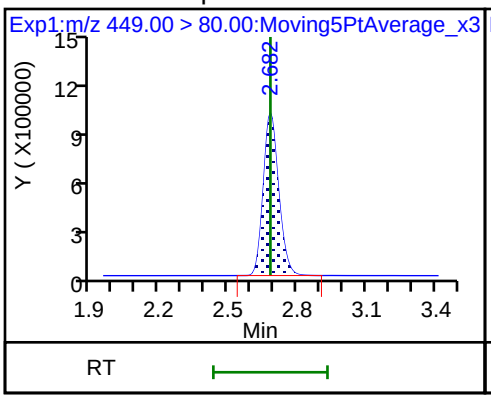
15 Perfluorooctanoic acid



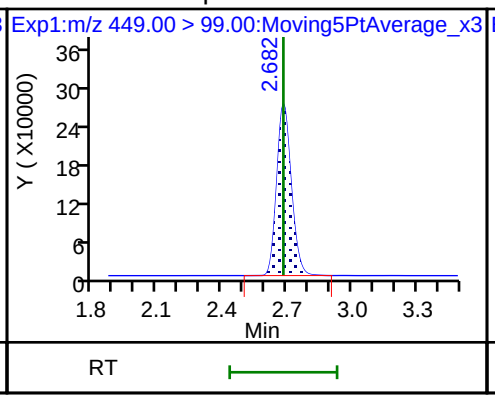
D 14 13C4 PFOA



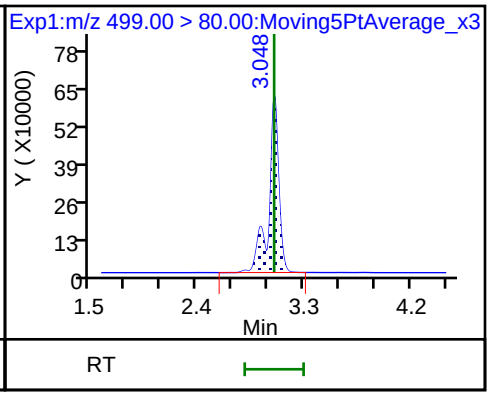
16 Perfluoroheptanesulfonic acid



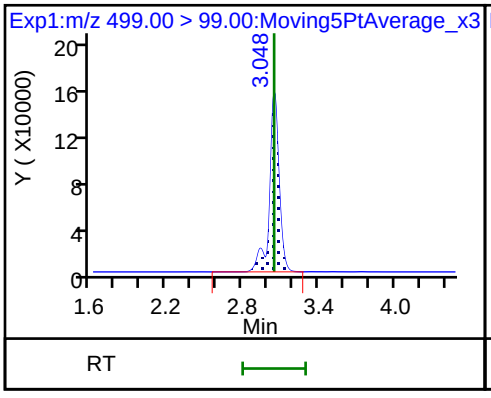
16 Perfluoroheptanesulfonic acid



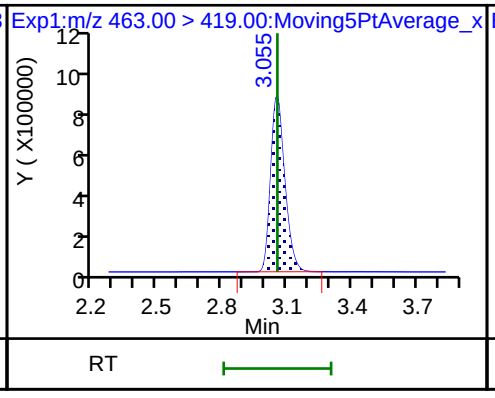
17 Perfluorooctane sulfonic acid



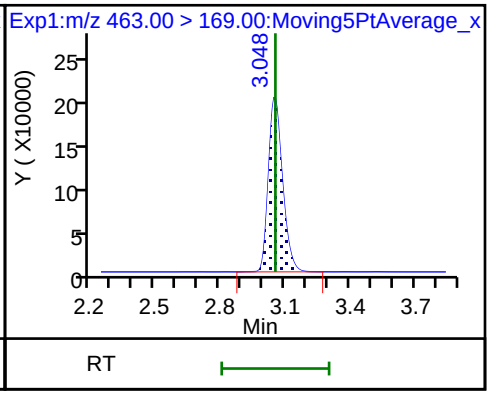
17 Perfluorooctane sulfonic acid



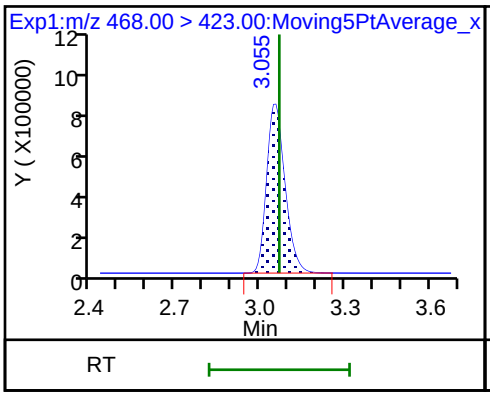
20 Perfluorononanoic acid



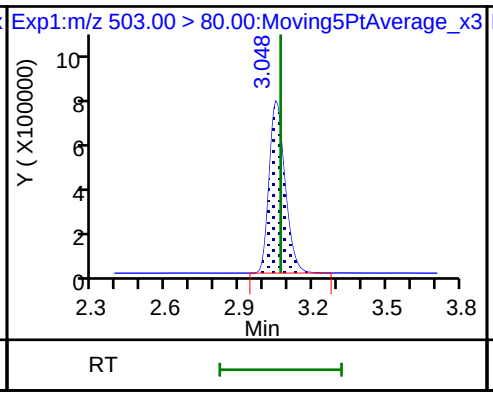
20 Perfluorononanoic acid



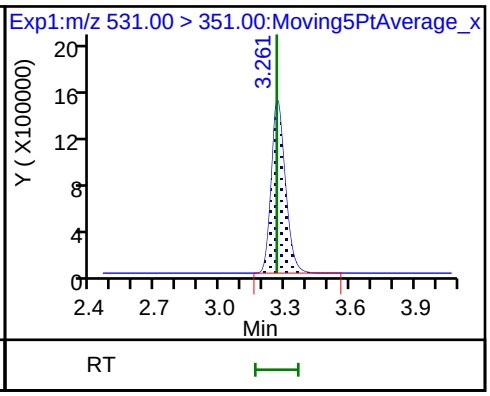
D 19 13C5 PFNA



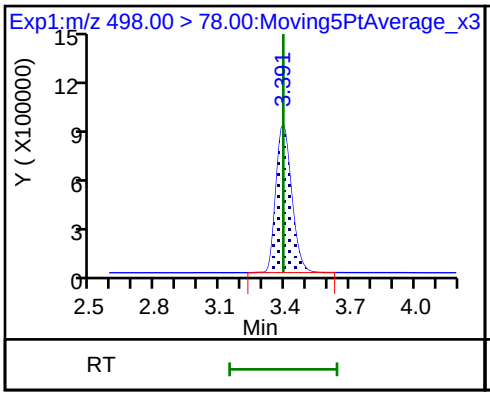
D 18 13C4 PFOS



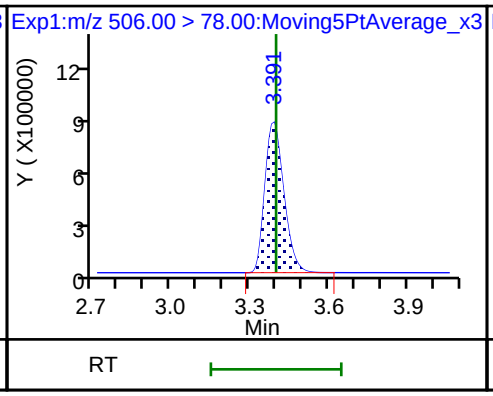
69 9-Chlorohexadecafluoro-3-oxanonane



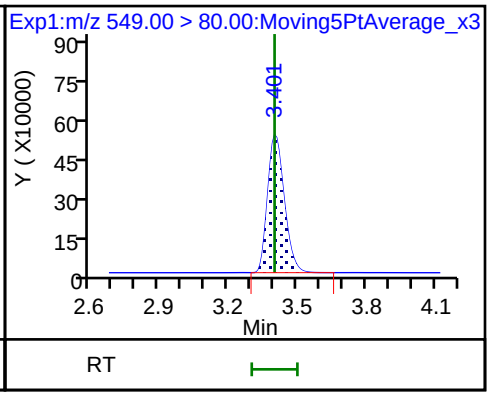
22 Perfluorooctane Sulfonamide



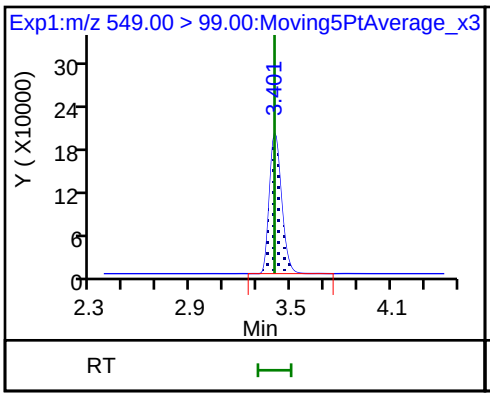
D 21 13C8 FOSA



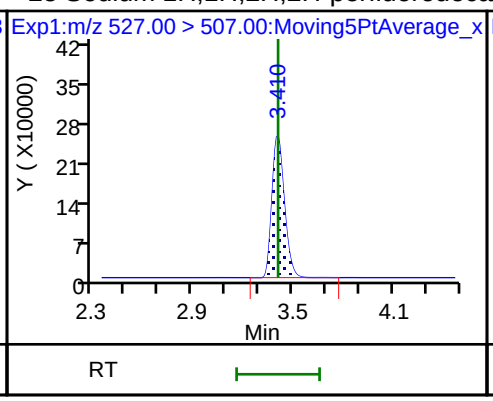
68 Perfluorononanesulfonic acid



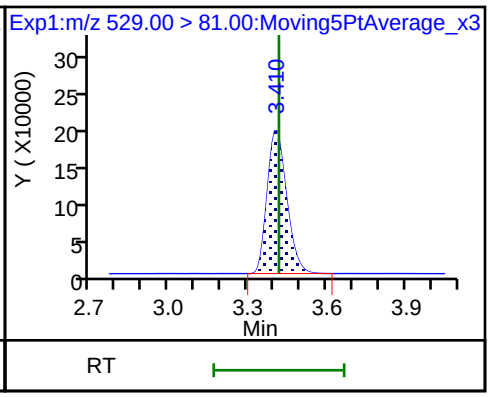
68 Perfluorononanesulfonic acid



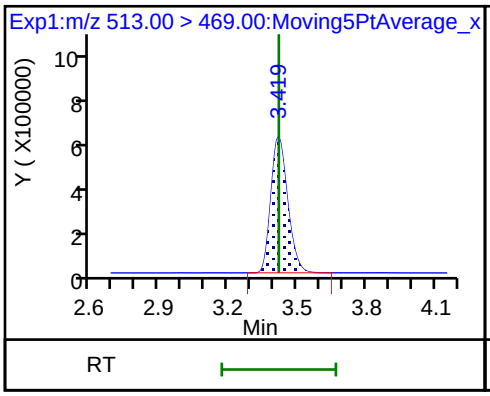
25 Sodium 1H,1H,2H,2H-perfluorodecane



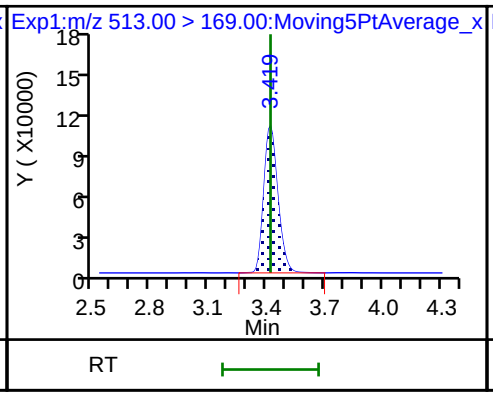
D 26 M2-8:2FTS



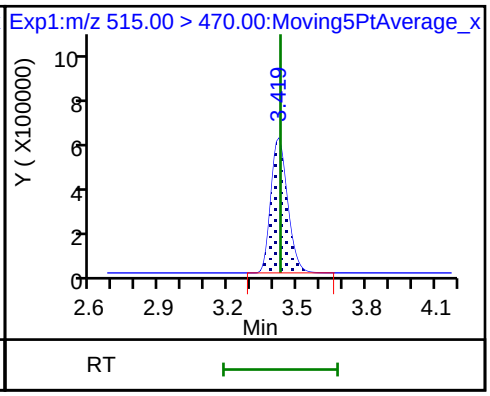
24 Perfluorodecanoic acid



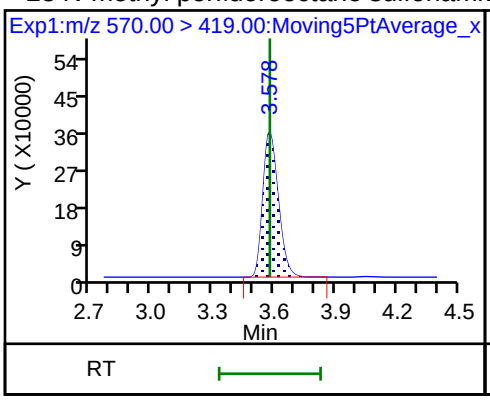
24 Perfluorodecanoic acid



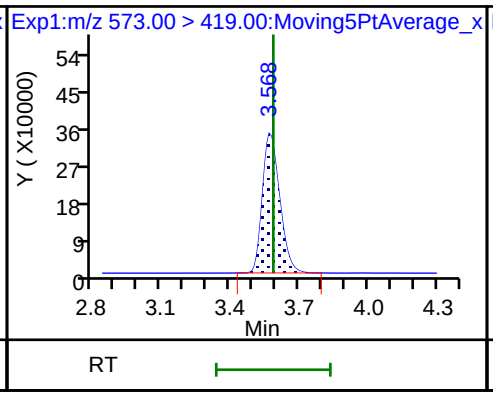
D 23 13C2 PFDA



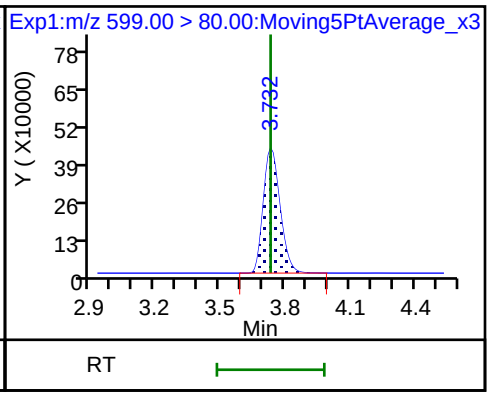
28 N-methyl perfluorooctane sulfonami



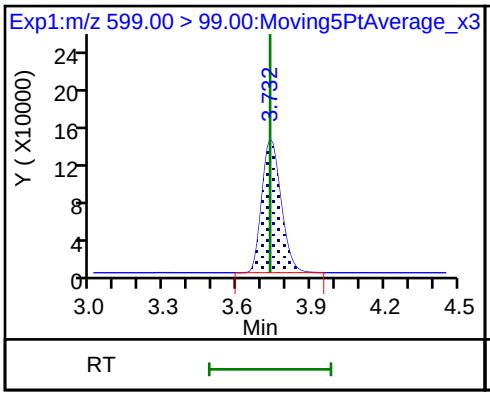
D 27 d3-NMeFOSAA



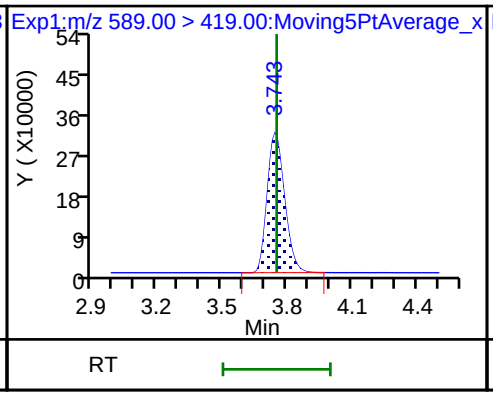
29 Perfluorodecane Sulfonic acid



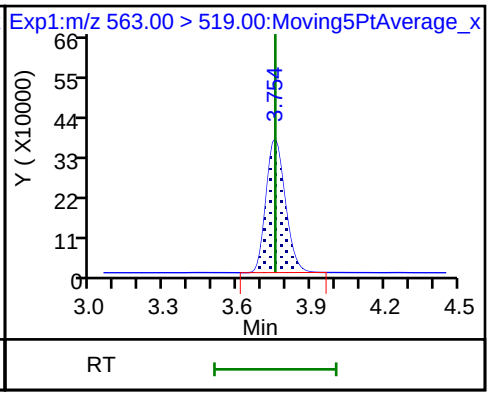
29 Perfluorodecane Sulfonic acid



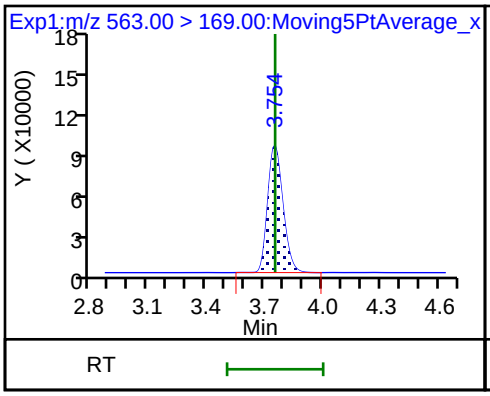
D 32 d5-NEtFOSAA



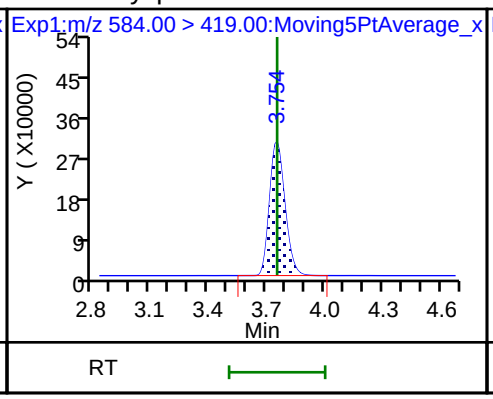
31 Perfluoroundecanoic acid



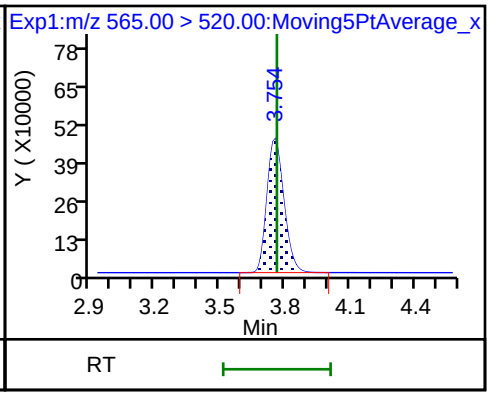
31 Perfluoroundecanoic acid



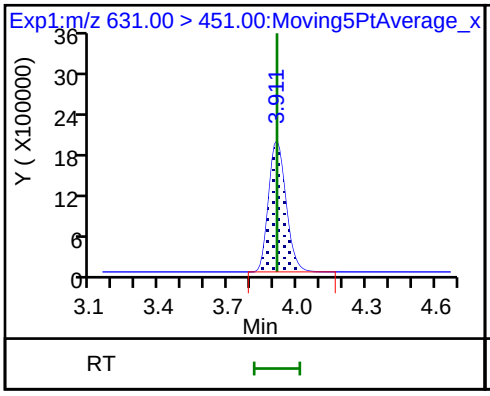
33 N-ethyl perfluorooctane sulfonamid



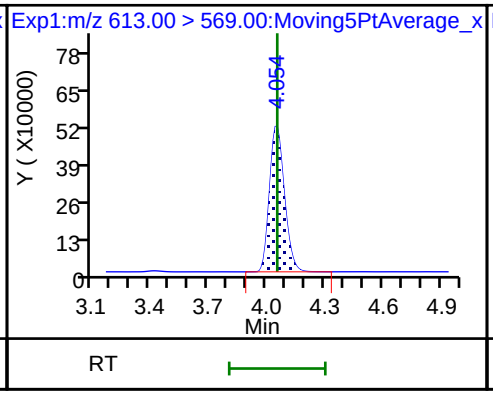
D 30 13C2 PFUnA



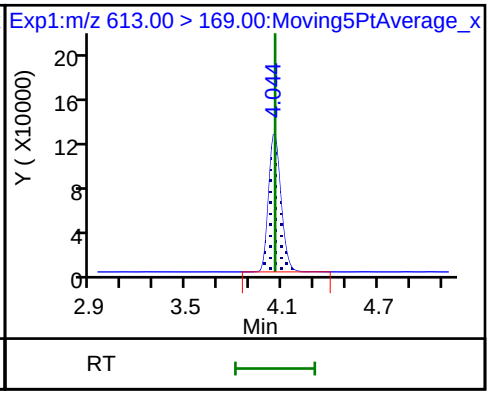
66 11-Chloroeicosafluoro-3-oxaundecan



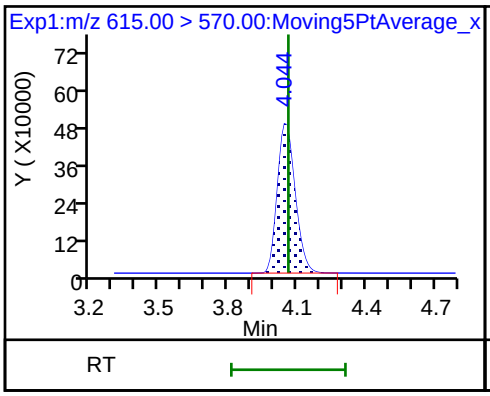
37 Perfluorododecanoic acid



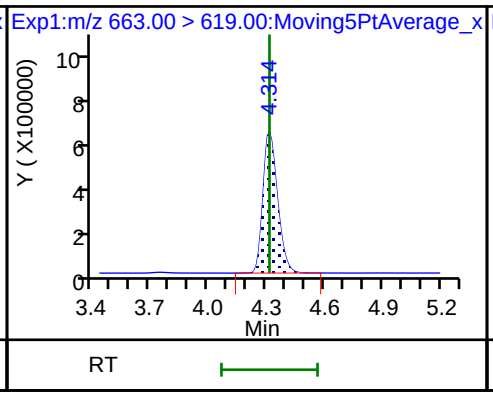
37 Perfluorododecanoic acid



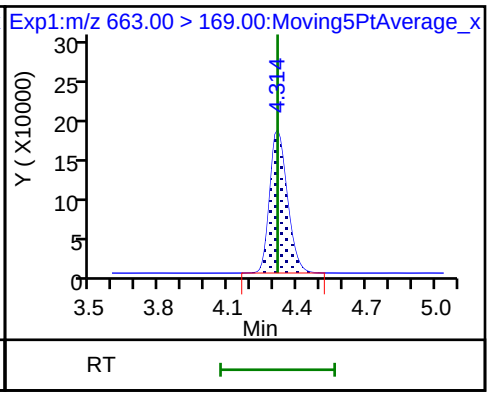
D 36 13C2 PFDoA



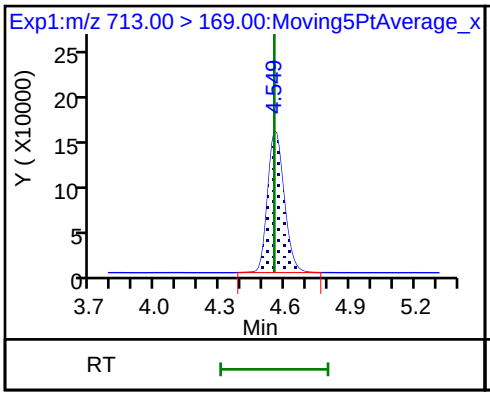
41 Perfluorotridecanoic acid



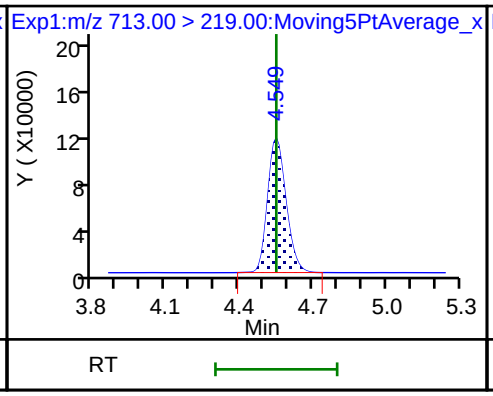
41 Perfluorotridecanoic acid



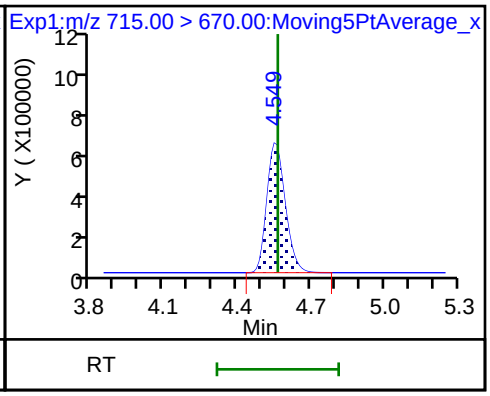
42 Perfluorotetradecanoic acid



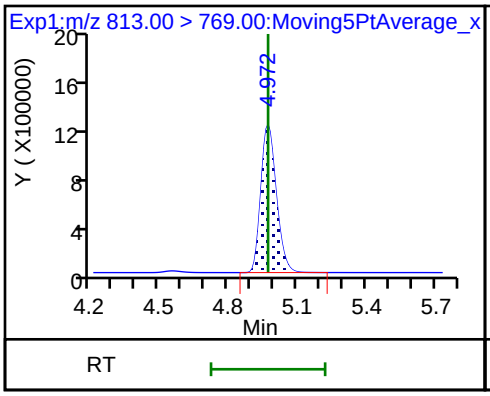
42 Perfluorotetradecanoic acid



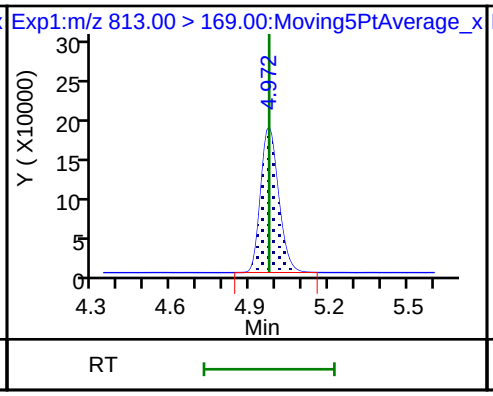
D 43 13C2-PFTeDA



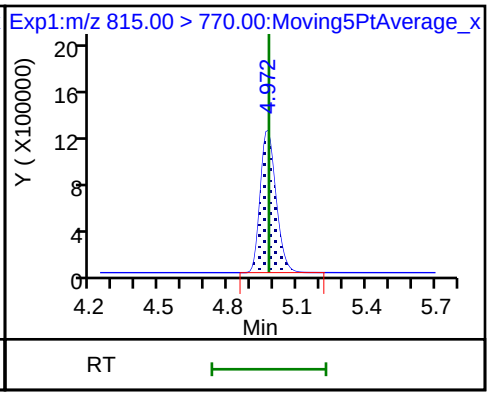
45 Perfluorohexadecanoic acid



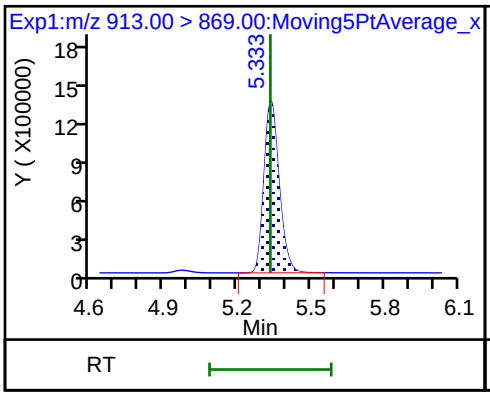
45 Perfluorohexadecanoic acid



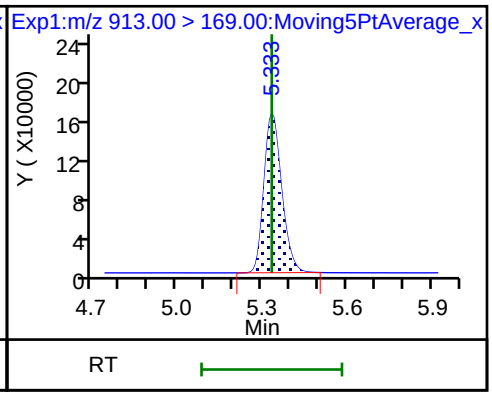
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219700/17 Calibration Date: 04/25/2018 01:10

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_058.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9344		1.01	1.00	0.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.224		1.03	1.00	2.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	78.68		0.888	0.884	0.5	50.0
4:2 FTS	AveID	16.03	16.74		0.975	0.934	4.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.041		1.02	1.00	2.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	71.25			0.938	-0.4	50.0
HFPO-DA (GenX)	AveID	2.785	2.843			1.00	2.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.049		1.05	1.00	4.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.059		0.851	0.910	-6.5	40.0
Adona	AveID	3.464	3.542			1.00	2.3	50.0
6:2FTS	AveID	1.691	1.605		0.900	0.948	-5.1	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.157		1.00	1.00	0.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.284		0.921	0.952	-3.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.010		0.969	1.00	-3.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.085		0.926	0.928	-0.2	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.856			0.932	-1.6	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9729		0.962	1.00	-3.8	40.0
8:2FTS	AveID	1.265	1.290		0.977	0.958	2.0	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7216			0.960	-9.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.008		0.977	1.00	-2.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9768		0.979	1.00	-2.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6257		0.929	0.964	-3.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	1.032		1.10	1.00	10.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7818		0.925	1.00	-7.5	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.905			0.942	-0.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.018		0.976	1.00	-2.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.125		0.926	1.00	-7.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2535		1.01	1.00	0.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9581		0.990	1.00	-1.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219700/17 Calibration Date: 04/25/2018 01:10

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.24LLC_058.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.015		1.01	1.00	1.1	50.0
13C4 PFBA	Ave	1.345	1.359		2.53	2.50	1.0	50.0
13C5 PFPeA	Ave	0.8672	0.8771		2.53	2.50	1.1	50.0
13C3-PFBS	Ave	0.0199	0.0190		2.22	2.33	-4.3	50.0
M2-4:2FTS	Ave	0.1425	0.1460		2.39	2.34	2.4	50.0
13C2 PFHxA	Ave	0.9590	0.9648		2.52	2.50	0.6	50.0
13C3 HFPO-DA	Ave	0.0593	0.0555		2.34	2.50	-6.5	50.0
13C4-PFHpA	Ave	0.9333	0.9273		2.48	2.50	-0.6	50.0
18O2 PFHxS	Ave	1.152	1.111		2.28	2.37	-3.5	50.0
M2-6:2FTS	Ave	0.2000	0.2085		2.48	2.38	4.2	40.0
13C4 PFOA	Ave	0.9276	0.9107		2.45	2.50	-1.8	50.0
13C4 PFOS	Ave	0.8066	0.7897		2.34	2.39	-2.1	50.0
13C5 PFNA	Ave	0.7973	0.7958		2.50	2.50	-0.2	50.0
13C8 FOSA	Ave	1.007	0.9650		2.40	2.50	-4.2	50.0
M2-8:2FTS	Ave	0.2409	0.2352		2.34	2.40	-2.3	40.0
13C2 PFDA	Ave	0.6701	0.6552		2.44	2.50	-2.2	50.0
d3-NMeFOSAA	Ave	0.3798	0.3815		2.51	2.50	0.4	50.0
d5-NEtFOSAA	Ave	0.3749	0.3799		2.53	2.50	1.3	50.0
13C2 PFUnA	Ave	0.5781	0.5854		2.53	2.50	1.3	50.0
13C2 PFDoA	Ave	0.6242	0.6033		2.42	2.50	-3.4	50.0
13C2-PFTeDA	Ave	0.7915	0.6988		2.21	2.50	-11.7	50.0
13C2-PFHxDA	Ave	1.288	1.163		2.26	2.50	-9.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_058.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 25-Apr-2018 01:10:05 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:26 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:24:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.435	0.0	1.000	2523773	1.01		101	811	
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.442	-0.007	1.000	6752522	2.53		101	45812	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.702	0.0	1.005	2132880	1.03		103	1497	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.703	-0.010	0.555	4356652	2.53		101	75961	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.729	0.0	1.000	2630569	0.8885		101	9560	
298.90 > 99.00	1.729	1.729	0.0	1.000	1104625		2.38(1.25-3.74)		12986	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.739	-0.010	1.000	87933	2.22		95.7	929	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.949	0.0	1.000	591254	0.9751		104	34961	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.961	-0.012	1.000	677216	2.39		102	6052	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.981	0.0	1.000	1995911	1.02		102	1871	
313.00 > 119.00	1.981	1.981	0.0	1.000	181075		11.02(5.03-15.10)		1433	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.993	-0.012	1.000	4792241	2.52		101	103697	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.003	0.0	1.000	2527819	0.9347		99.6	16143	
349.00 > 99.00	2.003	2.003	0.0	1.000	940741		2.69(1.36-4.07)		20354	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.082	2.082	0.0	1.000	313402	1.02		102	2577	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.095	-0.013	1.000	275601	2.34		93.5	7955	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.319	0.0	1.000	1932162	1.05		105	1684	
363.00 > 169.00	2.319	2.319	0.0	1.000	764065		2.53(1.13-3.40)		2261	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.319	0.0	0.994	2127355	0.8513		93.5	5003	
399.00 > 99.00	2.332	2.319	0.013	1.000	699082		3.04(1.50-4.49)		6306	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.322	-0.003	1.000	4605728	2.48		99.4	73310	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.335	-0.003	1.000	5222177	2.28		96.5	69517	
65 Adona										
377.00 > 251.00	2.358	2.358	0.0	1.000	5557277	1.02		102	69736	
377.00 > 85.00	2.358	2.358	0.0	1.000	3241984		1.71(0.84-2.53)		44177	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.652	0.0	1.000	630174	0.9000		94.9	9732	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.668	-0.016	1.000	983673	2.48		104	12352	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.675	0.0		4966943	2.50			59670	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.675	0.0	1.000	2093181	1.00		100	1529	
413.00 > 169.00	2.675	2.675	0.0	1.000	1060030		1.97(0.84-2.52)		3123	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.682	2.682	0.0	1.000	1918268	0.9209		96.7	13287	
449.00 > 99.00	2.682	2.682	0.0	1.000	535048		3.59(1.94-5.82)		14509	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.691	-0.016	1.000	4523252	2.45		98.2	65468	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.051	3.051	0.0	1.000	1579933	0.9257		99.8	5689	M
499.00 > 99.00	3.051	3.051	0.0	1.000	349159		4.52(2.31-6.93)		4993	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.051	0.0	1.000	1597140	0.9687		96.9	4152	
463.00 > 169.00	3.051	3.051	0.0	1.000	382797		4.17(1.90-5.69)		6108	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.067	-0.016	1.000	3952828	2.50		99.8	54784	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.067	-0.016	1.000	3749682	2.34		97.9	21741	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.265	3.265	0.0	1.000	2713590	0.9175		98.4	41436	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.388	0.0	1.000	1865300	0.9619		96.2	16354	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.399	-0.011	1.000	4792983	2.40		95.8	45725	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.407	3.407	0.0	1.000	1086871	0.8666		90.3	10380	
549.00 > 99.00	3.407	3.407	0.0	1.000	417420		2.60(1.33-3.97)		10406	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.407	0.0	1.000	577608	0.9768		102	28697	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.417	-0.010	1.000	1119190	2.34		97.7	9307	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.416	0.0	1.000	1312043	0.9770		97.7	5283	
513.00 > 169.00	3.416	3.416	0.0	1.000	227783		5.76(2.36-7.09)		3799	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.427	-0.011	1.000	3254438	2.44		97.8	81366	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.574	3.574	0.0	1.000	740402	0.9795		97.9	5117	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.586	-0.012	1.000	1894883	2.51		100	25535	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.729	3.729	0.0	1.000	946274	0.9290		96.4	9341	
599.00 > 99.00	3.729	3.729	0.0	1.000	320362		2.95(1.39-4.16)		8445	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.751	-0.011	1.000	1887074	2.53		101	26609	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.750	0.0	1.000	909231	0.9251		92.5	4140	
563.00 > 169.00	3.750	3.750	0.0	1.000	254856		3.57(2.12-6.36)		4335	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.750	3.750	0.0	1.003	779251	1.10		110	18150	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.762	-0.012	1.000	2907441	2.53		101	60225	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.907	3.907	0.0	1.000	4293141	0.9395		99.7	38026	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.050	0.0	1.000	1219766	0.9758		97.6	1566	
613.00 > 169.00	4.050	4.050	0.0	1.000	300444		4.06(2.13-6.40)		3172	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.061	-0.011	1.000	2996540	2.42		96.6	25768	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	1348754	0.9259		92.6	1547	
663.00 > 169.00	4.307	4.307	0.0	1.000	432747		3.12(1.25-3.76)		3037	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.552	0.0	1.000	351851	1.01		101	3105	
713.00 > 219.00	4.542	4.552	-0.010	0.998	246065		1.43(0.71-2.13)		2969	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.564	-0.012	1.000	3470681	2.21		88.3	19704	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.966	0.0	1.000	2213676	0.9895		99.0	851	
813.00 > 169.00	4.966	4.966	0.0	1.000	361460		6.12(2.86-8.58)		1828	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.976	-0.010	1.000	5776303	2.26		90.3	6510	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.336	5.336	0.0	1.000	2345091	1.01		101	729	
913.00 > 169.00	5.336	5.336	0.0	1.000	294212		7.97(3.83-11.48)		1521	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 11:25:27 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_058.d

Injection Date: 25-Apr-2018 01:10:05 Instrument ID: A8_N

Lims ID: CCV L4

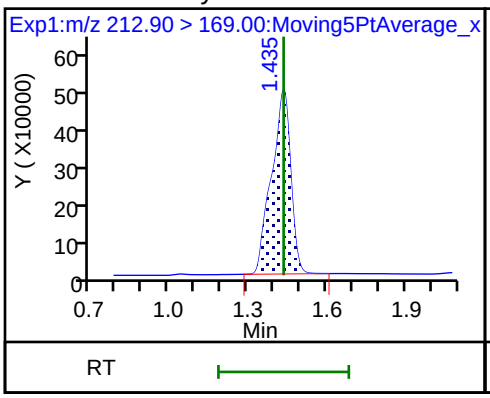
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 17

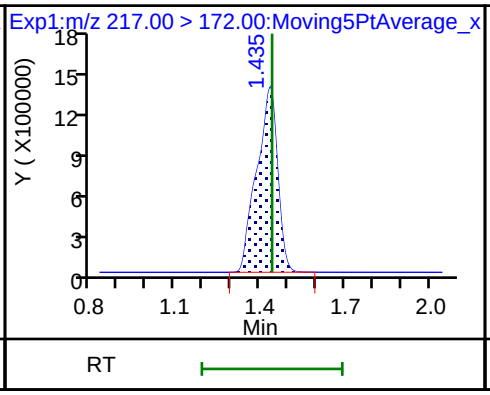
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

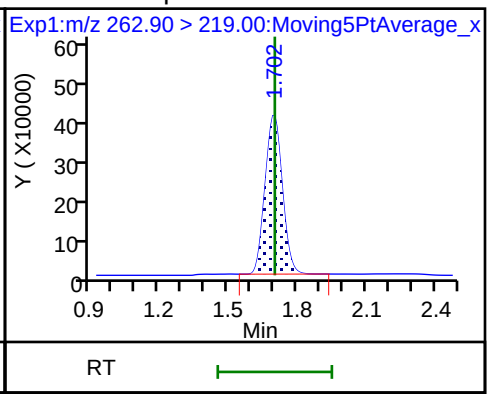
2 Perfluorobutyric acid



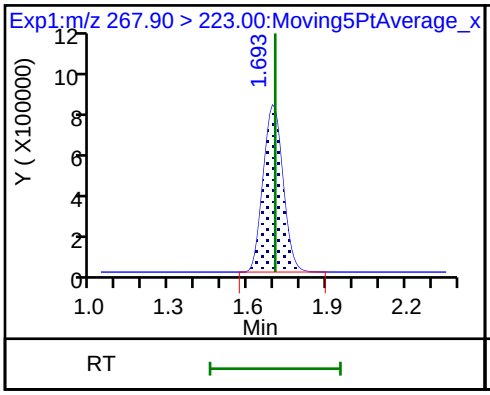
D 1 13C4 PFBA



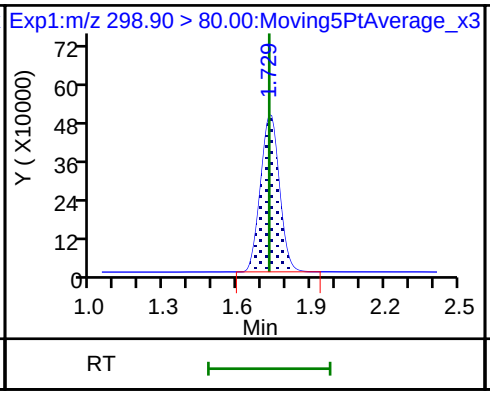
4 Perfluoropentanoic acid



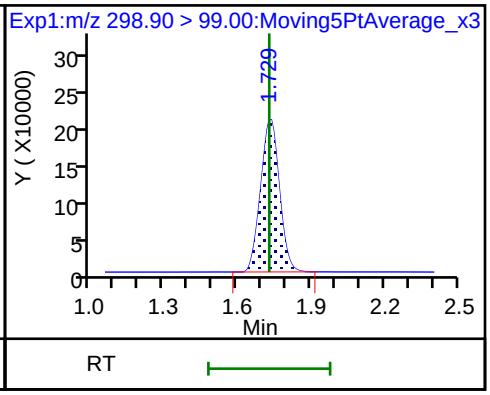
D 3 13C5-PFPeA



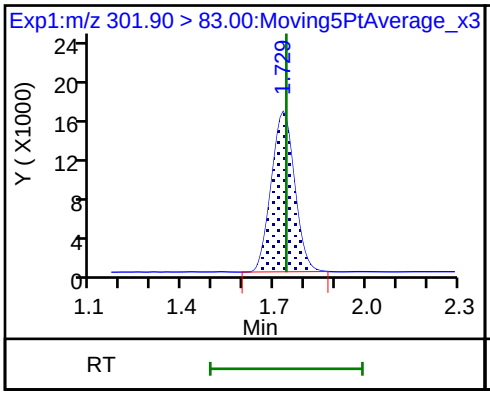
5 Perfluorobutanesulfonic acid



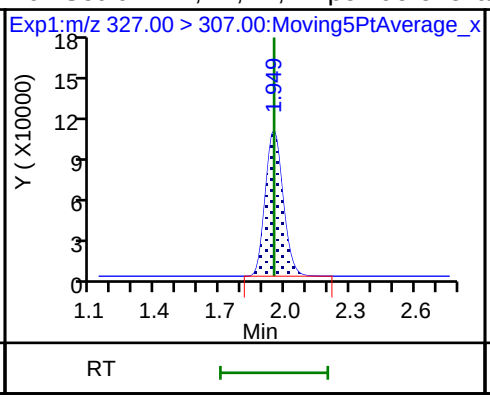
5 Perfluorobutanesulfonic acid



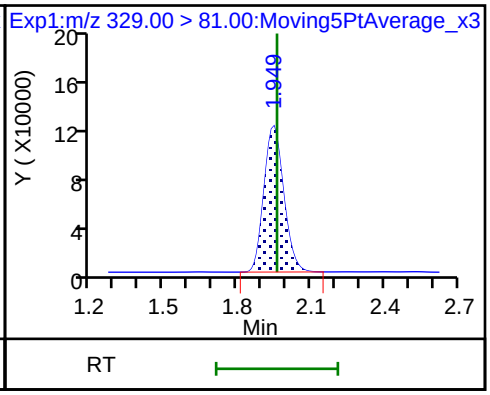
D 47 13C3-PFBS



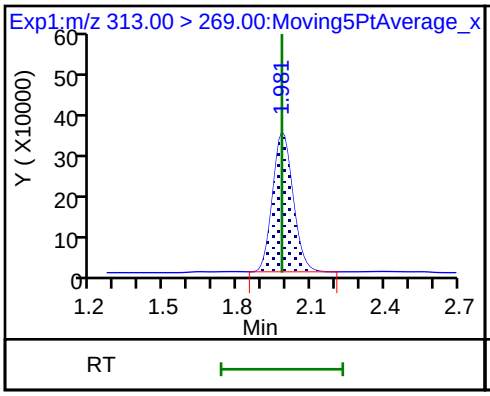
61 Sodium 1H,1H,2H,2H-perfluorohexan



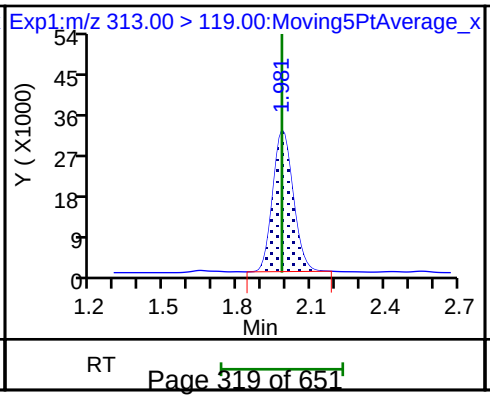
D 60 M2-4:2FTS



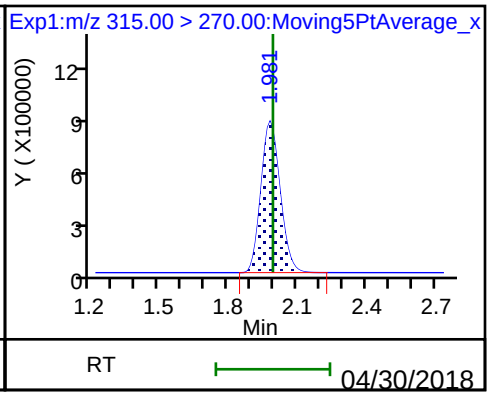
6 Perfluorohexanoic acid



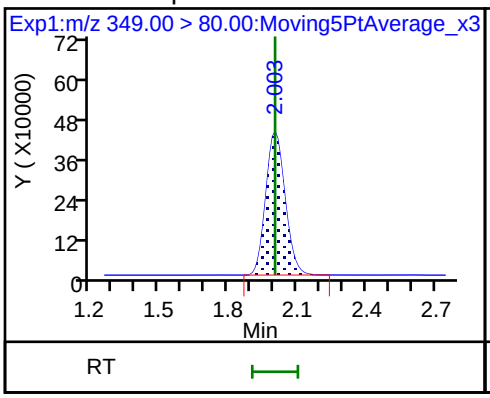
6 Perfluorohexanoic acid



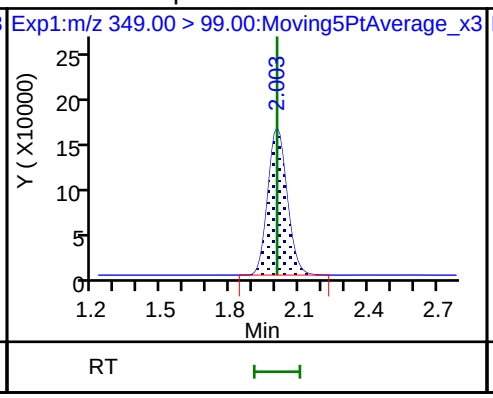
D 7 13C2 PFHxA



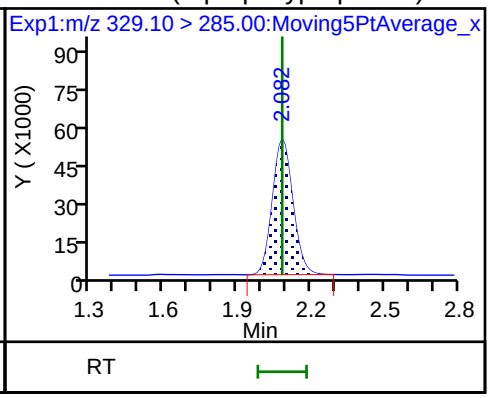
70 Perfluoropentanesulfonic acid



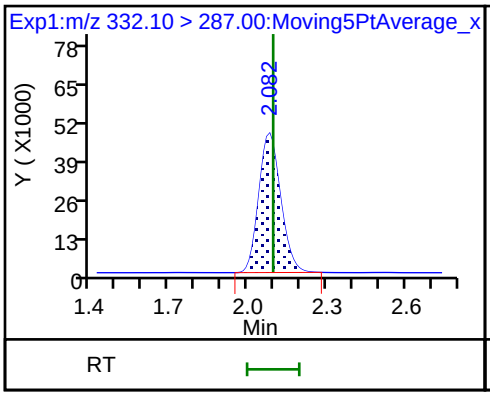
70 Perfluoropentanesulfonic acid



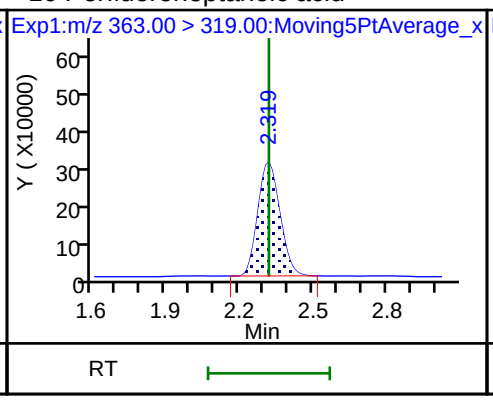
67 Perfluoro(2-propoxypropanoic) acid



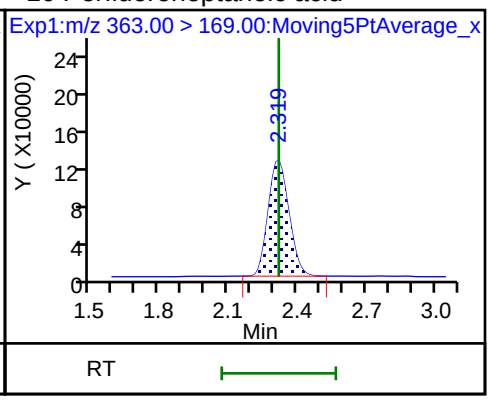
D 64 13C3 HFPO-DA



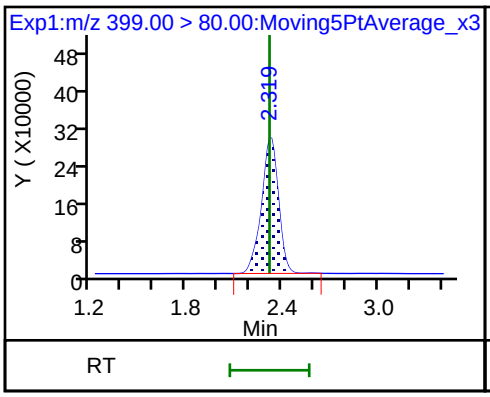
10 Perfluoroheptanoic acid



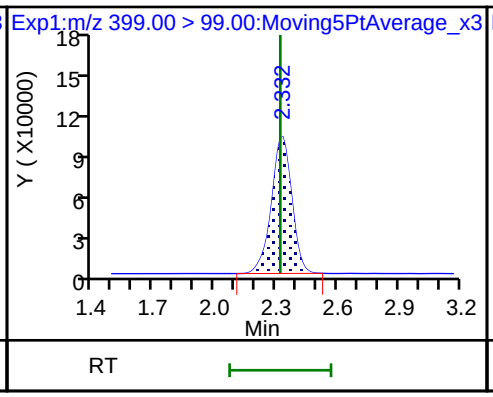
10 Perfluoroheptanoic acid



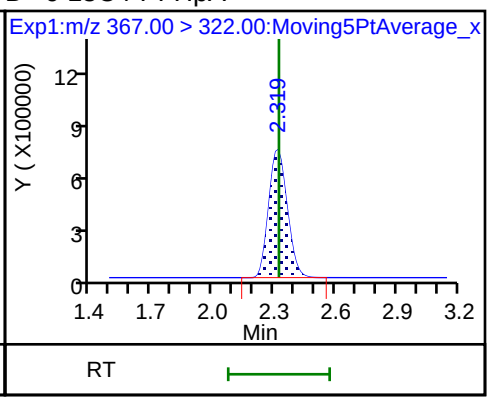
8 Perfluorohexanesulfonic acid



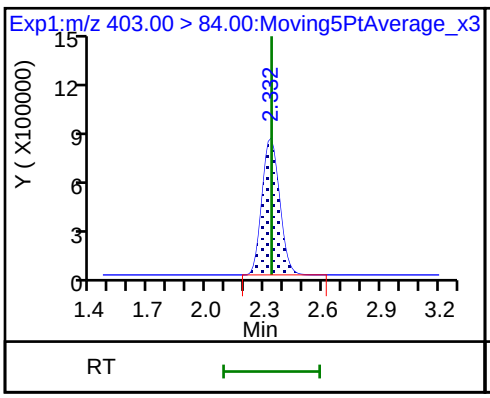
8 Perfluorohexanesulfonic acid



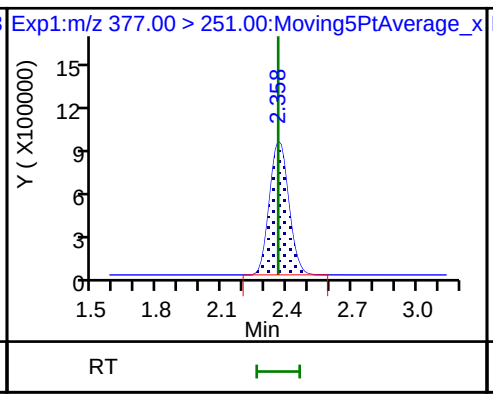
D 9 13C4-PFHpA



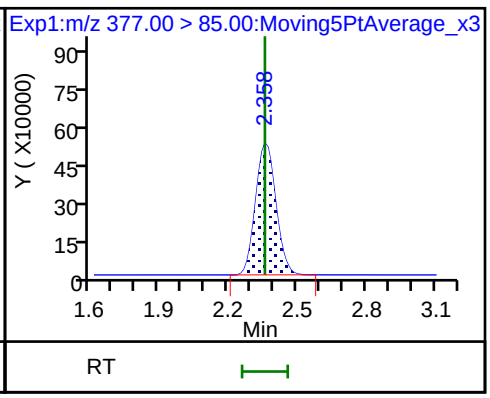
D 11 18O2 PFHxS



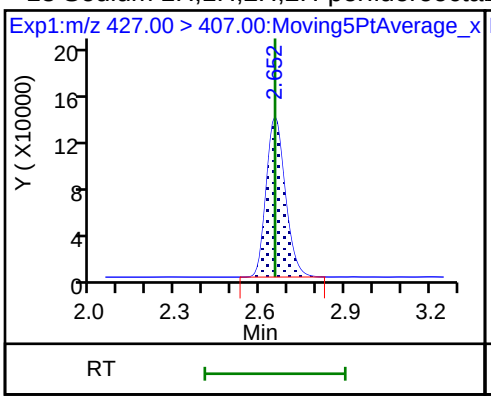
65 Adona



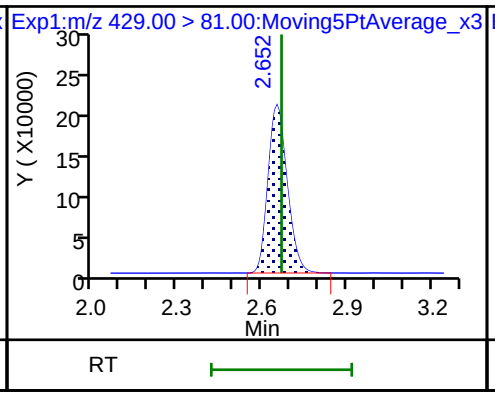
65 Adona



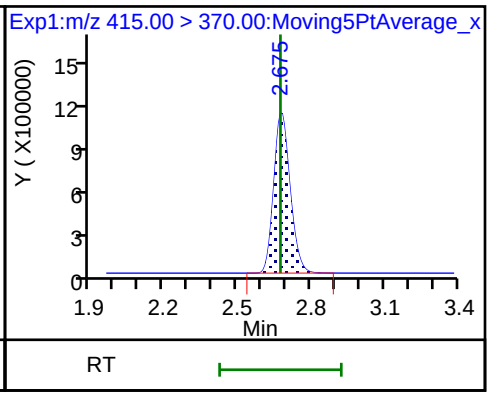
13 Sodium 1H,1H,2H,2H-perfluorooctane



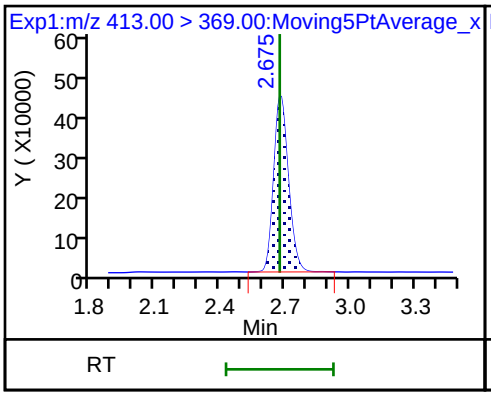
D 12 M2-6:2FTS



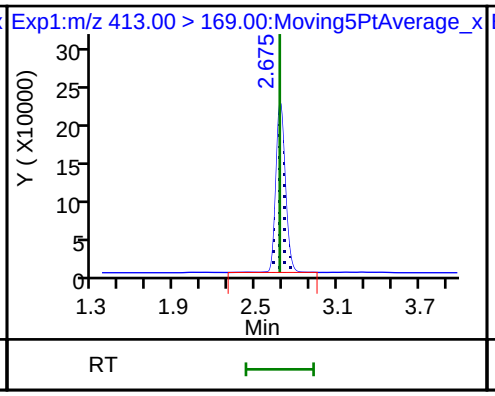
* 62 13C2-PFOA



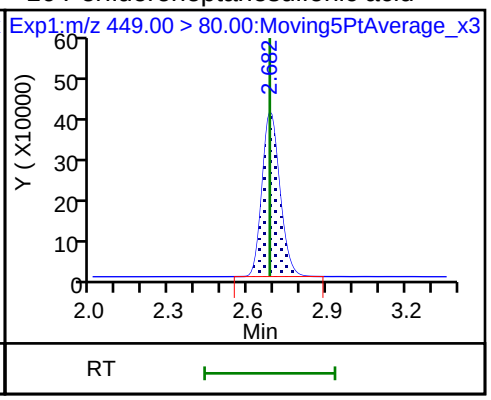
15 Perfluorooctanoic acid



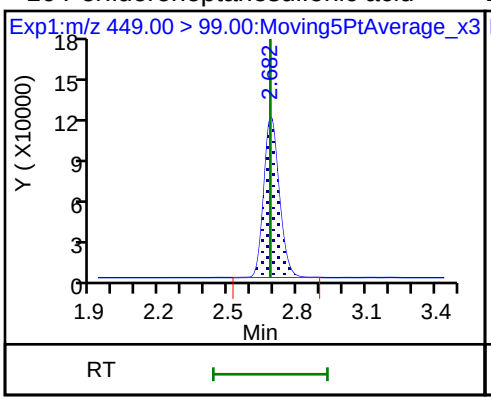
15 Perfluorooctanoic acid



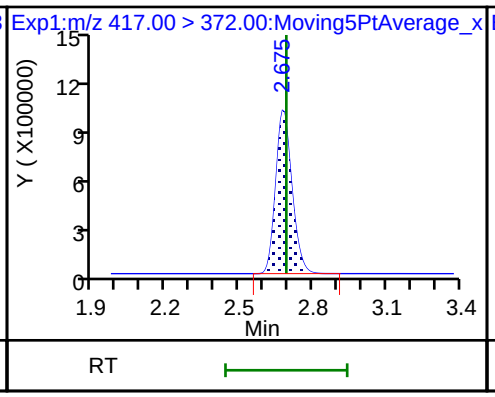
16 Perfluoroheptanesulfonic acid



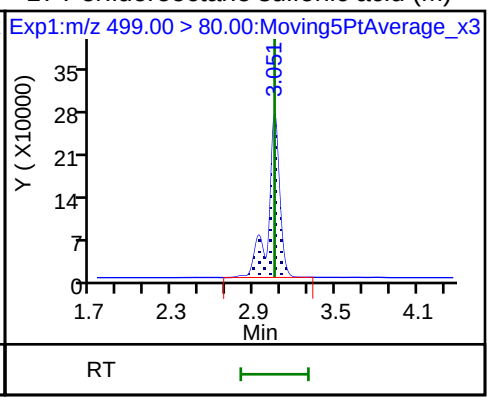
16 Perfluoroheptanesulfonic acid



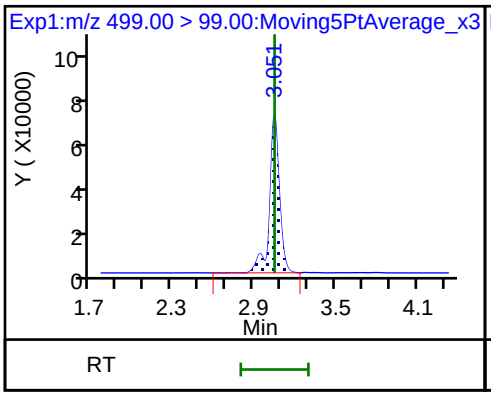
D 14 13C4 PFOA



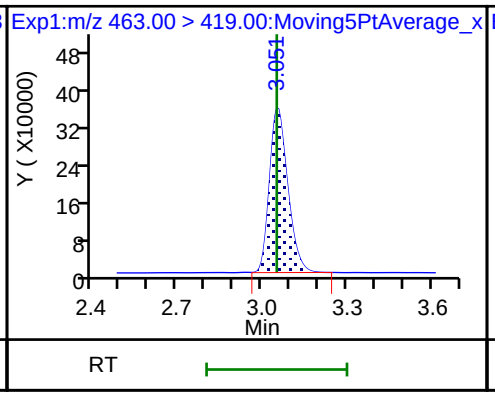
17 Perfluorooctane sulfonic acid (M)



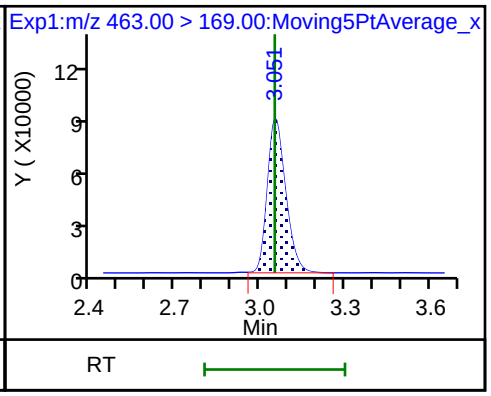
17 Perfluorooctane sulfonic acid



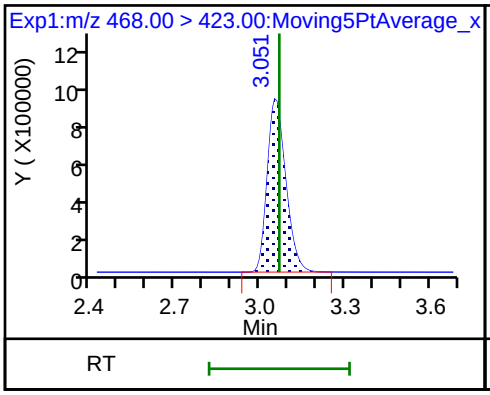
20 Perfluorononanoic acid



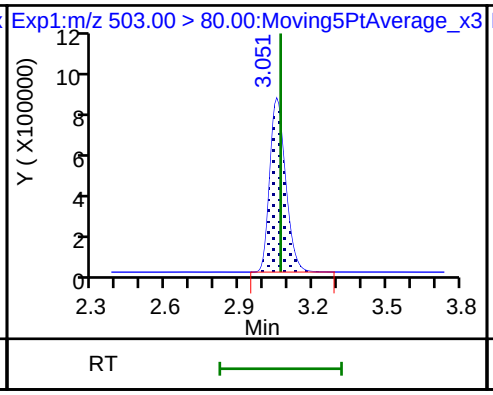
20 Perfluorononanoic acid



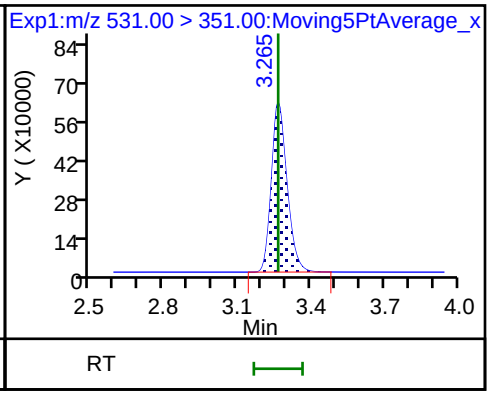
D 19 13C5 PFNA



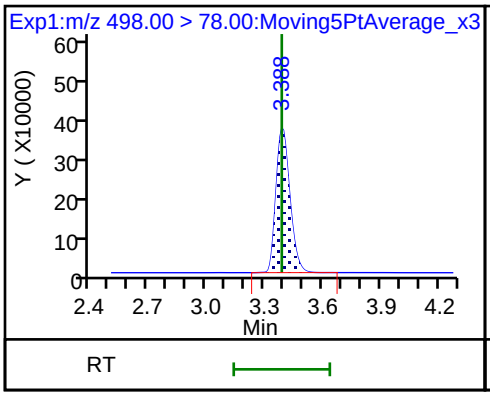
D 18 13C4 PFOS



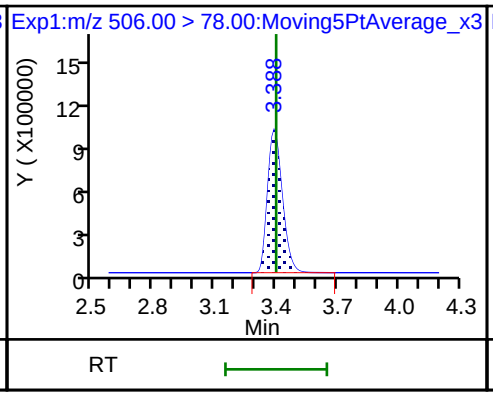
69 9-Chlorohexadecafluoro-3-oxanonane



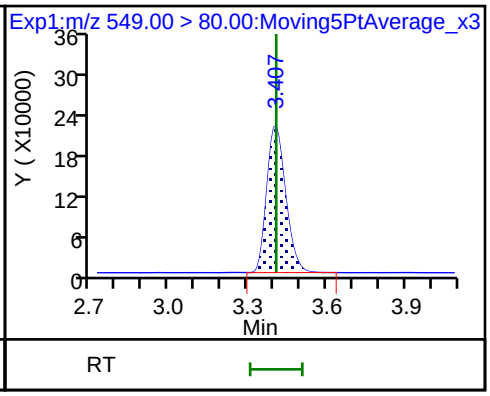
22 Perfluorooctane Sulfonamide



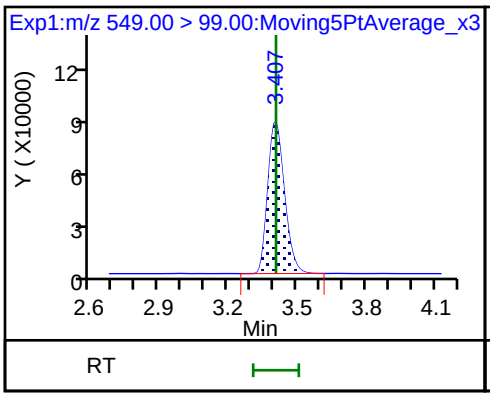
D 21 13C8 FOSA



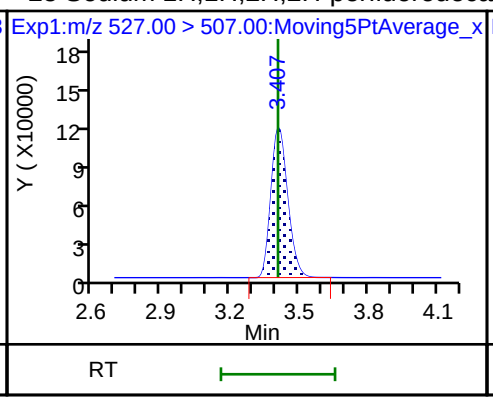
68 Perfluorononanesulfonic acid



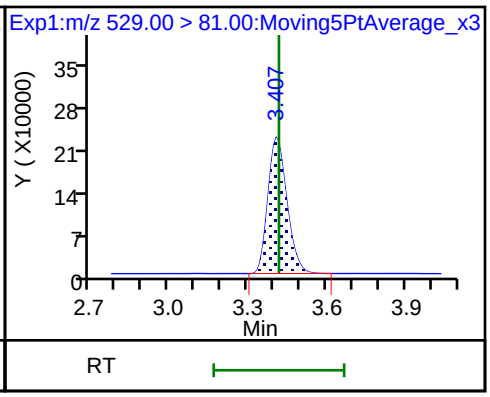
68 Perfluorononanesulfonic acid



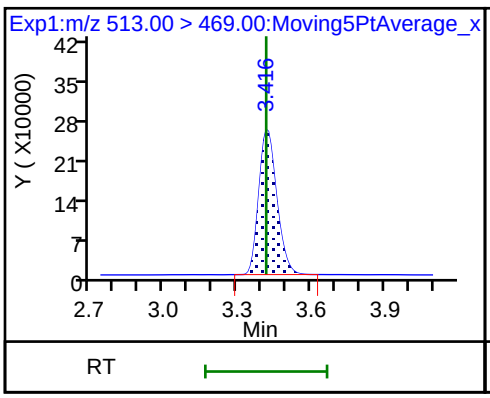
25 Sodium 1H,1H,2H,2H-perfluorodecane



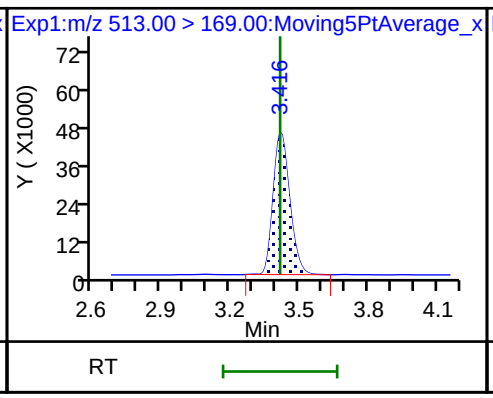
D 26 M2-8:2FTS



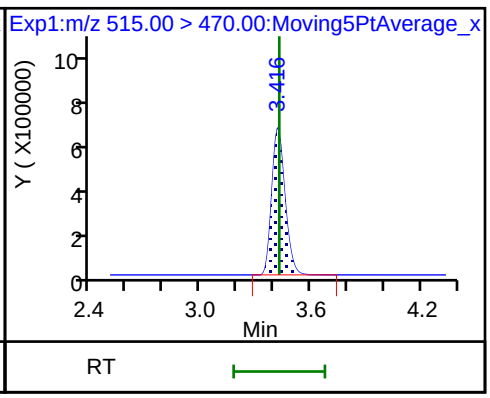
24 Perfluorodecanoic acid



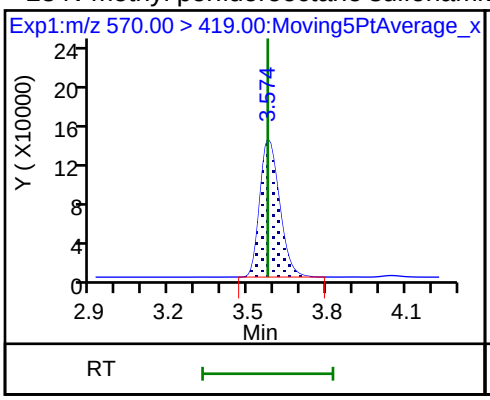
24 Perfluorodecanoic acid



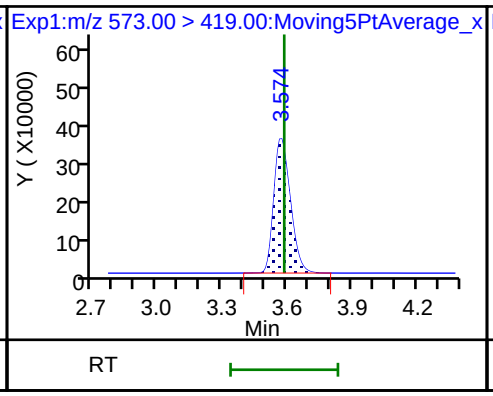
D 23 13C2 PFDA



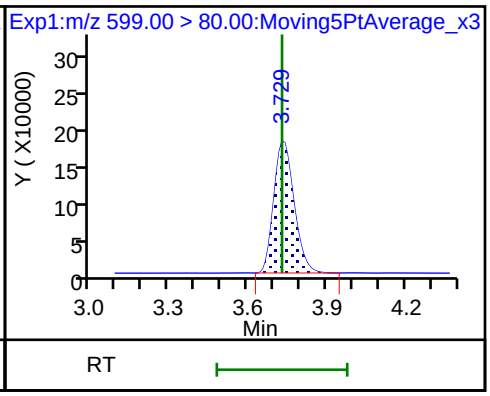
28 N-methyl perfluorooctane sulfonami



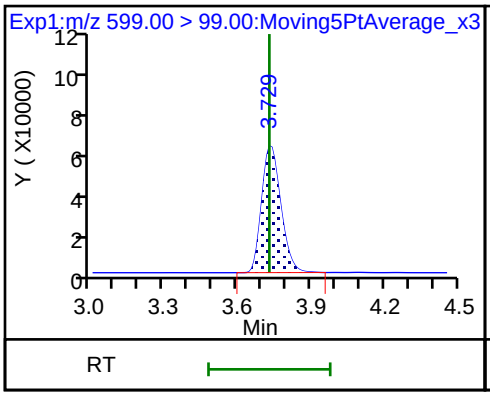
D 27 d3-NMeFOSAA



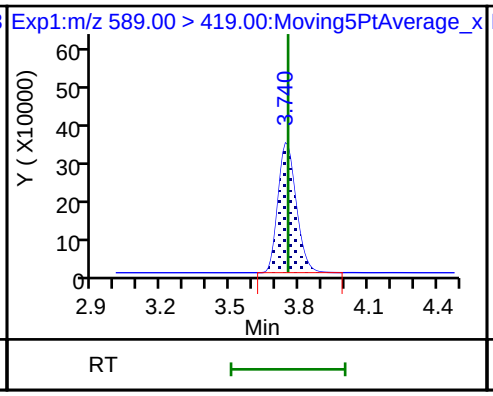
29 Perfluorodecane Sulfonic acid



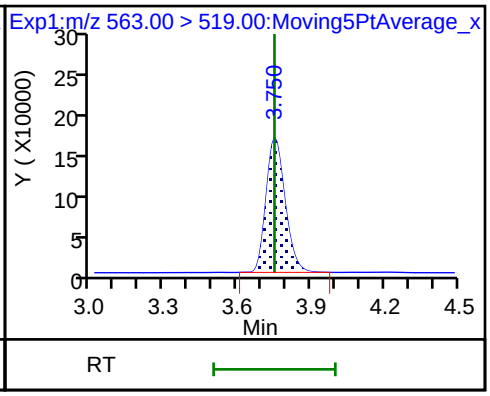
29 Perfluorodecane Sulfonic acid



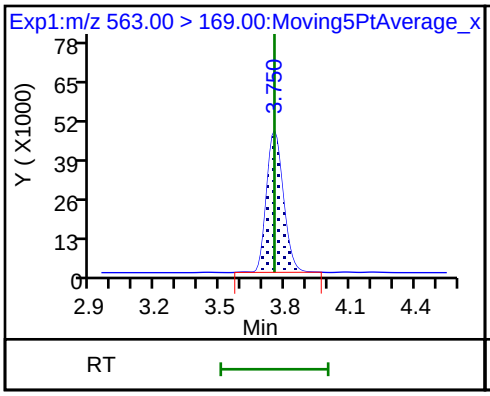
D 32 d5-NEtFOSAA



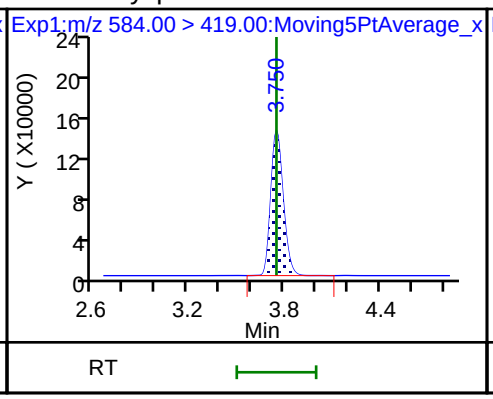
31 Perfluoroundecanoic acid



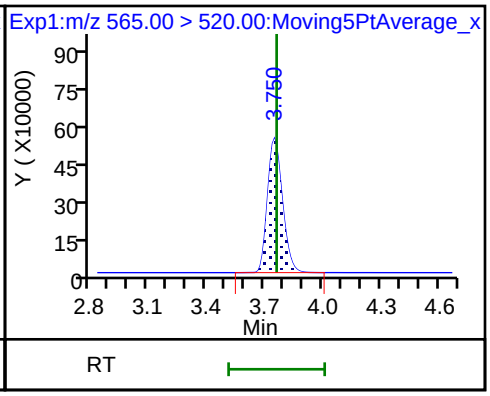
31 Perfluoroundecanoic acid



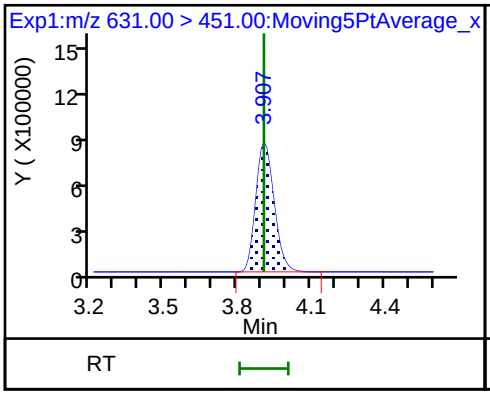
33 N-ethyl perfluorooctane sulfonamid



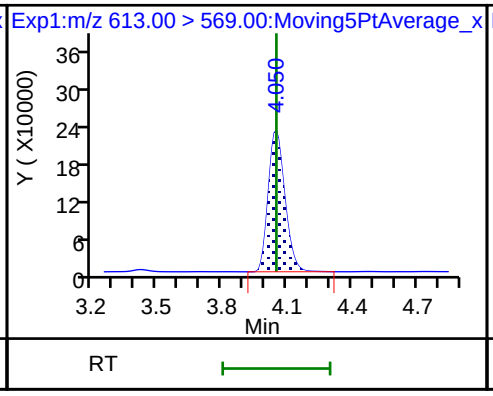
D 30 13C2 PFUnA



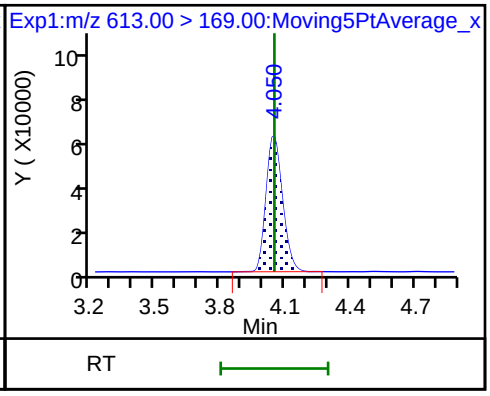
66 11-Chloroeicosafluoro-3-oxaundecan



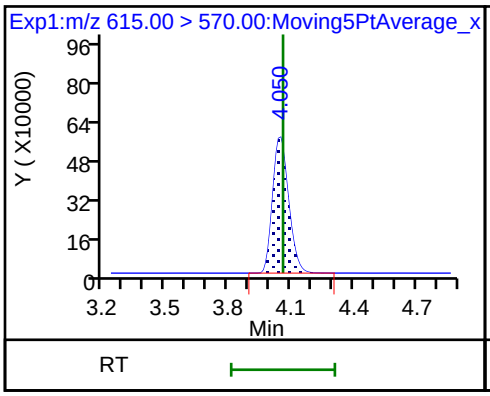
37 Perfluorododecanoic acid



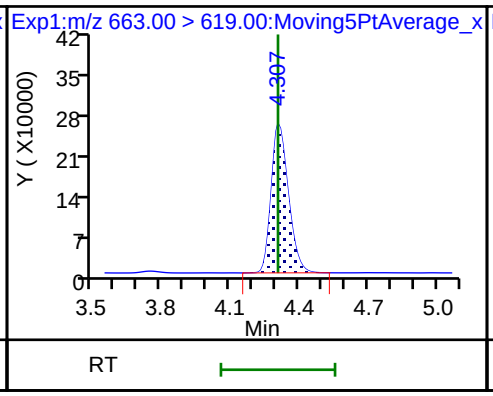
37 Perfluorododecanoic acid



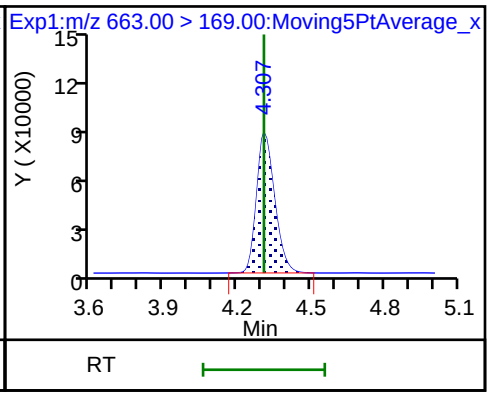
D 36 13C2 PFDoA



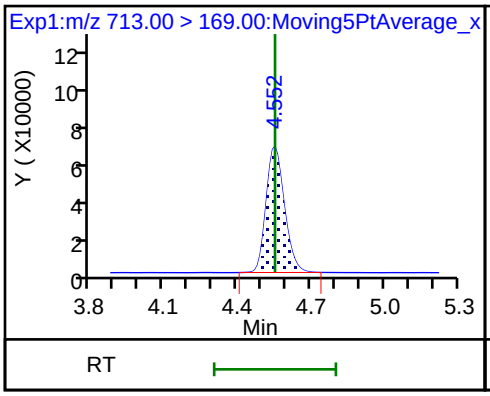
41 Perfluorotridecanoic acid



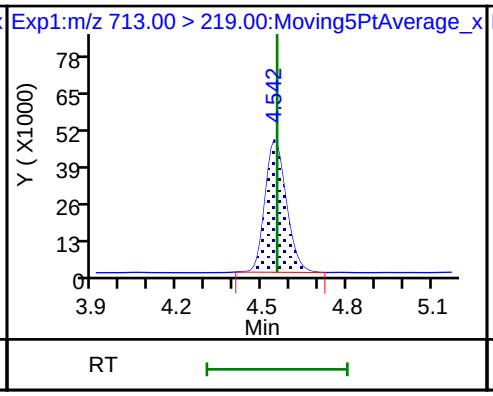
41 Perfluorotridecanoic acid



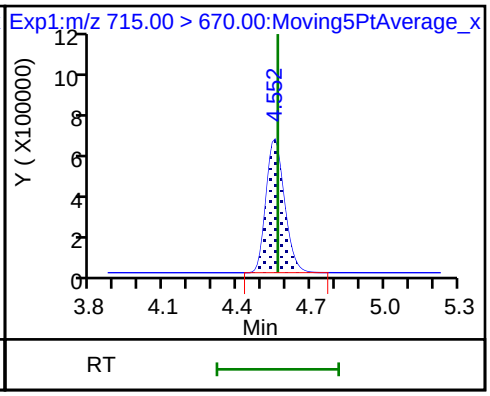
42 Perfluorotetradecanoic acid



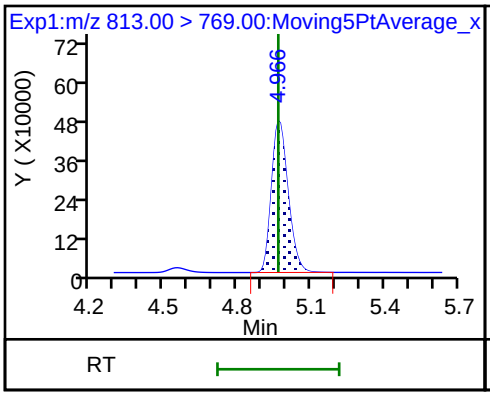
42 Perfluorotetradecanoic acid



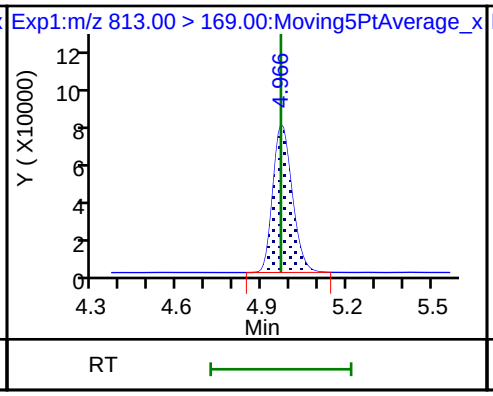
D 43 13C2-PFTeDA



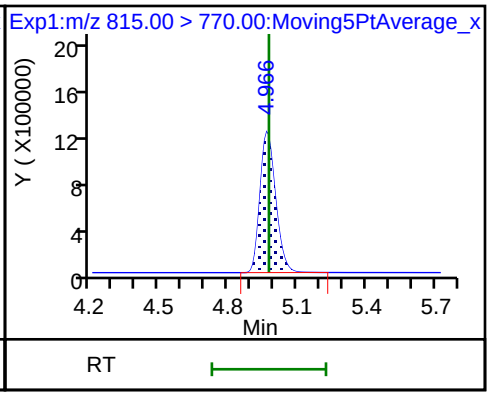
45 Perfluorohexadecanoic acid



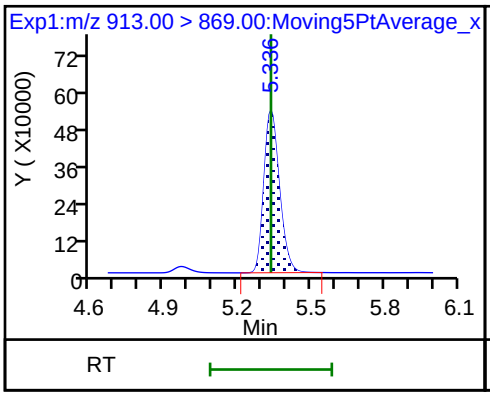
45 Perfluorohexadecanoic acid



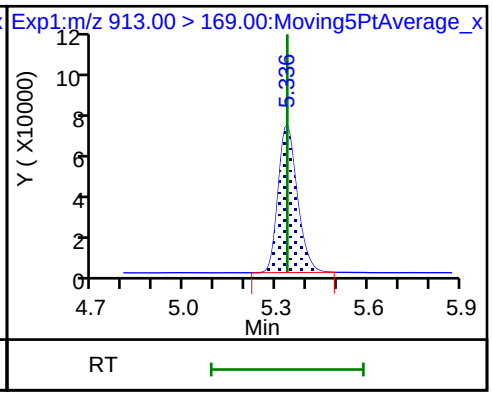
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

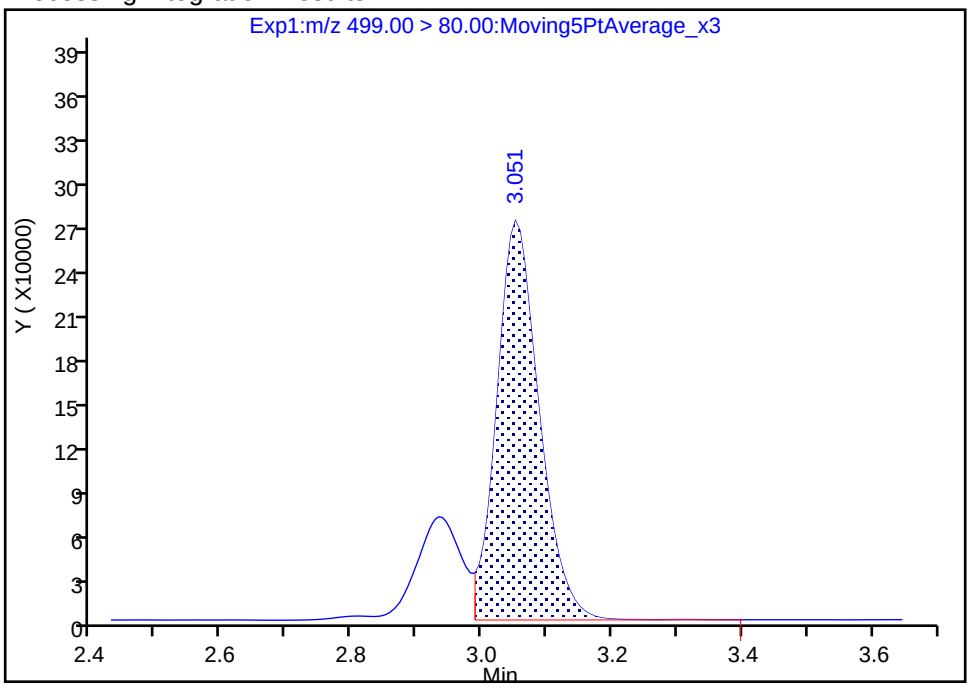
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_058.d
Injection Date: 25-Apr-2018 01:10:05 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 17
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

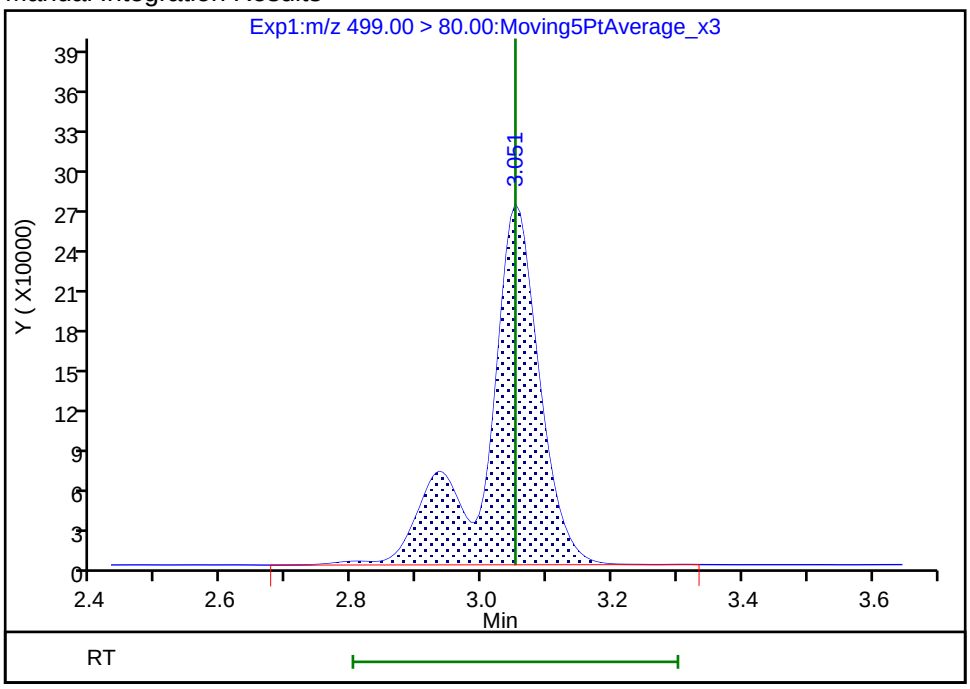
Processing Integration Results

RT: 3.05
Area: 1233328
Amount: 0.722635
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 1579933
Amount: 0.925718
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:24:49
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCVL 320-219909/2 Calibration Date: 04/26/2018 06:01

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9874		0.0532	0.0500	6.3	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.227		0.0515	0.0500	2.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	79.47			0.0442	1.5	50.0
4:2 FTS	AveID	16.03	15.11			0.0467	-5.8	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.059		0.0521	0.0500	4.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	67.86			0.0469	-5.1	50.0
HFPO-DA (GenX)	AveID	2.785	2.774			0.0500	-0.4	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.072		0.0536	0.0500	7.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.277		0.0513	0.0455	12.8	50.0
Adona	AveID	3.464	3.690			0.0500	6.5	50.0
6:2FTS	AveID	1.691	1.791			0.0474	6.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.351		0.0585	0.0500	16.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.347			0.0476	1.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.122			0.0464	3.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9946			0.0500	-4.6	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.911			0.0466	1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9717			0.0500	-3.9	50.0
8:2FTS	AveID	1.265	1.320			0.0479	4.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.8211			0.0480	2.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9596			0.0500	-7.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.054			0.0500	5.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6314			0.0482	-2.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9882			0.0500	5.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8681		0.0514	0.0500	2.7	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	3.028			0.0471	4.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.146		0.0549	0.0500	9.8	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.130			0.0500	-7.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2448			0.0500	-2.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.302			0.0500	-7.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCVL 320-219909/2 Calibration Date: 04/26/2018 06:01

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9695			0.0500	-3.4	50.0
13C4 PFBA	Ave	1.345	1.329		2.47	2.50	-1.2	50.0
13C5 PFPeA	Ave	0.8672	0.8824		2.54	2.50	1.8	50.0
13C3-PFBS	Ave	0.0199	0.0199		2.32	2.33	-0.0	50.0
M2-4:2FTS	Ave	0.1425	0.1476		2.42	2.34	3.6	50.0
13C2 PFHxA	Ave	0.9590	0.9613		2.51	2.50	0.2	50.0
13C3 HFPO-DA	Ave	0.0593	0.0535		2.26	2.50	-9.8	50.0
13C4-PFHpA	Ave	0.9333	0.9293		2.49	2.50	-0.4	50.0
18O2 PFHxS	Ave	1.152	1.119		2.30	2.37	-2.9	50.0
M2-6:2FTS	Ave	0.2000	0.2138		2.54	2.38	6.9	50.0
13C4 PFOA	Ave	0.9276	0.9027		2.43	2.50	-2.7	50.0
13C4 PFOS	Ave	0.8066	0.7636		2.26	2.39	-5.3	50.0
13C5 PFNA	Ave	0.7973	0.7840		2.46	2.50	-1.7	50.0
13C8 FOSA	Ave	1.007	0.9601		2.38	2.50	-4.7	50.0
M2-8:2FTS	Ave	0.2409	0.2257		2.24	2.40	-6.3	50.0
13C2 PFDA	Ave	0.6701	0.6675		2.49	2.50	-0.4	50.0
d3-NMeFOSAA	Ave	0.3798	0.3877		2.55	2.50	2.1	50.0
d5-NEtFOSAA	Ave	0.3749	0.3896		2.60	2.50	3.9	50.0
13C2 PFUnA	Ave	0.5781	0.5557		2.40	2.50	-3.9	50.0
13C2 PFDoA	Ave	0.6242	0.5826		2.33	2.50	-6.7	50.0
13C2-PFTeDA	Ave	0.7915	0.7562		2.39	2.50	-4.5	50.0
13C2-PFHxDA	Ave	1.288	1.294		2.51	2.50	0.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 26-Apr-2018 06:01:22 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:51 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	122849	0.0532		106	53.5	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6220605	2.47		98.8	36950	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.553	4129805	2.54		102	69434	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	101312	0.0515		103	86.1	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	86555	2.32		99.9	839	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	130763	0.0449		102	414	
298.90 > 99.00	1.739	1.739	0.0	1.005	53713		2.43(1.25-3.74)		615	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	645253	2.42		104	5765	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	26262	0.0440		94.2	1520	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4498852	2.51		100	94473	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.994	-0.012	1.000	95290	0.0521		104	80.1	
313.00 > 119.00	1.994	1.994	0.0	1.006	11984		7.95(5.03-15.10)		103	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.016	-0.011	1.000	118484	0.0445		94.9	693	
349.00 > 99.00	2.005	2.016	-0.011	1.000	43266		2.74(1.36-4.07)		877	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.095	-0.011	1.000	250452	2.26		90.2	7167	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.095	-0.011	1.000	13894	0.0498		99.6	89.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.321	0.001	1.000	4348964	2.49		99.6	76175	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.321	0.001	1.000	93280	0.0536		107	104	
363.00 > 169.00	2.322	2.321	0.001	1.000	34477		2.71(1.13-3.40)		141	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.334	0.001	1.000	4952718	2.30		97.1	60622	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.334	0.001	1.000	121643	0.0513		113	269	
399.00 > 99.00	2.335	2.334	0.001	1.000	38040		3.20(1.50-4.49)		296	
65 Adona										
377.00 > 251.00	2.374	2.372	0.002	1.000	263733	0.0533		107	3879	
377.00 > 85.00	2.361	2.372	-0.011	0.995	144510		1.83(0.84-2.53)		3357	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	950442	2.54		107	13333	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	33979	0.0502		106	935	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4680051	2.50			55018	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	4224629	2.43		97.3	46736	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	114152	0.0585		117	80.1	
413.00 > 169.00	2.690	2.690	0.0	1.003	59811		1.91(0.84-2.52)		174	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	91672	0.0483		101	659	
449.00 > 99.00	2.690	2.690	0.0	1.000	27463		3.34(1.94-5.82)		634	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	1.000	74447	0.0479		103	314	
499.00 > 99.00	3.057	3.059	-0.002	1.000	17982		4.14(2.31-6.93)		280	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.059	0.005	1.000	72984	0.0477		95.4	275	
463.00 > 169.00	3.057	3.059	-0.002	0.998	19978		3.65(1.90-5.69)		346	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.063	-0.006	1.000	3416275	2.26		94.7	23265	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.063	0.001	1.000	3669088	2.46		98.3	61500	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.273	-0.002	1.000	127286	0.0472		101	1946	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.399	-0.003	1.000	87329	0.0480		96.1	375	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	4493421	2.38		95.3	59941	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.414	3.408	0.006	1.000	56338	0.0493		103	625	
549.00 > 99.00	3.405	3.408	-0.003	0.997	20687		2.72(1.33-3.97)		582	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.417	-0.003	1.000	26718	0.0500		104	1324	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.423	-0.009	1.000	1011861	2.24		93.7	10957	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.427	0.006	1.003	59954	0.0465		93.0	299	
513.00 > 169.00	3.424	3.427	-0.003	1.000	11307		5.30(2.36-7.09)		204	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.432	-0.008	1.000	3123868	2.49		99.6	69001	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.582	0.002	1.000	1814283	2.55		102	22574	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.586	-0.002	1.000	38245	0.0528		106	221	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	43499	0.0469		97.2	335	
599.00 > 99.00	3.738	3.741	-0.003	1.000	18362		2.37(1.39-4.16)		669	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.758	0.001	1.000	2600619	2.40		96.1	40568	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.758	-0.009	1.000	1823192	2.60		104	27840	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.762	-0.003	1.000	45151	0.0514		103	263	
563.00 > 169.00	3.759	3.762	-0.003	1.000	12799		3.53(2.12-6.36)		372	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.762	-0.003	1.003	36034	0.0529		106	896	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.918	-0.002	1.000	203888	0.0490		104	2774	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.051	-0.003	1.000	62469	0.0549		110	82.9	
613.00 > 169.00	4.048	4.051	-0.003	1.000	14516		4.30(2.13-6.40)		205	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.059	-0.011	1.000	2726541	2.33		93.3	27014	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	61634	0.0465		93.0	71.3	
663.00 > 169.00	4.318	4.319	-0.001	1.000	22257		2.77(1.25-3.76)		231	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.563	-0.001	1.000	3539031	2.39		95.5	22400	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.562	4.564	-0.002	1.000	17327	0.0487		97.5	154	
713.00 > 219.00	4.551	4.564	-0.013	0.998	12526		1.38(0.71-2.13)		255	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.975	-0.002	1.000	6055812	2.51		100	14276	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.976	-0.003	1.000	157699	0.0465		92.9	72.2	
813.00 > 169.00	4.973	4.976	-0.003	1.000	25937		6.08(2.86-8.58)		185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.344	-0.002	1.000	117426	0.0483		96.6	50.0	
913.00 > 169.00	5.342	5.344	-0.002	1.000	13483		8.71(3.83-11.48)		121	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:36:52 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_005.d

Injection Date: 26-Apr-2018 06:01:22 Instrument ID: A8_N

Lims ID: CCVL

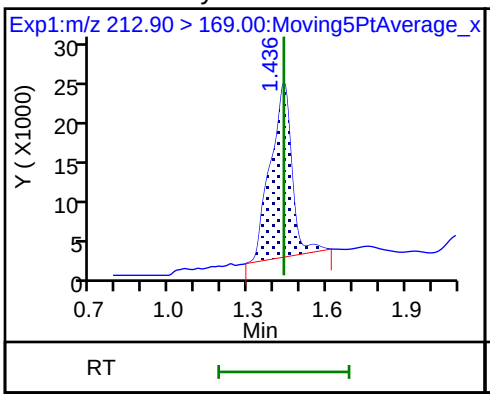
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

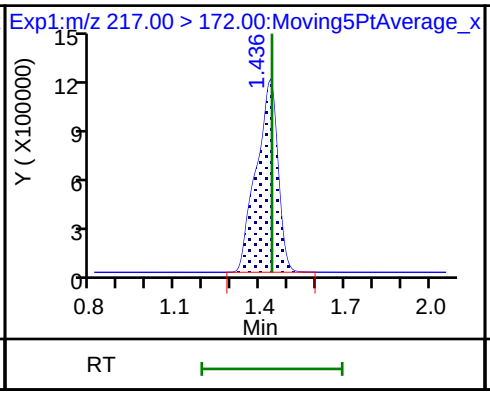
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

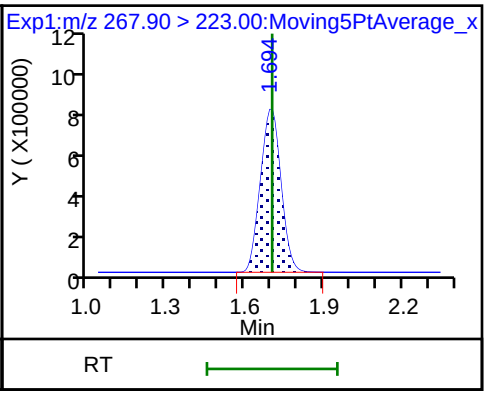
2 Perfluorobutyric acid



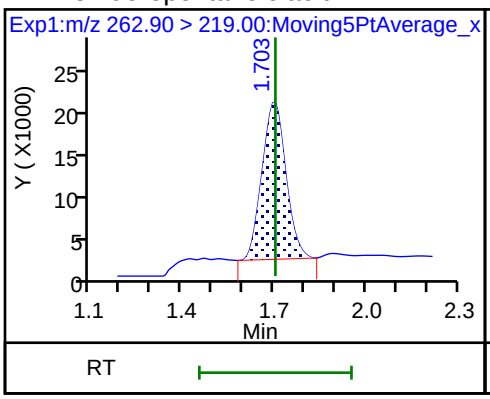
D 1 13C4 PFBA



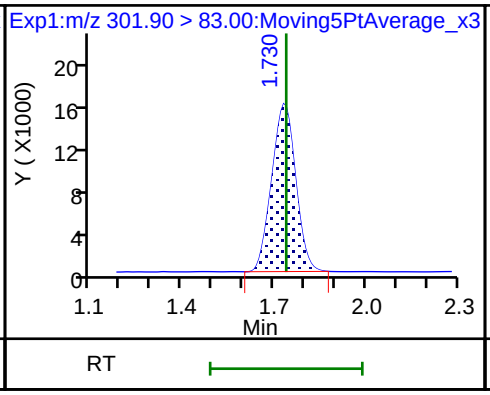
D 3 13C5-PFPeA



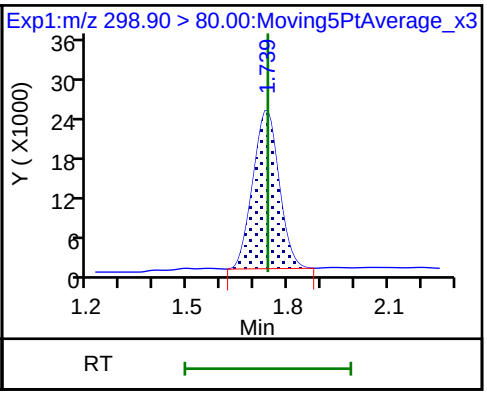
4 Perfluoropentanoic acid



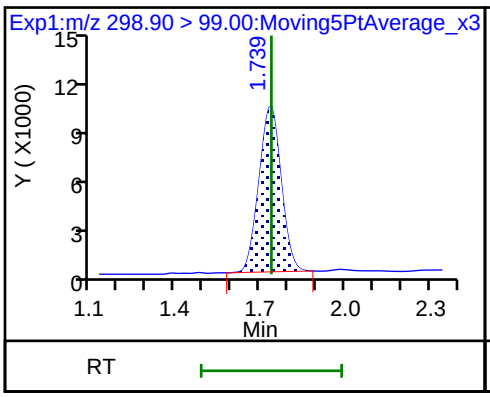
D 47 13C3-PFBS



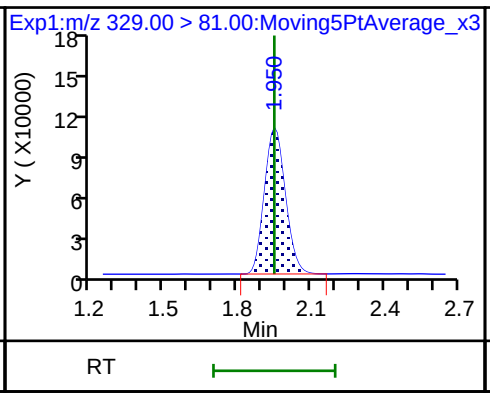
5 Perfluorobutanesulfonic acid



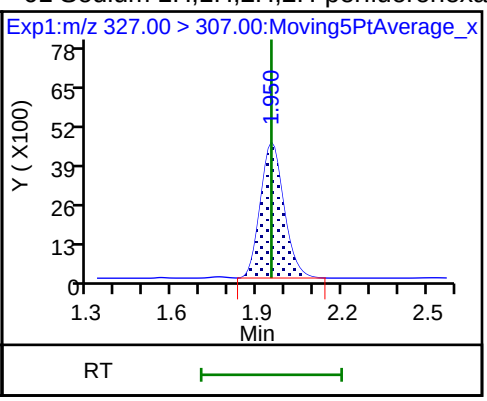
5 Perfluorobutanesulfonic acid



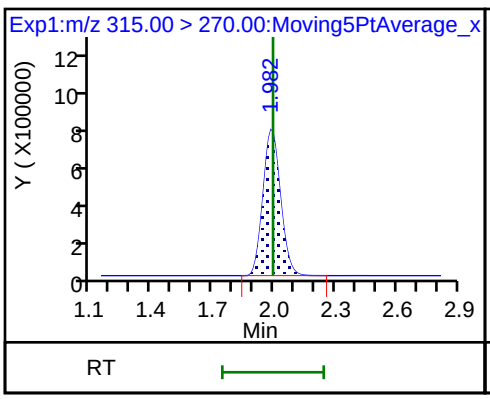
D 60 M2-4:2FTS



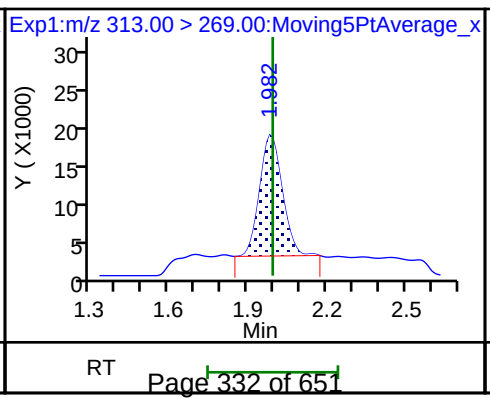
61 Sodium 1H,1H,2H,2H-perfluorohexane



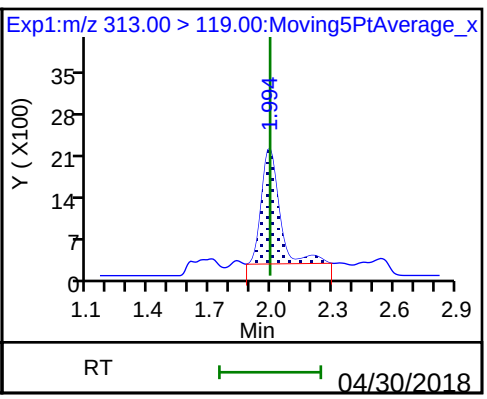
D 7 13C2 PFHxA



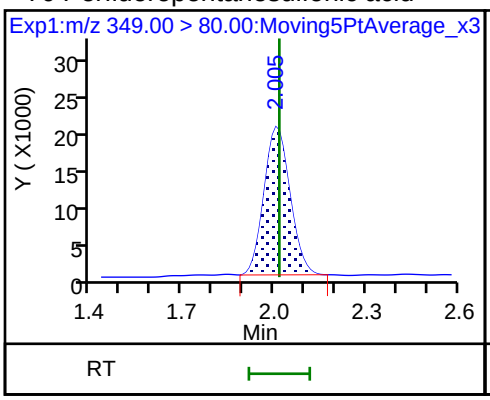
6 Perfluorohexanoic acid



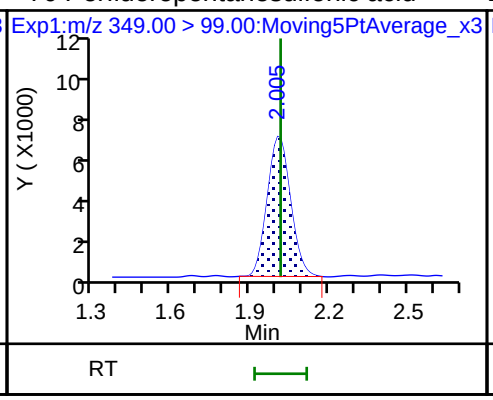
6 Perfluorohexanoic acid



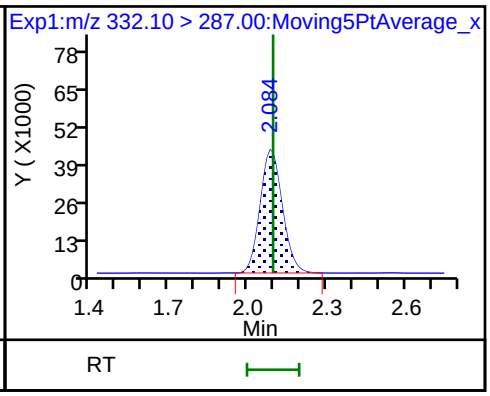
70 Perfluoropentanesulfonic acid



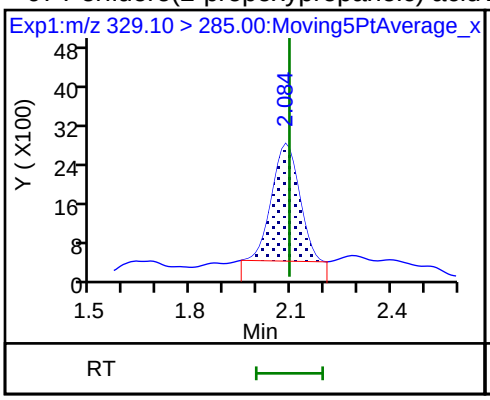
70 Perfluoropentanesulfonic acid



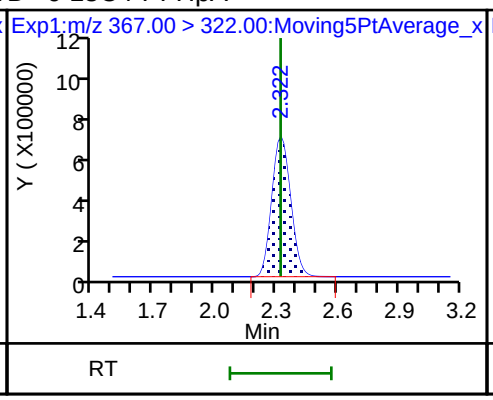
D 64 13C3 HFPO-DA



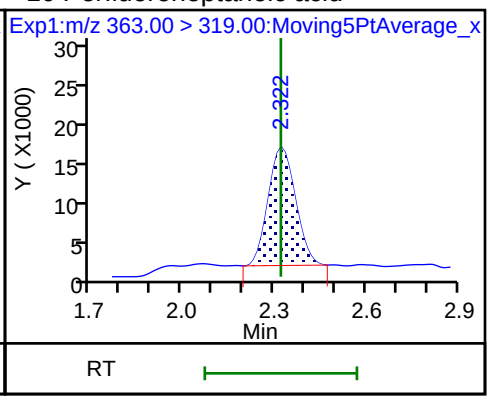
67 Perfluoro(2-propoxypropanoic) acid



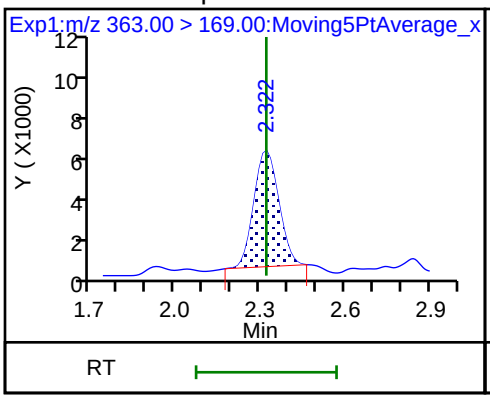
D 9 13C4-PFHpA



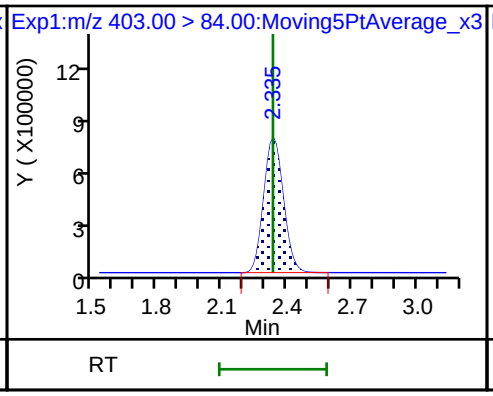
10 Perfluoroheptanoic acid



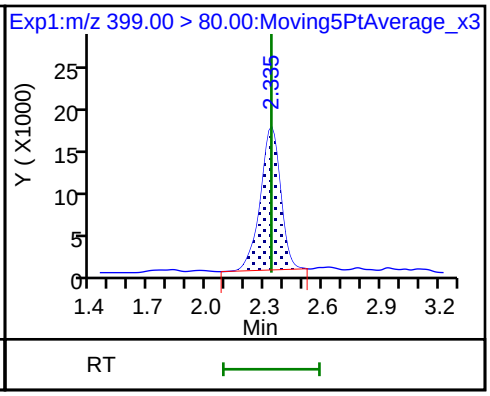
10 Perfluoroheptanoic acid



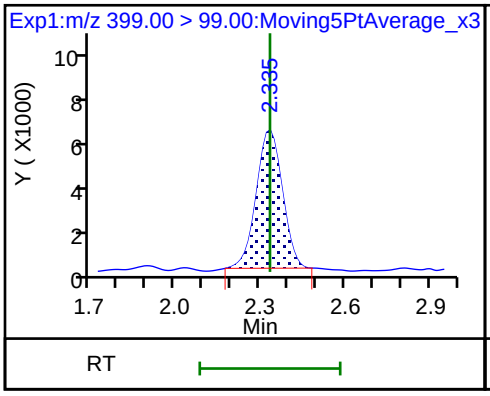
D 11 18O2 PFHxS



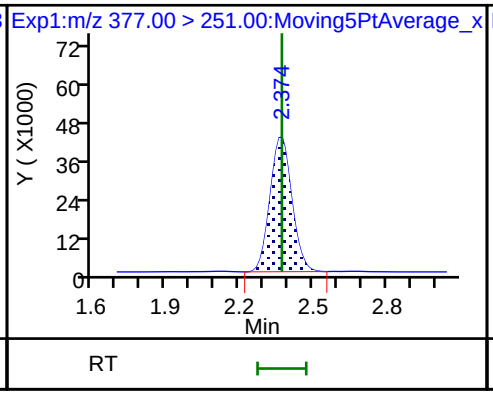
8 Perfluorohexanesulfonic acid



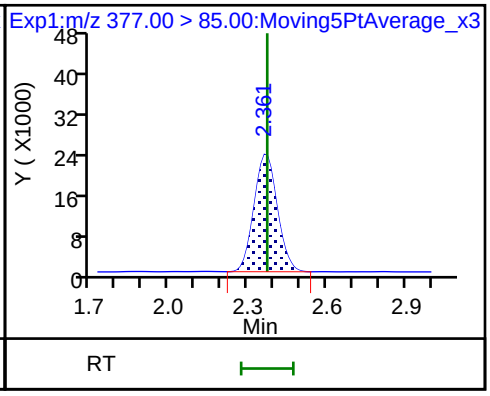
8 Perfluorohexanesulfonic acid



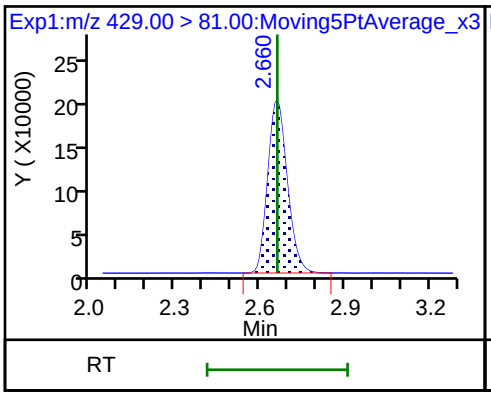
65 Adona



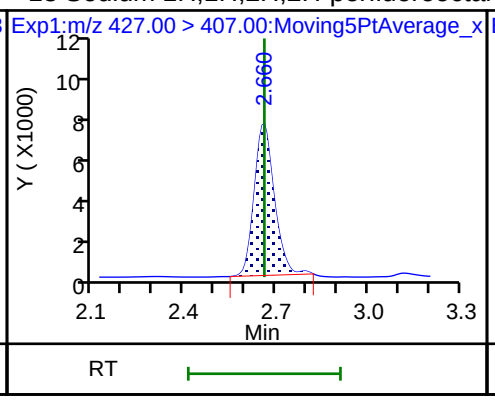
65 Adona



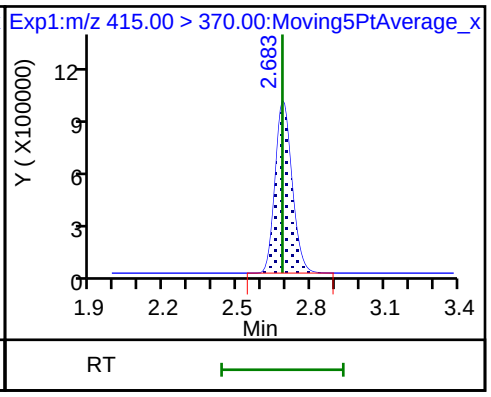
D 12 M2-6:2FTS



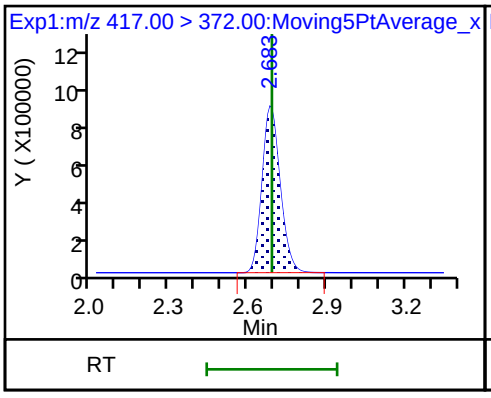
13 Sodium 1H,1H,2H,2H-perfluorooctane



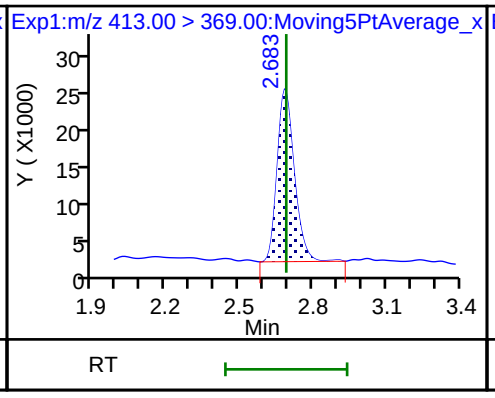
M2 13C2-PFOA



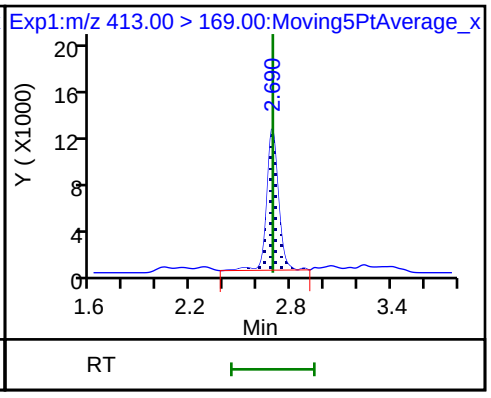
D 14 13C4 PFOA



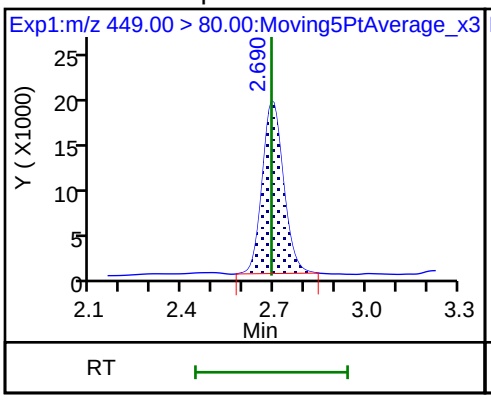
15 Perfluorooctanoic acid



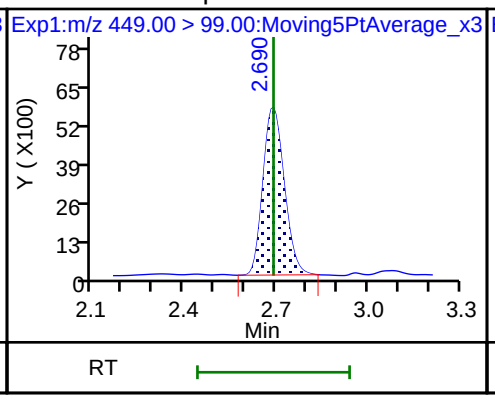
15 Perfluorooctanoic acid



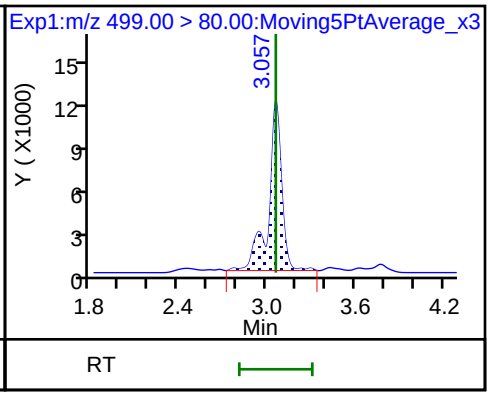
16 Perfluoroheptanesulfonic acid



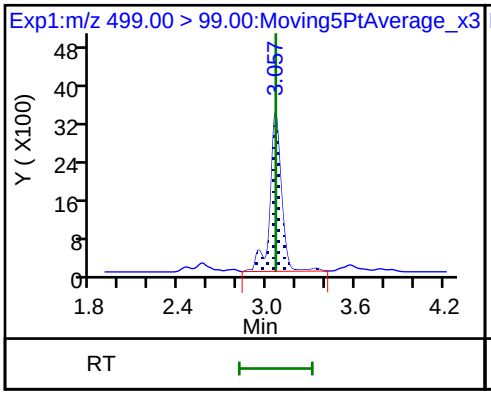
16 Perfluoroheptanesulfonic acid



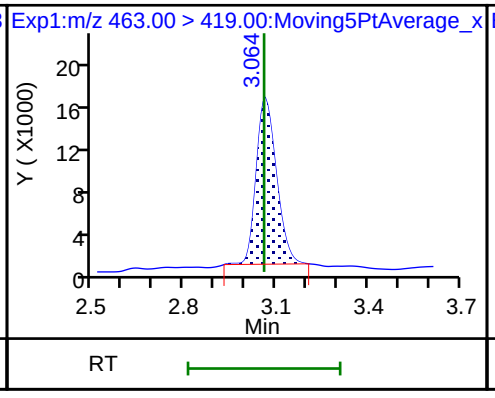
17 Perfluorooctane sulfonic acid



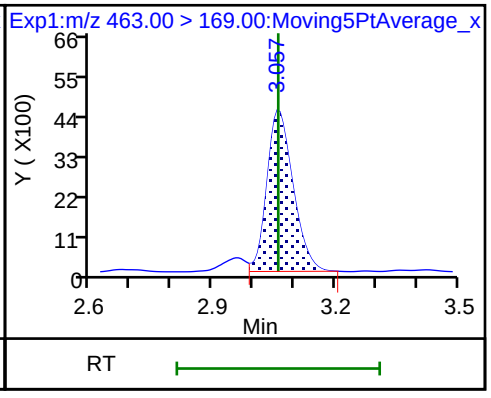
17 Perfluorooctane sulfonic acid



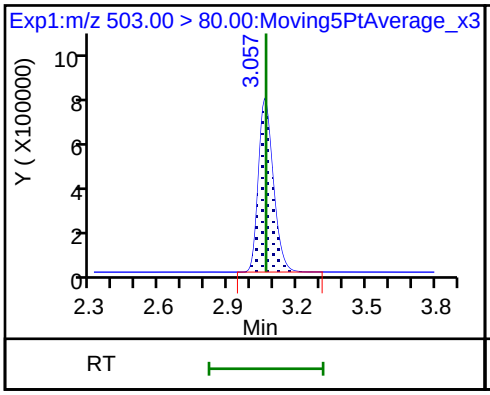
20 Perfluorononanoic acid



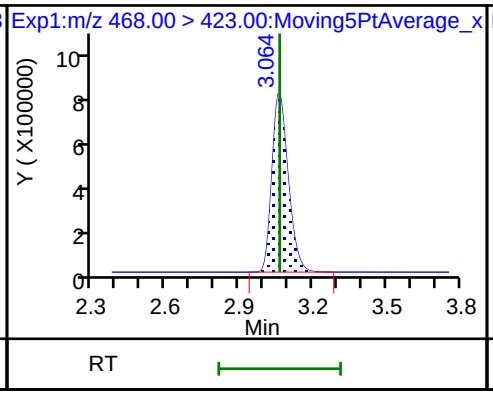
20 Perfluorononanoic acid



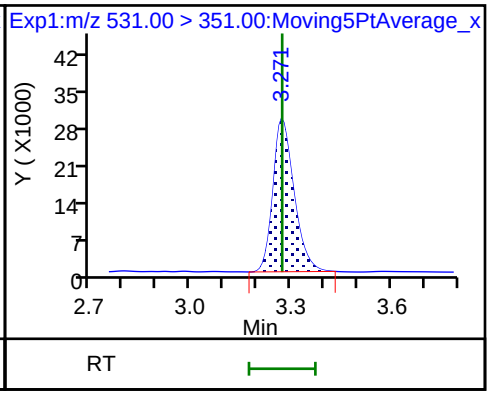
D 18 13C4 PFOS



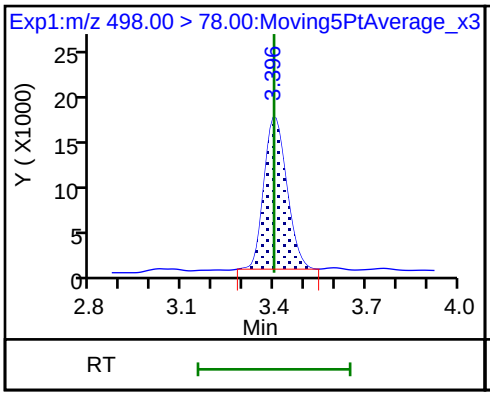
D 19 13C5 PFNA



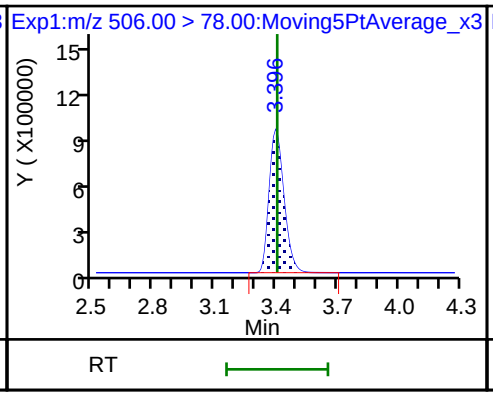
69 9-Chlorohexadecafluoro-3-oxanonane



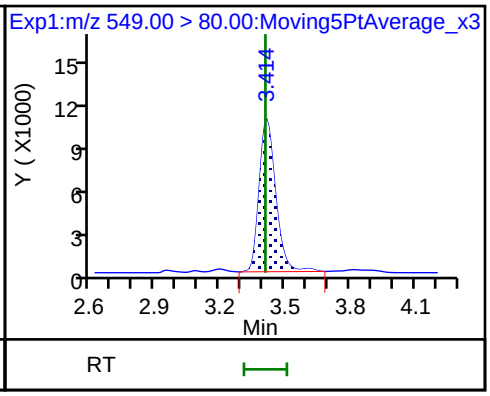
22 Perfluorooctane Sulfonamide



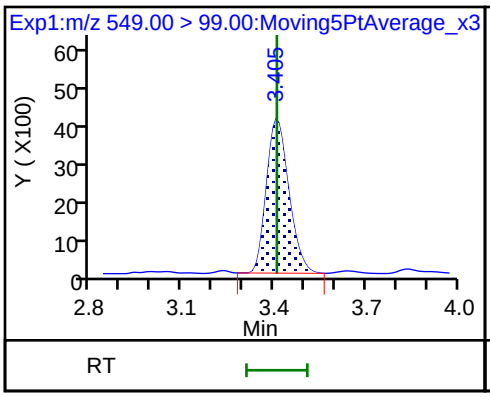
D 21 13C8 FOSA



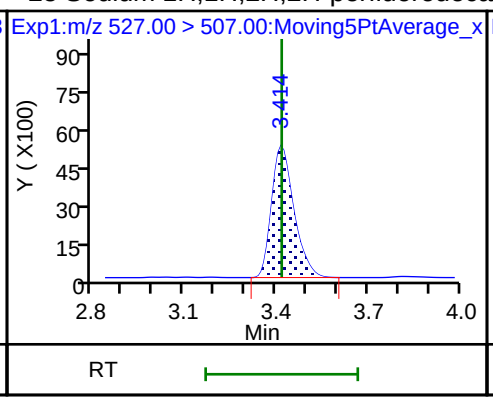
68 Perfluorononanesulfonic acid



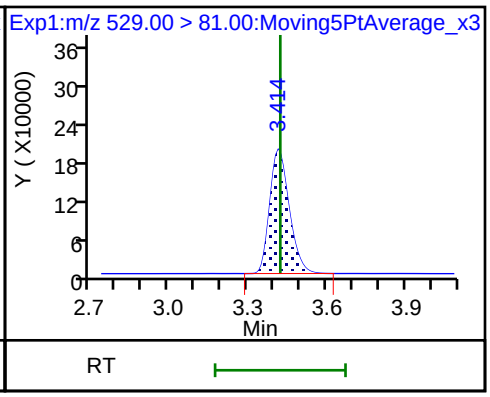
68 Perfluorononanesulfonic acid



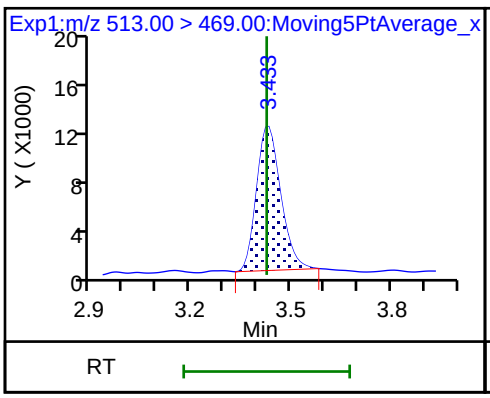
25 Sodium 1H,1H,2H,2H-perfluorodecane



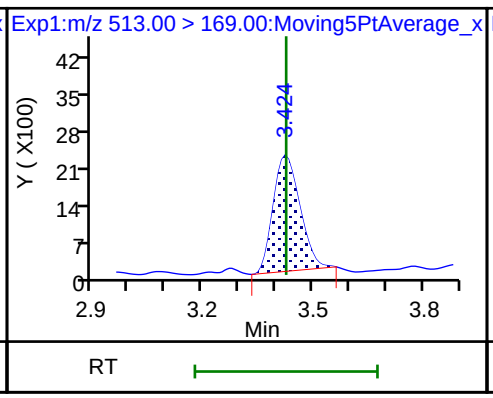
D 26 M2-8:2FTS



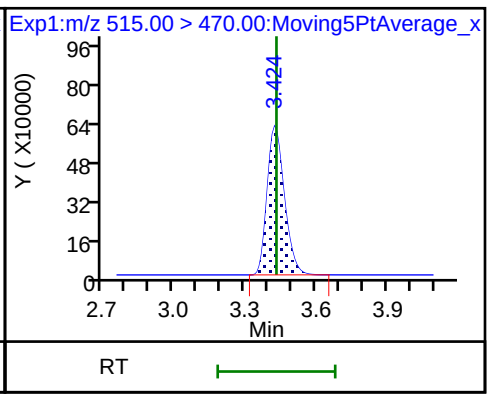
24 Perfluorodecanoic acid



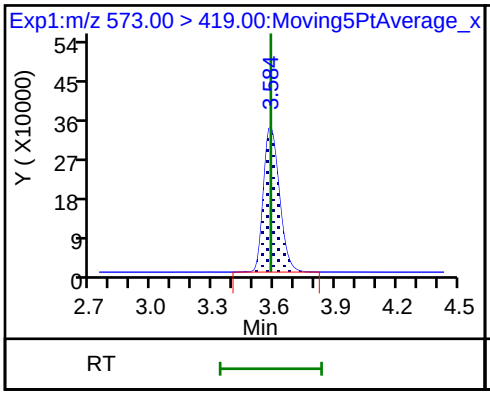
24 Perfluorodecanoic acid



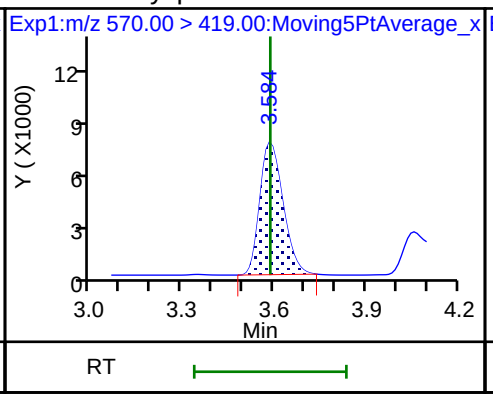
D 23 13C2 PFDA



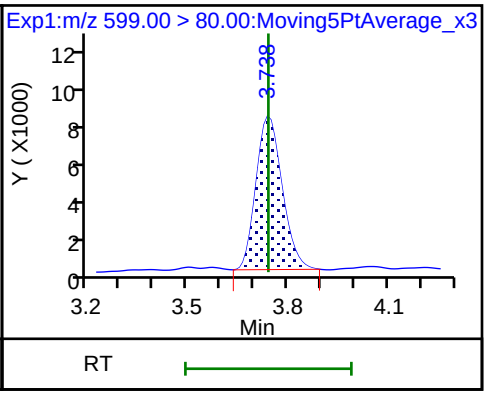
D 27 d3-NMeFOSAA



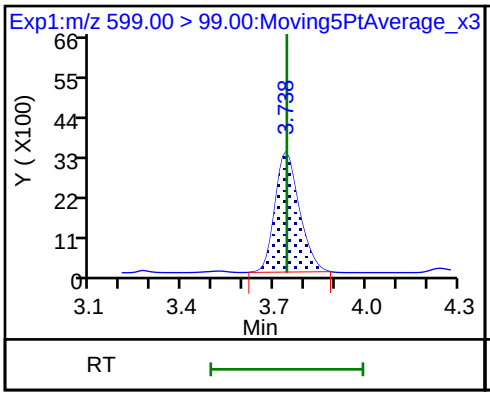
28 N-methyl perfluorooctane sulfonami



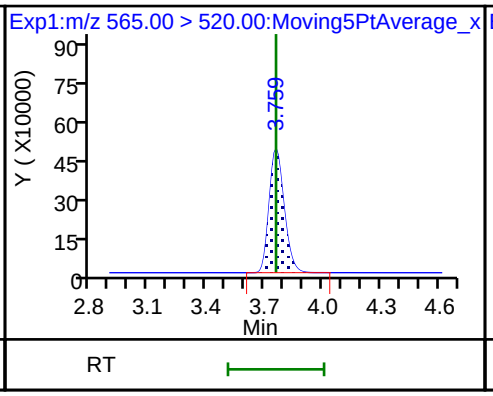
29 Perfluorodecane Sulfonic acid



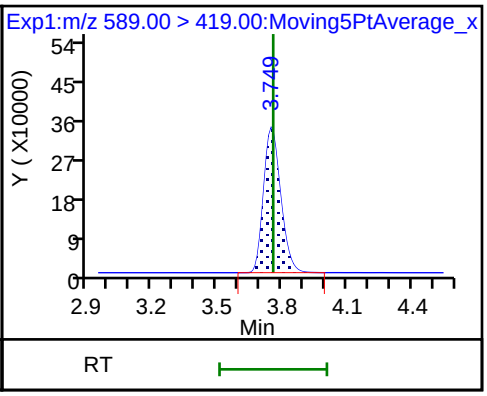
29 Perfluorodecane Sulfonic acid



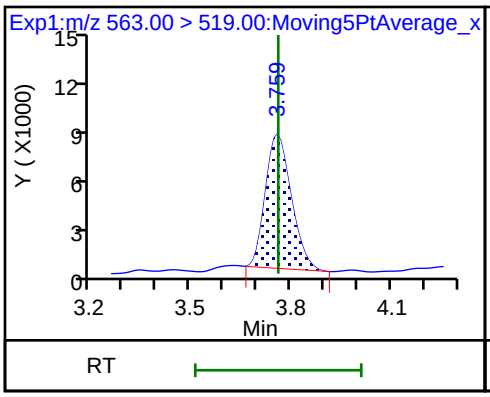
D 30 13C2 PFUnA



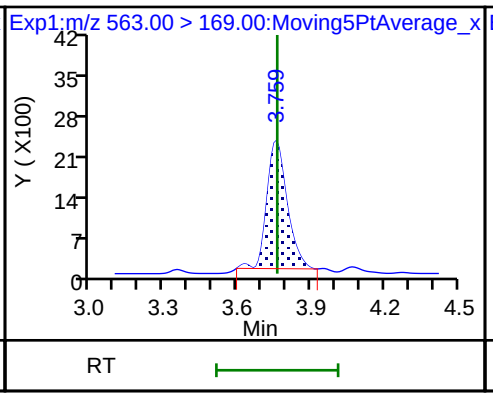
D 32 d5-NEtFOSAA



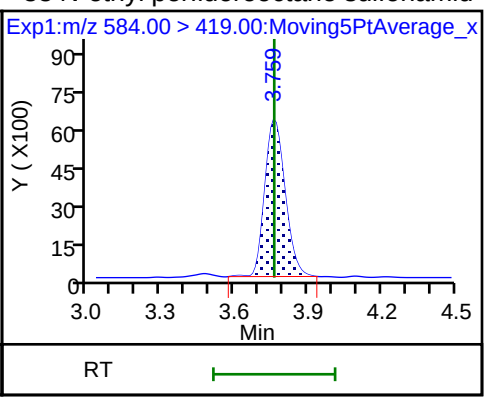
31 Perfluoroundecanoic acid



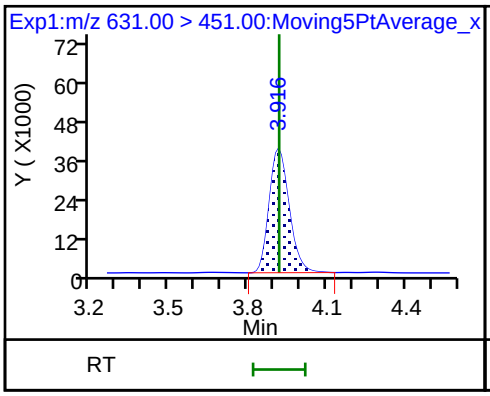
31 Perfluoroundecanoic acid



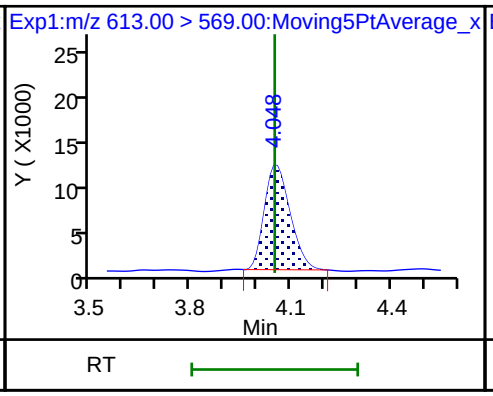
33 N-ethyl perfluorooctane sulfonamid



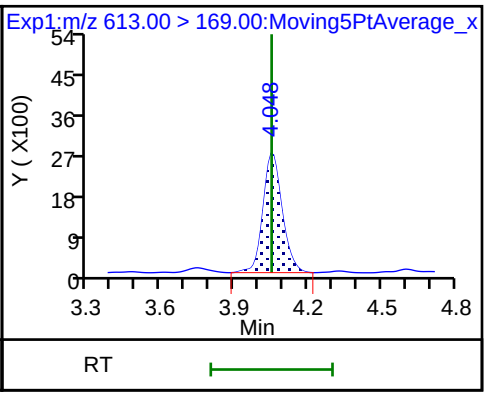
66 11-Chloroeicosafluoro-3-oxaundecan



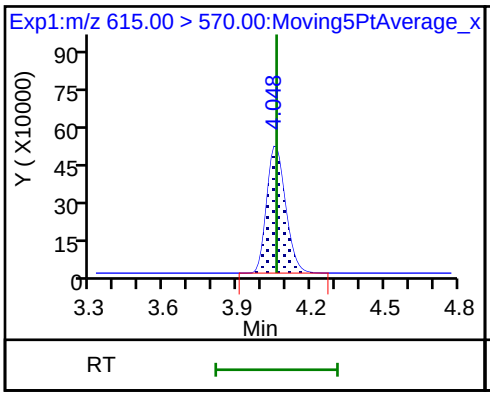
37 Perfluorododecanoic acid



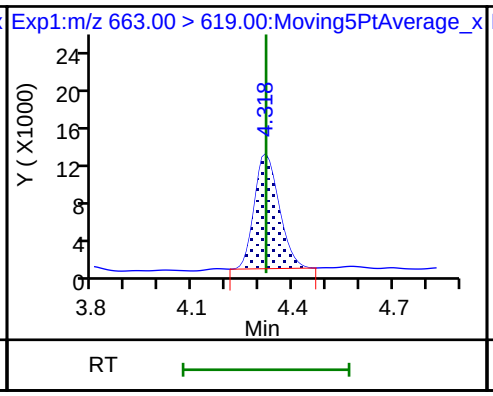
37 Perfluorododecanoic acid



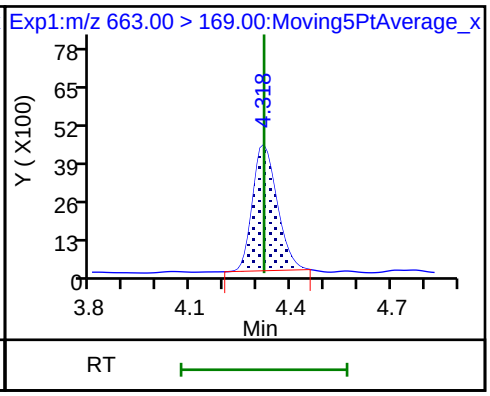
D 36 13C2 PFDoA



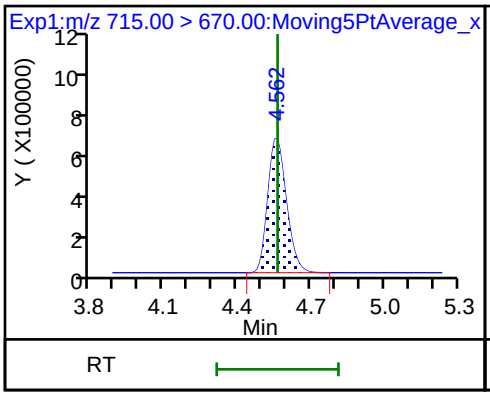
41 Perfluorotridecanoic acid



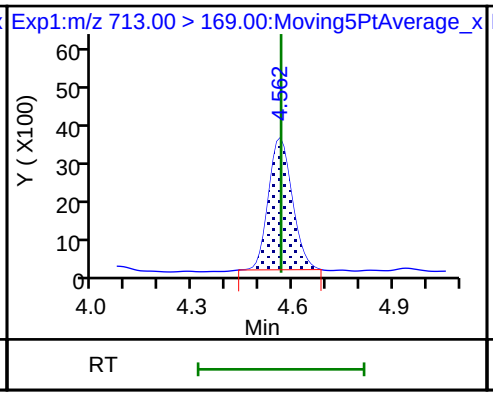
41 Perfluorotridecanoic acid



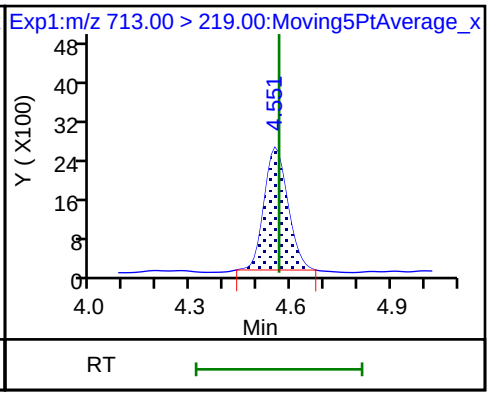
D 43 13C2-PFTeDA



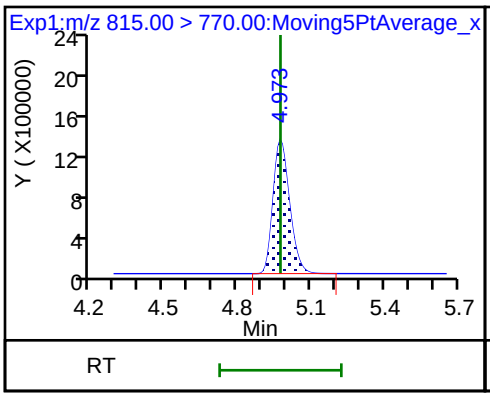
42 Perfluorotetradecanoic acid



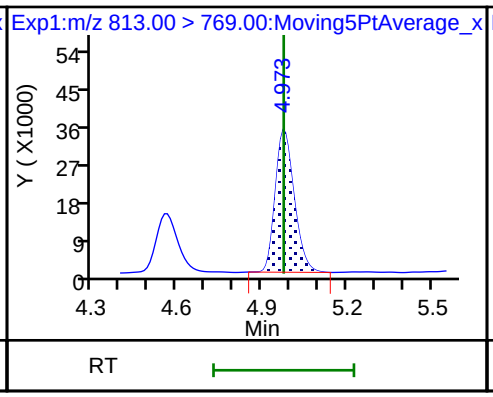
42 Perfluorotetradecanoic acid



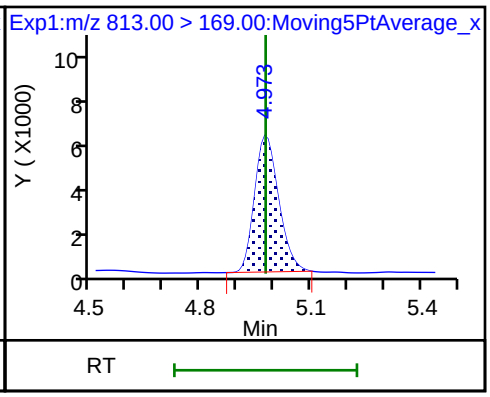
D 44 13C2-PFHxDA



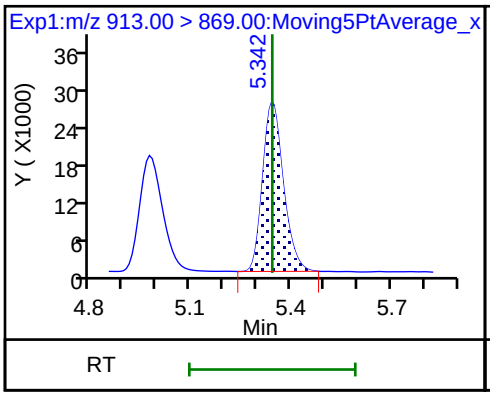
45 Perfluorohexadecanoic acid



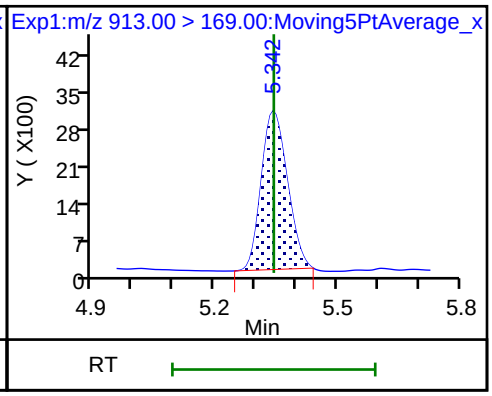
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219909/3 Calibration Date: 04/26/2018 06:09

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9057		0.975	1.00	-2.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.121		0.941	1.00	-5.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	76.16		0.860	0.884	-2.7	50.0
4:2 FTS	AveID	16.03	17.25		1.00	0.934	7.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9666		0.951	1.00	-4.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.10			0.938	-2.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.864			1.00	2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.087		1.09	1.00	8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.055		0.849	0.910	-6.7	40.0
Adona	AveID	3.464	3.679			1.00	6.2	50.0
6:2FTS	AveID	1.691	1.618		0.907	0.948	-4.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.352		0.969	0.952	1.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.045		0.905	1.00	-9.5	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.010		0.969	1.00	-3.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.090		0.930	0.928	0.2	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.858			0.932	-1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.017		1.01	1.00	0.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7341			0.960	-8.2	50.0
8:2FTS	AveID	1.265	1.219		0.923	0.958	-3.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9338		0.905	1.00	-9.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.033		1.04	1.00	3.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6515		0.967	0.964	0.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8836		0.946	1.00	-5.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7999		0.947	1.00	-5.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.841			0.942	-2.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.010		0.968	1.00	-3.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.127		0.927	1.00	-7.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2484		0.989	1.00	-1.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9126		0.941	1.00	-5.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-219909/3 Calibration Date: 04/26/2018 06:09

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9590		0.955	1.00	-4.5	50.0
13C4 PFBA	Ave	1.345	1.393		2.59	2.50	3.6	50.0
13C5 PFPeA	Ave	0.8672	0.9054		2.61	2.50	4.4	50.0
13C3-PFBS	Ave	0.0199	0.0196		2.29	2.33	-1.6	50.0
M2-4:2FTS	Ave	0.1425	0.1467		2.40	2.34	2.9	50.0
13C2 PFHxA	Ave	0.9590	0.9941		2.59	2.50	3.7	50.0
13C3 HFPO-DA	Ave	0.0593	0.0537		2.26	2.50	-9.5	50.0
13C4-PFHpA	Ave	0.9333	0.9232		2.47	2.50	-1.1	50.0
18O2 PFHxS	Ave	1.152	1.161		2.38	2.37	0.7	50.0
M2-6:2FTS	Ave	0.2000	0.2122		2.52	2.38	6.1	40.0
13C4 PFOA	Ave	0.9276	0.9752		2.63	2.50	5.1	50.0
13C4 PFOS	Ave	0.8066	0.7898		2.34	2.39	-2.1	50.0
13C5 PFNA	Ave	0.7973	0.7883		2.47	2.50	-1.1	50.0
13C8 FOSA	Ave	1.007	0.9611		2.39	2.50	-4.6	50.0
M2-8:2FTS	Ave	0.2409	0.2443		2.43	2.40	1.4	40.0
13C2 PFDA	Ave	0.6701	0.6838		2.55	2.50	2.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3783		2.49	2.50	-0.4	50.0
d5-NEtFOSAA	Ave	0.3749	0.4215		2.81	2.50	12.4	50.0
13C2 PFUnA	Ave	0.5781	0.5510		2.38	2.50	-4.7	50.0
13C2 PFDoA	Ave	0.6242	0.6162		2.47	2.50	-1.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7495		2.37	2.50	-5.3	50.0
13C2-PFHxDA	Ave	1.288	1.308		2.54	2.50	1.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_070.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Apr-2018 06:09:11 ALS Bottle#: 28 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:20:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	2371118	0.9754		97.5	1163	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6544803	2.59		104	43669	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.557	4253073	2.61		104	66726	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1907431	0.9408		94.1	1928	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	85520	2.29		98.4	873	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2476394	0.8600		97.3	9732	
298.90 > 99.00	1.739	1.739	0.0	1.000	1052044		2.35(1.25-3.74)		10784	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	643696	2.40		103	5058	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	592642	1.00		108	25518	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4669922	2.59		104	112543	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.994	1.994	0.0	1.006	1805646	0.9513		95.1	1853	
313.00 > 119.00	1.994	1.994	0.0	1.006	167061		10.81(5.03-15.10)		1488	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2418745	0.9196		98.0	14931	
349.00 > 99.00	2.005	2.016	-0.011	0.994	891832		2.71(1.36-4.07)		13512	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.095	0.0	1.000	252262	2.26		90.5	7092	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.000	288996	1.03		103	2127	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.321	0.0	1.000	4336796	2.47		98.9	57141	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1885628	1.09		109	2139	
363.00 > 169.00	2.321	2.321	0.0	1.000	739486		2.55(1.13-3.40)		3152	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.334	0.0	1.000	5157263	2.38		101	45651	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	2094418	0.8486		93.3	4853	
399.00 > 99.00	2.334	2.334	0.0	1.000	700996		2.99(1.50-4.49)		5609	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	5459552	1.06		106	68228	
377.00 > 85.00	2.372	2.372	0.0	1.000	3273488		1.67(0.84-2.53)		66965	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	946855	2.52		106	15345	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	611477	0.9073		95.7	11617	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4697624	2.50			71186	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	4581275	2.63		105	69382	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.003	1915153	0.9045		90.5	1345	
413.00 > 169.00	2.683	2.690	-0.007	1.000	1016258		1.88(0.84-2.52)		3087	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	1910126	0.9695		102	11584	
449.00 > 99.00	2.690	2.690	0.0	1.000	515096		3.71(1.94-5.82)		13745	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.059	0.0	1.000	1500691	0.9296		100	8635	
499.00 > 99.00	3.059	3.059	0.0	1.000	335232		4.48(2.31-6.93)		9339	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.059	0.0	1.000	1496258	0.9687		96.9	4785	
463.00 > 169.00	3.059	3.059	0.0	1.000	358482		4.17(1.90-5.69)		7760	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.063	-0.004	1.000	3546761	2.34		97.9	19261	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.063	-0.004	1.000	3703188	2.47		98.9	50274	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.273	3.273	0.0	1.000	2569825	0.9186		98.6	31938	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.399	0.0	1.000	1836913	1.01		101	8515	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.404	-0.005	1.000	4514716	2.39		95.4	36012	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.408	0.0	1.000	1045819	0.8816		91.8	10859	
549.00 > 99.00	3.408	3.408	0.0	1.000	403716		2.59(1.33-3.97)		13268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	535826	0.9227		96.3	26171	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.423	-0.006	1.000	1099186	2.43		101	10281	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.427	3.427	0.0	1.000	1199847	0.9052		90.5	6234	
513.00 > 169.00	3.427	3.427	0.0	1.000	228703		5.25(2.36-7.09)		4967	
D 23 13C2 PFDA										
515.00 > 470.00	3.427	3.432	-0.005	1.000	3212364	2.55		102	70211	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.582	-0.006	1.000	1777310	2.49		99.6	19434	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.586	0.0	1.003	734680	1.04		104	6550	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	931958	0.9673		100	9651	
599.00 > 99.00	3.741	3.741	0.0	1.000	321949		2.89(1.39-4.16)		6044	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.758	0.004	1.000	2588545	2.38		95.3	34212	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.758	-0.007	1.000	1979807	2.81		112	27920	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	828228	0.9465		94.7	5658	
563.00 > 169.00	3.762	3.762	0.0	1.000	209057		3.96(2.12-6.36)		6437	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.762	0.0	1.003	699741	0.9455		94.6	12743	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.918	0.0	1.000	3971478	0.9189		97.5	42268	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1169417	0.9684		96.8	1725	
613.00 > 169.00	4.051	4.051	0.0	1.000	272815		4.29(2.13-6.40)		2430	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.059	-0.008	1.000	2894747	2.47		98.7	36204	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	1304378	0.9269		92.7	1457	
663.00 > 169.00	4.319	4.319	0.0	1.000	402017		3.24(1.25-3.76)		3637	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.563	0.001	1.000	3520633	2.37		94.7	23778	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	349817	0.9891		98.9	3349	
713.00 > 219.00	4.554	4.564	-0.010	0.998	255928		1.37(0.71-2.13)		4101	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.975	0.001	1.000	6143789	2.54		102	16546	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.976	4.976	0.0	1.000	2242678	0.9415		94.1	952	
813.00 > 169.00	4.976	4.976	0.0	1.000	361791		6.20(2.86-8.58)		2083	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2356736	0.9551		95.5	822	
913.00 > 169.00	5.344	5.344	0.0	1.000	302004		7.80(3.83-11.48)		2104	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:36:55 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_070.d

Injection Date: 26-Apr-2018 06:09:11 Instrument ID: A8_N

Lims ID: CCV L4

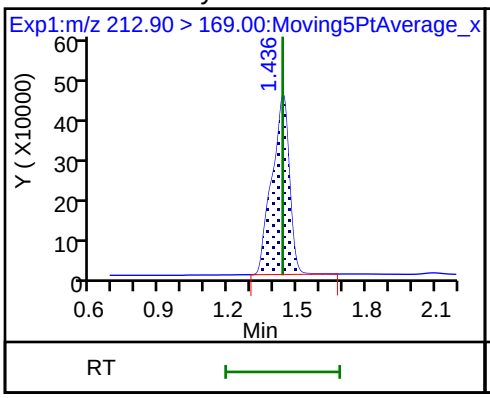
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 3

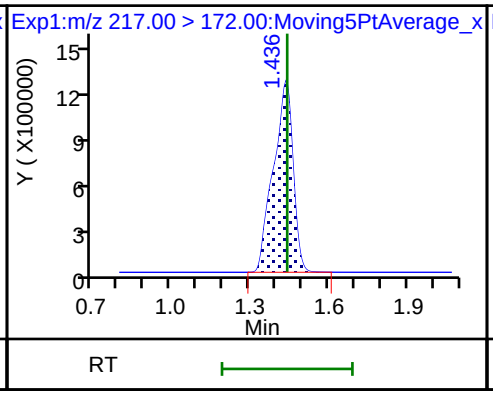
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

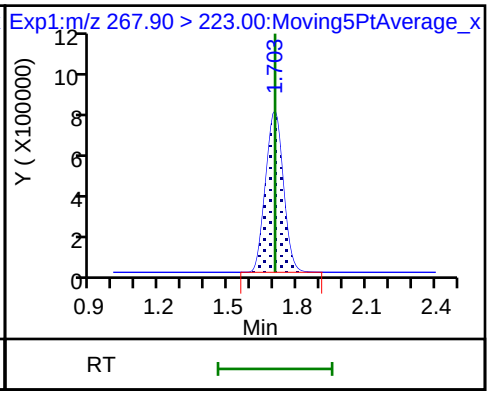
2 Perfluorobutyric acid



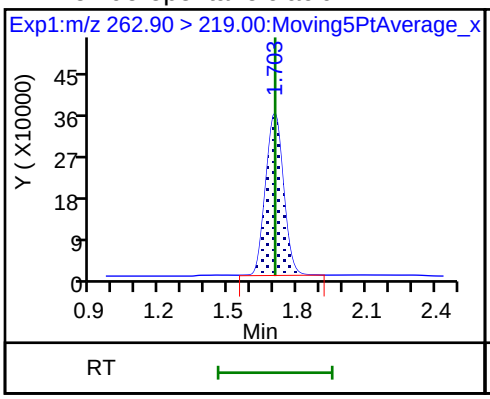
D 1 13C4 PFBA



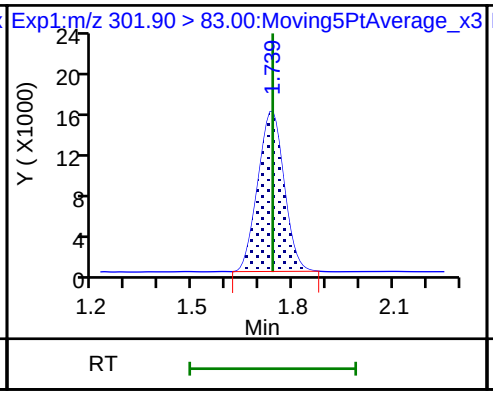
D 3 13C5-PFPeA



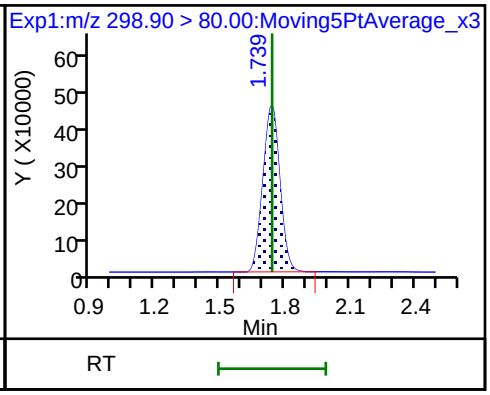
4 Perfluoropentanoic acid



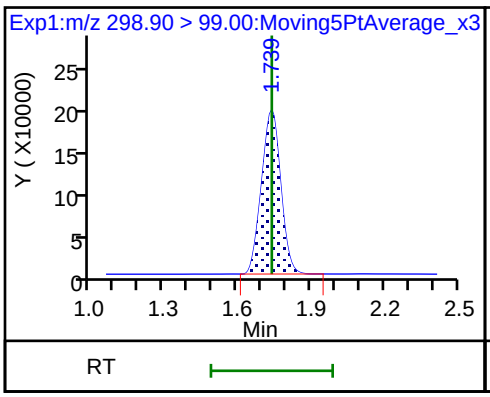
D 47 13C3-PFBS



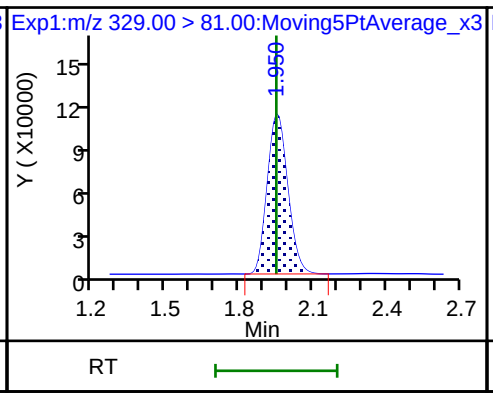
5 Perfluorobutanesulfonic acid



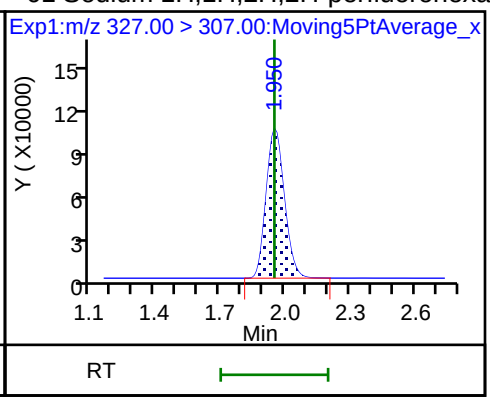
5 Perfluorobutanesulfonic acid



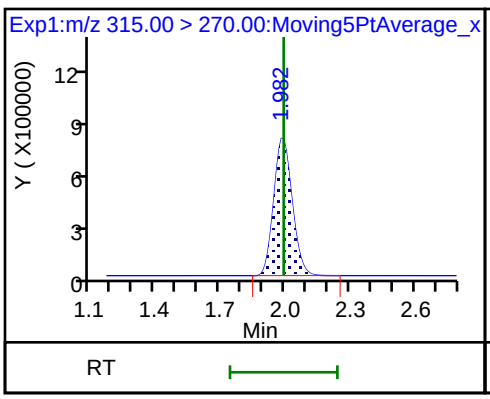
D 60 M2-4:2FTS



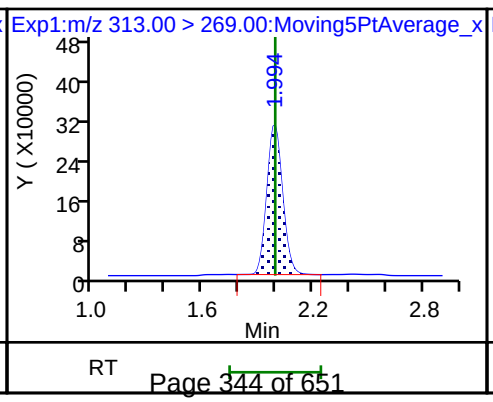
61 Sodium 1H,1H,2H,2H-perfluorohexane



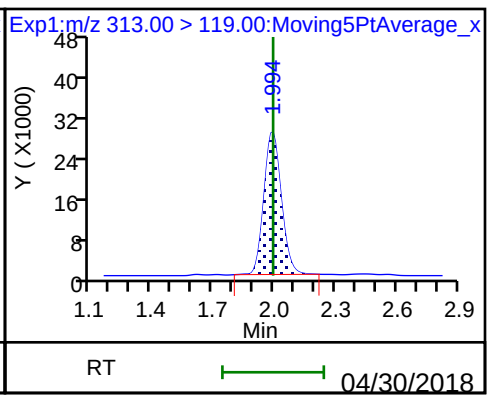
D 7 13C2 PFHxA



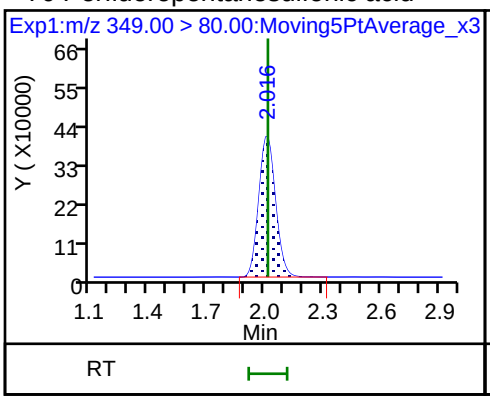
6 Perfluorohexanoic acid



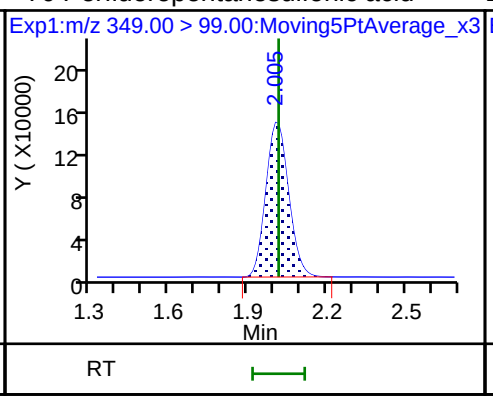
6 Perfluorohexanoic acid



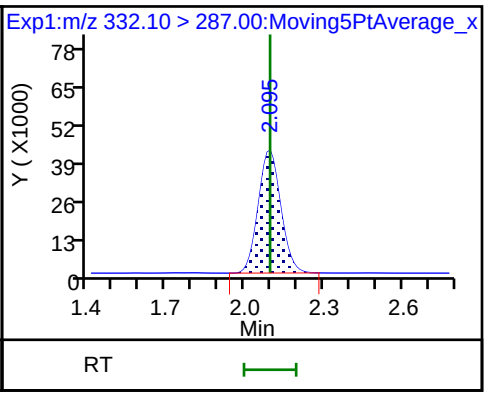
70 Perfluoropentanesulfonic acid



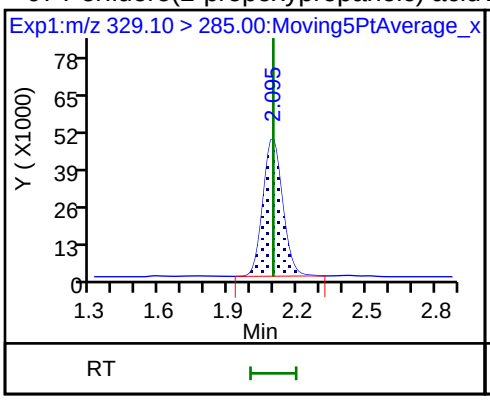
70 Perfluoropentanesulfonic acid



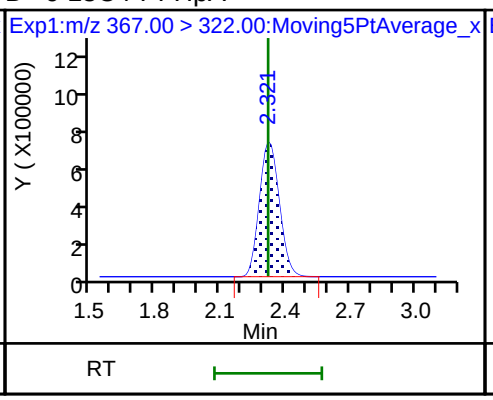
D 64 13C3 HFPO-DA



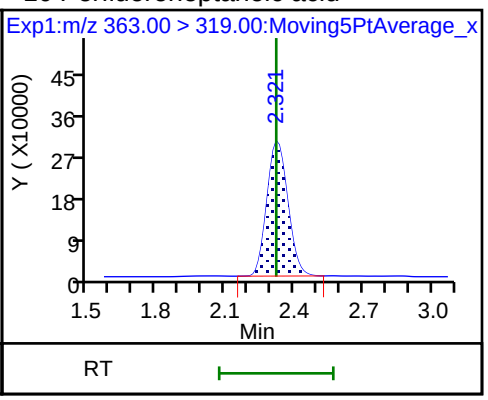
67 Perfluoro(2-propoxypropanoic) acid



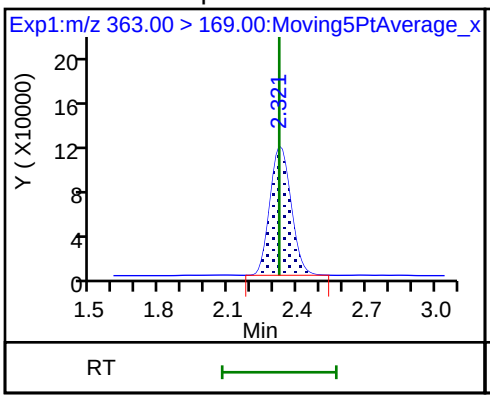
D 9 13C4-PFHpA



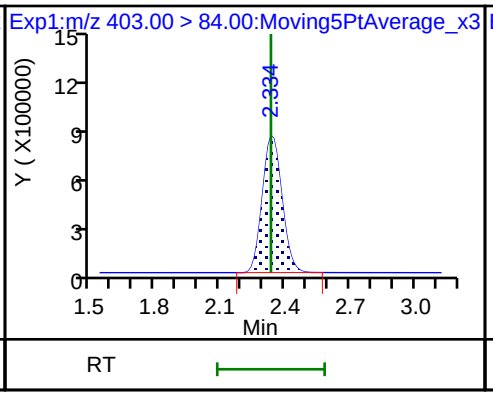
10 Perfluoroheptanoic acid



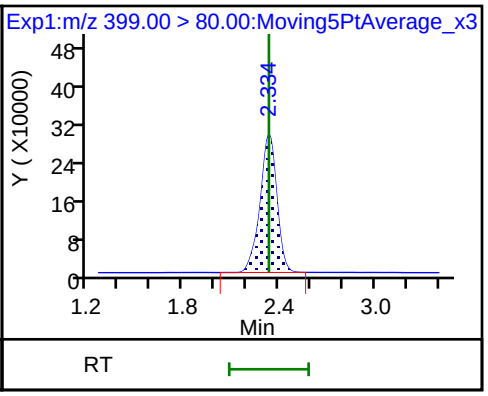
10 Perfluoroheptanoic acid



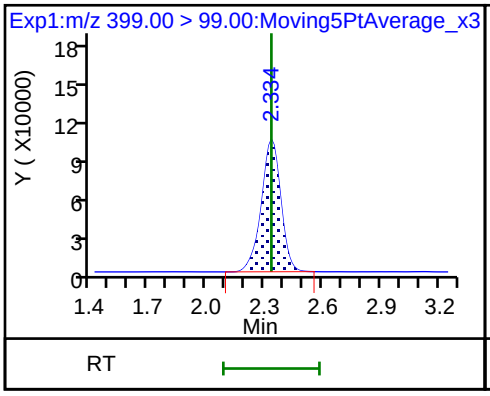
D 11 18O2 PFHxS



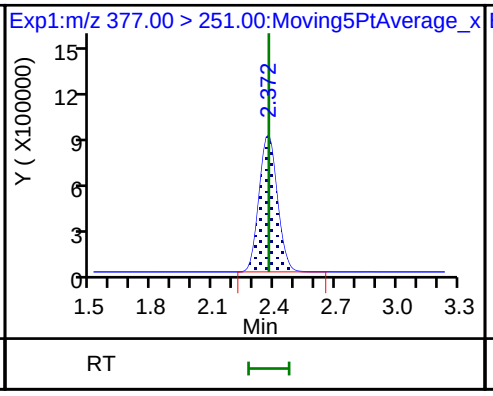
8 Perfluorohexanesulfonic acid



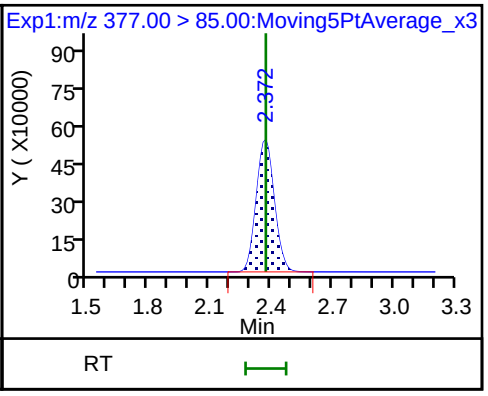
8 Perfluorohexanesulfonic acid



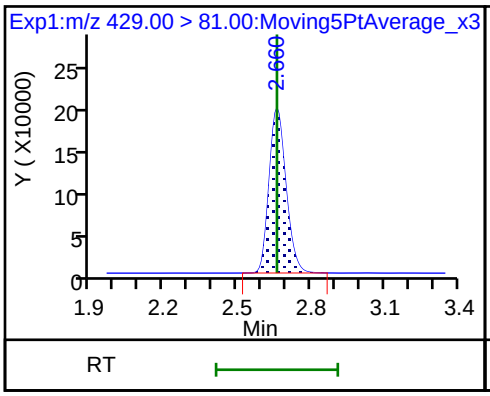
65 Adona



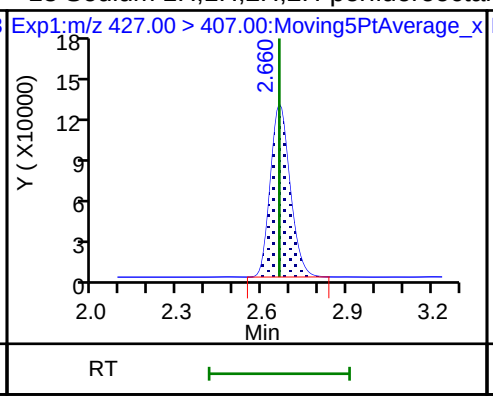
65 Adona



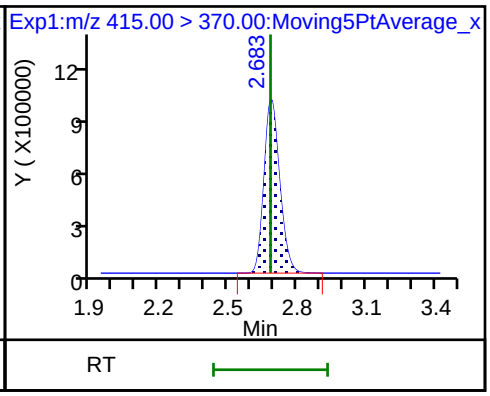
D 12 M2-6:2FTS



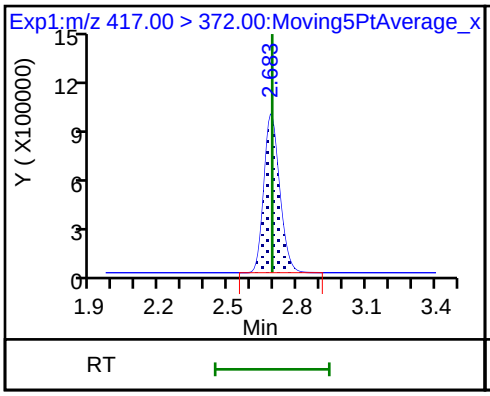
13 Sodium 1H,1H,2H,2H-perfluorooctane



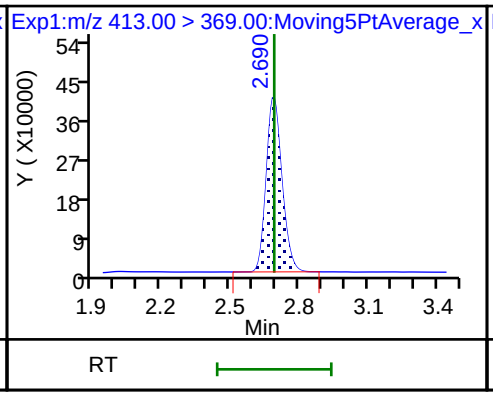
* 62 13C2-PFOA



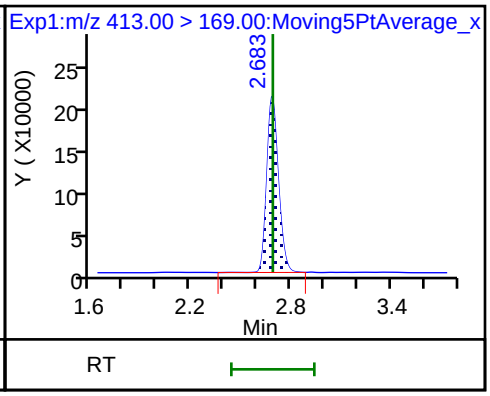
D 14 13C4 PFOA



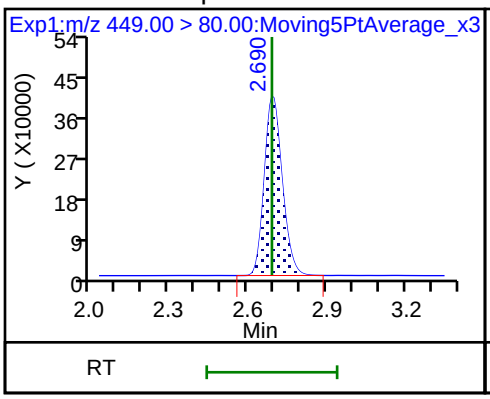
15 Perfluorooctanoic acid



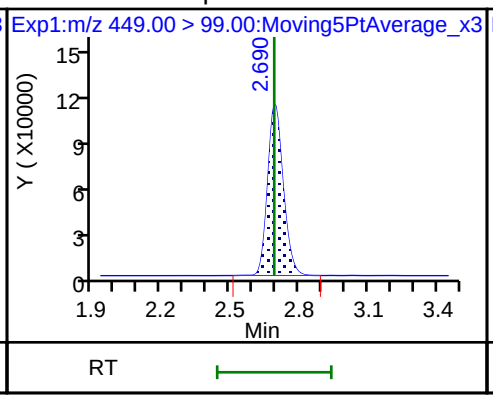
15 Perfluorooctanoic acid



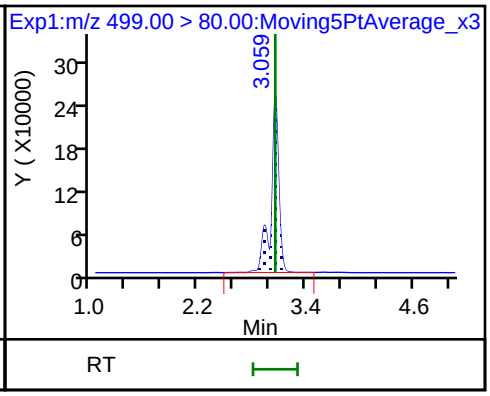
16 Perfluoroheptanesulfonic acid



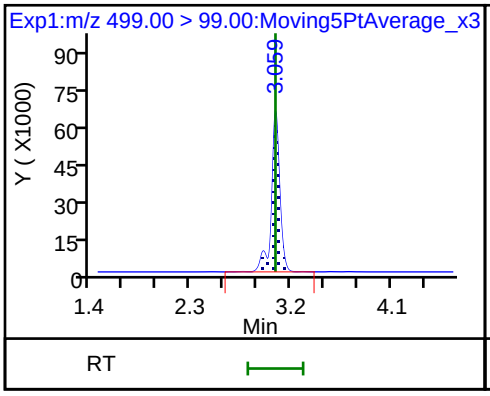
16 Perfluoroheptanesulfonic acid



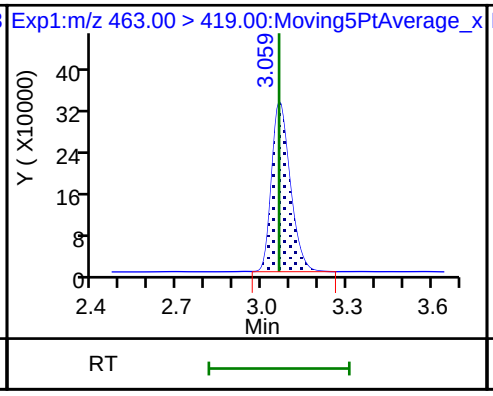
17 Perfluorooctane sulfonic acid



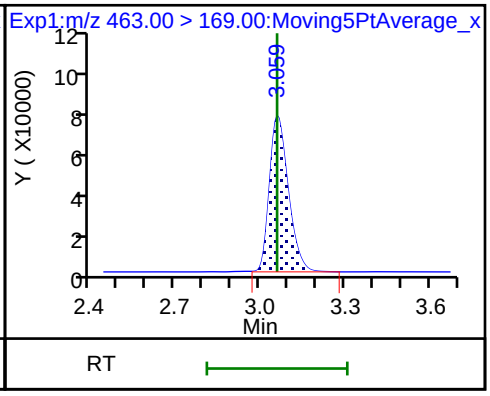
17 Perfluorooctane sulfonic acid



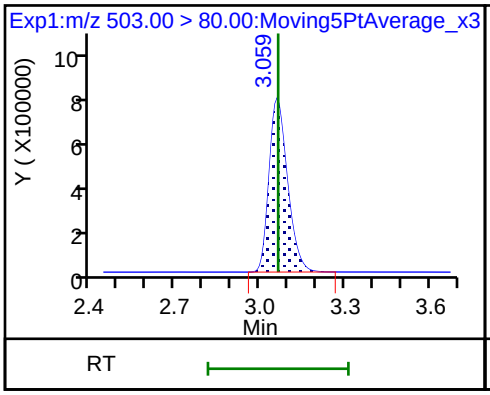
20 Perfluorononanoic acid



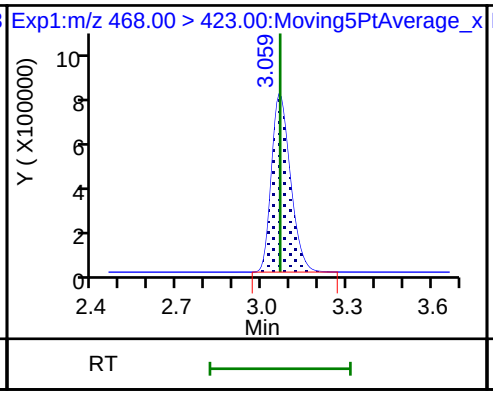
20 Perfluorononanoic acid



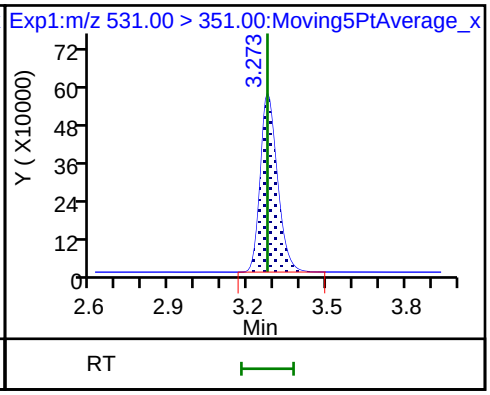
D 18 13C4 PFOS



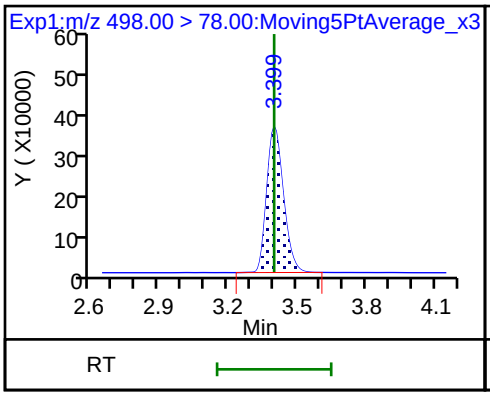
D 19 13C5 PFNA



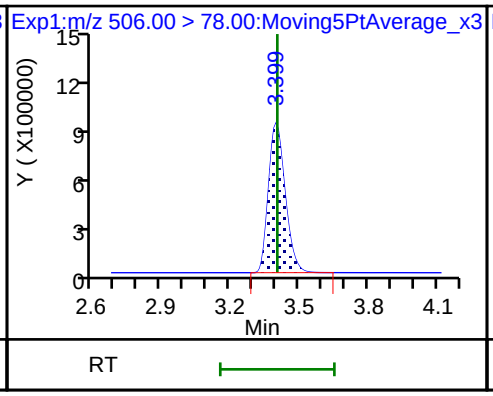
69 9-Chlorohexadecafluoro-3-oxanonane



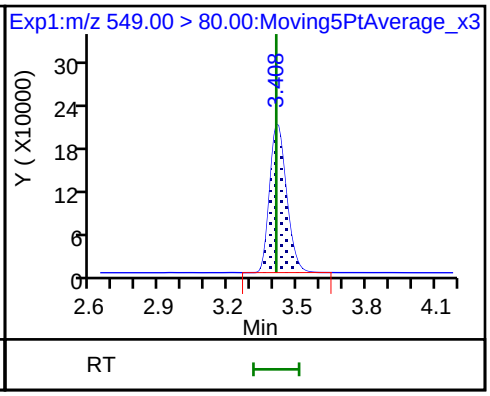
22 Perfluorooctane Sulfonamide



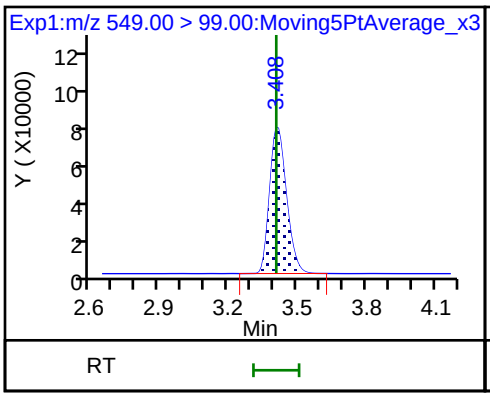
D 21 13C8 FOSA



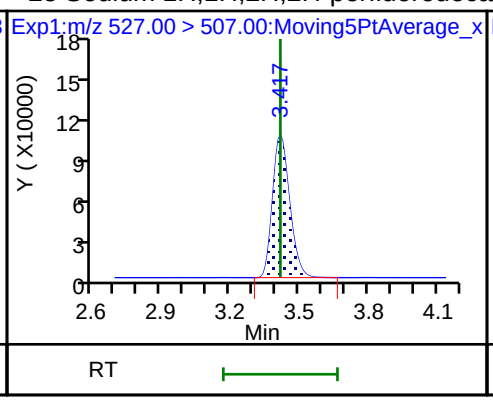
68 Perfluorononanesulfonic acid



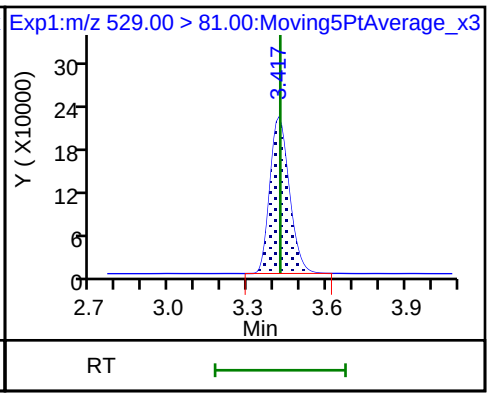
68 Perfluorononanesulfonic acid



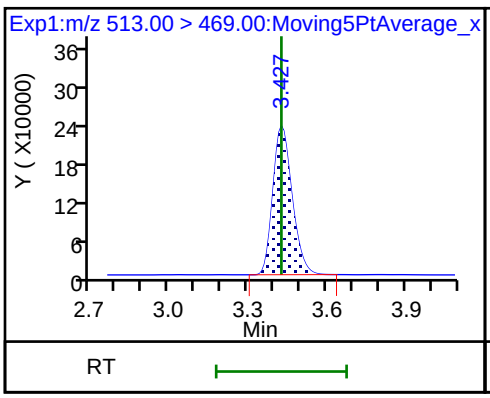
25 Sodium 1H,1H,2H,2H-perfluorodecane



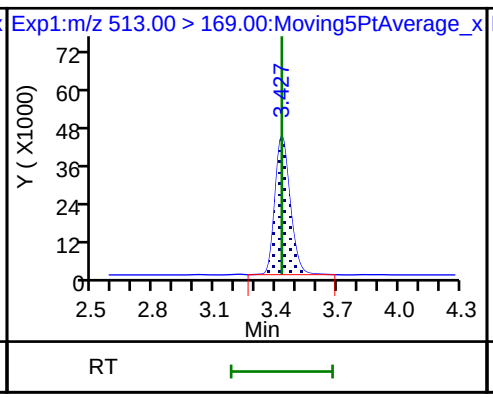
D 26 M2-8:2FTS



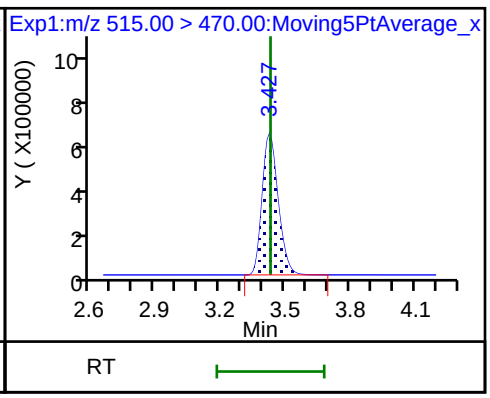
24 Perfluorodecanoic acid



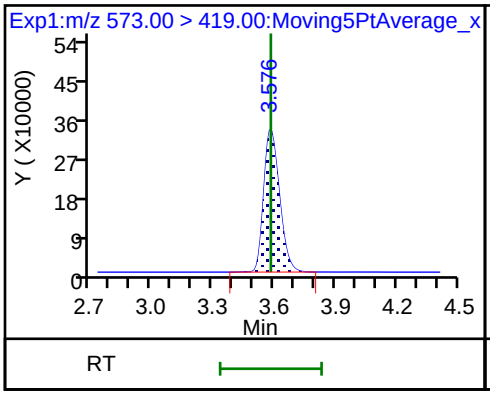
24 Perfluorodecanoic acid



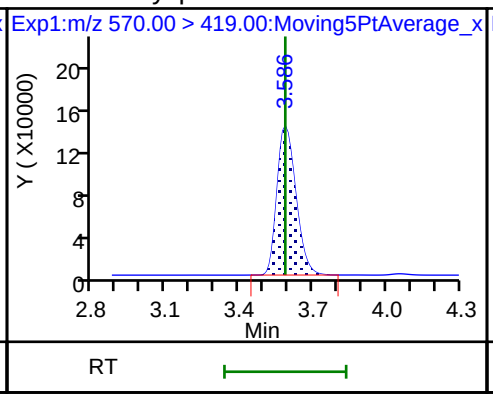
D 23 13C2 PFDA



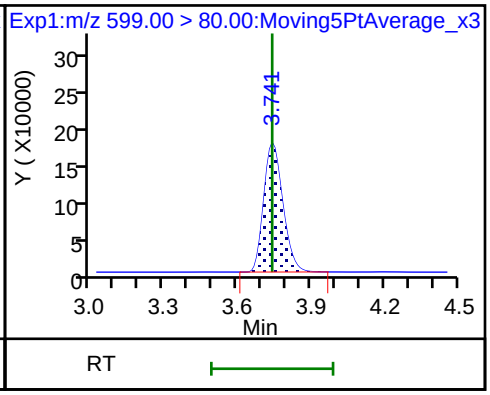
D 27 d3-NMeFOSAA



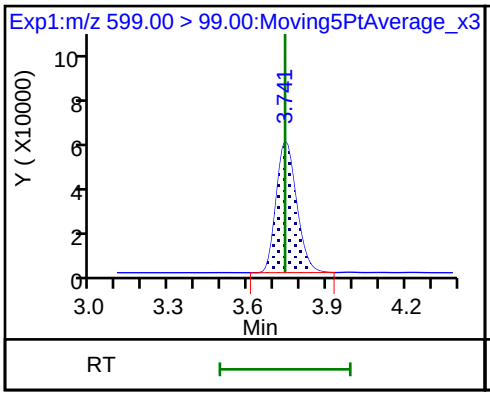
28 N-methyl perfluorooctane sulfonami



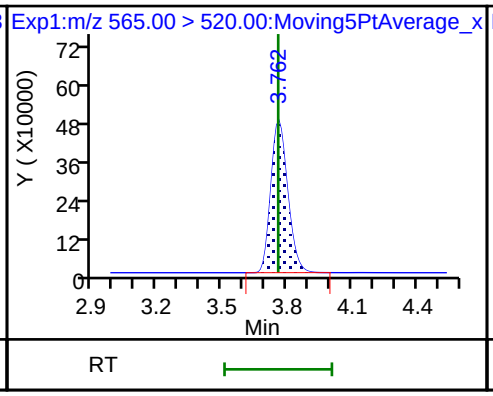
29 Perfluorodecane Sulfonic acid



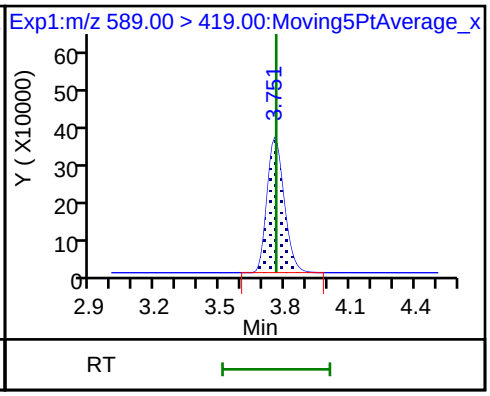
29 Perfluorodecane Sulfonic acid



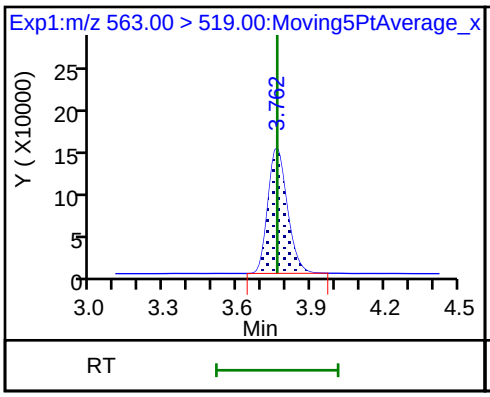
D 30 13C2 PFUnA



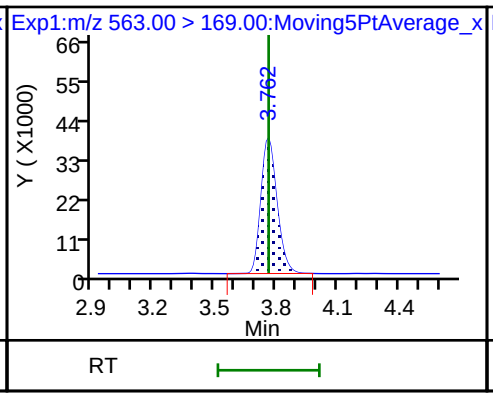
D 32 d5-NEtFOSAA



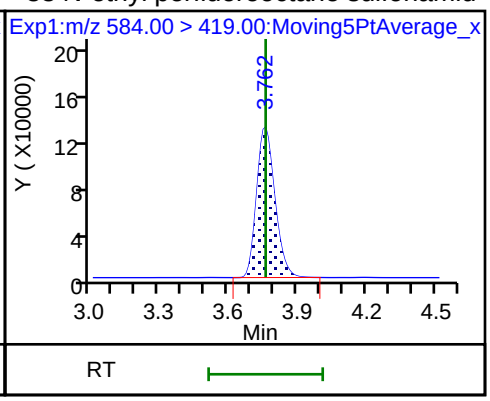
31 Perfluoroundecanoic acid



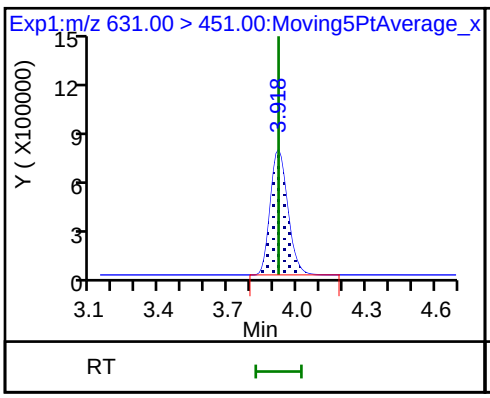
31 Perfluoroundecanoic acid



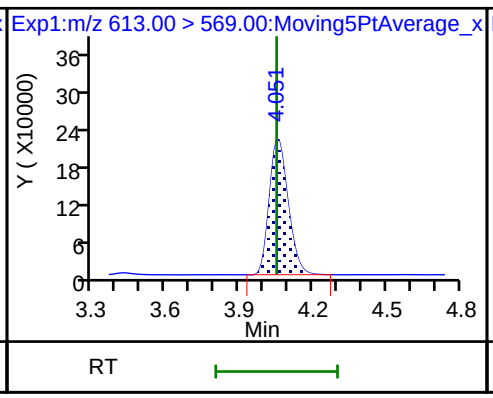
33 N-ethyl perfluorooctane sulfonamid



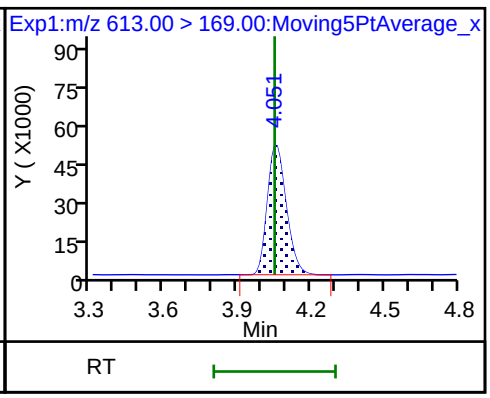
66 11-Chloroeicosafluoro-3-oxaundecan



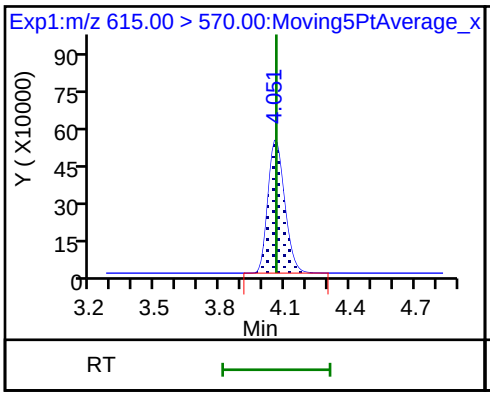
37 Perfluorododecanoic acid



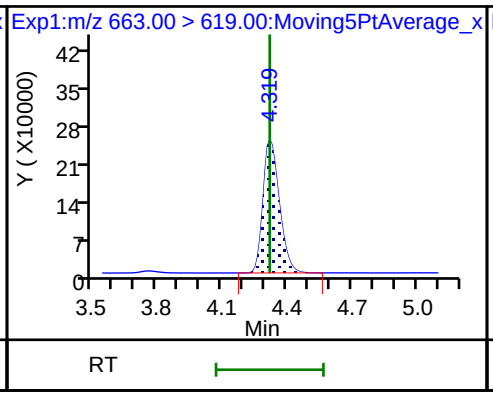
37 Perfluorododecanoic acid



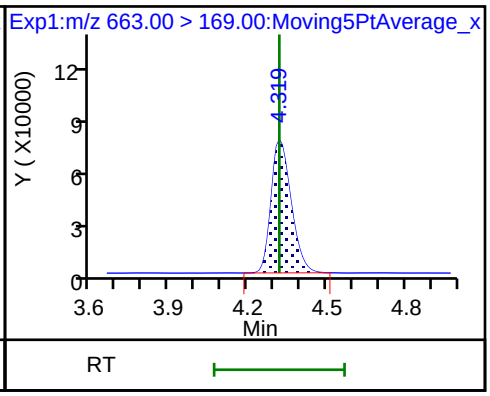
D 36 13C2 PFDoA



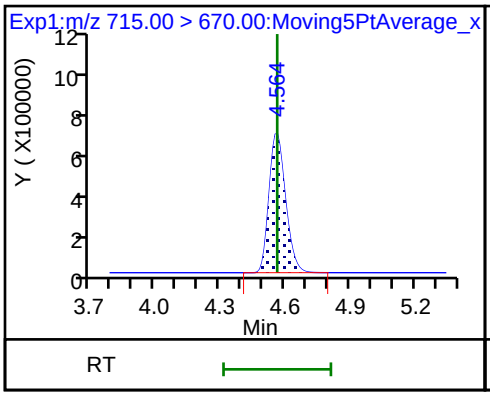
41 Perfluorotridecanoic acid



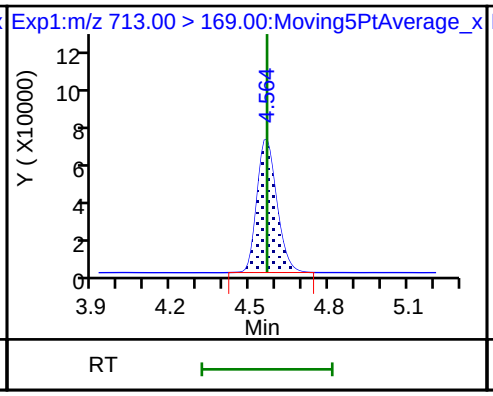
41 Perfluorotridecanoic acid



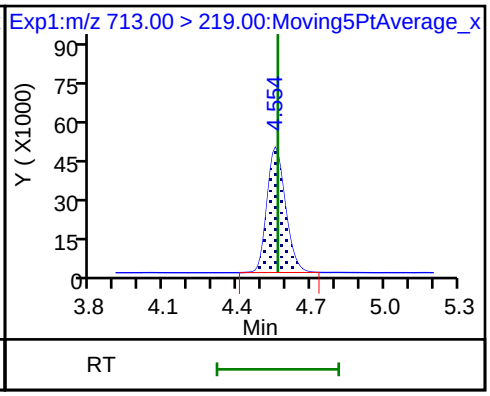
D 43 13C2-PFTeDA



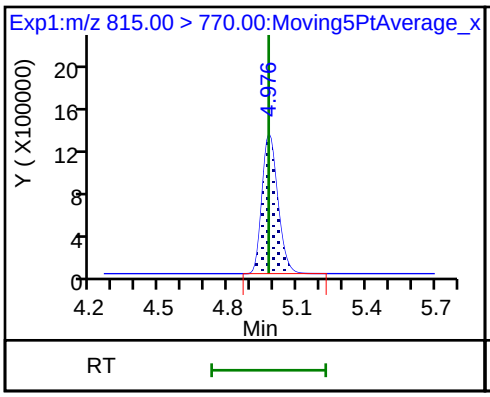
42 Perfluorotetradecanoic acid



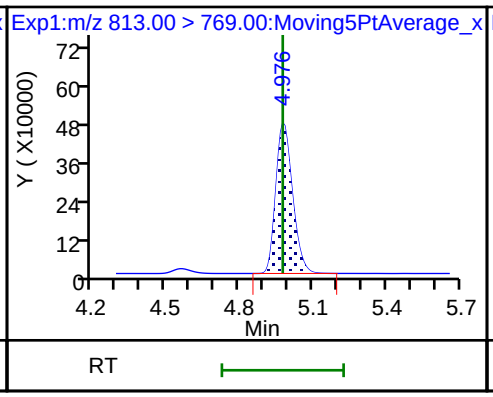
42 Perfluorotetradecanoic acid



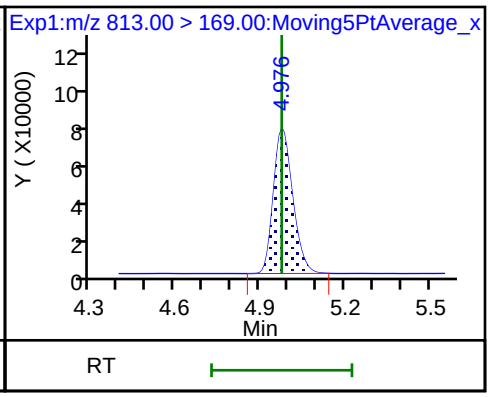
D 44 13C2-PFHxDA



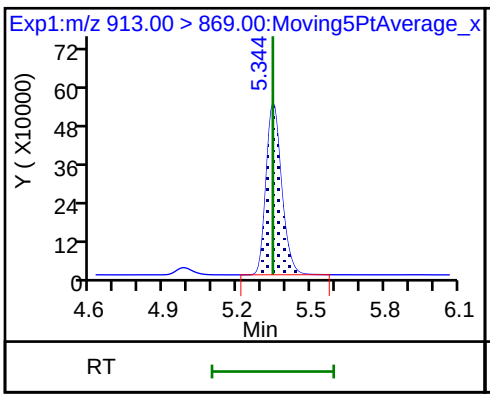
45 Perfluorohexadecanoic acid



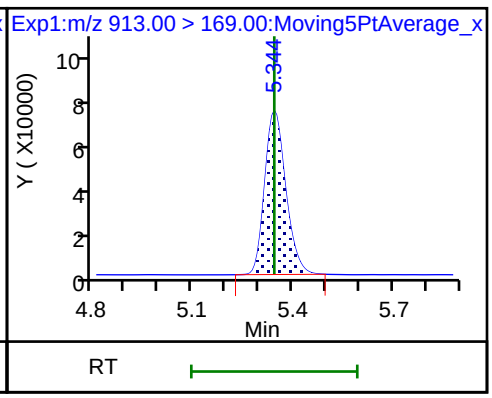
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220090/1 Calibration Date: 04/26/2018 18:05

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_053.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9483		2.55	2.50	2.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.159		2.43	2.50	-2.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	77.72		2.19	2.21	-0.7	50.0
4:2 FTS	AveID	16.03	18.07		2.63	2.34	12.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.015		2.50	2.50	-0.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	73.45			2.35	2.7	50.0
HFPO-DA (GenX)	AveID	2.785	3.020			2.50	8.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.067		2.66	2.50	6.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.079		2.17	2.28	-4.7	40.0
Adona	AveID	3.464	3.684			2.50	6.4	50.0
6:2FTS	AveID	1.691	1.770		2.48	2.37	4.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.140		2.47	2.50	-1.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.318		2.36	2.38	-0.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.023		2.45	2.50	-1.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.062		2.27	2.32	-2.4	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.826			2.33	-3.1	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.031		2.55	2.50	1.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7473			2.40	-6.5	50.0
8:2FTS	AveID	1.265	1.256		2.38	2.40	-0.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.013		2.46	2.50	-1.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.995		2.49	2.50	-0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6640		2.46	2.41	2.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9629		2.58	2.50	3.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8251		2.44	2.50	-2.4	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.797			2.36	-4.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.086		2.60	2.50	4.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.209		2.49	2.50	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2515		2.50	2.50	0.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9364		2.45	2.50	-2.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220090/1 Calibration Date: 04/26/2018 18:05

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_053.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9294		2.31	2.50	-7.4	50.0
13C4 PFBA	Ave	1.345	1.395		2.59	2.50	3.7	50.0
13C5 PFPeA	Ave	0.8672	0.8983		2.59	2.50	3.6	50.0
13C3-PFBS	Ave	0.0199	0.0203		2.37	2.33	1.9	50.0
M2-4:2FTS	Ave	0.1425	0.1520		2.49	2.34	6.6	50.0
13C2 PFHxA	Ave	0.9590	0.9909		2.58	2.50	3.3	50.0
13C3 HFPO-DA	Ave	0.0593	0.0514		2.17	2.50	-13.3	50.0
13C4-PFHpA	Ave	0.9333	0.9611		2.57	2.50	3.0	50.0
18O2 PFHxS	Ave	1.152	1.147		2.36	2.37	-0.4	50.0
M2-6:2FTS	Ave	0.2000	0.2087		2.48	2.38	4.4	40.0
13C4 PFOA	Ave	0.9276	0.9491		2.56	2.50	2.3	50.0
13C4 PFOS	Ave	0.8066	0.8149		2.41	2.39	1.0	50.0
13C5 PFNA	Ave	0.7973	0.8204		2.57	2.50	2.9	50.0
13C8 FOSA	Ave	1.007	0.9605		2.38	2.50	-4.6	50.0
M2-8:2FTS	Ave	0.2409	0.2340		2.33	2.40	-2.9	40.0
13C2 PFDA	Ave	0.6701	0.6588		2.46	2.50	-1.7	50.0
d3-NMeFOSAA	Ave	0.3798	0.3927		2.58	2.50	3.4	50.0
d5-NEtFOSAA	Ave	0.3749	0.3833		2.56	2.50	2.3	50.0
13C2 PFUnA	Ave	0.5781	0.5141		2.22	2.50	-11.1	50.0
13C2 PFDoA	Ave	0.6242	0.5760		2.31	2.50	-7.7	50.0
13C2-PFTeDA	Ave	0.7915	0.7238		2.29	2.50	-8.6	50.0
13C2-PFHxDA	Ave	1.288	1.267		2.46	2.50	-1.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_053.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 18:05:02 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:24:15 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK012

First Level Reviewer: westendorfc Date: 27-Apr-2018 15:24:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.442	-0.001	1.000	6145847	2.55		102	3473	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.446	-0.005	1.000	6481241	2.59		104	44501	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.703	-0.001	1.000	4835421	2.43		97.2	4836	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.711	-0.009	0.557	4173192	2.59		104	64489	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.739	-0.001	1.000	6469129	2.19		99.3	21732	
298.90 > 99.00	1.738	1.739	-0.001	1.000	2778900		2.33(1.25-3.74)		24308	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.747	-0.009	1.000	87566	2.37		102	754	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	1589168	2.63		113	68428	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.959	-0.010	1.000	659500	2.49		107	6216	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.994	-0.002	1.006	4670570	2.50		99.9	6264	
313.00 > 119.00	1.981	1.994	-0.013	1.000	421936		11.07(5.03-15.10)		3722	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	2.003	-0.022	1.000	4603178	2.58		103	95740	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.016	-0.013	1.000	6486775	2.41		103	31540	
349.00 > 99.00	2.003	2.016	-0.013	1.000	2336652		2.78(1.36-4.07)		29314	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.093	-0.010	1.000	238925	2.17		86.7	6375	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.095	-0.012	1.000	721452	2.71		108	4591	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.322	-0.002	1.000	4762544	2.66		107	5739	
363.00 > 169.00	2.320	2.322	-0.002	1.000	1791993		2.66(1.13-3.40)		9335	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.332	-0.012	1.000	4464973	2.57		103	77924	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.335	-0.002	1.000	5231159	2.17		95.3	10382	
399.00 > 99.00	2.333	2.335	-0.002	1.000	1725824		3.03(1.50-4.49)		9141	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.345	-0.012	1.000	5041351	2.36		99.6	56667	
65 Adona										
377.00 > 251.00	2.372	2.374	-0.002	1.000	13946824	2.66		106	123186	
377.00 > 85.00	2.372	2.374	-0.002	1.000	7964583		1.75(0.84-2.53)		84177	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.661	-0.001	1.000	1626826	2.48		105	19826	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.667	-0.007	1.000	921182	2.48		104	9475	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	4749674	2.36		99.3	23018	
449.00 > 99.00	2.690	2.691	-0.001	1.000	1297187		3.66(1.94-5.82)		33545	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.691	-0.008		4645653	2.50			53717	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.691	-0.008	1.000	5026089	2.47		98.7	3812	
413.00 > 169.00	2.683	2.691	-0.008	1.000	2579108		1.95(0.84-2.52)		8480	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.697	-0.014	1.000	4409074	2.56		102	60584	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.061	-0.005	1.000	3898985	2.45		98.1	14381	
463.00 > 169.00	3.063	3.061	0.002	1.002	979334		3.98(1.90-5.69)		26241	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.056	3.061	-0.005	1.000	3731270	2.27		97.6	28242	M
499.00 > 99.00	3.056	3.061	-0.005	1.000	825714		4.52(2.31-6.93)		11965	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.065	-0.009	1.000	3619108	2.41		101	23688	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.072	-0.016	1.000	3811048	2.57		103	94396	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.270	3.274	-0.004	1.000	6443705	2.26		96.9	65058	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.400	-0.005	1.000	4598983	2.55		102	35112	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.408	-0.013	1.000	4462218	2.38		95.4	63236	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.409	-0.005	1.000	2715792	2.24		93.5	19555	
549.00 > 99.00	3.413	3.409	0.004	1.003	1012790		2.68(1.33-3.97)		19735	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.418	-0.005	1.000	1307488	2.38		99.2	50164	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.426	-0.013	1.000	1041397	2.33		97.1	9944	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.427	-0.004	1.000	3100677	2.46		98.2	15195	
513.00 > 169.00	3.423	3.427	-0.004	1.000	564154		5.50(2.36-7.09)		8610	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.436	-0.013	1.000	3060509	2.46		98.3	54284	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.586	-0.014	1.000	1824537	2.58		103	22541	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.583	3.587	-0.004	1.003	1815633	2.49		99.8	11679	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.742	-0.005	1.000	2423307	2.46		102	22669	
599.00 > 99.00	3.737	3.742	-0.005	1.000	811259		2.99(1.39-4.16)		21446	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.752	0.006	1.003	1714751	2.58		103	43663	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.761	-0.013	1.000	1780830	2.56		102	19812	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.761	-0.003	1.000	2388096	2.22		88.9	85512	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.762	-0.004	1.000	1970487	2.44		97.6	8948	
563.00 > 169.00	3.758	3.762	-0.004	1.000	514717		3.83(2.12-6.36)		9259	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.919	-0.003	1.000	9975495	2.26		96.0	81865	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.051	-0.002	1.000	2906097	2.60		104	3999	
613.00 > 169.00	4.049	4.051	-0.002	1.000	693920		4.19(2.13-6.40)		6557	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.061	-0.012	1.000	2675865	2.31		92.3	26502	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.319	-0.012	1.000	3235379	2.49		99.5	3793	
663.00 > 169.00	4.307	4.319	-0.012	1.000	991526		3.26(1.25-3.76)		8107	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	845772	2.50		100	6190	
713.00 > 219.00	4.543	4.553	-0.010	0.998	627993		1.35(0.71-2.13)		9897	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.564	-0.011	1.000	3362533	2.29		91.4	22301	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.976	-0.010	1.000	5513091	2.45		98.0	2532	
813.00 > 169.00	4.966	4.976	-0.010	1.000	951449		5.79(2.86-8.58)		5798	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.976	-0.010	1.000	5887759	2.46		98.4	17161	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.337	-0.008	1.000	5471804	2.31		92.6	1802	
913.00 > 169.00	5.329	5.337	-0.008	1.000	675972		8.09(3.83-11.48)		3966	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 15:24:17 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_053.d

Injection Date: 26-Apr-2018 18:05:02 Instrument ID: A8_N

Lims ID: CCV L5

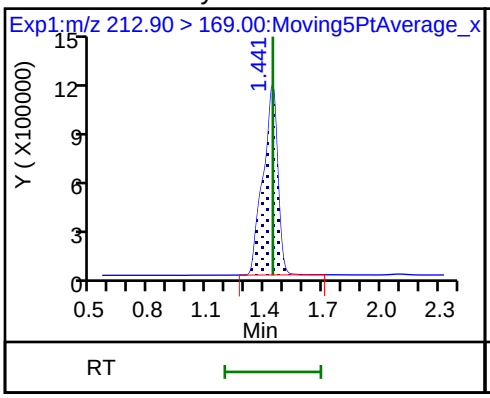
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1

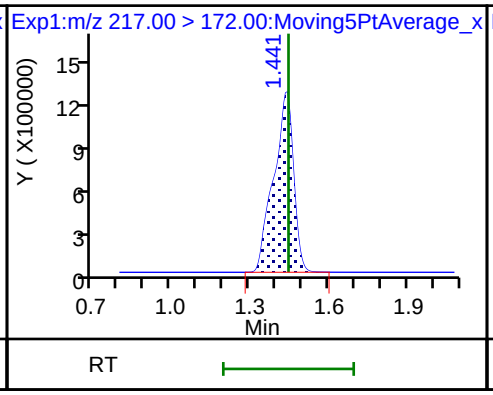
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

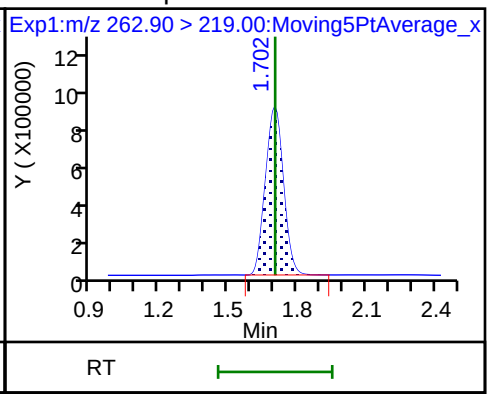
2 Perfluorobutyric acid



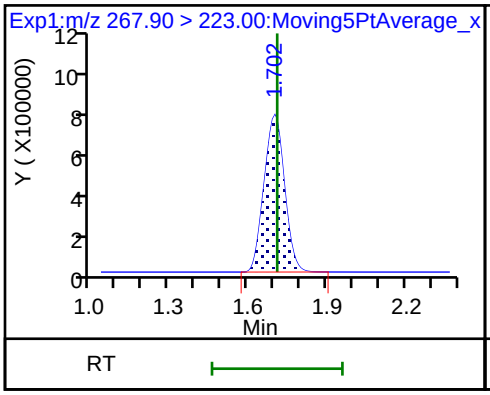
D 1 13C4 PFBA



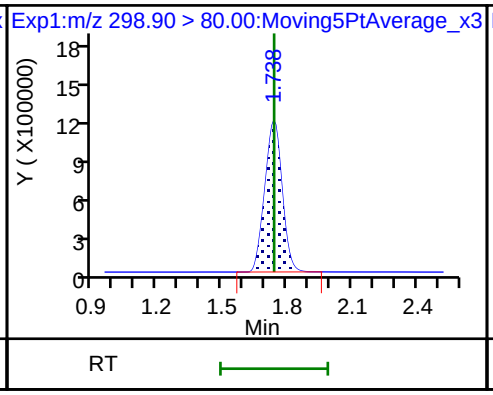
4 Perfluoropentanoic acid



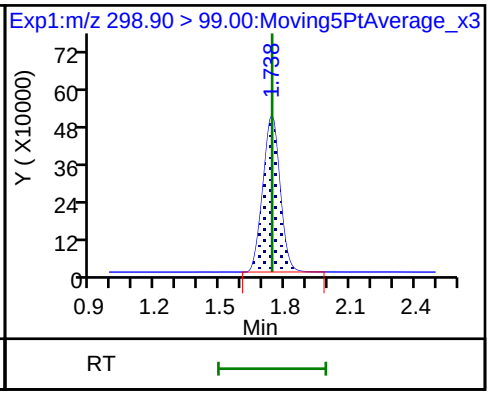
D 3 13C5-PFPeA



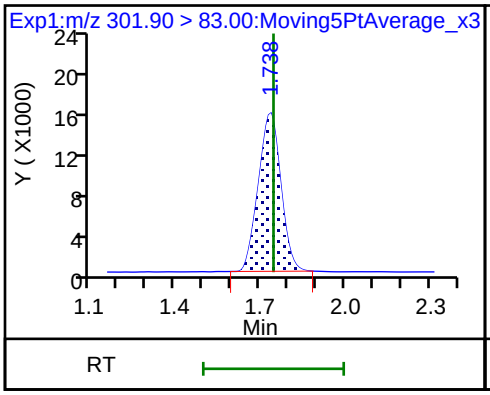
5 Perfluorobutanesulfonic acid



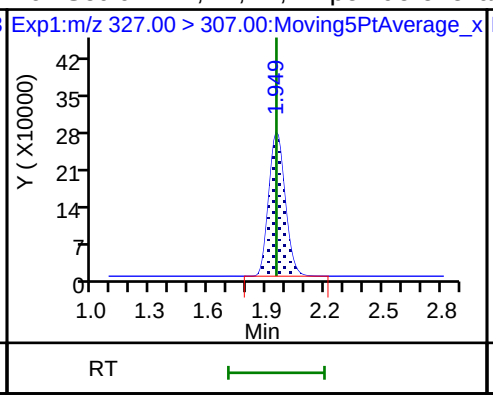
5 Perfluorobutanesulfonic acid



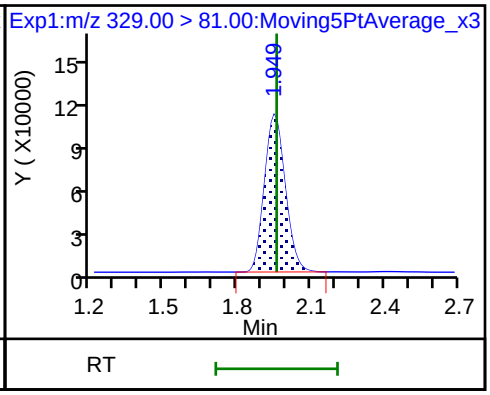
D 47 13C3-PFBS



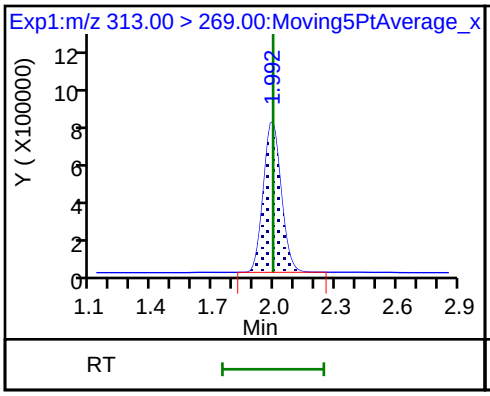
61 Sodium 1H,1H,2H,2H-perfluorohexane



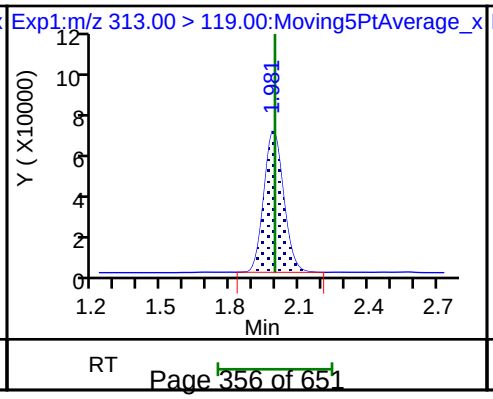
D 60 M2-4:2FTS



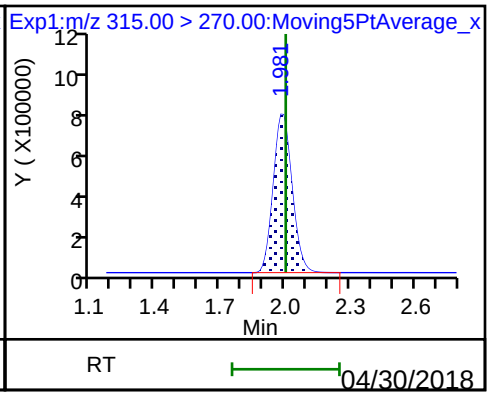
6 Perfluorohexanoic acid



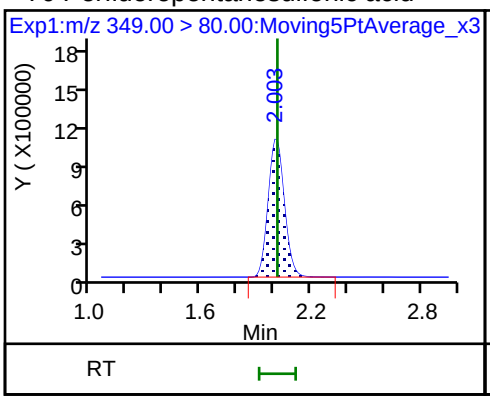
6 Perfluorohexanoic acid



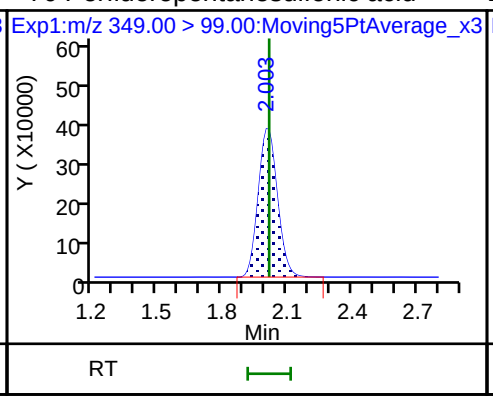
D 7 13C2 PFHxA



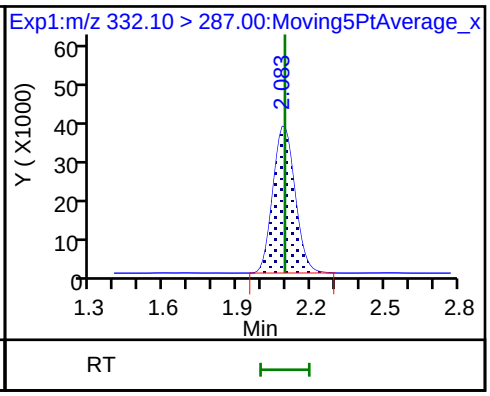
70 Perfluoropentanesulfonic acid



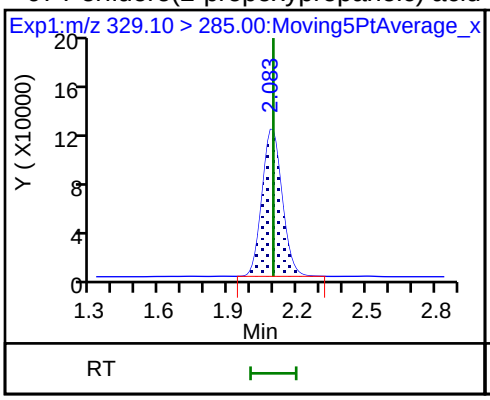
70 Perfluoropentanesulfonic acid



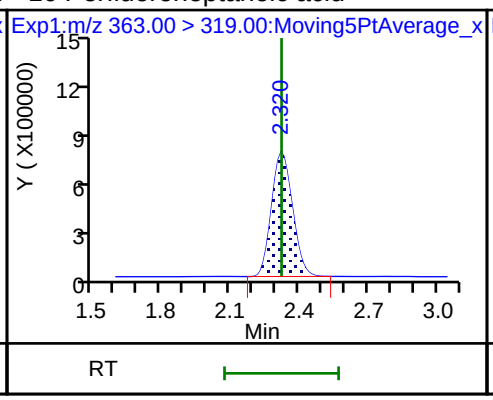
D 64 13C3 HFPO-DA



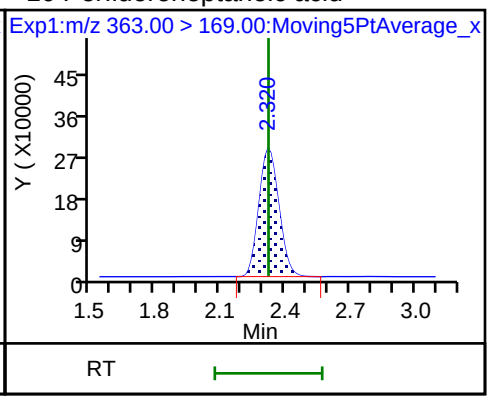
67 Perfluoro(2-propoxypropanoic) acid



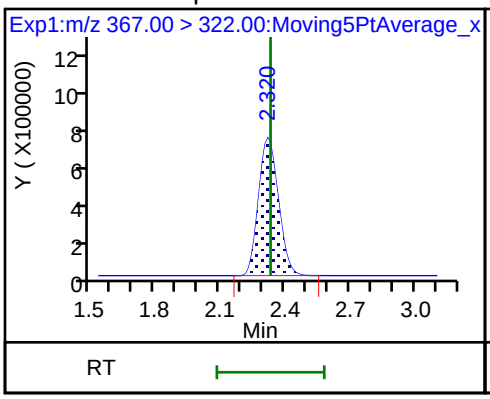
10 Perfluoroheptanoic acid



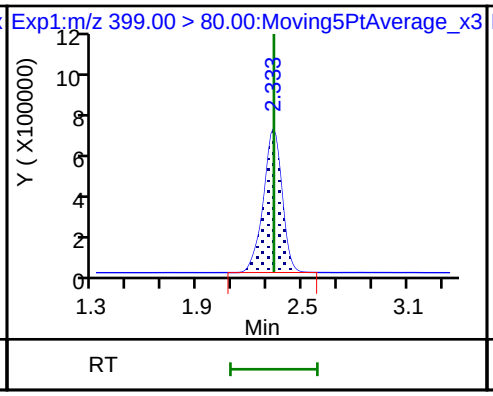
10 Perfluoroheptanoic acid



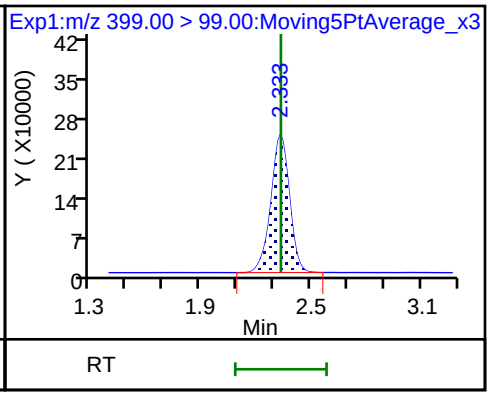
D 9 13C4-PFHpA



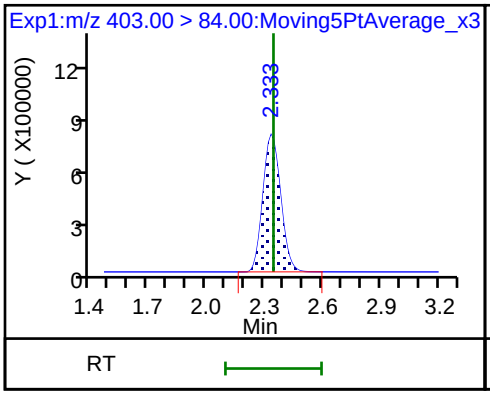
8 Perfluorohexanesulfonic acid



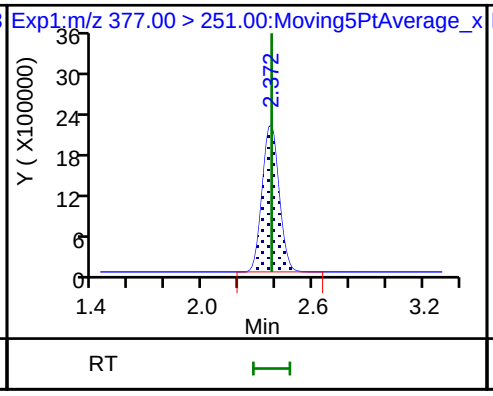
8 Perfluorohexanesulfonic acid



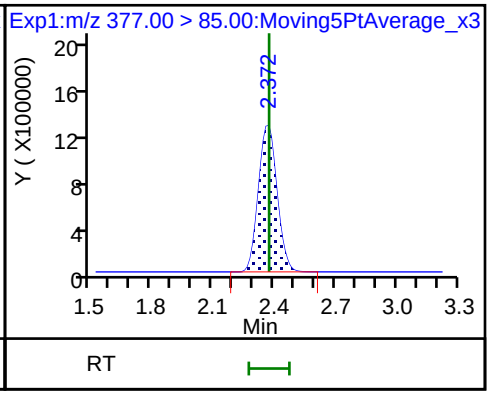
D 11 18O2 PFHxS



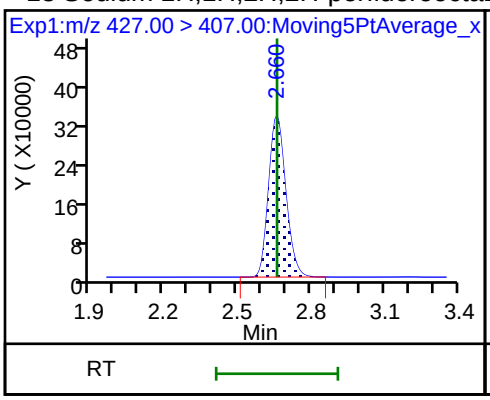
65 Adona



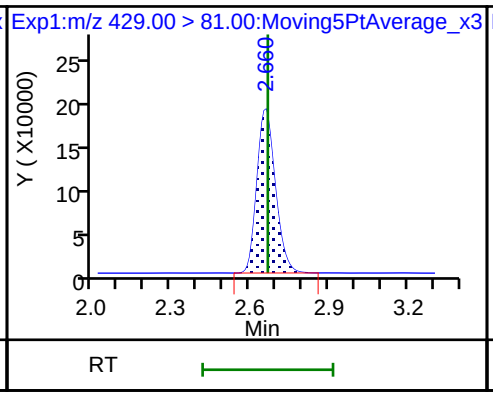
65 Adona



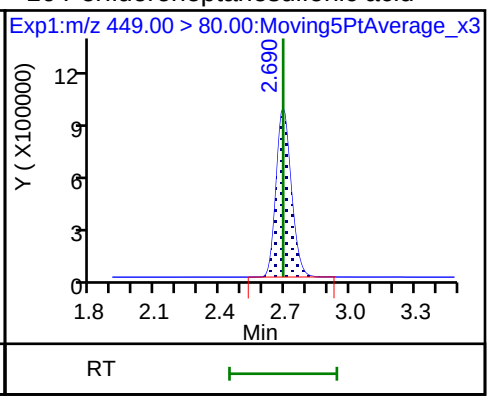
13 Sodium 1H,1H,2H,2H-perfluorooctane



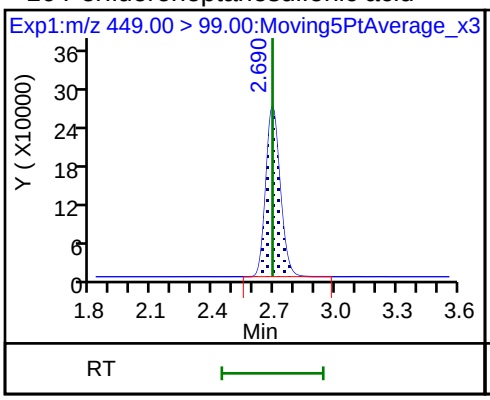
D 12 M2-6:2FTS



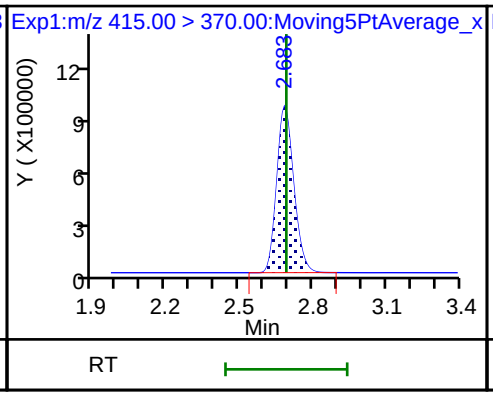
16 Perfluoroheptanesulfonic acid



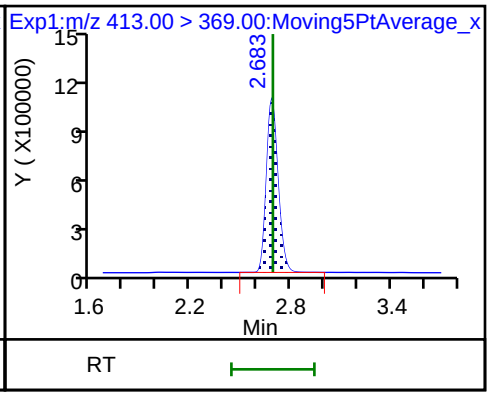
16 Perfluoroheptanesulfonic acid



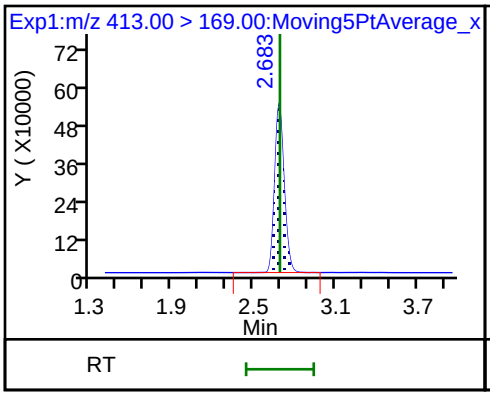
* 62 13C2-PFOA



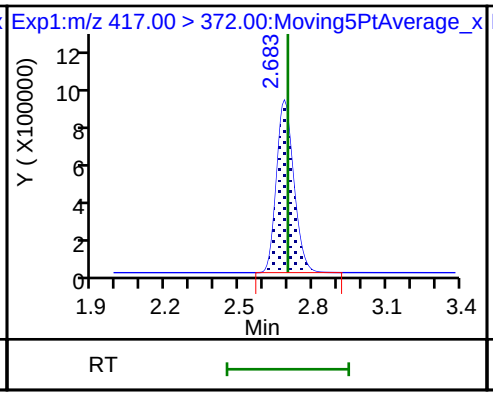
15 Perfluorooctanoic acid



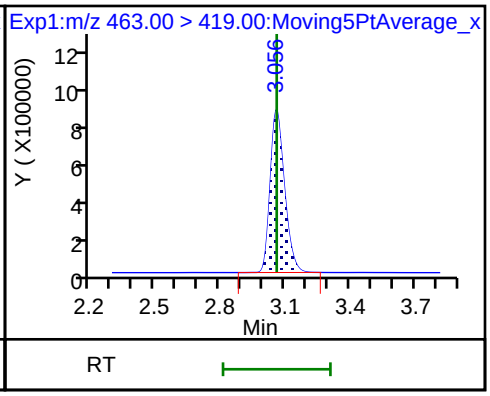
15 Perfluorooctanoic acid



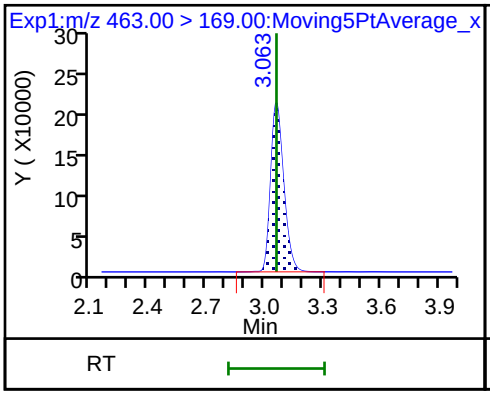
D 14 13C4 PFOA



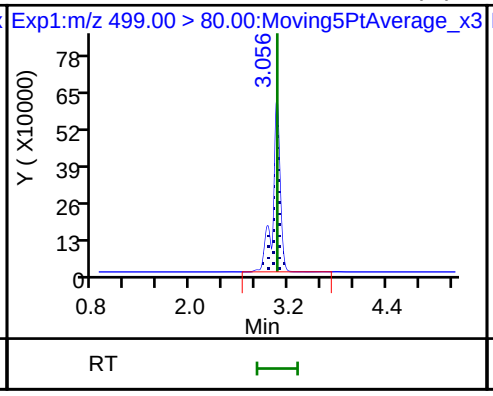
20 Perfluorononanoic acid



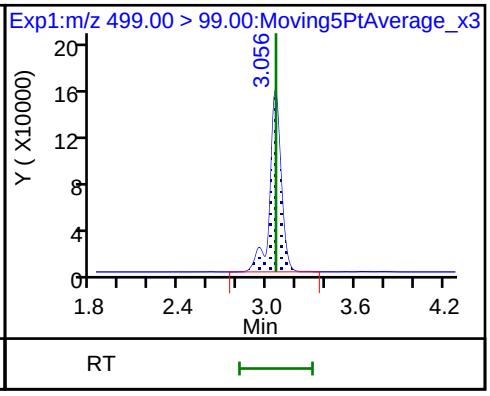
20 Perfluorononanoic acid



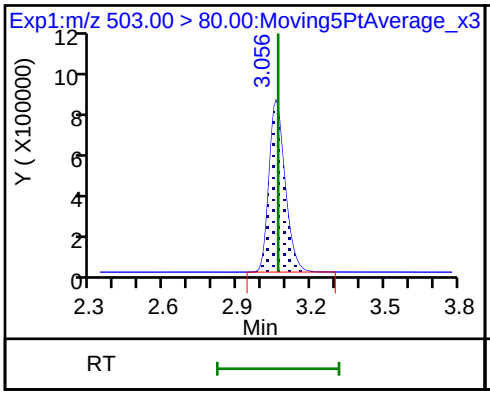
17 Perfluorooctane sulfonic acid (M)



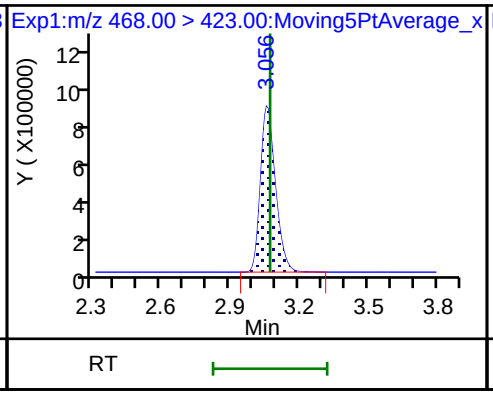
17 Perfluorooctane sulfonic acid



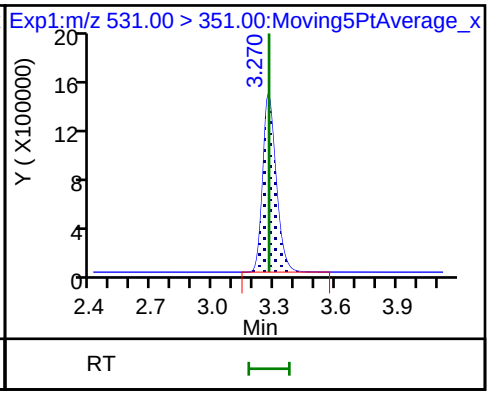
D 18 13C4 PFOS



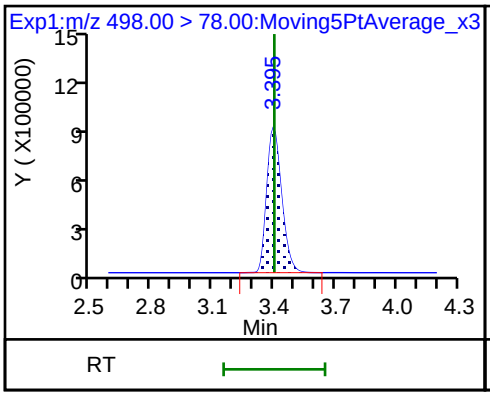
D 19 13C5 PFNA



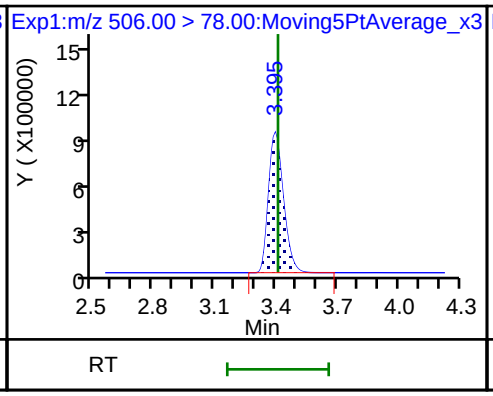
69 9-Chlorohexadecafluoro-3-oxanonane



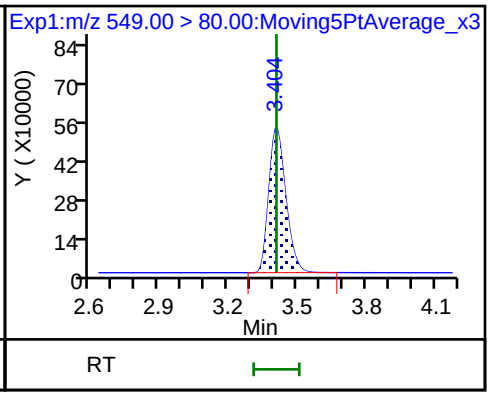
22 Perfluorooctane Sulfonamide



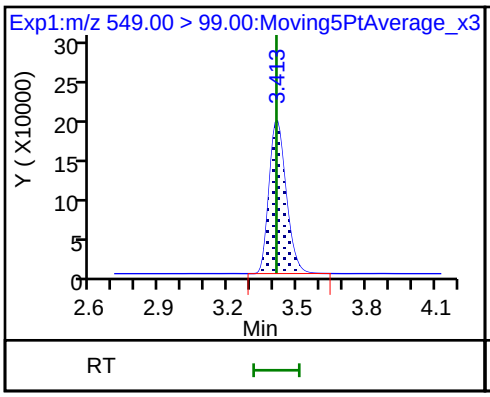
D 21 13C8 FOSA



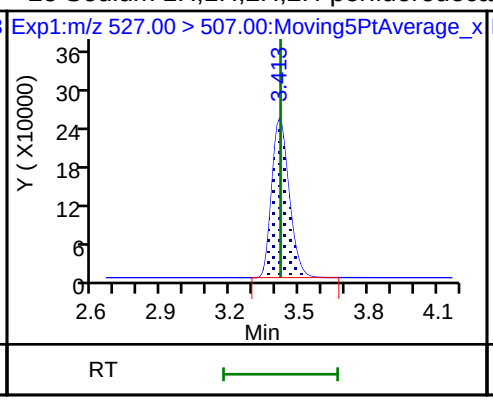
68 Perfluorononanesulfonic acid



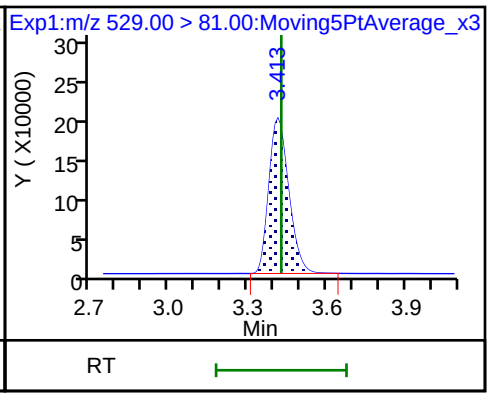
68 Perfluorononanesulfonic acid



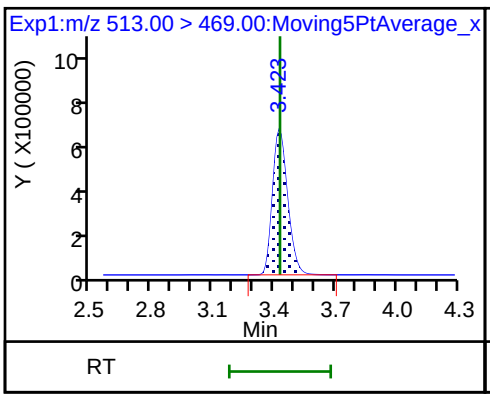
25 Sodium 1H,1H,2H,2H-perfluorodecane



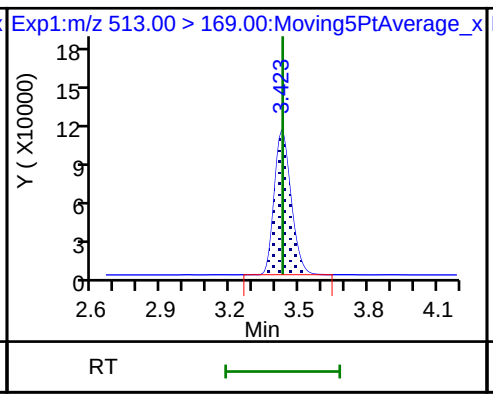
D 26 M2-8:2FTS



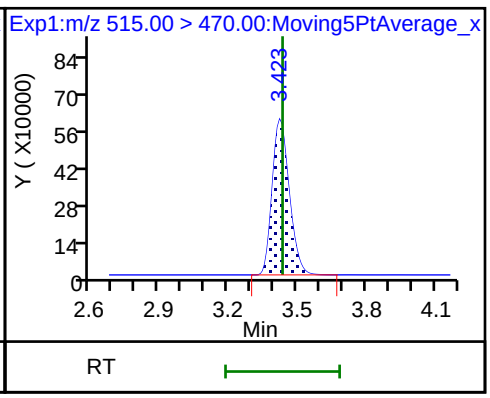
24 Perfluorodecanoic acid



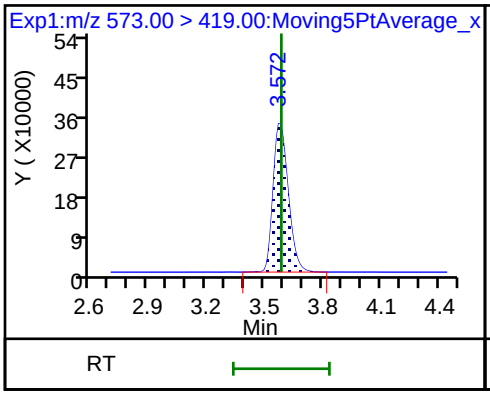
24 Perfluorodecanoic acid



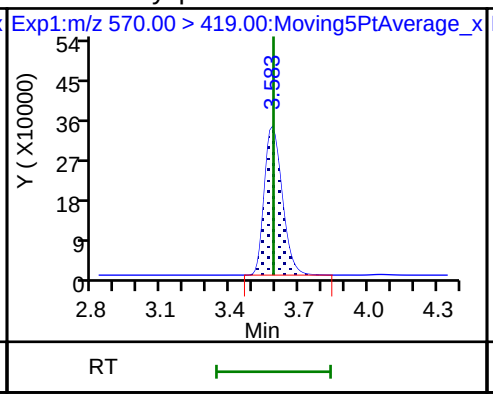
D 23 13C2 PFDA



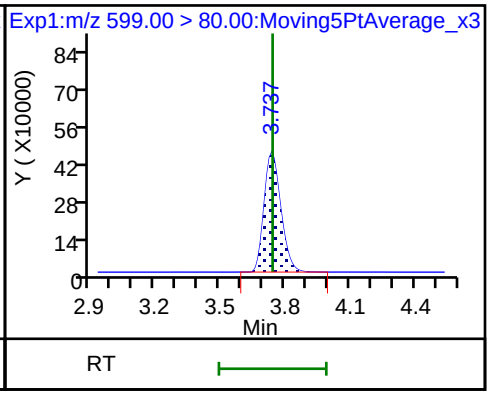
D 27 d3-NMeFOSAA



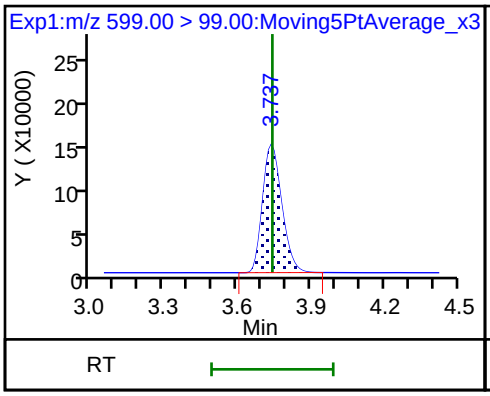
28 N-methyl perfluorooctane sulfonami



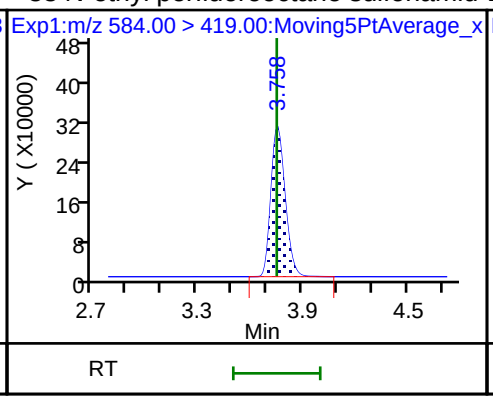
29 Perfluorodecane Sulfonic acid



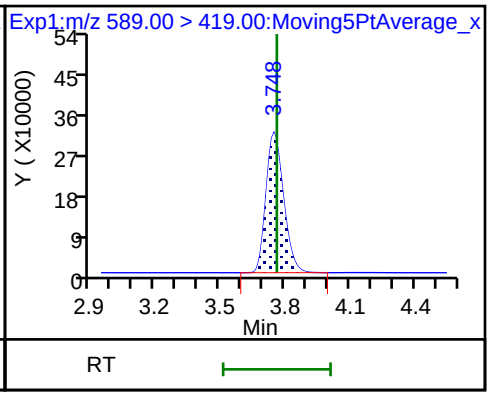
29 Perfluorodecane Sulfonic acid



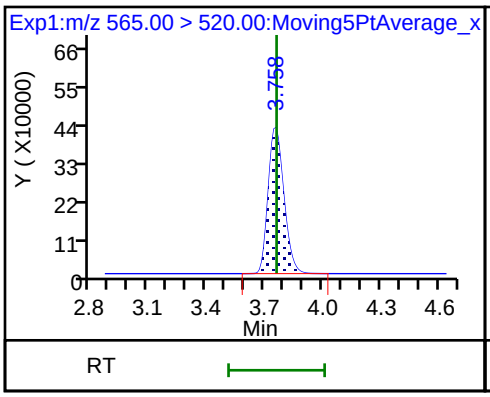
33 N-ethyl perfluorooctane sulfonamid



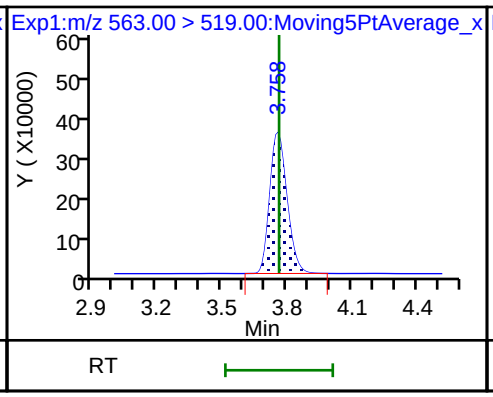
D 32 d5-NEtFOSAA



D 30 13C2 PFUnA



31 Perfluoroundecanoic acid



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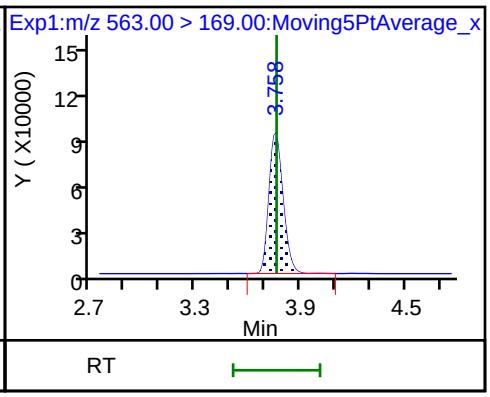
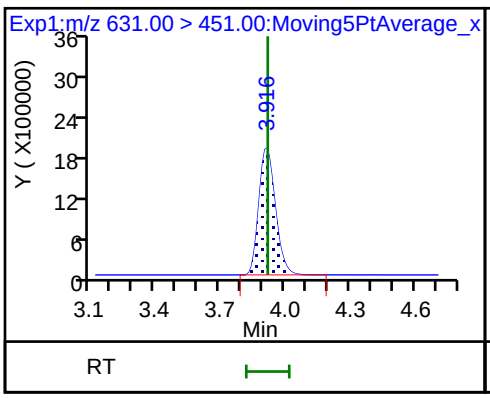
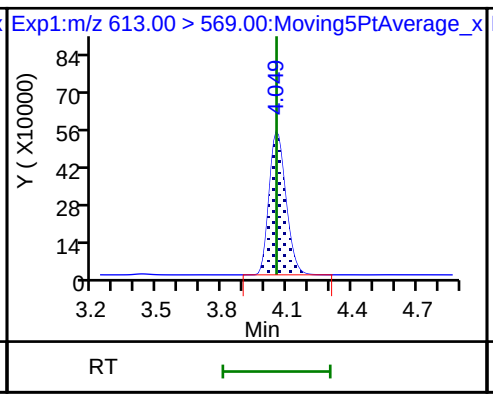


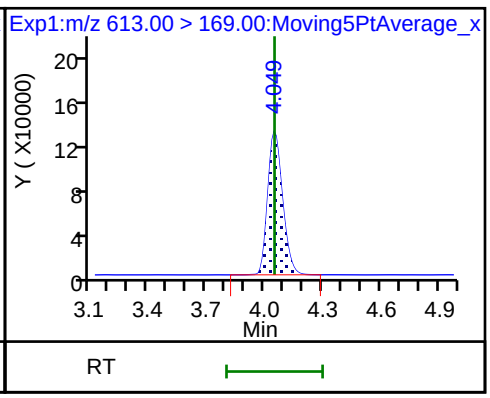
66 11-Chloroeicosafluoro-3-oxaundecan



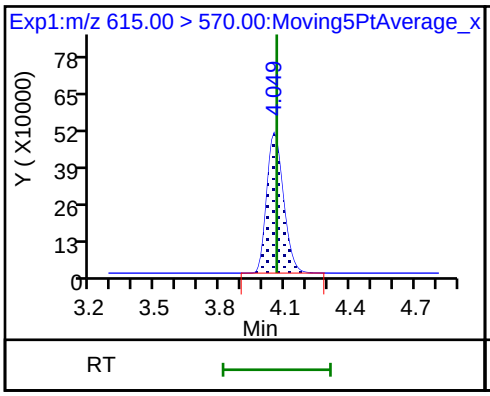
37 Perfluorododecanoic acid



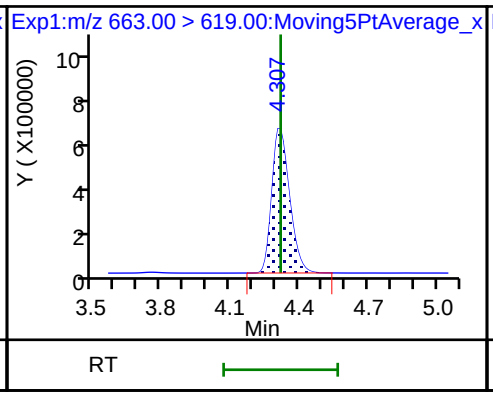
37 Perfluorododecanoic acid



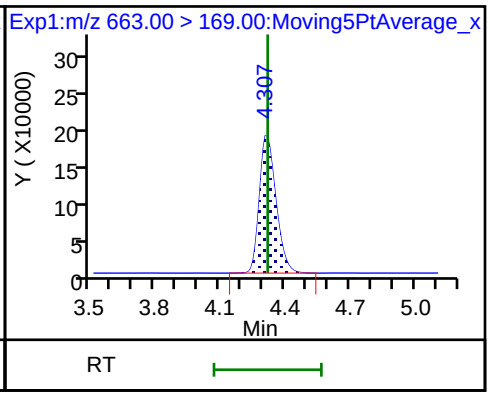
D 36 13C2 PFDoA



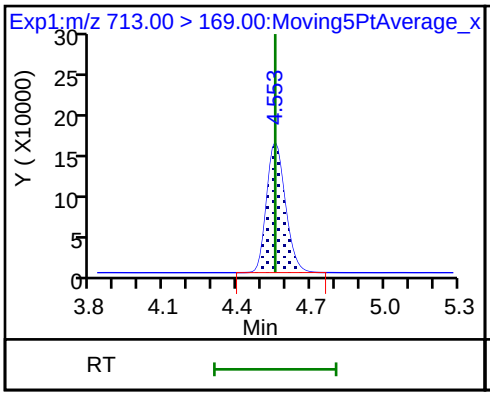
41 Perfluorotridecanoic acid



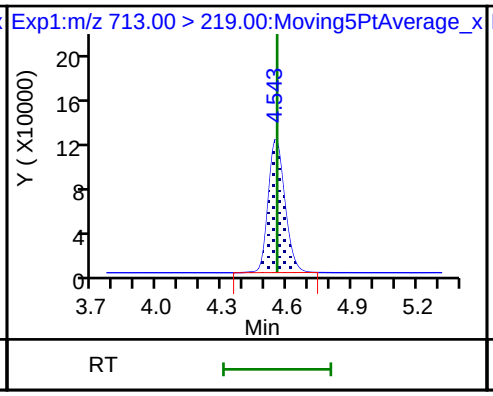
41 Perfluorotridecanoic acid



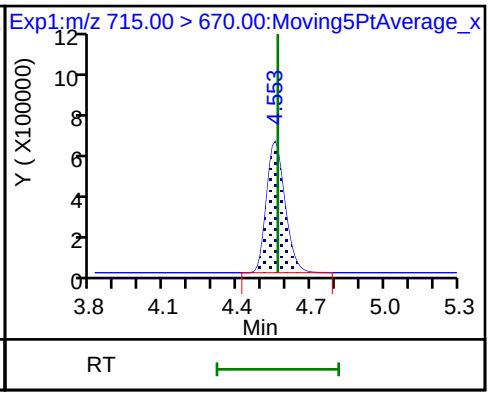
42 Perfluorotetradecanoic acid



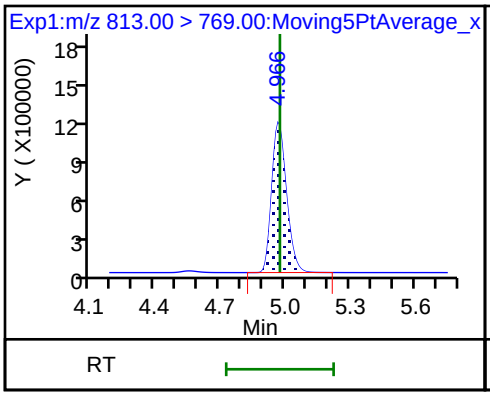
42 Perfluorotetradecanoic acid



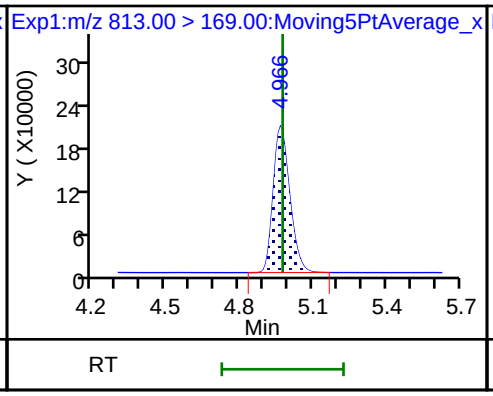
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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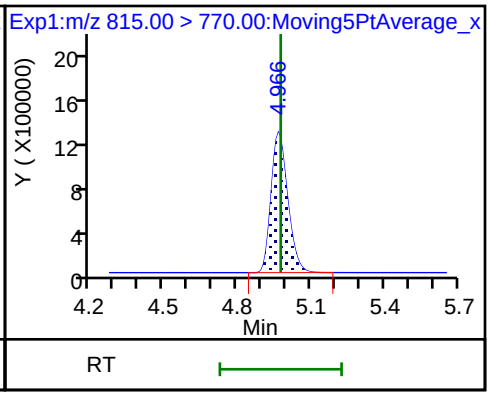
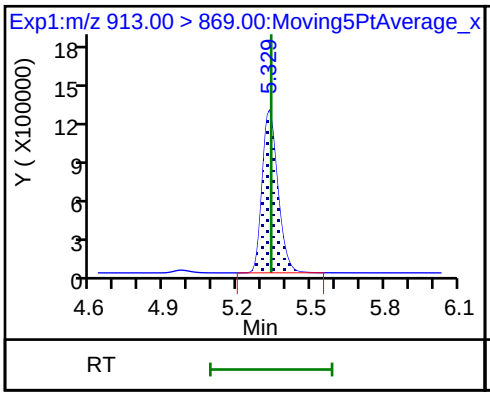
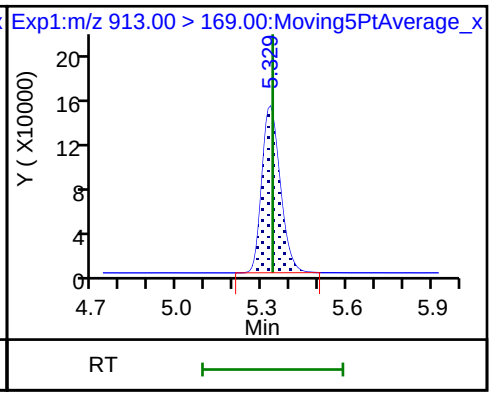


46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

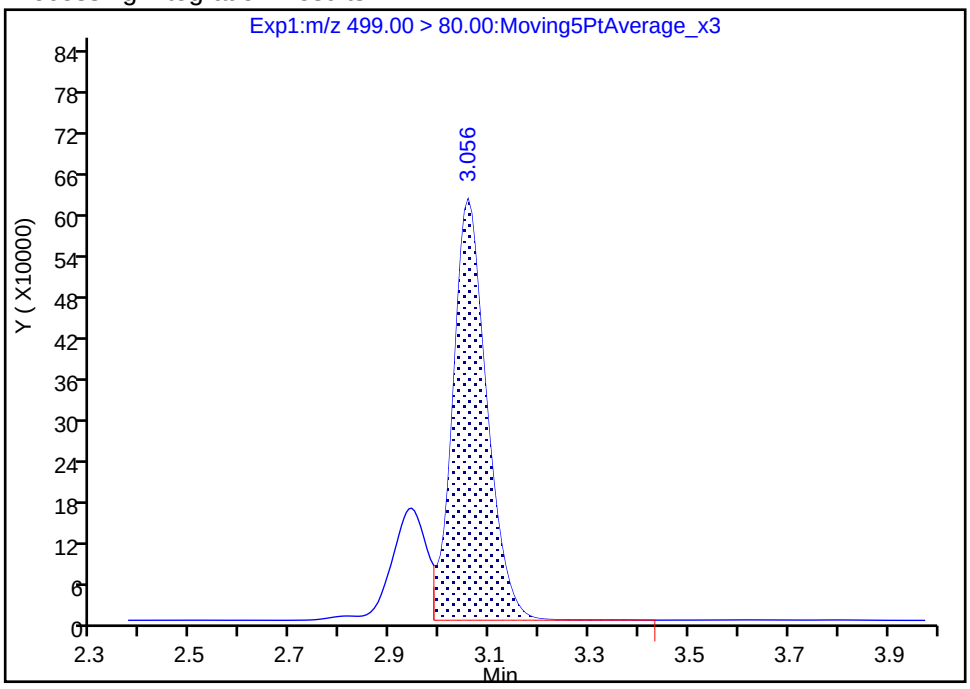
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_053.d
Injection Date: 26-Apr-2018 18:05:02 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

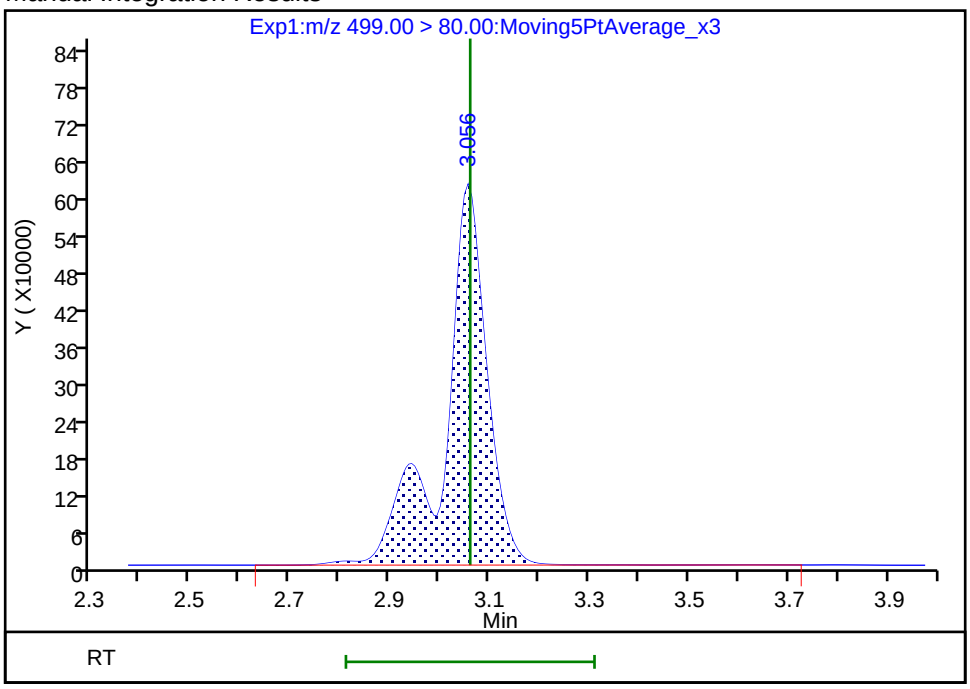
Processing Integration Results

RT: 3.06
Area: 2925701
Amount: 1.776082
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 3731270
Amount: 2.265113
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 15:24:13
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220090/8 Calibration Date: 04/26/2018 18:59

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_064.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9110		0.981	1.00	-1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.135		0.952	1.00	-4.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	75.10		0.848	0.884	-4.1	50.0
4:2 FTS	AveID	16.03	17.16		1.00	0.934	7.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9861		0.970	1.00	-3.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	67.38			0.938	-5.8	50.0
HFPO-DA (GenX)	AveID	2.785	3.121			1.00	12.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.062		1.06	1.00	6.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.003		0.806	0.910	-11.4	40.0
Adona	AveID	3.464	3.756			1.00	8.4	50.0
6:2FTS	AveID	1.691	1.675		0.939	0.948	-0.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.292		0.927	0.952	-2.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.100		0.952	1.00	-4.8	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9551		0.916	1.00	-8.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.067		0.910	0.928	-1.9	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.840			0.932	-2.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9238		0.913	1.00	-8.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7535			0.960	-5.7	50.0
8:2FTS	AveID	1.265	1.272		0.963	0.958	0.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.009		0.978	1.00	-2.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.023		1.03	1.00	2.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6345		0.942	0.964	-2.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9081		0.972	1.00	-2.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7883		0.933	1.00	-6.7	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.819			0.942	-3.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.007		0.966	1.00	-3.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.168		0.961	1.00	-3.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2535		1.01	1.00	1.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9539		0.985	1.00	-1.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220090/8 Calibration Date: 04/26/2018 18:59

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_064.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.021		1.02	1.00	1.7	50.0
13C4 PFBA	Ave	1.345	1.324		2.46	2.50	-1.6	50.0
13C5 PFPeA	Ave	0.8672	0.8625		2.49	2.50	-0.5	50.0
13C3-PFBS	Ave	0.0199	0.0198		2.32	2.33	-0.4	50.0
M2-4:2FTS	Ave	0.1425	0.1513		2.48	2.34	6.2	50.0
13C2 PFHxA	Ave	0.9590	0.9601		2.50	2.50	0.1	50.0
13C3 HFPO-DA	Ave	0.0593	0.0461		1.94	2.50	-22.4	50.0
13C4-PFHpA	Ave	0.9333	0.8834		2.37	2.50	-5.3	50.0
18O2 PFHxS	Ave	1.152	1.113		2.28	2.37	-3.4	50.0
M2-6:2FTS	Ave	0.2000	0.2051		2.44	2.38	2.5	40.0
13C4 PFOA	Ave	0.9276	0.9148		2.47	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8066	0.7667		2.27	2.39	-5.0	50.0
13C5 PFNA	Ave	0.7973	0.7984		2.50	2.50	0.1	50.0
13C8 FOSA	Ave	1.007	0.9916		2.46	2.50	-1.5	50.0
M2-8:2FTS	Ave	0.2409	0.2217		2.20	2.40	-8.0	40.0
13C2 PFDA	Ave	0.6701	0.6445		2.40	2.50	-3.8	50.0
d3-NMeFOSAA	Ave	0.3798	0.3722		2.45	2.50	-2.0	50.0
d5-NEtFOSAA	Ave	0.3749	0.3848		2.57	2.50	2.7	50.0
13C2 PFUnA	Ave	0.5781	0.5460		2.36	2.50	-5.6	50.0
13C2 PFDoA	Ave	0.6242	0.5956		2.39	2.50	-4.6	50.0
13C2-PFTeDA	Ave	0.7915	0.7570		2.39	2.50	-4.4	50.0
13C2-PFHxDA	Ave	1.288	1.346		2.61	2.50	4.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_064.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 18:59:46 ALS Bottle#: 13 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:45:14 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:33:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.442	0.0	1.000	2227788	0.9811		98.1	1069	
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.446	-0.004	1.000	6113354	2.46		98.4	44093	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1808337	0.9523		95.2	1924	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.711	-0.008	0.557	3983491	2.49		99.5	82808	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2430035	0.8480		95.9	8824	
298.90 > 99.00	1.739	1.739	0.0	1.000	1012762		2.40(1.25-3.74)		8489	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.747	-0.008	1.000	85103	2.32		99.6	692	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	586569	1.00		107	33248	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.959	-0.009	1.000	652683	2.48		106	6999	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.994	1.994	0.0	1.000	1748903	0.9704		97.0	2072	
313.00 > 119.00	1.994	1.994	0.0	1.000	163075		10.72(5.03-15.10)		1602	
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	2.003	-0.009	1.000	4433839	2.50		100	81917	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2313553	0.8839		94.2	13395	
349.00 > 99.00	2.016	2.016	0.0	1.000	873141		2.65(1.36-4.07)		14577	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.093	-0.009	1.000	212723	1.94		77.6	7001	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.005	265578	1.12		112	1827	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.322	0.0	1.000	1732537	1.06		106	2265	
363.00 > 169.00	2.322	2.322	0.0	1.000	678495		2.55(1.13-3.40)		2981	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.332	-0.010	1.000	4079710	2.37		94.7	64340	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.335	0.0	1.000	1876220	0.8064		88.6	4433	
399.00 > 99.00	2.335	2.335	0.0	1.000	644508		2.91(1.50-4.49)		4033	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.345	-0.010	1.000	4861706	2.28		96.6	55466	
65 Adona										
377.00 > 251.00	2.374	2.374	0.0	1.000	5319066	1.08		108	58037	
377.00 > 85.00	2.374	2.374	0.0	1.000	3136749		1.70(0.84-2.53)		64307	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.661	0.0	1.000	601629	0.9394		99.1	8378	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.667	-0.006	1.000	899774	2.44		103	10369	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.691	0.0	1.000	1742395	0.9266		97.3	13031	
449.00 > 99.00	2.691	2.691	0.0	1.000	482686		3.61(1.94-5.82)		9146	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.691	0.0		4618311	2.50			53271	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.691	0.0	1.003	1859263	0.9522		95.2	1307	
413.00 > 169.00	2.691	2.691	0.0	1.003	948419		1.96(0.84-2.52)		3386	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.697	-0.014	1.000	4224972	2.47		98.6	68173	
20 Perfluorononanoic acid										
463.00 > 419.00	3.061	3.061	0.0	1.000	1408689	0.9160		91.6	4413	
463.00 > 169.00	3.061	3.061	0.0	1.000	353353		3.99(1.90-5.69)		6918	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.061	3.061	0.0	1.000	1402304	0.9102		98.1	6490	
499.00 > 99.00	3.061	3.061	0.0	1.000	308495		4.55(2.31-6.93)		3919	
D 18 13C4 PFOS										
503.00 > 80.00	3.061	3.065	-0.004	1.000	3384956	2.27		95.0	17047	
D 19 13C5 PFNA										
468.00 > 423.00	3.061	3.072	-0.011	1.000	3687178	2.50		100	101670	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.274	3.274	0.0	1.000	2428553	0.9096		97.6	25637	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.400	3.400	0.0	1.000	1692310	0.9133		91.3	13847	
D 21 13C8 FOSA										
506.00 > 78.00	3.400	3.408	-0.008	1.000	4579651	2.46		98.5	43442	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.409	3.409	0.0	1.000	1024552	0.9049		94.3	11796	
549.00 > 99.00	3.409	3.409	0.0	1.000	378541		2.71(1.33-3.97)		10482	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.418	3.418	0.0	1.000	499134	0.9633		101	24565	
D 26 M2-8:2FTS										
529.00 > 81.00	3.418	3.426	-0.008	1.000	980767	2.20		92.0	9435	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.427	3.427	0.0	1.000	1201565	0.9784		97.8	5850	
513.00 > 169.00	3.427	3.427	0.0	1.000	218110		5.51(2.36-7.09)		4019	
D 23 13C2 PFDA										
515.00 > 470.00	3.427	3.436	-0.009	1.000	2976303	2.40		96.2	48020	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.586	-0.010	1.000	1718821	2.45		98.0	18993	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.587	3.587	0.0	1.003	703006	1.03		103	5397	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.742	3.742	0.0	1.000	866329	0.9421		97.7	9978	
599.00 > 99.00	3.742	3.742	0.0	1.000	292067		2.97(1.39-4.16)		9026	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.752	3.752	0.0	1.000	645546	0.9717		97.2	16527	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.761	-0.009	1.000	1777277	2.57		103	20270	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.761	0.001	1.000	2521489	2.36		94.4	58740	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	795119	0.9328		93.3	4872	
563.00 > 169.00	3.762	3.762	0.0	1.000	204300		3.89(2.12-6.36)		4630	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.919	3.919	0.0	1.000	3760311	0.9116		96.8	41998	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1108010	0.9657		96.6	1600	
613.00 > 169.00	4.051	4.051	0.0	1.000	286656		3.87(2.13-6.40)		3365	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.061	-0.010	1.000	2750429	2.39		95.4	32189	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	1284786	0.9609		96.1	1570	
663.00 > 169.00	4.319	4.319	0.0	1.000	401756		3.20(1.25-3.76)		3633	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	354543	1.01		101	3076	
713.00 > 219.00	4.553	4.553	0.0	1.000	263192		1.35(0.71-2.13)		5049	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.564	-0.011	1.000	3495972	2.39		95.6	28009	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.976	4.976	0.0	1.002	2371937	0.9851		98.5	1073	
813.00 > 169.00	4.976	4.976	0.0	1.002	393731		6.02(2.86-8.58)		2507	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.976	-0.009	1.000	6216535	2.61		105	18876	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.337	5.337	0.0	1.000	2539720	1.02		102	845	
913.00 > 169.00	5.337	5.337	0.0	1.000	316896		8.01(3.83-11.48)		2332	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 08:45:15 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_064.d

Injection Date: 26-Apr-2018 18:59:46 Instrument ID: A8_N

Lims ID: CCV L4

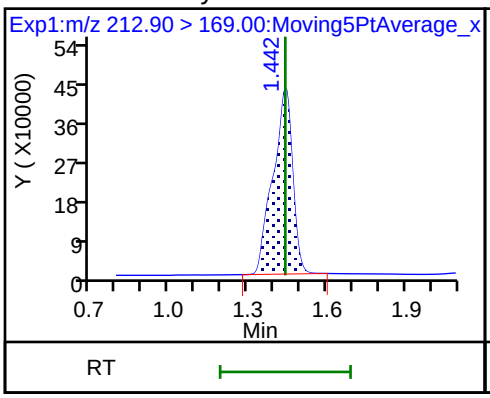
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 8

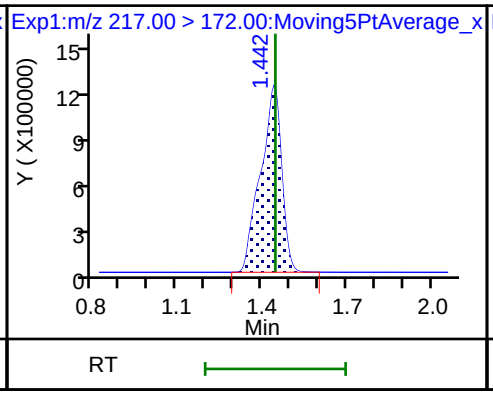
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

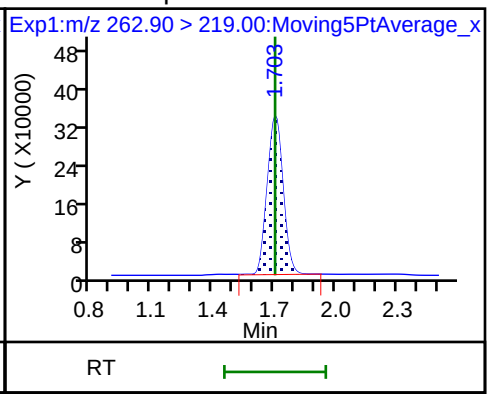
2 Perfluorobutyric acid



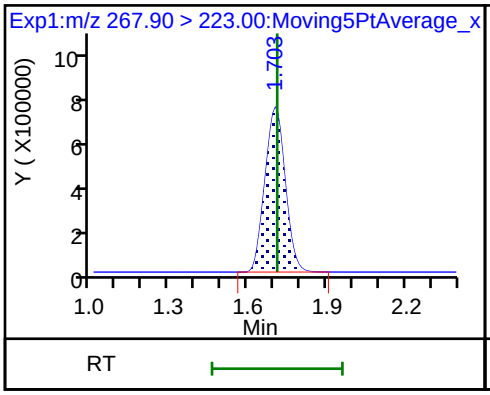
D 1 13C4 PFBA



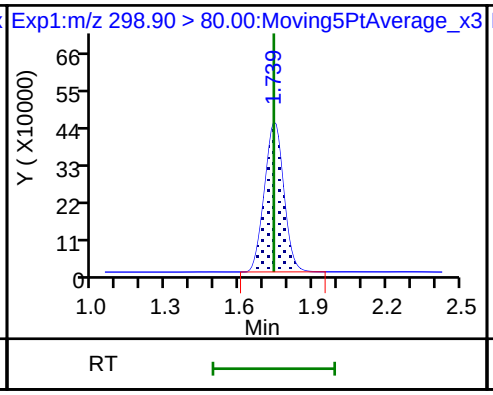
4 Perfluoropentanoic acid



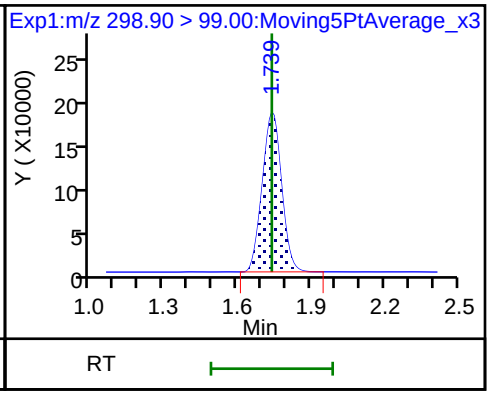
D 3 13C5-PFPeA



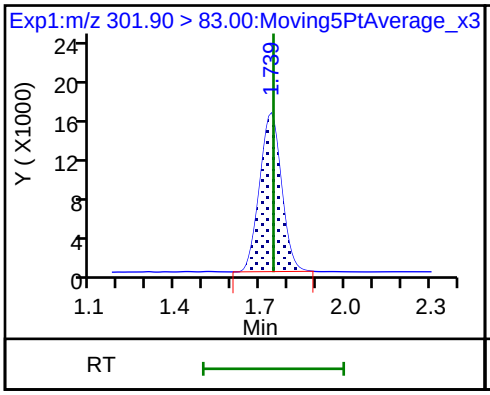
5 Perfluorobutanesulfonic acid



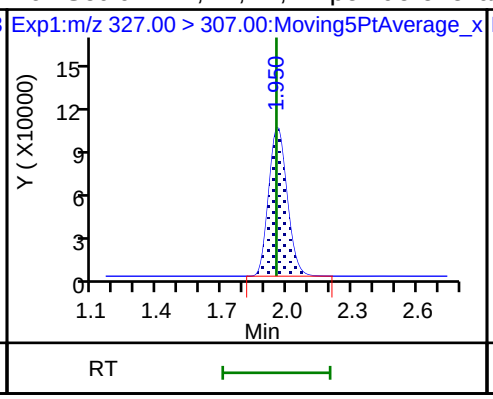
5 Perfluorobutanesulfonic acid



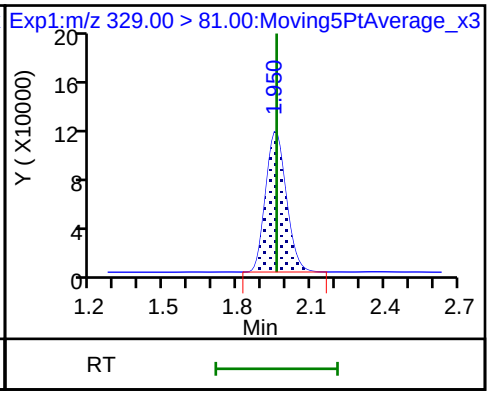
D 47 13C3-PFBS



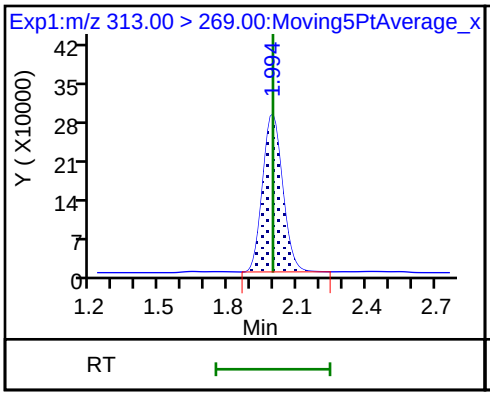
61 Sodium 1H,1H,2H,2H-perfluorohexane



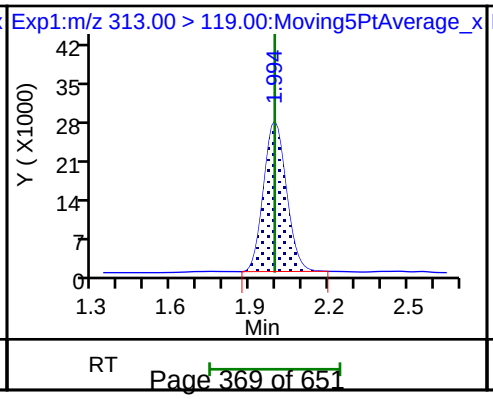
D 60 M2-4:2FTS



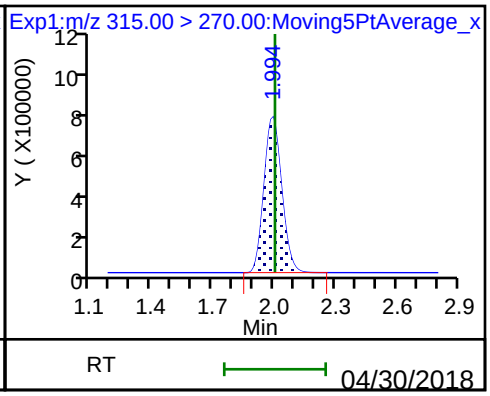
6 Perfluorohexanoic acid



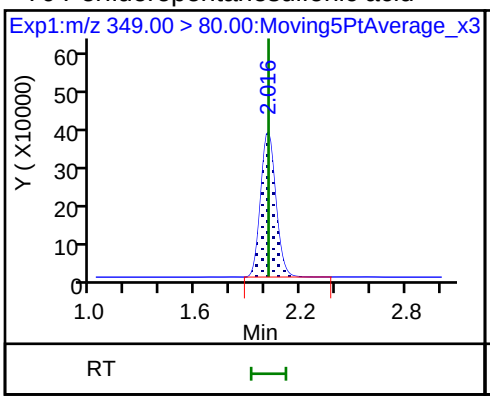
6 Perfluorohexanoic acid



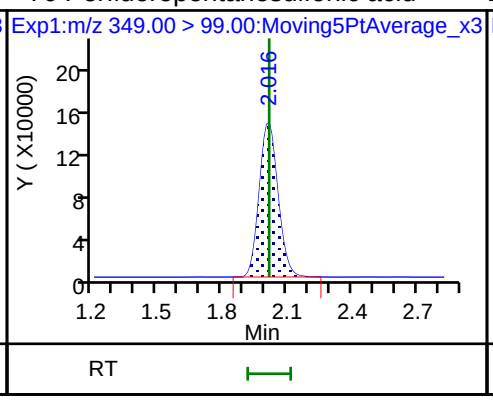
D 7 13C2 PFHxA



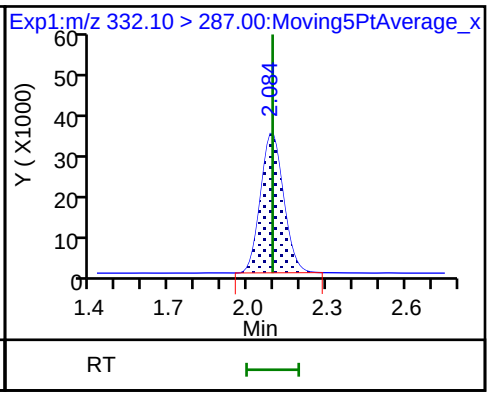
70 Perfluoropentanesulfonic acid



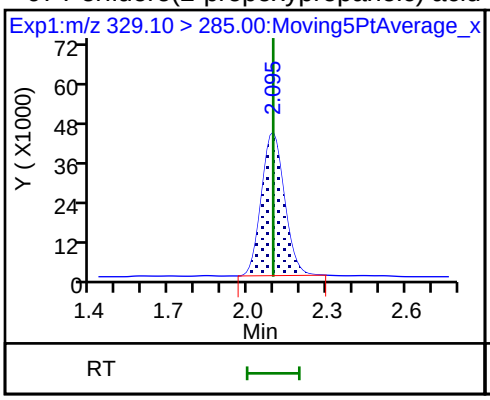
70 Perfluoropentanesulfonic acid



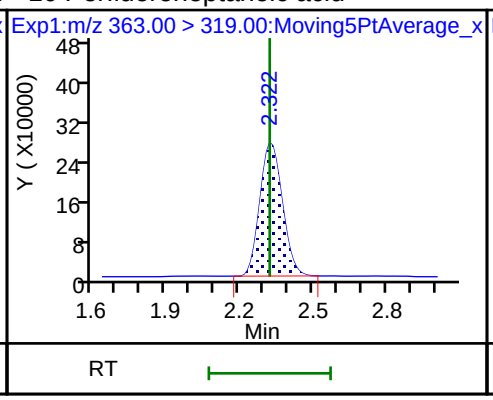
D 64 13C3 HFPO-DA



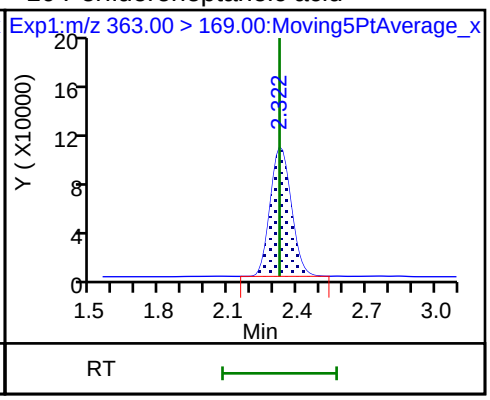
67 Perfluoro(2-propoxypropanoic) acid



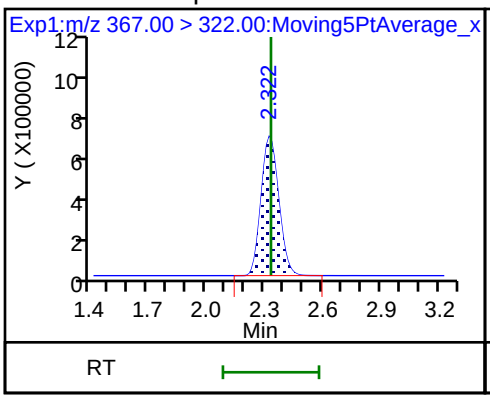
10 Perfluoroheptanoic acid



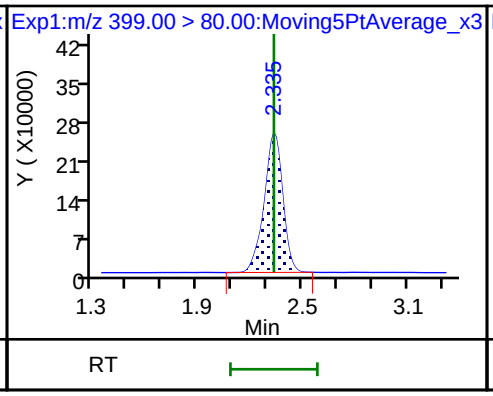
10 Perfluoroheptanoic acid



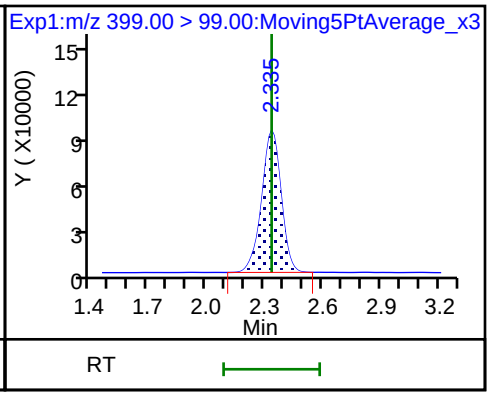
D 9 13C4-PFHpA



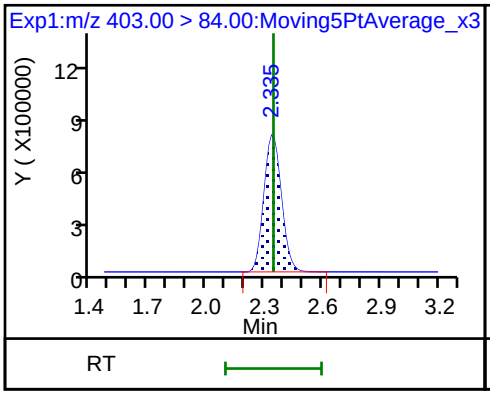
8 Perfluorohexanesulfonic acid



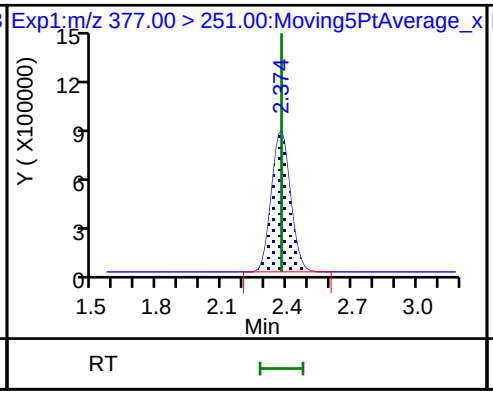
8 Perfluorohexanesulfonic acid



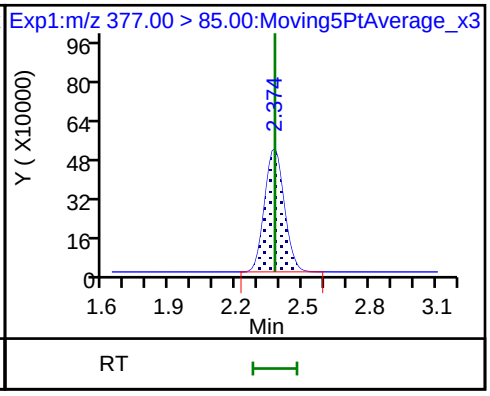
D 11 18O2 PFHxS



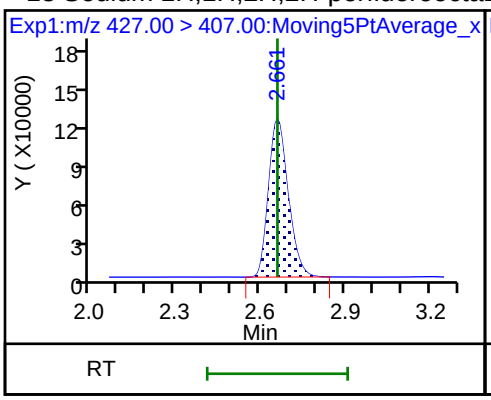
65 Adona



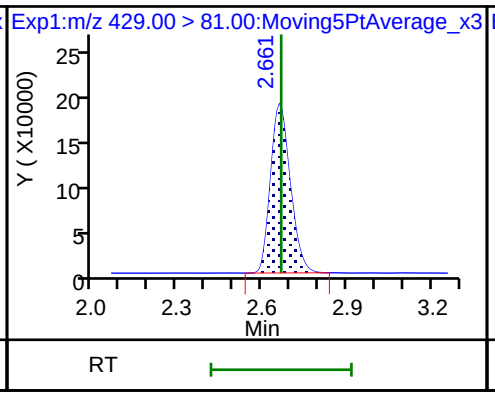
65 Adona



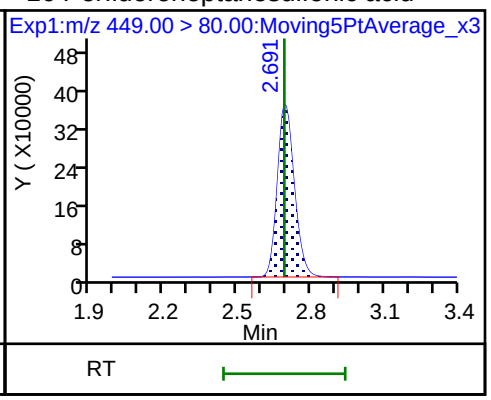
13 Sodium 1H,1H,2H,2H-perfluorooctane



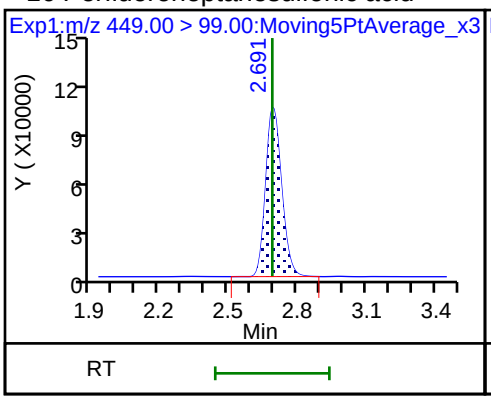
D 12 M2-6:2FTS



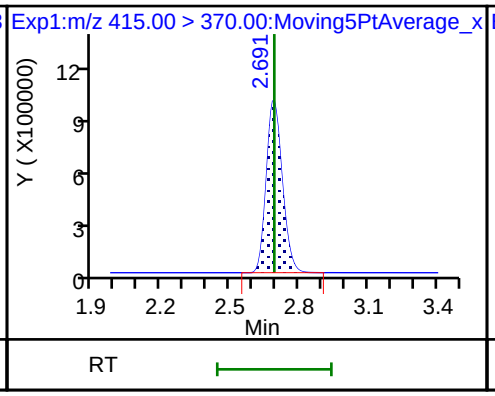
16 Perfluoroheptanesulfonic acid



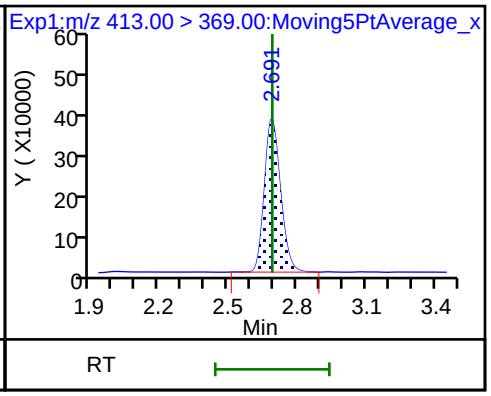
16 Perfluoroheptanesulfonic acid



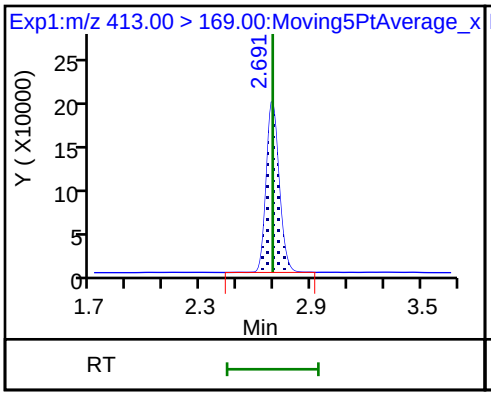
* 62 13C2-PFOA



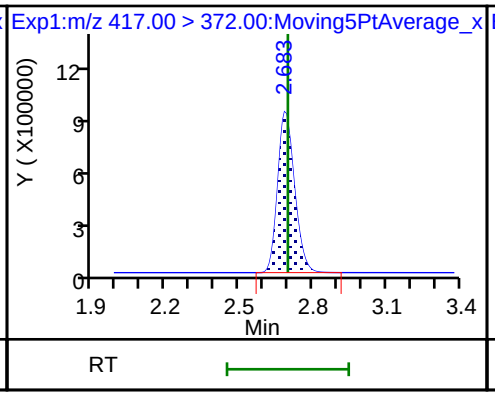
15 Perfluorooctanoic acid



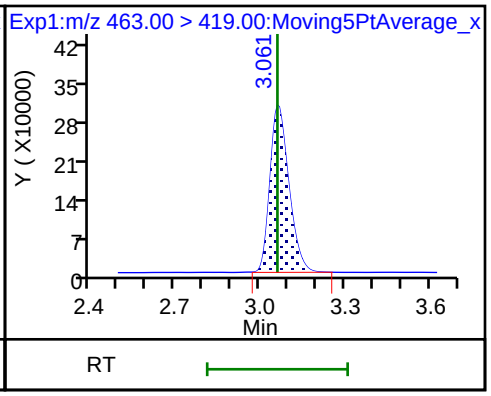
15 Perfluorooctanoic acid



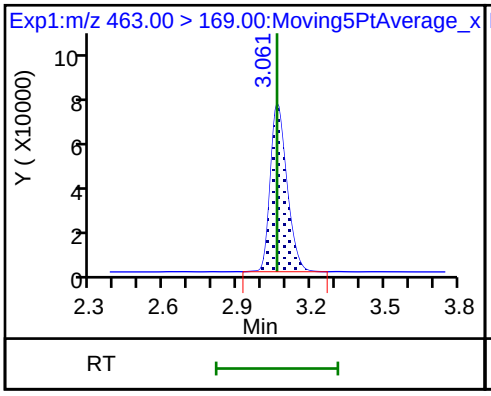
D 14 13C4 PFOA



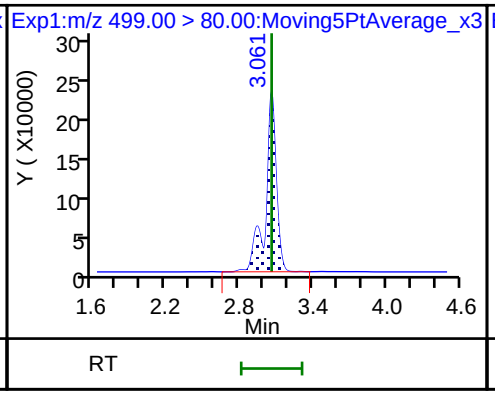
20 Perfluorononanoic acid



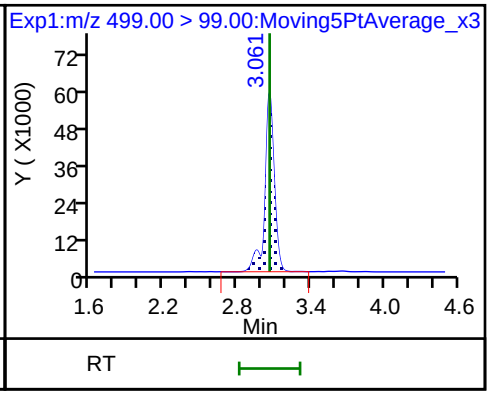
20 Perfluorononanoic acid



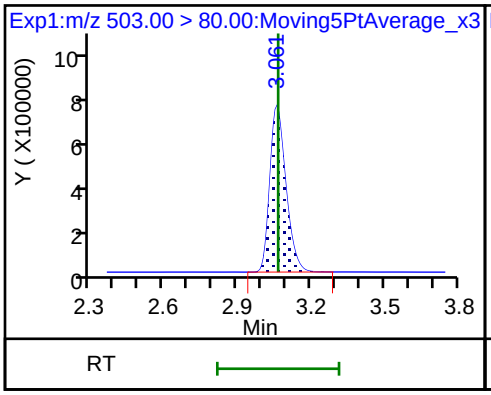
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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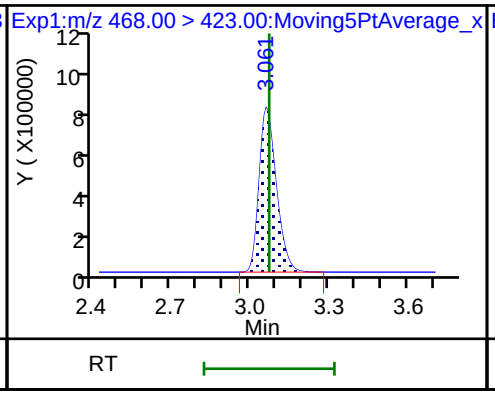
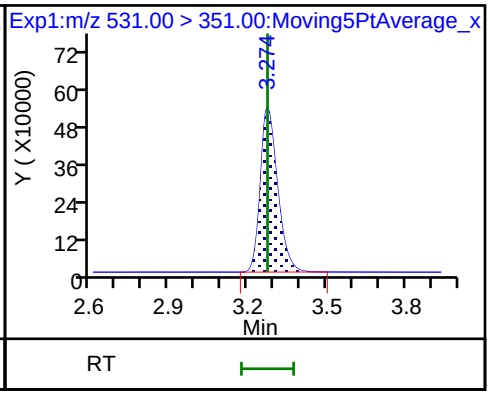
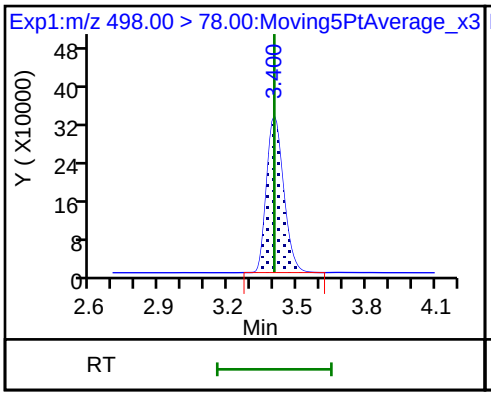


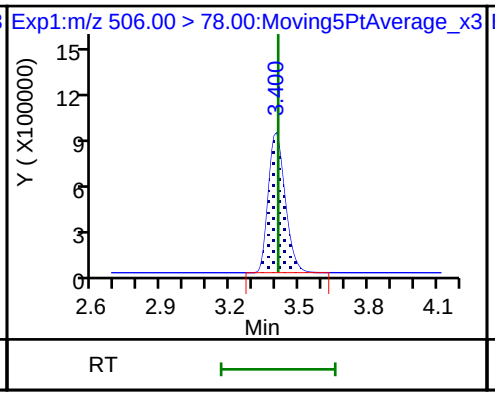
69 9-Chlorohexadecafluoro-3-oxanonane



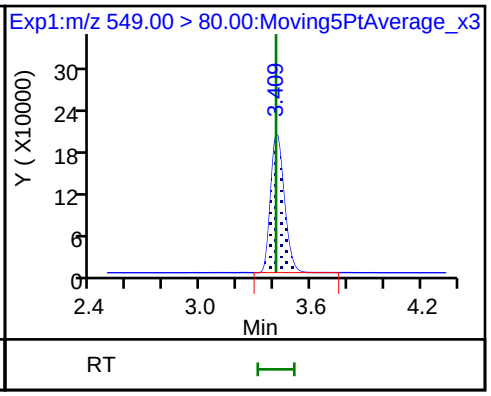
22 Perfluorooctane Sulfonamide



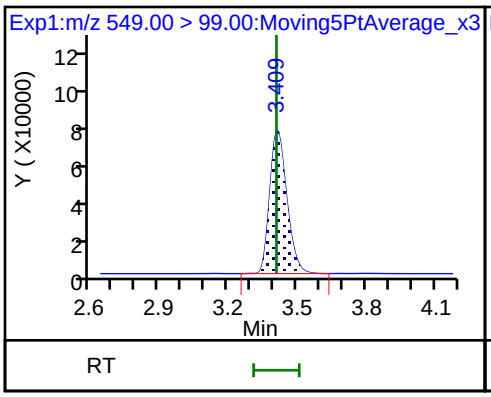
D 21 13C8 FOSA



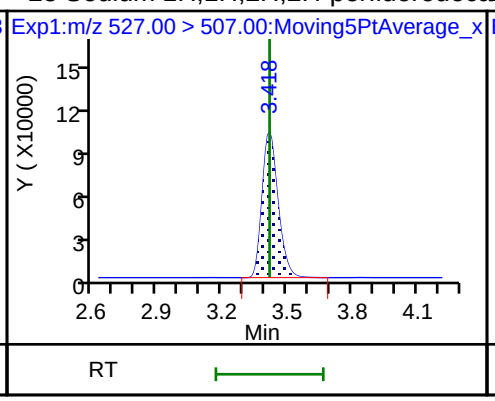
68 Perfluorononanesulfonic acid



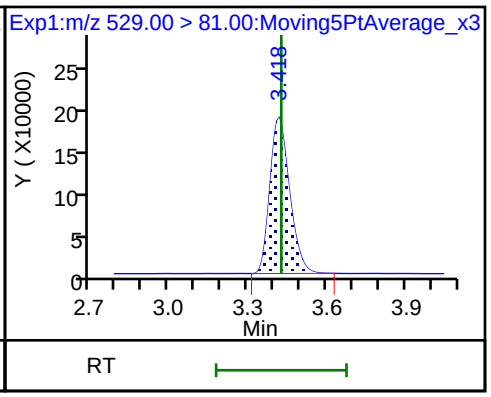
68 Perfluorononanesulfonic acid



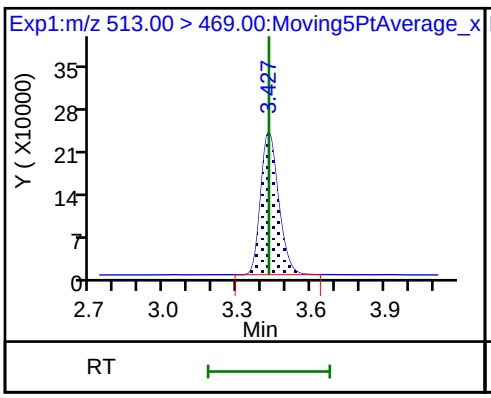
25 Sodium 1H,1H,2H,2H-perfluorodecane



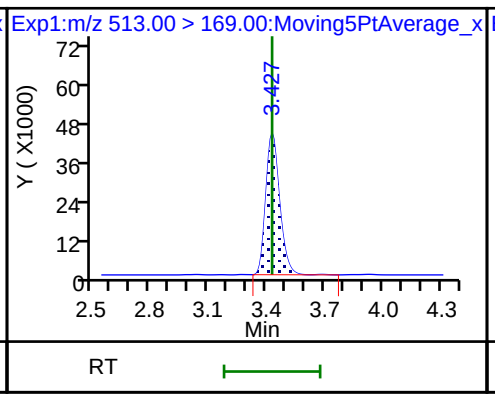
D 26 M2-8:2FTS



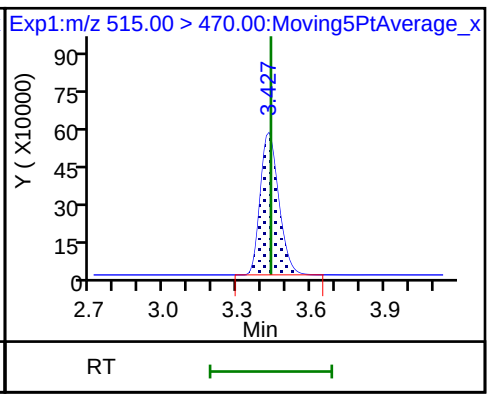
24 Perfluorodecanoic acid



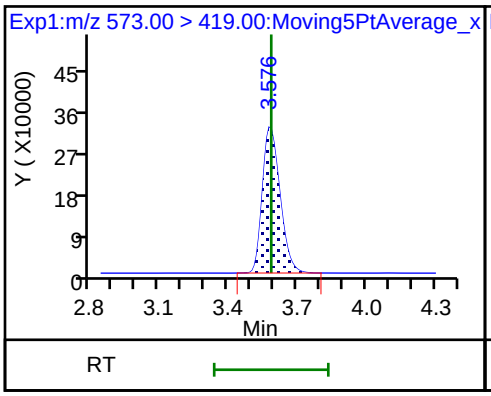
24 Perfluorodecanoic acid



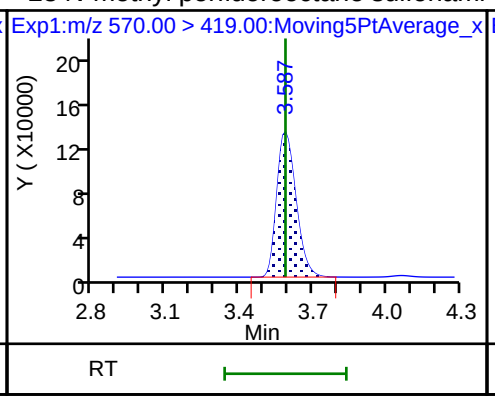
D 23 13C2 PFDA



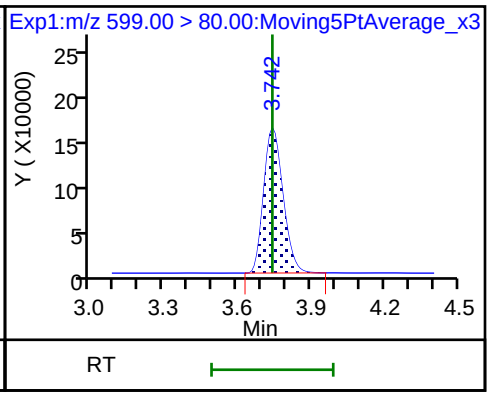
D 27 d3-NMeFOSAA



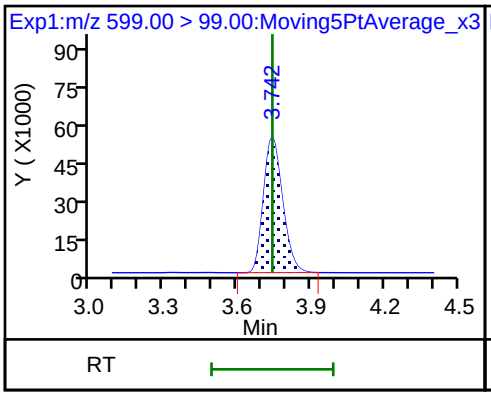
28 N-methyl perfluorooctane sulfonami



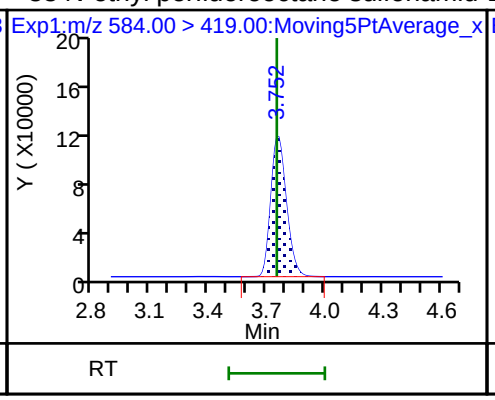
29 Perfluorodecane Sulfonic acid



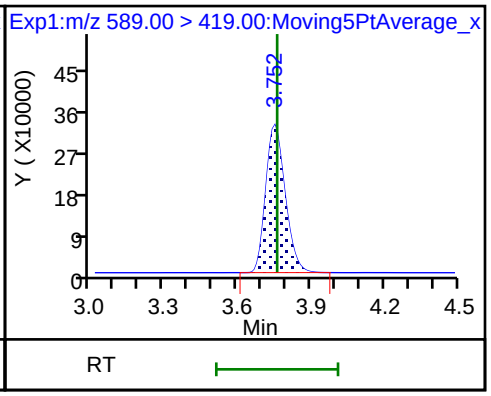
29 Perfluorodecane Sulfonic acid



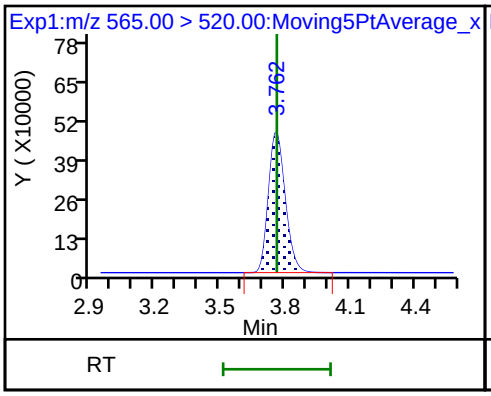
33 N-ethyl perfluorooctane sulfonamid



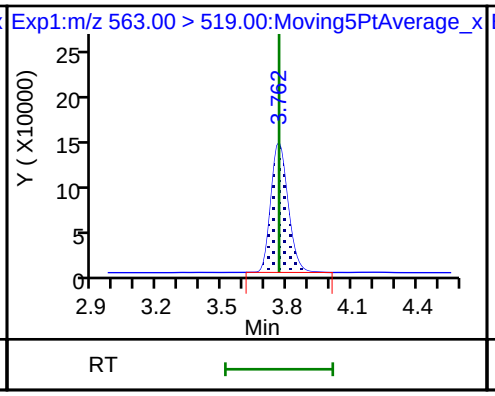
D 32 d5-NEtFOSAA



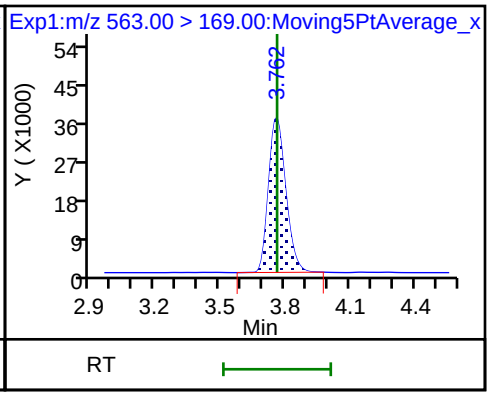
D 30 13C2 PFUnA



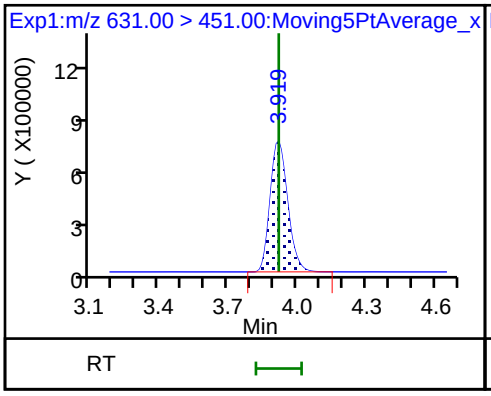
31 Perfluoroundecanoic acid



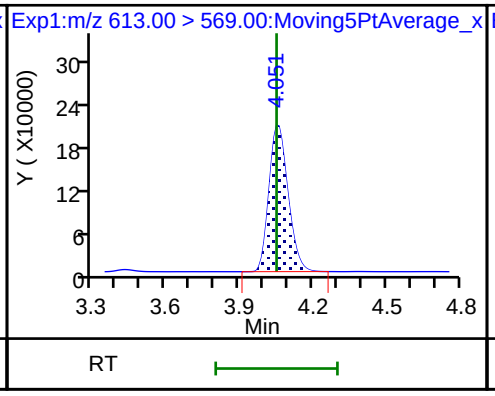
31 Perfluoroundecanoic acid



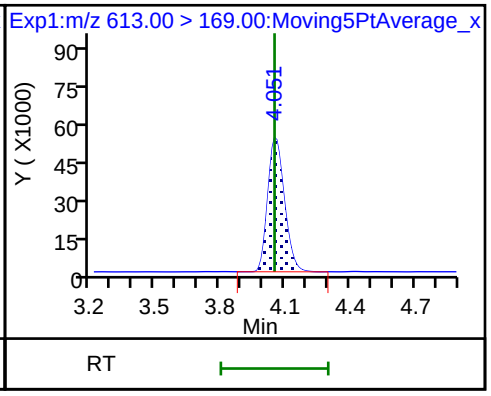
66 11-Chloroeicosafluoro-3-oxaundecan



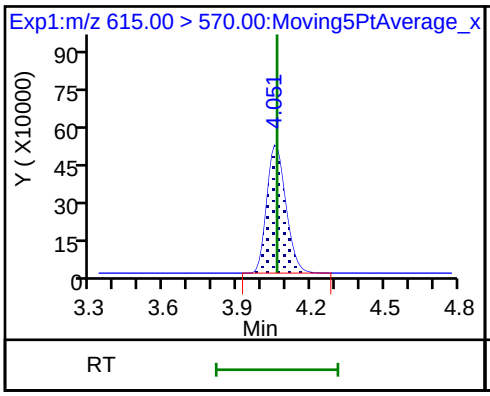
37 Perfluorododecanoic acid



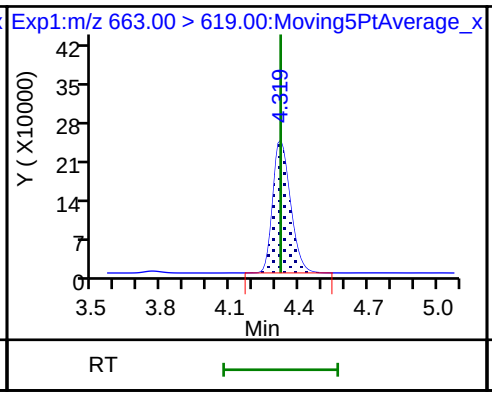
37 Perfluorododecanoic acid



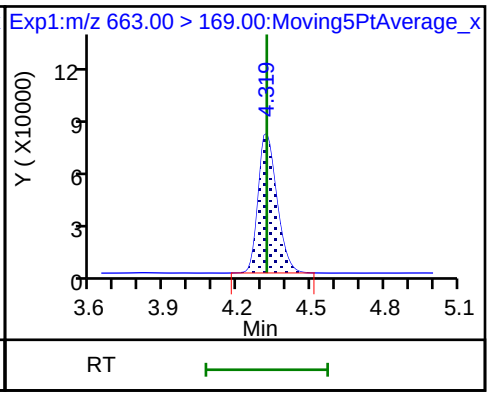
D 36 13C2 PFDoA



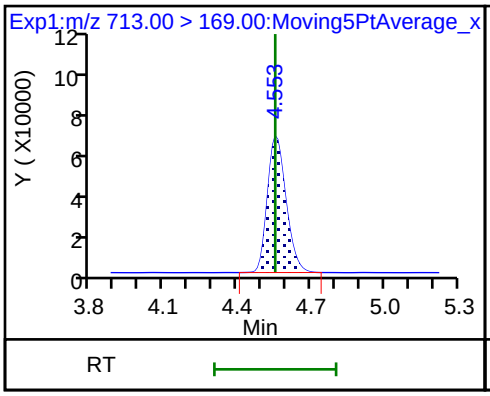
41 Perfluorotridecanoic acid



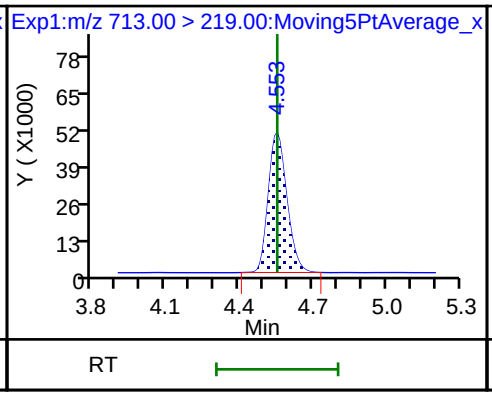
41 Perfluorotridecanoic acid



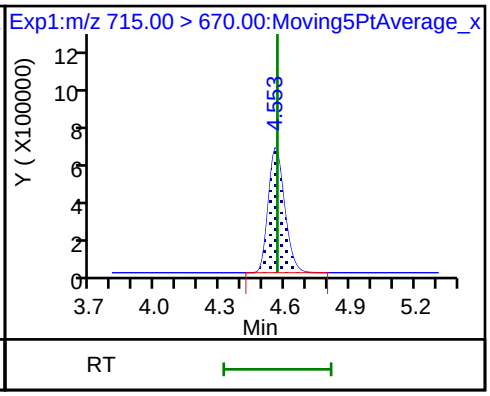
42 Perfluorotetradecanoic acid



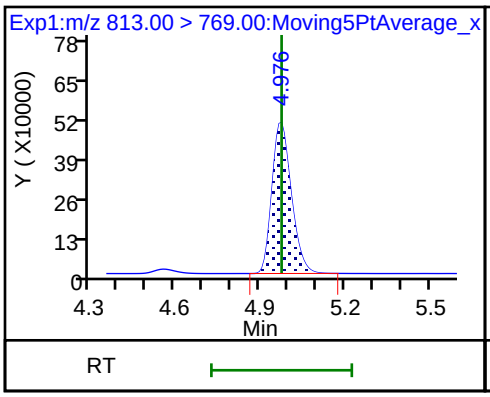
42 Perfluorotetradecanoic acid



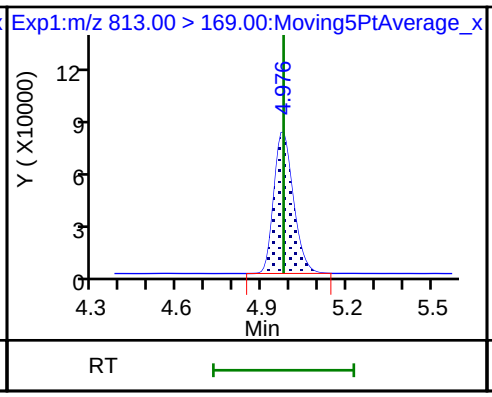
D 43 13C2-PFTeDA



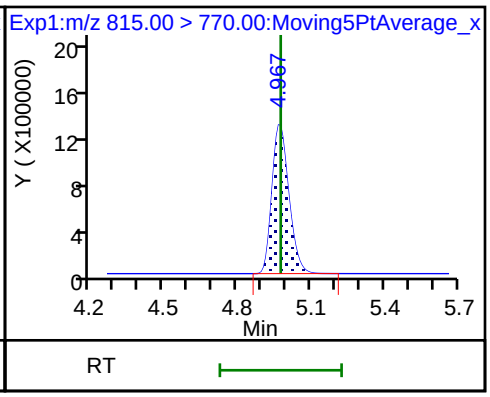
45 Perfluorohexadecanoic acid



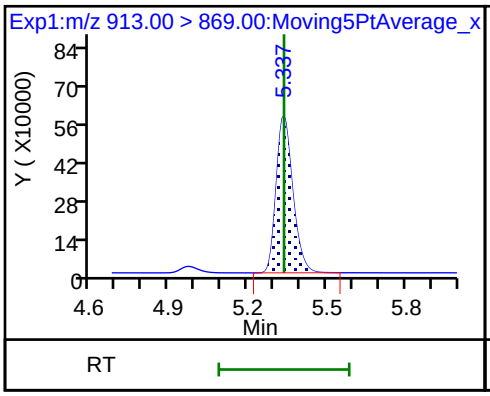
45 Perfluorohexadecanoic acid



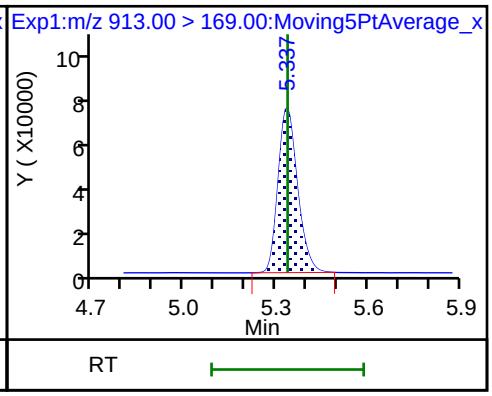
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCVL 320-220104/2 Calibration Date: 04/27/2018 06:44

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLBX_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9536		0.0513	0.0500	2.7	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.274		0.0534	0.0500	6.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	84.10			0.0442	7.4	50.0
4:2 FTS	AveID	16.03	18.11			0.0467	13.0	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.107		0.0545	0.0500	8.9	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	72.84			0.0469	1.9	50.0
HFPO-DA (GenX)	AveID	2.785	3.280			0.0500	17.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.105		0.0552	0.0500	10.4	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.252		0.0504	0.0455	10.7	50.0
Adona	AveID	3.464	3.617			0.0500	4.4	50.0
6:2FTS	AveID	1.691	1.809			0.0474	7.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.355			0.0476	2.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.299		0.0562	0.0500	12.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.124			0.0464	3.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.067		0.0512	0.0500	2.3	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.862			0.0466	-1.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9566			0.0500	-5.4	50.0
8:2FTS	AveID	1.265	1.297			0.0479	2.5	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7389			0.0480	-7.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.014			0.0500	-1.7	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.133			0.0500	13.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.7469		0.0554	0.0482	15.0	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8268			0.0500	-2.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	1.030			0.0500	10.2	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.825			0.0471	-3.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.104		0.0529	0.0500	5.9	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.190			0.0500	-2.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2342			0.0500	-6.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.325			0.0500	-4.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCVL 320-220104/2 Calibration Date: 04/27/2018 06:44

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLBX_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.023		0.0509	0.0500	1.8	50.0
13C4 PFBA	Ave	1.345	1.448		2.69	2.50	7.6	50.0
13C5 PFPeA	Ave	0.8672	0.9397		2.71	2.50	8.4	50.0
13C3-PFBS	Ave	0.0199	0.0211		2.46	2.33	5.9	50.0
M2-4:2FTS	Ave	0.1425	0.1545		2.53	2.34	8.4	50.0
13C2 PFHxA	Ave	0.9590	1.006		2.62	2.50	4.9	50.0
13C3 HFPO-DA	Ave	0.0593	0.0567		2.39	2.50	-4.5	50.0
13C4-PFHpA	Ave	0.9333	1.000		2.68	2.50	7.1	50.0
18O2 PFHxS	Ave	1.152	1.169		2.40	2.37	1.5	50.0
M2-6:2FTS	Ave	0.2000	0.2206		2.62	2.38	10.3	50.0
13C4 PFOA	Ave	0.9276	0.9617		2.59	2.50	3.7	50.0
13C4 PFOS	Ave	0.8066	0.8289		2.46	2.39	2.8	50.0
13C5 PFNA	Ave	0.7973	0.8411		2.64	2.50	5.5	50.0
13C8 FOSA	Ave	1.007	1.019		2.53	2.50	1.2	50.0
M2-8:2FTS	Ave	0.2409	0.2595		2.58	2.40	7.7	50.0
13C2 PFDA	Ave	0.6701	0.7030		2.62	2.50	4.9	50.0
d3-NMeFOSAA	Ave	0.3798	0.3904		2.57	2.50	2.8	50.0
13C2 PFUnA	Ave	0.5781	0.5851		2.53	2.50	1.2	50.0
d5-NEtFOSAA	Ave	0.3749	0.4248		2.83	2.50	13.3	50.0
13C2 PFDoA	Ave	0.6242	0.6396		2.56	2.50	2.5	50.0
13C2-PFTeDA	Ave	0.7915	0.7436		2.35	2.50	-6.1	50.0
13C2-PFHxDA	Ave	1.288	1.223		2.37	2.50	-5.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\2018.04.26LLBX_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 27-Apr-2018 06:44:03 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 10:05:24 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK040

First Level Reviewer: hannigana Date: 27-Apr-2018 10:04:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.436	-0.001	1.000	6464112	2.69		108	38992	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.437	-0.002	1.000	123287	0.0513		103	55.9	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.693	1.704	-0.011	1.000	106891	0.0534		107	92.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.704	-0.011	0.555	4196325	2.71		108	63988	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.731	-0.002	1.000	87503	2.46		106	2299	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.740	-0.011	1.000	139907	0.0475		107	472	
298.90 > 99.00	1.729	1.740	-0.011	1.000	54195		2.58(1.25-3.74)		517	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.938	1.951	-0.013	1.000	31830	0.0528		113	1806	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.951	-0.002	1.000	644411	2.53		108	4973	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.983	-0.002	1.000	99486	0.0545		109	111	
313.00 > 119.00	1.981	1.983	-0.002	1.000	13173		7.55(5.03-15.10)		110	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.984	-0.003	1.000	4493939	2.62		105	94206	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.006	-0.003	1.000	128576	0.0478		102	704	
349.00 > 99.00	2.003	2.006	-0.003	1.000	38823		3.31(1.36-4.07)		698	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.085	-0.002	1.000	16594	0.0589		118	94.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.085	-0.002	1.000	252980	2.39		95.5	6931	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.323	-0.003	1.000	98691	0.0552		110	113	
363.00 > 169.00	2.320	2.323	-0.003	1.000	42394		2.33(1.13-3.40)		211	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.324	-0.004	1.000	4464649	2.68		107	53489	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.336	-0.003	1.000	118973	0.0504		111	276	
399.00 > 99.00	2.320	2.336	-0.016	0.994	38539		3.09(1.50-4.49)		268	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.337	-0.004	1.000	4937661	2.40		101	48219	
65 Adona										
377.00 > 251.00	2.359	2.362	-0.003	1.000	267757	0.0522		104	4718	
377.00 > 85.00	2.359	2.362	-0.003	1.000	153701		1.74(0.84-2.53)		4089	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.655	-0.002	1.000	935944	2.62		110	10581	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.661	-0.008	1.000	33791	0.0507		107	455	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.684	-0.009		4465597	2.50			43819	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.684	-0.001	1.003	111614	0.0562		112	73.8	
413.00 > 169.00	2.675	2.684	-0.009	1.000	58778		1.90(0.84-2.52)		204	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.685	-0.010	1.000	4294746	2.59		104	52455	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.692	-0.009	1.000	95488	0.0486		102	669	
449.00 > 99.00	2.683	2.692	-0.009	1.000	27872		3.43(1.94-5.82)		580	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.054	-0.004	1.000	77237	0.0480		103	296	
499.00 > 99.00	3.050	3.054	-0.004	1.000	19574		3.95(2.31-6.93)		206	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.055	-0.005	1.000	3538685	2.46		103	19871	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.055	-0.005	1.000	3756052	2.64		105	51843	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.061	-0.004	1.002	80137	0.0512		102	210	
463.00 > 169.00	3.057	3.061	-0.004	1.002	17806		4.50(1.90-5.69)		301	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.264	3.274	-0.010	1.000	128493	0.0460		98.8	3528	
D 21 13C8 FOSA										
506.00 > 78.00	3.386	3.393	-0.007	1.000	4549595	2.53		101	47252	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.399	-0.004	1.003	87039	0.0473		94.6	1358	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.405	3.408	-0.003	1.000	52515	0.0444		92.4	825	
549.00 > 99.00	3.405	3.408	-0.003	1.000	23754		2.21(1.33-3.97)		678	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.405	3.408	-0.003	1.000	28810	0.0491		103	1903	
D 26 M2-8:2FTS										
529.00 > 81.00	3.405	3.411	-0.006	1.000	1110231	2.58		108	9974	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.421	0.003	1.000	3139269	2.62		105	76291	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.414	3.427	-0.013	0.997	63666	0.0491		98.3	253	
513.00 > 169.00	3.414	3.427	-0.013	0.997	13915		4.58(2.36-7.09)		308	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.583	3.576	0.007	1.003	39505	0.0568		114	239	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.579	-0.007	1.000	1743479	2.57		103	21408	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	53300	0.0554		115	565	
599.00 > 99.00	3.727	3.741	-0.014	0.997	16613		3.21(1.39-4.16)		416	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.743	0.005	1.000	1896789	2.83		113	21418	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.752	0.006	1.003	39058	0.0551		110	861	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.752	-0.004	1.000	43202	0.0489		97.8	230	
563.00 > 169.00	3.748	3.752	-0.004	1.000	11164		3.87(2.12-6.36)		293	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.753	-0.005	1.000	2612642	2.53		101	48110	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.908	-0.003	1.000	197010	0.0457		97.0	3040	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.051	-0.003	1.000	63086	0.0529		106	94.7	
613.00 > 169.00	4.048	4.051	-0.003	1.000	15263		4.13(2.13-6.40)		163	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.051	-0.003	1.000	2856255	2.56		102	26912	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.308	-0.002	1.000	67977	0.0490		97.9	81.0	
663.00 > 169.00	4.306	4.308	-0.002	1.000	19198		3.54(1.25-3.76)		203	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.554	-0.003	1.000	15556	0.0466		93.3	156	
713.00 > 219.00	4.541	4.554	-0.013	0.998	11620		1.34(0.71-2.13)		245	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.554	-0.003	1.000	3320623	2.35		93.9	19327	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.967	-0.002	1.000	144728	0.0477		95.4	67.5	
813.00 > 169.00	4.965	4.967	-0.002	1.000	24852		5.82(2.86-8.58)		166	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.967	-0.002	1.000	5459948	2.37		94.9	16276	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.327	5.329	-0.002	1.000	111662	0.0509		102	45.0	
913.00 > 169.00	5.327	5.329	-0.002	1.000	12935		8.63(3.83-11.48)		123	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 10:05:26 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\2018.04.26LLBX_004.d

Injection Date: 27-Apr-2018 06:44:03 Instrument ID: A8_N

Lims ID: CCVL

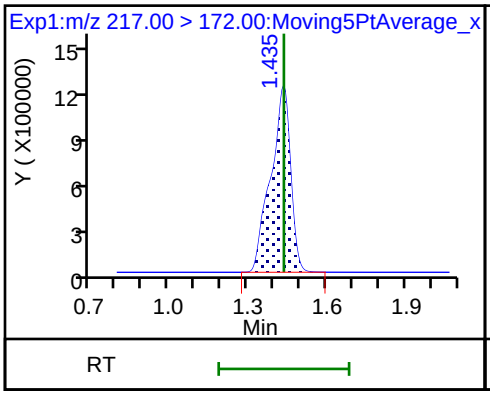
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

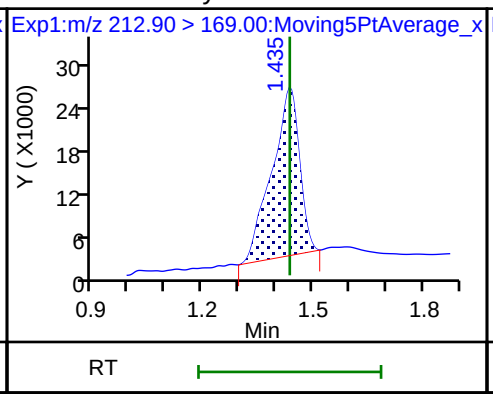
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

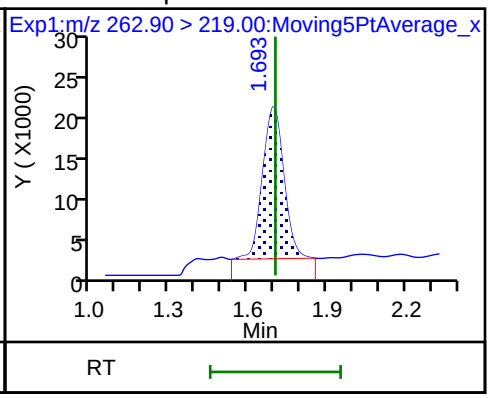
D 1 13C4 PFBA



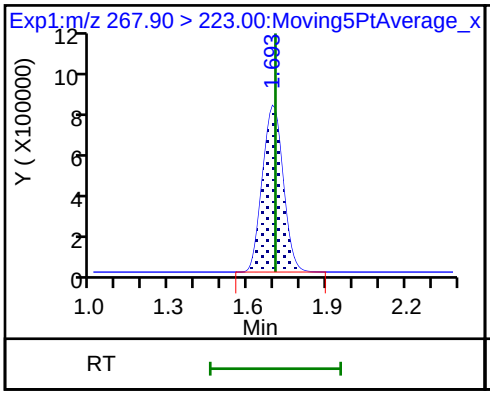
2 Perfluorobutyric acid



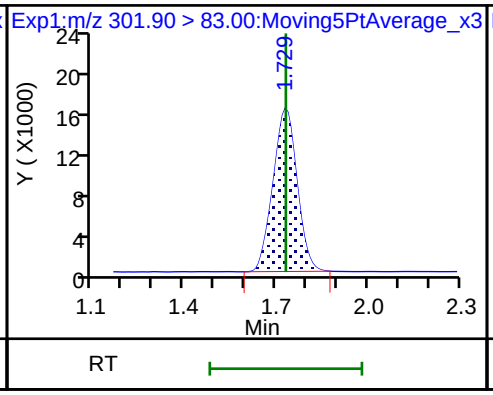
4 Perfluoropentanoic acid



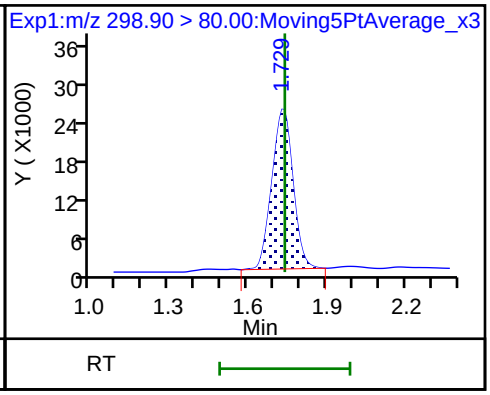
D 3 13C5-PFPeA



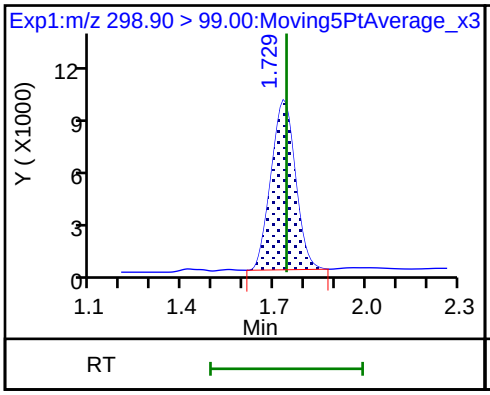
D 47 13C3-PFBS



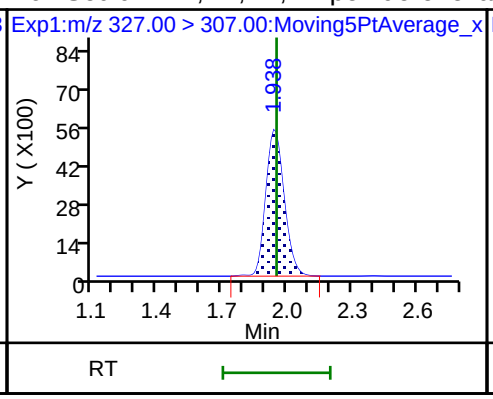
5 Perfluorobutanesulfonic acid



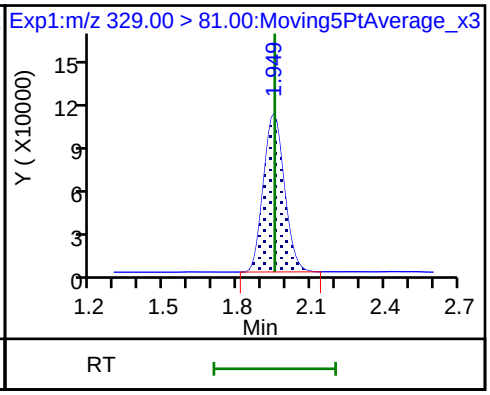
5 Perfluorobutanesulfonic acid



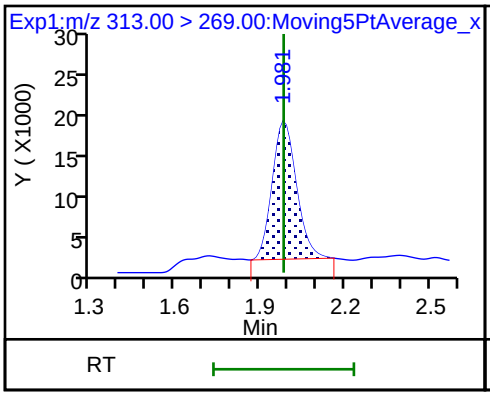
61 Sodium 1H,1H,2H,2H-perfluorohexane



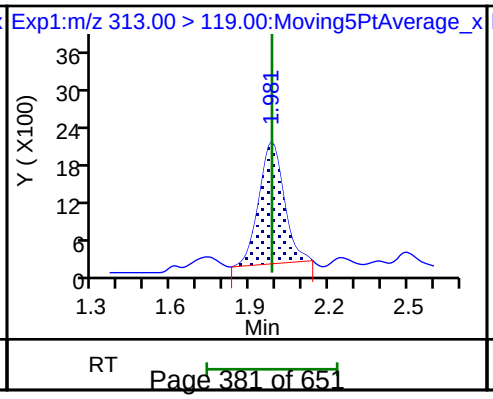
D 60 M2-4:2FTS



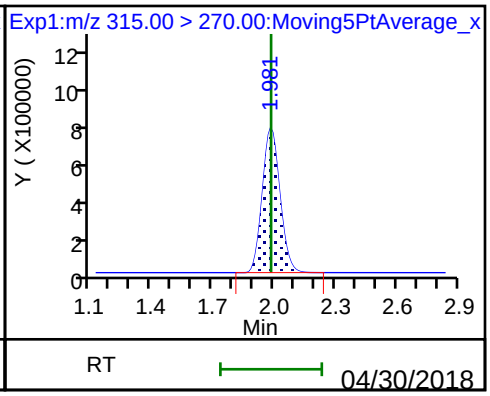
6 Perfluorohexanoic acid



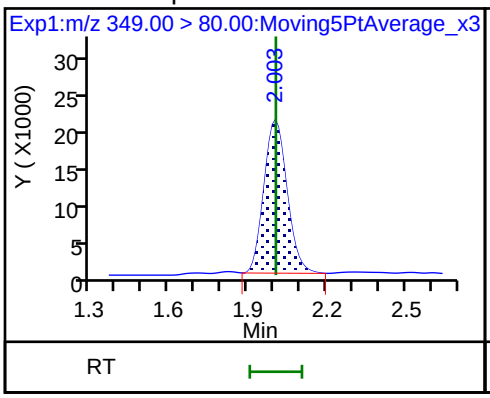
6 Perfluorohexanoic acid



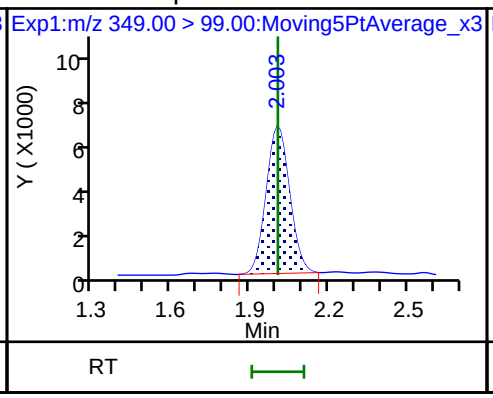
D 7 13C2 PFHxA



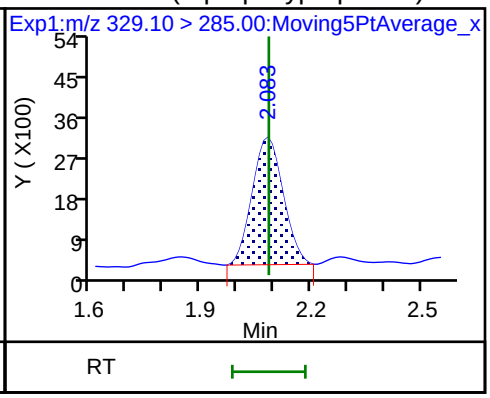
70 Perfluoropentanesulfonic acid



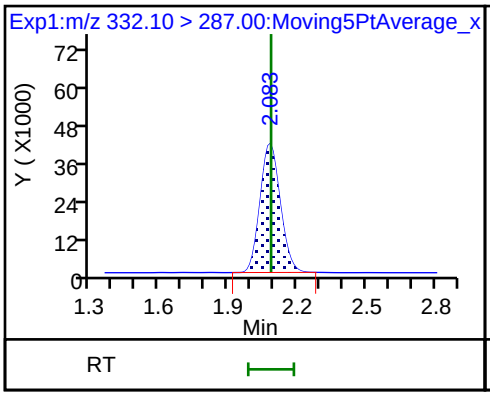
70 Perfluoropentanesulfonic acid



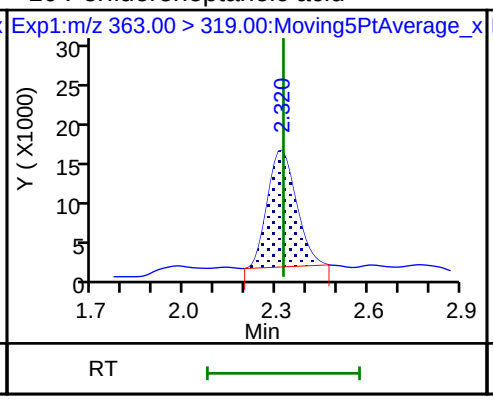
67 Perfluoro(2-propoxypropanoic) acid



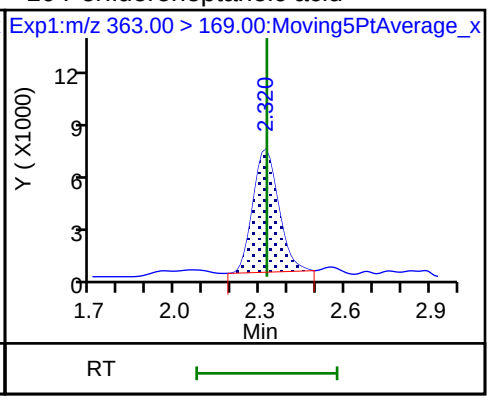
D 64 13C3 HFPO-DA



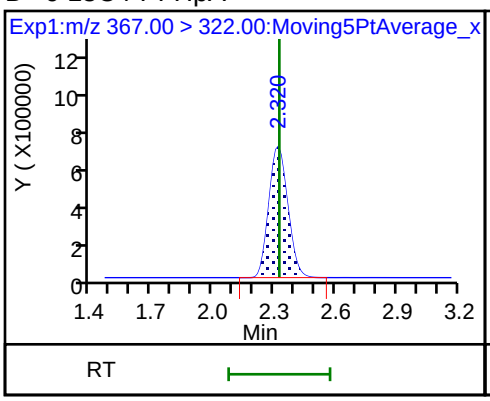
10 Perfluoroheptanoic acid



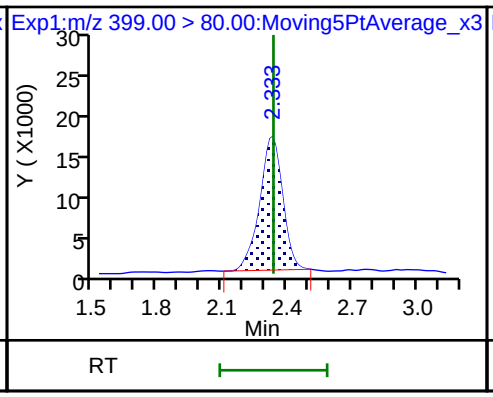
10 Perfluoroheptanoic acid



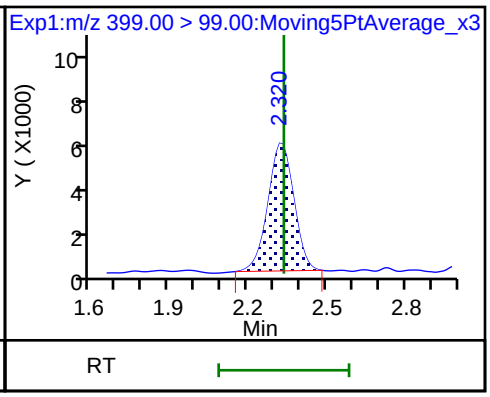
D 9 13C4-PFHpA



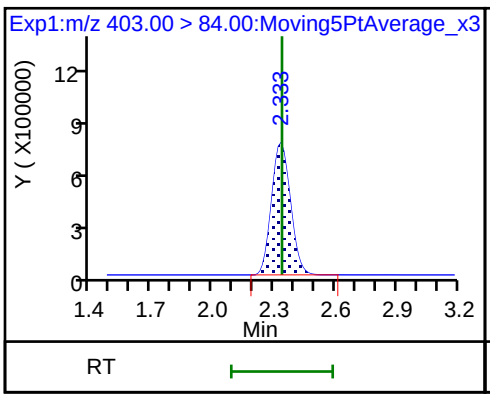
8 Perfluorohexanesulfonic acid



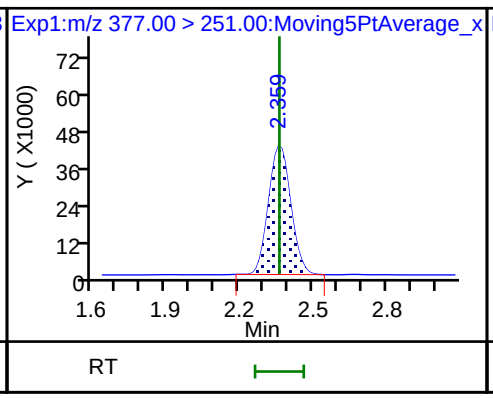
8 Perfluorohexanesulfonic acid



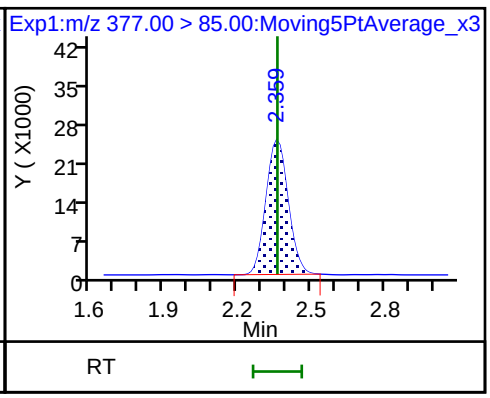
D 11 18O2 PFHxS



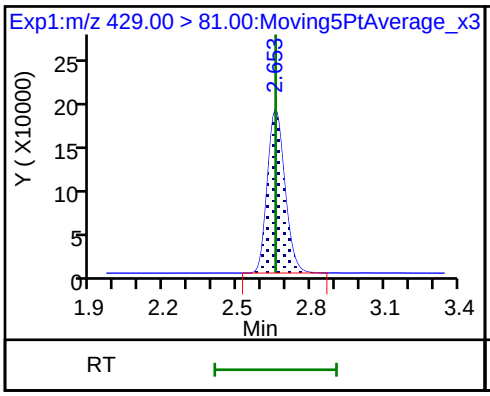
65 Adona



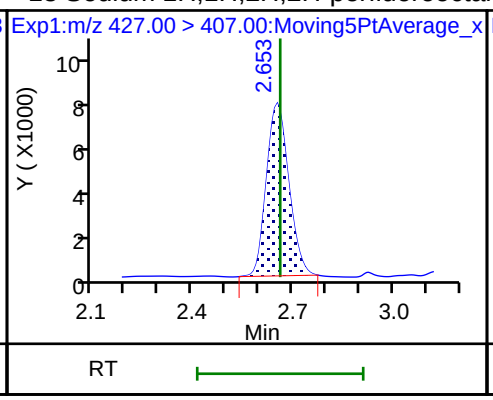
65 Adona



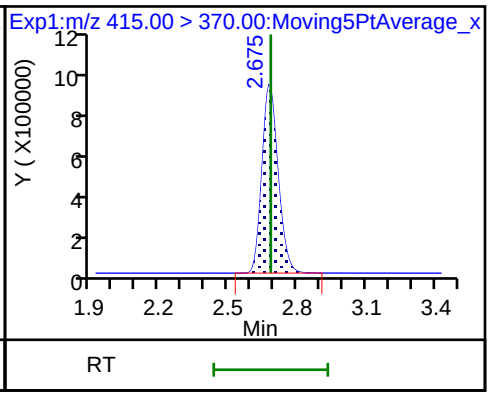
D 12 M2-6:2FTS



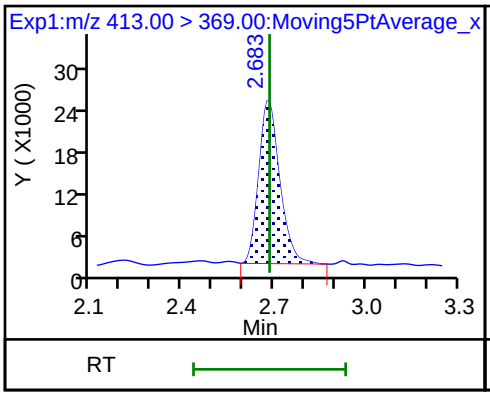
13 Sodium 1H,1H,2H,2H-perfluorooctane



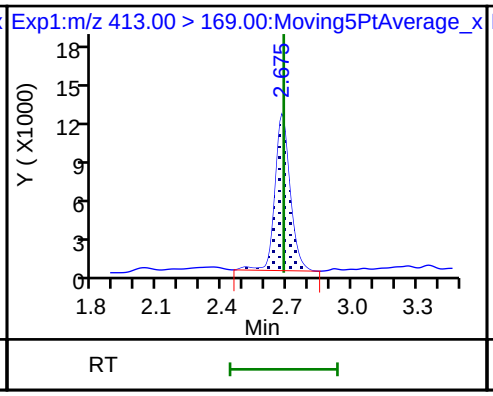
M62 13C2-PFOA



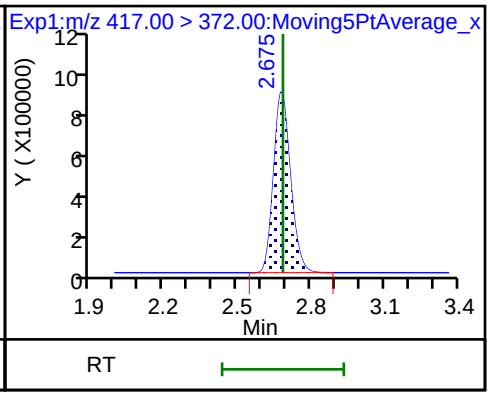
15 Perfluorooctanoic acid



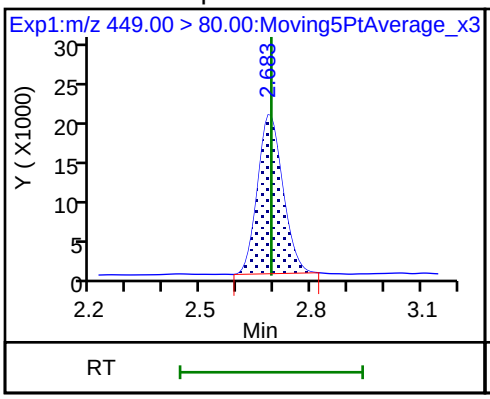
15 Perfluorooctanoic acid



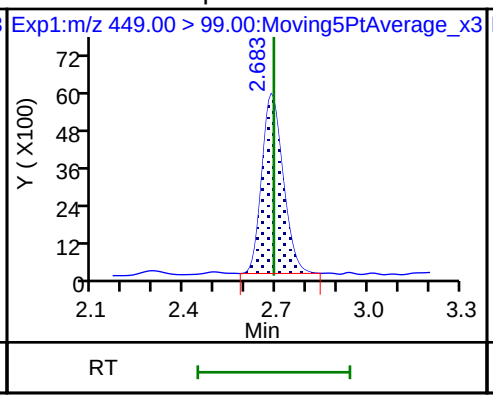
D 14 13C4 PFOA



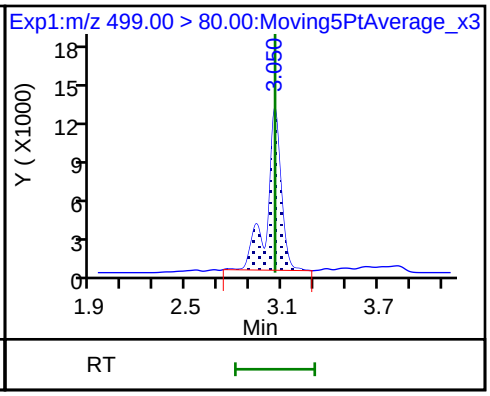
16 Perfluoroheptanesulfonic acid



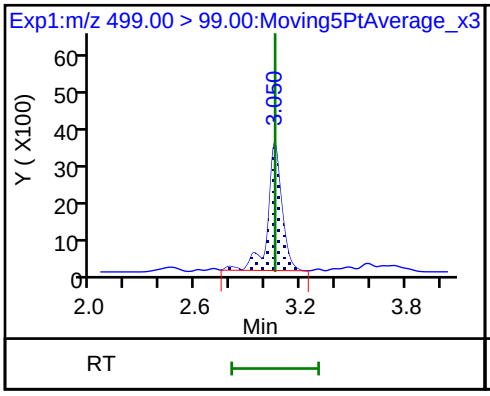
16 Perfluoroheptanesulfonic acid



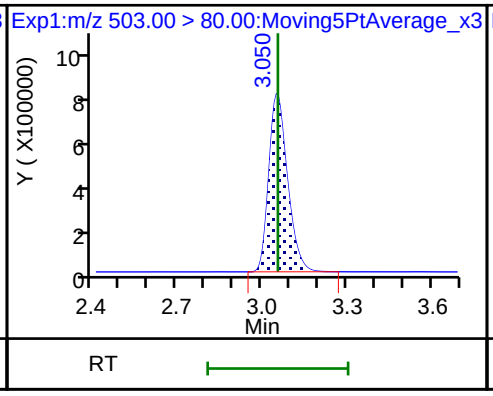
17 Perfluorooctane sulfonic acid



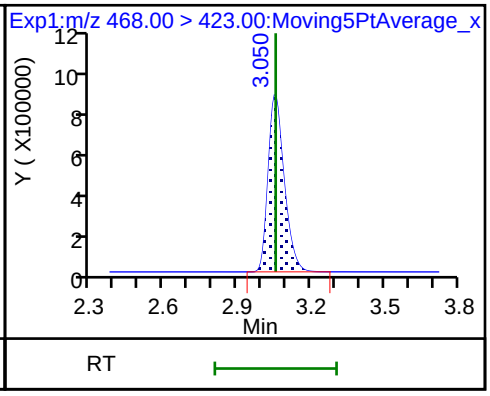
17 Perfluorooctane sulfonic acid



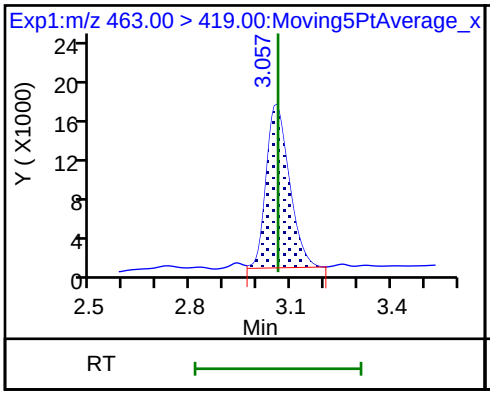
D 18 13C4 PFOS



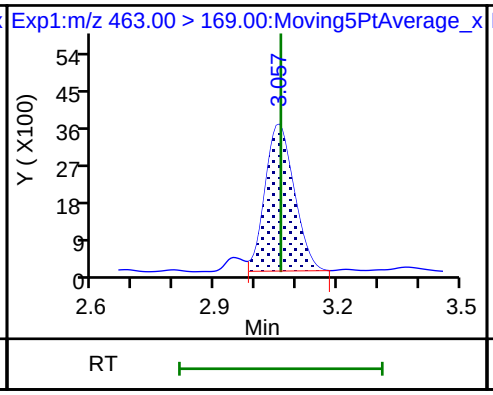
D 19 13C5 PFNA



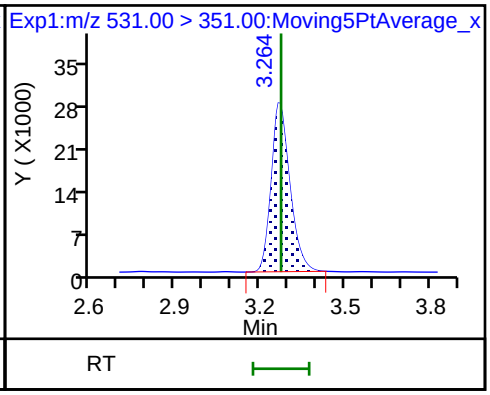
20 Perfluorononanoic acid



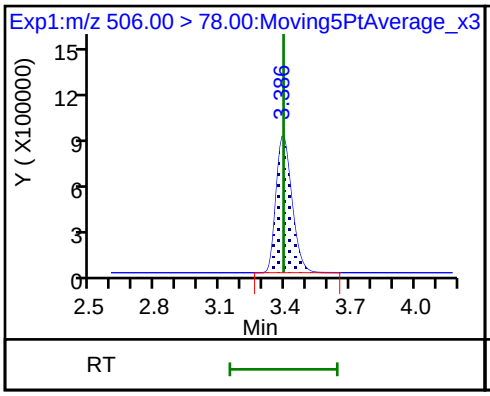
20 Perfluorononanoic acid



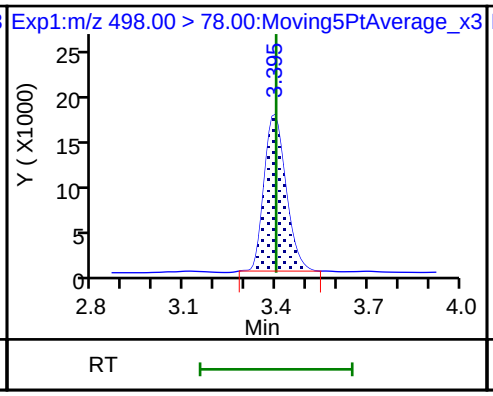
69 9-Chlorohexadecafluoro-3-oxanonane



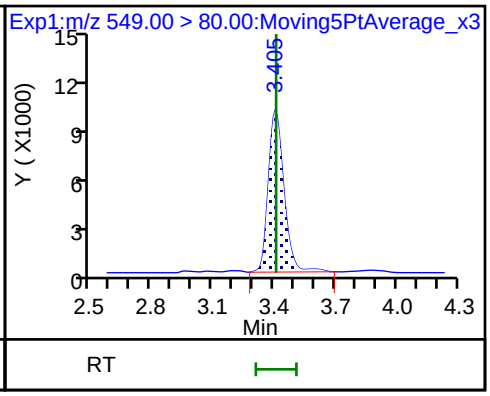
D 21 13C8 FOSA



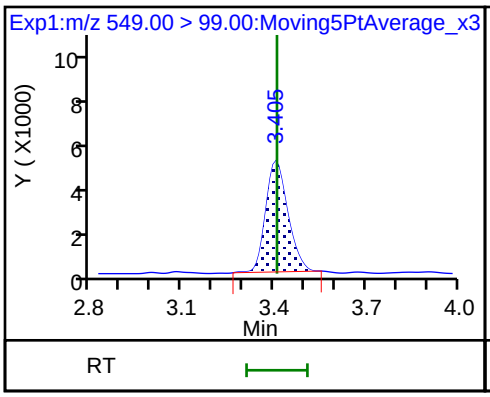
22 Perfluorooctane Sulfonamide



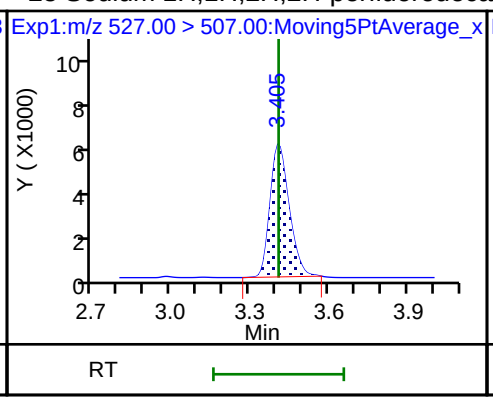
68 Perfluorononanesulfonic acid



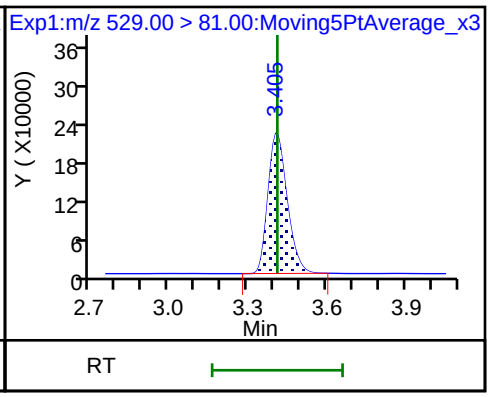
68 Perfluorononanesulfonic acid



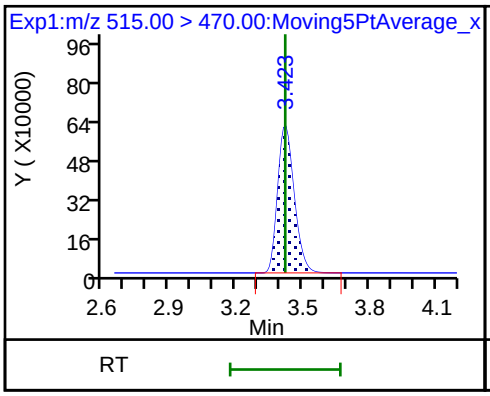
25 Sodium 1H,1H,2H,2H-perfluorodecane



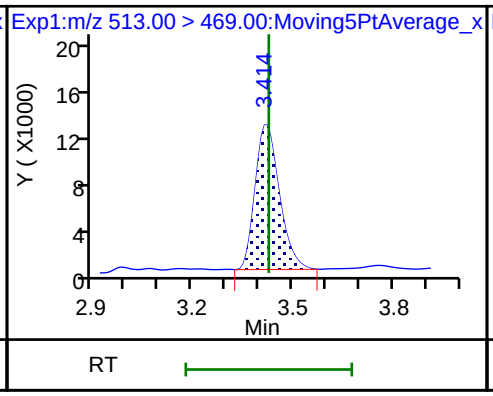
D 26 M2-8:2FTS



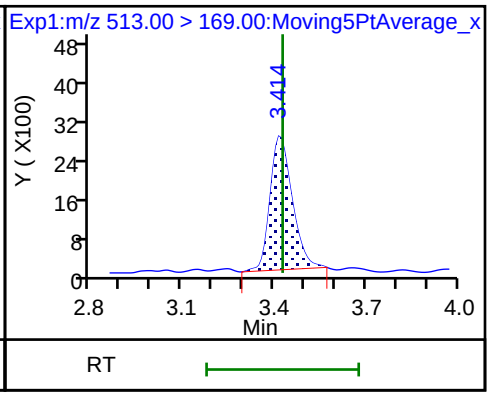
D 23 13C2 PFDA



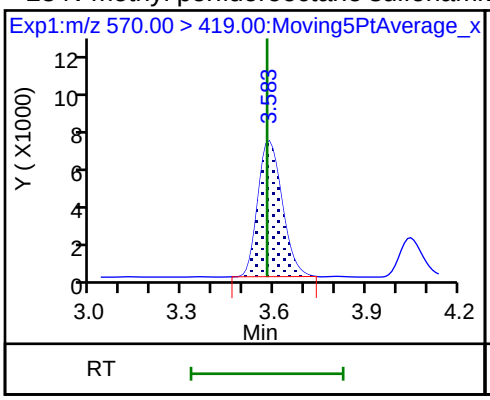
24 Perfluorodecanoic acid



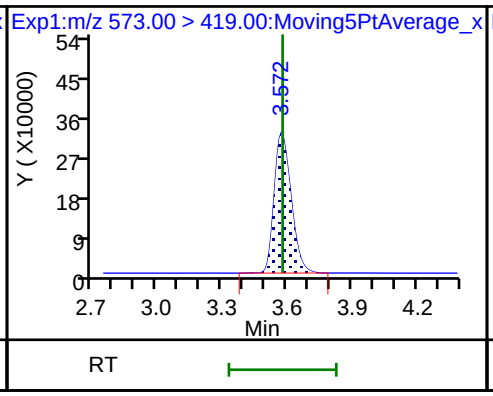
24 Perfluorodecanoic acid



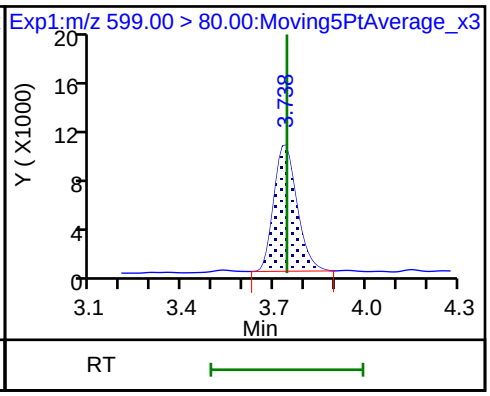
28 N-methyl perfluorooctane sulfonami



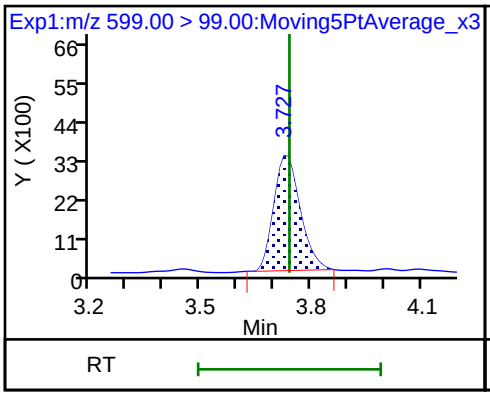
D 27 d3-NMeFOSAA



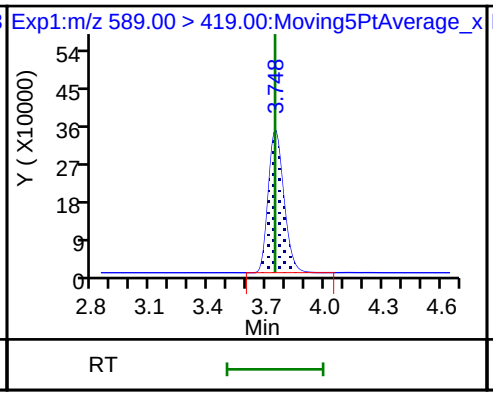
29 Perfluorodecane Sulfonic acid



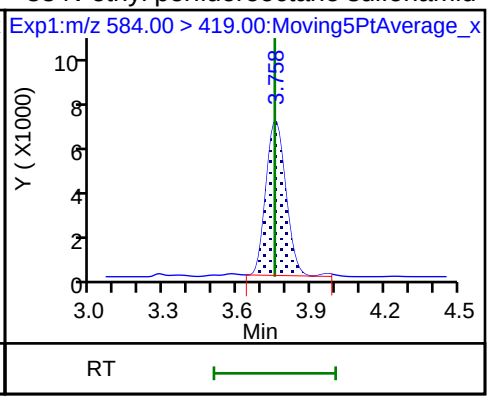
29 Perfluorodecane Sulfonic acid



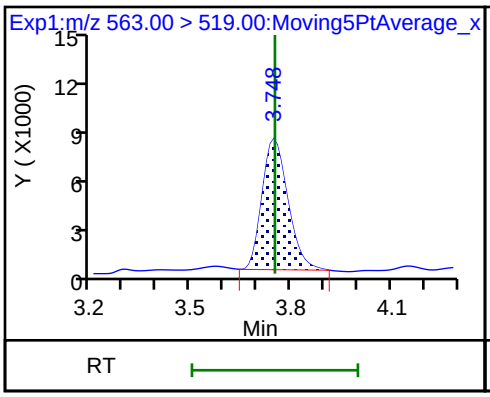
D 32 d5-NEtFOSAA



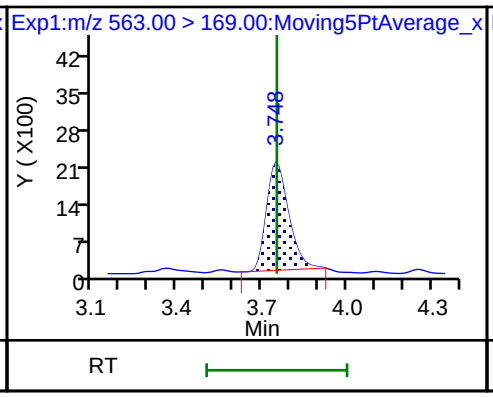
33 N-ethyl perfluorooctane sulfonamid



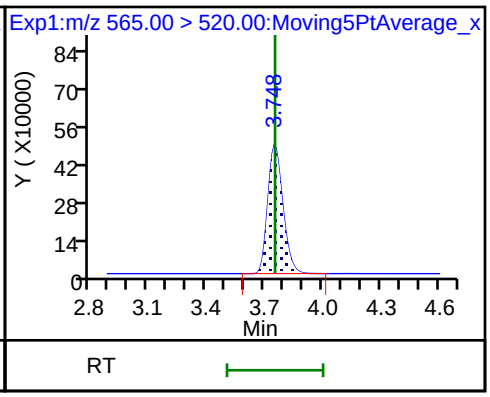
31 Perfluoroundecanoic acid



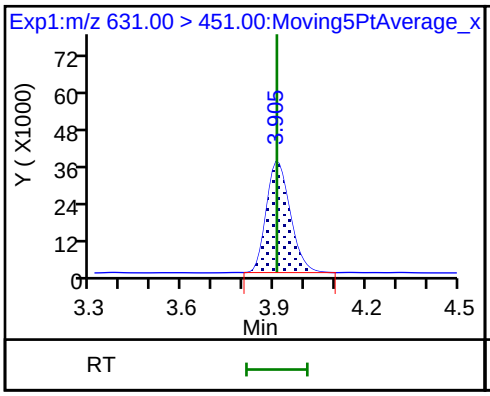
31 Perfluoroundecanoic acid



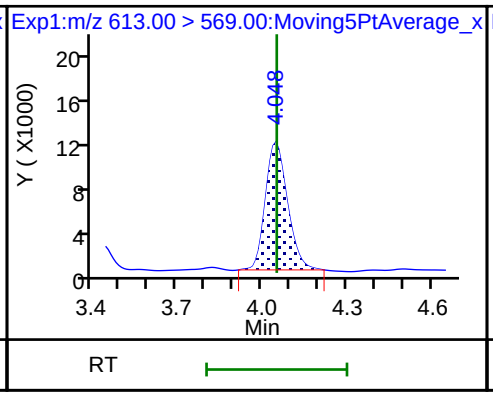
D 30 13C2 PFUnA



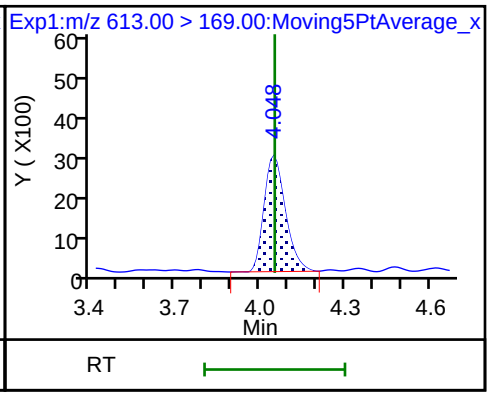
66 11-Chloroeicosafluoro-3-oxaundecan



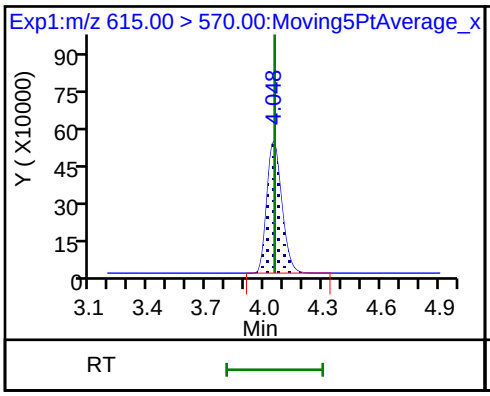
37 Perfluorododecanoic acid



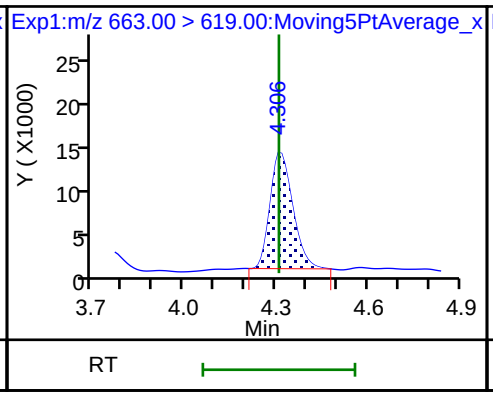
37 Perfluorododecanoic acid



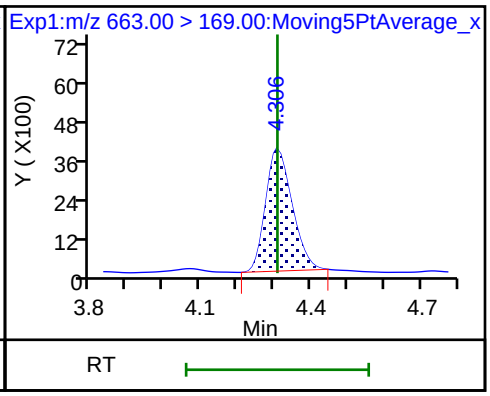
D 36 13C2 PFDoA



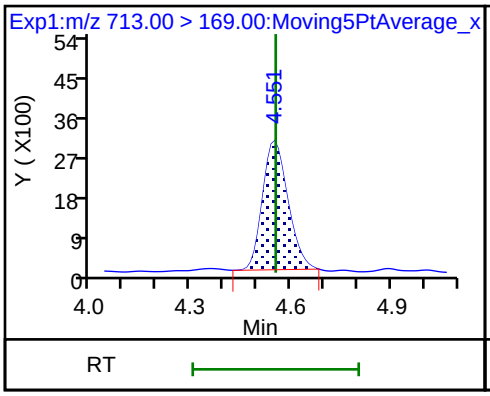
41 Perfluorotridecanoic acid



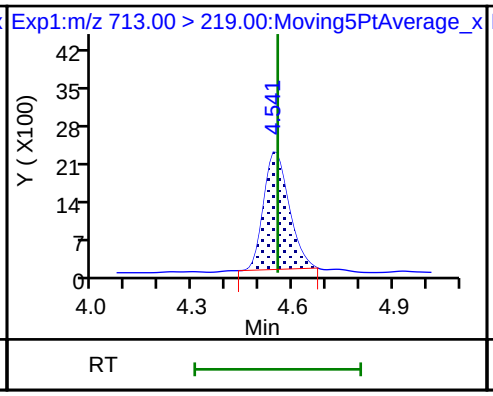
41 Perfluorotridecanoic acid



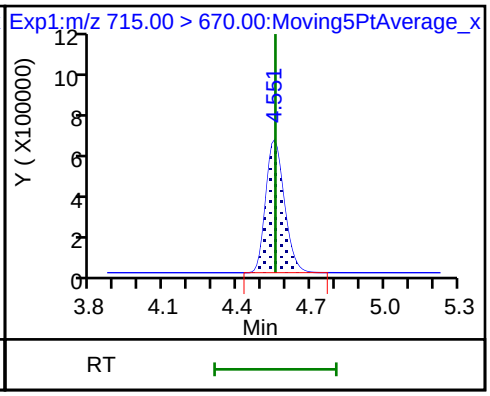
42 Perfluorotetradecanoic acid



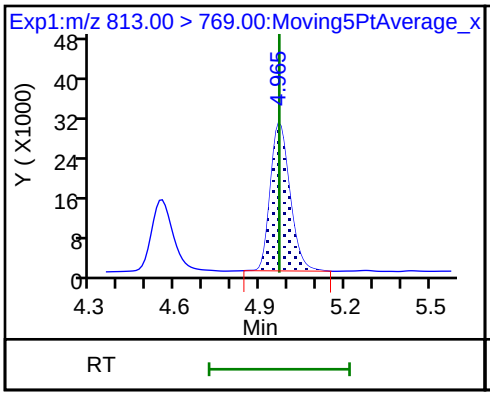
42 Perfluorotetradecanoic acid



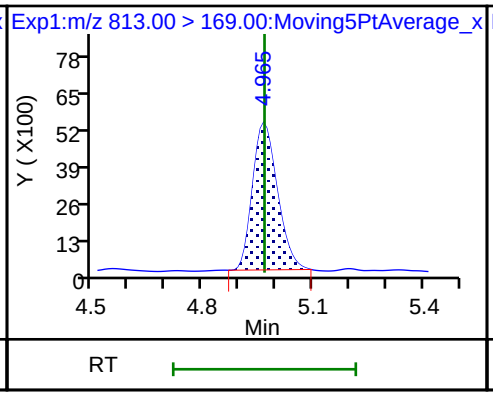
D 43 13C2-PFTeDA



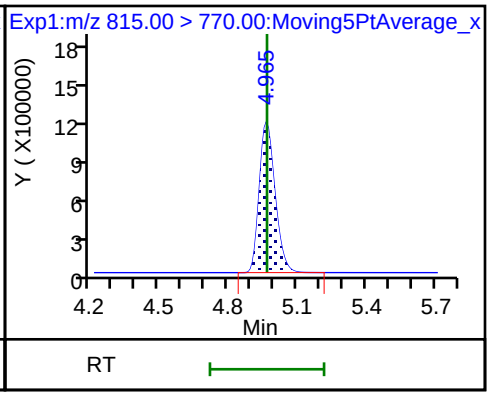
45 Perfluorohexadecanoic acid



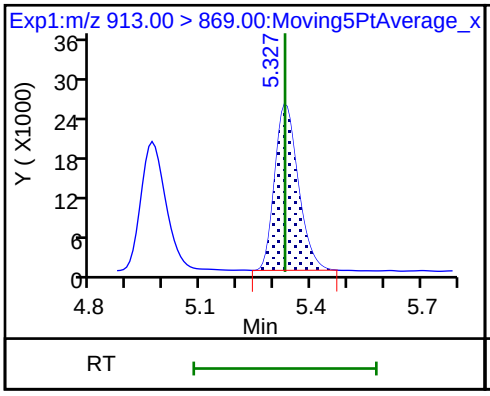
45 Perfluorohexadecanoic acid



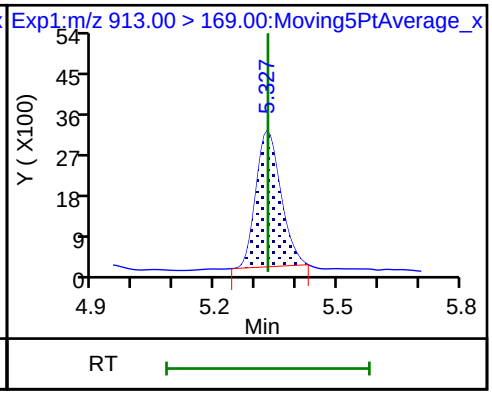
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220104/3 Calibration Date: 04/27/2018 06:51

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLBX_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9417		1.01	1.00	1.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.139		0.956	1.00	-4.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	77.93		0.880	0.884	-0.5	50.0
4:2 FTS	AveID	16.03	18.25		1.06	0.934	13.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.999		0.983	1.00	-1.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.20			0.938	-1.8	50.0
HFPO-DA (GenX)	AveID	2.785	2.832			1.00	1.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.012		1.01	1.00	1.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.060		0.853	0.910	-6.3	40.0
Adona	AveID	3.464	3.632			1.00	4.8	50.0
6:2FTS	AveID	1.691	1.630		0.914	0.948	-3.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.136		0.983	1.00	-1.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.306		0.936	0.952	-1.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.073		0.915	0.928	-1.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.011		0.969	1.00	-3.1	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.818			0.932	-3.6	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9603		0.949	1.00	-5.1	40.0
8:2FTS	AveID	1.265	1.376		1.04	0.958	8.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7227			0.960	-9.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9779		0.948	1.00	-5.2	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9777		0.980	1.00	-2.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6136		0.911	0.964	-5.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9073		0.971	1.00	-2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7825		0.926	1.00	-7.4	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.886			0.942	-0.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.013		0.971	1.00	-2.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.145		0.942	1.00	-5.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2403		0.957	1.00	-4.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9703		1.00	1.00	0.2	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220104/3 Calibration Date: 04/27/2018 06:51

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLBX_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.046		1.04	1.00	4.2	50.0
13C4 PFBA	Ave	1.345	1.318		2.45	2.50	-2.0	50.0
13C5 PFPeA	Ave	0.8672	0.8765		2.53	2.50	1.1	50.0
13C3-PFBS	Ave	0.0199	0.0189		2.21	2.33	-5.0	50.0
M2-4:2FTS	Ave	0.1425	0.1474		2.41	2.34	3.4	50.0
13C2 PFHxA	Ave	0.9590	0.9426		2.46	2.50	-1.7	50.0
13C3 HFPO-DA	Ave	0.0593	0.0512		2.16	2.50	-13.7	50.0
13C4-PFHpA	Ave	0.9333	0.9108		2.44	2.50	-2.4	50.0
18O2 PFHxS	Ave	1.152	1.090		2.24	2.37	-5.3	50.0
M2-6:2FTS	Ave	0.2000	0.2021		2.40	2.38	1.1	40.0
13C4 PFOA	Ave	0.9276	0.9144		2.46	2.50	-1.4	50.0
13C4 PFOS	Ave	0.8066	0.7804		2.31	2.39	-3.3	50.0
13C5 PFNA	Ave	0.7973	0.7843		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.007	0.9743		2.42	2.50	-3.3	50.0
M2-8:2FTS	Ave	0.2409	0.2326		2.31	2.40	-3.4	40.0
13C2 PFDA	Ave	0.6701	0.6662		2.49	2.50	-0.6	50.0
d3-NMeFOSAA	Ave	0.3798	0.3866		2.54	2.50	1.8	50.0
13C2 PFUnA	Ave	0.5781	0.5147		2.23	2.50	-11.0	50.0
d5-NEtFOSAA	Ave	0.3749	0.3849		2.57	2.50	2.7	50.0
13C2 PFDoA	Ave	0.6242	0.6008		2.41	2.50	-3.8	50.0
13C2-PFTeDA	Ave	0.7915	0.7794		2.46	2.50	-1.5	50.0
13C2-PFHxDA	Ave	1.288	1.308		2.54	2.50	1.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\2018.04.26LLBX_034.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Apr-2018 06:51:50 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 10:05:28 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK040

First Level Reviewer: hannigana Date: 27-Apr-2018 10:05:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.437	1.436	0.001	1.000	6127712	2.45		98.0	37065	
2 Perfluorobutyric acid										
212.90 > 169.00	1.437	1.437	0.0	1.000	2308293	1.01		101	1407	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.704	1.704	0.0	1.000	1856188	0.9556		95.6	1863	
D 3 13C5-PFPeA										
267.90 > 223.00	1.704	1.704	0.0	0.557	4074464	2.53		101	63422	
D 47 13C3-PFBS										
301.90 > 83.00	1.731	1.731	0.0	1.000	81721	2.21		95.0	646	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.740	0.0	1.005	2421433	0.8800		99.5	8461	
298.90 > 99.00	1.740	1.740	0.0	1.005	1019286		2.38(1.25-3.74)		9784	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.951	1.951	0.0	1.000	599240	1.06		114	34546	
D 60 M2-4:2FTS										
329.00 > 81.00	1.951	1.951	0.0	1.000	639745	2.41		103	5501	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.983	1.983	0.0	1.000	1751576	0.9835		98.3	2376	
313.00 > 119.00	1.983	1.983	0.0	1.000	157443		11.13(5.03-15.10)		1632	
D 7 13C2 PFHxA										
315.00 > 270.00	1.983	1.984	-0.001	1.000	4381814	2.46		98.3	81949	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	2.006	0.0	1.000	2314543	0.9209		98.2	12484	
349.00 > 99.00	2.006	2.006	0.0	1.000	851243		2.72(1.36-4.07)		10907	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.085	2.085	0.0	1.000	269516	1.02		102	1975	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.085	2.085	0.0	1.000	237958	2.16		86.3	9799	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.323	2.323	0.0	1.000	1713726	1.01		101	2102	
363.00 > 169.00	2.323	2.323	0.0	1.000	661848		2.59(1.13-3.40)		3054	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.324	-0.001	1.000	4233676	2.44		97.6	55725	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.336	0.0	1.000	1956688	0.8527		93.7	4508	
399.00 > 99.00	2.336	2.336	0.0	1.000	634376		3.08(1.50-4.49)		3951	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.337	-0.001	1.000	4795272	2.24		94.7	54255	
65 Adona										
377.00 > 251.00	2.362	2.362	0.0	1.000	5269731	1.05		105	52977	
377.00 > 85.00	2.362	2.362	0.0	1.000	3205184		1.64(0.84-2.53)		43190	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.655	0.006	1.000	892670	2.40		101	10843	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.661	0.0	1.000	580671	0.9139		96.4	9915	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.684	0.0		4648517	2.50			69378	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.684	0.0	1.000	1930890	0.9829		98.3	1268	
413.00 > 169.00	2.684	2.684	0.0	1.000	989552		1.95(0.84-2.52)		3919	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.685	-0.001	1.000	4250752	2.46		98.6	67653	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.692	2.692	0.0	1.000	1803912	0.9363		98.4	10370	
449.00 > 99.00	2.692	2.692	0.0	1.000	502979		3.59(1.94-5.82)		10493	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.054	3.054	0.0	1.000	1444378	0.9150		98.6	4622	M
499.00 > 99.00	3.054	3.054	0.0	1.000	321211		4.50(2.31-6.93)		3841	
D 18 13C4 PFOS										
503.00 > 80.00	3.054	3.055	-0.001	1.000	3468087	2.31		96.7	19323	
D 19 13C5 PFNA										
468.00 > 423.00	3.061	3.055	0.006	1.000	3645868	2.46		98.4	66850	
20 Perfluorononanoic acid										
463.00 > 419.00	3.061	3.061	0.0	1.000	1473921	0.9693		96.9	4412	
463.00 > 169.00	3.061	3.061	0.0	1.000	363430		4.06(1.90-5.69)		5715	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.274	3.274	0.0	1.000	2458093	0.8986		96.4	42371	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.393	0.006	1.000	4529118	2.42		96.7	35706	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.399	0.0	1.000	1739755	0.9494		94.9	17101	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.408	0.0	1.000	1006674	0.8678		90.4	9049	
549.00 > 99.00	3.408	3.408	0.0	1.000	375279		2.68(1.33-3.97)		8246	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.408	0.0	1.000	570036	1.04		109	15773	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.411	-0.003	1.000	1035701	2.31		96.6	8925	
D 23 13C2 PFDA										
515.00 > 470.00	3.418	3.421	-0.002	1.000	3097004	2.49		99.4	60230	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.427	3.427	0.0	1.003	1211408	0.9479		94.8	4863	
513.00 > 169.00	3.427	3.427	0.0	1.003	199831		6.06(2.36-7.09)		4801	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.576	3.576	0.0	1.000	702861	0.9804		98.0	4742	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.579	-0.003	1.000	1797182	2.54		102	21103	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	858258	0.9110		94.5	8694	
599.00 > 99.00	3.741	3.741	0.0	1.000	292647		2.93(1.39-4.16)		7647	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.743	0.009	1.000	1789144	2.57		103	18858	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.752	3.752	0.0	1.000	649344	0.9709		97.1	16664	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.752	3.752	0.0	1.000	748795	0.9259		92.6	5294	
563.00 > 169.00	3.752	3.752	0.0	1.000	197236		3.80(2.12-6.36)		5156	
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.753	-0.001	1.000	2392352	2.23		89.0	48501	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.908	3.908	0.0	1.000	3944787	0.9334		99.1	50114	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1131174	0.9710		97.1	1626	
613.00 > 169.00	4.051	4.051	0.0	1.000	281732		4.02(2.13-6.40)		3486	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.051	0.0	1.000	2792578	2.41		96.2	27597	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.308	0.0	1.000	1278818	0.9420		94.2	1584	
663.00 > 169.00	4.308	4.308	0.0	1.000	424383		3.01(1.25-3.76)		3910	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	348208	0.9567		95.7	2649	
713.00 > 219.00	4.544	4.554	-0.010	0.998	256773		1.36(0.71-2.13)		3275	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.554	0.0	1.000	3623143	2.46		98.5	24836	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.967	0.0	1.000	2360589	1.00		100	1092	
813.00 > 169.00	4.967	4.967	0.0	1.000	391907		6.02(2.86-8.58)		2391	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.967	0.0	1.000	6081891	2.54		102	17311	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.329	0.0	1.000	2545357	1.04		104	849	
913.00 > 169.00	5.329	5.329	0.0	1.000	321032		7.93(3.83-11.48)		2334	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 10:05:29 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\2018.04.26LLBX_034.d

Injection Date: 27-Apr-2018 06:51:50 Instrument ID: A8_N

Lims ID: CCV L4

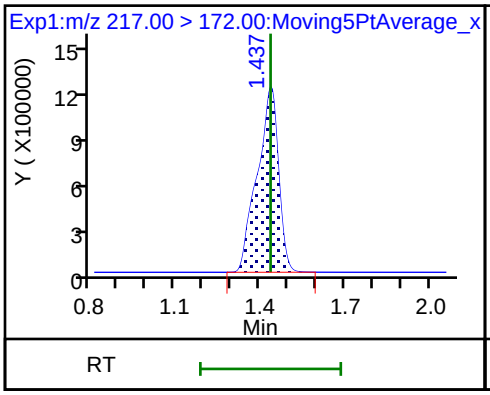
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

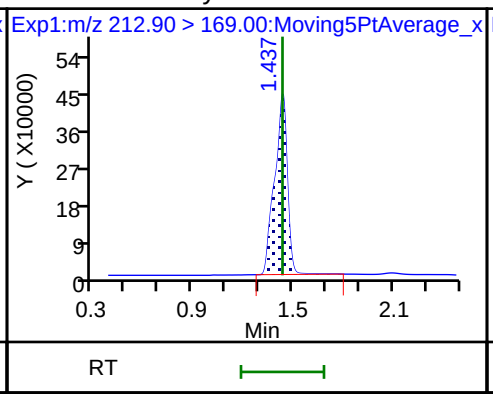
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

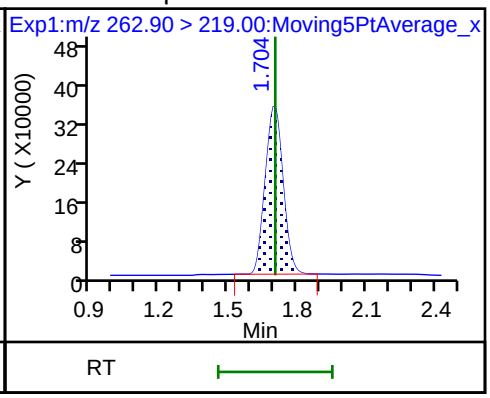
D 1 13C4 PFBA



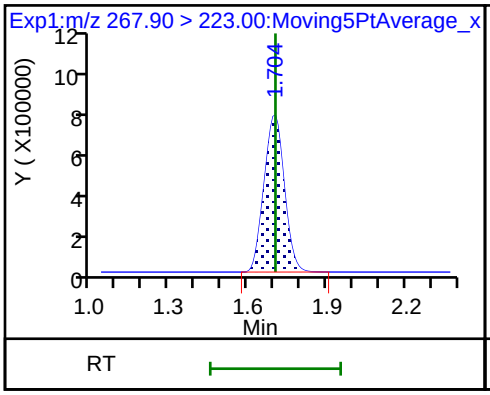
2 Perfluorobutyric acid



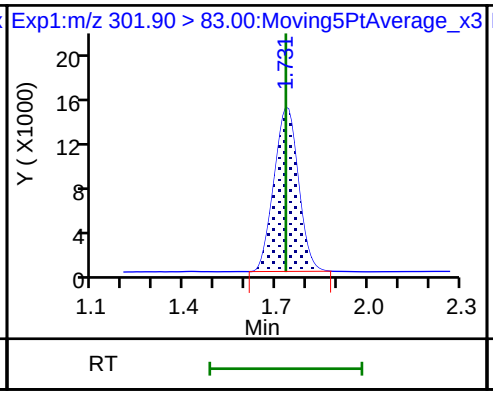
4 Perfluoropentanoic acid



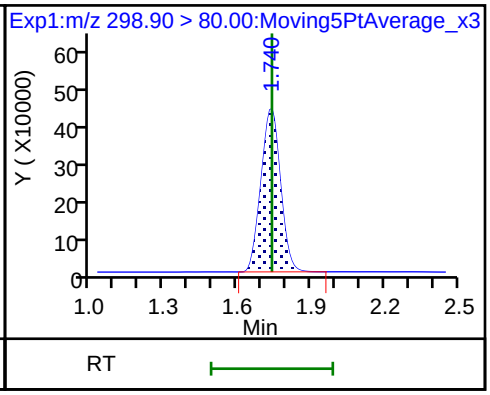
D 3 13C5-PFPeA



D 47 13C3-PFBS



5 Perfluorobutanesulfonic acid



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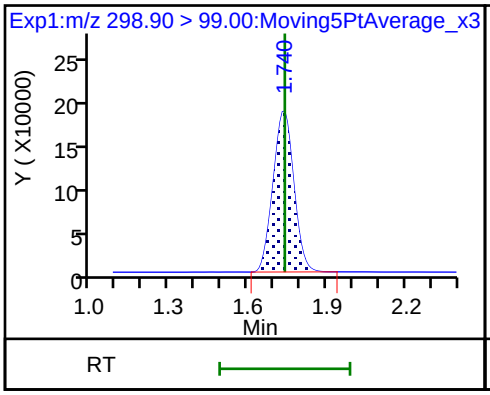
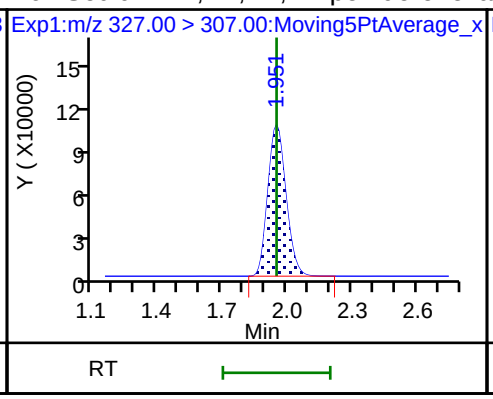
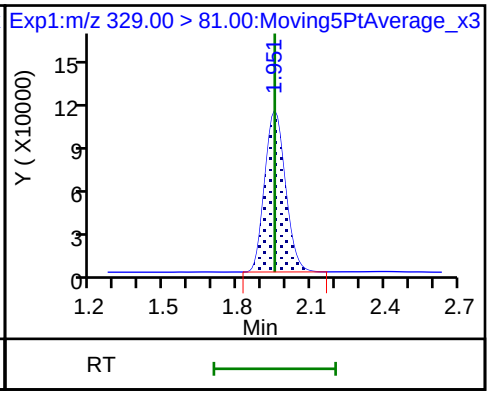


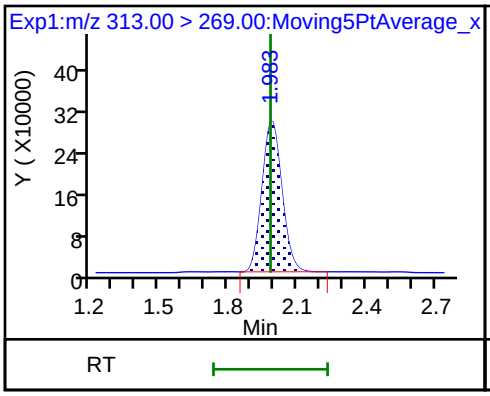
61 Sodium 1H,1H,2H,2H-perfluorohexane



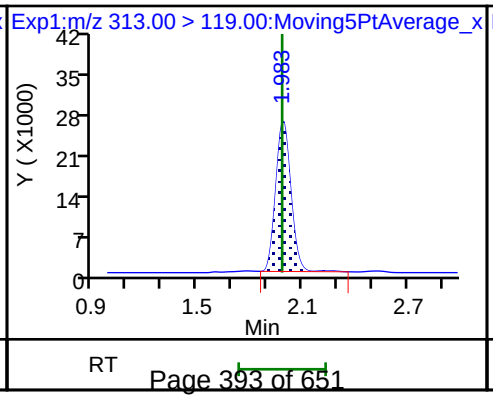
D 60 M2-4:2FTS



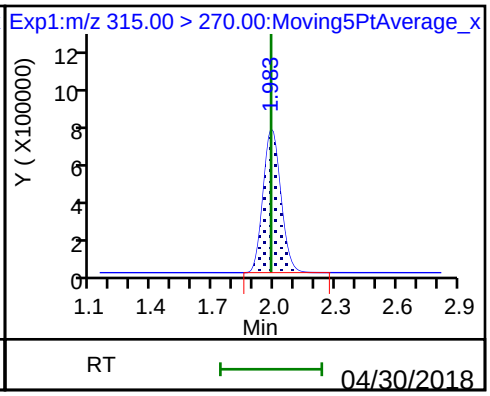
6 Perfluorohexanoic acid



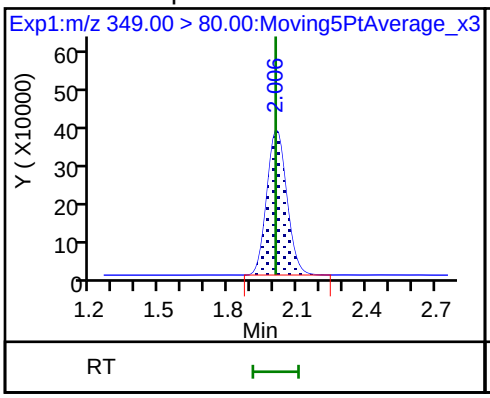
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



70 Perfluoropentanesulfonic acid



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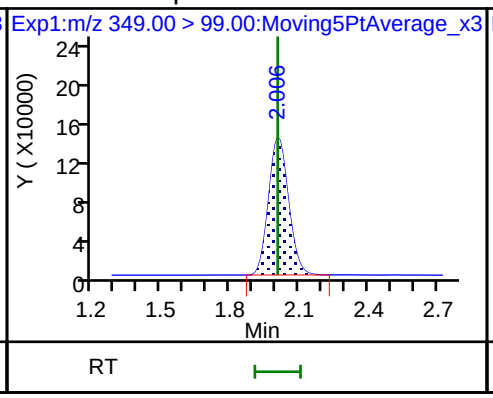
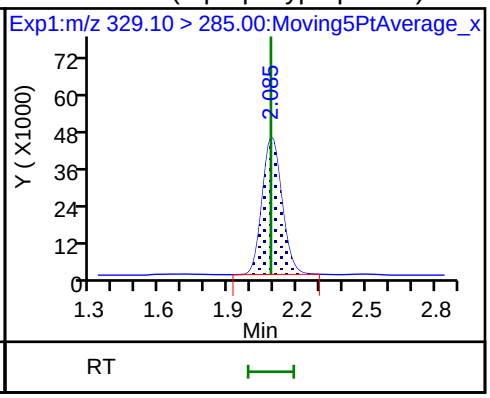
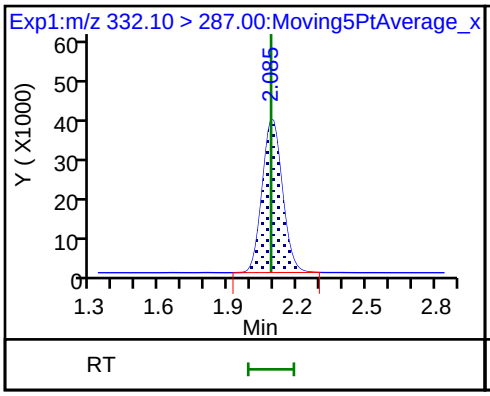


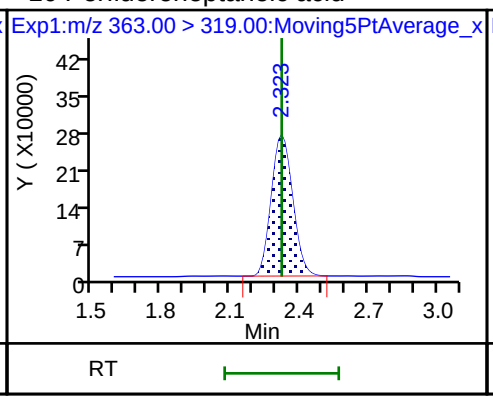
67 Perfluoro(2-propoxypropanoic) acid



D 64 13C3 HFPO-DA



10 Perfluoroheptanoic acid



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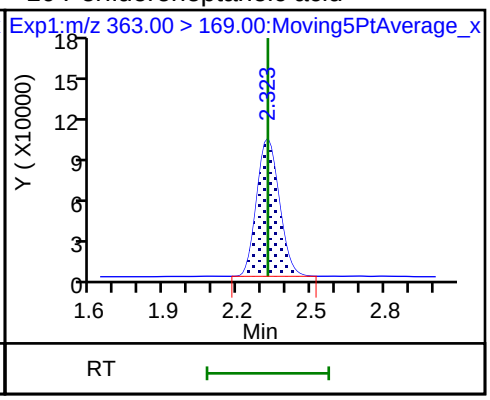
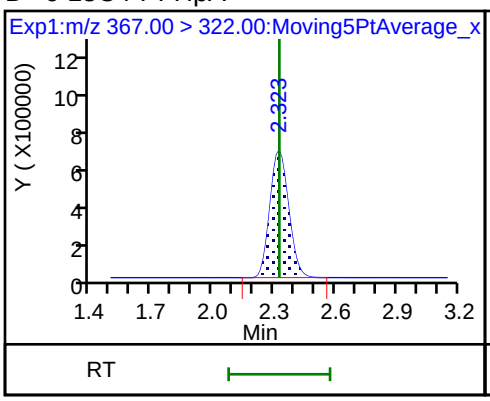
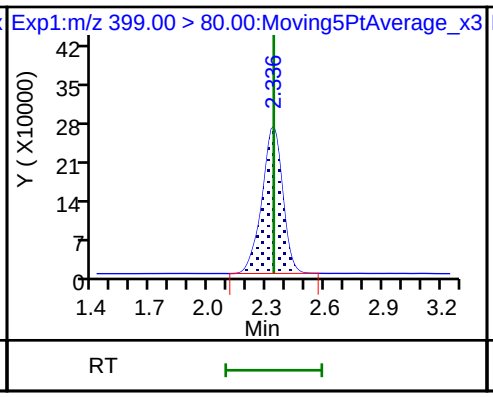


D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid



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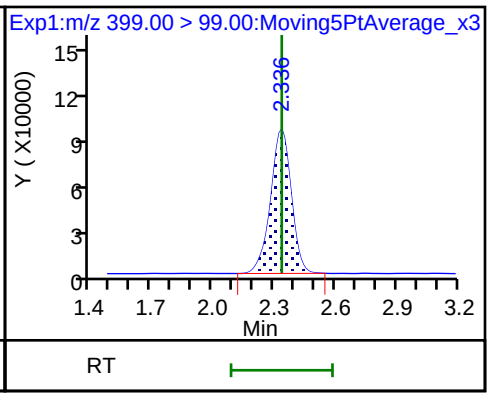
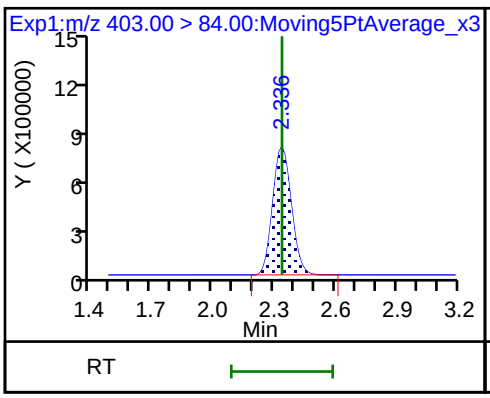
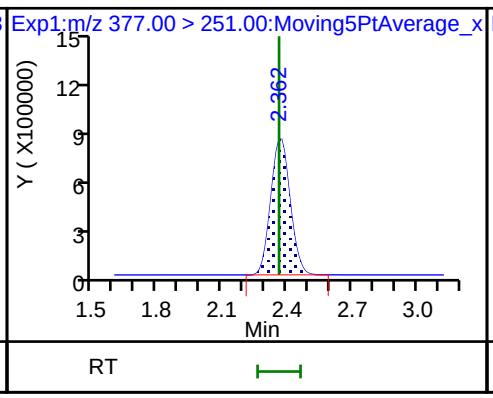


D 11 18O2 PFHxS



65 Adona



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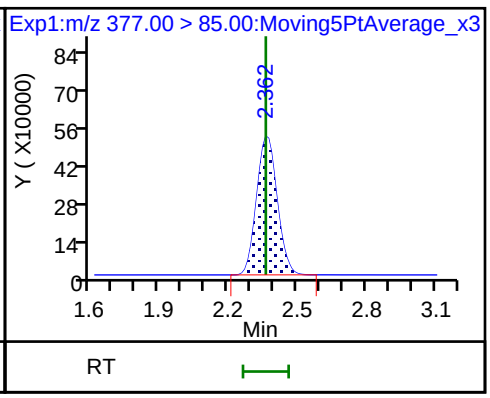
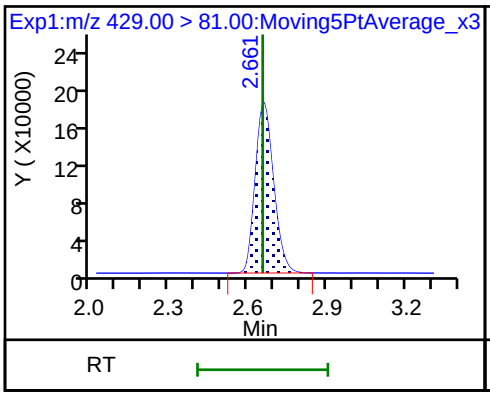
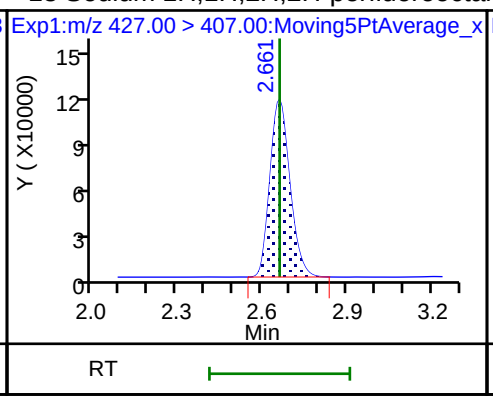


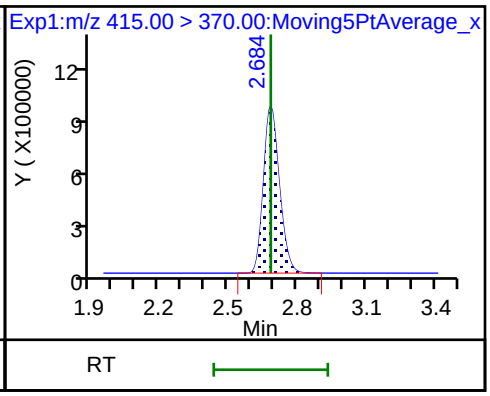
D 12 M2-6:2FTS



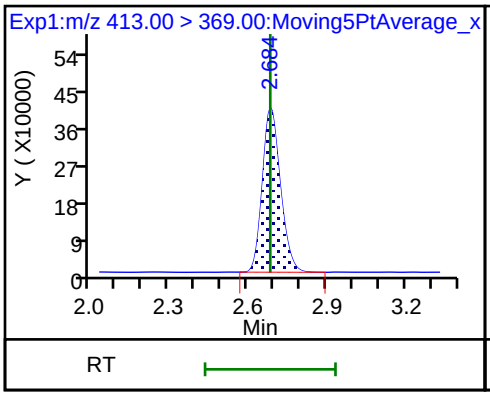
13 Sodium 1H,1H,2H,2H-perfluorooctane



M62 13C2-PFOA



15 Perfluorooctanoic acid



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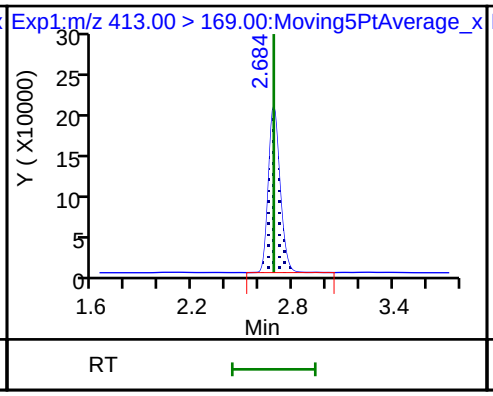
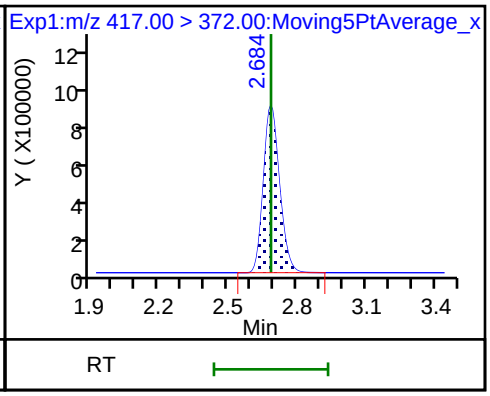
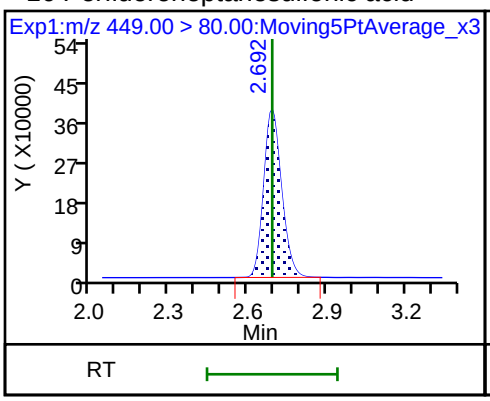


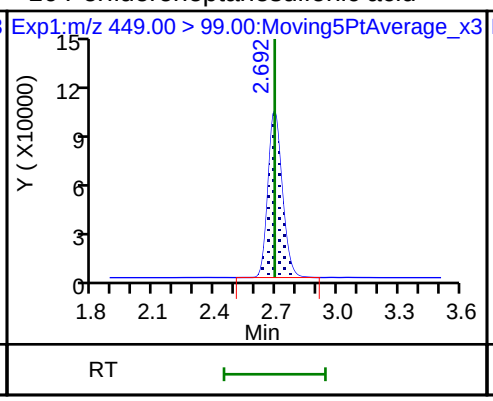
D 14 13C4 PFOA



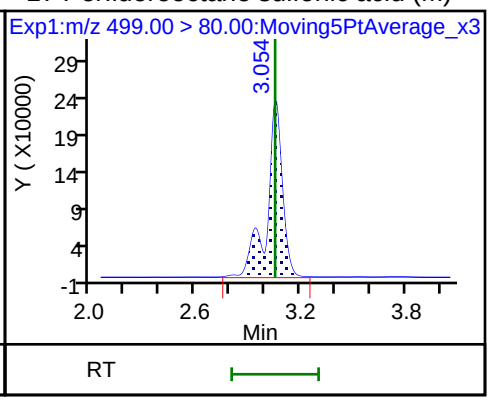
16 Perfluoroheptanesulfonic acid



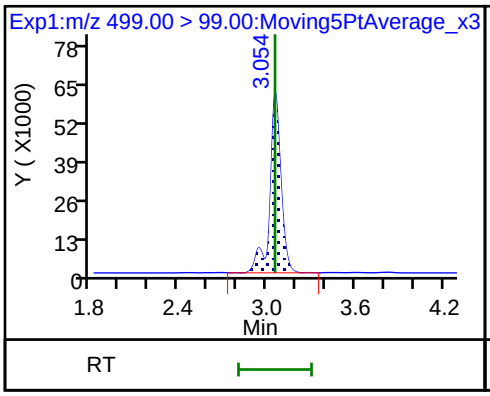
16 Perfluoroheptanesulfonic acid



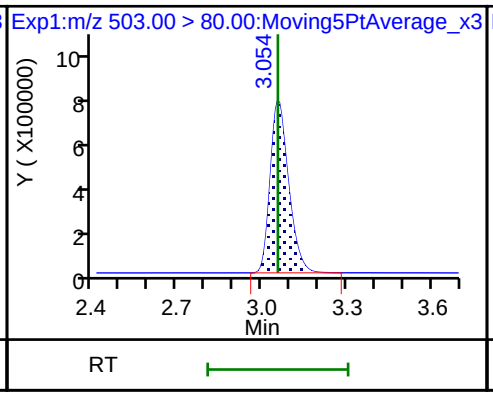
17 Perfluorooctane sulfonic acid (M)



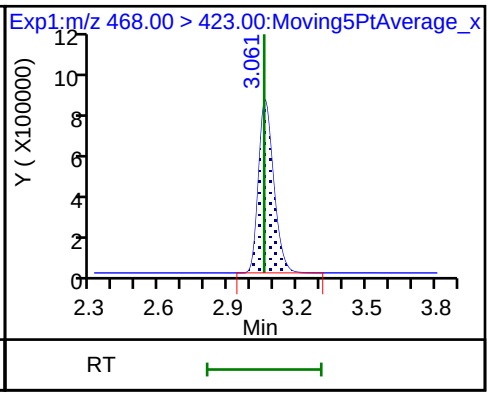
17 Perfluorooctane sulfonic acid



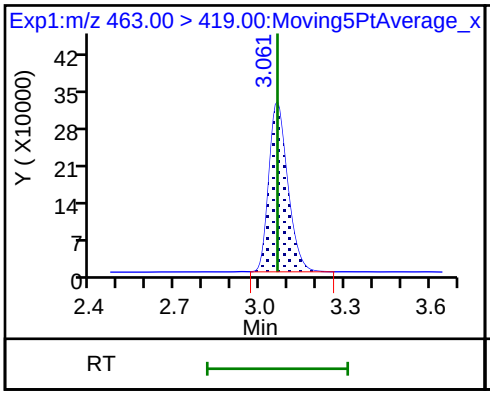
D 18 13C4 PFOS



D 19 13C5 PFNA



20 Perfluorononanoic acid



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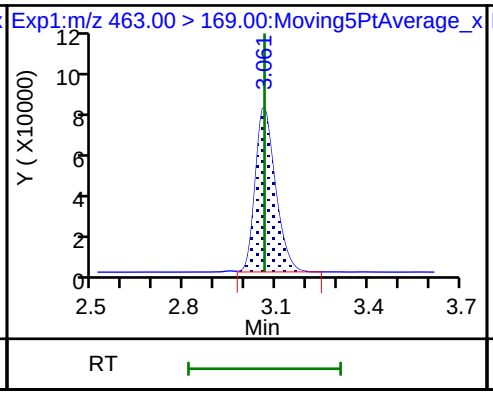
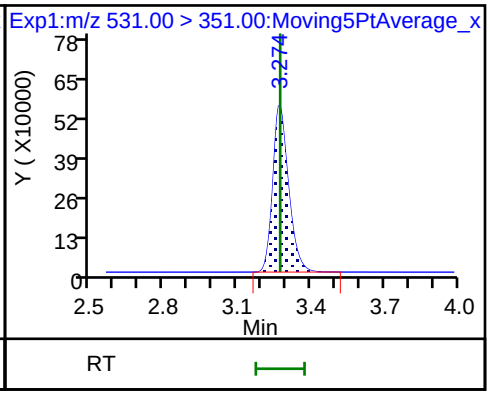
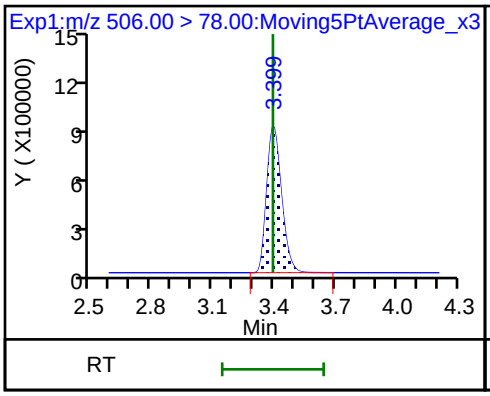


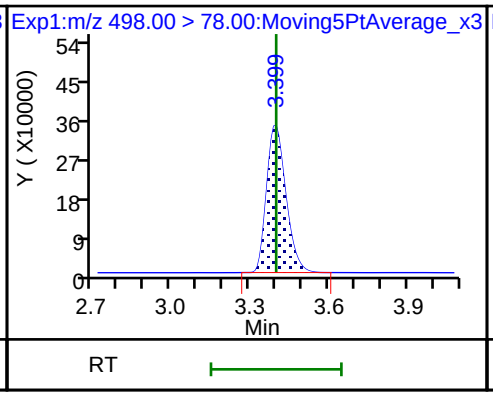
69 9-Chlorohexadecafluoro-3-oxanonane



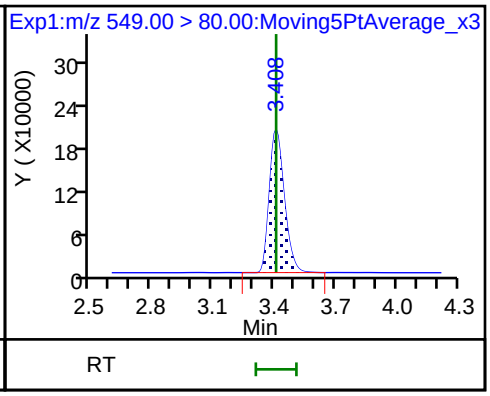
D 21 13C8 FOSA



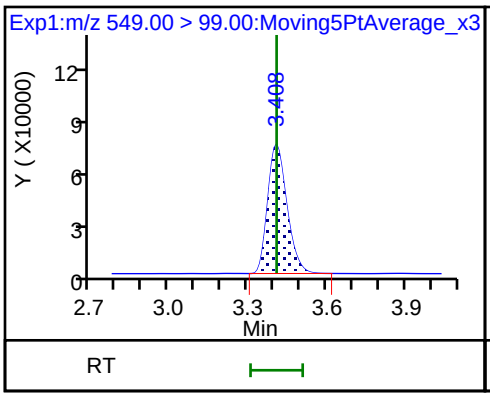
22 Perfluorooctane Sulfonamide



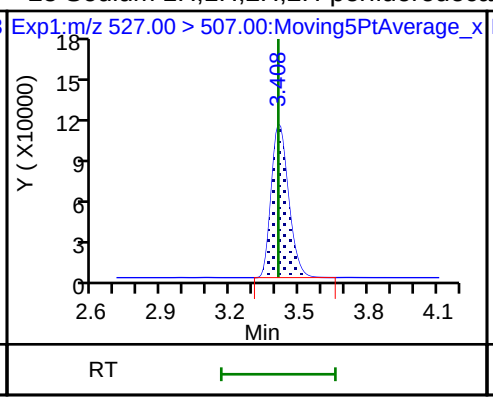
68 Perfluorononanesulfonic acid



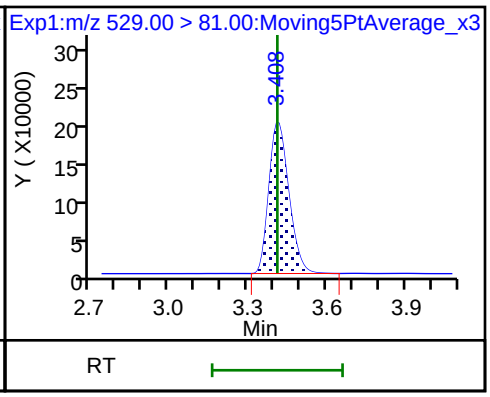
68 Perfluorononanesulfonic acid



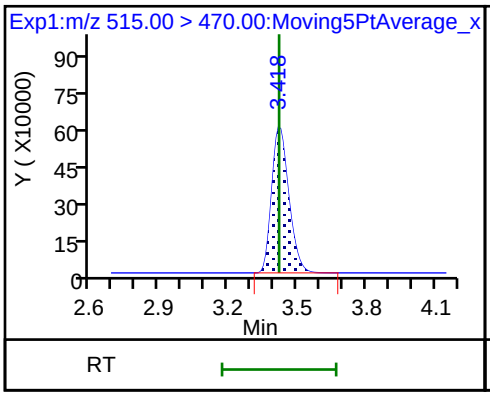
25 Sodium 1H,1H,2H,2H-perfluorodecane



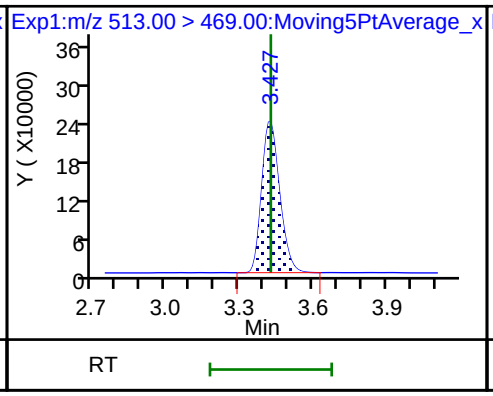
D 26 M2-8:2FTS



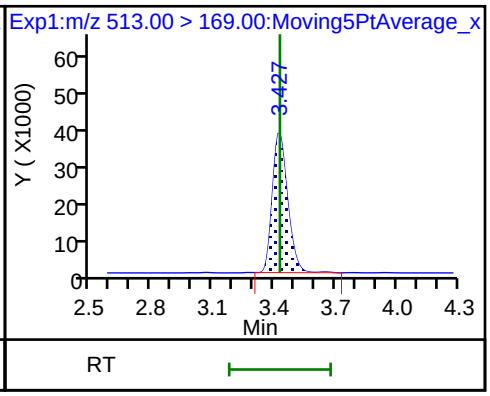
D 23 13C2 PFDA



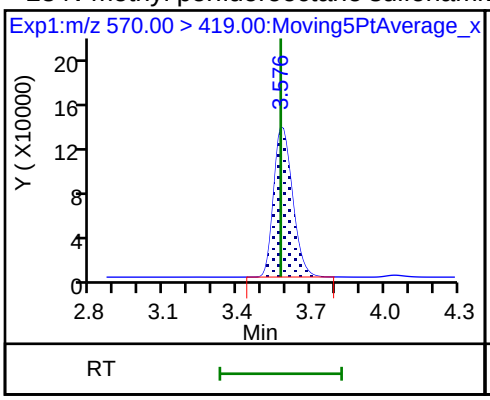
24 Perfluorodecanoic acid



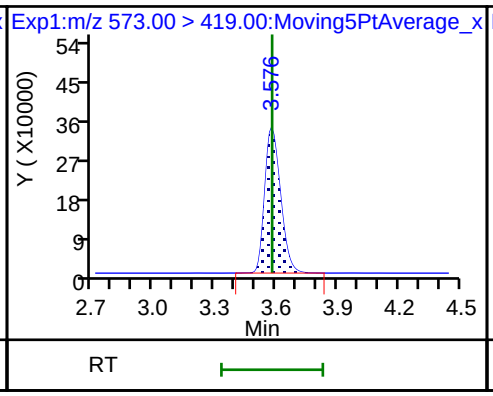
24 Perfluorodecanoic acid



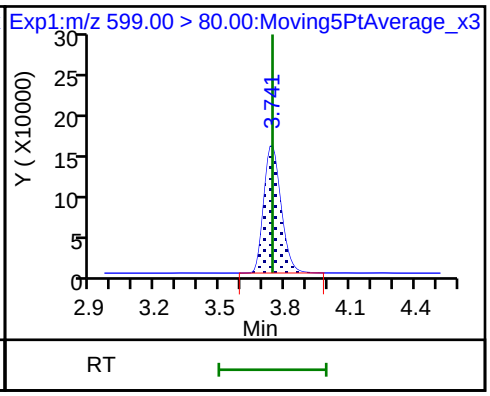
28 N-methyl perfluorooctane sulfonami



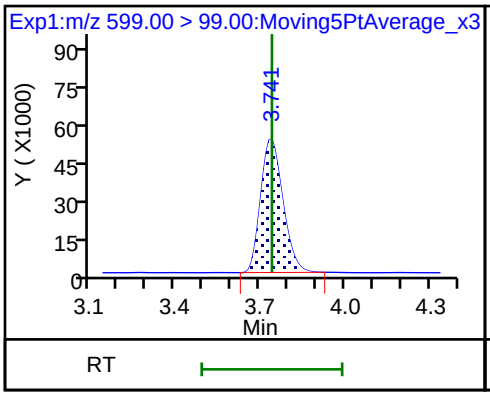
D 27 d3-NMeFOSAA



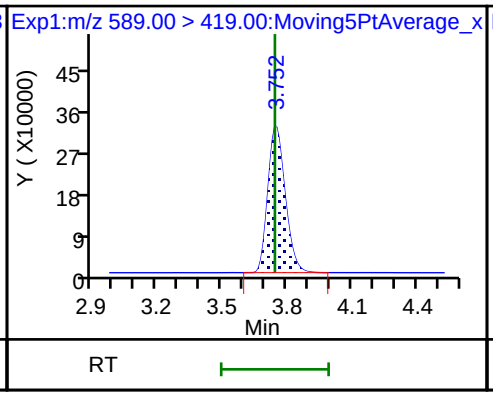
29 Perfluorodecane Sulfonic acid



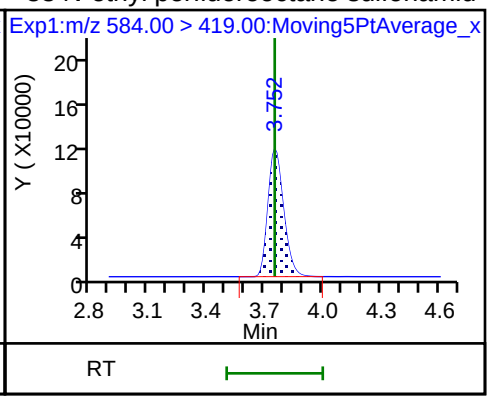
29 Perfluorodecane Sulfonic acid



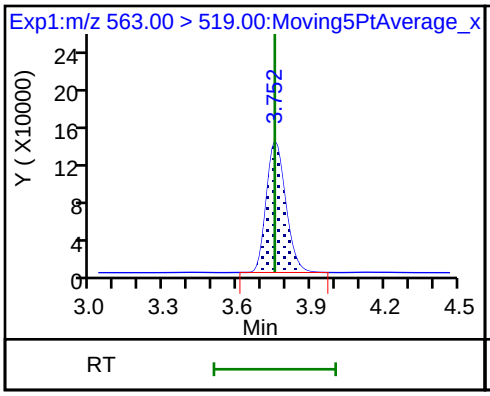
D 32 d5-NEtFOSAA



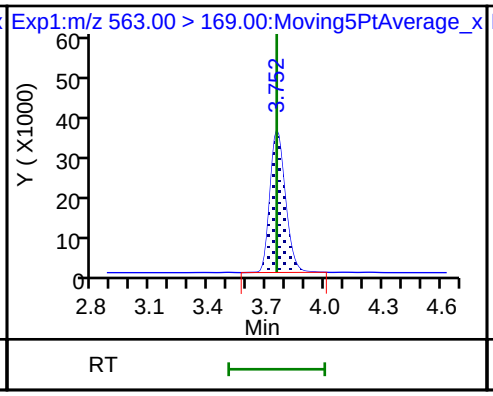
33 N-ethyl perfluorooctane sulfonamid



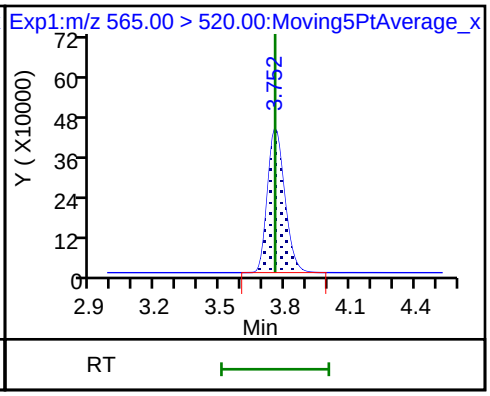
31 Perfluoroundecanoic acid



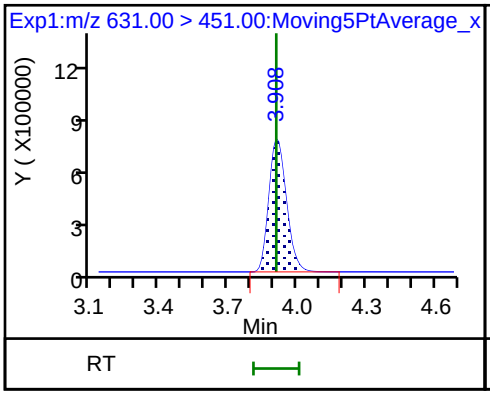
31 Perfluoroundecanoic acid



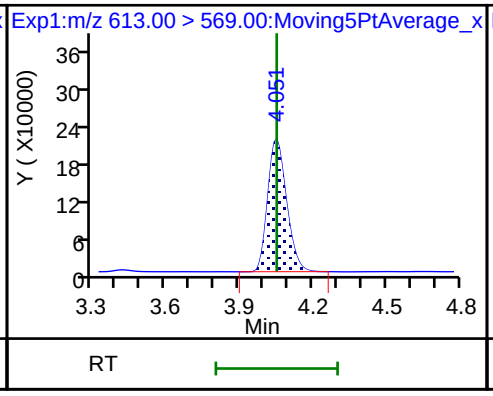
D 30 13C2 PFUnA



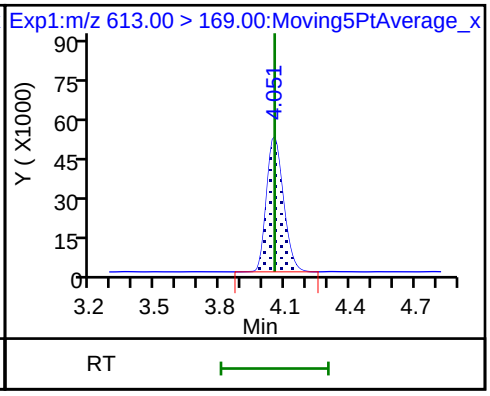
66 11-Chloroeicosafluoro-3-oxaundecan



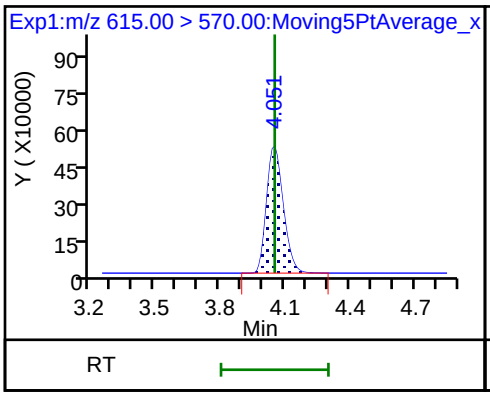
37 Perfluorododecanoic acid



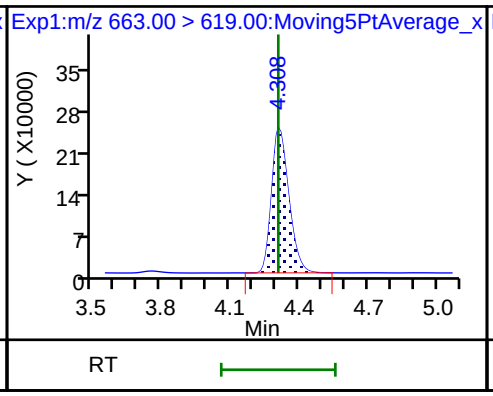
37 Perfluorododecanoic acid



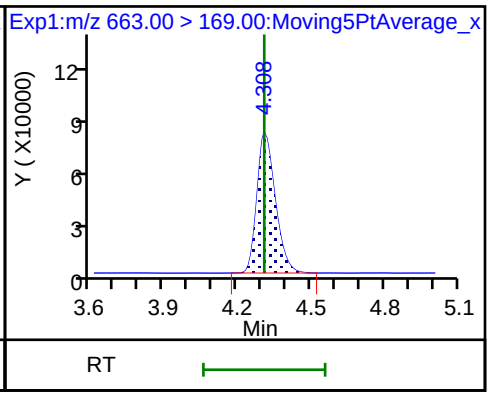
D 36 13C2 PFDoA



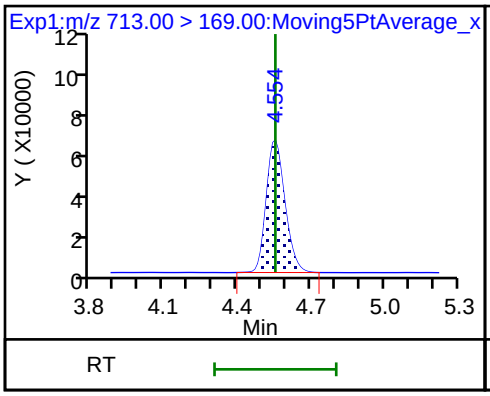
41 Perfluorotridecanoic acid



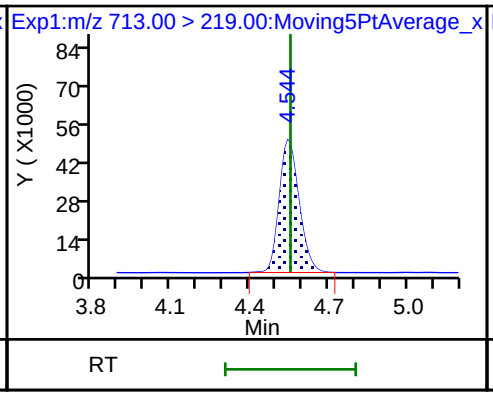
41 Perfluorotridecanoic acid



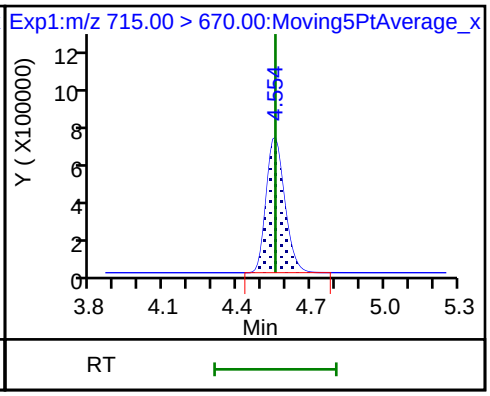
42 Perfluorotetradecanoic acid



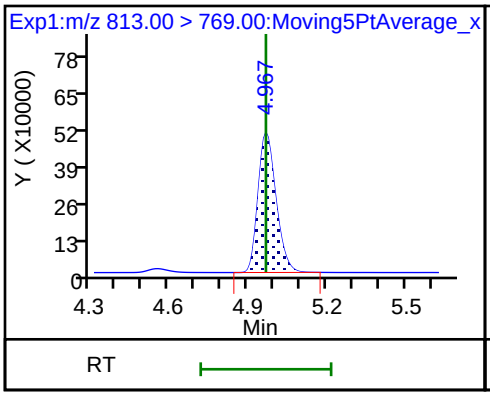
42 Perfluorotetradecanoic acid



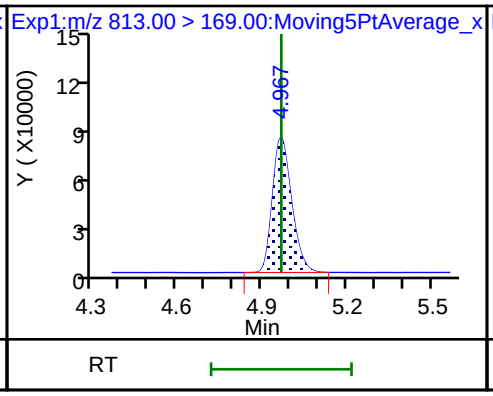
D 43 13C2-PFTeDA



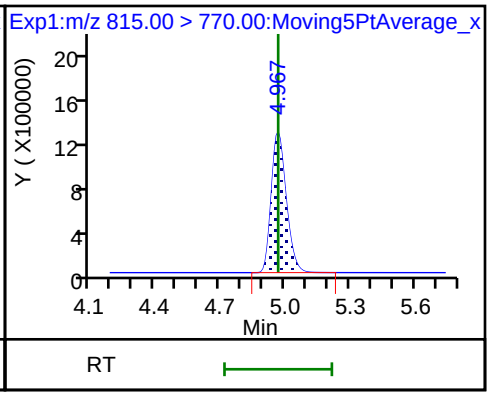
45 Perfluorohexadecanoic acid



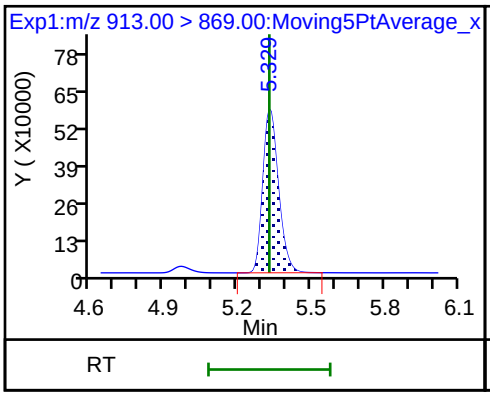
45 Perfluorohexadecanoic acid



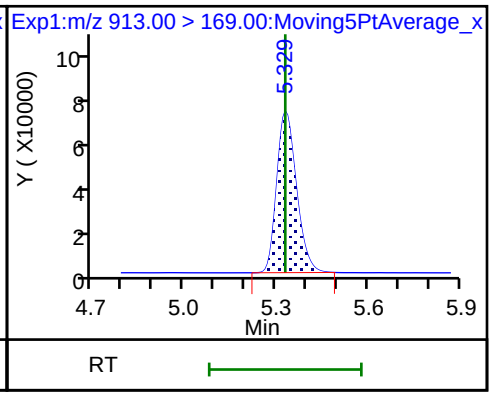
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

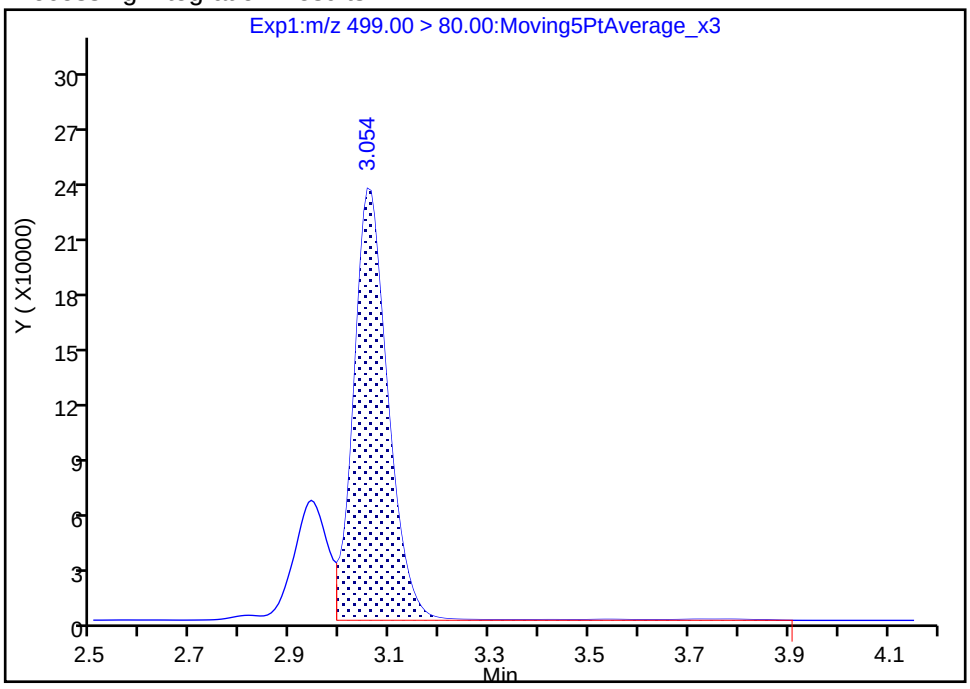
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b\2018.04.26LLBX_034.d
Injection Date: 27-Apr-2018 06:51:50 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

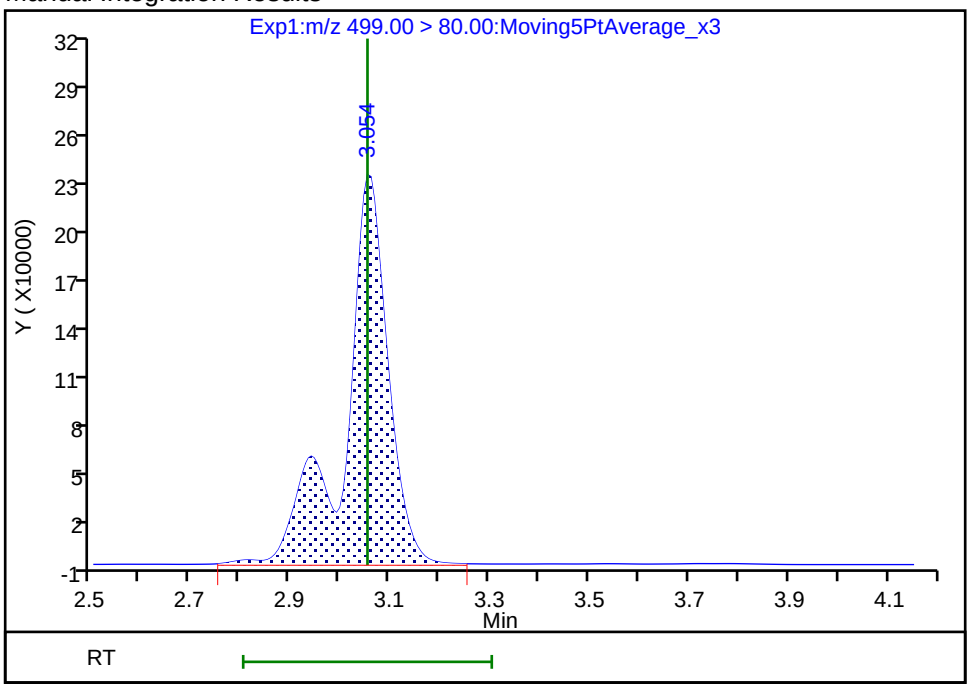
Processing Integration Results

RT: 3.05
Area: 1126681
Amount: 0.713749
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 1444378
Amount: 0.915009
Amount Units: ng/ml



Reviewer: hannigana, 27-Apr-2018 10:04:54
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220224/1 Calibration Date: 04/27/2018 11:33

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLC_067.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9381		2.53	2.50	1.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.205		2.53	2.50	1.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	80.07		2.26	2.21	2.3	50.0
4:2 FTS	AveID	16.03	17.40		2.53	2.34	8.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.034		2.54	2.50	1.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	71.36			2.35	-0.2	50.0
HFPO-DA (GenX)	AveID	2.785	3.104			2.50	11.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.090		2.72	2.50	8.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.060		2.13	2.28	-6.3	40.0
Adona	AveID	3.464	3.776			2.50	9.0	50.0
6:2FTS	AveID	1.691	1.678		2.35	2.37	-0.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.119		2.42	2.50	-3.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.374		2.46	2.38	3.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.101		2.64	2.50	5.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.125		2.40	2.32	3.5	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.995			2.33	5.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.080		2.67	2.50	6.7	40.0
8:2FTS	AveID	1.265	1.319		2.50	2.40	4.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7810			2.40	-2.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.015		2.46	2.50	-1.6	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9915		2.49	2.50	-0.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6566		2.44	2.41	1.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9095		2.43	2.50	-2.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8389		2.48	2.50	-0.7	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.907			2.36	-0.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.052		2.52	2.50	0.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.160		2.39	2.50	-4.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2504		2.49	2.50	-0.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9837		2.57	2.50	3.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220224/1 Calibration Date: 04/27/2018 11:33

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLC_067.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.064		2.65	2.50	5.9	50.0
13C4 PFBA	Ave	1.345	1.429		2.66	2.50	6.2	50.0
13C5 PFPeA	Ave	0.8672	0.9258		2.67	2.50	6.8	50.0
13C3-PFBS	Ave	0.0199	0.0204		2.38	2.33	2.5	50.0
M2-4:2FTS	Ave	0.1425	0.1509		2.47	2.34	5.9	50.0
13C2 PFHxA	Ave	0.9590	0.997		2.60	2.50	3.9	50.0
13C3 HFPO-DA	Ave	0.0593	0.0533		2.25	2.50	-10.2	50.0
13C4-PFHpA	Ave	0.9333	0.9627		2.58	2.50	3.2	50.0
18O2 PFHxS	Ave	1.152	1.192		2.45	2.37	3.5	50.0
M2-6:2FTS	Ave	0.2000	0.2123		2.52	2.38	6.1	40.0
13C4 PFOA	Ave	0.9276	0.9466		2.55	2.50	2.0	50.0
13C4 PFOS	Ave	0.8066	0.7996		2.37	2.39	-0.9	50.0
13C5 PFNA	Ave	0.7973	0.8099		2.54	2.50	1.6	50.0
13C8 FOSA	Ave	1.007	0.9713		2.41	2.50	-3.6	50.0
M2-8:2FTS	Ave	0.2409	0.2346		2.33	2.40	-2.6	40.0
13C2 PFDA	Ave	0.6701	0.6770		2.53	2.50	1.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3913		2.58	2.50	3.0	50.0
d5-NEtFOSAA	Ave	0.3749	0.4006		2.67	2.50	6.9	50.0
13C2 PFUnA	Ave	0.5781	0.5299		2.29	2.50	-8.3	50.0
13C2 PFDoA	Ave	0.6242	0.6117		2.45	2.50	-2.0	50.0
13C2-PFTeDA	Ave	0.7915	0.7478		2.36	2.50	-5.5	50.0
13C2-PFHxDA	Ave	1.288	1.325		2.57	2.50	2.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_067.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 27-Apr-2018 11:33:34 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 13:06:02 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 12:52:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.436	0.005	1.000	6912891	2.66		106	36344	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	6485255	2.53		101	2204	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.694	0.009	0.557	4477527	2.67		107	67326	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	5397103	2.53		101	5716	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.730	0.009	1.000	91736	2.38		103	772	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	6982220	2.26		102	23344	
298.90 > 99.00	1.739	1.739	0.0	1.000	2895231		2.41(1.25-3.74)		36858	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	1603257	2.53		109	66799	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	681759	2.47		106	6725	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	4984689	2.54		102	9742	
313.00 > 119.00	1.993	1.982	0.011	1.006	451608		11.04(5.03-15.10)		4281	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.982	0.0	1.000	4819984	2.60		104	87185	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.005	0.0	1.000	6602235	2.34		99.8	34392	
349.00 > 99.00	2.005	2.005	0.0	1.000	2419979		2.73(1.36-4.07)		32543	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	0.995	799857	2.79		111	5423	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.084	0.011	1.000	257722	2.25		89.8	10654	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	5072784	2.72		109	6794	
363.00 > 169.00	2.321	2.321	0.0	1.000	1941173		2.61(1.13-3.40)		9690	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.323	-0.002	1.000	4655995	2.58		103	80782	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	5564551	2.13		93.7	12019	
399.00 > 99.00	2.334	2.334	0.0	1.000	1846076		3.01(1.50-4.49)		12868	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.336	-0.002	1.000	5455655	2.45		104	49906	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	14604288	2.73		109	104435	
377.00 > 85.00	2.360	2.372	-0.012	0.995	8787936		1.66(0.84-2.53)		99155	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.653	0.0	1.000	975158	2.52		106	11630	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.003	1632691	2.35		99.2	29838	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.676	0.007	1.000	4577782	2.55		102	48642	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4836261	2.50			60724	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.000	5122535	2.42		96.8	3305	
413.00 > 169.00	2.683	2.683	0.0	1.000	2754447		1.86(0.84-2.52)		9170	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	5059711	2.46		104	26619	
449.00 > 99.00	2.690	2.690	0.0	1.000	1374930		3.68(1.94-5.82)		28387	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.056	0.0	1.000	3697012	2.37		99.1	19804	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.056	0.0	1.000	3916723	2.54		102	70266	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.056	3.056	0.0	1.000	4039016	2.40		103	18451	M
499.00 > 99.00	3.056	3.056	0.0	1.000	870171		4.64(2.31-6.93)		18252	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.056	0.0	1.000	4311904	2.64		106	16645	
463.00 > 169.00	3.056	3.056	0.0	1.000	989354		4.36(1.90-5.69)		23514	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.270	3.270	0.0	1.000	7188663	2.47		106	70062	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.394	0.0	1.000	4697466	2.41		96.4	37940	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.394	0.0	1.000	5071888	2.67		107	39574	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1086809	2.33		97.4	8296	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.413	0.0	1.000	1433754	2.50		104	45659	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.413	0.0	1.000	2899376	2.34		97.7	29697	
549.00 > 99.00	3.404	3.413	-0.009	0.997	1079008		2.69(1.33-3.97)		26335	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.422	0.0	1.000	3273916	2.53		101	70156	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.422	0.0	1.000	3323276	2.46		98.4	12196	
513.00 > 169.00	3.422	3.422	0.0	1.000	601355		5.53(2.36-7.09)		12824	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.571	0.001	1.000	1892256	2.58		103	22793	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.582	3.582	0.0	1.003	1876135	2.49		99.4	13852	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.737	3.737	0.0	1.000	2447632	2.44		101	17422	
599.00 > 99.00	3.737	3.737	0.0	1.000	816338		3.00(1.39-4.16)		16699	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.747	0.001	1.000	1937384	2.67		107	21442	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.758	0.0	1.000	2562869	2.29		91.7	32761	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.758	0.0	1.003	1762064	2.43		97.3	34741	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.758	0.0	1.000	2149941	2.48		99.3	14557	
563.00 > 169.00	3.758	3.758	0.0	1.000	542426		3.96(2.12-6.36)		16098	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.916	0.0	1.000	10589898	2.35		99.8	83973	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.048	0.001	1.000	2958133	2.45		98.0	27929	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.049	0.0	1.000	3112181	2.52		101	4326	
613.00 > 169.00	4.049	4.049	0.0	1.000	748302		4.16(2.13-6.40)		5616	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	3431824	2.39		95.5	3967	
663.00 > 169.00	4.318	4.318	0.0	1.000	1086198		3.16(1.25-3.76)		9317	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	905746	2.49		99.7	6300	
713.00 > 219.00	4.553	4.553	0.0	1.000	660787		1.37(0.71-2.13)		9526	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.553	0.0	1.000	3616649	2.36		94.5	22264	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.966	0.0	1.000	6302886	2.57		103	2591	
813.00 > 169.00	4.966	4.966	0.0	1.000	1042675		6.04(2.86-8.58)		5759	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.966	0.0	1.000	6407550	2.57		103	16937	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.336	5.336	0.0	1.000	6816358	2.65		106	1997	
913.00 > 169.00	5.329	5.336	-0.007	0.999	851576		8.00(3.83-11.48)		4185	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 13:06:03 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_067.d

Injection Date: 27-Apr-2018 11:33:34 Instrument ID: A8_N

Lims ID: CCV L5

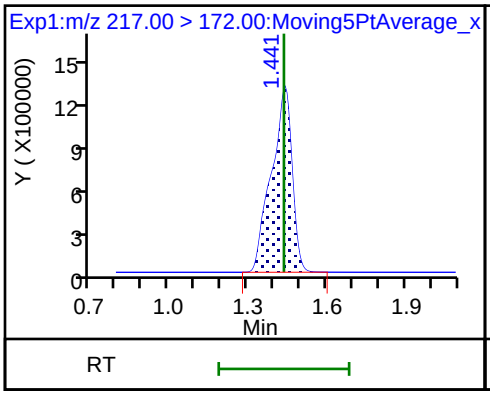
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 1

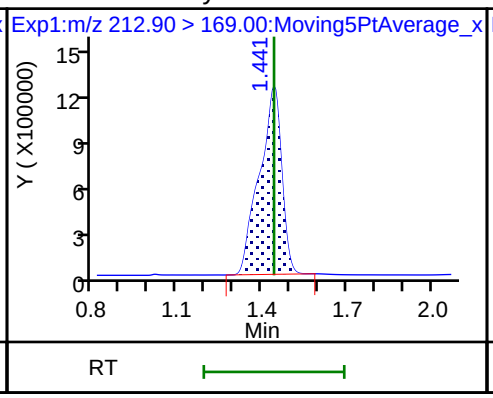
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

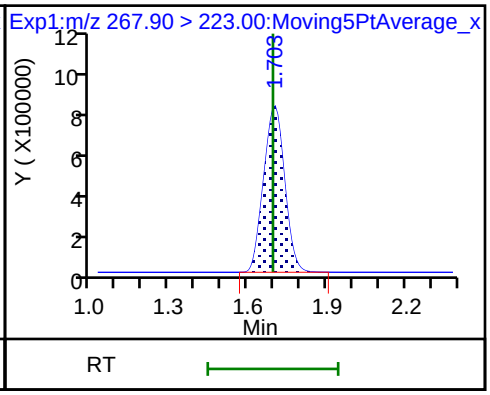
D 1 13C4 PFBA



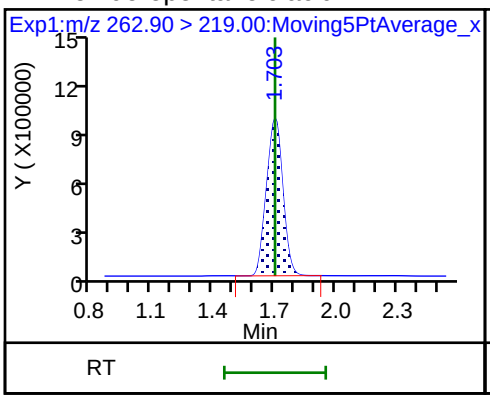
2 Perfluorobutyric acid



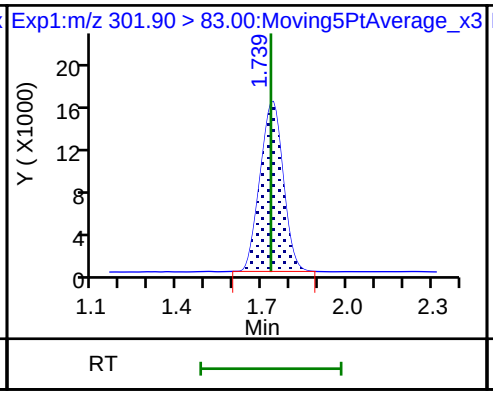
D 3 13C5-PFPeA



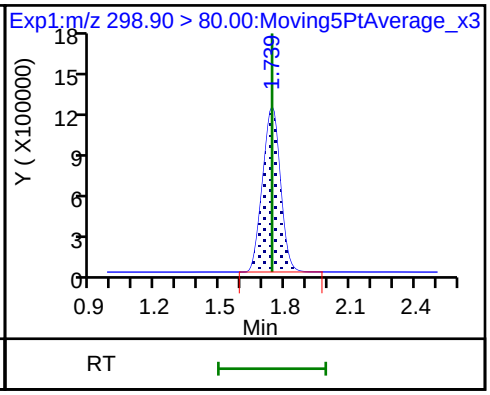
4 Perfluoropentanoic acid



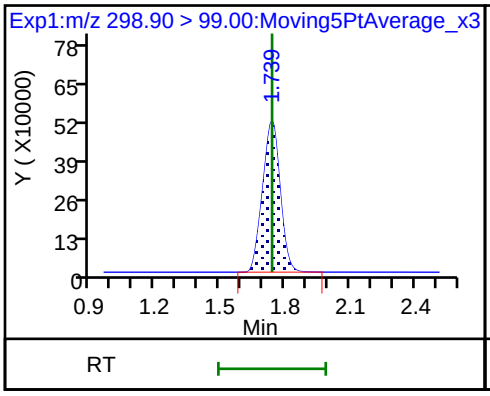
D 47 13C3-PFBS



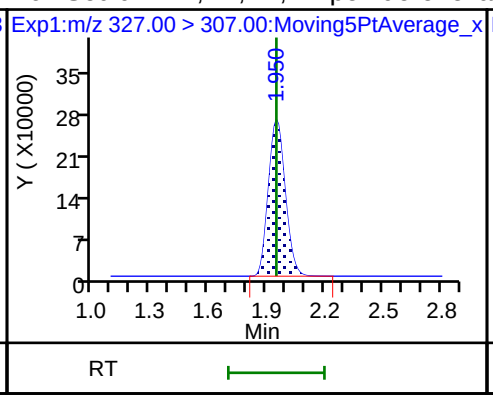
5 Perfluorobutanesulfonic acid



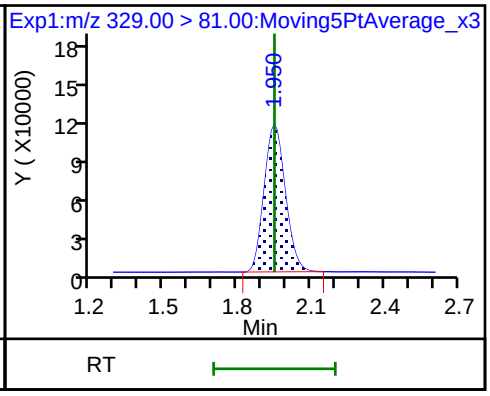
5 Perfluorobutanesulfonic acid



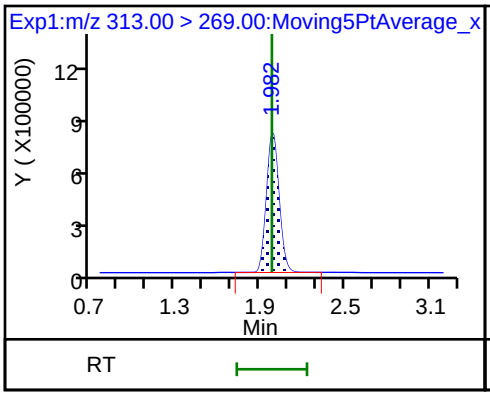
61 Sodium 1H,1H,2H,2H-perfluorohexane



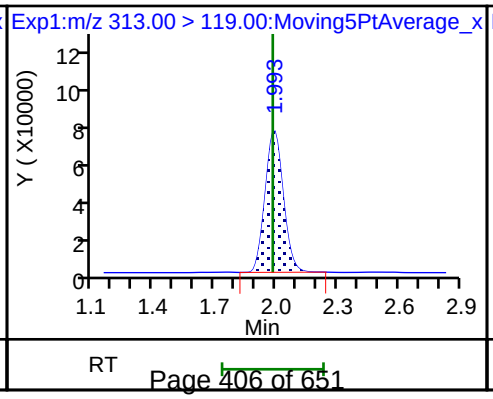
D 60 M2-4:2FTS



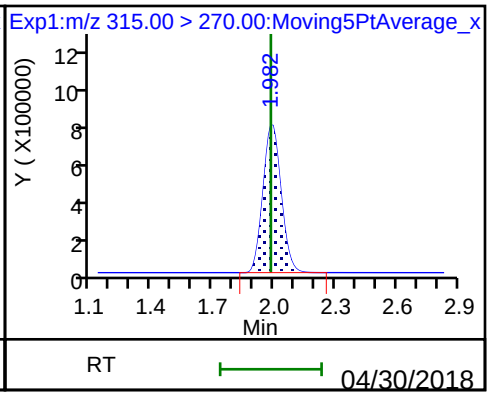
6 Perfluorohexanoic acid



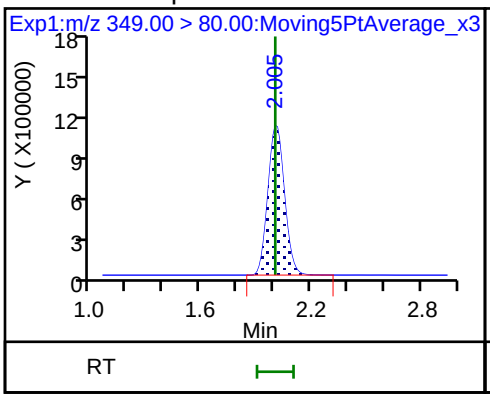
6 Perfluorohexanoic acid



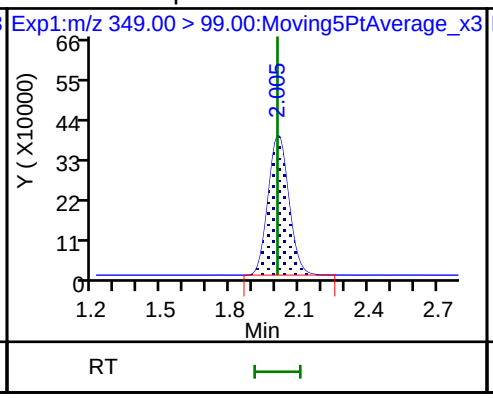
D 7 13C2 PFHxA



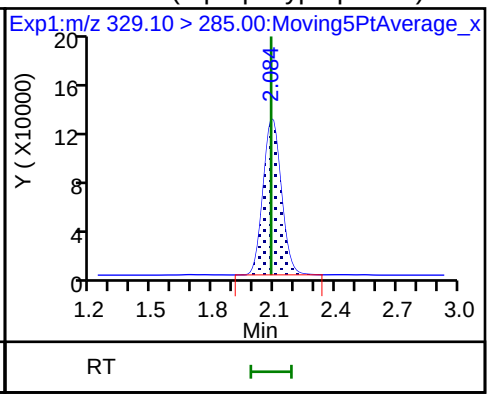
70 Perfluoropentanesulfonic acid



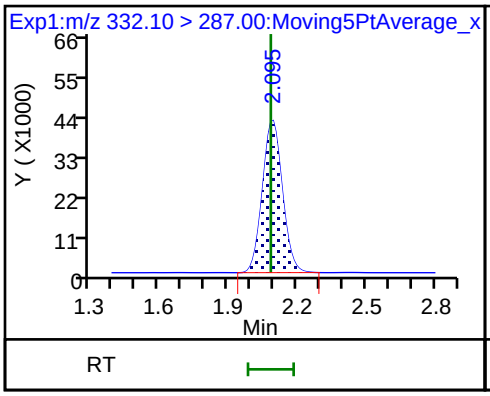
70 Perfluoropentanesulfonic acid



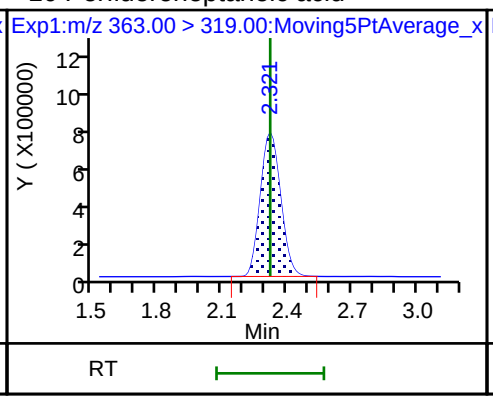
67 Perfluoro(2-propoxypropanoic) acid



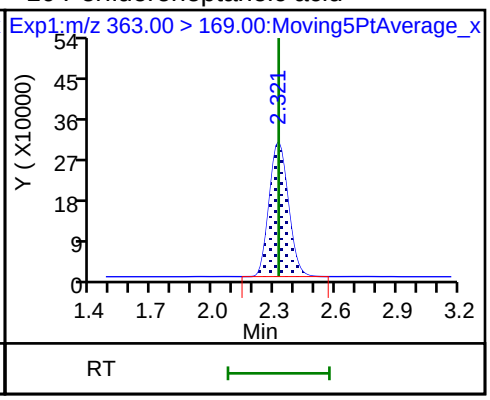
D 64 13C3 HFPO-DA



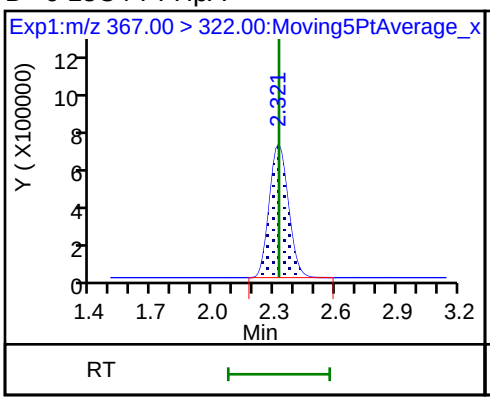
10 Perfluoroheptanoic acid



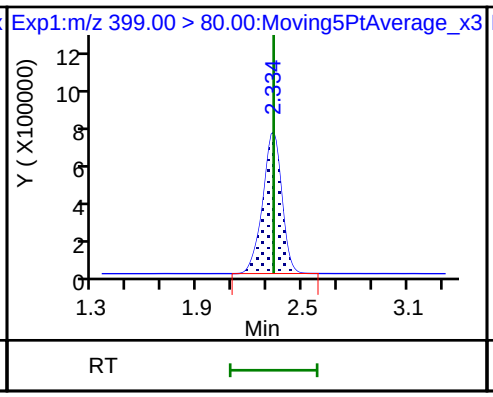
10 Perfluoroheptanoic acid



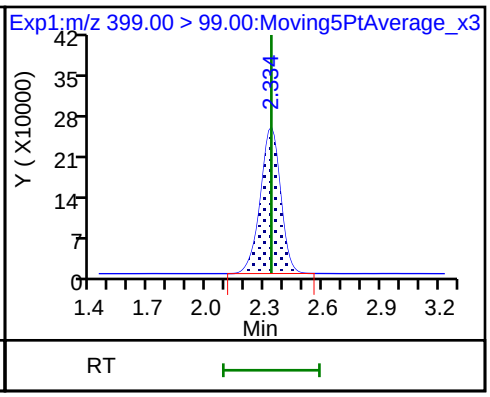
D 9 13C4-PFHpA



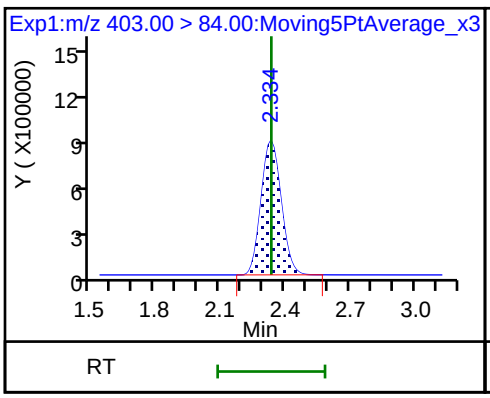
8 Perfluorohexanesulfonic acid



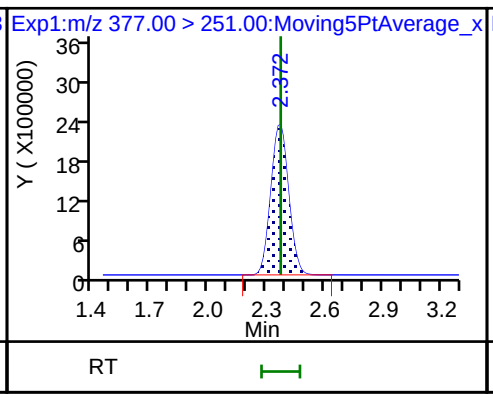
8 Perfluorohexanesulfonic acid



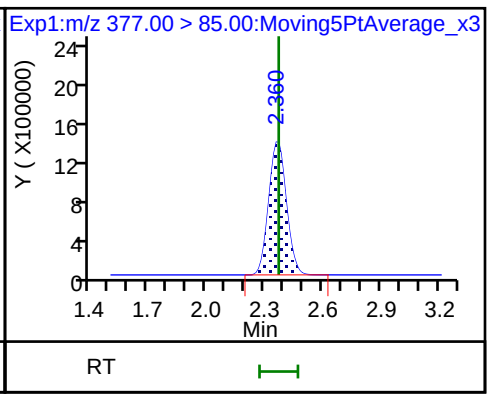
D 11 18O2 PFHxS



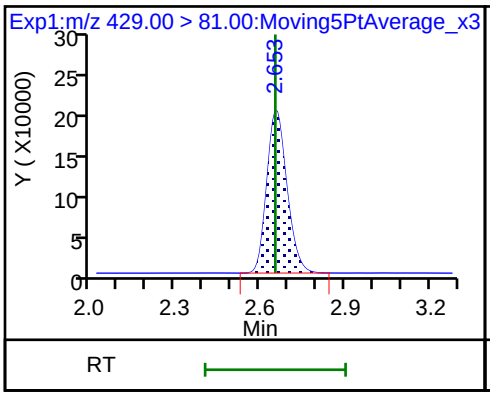
65 Adona



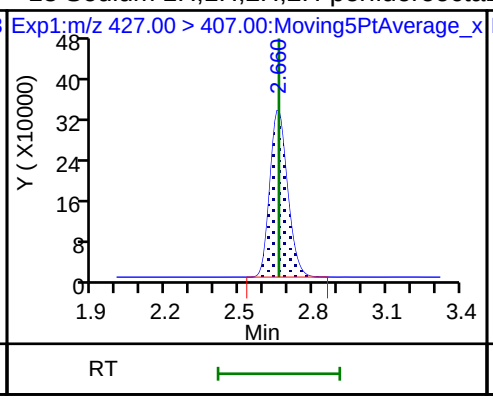
65 Adona



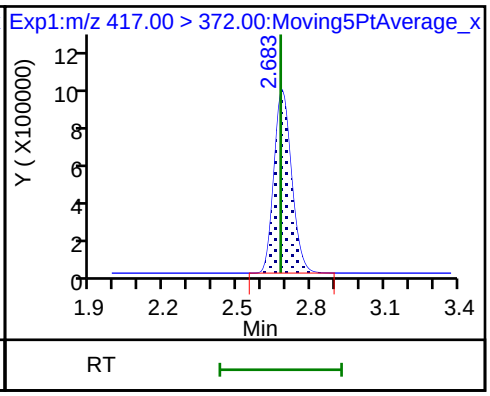
D 12 M2-6:2FTS



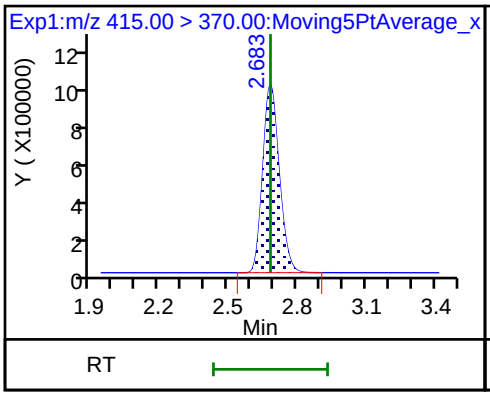
13 Sodium 1H,1H,2H,2H-perfluorooctane



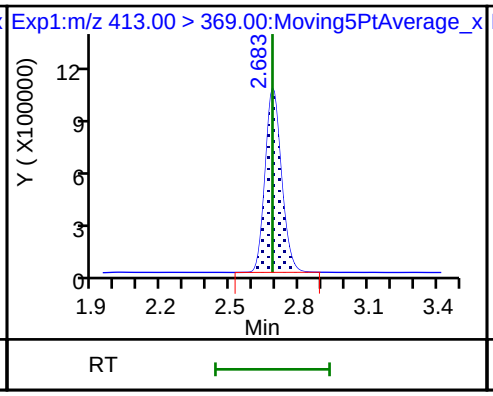
D 14 13C4 PFOA



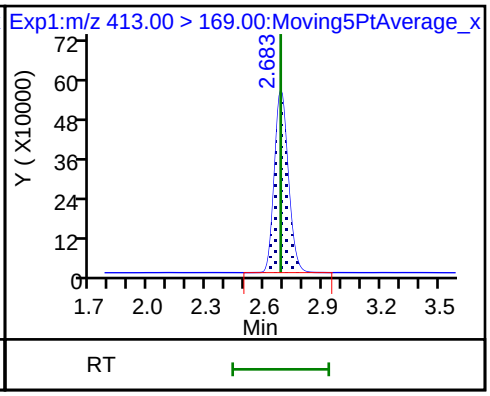
* 62 13C2-PFOA



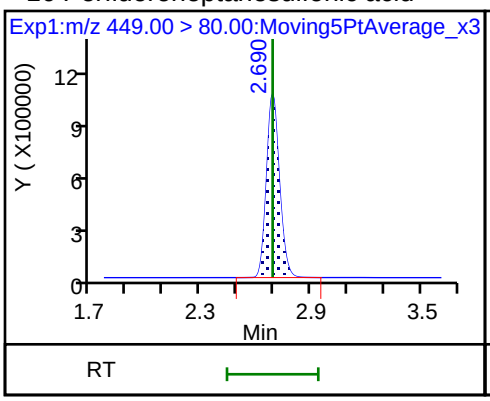
15 Perfluorooctanoic acid



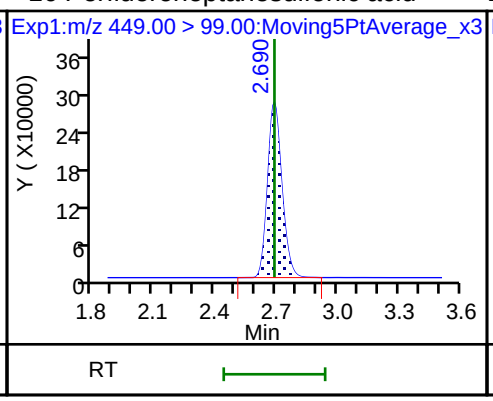
15 Perfluorooctanoic acid



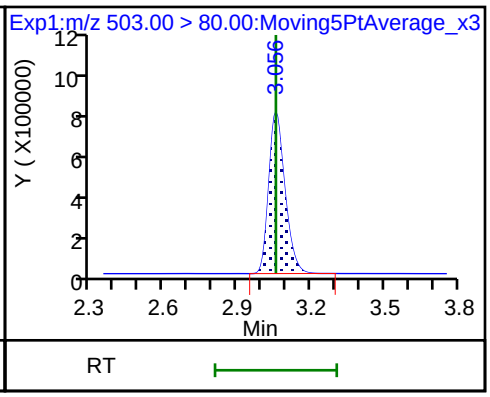
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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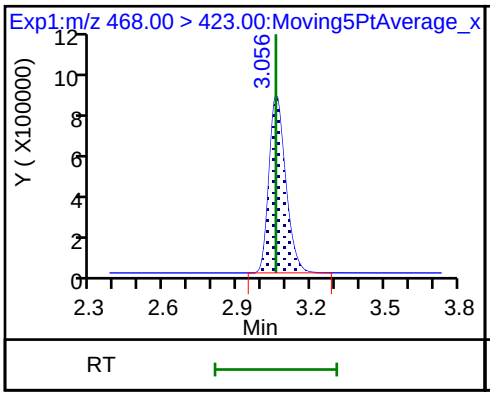
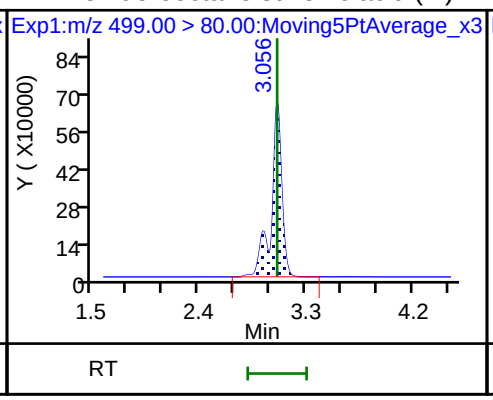
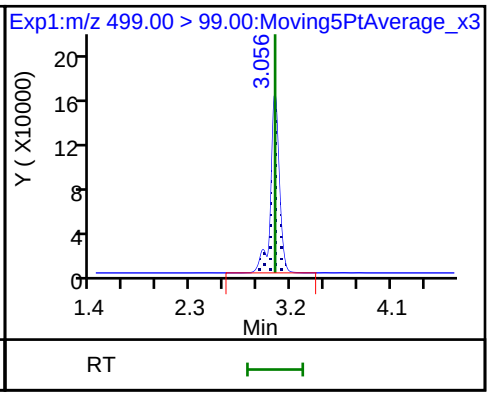


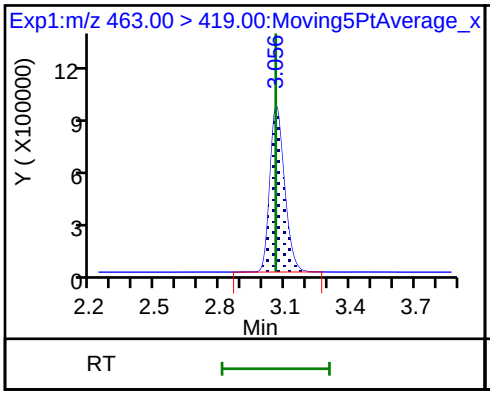
17 Perfluorooctane sulfonic acid (M)



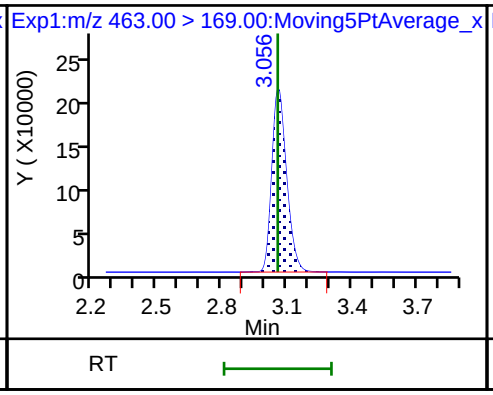
17 Perfluorooctane sulfonic acid



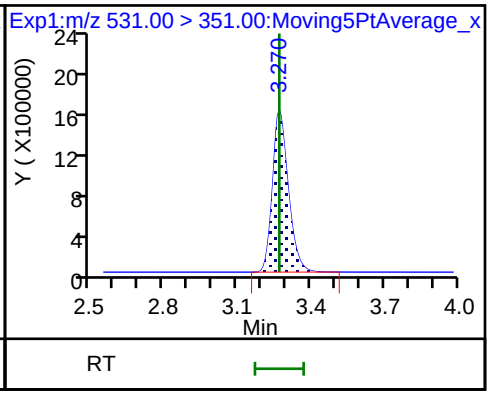
20 Perfluorononanoic acid



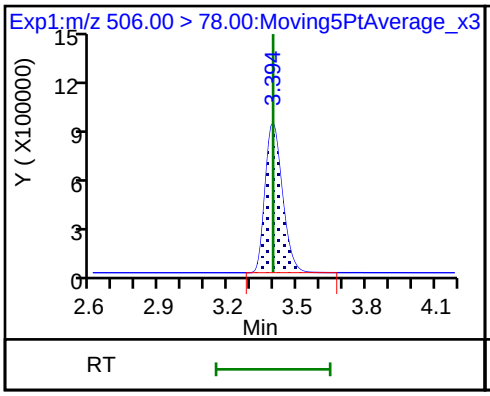
20 Perfluorononanoic acid



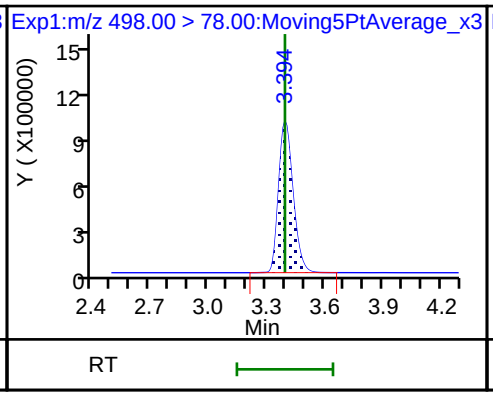
69 9-Chlorohexadecafluoro-3-oxanonane



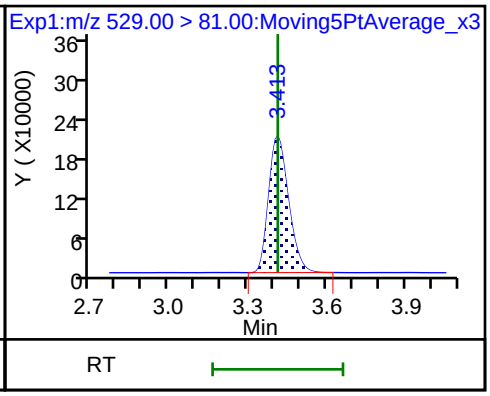
D 21 13C8 FOSA



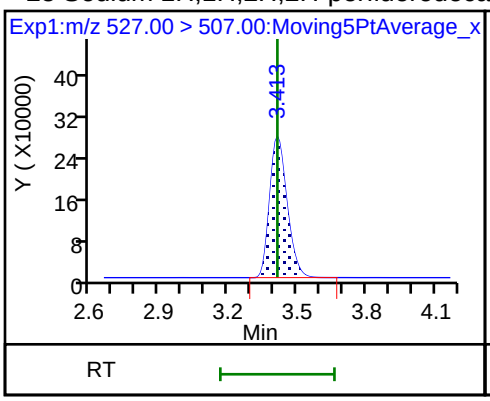
22 Perfluorooctane Sulfonamide



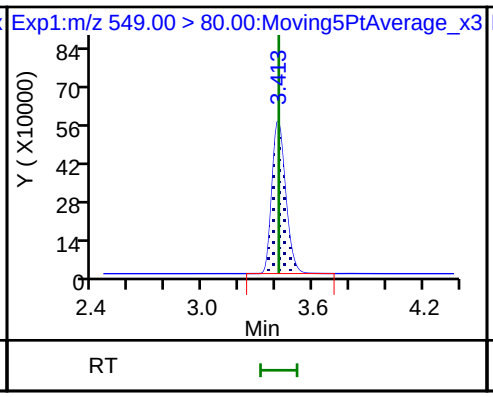
D 26 M2-8:2FTS



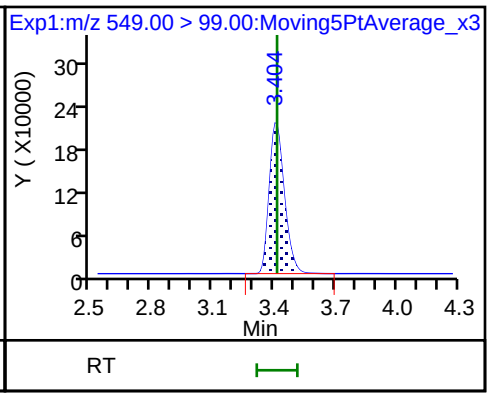
25 Sodium 1H,1H,2H,2H-perfluorodecane



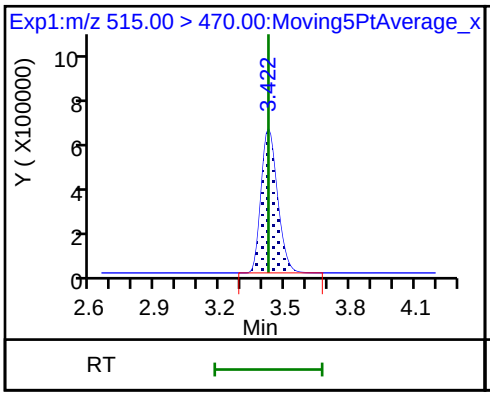
68 Perfluorononanesulfonic acid



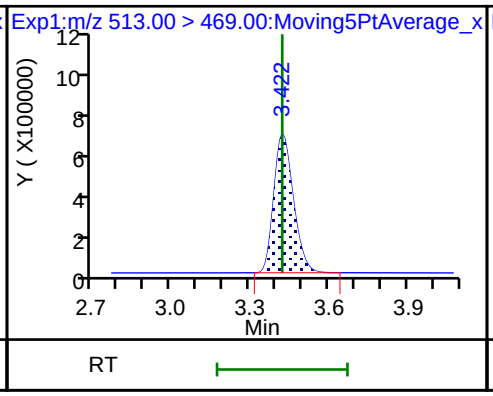
68 Perfluorononanesulfonic acid



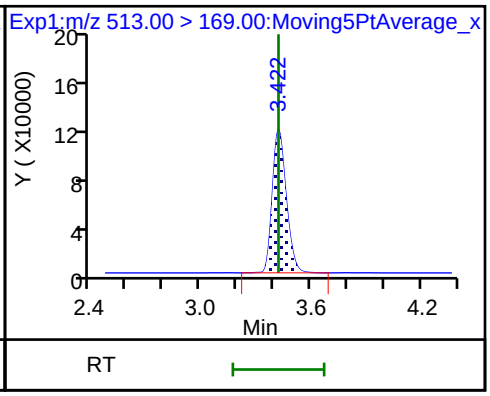
D 23 13C2 PFDA



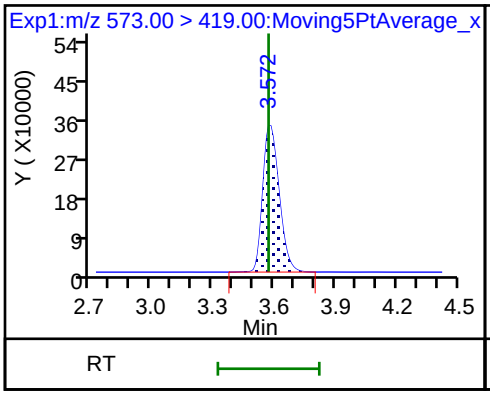
24 Perfluorodecanoic acid



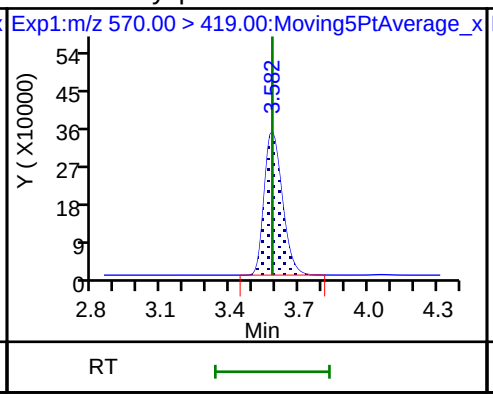
24 Perfluorodecanoic acid



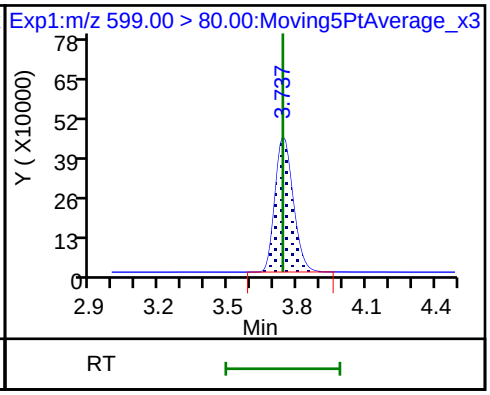
D 27 d3-NMeFOSAA



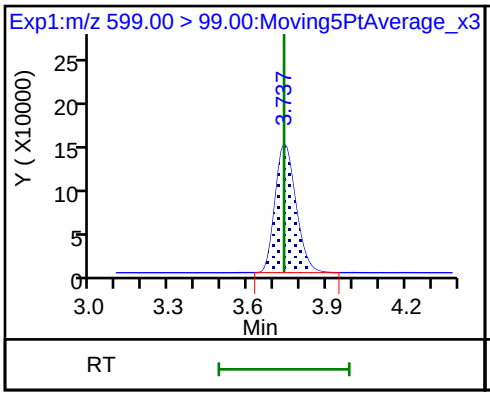
28 N-methyl perfluorooctane sulfonami



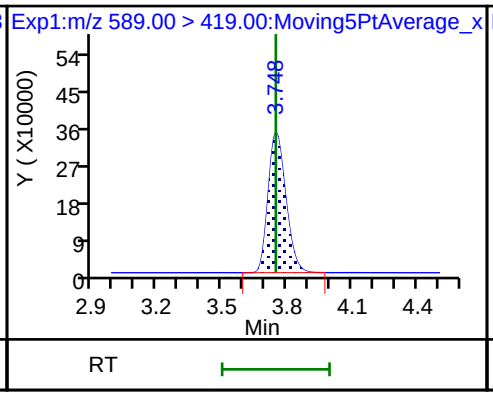
29 Perfluorodecane Sulfonic acid



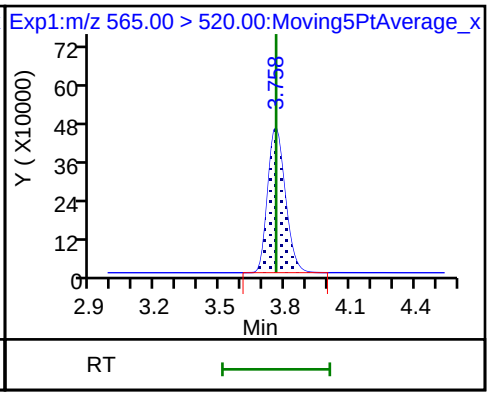
29 Perfluorodecane Sulfonic acid



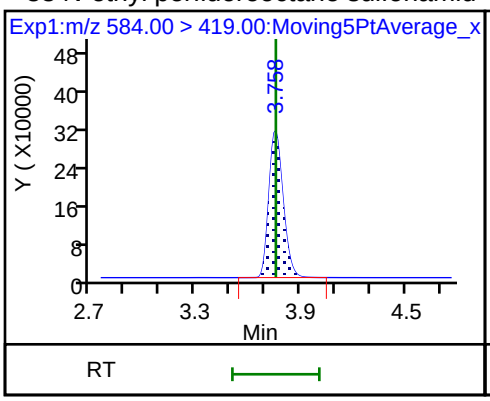
D 32 d5-NEtFOSAA



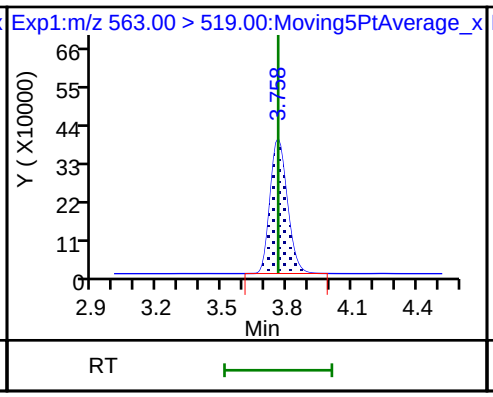
D 30 13C2 PFUnA



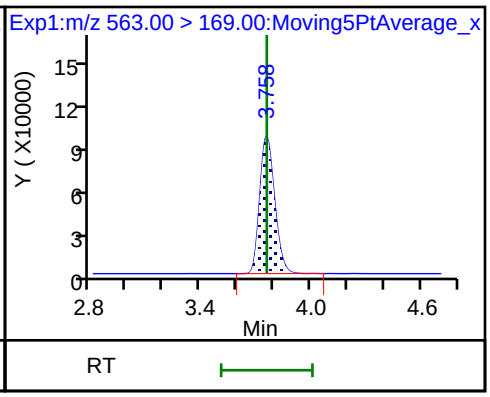
33 N-ethyl perfluorooctane sulfonamid



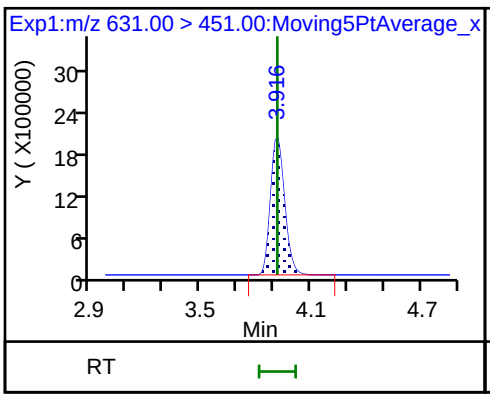
31 Perfluoroundecanoic acid



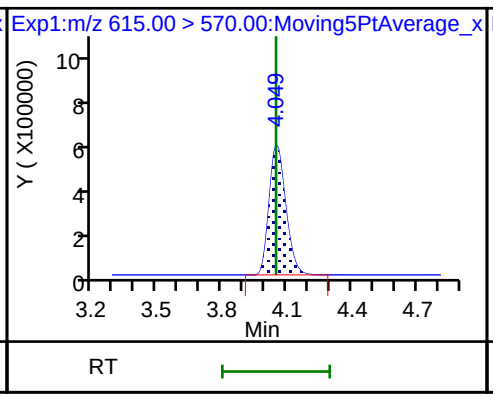
31 Perfluoroundecanoic acid



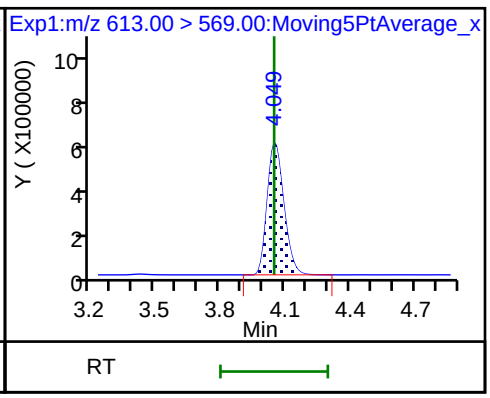
66 11-Chloroeicosafluoro-3-oxaundecan



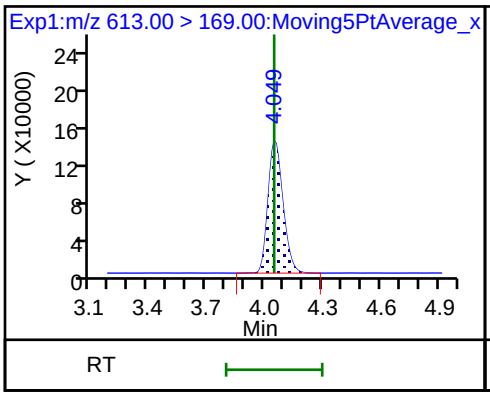
D 36 13C2 PFDoA



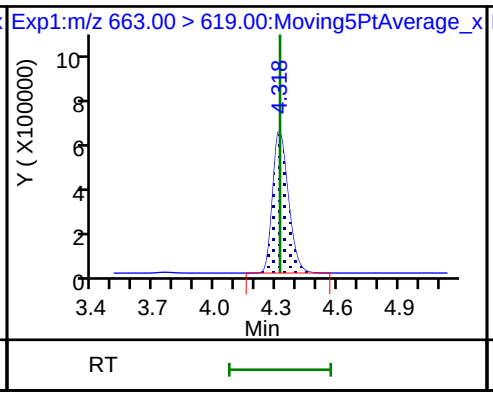
37 Perfluorododecanoic acid



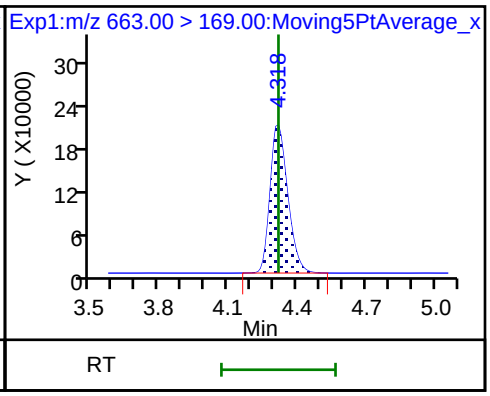
37 Perfluorododecanoic acid



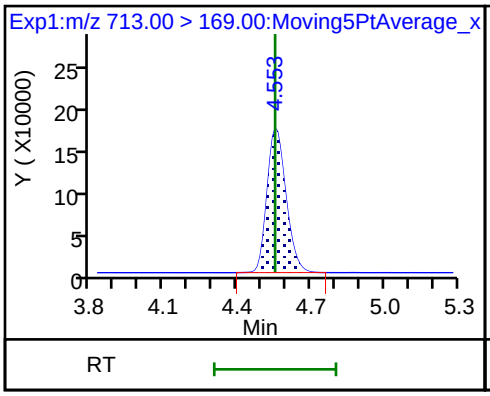
41 Perfluorotridecanoic acid



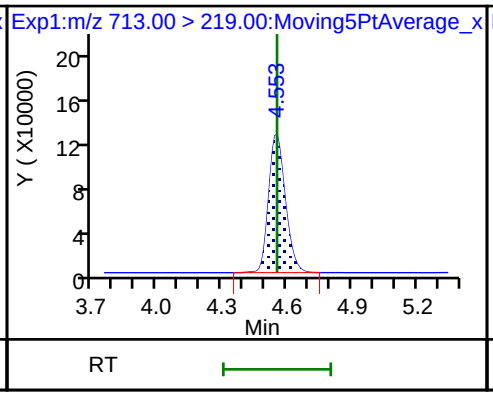
41 Perfluorotridecanoic acid



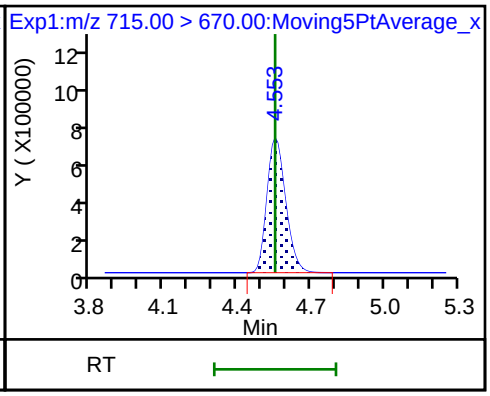
42 Perfluorotetradecanoic acid



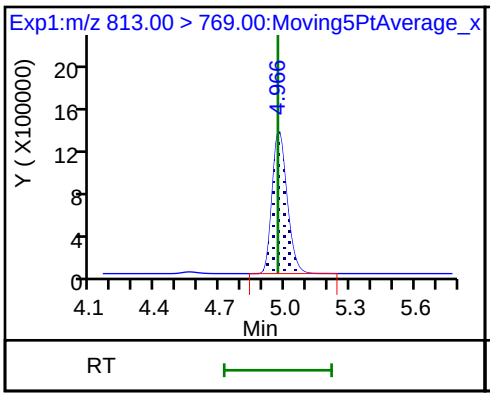
42 Perfluorotetradecanoic acid



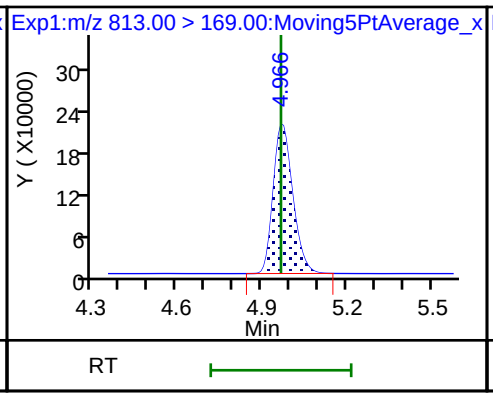
D 43 13C2-PFTeDA



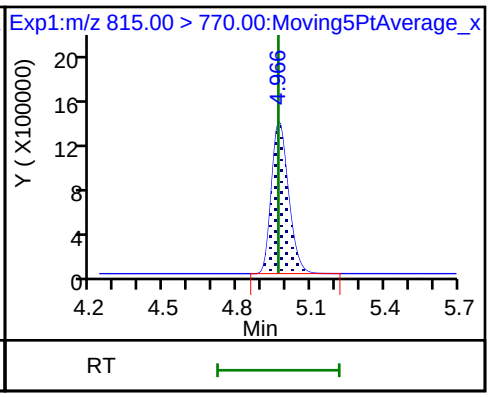
45 Perfluorohexadecanoic acid



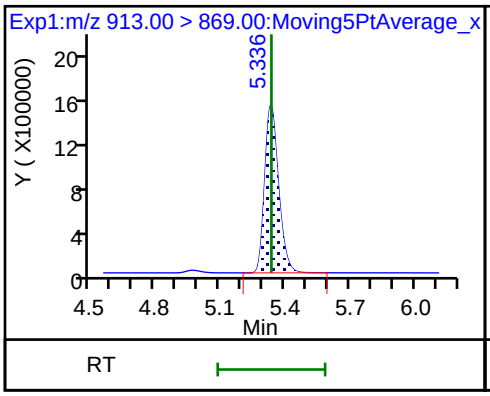
45 Perfluorohexadecanoic acid



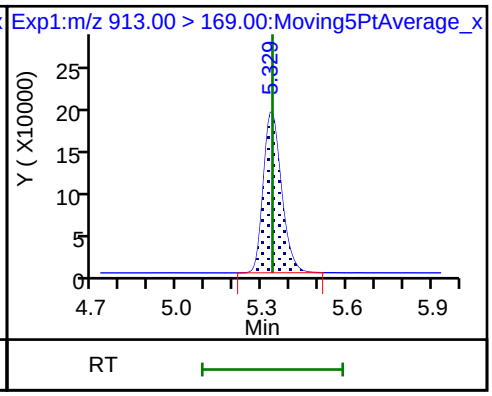
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

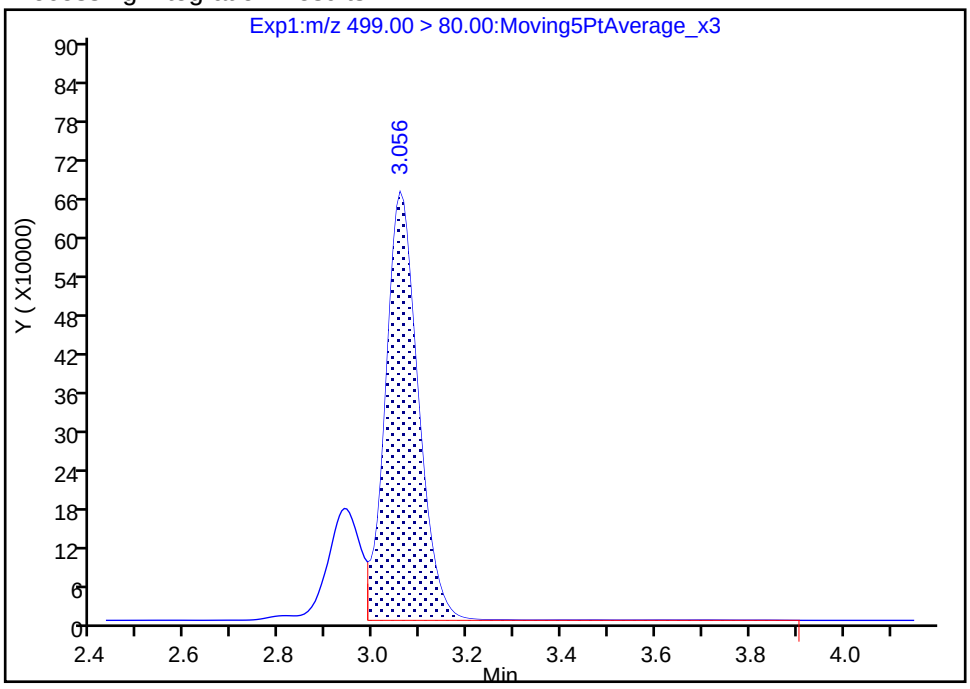
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_067.d
Injection Date: 27-Apr-2018 11:33:34 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

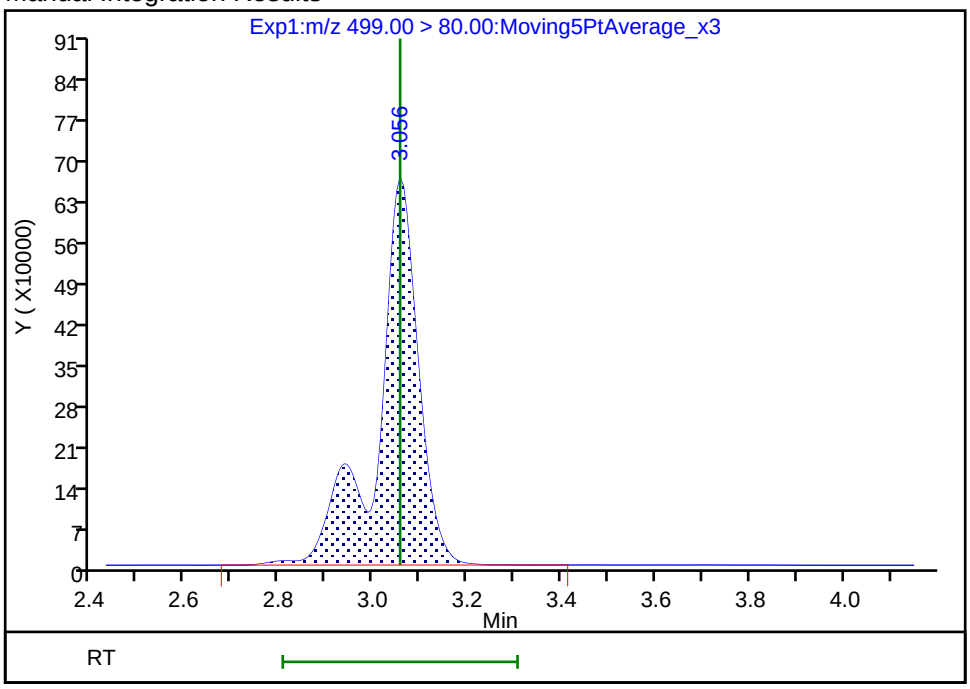
Processing Integration Results

RT: 3.06
Area: 3204141
Amount: 1.904125
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 4039016
Amount: 2.400266
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 12:52:26
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220224/6 Calibration Date: 04/27/2018 12:12

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLC_072.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9147		0.985	1.00	-1.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.168		0.980	1.00	-2.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	78.01		0.881	0.884	-0.4	50.0
4:2 FTS	AveID	16.03	17.32		1.01	0.934	8.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.000		0.984	1.00	-1.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.66			0.938	-1.2	50.0
HFPO-DA (GenX)	AveID	2.785	3.013			1.00	8.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.025		1.02	1.00	2.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.032		0.829	0.910	-8.9	40.0
Adona	AveID	3.464	3.603			1.00	4.0	50.0
6:2FTS	AveID	1.691	1.594		0.894	0.948	-5.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.094		0.947	1.00	-5.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.338		0.960	0.952	0.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9721		0.932	1.00	-6.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.069		0.912	0.928	-1.7	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.823			0.932	-3.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9899		0.979	1.00	-2.1	40.0
8:2FTS	AveID	1.265	1.306		0.989	0.958	3.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7598			0.960	-5.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9336		0.905	1.00	-9.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9752		0.978	1.00	-2.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6604		0.981	0.964	1.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9076		0.971	1.00	-2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7622		0.902	1.00	-9.8	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.880			0.942	-1.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.008		0.967	1.00	-3.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.167		0.960	1.00	-4.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2460		0.979	1.00	-2.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9430		0.974	1.00	-2.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Lab Sample ID: CCV 320-220224/6 Calibration Date: 04/27/2018 12:12

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLC_072.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.8746		0.871	1.00	-12.9	50.0
13C4 PFBA	Ave	1.345	1.395		2.59	2.50	3.7	50.0
13C5 PFPeA	Ave	0.8672	0.9076		2.62	2.50	4.7	50.0
13C3-PFBS	Ave	0.0199	0.0200		2.34	2.33	0.6	50.0
M2-4:2FTS	Ave	0.1425	0.1626		2.66	2.34	14.1	50.0
13C2 PFHxA	Ave	0.9590	0.9791		2.55	2.50	2.1	50.0
13C3 HFPO-DA	Ave	0.0593	0.0510		2.15	2.50	-14.1	50.0
13C4-PFHpA	Ave	0.9333	0.9683		2.59	2.50	3.7	50.0
18O2 PFHxS	Ave	1.152	1.129		2.32	2.37	-2.0	50.0
M2-6:2FTS	Ave	0.2000	0.2271		2.70	2.38	13.5	40.0
13C4 PFOA	Ave	0.9276	0.9451		2.55	2.50	1.9	50.0
13C4 PFOS	Ave	0.8066	0.8071		2.39	2.39	0.0	50.0
13C5 PFNA	Ave	0.7973	0.8132		2.55	2.50	2.0	50.0
13C8 FOSA	Ave	1.007	0.9751		2.42	2.50	-3.2	50.0
M2-8:2FTS	Ave	0.2409	0.2382		2.37	2.40	-1.1	40.0
13C2 PFDA	Ave	0.6701	0.6961		2.60	2.50	3.9	50.0
d3-NMeFOSAA	Ave	0.3798	0.4038		2.66	2.50	6.3	50.0
d5-NEtFOSAA	Ave	0.3749	0.4179		2.79	2.50	11.5	50.0
13C2 PFUnA	Ave	0.5781	0.5739		2.48	2.50	-0.7	50.0
13C2 PFDoA	Ave	0.6242	0.6160		2.47	2.50	-1.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7571		2.39	2.50	-4.3	50.0
13C2-PFHxDA	Ave	1.288	1.291		2.51	2.50	0.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_072.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 27-Apr-2018 12:12:34 ALS Bottle#: 28 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 13:06:17 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 12:52:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	1.000	6545741	2.59		104	44397	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.004	2394897	0.9850		98.5	1436	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.694	0.009	0.557	4258546	2.62		105	72231	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1989380	0.9799		98.0	2006	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.730	0.009	1.000	87384	2.34		101	967	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2591744	0.8808		99.6	11276	
298.90 > 99.00	1.739	1.739	0.0	1.000	1097027		2.36(1.25-3.74)		13777	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	607831	1.01		108	34915	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	712689	2.66		114	7729	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	1836949	0.9837		98.4	2967	
313.00 > 119.00	1.982	1.982	0.0	1.000	159402		11.52(5.03-15.10)		1595	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.982	0.0	1.000	4594281	2.55		102	78123	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	2490902	0.9268		98.8	15720	
349.00 > 99.00	2.004	2.004	0.0	1.000	914023		2.73(1.36-4.07)		19477	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.083	0.0	1.000	288165	1.08		108	1951	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	239128	2.15		85.9	6625	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1863071	1.02		102	2366	
363.00 > 169.00	2.321	2.321	0.0	1.000	738079		2.52(1.13-3.40)		3318	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.323	-0.002	1.000	4543392	2.59		104	55678	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	1989220	0.8295		91.1	4710	
399.00 > 99.00	2.334	2.334	0.0	1.000	694532		2.86(1.50-4.49)		4775	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.336	-0.002	1.000	5011454	2.32		98.0	65665	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	5458389	1.04		104	51402	
377.00 > 85.00	2.360	2.360	0.0	1.000	3093512		1.76(0.84-2.53)		49601	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.653	0.0	1.000	1012283	2.70		114	11558	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.653	0.0	1.000	644178	0.8940		94.3	12098	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.676	0.007	1.000	4434557	2.55		102	55064	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4692374	2.50			62176	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.000	1940360	0.9468		94.7	1553	
413.00 > 169.00	2.683	2.683	0.0	1.000	1029551		1.88(0.84-2.52)		3927	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	1930250	0.9597		101	9969	
449.00 > 99.00	2.683	2.690	-0.007	0.997	525532		3.67(1.94-5.82)		9294	
D 18 13C4 PFOS										
503.00 > 80.00	3.052	3.056	-0.004	1.000	3620578	2.39		100	20145	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.056	0.003	1.000	3815840	2.55		102	76258	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.059	0.0	1.002	1503221	0.9122		98.3	17486	
499.00 > 99.00	3.052	3.059	-0.007	1.000	326830		4.60(2.31-6.93)		5098	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.059	0.0	1.000	1483704	0.9322		93.2	4954	
463.00 > 169.00	3.059	3.059	0.0	1.000	375394		3.95(1.90-5.69)		6834	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.266	3.266	0.0	1.000	2573631	0.9012		96.7	33613	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.394	-0.005	1.000	4575404	2.42		96.8	38855	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.389	0.0	1.000	1811587	0.9786		97.9	22264	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.413	-0.005	1.000	1070737	2.37		98.9	9261	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.408	0.0	1.000	559555	0.9891		103	21221	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.408	0.0	1.000	1104895	0.9124		95.0	10450	
549.00 > 99.00	3.408	3.408	0.0	1.000	393843		2.81(1.33-3.97)		9634	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.422	-0.005	1.000	3266468	2.60		104	39867	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.417	0.0	1.000	1219834	0.9050		90.5	5233	
513.00 > 169.00	3.427	3.417	0.010	1.003	218800		5.58(2.36-7.09)		4669	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.571	0.004	1.000	1894719	2.66		106	27803	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.575	0.0	1.000	739064	0.9778		97.8	5340	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	964394	0.9805		102	10525	
599.00 > 99.00	3.730	3.741	-0.011	0.997	311205		3.10(1.39-4.16)		7223	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.747	-0.006	1.000	1961062	2.79		111	26935	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.758	-0.007	1.000	2693061	2.48		99.3	71068	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.751	0.0	1.003	711946	0.9712		97.1	12891	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.751	0.0	1.000	821009	0.9018		90.2	3848	
563.00 > 169.00	3.751	3.751	0.0	1.000	213645		3.84(2.12-6.36)		4920	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.908	3.908	0.0	1.000	4109822	0.9315		98.9	45884	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.048	0.003	1.000	2890305	2.47		98.7	27056	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1165650	0.9668		96.7	1814	
613.00 > 169.00	4.051	4.051	0.0	1.000	293731		3.97(2.13-6.40)		3227	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.308	0.0	1.000	1349467	0.9604		96.0	1561	
663.00 > 169.00	4.308	4.308	0.0	1.000	422836		3.19(1.25-3.76)		3666	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	349581	0.9795		97.9	2669	
713.00 > 219.00	4.543	4.553	-0.010	0.998	258237		1.35(0.71-2.13)		4092	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.553	0.0	1.000	3552716	2.39		95.7	25126	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.967	0.0	1.000	2284489	0.9735		97.4	1051	
813.00 > 169.00	4.967	4.967	0.0	1.000	387758		5.89(2.86-8.58)		2405	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.966	0.001	1.000	6056739	2.51		100	20595	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.329	0.0	1.000	2118859	0.8710		87.1	819	
913.00 > 169.00	5.329	5.329	0.0	1.000	262334		8.08(3.83-11.48)		1973	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 13:06:18 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_072.d

Injection Date: 27-Apr-2018 12:12:34 Instrument ID: A8_N

Lims ID: CCV L4

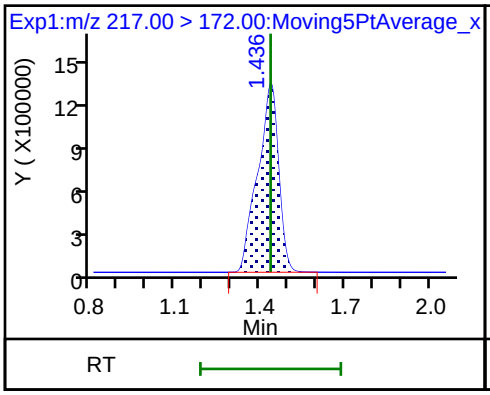
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 6

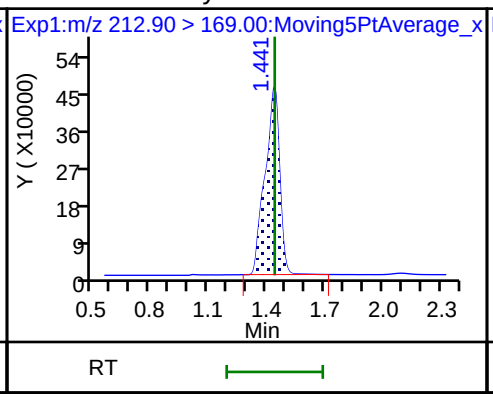
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

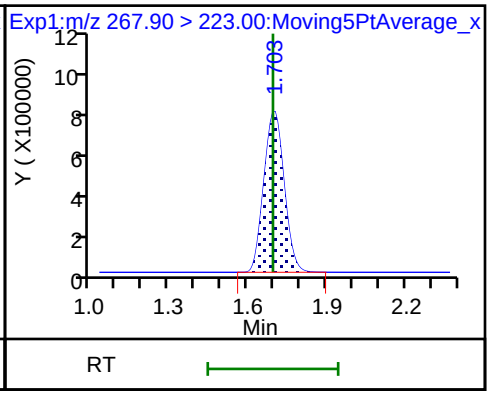
D 1 13C4 PFBA



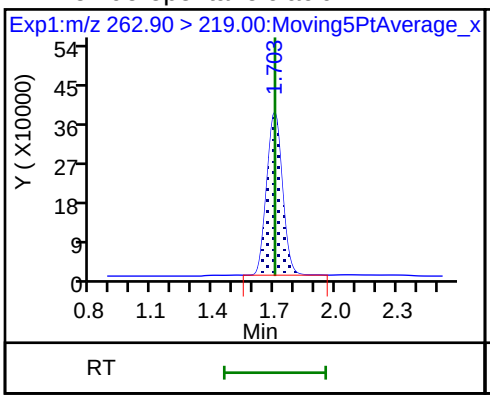
2 Perfluorobutyric acid



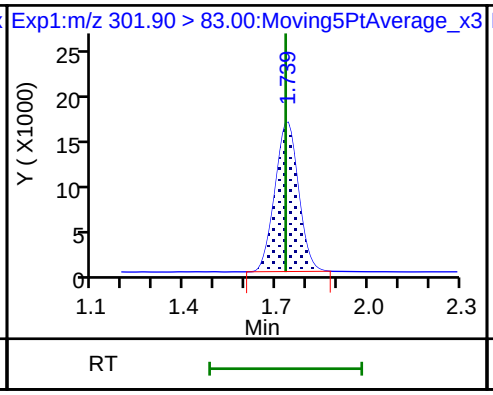
D 3 13C5-PFPeA



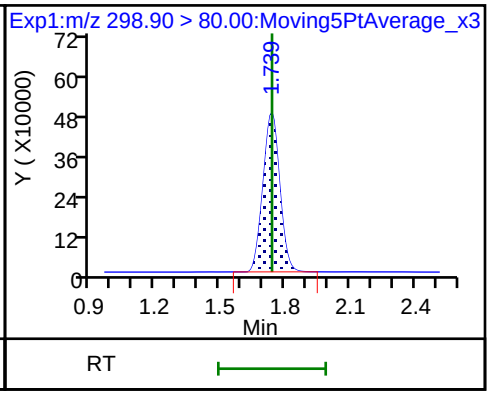
4 Perfluoropentanoic acid



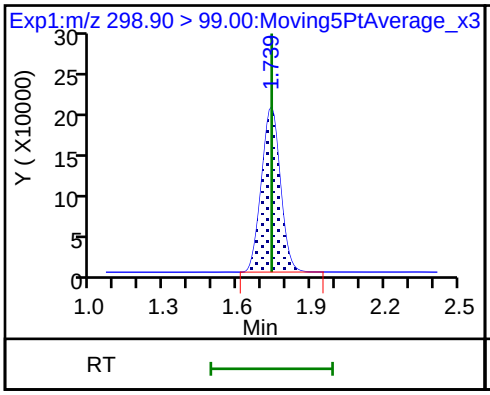
D 47 13C3-PFBS



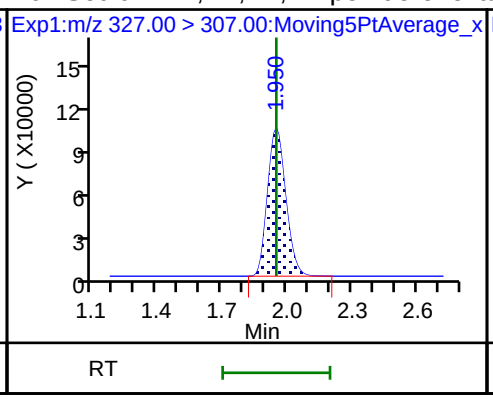
5 Perfluorobutanesulfonic acid



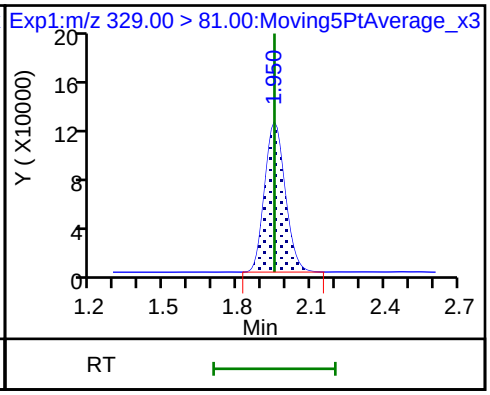
5 Perfluorobutanesulfonic acid



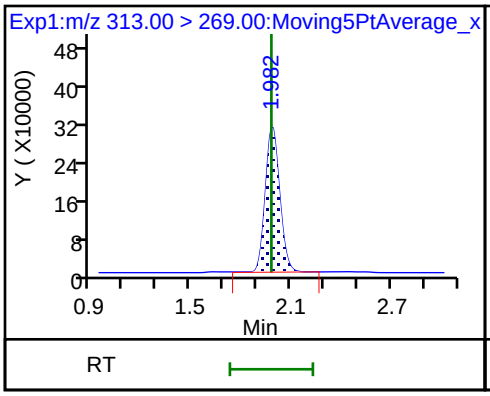
61 Sodium 1H,1H,2H,2H-perfluorohexane



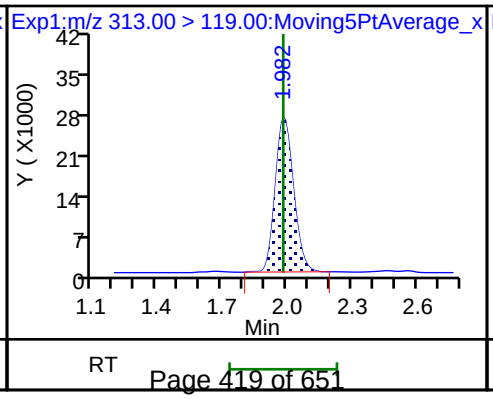
D 60 M2-4:2FTS



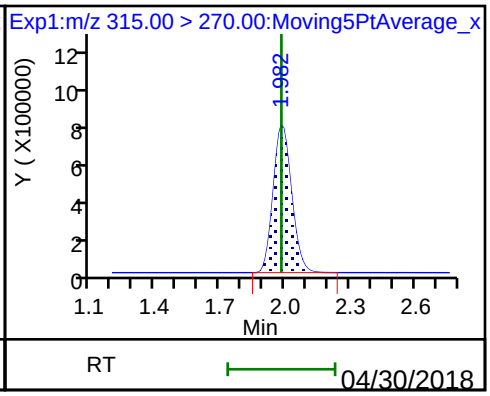
6 Perfluorohexanoic acid



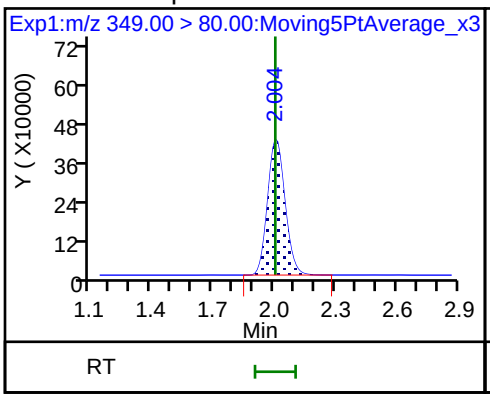
6 Perfluorohexanoic acid



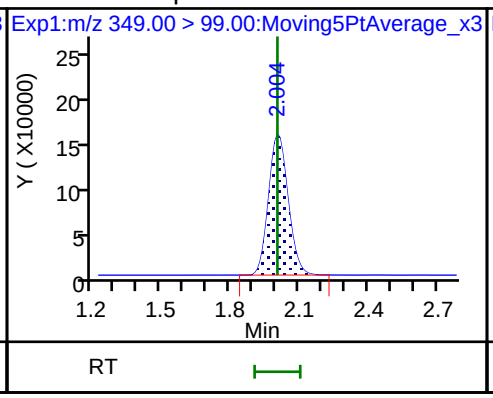
D 7 13C2 PFHxA



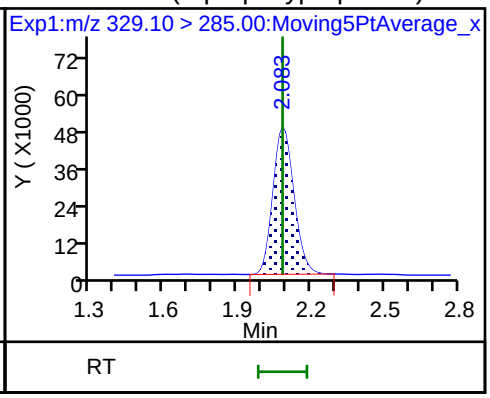
70 Perfluoropentanesulfonic acid



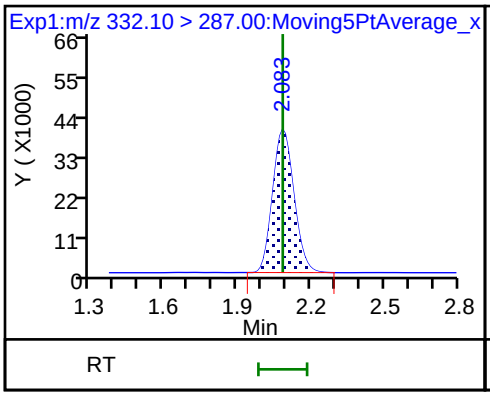
70 Perfluoropentanesulfonic acid



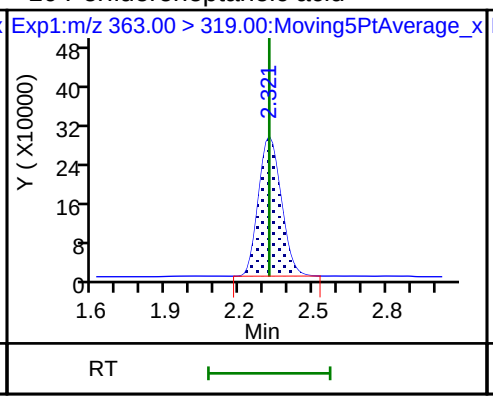
67 Perfluoro(2-propoxypropanoic) acid



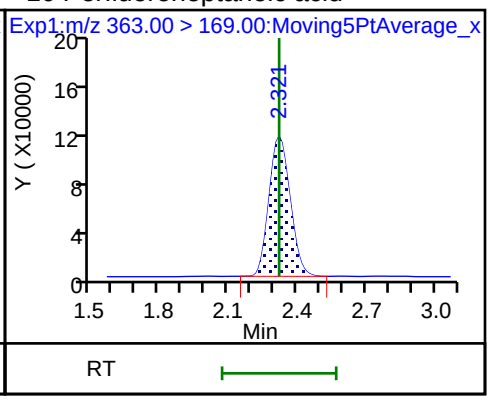
D 64 13C3 HFPO-DA



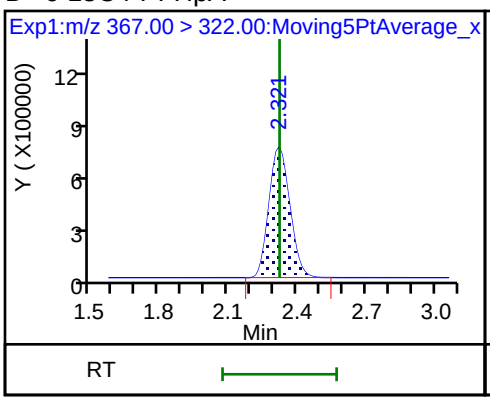
10 Perfluoroheptanoic acid



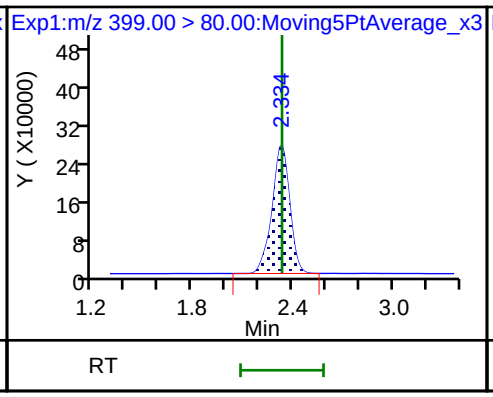
10 Perfluoroheptanoic acid



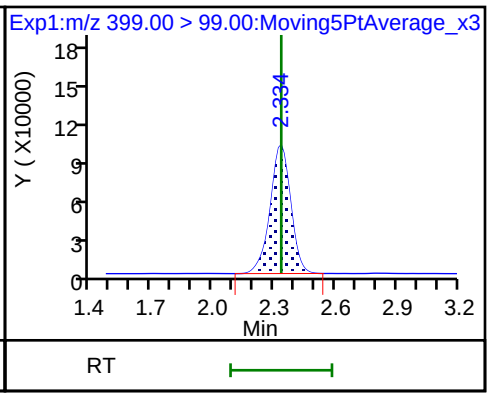
D 9 13C4-PFHpA



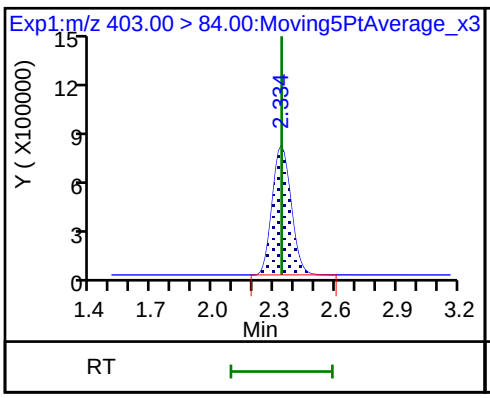
8 Perfluorohexanesulfonic acid



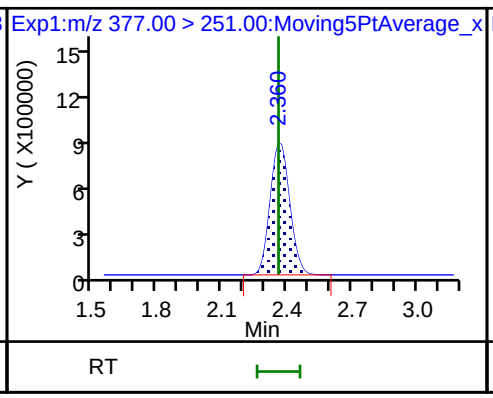
8 Perfluorohexanesulfonic acid



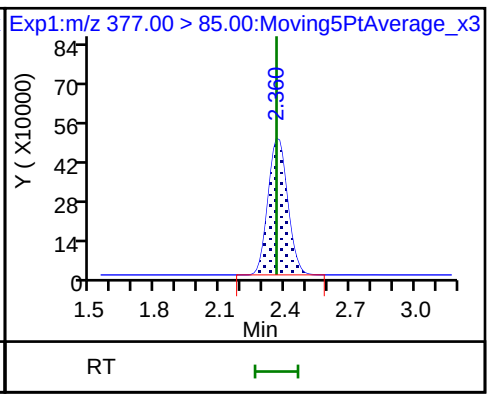
D 11 18O2 PFHxS



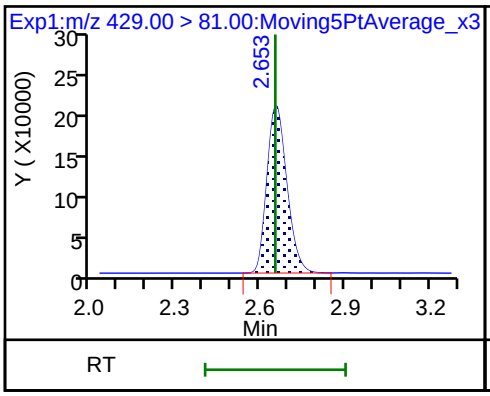
65 Adona



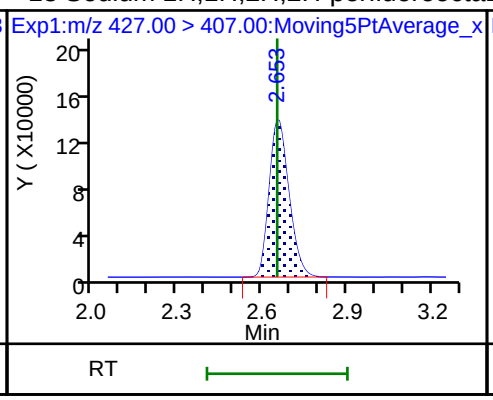
65 Adona



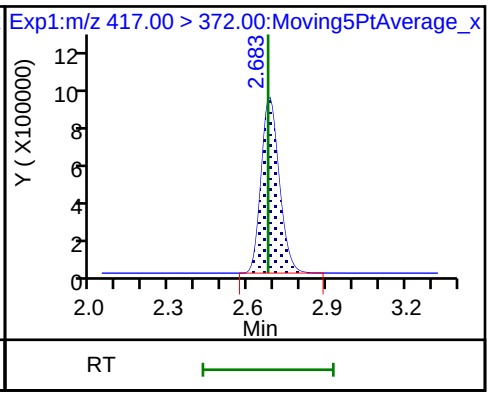
D 12 M2-6:2FTS



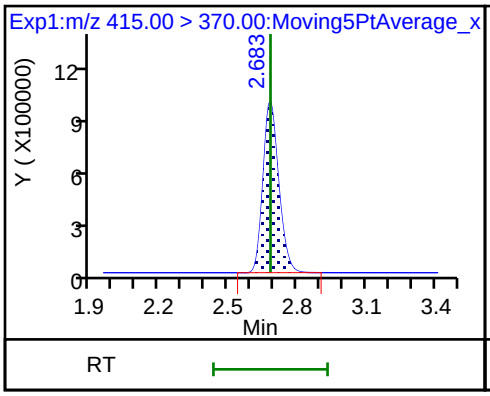
13 Sodium 1H,1H,2H,2H-perfluorooctane



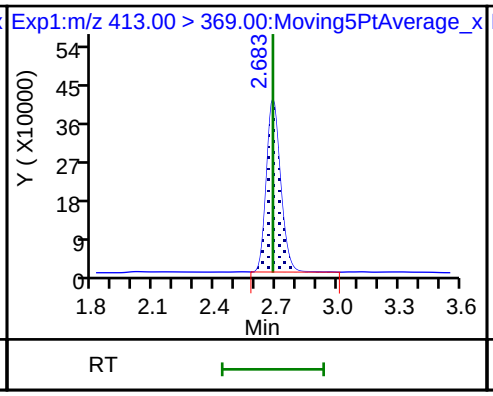
D 14 13C4 PFOA



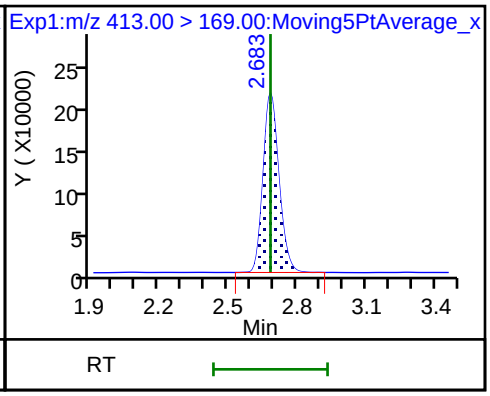
* 62 13C2-PFOA



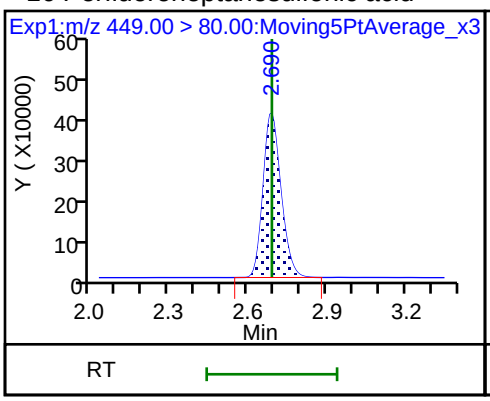
15 Perfluorooctanoic acid



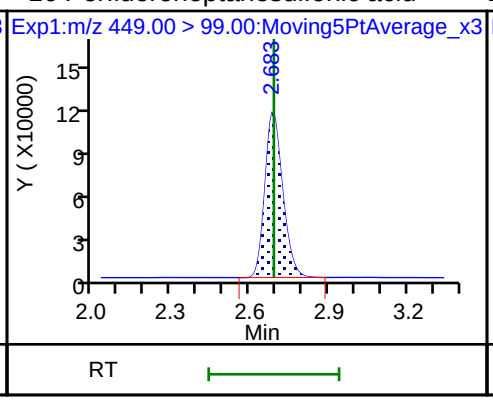
15 Perfluorooctanoic acid



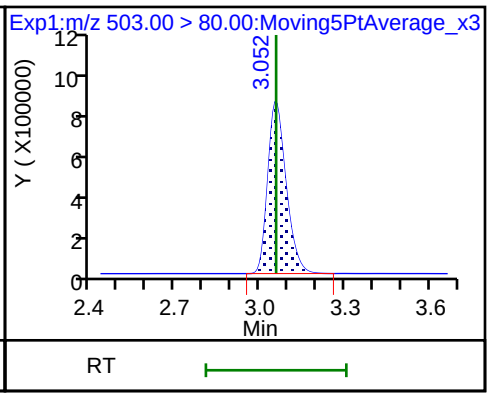
16 Perfluoroheptanesulfonic acid



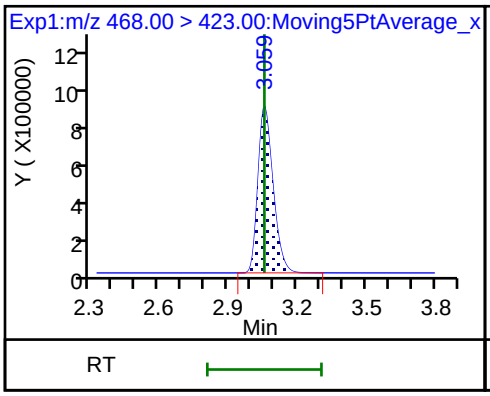
16 Perfluoroheptanesulfonic acid



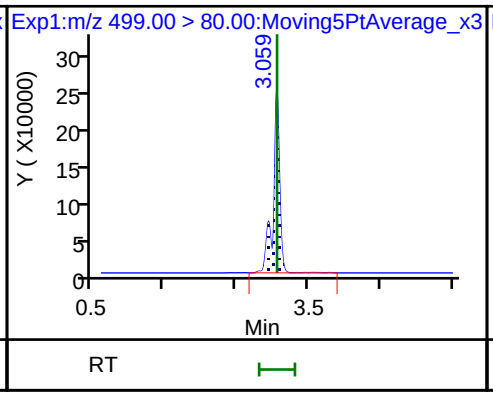
D 18 13C4 PFOS



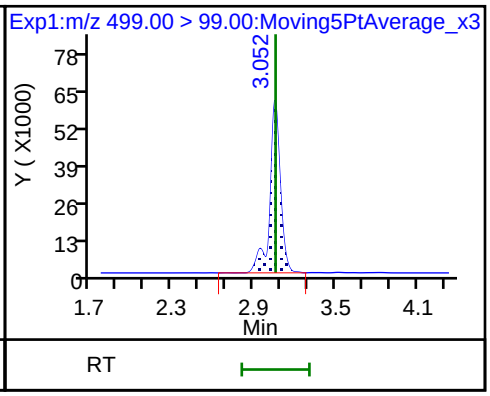
D 19 13C5 PFNA



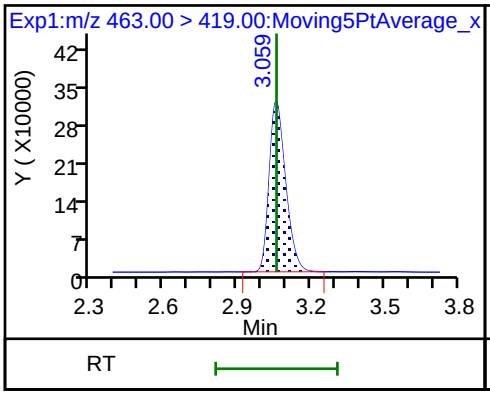
17 Perfluorooctane sulfonic acid



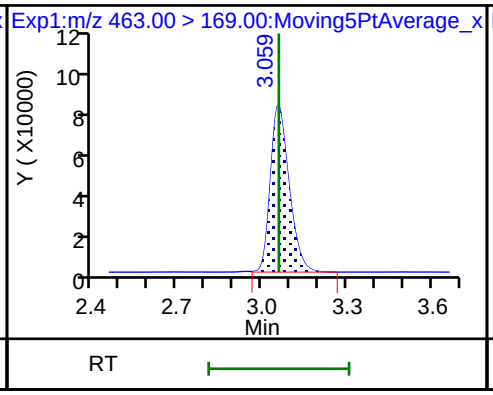
17 Perfluorooctane sulfonic acid



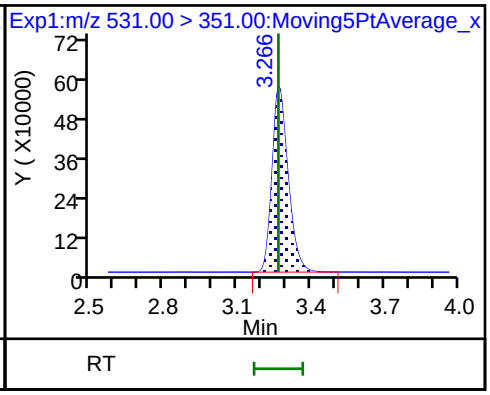
20 Perfluorononanoic acid



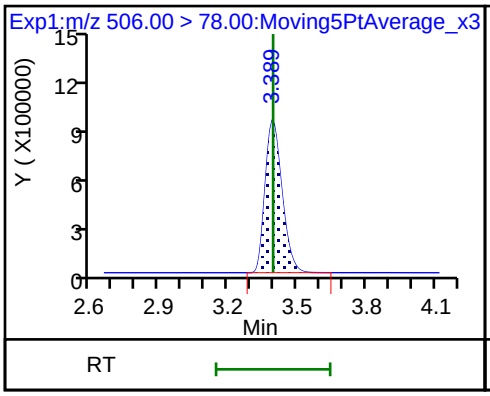
20 Perfluorononanoic acid



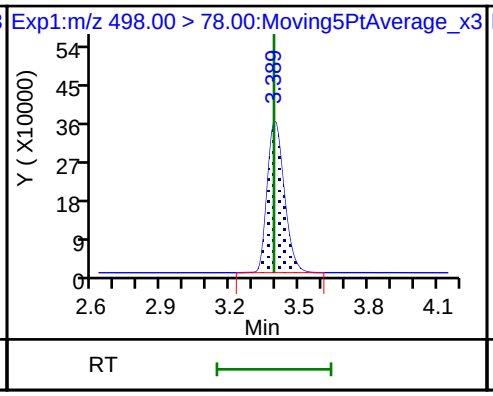
69 9-Chlorohexadecafluoro-3-oxanonane



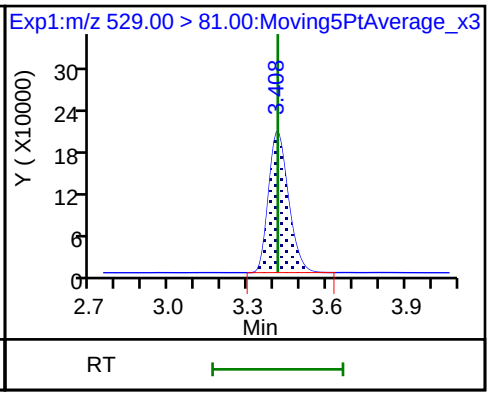
D 21 13C8 FOSA



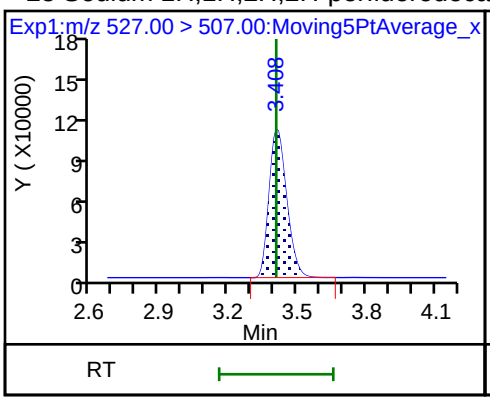
22 Perfluorooctane Sulfonamide



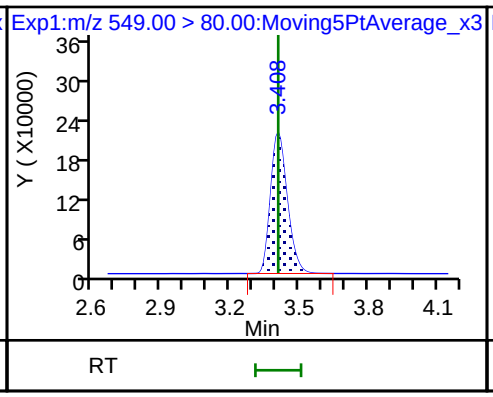
D 26 M2-8:2FTS



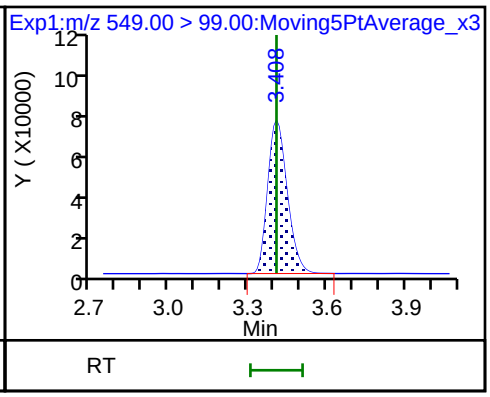
25 Sodium 1H,1H,2H,2H-perfluorodecan



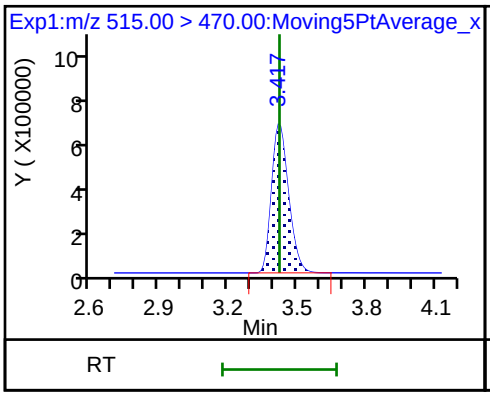
68 Perfluorononanesulfonic acid



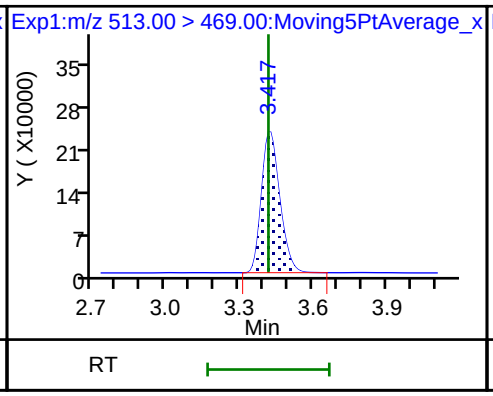
68 Perfluorononanesulfonic acid



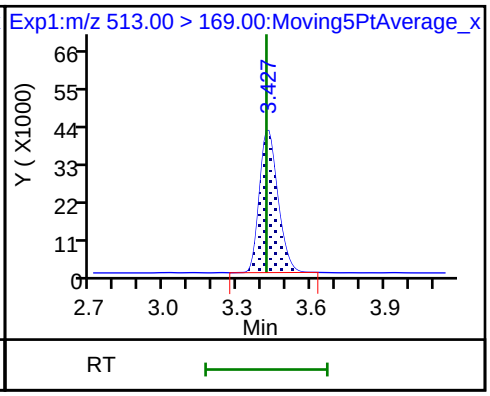
D 23 13C2 PFDA



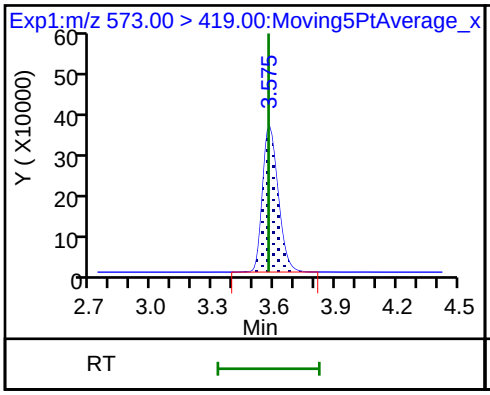
24 Perfluorodecanoic acid



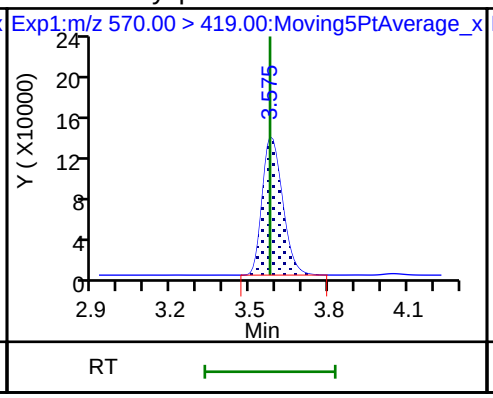
24 Perfluorodecanoic acid



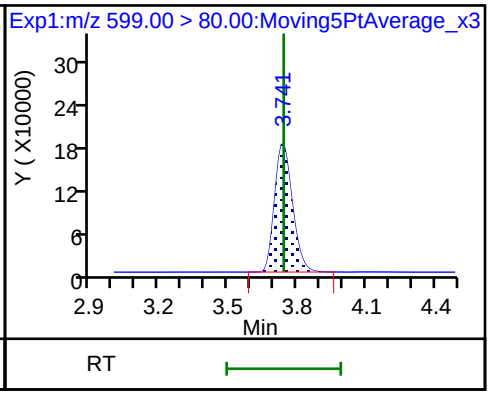
D 27 d3-NMeFOSAA



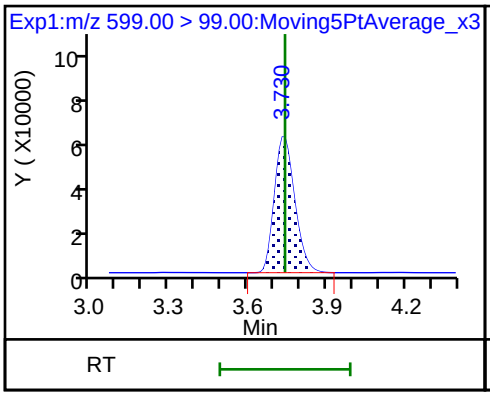
28 N-methyl perfluorooctane sulfonami



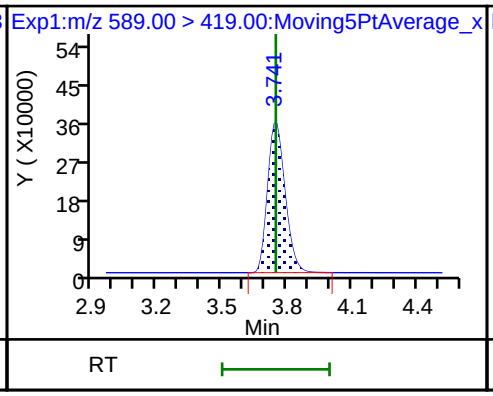
29 Perfluorodecane Sulfonic acid



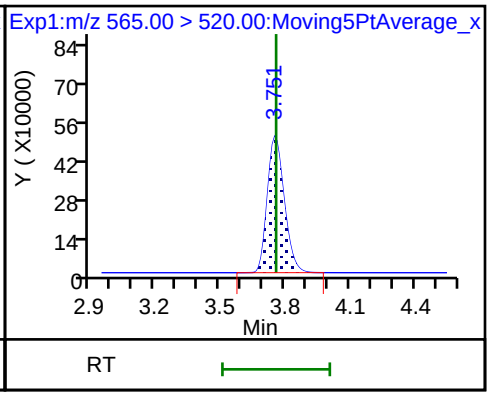
29 Perfluorodecane Sulfonic acid



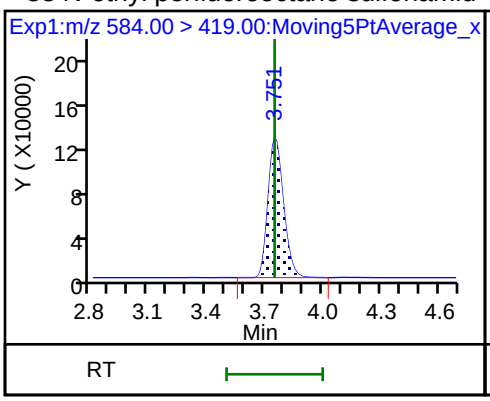
D 32 d5-NEtFOSAA



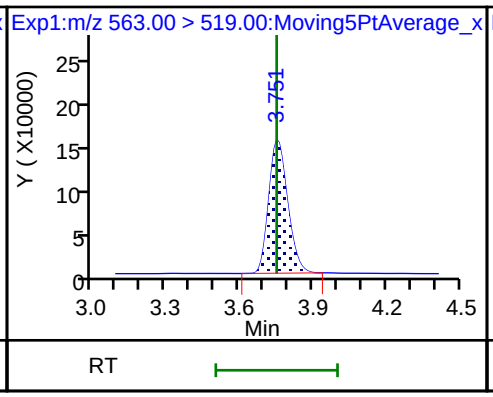
D 30 13C2 PFUnA



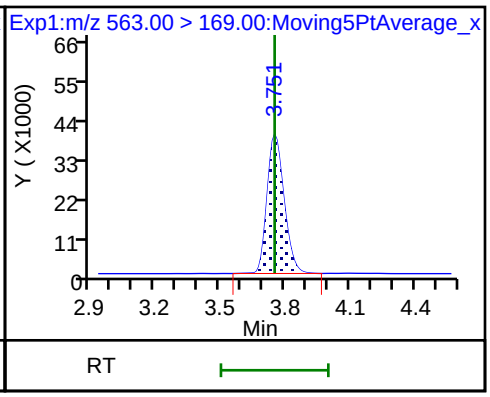
33 N-ethyl perfluorooctane sulfonamid



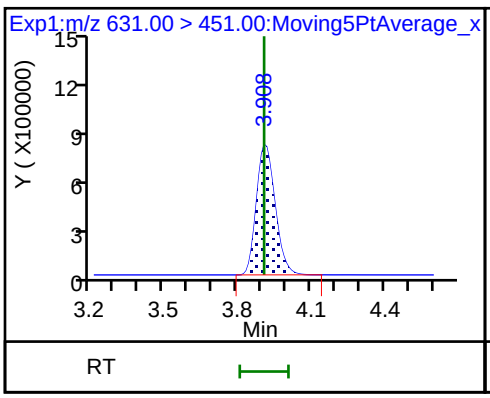
31 Perfluoroundecanoic acid



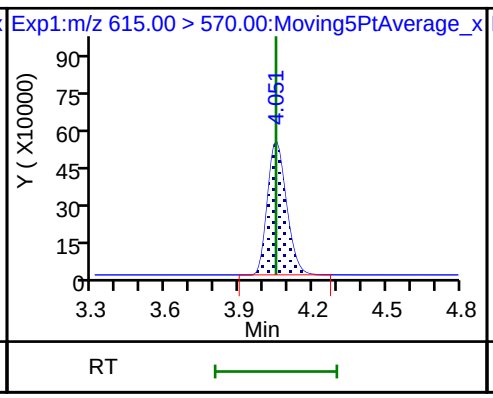
31 Perfluoroundecanoic acid



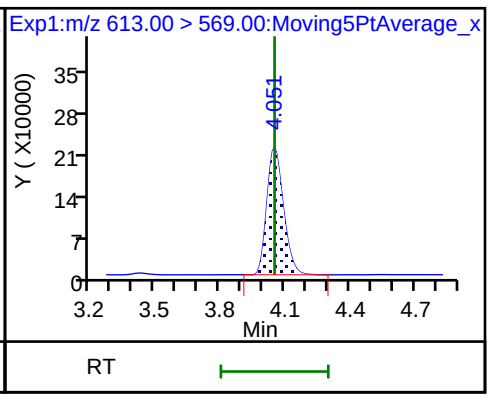
66 11-Chloroeicosafluoro-3-oxaundecan



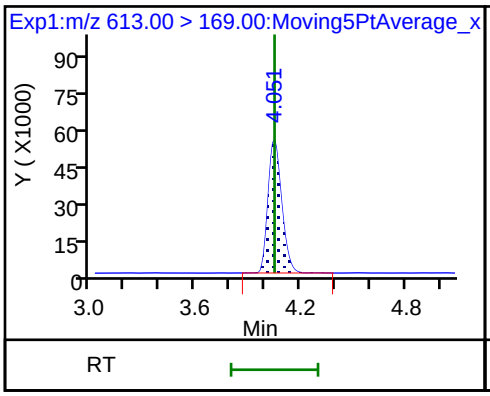
D 36 13C2 PFDoA



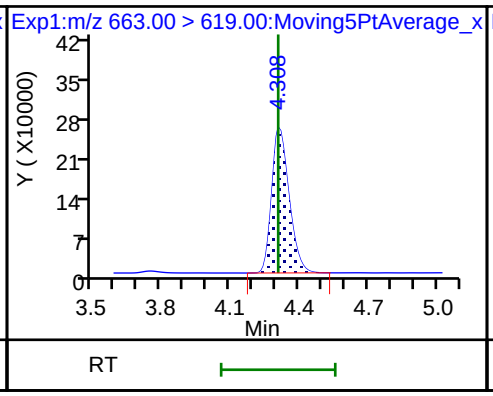
37 Perfluorododecanoic acid



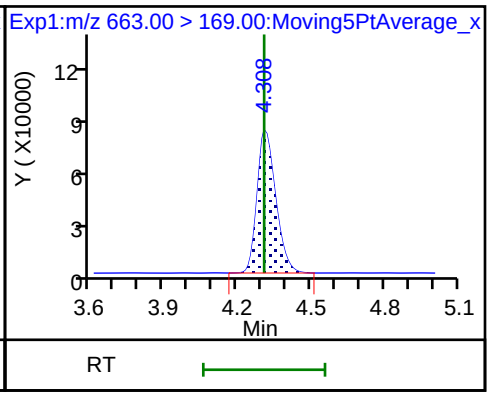
37 Perfluorododecanoic acid



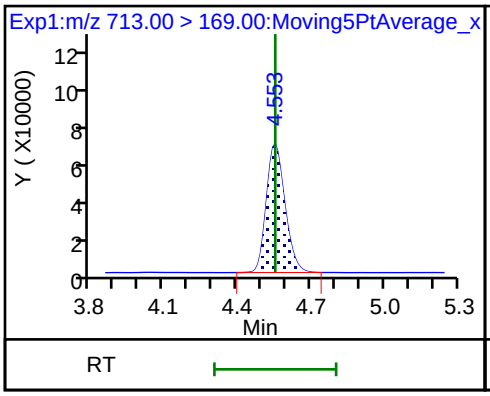
41 Perfluorotridecanoic acid



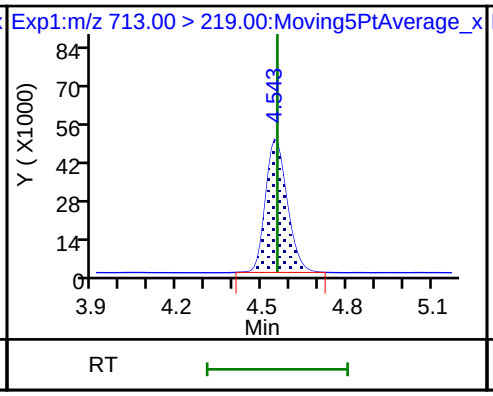
41 Perfluorotridecanoic acid



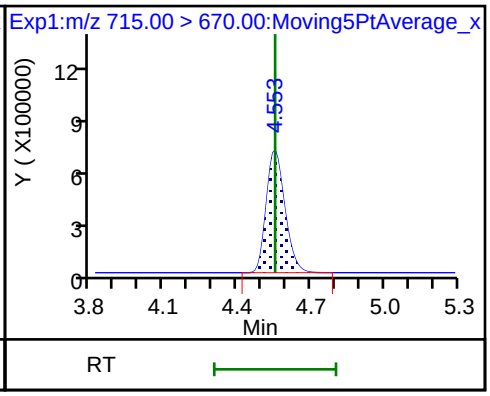
42 Perfluorotetradecanoic acid



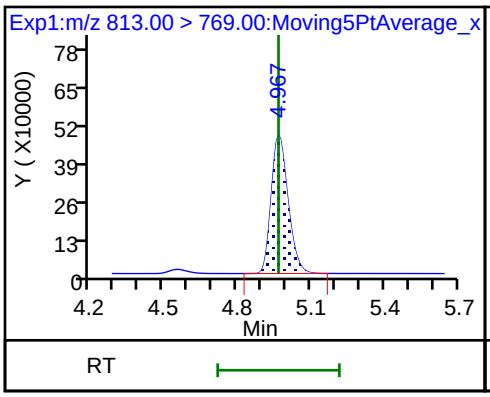
42 Perfluorotetradecanoic acid



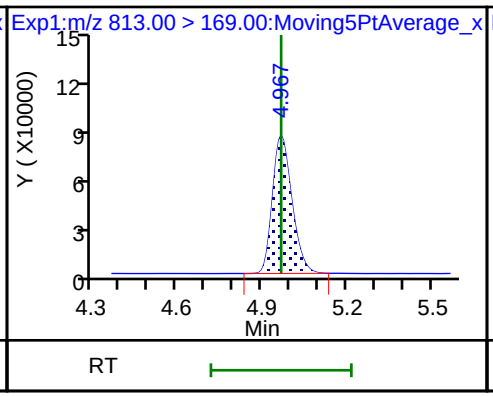
D 43 13C2-PFTeDA



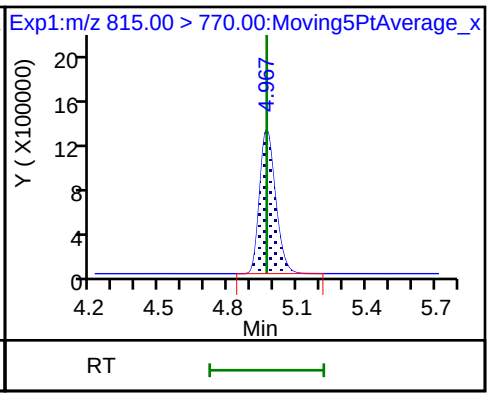
45 Perfluorohexadecanoic acid



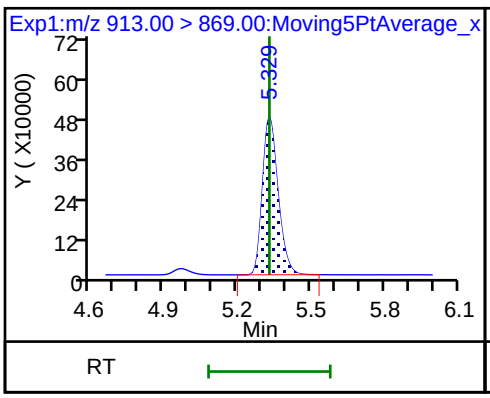
45 Perfluorohexadecanoic acid



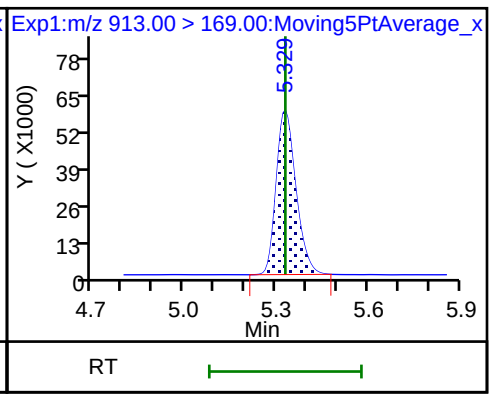
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218876/1-A

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_043.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.00(g) | Date Analyzed: 04/24/2018 23:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		0.00050
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		0.00050
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		0.00050
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		0.00050
335-67-1	Perfluorooctanoic acid (PFOA)	ND		0.00050
375-95-1	Perfluorononanoic acid (PFNA)	ND		0.00050
335-76-2	Perfluorodecanoic acid (PFDA)	ND		0.00050
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		0.00050
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		0.00050
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		0.00050
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		0.00050
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.00050
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		0.00050
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00050
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		0.0013
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		0.00050
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		0.00050
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0050
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0050
27619-97-2	6:2FTS	ND		0.0050
39108-34-4	8:2FTS	ND		0.0050

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218876/1-A

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_043.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.00(g) | Date Analyzed: 04/24/2018 23:12

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	18	*	25-150
STL01893	13C5 PFPeA	72		25-150
STL00993	13C2 PFHxA	69		25-150
STL01892	13C4-PFHpA	71		25-150
STL00990	13C4 PFOA	70		25-150
STL00995	13C5 PFNA	70		25-150
STL00996	13C2 PFDA	69		25-150
STL00997	13C2 PFUnA	71		25-150
STL00998	13C2 PFDoA	66		25-150
STL02116	13C2-PFTeDA	74		25-150
STL02337	13C3-PFBS	72		25-150
STL00994	18O2 PFHxS	73		25-150
STL00991	13C4 PFOS	70		25-150
STL01056	13C8 FOSA	68		25-150
STL02118	d3-NMeFOSAA	70		25-150
STL02117	d5-NEtFOSAA	74		25-150
STL02279	M2-6:2FTS	77		25-150
STL02280	M2-8:2FTS	73		25-150
STL02395	M2-4:2FTS	65		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_043.d
Lims ID: MB 320-218876/1-A
Client ID:
Sample Type: MB
Inject. Date: 24-Apr-2018 23:12:47 ALS Bottle#: 29 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-218876/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: barnettj Date: 25-Apr-2018 14:25:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.004	14611	0.0294			4.3	M
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	1340003	0.4454		17.8	9799	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	-0.001	0.557	3472652	1.79		71.6	55045	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	74534	1.68		72.0	765	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.961	-0.012	1.000	481304	1.51		64.7	3622	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	3711579	1.73		69.2	68190	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.322	-0.001	1.000	3682419	1.76		70.6	57512	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.332	0.002	1.000	15429	0.007211			38.6	
399.00 > 99.00	2.334	2.332	0.002	1.000	5142		3.00(1.50-4.49)		34.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	4471332	1.74		73.4	117665	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.660	-0.008	1.000	5771	0.0100			127	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.668	-0.016	1.000	813186	1.82		76.6	10544	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.690	-0.008		5590323	2.50			73954	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.690	-0.015	0.997	5888	0.003490			4.9	
413.00 > 169.00	2.675	2.690	-0.015	0.997	6256		0.94(0.84-2.52)		18.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.691	-0.009	1.000	3650183	1.76		70.4	76840	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.067	-0.011	1.000	3124930	1.75		70.1	99905	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.067	-0.011	1.000	2998194	1.66		69.5	22442	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.398	-0.004	1.000	2064	0.001325			46.9	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.399	-0.005	1.000	3851318	1.71		68.4	44808	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.417	-0.004	1.000	938398	1.74		72.7	8511	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.427	-0.005	1.000	2592830	1.73		69.2	56862	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.586	-0.015	1.000	1486712	1.75		70.0	17708	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.751	-0.004	1.000	1543036	1.84		73.6	23522	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.747	3.761	-0.014	1.000	7407	0.009592			32.0	
563.00 > 169.00	3.758	3.761	-0.003	1.003	1758		4.21(2.12-6.36)		32.0	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.762	-0.015	1.000	2284384	1.77		70.7	71084	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.061	-0.014	1.000	2309690	1.65		66.2	24710	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.564	-0.014	1.000	3272451	1.85		74.0	26656	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.975	-0.002	1.002	44072	0.000205			20.7	
813.00 > 169.00	4.965	4.975	-0.011	1.000	7574		5.82(2.86-8.58)		60.3	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.976	-0.012	1.000	5174296	1.80		71.9	16755	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:05 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_043.d

Injection Date: 24-Apr-2018 23:12:47 Instrument ID: A8_N

Lims ID: MB 320-218876/1-A

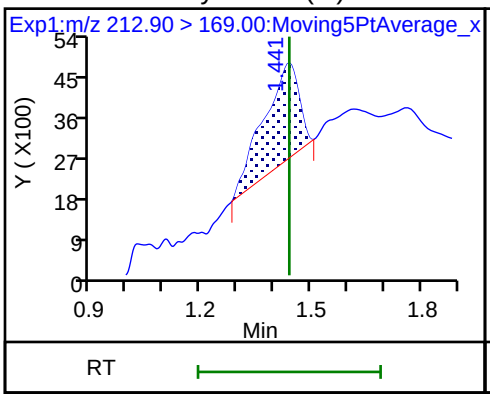
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 2

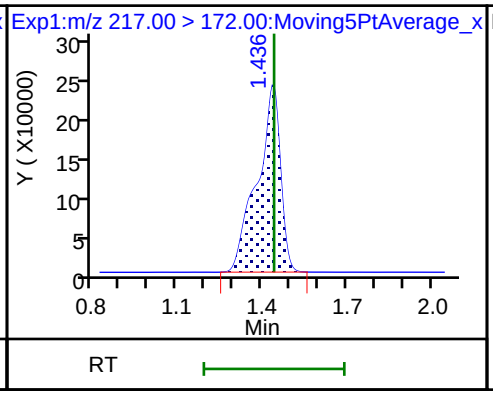
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

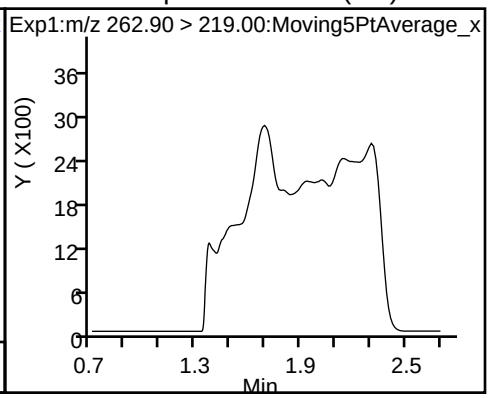
2 Perfluorobutyric acid (M)



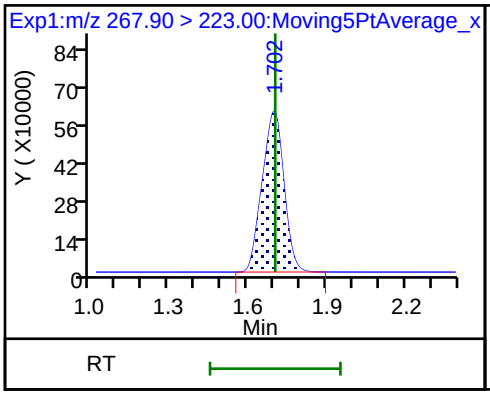
D 1 13C4 PFBA



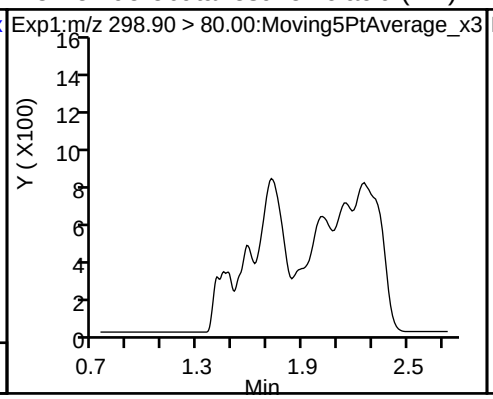
4 Perfluoropentanoic acid (ND)



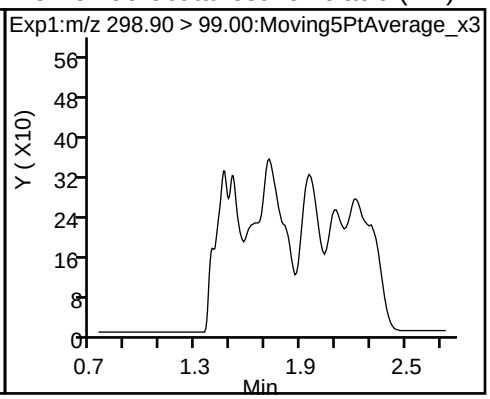
D 3 13C5-PFPeA



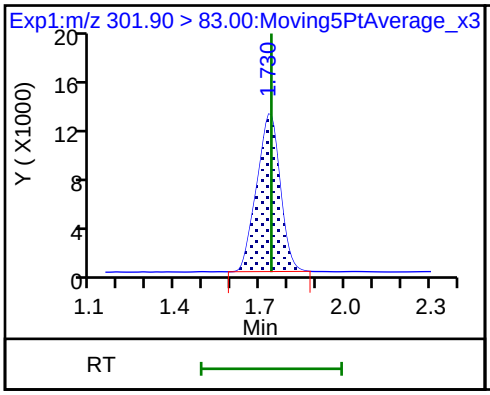
5 Perfluorobutanesulfonic acid (ND)



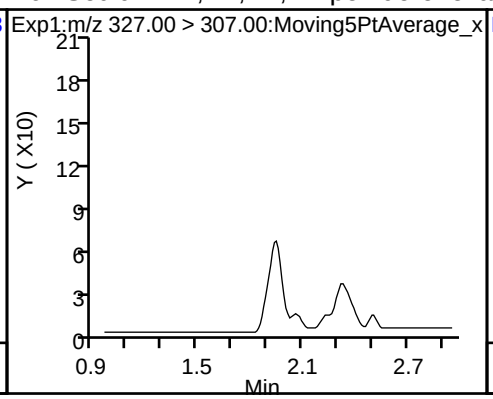
5 Perfluorobutanesulfonic acid (ND)



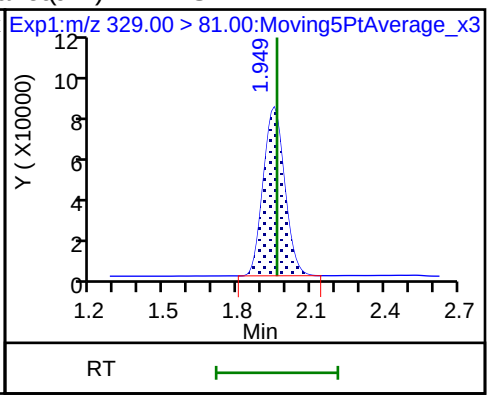
D 47 13C3-PFBS



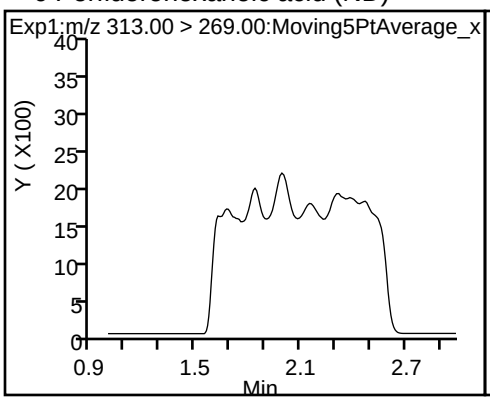
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



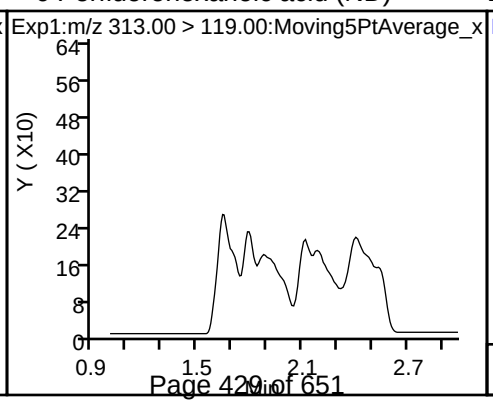
D 60 (ND) 4:2FTS



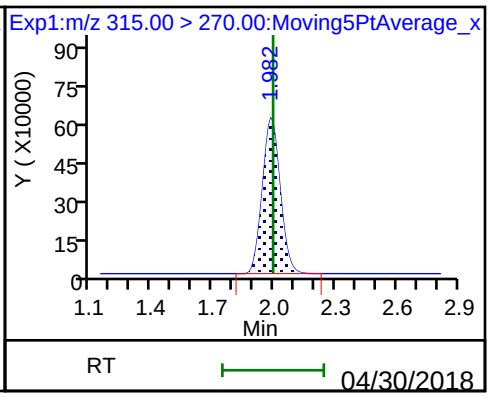
6 Perfluorohexanoic acid (ND)



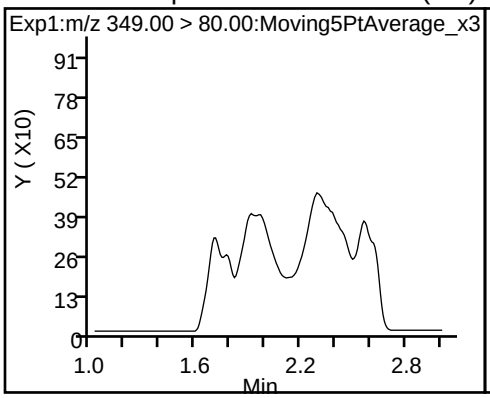
6 Perfluorohexanoic acid (ND)



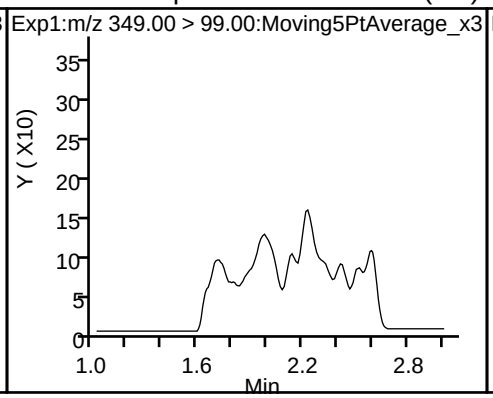
D 7 13C2 PFHxA



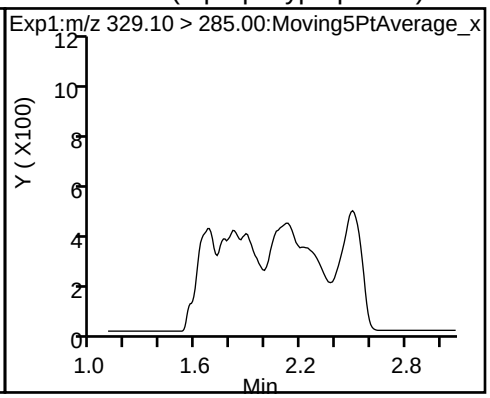
70 Perfluoropentanesulfonic acid (ND)



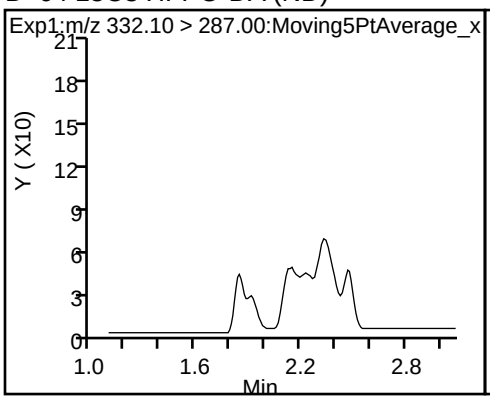
70 Perfluoropentanesulfonic acid (ND)



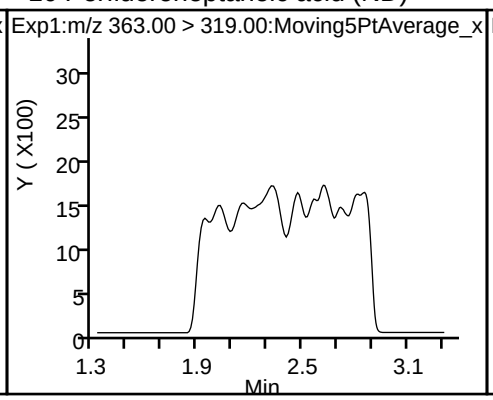
67 Perfluoro(2-propoxypropanoic) acid (ND)



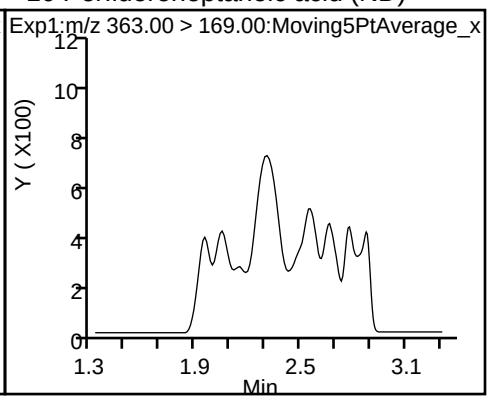
D 64 13C3 HFPO-DA (ND)



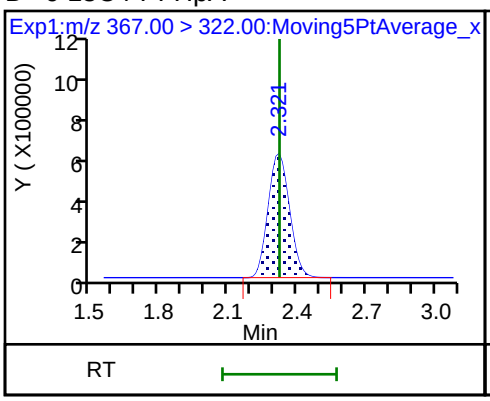
10 Perfluoroheptanoic acid (ND)



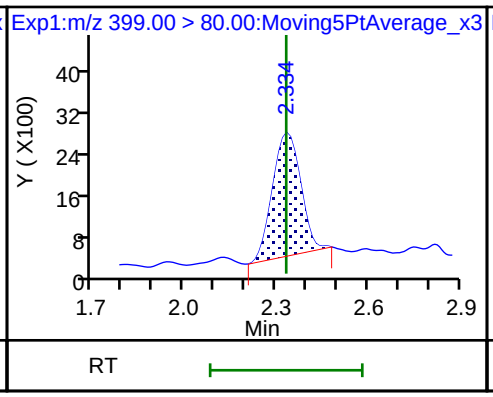
10 Perfluoroheptanoic acid (ND)



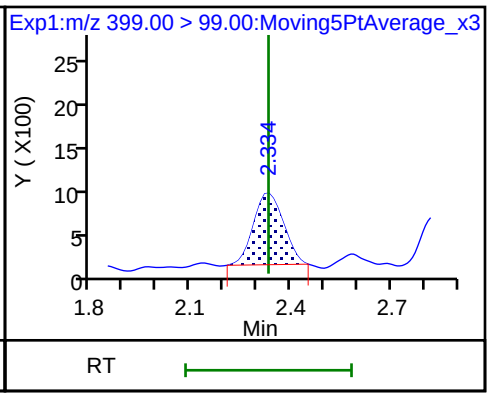
D 9 13C4-PFHpA



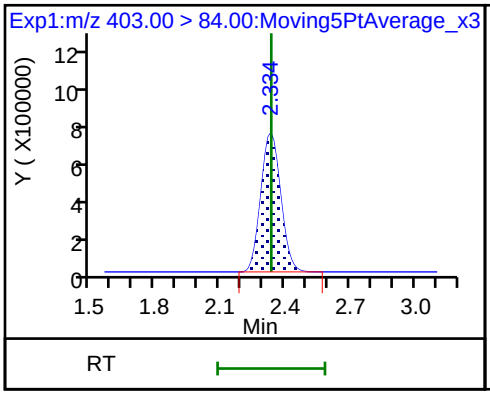
8 Perfluorohexanesulfonic acid



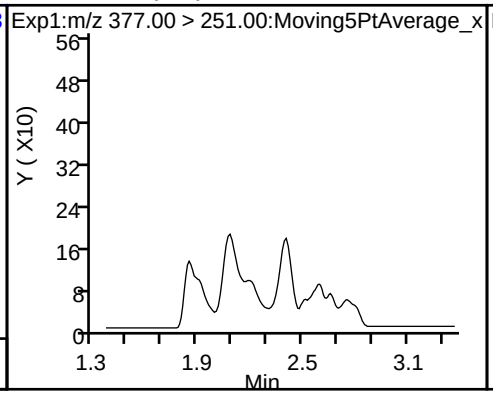
8 Perfluorohexanesulfonic acid



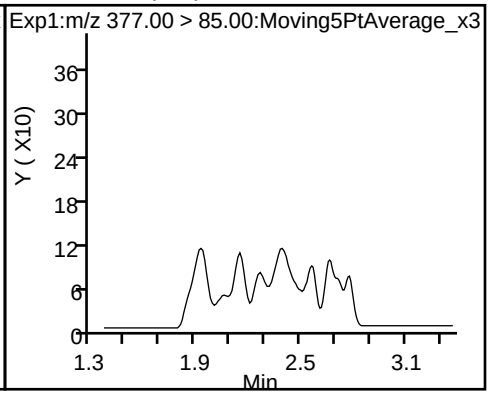
D 11 18O2 PFHxS



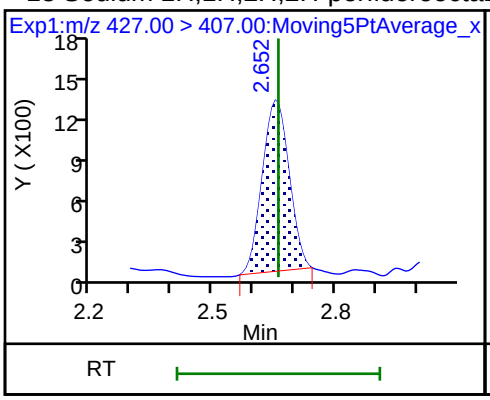
65 Adona (ND)



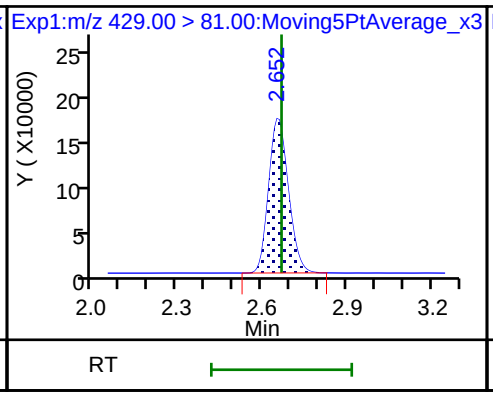
65 Adona (ND)



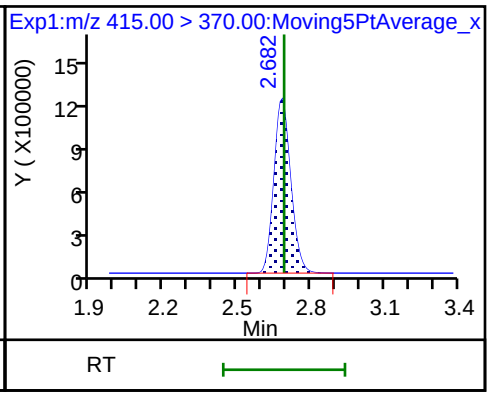
13 Sodium 1H,1H,2H,2H-perfluorooctane



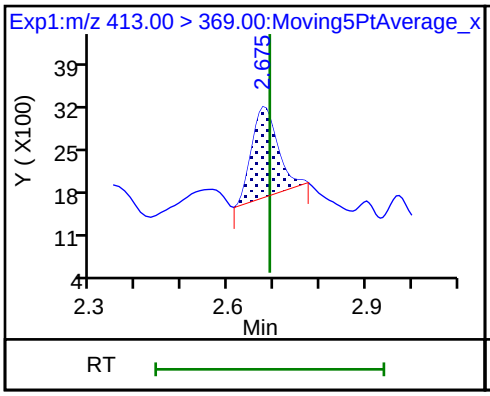
D 12 M2-6:2FTS



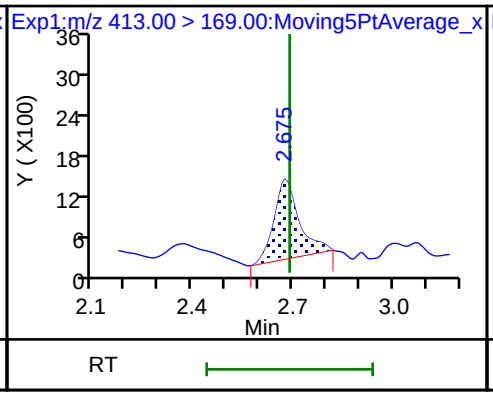
* 62 13C2-PFOA



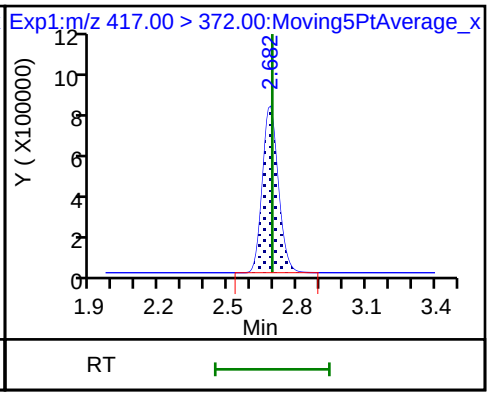
15 Perfluorooctanoic acid



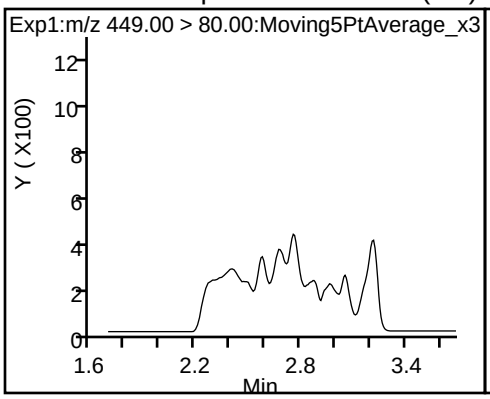
15 Perfluorooctanoic acid



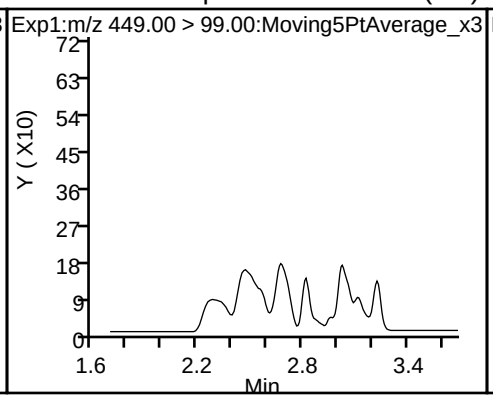
D 14 13C4 PFOA



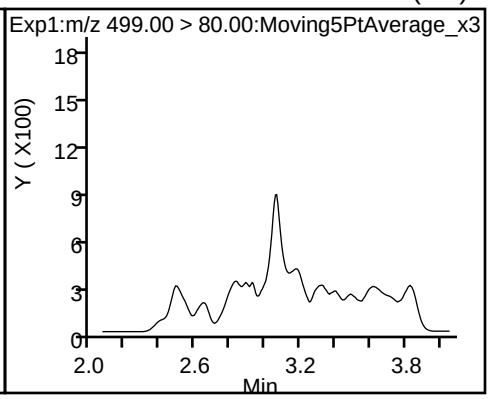
16 Perfluoroheptanesulfonic acid (ND)



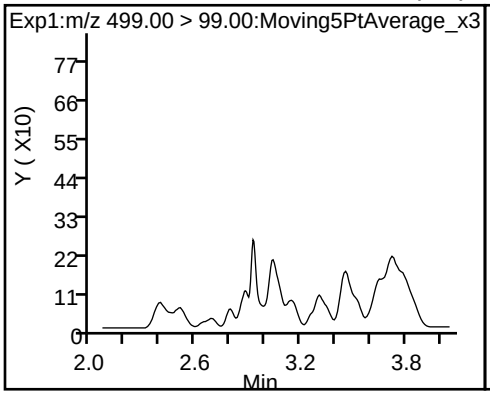
16 Perfluoroheptanesulfonic acid (ND)



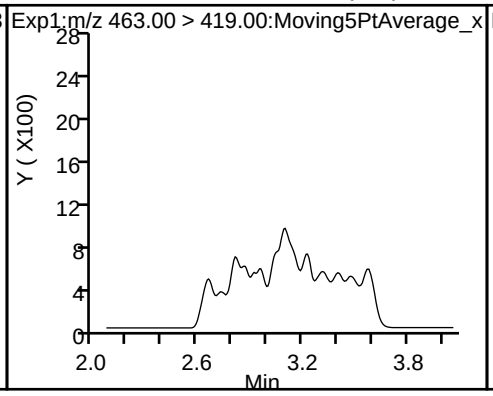
17 Perfluorooctane sulfonic acid (ND)



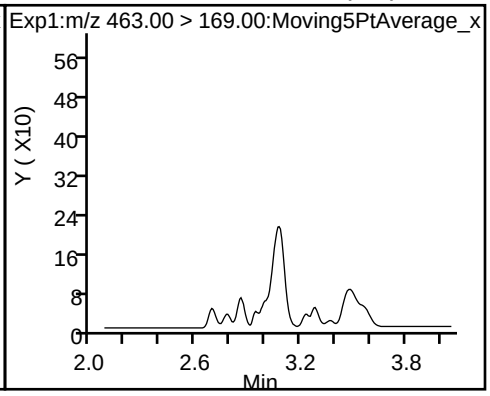
17 Perfluorooctane sulfonic acid (ND)



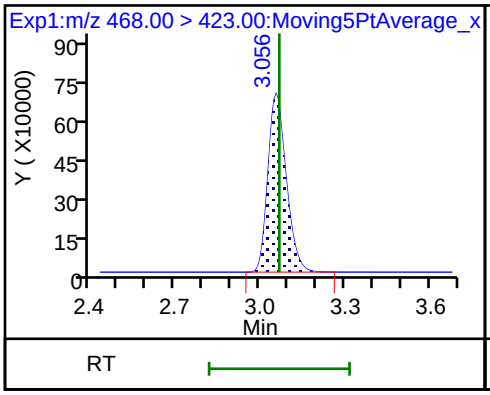
20 Perfluorononanoic acid (ND)



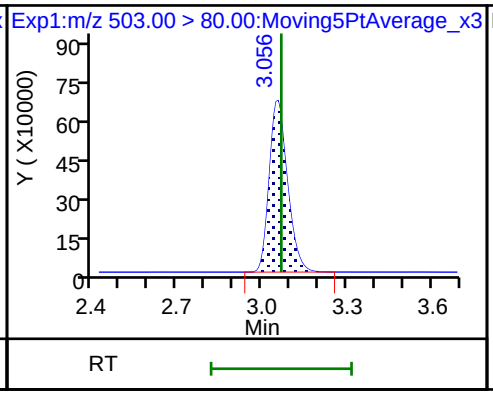
20 Perfluorononanoic acid (ND)



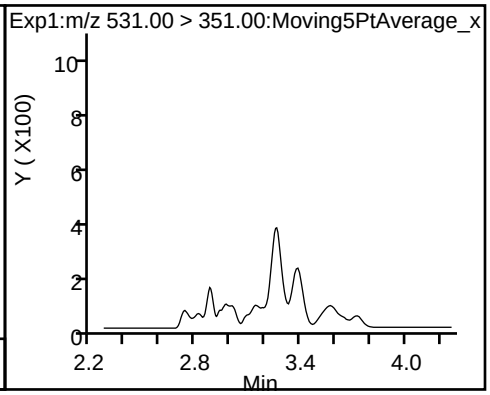
D 19 13C5 PFNA



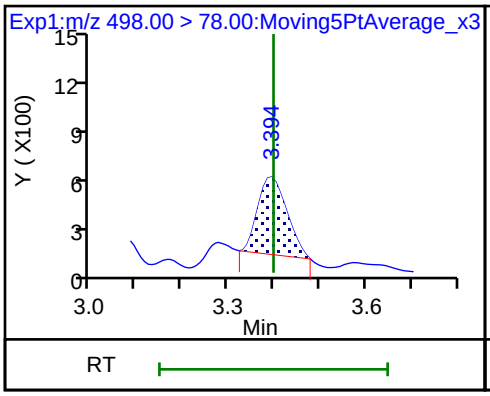
D 18 13C4 PFOS



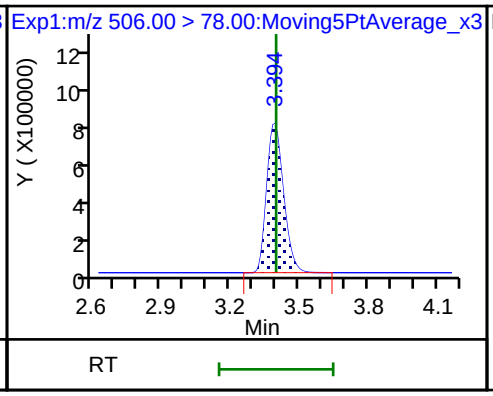
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



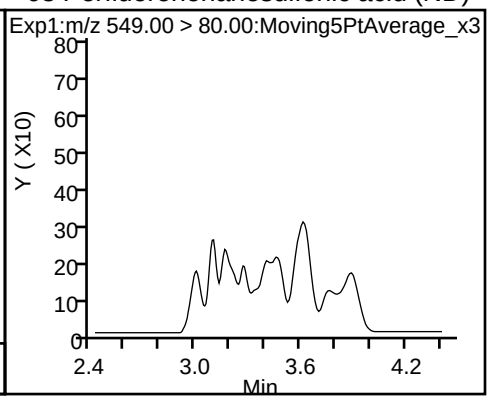
22 Perfluorooctane Sulfonamide



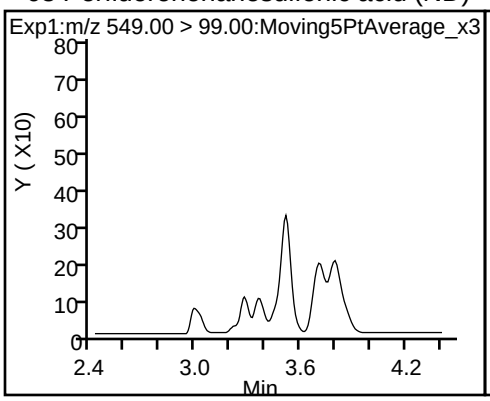
D 21 13C8 FOSA



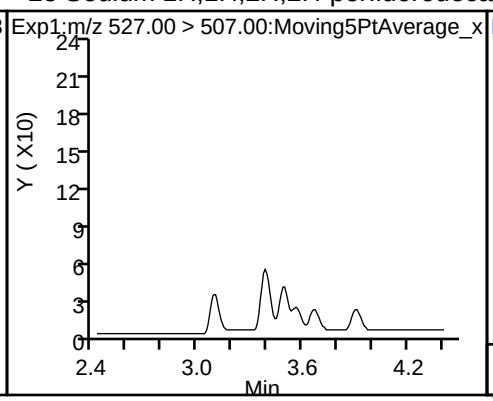
68 Perfluorononanesulfonic acid (ND)



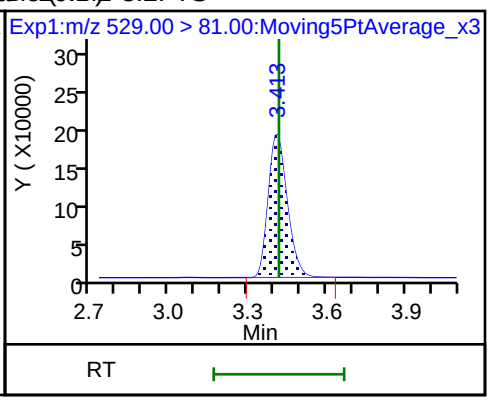
68 Perfluorononanesulfonic acid (ND)



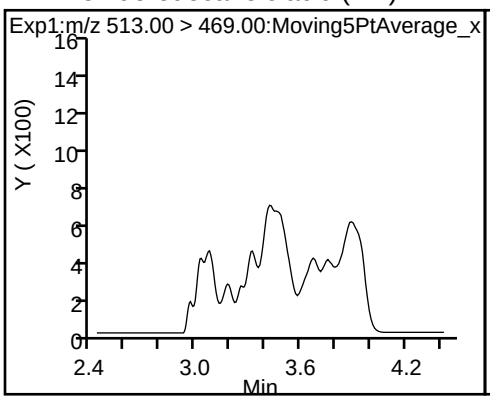
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



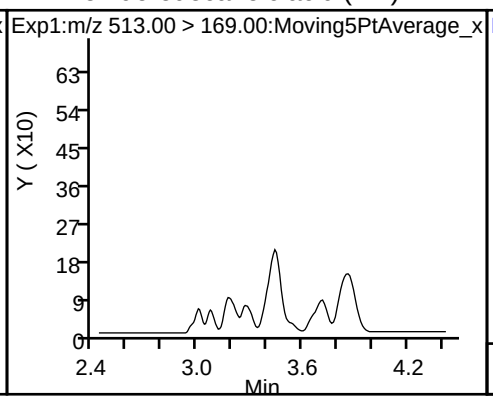
D 26 (ND) 8:2FTS



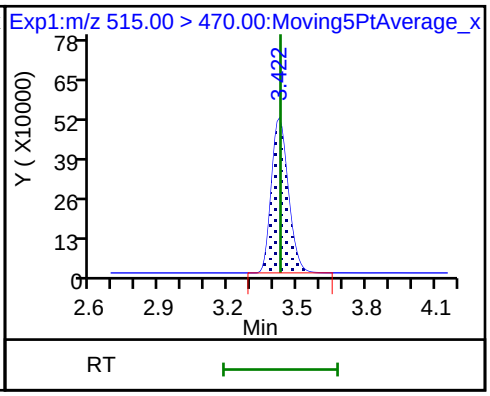
24 Perfluorodecanoic acid (ND)



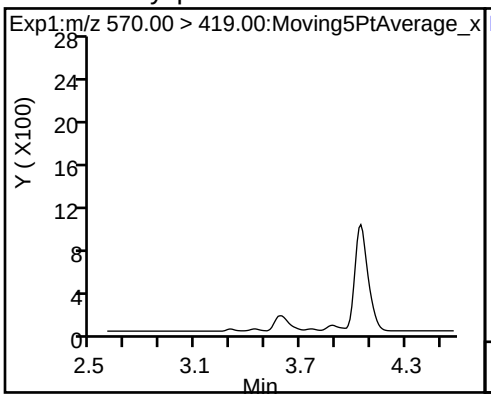
24 Perfluorodecanoic acid (ND)

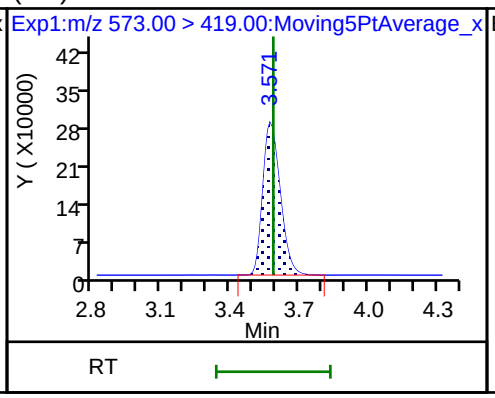


D 23 13C2 PFDA

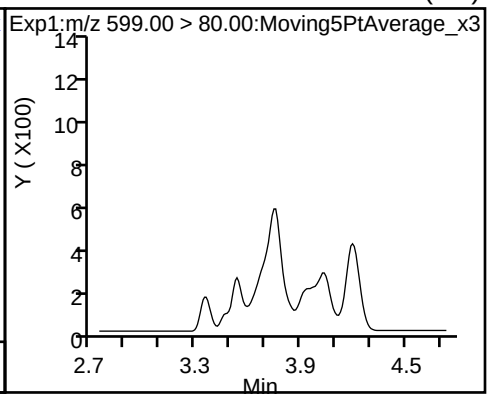


28 N-methyl perfluorooctane sulfonamid (ND) D 27 d3-NMeFOSAA

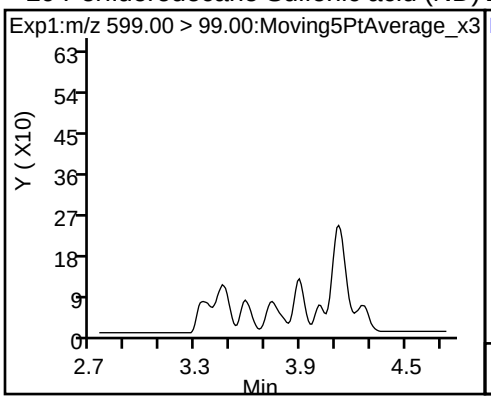


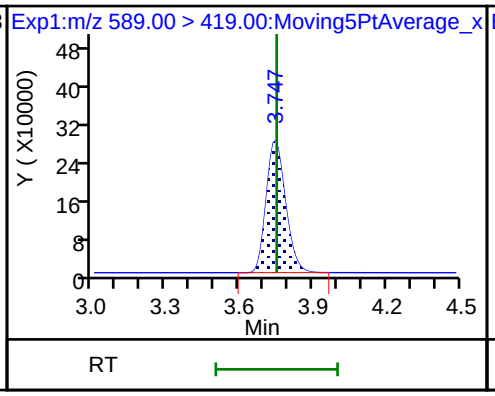


29 Perfluorodecane Sulfonic acid (ND)

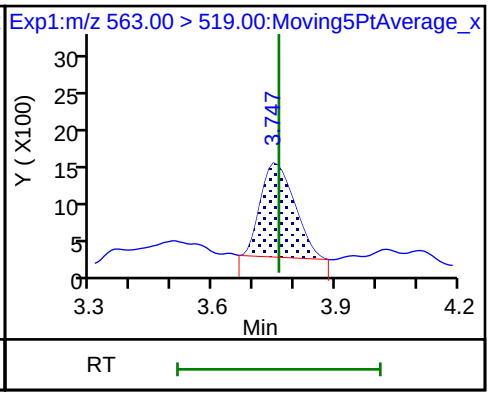


29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA

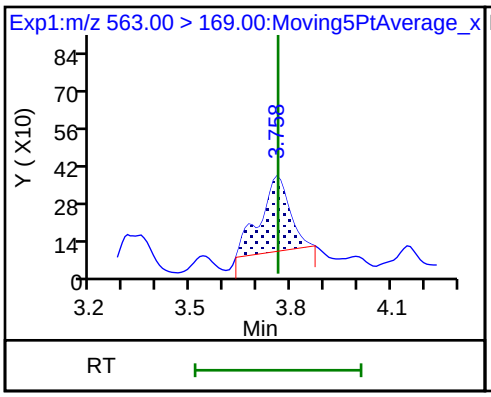




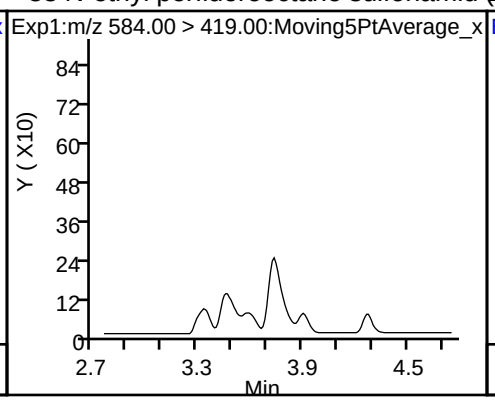
31 Perfluoroundecanoic acid

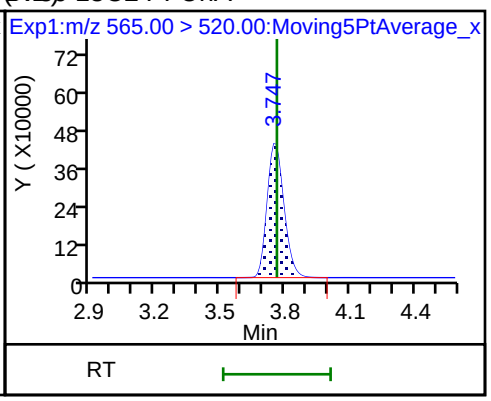


31 Perfluoroundecanoic acid

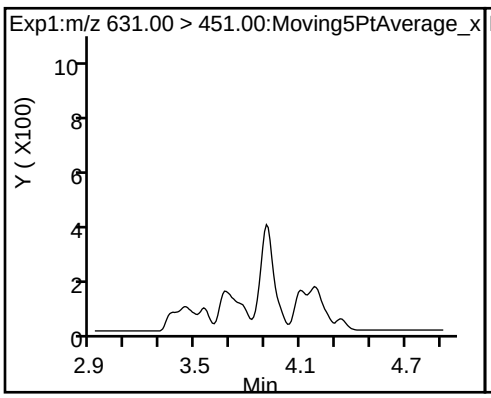


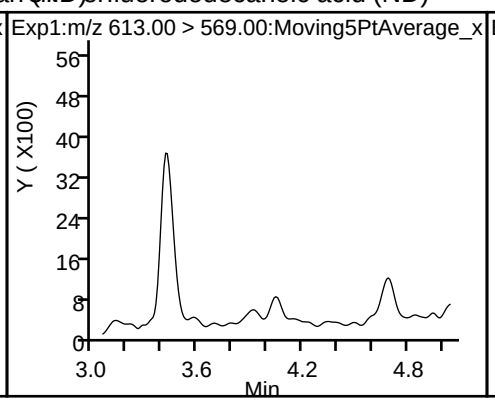
33 N-ethyl perfluorooctane sulfonamid (ND) D 30 13C2 PFUnA



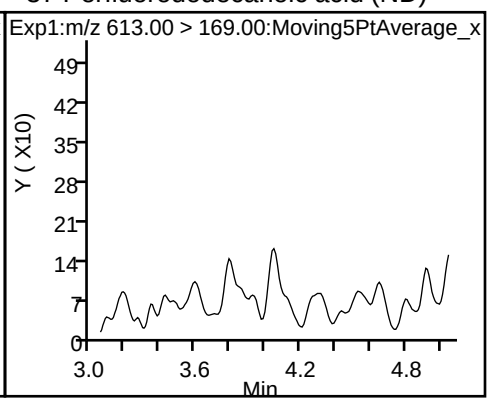


66 11-Chloroeicosafluoro-3-oxaundecan (ND) 37 Perfluorododecanoic acid (ND)

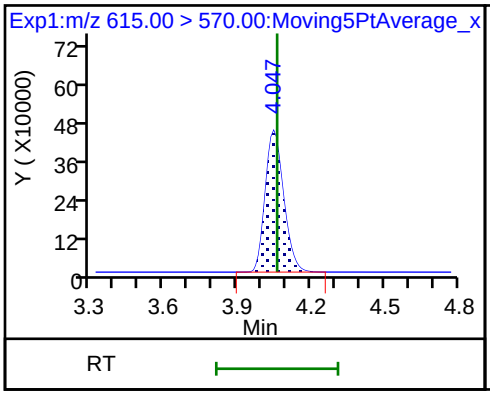




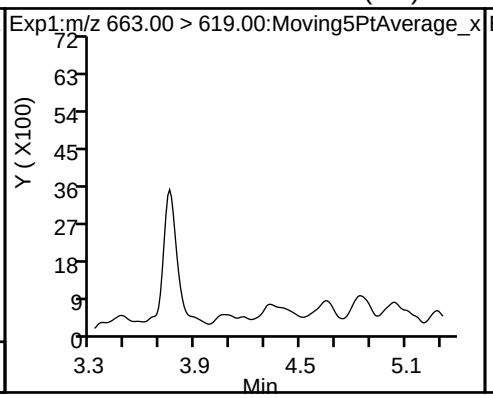
37 Perfluorododecanoic acid (ND)



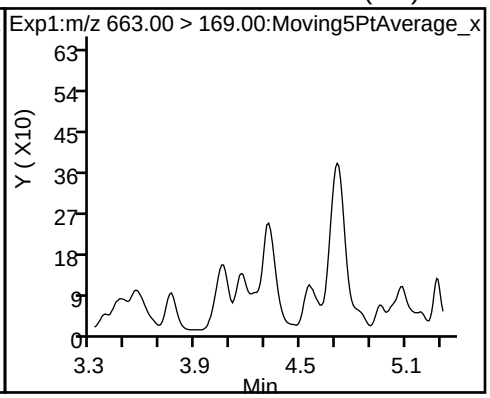
D 36 13C2 PFDoA



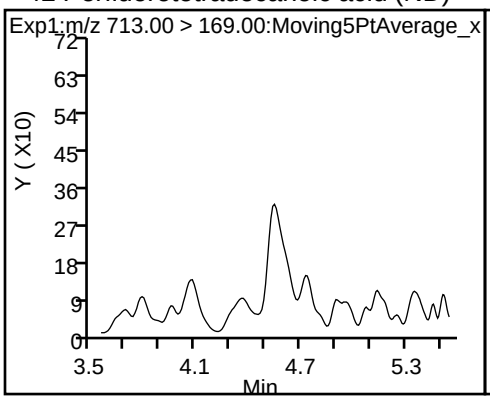
41 Perfluorotridecanoic acid (ND)



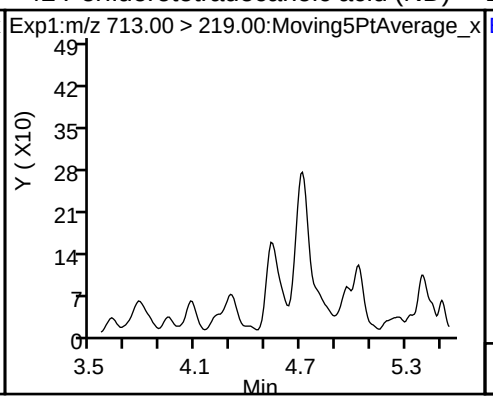
41 Perfluorotridecanoic acid (ND)



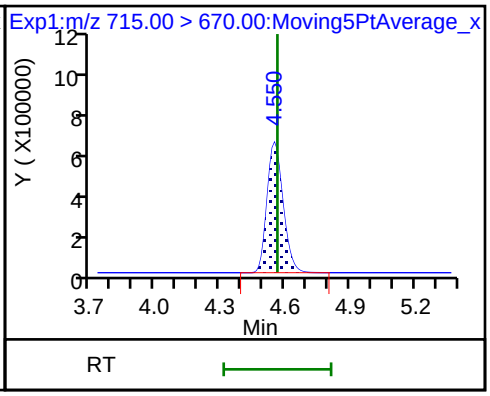
42 Perfluorotetradecanoic acid (ND)



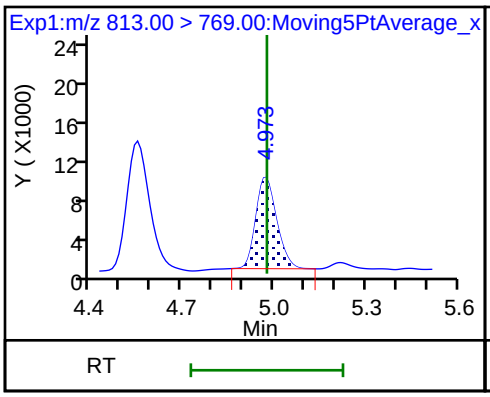
42 Perfluorotetradecanoic acid (ND)



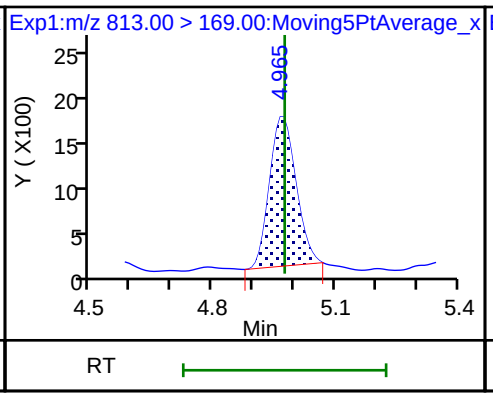
D 43 13C2-PFTeDA



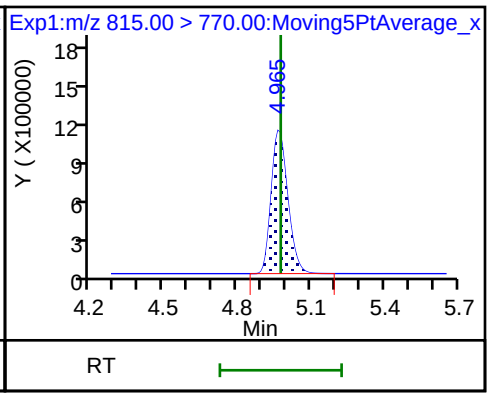
45 Perfluorohexadecanoic acid



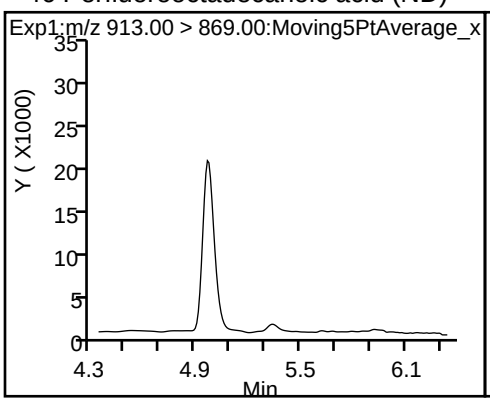
45 Perfluorohexadecanoic acid



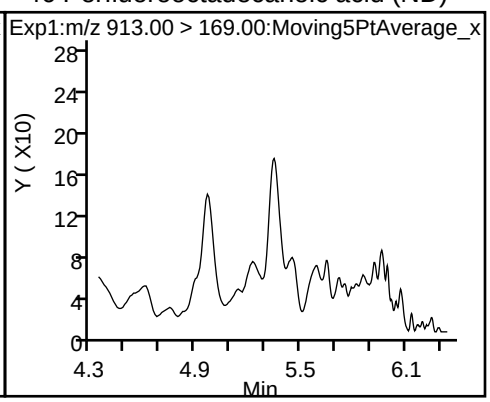
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

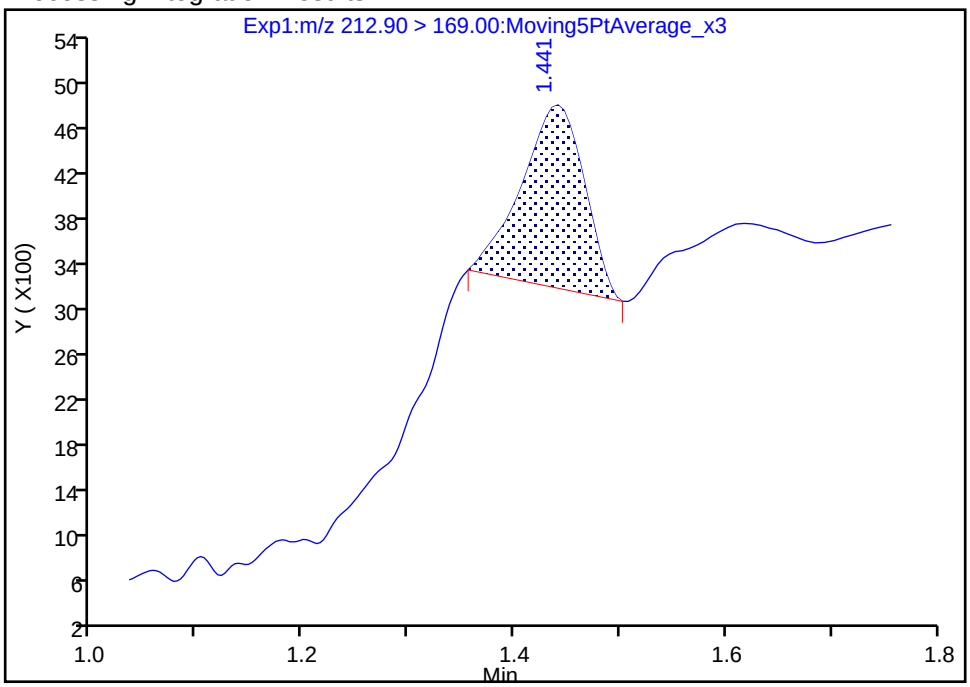
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_043.d
Injection Date: 24-Apr-2018 23:12:47 Instrument ID: A8_N
Lims ID: MB 320-218876/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

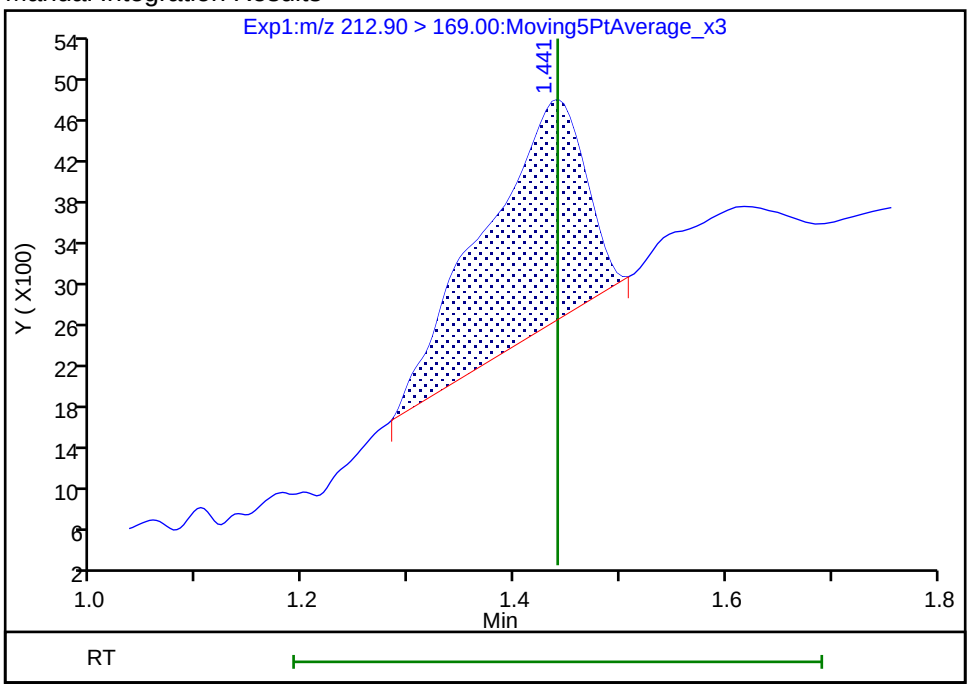
Processing Integration Results

RT: 1.44
Area: 6542
Amount: 0.013144
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 14611
Amount: 0.029356
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:14:07
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218884/1-A

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_052.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.00(g) | Date Analyzed: 04/25/2018 00:23

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00151		0.00050
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		0.00050
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		0.00050
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		0.00050
335-67-1	Perfluorooctanoic acid (PFOA)	ND		0.00050
375-95-1	Perfluorononanoic acid (PFNA)	ND		0.00050
335-76-2	Perfluorodecanoic acid (PFDA)	ND		0.00050
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		0.00050
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		0.00050
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	ND		0.00050
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		0.00050
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		0.00050
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	ND		0.00050
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		0.00050
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		0.0013
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		0.00050
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		0.00050
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0050
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0050
27619-97-2	6:2FTS	ND		0.0050
39108-34-4	8:2FTS	ND		0.0050

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218884/1-A

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_052.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.00(g) | Date Analyzed: 04/25/2018 00:23

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	65		25-150
STL01893	13C5 PFPeA	64		25-150
STL00993	13C2 PFHxA	62		25-150
STL01892	13C4-PFHpA	62		25-150
STL00990	13C4 PFOA	61		25-150
STL00995	13C5 PFNA	62		25-150
STL00996	13C2 PFDA	60		25-150
STL00997	13C2 PFUnA	62		25-150
STL00998	13C2 PFDoA	58		25-150
STL02116	13C2-PFTeDA	61		25-150
STL02337	13C3-PFBS	67		25-150
STL00994	18O2 PFHxS	64		25-150
STL00991	13C4 PFOS	63		25-150
STL01056	13C8 FOSA	50		25-150
STL02118	d3-NMeFOSAA	60		25-150
STL02117	d5-NEtFOSAA	67		25-150
STL02279	M2-6:2FTS	66		25-150
STL02280	M2-8:2FTS	62		25-150
STL02395	M2-4:2FTS	0		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_052.d
Lims ID: MB 320-218884/1-A
Client ID:
Sample Type: MB
Inject. Date: 25-Apr-2018 00:23:09 ALS Bottle#: 35 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-218884/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:20:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.435	1.436	-0.001	1.000	606716	0.3018			235	M
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.442	-0.007	1.000	5412014	1.63		65.4	35700	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.691	1.694	-0.003	1.000	17580	0.0107			14.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.691	1.703	-0.012	0.555	3436986	1.61		64.4	56668	
D 47 13C3-PFBS										
301.90 > 83.00	1.727	1.739	-0.012	1.000	76187	1.56		66.9	626	
D 7 13C2 PFHxA										
315.00 > 270.00	1.979	1.993	-0.014	1.000	3658060	1.55		62.0	69479	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.317	2.321	-0.004	1.000	14017	0.006788			31.4	
399.00 > 99.00	2.330	2.321	0.009	1.006	4789		2.93(1.50-4.49)		30.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.317	2.322	-0.005	1.000	3572481	1.56		62.2	62636	
D 11 18O2 PFHxS										
403.00 > 84.00	2.317	2.335	-0.018	1.000	4315073	1.52		64.4	61683	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.650	2.652	-0.002	1.000	6185	0.0113			134	
D 12 M2-6:2FTS										
429.00 > 81.00	2.650	2.668	-0.018	1.000	766568	1.56		65.6	9516	
* 62 13C2-PFOA										
415.00 > 370.00	2.673	2.675	-0.002		6151851	2.50			78173	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.673	2.675	-0.002	1.000	16860	0.0104			11.6	
413.00 > 169.00	2.673	2.675	-0.002	1.000	11337		1.49(0.84-2.52)		34.8	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.691	-0.018	1.000	3493244	1.53		61.2	68186	
20 Perfluorononanoic acid										
463.00 > 419.00	3.047	3.055	-0.008	1.000	7736	0.006138			23.1	
463.00 > 169.00	3.054	3.055	-0.001	1.002	2013		3.84(1.90-5.69)		78.2	
D 19 13C5 PFNA										
468.00 > 423.00	3.047	3.067	-0.020	1.000	3021897	1.54		61.6	57462	
D 18 13C4 PFOS										
503.00 > 80.00	3.047	3.067	-0.020	1.000	2995590	1.51		63.1	20034	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.391	-0.011	0.997	6790	0.005388			26.1	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.399	-0.009	1.000	3114569	1.26		50.3	18314	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.410	-0.002	1.000	1466	0.003140			60.8	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.417	-0.009	1.000	883626	1.49		62.2	8680	
D 23 13C2 PFDA										
515.00 > 470.00	3.418	3.427	-0.009	1.000	2483316	1.51		60.2	62601	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.567	3.586	-0.019	1.000	1394999	1.49		59.7	16814	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.751	-0.010	1.000	1555522	1.69		67.4	23993	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.754	-0.003	1.003	7007	0.009468			24.1	
563.00 > 169.00	3.751	3.754	-0.003	1.003	2825		2.48(2.12-6.36)		53.9	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.754	-0.003	1.003	3460	0.005951			70.2	
D 30 13C2 PFUnA										
565.00 > 520.00	3.741	3.762	-0.021	1.000	2189365	1.54		61.6	58548	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.061	-0.020	1.000	2236974	1.46		58.3	26837	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.564	-0.022	1.000	2957066	1.52		60.7	22729	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.972	-0.006	1.000	49263	0.002072			23.6	
813.00 > 169.00	4.966	4.972	-0.006	1.000	9161		5.38(2.86-8.58)		67.1	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.976	-0.010	1.000	5340318	1.69		67.4	16369	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:17 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_052.d

Injection Date: 25-Apr-2018 00:23:09 Instrument ID: A8_N

Lims ID: MB 320-218884/1-A

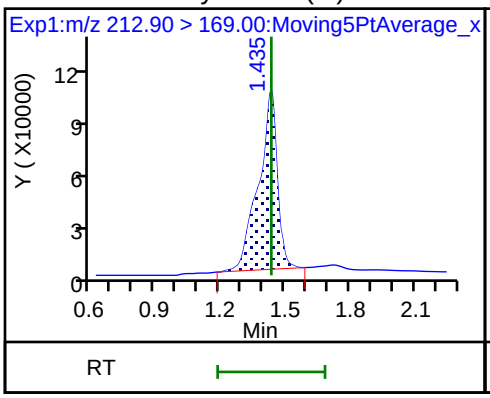
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 11

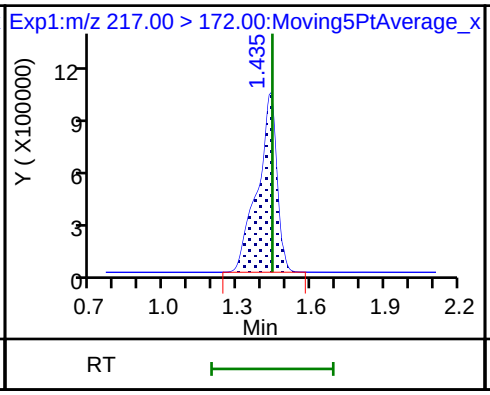
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

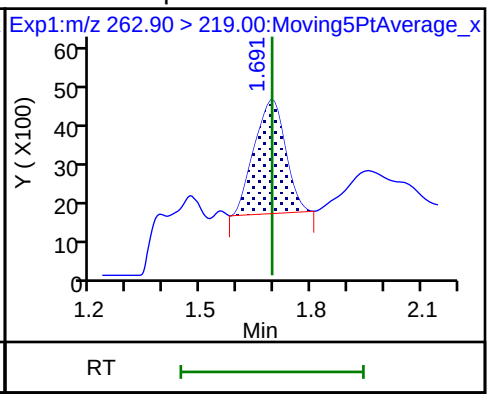
2 Perfluorobutyric acid (M)



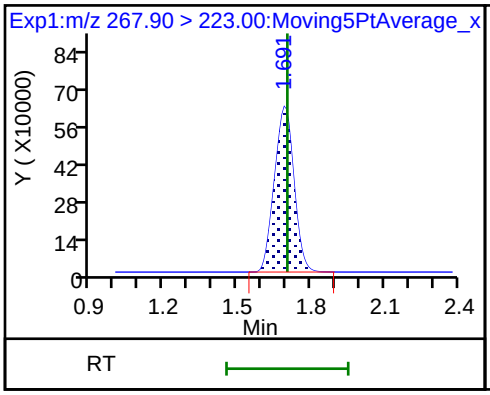
D 1 13C4 PFBA



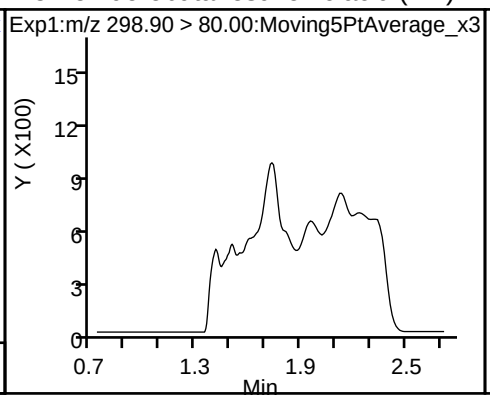
4 Perfluoropentanoic acid



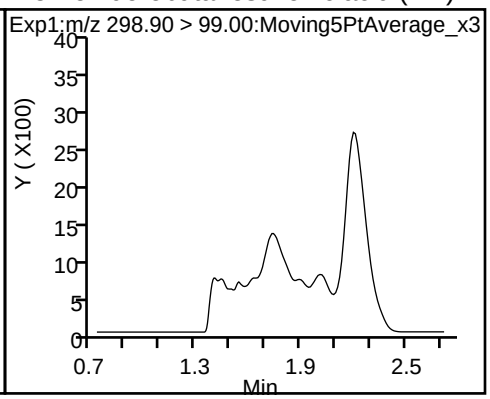
D 3 13C5-PFPeA



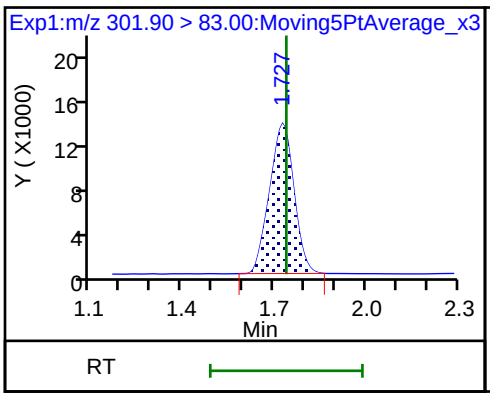
5 Perfluorobutanesulfonic acid (ND)



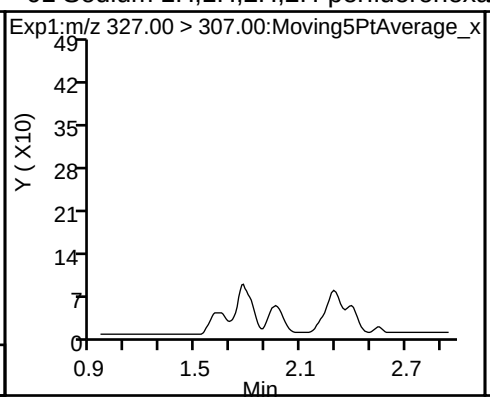
5 Perfluorobutanesulfonic acid (ND)



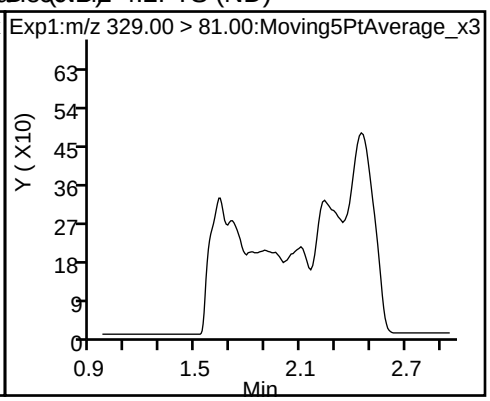
D 47 13C3-PFBS



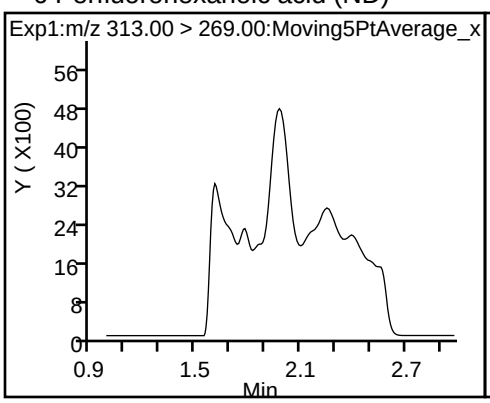
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (ND)



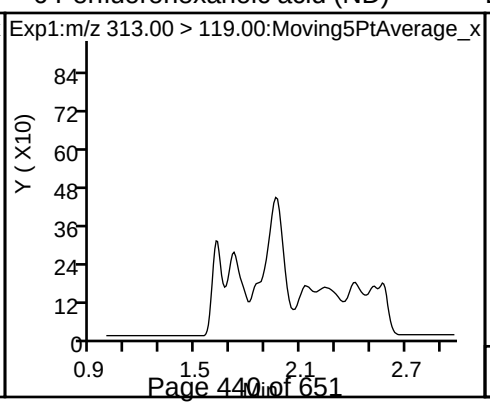
D 60 M2-4:2FTS (ND)



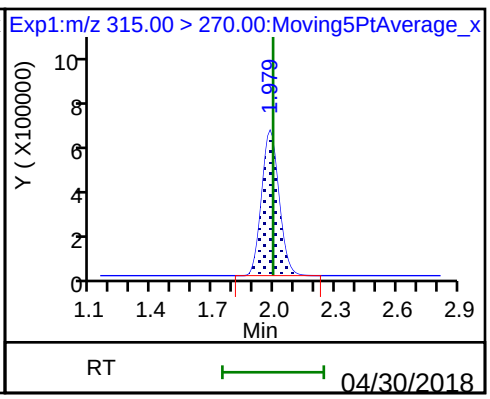
6 Perfluorohexanoic acid (ND)



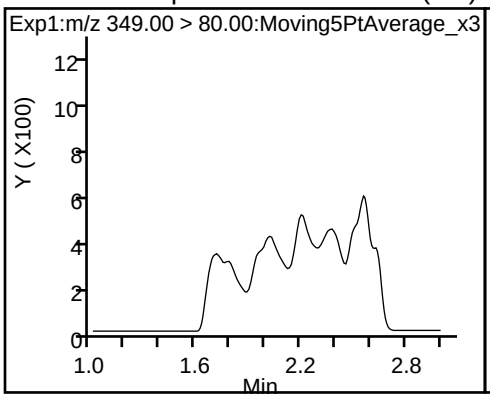
6 Perfluorohexanoic acid (ND)



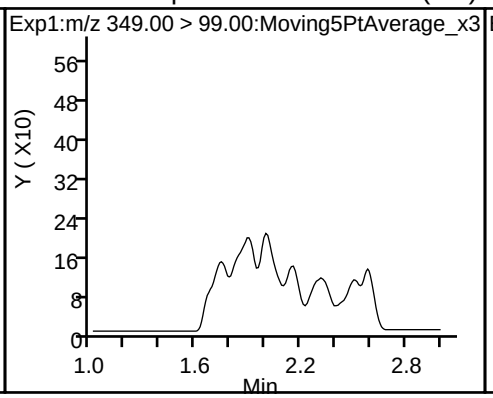
D 7 13C2 PFHxA



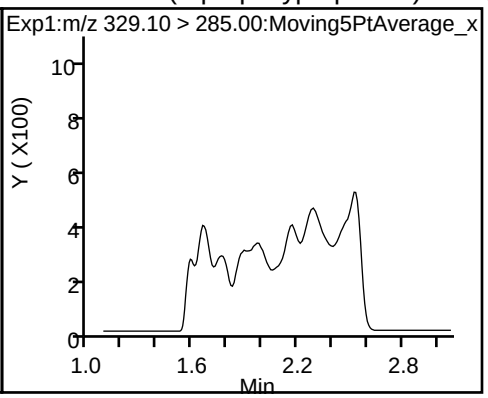
70 Perfluoropentanesulfonic acid (ND)



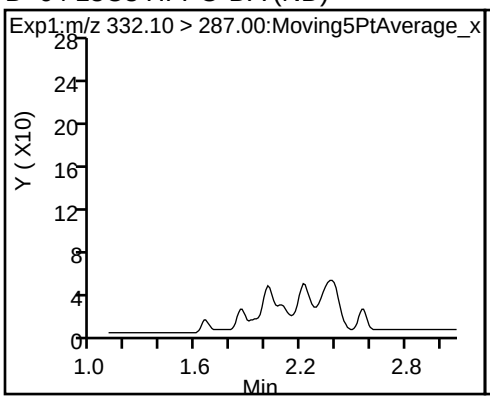
70 Perfluoropentanesulfonic acid (ND)



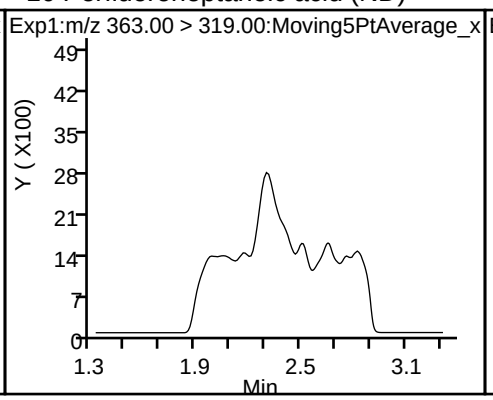
67 Perfluoro(2-propoxypropanoic) acid (ND)



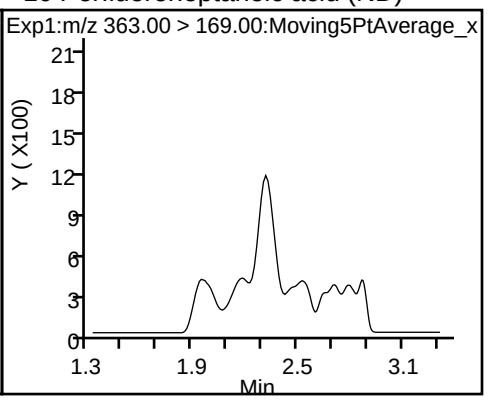
D 64 13C3 HFPO-DA (ND)



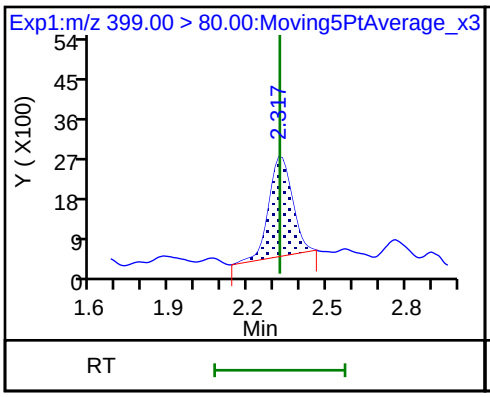
10 Perfluoroheptanoic acid (ND)



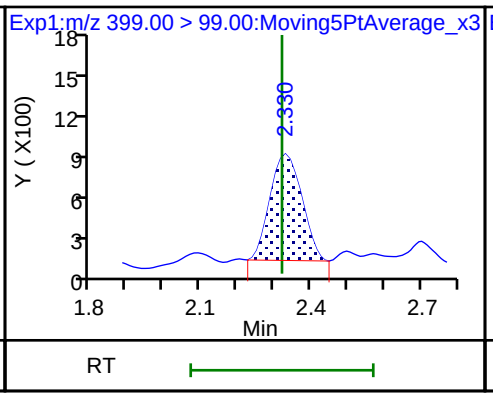
10 Perfluoroheptanoic acid (ND)



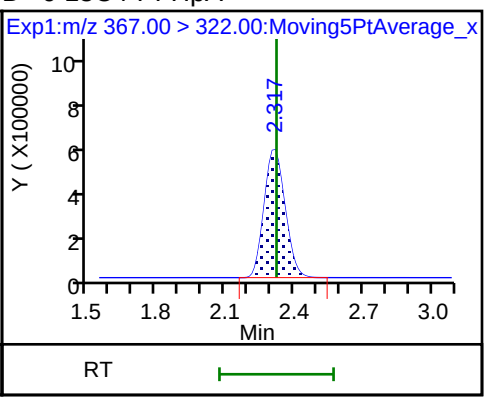
8 Perfluorohexanesulfonic acid



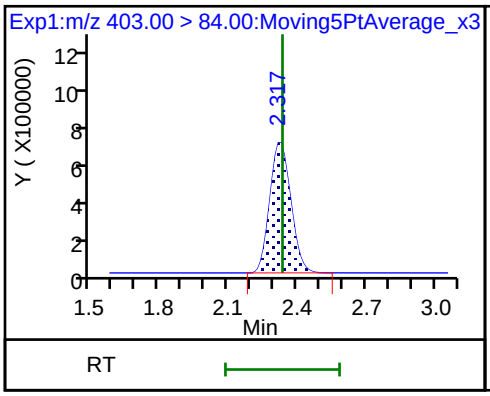
8 Perfluorohexanesulfonic acid



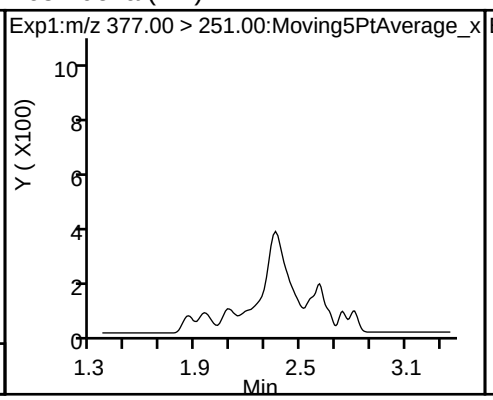
D 9 13C4-PFHpA



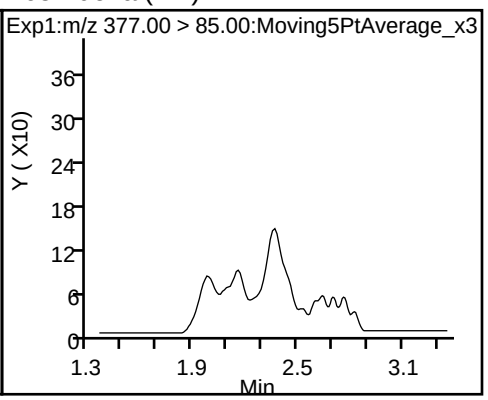
D 11 18O2 PFHxS



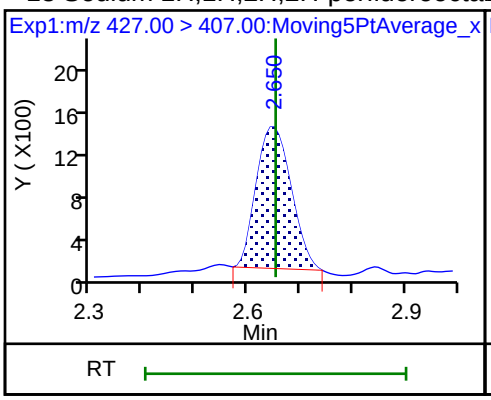
65 Adona (ND)



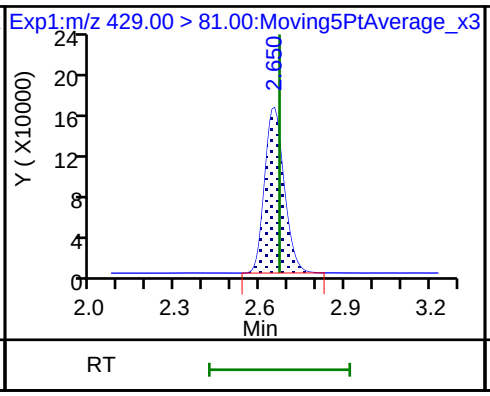
65 Adona (ND)



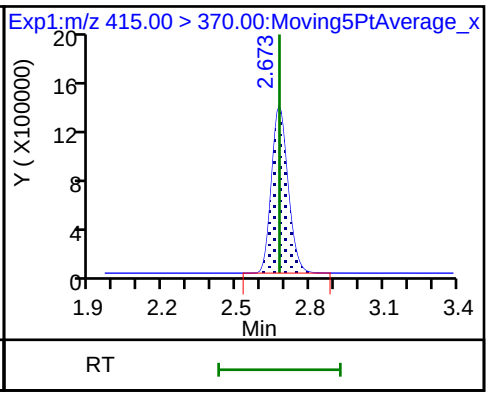
13 Sodium 1H,1H,2H,2H-perfluorooctane



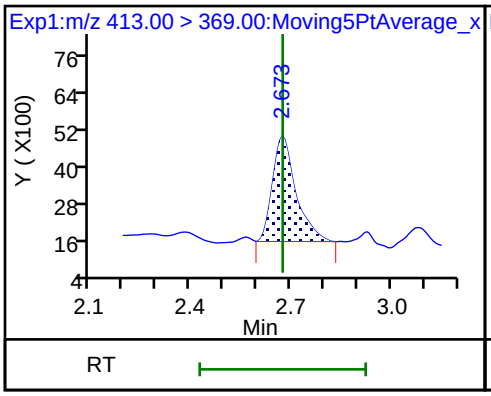
D 12 M2-6:2FTS



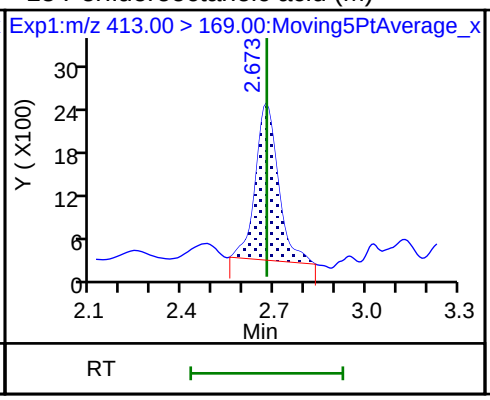
* 62 13C2-PFOA



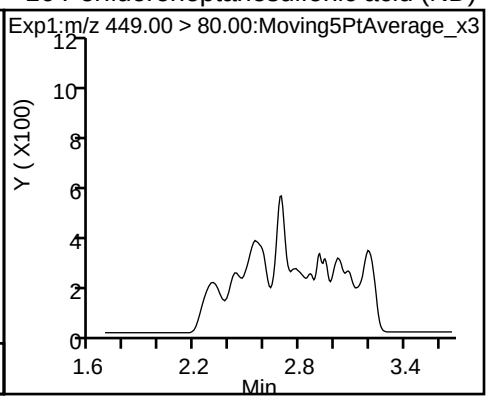
15 Perfluorooctanoic acid



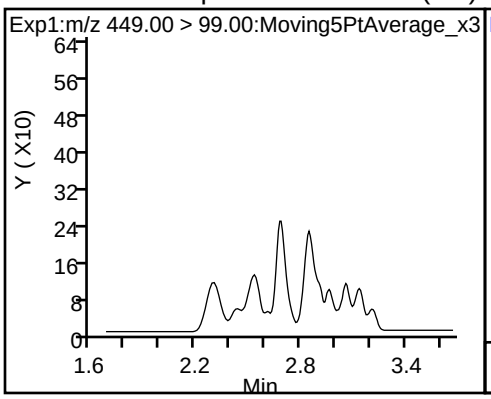
15 Perfluorooctanoic acid (M)

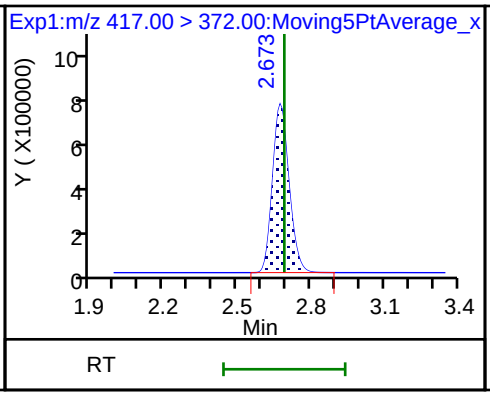


16 Perfluoroheptanesulfonic acid (ND)

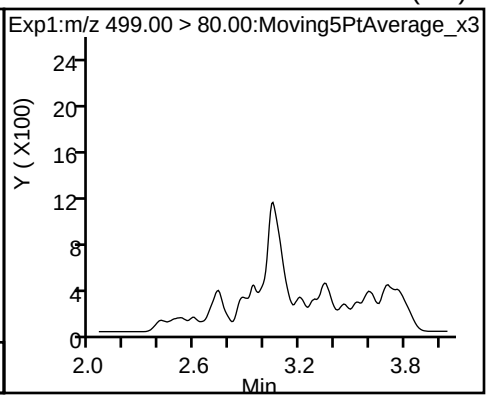


16 Perfluoroheptanesulfonic acid (ND) D 14 13C4 PFOA

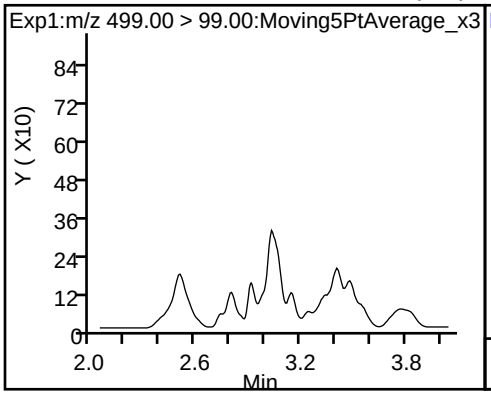




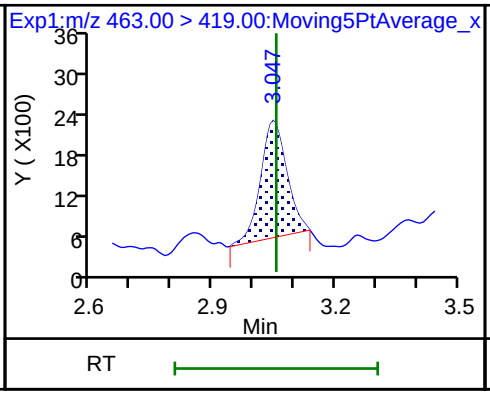
17 Perfluorooctane sulfonic acid (ND)



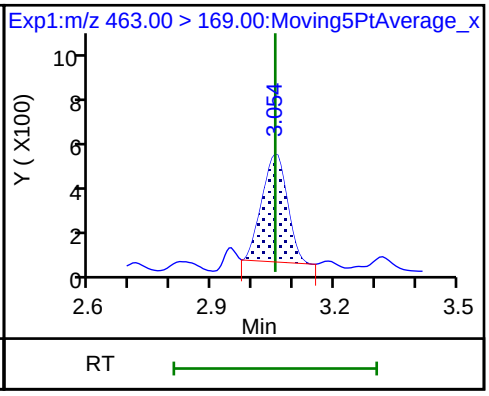
17 Perfluorooctane sulfonic acid (ND)



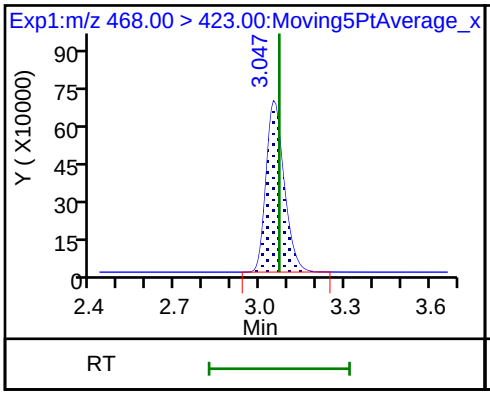
20 Perfluorononanoic acid



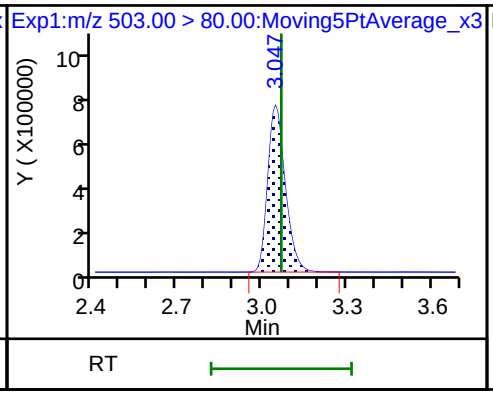
20 Perfluorononanoic acid



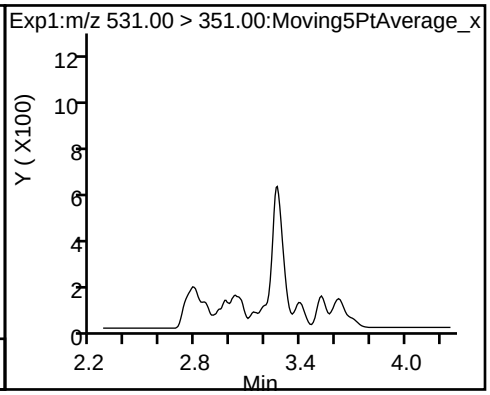
D 19 13C5 PFNA



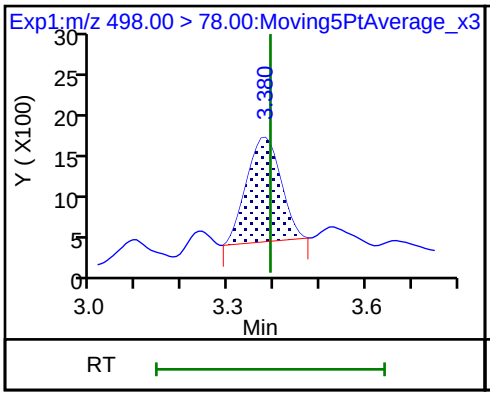
D 18 13C4 PFOS



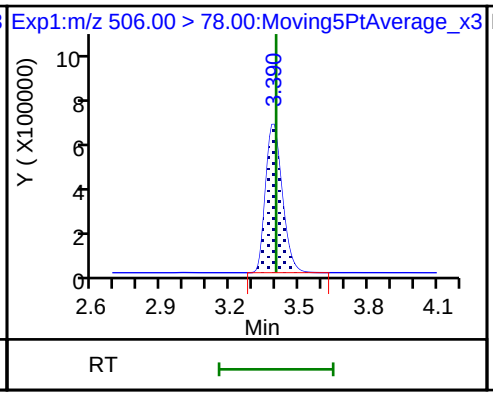
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



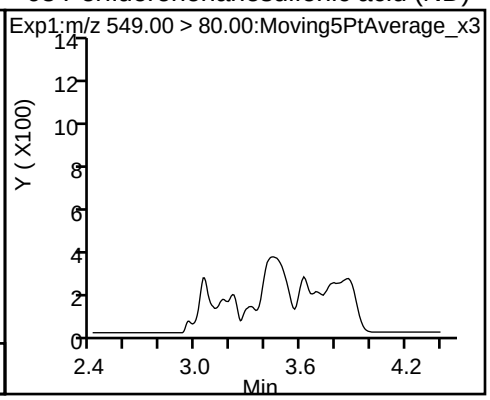
22 Perfluorooctane Sulfonamide



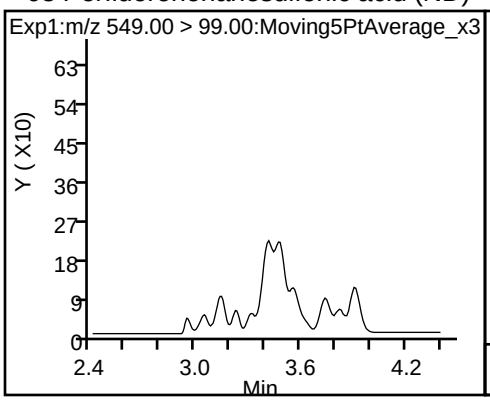
D 21 13C8 FOSA



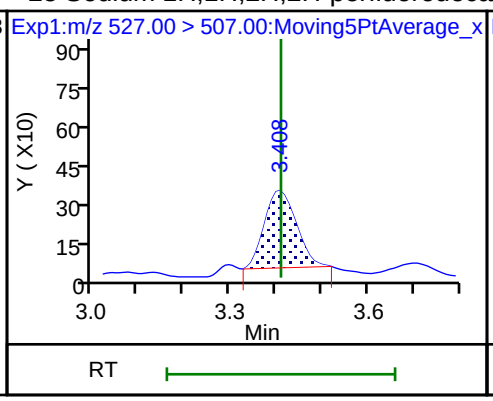
68 Perfluorononanesulfonic acid (ND)



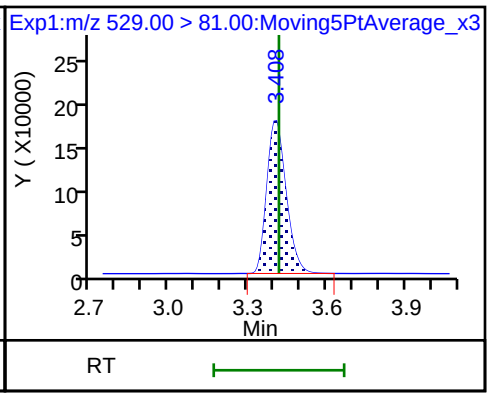
68 Perfluorononanesulfonic acid (ND)



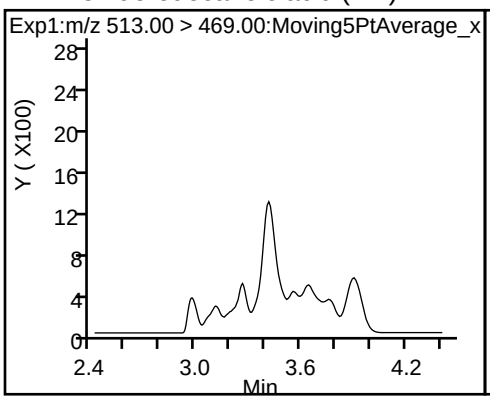
25 Sodium 1H,1H,2H,2H-perfluorodecane



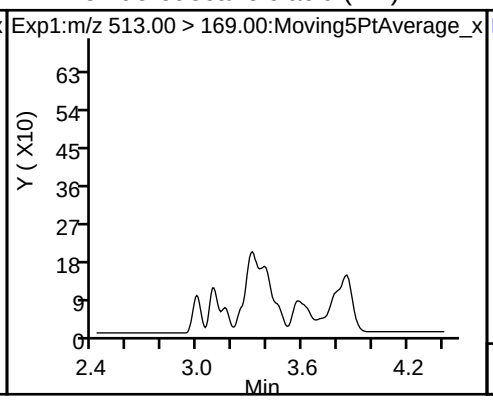
D 26 M2-8:2FTS



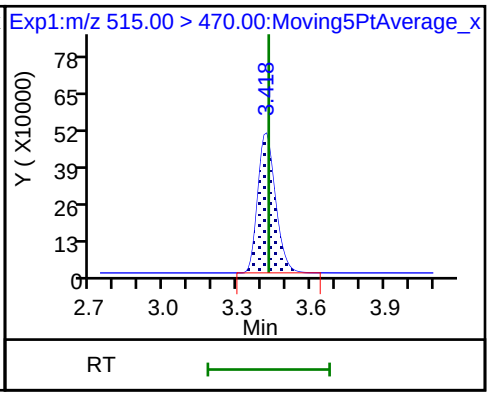
24 Perfluorodecanoic acid (ND)



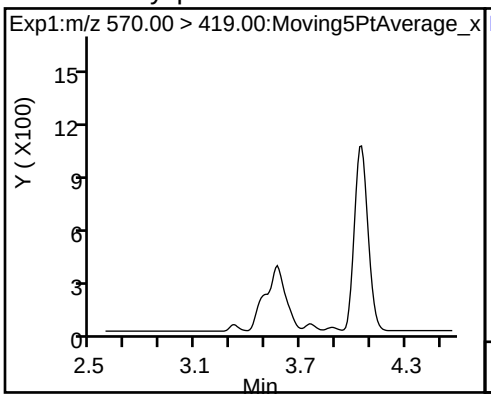
24 Perfluorodecanoic acid (ND)

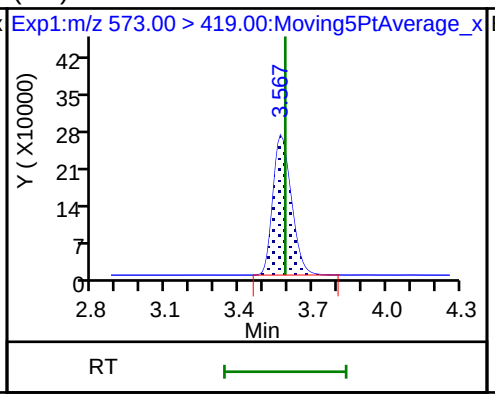


D 23 13C2 PFDA

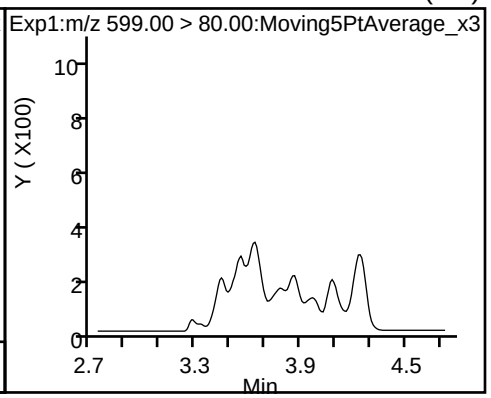


28 N-methyl perfluorooctane sulfonamid (ND) D 27 d3-NMeFOSAA

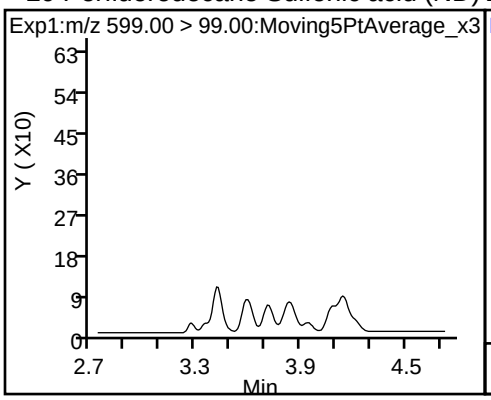


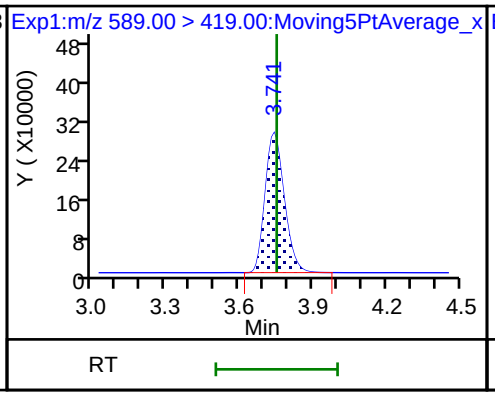


29 Perfluorodecane Sulfonic acid (ND)

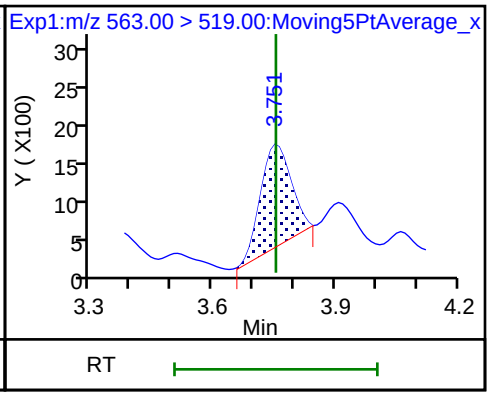


29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA

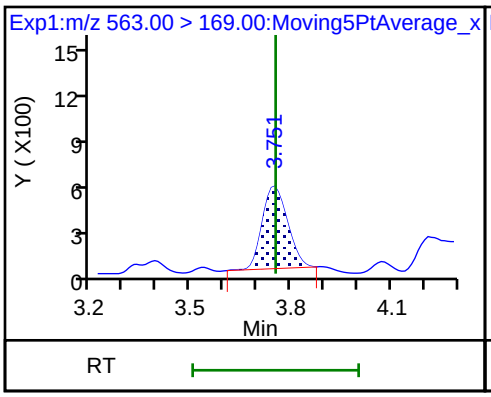




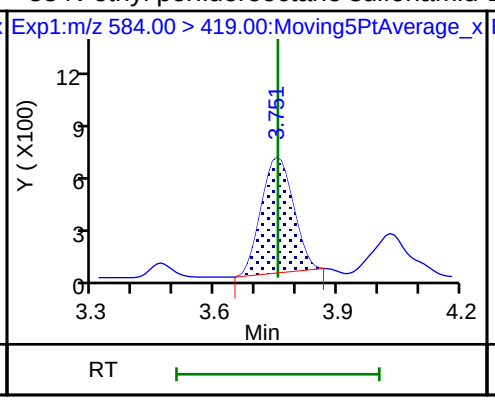
31 Perfluoroundecanoic acid

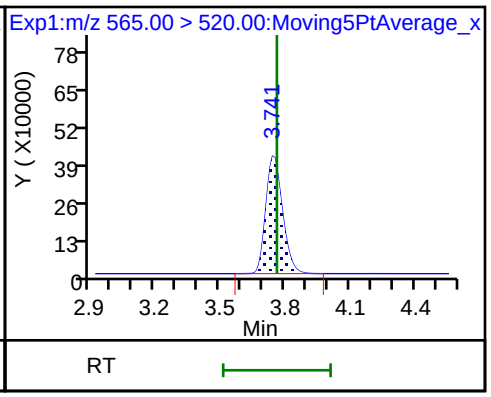


31 Perfluoroundecanoic acid

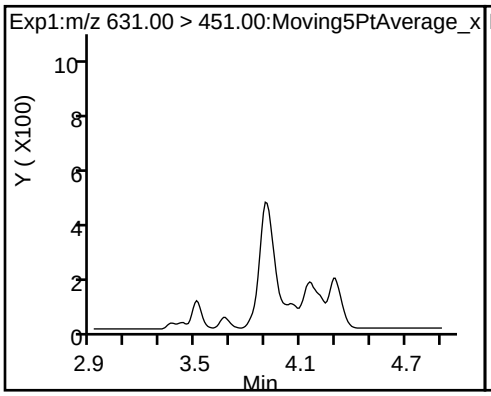


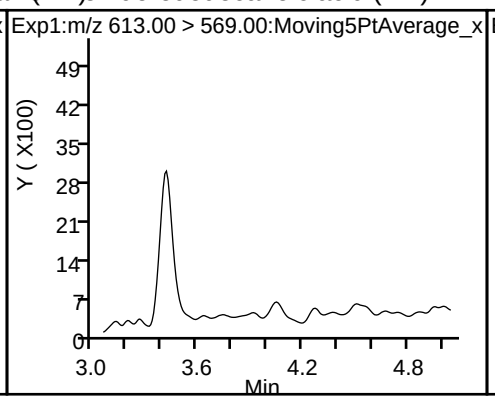
33 N-ethyl perfluorooctane sulfonamid D 30 13C2 PFUnA



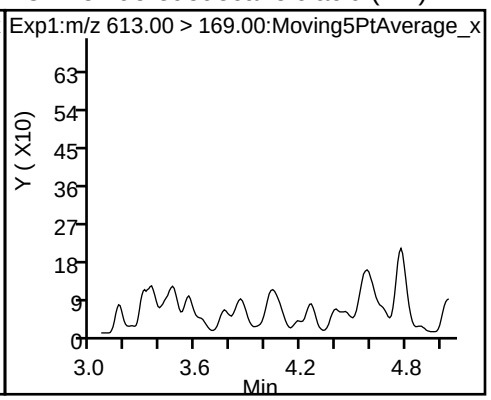


66 11-Chloroeicosafluoro-3-oxaundecan (ND) 35 Perfluorododecanoic acid (ND)

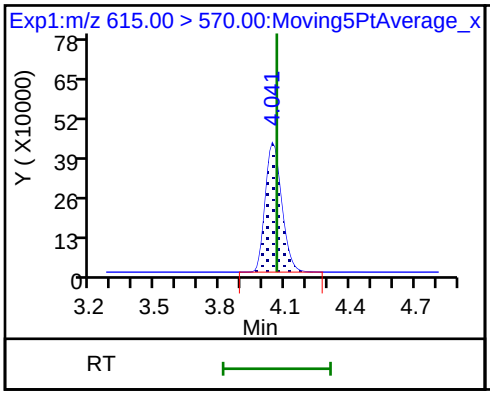




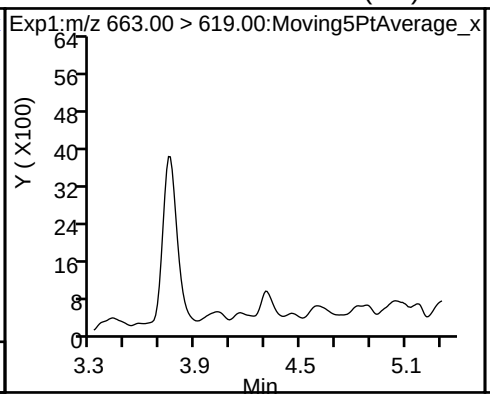
37 Perfluorododecanoic acid (ND)



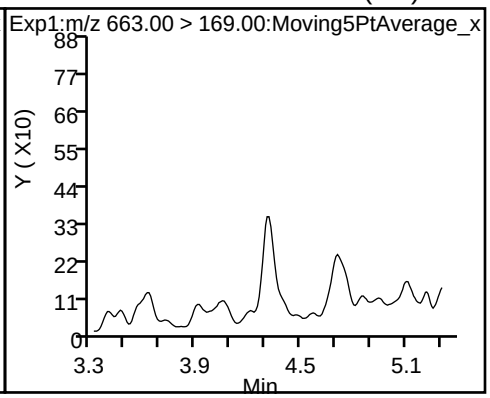
D 36 13C2 PFDoA



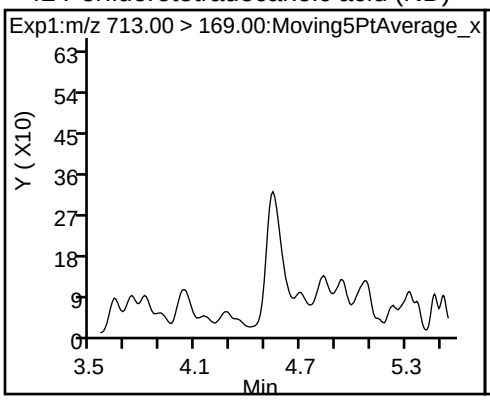
41 Perfluorotridecanoic acid (ND)



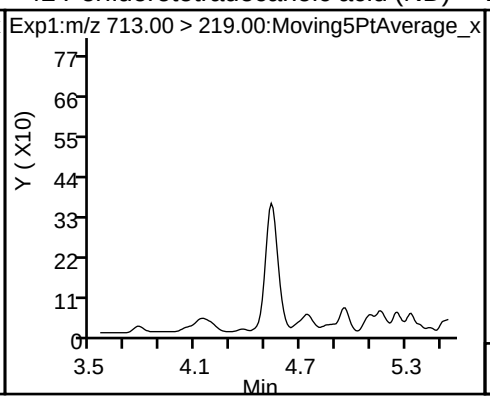
41 Perfluorotridecanoic acid (ND)



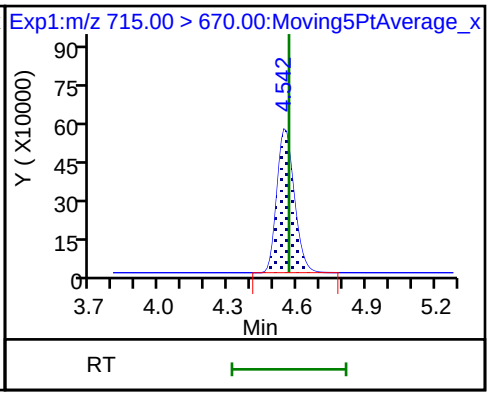
42 Perfluorotetradecanoic acid (ND)



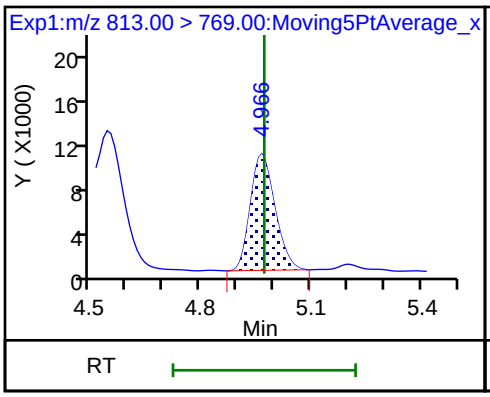
42 Perfluorotetradecanoic acid (ND)



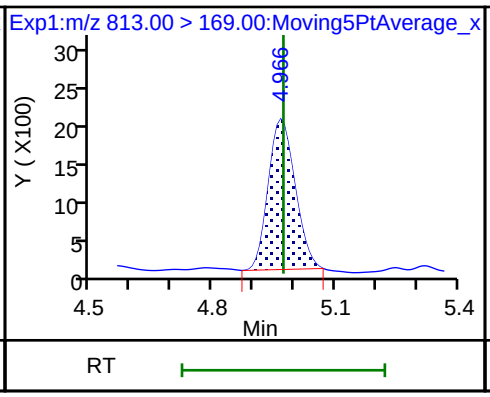
D 43 13C2-PFTeDA



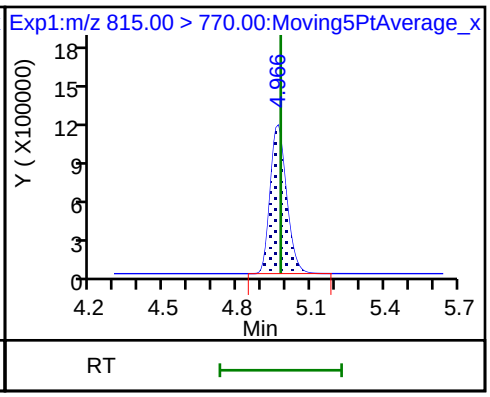
45 Perfluorohexadecanoic acid



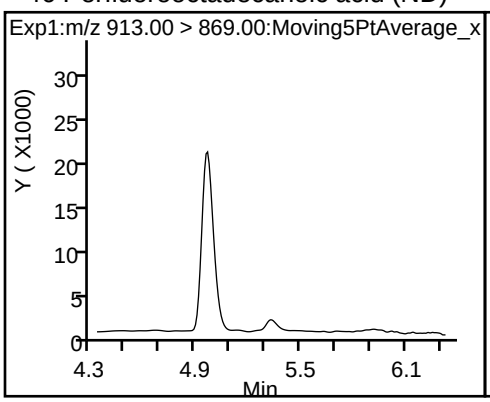
45 Perfluorohexadecanoic acid



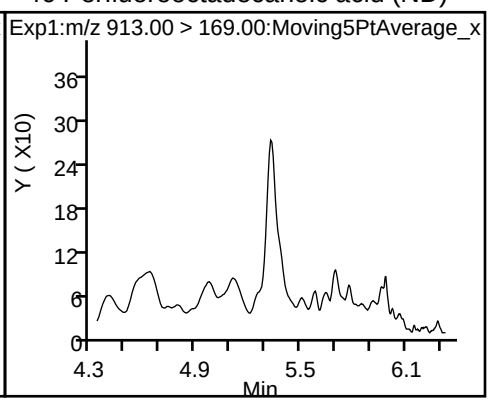
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

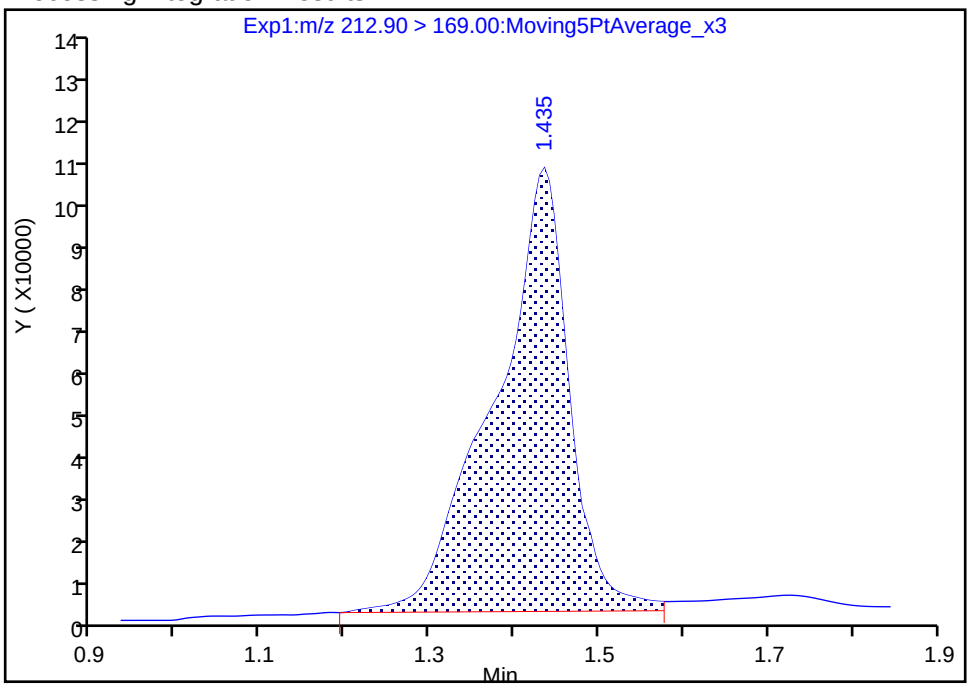
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_052.d
Injection Date: 25-Apr-2018 00:23:09 Instrument ID: A8_N
Lims ID: MB 320-218884/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

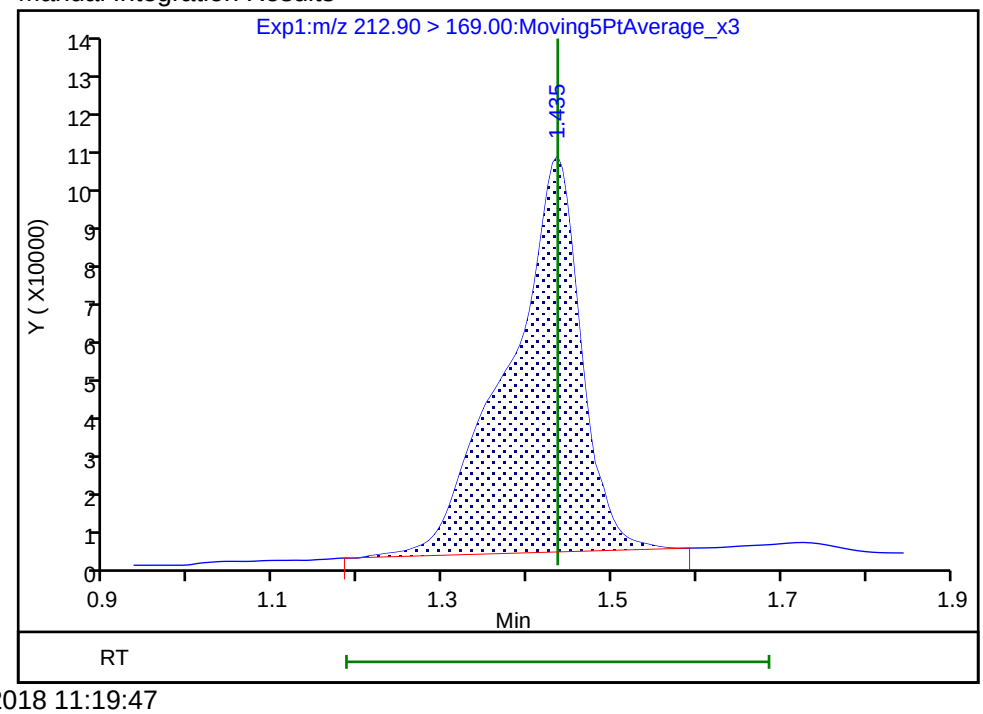
Processing Integration Results

RT: 1.44
Area: 631651
Amount: 0.314230
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 606716
Amount: 0.301826
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:19:47
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

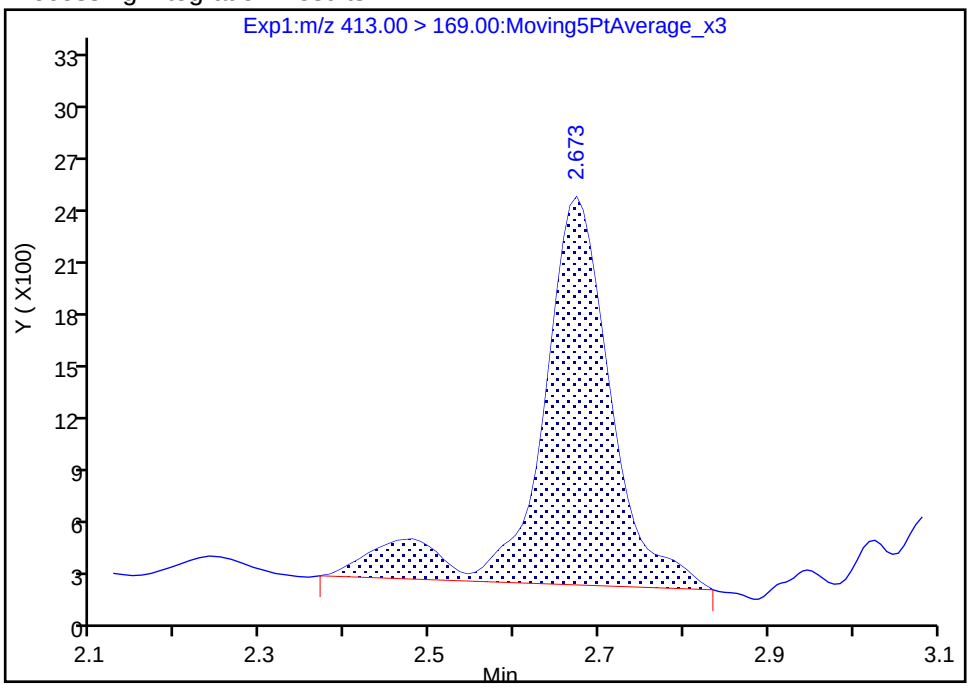
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_052.d
Injection Date: 25-Apr-2018 00:23:09 Instrument ID: A8_N
Lims ID: MB 320-218884/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

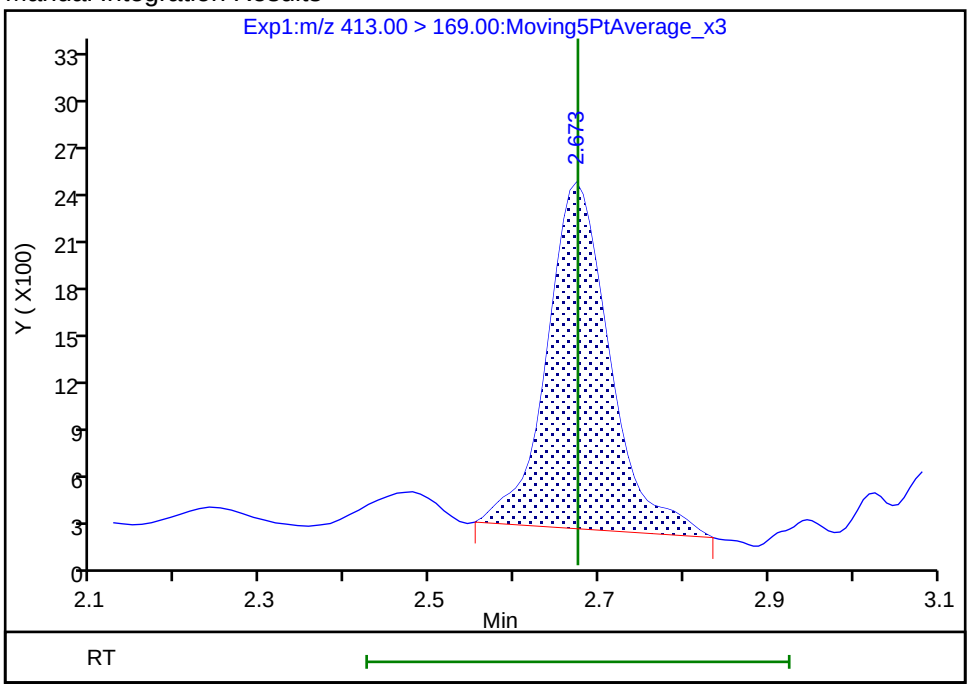
Processing Integration Results

RT: 2.67
Area: 13116
Amount: 0.010443
Amount Units: ng/ml



Manual Integration Results

RT: 2.67
Area: 11337
Amount: 0.010443
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:20:03
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218876/2-A

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_044.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.00(g) | Date Analyzed: 04/24/2018 23:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00531		0.00050
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00473		0.00050
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00490		0.00050
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00528		0.00050
335-67-1	Perfluorooctanoic acid (PFOA)	0.00471		0.00050
375-95-1	Perfluorononanoic acid (PFNA)	0.00466		0.00050
335-76-2	Perfluorodecanoic acid (PFDA)	0.00472		0.00050
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00425		0.00050
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00514		0.00050
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00449		0.00050
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00472		0.00050
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00426		0.00050
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00410		0.00050
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00469		0.00050
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00484		0.0013
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00454		0.00050
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00475		0.00050
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00534		0.0050
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0050
27619-97-2	6:2FTS	0.00603		0.0050
39108-34-4	8:2FTS	ND		0.0050

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218876/2-A

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_044.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.00(g) | Date Analyzed: 04/24/2018 23:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	15	*	25-150
STL01893	13C5 PFPeA	64		25-150
STL00993	13C2 PFHxA	64		25-150
STL01892	13C4-PFHpA	62		25-150
STL00990	13C4 PFOA	64		25-150
STL00995	13C5 PFNA	66		25-150
STL00996	13C2 PFDA	64		25-150
STL00997	13C2 PFUnA	65		25-150
STL00998	13C2 PFDoA	62		25-150
STL02116	13C2-PFTeDA	67		25-150
STL02337	13C3-PFBS	66		25-150
STL00994	18O2 PFHxS	66		25-150
STL00991	13C4 PFOS	63		25-150
STL01056	13C8 FOSA	63		25-150
STL02118	d3-NMeFOSAA	62		25-150
STL02117	d5-NEtFOSAA	69		25-150
STL02279	M2-6:2FTS	67		25-150
STL02280	M2-8:2FTS	67		25-150
STL02395	M2-4:2FTS	66		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_044.d
Lims ID: LCS 320-218876/2-A
Client ID:
Sample Type: LCS
Inject. Date: 24-Apr-2018 23:20:36 ALS Bottle#: 30 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-218876/2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: barnettj Date: 25-Apr-2018 14:26:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.441	-0.005	1.000	462654	1.06		106	177	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	1171923	0.3713		14.9	8640	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.702	0.001	1.000	1460799	0.9456		94.6	1592	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.557	3240627	1.59		63.7	54720	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.738	0.001	1.005	2065870	0.8528		96.5	7758	
298.90 > 99.00	1.739	1.738	0.001	1.005	863894		2.39(1.25-3.74)		6929	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	71947	1.54		66.3	649	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.959	-0.009	1.000	462818	0.9329		99.9	18903	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.961	-0.011	1.000	515759	1.54		66.1	4938	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.992	-0.010	1.000	1427918	0.9809		98.1	1927	
313.00 > 119.00	1.982	1.992	-0.010	1.000	132051		10.81(5.03-15.10)		1299	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	3581473	1.59		63.7	72825	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.014	-0.009	1.000	1865151	0.8429		89.9	12417	
349.00 > 99.00	2.005	2.014	-0.009	1.000	700161		2.66(1.36-4.07)		9167	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.093	-0.009	1.000	221403	NR		0.0	1532	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.323	2.319	0.004	1.000	1433954	1.06		106	1776	
363.00 > 169.00	2.323	2.319	0.004	1.000	576772		2.49(1.13-3.40)		2327	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.322	0.001	1.000	3393833	1.55		62.0	64843	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.332	-0.009	0.994	1649129	0.8191		89.3	3557	
399.00 > 99.00	2.323	2.332	-0.009	0.994	552850		2.98(1.50-4.49)		3678	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.335	0.001	1.000	4207348	1.56		65.8	81112	
65 Adona										
377.00 > 251.00	2.362	2.372	-0.010	1.000	4289554	1.04		104	62218	
377.00 > 85.00	2.362	2.372	-0.010	1.000	2358873		1.82(0.84-2.53)		41488	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.660	-0.007	1.000	639614	1.21		127	10132	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.668	-0.015	1.000	745427	1.59		66.9	8998	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.690	-0.007		5864115	2.50			88412	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	1517194	0.9426		93.6	1117	
413.00 > 169.00	2.683	2.690	-0.007	1.000	793985		1.91(0.84-2.52)		2884	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.691	-0.008	1.000	3482665	1.60		64.0	72635	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.697	-0.006	1.000	1480941	0.9378		98.5	9903	
449.00 > 99.00	2.691	2.697	-0.006	1.000	407777		3.63(1.94-5.82)		8485	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.052	3.060	-0.008	1.000	1251795	0.9674		104	7091	
499.00 > 99.00	3.052	3.060	-0.008	1.000	267913		4.67(2.31-6.93)		4036	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.067	-0.008	1.000	1197893	0.9312		93.1	3988	
463.00 > 169.00	3.052	3.067	-0.015	0.998	294065		4.07(1.90-5.69)		7164	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.067	-0.008	1.000	3084266	1.65		66.0	56524	
D 18 13C4 PFOS										
503.00 > 80.00	3.052	3.067	-0.015	1.000	2842790	1.50		62.9	18125	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.266	3.273	-0.007	1.000	2091295	0.9327		100	29719	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	1.000	1438828	0.9505		95.1	28227	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.399	-0.010	1.000	3741210	1.58		63.3	35613	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.407	3.417	-0.010	1.000	854775	0.8990		93.6	14193	
549.00 > 99.00	3.407	3.417	-0.010	1.000	336922		2.54(1.33-3.97)		8440	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.417	-0.010	1.000	455583	0.9577		100.0	15001	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.417	-0.010	1.000	900393	1.59		66.5	6894	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.426	-0.009	1.000	973418	0.9449		94.5	4289	
513.00 > 169.00	3.417	3.426	-0.009	1.000	183075		5.32(2.36-7.09)		4005	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.427	-0.010	1.000	2496510	1.59		63.5	54462	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.586	-0.011	1.000	585681	1.07		107	4927	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.586	-0.011	1.000	1375102	1.54		61.7	20008	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.740	-0.010	1.000	701023	0.9078		94.2	8709	
599.00 > 99.00	3.740	3.740	0.0	1.003	261681		2.68(1.39-4.16)		5484	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.751	-0.011	1.000	1508395	1.72		68.6	21230	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.761	-0.010	1.000	632364	0.8493		84.5	2679	
563.00 > 169.00	3.751	3.761	-0.010	1.000	163695		3.86(2.12-6.36)		3492	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.761	-0.010	1.003	558030	0.9897		99.0	12844	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.762	-0.011	1.000	2202672	1.62		65.0	59273	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.907	3.918	-0.011	1.000	3143357	0.9074		96.3	33628	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.050	0.0	1.000	970736	1.03		103	1278	
613.00 > 169.00	4.050	4.050	0.0	1.000	247300		3.93(2.13-6.40)		2478	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.061	-0.011	1.000	2263058	1.55		61.8	28844	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.318	-0.011	1.000	988394	0.8984		89.8	1251	
663.00 > 169.00	4.307	4.318	-0.011	1.000	337083		2.93(1.25-3.76)		2731	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	296111	0.9438		94.4	3190	
713.00 > 219.00	4.553	4.553	0.0	1.000	202644		1.46(0.71-2.13)		2940	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.564	-0.011	1.000	3123020	1.68		67.3	26484	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.975	4.975	0.0	1.000	1908677	1.00		99.4	932	
813.00 > 169.00	4.975	4.975	0.0	1.000	306571		6.23(2.86-8.58)		1927	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.976	-0.001	1.000	4921827	1.63		65.2	16044	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.336	5.344	-0.008	1.000	1968643	1.00		99.6	755	
913.00 > 169.00	5.336	5.344	-0.008	1.000	240074		8.20(3.83-11.48)		1919	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 26-Apr-2018 11:25:07 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_044.d

Injection Date: 24-Apr-2018 23:20:36 Instrument ID: A8_N

Lims ID: LCS 320-218876/2-A

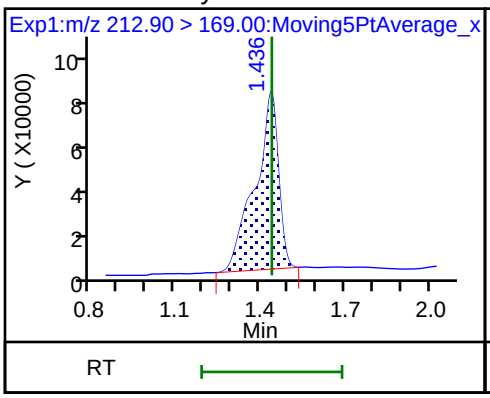
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 30 Worklist Smp#: 3

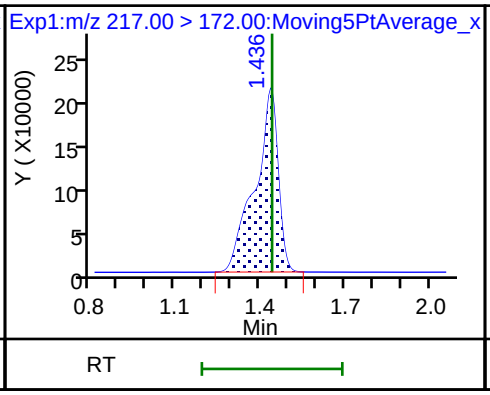
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

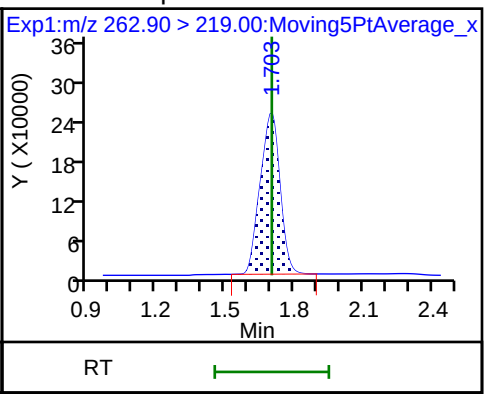
2 Perfluorobutyric acid



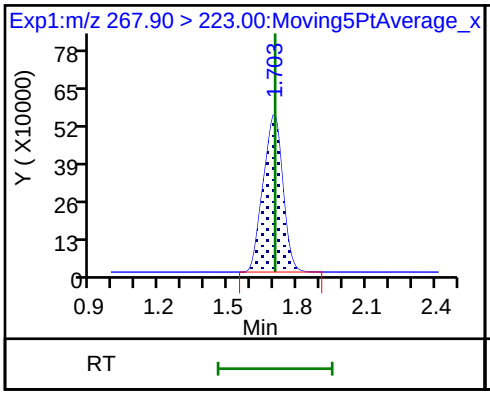
D 1 13C4 PFBA



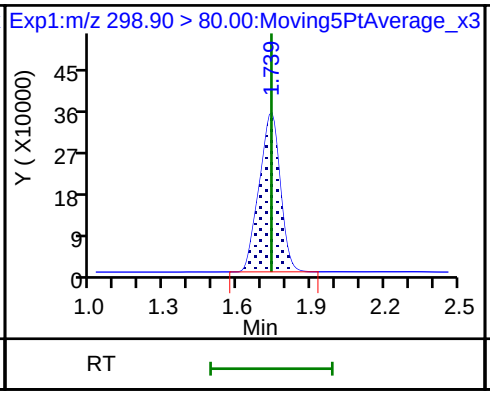
4 Perfluoropentanoic acid



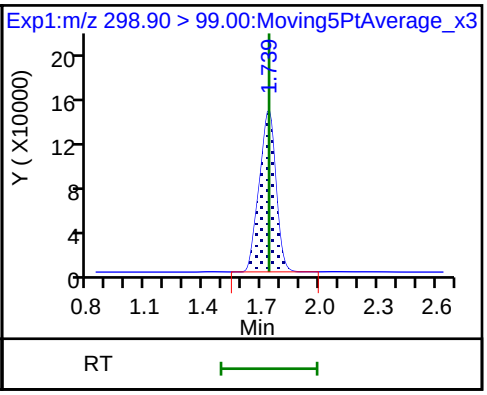
D 3 13C5-PFPeA



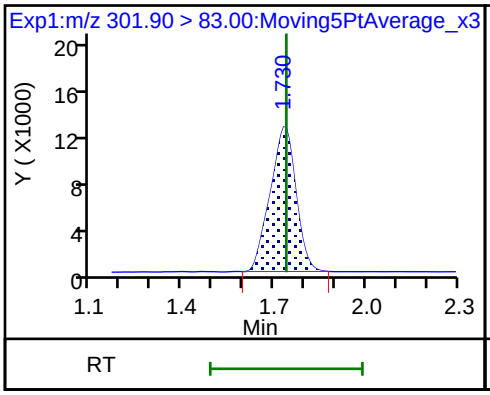
5 Perfluorobutanesulfonic acid



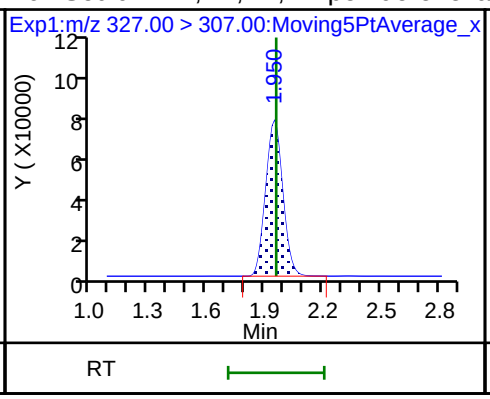
5 Perfluorobutanesulfonic acid



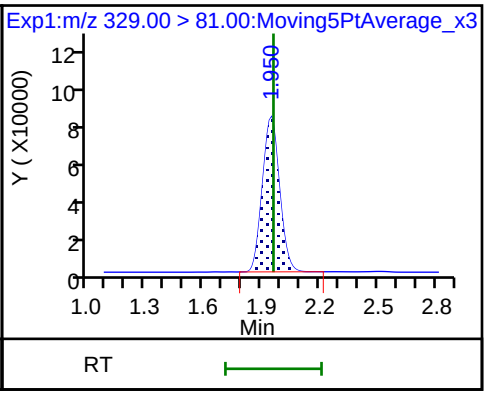
D 47 13C3-PFBS



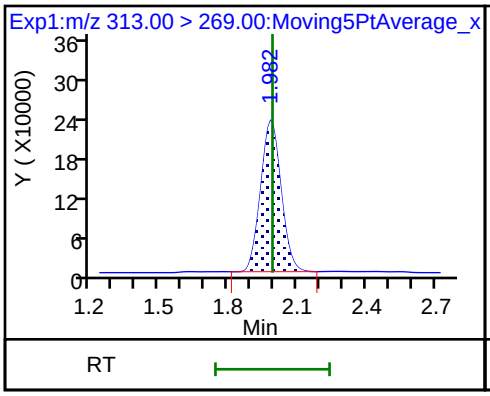
61 Sodium 1H,1H,2H,2H-perfluorohexane



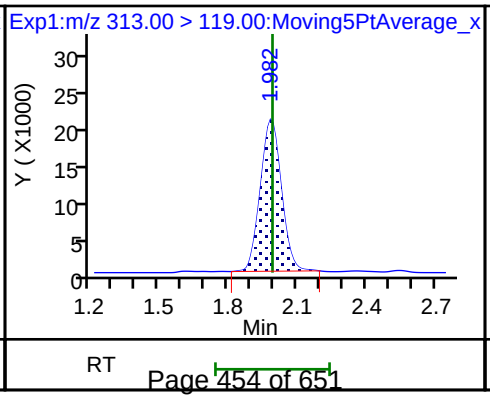
D 60 M2-4:2FTS



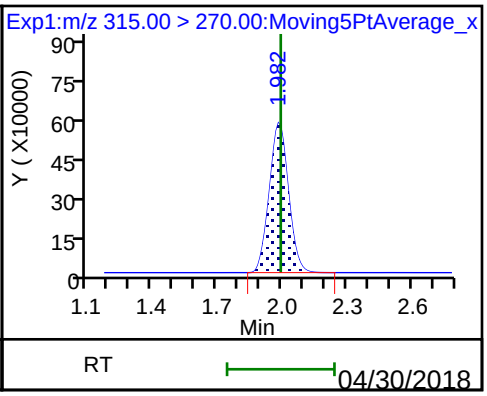
6 Perfluorohexanoic acid



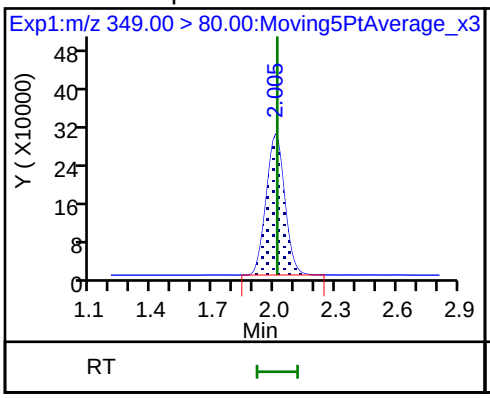
6 Perfluorohexanoic acid



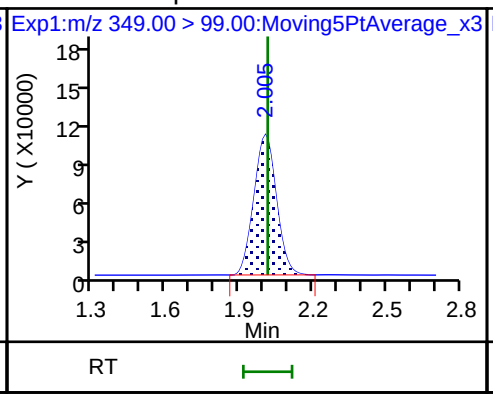
D 7 13C2 PFHxA



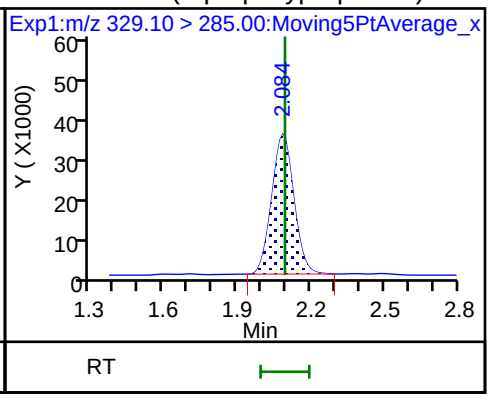
70 Perfluoropentanesulfonic acid



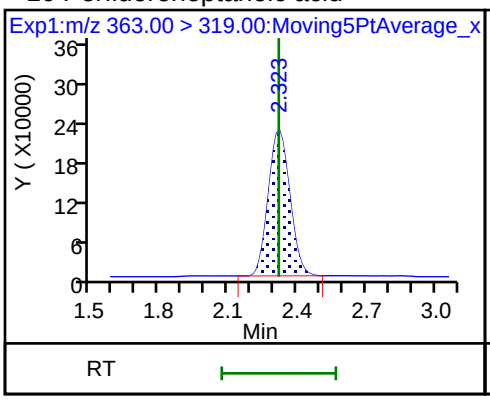
70 Perfluoropentanesulfonic acid



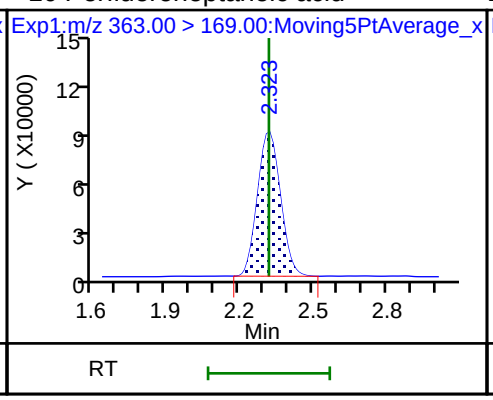
67 Perfluoro(2-propoxypropanoic) acid



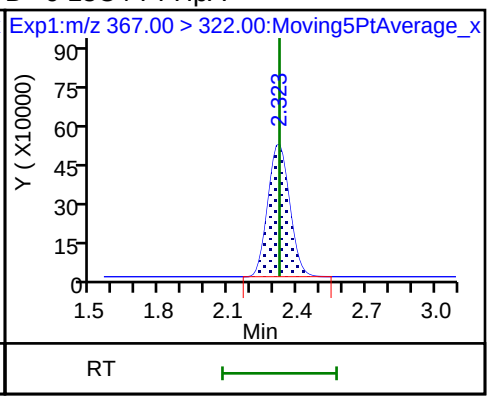
10 Perfluoroheptanoic acid



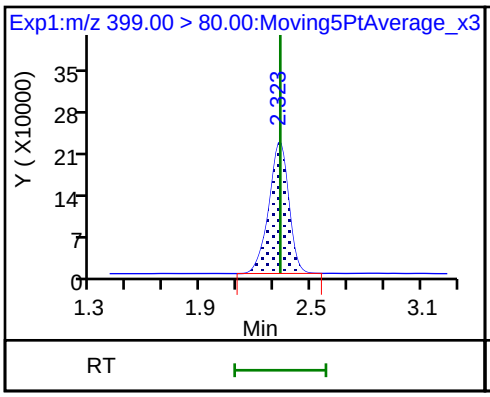
10 Perfluoroheptanoic acid



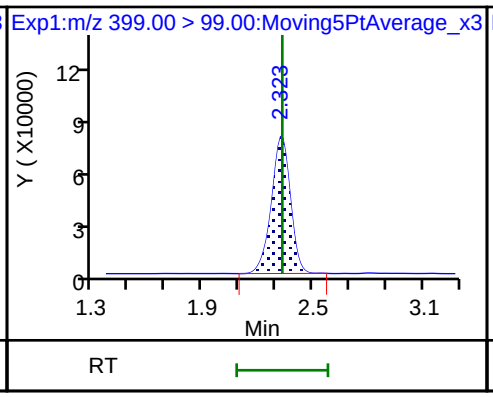
D 9 13C4-PFHpA



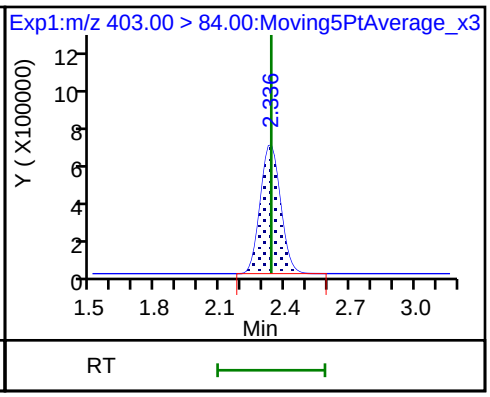
8 Perfluorohexanesulfonic acid



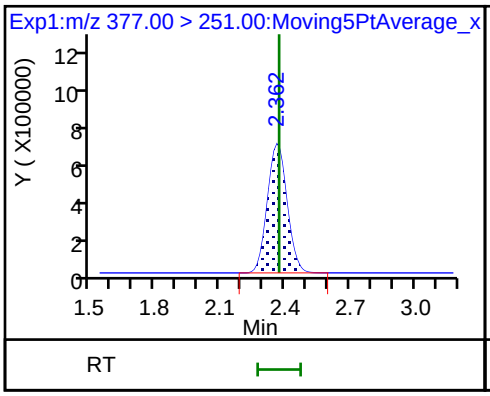
8 Perfluorohexanesulfonic acid



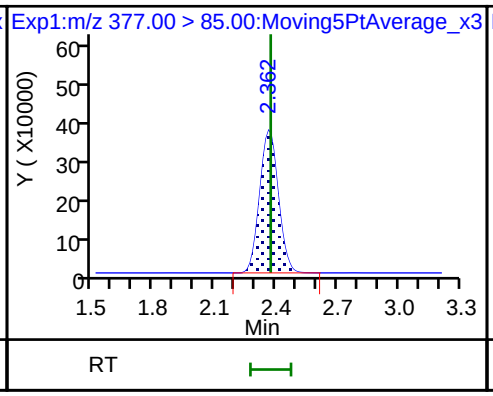
D 11 18O2 PFHxS



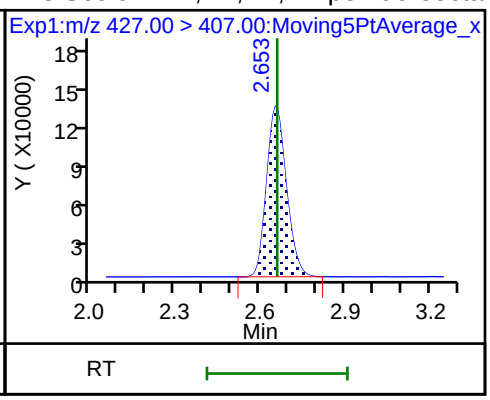
65 Adona



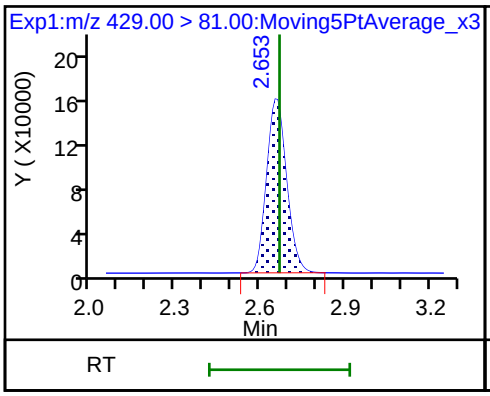
65 Adona



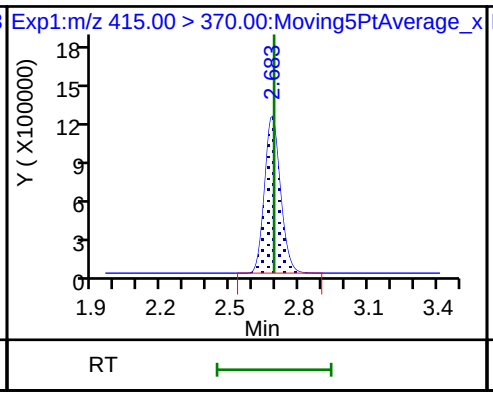
13 Sodium 1H,1H,2H,2H-perfluorooctane



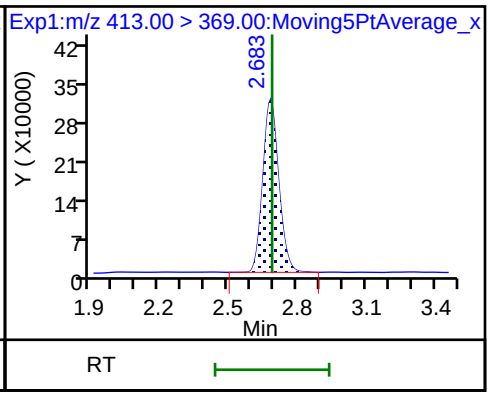
D 12 M2-6:2FTS



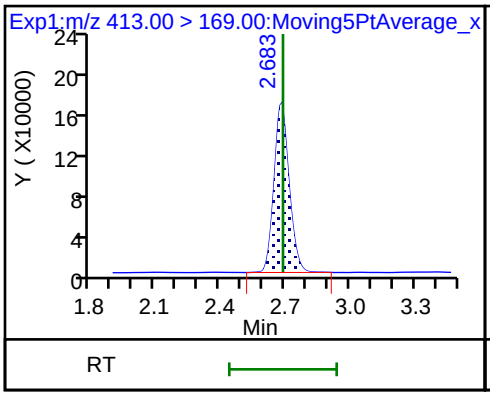
* 62 13C2-PFOA



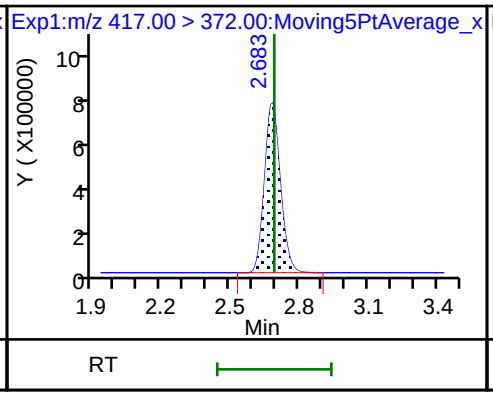
15 Perfluorooctanoic acid



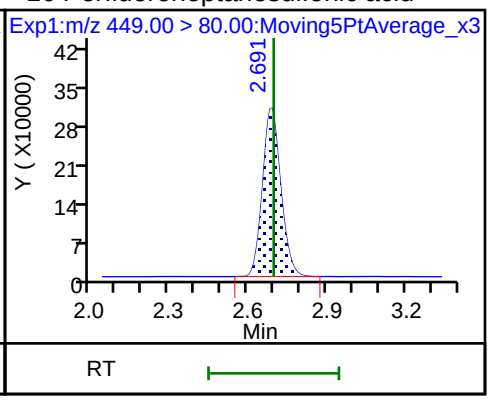
15 Perfluorooctanoic acid



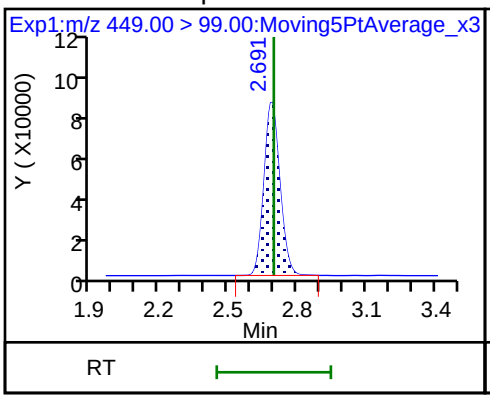
D 14 13C4 PFOA



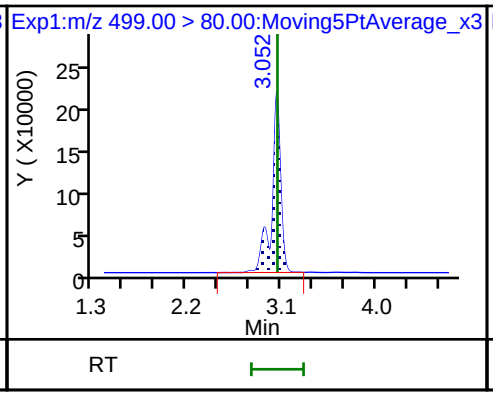
16 Perfluoroheptanesulfonic acid



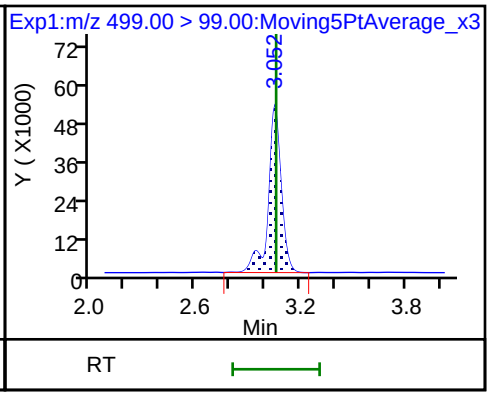
16 Perfluoroheptanesulfonic acid



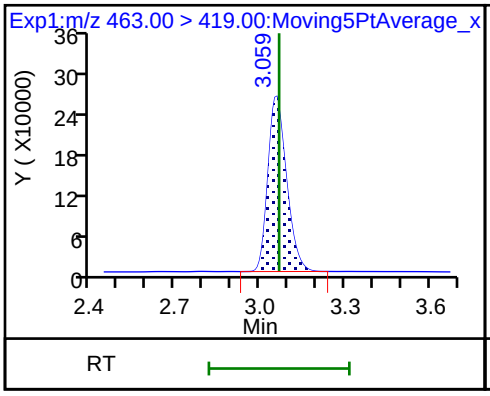
17 Perfluorooctane sulfonic acid



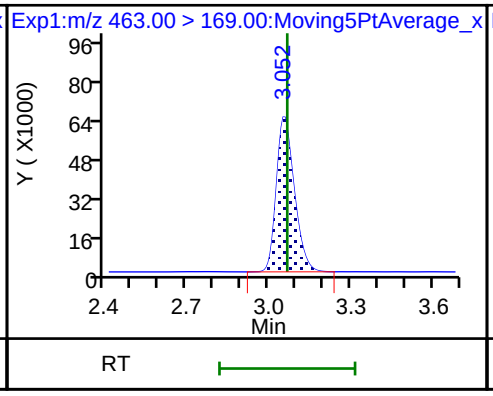
17 Perfluorooctane sulfonic acid



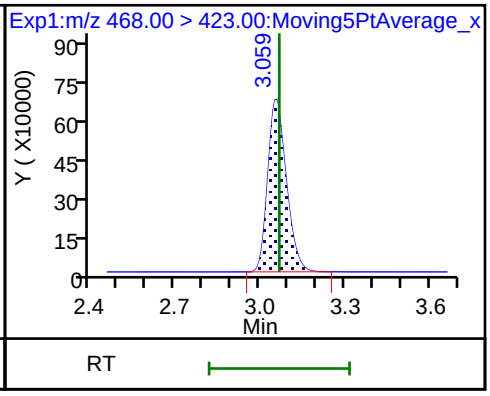
20 Perfluorononanoic acid



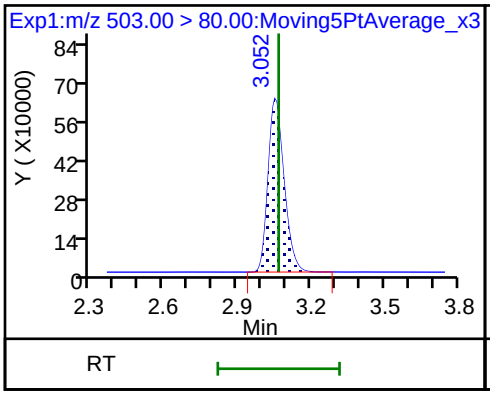
20 Perfluorononanoic acid



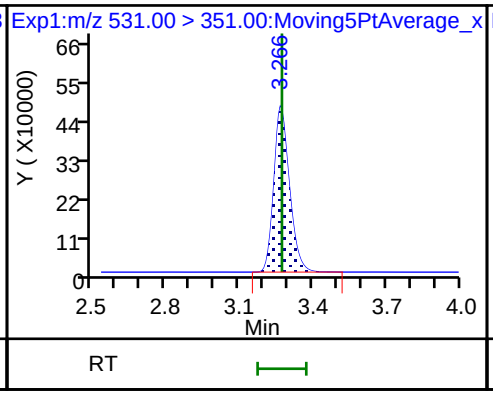
D 19 13C5 PFNA



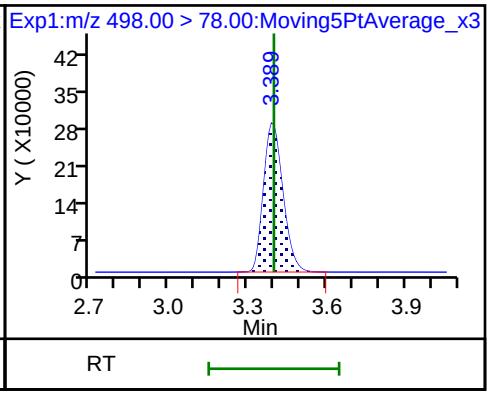
D 18 13C4 PFOS



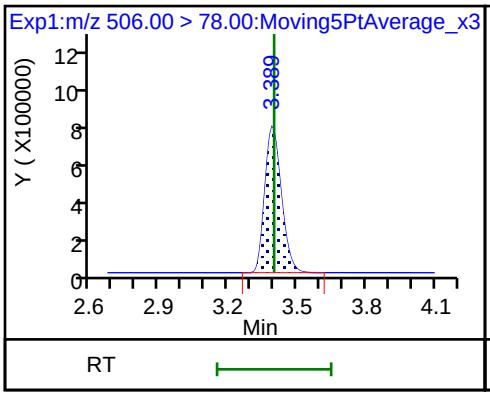
69 9-Chlorohexadecafluoro-3-oxanonane



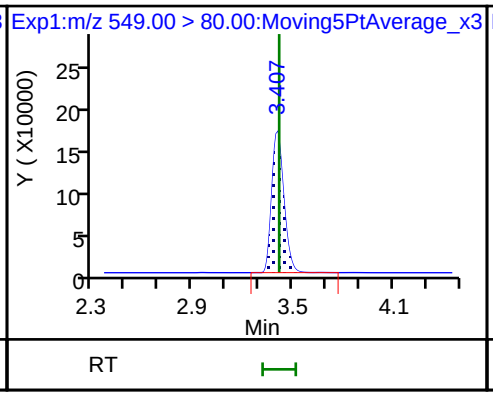
22 Perfluorooctane Sulfonamide



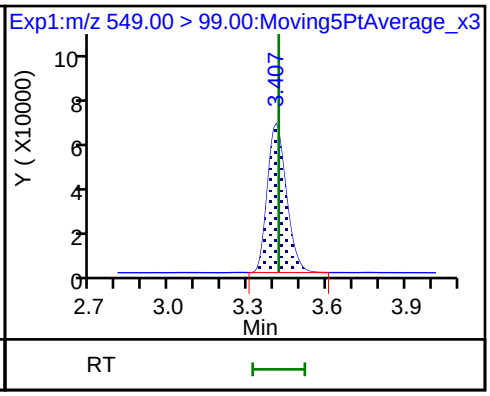
D 21 13C8 FOSA



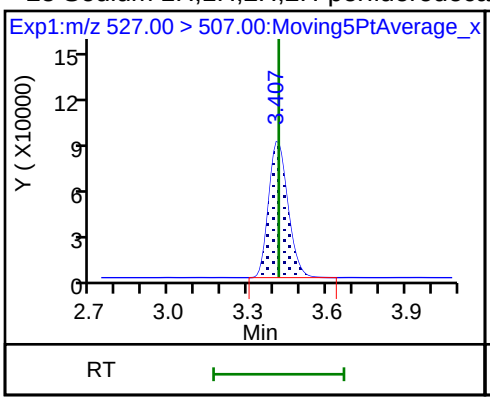
68 Perfluorononanesulfonic acid



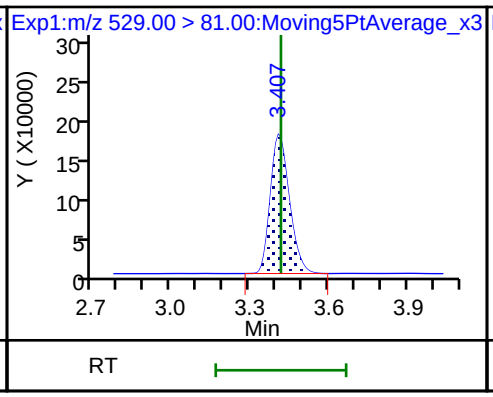
68 Perfluorononanesulfonic acid



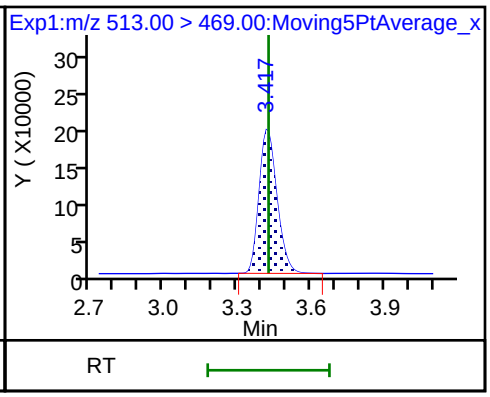
25 Sodium 1H,1H,2H,2H-perfluorodecane



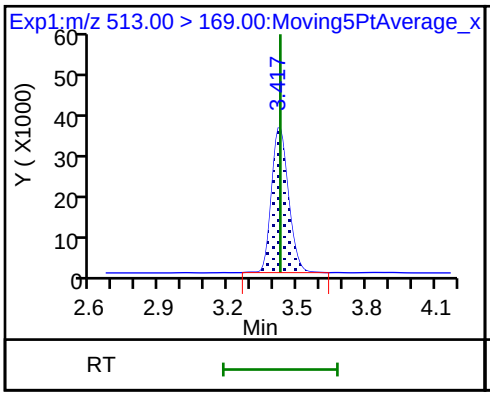
D 26 M2-8:2FTS



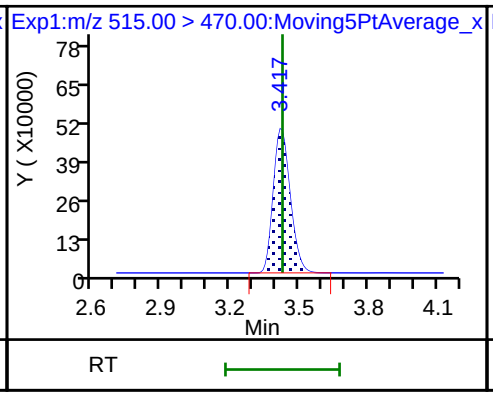
24 Perfluorodecanoic acid



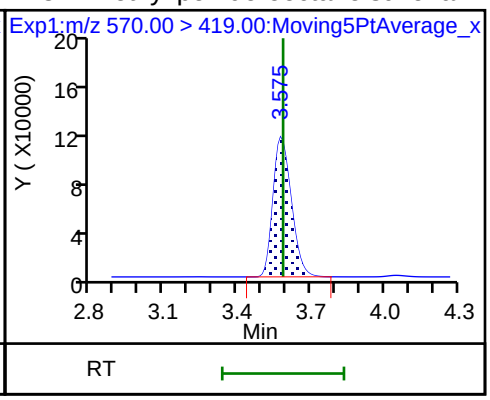
24 Perfluorodecanoic acid



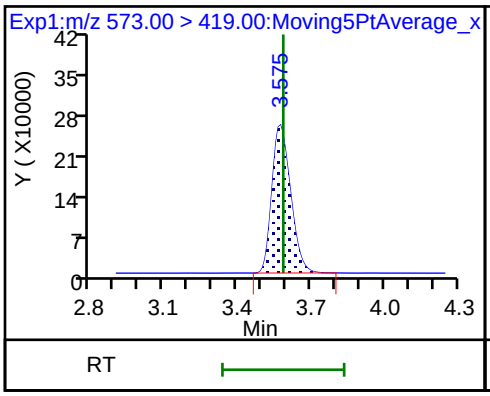
D 23 13C2 PFDA



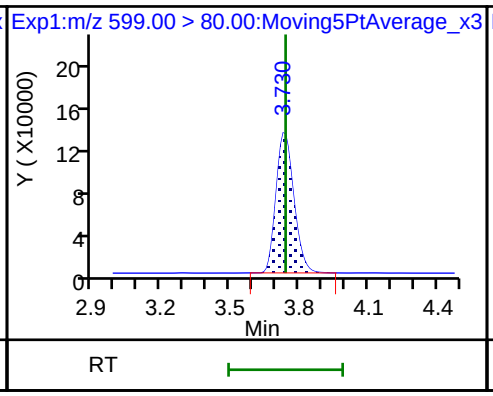
28 N-methyl perfluorooctane sulfonami



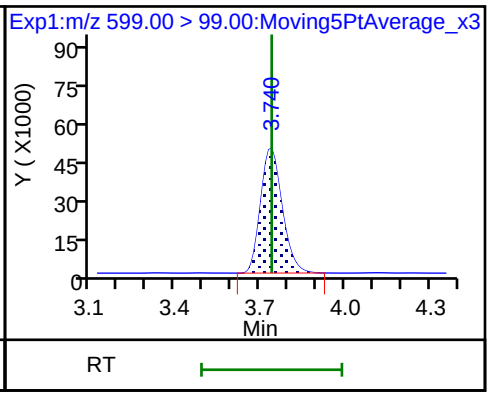
D 27 d3-NMeFOSAA



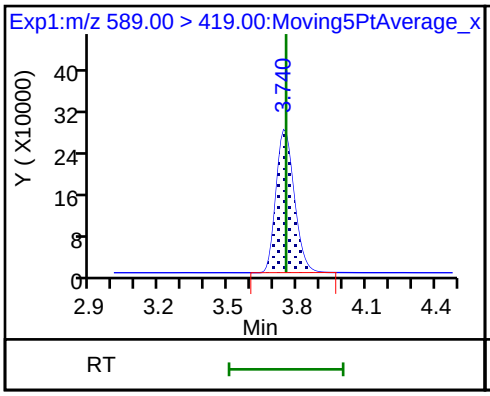
29 Perfluorodecane Sulfonic acid



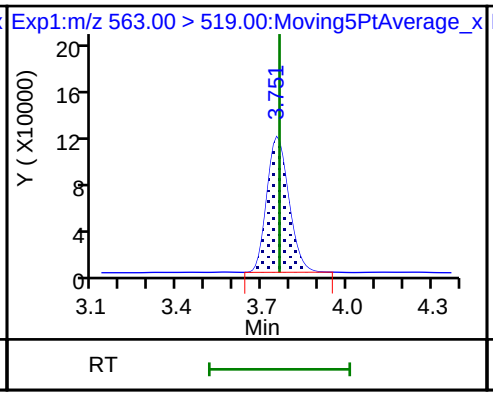
29 Perfluorodecane Sulfonic acid



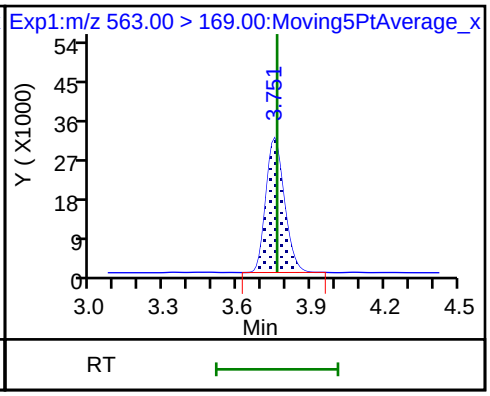
D 32 d5-NEtFOSAA



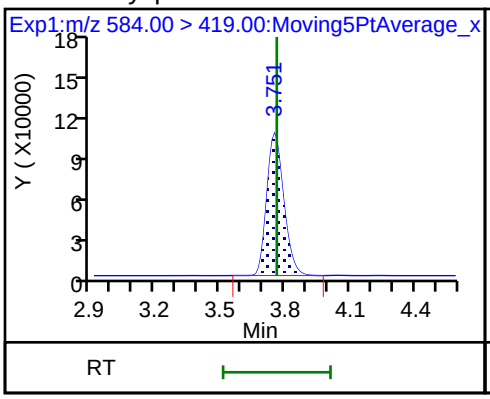
31 Perfluoroundecanoic acid



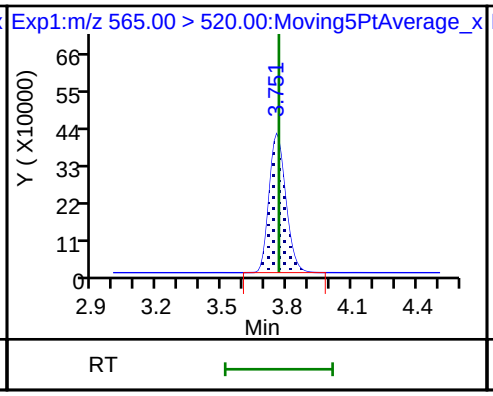
31 Perfluoroundecanoic acid



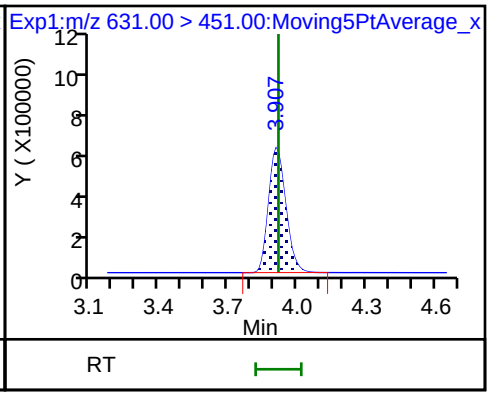
33 N-ethyl perfluorooctane sulfonamid



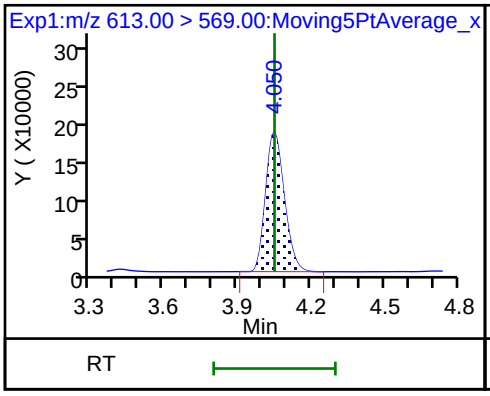
D 30 13C2 PFUnA



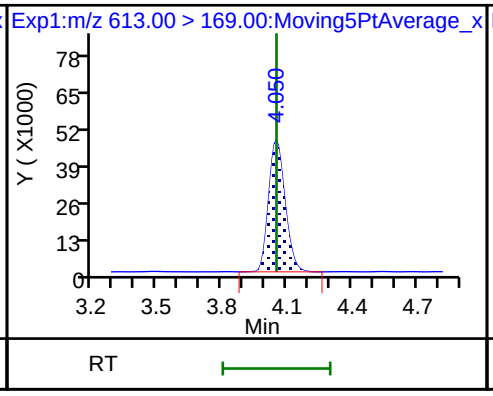
66 11-Chloroeicosafluoro-3-oxaundecan



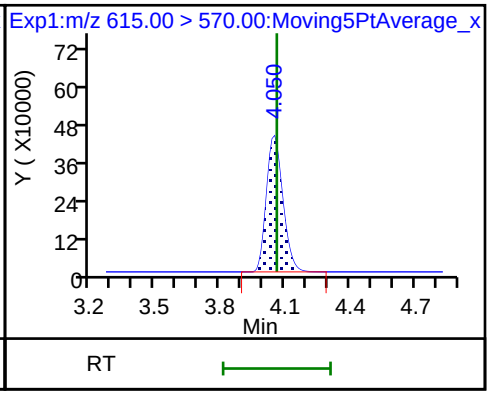
37 Perfluorododecanoic acid



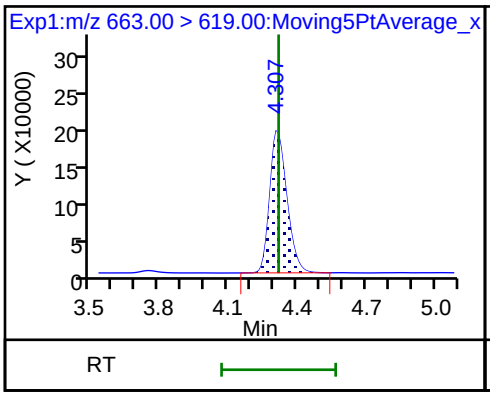
37 Perfluorododecanoic acid



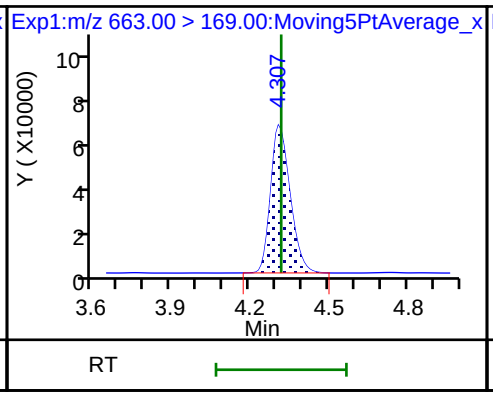
D 36 13C2 PFDoA



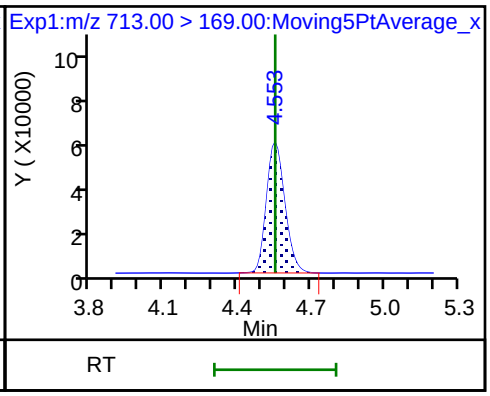
41 Perfluorotridecanoic acid



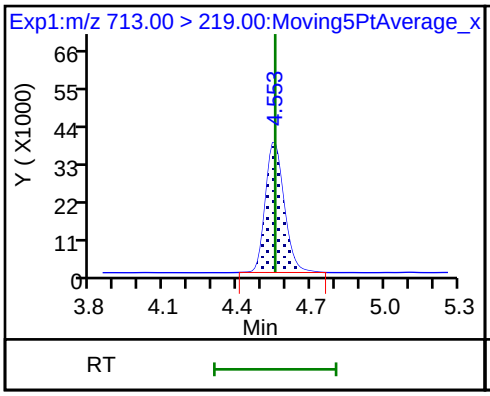
41 Perfluorotridecanoic acid



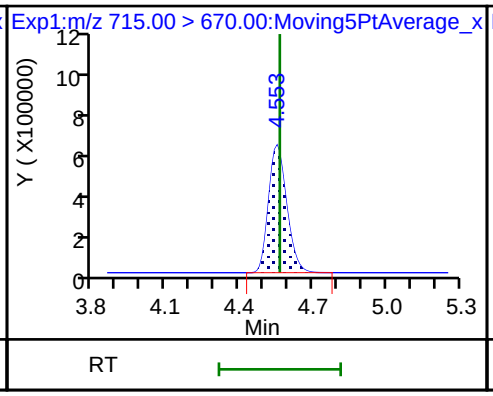
42 Perfluorotetradecanoic acid



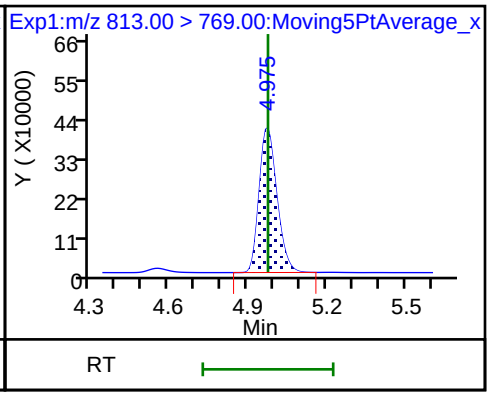
42 Perfluorotetradecanoic acid



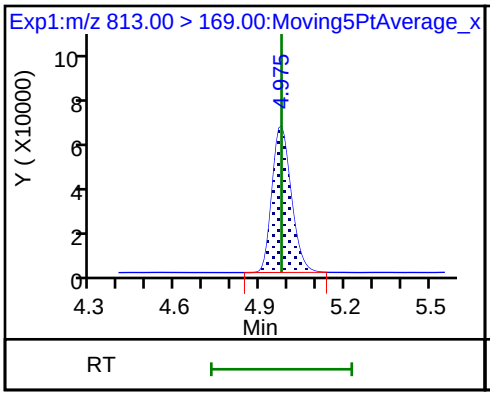
D 43 13C2-PFTeDA



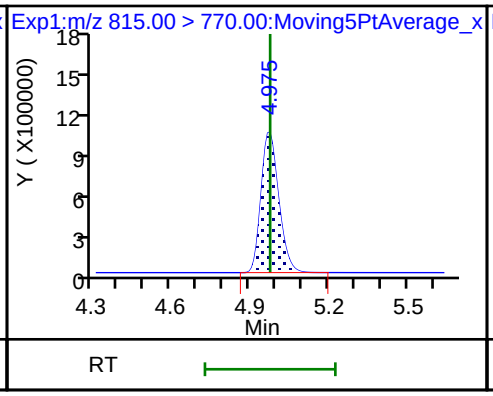
45 Perfluorohexadecanoic acid



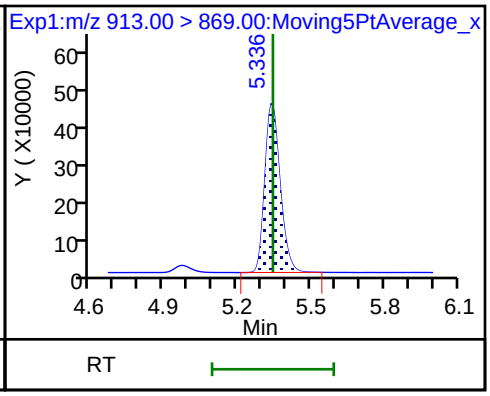
45 Perfluorohexadecanoic acid



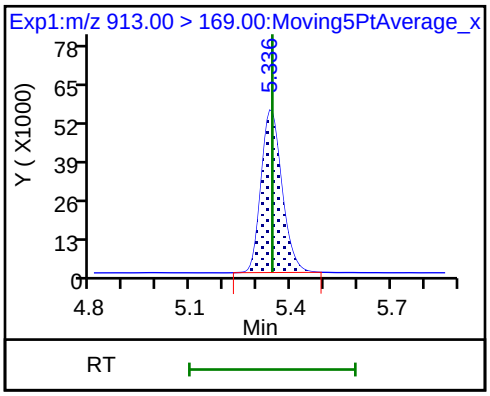
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218884/2-A

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_053.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.00(g) | Date Analyzed: 04/25/2018 00:30

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00729		0.00050
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00565		0.00050
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00584		0.00050
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00611		0.00050
335-67-1	Perfluorooctanoic acid (PFOA)	0.0116		0.00050
375-95-1	Perfluorononanoic acid (PFNA)	0.00466		0.00050
335-76-2	Perfluorodecanoic acid (PFDA)	0.00481		0.00050
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00395		0.00050
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00500		0.00050
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00474		0.00050
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00414		0.00050
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00463		0.00050
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00417		0.00050
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00444		0.00050
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00487		0.0013
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00465		0.00050
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		0.00050
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0050
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0050
27619-97-2	6:2FTS	ND		0.0050
39108-34-4	8:2FTS	ND		0.0050

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218884/2-A

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_053.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.00(g) | Date Analyzed: 04/25/2018 00:30

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	77		25-150
STL01893	13C5 PFPeA	77		25-150
STL00993	13C2 PFHxA	74		25-150
STL01892	13C4-PFHpA	74		25-150
STL00990	13C4 PFOA	72		25-150
STL00995	13C5 PFNA	75		25-150
STL00996	13C2 PFDA	71		25-150
STL00997	13C2 PFUnA	72		25-150
STL00998	13C2 PFDoA	67		25-150
STL02116	13C2-PFTeDA	75		25-150
STL02337	13C3-PFBS	75		25-150
STL00994	18O2 PFHxS	75		25-150
STL00991	13C4 PFOS	72		25-150
STL01056	13C8 FOSA	60		25-150
STL02118	d3-NMeFOSAA	71		25-150
STL02117	d5-NEtFOSAA	75		25-150
STL02279	M2-6:2FTS	73		25-150
STL02280	M2-8:2FTS	71		25-150
STL02395	M2-4:2FTS	0		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_053.d
Lims ID: LCS 320-218884/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Apr-2018 00:30:58 ALS Bottle#: 36 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-218884/2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:21:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.436	0.0	1.000	3079394	1.46		146	1330	M
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	5688018	1.92		76.6	38234	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.694	0.0	1.000	1993320	1.13		113	2363	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.556	3703430	1.93		77.4	58256	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.730	0.0	1.000	2374396	0.9265		105	9271	
298.90 > 99.00	1.730	1.730	0.0	1.000	976111		2.43(1.25-3.74)		2720	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	76109	1.73		74.5	619	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.005	1868475	1.17		117	2958	
313.00 > 119.00	1.971	1.982	-0.011	1.000	173690		10.76(5.03-15.10)		1576	
D 7 13C2 PFHxA										
315.00 > 270.00	1.971	1.993	-0.022	1.000	3937312	1.86		74.4	70098	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.993	2.004	-0.011	1.000	2142109	0.9151		97.6	10737	
349.00 > 99.00	1.993	2.004	-0.011	1.000	769369		2.78(1.36-4.07)		13724	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.072	2.084	-0.012	1.000	230131	NR		0.0	1640	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.321	-0.013	1.000	1866000	1.22		122	2204	
363.00 > 169.00	2.308	2.321	-0.013	1.000	763658		2.44(1.13-3.40)		3229	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	1.000	1803509	0.8336		90.9	4031	
399.00 > 99.00	2.321	2.321	0.0	1.000	594322		3.03(1.50-4.49)		3826	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.322	-0.014	1.000	3812045	1.85		74.0	49639	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.335	-0.014	1.000	4520728	1.78		75.2	64526	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	109293	0.0245		2.5	1420	
377.00 > 85.00	2.360	2.360	0.0	1.000	64106		1.70(0.84-2.53)		1470	
13 Sodium 1H,1H,2H,2H-perfluorooctane										M
427.00 > 407.00	2.644	2.652	-0.008	0.997	5298	0.009670		1.0	108	M
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.668	-0.015	1.000	769689	1.74		73.4	9753	
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.675	0.004		5517816	2.50			56743	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.679	2.675	0.004	1.000	3923599	2.32		230	2811	
413.00 > 169.00	2.679	2.675	0.004	1.000	2099549		1.87(0.84-2.52)		6084	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.686	2.682	0.004	1.000	1517815	0.8879		93.3	9069	
449.00 > 99.00	2.679	2.682	-0.003	0.997	411866		3.69(1.94-5.82)		8520	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.691	-0.012	1.000	3666075	1.79		71.6	57779	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.047	3.048	-0.001	1.000	1363632	0.9736		105	2512	M
499.00 > 99.00	3.047	3.048	-0.001	1.000	313160		4.35(2.31-6.93)		20578	
20 Perfluorononanoic acid										
463.00 > 419.00	3.047	3.055	-0.008	1.000	1286954	0.9317		93.2	4218	
463.00 > 169.00	3.054	3.055	-0.001	1.002	316723		4.06(1.90-5.69)		9957	
D 19 13C5 PFNA										
468.00 > 423.00	3.047	3.067	-0.020	1.000	3311847	1.88		75.3	67293	
D 18 13C4 PFOS										
503.00 > 80.00	3.047	3.067	-0.020	1.000	3077273	1.73		72.3	22363	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.260	3.261	-0.001	1.000	1489087	0.6135		65.8	24239	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.399	-0.010	1.000	3353019	1.51		60.3	29232	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.399	3.401	-0.002	1.000	835896	0.8121		84.6	6215	
549.00 > 99.00	3.399	3.401	-0.002	1.000	329716		2.54(1.33-3.97)		11134	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.417	-0.009	1.000	907106	1.71		71.2	6901	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.419	-0.002	1.000	1035331	0.9622		96.2	4494	
513.00 > 169.00	3.417	3.419	-0.002	1.000	184251		5.62(2.36-7.09)		3627	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.427	-0.010	1.000	2607722	1.76		70.5	64240	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.566	3.586	-0.020	1.000	1484512	1.77		70.8	18929	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.732	-0.002	1.000	776753	0.9292		96.4	11261	
599.00 > 99.00	3.730	3.732	-0.002	1.000	250661		3.10(1.39-4.16)		5165	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.751	-0.010	1.000	1558194	1.88		75.3	11899	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.754	-0.003	1.000	616745	0.7897		78.6	2926	
563.00 > 169.00	3.751	3.754	-0.003	1.000	170266		3.62(2.12-6.36)		2871	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.762	-0.011	1.000	2310415	1.81		72.4	39351	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.908	3.911	-0.003	1.000	2459540	0.6559		69.6	43268	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.041	4.054	-0.013	1.000	963147	1.00		100	1333	
613.00 > 169.00	4.041	4.054	-0.013	1.000	228732		4.21(2.13-6.40)		2535	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.061	-0.020	1.000	2306985	1.67		67.0	27454	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.314	-0.006	1.000	1063521	0.9483		94.8	1426	
663.00 > 169.00	4.308	4.314	-0.006	1.000	330000		3.22(1.25-3.76)		3264	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.542	4.549	-0.007	1.000	274031	0.8282		82.8	2501	
713.00 > 219.00	4.542	4.549	-0.007	1.000	197913		1.38(0.71-2.13)		3471	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.564	-0.022	1.000	3293716	1.89		75.4	26515	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.972	-0.007	1.000	1585838	0.7029		69.8	747	
813.00 > 169.00	4.965	4.972	-0.007	1.000	271950		5.83(2.86-8.58)		1890	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.976	-0.011	1.000	5773176	2.03		81.2	19496	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.328	5.333	-0.005	1.000	1501459	0.6476		64.8	543	
913.00 > 169.00	5.328	5.333	-0.005	1.000	185423		8.10(3.83-11.48)		1475	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:19 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_053.d

Injection Date: 25-Apr-2018 00:30:58 Instrument ID: A8_N

Lims ID: LCS 320-218884/2-A

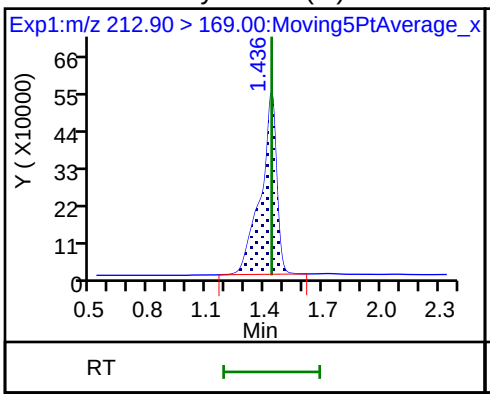
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 12

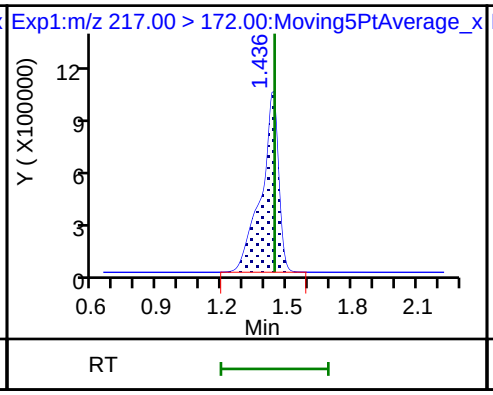
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

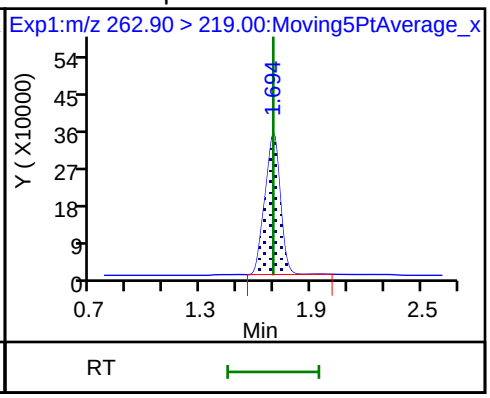
2 Perfluorobutyric acid (M)



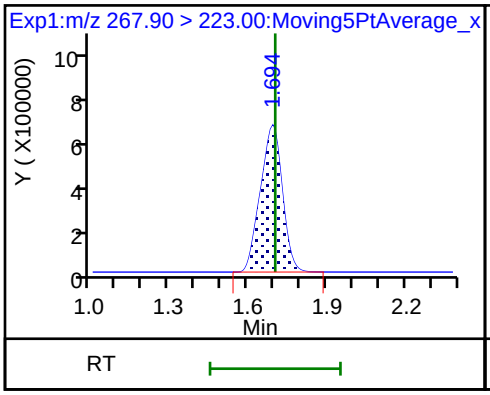
D 1 13C4 PFBA



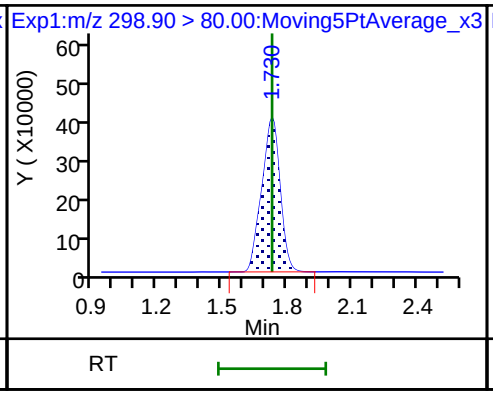
4 Perfluoropentanoic acid



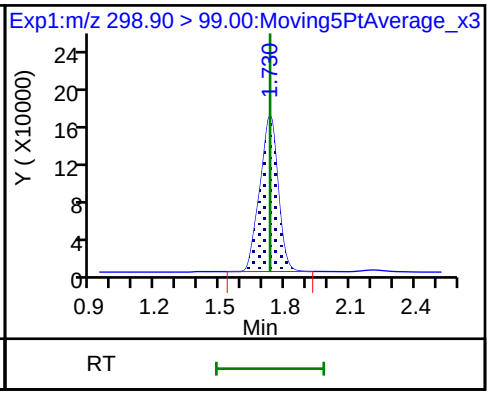
D 3 13C5-PFPeA



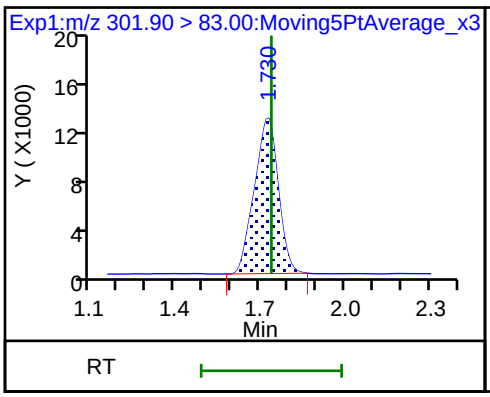
5 Perfluorobutanesulfonic acid



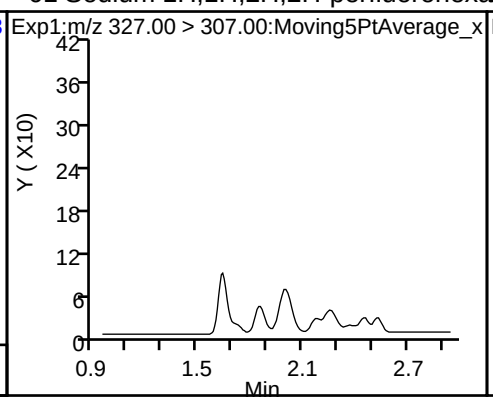
5 Perfluorobutanesulfonic acid



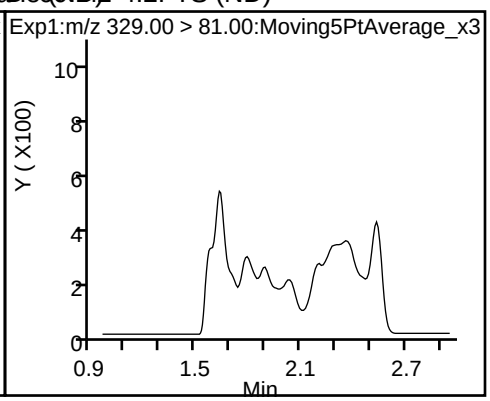
D 47 13C3-PFBS



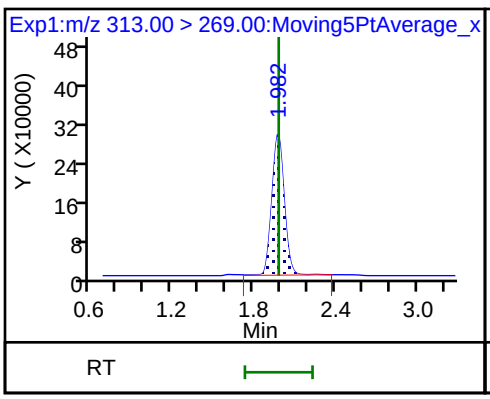
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



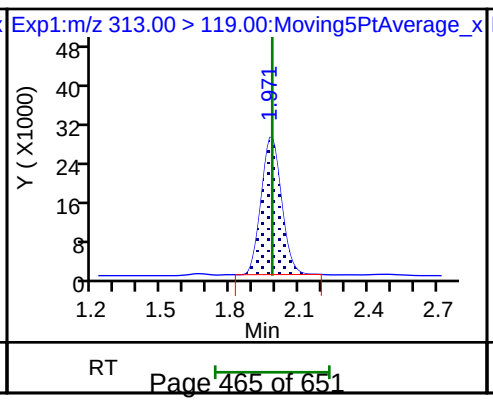
D 60 NM2-4:2FTS (ND)



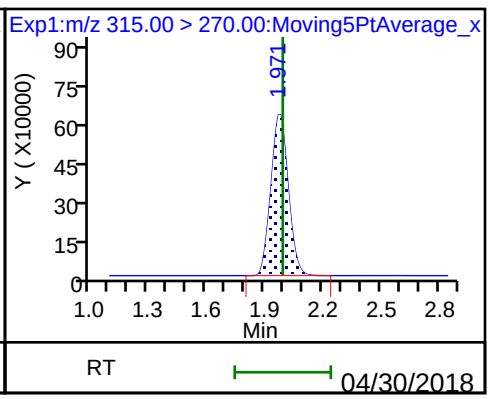
6 Perfluorohexanoic acid



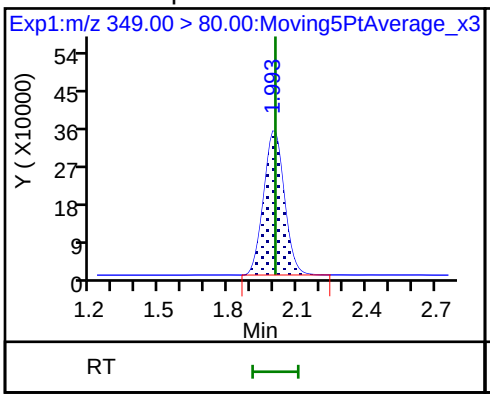
6 Perfluorohexanoic acid



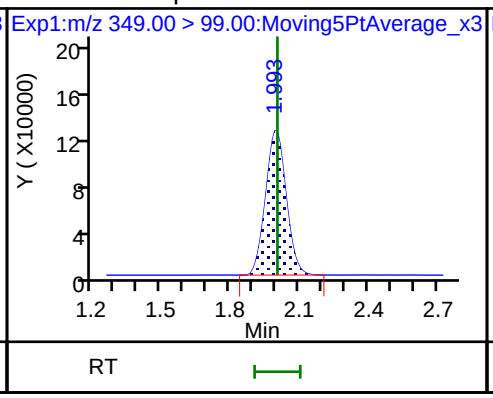
D 7 13C2 PFHxA



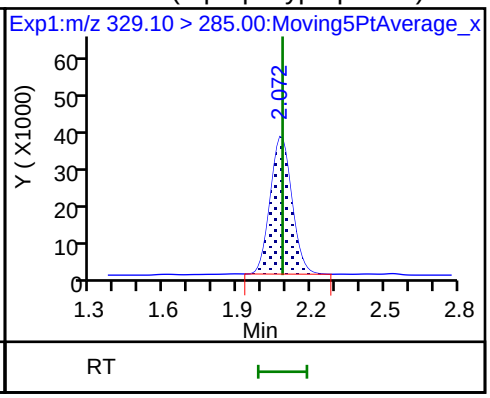
70 Perfluoropentanesulfonic acid



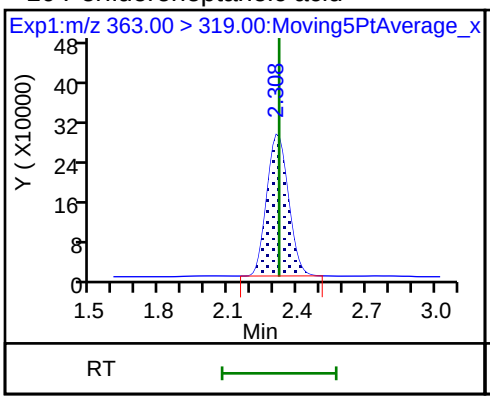
70 Perfluoropentanesulfonic acid



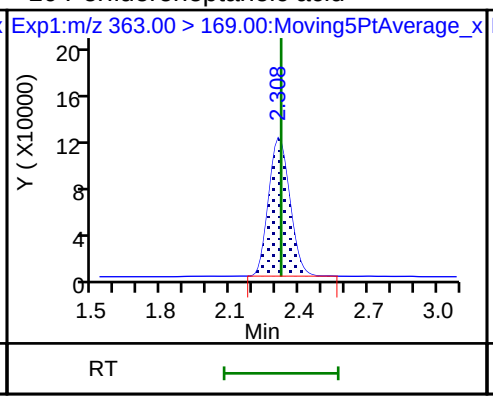
67 Perfluoro(2-propoxypropanoic) acid



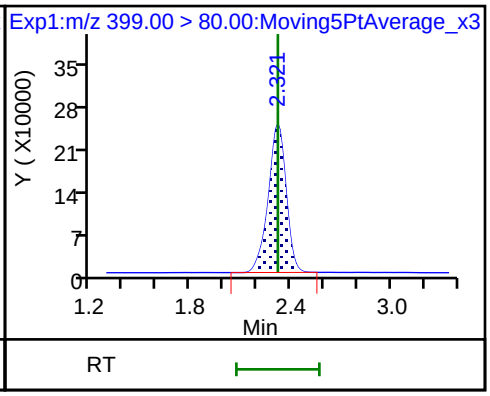
10 Perfluoroheptanoic acid



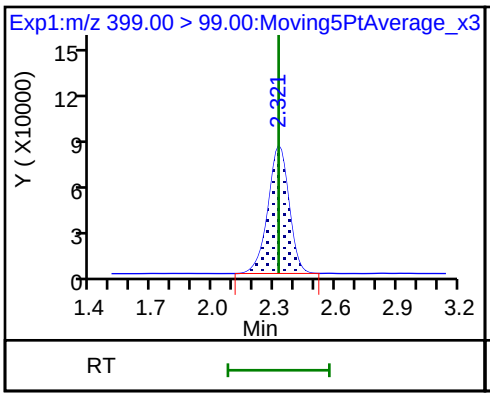
10 Perfluoroheptanoic acid



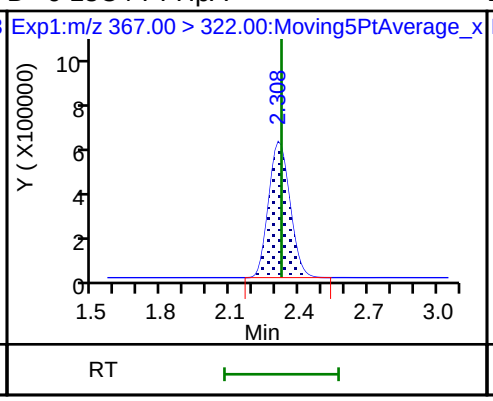
8 Perfluorohexanesulfonic acid



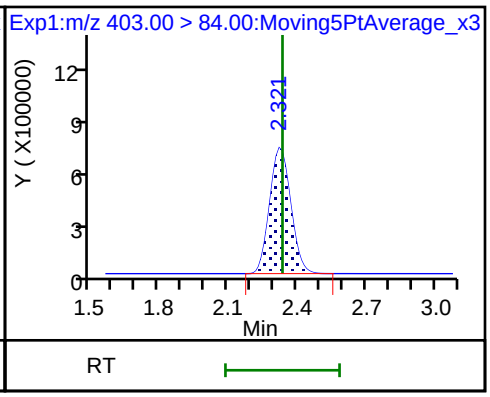
8 Perfluorohexanesulfonic acid



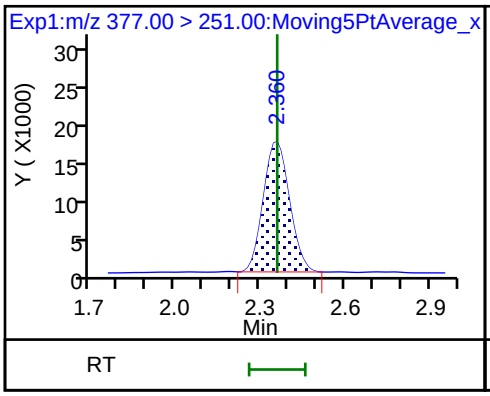
D 9 13C4-PFHpA



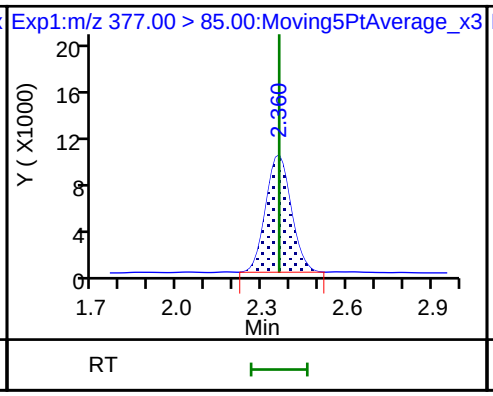
D 11 18O2 PFHxS



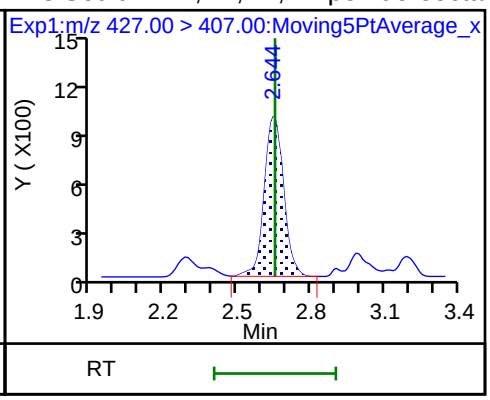
65 Adona



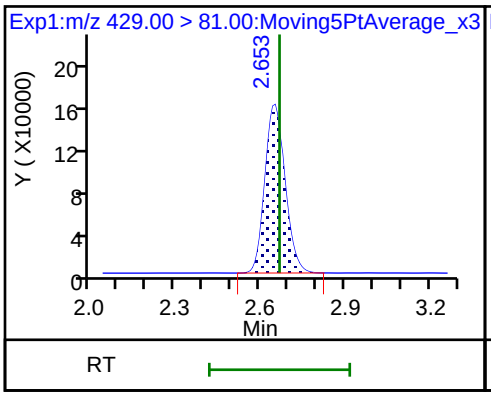
65 Adona



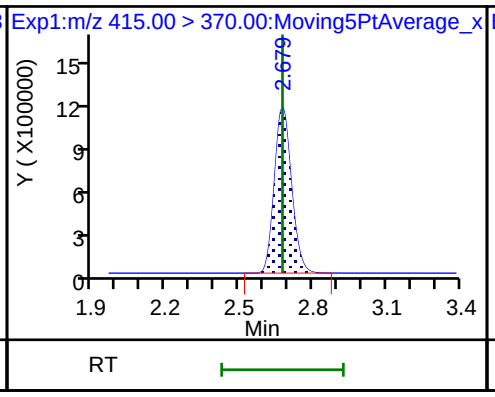
13 Sodium 1H,1H,2H,2H-perfluorooctane (M)



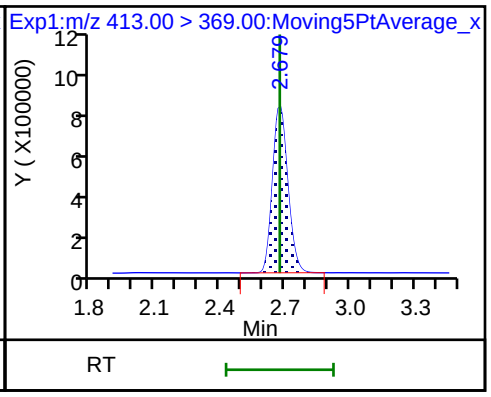
D 12 M2-6:2FTS



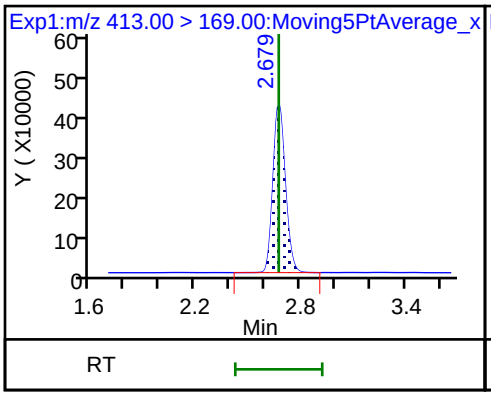
* 62 13C2-PFOA



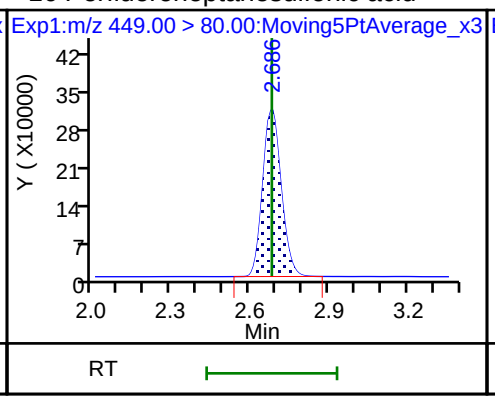
15 Perfluorooctanoic acid



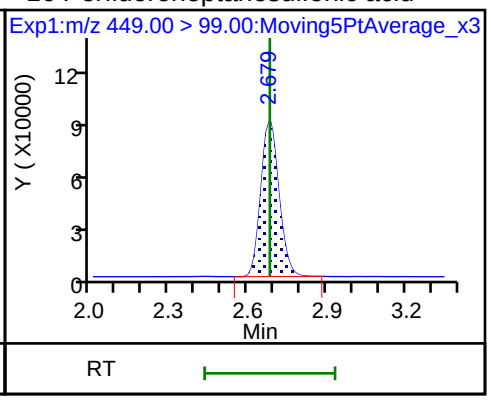
15 Perfluorooctanoic acid



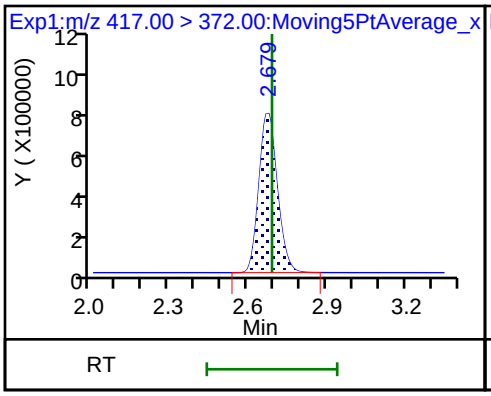
16 Perfluoroheptanesulfonic acid



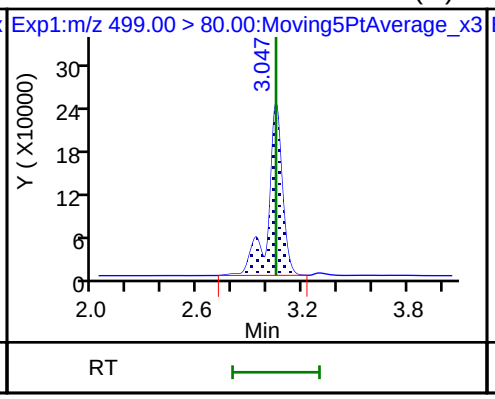
16 Perfluoroheptanesulfonic acid



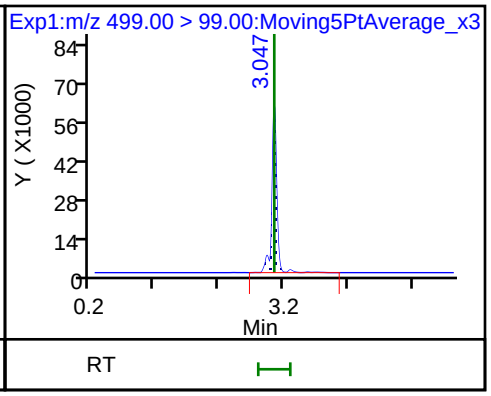
D 14 13C4 PFOA



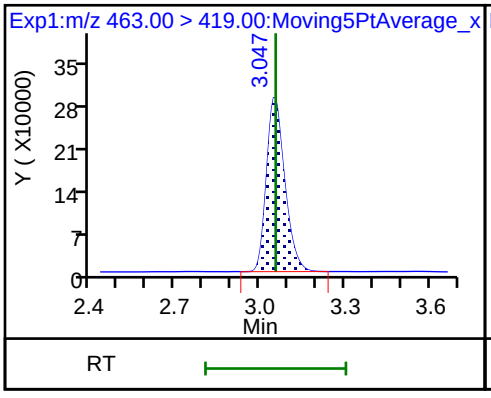
17 Perfluorooctane sulfonic acid (M)



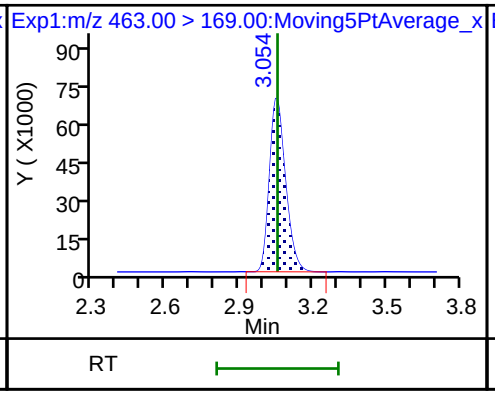
17 Perfluorooctane sulfonic acid



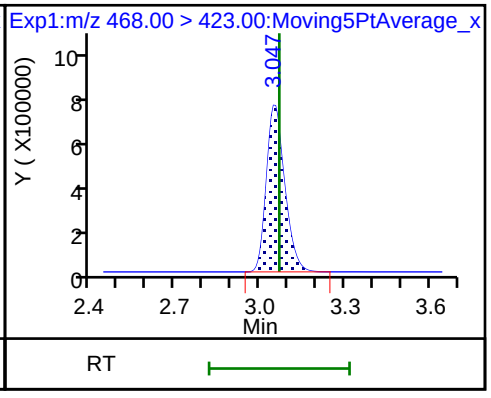
20 Perfluorononanoic acid



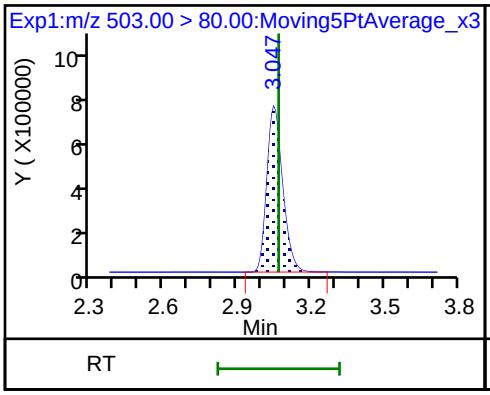
20 Perfluorononanoic acid



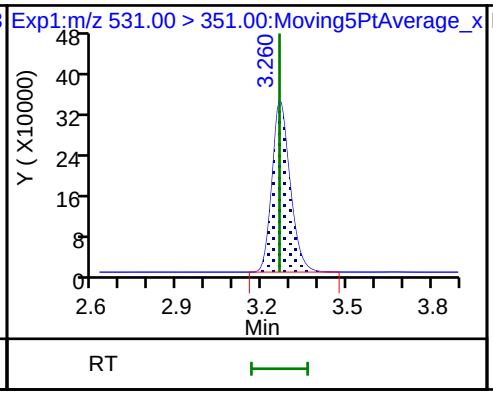
D 19 13C5 PFNA



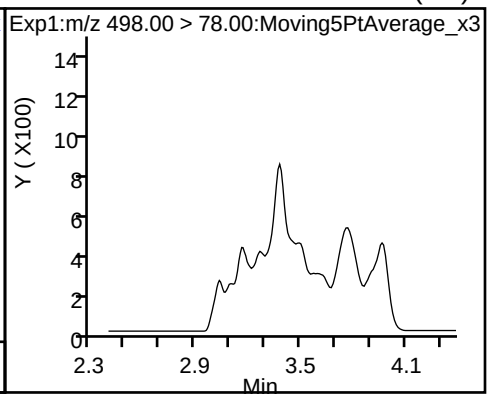
D 18 13C4 PFOS



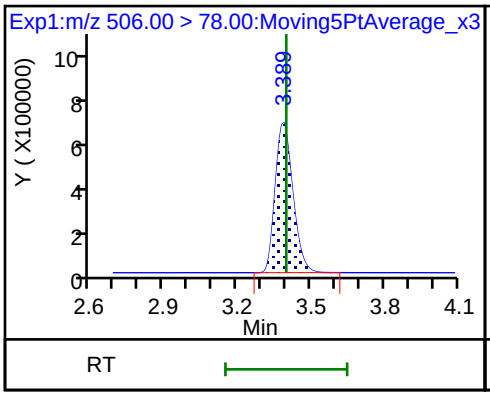
69 9-Chlorohexadecafluoro-3-oxanonane



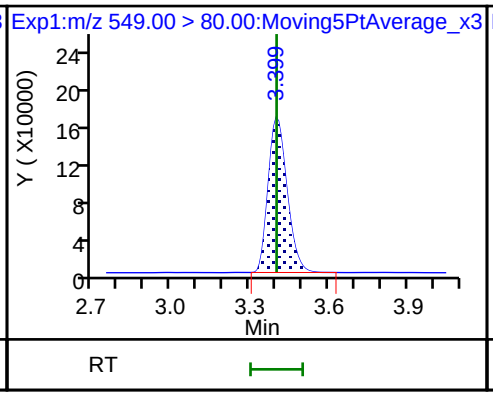
22 Perfluorooctane Sulfonamide (ND)



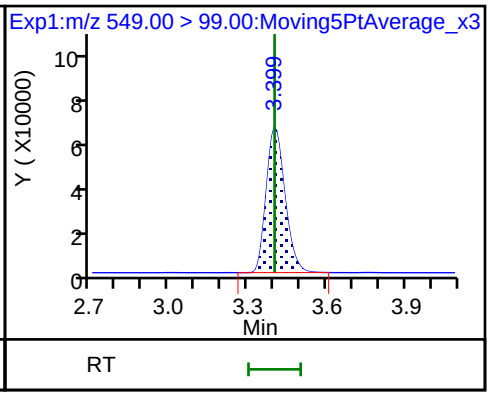
D 21 13C8 FOSA



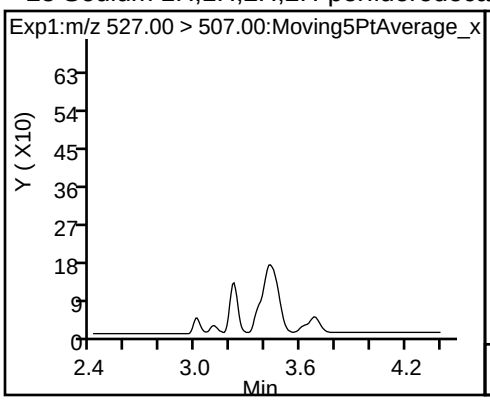
68 Perfluorononanesulfonic acid



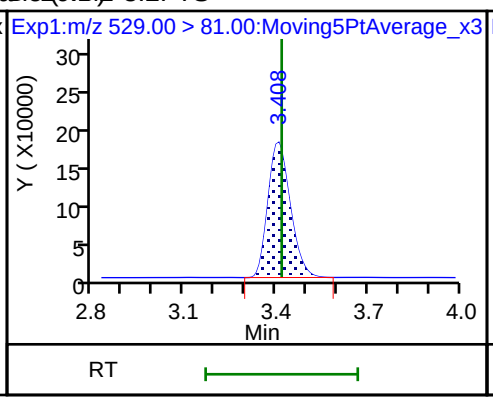
68 Perfluorononanesulfonic acid



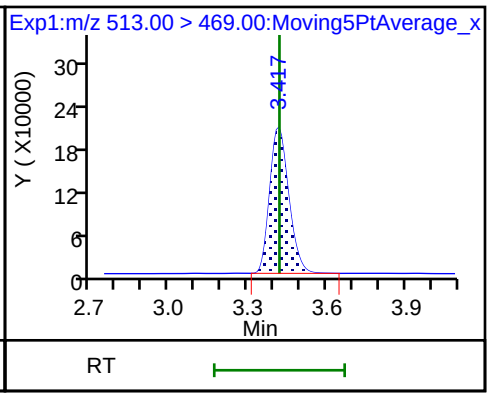
25 Sodium 1H,1H,2H,2H-perfluorodecane(6:2)



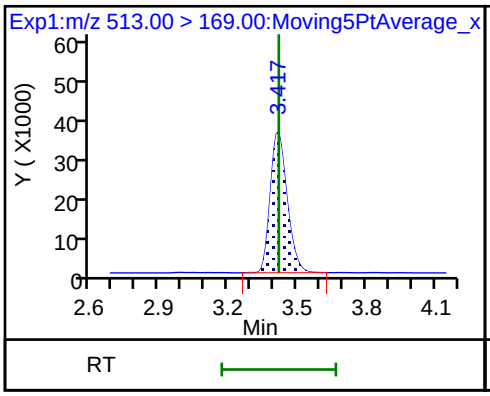
D 26 (NM)2-8:2FTS



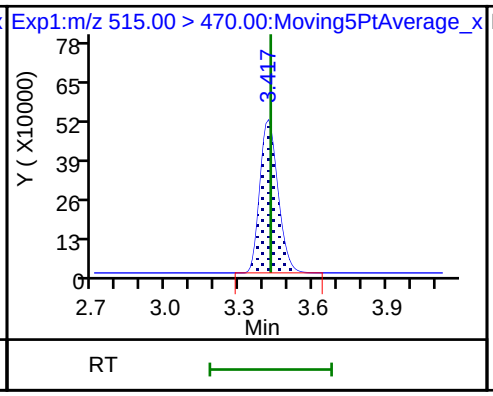
24 Perfluorodecanoic acid



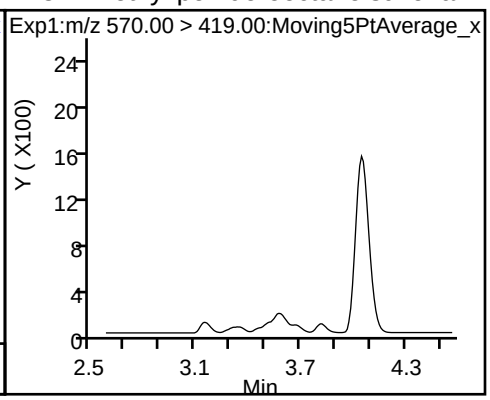
24 Perfluorodecanoic acid



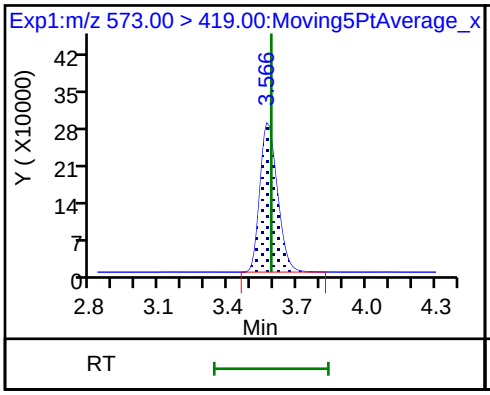
D 23 13C2 PFDA



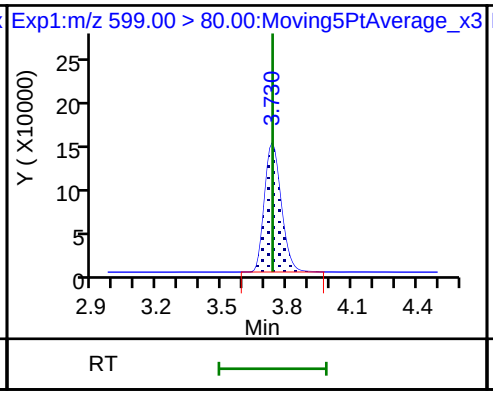
28 N-methyl perfluorooctane sulfonami (ND)



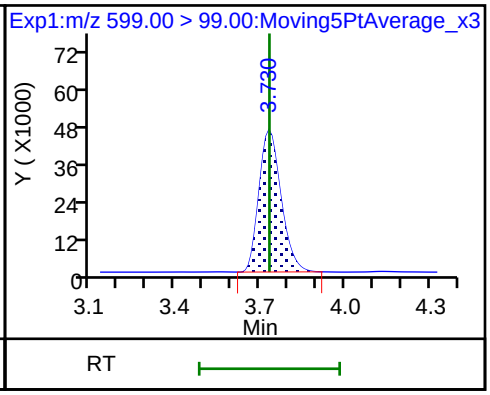
D 27 d3-NMeFOSAA



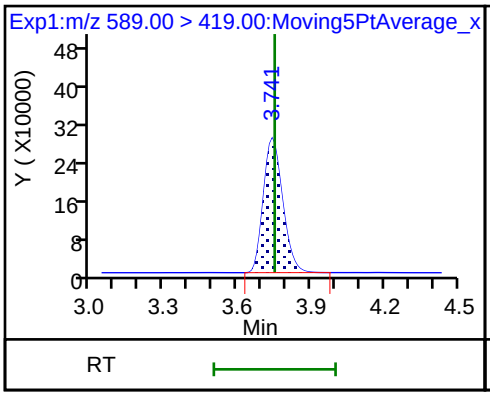
29 Perfluorodecane Sulfonic acid



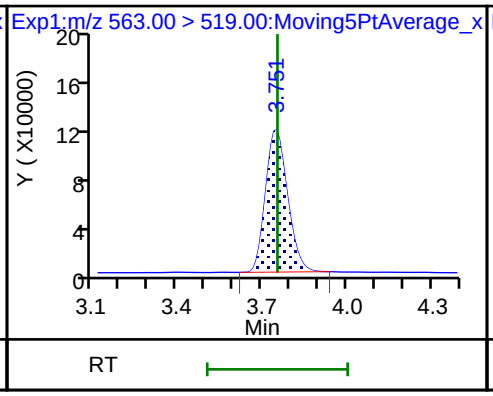
29 Perfluorodecane Sulfonic acid



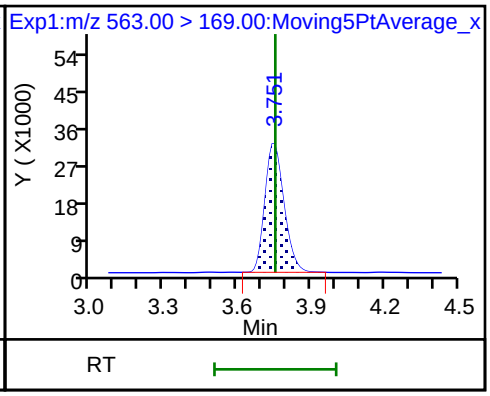
D 32 d5-NEtFOSAA



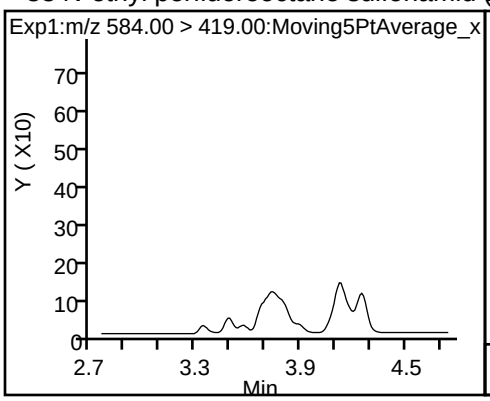
31 Perfluoroundecanoic acid



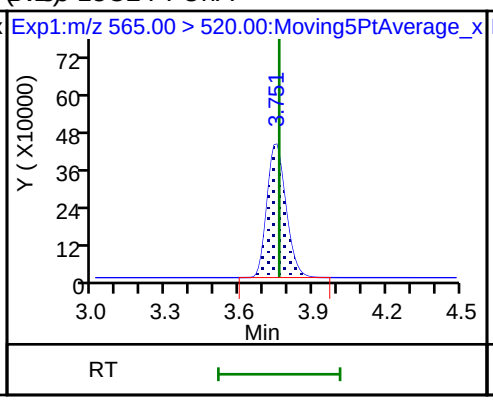
31 Perfluoroundecanoic acid



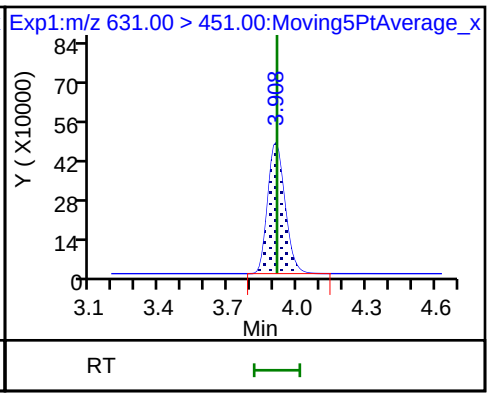
33 N-ethyl perfluorooctane sulfonamid (NE



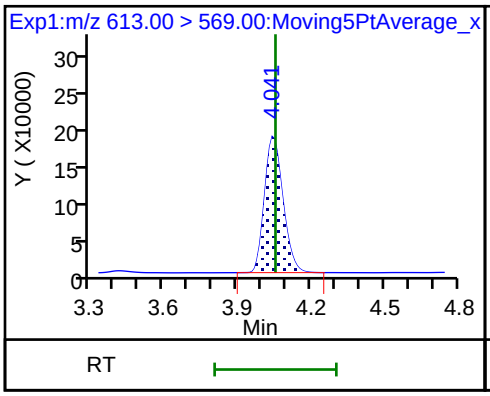
M2) 13C2 PFUnA



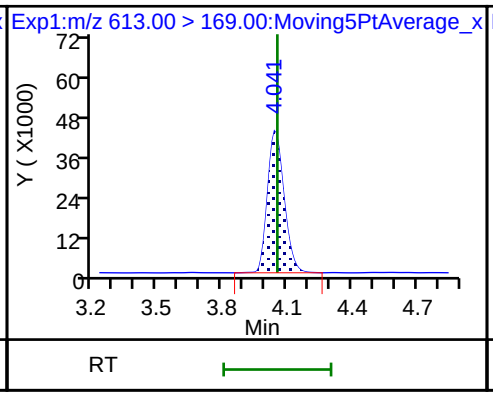
66 11-Chloroeicosafluoro-3-oxaundecan



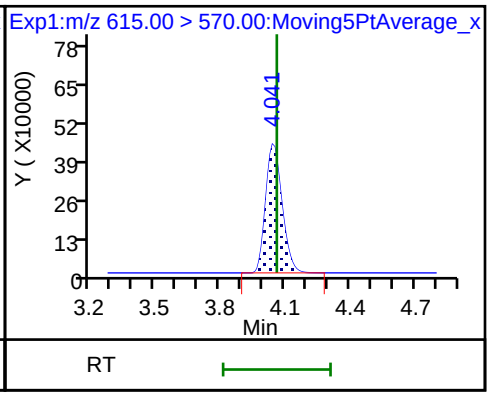
37 Perfluorododecanoic acid



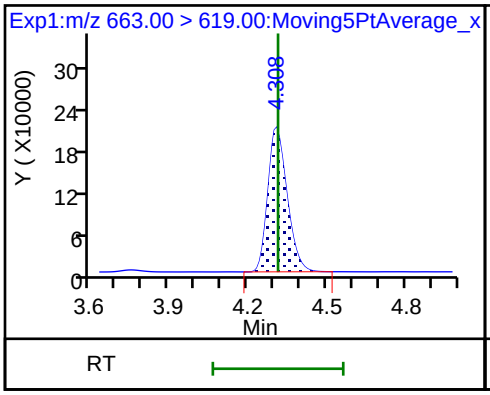
37 Perfluorododecanoic acid



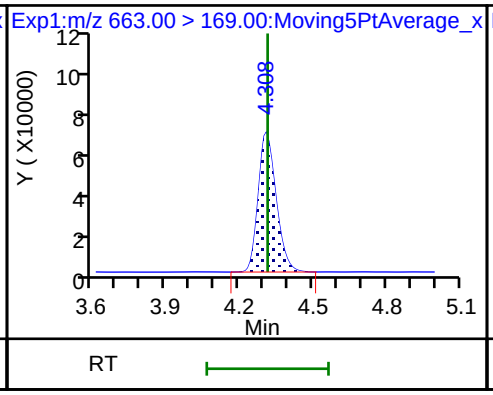
D 36 13C2 PFDoA



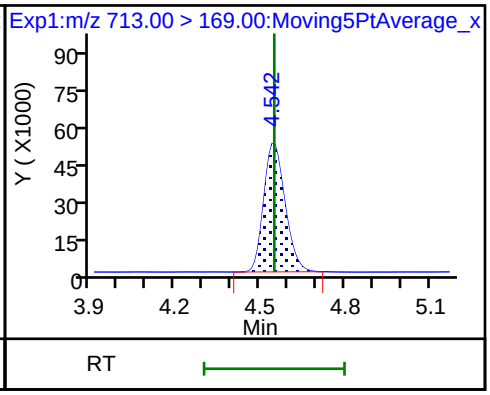
41 Perfluorotridecanoic acid



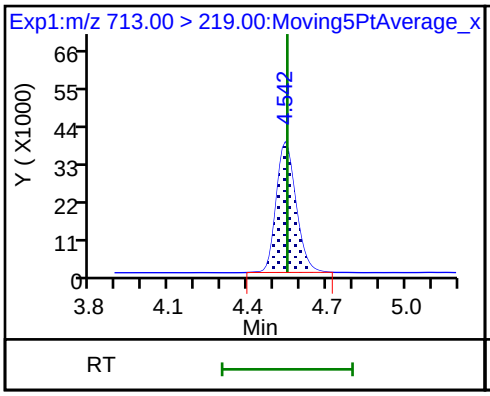
41 Perfluorotridecanoic acid



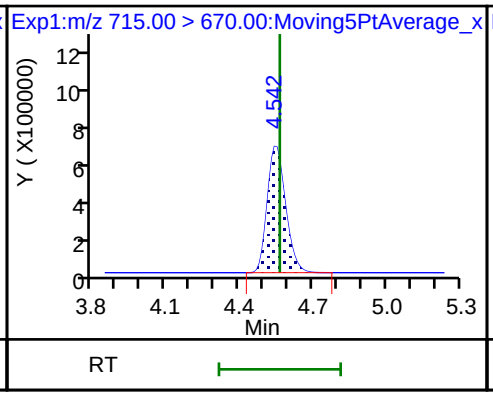
42 Perfluorotetradecanoic acid



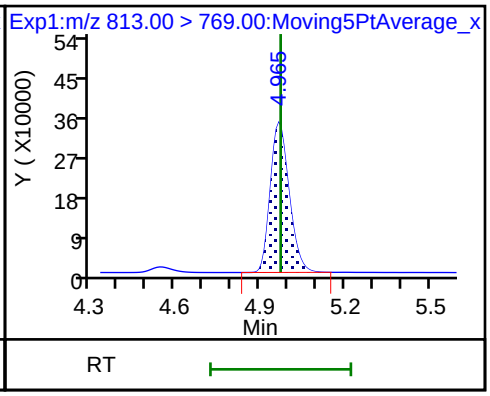
42 Perfluorotetradecanoic acid



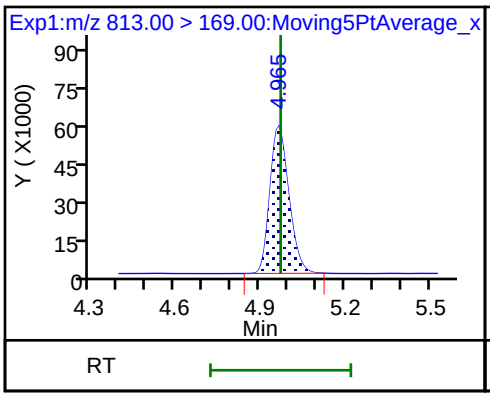
D 43 13C2-PFTeDA



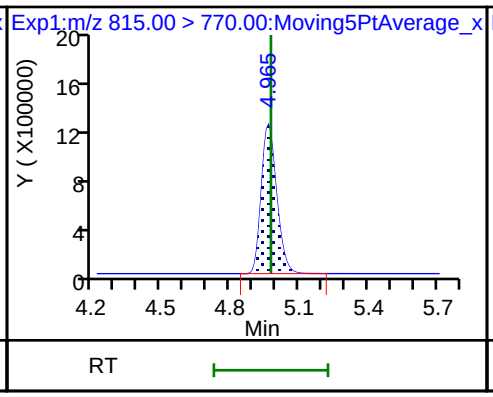
45 Perfluorohexadecanoic acid



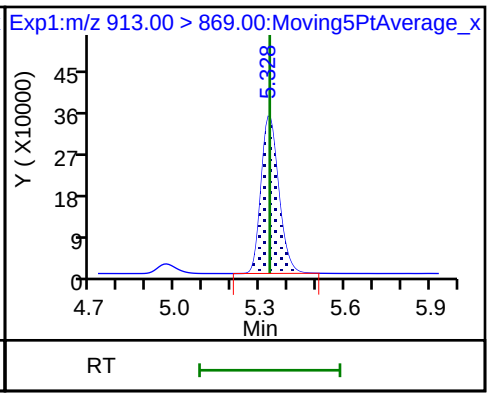
45 Perfluorohexadecanoic acid



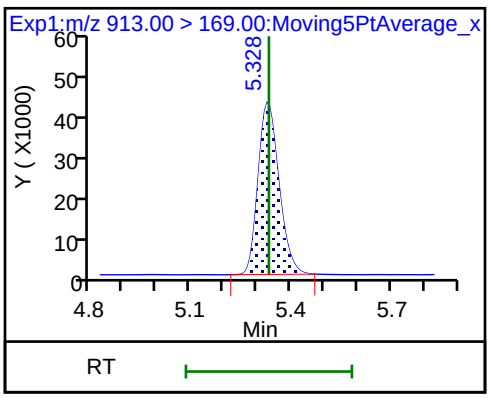
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

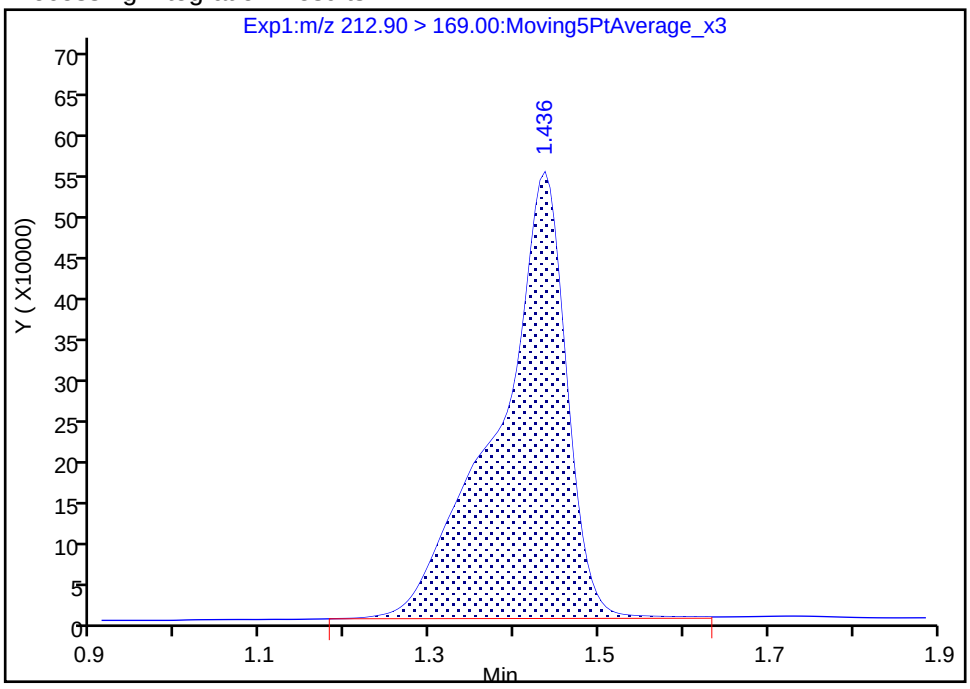
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_053.d
Injection Date: 25-Apr-2018 00:30:58 Instrument ID: A8_N
Lims ID: LCS 320-218884/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

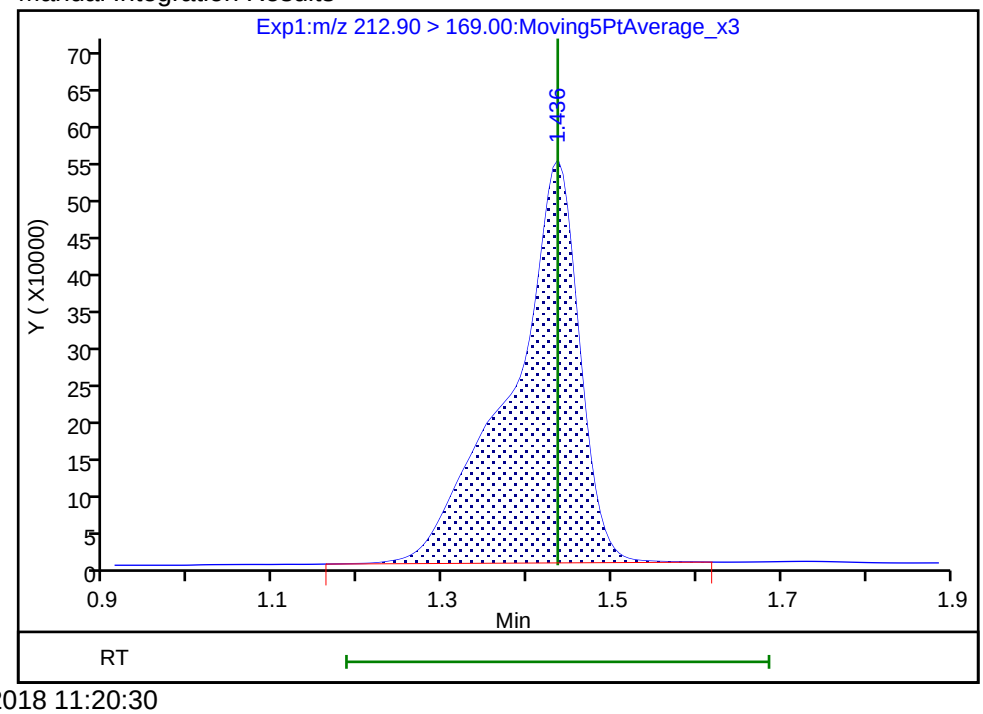
Processing Integration Results

RT: 1.44
Area: 3099344
Amount: 1.467029
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 3079394
Amount: 1.457586
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:20:30
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

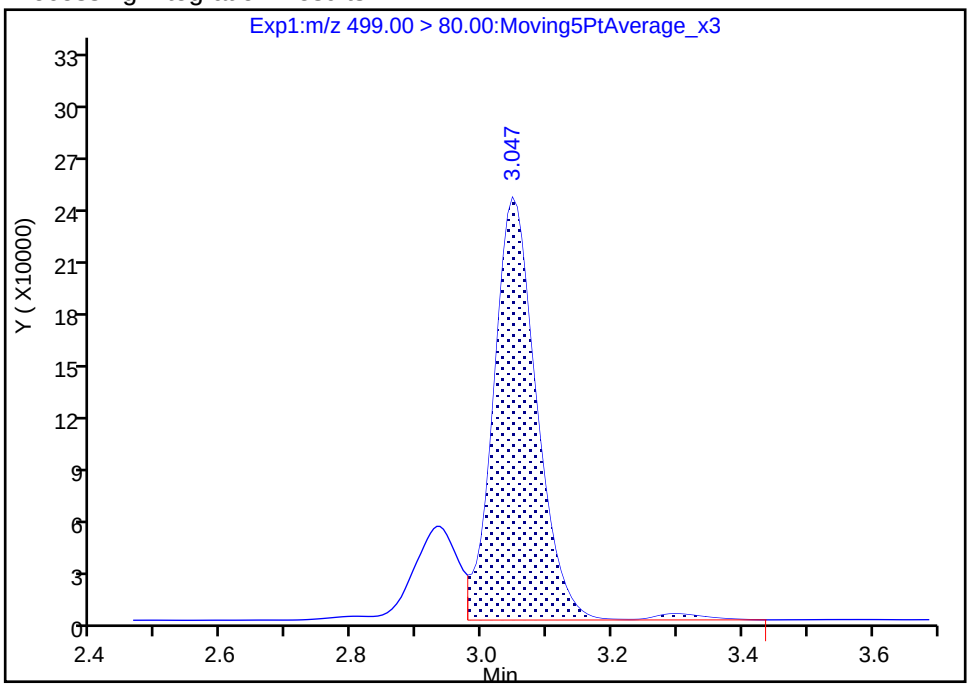
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_053.d
Injection Date: 25-Apr-2018 00:30:58 Instrument ID: A8_N
Lims ID: LCS 320-218884/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

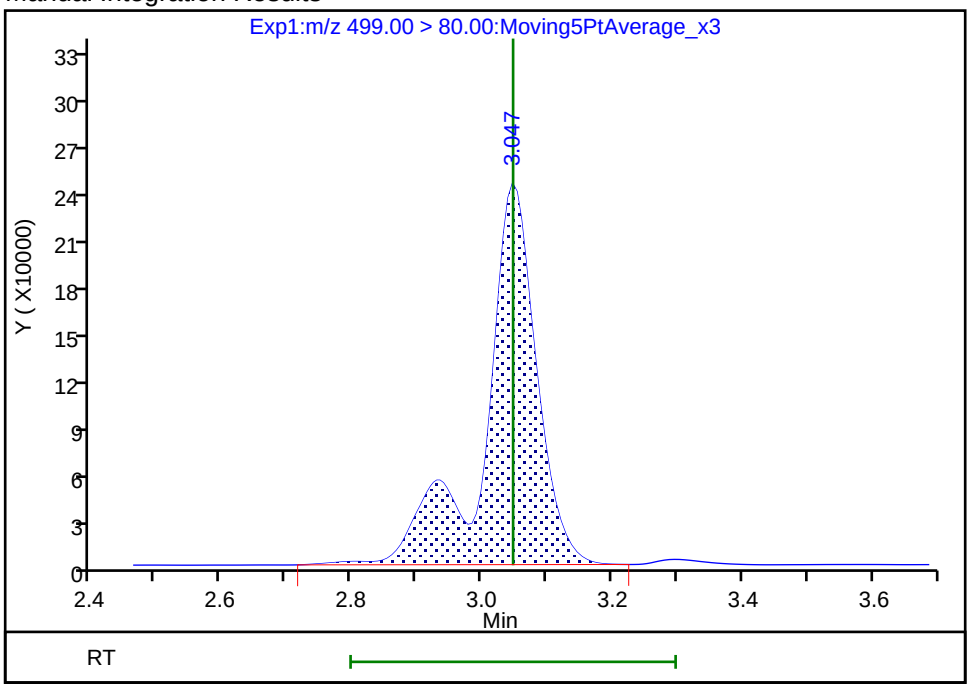
Processing Integration Results

RT: 3.05
Area: 1127120
Amount: 0.804709
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 1363632
Amount: 0.973567
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:20:52
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

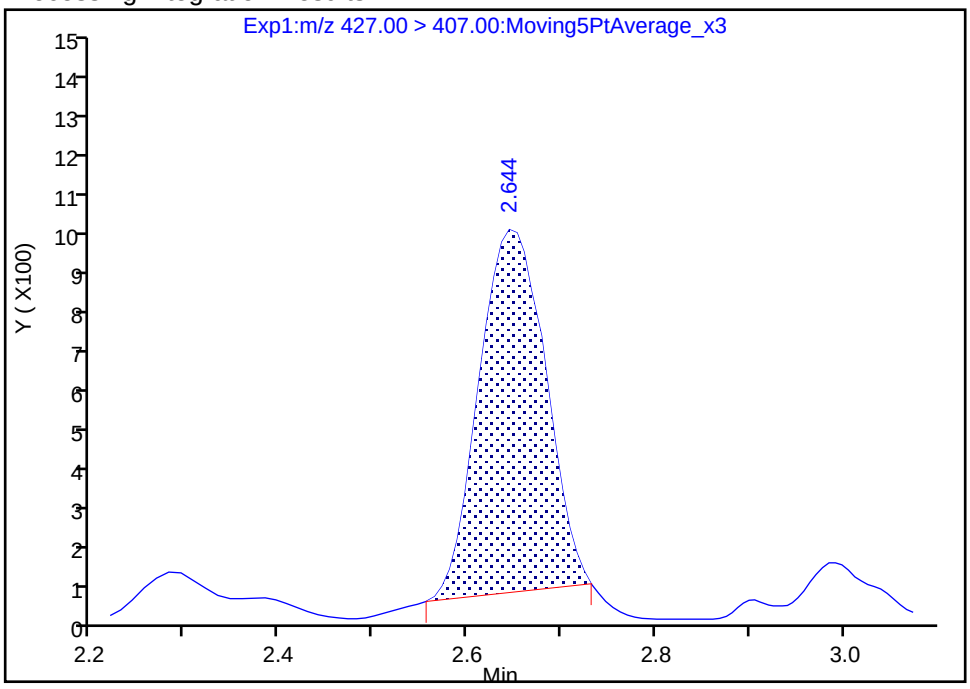
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_053.d
Injection Date: 25-Apr-2018 00:30:58 Instrument ID: A8_N
Lims ID: LCS 320-218884/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

13 Sodium 1H,1H,2H,2H-perfluorooctane sulfonate, CAS: 27619-97-2

Signal: 1

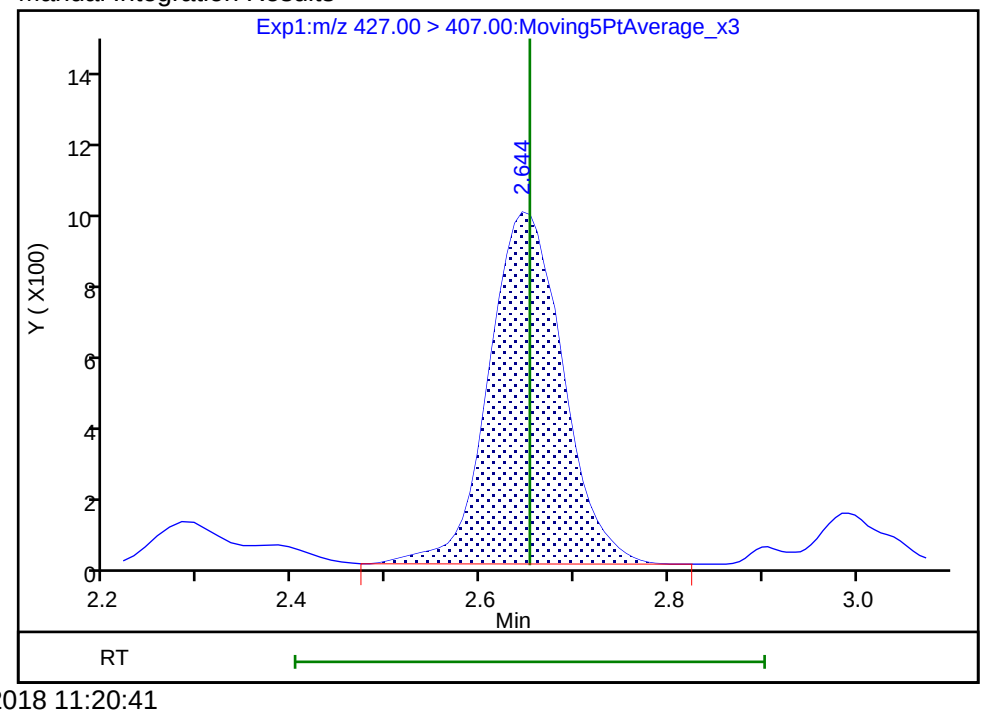
Processing Integration Results

RT: 2.64
Area: 4420
Amount: 0.008068
Amount Units: ng/ml



Manual Integration Results

RT: 2.64
Area: 5298
Amount: 0.009670
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:20:41
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MS | Lab Sample ID: 320-38054-2 MS

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_047.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.03(g) | Date Analyzed: 04/24/2018 23:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0622		0.00055
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.0261		0.00055
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0326		0.00055
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.0204		0.00055
335-67-1	Perfluorooctanoic acid (PFOA)	0.0185		0.00055
307-55-1	Perfluorododecanoic acid (PFDoA)	0.0458		0.00055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0330		0.00055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00503		0.00055
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00986		0.00055
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00810		0.00055
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.0183		0.00055
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00633		0.0055
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00847		0.0055
27619-97-2	6:2FTS	0.0449		0.0055

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	7	*	25-150
STL01893	13C5 PFPeA	62		25-150
STL00993	13C2 PFHxA	64		25-150
STL01892	13C4-PFHpA	67		25-150
STL00990	13C4 PFOA	63		25-150
STL00998	13C2 PFDoA	51		25-150
STL02116	13C2-PFTeDA	14	*	25-150
STL02337	13C3-PFBS	75		25-150
STL00994	18O2 PFHxS	71		25-150
STL00991	13C4 PFOS	51		25-150
STL02118	d3-NMeFOSAA	56		25-150
STL02117	d5-NEtFOSAA	45		25-150
STL02279	M2-6:2FTS	112		25-150
STL02395	M2-4:2FTS	245	*	0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_047.d
Lims ID: 320-38054-A-2-B MS
Client ID:
Sample Type: MS
Inject. Date: 24-Apr-2018 23:44:05 ALS Bottle#: 33 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-2-b ms
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:17:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										EM
212.90 > 169.00	1.436	1.441	-0.005	1.000	2092587	11.4		1139	733	EM
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	494528	0.1834		7.3	4451	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.702	-0.008	1.000	6123366	4.78		478	9880	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.555	2687552	1.55		61.9	36310	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.738	-0.008	1.000	2143598	0.9212		104	5444	
298.90 > 99.00	1.730	1.738	-0.008	1.000	882610		2.43(1.25-3.74)		2954	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	69104	1.73		74.5	222	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.939	1.959	-0.020	1.000	1418775	2.98		319	4347	
D 60 M2-4:2FTS										
329.00 > 81.00	1.939	1.961	-0.022	1.000	1634495	5.72		245	3168	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.992	-0.010	1.000	7409298	5.96		596	6330	
313.00 > 119.00	1.982	1.992	-0.010	1.000	659020		11.24(5.03-15.10)		6775	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	3059192	1.59		63.7	71380	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.014	-0.009	1.000	1932342	0.9092		96.9	11368	
349.00 > 99.00	1.994	2.014	-0.020	0.994	697223		2.77(1.36-4.07)		6283	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.093	-0.009	1.000	199637	NR		0.0	413	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.309	2.319	-0.010	1.000	4695716	3.73		373	5078	
363.00 > 169.00	2.309	2.319	-0.010	1.000	1751423		2.68(1.13-3.40)		6791	
D 9 13C4-PFHpA										
367.00 > 322.00	2.309	2.322	-0.013	1.000	3146668	1.68		67.3	54486	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.322	2.332	-0.010	1.000	3338467	1.80		197	3487	
399.00 > 99.00	2.322	2.332	-0.010	1.000	1130986		2.95(1.50-4.49)		3155	
D 11 18O2 PFHxS										
403.00 > 84.00	2.322	2.335	-0.013	1.000	3865173	1.67		70.8	86657	
65 Adona										
377.00 > 251.00	2.361	2.372	-0.011	1.000	3537736	1.23		123	40492	
377.00 > 85.00	2.361	2.372	-0.011	1.000	2081411		1.70(0.84-2.53)		22342	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.660	-0.007	1.000	6244682	8.22		867	2062	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.668	-0.015	1.000	1067409	2.66		112	2022	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.690	-0.014		5010045	2.50			106529	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.690	-0.014	1.000	4618282	3.39		337	3570	
413.00 > 169.00	2.676	2.690	-0.014	1.000	2549356		1.81(0.84-2.52)		4158	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.691	-0.015	1.000	2943881	1.58		63.3	44686	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.697	-0.014	1.000	1632908	1.48		156	380	
449.00 > 99.00	2.683	2.697	-0.014	1.000	440809		3.70(1.94-5.82)		3003	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.051	3.060	-0.009	1.000	90008765	99.7		10745	148866	E
499.00 > 99.00	3.051	3.060	-0.009	1.000	29745796		3.03(2.31-6.93)		122415	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.051	3.067	-0.016	1.000	13155865	16.3		1632	22287	E
463.00 > 169.00	3.058	3.067	-0.009	1.002	3333969		3.95(1.90-5.69)		13677	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.067	-0.016	1.000	1932871	1.21		48.4	38605	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.067	-0.016	1.000	1983113	1.23		51.3	5314	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.259	3.273	-0.014	1.000	1824385	1.17		125	25145	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.388	3.398	-0.010	1.000	51902494	50.7		5073	105	E
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.399	-0.011	1.000	2528477	1.25		50.1	28.0	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.407	3.417	-0.010	1.000	2154833	3.25		338	50.0	
549.00 > 99.00	3.407	3.417	-0.010	1.000	758574		2.84(1.33-3.97)		218	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.416	3.417	-0.001	1.003	76043716	90.9		9483	101960	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.417	-0.010	1.000	1584263	3.28		137	7444	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.416	3.426	-0.010	1.000	11555081	15.0		1504	23530	E
513.00 > 169.00	3.416	3.426	-0.010	1.000	2139297		5.40(2.36-7.09)		12547	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.427	-0.011	1.000	1861870	1.39		55.5	40424	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.574	3.586	-0.012	1.000	491949	1.16		116	260	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.586	-0.012	1.000	1064675	1.40		55.9	9957	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.729	3.740	-0.011	1.000	1803916	3.35		347	24.8	
599.00 > 99.00	3.729	3.740	-0.011	1.000	660496		2.73(1.39-4.16)		125	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.751	-0.011	1.000	853750	1.14		45.5	5399	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.750	3.761	-0.011	1.000	69610629	140.1		13936	1760	EM
563.00 > 169.00	3.750	3.761	-0.011	1.000	25465089		2.73(2.12-6.36)		578	M
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.750	3.761	-0.011	1.003	494853	1.55		155	569	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.762	-0.012	1.000	1470272	1.27		50.8	25940	
35 MeFOSA										
512.00 > 169.00	3.886	3.875	0.011		249781	NC			74.8	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.907	3.918	-0.011	1.000	2148928	0.8892		94.4	28818	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.042	4.050	-0.008	1.000	5615133	8.39		839	5217	
613.00 > 169.00	4.042	4.050	-0.008	1.000	1559208		3.60(2.13-6.40)		8076	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.061	-0.019	1.000	1604502	1.28		51.3	16441	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.303	4.318	-0.015	1.000	24949190	32.0		3199	22172	E
663.00 > 169.00	4.303	4.318	-0.015	1.000	9116973		2.74(1.25-3.76)		18575	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.548	4.553	-0.005	1.000	325789	6.04		604	597	
713.00 > 219.00	4.538	4.553	-0.015	0.998	235457		1.38(0.71-2.13)		747	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.548	4.564	-0.016	1.000	536904	0.3385		13.5	5563	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.968	4.975	-0.007	1.000	963061	4.05		402	680	
813.00 > 169.00	4.968	4.975	-0.007	1.000	161559		5.96(2.86-8.58)		598	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.968	4.976	-0.008	1.000	623924	0.2417		9.7	4214	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.344	-0.015	1.000	890926	3.56		356	658	
913.00 > 169.00	5.329	5.344	-0.015	1.000	110414		8.07(3.83-11.48)		720	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:11 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_047.d

Injection Date: 24-Apr-2018 23:44:05 Instrument ID: A8_N

Lims ID: 320-38054-A-2-B MS

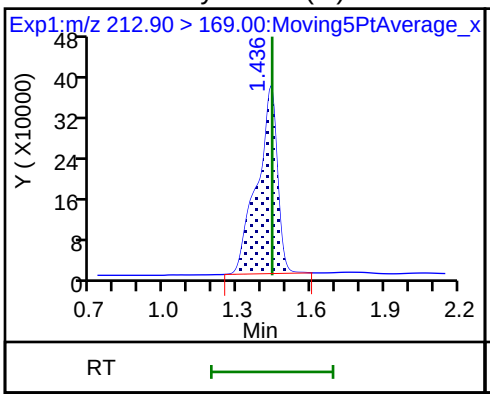
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 33 Worklist Smp#: 6

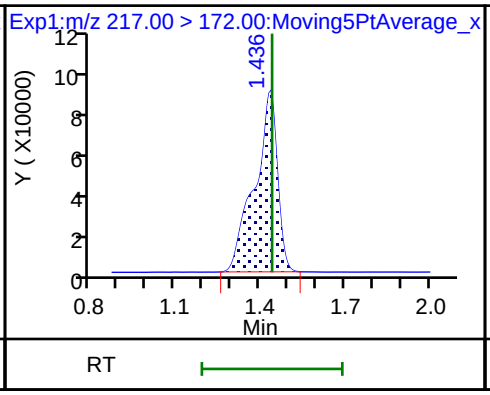
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

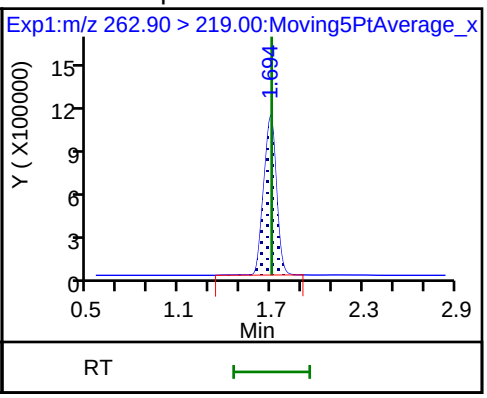
2 Perfluorobutyric acid (M)



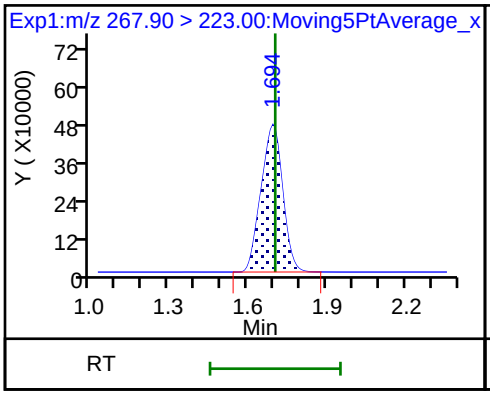
D 1 13C4 PFBA



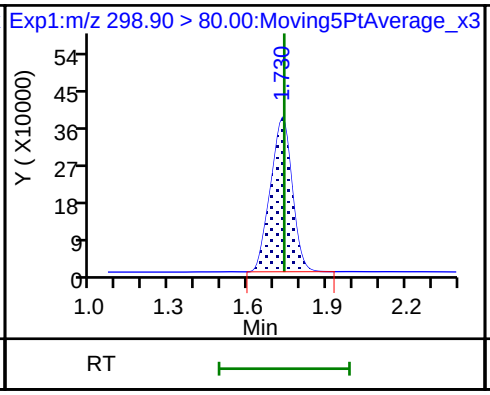
4 Perfluoropentanoic acid



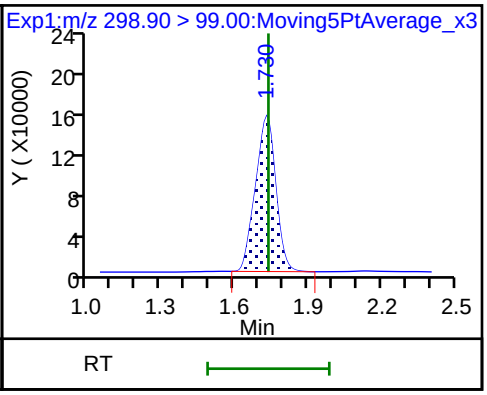
D 3 13C5-PFPeA



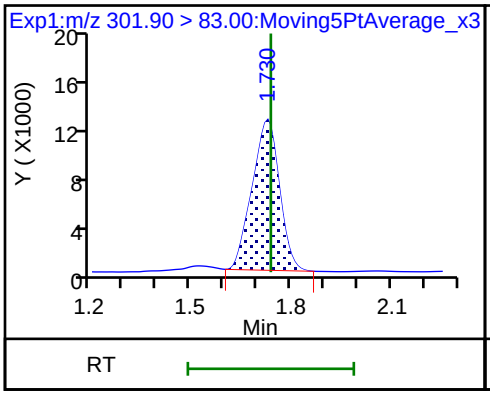
5 Perfluorobutanesulfonic acid



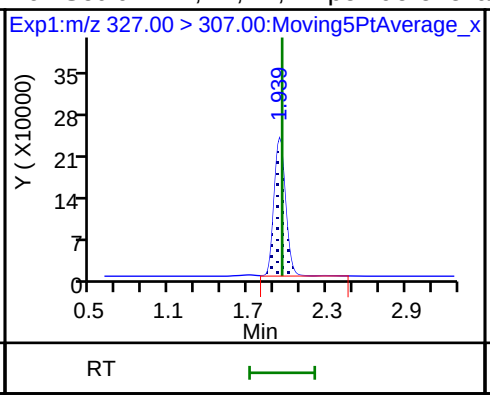
5 Perfluorobutanesulfonic acid



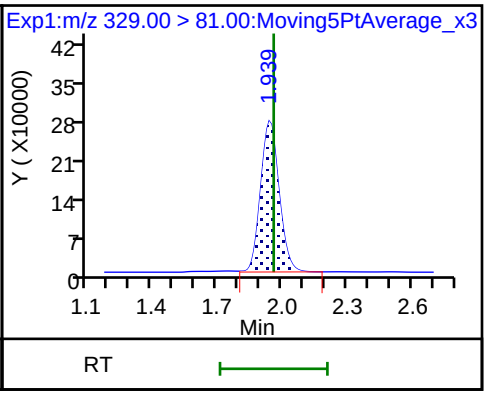
D 47 13C3-PFBS



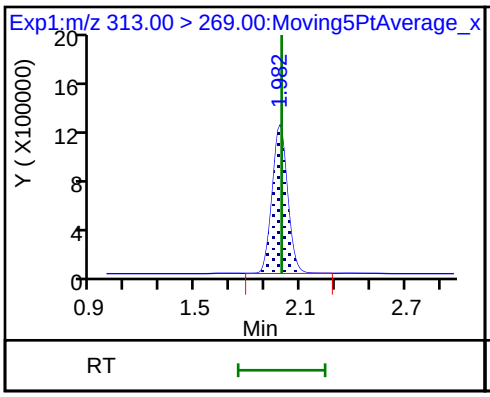
61 Sodium 1H,1H,2H,2H-perfluorohexane



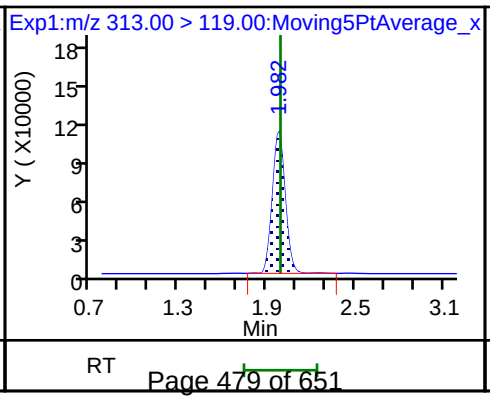
D 60 M2-4:2FTS



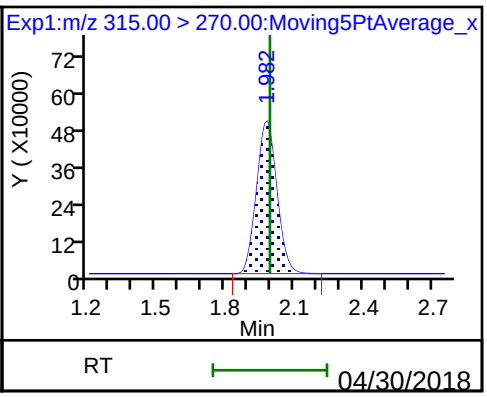
6 Perfluorohexanoic acid



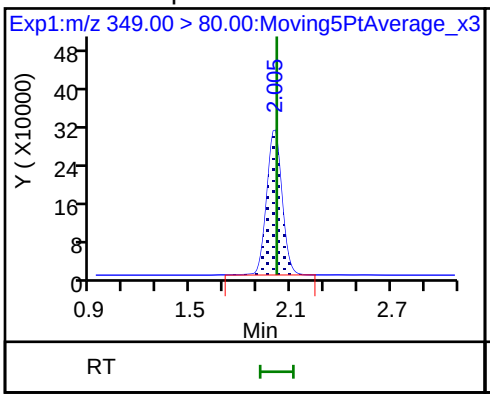
6 Perfluorohexanoic acid



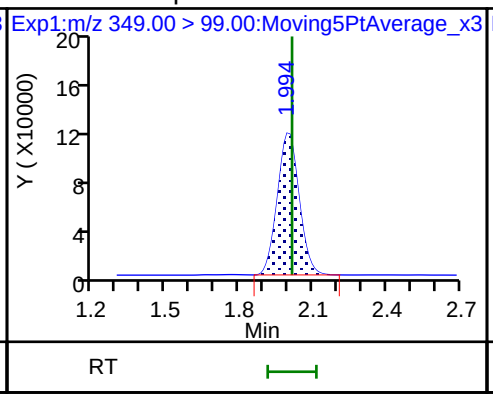
D 7 13C2 PFHxA



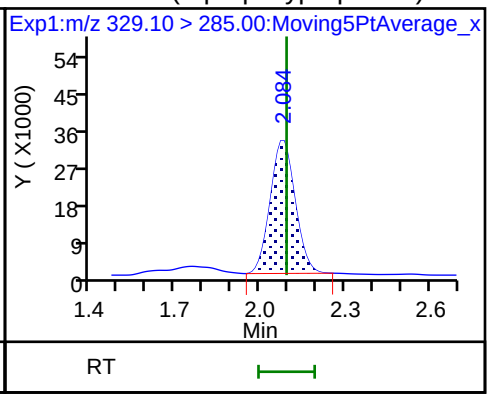
70 Perfluoropentanesulfonic acid



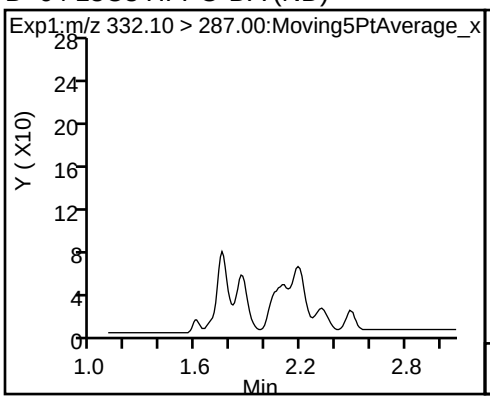
70 Perfluoropentanesulfonic acid



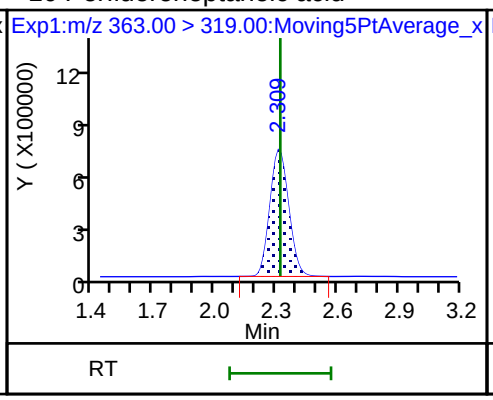
67 Perfluoro(2-propoxypropanoic) acid



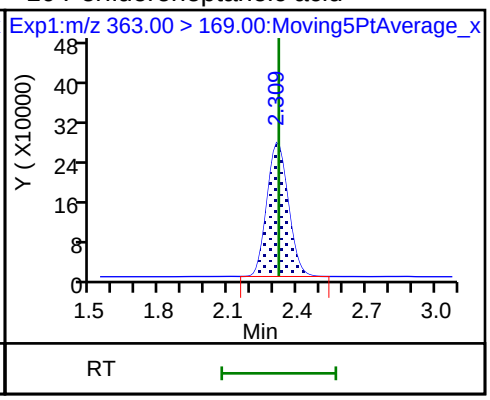
D 64 13C3 HFPO-DA (ND)



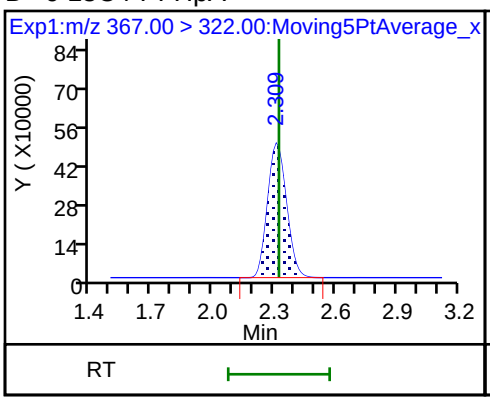
10 Perfluoroheptanoic acid



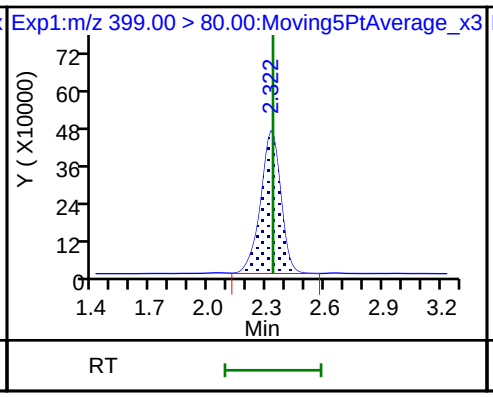
10 Perfluoroheptanoic acid



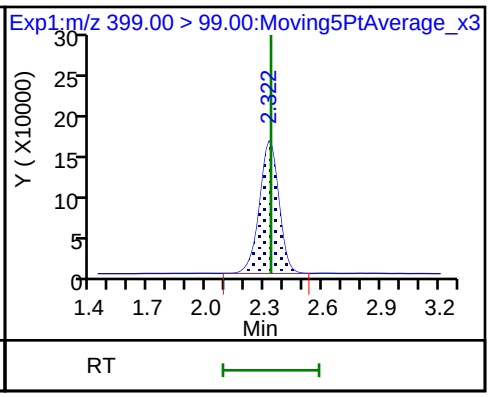
D 9 13C4-PFHpA



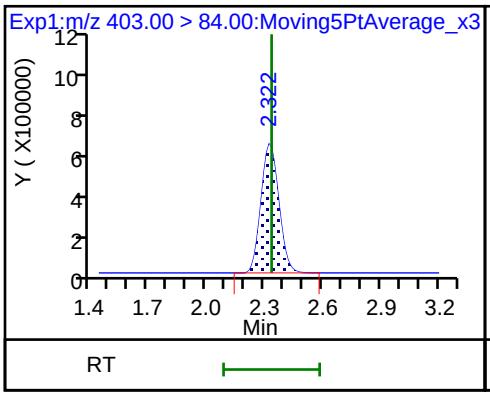
8 Perfluorohexanesulfonic acid



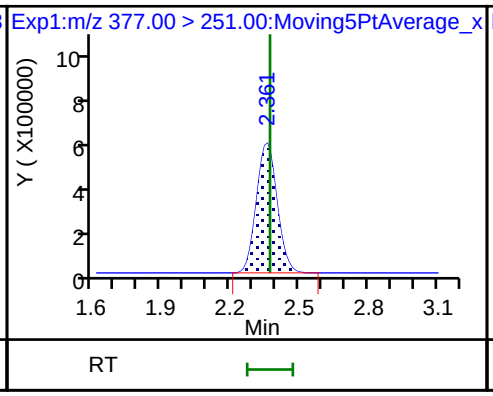
8 Perfluorohexanesulfonic acid



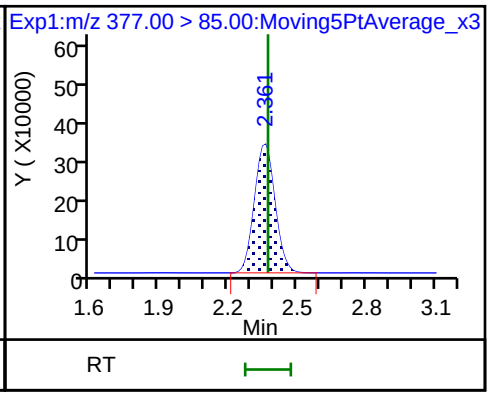
D 11 18O2 PFHxS



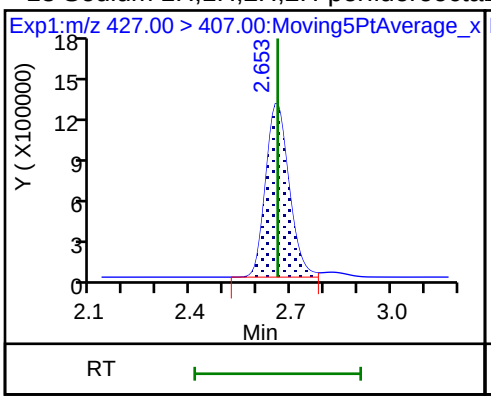
65 Adona



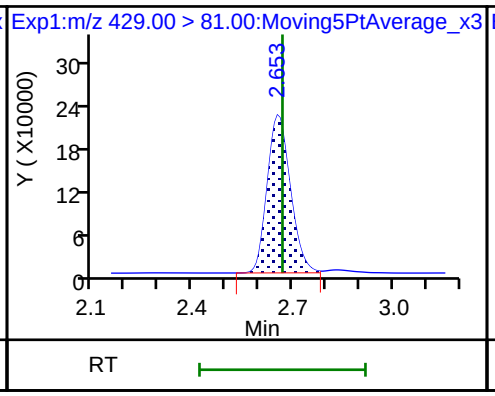
65 Adona



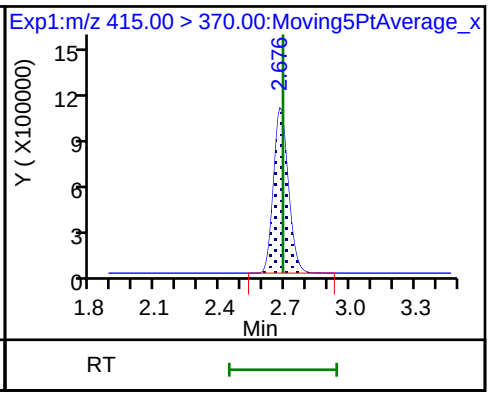
13 Sodium 1H,1H,2H,2H-perfluorooctane



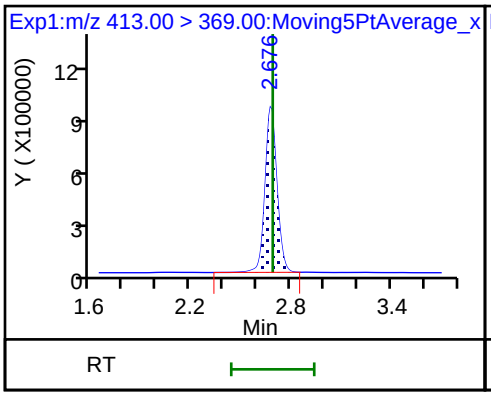
D 12 M2-6:2FTS



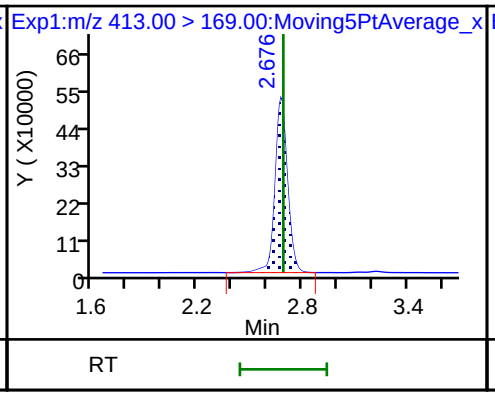
* 62 13C2-PFOA



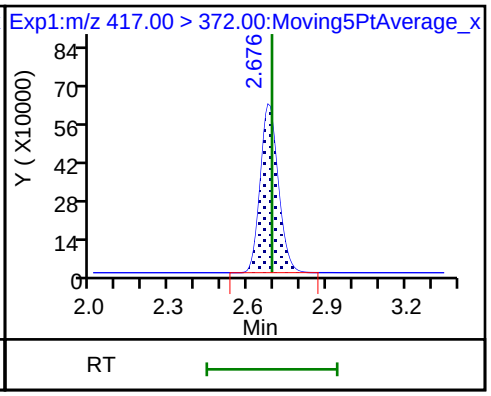
15 Perfluorooctanoic acid



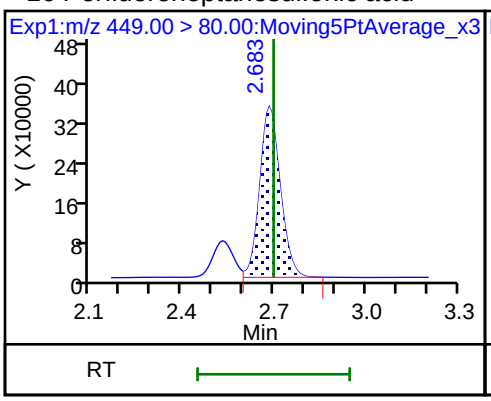
15 Perfluorooctanoic acid



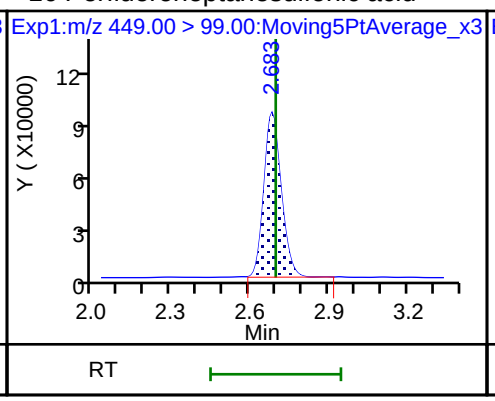
D 14 13C4 PFOA



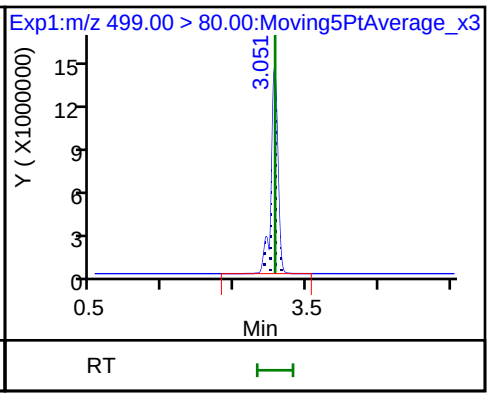
16 Perfluoroheptanesulfonic acid



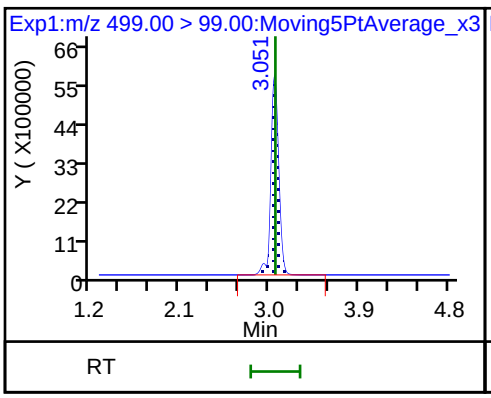
16 Perfluoroheptanesulfonic acid



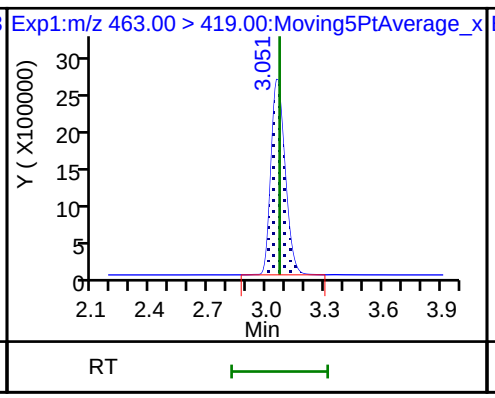
17 Perfluorooctane sulfonic acid



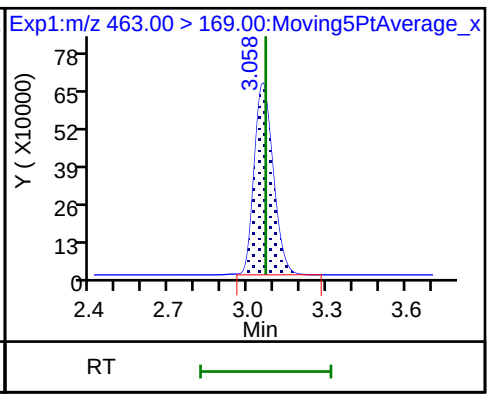
17 Perfluorooctane sulfonic acid



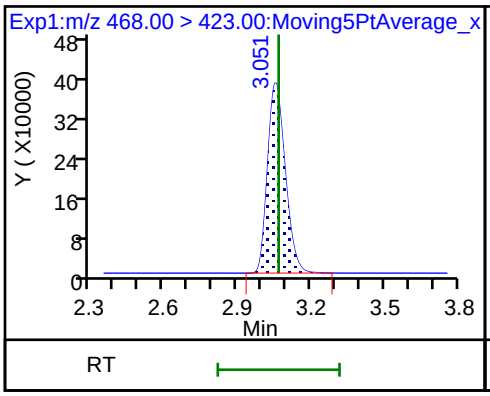
20 Perfluorononanoic acid



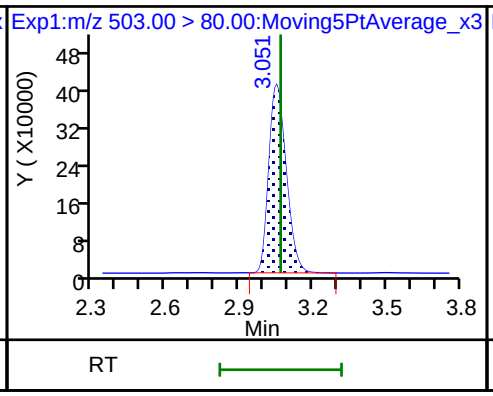
20 Perfluorononanoic acid



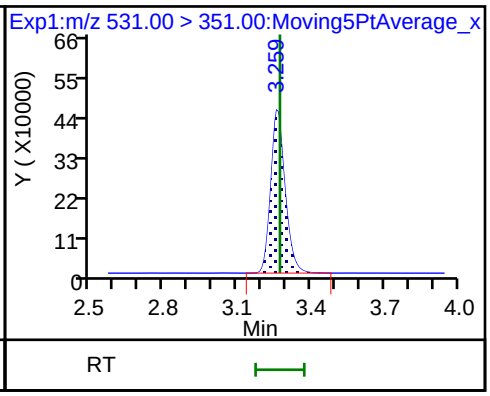
D 19 13C5 PFNA



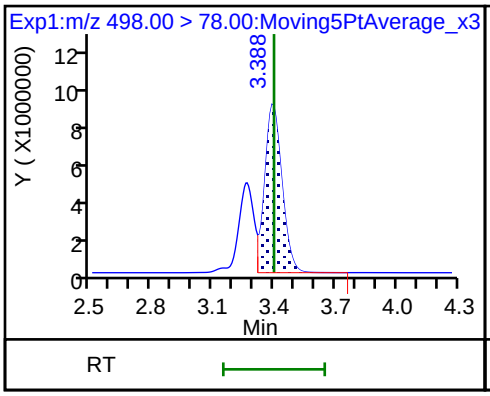
D 18 13C4 PFOS



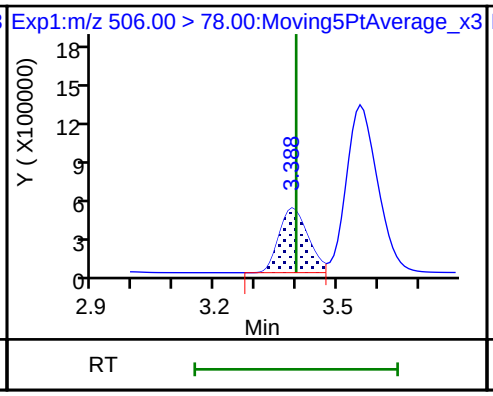
69 9-Chlorohexadecafluoro-3-oxanonane



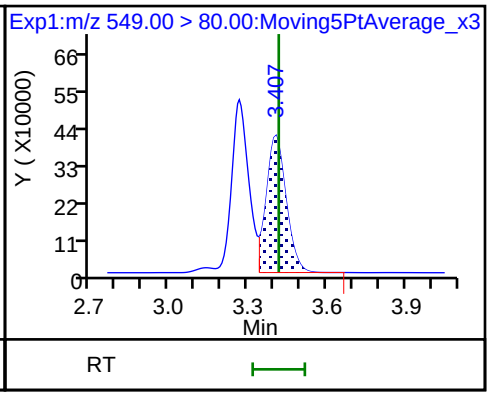
22 Perfluorooctane Sulfonamide



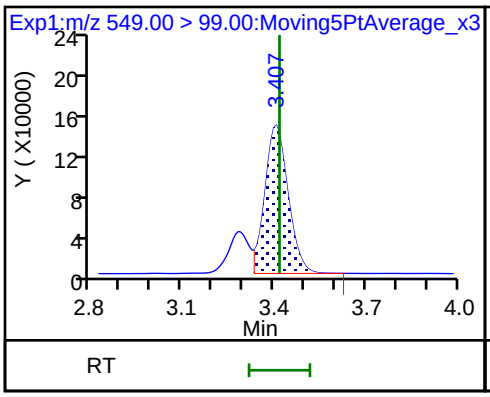
D 21 13C8 FOSA



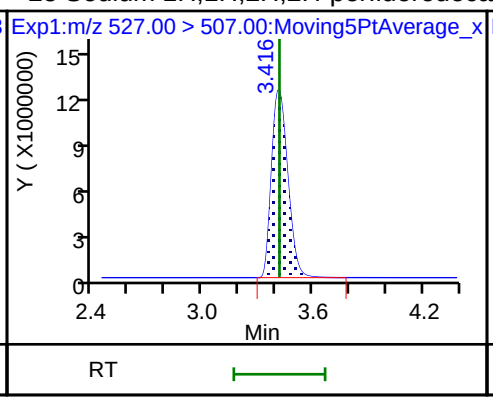
68 Perfluorononanesulfonic acid



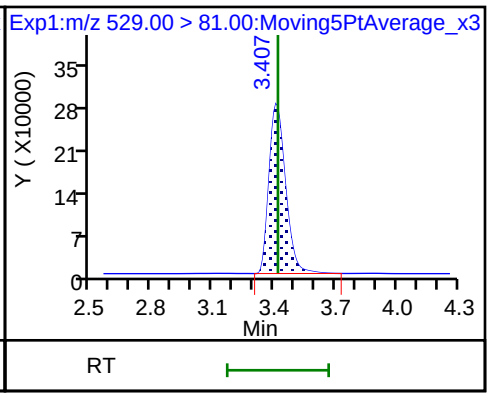
68 Perfluorononanesulfonic acid



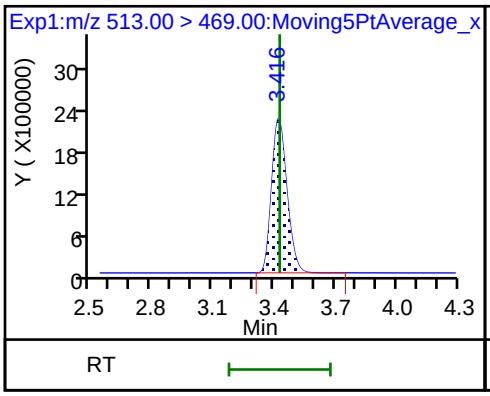
25 Sodium 1H,1H,2H,2H-perfluorodecane



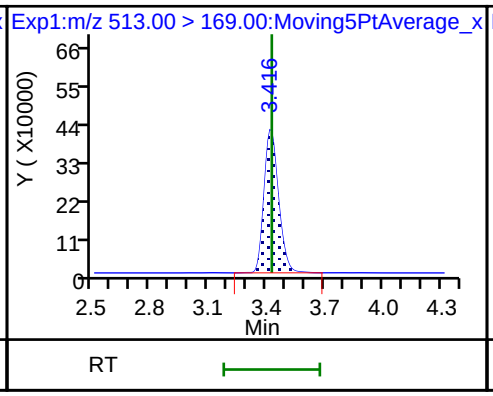
D 26 M2-8:2FTS



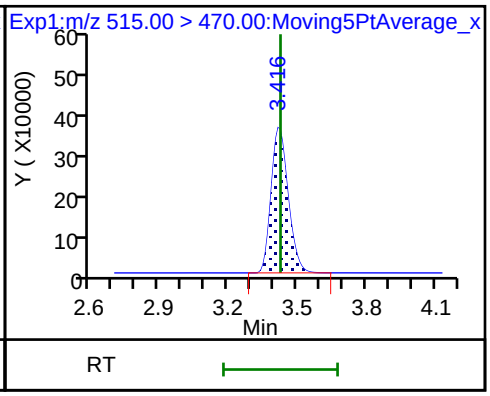
24 Perfluorodecanoic acid



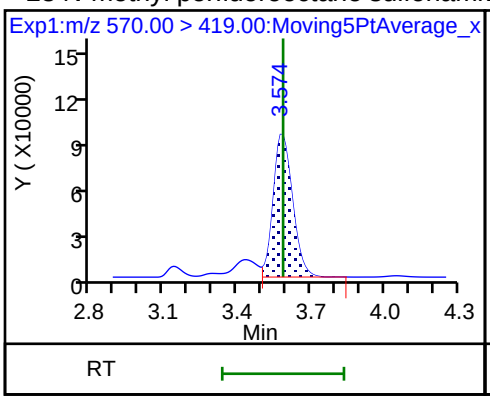
24 Perfluorodecanoic acid



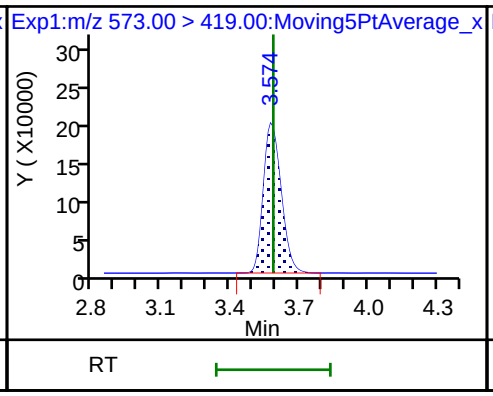
D 23 13C2 PFDA



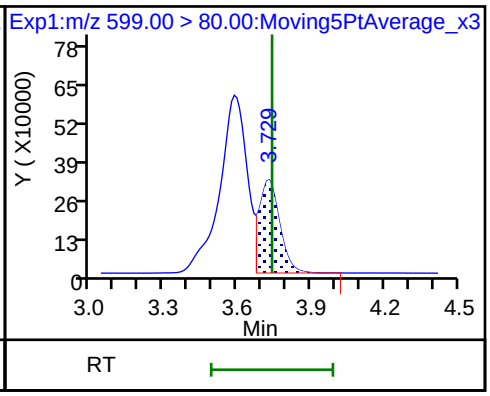
28 N-methyl perfluorooctane sulfonami



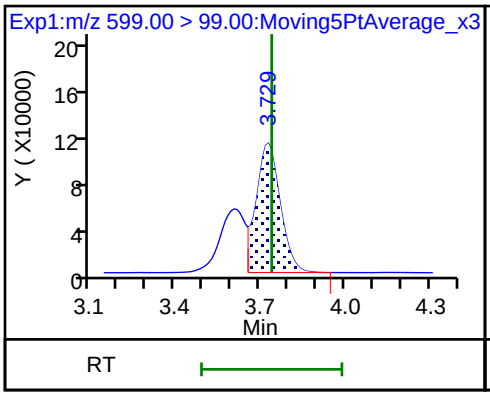
D 27 d3-NMeFOSAA



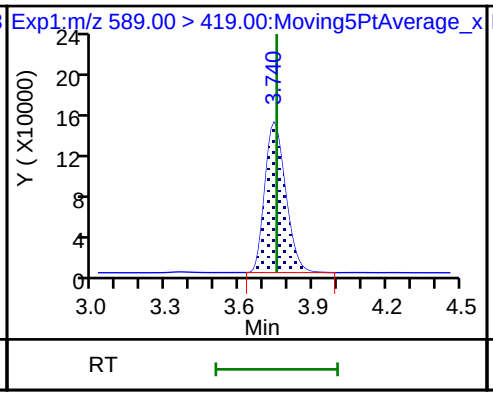
29 Perfluorodecane Sulfonic acid



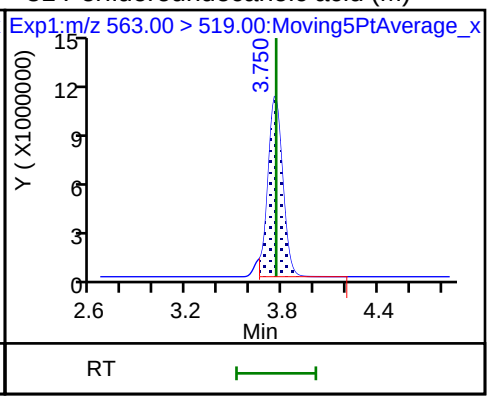
29 Perfluorodecane Sulfonic acid



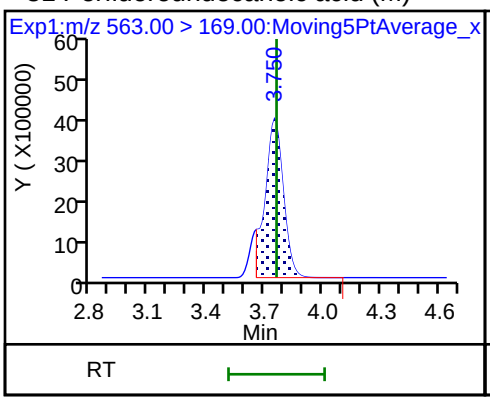
D 32 d5-NEtFOSAA



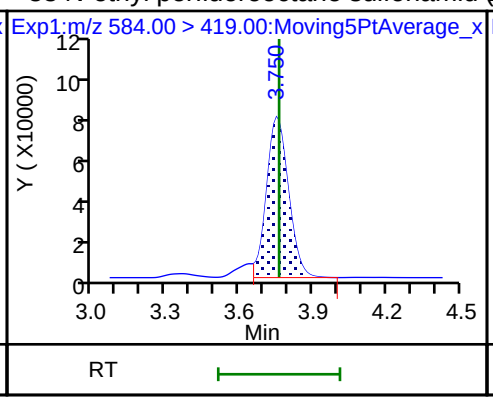
31 Perfluoroundecanoic acid (M)



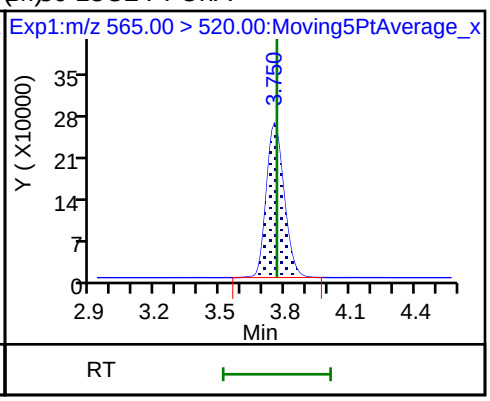
31 Perfluoroundecanoic acid (M)



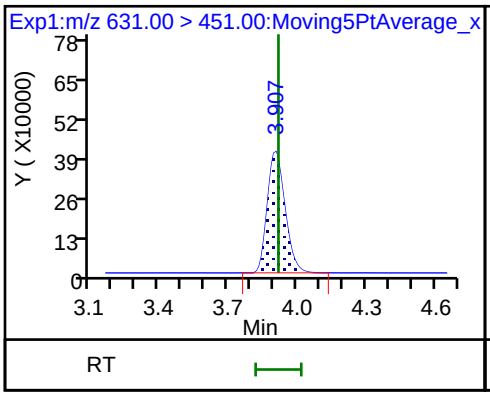
33 N-ethyl perfluorooctane sulfonamid (M)



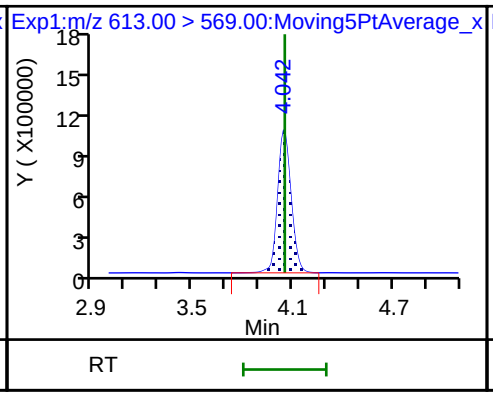
D 30 13C2 PFUnA



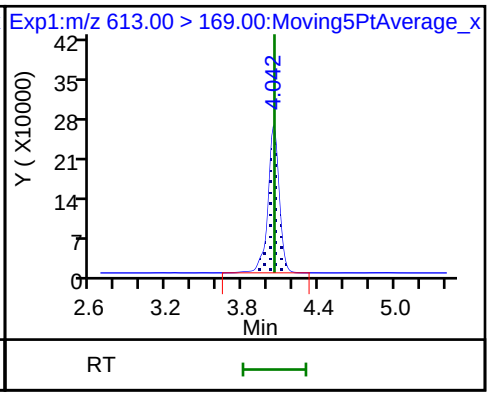
66 11-Chloroeicosafluoro-3-oxaundecan



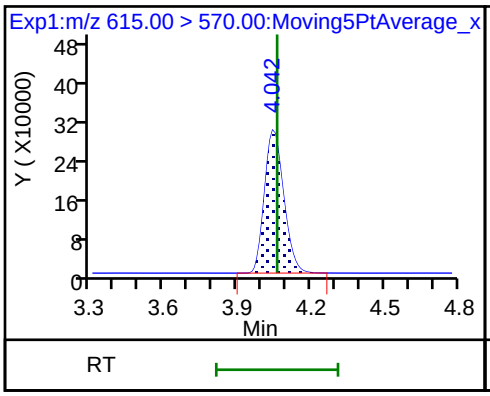
37 Perfluorododecanoic acid



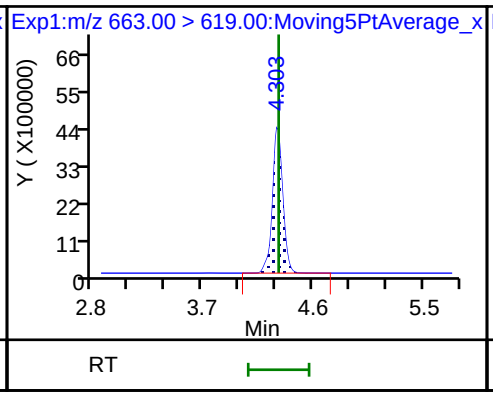
37 Perfluorododecanoic acid



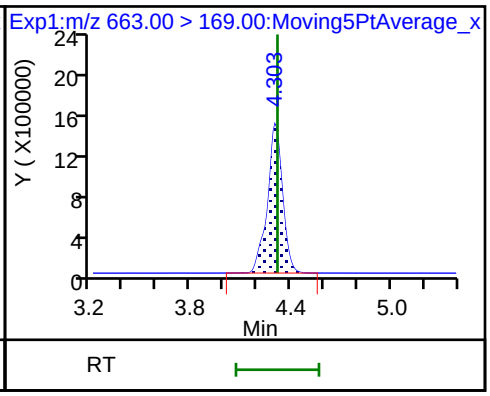
D 36 13C2 PFDoA



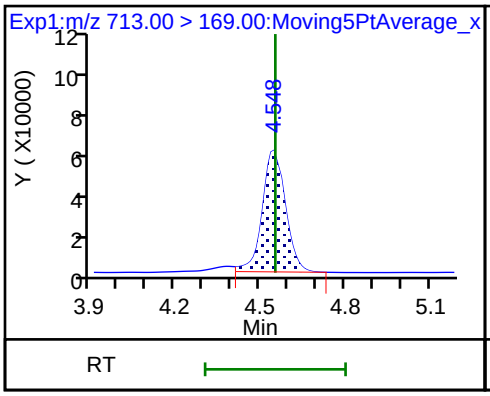
41 Perfluorotridecanoic acid



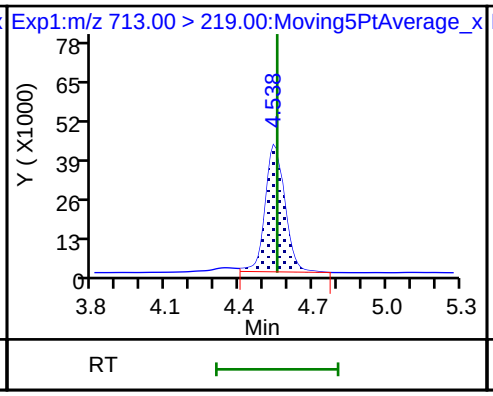
41 Perfluorotridecanoic acid



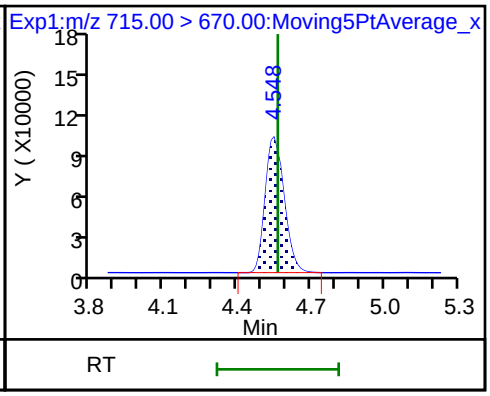
42 Perfluorotetradecanoic acid



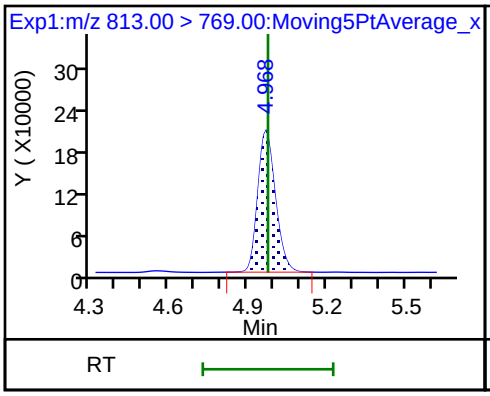
42 Perfluorotetradecanoic acid



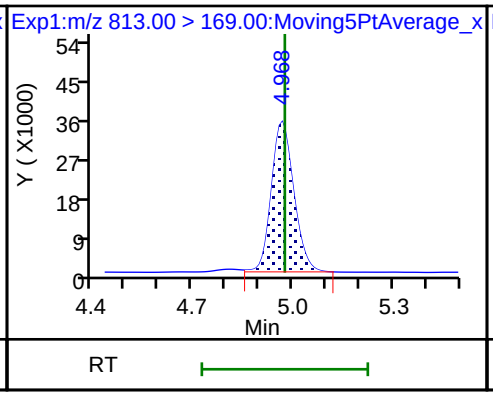
D 43 13C2-PFTeDA



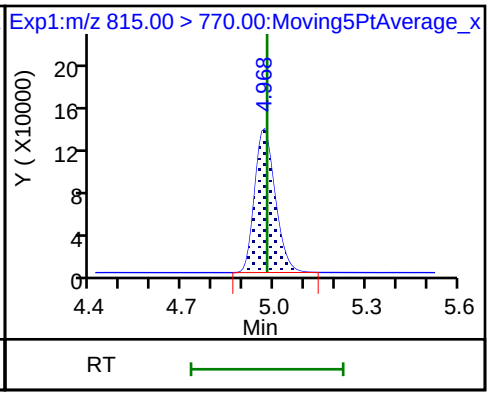
45 Perfluorohexadecanoic acid



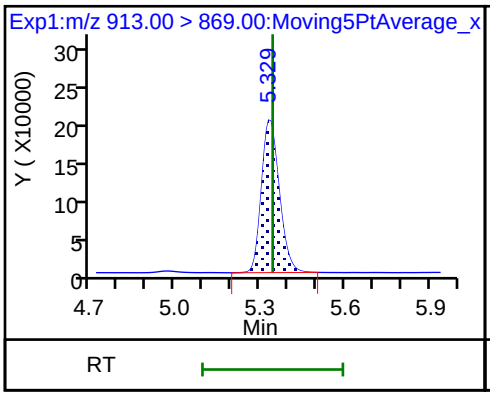
45 Perfluorohexadecanoic acid



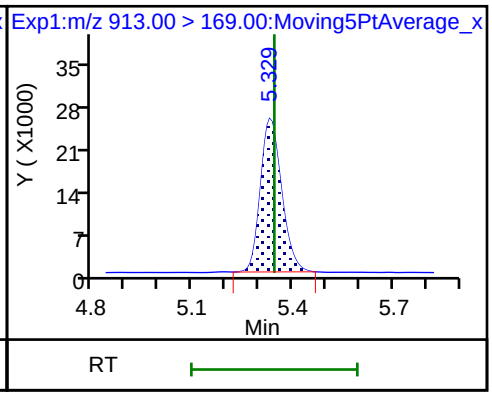
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

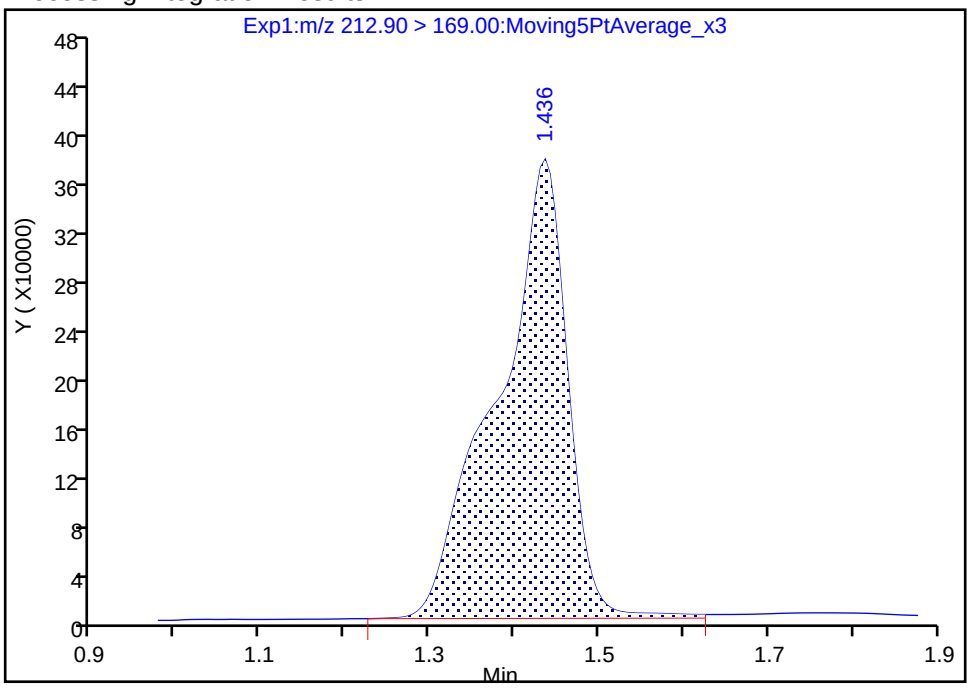
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_047.d
Injection Date: 24-Apr-2018 23:44:05 Instrument ID: A8_N
Lims ID: 320-38054-A-2-B MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 33 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

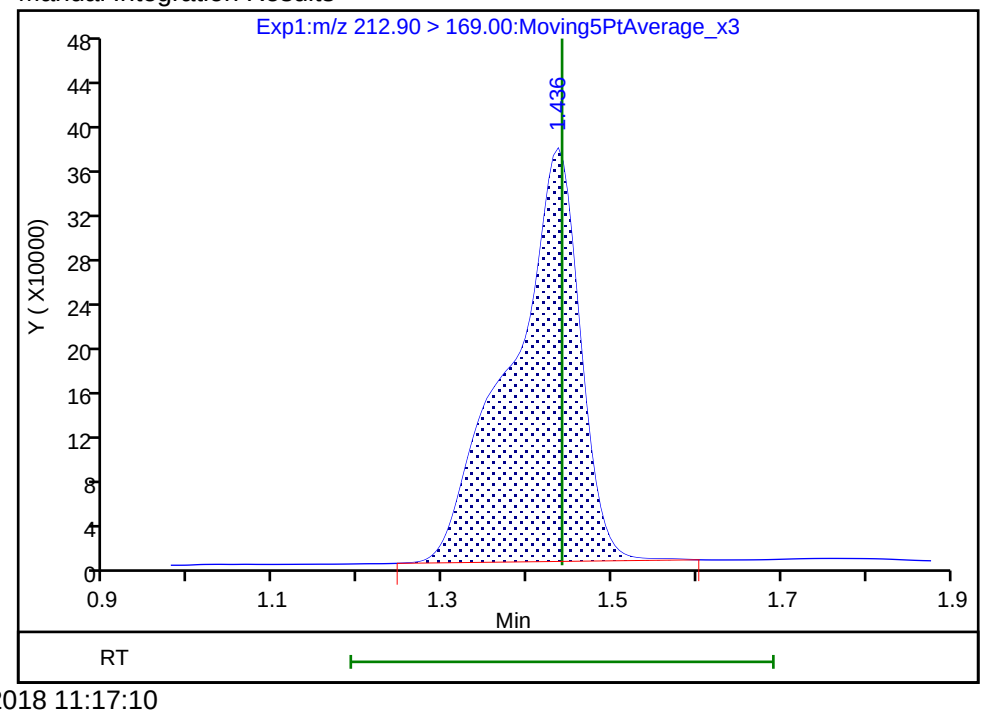
Processing Integration Results

RT: 1.44
Area: 2132863
Amount: 11.611868
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 2092587
Amount: 11.392594
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:17:10
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

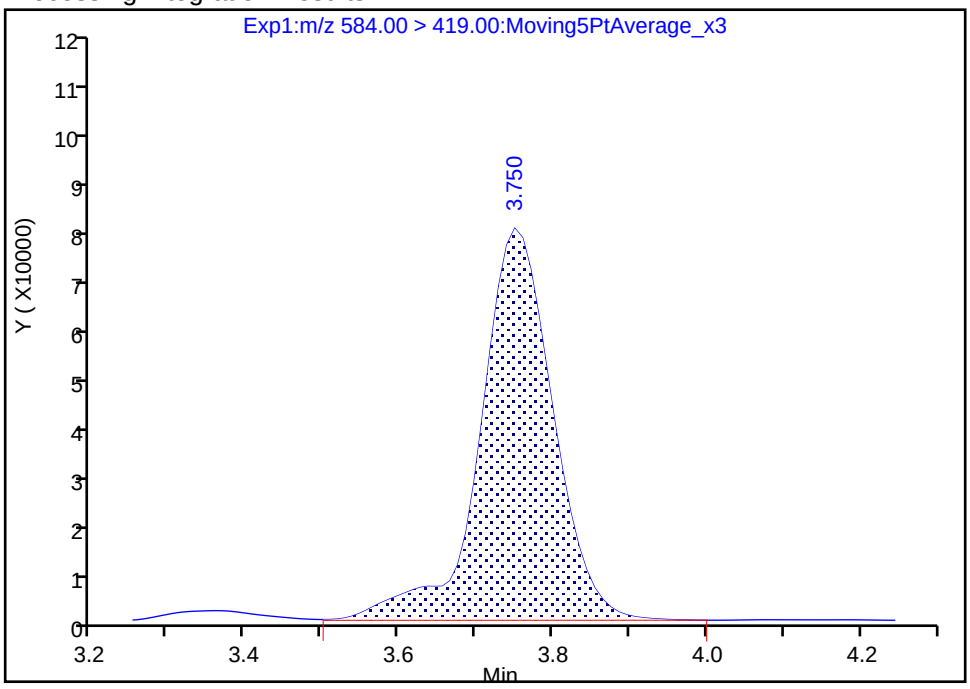
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_047.d				
Injection Date:	24-Apr-2018 23:44:05	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-B MS				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	33	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

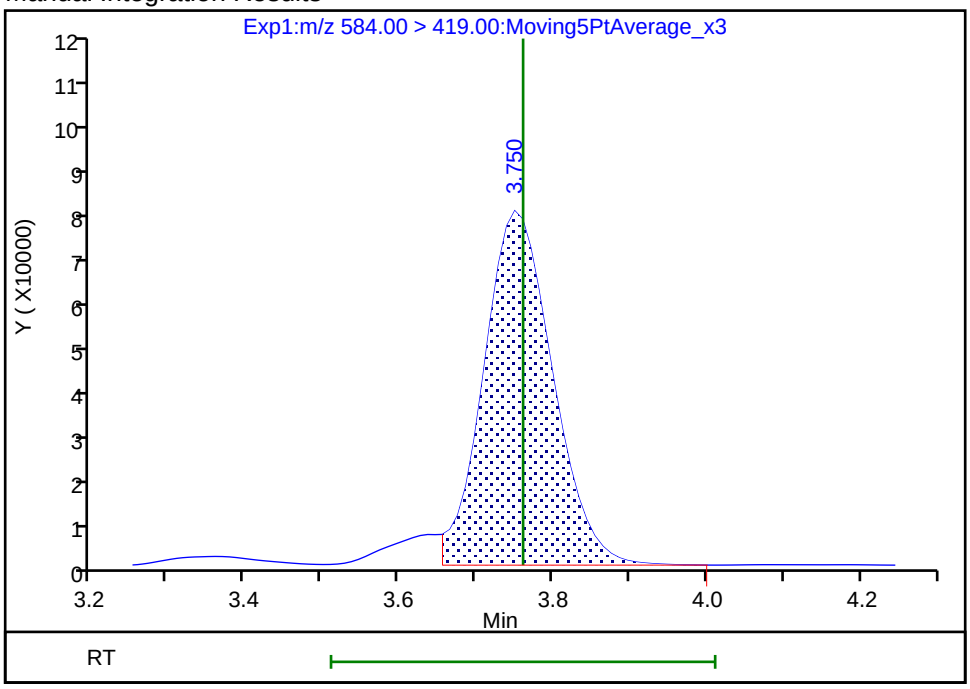
Processing Integration Results

RT: 3.75
Area: 528156
Amount: 1.654975
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 494853
Amount: 1.550620
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:17:47

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MS | Lab Sample ID: 320-38054-2 MS

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_056.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.04(g) | Date Analyzed: 04/25/2018 00:54

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00723		0.00054
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00965		0.00054
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.0230		0.00054
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000768		0.00054
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0054
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0054

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02337	13C3-PFBS	87		25-150
STL00991	13C4 PFOS	62		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	96		25-150
STL02117	d5-NEtFOSAA	58		25-150
STL02395	M2-4:2FTS	0		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_056.d
Lims ID: 320-38054-A-2-E MS
Client ID:
Sample Type: MS
Inject. Date: 25-Apr-2018 00:54:23 ALS Bottle#: 39 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-2-e ms
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:23:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										E
212.90 > 169.00	1.436	1.436	0.0	1.000	172491041	151.3		15131	25196	E
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	3069232	1.95		77.8	17543	
4 Perfluoropentanoic acid										E
262.90 > 219.00	1.694	1.694	0.0	1.000	141105009	193.1		19305	46535	E
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.555	1533264	1.51		60.3	20272	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.730	0.009	1.000	2120012	1.33		150	839	
298.90 > 99.00	1.739	1.730	0.009	1.000	908320		2.33(1.25-3.74)		698	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	47347	2.03		87.3	407	
6 Perfluorohexanoic acid										RE
313.00 > 269.00	1.982	1.982	0.0	1.000	142784693	192.7		19266	57312	RE
313.00 > 119.00	1.982	1.982	0.0	1.000	32437910		4.40(5.03-15.10)		141415	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	1823377	1.62		64.9	39448	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	2172144	1.49		159	514	
349.00 > 99.00	2.004	2.004	0.0	1.000	775501		2.80(1.36-4.07)		477	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.084	-0.001	1.000	203362	NR		0.0	1370	
10 Perfluoroheptanoic acid										E
363.00 > 319.00	2.321	2.321	0.0	1.006	132624156	241.5		24149	42816	E
363.00 > 169.00	2.321	2.321	0.0	1.006	88486607		1.50(1.13-3.40)		82911	
8 Perfluorohexanesulfonic acid										E
399.00 > 80.00	2.334	2.321	0.013	1.000	14824842	16.2		1766	132	E
399.00 > 99.00	2.334	2.321	0.013	1.000	4600353		3.22(1.50-4.49)		141	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.322	-0.014	1.000	1371775	1.25		50.2	28258	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	1912861	1.42		59.9	16840	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	61782	0.0306		3.1	840	
377.00 > 85.00	2.360	2.360	0.0	1.000	37994		1.63(0.84-2.53)		762	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.654	2.652	0.002	1.003	20439	0.0776		8.2	452	
D 12 M2-6:2FTS										
429.00 > 81.00	2.646	2.668	-0.022	1.000	369982	1.58		66.4	4782	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.675	0.001		2930683	2.50			49866	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.684	2.675	0.009	1.003	128133686	163.8		16259	36219	E
413.00 > 169.00	2.676	2.675	0.001	1.000	99311801		1.29(0.84-2.52)		64439	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.684	2.682	0.002	1.000	1375427	1.78		186	194	
449.00 > 99.00	2.684	2.682	0.002	1.000	382618		3.59(1.94-5.82)		240	M
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.691	-0.015	1.000	1692536	1.56		62.3	24791	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	2.934	3.048	-0.114	0.962	12892834	20.3		2189	566	E
499.00 > 99.00	3.051	3.048	0.003	1.000	22967467		0.56(2.31-6.93)		3324	M
20 Perfluorononanoic acid										E
463.00 > 419.00	3.058	3.055	0.003	1.002	85588599	141.6		14161	300579	E
463.00 > 169.00	3.051	3.055	-0.004	1.000	33770029		2.53(1.90-5.69)		370974	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.067	-0.016	1.000	1449086	1.55		62.0	28709	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.067	-0.016	1.000	1394714	1.47		61.7	8318	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.262	3.261	0.001	1.000	1486877	1.35		145	16933	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.391	-0.004	1.000	145115	0.1413		14.1	223	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.399	-0.012	1.000	2537721	2.15		86.0	30069	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.396	3.401	-0.005	1.000	2017768	4.33		451	69.3	
549.00 > 99.00	3.406	3.401	0.005	1.003	748530		2.70(1.33-3.97)		154	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.410	-0.004	1.000	151299	0.5371		56.1	5570	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.417	-0.011	1.000	533200	1.89		78.8	4780	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.424	3.419	0.005	1.003	64139796	91.9		9185	151275	E
513.00 > 169.00	3.415	3.419	-0.004	1.000	17069314		3.76(2.36-7.09)		96889	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.427	-0.012	1.000	1692265	2.15		86.2	31874	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.586	-0.011	1.000	1073804	2.41		96.5	14434	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.720	3.732	-0.012	1.000	1605887	4.24		440	24.9	
599.00 > 99.00	3.720	3.732	-0.012	1.000	645531		2.49(1.39-4.16)		126	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.751	-0.010	1.000	642338	1.46		58.5	11142	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.752	3.754	-0.002	1.000	73077081	174.1		17324	2033	EM
563.00 > 169.00	3.752	3.754	-0.002	1.000	26652980		2.74(2.12-6.36)		575	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.762	-0.010	1.000	1241620	1.83		73.3	24457	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.909	3.911	-0.002	1.000	2536095	1.49		158	35120	
37 Perfluorododecanoic acid										E
613.00 > 569.00	4.042	4.054	-0.012	1.000	37252242	58.6		5860	35133	E
613.00 > 169.00	4.042	4.054	-0.012	1.000	11038624		3.37(2.13-6.40)		48117	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.061	-0.019	1.000	1523884	2.08		83.3	20011	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.313	4.314	-0.001	1.000	42243636	57.0		5702	26341	E
663.00 > 169.00	4.301	4.314	-0.013	0.997	16421888		2.57(1.25-3.76)		28267	
42 Perfluorotetradecanoic acid										E
713.00 > 169.00	4.548	4.549	-0.001	1.000	6751508	33.9		3394	24093	E
713.00 > 219.00	4.538	4.549	-0.011	0.998	4796232		1.41(0.71-2.13)		21249	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.548	4.564	-0.016	1.000	1980144	2.13		85.4	13970	
45 Perfluorohexadecanoic acid										E
813.00 > 769.00	4.962	4.972	-0.010	1.000	13098480	11.2		1116	5539	E
813.00 > 169.00	4.962	4.972	-0.010	1.000	2177441		6.02(2.86-8.58)		4874	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.962	4.976	-0.014	1.000	3069862	2.03		81.3	12874	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.333	5.333	0.0	1.000	3688514	2.99		299	1520	
913.00 > 169.00	5.333	5.333	0.0	1.000	461894		7.99(3.83-11.48)		2190	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:23 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_056.d

Injection Date: 25-Apr-2018 00:54:23 Instrument ID: A8_N

Lims ID: 320-38054-A-2-E MS

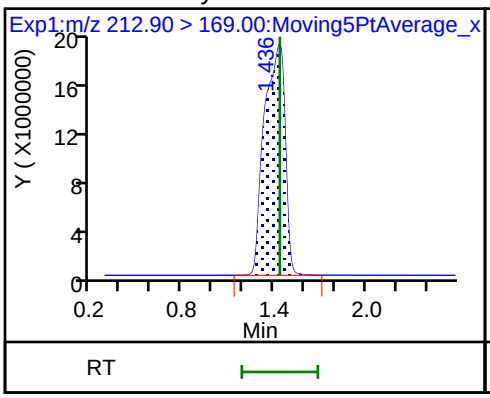
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 39 Worklist Smp#: 15

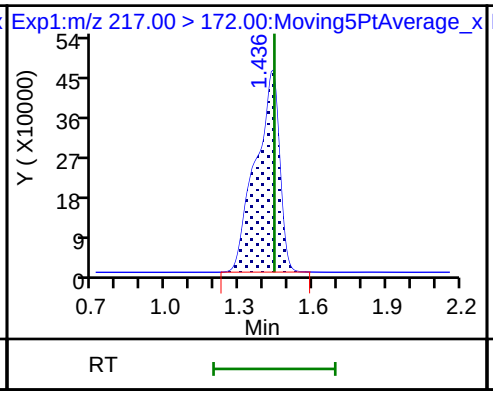
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

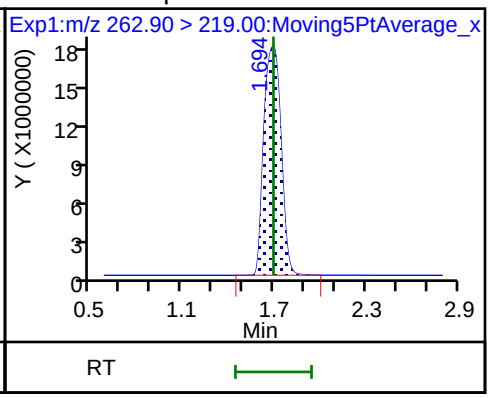
2 Perfluorobutyric acid



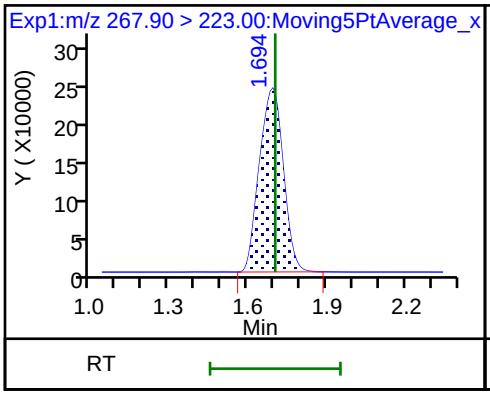
D 1 13C4 PFBA



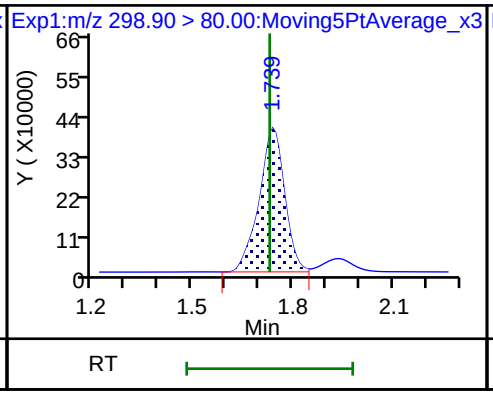
4 Perfluoropentanoic acid



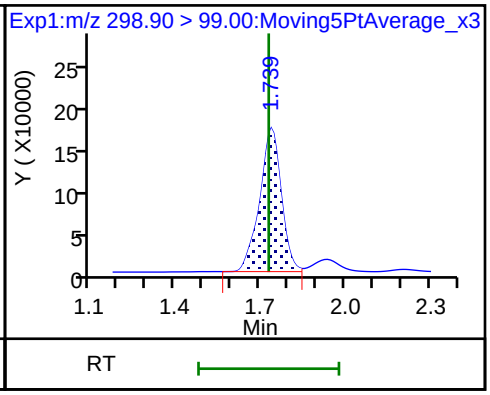
D 3 13C5-PFPeA



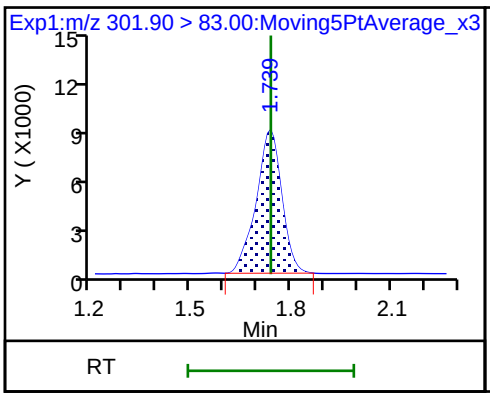
5 Perfluorobutanesulfonic acid



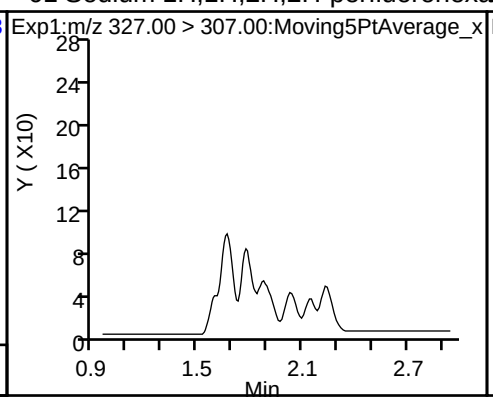
5 Perfluorobutanesulfonic acid



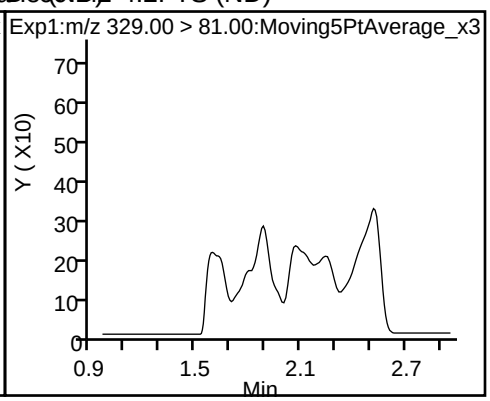
D 47 13C3-PFBS



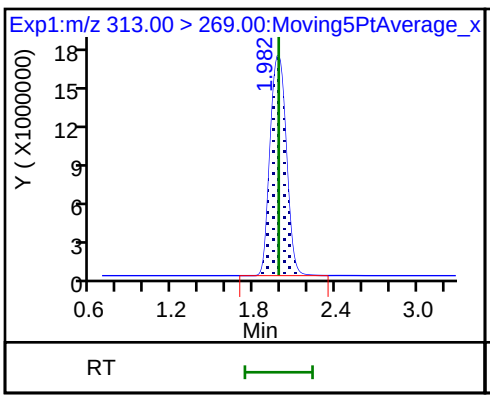
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



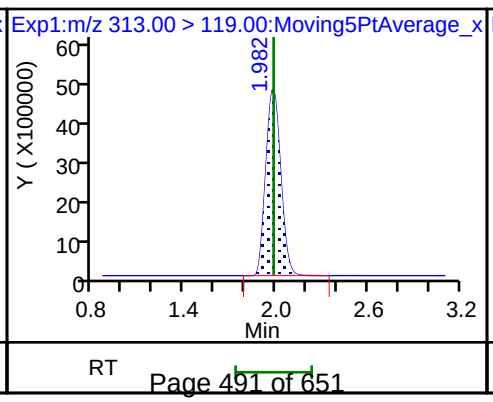
D 60 (ND) 4:2FTS (ND)



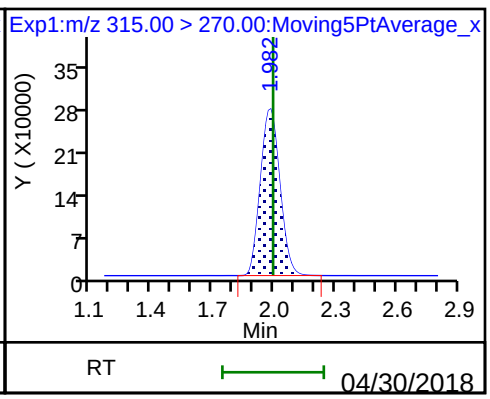
6 Perfluorohexanoic acid



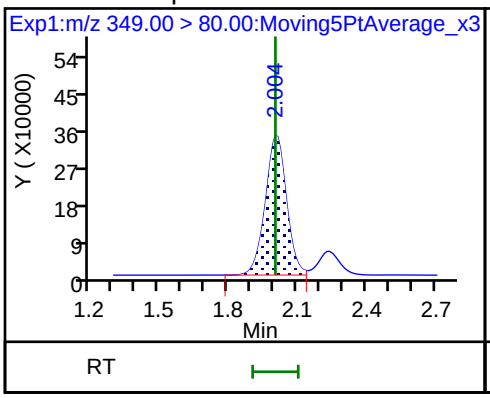
6 Perfluorohexanoic acid



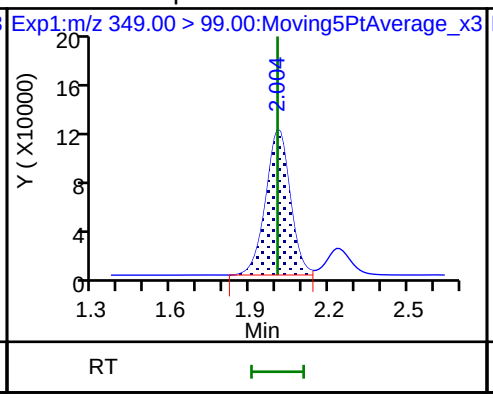
D 7 13C2 PFHxA



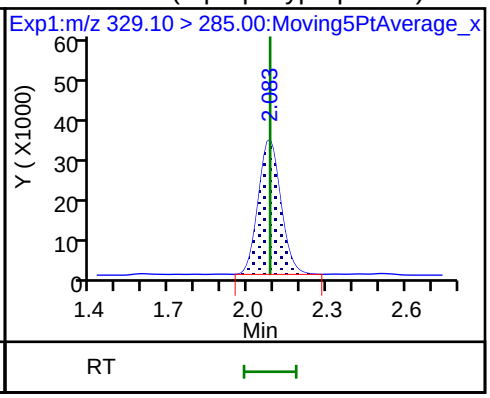
70 Perfluoropentanesulfonic acid



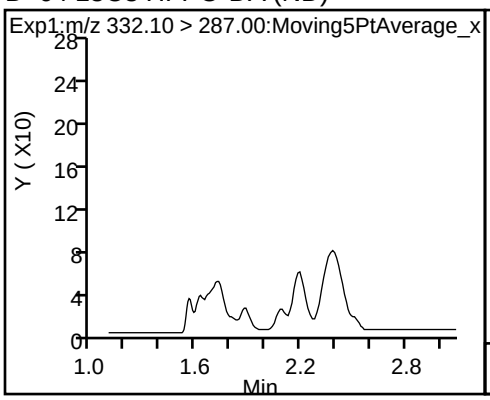
70 Perfluoropentanesulfonic acid



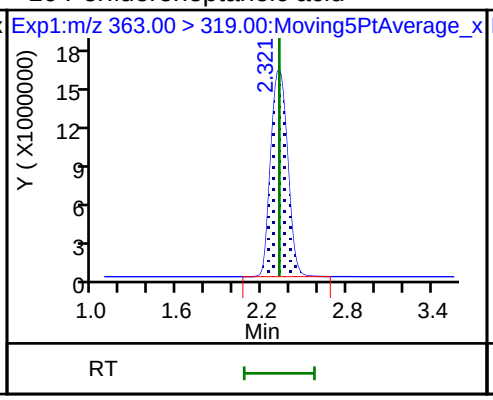
67 Perfluoro(2-propoxypropanoic) acid



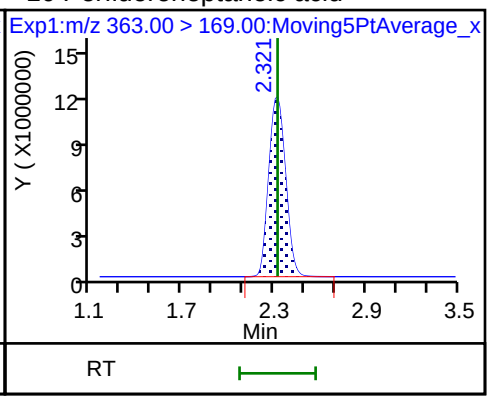
D 64 13C3 HFPO-DA (ND)



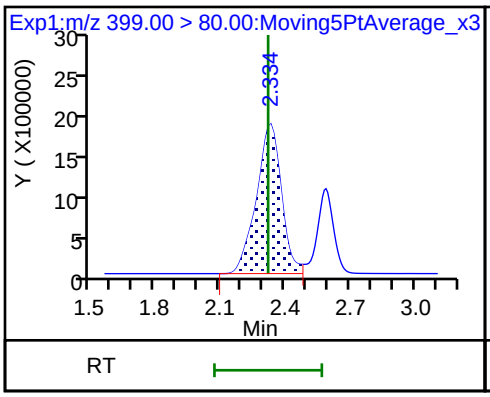
10 Perfluoroheptanoic acid



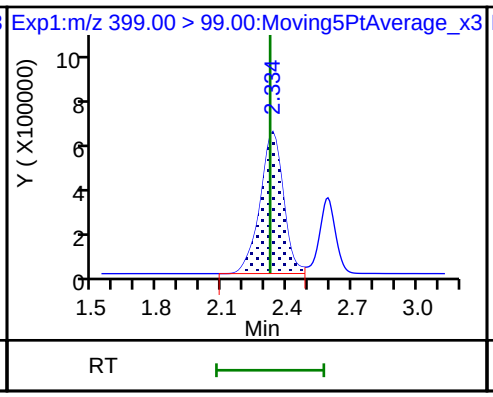
10 Perfluoroheptanoic acid



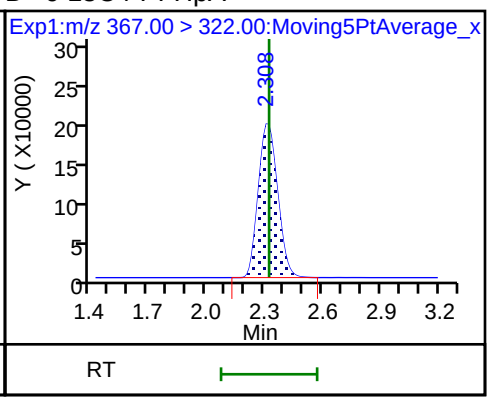
8 Perfluorohexanesulfonic acid



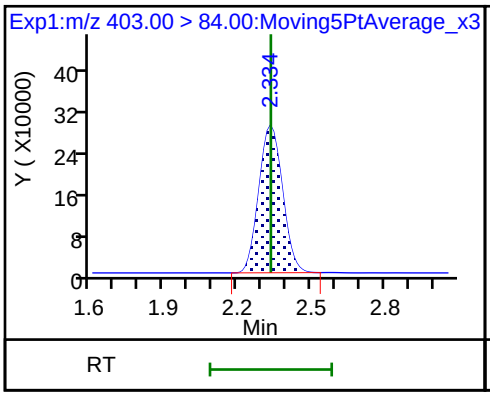
8 Perfluorohexanesulfonic acid



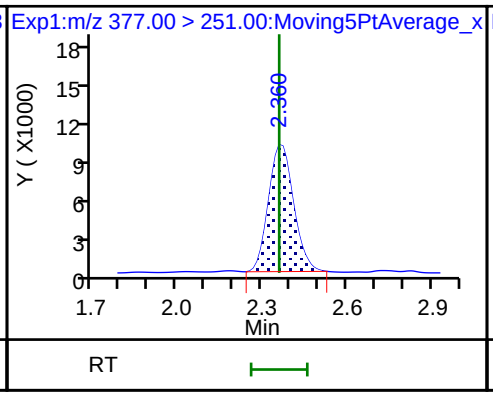
D 9 13C4-PFHpA



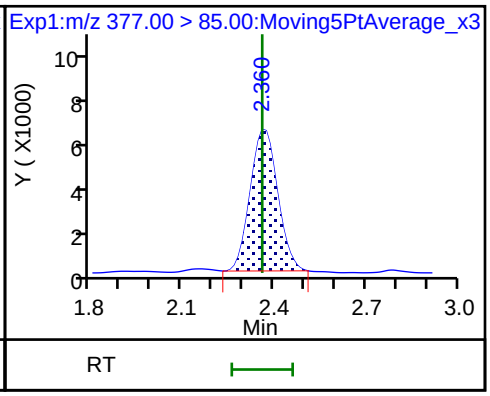
D 11 18O2 PFHxS



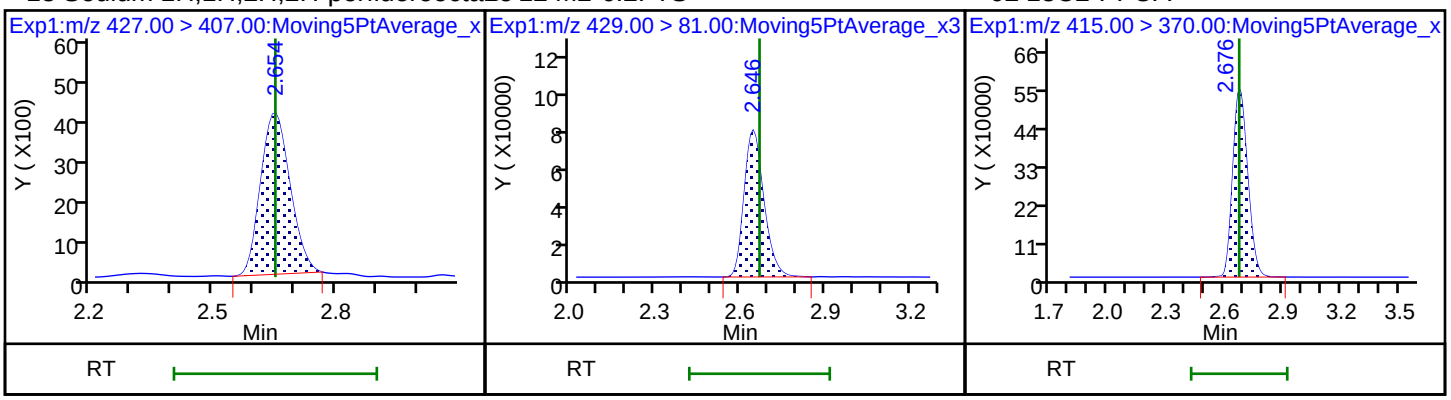
65 Adona



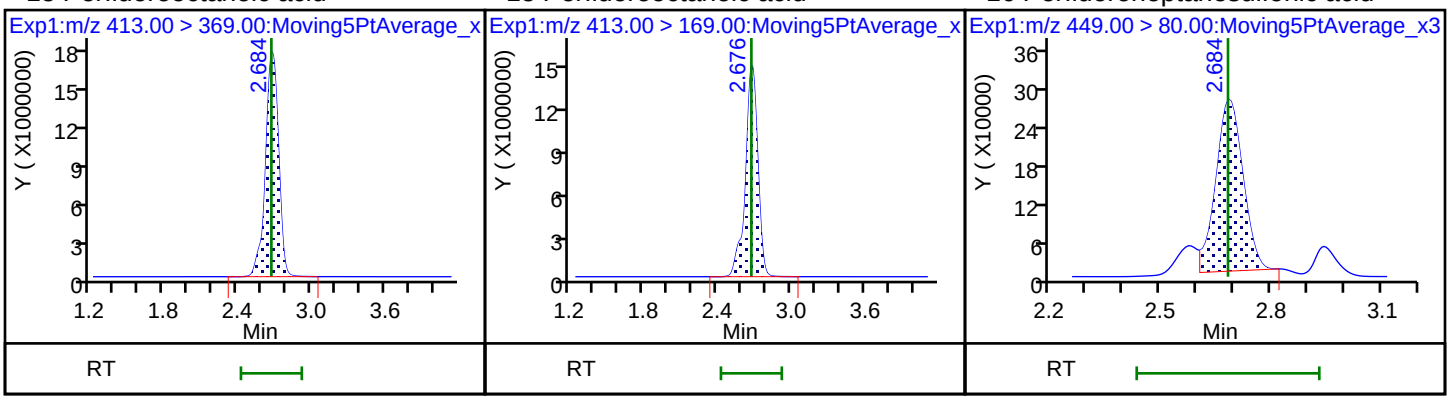
65 Adona



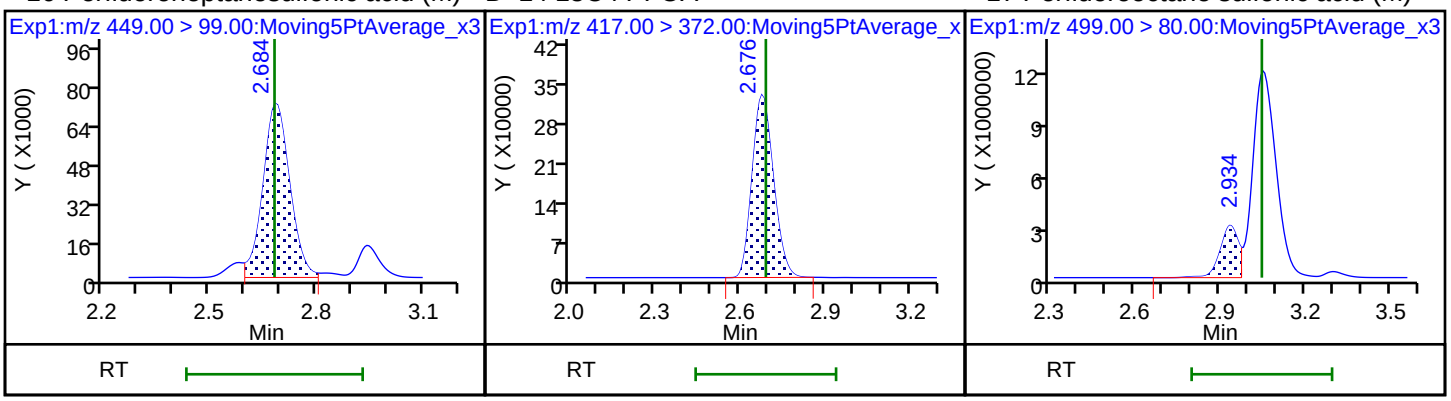
13 Sodium 1H,1H,2H,2H-perfluorooctane D 12 M2-6:2FTS * 62 13C2-PFOA



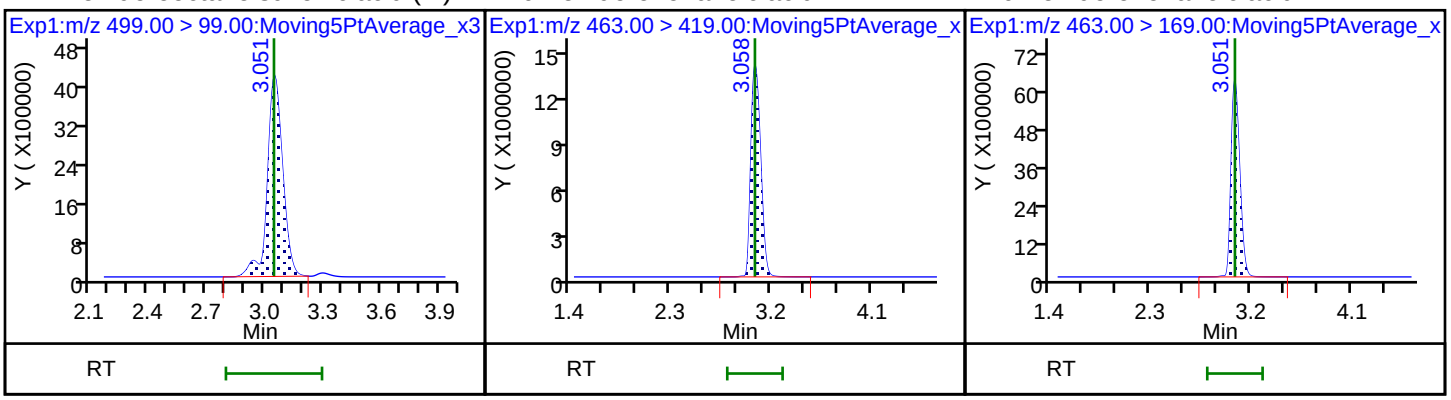
15 Perfluorooctanoic acid 15 Perfluorooctanoic acid 16 Perfluoroheptanesulfonic acid



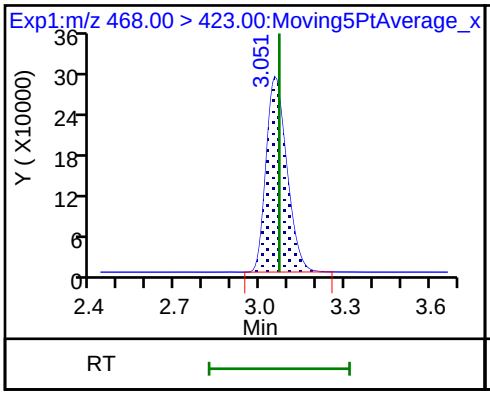
16 Perfluoroheptanesulfonic acid (M) D 14 13C4 PFOA 17 Perfluorooctane sulfonic acid (M)



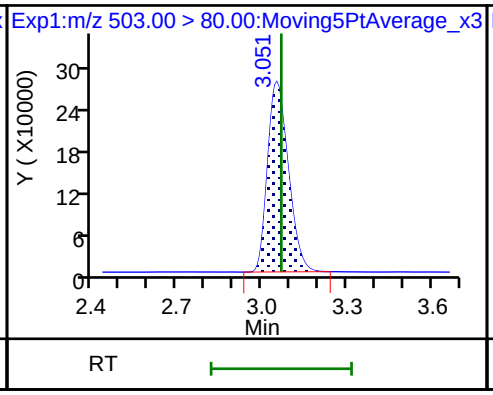
17 Perfluorooctane sulfonic acid (M) 20 Perfluorononanoic acid 20 Perfluorononanoic acid



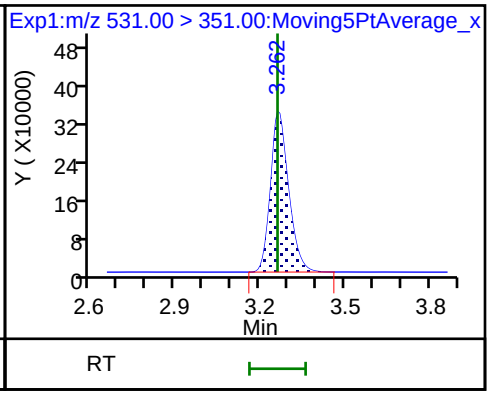
D 19 13C5 PFNA



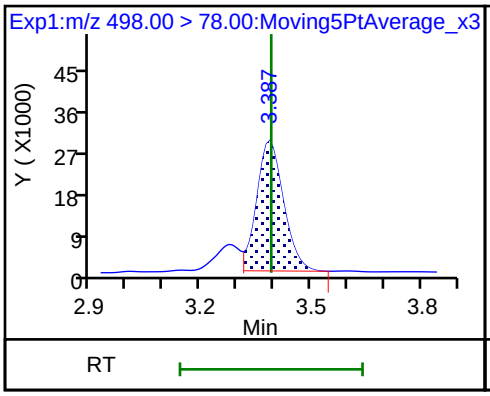
D 18 13C4 PFOS



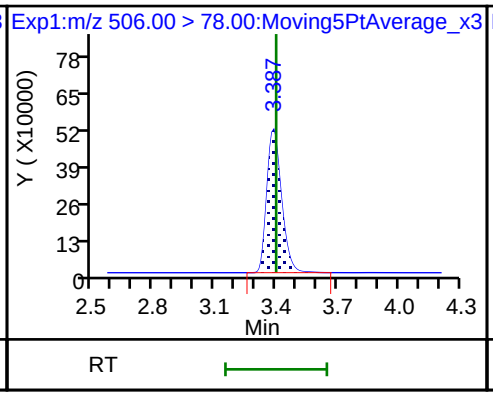
69 9-Chlorohexadecafluoro-3-oxanonane



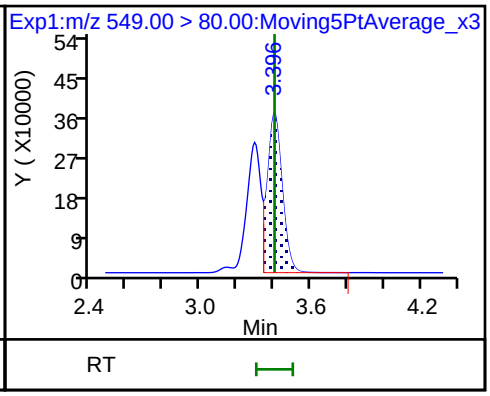
22 Perfluorooctane Sulfonamide



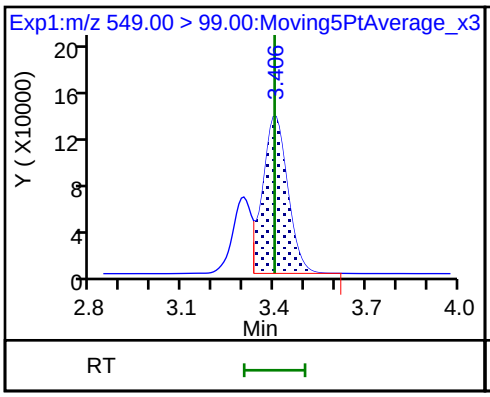
D 21 13C8 FOSA



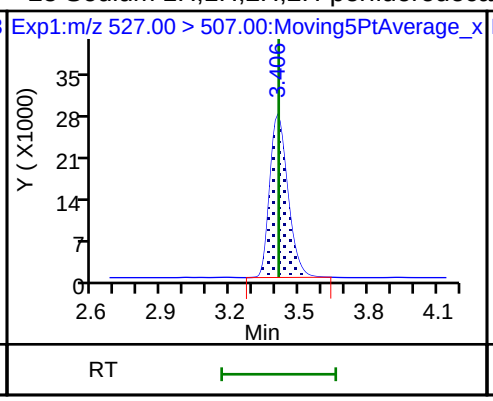
68 Perfluorononanesulfonic acid



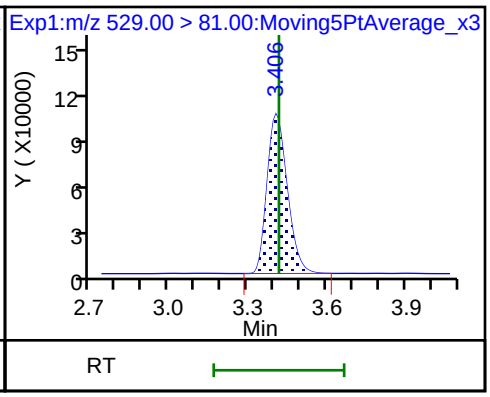
68 Perfluorononanesulfonic acid



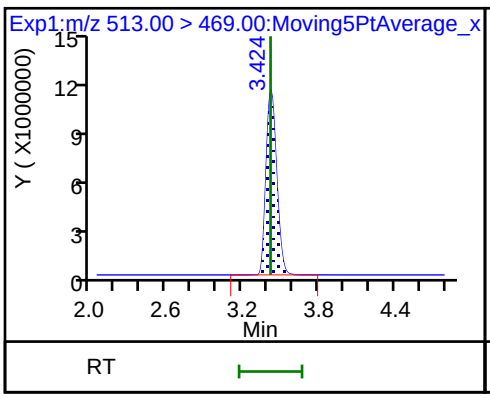
25 Sodium 1H,1H,2H,2H-perfluorodecane



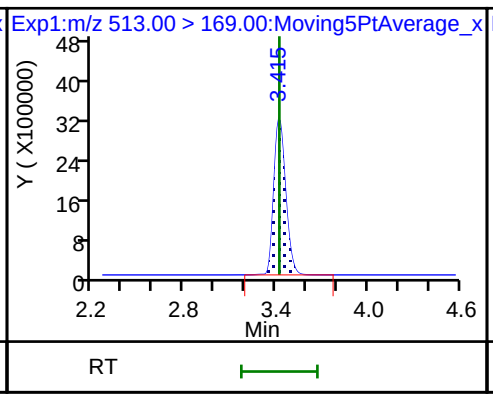
D 26 M2-8:2FTS



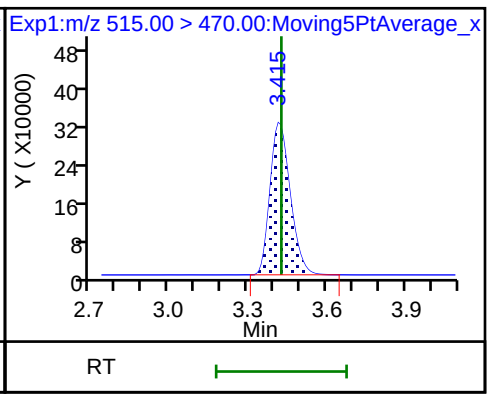
24 Perfluorodecanoic acid



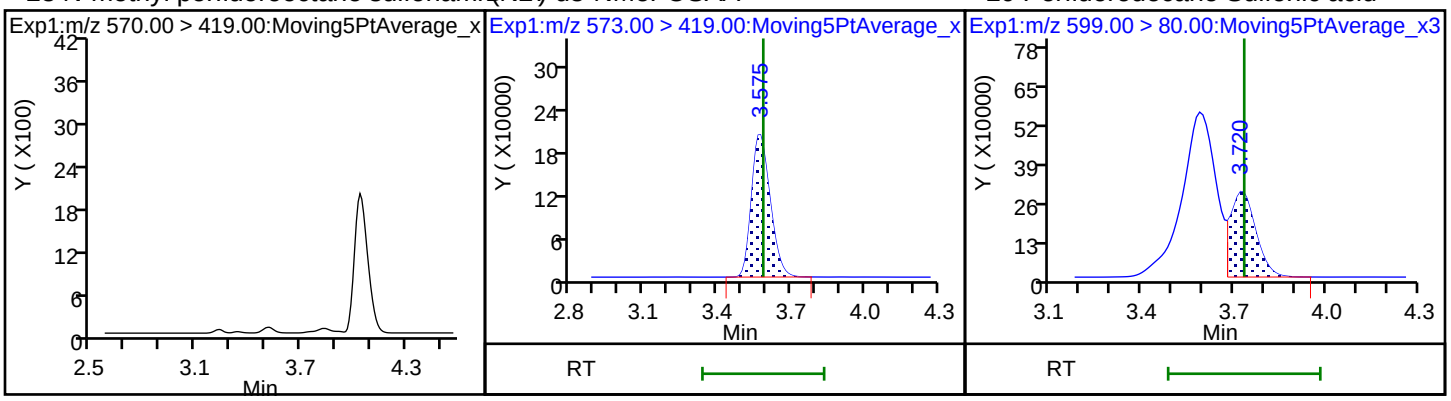
24 Perfluorodecanoic acid



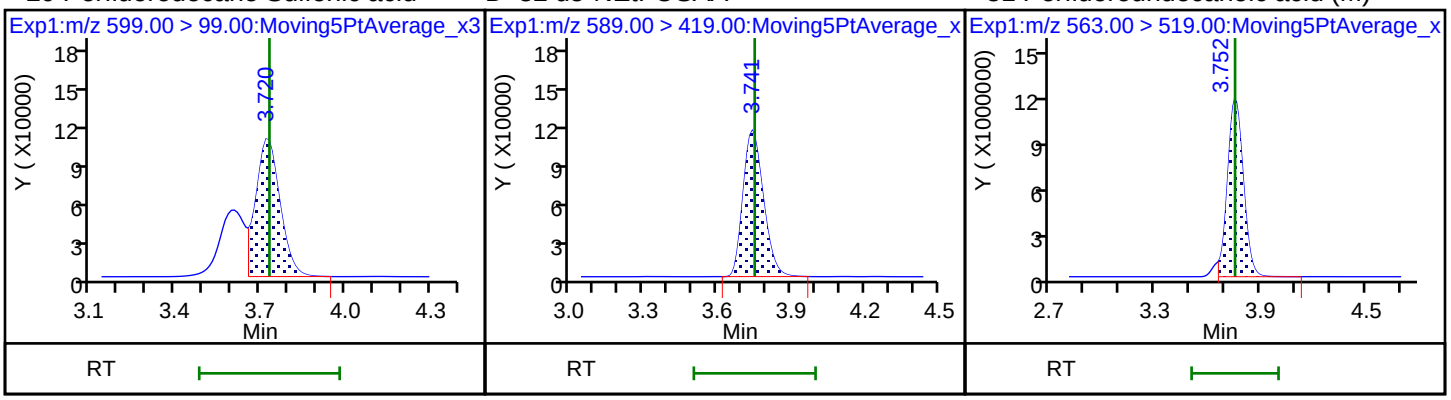
D 23 13C2 PFDA



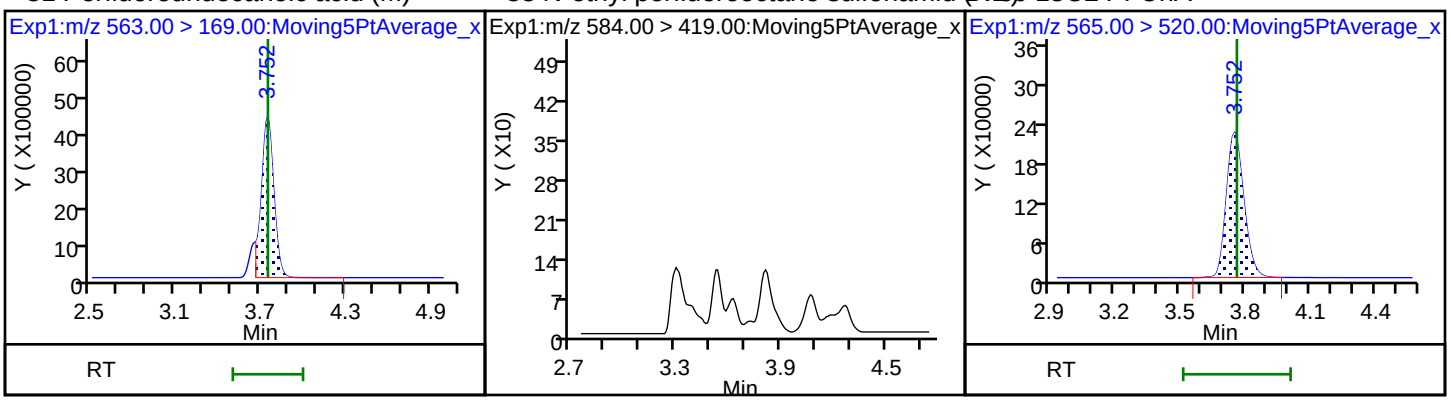
28 N-methyl perfluorooctane sulfonamid (ND) D 27 d3-NMeFOSAA 29 Perfluorodecane Sulfonic acid



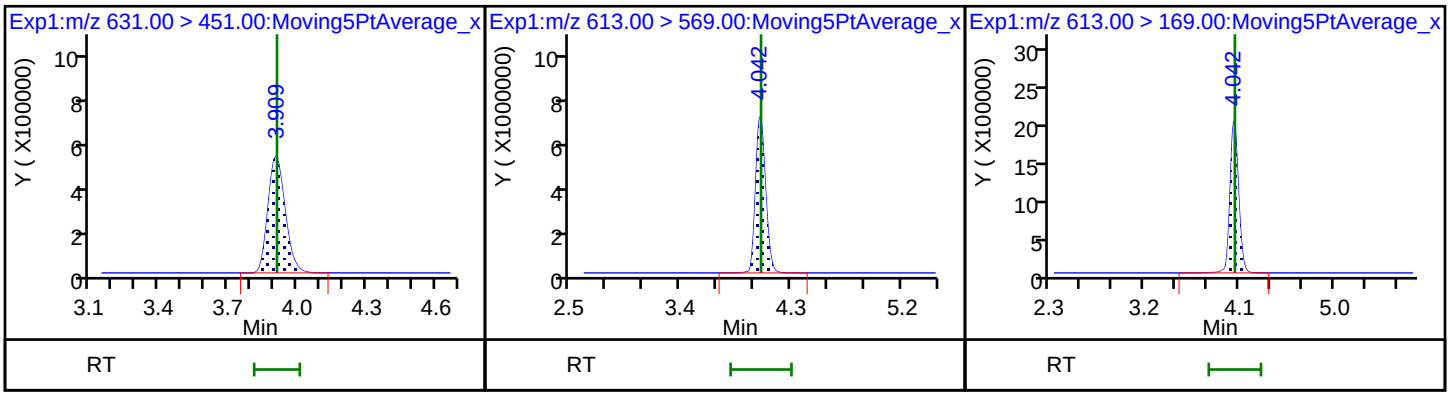
29 Perfluorodecane Sulfonic acid D 32 d5-NEtFOSAA 31 Perfluoroundecanoic acid (M)



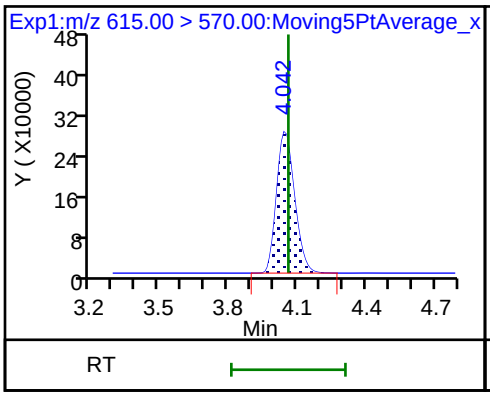
31 Perfluoroundecanoic acid (M) 33 N-ethyl perfluorooctane sulfonamid (ND) 30 13C2 PFUnA



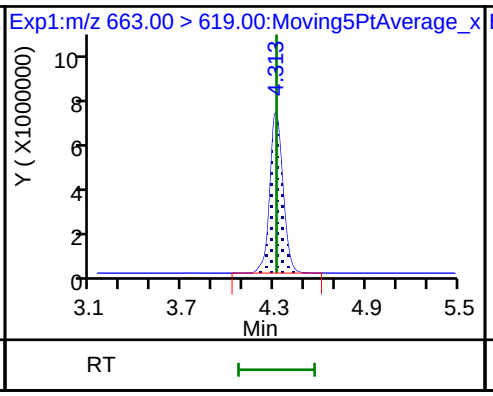
66 11-Chloroeicosafluoro-3-oxaundecan 37 Perfluorododecanoic acid 37 Perfluorododecanoic acid



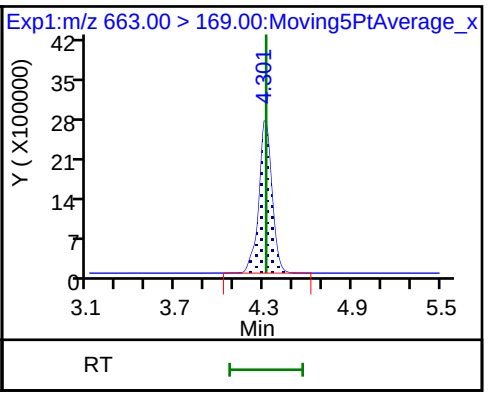
D 36 13C2 PFDoA



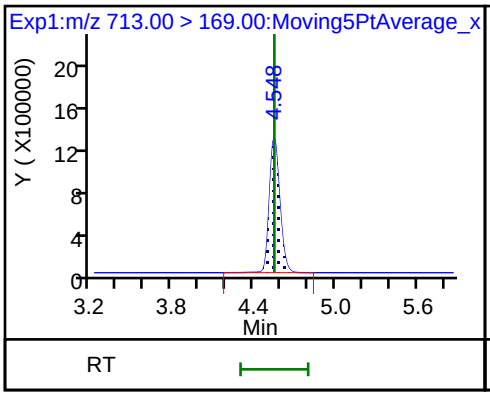
41 Perfluorotridecanoic acid



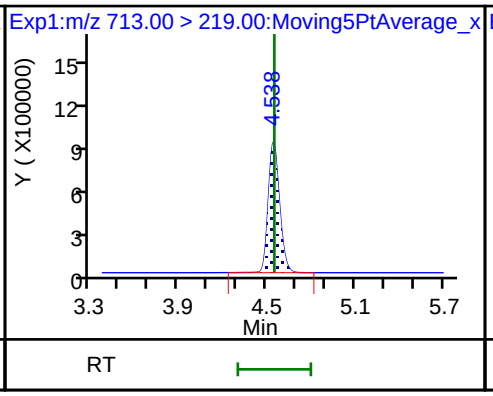
41 Perfluorotridecanoic acid



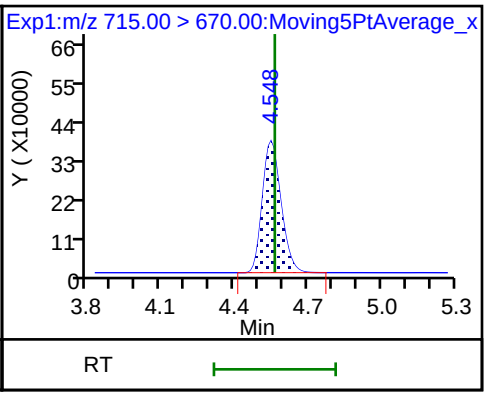
42 Perfluorotetradecanoic acid



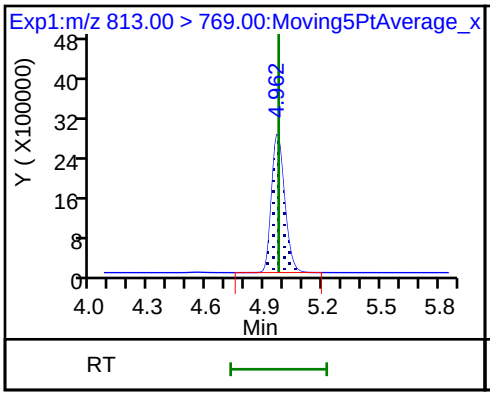
42 Perfluorotetradecanoic acid



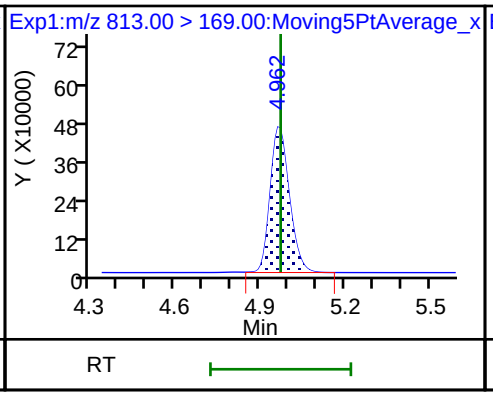
D 43 13C2-PFTeDA



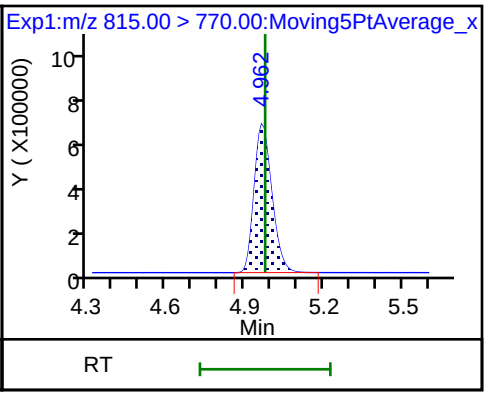
45 Perfluorohexadecanoic acid



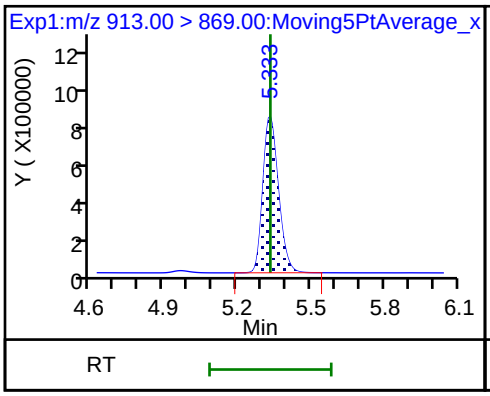
45 Perfluorohexadecanoic acid



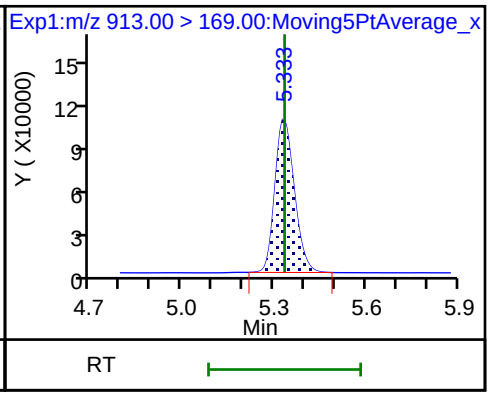
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

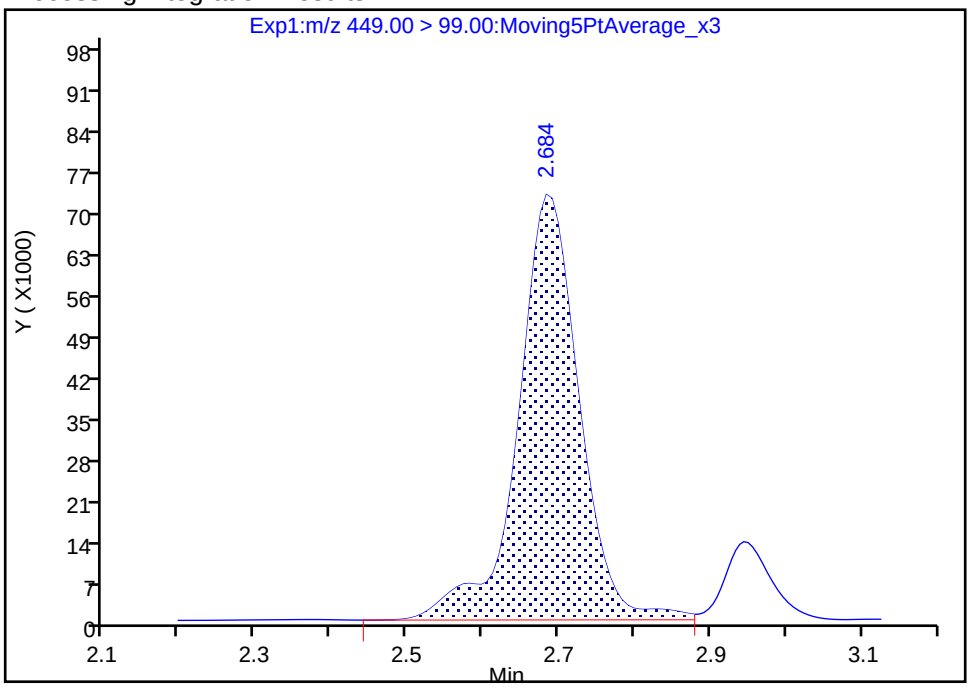
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_056.d
Injection Date: 25-Apr-2018 00:54:23 Instrument ID: A8_N
Lims ID: 320-38054-A-2-E MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 39 Worklist Smp#: 15
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

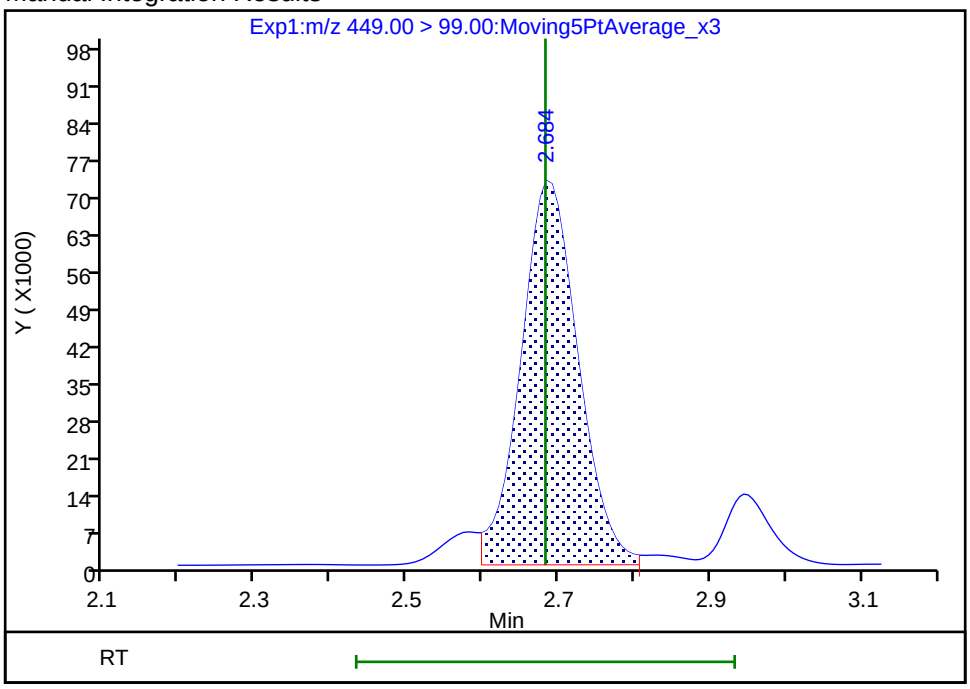
Processing Integration Results

RT: 2.68
Area: 411230
Amount: 1.775263
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 382618
Amount: 1.775263
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:22:57
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MS DL | Lab Sample ID: 320-38054-2 MS DL

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLC_070.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.04(g) | Date Analyzed: 04/27/2018 11:56

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220224 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
307-55-1	Perfluorododecanoic acid (PFDoA)	0.409		0.0054
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.400		0.0054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.182		0.0054
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0809		0.0054
27619-97-2	6:2FTS	ND		0.054
39108-34-4	8:2FTS	ND		0.054

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00998	13C2 PFDoA	55		25-150
STL02116	13C2-PFTeDA	58		25-150
STL00994	18O2 PFHxS	62		25-150
STL02279	M2-6:2FTS	62		25-150
STL02280	M2-8:2FTS	63		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_070.d
Lims ID: 320-38054-A-2-E MS
Client ID:
Sample Type: MS
Inject. Date: 27-Apr-2018 11:56:59 ALS Bottle#: 53 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38054-a-2-e ms 10X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 13:06:02 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 12:57:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.436	0.005	1.000	505051	0.1714		68.5	3846	
2 Perfluorobutyric acid										E
212.90 > 169.00	1.441	1.441	0.0	1.000	53024152	28.3		28266	25816	E
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.694	0.008	0.557	304469	0.1603		64.1	4933	
4 Perfluoropentanoic acid										E
262.90 > 219.00	1.702	1.703	-0.001	1.000	57630048	39.7		39706	71050	E
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.730	0.008	1.000	6784	0.1556		66.9	58.1	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.739	-0.001	1.000	327358	0.1433		162	590	
298.90 > 99.00	1.738	1.739	-0.001	1.000	135685		2.41(1.25-3.74)		578	
6 Perfluorohexanoic acid										E
313.00 > 269.00	1.992	1.982	0.010	1.006	58856914	39.2		39184	136333	E
313.00 > 119.00	1.981	1.982	-0.001	1.000	7012683		8.39(5.03-15.10)		76280	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.982	-0.001	1.000	369554	0.1759		70.4	10112	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.005	-0.001	1.000	362313	0.1736		185	646	
349.00 > 99.00	2.015	2.005	0.010	1.006	138730		2.61(1.36-4.07)		720	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.094	2.084	0.010	1.000	22398	NR		0.0	137	
10 Perfluoroheptanoic acid										E
363.00 > 319.00	2.320	2.321	-0.001	1.000	60048325	53.1		53054	58823	E
363.00 > 169.00	2.320	2.321	-0.001	1.000	30133687		1.99(1.13-3.40)		108304	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.323	-0.003	1.000	282705	0.1383		55.3	5357	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.334	-0.001	1.000	2649385	1.49		1623	228	
399.00 > 99.00	2.333	2.334	-0.001	1.000	836893		3.17(1.50-4.49)		223	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.336	-0.003	1.000	372053	0.1474		62.3	11612	
65 Adona										
377.00 > 251.00	2.373	2.372	0.001	1.000	9037	0.002572		2.6	117	
377.00 > 85.00	2.373	2.372	0.001	1.000	5309		1.70(0.84-2.53)		110	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.653	0.0	1.000	64064	0.1462		61.6	1036	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.660	-0.007	1.000	3976	0.008719		9.2	102	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.676	0.007	1.000	310042	0.1526		61.0	12740	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		547663	0.2500			12387	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.683	2.683	0.0	1.000	45643107	31.9		31617	43703	E
413.00 > 169.00	2.683	2.683	0.0	1.000	27422702		1.66(0.84-2.52)		98865	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.690	0.001	1.000	248072	0.1842		193	279	
449.00 > 99.00	2.691	2.690	0.001	1.000	73650		3.37(1.94-5.82)		479	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.056	0.001	1.000	242459	0.1372		57.4	1711	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.056	0.001	1.000	270435	0.1548		61.9	9472	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.057	3.056	0.001	1.000	18528224	16.8		18092	238670	E
499.00 > 99.00	3.057	3.056	0.001	1.000	4447256		4.17(2.31-6.93)		90288	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.057	3.056	0.001	1.000	26621612	23.6		23602	93980	E
463.00 > 169.00	3.057	3.056	0.001	1.000	7031547		3.79(1.90-5.69)		31533	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.270	0.001	1.000	161018	0.0842		90.3	3025	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.394	0.002	1.000	307743	0.1395		55.8	6742	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.394	0.002	1.000	18748	0.0151		15.1	160	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.413	0.002	1.000	80047	0.1517		63.3	635	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.413	0.002	1.000	23852	0.0564		58.9	1137	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.405	3.413	-0.008	1.000	268017	0.3305		344	81.5	
549.00 > 99.00	3.405	3.413	-0.008	1.000	110590		2.42(1.33-3.97)		195	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.422	0.002	1.000	243337	0.1658		66.3	7876	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.424	3.422	0.002	1.000	13666126	13.6		13610	47384	E
513.00 > 169.00	3.424	3.422	0.002	1.000	2349452		5.82(2.36-7.09)		12854	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.571	0.002	1.000	116930	0.1405		56.2	1228	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.739	3.737	0.002	1.000	258813	0.3930		408	36.3	
599.00 > 99.00	3.739	3.737	0.002	1.000	109919		2.35(1.39-4.16)		200	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.747	0.002	1.000	113829	0.1386		55.4	2307	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.758	-0.009	1.000	205921	0.1626		65.0	5387	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.760	3.758	0.002	1.003	16034716	23.0		22921	4301	EM
563.00 > 169.00	3.749	3.758	-0.009	1.000	4460289		3.59(2.12-6.36)		974	M
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.916	0.0	1.000	248497	0.0841		89.3	4264	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.048	0.001	1.000	187678	0.1372		54.9	2887	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.049	0.0	1.000	5888568	7.52		7522	10864	
613.00 > 169.00	4.049	4.049	0.0	1.000	1418856		4.15(2.13-6.40)		15435	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	6707882	7.35		7352	9349	
663.00 > 169.00	4.307	4.318	-0.011	0.997	2359566		2.84(1.25-3.76)		12476	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.553	-0.001	1.000	842227	3.35		3348	4331	
713.00 > 219.00	4.552	4.553	-0.001	1.000	597659		1.41(0.71-2.13)		7038	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.553	-0.001	1.000	250379	0.1444		57.8	2807	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.966	-0.001	1.000	1374014	1.12		1115	1191	
813.00 > 169.00	4.965	4.966	-0.001	1.000	238050		5.77(2.86-8.58)		1538	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.966	-0.001	1.000	316665	0.1122		44.9	2253	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.328	5.336	-0.008	1.000	346848	0.2727		273	320	
913.00 > 169.00	5.328	5.336	-0.008	1.000	42521		8.16(3.83-11.48)		384	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 13:06:12 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_070.d

Injection Date: 27-Apr-2018 11:56:59 Instrument ID: A8_N

Lims ID: 320-38054-A-2-E MS

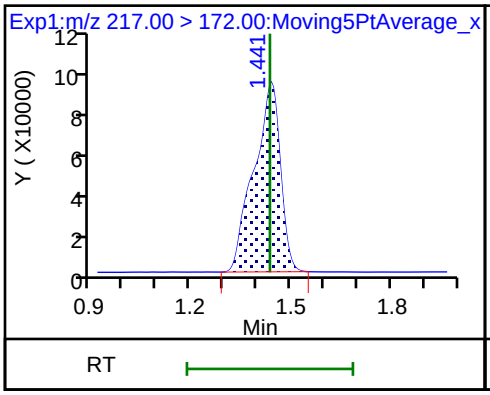
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 53 Worklist Smp#: 4

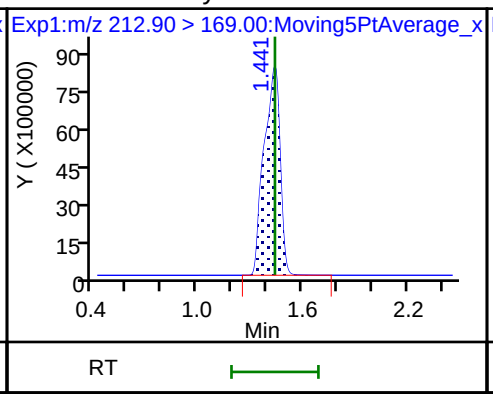
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

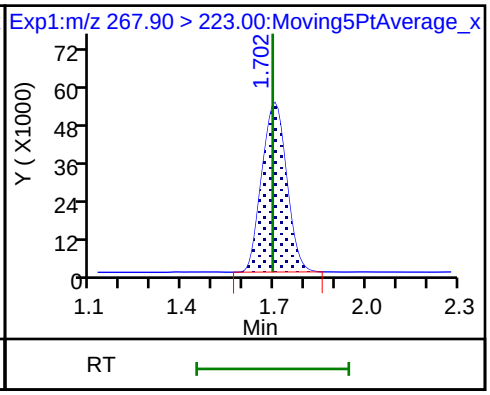
D 1 13C4 PFBA



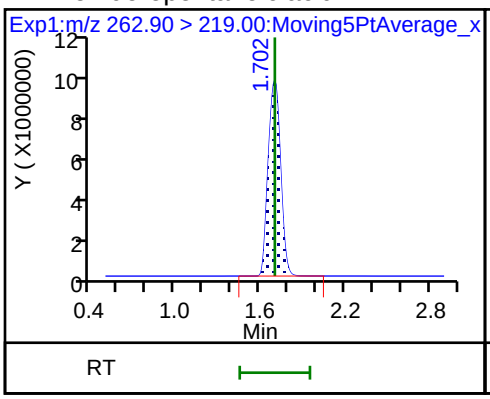
2 Perfluorobutyric acid



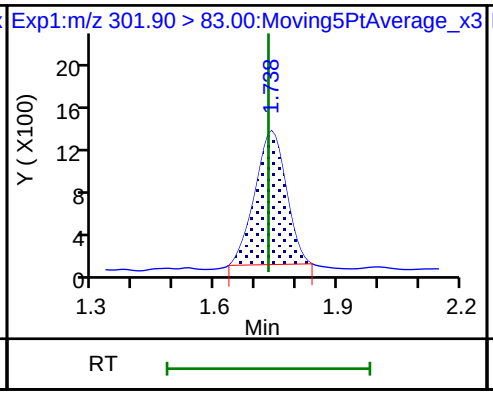
D 3 13C5-PFPeA



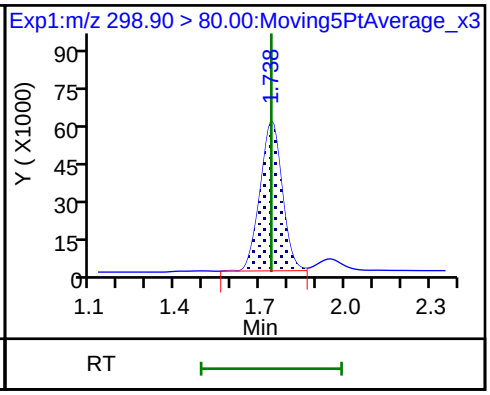
4 Perfluoropentanoic acid



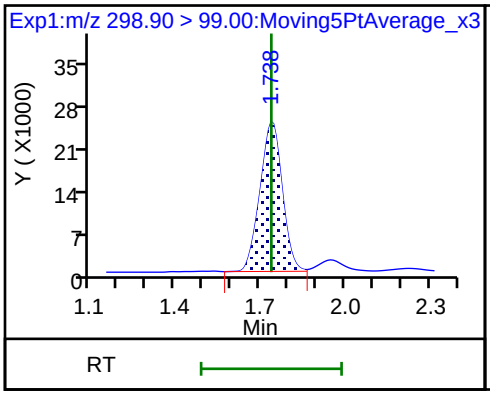
D 47 13C3-PFBS



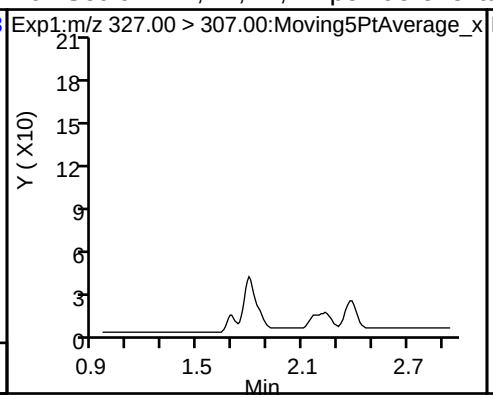
5 Perfluorobutanesulfonic acid



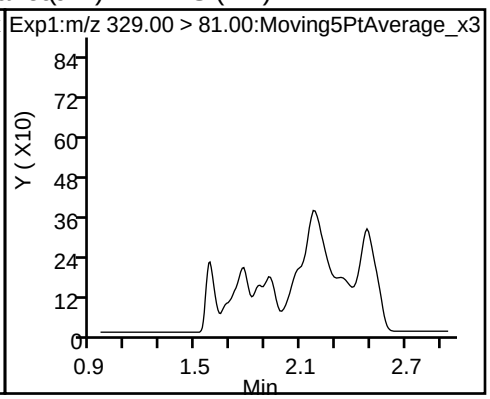
5 Perfluorobutanesulfonic acid



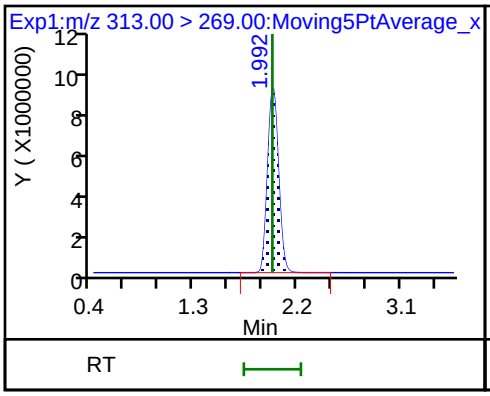
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (NM)



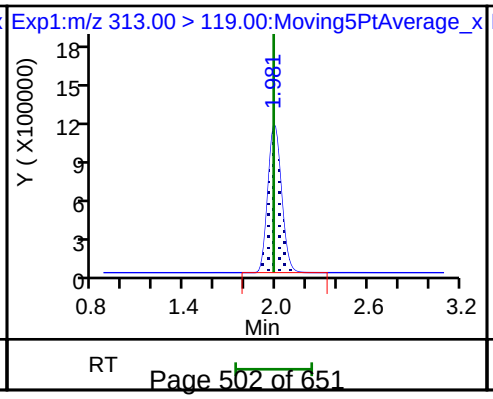
D 60 M2-4:2FTS (ND)



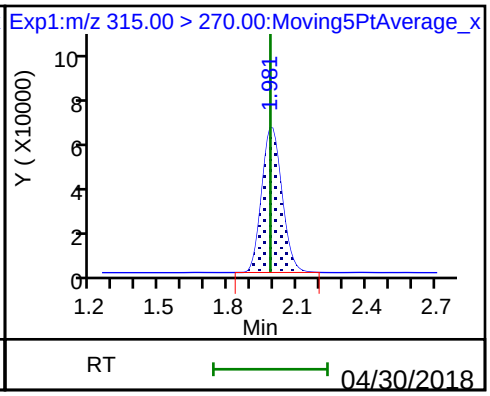
6 Perfluorohexanoic acid



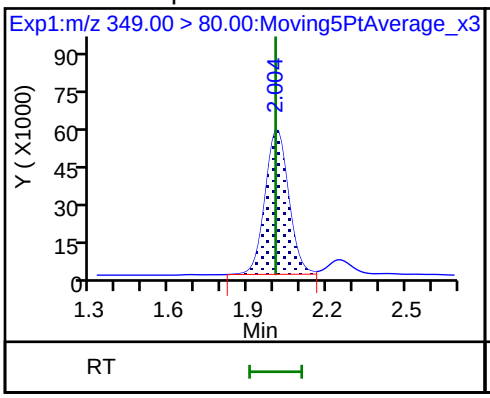
6 Perfluorohexanoic acid



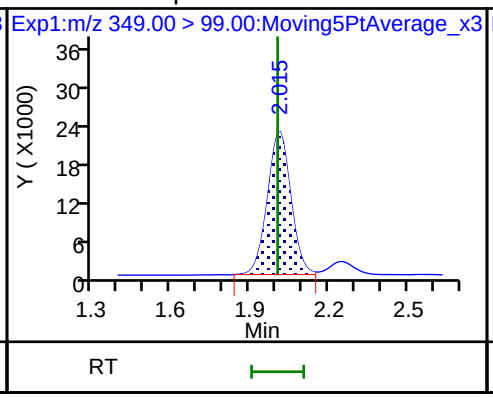
D 7 13C2 PFHxA



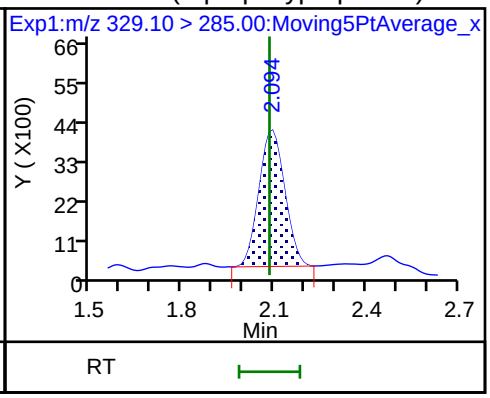
70 Perfluoropentanesulfonic acid



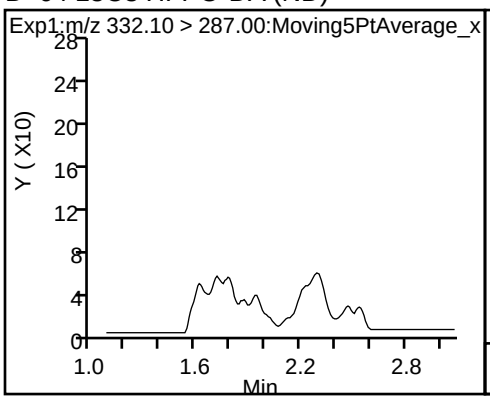
70 Perfluoropentanesulfonic acid



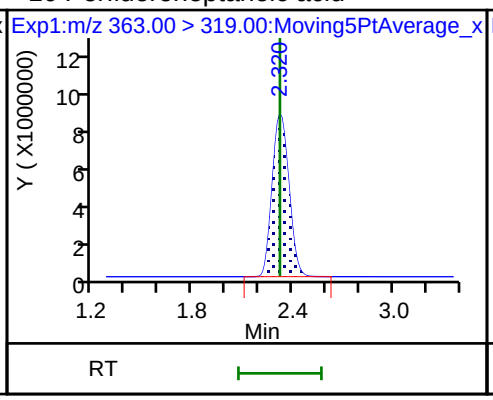
67 Perfluoro(2-propoxypropanoic) acid



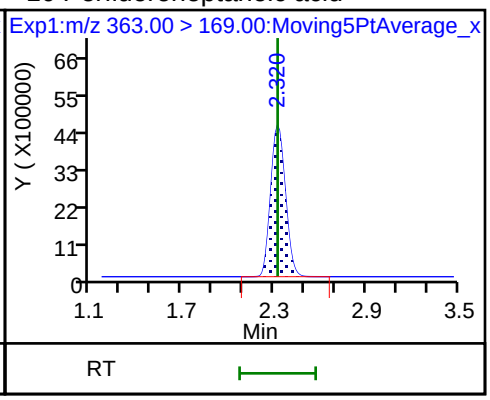
D 64 13C3 HFPO-DA (ND)



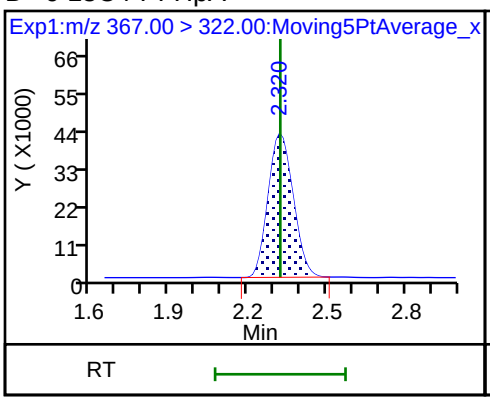
10 Perfluoroheptanoic acid



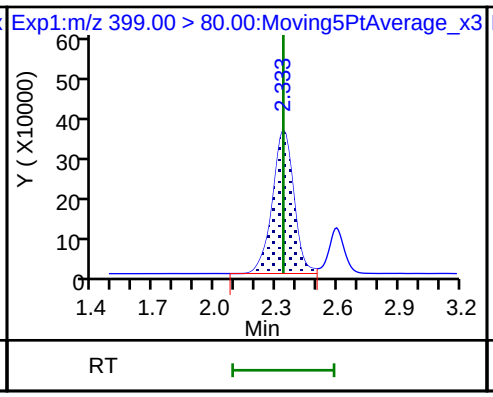
10 Perfluoroheptanoic acid



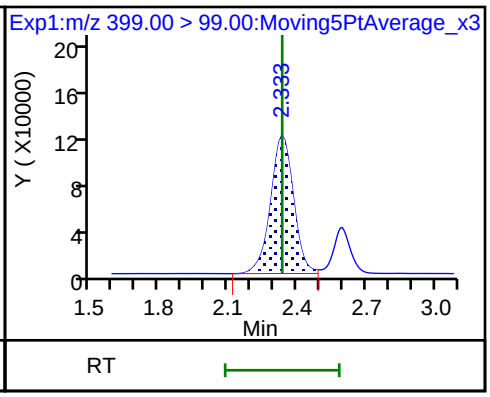
D 9 13C4-PFHpA



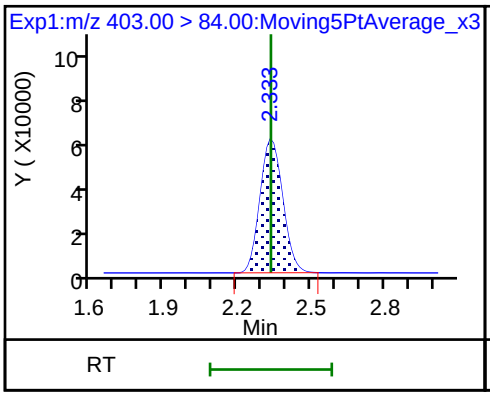
8 Perfluorohexanesulfonic acid



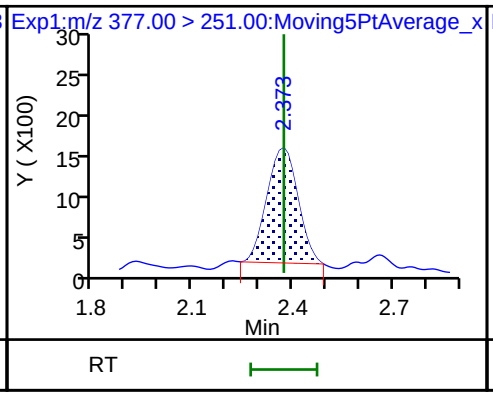
8 Perfluorohexanesulfonic acid



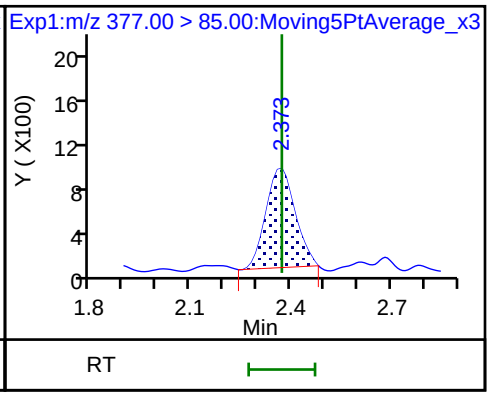
D 11 18O2 PFHxS



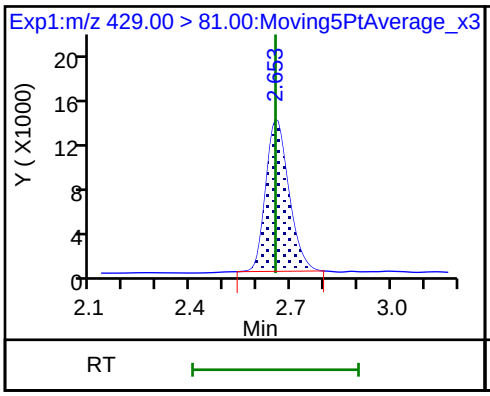
65 Adona



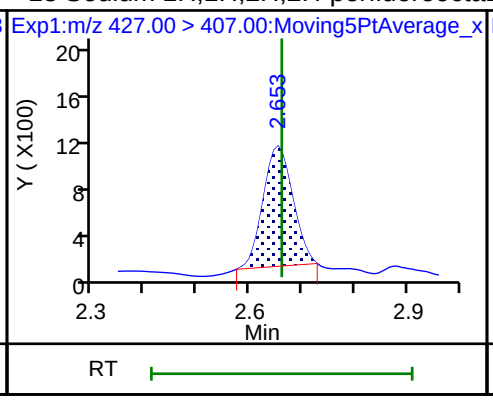
65 Adona



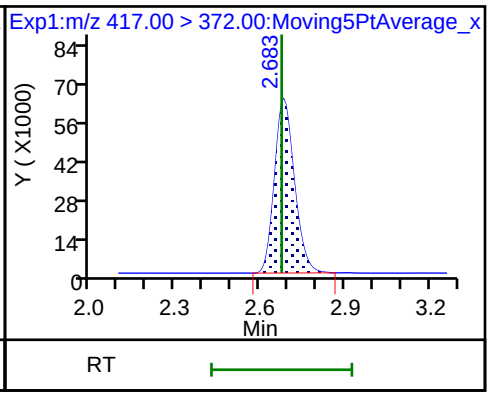
D 12 M2-6:2FTS



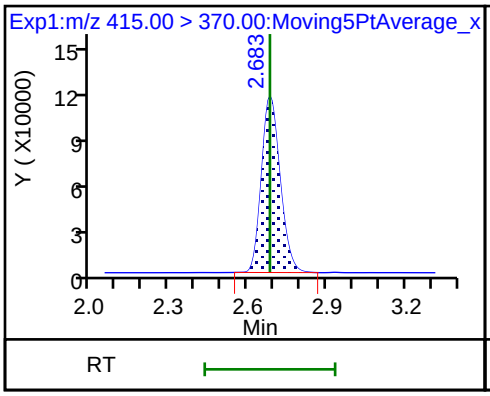
13 Sodium 1H,1H,2H,2H-perfluorooctane



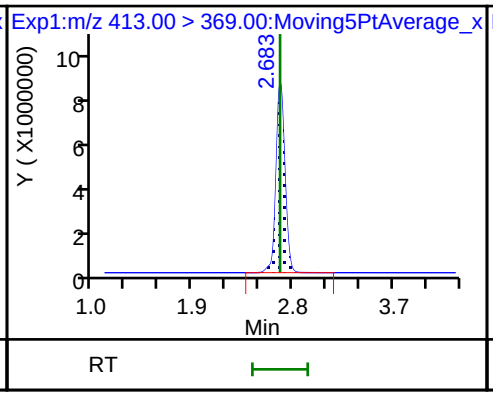
D 14 13C4 PFOA



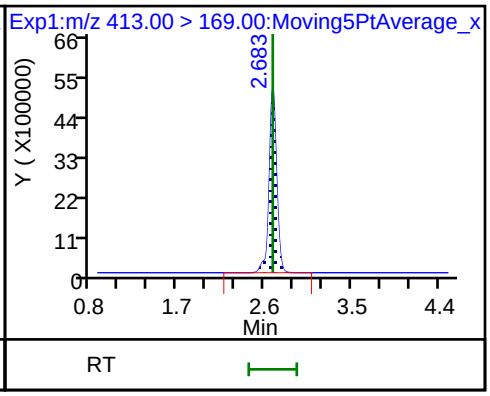
* 62 13C2-PFOA



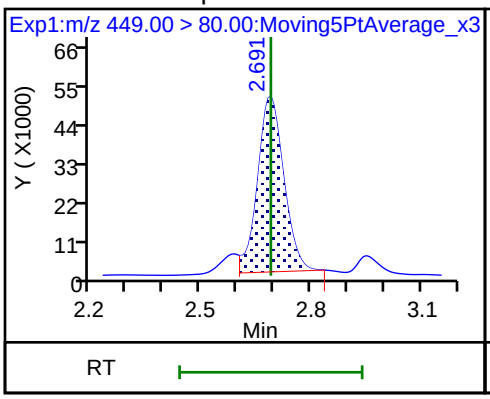
15 Perfluorooctanoic acid



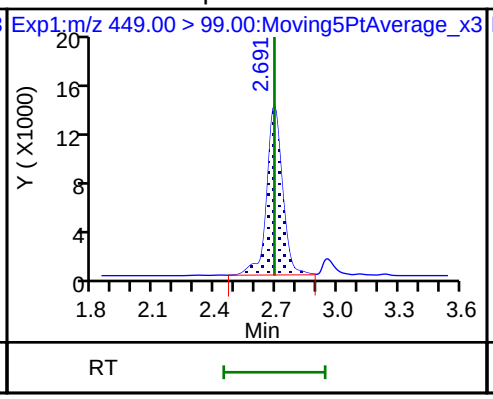
15 Perfluorooctanoic acid



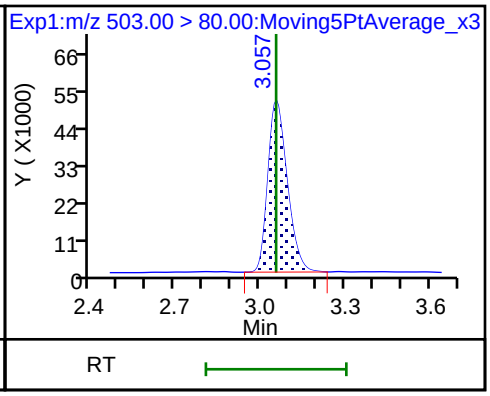
16 Perfluoroheptanesulfonic acid



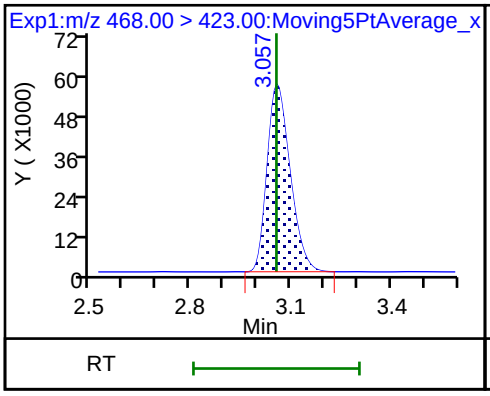
16 Perfluoroheptanesulfonic acid



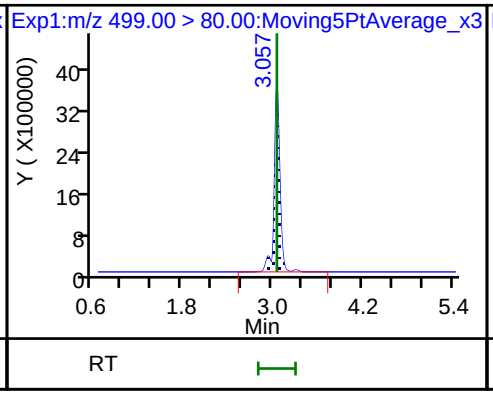
D 18 13C4 PFOS



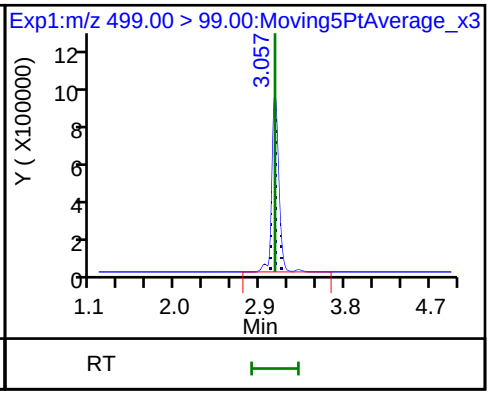
D 19 13C5 PFNA



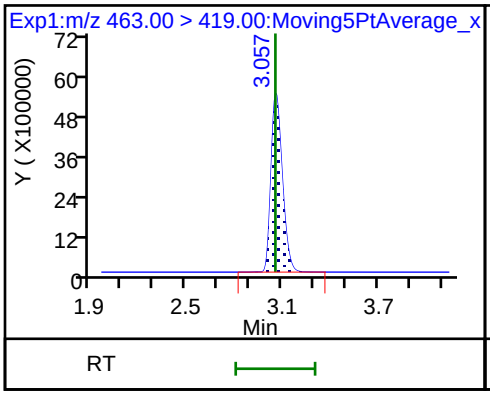
17 Perfluorooctane sulfonic acid



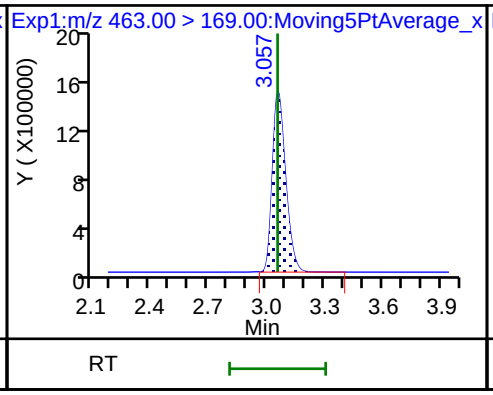
17 Perfluorooctane sulfonic acid



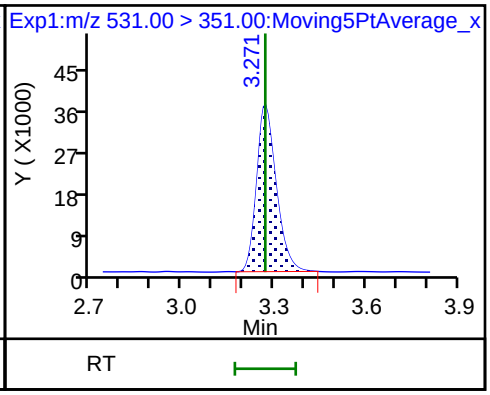
20 Perfluorononanoic acid



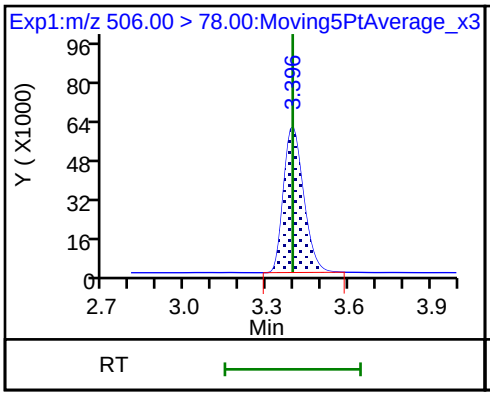
20 Perfluorononanoic acid



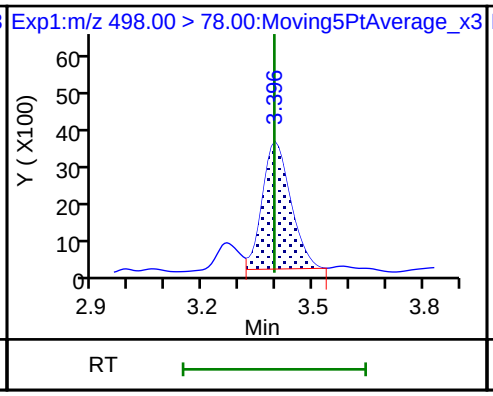
69 9-Chlorohexadecafluoro-3-oxanonane



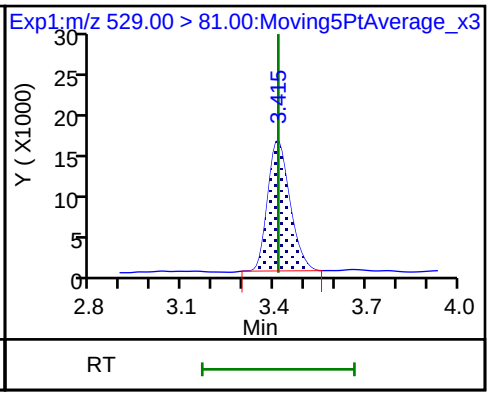
D 21 13C8 FOSA



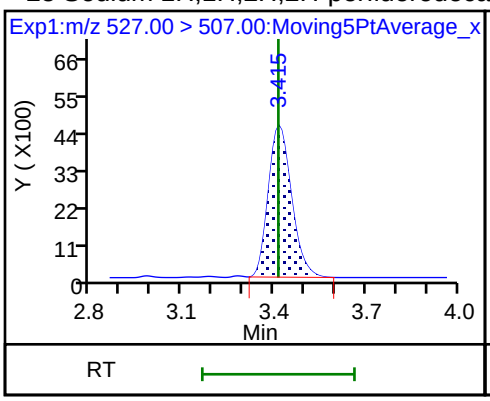
22 Perfluorooctane Sulfonamide



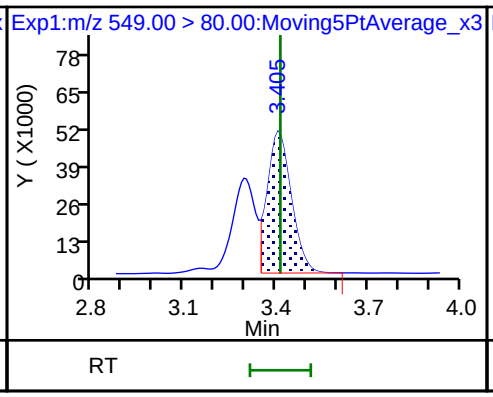
D 26 M2-8:2FTS



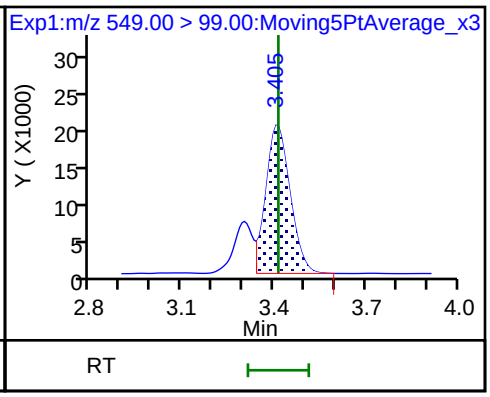
25 Sodium 1H,1H,2H,2H-perfluorodecan



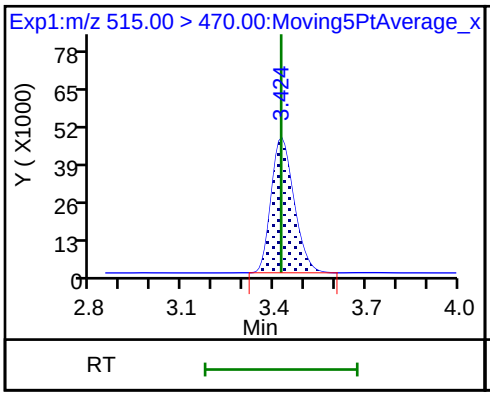
68 Perfluorononanesulfonic acid



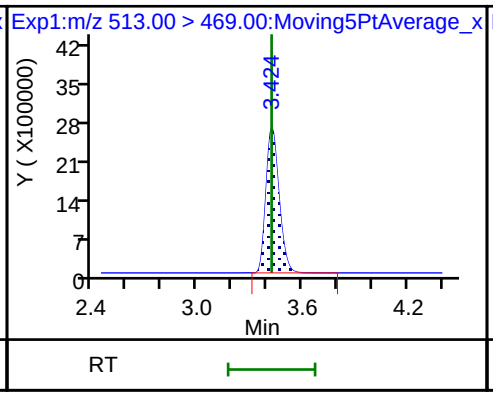
68 Perfluorononanesulfonic acid



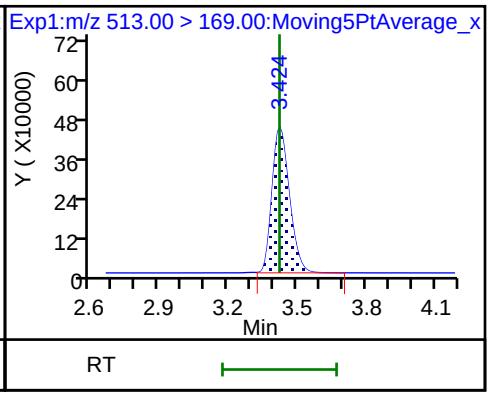
D 23 13C2 PFDA



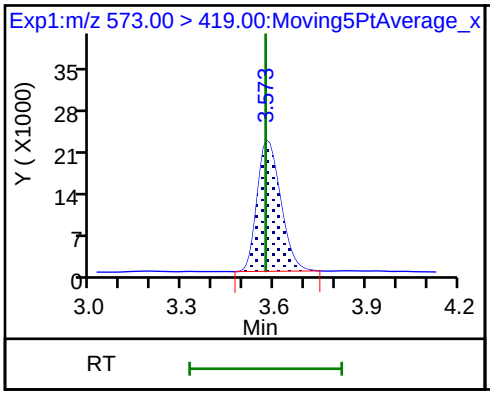
24 Perfluorodecanoic acid



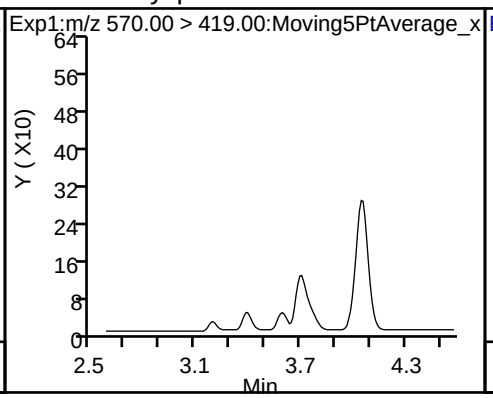
24 Perfluorodecanoic acid



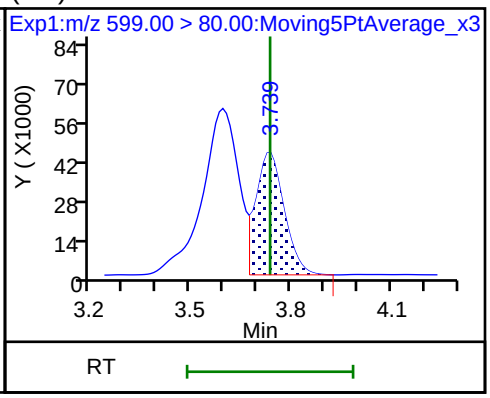
D 27 d3-NMeFOSAA



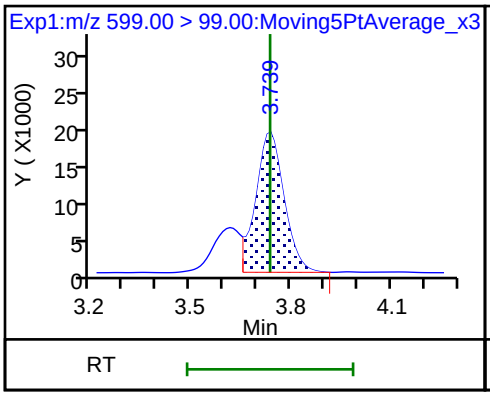
28 N-methyl perfluorooctane sulfonami (M)



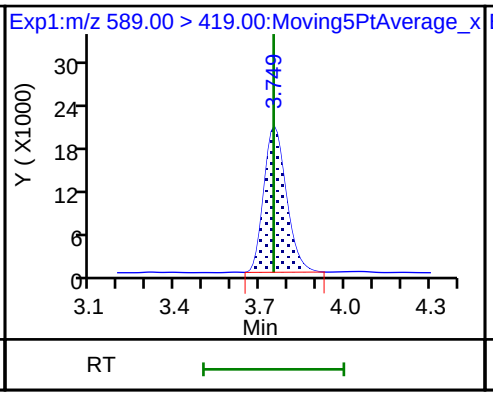
29 Perfluorodecane Sulfonic acid



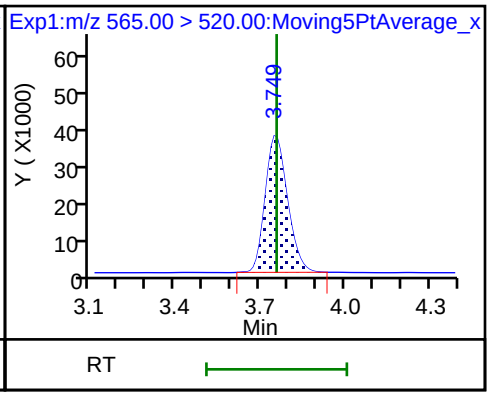
29 Perfluorodecane Sulfonic acid



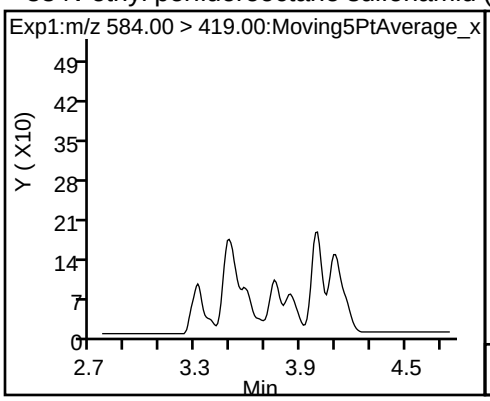
D 32 d5-NEtFOSAA



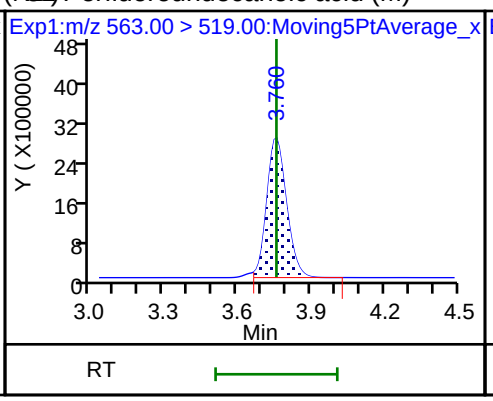
D 30 13C2 PFUnA



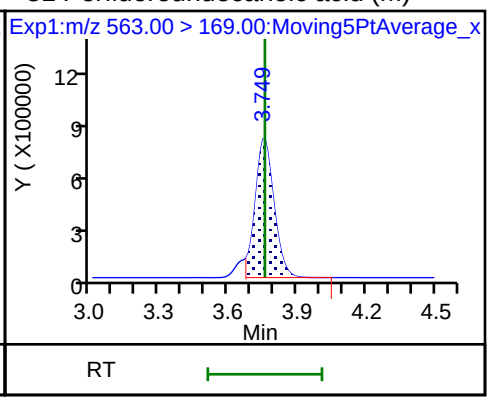
33 N-ethyl perfluorooctane sulfonamid (M)



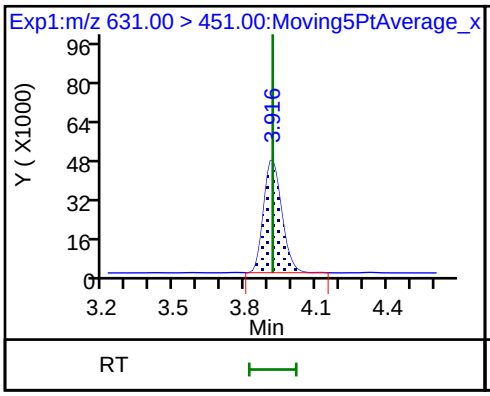
31 Perfluoroundecanoic acid (M)



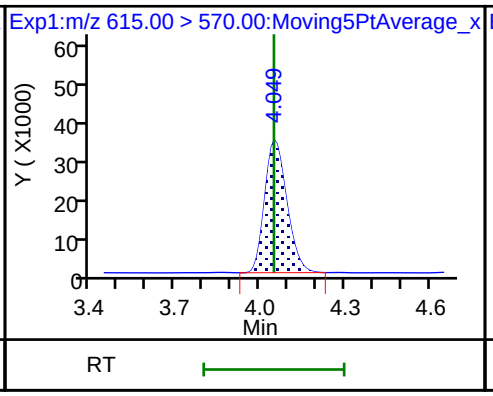
31 Perfluoroundecanoic acid (M)



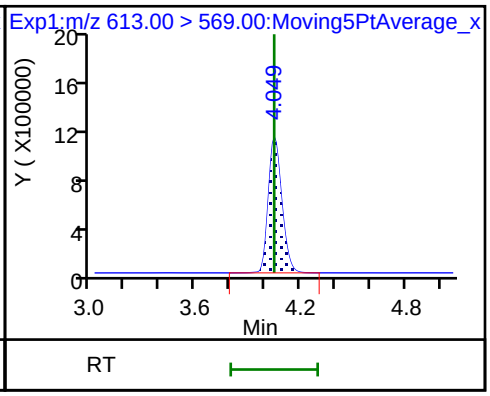
66 11-Chloroeicosafluoro-3-oxaundecan



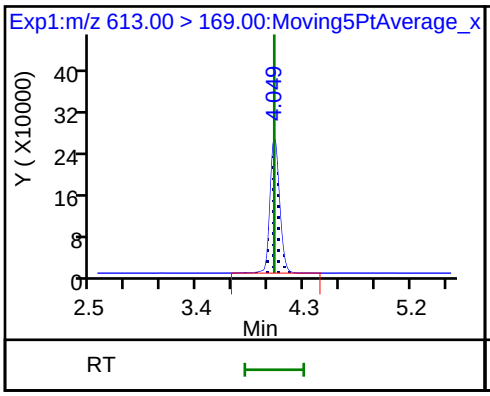
D 36 13C2 PFDoA



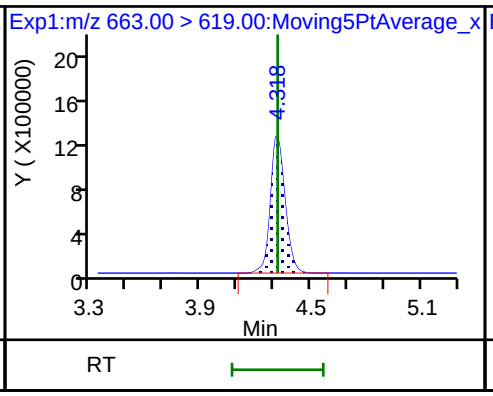
37 Perfluorododecanoic acid



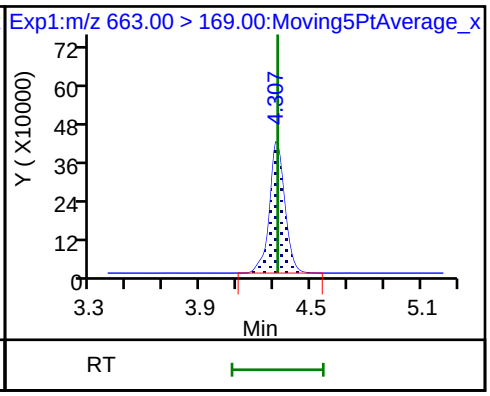
37 Perfluorododecanoic acid



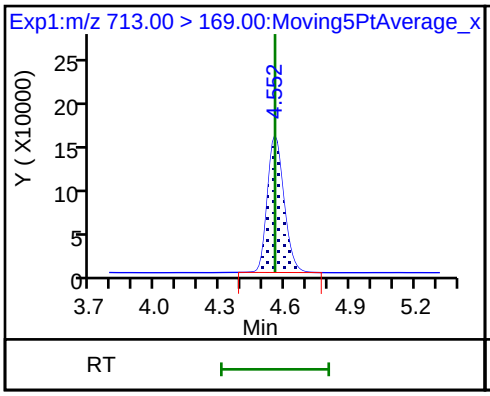
41 Perfluorotridecanoic acid



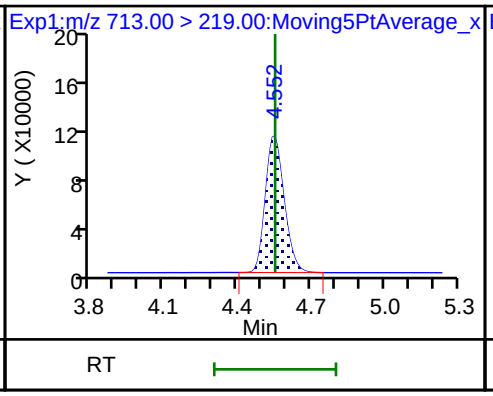
41 Perfluorotridecanoic acid



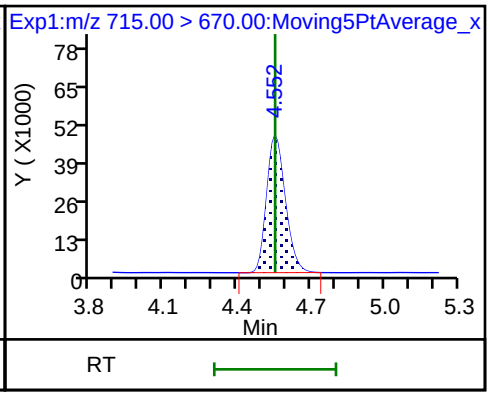
42 Perfluorotetradecanoic acid



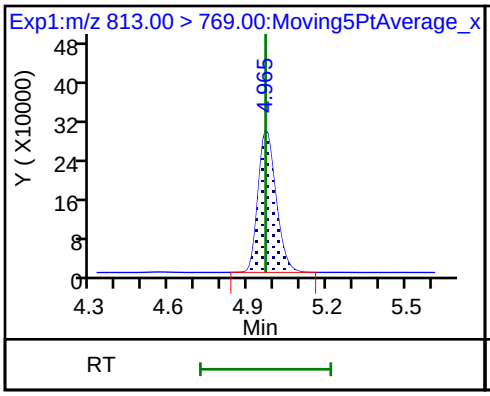
42 Perfluorotetradecanoic acid



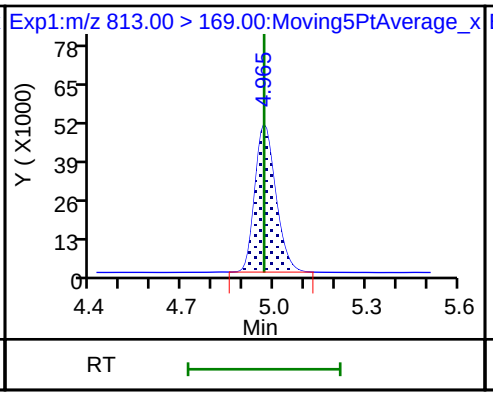
D 43 13C2-PFTeDA



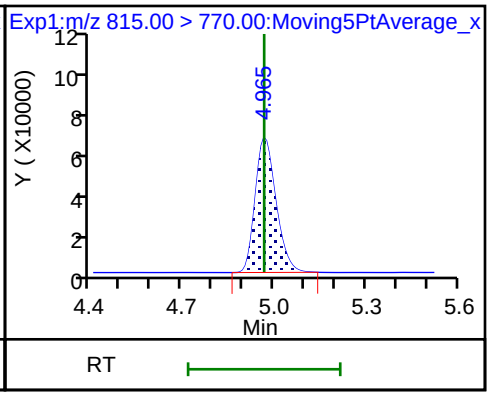
45 Perfluorohexadecanoic acid



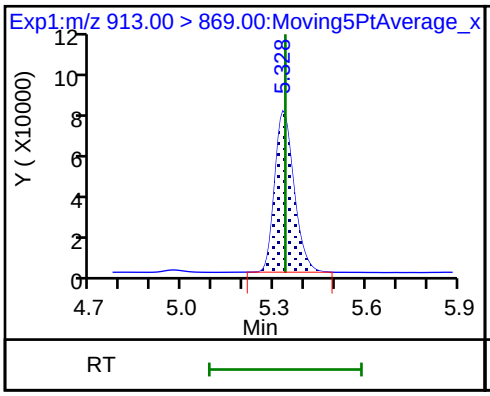
45 Perfluorohexadecanoic acid



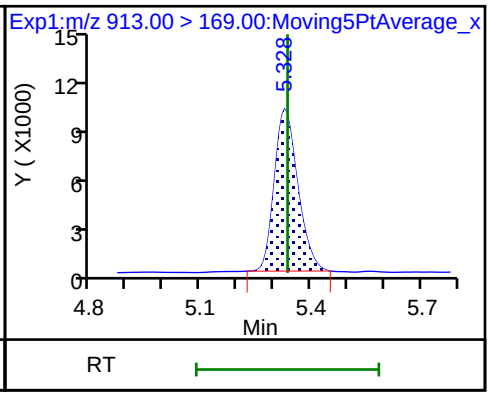
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MS DL | Lab Sample ID: 320-38054-2 MS DL

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.26LLA_055.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.03(g) | Date Analyzed: 04/26/2018 18:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220090 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-95-1	Perfluorononanoic acid (PFNA)	0.0888		0.055
335-76-2	Perfluorodecanoic acid (PFDA)	0.0743		0.055
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.993		0.055
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.178		0.055
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.926		0.14
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.371		0.055
39108-34-4	8:2FTS	0.837		0.55

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	61		25-150
STL00996	13C2 PFDA	64		25-150
STL00997	13C2 PFUnA	62		25-150
STL00998	13C2 PFDoA	45		25-150
STL00991	13C4 PFOS	53		25-150
STL01056	13C8 FOSA	58		25-150
STL02280	M2-8:2FTS	104		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_055.d
Lims ID: 320-38054-A-2-B MS
Client ID:
Sample Type: MS
Inject. Date: 26-Apr-2018 18:20:38 ALS Bottle#: 40 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38054-a-2-b ms 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:33:52 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:27:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.442	-0.006	1.000	23309	0.1255		1255	11.0	
D 1 13C4 PFBA										M
217.00 > 172.00	1.436	1.446	-0.010	1.000	4999	0.001537		6.1	42.0	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.703	1.703	0.0	1.005	61323	0.0489		489	57.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.711	-0.017	0.554	26292	0.0125		50.2	673	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	20847	0.006864		77.6	67.3	
298.90 > 99.00	1.730	1.739	-0.009	0.995	8127		2.57(1.25-3.74)		78.4	
D 47 13C3-PFBS										M
301.90 > 83.00	1.739	1.747	-0.008	1.000	902	0.0188		80.7	9.3	M
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	7019	0.0113		121	317	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.959	-0.009	1.000	6680	0.0194		83.0	69.4	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.982	1.994	-0.012	1.000	85250	0.0625		625	93.0	M
313.00 > 119.00	1.982	1.994	-0.012	1.000	8236		10.35(5.03-15.10)		60.5	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	2.003	-0.021	1.000	33553	0.0145		57.9	825	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.016	-0.011	1.000	20990	0.007566		80.7	135	
349.00 > 99.00	2.005	2.016	-0.011	1.000	9122		2.30(1.36-4.07)		134	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.322	-0.001	1.000	52507	0.0388		388	64.4	
363.00 > 169.00	2.321	2.322	-0.001	1.000	21952		2.39(1.13-3.40)		95.7	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.332	-0.011	1.000	33790	0.0150		59.9	932	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.335	-0.001	1.000	34717	0.0179		195	72.9	
399.00 > 99.00	2.334	2.335	-0.001	1.000	12396		2.80(1.50-4.49)		81.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.345	-0.011	1.000	40640	0.0146		61.7	1334	
65 Adona										
377.00 > 251.00	2.360	2.374	-0.014	1.000	43668	0.0123		123	720	
377.00 > 85.00	2.360	2.374	-0.014	1.000	24060		1.81(0.84-2.53)		406	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.661	0.014	1.000	129694	0.0903		953	1538	
D 12 M2-6:2FTS										
429.00 > 81.00	2.675	2.667	0.008	1.000	20173	0.0417		176	266	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	17234	0.0126		133	108	
449.00 > 99.00	2.683	2.691	-0.008	0.997	4930		3.50(1.94-5.82)		79.0	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.691	-0.008		60428	0.0250			1609	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.691	-0.008	1.000	59508	0.0350		348	38.7	
413.00 > 169.00	2.683	2.691	-0.008	1.000	34889		1.71(0.84-2.52)		106	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.697	-0.014	1.000	36755	0.0164		65.6	1012	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.061	-0.004	1.000	199461	0.1626		1626	732	
463.00 > 169.00	3.057	3.061	-0.004	1.000	46874		4.26(1.90-5.69)		1285	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.061	-0.004	1.000	1892862	1.70		18268	11723	
499.00 > 99.00	3.057	3.061	-0.004	1.000	461366		4.10(2.31-6.93)		5943	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.065	-0.008	1.000	24531	0.0126		52.6	181	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.072	-0.015	1.000	29420	0.0153		61.1	1120	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.274	-0.003	1.000	18647	0.009637		103	541	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.400	-0.005	1.000	965757	0.6798		6798	213	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.408	-0.013	1.000	35113	0.0144		57.7	26.0	
68 Perfluorononanesulfonic acid										M
549.00 > 80.00	3.404	3.409	-0.005	1.000	32909	0.0401		418	69.9	
549.00 > 99.00	3.404	3.409	-0.005	1.000	8585		3.83(1.33-3.97)		95.9	M
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.418	-0.004	1.000	1174468	1.53		16000	37677	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.426	-0.012	1.000	14503	0.0249		104	117	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.427	-0.004	1.000	145572	0.1360		1360	619	
513.00 > 169.00	3.423	3.427	-0.004	1.000	27314		5.33(2.36-7.09)		403	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.436	-0.013	1.000	25939	0.0160		64.1	985	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.586	-0.003	1.000	8872	0.009663		38.7	131	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.583	3.587	-0.004	1.000	6579	0.0186		186	189	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.742	-0.004	1.000	18995	0.0285		296	26.6	
599.00 > 99.00	3.738	3.742	-0.004	1.000	8019		2.37(1.39-4.16)		68.1	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.752	0.006	1.003	10522	0.0188		188	273	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.761	-0.013	1.000	14941	0.0165		66.0	210	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.761	-0.003	1.000	21667	0.0155		62.0	704	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.758	3.762	-0.004	1.000	1330891	1.82		18080	2787	M
563.00 > 169.00	3.758	3.762	-0.004	1.000	362062		3.68(2.12-6.36)		740	M
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.904	3.919	-0.015	1.000	26766	0.008954		95.1	532	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.058	4.051	0.007	1.003	54795	0.0782		782	113	
613.00 > 169.00	4.048	4.051	-0.003	1.000	15501		3.53(2.13-6.40)		150	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.061	-0.013	1.000	16803	0.0111		44.5	321	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.319	-0.013	1.000	265697	0.3253		3253	429	
663.00 > 169.00	4.306	4.319	-0.013	1.000	85872		3.09(1.25-3.76)		553	
42 Perfluorotetradecanoic acid										M
713.00 > 169.00	4.551	4.553	-0.002	1.000	2265	0.0489		489	21.2	
713.00 > 219.00	4.541	4.553	-0.012	0.998	1629		1.39(0.71-2.13)		27.7	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.564	-0.013	1.000	4609	0.002409		9.6	55.0	
45 Perfluorohexadecanoic acid										M
813.00 > 769.00	4.965	4.976	-0.011	0.998	10710	0.0197		195	10.0	
813.00 > 169.00	4.974	4.976	-0.002	1.000	1402		7.64(2.86-8.58)		9.9	M
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.976	-0.002	1.000	6741	0.002165		8.7	61.0	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 08:34:01 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_055.d

Injection Date: 26-Apr-2018 18:20:38 Instrument ID: A8_N

Lims ID: 320-38054-A-2-B MS

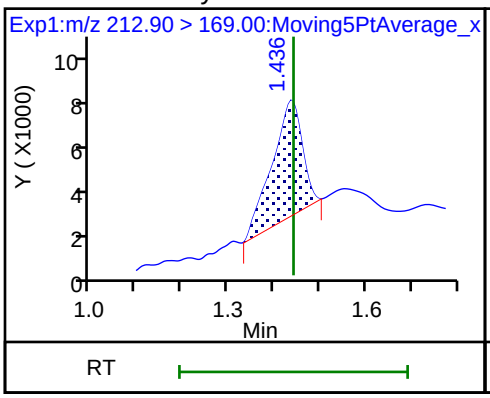
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 40 Worklist Smp#: 3

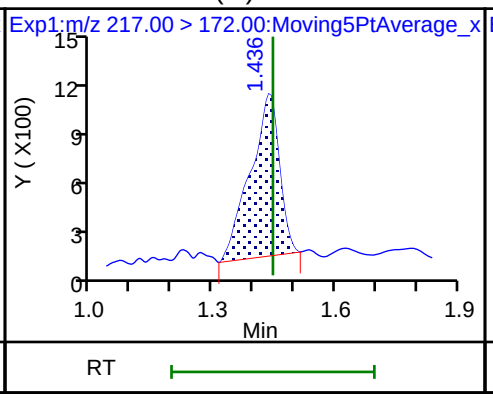
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

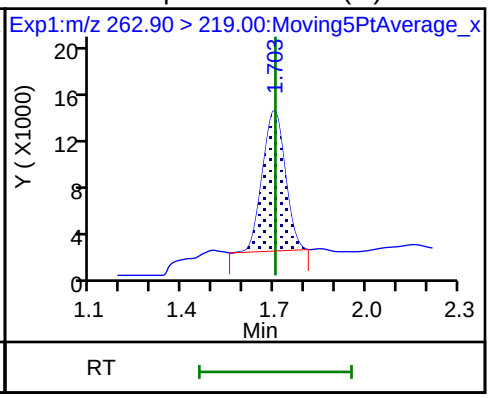
2 Perfluorobutyric acid



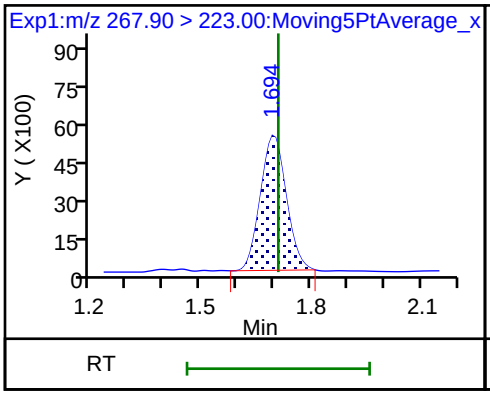
D 1 13C4 PFBA (M)



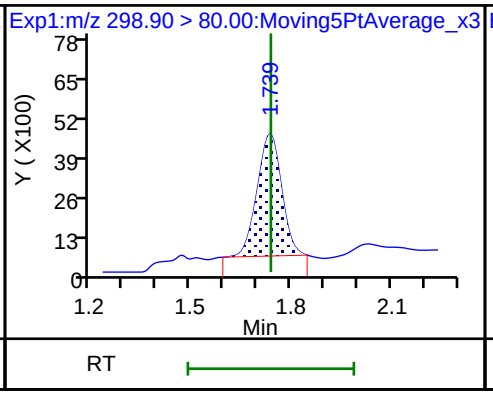
4 Perfluoropentanoic acid (M)



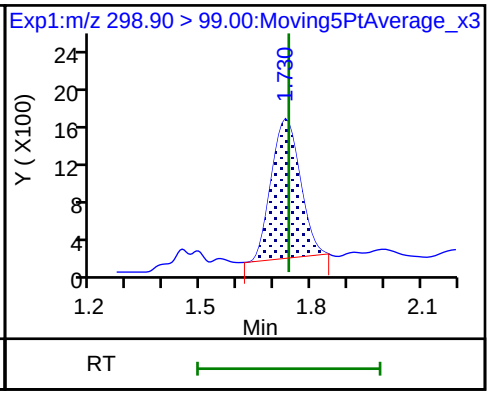
D 3 13C5-PFPeA



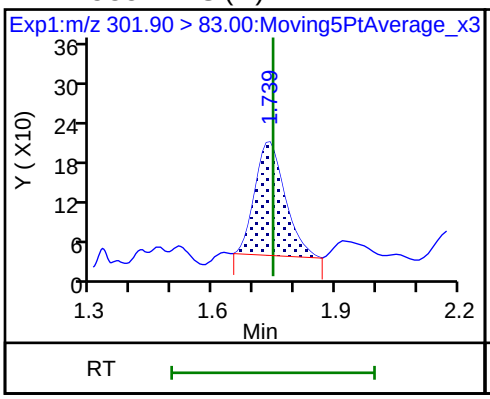
5 Perfluorobutanesulfonic acid



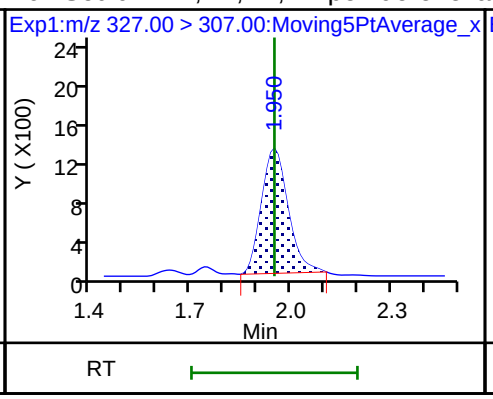
5 Perfluorobutanesulfonic acid



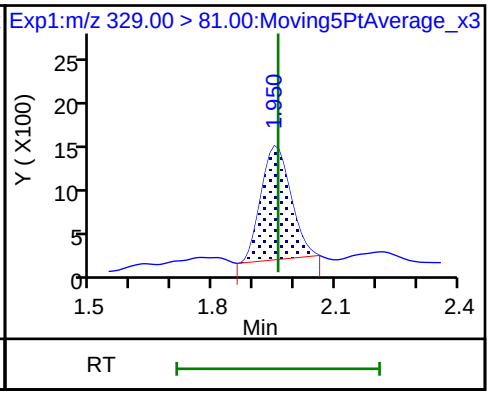
D 47 13C3-PFBS (M)



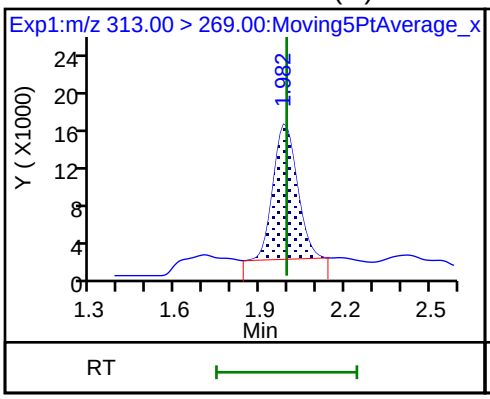
61 Sodium 1H,1H,2H,2H-perfluorohexa



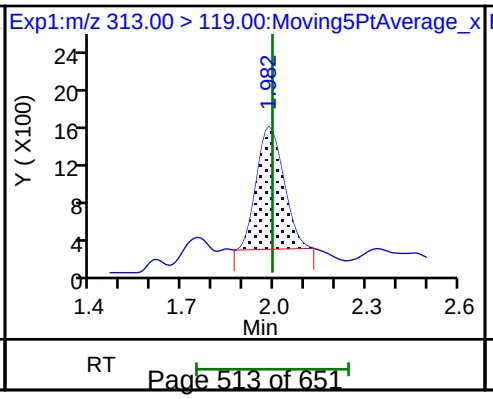
D 60 M2-4:2FTS



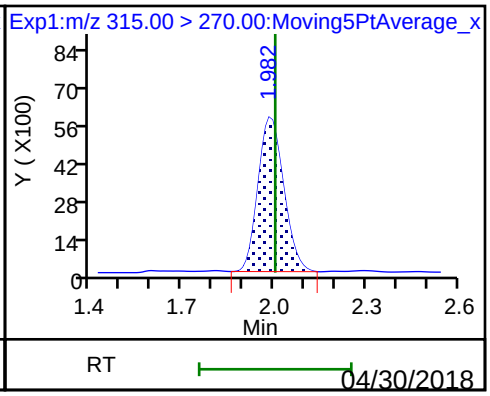
6 Perfluorohexanoic acid (M)



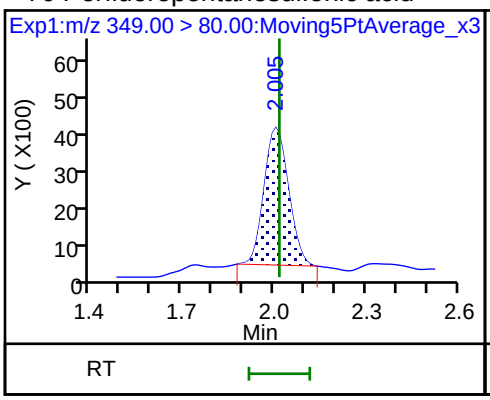
6 Perfluorohexanoic acid



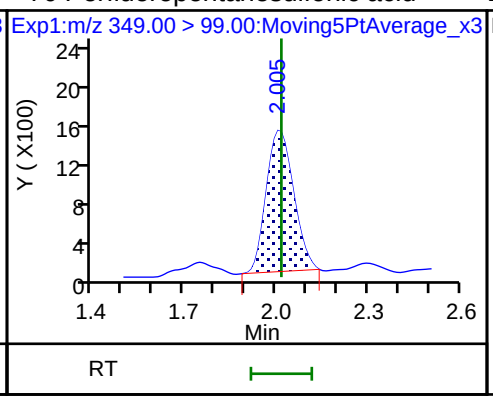
D 7 13C2 PFHxA



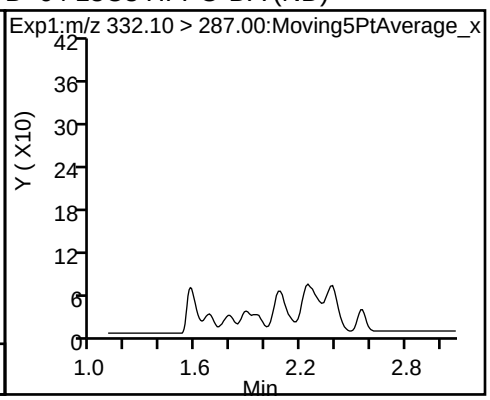
70 Perfluoropentanesulfonic acid



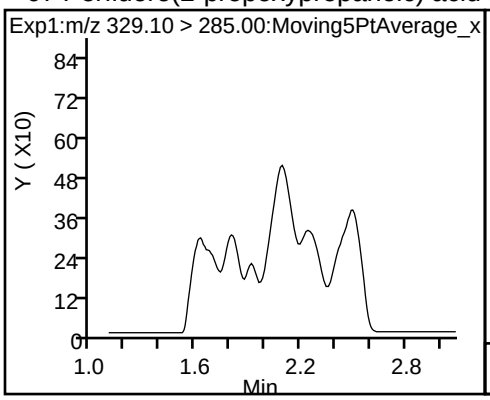
70 Perfluoropentanesulfonic acid



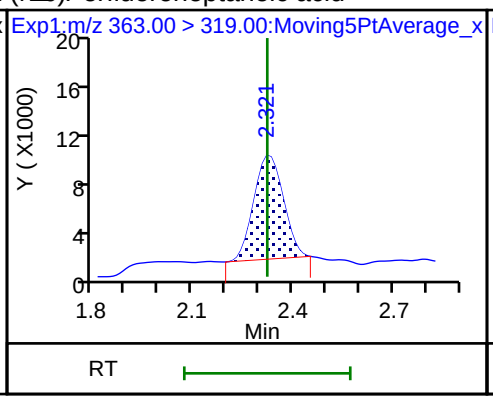
D 64 13C3 HFPO-DA (ND)



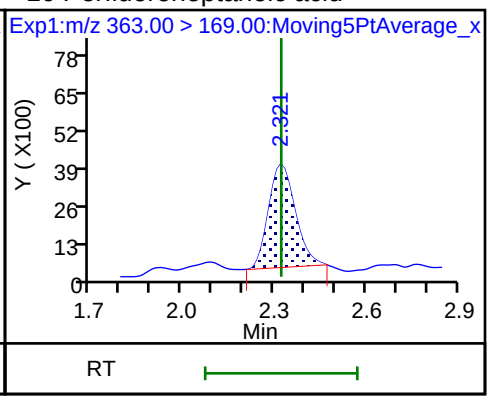
67 Perfluoro(2-propoxypropanoic) acid (ND)



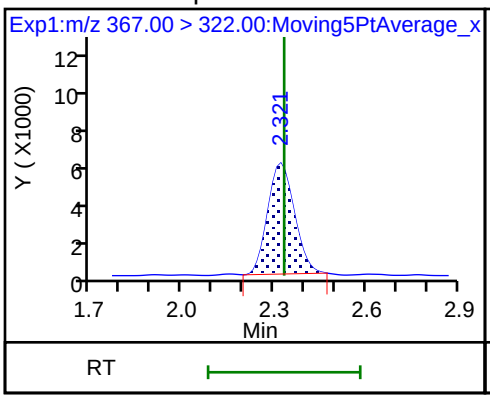
10 Perfluoroheptanoic acid



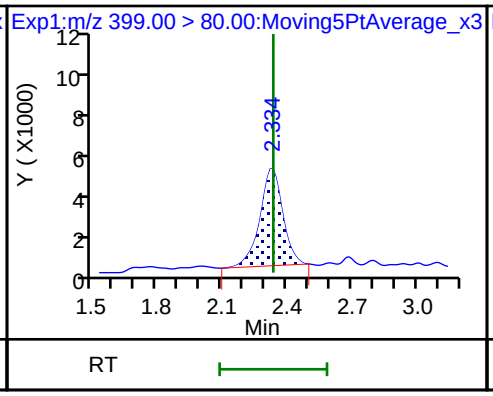
10 Perfluoroheptanoic acid



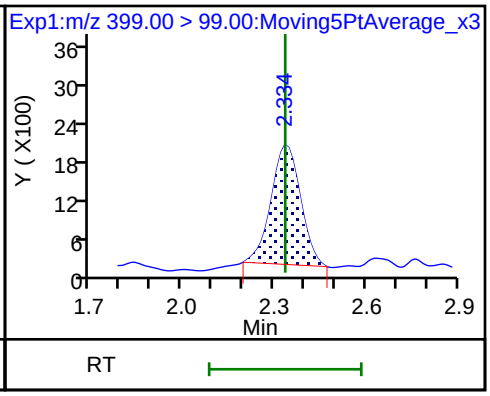
D 9 13C4-PFHpA



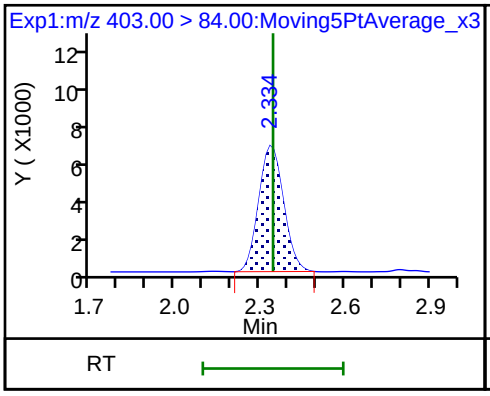
8 Perfluorohexanesulfonic acid



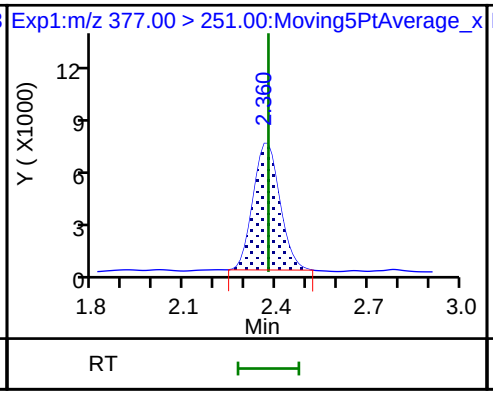
8 Perfluorohexanesulfonic acid



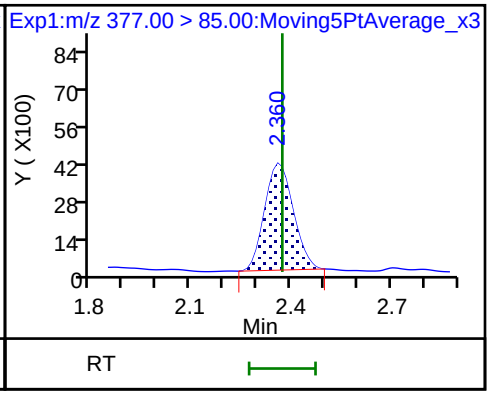
D 11 18O2 PFHxS



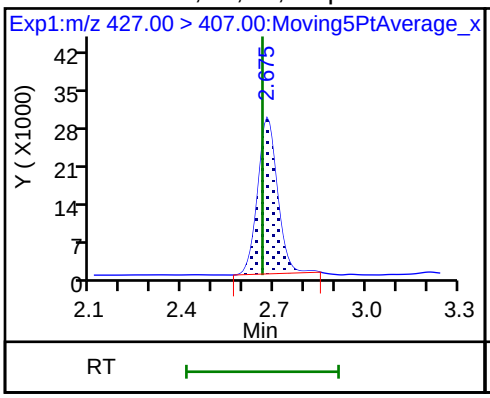
65 Adona



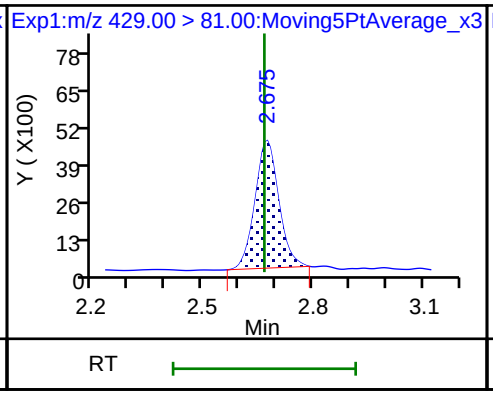
65 Adona



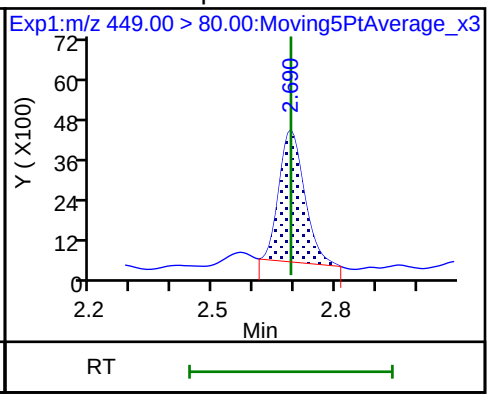
13 Sodium 1H,1H,2H,2H-perfluorooctane



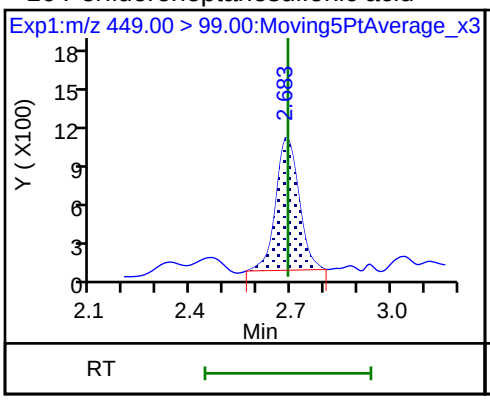
D 12 M2-6:2FTS



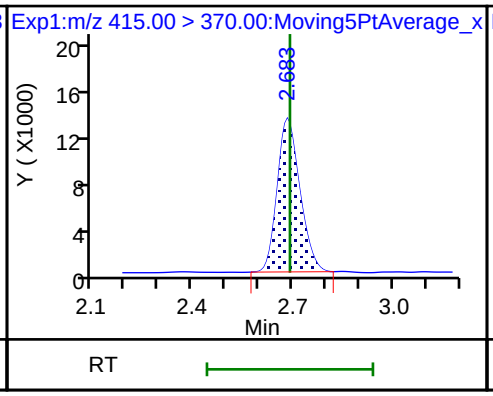
16 Perfluoroheptanesulfonic acid



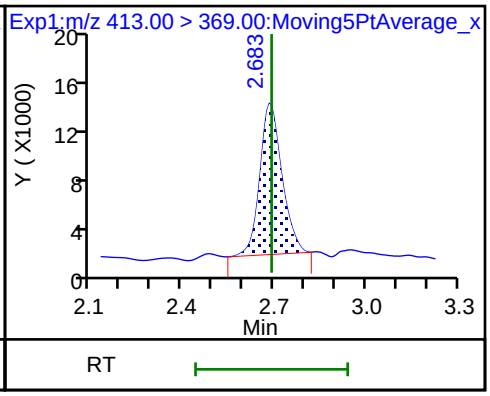
16 Perfluoroheptanesulfonic acid



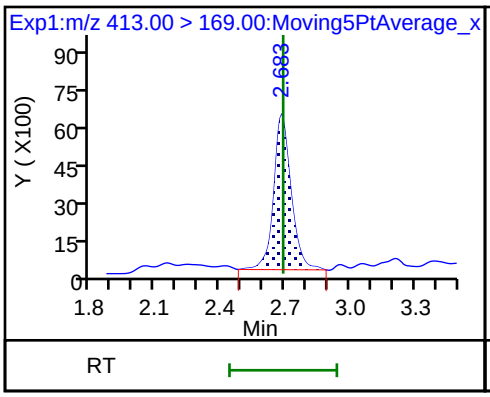
* 62 13C2-PFOA



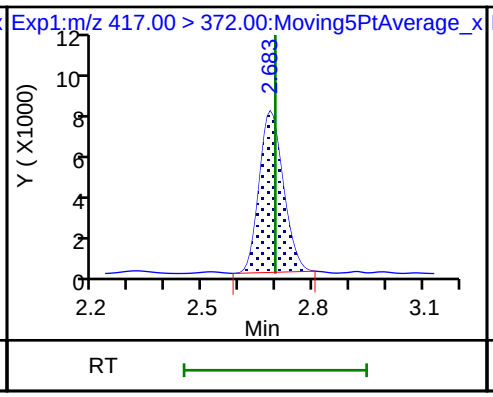
15 Perfluorooctanoic acid



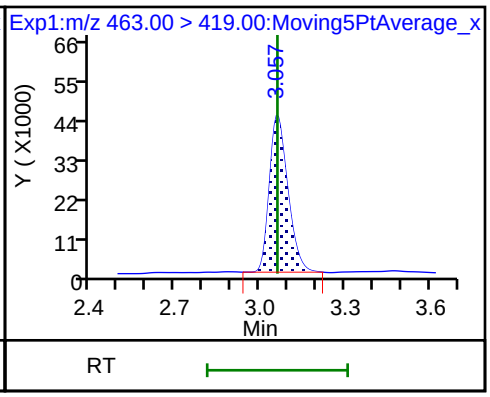
15 Perfluorooctanoic acid



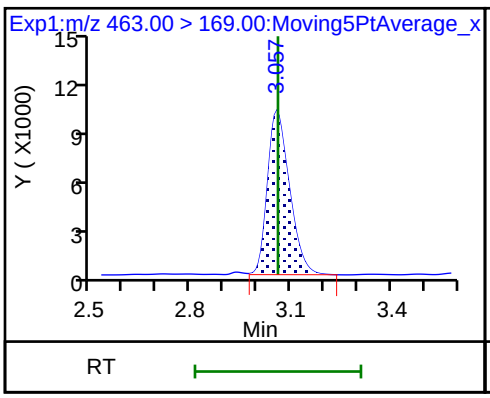
D 14 13C4 PFOA



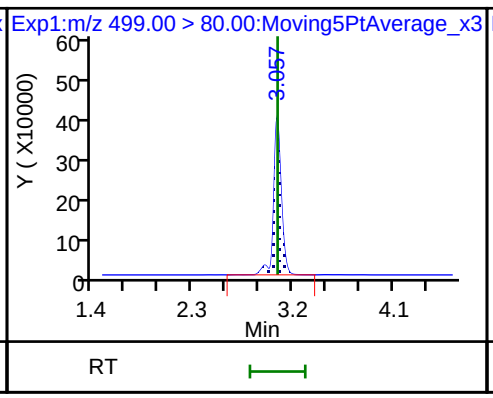
20 Perfluorononanoic acid



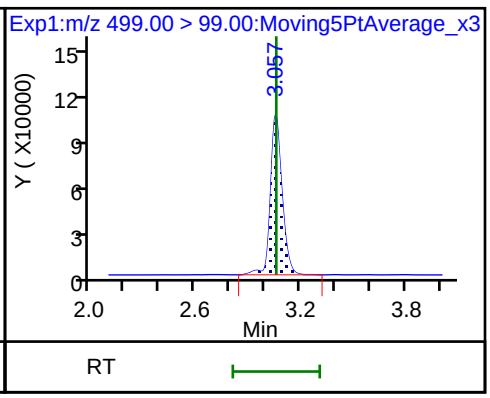
20 Perfluorononanoic acid



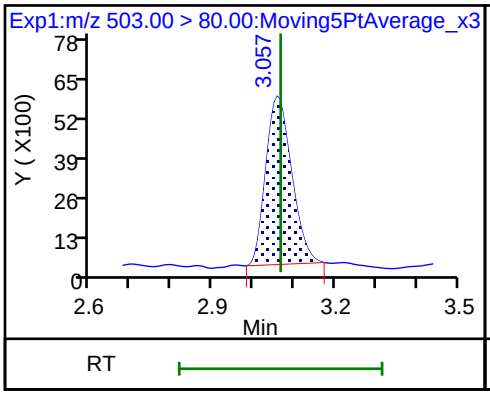
17 Perfluorooctane sulfonic acid



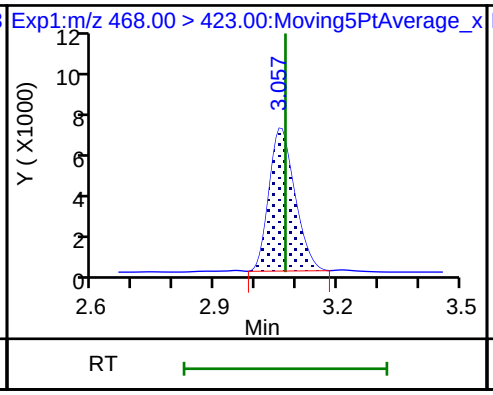
17 Perfluorooctane sulfonic acid



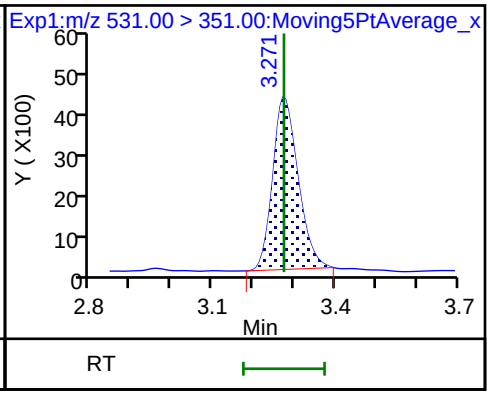
D 18 13C4 PFOS



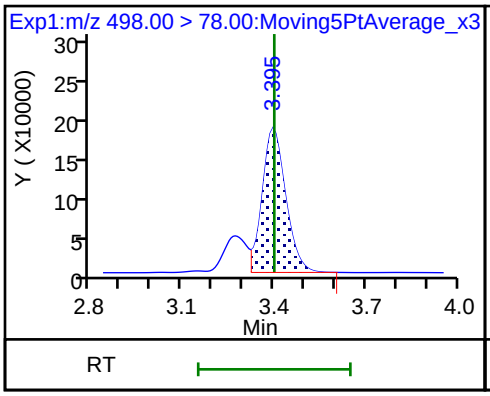
D 19 13C5 PFNA



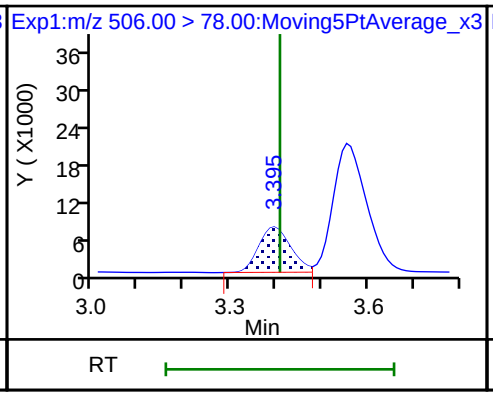
69 9-Chlorohexadecafluoro-3-oxanonane



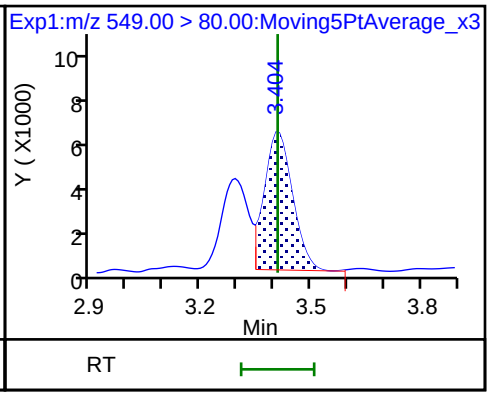
22 Perfluorooctane Sulfonamide



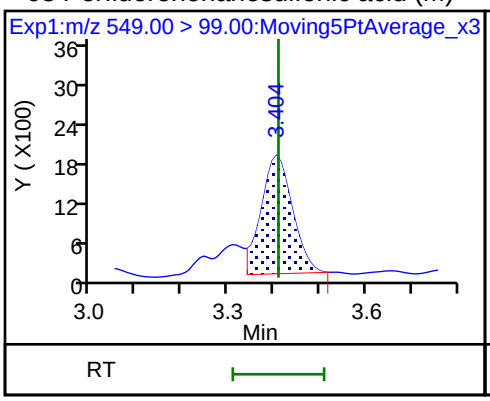
D 21 13C8 FOSA



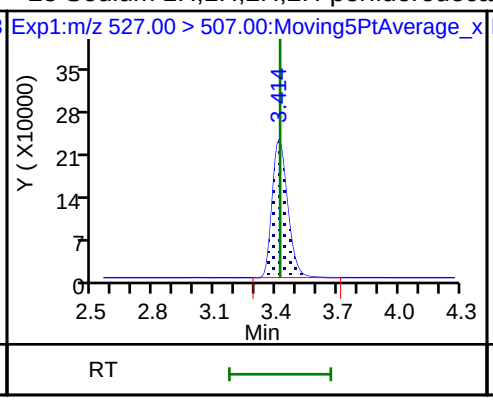
68 Perfluorononanesulfonic acid



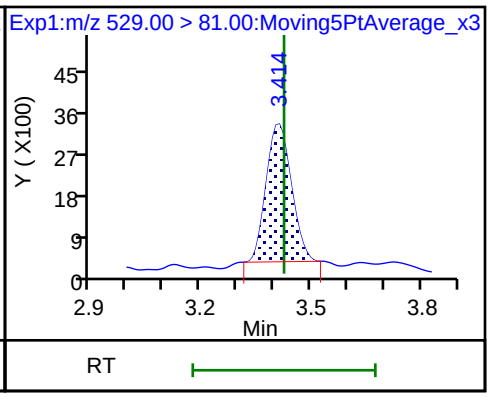
68 Perfluorononanesulfonic acid (M)



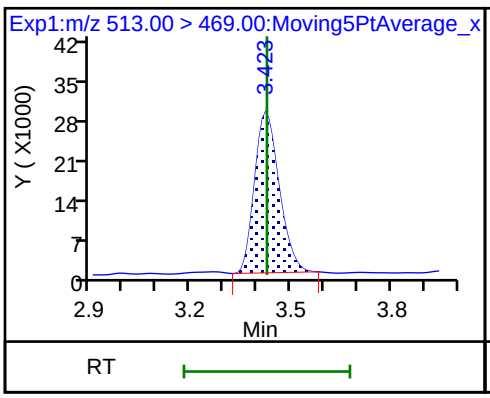
25 Sodium 1H,1H,2H,2H-perfluorodecane



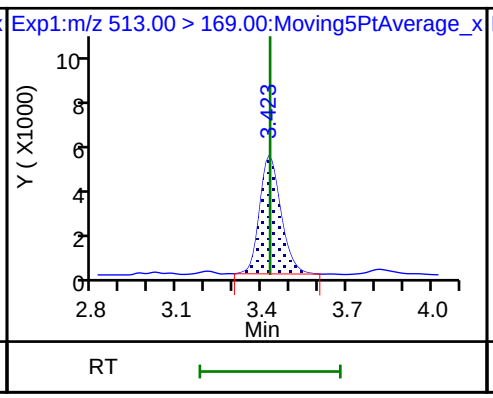
D 26 M2-8:2FTS



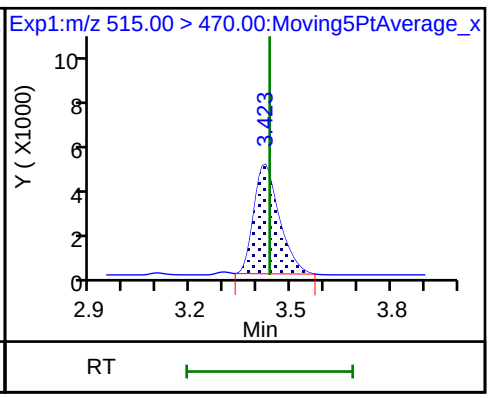
24 Perfluorodecanoic acid



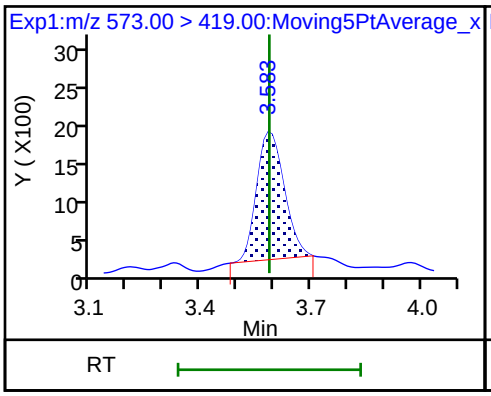
24 Perfluorodecanoic acid



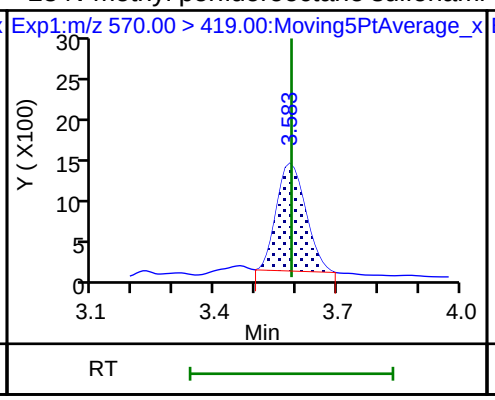
D 23 13C2 PFDA



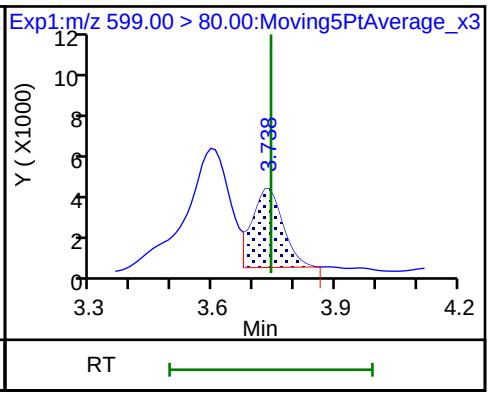
D 27 d3-NMeFOSAA



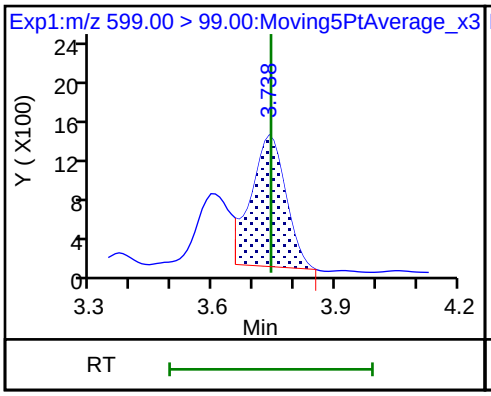
28 N-methyl perfluorooctane sulfonami



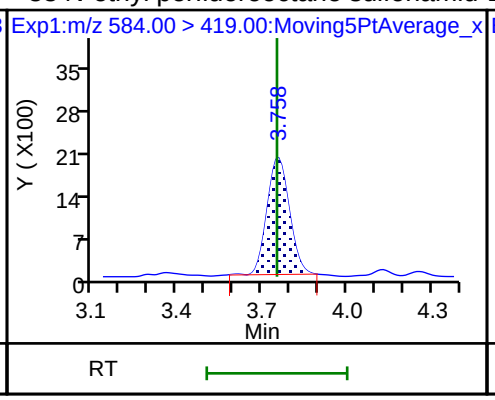
29 Perfluorodecane Sulfonic acid



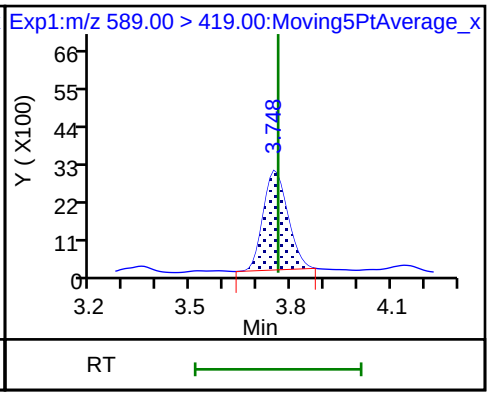
29 Perfluorodecane Sulfonic acid



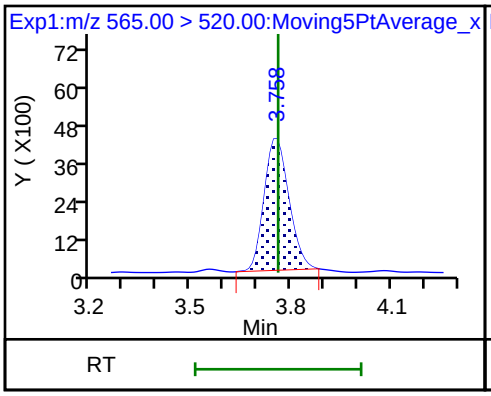
33 N-ethyl perfluorooctane sulfonamid



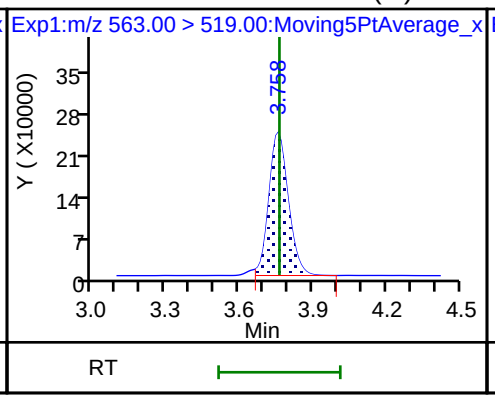
D 32 d5-NEtFOSAA



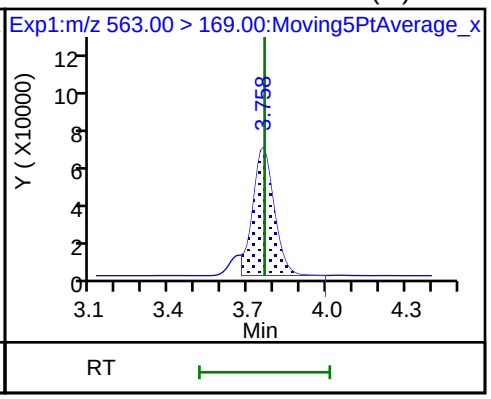
D 30 13C2 PFUnA



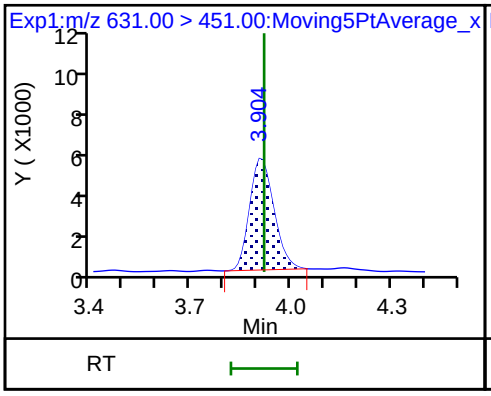
31 Perfluoroundecanoic acid (M)



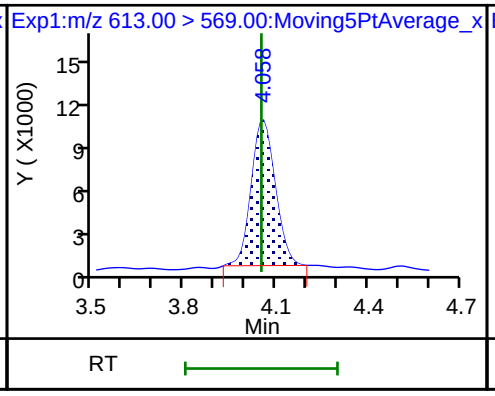
31 Perfluoroundecanoic acid (M)



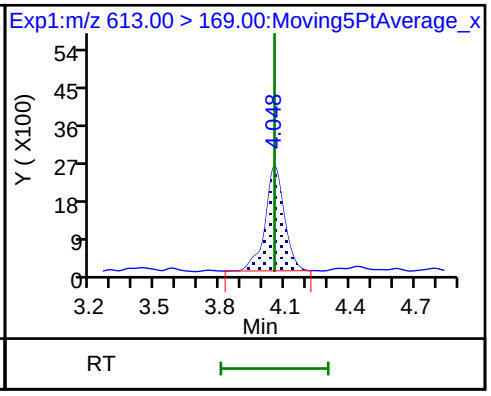
66 11-Chloroeicosafluoro-3-oxaundecan



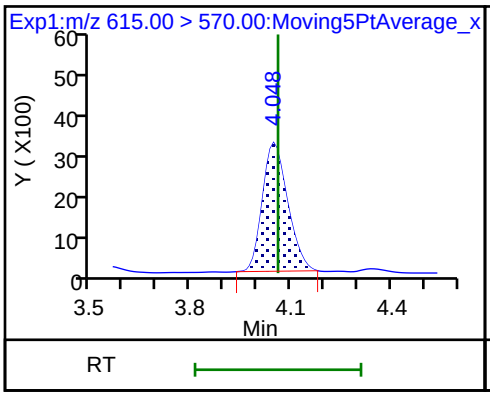
37 Perfluorododecanoic acid



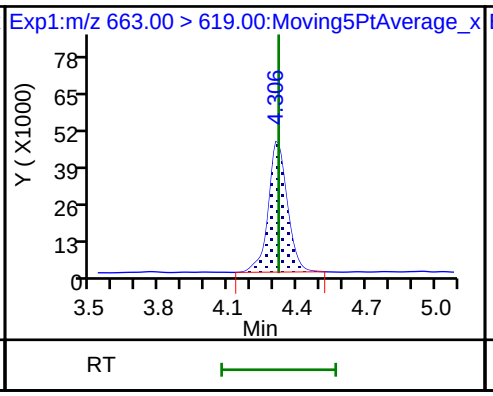
37 Perfluorododecanoic acid



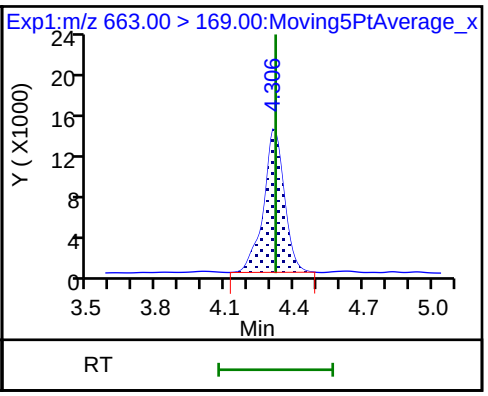
D 36 13C2 PFDoA



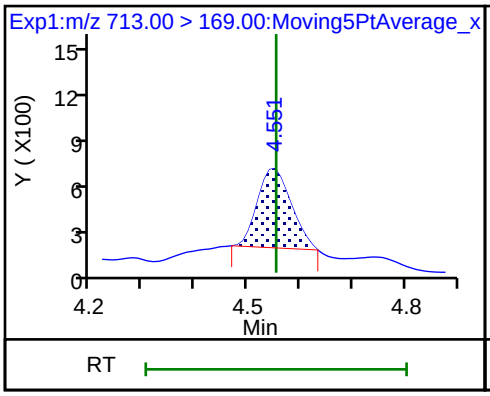
41 Perfluorotridecanoic acid



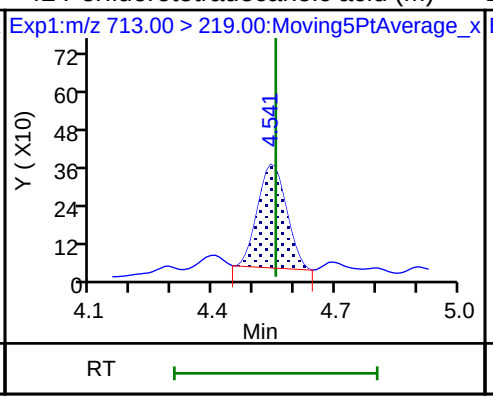
41 Perfluorotridecanoic acid



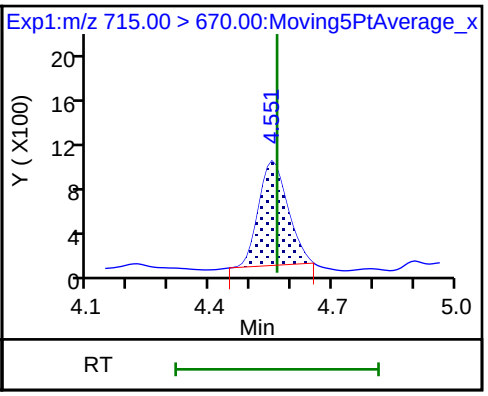
42 Perfluorotetradecanoic acid



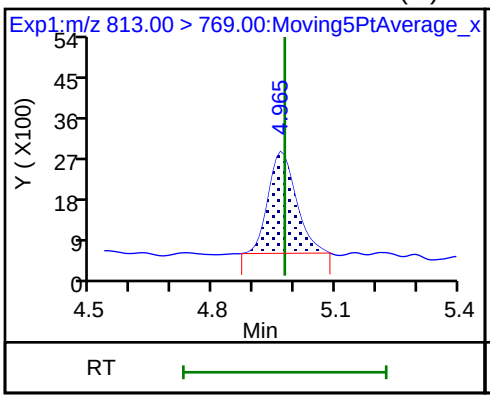
42 Perfluorotetradecanoic acid (M)



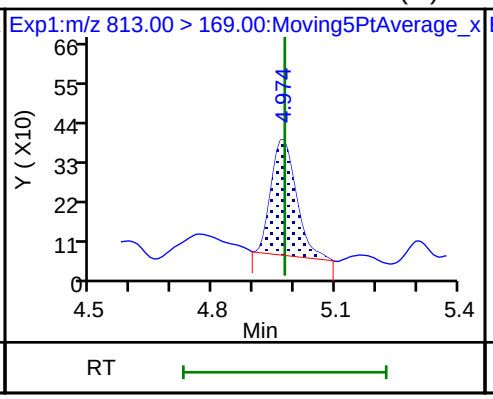
D 43 13C2-PFTeDA



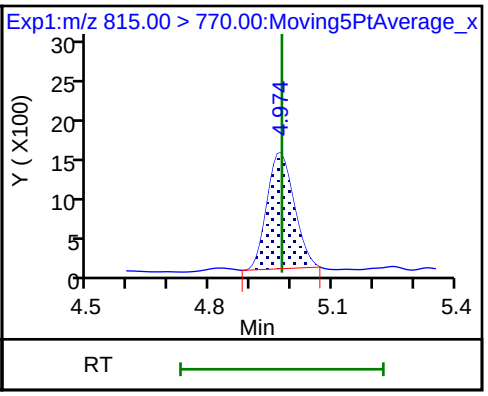
45 Perfluorohexadecanoic acid (M)



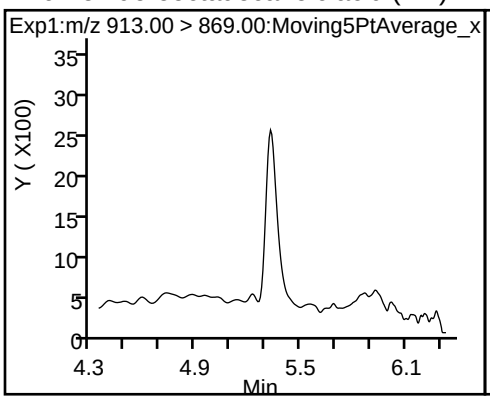
45 Perfluorohexadecanoic acid (M)



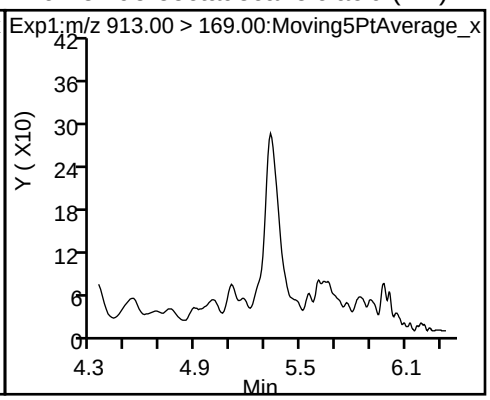
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

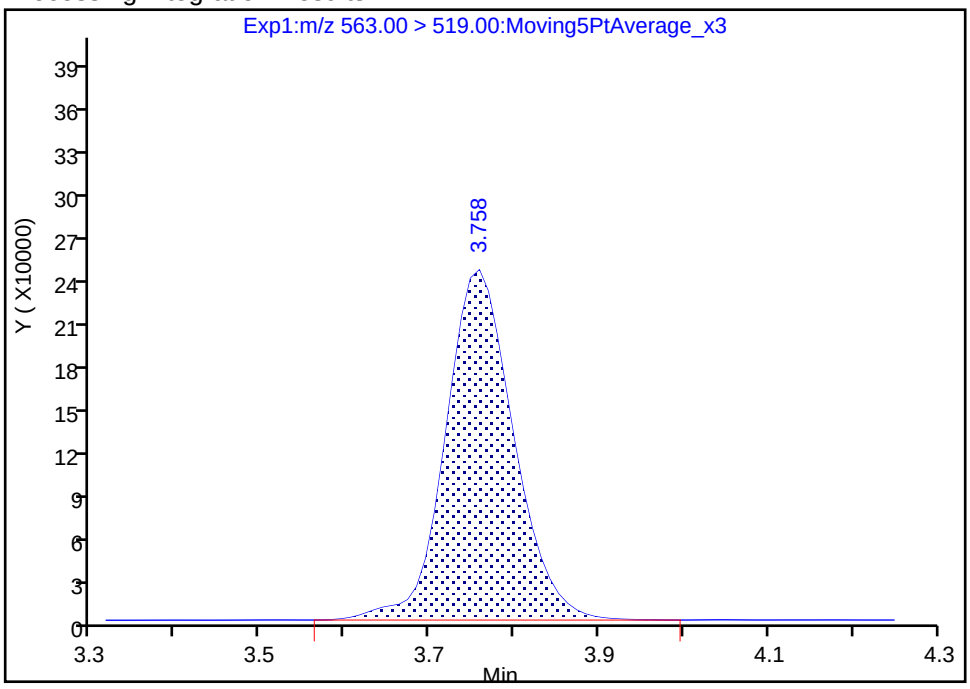
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_055.d
Injection Date: 26-Apr-2018 18:20:38 Instrument ID: A8_N
Lims ID: 320-38054-A-2-B MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 40 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

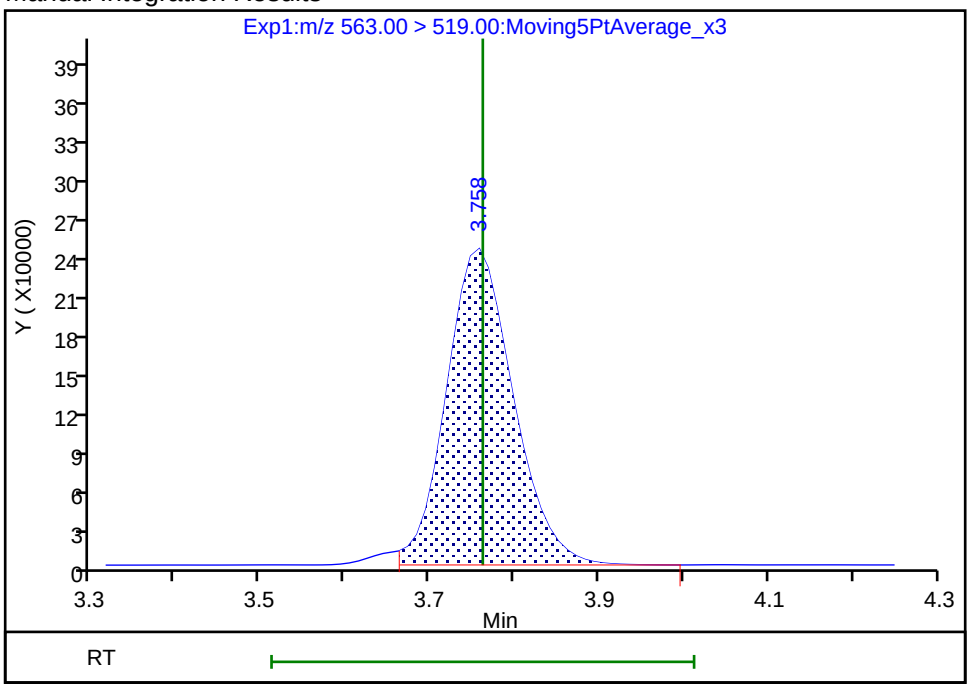
Processing Integration Results

RT: 3.76
Area: 1355272
Amount: 1.850377
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 1330891
Amount: 1.817089
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:26:36
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

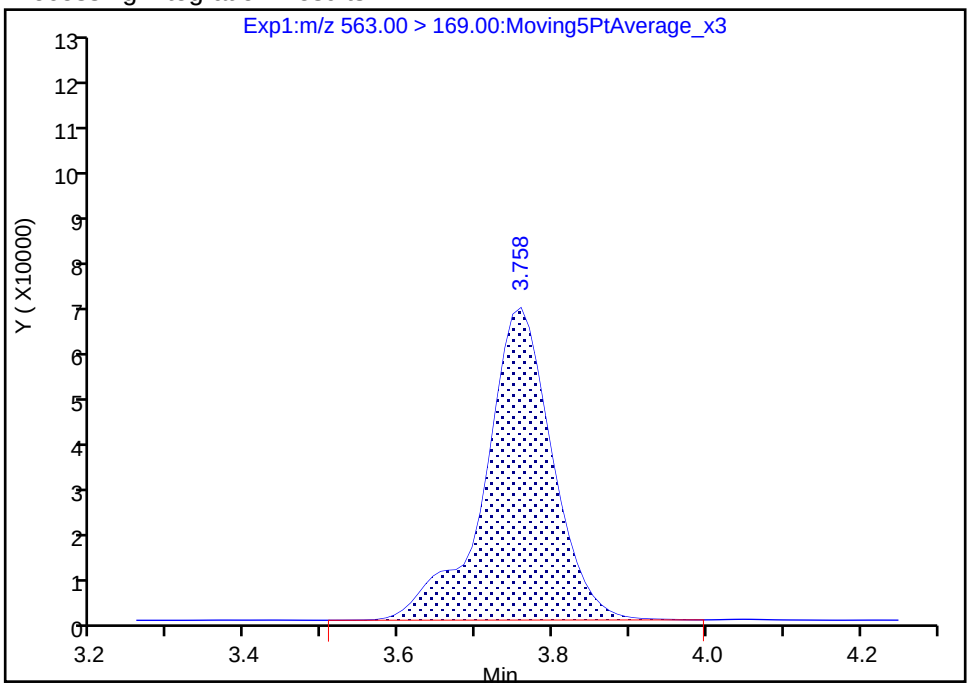
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_055.d
Injection Date: 26-Apr-2018 18:20:38 Instrument ID: A8_N
Lims ID: 320-38054-A-2-B MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 40 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

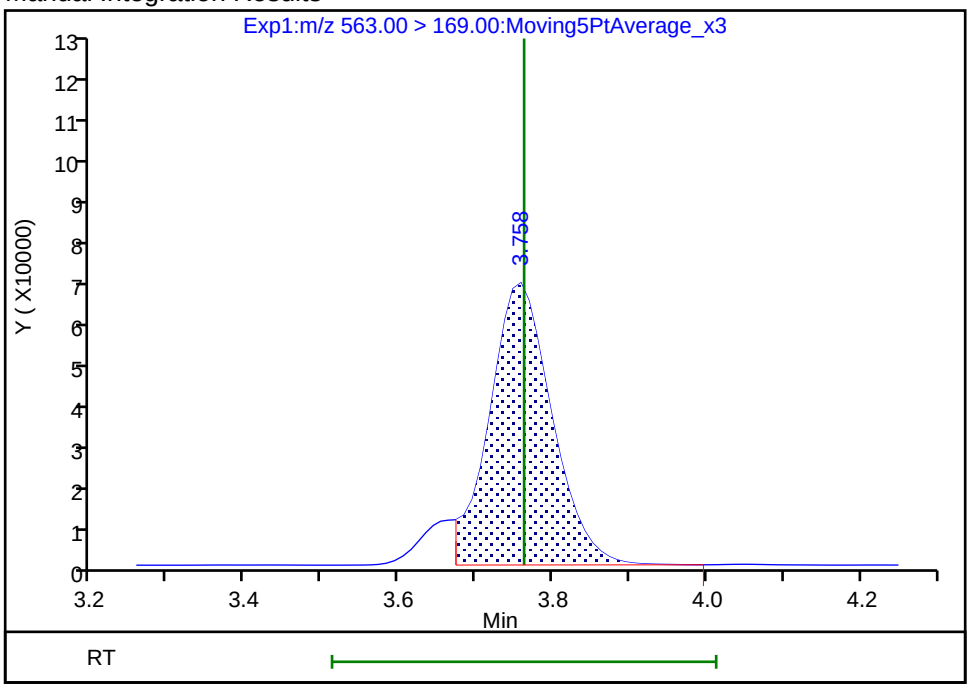
Processing Integration Results

RT: 3.76
Area: 394423
Amount: 1.850377
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 362062
Amount: 1.817089
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:26:38
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MS DL2 | Lab Sample ID: 320-38054-2 MS DL2

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLA_058.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.04(g) | Date Analyzed: 04/26/2018 18:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220090 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	1.87		0.054
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.93		0.054
307-24-4	Perfluorohexanoic acid (PFHxA)	2.63		0.054
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.81		0.054
335-67-1	Perfluorooctanoic acid (PFOA)	2.02		0.054
375-95-1	Perfluorononanoic acid (PFNA)	1.47		0.054
335-76-2	Perfluorodecanoic acid (PFDA)	0.682		0.054
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.23		0.054
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.836		0.14

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	56		25-150
STL01893	13C5 PFPeA	59		25-150
STL00993	13C2 PFHxA	70		25-150
STL01892	13C4-PFHpA	56		25-150
STL00990	13C4 PFOA	62		25-150
STL00995	13C5 PFNA	53		25-150
STL00996	13C2 PFDA	56		25-150
STL00997	13C2 PFUnA	58		25-150
STL00991	13C4 PFOS	55		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_058.d
Lims ID: 320-38054-A-2-E MS
Client ID:
Sample Type: MS
Inject. Date: 26-Apr-2018 18:44:05 ALS Bottle#: 43 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38054-a-2-e ms 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:33:52 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:32:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.439	1.442	-0.003	1.000	6314041	3.44		34410	3725	
D 1 13C4 PFBA										
217.00 > 172.00	1.439	1.446	-0.007	1.000	49403	0.0141		56.2	458	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.703	0.005	1.000	8618962	5.38		53818	10429	
D 3 13C5-PFPeA										
267.90 > 223.00	1.708	1.711	-0.003	0.558	33595	0.0148		59.3	668	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.739	0.005	1.005	31420	0.009473		107	102	
298.90 > 99.00	1.744	1.739	0.005	1.005	15249		2.06(1.25-3.74)		123	
D 47 13C3-PFBS										M
301.90 > 83.00	1.735	1.747	-0.012	1.000	985	0.0189		81.5	9.3	M
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.994	-0.006	1.000	8579747	4.84		48445	13331	
313.00 > 119.00	1.988	1.994	-0.006	1.000	758344		11.31(5.03-15.10)		7694	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	2.003	-0.015	1.000	43572	0.0174		69.5	1091	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.016	-0.005	1.000	42234	0.0139		149	229	
349.00 > 99.00	2.011	2.016	-0.005	1.000	14659		2.88(1.36-4.07)		188	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.095	-0.005	1.000	1834	NR		0.0	13.7	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.329	2.322	0.007	1.000	9532008	7.00		70003	11797	
363.00 > 169.00	2.329	2.322	0.007	1.000	3648144		2.61(1.13-3.40)		20843	
D 9 13C4-PFHpA										
367.00 > 322.00	2.329	2.332	-0.003	1.000	34011	0.0139		55.8	1095	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.342	2.335	0.007	1.000	301628	0.1701		1854	200	
399.00 > 99.00	2.342	2.335	0.007	1.000	84788		3.56(1.50-4.49)		182	
D 11 18O2 PFHxS										
403.00 > 84.00	2.342	2.345	-0.003	1.000	37062	0.0123		52.1	1486	
13 Sodium 1H,1H,2H,2H-perfluorooctane										M
427.00 > 407.00	2.686	2.661	0.025	1.003	3913	0.002567		27.1	54.7	M
D 12 M2-6:2FTS										
429.00 > 81.00	2.679	2.667	0.012	1.000	21416	0.0410		173	409	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.694	2.691	0.003	1.000	29340	0.0191		200	145	
449.00 > 99.00	2.694	2.691	0.003	1.000	9795		3.00(1.94-5.82)		186	
* 62 13C2-PFOA										
415.00 > 370.00	2.694	2.691	0.003		65329	0.0250			1941	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.694	2.691	0.003	1.000	6423144	3.72		36922	5051	
413.00 > 169.00	2.686	2.691	-0.005	0.997	3490792		1.84(0.84-2.52)		12128	
D 14 13C4 PFOA										
417.00 > 372.00	2.694	2.697	-0.003	1.000	37361	0.0154		61.6	1624	
20 Perfluorononanoic acid										
463.00 > 419.00	3.068	3.061	0.007	1.002	3095135	2.71		27063	9604	
463.00 > 169.00	3.068	3.061	0.007	1.002	743190		4.16(1.90-5.69)		15992	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.061	3.061	0.0	1.000	1937786	1.54		16575	3642	M
499.00 > 99.00	3.061	3.061	0.0	1.000	468910		4.13(2.31-6.93)		7671	
D 18 13C4 PFOS										
503.00 > 80.00	3.061	3.065	-0.004	1.000	27679	0.0131		54.9	178	
D 19 13C5 PFNA										
468.00 > 423.00	3.061	3.072	-0.011	1.000	27421	0.0132		52.6	968	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.274	3.274	0.0	1.000	15558	0.007126		76.5	310	
D 21 13C8 FOSA										
506.00 > 78.00	3.400	3.408	-0.008	1.000	32665	0.0124		49.6	1315	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.418	3.409	0.009	1.000	32801	0.0354		369	88.6	
549.00 > 99.00	3.418	3.409	0.009	1.000	12204		2.69(1.33-3.97)		123	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.418	3.418	0.0	1.000	2629	0.006127		64.0	143	
D 26 M2-8:2FTS										
529.00 > 81.00	3.418	3.426	-0.008	1.000	8121	0.0129		53.9	74.9	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.428	3.427	0.001	1.000	1265681	1.25		12540	4985	
513.00 > 169.00	3.428	3.427	0.001	1.000	248724		5.09(2.36-7.09)		5522	
D 23 13C2 PFDA										
515.00 > 470.00	3.428	3.436	-0.008	1.000	24460	0.0140		55.9	1022	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.586	-0.010	1.000	12492	0.0126		50.3	136	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.742	3.742	0.0	1.000	28009	0.0373		386	40.9	
599.00 > 99.00	3.742	3.742	0.0	1.000	11040		2.54(1.39-4.16)		155	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.752	3.761	-0.009	1.000	11304	0.0115		46.2	217	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.761	0.001	1.000	21991	0.0146		58.2	813	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.762	3.762	0.0	1.000	1688879	2.27		22606	3458	M
563.00 > 169.00	3.762	3.762	0.0	1.000	463039		3.65(2.12-6.36)		1260	M
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.919	3.919	0.0	1.000	20419	0.006054		64.3	380	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	550034	0.6942		6942	1365	
613.00 > 169.00	4.061	4.051	0.010	1.003	146869		3.75(2.13-6.40)		1594	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.061	-0.010	1.000	18994	0.0116		46.6	366	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	636685	0.6895		6895	1117	
663.00 > 169.00	4.319	4.319	0.0	1.000	226849		2.81(1.25-3.76)		1524	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.553	-0.001	1.000	86539	0.3172		3172	831	
713.00 > 219.00	4.552	4.553	-0.001	1.000	63092		1.37(0.71-2.13)		1359	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.564	-0.012	1.000	27157	0.0131		52.5	384	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.976	-0.002	1.000	126867	0.0811		805	123	
813.00 > 169.00	4.974	4.976	-0.002	1.000	21194		5.99(2.86-8.58)		164	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.976	-0.002	1.000	32388	0.009623		38.5	277	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.335	5.337	-0.002	1.000	30313	0.0233		233	31.3	
913.00 > 169.00	5.335	5.337	-0.002	1.000	2913		10.41(3.83-11.48)		32.8	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 08:34:11 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_058.d

Injection Date: 26-Apr-2018 18:44:05 Instrument ID: A8_N

Lims ID: 320-38054-A-2-E MS

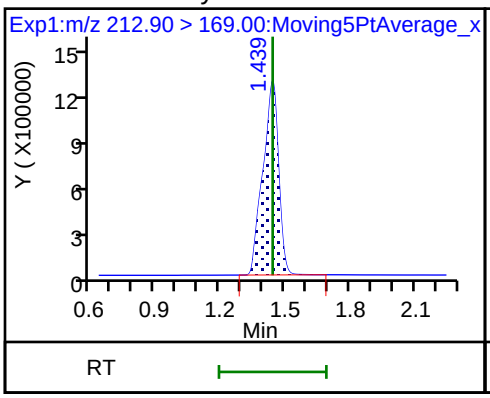
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 43 Worklist Smp#: 6

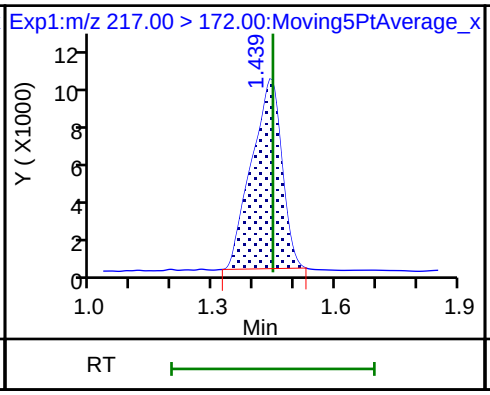
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

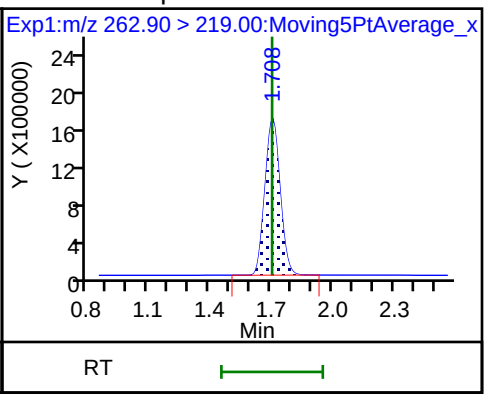
2 Perfluorobutyric acid



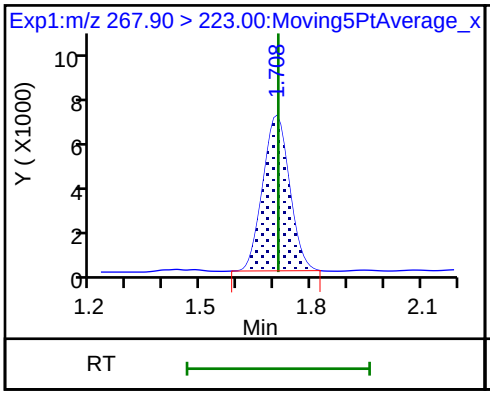
D 1 13C4 PFBA



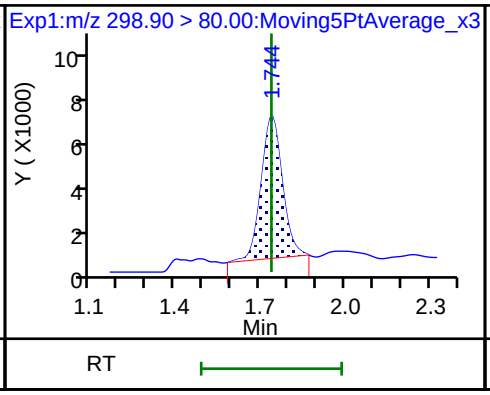
4 Perfluoropentanoic acid



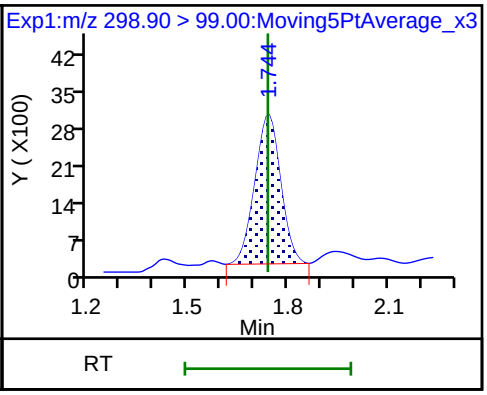
D 3 13C5-PFPeA



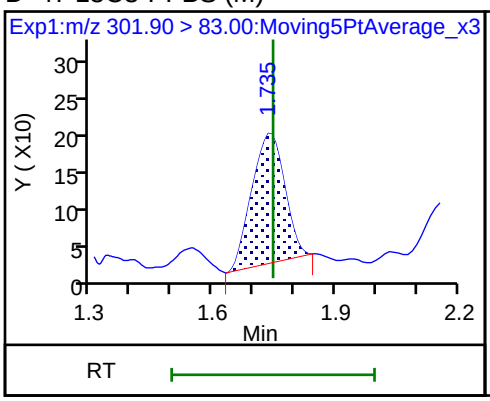
5 Perfluorobutanesulfonic acid



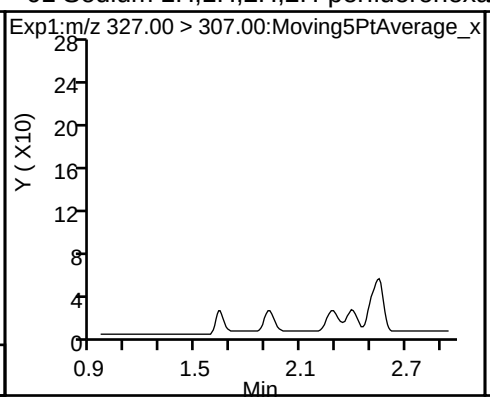
5 Perfluorobutanesulfonic acid



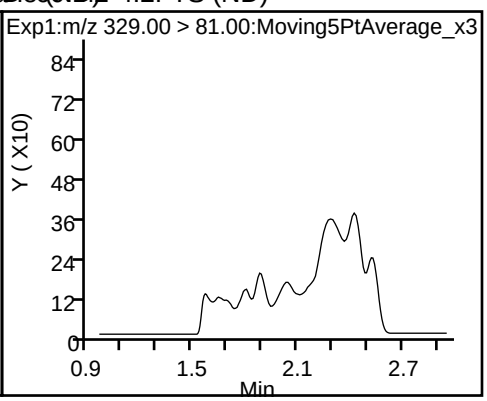
D 47 13C3-PFBS (M)



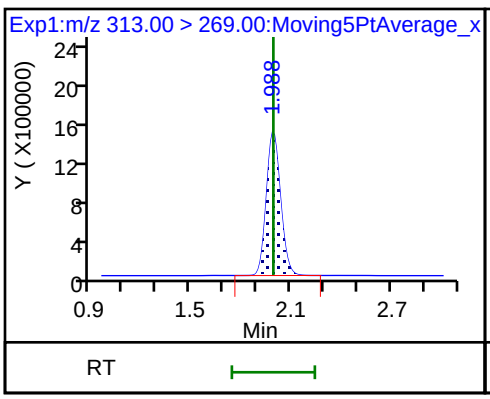
61 Sodium 1H,1H,2H,2H-perfluorohexane (NM)



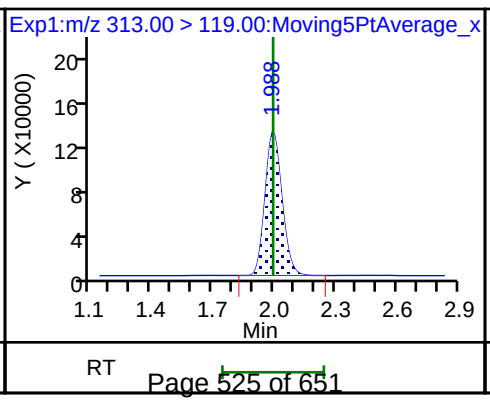
D 60 (NM) 4:2FTS (ND)



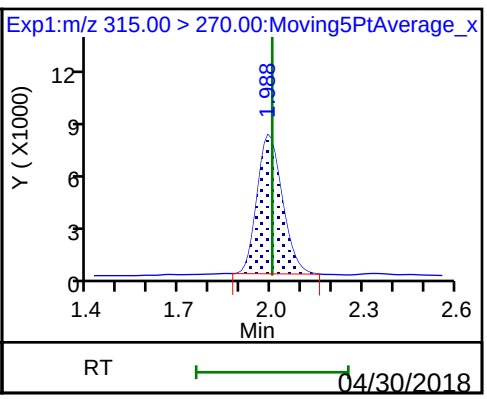
6 Perfluorohexanoic acid



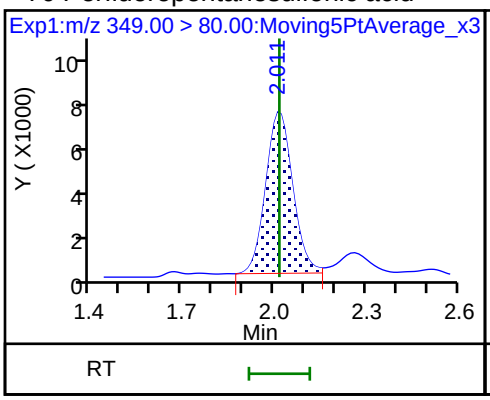
6 Perfluorohexanoic acid



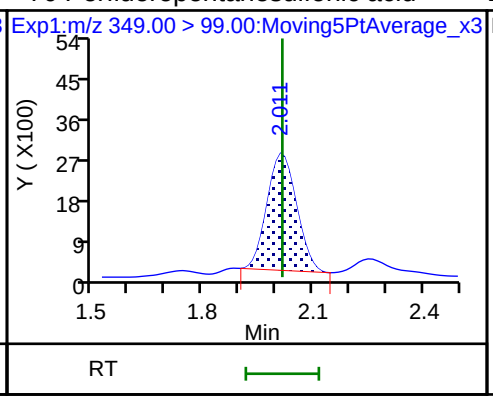
D 7 13C2 PFHxA



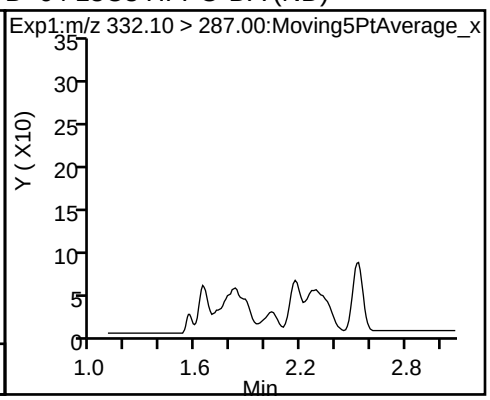
70 Perfluoropentanesulfonic acid



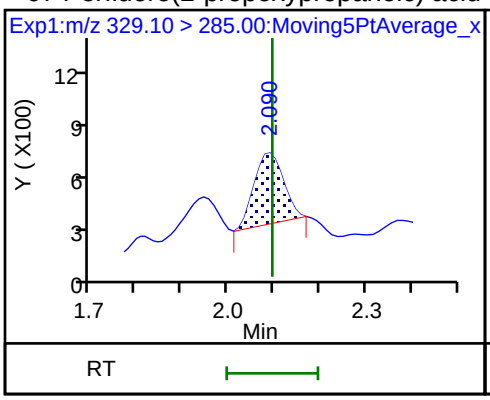
70 Perfluoropentanesulfonic acid



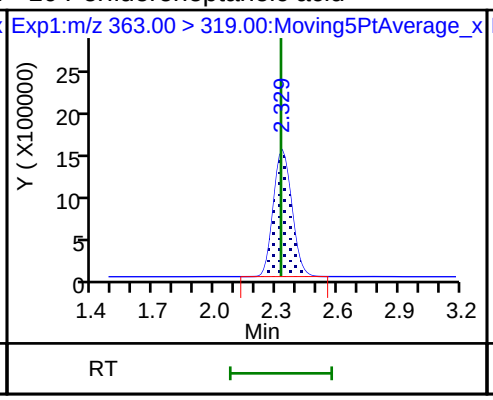
D 64 13C3 HFPO-DA (ND)



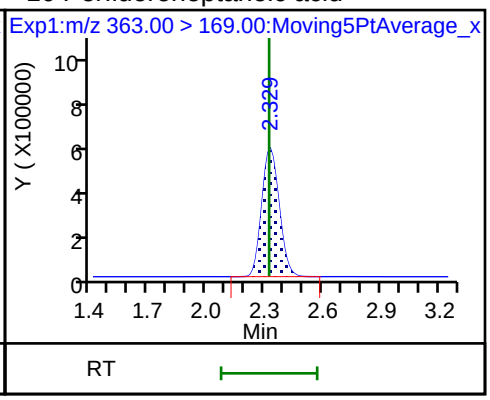
67 Perfluoro(2-propoxypropanoic) acid



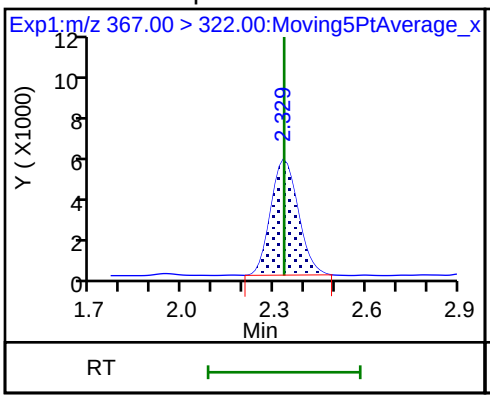
10 Perfluoroheptanoic acid



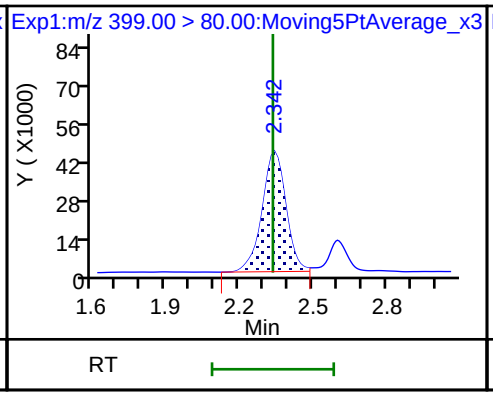
10 Perfluoroheptanoic acid



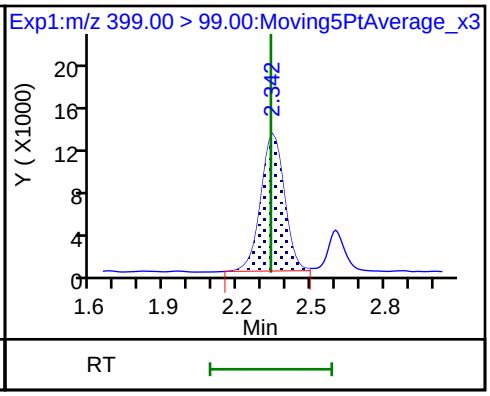
D 9 13C4-PFHpA



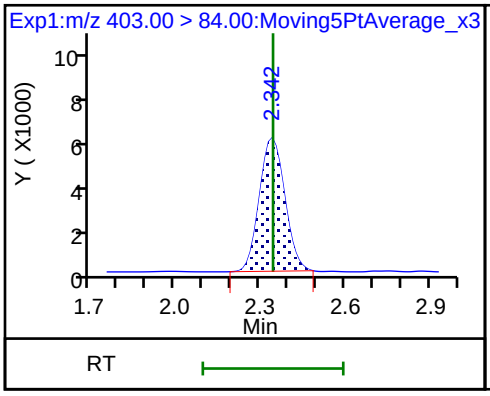
8 Perfluorohexanesulfonic acid



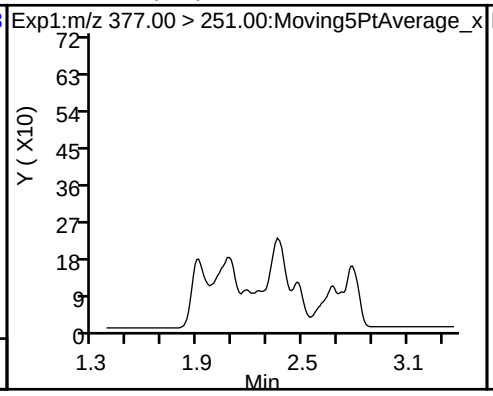
8 Perfluorohexanesulfonic acid



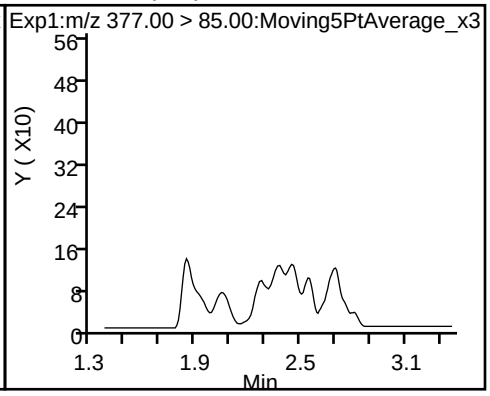
D 11 18O2 PFHxS



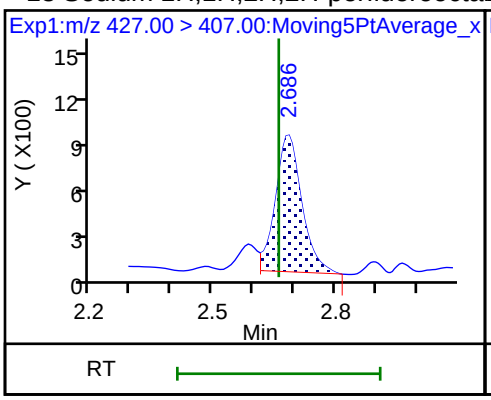
65 Adona (ND)



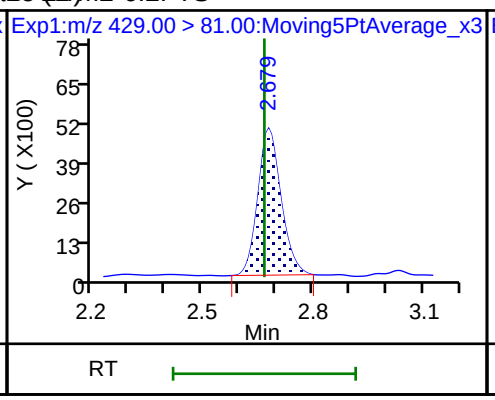
65 Adona (ND)



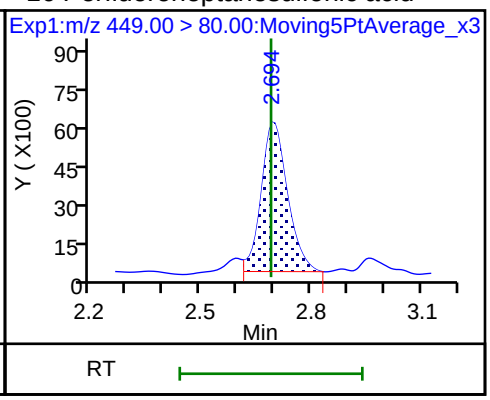
13 Sodium 1H,1H,2H,2H-perfluorooctane [M2-6:2FTS



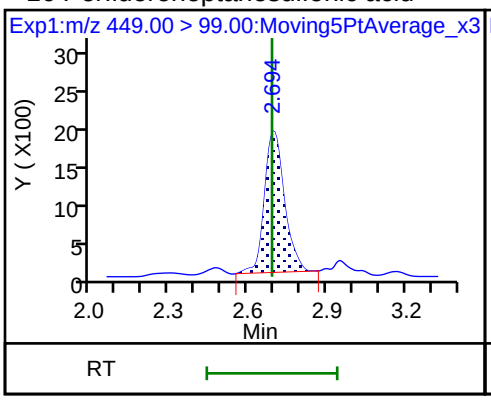
D 12



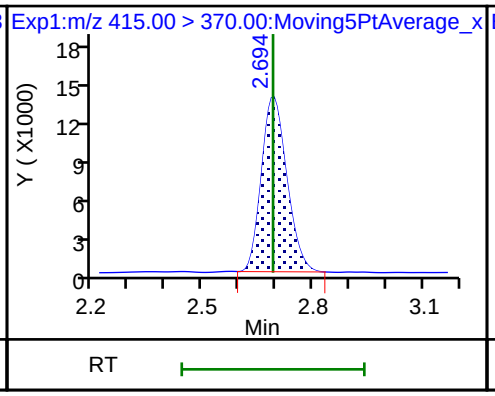
16 Perfluoroheptanesulfonic acid



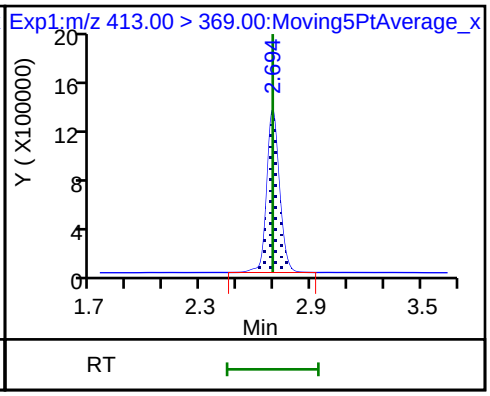
16 Perfluoroheptanesulfonic acid



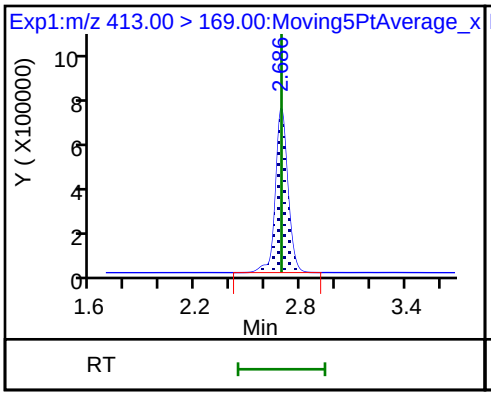
* 62 13C2-PFOA



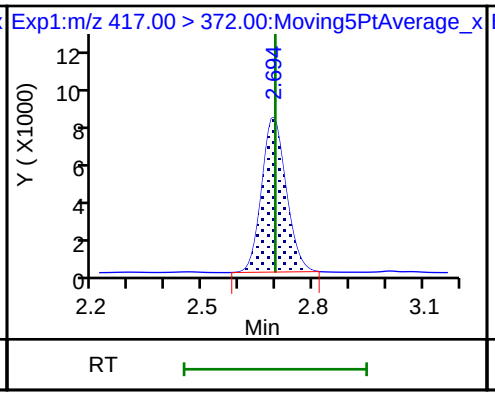
15 Perfluorooctanoic acid



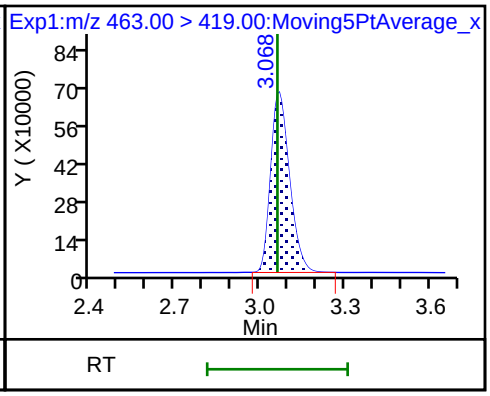
15 Perfluorooctanoic acid



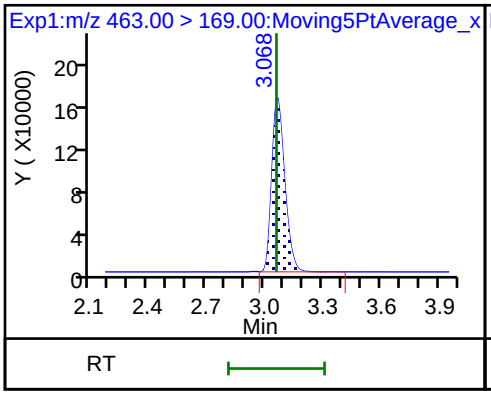
D 14 13C4 PFOA



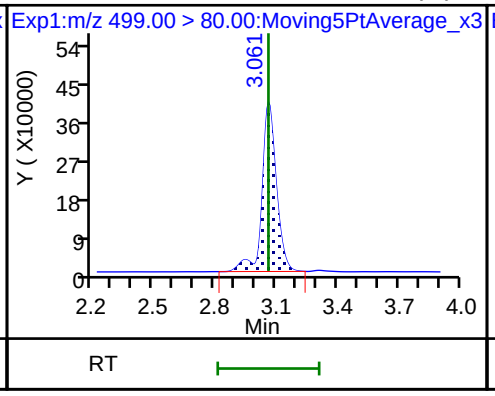
20 Perfluorononanoic acid



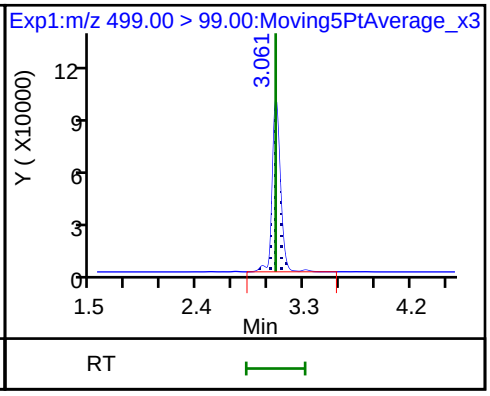
20 Perfluorononanoic acid



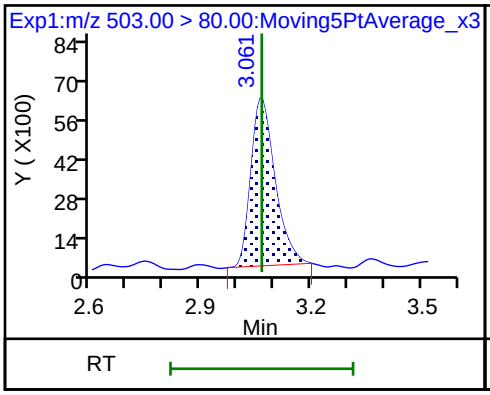
17 Perfluorooctane sulfonic acid (M)



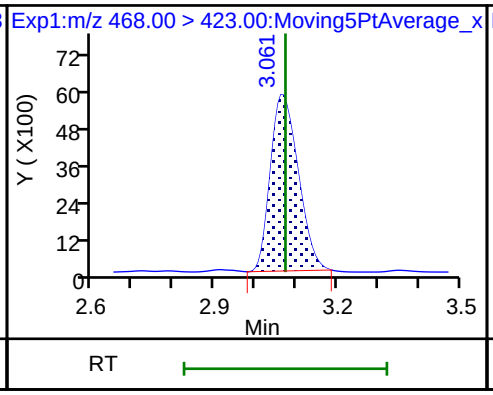
17 Perfluorooctane sulfonic acid



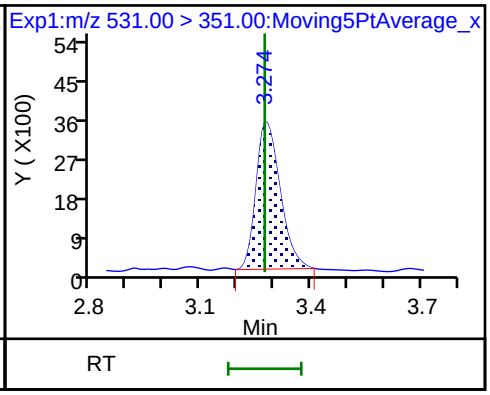
D 18 13C4 PFOS



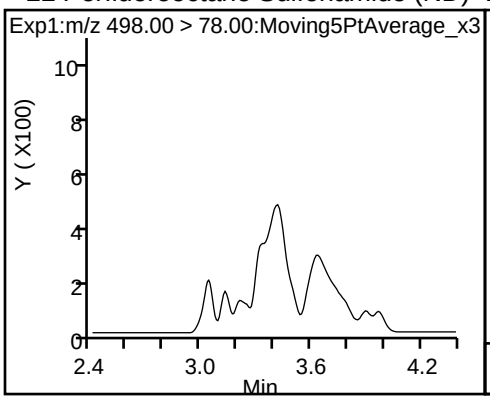
D 19 13C5 PFNA



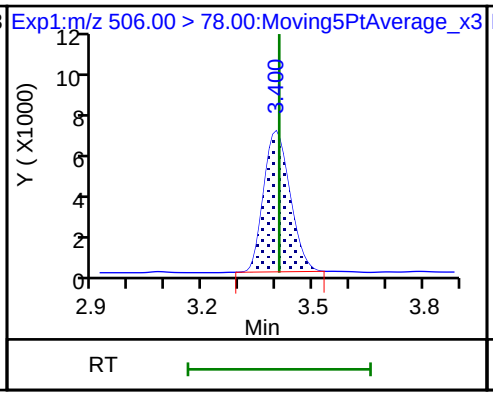
69 9-Chlorohexadecafluoro-3-oxanonane



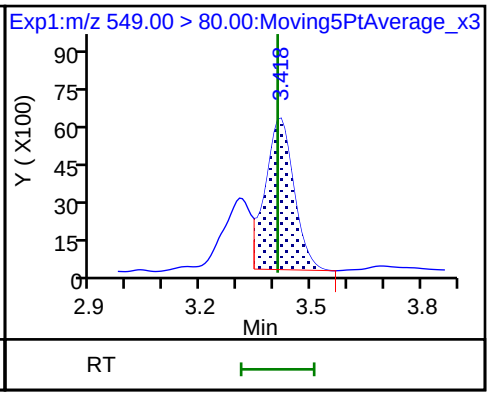
22 Perfluorooctane Sulfonamide (ND)



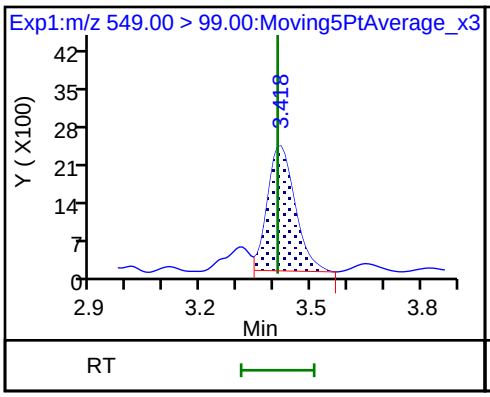
D 21 13C8 FOSA



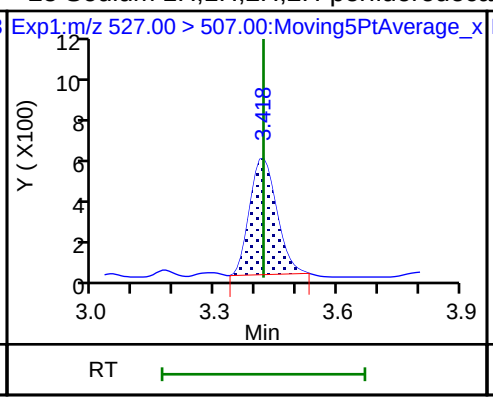
68 Perfluorononanesulfonic acid



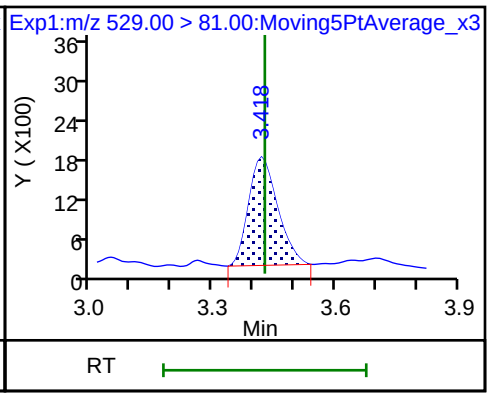
68 Perfluorononanesulfonic acid



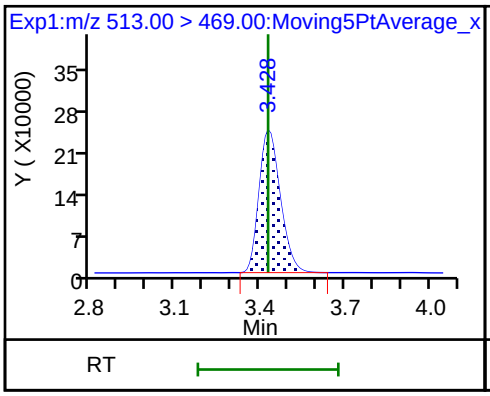
25 Sodium 1H,1H,2H,2H-perfluorodecane



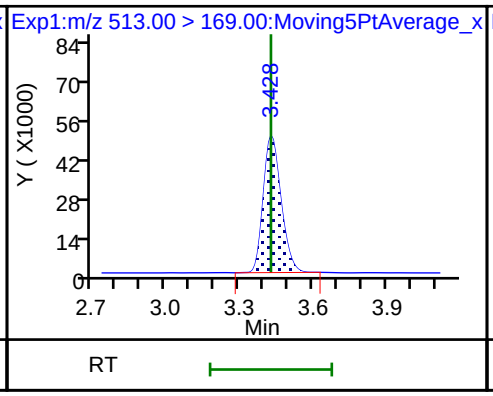
D 26 M2-8:2FTS



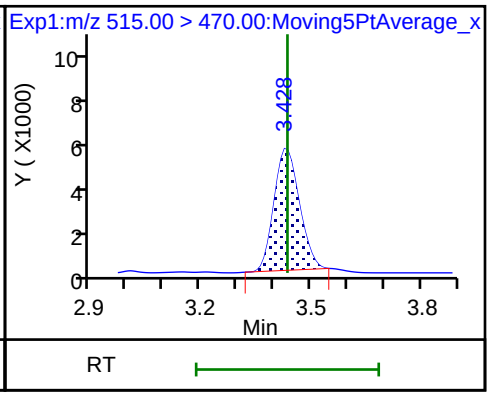
24 Perfluorodecanoic acid



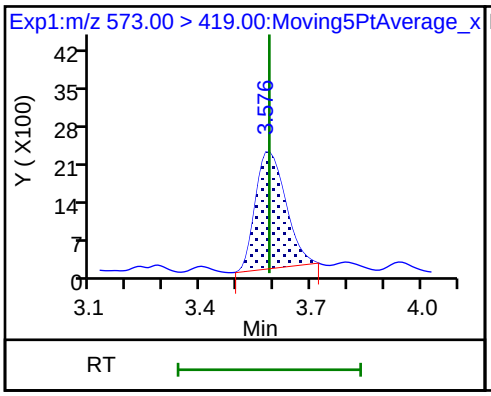
24 Perfluorodecanoic acid



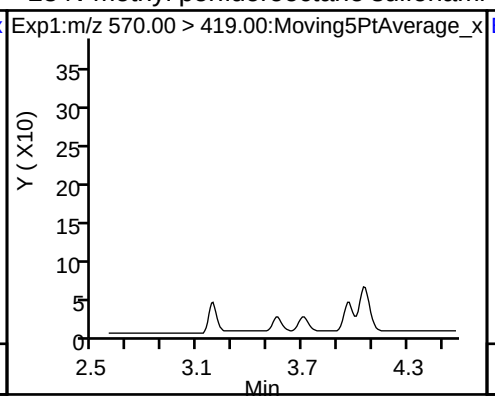
D 23 13C2 PFDA



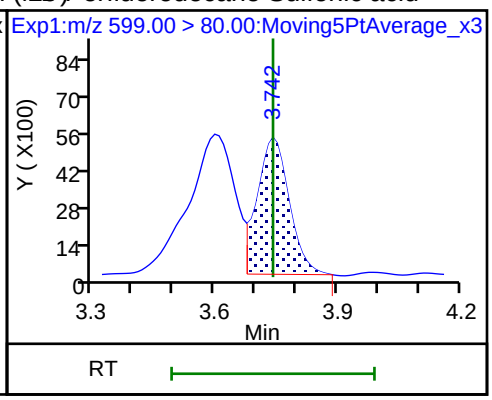
D 27 d3-NMeFOSAA



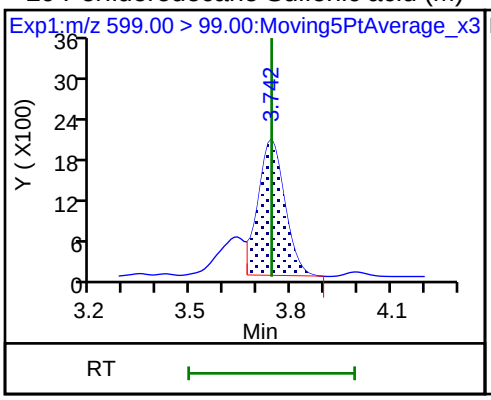
28 N-methyl perfluorooctane sulfonami (M)



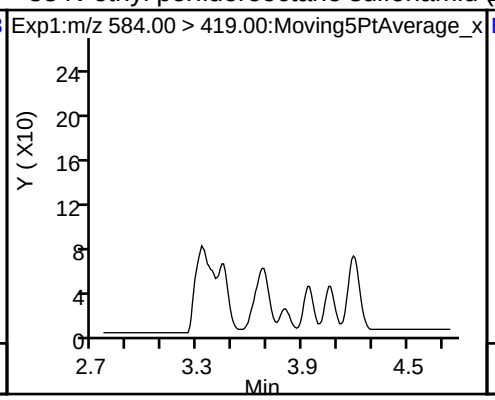
29 Perfluorodecane Sulfonic acid



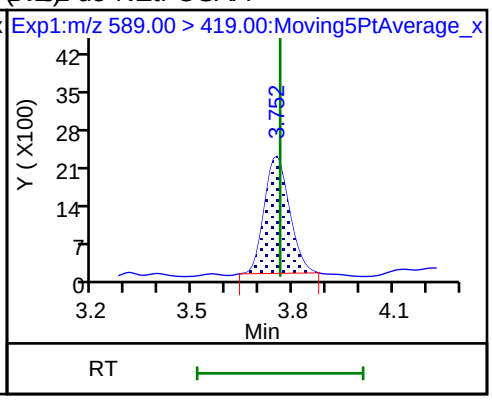
29 Perfluorodecane Sulfonic acid (M)



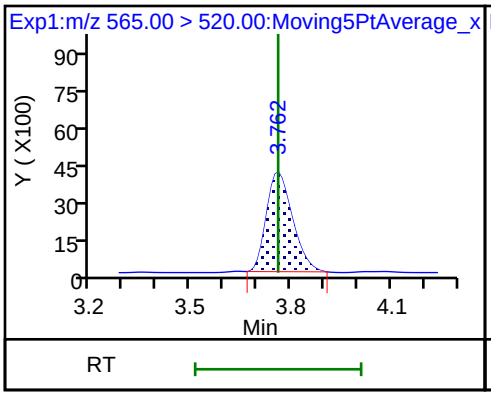
33 N-ethyl perfluorooctane sulfonamid (M)



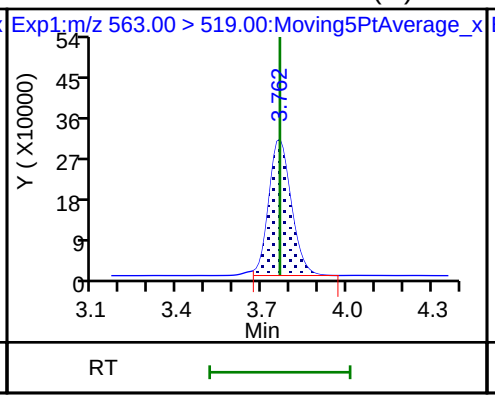
D 32 d5-NEtFOSAA



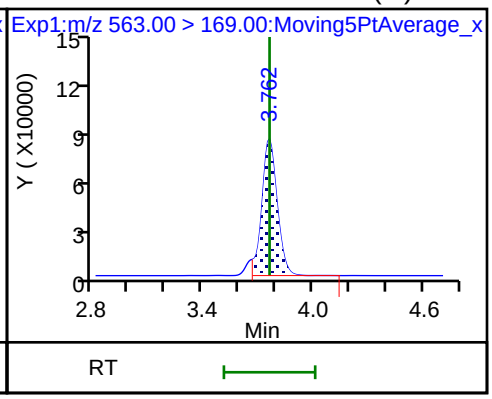
D 30 13C2 PFUnA



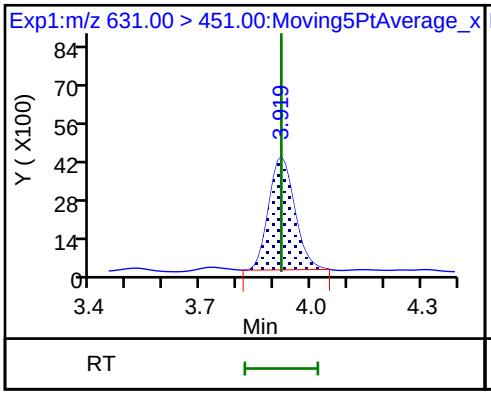
31 Perfluoroundecanoic acid (M)



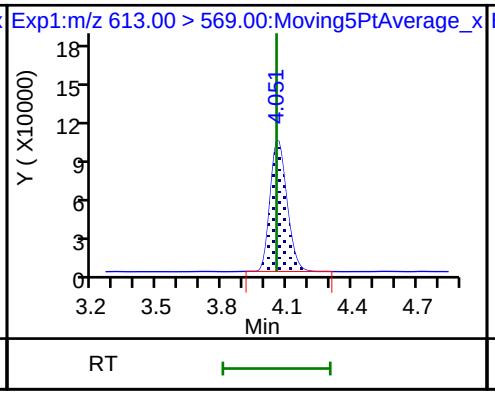
31 Perfluoroundecanoic acid (M)



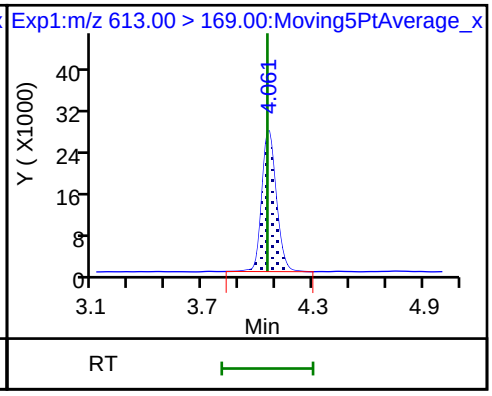
66 11-Chloroeicosafluoro-3-oxaundecan



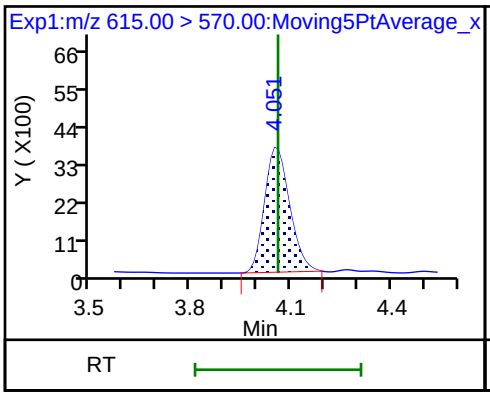
37 Perfluorododecanoic acid



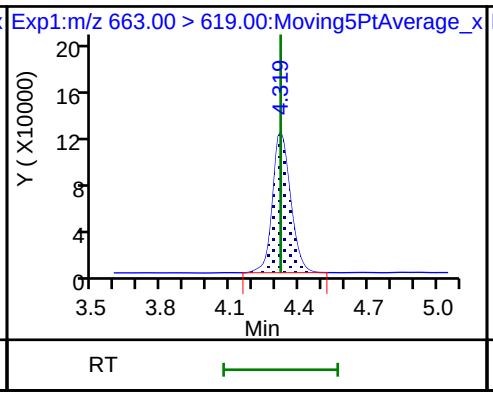
37 Perfluorododecanoic acid



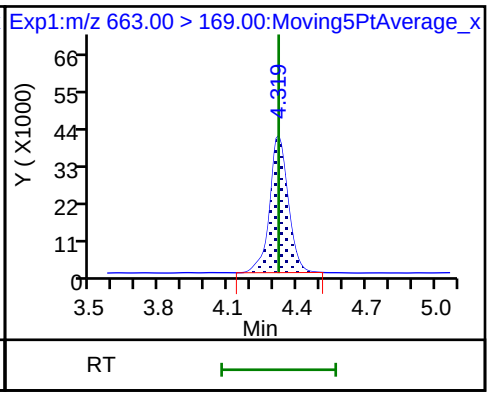
D 36 13C2 PFDoA



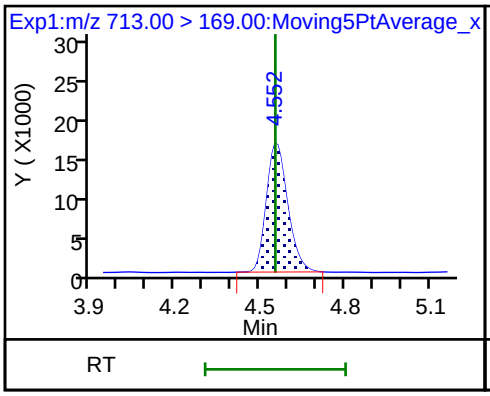
41 Perfluorotridecanoic acid



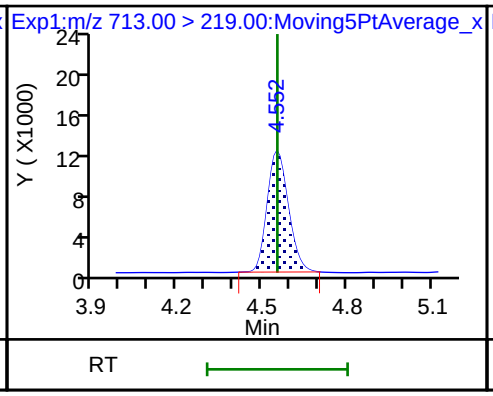
41 Perfluorotridecanoic acid



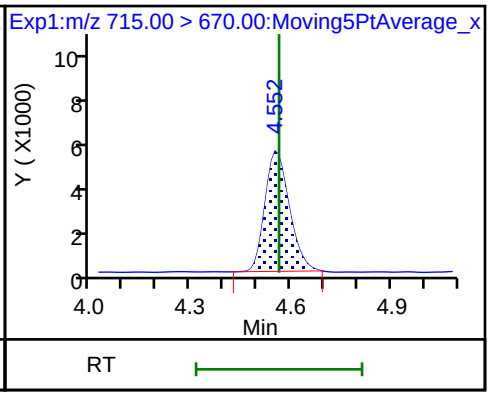
42 Perfluorotetradecanoic acid



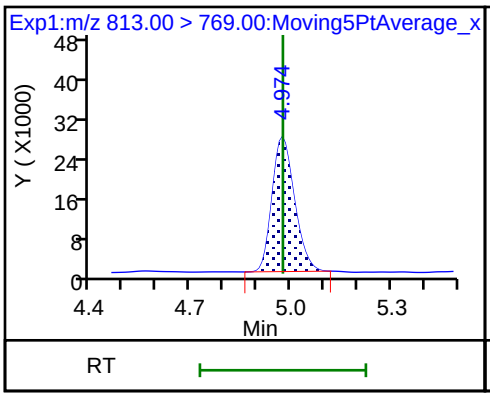
42 Perfluorotetradecanoic acid



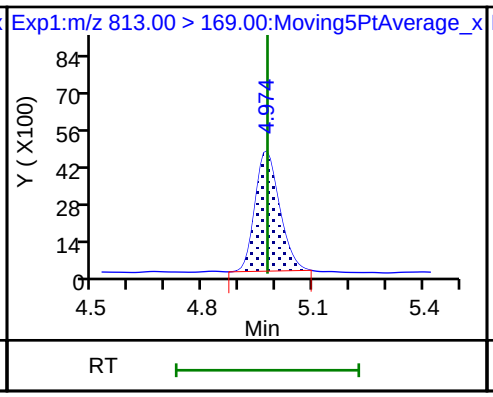
D 43 13C2-PFTeDA



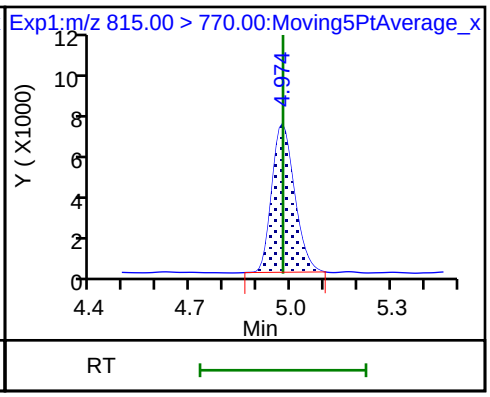
45 Perfluorohexadecanoic acid



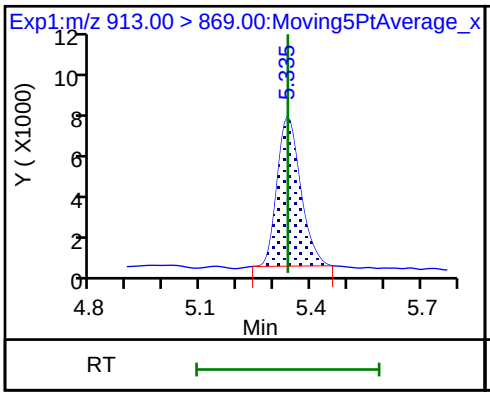
45 Perfluorohexadecanoic acid



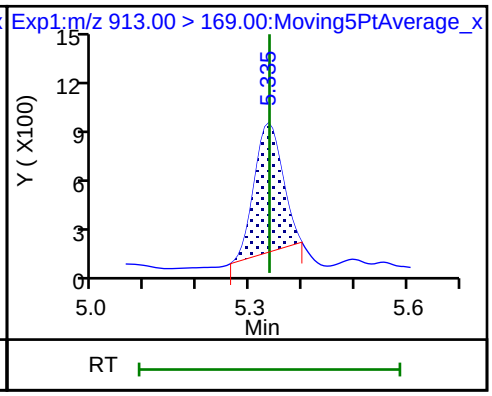
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

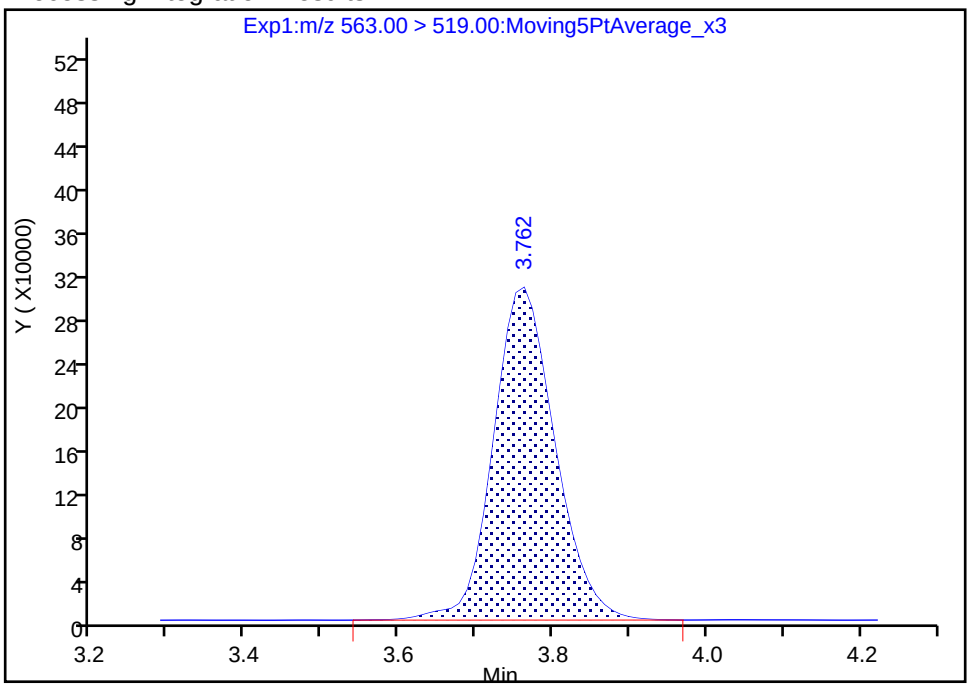
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_058.d				
Injection Date:	26-Apr-2018 18:44:05	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-E MS				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	43	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

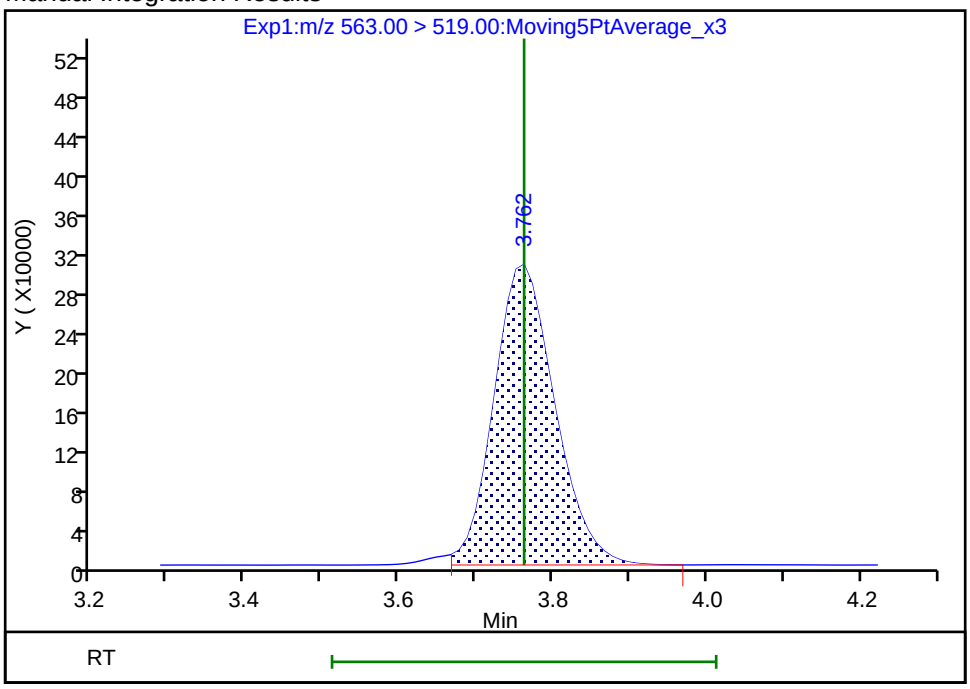
Processing Integration Results

RT: 3.76
Area: 1712551
Amount: 2.303727
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 1688879
Amount: 2.271884
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:32:29

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

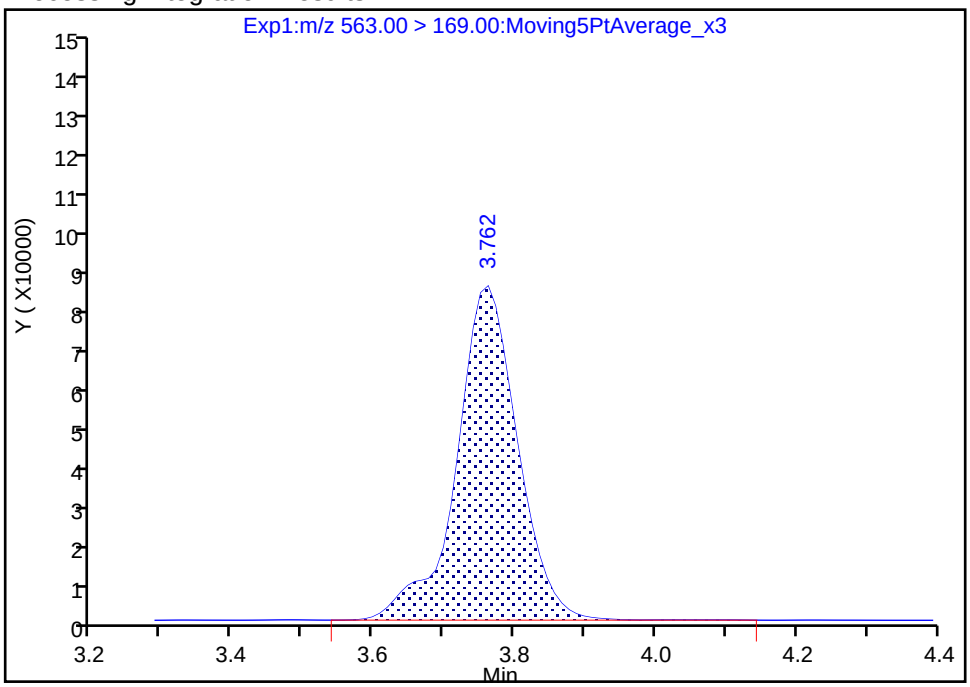
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_058.d
Injection Date: 26-Apr-2018 18:44:05 Instrument ID: A8_N
Lims ID: 320-38054-A-2-E MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 43 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

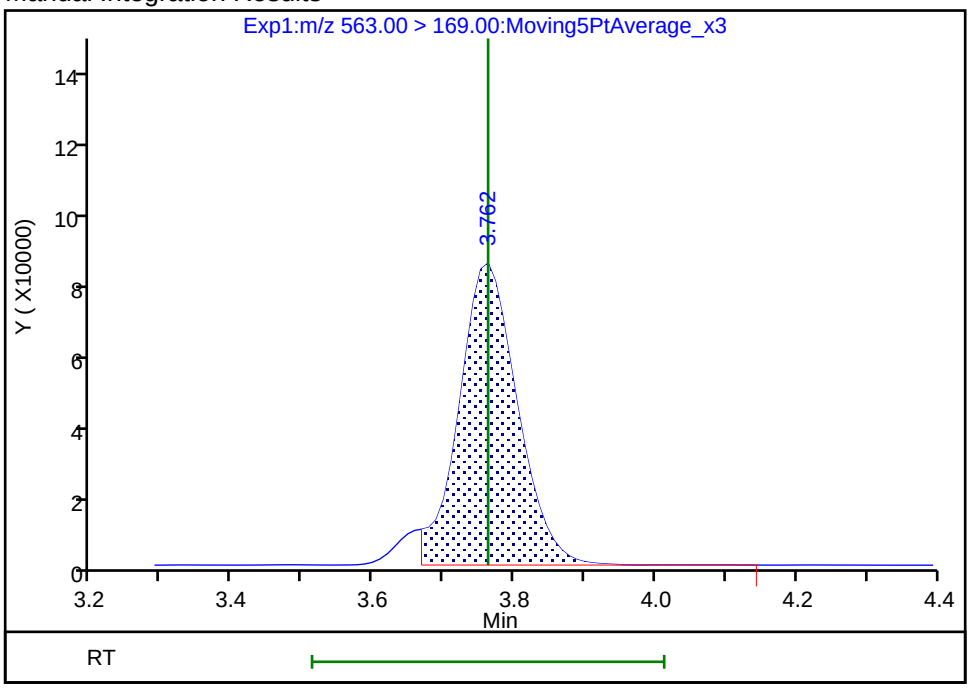
Processing Integration Results

RT: 3.76
Area: 486443
Amount: 2.303727
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 463039
Amount: 2.271884
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:32:31
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

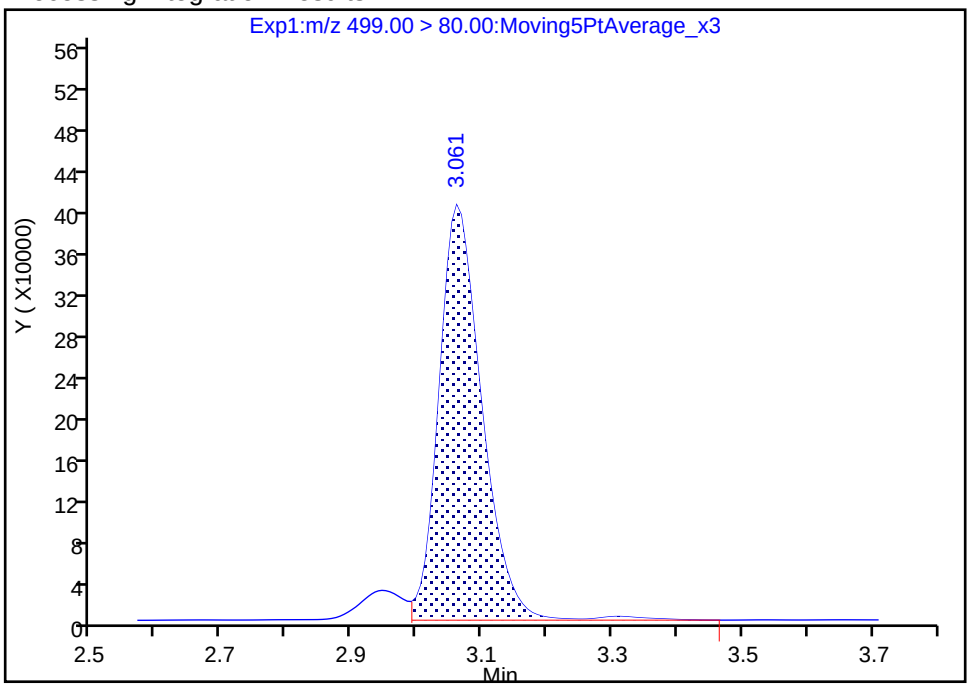
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_058.d
Injection Date: 26-Apr-2018 18:44:05 Instrument ID: A8_N
Lims ID: 320-38054-A-2-E MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 43 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

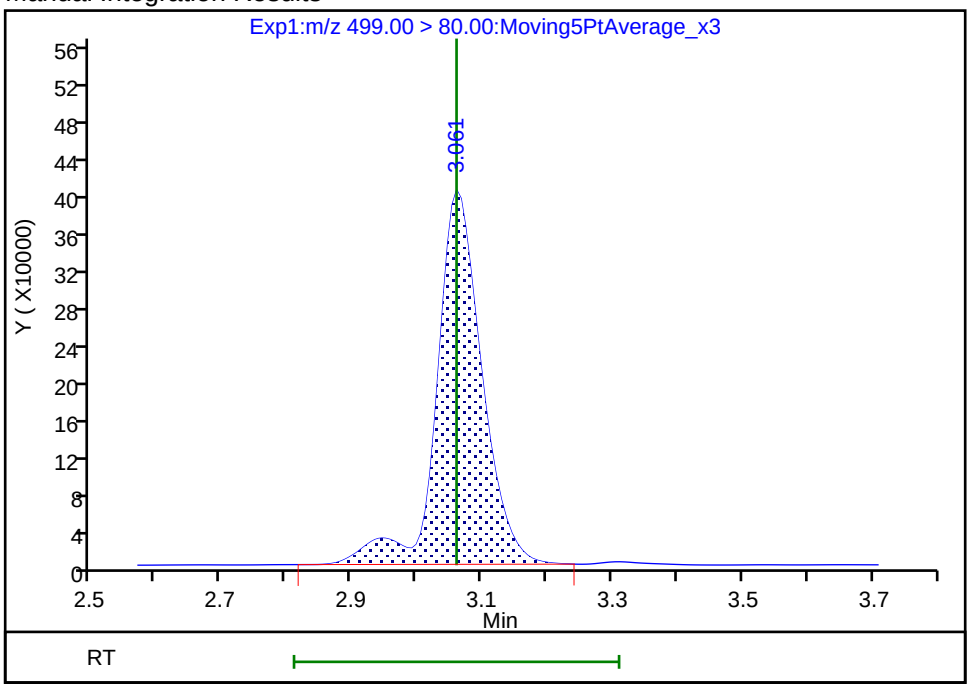
Processing Integration Results

RT: 3.06
Area: 1840249
Amount: 1.460699
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 1937786
Amount: 1.538119
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:32:05
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MSD | Lab Sample ID: 320-38054-2 MSD

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.24LLC_048.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.02(g) | Date Analyzed: 04/24/2018 23:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0299		0.00055
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.0147		0.00055
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0178		0.00055
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.0117		0.00055
335-67-1	Perfluorooctanoic acid (PFOA)	0.0144		0.00055
307-55-1	Perfluorododecanoic acid (PFDoA)	0.0381		0.00055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0269		0.00055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00483		0.00055
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0102		0.00055
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00788		0.00055
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.0166		0.00055
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00739		0.0055
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00895		0.0055
27619-97-2	6:2FTS	0.0484		0.0055

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	9	*	25-150
STL01893	13C5 PFPeA	70		25-150
STL00993	13C2 PFHxA	72		25-150
STL01892	13C4-PFHpA	74		25-150
STL00990	13C4 PFOA	67		25-150
STL00998	13C2 PFDoA	58		25-150
STL02116	13C2-PFTeDA	21	*	25-150
STL02337	13C3-PFBS	80		25-150
STL00994	18O2 PFHxS	74		25-150
STL00991	13C4 PFOS	54		25-150
STL02118	d3-NMeFOSAA	51		25-150
STL02117	d5-NEtFOSAA	48		25-150
STL02279	M2-6:2FTS	110		25-150
STL02395	M2-4:2FTS	264	*	0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_048.d
Lims ID: 320-38054-A-2-C MSD
Client ID:
Sample Type: MSD
Inject. Date: 24-Apr-2018 23:51:55 ALS Bottle#: 34 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-2-c msd
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:19:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.441	-0.005	1.000	1270271	5.45		545	450	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	627163	0.2268		9.1	5183	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.693	1.702	-0.009	1.000	3991176	2.68		268	3025	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.703	-0.010	0.555	3123299	1.75		70.1	46005	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.738	-0.009	1.000	2242631	0.8807		99.6	7332	
298.90 > 99.00	1.729	1.738	-0.009	1.000	964078		2.33(1.25-3.74)		3170	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.739	-0.010	1.000	75624	1.85		79.5	256	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.959	-0.010	1.000	1586059	3.04		326	6867	
D 60 M2-4:2FTS										
329.00 > 81.00	1.938	1.961	-0.023	1.000	1806432	6.17		264	4837	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.992	-0.011	1.000	4648783	3.23		323	4973	
313.00 > 119.00	1.981	1.992	-0.011	1.000	419163		11.09(5.03-15.10)		2869	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.993	-0.012	1.000	3535767	1.79		71.7	73697	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.014	-0.010	1.000	2057880	0.8848		94.3	10147	
349.00 > 99.00	2.004	2.014	-0.010	1.000	747556		2.75(1.36-4.07)		4917	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.093	-0.010	1.000	240760	NR		0.0	308	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.307	2.319	-0.012	1.000	3034598	2.14		214	3170	
363.00 > 169.00	2.307	2.319	-0.012	1.000	1182961		2.57(1.13-3.40)		6530	
D 9 13C4-PFHpA										
367.00 > 322.00	2.307	2.322	-0.015	1.000	3544237	1.85		73.9	61372	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.332	-0.012	1.000	3709564	1.86		203	3962	
399.00 > 99.00	2.320	2.332	-0.012	1.000	1204831		3.08(1.50-4.49)		3996	
D 11 18O2 PFHxS										
403.00 > 84.00	2.320	2.335	-0.015	1.000	4162834	1.76		74.3	109054	
65 Adona										
377.00 > 251.00	2.359	2.372	-0.013	1.000	3869166	1.24		124	56572	
377.00 > 85.00	2.359	2.372	-0.013	1.000	2368835		1.63(0.84-2.53)		25329	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.660	-0.007	1.000	6740674	8.82		931	2242	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.668	-0.015	1.000	1073120	2.61		110	2009	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.690	-0.014		5138915	2.50			61128	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.690	-0.014	1.000	3849887	2.62		260	2971	
413.00 > 169.00	2.676	2.690	-0.014	1.000	2204152		1.75(0.84-2.52)		3843	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.691	-0.015	1.000	3185347	1.67		66.8	67824	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.697	-0.014	1.000	1708906	1.43		151	394	
449.00 > 99.00	2.683	2.697	-0.014	1.000	456418		3.74(1.94-5.82)		5102	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	3.051	3.060	-0.009	1.002	89934402	92.1		9929	119252	EM
499.00 > 99.00	3.051	3.060	-0.009	1.002	29201353		3.08(2.31-6.93)		124502	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.051	3.067	-0.016	1.000	12829860	13.9		1392	23427	E
463.00 > 169.00	3.051	3.067	-0.016	1.000	3306736		3.88(1.90-5.69)		14260	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.067	-0.016	1.000	2210390	1.35		53.9	41055	
D 18 13C4 PFOS										
503.00 > 80.00	3.045	3.067	-0.022	1.000	2144476	1.29		54.1	1253	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.259	3.273	-0.014	1.000	2011171	1.19		128	28493	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.389	3.398	-0.009	1.000	53277301	48.0		4805	105	E
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.399	-0.010	1.000	2740460	1.32		52.9	30.8	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.398	3.417	-0.019	1.000	2139105	2.98		311	47.2	
549.00 > 99.00	3.398	3.417	-0.019	1.000	771982		2.77(1.33-3.97)		220	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.407	3.417	-0.010	1.000	76846484	96.7		10095	107557	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.417	-0.010	1.000	1503971	3.04		127	3983	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.417	3.426	-0.009	1.000	11813258	14.4		1441	27074	E
513.00 > 169.00	3.417	3.426	-0.009	1.000	2184678		5.41(2.36-7.09)		13577	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.427	-0.010	1.000	1986670	1.44		57.7	48303	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.586	-0.011	1.000	538409	1.35		135	283	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.586	-0.011	1.000	1002211	1.28		51.3	8816	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.719	3.740	-0.021	1.000	1766341	3.03		315	24.2	
599.00 > 99.00	3.719	3.740	-0.021	1.000	638047		2.77(1.39-4.16)		117	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.730	3.751	-0.021	1.000	929280	1.21		48.2	5811	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.751	3.761	-0.010	1.000	66019503	127.6		12694	1356	EM
563.00 > 169.00	3.740	3.761	-0.021	0.997	24315080		2.72(2.12-6.36)		398	M
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.751	3.761	-0.010	1.006	566071	1.63		163	759	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.762	-0.011	1.000	1530908	1.29		51.5	44398	
35 MeFOSA										
512.00 > 169.00	3.887	3.875	0.012		274368	NC			80.9	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.897	3.918	-0.021	1.000	2286260	0.8749		92.9	30799	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.042	4.050	-0.008	1.000	5393755	6.95		695	5043	
613.00 > 169.00	4.042	4.050	-0.008	1.000	1525547		3.54(2.13-6.40)		6947	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.061	-0.019	1.000	1860699	1.45		58.0	21926	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.303	4.318	-0.016	1.000	26928631	29.8		2977	19791	E
663.00 > 169.00	4.303	4.318	-0.016	1.000	10080838		2.67(1.25-3.76)		20884	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.548	4.553	-0.005	1.002	420660	4.90		490	710	
713.00 > 219.00	4.537	4.553	-0.016	1.000	296356		1.42(0.71-2.13)		1089	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.537	4.564	-0.027	1.000	854071	0.5249		21.0	9177	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.962	4.975	-0.013	1.000	1218295	2.44		242	782	
813.00 > 169.00	4.962	4.975	-0.013	1.000	199655		6.10(2.86-8.58)		770	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.962	4.976	-0.014	1.000	1306072	0.4933		19.7	8468	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.332	5.344	-0.012	1.000	1343715	2.56		256	858	
913.00 > 169.00	5.332	5.344	-0.012	1.000	166565		8.07(3.83-11.48)		1034	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:13 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_048.d

Injection Date: 24-Apr-2018 23:51:55 Instrument ID: A8_N

Lims ID: 320-38054-A-2-C MSD

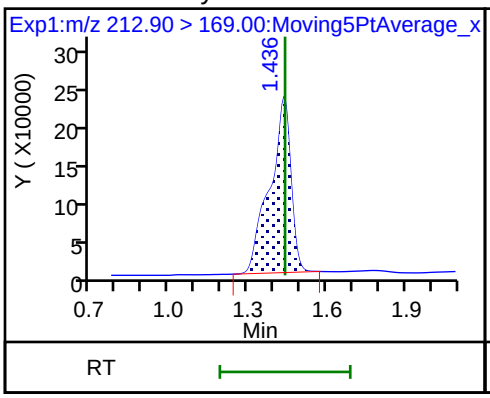
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 34 Worklist Smp#: 7

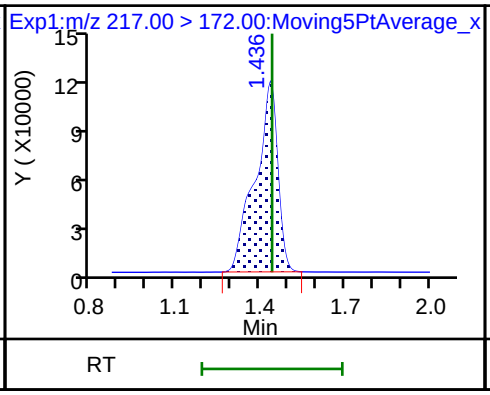
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

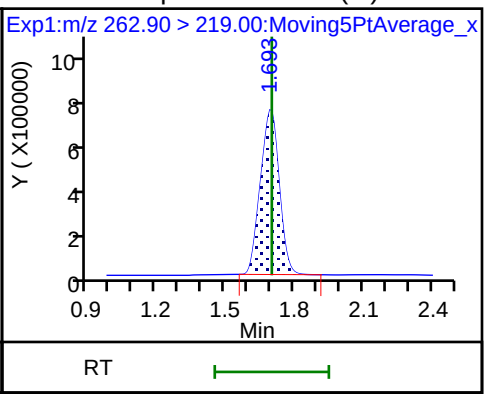
2 Perfluorobutyric acid



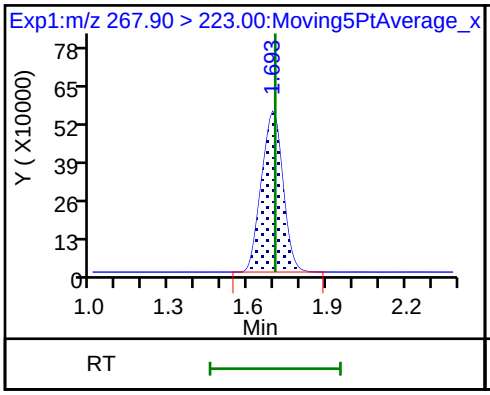
D 1 13C4 PFBA



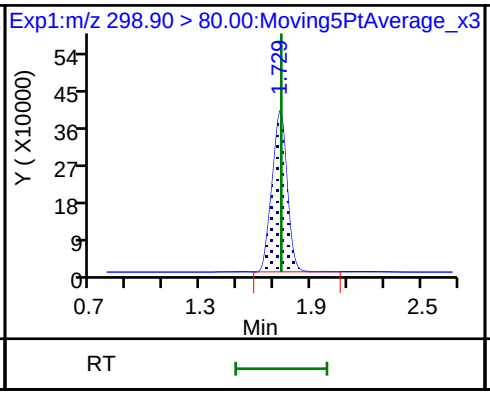
4 Perfluoropentanoic acid (M)



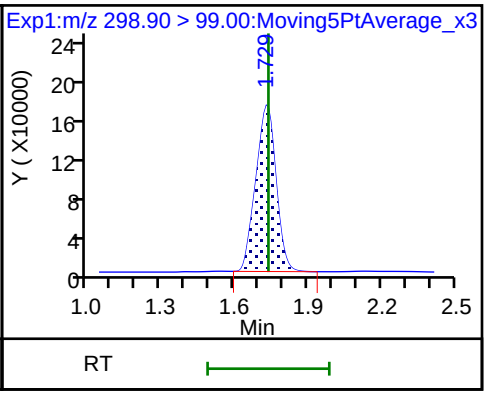
D 3 13C5-PFPeA



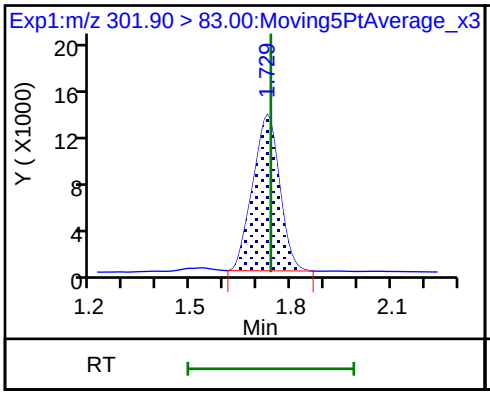
5 Perfluorobutanesulfonic acid



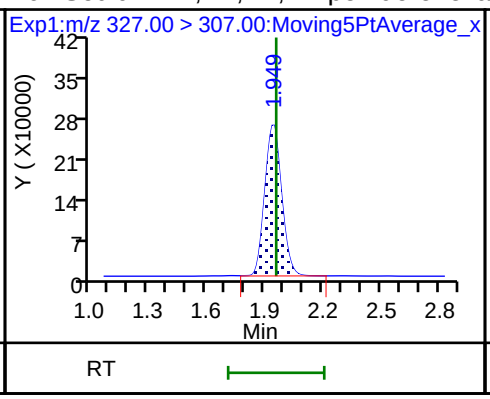
5 Perfluorobutanesulfonic acid



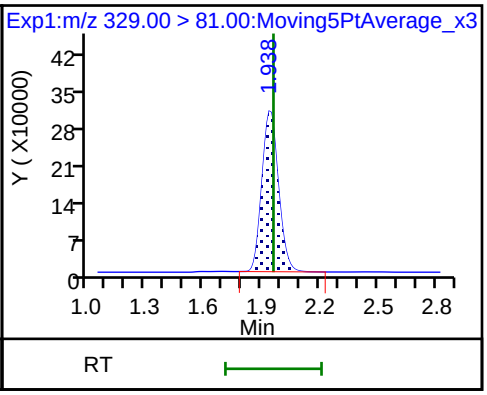
D 47 13C3-PFBS



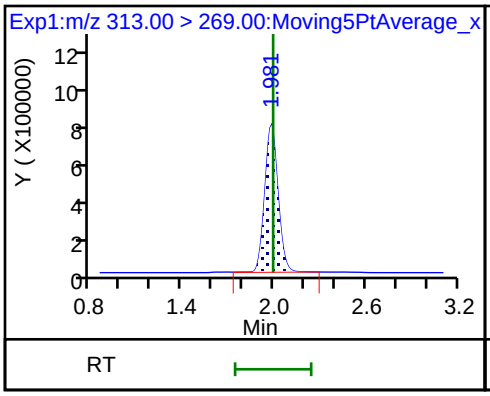
61 Sodium 1H,1H,2H,2H-perfluorohexane



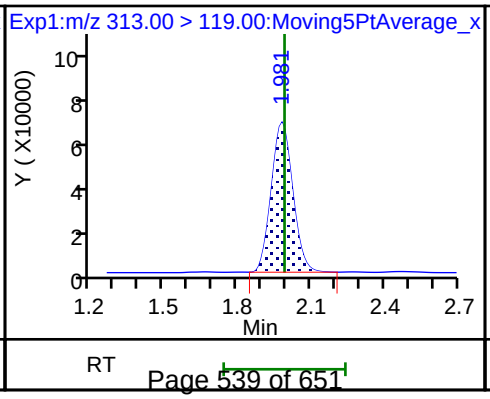
D 60 M2-4:2FTS



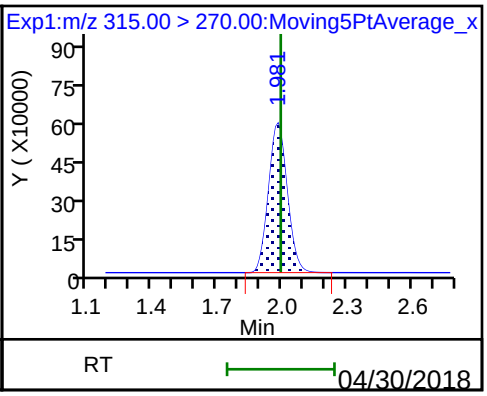
6 Perfluorohexanoic acid



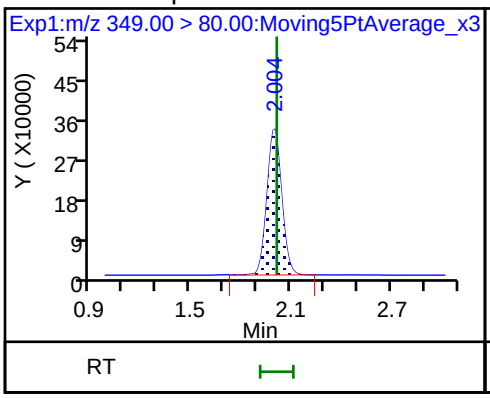
6 Perfluorohexanoic acid



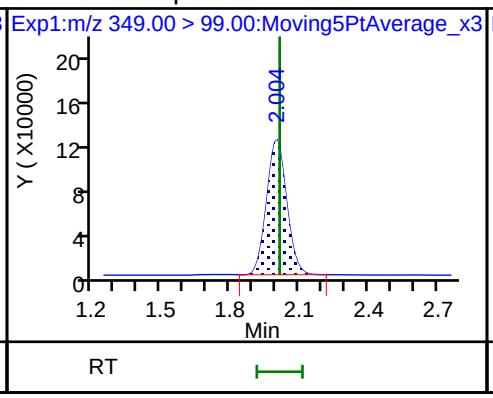
D 7 13C2 PFHxA



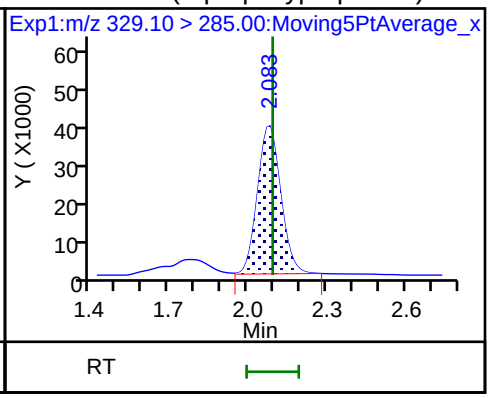
70 Perfluoropentanesulfonic acid



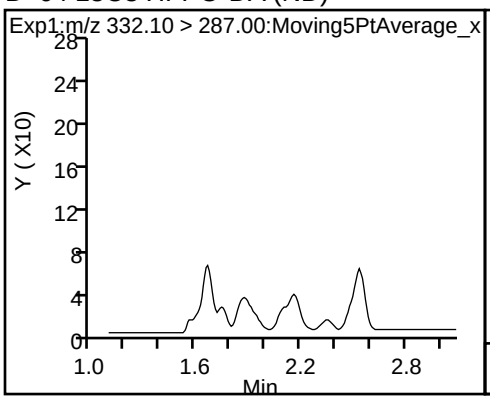
70 Perfluoropentanesulfonic acid



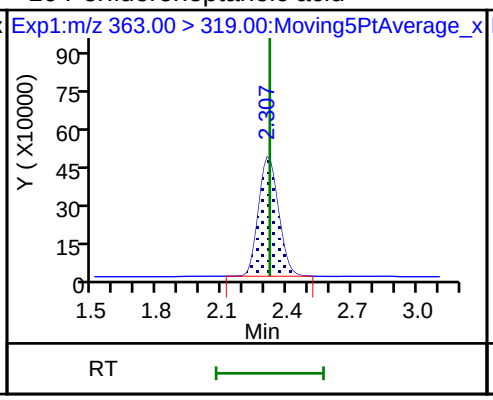
67 Perfluoro(2-propoxypropanoic) acid



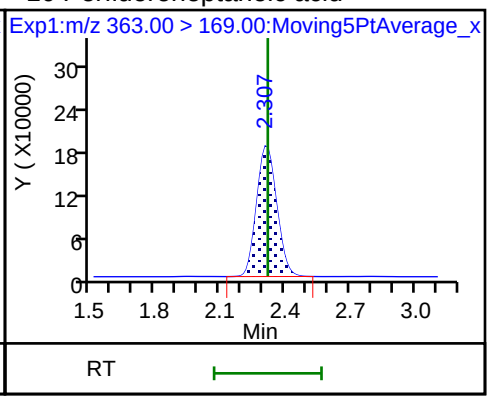
D 64 13C3 HFPO-DA (ND)



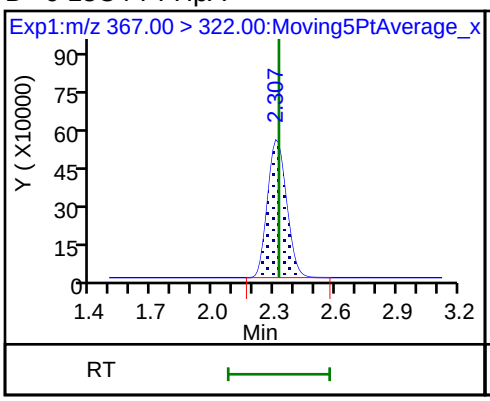
10 Perfluoroheptanoic acid



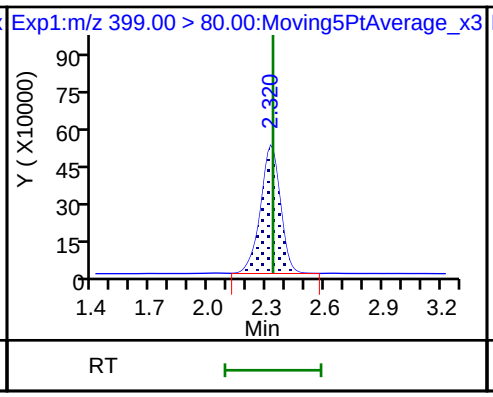
10 Perfluoroheptanoic acid



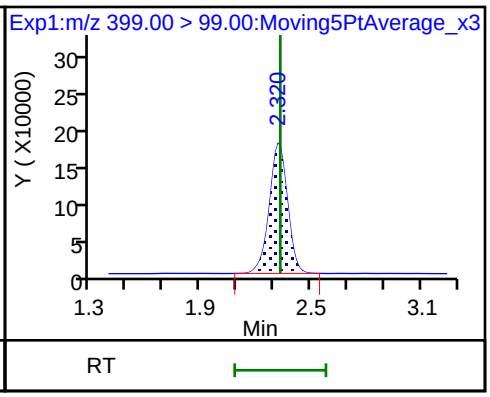
D 9 13C4-PFHpA



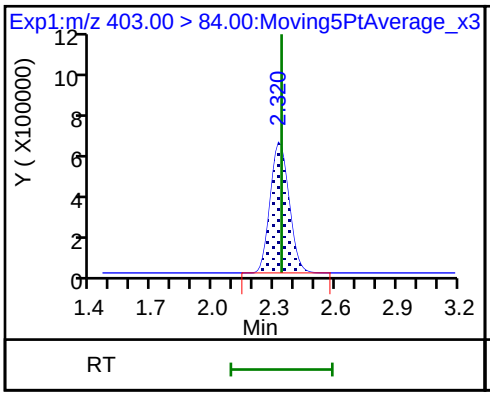
8 Perfluorohexanesulfonic acid



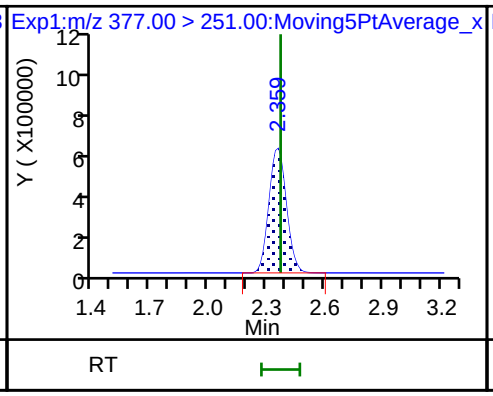
8 Perfluorohexanesulfonic acid



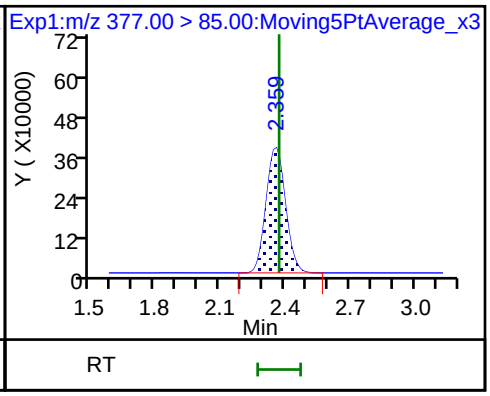
D 11 18O2 PFHxS



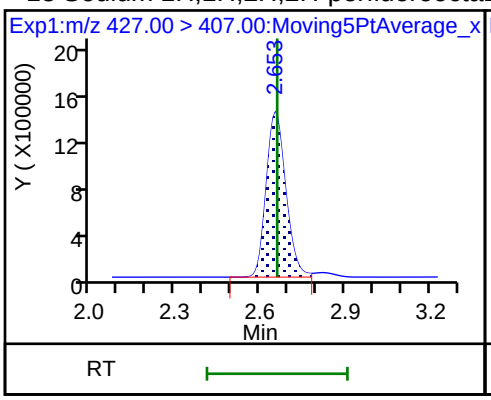
65 Adona



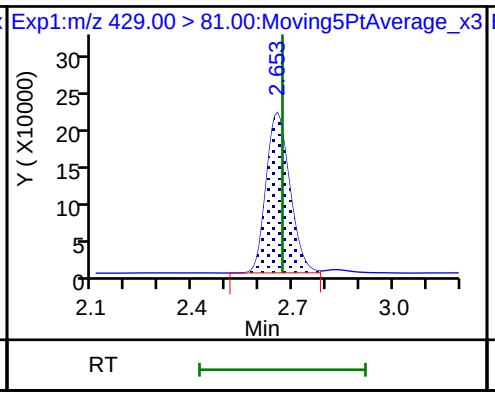
65 Adona



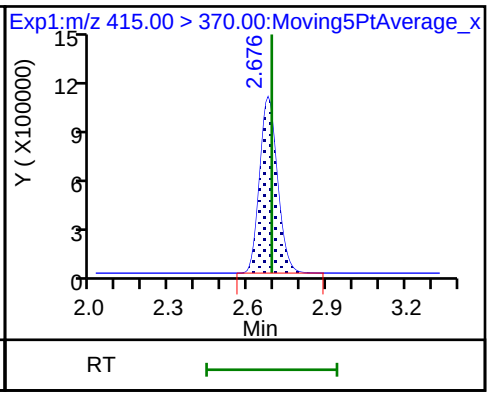
13 Sodium 1H,1H,2H,2H-perfluorooctane



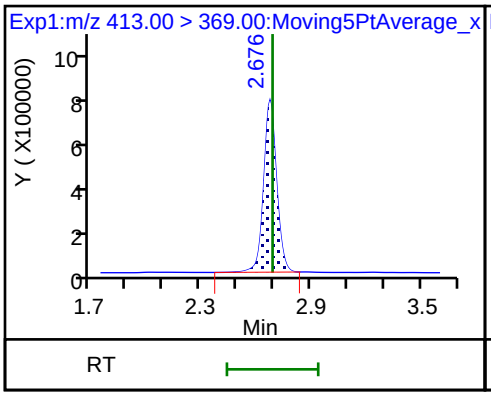
D 12 M2-6:2FTS



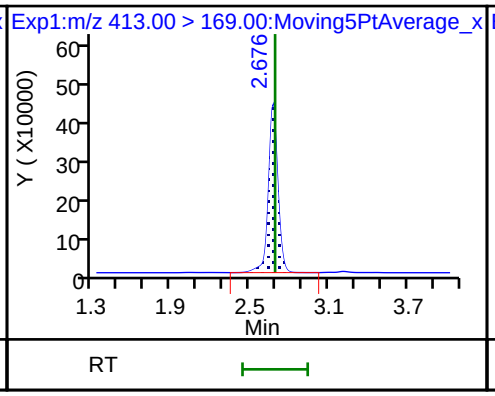
* 62 13C2-PFOA



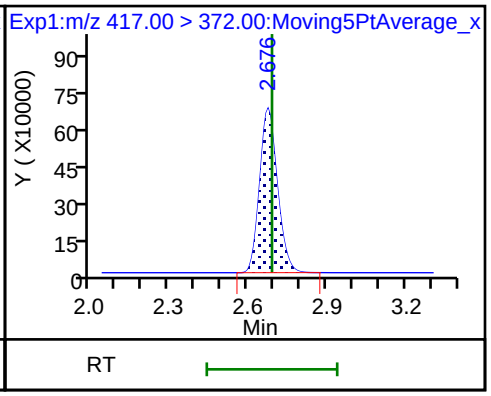
15 Perfluorooctanoic acid



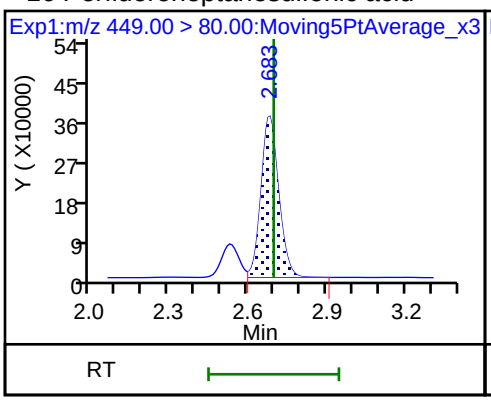
15 Perfluorooctanoic acid



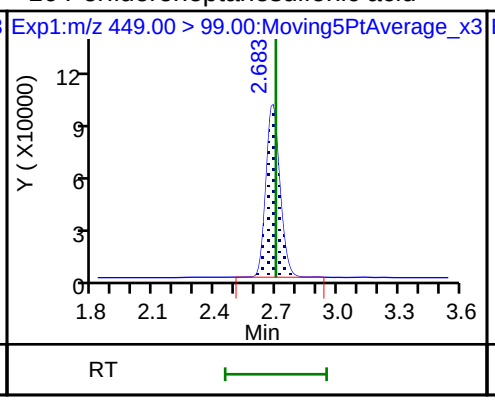
D 14 13C4 PFOA



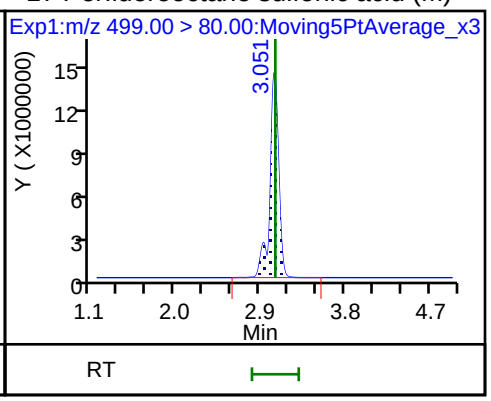
16 Perfluoroheptanesulfonic acid



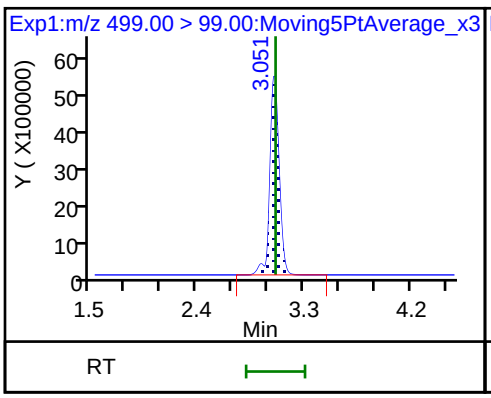
16 Perfluoroheptanesulfonic acid



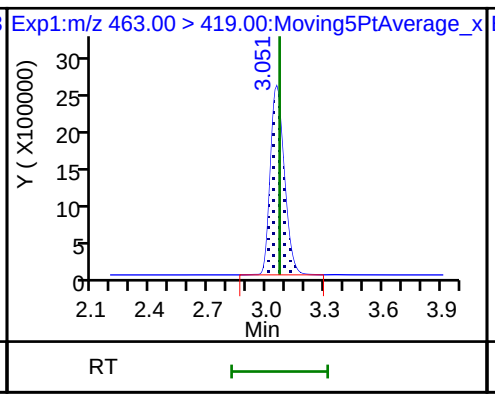
17 Perfluorooctane sulfonic acid (M)



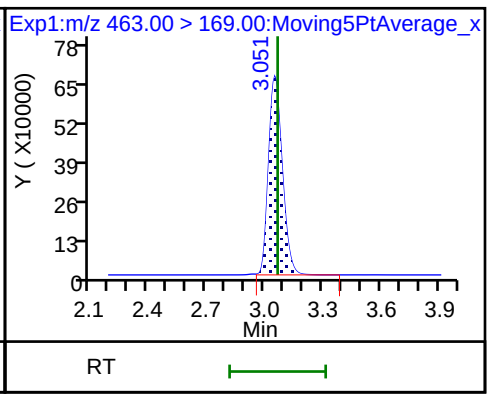
17 Perfluorooctane sulfonic acid



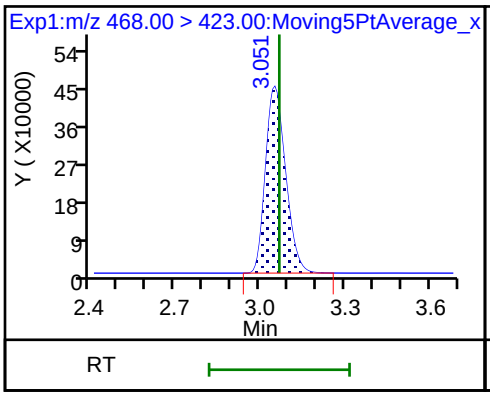
20 Perfluorononanoic acid



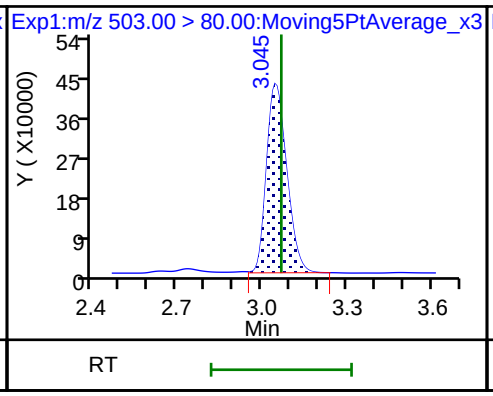
20 Perfluorononanoic acid



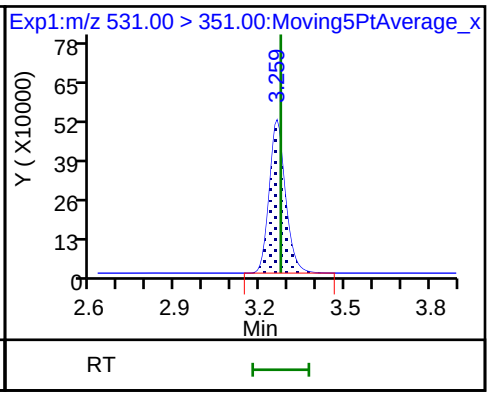
D 19 13C5 PFNA



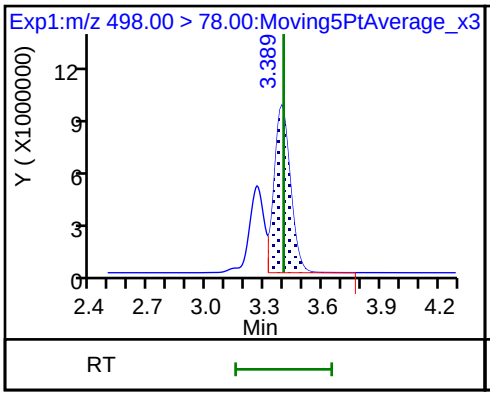
D 18 13C4 PFOS



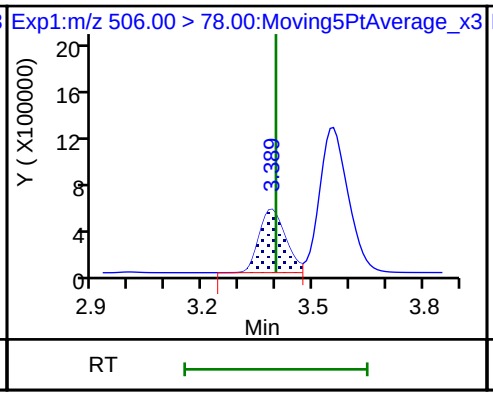
69 9-Chlorohexadecafluoro-3-oxanonane



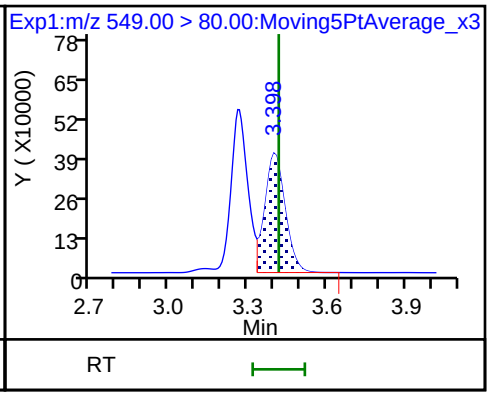
22 Perfluorooctane Sulfonamide



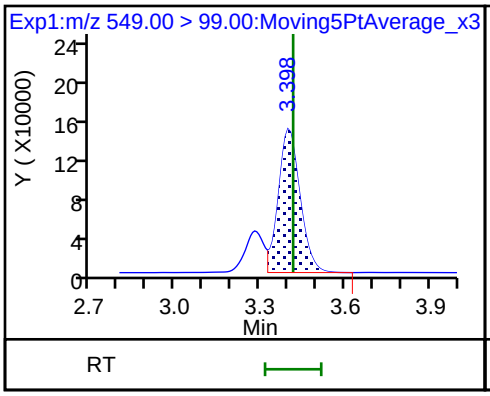
D 21 13C8 FOSA



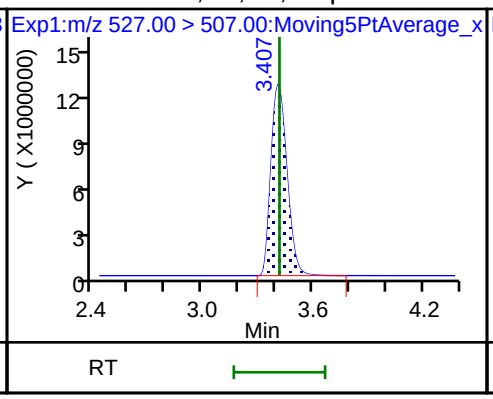
68 Perfluorononanesulfonic acid



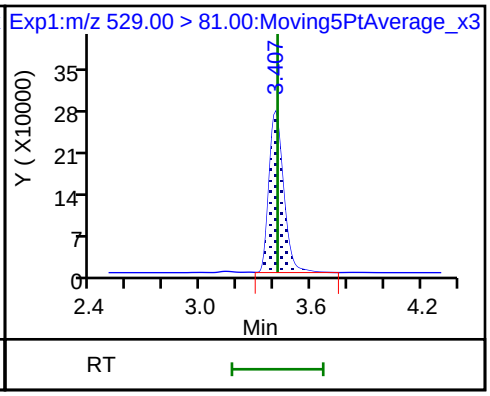
68 Perfluorononanesulfonic acid



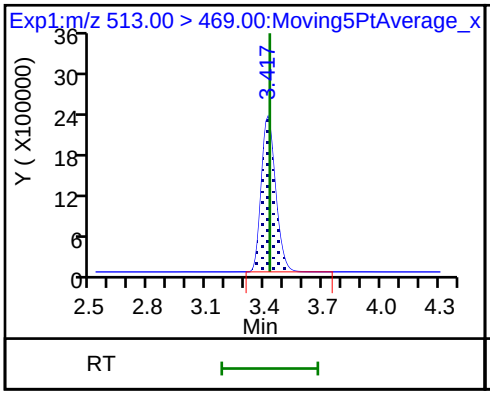
25 Sodium 1H,1H,2H,2H-perfluorodecane



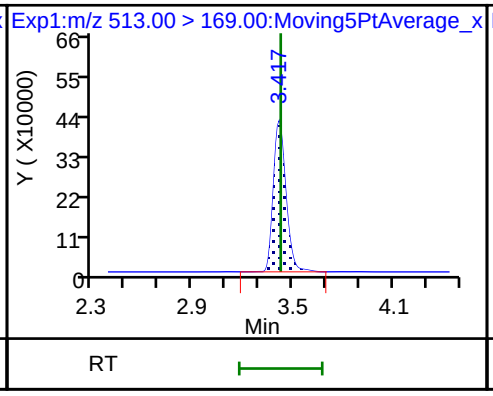
D 26 M2-8:2FTS



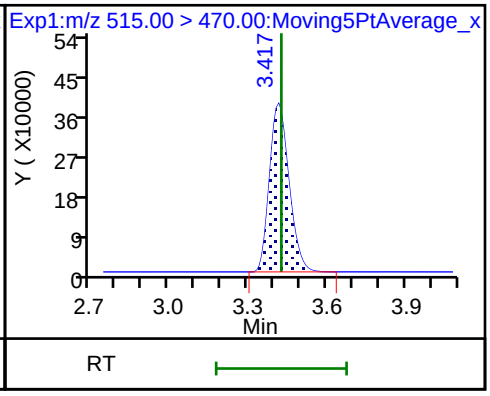
24 Perfluorodecanoic acid



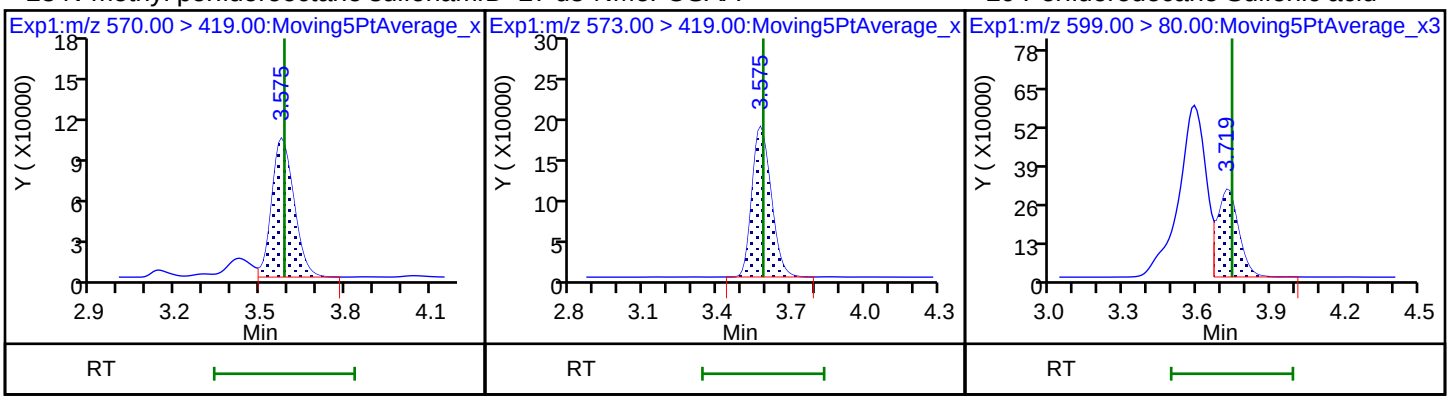
24 Perfluorodecanoic acid



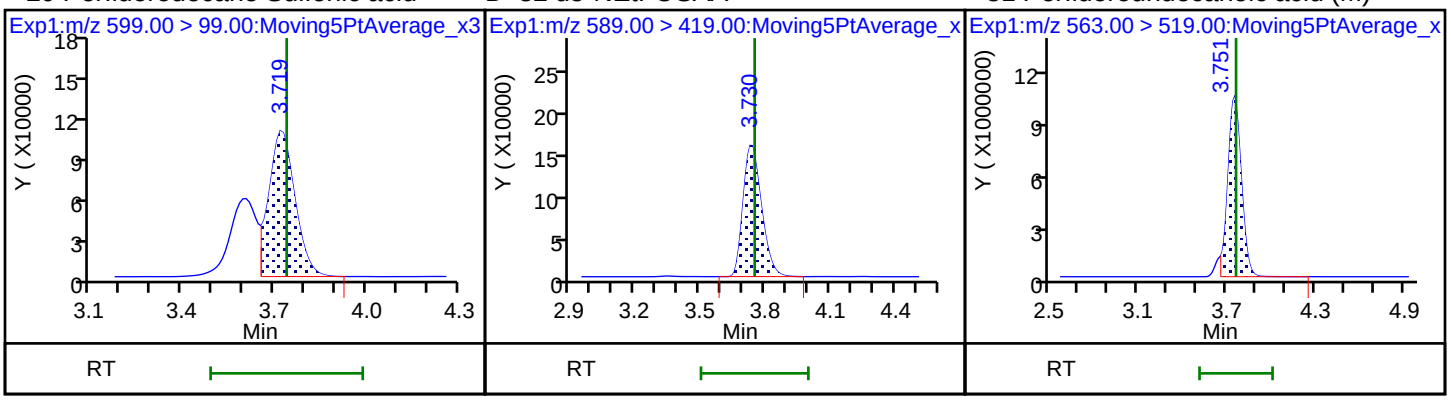
D 23 13C2 PFDA



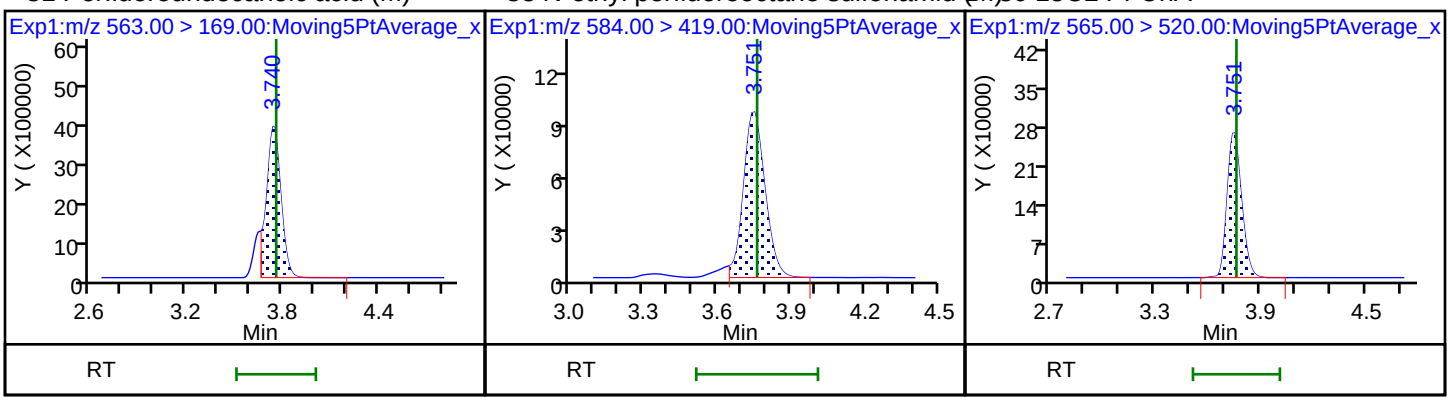
28 N-methyl perfluorooctane sulfonamiD 27 d3-NMeFOSAA 29 Perfluorodecane Sulfonic acid



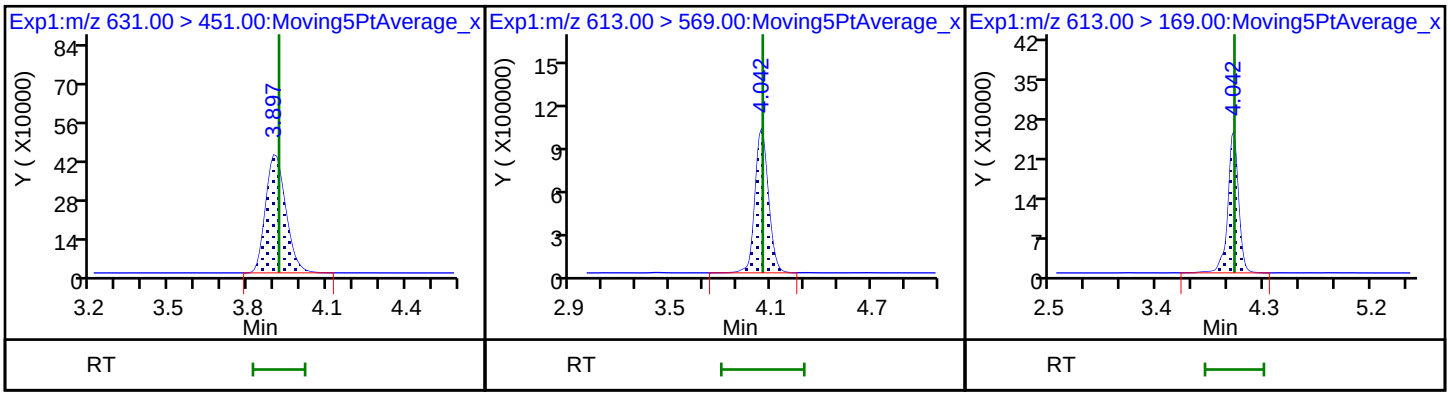
29 Perfluorodecane Sulfonic acid D 32 d5-NEtFOSAA 31 Perfluoroundecanoic acid (M)



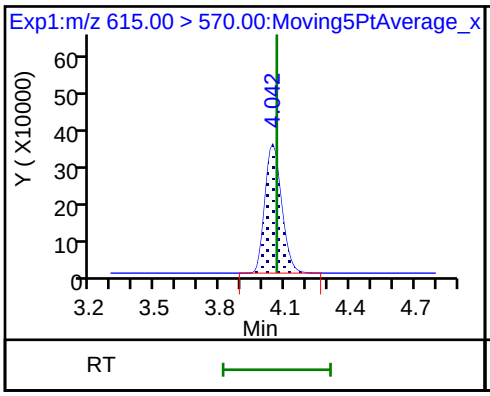
31 Perfluoroundecanoic acid (M) 33 N-ethyl perfluorooctane sulfonamid (M) 30 13C2 PFUnA



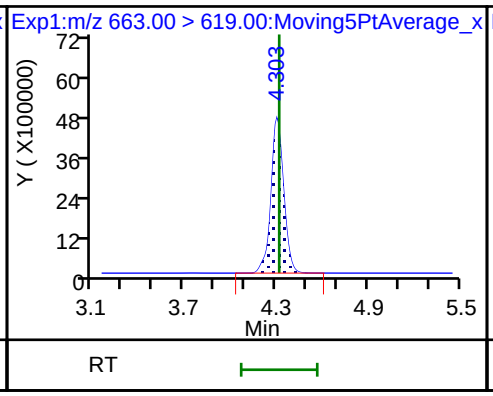
66 11-Chloroeicosafluoro-3-oxaundecan 37 Perfluorododecanoic acid 37 Perfluorododecanoic acid



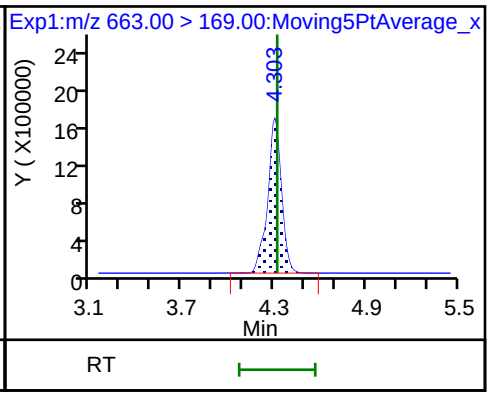
D 36 13C2 PFDoA



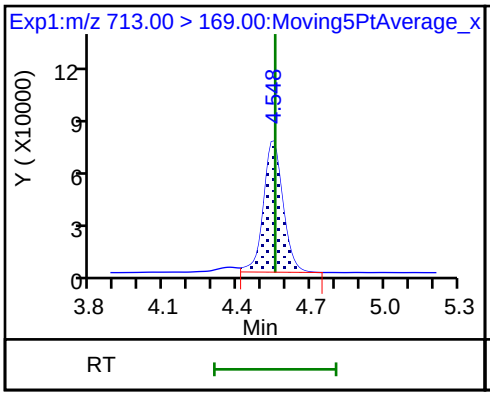
41 Perfluorotridecanoic acid



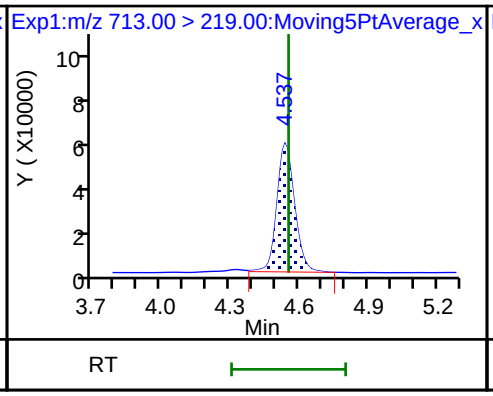
41 Perfluorotridecanoic acid



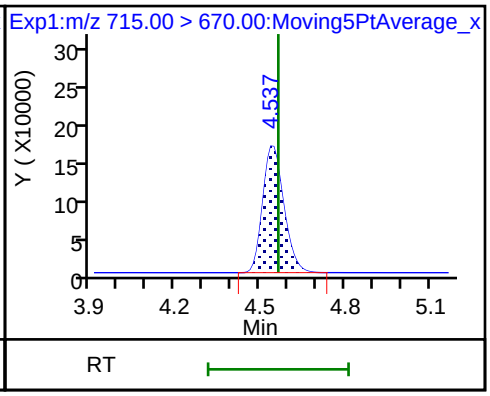
42 Perfluorotetradecanoic acid



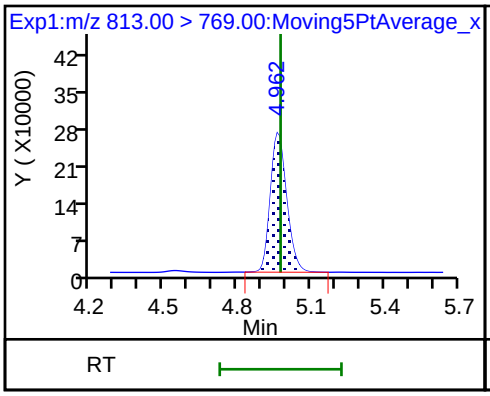
42 Perfluorotetradecanoic acid



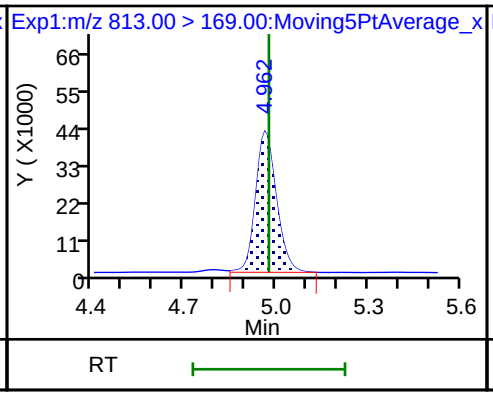
D 43 13C2-PFTeDA



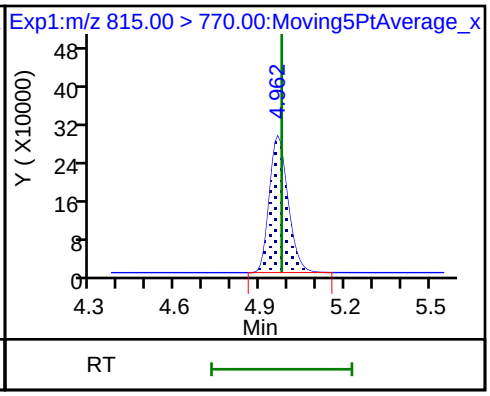
45 Perfluorohexadecanoic acid



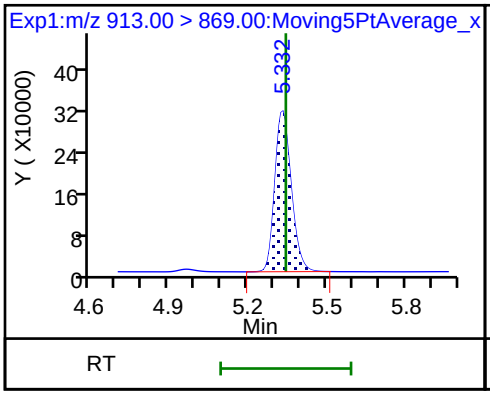
45 Perfluorohexadecanoic acid



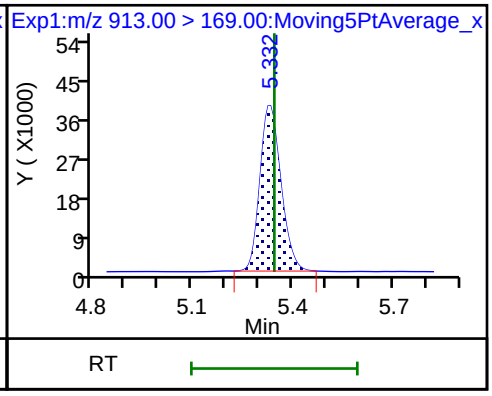
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

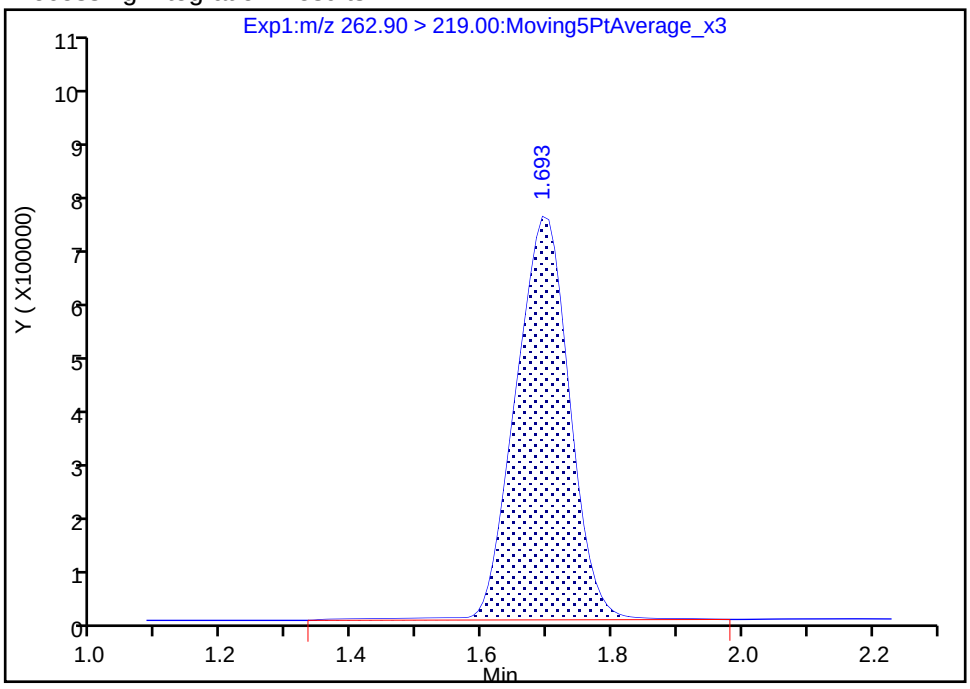
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_048.d				
Injection Date:	24-Apr-2018 23:51:55	Instrument ID:	A8_N		
Lims ID:	320-38054-A-2-C MSD				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

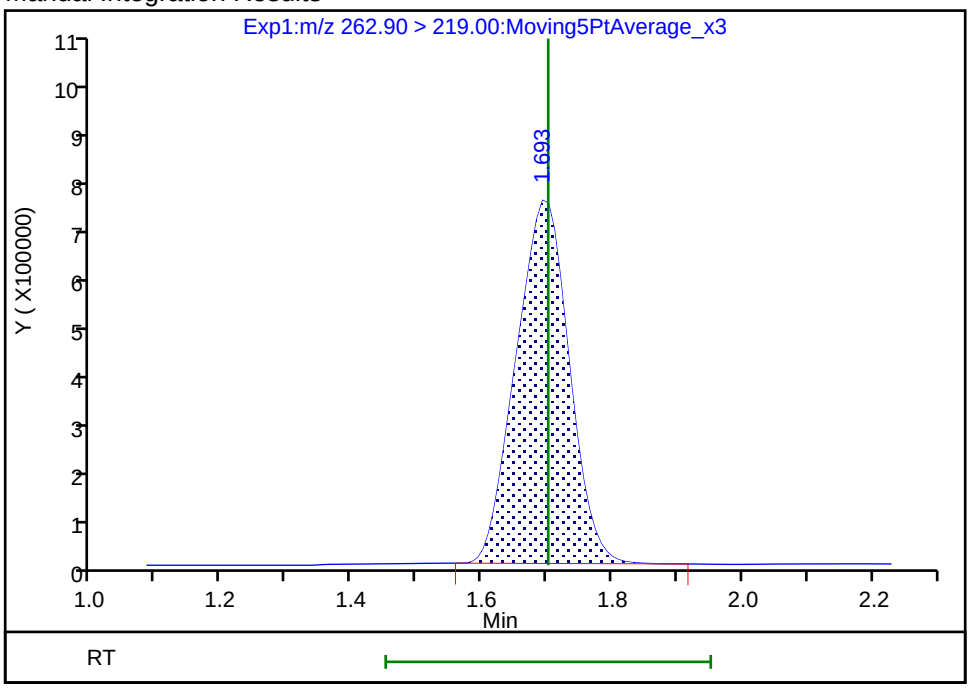
Processing Integration Results

RT: 1.69
Area: 4074504
Amount: 2.736583
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 3991176
Amount: 2.680617
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:18:11

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

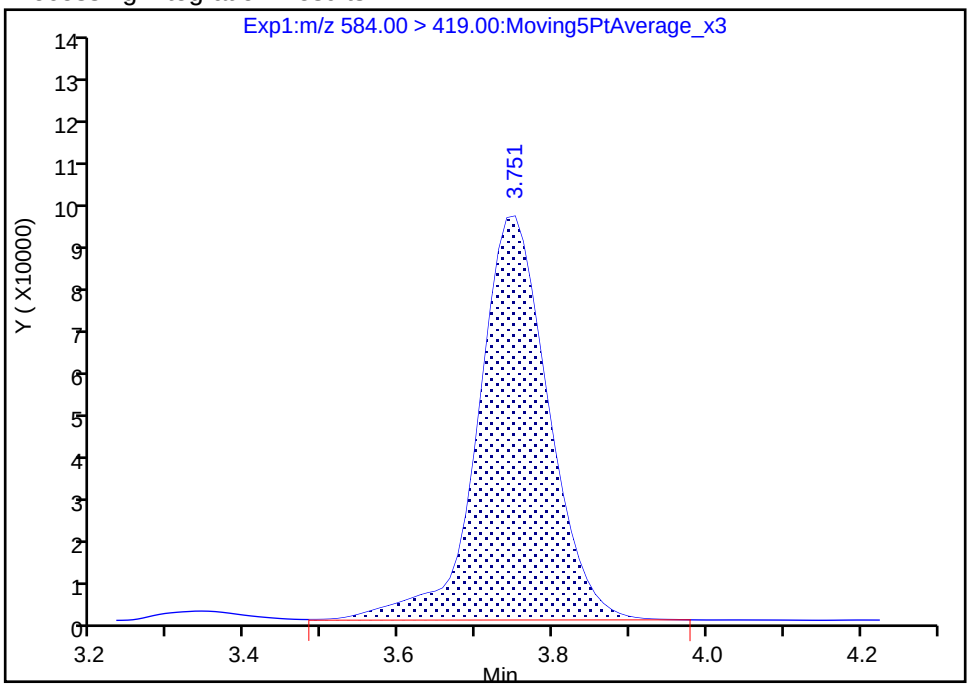
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_048.d
Injection Date: 24-Apr-2018 23:51:55 Instrument ID: A8_N
Lims ID: 320-38054-A-2-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 34 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

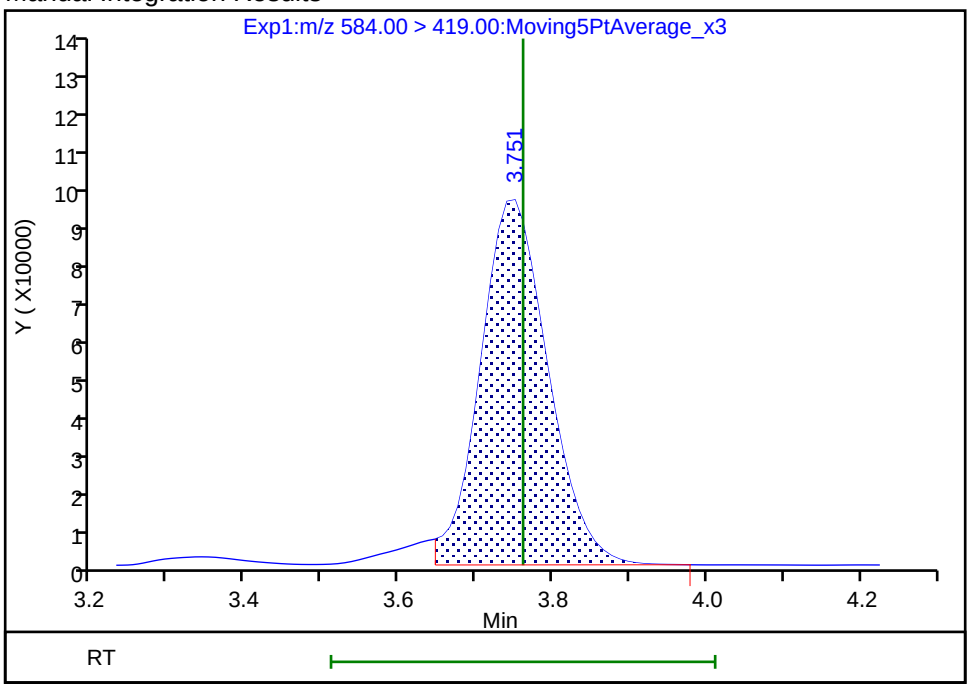
Processing Integration Results

RT: 3.75
Area: 591483
Amount: 1.702769
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 566071
Amount: 1.629612
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:18:51
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MSD | Lab Sample ID: 320-38054-2 MSD

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.24LLC_057.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.05(g) | Date Analyzed: 04/25/2018 01:02

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219700 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00549		0.00054
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00729		0.00054
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.0228		0.00054
754-91-6	Perfluorooctane Sulfonamide (FOSA)	ND		0.00054
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND		0.0054
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND		0.0054

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02337	13C3-PFBS	84		25-150
STL00991	13C4 PFOS	64		25-150
STL01056	13C8 FOSA	94		25-150
STL02118	d3-NMeFOSAA	120		25-150
STL02117	d5-NEtFOSAA	72		25-150
STL02395	M2-4:2FTS	0		0-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_057.d
Lims ID: 320-38054-A-2-F MSD
Client ID:
Sample Type: MSD
Inject. Date: 25-Apr-2018 01:02:14 ALS Bottle#: 40 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38054-a-2-f msd
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 11:25:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK032

First Level Reviewer: westendorfc Date: 26-Apr-2018 11:24:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										E
212.90 > 169.00	1.436	1.436	0.0	1.004	166187528	146.5		14651	24179	E
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.442	-0.012	1.000	3054038	1.95		77.9	19259	
4 Perfluoropentanoic acid										E
262.90 > 219.00	1.694	1.694	0.0	1.000	138646029	204.7		20473	41846	E
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.555	1420598	1.40		56.2	22788	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.730	0.009	1.000	1545506	1.01		115	787	
298.90 > 99.00	1.739	1.730	0.009	1.000	623193		2.48(1.25-3.74)		568	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	45258	1.95		83.9	396	
6 Perfluorohexanoic acid										RE
313.00 > 269.00	1.982	1.982	0.0	1.000	140141435	188.9		18895	53376	RE
313.00 > 119.00	1.982	1.982	0.0	1.000	31302332		4.48(5.03-15.10)		159545	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	1824798	1.63		65.3	40455	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.004	0.0	1.000	1376816	0.9891		105	407	
349.00 > 99.00	2.004	2.004	0.0	1.000	499386		2.76(1.36-4.07)		417	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	214589	NR		0.0	1825	
10 Perfluoroheptanoic acid										E
363.00 > 319.00	2.321	2.321	0.0	1.006	131949773	237.8		23780	42452	E
363.00 > 169.00	2.308	2.321	-0.013	1.000	90499482		1.46(1.13-3.40)		73634	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.321	0.013	1.000	4684006	5.11		558	47.5	
399.00 > 99.00	2.334	2.321	0.013	1.000	1462637		3.20(1.50-4.49)		49.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.322	-0.014	1.000	1385960	1.27		50.9	20300	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	1914234	1.42		60.3	20910	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.652	-0.008	1.000	12144	0.0431		4.5	245	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.668	-0.024	1.000	395751	1.70		71.4	4632	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.675	0.0		2915543	2.50			34939	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.675	2.675	0.0	1.000	125846524	156.0		15484	36744	E
413.00 > 169.00	2.675	2.675	0.0	1.000	97158383		1.30(0.84-2.52)		192013	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.682	2.682	0.0	1.000	1085726	1.35		142	208	
449.00 > 99.00	2.682	2.682	0.0	1.000	290793		3.73(1.94-5.82)		230	M
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.691	-0.016	1.000	1745528	1.61		64.5	33378	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	3.050	3.048	0.002	1.002	70344354	106.6		11487	2155	EM
499.00 > 99.00	3.050	3.048	0.002	1.002	20925048		3.36(2.31-6.93)		3291	M
20 Perfluorononanoic acid										E
463.00 > 419.00	3.050	3.055	-0.005	1.000	89690235	143.0		14304	202539	E
463.00 > 169.00	3.050	3.055	-0.005	1.000	35745012		2.51(1.90-5.69)		12533	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.067	-0.017	1.000	1503328	1.62		64.7	33761	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.067	-0.024	1.000	1449798	1.54		64.5	10430	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.260	3.261	-0.001	1.000	1910086	1.67		179	22910	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.384	3.391	-0.007	1.000	99617	0.0892		8.9	193	
D 21 13C8 FOSA										
506.00 > 78.00	3.384	3.399	-0.015	1.000	2760537	2.35		94.0	32780	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.394	3.401	-0.007	1.000	1992929	4.11		428	74.0	
549.00 > 99.00	3.394	3.401	-0.007	1.000	742736		2.68(1.33-3.97)		163	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.394	3.410	-0.016	0.997	51654	0.1730		18.1	2396	
D 26 M2-8:2FTS										
529.00 > 81.00	3.403	3.417	-0.014	1.000	565003	2.01		84.0	4897	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.422	3.419	0.003	1.003	66478223	88.2		8816	115367	E
513.00 > 169.00	3.412	3.419	-0.007	1.000	18176780		3.66(2.36-7.09)		22509	
D 23 13C2 PFDA										
515.00 > 470.00	3.412	3.427	-0.015	1.000	1827400	2.34		93.5	34424	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.563	3.586	-0.024	1.000	1327740	3.00		120	23204	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.732	-0.015	1.000	1662012	4.22		438	24.8	
599.00 > 99.00	3.717	3.732	-0.015	1.000	671820		2.47(1.39-4.16)		129	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.751	-0.013	1.000	791605	1.81		72.4	11286	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.749	3.754	-0.005	1.000	74507503	158.9		15815	2125	EM
563.00 > 169.00	3.749	3.754	-0.005	1.000	27213492		2.74(2.12-6.36)		606	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.762	-0.013	1.000	1386739	2.06		82.3	26991	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.911	-0.006	1.000	2655285	1.50		160	43097	
37 Perfluorododecanoic acid										E
613.00 > 569.00	4.050	4.054	-0.004	1.003	45183500	65.3		6532	38956	E
613.00 > 169.00	4.040	4.054	-0.014	1.000	13994332		3.23(2.13-6.40)		47459	
D 36 13C2 PFDoA										
615.00 > 570.00	4.040	4.061	-0.021	1.000	1658136	2.28		91.1	18953	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.308	4.314	-0.006	1.000	48009313	59.6		5956	31766	E
663.00 > 169.00	4.308	4.314	-0.006	1.000	19054623		2.52(1.25-3.76)		36038	
42 Perfluorotetradecanoic acid										E
713.00 > 169.00	4.543	4.549	-0.006	1.000	9096008	39.5		3946	18992	E
713.00 > 219.00	4.543	4.549	-0.006	1.000	6707814		1.36(0.71-2.13)		23817	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.564	-0.021	1.000	2294482	2.49		99.4	17307	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.972	-0.005	1.000	16464143	9.59		951	6792	
813.00 > 169.00	4.967	4.972	-0.005	1.000	2786142		5.91(2.86-8.58)		5508	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.976	-0.009	1.000	4524100	3.01		120	16611	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.333	-0.003	1.000	4512339	2.48		248	1578	
913.00 > 169.00	5.330	5.333	-0.003	1.000	557721		8.09(3.83-11.48)		2310	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 11:25:25 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b\2018.04.24LLC_057.d

Injection Date: 25-Apr-2018 01:02:14 Instrument ID: A8_N

Lims ID: 320-38054-A-2-F MSD

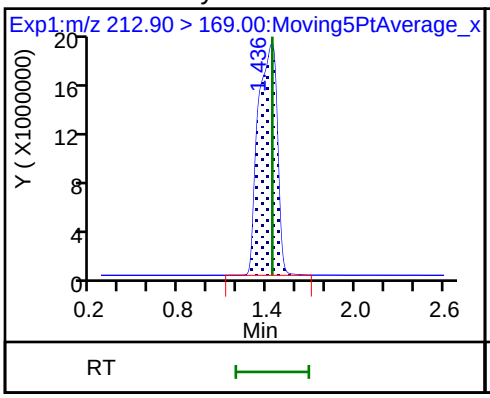
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 40 Worklist Smp#: 16

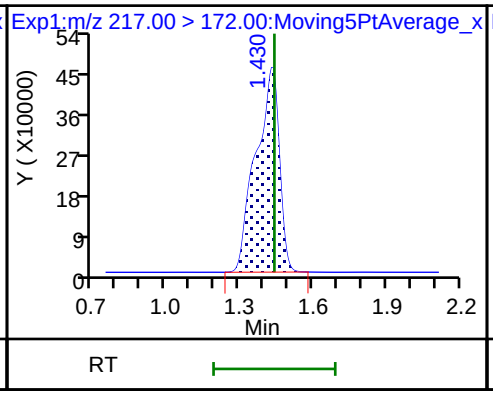
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

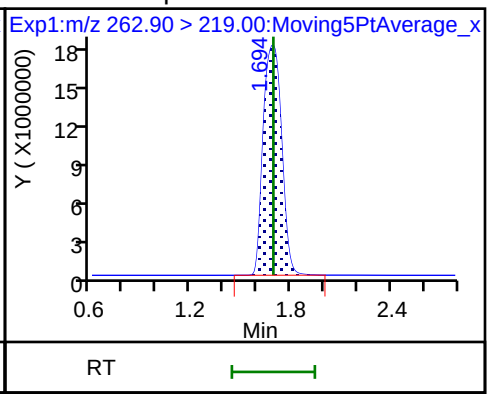
2 Perfluorobutyric acid



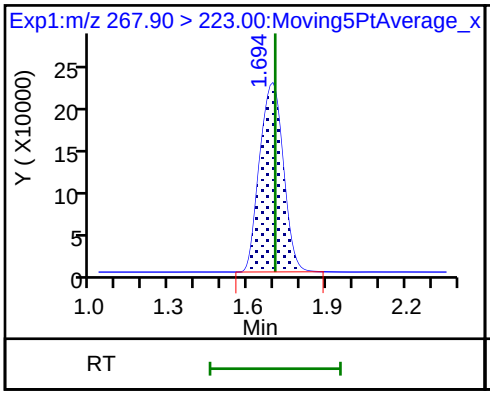
D 1 13C4 PFBA



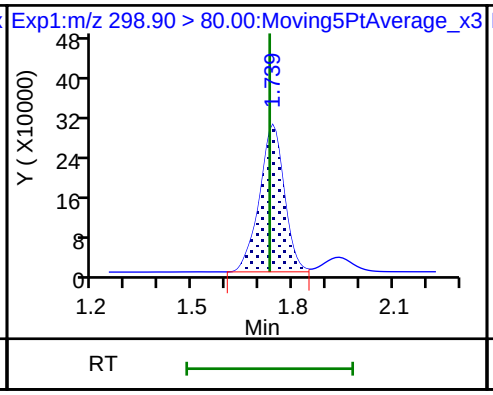
4 Perfluoropentanoic acid



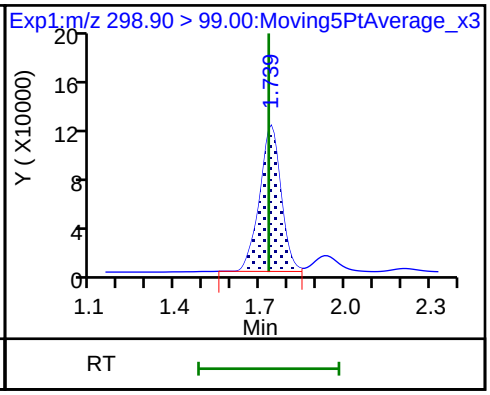
D 3 13C5-PFPeA



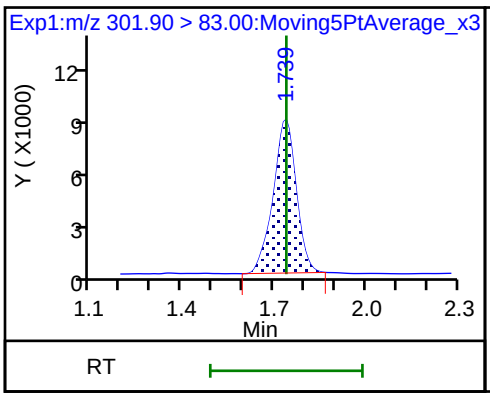
5 Perfluorobutanesulfonic acid



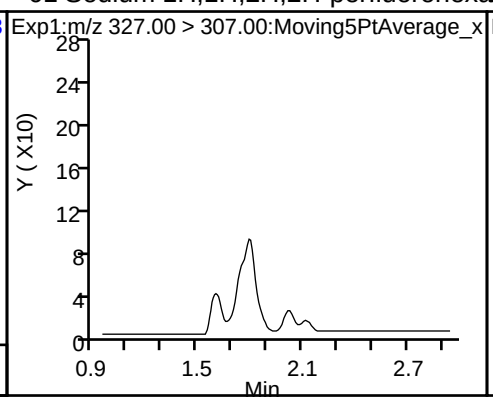
5 Perfluorobutanesulfonic acid



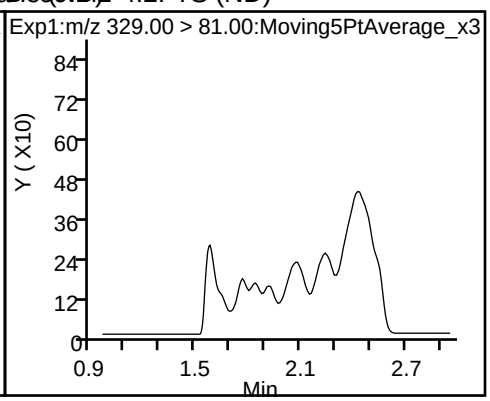
D 47 13C3-PFBS



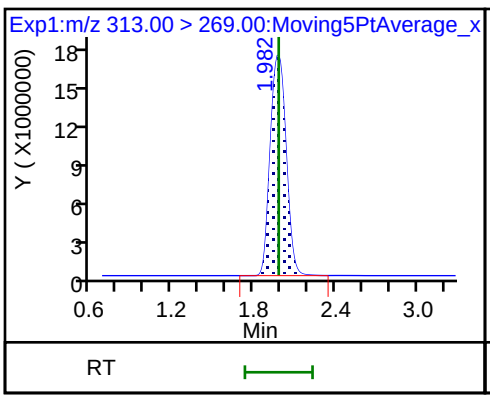
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (NM)



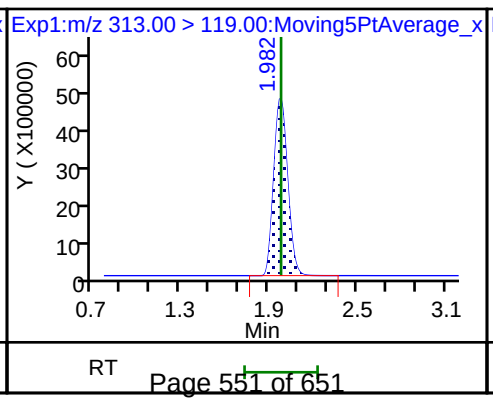
D 60 (NM) 4:2FTS (ND)



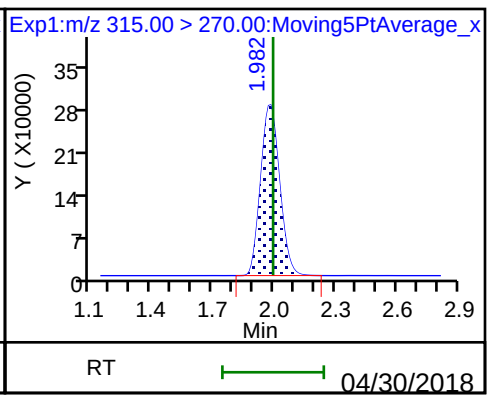
6 Perfluorohexanoic acid



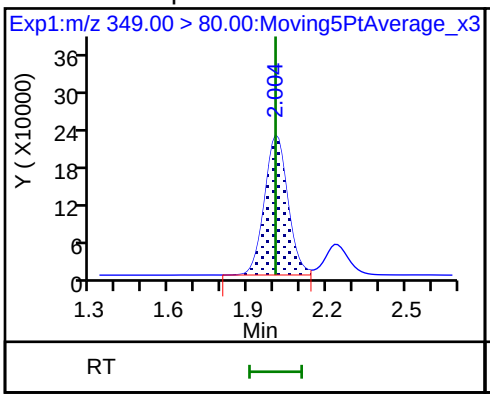
6 Perfluorohexanoic acid



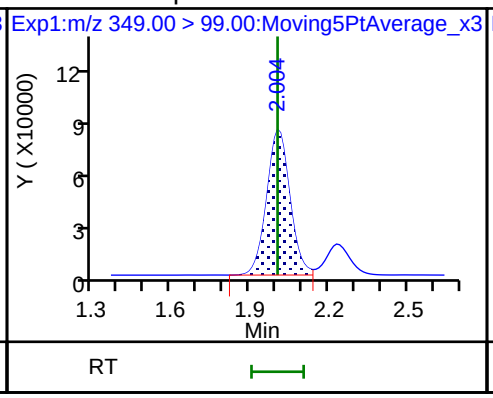
D 7 13C2 PFHxA



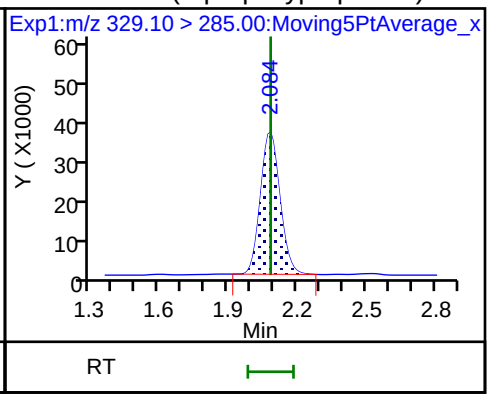
70 Perfluoropentanesulfonic acid



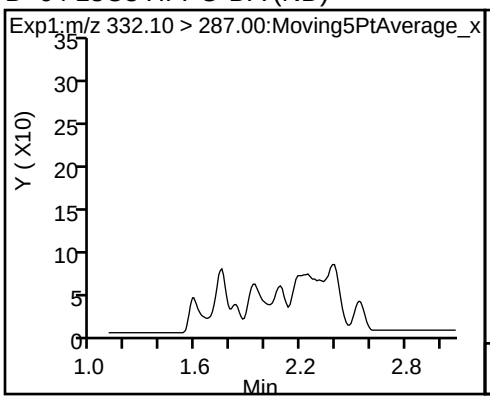
70 Perfluoropentanesulfonic acid



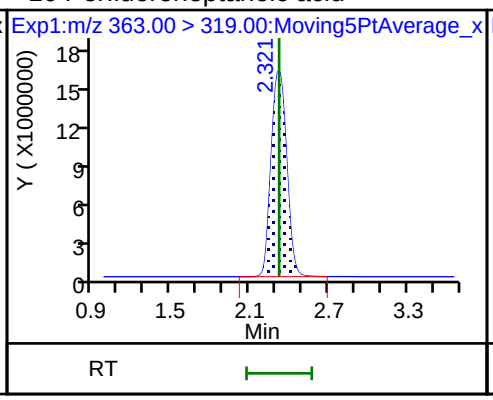
67 Perfluoro(2-propoxypropanoic) acid



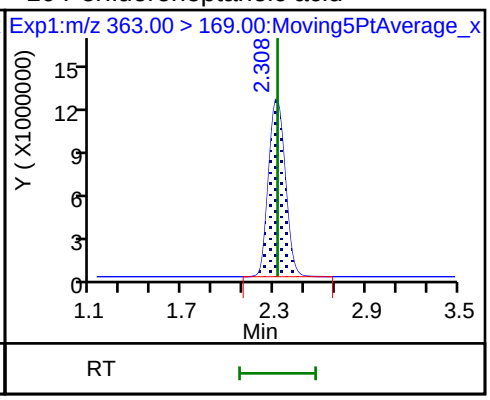
D 64 13C3 HFPO-DA (ND)



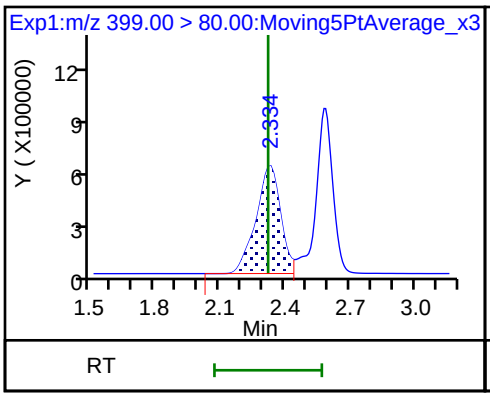
10 Perfluoroheptanoic acid



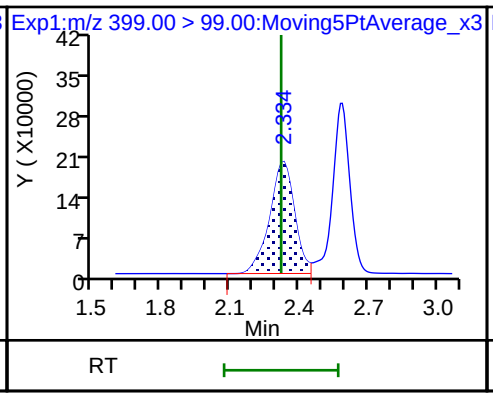
10 Perfluoroheptanoic acid



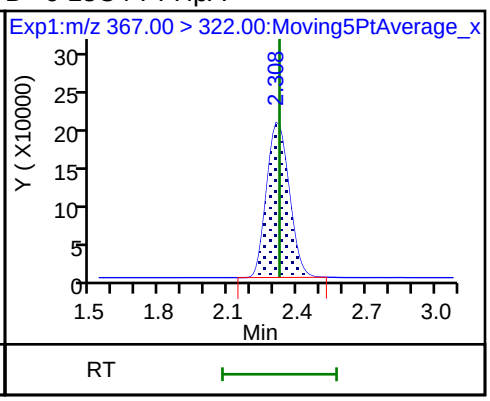
8 Perfluorohexanesulfonic acid



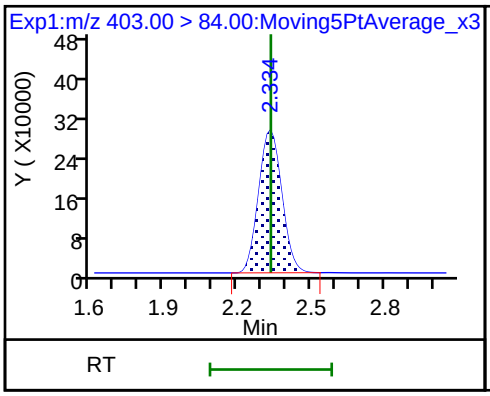
8 Perfluorohexanesulfonic acid



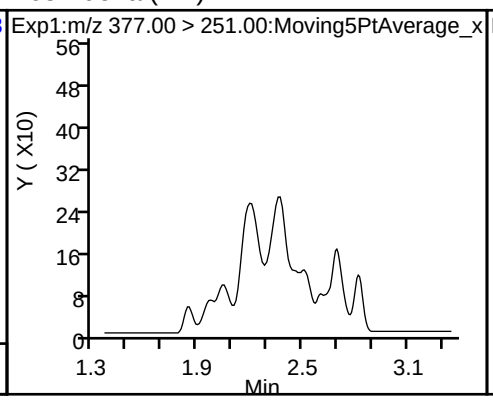
D 9 13C4-PFHpA



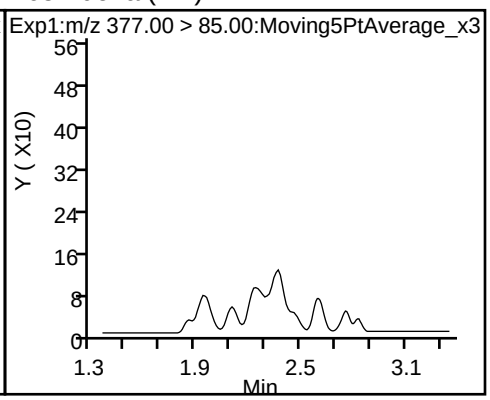
D 11 18O2 PFHxS



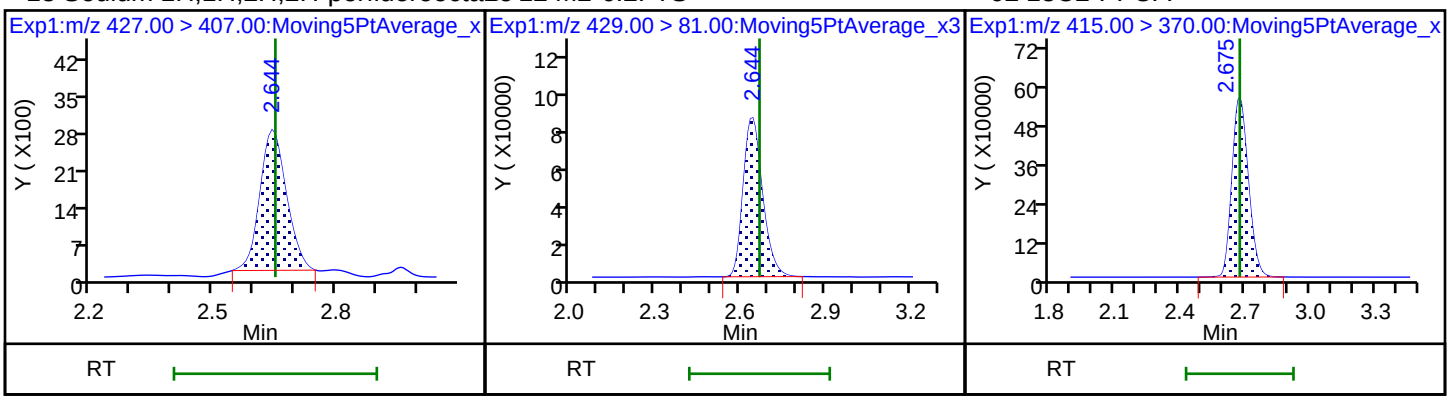
65 Adona (ND)



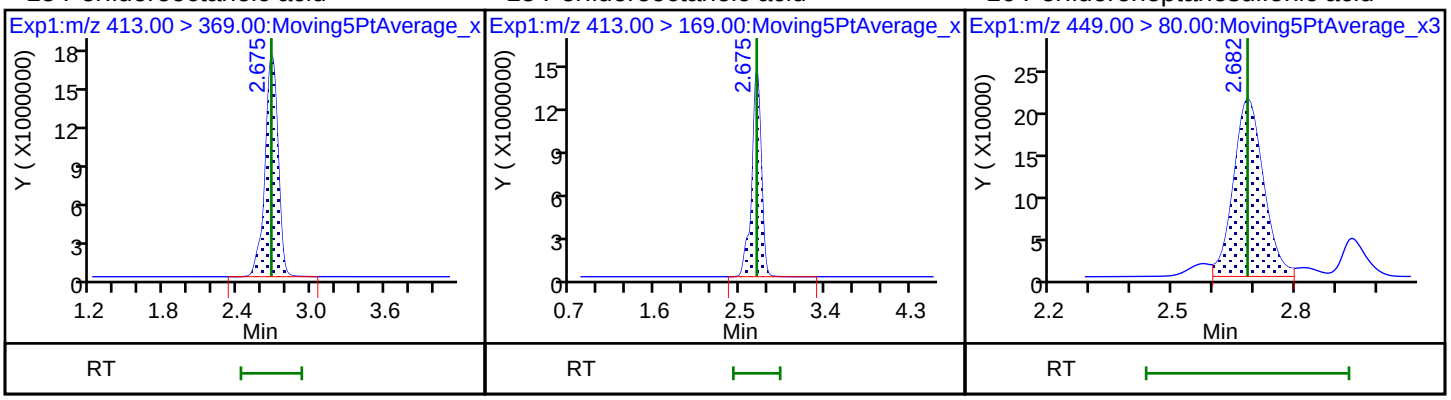
65 Adona (ND)



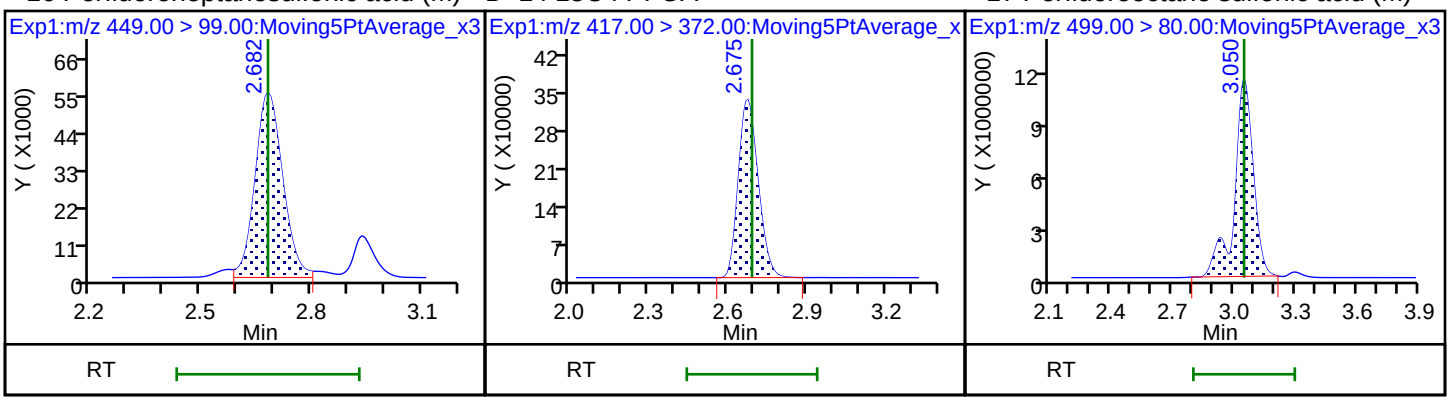
13 Sodium 1H,1H,2H,2H-perfluorooctane D 12 M2-6:2FTS * 62 13C2-PFOA



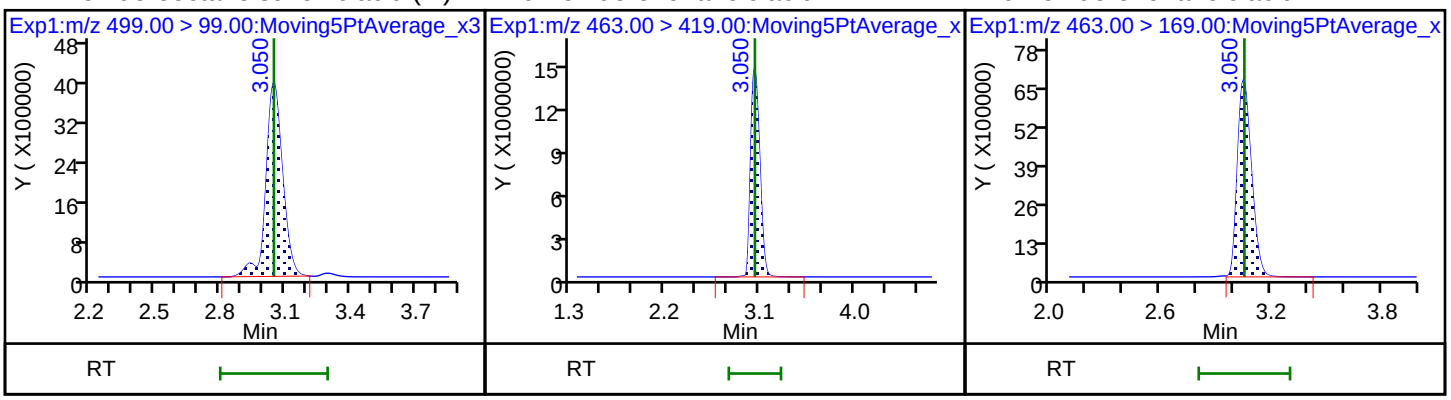
15 Perfluorooctanoic acid 15 Perfluorooctanoic acid 16 Perfluoroheptanesulfonic acid



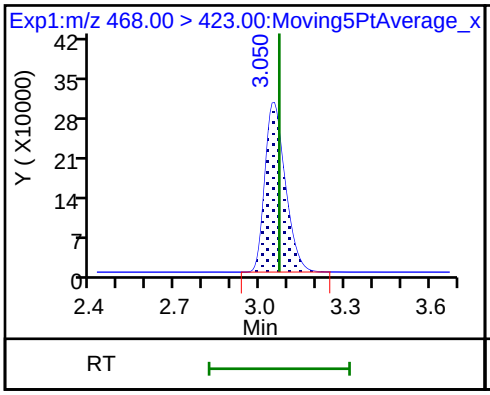
16 Perfluoroheptanesulfonic acid (M) D 14 13C4 PFOA 17 Perfluorooctane sulfonic acid (M)



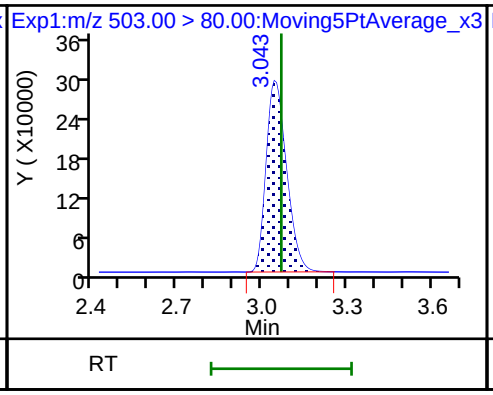
17 Perfluorooctane sulfonic acid (M) 20 Perfluorononanoic acid 20 Perfluorononanoic acid



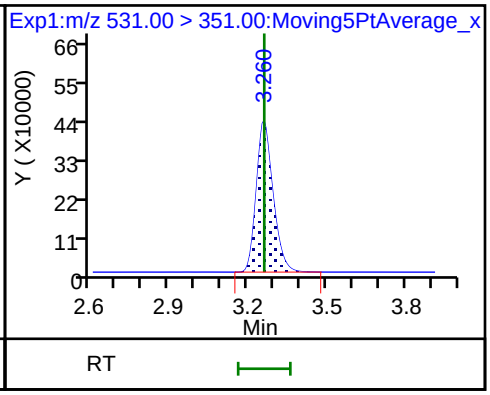
D 19 13C5 PFNA



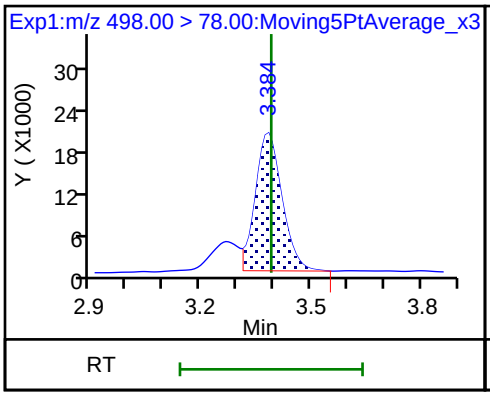
D 18 13C4 PFOS



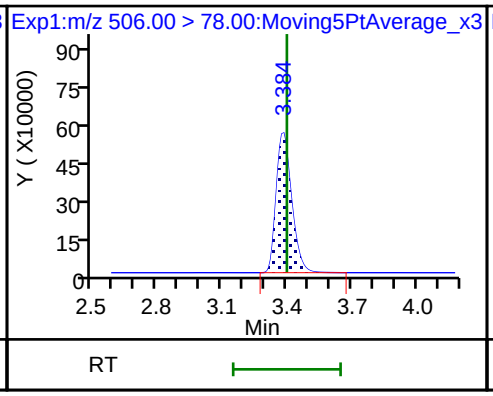
69 9-Chlorohexadecafluoro-3-oxanonane



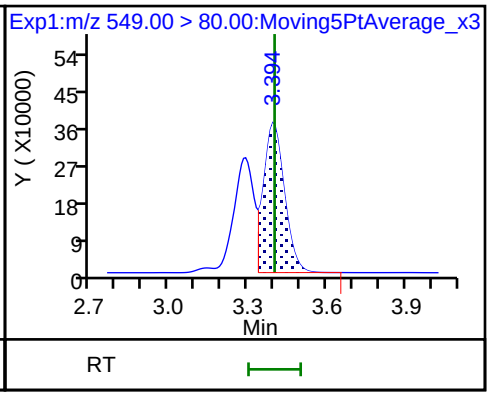
22 Perfluorooctane Sulfonamide



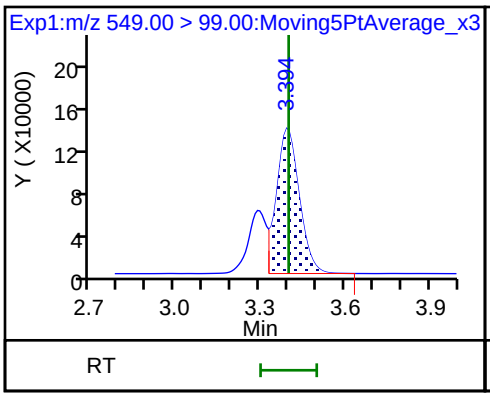
D 21 13C8 FOSA



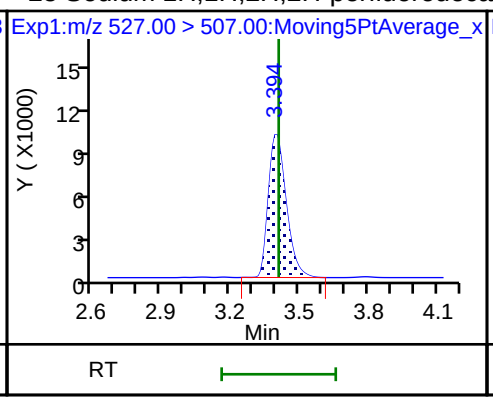
68 Perfluorononanesulfonic acid



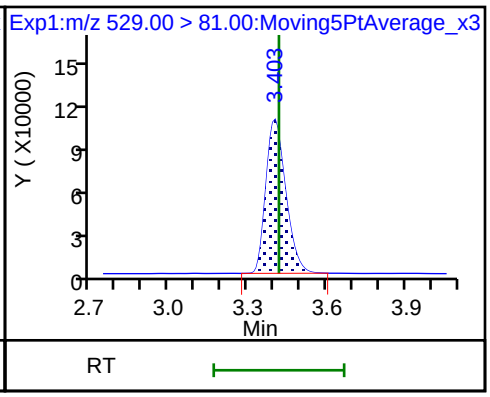
68 Perfluorononanesulfonic acid



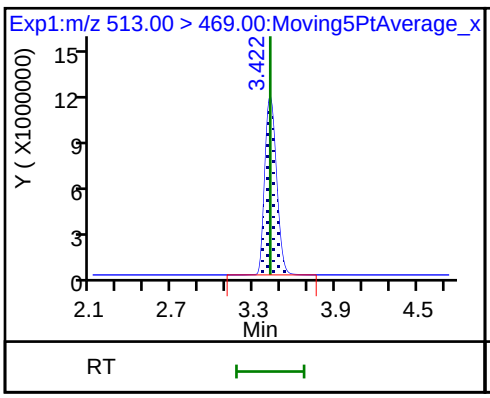
25 Sodium 1H,1H,2H,2H-perfluorodecane



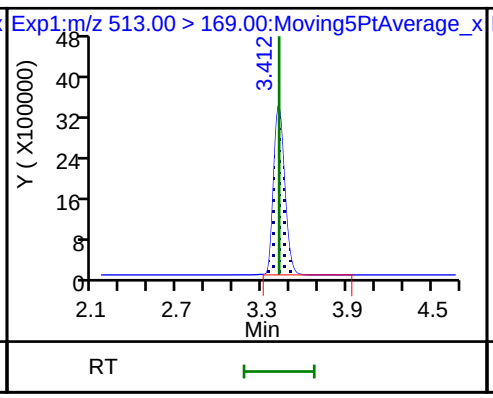
D 26 M2-8:2FTS



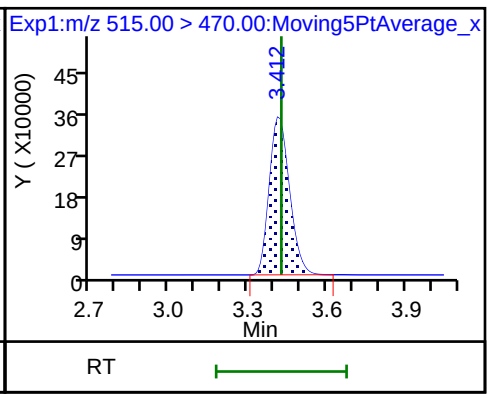
24 Perfluorodecanoic acid



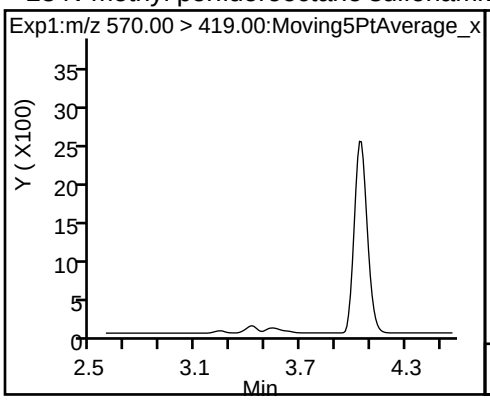
24 Perfluorodecanoic acid



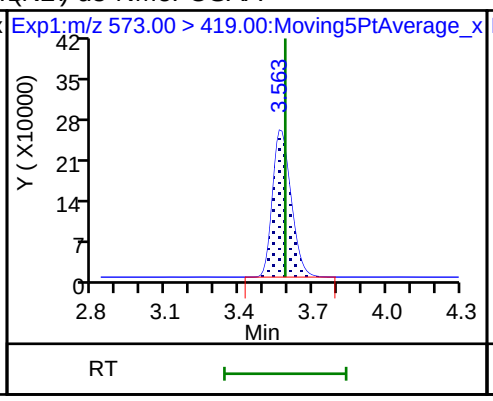
D 23 13C2 PFDA



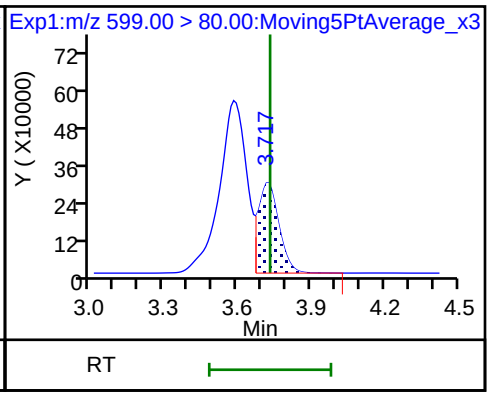
28 N-methyl perfluorooctane sulfonamid (NM)



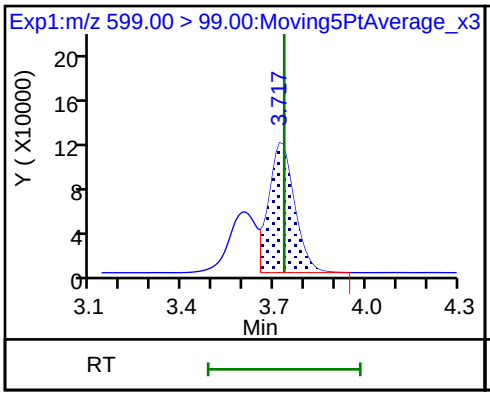
D 27 d3-NMeFOSAA



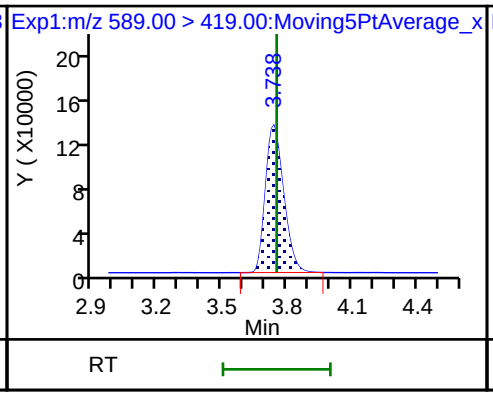
29 Perfluorodecane Sulfonic acid



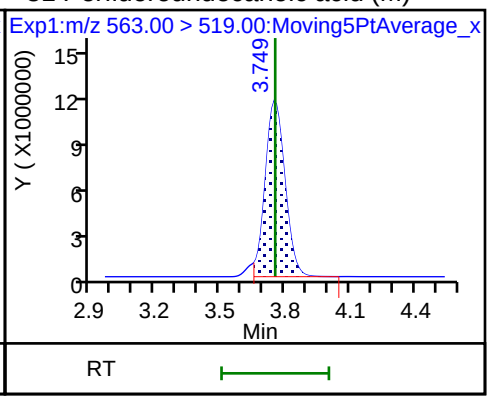
29 Perfluorodecane Sulfonic acid



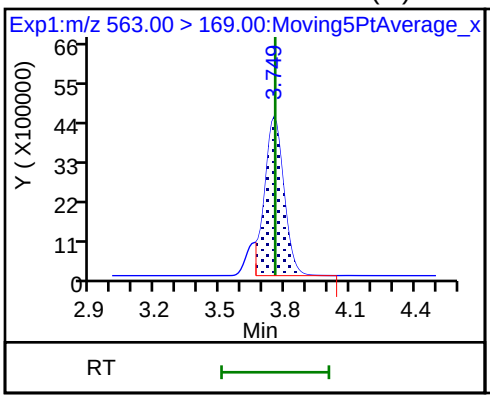
D 32 d5-NEtFOSAA



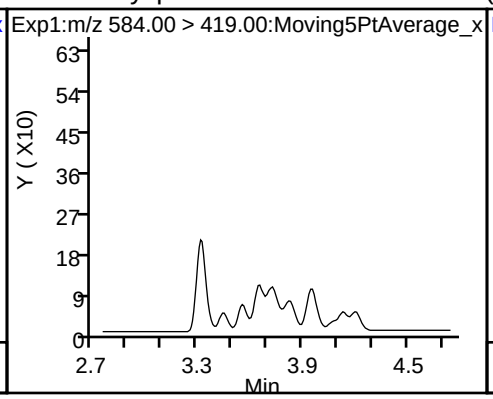
31 Perfluoroundecanoic acid (M)



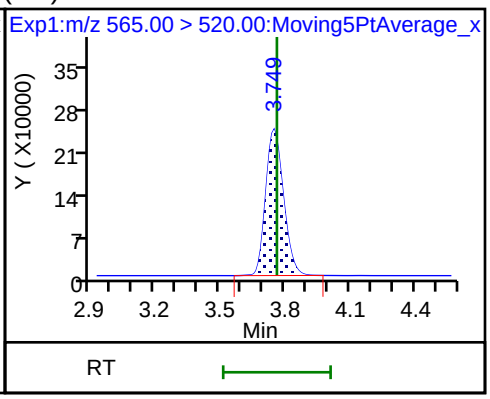
31 Perfluoroundecanoic acid (M)



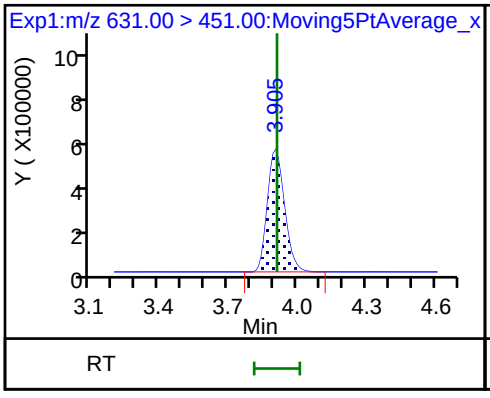
33 N-ethyl perfluorooctane sulfonamid (NEM)



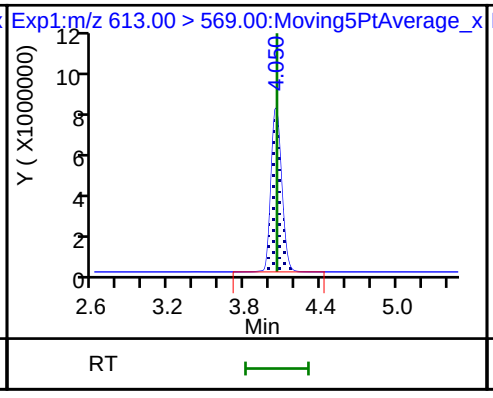
D 30 13C2 PFUnA



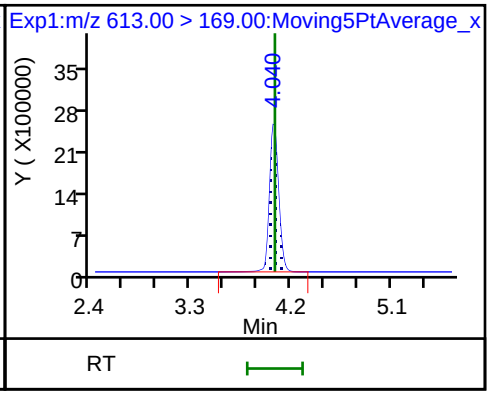
66 11-Chloroeicosafluoro-3-oxaundecan



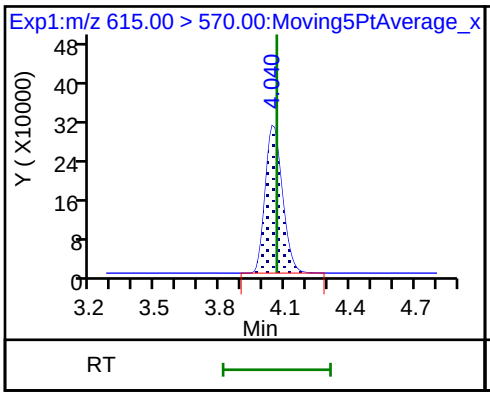
37 Perfluorododecanoic acid



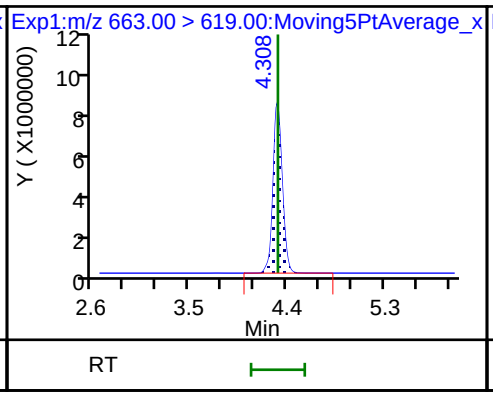
37 Perfluorododecanoic acid



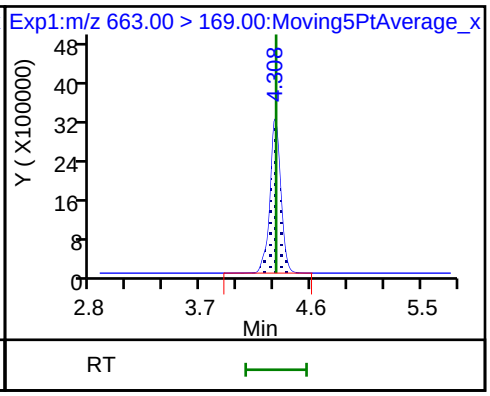
D 36 13C2 PFDoA



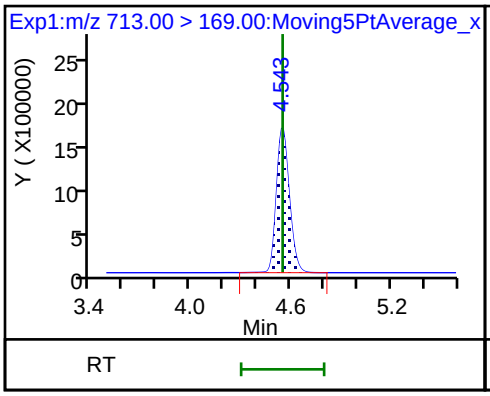
41 Perfluorotridecanoic acid



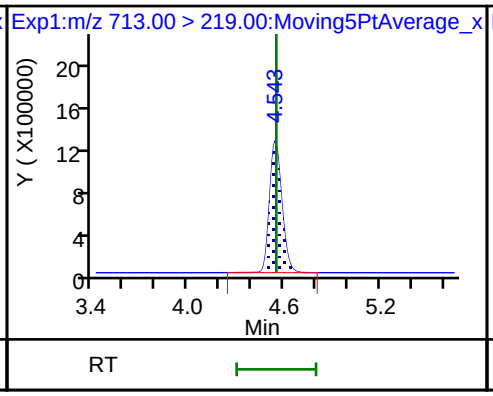
41 Perfluorotridecanoic acid



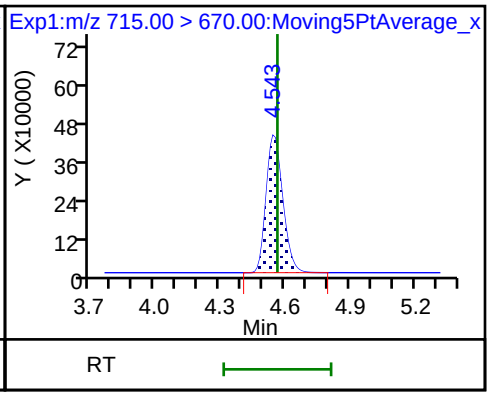
42 Perfluorotetradecanoic acid



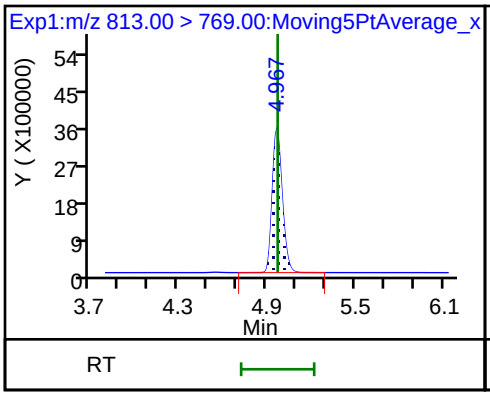
42 Perfluorotetradecanoic acid



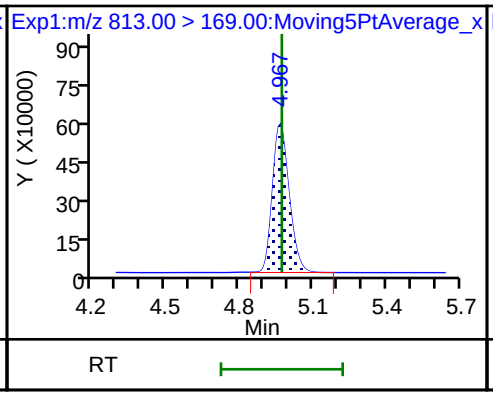
D 43 13C2-PFTeDA



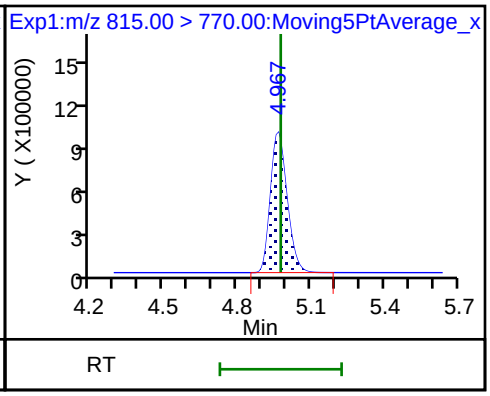
45 Perfluorohexadecanoic acid



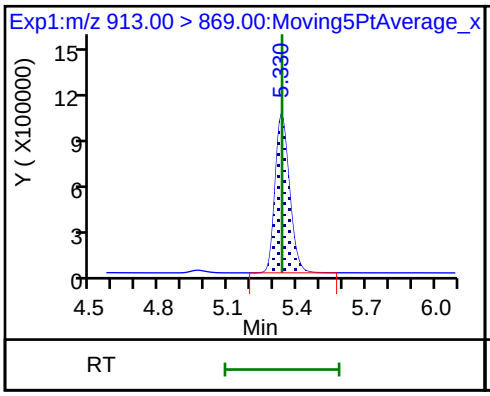
45 Perfluorohexadecanoic acid



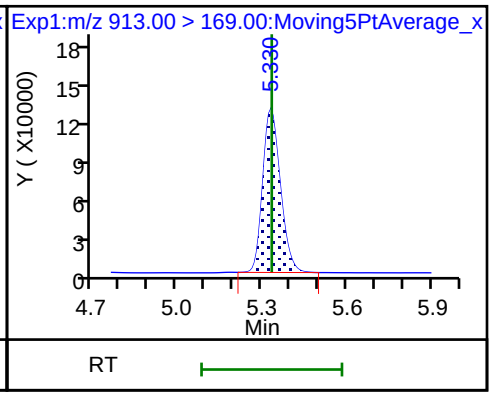
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

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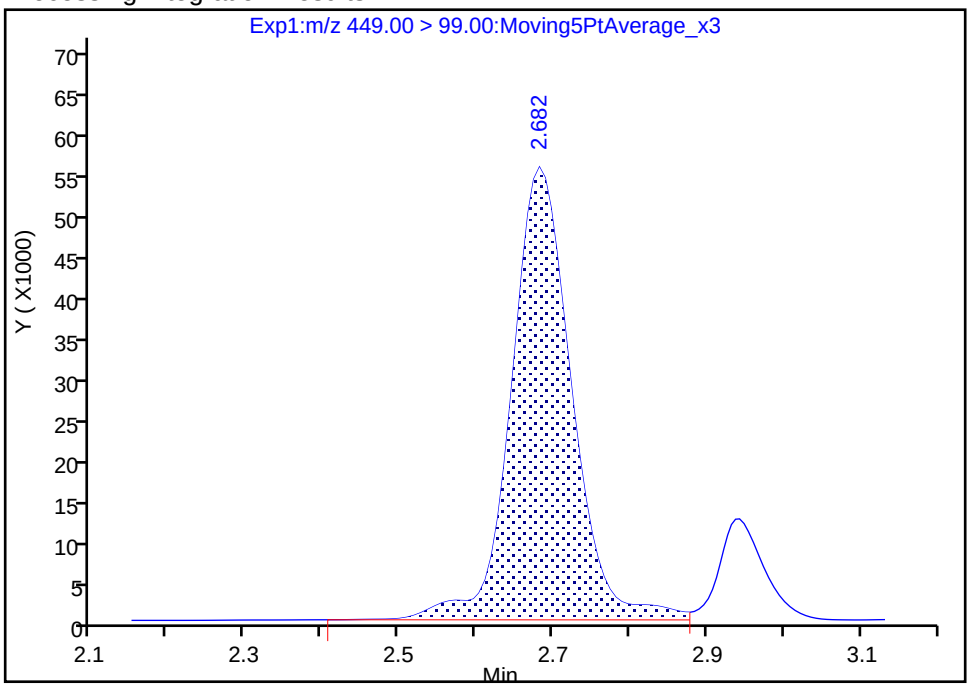
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 40 Worklist Smp#: 16
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

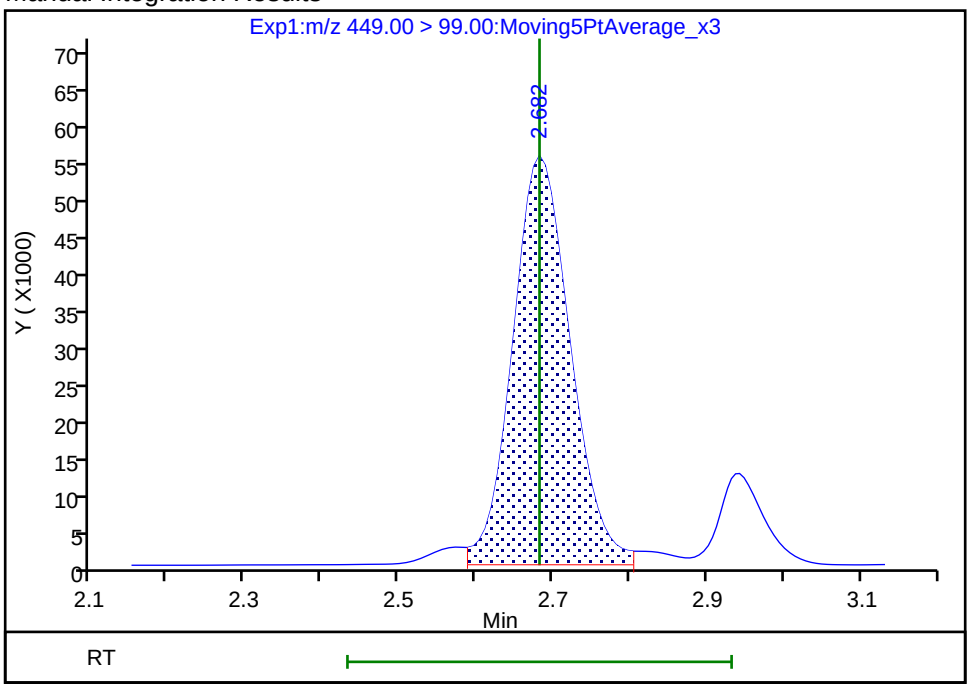
Processing Integration Results

RT: 2.68
Area: 305486
Amount: 1.348103
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 290793
Amount: 1.348103
Amount Units: ng/ml



Reviewer: westendorfc, 26-Apr-2018 11:23:55
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MSD DL | Lab Sample ID: 320-38054-2 MSD DL

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLC_071.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.05(g) | Date Analyzed: 04/27/2018 12:04

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220224 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
307-55-1	Perfluorododecanoic acid (PFDoA)	0.422		0.0054
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.371		0.0054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.230		0.0054
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0257		0.0054
27619-97-2	6:2FTS	ND		0.054
39108-34-4	8:2FTS	ND		0.054

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00998	13C2 PFDoA	76		25-150
STL02116	13C2-PFTeDA	70		25-150
STL00994	18O2 PFHxS	64		25-150
STL02279	M2-6:2FTS	72		25-150
STL02280	M2-8:2FTS	70		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_071.d
Lims ID: 320-38054-A-2-F MSD
Client ID:
Sample Type: MSD
Inject. Date: 27-Apr-2018 12:04:47 ALS Bottle#: 54 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38054-a-2-f msd 10X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 13:06:02 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 13:05:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.436	0.005	1.000	483517	0.1771		70.8	3771	
2 Perfluorobutyric acid										E
212.90 > 169.00	1.441	1.441	0.0	1.000	51240393	28.5		28532	28839	E
D 3 13C5-PFPeA										
267.90 > 223.00	1.701	1.694	0.007	0.557	286346	0.1627		65.1	4679	
4 Perfluoropentanoic acid										E
262.90 > 219.00	1.701	1.703	-0.002	1.000	59454928	43.6		43556	77064	E
D 47 13C3-PFBS										
301.90 > 83.00	1.737	1.730	0.007	1.000	6866	0.1700		73.1	79.3	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.737	1.739	-0.002	1.000	229521	0.0993		112	514	
298.90 > 99.00	1.737	1.739	-0.002	1.000	97063		2.36(1.25-3.74)		479	
6 Perfluorohexanoic acid										E
313.00 > 269.00	1.980	1.982	-0.002	1.000	57433144	39.9		39872	131728	E
313.00 > 119.00	1.980	1.982	-0.002	1.000	6785397		8.46(5.03-15.10)		69615	
D 7 13C2 PFHxA										
315.00 > 270.00	1.980	1.982	-0.002	1.000	354392	0.1821		72.8	7305	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.005	-0.003	1.000	220710	0.1045		111	439	
349.00 > 99.00	2.003	2.005	-0.003	1.000	84259		2.62(1.36-4.07)		448	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.082	2.084	-0.002	1.000	19478	NR		0.0	114	
10 Perfluoroheptanoic acid										E
363.00 > 319.00	2.319	2.321	-0.002	1.000	60440471	55.1		55071	61199	E
363.00 > 169.00	2.319	2.321	-0.002	1.000	29664805		2.04(1.13-3.40)		107753	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.323	-0.004	1.000	274134	0.1447		57.9	5954	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.334	-0.002	1.000	807700	0.4749		518	82.1	
399.00 > 99.00	2.332	2.334	-0.002	1.000	267906		3.01(1.50-4.49)		89.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.336	-0.004	1.000	355430	0.1520		64.3	11033	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.653	-0.001	1.000	69029	0.1701		71.6	1087	
D 14 13C4 PFOA										
417.00 > 372.00	2.674	2.676	-0.002	1.000	316486	0.1681		67.2	9308	
* 62 13C2-PFOA										
415.00 > 370.00	2.674	2.683	-0.009		507387	0.2500			17039	
15 Perfluorooctanoic acid										E
413.00 > 369.00	2.682	2.683	-0.001	1.003	42676759	29.2		28960	31841	E
413.00 > 169.00	2.674	2.683	-0.009	1.000	26238367		1.63(0.84-2.52)		70163	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.682	2.690	-0.008	1.000	185492	0.1242		130	287	M
449.00 > 99.00	2.682	2.690	-0.008	1.000	45043		4.12(1.94-5.82)		289	M
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.056	0.0	1.000	268790	0.1642		68.7	1973	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.056	0.0	1.000	268322	0.1658		66.3	9457	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.049	3.056	-0.007	0.998	16037641	13.1		14126	85642	E
499.00 > 99.00	3.049	3.056	-0.007	0.998	3948622		4.06(2.31-6.93)		89842	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.056	3.056	0.0	1.000	27639898	24.7		24698	71298	E
463.00 > 169.00	3.056	3.056	0.0	1.000	7660484		3.61(1.90-5.69)		28475	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.263	3.270	-0.007	1.000	189646	0.0895		96.0	3908	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.394	-0.001	1.000	315808	0.1545		61.8	6097	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.384	3.394	-0.010	0.997	11623	0.009096		9.1	102	M
D 26 M2-8:2FTS										
529.00 > 81.00	3.412	3.413	-0.001	1.000	81930	0.1676		70.0	846	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.412	3.413	-0.001	1.000	6640	0.0153		16.0	328	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.402	3.413	-0.011	1.000	255262	0.2839		296	91.6	
549.00 > 99.00	3.402	3.413	-0.011	1.000	105744		2.41(1.33-3.97)		203	
D 23 13C2 PFDA										
515.00 > 470.00	3.421	3.422	-0.001	1.000	257431	0.1893		75.7	7260	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.421	3.422	-0.001	1.000	14932968	14.1		14058	60953	E
513.00 > 169.00	3.421	3.422	-0.001	1.000	2621317		5.70(2.36-7.09)		36456	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.571	-0.001	1.000	140530	0.1823		72.9	2004	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.733	3.737	-0.004	1.000	275933	0.3779		392	42.3	
599.00 > 99.00	3.733	3.737	-0.004	1.000	107490		2.57(1.39-4.16)		205	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.744	3.747	-0.003	1.000	129990	0.1709		68.3	2302	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.758	-0.004	1.000	231570	0.1974		79.0	8400	
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.754	3.758	-0.004	1.000	17126724	21.9		21770	5234	EM
563.00 > 169.00	3.754	3.758	-0.004	1.000	4649701		3.68(2.12-6.36)		1074	M
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.911	3.916	-0.005	1.000	285070	0.0870		92.4	6124	
D 36 13C2 PFDoA										
615.00 > 570.00	4.054	4.048	0.006	1.000	240497	0.1898		75.9	3701	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.054	4.049	0.005	1.000	7818818	7.79		7794	13599	
613.00 > 169.00	4.054	4.049	0.005	1.000	1903016		4.11(2.13-6.40)		9935	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.314	4.318	-0.004	1.000	8024929	6.86		6864	11449	
663.00 > 169.00	4.314	4.318	-0.004	1.000	2663845		3.01(1.25-3.76)		12235	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.548	4.553	-0.005	1.000	1209033	4.25		4251	6186	
713.00 > 219.00	4.548	4.553	-0.005	1.000	843308		1.43(0.71-2.13)		7658	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.548	4.553	-0.005	1.000	283081	0.1762		70.5	2703	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.970	4.966	0.004	1.000	1699005	0.9562		949	1391	
813.00 > 169.00	4.970	4.966	0.004	1.000	292651		5.81(2.86-8.58)		1612	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.970	4.966	0.004	1.000	458427	0.1754		70.2	3161	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.332	5.336	-0.004	1.000	366938	0.1993		199	325	
913.00 > 169.00	5.332	5.336	-0.004	1.000	47116		7.79(3.83-11.48)		414	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 13:06:15 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b\2018.04.26LLC_071.d

Injection Date: 27-Apr-2018 12:04:47 Instrument ID: A8_N

Lims ID: 320-38054-A-2-F MSD

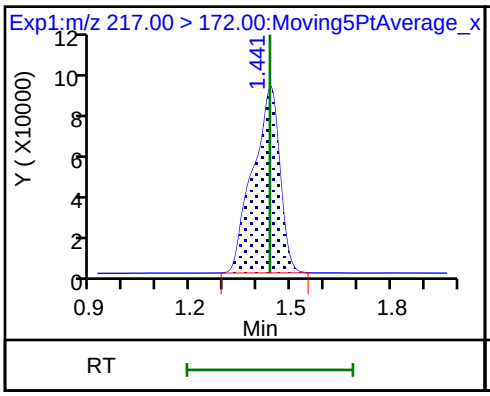
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 54 Worklist Smp#: 5

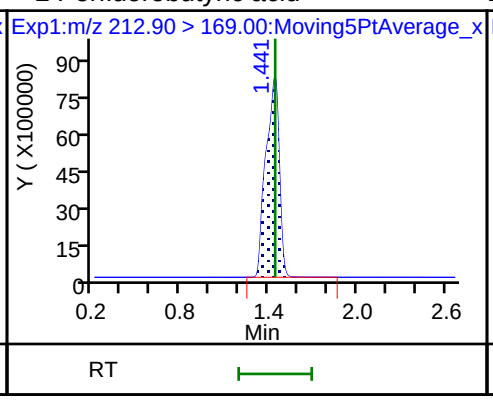
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

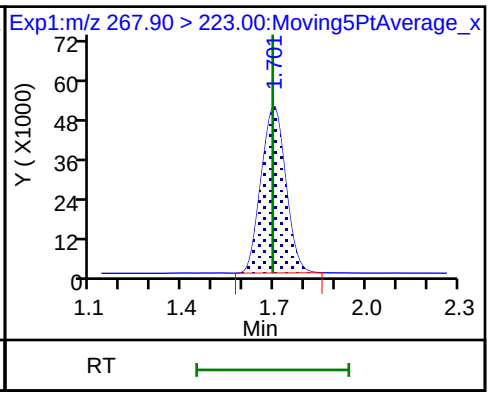
D 1 13C4 PFBA



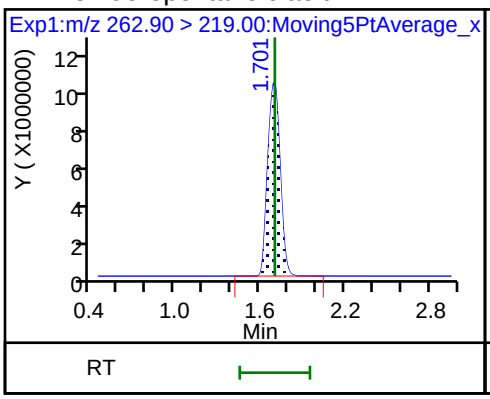
2 Perfluorobutyric acid



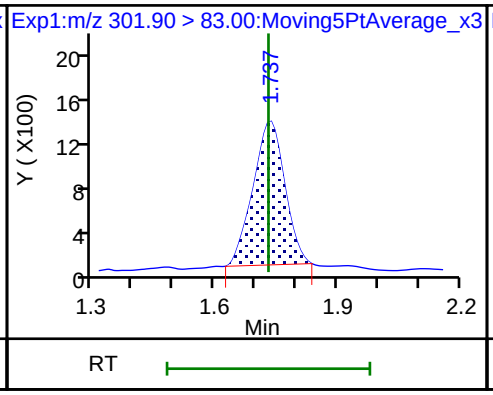
D 3 13C5-PFPeA



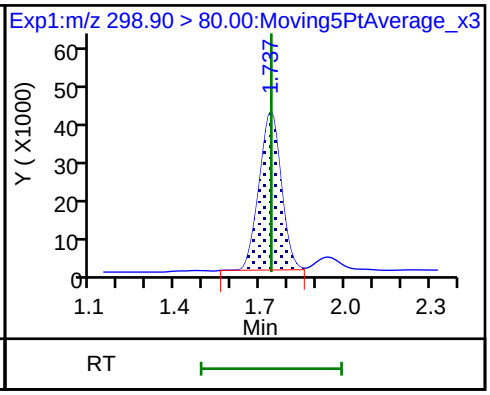
4 Perfluoropentanoic acid



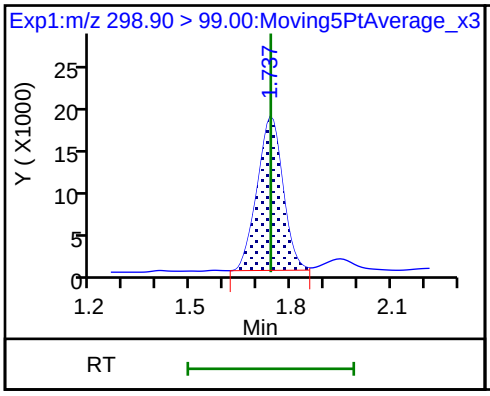
D 47 13C3-PFBS



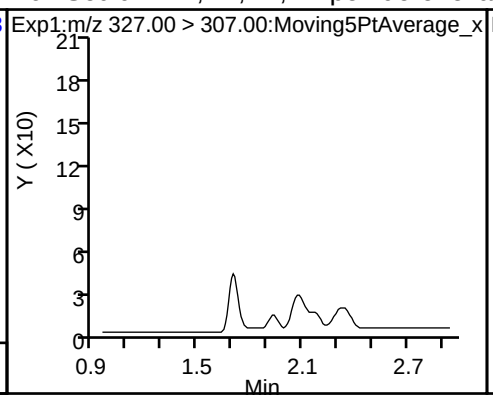
5 Perfluorobutanesulfonic acid



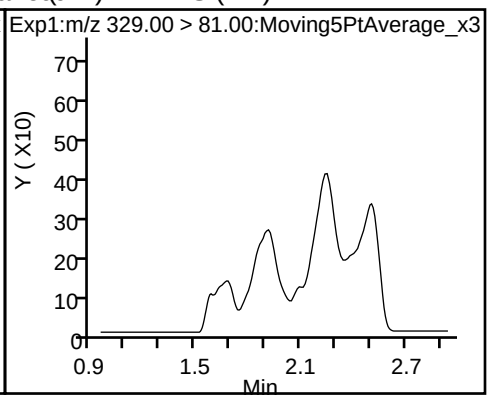
5 Perfluorobutanesulfonic acid



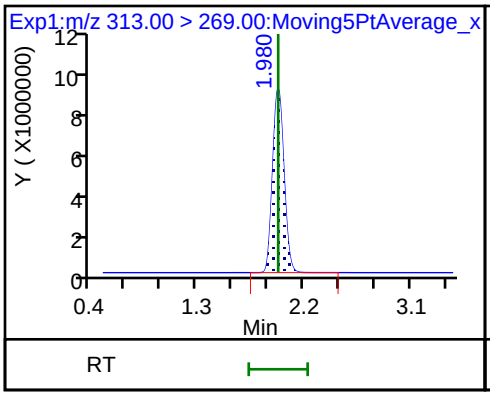
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (NM)



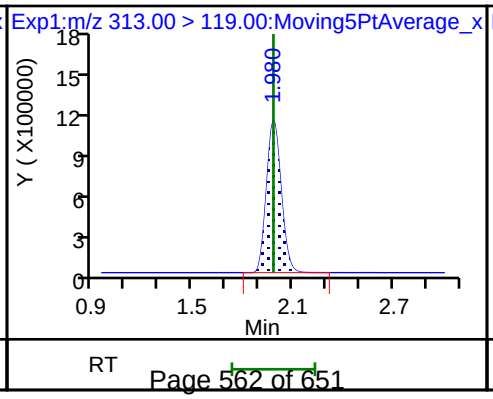
D 60 M2-4:2FTS (ND)



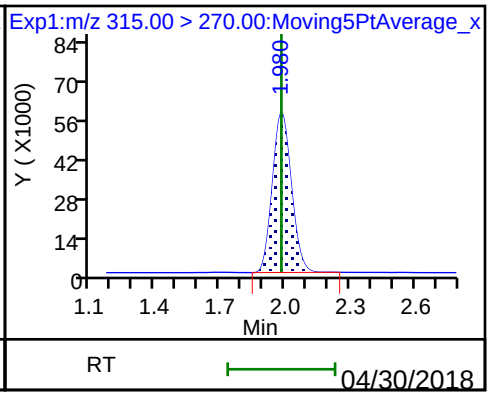
6 Perfluorohexanoic acid



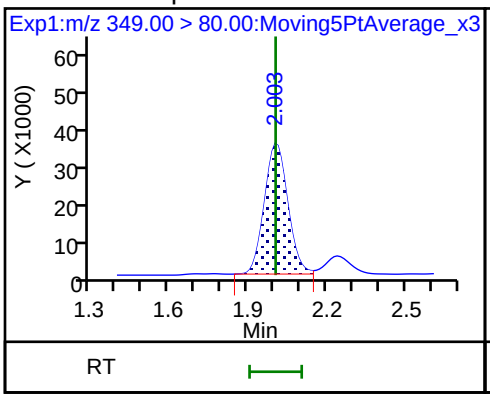
6 Perfluorohexanoic acid



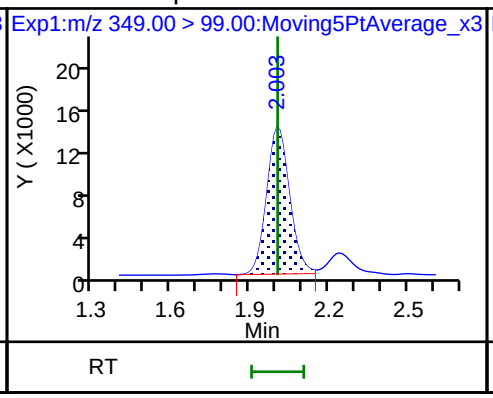
D 7 13C2 PFHxA



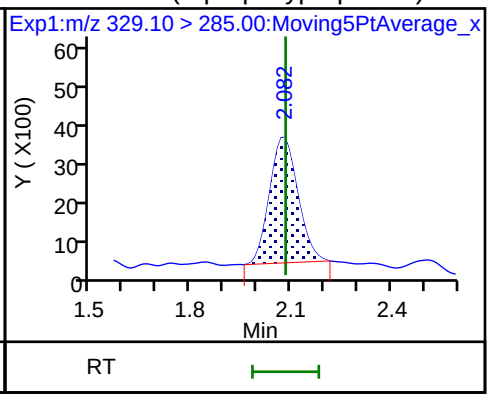
70 Perfluoropentanesulfonic acid



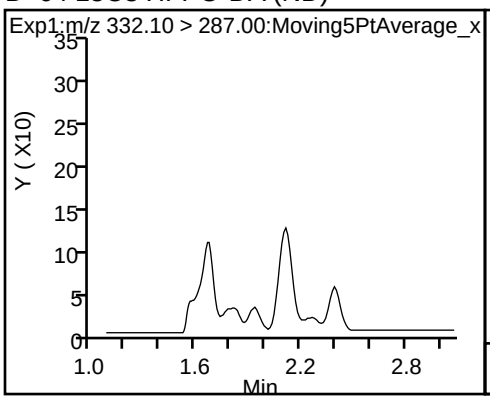
70 Perfluoropentanesulfonic acid



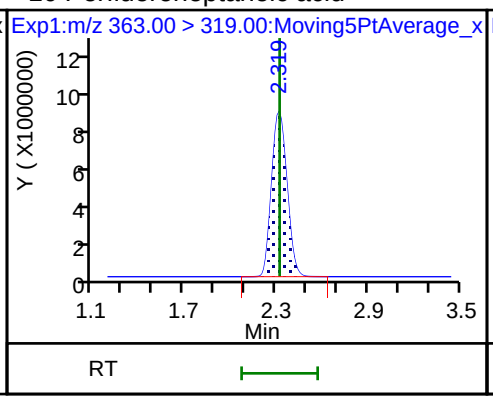
67 Perfluoro(2-propoxypropanoic) acid



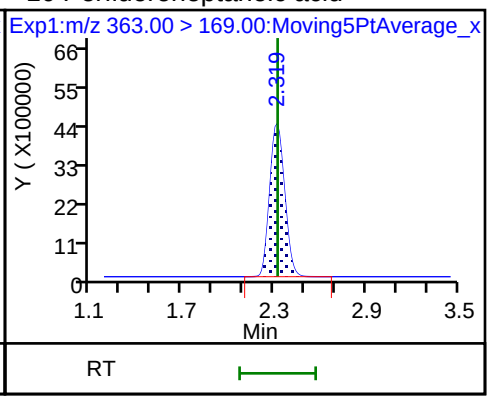
D 64 13C3 HFPO-DA (ND)



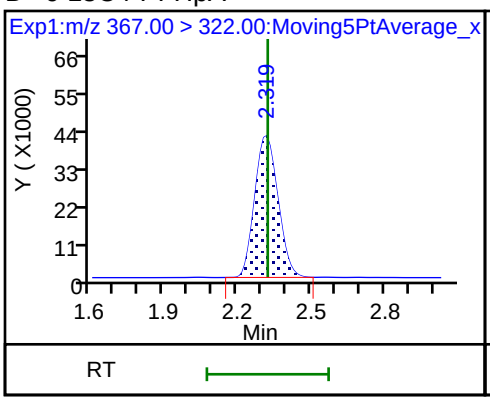
10 Perfluoroheptanoic acid



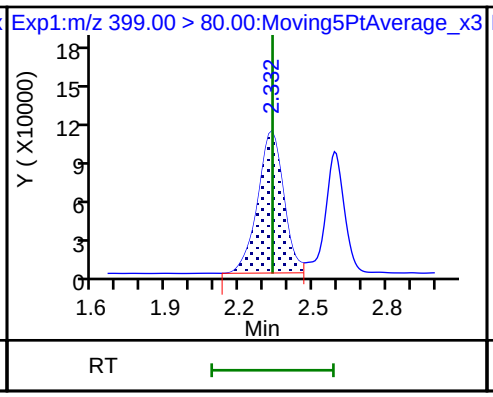
10 Perfluoroheptanoic acid



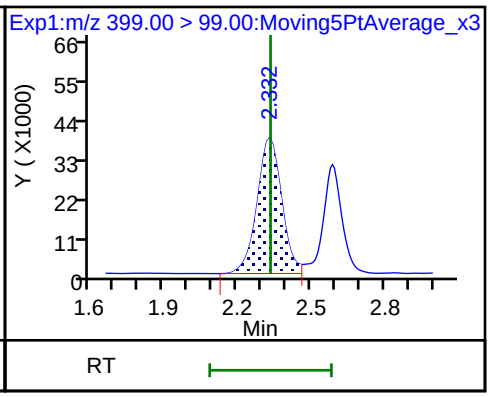
D 9 13C4-PFHpA



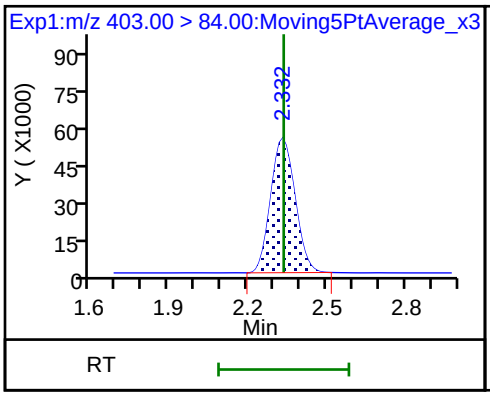
8 Perfluorohexanesulfonic acid



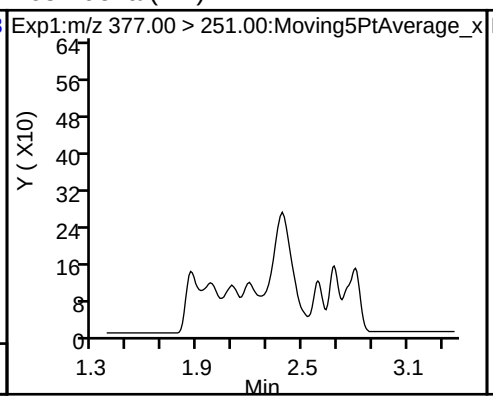
8 Perfluorohexanesulfonic acid



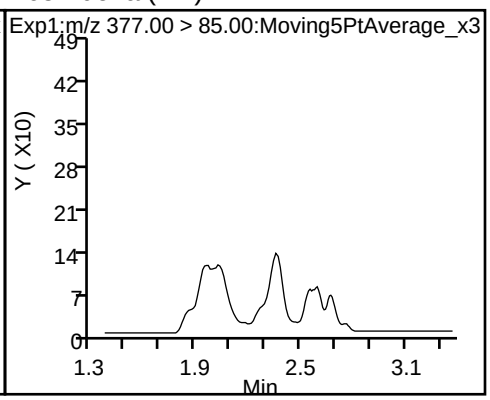
D 11 18O2 PFHxS



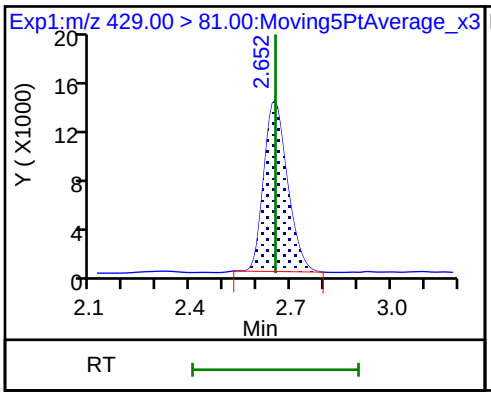
65 Adona (ND)



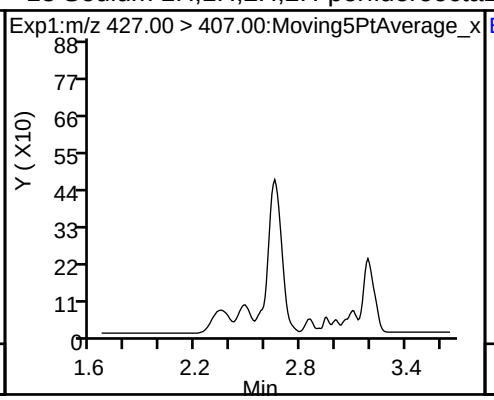
65 Adona (ND)



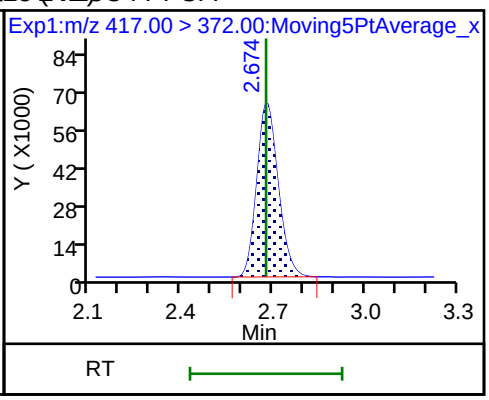
D 12 M2-6:2FTS



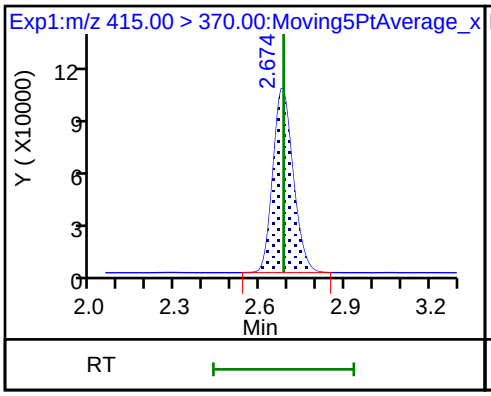
13 Sodium 1H,1H,2H,2H-perfluorooctane [M-H]



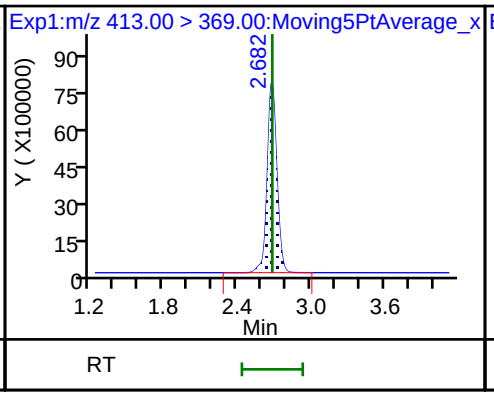
D 14 13C4 PFOA



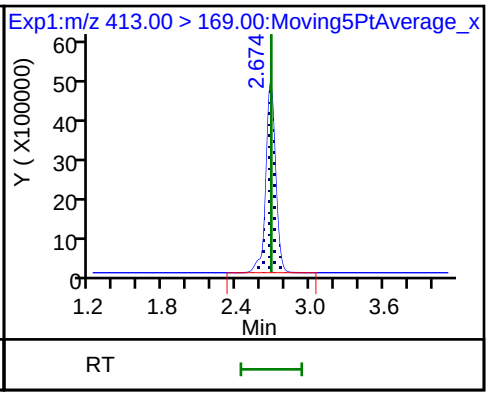
* 62 13C2-PFOA



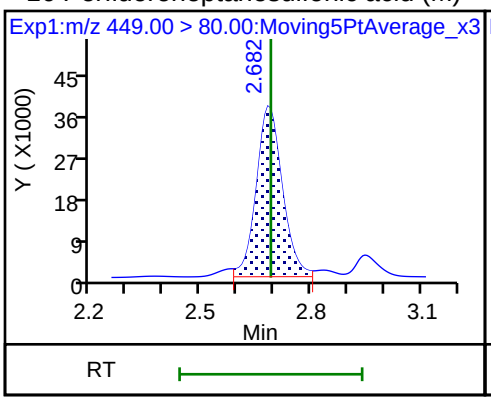
15 Perfluorooctanoic acid



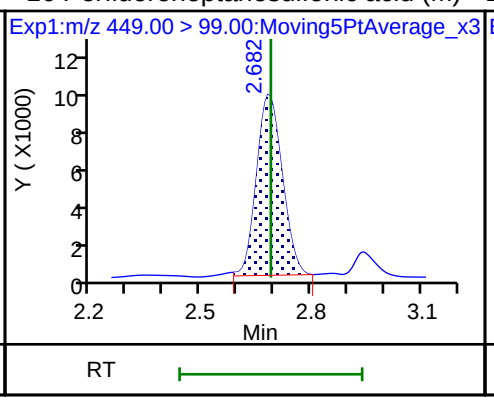
15 Perfluorooctanoic acid



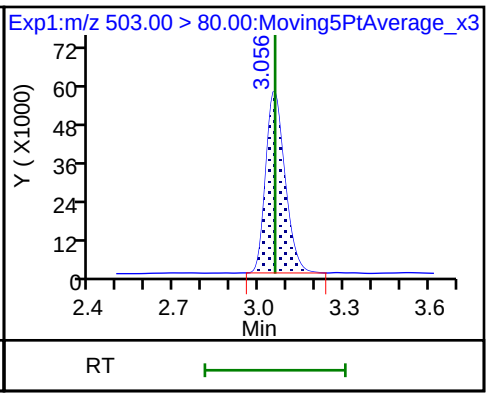
16 Perfluoroheptanesulfonic acid (M)



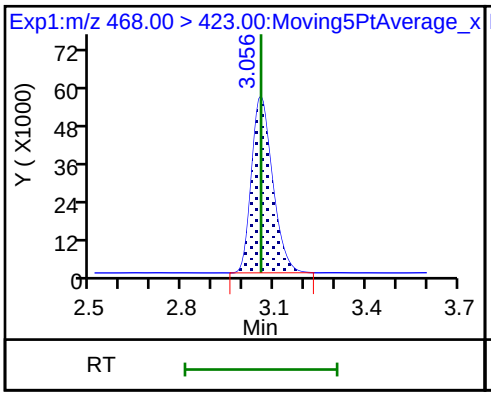
16 Perfluoroheptanesulfonic acid (M)



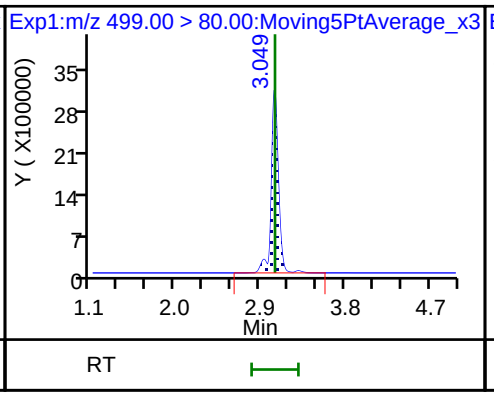
D 18 13C4 PFOS



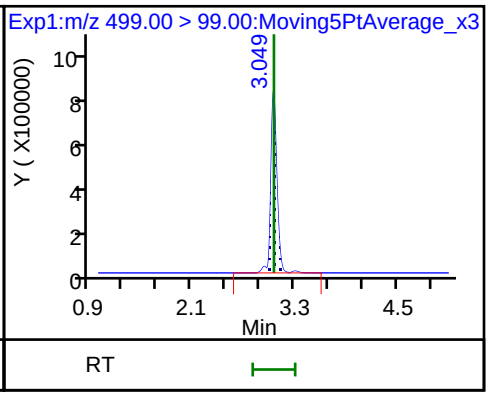
D 19 13C5 PFNA



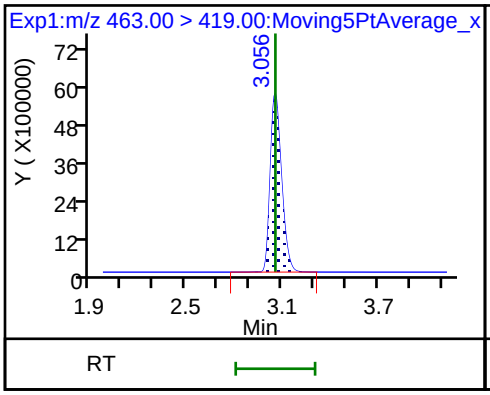
17 Perfluorooctane sulfonic acid



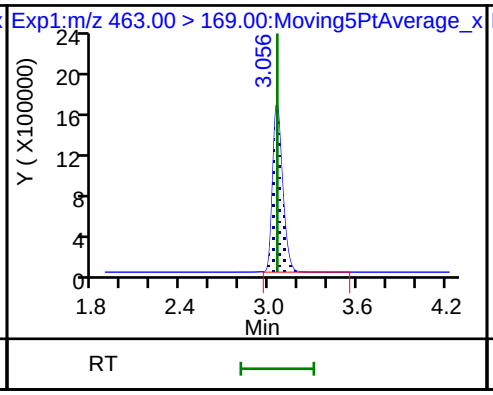
17 Perfluorooctane sulfonic acid



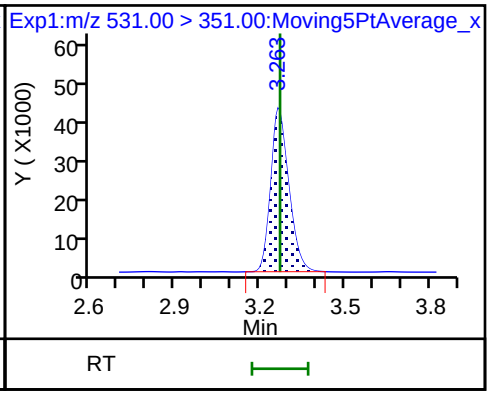
20 Perfluorononanoic acid



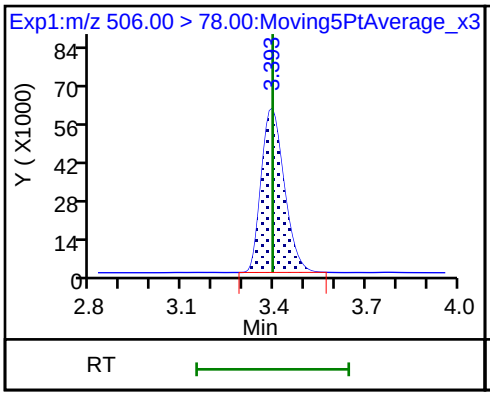
20 Perfluorononanoic acid



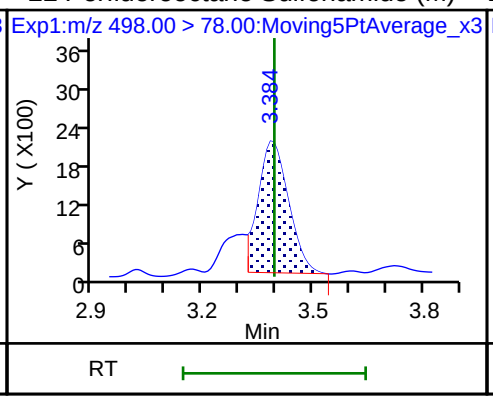
69 9-Chlorohexadecafluoro-3-oxanonane



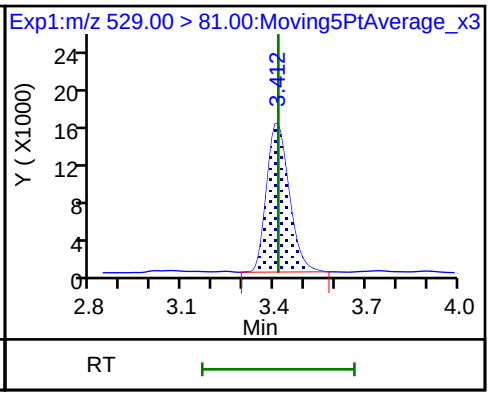
D 21 13C8 FOSA



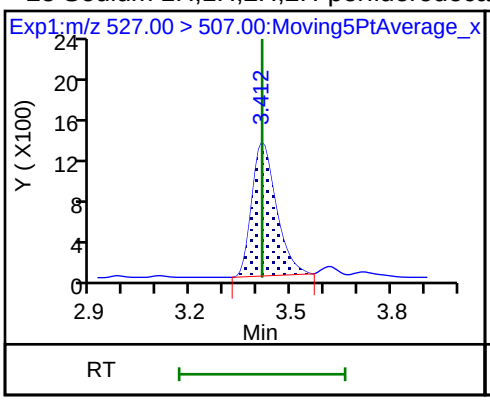
22 Perfluorooctane Sulfonamide (M)



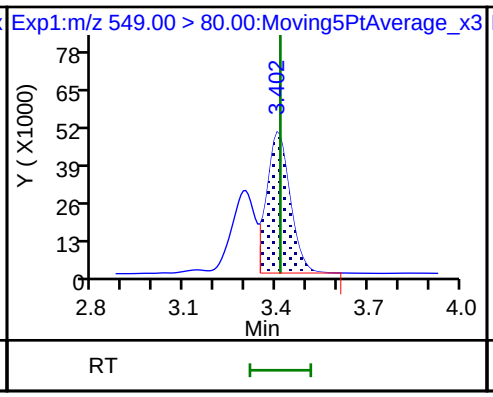
D 26 M2-8:2FTS



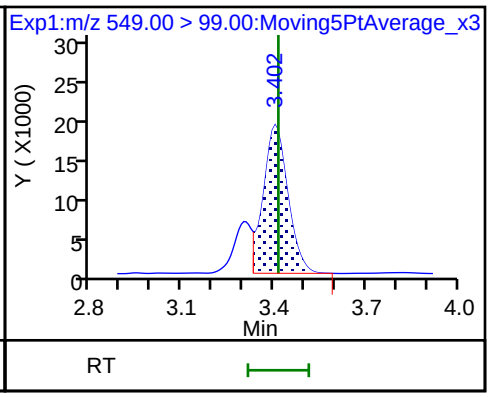
25 Sodium 1H,1H,2H,2H-perfluorodecan



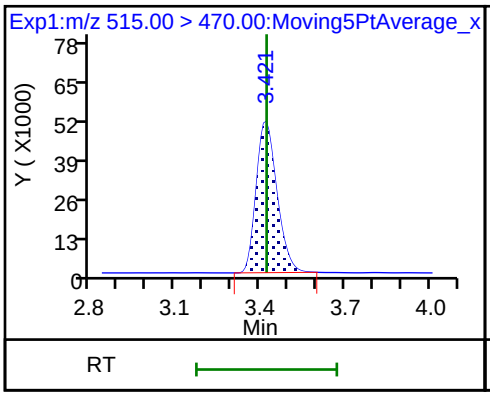
68 Perfluorononanesulfonic acid



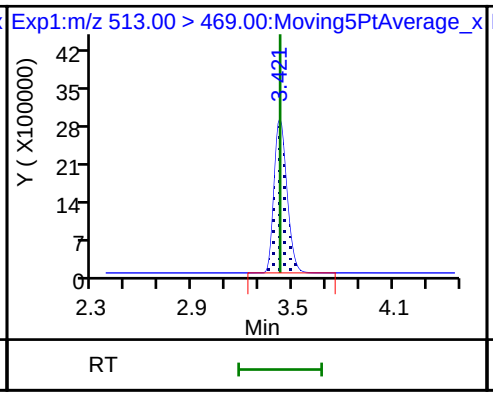
68 Perfluorononanesulfonic acid



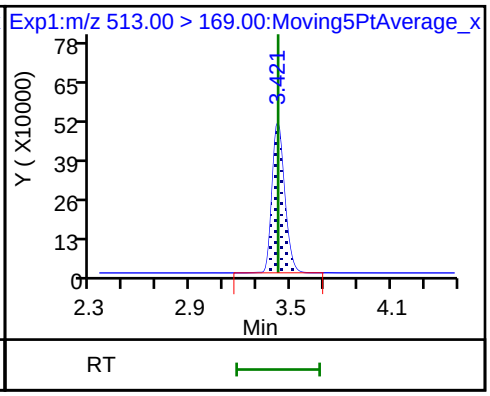
D 23 13C2 PFDA



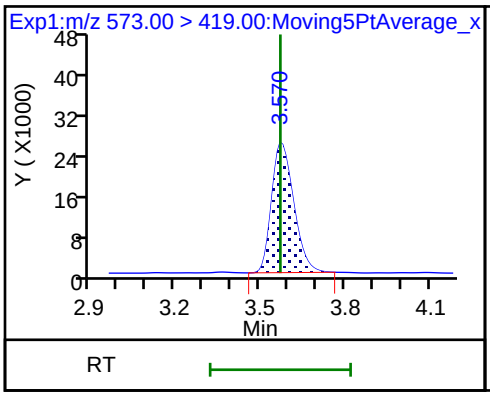
24 Perfluorodecanoic acid



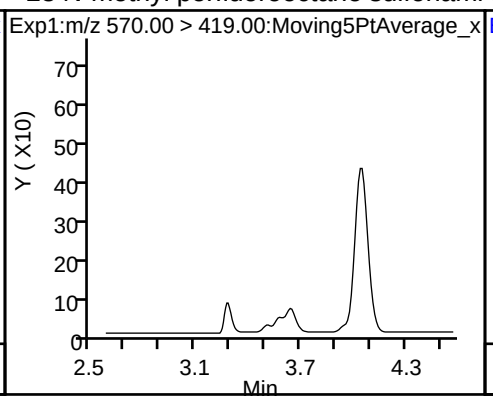
24 Perfluorodecanoic acid



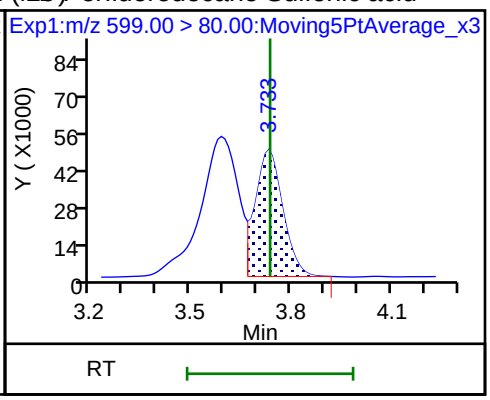
D 27 d3-NMeFOSAA



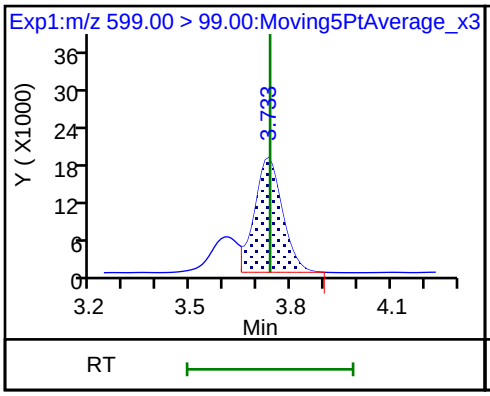
28 N-methyl perfluorooctane sulfonami (M)



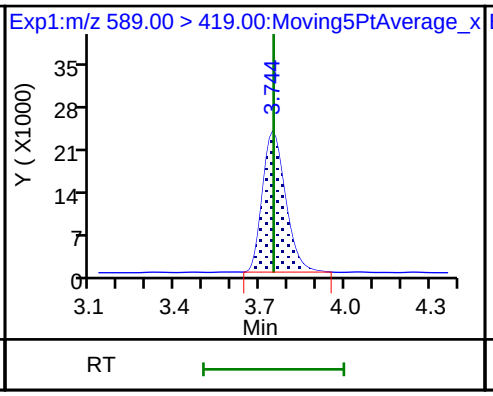
29 Perfluorodecane Sulfonic acid



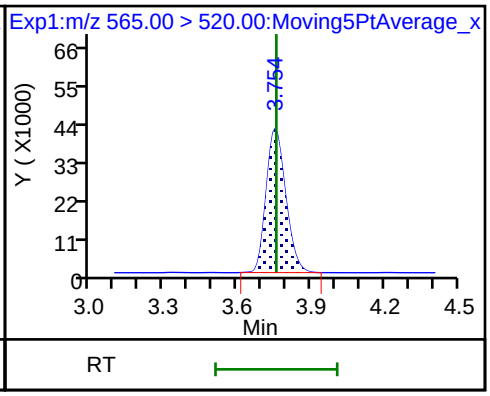
29 Perfluorodecane Sulfonic acid



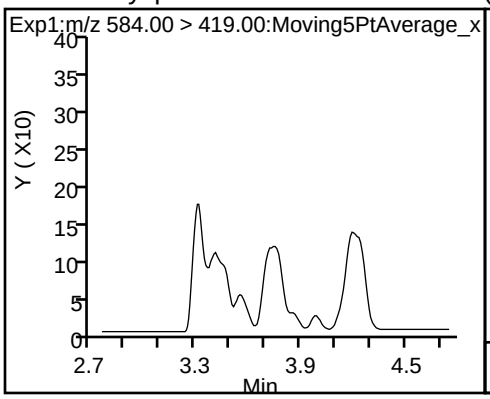
D 32 d5-NEtFOSAA



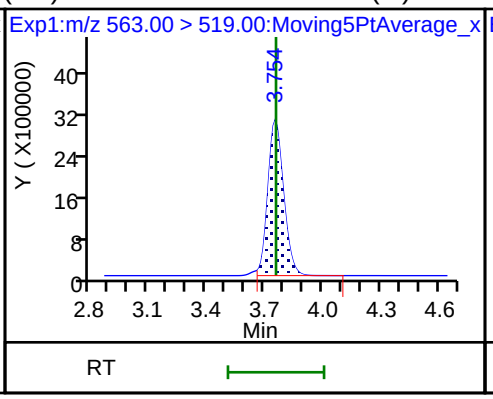
D 30 13C2 PFUnA



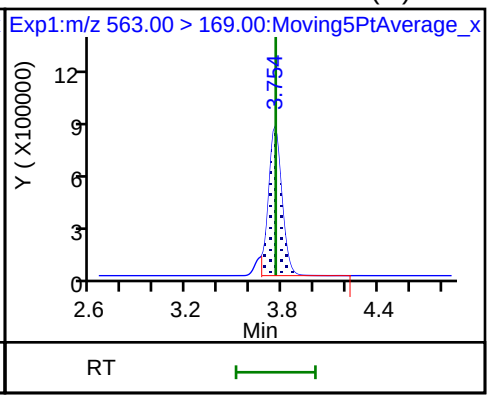
33 N-ethyl perfluorooctane sulfonamid (M)



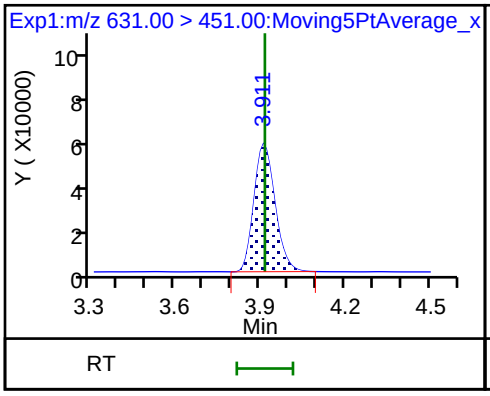
31 Perfluoroundecanoic acid (M)



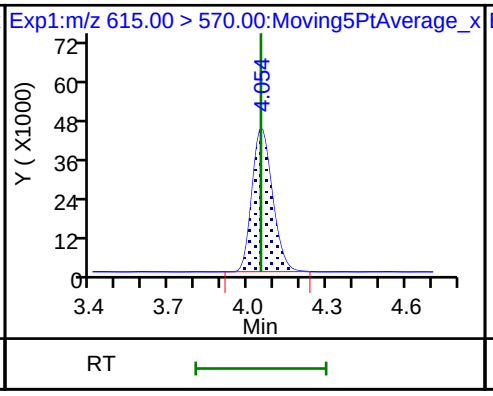
31 Perfluoroundecanoic acid (M)



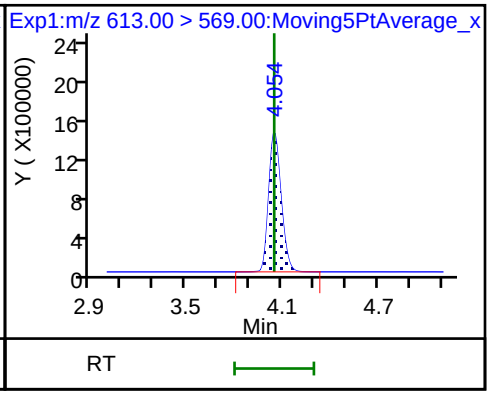
66 11-Chloroeicosafluoro-3-oxaundecan



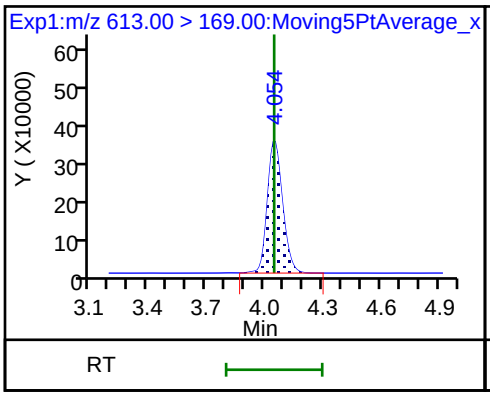
D 36 13C2 PFDoA



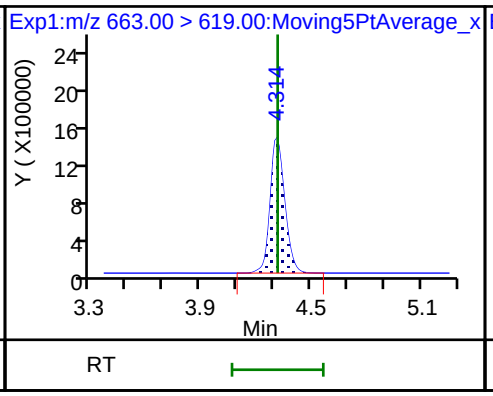
37 Perfluorododecanoic acid



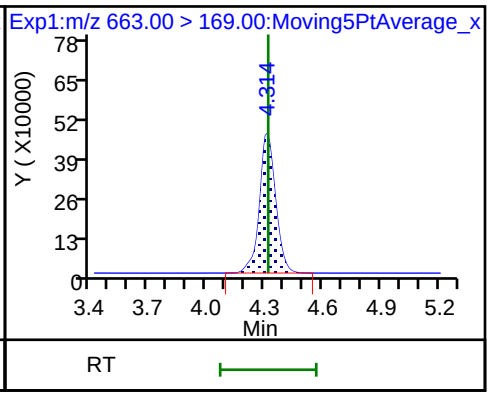
37 Perfluorododecanoic acid



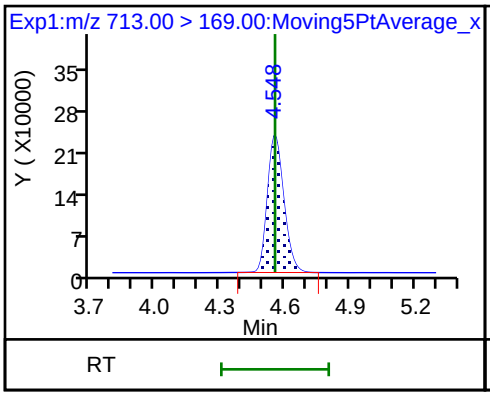
41 Perfluorotridecanoic acid



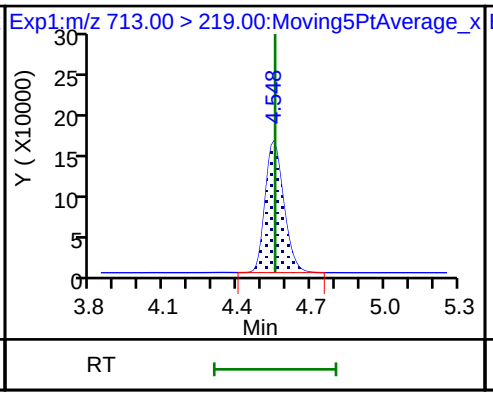
41 Perfluorotridecanoic acid



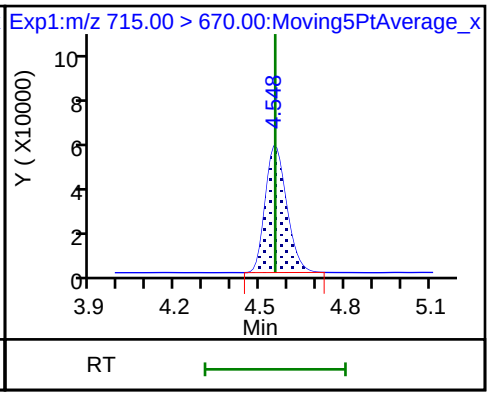
42 Perfluorotetradecanoic acid



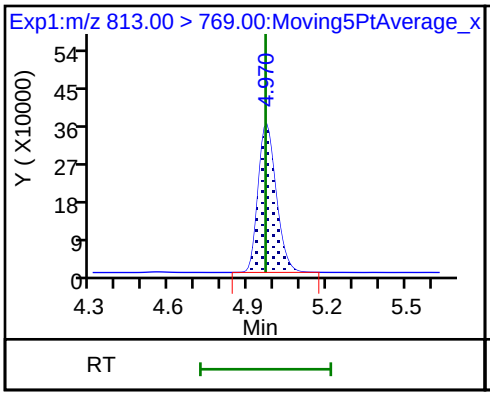
42 Perfluorotetradecanoic acid



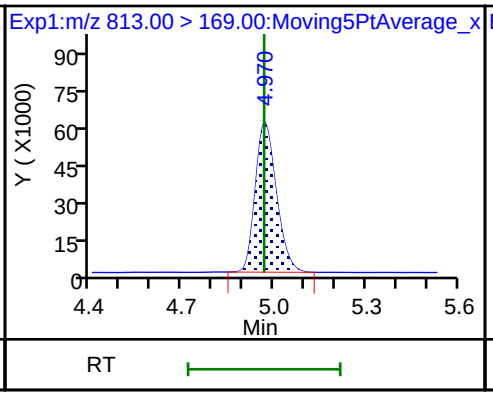
D 43 13C2-PFTeDA



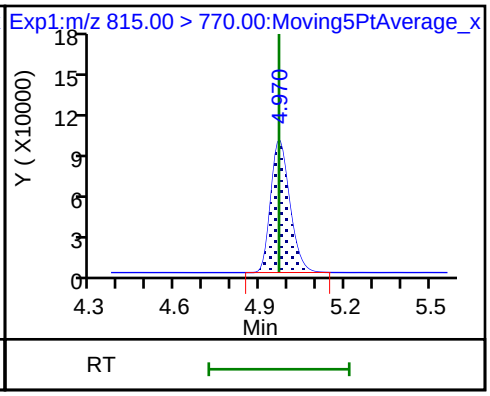
45 Perfluorohexadecanoic acid



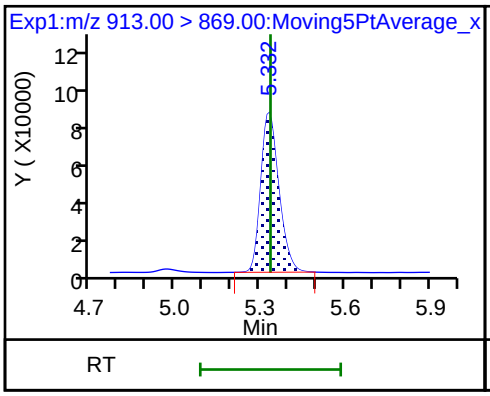
45 Perfluorohexadecanoic acid



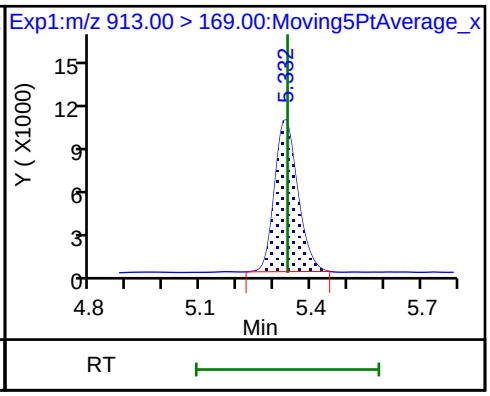
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MSD DL | Lab Sample ID: 320-38054-2 MSD DL

Matrix: Solid (Pre-Treatment) | Lab File ID: 2018.04.26LLA_056.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Pre-Prep | Date Extracted: 04/19/2018 18:33

Sample wt/vol: 2.02(g) | Date Analyzed: 04/26/2018 18:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220090 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-95-1	Perfluorononanoic acid (PFNA)	0.0939		0.055
335-76-2	Perfluorodecanoic acid (PFDA)	0.0856		0.055
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.894		0.055
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.160		0.055
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.903		0.14
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.344		0.055
39108-34-4	8:2FTS	0.719		0.55

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	63		25-150
STL00996	13C2 PFDA	64		25-150
STL00997	13C2 PFUnA	73		25-150
STL00998	13C2 PFDoA	54		25-150
STL00991	13C4 PFOS	56		25-150
STL01056	13C8 FOSA	66		25-150
STL02280	M2-8:2FTS	136		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_056.d
Lims ID: 320-38054-A-2-C MSD
Client ID:
Sample Type: MSD
Inject. Date: 26-Apr-2018 18:28:27 ALS Bottle#: 41 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38054-a-2-c msd 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:33:52 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:29:25

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.442	-0.001	1.000	14845	0.0699		699	7.0	
D 1 13C4 PFBA										M
217.00 > 172.00	1.441	1.446	-0.005	1.000	5719	0.001774		7.1	50.7	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	42266	0.0280		280	39.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.711	-0.008	0.557	31620	0.0152		60.9	638	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	22026	0.007408		83.8	79.5	
298.90 > 99.00	1.739	1.739	0.0	1.005	9253		2.38(1.25-3.74)		98.7	
D 47 13C3-PFBS										M
301.90 > 83.00	1.730	1.747	-0.017	1.000	883	0.0185		79.6	5.3	M
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	7029	0.0115		124	373	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.959	-0.009	1.000	8561	0.0251		107	81.3	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.993	1.994	-0.001	1.006	52613	0.0319		319	55.8	M
313.00 > 119.00	1.982	1.994	-0.012	1.000	4108		12.81(5.03-15.10)		42.1	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	2.003	-0.021	1.000	40557	0.0176		70.6	1010	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.016	-0.012	1.000	21425	0.007889		84.1	127	
349.00 > 99.00	2.004	2.016	-0.012	1.000	8963		2.39(1.36-4.07)		164	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.321	2.322	-0.001	1.000	38457	0.0252		252	48.6	R
363.00 > 169.00	2.321	2.322	-0.001	1.000	9559		4.02(1.13-3.40)		42.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.332	-0.011	1.000	38185	0.0171		68.3	1209	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.335	-0.001	1.000	40988	0.0200		218	87.2	
399.00 > 99.00	2.334	2.335	-0.001	1.000	12986		3.16(1.50-4.49)		82.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.345	-0.011	1.000	42836	0.0155		65.6	1406	
65 Adona										
377.00 > 251.00	2.372	2.374	-0.002	1.000	52829	0.0142		142	955	
377.00 > 85.00	2.372	2.374	-0.002	1.000	27207		1.94(0.84-2.53)		565	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.661	0.014	1.000	137808	0.0771		814	1045	
D 12 M2-6:2FTS										
429.00 > 81.00	2.675	2.667	0.008	1.000	25102	0.0524		221	333	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	18217	0.0128		134	89.4	
449.00 > 99.00	2.690	2.691	-0.001	1.000	4969		3.67(1.94-5.82)		110	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.691	-0.009		59917	0.0250			2692	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.691	-0.001	1.000	53971	0.0289		287	36.4	
413.00 > 169.00	2.682	2.691	-0.009	0.997	27737		1.95(0.84-2.52)		101	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.697	-0.007	1.000	40425	0.0182		72.7	1216	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.061	0.002	1.002	213471	0.1710		1710	671	
463.00 > 169.00	3.063	3.061	0.002	1.002	48551		4.40(1.90-5.69)		1364	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.056	3.061	-0.005	1.000	1922721	1.64		17720	9640	
499.00 > 99.00	3.056	3.061	-0.005	1.000	447069		4.30(2.31-6.93)		8034	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.065	-0.009	1.000	25689	0.0133		55.6	145	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.072	-0.016	1.000	29928	0.0157		62.6	1093	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.277	3.274	0.003	1.000	19835	0.009789		105	492	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.400	-0.006	1.000	1012849	0.6265		6265	220	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.408	-0.014	1.000	39956	0.0166		66.2	27.6	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.409	0.004	1.000	27358	0.0318		332	67.0	
549.00 > 99.00	3.413	3.409	0.004	1.000	12866		2.13(1.33-3.97)		164	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.418	-0.005	1.003	1301052	1.31		13666	51044	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.426	-0.022	1.000	18809	0.0326		136	184	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.427	-0.005	1.000	164172	0.1559		1559	710	
513.00 > 169.00	3.422	3.427	-0.005	1.000	29632		5.54(2.36-7.09)		453	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.436	-0.014	1.000	25518	0.0159		63.6	717	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.586	-0.004	1.000	15815	0.0174		69.5	179	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.593	3.587	0.006	1.003	4930	0.007814		78.1	74.4	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.737	3.742	-0.005	1.000	19777	0.0283		294	25.6	
599.00 > 99.00	3.737	3.742	-0.005	1.000	8428		2.35(1.39-4.16)		88.3	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.752	0.006	1.003	7040	0.0121		121	166	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.761	-0.014	1.000	15559	0.0173		69.3	431	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.761	-0.014	1.000	25399	0.0183		73.3	816	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.758	3.762	-0.004	1.003	1397970	1.63		16201	2825	M
563.00 > 169.00	3.758	3.762	-0.004	1.003	381356		3.67(2.12-6.36)		898	M
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.914	3.919	-0.005	1.000	28987	0.009260		98.3	685	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.051	-0.004	1.000	59869	0.0711		711	135	
613.00 > 169.00	4.047	4.051	-0.004	1.000	16051		3.73(2.13-6.40)		129	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.061	-0.014	1.000	20189	0.0135		54.0	308	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.319	-0.013	1.000	286944	0.2924		2924	483	
663.00 > 169.00	4.306	4.319	-0.013	1.000	101730		2.82(1.25-3.76)		867	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.553	-0.003	1.000	4525	0.0566		566	42.3	
713.00 > 219.00	4.540	4.553	-0.013	0.998	2717		1.67(0.71-2.13)		48.9	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.564	-0.014	1.000	7954	0.004193		16.8	96.3	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.976	-0.012	1.000	12684	0.004109		16.4	110	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 08:34:04 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_056.d

Injection Date: 26-Apr-2018 18:28:27 Instrument ID: A8_N

Lims ID: 320-38054-A-2-C MSD

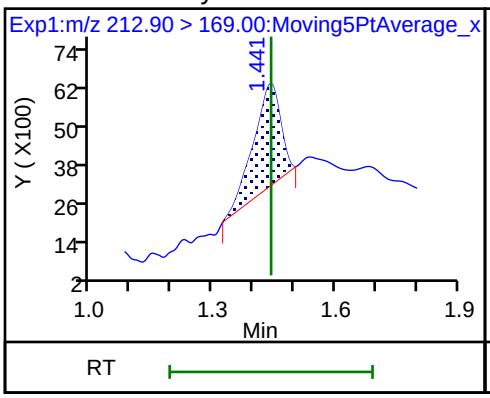
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 41 Worklist Smp#: 4

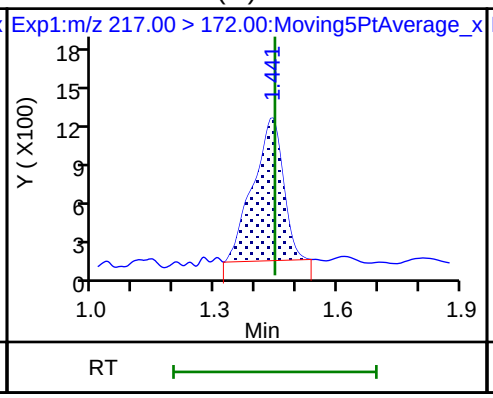
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

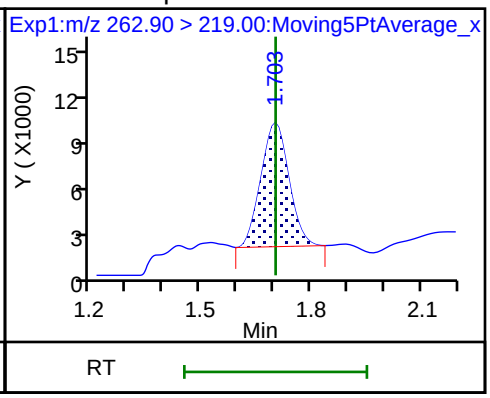
2 Perfluorobutyric acid



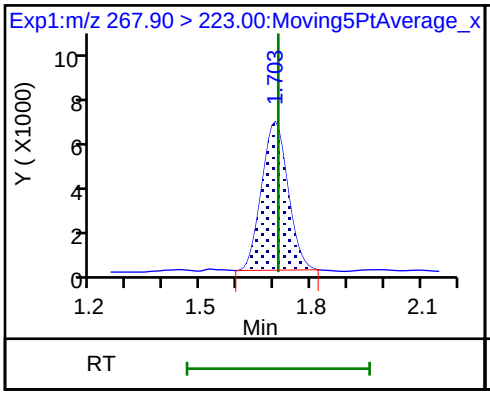
D 1 13C4 PFBA (M)



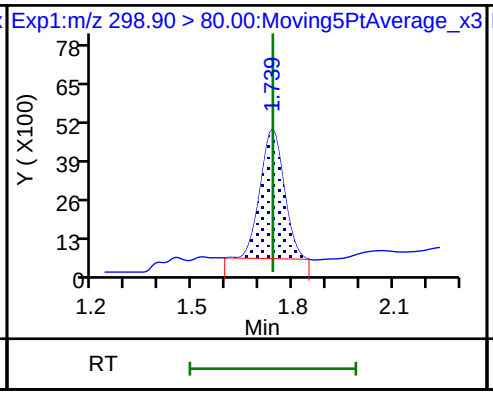
4 Perfluoropentanoic acid



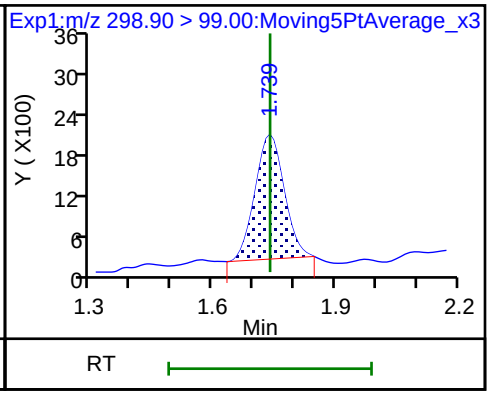
D 3 13C5-PFPeA



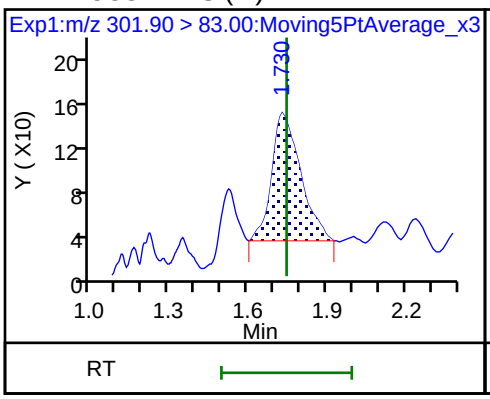
5 Perfluorobutanesulfonic acid



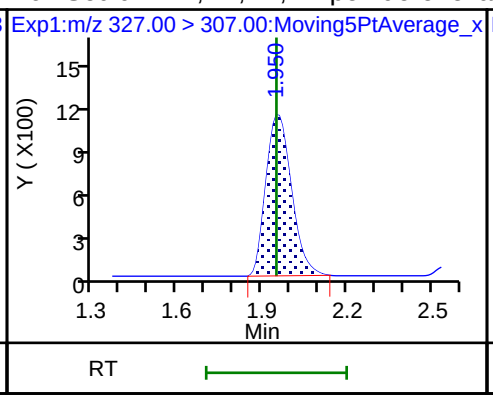
5 Perfluorobutanesulfonic acid



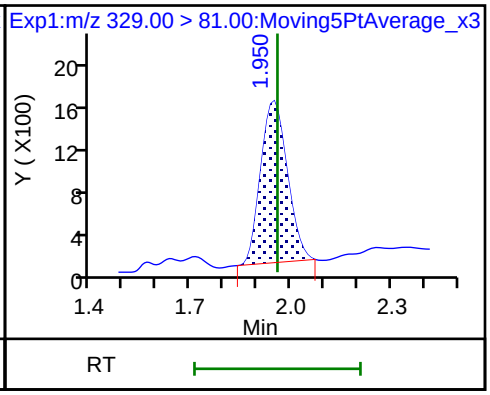
D 47 13C3-PFBS (M)



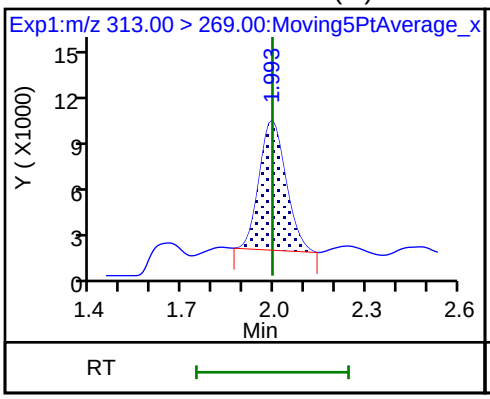
61 Sodium 1H,1H,2H,2H-perfluorohexa



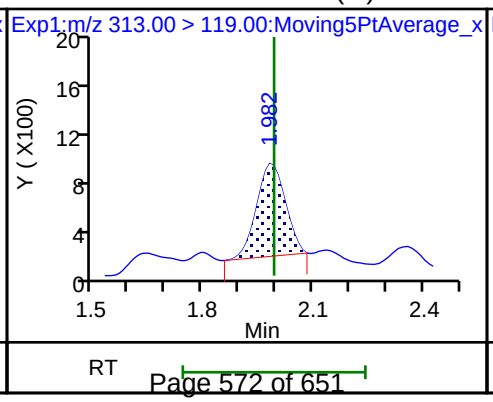
D 60 M2-4:2FTS



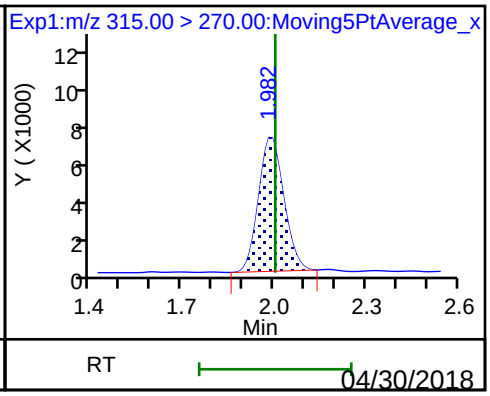
6 Perfluorohexanoic acid (M)



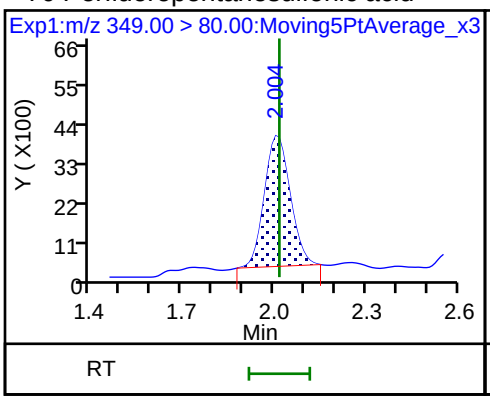
6 Perfluorohexanoic acid (M)



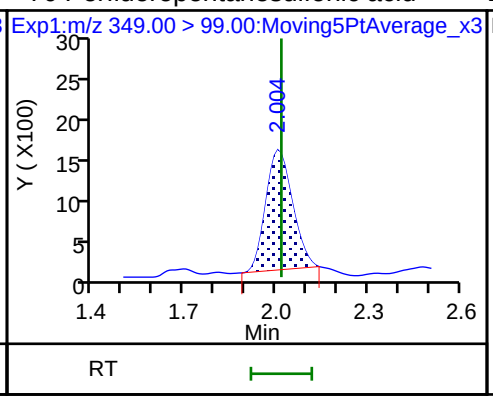
D 7 13C2 PFHxA



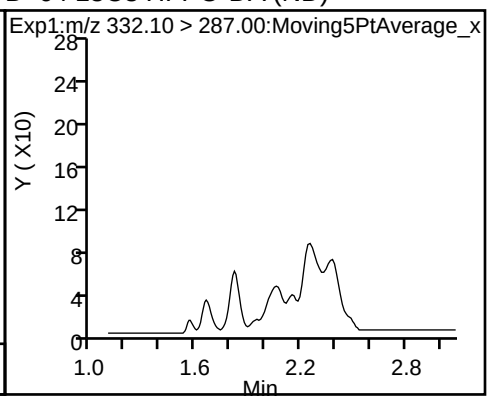
70 Perfluoropentanesulfonic acid



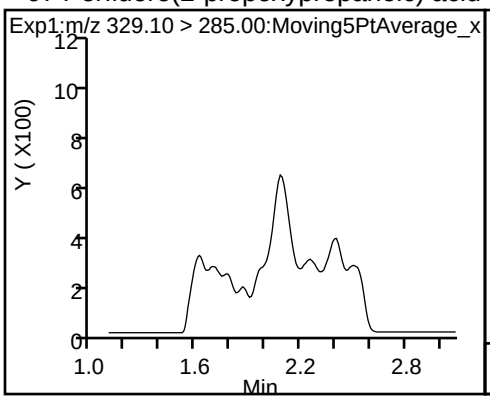
70 Perfluoropentanesulfonic acid



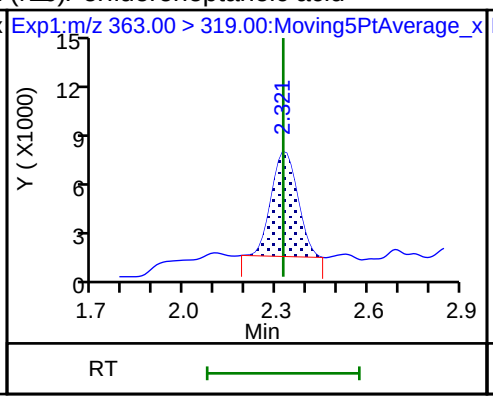
D 64 13C3 HFPO-DA (ND)



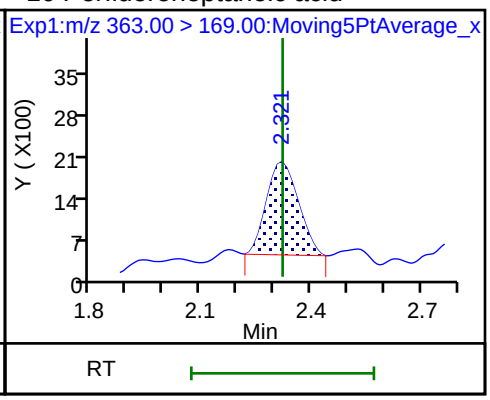
67 Perfluoro(2-propoxypropanoic) acid (ND)



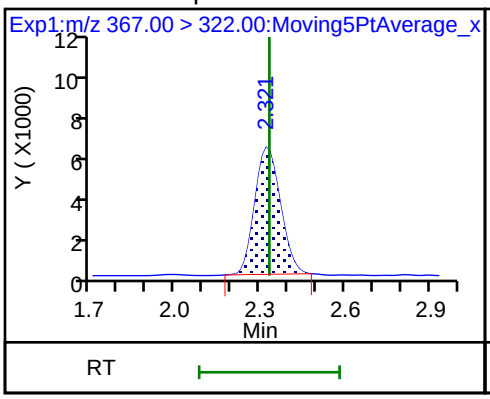
10 Perfluoroheptanoic acid



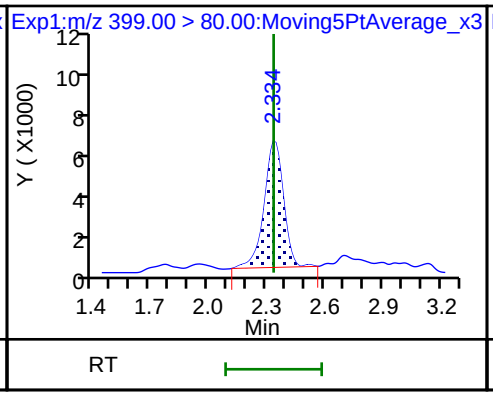
10 Perfluoroheptanoic acid



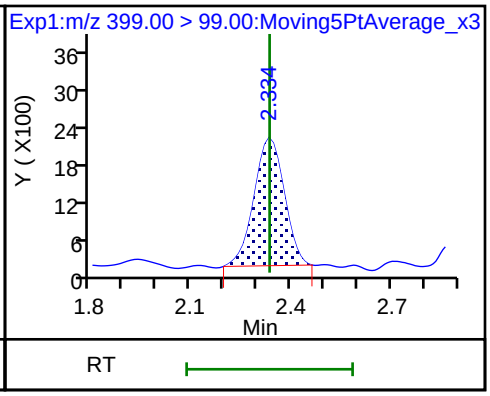
D 9 13C4-PFHpA



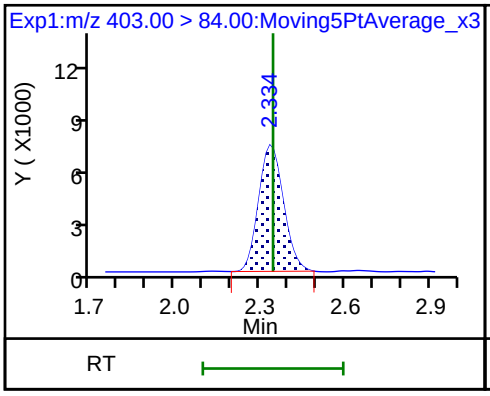
8 Perfluorohexanesulfonic acid



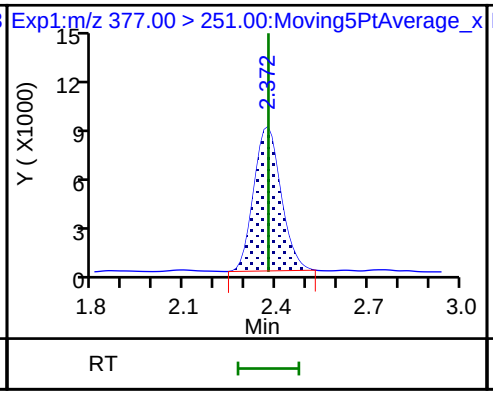
8 Perfluorohexanesulfonic acid



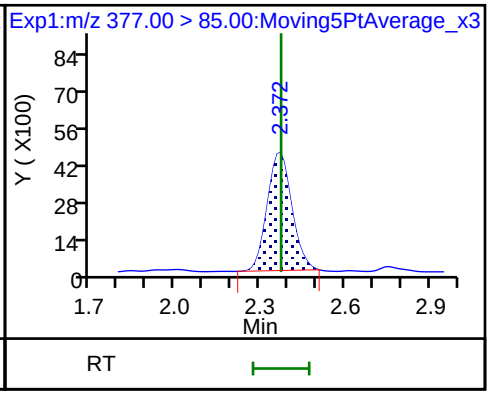
D 11 18O2 PFHxS



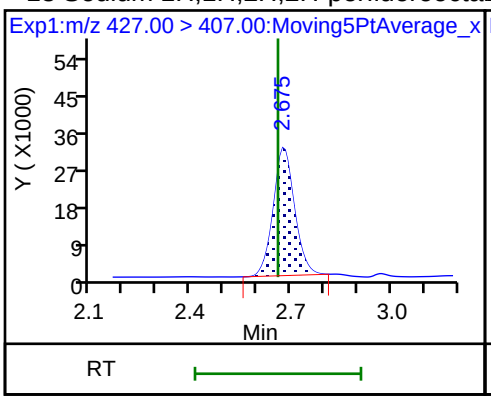
65 Adona



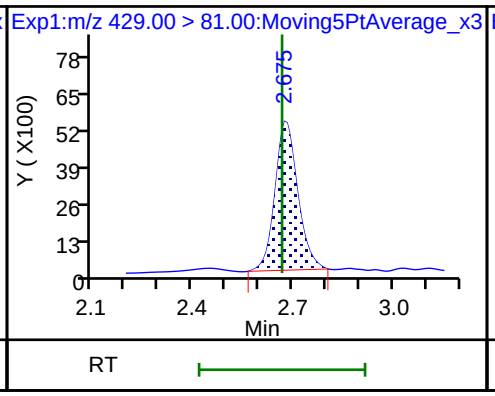
65 Adona



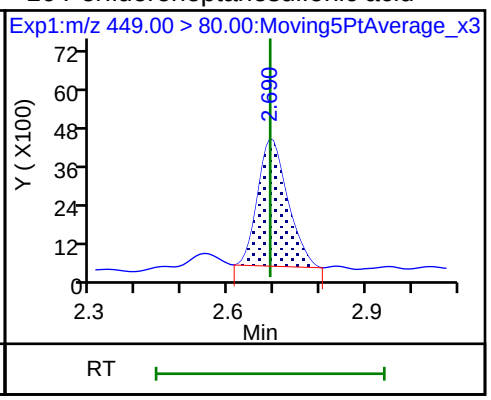
13 Sodium 1H,1H,2H,2H-perfluorooctane



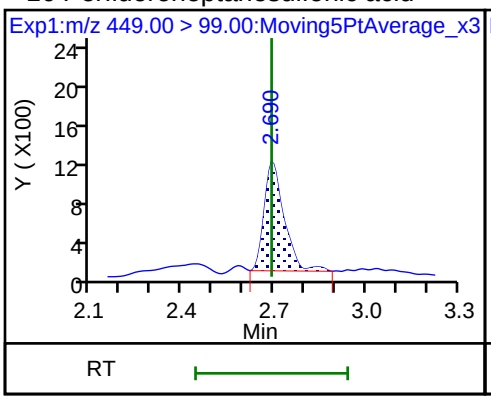
D 12 M2-6:2FTS



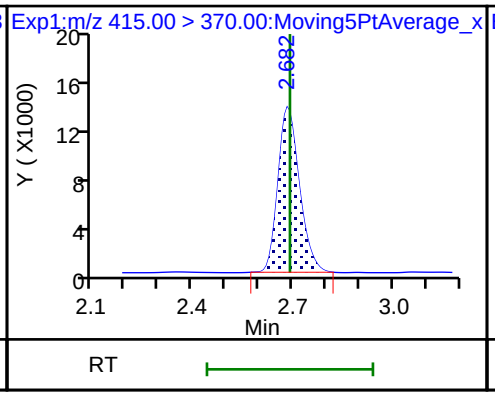
16 Perfluoroheptanesulfonic acid



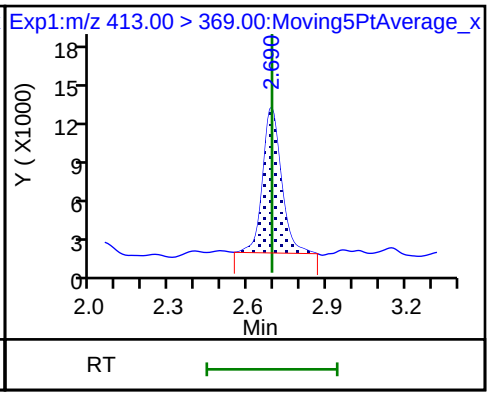
16 Perfluoroheptanesulfonic acid



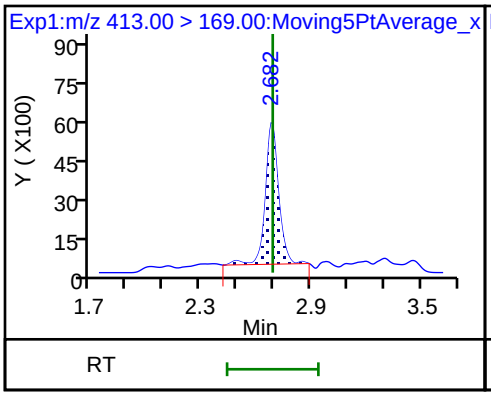
* 62 13C2-PFOA



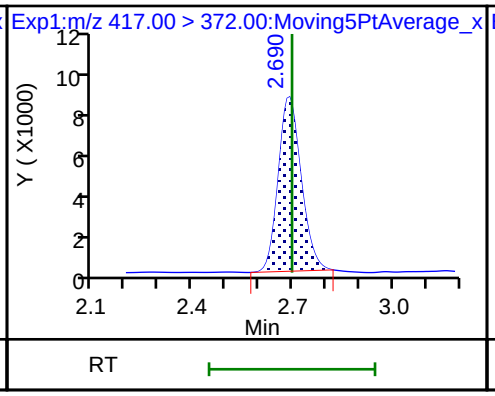
15 Perfluorooctanoic acid



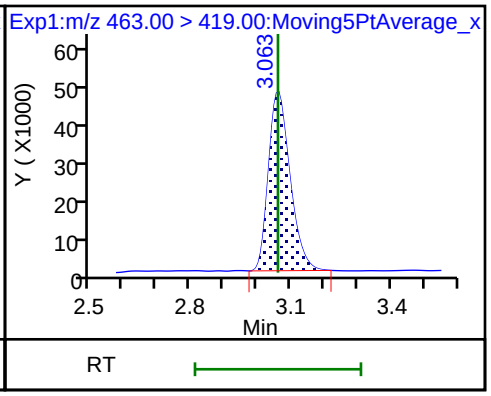
15 Perfluorooctanoic acid



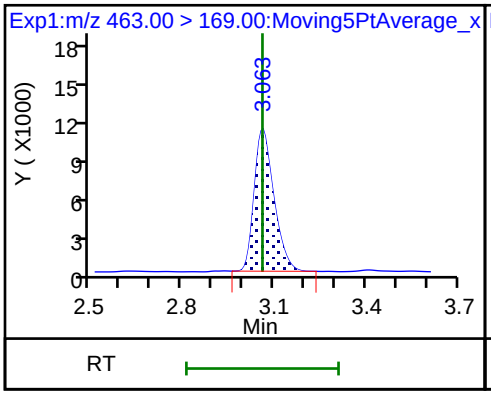
D 14 13C4 PFOA



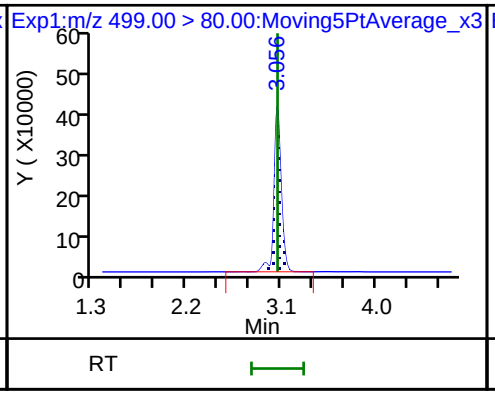
20 Perfluorononanoic acid



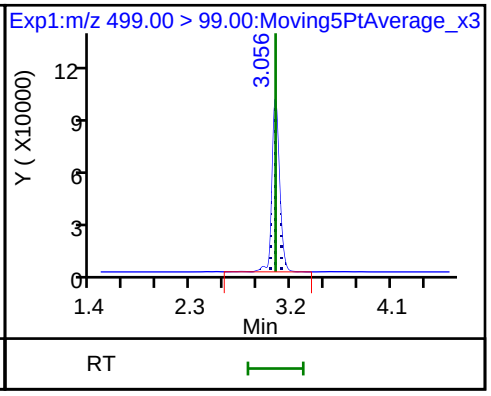
20 Perfluorononanoic acid



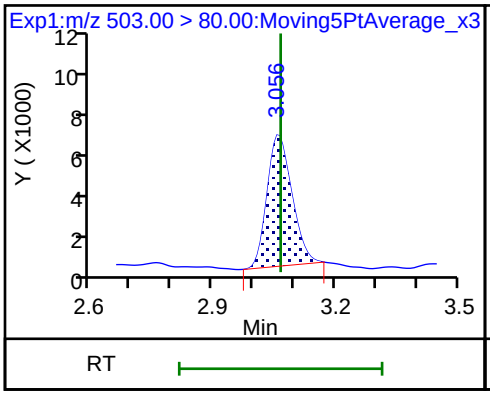
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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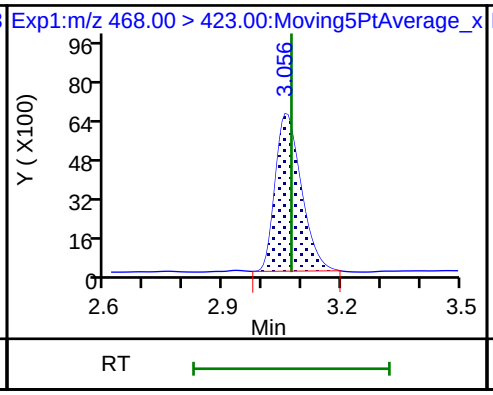
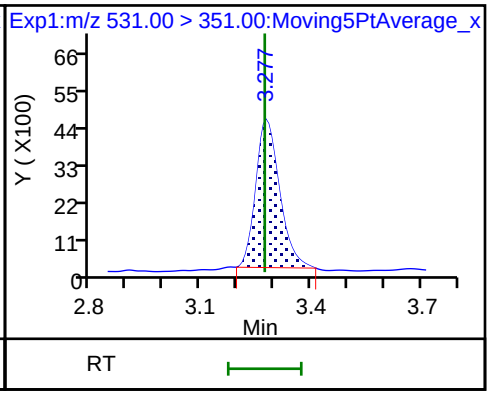
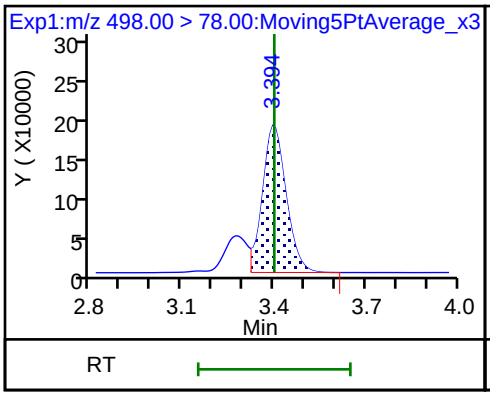


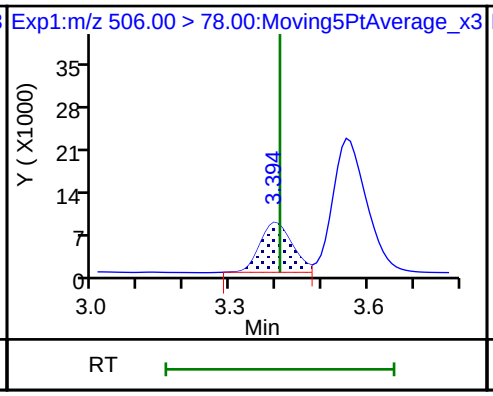
69 9-Chlorohexadecafluoro-3-oxanonane



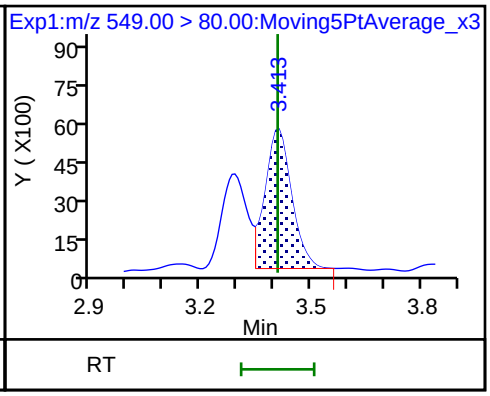
22 Perfluorooctane Sulfonamide



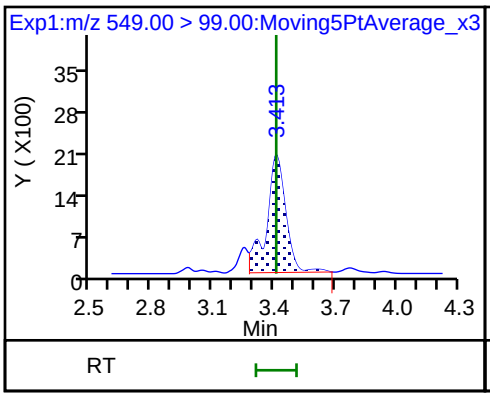
D 21 13C8 FOSA



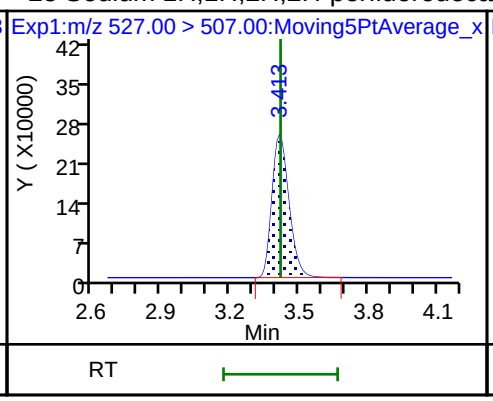
68 Perfluorononanesulfonic acid



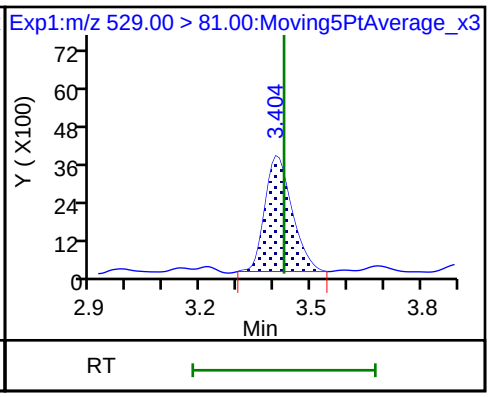
68 Perfluorononanesulfonic acid



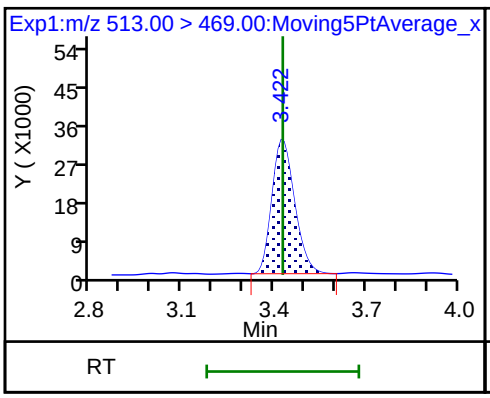
25 Sodium 1H,1H,2H,2H-perfluorodecane



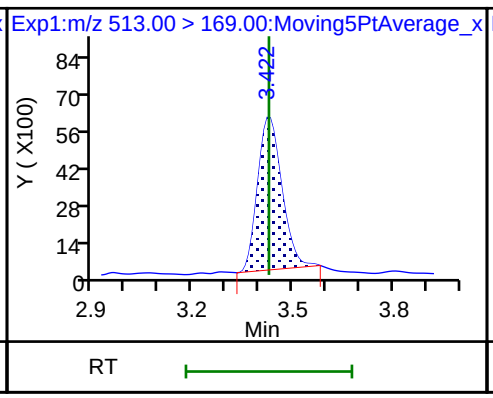
D 26 M2-8:2FTS



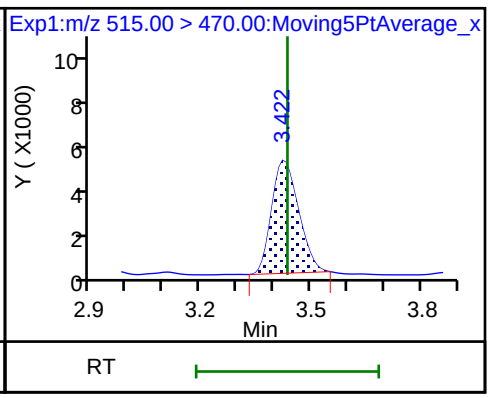
24 Perfluorodecanoic acid



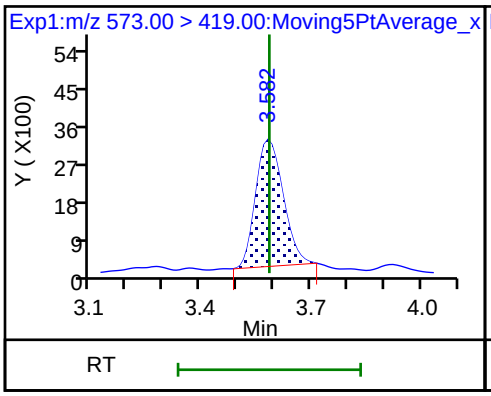
24 Perfluorodecanoic acid



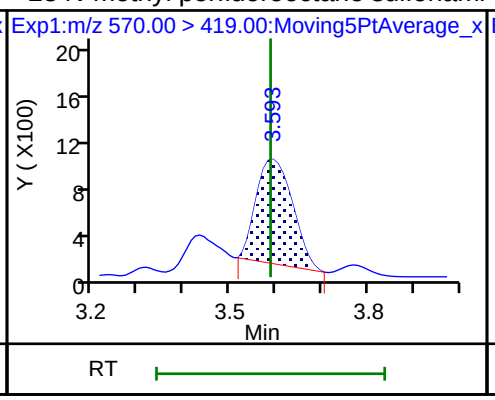
D 23 13C2 PFDA



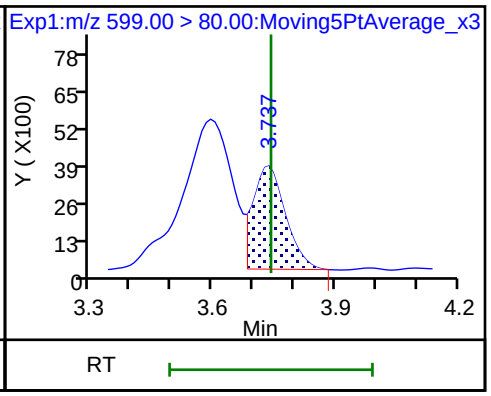
D 27 d3-NMeFOSAA



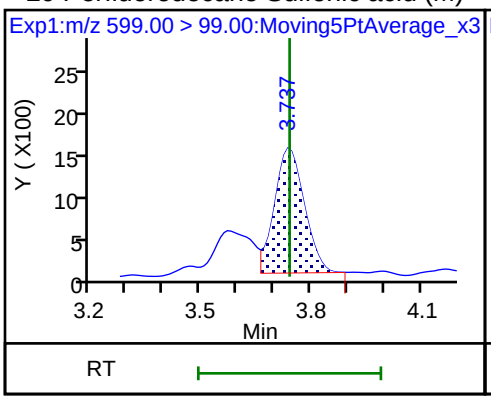
28 N-methyl perfluorooctane sulfonami



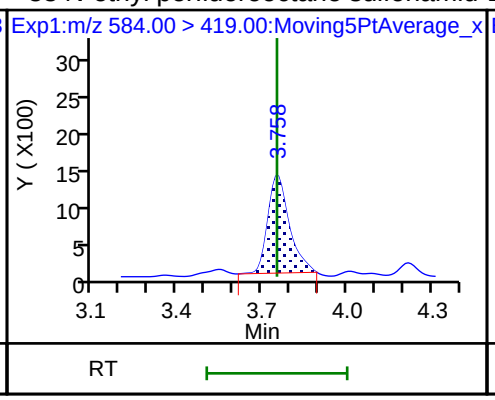
29 Perfluorodecane Sulfonic acid



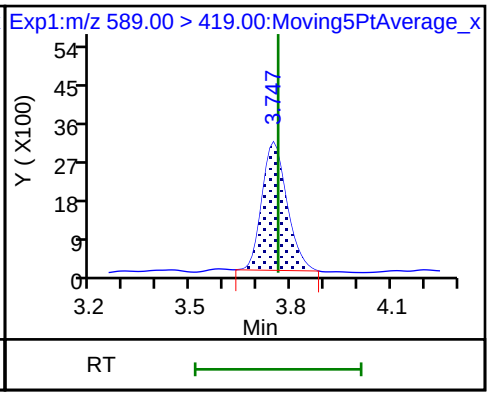
29 Perfluorodecane Sulfonic acid (M)



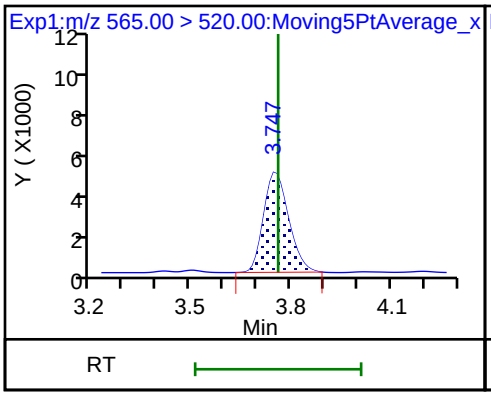
33 N-ethyl perfluorooctane sulfonamid



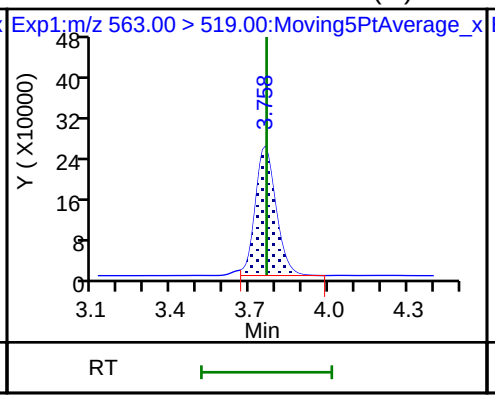
D 32 d5-NEtFOSAA



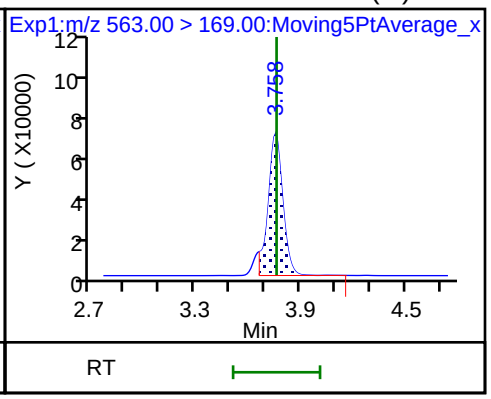
D 30 13C2 PFUnA



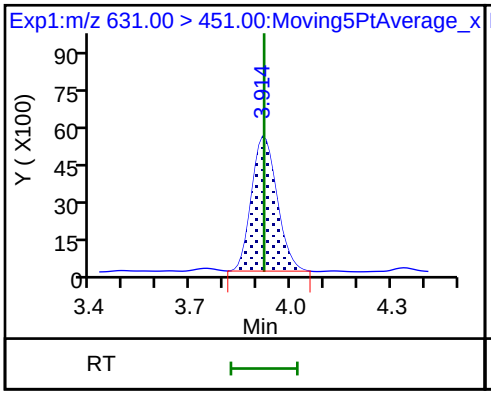
31 Perfluoroundecanoic acid (M)



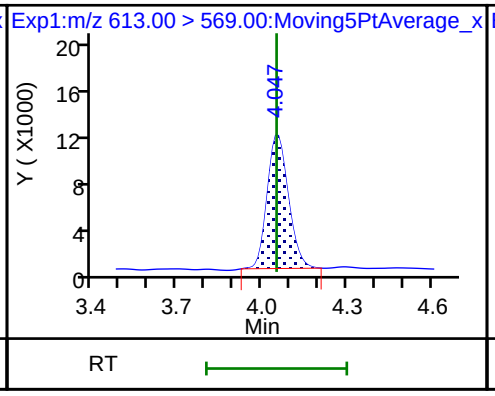
31 Perfluoroundecanoic acid (M)



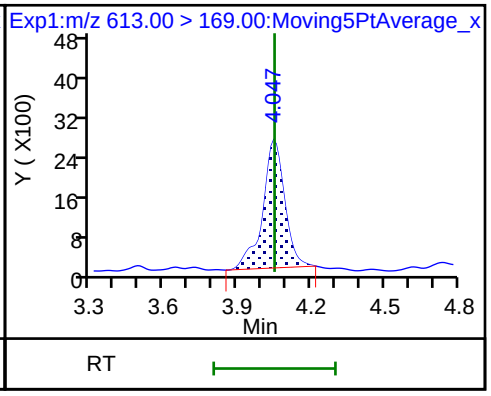
66 11-Chloroeicosafluoro-3-oxaundecan



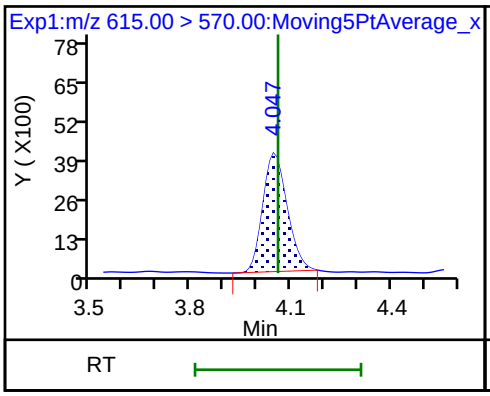
37 Perfluorododecanoic acid



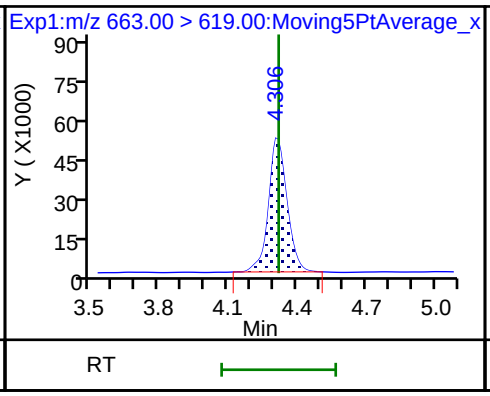
37 Perfluorododecanoic acid



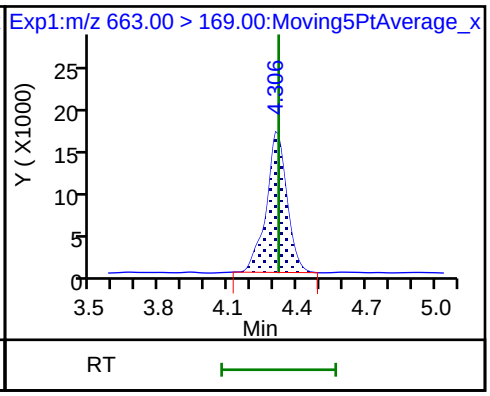
D 36 13C2 PFDoA



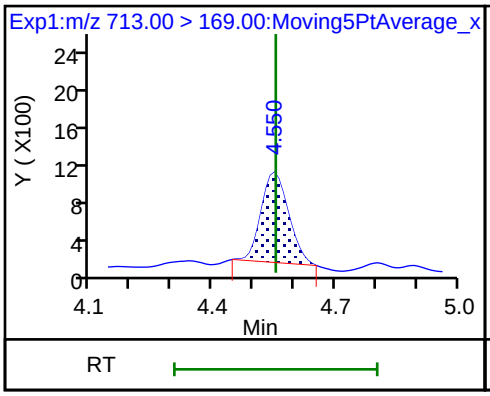
41 Perfluorotridecanoic acid



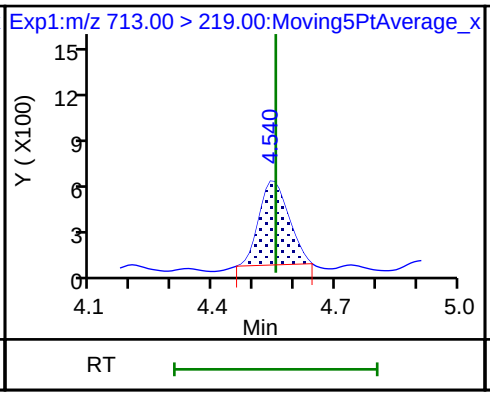
41 Perfluorotridecanoic acid



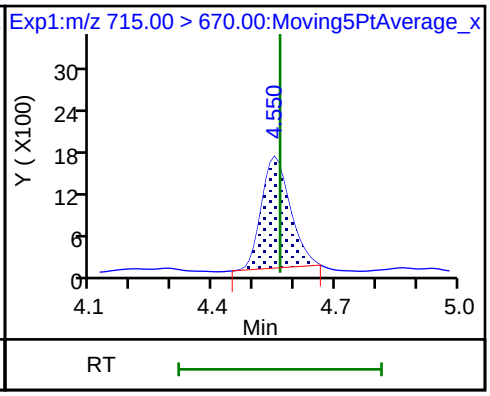
42 Perfluorotetradecanoic acid



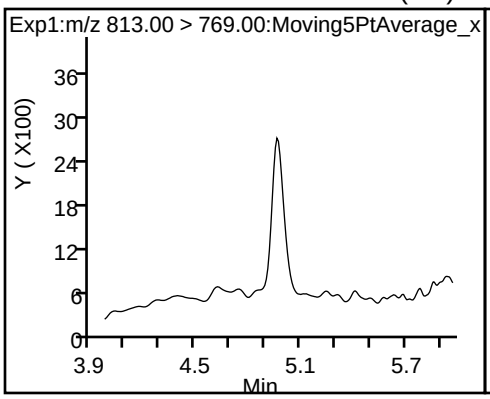
42 Perfluorotetradecanoic acid



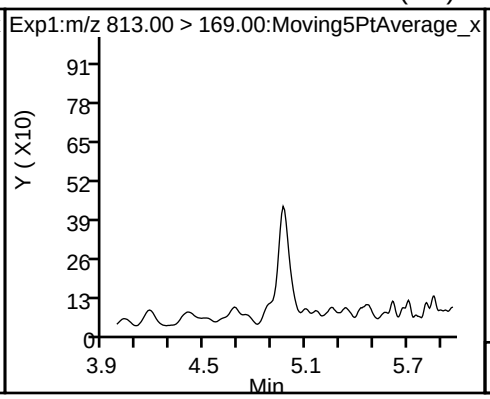
D 43 13C2-PFTeDA



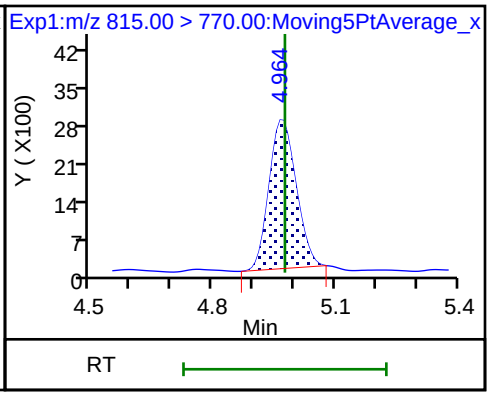
45 Perfluorohexadecanoic acid (ND)



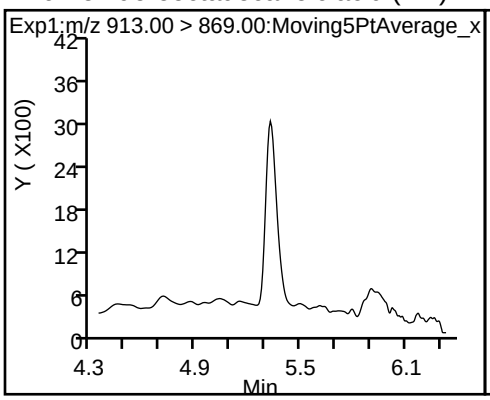
45 Perfluorohexadecanoic acid (ND)



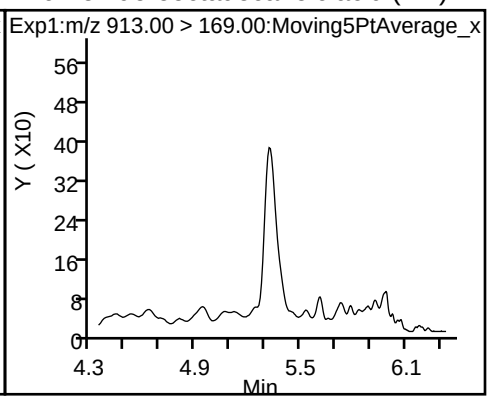
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

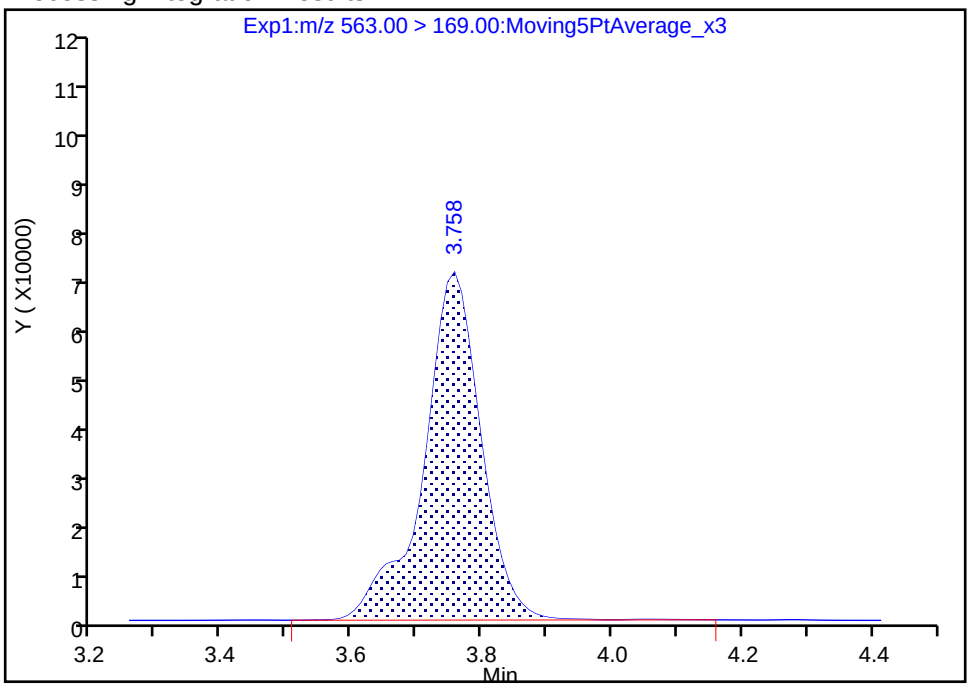
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_056.d
Injection Date: 26-Apr-2018 18:28:27 Instrument ID: A8_N
Lims ID: 320-38054-A-2-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 41 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

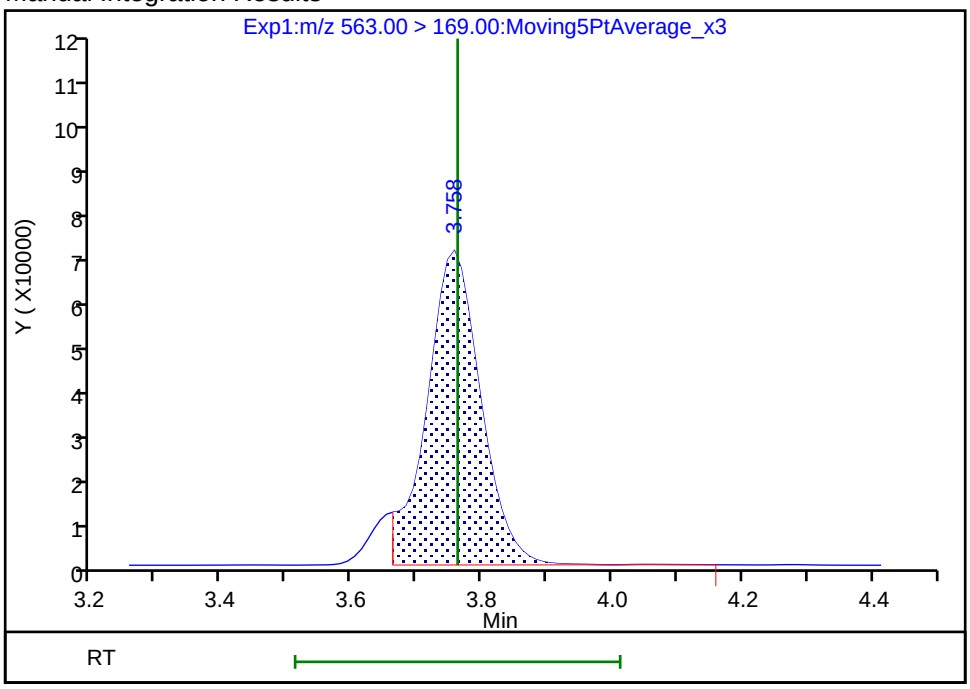
Processing Integration Results

RT: 3.76
Area: 408151
Amount: 1.656159
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 381356
Amount: 1.628223
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:31:06
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

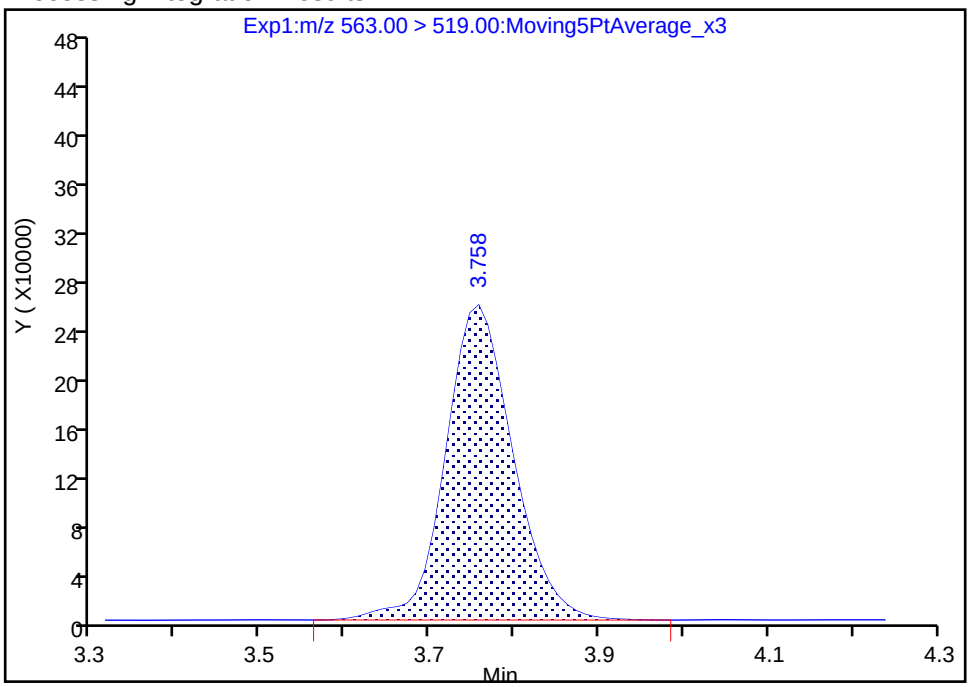
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_056.d
Injection Date: 26-Apr-2018 18:28:27 Instrument ID: A8_N
Lims ID: 320-38054-A-2-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 41 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

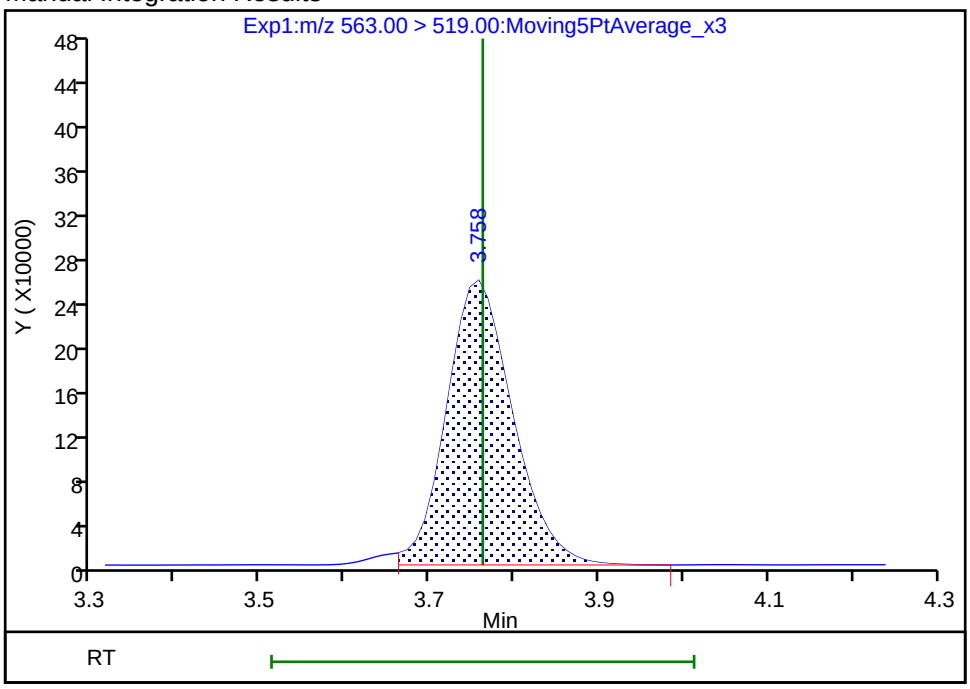
Processing Integration Results

RT: 3.76
Area: 1421956
Amount: 1.656159
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 1397970
Amount: 1.628223
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:31:07
Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP MSD DL2 | Lab Sample ID: 320-38054-2 MSD DL2

Matrix: Solid (Post-Treatment) | Lab File ID: 2018.04.26LLA_059.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: TOPS Post-Prep | Date Extracted: 04/19/2018 19:05

Sample wt/vol: 2.05(g) | Date Analyzed: 04/26/2018 18:51

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220090 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	1.88		0.054
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.36		0.054
307-24-4	Perfluorohexanoic acid (PFHxA)	2.97		0.054
375-85-9	Perfluoroheptanoic acid (PFHpA)	4.01		0.054
335-67-1	Perfluorooctanoic acid (PFOA)	1.83		0.054
375-95-1	Perfluorononanoic acid (PFNA)	1.59		0.054
335-76-2	Perfluorodecanoic acid (PFDA)	0.833		0.054
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10		0.054
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.693		0.14

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	59		25-150
STL01893	13C5 PFPeA	57		25-150
STL00993	13C2 PFHxA	64		25-150
STL01892	13C4-PFHpA	58		25-150
STL00990	13C4 PFOA	68		25-150
STL00995	13C5 PFNA	56		25-150
STL00996	13C2 PFDA	61		25-150
STL00997	13C2 PFUnA	75		25-150
STL00991	13C4 PFOS	63		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_059.d
Lims ID: 320-38054-A-2-F MSD
Client ID:
Sample Type: MSD
Inject. Date: 26-Apr-2018 18:51:55 ALS Bottle#: 44 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38054-a-2-f msd 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 08:33:52 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK027

First Level Reviewer: westendorfc Date: 27-Apr-2018 08:33:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.442	0.0	1.004	6007730	3.48		34809	3667	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.446	-0.010	1.000	46468	0.0147		58.8	426	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	8656667	6.22		62172	10248	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.711	-0.008	0.556	29208	0.0143		57.4	718	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	25090	NR		0.0	78.4	
298.90 > 99.00	1.739	1.739	0.0	1.000	8807		2.85(1.25-3.74)		69.0	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.994	-0.001	1.006	8036759	5.49		54923	12296	
313.00 > 119.00	1.993	1.994	-0.001	1.006	733413		10.96(5.03-15.10)		5692	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	2.003	-0.021	1.000	36001	0.0160		63.9	1009	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.016	-0.011	1.000	22766	NR		0.0	118	
349.00 > 99.00	2.005	2.016	-0.011	1.000	10610		2.15(1.36-4.07)		129	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.322	-0.001	1.000	9450046	7.41		74103	11254	
363.00 > 169.00	2.321	2.322	-0.001	1.000	3667042		2.58(1.13-3.40)		18787	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.332	-0.011	1.000	31853	0.0145		58.1	631	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.335	-0.001	1.000	77512	0.0406		443	63.8	
399.00 > 99.00	2.334	2.335	-0.001	1.000	30080		2.58(1.50-4.49)		73.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.345	-0.011	1.000	39890	0.0147		62.3	1581	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.683	2.667	0.016	1.000	17665	0.0376		158	210	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.691	0.007	1.000	19042	0.0120		126	96.6	
449.00 > 99.00	2.698	2.691	0.007	1.000	4648		4.10(1.94-5.82)		84.7	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.691	-0.001		58718	0.0250			2145	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.691	-0.001	1.000	5811137	3.38		33567	5807	
413.00 > 169.00	2.690	2.691	-0.001	1.000	3003652		1.93(0.84-2.52)		10950	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.697	-0.007	1.000	37180	0.0171		68.3	1313	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.061	0.002	1.000	3219936	2.93		29333	14774	
463.00 > 169.00	3.063	3.061	0.002	1.000	798311		4.03(1.90-5.69)		22389	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.061	0.002	1.000	1663640	1.28		13798	9433	
499.00 > 99.00	3.057	3.061	-0.004	0.998	389820		4.27(2.31-6.93)		5180	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.065	-0.002	1.000	28544	0.0151		63.0	185	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.072	-0.009	1.000	26319	0.0141		56.2	1174	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.277	3.274	0.003	1.000	17710	0.007866		84.4	313	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.408	-0.013	1.000	30600	0.0129		51.7	736	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.409	-0.005	1.000	27368	0.0287		299	92.2	
549.00 > 99.00	3.413	3.409	0.004	1.003	10218		2.68(1.33-3.97)		109	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.426	-0.013	1.000	7541	0.0133		55.7	47.8	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.427	-0.004	0.997	1530385	1.54		15399	7459	
513.00 > 169.00	3.423	3.427	-0.004	0.997	248270		6.16(2.36-7.09)		4826	
D 23 13C2 PFDA										
515.00 > 470.00	3.432	3.436	-0.004	1.000	24085	0.0153		61.2	1203	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.586	-0.004	1.000	11221	0.0126		50.3	146	
29 Perfluorodecane Sulfonic acid										M
599.00 > 80.00	3.737	3.742	-0.005	1.000	28151	0.0363		377	36.1	
599.00 > 99.00	3.737	3.742	-0.005	1.000	8942		3.15(1.39-4.16)		150	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.761	-0.014	1.000	19802	0.0225		90.0	465	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.761	-0.003	1.000	25349	0.0187		74.7	786	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.758	3.762	-0.004	1.000	1740457	2.03		20210	4326	M
563.00 > 169.00	3.758	3.762	-0.004	1.000	483074		3.60(2.12-6.36)		1493	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.914	3.919	-0.005	1.000	23777	0.006836		72.6	399	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.051	0.006	1.000	713339	0.7783		7783	1323	
613.00 > 169.00	4.047	4.051	-0.004	0.997	176330		4.05(2.13-6.40)		1689	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.061	-0.004	1.000	21972	0.0150		59.9	346	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.319	-0.002	1.000	758603	0.7102		7102	1343	
663.00 > 169.00	4.317	4.319	-0.002	1.000	260064		2.92(1.25-3.76)		2005	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.553	-0.002	1.000	113530	0.3858		3858	926	
713.00 > 219.00	4.551	4.553	-0.002	1.000	78997		1.44(0.71-2.13)		1530	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.564	-0.013	1.000	29294	0.0158		63.0	341	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.976	-0.003	1.000	162863	0.0834		828	152	
813.00 > 169.00	4.973	4.976	-0.003	1.000	25458		6.40(2.86-8.58)		189	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.976	-0.003	1.000	40675	0.0134		53.8	363	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.334	5.337	-0.003	1.000	34472	0.0211		211	35.0	
913.00 > 169.00	5.334	5.337	-0.003	1.000	3236		10.65(3.83-11.48)		36.9	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 08:34:14 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_059.d

Injection Date: 26-Apr-2018 18:51:55 Instrument ID: A8_N

Lims ID: 320-38054-A-2-F MSD

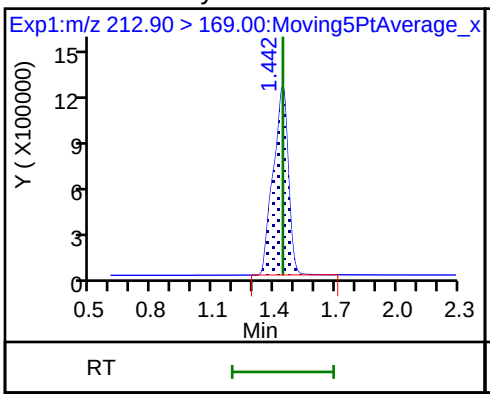
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 44 Worklist Smp#: 7

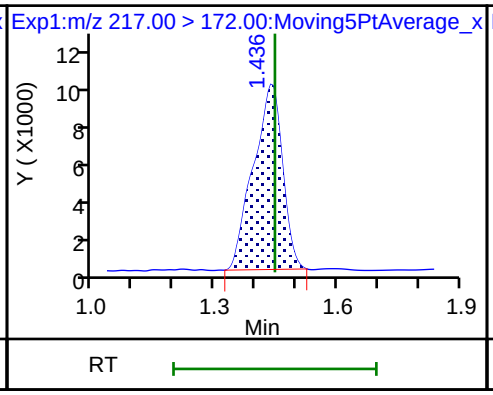
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

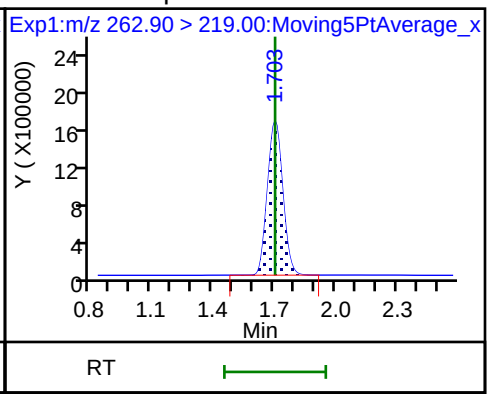
2 Perfluorobutyric acid



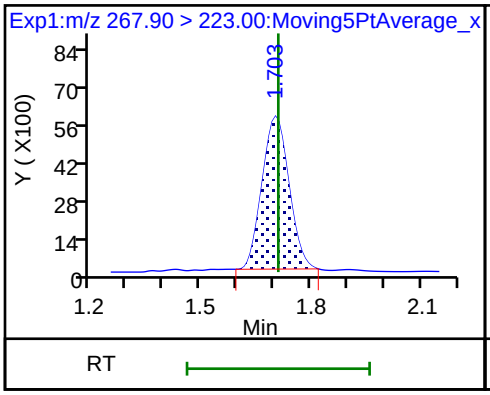
D 1 13C4 PFBA



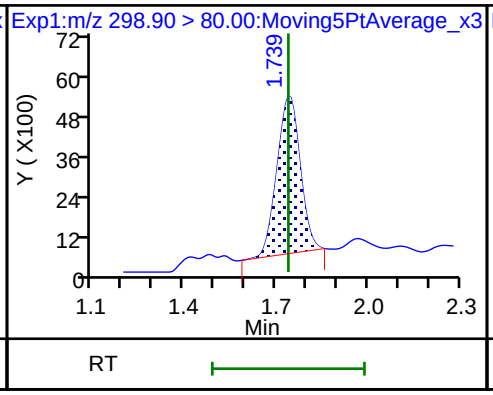
4 Perfluoropentanoic acid



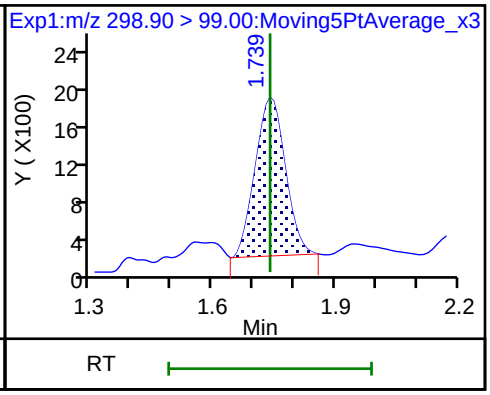
D 3 13C5-PFPeA



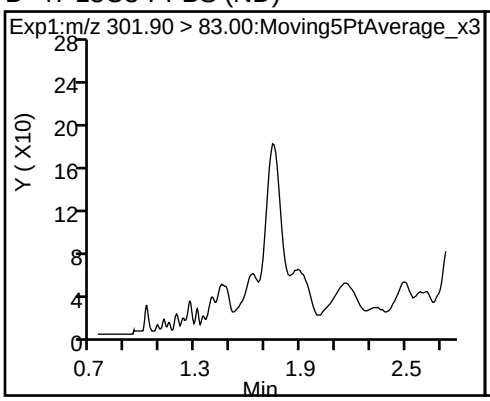
5 Perfluorobutanesulfonic acid



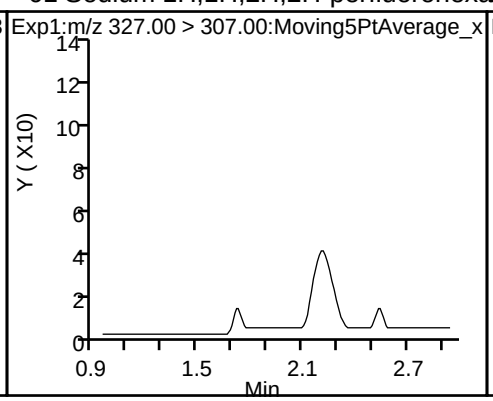
5 Perfluorobutanesulfonic acid



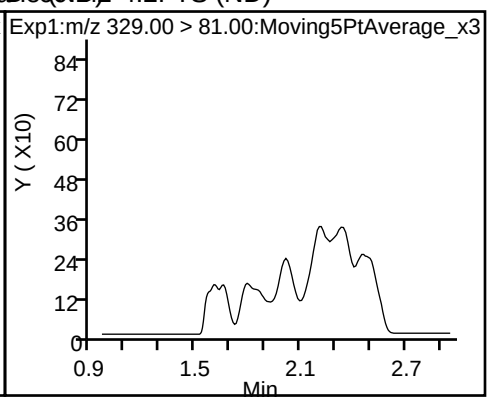
D 47 13C3-PFBS (ND)



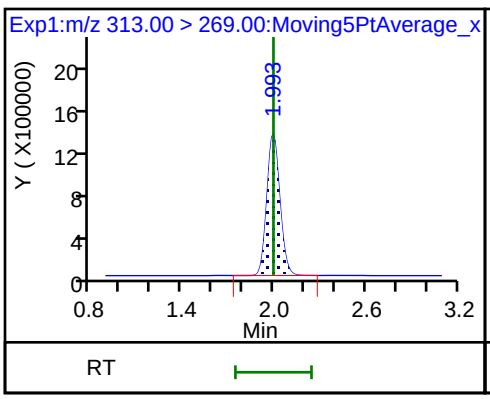
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (NM)



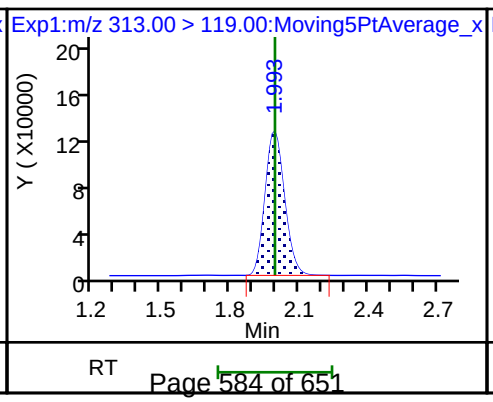
D 60 (NM) 4:2FTS (ND)



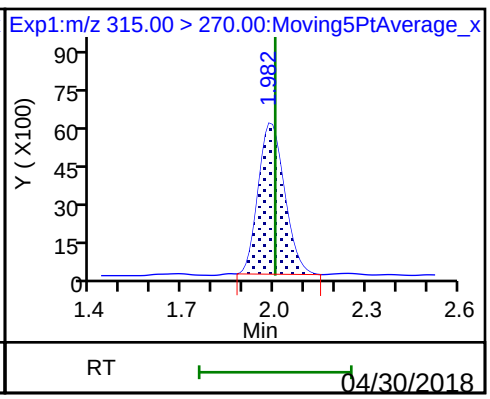
6 Perfluorohexanoic acid



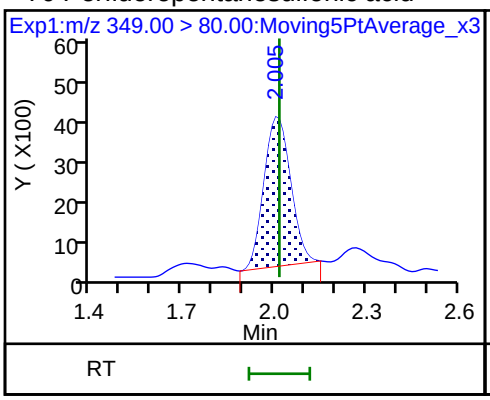
6 Perfluorohexanoic acid



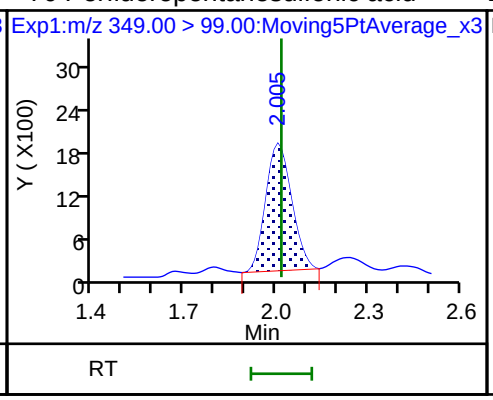
D 7 13C2 PFHxA



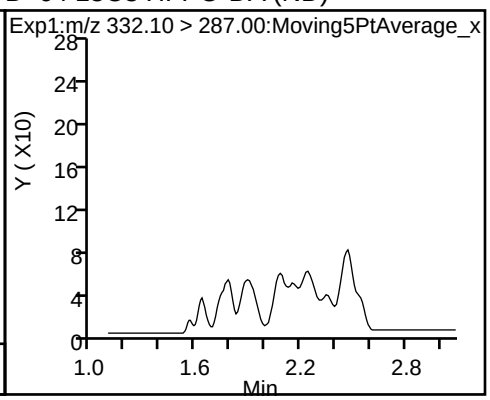
70 Perfluoropentanesulfonic acid



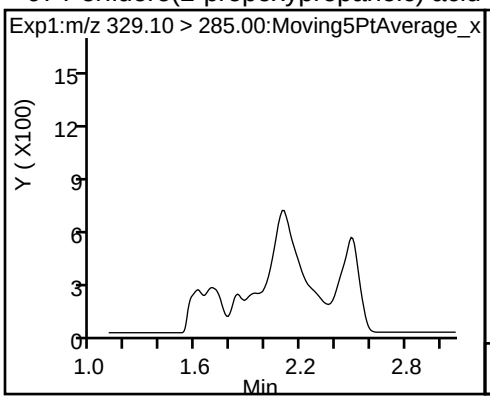
70 Perfluoropentanesulfonic acid



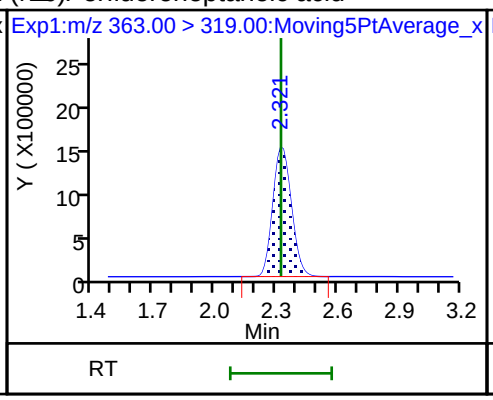
D 64 13C3 HFPO-DA (ND)



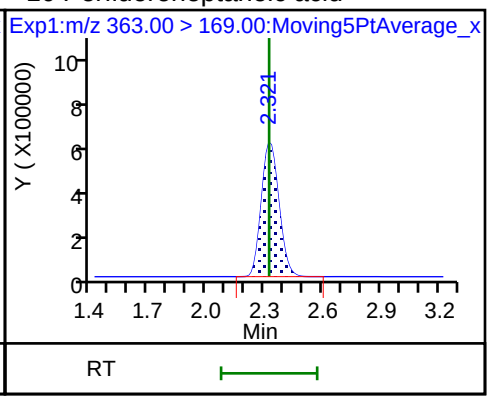
67 Perfluoro(2-propoxypropanoic) acid (ND)



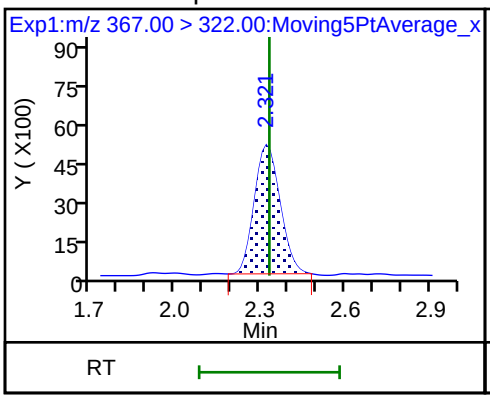
10 Perfluoroheptanoic acid



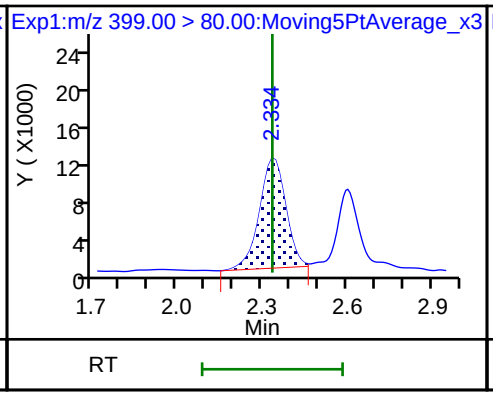
10 Perfluoroheptanoic acid



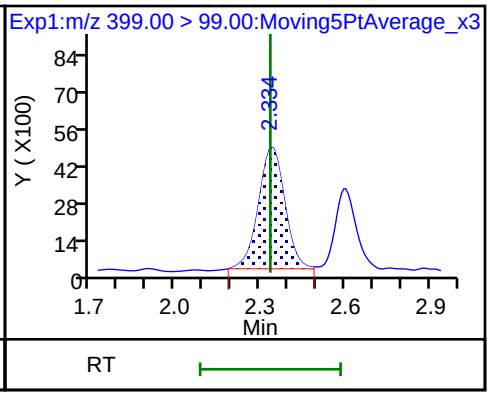
D 9 13C4-PFHpA



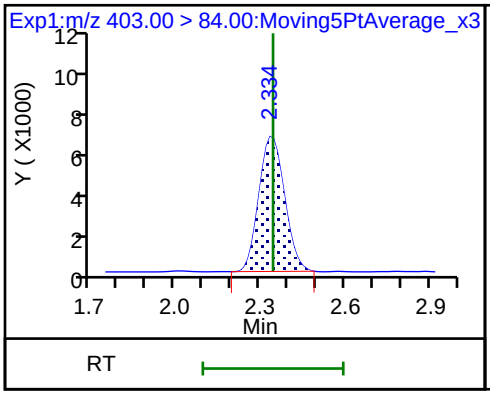
8 Perfluorohexanesulfonic acid



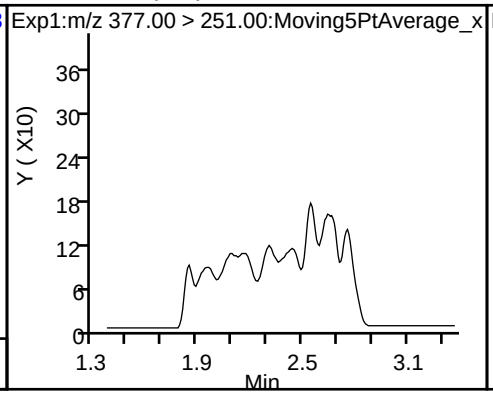
8 Perfluorohexanesulfonic acid



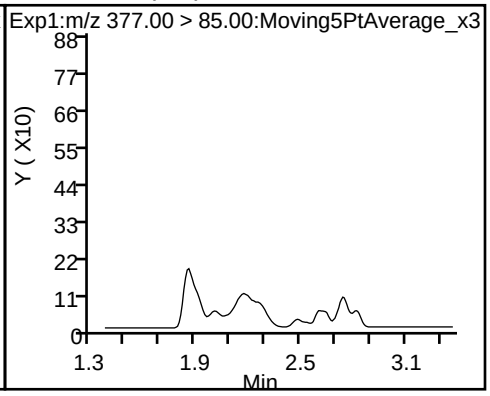
D 11 18O2 PFHxS



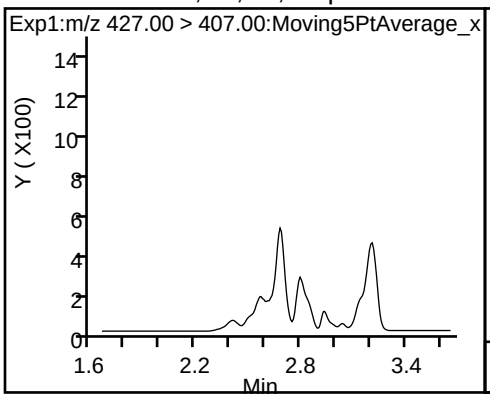
65 Adona (ND)



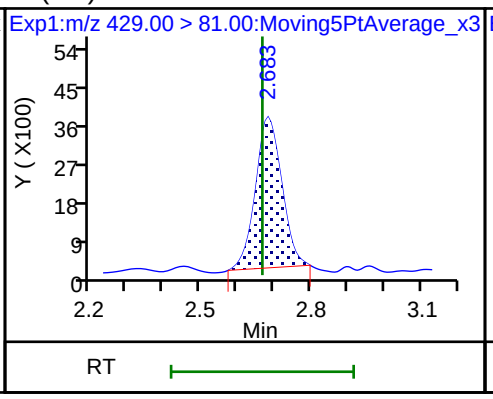
65 Adona (ND)



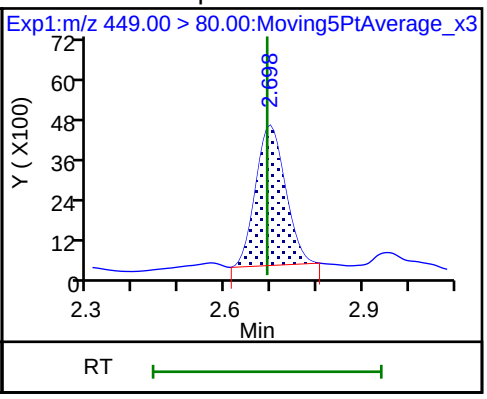
13 Sodium 1H,1H,2H,2H-perfluorooctane [(D)M2-6:2FTS



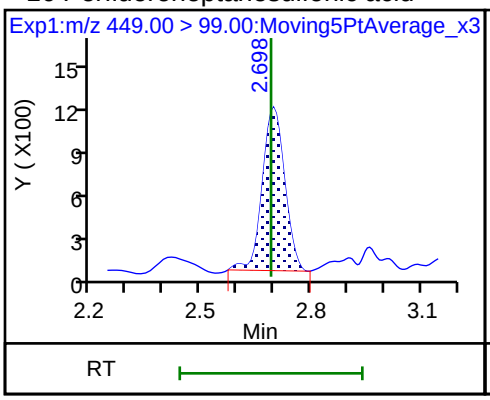
D 12 13C2-6:2FTS



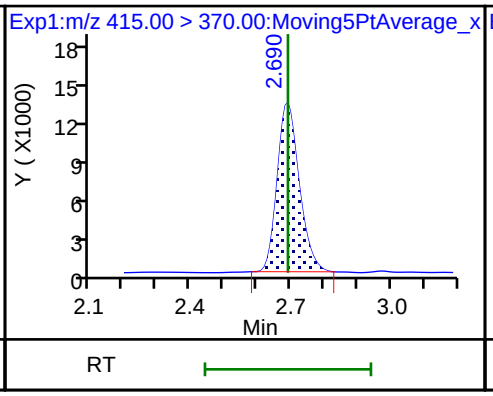
16 Perfluoroheptanesulfonic acid



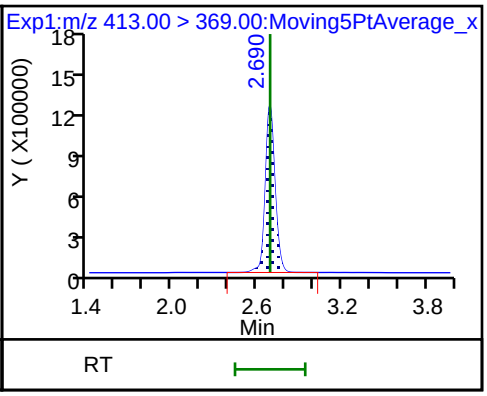
16 Perfluoroheptanesulfonic acid



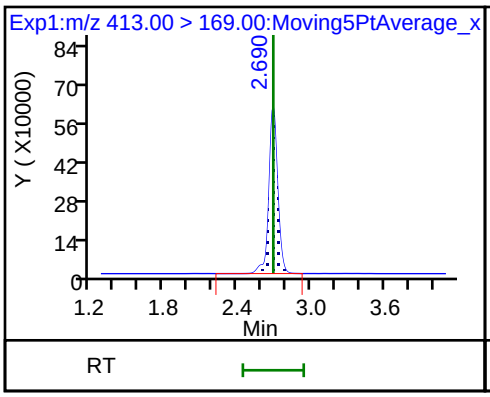
* 62 13C2-PFOA



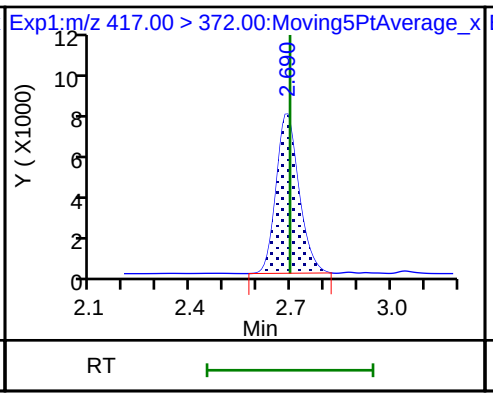
15 Perfluorooctanoic acid



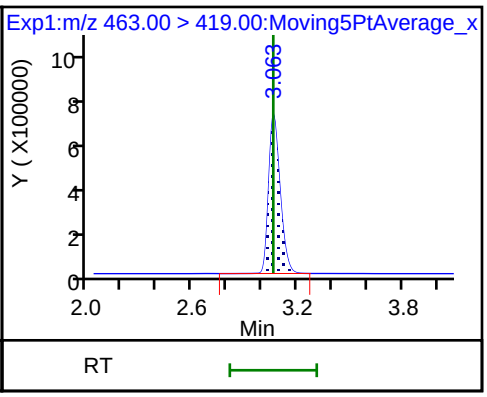
15 Perfluorooctanoic acid



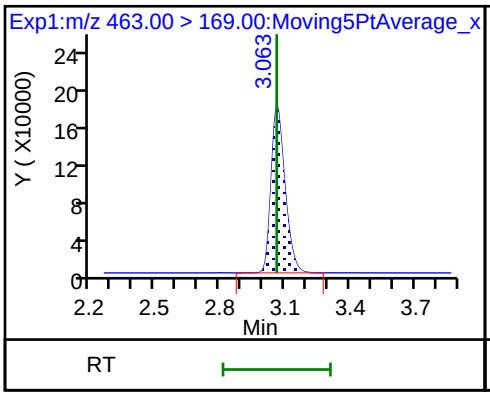
D 14 13C4 PFOA



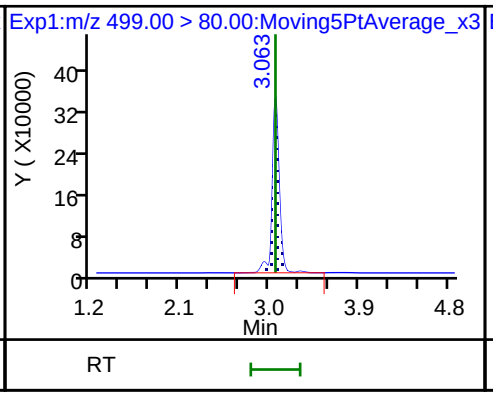
20 Perfluorononanoic acid



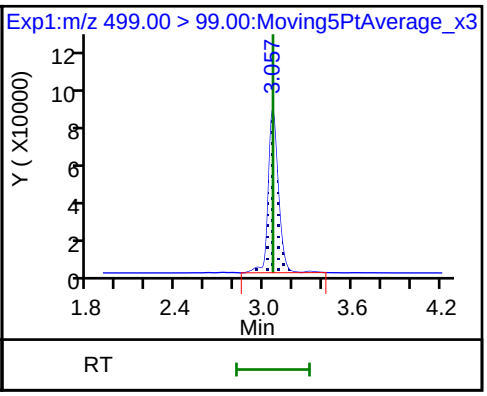
20 Perfluorononanoic acid



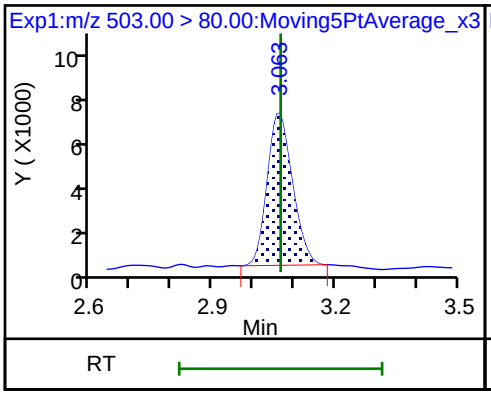
17 Perfluorooctane sulfonic acid



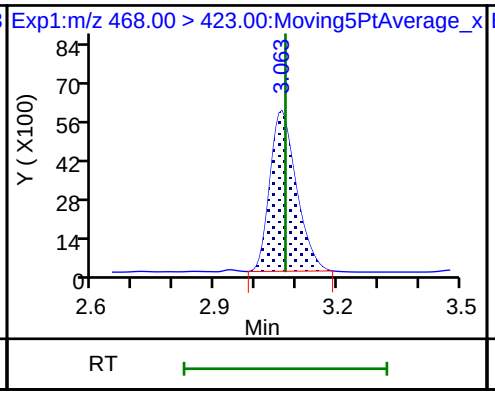
17 Perfluorooctane sulfonic acid



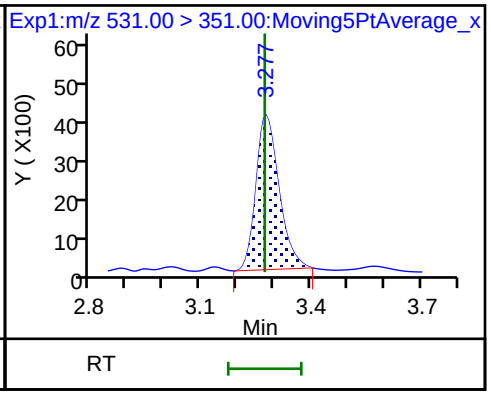
D 18 13C4 PFOS



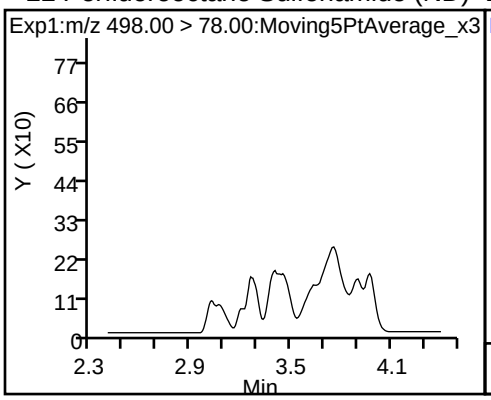
D 19 13C5 PFNA



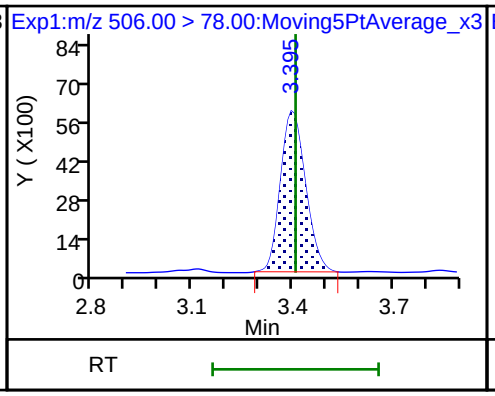
69 9-Chlorohexadecafluoro-3-oxanonane



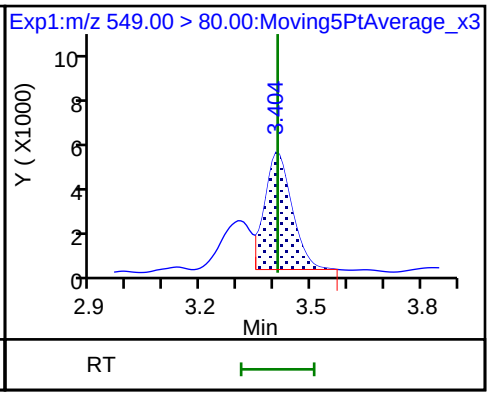
22 Perfluorooctane Sulfonamide (ND)



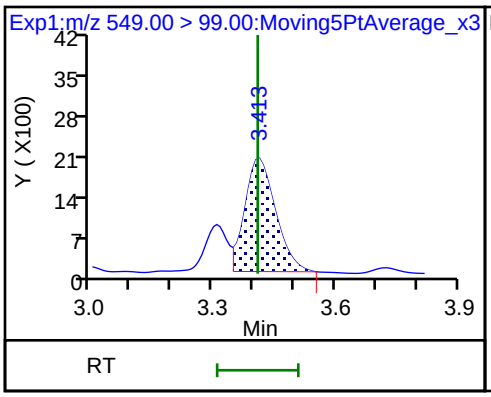
D 21 13C8 FOSA



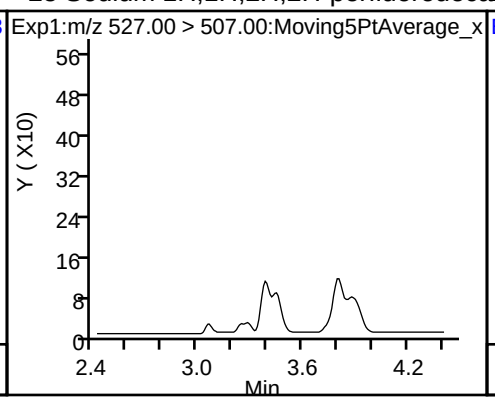
68 Perfluorononanesulfonic acid



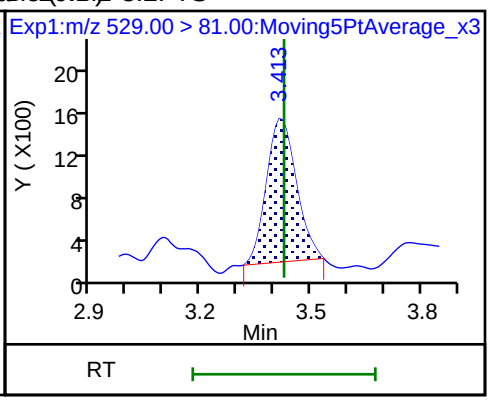
68 Perfluorononanesulfonic acid



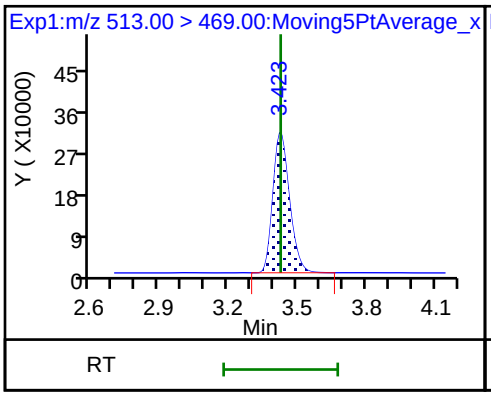
25 Sodium 1H,1H,2H,2H-perfluorodecane(6:2)-8:2FTS



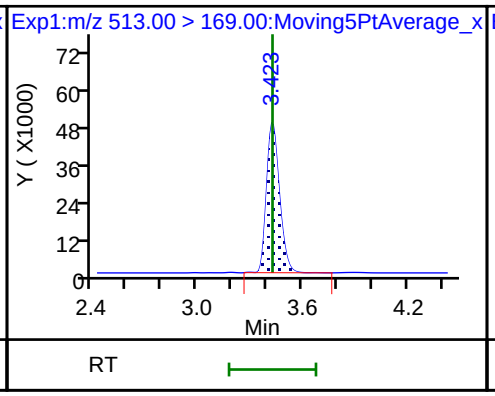
D 26 (ND)



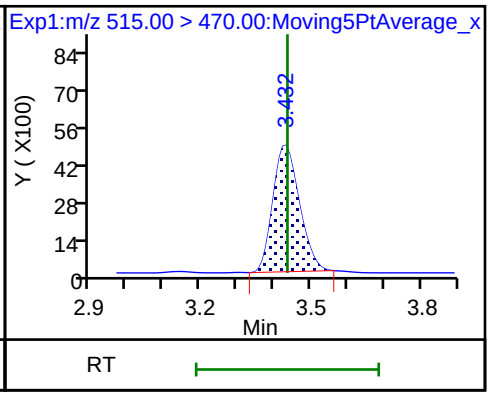
24 Perfluorodecanoic acid



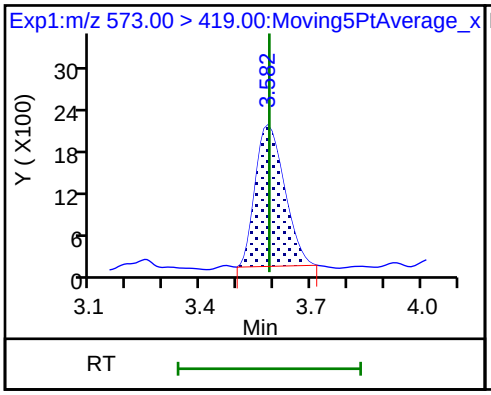
24 Perfluorodecanoic acid



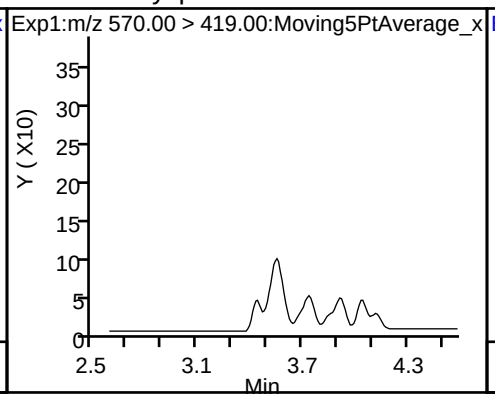
D 23 13C2 PFDA



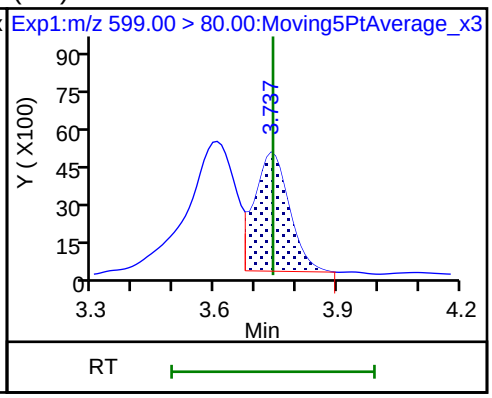
D 27 d3-NMeFOSAA



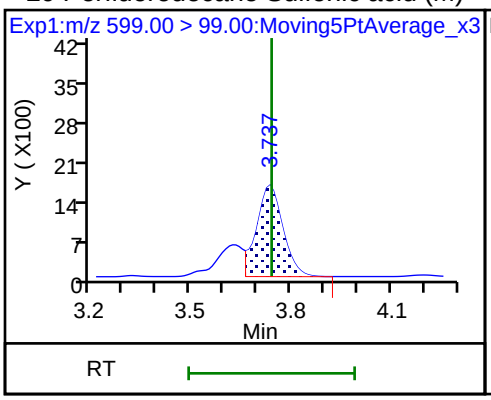
28 N-methyl perfluorooctane sulfonami (M)



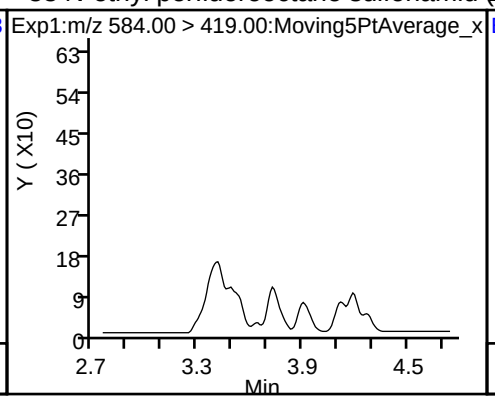
29 Perfluorodecane Sulfonic acid



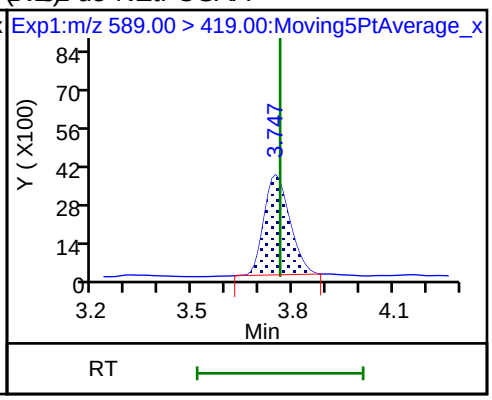
29 Perfluorodecane Sulfonic acid (M)



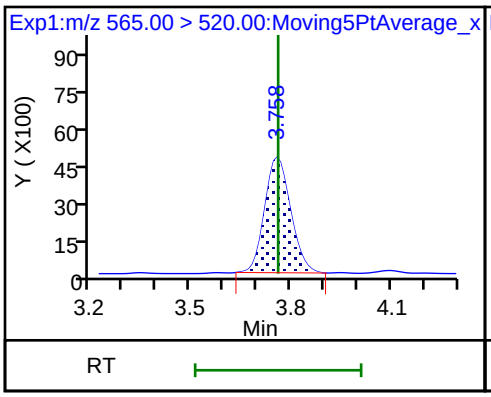
33 N-ethyl perfluorooctane sulfonamid (M)



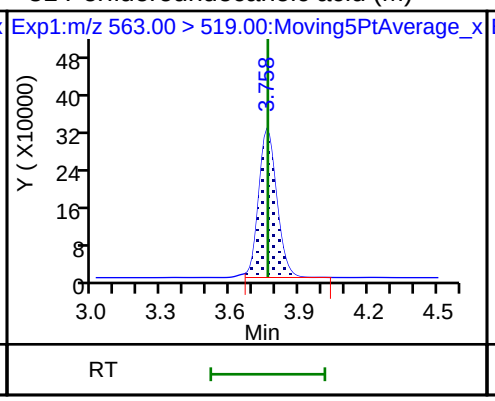
32 d5-NEtFOSAA



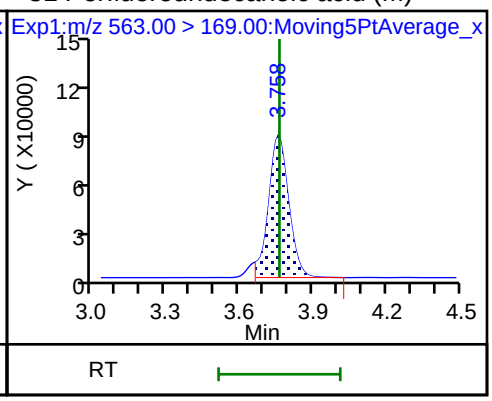
D 30 13C2 PFUnA



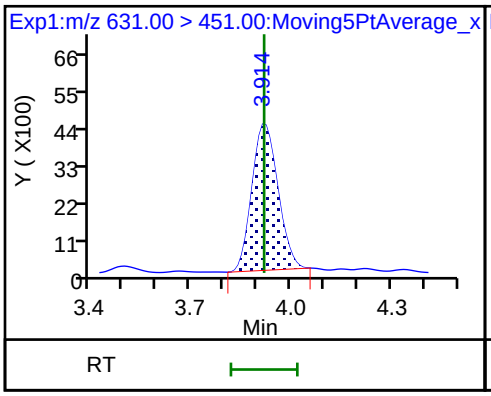
31 Perfluoroundecanoic acid (M)



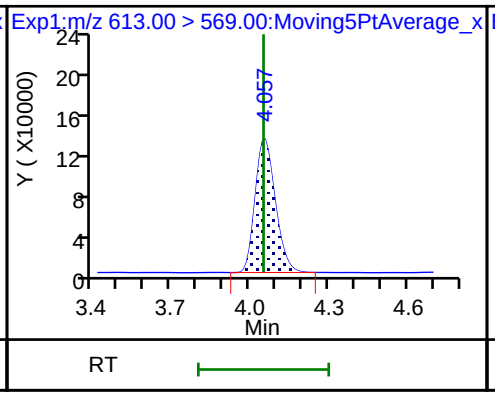
31 Perfluoroundecanoic acid (M)



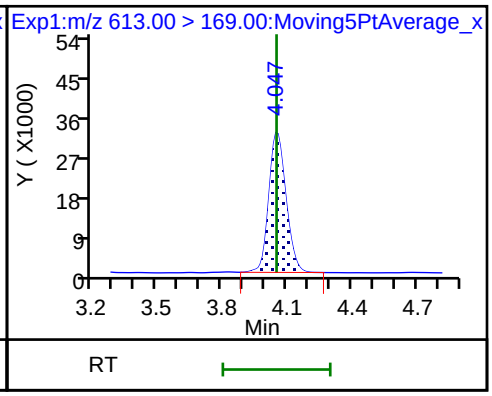
66 11-Chloroeicosafluoro-3-oxaundecan



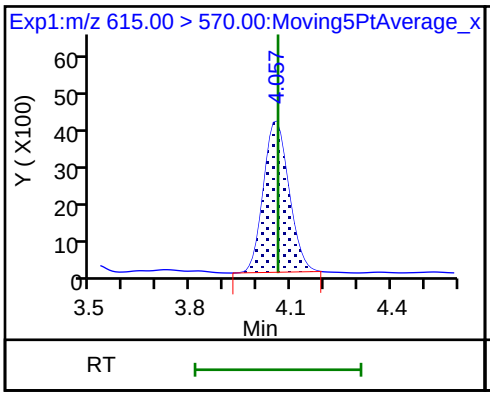
37 Perfluorododecanoic acid



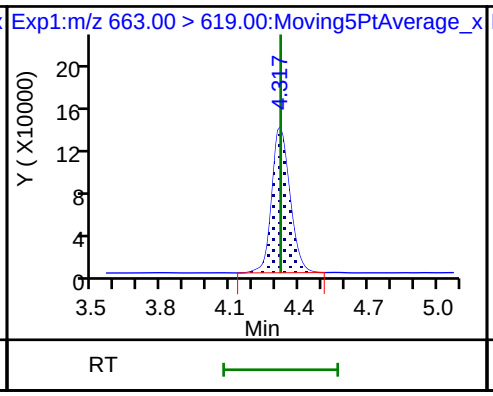
37 Perfluorododecanoic acid



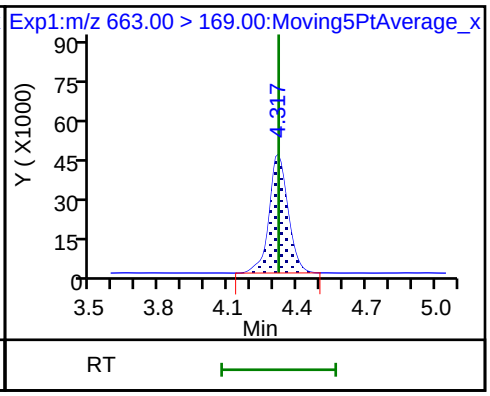
D 36 13C2 PFDoA



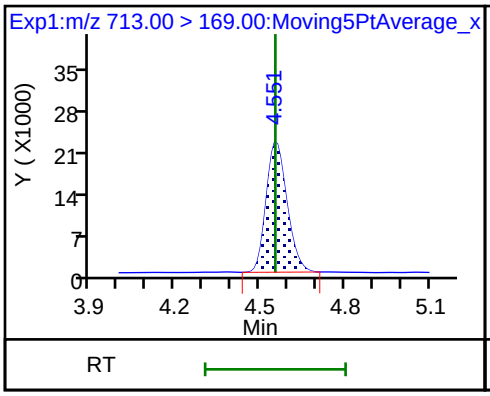
41 Perfluorotridecanoic acid



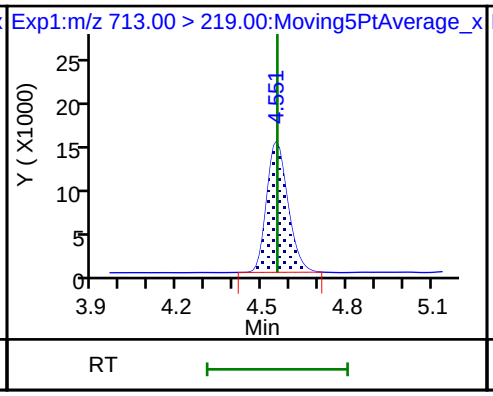
41 Perfluorotridecanoic acid



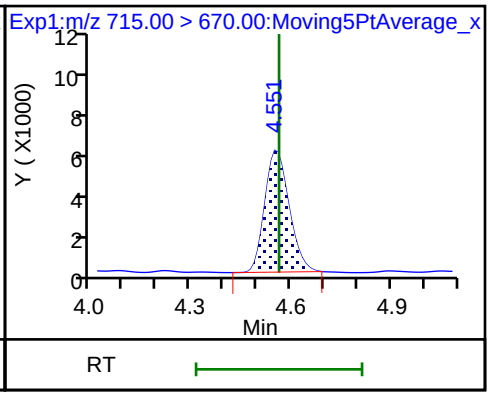
42 Perfluorotetradecanoic acid



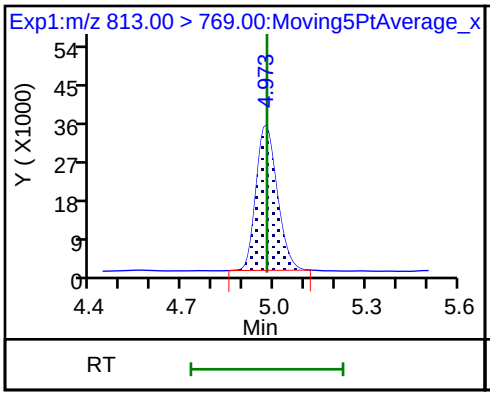
42 Perfluorotetradecanoic acid



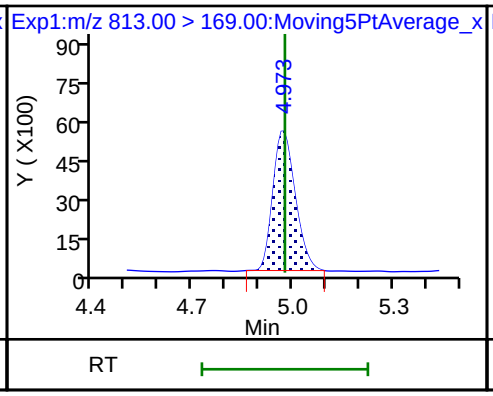
D 43 13C2-PFTeDA



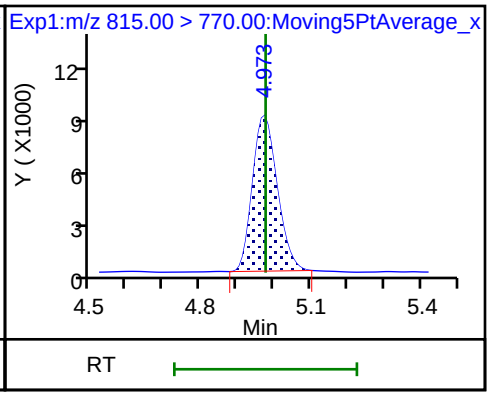
45 Perfluorohexadecanoic acid



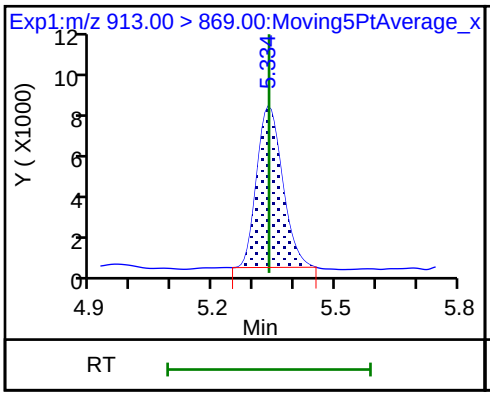
45 Perfluorohexadecanoic acid



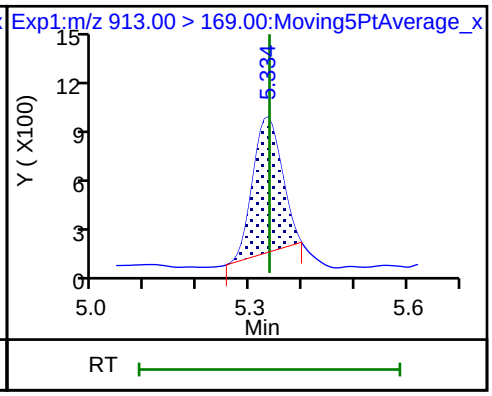
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

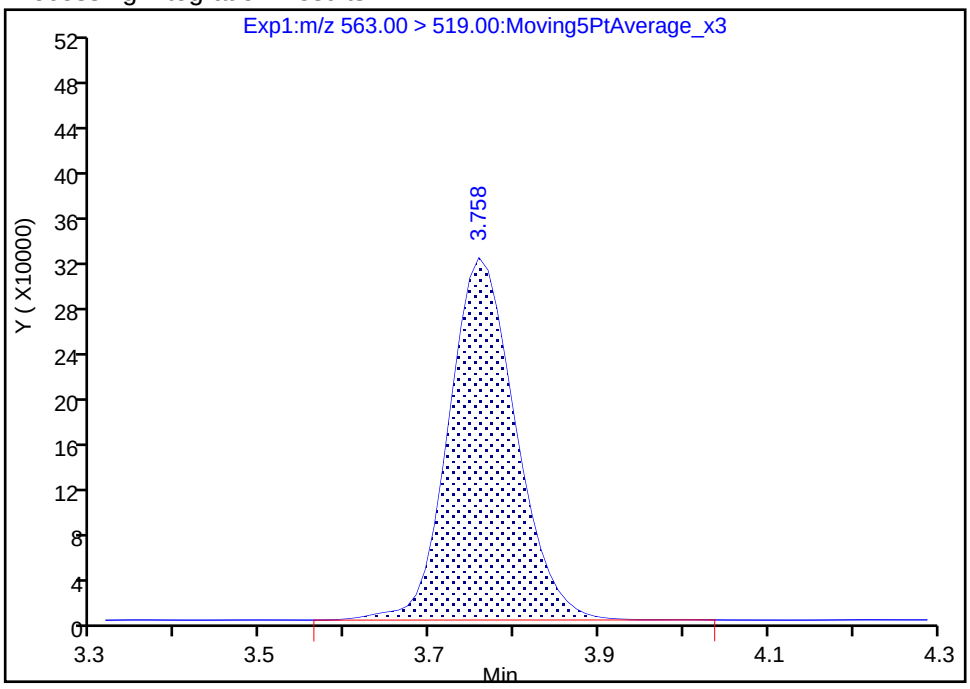
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_059.d
Injection Date: 26-Apr-2018 18:51:55 Instrument ID: A8_N
Lims ID: 320-38054-A-2-F MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 44 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

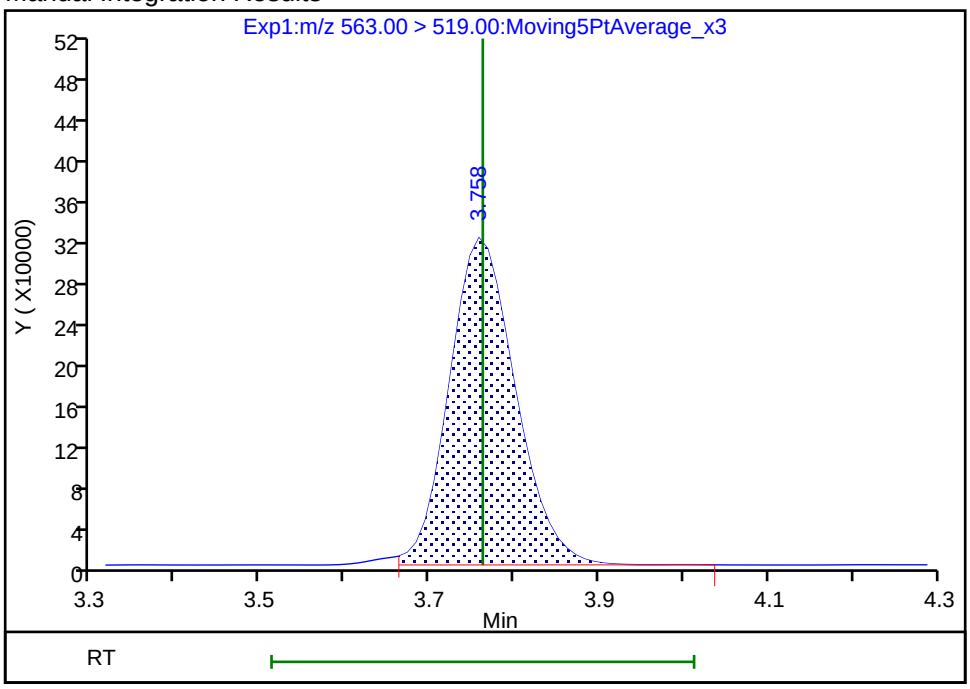
Processing Integration Results

RT: 3.76
Area: 1757885
Amount: 2.051456
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 1740457
Amount: 2.031117
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:33:19
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

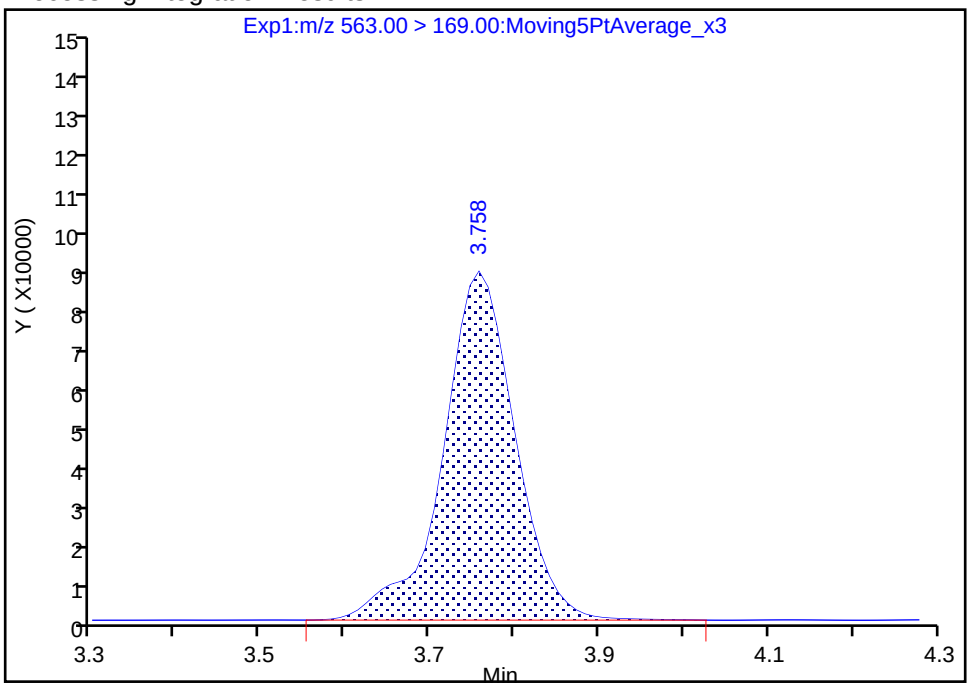
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b\2018.04.26LLA_059.d
Injection Date: 26-Apr-2018 18:51:55 Instrument ID: A8_N
Lims ID: 320-38054-A-2-F MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 44 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

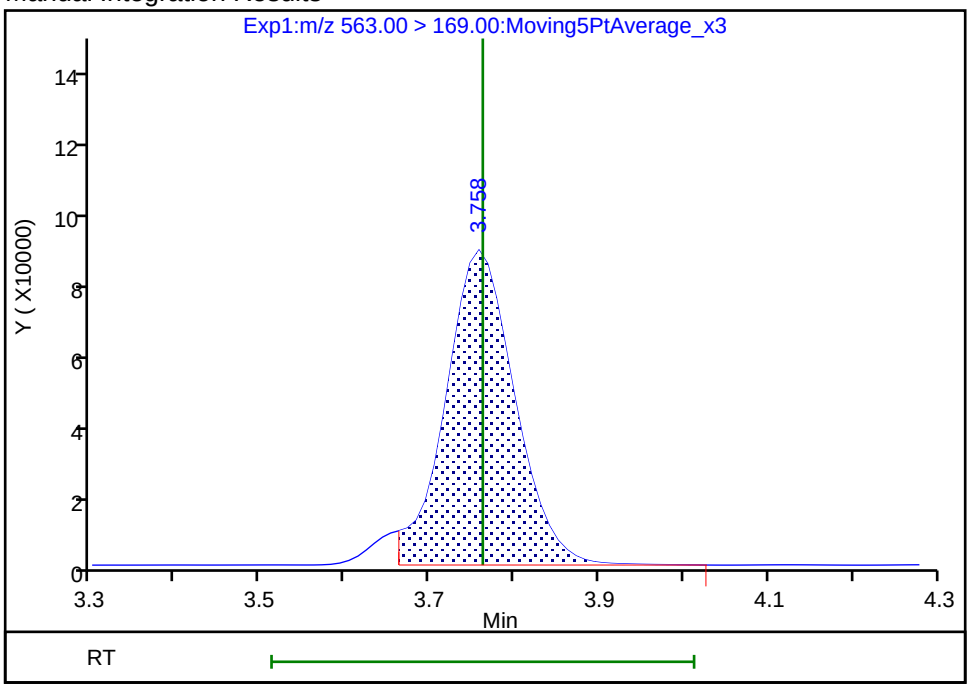
Processing Integration Results

RT: 3.76
Area: 503706
Amount: 2.051456
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 483074
Amount: 2.031117
Amount Units: ng/ml



Reviewer: westendorfc, 27-Apr-2018 08:33:21
Audit Action: Manually Integrated Audit Reason: Split Peak

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/10/2018 18:31

Analysis Batch Number: 217359 End Date: 04/10/2018 19:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/10/2018 18:31	1		GeminiC18 3x100 3(mm)
IC 320-217359/2		04/10/2018 18:39	1	2018.04.10LLICAL 002.d	GeminiC18 3x100 3(mm)
IC 320-217359/3		04/10/2018 18:47	1	2018.04.10LLICAL 003.d	GeminiC18 3x100 3(mm)
IC 320-217359/4		04/10/2018 18:55	1	2018.04.10LLICAL 004.d	GeminiC18 3x100 3(mm)
IC 320-217359/5 ICIS		04/10/2018 19:03	1	2018.04.10LLICAL 005.d	GeminiC18 3x100 3(mm)
IC 320-217359/6		04/10/2018 19:10	1	2018.04.10LLICAL 006.d	GeminiC18 3x100 3(mm)
IC 320-217359/7		04/10/2018 19:18	1	2018.04.10LLICAL 007.d	GeminiC18 3x100 3(mm)
IC 320-217359/8		04/10/2018 19:26	1	2018.04.10LLICAL 008.d	GeminiC18 3x100 3(mm)
ICB 320-217359/9		04/10/2018 19:34	1	2018.04.10LLICAL 009.d	GeminiC18 3x100 3(mm)
ICV 320-217359/10		04/10/2018 19:42	1	2018.04.10LLICAL 010.d	GeminiC18 3x100 3(mm)
CCB 320-217359/11		04/10/2018 19:50	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/24/2018 18:07

Analysis Batch Number: 219693 End Date: 04/24/2018 20:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-219693/1		04/24/2018 18:07	1	2018.04.24LLC_004.d	GeminiC18 3x100 3(mm)
CCVL 320-219693/2		04/24/2018 18:15	1	2018.04.24LLC_005.d	GeminiC18 3x100 3(mm)
CCV 320-219693/3 CCVIS		04/24/2018 18:23	1	2018.04.24LLC_006.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 18:31	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 18:39	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 18:47	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 18:54	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:02	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:10	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:18	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:33	1		GeminiC18 3x100 3(mm)
CCV 320-219693/13		04/24/2018 19:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:49	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 19:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 20:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 20:12	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 20:20	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 20:28	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/24/2018 20:36	1		GeminiC18 3x100 3(mm)
CCV 320-219693/21		04/24/2018 20:44	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/24/2018 23:04

Analysis Batch Number: 219700 End Date: 04/25/2018 01:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-219700/1		04/24/2018 23:04	1	2018.04.24LLC_042.d	GeminiC18 3x100 3(mm)
MB 320-218876/1-A		04/24/2018 23:12	1	2018.04.24LLC_043.d	GeminiC18 3x100 3(mm)
LCS 320-218876/2-A		04/24/2018 23:20	1	2018.04.24LLC_044.d	GeminiC18 3x100 3(mm)
320-38054-1		04/24/2018 23:28	1	2018.04.24LLC_045.d	GeminiC18 3x100 3(mm)
320-38054-2		04/24/2018 23:36	1	2018.04.24LLC_046.d	GeminiC18 3x100 3(mm)
320-38054-2 MS		04/24/2018 23:44	1	2018.04.24LLC_047.d	GeminiC18 3x100 3(mm)
320-38054-2 MSD		04/24/2018 23:51	1	2018.04.24LLC_048.d	GeminiC18 3x100 3(mm)
CCV 320-219700/10		04/25/2018 00:15	1	2018.04.24LLC_051.d	GeminiC18 3x100 3(mm)
MB 320-218884/1-A		04/25/2018 00:23	1	2018.04.24LLC_052.d	GeminiC18 3x100 3(mm)
LCS 320-218884/2-A		04/25/2018 00:30	1	2018.04.24LLC_053.d	GeminiC18 3x100 3(mm)
320-38054-1		04/25/2018 00:38	1	2018.04.24LLC_054.d	GeminiC18 3x100 3(mm)
320-38054-2		04/25/2018 00:46	1	2018.04.24LLC_055.d	GeminiC18 3x100 3(mm)
320-38054-2 MS		04/25/2018 00:54	1	2018.04.24LLC_056.d	GeminiC18 3x100 3(mm)
320-38054-2 MSD		04/25/2018 01:02	1	2018.04.24LLC_057.d	GeminiC18 3x100 3(mm)
CCV 320-219700/17		04/25/2018 01:10	1	2018.04.24LLC_058.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 05:53

Analysis Batch Number: 219909 End Date: 04/26/2018 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-219909/1		04/26/2018 05:53	1	2018.04.25LLBX_004.d	GeminiC18 3x100 3(mm)
CCVL 320-219909/2		04/26/2018 06:01	1	2018.04.25LLBX_005.d	GeminiC18 3x100 3(mm)
CCV 320-219909/3 CCVIS		04/26/2018 06:09	1	2018.04.25LLBX_070.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:17	50		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:24	5		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:32	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:40	50		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:48	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 07:03	5		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 07:11	5		GeminiC18 3x100 3(mm)
CCV 320-219909/12		04/26/2018 07:19	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 18:05

Analysis Batch Number: 220090 End Date: 04/26/2018 18:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-220090/1		04/26/2018 18:05	1	2018.04.26LLA_053.d	GeminiC18 3x100 3(mm)
320-38054-2 DL		04/26/2018 18:12	100	2018.04.26LLA_054.d	GeminiC18 3x100 3(mm)
320-38054-2 MS DL		04/26/2018 18:20	100	2018.04.26LLA_055.d	GeminiC18 3x100 3(mm)
320-38054-2 MSD DL		04/26/2018 18:28	100	2018.04.26LLA_056.d	GeminiC18 3x100 3(mm)
320-38054-2 DL2		04/26/2018 18:36	100	2018.04.26LLA_057.d	GeminiC18 3x100 3(mm)
320-38054-2 MS DL2		04/26/2018 18:44	100	2018.04.26LLA_058.d	GeminiC18 3x100 3(mm)
320-38054-2 MSD DL2		04/26/2018 18:51	100	2018.04.26LLA_059.d	GeminiC18 3x100 3(mm)
CCV 320-220090/8		04/26/2018 18:59	1	2018.04.26LLA_064.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/27/2018 06:36

Analysis Batch Number: 220104 End Date: 04/27/2018 06:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-220104/1		04/27/2018 06:36	1	2018.04.26LLBX_003.d	GeminiC18 3x100 3(mm)
CCVL 320-220104/2		04/27/2018 06:44	1	2018.04.26LLBX_004.d	GeminiC18 3x100 3(mm)
CCV 320-220104/3 CCVIS		04/27/2018 06:51	1	2018.04.26LLBX_034.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: A8_N Start Date: 04/27/2018 11:33

Analysis Batch Number: 220224 End Date: 04/27/2018 12:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-220224/1		04/27/2018 11:33	1	2018.04.26LLC_067.d	GeminiC18 3x100 3(mm)
320-38054-1 DL		04/27/2018 11:41	5	2018.04.26LLC_068.d	GeminiC18 3x100 3(mm)
320-38054-2 DL		04/27/2018 11:49	10	2018.04.26LLC_069.d	GeminiC18 3x100 3(mm)
320-38054-2 MS DL		04/27/2018 11:56	10	2018.04.26LLC_070.d	GeminiC18 3x100 3(mm)
320-38054-2 MSD DL		04/27/2018 12:04	10	2018.04.26LLC_071.d	GeminiC18 3x100 3(mm)
CCV 320-220224/6		04/27/2018 12:12	1	2018.04.26LLC_072.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218876 Batch Start Date: 04/19/18 18:33 Batch Analyst: Reed, Jonathan E

Batch Method: TOPS Pre-Prep Batch End Date: 04/24/18 00:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00055	LCMPFCSUTOPS 00005	LCPFC-IS 00037	LCPFCSP 00139
MB 320-218876/1		TOPS Pre-Prep, 537 (modified)		2.00 g	10.00 mL	500 uL	25 uL	500 uL	
LCS 320-218876/2		TOPS Pre-Prep, 537 (modified)		2.00 g	10.00 mL	500 uL	25 uL	500 uL	500 uL
320-38054-A-1	SB007(2-4)-TOP	TOPS Pre-Prep, 537 (modified)	^	2.02 g	10.00 mL	500 uL	25 uL	500 uL	
320-38054-A-2	SB003(0-2)-TOP	TOPS Pre-Prep, 537 (modified)	^	2.02 g	10.00 mL	500 uL	25 uL	500 uL	
320-38054-A-2 MS	SB003(0-2)-TOP	TOPS Pre-Prep, 537 (modified)	^	2.03 g	10.00 mL	500 uL	25 uL	500 uL	500 uL
320-38054-A-2 MSD	SB003(0-2)-TOP	TOPS Pre-Prep, 537 (modified)	^	2.02 g	10.00 mL	500 uL	25 uL	500 uL	500 uL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218876 Batch Start Date: 04/19/18 18:33 Batch Analyst: Reed, Jonathan E

Batch Method: TOPS Pre-Prep Batch End Date: 04/24/18 00:40

Batch Notes	
Acetic Acid ID	985732
Acid ID	4116040
Acid Name	HCL
Analyst ID - Aliquot Step	JER
Balance ID	QA-078
Batch Comment	Sample labels match client IDs JER
Analyst ID - Concentration	JER
Analyst ID - Final Volume Step	JER
H2O ID	4/18/18
Hexane ID	1214435
Internal Standard ID#	1208927
Manifold ID	TOPS
Methanol ID	1207213
Methanolic Potassium Hydroxide ID	1209316
Millipore Water Dispense Date	04/18/2018
Sodium Hydroxide ID	163510
Ammonium Hydroxide/MeOH ID	1213092
pH Indicator ID	3817
Pipette/Syringe/Dispenser ID	I46360G, O43093F
Analyst ID - Reagent Drop Witness	TWL
Analyst ID - Reagent Drop	JER
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	ALM
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Blank Sand Lot #	175767
Solvent Lot #	1209316, 1213092
Solvent Name	0.4% KOH/MeOH, 0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Lot ID	017738067A

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218876 Batch Start Date: 04/19/18 18:33 Batch Analyst: Reed, Jonathan E

Batch Method: TOPS Pre-Prep Batch End Date: 04/24/18 00:40

SPE Cartridge Type	WAX 150mg

Basis	Basis Description
^	Pre-Treatment

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218884 Batch Start Date: 04/19/18 19:04 Batch Analyst: Reed, Jonathan E

Batch Method: TOPS Post-Prep Batch End Date: 04/24/18 00:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00055	LCMPFCSUTOPS 00005	LCPFC-IS 00037	LCPFCSP 00139
MB 320-218884/1		TOPS Post-Prep, 537 (modified)		2.00 g	10.00 mL	500 uL	25 uL	500 uL	
LCS 320-218884/2		TOPS Post-Prep, 537 (modified)		2.00 g	10.00 mL	500 uL	25 uL	500 uL	500 uL
320-38054-A-1	SB007(2-4)-TOP	TOPS Post-Prep, 537 (modified)	B	2.05 g	10.00 mL	500 uL	25 uL	500 uL	
320-38054-A-2	SB003(0-2)-TOP	TOPS Post-Prep, 537 (modified)	B	2.01 g	10.00 mL	500 uL	25 uL	500 uL	
320-38054-A-2 MS	SB003(0-2)-TOP	TOPS Post-Prep, 537 (modified)	B	2.04 g	10.00 mL	500 uL	25 uL	500 uL	500 uL
320-38054-A-2 MSD	SB003(0-2)-TOP	TOPS Post-Prep, 537 (modified)	B	2.05 g	10.00 mL	500 uL	25 uL	500 uL	500 uL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218884 Batch Start Date: 04/19/18 19:04 Batch Analyst: Reed, Jonathan E

Batch Method: TOPS Post-Prep Batch End Date: 04/24/18 00:45

Batch Notes	
Acetic Acid ID	985732
Acid ID	4116040
Acid Name	HCL
Analyst ID - Aliquot Step	JER
Balance ID	QA-078
Batch Comment	Sample labels match client IDs JER
Analyst ID - Concentration	JER
First End time	02:00
Analyst ID - Final Volume Step	JER
H2O ID	4/18/18
Hydrochloric Acid ID	4116040
Hexane ID	1214435
Internal Standard ID#	1208927
Potassium Persulfate ID	A0375670
Manifold ID	TOPS
Methanol ID	1207213
Methanolic Potassium Hydroxide ID	1209316
Millipore Water Dispense Date	04/18/2018
Sodium Hydroxide ID	163510
Ammonium Hydroxide/MeOH ID	1213092
pH Indicator ID	3817
Pipette/Syringe/Dispenser ID	I46360G, O43093F
Analyst ID - Reagent Drop Witness	TWL
Analyst ID - Reagent Drop	JER
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	ALM
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Blank Sand Lot #	175767
Solvent Lot #	1209316, 1213092

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218884 Batch Start Date: 04/19/18 19:04 Batch Analyst: Reed, Jonathan E

Batch Method: TOPS Post-Prep Batch End Date: 04/24/18 00:45

Solvent Name	0.4% KOH/MeOH, 0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Lot ID	017738067A
SPE Cartridge Type	WAX 150mg
Solid Phase Extraction Disk ID	017738067A
First Start time	20:00

Basis	Basis Description
B	Post-Treatment

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Sum = 220272
Lab = 220275

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 38054

Work List ID(s): 57174, 57288, 57329

Extraction Batch: 218876, 218884

Analysis Batch(es): 219700, 220090, 220224

Delivery Rank 4

Due Date: ———

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 217359	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).	✓	✓	
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓		
D. Documentation			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1st Level (Analyst): CBW Date: 4/27/18

2nd Level Reviewer: MWay Date: 4/27/2018

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 24APR2018NC_2A_PFC Worklist Num: 57172
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57172.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057172-001	CCB	24-Apr-2018 18:07:51	2018.04.24LLC_004.d	20	1.0		sv
CCVL	320-0057172-002	CCVL	24-Apr-2018 18:15:42	2018.04.24LLC_005.d	21	1.0		sv
CCV L4	320-0057172-003	CCVIS	24-Apr-2018 18:23:32	2018.04.24LLC_006.d	13	1.0		sv
190-16073-A-2-A	320-0057172-004	Client	24-Apr-2018 18:31:22	2018.04.24LLC_007.d	1	100.	Main Holding	sv
MB 320-219494/1-A	320-0057172-005	MB	24-Apr-2018 18:39:13	2018.04.24LLC_008.d	2	1.0		sv
LCS 320-219494/2-A	320-0057172-006	LCS	24-Apr-2018 18:47:02	2018.04.24LLC_009.d	3	1.0		sv
LCSD 320-219494/3-A	320-0057172-007	LCSD	24-Apr-2018 18:54:50	2018.04.24LLC_010.d	4	1.0		sv
480-134528-B-1-A	320-0057172-008	Client	24-Apr-2018 19:02:38	2018.04.24LLC_011.d	5	1.0	MW-3	sv
480-134528-B-2-A	320-0057172-009	Client	24-Apr-2018 19:10:27	2018.04.24LLC_012.d	6	1.0	MW-6D	sv
480-134528-B-3-A	320-0057172-010	Client	24-Apr-2018 19:18:16	2018.04.24LLC_013.d	7	1.0	MW-5R REPLACEMENT	sv
480-134528-B-4-A	320-0057172-011	Client	24-Apr-2018 19:26:05	2018.04.24LLC_014.d	8	1.0	AE-1D	sv
480-134528-B-5-A	320-0057172-012	Client	24-Apr-2018 19:33:54	2018.04.24LLC_015.d	9	1.0	AE-1S	sv
CCV L5	320-0057172-013	CCV	24-Apr-2018 19:41:43	2018.04.24LLC_016.d	14	1.0		sv
480-134528-B-7-A	320-0057172-014	Client	24-Apr-2018 19:49:31	2018.04.24LLC_017.d	10	1.0	GW-DUP1	sv
480-134528-A-8-A	320-0057172-015	Client	24-Apr-2018 19:57:21	2018.04.24LLC_018.d	11	1.0	FIELD TRIP BLANK	sv
320-38390-A-1-A	320-0057172-016	Client	24-Apr-2018 20:05:11	2018.04.24LLC_019.d	12	1.0	FRAC-01	sv
190-16074-B-1-A	320-0057172-017	Client	24-Apr-2018 20:12:59	2018.04.24LLC_020.d	13	10.0	Main Discharge PFOS	sv
190-16073-B-4-A	320-0057172-018	Client	24-Apr-2018 20:20:49	2018.04.24LLC_021.d	14	10.0	Carbon 2	sv
190-16074-B-1-A	320-0057172-019	Client	24-Apr-2018 20:28:37	2018.04.24LLC_022.d	15	1.0	Main Discharge PFOS	sv
190-16073-B-4-A	320-0057172-020	Client	24-Apr-2018 20:36:25	2018.04.24LLC_023.d	16	1.0	Carbon 2	sv
CCV L4	320-0057172-021	CCV	24-Apr-2018 20:44:13	2018.04.24LLC_024.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 24APR2018NC_2C_PFC Worklist Num: 57174
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0057174-001	CCV	24-Apr-2018 23:04:59	2018.04.24LLC_042.d	13	1.0		sv
MB 320-218876/1-A	320-0057174-002	MB	24-Apr-2018 23:12:47	2018.04.24LLC_043.d	29	1.0		sv
LCS 320-218876/2-A	320-0057174-003	LCS	24-Apr-2018 23:20:36	2018.04.24LLC_044.d	30	1.0		sv
320-38054-A-1-A	320-0057174-004	Client	24-Apr-2018 23:28:25	2018.04.24LLC_045.d	31	1.0	SB007(2-4)-TOP	sv
320-38054-A-2-A	320-0057174-005	Client	24-Apr-2018 23:36:14	2018.04.24LLC_046.d	32	1.0	SB003(0-2)-TOP	sv
320-38054-A-2-B MS	320-0057174-006	MS	24-Apr-2018 23:44:05	2018.04.24LLC_047.d	33	1.0		sv
320-38054-A-2-C MSD	320-0057174-007	MSD	24-Apr-2018 23:51:55	2018.04.24LLC_048.d	34	1.0		sv
RB	320-0057174-008	RB	24-Apr-2018 23:59:46	2018.04.24LLC_049.d	54	1.0		sv
RB	320-0057174-009	RB	25-Apr-2018 00:07:33	2018.04.24LLC_050.d	54	1.0		sv
CCV L5	320-0057174-010	CCV	25-Apr-2018 00:15:21	2018.04.24LLC_051.d	14	1.0		sv
MB 320-218884/1-A	320-0057174-011	MB	25-Apr-2018 00:23:09	2018.04.24LLC_052.d	35	1.0		sv
LCS 320-218884/2-A	320-0057174-012	LCS	25-Apr-2018 00:30:58	2018.04.24LLC_053.d	36	1.0		sv
320-38054-A-1-B	320-0057174-013	Client	25-Apr-2018 00:38:46	2018.04.24LLC_054.d	37	1.0	SB007(2-4)-TOP	sv
320-38054-A-2-D	320-0057174-014	Client	25-Apr-2018 00:46:34	2018.04.24LLC_055.d	38	1.0	SB003(0-2)-TOP	sv
320-38054-A-2-E MS	320-0057174-015	MS	25-Apr-2018 00:54:23	2018.04.24LLC_056.d	39	1.0		sv
320-38054-A-2-F MSD	320-0057174-016	MSD	25-Apr-2018 01:02:14	2018.04.24LLC_057.d	40	1.0		sv
CCV L4	320-0057174-017	CCV	25-Apr-2018 01:10:05	2018.04.24LLC_058.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCA_PFC Worklist Num: 57241
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057241-001	CCB	26-Apr-2018 05:53:34	2018.04.25LLBX_004.d	20	1.0		sv
CCVL	320-0057241-002	CCVL	26-Apr-2018 06:01:22	2018.04.25LLBX_005.d	21	1.0		sv
CCV L4	320-0057241-003	CCVIS	26-Apr-2018 06:09:11	2018.04.25LLBX_070.d	28	1.0		sv
320-38061-A-2-A	320-0057241-004	Client	26-Apr-2018 06:17:00	2018.04.25LLBX_071.d	47	50.0	SB012(2-4)	sv
320-38061-A-3-A	320-0057241-005	Client	26-Apr-2018 06:24:48	2018.04.25LLBX_072.d	48	5.0	SB008(2-4)	sv
320-38061-A-4-A	320-0057241-006	Client	26-Apr-2018 06:32:37	2018.04.25LLBX_073.d	49	1.0	SB007(0-2)	sv
320-38061-A-5-A	320-0057241-007	Client	26-Apr-2018 06:40:27	2018.04.25LLBX_074.d	50	50.0	SB003(0-2)	sv
320-38061-A-5-A	320-0057241-008	Client	26-Apr-2018 06:48:16	2018.04.25LLBX_075.d	51	10.0	SB003(0-2)	sv
RB	320-0057241-009	RB	26-Apr-2018 06:56:05	2018.04.25LLBX_076.d	54	1.0		sv
320-38061-A-6-A	320-0057241-010	Client	26-Apr-2018 07:03:52	2018.04.25LLBX_077.d	52	5.0	SB004(8-10)	sv
320-38061-A-7-A	320-0057241-011	Client	26-Apr-2018 07:11:42	2018.04.25LLBX_078.d	53	5.0	SB013(8-10)	sv
CCV L4	320-0057241-012	CCV	26-Apr-2018 07:19:30	2018.04.25LLBX_079.d	28	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCI_PFC Worklist Num: 57288
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L5	320-0057288-001	CCV	26-Apr-2018 18:05:02	2018.04.26LLA_053.d	14	1.0		sv
320-38054-A-2-A	320-0057288-002	Client	26-Apr-2018 18:12:50	2018.04.26LLA_054.d	39	100.	SB003(0-2)-TOP	sv
320-38054-A-2-B MS	320-0057288-003	MS	26-Apr-2018 18:20:38	2018.04.26LLA_055.d	40	100.		sv
320-38054-A-2-C MSD	320-0057288-004	MSD	26-Apr-2018 18:28:27	2018.04.26LLA_056.d	41	100.		sv
320-38054-A-2-D	320-0057288-005	Client	26-Apr-2018 18:36:17	2018.04.26LLA_057.d	42	100.	SB003(0-2)-TOP	sv
320-38054-A-2-E MS	320-0057288-006	MS	26-Apr-2018 18:44:05	2018.04.26LLA_058.d	43	100.		sv
320-38054-A-2-F MSD	320-0057288-007	MSD	26-Apr-2018 18:51:55	2018.04.26LLA_059.d	44	100.		sv
CCV L4	320-0057288-008	CCV	26-Apr-2018 18:59:46	2018.04.26LLA_064.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 27APR2018NCA_PFC Worklist Num: 57296
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57296.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057296-001	CCB	27-Apr-2018 06:36:15	2018.04.26LLBX_003.d	20	1.0		sv
CCVL	320-0057296-002	CCVL	27-Apr-2018 06:44:03	2018.04.26LLBX_004.d	21	1.0		sv
CCV L4	320-0057296-003	CCVIS	27-Apr-2018 06:51:50	2018.04.26LLBX_034.d	13	1.0		sv
320-38022-A-33-A	320-0057296-004	Client	27-Apr-2018 06:59:38	2018.04.26LLBX_035.d	22	100.	REN09-SD1-01	sv
320-38022-A-33-B MS	320-0057296-005	MS	27-Apr-2018 07:07:28	2018.04.26LLBX_036.d	23	100.	REN09-SD1-01	sv
320-38022-A-33-C MSD	320-0057296-006	MSD	27-Apr-2018 07:15:16	2018.04.26LLBX_037.d	24	100.	REN09-SD1-01	sv
320-38022-A-33-A	320-0057296-007	Client	27-Apr-2018 07:23:03	2018.04.26LLBX_038.d	25	10.0	REN09-SD1-01	sv
320-38022-A-33-B MS	320-0057296-008	MS	27-Apr-2018 07:30:52	2018.04.26LLBX_039.d	26	10.0	REN09-SD1-01	sv
320-38022-A-33-C MSD	320-0057296-009	MSD	27-Apr-2018 07:38:39	2018.04.26LLBX_040.d	27	10.0	REN09-SD1-01	sv
RB	320-0057296-010	RB	27-Apr-2018 07:46:27	2018.04.26LLBX_041.d	54	1.0		sv
RB	320-0057296-011	RB	27-Apr-2018 07:54:16	2018.04.26LLBX_042.d	54	1.0		sv
CCV L5	320-0057296-012	CCV	27-Apr-2018 08:02:06	2018.04.26LLBX_043.d	14	1.0		sv
320-38022-A-34-A	320-0057296-013	Client	27-Apr-2018 08:09:58	2018.04.26LLBX_044.d	28	1.0	REN10-SB1-01	sv
320-38022-A-36-A	320-0057296-014	Client	27-Apr-2018 08:17:50	2018.04.26LLBX_045.d	29	20.0	REN10-SB2-01	sv
320-38022-A-37-A	320-0057296-015	Client	27-Apr-2018 08:25:40	2018.04.26LLBX_046.d	30	1.0	REN10-SB2-02	sv
320-38022-A-38-A	320-0057296-016	Client	27-Apr-2018 08:33:29	2018.04.26LLBX_047.d	31	20.0	REN10-SB3-01	sv
320-38022-A-39-A	320-0057296-017	Client	27-Apr-2018 08:41:16	2018.04.26LLBX_048.d	32	1.0	REN10-SB3-02	sv
320-38022-A-42-A	320-0057296-018	Client	27-Apr-2018 08:49:04	2018.04.26LLBX_049.d	33	100.	REN06-SB1-01D	sv
320-38022-A-42-A	320-0057296-019	Client	27-Apr-2018 08:56:53	2018.04.26LLBX_050.d	34	10.0	REN06-SB1-01D	sv
RB	320-0057296-020	RB	27-Apr-2018 09:04:44	2018.04.26LLBX_051.d	54	1.0		sv
320-38022-A-54-A	320-0057296-021	Client	27-Apr-2018 09:12:30	2018.04.26LLBX_052.d	35	1.0	REN08-SB2-02D	sv
320-38165-A-31-A	320-0057296-022	Client	27-Apr-2018 09:20:19	2018.04.26LLBX_053.d	36	5.0	REN08-SB3-01	sv
CCV L4	320-0057296-023	CCV	27-Apr-2018 09:28:06	2018.04.26LLBX_054.d	13	1.0		sv
320-38165-A-32-A	320-0057296-024	Client	27-Apr-2018 09:35:56	2018.04.26LLBX_055.d	37	1.0	REN08-SB3-02	sv
CCV L5	320-0057296-025	CCV	27-Apr-2018 09:43:47	2018.04.26LLBX_056.d	14	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 27APR2018NCC_PFC Worklist Num: 57329
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b
Anaylysis Type: SemiVOA Creator: Westendorf, Cary B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L5	320-0057329-001	CCV	27-Apr-2018 11:33:34	2018.04.26LLC_067.d	29	1.0		sv
320-38054-A-1-B	320-0057329-002	Client	27-Apr-2018 11:41:21	2018.04.26LLC_068.d	51	5.0	SB007(2-4)-TOP	sv
320-38054-A-2-D	320-0057329-003	Client	27-Apr-2018 11:49:10	2018.04.26LLC_069.d	52	10.0	SB003(0-2)-TOP	sv
320-38054-A-2-E MS	320-0057329-004	MS	27-Apr-2018 11:56:59	2018.04.26LLC_070.d	53	10.0		sv
320-38054-A-2-F MSD	320-0057329-005	MSD	27-Apr-2018 12:04:47	2018.04.26LLC_071.d	54	10.0		sv
CCV L4	320-0057329-006	CCV	27-Apr-2018 12:12:34	2018.04.26LLC_072.d	28	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 24APR2018NC_2C_PFC Worklist Number: 57174
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180425-57174.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch: 219700
# 1 CCV L4	# 1 CCV L4
# 2 MB 320-218876/1-A	# 2 MB 320-218876/1-A
# 3 LCS 320-218876/2-A	# 3 LCS 320-218876/2-A
# 4 320-38054-A-1-A	# 4 320-38054-A-1-A
# 5 320-38054-A-2-A	# 5 320-38054-A-2-A
# 6 320-38054-A-2-B MS	# 6 320-38054-A-2-B MS
# 7 320-38054-A-2-C MSD	# 7 320-38054-A-2-C MSD
# 8 RB	# 8 RB
# 9 RB	# 9 RB
#10 CCV L5	#10 CCV L5
#11 MB 320-218884/1-A	#11 MB 320-218884/1-A
#12 LCS 320-218884/2-A	#12 LCS 320-218884/2-A
#13 320-38054-A-1-B	#13 320-38054-A-1-B
#14 320-38054-A-2-D	#14 320-38054-A-2-D
#15 320-38054-A-2-E MS	#15 320-38054-A-2-E MS
#16 320-38054-A-2-F MSD	#16 320-38054-A-2-F MSD
#17 CCV L4	#17 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26APR2018NCI_PFC Worklist Number: 57288
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57288.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_QSM5-1 ICAL Raw Batch: 220089	LC PFC ICAL Raw Batch: 220090
# 1 CCV L5	# 1 CCV L5	# 1 CCV L5
# 2 320-38054-A-2-A		# 2 320-38054-A-2-A
# 3 320-38054-A-2-B MS		# 3 320-38054-A-2-B MS
# 4 320-38054-A-2-C MSD		# 4 320-38054-A-2-C MSD
# 5 320-38054-A-2-D		# 5 320-38054-A-2-D
# 6 320-38054-A-2-E MS		# 6 320-38054-A-2-E MS
# 7 320-38054-A-2-F MSD		# 7 320-38054-A-2-F MSD
# 8 CCV L4	# 8 CCV L4	# 8 CCV L4

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 27APR2018NCC_PFC Worklist Number: 57329
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57329.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch: 220224
# 1 CCV L5	# 1 CCV L5
# 2 320-38054-A-1-B	# 2 320-38054-A-1-B
# 3 320-38054-A-2-D	# 3 320-38054-A-2-D
# 4 320-38054-A-2-E MS	# 4 320-38054-A-2-E MS
# 5 320-38054-A-2-F MSD	# 5 320-38054-A-2-F MSD
# 6 CCV L4	# 6 CCV L4

74 TOPS - Soil

AS 4/24/18

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876 ✓

Method Code: 320-TOPS_PrePrep_S-320

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 6:33:00PM

Batch End: 4/24/2018 12:40:00AM

Shake Extraction with Ultrasonic Bath Extraction

Due: 5/2

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-218876/1 N/A	N/A	2.00 g	10.00 mL	N/A	N/A	N/A		
2	LCS-320-218876/2 N/A	N/A	2.00 g	10.00 mL	N/A	N/A	N/A		
3	320-38054-A-1 (PFC_IDA)	N/A (320-38054-1)	2.02 g	10.00 mL	4/27/18	12_Days	4		
4	320-38054-A-2 (PFC_IDA)	N/A (320-38054-1)	2.02 g	10.00 mL	4/27/18	12_Days	4		
5	320-38054-A-2-MS (PFC_IDA)	N/A (320-38054-1)	2.03 g	10.00 mL	4/27/18	12_Days	4		
6	320-38054-A-2-MSD (PFC_IDA)	N/A (320-38054-1)	2.02 g	10.00 mL	4/27/18	12_Days	4		
7	N/A	N/A			N/A	N/A	N/A		
8	N/A	N/A			N/A	N/A	N/A		
9	N/A	N/A			N/A	N/A	N/A		

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04/30/2018

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876 Analyst: Reed, Jonathan E Batch Open: 4/19/2018 6:33:00PM

Method Code: 320-TOPS_PrePrep_S-320 Batch End: 4/24/2018 12:40:00AM

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	175767
Filter ID	NA
Millipore Water Dispense Date	04/18/2018
SPE Cartridge Lot ID	017738067A
SPE Cartridge Type	WAX 150mg
Hexane ID	1214435
Methanol ID	1207213
Ammonium Hydroxide/MeOH ID	1213092
Sodium Hydroxide ID	163510
Methanolic Potassium Hydroxide ID	1209316
Acetic Acid ID	985732
Solvent Name	0.4% KOH/MeOH, 0.3% NH4OH/MeOH
Solvent Lot #	1209316, 1213092
Acid Name	HCL
Acid ID	4116040
Reagent ID	NA
Reagent Lot Number	NA
H2O ID	4/18/18
pH Indicator ID	3817
Internal Standard ID#	1208927

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876 Analyst: Reed, Jonathan E Batch Open: 4/19/2018 6:33:00PM

Method Code: 320-TOPS_PrePrep_S-320 Batch End: 4/24/2018 12:40:00AM

Manifold ID	TOPS
Pipette/Syringe/Dispenser ID	I46360G, O43093F
Analyst ID - Reagent Drop	JER
Analyst ID - Reagent Drop Witness	TWL
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	ALM
Analyst ID - Concentration	JER
Analyst ID - Aliquot Step	JER
Analyst ID - Final Volume Step	JER
SOP Number	WS-LC-0025
Batch Comment	Sample labels match client IDs JER

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876

Method Code: 320-TOPS_PrePrep_S-320

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 6:33:00PM

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218876/1	LCMPFCSUTOPS_00005	25 uL	10.00 mL	4/20/18	TVE 4/20/18
LCS 320-218876/2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218876/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MSD	LCPFCSP_00139	500 uL	10.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 6:33:00PM

Method Code: 320-TOPS_PrePrep_S-320

Batch End:

Reagent Additions Worksheet IDA only 4/23/18

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218876/1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL	4/23/18	GXL 4/23/18
MB 320-218876/1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218876/2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
LCS 320-218876/2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218876/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2 MS	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MSD	LCPFCSP_00139	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 6:33:00PM

Method Code: 320-TOPS_PrePrep_S-320

Batch End:

Reagent Additions Worksheet IS Only 4/23/18

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218876/1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
MB 320-218876/1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
MB 320-218876/1	LCPFC-IS_00037	500 uL	10.00 mL	4/23/18	ALM 4-23-18
LCS 320-218876/2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
LCS 320-218876/2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218876/2	LCPFC-IS_00037	500 uL	10.00 mL		
LCS 320-218876/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-1	LCPFC-IS_00037	500 uL	10.00 mL		
320-38054-A-2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2	LCPFC-IS_00037	500 uL	10.00 mL		
320-38054-A-2 MS	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2 MS	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCPFC-IS_00037	500 uL	10.00 mL		
320-38054-A-2 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218876 Analyst: Reed, Jonathan E Batch Open: 4/19/2018 6:33:00PM

Method Code: 320-TOPS_PrePrep_S-320 IS only 4/23/18 Batch End:

320-38054-A-2 MSD	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MSD	LCPFC-IS_00037	500 uL	10.00 mL	4/23/18	ALM 4-23-18
320-38054-A-2 MSD	LCPFCSP_00139	500 uL	10.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 218876 Test TOPS - Pre

Earliest Holding Time 4/24/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	NA	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	NA	NA
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: VPM Date: 4/24/18

2nd Level Reviewer: Date: 4/24/18

Comments:

74 TOPS-Soil

Solid SW-846-3500 Analysis Sheet

AS 4/24/18

(To Accompany Samples to Instruments)

Batch Number: 320-218884 ✓

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320

Batch End: 4/24/2018 12:45:00AM

Shake Extraction with Ultrasonic Bath Extraction

Due: 5/2

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-218884/1 N/A	N/A	2.00 g	10.00 mL	N/A	N/A	N/A		
2	LCS~320-218884/2 N/A	N/A	2.00 g	10.00 mL	N/A	N/A	N/A		
3	320-38054-A-1 (PFC_IDA)	N/A (320-38054-1)	2.05 g	10.00 mL	4/27/18	12_Days	4		
4	320-38054-A-2 (PFC_IDA)	N/A (320-38054-1)	2.01 g	10.00 mL	4/27/18	12_Days	4		
5	320-38054-A-2~MS (PFC_IDA)	N/A (320-38054-1)	2.04 g	10.00 mL	4/27/18	12_Days	4		
6	320-38054-A-2~MSD (PFC_IDA)	N/A (320-38054-1)	2.05 g	10.00 mL	4/27/18	12_Days	4		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218884

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320

Batch End: 4/24/2018 12:45:00AM

Batch Notes

Balance ID	QA-078
Blank Sand Lot #	175767
Filter ID	NA
Millipore Water Dispense Date	04/18/2018
SPE Cartridge Lot ID	017738067A
SPE Cartridge Type	WAX 150mg
Solid Phase Extraction Disk ID	017738067A
Hexane ID	1214435
Methanol ID	1207213
Ammonium Hydroxide/MeOH ID	1213092
Sodium Hydroxide ID	163510
Methanolic Potassium Hydroxide ID	1209316
Acetic Acid ID	985732
Hydrochloric Acid ID	4116040
Potassium Persulfate ID	A0375670
Solvent Name	0.4% KOH/MeOH, 0.3% NH4OH/MeOH
Solvent Lot #	1209316, 1213092
Acid Name	HCL
Acid ID	4116040
Reagent ID	NA
Reagent Lot Number	NA

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218884 Analyst: Reed, Jonathan E Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320 Batch End: 4/24/2018 12:45:00AM

H2O ID	4/18/18
pH Indicator ID	3817
Internal Standard ID#	1208927
Manifold ID	TOPS
Pipette/Syringe/Dispenser ID	I46360G, O43093F
First Start time	20:00
First End time	02:00
Analyst ID - Reagent Drop	JER
Analyst ID - Reagent Drop Witness	TWL
Analyst ID - IS Reagent Drop	JER
Analyst ID - IS Reagent Drop Witness	ALM
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	TWL
Analyst ID - Concentration	JER
Analyst ID - Aliquot Step	JER
Analyst ID - Final Volume Step	JER
SOP Number	WS-LC-0025
Batch Comment	Sample labels match client IDs JER

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218884

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218884/1	LCMPFCSUTOPS_00005	25 uL	10.00 mL	4/20/18	4/20/18
LCS 320-218884/2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218884/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MSD	LCPFCSP_00139	500 uL	10.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218884

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320

Batch End:

Reagent Additions Worksheet IDA only 4/23/18

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218884/1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL	4/23/18	GXL 4/23/18
MB 320-218884/1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218884/2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
LCS 320-218884/2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218884/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2 MS	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MSD	LCPFCSP_00139	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218884

Analyst: Reed, Jonathan E

Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320

Batch End:

Reagent Additions Worksheet

IS only 4/23/18

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218884/1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
MB 320-218884/1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
MB 320-218884/1	LCPFC-IS_00037	500 uL	10.00 mL	4/23/18	ALM 4-23-18
LCS 320-218884/2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
LCS 320-218884/2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
LCS 320-218884/2	LCPFC-IS_00037	500 uL	10.00 mL		
LCS 320-218884/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-1	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-1	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-1	LCPFC-IS_00037	500 uL	10.00 mL		
320-38054-A-2	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2	LCPFC-IS_00037	500 uL	10.00 mL		
320-38054-A-2 MS	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		
320-38054-A-2 MS	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MS	LCPFC-IS_00037	500 uL	10.00 mL		
320-38054-A-2 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38054-A-2 MSD	LCMPFC_ALL_SU_00050	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218884 Analyst: Reed, Jonathan E Batch Open: 4/19/2018 7:04:00PM

Method Code: 320-TOPS_PostPrep_S-320 Batch End:

320-38054-A-2 MSD	LCMPFCSUTOPS_00005	25 uL	10.00 mL		
320-38054-A-2 MSD	LCPFC-IS_00037	500 uL	10.00 mL	4/23/18	ALM 4-23-18
320-38054-A-2 MSD	LCPFCSP_00139	500 uL	10.00 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 218884 Test TO-15-PO54

Earliest Holding Time 4/24/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	NA	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	NA	NA
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: [signature] Date: 4/24/18

2nd Level Reviewer: VPM Date: 4/24/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC-IDA

Analyst (Print Name) Cary Westendorf **Reagent ID** LC-80:20-00004

Date 4/26/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
38054	2 pre	14000	15	1500	100
	2 ms pre				
	2 msd pre				
	2 post				
	2 ms Post				
	2 msd Post				
	1 post		40	200	5

4/26/18

Comments:

Q:\Document-Management\Forms\QA-747 SampleDilutionRecord.doc 1/29/20187 RE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC-IDA

Analyst (Print Name) Cary Westendorf **Reagent ID** LC-80:20_00003

Date 4/27/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
38054	2 post	4000	30	300	10
↓	2 ms pos-1	↓	↓	↓	↓
	2 msd post				
←					

Total_PFCA_Diff

Total PFCA (Treatment Difference)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP Lab Sample ID: 320-38054-1

Matrix: Solid Lab File ID:

Analysis Method: Total PFCA-Dif Date Collected: 04/10/2018 10:50

Extraction Method: Date Extracted:

Sample wt/vol: Date Analyzed: 04/27/2018 15:47

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: GC Column: ID:

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220275 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	0.020		
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.033		
307-24-4	Perfluorohexanoic acid (PFHxA)	0.045		
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.058		
335-67-1	Perfluorooctanoic acid (PFOA)	0.071		
375-95-1	Perfluorononanoic acid (PFNA)	0.11		
STL02402	Total Perfluoroalkyl carboxylic acid	0.34		

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP Lab Sample ID: 320-38054-2

Matrix: Solid Lab File ID:

Analysis Method: Total PFCA-Dif Date Collected: 04/10/2018 11:11

Extraction Method: Date Extracted:

Sample wt/vol: Date Analyzed: 04/27/2018 15:47

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: GC Column: ID:

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220275 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
375-22-4	Perfluorobutanoic acid (PFBA)	1.8		
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.4		
307-24-4	Perfluorohexanoic acid (PFHxA)	3.5		
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.4		
335-67-1	Perfluorooctanoic acid (PFOA)	3.0		
375-95-1	Perfluorononanoic acid (PFNA)	1.3		
STL02402	Total Perfluoroalkyl carboxylic acid	16		

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: NOEQUIP Start Date: 04/27/2018 15:47

Analysis Batch Number: 220275 End Date: 04/27/2018 15:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
320-38054-1		04/27/2018 15:47	1		
320-38054-2		04/27/2018 15:47	1		

Total PFCA-Dif

Total_PFCA_Sum

Total PFCA (Summary)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP Lab Sample ID: 320-38054-1

Matrix: Solid (Pre-Treatment) Lab File ID:

Analysis Method: Total PFCA-Sum Date Collected: 04/10/2018 10:50

Extraction Method: None Date Extracted: 04/27/2018 15:44

Sample wt/vol: Date Analyzed: 04/27/2018 15:44

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: GC Column: ID:

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220272 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
STL02402	Total Perfluoroalkyl carboxylic acid	0.0041		

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB007(2-4)-TOP Lab Sample ID: 320-38054-1

Matrix: Solid (Post-Treatment) Lab File ID:

Analysis Method: Total PFCA-Sum Date Collected: 04/10/2018 10:50

Extraction Method: None Date Extracted: 04/27/2018 15:44

Sample wt/vol: Date Analyzed: 04/27/2018 15:44

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: GC Column: ID:

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220272 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
STL02402	Total Perfluoroalkyl carboxylic acid	0.34		

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP Lab Sample ID: 320-38054-2

Matrix: Solid (Pre-Treatment) Lab File ID:

Analysis Method: Total PFCA-Sum Date Collected: 04/10/2018 11:11

Extraction Method: None Date Extracted: 04/27/2018 15:44

Sample wt/vol: Date Analyzed: 04/27/2018 15:44

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: GC Column: ID:

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220272 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
STL02402	Total Perfluoroalkyl carboxylic acid	0.15		

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Client Sample ID: SB003(0-2)-TOP Lab Sample ID: 320-38054-2

Matrix: Solid (Post-Treatment) Lab File ID:

Analysis Method: Total PFCA-Sum Date Collected: 04/10/2018 11:11

Extraction Method: None Date Extracted: 04/27/2018 15:44

Sample wt/vol: Date Analyzed: 04/27/2018 15:44

Con. Extract Vol.: Dilution Factor: 1

Injection Volume: GC Column: ID:

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220272 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL
STL02402	Total Perfluoroalkyl carboxylic acid	16		

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: NOEQUIP Start Date: 04/27/2018 15:44

Analysis Batch Number: 220272 End Date: 04/27/2018 15:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
320-38054-1		04/27/2018 15:44	1		
320-38054-2		04/27/2018 15:44	1		
320-38054-1		04/27/2018 15:44	1		
320-38054-2		04/27/2018 15:44	1		

Total PFCA-Sum

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38054-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB007(2-4)-TOP	320-38054-1
SB003(0-2)-TOP	320-38054-2

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38054-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38054-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 04/18/2018 11:53 End Date: 04/18/2018 11:53

Lab Sample ID	D / F	Type	Time	Analytes																				
				% Sol	Moist																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
320-38061-A-1 DU	1	T	11:53	X	X																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
320-38054-1	1	T	11:53	X	X																			
320-38054-2	1	T	11:53	X	X																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38054-1

SDG No.:

Batch Number: 218606 Batch Start Date: 04/18/18 11:53 Batch Analyst: Saechao, Tammy C

Batch Method: D 2216 Batch End Date: 04/19/18 09:14

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-38061-A-1 DU		D 2216	T	3	1.02 g	14.97 g	14.01 g		
320-38054-A-1	SB007(2-4)-TOP	D 2216	T	10	1.04 g	13.44 g	11.03 g		
320-38054-A-2	SB003(0-2)-TOP	D 2216	T	11	1.01 g	9.46 g	8.63 g		

Batch Notes	
Balance ID	QA-068
Date and Time Samples in Desiccator	04/19/2018 08:21
Date and Time Samples out of Desiccator	04/19/2018 09:14
Date samples were placed in the oven	04/18/2018
Oven Temp In	112 Degrees C
Time samples were place in the oven	11:53
Date samples were removed from oven	04/19/2018
Oven Temp Out	115 Degrees C
Time Samples were removed from oven	08:21
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

NYSC

460551

Chain of Custody Record

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Nick Russell	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-589-6353	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:

Address: 630 Johnson Ave Suite 7	Due Date Requested:
City: Bohemia	TAT Requested (days): 15 days
State, Zip: NY, 11716	
Phone: 631-589-6353(Tel)	PO #: SHD1801
Email: andyl@pwgrosser.com	WO #: SHD1801
Project Name: Suffolk County Firematics Site	Project #: 46024260
Site:	SSOW#:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS_Standard List (21 Analytes) TOP ASSY	SPLP PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N			
SB007(2-4)-TOP	4-10-18	1050					X		1	
SB003(0-2)-TOP	4-10-18	1111					X		1	

Preservation Codes:

A - HCl	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)
Other:	

320-38054 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by: Nick Russell	4-10-18 1425		Received by:	4/10/18 1450	
Relinquished by:	4/10/18 1720	TA	Received by:	4-11-18 845	TA W SAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.7°C ice 4/4-2

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-38054-1

Login Number: 38054
List Number: 1
Creator: Turpen, Troy

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 320-38061-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
630 Johnson Ave
Suite 7
Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Approved for release.
Thomas A Chupela
Project Management Assistant I
4/30/2018 8:26 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
04/30/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 320-38061-1

Job Description: Suffolk County Firematics Site

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Approved for release.
Thomas A Chupela
Project Management Assistant I
4/30/2018 8:26 AM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-38061-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 4/11/2018 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The sample collection date, sample type, and matrix were only recorded for the first sample on the COC. In addition, the client requested that all sample IDs have the same naming convention. The foot markers in the IDs were removed per client request.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED HYDROCARBONS (PFC)
Samples SB031(0-2) (320-38061-1), SB012(2-4) (320-38061-2), SB008(2-4) (320-38061-3), SB007(0-2) (320-38061-4), SB003(0-2) (320-38061-5), SB004(8-10) (320-38061-6) and SB013(8-10) (320-38061-7) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC. The samples were prepared on 04/16/2018 and analyzed on 04/21/2018 and 04/26/2018.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 320-218132 and analytical batch 320-219143 were outside control limits for Perfluorooctanoic acid (PFOA). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Isotope Dilution Analyte (IDA) recovery for M2-6:2FTS and M2-8:2FTS is above the method recommended limit for the following samples: SB031(0-2) (320-38061-1), SB012(2-4) (320-38061-2), SB007(0-2) (320-38061-4), (320-38061-A-1-B MS) and (320-38061-A-1-C MSD). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Isotope Dilution Analyte (IDA) recovery for M2-8:2FTS is above the method recommended limit for the following sample: SB003(0-2) (320-38061-5). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Refer to the QC report for details.

Results for samples SB012(2-4) (320-38061-2), SB008(2-4) (320-38061-3), SB003(0-2) (320-38061-5), SB004(8-10) (320-38061-6) and SB013(8-10) (320-38061-7) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

No other difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All other quality control parameters were within the acceptance limits.

PERFLUORINATED HYDROCARBONS (PFC)
Samples FB008 (320-38061-8) and EB008 (320-38061-9) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with PFC.

The samples were prepared on 04/18/2018 and analyzed on 04/26/2018.

6:2FTS and Perfluorohexanesulfonic acid (PFHxS) were detected in method blank MB 320-218597/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No difficulties were encountered during the Perfluorinated Hydrocarbons (PFC) analysis.

All quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples SB031(0-2) (320-38061-1), SB012(2-4) (320-38061-2), SB008(2-4) (320-38061-3), SB007(0-2) (320-38061-4), SB003(0-2) (320-38061-5), SB004(8-10) (320-38061-6) and SB013(8-10) (320-38061-7) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 04/18/2018.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-38061-1	SB031(0-2)	Solid	04/10/18 09:15	04/11/18 08:45
320-38061-2	SB012(2-4)	Solid	04/10/18 09:45	04/11/18 08:45
320-38061-3	SB008(2-4)	Solid	04/10/18 10:00	04/11/18 08:45
320-38061-4	SB007(0-2)	Solid	04/10/18 10:45	04/11/18 08:45
320-38061-5	SB003(0-2)	Solid	04/10/18 11:11	04/11/18 08:45
320-38061-6	SB004(8-10)	Solid	04/10/18 11:30	04/11/18 08:45
320-38061-7	SB013(8-10)	Solid	04/10/18 12:15	04/11/18 08:45
320-38061-8	FB008	Water	04/10/18 12:30	04/11/18 08:45
320-38061-9	EB008	Water	04/10/18 12:30	04/11/18 08:45

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Client Sample ID: SB031(0-2) — Lab Sample ID: 320-38061-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.000041	J	0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000040	J	0.00021	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00043	F1	0.00021	0.000091	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.000070	J	0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.000045	J	0.00021	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00070		0.00021	0.000054	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00015	J	0.00021	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0030		0.00053	0.00021	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00018	J	0.00021	0.000087	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB012(2-4) — Lab Sample ID: 320-38061-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00036		0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00039		0.00021	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00021	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0022		0.00021	0.000092	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.0020		0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.0081		0.00021	0.000023	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.0018		0.00021	0.000038	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.00058		0.00021	0.000054	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.00015	J	0.00021	0.000027	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0093		0.00021	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.00042		0.00021	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.00034		0.00021	0.000087	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.00025	J	0.0021	0.00016	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.0018	J	0.0021	0.00027	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.65	D	0.027	0.011	mg/Kg	50	☼	537 (modified)	Total/NA

Client Sample ID: SB008(2-4) — Lab Sample ID: 320-38061-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00011	J	0.00023	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00027		0.00023	0.000088	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00033		0.00023	0.000048	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00017	J	0.00023	0.000033	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00043		0.00023	0.000099	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00063		0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.0019		0.00023	0.000025	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00039		0.00023	0.000041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00081		0.00023	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.000083	J	0.00023	0.000040	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.00011	J	0.00023	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.0012		0.00023	0.000094	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.00083	J	0.0023	0.00017	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.0028		0.0023	0.00029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.064	D	0.0029	0.0011	mg/Kg	5	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB007(0-2) — Lab Sample ID: 320-38061-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.00021	J	0.00025	0.000035	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.00023	J	0.00025	0.000097	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.00072		0.00025	0.000053	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00020	J	0.00025	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00068		0.00025	0.00011	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00038		0.00025	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00021	J	0.00025	0.000028	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00066		0.00025	0.000045	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.0015		0.00025	0.000084	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA)	0.018		0.00025	0.000064	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.0019		0.00025	0.000068	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00037		0.00025	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.0025		0.00063	0.00025	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA)	0.0045		0.00025	0.00010	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS	0.0091		0.0025	0.00019	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.023		0.0025	0.00031	mg/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: SB003(0-2) — Lab Sample ID: 320-38061-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.0023		0.00022	0.000031	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.0016		0.00022	0.000085	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.0045		0.00022	0.000047	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.0018		0.00022	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0059		0.00022	0.000095	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.021		0.00022	0.000060	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.00022		0.00022	0.000028	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0066		0.00022	0.000034	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.0019		0.00022	0.000039	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanesulfonic acid (PFDS)	0.021		0.00022	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.0017	J	0.0022	0.00043	mg/Kg	1	☼	537 (modified)	Total/NA
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.012		0.0022	0.00041	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA) - DL	0.085	D	0.0022	0.00040	mg/Kg	10	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA) - DL	0.088	D	0.0022	0.00024	mg/Kg	10	☼	537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA) - DL	0.062	D	0.0022	0.00074	mg/Kg	10	☼	537 (modified)	Total/NA
6:2FTS - DL	0.074	D	0.022	0.0017	mg/Kg	10	☼	537 (modified)	Total/NA
Perfluorotridecanoic Acid (PFTriA) - DL2	0.40	D	0.011	0.0028	mg/Kg	50	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL2	0.87	D	0.028	0.011	mg/Kg	50	☼	537 (modified)	Total/NA
Perfluorooctane Sulfonamide (FOSA) - DL2	0.60	D	0.011	0.0046	mg/Kg	50	☼	537 (modified)	Total/NA
8:2FTS - DL2	0.74	D	0.11	0.014	mg/Kg	50	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA) - DL3	1.02	D	0.022	0.0040	mg/Kg	100	☼	537 (modified)	Total/NA

Client Sample ID: SB004(8-10) — Lab Sample ID: 320-38061-6

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB004(8-10) (Continued) — Lab Sample ID: 320-38061-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.000062	J	0.00020	0.000028	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.000082	J	0.00020	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.00049		0.00020	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.0021		0.00020	0.000088	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.0060		0.00020	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.00012	J	0.00020	0.000022	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.00017	J	0.00020	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.00081		0.00020	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.00019	J	0.00020	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.011		0.00051	0.00020	mg/Kg	1	☼	537 (modified)	Total/NA
8:2FTS	0.0010	J	0.0020	0.00025	mg/Kg	1	☼	537 (modified)	Total/NA
6:2FTS - DL	0.027	D	0.010	0.00076	mg/Kg	5	☼	537 (modified)	Total/NA

Client Sample ID: SB013(8-10) — Lab Sample ID: 320-38061-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.000031	J	0.00021	0.000029	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.000088	J	0.00021	0.000043	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.000032	J	0.00021	0.000030	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.00017	J	0.00021	0.000089	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.00011	J	0.00021	0.000037	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.0010		0.00021	0.000032	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.000072	J	0.00021	0.000036	mg/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	0.038	D	0.0026	0.0010	mg/Kg	5	☼	537 (modified)	Total/NA

Client Sample ID: FB008 — Lab Sample ID: 320-38061-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.81	0.15	ng/L	1		537 (modified)	Total/NA
6:2FTS	3.99	J B	18.1	1.81	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EB008 — Lab Sample ID: 320-38061-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.36	J	1.77	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.24	J B	1.77	0.15	ng/L	1		537 (modified)	Total/NA
6:2FTS	3.89	J B	17.7	1.77	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB031(0-2)

Date Collected: 04/10/18 09:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-1

Matrix: Solid
Percent Solids: 93.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.000041**	**J**	0.00021	0.000030	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluoropentanoic acid (PFPeA)	0.000082	U	0.00021	0.000082	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorohexanoic acid (PFHxA)	0.000045	U	0.00021	0.000045	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluoroheptanoic acid (PFHpA)	**0.000040**	**J**	0.00021	0.000031	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorooctanoic acid (PFOA)	**0.00043**	**F1**	0.00021	0.000091	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorononanoic acid (PFNA)	**0.000070**	**J**	0.00021	0.000038	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorodecanoic acid (PFDA)	**0.000045**	**J**	0.00021	0.000023	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluoroundecanoic acid (PFUnA)	0.000038	U	0.00021	0.000038	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00021	0.000071	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorotridecanoic Acid (PFTriA)	**0.00070**		0.00021	0.000054	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorotetradecanoic acid (PFTeA)	0.000057	U	0.00021	0.000057	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00021	0.000027	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00015**	**J**	0.00021	0.000033	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000037	U	0.00021	0.000037	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorooctanesulfonic acid (PFOS)	**0.0030**		0.00053	0.00021	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorodecanesulfonic acid (PFDS)	0.000041	U	0.00021	0.000041	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
Perfluorooctane Sulfonamide (FOSA)	**0.00018**	**J**	0.00021	0.000087	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.0021	0.00041	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
6:2FTS	0.00016	U	0.0021	0.00016	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1
8:2FTS	0.00027	U	0.0021	0.00027	mg/Kg	☼	04/16/18 08:43	04/21/18 10:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C5 PFPeA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C2 PFHxA	*88*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C4-PFHpA	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C4 PFOA	*105*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C5 PFNA	*108*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C2 PFDA	*111*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C2 PFUnA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C2 PFDoA	*98*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C2-PFTeDA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C3-PFBS	*96*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
18O2 PFHxS	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C4 PFOS	*96*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
13C8 FOSA	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
d3-NMeFOSAA	*124*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
d5-NEtFOSAA	*124*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
M2-6:2FTS	*182*	*	*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*
M2-8:2FTS	*188*	*	*25 - 150*	*04/16/18 08:43*	*04/21/18 10:13*	*1*

Client Sample ID: SB012(2-4)

Date Collected: 04/10/18 09:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-2

Matrix: Solid
Percent Solids: 93.2

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00036**		0.00021	0.000030	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluoropentanoic acid (PFPeA)	0.000082	U	0.00021	0.000082	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorohexanoic acid (PFHxA)	**0.00039**		0.00021	0.000045	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluoroheptanoic acid (PFHpA)	**0.00018**	**J**	0.00021	0.000031	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorooctanoic acid (PFOA)	**0.0022**		0.00021	0.000092	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorononanoic acid (PFNA)	**0.0020**		0.00021	0.000038	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorodecanoic acid (PFDA)	**0.0081**		0.00021	0.000023	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluoroundecanoic acid (PFUnA)	**0.0018**		0.00021	0.000038	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00021	0.000071	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorotridecanoic Acid (PFTriA)	**0.00058**		0.00021	0.000054	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00021	0.000058	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorobutanesulfonic acid (PFBS)	**0.00015**	**J**	0.00021	0.000027	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0093**		0.00021	0.000033	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.00042**		0.00021	0.000037	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorodecanesulfonic acid (PFDS)	0.000042	U	0.00021	0.000042	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
Perfluorooctane Sulfonamide (FOSA)	**0.00034**		0.00021	0.000087	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0021	0.00042	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
6:2FTS	**0.00025**	**J**	0.0021	0.00016	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1
8:2FTS	**0.0018**	**J**	0.0021	0.00027	mg/Kg	☼	04/16/18 08:43	04/21/18 10:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C5 PFPeA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C2 PFHxA	*88*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C4-PFHpA	*96*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C4 PFOA	*103*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C5 PFNA	*56*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C2 PFDA	*110*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C2 PFUnA	*106*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C2 PFDoA	*103*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C2-PFTeDA	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C3-PFBS	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
18O2 PFHxS	*93*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C4 PFOS	*53*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
13C8 FOSA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
d3-NMeFOSAA	*126*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
d5-NEtFOSAA	*121*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
M2-6:2FTS	*178*	*	*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*
M2-8:2FTS	*164*	*	*25 - 150*	*04/16/18 08:43*	*04/21/18 10:36*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.65**	**D**	0.027	0.011	mg/Kg	☼	04/16/18 08:43	04/26/18 06:17	50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	93		25 - 150	04/16/18 08:43	04/26/18 06:17	50

Client Sample ID: SB008(2-4)

Lab Sample ID: 320-38061-3

Date Collected: 04/10/18 10:00
Matrix: Solid
Date Received: 04/11/18 08:45
Percent Solids: 85.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00011**	**J**	0.00023	0.000032	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluoropentanoic acid (PFPeA)	**0.00027**		0.00023	0.000088	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorohexanoic acid (PFHxA)	**0.00033**		0.00023	0.000048	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluoroheptanoic acid (PFHpA)	**0.00017**	**J**	0.00023	0.000033	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorooctanoic acid (PFOA)	**0.00043**		0.00023	0.000099	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorononanoic acid (PFNA)	**0.00063**		0.00023	0.000041	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorodecanoic acid (PFDA)	**0.0019**		0.00023	0.000025	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluoroundecanoic acid (PFUnA)	**0.00039**		0.00023	0.000041	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorododecanoic acid (PFDoA)	0.000077	U	0.00023	0.000077	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorotridecanoic Acid (PFTriA)	0.000059	U	0.00023	0.000059	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorotetradecanoic acid (PFTeA)	0.000062	U	0.00023	0.000062	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorobutanesulfonic acid (PFBS)	0.000029	U	0.00023	0.000029	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00081**		0.00023	0.000036	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.000083**	**J**	0.00023	0.000040	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorodecanesulfonic acid (PFDS)	**0.00011**	**J**	0.00023	0.000045	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
Perfluorooctane Sulfonamide (FOSA)	**0.0012**		0.00023	0.000094	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00045	U	0.0023	0.00045	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00042	U	0.0023	0.00042	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
6:2FTS	**0.00083**	**J**	0.0023	0.00017	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1
8:2FTS	**0.0028**		0.0023	0.00029	mg/Kg	☼	04/16/18 08:43	04/21/18 10:44	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	96		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C5 PFPeA	96		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C2 PFHxA	85		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C4-PFHpA	102		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C4 PFOA	104		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C5 PFNA	93		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C2 PFDA	108		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C2 PFUnA	97		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C2 PFDoA	98		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C2-PFTeDA	101		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C3-PFBS	84		25 - 150	04/16/18 08:43	04/21/18 10:44	1
18O2 PFHxS	90		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C4 PFOS	83		25 - 150	04/16/18 08:43	04/21/18 10:44	1
13C8 FOSA	89		25 - 150	04/16/18 08:43	04/21/18 10:44	1
d3-NMeFOSAA	120		25 - 150	04/16/18 08:43	04/21/18 10:44	1
d5-NEtFOSAA	117		25 - 150	04/16/18 08:43	04/21/18 10:44	1
M2-6:2FTS	116		25 - 150	04/16/18 08:43	04/21/18 10:44	1
M2-8:2FTS	124		25 - 150	04/16/18 08:43	04/21/18 10:44	1

Client Sample ID: SB008(2-4)

Lab Sample ID: 320-38061-3
Date Collected: 04/10/18 10:00
Matrix: Solid
Date Received: 04/11/18 08:45
Percent Solids: 85.6

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.064**	**D**	0.0029	0.0011	mg/Kg	☼	04/16/18 08:43	04/26/18 06:24	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*90*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:24*	*5*

Client Sample ID: SB007(0-2)

Lab Sample ID: 320-38061-4
Date Collected: 04/10/18 10:45
Matrix: Solid
Date Received: 04/11/18 08:45
Percent Solids: 78.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.00021**	**J**	0.00025	0.000035	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluoropentanoic acid (PFPeA)	**0.00023**	**J**	0.00025	0.000097	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorohexanoic acid (PFHxA)	**0.00072**		0.00025	0.000053	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluoroheptanoic acid (PFHpA)	**0.00020**	**J**	0.00025	0.000036	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorooctanoic acid (PFOA)	**0.00068**		0.00025	0.00011	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorononanoic acid (PFNA)	**0.00038**		0.00025	0.000045	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorodecanoic acid (PFDA)	**0.00021**	**J**	0.00025	0.000028	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluoroundecanoic acid (PFUnA)	**0.00066**		0.00025	0.000045	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorododecanoic acid (PFDoA)	**0.0015**		0.00025	0.000084	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorotridecanoic Acid (PFTriA)	**0.018**		0.00025	0.000064	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorotetradecanoic acid (PFTeA)	**0.0019**		0.00025	0.000068	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorobutanesulfonic acid (PFBS)	0.000031	U	0.00025	0.000031	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00037**		0.00025	0.000039	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000044	U	0.00025	0.000044	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorooctanesulfonic acid (PFOS)	**0.0025**		0.00063	0.00025	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorodecanesulfonic acid (PFDS)	0.000049	U	0.00025	0.000049	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
Perfluorooctane Sulfonamide (FOSA)	**0.0045**		0.00025	0.00010	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00049	U	0.0025	0.00049	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00046	U	0.0025	0.00046	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
6:2FTS	**0.0091**		0.0025	0.00019	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1
8:2FTS	**0.023**		0.0025	0.00031	mg/Kg	☼	04/16/18 08:43	04/21/18 10:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C5 PFPeA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C2 PFHxA	*88*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C4-PFHpA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C4 PFOA	*104*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C5 PFNA	*106*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C2 PFDA	*106*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C2 PFUnA	*95*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*
13C2 PFDoA	*84*		*25 - 150*	*04/16/18 08:43*	*04/21/18 10:52*	*1*

Client Sample ID: SB007(0-2)

Date Collected: 04/10/18 10:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-4

Matrix: Solid
Percent Solids: 78.3

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2-PFTeDA	72		25 - 150	04/16/18 08:43	04/21/18 10:52	1
13C3-PFBS	96		25 - 150	04/16/18 08:43	04/21/18 10:52	1
18O2 PFHxS	96		25 - 150	04/16/18 08:43	04/21/18 10:52	1
13C4 PFOS	97		25 - 150	04/16/18 08:43	04/21/18 10:52	1
13C8 FOSA	87		25 - 150	04/16/18 08:43	04/21/18 10:52	1
d3-NMeFOSAA	100		25 - 150	04/16/18 08:43	04/21/18 10:52	1
d5-NEtFOSAA	114		25 - 150	04/16/18 08:43	04/21/18 10:52	1
M2-6:2FTS	218	*	25 - 150	04/16/18 08:43	04/21/18 10:52	1
M2-8:2FTS	204	*	25 - 150	04/16/18 08:43	04/21/18 10:52	1

Client Sample ID: SB003(0-2)

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-5

Matrix: Solid
Percent Solids: 88.5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0023		0.00022	0.000031	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluoropentanoic acid (PFPeA)	0.0016		0.00022	0.000085	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluorohexanoic acid (PFHxA)	0.0045		0.00022	0.000047	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluoroheptanoic acid (PFHpA)	0.0018		0.00022	0.000032	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluorooctanoic acid (PFOA)	0.0059		0.00022	0.000095	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluorotetradecanoic acid (PFTeA)	0.021		0.00022	0.000060	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluorobutanesulfonic acid (PFBS)	0.00022		0.00022	0.000028	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluorohexanesulfonic acid (PFHxS)	0.0066		0.00022	0.000034	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.0019		0.00022	0.000039	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
Perfluorodecanesulfonic acid (PFDS)	0.021		0.00022	0.000043	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.0017	J	0.0022	0.00043	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.012		0.0022	0.00041	mg/Kg	☼	04/16/18 08:43	04/21/18 11:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	128		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C5 PFPeA	142		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C2 PFHxA	114		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C4-PFHpA	100		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C4 PFOA	103		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C2-PFTeDA	53		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C3-PFBS	150		25 - 150	04/16/18 08:43	04/21/18 11:00	1
18O2 PFHxS	100		25 - 150	04/16/18 08:43	04/21/18 11:00	1
13C4 PFOS	55		25 - 150	04/16/18 08:43	04/21/18 11:00	1
d3-NMeFOSAA	39		25 - 150	04/16/18 08:43	04/21/18 11:00	1
d5-NEtFOSAA	32		25 - 150	04/16/18 08:43	04/21/18 11:00	1

Client Sample ID: SB003(0-2)

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-5

Matrix: Solid
Percent Solids: 88.5

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	0.085	D	0.0022	0.00040	mg/Kg	☼	04/16/18 08:43	04/26/18 06:48	10
Perfluorodecanoic acid (PFDA)	0.088	D	0.0022	0.00024	mg/Kg	☼	04/16/18 08:43	04/26/18 06:48	10
Perfluorododecanoic acid (PFDoA)	0.062	D	0.0022	0.00074	mg/Kg	☼	04/16/18 08:43	04/26/18 06:48	10
6:2FTS	0.074	D	0.022	0.0017	mg/Kg	☼	04/16/18 08:43	04/26/18 06:48	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*79*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:48*	*10*
13C2 PFDA	*67*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:48*	*10*
13C2 PFDoA	*54*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:48*	*10*
M2-6:2FTS	*147*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:48*	*10*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotridecanoic Acid (PFTriA)	0.40	D	0.011	0.0028	mg/Kg	☼	04/16/18 08:43	04/26/18 06:40	50
Perfluorooctanesulfonic acid (PFOS)	0.87	D	0.028	0.011	mg/Kg	☼	04/16/18 08:43	04/26/18 06:40	50
Perfluorooctane Sulfonamide (FOSA)	0.60	D	0.011	0.0046	mg/Kg	☼	04/16/18 08:43	04/26/18 06:40	50
8:2FTS	0.74	D	0.11	0.014	mg/Kg	☼	04/16/18 08:43	04/26/18 06:40	50

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*50*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:40*	*50*
13C4 PFOS	*70*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:40*	*50*
13C8 FOSA	*57*		*25 - 150*	*04/16/18 08:43*	*04/26/18 06:40*	*50*
M2-8:2FTS	*190*	*	*25 - 150*	*04/16/18 08:43*	*04/26/18 06:40*	*50*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	1.02	D	0.022	0.0040	mg/Kg	☼	04/16/18 08:43	04/26/18 16:00	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFUnA	*94*		*25 - 150*	*04/16/18 08:43*	*04/26/18 16:00*	*100*

Client Sample ID: SB004(8-10)

Date Collected: 04/10/18 11:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-6

Matrix: Solid
Percent Solids: 97.3

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.000062	J	0.00020	0.000028	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluoropentanoic acid (PFPeA)	0.000078	U	0.00020	0.000078	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorohexanoic acid (PFHxA)	0.000082	J	0.00020	0.000043	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluoroheptanoic acid (PFHpA)	0.00049		0.00020	0.000030	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorooctanoic acid (PFOA)	0.0021		0.00020	0.000088	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorononanoic acid (PFNA)	0.0060		0.00020	0.000037	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorodecanoic acid (PFDA)	0.00012	J	0.00020	0.000022	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluoroundecanoic acid (PFUnA)	0.00017	J	0.00020	0.000037	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorododecanoic acid (PFDoA)	0.000068	U	0.00020	0.000068	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorotridecanoic Acid (PFTriA)	0.000052	U	0.00020	0.000052	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1

Client Sample ID: SB004(8-10)

Date Collected: 04/10/18 11:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-6

Matrix: Solid
Percent Solids: 97.3

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorohexanesulfonic acid (PFHxS)	**0.00081**		0.00020	0.000032	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.00019**	**J**	0.00020	0.000036	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorooctanesulfonic acid (PFOS)	**0.011**		0.00051	0.00020	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U	0.00020	0.000040	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
Perfluorooctane Sulfonamide (FOSA)	0.000083	U	0.00020	0.000083	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1
8:2FTS	**0.0010**	**J**	0.0020	0.00025	mg/Kg	☼	04/16/18 08:43	04/21/18 11:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*102*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C5 PFPeA	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C2 PFHxA	*94*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C4-PFHpA	*106*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C4 PFOA	*105*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C5 PFNA	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C2 PFDA	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C2 PFUnA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C2 PFDoA	*95*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C2-PFTeDA	*95*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C3-PFBS	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
18O2 PFHxS	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C4 PFOS	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
13C8 FOSA	*91*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
d3-NMeFOSAA	*70*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
d5-NEtFOSAA	*74*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*
M2-8:2FTS	*93*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:08*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	**0.027**	**D**	0.010	0.00076	mg/Kg	☼	04/16/18 08:43	04/26/18 07:03	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2FTS	*91*		*25 - 150*	*04/16/18 08:43*	*04/26/18 07:03*	*5*

Client Sample ID: SB013(8-10)

Date Collected: 04/10/18 12:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-7

Matrix: Solid
Percent Solids: 96.6

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.000031**	**J**	0.00021	0.000029	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluoropentanoic acid (PFPeA)	0.000079	U	0.00021	0.000079	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorohexanoic acid (PFHxA)	**0.000088**	**J**	0.00021	0.000043	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluoroheptanoic acid (PFHpA)	**0.000032**	**J**	0.00021	0.000030	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorooctanoic acid (PFOA)	**0.00017**	**J**	0.00021	0.000089	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorononanoic acid (PFNA)	**0.00011**	**J**	0.00021	0.000037	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1

Client Sample ID: SB013(8-10)

Date Collected: 04/10/18 12:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-7

Matrix: Solid
Percent Solids: 96.6

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	0.000023	U	0.00021	0.000023	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluoroundecanoic acid (PFUnA)	0.000037	U	0.00021	0.000037	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00021	0.000069	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorotridecanoic Acid (PFTriA)	0.000053	U	0.00021	0.000053	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorotetradecanoic acid (PFTeA)	0.000056	U	0.00021	0.000056	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00021	0.000026	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorohexanesulfonic acid (PFHxS)	**0.0010**		0.00021	0.000032	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.000072**	**J**	0.00021	0.000036	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorodecanesulfonic acid (PFDS)	0.000040	U	0.00021	0.000040	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
Perfluorooctane Sulfonamide (FOSA)	0.000085	U	0.00021	0.000085	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0021	0.00040	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0021	0.00038	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
6:2FTS	0.00015	U	0.0021	0.00015	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1
8:2FTS	0.00026	U	0.0021	0.00026	mg/Kg	☼	04/16/18 08:43	04/21/18 11:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C5 PFPeA	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C2 PFHxA	*94*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C4-PFHpA	*106*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C4 PFOA	*104*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C5 PFNA	*91*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C2 PFDA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C2 PFUnA	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C2 PFDoA	*95*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C2-PFTeDA	*94*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C3-PFBS	*102*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
18O2 PFHxS	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C4 PFOS	*93*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
13C8 FOSA	*85*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
d3-NMeFOSAA	*84*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
d5-NEtFOSAA	*86*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
M2-6:2FTS	*108*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*
M2-8:2FTS	*103*		*25 - 150*	*04/16/18 08:43*	*04/21/18 11:23*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**0.038**	**D**	0.0026	0.0010	mg/Kg	☼	04/16/18 08:43	04/26/18 07:11	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*100*		*25 - 150*	*04/16/18 08:43*	*04/26/18 07:11*	*5*

Client Sample ID: FB008

Date Collected: 04/10/18 12:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-8

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.32	U	1.81	0.32	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluoropentanoic acid (PFPeA)	0.44	U	1.81	0.44	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorohexanoic acid (PFHxA)	0.53	U	1.81	0.53	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluoroheptanoic acid (PFHpA)	0.23	U	1.81	0.23	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorooctanoic acid (PFOA)	0.77	U	1.81	0.77	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorononanoic acid (PFNA)	0.24	U	1.81	0.24	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorodecanoic acid (PFDA)	0.28	U	1.81	0.28	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluoroundecanoic acid (PFUnA)	1.0	U	1.81	1.0	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorododecanoic acid (PFDoA)	0.50	U	1.81	0.50	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorotridecanoic Acid (PFTriA)	1.18	U	1.81	1.18	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorotetradecanoic acid (PFTeA)	0.26	U	1.81	0.26	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorobutanesulfonic acid (PFBS)	0.18	U	1.81	0.18	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorohexanesulfonic acid (PFHxS)	**0.25**	**J B**	1.81	0.15	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.17	U	1.81	0.17	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorooctanesulfonic acid (PFOS)	0.49	U	1.81	0.49	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorodecanesulfonic acid (PFDS)	0.29	U	1.81	0.29	ng/L		04/18/18 10:41	04/26/18 12:44	1
Perfluorooctane Sulfonamide (FOSA)	0.32	U	1.81	0.32	ng/L		04/18/18 10:41	04/26/18 12:44	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.81	U	18.1	2.81	ng/L		04/18/18 10:41	04/26/18 12:44	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.72	U	18.1	1.72	ng/L		04/18/18 10:41	04/26/18 12:44	1
6:2FTS	**3.99**	**J B**	18.1	1.81	ng/L		04/18/18 10:41	04/26/18 12:44	1
8:2FTS	1.81	U	18.1	1.81	ng/L		04/18/18 10:41	04/26/18 12:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C5 PFPeA	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C2 PFHxA	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C4-PFHpA	*90*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C4 PFOA	*92*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C5 PFNA	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C2 PFDA	*92*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C2 PFUnA	*87*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C2 PFDoA	*80*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C2-PFTeDA	*87*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C3-PFBS	*90*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
18O2 PFHxS	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C4 PFOS	*93*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
13C8 FOSA	*79*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
d3-NMeFOSAA	*80*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
d5-NEtFOSAA	*95*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
M2-6:2FTS	*106*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*
M2-8:2FTS	*103*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:44*	*1*

Client Sample ID: EB008

Date Collected: 04/10/18 12:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-9

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.36**	**J**	1.77	0.31	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluoropentanoic acid (PFPeA)	0.43	U	1.77	0.43	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorohexanoic acid (PFHxA)	0.51	U	1.77	0.51	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluoroheptanoic acid (PFHpA)	0.22	U	1.77	0.22	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorooctanoic acid (PFOA)	0.75	U	1.77	0.75	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorononanoic acid (PFNA)	0.24	U	1.77	0.24	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorodecanoic acid (PFDA)	0.27	U	1.77	0.27	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluoroundecanoic acid (PFUnA)	0.97	U	1.77	0.97	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorododecanoic acid (PFDoA)	0.49	U	1.77	0.49	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorotridecanoic Acid (PFTriA)	1.15	U	1.77	1.15	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorotetradecanoic acid (PFTeA)	0.26	U	1.77	0.26	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorobutanesulfonic acid (PFBS)	0.18	U	1.77	0.18	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorohexanesulfonic acid (PFHxS)	**0.24**	**J B**	1.77	0.15	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.17	U	1.77	0.17	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorooctanesulfonic acid (PFOS)	0.48	U	1.77	0.48	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorodecanesulfonic acid (PFDS)	0.28	U	1.77	0.28	ng/L		04/18/18 10:41	04/26/18 12:52	1
Perfluorooctane Sulfonamide (FOSA)	0.31	U	1.77	0.31	ng/L		04/18/18 10:41	04/26/18 12:52	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.74	U	17.7	2.74	ng/L		04/18/18 10:41	04/26/18 12:52	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.68	U	17.7	1.68	ng/L		04/18/18 10:41	04/26/18 12:52	1
6:2FTS	**3.89**	**J B**	17.7	1.77	ng/L		04/18/18 10:41	04/26/18 12:52	1
8:2FTS	1.77	U	17.7	1.77	ng/L		04/18/18 10:41	04/26/18 12:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C5 PFPeA	*92*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C2 PFHxA	*92*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C4-PFHpA	*93*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C4 PFOA	*89*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C5 PFNA	*94*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C2 PFDA	*94*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C2 PFUnA	*88*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C2 PFDoA	*82*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C2-PFTeDA	*82*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C3-PFBS	*94*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
18O2 PFHxS	*93*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C4 PFOS	*92*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
13C8 FOSA	*86*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
d3-NMeFOSAA	*84*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
M2-6:2FTS	*105*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*
M2-8:2FTS	*105*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:52*	*1*

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38061-1	SB031(0-2)	100	100	88	101	105	108	111	100
320-38061-1 MS	SB031(0-2)	94	101	90	101	106	113	121	113
320-38061-1 MSD	SB031(0-2)	102	103	89	106	108	116	115	104
320-38061-2	SB012(2-4)	91	97	88	96	103	56	110	106
320-38061-2 - DL	SB012(2-4)								
320-38061-3	SB008(2-4)	96	96	85	102	104	93	108	97
320-38061-3 - DL	SB008(2-4)								
320-38061-4	SB007(0-2)	90	97	88	100	104	106	106	95
320-38061-5	SB003(0-2)	128	142	114	100	103			
320-38061-5 - DL2	SB003(0-2)								
320-38061-5 - DL	SB003(0-2)						79	67	
320-38061-5 - DL3	SB003(0-2)								94
320-38061-6	SB004(8-10)	102	99	94	106	105	101	101	97
320-38061-6 - DL	SB004(8-10)								
320-38061-7	SB013(8-10)	101	99	94	106	104	91	100	99
320-38061-7 - DL	SB013(8-10)								
LCS 320-218132/2-A	Lab Control Sample	96	96	88	102	101	99	97	91
MB 320-218132/1-A	Method Blank	97	98	89	100	97	99	100	91

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOSA	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38061-1	SB031(0-2)	98	97	96	99	96	99	124	124
320-38061-1 MS	SB031(0-2)	100	99	97	97	102	105	148	141
320-38061-1 MSD	SB031(0-2)	100	104	98	99	99	100	129	119
320-38061-2	SB012(2-4)	103	99	97	93	53	97	126	121
320-38061-2 - DL	SB012(2-4)					93			
320-38061-3	SB008(2-4)	98	101	84	90	83	89	120	117
320-38061-3 - DL	SB008(2-4)					90			
320-38061-4	SB007(0-2)	84	72	96	96	97	87	100	114
320-38061-5	SB003(0-2)		53	150	100	55		39	32
320-38061-5 - DL2	SB003(0-2)	50				70	57		
320-38061-5 - DL	SB003(0-2)	54							
320-38061-5 - DL3	SB003(0-2)								
320-38061-6	SB004(8-10)	95	95	100	101	97	91	70	74
320-38061-6 - DL	SB004(8-10)								
320-38061-7	SB013(8-10)	95	94	102	100	93	85	84	86
320-38061-7 - DL	SB013(8-10)					100			
LCS 320-218132/2-A	Lab Control Sample	92	91	95	95	94	89	100	99
MB 320-218132/1-A	Method Blank	94	95	93	98	98	88	93	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
320-38061-1	SB031(0-2)	182 *	188 *						
320-38061-1 MS	SB031(0-2)	214 *	245 *						
320-38061-1 MSD	SB031(0-2)	184 *	179 *						
320-38061-2	SB012(2-4)	178 *	164 *						
320-38061-2 - DL	SB012(2-4)								
320-38061-3	SB008(2-4)	116	124						

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)						
320-38061-3 - DL	SB008(2-4)								
320-38061-4	SB007(0-2)	218 *	204 *						
320-38061-5	SB003(0-2)								
320-38061-5 - DL2	SB003(0-2)		190 *						
320-38061-5 - DL	SB003(0-2)	147							
320-38061-5 - DL3	SB003(0-2)								
320-38061-6	SB004(8-10)		93						
320-38061-6 - DL	SB004(8-10)	91							
320-38061-7	SB013(8-10)	108	103						
320-38061-7 - DL	SB013(8-10)								
LCS 320-218132/2-A	Lab Control Sample	107	102						
MB 320-218132/1-A	Method Blank	101	100						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-38061-8	FB008	90	91	91	90	92	91	92	87
320-38061-9	EB008	91	92	92	93	89	94	94	88
320-38169-A-1-B MS	Matrix Spike	38	72	82	86	94	96	89	88
320-38169-A-1-C MSD	Matrix Spike Duplicate	38	73	81	92	93	94	90	88
LCS 320-218597/2-A	Lab Control Sample	89	93	93	90	91	94	93	92
MB 320-218597/1-A	Method Blank	90	94	89	91	95	96	94	87

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOSA (25-150)	-NEtFOSA (25-150)
320-38061-8	FB008	80	87	90	91	93	79	80	95

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOSA	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38061-9	EB008	82	82	94	93	92	86	84	93
320-38169-A-1-B MS	Matrix Spike	86	86	88	97	94	88	91	95
320-38169-A-1-C MSD	Matrix Spike Duplicate	85	89	87	97	92	86	85	91
LCS 320-218597/2-A	Lab Control Sample	80	83	91	90	90	78	81	91
MB 320-218597/1-A	Method Blank	83	83	90	91	91	80	86	96

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		M262FTS	M282FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)
320-38061-8	FB008	106	103
320-38061-9	EB008	105	105
320-38169-A-1-B MS	Matrix Spike	134	101
320-38169-A-1-C MSD	Matrix Spike Duplicate	136	105
LCS 320-218597/2-A	Lab Control Sample	103	99
MB 320-218597/1-A	Method Blank	105	103

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-218132/1-A
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 218132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.000028	U	0.00020	0.000028	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorooctanesulfonic acid (PFOS)	0.00020	U	0.00050	0.00020	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
6:2FTS	0.00015	U	0.0020	0.00015	mg/Kg		04/16/18 08:43	04/21/18 09:57	1
8:2FTS	0.00025	U	0.0020	0.00025	mg/Kg		04/16/18 08:43	04/21/18 09:57	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C5 PFPeA	*98*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C2 PFHxA	*89*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C4-PFHpA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C4 PFOA	*97*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C5 PFNA	*99*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C2 PFDA	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C2 PFUnA	*91*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C2 PFDoA	*94*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C2-PFTeDA	*95*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C3-PFBS	*93*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
18O2 PFHxS	*98*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C4 PFOS	*98*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
13C8 FOSA	*88*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
d3-NMeFOSAA	*93*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
d5-NEtFOSAA	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
M2-6:2FTS	*101*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*
M2-8:2FTS	*100*		*25 - 150*	*04/16/18 08:43*	*04/21/18 09:57*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-218132/2-A
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 218132

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorobutanoic acid (PFBA)			0.00200	0.00189		mg/Kg		95	81 - 133		
Perfluoropentanoic acid (PFPeA)			0.00200	0.00179		mg/Kg		90	79 - 120		
Perfluorohexanoic acid (PFHxA)			0.00200	0.00202		mg/Kg		101	75 - 125		
Perfluoroheptanoic acid (PFHpA)			0.00200	0.00199		mg/Kg		99	76 - 124		
Perfluorooctanoic acid (PFOA)			0.00200	0.00170		mg/Kg		85	76 - 121		
Perfluorononanoic acid (PFNA)			0.00200	0.00169		mg/Kg		85	74 - 126		
Perfluorodecanoic acid (PFDA)			0.00200	0.00186		mg/Kg		93	74 - 124		
Perfluoroundecanoic acid (PFUnA)			0.00200	0.00172		mg/Kg		86	74 - 114		
Perfluorododecanoic acid (PFDoA)			0.00200	0.00181		mg/Kg		91	75 - 123		
Perfluorotridecanoic Acid (PFTriA)			0.00200	0.00184		mg/Kg		92	43 - 116		
Perfluorotetradecanoic acid (PFTeA)			0.00200	0.00173		mg/Kg		86	22 - 129		
Perfluorobutanesulfonic acid (PFBS)			0.00177	0.00168		mg/Kg		95	73 - 142		
Perfluorohexanesulfonic acid (PFHxS)			0.00182	0.00161		mg/Kg		88	75 - 121		
Perfluoroheptanesulfonic Acid (PFHpS)			0.00190	0.00172		mg/Kg		90	78 - 146		
Perfluorooctanesulfonic acid (PFOS)			0.00186	0.00172		mg/Kg		93	69 - 131		
Perfluorodecanesulfonic acid (PFDS)			0.00193	0.00171		mg/Kg		89	54 - 113		
Perfluorooctane Sulfonamide (FOSA)			0.00200	0.00181		mg/Kg		91	62 - 135		
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)			0.00200	0.00184	J	mg/Kg		92	65 - 135		
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)			0.00200	0.00195	J	mg/Kg		97	65 - 135		
6:2FTS			0.00190	0.00179	J	mg/Kg		94	65 - 135		
8:2FTS			0.00192	0.00178	J	mg/Kg		93	65 - 135		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*96*		*25 - 150*
13C5 PFPeA	*96*		*25 - 150*
13C2 PFHxA	*88*		*25 - 150*
13C4-PFHpA	*102*		*25 - 150*
13C4 PFOA	*101*		*25 - 150*
13C5 PFNA	*99*		*25 - 150*
13C2 PFDA	*97*		*25 - 150*
13C2 PFUnA	*91*		*25 - 150*
13C2 PFDoA	*92*		*25 - 150*
13C2-PFTeDA	*91*		*25 - 150*
13C3-PFBS	*95*		*25 - 150*
18O2 PFHxS	*95*		*25 - 150*
13C4 PFOS	*94*		*25 - 150*
13C8 FOSA	*89*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-218132/2-A
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 218132

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	100		25 - 150
d5-NEtFOSAA	99		25 - 150
M2-6:2FTS	107		25 - 150
M2-8:2FTS	102		25 - 150

Lab Sample ID: 320-38061-1 MS
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: SB031(0-2)
Prep Type: Total/NA
Prep Batch: 218132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	0.000041	J	0.00213	0.00210		mg/Kg	☼	97	81 - 133
Perfluoropentanoic acid (PFPeA)	0.000082	U	0.00213	0.00200		mg/Kg	☼	94	79 - 120
Perfluorohexanoic acid (PFHxA)	0.000045	U	0.00213	0.00221		mg/Kg	☼	104	75 - 125
Perfluoroheptanoic acid (PFHpA)	0.000040	J	0.00213	0.00221		mg/Kg	☼	102	76 - 124
Perfluorooctanoic acid (PFOA)	0.00043	F1	0.00213	0.00202	F1	mg/Kg	☼	75	76 - 121
Perfluorononanoic acid (PFNA)	0.000070	J	0.00213	0.00191		mg/Kg	☼	87	74 - 126
Perfluorodecanoic acid (PFDA)	0.000045	J	0.00213	0.00183		mg/Kg	☼	84	74 - 124
Perfluoroundecanoic acid (PFUnA)	0.000038	U	0.00213	0.00218		mg/Kg	☼	102	74 - 114
Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00213	0.00210		mg/Kg	☼	99	75 - 123
Perfluorotridecanoic Acid (PFTriA)	0.00070		0.00213	0.00252		mg/Kg	☼	86	43 - 116
Perfluorotetradecanoic acid (PFTeA)	0.000057	U	0.00213	0.00200		mg/Kg	☼	94	22 - 129
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00188	0.00171		mg/Kg	☼	91	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	0.00015	J	0.00194	0.00192		mg/Kg	☼	92	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	0.000037	U	0.00203	0.00182		mg/Kg	☼	90	78 - 146
Perfluorooctanesulfonic acid (PFOS)	0.0030		0.00197	0.00530		mg/Kg	☼	115	69 - 131
Perfluorodecanesulfonic acid (PFDS)	0.000041	U	0.00205	0.00177		mg/Kg	☼	86	54 - 113
Perfluorooctane Sulfonamide (FOSA)	0.00018	J	0.00213	0.00212		mg/Kg	☼	91	62 - 135
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.00213	0.00195	J	mg/Kg	☼	92	65 - 135
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.00213	0.00204	J	mg/Kg	☼	96	65 - 135
6:2FTS	0.00016	U	0.00202	0.00187	J	mg/Kg	☼	93	65 - 135
8:2FTS	0.00027	U	0.00204	0.00187	J	mg/Kg	☼	92	65 - 135

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	94		25 - 150
13C5 PFPeA	101		25 - 150
13C2 PFHxA	90		25 - 150
13C4-PFHpA	101		25 - 150
13C4 PFOA	106		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-38061-1 MS
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: SB031(0-2)
Prep Type: Total/NA
Prep Batch: 218132

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C5 PFNA	113		25 - 150
13C2 PFDA	121		25 - 150
13C2 PFUnA	113		25 - 150
13C2 PFDoA	100		25 - 150
13C2-PFTeDA	99		25 - 150
13C3-PFBS	97		25 - 150
18O2 PFHxS	97		25 - 150
13C4 PFOS	102		25 - 150
13C8 FOSA	105		25 - 150
d3-NMeFOSAA	148		25 - 150
d5-NEtFOSAA	141		25 - 150
M2-6:2FTS	214	*	25 - 150
M2-8:2FTS	245	*	25 - 150

Lab Sample ID: 320-38061-1 MSD
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: SB031(0-2)
Prep Type: Total/NA
Prep Batch: 218132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.000041	J	0.00214	0.00204		mg/Kg	☼	93	81 - 133	2	30
Perfluoropentanoic acid (PFPeA)	0.000082	U	0.00214	0.00199		mg/Kg	☼	93	79 - 120	0	30
Perfluorohexanoic acid (PFHxA)	0.000045	U	0.00214	0.00231		mg/Kg	☼	108	75 - 125	4	30
Perfluoroheptanoic acid (PFHpA)	0.000040	J	0.00214	0.00194		mg/Kg	☼	88	76 - 124	13	30
Perfluorooctanoic acid (PFOA)	0.00043	F1	0.00214	0.00205	F1	mg/Kg	☼	75	76 - 121	1	30
Perfluorononanoic acid (PFNA)	0.000070	J	0.00214	0.00184		mg/Kg	☼	83	74 - 126	4	30
Perfluorodecanoic acid (PFDA)	0.000045	J	0.00214	0.00189		mg/Kg	☼	86	74 - 124	3	30
Perfluoroundecanoic acid (PFUnA)	0.000038	U	0.00214	0.00211		mg/Kg	☼	99	74 - 114	3	30
Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00214	0.00214		mg/Kg	☼	100	75 - 123	2	30
Perfluorotridecanoic Acid (PFTriA)	0.00070		0.00214	0.00228		mg/Kg	☼	73	43 - 116	10	30
Perfluorotetradecanoic acid (PFTeA)	0.000057	U	0.00214	0.00193		mg/Kg	☼	90	22 - 129	3	30
Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00190	0.00171		mg/Kg	☼	90	73 - 142	0	30
Perfluorohexanesulfonic acid (PFHxS)	0.00015	J	0.00195	0.00177		mg/Kg	☼	83	75 - 121	8	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.000037	U	0.00204	0.00183		mg/Kg	☼	89	78 - 146	0	30
Perfluorooctanesulfonic acid (PFOS)	0.0030		0.00199	0.00486		mg/Kg	☼	92	69 - 131	9	30
Perfluorodecanesulfonic acid (PFDS)	0.000041	U	0.00207	0.00185		mg/Kg	☼	90	54 - 113	5	30
Perfluorooctane Sulfonamide (FOSA)	0.00018	J	0.00214	0.00214		mg/Kg	☼	91	62 - 135	1	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.00214	0.00197	J	mg/Kg	☼	92	65 - 135	1	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.00214	0.00205	J	mg/Kg	☼	96	65 - 135	1	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-38061-1 MSD
Matrix: Solid
Analysis Batch: 219143

Client Sample ID: SB031(0-2)
Prep Type: Total/NA
Prep Batch: 218132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
6:2FTS	0.00016	U	0.00203	0.00195	J	mg/Kg	☼	96	65 - 135	4	30
8:2FTS	0.00027	U	0.00205	0.00199	J	mg/Kg	☼	97	65 - 135	6	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*102*		*25 - 150*
13C5 PFPeA	*103*		*25 - 150*
13C2 PFHxA	*89*		*25 - 150*
13C4-PFHpA	*106*		*25 - 150*
13C4 PFOA	*108*		*25 - 150*
13C5 PFNA	*116*		*25 - 150*
13C2 PFDA	*115*		*25 - 150*
13C2 PFUnA	*104*		*25 - 150*
13C2 PFDoA	*100*		*25 - 150*
13C2-PFTeDA	*104*		*25 - 150*
13C3-PFBS	*98*		*25 - 150*
18O2 PFHxS	*99*		*25 - 150*
13C4 PFOS	*99*		*25 - 150*
13C8 FOSA	*100*		*25 - 150*
d3-NMeFOSAA	*129*		*25 - 150*
d5-NEtFOSAA	*119*		*25 - 150*
M2-6:2FTS	*184*	*	*25 - 150*
M2-8:2FTS	*179*	*	*25 - 150*

Lab Sample ID: MB 320-218597/1-A
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 218597

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorohexanesulfonic acid (PFHxS)	0.360	J	2.00	0.17	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32	ng/L		04/18/18 10:41	04/26/18 12:28	1
Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35	ng/L		04/18/18 10:41	04/26/18 12:28	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10	ng/L		04/18/18 10:41	04/26/18 12:28	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-218597/1-A
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 218597

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90	ng/L		04/18/18 10:41	04/26/18 12:28	1
6:2FTS	3.850	J	20.0	2.00	ng/L		04/18/18 10:41	04/26/18 12:28	1
8:2FTS	2.00	U	20.0	2.00	ng/L		04/18/18 10:41	04/26/18 12:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C5 PFPeA	*94*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C2 PFHxA	*89*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C4-PFHpA	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C4 PFOA	*95*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C5 PFNA	*96*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C2 PFDA	*94*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C2 PFUnA	*87*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C2 PFDoA	*83*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C2-PFTeDA	*83*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C3-PFBS	*90*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
18O2 PFHxS	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C4 PFOS	*91*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
13C8 FOSA	*80*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
d3-NMeFOSAA	*86*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
M2-6:2FTS	*105*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*
M2-8:2FTS	*103*		*25 - 150*	*04/18/18 10:41*	*04/26/18 12:28*	*1*

Lab Sample ID: LCS 320-218597/2-A
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 218597

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.44		ng/L		104	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	35.90		ng/L		90	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	38.59		ng/L		96	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.52		ng/L		101	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	38.18		ng/L		95	64 - 124
Perfluorononanoic acid (PFNA)	40.0	37.05		ng/L		93	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	35.89		ng/L		90	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	35.16		ng/L		88	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	39.55		ng/L		99	71 - 131
Perfluorotridecanoic Acid (PFTriA)	40.0	38.58		ng/L		96	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.47		ng/L		94	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	33.50		ng/L		95	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.96		ng/L		93	63 - 123

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-218597/2-A
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 218597

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.14		ng/L		98	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.36		ng/L		101	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	34.81		ng/L		90	68 - 128
Perfluorooctane Sulfonamide (FOSA)	40.0	39.16		ng/L		98	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	42.94		ng/L		107	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	41.30		ng/L		103	65 - 125
6:2FTS	37.9	39.31		ng/L		104	66 - 126
8:2FTS	38.3	39.57		ng/L		103	67 - 127

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*89*		*25 - 150*
13C5 PFPeA	*93*		*25 - 150*
13C2 PFHxA	*93*		*25 - 150*
13C4-PFHpA	*90*		*25 - 150*
13C4 PFOA	*91*		*25 - 150*
13C5 PFNA	*94*		*25 - 150*
13C2 PFDA	*93*		*25 - 150*
13C2 PFUnA	*92*		*25 - 150*
13C2 PFDoA	*80*		*25 - 150*
13C2-PFTeDA	*83*		*25 - 150*
13C3-PFBS	*91*		*25 - 150*
18O2 PFHxS	*90*		*25 - 150*
13C4 PFOS	*90*		*25 - 150*
13C8 FOSA	*78*		*25 - 150*
d3-NMeFOSAA	*81*		*25 - 150*
d5-NEtFOSAA	*91*		*25 - 150*
M2-6:2FTS	*103*		*25 - 150*
M2-8:2FTS	*99*		*25 - 150*

Lab Sample ID: 320-38169-A-1-B MS
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 218597

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	53.2		38.8	92.31		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	99.6		38.8	139.2		ng/L		102	66 - 126
Perfluorohexanoic acid (PFHxA)	71.1		38.8	112.3		ng/L		106	66 - 126
Perfluoroheptanoic acid (PFHpA)	52.3		38.8	100.2		ng/L		124	66 - 126
Perfluorooctanoic acid (PFOA)	35.7		38.8	74.24		ng/L		99	64 - 124
Perfluorononanoic acid (PFNA)	5.45		38.8	41.23		ng/L		92	68 - 128
Perfluorodecanoic acid (PFDA)	0.30	U	38.8	38.72		ng/L		100	69 - 129

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-38169-A-1-B MS
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 218597

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	1.05	U	38.8	33.67		ng/L		87	60 - 120
Perfluorododecanoic acid (PFDoA)	0.53	U	38.8	36.97		ng/L		95	71 - 131
Perfluorotridecanoic Acid (PFTriA)	1.24	U	38.8	35.27		ng/L		91	72 - 132
Perfluorotetradecanoic acid (PFTeA)	0.28	U	38.8	37.65		ng/L		97	68 - 128
Perfluorobutanesulfonic acid (PFBS)	6.53		34.3	40.54		ng/L		99	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	25.8	B	35.3	55.22		ng/L		83	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	0.96	J	36.9	37.86		ng/L		100	68 - 128
Perfluorooctanesulfonic acid (PFOS)	27.2		36.0	61.99		ng/L		97	67 - 127
Perfluorodecanesulfonic acid (PFDS)	0.31	U	37.4	33.22		ng/L		89	68 - 128
Perfluorooctane Sulfonamide (FOSA)	0.33	U	38.8	35.80		ng/L		92	70 - 130
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.96	U	38.8	39.80		ng/L		103	67 - 127
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.82	U	38.8	37.19		ng/L		96	65 - 125
6:2FTS	5.47	J B	36.8	40.09		ng/L		94	66 - 126
8:2FTS	1.91	U	37.2	35.86		ng/L		96	67 - 127

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*38*		*25 - 150*
13C5 PFPeA	*72*		*25 - 150*
13C2 PFHxA	*82*		*25 - 150*
13C4-PFHpA	*86*		*25 - 150*
13C4 PFOA	*94*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*89*		*25 - 150*
13C2 PFUnA	*88*		*25 - 150*
13C2 PFDoA	*86*		*25 - 150*
13C2-PFTeDA	*86*		*25 - 150*
13C3-PFBS	*88*		*25 - 150*
18O2 PFHxS	*97*		*25 - 150*
13C4 PFOS	*94*		*25 - 150*
13C8 FOSA	*88*		*25 - 150*
d3-NMeFOSAA	*91*		*25 - 150*
d5-NEtFOSAA	*95*		*25 - 150*
M2-6:2FTS	*134*		*25 - 150*
M2-8:2FTS	*101*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-38169-A-1-C MSD
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 218597

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	53.2		38.5	89.31		ng/L		94	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	99.6		38.5	137.1		ng/L		97	66 - 126	2	30
Perfluorohexanoic acid (PFHxA)	71.1		38.5	110.0		ng/L		101	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)	52.3		38.5	90.00		ng/L		98	66 - 126	11	30
Perfluorooctanoic acid (PFOA)	35.7		38.5	72.96		ng/L		97	64 - 124	2	30
Perfluorononanoic acid (PFNA)	5.45		38.5	41.87		ng/L		95	68 - 128	2	30
Perfluorodecanoic acid (PFDA)	0.30	U	38.5	36.36		ng/L		94	69 - 129	6	30
Perfluoroundecanoic acid (PFUnA)	1.05	U	38.5	34.45		ng/L		89	60 - 120	2	30
Perfluorododecanoic acid (PFDoA)	0.53	U	38.5	37.73		ng/L		98	71 - 131	2	30
Perfluorotridecanoic Acid (PFTriA)	1.24	U	38.5	34.79		ng/L		90	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)	0.28	U	38.5	34.75		ng/L		90	68 - 128	8	30
Perfluorobutanesulfonic acid (PFBS)	6.53		34.1	40.73		ng/L		100	73 - 133	0	30
Perfluorohexanesulfonic acid (PFHxS)	25.8	B	35.1	54.98		ng/L		83	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)	0.96	J	36.7	36.47		ng/L		97	68 - 128	4	30
Perfluorooctanesulfonic acid (PFOS)	27.2		35.8	62.29		ng/L		98	67 - 127	0	30
Perfluorodecanesulfonic acid (PFDS)	0.31	U	37.1	33.82		ng/L		91	68 - 128	2	30
Perfluorooctane Sulfonamide (FOSA)	0.33	U	38.5	36.22		ng/L		94	70 - 130	1	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.96	U	38.5	42.01		ng/L		109	67 - 127	5	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.82	U	38.5	37.62		ng/L		98	65 - 125	1	30
6:2FTS	5.47	J B	36.5	39.16		ng/L		92	66 - 126	2	30
8:2FTS	1.91	U	36.9	33.96		ng/L		92	67 - 127	5	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*38*		*25 - 150*
13C5 PFPeA	*73*		*25 - 150*
13C2 PFHxA	*81*		*25 - 150*
13C4-PFHpA	*92*		*25 - 150*
13C4 PFOA	*93*		*25 - 150*
13C5 PFNA	*94*		*25 - 150*
13C2 PFDA	*90*		*25 - 150*
13C2 PFUnA	*88*		*25 - 150*
13C2 PFDoA	*85*		*25 - 150*
13C2-PFTeDA	*89*		*25 - 150*
13C3-PFBS	*87*		*25 - 150*
18O2 PFHxS	*97*		*25 - 150*
13C4 PFOS	*92*		*25 - 150*
13C8 FOSA	*86*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 320-38169-A-1-C MSD
Matrix: Water
Analysis Batch: 220023

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 218597

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
d3-NMeFOSAA	85		25 - 150
d5-NEtFOSAA	91		25 - 150
M2-6:2FTS	136		25 - 150
M2-8:2FTS	105		25 - 150

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	Isotope Dilution analyte is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Prep Batch: 218132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-1	SB031(0-2)	Total/NA	Solid	SHAKE	
320-38061-2	SB012(2-4)	Total/NA	Solid	SHAKE	
320-38061-2 - DL	SB012(2-4)	Total/NA	Solid	SHAKE	
320-38061-3	SB008(2-4)	Total/NA	Solid	SHAKE	
320-38061-3 - DL	SB008(2-4)	Total/NA	Solid	SHAKE	
320-38061-4	SB007(0-2)	Total/NA	Solid	SHAKE	
320-38061-5 - DL	SB003(0-2)	Total/NA	Solid	SHAKE	
320-38061-5 - DL2	SB003(0-2)	Total/NA	Solid	SHAKE	
320-38061-5 - DL3	SB003(0-2)	Total/NA	Solid	SHAKE	
320-38061-5	SB003(0-2)	Total/NA	Solid	SHAKE	
320-38061-6	SB004(8-10)	Total/NA	Solid	SHAKE	
320-38061-6 - DL	SB004(8-10)	Total/NA	Solid	SHAKE	
320-38061-7 - DL	SB013(8-10)	Total/NA	Solid	SHAKE	
320-38061-7	SB013(8-10)	Total/NA	Solid	SHAKE	
MB 320-218132/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-218132/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-38061-1 MS	SB031(0-2)	Total/NA	Solid	SHAKE	
320-38061-1 MSD	SB031(0-2)	Total/NA	Solid	SHAKE	

Prep Batch: 218597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-8	FB008	Total/NA	Water	3535	
320-38061-9	EB008	Total/NA	Water	3535	
MB 320-218597/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-218597/2-A	Lab Control Sample	Total/NA	Water	3535	
320-38169-A-1-B MS	Matrix Spike	Total/NA	Water	3535	
320-38169-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	3535	

Analysis Batch: 219143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-1	SB031(0-2)	Total/NA	Solid	537 (modified)	218132
320-38061-2	SB012(2-4)	Total/NA	Solid	537 (modified)	218132
320-38061-3	SB008(2-4)	Total/NA	Solid	537 (modified)	218132
320-38061-4	SB007(0-2)	Total/NA	Solid	537 (modified)	218132
320-38061-5	SB003(0-2)	Total/NA	Solid	537 (modified)	218132
320-38061-6	SB004(8-10)	Total/NA	Solid	537 (modified)	218132
320-38061-7	SB013(8-10)	Total/NA	Solid	537 (modified)	218132
MB 320-218132/1-A	Method Blank	Total/NA	Solid	537 (modified)	218132
LCS 320-218132/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	218132
320-38061-1 MS	SB031(0-2)	Total/NA	Solid	537 (modified)	218132
320-38061-1 MSD	SB031(0-2)	Total/NA	Solid	537 (modified)	218132

Analysis Batch: 219909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-2 - DL	SB012(2-4)	Total/NA	Solid	537 (modified)	218132
320-38061-3 - DL	SB008(2-4)	Total/NA	Solid	537 (modified)	218132
320-38061-5 - DL2	SB003(0-2)	Total/NA	Solid	537 (modified)	218132
320-38061-5 - DL	SB003(0-2)	Total/NA	Solid	537 (modified)	218132
320-38061-6 - DL	SB004(8-10)	Total/NA	Solid	537 (modified)	218132
320-38061-7 - DL	SB013(8-10)	Total/NA	Solid	537 (modified)	218132

LCMS (Continued)

Analysis Batch: 220023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-8	FB008	Total/NA	Water	537 (modified)	218597
320-38061-9	EB008	Total/NA	Water	537 (modified)	218597
MB 320-218597/1-A	Method Blank	Total/NA	Water	537 (modified)	218597
LCS 320-218597/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	218597
320-38169-A-1-B MS	Matrix Spike	Total/NA	Water	537 (modified)	218597
320-38169-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	537 (modified)	218597

Analysis Batch: 220081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-5 - DL3	SB003(0-2)	Total/NA	Solid	537 (modified)	218132

General Chemistry

Analysis Batch: 218606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38061-1	SB031(0-2)	Total/NA	Solid	D 2216	
320-38061-2	SB012(2-4)	Total/NA	Solid	D 2216	
320-38061-3	SB008(2-4)	Total/NA	Solid	D 2216	
320-38061-4	SB007(0-2)	Total/NA	Solid	D 2216	
320-38061-5	SB003(0-2)	Total/NA	Solid	D 2216	
320-38061-6	SB004(8-10)	Total/NA	Solid	D 2216	
320-38061-7	SB013(8-10)	Total/NA	Solid	D 2216	
320-38061-1 DU	SB031(0-2)	Total/NA	Solid	D 2216	

Client Sample ID: SB031(0-2)
Date Collected: 04/10/18 09:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB031(0-2)
Date Collected: 04/10/18 09:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-1
Matrix: Solid
Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 10:13	JRB	TAL SAC

Client Sample ID: SB012(2-4)
Date Collected: 04/10/18 09:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB012(2-4)
Date Collected: 04/10/18 09:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-2
Matrix: Solid
Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 10:36	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL		218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	50	219909	04/26/18 06:17	JRB	TAL SAC

Client Sample ID: SB008(2-4)
Date Collected: 04/10/18 10:00
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB008(2-4)
Date Collected: 04/10/18 10:00
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-3
Matrix: Solid
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 10:44	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL		218132	04/16/18 08:43	HJA	TAL SAC

Client Sample ID: SB008(2-4)
Date Collected: 04/10/18 10:00
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-3
Matrix: Solid
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (modified)	DL	5	219909	04/26/18 06:24	JRB	TAL SAC

Client Sample ID: SB007(0-2)
Date Collected: 04/10/18 10:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB007(0-2)
Date Collected: 04/10/18 10:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-4
Matrix: Solid
Percent Solids: 78.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 10:52	JRB	TAL SAC

Client Sample ID: SB003(0-2)
Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB003(0-2)
Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-5
Matrix: Solid
Percent Solids: 88.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 11:00	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL2		218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL2	50	219909	04/26/18 06:40	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL		218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	219909	04/26/18 06:48	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL3		218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL3	100	220081	04/26/18 16:00	JRB	TAL SAC

Client Sample ID: SB004(8-10)
Date Collected: 04/10/18 11:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB004(8-10)
Date Collected: 04/10/18 11:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-6
Matrix: Solid
Percent Solids: 97.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 11:08	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL		218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	219909	04/26/18 07:03	JRB	TAL SAC

Client Sample ID: SB013(8-10)
Date Collected: 04/10/18 12:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB013(8-10)
Date Collected: 04/10/18 12:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-7
Matrix: Solid
Percent Solids: 96.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)		1	219143	04/21/18 11:23	JRB	TAL SAC
Total/NA	Prep	SHAKE	DL		218132	04/16/18 08:43	HJA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	219909	04/26/18 07:11	JRB	TAL SAC

Client Sample ID: FB008
Date Collected: 04/10/18 12:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			218597	04/18/18 10:41	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	220023	04/26/18 12:44	JRB	TAL SAC

Lab Chronicle

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38061-1

Client Sample ID: EB008
Date Collected: 04/10/18 12:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38061-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			218597	04/18/18 10:41	TWL	TAL SAC
Total/NA	Analysis	537 (modified)		1	220023	04/26/18 12:52	JRB	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-38061-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
Arizona	State Program	9	AZ0708	08-11-18
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-18
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18
L-A-B	DoD ELAP		L2468	01-20-21
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-14-20
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-19
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	07-31-18
USDA	Federal		P330-11-00436	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
New York	NELAP	2	11452	04-01-19
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #
SB004(8-10) DL	320-38061-6 DL	91

	QC LIMITS
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	PFNA #	PFDA #	PFDoA #
SB003(0-2) DL	320-38061-5 DL	147	79	67	54

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFNA = 13C5 PFNA	25-150
PFDA = 13C2 PFDA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB031(0-2)	320-38061-1	100	100	96	88	101	99	182 *	105
SB012(2-4)	320-38061-2	91	97	97	88	96	93	178 *	103
SB008(2-4)	320-38061-3	96	96	84	85	102	90	116	104
SB007(0-2)	320-38061-4	90	97	96	88	100	96	218 *	104
SB013(8-10)	320-38061-7	101	99	102	94	106	100	108	104
	MB 320-218132/1-A	97	98	93	89	100	98	101	97
	LCS 320-218132/2-A	96	96	95	88	102	95	107	101
SB031(0-2) MS	320-38061-1 MS	94	101	97	90	101	97	214 *	106
SB031(0-2) MSD	320-38061-1 MSD	102	103	98	89	106	99	184 *	108

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
SB031(0-2)	320-38061-1	96	108	99	188 *	111	124	124	100
SB012(2-4)	320-38061-2	53	56	97	164 *	110	126	121	106
SB008(2-4)	320-38061-3	83	93	89	124	108	120	117	97
SB007(0-2)	320-38061-4	97	106	87	204 *	106	100	114	95
SB013(8-10)	320-38061-7	93	91	85	103	100	84	86	99
	MB 320-218132/1-A	98	99	88	100	100	93	101	91
	LCS 320-218132/2-A	94	99	89	102	97	100	99	91
SB031(0-2) MS	320-38061-1 MS	102	113	105	245 *	121	148	141	113
SB031(0-2) MSD	320-38061-1 MSD	99	116	100	179 *	115	129	119	104

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
SB031(0-2)	320-38061-1	98	97
SB012(2-4)	320-38061-2	103	99
SB008(2-4)	320-38061-3	98	101
SB007(0-2)	320-38061-4	84	72
SB013(8-10)	320-38061-7	95	94
	MB 320-218132/1-A	94	95
	LCS 320-218132/2-A	92	91
SB031(0-2) MS	320-38061-1 MS	100	99
SB031(0-2) MSD	320-38061-1 MSD	100	104

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB003(0-2)	320-38061-5	128	142	150	114	100	100	103	55

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	d3NMFOS #	d5NEFOS #	PFTDA #
SB003(0-2)	320-38061-5	39	32	53

	QC LIMITS
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB004(8-10)	320-38061-6	102	99	100	94	106	101	105	97

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #
SB004(8-10)	320-38061-6	101	91	93	101	70	74	97	95

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFTDA #
SB004(8-10)	320-38061-6	95

	QC LIMITS
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #
SB012(2-4) DL	320-38061-2 DL	93
SB008(2-4) DL	320-38061-3 DL	90
SB013(8-10) DL	320-38061-7 DL	100

	QC LIMITS
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFOSA #	M282FTS #	PFDoA #
SB003(0-2) DL2	320-38061-5 DL2	70	57	190 *	50

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFUnA #
SB003(0-2) DL3	320-38061-5 DL3	94

	QC LIMITS
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
FB008	320-38061-8	90	91	90	91	90	91	106	92
EB008	320-38061-9	91	92	94	92	93	93	105	89
	MB 320-218597/1-A	90	94	90	89	91	91	105	95
	LCS 320-218597/2-A	89	93	91	93	90	90	103	91
	320-38169-A-1-B MS	38	72	88	82	86	97	134	94
	320-38169-A-1-C MSD	38	73	87	81	92	97	136	93

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
FB008	320-38061-8	91	93	79	103	92	80	95	87
EB008	320-38061-9	94	92	86	105	94	84	93	88
	MB 320-218597/1-A	96	91	80	103	94	86	96	87
	LCS 320-218597/2-A	94	90	78	99	93	81	91	92
	320-38169-A-1-B MS	96	94	88	101	89	91	95	88
	320-38169-A-1-C MSD	94	92	86	105	90	85	91	88

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
FB008	320-38061-8	80	87
EB008	320-38061-9	82	82
	MB 320-218597/1-A	83	83
	LCS 320-218597/2-A	80	83
	320-38169-A-1-B MS	86	86
	320-38169-A-1-C MSD	85	89

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.20LLC_025.d

Lab ID: LCS 320-218132/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00200	0.00189	95	81-133	
Perfluoropentanoic acid (PFPeA)	0.00200	0.00179	90	79-120	
Perfluorohexanoic acid (PFHxA)	0.00200	0.00202	101	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00200	0.00199	99	76-124	
Perfluorooctanoic acid (PFOA)	0.00200	0.00170	85	76-121	
Perfluorononanoic acid (PFNA)	0.00200	0.00169	85	74-126	
Perfluorodecanoic acid (PFDA)	0.00200	0.00186	93	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00200	0.00172	86	74-114	
Perfluorododecanoic acid (PFDoA)	0.00200	0.00181	91	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00200	0.00184	92	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00200	0.00173	86	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00177	0.00168	95	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00182	0.00161	88	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00190	0.00172	90	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.00172	93	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00193	0.00171	89	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00200	0.00181	91	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00200	0.00184 J	92	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00200	0.00195 J	97	65-135	
6:2FTS	0.00190	0.00179 J	94	65-135	
8:2FTS	0.00192	0.00178 J	93	65-135	
13C4 PFBA	0.00500	0.00482	96	25-150	
13C5 PFPeA	0.00500	0.00481	96	25-150	
13C2 PFHxA	0.00500	0.00441	88	25-150	
13C4-PFHpA	0.00500	0.00512	102	25-150	
13C4 PFOA	0.00500	0.00505	101	25-150	
13C5 PFNA	0.00500	0.00493	99	25-150	
13C2 PFDA	0.00500	0.00485	97	25-150	
13C2 PFUnA	0.00500	0.00457	91	25-150	
13C2 PFDoA	0.00500	0.00458	92	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.20LLC_025.d

Lab ID: LCS 320-218132/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00500	0.00455	91	25-150	
13C3-PFBS	0.00465	0.00440	95	25-150	
18O2 PFHxS	0.00473	0.00448	95	25-150	
13C4 PFOS	0.00478	0.00451	94	25-150	
13C8 FOSA	0.00500	0.00445	89	25-150	
d3-NMeFOSAA	0.00500	0.00500	100	25-150	
d5-NEtFOSAA	0.00500	0.00495	99	25-150	
M2-6:2FTS	0.00475	0.00508	107	25-150	
M2-8:2FTS	0.00479	0.00487	102	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.26LLA_011.d

Lab ID: LCS 320-218597/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.44	104	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	35.90	90	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	38.59	96	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	40.52	101	66-126	
Perfluorooctanoic acid (PFOA)	40.0	38.18	95	64-124	
Perfluorononanoic acid (PFNA)	40.0	37.05	93	68-128	
Perfluorodecanoic acid (PFDA)	40.0	35.89	90	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	35.16	88	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	39.55	99	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	38.58	96	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	37.47	94	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	33.50	95	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.96	93	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.14	98	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	37.36	101	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	34.81	90	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	39.16	98	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	42.94	107	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	41.30	103	65-125	
6:2FTS	37.9	39.31	104	66-126	
8:2FTS	38.3	39.57	103	67-127	
13C4 PFBA	100	88.70	89	25-150	
13C5 PFPeA	100	92.81	93	25-150	
13C2 PFHxA	100	92.88	93	25-150	
13C4-PFHpA	100	89.72	90	25-150	
13C4 PFOA	100	90.87	91	25-150	
13C5 PFNA	100	93.92	94	25-150	
13C2 PFDA	100	92.64	93	25-150	
13C2 PFUnA	100	92.14	92	25-150	
13C2 PFDoA	100	79.60	80	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.26LLA_011.d

Lab ID: LCS 320-218597/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	100	82.98	83	25-150	
13C3-PFBS	93.0	84.57	91	25-150	
18O2 PFHxS	94.6	84.95	90	25-150	
13C4 PFOS	95.6	85.68	90	25-150	
13C8 FOSA	100	77.88	78	25-150	
d3-NMeFOSAA	100	80.52	81	25-150	
d5-NEtFOSAA	100	90.89	91	25-150	
M2-6:2FTS	95.0	97.43	103	25-150	
M2-8:2FTS	95.8	94.39	99	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.20LLC_027.d

Lab ID: 320-38061-1 MS Client ID: SB031(0-2) MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00213	0.000041 J	0.00210	97	81-133	
Perfluoropentanoic acid (PFPeA)	0.00213	0.000082 U	0.00200	94	79-120	
Perfluorohexanoic acid (PFHxA)	0.00213	0.000045 U	0.00221	104	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00213	0.000040 J	0.00221	102	76-124	
Perfluorooctanoic acid (PFOA)	0.00213	0.00043	0.00202	75	76-121	F1
Perfluorononanoic acid (PFNA)	0.00213	0.000070 J	0.00191	87	74-126	
Perfluorodecanoic acid (PFDA)	0.00213	0.000045 J	0.00183	84	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00213	0.000038 U	0.00218	102	74-114	
Perfluorododecanoic acid (PFDoA)	0.00213	0.000071 U	0.00210	99	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00213	0.00070	0.00252	86	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00213	0.000057 U	0.00200	94	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00188	0.000027 U	0.00171	91	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00194	0.00015 J	0.00192	92	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00203	0.000037 U	0.00182	90	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00197	0.0030	0.00530	115	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00205	0.000041 U	0.00177	86	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00213	0.00018 J	0.00212	91	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00213	0.00041 U	0.00195 J	92	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00213	0.00039 U	0.00204 J	96	65-135	
6:2FTS	0.00202	0.00016 U	0.00187 J	93	65-135	
8:2FTS	0.00204	0.00027 U	0.00187 J	92	65-135	
13C4 PFBA	0.00532	0.0053	0.00500	94	25-150	
13C5 PFPeA	0.00532	0.0053	0.00535	101	25-150	
13C2 PFHxA	0.00532	0.0047	0.00478	90	25-150	
13C4-PFHpA	0.00532	0.0054	0.00539	101	25-150	
13C4 PFOA	0.00532	0.0056	0.00564	106	25-150	
13C5 PFNA	0.00532	0.0057	0.00604	113	25-150	
13C2 PFDA	0.00532	0.0059	0.00646	121	25-150	
13C2 PFUnA	0.00532	0.0053	0.00601	113	25-150	
13C2 PFDoA	0.00532	0.0052	0.00531	100	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.20LLC_027.d

Lab ID: 320-38061-1 MS Client ID: SB031(0-2) MS

COMPOUND	SPIKE ADDED (mg/Kg)	SAMPLE CONCENTRATION (mg/Kg)	MS CONCENTRATION (mg/Kg)	MS % REC	QC LIMITS REC	#
13C2-PFTeDA	0.00532	0.0052	0.00524	99	25-150	
13C3-PFBS	0.00495	0.0047	0.00482	97	25-150	
18O2 PFHxS	0.00503	0.0050	0.00489	97	25-150	
13C4 PFOS	0.00509	0.0049	0.00518	102	25-150	
13C8 FOSA	0.00532	0.0053	0.00558	105	25-150	
d3-NMeFOSAA	0.00532	0.0066	0.00785	148	25-150	
d5-NEtFOSAA	0.00532	0.0066	0.00749	141	25-150	
M2-6:2FTS	0.00505	0.0092	0.0108	214	25-150	*
M2-8:2FTS	0.00510	0.0096	0.0125	245	25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.26LLA_015.d

Lab ID: 320-38169-A-1-B MS Client ID:

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	38.8	53.2	92.31	101	70-130	
Perfluoropentanoic acid (PFPeA)	38.8	99.6	139.2	102	66-126	
Perfluorohexanoic acid (PFHxA)	38.8	71.1	112.3	106	66-126	
Perfluoroheptanoic acid (PFHpA)	38.8	52.3	100.2	124	66-126	
Perfluorooctanoic acid (PFOA)	38.8	35.7	74.24	99	64-124	
Perfluorononanoic acid (PFNA)	38.8	5.45	41.23	92	68-128	
Perfluorodecanoic acid (PFDA)	38.8	0.30 U	38.72	100	69-129	
Perfluoroundecanoic acid (PFUnA)	38.8	1.05 U	33.67	87	60-120	
Perfluorododecanoic acid (PFDoA)	38.8	0.53 U	36.97	95	71-131	
Perfluorotridecanoic Acid (PFTriA)	38.8	1.24 U	35.27	91	72-132	
Perfluorotetradecanoic acid (PFTeA)	38.8	0.28 U	37.65	97	68-128	
Perfluorobutanesulfonic acid (PFBS)	34.3	6.53	40.54	99	73-133	
Perfluorohexanesulfonic acid (PFHxS)	35.3	25.8	55.22	83	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	36.9	0.96 J	37.86	100	68-128	
Perfluorooctanesulfonic acid (PFOS)	36.0	27.2	61.99	97	67-127	
Perfluorodecanesulfonic acid (PFDS)	37.4	0.31 U	33.22	89	68-128	
Perfluorooctane Sulfonamide (FOSA)	38.8	0.33 U	35.80	92	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	38.8	2.96 U	39.80	103	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	38.8	1.82 U	37.19	96	65-125	
6:2FTS	36.8	5.47 J	40.09	94	66-126	
8:2FTS	37.2	1.91 U	35.86	96	67-127	
13C4 PFBA	97.0	37.1	37.16	38	25-150	
13C5 PFPeA	97.0	71.3	69.96	72	25-150	
13C2 PFHxA	97.0	80.5	79.75	82	25-150	
13C4-PFHpA	97.0	88.8	83.70	86	25-150	
13C4 PFOA	97.0	94.4	91.54	94	25-150	
13C5 PFNA	97.0	94.0	93.44	96	25-150	
13C2 PFDA	97.0	91.0	86.42	89	25-150	
13C2 PFUnA	97.0	80.7	85.13	88	25-150	
13C2 PFDoA	97.0	76.9	83.28	86	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.26LLA_015.d

Lab ID: 320-38169-A-1-B MS Client ID:

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
13C2-PFTeDA	97.0	82.5	82.92	86	25-150	
13C3-PFBS	90.2	78.1	79.76	88	25-150	
18O2 PFHxS	91.7	83.4	88.91	97	25-150	
13C4 PFOS	92.7	85.8	87.46	94	25-150	
13C8 FOSA	97.0	82.8	85.27	88	25-150	
d3-NMeFOSAA	97.0	81.4	87.81	91	25-150	
d5-NEtFOSAA	97.0	90.3	91.75	95	25-150	
M2-6:2FTS	92.1	132	123.2	134	25-150	
M2-8:2FTS	92.9	91.9	93.81	101	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.20LLC_028.d

Lab ID: 320-38061-1 MSD Client ID: SB031(0-2) MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	0.00214	0.00204	93	2	30	81-133	
Perfluoropentanoic acid (PFPeA)	0.00214	0.00199	93	0	30	79-120	
Perfluorohexanoic acid (PFHxA)	0.00214	0.00231	108	4	30	75-125	
Perfluoroheptanoic acid (PFHpA)	0.00214	0.00194	88	13	30	76-124	
Perfluorooctanoic acid (PFOA)	0.00214	0.00205	75	1	30	76-121	F1
Perfluorononanoic acid (PFNA)	0.00214	0.00184	83	4	30	74-126	
Perfluorodecanoic acid (PFDA)	0.00214	0.00189	86	3	30	74-124	
Perfluoroundecanoic acid (PFUnA)	0.00214	0.00211	99	3	30	74-114	
Perfluorododecanoic acid (PFDoA)	0.00214	0.00214	100	2	30	75-123	
Perfluorotridecanoic Acid (PFTriA)	0.00214	0.00228	73	10	30	43-116	
Perfluorotetradecanoic acid (PFTeA)	0.00214	0.00193	90	3	30	22-129	
Perfluorobutanesulfonic acid (PFBS)	0.00190	0.00171	90	0	30	73-142	
Perfluorohexanesulfonic acid (PFHxS)	0.00195	0.00177	83	8	30	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	0.00204	0.00183	89	0	30	78-146	
Perfluorooctanesulfonic acid (PFOS)	0.00199	0.00486	92	9	30	69-131	
Perfluorodecanesulfonic acid (PFDS)	0.00207	0.00185	90	5	30	54-113	
Perfluorooctane Sulfonamide (FOSA)	0.00214	0.00214	91	1	30	62-135	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00214	0.00197 J	92	1	30	65-135	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00214	0.00205 J	96	1	30	65-135	
6:2FTS	0.00203	0.00195 J	96	4	30	65-135	
8:2FTS	0.00205	0.00199 J	97	6	30	65-135	
13C4 PFBA	0.00536	0.00546	102			25-150	
13C5 PFPeA	0.00536	0.00550	103			25-150	
13C2 PFHxA	0.00536	0.00475	89			25-150	
13C4-PFHpA	0.00536	0.00570	106			25-150	
13C4 PFOA	0.00536	0.00577	108			25-150	
13C5 PFNA	0.00536	0.00620	116			25-150	
13C2 PFDA	0.00536	0.00619	115			25-150	
13C2 PFUnA	0.00536	0.00556	104			25-150	
13C2 PFDoA	0.00536	0.00534	100			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2018.04.20LLC_028.d

Lab ID: 320-38061-1 MSD Client ID: SB031(0-2) MSD

COMPOUND	SPIKE ADDED (mg/Kg)	MSD CONCENTRATION (mg/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C2-PFTeDA	0.00536	0.00556	104			25-150	
13C3-PFBS	0.00499	0.00486	98			25-150	
18O2 PFHxS	0.00507	0.00503	99			25-150	
13C4 PFOS	0.00513	0.00508	99			25-150	
13C8 FOSA	0.00536	0.00537	100			25-150	
d3-NMeFOSAA	0.00536	0.00690	129			25-150	
d5-NEtFOSAA	0.00536	0.00638	119			25-150	
M2-6:2FTS	0.00509	0.00936	184			25-150	*
M2-8:2FTS	0.00514	0.00920	179			25-150	*

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.26LLA_016.d

Lab ID: 320-38169-A-1-C MSD Client ID:

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	38.5	89.31	94	3	30	70-130	
Perfluoropentanoic acid (PFPeA)	38.5	137.1	97	2	30	66-126	
Perfluorohexanoic acid (PFHxA)	38.5	110.0	101	2	30	66-126	
Perfluoroheptanoic acid (PFHpA)	38.5	90.00	98	11	30	66-126	
Perfluorooctanoic acid (PFOA)	38.5	72.96	97	2	30	64-124	
Perfluorononanoic acid (PFNA)	38.5	41.87	95	2	30	68-128	
Perfluorodecanoic acid (PFDA)	38.5	36.36	94	6	30	69-129	
Perfluoroundecanoic acid (PFUnA)	38.5	34.45	89	2	30	60-120	
Perfluorododecanoic acid (PFDoA)	38.5	37.73	98	2	30	71-131	
Perfluorotridecanoic Acid (PFTriA)	38.5	34.79	90	1	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	38.5	34.75	90	8	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	34.1	40.73	100	0	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	35.1	54.98	83	0	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	36.7	36.47	97	4	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	35.8	62.29	98	0	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	37.1	33.82	91	2	30	68-128	
Perfluorooctane Sulfonamide (FOSA)	38.5	36.22	94	1	30	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	38.5	42.01	109	5	30	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	38.5	37.62	98	1	30	65-125	
6:2FTS	36.5	39.16	92	2	30	66-126	
8:2FTS	36.9	33.96	92	5	30	67-127	
13C4 PFBA	96.3	36.91	38			25-150	
13C5 PFPeA	96.3	69.99	73			25-150	
13C2 PFHxA	96.3	78.03	81			25-150	
13C4-PFHpA	96.3	88.55	92			25-150	
13C4 PFOA	96.3	89.93	93			25-150	
13C5 PFNA	96.3	90.32	94			25-150	
13C2 PFDA	96.3	87.05	90			25-150	
13C2 PFUnA	96.3	84.94	88			25-150	
13C2 PFDoA	96.3	82.02	85			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.26LLA_016.d

Lab ID: 320-38169-A-1-C MSD Client ID:

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C2-PFTeDA	96.3	85.84	89			25-150	
13C3-PFBS	89.6	77.62	87			25-150	
18O2 PFHxS	91.1	88.36	97			25-150	
13C4 PFOS	92.1	84.50	92			25-150	
13C8 FOSA	96.3	82.52	86			25-150	
d3-NMeFOSAA	96.3	82.27	85			25-150	
d5-NEtFOSAA	96.3	87.31	91			25-150	
M2-6:2FTS	91.5	124.1	136			25-150	
M2-8:2FTS	92.3	97.18	105			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab File ID: 2018.04.20LLC_024.d Lab Sample ID: MB 320-218132/1-A

Matrix: Solid Date Extracted: 04/16/2018 08:43

Instrument ID: A8_N Date Analyzed: 04/21/2018 09:57

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-218132/2-A	2018.04.20LLC_025.d	04/21/2018 10:05
SB031(0-2)	320-38061-1	2018.04.20LLC_026.d	04/21/2018 10:13
SB031(0-2) MS	320-38061-1 MS	2018.04.20LLC_027.d	04/21/2018 10:21
SB031(0-2) MSD	320-38061-1 MSD	2018.04.20LLC_028.d	04/21/2018 10:29
SB012(2-4)	320-38061-2	2018.04.20LLC_029.d	04/21/2018 10:36
SB008(2-4)	320-38061-3	2018.04.20LLC_030.d	04/21/2018 10:44
SB007(0-2)	320-38061-4	2018.04.20LLC_031.d	04/21/2018 10:52
SB003(0-2)	320-38061-5	2018.04.20LLC_032.d	04/21/2018 11:00
SB004(8-10)	320-38061-6	2018.04.20LLC_033.d	04/21/2018 11:08
SB013(8-10)	320-38061-7	2018.04.20LLC_035.d	04/21/2018 11:23
SB012(2-4) DL	320-38061-2 DL	2018.04.25LLBX_071.d	04/26/2018 06:17
SB008(2-4) DL	320-38061-3 DL	2018.04.25LLBX_072.d	04/26/2018 06:24
SB003(0-2) DL2	320-38061-5 DL2	2018.04.25LLBX_074.d	04/26/2018 06:40
SB003(0-2) DL	320-38061-5 DL	2018.04.25LLBX_075.d	04/26/2018 06:48
SB004(8-10) DL	320-38061-6 DL	2018.04.25LLBX_077.d	04/26/2018 07:03
SB013(8-10) DL	320-38061-7 DL	2018.04.25LLBX_078.d	04/26/2018 07:11
SB003(0-2) DL3	320-38061-5 DL3	2018.04.26LLA_037.d	04/26/2018 16:00

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab File ID: 2018.04.26LLA_010.d Lab Sample ID: MB 320-218597/1-A

Matrix: Water Date Extracted: 04/18/2018 10:41

Instrument ID: A8_N Date Analyzed: 04/26/2018 12:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-218597/2-A	2018.04.26LLA_011.d	04/26/2018 12:36
FB008	320-38061-8	2018.04.26LLA_012.d	04/26/2018 12:44
EB008	320-38061-9	2018.04.26LLA_013.d	04/26/2018 12:52
	320-38169-A-1-B MS	2018.04.26LLA_015.d	04/26/2018 13:08
	320-38169-A-1-C MSD	2018.04.26LLA_016.d	04/26/2018 13:15

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Sample No.: IC 320-217359/5 Date Analyzed: 04/10/2018 19:03

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.10LLICAL_00 Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4623888	2.67				
UPPER LIMIT		6935832	2.87				
LOWER LIMIT		2311944	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-217359/9		4390532	2.67				
ICV 320-217359/10		4377627	2.68				
CCV 320-219129/3 CCVIS		4861849	2.68				
CCV 320-219909/3 CCVIS		4697624	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Sample No.: CCV 320-219129/3 Date Analyzed: 04/21/2018 05:39

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.20LLAAX_059 Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4861849	2.68				
UPPER LIMIT		7292774	2.88				
LOWER LIMIT		2430925	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-219129/1		4491795	2.68				
CCVL 320-219129/2		4740408	2.68				
CCV 320-219143/1		4558323	2.68				
MB 320-218132/1-A		5415621	2.68				
LCS 320-218132/2-A		4637712	2.68				
320-38061-1	SB031(0-2)	4765421	2.68				
320-38061-1 MS	SB031(0-2) MS	4782279	2.68				
320-38061-1 MSD	SB031(0-2) MSD	4604152	2.68				
320-38061-2	SB012(2-4)	4653287	2.67				
320-38061-3	SB008(2-4)	4565860	2.68				
320-38061-4	SB007(0-2)	4742124	2.68				
320-38061-5	SB003(0-2)	3010948	2.68				
320-38061-6	SB004(8-10)	4515962	2.68				
CCV 320-219143/12		4548019	2.68				
320-38061-7	SB013(8-10)	4504818	2.68				
CCV 320-219143/14		4722332	2.69				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Sample No.: CCV 320-219909/3 Date Analyzed: 04/26/2018 06:09

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.25LLBX_070. Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4697624	2.68				
UPPER LIMIT		7046436	2.88				
LOWER LIMIT		2348812	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-219909/1		4591124	2.68				
CCVL 320-219909/2		4680051	2.68				
320-38061-2 DL	SB012(2-4) DL	97412*	2.69				
320-38061-3 DL	SB008(2-4) DL	898876*	2.69				
320-38061-5 DL2	SB003(0-2) DL2	95463*	2.68				
320-38061-5 DL	SB003(0-2) DL	478685*	2.68				
320-38061-6 DL	SB004(8-10) DL	955055*	2.68				
320-38061-7 DL	SB013(8-10) DL	942029*	2.68				
CCV 320-219909/12		4636670	2.68				
CCV 320-220023/1		4570767	2.70				
MB 320-218597/1-A		5056439	2.69				
LCS 320-218597/2-A		5166070	2.70				
320-38061-8	FB008	5159224	2.69				
320-38061-9	EB008	4885425	2.70				
320-38169-A-1-B MS		5166459	2.69				
320-38169-A-1-C MSD		5133657	2.70				
CCV 320-220023/12		4603817	2.69				
CCV 320-220081/1		4682556	2.69				
320-38061-5 DL3	SB003(0-2) DL3	50052*	2.69				
CCV 320-220081/12		4598357	2.70				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB031(0-2) | Lab Sample ID: 320-38061-1

Matrix: Solid | Lab File ID: 2018.04.20LLC_026.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.04(g) | Date Analyzed: 04/21/2018 10:13

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000041	J	0.00021	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000082	U	0.00021	0.000082
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000045	U	0.00021	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000040	J	0.00021	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.00043	F1	0.00021	0.000091
375-95-1	Perfluorononanoic acid (PFNA)	0.000070	J	0.00021	0.000038
335-76-2	Perfluorodecanoic acid (PFDA)	0.000045	J	0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000038	U	0.00021	0.000038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00021	0.000071
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00070		0.00021	0.000054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000057	U	0.00021	0.000057
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000027	U	0.00021	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00015	J	0.00021	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000037	U	0.00021	0.000037
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0030		0.00053	0.00021
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000041	U	0.00021	0.000041
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00018	J	0.00021	0.000087
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00041	U	0.0021	0.00041
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039
27619-97-2	6:2FTS	0.00016	U	0.0021	0.00016
39108-34-4	8:2FTS	0.00027	U	0.0021	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB031(0-2) | Lab Sample ID: 320-38061-1

Matrix: Solid | Lab File ID: 2018.04.20LLC_026.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.04(g) | Date Analyzed: 04/21/2018 10:13

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	100		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	88		25-150
STL01892	13C4-PFHpA	101		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	108		25-150
STL00996	13C2 PFDA	111		25-150
STL00997	13C2 PFUnA	100		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2-PFTeDA	97		25-150
STL02337	13C3-PFBS	96		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	99		25-150
STL02118	d3-NMeFOSAA	124		25-150
STL02117	d5-NEtFOSAA	124		25-150
STL02279	M2-6:2FTS	182	*	25-150
STL02280	M2-8:2FTS	188	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d
Lims ID: 320-38061-A-1-A
Client ID: SB031(0-2)
Sample Type: Client
Inject. Date: 21-Apr-2018 10:13:33 ALS Bottle#: 18 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-1-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 24-Apr-2018 11:32:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.441	-0.006	1.000	6428271	2.51		100	42923	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.004	46490	0.0195			7.7	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.701	0.001	0.557	4137275	2.50		100	48030	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.703	-0.001	1.000	54492	0.0276			21.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.738	-0.009	1.000	84411	2.23		95.7	262	
D 60 M2-4:2FTS										
329.00 > 81.00	1.801	1.948	-0.147	1.000	1281	0.004715		0.0	3.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.980	1.980	0.0	1.000	4002991	2.19		87.6	82948	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.318	0.001	1.000	33862	0.0188			33.6	
363.00 > 169.00	2.306	2.318	-0.012	0.994	14395		2.35(1.13-3.40)		64.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.319	0.0	1.000	4495251	2.53		101	70578	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.331	0.001	1.000	173259	0.0704			229	
399.00 > 99.00	2.332	2.331	0.001	1.000	53981		3.21(1.50-4.49)		130	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.332	0.0	1.000	5142135	2.34		99.0	116464	
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.652	0.0	1.000	1643381	4.31		182	7990	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.659	2.658	0.001	1.003	13761	0.0118			67.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.681	0.001		4765421	2.50			52139	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.681	0.001	1.000	438471	0.2038			344	
413.00 > 169.00	2.682	2.681	0.001	1.000	256162		1.71(0.84-2.52)		671	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.682	0.0	1.000	4655295	2.63		105	81740	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.688	0.001	1.000	7970	0.004060			33.5	
449.00 > 99.00	2.682	2.688	-0.006	0.997	3810		2.09(1.94-5.82)		22.4	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.056	3.054	0.002	1.000	2297105	1.43			7055	
499.00 > 99.00	3.056	3.054	0.002	1.000	530243		4.33(2.31-6.93)		2683	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.054	0.002	1.000	56066	0.0329			126	
463.00 > 169.00	3.056	3.054	0.002	1.000	14840		3.78(1.90-5.69)		161	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.055	0.001	1.000	4088321	2.69		108	70235	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.055	0.001	1.000	3534193	2.30		96.2	20388	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.391	0.002	1.000	164650	0.0857			135	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.393	0.0	1.000	4748251	2.47		98.9	39346	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.421	3.410	0.011	1.003	3435	0.003152			232	
D 26 M2-8:2FTS										
529.00 > 81.00	3.411	3.411	0.0	1.000	2062957	4.49		188	13344	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.421	3.419	0.002	1.000	30560	0.0209			63.3	
513.00 > 169.00	3.411	3.419	-0.008	0.997	5016		6.09(2.36-7.09)		43.6	M
D 23 13C2 PFDA										
515.00 > 470.00	3.421	3.420	0.001	1.000	3537383	2.77		111	100636	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.569	0.001	1.000	2243149	3.10		124	47676	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.743	0.0	1.000	2215403	3.10		124	36804	
D 30 13C2 PFUnA										
565.00 > 520.00	3.753	3.754	-0.001	1.000	2753052	2.50		99.9	72809	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.042	-0.001	1.000	2901884	2.44		97.6	39545	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.233	4.301	-0.068	1.000	464712	0.3294			433	
663.00 > 169.00	4.233	4.301	-0.068	1.000	366420		1.27(1.25-3.76)		2541	
42 Perfluorotetradecanoic acid										RM
713.00 > 169.00	4.480	4.547	-0.067	0.986	9341	0.0254			58.2	RM
713.00 > 219.00	4.470	4.547	-0.077	0.984	2811		3.32(0.71-2.13)		29.3	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.548	-0.006	1.000	3657276	2.42		97.0	35451	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.957	4.961	-0.004	1.000	58749	0.004334			22.8	
813.00 > 169.00	4.957	4.961	-0.004	1.000	11507		5.11(2.86-8.58)		66.6	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.957	4.961	-0.004	1.000	5827347	2.37		94.9	16503	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

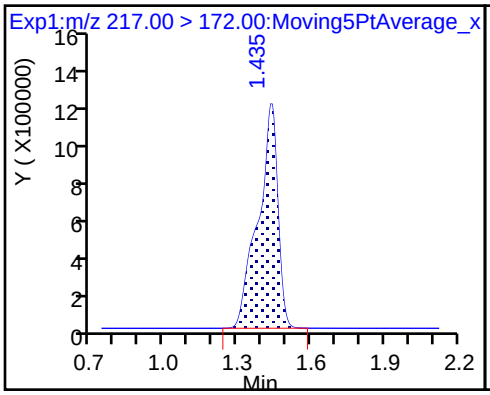
Report Date: 24-Apr-2018 16:42:00 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

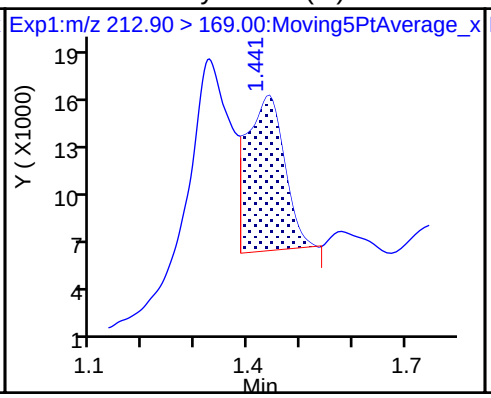
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d

Injection Date:	21-Apr-2018 10:13:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-A	Lab Sample ID:	320-38061-1		
Client ID:	SB031(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

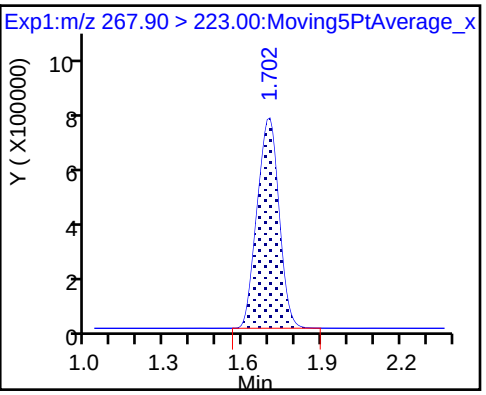
D 1 13C4 PFBA



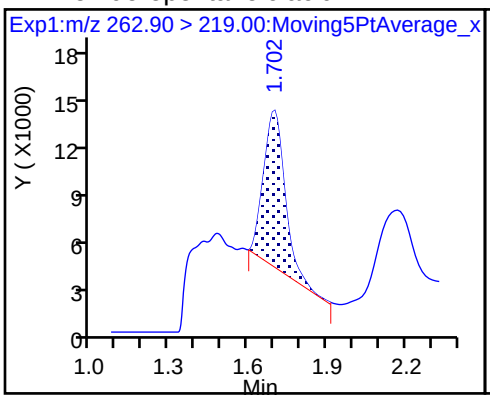
2 Perfluorobutyric acid (M)



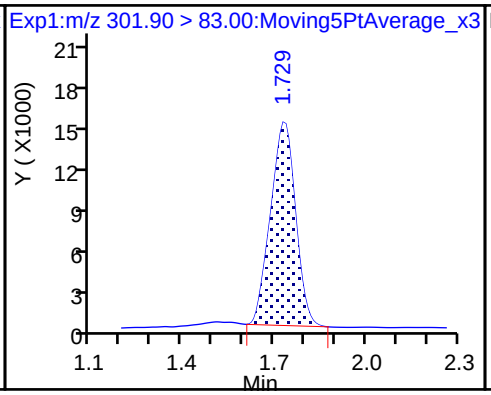
D 3 13C5-PFPeA



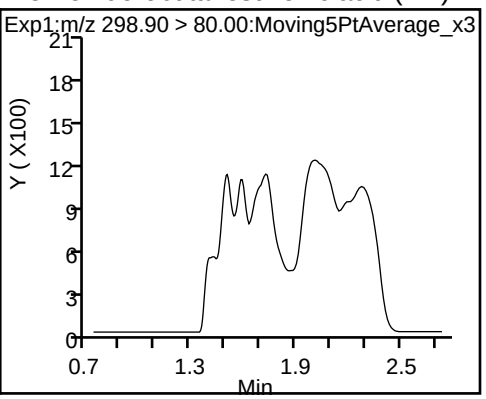
4 Perfluoropentanoic acid



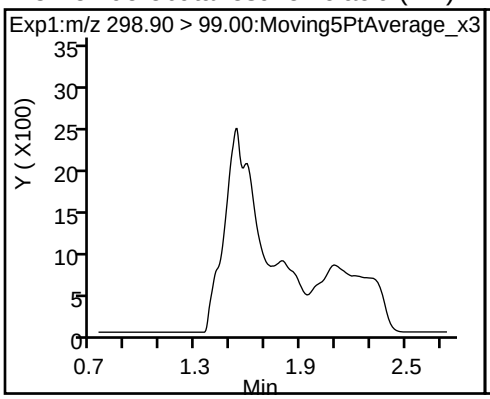
D 47 13C3-PFBS



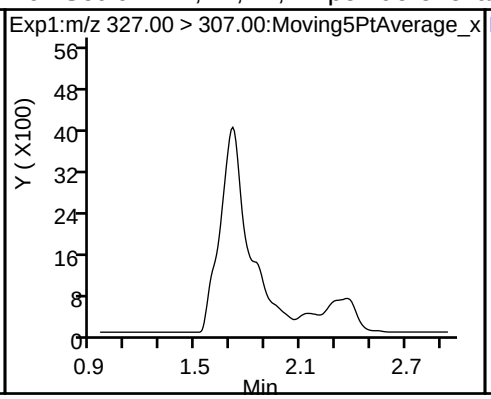
5 Perfluorobutanesulfonic acid (ND)



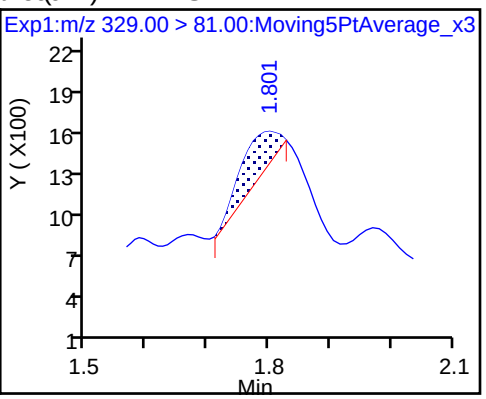
5 Perfluorobutanesulfonic acid (ND)



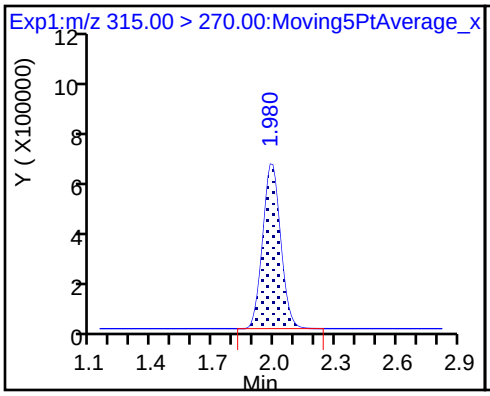
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (ND)



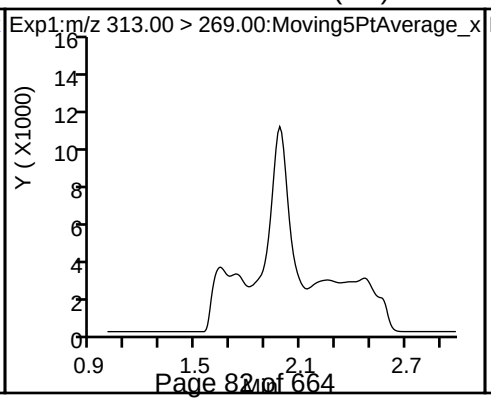
D 6 (ND) 2-4:2FTS



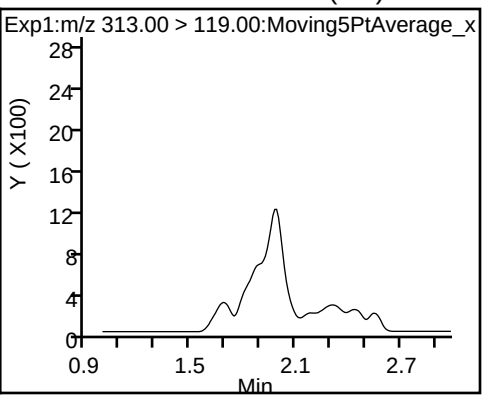
D 7 13C2 PFHxA



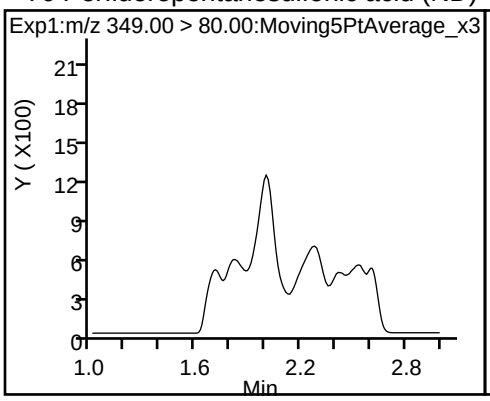
6 Perfluorohexanoic acid (ND)



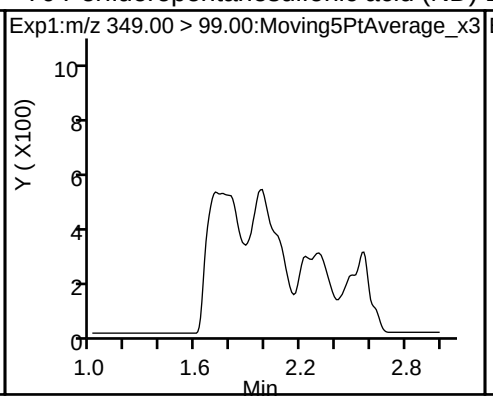
6 Perfluorohexanoic acid (ND)



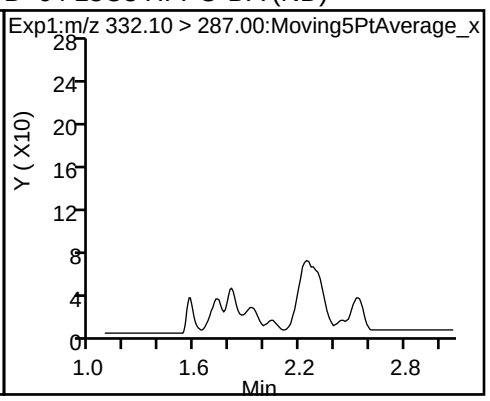
70 Perfluoropentanesulfonic acid (ND)



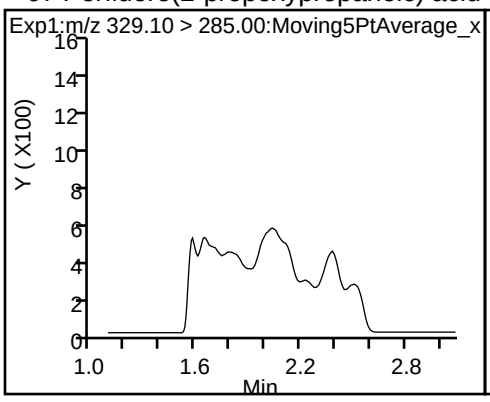
70 Perfluoropentanesulfonic acid (ND)



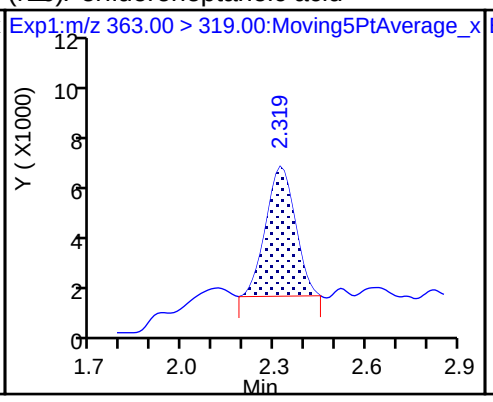
D 64 13C3 HFPO-DA (ND)



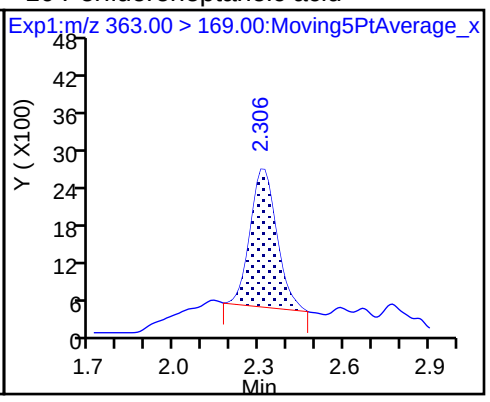
67 Perfluoro(2-propoxypropanoic) acid (ND)



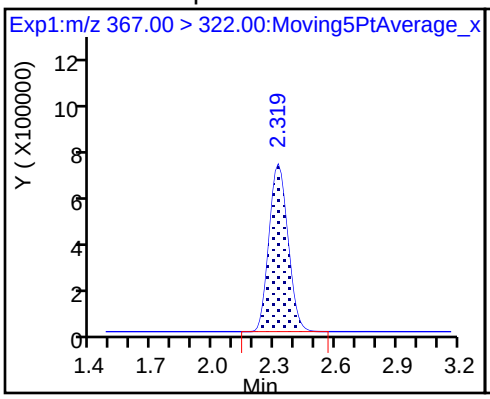
10 Perfluoroheptanoic acid



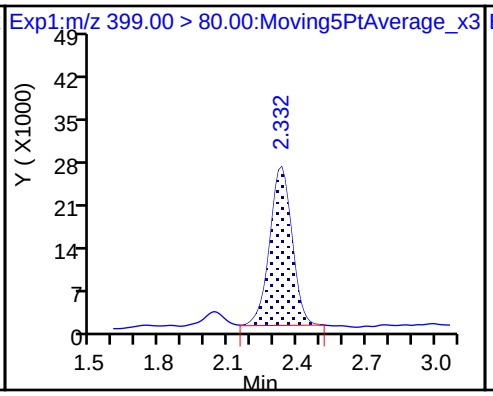
10 Perfluoroheptanoic acid



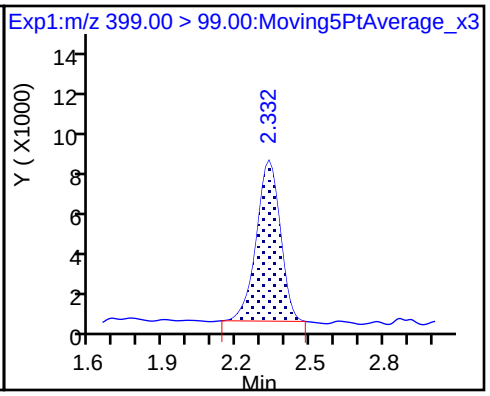
D 9 13C4-PFHpA



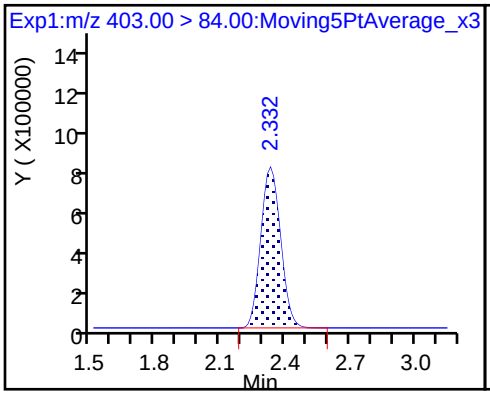
8 Perfluorohexanesulfonic acid



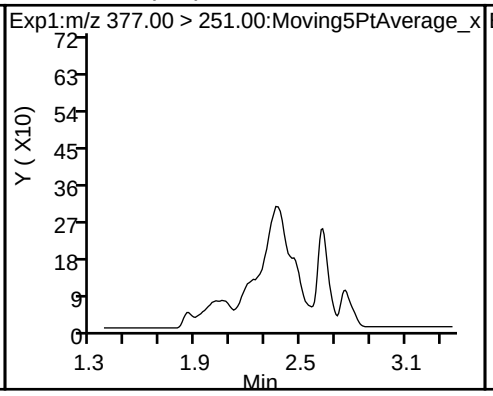
8 Perfluorohexanesulfonic acid



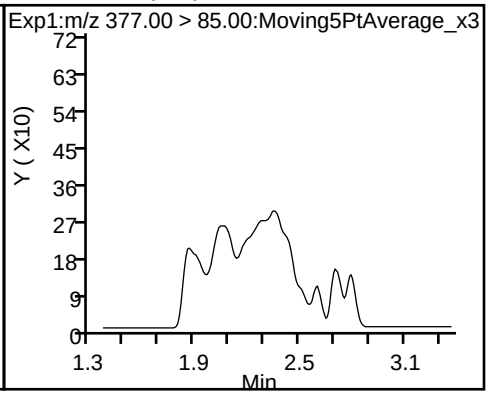
D 11 18O2 PFHxS



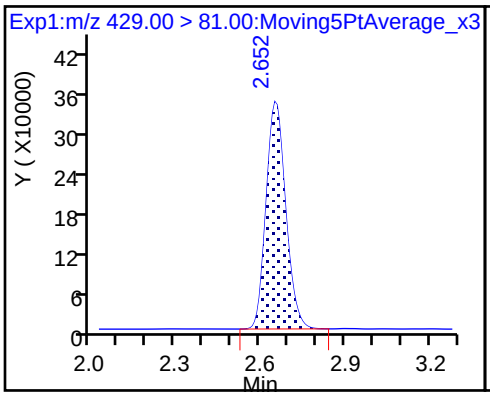
65 Adona (ND)



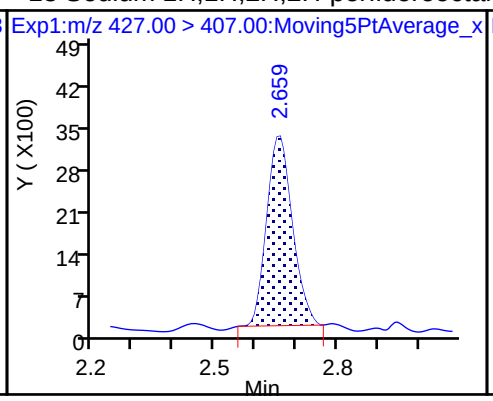
65 Adona (ND)



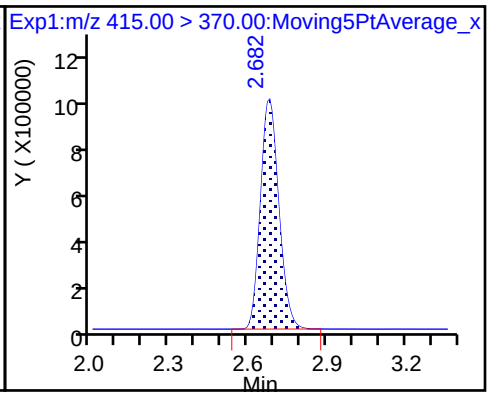
D 12 M2-6:2FTS



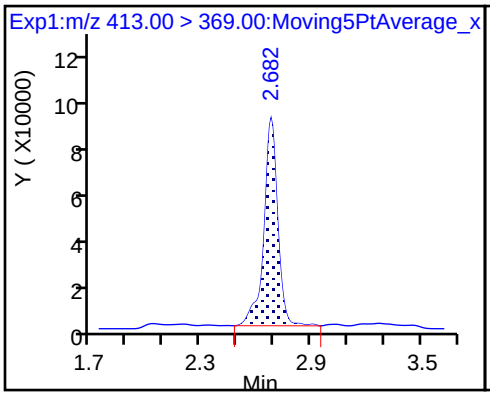
13 Sodium 1H,1H,2H,2H-perfluorooctane



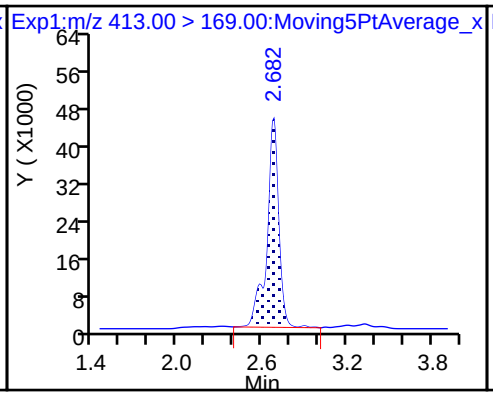
M62 13C2-PFOA



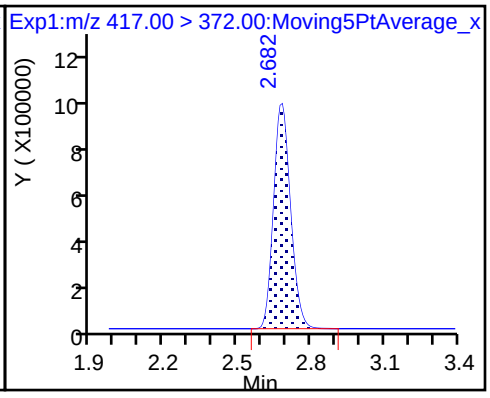
15 Perfluorooctanoic acid



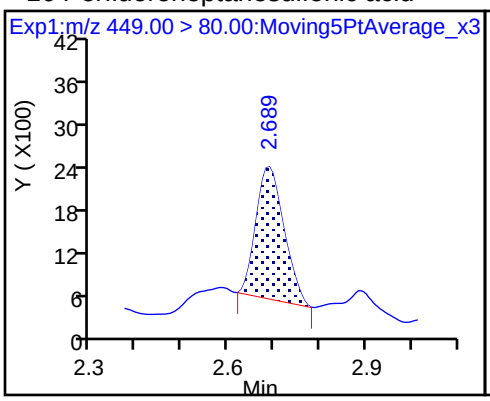
15 Perfluorooctanoic acid



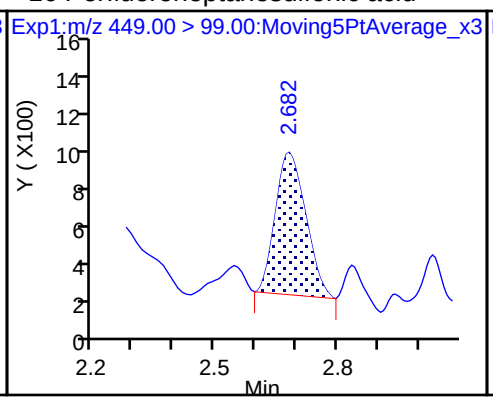
D 14 13C4 PFOA



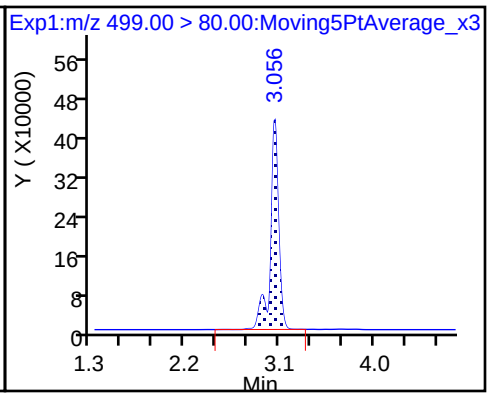
16 Perfluoroheptanesulfonic acid



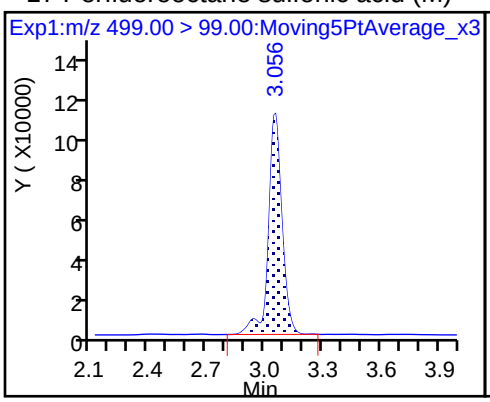
16 Perfluoroheptanesulfonic acid



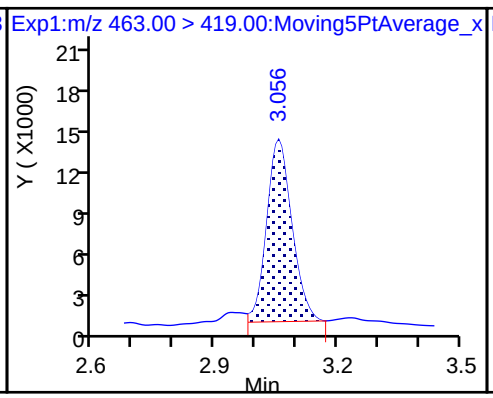
17 Perfluorooctane sulfonic acid



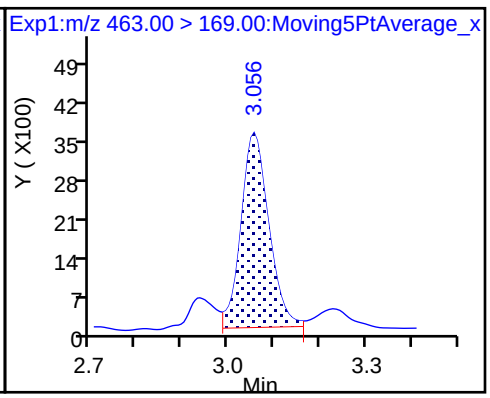
17 Perfluorooctane sulfonic acid (M)



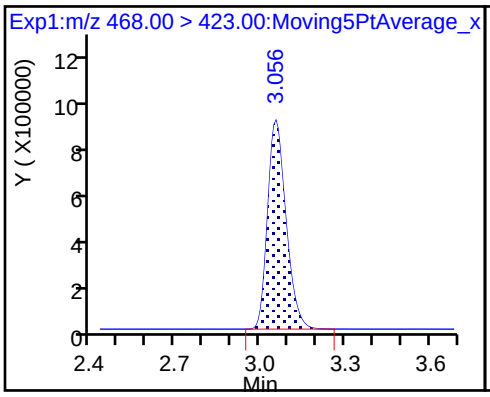
20 Perfluorononanoic acid



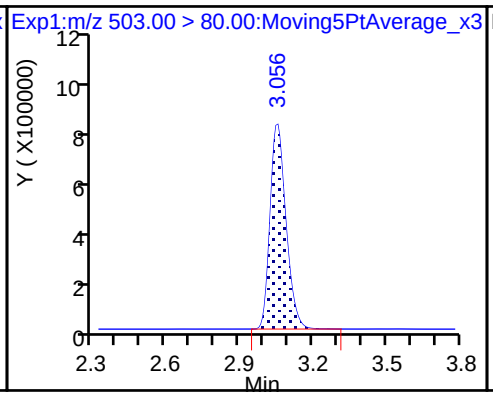
20 Perfluorononanoic acid



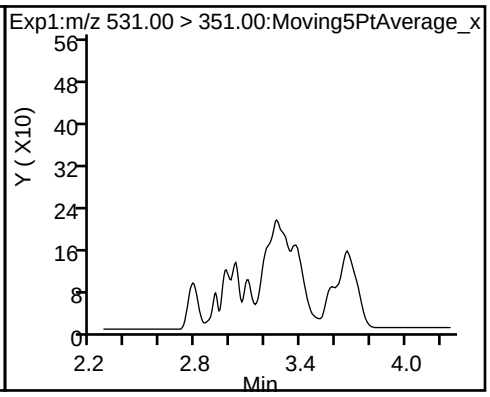
D 19 13C5 PFNA



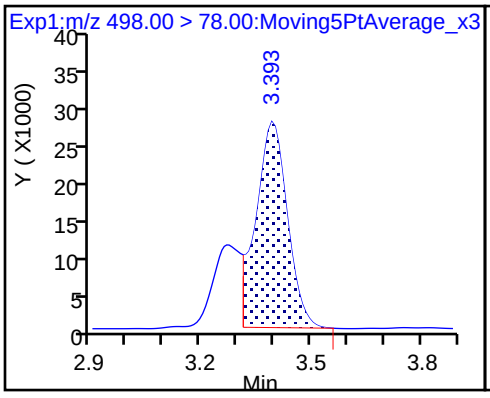
D 18 13C4 PFOS



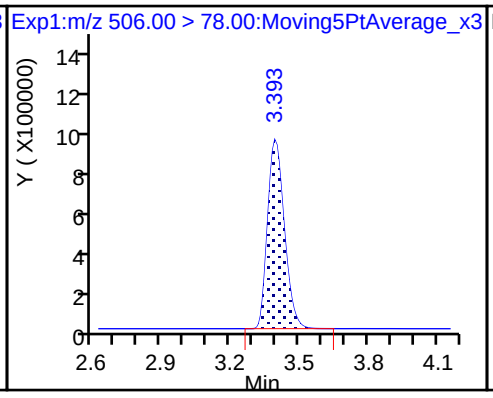
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



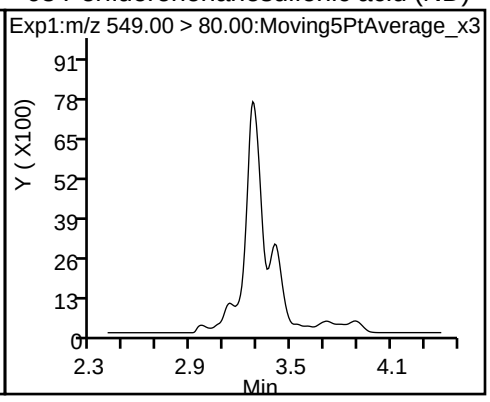
22 Perfluorooctane Sulfonamide



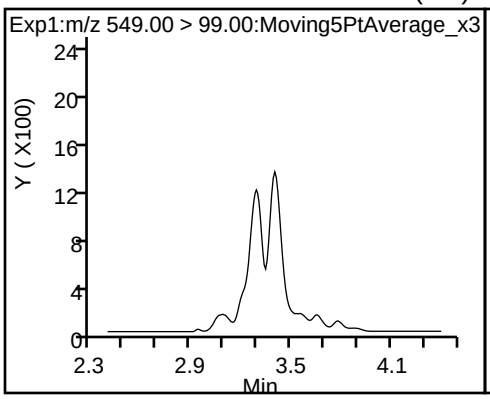
D 21 13C8 FOSA



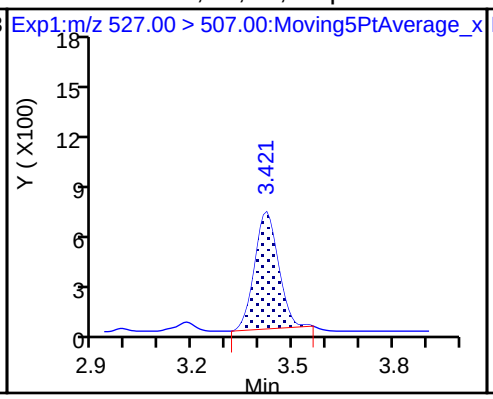
68 Perfluorononanesulfonic acid (ND)



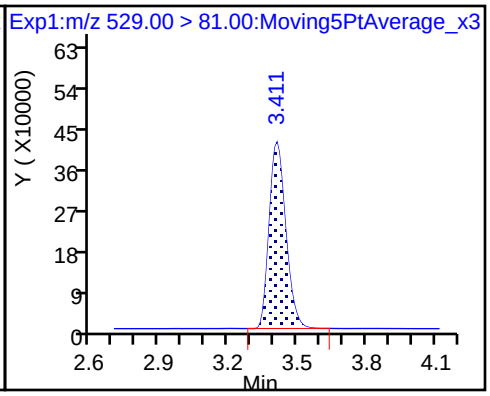
68 Perfluorononanesulfonic acid (ND)



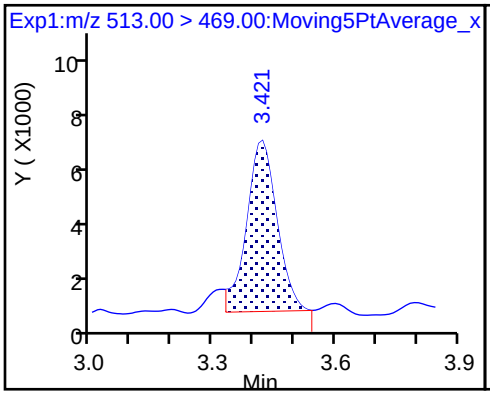
25 Sodium 1H,1H,2H,2H-perfluorodecane



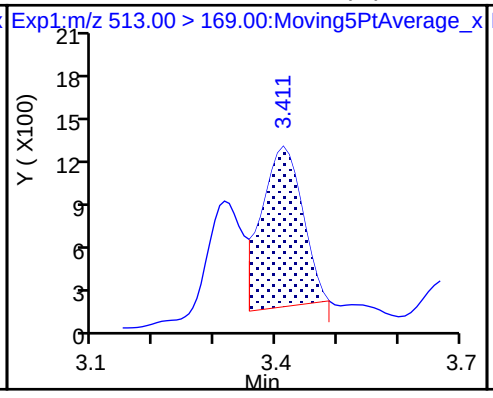
D 26 M2-8:2FTS



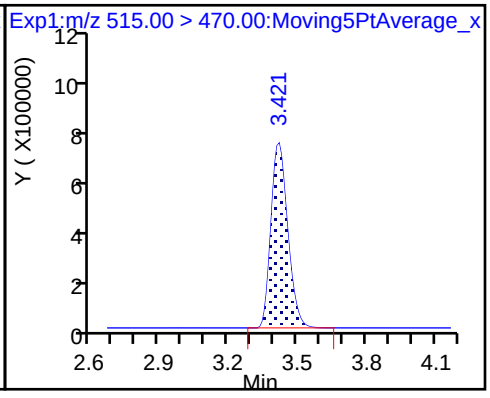
24 Perfluorodecanoic acid



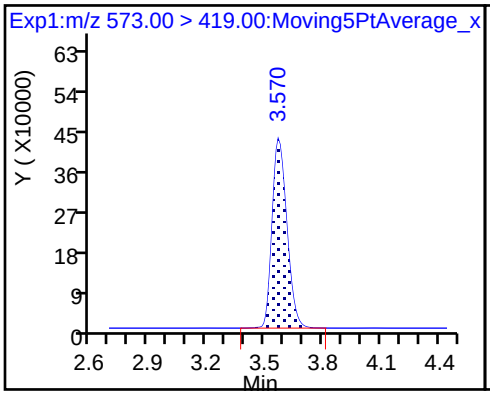
24 Perfluorodecanoic acid (M)



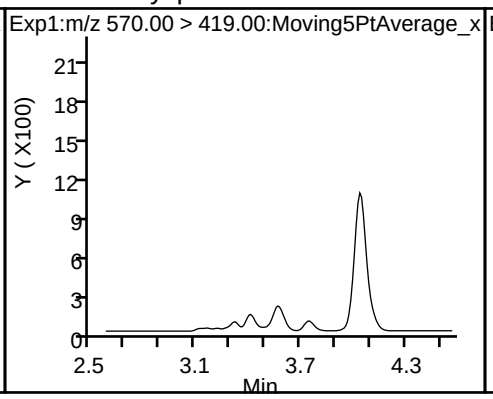
D 23 13C2 PFDA



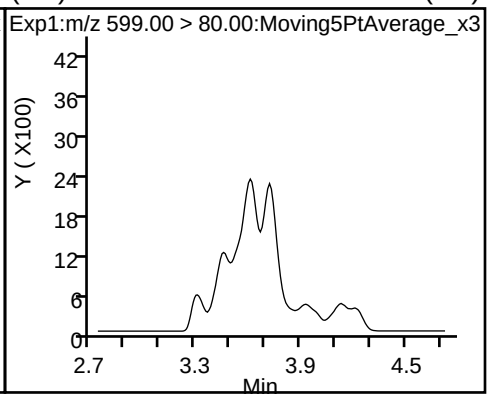
D 27 d3-NMeFOSAA



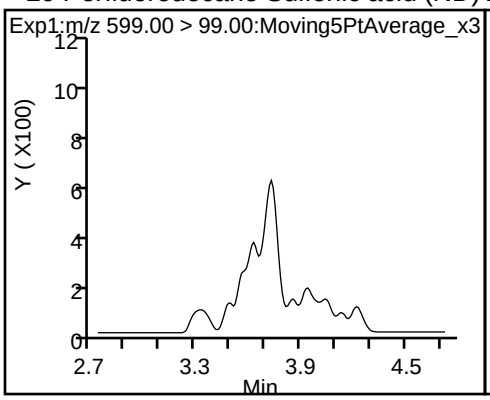
28 N-methyl perfluorooctane sulfonami (ND)



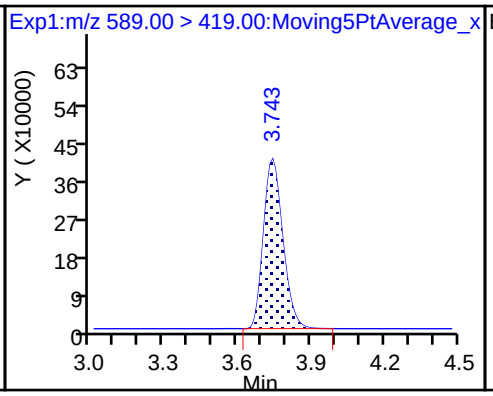
29 Perfluorodecane Sulfonic acid (ND)



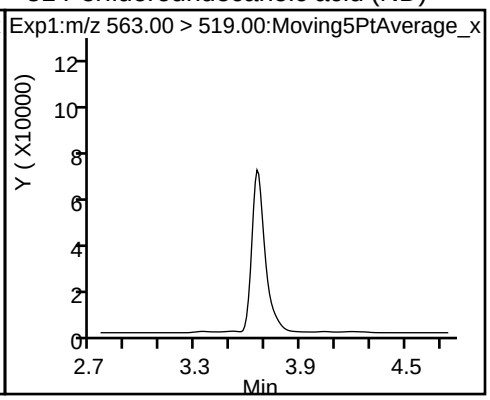
29 Perfluorodecane Sulfonic acid (ND)



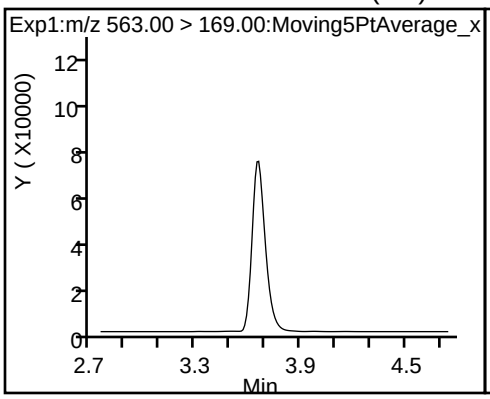
D 32 d5-NEtFOSAA



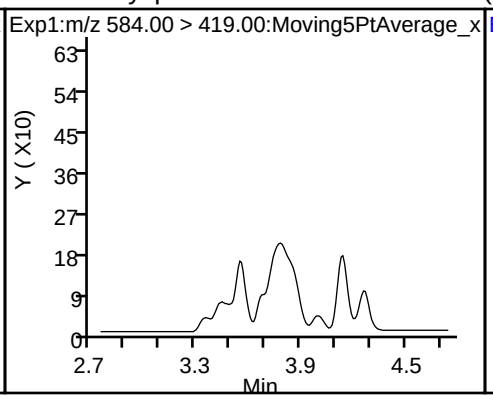
31 Perfluoroundecanoic acid (ND)



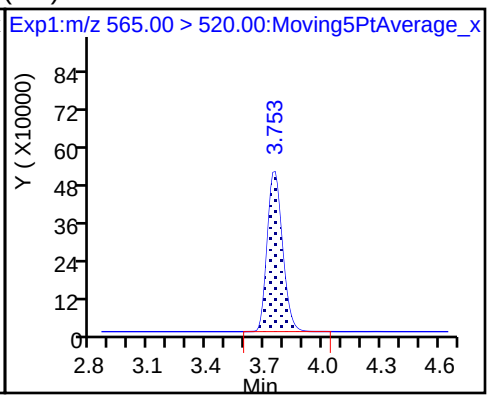
31 Perfluoroundecanoic acid (ND)



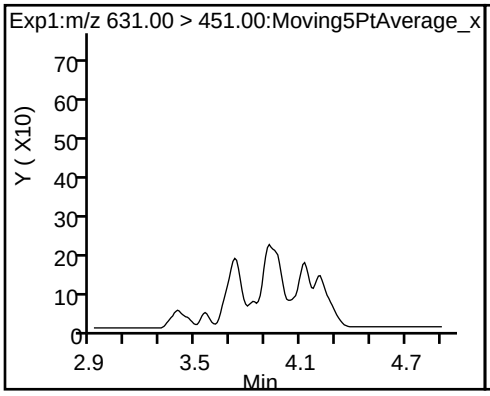
33 N-ethyl perfluorooctane sulfonamid (ND)



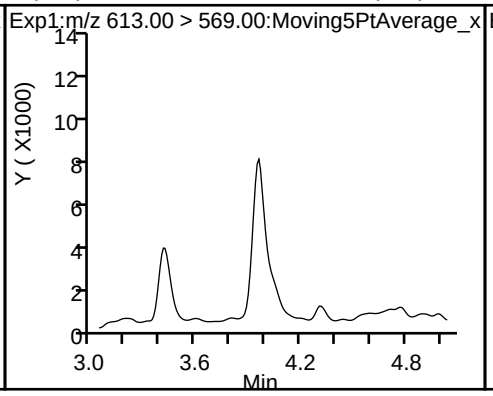
M3PFUnA 13C2 PFUnA



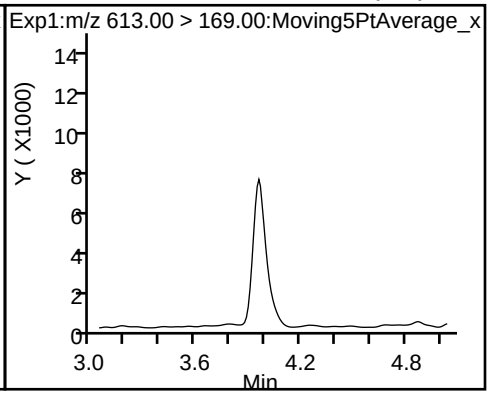
66 11-Chloroeicosafluoro-3-oxaundecan (ND)



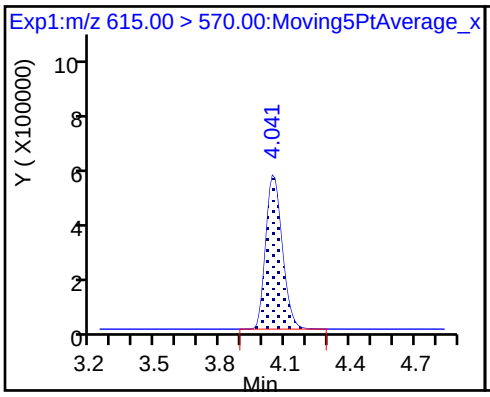
37 Perfluorododecanoic acid (ND)



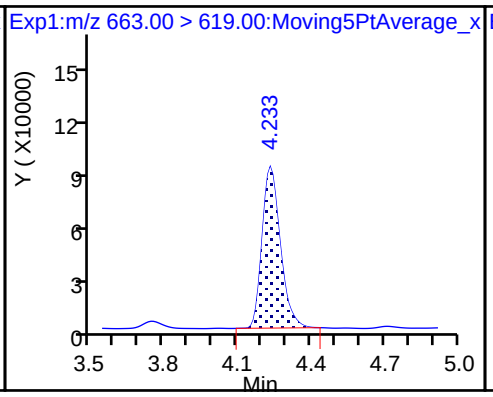
37 Perfluorododecanoic acid (ND)



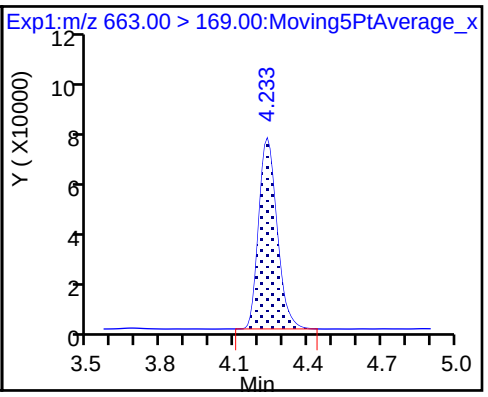
D 36 13C2 PFDoA



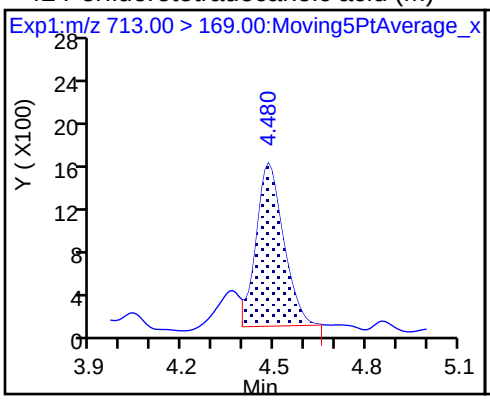
41 Perfluorotridecanoic acid



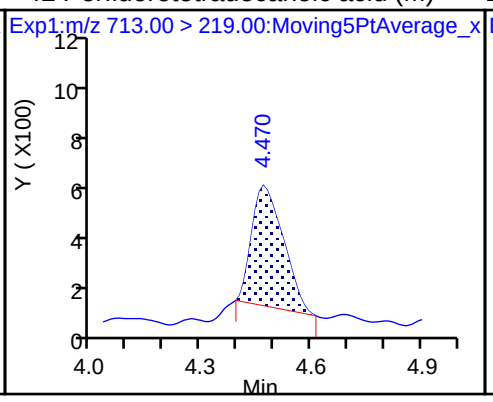
41 Perfluorotridecanoic acid



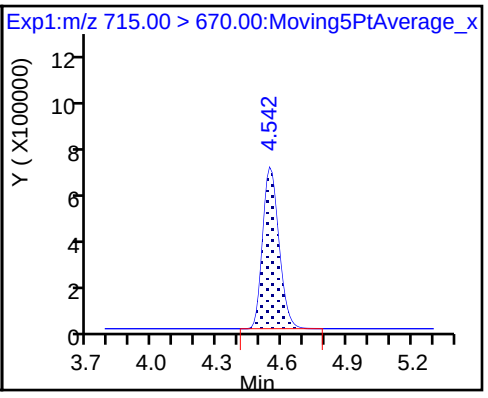
42 Perfluorotetradecanoic acid (M)



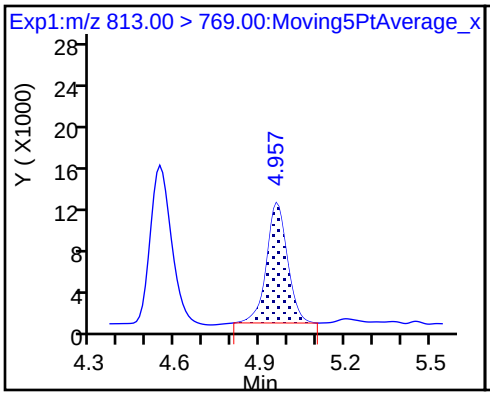
42 Perfluorotetradecanoic acid (M)



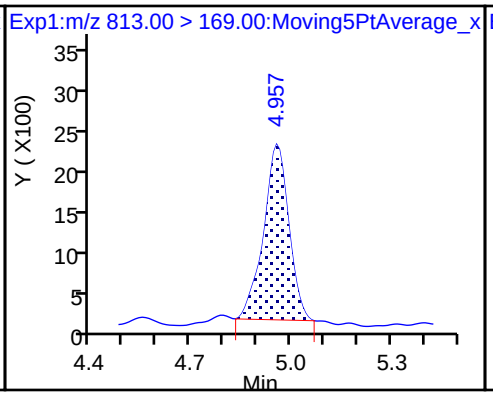
D 43 13C2-PFTeDA



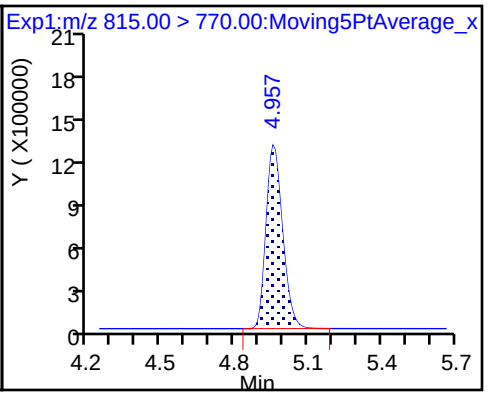
45 Perfluorohexadecanoic acid



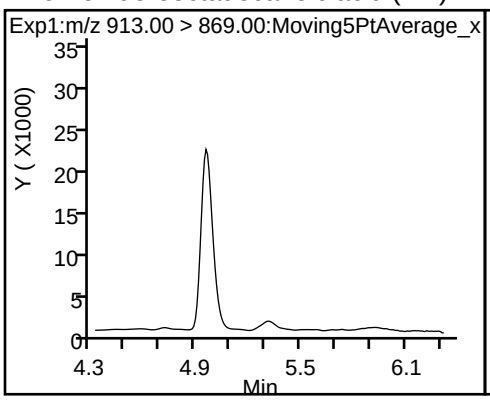
45 Perfluorohexadecanoic acid



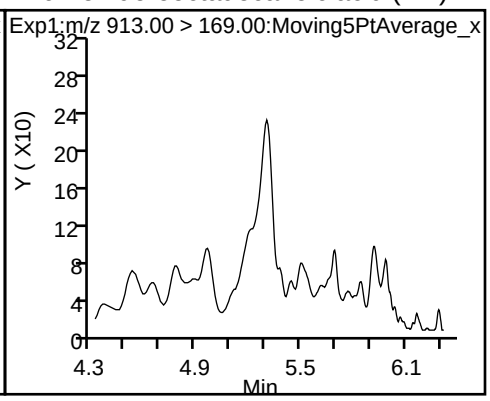
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

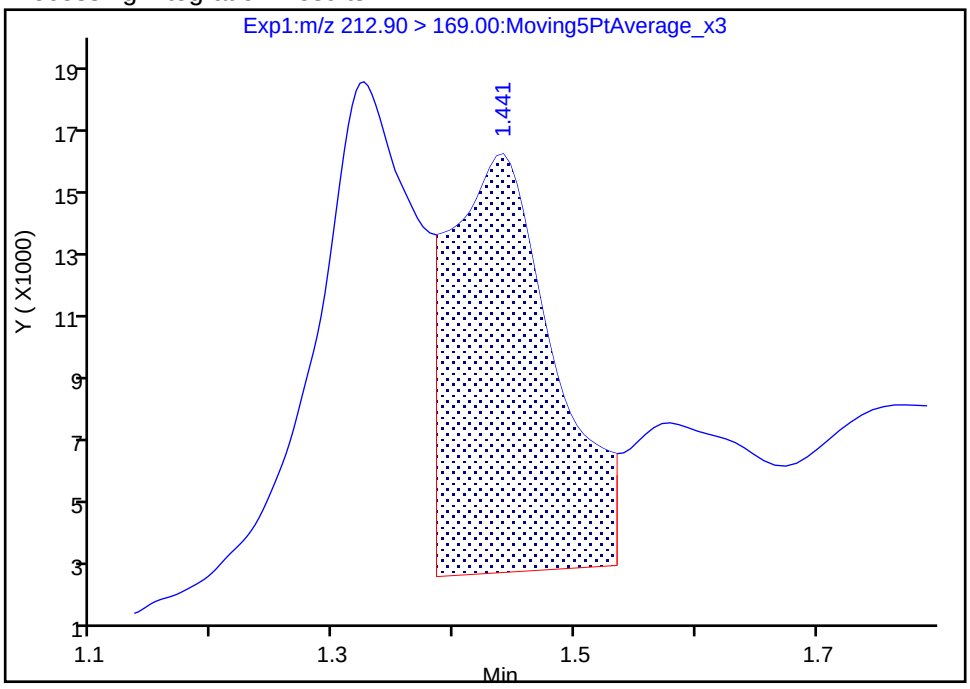
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d				
Injection Date:	21-Apr-2018 10:13:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-A	Lab Sample ID:	320-38061-1		
Client ID:	SB031(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

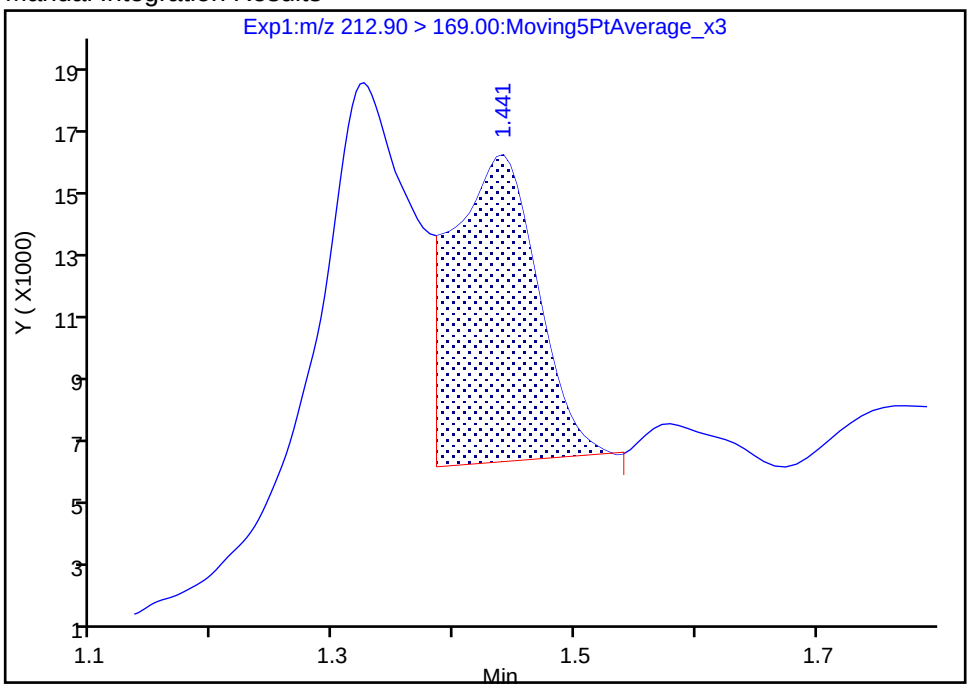
Processing Integration Results

RT: 1.44
Area: 77862
Amount: 0.032611
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 46490
Amount: 0.019471
Amount Units: ng/ml



Reviewer: westendorfc, 24-Apr-2018 11:30:07

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

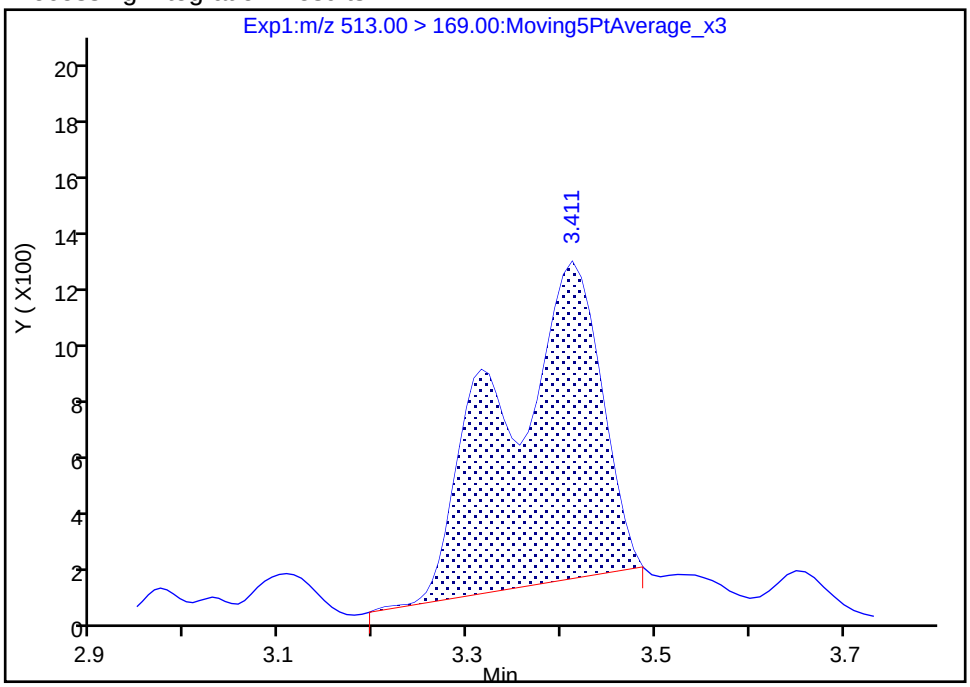
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d				
Injection Date:	21-Apr-2018 10:13:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-A	Lab Sample ID:	320-38061-1		
Client ID:	SB031(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 2

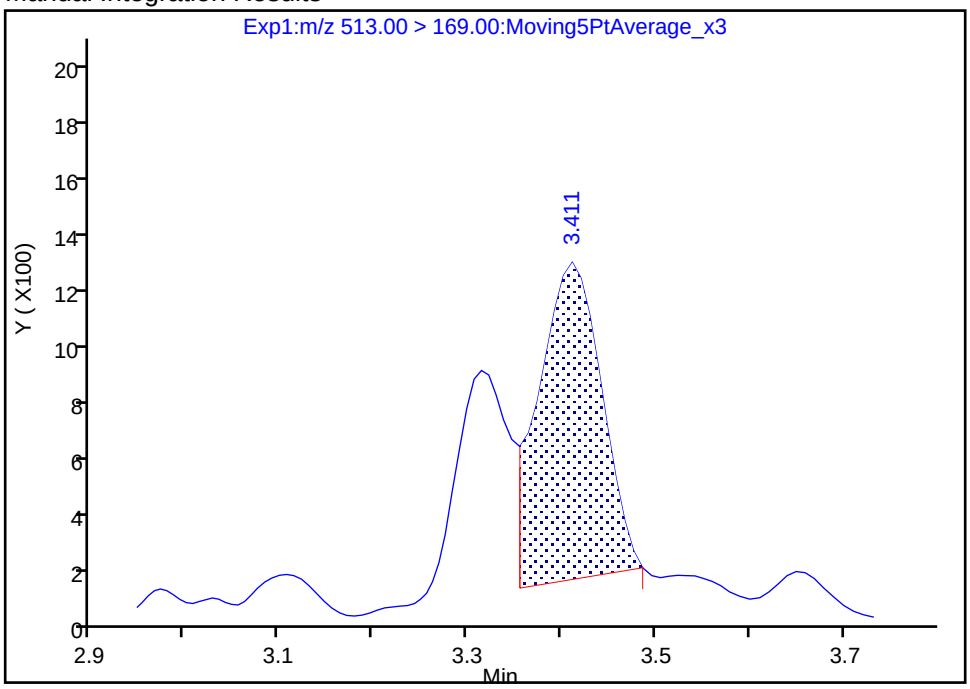
Processing Integration Results

RT: 3.41
Area: 8024
Amount: 0.020937
Amount Units: ng/ml



Manual Integration Results

RT: 3.41
Area: 5016
Amount: 0.020937
Amount Units: ng/ml



Reviewer: westendorfc, 24-Apr-2018 11:30:48

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

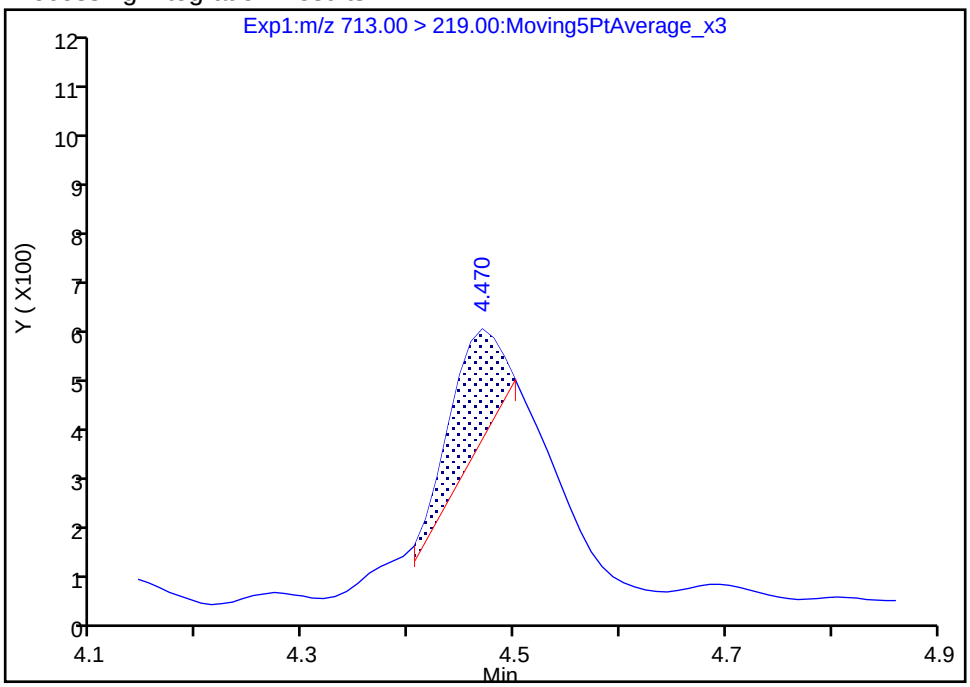
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d				
Injection Date:	21-Apr-2018 10:13:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-A	Lab Sample ID:	320-38061-1		
Client ID:	SB031(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

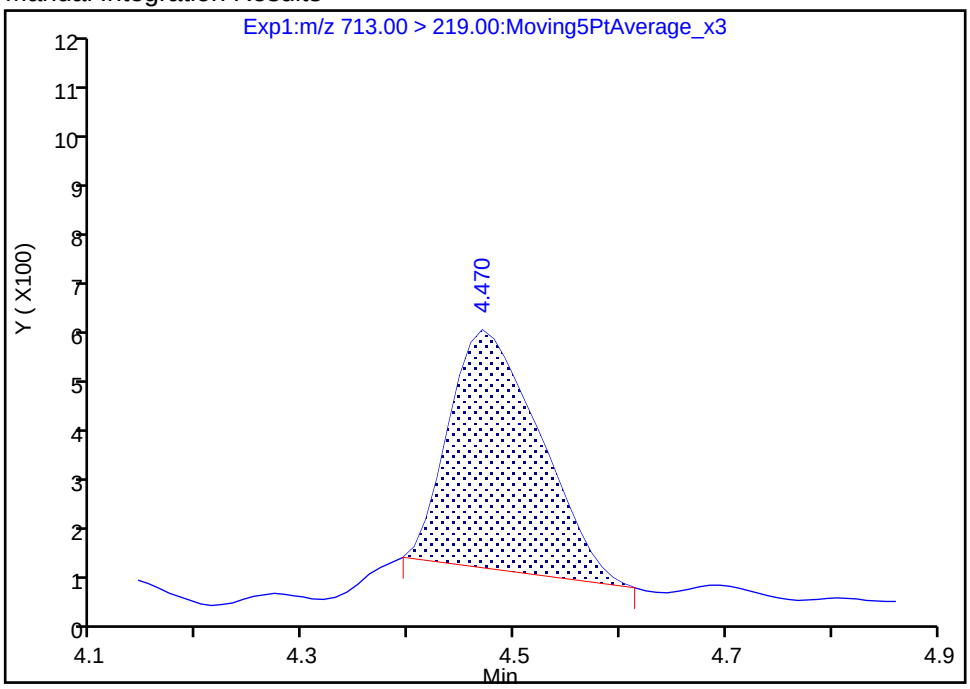
Processing Integration Results

RT: 4.47
Area: 762
Amount: 0.020144
Amount Units: ng/ml



Manual Integration Results

RT: 4.47
Area: 2811
Amount: 0.025424
Amount Units: ng/ml



Reviewer: westendorfc, 24-Apr-2018 11:32:05

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

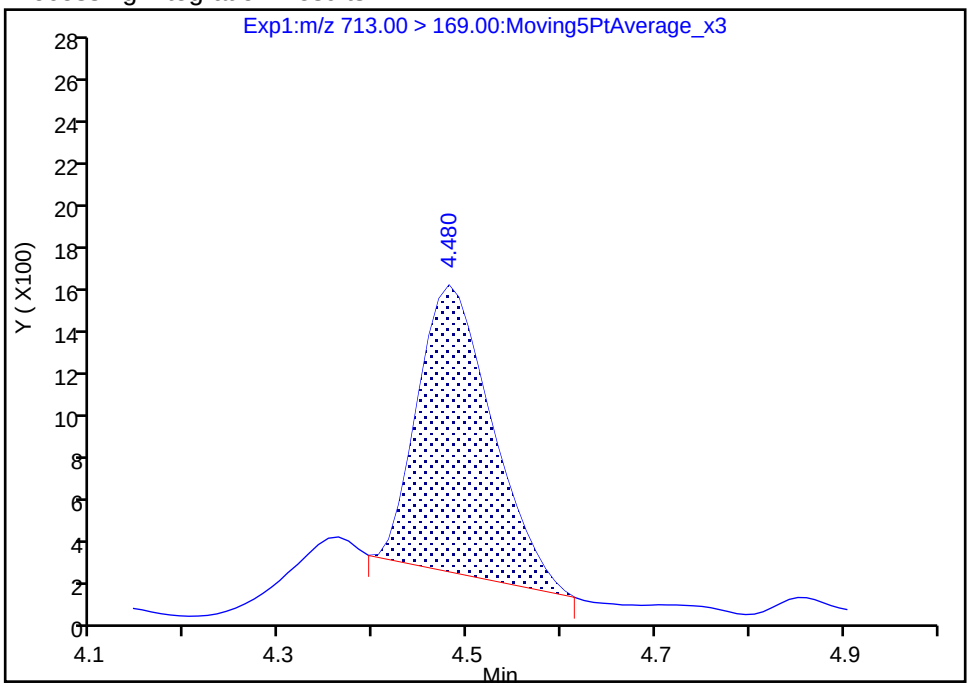
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d				
Injection Date:	21-Apr-2018 10:13:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-A	Lab Sample ID:	320-38061-1		
Client ID:	SB031(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

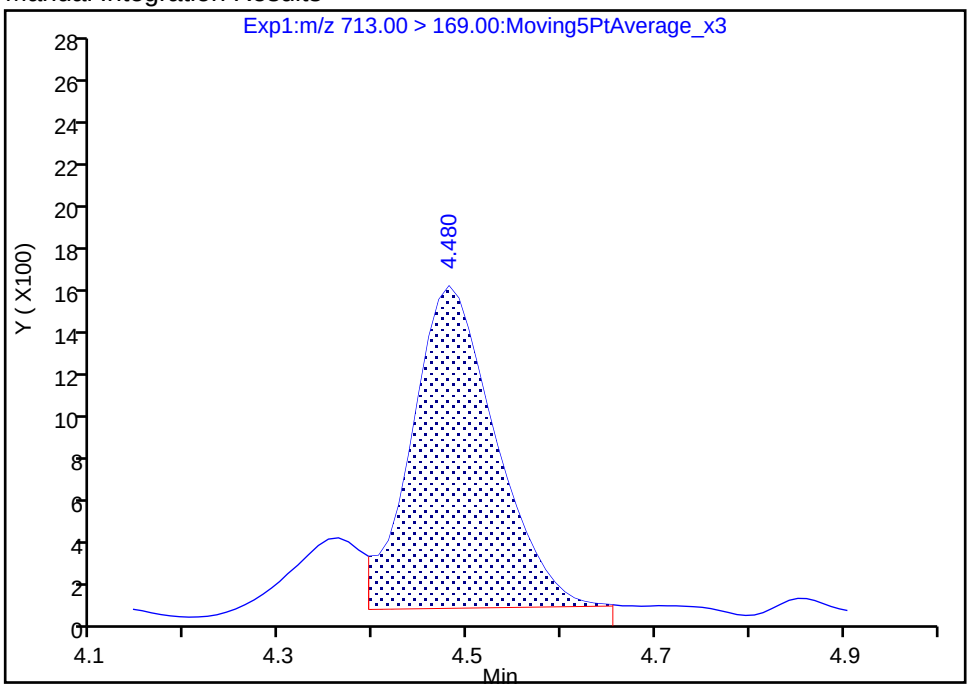
Processing Integration Results

RT: 4.48
Area: 7401
Amount: 0.020144
Amount Units: ng/ml



Manual Integration Results

RT: 4.48
Area: 9341
Amount: 0.025424
Amount Units: ng/ml



Reviewer: westendorfc, 24-Apr-2018 11:32:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

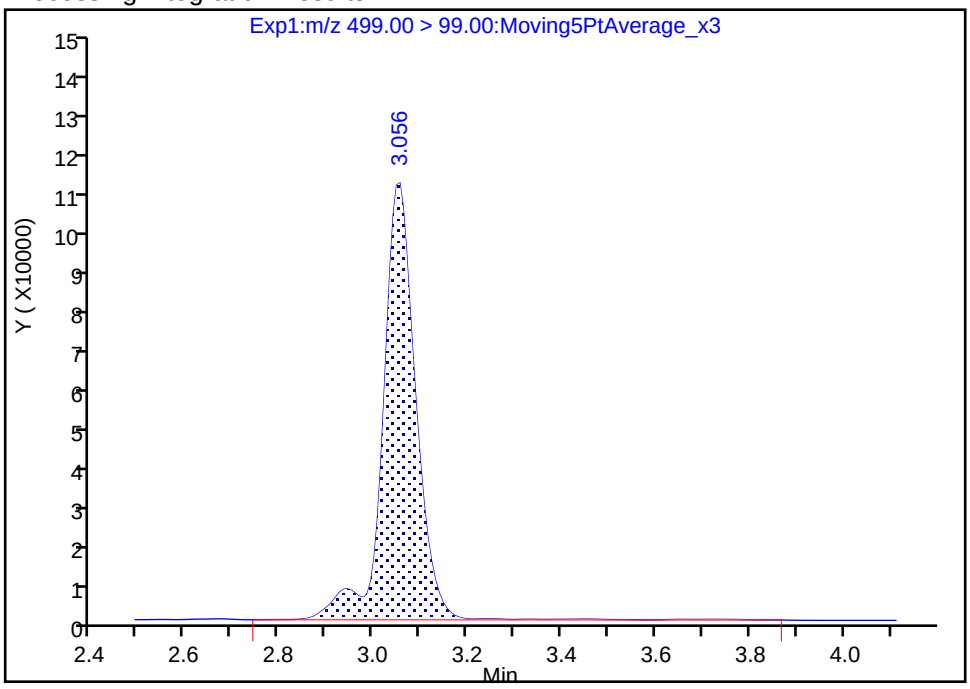
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_026.d				
Injection Date:	21-Apr-2018 10:13:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-A	Lab Sample ID:	320-38061-1		
Client ID:	SB031(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

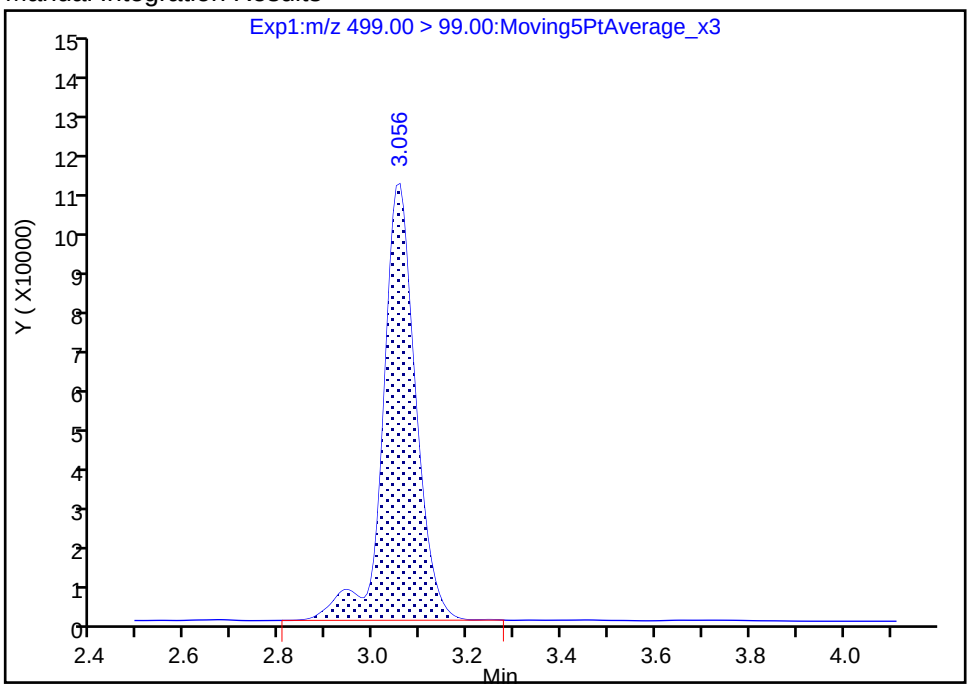
Processing Integration Results

RT: 3.06
Area: 537688
Amount: 1.427990
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 530243
Amount: 1.427990
Amount Units: ng/ml



Reviewer: westendorfc, 24-Apr-2018 11:30:29

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB012(2-4) | Lab Sample ID: 320-38061-2

Matrix: Solid | Lab File ID: 2018.04.20LLC_029.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:45

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.03(g) | Date Analyzed: 04/21/2018 10:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00036		0.00021	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000082	U	0.00021	0.000082
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00039		0.00021	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00018	J	0.00021	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.0022		0.00021	0.000092
375-95-1	Perfluorononanoic acid (PFNA)	0.0020		0.00021	0.000038
335-76-2	Perfluorodecanoic acid (PFDA)	0.0081		0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.0018		0.00021	0.000038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000071	U	0.00021	0.000071
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00058		0.00021	0.000054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000058	U	0.00021	0.000058
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00015	J	0.00021	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0093		0.00021	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00042		0.00021	0.000037
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000042	U	0.00021	0.000042
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00034		0.00021	0.000087
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00042	U	0.0021	0.00042
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00039	U	0.0021	0.00039
27619-97-2	6:2FTS	0.00025	J	0.0021	0.00016
39108-34-4	8:2FTS	0.0018	J	0.0021	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB012(2-4) | Lab Sample ID: 320-38061-2

Matrix: Solid | Lab File ID: 2018.04.20LLC_029.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:45

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.03(g) | Date Analyzed: 04/21/2018 10:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	91		25-150
STL01893	13C5 PFPeA	97		25-150
STL00993	13C2 PFHxA	88		25-150
STL01892	13C4-PFHpA	96		25-150
STL00990	13C4 PFOA	103		25-150
STL00995	13C5 PFNA	56		25-150
STL00996	13C2 PFDA	110		25-150
STL00997	13C2 PFUnA	106		25-150
STL00998	13C2 PFDoA	103		25-150
STL02116	13C2-PFTeDA	99		25-150
STL02337	13C3-PFBS	97		25-150
STL00994	18O2 PFHxS	93		25-150
STL00991	13C4 PFOS	53		25-150
STL01056	13C8 FOSA	97		25-150
STL02118	d3-NMeFOSAA	126		25-150
STL02117	d5-NEtFOSAA	121		25-150
STL02279	M2-6:2FTS	178	*	25-150
STL02280	M2-8:2FTS	164	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d
Lims ID: 320-38061-A-2-A
Client ID: SB012(2-4)
Sample Type: Client
Inject. Date: 21-Apr-2018 10:36:59 ALS Bottle#: 21 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-2-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:18:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	5715677	2.28		91.3	33636	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.441	0.006	1.008	356241	0.1678			13.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.701	-0.008	0.555	3901772	2.42		96.7	15241	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.738	-0.009	1.000	83842	2.26		97.4	866	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.729	1.739	-0.010	1.000	198654	0.0704			219	M
298.90 > 99.00	1.729	1.739	-0.010	1.000	74778		2.66(1.25-3.74)		90.9	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.980	0.001	1.000	3916777	2.19		87.8	59048	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.981	1.990	-0.009	1.000	292295	0.1836			51.3	M
313.00 > 119.00	1.981	1.990	-0.009	1.000	22631		12.92(5.03-15.10)		135	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.307	2.318	-0.011	1.000	138914	0.0831			59.5	M
363.00 > 169.00	2.307	2.318	-0.011	1.000	49712		2.79(1.13-3.40)		186	
D 9 13C4-PFHpA										
367.00 > 322.00	2.307	2.319	-0.012	1.000	4172932	2.40		96.1	49982	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.331	-0.011	1.000	9818566	4.35			12570	
399.00 > 99.00	2.320	2.331	-0.011	1.000	3043059		3.23(1.50-4.49)		7266	
D 11 18O2 PFHxS										
403.00 > 84.00	2.320	2.332	-0.012	1.000	4716788	2.20		93.0	73794	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.652	-0.007	1.000	1572555	4.22		178	8051	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.658	-0.013	1.000	132856	0.1187			521	
* 62 13C2-PFOA										
415.00 > 370.00	2.668	2.681	-0.013		4653287	2.50			57221	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.668	2.681	-0.013	1.000	2076045	1.01			748	
413.00 > 169.00	2.668	2.681	-0.013	1.000	1163469		1.78(0.84-2.52)		2795	
D 14 13C4 PFOA										
417.00 > 372.00	2.668	2.682	-0.014	1.000	4439814	2.57		103	66624	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.688	-0.013	1.000	210577	0.1976			251	
449.00 > 99.00	2.675	2.688	-0.013	1.000	55785		3.77(1.94-5.82)		255	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	3.050	3.054	-0.004	1.002	149704584	171.4			23912	EM
499.00 > 99.00	3.043	3.054	-0.011	1.000	51498743		2.91(2.31-6.93)		117704	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.054	-0.011	0.998	823069	0.9552			594	
463.00 > 169.00	3.050	3.054	-0.004	1.000	205754		4.00(1.90-5.69)		775	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.055	-0.005	1.000	2065926	1.39		55.7	26468	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.055	-0.012	1.000	1918617	1.28		53.5	7040	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.385	3.391	-0.006	1.000	294768	0.1611			85.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.393	-0.008	1.000	4523372	2.41		96.5	34703	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.410	-0.015	1.000	769170	0.8274			21494	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.411	-0.016	1.000	1759466	3.92		164	8433	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.419	-0.015	1.000	5388722	3.79			4627	
513.00 > 169.00	3.404	3.419	-0.015	1.000	995999		5.41(2.36-7.09)		1495	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.420	-0.016	1.000	3444566	2.76		110	62754	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.569	-0.007	1.000	2225935	3.15		126	30831	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.743	-0.017	1.000	2118829	3.04		121	24275	
31 Perfluoroundecanoic acid										Ma
563.00 > 519.00	3.737	3.753	-0.016	1.000	789526	0.8225			201	a
563.00 > 169.00	3.694	3.753	-0.059	0.989	192548		4.10(2.12-6.36)		44.8	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.753	-0.016	1.003	19812	0.0250			155	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.754	-0.017	1.000	2839626	2.64		106	105994	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.038	4.042	-0.004	1.000	34665	0.0279			28.1	
613.00 > 169.00	4.027	4.042	-0.015	0.997	14246		2.43(2.13-6.40)		77.9	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.042	-0.004	1.000	2979480	2.56		103	43074	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.298	4.301	-0.003	1.000	391938	0.2706			273	
663.00 > 169.00	4.289	4.301	-0.012	0.998	144501		2.71(1.25-3.76)		880	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.530	4.548	-0.018	1.000	3645134	2.47		99.0	29271	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 24-Apr-2018 16:42:07 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d

Injection Date: 21-Apr-2018 10:36:59 Instrument ID: A8_N

Lims ID: 320-38061-A-2-A Lab Sample ID: 320-38061-2

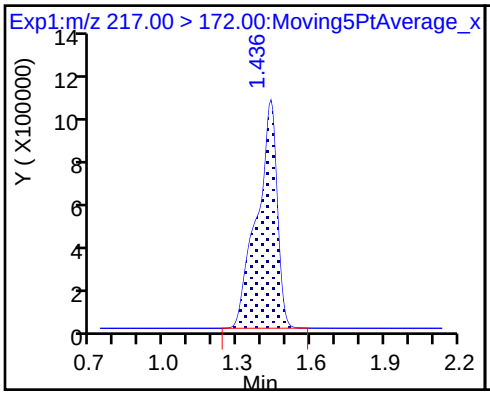
Client ID: SB012(2-4)

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 7

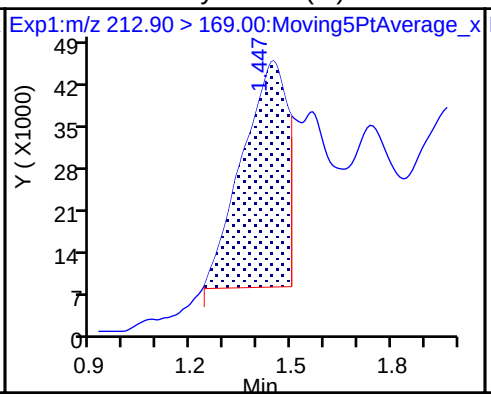
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

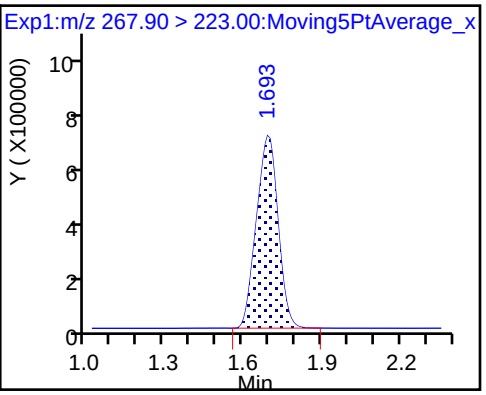
D 1 13C4 PFBA



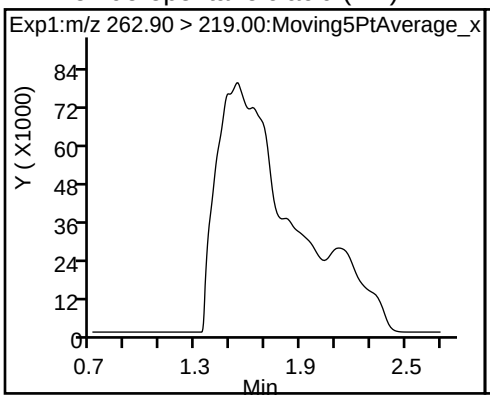
2 Perfluorobutyric acid (M)



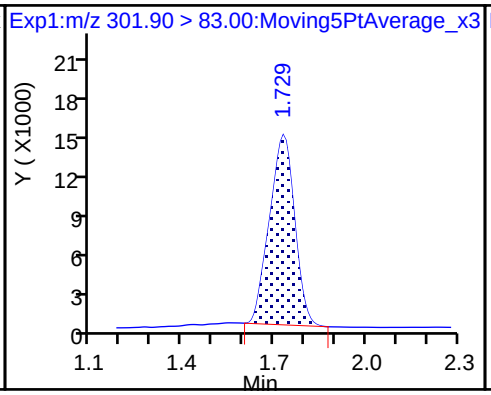
D 3 13C5-PFPeA



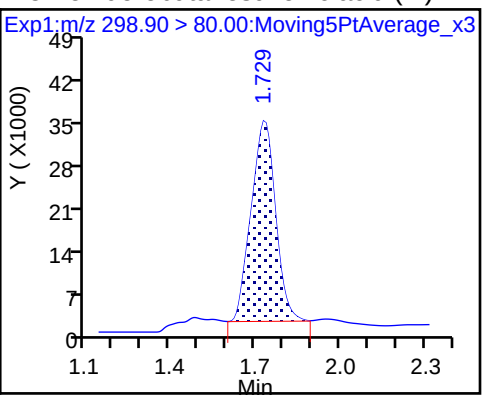
4 Perfluoropentanoic acid (ND)



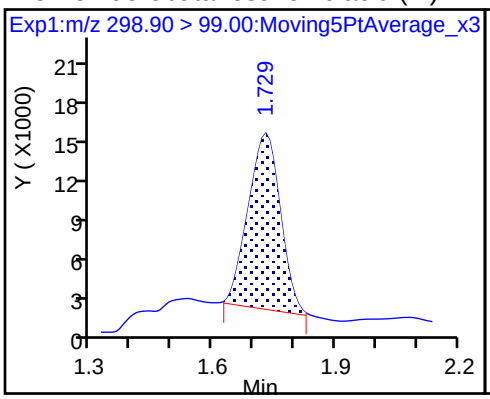
D 47 13C3-PFBS



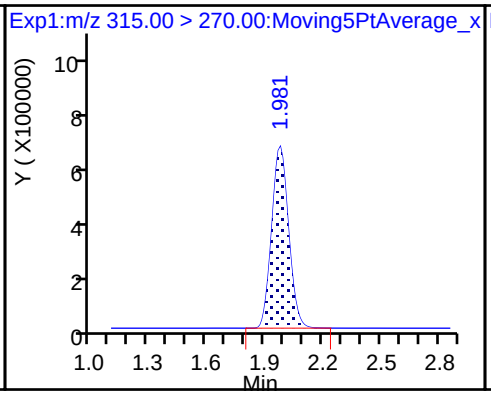
5 Perfluorobutanesulfonic acid (M)



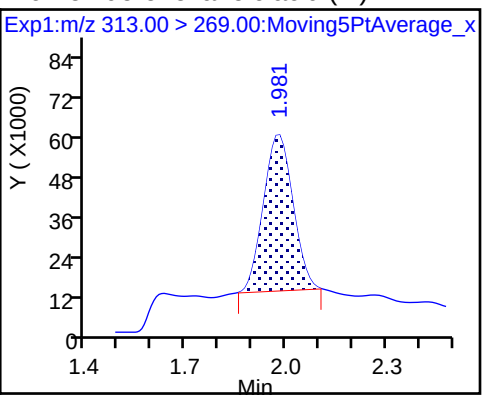
5 Perfluorobutanesulfonic acid (M)



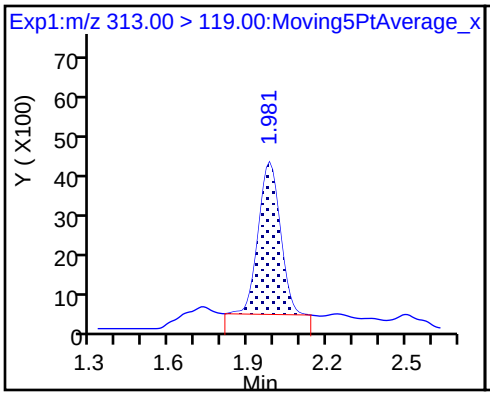
D 7 13C2 PFHxA



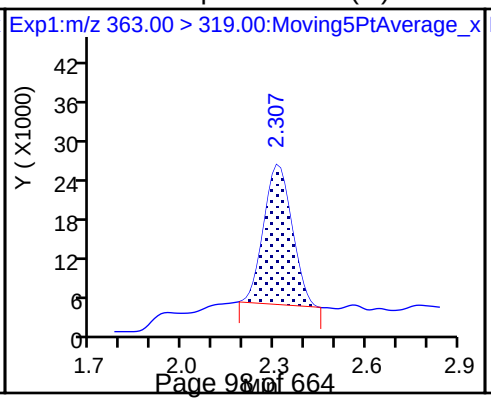
6 Perfluorohexanoic acid (M)



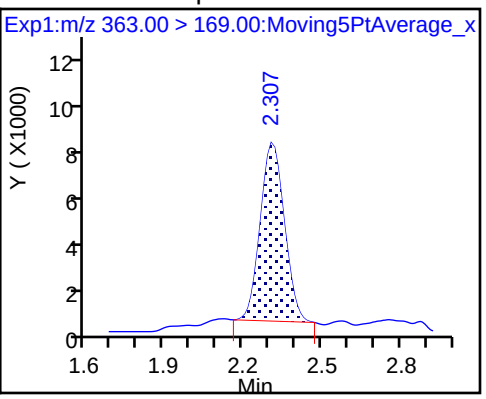
6 Perfluorohexanoic acid



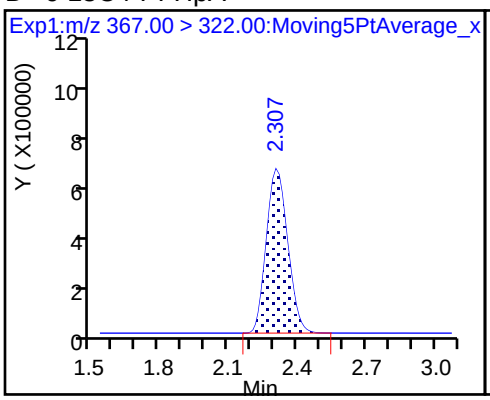
10 Perfluoroheptanoic acid (M)



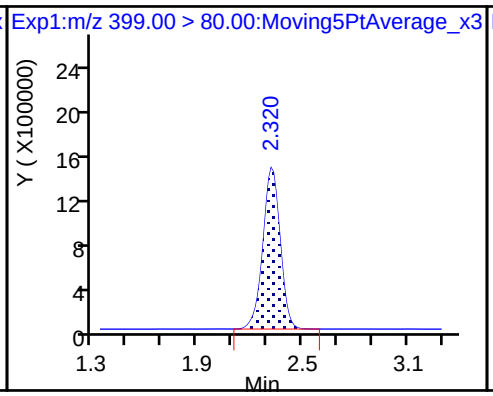
10 Perfluoroheptanoic acid



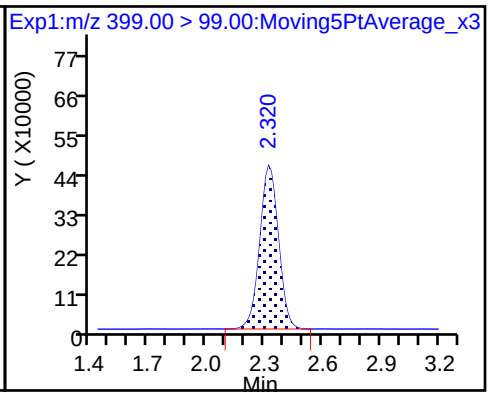
D 9 13C4-PFHpA



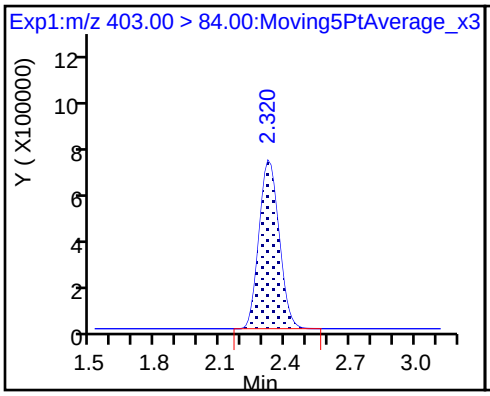
8 Perfluorohexanesulfonic acid



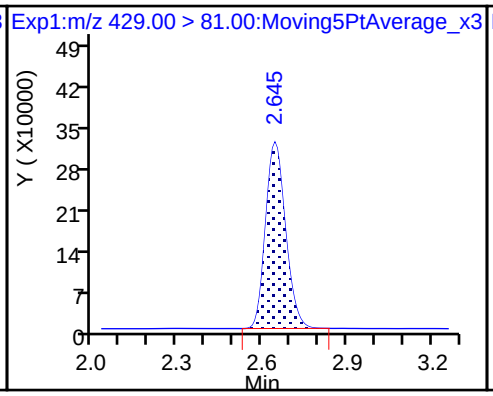
8 Perfluorohexanesulfonic acid



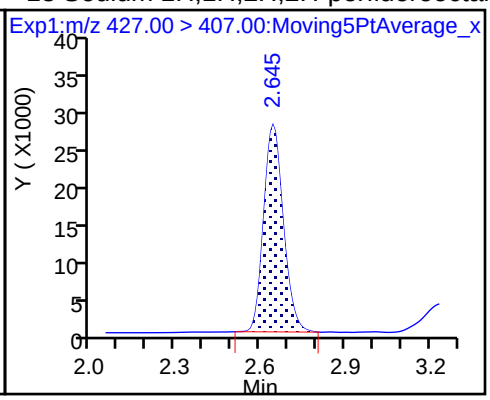
D 11 18O2 PFHxS



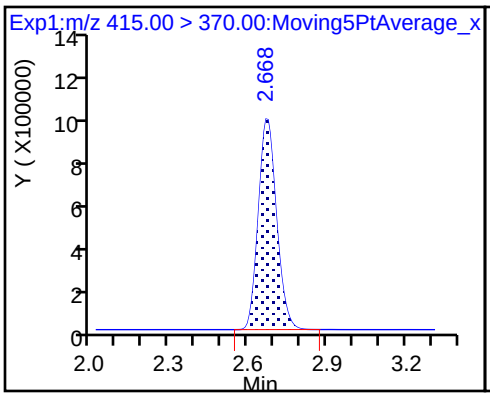
D 12 M2-6:2FTS



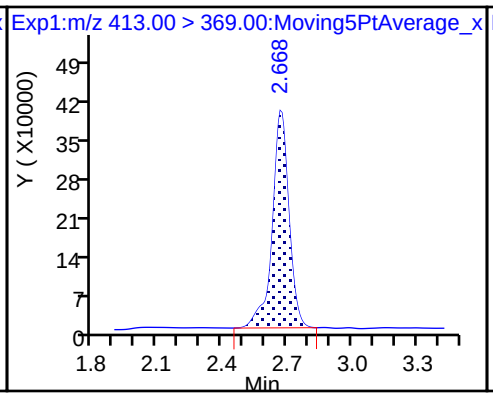
13 Sodium 1H,1H,2H,2H-perfluorooctane



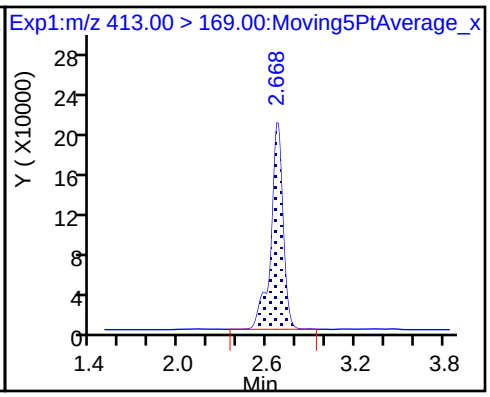
* 62 13C2-PFOA



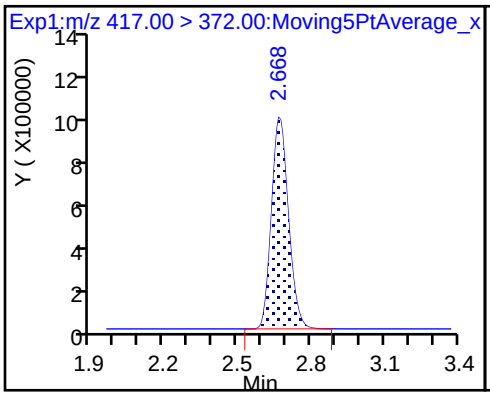
15 Perfluorooctanoic acid



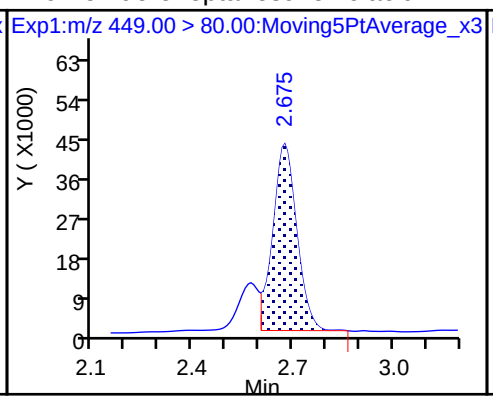
15 Perfluorooctanoic acid



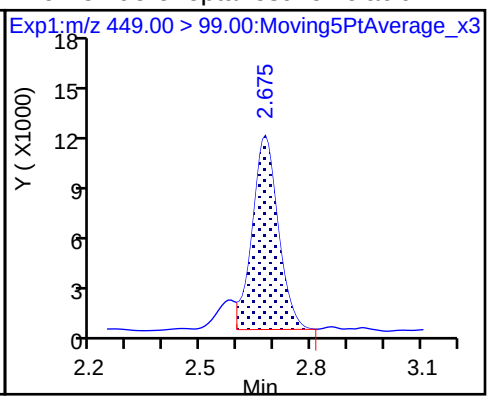
D 14 13C4 PFOA



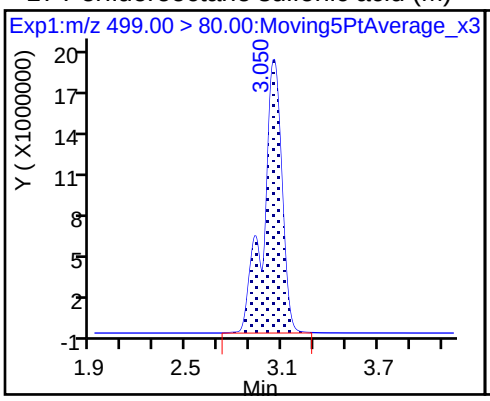
16 Perfluoroheptanesulfonic acid



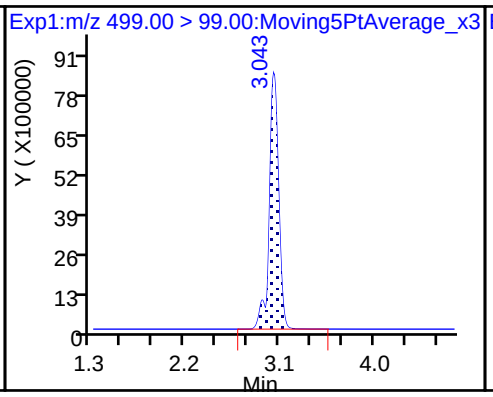
16 Perfluoroheptanesulfonic acid



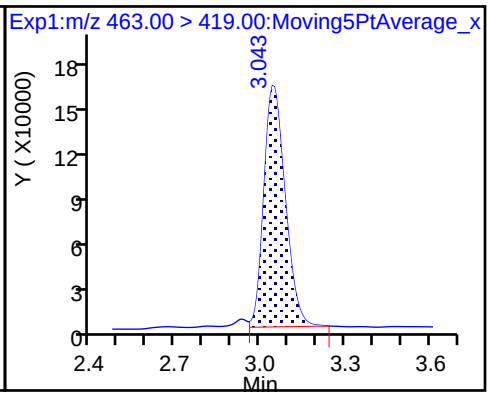
17 Perfluorooctane sulfonic acid (M)



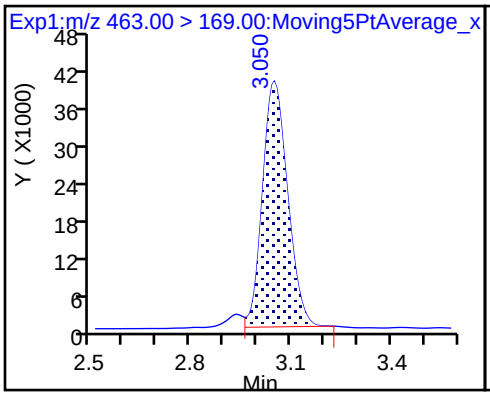
17 Perfluorooctane sulfonic acid



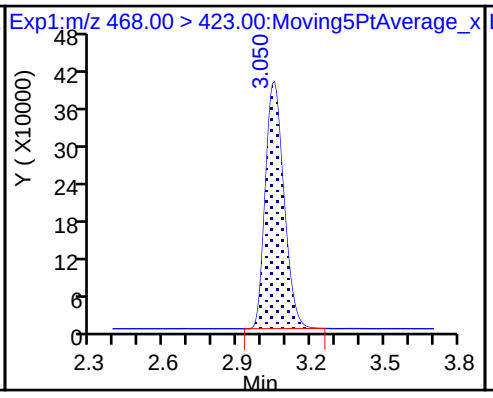
20 Perfluorononanoic acid



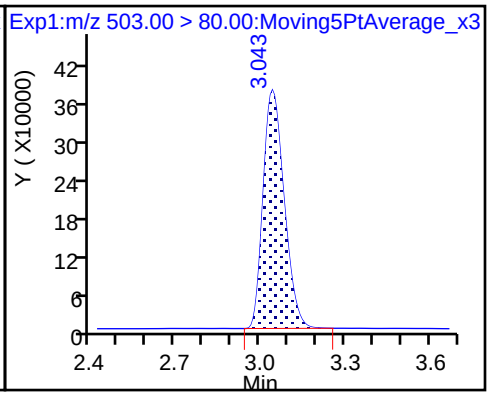
20 Perfluorononanoic acid



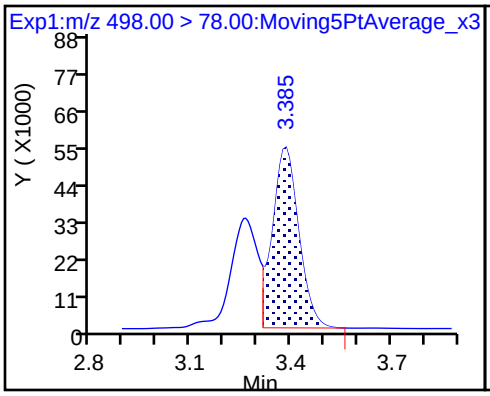
D 19 13C5 PFNA



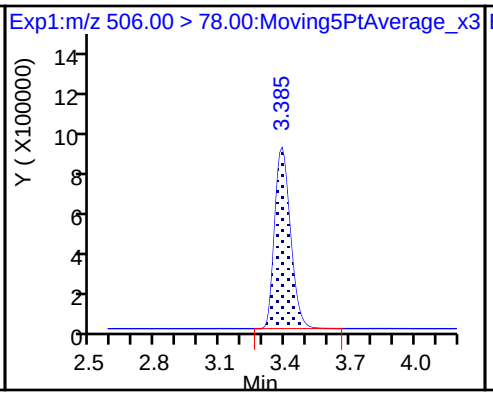
D 18 13C4 PFOS



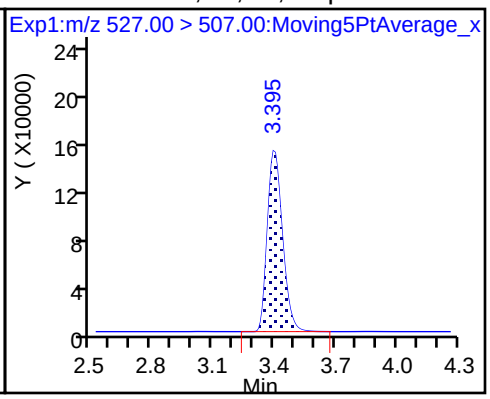
22 Perfluorooctane Sulfonamide



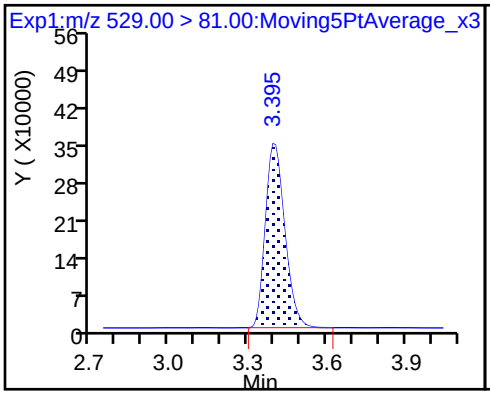
D 21 13C8 FOSA



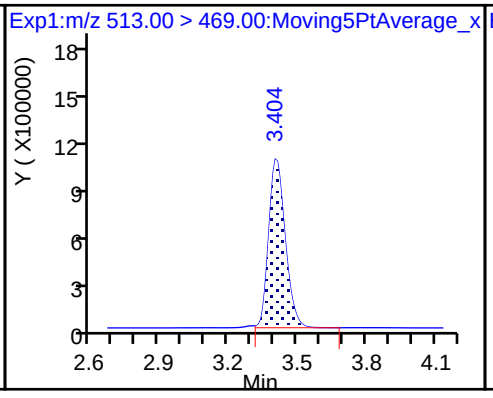
25 Sodium 1H,1H,2H,2H-perfluorodecane



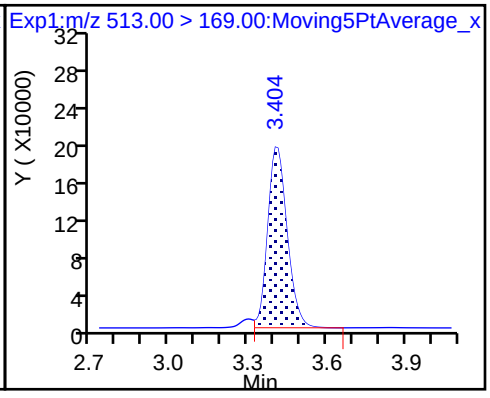
D 26 M2-8:2FTS



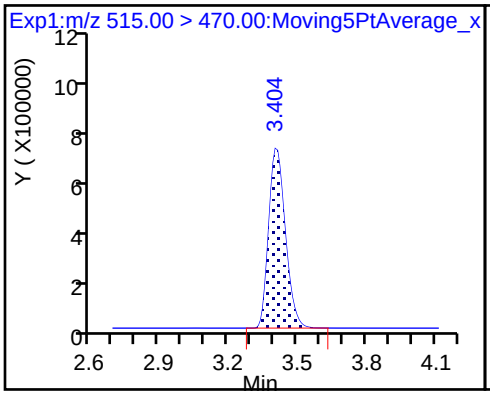
24 Perfluorodecanoic acid



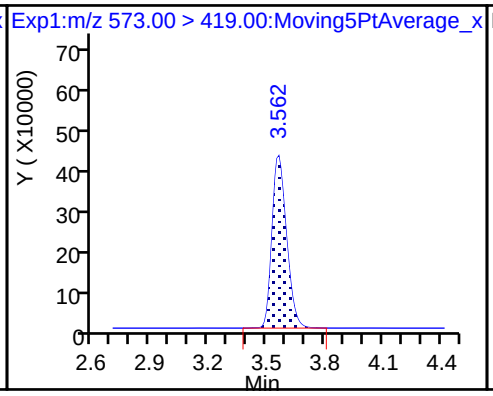
24 Perfluorodecanoic acid



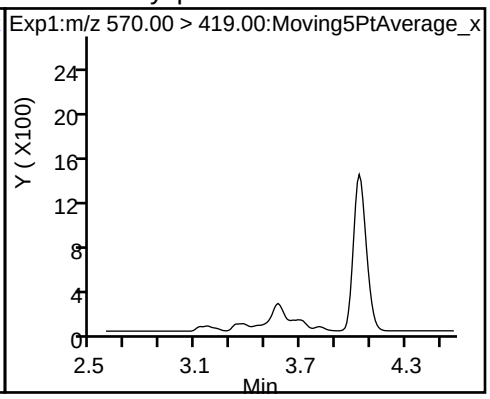
D 23 13C2 PFDA



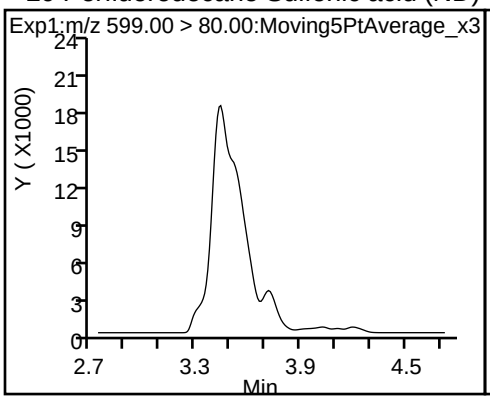
D 27 d3-NMeFOSAA



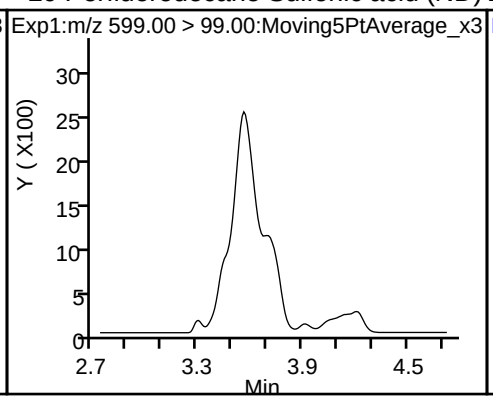
28 N-methyl perfluorooctane sulfonami (ND)



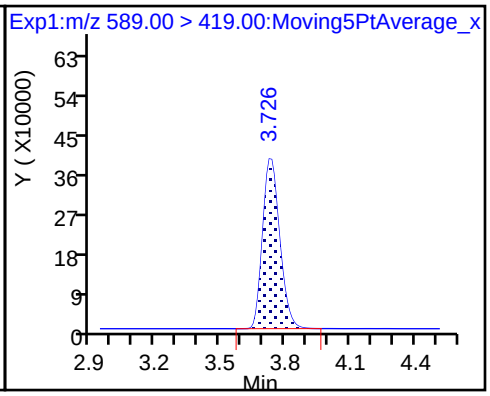
29 Perfluorodecane Sulfonic acid (ND)



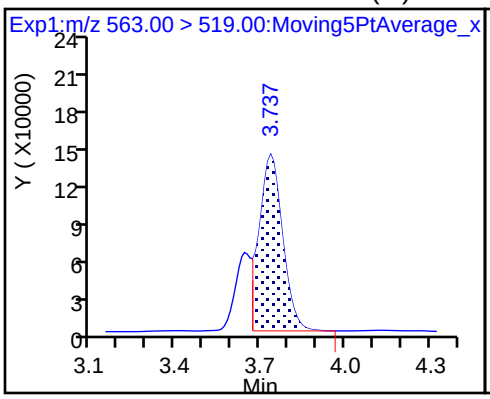
29 Perfluorodecane Sulfonic acid (ND)



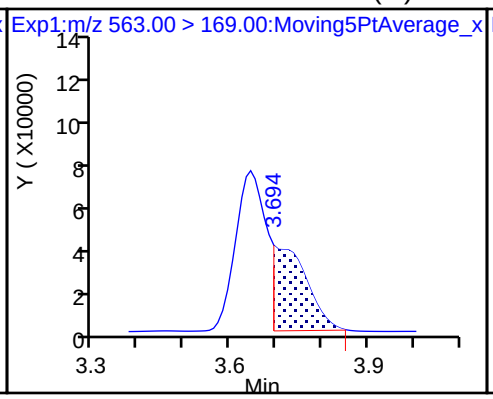
D 32 d5-NEtFOSAA



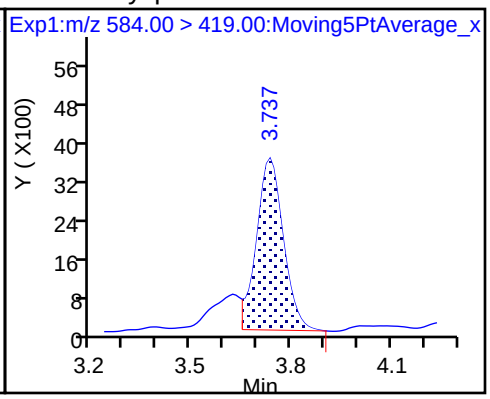
31 Perfluoroundecanoic acid (M)



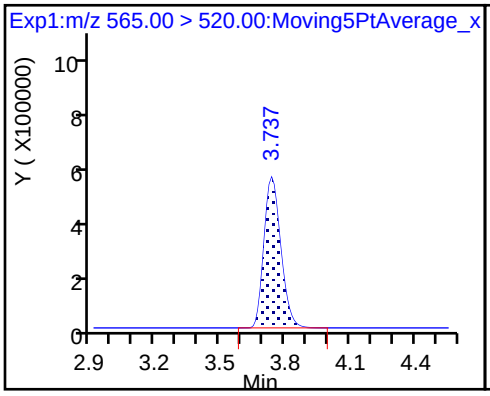
31 Perfluoroundecanoic acid (M)



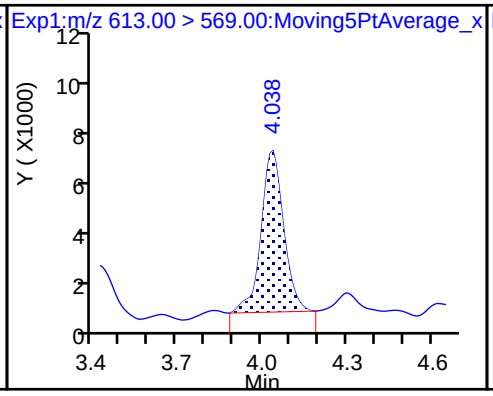
33 N-ethyl perfluorooctane sulfonamid



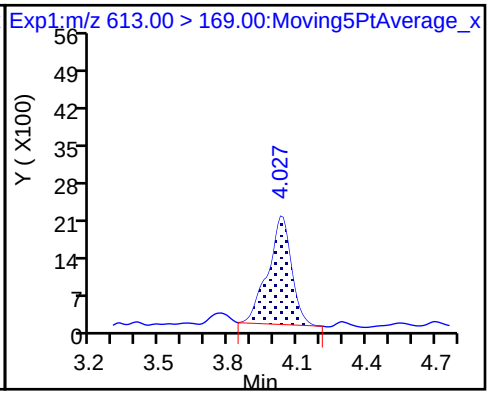
D 30 13C2 PFUnA



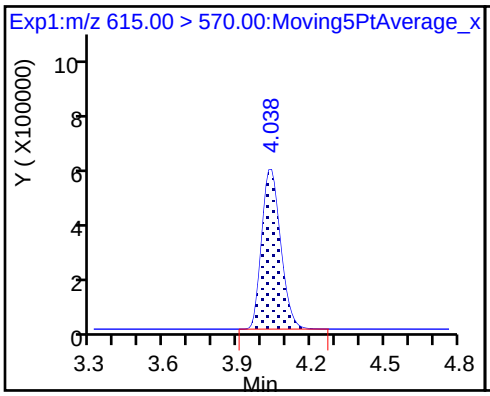
37 Perfluorododecanoic acid



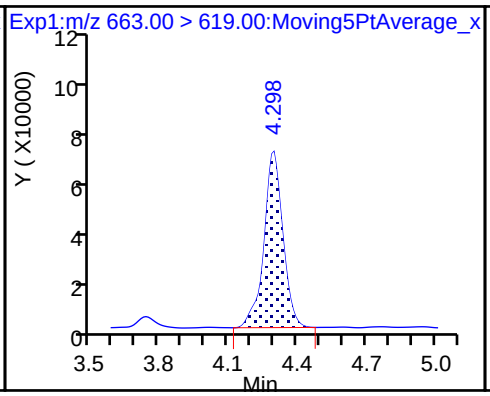
37 Perfluorododecanoic acid



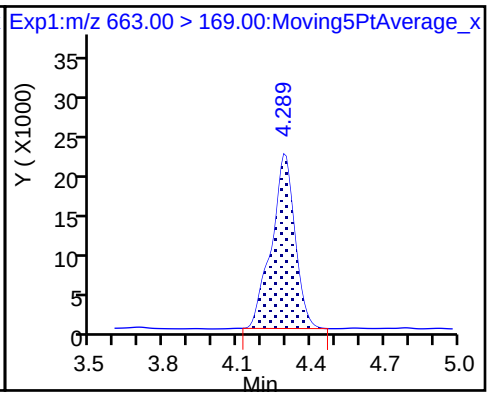
D 36 13C2 PFDoA



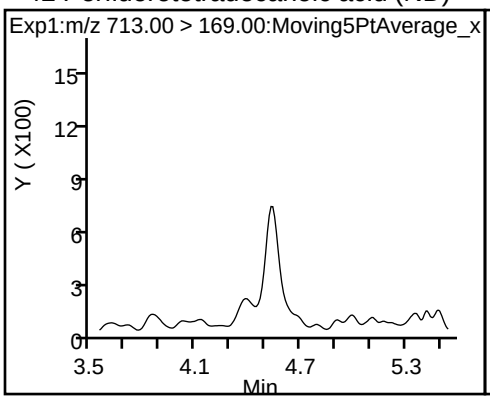
41 Perfluorotridecanoic acid



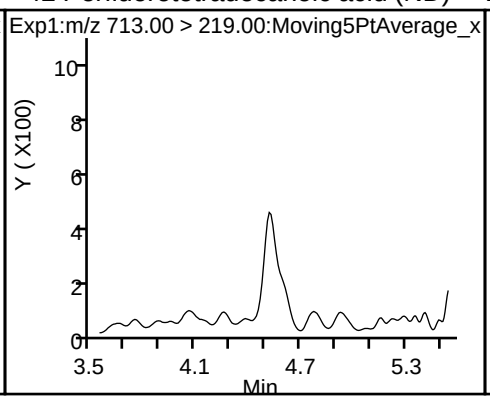
41 Perfluorotridecanoic acid



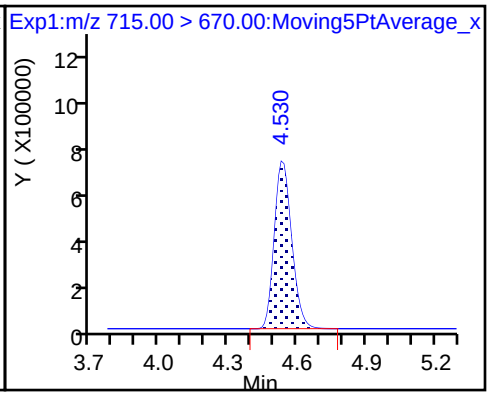
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

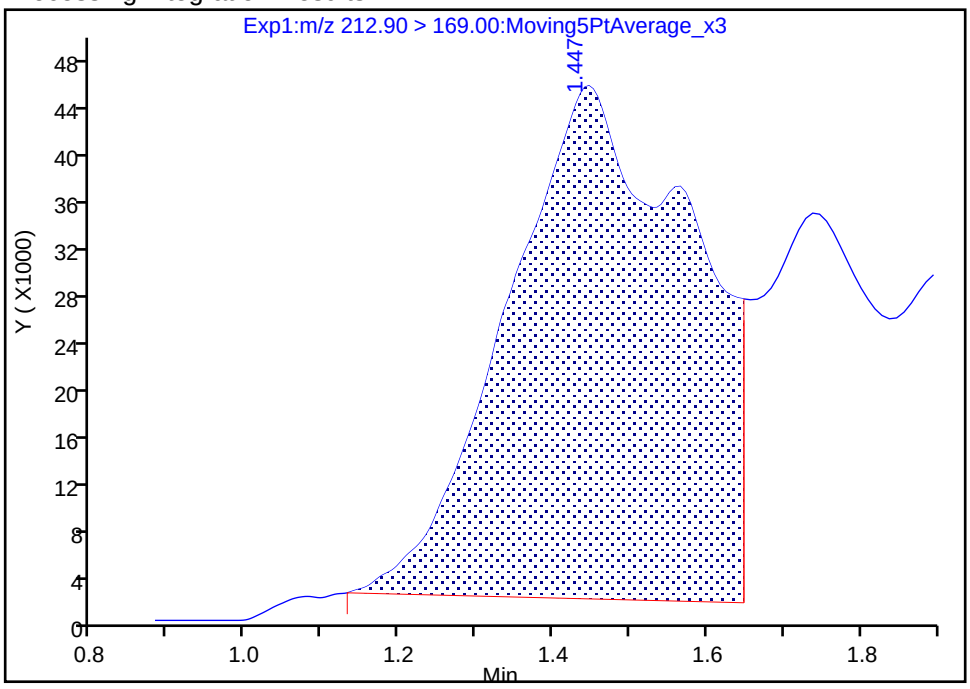
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

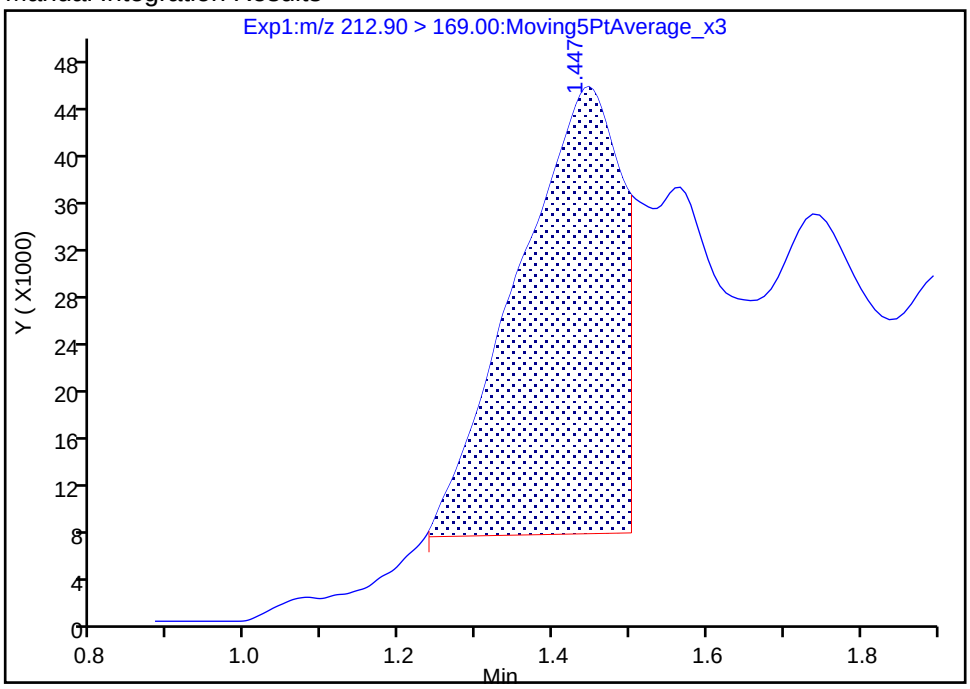
Processing Integration Results

RT: 1.45
Area: 733007
Amount: 0.345279
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 356241
Amount: 0.167806
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:15:13

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

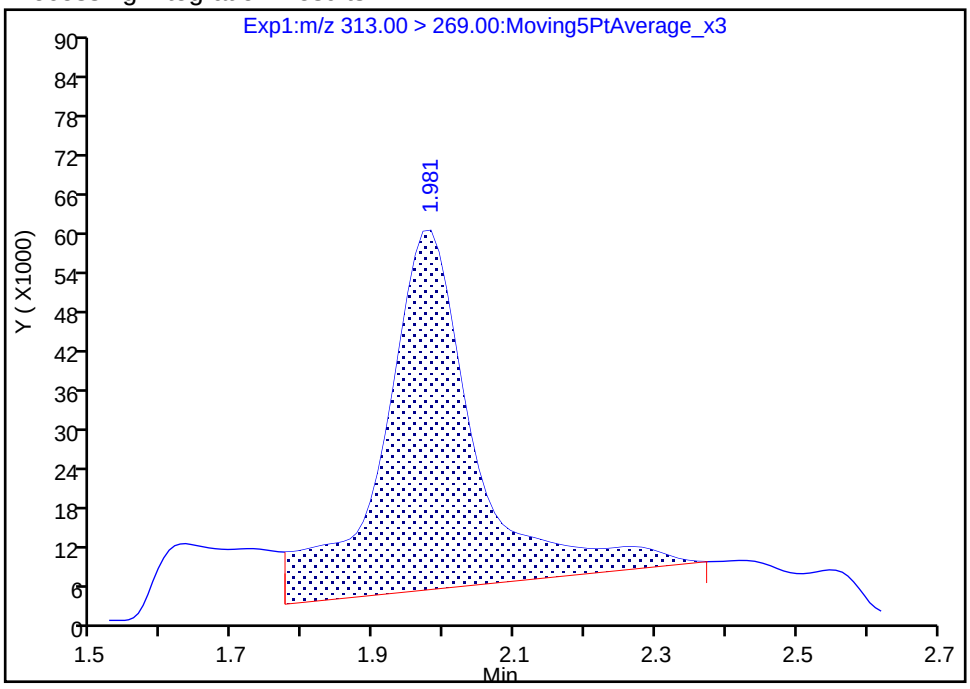
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

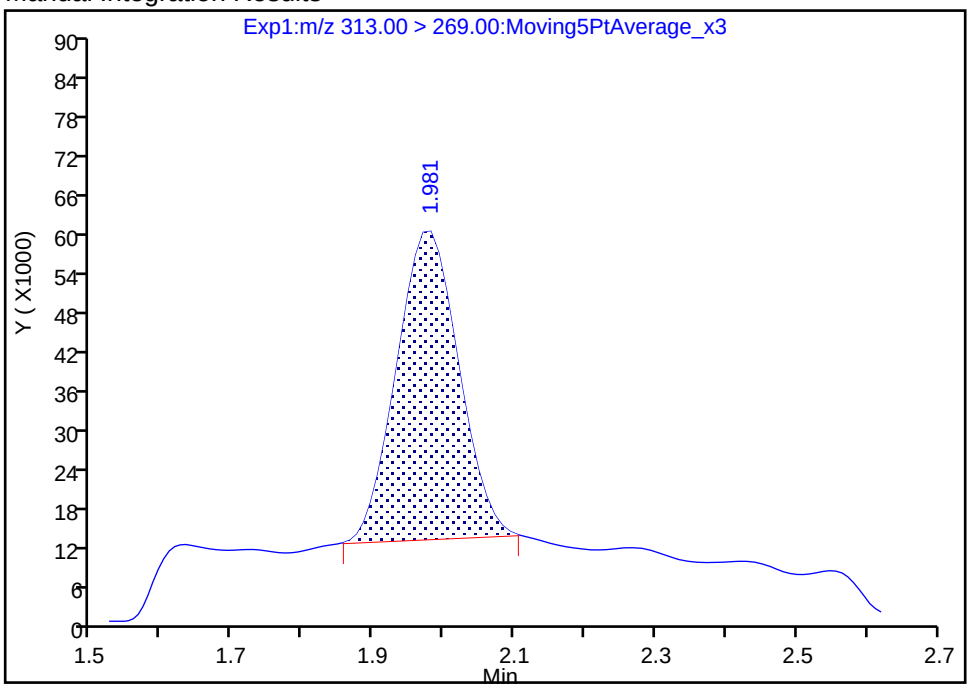
Processing Integration Results

RT: 1.98
Area: 505654
Amount: 0.317621
Amount Units: ng/ml



Manual Integration Results

RT: 1.98
Area: 292295
Amount: 0.183602
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:16:31

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

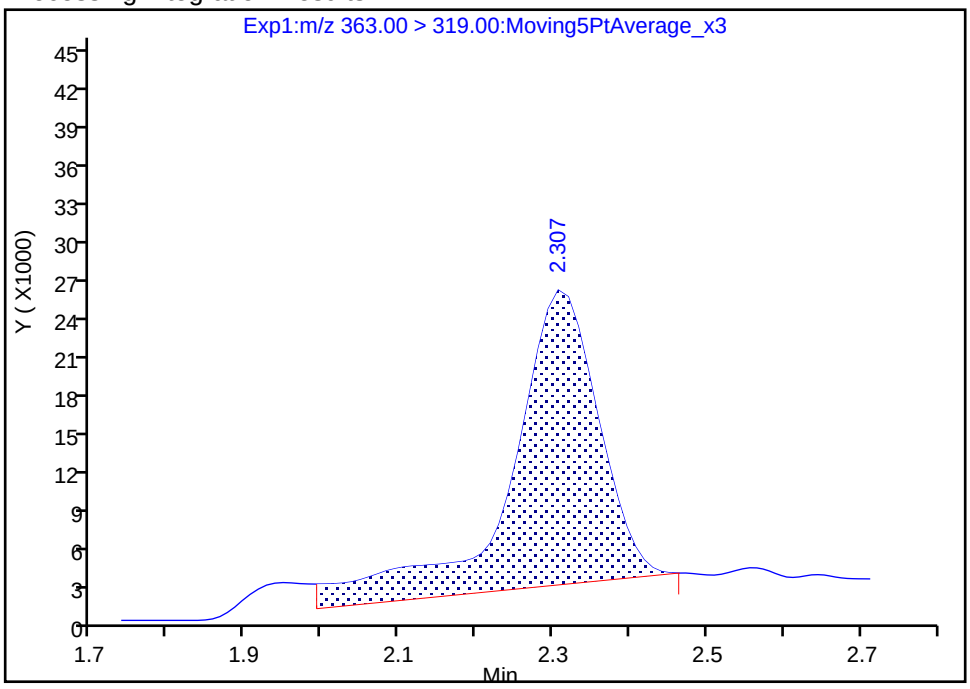
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

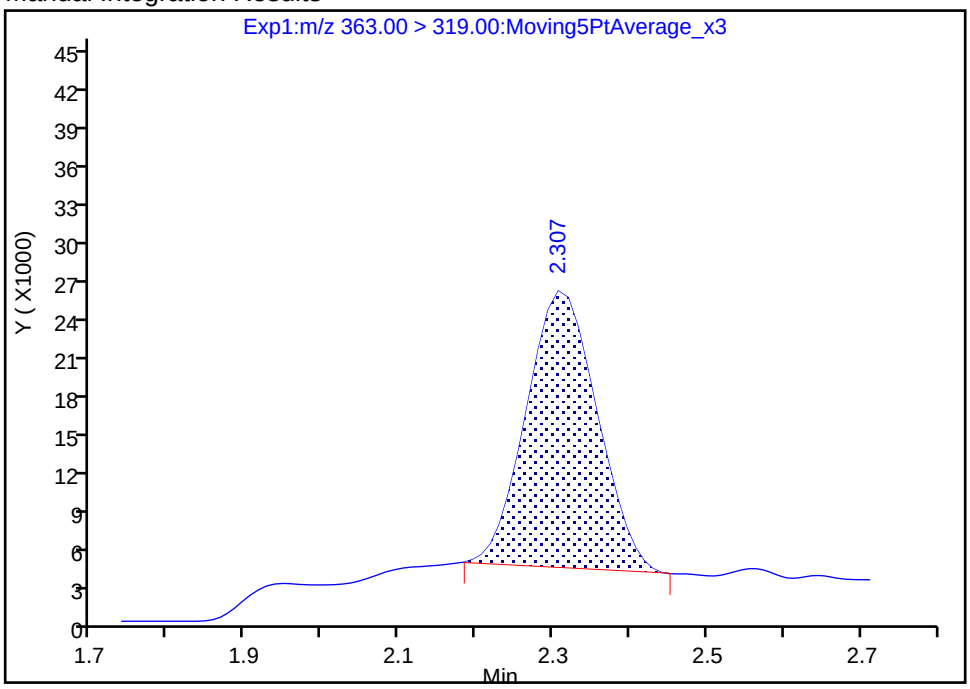
Processing Integration Results

RT: 2.31
Area: 186747
Amount: 0.111781
Amount Units: ng/ml



Manual Integration Results

RT: 2.31
Area: 138914
Amount: 0.083149
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:16:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

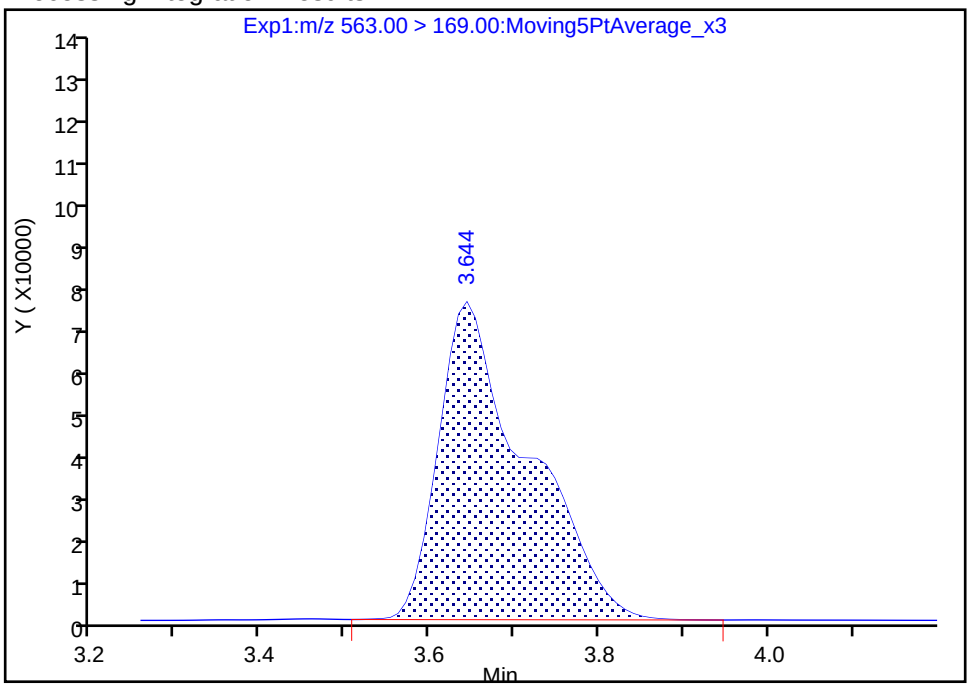
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

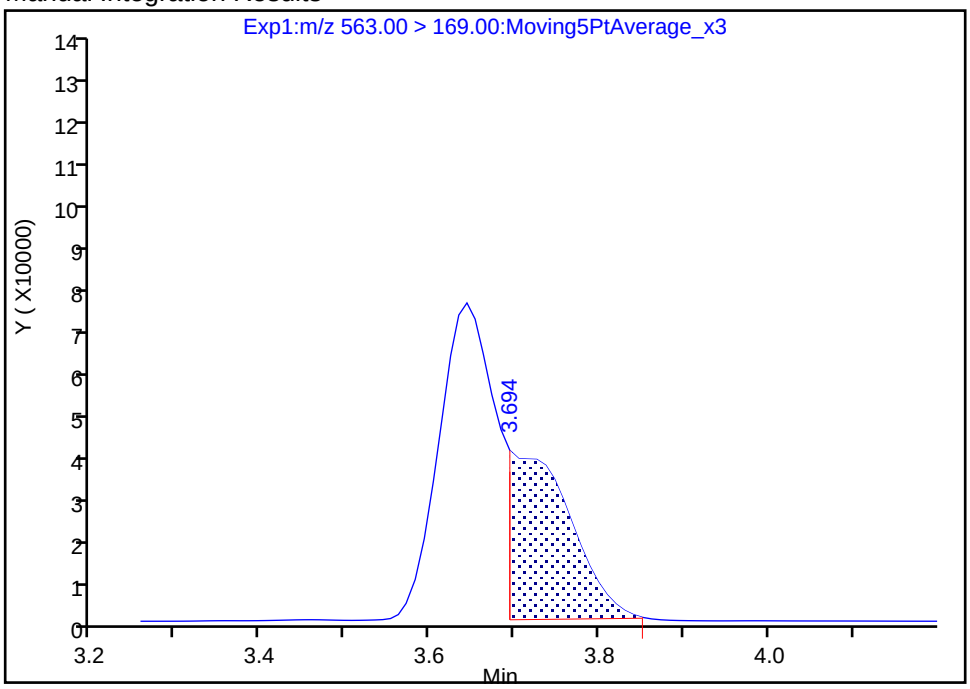
Processing Integration Results

RT: 3.64
Area: 546274
Amount: 0.257288
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 192548
Amount: 0.822504
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:17:57

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

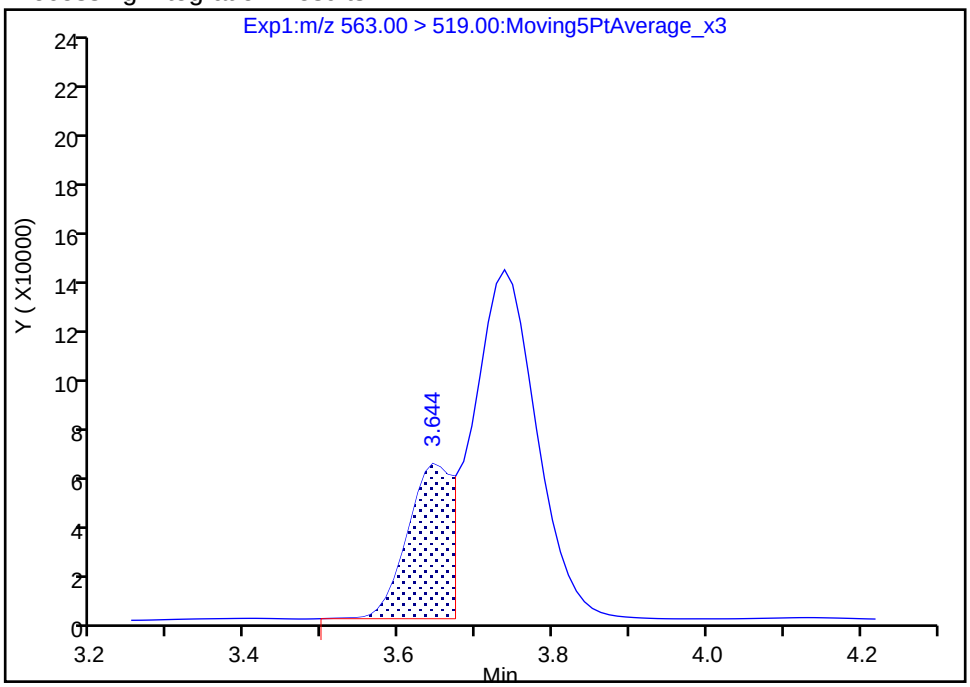
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

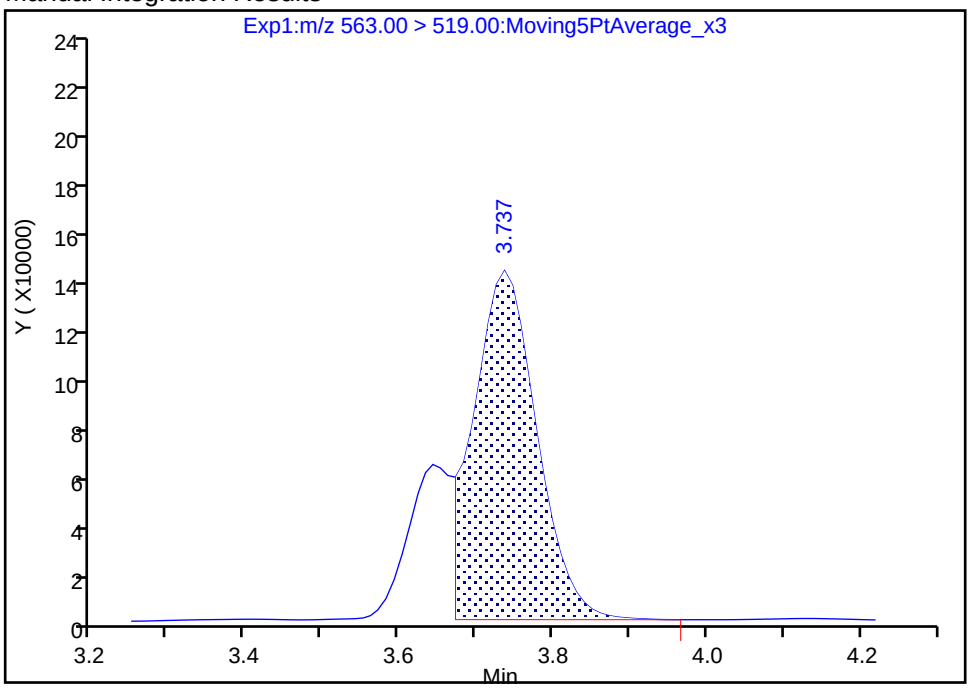
Processing Integration Results

RT: 3.64
Area: 246972
Amount: 0.257288
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 789526
Amount: 0.822504
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:18:04

Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

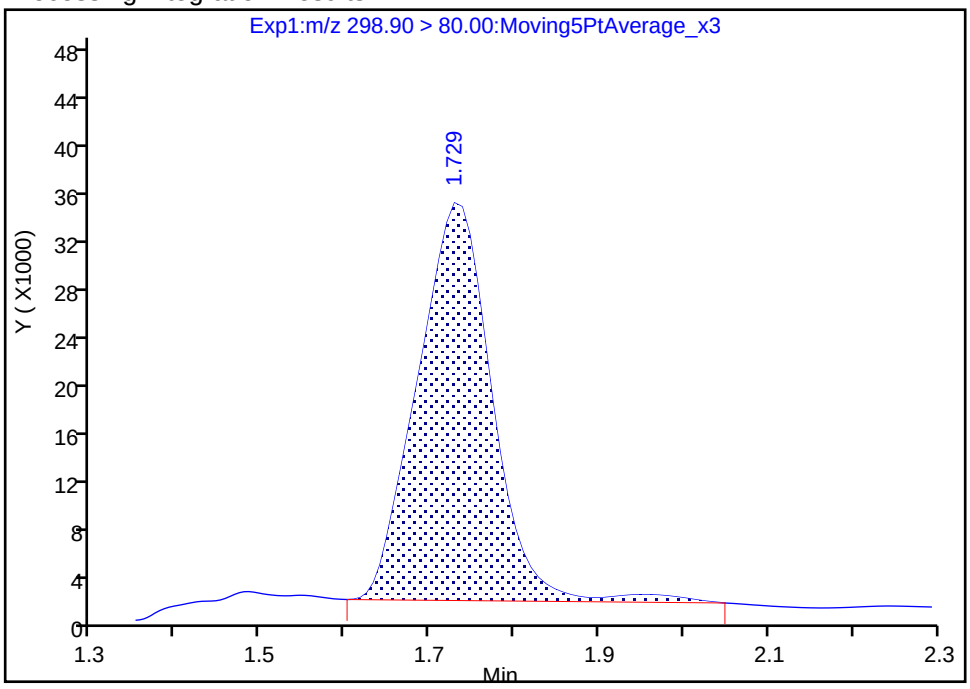
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

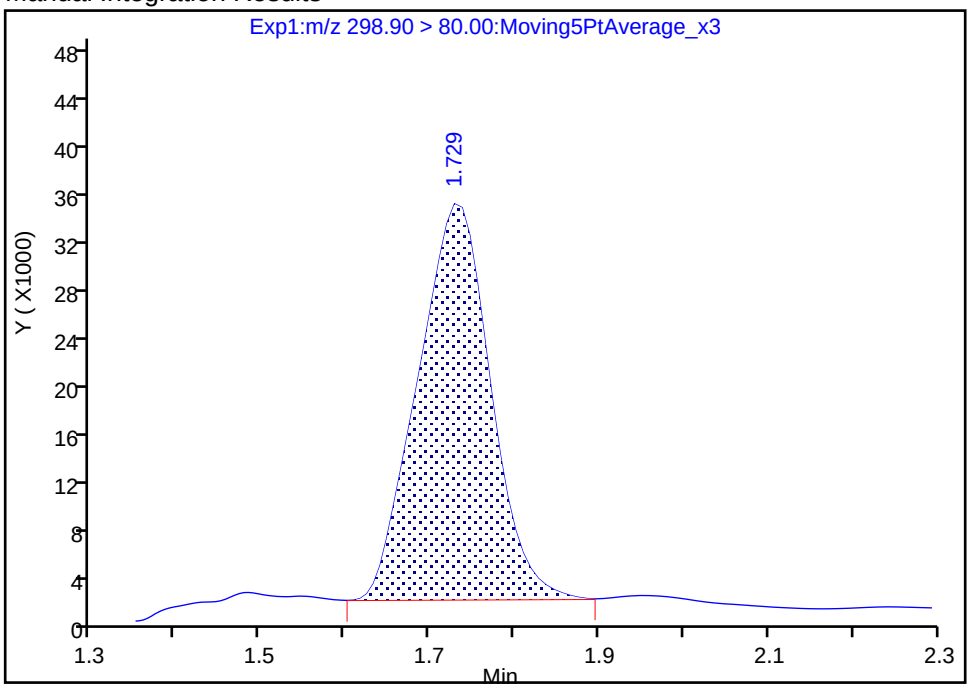
Processing Integration Results

RT: 1.73
Area: 204630
Amount: 0.072484
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 198654
Amount: 0.070368
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:15:51

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

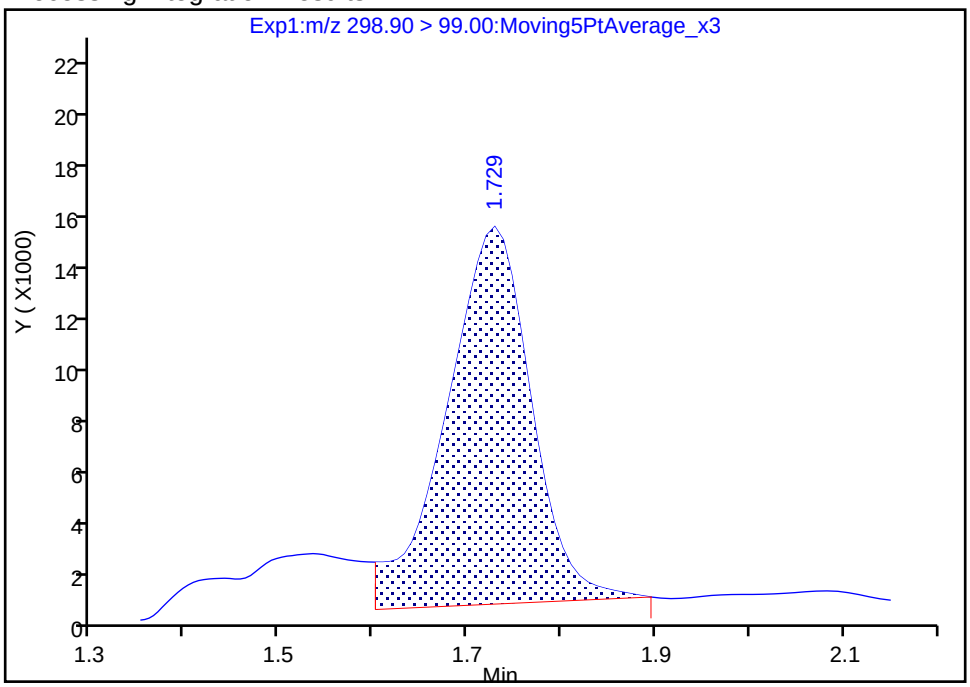
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_029.d				
Injection Date:	21-Apr-2018 10:36:59	Instrument ID:	A8_N		
Lims ID:	320-38061-A-2-A	Lab Sample ID:	320-38061-2		
Client ID:	SB012(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	21	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

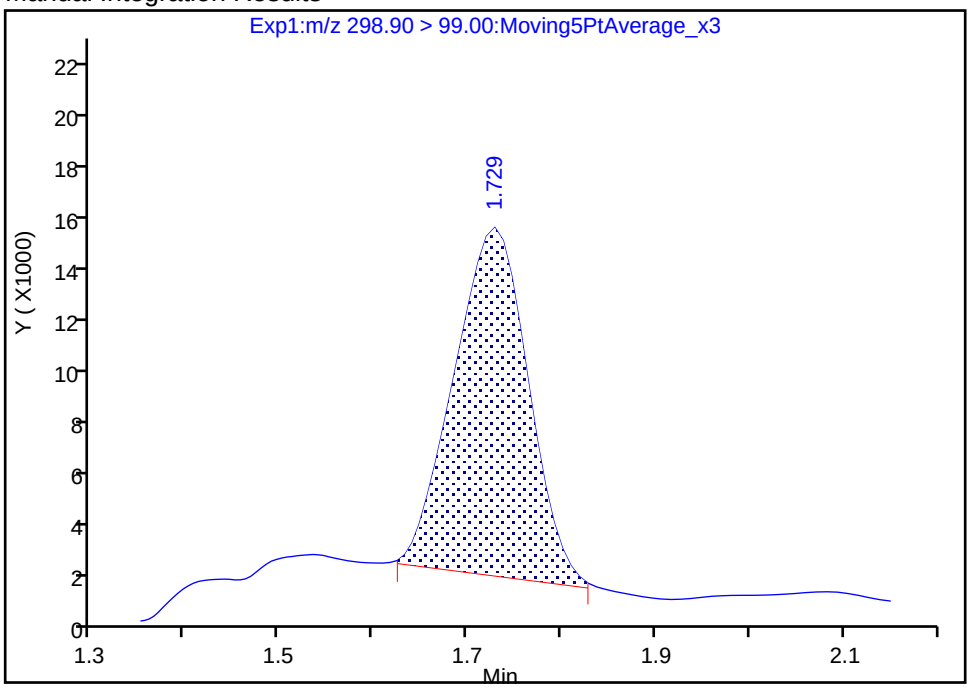
Processing Integration Results

RT: 1.73
Area: 92465
Amount: 0.072484
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 74778
Amount: 0.070368
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:16:00

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB012(2-4) DL Lab Sample ID: 320-38061-2 DL

Matrix: Solid Lab File ID: 2018.04.25LLBX_071.d

Analysis Method: 537 (modified) Date Collected: 04/10/2018 09:45

Extraction Method: SHAKE Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.03(g) Date Analyzed: 04/26/2018 06:17

Con. Extract Vol.: 10.00(mL) Dilution Factor: 50

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 219909 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.65	D	0.027	0.011

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_071.d
Lims ID: 320-38061-A-2-A
Client ID: SB012(2-4)
Sample Type: Client
Inject. Date: 26-Apr-2018 06:17:00 ALS Bottle#: 47 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-38061-a-2-a 50X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:22:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	5835	0.002500			2.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	125676	0.0479		95.9	926	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.556	84332	0.0499		99.8	1271	
D 47 13C3-PFBS										M
301.90 > 83.00	1.730	1.739	-0.009	1.000	1751	0.0452		97.1	20.3	M
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	7883	0.002674			26.7	
298.90 > 99.00	1.739	1.739	0.0	1.005	3655		2.16(1.25-3.74)		30.0	
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	1.993	0.001	1.000	82932	0.0444		88.8	1825	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.321	0.002	1.000	78621	0.0432		86.5	1583	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.334	0.002	1.000	100675	0.0449		94.8	4031	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.334	0.002	1.000	189247	0.0786			435	
399.00 > 99.00	2.336	2.334	0.002	1.000	61298		3.09(1.50-4.49)		392	
D 12 M2-6:2FTS										
429.00 > 81.00	2.683	2.660	0.023	1.000	32569	0.0836		176	499	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.691	2.660	0.031	1.003	26712	0.0230			497	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.683	0.008		97412	0.0500			3127	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.690	0.001	1.000	94371	0.0522		104	2565	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	0.997	43759	0.0201			29.9	
413.00 > 169.00	2.691	2.690	0.001	1.000	24576		1.78(0.84-2.52)		70.4	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.064	3.059	0.005	1.000	9610699	6.07			48458	
499.00 > 99.00	3.064	3.059	0.005	1.000	2226506		4.32(2.31-6.93)		29687	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.059	0.005	1.000	31781	0.0210			107	
463.00 > 169.00	3.057	3.059	-0.002	0.998	6868		4.63(1.90-5.69)		181	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.063	0.001	1.000	69553	0.0443		92.6	498	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.063	0.001	1.000	72728	0.0468		93.6	3972	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.399	-0.003	1.000	3200	0.001879			12.6	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	84199	0.0429		85.8	1379	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.417	-0.003	1.000	9236	0.0173			460	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.423	-0.009	1.000	20268	0.0432		90.2	157	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.427	-0.003	1.000	91377	0.0704			337	
513.00 > 169.00	3.433	3.427	0.006	1.003	16790		5.44(2.36-7.09)		273	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.432	-0.008	1.000	62947	0.0482		96.4	2142	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.582	0.002	1.000	33968	0.0459		91.8	534	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.758	0.001	1.000	58728	0.0521		104	1555	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.758	-0.009	1.000	36651	0.0502		100	516	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.762	-0.003	1.003	2312	0.003375			38.1	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.059	0.0	1.000	52667	0.0433		86.6	909	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.563	-0.002	1.000	74725	0.0485		96.9	634	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 10:36:58 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_071.d

Injection Date: 26-Apr-2018 06:17:00 Instrument ID: A8_N

Lims ID: 320-38061-A-2-A Lab Sample ID: 320-38061-2

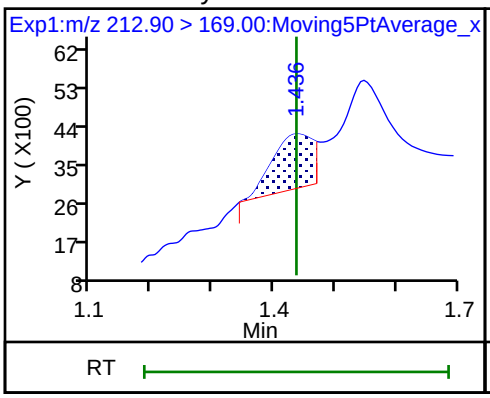
Client ID: SB012(2-4)

Operator ID: SACINSTLCMS01 ALS Bottle#: 47 Worklist Smp#: 4

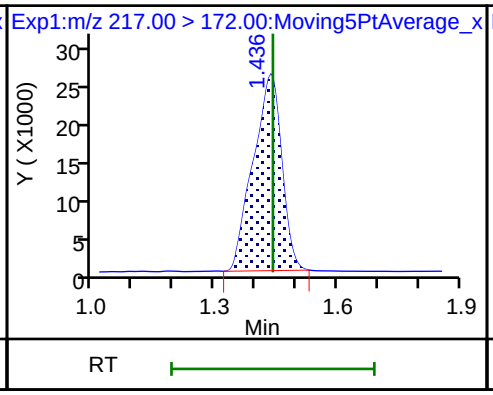
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

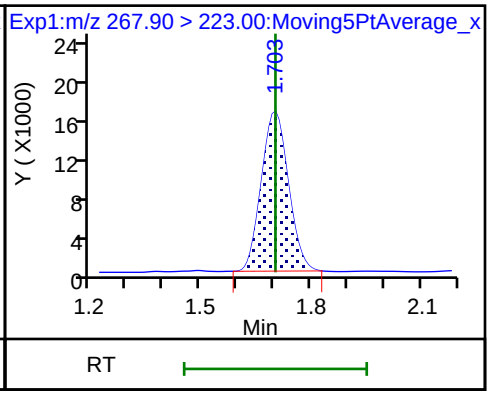
2 Perfluorobutyric acid



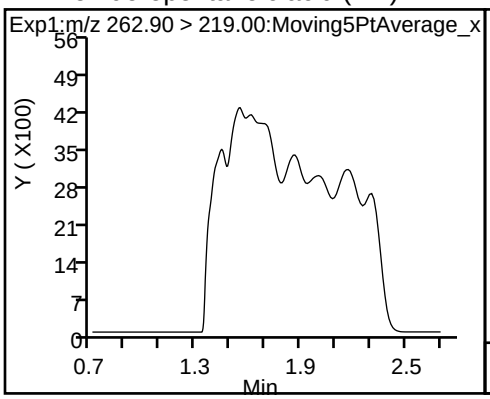
D 1 13C4 PFBA



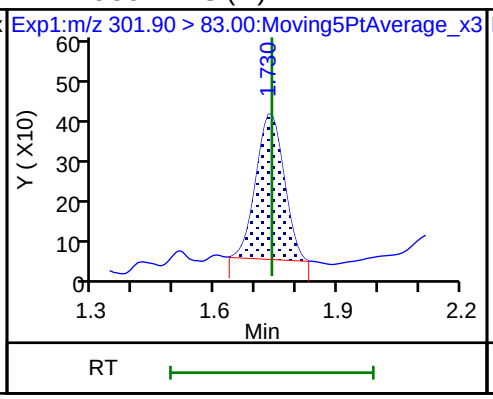
D 3 13C5-PFPeA



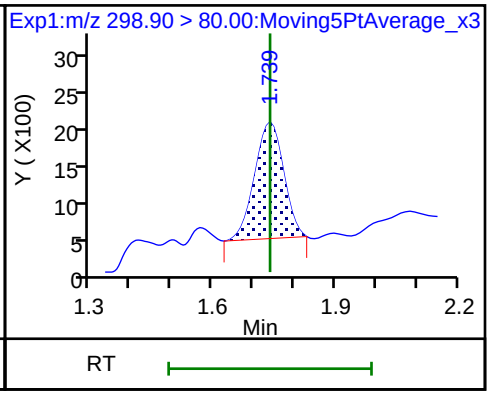
4 Perfluoropentanoic acid (ND)



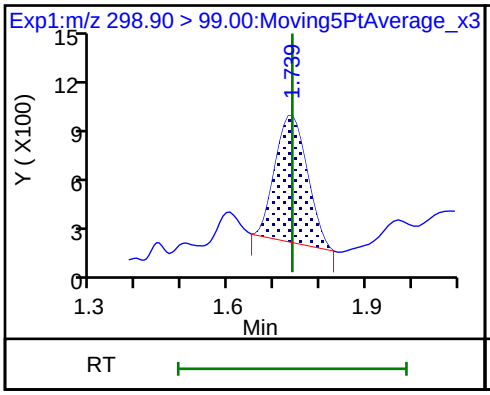
D 47 13C3-PFBS (M)



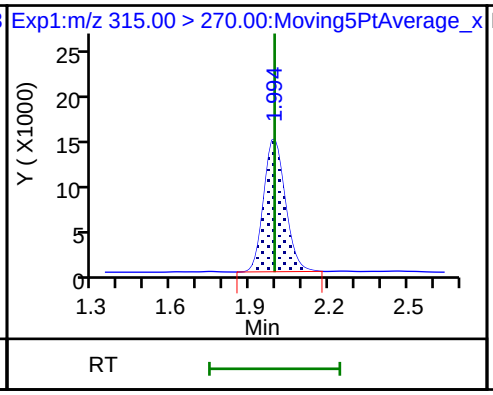
5 Perfluorobutanesulfonic acid



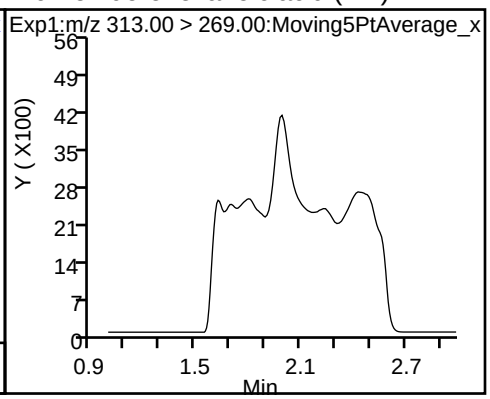
5 Perfluorobutanesulfonic acid



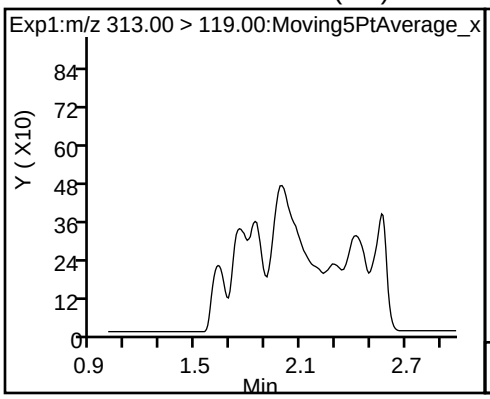
D 7 13C2 PFHxA



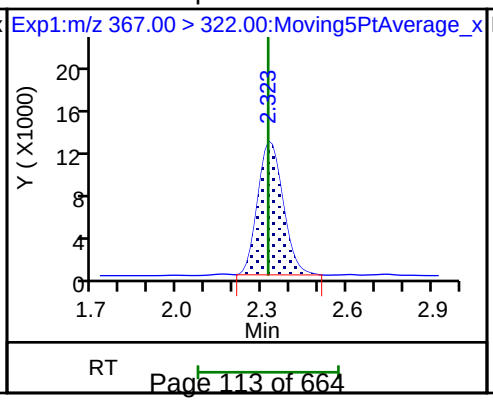
6 Perfluorohexanoic acid (ND)



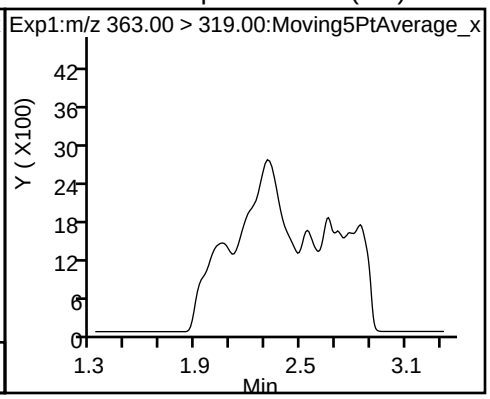
6 Perfluorohexanoic acid (ND)



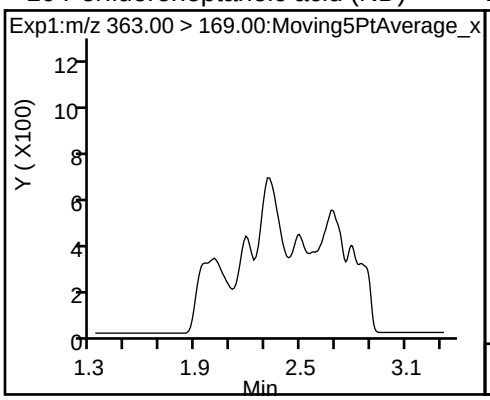
D 9 13C4-PFHpA



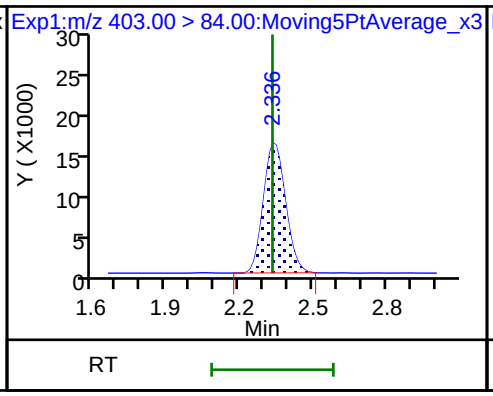
10 Perfluoroheptanoic acid (ND)



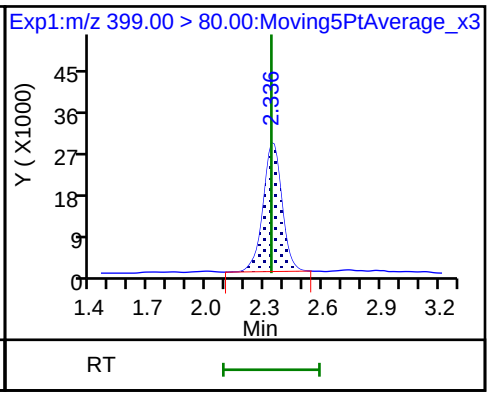
10 Perfluoroheptanoic acid (ND)



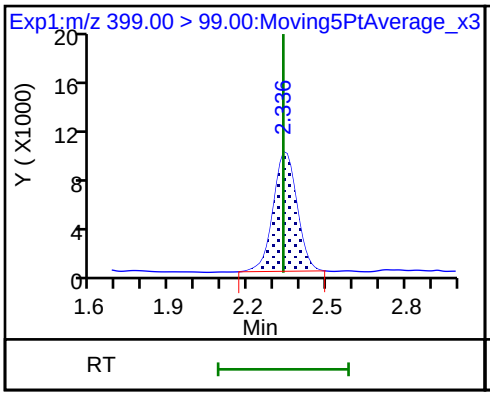
D 11 18O2 PFHxS



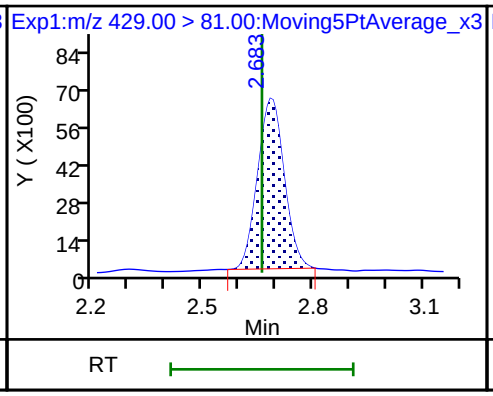
8 Perfluorohexanesulfonic acid



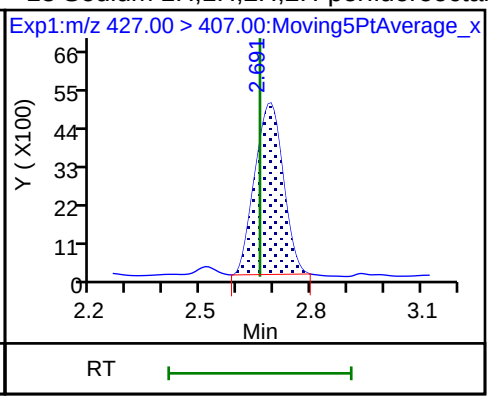
8 Perfluorohexanesulfonic acid



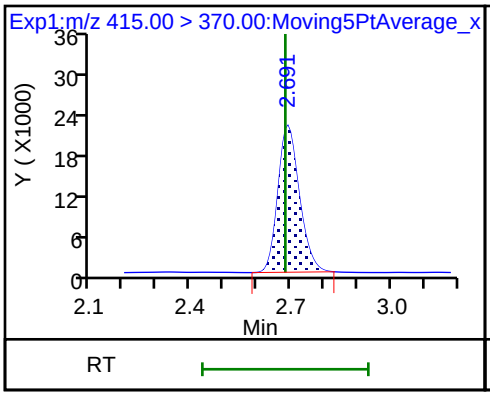
D 12 M2-6:2FTS



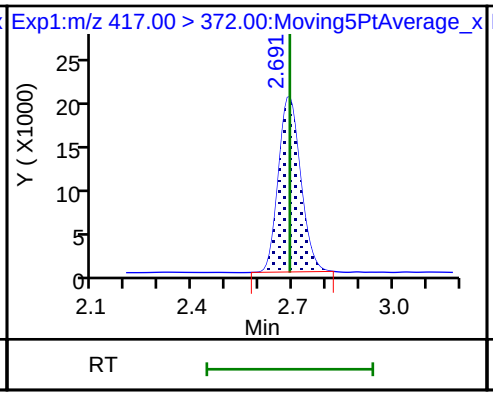
13 Sodium 1H,1H,2H,2H-perfluorooctane



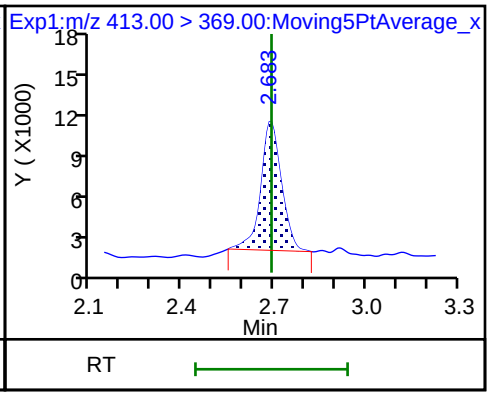
* 62 13C2-PFOA



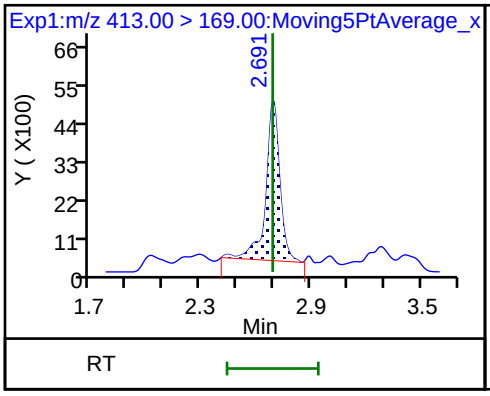
D 14 13C4 PFOA



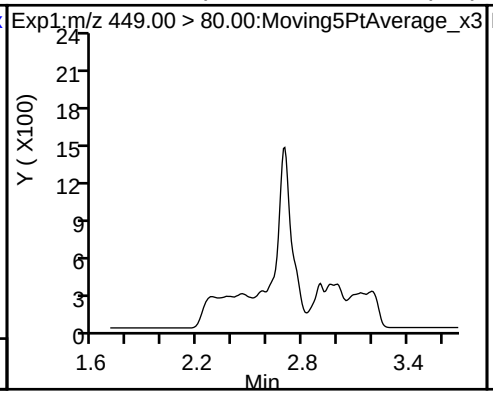
15 Perfluorooctanoic acid



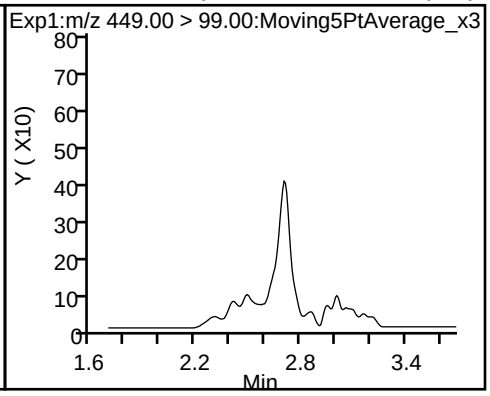
15 Perfluorooctanoic acid



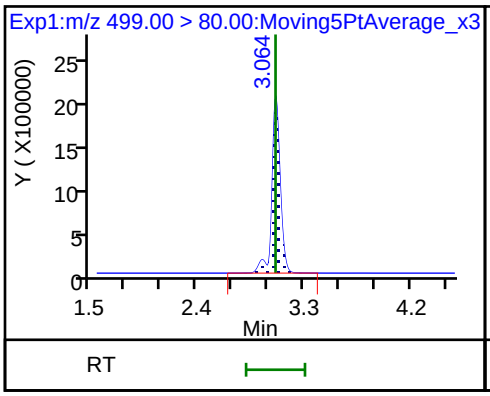
16 Perfluoroheptanesulfonic acid (ND)



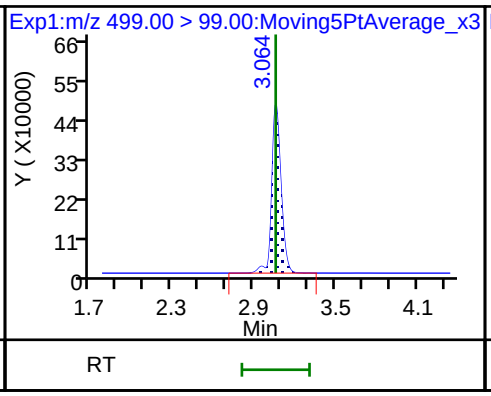
16 Perfluoroheptanesulfonic acid (ND)



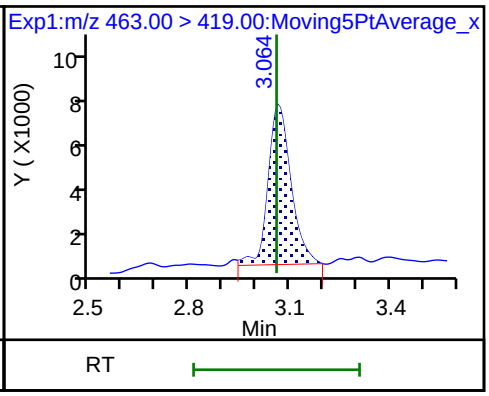
17 Perfluorooctane sulfonic acid



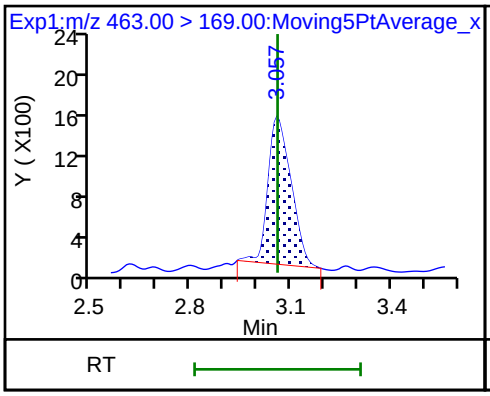
17 Perfluorooctane sulfonic acid



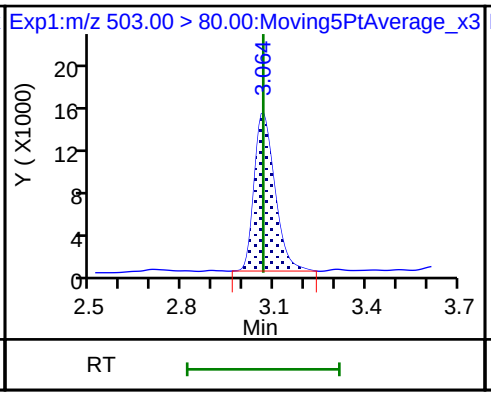
20 Perfluorononanoic acid



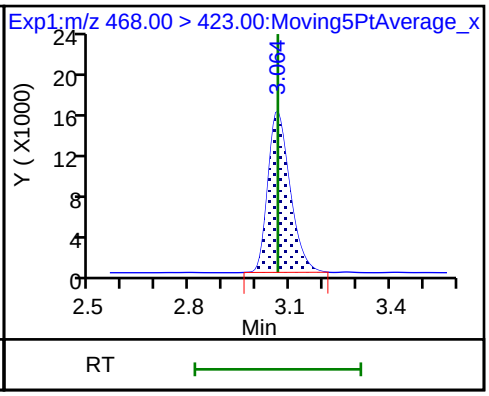
20 Perfluorononanoic acid



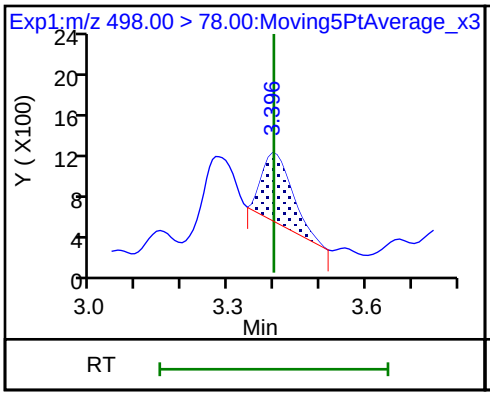
D 18 13C4 PFOS



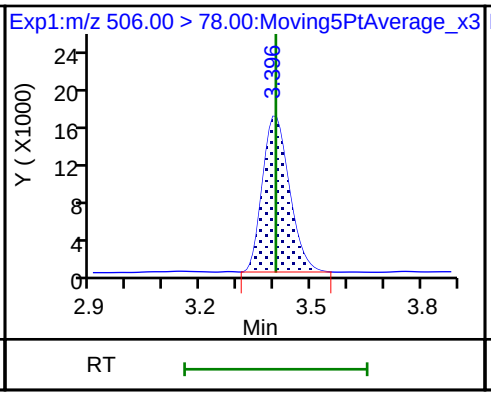
D 19 13C5 PFNA



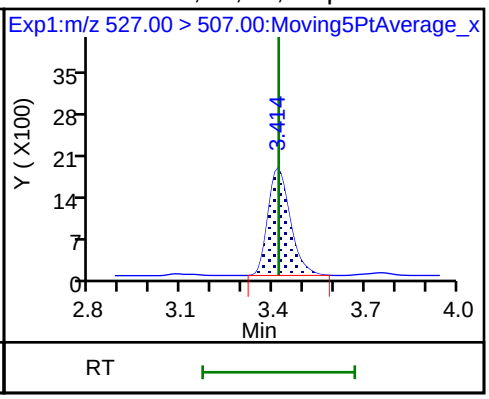
22 Perfluorooctane Sulfonamide



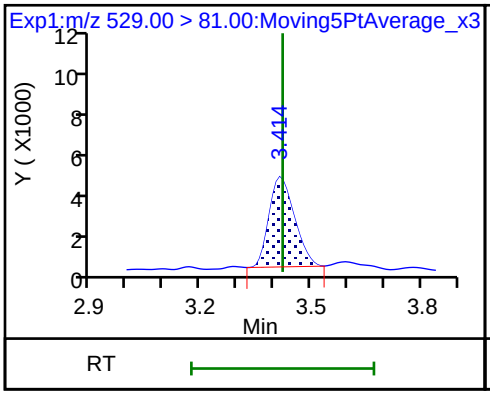
D 21 13C8 FOSA



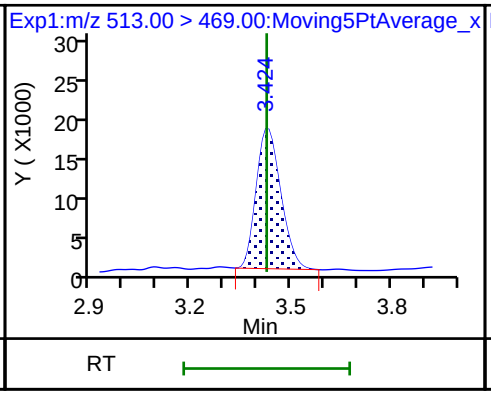
25 Sodium 1H,1H,2H,2H-perfluorodecane



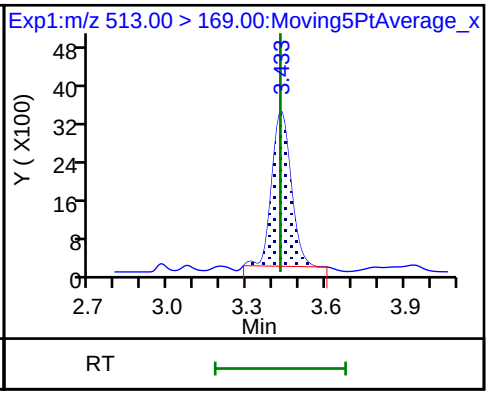
D 26 M2-8:2FTS



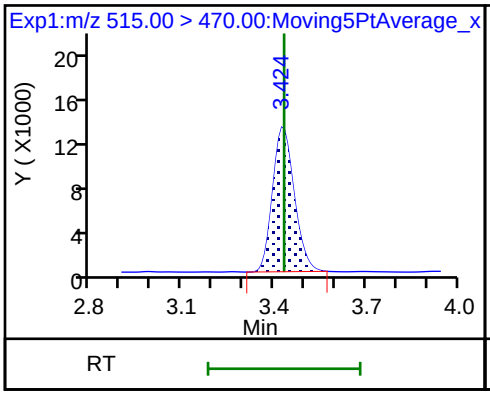
24 Perfluorodecanoic acid



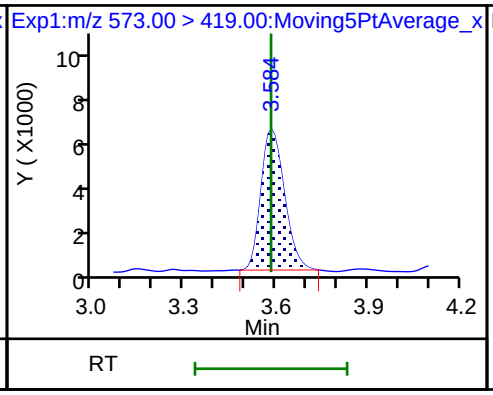
24 Perfluorodecanoic acid



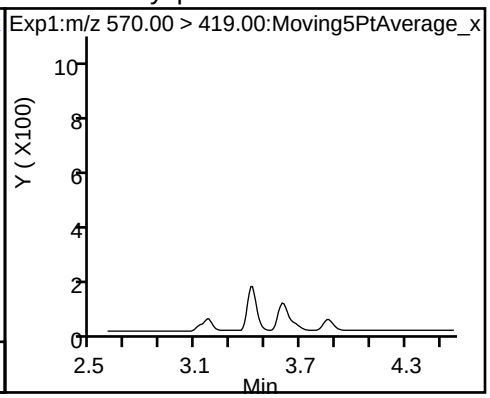
D 23 13C2 PFDA



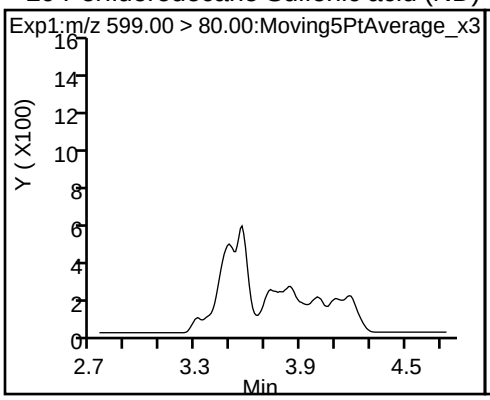
D 27 d3-NMeFOSAA



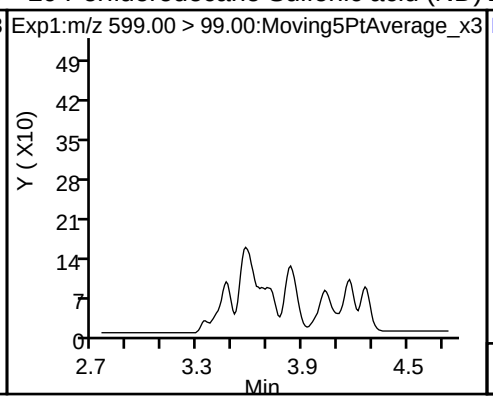
28 N-methyl perfluorooctane sulfonami (ND)



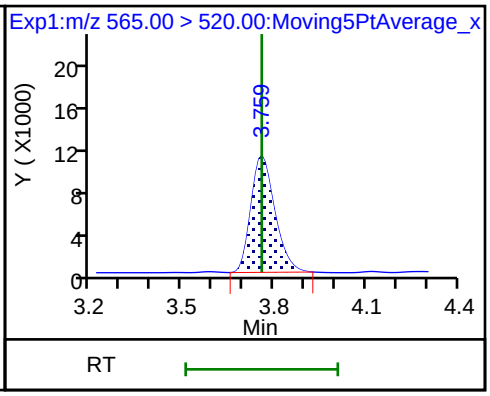
29 Perfluorodecane Sulfonic acid (ND)



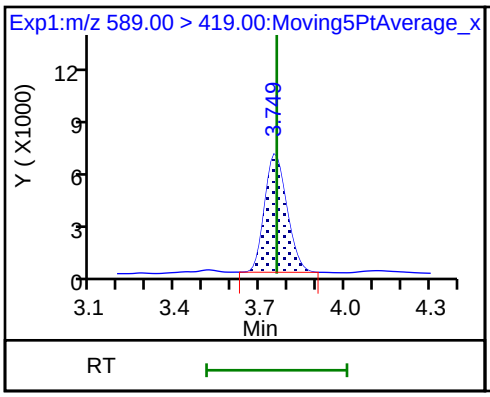
29 Perfluorodecane Sulfonic acid (ND)



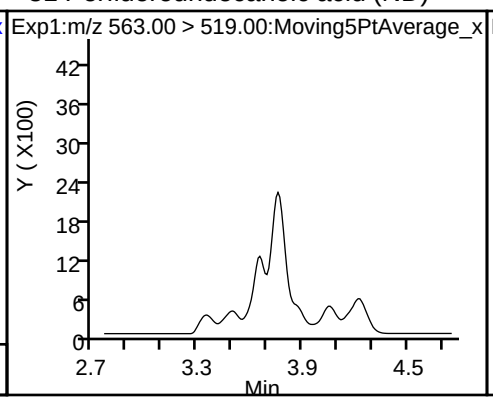
D 30 13C2 PFUnA



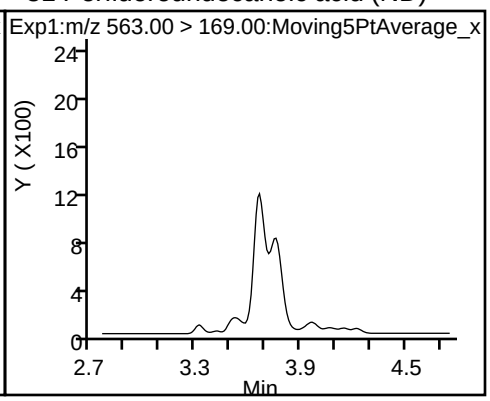
D 32 d5-NEtFOSAA



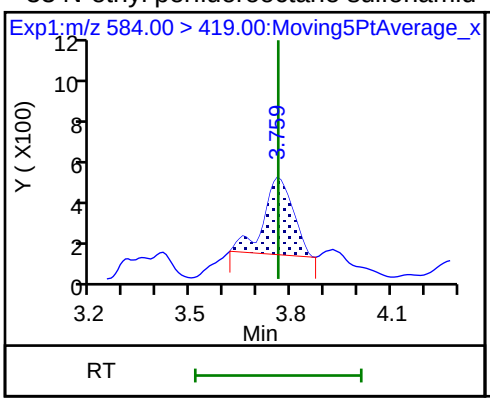
31 Perfluoroundecanoic acid (ND)



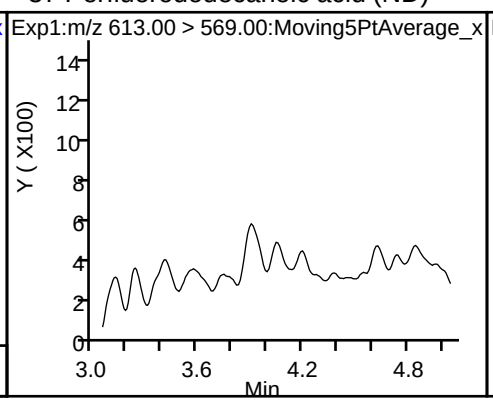
31 Perfluoroundecanoic acid (ND)



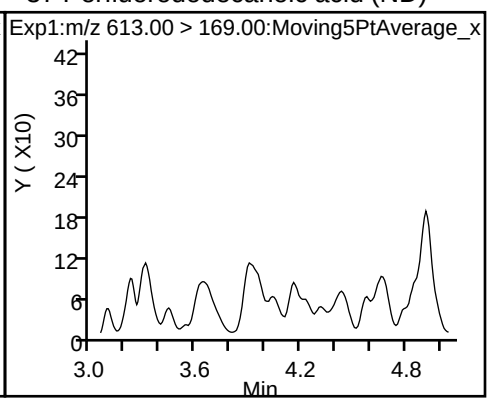
33 N-ethyl perfluorooctane sulfonamid



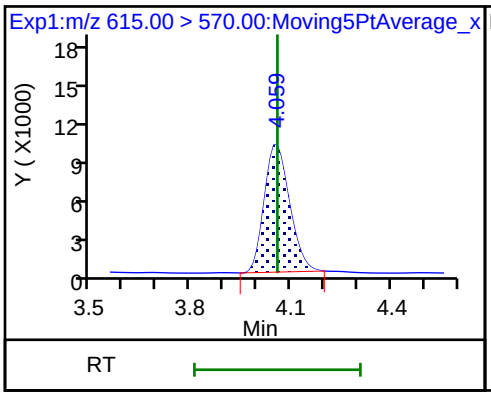
37 Perfluorododecanoic acid (ND)



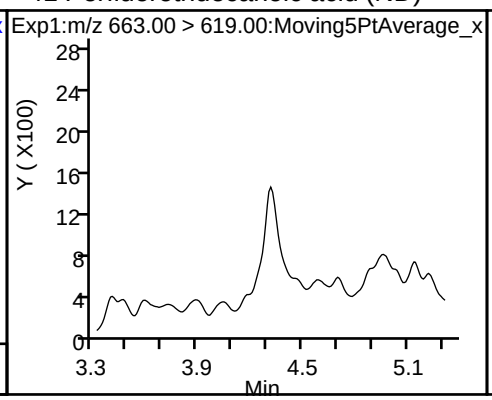
37 Perfluorododecanoic acid (ND)



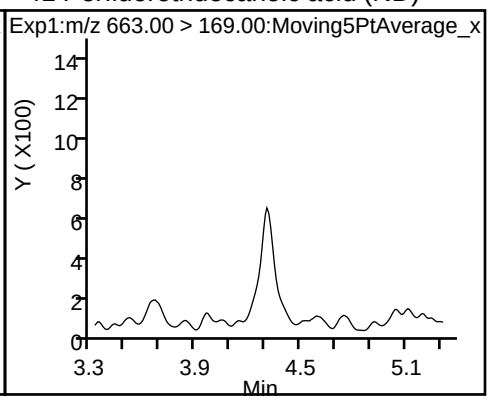
D 36 13C2 PFDoA



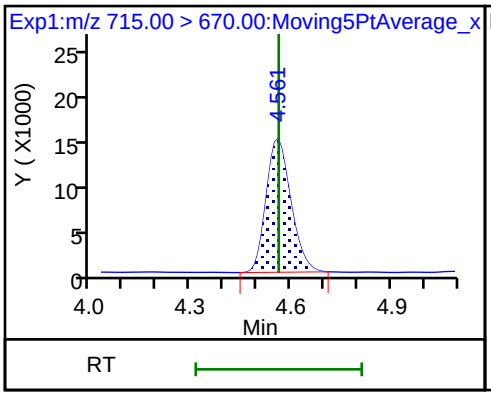
41 Perfluorotridecanoic acid (ND)



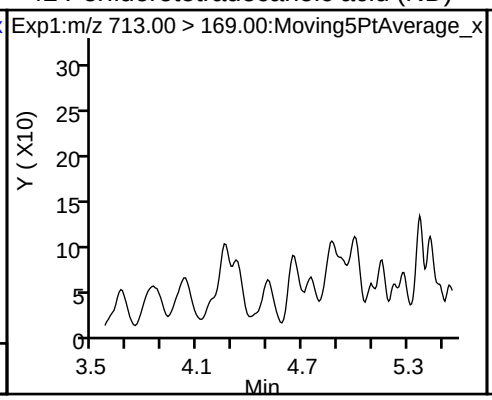
41 Perfluorotridecanoic acid (ND)



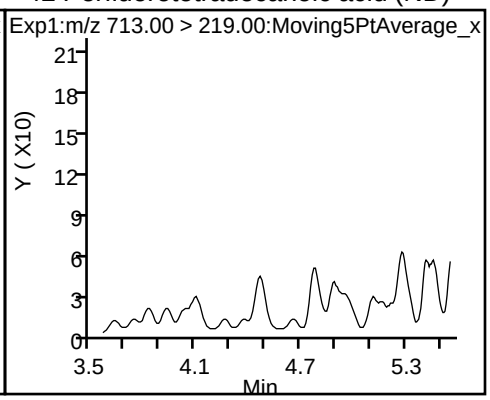
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB008(2-4) | Lab Sample ID: 320-38061-3

Matrix: Solid | Lab File ID: 2018.04.20LLC_030.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:00

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/21/2018 10:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 14.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00011	J	0.00023	0.000032
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00027		0.00023	0.000088
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00033		0.00023	0.000048
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00017	J	0.00023	0.000033
335-67-1	Perfluorooctanoic acid (PFOA)	0.00043		0.00023	0.000099
375-95-1	Perfluorononanoic acid (PFNA)	0.00063		0.00023	0.000041
335-76-2	Perfluorodecanoic acid (PFDA)	0.0019		0.00023	0.000025
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00039		0.00023	0.000041
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000077	U	0.00023	0.000077
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000059	U	0.00023	0.000059
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000062	U	0.00023	0.000062
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000029	U	0.00023	0.000029
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00081		0.00023	0.000036
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000083	J	0.00023	0.000040
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00011	J	0.00023	0.000045
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.0012		0.00023	0.000094
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00045	U	0.0023	0.00045
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00042	U	0.0023	0.00042
27619-97-2	6:2FTS	0.00083	J	0.0023	0.00017
39108-34-4	8:2FTS	0.0028		0.0023	0.00029

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB008(2-4) | Lab Sample ID: 320-38061-3

Matrix: Solid | Lab File ID: 2018.04.20LLC_030.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:00

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/21/2018 10:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 14.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	96		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	85		25-150
STL01892	13C4-PFHpA	102		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	93		25-150
STL00996	13C2 PFDA	108		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2-PFTeDA	101		25-150
STL02337	13C3-PFBS	84		25-150
STL00994	18O2 PFHxS	90		25-150
STL00991	13C4 PFOS	83		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	120		25-150
STL02117	d5-NEtFOSAA	117		25-150
STL02279	M2-6:2FTS	116		25-150
STL02280	M2-8:2FTS	124		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_030.d
Lims ID: 320-38061-A-3-A
Client ID: SB008(2-4)
Sample Type: Client
Inject. Date: 21-Apr-2018 10:44:50 ALS Bottle#: 22 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-3-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:30:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	5903160	2.40		96.1	39047	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.000	109202	0.0498			22.0	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.701	0.001	0.558	3798562	2.40		95.9	49737	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.702	1.703	-0.001	1.000	211683	0.1169			82.1	M
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	71208	1.96		84.3	354	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.739	-0.001	1.000	23502	0.009802			53.3	
298.90 > 99.00	1.738	1.739	-0.001	1.000	8627		2.72(1.25-3.74)		21.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.980	0.001	1.000	3708054	2.12		84.7	65601	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.990	-0.009	1.000	213611	0.1417			158	
313.00 > 119.00	1.981	1.990	-0.009	1.000	16795		12.72(5.03-15.10)		137	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.318	0.002	1.000	130733	0.0751			132	
363.00 > 169.00	2.320	2.318	0.002	1.000	58395		2.24(1.13-3.40)		271	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.319	0.001	1.000	4346186	2.55		102	83590	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.331	0.002	1.000	755877	0.3519			1288	
399.00 > 99.00	2.333	2.331	0.002	1.000	242266		3.12(1.50-4.49)		689	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.332	0.001	1.000	4489009	2.13		90.2	86956	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.652	0.001	1.000	1010030	2.77		116	7398	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.658	-0.005	1.000	260144	0.3618			1021	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.681	-0.006		4565860	2.50			79191	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.681	-0.006	1.000	384774	0.1885			253	
413.00 > 169.00	2.675	2.681	-0.006	1.000	217740		1.77(0.84-2.52)		605	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.682	-0.007	1.000	4416215	2.61		104	76812	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.688	-0.005	1.000	58720	0.0363			184	
449.00 > 99.00	2.683	2.688	-0.005	1.000	16111		3.64(1.94-5.82)		145	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	3.050	3.054	-0.004	1.000	32879496	24.8			34657	EM
499.00 > 99.00	3.050	3.054	-0.004	1.000	8955332		3.67(2.31-6.93)		56635	
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.054	-0.004	1.000	386748	0.2737			783	
463.00 > 169.00	3.057	3.054	0.003	1.002	95585		4.05(1.90-5.69)		1232	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.055	-0.005	1.000	3388035	2.33		93.1	80242	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.055	-0.005	1.000	2910849	1.98		82.7	16399	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.391	0.004	1.000	839699	0.5055			68.2	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.393	0.002	1.000	4105984	2.23		89.3	45089	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.410	0.003	1.003	844744	1.23			27546	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.411	-0.007	1.000	1304820	2.97		124	7867	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.413	3.419	-0.006	1.000	1113855	0.8190			2442	
513.00 > 169.00	3.413	3.419	-0.006	1.000	196300		5.67(2.36-7.09)		1339	
D 23 13C2 PFDA										
515.00 > 470.00	3.413	3.420	-0.007	1.000	3296061	2.69		108	72631	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.569	0.003	1.000	2074053	2.99		120	36102	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.732	-0.005	1.000	37581	0.0475			11.5	
599.00 > 99.00	3.727	3.732	-0.005	1.000	13774		2.73(1.39-4.16)		45.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.743	-0.006	1.000	2008622	2.93		117	23069	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.748	3.753	-0.005	1.000	145285	0.1684			265	M
563.00 > 169.00	3.737	3.753	-0.016	0.997	39480		3.68(2.12-6.36)		125	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.754	-0.006	1.000	2552021	2.42		96.7	48321	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.037	4.042	-0.005	0.997	25647	0.0220			24.0	
613.00 > 169.00	4.047	4.042	0.005	1.000	6503		3.94(2.13-6.40)		30.8	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.042	0.005	1.000	2797707	2.45		98.2	48287	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.301	0.005	1.000	17363	0.0128			15.7	
663.00 > 169.00	4.306	4.301	0.005	1.000	6198		2.80(1.25-3.76)		50.8	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.540	4.548	-0.008	1.000	3650496	2.53		101	30880	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:42:09 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_030.d

Injection Date: 21-Apr-2018 10:44:50 Instrument ID: A8_N

Lims ID: 320-38061-A-3-A Lab Sample ID: 320-38061-3

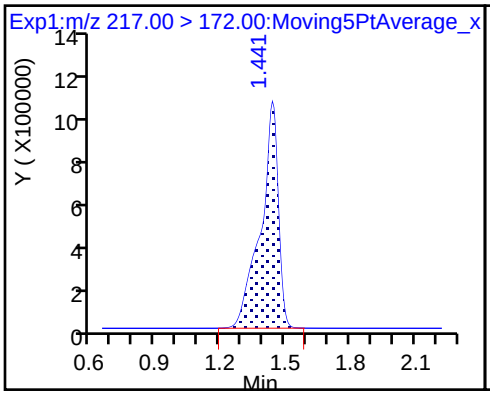
Client ID: SB008(2-4)

Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 8

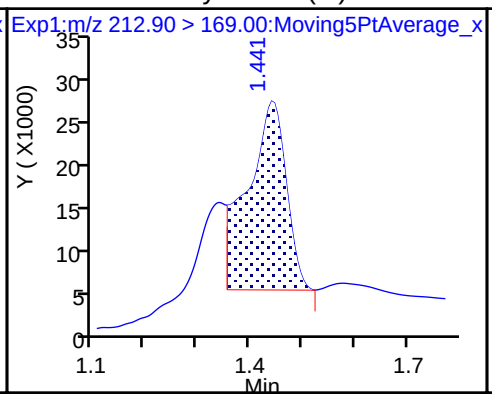
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

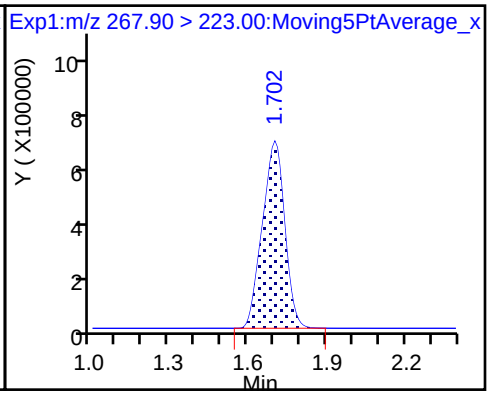
D 1 13C4 PFBA



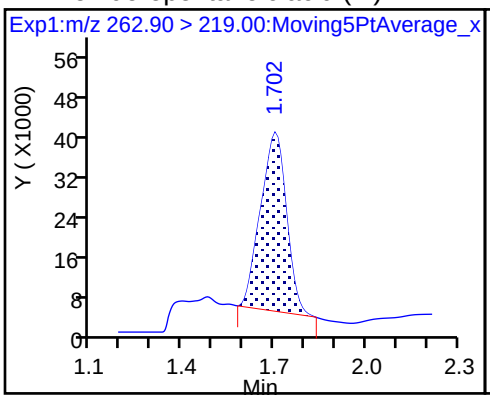
2 Perfluorobutyric acid (M)



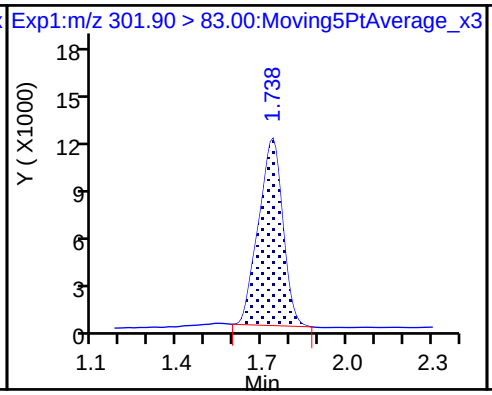
D 3 13C5-PFPeA



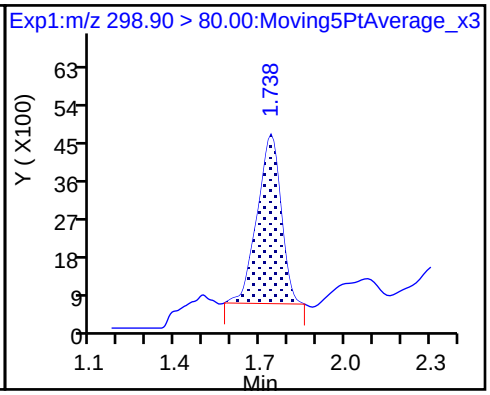
4 Perfluoropentanoic acid (M)



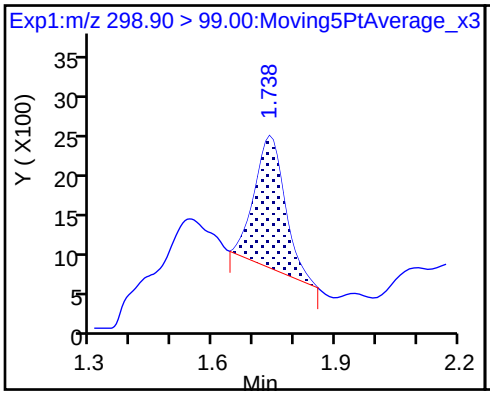
D 47 13C3-PFBS



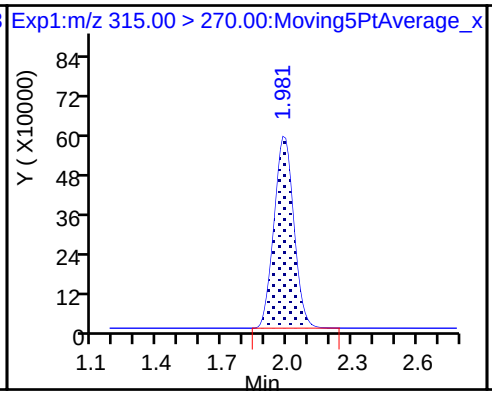
5 Perfluorobutanesulfonic acid



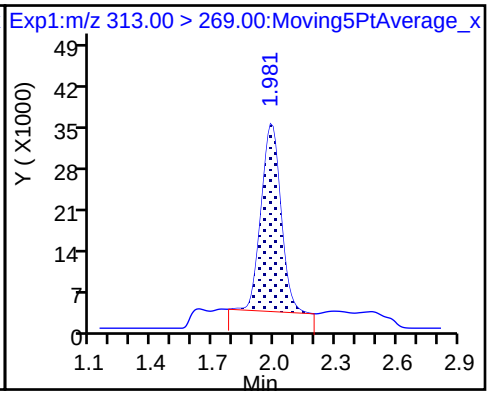
5 Perfluorobutanesulfonic acid



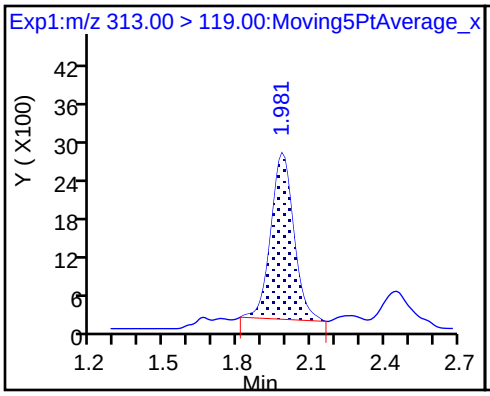
D 7 13C2 PFHxA



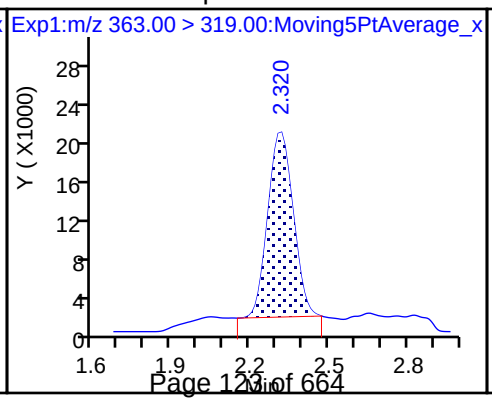
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid



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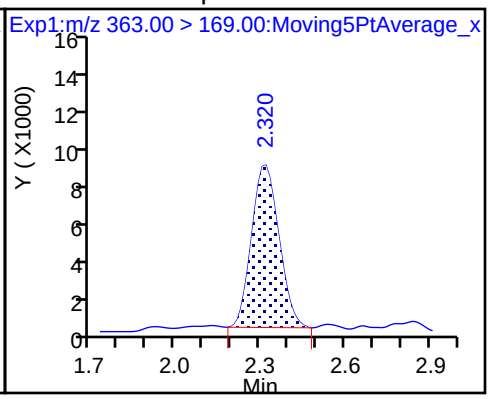
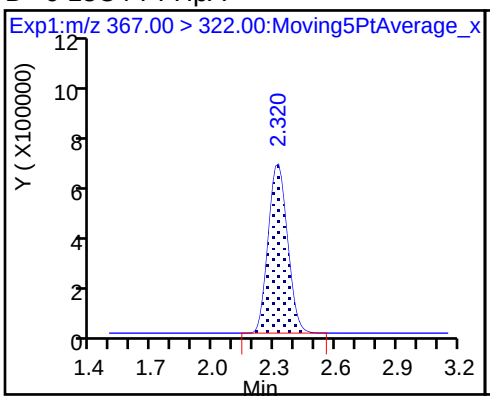
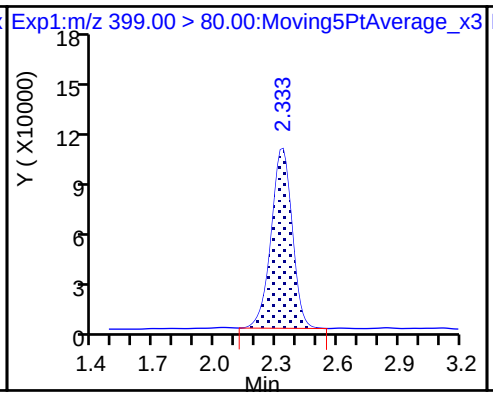


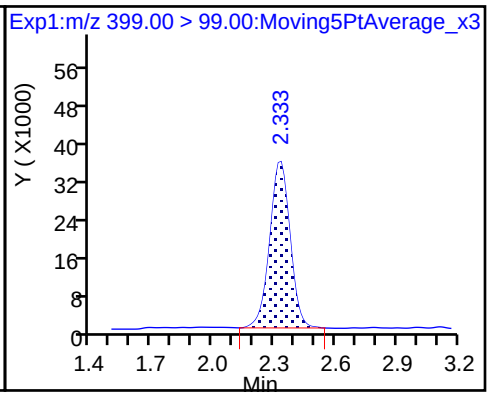
D 9 13C4-PFHpA



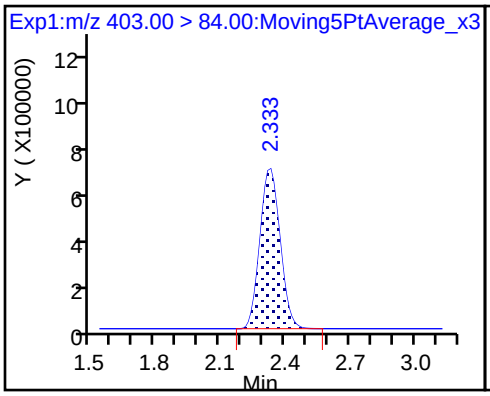
8 Perfluorohexanesulfonic acid



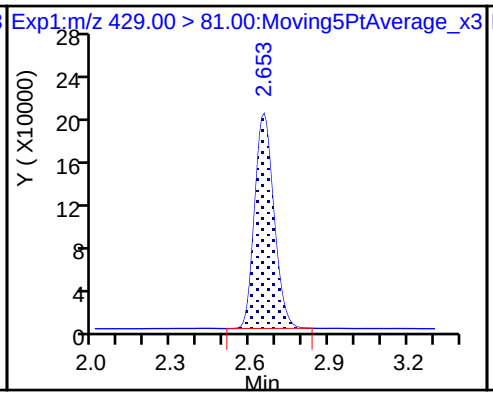
8 Perfluorohexanesulfonic acid



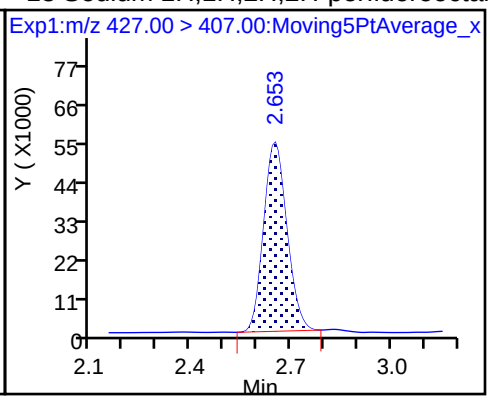
D 11 18O2 PFHxS



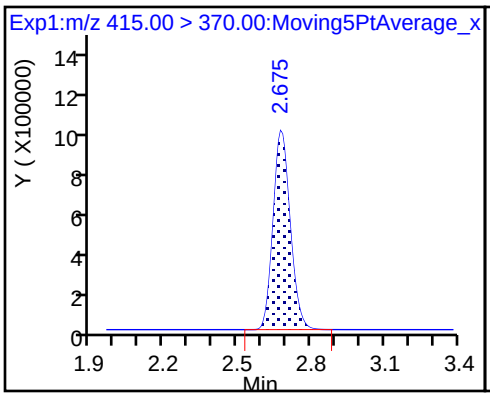
D 12 M2-6:2FTS



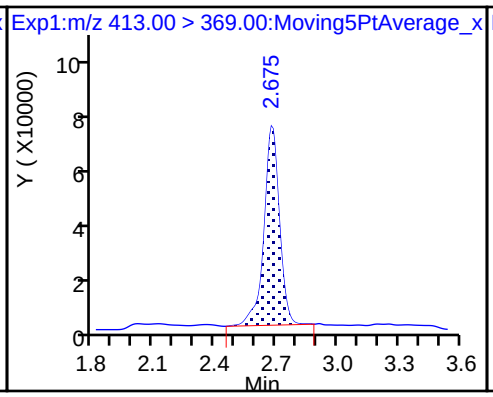
13 Sodium 1H,1H,2H,2H-perfluorooctane



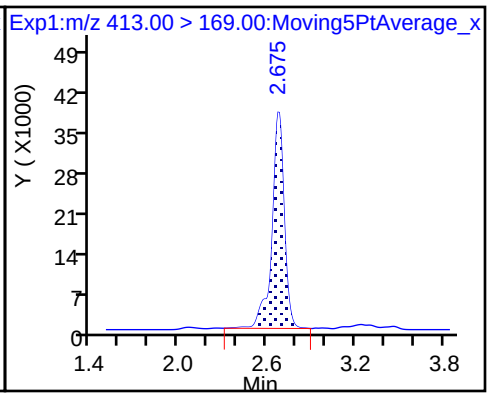
* 62 13C2-PFOA



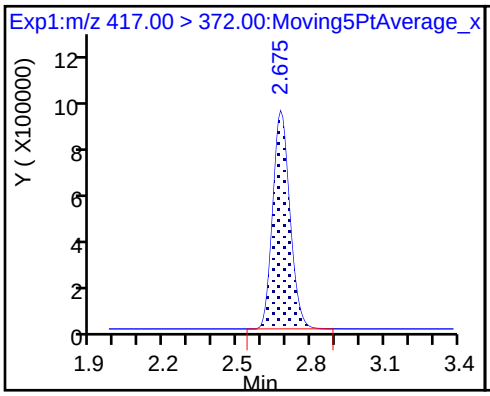
15 Perfluorooctanoic acid



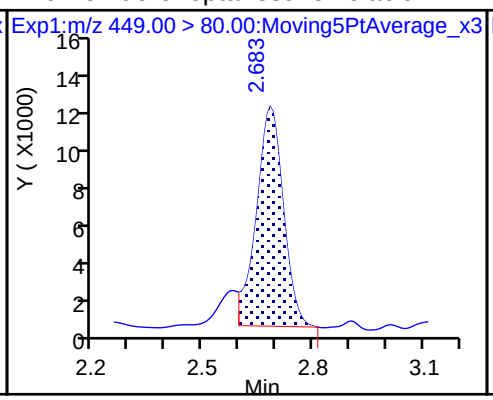
15 Perfluorooctanoic acid



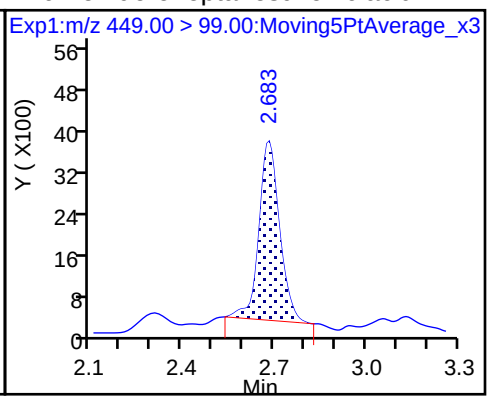
D 14 13C4 PFOA



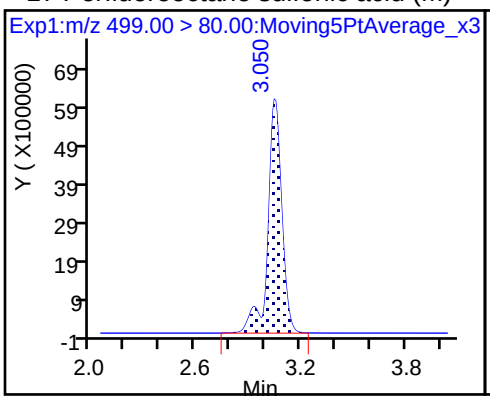
16 Perfluoroheptanesulfonic acid



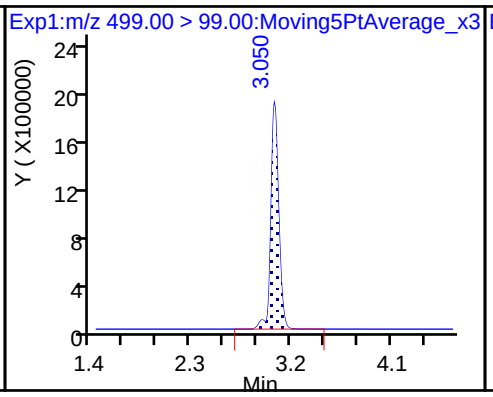
16 Perfluoroheptanesulfonic acid



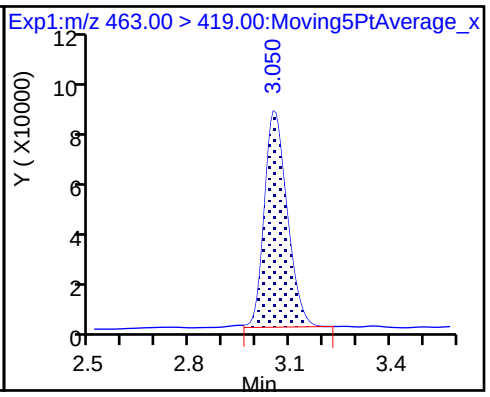
17 Perfluorooctane sulfonic acid (M)



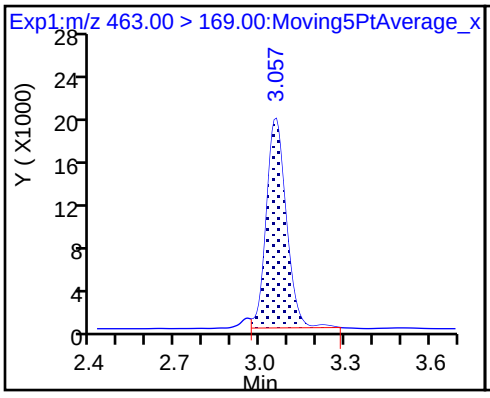
17 Perfluorooctane sulfonic acid



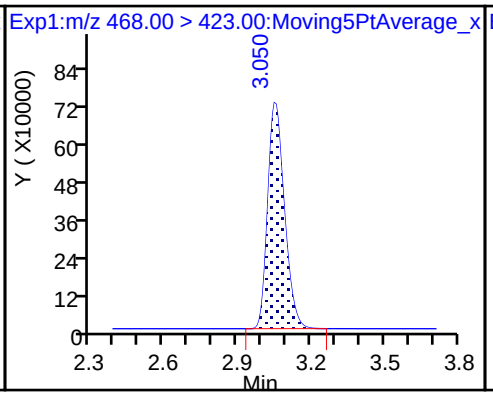
20 Perfluorononanoic acid



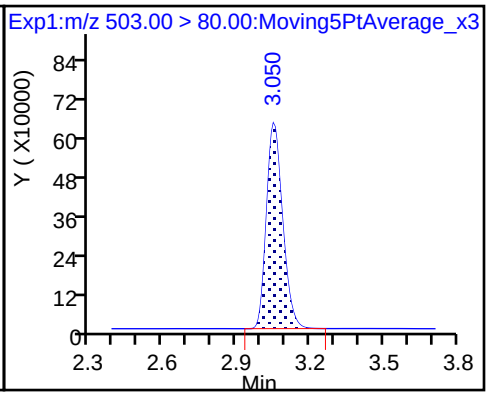
20 Perfluorononanoic acid



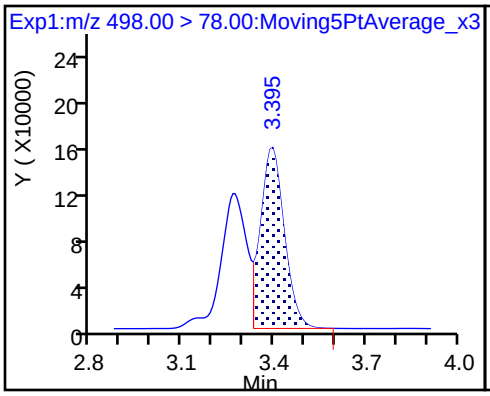
D 19 13C5 PFNA



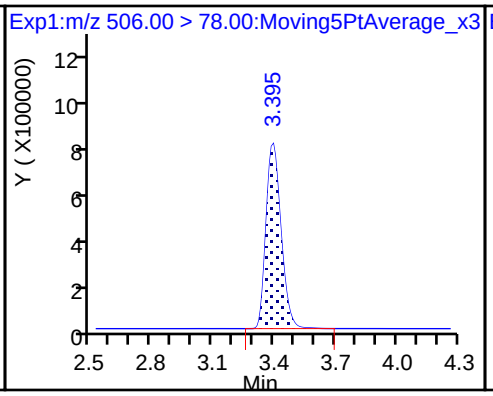
D 18 13C4 PFOS



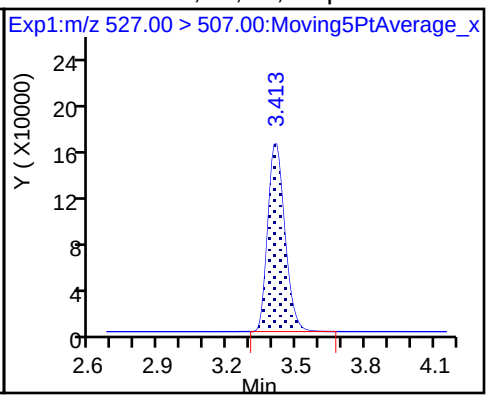
22 Perfluorooctane Sulfonamide



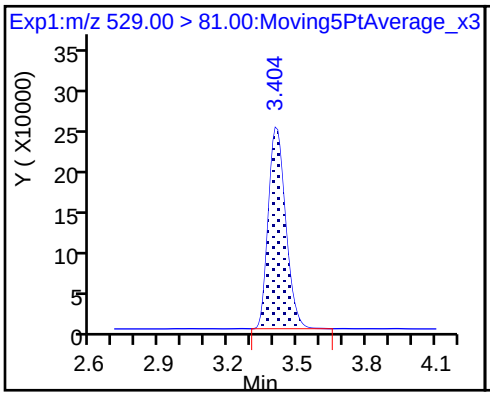
D 21 13C8 FOSA



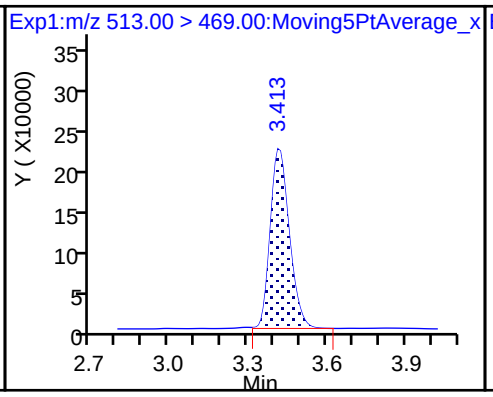
25 Sodium 1H,1H,2H,2H-perfluorodecane



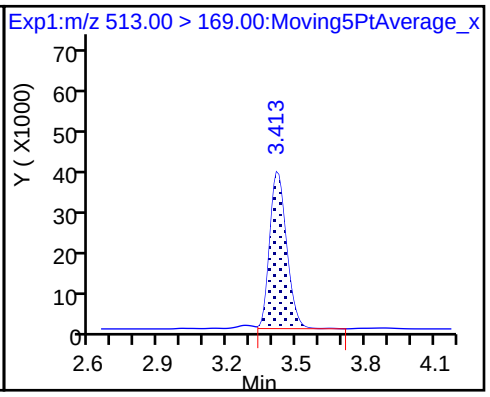
D 26 M2-8:2FTS



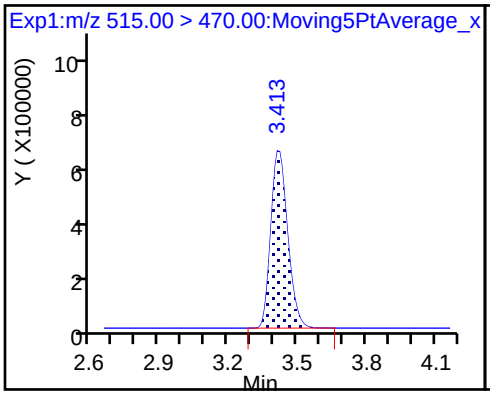
24 Perfluorodecanoic acid



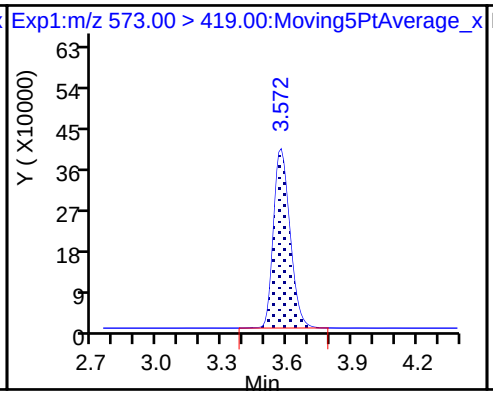
24 Perfluorodecanoic acid



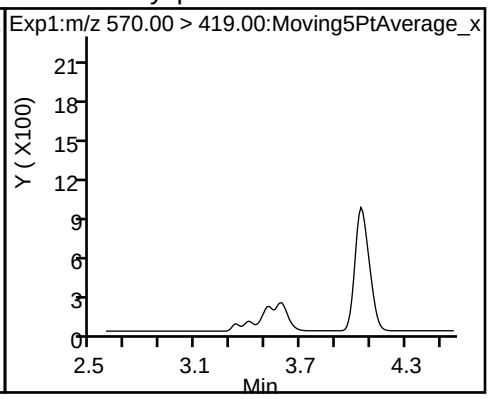
D 23 13C2 PFDA



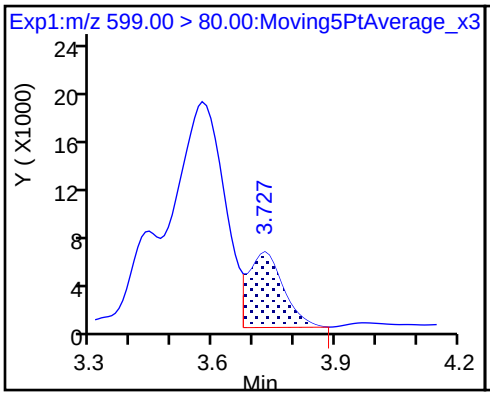
D 27 d3-NMeFOSAA



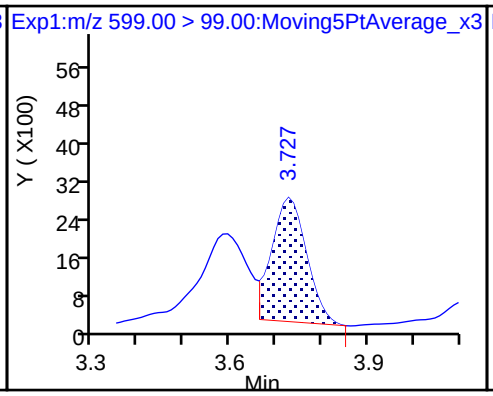
28 N-methyl perfluorooctane sulfonami (ND)



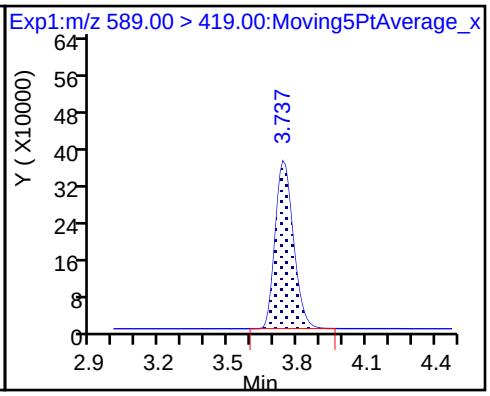
29 Perfluorodecane Sulfonic acid



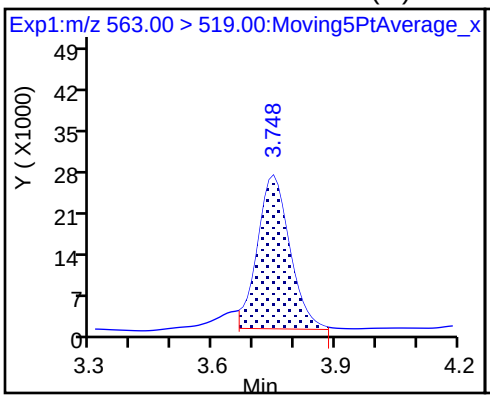
29 Perfluorodecane Sulfonic acid



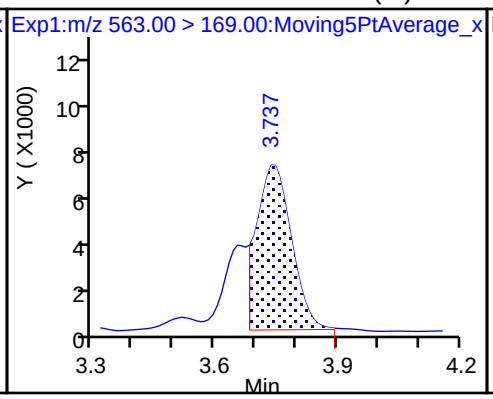
D 32 d5-NEtFOSAA



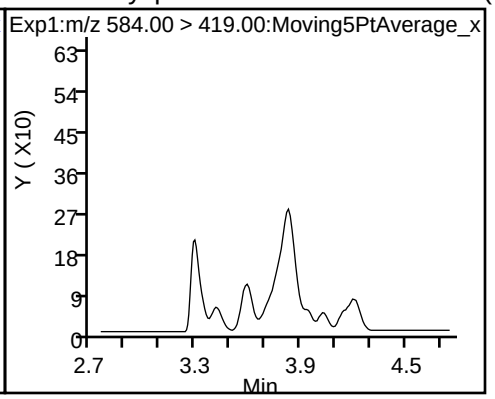
31 Perfluoroundecanoic acid (M)



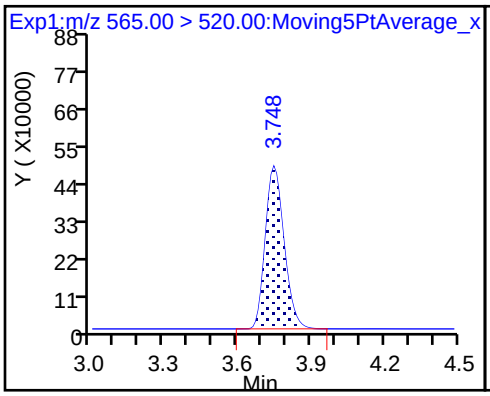
31 Perfluoroundecanoic acid (M)



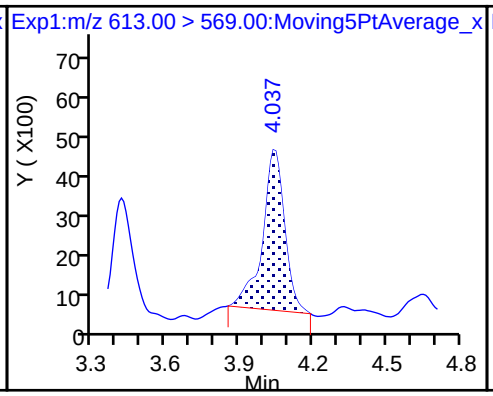
33 N-ethyl perfluorooctane sulfonamid (ND)



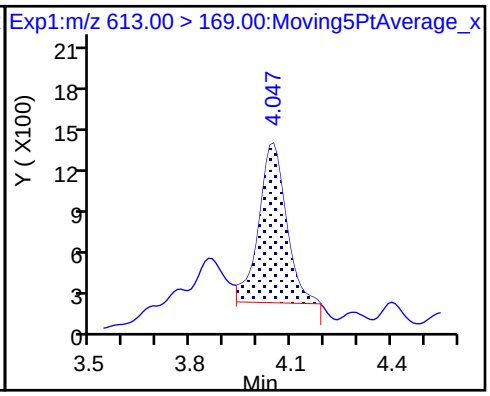
D 30 13C2 PFUnA



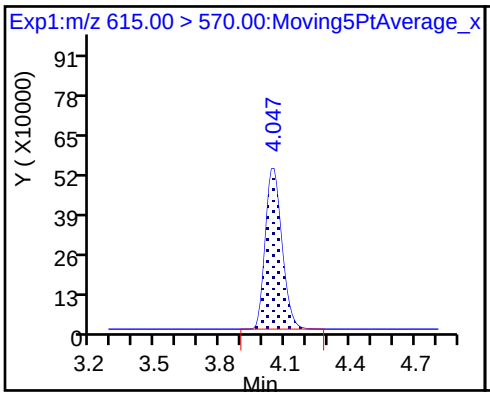
37 Perfluorododecanoic acid



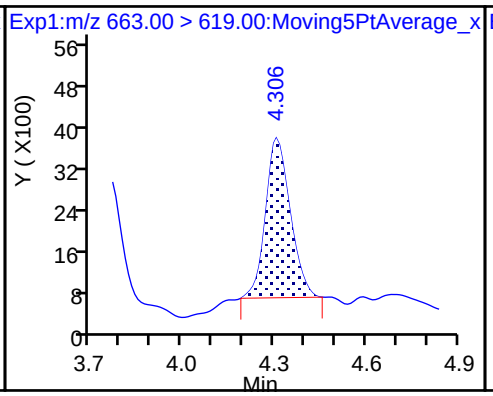
37 Perfluorododecanoic acid



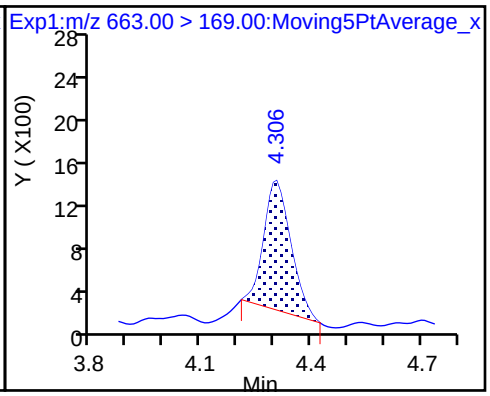
D 36 13C2 PFDoA



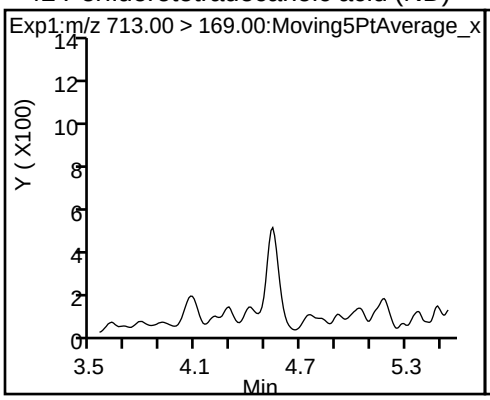
41 Perfluorotridecanoic acid



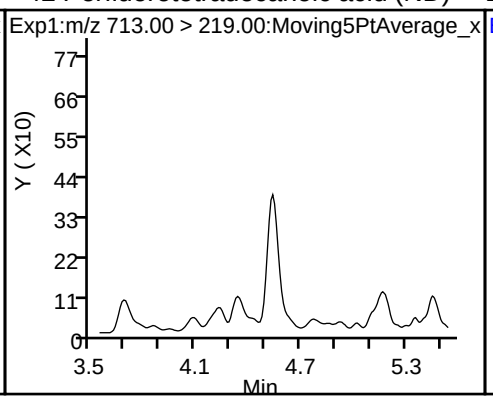
41 Perfluorotridecanoic acid



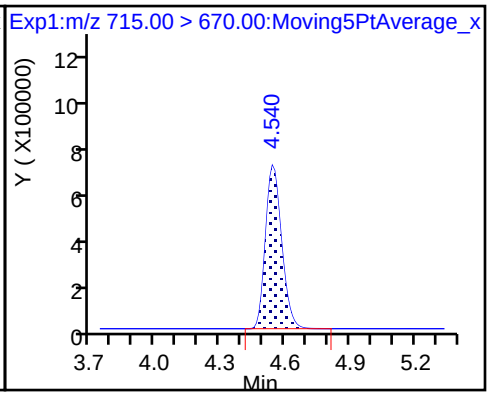
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

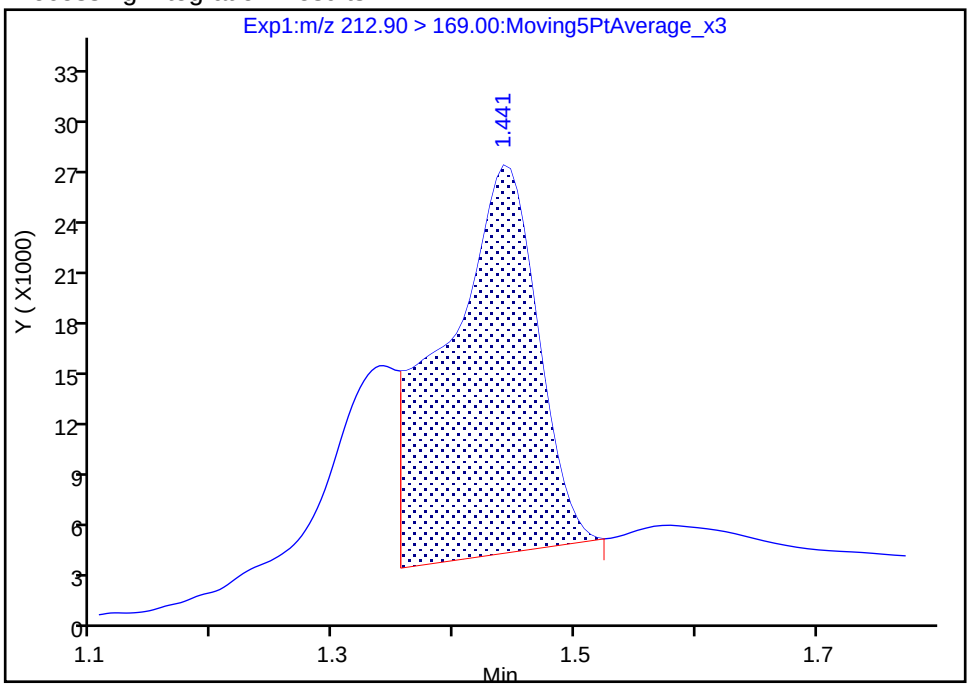
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_030.d				
Injection Date:	21-Apr-2018 10:44:50	Instrument ID:	A8_N		
Lims ID:	320-38061-A-3-A	Lab Sample ID:	320-38061-3		
Client ID:	SB008(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

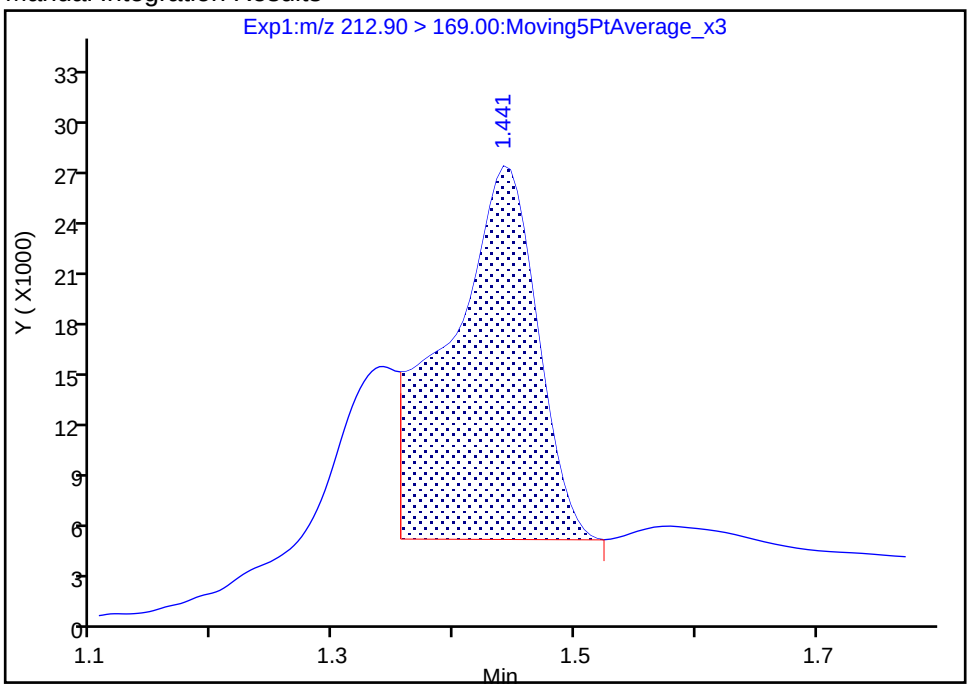
Processing Integration Results

RT: 1.44
Area: 117817
Amount: 0.053735
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 109202
Amount: 0.049805
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:27:55

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

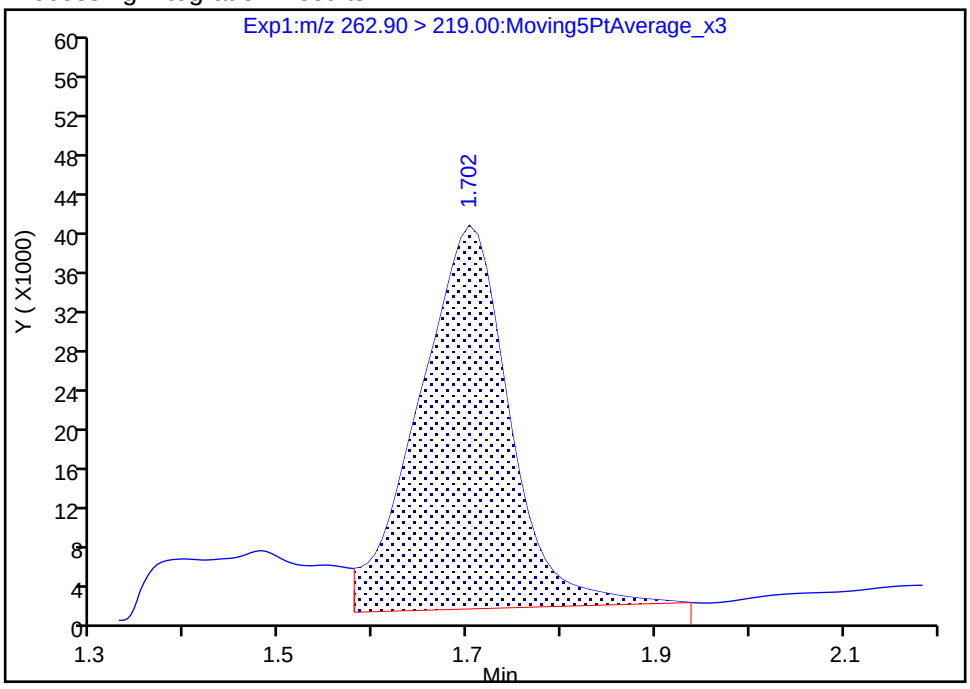
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_030.d				
Injection Date:	21-Apr-2018 10:44:50	Instrument ID:	A8_N		
Lims ID:	320-38061-A-3-A	Lab Sample ID:	320-38061-3		
Client ID:	SB008(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

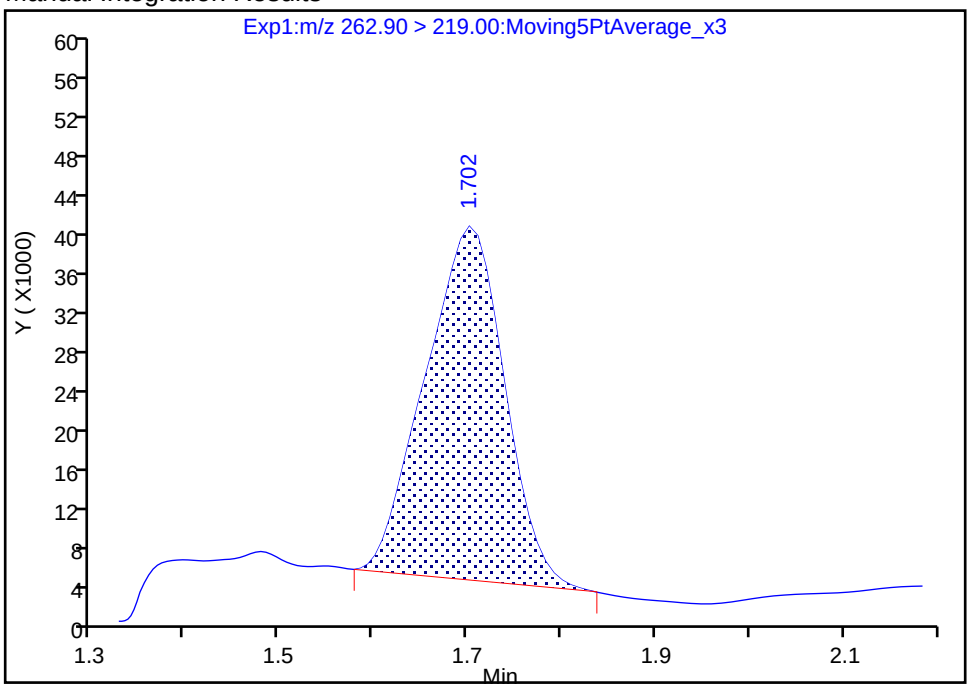
Processing Integration Results

RT: 1.70
Area: 261310
Amount: 0.144306
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 211683
Amount: 0.116900
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:28:09

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

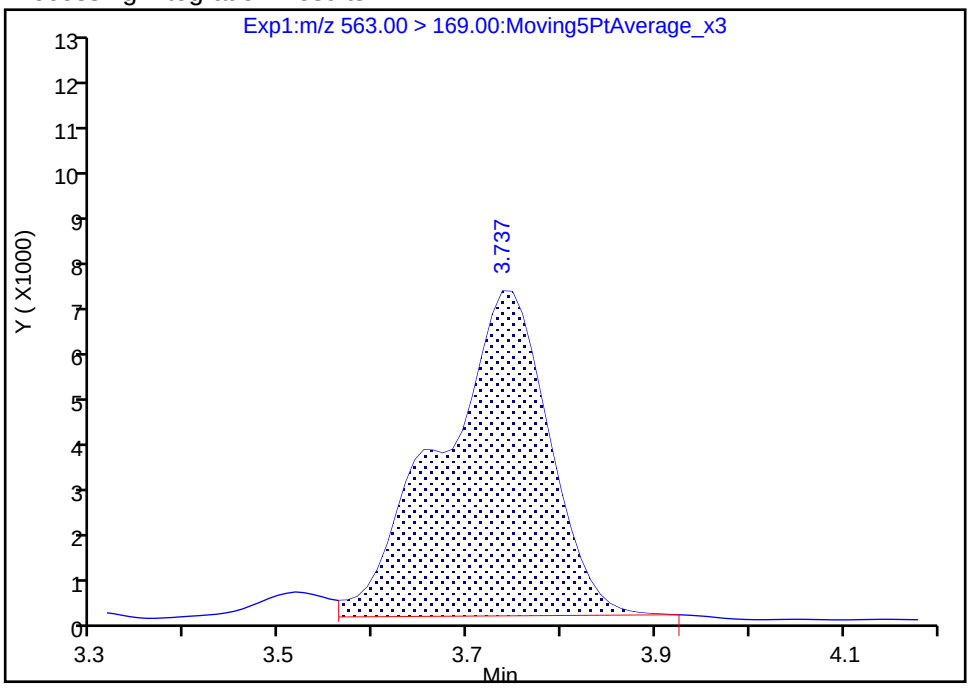
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_030.d				
Injection Date:	21-Apr-2018 10:44:50	Instrument ID:	A8_N		
Lims ID:	320-38061-A-3-A	Lab Sample ID:	320-38061-3		
Client ID:	SB008(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

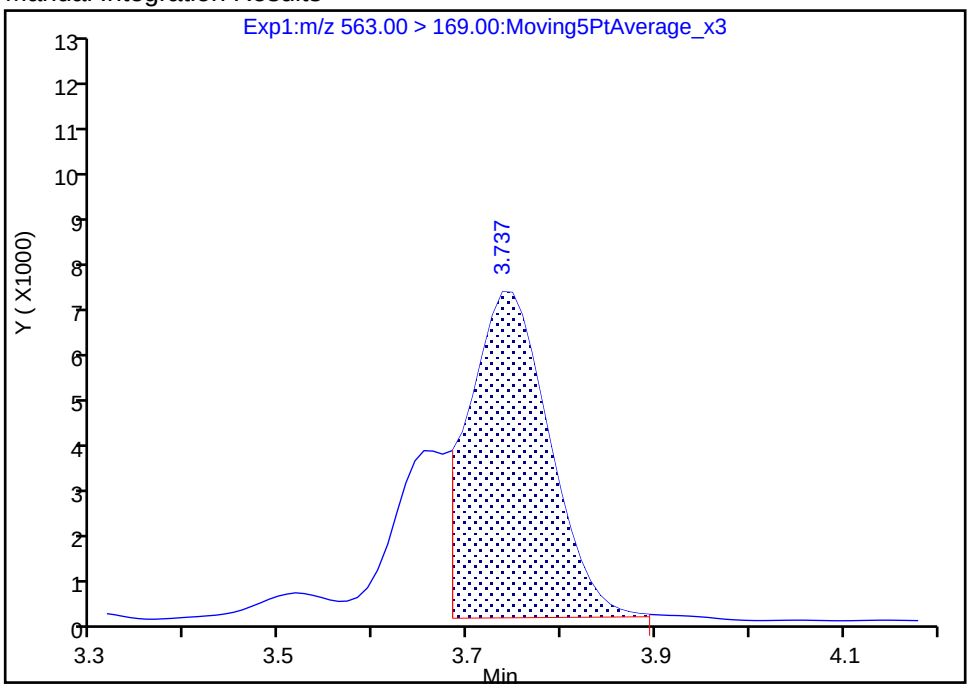
Processing Integration Results

RT: 3.74
Area: 53770
Amount: 0.179317
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 39480
Amount: 0.168410
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:29:15

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

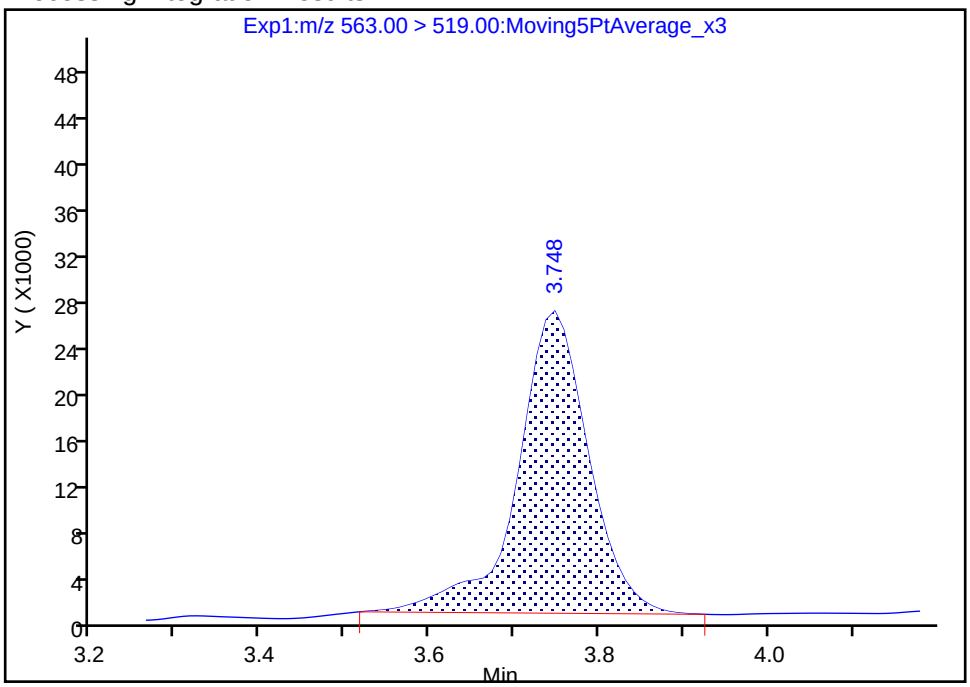
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_030.d				
Injection Date:	21-Apr-2018 10:44:50	Instrument ID:	A8_N		
Lims ID:	320-38061-A-3-A	Lab Sample ID:	320-38061-3		
Client ID:	SB008(2-4)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	22	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

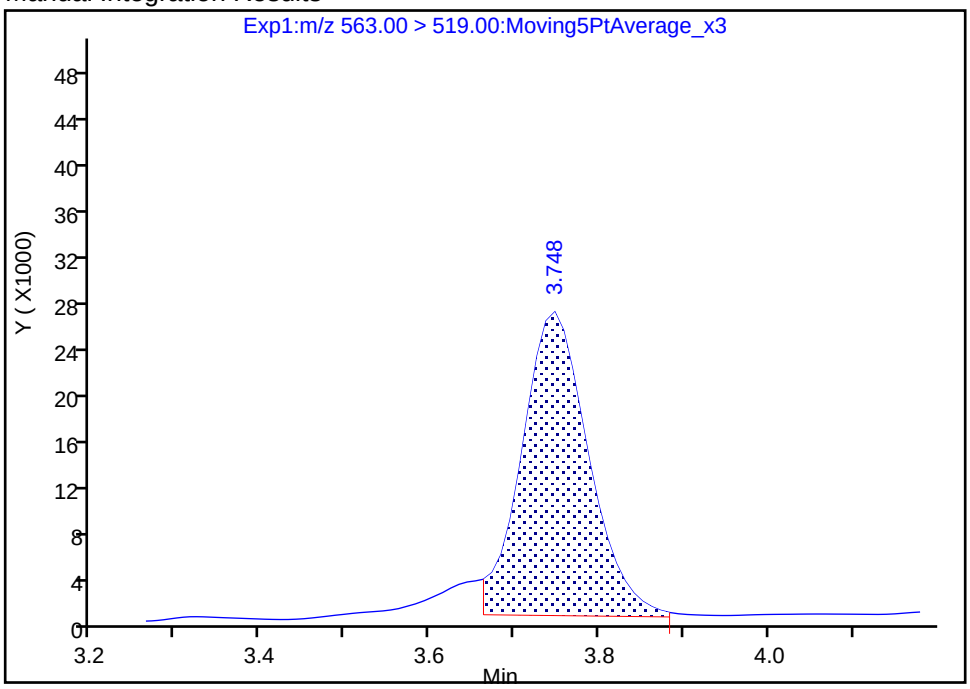
Processing Integration Results

RT: 3.75
Area: 154694
Amount: 0.179317
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 145285
Amount: 0.168410
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:29:23

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB008(2-4) DL | Lab Sample ID: 320-38061-3 DL

Matrix: Solid | Lab File ID: 2018.04.25LLBX_072.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:00

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/26/2018 06:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 5

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 14.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219909 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.064	D	0.0029	0.0011

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	90		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_072.d
Lims ID: 320-38061-A-3-A
Client ID: SB008(2-4)
Sample Type: Client
Inject. Date: 26-Apr-2018 06:24:48 ALS Bottle#: 48 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-38061-a-3-a 5X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:23:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.436	0.005	1.000	31844	0.0139			10.4	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	1234034	0.5102		102	9485	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	-0.001	0.556	795559	0.5103		102	11560	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.703	-0.001	1.000	48809	0.0257			36.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.739	-0.001	1.000	14295	0.3996		85.9	122	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.993	-0.002	1.000	798657	0.4633		92.7	15326	
D 9 13C4-PFHpA										
367.00 > 322.00	2.332	2.321	0.011	1.000	874909	0.5215		104	23315	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.332	2.321	0.011	1.000	26693	0.0152			33.6	
363.00 > 169.00	2.332	2.321	0.011	1.000	10678		2.50(1.13-3.40)		36.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.334	0.011	1.000	864860	0.4176		88.3	23144	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.345	2.334	0.011	1.000	155718	0.0752			300	
399.00 > 99.00	2.345	2.334	0.011	1.000	46483		3.35(1.50-4.49)		322	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.660	0.007	1.000	165193	0.4595		96.7	2312	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.660	0.007	1.000	49805	0.0847			780	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.683	0.007		898876	0.5000			27140	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.690	0.0	1.000	875291	0.5249		105	23169	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.690	2.690	0.0	1.000	77121	0.0381			54.3	
413.00 > 169.00	2.690	2.690	0.0	1.000	46144		1.67(0.84-2.52)		117	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	9703	0.005590			55.8	
449.00 > 99.00	2.690	2.690	0.0	1.000	3027		3.21(1.94-5.82)		63.2	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.059	0.004	1.000	7939545	5.58			32533	
499.00 > 99.00	3.063	3.059	0.004	1.000	1871382		4.24(2.31-6.93)		30265	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.059	0.004	1.000	83265	0.0541			279	
463.00 > 169.00	3.056	3.059	-0.003	0.998	19761		4.21(1.90-5.69)		490	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.063	0.0	1.000	624914	0.4309		90.2	4095	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.063	0.0	1.000	737982	0.5149		103	20600	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.399	-0.005	1.000	173459	0.1069			67.2	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.404	-0.010	1.000	801750	0.4428		88.6	15589	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.417	-0.004	1.000	125876	0.2603			4971	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.423	-0.010	1.000	183058	0.4228		88.3	1502	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.431	3.427	0.004	1.003	234054	0.1797			878	
513.00 > 169.00	3.422	3.427	-0.005	1.000	41776		5.60(2.36-7.09)		459	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.432	-0.010	1.000	631246	0.5240		105	17581	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.582	0.0	1.000	345853	0.5065		101	4893	
D 30 13C2 PFUnA										
565.00 > 520.00	3.757	3.758	-0.001	1.000	529245	0.5093		102	19524	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.758	-0.011	1.000	373605	0.5544		111	5713	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.757	3.762	-0.005	1.000	28831	0.0322			133	
563.00 > 169.00	3.757	3.762	-0.005	1.000	8399		3.43(2.12-6.36)		78.7	
D 36 13C2 PFDoA										
615.00 > 570.00	4.057	4.059	-0.002	1.000	520388	0.4637		92.7	9781	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.560	4.563	-0.003	1.000	707402	0.4971		99.4	7527	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 10:36:59 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_072.d

Injection Date: 26-Apr-2018 06:24:48 Instrument ID: A8_N

Lims ID: 320-38061-A-3-A Lab Sample ID: 320-38061-3

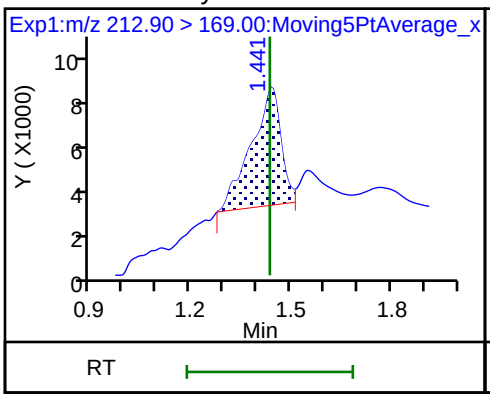
Client ID: SB008(2-4)

Operator ID: SACINSTLCMS01 ALS Bottle#: 48 Worklist Smp#: 5

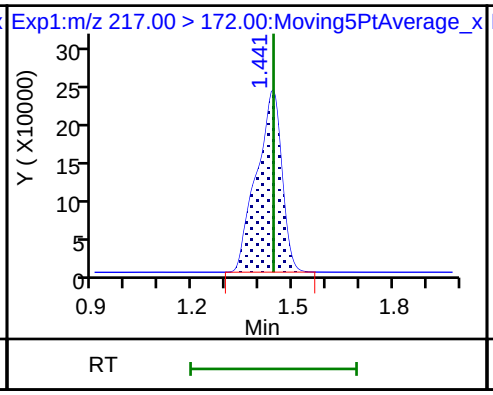
Injection Vol: 2.0 ul Dil. Factor: 5.0000

Method: A8_N Limit Group: LC PFC ICAL

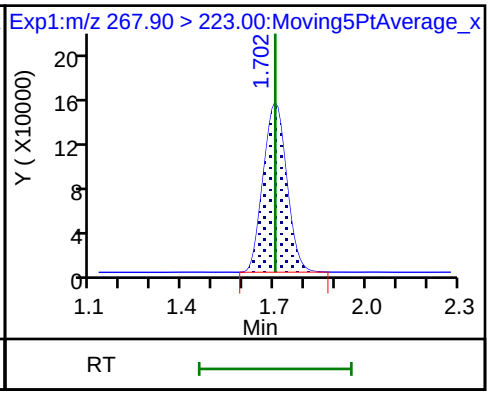
2 Perfluorobutyric acid



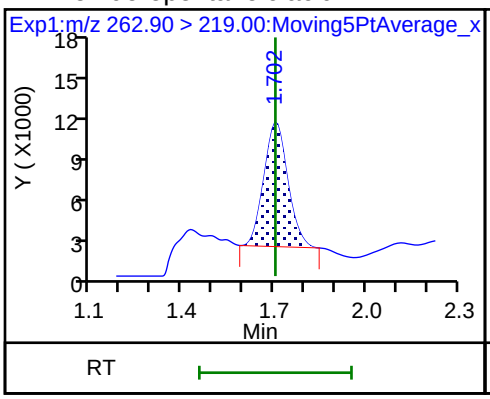
D 1 13C4 PFBA



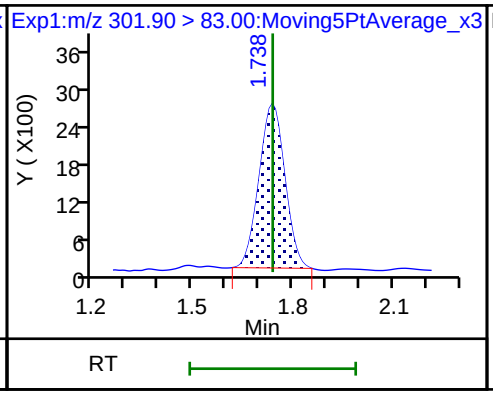
D 3 13C5-PFPeA



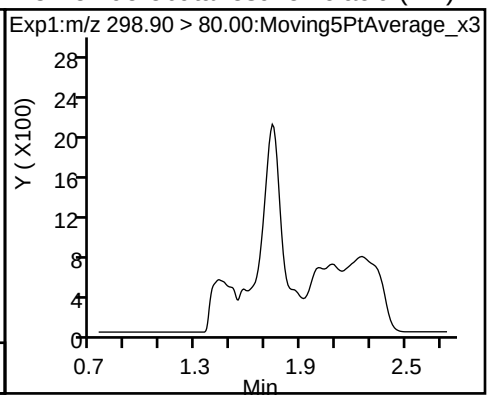
4 Perfluoropentanoic acid



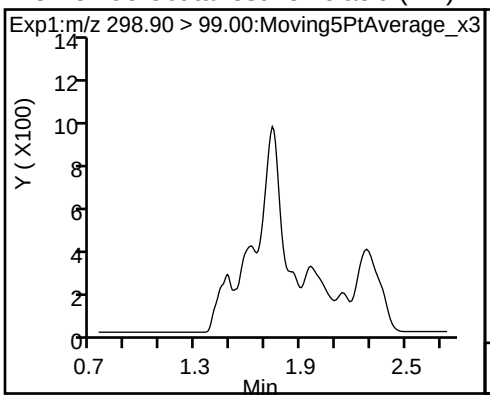
D 47 13C3-PFBS



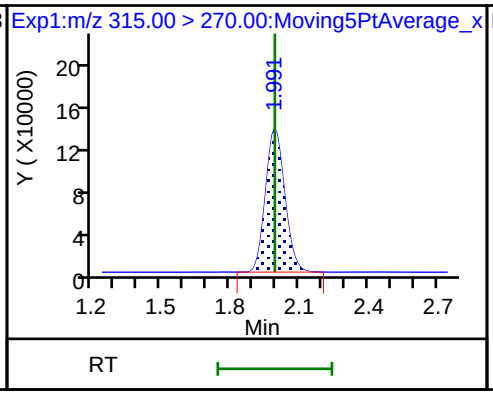
5 Perfluorobutanesulfonic acid (ND)



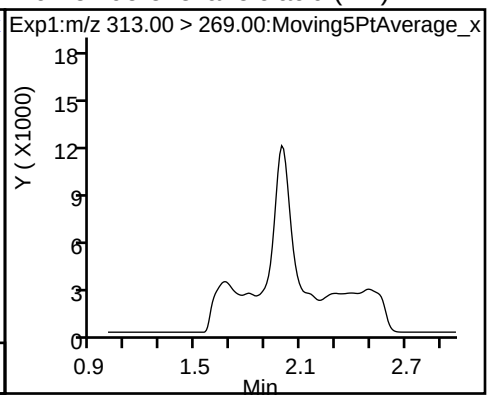
5 Perfluorobutanesulfonic acid (ND)



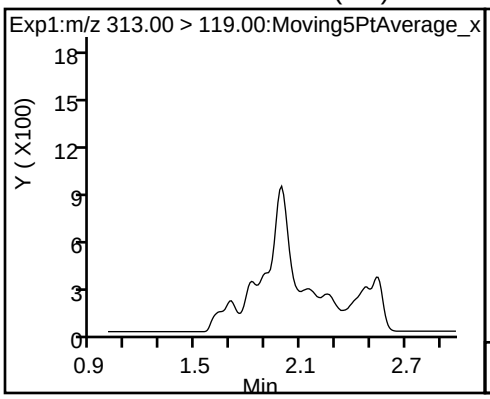
D 7 13C2 PFHxA



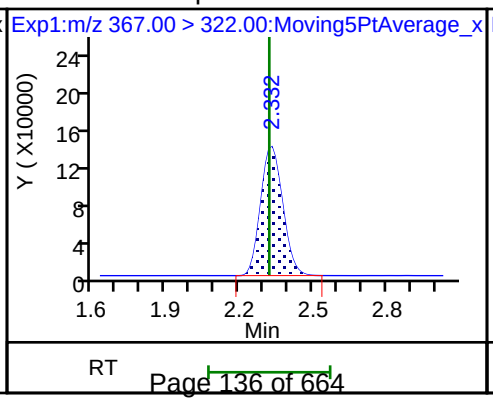
6 Perfluorohexanoic acid (ND)



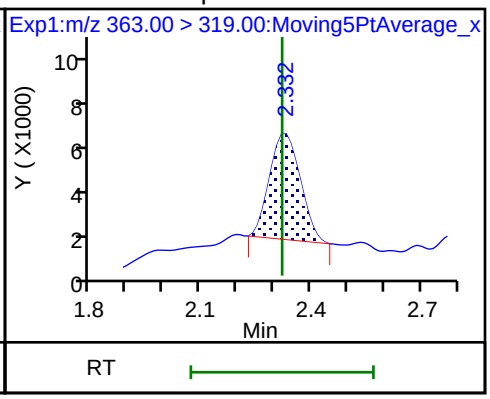
6 Perfluorohexanoic acid (ND)



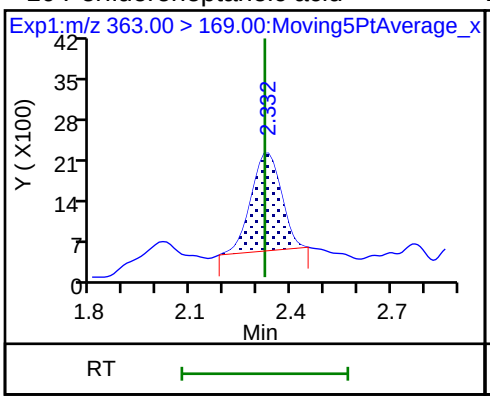
D 9 13C4-PFHpA



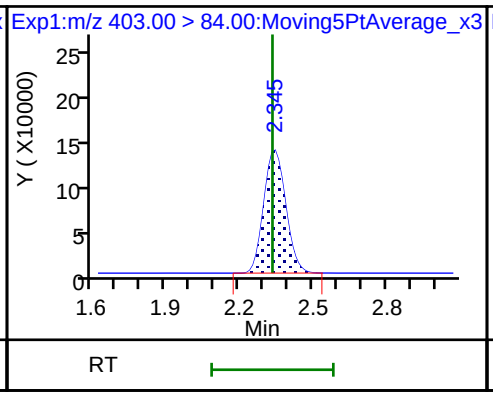
10 Perfluoroheptanoic acid



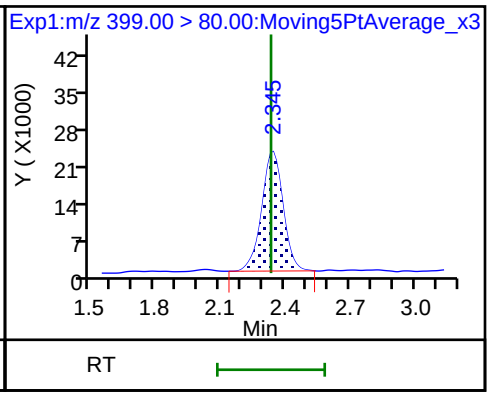
10 Perfluoroheptanoic acid



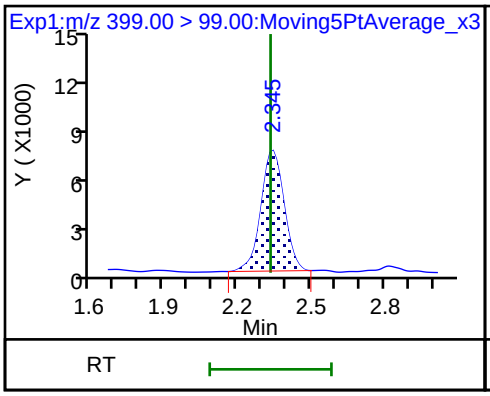
D 11 18O2 PFHxS



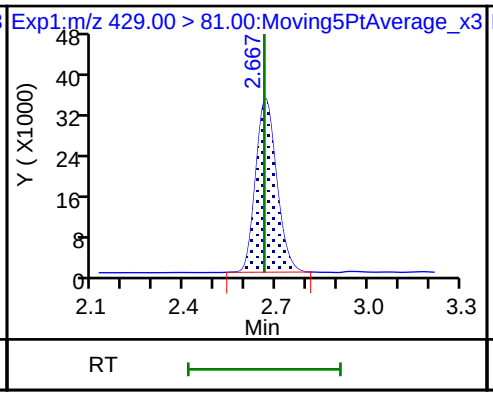
8 Perfluorohexanesulfonic acid



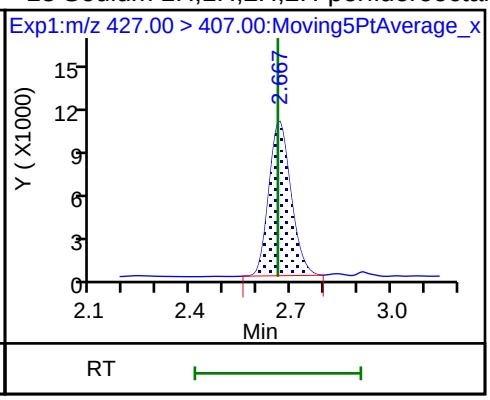
8 Perfluorohexanesulfonic acid



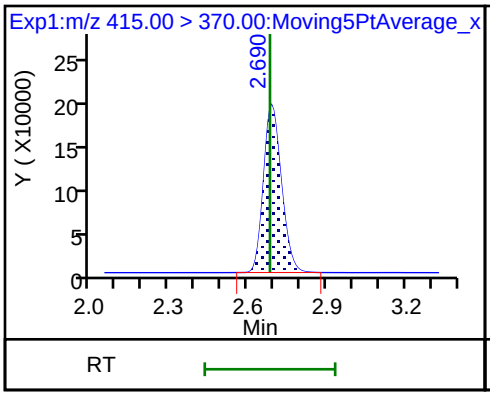
D 12 M2-6:2FTS



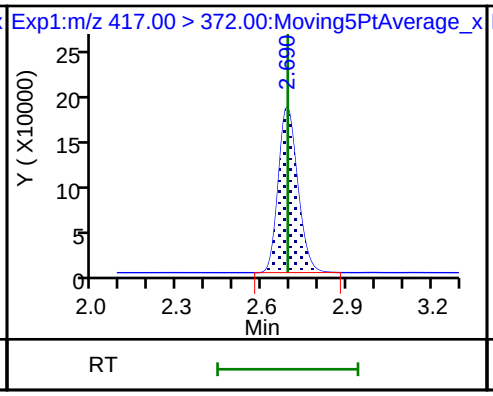
13 Sodium 1H,1H,2H,2H-perfluorooctane



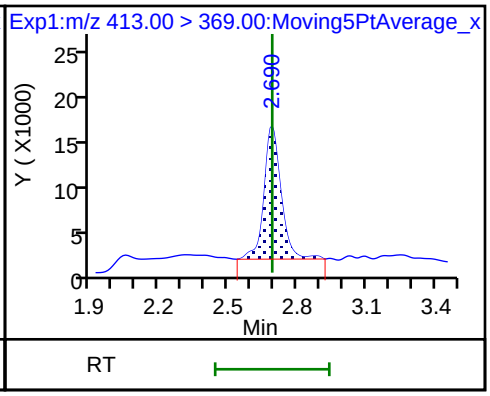
* 62 13C2-PFOA



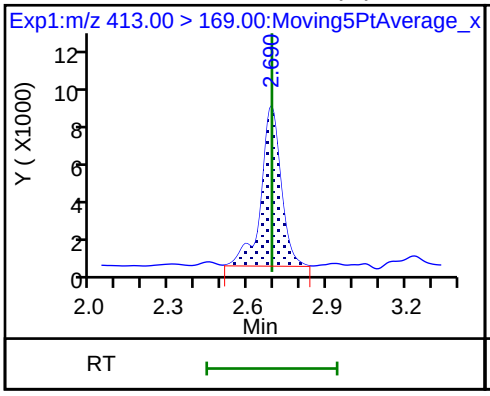
D 14 13C4 PFOA



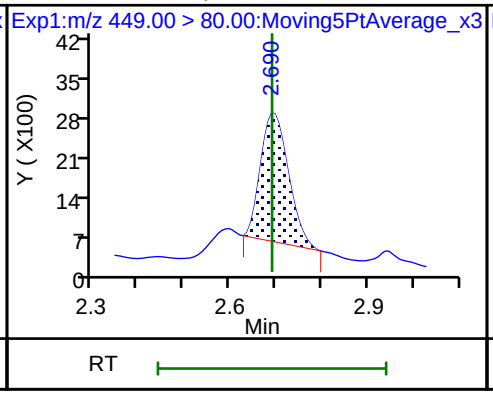
15 Perfluorooctanoic acid



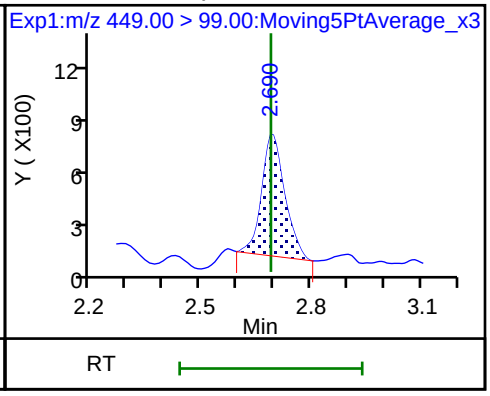
15 Perfluorooctanoic acid (M)



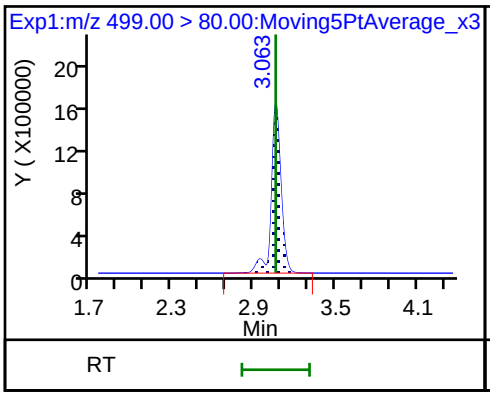
16 Perfluoroheptanesulfonic acid



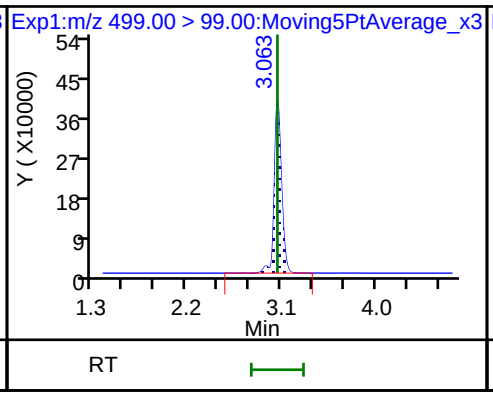
16 Perfluoroheptanesulfonic acid



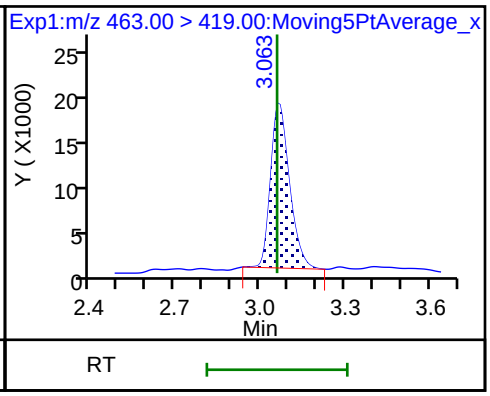
17 Perfluorooctane sulfonic acid



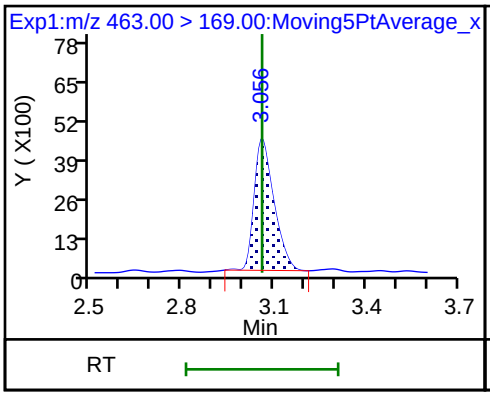
17 Perfluorooctane sulfonic acid



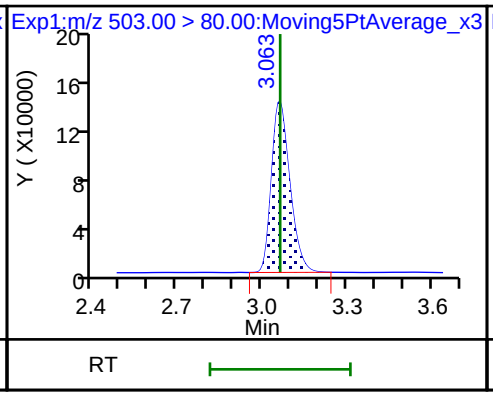
20 Perfluorononanoic acid



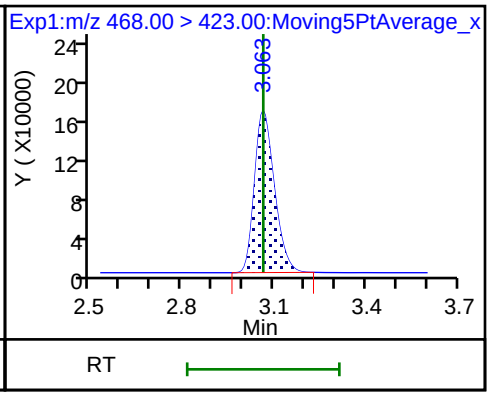
20 Perfluorononanoic acid



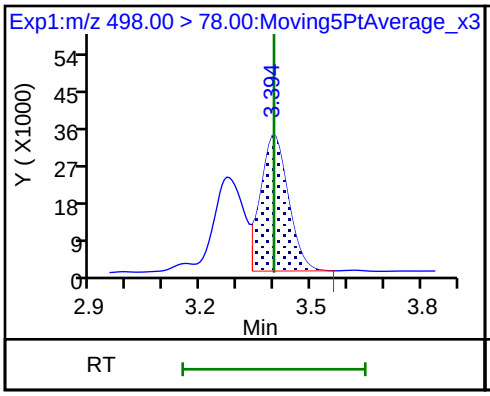
D 18 13C4 PFOS



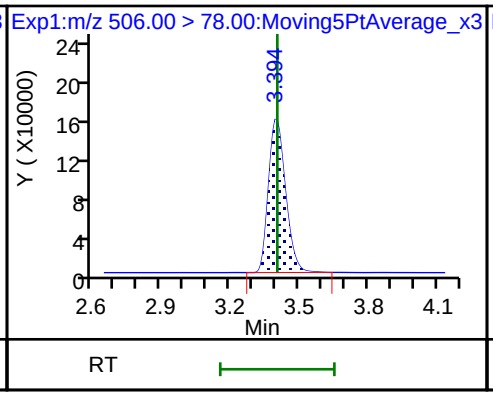
D 19 13C5 PFNA



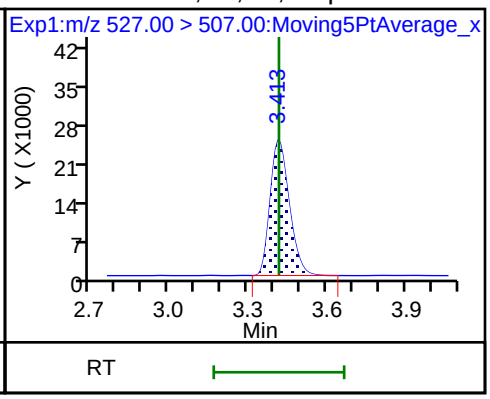
22 Perfluorooctane Sulfonamide



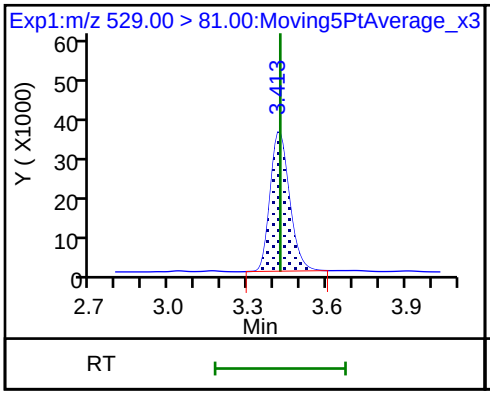
D 21 13C8 FOSA



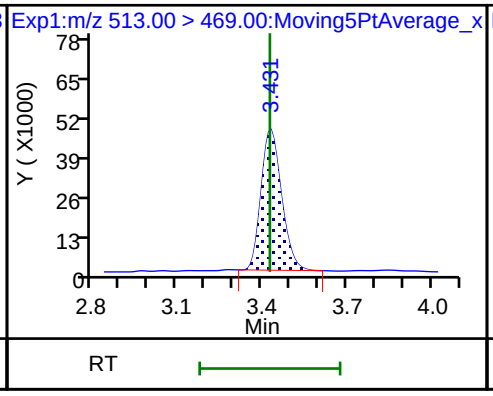
25 Sodium 1H,1H,2H,2H-perfluorodecane



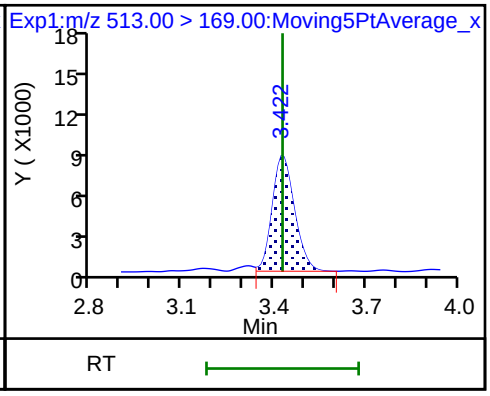
D 26 M2-8:2FTS



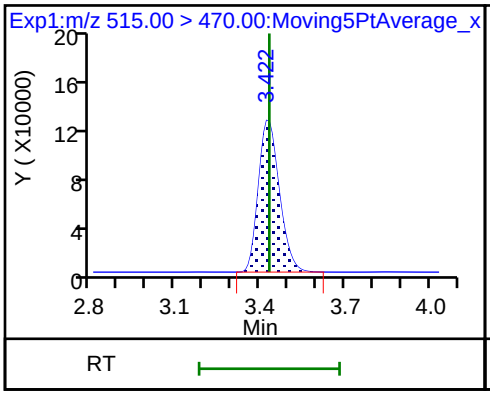
24 Perfluorodecanoic acid



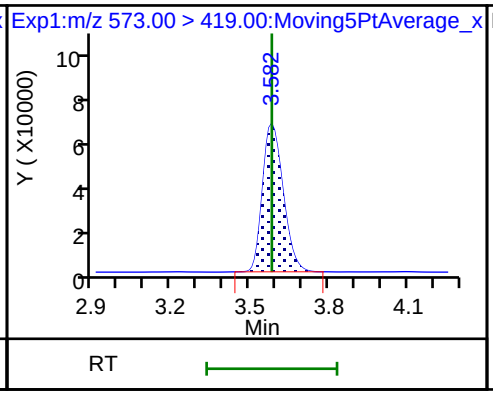
24 Perfluorodecanoic acid



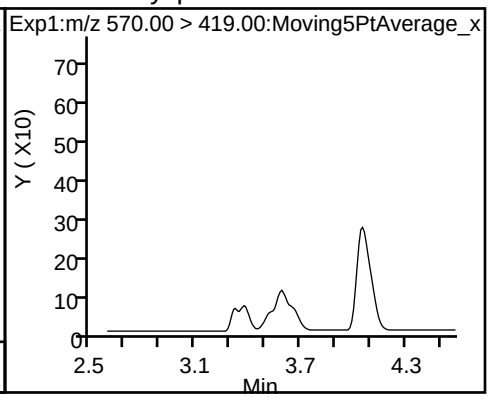
D 23 13C2 PFDA



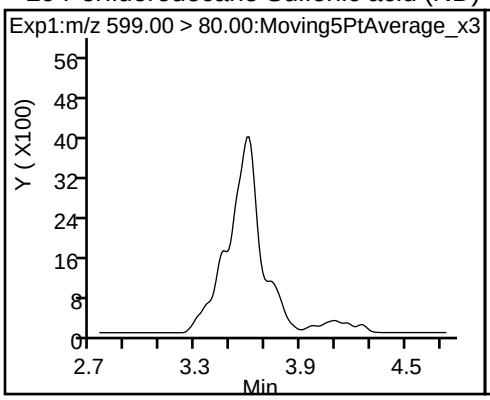
D 27 d3-NMeFOSAA



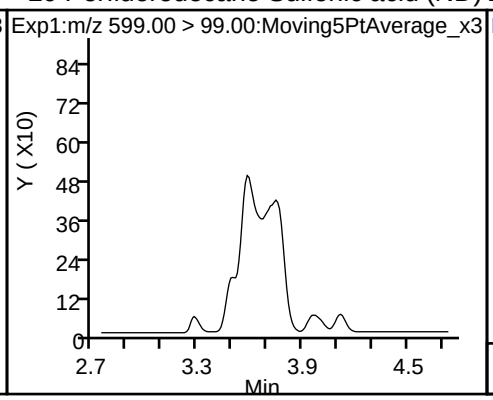
28 N-methyl perfluorooctane sulfonami (ND)



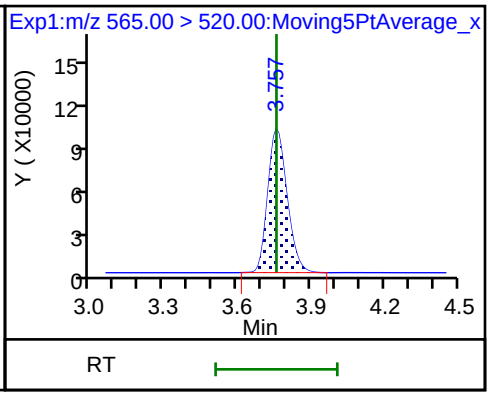
29 Perfluorodecane Sulfonic acid (ND)



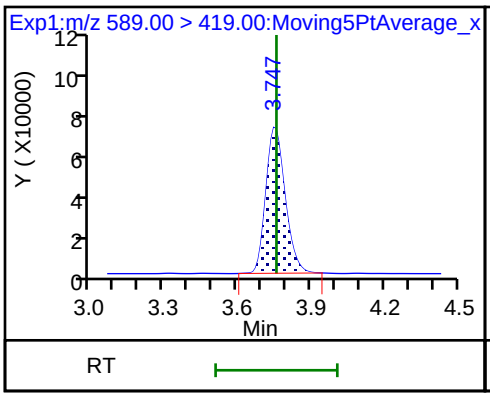
29 Perfluorodecane Sulfonic acid (ND)



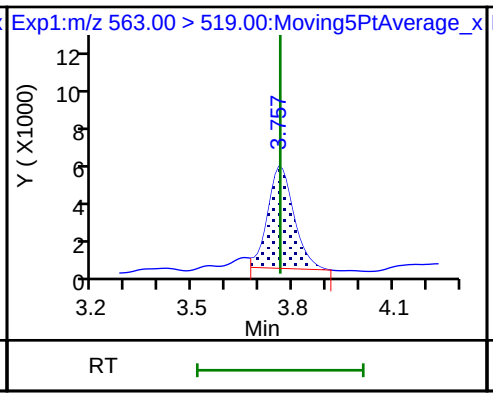
D 30 13C2 PFUnA



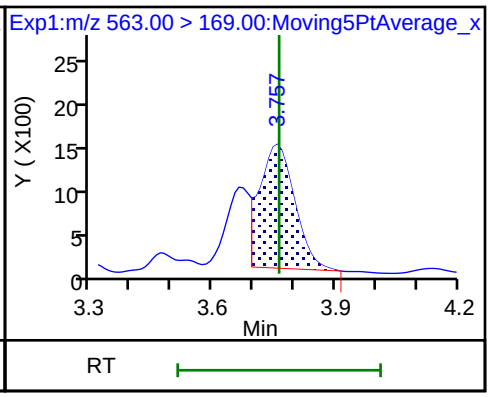
D 32 d5-NEtFOSAA



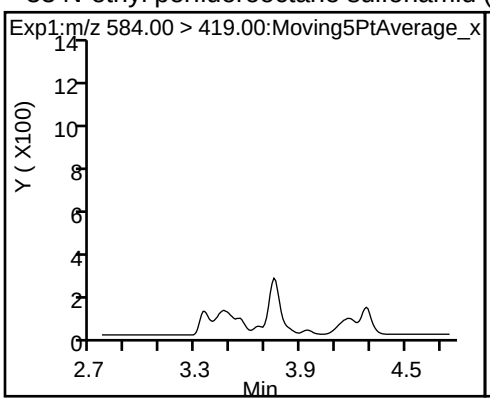
31 Perfluoroundecanoic acid



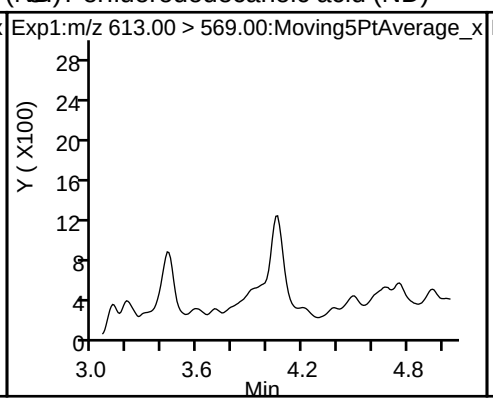
31 Perfluoroundecanoic acid



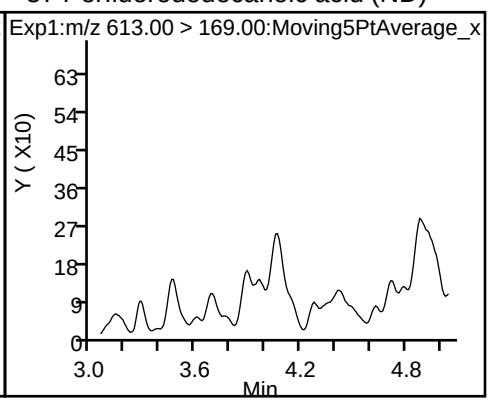
33 N-ethyl perfluorooctane sulfonamid (ND)



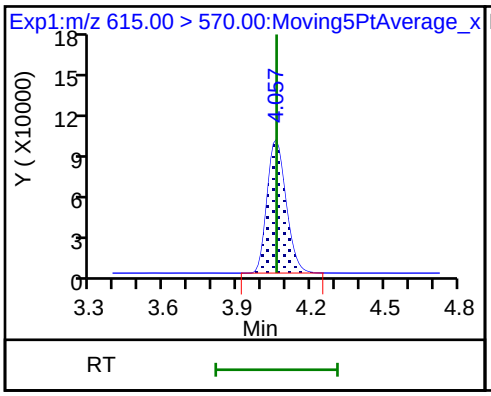
37 Perfluorododecanoic acid (ND)



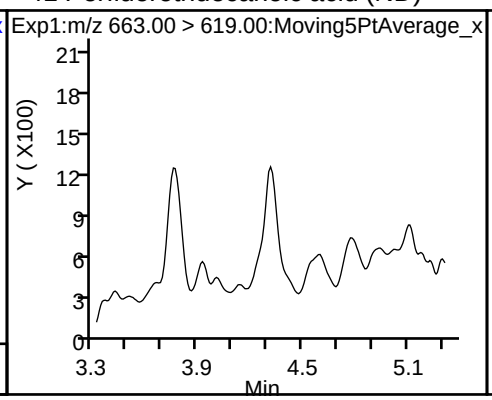
37 Perfluorododecanoic acid (ND)



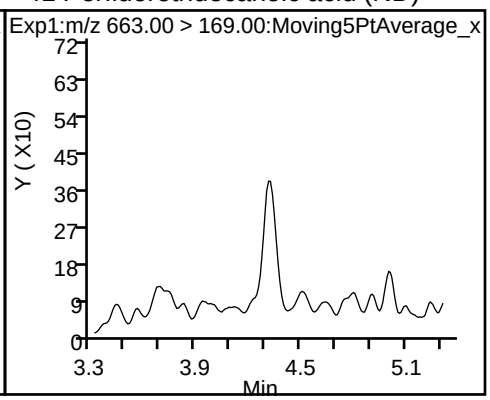
D 36 13C2 PFDoA



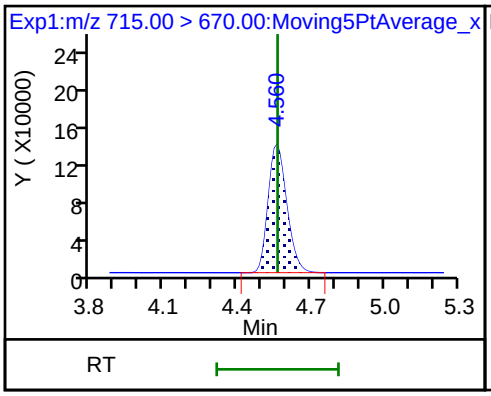
41 Perfluorotridecanoic acid (ND)



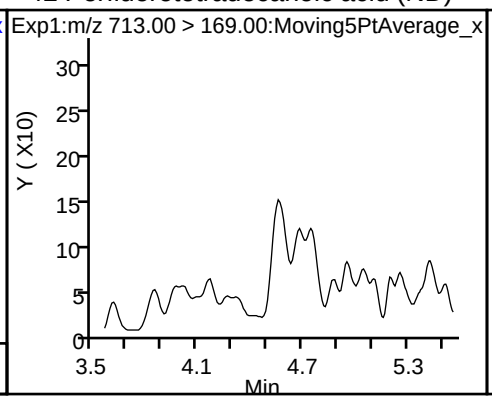
41 Perfluorotridecanoic acid (ND)



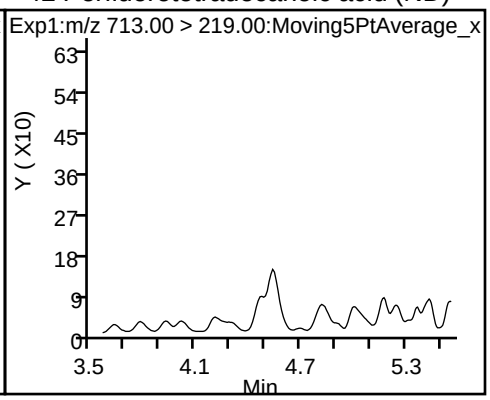
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB007(0-2) | Lab Sample ID: 320-38061-4

Matrix: Solid | Lab File ID: 2018.04.20LLC_031.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:45

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/21/2018 10:52

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 21.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00021	J	0.00025	0.000035
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00023	J	0.00025	0.000097
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00072		0.00025	0.000053
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00020	J	0.00025	0.000036
335-67-1	Perfluorooctanoic acid (PFOA)	0.00068		0.00025	0.00011
375-95-1	Perfluorononanoic acid (PFNA)	0.00038		0.00025	0.000045
335-76-2	Perfluorodecanoic acid (PFDA)	0.00021	J	0.00025	0.000028
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00066		0.00025	0.000045
307-55-1	Perfluorododecanoic acid (PFDoA)	0.0015		0.00025	0.000084
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.018		0.00025	0.000064
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.0019		0.00025	0.000068
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000031	U	0.00025	0.000031
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00037		0.00025	0.000039
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000044	U	0.00025	0.000044
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.0025		0.00063	0.00025
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000049	U	0.00025	0.000049
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.0045		0.00025	0.00010
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00049	U	0.0025	0.00049
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00046	U	0.0025	0.00046
27619-97-2	6:2FTS	0.0091		0.0025	0.00019
39108-34-4	8:2FTS	0.023		0.0025	0.00031

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB007(0-2) | Lab Sample ID: 320-38061-4

Matrix: Solid | Lab File ID: 2018.04.20LLC_031.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:45

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/21/2018 10:52

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 21.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	90		25-150
STL01893	13C5 PFPeA	97		25-150
STL00993	13C2 PFHxA	88		25-150
STL01892	13C4-PFHpA	100		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	106		25-150
STL00997	13C2 PFUnA	95		25-150
STL00998	13C2 PFDoA	84		25-150
STL02116	13C2-PFTeDA	72		25-150
STL02337	13C3-PFBS	96		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	97		25-150
STL01056	13C8 FOSA	87		25-150
STL02118	d3-NMeFOSAA	100		25-150
STL02117	d5-NEtFOSAA	114		25-150
STL02279	M2-6:2FTS	218	*	25-150
STL02280	M2-8:2FTS	204	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d
Lims ID: 320-38061-A-4-A
Client ID: SB007(0-2)
Sample Type: Client
Inject. Date: 21-Apr-2018 10:52:40 ALS Bottle#: 23 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-4-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:33:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	5738796	2.25		89.9	33408	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.000	174896	0.0821			8.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.701	0.001	0.559	3972195	2.41		96.6	29389	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.702	1.703	-0.001	1.000	169912	0.0897			11.2	M
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.738	-0.009	1.000	83953	2.22		95.7	165	
5 Perfluorobutanesulfonic acid										RM
298.90 > 80.00	1.747	1.739	0.008	1.010	30395	0.0108			11.2	RM
298.90 > 99.00	1.738	1.739	-0.001	1.005	7351		4.13(1.25-3.74)		7.8	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.980	0.001	1.000	3983950	2.19		87.6	71748	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.990	-0.009	1.000	467549	0.2887			137	
313.00 > 119.00	1.981	1.990	-0.009	1.000	41711		11.21(5.03-15.10)		194	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.318	0.002	1.000	138772	0.0779			56.1	
363.00 > 169.00	2.307	2.318	-0.011	0.994	57627		2.41(1.13-3.40)		244	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.319	0.001	1.000	4446803	2.51		100	62295	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.331	-0.011	0.994	351967	0.1480			160	
399.00 > 99.00	2.320	2.331	-0.011	0.994	114694		3.07(1.50-4.49)		181	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.332	0.001	1.000	4968251	2.27		96.1	76310	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.652	0.001	1.000	1966941	5.19		218	4345	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.658	-0.005	1.000	5073187	3.62			15613	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.681	-0.006		4742124	2.50			70151	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.681	-0.006	1.000	576011	0.2727			196	
413.00 > 169.00	2.675	2.681	-0.006	1.000	323738		1.78(0.84-2.52)		767	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.682	-0.007	1.000	4569692	2.60		104	67528	
16 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	2.675	2.688	-0.013	1.000	23750	0.0120			12.2	
449.00 > 99.00	2.683	2.688	-0.005	1.003	6575		3.61(1.94-5.82)		17.1	M
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.043	3.054	-0.011	1.000	1584402	0.9767			1342	M
499.00 > 99.00	3.043	3.054	-0.011	1.000	356970		4.44(2.31-6.93)		1234	
20 Perfluorononanoic acid										M
463.00 > 419.00	3.050	3.054	-0.004	1.002	250221	0.1504			202	M
463.00 > 169.00	3.043	3.054	-0.011	1.000	61529		4.07(1.90-5.69)		779	M
D 19 13C5 PFNA										
468.00 > 423.00	3.043	3.055	-0.012	1.000	3989255	2.64		106	58333	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.055	-0.012	1.000	3563849	2.33		97.5	6402	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.385	3.391	-0.006	1.000	2971151	1.78			300	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.393	-0.008	1.000	4132361	2.16		86.5	1160	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.404	3.410	-0.006	1.000	10882591	9.24			259240	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.411	-0.007	1.000	2228130	4.88		204	4838	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.413	3.419	-0.006	1.000	115041	0.0825			101	
513.00 > 169.00	3.413	3.419	-0.006	1.000	23002		5.00(2.36-7.09)		236	
D 23 13C2 PFDA										
515.00 > 470.00	3.413	3.420	-0.007	1.000	3381242	2.66		106	61509	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.569	-0.007	1.000	1794375	2.49		99.6	17896	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.726	3.732	-0.006	1.000	15696	0.0162			25.8	
599.00 > 99.00	3.726	3.732	-0.006	1.000	7542		2.08(1.39-4.16)		74.2	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.743	-0.006	1.000	2033507	2.86		114	20483	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.753	-0.016	1.000	231678	0.2642			299	
563.00 > 169.00	3.737	3.753	-0.016	1.000	55016		4.21(2.12-6.36)		1217	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.737	3.753	-0.016	1.000	36764	0.0484			75.0	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.754	-0.017	1.000	2594390	2.37		94.6	60219	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.036	4.042	-0.006	1.000	624694	0.6015			398	
613.00 > 169.00	4.036	4.042	-0.006	1.000	150910		4.14(2.13-6.40)		931	
D 36 13C2 PFDoA										
615.00 > 570.00	4.036	4.042	-0.006	1.000	2489647	2.10		84.1	28164	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.297	4.301	-0.004	1.000	8834320	7.30			5511	
663.00 > 169.00	4.297	4.301	-0.004	1.000	2838763		3.11(1.25-3.76)		14512	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.540	4.547	-0.007	1.000	209860	0.7707			1175	
713.00 > 219.00	4.530	4.547	-0.017	0.998	159888		1.31(0.71-2.13)		1054	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.540	4.548	-0.008	1.000	2710417	1.81		72.2	21902	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:42:11 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d

Injection Date: 21-Apr-2018 10:52:40 Instrument ID: A8_N

Lims ID: 320-38061-A-4-A Lab Sample ID: 320-38061-4

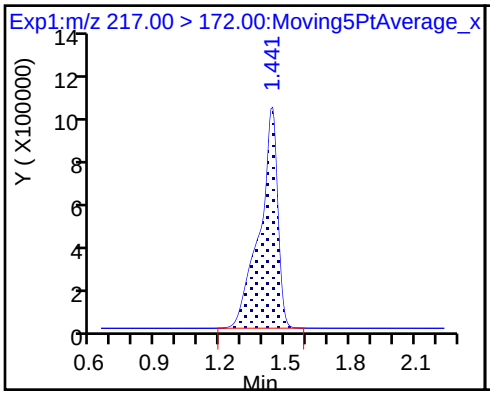
Client ID: SB007(0-2)

Operator ID: SACINSTLCMS01 ALS Bottle#: 23 Worklist Smp#: 9

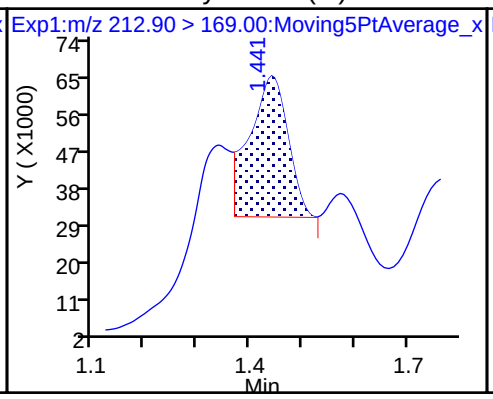
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

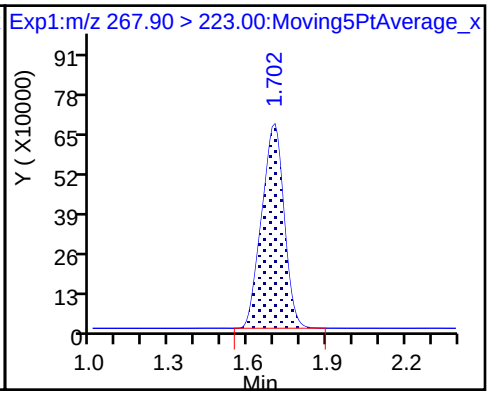
D 1 13C4 PFBA



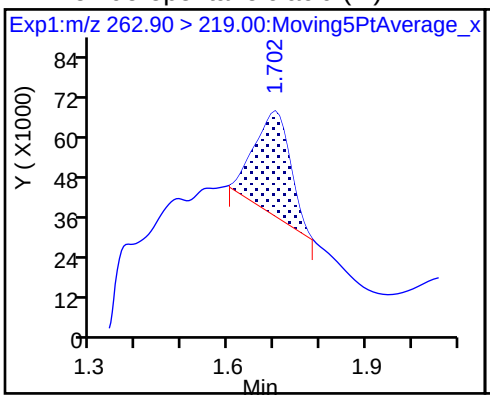
2 Perfluorobutyric acid (M)



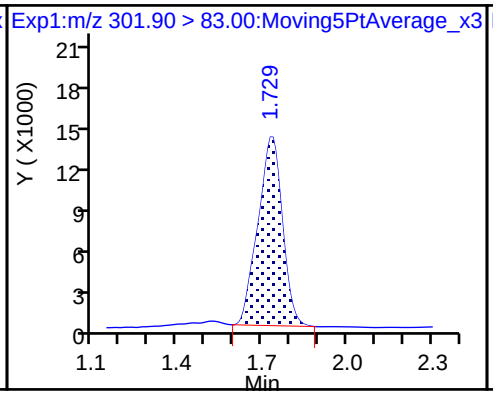
D 3 13C5-PFPeA



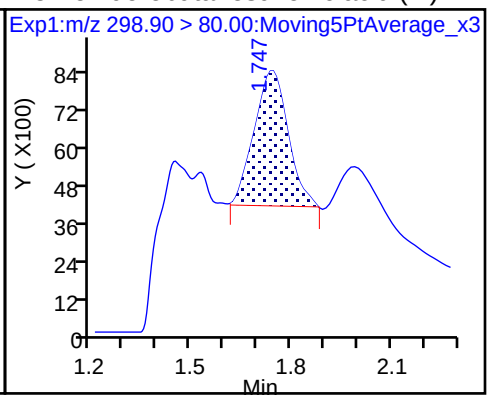
4 Perfluoropentanoic acid (M)



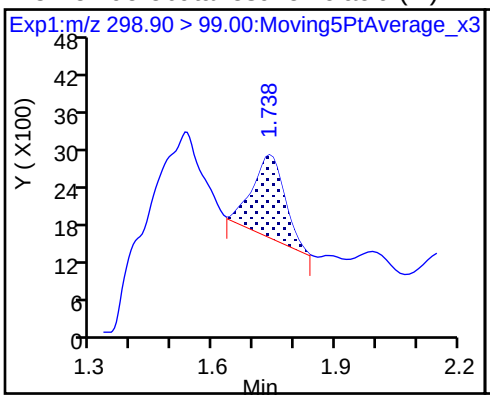
D 47 13C3-PFBS



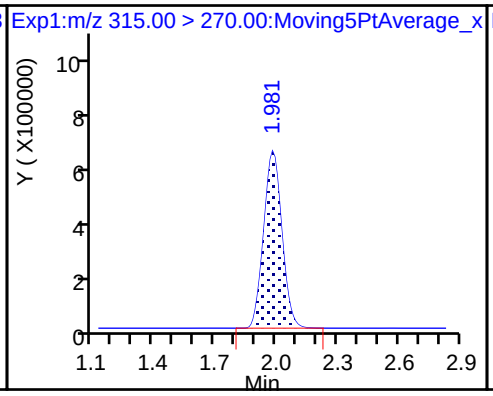
5 Perfluorobutanesulfonic acid (M)



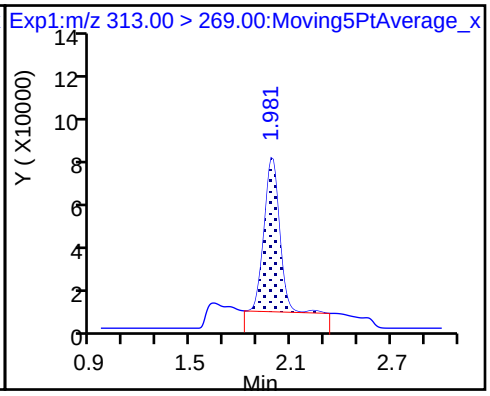
5 Perfluorobutanesulfonic acid (M)



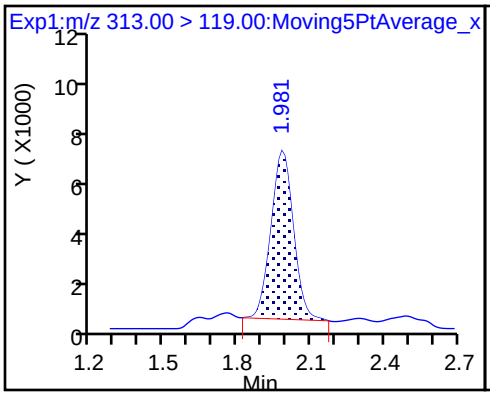
D 7 13C2 PFHxA



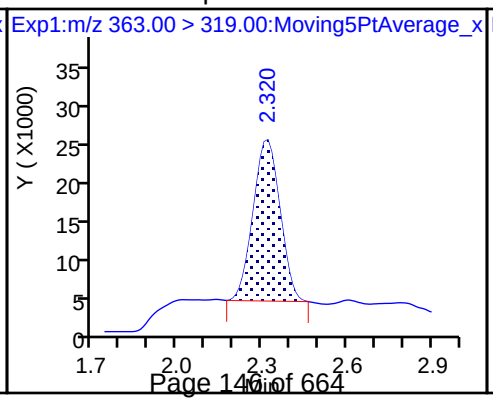
6 Perfluorohexanoic acid



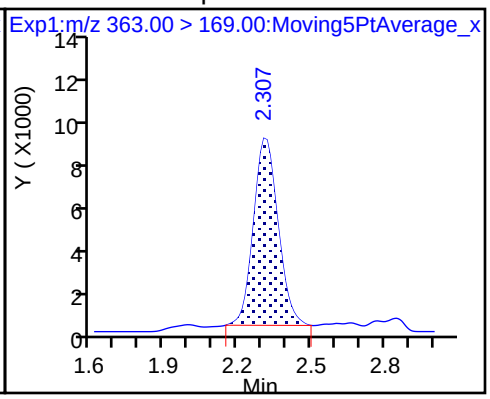
6 Perfluorohexanoic acid



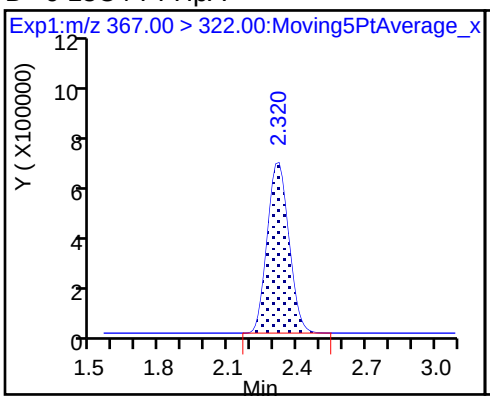
10 Perfluoroheptanoic acid



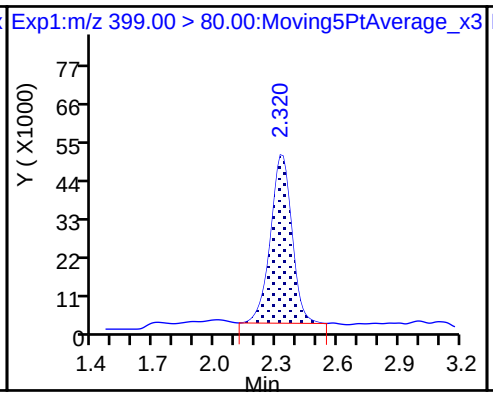
10 Perfluoroheptanoic acid



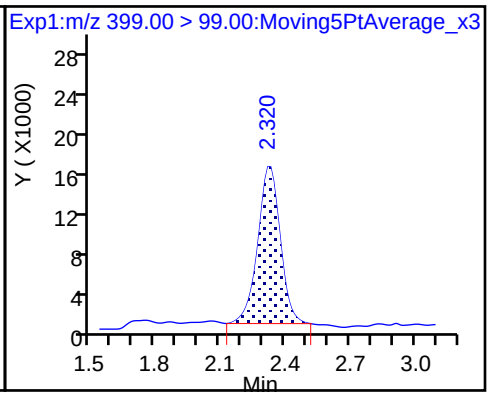
D 9 13C4-PFHpA



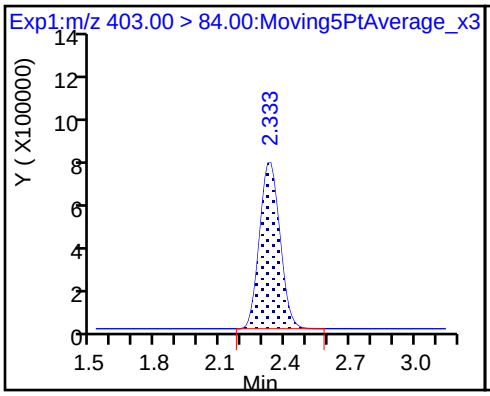
8 Perfluorohexanesulfonic acid



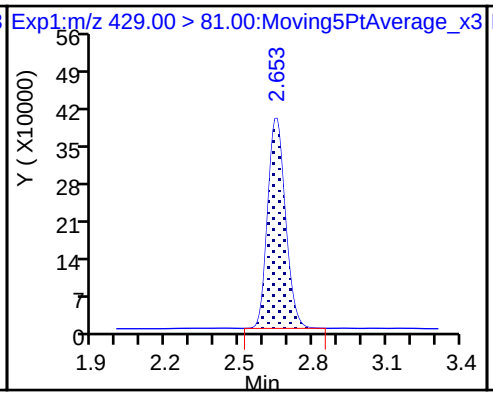
8 Perfluorohexanesulfonic acid



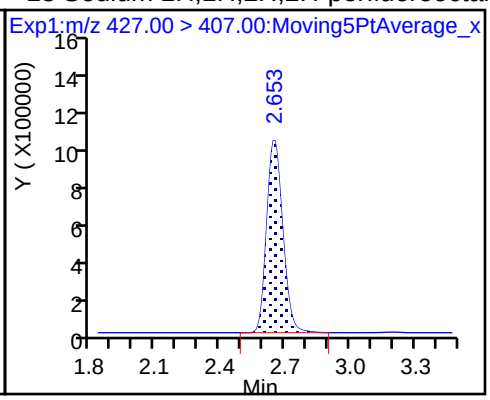
D 11 18O2 PFHxS



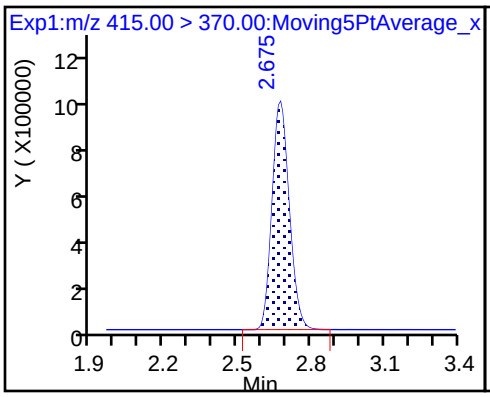
D 12 M2-6:2FTS



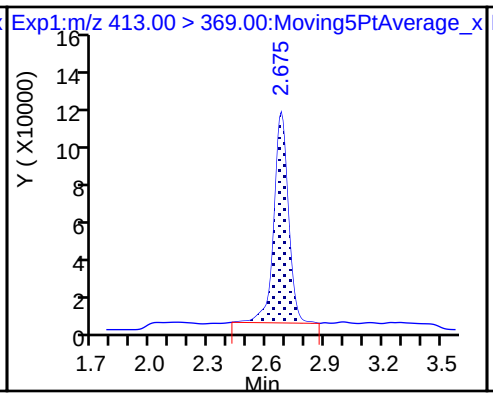
13 Sodium 1H,1H,2H,2H-perfluorooctane



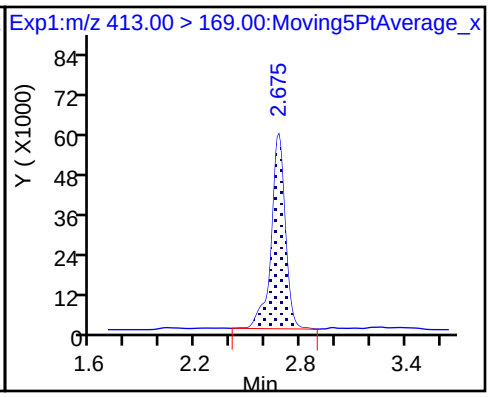
* 62 13C2-PFOA



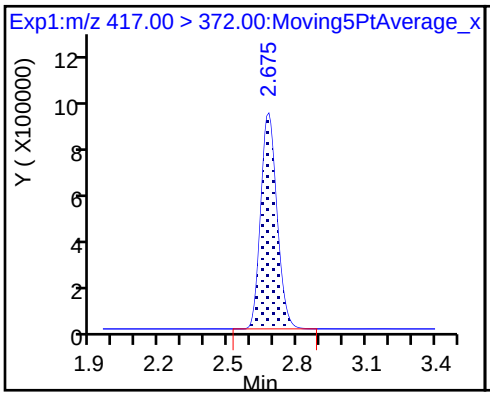
15 Perfluorooctanoic acid



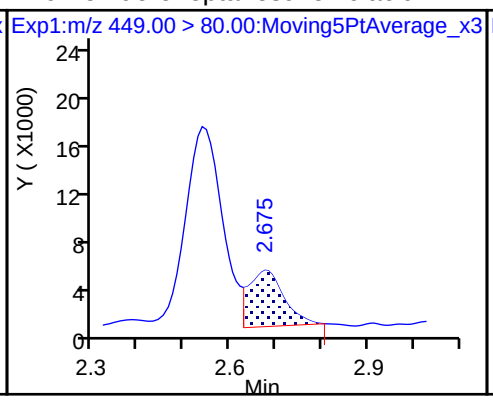
15 Perfluorooctanoic acid



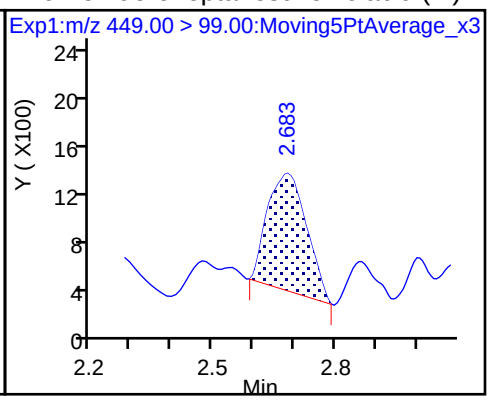
D 14 13C4 PFOA



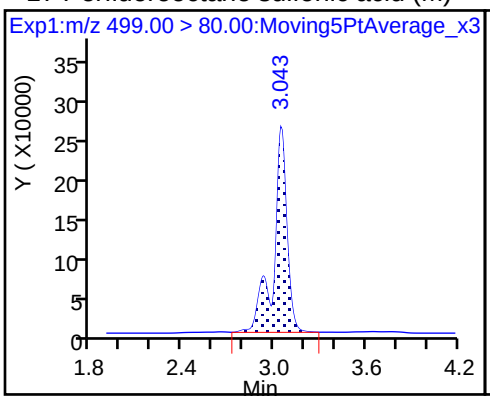
16 Perfluoroheptanesulfonic acid



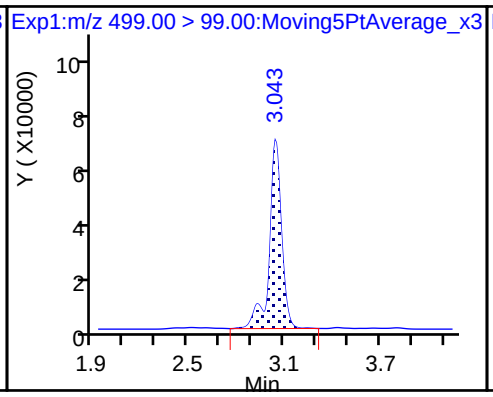
16 Perfluoroheptanesulfonic acid (M)



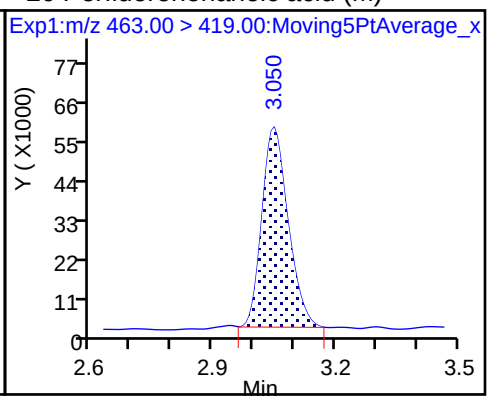
17 Perfluorooctane sulfonic acid (M)



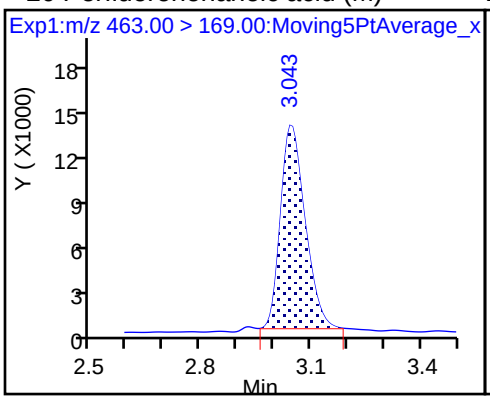
17 Perfluorooctane sulfonic acid



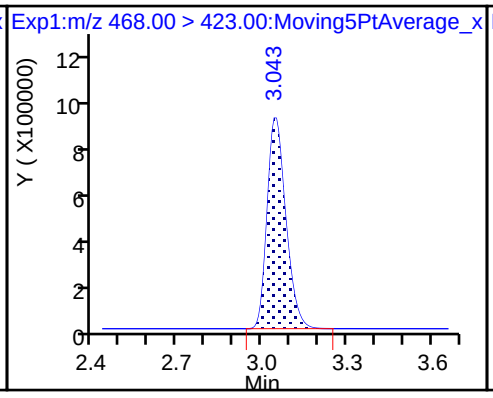
20 Perfluorononanoic acid (M)



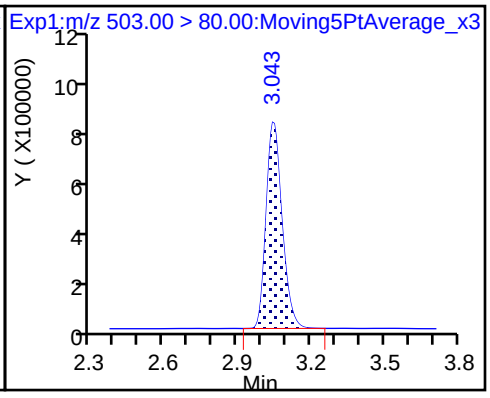
20 Perfluorononanoic acid (M)



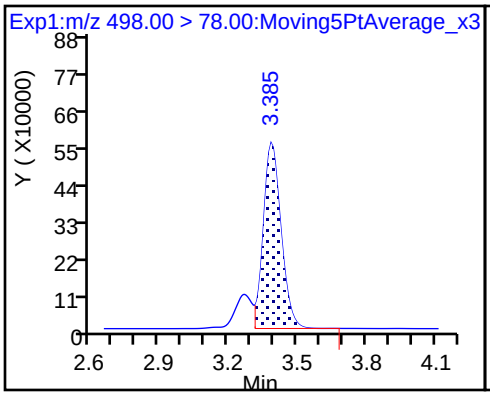
D 19 13C5 PFNA



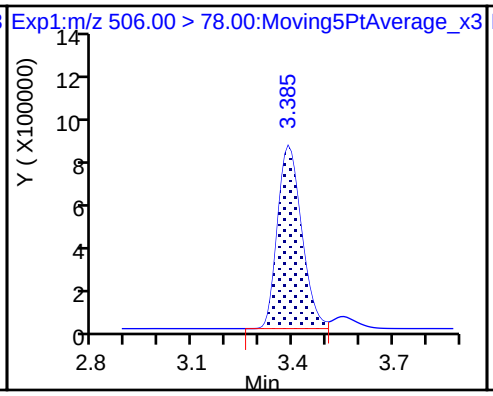
D 18 13C4 PFOS



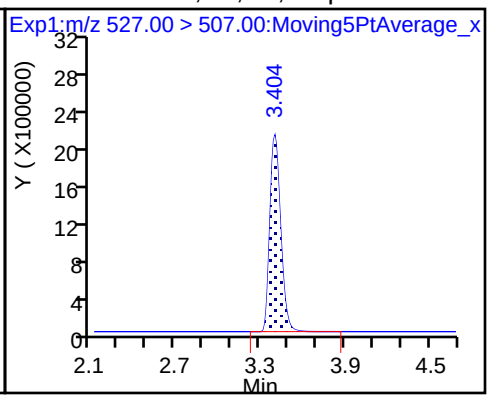
22 Perfluorooctane Sulfonamide



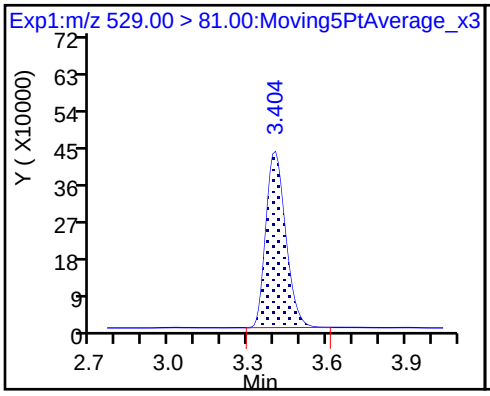
D 21 13C8 FOSA



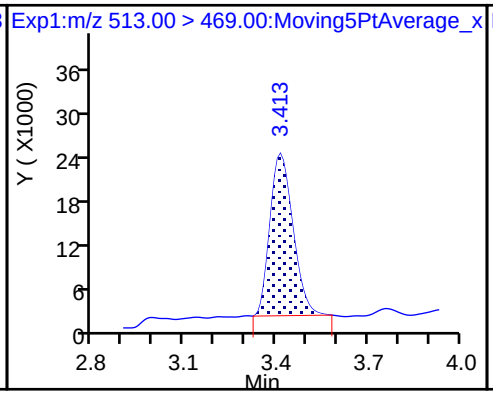
25 Sodium 1H,1H,2H,2H-perfluorodecane



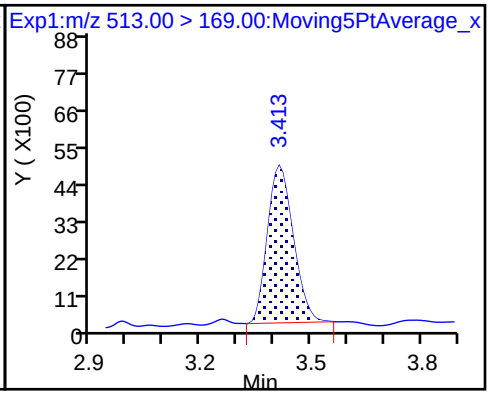
D 26 M2-8:2FTS



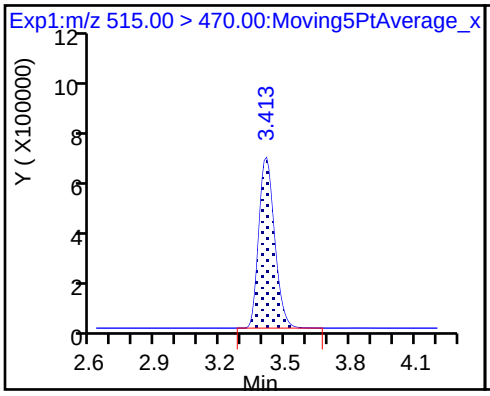
24 Perfluorodecanoic acid



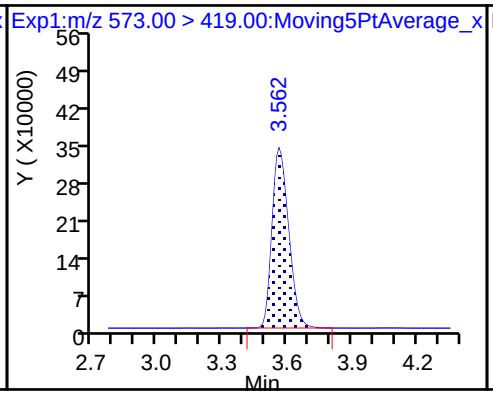
24 Perfluorodecanoic acid



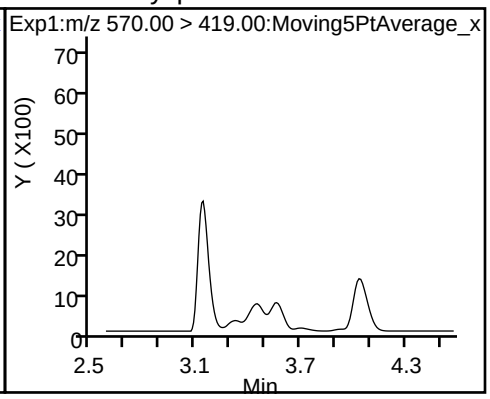
D 23 13C2 PFDA



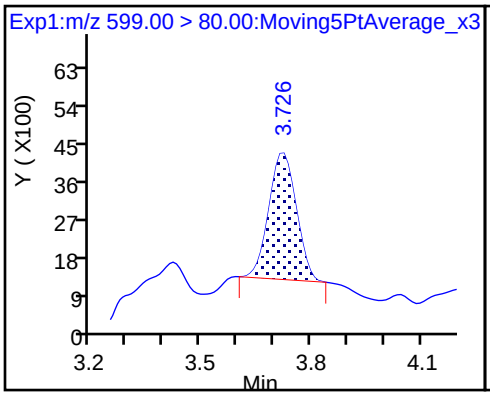
D 27 d3-NMeFOSAA



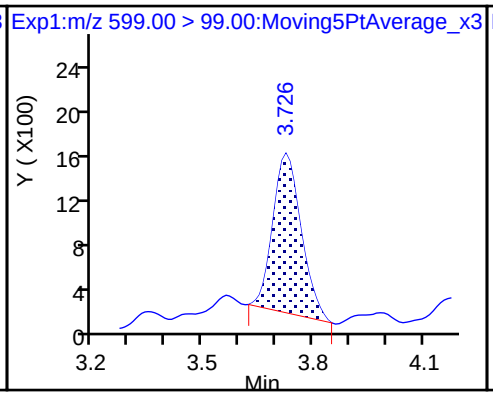
28 N-methyl perfluorooctane sulfonami (ND)



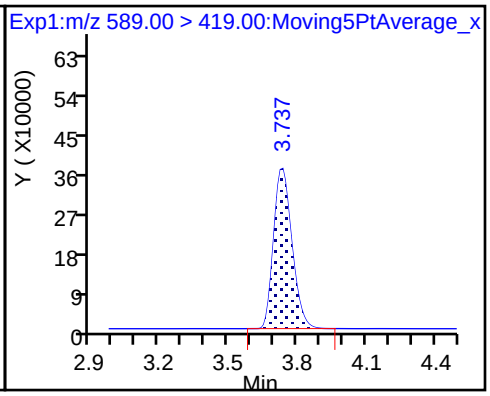
29 Perfluorodecane Sulfonic acid



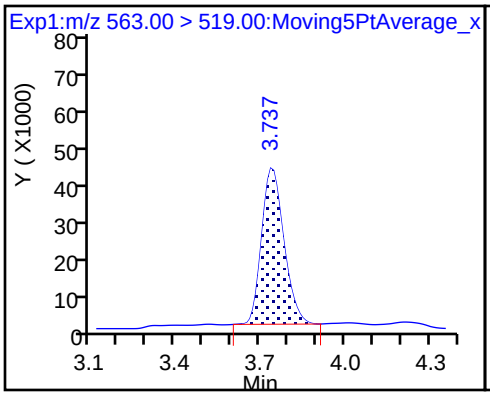
29 Perfluorodecane Sulfonic acid



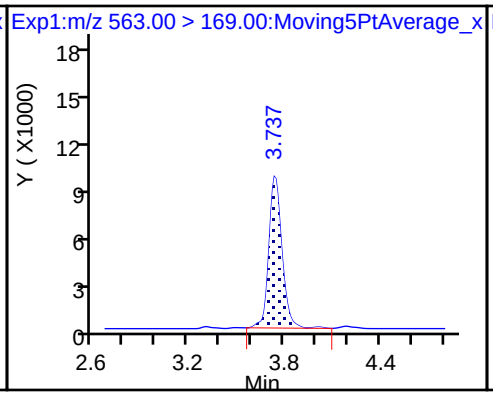
D 32 d5-NEtFOSAA



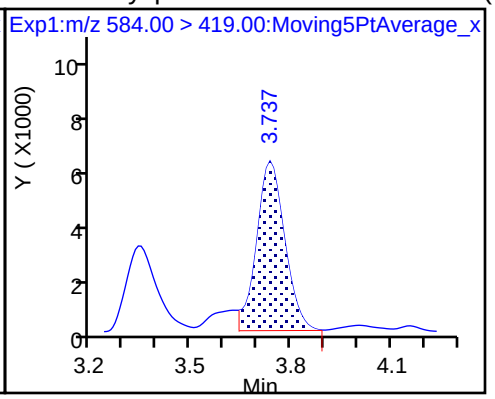
31 Perfluoroundecanoic acid



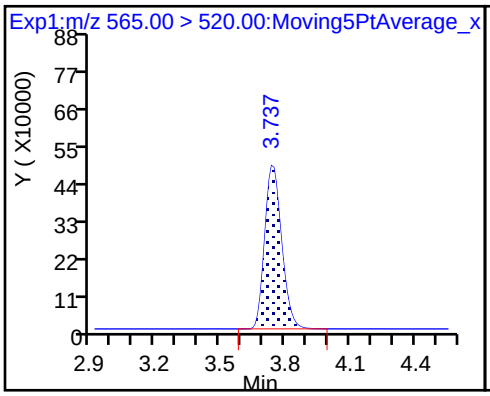
31 Perfluoroundecanoic acid



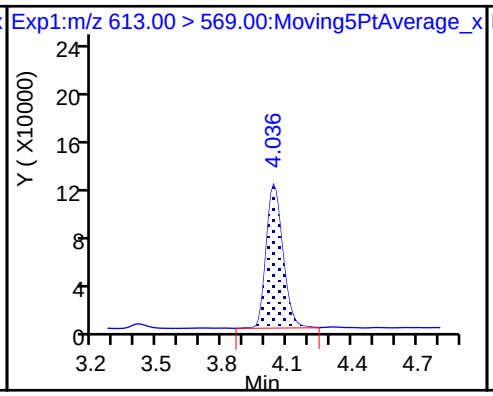
33 N-ethyl perfluorooctane sulfonamid (M)



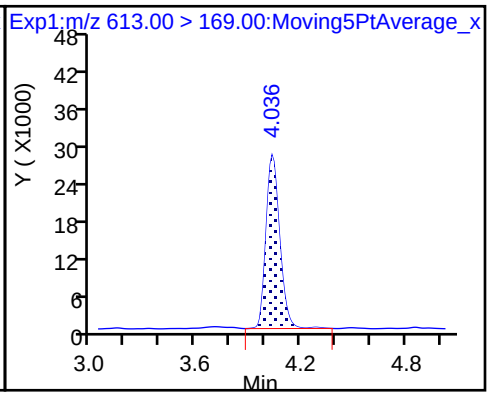
D 30 13C2 PFUnA



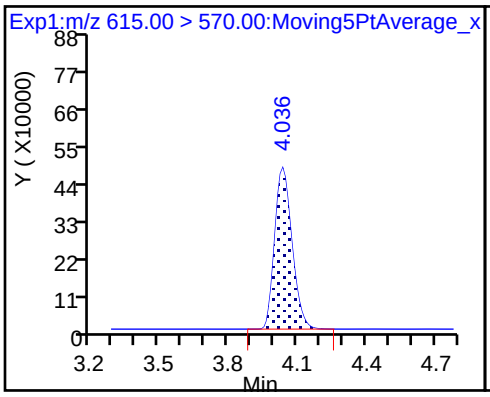
37 Perfluorododecanoic acid



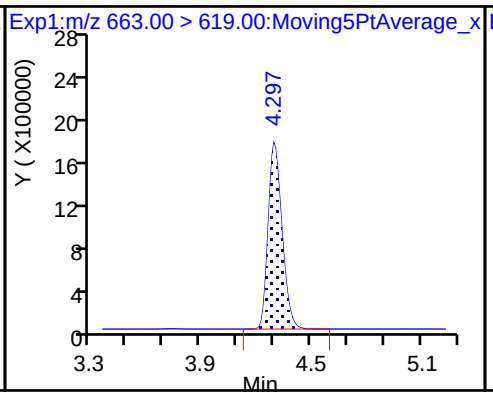
37 Perfluorododecanoic acid



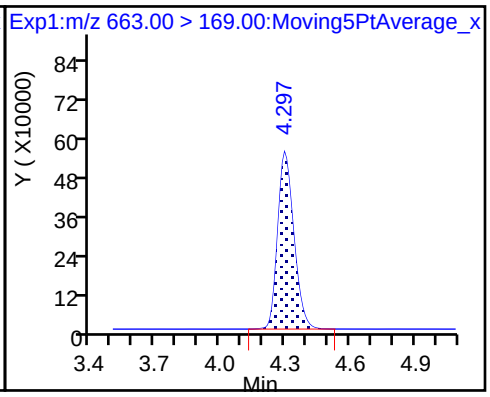
D 36 13C2 PFDoA



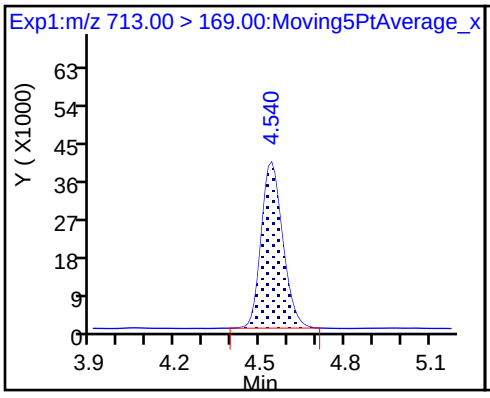
41 Perfluorotridecanoic acid



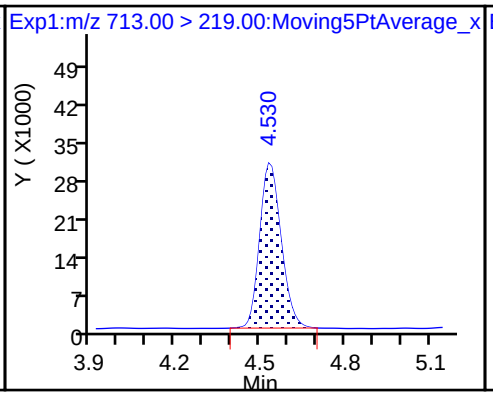
41 Perfluorotridecanoic acid



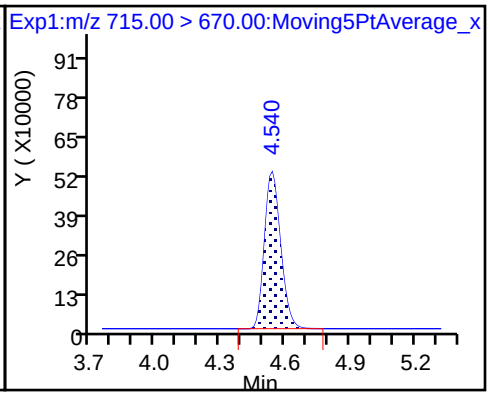
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

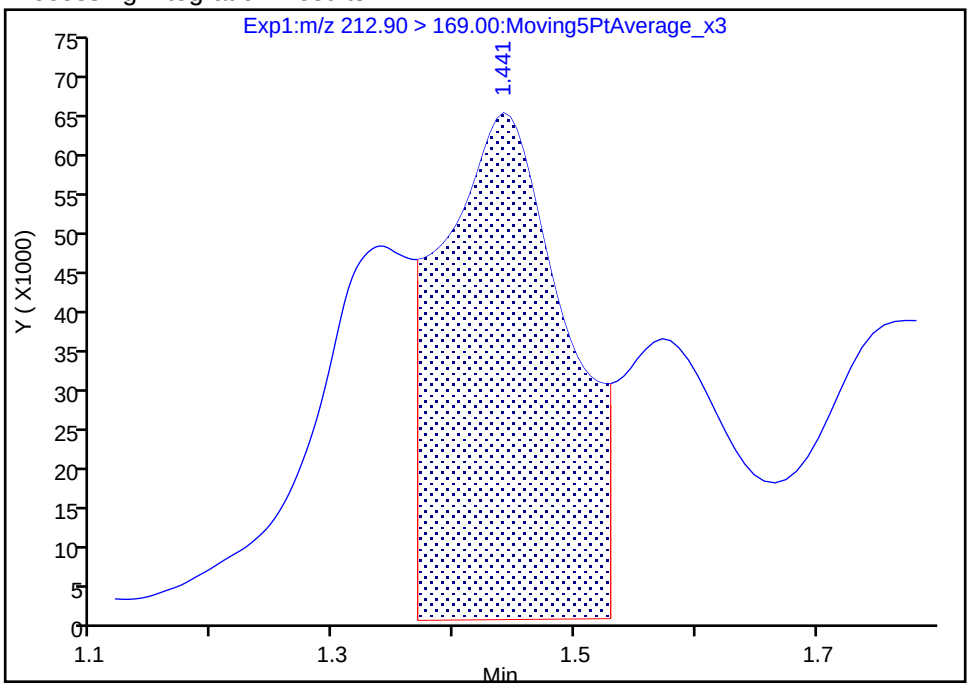
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

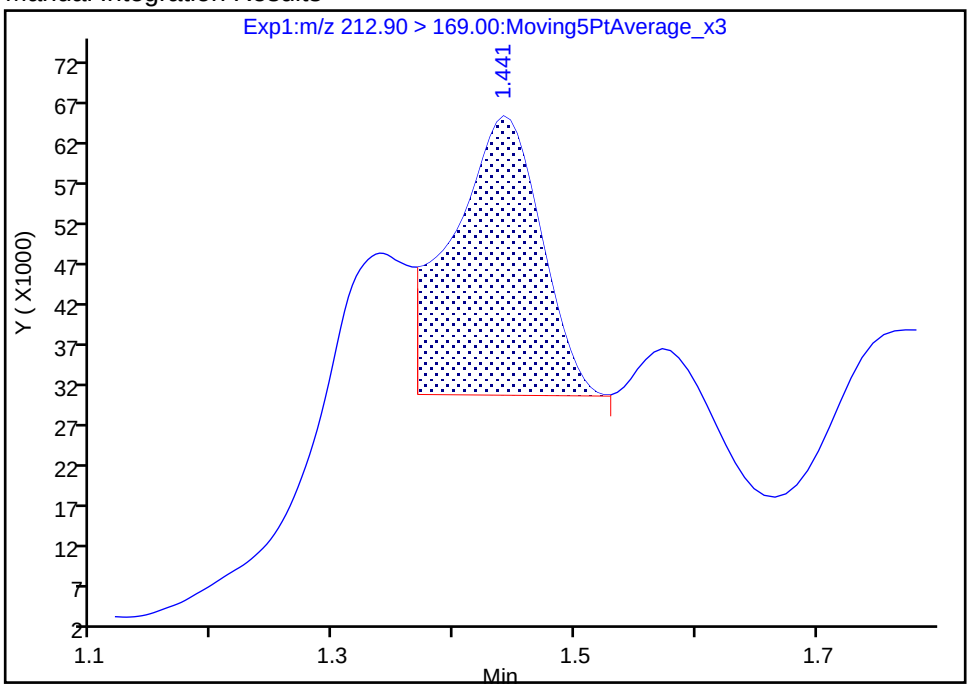
Processing Integration Results

RT: 1.44
Area: 463316
Amount: 0.217363
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 174896
Amount: 0.082052
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:30:29

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

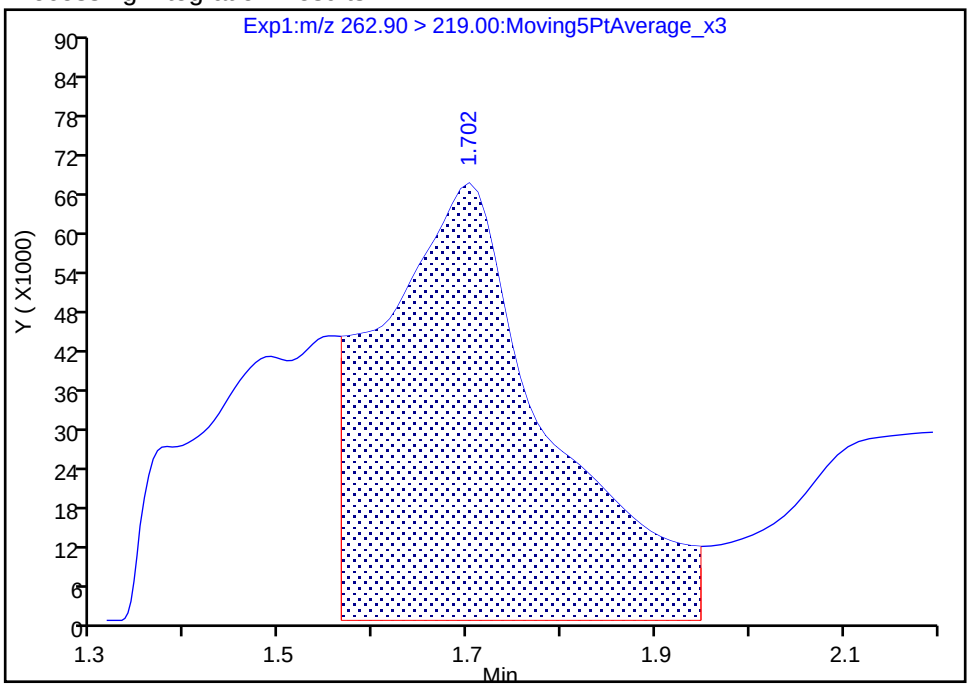
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

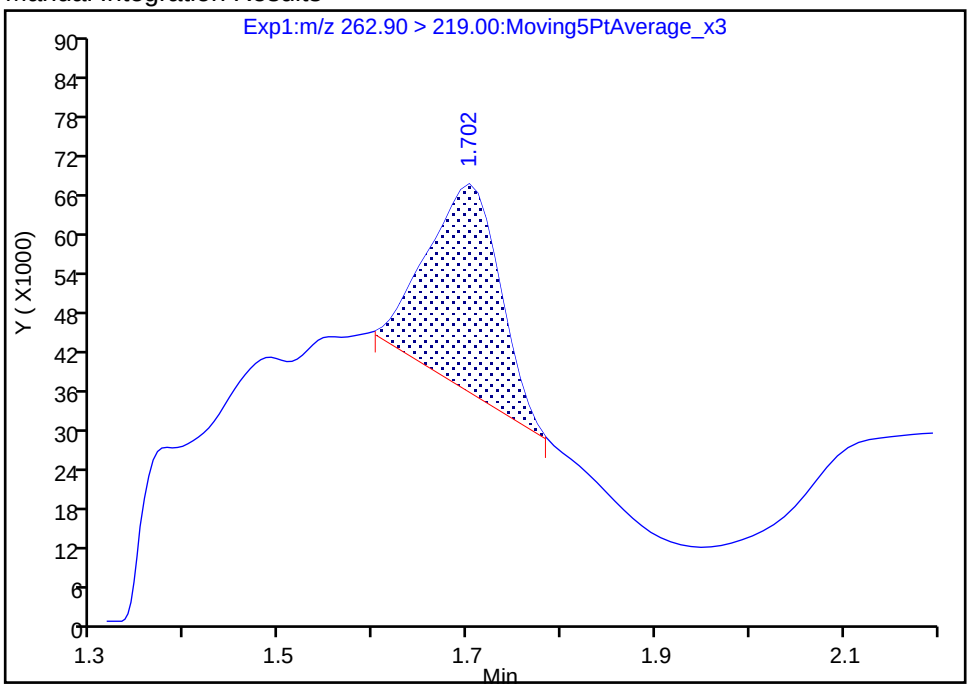
Processing Integration Results

RT: 1.70
Area: 835288
Amount: 0.441116
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 169912
Amount: 0.089731
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:30:45

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

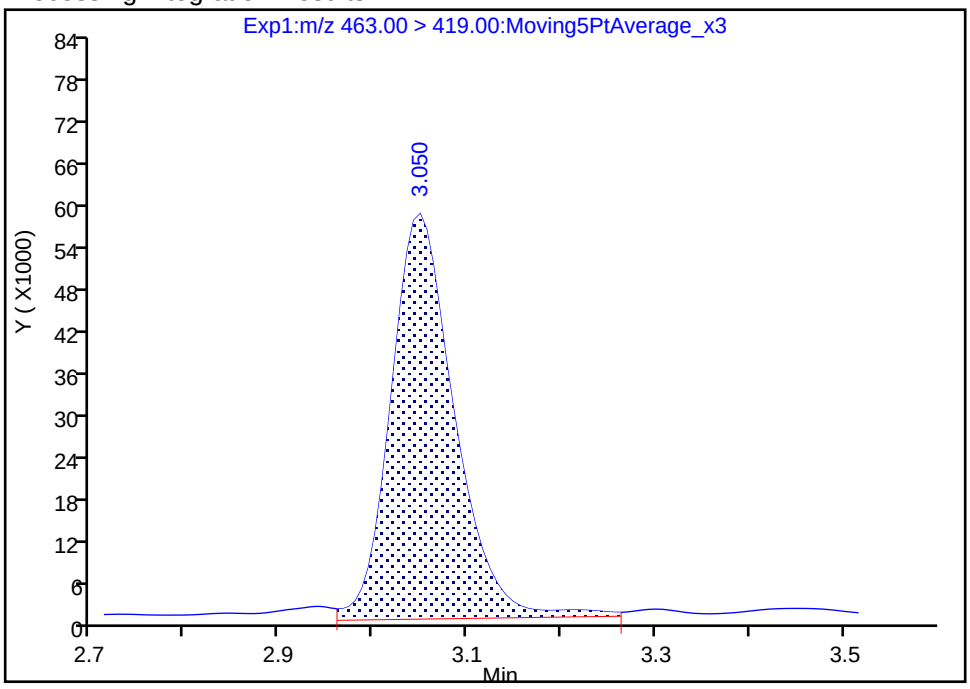
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

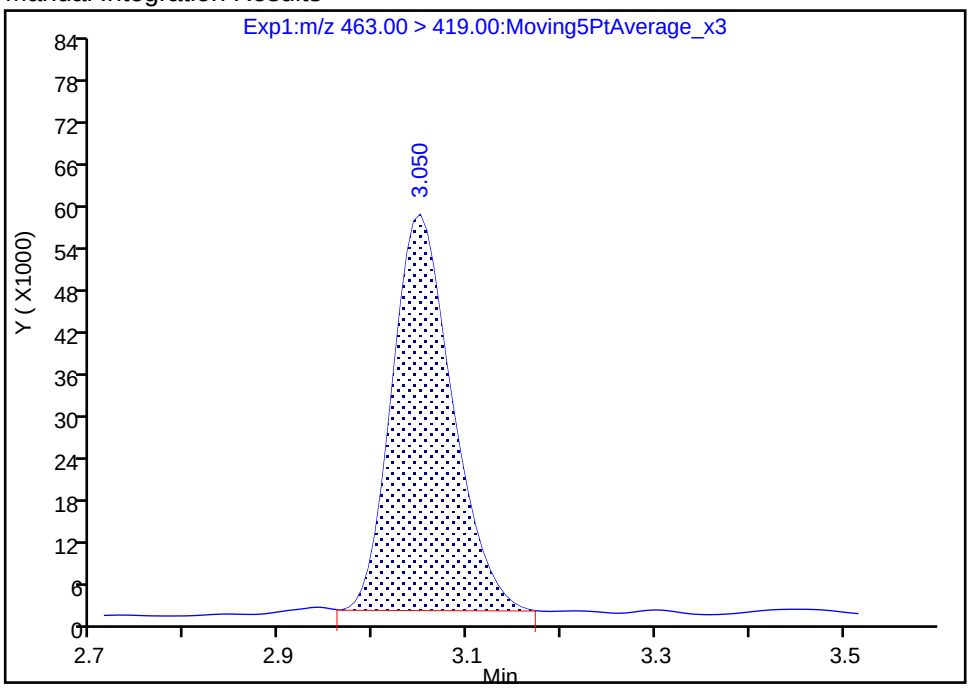
Processing Integration Results

RT: 3.05
Area: 271384
Amount: 0.163105
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 250221
Amount: 0.150386
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:32:10

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

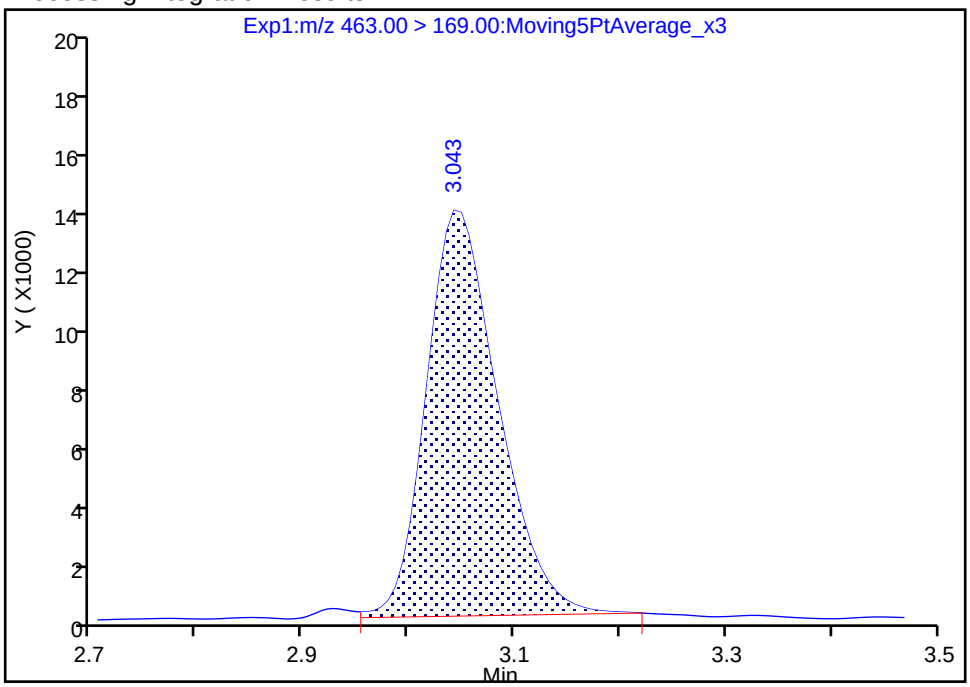
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

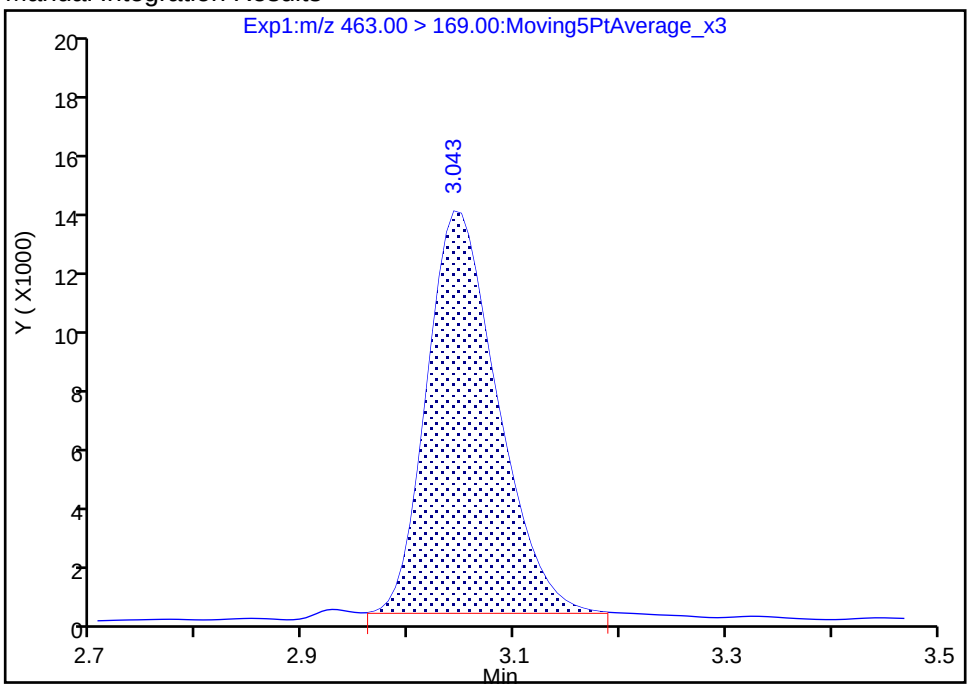
Processing Integration Results

RT: 3.04
Area: 63097
Amount: 0.163105
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 61529
Amount: 0.150386
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:32:20

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

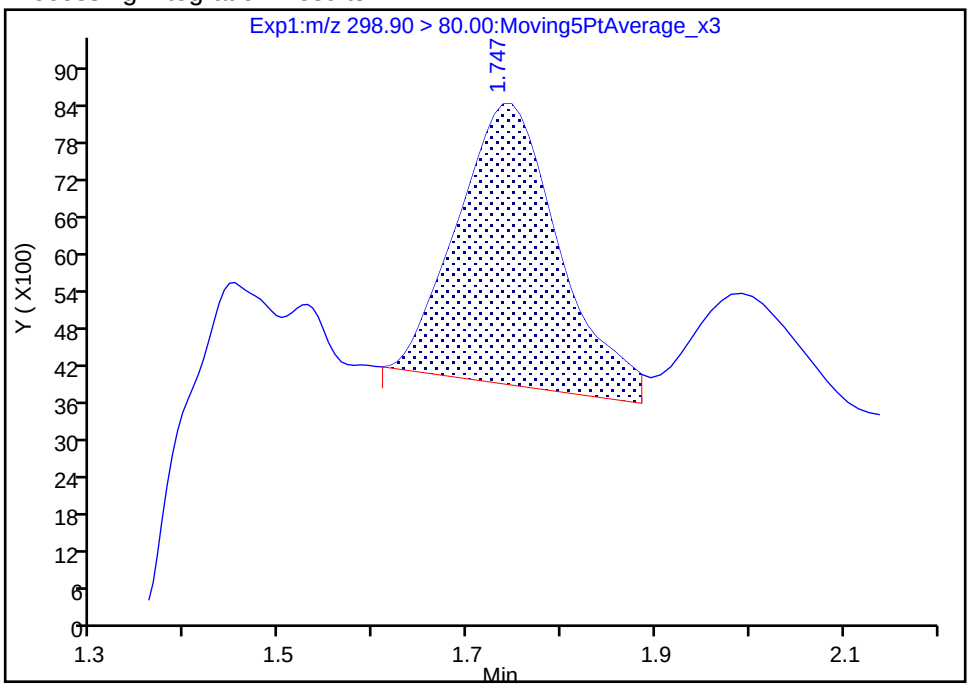
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

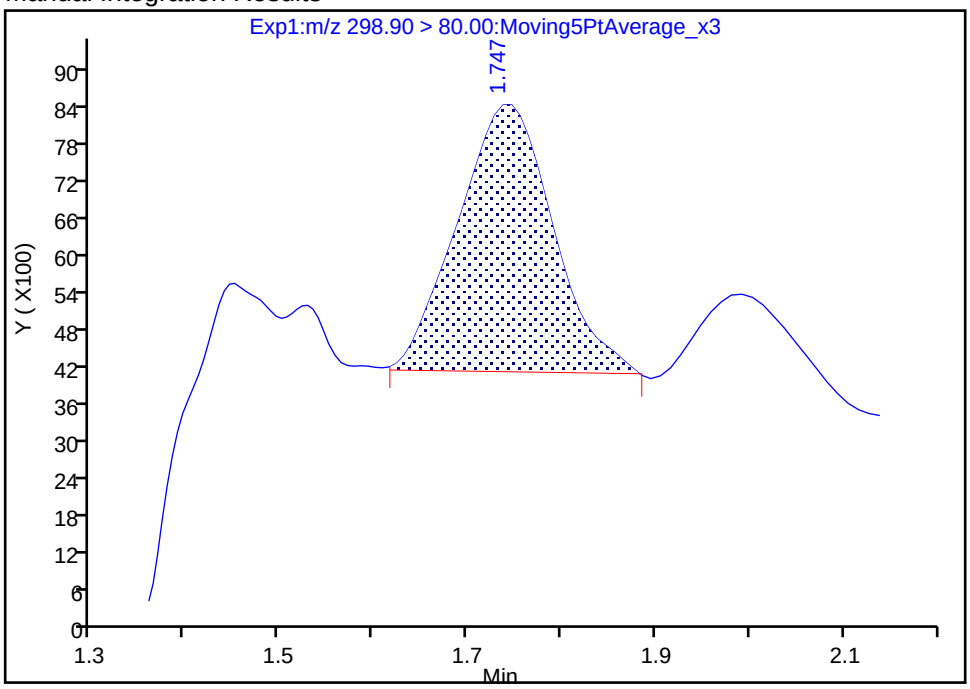
Processing Integration Results

RT: 1.75
Area: 34206
Amount: 0.012100
Amount Units: ng/ml



Manual Integration Results

RT: 1.75
Area: 30395
Amount: 0.010752
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:30:59

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

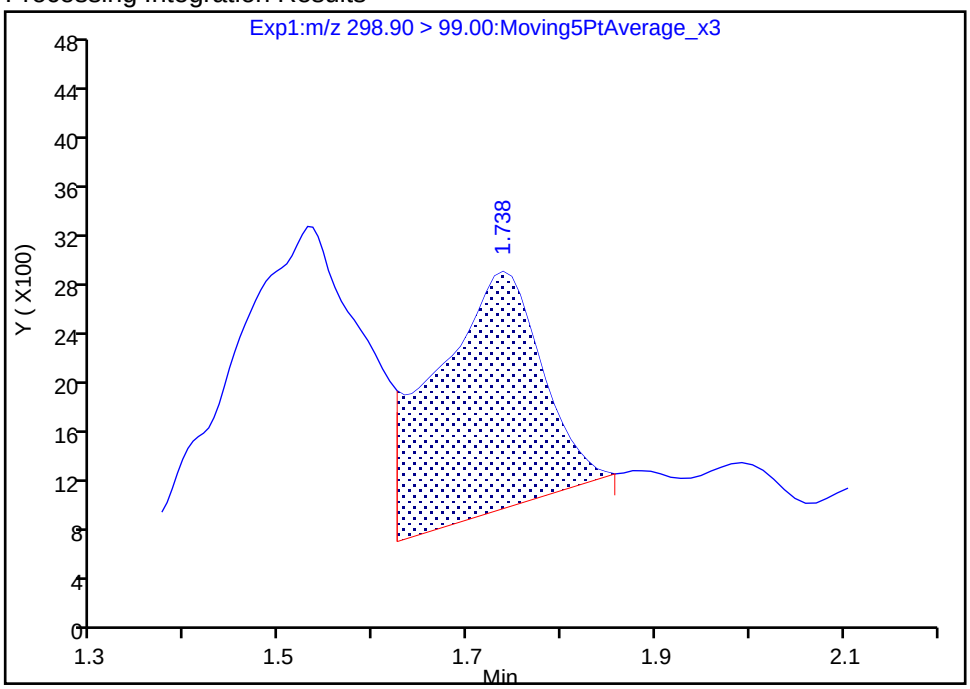
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

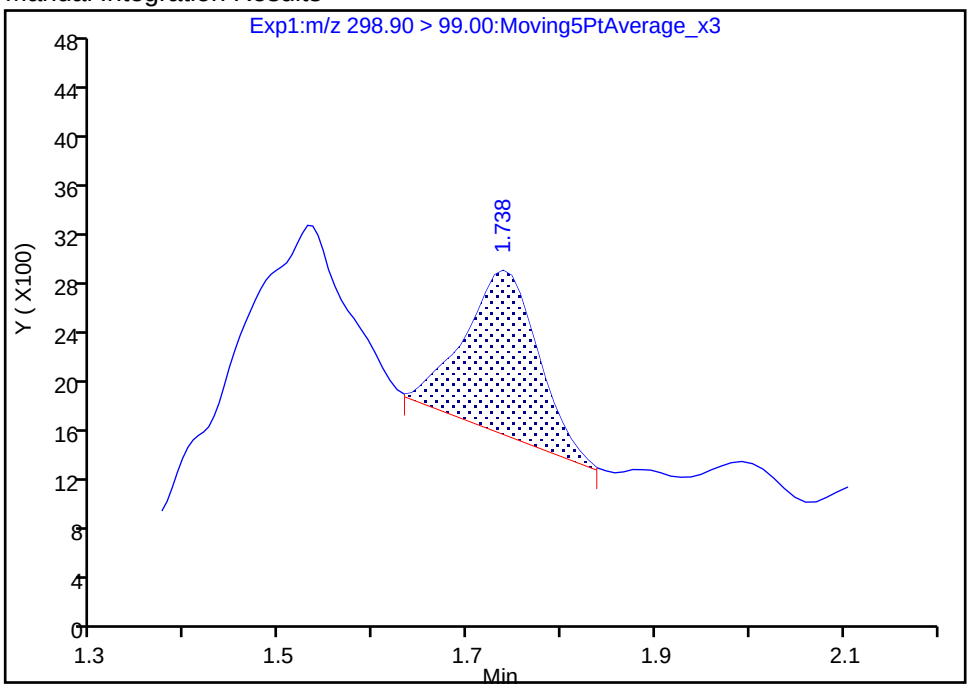
Processing Integration Results

RT: 1.74
Area: 15497
Amount: 0.012100
Amount Units: ng/ml



Manual Integration Results

RT: 1.74
Area: 7351
Amount: 0.010752
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:31:06
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

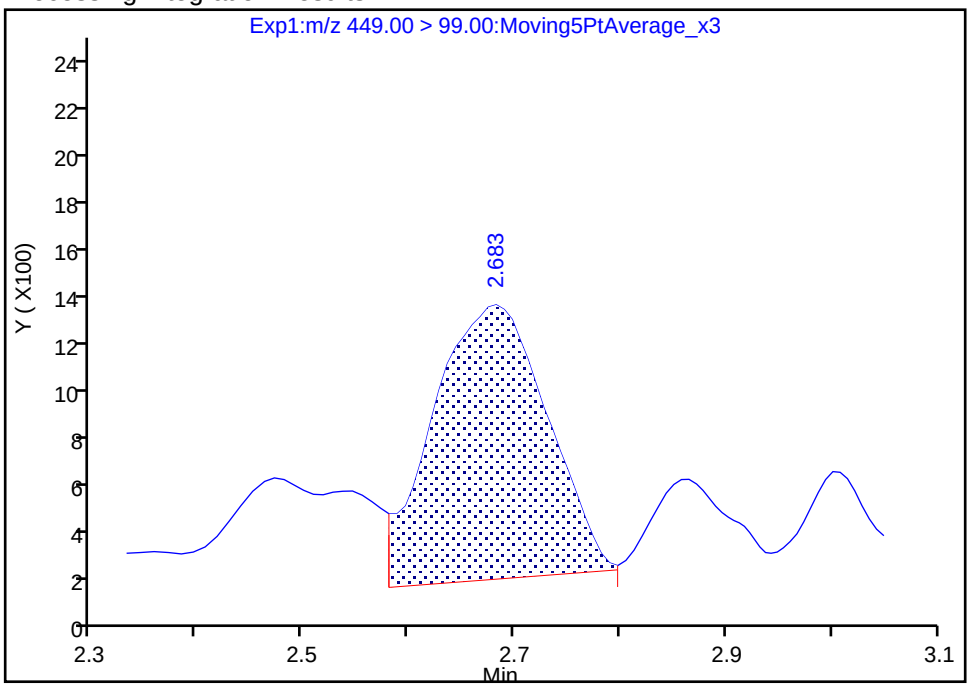
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 2

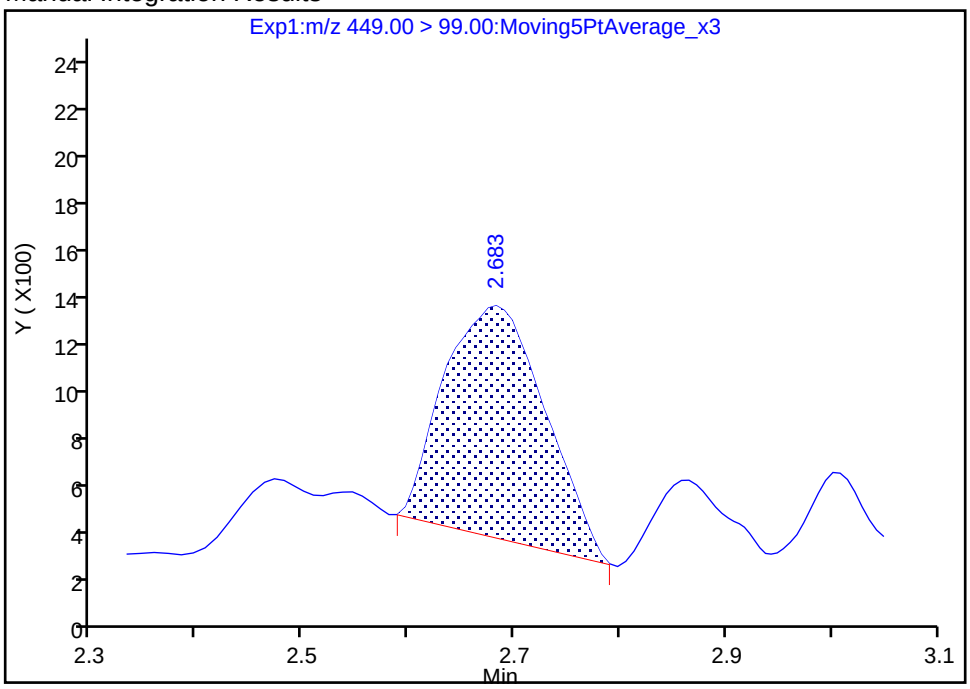
Processing Integration Results

RT: 2.68
Area: 8784
Amount: 0.011997
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 6575
Amount: 0.011997
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:31:32

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

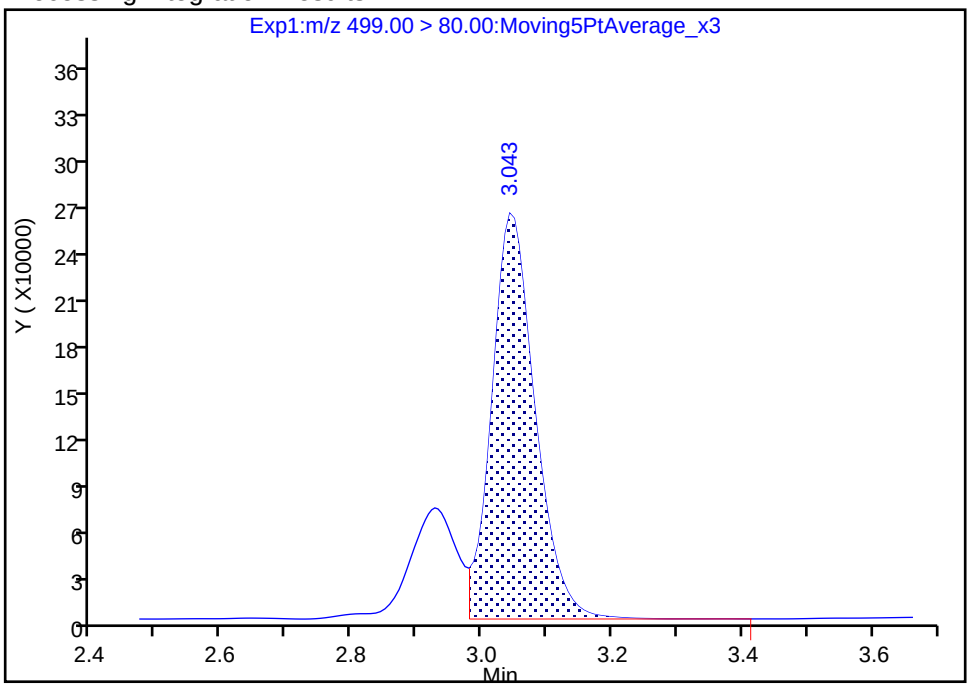
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

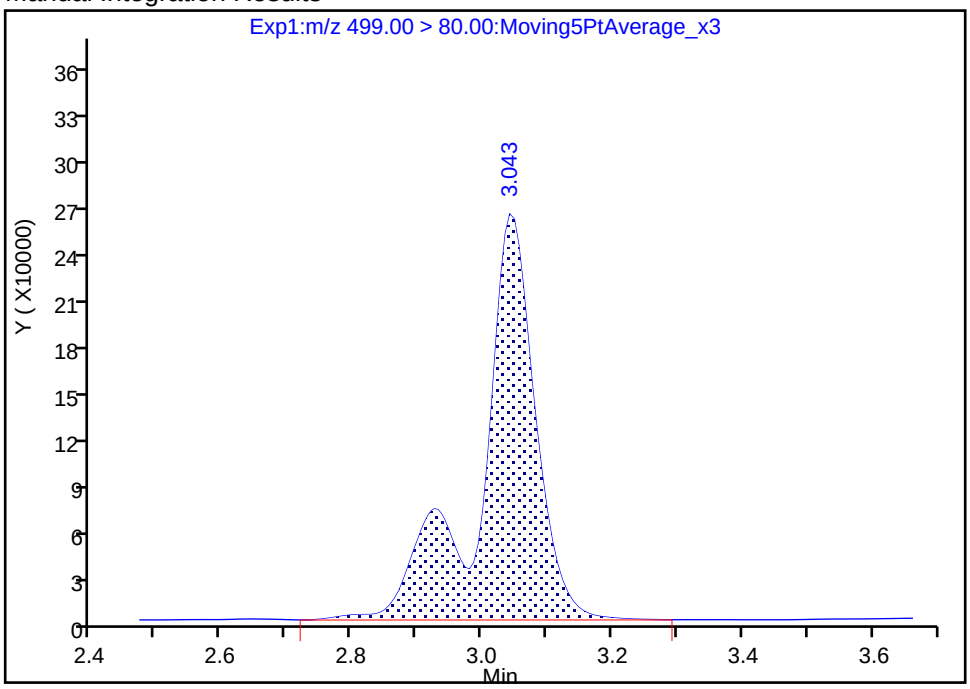
Processing Integration Results

RT: 3.04
Area: 1217720
Amount: 0.750694
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 1584402
Amount: 0.976744
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:31:52

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

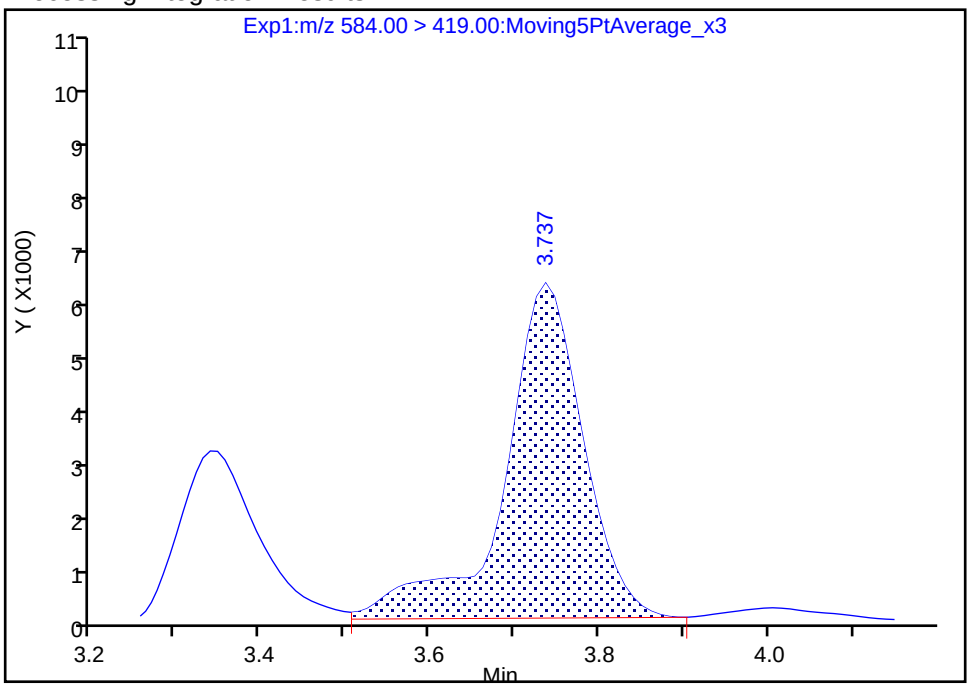
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_031.d				
Injection Date:	21-Apr-2018 10:52:40	Instrument ID:	A8_N		
Lims ID:	320-38061-A-4-A	Lab Sample ID:	320-38061-4		
Client ID:	SB007(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	23	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

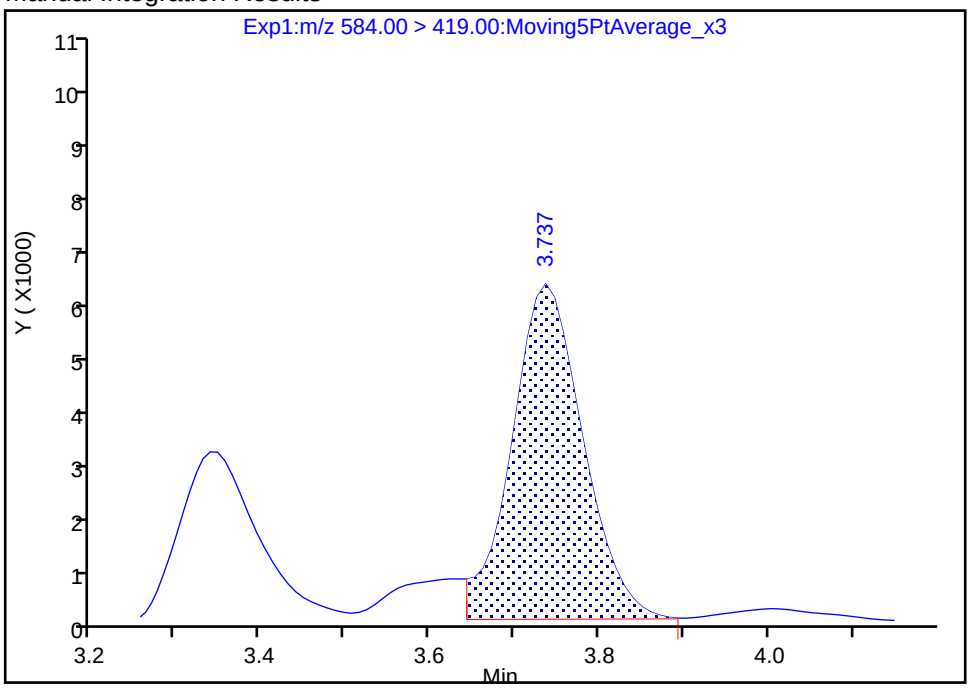
Processing Integration Results

RT: 3.74
Area: 41200
Amount: 0.054202
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 36764
Amount: 0.048366
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:32:58

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB003(0-2) | Lab Sample ID: 320-38061-5

Matrix: Solid | Lab File ID: 2018.04.20LLC_032.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/21/2018 11:00

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 11.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.0023		0.00022	0.000031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.0016		0.00022	0.000085
307-24-4	Perfluorohexanoic acid (PFHxA)	0.0045		0.00022	0.000047
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.0018		0.00022	0.000032
335-67-1	Perfluorooctanoic acid (PFOA)	0.0059		0.00022	0.000095
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.021		0.00022	0.000060
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00022		0.00022	0.000028
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0066		0.00022	0.000034
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.0019		0.00022	0.000039
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.021		0.00022	0.000043
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.0017	J	0.0022	0.00043
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.012		0.0022	0.00041

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	128		25-150
STL01893	13C5 PFPeA	142		25-150
STL00993	13C2 PFHxA	114		25-150
STL01892	13C4-PFHpA	100		25-150
STL00990	13C4 PFOA	103		25-150
STL02116	13C2-PFTeDA	53		25-150
STL02337	13C3-PFBS	150		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	55		25-150
STL02118	d3-NMeFOSAA	39		25-150
STL02117	d5-NEtFOSAA	32		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d
Lims ID: 320-38061-A-5-A
Client ID: SB003(0-2)
Sample Type: Client
Inject. Date: 21-Apr-2018 11:00:30 ALS Bottle#: 24 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-5-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:35:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	5194387	3.21		128	30979	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.000	1991476	1.03			231	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.701	0.001	0.557	3720745	3.56		142	36901	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.702	1.703	-0.001	1.000	1288122	0.7262			134	M
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	83478	3.48		150	83.2	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.738	1.739	-0.001	1.000	283319	0.1008			198	
298.90 > 99.00	1.738	1.739	-0.001	1.000	120903		2.34(1.25-3.74)		62.4	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.980	0.011	1.000	3291229	2.85		114	49153	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.991	1.990	0.001	1.000	2704754	2.02			665	M
313.00 > 119.00	1.991	1.990	0.001	1.000	251254		10.77(5.03-15.10)		892	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.318	0.001	1.000	909126	0.8054			548	
363.00 > 169.00	2.319	2.318	0.001	1.000	348065		2.61(1.13-3.40)		1554	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.319	0.0	1.000	2819467	2.51		100	43437	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.331	0.001	1.000	4707929	2.99			2559	
399.00 > 99.00	2.332	2.331	0.001	1.000	1498812		3.14(1.50-4.49)		1393	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.332	0.0	1.000	3291349	2.37		100	39294	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.652	0.015	1.000	890069	3.70		156	822	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.667	2.658	0.009	1.000	20397258	32.2			3073	E
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.681	0.001		3010948	2.50			49781	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.681	0.001	1.000	3562047	2.68			2514	
413.00 > 169.00	2.682	2.681	0.001	1.000	2007314		1.77(0.84-2.52)		1751	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.682	0.0	1.000	2876320	2.57		103	56739	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.688	0.001	1.000	607081	0.8519			112	
449.00 > 99.00	2.689	2.688	0.001	1.000	155060		3.92(1.94-5.82)		354	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.056	3.054	0.002	1.000	140782014	241.1			6049970	E
499.00 > 99.00	3.056	3.054	0.002	1.000	48225253		2.92(2.31-6.93)		80933	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.056	3.054	0.002	1.000	22075380	36.1			16784	E
463.00 > 169.00	3.056	3.054	0.002	1.000	5897826		3.74(1.90-5.69)		10701	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.055	0.001	1.000	1467951	1.53		61.1	20703	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.055	0.001	1.000	1282788	1.32		55.2	594	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.393	3.391	0.002	1.000	86398339	156.2			78.4	E
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.393	0.0	1.000	1366740	1.13		45.1	6.8	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.421	3.410	0.011	1.003	110824847	120.0			43817	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.411	3.411	0.0	1.000	1748690	6.03		252	3655	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.421	3.419	0.002	1.000	17084359	35.3			18174	E
513.00 > 169.00	3.421	3.419	0.002	1.000	3271823		5.22(2.36-7.09)		5779	
D 23 13C2 PFDA										
515.00 > 470.00	3.421	3.420	0.001	1.000	1171973	1.45		58.1	14810	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.579	3.569	0.010	1.000	441666	0.9654		38.6	2501	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.577	0.002	1.000	132894	0.7543			35.9	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.722	3.732	-0.010	1.000	3332794	9.56			18.3	
599.00 > 99.00	3.722	3.732	-0.010	1.000	1302299		2.56(1.39-4.16)		98.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.743	0.0	1.000	357877	0.7926		31.7	3244	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										EM
563.00 > 519.00	3.754	3.753	0.001	1.000	102302711	280.8			1475	EM
563.00 > 169.00	3.754	3.753	0.001	1.000	42281078		2.42(2.12-6.36)		357	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.753	0.001	1.003	744916	5.57			273	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.754	0.0	1.000	1077704	1.55		61.9	20324	
37 Perfluorododecanoic acid										E
613.00 > 569.00	4.047	4.042	0.005	1.000	12167118	27.4			10255	E
613.00 > 169.00	4.047	4.042	0.005	1.000	3364294		3.62(2.13-6.40)		8004	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.042	0.005	1.000	1063294	1.41		56.6	11282	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.307	4.301	0.006	1.000	64376950	124.5			36298	E
663.00 > 169.00	4.307	4.301	0.006	1.000	29818342		2.16(1.25-3.76)		43995	
42 Perfluorotetradecanoic acid										M
713.00 > 169.00	4.542	4.547	-0.005	1.000	1195545	9.34			1111	M
713.00 > 219.00	4.532	4.547	-0.015	0.998	839320		1.42(0.71-2.13)		1090	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.548	-0.006	1.000	1274264	1.34		53.5	7887	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:42:13 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d

Injection Date: 21-Apr-2018 11:00:30 Instrument ID: A8_N

Lims ID: 320-38061-A-5-A Lab Sample ID: 320-38061-5

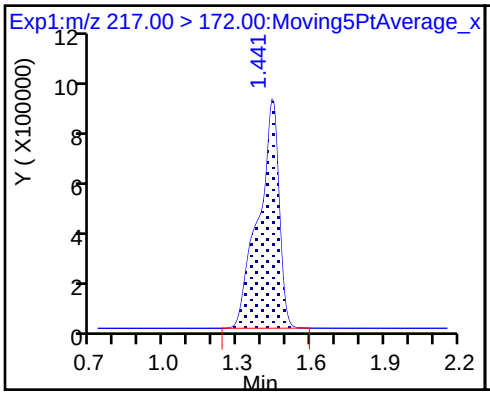
Client ID: SB003(0-2)

Operator ID: SACINSTLCMS01 ALS Bottle#: 24 Worklist Smp#: 10

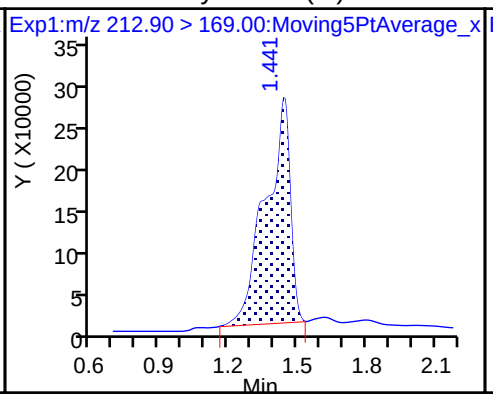
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

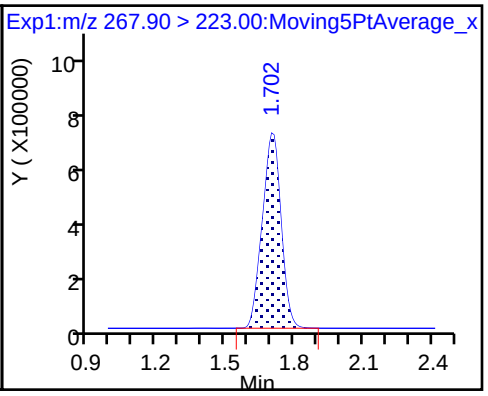
D 1 13C4 PFBA



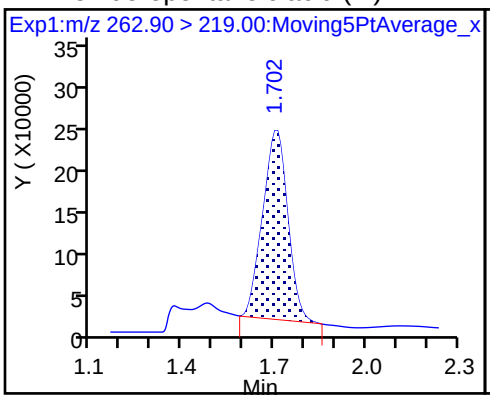
2 Perfluorobutyric acid (M)



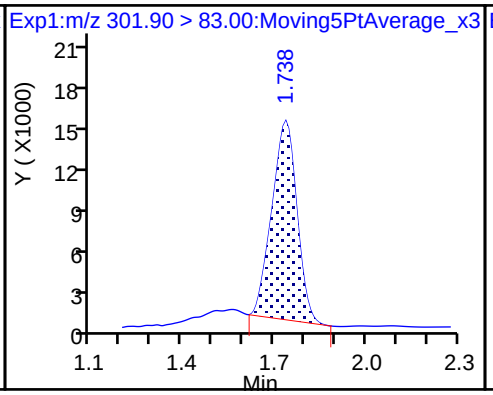
D 3 13C5-PFPeA



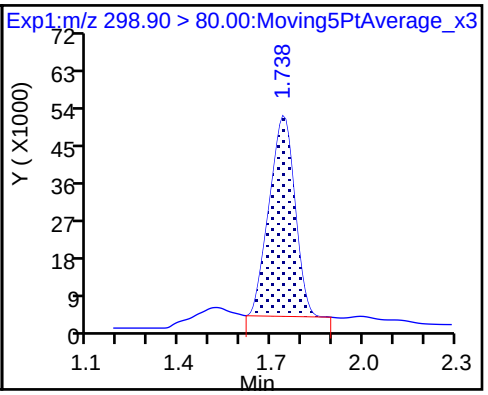
4 Perfluoropentanoic acid (M)



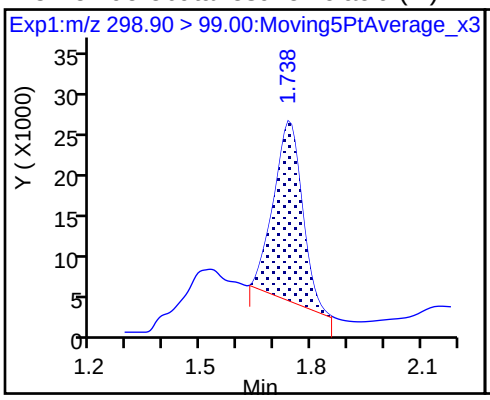
D 47 13C3-PFBS



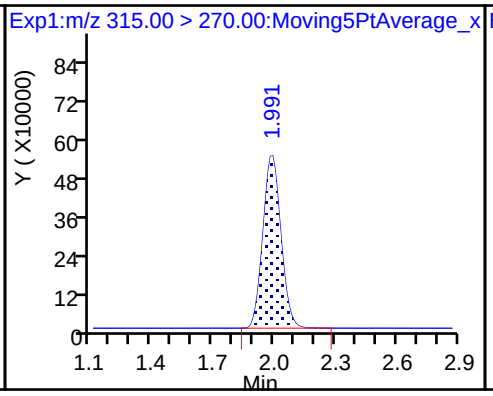
5 Perfluorobutanesulfonic acid



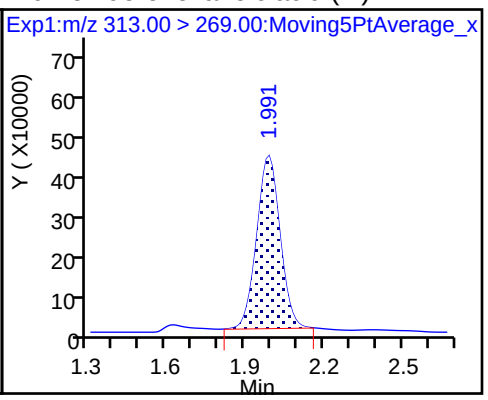
5 Perfluorobutanesulfonic acid (M)



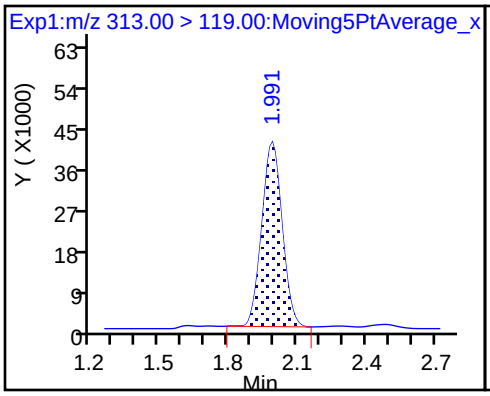
D 7 13C2 PFHxA



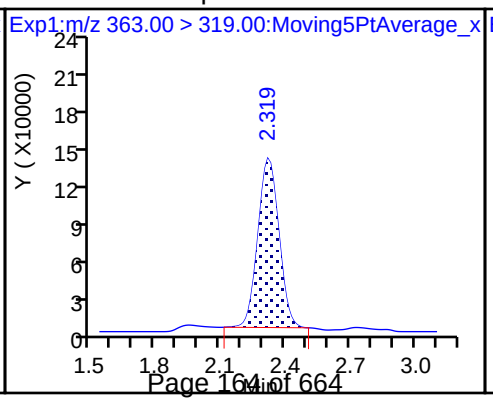
6 Perfluorohexanoic acid (M)



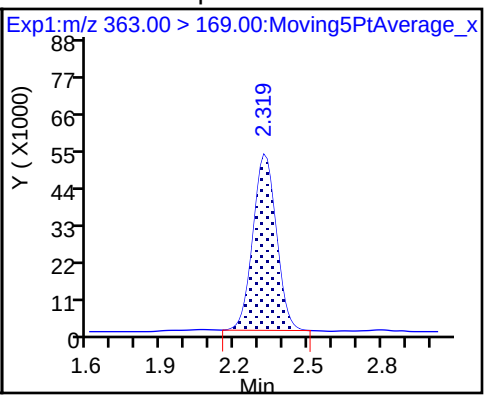
6 Perfluorohexanoic acid



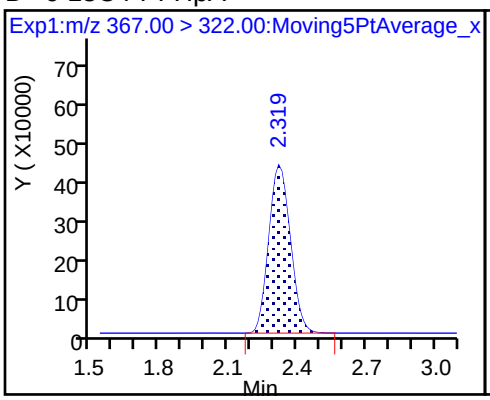
10 Perfluoroheptanoic acid



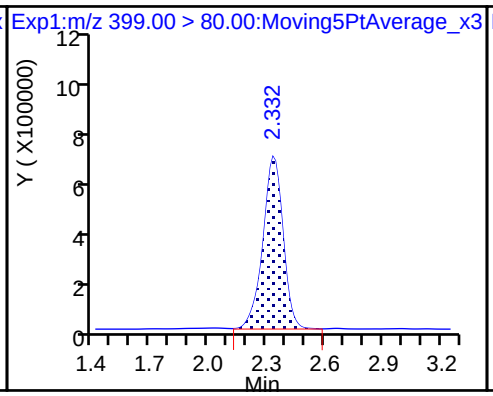
10 Perfluoroheptanoic acid



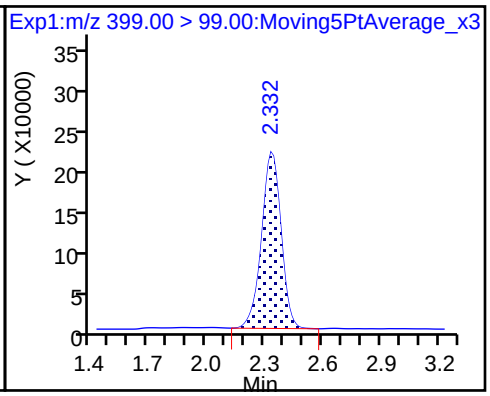
D 9 13C4-PFHpA



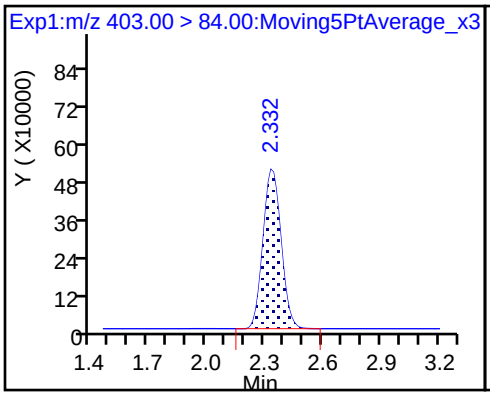
8 Perfluorohexanesulfonic acid



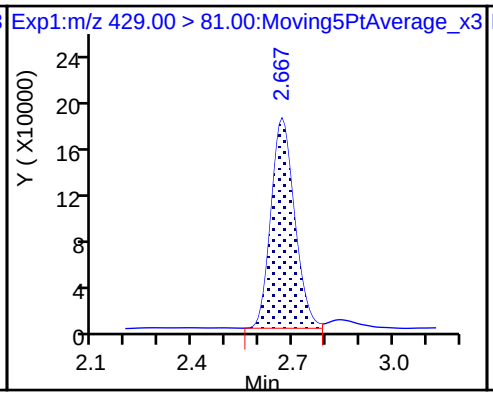
8 Perfluorohexanesulfonic acid



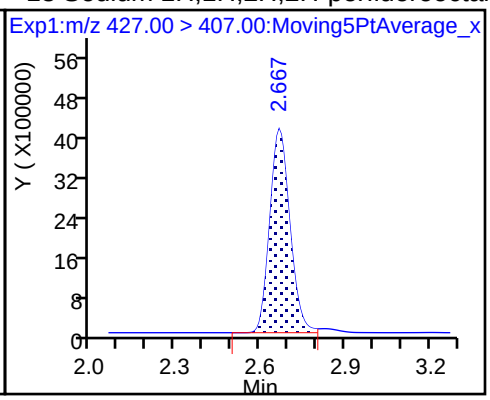
D 11 18O2 PFHxS



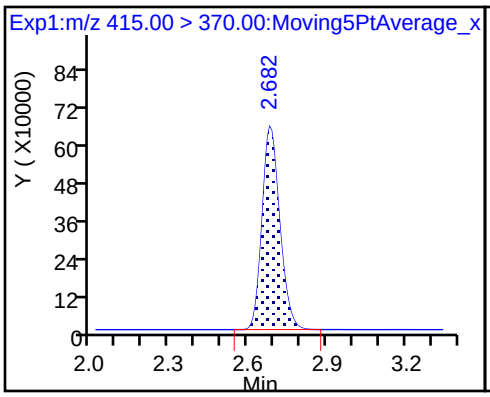
D 12 M2-6:2FTS



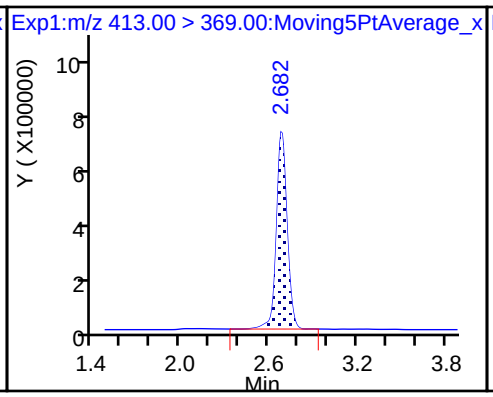
13 Sodium 1H,1H,2H,2H-perfluorooctane



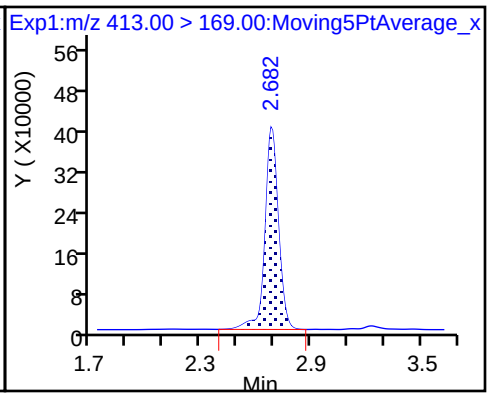
* 62 13C2-PFOA



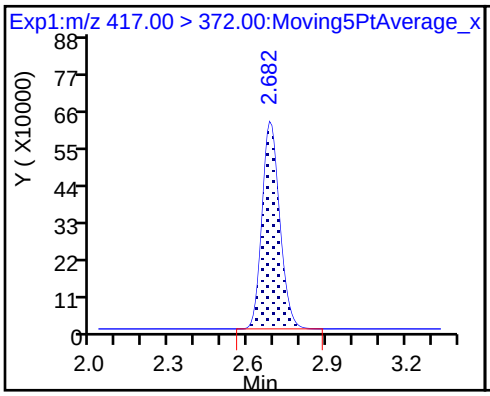
15 Perfluorooctanoic acid



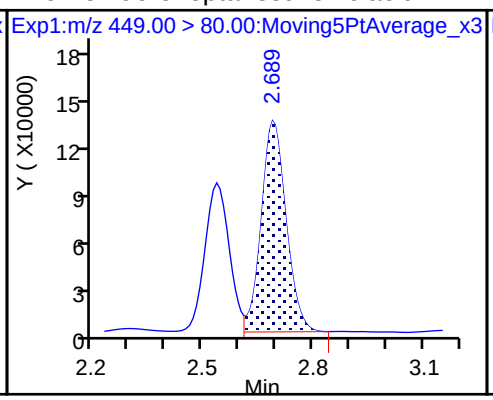
15 Perfluorooctanoic acid



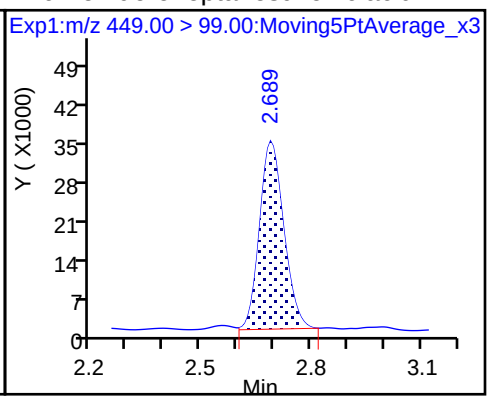
D 14 13C4 PFOA



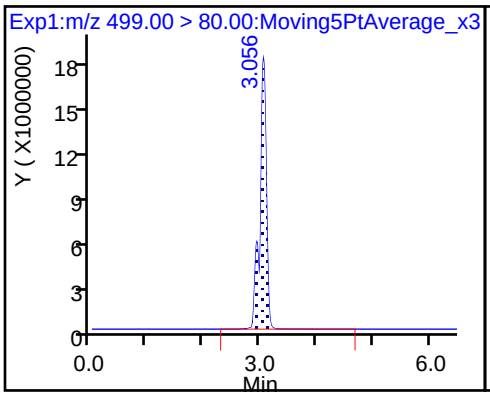
16 Perfluoroheptanesulfonic acid



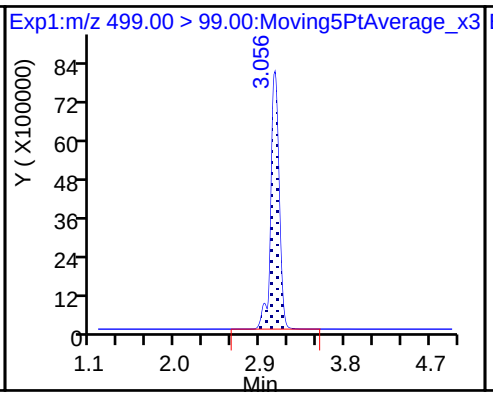
16 Perfluoroheptanesulfonic acid



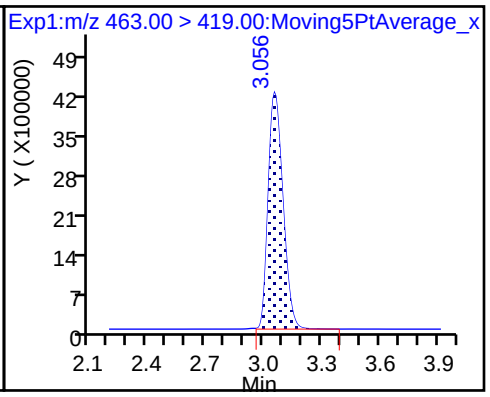
17 Perfluorooctane sulfonic acid



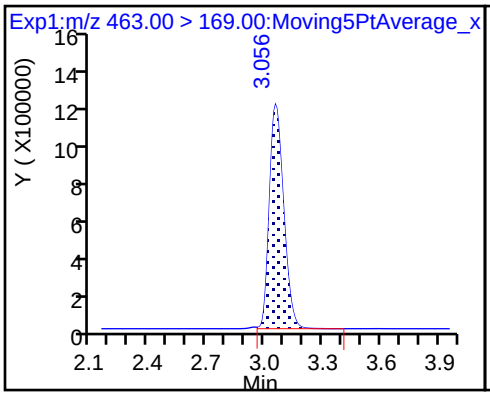
17 Perfluorooctane sulfonic acid



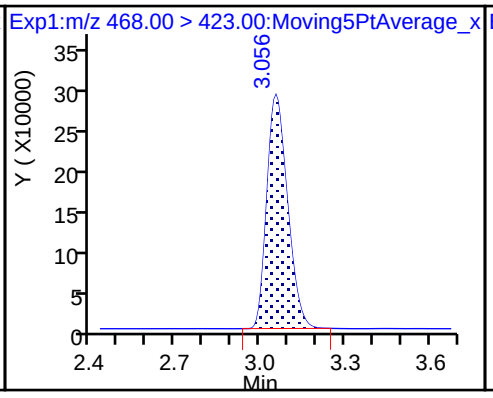
20 Perfluorononanoic acid



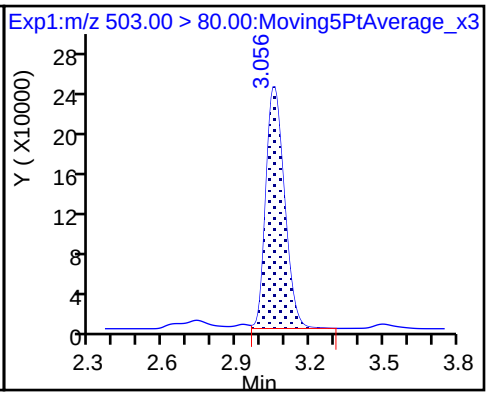
20 Perfluorononanoic acid



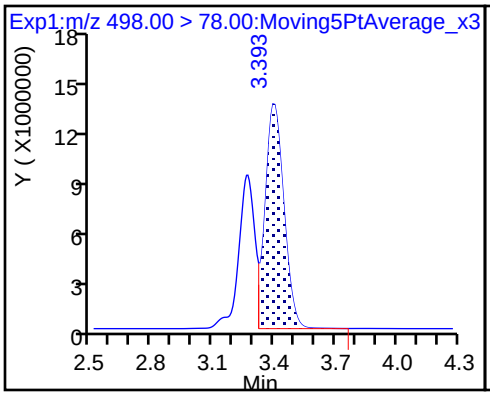
D 19 13C5 PFNA



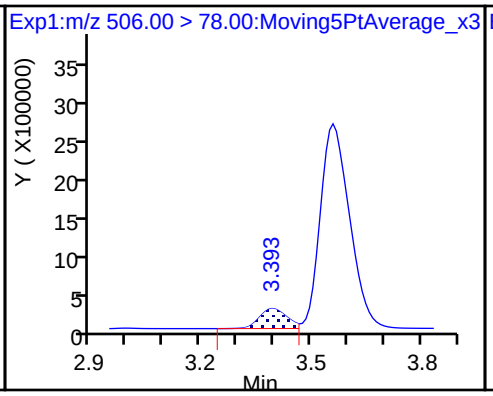
D 18 13C4 PFOS



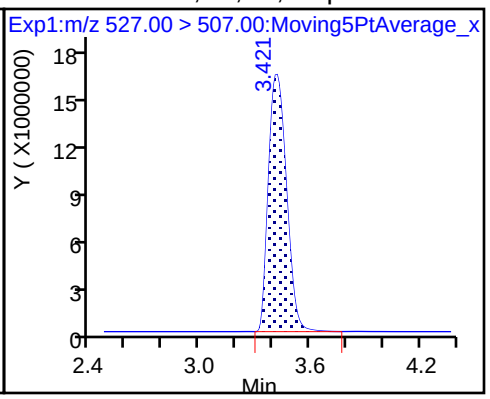
22 Perfluorooctane Sulfonamide



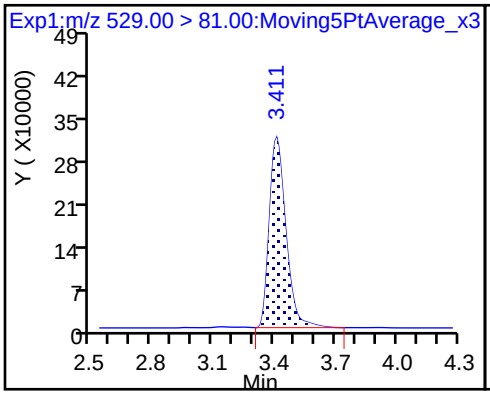
D 21 13C8 FOSA



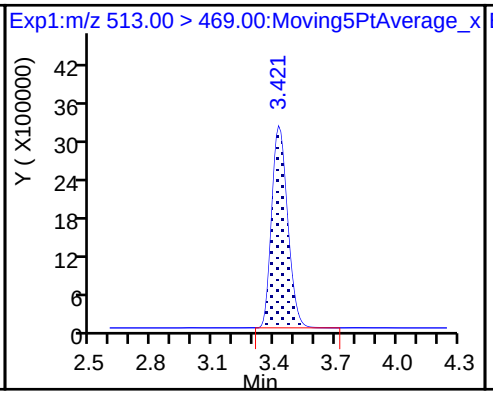
25 Sodium 1H,1H,2H,2H-perfluorodecane



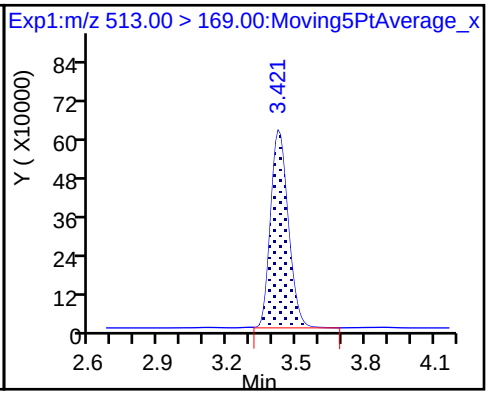
D 26 M2-8:2FTS



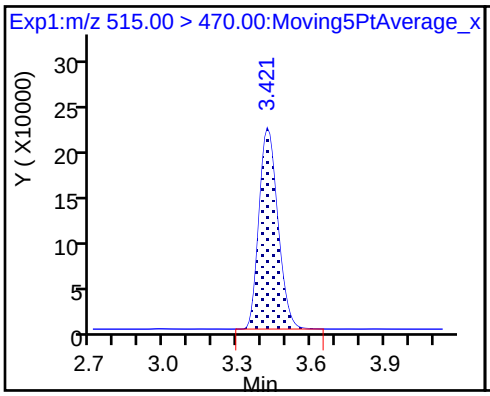
24 Perfluorodecanoic acid



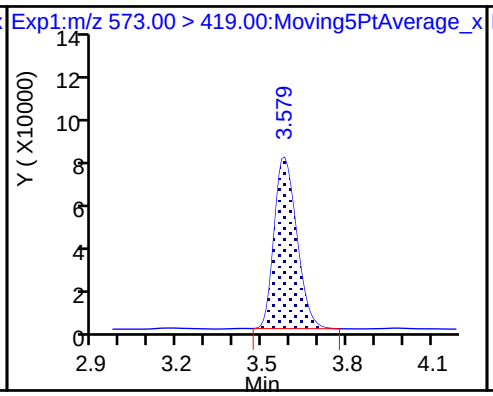
24 Perfluorodecanoic acid



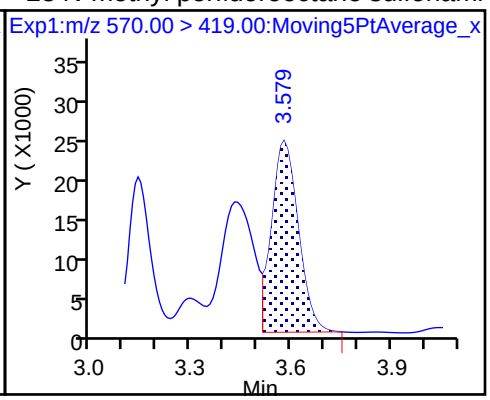
D 23 13C2 PFDA



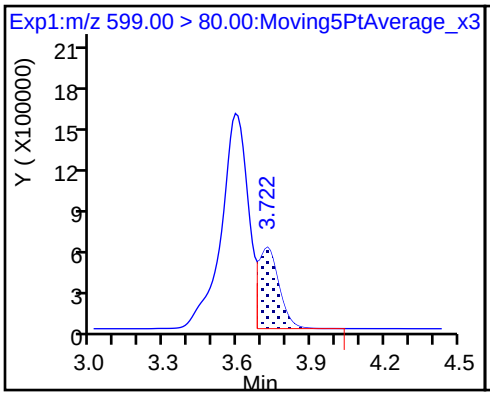
D 27 d3-NMeFOSAA



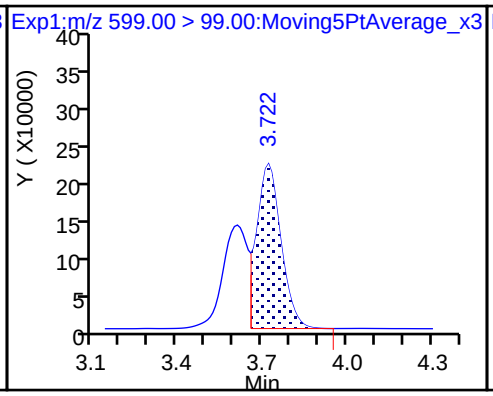
28 N-methyl perfluorooctane sulfonami



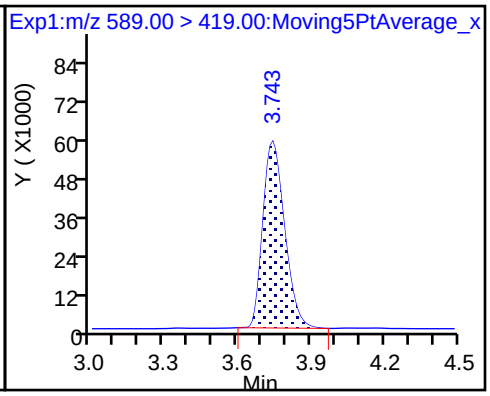
29 Perfluorodecane Sulfonic acid



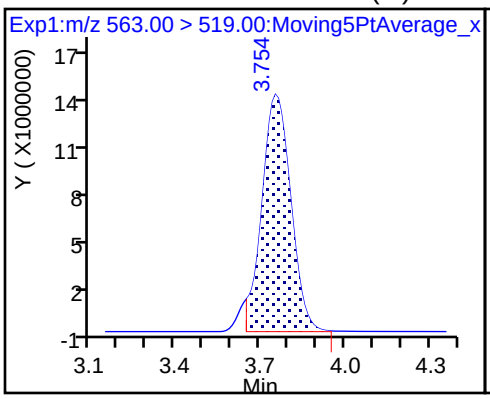
29 Perfluorodecane Sulfonic acid



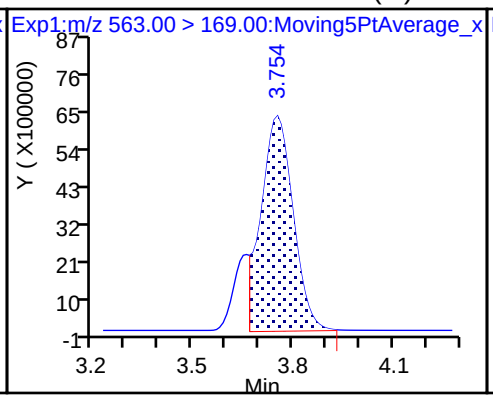
D 32 d5-NEtFOSAA



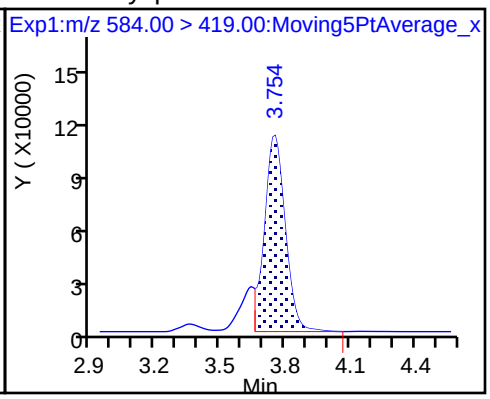
31 Perfluoroundecanoic acid (M)



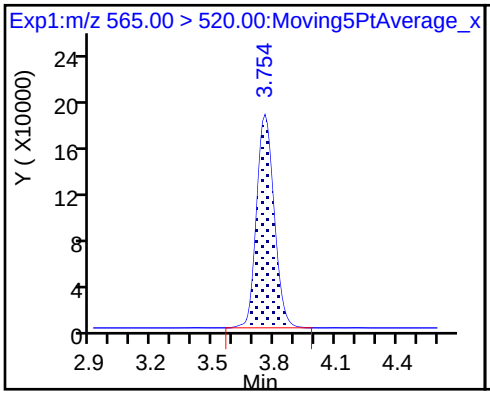
31 Perfluoroundecanoic acid (M)



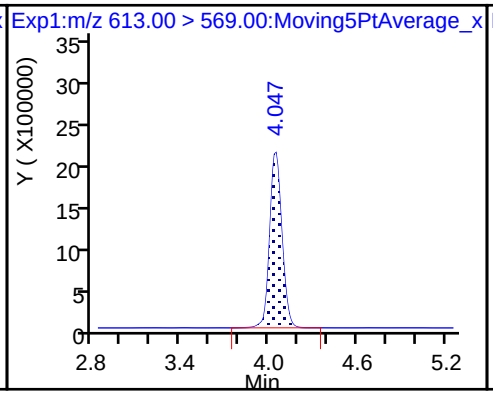
33 N-ethyl perfluorooctane sulfonamid



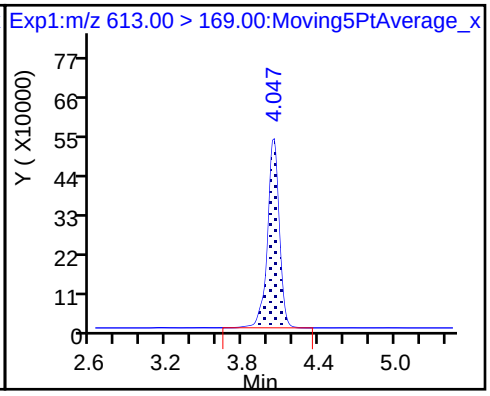
D 30 13C2 PFUnA



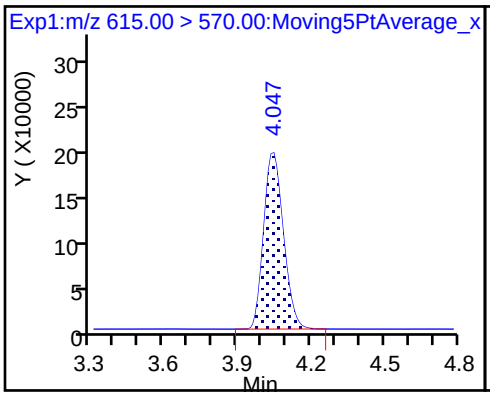
37 Perfluorododecanoic acid



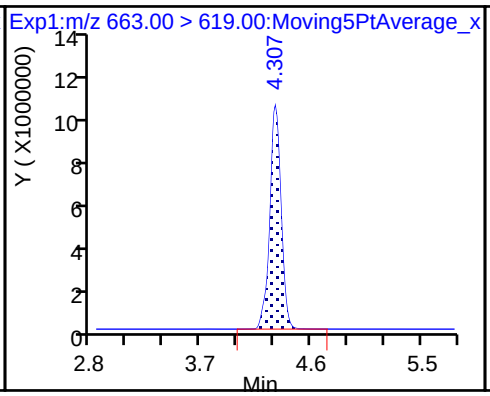
37 Perfluorododecanoic acid



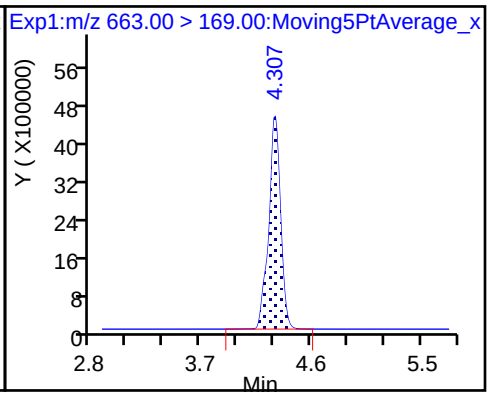
D 36 13C2 PFDoA



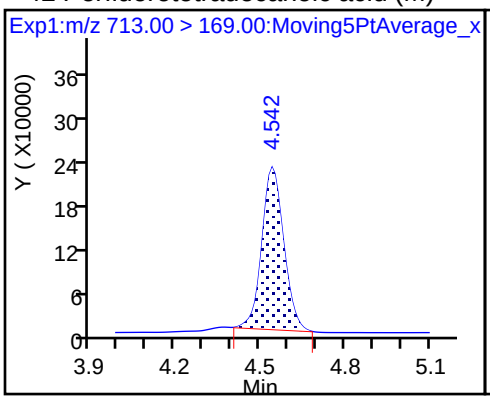
41 Perfluorotridecanoic acid



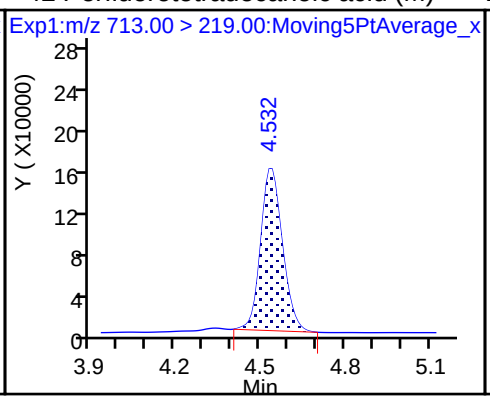
41 Perfluorotridecanoic acid



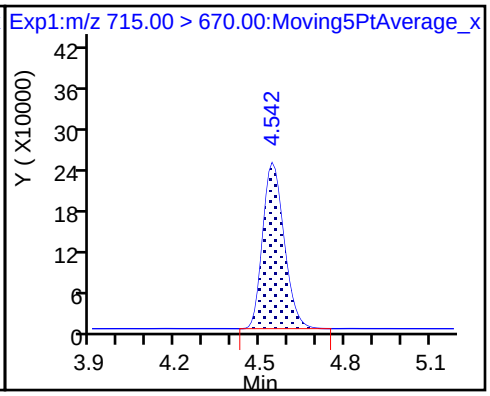
42 Perfluorotetradecanoic acid (M)



42 Perfluorotetradecanoic acid (M)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

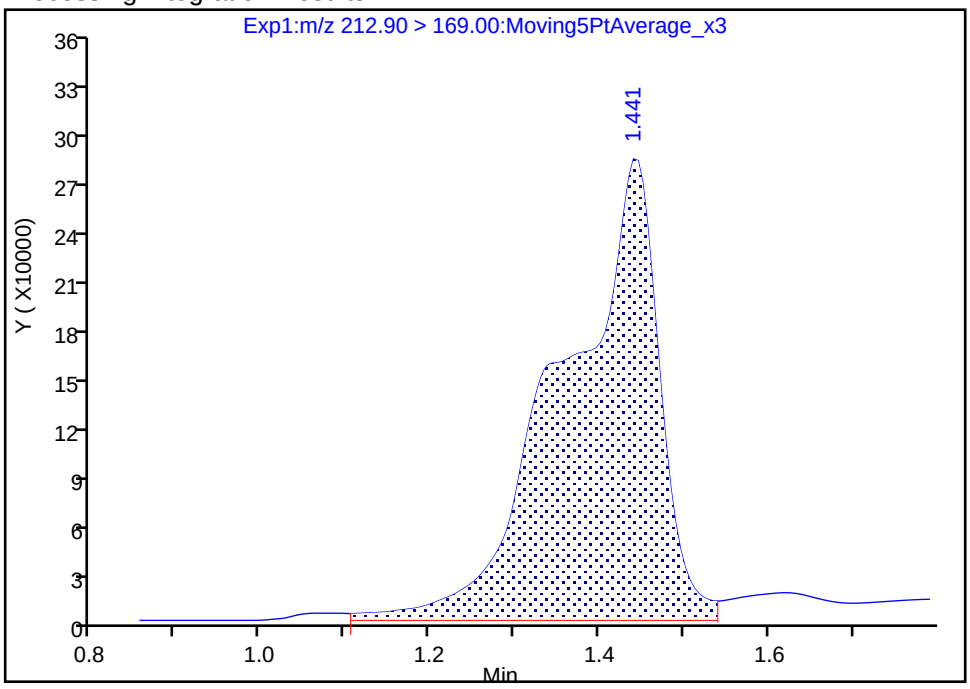
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d				
Injection Date:	21-Apr-2018 11:00:30	Instrument ID:	A8_N		
Lims ID:	320-38061-A-5-A	Lab Sample ID:	320-38061-5		
Client ID:	SB003(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

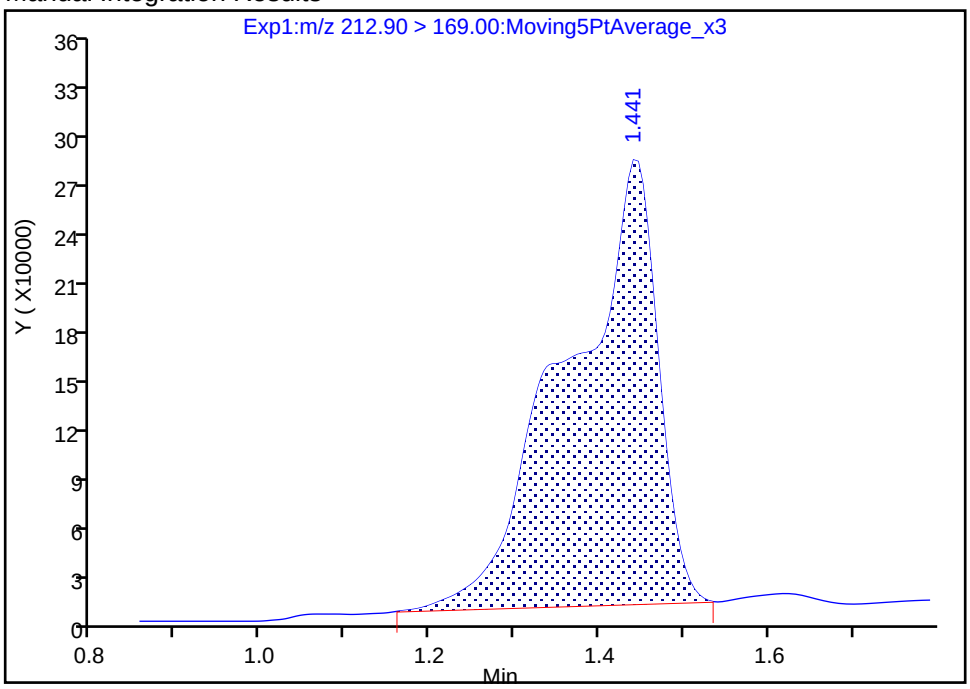
Processing Integration Results

RT: 1.44
Area: 2200750
Amount: 1.140687
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 1991476
Amount: 1.032216
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:33:47

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

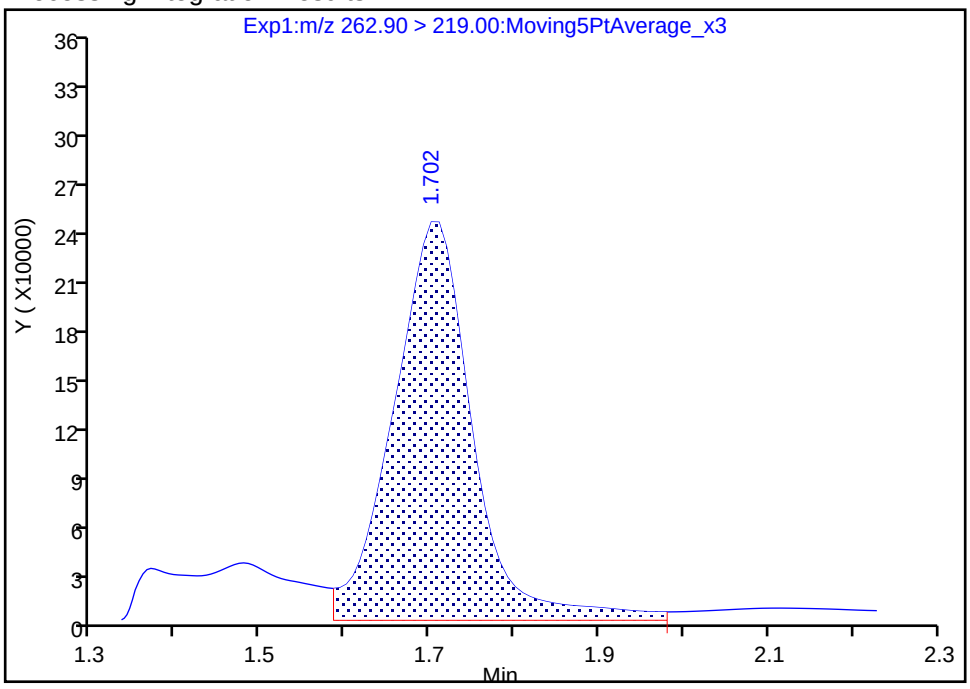
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d				
Injection Date:	21-Apr-2018 11:00:30	Instrument ID:	A8_N		
Lims ID:	320-38061-A-5-A	Lab Sample ID:	320-38061-5		
Client ID:	SB003(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

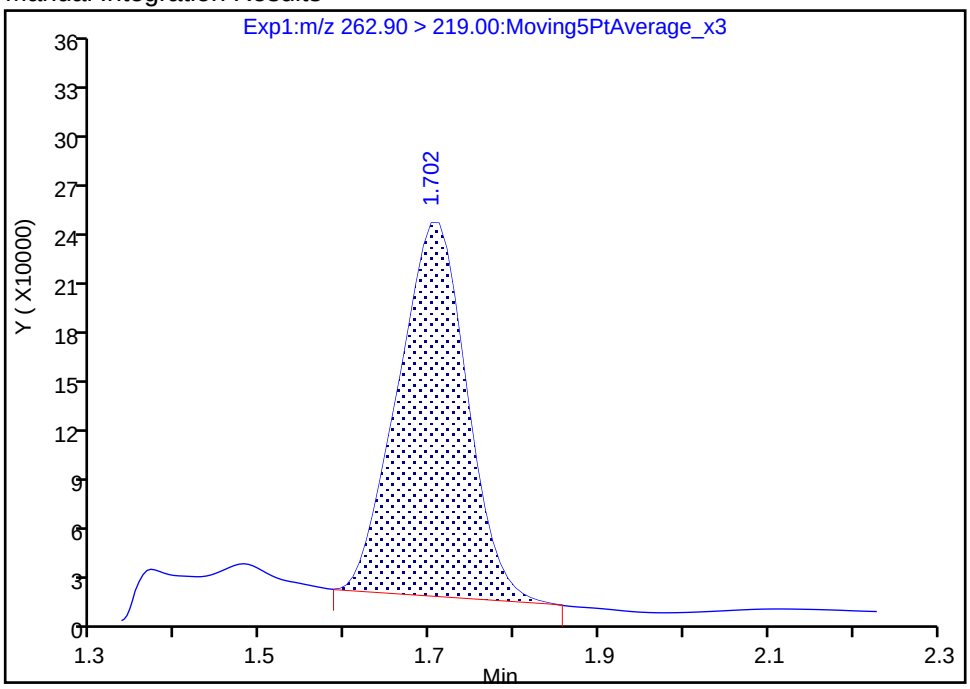
Processing Integration Results

RT: 1.70
Area: 1575701
Amount: 0.888365
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 1288122
Amount: 0.726230
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:33:59

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

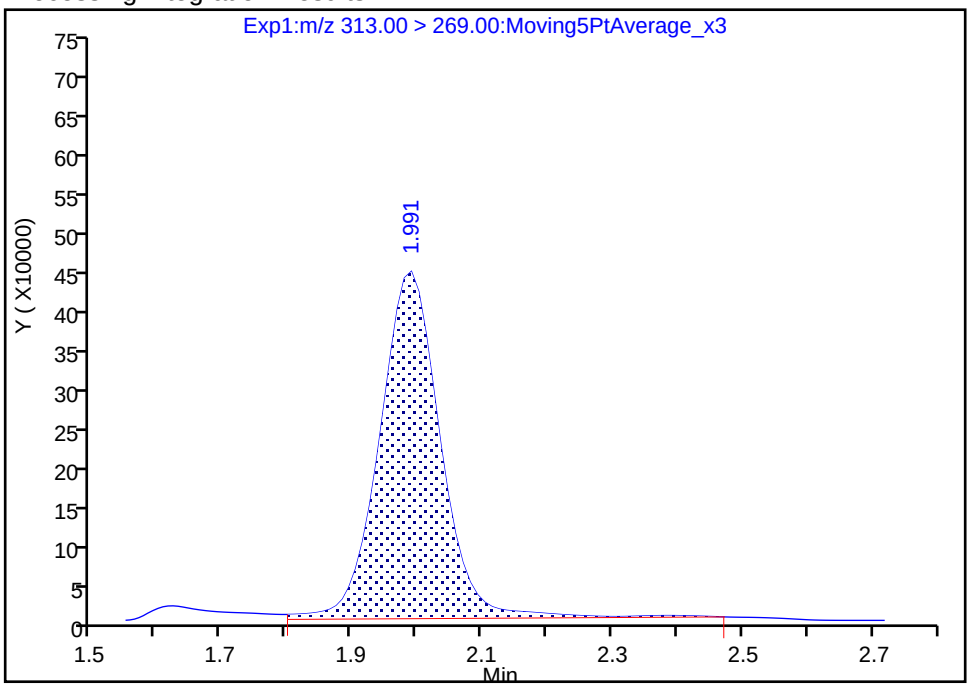
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d				
Injection Date:	21-Apr-2018 11:00:30	Instrument ID:	A8_N		
Lims ID:	320-38061-A-5-A	Lab Sample ID:	320-38061-5		
Client ID:	SB003(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

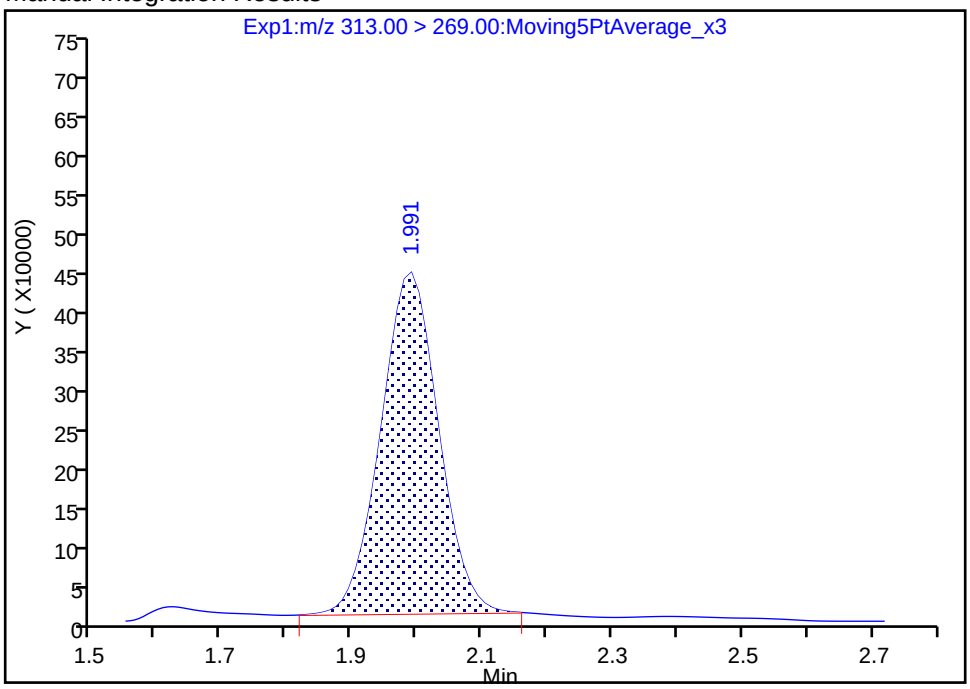
Processing Integration Results

RT: 1.99
Area: 2900863
Amount: 2.168472
Amount Units: ng/ml



Manual Integration Results

RT: 1.99
Area: 2704754
Amount: 2.021875
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:34:26

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

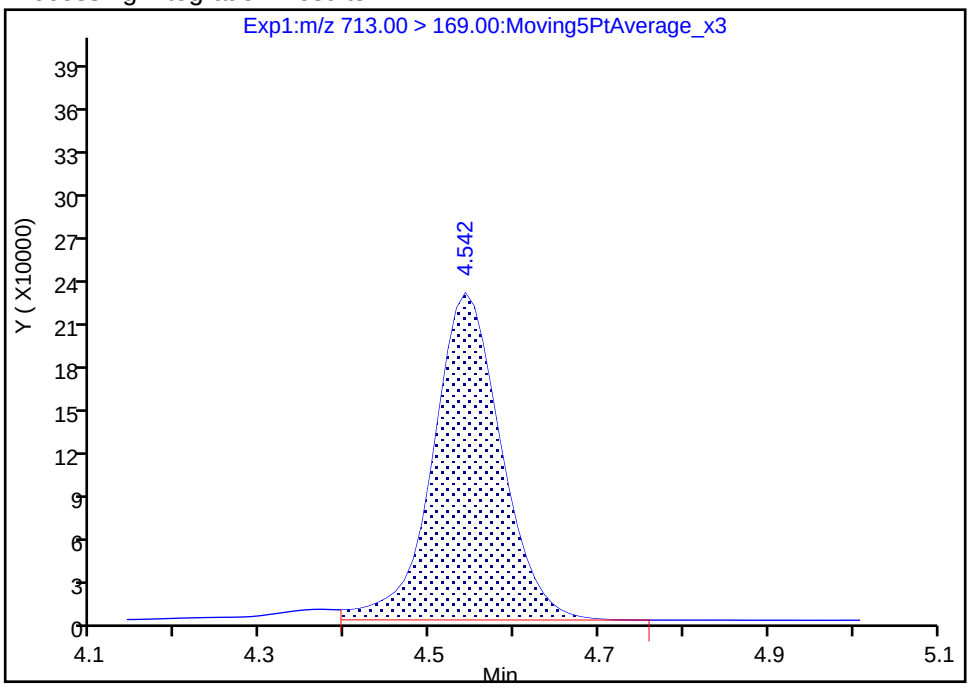
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d				
Injection Date:	21-Apr-2018 11:00:30	Instrument ID:	A8_N		
Lims ID:	320-38061-A-5-A	Lab Sample ID:	320-38061-5		
Client ID:	SB003(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

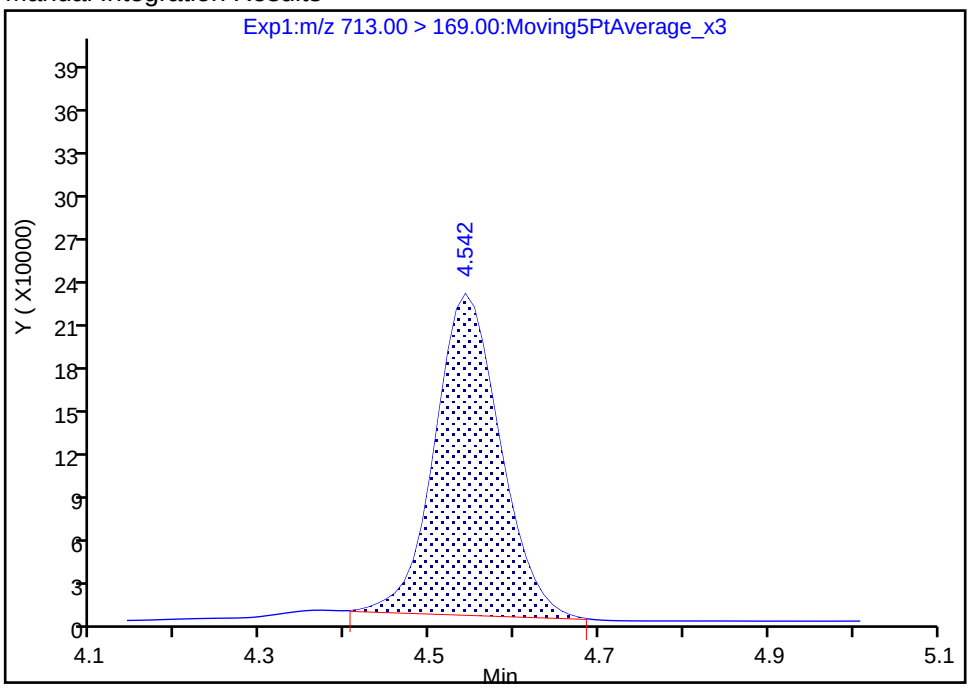
Processing Integration Results

RT: 4.54
Area: 1264365
Amount: 9.876985
Amount Units: ng/ml



Manual Integration Results

RT: 4.54
Area: 1195545
Amount: 9.339376
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:36:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

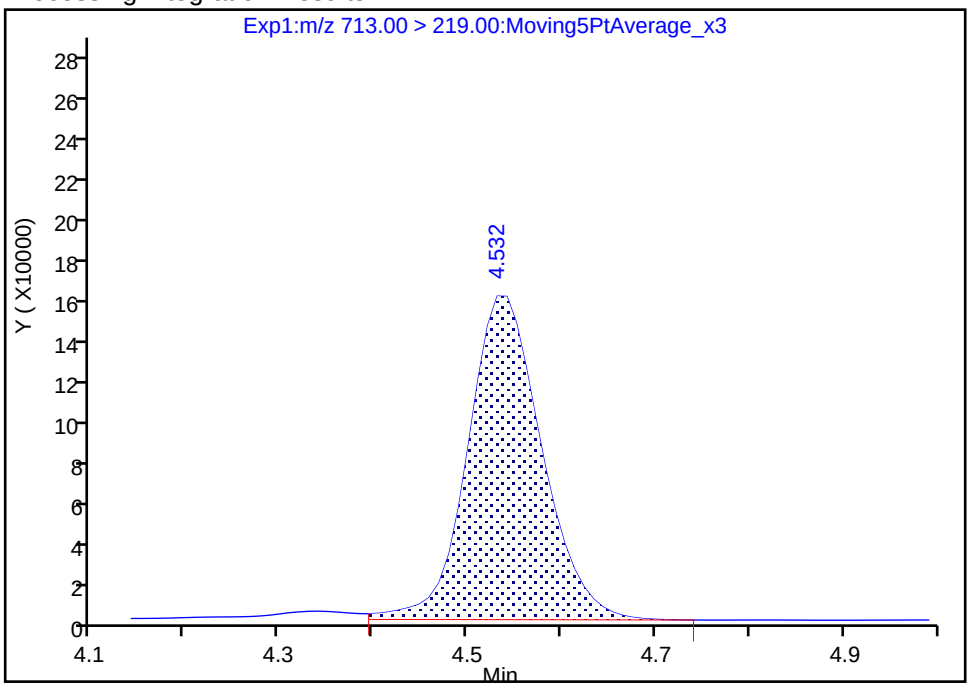
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d				
Injection Date:	21-Apr-2018 11:00:30	Instrument ID:	A8_N		
Lims ID:	320-38061-A-5-A	Lab Sample ID:	320-38061-5		
Client ID:	SB003(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

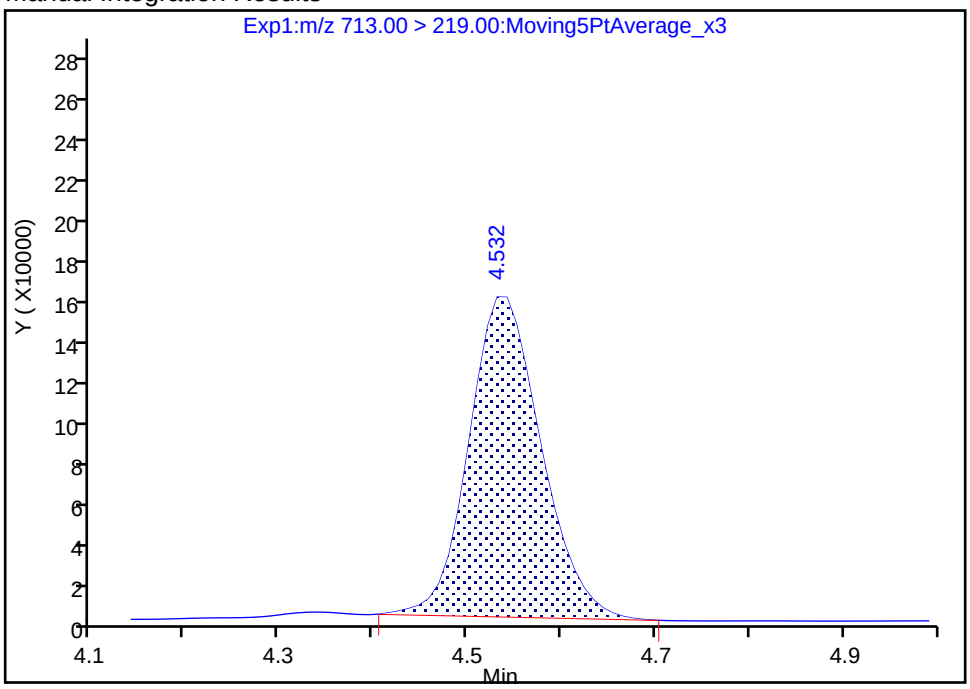
Processing Integration Results

RT: 4.53
Area: 869450
Amount: 9.876985
Amount Units: ng/ml



Manual Integration Results

RT: 4.53
Area: 839320
Amount: 9.339376
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:37:03

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

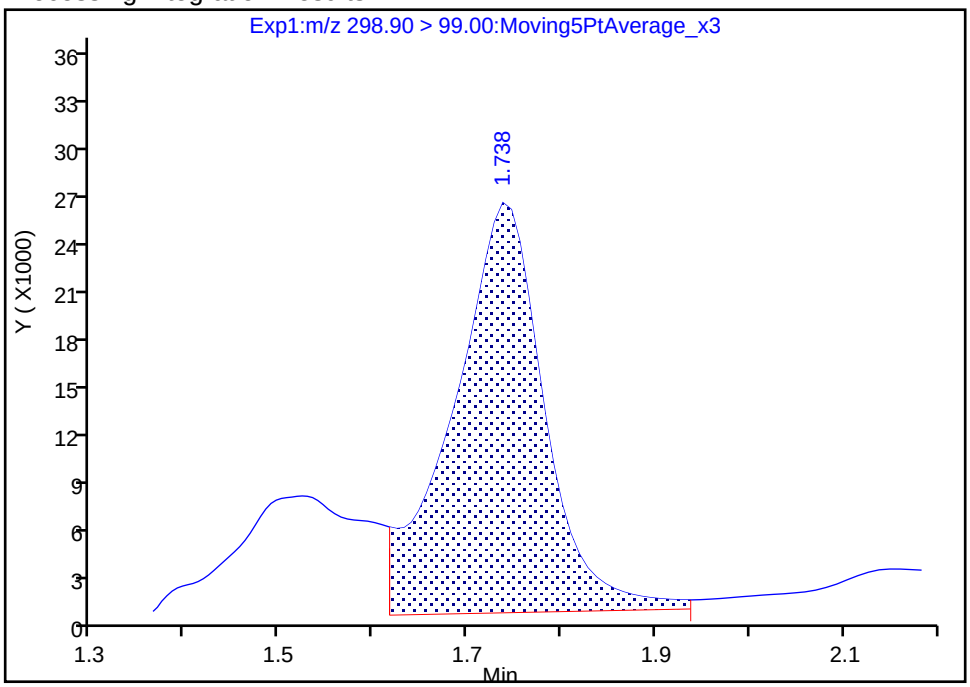
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_032.d				
Injection Date:	21-Apr-2018 11:00:30	Instrument ID:	A8_N		
Lims ID:	320-38061-A-5-A	Lab Sample ID:	320-38061-5		
Client ID:	SB003(0-2)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	24	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

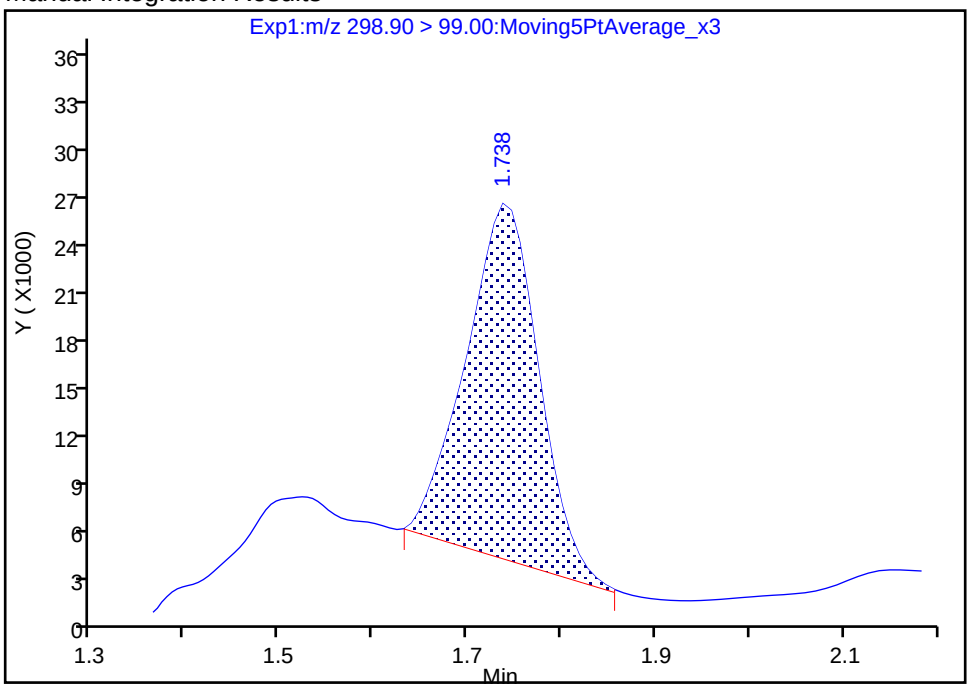
Processing Integration Results

RT: 1.74
Area: 174673
Amount: 0.100795
Amount Units: ng/ml



Manual Integration Results

RT: 1.74
Area: 120903
Amount: 0.100795
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:34:12

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB003(0-2) DL | Lab Sample ID: 320-38061-5 DL

Matrix: Solid | Lab File ID: 2018.04.25LLBX_075.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/26/2018 06:48

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 10

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 11.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219909 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	0.085	D	0.0022	0.00040
335-76-2	Perfluorodecanoic acid (PFDA)	0.088	D	0.0022	0.00024
307-55-1	Perfluorododecanoic acid (PFDoA)	0.062	D	0.0022	0.00074
27619-97-2	6:2FTS	0.074	D	0.022	0.0017

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	79		25-150
STL00996	13C2 PFDA	67		25-150
STL00998	13C2 PFDoA	54		25-150
STL02279	M2-6:2FTS	147		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_075.d
Lims ID: 320-38061-A-5-A
Client ID: SB003(0-2)
Sample Type: Client
Inject. Date: 26-Apr-2018 06:48:16 ALS Bottle#: 51 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38061-a-5-a 10X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:28:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.436	0.005	1.000	238467	0.0937			36.7	M
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	685434	0.2661		106	5243	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.556	448155	0.2699		108	6760	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.703	1.703	0.0	1.000	160865	0.0753			67.6	M
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	9309	0.2443		105	37.6	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	35616	0.0114			88.3	
298.90 > 99.00	1.739	1.739	0.0	1.000	15593		2.28(1.25-3.74)		33.7	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.993	0.0	1.000	429678	0.2340		93.6	7555	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.994	-0.001	1.000	393371	0.2252			260	
313.00 > 119.00	1.993	1.994	-0.001	1.000	36467		10.79(5.03-15.10)		221	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.321	0.0	1.000	462173	0.2586		103	10673	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	148405	0.0802			169	
363.00 > 169.00	2.321	2.321	0.0	1.000	56338		2.63(1.13-3.40)		285	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.334	0.0	1.000	494697	0.2243		94.8	13252	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	704383	0.2975			952	
399.00 > 99.00	2.334	2.334	0.0	1.000	226977		3.10(1.50-4.49)		998	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.660	0.001	1.000	133938	0.3498		147	479	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.660	0.001	1.000	3195573	3.35			2524	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.683	0.001		478685	0.2500			14693	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.690	-0.006	1.000	457199	0.2574		103	12304	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.690	0.001	1.003	580599	0.2748			511	
413.00 > 169.00	2.691	2.690	0.001	1.003	333137		1.74(0.84-2.52)		823	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.690	0.001	1.000	81551	0.0588			114	
449.00 > 99.00	2.699	2.690	0.009	1.003	23481		3.47(1.94-5.82)		245	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.064	3.059	0.005	1.000	38141211	33.6			81561	E
499.00 > 99.00	3.064	3.059	0.005	1.000	10482462		3.64(2.31-6.93)		83976	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.059	0.005	1.000	4779175	3.82			18862	
463.00 > 169.00	3.064	3.059	0.005	1.000	1182168		4.04(1.90-5.69)		10637	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.063	0.001	1.000	249467	0.1615		67.6	693	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.063	0.001	1.000	299734	0.1963		78.5	10562	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.396	3.399	-0.003	1.000	27170262	22.7			161	E
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	296452	0.1537		61.5	6.6	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.415	3.417	-0.002	1.000	35673002	24.4			273655	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.423	-0.008	1.000	277254	0.6012		251	1717	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.427	-0.003	1.000	3491699	3.96			11100	
513.00 > 169.00	3.424	3.427	-0.003	1.000	628750		5.55(2.36-7.09)		8760	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.432	-0.008	1.000	213680	0.1665		66.6	5974	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.582	0.002	1.000	92262	0.1269		50.7	1570	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.586	-0.002	1.000	20979	0.0570			40.2	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.739	3.741	-0.002	1.000	536519	0.7917			25.3	
599.00 > 99.00	3.739	3.741	-0.002	1.000	212047		2.53(1.39-4.16)		123	
D 30 13C2 PFUnA										
565.00 > 520.00	3.760	3.758	0.002	1.000	207637	0.1876		75.0	5315	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.758	-0.009	1.000	77846	0.1085		43.4	1566	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.760	3.762	-0.002	1.000	36175727	51.5			212631	E
563.00 > 169.00	3.760	3.762	-0.002	1.000	10877428		3.33(2.12-6.36)		191407	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.762	-0.002	1.003	191527	0.6582			1744	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.062	4.051	0.011	1.000	1877694	2.79			2646	
613.00 > 169.00	4.062	4.051	0.011	1.000	509773		3.68(2.13-6.40)		2936	
D 36 13C2 PFDoA										
615.00 > 570.00	4.062	4.059	0.003	1.000	161545	0.1352		54.1	2347	
41 Perfluorotridecanoic acid										E
663.00 > 619.00	4.317	4.319	-0.002	1.000	13077283	16.7			12937	E
663.00 > 169.00	4.317	4.319	-0.002	1.000	4600445		2.84(1.25-3.76)		16601	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.563	-0.002	1.000	164470	0.1085		43.4	1520	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.561	4.564	-0.003	1.000	164279	0.99			593	
713.00 > 219.00	4.551	4.564	-0.013	0.998	110244		1.49(0.71-2.13)		697	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 10:37:05 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_075.d

Injection Date: 26-Apr-2018 06:48:16 Instrument ID: A8_N

Lims ID: 320-38061-A-5-A Lab Sample ID: 320-38061-5

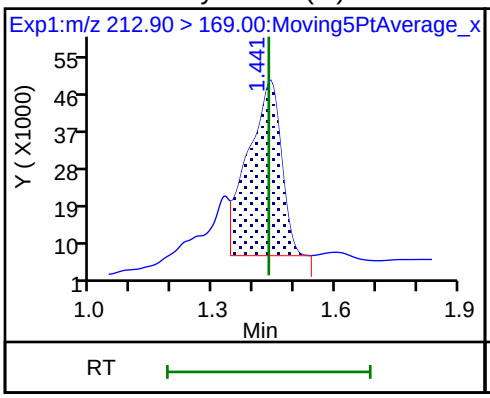
Client ID: SB003(0-2)

Operator ID: SACINSTLCMS01 ALS Bottle#: 51 Worklist Smp#: 8

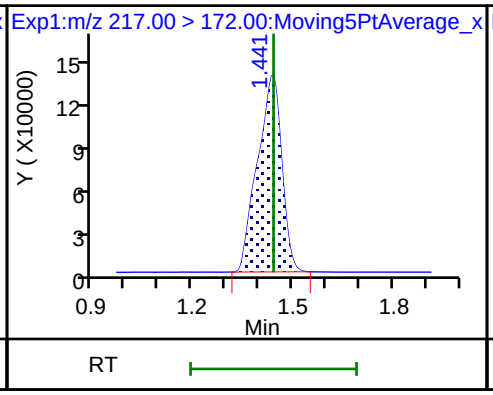
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

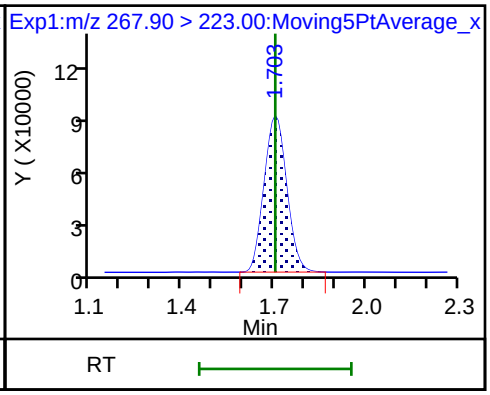
2 Perfluorobutyric acid (M)



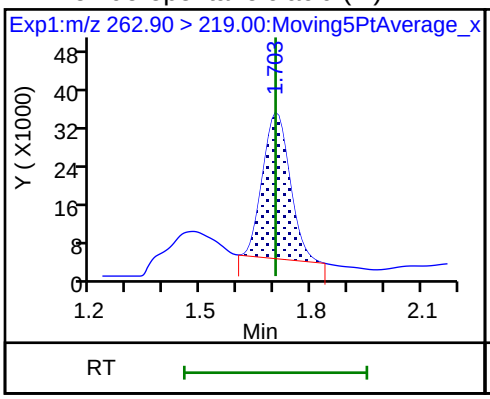
D 1 13C4 PFBA



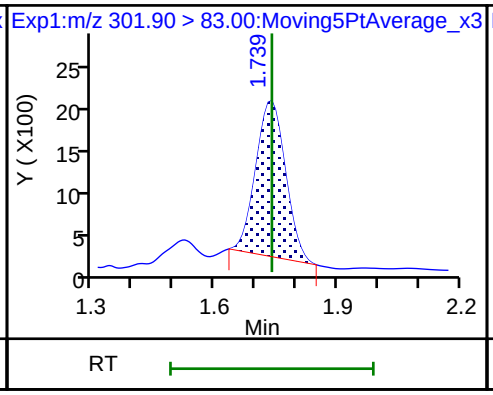
D 3 13C5-PFPeA



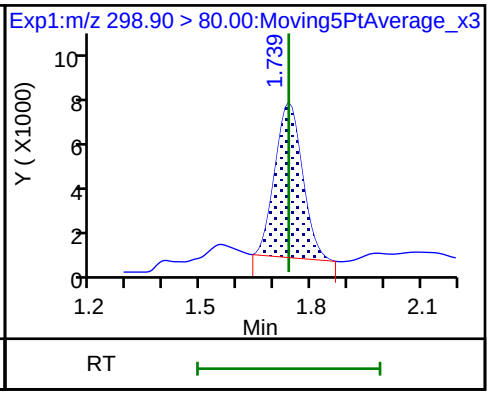
4 Perfluoropentanoic acid (M)



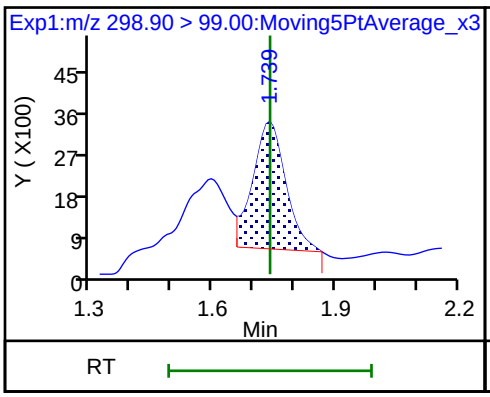
D 47 13C3-PFBS



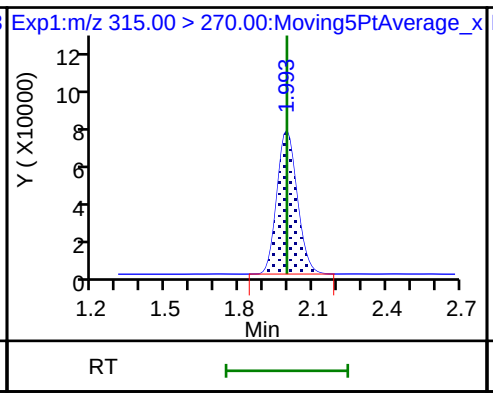
5 Perfluorobutanesulfonic acid



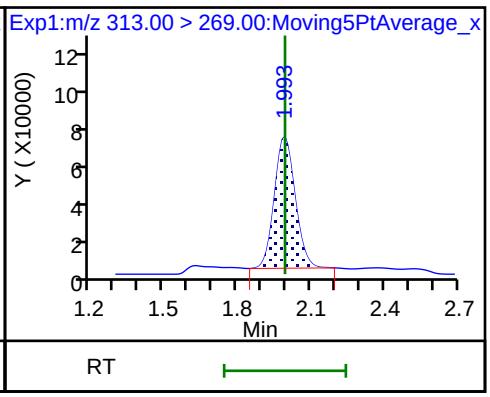
5 Perfluorobutanesulfonic acid



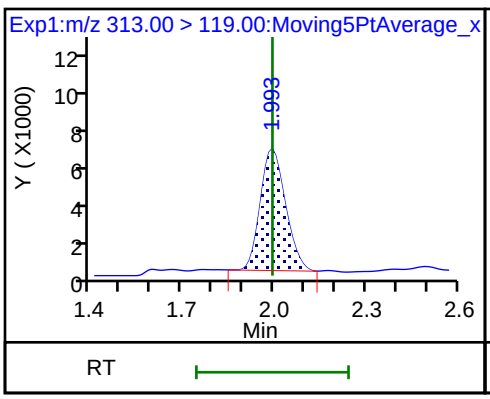
D 7 13C2 PFHxA



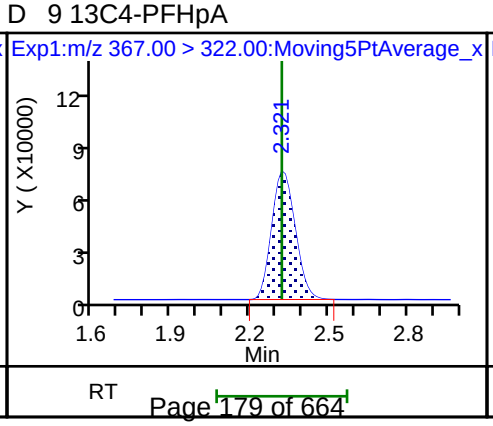
6 Perfluorohexanoic acid



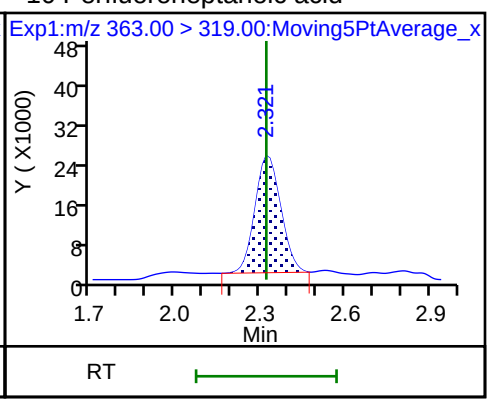
6 Perfluorohexanoic acid



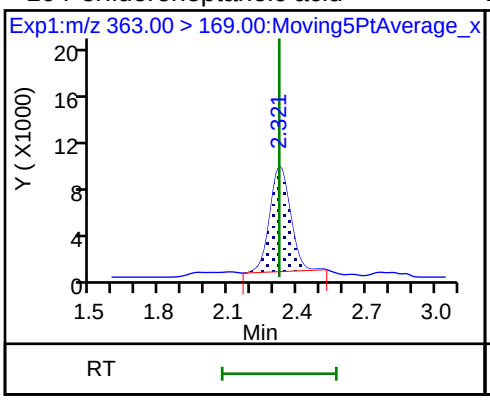
D 9 13C4-PFHpA



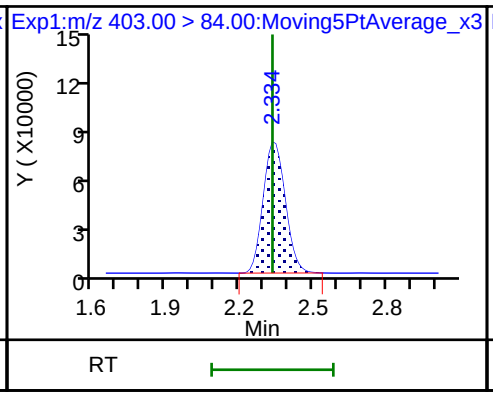
10 Perfluoroheptanoic acid



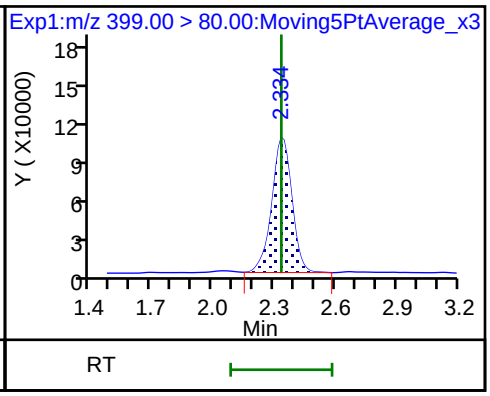
10 Perfluoroheptanoic acid



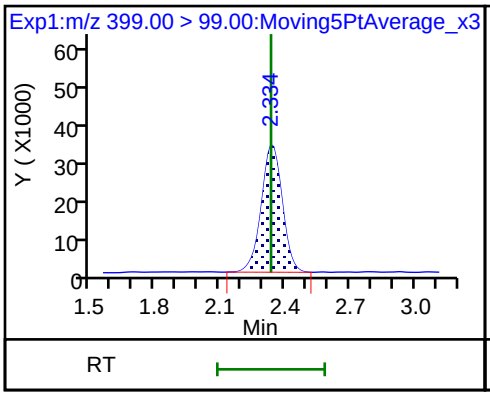
D 11 18O2 PFHxS



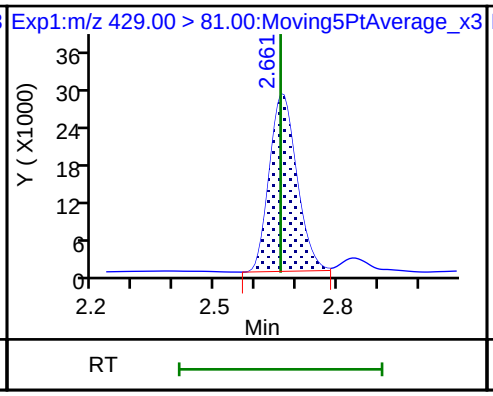
8 Perfluorohexanesulfonic acid



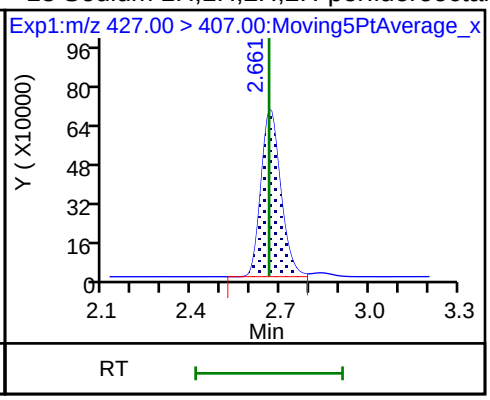
8 Perfluorohexanesulfonic acid



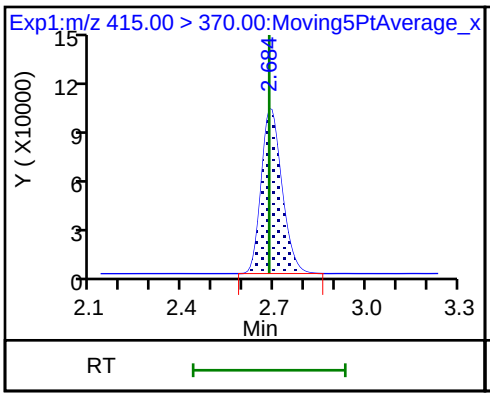
D 12 M2-6:2FTS



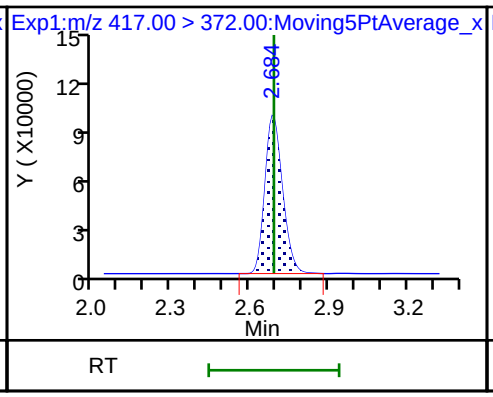
13 Sodium 1H,1H,2H,2H-perfluorooctane



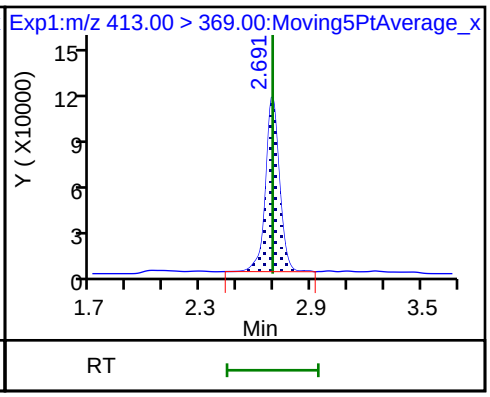
* 62 13C2-PFOA



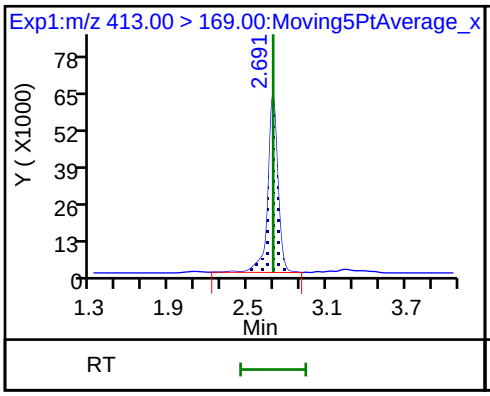
D 14 13C4 PFOA



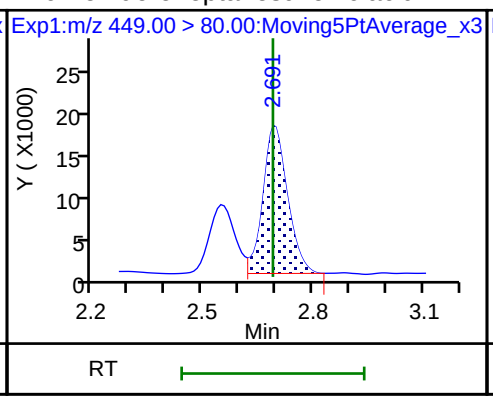
15 Perfluorooctanoic acid



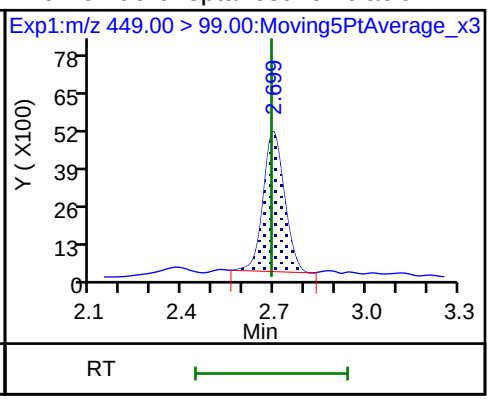
15 Perfluorooctanoic acid



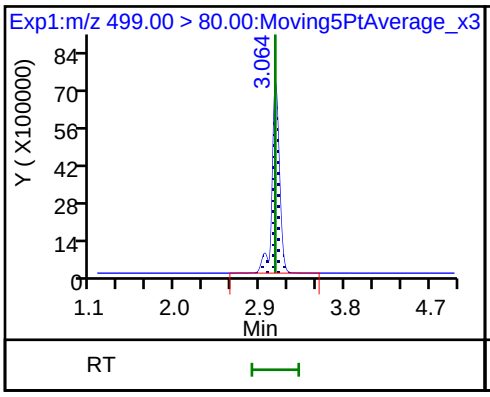
16 Perfluoroheptanesulfonic acid



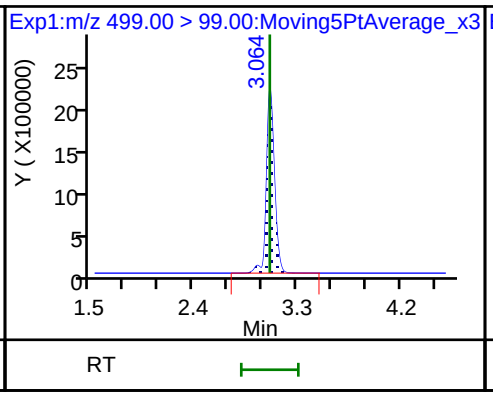
16 Perfluoroheptanesulfonic acid



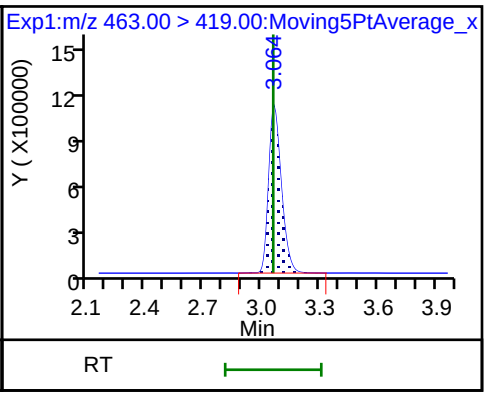
17 Perfluorooctane sulfonic acid



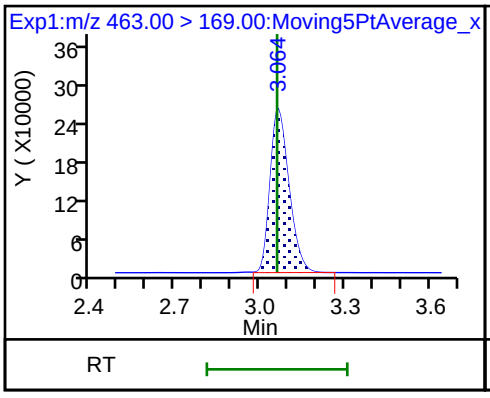
17 Perfluorooctane sulfonic acid



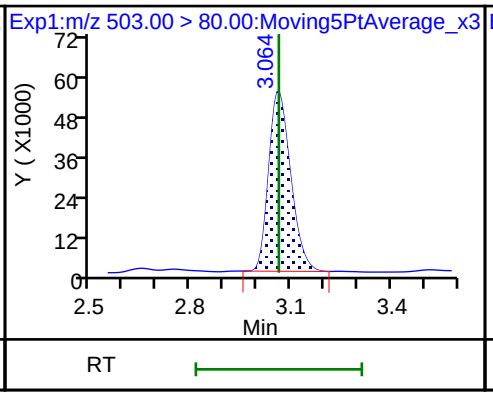
20 Perfluorononanoic acid



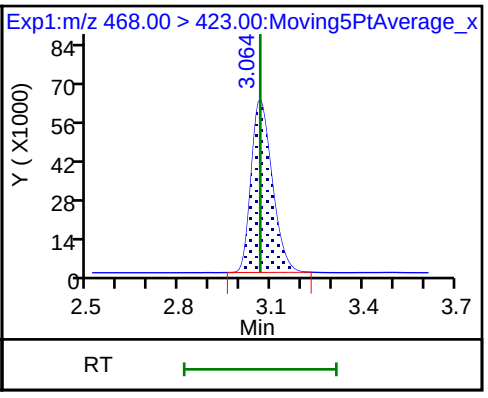
20 Perfluorononanoic acid



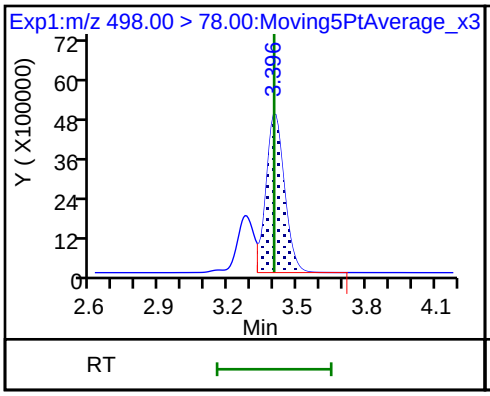
D 18 13C4 PFOS



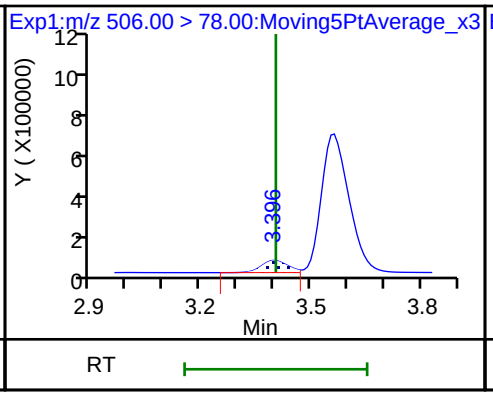
D 19 13C5 PFNA



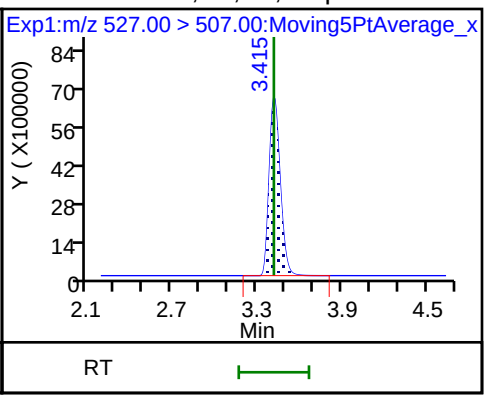
22 Perfluorooctane Sulfonamide



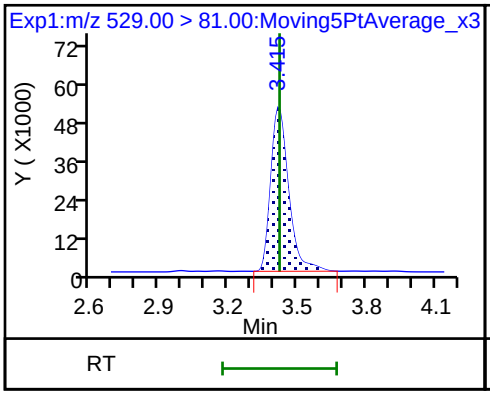
D 21 13C8 FOSA



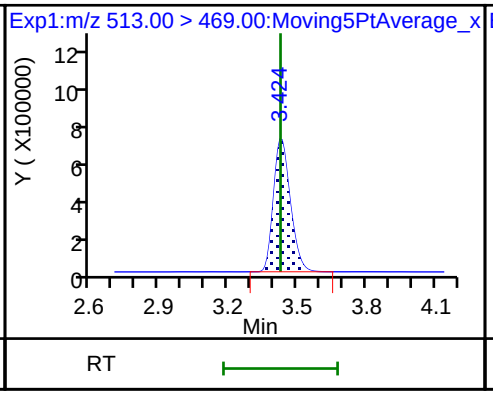
25 Sodium 1H,1H,2H,2H-perfluorodecane



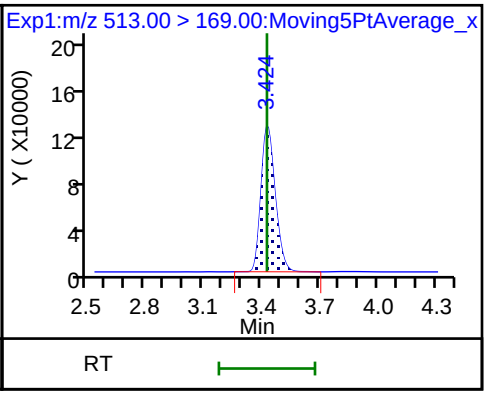
D 26 M2-8:2FTS



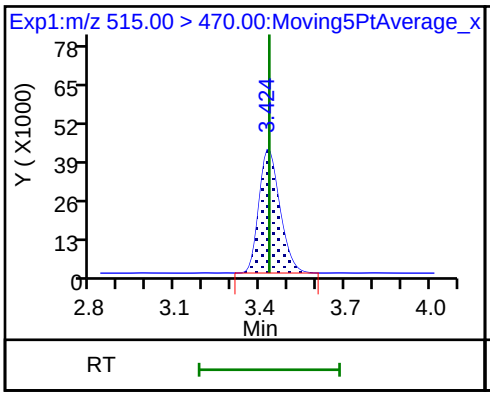
24 Perfluorodecanoic acid



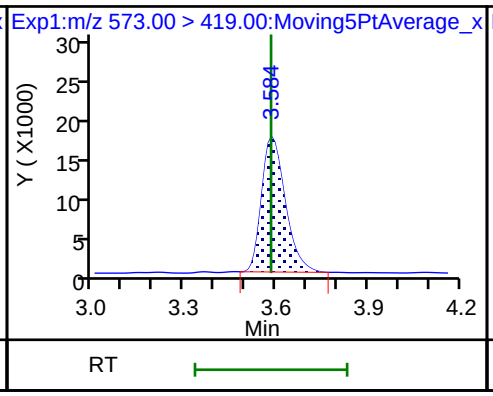
24 Perfluorodecanoic acid



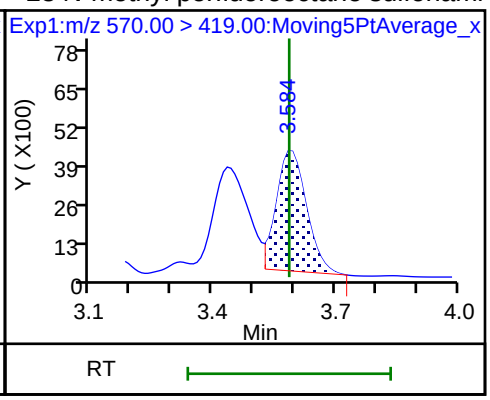
D 23 13C2 PFDA



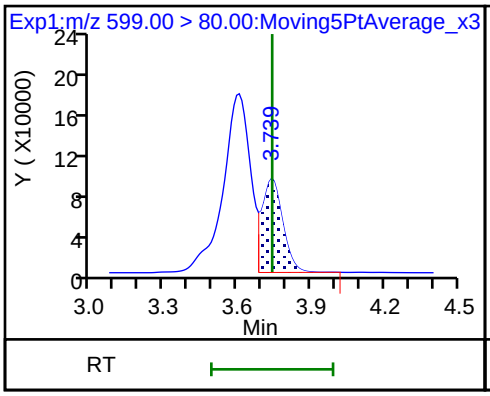
D 27 d3-NMeFOSAA



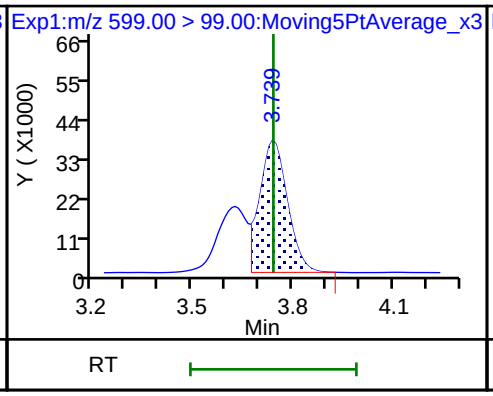
28 N-methyl perfluorooctane sulfonami



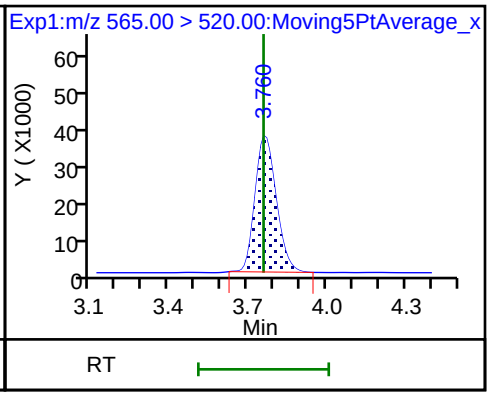
29 Perfluorodecane Sulfonic acid



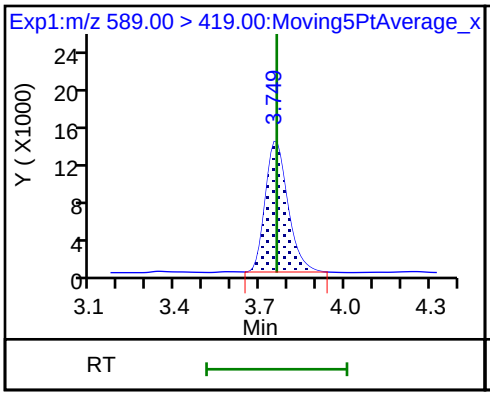
29 Perfluorodecane Sulfonic acid



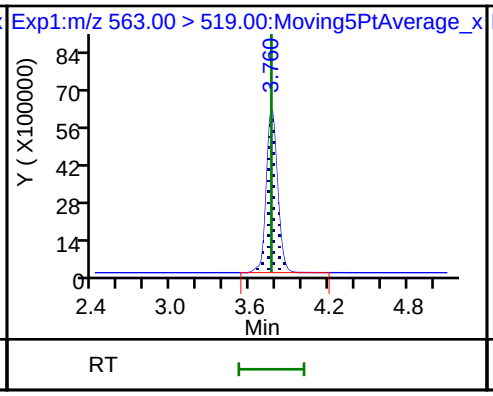
D 30 13C2 PFUnA



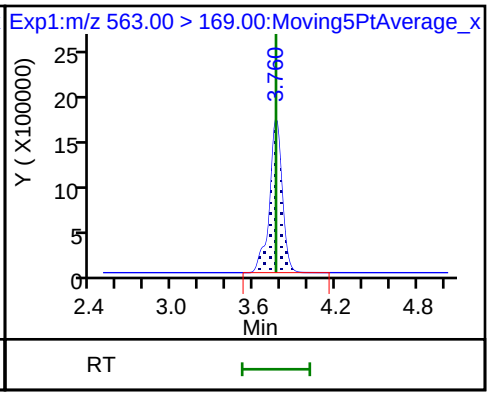
D 32 d5-NEtFOSAA



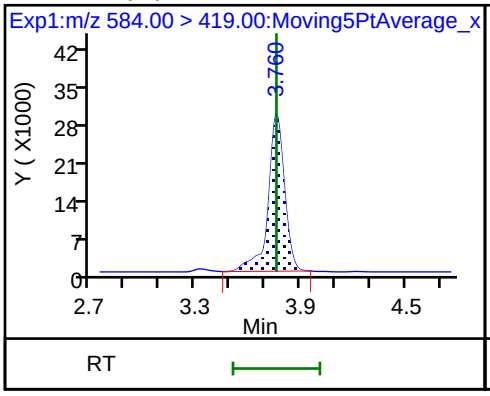
31 Perfluoroundecanoic acid



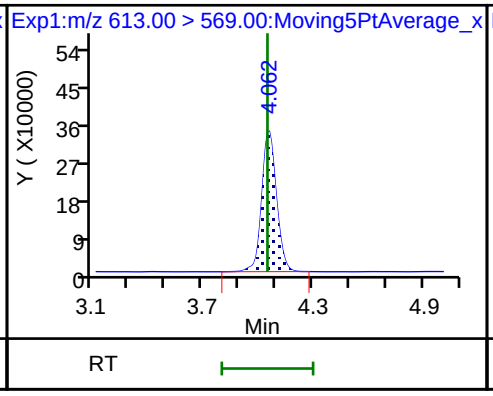
31 Perfluoroundecanoic acid



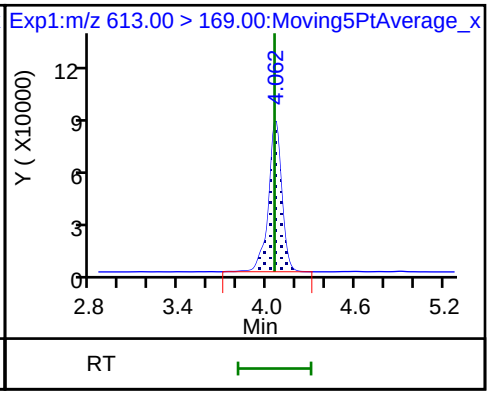
33 N-ethyl perfluorooctane sulfonamid



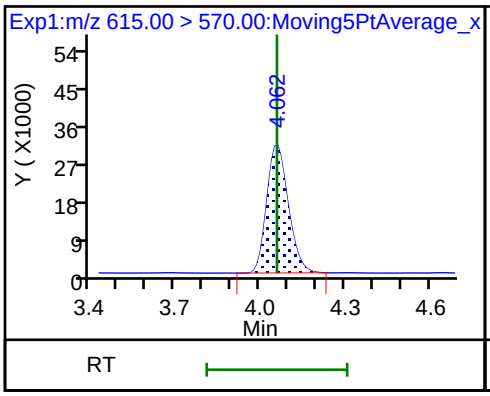
37 Perfluorododecanoic acid



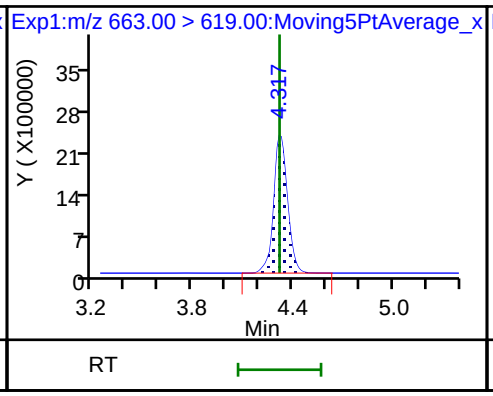
37 Perfluorododecanoic acid



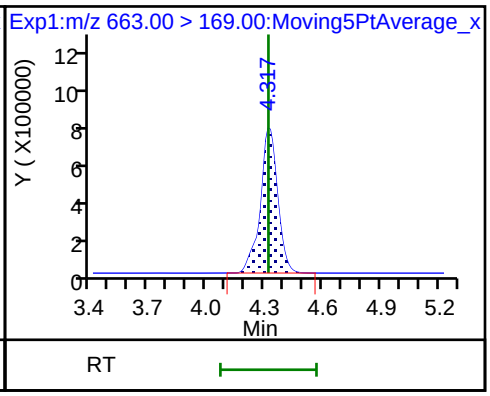
D 36 13C2 PFDoA



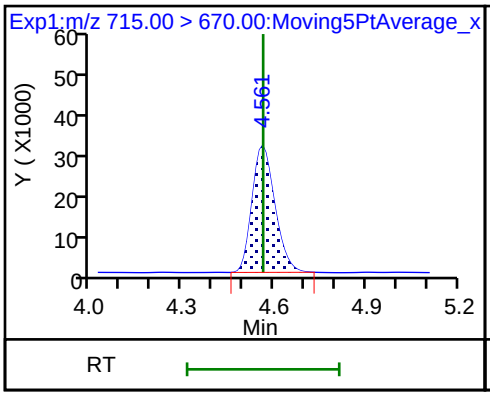
41 Perfluorotridecanoic acid



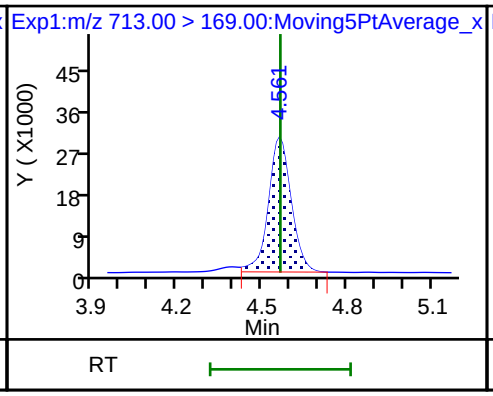
41 Perfluorotridecanoic acid



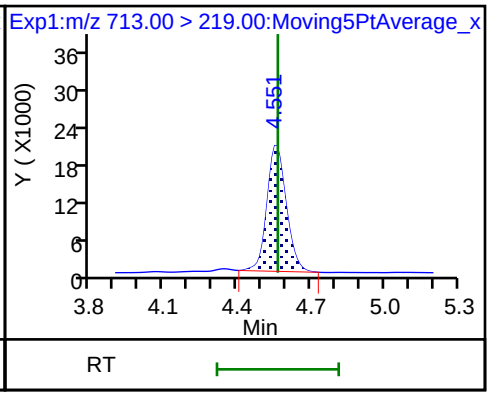
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB003(0-2) DL2 | Lab Sample ID: 320-38061-5 DL2

Matrix: Solid | Lab File ID: 2018.04.25LLBX_074.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/26/2018 06:40

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 50

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 11.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219909 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.40	D	0.011	0.0028
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.87	D	0.028	0.011
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.60	D	0.011	0.0046
39108-34-4	8:2FTS	0.74	D	0.11	0.014

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00998	13C2 PFDoA	50		25-150
STL00991	13C4 PFOS	70		25-150
STL01056	13C8 FOSA	57		25-150
STL02280	M2-8:2FTS	190	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_074.d
Lims ID: 320-38061-A-5-A
Client ID: SB003(0-2)
Sample Type: Client
Inject. Date: 26-Apr-2018 06:40:27 ALS Bottle#: 50 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 50.0000
Sample Info: 320-38061-a-5-a 50X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:26:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.436	0.0	1.000	36283	0.0158			11.4	M
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	123499	0.0481		96.2	1009	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.554	77027	0.0465		93.0	1394	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.703	-0.009	1.000	27331	0.0149			20.4	M
D 47 13C3-PFBS										M
301.90 > 83.00	1.721	1.739	-0.018	1.000	2194	0.0578		124	16.2	M
5 Perfluorobutanesulfonic acid										R
298.90 > 80.00	1.739	1.739	0.0	1.010	10449	0.002829			35.4	R
298.90 > 99.00	1.730	1.739	-0.009	1.005	2462		4.24(1.25-3.74)		17.4	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	83910	0.0458		91.7	2127	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.994	-0.012	1.000	74451	0.0437			64.3	
313.00 > 119.00	1.993	1.994	-0.001	1.006	9685		7.69(5.03-15.10)		62.3	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.321	0.0	1.000	86762	0.0487		97.4	2024	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	28430	0.0164			30.4	
363.00 > 169.00	2.321	2.321	0.0	1.000	9674		2.94(1.13-3.40)		39.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.334	0.0	1.000	91954	0.0418		88.4	3752	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	133370	0.0606			220	
399.00 > 99.00	2.334	2.334	0.0	1.000	42783		3.12(1.50-4.49)		293	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.683	2.660	0.023	1.000	31899	0.0835		176	247	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.660	0.015	0.997	766422	0.6751			2497	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		95463	0.0500			2293	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	92993	0.0525		105	3372	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	120389	0.0560			91.5	
413.00 > 169.00	2.683	2.690	-0.007	1.000	66790		1.80(0.84-2.52)		176	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	15759	0.0109			65.3	
449.00 > 99.00	2.698	2.690	0.008	1.003	4222		3.73(1.94-5.82)		72.3	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	1.000	9243767	7.83			45132	
499.00 > 99.00	3.057	3.059	-0.002	1.000	2192680		4.22(2.31-6.93)		39004	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.059	-0.002	1.000	939571	0.7079			3002	
463.00 > 169.00	3.057	3.059	-0.002	1.000	240110		3.91(1.90-5.69)		6746	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.063	-0.006	1.000	51864	0.0337		70.5	293	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.063	-0.006	1.000	63645	0.0418		83.6	2386	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.399	-0.001	1.003	5984952	5.44			201	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.404	-0.015	1.000	54368	0.0283		56.5	5.5	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	7405147	6.68			143185	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.423	-0.006	1.000	41942	0.0912		190	329	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.427	-0.001	1.000	698553	0.7914			2653	
513.00 > 169.00	3.426	3.427	-0.001	1.000	121708		5.74(2.36-7.09)		1955	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.432	-0.006	1.000	42784	0.0334		66.9	1682	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.586	3.582	0.004	1.000	21934	0.0302		60.5	302	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.586	-0.011	0.997	3409	0.007792			30.6	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.741	-0.011	1.000	102275	0.1452			24.3	
599.00 > 99.00	3.730	3.741	-0.011	1.000	42214		2.42(1.39-4.16)		107	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.758	-0.007	1.000	45623	0.0413		82.7	1259	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.758	-0.007	1.000	20516	0.0287		57.3	315	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.751	3.762	-0.011	1.000	8523523	11.1			30888	E
563.00 > 169.00	3.751	3.762	-0.011	1.000	2278291		3.74(2.12-6.36)		46985	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.762	-0.011	1.000	39548	0.1031			762	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	374004	0.6053			576	
613.00 > 169.00	4.051	4.051	0.0	1.000	98981		3.78(2.13-6.40)		625	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.059	-0.008	1.000	29624	0.0249		49.7	521	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	2574277	3.58			2899	
663.00 > 169.00	4.308	4.319	-0.011	0.997	921732		2.79(1.25-3.76)		6286	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.563	-0.011	1.000	32380	0.0214		42.9	334	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.564	-0.012	1.000	28858	0.1774			192	
713.00 > 219.00	4.552	4.564	-0.012	1.000	21595		1.34(0.71-2.13)		207	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 10:37:02 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_074.d

Injection Date: 26-Apr-2018 06:40:27 Instrument ID: A8_N

Lims ID: 320-38061-A-5-A Lab Sample ID: 320-38061-5

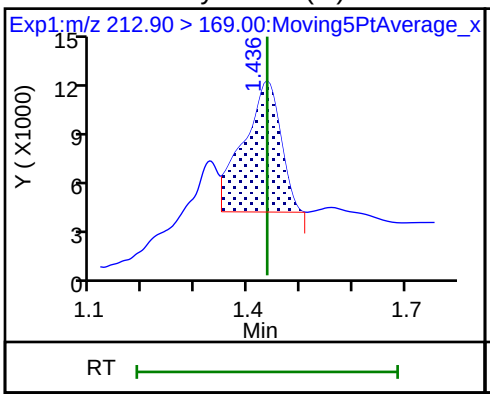
Client ID: SB003(0-2)

Operator ID: SACINSTLCMS01 ALS Bottle#: 50 Worklist Smp#: 7

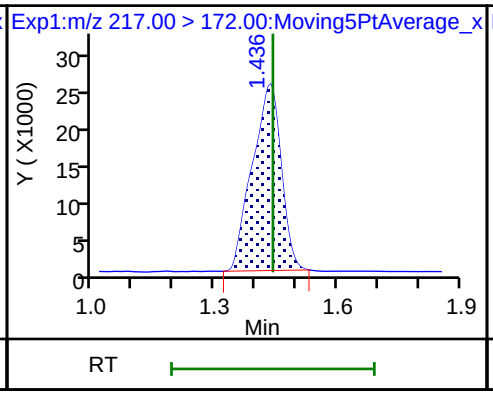
Injection Vol: 2.0 ul Dil. Factor: 50.0000

Method: A8_N Limit Group: LC PFC ICAL

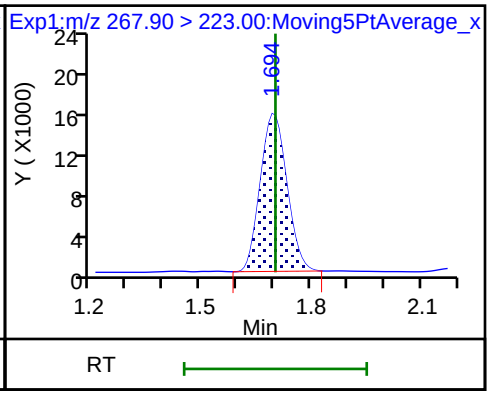
2 Perfluorobutyric acid (M)



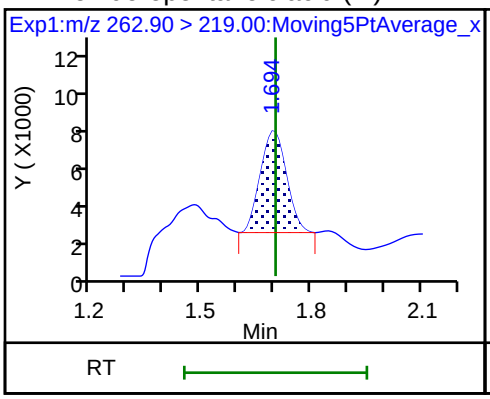
D 1 13C4 PFBA



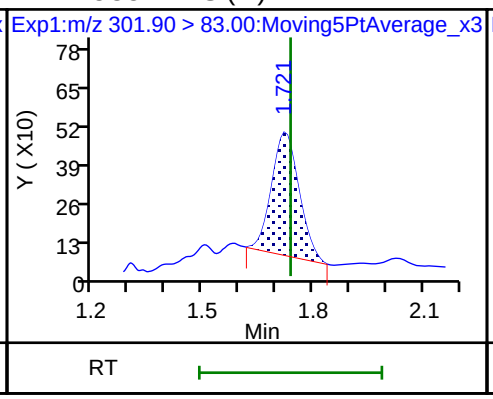
D 3 13C5-PFPeA



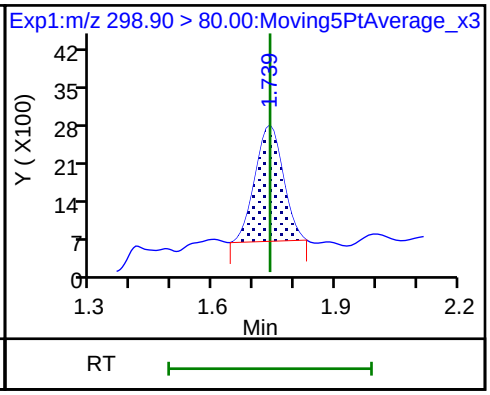
4 Perfluoropentanoic acid (M)



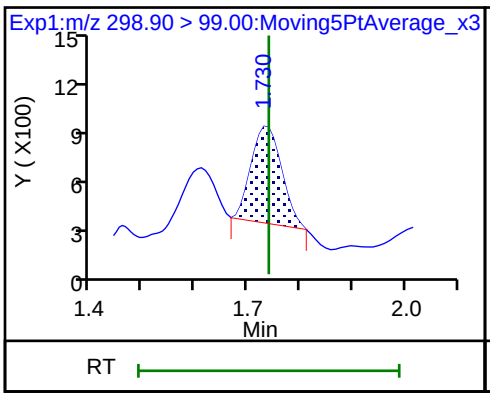
D 47 13C3-PFBS (M)



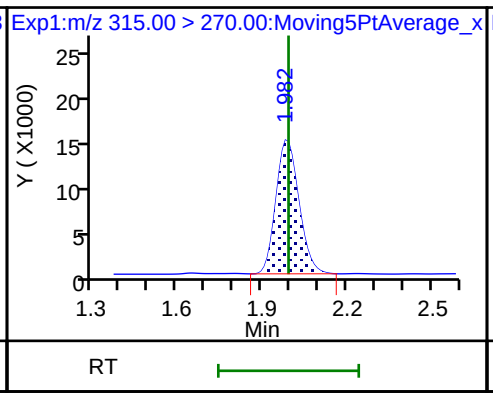
5 Perfluorobutanesulfonic acid



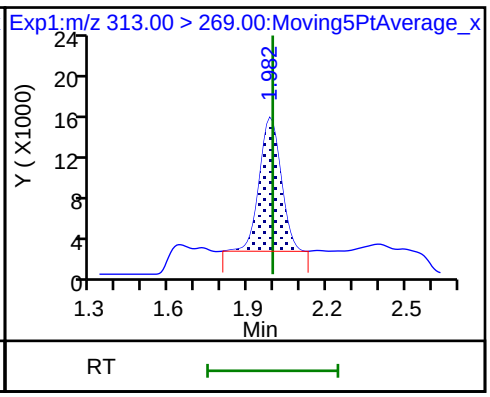
5 Perfluorobutanesulfonic acid



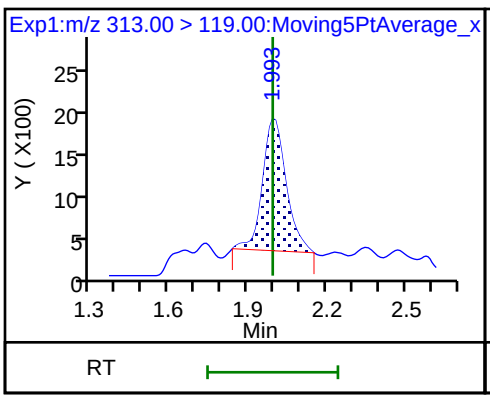
D 7 13C2 PFHxA



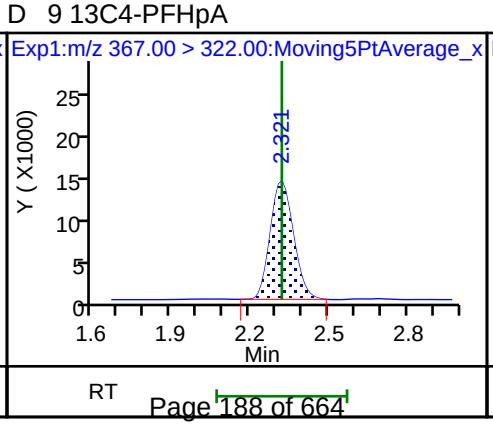
6 Perfluorohexanoic acid



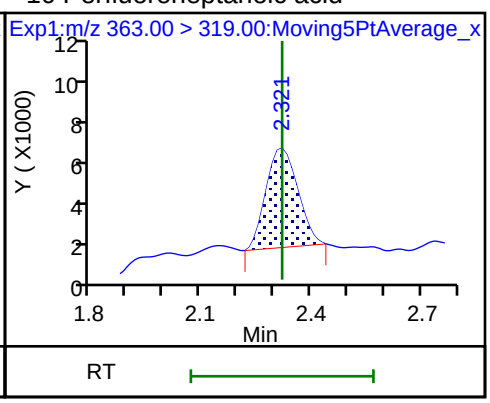
6 Perfluorohexanoic acid



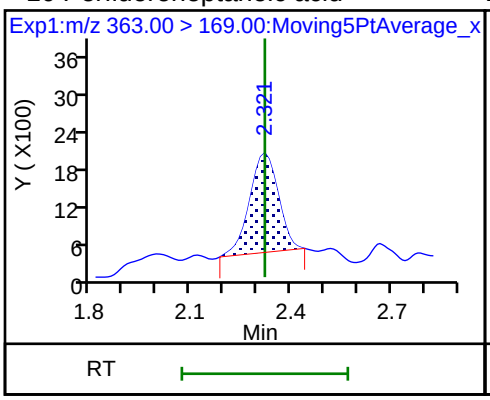
D 9 13C4-PFHpA



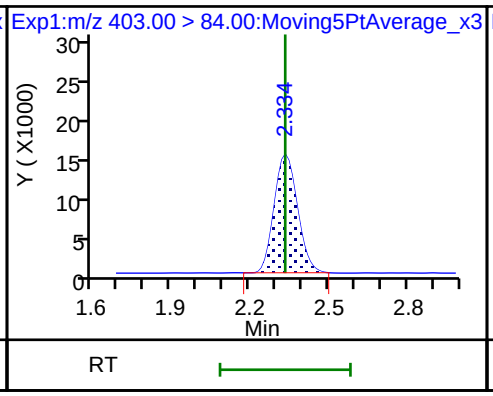
10 Perfluoroheptanoic acid



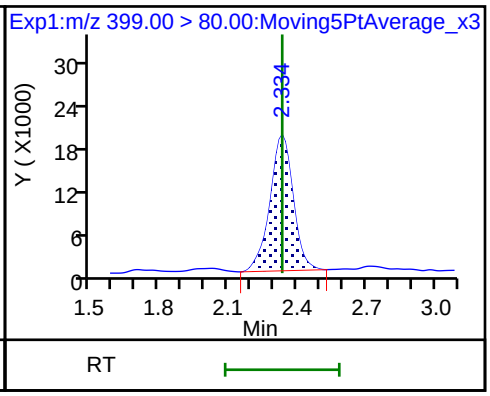
10 Perfluoroheptanoic acid



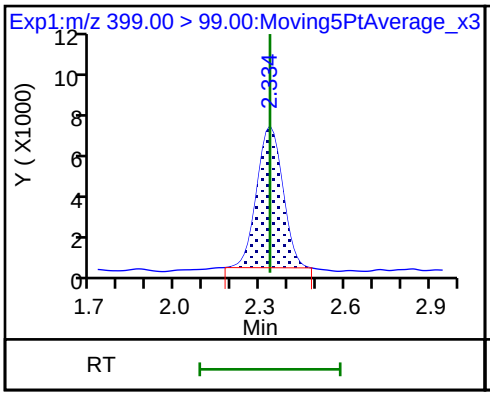
D 11 18O2 PFHxS



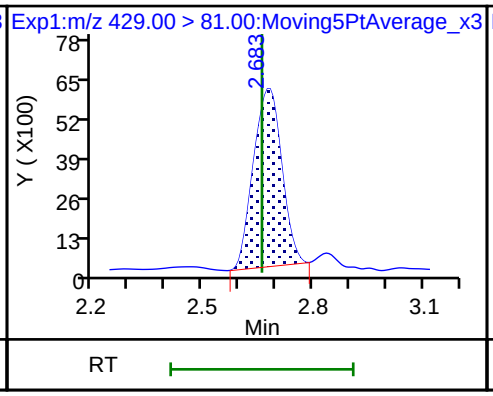
8 Perfluorohexanesulfonic acid



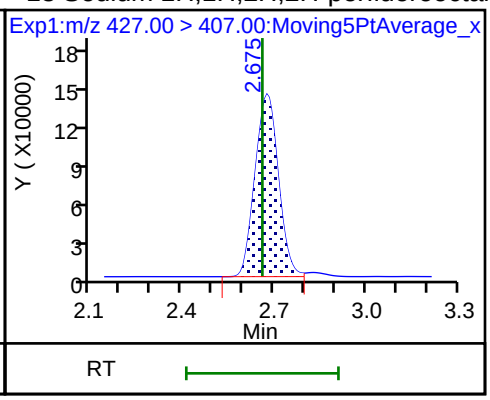
8 Perfluorohexanesulfonic acid



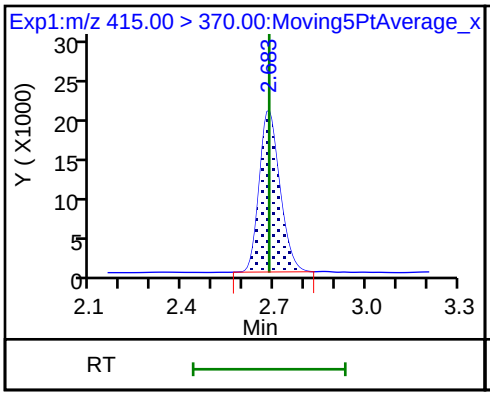
D 12 M2-6:2FTS



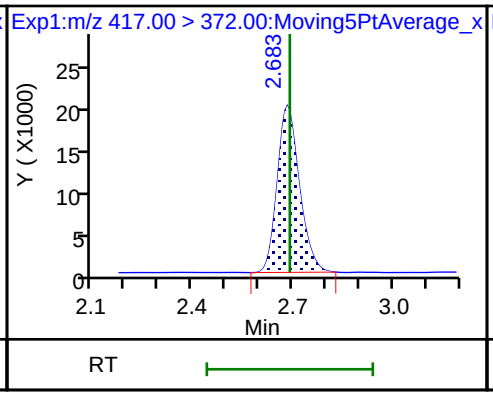
13 Sodium 1H,1H,2H,2H-perfluorooctane



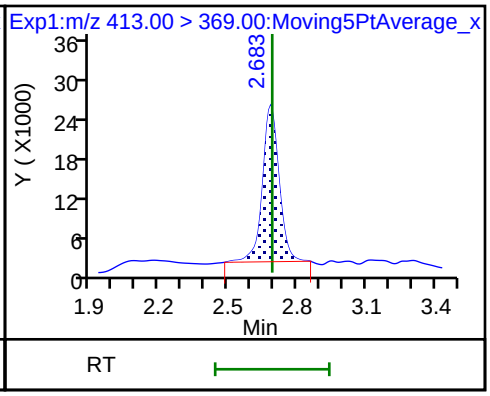
* 62 13C2-PFOA



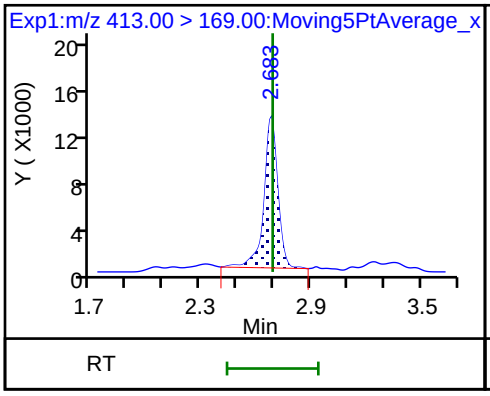
D 14 13C4 PFOA



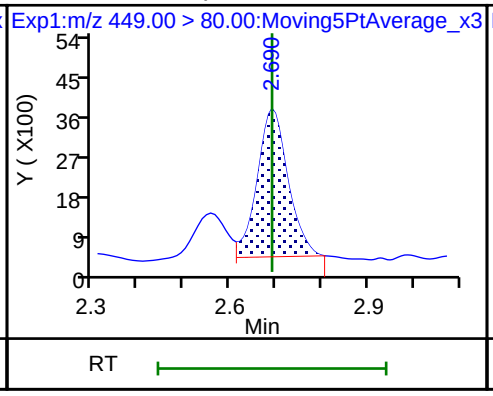
15 Perfluorooctanoic acid



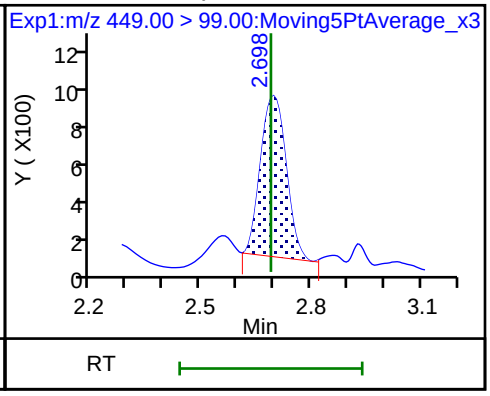
15 Perfluorooctanoic acid



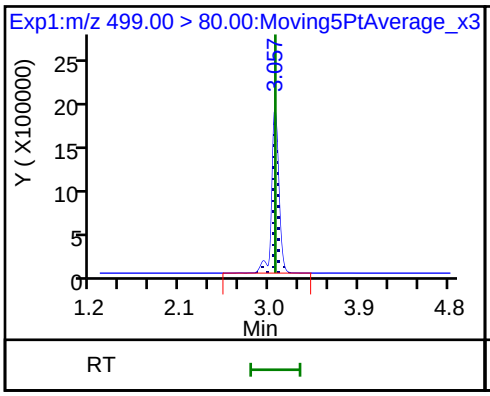
16 Perfluoroheptanesulfonic acid



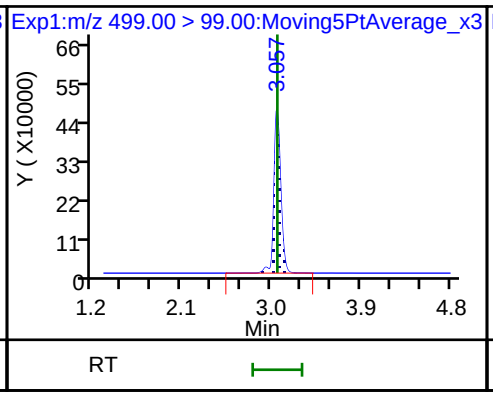
16 Perfluoroheptanesulfonic acid



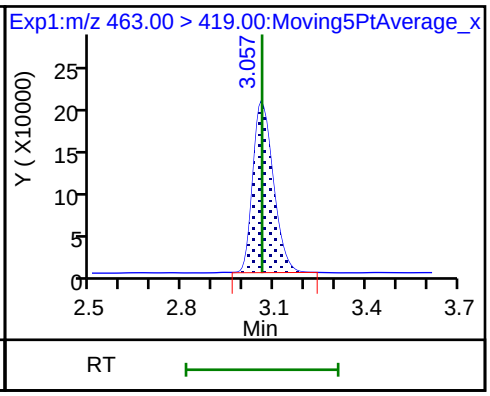
17 Perfluorooctane sulfonic acid



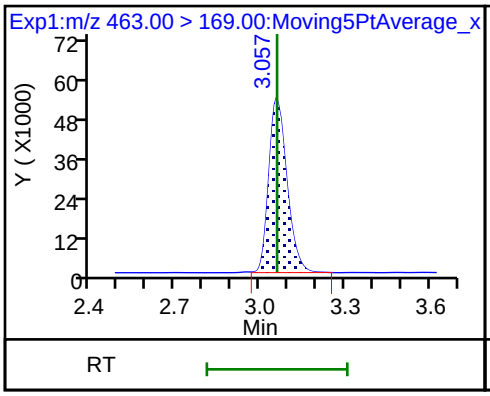
17 Perfluorooctane sulfonic acid



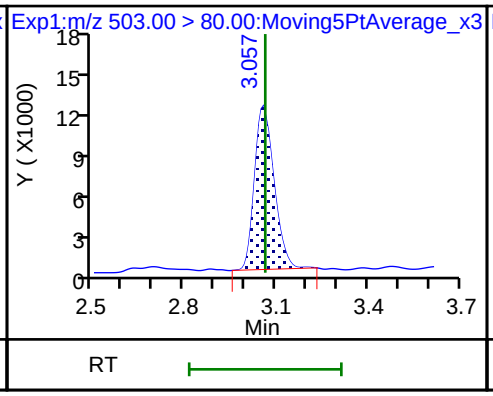
20 Perfluorononanoic acid



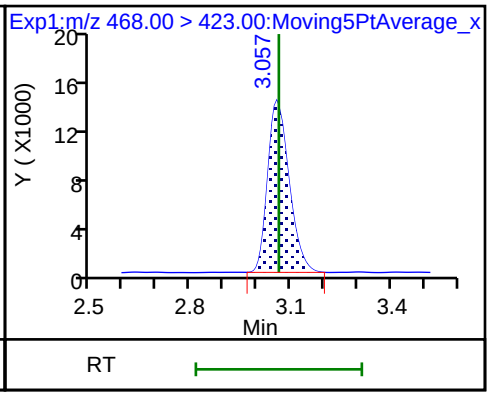
20 Perfluorononanoic acid



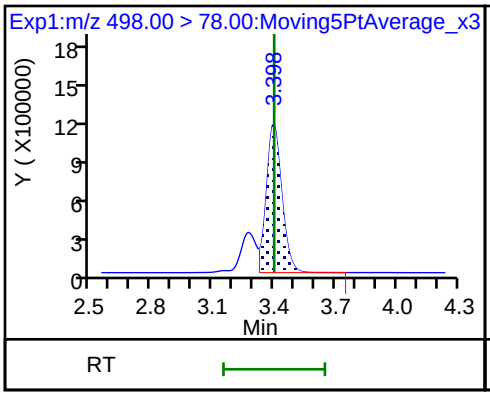
D 18 13C4 PFOS



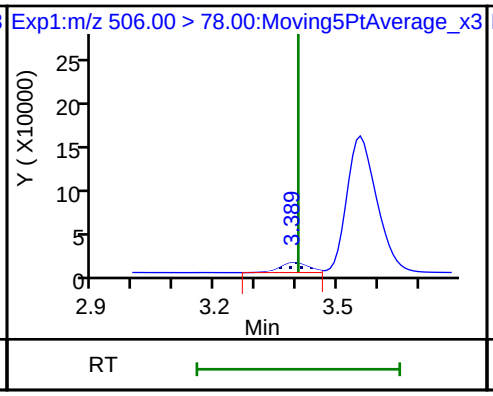
D 19 13C5 PFNA



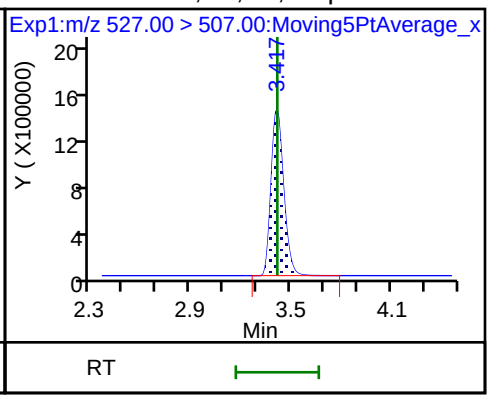
22 Perfluorooctane Sulfonamide



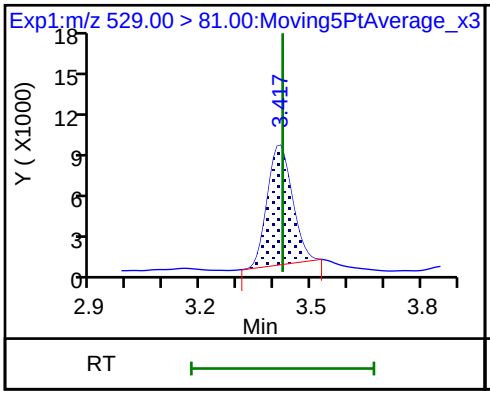
D 21 13C8 FOSA



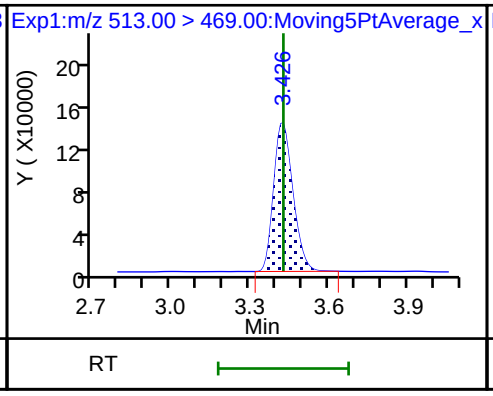
25 Sodium 1H,1H,2H,2H-perfluorodecane



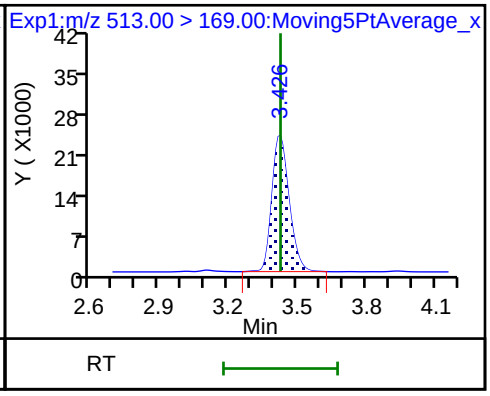
D 26 M2-8:2FTS



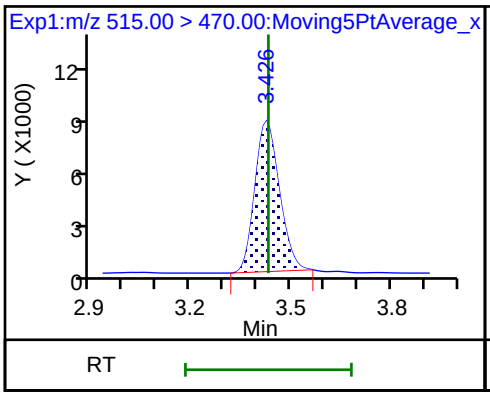
24 Perfluorodecanoic acid



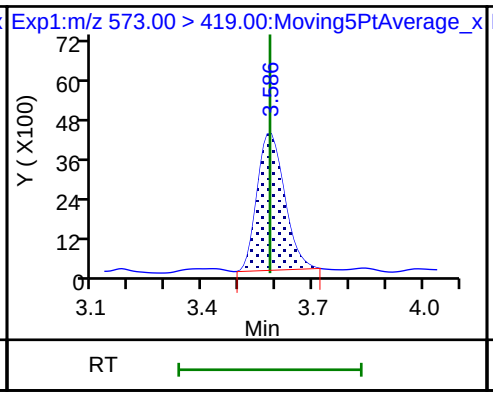
24 Perfluorodecanoic acid



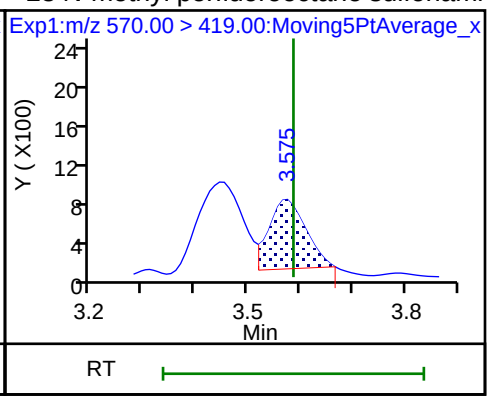
D 23 13C2 PFDA



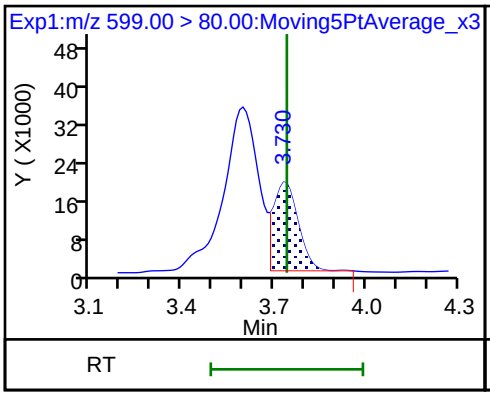
D 27 d3-NMeFOSAA



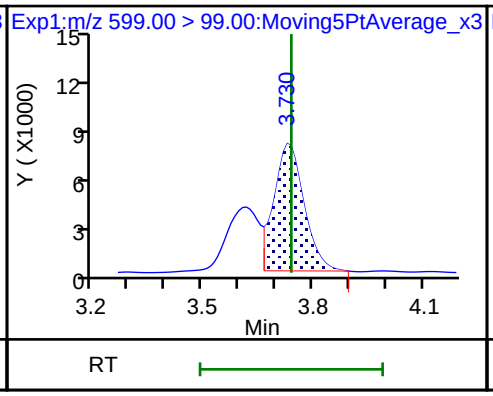
28 N-methyl perfluorooctane sulfonami



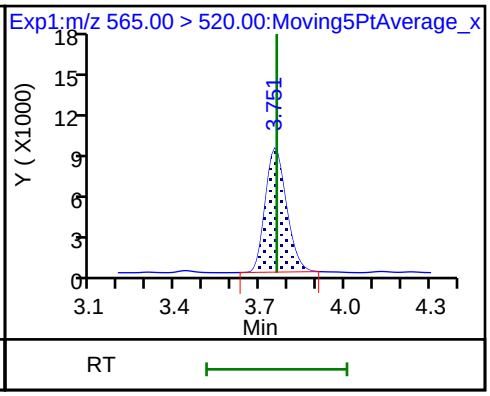
29 Perfluorodecane Sulfonic acid



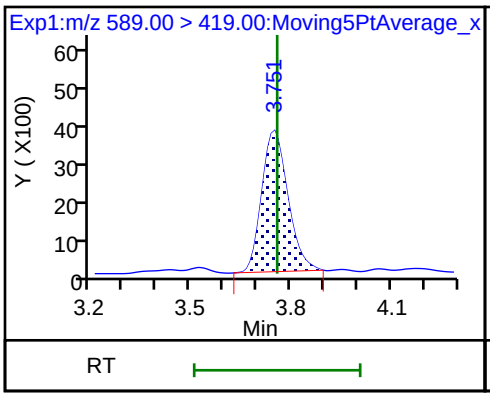
29 Perfluorodecane Sulfonic acid



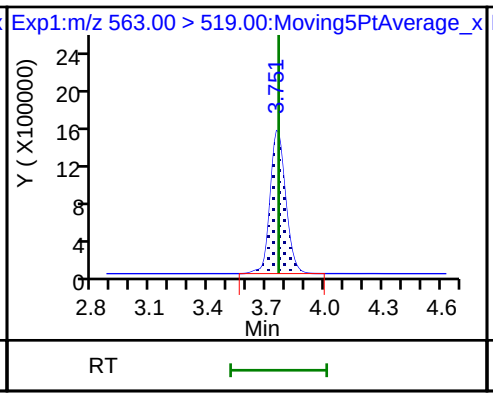
D 30 13C2 PFUnA



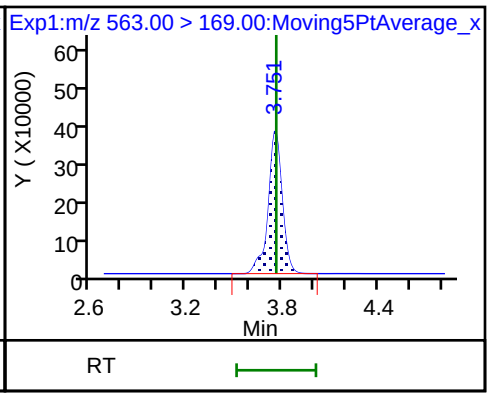
D 32 d5-NEtFOSAA



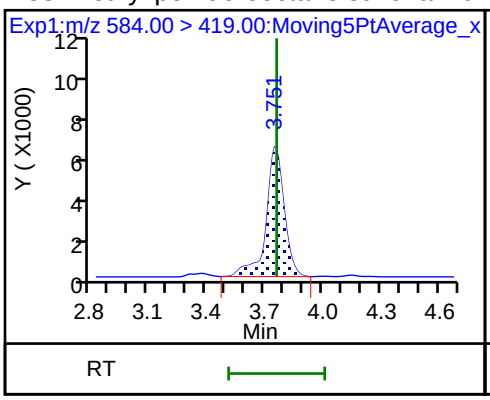
31 Perfluoroundecanoic acid



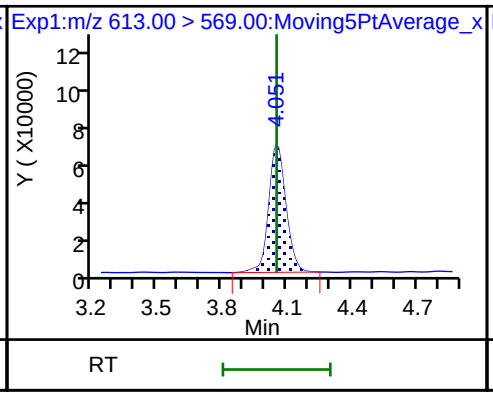
31 Perfluoroundecanoic acid



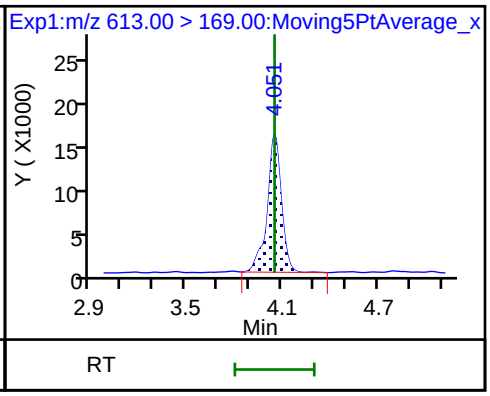
33 N-ethyl perfluorooctane sulfonamid



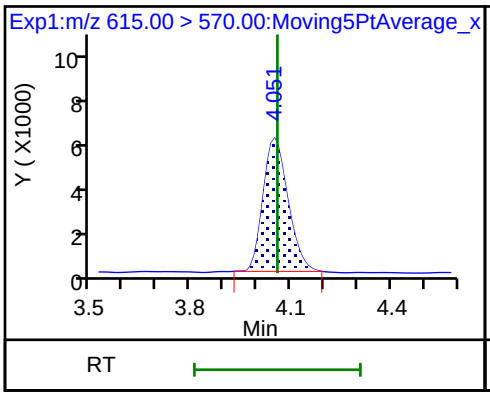
37 Perfluorododecanoic acid



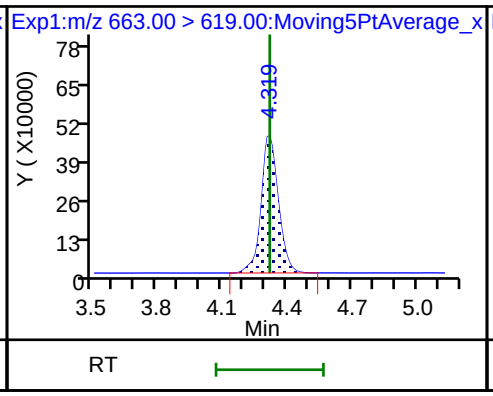
37 Perfluorododecanoic acid



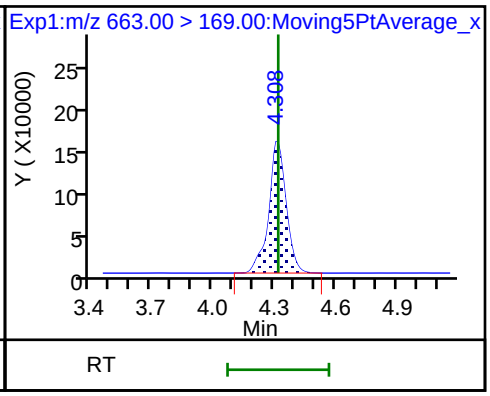
D 36 13C2 PFDoA



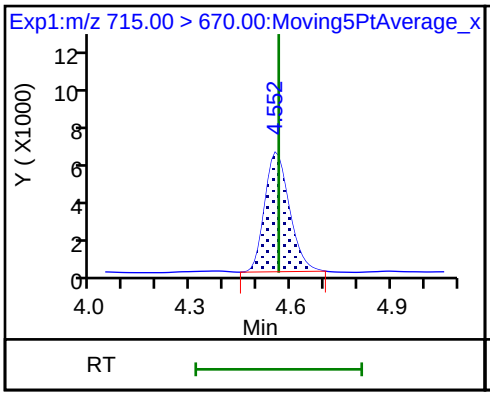
41 Perfluorotridecanoic acid



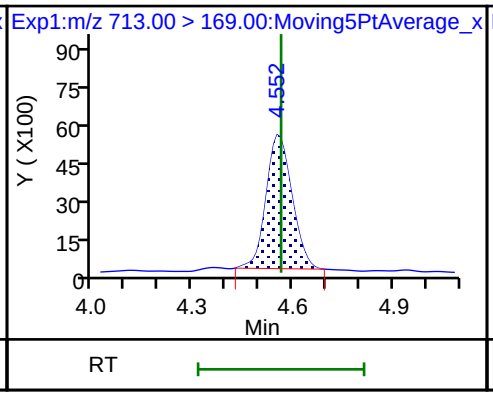
41 Perfluorotridecanoic acid



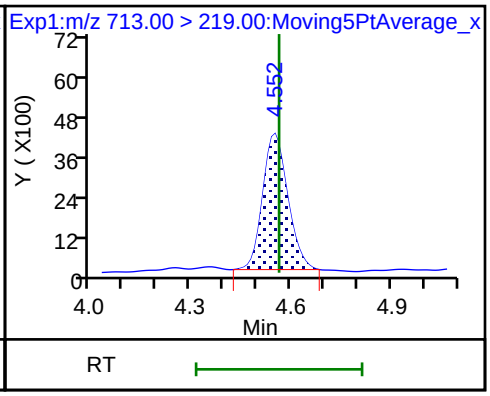
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB003(0-2) DL3 | Lab Sample ID: 320-38061-5 DL3

Matrix: Solid | Lab File ID: 2018.04.26LLA_037.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.09(g) | Date Analyzed: 04/26/2018 16:00

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 11.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220081 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.02	D	0.022	0.0040

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00997	13C2 PFUnA	94		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\2018.04.26LLA_037.d
Lims ID: 320-38061-A-5-A
Client ID: SB003(0-2)
Sample Type: Client
Inject. Date: 26-Apr-2018 16:00:03 ALS Bottle#: 25 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38061-a-5-a 100X
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 10:25:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 10:12:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.442	-0.001	1.000	62157	0.0231		92.3	519	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.446	-0.005	1.000	27892	0.0121			9.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.556	38270	0.0220		88.2	843	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.711	-0.008	1.000	15645	0.008576			13.1	
D 47 13C3-PFBS										M
301.90 > 83.00	1.730	1.739	-0.009	1.000	1219	0.0306		132	9.8	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.994	-0.001	1.000	41505	0.0216		86.5	1359	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.321	0.013	1.000	40570	0.0217		86.9	831	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.334	2.332	0.002	1.000	51482	0.0317			68.0	
363.00 > 169.00	2.334	2.332	0.002	1.000	22414		2.30(1.13-3.40)		118	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.334	0.013	1.000	44800	0.0194		82.1	1841	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.345	0.002	1.000	75132	0.0350			169	
399.00 > 99.00	2.347	2.345	0.002	1.000	19995		3.76(1.50-4.49)		105	
D 12 M2-6:2FTS										
429.00 > 81.00	2.692	2.660	0.032	1.000	19112	0.0477		201	177	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.685	2.667	0.018	0.997	410171	0.3015			1875	
D 14 13C4 PFOA										
417.00 > 372.00	2.692	2.690	0.002	1.000	48173	0.0259		104	2030	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.692	2.697	-0.005		50052	0.0250			1451	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.692	2.697	-0.005	1.000	68579	0.0308			43.0	
413.00 > 169.00	2.692	2.697	-0.005	1.000	37095		1.85(0.84-2.52)		131	
16 Perfluoroheptanesulfonic acid										R
449.00 > 80.00	2.700	2.705	-0.005	1.000	10794	0.008167			47.0	R
449.00 > 99.00	2.692	2.705	-0.013	0.997	1754		6.15(1.94-5.82)		31.5	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.060	0.005	1.000	23791	0.0147		61.6	138	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	4728725	4.37			23640	
499.00 > 99.00	3.065	3.065	0.0	1.000	1120400		4.22(2.31-6.93)		13348	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.067	-0.002	1.000	31999	0.0200		80.2	1164	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.072	-0.007	1.000	487618	0.3654			1564	
463.00 > 169.00	3.065	3.072	-0.007	1.000	119959		4.06(1.90-5.69)		2586	
D 21 13C8 FOSA										
506.00 > 78.00	3.403	3.398	0.005	1.000	33814	0.0168		67.1	7.1	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.403	3.408	-0.005	1.000	3030345	2.21			222	
D 26 M2-8:2FTS										
529.00 > 81.00	3.422	3.416	0.006	1.000	24357	0.0505		211	208	
D 23 13C2 PFDA										
515.00 > 470.00	3.431	3.426	0.005	1.000	23427	0.0175		69.8	736	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.422	3.426	-0.004	1.000	3406525	2.65			93688	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.431	3.436	-0.005	1.000	322788	0.3339			1296	
513.00 > 169.00	3.431	3.436	-0.005	1.000	62198		5.19(2.36-7.09)		1085	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.593	3.585	0.007	1.000	11928	0.0157		62.7	198	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.593	3.597	-0.005	1.000	3506	0.007368			53.6	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.757	3.750	0.007	1.000	11503	0.0153		61.3	166	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.747	3.751	-0.004	1.000	59127	0.0915			28.4	
599.00 > 99.00	3.736	3.751	-0.015	0.997	25628		2.31(1.39-4.16)		166	
D 30 13C2 PFUnA										
565.00 > 520.00	3.767	3.761	0.006	1.000	27276	0.0236		94.3	689	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.757	3.761	-0.004	1.000	22041	0.0513			406	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.757	3.761	-0.004	0.997	4244733	4.60			22684	
563.00 > 169.00	3.757	3.761	-0.004	0.997	1118619		3.79(2.12-6.36)		16728	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.056	4.060	-0.004	1.000	14149	0.0113		45.3	210	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.056	4.061	-0.005	1.000	189011	0.3202			376	
613.00 > 169.00	4.056	4.061	-0.005	1.000	52933		3.57(2.13-6.40)		476	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.316	4.318	-0.002	1.000	1269957	1.85			2097	
663.00 > 169.00	4.316	4.318	-0.002	1.000	450358		2.82(1.25-3.76)		2905	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.560	4.553	0.007	1.000	16942	0.0107		42.8	164	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.560	4.564	-0.004	1.000	14198	0.0834			133	
713.00 > 219.00	4.549	4.564	-0.015	0.998	10528		1.35(0.71-2.13)		167	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 10:25:57 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\2018.04.26LLA_037.d

Injection Date: 26-Apr-2018 16:00:03 Instrument ID: A8_N

Lims ID: 320-38061-A-5-A Lab Sample ID: 320-38061-5

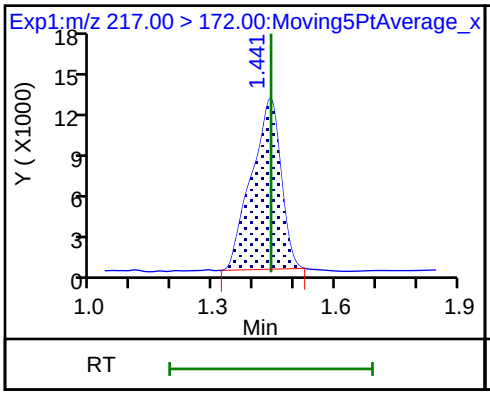
Client ID: SB003(0-2)

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 2

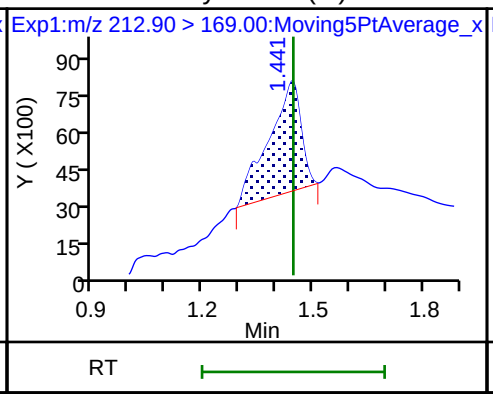
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

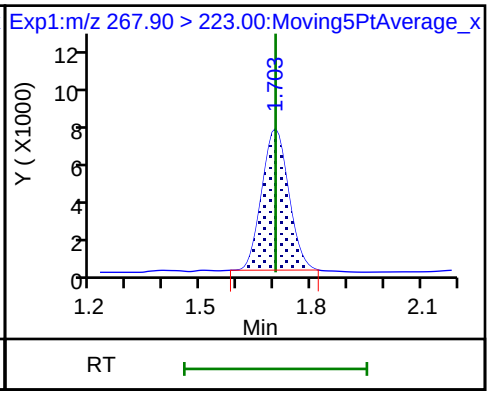
D 1 13C4 PFBA



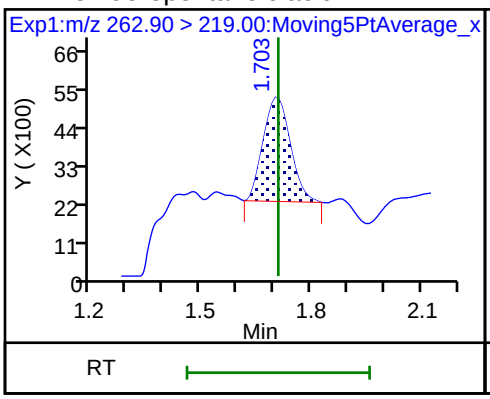
2 Perfluorobutyric acid (M)



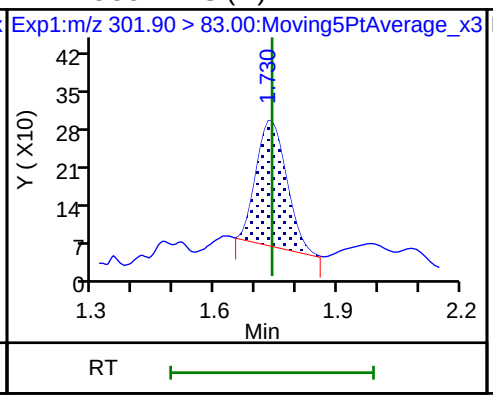
D 3 13C5-PFPeA



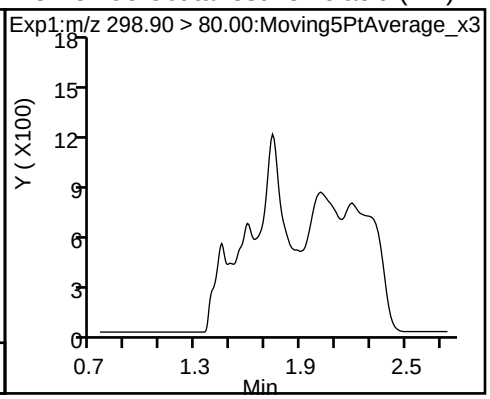
4 Perfluoropentanoic acid



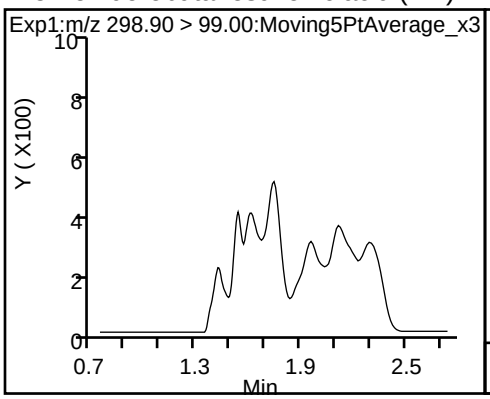
D 47 13C3-PFBS (M)



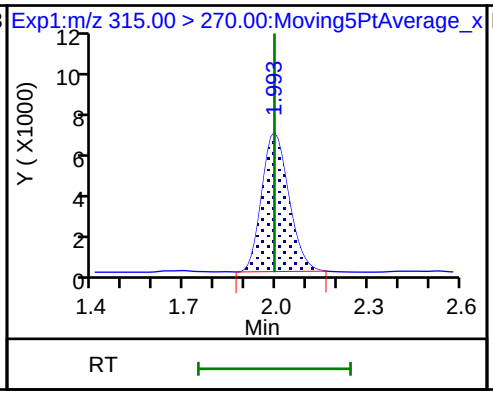
5 Perfluorobutanesulfonic acid (ND)



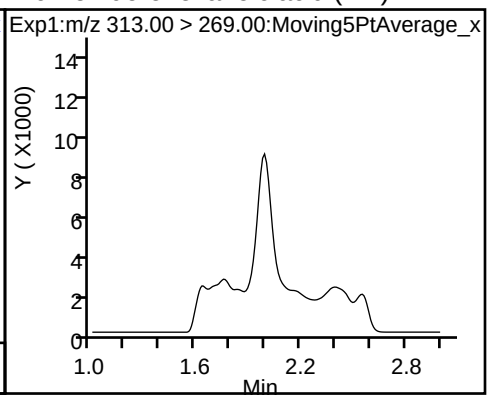
5 Perfluorobutanesulfonic acid (ND)



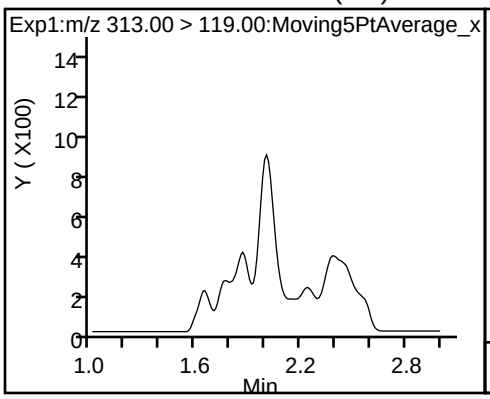
D 7 13C2 PFHxA



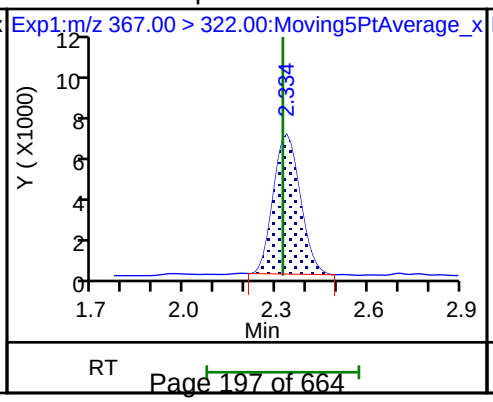
6 Perfluorohexanoic acid (ND)



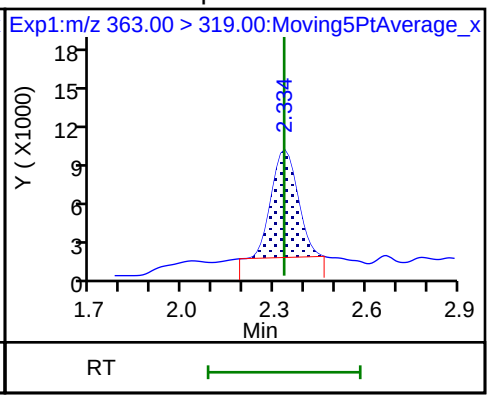
6 Perfluorohexanoic acid (ND)



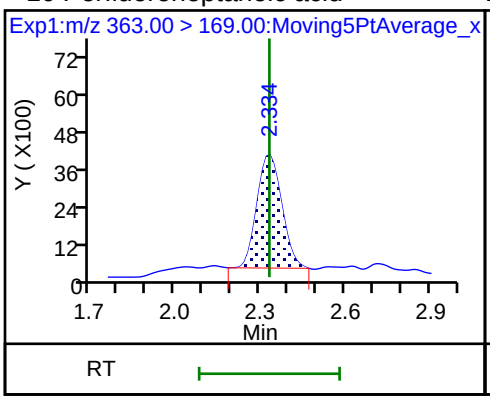
D 9 13C4-PFHpA



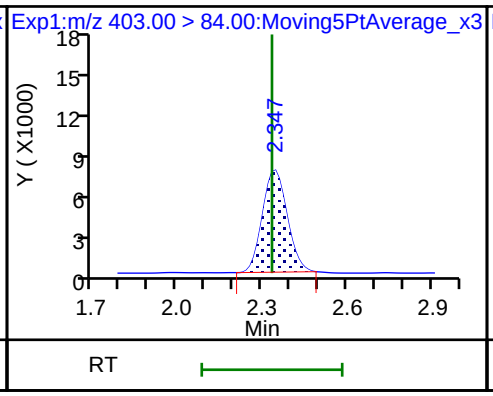
10 Perfluoroheptanoic acid



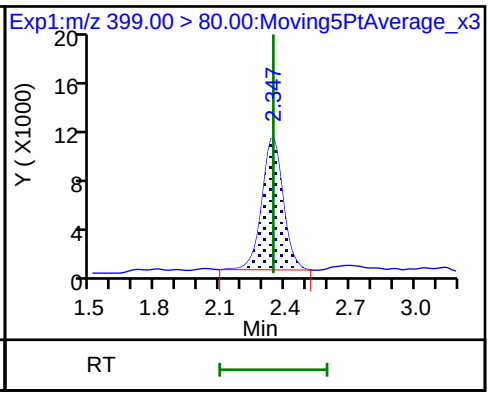
10 Perfluoroheptanoic acid



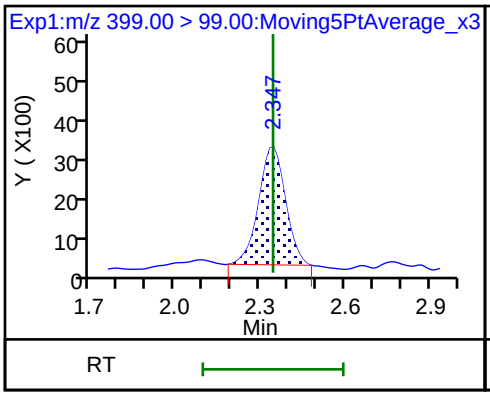
D 11 18O2 PFHxS



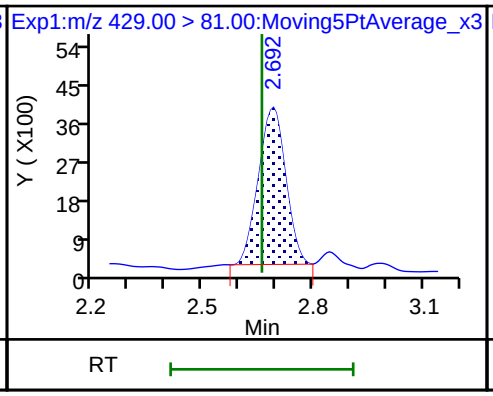
8 Perfluorohexanesulfonic acid



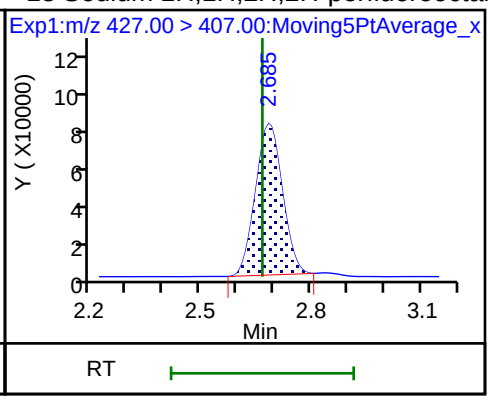
8 Perfluorohexanesulfonic acid



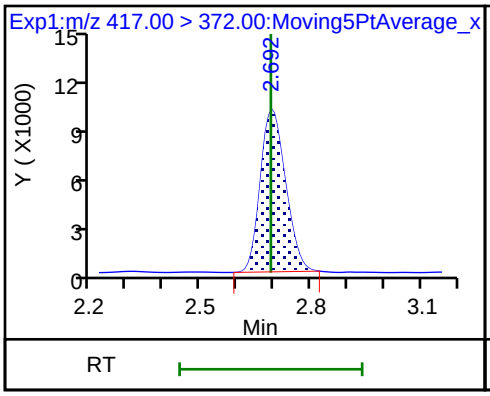
D 12 M2-6:2FTS



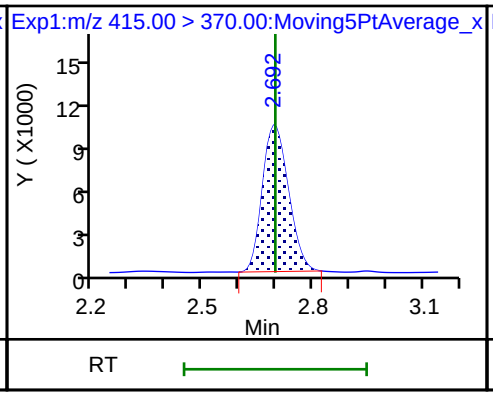
13 Sodium 1H,1H,2H,2H-perfluorooctane



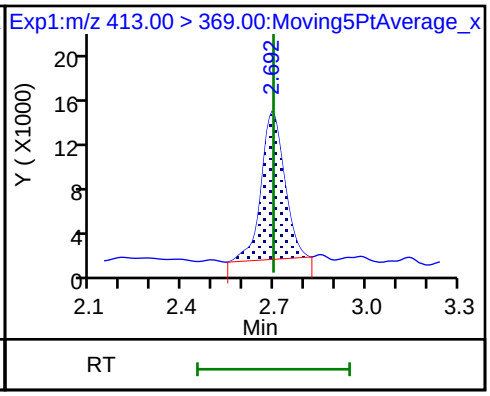
D 14 13C4 PFOA



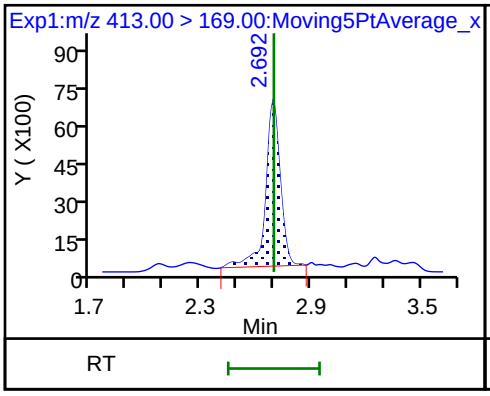
* 62 13C2-PFOA



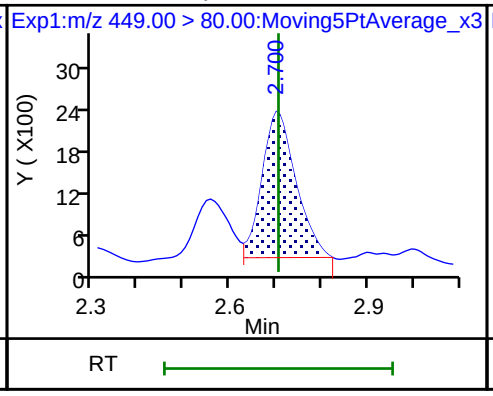
15 Perfluorooctanoic acid



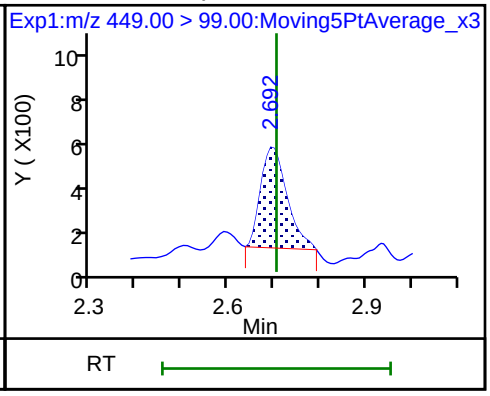
15 Perfluorooctanoic acid



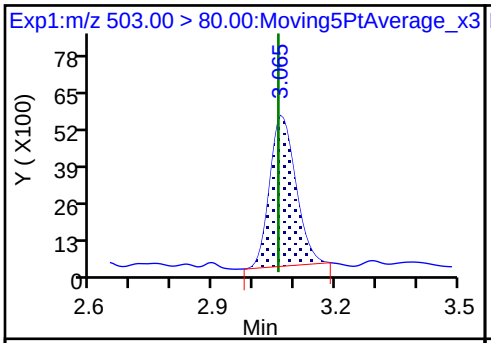
16 Perfluoroheptanesulfonic acid



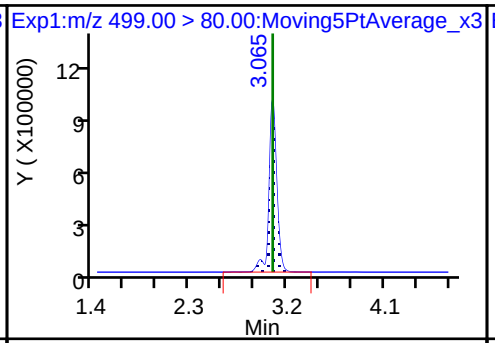
16 Perfluoroheptanesulfonic acid



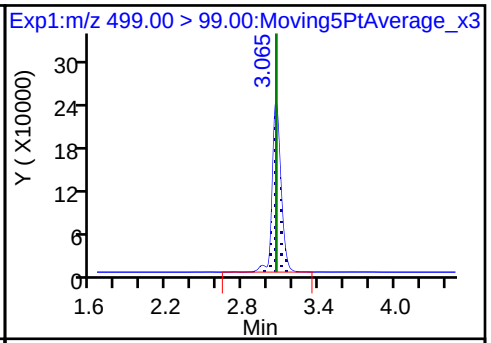
D 18 13C4 PFOS



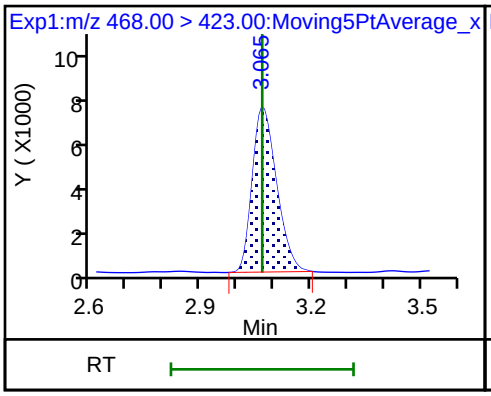
17 Perfluorooctane sulfonic acid



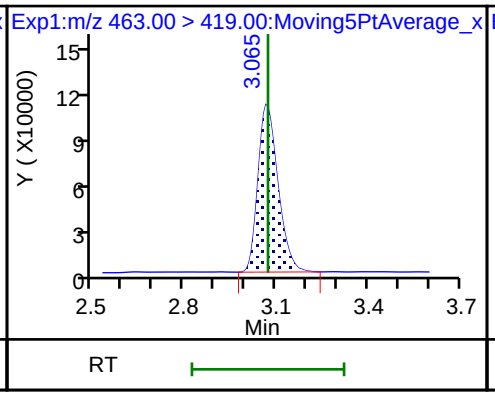
17 Perfluorooctane sulfonic acid



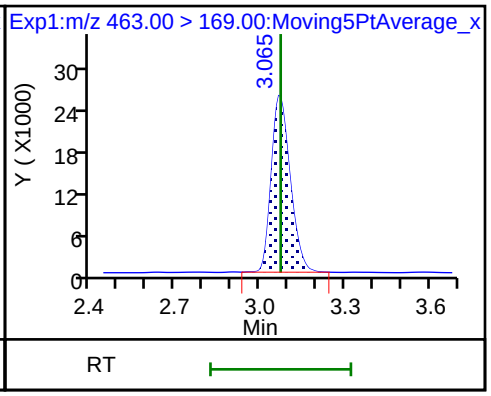
D 19 13C5 PFNA



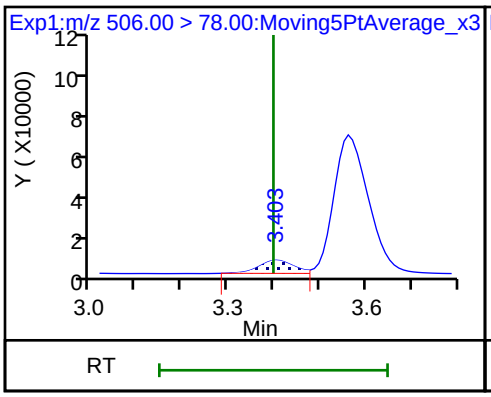
20 Perfluorononanoic acid



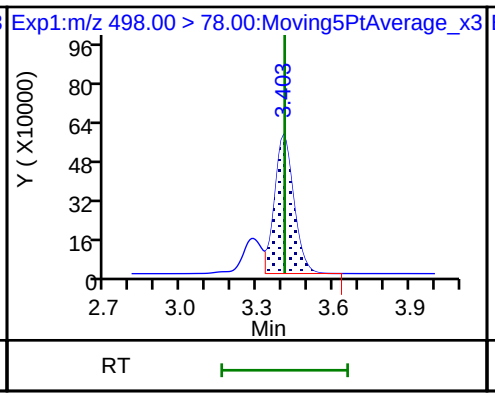
20 Perfluorononanoic acid



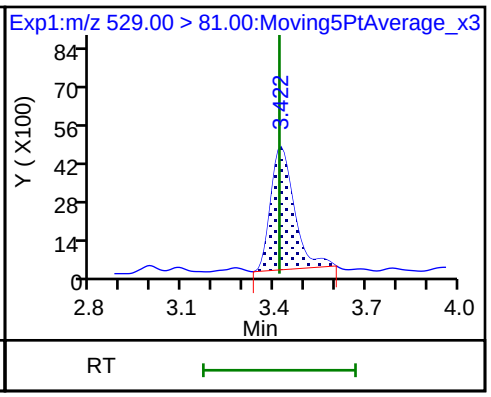
D 21 13C8 FOSA



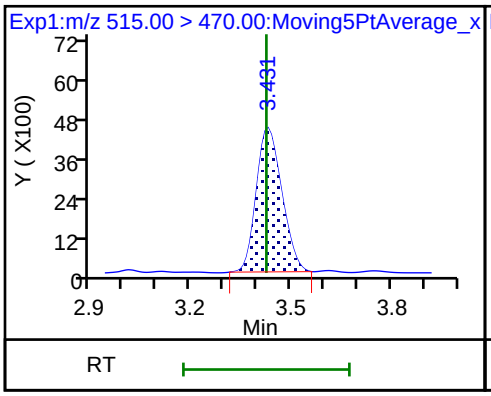
22 Perfluorooctane Sulfonamide



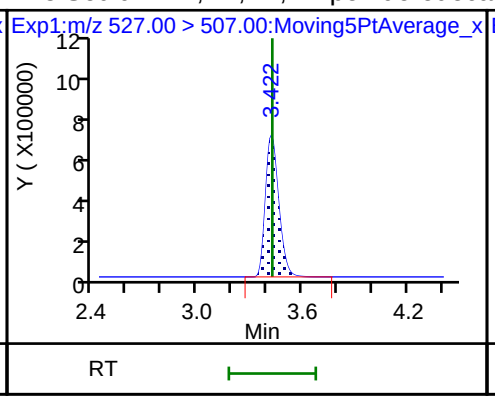
D 26 M2-8:2FTS



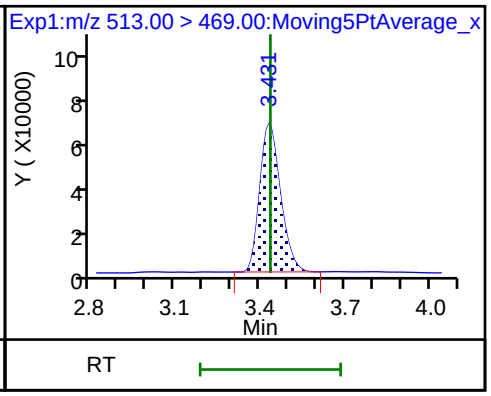
D 23 13C2 PFDA



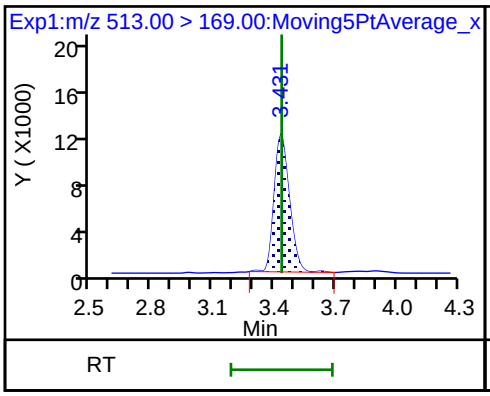
25 Sodium 1H,1H,2H,2H-perfluorodecan



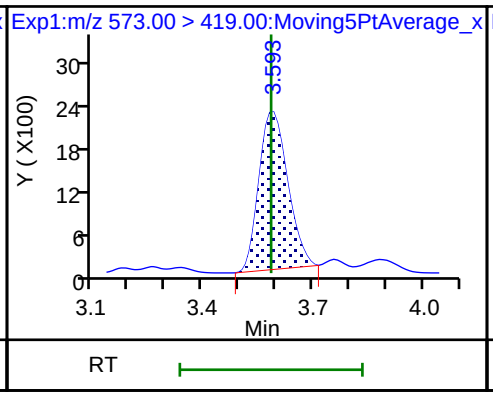
24 Perfluorodecanoic acid



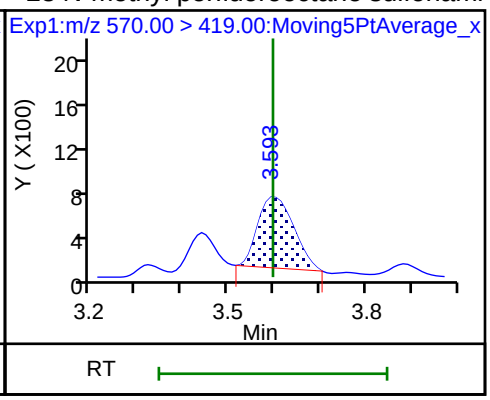
24 Perfluorodecanoic acid



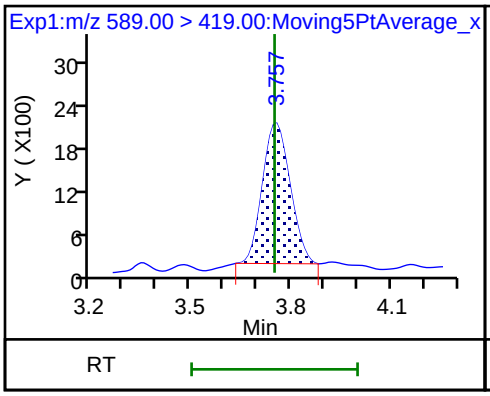
D 27 d3-NMeFOSAA



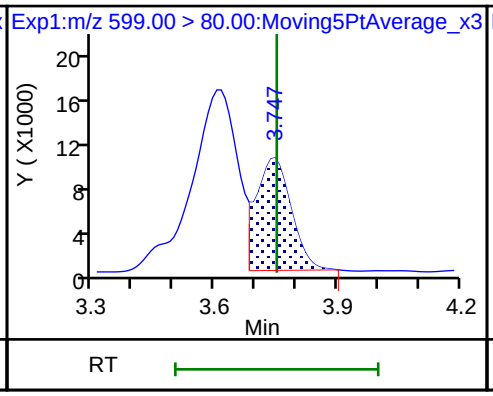
28 N-methyl perfluorooctane sulfonami



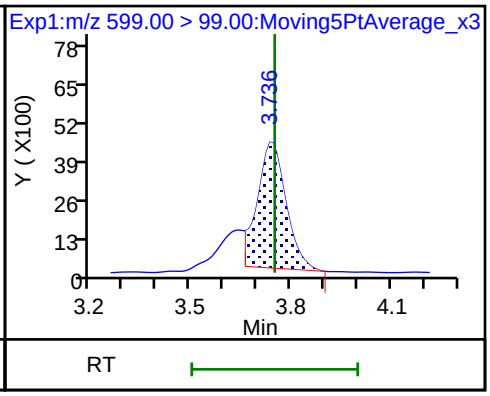
D 32 d5-NEtFOSAA



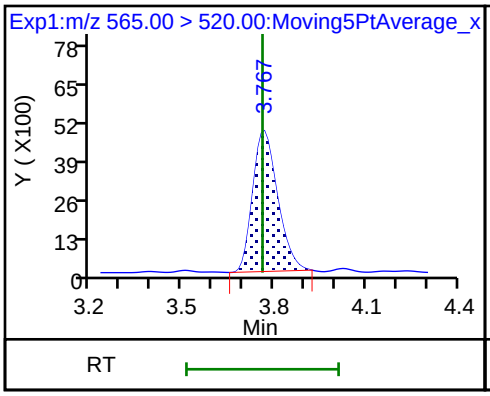
29 Perfluorodecane Sulfonic acid



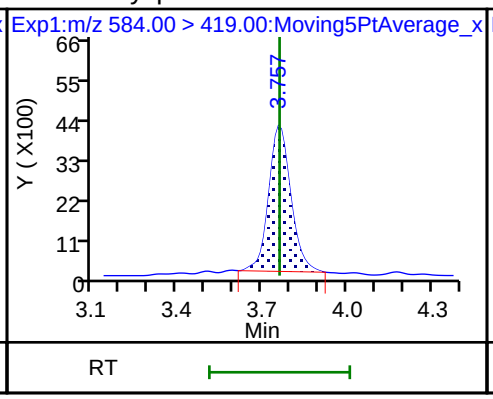
29 Perfluorodecane Sulfonic acid



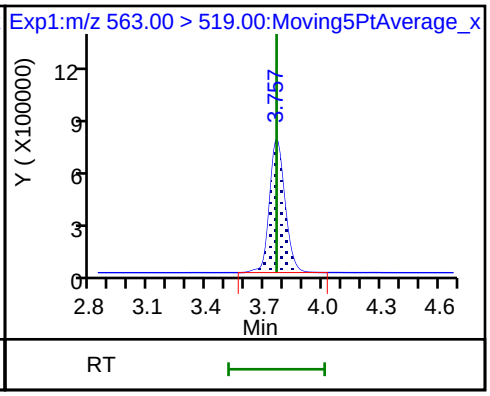
D 30 13C2 PFUnA



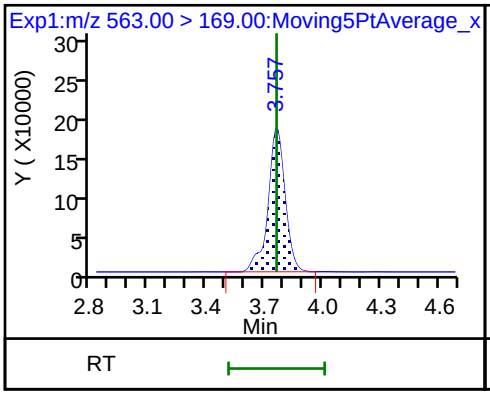
33 N-ethyl perfluorooctane sulfonamid



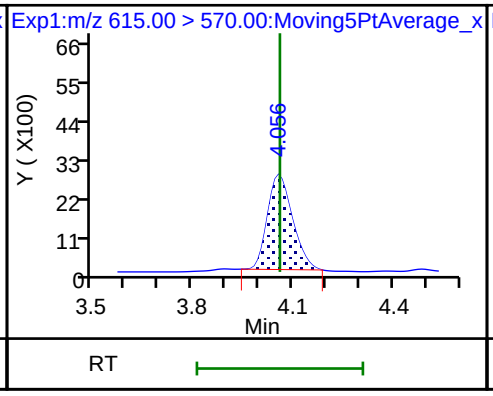
31 Perfluoroundecanoic acid



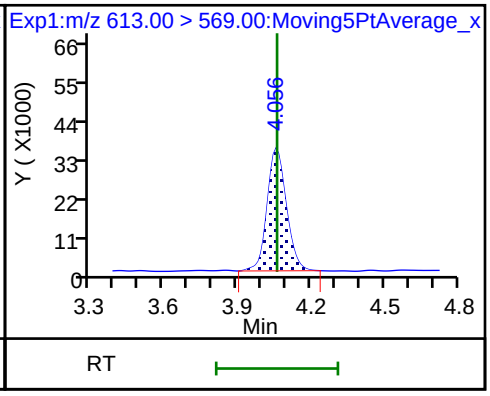
31 Perfluoroundecanoic acid



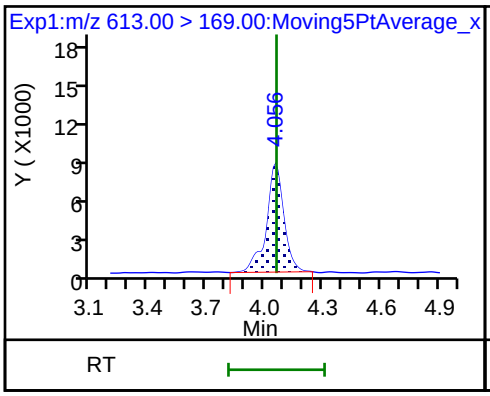
D 36 13C2 PFDoA



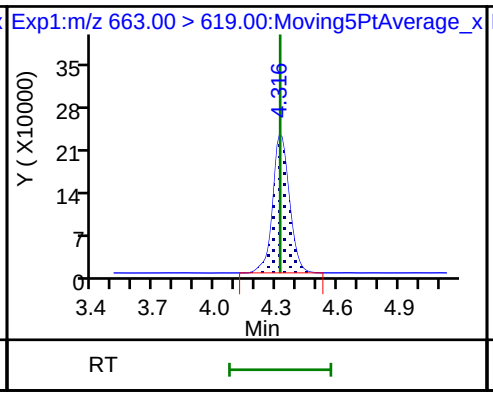
37 Perfluorododecanoic acid



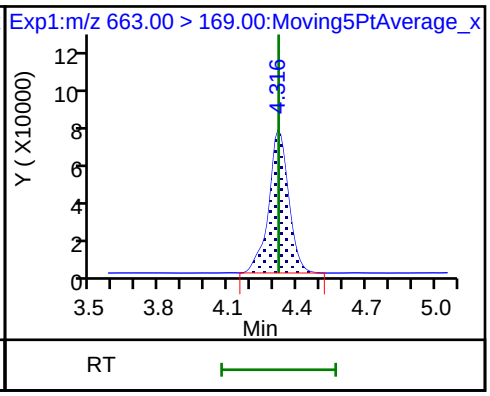
37 Perfluorododecanoic acid



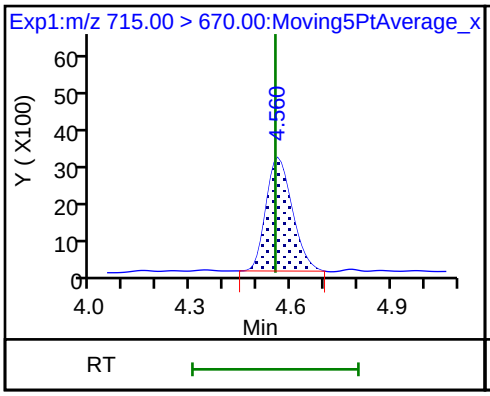
41 Perfluorotridecanoic acid



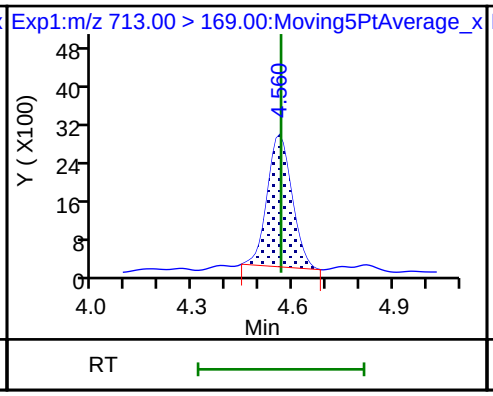
41 Perfluorotridecanoic acid



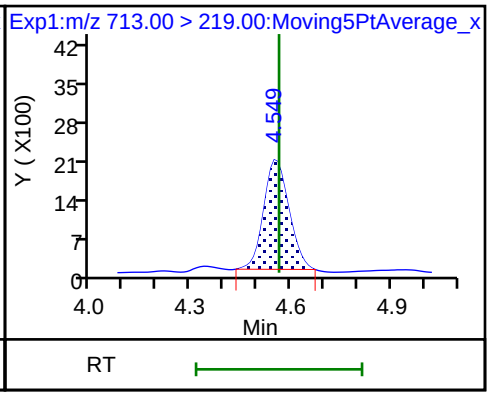
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB004(8-10) | Lab Sample ID: 320-38061-6

Matrix: Solid | Lab File ID: 2018.04.20LLC_033.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:30

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.05(g) | Date Analyzed: 04/21/2018 11:08

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000062	J	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000078	U	0.00020	0.000078
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000082	J	0.00020	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00049		0.00020	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.0021		0.00020	0.000088
375-95-1	Perfluorononanoic acid (PFNA)	0.0060		0.00020	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.00012	J	0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00017	J	0.00020	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000068	U	0.00020	0.000068
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000052	U	0.00020	0.000052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000055	U	0.00020	0.000055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00081		0.00020	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00019	J	0.00020	0.000036
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.011		0.00051	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U	0.00020	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000083	U	0.00020	0.000083
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0020	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0020	0.00038
39108-34-4	8:2FTS	0.0010	J	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB004(8-10) | Lab Sample ID: 320-38061-6

Matrix: Solid | Lab File ID: 2018.04.20LLC_033.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:30

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.05(g) | Date Analyzed: 04/21/2018 11:08

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	102		25-150
STL01893	13C5 PFPeA	99		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4-PFHpA	106		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2-PFTeDA	95		25-150
STL02337	13C3-PFBS	100		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	97		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	70		25-150
STL02117	d5-NEtFOSAA	74		25-150
STL02280	M2-8:2FTS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_033.d
Lims ID: 320-38061-A-6-A
Client ID: SB004(8-10)
Sample Type: Client
Inject. Date: 21-Apr-2018 11:08:19 ALS Bottle#: 25 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-6-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:39:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	6173469	2.54		102	38551	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.000	69577	0.0303			22.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.701	0.002	0.557	3894004	2.49		99.4	62526	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.703	1.703	0.0	1.000	64186	0.0346			43.1	M
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	83955	2.34		100	568	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.980	0.002	1.000	4073822	2.35		94.1	95948	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.990	-0.008	1.000	66894	0.0404			65.0	
313.00 > 119.00	1.982	1.990	-0.008	1.000	8099		8.26(5.03-15.10)		59.8	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.318	0.003	1.000	431222	0.2402			536	
363.00 > 169.00	2.321	2.318	0.003	1.000	161304		2.67(1.13-3.40)		746	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.319	0.002	1.000	4483341	2.66		106	69819	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.331	0.003	1.000	940252	0.3958			2482	
399.00 > 99.00	2.334	2.331	0.003	1.000	292586		3.21(1.50-4.49)		1276	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.332	0.002	1.000	4963894	2.39		101	110944	
D 12 M2-6:2FTS										
429.00 > 81.00	2.654	2.652	0.002	1.000	847346	2.35		98.8	8173	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.654	2.658	-0.004	1.000	7460500	12.4			51375	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.681	0.003		4515962	2.50			52821	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.681	0.003	1.003	2039490	1.01			1495	
413.00 > 169.00	2.684	2.681	0.003	1.003	1098100		1.86(0.84-2.52)		3617	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.682	-0.006	1.000	4378128	2.61		105	71127	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.684	2.688	-0.004	1.000	170266	0.0910			555	
449.00 > 99.00	2.684	2.688	-0.004	1.000	45640		3.73(1.94-5.82)		407	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.051	3.054	-0.003	1.000	8101488	5.28			18990	
499.00 > 99.00	3.051	3.054	-0.003	1.000	1812631		4.47(2.31-6.93)		25373	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.054	0.004	1.000	4464907	2.93			10679	
463.00 > 169.00	3.058	3.054	0.004	1.000	1057068		4.22(1.90-5.69)		12244	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.055	0.003	1.000	3652394	2.54		101	79604	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.055	-0.004	1.000	3369100	2.31		96.7	22057	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.391	0.005	1.000	58564	0.0350			55.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.393	0.003	1.000	4137008	2.27		91.0	27171	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.410	-0.004	1.000	252544	0.4917			7231	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.411	-0.005	1.000	972189	2.23		93.3	7776	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.419	-0.004	1.000	75597	0.0601			188	
513.00 > 169.00	3.415	3.419	-0.004	1.000	11761		6.43(2.36-7.09)		69.2	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.420	-0.005	1.000	3047411	2.52		101	76050	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.569	0.004	1.000	1208091	1.76		70.4	20905	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.743	-0.005	1.000	1261142	1.86		74.5	21360	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.749	3.753	-0.004	1.000	70559	0.0824			181	M
563.00 > 169.00	3.749	3.753	-0.004	1.000	17430		4.05(2.12-6.36)		101	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.754	-0.005	1.000	2533140	2.43		97.0	79465	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.042	-0.004	1.000	2683320	2.38		95.2	29876	
41 Perfluorotridecanoic acid										R
663.00 > 619.00	4.307	4.301	0.006	1.000	22224	0.0170			22.1	R
663.00 > 169.00	4.298	4.301	-0.003	0.998	5537		4.01(1.25-3.76)		42.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.541	4.548	-0.007	1.000	3407610	2.38		95.3	28654	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:42:14 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_033.d

Injection Date: 21-Apr-2018 11:08:19 Instrument ID: A8_N

Lims ID: 320-38061-A-6-A Lab Sample ID: 320-38061-6

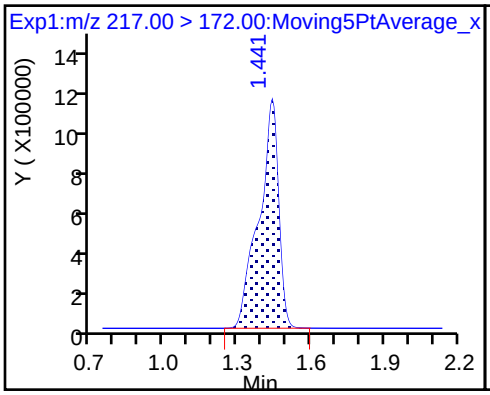
Client ID: SB004(8-10)

Operator ID: SACINSTLCMS01 ALS Bottle#: 25 Worklist Smp#: 11

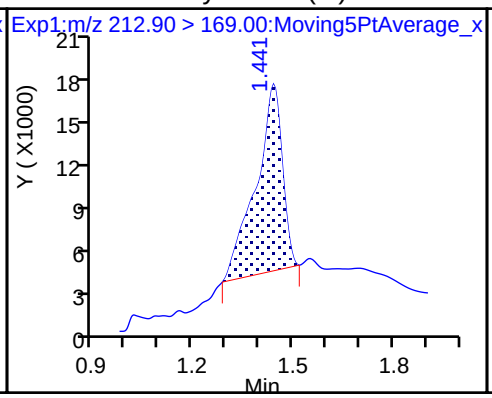
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

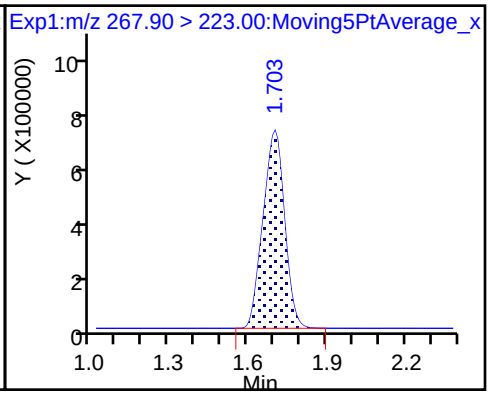
D 1 13C4 PFBA



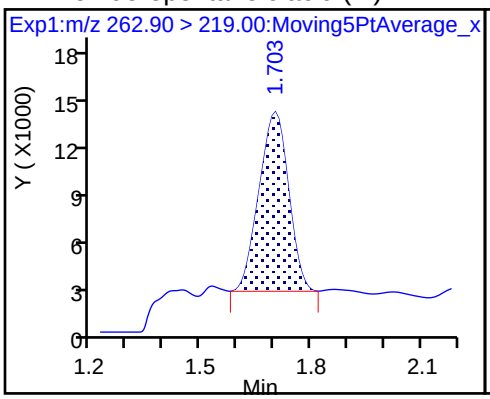
2 Perfluorobutyric acid (M)



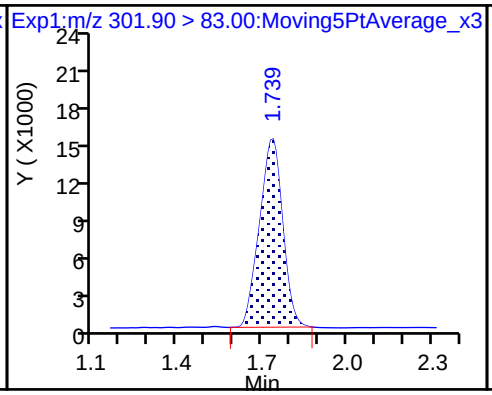
D 3 13C5-PFPeA



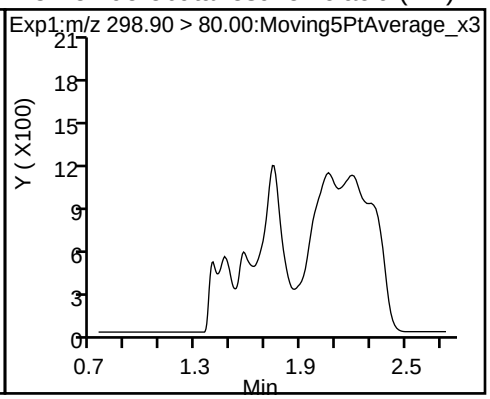
4 Perfluoropentanoic acid (M)



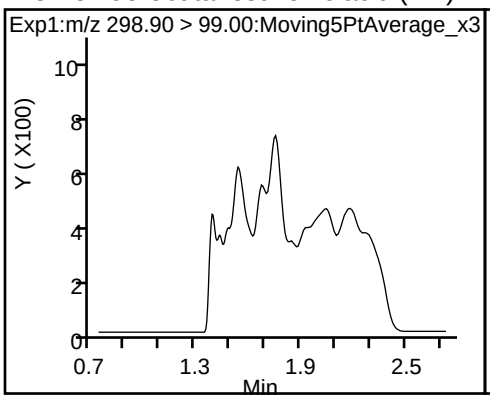
D 47 13C3-PFBS



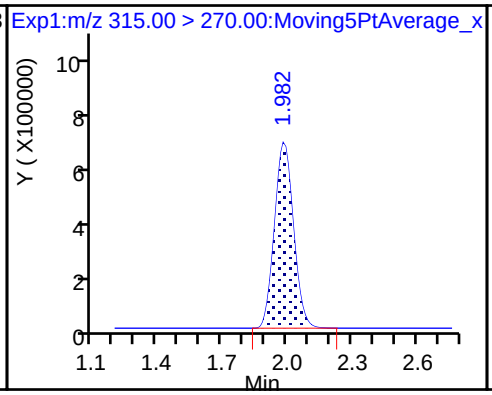
5 Perfluorobutanesulfonic acid (ND)



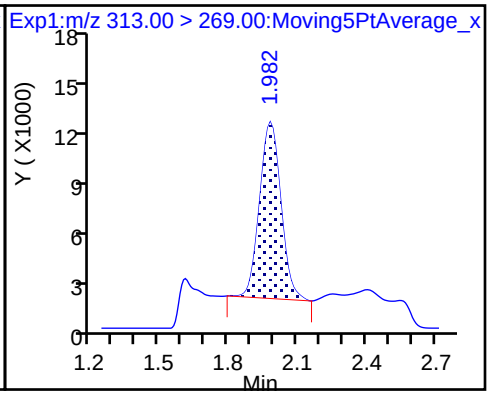
5 Perfluorobutanesulfonic acid (ND)



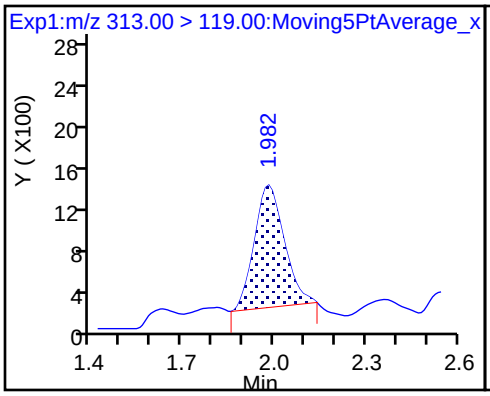
D 7 13C2 PFHxA



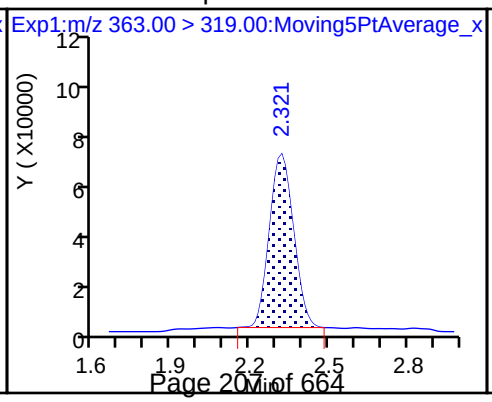
6 Perfluorohexanoic acid



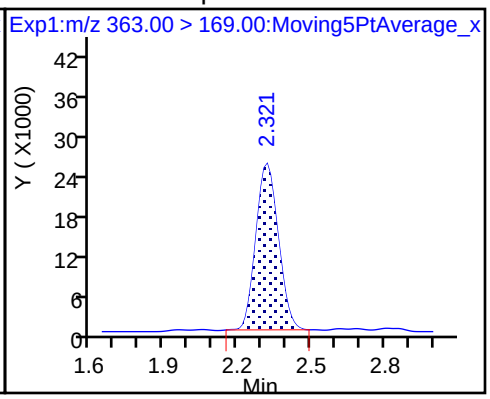
6 Perfluorohexanoic acid



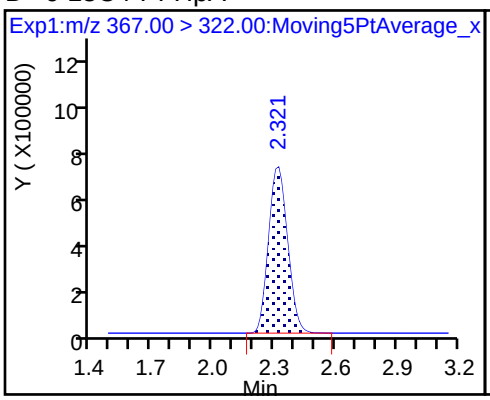
10 Perfluoroheptanoic acid



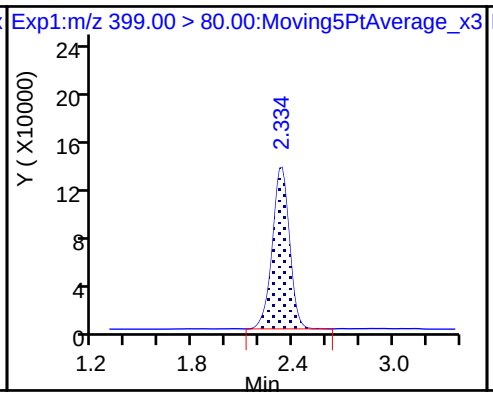
10 Perfluoroheptanoic acid



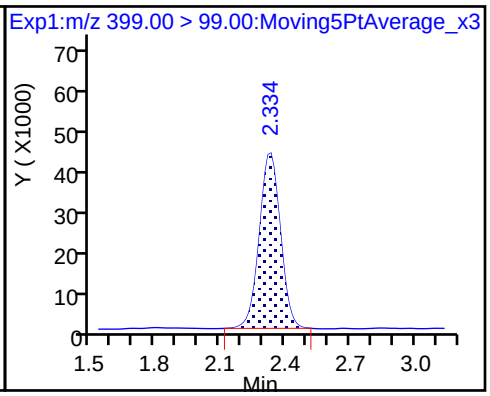
D 9 13C4-PFHpA



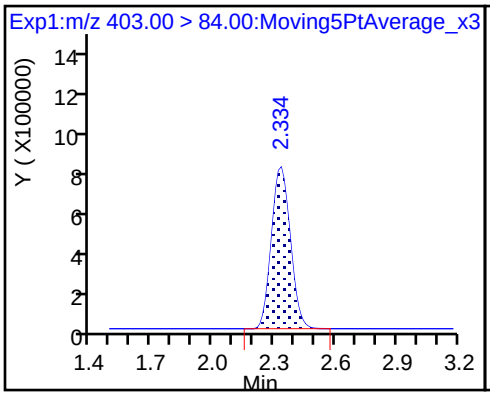
8 Perfluorohexanesulfonic acid



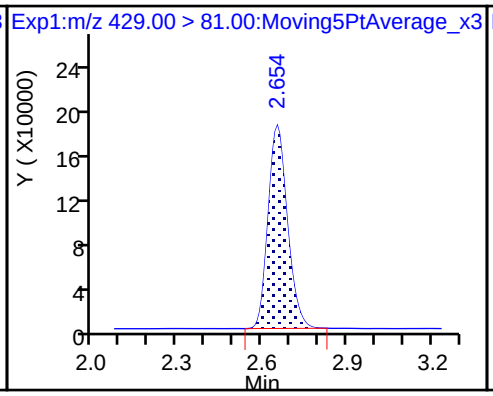
8 Perfluorohexanesulfonic acid



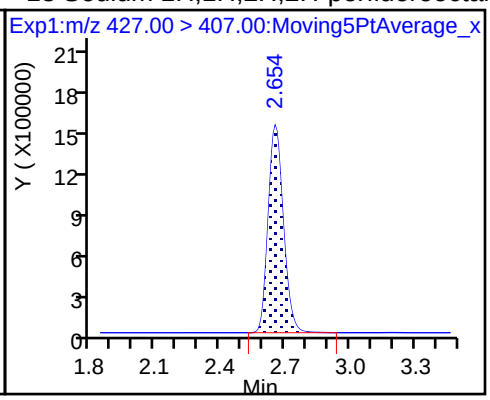
D 11 18O2 PFHxS



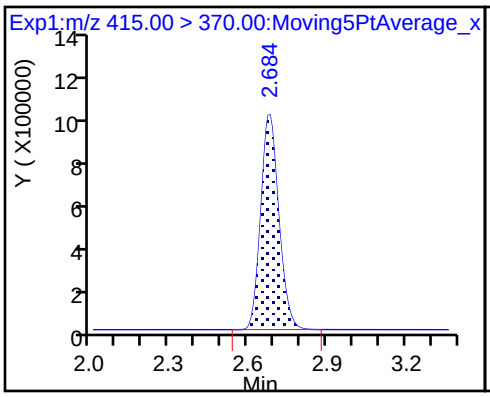
D 12 M2-6:2FTS



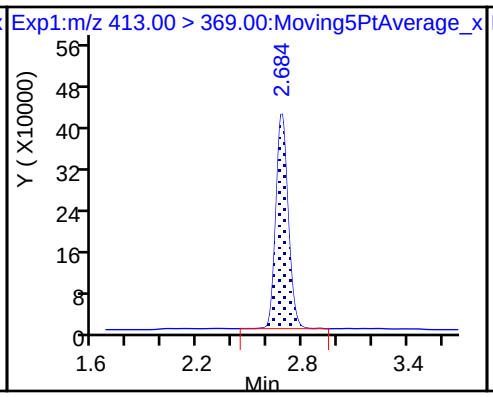
13 Sodium 1H,1H,2H,2H-perfluorooctane



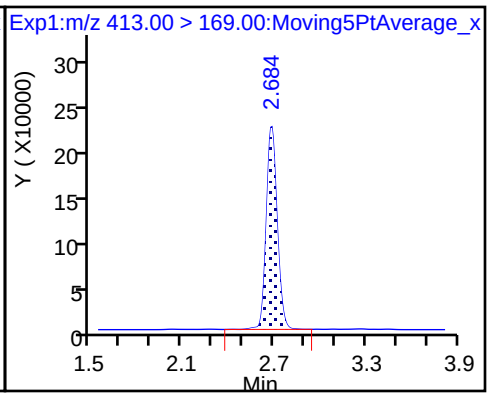
* 62 13C2-PFOA



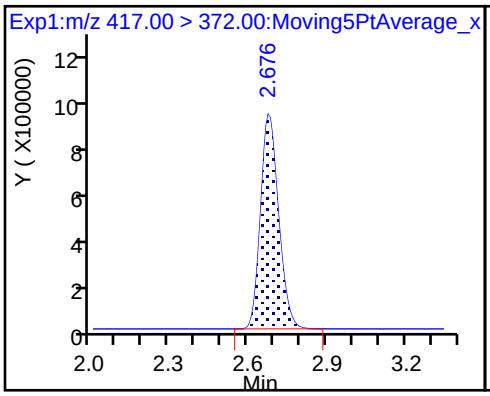
15 Perfluorooctanoic acid



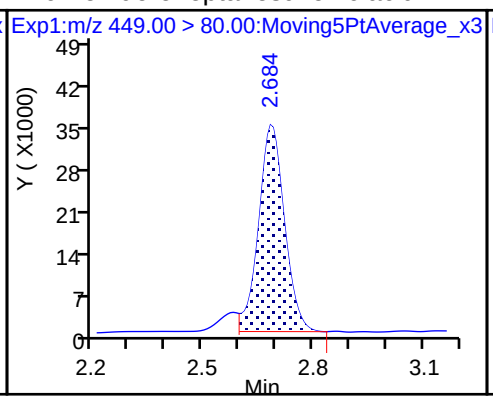
15 Perfluorooctanoic acid



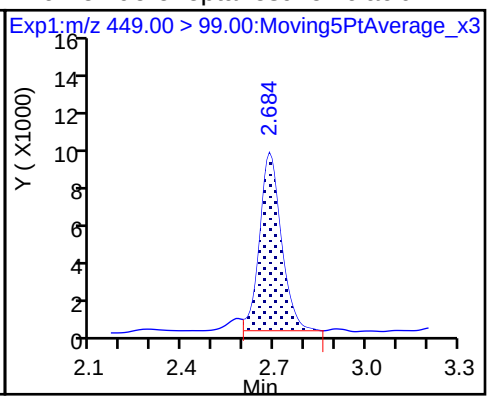
D 14 13C4 PFOA



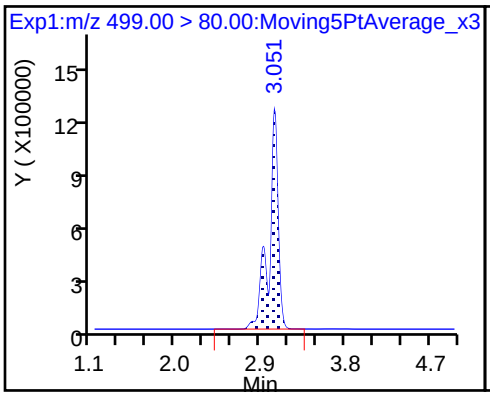
16 Perfluoroheptanesulfonic acid



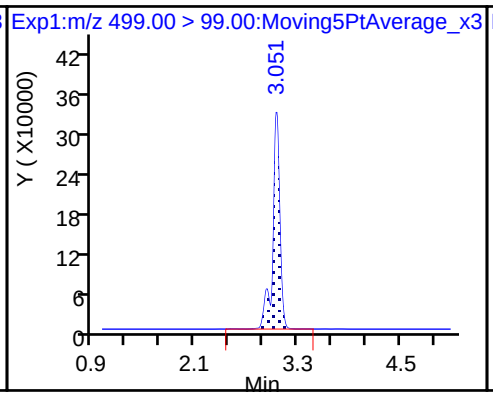
16 Perfluoroheptanesulfonic acid



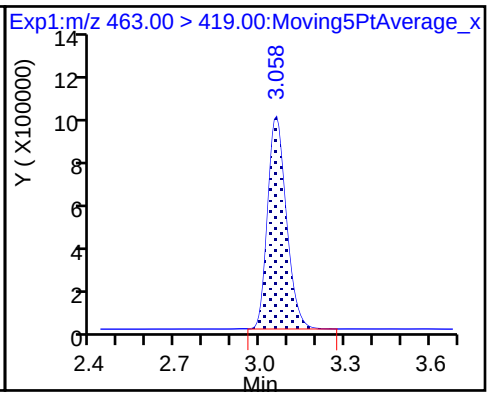
17 Perfluorooctane sulfonic acid



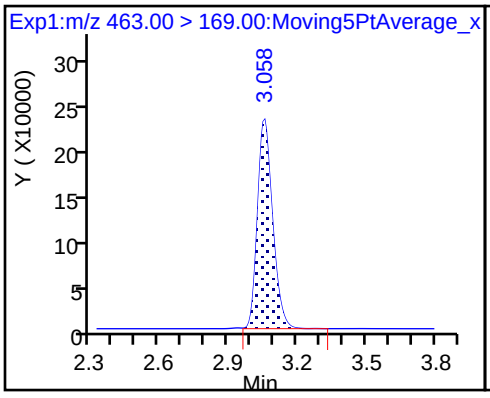
17 Perfluorooctane sulfonic acid



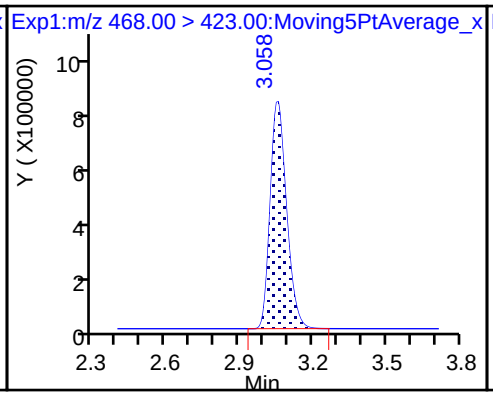
20 Perfluorononanoic acid



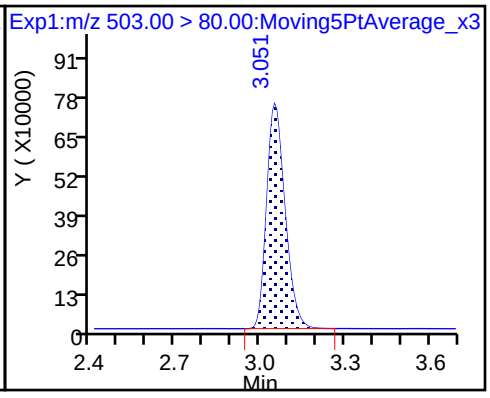
20 Perfluorononanoic acid



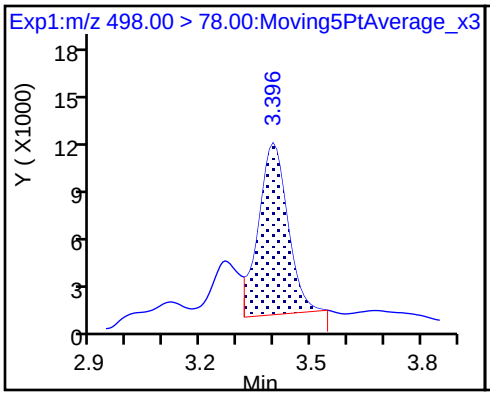
D 19 13C5 PFNA



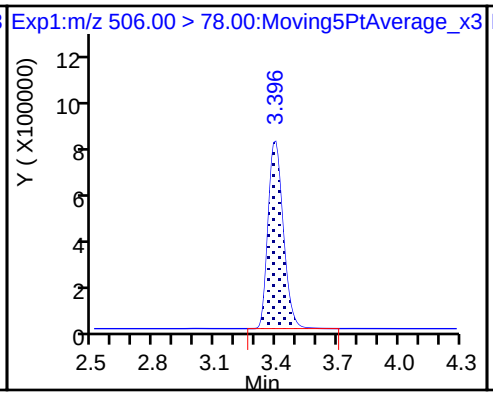
D 18 13C4 PFOS



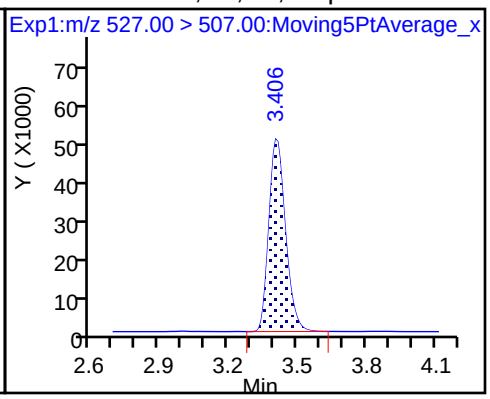
22 Perfluorooctane Sulfonamide



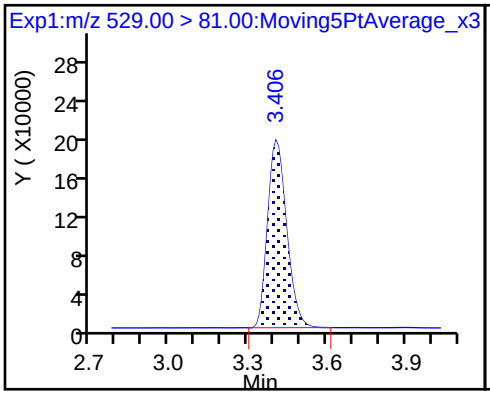
D 21 13C8 FOSA



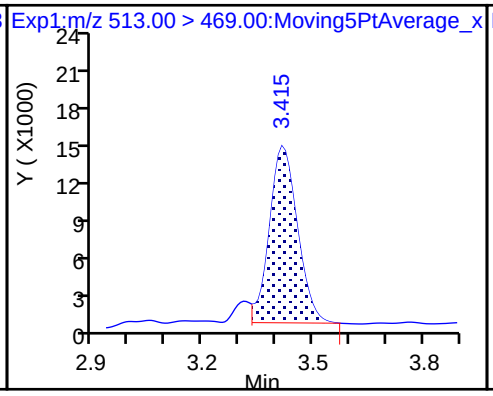
25 Sodium 1H,1H,2H,2H-perfluorodecane



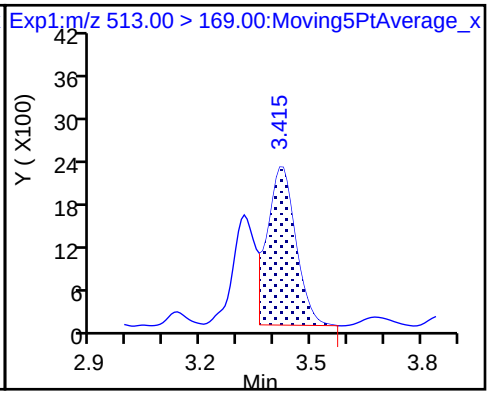
D 26 M2-8:2FTS



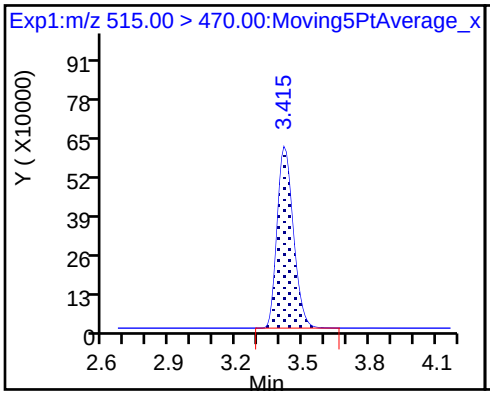
24 Perfluorodecanoic acid



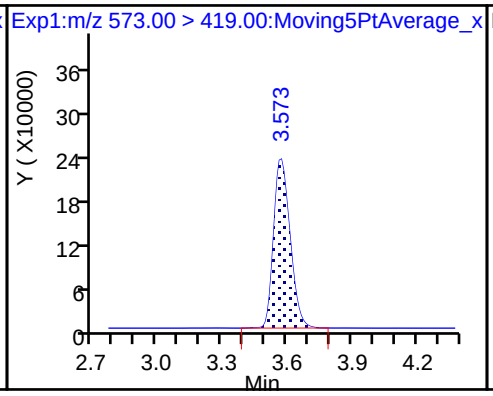
24 Perfluorodecanoic acid



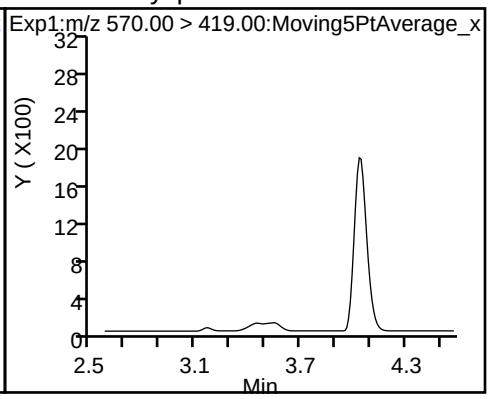
D 23 13C2 PFDA



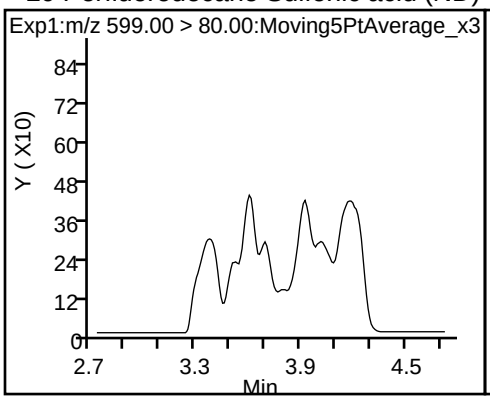
D 27 d3-NMeFOSAA



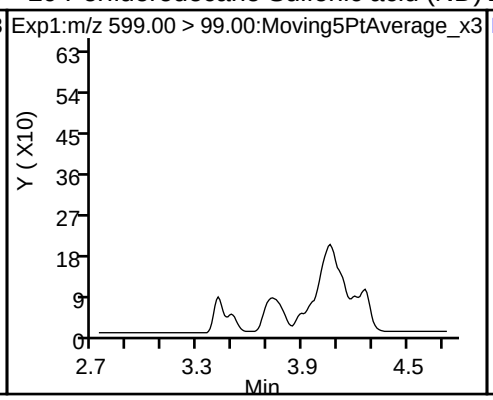
28 N-methyl perfluorooctane sulfonami (ND)



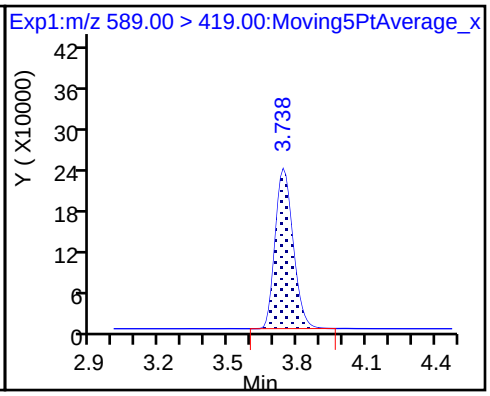
29 Perfluorodecane Sulfonic acid (ND)



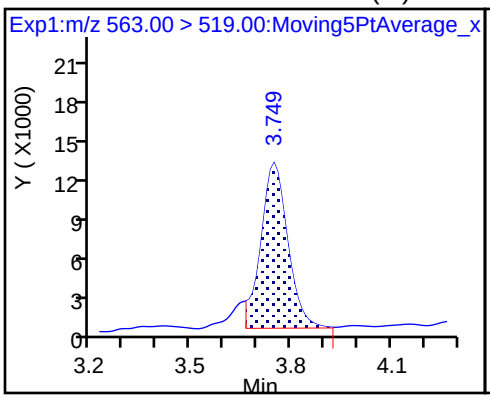
29 Perfluorodecane Sulfonic acid (ND)



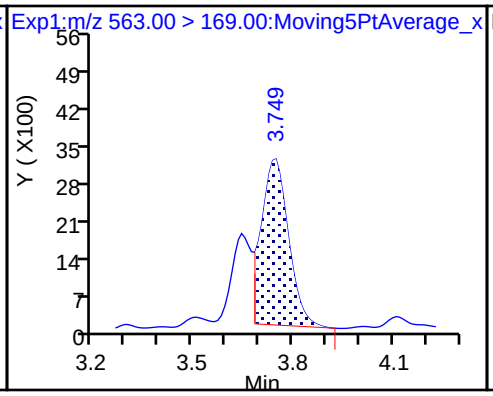
D 32 d5-NEtFOSAA



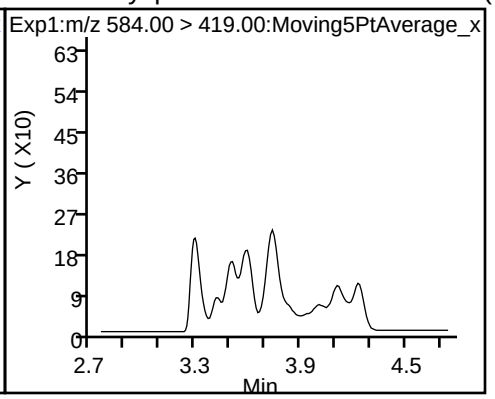
31 Perfluoroundecanoic acid (M)



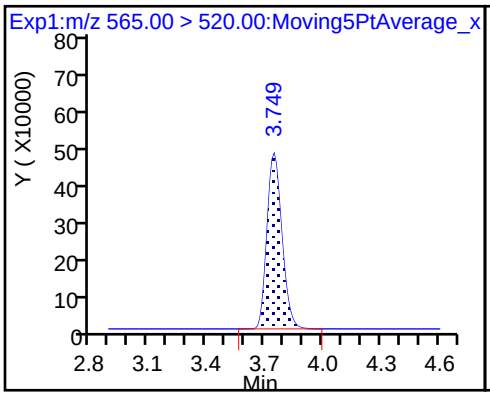
31 Perfluoroundecanoic acid



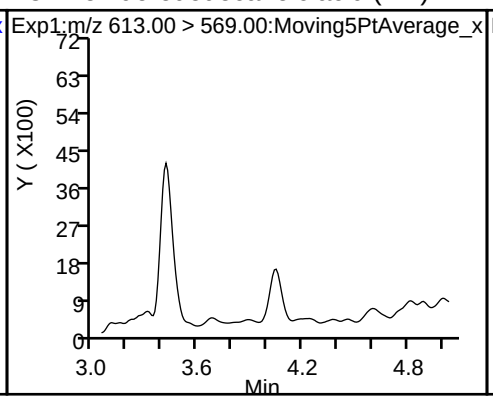
33 N-ethyl perfluorooctane sulfonamid (ND)



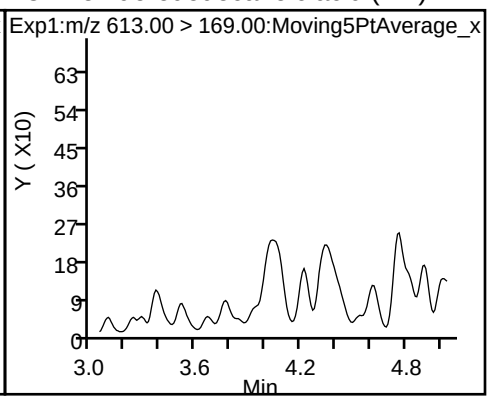
D 30 13C2 PFUnA



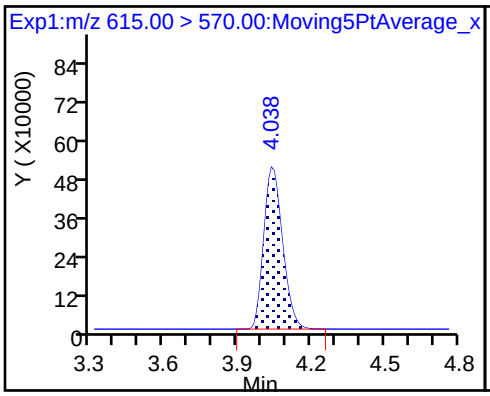
37 Perfluorododecanoic acid (ND)



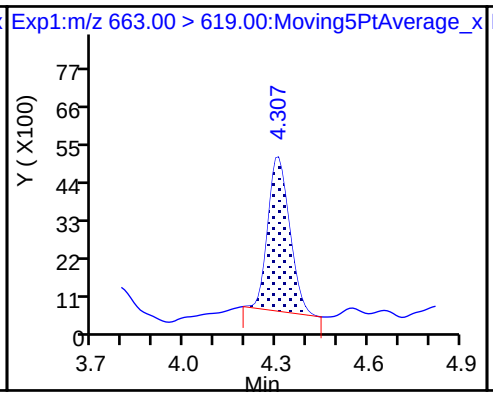
37 Perfluorododecanoic acid (ND)



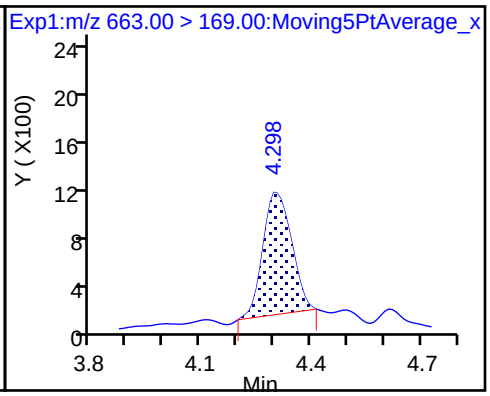
D 36 13C2 PFDoA



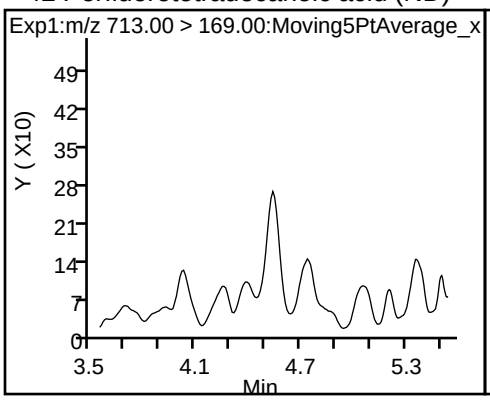
41 Perfluorotridecanoic acid



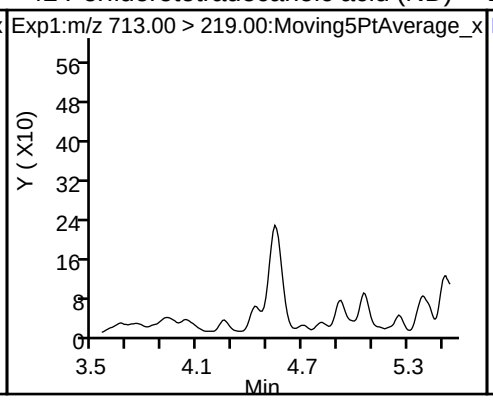
41 Perfluorotridecanoic acid



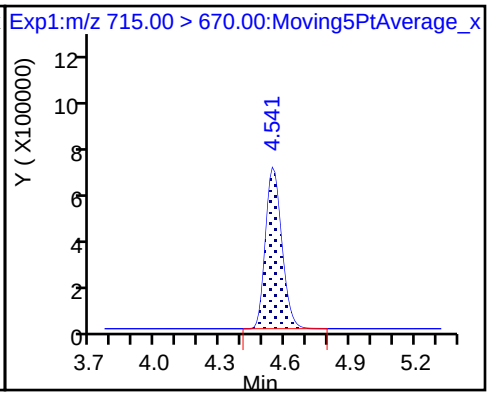
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

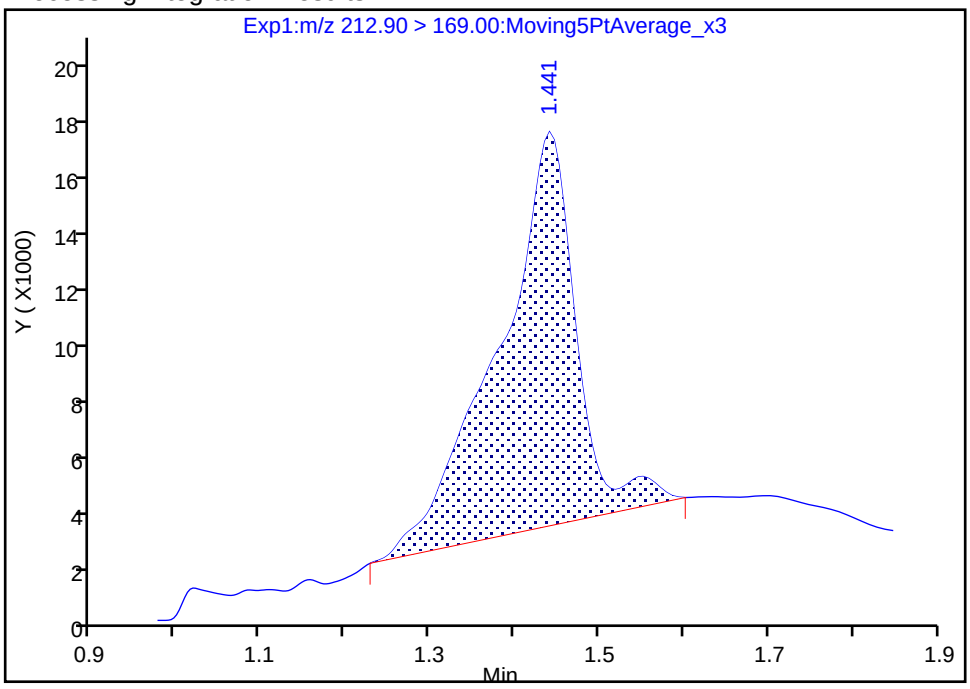
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_033.d				
Injection Date:	21-Apr-2018 11:08:19	Instrument ID:	A8_N		
Lims ID:	320-38061-A-6-A	Lab Sample ID:	320-38061-6		
Client ID:	SB004(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

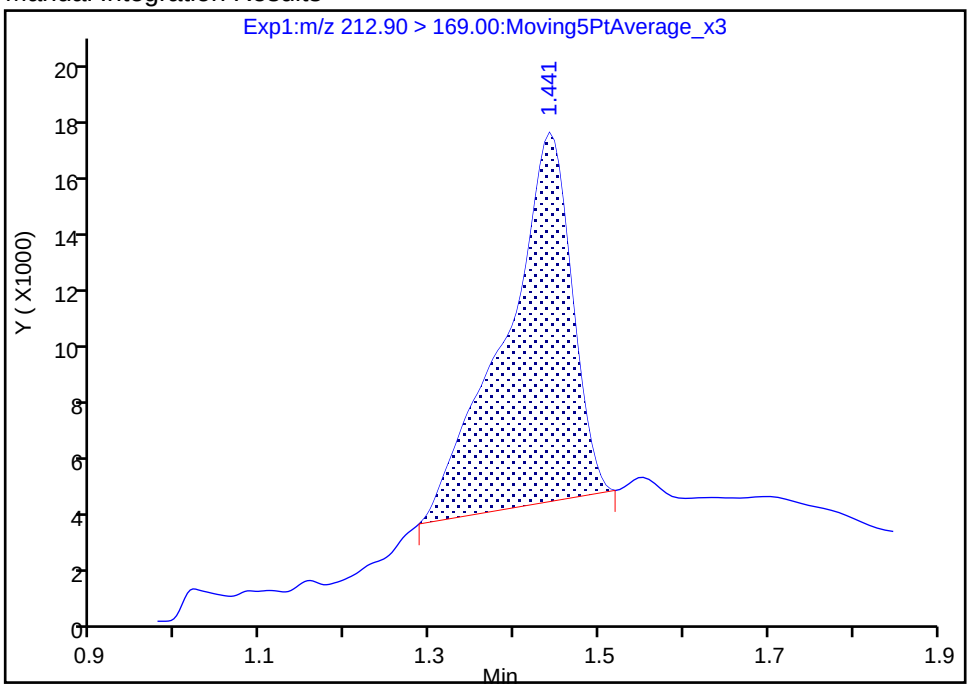
Processing Integration Results

RT: 1.44
Area: 86758
Amount: 0.037836
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 69577
Amount: 0.030344
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:37:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

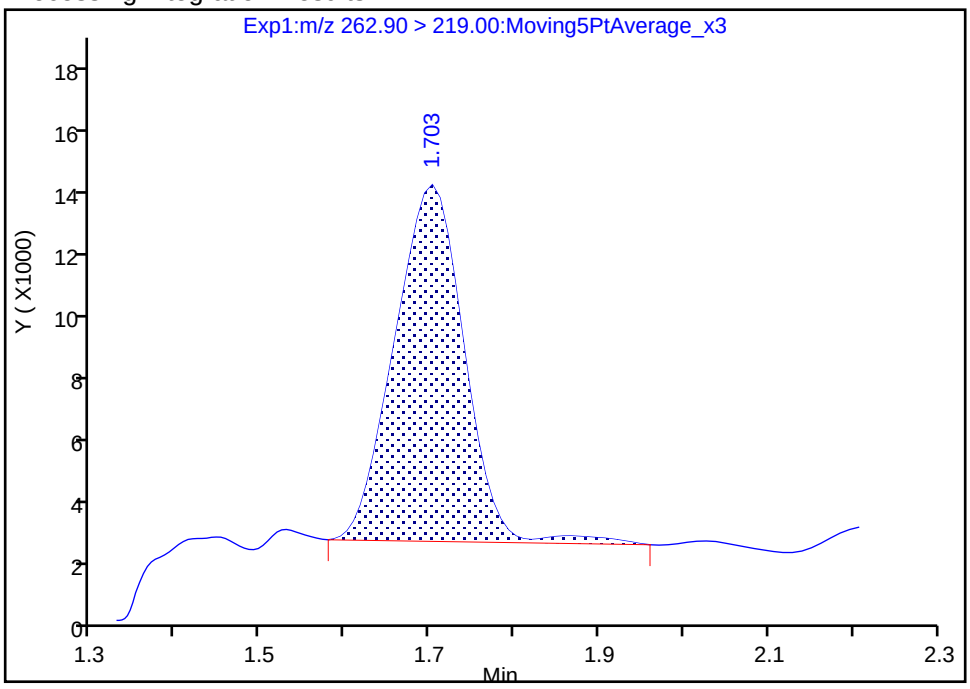
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_033.d				
Injection Date:	21-Apr-2018 11:08:19	Instrument ID:	A8_N		
Lims ID:	320-38061-A-6-A	Lab Sample ID:	320-38061-6		
Client ID:	SB004(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

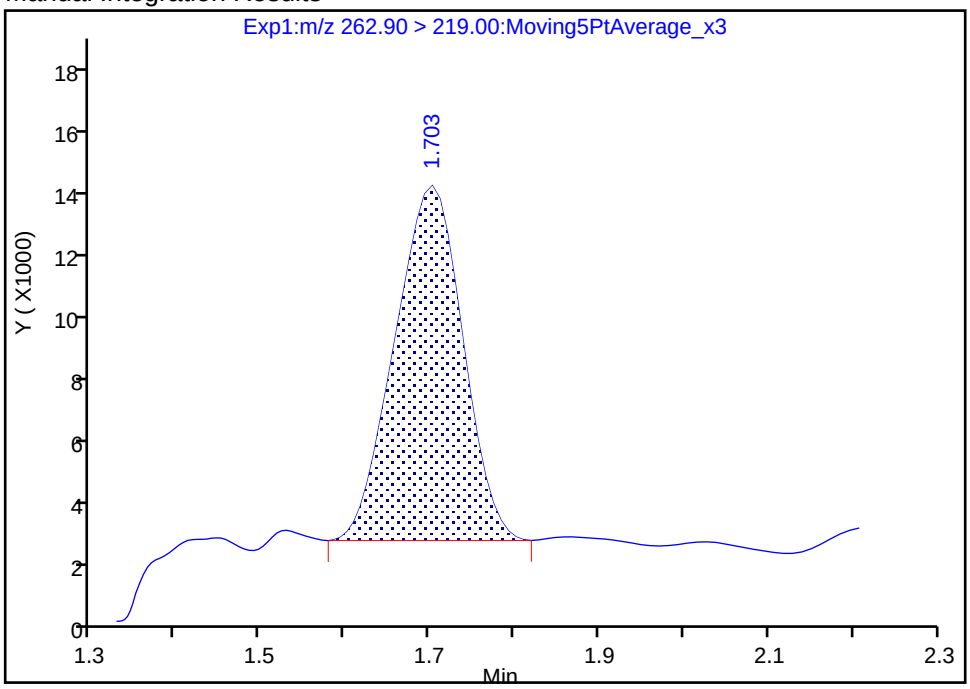
Processing Integration Results

RT: 1.70
Area: 66324
Amount: 0.035729
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 64186
Amount: 0.034577
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:38:01

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

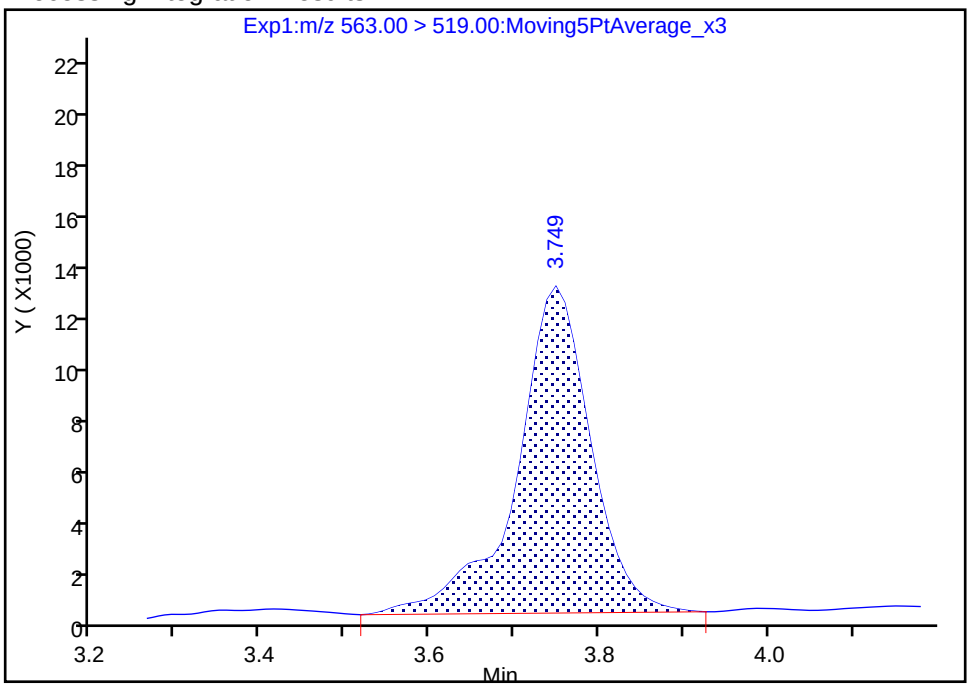
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_033.d				
Injection Date:	21-Apr-2018 11:08:19	Instrument ID:	A8_N		
Lims ID:	320-38061-A-6-A	Lab Sample ID:	320-38061-6		
Client ID:	SB004(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	25	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

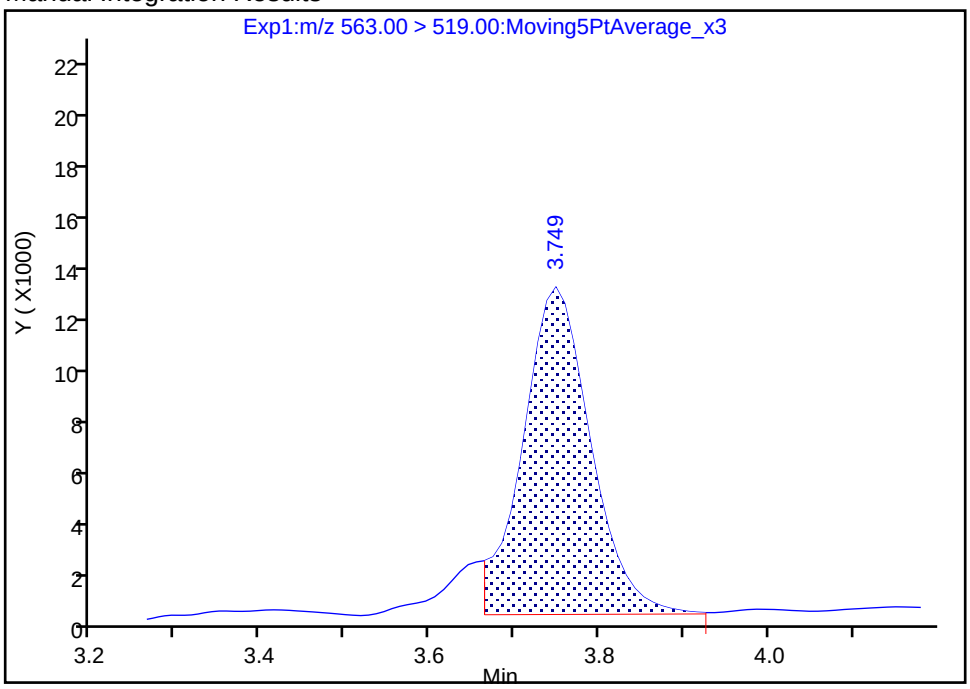
Processing Integration Results

RT: 3.75
Area: 77172
Amount: 0.090122
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 70559
Amount: 0.082400
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:38:39

Audit Action: Manually Integrated Audit Reason: Split Peak

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB004(8-10) DL | Lab Sample ID: 320-38061-6 DL

Matrix: Solid | Lab File ID: 2018.04.25LLBX_077.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:30

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.05(g) | Date Analyzed: 04/26/2018 07:03

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 5

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219909 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
27619-97-2	6:2FTS	0.027	D	0.010	0.00076

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02279	M2-6:2FTS	91		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_077.d
Lims ID: 320-38061-A-6-A
Client ID: SB004(8-10)
Sample Type: Client
Inject. Date: 26-Apr-2018 07:03:52 ALS Bottle#: 52 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-38061-a-6-a 5X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:29:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.004	19442	0.008113			7.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.441	-0.010	1.000	1290442	0.5021		100	10043	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.554	809632	0.4888		97.8	15506	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.703	-0.009	1.000	16395	0.008496			13.4	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	17747	0.4669		100	157	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	862610	0.4709		94.2	18753	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.321	0.0	1.000	949347	0.5325		107	25459	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	96039	0.0505			110	
363.00 > 169.00	2.308	2.321	-0.013	0.994	36644		2.62(1.13-3.40)		171	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.334	0.0	1.000	1002592	0.4557		96.3	23085	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	204143	0.0851			379	
399.00 > 99.00	2.334	2.334	0.0	1.000	59019		3.46(1.50-4.49)		424	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	165088	0.4322		91.0	2190	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.660	-0.007	0.997	1532483	2.61			29274	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		955055	0.5000			29217	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	888008	0.5012		100	23586	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	429315	0.2092			303	
413.00 > 169.00	2.683	2.690	-0.007	1.000	229207		1.87(0.84-2.52)		784	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.690	-0.007	1.000	37910	0.0187			197	
449.00 > 99.00	2.690	2.690	0.0	1.003	11275		3.36(1.94-5.82)		219	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.057	3.059	-0.002	1.000	1698182	1.02			5451	M
499.00 > 99.00	3.057	3.059	-0.002	1.000	396858		4.28(2.31-6.93)		9366	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.059	-0.002	1.000	901641	0.5397			3224	
463.00 > 169.00	3.057	3.059	-0.002	1.000	228589		3.94(1.90-5.69)		5226	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.063	-0.006	1.000	728699	0.4729		98.9	4829	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.063	-0.006	1.000	801077	0.5260		105	22818	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.386	3.399	-0.013	0.997	3319	0.001869			14.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	877825	0.4563		91.3	12475	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.417	-0.003	1.000	44205	0.0945			2121	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.423	-0.009	1.000	177154	0.3851		80.4	1579	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.423	3.427	-0.004	1.000	14663	0.0113			59.2	
513.00 > 169.00	3.414	3.427	-0.013	0.997	2723		5.38(2.36-7.09)		29.9	M
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.432	-0.009	1.000	627888	0.4906		98.1	15554	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.582	-0.010	1.000	225207	0.3104		62.1	2655	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.758	0.001	1.000	541568	0.4905		98.1	16628	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.758	-0.010	1.000	266042	0.3715		74.3	6065	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.059	-0.011	1.000	549617	0.4610		92.2	8679	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.563	-0.012	1.000	725526	0.4799		96.0	6271	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 10:37:07 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_077.d

Injection Date: 26-Apr-2018 07:03:52 Instrument ID: A8_N

Lims ID: 320-38061-A-6-A Lab Sample ID: 320-38061-6

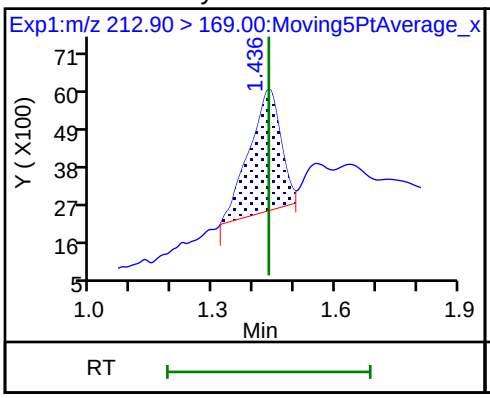
Client ID: SB004(8-10)

Operator ID: SACINSTLCMS01 ALS Bottle#: 52 Worklist Smp#: 10

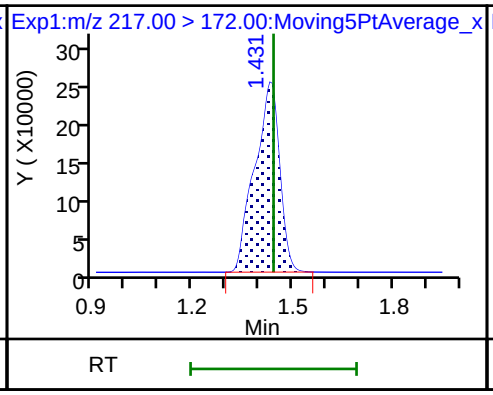
Injection Vol: 2.0 ul Dil. Factor: 5.0000

Method: A8_N Limit Group: LC PFC ICAL

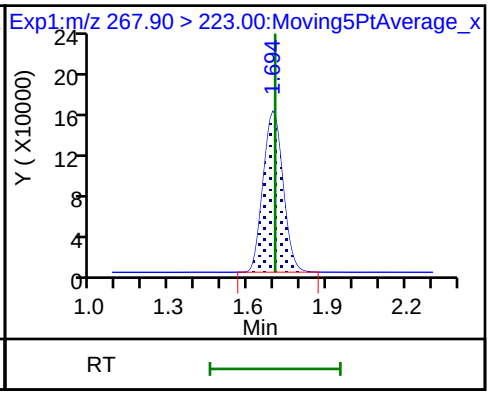
2 Perfluorobutyric acid



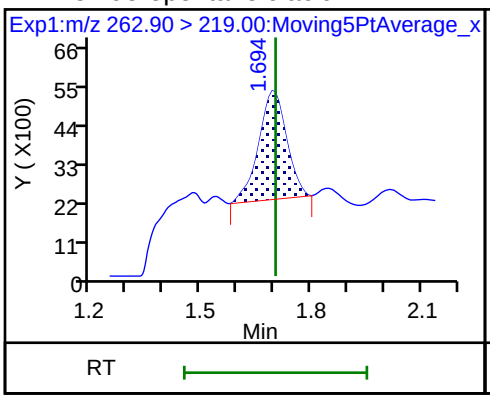
D 1 13C4 PFBA



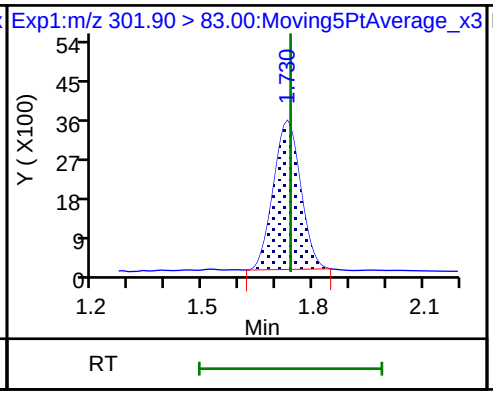
D 3 13C5-PFPeA



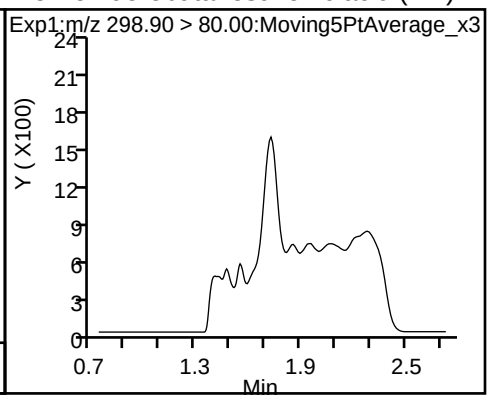
4 Perfluoropentanoic acid



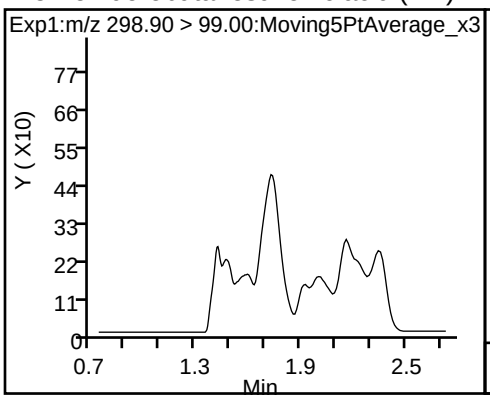
D 47 13C3-PFBS



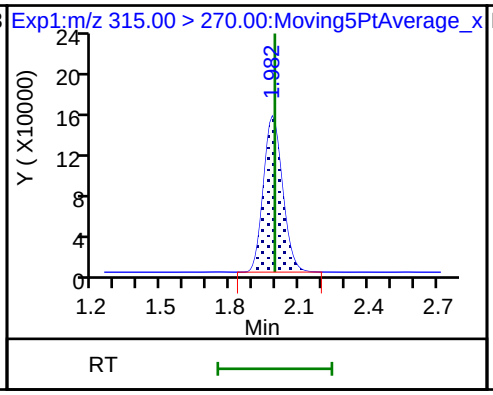
5 Perfluorobutanesulfonic acid (ND)



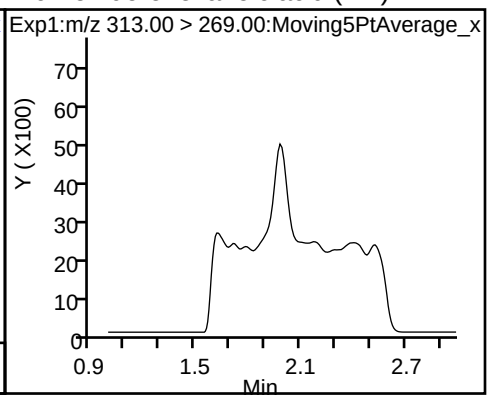
5 Perfluorobutanesulfonic acid (ND)



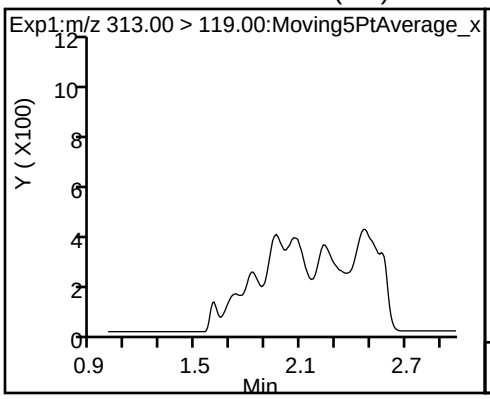
D 7 13C2 PFHxA



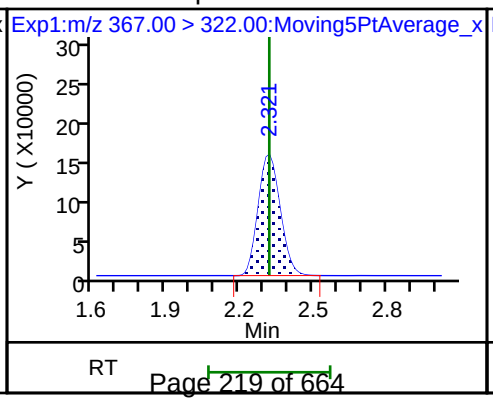
6 Perfluorohexanoic acid (ND)



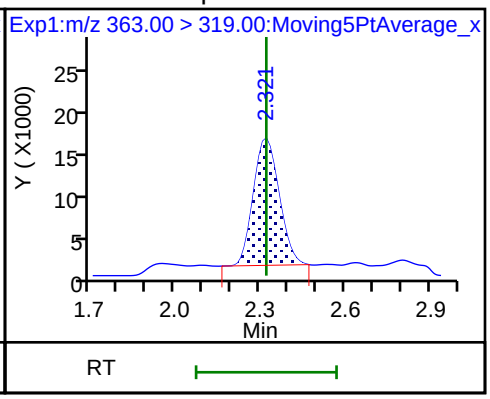
6 Perfluorohexanoic acid (ND)



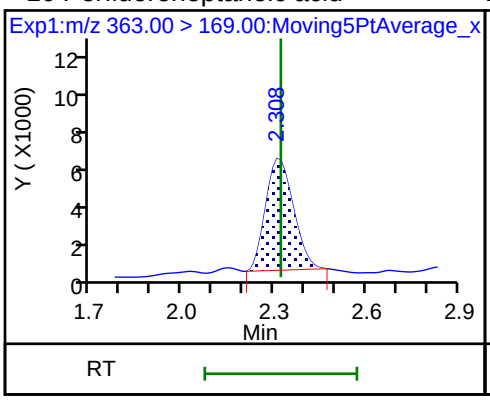
D 9 13C4-PFHpA



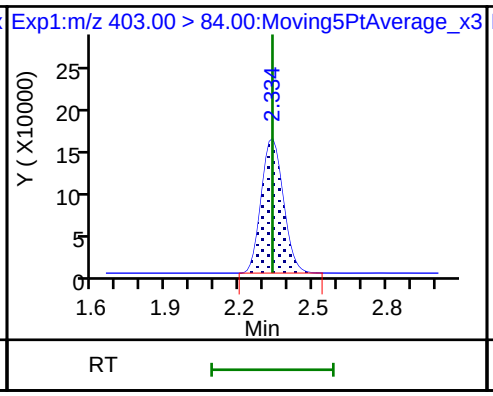
10 Perfluoroheptanoic acid



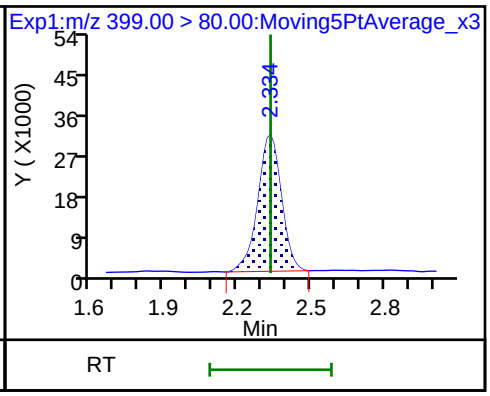
10 Perfluoroheptanoic acid



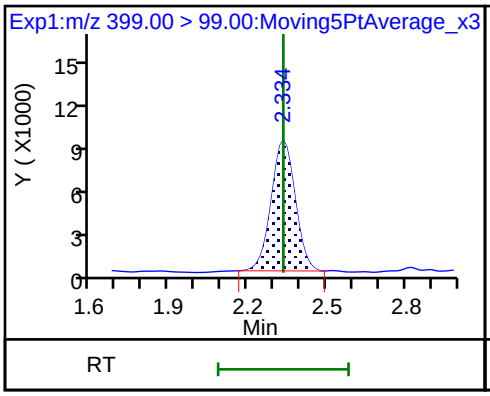
D 11 18O2 PFHxS



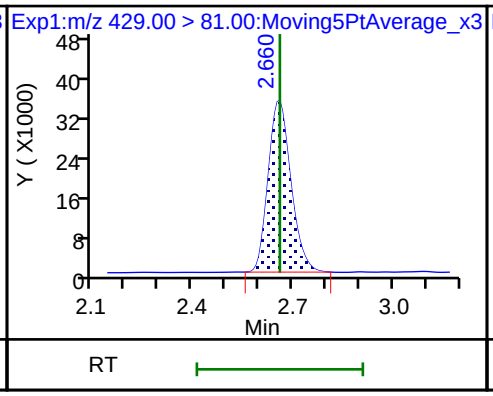
8 Perfluorohexanesulfonic acid



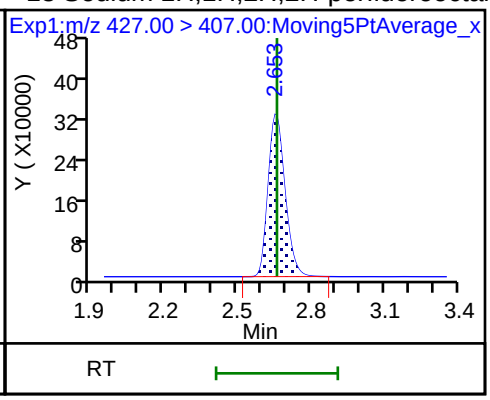
8 Perfluorohexanesulfonic acid



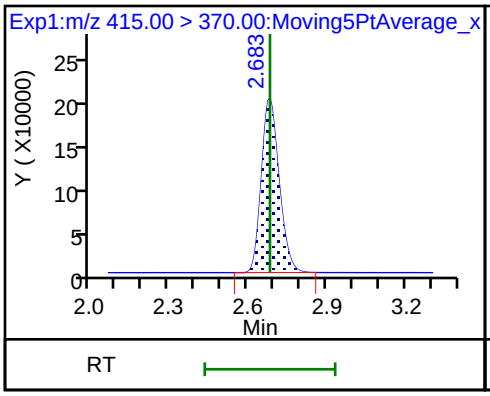
D 12 M2-6:2FTS



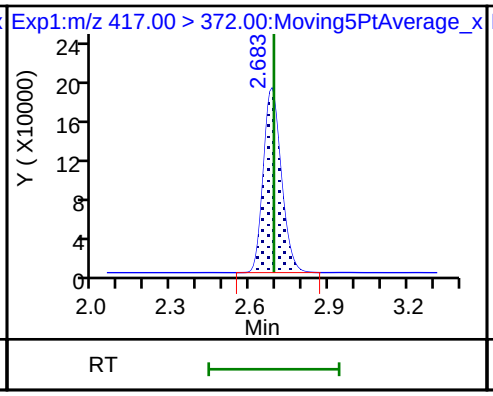
13 Sodium 1H,1H,2H,2H-perfluorooctane



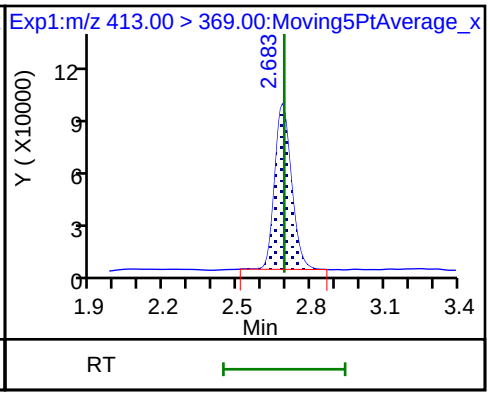
* 62 13C2-PFOA



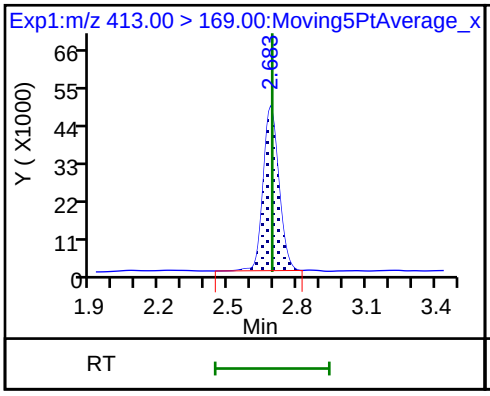
D 14 13C4 PFOA



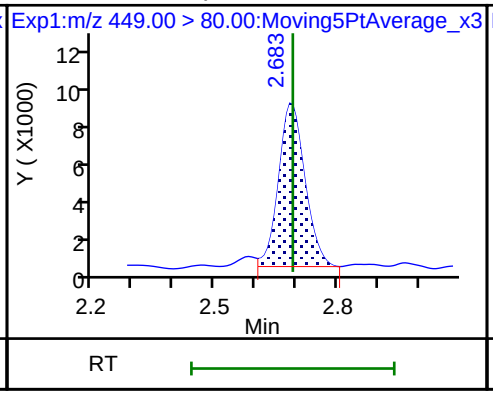
15 Perfluorooctanoic acid



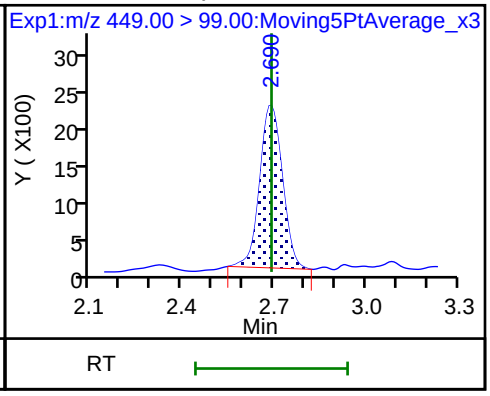
15 Perfluorooctanoic acid



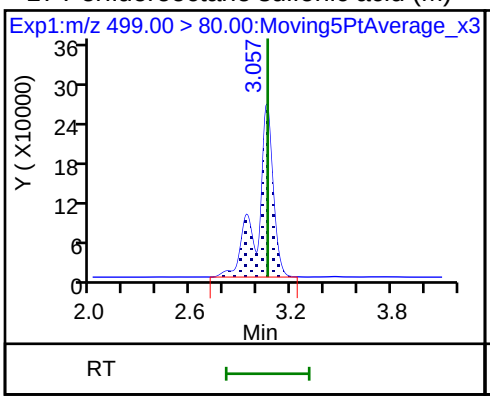
16 Perfluoroheptanesulfonic acid



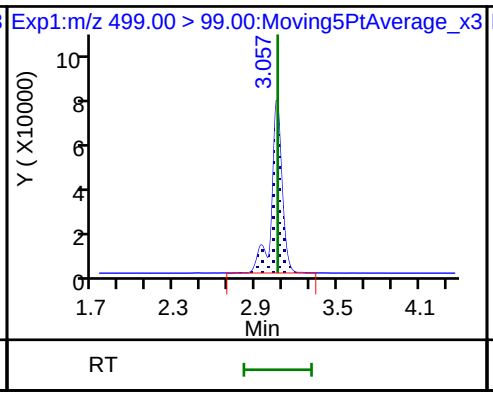
16 Perfluoroheptanesulfonic acid



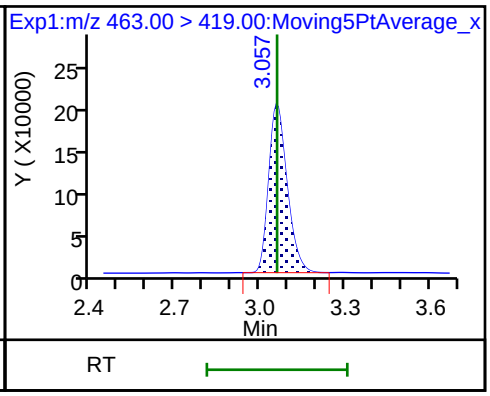
17 Perfluorooctane sulfonic acid (M)



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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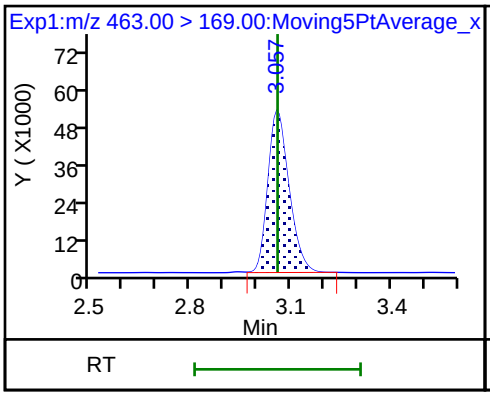
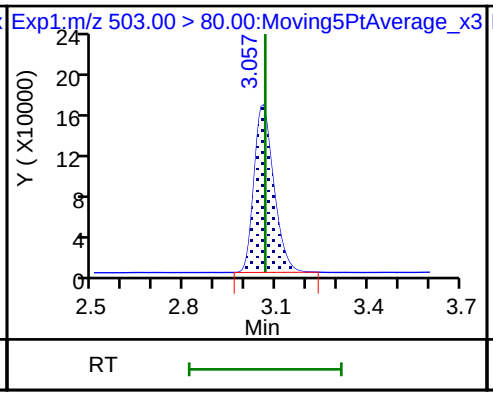
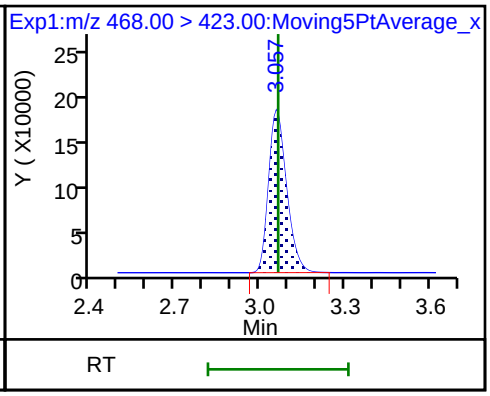


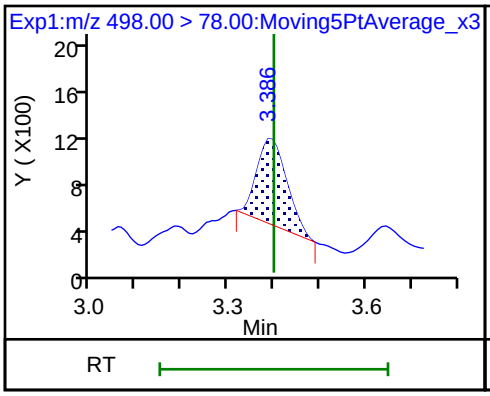
D 18 13C4 PFOS



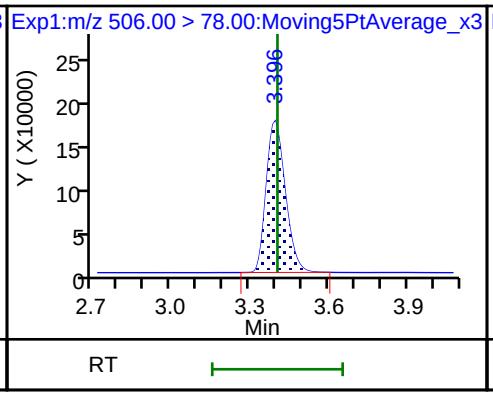
D 19 13C5 PFNA



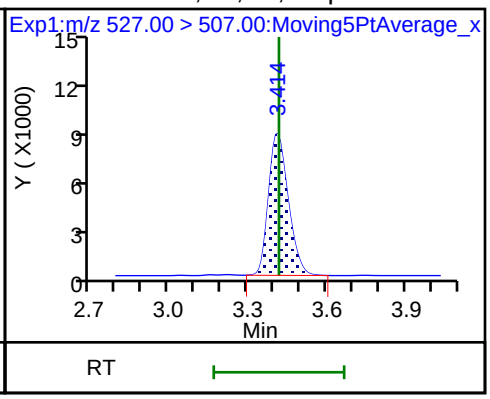
22 Perfluorooctane Sulfonamide



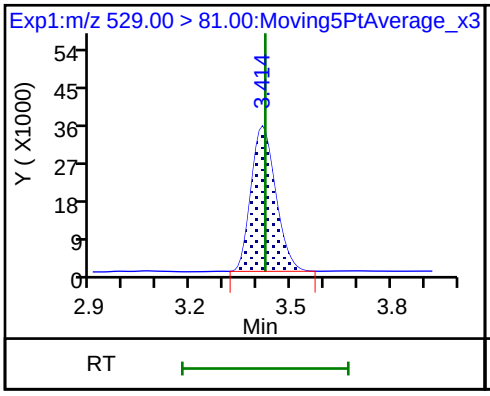
D 21 13C8 FOSA



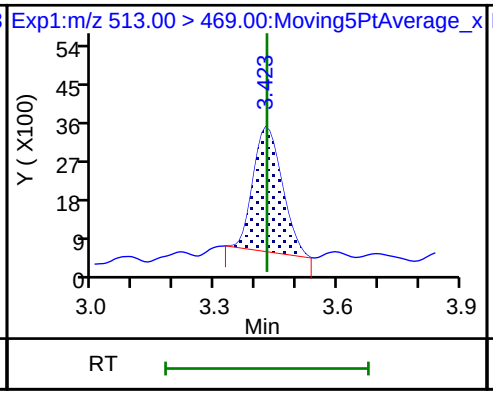
25 Sodium 1H,1H,2H,2H-perfluorodecane



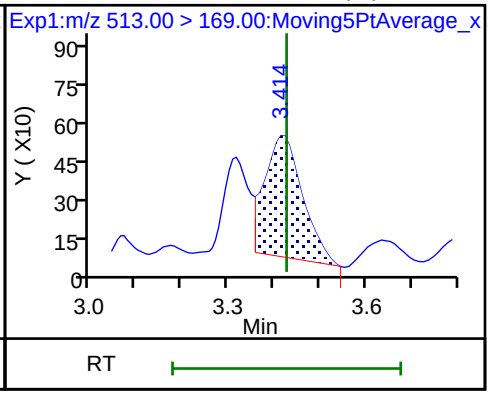
D 26 M2-8:2FTS



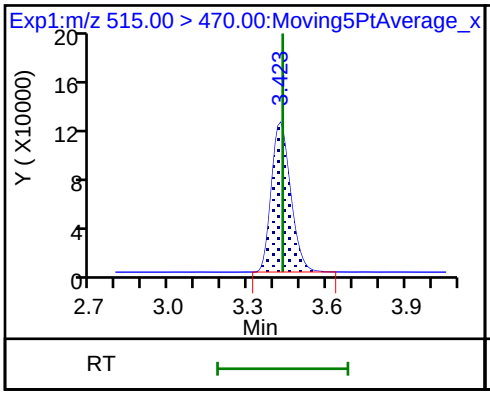
24 Perfluorodecanoic acid



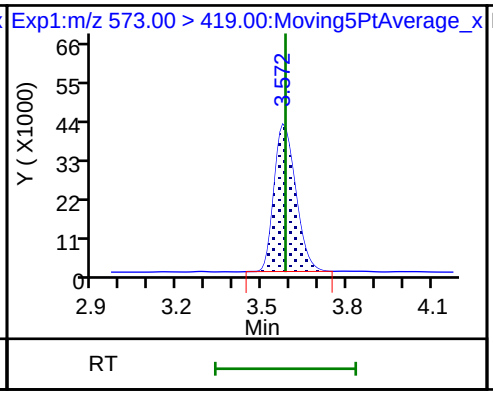
24 Perfluorodecanoic acid (M)



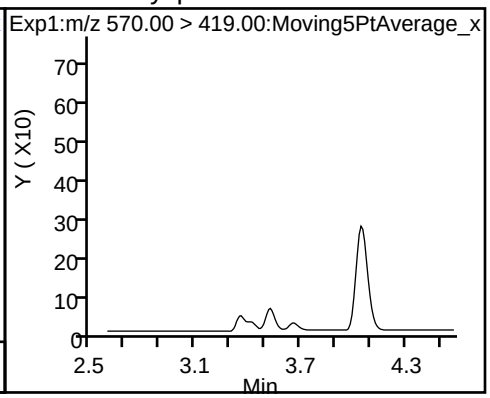
D 23 13C2 PFDA



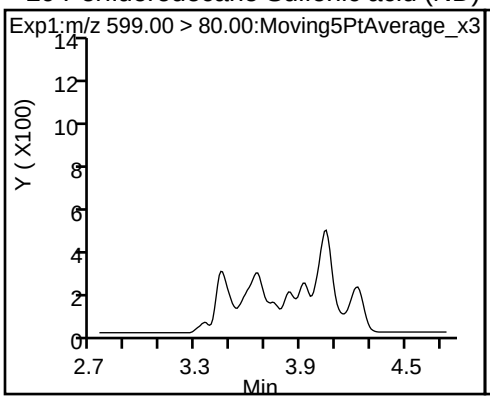
D 27 d3-NMeFOSAA



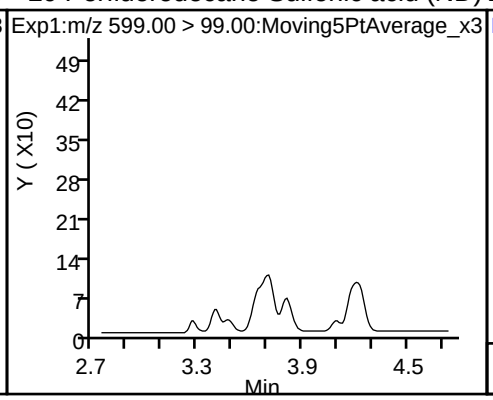
28 N-methyl perfluorooctane sulfonami (ND)



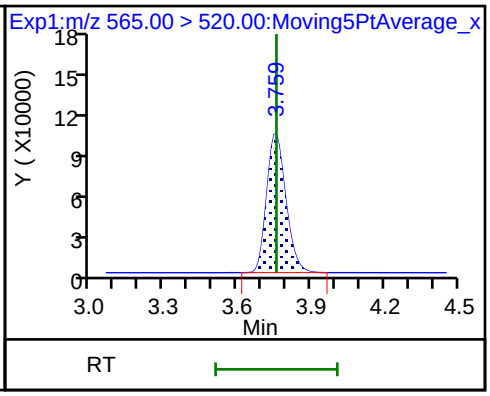
29 Perfluorodecane Sulfonic acid (ND)



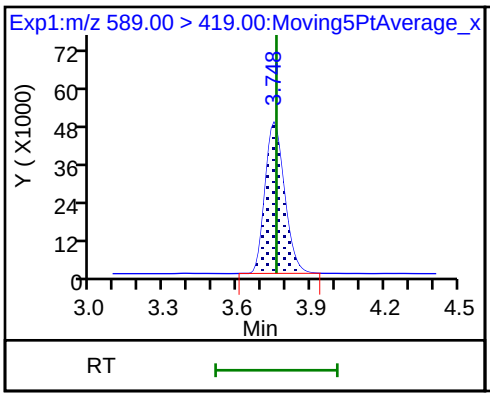
29 Perfluorodecane Sulfonic acid (ND)



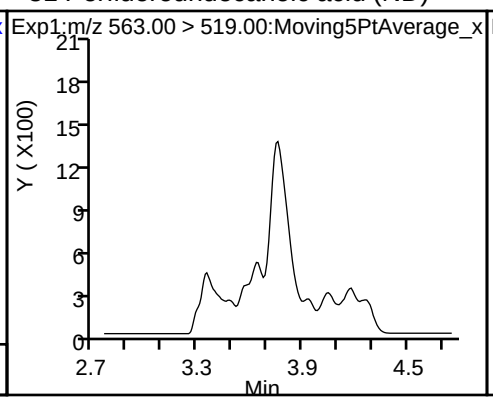
D 30 13C2 PFUnA



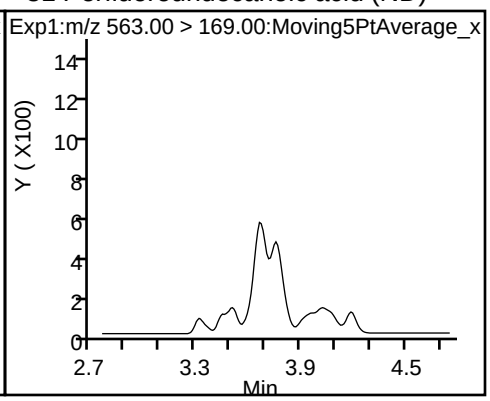
D 32 d5-NEtFOSAA



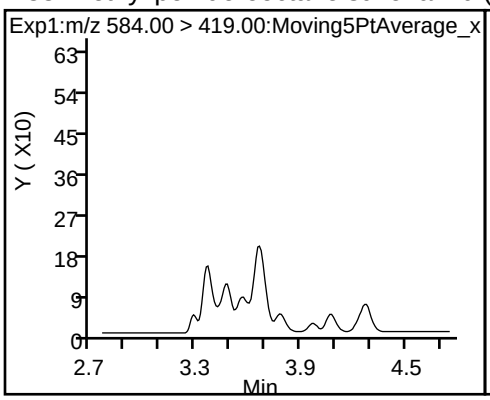
31 Perfluoroundecanoic acid (ND)



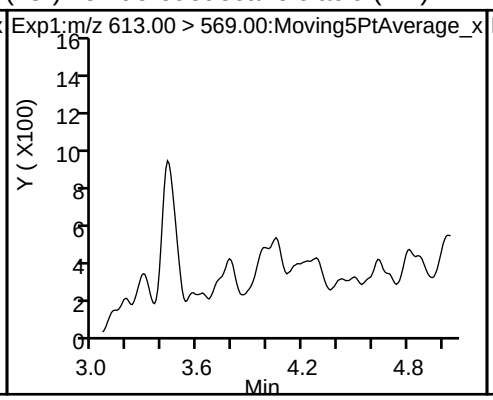
31 Perfluoroundecanoic acid (ND)



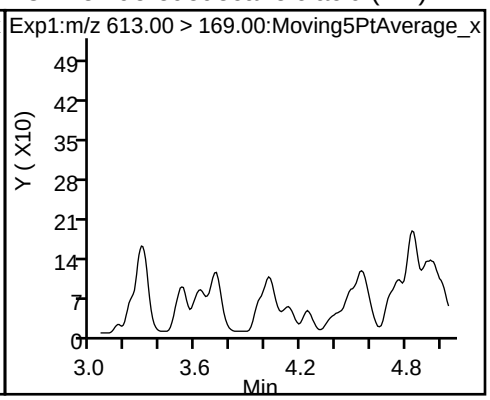
33 N-ethyl perfluorooctane sulfonamid (ND)



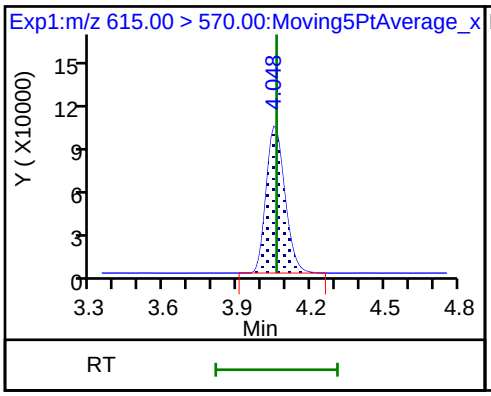
37 Perfluorododecanoic acid (ND)



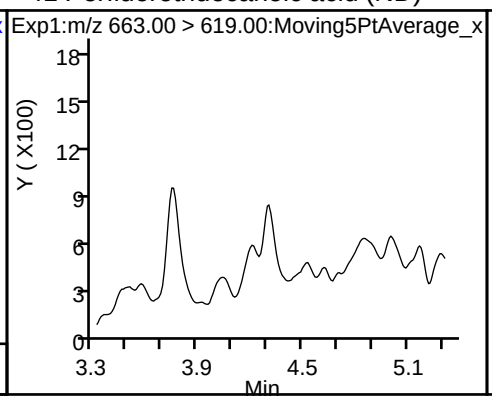
37 Perfluorododecanoic acid (ND)



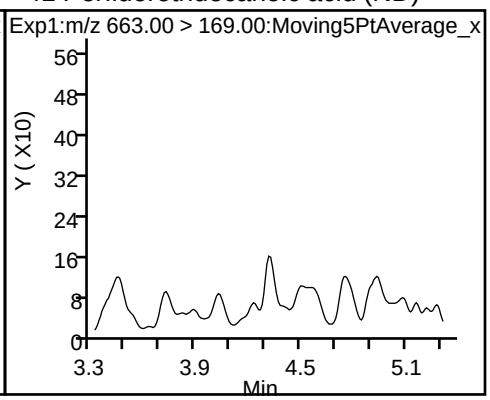
D 36 13C2 PFDoA



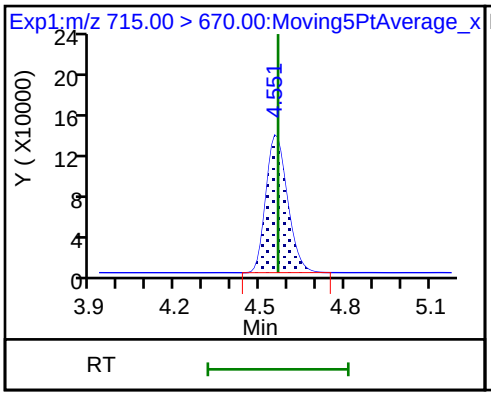
41 Perfluorotridecanoic acid (ND)



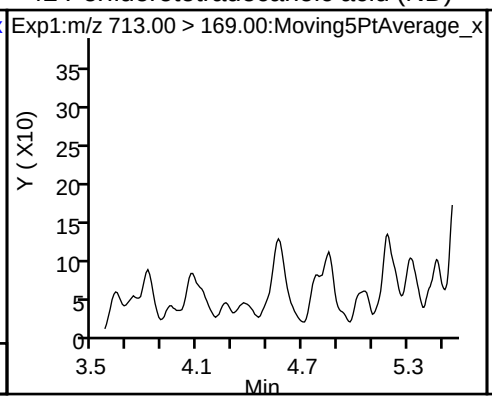
41 Perfluorotridecanoic acid (ND)



D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



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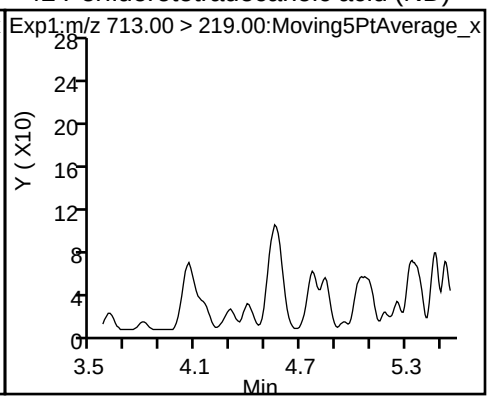


FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB013(8-10) | Lab Sample ID: 320-38061-7

Matrix: Solid | Lab File ID: 2018.04.20LLC_035.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.02(g) | Date Analyzed: 04/21/2018 11:23

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000031	J	0.00021	0.000029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000079	U	0.00021	0.000079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000088	J	0.00021	0.000043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000032	J	0.00021	0.000030
335-67-1	Perfluorooctanoic acid (PFOA)	0.00017	J	0.00021	0.000089
375-95-1	Perfluorononanoic acid (PFNA)	0.00011	J	0.00021	0.000037
335-76-2	Perfluorodecanoic acid (PFDA)	0.000023	U	0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000037	U	0.00021	0.000037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000069	U	0.00021	0.000069
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000053	U	0.00021	0.000053
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000056	U	0.00021	0.000056
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000026	U	0.00021	0.000026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.0010		0.00021	0.000032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000072	J	0.00021	0.000036
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000040	U	0.00021	0.000040
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000085	U	0.00021	0.000085
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00040	U	0.0021	0.00040
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00038	U	0.0021	0.00038
27619-97-2	6:2FTS	0.00015	U	0.0021	0.00015
39108-34-4	8:2FTS	0.00026	U	0.0021	0.00026

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB013(8-10) | Lab Sample ID: 320-38061-7

Matrix: Solid | Lab File ID: 2018.04.20LLC_035.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.02(g) | Date Analyzed: 04/21/2018 11:23

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	101		25-150
STL01893	13C5 PFPeA	99		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4-PFHpA	106		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	91		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2-PFTeDA	94		25-150
STL02337	13C3-PFBS	102		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	85		25-150
STL02118	d3-NMeFOSAA	84		25-150
STL02117	d5-NEtFOSAA	86		25-150
STL02279	M2-6:2FTS	108		25-150
STL02280	M2-8:2FTS	103		25-150

Report Date: 24-Apr-2018 16:42:18 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_035.d
Lims ID: 320-38061-A-7-A
Client ID: SB013(8-10)
Sample Type: Client
Inject. Date: 21-Apr-2018 11:23:58 ALS Bottle#: 26 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-7-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:42:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:41:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.441	0.006	1.000	6102810	2.52		101	41087	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.447	0.0	1.000	33947	0.0150			3.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.701	0.001	0.557	3856335	2.47		98.7	67730	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.711	1.712	-0.001	1.005	14286	0.007771			9.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	84636	2.36		102	475	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.980	0.012	1.000	4072384	2.36		94.3	83152	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.992	1.993	-0.001	1.000	70636	0.0427			77.6	RM
313.00 > 119.00	1.992	1.993	-0.001	1.000	4613		15.31(5.03-15.10)		47.8	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.319	0.0	1.000	4462083	2.65		106	87451	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.321	-0.002	1.000	27823	0.0156			30.8	
363.00 > 169.00	2.319	2.321	-0.002	1.000	9488		2.93(1.13-3.40)		40.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.332	0.0	1.000	4907370	2.36		100.0	85384	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.334	-0.002	1.000	1143074	0.4867			3164	
399.00 > 99.00	2.332	2.334	-0.002	1.000	381704		2.99(1.50-4.49)		1844	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.652	0.008	1.000	925720	2.57		108	11239	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.661	-0.001	1.000	16203	0.0246			155	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.682	0.0	1.000	4362226	2.61		104	92753	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.684	-0.002	1.000	167850	0.0833			123	
413.00 > 169.00	2.682	2.684	-0.002	1.000	85459		1.96(0.84-2.52)		234	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.684	-0.002		4504818	2.50			78747	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	62712	0.0349			143	
449.00 > 99.00	2.690	2.691	-0.001	1.000	17145		3.66(1.94-5.82)		153	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.055	0.001	1.000	3239206	2.23		93.2	22337	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.055	0.001	1.000	3284128	2.29		91.4	89090	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.060	0.003	1.002	75268	0.0549			218	
463.00 > 169.00	3.063	3.060	0.003	1.002	17989		4.18(1.90-5.69)		278	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.056	3.060	-0.004	1.000	26116224	17.7			76662	E
499.00 > 99.00	3.056	3.060	-0.004	1.000	6710780		3.89(2.31-6.93)		56481	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.393	0.001	1.000	3848603	2.12		84.8	40169	
22 Perfluorooctane Sulfonamide										M
498.00 > 78.00	3.385	3.398	-0.013	0.997	8502	0.005460			24.3	M
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.407	0.006	1.000	13697	0.0243			902	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.411	0.002	1.000	1065861	2.46		103	9138	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.420	0.002	1.000	3026333	2.51		100	51006	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.569	0.002	1.000	1436143	2.10		83.9	24589	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.743	0.004	1.000	1448132	2.14		85.8	17945	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.747	3.751	-0.004	1.000	13285	0.0153			72.9	
563.00 > 169.00	3.747	3.751	-0.004	1.000	3510		3.78(2.12-6.36)		98.7	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.754	-0.007	1.000	2575855	2.47		98.9	59779	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.042	0.004	1.000	2663917	2.37		94.7	42024	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.549	4.548	0.001	1.000	3346909	2.35		93.9	23204	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:42:18 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_035.d

Injection Date: 21-Apr-2018 11:23:58 Instrument ID: A8_N

Lims ID: 320-38061-A-7-A Lab Sample ID: 320-38061-7

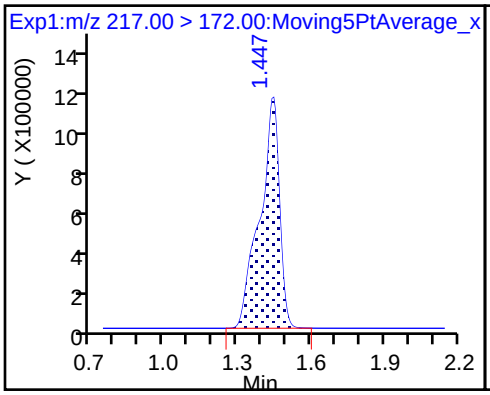
Client ID: SB013(8-10)

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 13

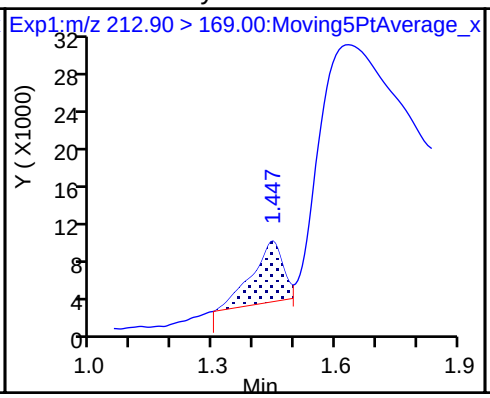
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

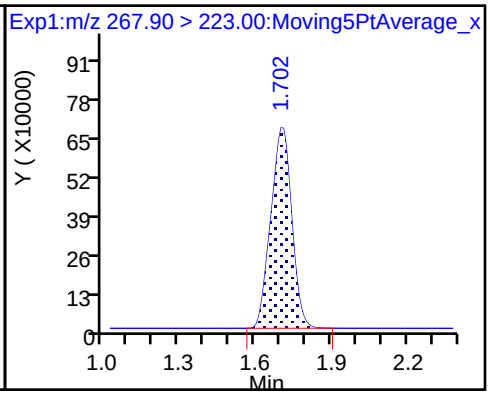
D 1 13C4 PFBA



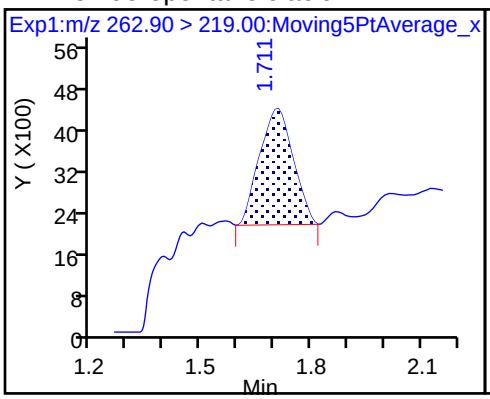
2 Perfluorobutyric acid



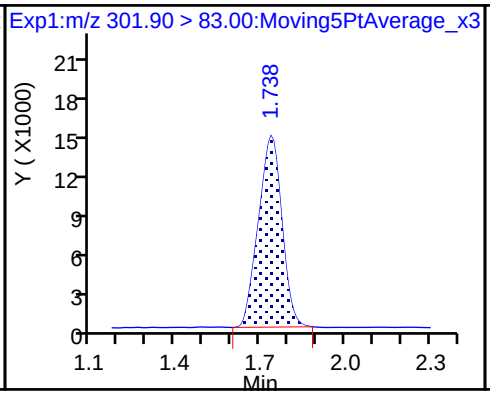
D 3 13C5-PFPeA



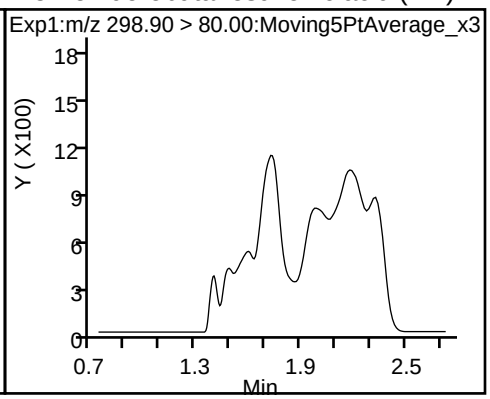
4 Perfluoropentanoic acid



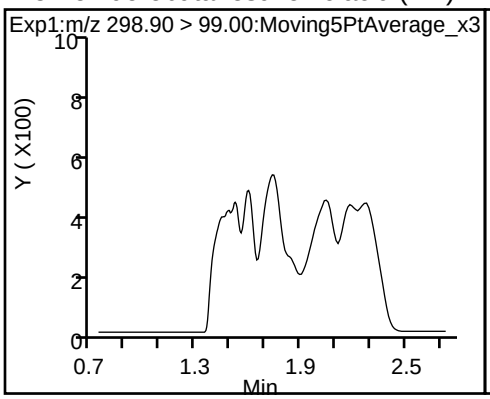
D 47 13C3-PFBS



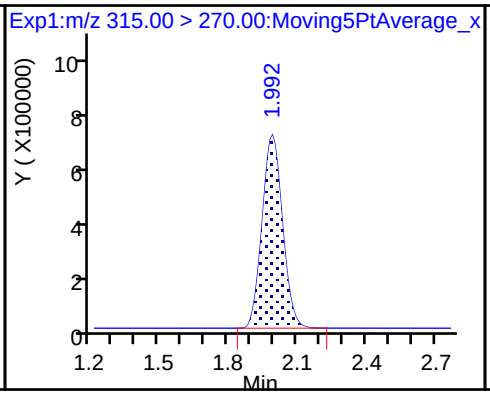
5 Perfluorobutanesulfonic acid (ND)



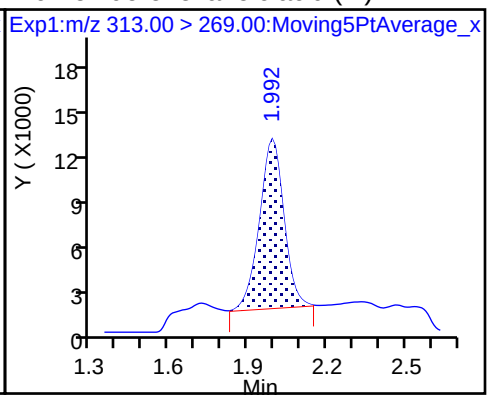
5 Perfluorobutanesulfonic acid (ND)



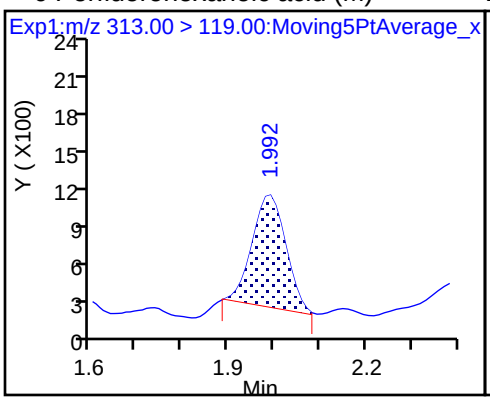
D 7 13C2 PFHxA



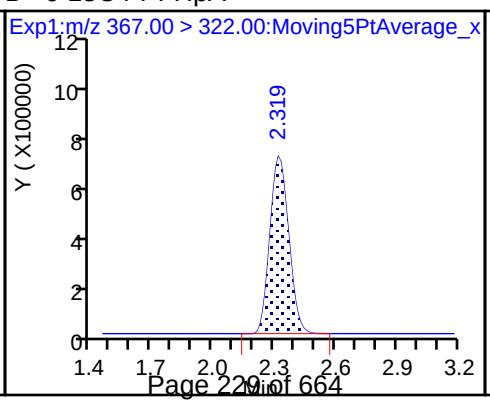
6 Perfluorohexanoic acid (M)



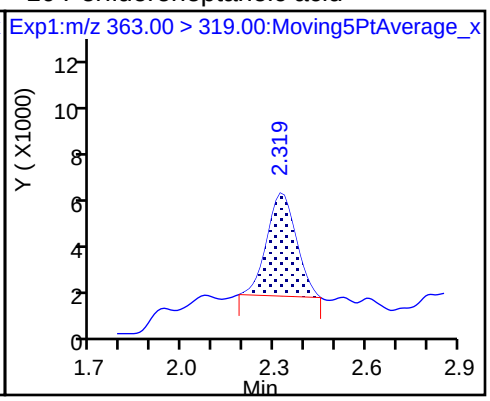
6 Perfluorohexanoic acid (M)



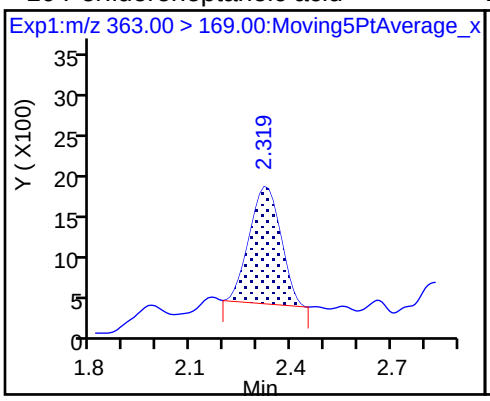
D 9 13C4-PFHpA



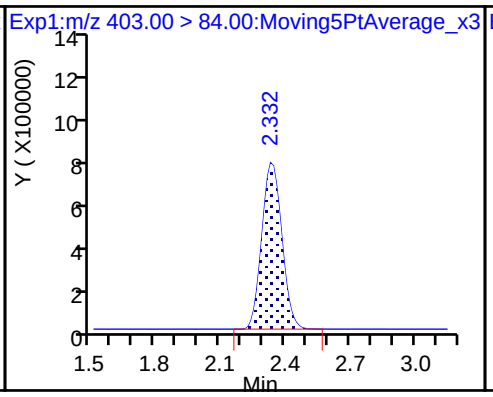
10 Perfluoroheptanoic acid



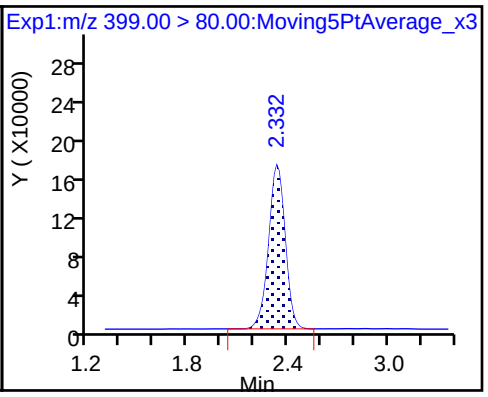
10 Perfluoroheptanoic acid



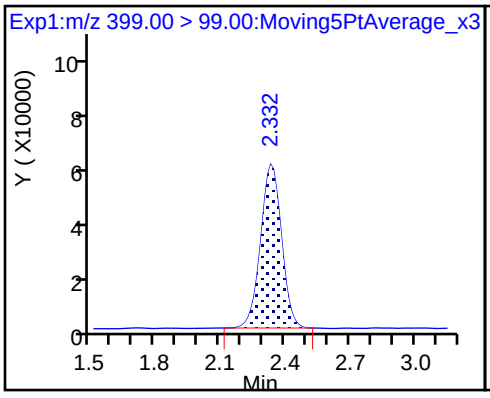
D 11 18O2 PFHxS



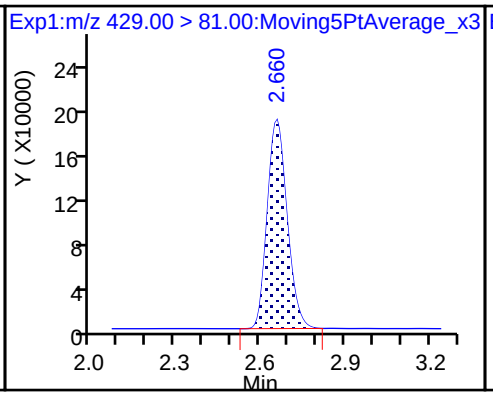
8 Perfluorohexanesulfonic acid



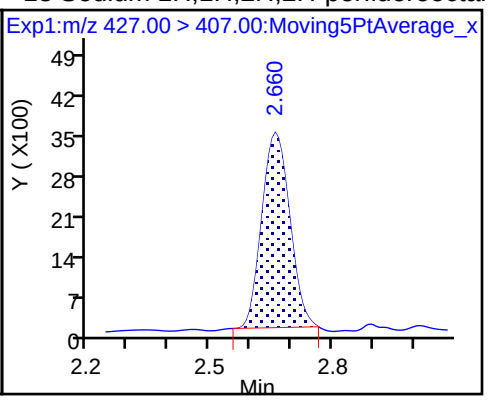
8 Perfluorohexanesulfonic acid



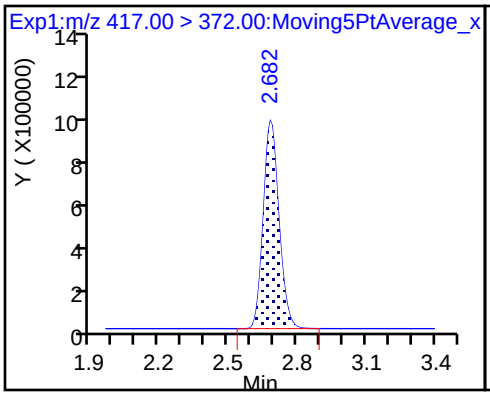
D 12 M2-6:2FTS



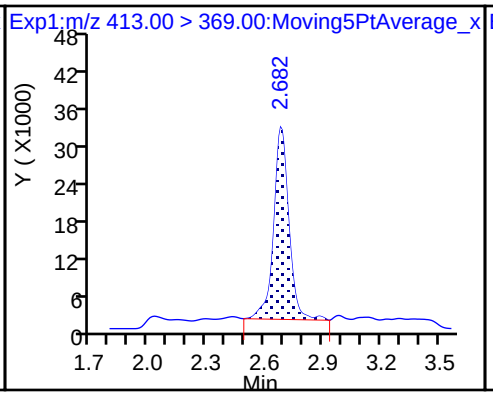
13 Sodium 1H,1H,2H,2H-perfluorooctane



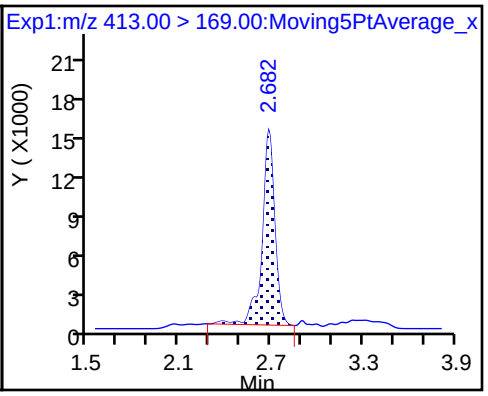
D 14 13C4 PFOA



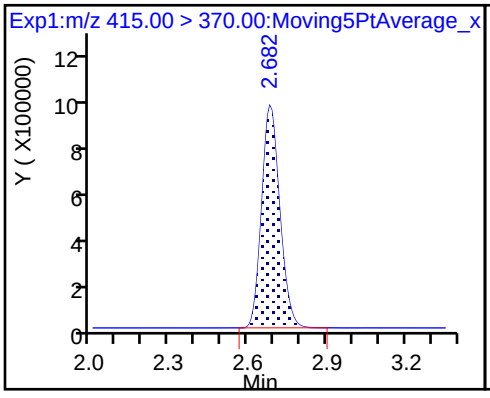
15 Perfluorooctanoic acid



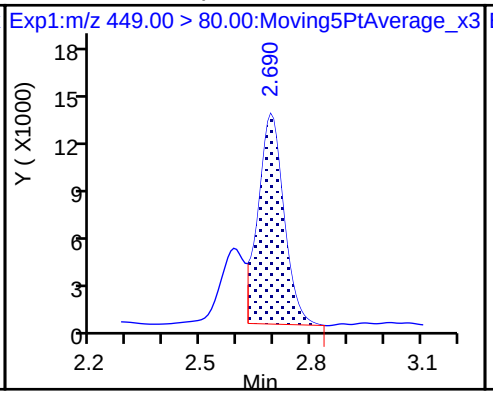
15 Perfluorooctanoic acid



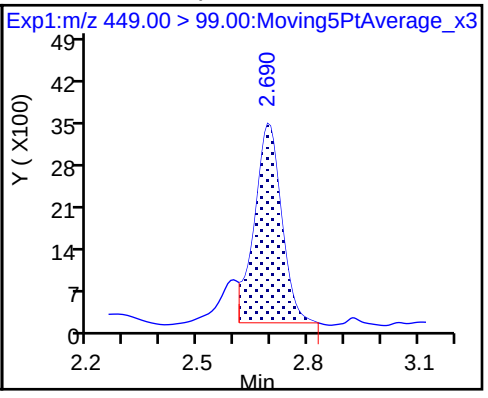
* 62 13C2-PFOA



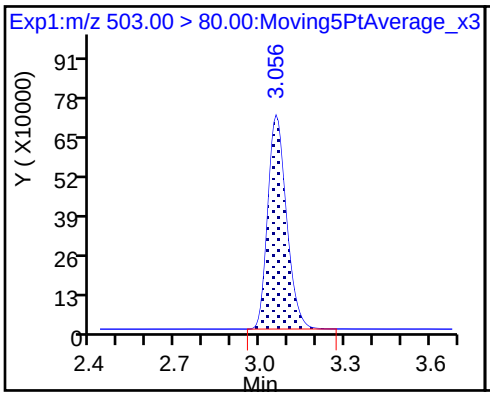
16 Perfluoroheptanesulfonic acid



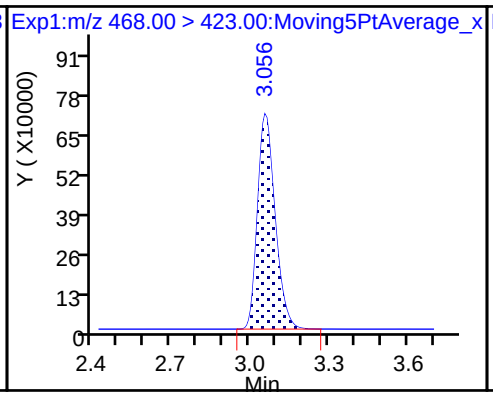
16 Perfluoroheptanesulfonic acid



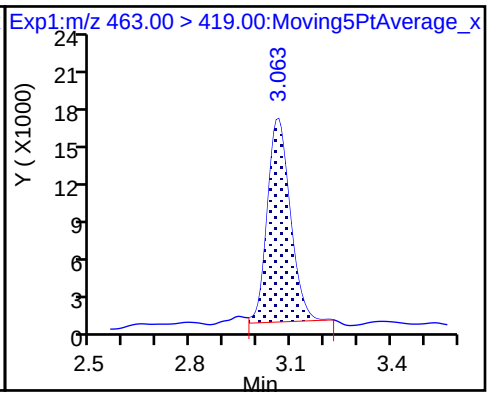
D 18 13C4 PFOS



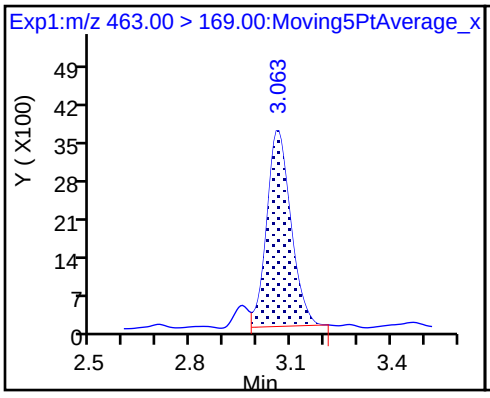
D 19 13C5 PFNA



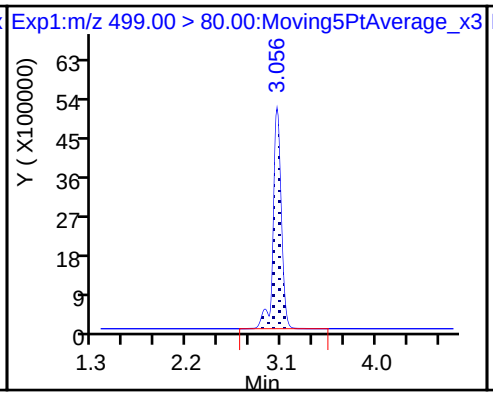
20 Perfluorononanoic acid



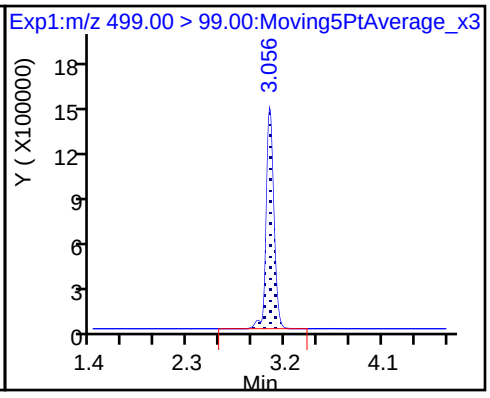
20 Perfluorononanoic acid



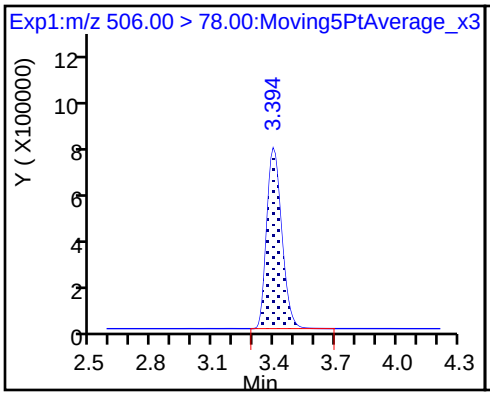
17 Perfluorooctane sulfonic acid



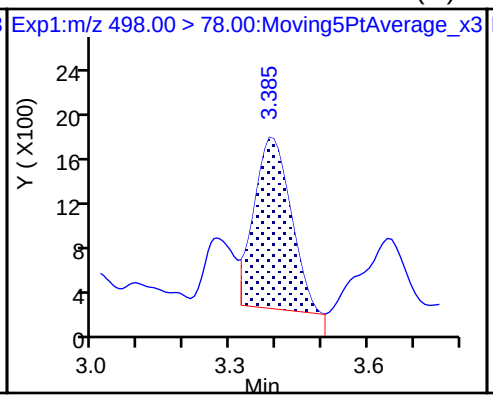
17 Perfluorooctane sulfonic acid



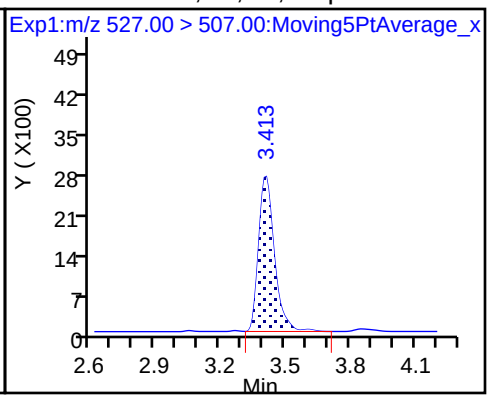
D 21 13C8 FOSA



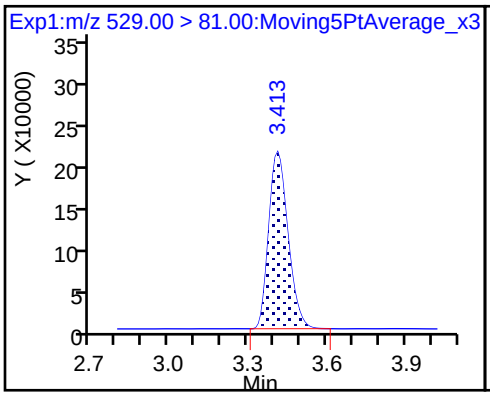
22 Perfluorooctane Sulfonamide (M)



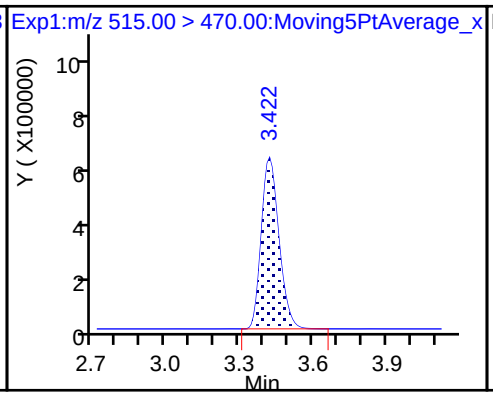
25 Sodium 1H,1H,2H,2H-perfluorodecane



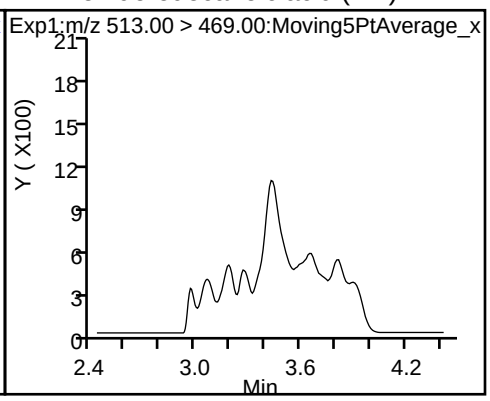
D 26 M2-8:2FTS



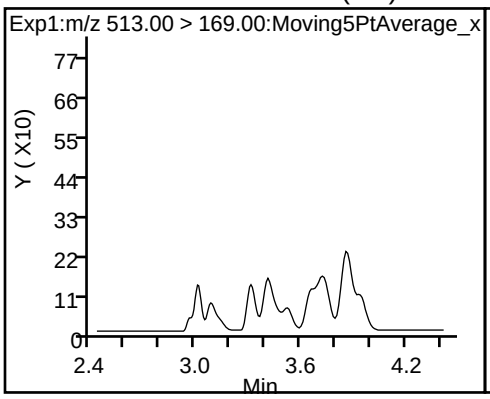
D 23 13C2 PFDA



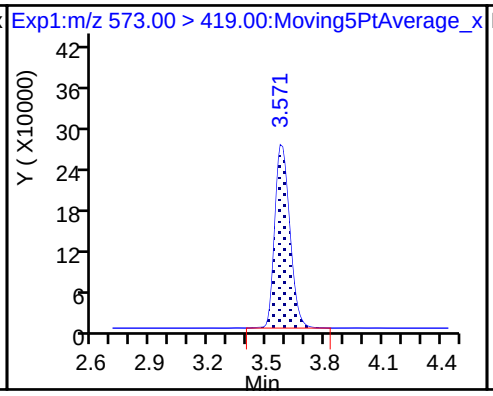
24 Perfluorodecanoic acid (ND)



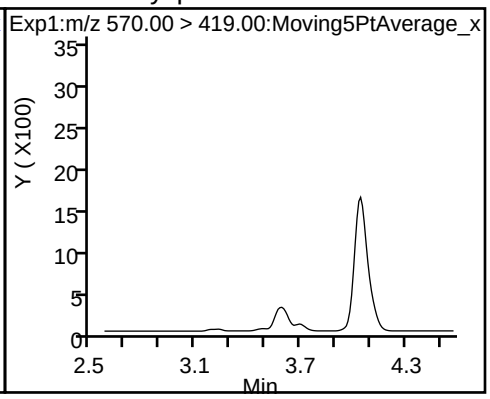
24 Perfluorodecanoic acid (ND)



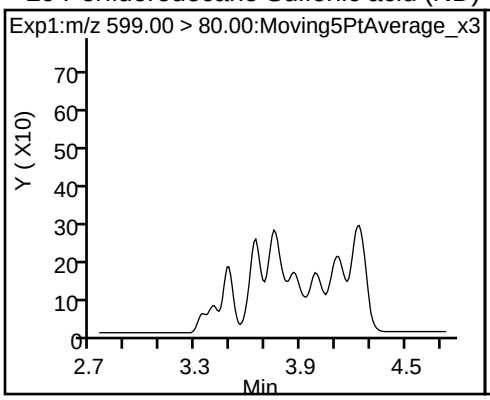
D 27 d3-NMeFOSAA



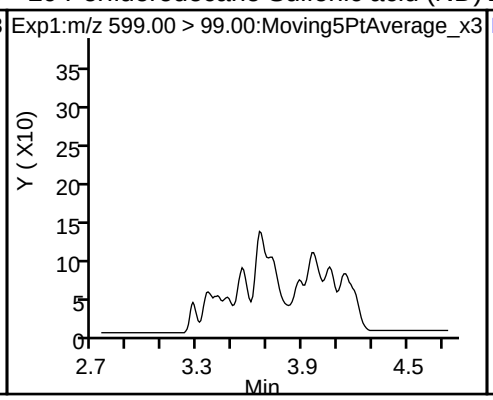
28 N-methyl perfluorooctane sulfonami (ND)



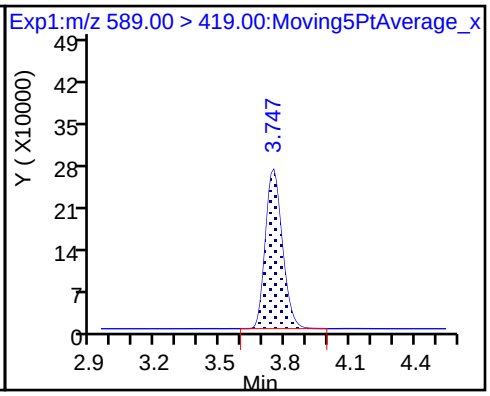
29 Perfluorodecane Sulfonic acid (ND)



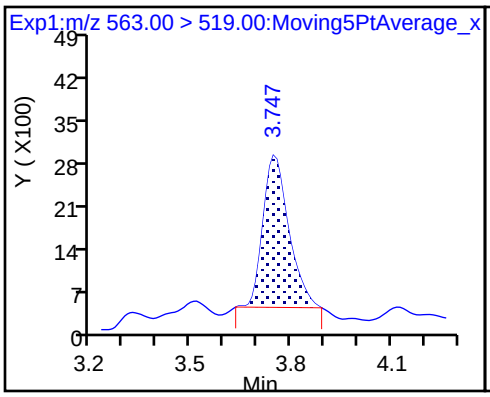
29 Perfluorodecane Sulfonic acid (ND)



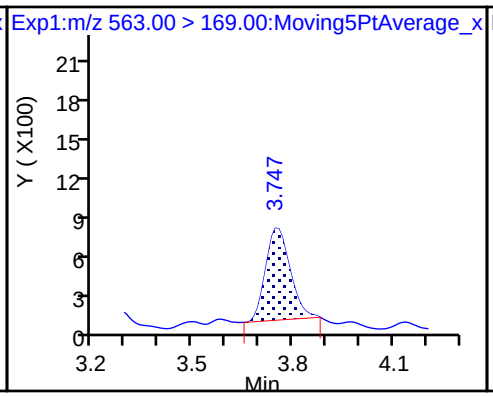
D 32 d5-NEtFOSAA



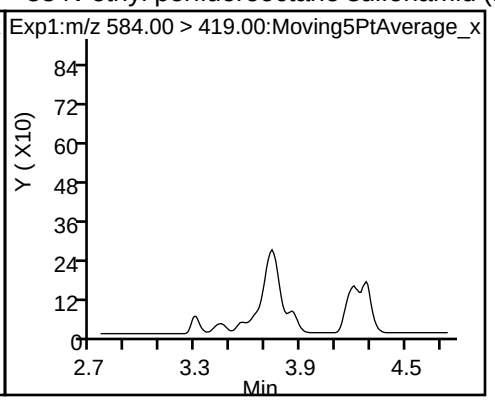
31 Perfluoroundecanoic acid



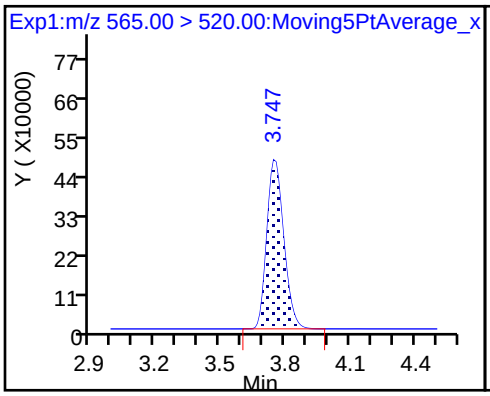
31 Perfluoroundecanoic acid



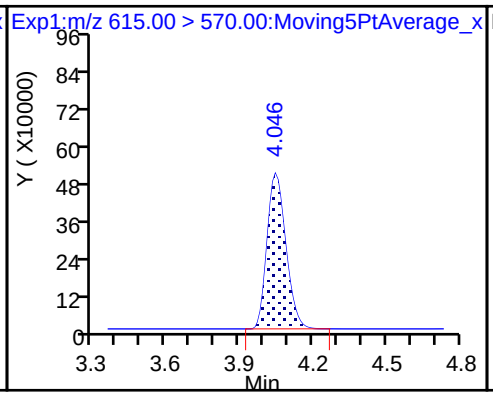
33 N-ethyl perfluorooctane sulfonamid (ND)



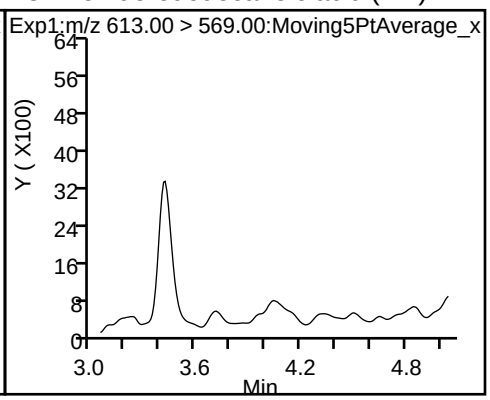
D 30 13C2 PFUnA



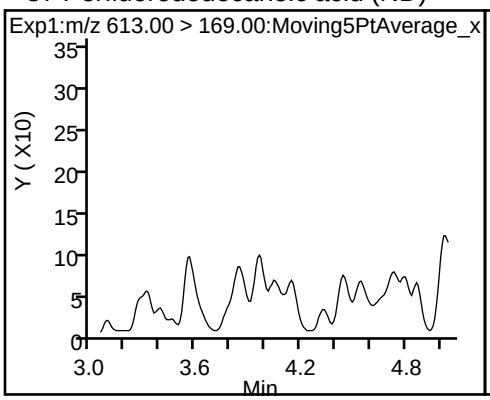
D 36 13C2 PFDoA



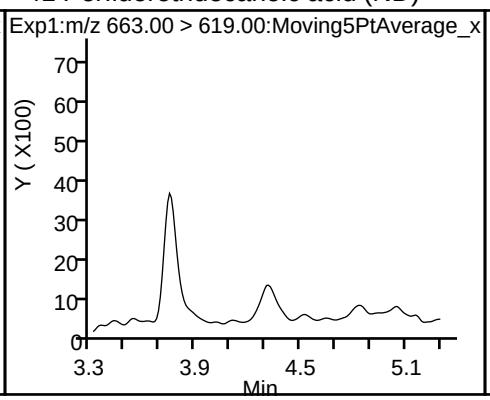
37 Perfluorododecanoic acid (ND)



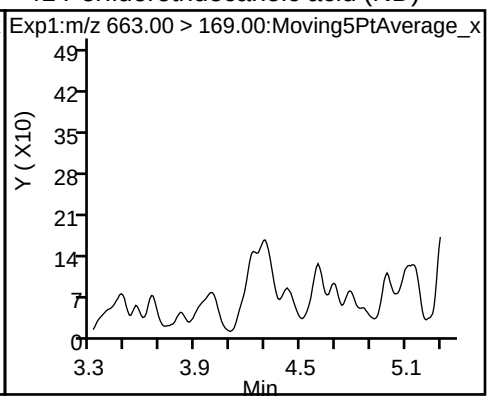
37 Perfluorododecanoic acid (ND)



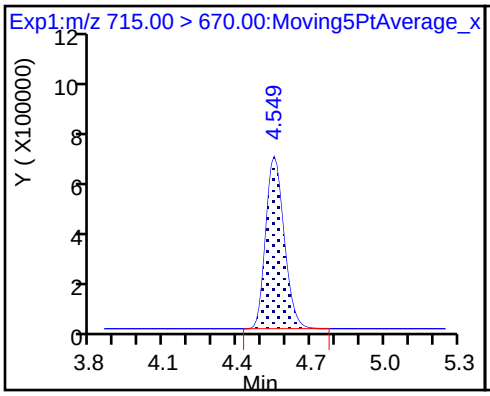
41 Perfluorotridecanoic acid (ND)



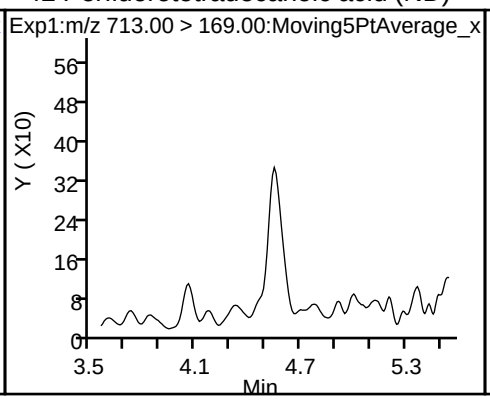
41 Perfluorotridecanoic acid (ND)



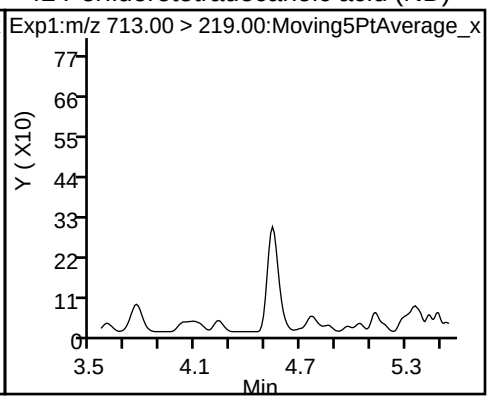
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

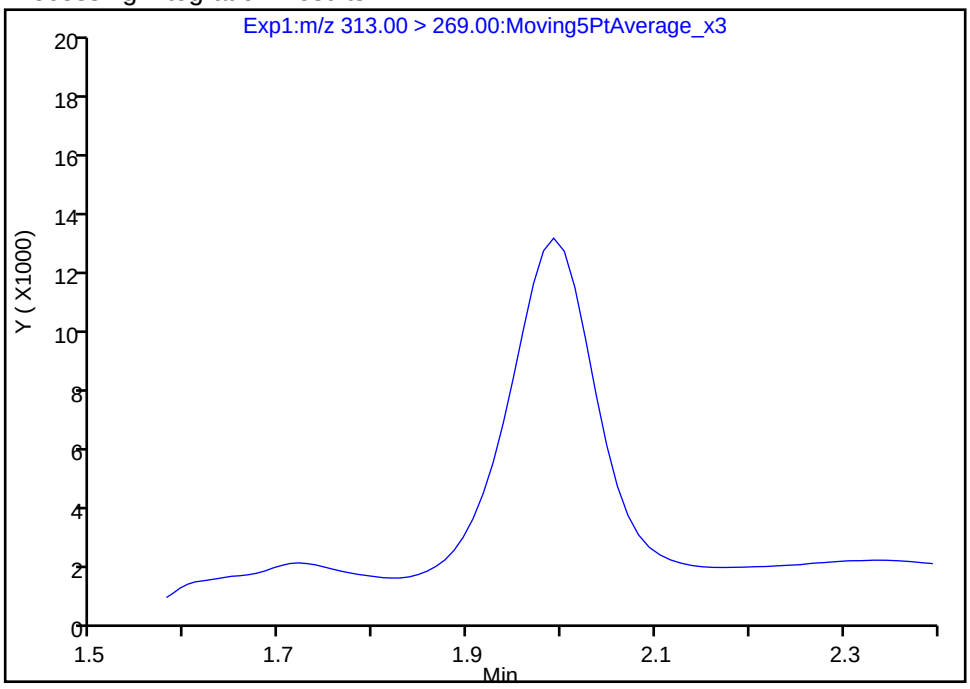
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_035.d				
Injection Date:	21-Apr-2018 11:23:58	Instrument ID:	A8_N		
Lims ID:	320-38061-A-7-A	Lab Sample ID:	320-38061-7		
Client ID:	SB013(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

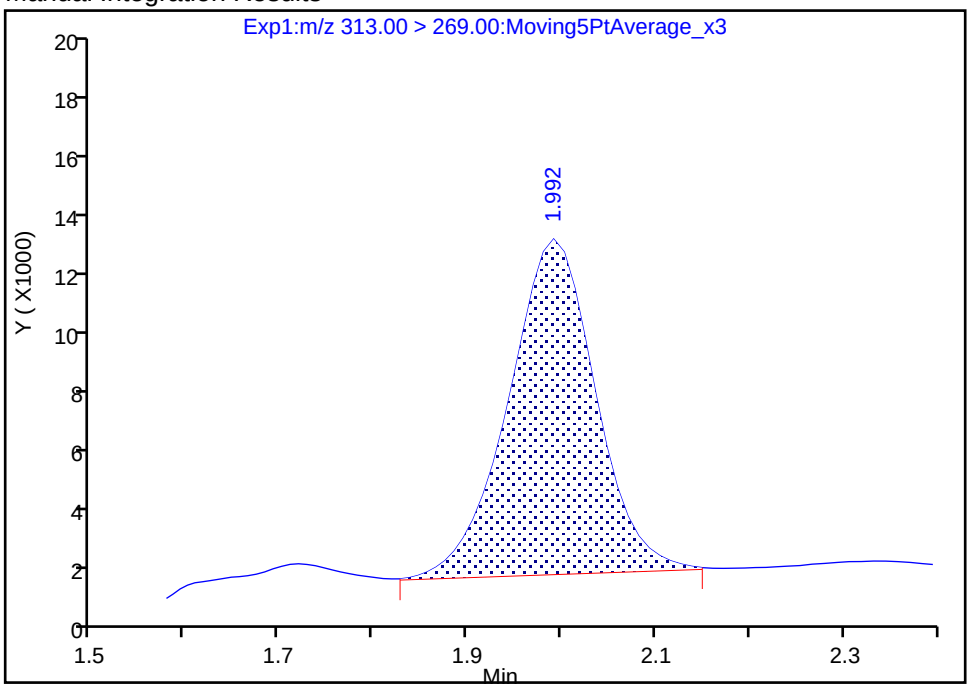
Not Detected
Expected RT: 1.99

Processing Integration Results



Manual Integration Results

RT: 1.99
Area: 70636
Amount: 0.042674
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:39:44
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_035.d

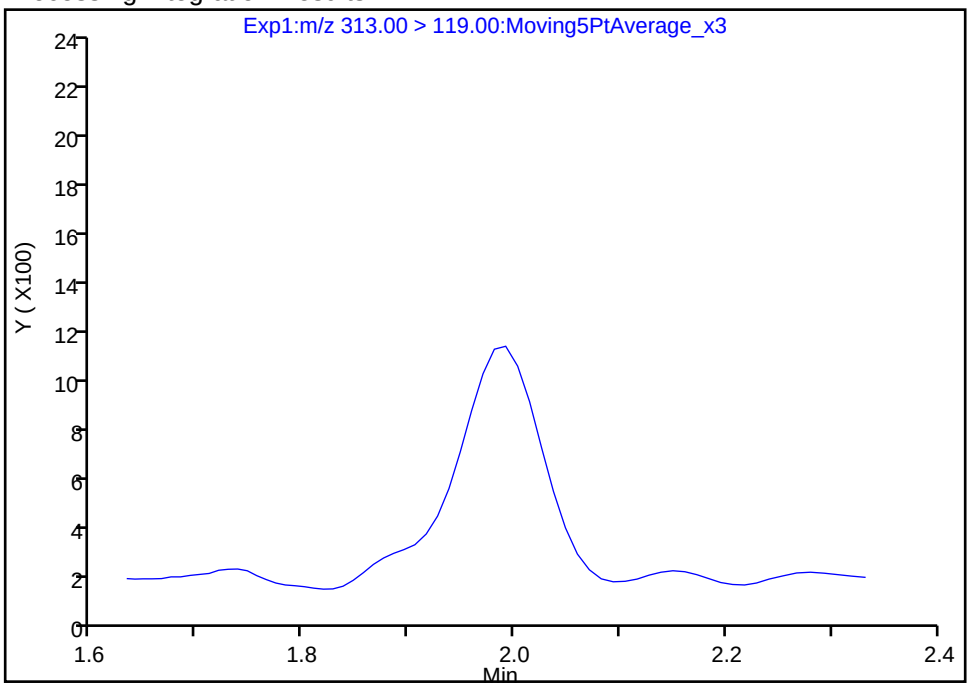
Injection Date:	21-Apr-2018 11:23:58	Instrument ID:	A8_N		
Lims ID:	320-38061-A-7-A	Lab Sample ID:	320-38061-7		
Client ID:	SB013(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

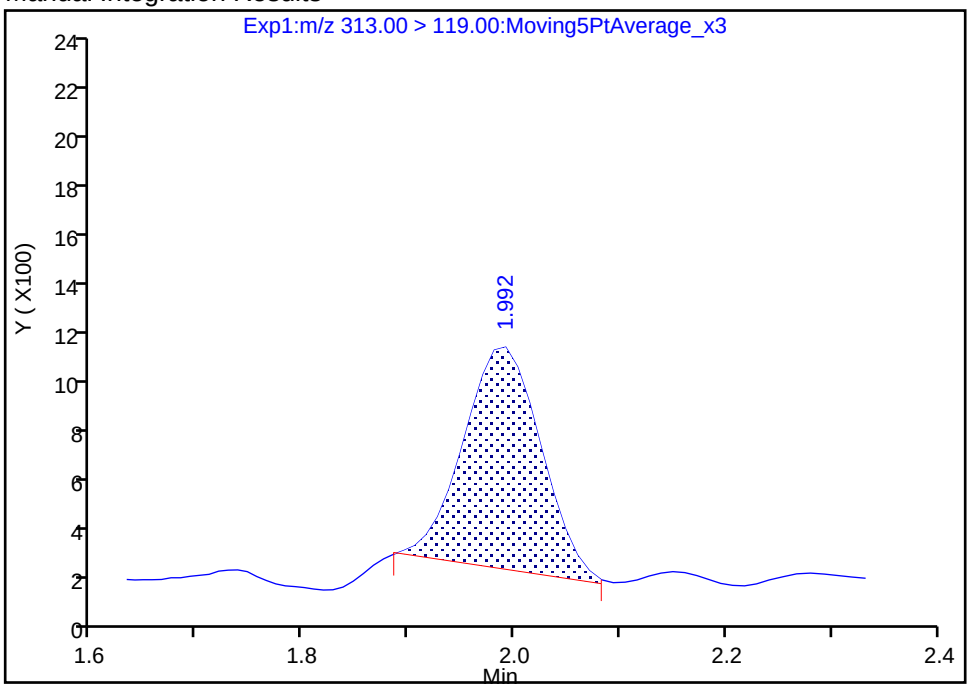
Not Detected
Expected RT: 1.99

Processing Integration Results



Manual Integration Results

RT: 1.99
Area: 4613
Amount: 0.042674
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:39:57
Audit Action: Manually Integrated Audit Reason: Missed Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

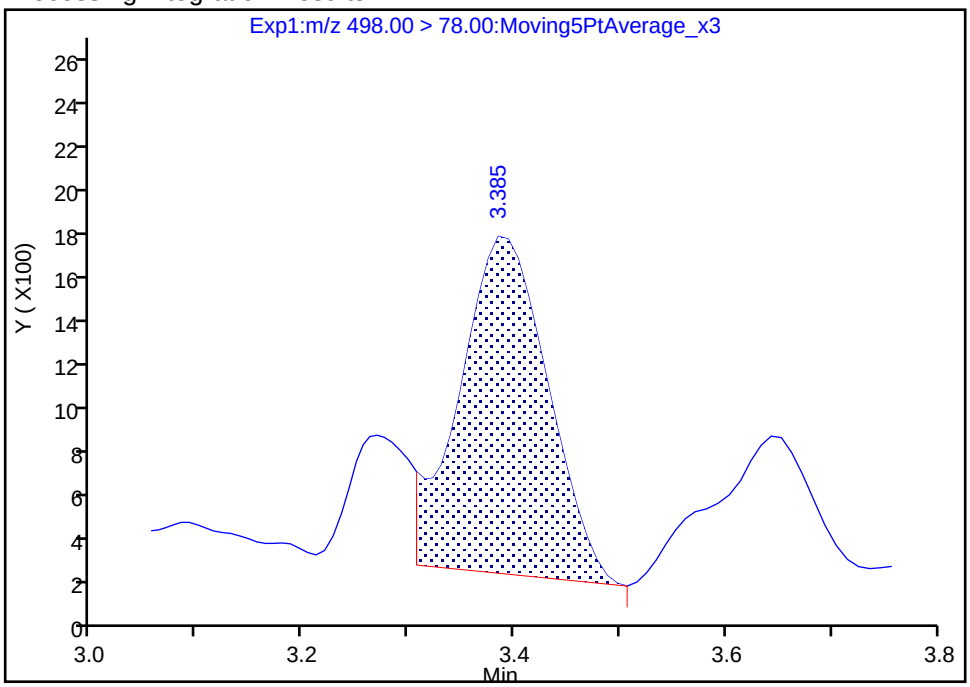
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_035.d				
Injection Date:	21-Apr-2018 11:23:58	Instrument ID:	A8_N		
Lims ID:	320-38061-A-7-A	Lab Sample ID:	320-38061-7		
Client ID:	SB013(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	26	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

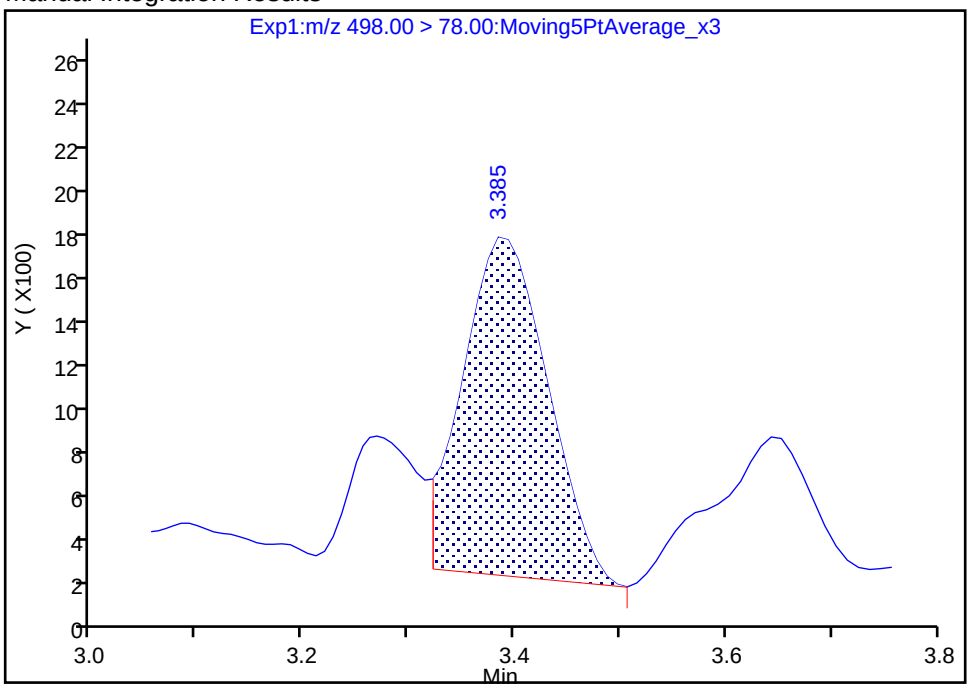
Processing Integration Results

RT: 3.38
Area: 8838
Amount: 0.005676
Amount Units: ng/ml



Manual Integration Results

RT: 3.38
Area: 8502
Amount: 0.005460
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:40:30

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB013(8-10) DL | Lab Sample ID: 320-38061-7 DL

Matrix: Solid | Lab File ID: 2018.04.25LLBX_078.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.02(g) | Date Analyzed: 04/26/2018 07:11

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 5

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219909 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.038	D	0.0026	0.0010

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	100		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_078.d
Lims ID: 320-38061-A-7-A
Client ID: SB013(8-10)
Sample Type: Client
Inject. Date: 26-Apr-2018 07:11:42 ALS Bottle#: 53 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 5.0000
Sample Info: 320-38061-a-7-a 5X
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:36:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.004	8538	0.003599			3.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.441	-0.010	1.000	1277557	0.5040		101	10362	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.554	832516	0.5095		102	14671	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	2939	0.001481			2.8	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	17730	0.4729		102	167	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	831534	0.4602		92.0	18228	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.321	0.002	1.000	935970	0.5323		106	21368	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.323	2.321	0.002	1.000	5323	0.002841			5.8	M
363.00 > 169.00	2.309	2.321	-0.012	0.994	3258		1.63(1.13-3.40)		13.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.334	0.002	1.000	989637	0.4560		96.4	26615	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.334	0.002	1.000	247077	0.1043			599	
399.00 > 99.00	2.323	2.334	-0.011	0.994	77465		3.19(1.50-4.49)		551	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.660	-0.007	1.000	179441	0.4762		100	2111	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.660	-0.007	1.000	11880	0.0186			294	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		942029	0.5000			22433	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	870083	0.4978		99.6	30793	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	36725	0.0183			22.3	
413.00 > 169.00	2.683	2.690	-0.007	1.000	24558		1.50(0.84-2.52)		74.2	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.690	0.001	1.000	12710	0.006315			72.2	
449.00 > 99.00	2.691	2.690	0.001	1.000	3846		3.30(1.94-5.82)		66.8	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.057	3.059	-0.002	1.002	6117356	3.71			19585	M
499.00 > 99.00	3.057	3.059	-0.002	1.002	1406681		4.35(2.31-6.93)		21805	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.059	-0.002	1.000	15414	0.009622			51.6	
463.00 > 169.00	3.079	3.059	0.020	1.007	5103		3.02(1.90-5.69)		109	
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.063	-0.012	1.000	724591	0.4768		99.7	5491	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.063	-0.006	1.000	768198	0.5114		102	16919	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	811106	0.4274		85.5	12305	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.417	-0.002	1.003	2232	0.004302			118	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.423	-0.017	1.000	196402	0.4328		90.4	1412	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.432	-0.008	1.000	634312	0.5024		100	20815	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.582	-0.009	1.000	333378	0.4658		93.2	5776	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.758	-0.009	1.000	535543	0.4917		98.3	19780	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.758	-0.009	1.000	316944	0.4487		89.7	5337	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.059	-0.010	1.000	528509	0.4494		89.9	6646	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.563	-0.012	1.000	701796	0.4706		94.1	6711	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 10:37:09 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_078.d

Injection Date: 26-Apr-2018 07:11:42 Instrument ID: A8_N

Lims ID: 320-38061-A-7-A Lab Sample ID: 320-38061-7

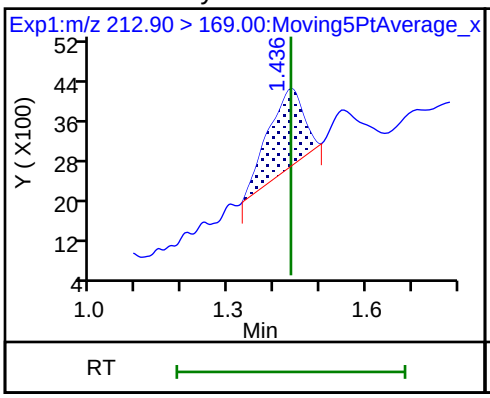
Client ID: SB013(8-10)

Operator ID: SACINSTLCMS01 ALS Bottle#: 53 Worklist Smp#: 11

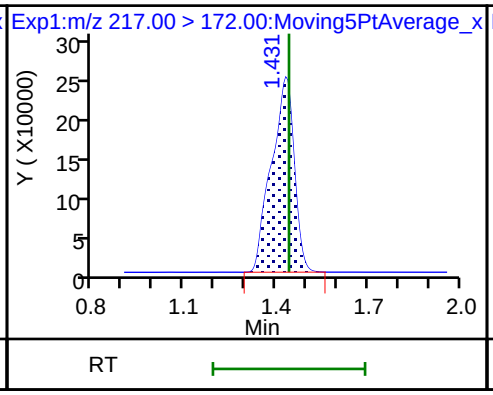
Injection Vol: 2.0 ul Dil. Factor: 5.0000

Method: A8_N Limit Group: LC PFC ICAL

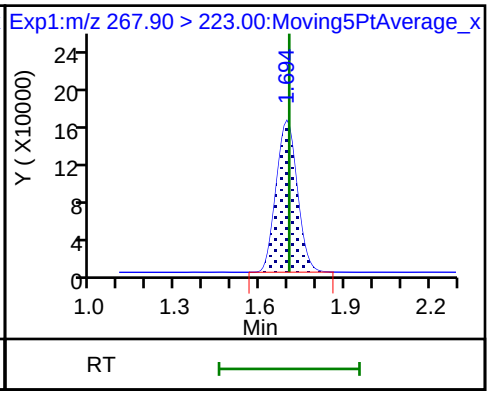
2 Perfluorobutyric acid



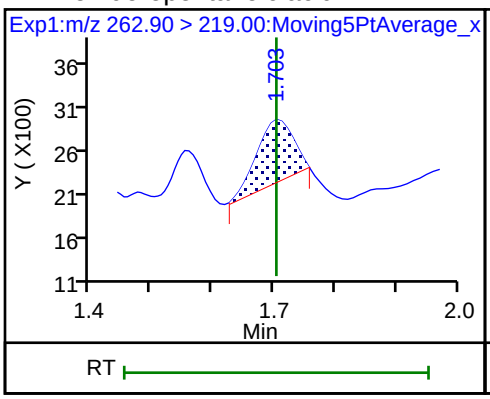
D 1 13C4 PFBA



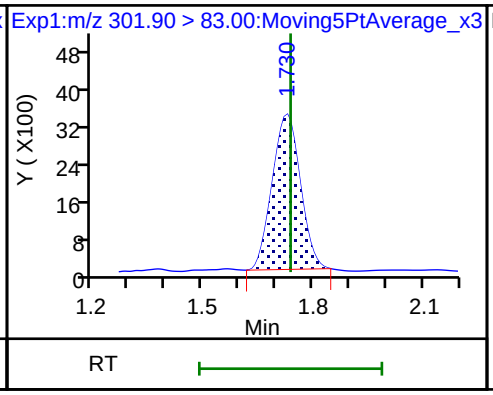
D 3 13C5-PFPeA



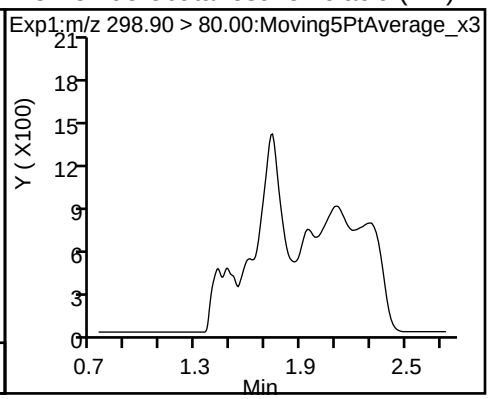
4 Perfluoropentanoic acid



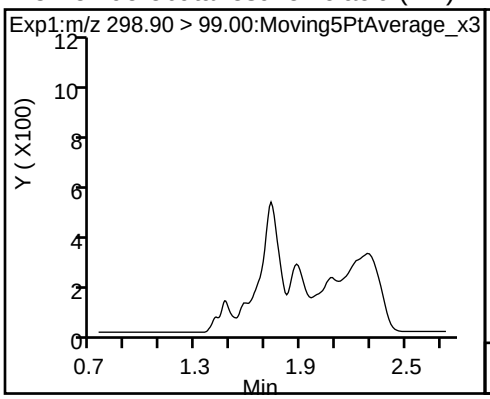
D 47 13C3-PFBS



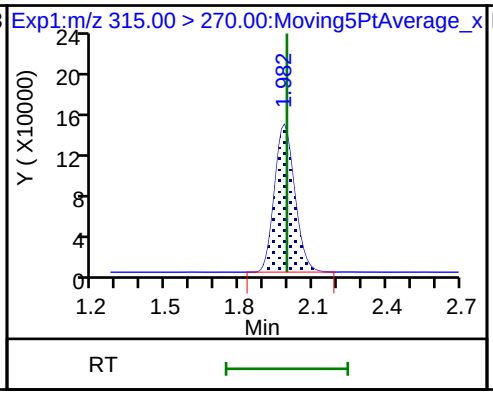
5 Perfluorobutanesulfonic acid (ND)



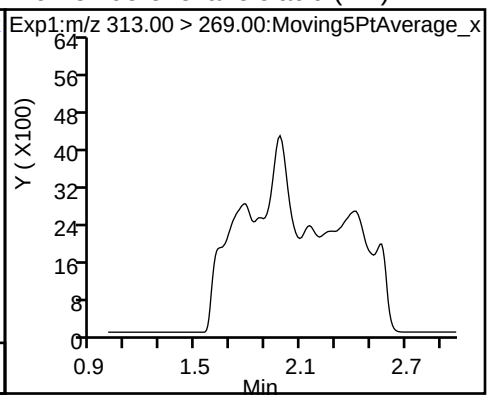
5 Perfluorobutanesulfonic acid (ND)



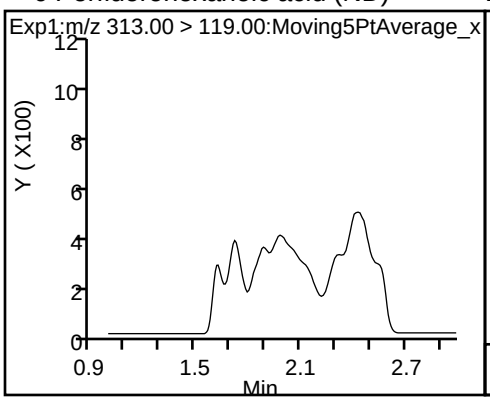
D 7 13C2 PFHxA



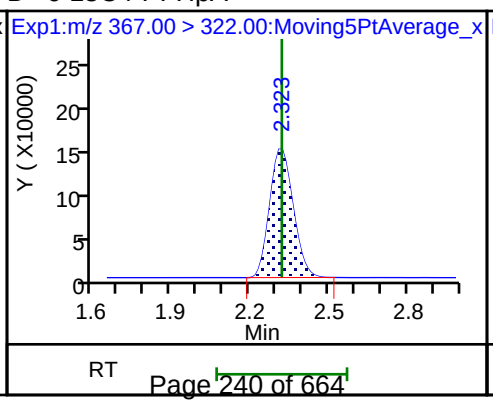
6 Perfluorohexanoic acid (ND)



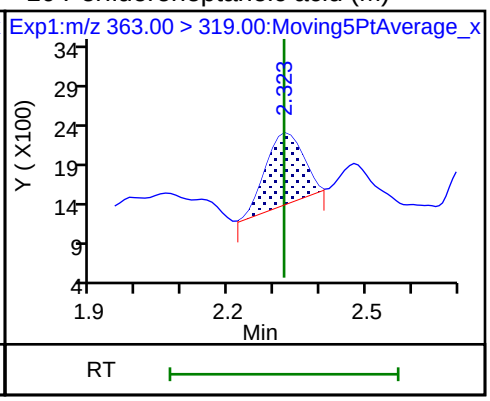
6 Perfluorohexanoic acid (ND)



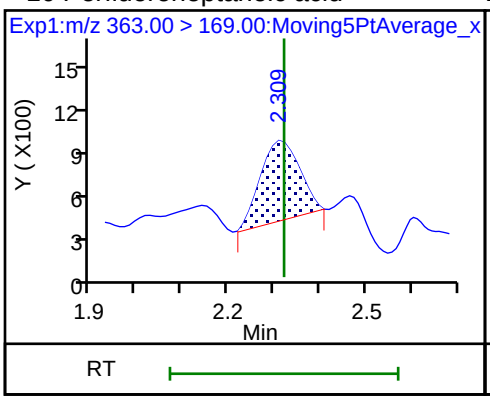
D 9 13C4-PFHpA



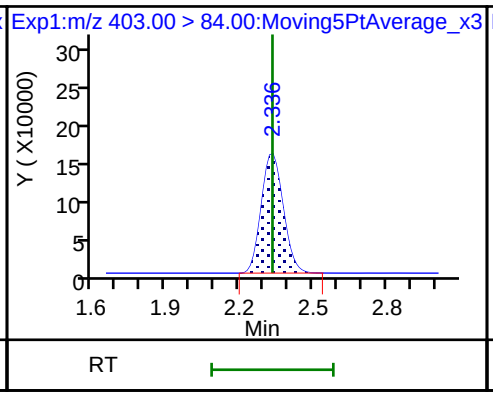
10 Perfluoroheptanoic acid (M)



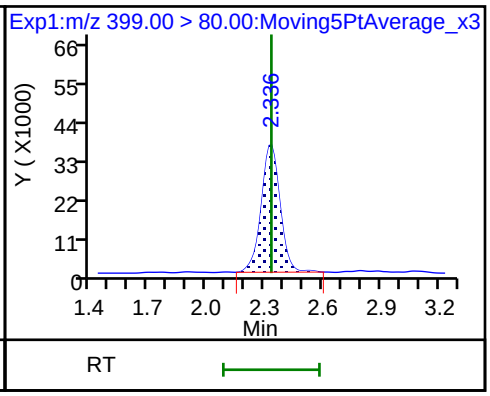
10 Perfluoroheptanoic acid



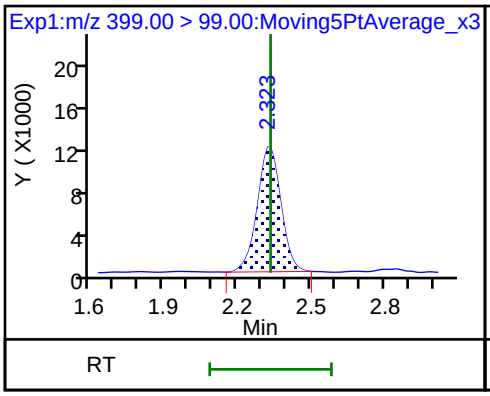
D 11 18O2 PFHxS



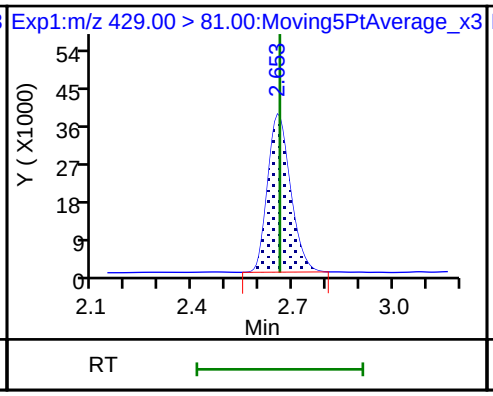
8 Perfluorohexanesulfonic acid



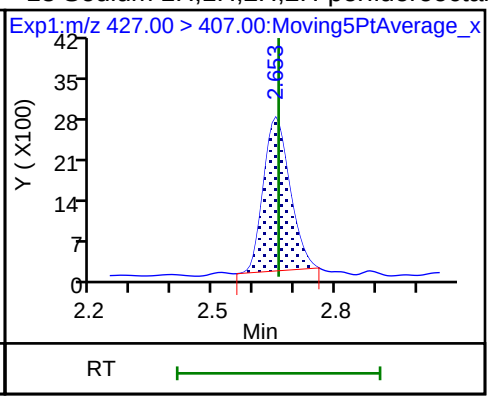
8 Perfluorohexanesulfonic acid



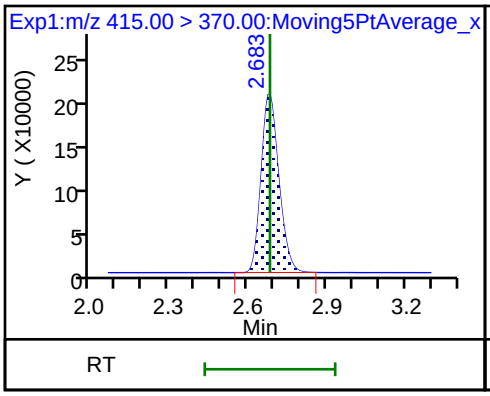
D 12 M2-6:2FTS



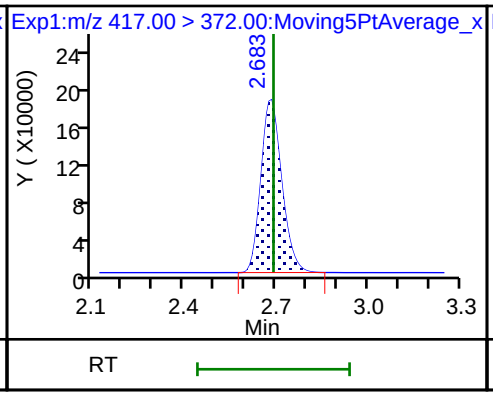
13 Sodium 1H,1H,2H,2H-perfluorooctane



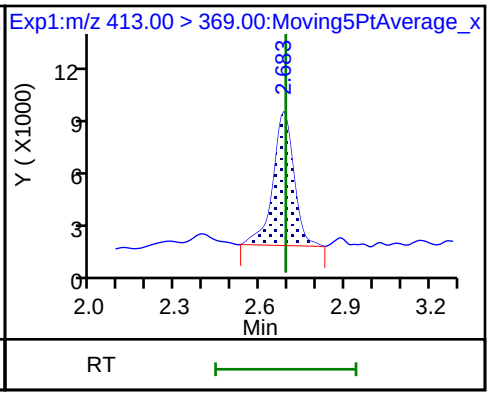
* 62 13C2-PFOA



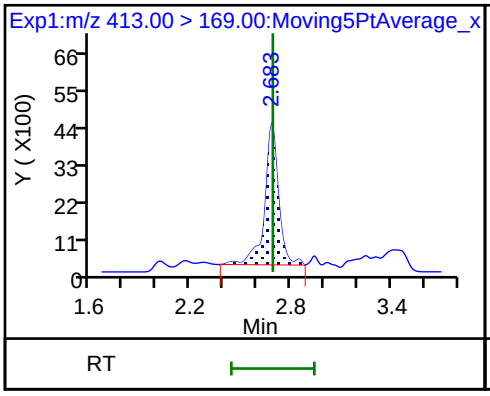
D 14 13C4 PFOA



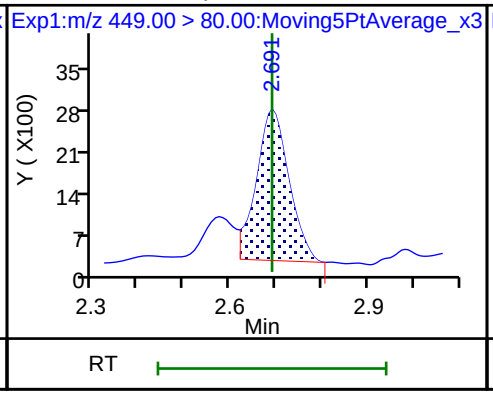
15 Perfluorooctanoic acid



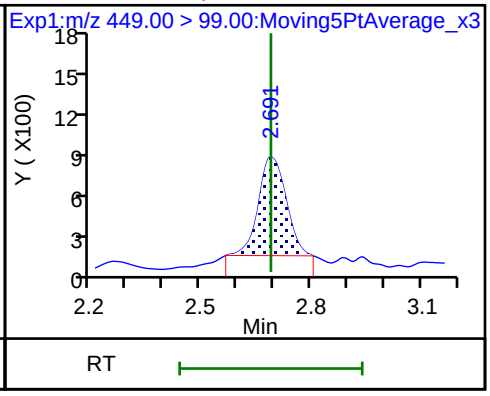
15 Perfluorooctanoic acid



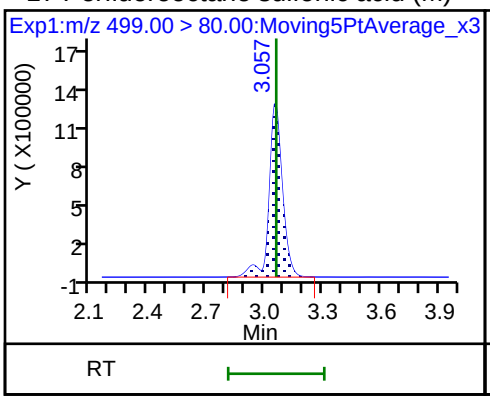
16 Perfluoroheptanesulfonic acid



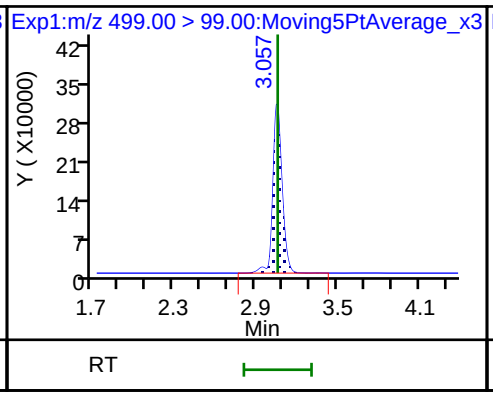
16 Perfluoroheptanesulfonic acid



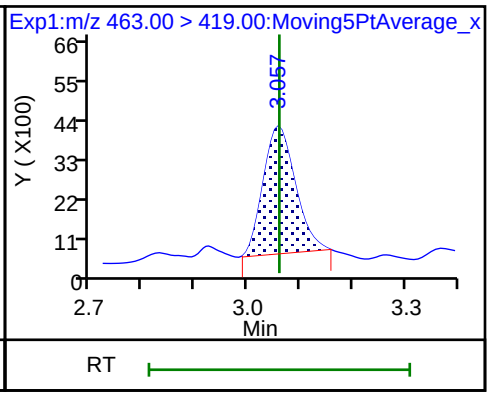
17 Perfluorooctane sulfonic acid (M)



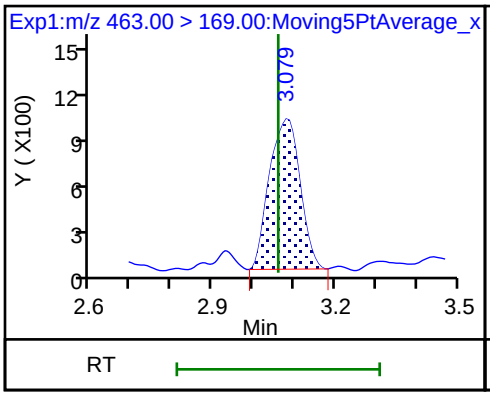
17 Perfluorooctane sulfonic acid



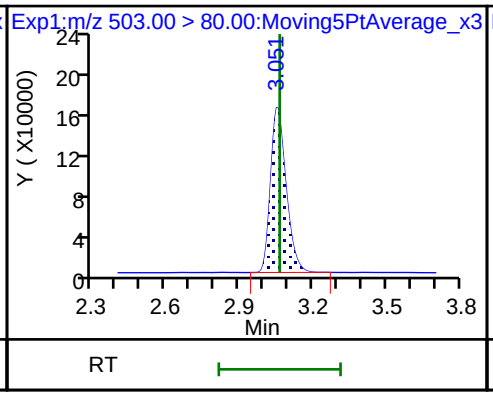
20 Perfluorononanoic acid



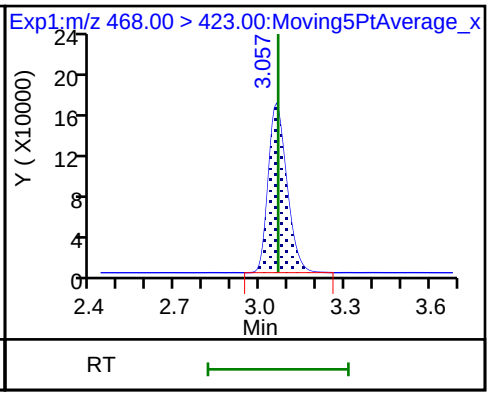
20 Perfluorononanoic acid



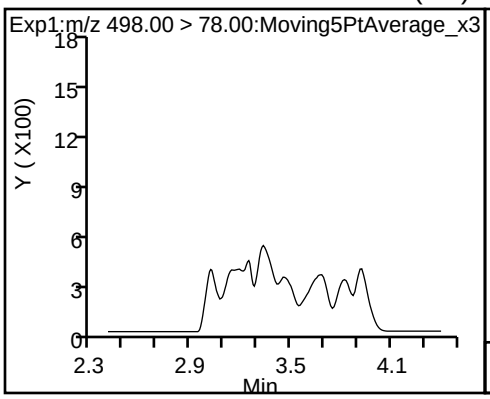
D 18 13C4 PFOS



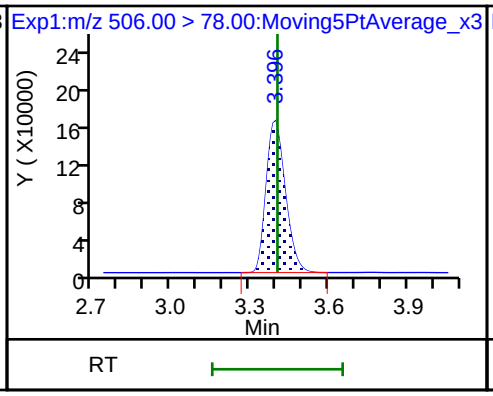
D 19 13C5 PFNA



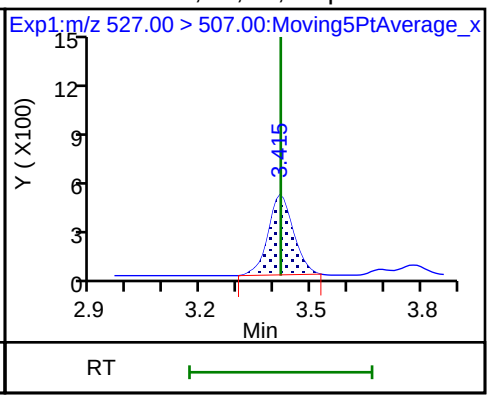
22 Perfluorooctane Sulfonamide (ND)



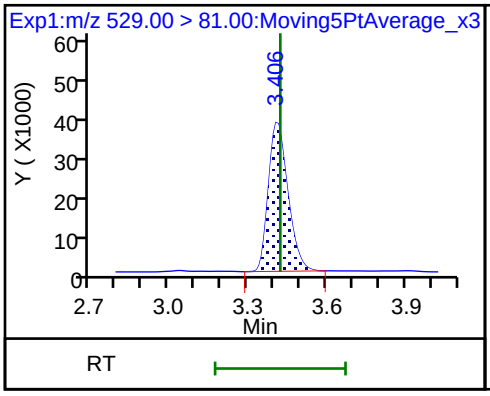
D 21 13C8 FOSA



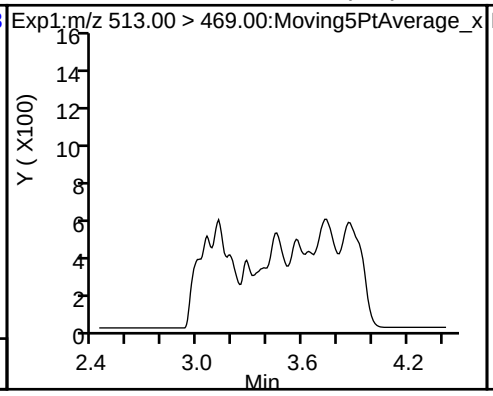
25 Sodium 1H,1H,2H,2H-perfluorodecane



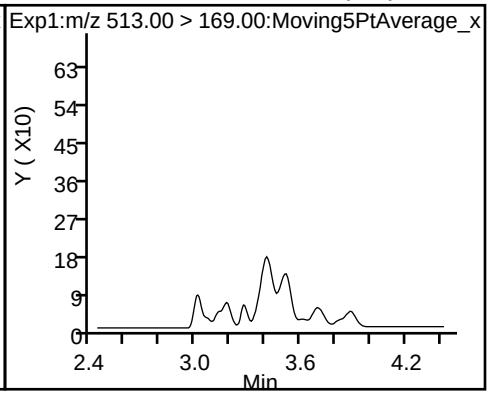
D 26 M2-8:2FTS



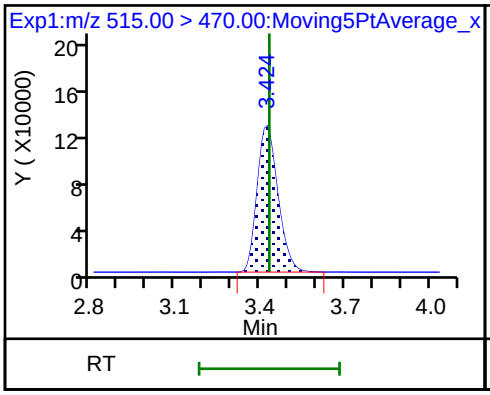
24 Perfluorodecanoic acid (ND)



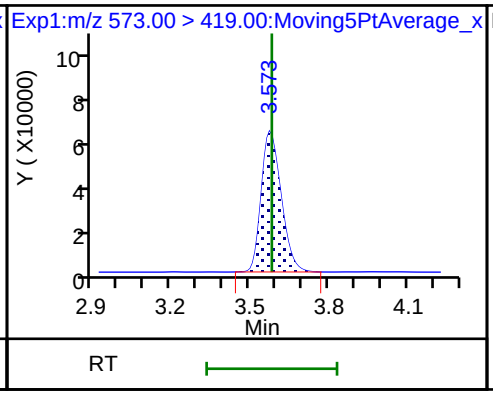
24 Perfluorodecanoic acid (ND)



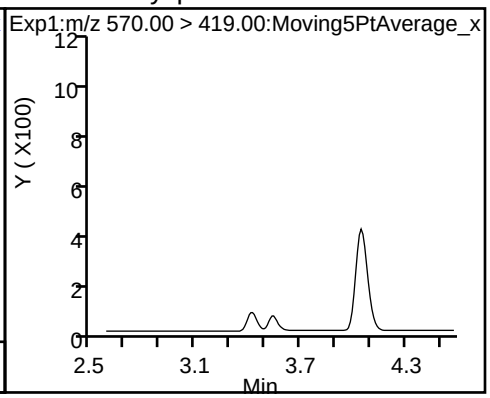
D 23 13C2 PFDA



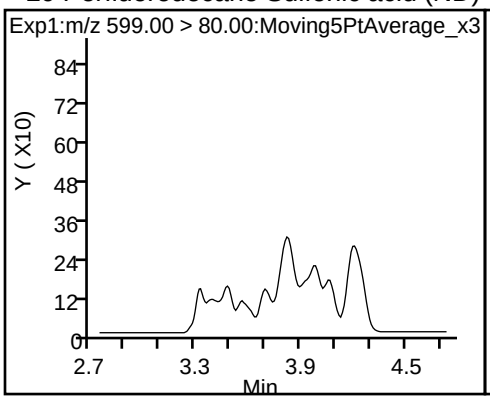
D 27 d3-NMeFOSAA



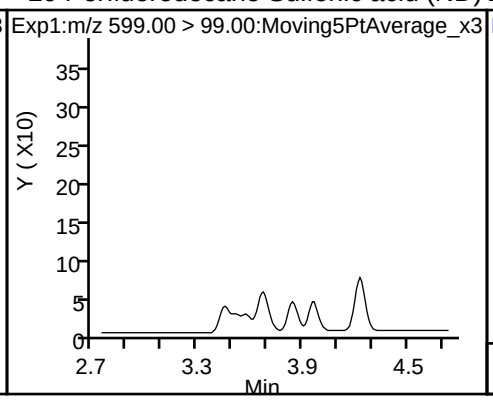
28 N-methyl perfluorooctane sulfonami (ND)



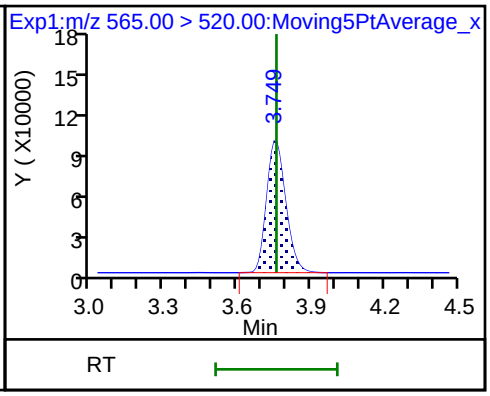
29 Perfluorodecane Sulfonic acid (ND)



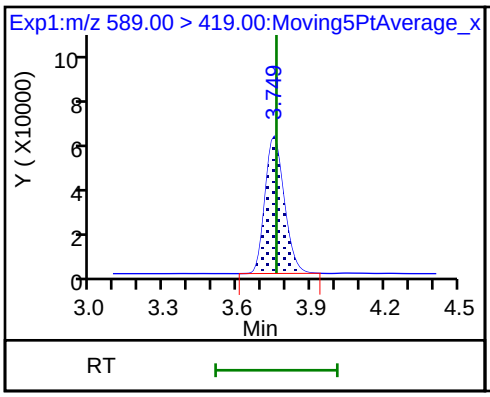
29 Perfluorodecane Sulfonic acid (ND)



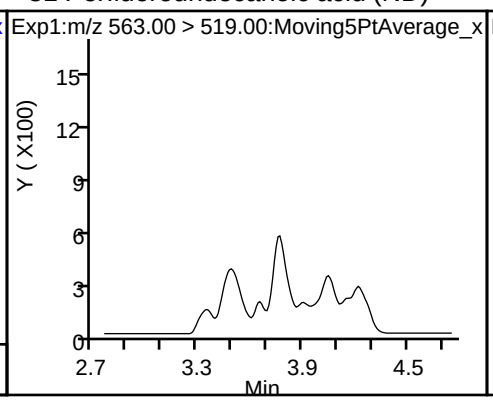
D 30 13C2 PFUnA



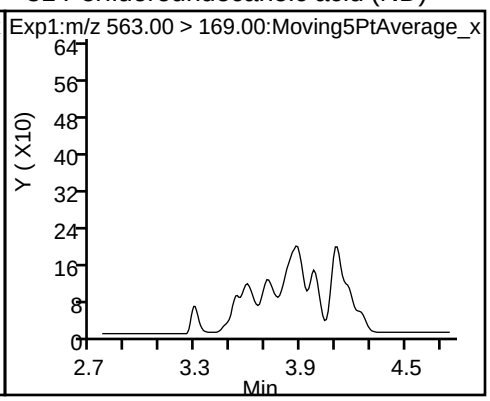
D 32 d5-NEtFOSAA



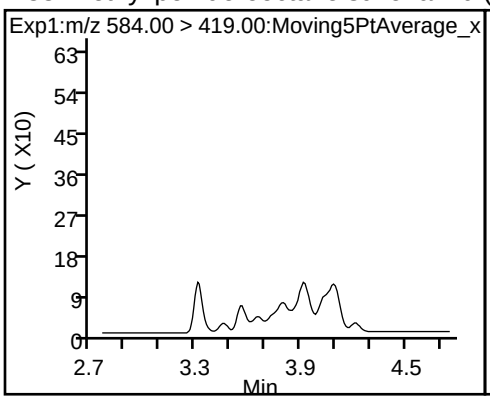
31 Perfluoroundecanoic acid (ND)



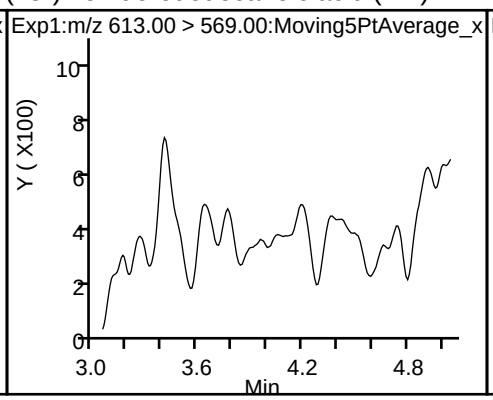
31 Perfluoroundecanoic acid (ND)



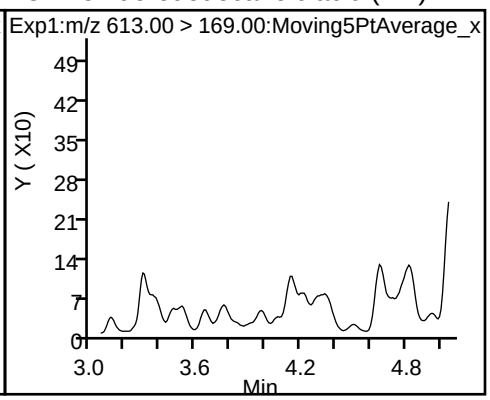
33 N-ethyl perfluorooctane sulfonamid (ND)



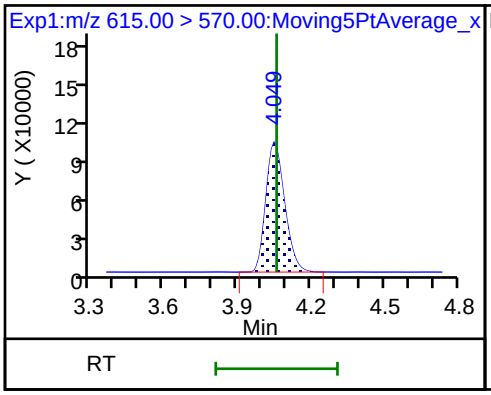
37 Perfluorododecanoic acid (ND)



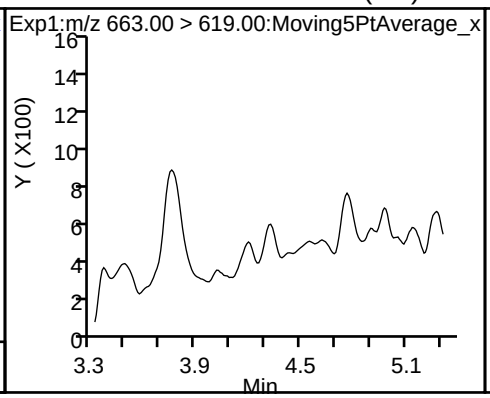
37 Perfluorododecanoic acid (ND)



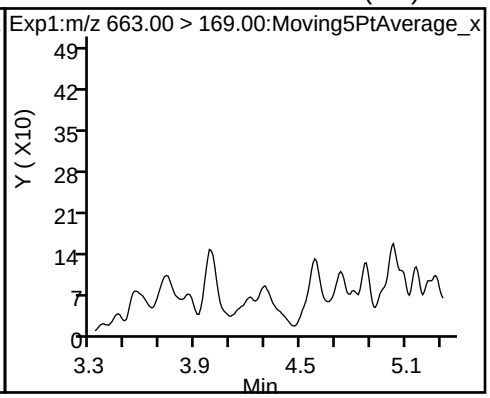
D 36 13C2 PFDoA



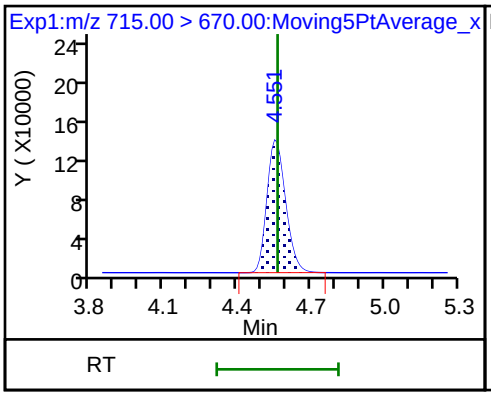
41 Perfluorotridecanoic acid (ND)



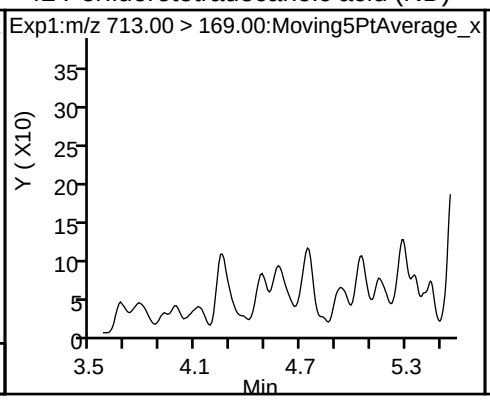
41 Perfluorotridecanoic acid (ND)



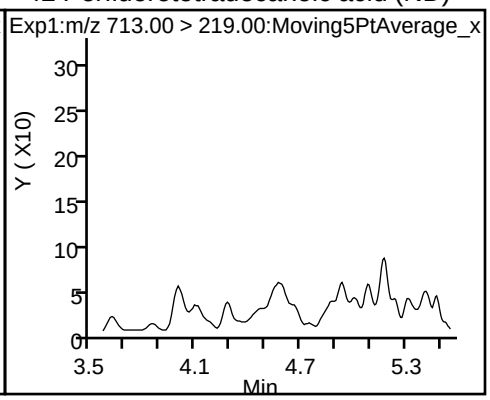
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

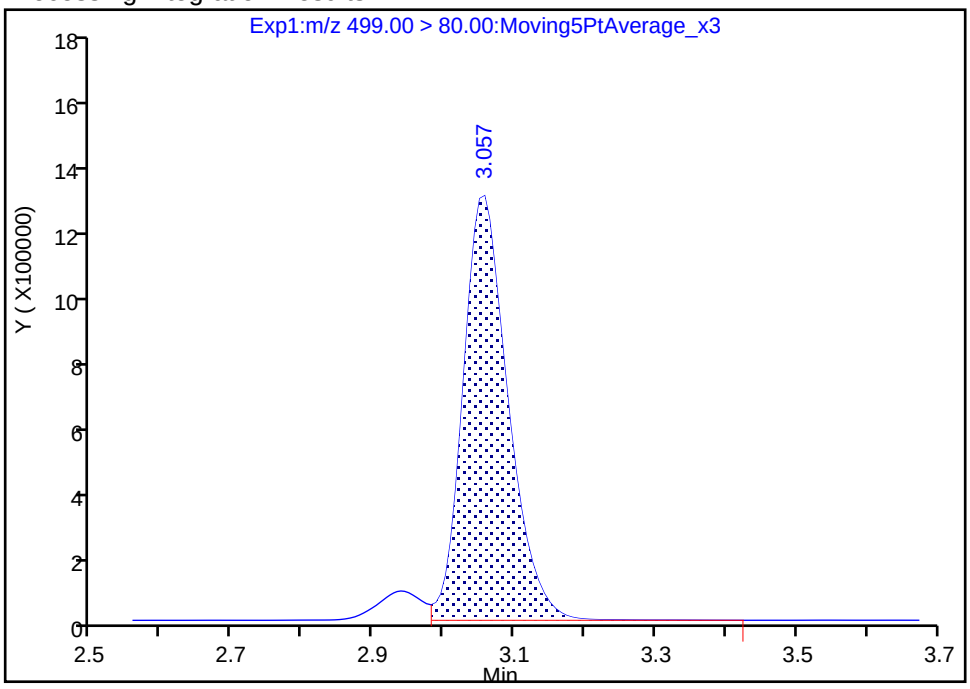
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_078.d				
Injection Date:	26-Apr-2018 07:11:42	Instrument ID:	A8_N		
Lims ID:	320-38061-A-7-A	Lab Sample ID:	320-38061-7		
Client ID:	SB013(8-10)				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	5.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

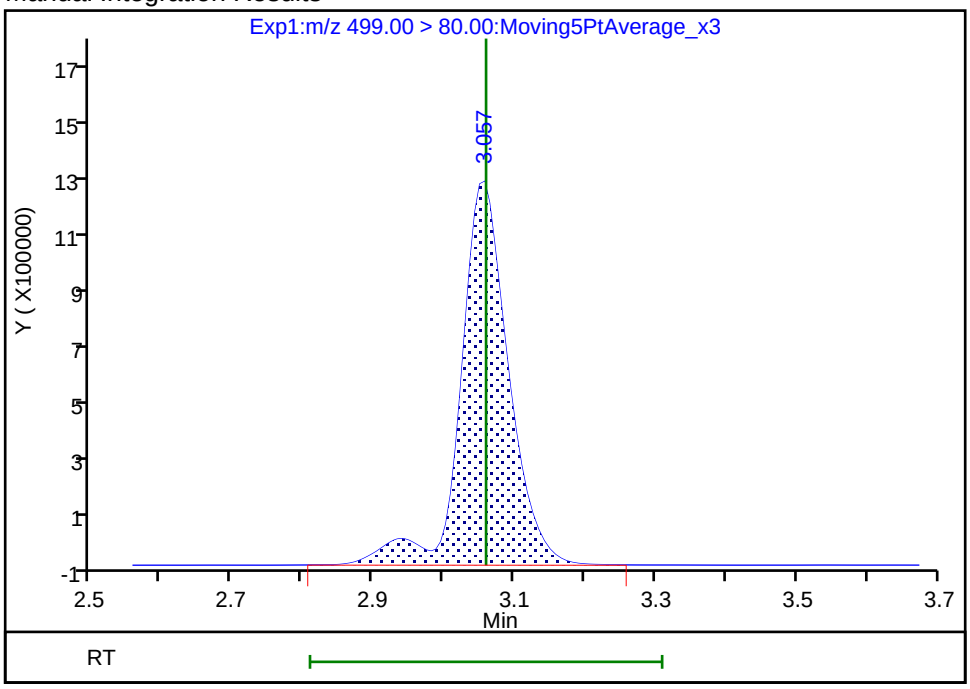
Processing Integration Results

RT: 3.06
Area: 5729777
Amount: 3.474637
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 6117356
Amount: 3.709672
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 10:30:38

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: FB008 | Lab Sample ID: 320-38061-8

Matrix: Water | Lab File ID: 2018.04.26LLA_012.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:30

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 275.7(mL) | Date Analyzed: 04/26/2018 12:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.32	U	1.81	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.44	U	1.81	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	0.53	U	1.81	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.23	U	1.81	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	0.77	U	1.81	0.77
375-95-1	Perfluorononanoic acid (PFNA)	0.24	U	1.81	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	0.28	U	1.81	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.0	U	1.81	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	0.50	U	1.81	0.50
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.18	U	1.81	1.18
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.26	U	1.81	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.18	U	1.81	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.81	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.17	U	1.81	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.49	U	1.81	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.29	U	1.81	0.29
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.32	U	1.81	0.32
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.81	U	18.1	2.81
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.72	U	18.1	1.72
27619-97-2	6:2FTS	3.99	J B	18.1	1.81
39108-34-4	8:2FTS	1.81	U	18.1	1.81

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: FB008 | Lab Sample ID: 320-38061-8

Matrix: Water | Lab File ID: 2018.04.26LLA_012.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:30

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 275.7(mL) | Date Analyzed: 04/26/2018 12:44

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	90		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	91		25-150
STL01892	13C4-PFHpA	90		25-150
STL00990	13C4 PFOA	92		25-150
STL00995	13C5 PFNA	91		25-150
STL00996	13C2 PFDA	92		25-150
STL00997	13C2 PFUnA	87		25-150
STL00998	13C2 PFDoA	80		25-150
STL02116	13C2-PFTeDA	87		25-150
STL02337	13C3-PFBS	90		25-150
STL00994	18O2 PFHxS	91		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	79		25-150
STL02118	d3-NMeFOSAA	80		25-150
STL02117	d5-NEtFOSAA	95		25-150
STL02279	M2-6:2FTS	106		25-150
STL02280	M2-8:2FTS	103		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_012.d
Lims ID: 320-38061-A-8-A
Client ID: FB008
Sample Type: Client
Inject. Date: 26-Apr-2018 12:44:33 ALS Bottle#: 6 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-8-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:41:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.435	0.006	1.000	6242007	2.25		89.9	40436	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.447	1.441	0.006	1.004	9086	0.003919			3.0	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.702	0.001	0.555	4087464	2.28		91.4	66395	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	85892	2.09		90.0	2046	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.992	0.001	1.000	4510564	2.28		91.2	99959	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.320	0.014	1.000	4345111	2.26		90.2	87364	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.333	0.014	1.000	5118608	2.15		91.0	52525	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.346	0.001	1.000	16957	0.006923			43.1	
399.00 > 99.00	2.334	2.346	-0.012	0.994	4861		3.49(1.50-4.49)		27.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.661	0.007	1.000	1036122	2.51		106	11940	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.668	0.0	1.000	81099	0.1100			1099	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.683	0.007	1.000	4399675	2.30		91.9	86709	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.698	-0.008		5159224	2.50			70066	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.690	2.698	-0.008	1.000	11633	0.005721			6.7	
413.00 > 169.00	2.690	2.698	-0.008	1.000	6188		1.88(0.84-2.52)		21.9	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA										
468.00 > 423.00	3.070	3.060	0.010	1.000	3732431	2.27		90.7	83171	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.060	0.004	1.000	3687470	2.22		92.7	28830	
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.398	0.006	1.000	4091709	1.97		78.7	40635	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.398	0.006	1.000	4364	0.002636			43.3	
D 26 M2-8:2FTS										
529.00 > 81.00	3.423	3.407	0.016	1.000	1222897	2.46		103	10573	
D 23 13C2 PFDA										
515.00 > 470.00	3.432	3.426	0.006	1.000	3188047	2.31		92.2	91091	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.575	0.008	1.000	1564834	2.00		79.8	19564	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.593	3.597	-0.004	1.003	2327	0.003728			23.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.751	0.007	1.000	1843794	2.38		95.3	25819	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.751	0.007	1.000	2582582	2.16		86.6	59516	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.761	0.007	1.003	3771	0.005471			77.6	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.768	3.761	0.007	1.003	3653	0.004184			19.7	
563.00 > 169.00	3.768	3.761	0.007	1.003	1316		2.78(2.12-6.36)		20.4	
D 36 13C2 PFDoA										
615.00 > 570.00	4.058	4.050	0.008	1.000	2575857	2.00		80.0	28531	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.561	4.553	0.008	1.000	3536652	2.17		86.6	22565	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 16:46:33 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_012.d

Injection Date: 26-Apr-2018 12:44:33 Instrument ID: A8_N

Lims ID: 320-38061-A-8-A Lab Sample ID: 320-38061-8

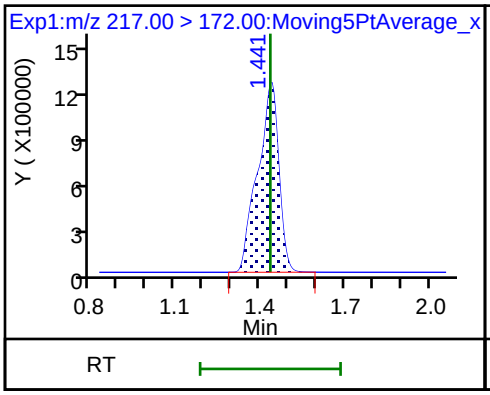
Client ID: FB008

Operator ID: SACINSTLCMS01 ALS Bottle#: 6 Worklist Smp#: 4

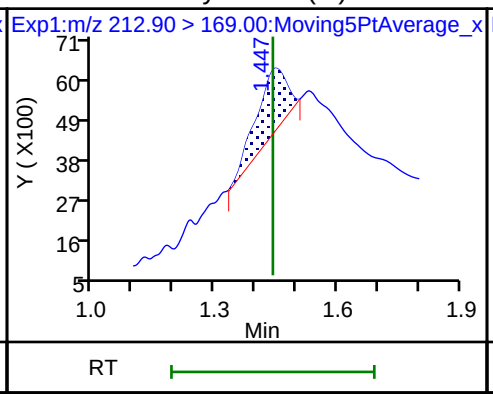
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

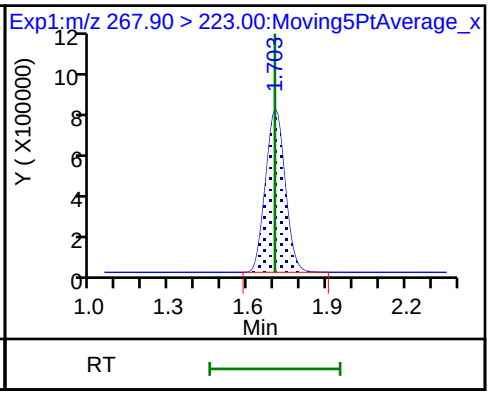
D 1 13C4 PFBA



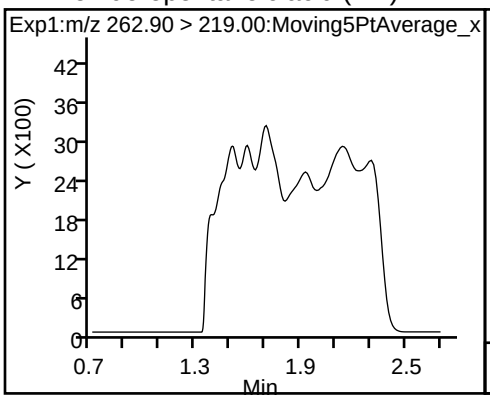
2 Perfluorobutyric acid (M)



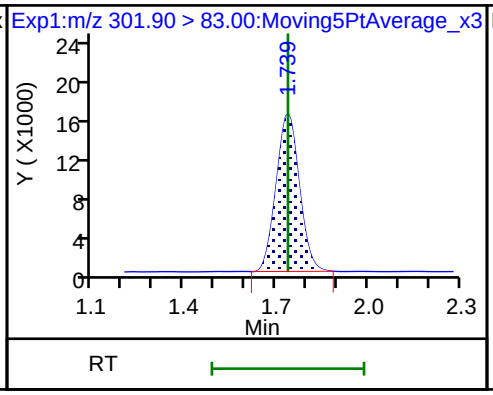
D 3 13C5-PFPeA



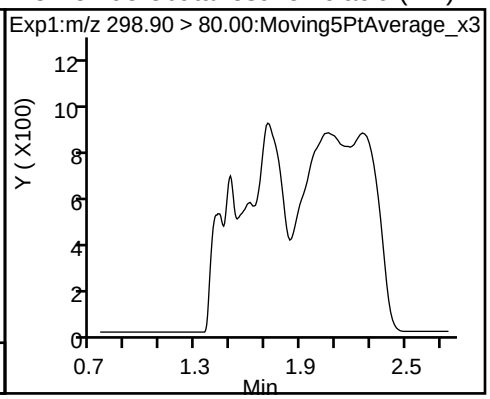
4 Perfluoropentanoic acid (ND)



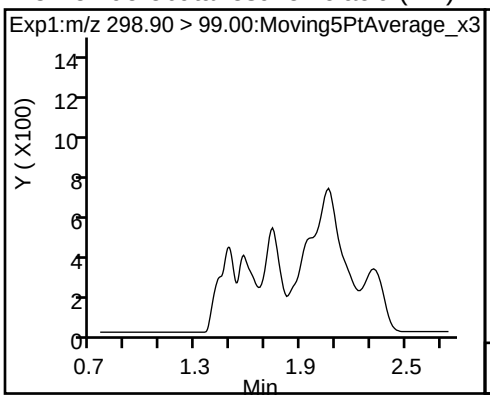
D 47 13C3-PFBS



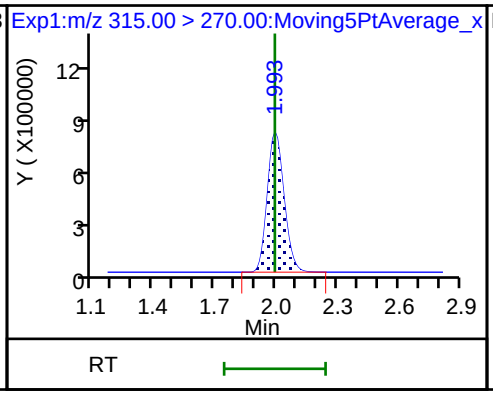
5 Perfluorobutanesulfonic acid (ND)



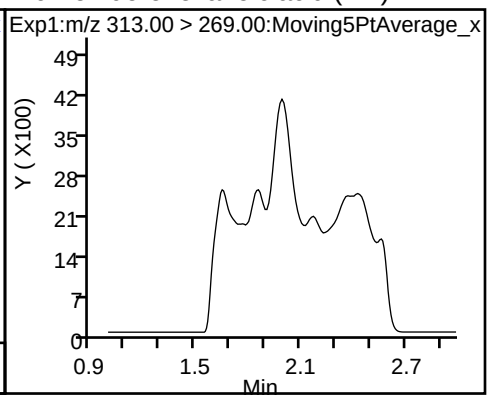
5 Perfluorobutanesulfonic acid (ND)



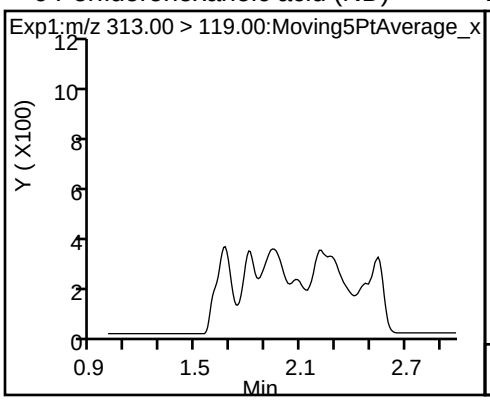
D 7 13C2 PFHxA



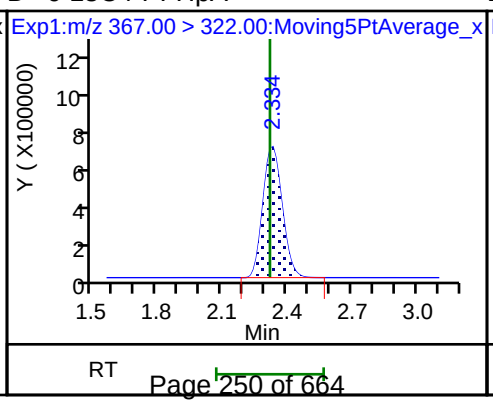
6 Perfluorohexanoic acid (ND)



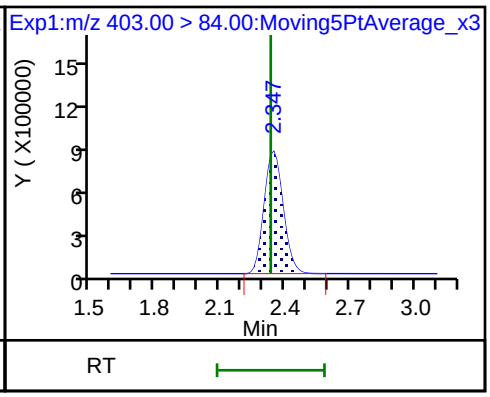
6 Perfluorohexanoic acid (ND)



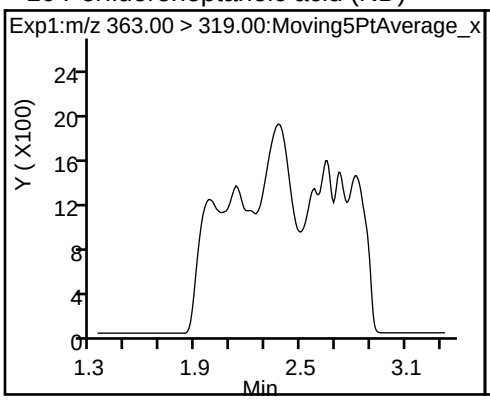
D 9 13C4-PFHpA



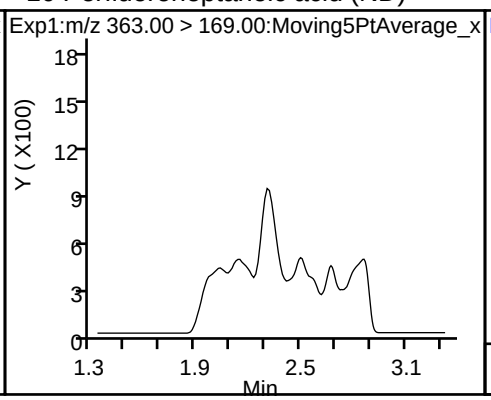
D 11 18O2 PFHxS



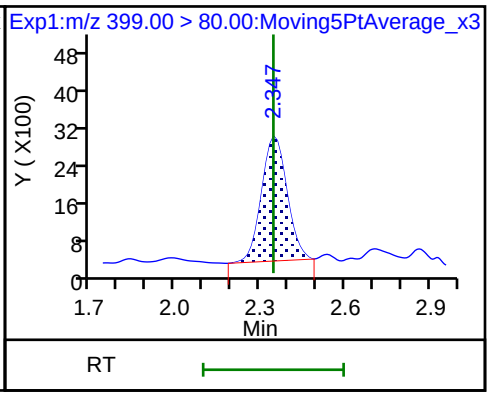
10 Perfluoroheptanoic acid (ND)



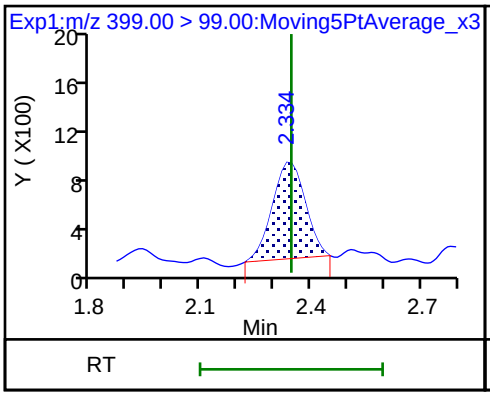
10 Perfluoroheptanoic acid (ND)



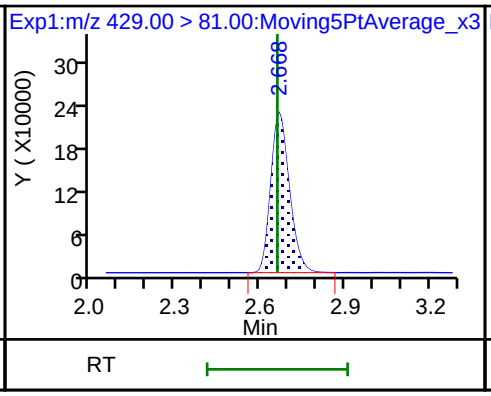
8 Perfluorohexanesulfonic acid



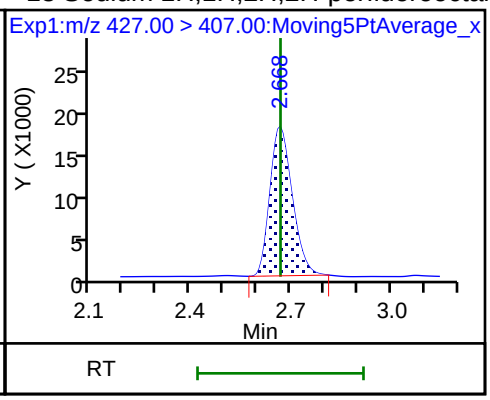
8 Perfluorohexanesulfonic acid



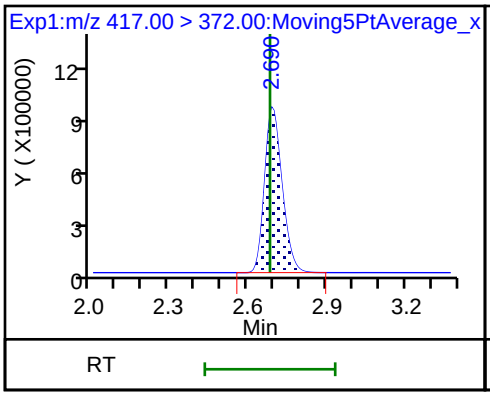
D 12 M2-6:2FTS



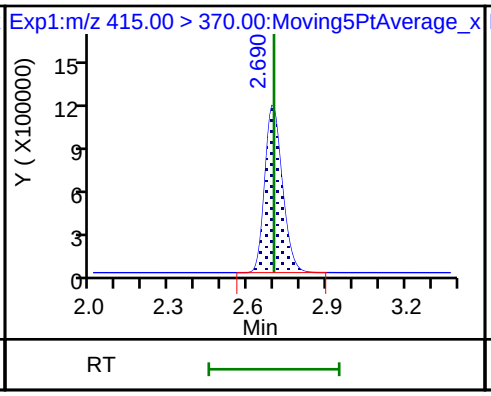
13 Sodium 1H,1H,2H,2H-perfluorooctane



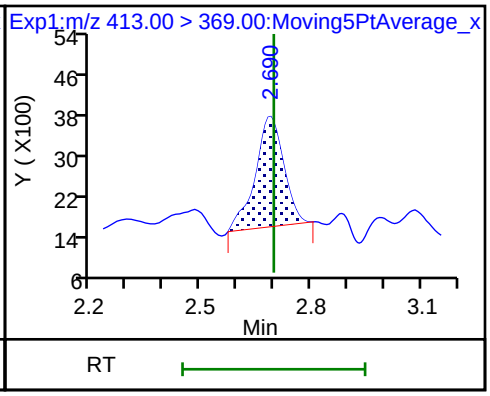
D 14 13C4 PFOA



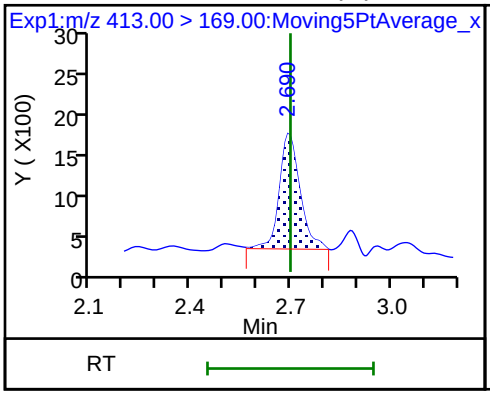
* 62 13C2-PFOA



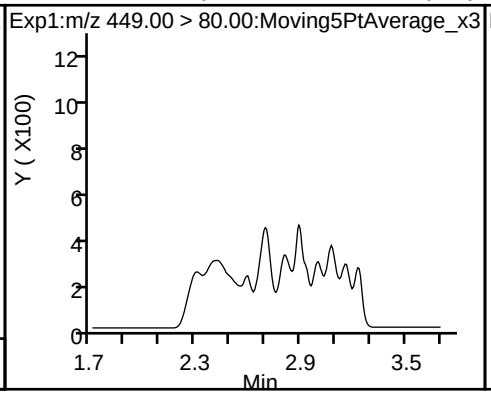
15 Perfluorooctanoic acid



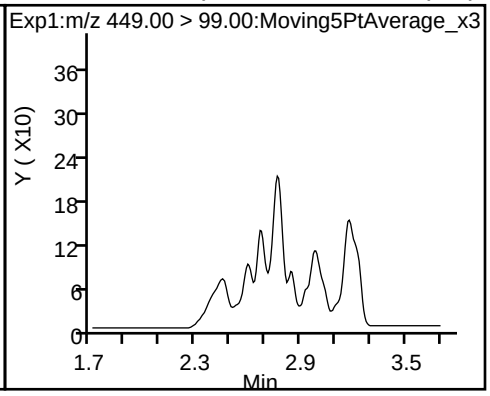
15 Perfluorooctanoic acid (M)



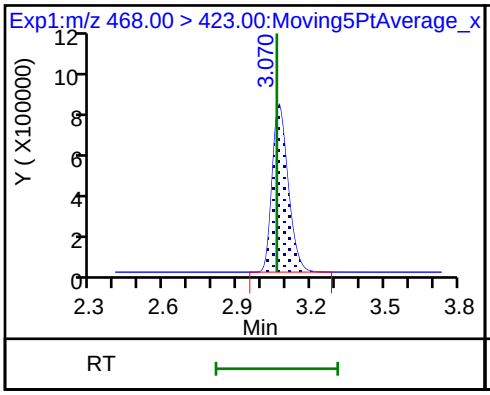
16 Perfluoroheptanesulfonic acid (ND)



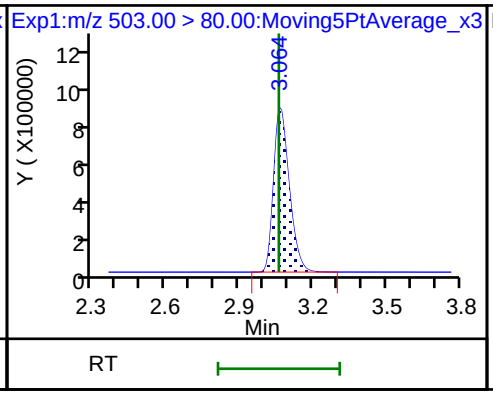
16 Perfluoroheptanesulfonic acid (ND)



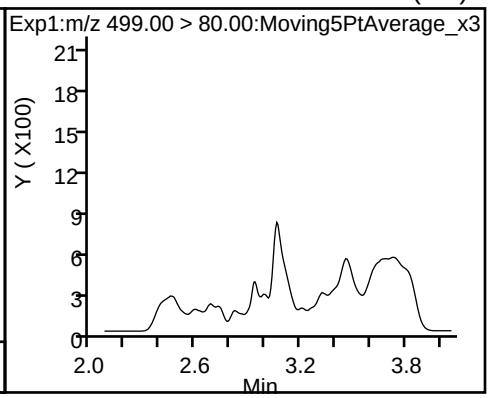
D 19 13C5 PFNA



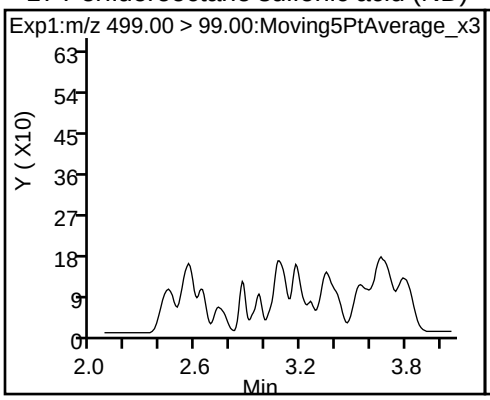
D 18 13C4 PFOS



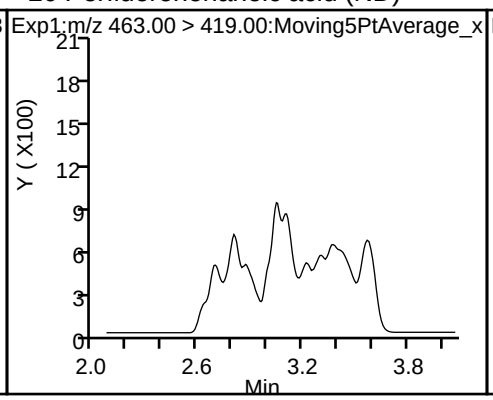
17 Perfluorooctane sulfonic acid (ND)



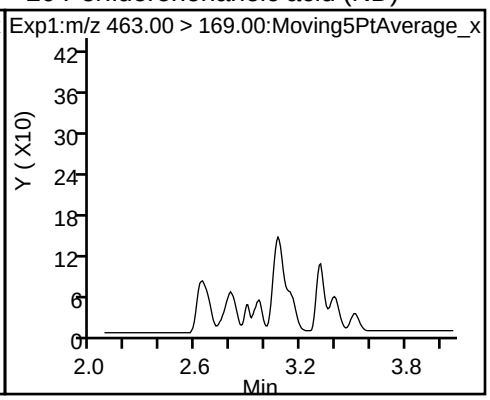
17 Perfluorooctane sulfonic acid (ND)



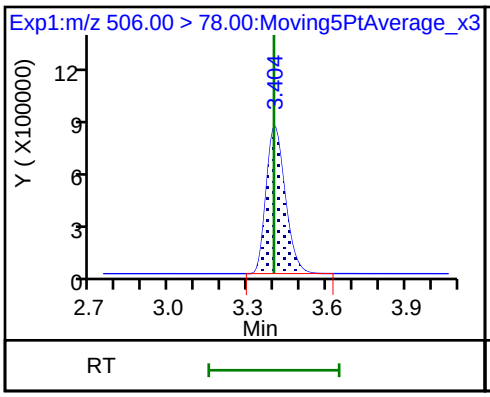
20 Perfluorononanoic acid (ND)



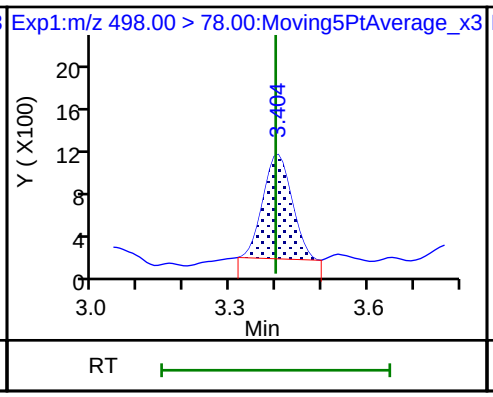
20 Perfluorononanoic acid (ND)



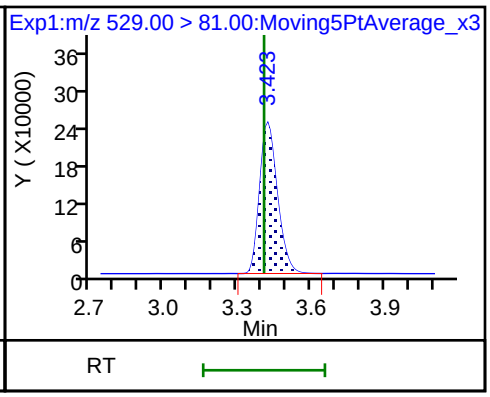
D 21 13C8 FOSA



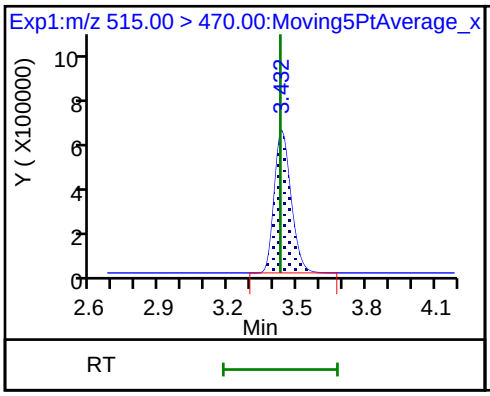
22 Perfluorooctane Sulfonamide



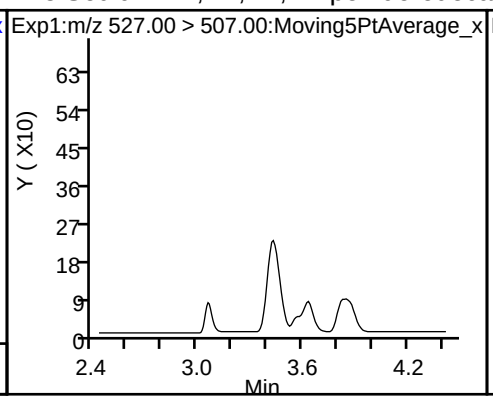
D 26 M2-8:2FTS



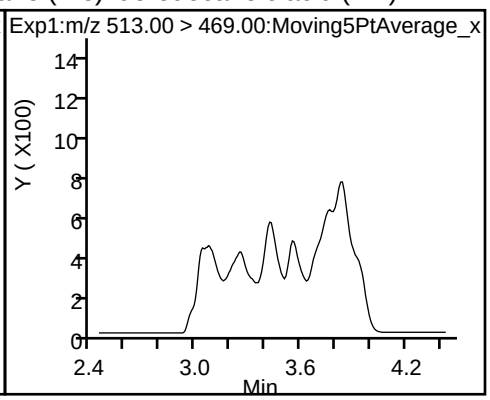
D 23 13C2 PFDA



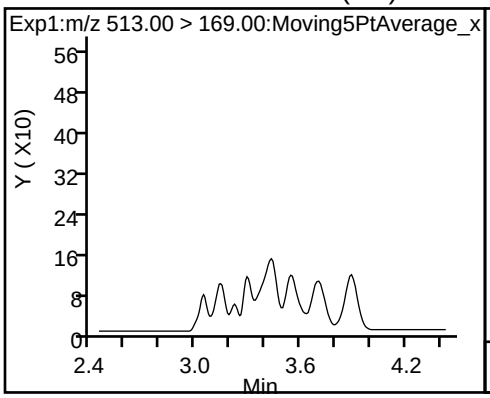
25 Sodium 1H,1H,2H,2H-perfluorodecane2 (ND)



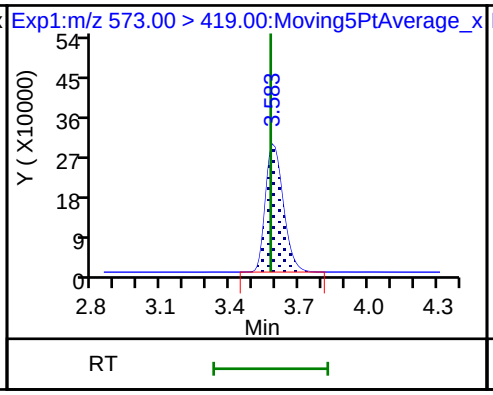
24 Perfluorodecanoic acid (ND)



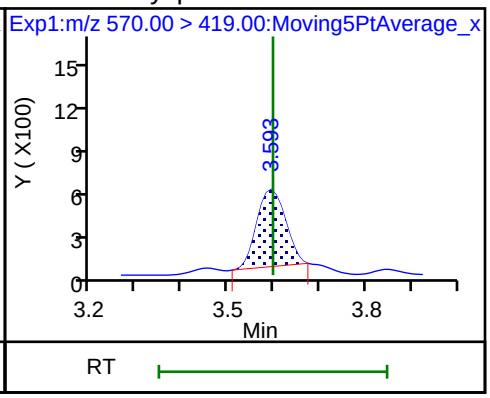
24 Perfluorodecanoic acid (ND)



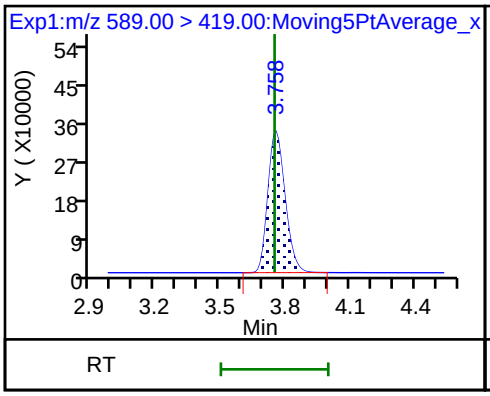
D 27 d3-NMeFOSAA



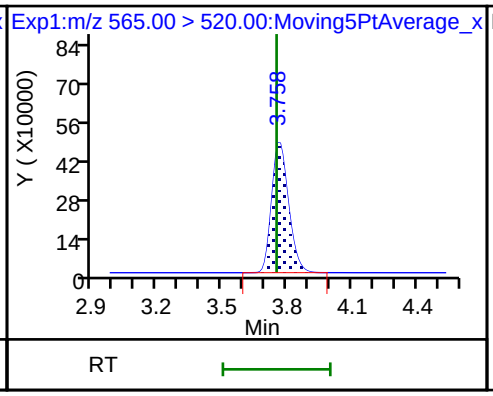
28 N-methyl perfluorooctane sulfonami



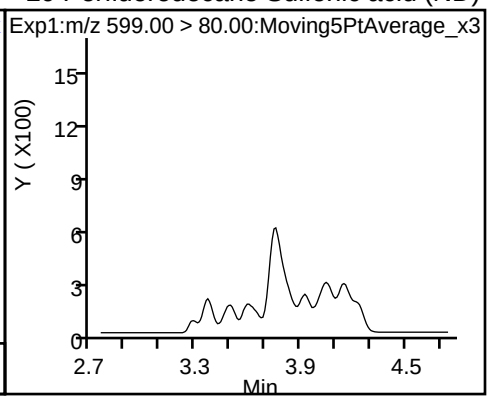
D 32 d5-NEtFOSAA



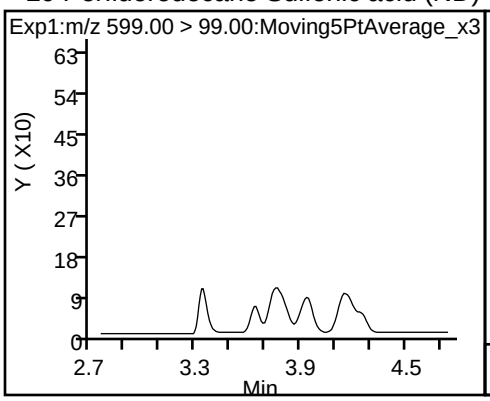
D 30 13C2 PFUnA



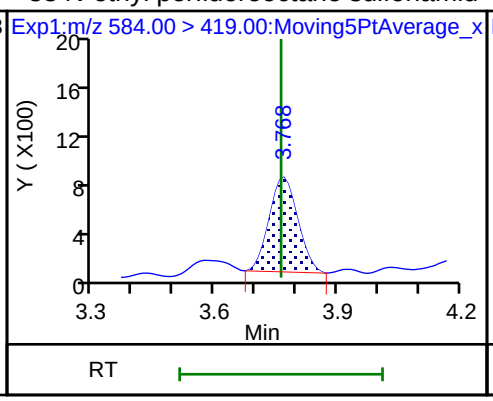
29 Perfluorodecane Sulfonic acid (ND)



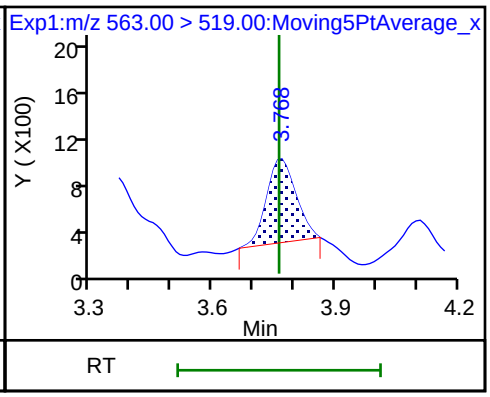
29 Perfluorodecane Sulfonic acid (ND)



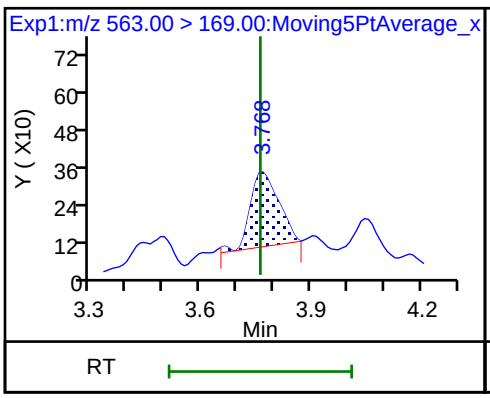
33 N-ethyl perfluorooctane sulfonamid



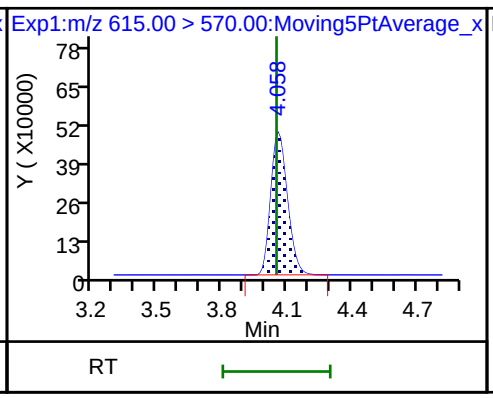
31 Perfluoroundecanoic acid



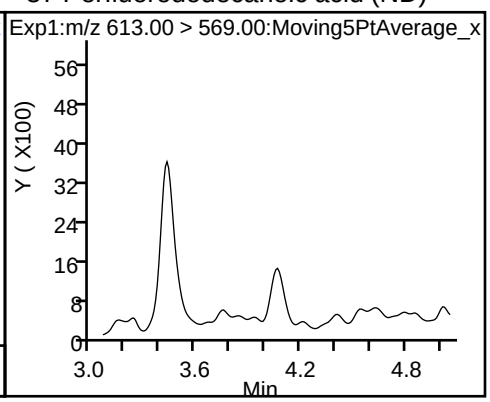
31 Perfluoroundecanoic acid



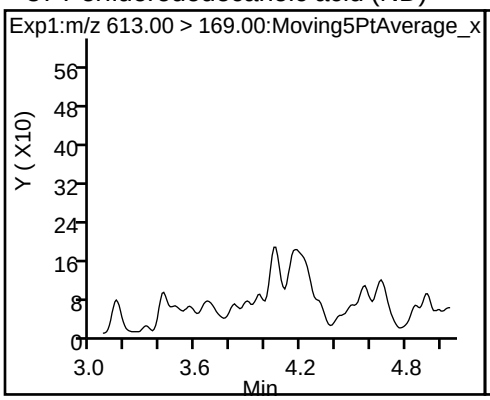
D 36 13C2 PFDoA



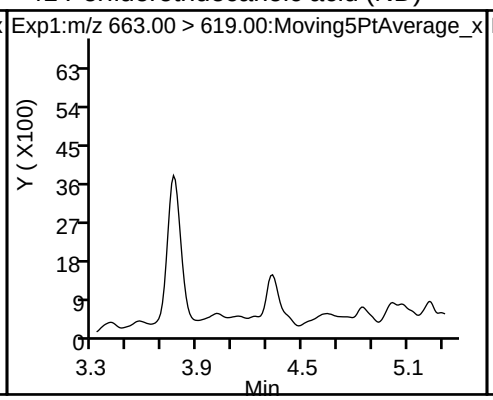
37 Perfluorododecanoic acid (ND)



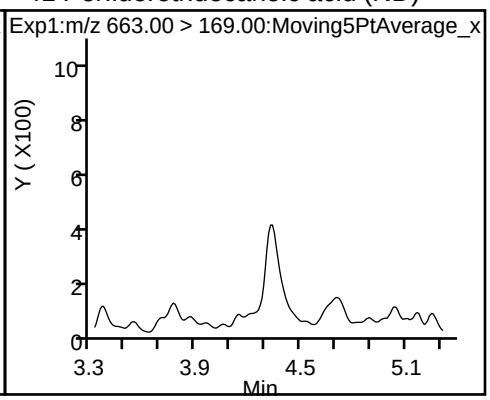
37 Perfluorododecanoic acid (ND)



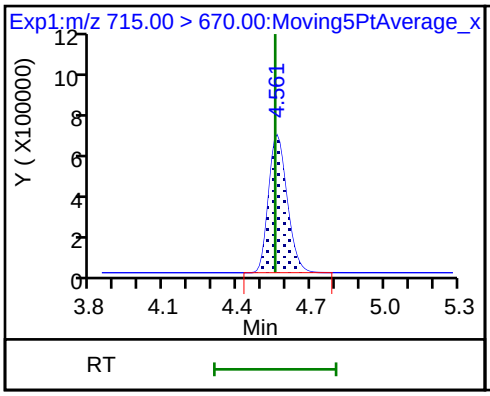
41 Perfluorotridecanoic acid (ND)



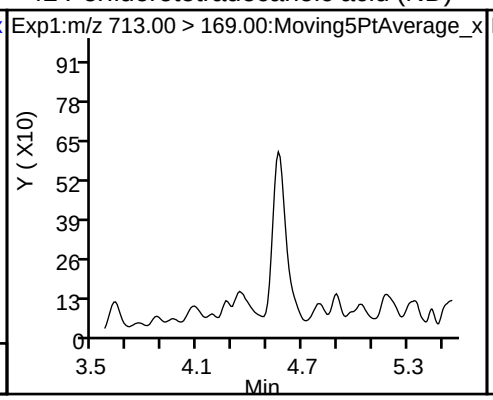
41 Perfluorotridecanoic acid (ND)



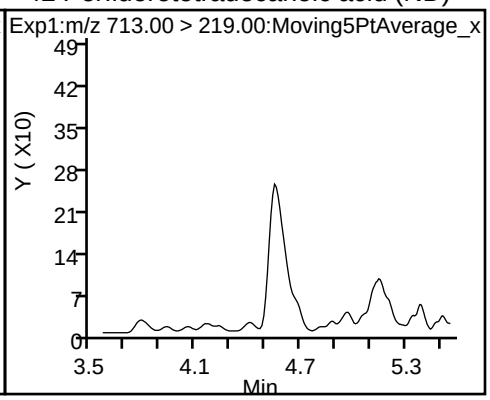
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

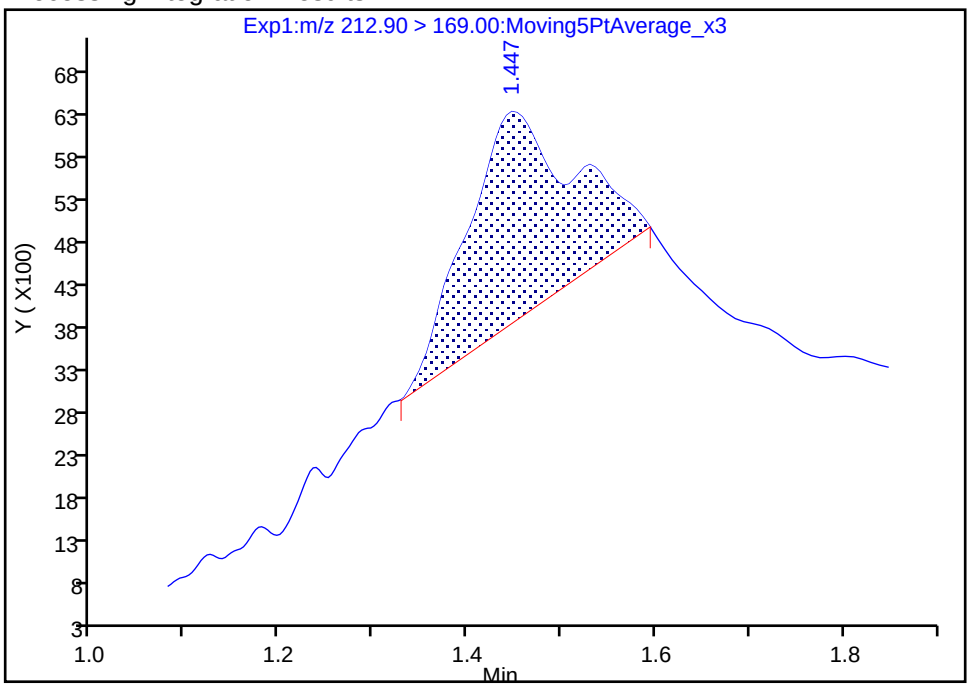
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_012.d				
Injection Date:	26-Apr-2018 12:44:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-8-A	Lab Sample ID:	320-38061-8		
Client ID:	FB008				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

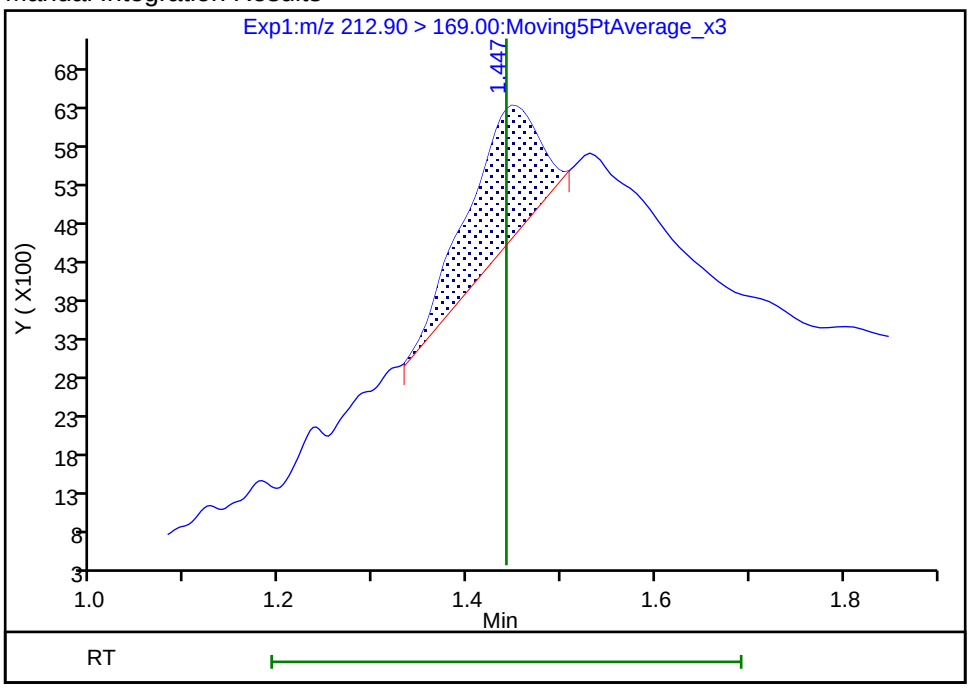
Processing Integration Results

RT: 1.45
Area: 19150
Amount: 0.008260
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 9086
Amount: 0.003919
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:40:19

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

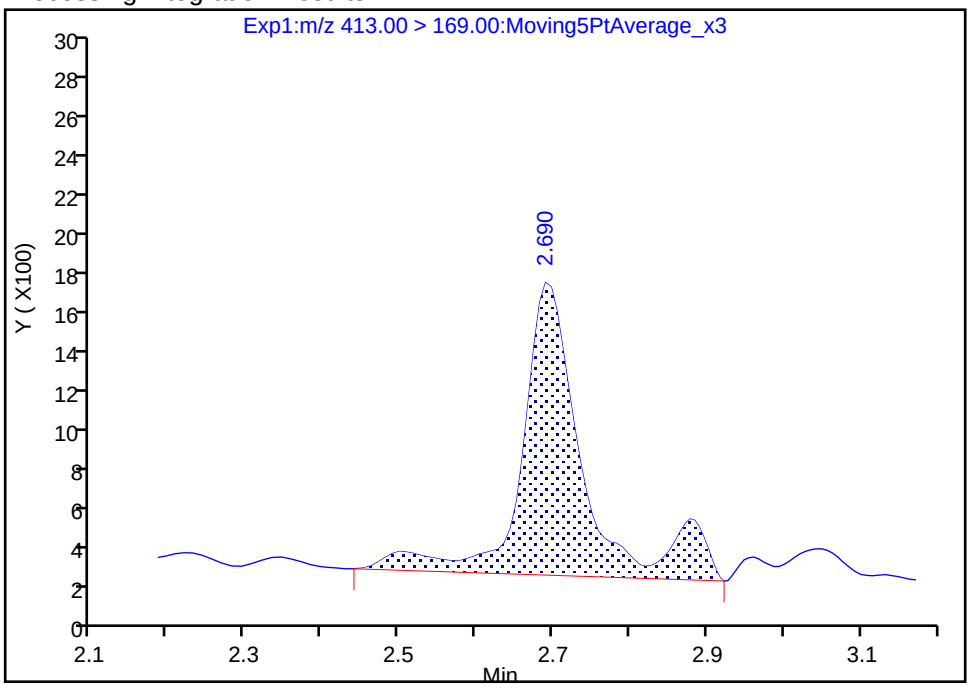
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_012.d				
Injection Date:	26-Apr-2018 12:44:33	Instrument ID:	A8_N		
Lims ID:	320-38061-A-8-A	Lab Sample ID:	320-38061-8		
Client ID:	FB008				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	6	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

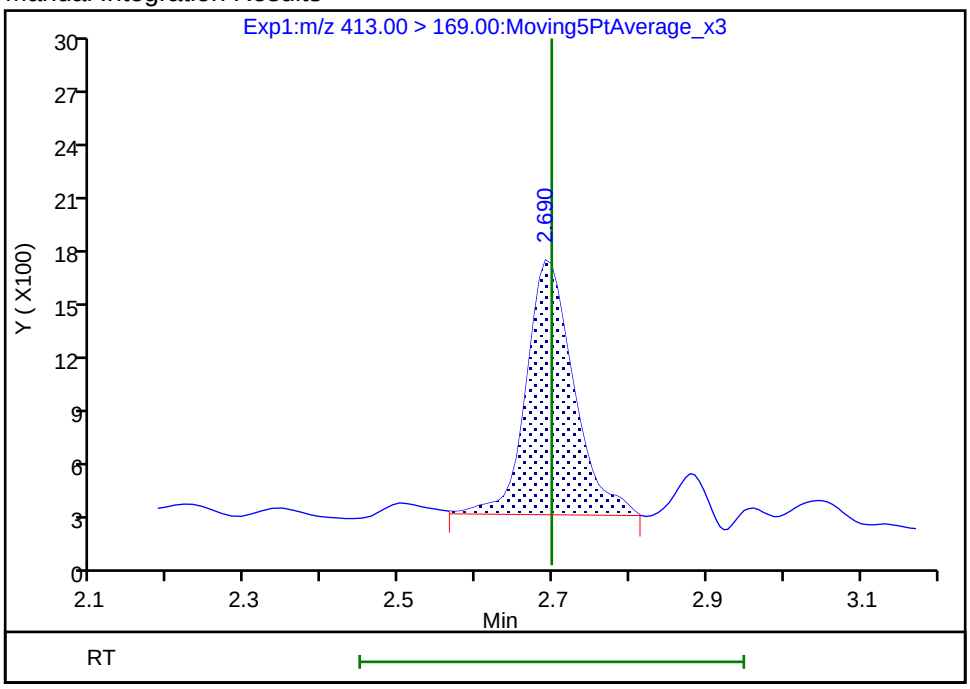
Processing Integration Results

RT: 2.69
Area: 8471
Amount: 0.005721
Amount Units: ng/ml



Manual Integration Results

RT: 2.69
Area: 6188
Amount: 0.005721
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:40:40

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: EB008 | Lab Sample ID: 320-38061-9

Matrix: Water | Lab File ID: 2018.04.26LLA_013.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:30

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 282.6(mL) | Date Analyzed: 04/26/2018 12:52

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.36	J	1.77	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.43	U	1.77	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	0.51	U	1.77	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.22	U	1.77	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	0.75	U	1.77	0.75
375-95-1	Perfluorononanoic acid (PFNA)	0.24	U	1.77	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	0.27	U	1.77	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.97	U	1.77	0.97
307-55-1	Perfluorododecanoic acid (PFDoA)	0.49	U	1.77	0.49
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.15	U	1.77	1.15
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.26	U	1.77	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.18	U	1.77	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.24	J B	1.77	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.17	U	1.77	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.48	U	1.77	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.28	U	1.77	0.28
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.31	U	1.77	0.31
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.74	U	17.7	2.74
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.68	U	17.7	1.68
27619-97-2	6:2FTS	3.89	J B	17.7	1.77
39108-34-4	8:2FTS	1.77	U	17.7	1.77

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: EB008 | Lab Sample ID: 320-38061-9

Matrix: Water | Lab File ID: 2018.04.26LLA_013.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:30

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 282.6(mL) | Date Analyzed: 04/26/2018 12:52

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	91		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	92		25-150
STL01892	13C4-PFHpA	93		25-150
STL00990	13C4 PFOA	89		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	88		25-150
STL00998	13C2 PFDoA	82		25-150
STL02116	13C2-PFTeDA	82		25-150
STL02337	13C3-PFBS	94		25-150
STL00994	18O2 PFHxS	93		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	84		25-150
STL02117	d5-NEtFOSAA	93		25-150
STL02279	M2-6:2FTS	105		25-150
STL02280	M2-8:2FTS	105		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_013.d
Lims ID: 320-38061-A-9-A
Client ID: EB008
Sample Type: Client
Inject. Date: 26-Apr-2018 12:52:24 ALS Bottle#: 7 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-9-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:42:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.435	0.007	1.000	5997647	2.28		91.2	35914	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.453	1.441	0.012	1.008	22705	0.0102			7.4	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.712	1.702	0.010	0.557	3894660	2.30		91.9	58579	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	85138	2.19		94.2	693	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.992	0.001	1.000	4309420	2.30		92.0	68890	
D 9 13C4-PFHpA										
367.00 > 322.00	2.335	2.320	0.015	1.000	4224602	2.32		92.7	57806	
D 11 18O2 PFHxS										
403.00 > 84.00	2.348	2.333	0.015	1.000	4961627	2.20		93.2	63155	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.348	2.346	0.002	1.000	16032	0.006752			41.1	
399.00 > 99.00	2.348	2.346	0.002	1.000	4729		3.39(1.50-4.49)		30.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.661	0.007	1.000	971834	2.49		105	13073	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.668	0.0	1.000	76004	0.1099			1092	
D 14 13C4 PFOA										
417.00 > 372.00	2.698	2.683	0.015	1.000	4049132	2.23		89.3	73428	
* 62 13C2-PFOA										
415.00 > 370.00	2.698	2.698	0.0		4885425	2.50			95815	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.698	-0.007	0.997	12272	0.006558			7.5	
413.00 > 169.00	2.698	2.698	0.0	1.000	0		0.00(0.84-2.52)			

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA										
468.00 > 423.00	3.071	3.060	0.011	1.000	3671118	2.36		94.2	73969	
D 18 13C4 PFOS										
503.00 > 80.00	3.071	3.060	0.011	1.000	3464023	2.20		91.9	23494	
20 Perfluorononanoic acid										
463.00 > 419.00	3.071	3.074	-0.003	1.000	1681	0.001098			5.9	
463.00 > 169.00	3.087	3.074	0.013	1.005	577		2.91(1.90-5.69)		11.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.398	0.008	1.000	4214798	2.14		85.7	40226	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.407	0.017	1.000	1182294	2.51		105	8600	
D 23 13C2 PFDA										
515.00 > 470.00	3.443	3.426	0.017	1.000	3089515	2.36		94.4	86705	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.588	3.575	0.013	1.000	1560709	2.10		84.1	24241	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.762	3.751	0.011	1.000	1695759	2.31		92.6	25752	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.751	0.011	1.000	2484053	2.20		88.0	65754	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.773	3.761	0.012	1.003	5192	0.006183			31.4	R
563.00 > 169.00	3.773	3.761	0.012	1.003	2614		1.99(2.12-6.36)		59.4	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.050	0.011	1.000	2508464	2.06		82.3	26172	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.553	0.009	1.000	3153325	2.04		81.5	22331	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 16:46:35 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_013.d

Injection Date: 26-Apr-2018 12:52:24 Instrument ID: A8_N

Lims ID: 320-38061-A-9-A Lab Sample ID: 320-38061-9

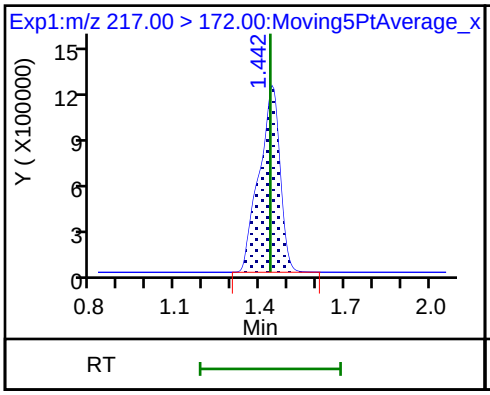
Client ID: EB008

Operator ID: SACINSTLCMS01 ALS Bottle#: 7 Worklist Smp#: 5

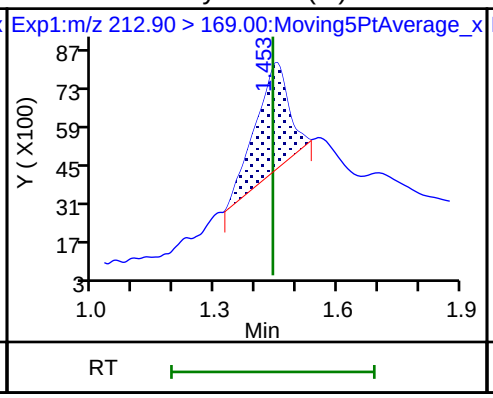
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

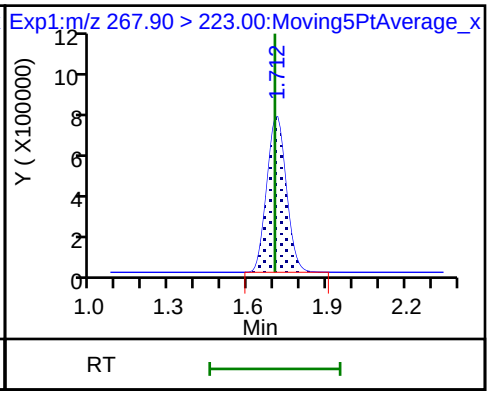
D 1 13C4 PFBA



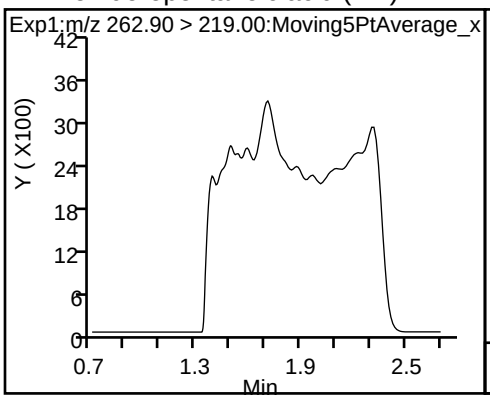
2 Perfluorobutyric acid (M)



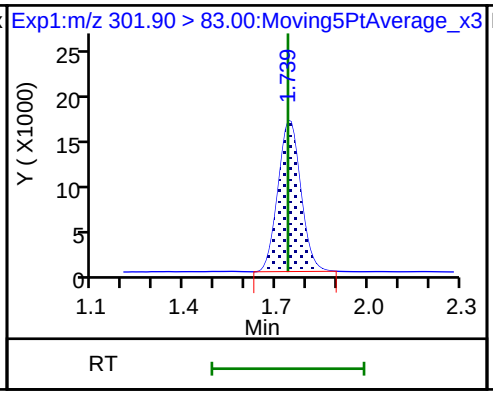
D 3 13C5-PFPeA



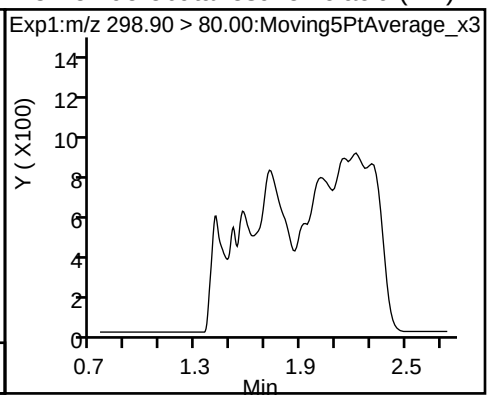
4 Perfluoropentanoic acid (ND)



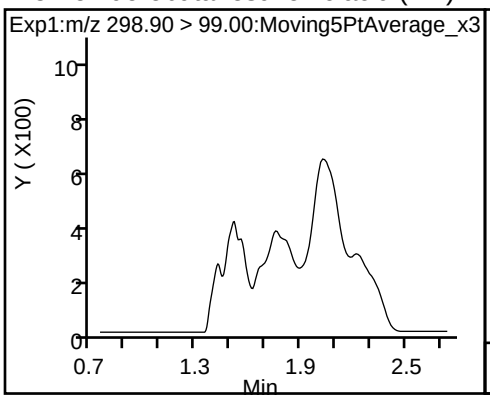
D 47 13C3-PFBS



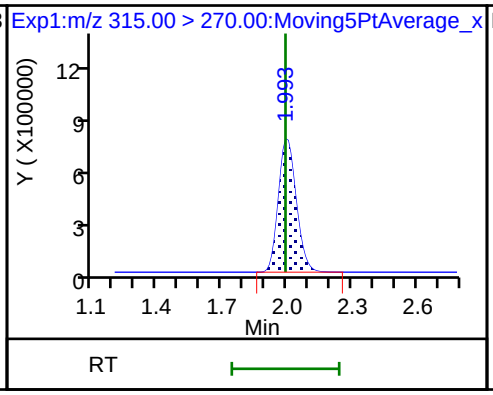
5 Perfluorobutanesulfonic acid (ND)



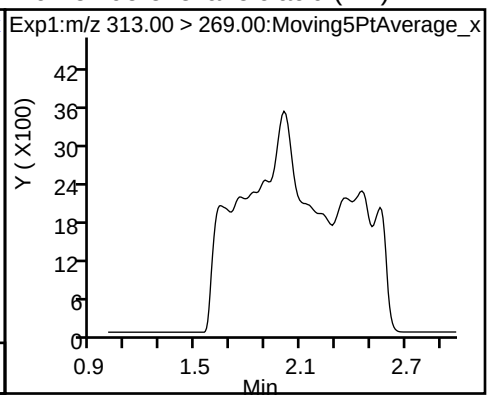
5 Perfluorobutanesulfonic acid (ND)



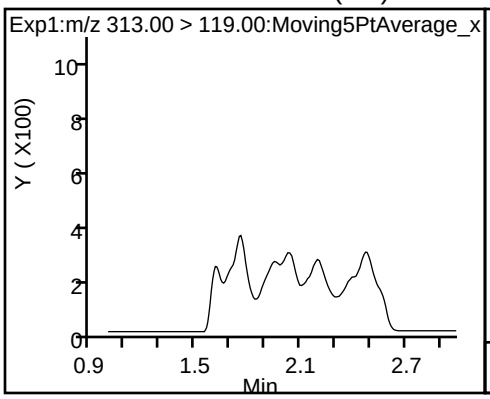
D 7 13C2 PFHxA



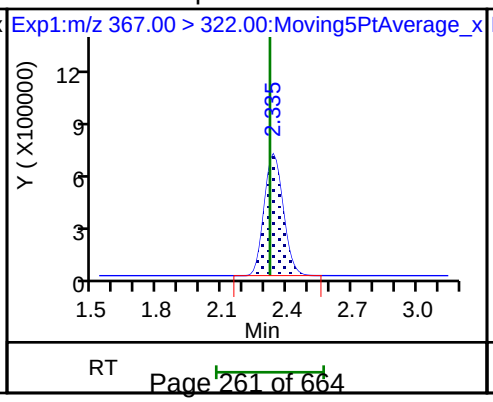
6 Perfluorohexanoic acid (ND)



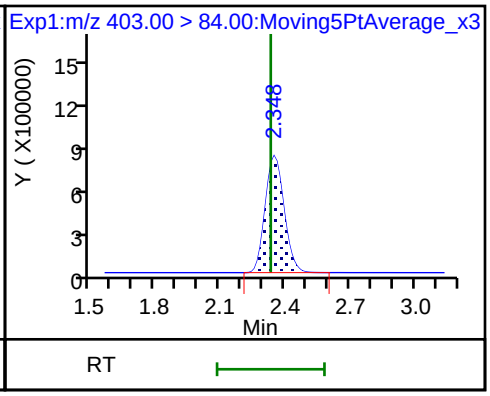
6 Perfluorohexanoic acid (ND)



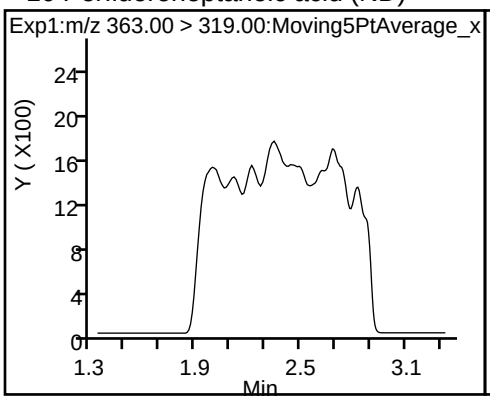
D 9 13C4-PFHpA



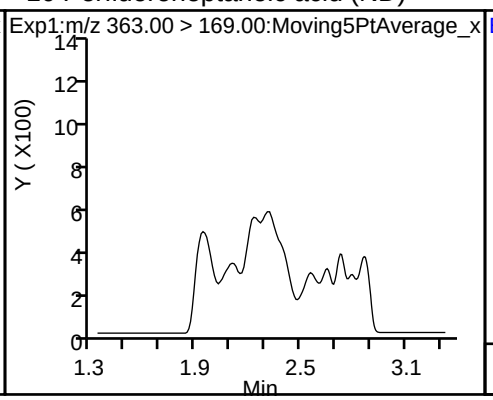
D 11 18O2 PFHxS



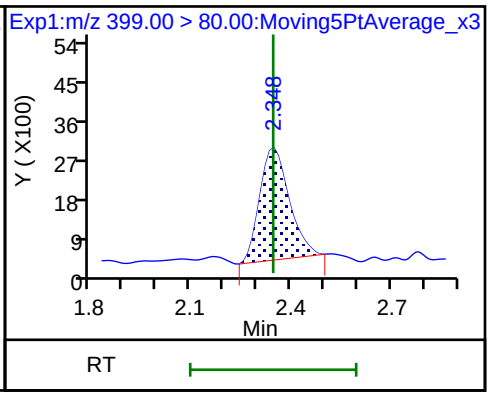
10 Perfluoroheptanoic acid (ND)



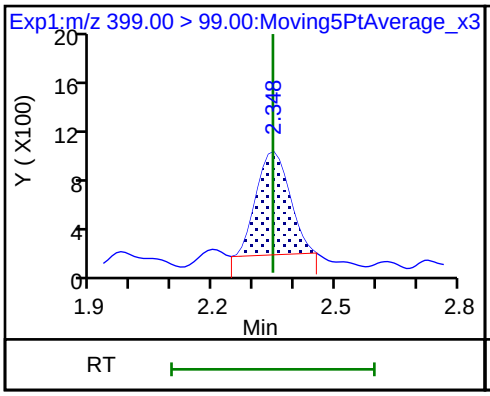
10 Perfluoroheptanoic acid (ND)



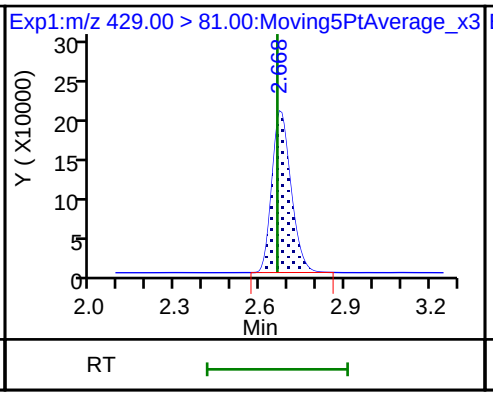
8 Perfluorohexanesulfonic acid



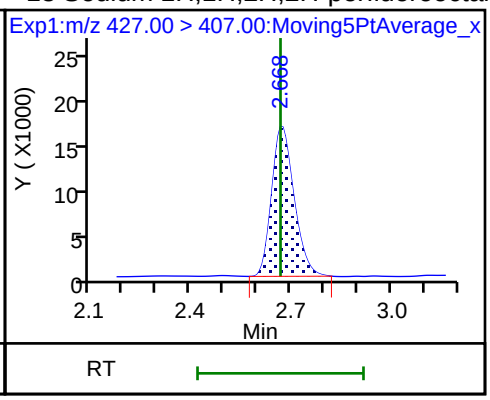
8 Perfluorohexanesulfonic acid



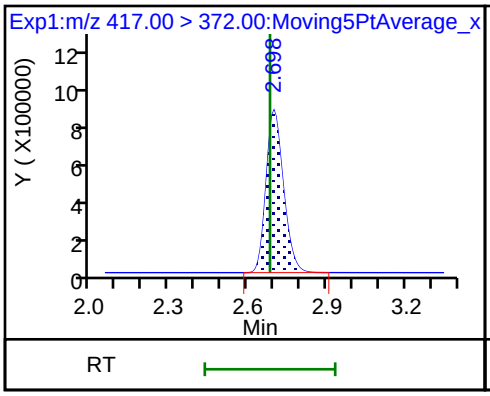
D 12 M2-6:2FTS



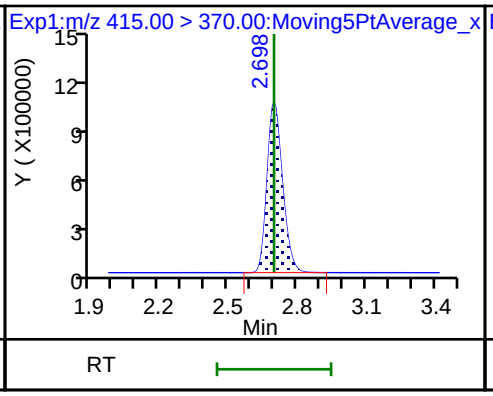
13 Sodium 1H,1H,2H,2H-perfluorooctane



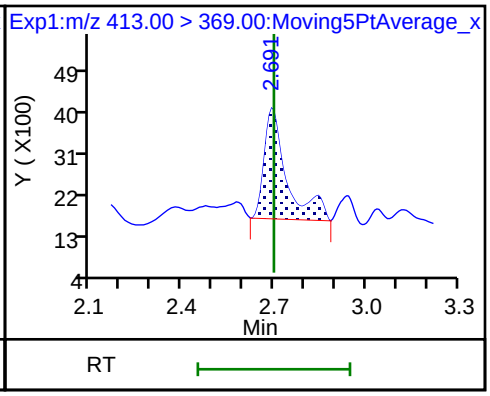
D 14 13C4 PFOA



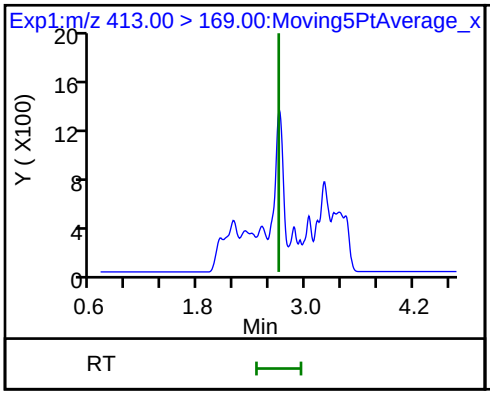
* 62 13C2-PFOA



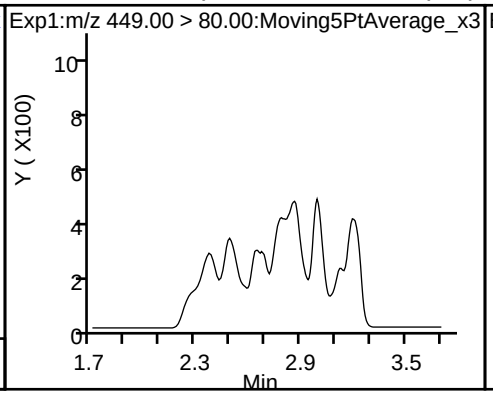
15 Perfluorooctanoic acid



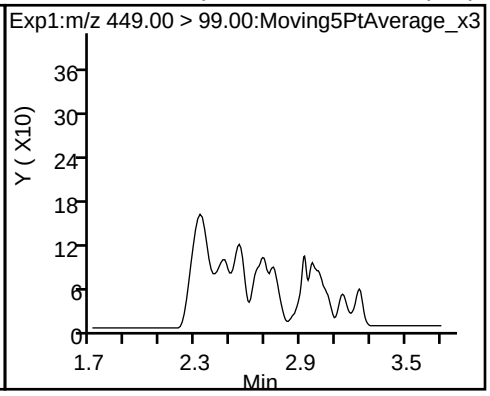
15 Perfluorooctanoic acid



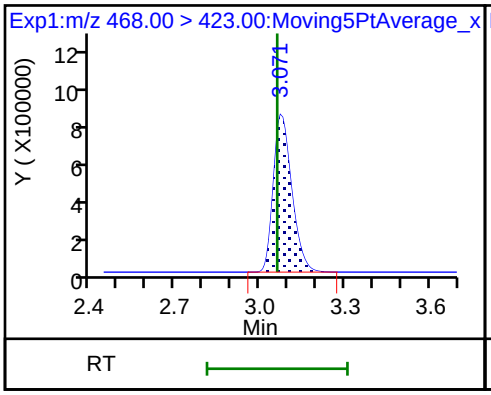
16 Perfluoroheptanesulfonic acid (ND)



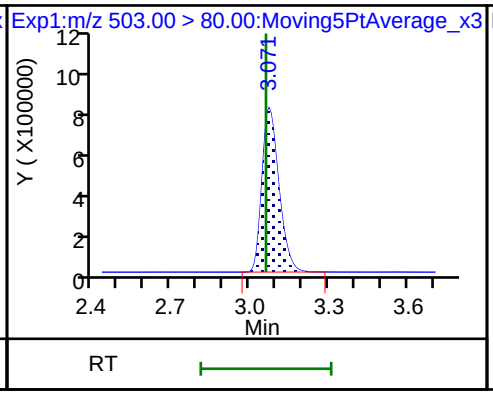
16 Perfluoroheptanesulfonic acid (ND)



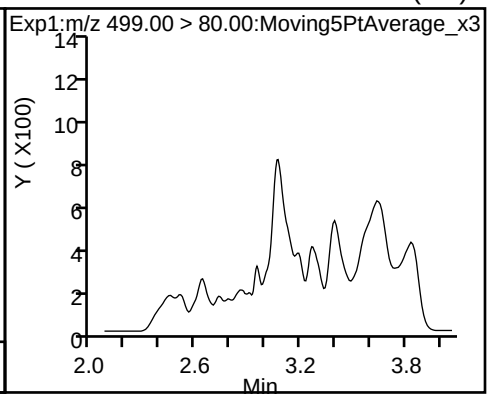
D 19 13C5 PFNA



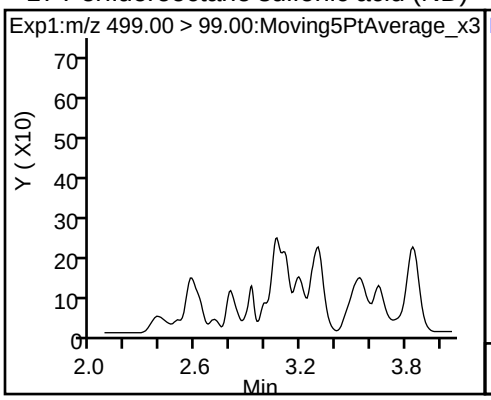
D 18 13C4 PFOS



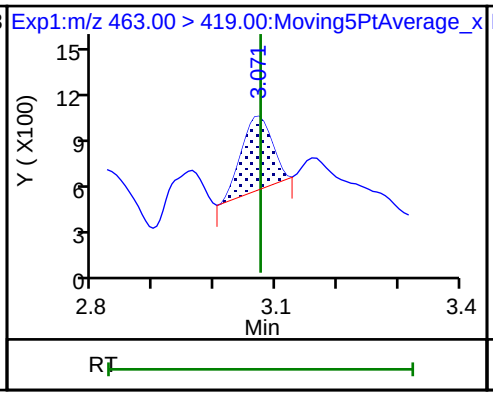
17 Perfluorooctane sulfonic acid (ND)



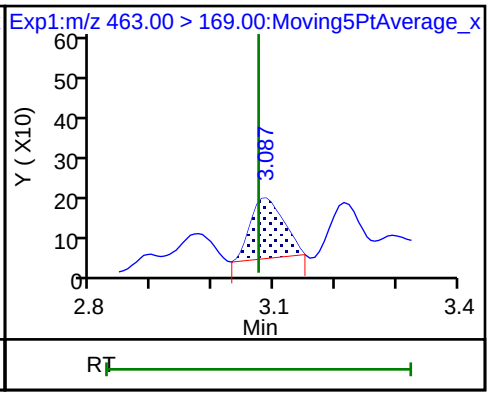
17 Perfluorooctane sulfonic acid (ND)



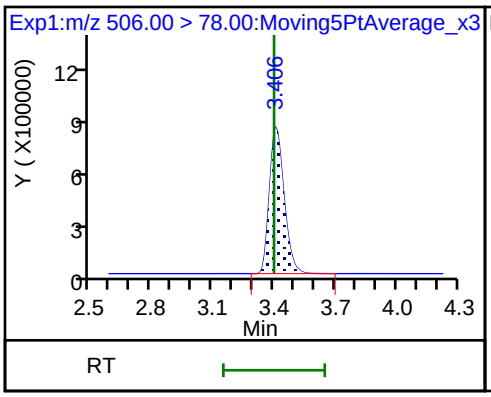
20 Perfluorononanoic acid



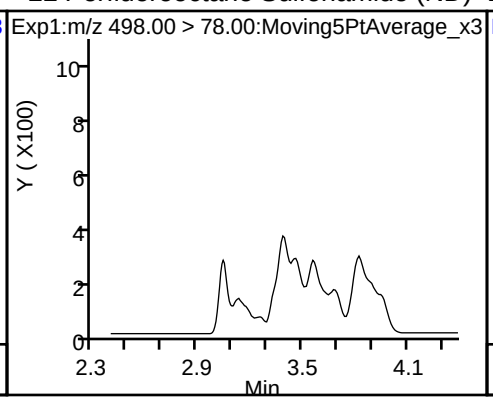
20 Perfluorononanoic acid



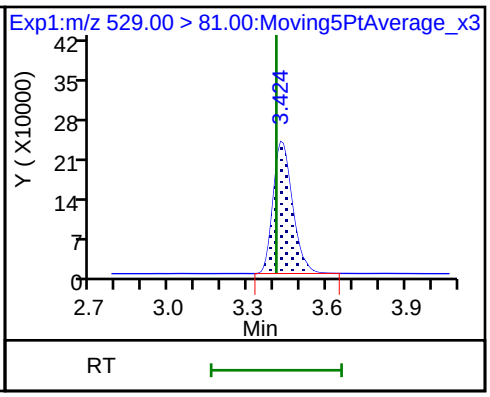
D 21 13C8 FOSA



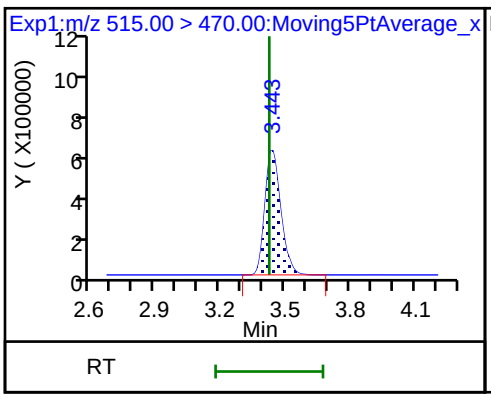
22 Perfluorooctane Sulfonamide (ND)



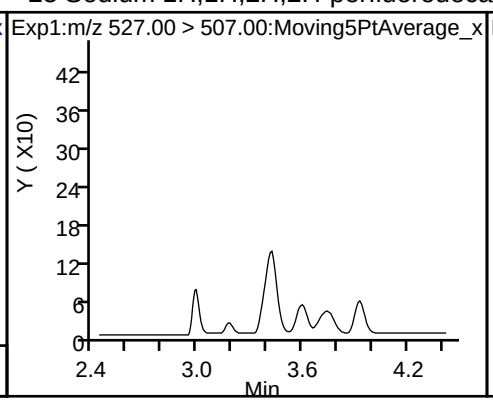
D 26 M2-8:2FTS



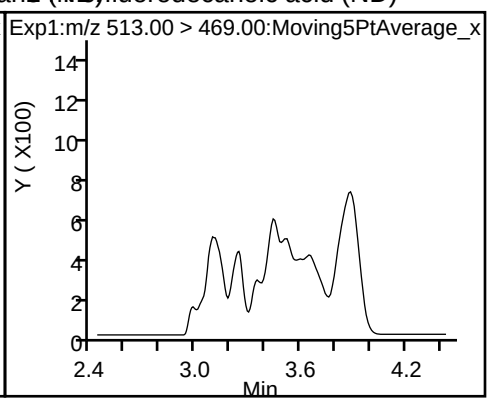
D 23 13C2 PFDA



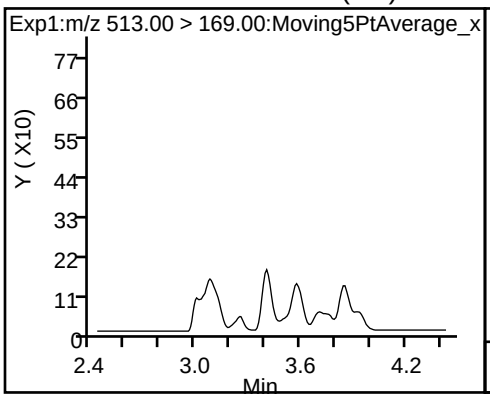
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



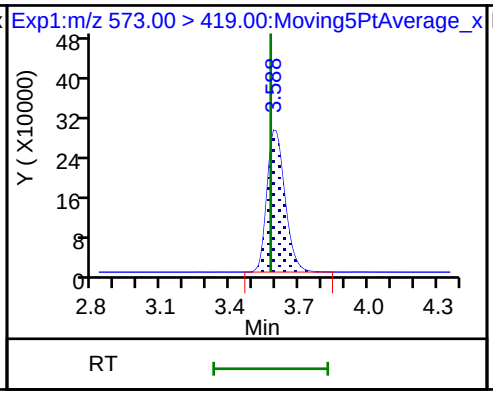
24 Perfluorodecanoic acid (ND)



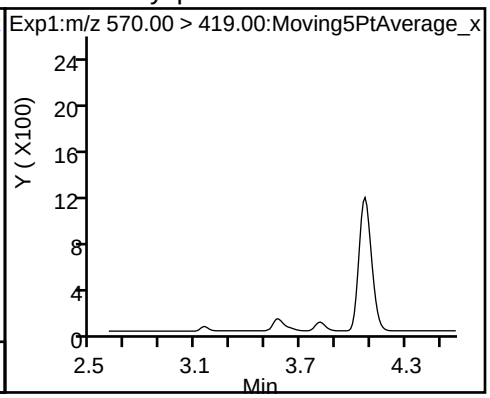
24 Perfluorodecanoic acid (ND)



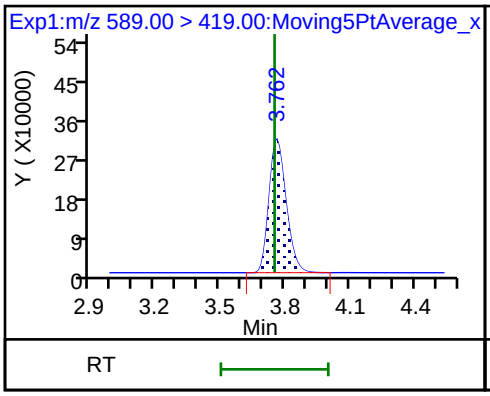
D 27 d3-NMeFOSAA



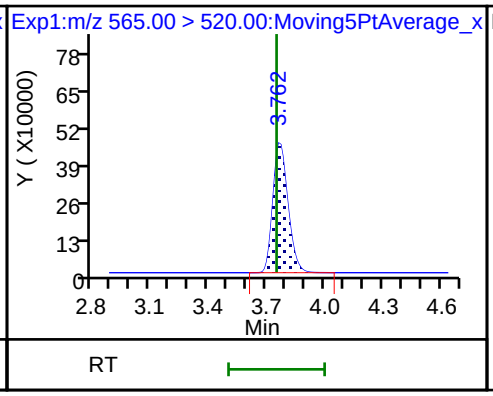
28 N-methyl perfluorooctane sulfonami (ND)



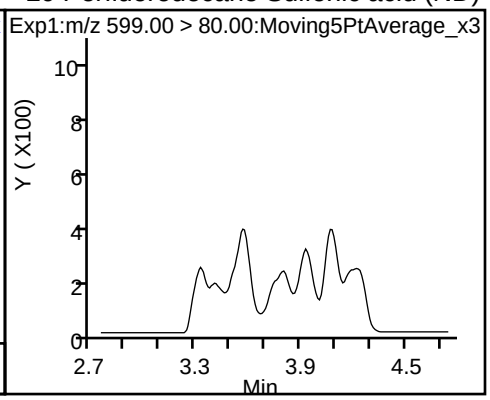
D 32 d5-NEtFOSAA



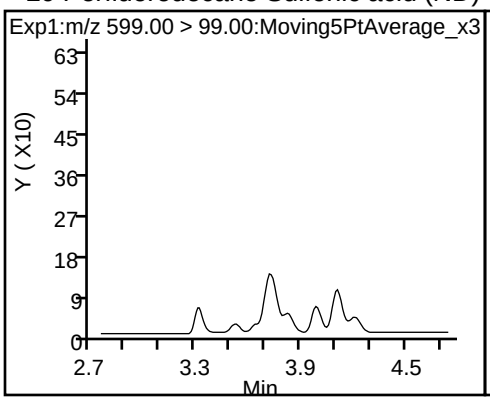
D 30 13C2 PFUnA



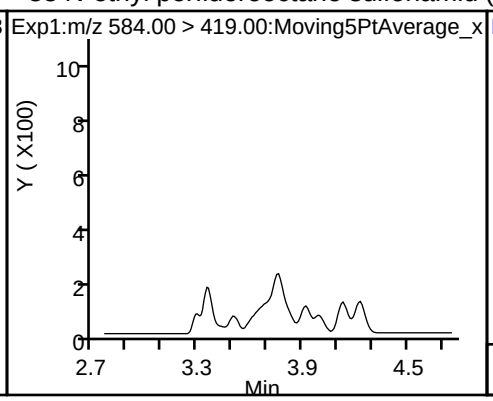
29 Perfluorodecane Sulfonic acid (ND)



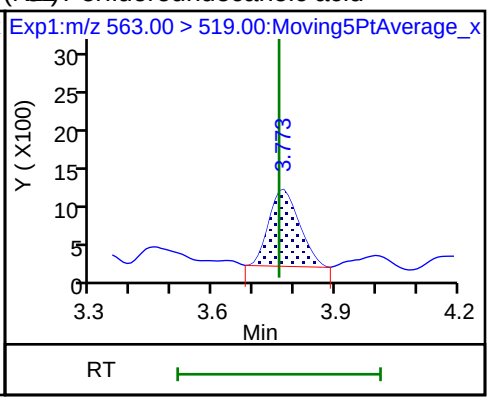
29 Perfluorodecane Sulfonic acid (ND)



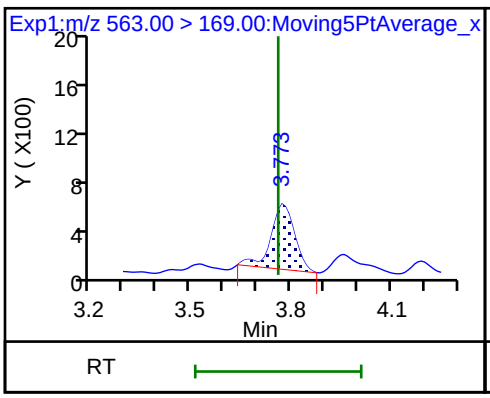
33 N-ethyl perfluorooctane sulfonamid (ND)



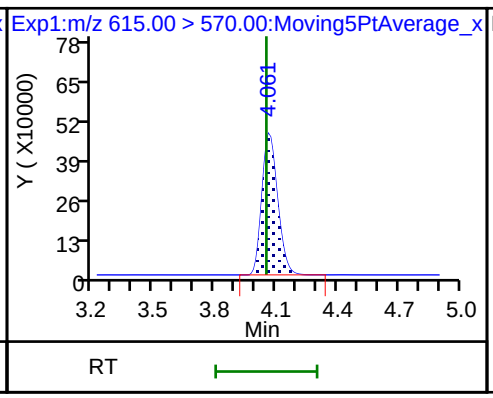
31 Perfluoroundecanoic acid



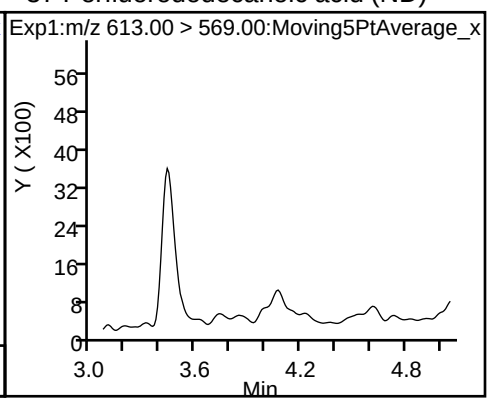
31 Perfluoroundecanoic acid



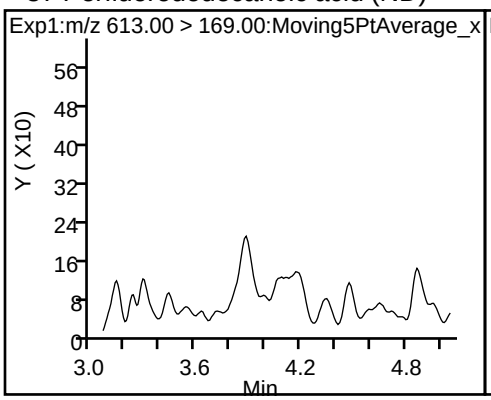
D 36 13C2 PFDoA



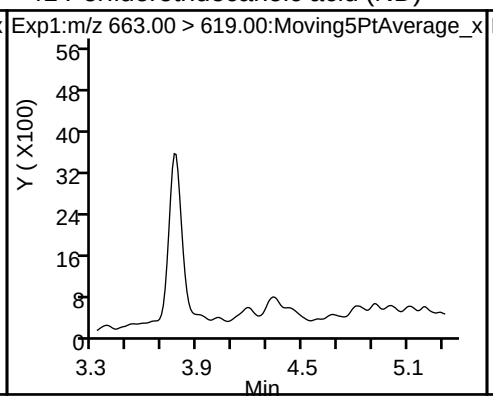
37 Perfluorododecanoic acid (ND)



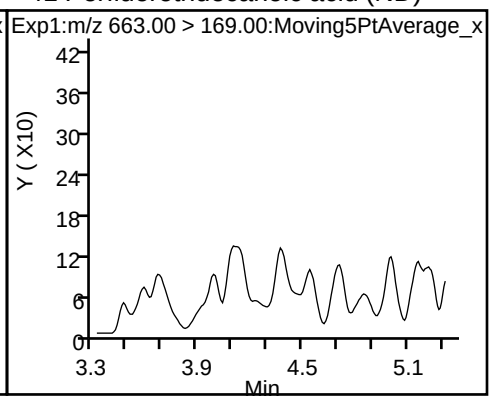
37 Perfluorododecanoic acid (ND)



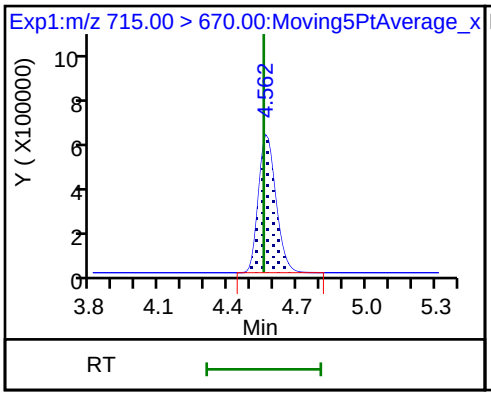
41 Perfluorotridecanoic acid (ND)



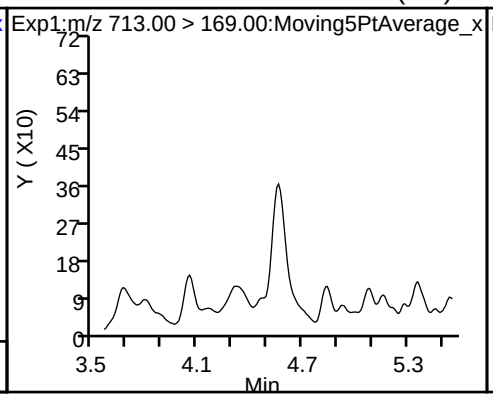
41 Perfluorotridecanoic acid (ND)



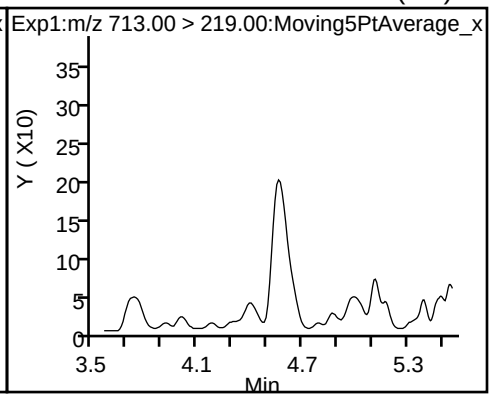
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

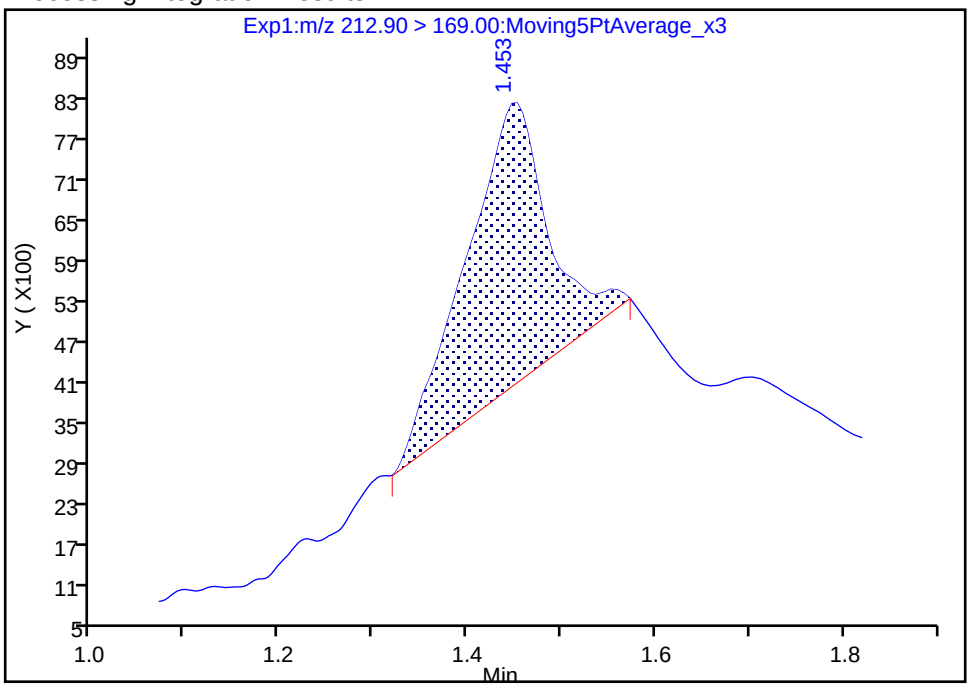
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_013.d				
Injection Date:	26-Apr-2018 12:52:24	Instrument ID:	A8_N		
Lims ID:	320-38061-A-9-A	Lab Sample ID:	320-38061-9		
Client ID:	EB008				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	7	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

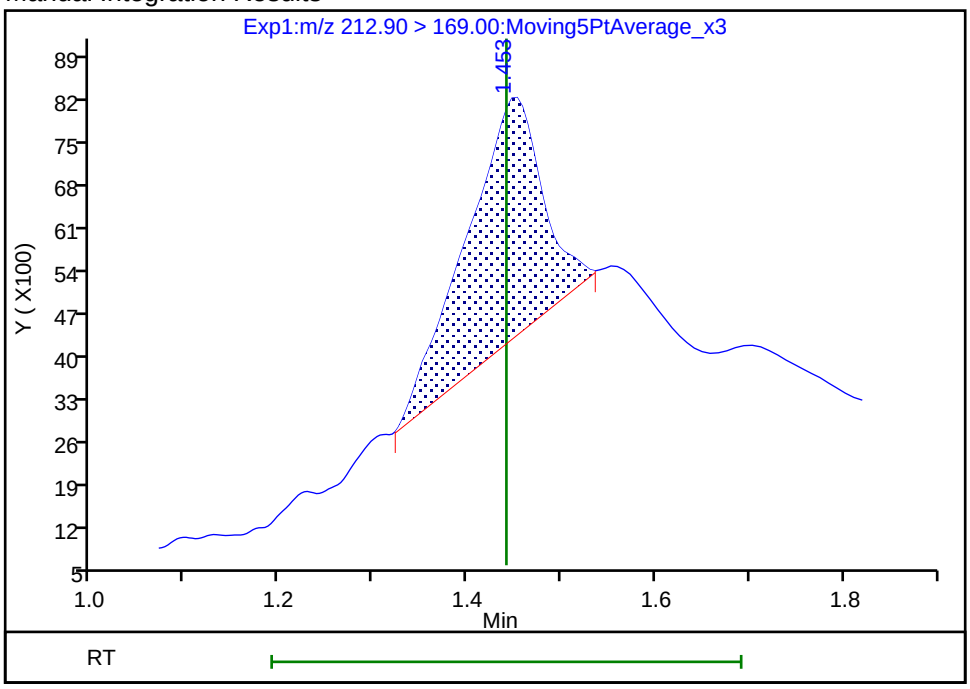
Processing Integration Results

RT: 1.45
Area: 25968
Amount: 0.011657
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
Area: 22705
Amount: 0.010192
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:41:40

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-217359/2	2018.04.10LLICAL_002.d
Level 2	IC 320-217359/3	2018.04.10LLICAL_003.d
Level 3	IC 320-217359/4	2018.04.10LLICAL_004.d
Level 4	IC 320-217359/5	2018.04.10LLICAL_005.d
Level 5	IC 320-217359/6	2018.04.10LLICAL_006.d
Level 6	IC 320-217359/7	2018.04.10LLICAL_007.d
Level 7	IC 320-217359/8	2018.04.10LLICAL_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9087 0.9558	0.9215 0.9254	0.9250	0.9115	0.9520	AveID		0.9286				2.0		35.0			
Perfluoropentanoic acid (PFPeA)	1.2578 1.1682	1.2108 1.1732	1.1604	1.1461	1.2257	AveID		1.1918				3.4		35.0			
Perfluorobutanesulfonic acid (PFBS)	76.893 81.717	82.786 71.544	78.801	75.066	81.197	AveID		78.286				5.2		50.0			
4:2 FTS	14.379 16.335	17.388 16.450	16.158	15.381	16.133	AveID		16.032				5.9		50.0			
Perfluorohexanoic acid (PFHxA)	0.9165 1.0971	1.0419 0.9805	0.9871	1.0324	1.0575	AveID		1.0161				5.9		35.0			
Perfluoropentanesulfonic acid (PFPeS)	72.651 73.152	73.718 66.574	72.295	69.587	72.578	AveID		71.508				3.6		50.0			
HFPO-DA (GenX)	2.6776 3.4120	2.2053 2.8850	2.9463	2.6401	2.7314	AveID		2.7854				13.1		35.0			
Perfluoroheptanoic acid (PFHpA)	0.8886 1.0632	0.8961 1.0895	1.0153	1.0044	1.0491	AveID		1.0009				7.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3313 1.0960	1.2076 1.0563	1.0824	1.0501	1.0988	AveID		1.1318				9.0		35.0			
Adona	3.4574 3.3221	3.5134 2.9110	3.4665	3.8310	3.7468	AveID		3.4640				8.7		50.0			
6:2FTS	1.5421 1.7475	1.9455 1.7701	1.5586	1.6684	1.6013	AveID		1.6905				8.5		35.0			
Perfluorooctanoic acid (PFOA)	1.2196 1.1748	1.2108 1.1155	1.1409	1.0810	1.1452	AveID		1.1554				4.3		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2050 1.3855	1.3067 1.3134	1.3594	1.3058	1.4180	AveID		1.3277				5.2		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.0579 1.1424	1.0586 1.1443	1.0560	1.0546	1.1010	AveID		1.0878				3.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	0.9233 1.1269	1.1068 1.0188	1.0452	1.0400	1.0380	AveID		1.0427				6.3		35.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate	1.6407 2.0236	1.8519 1.8739	1.8303	1.9058	2.0694	AveID		1.8851				7.4		50.0			
Perfluorononanesulfonic acid (PFNS)	0.8421 0.8194	0.8119 0.7979	0.7759	0.7194	0.8292	AveID		0.7994				5.2		50.0			
8:2FTS	1.4631 1.3212	1.2394 1.2657	1.1167	1.2298	1.2217	AveID		1.2654				8.4		35.0			
Perfluorooctane Sulfonamide (FOSA)	0.9307 1.0709	1.0441 0.9800	1.0023	1.0041	1.0484	AveID		1.0115				4.7		35.0			
Perfluorodecanoic acid (PFDA)	1.0885 0.9859	1.1057 1.0134	0.9627	1.0005	1.0643	AveID		1.0316				5.3		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9083 1.1043	0.8872 1.0603	1.0109	0.9545	1.0557	AveID		0.9973				8.3		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.5294 0.7137	0.6184 0.7022	0.6496	0.6477	0.6837	AveID		0.6492				9.6		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.7913 0.9588	0.9928 0.9829	0.9228	0.9274	0.9655	AveID		0.9345				7.3		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9440 0.8695	0.9150 0.8330	0.7542	0.7914	0.8086	AveID		0.8451				8.1		35.0			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	2.7334 2.8552	3.0246 2.5419	3.0187	3.1256	3.0878	AveID		2.9125				7.3		50.0			
Perfluorododecanoic acid (PFDoA)	1.0500 1.0844	0.9584 1.0838	1.0669	0.9590	1.0976	AveID		1.0429				5.7		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.2989 1.2824	1.2093 1.2168	1.1646	1.1001	1.2353	AveID		1.2153				5.6		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2445 0.2592	0.2707 0.2509	0.2469	0.2461	0.2397	AveID		0.2511				4.2		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.8074 0.9223	1.3282 0.9137	1.0648	0.9768	1.0014	L2ID	0.0211	0.9469							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.0226 0.9916	0.9945 0.9873	1.0118	0.9863	1.0342	AveID		1.0041				1.9		50.0			
13C4 PFBA	1.2940 1.4238	1.3269 1.4303	1.2929	1.3278	1.3223	Ave		1.3454				4.3		50.0			
13C5 PFPeA	0.8504 0.9141	0.8510 0.9065	0.8296	0.8639	0.8548	Ave		0.8672				3.6		50.0			
13C3-PFBS	0.0195 0.0202	0.0192 0.0216	0.0190	0.0203	0.0195	Ave		0.0199				4.6		50.0			
M2-4:2FTS	0.1407 0.1456	0.1400 0.1466	0.1378	0.1445	0.1424	Ave		0.1425				2.3		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFHxA	0.9705 0.9727	0.9235 1.0286	0.9450	0.9498	0.9228	Ave		0.9590				3.8		50.0			
13C3 HFPO-DA	0.0607 0.0558	0.0645 0.0590	0.0536	0.0606	0.0611	Ave		0.0593				6.1		50.0			
13C4-PFHpA	0.9512 0.9245	0.9580 0.9305	0.9001	0.9261	0.9425	Ave		0.9333				2.1		50.0			
18O2 PFHxS	1.1389 1.1679	1.1640 1.1715	1.1515	1.1448	1.1247	Ave		1.1519				1.5		50.0			
M2-6:2FTS	0.2013 0.2035	0.1892 0.1970	0.2051	0.2032	0.2005	Ave		0.2000				2.7		50.0			
13C4 PFOA	0.9343 0.9540	0.9073 0.9397	0.9043	0.9264	0.9275	Ave		0.9276				1.9		50.0			
13C4 PFOS	0.7935 0.8268	0.8168 0.8235	0.7958	0.8102	0.7798	Ave		0.8066				2.2		50.0			
13C5 PFNA	0.8203 0.7821	0.8002 0.8169	0.7761	0.7954	0.7901	Ave		0.7973				2.1		50.0			
M2-8:2FTS	0.2407 0.2360	0.2491 0.2358	0.2375	0.2469	0.2400	Ave		0.2409				2.2		50.0			
13C8 FOSA	1.0076 1.0108	1.0097 1.0199	0.9999	1.0220	0.9804	Ave		1.0072				1.4		50.0			
13C2 PFDA	0.6589 0.7306	0.6313 0.6919	0.6468	0.6894	0.6418	Ave		0.6701				5.3		50.0			
d3-NMeFOSAA	0.3521 0.3880	0.3703 0.4138	0.3721	0.3933	0.3693	Ave		0.3798				5.3		50.0			
d5-NEtFOSAA	0.3917 0.3803	0.3750 0.3593	0.3725	0.3713	0.3740	Ave		0.3749				2.6		50.0			
13C2 PFUnA	0.5883 0.5911	0.5771 0.5697	0.5957	0.5619	0.5626	Ave		0.5781				2.4		50.0			
13C2 PFDoA	0.5964 0.6225	0.6348 0.6364	0.6241	0.6615	0.5939	Ave		0.6242				3.8		50.0			
13C2-PFTeDA	0.7749 0.7948	0.7757 0.8130	0.7679	0.8272	0.7873	Ave		0.7915				2.8		50.0			
13C2-PFHxDA	1.2936 1.3188	1.2730 1.3422	1.2549	1.2935	1.2397	Ave		1.2879				2.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-217359/2	2018.04.10LLICAL_002.d
Level 2	IC 320-217359/3	2018.04.10LLICAL_003.d
Level 3	IC 320-217359/4	2018.04.10LLICAL_004.d
Level 4	IC 320-217359/5	2018.04.10LLICAL_005.d
Level 5	IC 320-217359/6	2018.04.10LLICAL_006.d
Level 6	IC 320-217359/7	2018.04.10LLICAL_007.d
Level 7	IC 320-217359/8	2018.04.10LLICAL_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	56172 13377174	112834 21784128	580880	2238331	5819896	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	51097 10497161	95082 17503102	467549	1831380	4844578	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	63156 14347107	129549 22532715	642890	2489261	6477140	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	12478 3030208	28749 5473778	139275	538908	1359770	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	42489 10489823	88785 16596765	453023	1813678	4512177	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	63317 13627914	122406 22248169	625836	2448518	6143254	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	7766 1870994	13126 2803143	76650	295687	771939	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	40376 9662627	79218 16683281	443829	1720489	4571563	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	65909 11450464	118037 18531754	550837	2023389	5199428	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
Adona		AveID	131051 26999565	264804 39451342	1339859	5740779	13509817	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
6:2FTS		AveID	14055 3314359	32205 5439954	147222	594490	1407564	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	54434 11016957	101372 17251700	501075	1852208	4910933	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	43482 10719572	93755 16945821	500192	1862796	4867309	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	37213 8615775	74043 14391699	378769	1466540	3684174	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	36180 8663453	81721 13696835	394004	1529838	3792206	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate		AveID	57962 15327887	130088 23669204	659333	2661617	6954333	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	30641 6392773	58744 10381596	287902	1034931	2870093	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2FTS		AveID	16119 2936296	27294 4704229	123407	537990	1298898	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorooctane Sulfonamide (FOSA)		AveID	44800 10640158	97271 16450280	486733	1898032	4752476	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanoic acid (PFDA)		AveID	34262 7080425	64415 11538792	302427	1275776	3158094	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	15277 4211279	30316 7221428	182686	694281	1802851	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	19344 5591516	44930 9173589	242056	935700	2376399	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	14805 3584245	34358 5812610	166943	636880	1669717	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	26530 5051597	48726 7810732	218231	822546	2103252	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate		AveID	97600 21858692	214741 32450794	1099095	4412145	10487942	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	29913 6635970	56140 11350274	323392	1173427	3013785	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	37004 7847307	70835 12743041	353030	1346073	3391923	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	9052 2025257	19373 3357209	92073	376531	872520	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	111692 11955765	156018 20182542	648936	2337041	5739538	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	63194 12855038	116814 21808387	616691	2359770	5927518	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6181350 6997865	6122262 5884851	6279614	6139471	6113537	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4062250 4492903	3926283 3729652	4029236	3994638	3952401	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	86409 92353	82315 82834	85829	87216	83922	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	627830 668373	603123 563434	625222	623892	615130	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4636047 4780636	4260718 4231897	4589544	4391788	4266668	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PFOA	Ave	290038 274179	297607 242908	260156	279991	282614	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4-PFHpA	13PF OA	Ave	4543661 4543925	4420246 3828332	4371595	4282212	4357585	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5146760 5430236	5080567 4559710	5290521	5007633	4919272	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PF OA	Ave	913336 950305	829435 769923	946554	892700	880882	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	4463374 4688766	4186198 3866213	4391971	4283435	4288230	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	3623690 3884830	3602676 3239063	3695054	3581436	3447017	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3918358 3844023	3691890 3361051	3769499	3677661	3653281	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2FTS	13PF OA	Ave	1101720 1111203	1101099 929210	1105113	1093693	1063168	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C8 FOSA	13PF OA	Ave	4813462 4967723	4658336 4196317	4856180	4725832	4533137	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	3147491 3590754	2912736 2846573	3141564	3187733	2967373	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1681961 1906740	1708589 1702670	1807153	1818526	1707705	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1870983 1869135	1730407 1478400	1809132	1716798	1729345	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2810450 2905024	2662627 2344065	2893419	2598322	2601195	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2848895 3059706	2928766 2618174	3031255	3058842	2745849	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	3701548 3906384	3578927 3344927	3729686	3824690	3639964	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	6179539 6481798	5873165 5522067	6094708	5981114	5731595	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-Apr-2018 18:39:37 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:50:57 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:12:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.432	1.431	0.001	1.000	6181350	2.40		96.2	51986	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.432	1.432	0.0	1.000	56172	0.0245		97.9	31.7	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.706	1.699	0.007	1.000	51097	0.0264		106	41.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.706	1.699	0.007	0.560	4062250	2.45		98.1	95308	
D 47 13C3-PFBS										
301.90 > 83.00	1.742	1.735	0.007	1.000	86409	2.27		97.7	767	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.736	0.006	1.000	63156	0.0217		98.2	279	
298.90 > 99.00	1.742	1.736	0.006	1.000	27507		2.30(1.25-3.74)	98.2	389	
D 60 M2-4:2FTS										
329.00 > 81.00	1.953	1.950	0.003	1.000	627830	2.31		98.7	7913	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.953	1.950	0.003	1.000	12478	0.0209		89.7	710	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.985	0.001	1.000	4636047	2.53		101	101202	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.985	0.001	1.000	42489	0.0225		90.2	86.3	
313.00 > 119.00	1.986	1.985	0.001	1.000	5567		7.63(5.03-15.10)	90.2	74.7	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.008	2.008	0.0	1.000	63317	0.0238		102	545	
349.00 > 99.00	2.008	2.008	0.0	1.000	22154		2.86(1.36-4.07)	102	547	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.087	2.084	0.003	1.000	290038	2.56		102	7460	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.087	2.087	0.0	1.000	7766	0.0240		96.1	49.1	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.313	2.314	-0.001	1.000	40376	0.0222		88.8	47.6	
363.00 > 169.00	2.313	2.314	-0.001	1.000	16255		2.48(1.13-3.40)	88.8	62.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.313	2.314	-0.001	1.000	4543661	2.55		102	82661	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.326	2.323	0.003	1.000	65909	0.0268		118	260	
399.00 > 99.00	2.326	2.323	0.003	1.000	23111		2.85(1.50-4.49)	118	253	
D 11 18O2 PFHxS										
403.00 > 84.00	2.326	2.327	-0.001	1.000	5146760	2.34		98.9	93287	
65 Adona										
377.00 > 251.00	2.366	2.360	0.006	1.000	131051	0.0250		99.8	1983	
377.00 > 85.00	2.352	2.360	-0.008	0.994	76139		1.72(0.84-2.53)	99.8	2103	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.648	2.649	-0.001	1.000	14055	0.0216		91.2	251	
D 12 M2-6:2FTS										
429.00 > 81.00	2.648	2.649	-0.001	1.000	913336	2.39		101	13873	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.673	0.006	1.000	4463374	2.52		101	72271	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.679	2.674	0.005	1.000	54434	0.0264		106	31.2	
413.00 > 169.00	2.679	2.674	0.005	1.000	29641		1.84(0.84-2.52)	106	116	M
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.674	0.005		4776998	2.50			72796	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.679	2.680	-0.001	1.000	43482	0.0216		90.8	413	
449.00 > 99.00	2.686	2.680	0.006	1.003	12993		3.35(1.94-5.82)	90.8	376	
D 18 13C4 PFOS										
503.00 > 80.00	3.039	3.041	-0.002	1.000	3623690	2.35		98.4	29511	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.039	3.042	-0.003	1.000	37213	0.0226		97.3	125	
499.00 > 99.00	3.039	3.042	-0.003	1.000	9288		4.01(2.31-6.93)	97.3	122	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.046	3.043	0.003	1.000	36180	0.0221		88.6	86.3	
463.00 > 169.00	3.046	3.043	0.003	1.000	9677		3.74(1.90-5.69)	88.6	183	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.045	0.001	1.000	3918358	2.57		103	96245	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.253	3.253	0.0	1.000	57962	0.0203		87.0	1598	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.389	3.388	0.001	1.000	30641	0.0253		105	390	
549.00 > 99.00	3.389	3.388	0.001	1.000	9777		3.13(1.33-3.97)	105	297	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.390	-0.001	1.000	1101720	2.39		99.9	9765	
25 Sodium 1H,1H,2H,2H-perfluorodecane										M
527.00 > 507.00	3.398	3.393	0.005	1.003	16119	0.0277		116	867	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.397	0.001	1.000	4813462	2.50		100	67909	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.401	0.006	1.003	44800	0.0230		92.0	1056	
D 23 13C2 PFDA										
515.00 > 470.00	3.398	3.401	-0.003	1.000	3147491	2.46		98.3	66677	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.402	0.005	1.003	34262	0.0264		106	145	
513.00 > 169.00	3.407	3.402	0.005	1.003	5026		6.82(2.36-7.09)	106	79.2	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.557	3.553	0.004	1.000	1681961	2.32		92.7	20302	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.557	3.558	-0.001	1.000	15277	0.0228		91.1	111	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.719	3.715	0.004	1.000	19344	0.0197		81.5	163	
599.00 > 99.00	3.708	3.715	-0.007	0.997	6967		2.78(1.39-4.16)	81.5	357	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.719	3.722	-0.003	1.000	1870983	2.61		104	18488	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.730	3.727	0.003	1.003	14805	0.0212		84.7	220	
D 30 13C2 PFUnA										
565.00 > 520.00	3.730	3.727	0.003	1.000	2810450	2.54		102	70104	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.730	3.727	0.003	1.000	26530	0.0279		112	97.5	
563.00 > 169.00	3.730	3.727	0.003	1.000	6718		3.95(2.12-6.36)	112	163	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.886	3.883	0.003	1.000	97600	0.0221		93.9	2230	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.017	0.002	1.000	2848895	2.39		95.5	25147	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.020	-0.001	1.000	29913	0.0252		101	33.4	
613.00 > 169.00	4.019	4.020	-0.001	1.000	6518		4.59(2.13-6.40)	101	83.8	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.281	4.278	0.003	1.000	37004	0.0267		107	34.1	
663.00 > 169.00	4.281	4.278	0.003	1.000	11098		3.33(1.25-3.76)	107	130	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.511	4.513	-0.002	1.000	3701548	2.45		97.9	26989	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.513	0.008	1.002	9052	0.0243		97.4	86.8	
713.00 > 219.00	4.511	4.513	-0.002	1.000	5901		1.53(0.71-2.13)	97.4	99.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.913	4.918	-0.005	1.000	6179539	2.51		100	17318	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.922	4.920	0.002	1.002	111692	0.0254		102	37.2	
813.00 > 169.00	4.913	4.920	-0.007	1.000	18001		6.20(2.86-8.58)	102	160	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.262	5.268	-0.006	1.000	63194	0.0255		102	18.7	
913.00 > 169.00	5.262	5.268	-0.006	1.000	7131		8.86(3.83-11.48)	102	64.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:50:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d

Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N

Lims ID: IC L1 Full

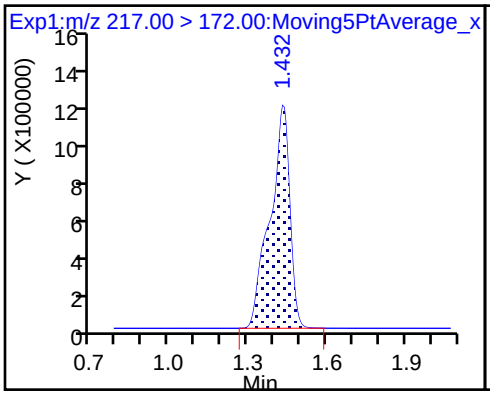
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

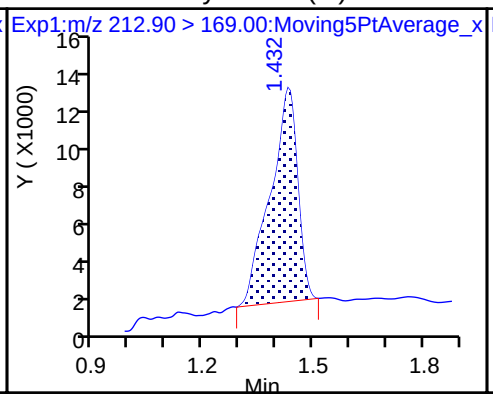
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

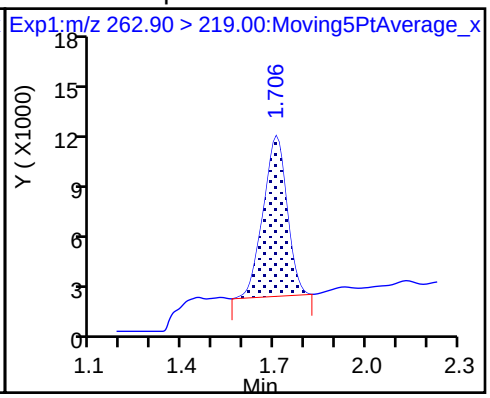
D 1 13C4 PFBA



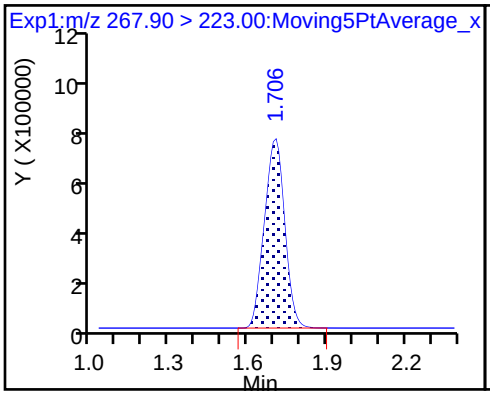
2 Perfluorobutyric acid (M)



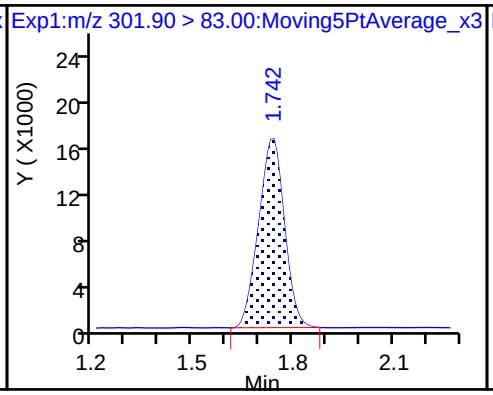
4 Perfluoropentanoic acid



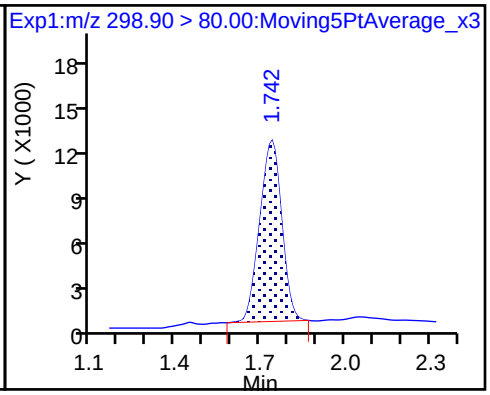
D 3 13C5-PFPeA



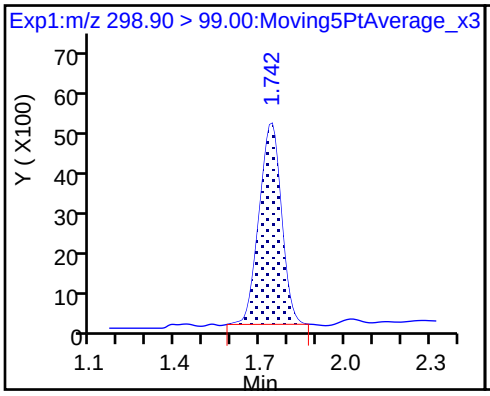
D 47 13C3-PFBS



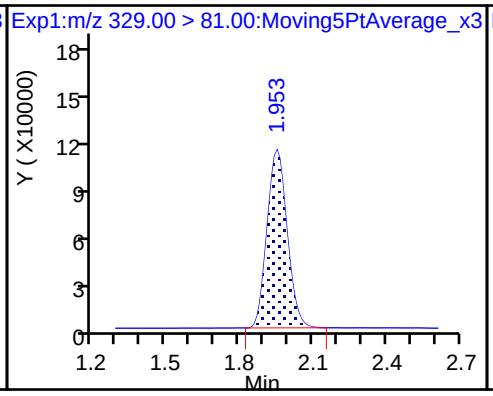
5 Perfluorobutanesulfonic acid



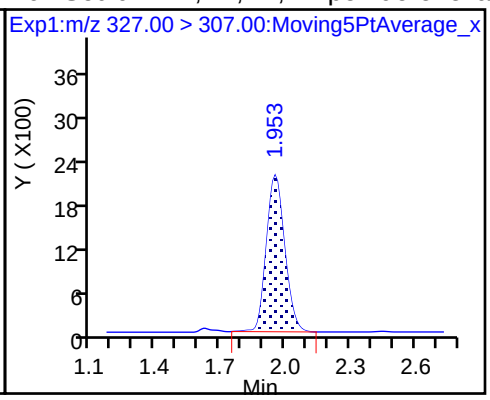
5 Perfluorobutanesulfonic acid



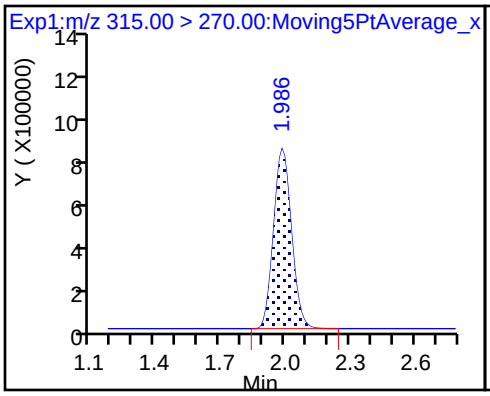
D 60 M2-4:2FTS



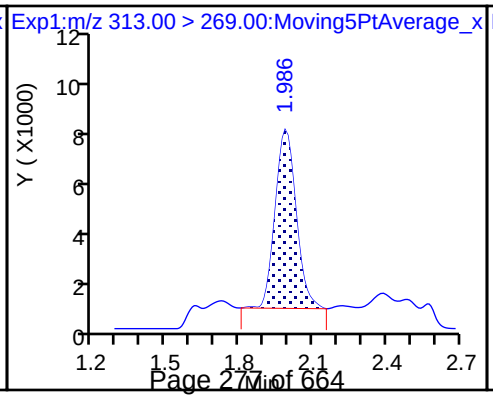
61 Sodium 1H,1H,2H,2H-perfluorohexane



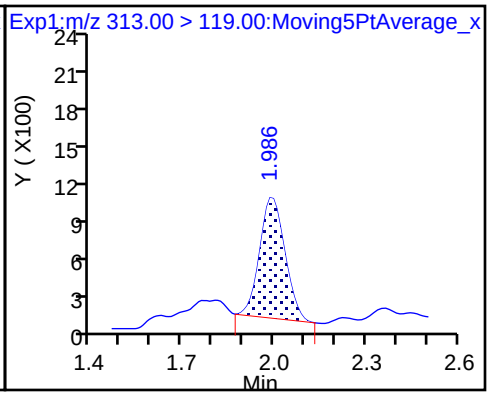
D 7 13C2 PFHxA



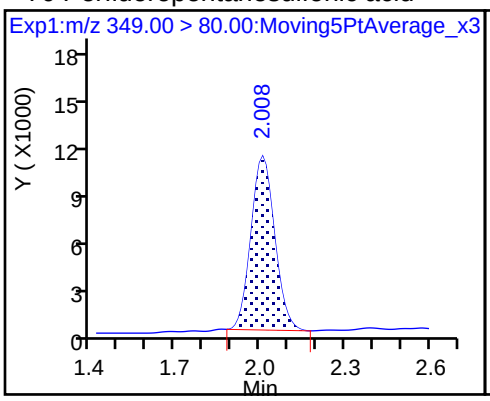
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid



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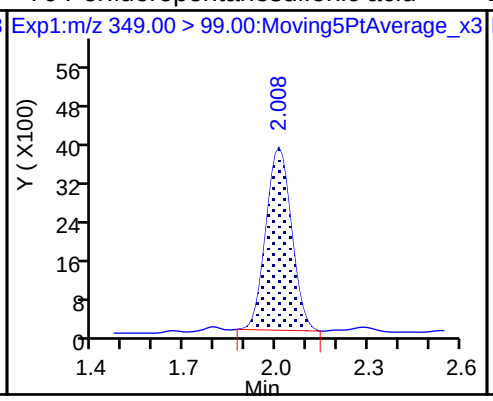
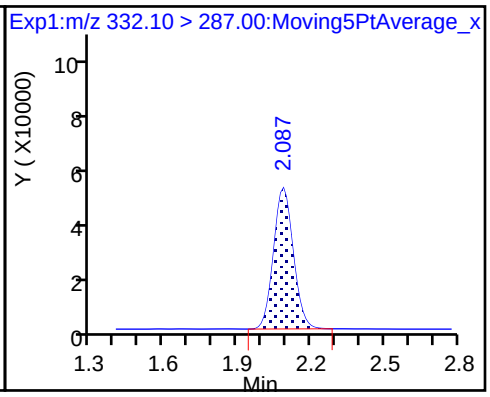
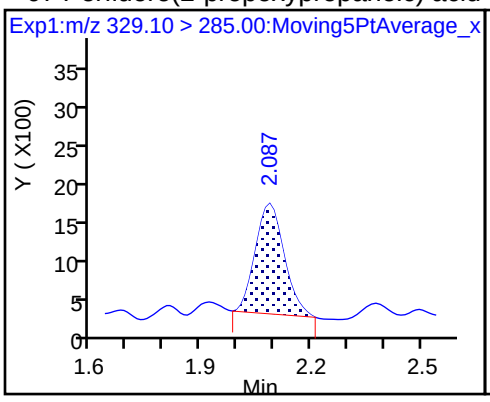


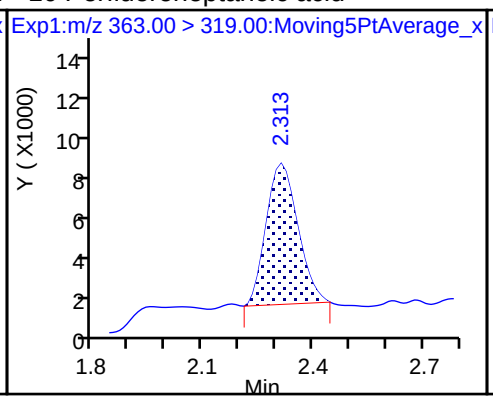
D 64 13C3 HFPO-DA



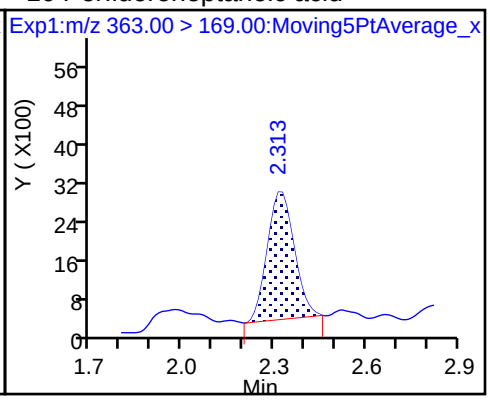
67 Perfluoro(2-propoxypropanoic) acid



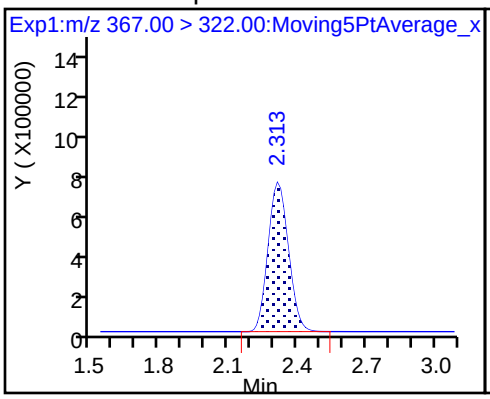
10 Perfluoroheptanoic acid



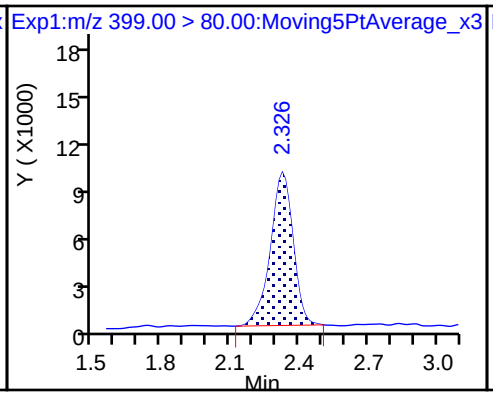
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid



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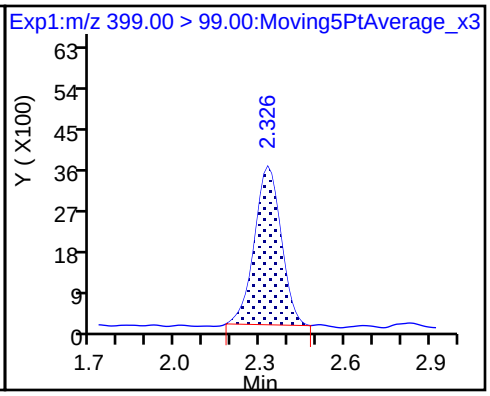
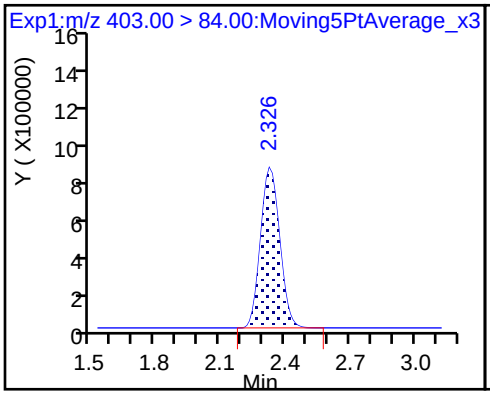
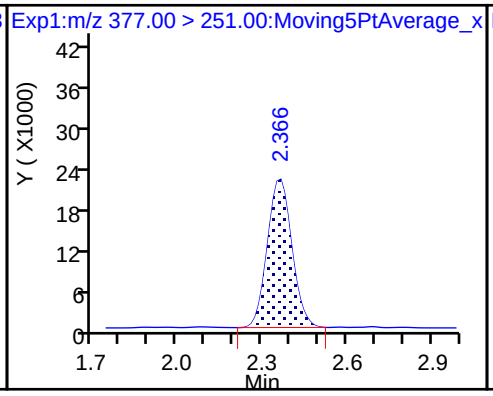


D 11 18O2 PFHxS



65 Adona



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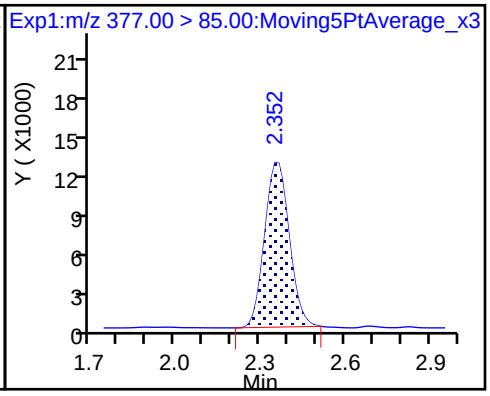
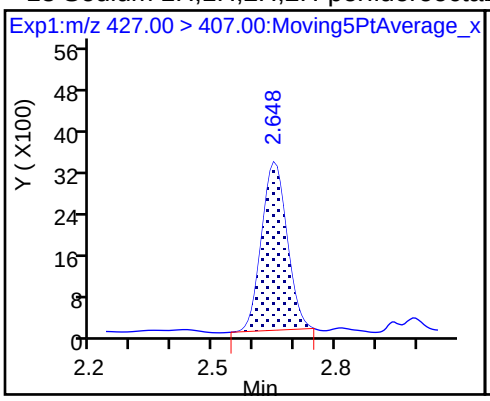
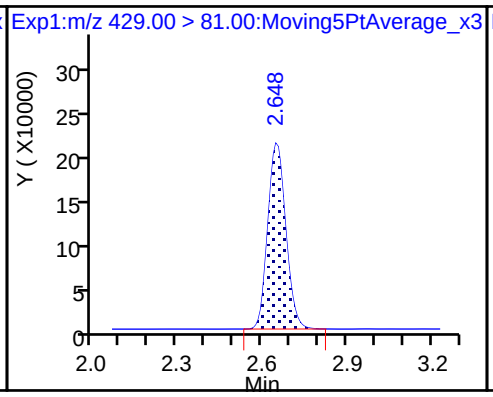


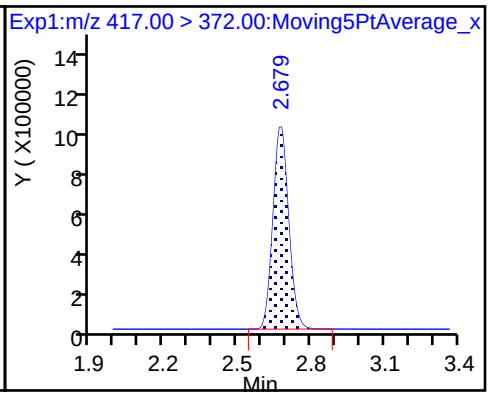
13 Sodium 1H,1H,2H,2H-perfluorooctane



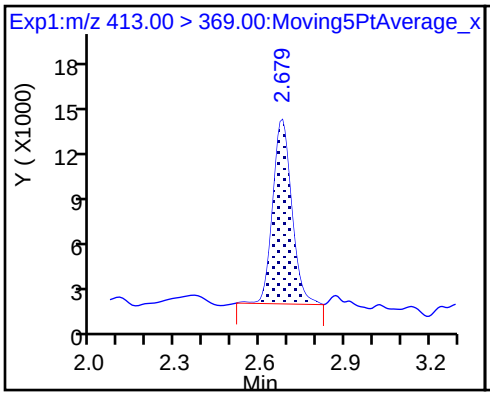
D 12 M2-6:2FTS



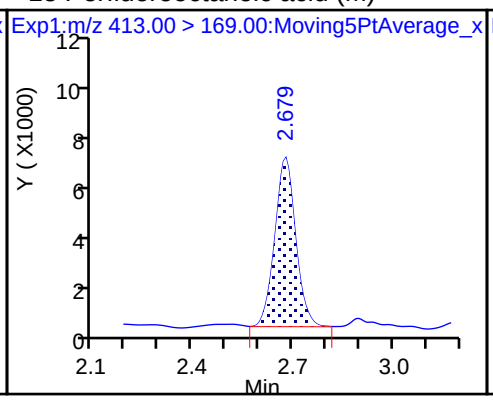
D 14 13C4 PFOA



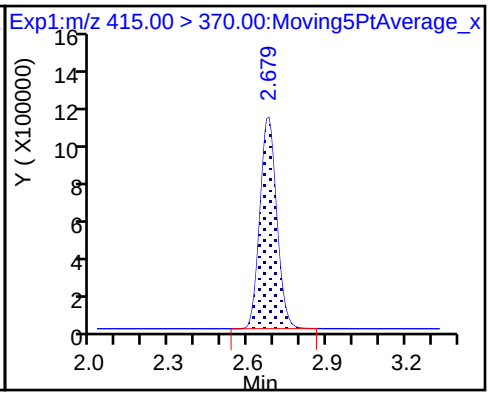
15 Perfluorooctanoic acid



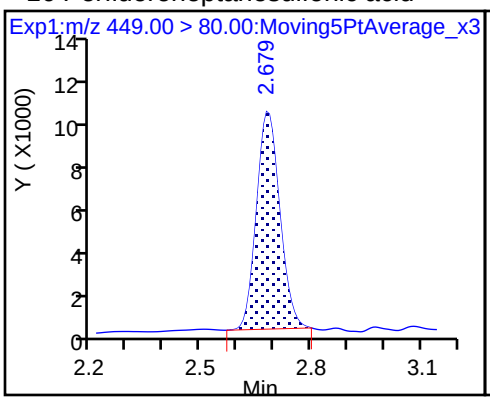
15 Perfluorooctanoic acid (M)



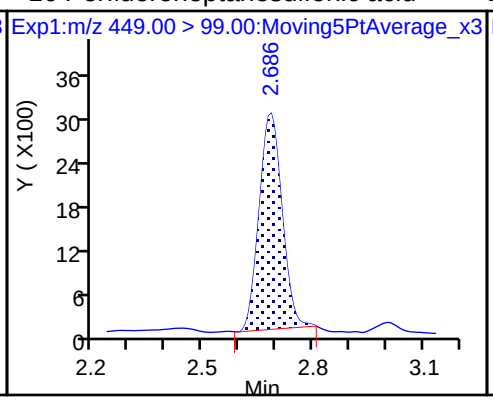
* 62 13C2-PFOA



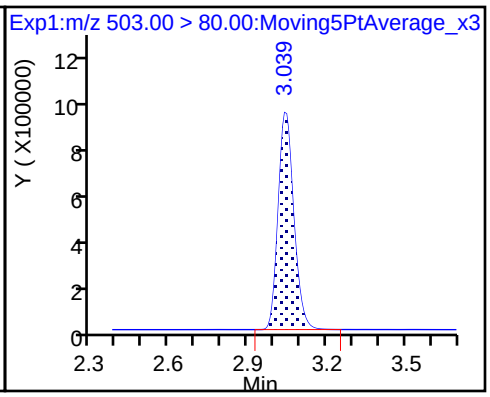
16 Perfluoroheptanesulfonic acid



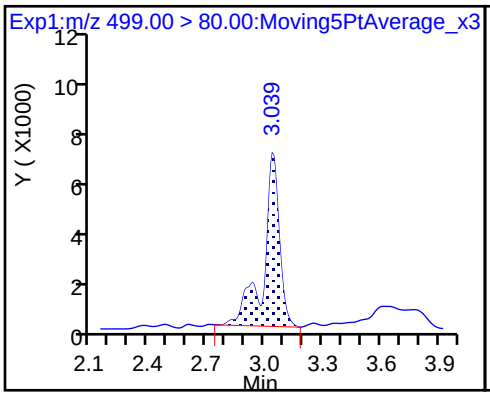
16 Perfluoroheptanesulfonic acid



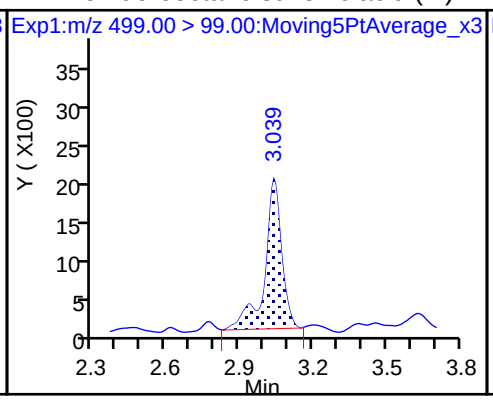
D 18 13C4 PFOS



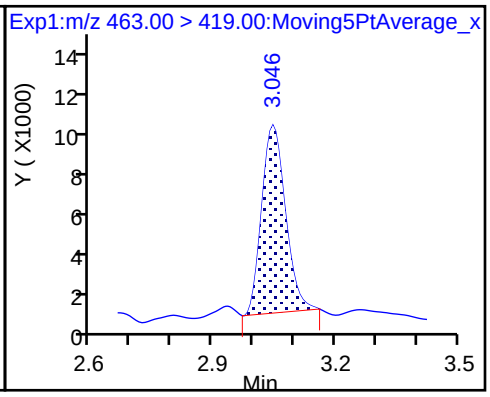
17 Perfluorooctane sulfonic acid



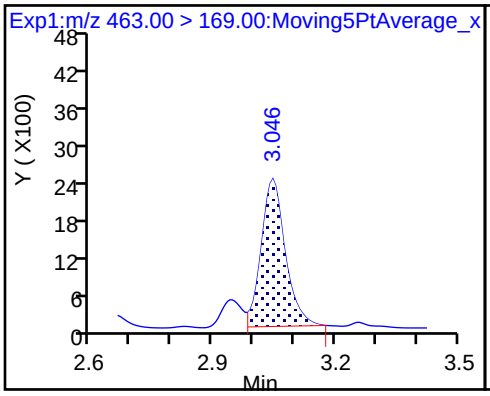
17 Perfluorooctane sulfonic acid (M)



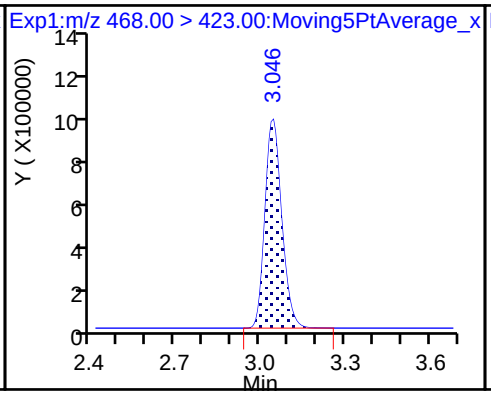
20 Perfluorononanoic acid



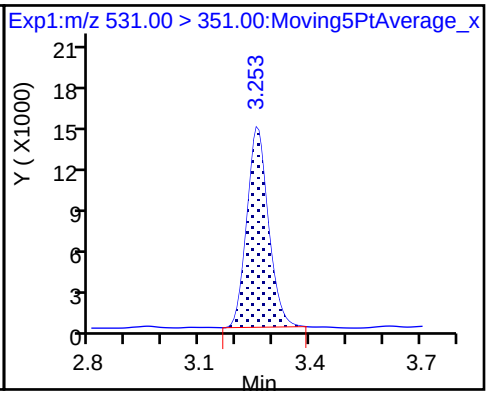
20 Perfluorononanoic acid



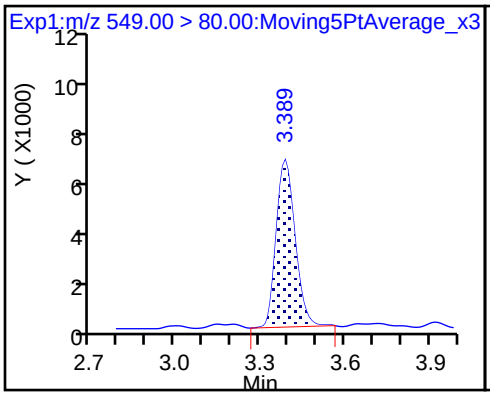
D 19 13C5 PFNA



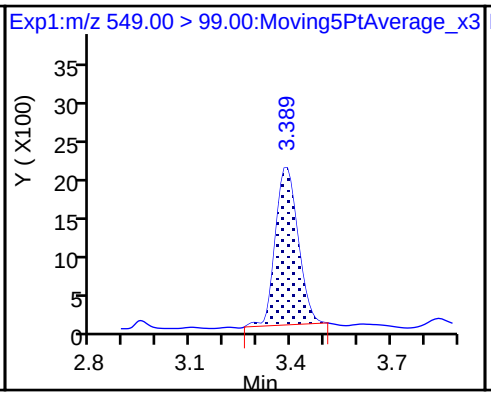
69 9-Chlorohexadecafluoro-3-oxanonane



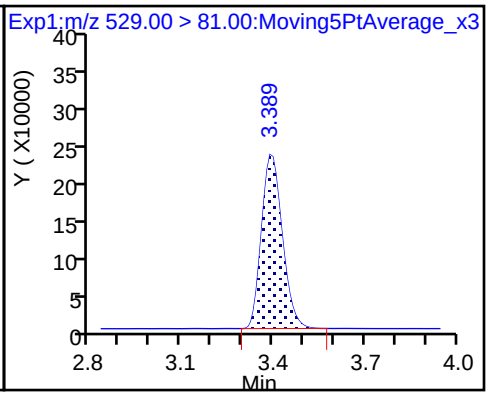
68 Perfluorononanesulfonic acid



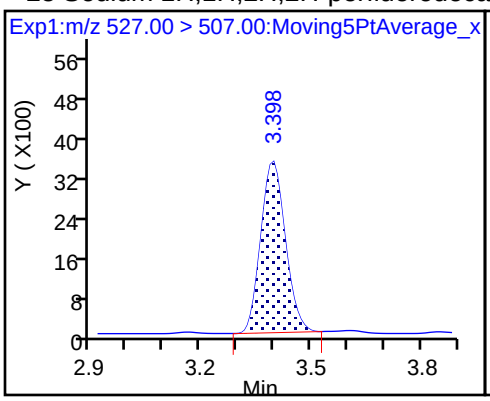
68 Perfluorononanesulfonic acid



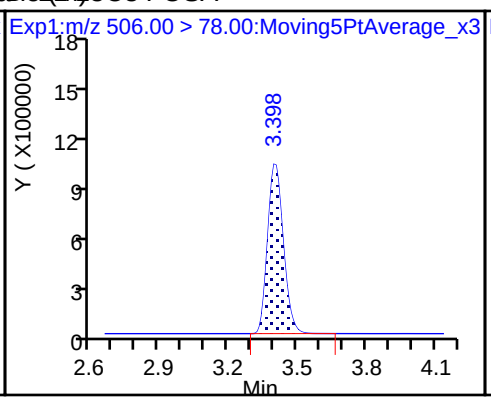
D 26 M2-8:2FTS



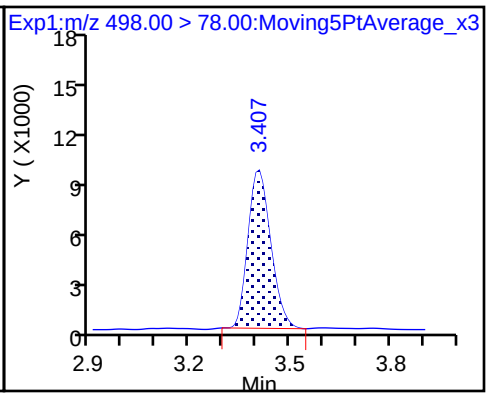
25 Sodium 1H,1H,2H,2H-perfluorodecane(1)



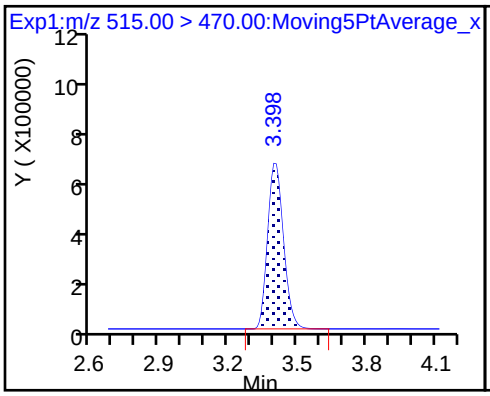
D 21 13C8 FOSA



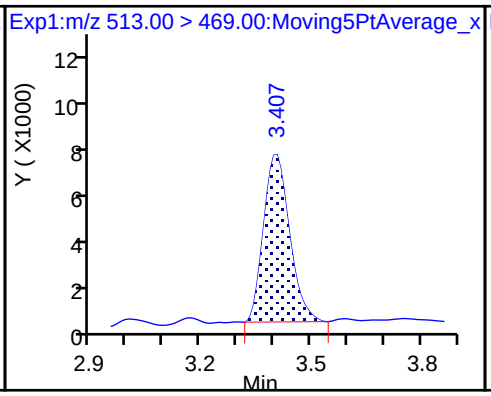
22 Perfluorooctane Sulfonamide



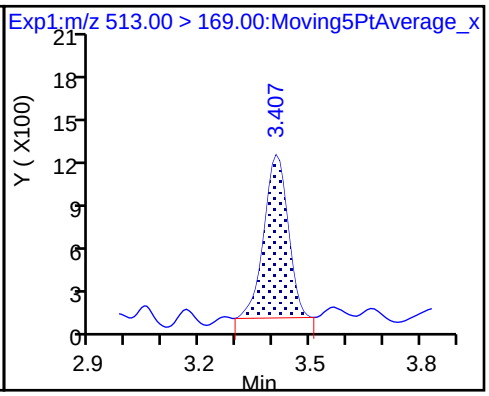
D 23 13C2 PFDA



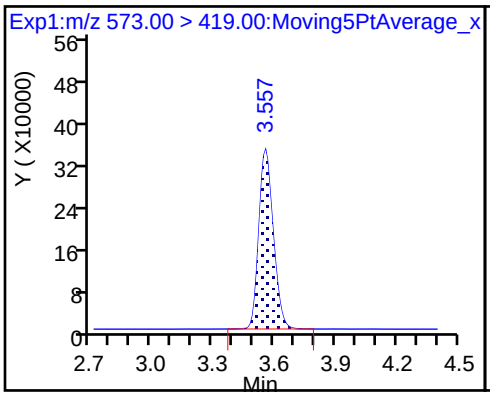
24 Perfluorodecanoic acid



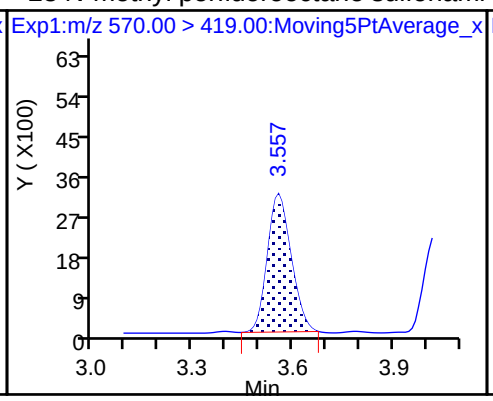
24 Perfluorodecanoic acid



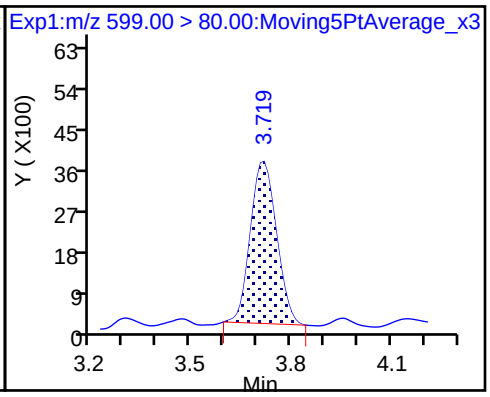
D 27 d3-NMeFOSAA



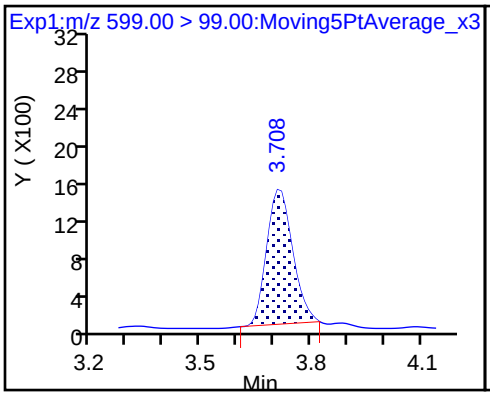
28 N-methyl perfluorooctane sulfonami



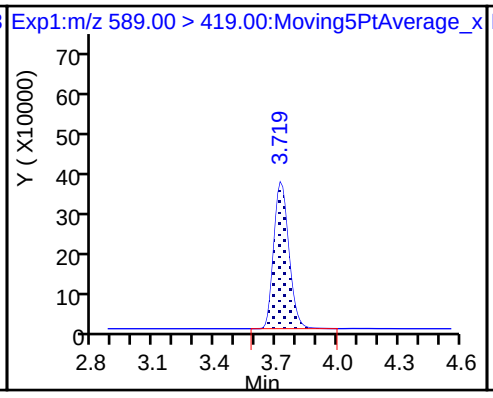
29 Perfluorodecane Sulfonic acid



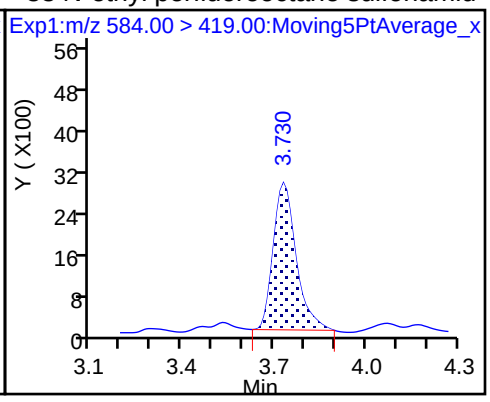
29 Perfluorodecane Sulfonic acid



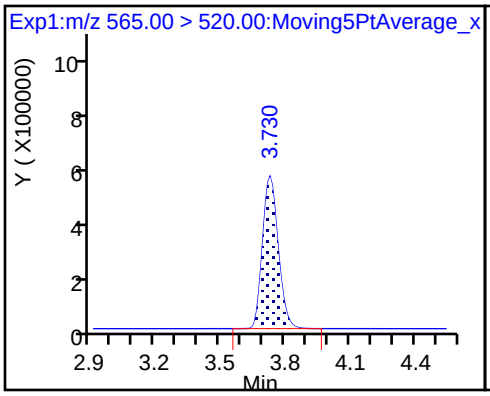
D 32 d5-NEtFOSAA



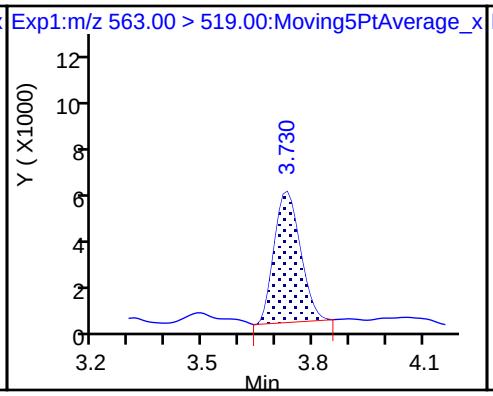
33 N-ethyl perfluorooctane sulfonamid



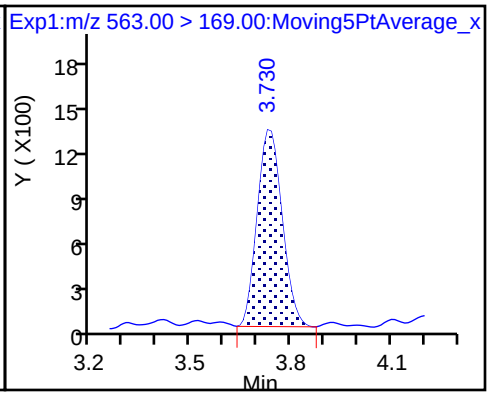
D 30 13C2 PFUnA



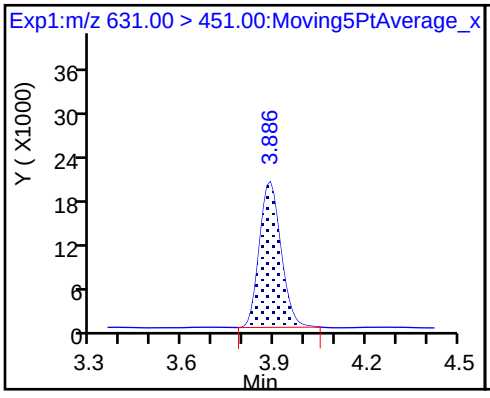
31 Perfluoroundecanoic acid



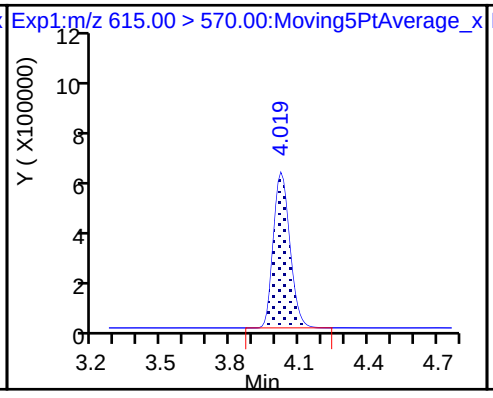
31 Perfluoroundecanoic acid



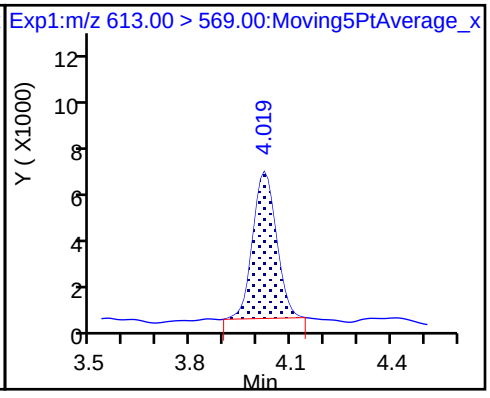
66 11-Chloroeicosafluoro-3-oxaundecan



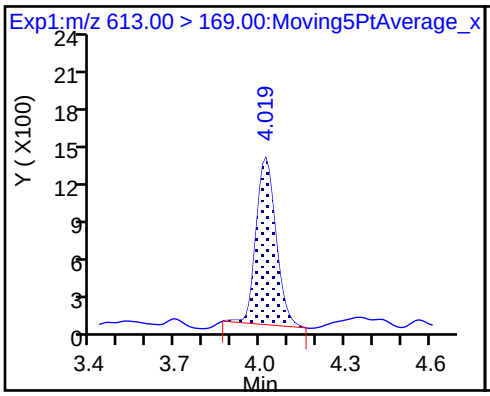
D 36 13C2 PFDoA



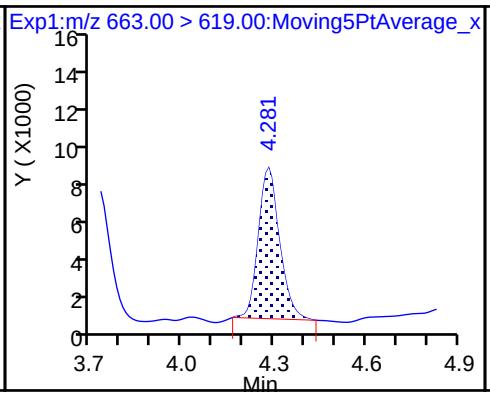
37 Perfluorododecanoic acid



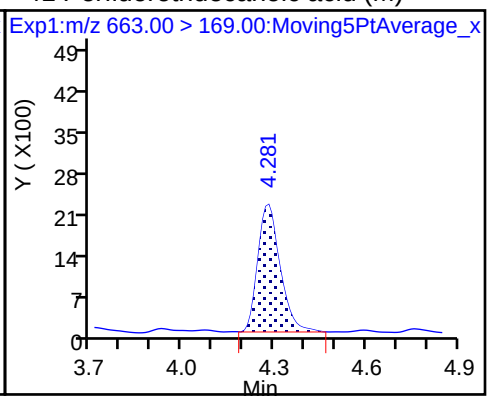
37 Perfluorododecanoic acid



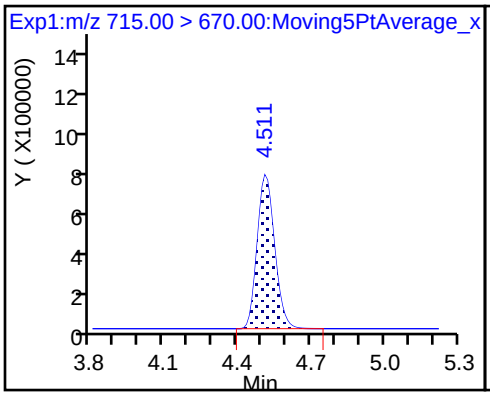
41 Perfluorotridecanoic acid



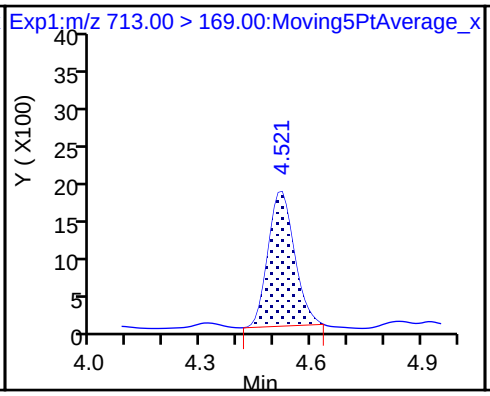
41 Perfluorotridecanoic acid (M)



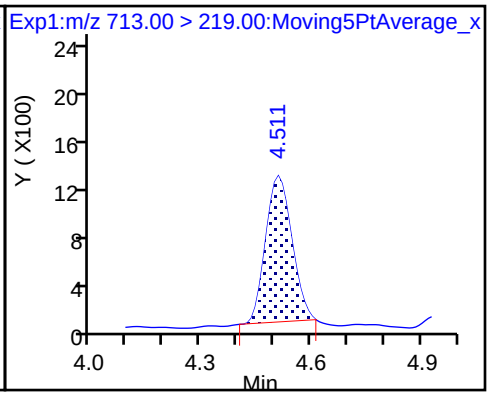
D 43 13C2-PFTeDA



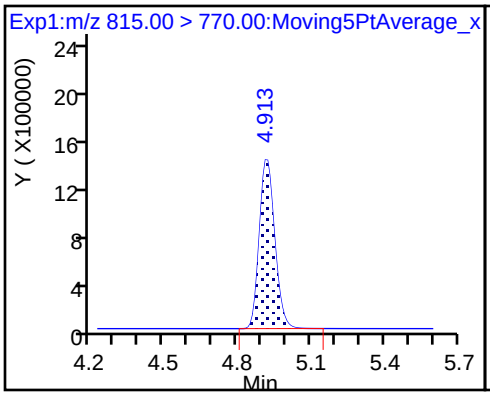
42 Perfluorotetradecanoic acid



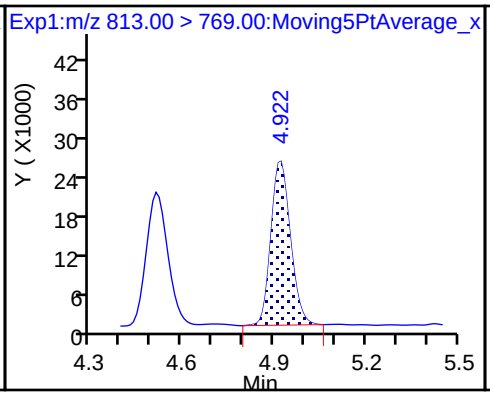
42 Perfluorotetradecanoic acid



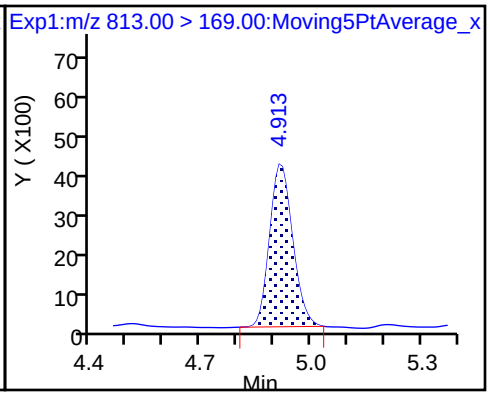
D 44 13C2-PFHxDA



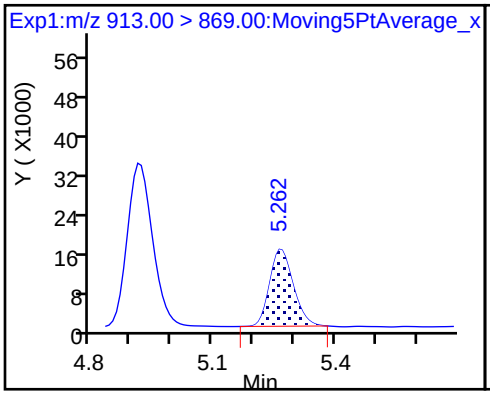
45 Perfluorohexadecanoic acid



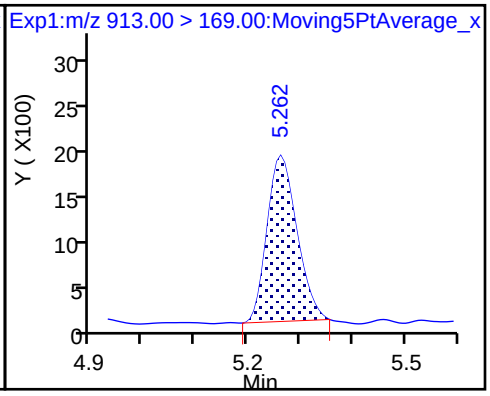
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

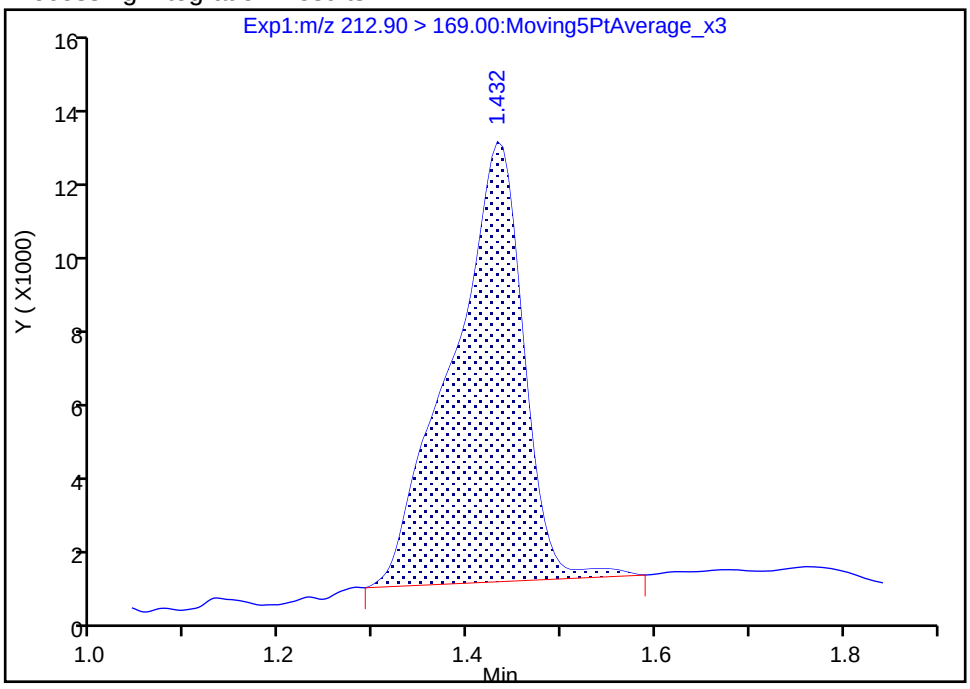
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

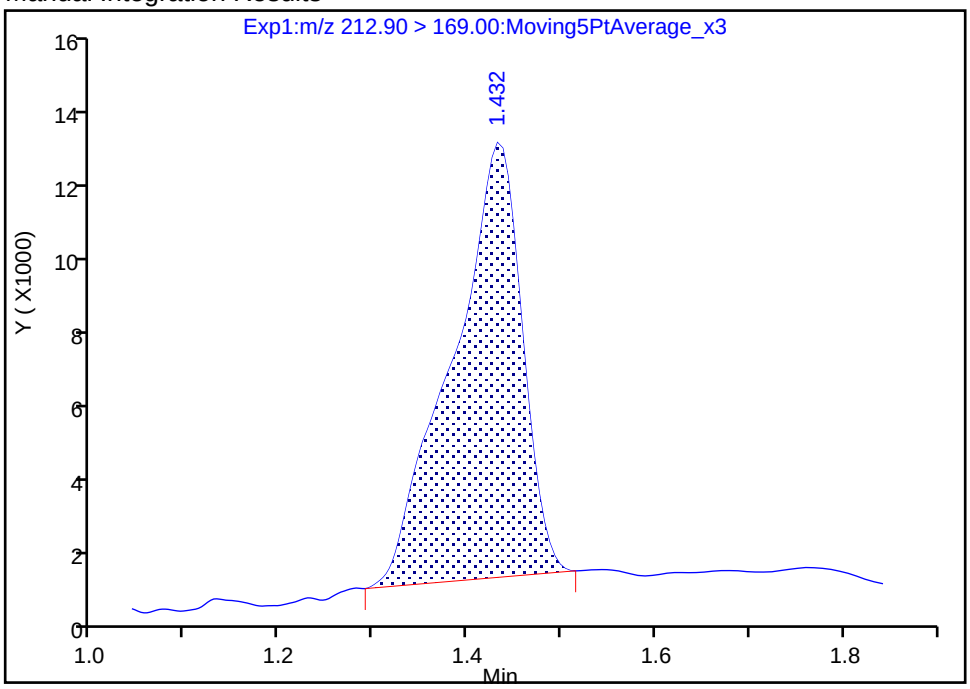
Processing Integration Results

RT: 1.43
Area: 58250
Amount: 0.025241
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 56172
Amount: 0.024466
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:46
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

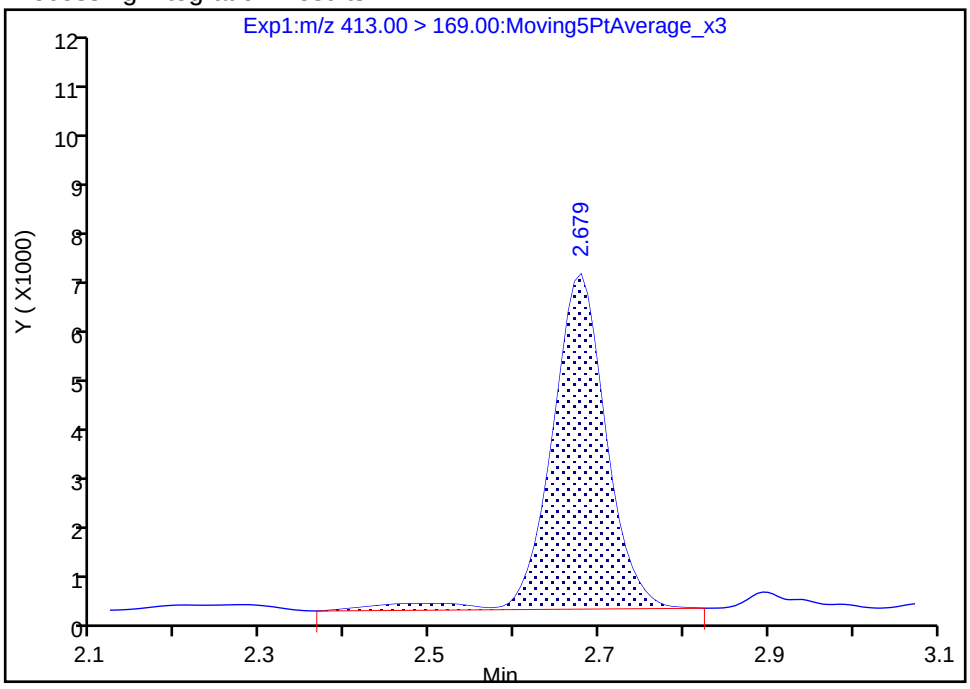
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

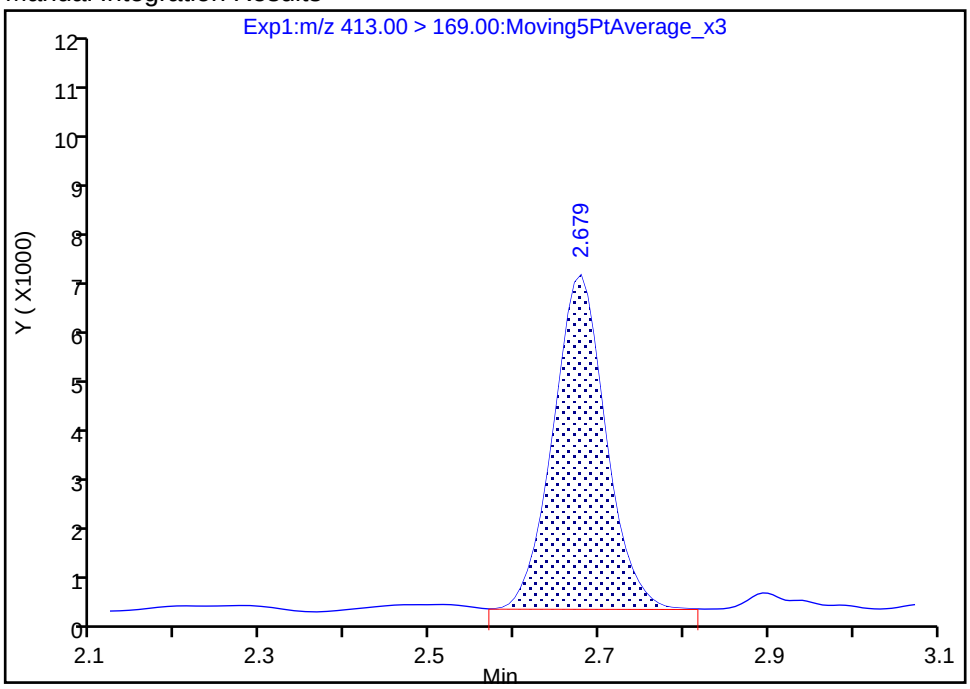
Processing Integration Results

RT: 2.68
Area: 30899
Amount: 0.026388
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 29641
Amount: 0.026388
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

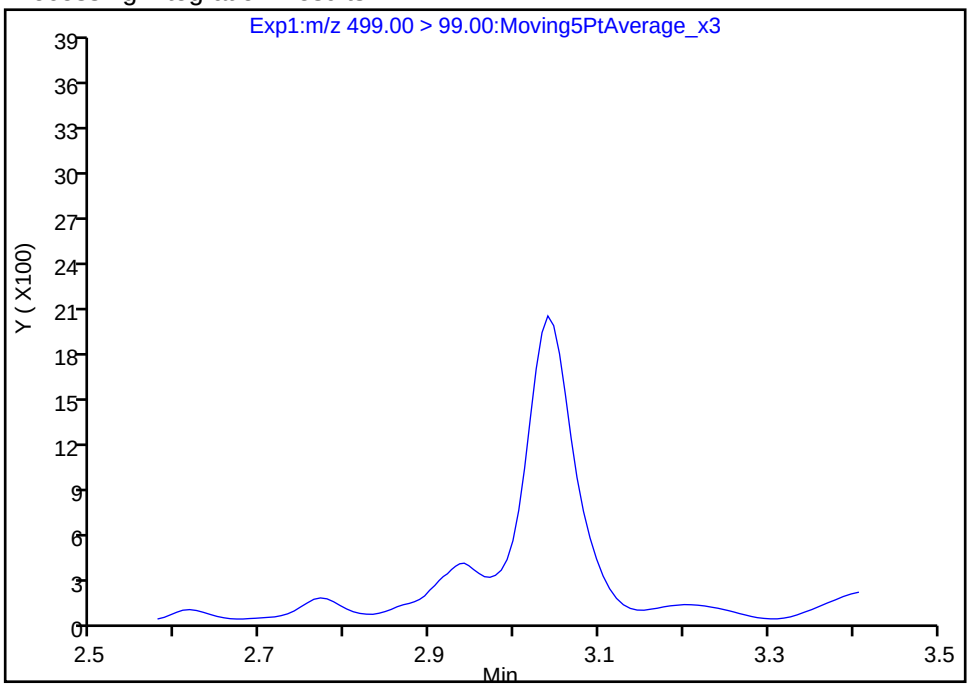
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

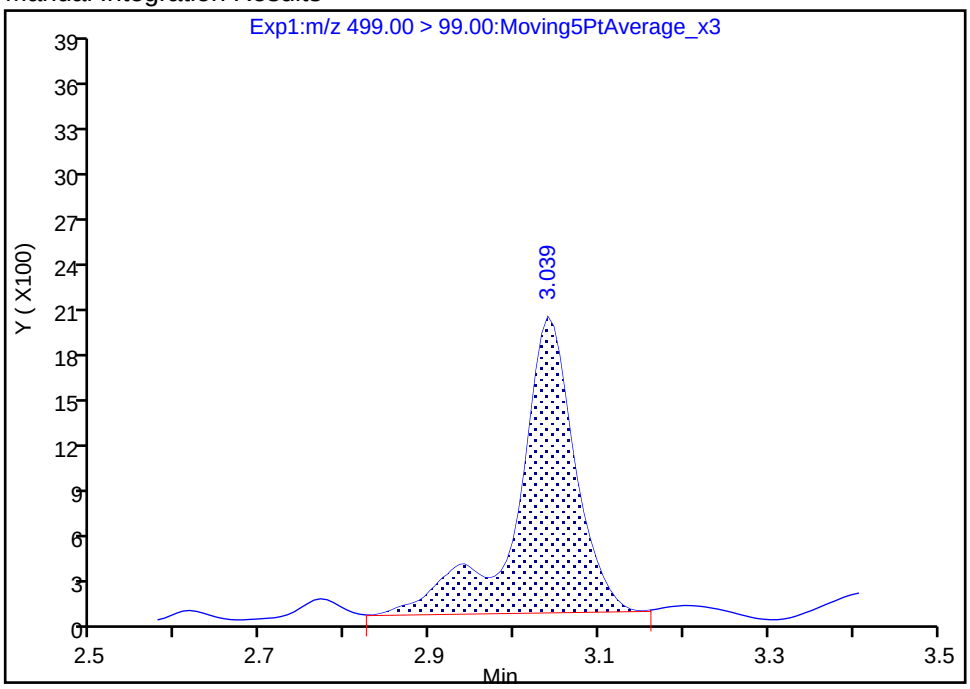
Processing Integration Results

RT: 3.04
Area: 0
Amount: 0.022562
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 9288
Amount: 0.022562
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:29
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

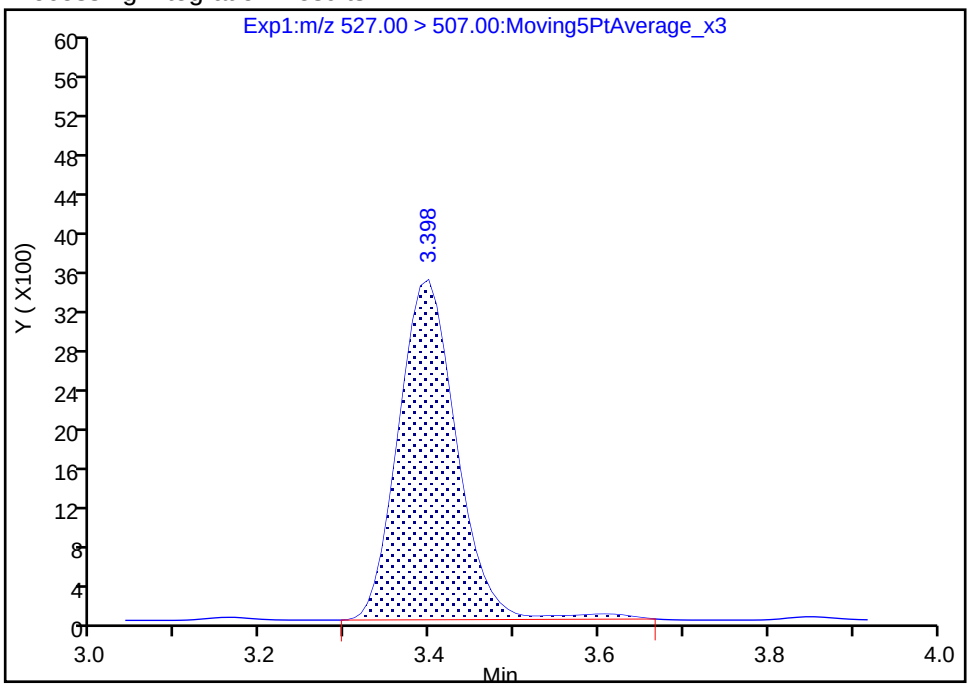
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

25 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

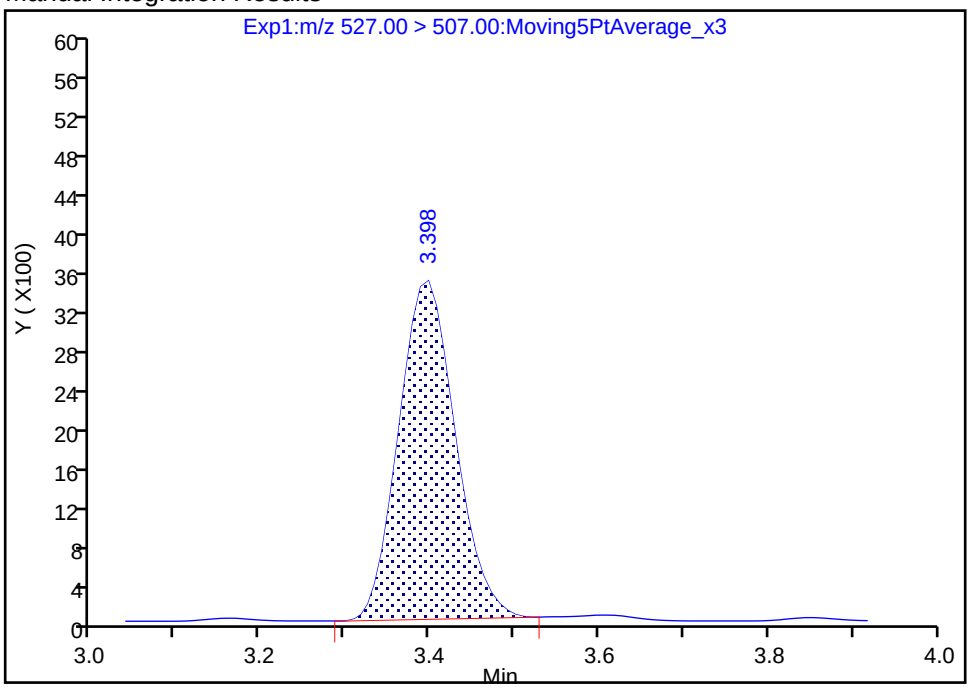
Processing Integration Results

RT: 3.40
Area: 16622
Amount: 0.028410
Amount Units: ng/ml



Manual Integration Results

RT: 3.40
Area: 16119
Amount: 0.027692
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:11:26
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

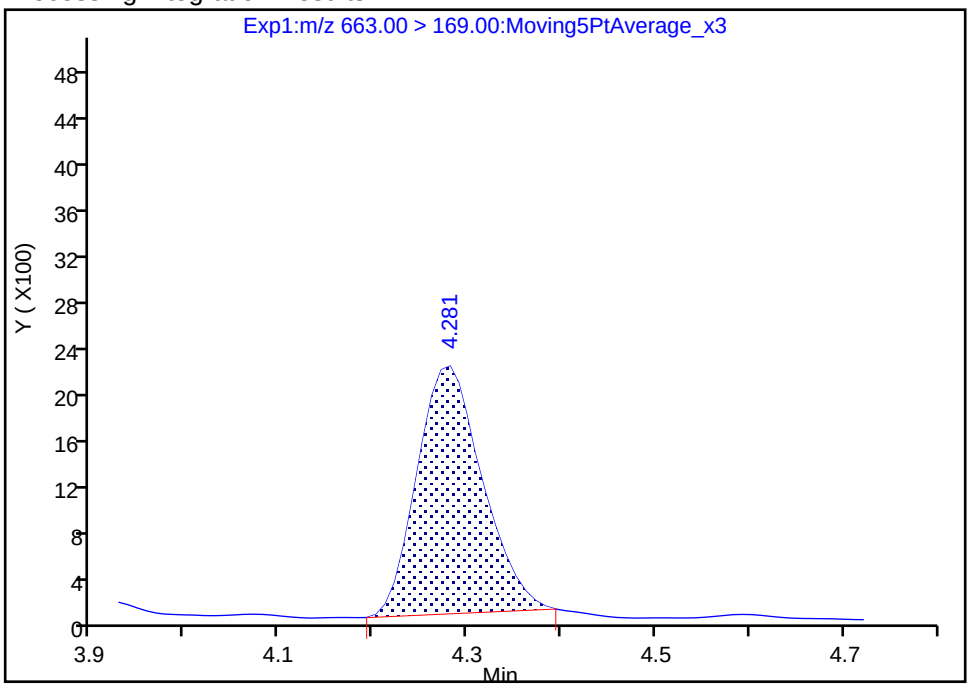
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 2

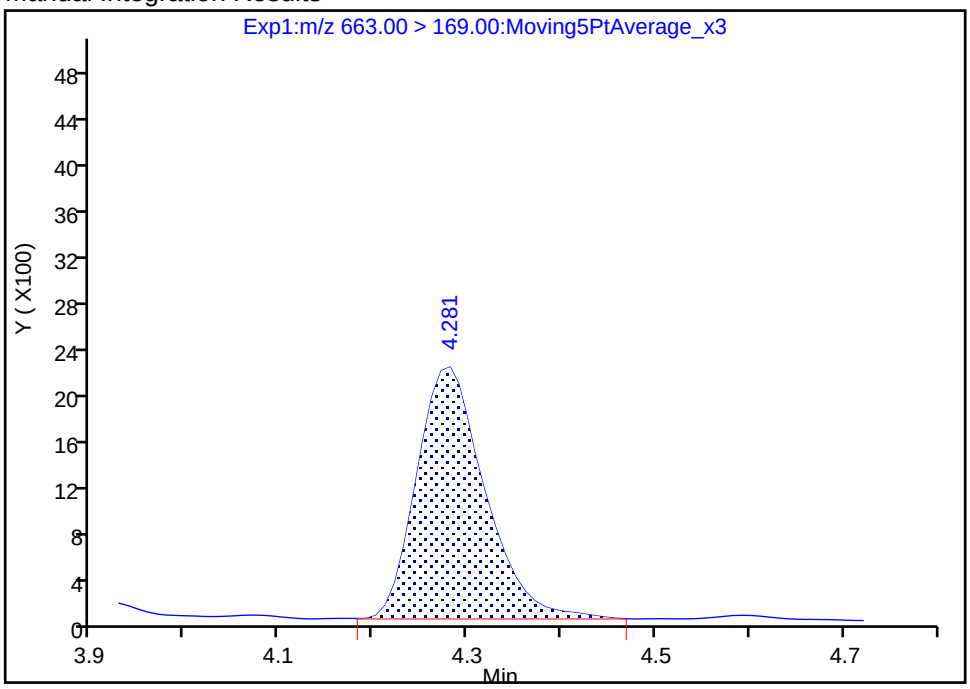
Processing Integration Results

RT: 4.28
Area: 10435
Amount: 0.026719
Amount Units: ng/ml



Manual Integration Results

RT: 4.28
Area: 11098
Amount: 0.026719
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:11:49
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-Apr-2018 18:47:28 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:01 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:13:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.431	0.005	1.000	6122262	2.47		98.6	45490	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.432	0.004	1.000	112834	0.0496		99.2	64.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.699	0.004	0.558	3926283	2.45		98.1	81057	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.699	0.004	1.000	95082	0.0508		102	82.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.735	0.004	1.000	82315	2.24		96.4	726	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.003	1.000	129549	0.0467		106	581	
298.90 > 99.00	1.739	1.736	0.003	1.000	54808		2.36(1.25-3.74)	106	750	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	28749	0.0506		108	1649	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	603123	2.29		98.2	6638	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.985	0.008	1.000	88785	0.0513		103	187	
313.00 > 119.00	1.993	1.985	0.008	1.000	8724		10.18(5.03-15.10)	103	121	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.985	0.008	1.000	4260718	2.41		96.3	104826	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.008	0.008	1.000	122406	0.0483		103	896	
349.00 > 99.00	2.004	2.008	-0.004	0.994	46264		2.65(1.36-4.07)	103	913	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	297607	2.72		109	6443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.087	0.008	1.005	13126	0.0396		79.2	93.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.314	0.007	1.000	4420246	2.57		103	71318	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.314	0.007	1.000	79218	0.0448		89.5	85.7	
363.00 > 169.00	2.321	2.314	0.007	1.000	35808		2.21(1.13-3.40)	89.5	164	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.323	-0.002	0.994	118037	0.0485		107	408	
399.00 > 99.00	2.334	2.323	0.011	1.000	37872		3.12(1.50-4.49)	107	437	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.327	0.007	1.000	5080567	2.39		101	118670	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	264804	0.0507		101	3382	
377.00 > 85.00	2.360	2.360	0.0	1.000	154875		1.71(0.84-2.53)	101	3689	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	829435	2.25		94.6	10696	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	32205	0.0545		115	547	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	4186198	2.45		97.8	105368	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4613805	2.50			88596	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	101372	0.0524		105	60.7	
413.00 > 169.00	2.675	2.674	0.001	1.000	56802		1.78(0.84-2.52)	105	205	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	93755	0.0468		98.4	815	
449.00 > 99.00	2.683	2.680	0.003	1.000	23808		3.94(1.94-5.82)	98.4	554	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3602676	2.42		101	24509	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.043	3.042	0.001	1.000	74043	0.0452		97.3	267	
499.00 > 99.00	3.050	3.042	0.008	1.002	15924		4.65(2.31-6.93)	97.3	249	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.043	0.007	1.000	81721	0.0531		106	203	
463.00 > 169.00	3.050	3.043	0.007	1.000	20435		4.00(1.90-5.69)	106	366	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3691890	2.51		100	88911	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	130088	0.0458		98.2	3608	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.395	3.388	0.007	1.000	58744	0.0488		102	794	
549.00 > 99.00	3.395	3.388	0.007	1.000	21166		2.78(1.33-3.97)	102	527	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	1101099	2.48		103	10682	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	27294	0.0469		97.9	1136	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4658336	2.51		100	52005	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	97271	0.0516		103	2312	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	2912736	2.36		94.2	67644	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	64415	0.0536		107	275	
513.00 > 169.00	3.404	3.402	0.002	1.000	11191		5.76(2.36-7.09)	107	302	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1708589	2.44		97.5	20700	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.563	3.558	0.005	1.003	30316	0.0445		89.0	308	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	44930	0.0459		95.2	493	
599.00 > 99.00	3.716	3.715	0.001	1.000	14514		3.10(1.39-4.16)	95.2	960	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.722	0.005	1.000	1730407	2.50		100	16886	
D 30 13C2 PFUnA										
565.00 > 520.00	3.727	3.727	0.0	1.000	2662627	2.50		99.8	58782	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.727	3.727	0.0	1.000	34358	0.0531		106	684	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.727	0.010	1.003	48726	0.0541		108	200	
563.00 > 169.00	3.727	3.727	0.0	1.000	13759		3.54(2.12-6.36)	108	342	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	214741	0.0489		104	3908	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.017	0.010	1.000	2928766	2.54		102	34702	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.027	4.020	0.007	1.000	56140	0.0460		91.9	63.9	
613.00 > 169.00	4.027	4.020	0.007	1.000	16582		3.39(2.13-6.40)	91.9	256	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.278	0.001	1.000	70835	0.0498		99.5	65.7	
663.00 > 169.00	4.279	4.278	0.001	1.000	22777		3.11(1.25-3.76)	99.5	277	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.520	4.513	0.007	1.000	3578927	2.45		98.0	23308	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.510	4.513	-0.003	0.998	19373	0.0539		108	235	
713.00 > 219.00	4.510	4.513	-0.003	0.998	13443		1.44(0.71-2.13)	108	289	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.918	0.003	1.000	5873165	2.47		98.8	20125	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.920	0.001	1.000	156018	0.0479		95.7	51.2	
813.00 > 169.00	4.921	4.920	0.001	1.000	25268		6.17(2.86-8.58)	95.7	222	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.268	0.001	1.000	116814	0.0495		99.0	34.4	
913.00 > 169.00	5.269	5.268	0.001	1.000	14479		8.07(3.83-11.48)	99.0	141	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:02 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d

Injection Date: 10-Apr-2018 18:47:28 Instrument ID: A8_N

Lims ID: IC L2 Full

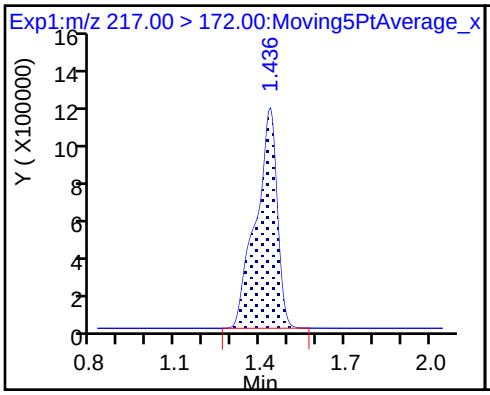
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

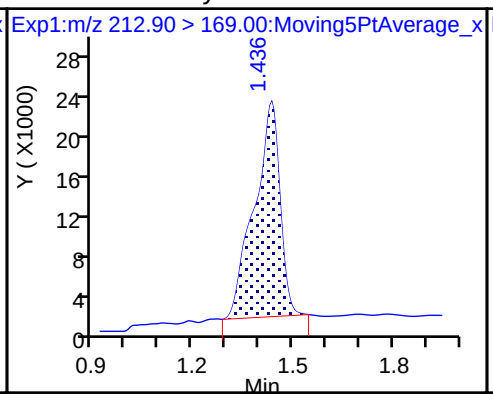
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

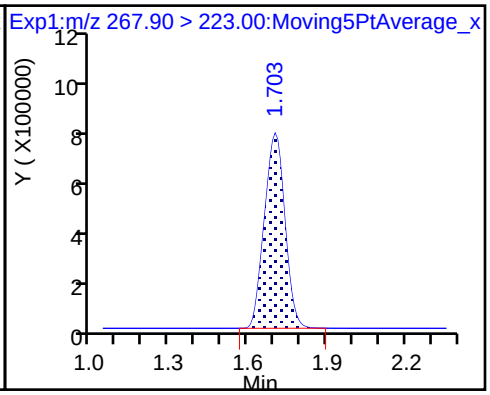
D 1 13C4 PFBA



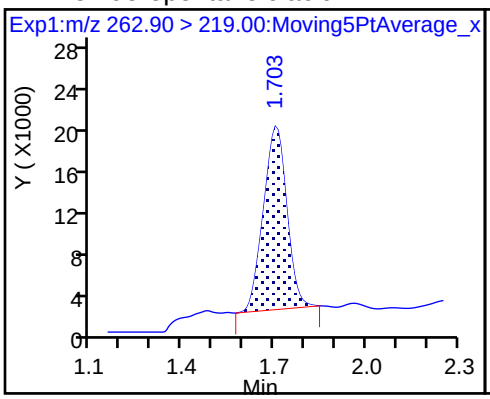
2 Perfluorobutyric acid



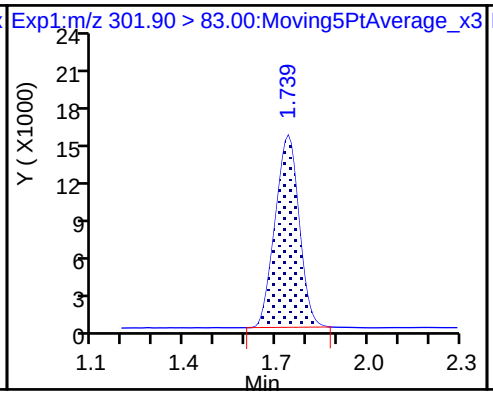
D 3 13C5-PFPeA



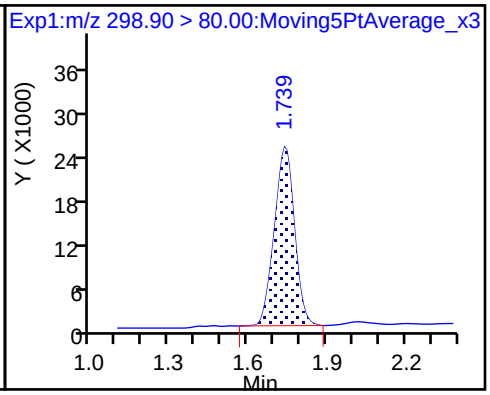
4 Perfluoropentanoic acid



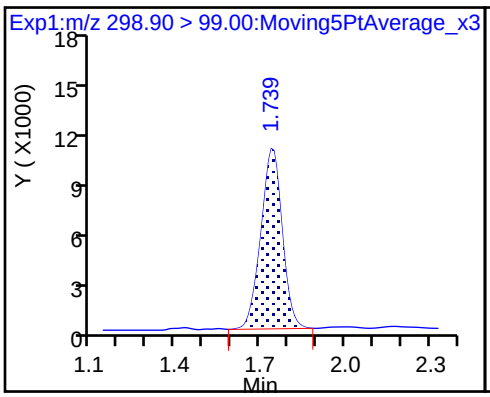
D 47 13C3-PFBS



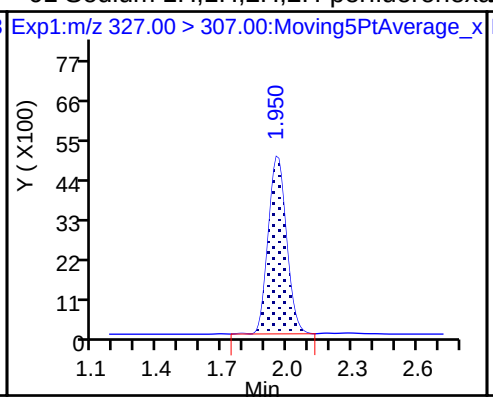
5 Perfluorobutanesulfonic acid



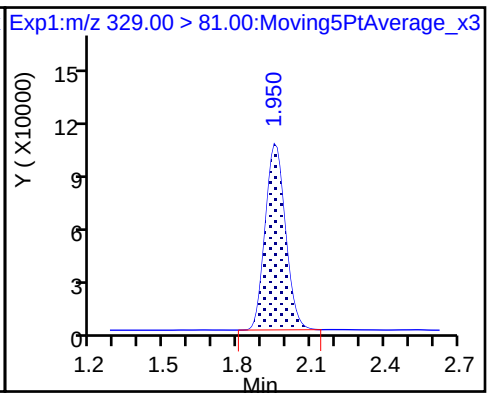
5 Perfluorobutanesulfonic acid



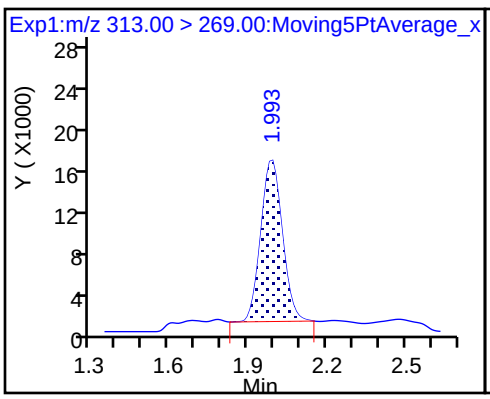
61 Sodium 1H,1H,2H,2H-perfluorohexane



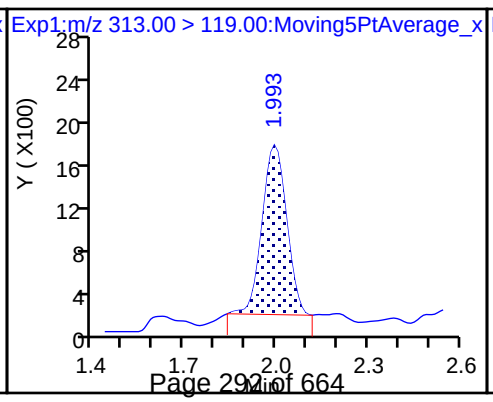
D 60 M2-4:2FTS



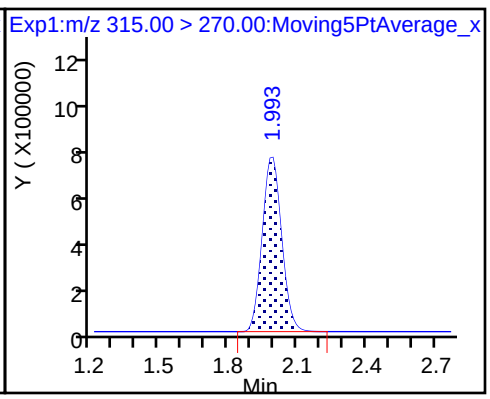
6 Perfluorohexanoic acid



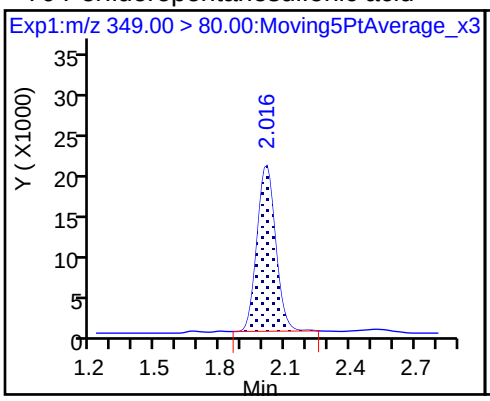
6 Perfluorohexanoic acid



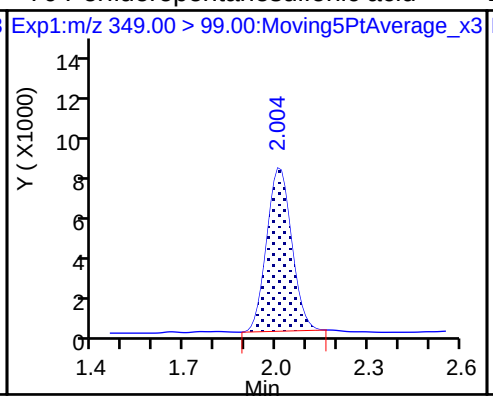
D 7 13C2 PFHxA



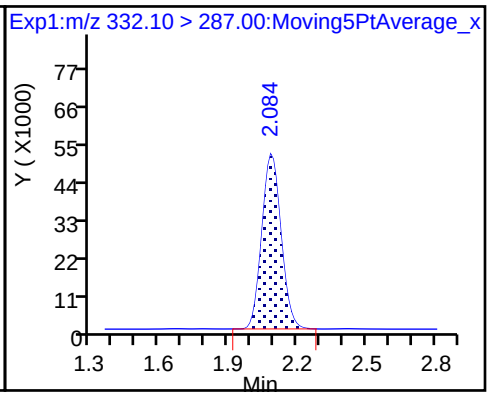
70 Perfluoropentanesulfonic acid



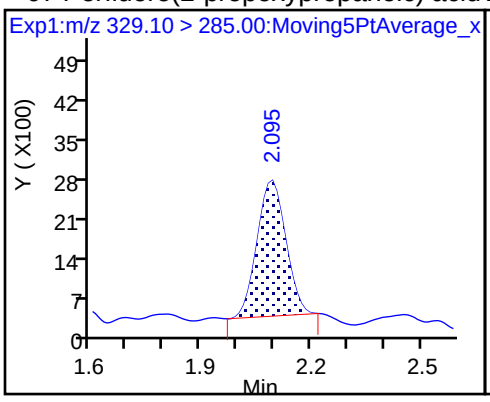
70 Perfluoropentanesulfonic acid



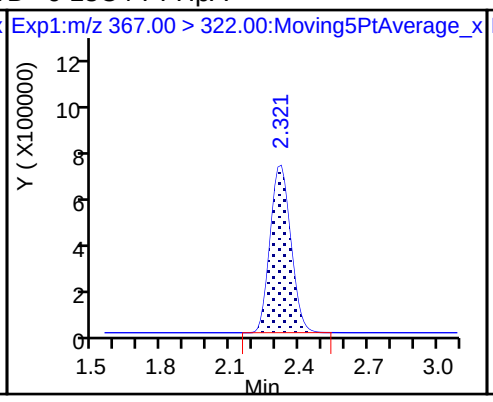
D 64 13C3 HFPO-DA



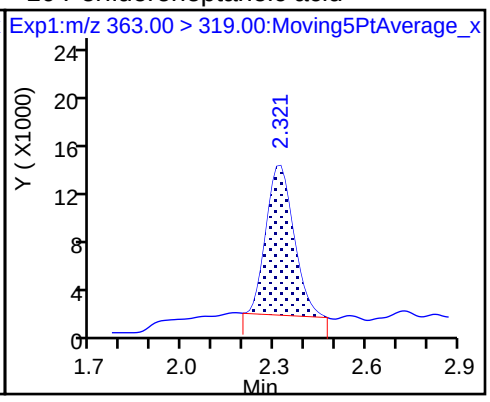
67 Perfluoro(2-propoxypropanoic) acid



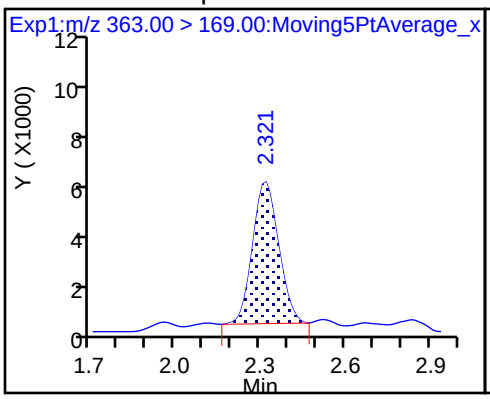
D 9 13C4-PFHpA



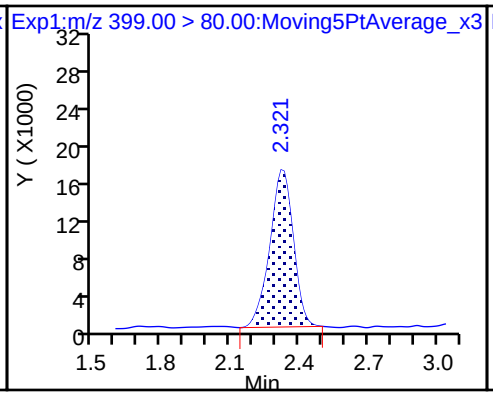
10 Perfluoroheptanoic acid



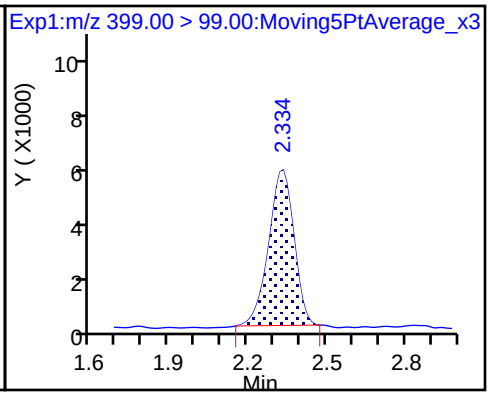
10 Perfluoroheptanoic acid



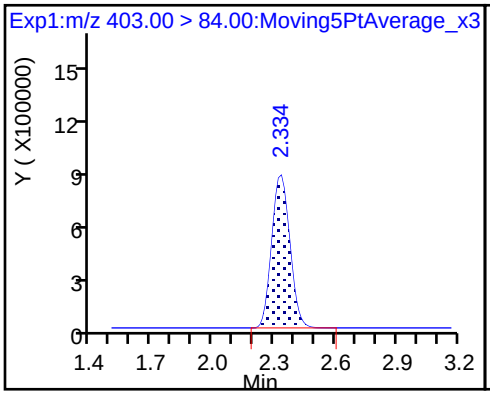
8 Perfluorohexanesulfonic acid



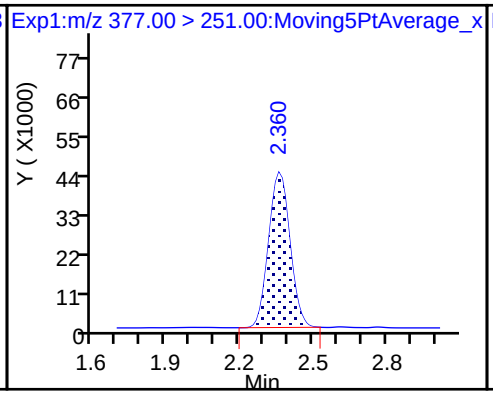
8 Perfluorohexanesulfonic acid



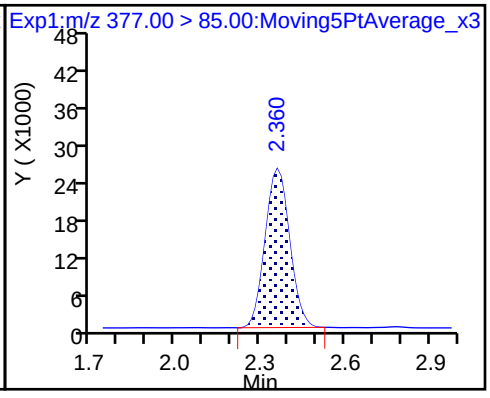
D 11 18O2 PFHxS



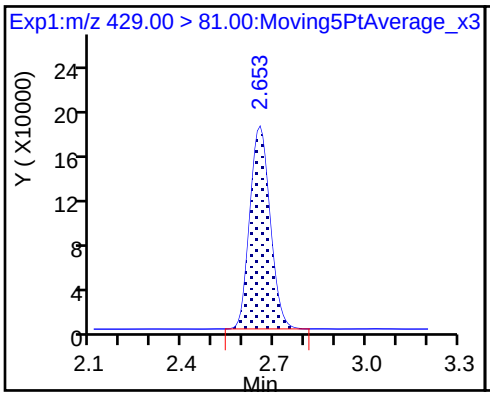
65 Adona



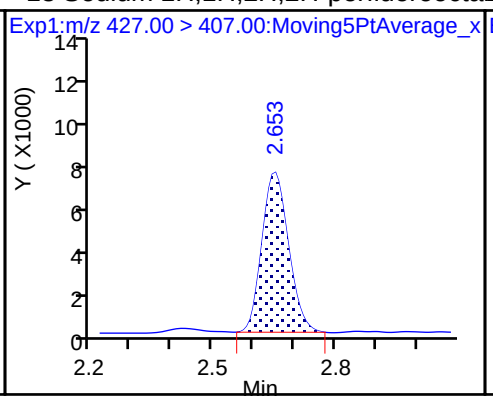
65 Adona



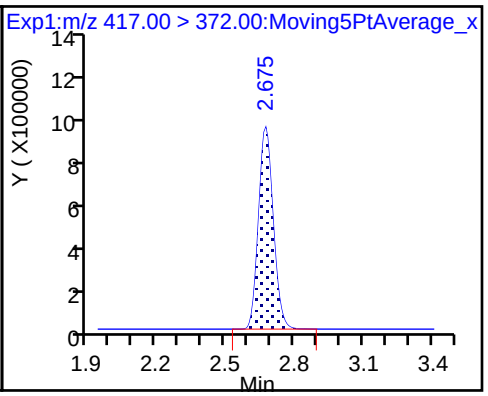
D 12 M2-6:2FTS



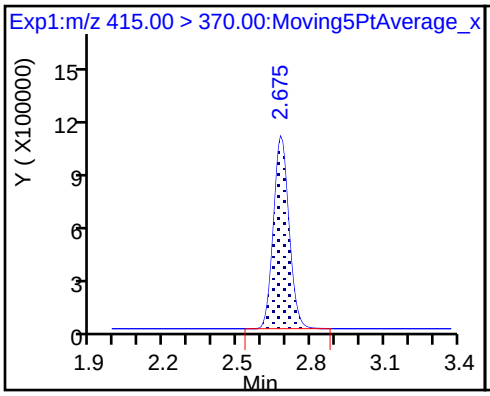
13 Sodium 1H,1H,2H,2H-perfluorooctane



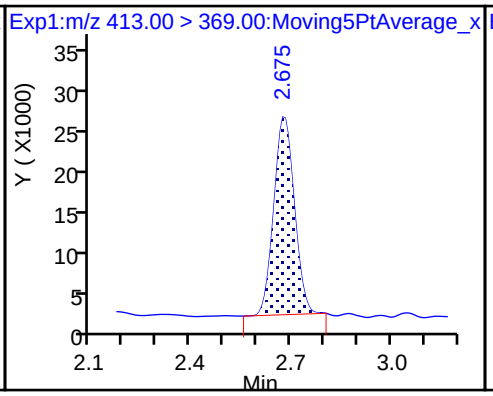
D 14 13C4 PFOA



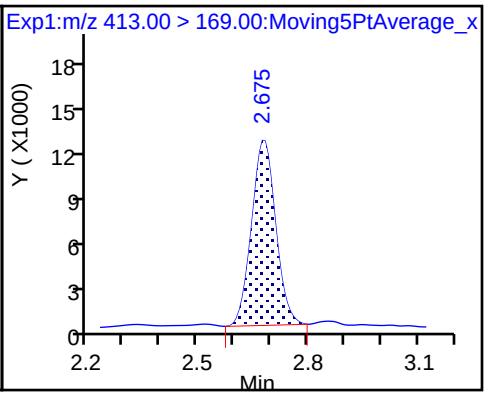
* 62 13C2-PFOA



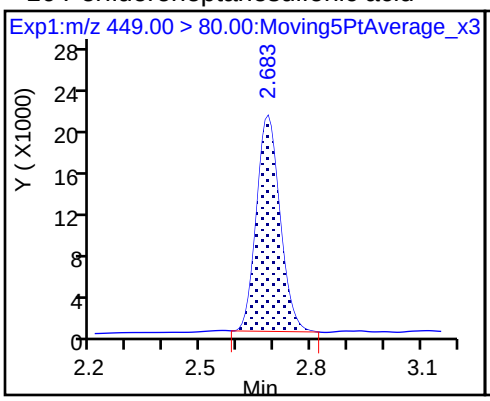
15 Perfluorooctanoic acid



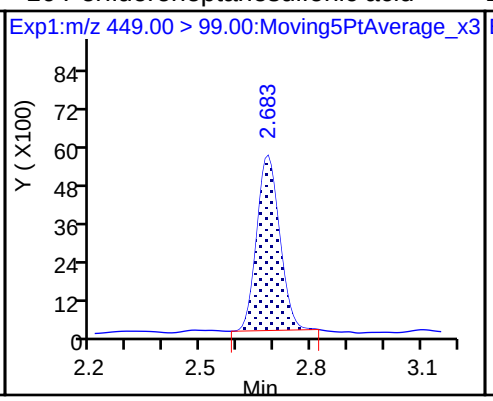
15 Perfluorooctanoic acid



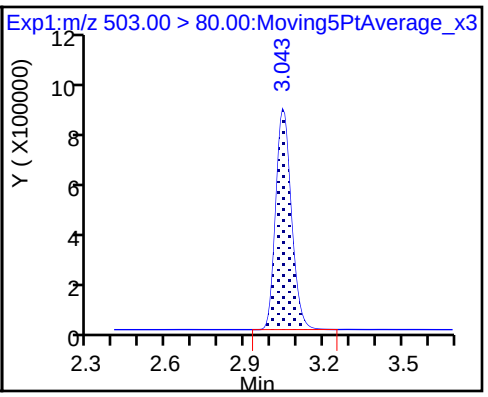
16 Perfluoroheptanesulfonic acid



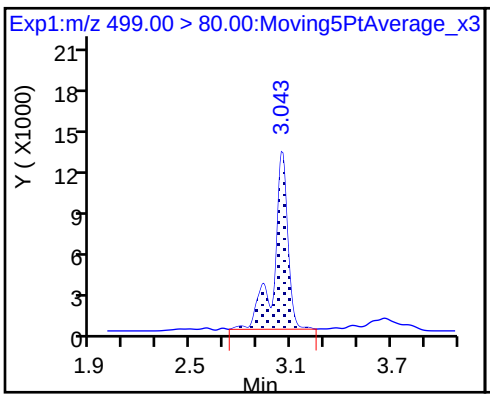
16 Perfluoroheptanesulfonic acid



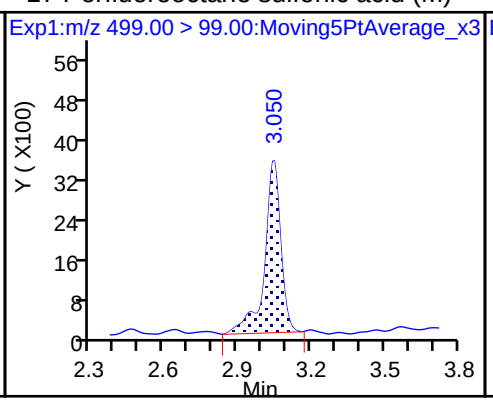
D 18 13C4 PFOS



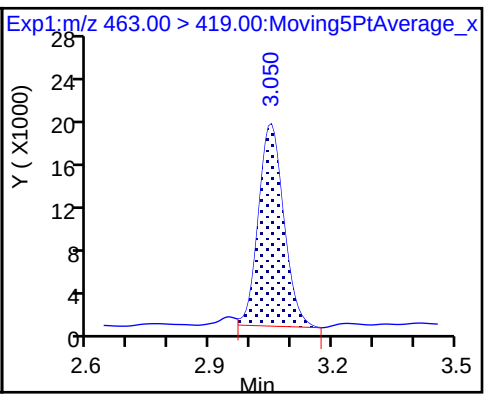
17 Perfluorooctane sulfonic acid



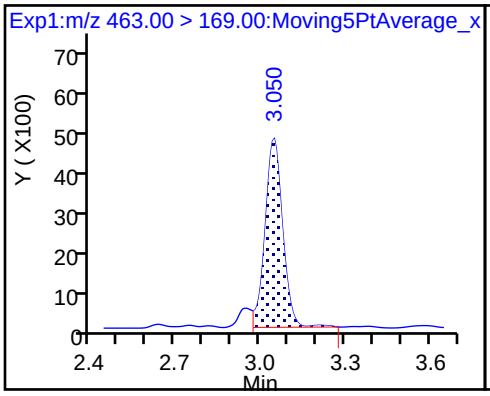
17 Perfluorooctane sulfonic acid (M)



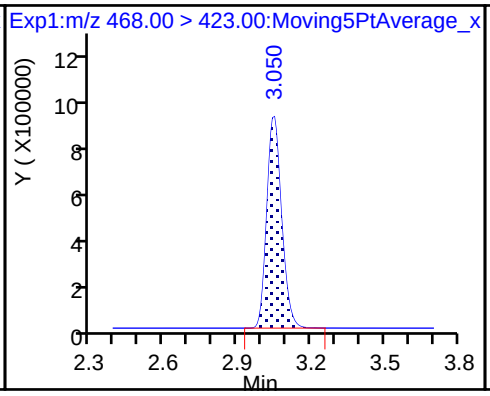
20 Perfluorononanoic acid



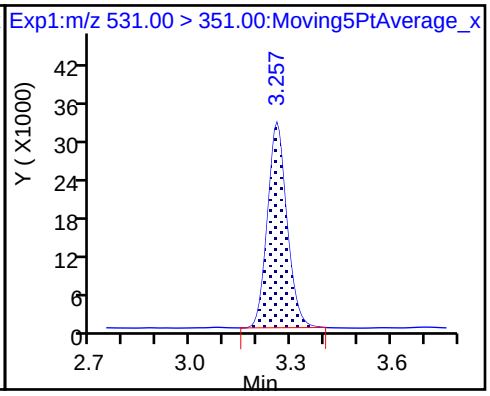
20 Perfluorononanoic acid



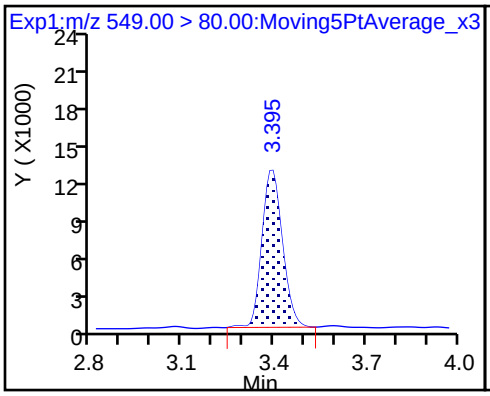
D 19 13C5 PFNA



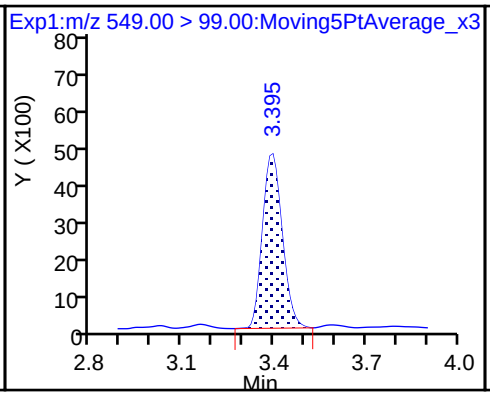
69 9-Chlorohexadecafluoro-3-oxanonane



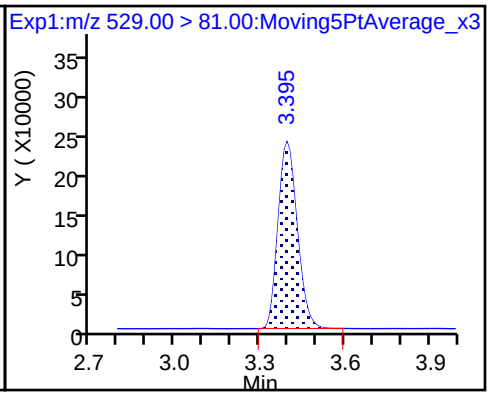
68 Perfluorononanesulfonic acid



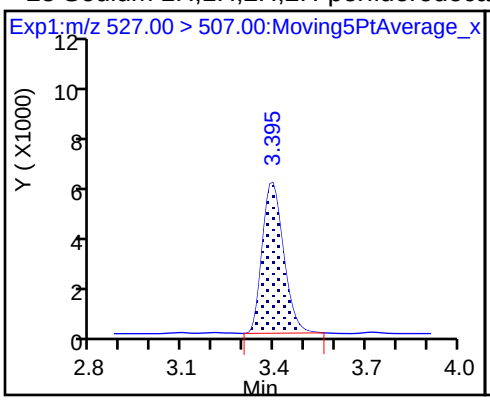
68 Perfluorononanesulfonic acid



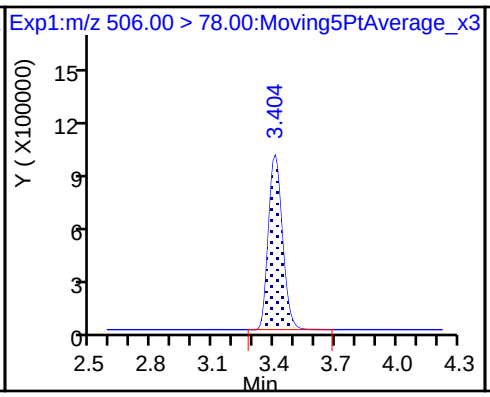
D 26 M2-8:2FTS



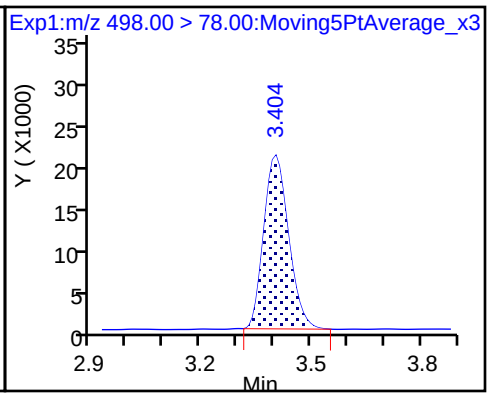
25 Sodium 1H,1H,2H,2H-perfluorodecane



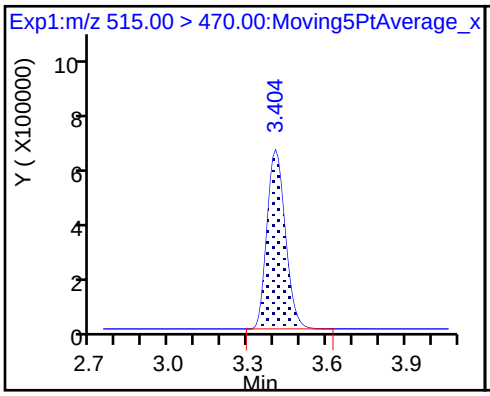
D 21 13C8 FOSA



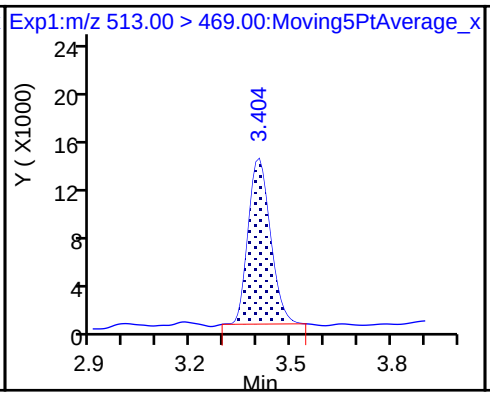
22 Perfluorooctane Sulfonamide



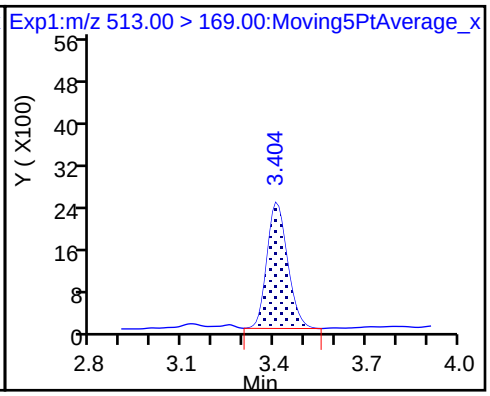
D 23 13C2 PFDA



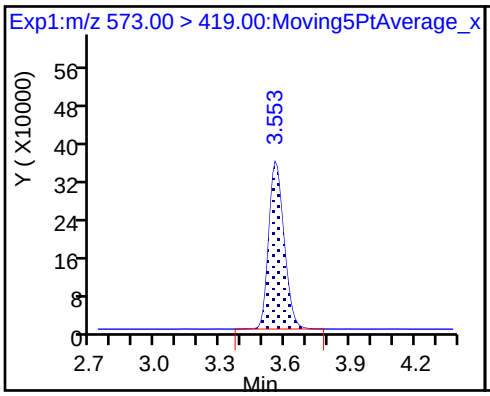
24 Perfluorodecanoic acid



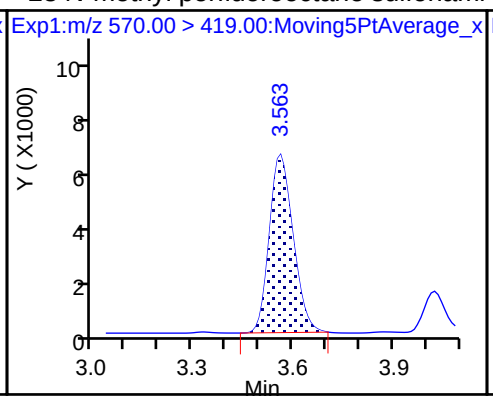
24 Perfluorodecanoic acid



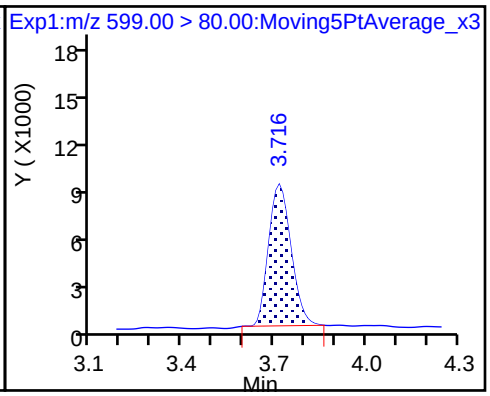
D 27 d3-NMeFOSAA



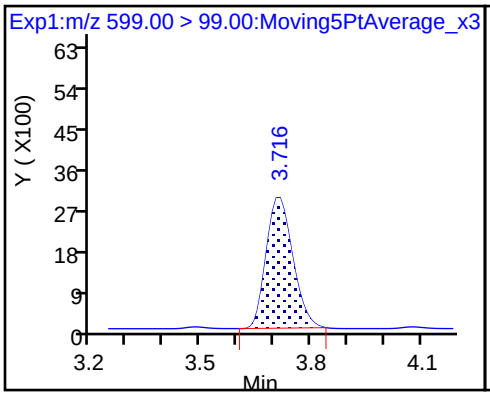
28 N-methyl perfluorooctane sulfonami



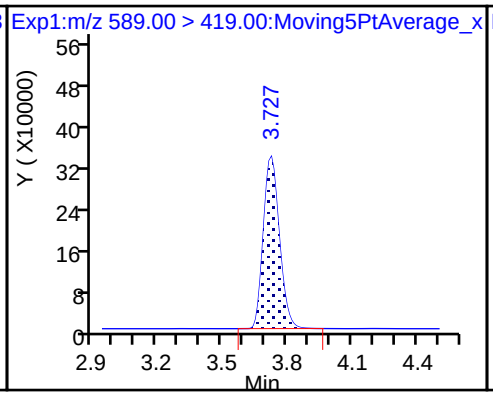
29 Perfluorodecane Sulfonic acid



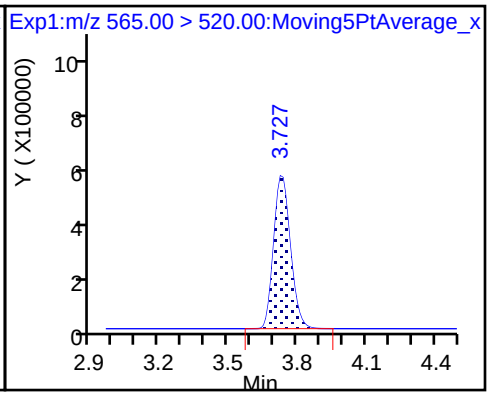
29 Perfluorodecane Sulfonic acid



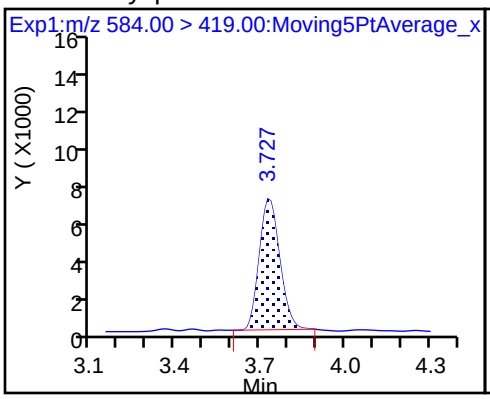
D 32 d5-NEtFOSAA



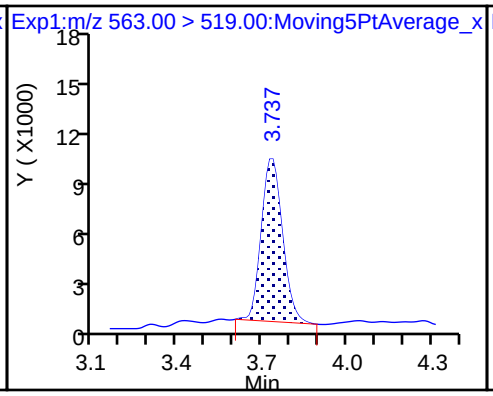
D 30 13C2 PFUnA



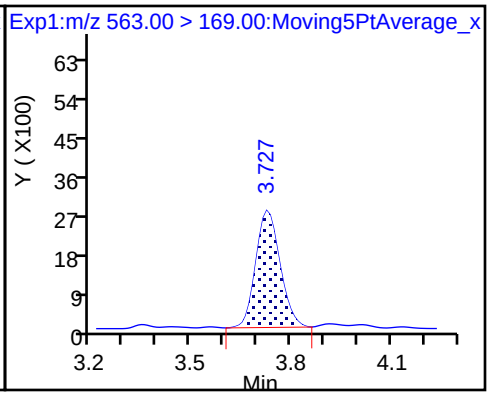
33 N-ethyl perfluorooctane sulfonamid



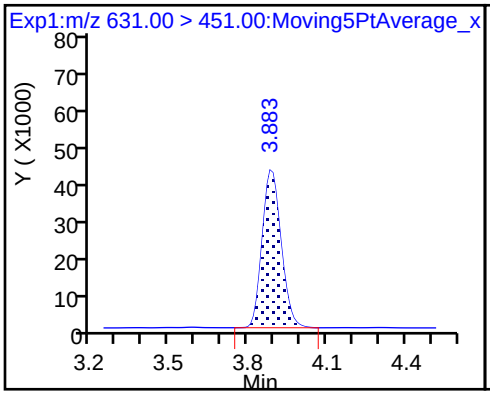
31 Perfluoroundecanoic acid



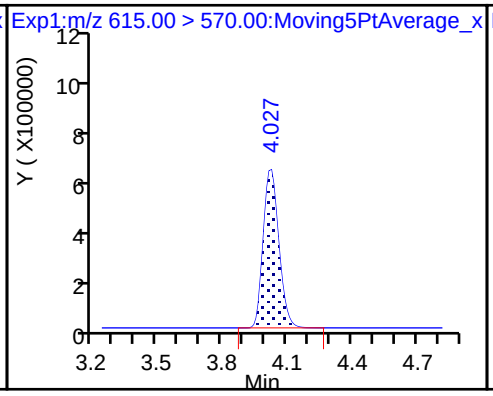
31 Perfluoroundecanoic acid



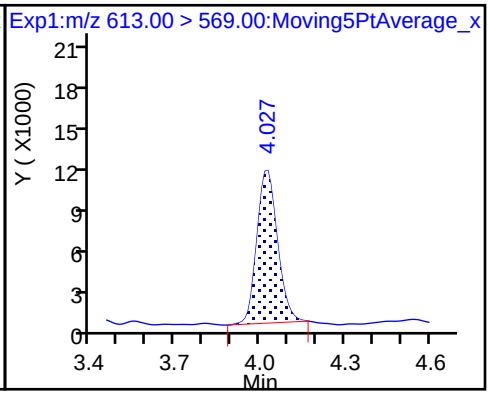
66 11-Chloroeicosafluoro-3-oxaundecan



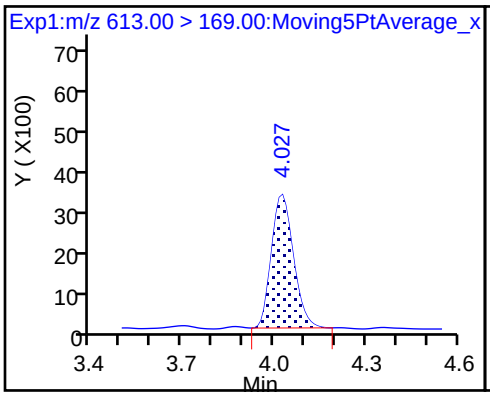
D 36 13C2 PFDoA



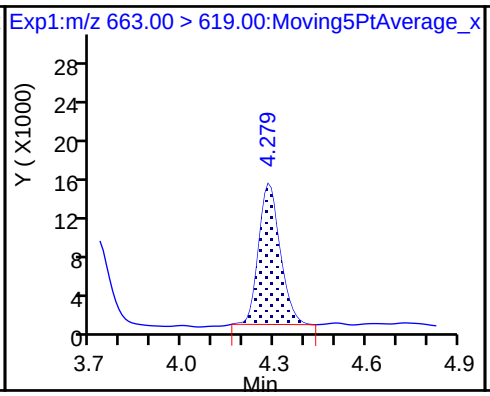
37 Perfluorododecanoic acid



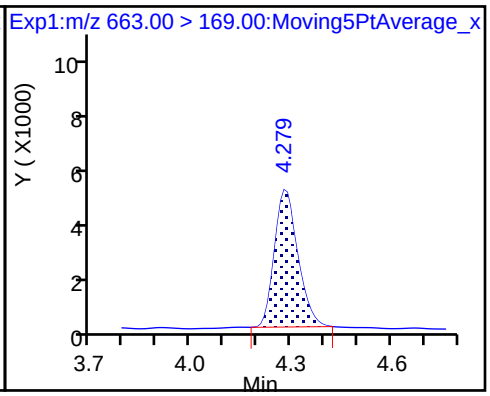
37 Perfluorododecanoic acid



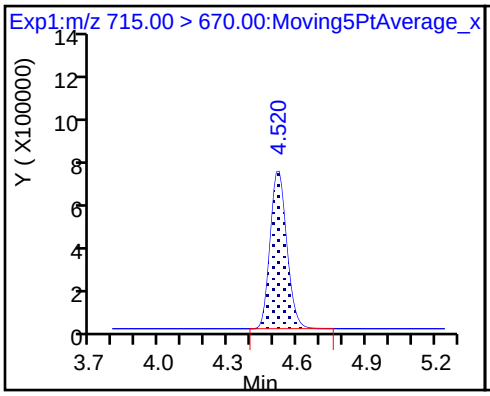
41 Perfluorotridecanoic acid



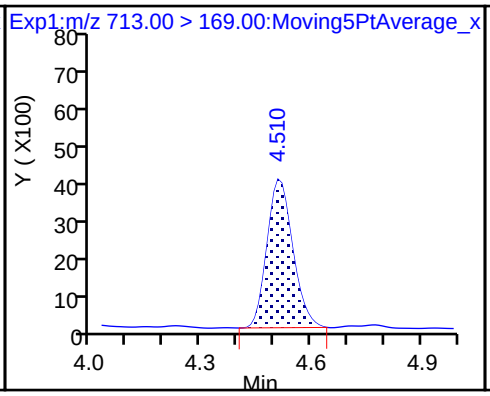
41 Perfluorotridecanoic acid



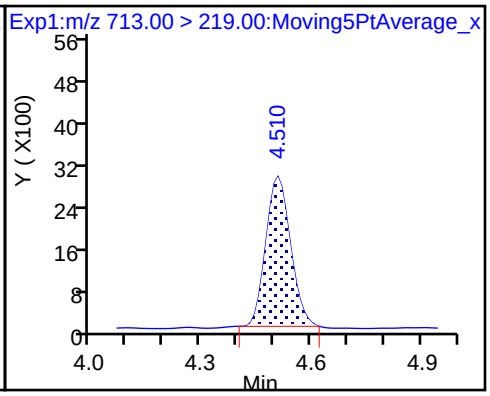
D 43 13C2-PFTeDA



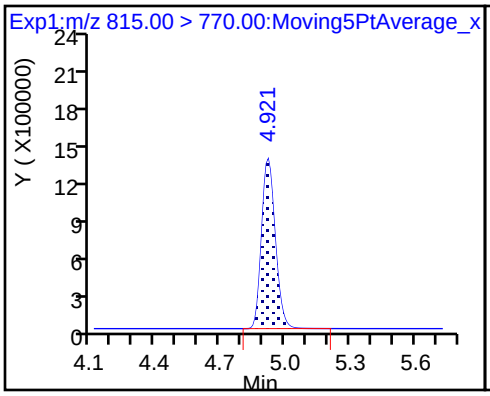
42 Perfluorotetradecanoic acid



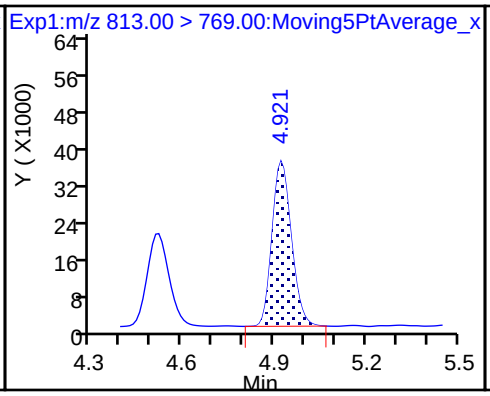
42 Perfluorotetradecanoic acid



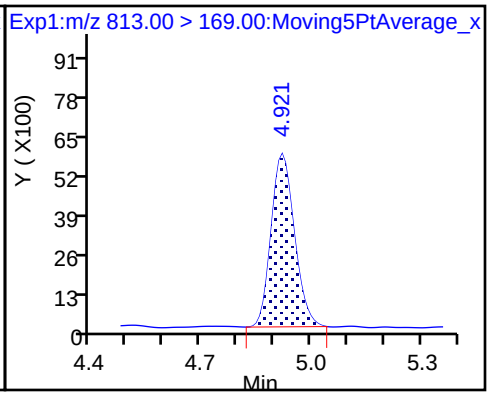
D 44 13C2-PFHxDA



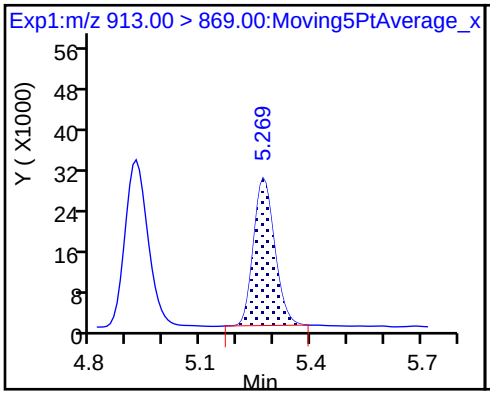
45 Perfluorohexadecanoic acid



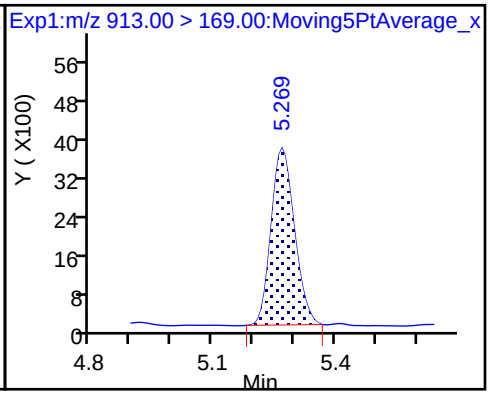
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

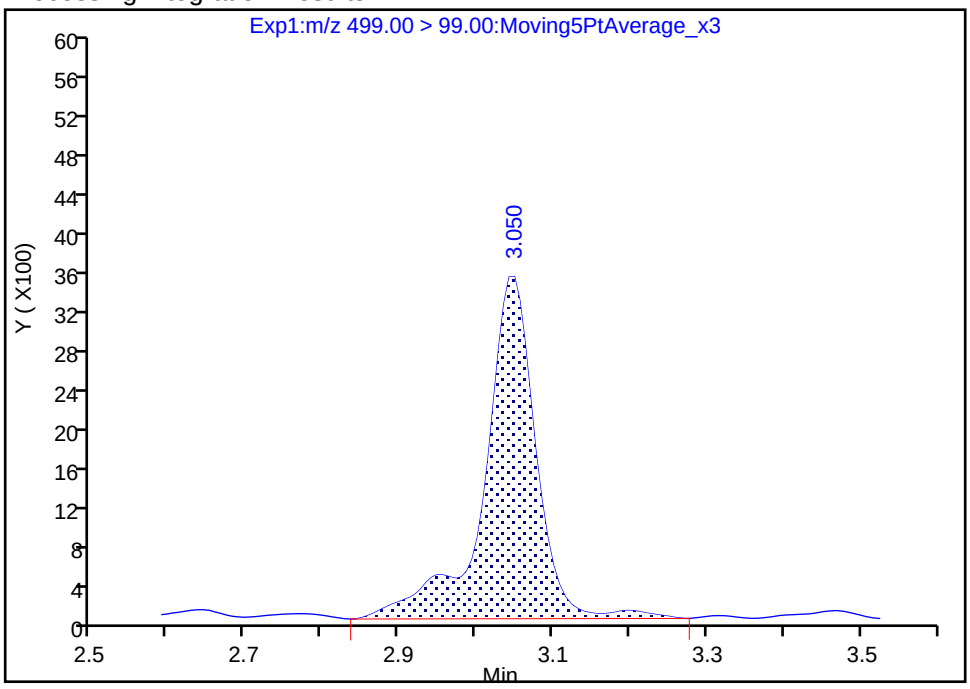
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d
Injection Date: 10-Apr-2018 18:47:28 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

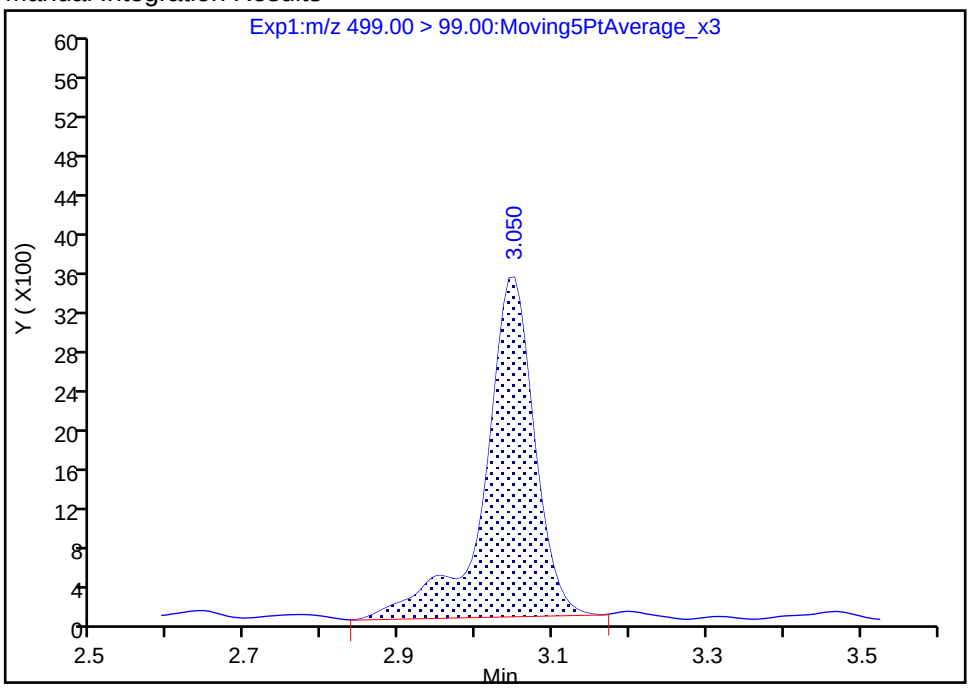
Processing Integration Results

RT: 3.05
Area: 16662
Amount: 0.045154
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 15924
Amount: 0.045154
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:13:05
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-Apr-2018 18:55:18 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:15:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.431	0.004	1.000	6279614	2.40		96.1	48122	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.432	0.003	1.000	580880	0.2490		99.6	342	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	467549	0.2434		97.4	427	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	4029236	2.39		95.7	84337	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.735	0.003	1.000	85829	2.22		95.5	892	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.736	0.002	1.000	642890	0.2225		101	3140	
298.90 > 99.00	1.738	1.736	0.002	1.000	274212		2.34(1.25-3.74)	101	4317	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.950	-0.002	1.000	625222	2.26		96.7	5849	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.950	-0.002	1.000	139275	0.2353		101	8215	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.985	0.007	1.000	4589544	2.46		98.5	114865	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.985	0.007	1.000	453023	0.2428		97.1	1126	
313.00 > 119.00	1.992	1.985	0.007	1.000	45129		10.04(5.03-15.10)	97.1	510	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.015	2.008	0.007	1.000	625836	0.2371		101	5727	
349.00 > 99.00	2.003	2.008	-0.005	0.994	236948		2.64(1.36-4.07)	101	6870	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.084	-0.002	1.000	260156	2.26		90.3	6351	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.094	2.087	0.007	1.005	76650	0.2644		106	612	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	443829	0.2536		101	594	
363.00 > 169.00	2.320	2.314	0.006	1.000	183548		2.42(1.13-3.40)	101	819	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	4371595	2.41		96.4	64932	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.323	0.010	1.000	550837	0.2176		95.6	1709	
399.00 > 99.00	2.333	2.323	0.010	1.000	175057		3.15(1.50-4.49)	95.6	1638	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	5290521	2.36		100.0	79356	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	1339859	0.2502		100	20372	
377.00 > 85.00	2.359	2.360	-0.001	1.000	772157		1.74(0.84-2.53)	100	16304	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	147222	0.2185		92.2	3008	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	946554	2.44		103	15607	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	4391971	2.44		97.5	89680	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	501075	0.2469		98.7	266	
413.00 > 169.00	2.675	2.674	0.001	1.000	260669		1.92(0.84-2.52)	98.7	1136	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4856867	2.50			62253	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	500192	0.2437		102	4655	
449.00 > 99.00	2.683	2.680	0.003	1.000	131175		3.81(1.94-5.82)	102	3786	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3695054	2.36		98.7	32380	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.042	0.008	1.002	378769	0.2252		97.1	1651	
499.00 > 99.00	3.043	3.042	0.001	1.000	94059		4.03(2.31-6.93)	97.1	1374	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	0.998	394004	0.2506		100	1139	
463.00 > 169.00	3.050	3.043	0.007	1.000	89167		4.42(1.90-5.69)	100	1764	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3769499	2.43		97.3	82628	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	659333	0.2262		97.1	17883	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.388	-0.003	1.000	287902	0.2330		97.1	4091	
549.00 > 99.00	3.395	3.388	0.007	1.003	106966		2.69(1.33-3.97)	97.1	2580	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	1105113	2.36		98.6	11270	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	123407	0.2114		88.3	6419	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4856180	2.48		99.3	57058	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	486733	0.2477		99.1	17148	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	3141564	2.41		96.5	74258	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	302427	0.2333		93.3	1146	
513.00 > 169.00	3.404	3.402	0.002	1.000	51441		5.88(2.36-7.09)	93.3	1188	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1807153	2.45		98.0	18609	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.558	0.004	1.003	182686	0.2534		101	1647	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	242056	0.2411		100	3016	
599.00 > 99.00	3.716	3.715	0.001	1.000	77912		3.11(1.39-4.16)	100	1891	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.722	0.004	1.000	1809132	2.48		99.4	15271	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.726	3.727	-0.001	1.000	166943	0.2469		98.7	2050	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.727	-0.001	1.000	2893419	2.58		103	82331	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.727	-0.001	1.000	218231	0.2231		89.2	981	
563.00 > 169.00	3.726	3.727	-0.001	1.000	53370		4.09(2.12-6.36)	89.2	1795	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	1099095	0.2441		104	17279	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.017	-0.001	1.000	3031255	2.50		100.0	32020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.026	4.020	0.006	1.003	323392	0.2558		102	356	
613.00 > 169.00	4.026	4.020	0.006	1.003	76615		4.22(2.13-6.40)	102	964	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.278	0.001	1.000	353030	0.2396		95.8	325	
663.00 > 169.00	4.279	4.278	0.001	1.000	109952		3.21(1.25-3.76)	95.8	1133	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.510	4.513	-0.003	1.000	3729686	2.43		97.0	27846	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.510	4.513	-0.003	1.000	92073	0.2457		98.3	961	
713.00 > 219.00	4.510	4.513	-0.003	1.000	66153		1.39(0.71-2.13)	98.3	1347	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.918	0.003	1.000	6094708	2.44		97.4	18710	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.920	0.001	1.000	648936	0.2588		104	210	
813.00 > 169.00	4.921	4.920	0.001	1.000	100021		6.49(2.86-8.58)	104	777	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.268	0.001	1.000	616691	0.2519		101	178	
913.00 > 169.00	5.269	5.268	0.001	1.000	75406		8.18(3.83-11.48)	101	660	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:06 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_004.d

Injection Date: 10-Apr-2018 18:55:18 Instrument ID: A8_N

Lims ID: IC L3 Full

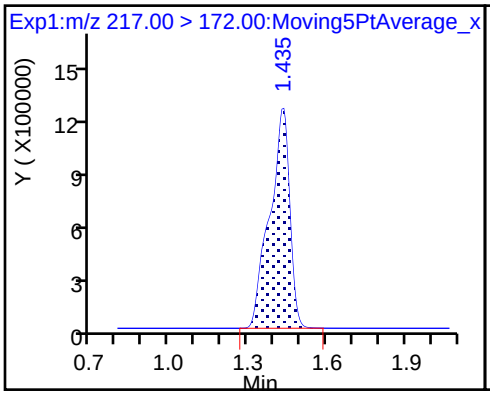
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

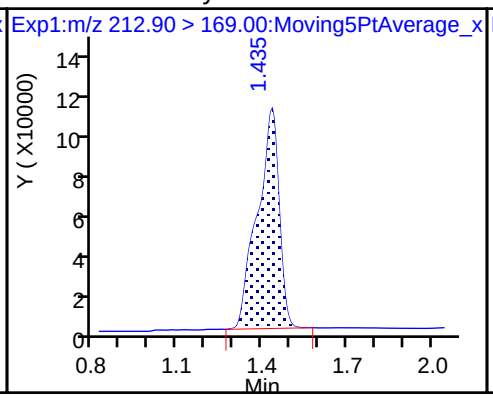
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

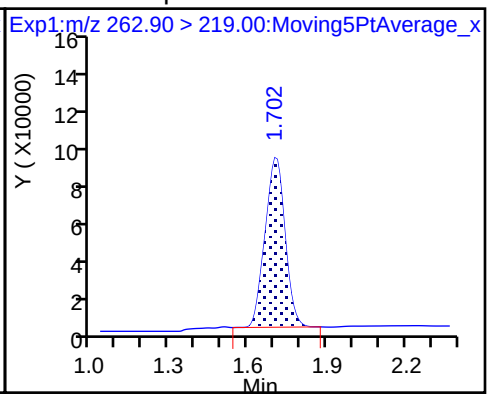
D 1 13C4 PFBA



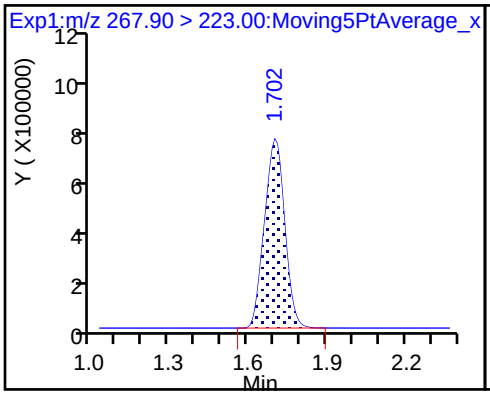
2 Perfluorobutyric acid



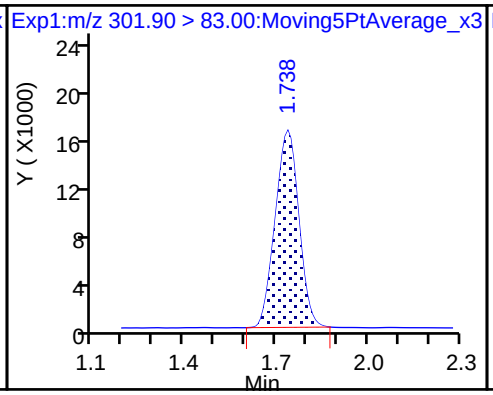
4 Perfluoropentanoic acid



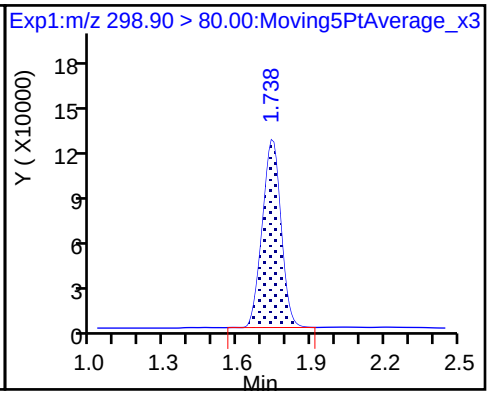
D 3 13C5-PFPeA



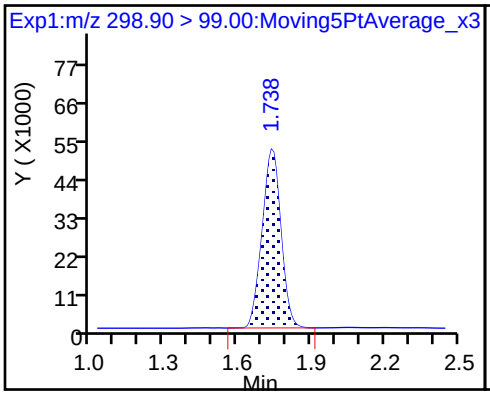
D 47 13C3-PFBS



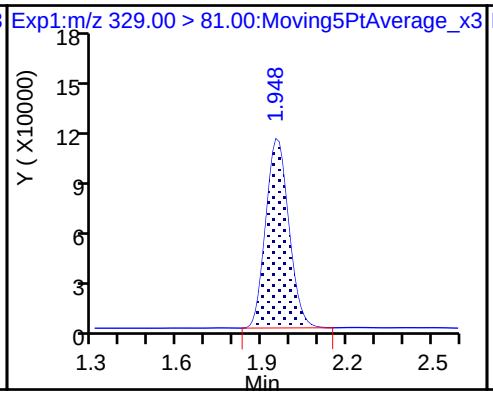
5 Perfluorobutanesulfonic acid



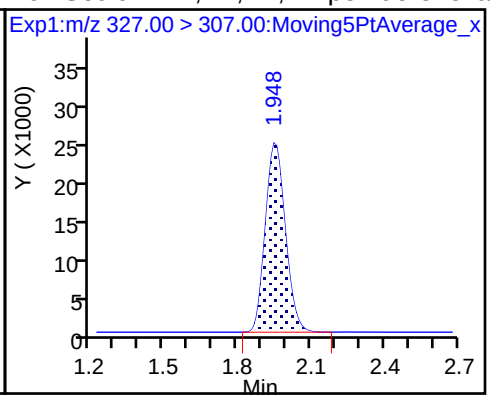
5 Perfluorobutanesulfonic acid



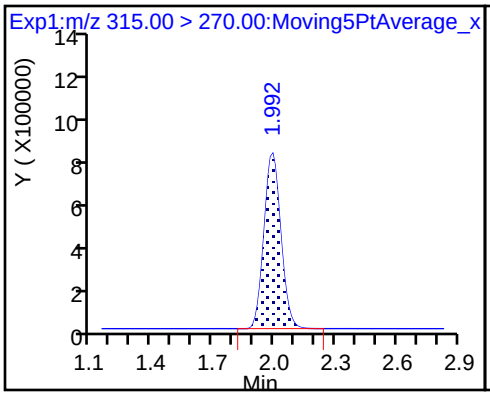
D 60 M2-4:2FTS



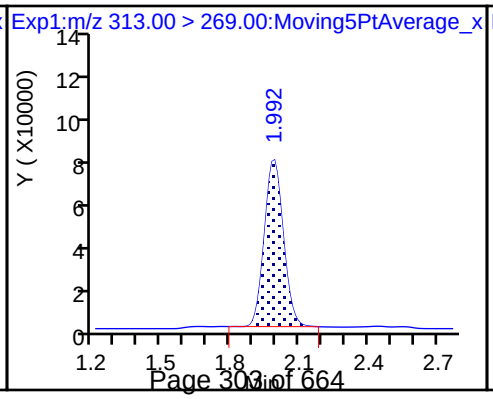
61 Sodium 1H,1H,2H,2H-perfluorohexane



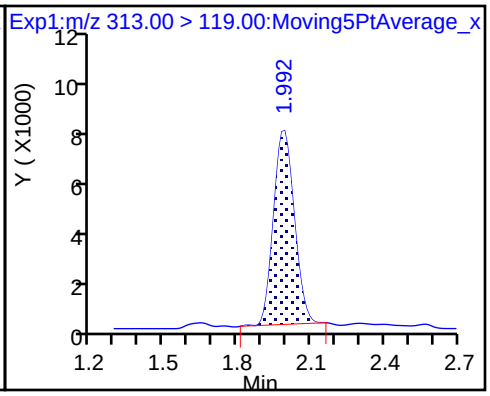
D 7 13C2 PFHxA



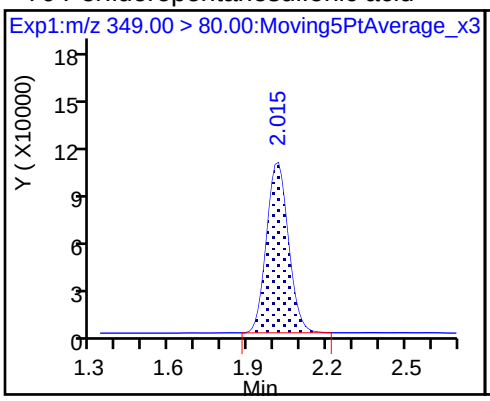
6 Perfluorohexanoic acid



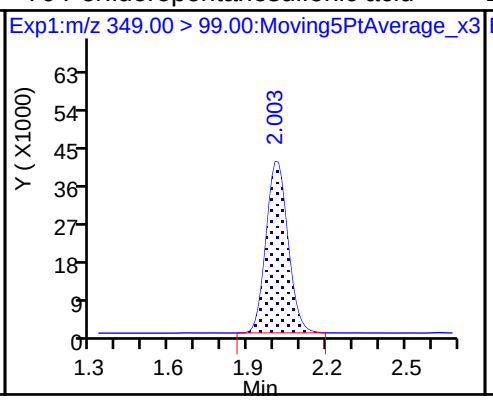
6 Perfluorohexanoic acid



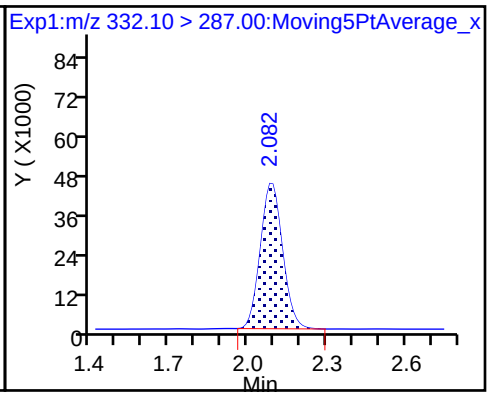
70 Perfluoropentanesulfonic acid



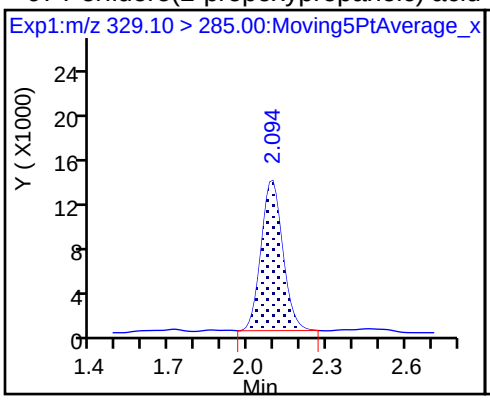
70 Perfluoropentanesulfonic acid



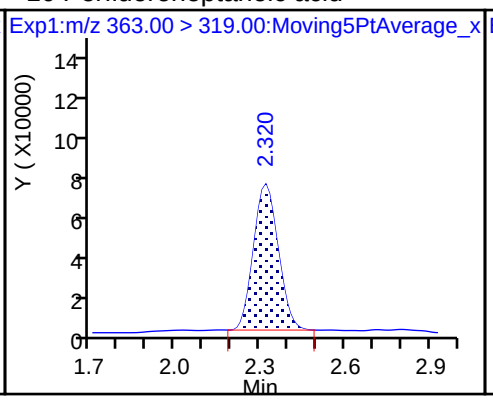
D 64 13C3 HFPO-DA



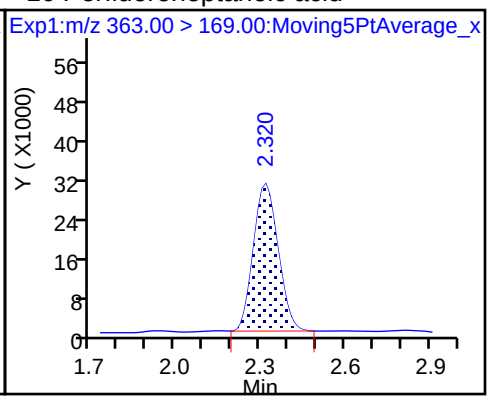
67 Perfluoro(2-propoxypropanoic) acid



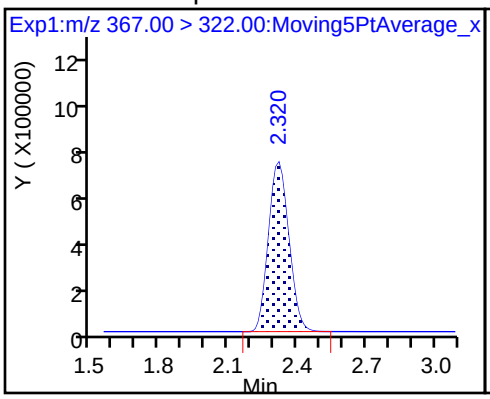
10 Perfluoroheptanoic acid



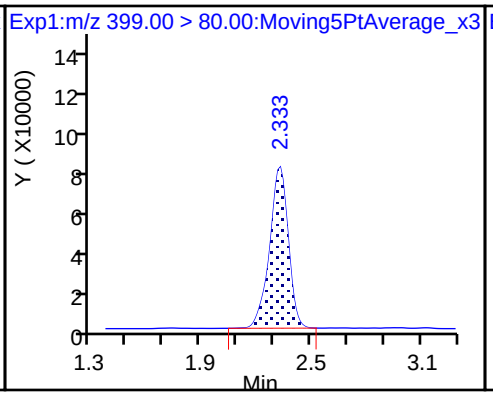
10 Perfluoroheptanoic acid



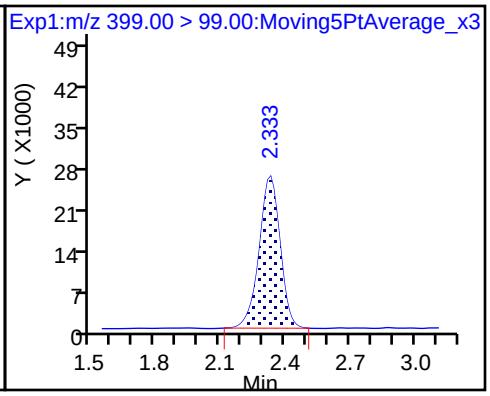
D 9 13C4-PFHpA



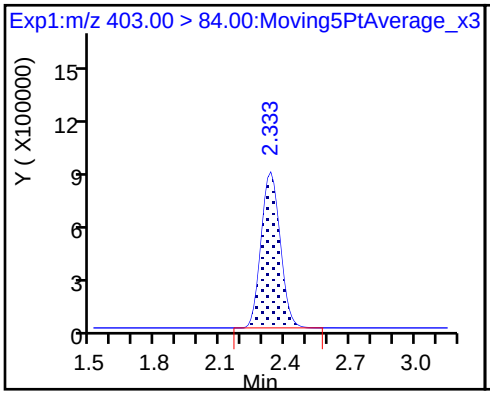
8 Perfluorohexanesulfonic acid



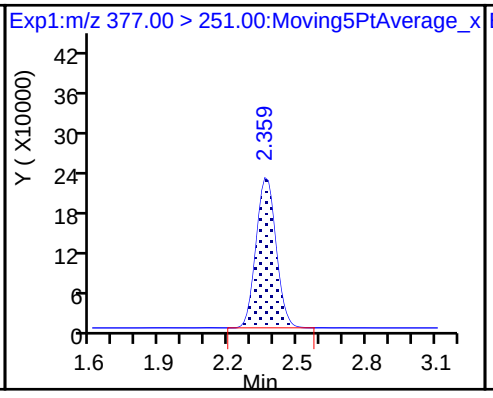
8 Perfluorohexanesulfonic acid



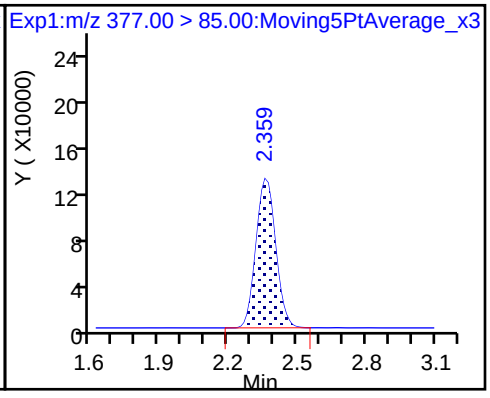
D 11 18O2 PFHxS



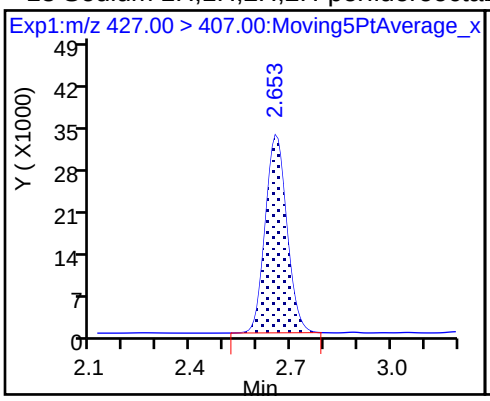
65 Adona



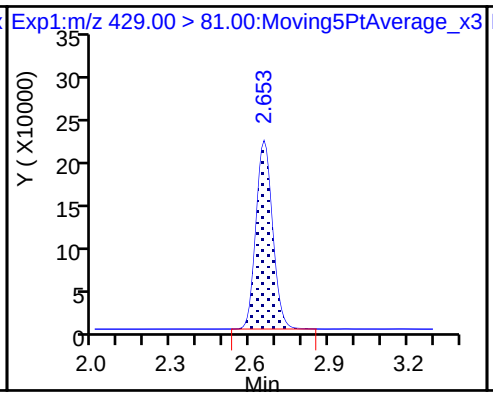
65 Adona



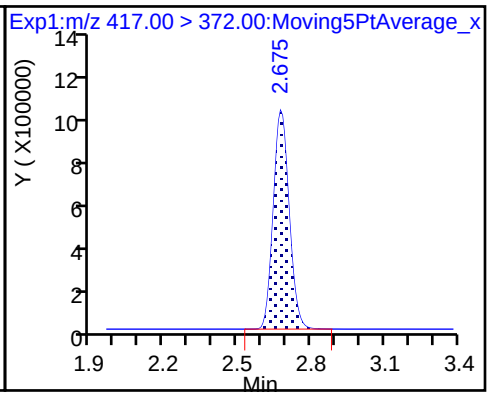
13 Sodium 1H,1H,2H,2H-perfluorooctane



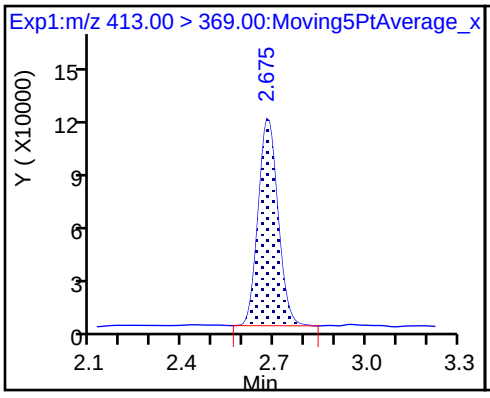
D 12 M2-6:2FTS



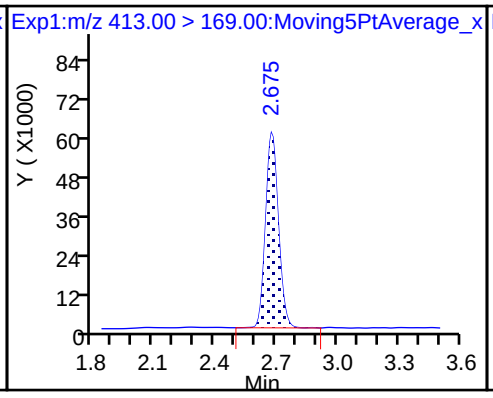
D 14 13C4 PFOA



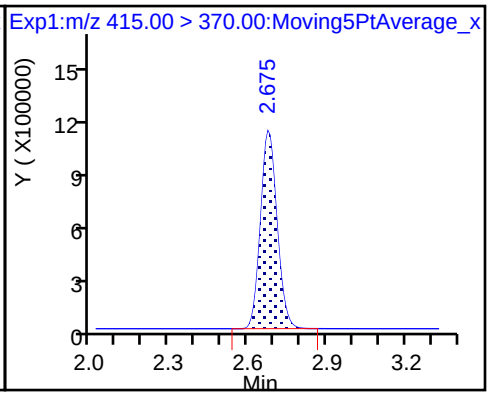
15 Perfluorooctanoic acid



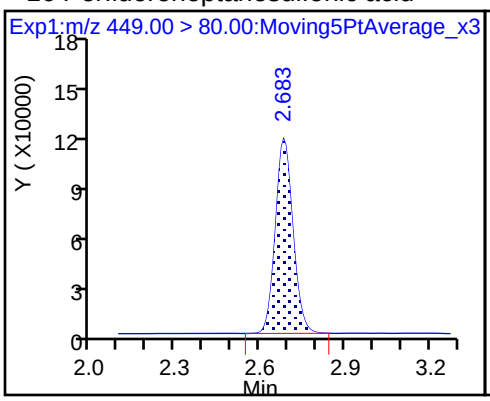
15 Perfluorooctanoic acid



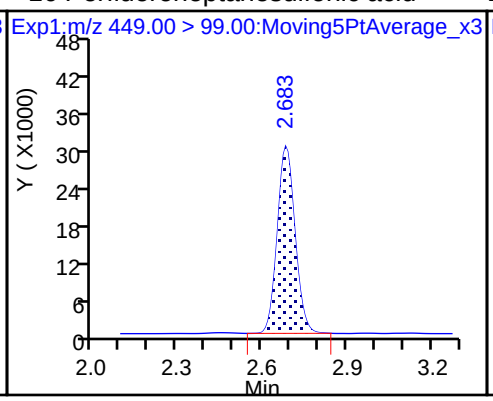
* 62 13C2-PFOA



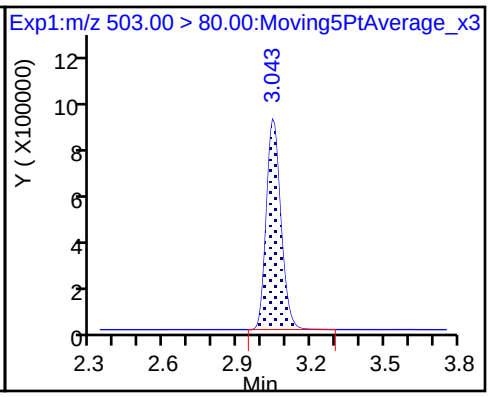
16 Perfluoroheptanesulfonic acid



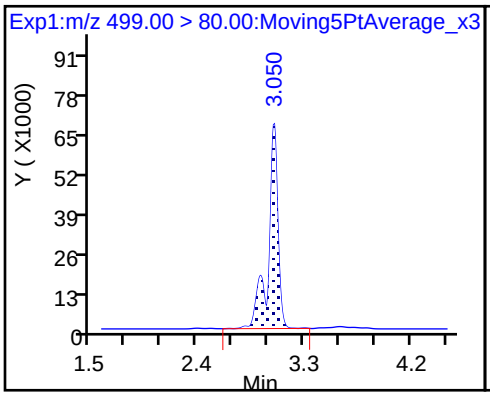
16 Perfluoroheptanesulfonic acid



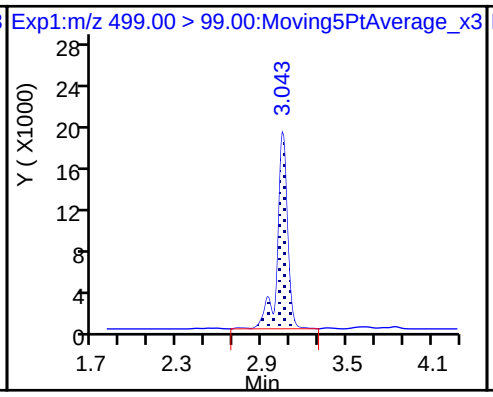
D 18 13C4 PFOS



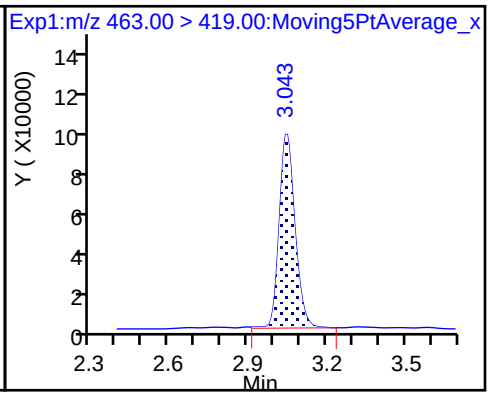
17 Perfluorooctane sulfonic acid



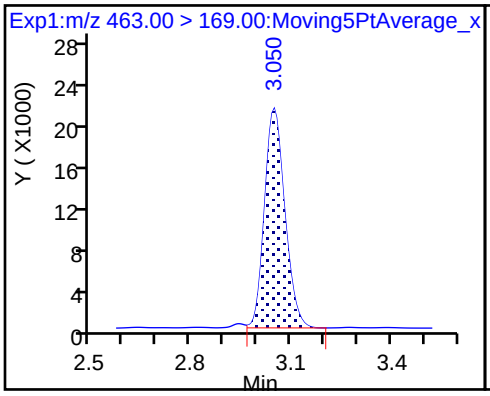
17 Perfluorooctane sulfonic acid



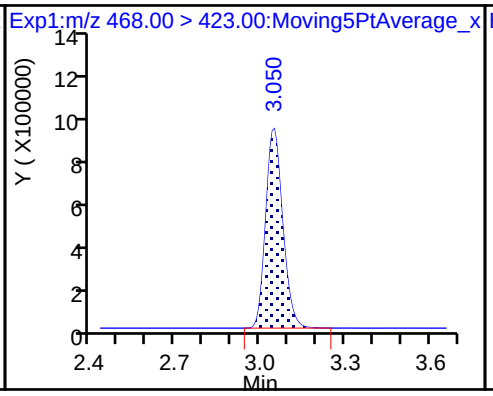
20 Perfluorononanoic acid



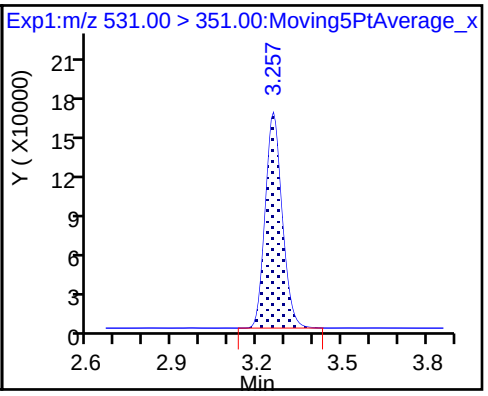
20 Perfluorononanoic acid



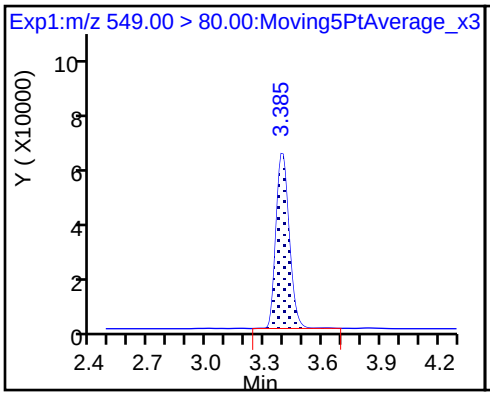
D 19 13C5 PFNA



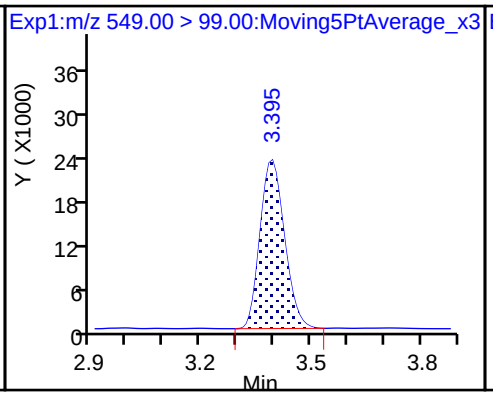
69 9-Chlorohexadecafluoro-3-oxanonane



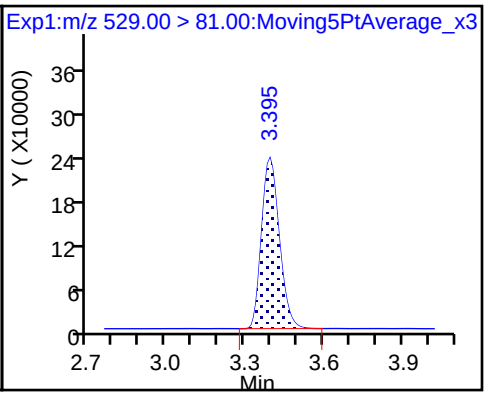
68 Perfluorononanesulfonic acid



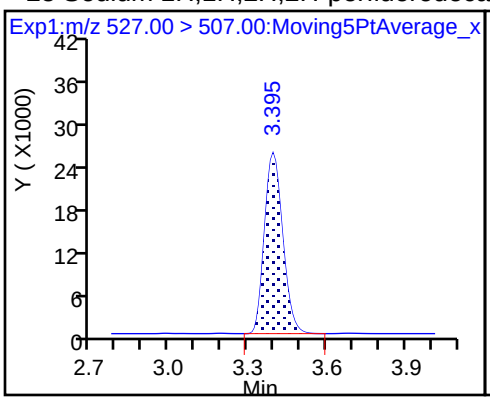
68 Perfluorononanesulfonic acid



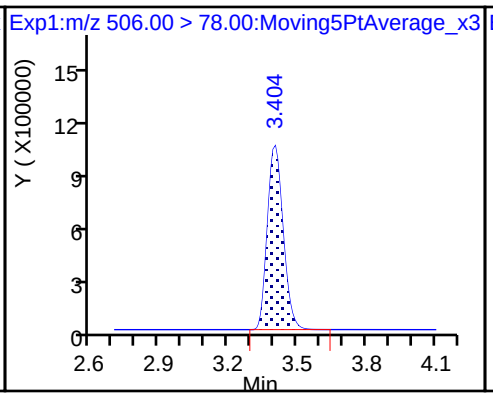
D 26 M2-8:2FTS



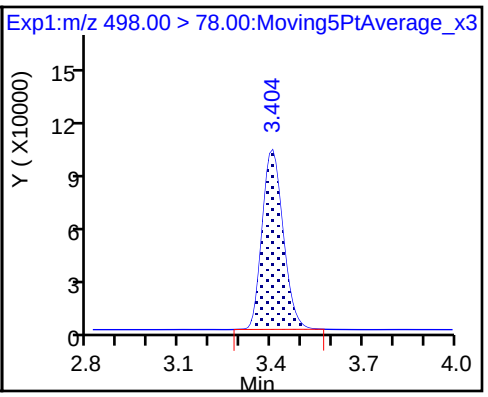
25 Sodium 1H,1H,2H,2H-perfluorodecane



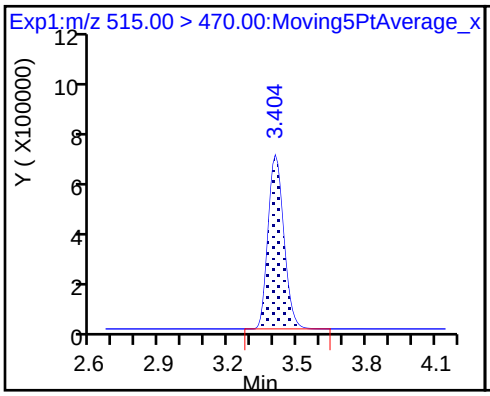
D 21 13C8 FOSA



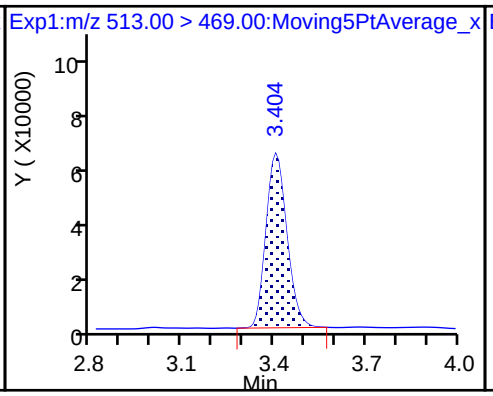
22 Perfluorooctane Sulfonamide



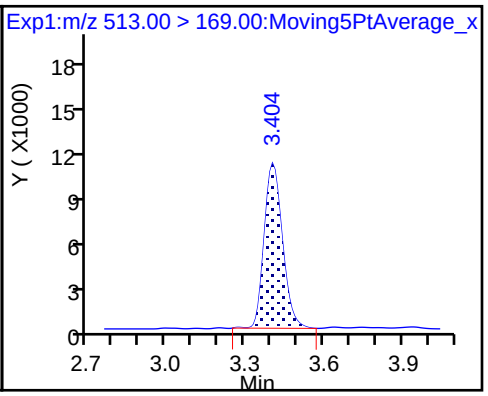
D 23 13C2 PFDA



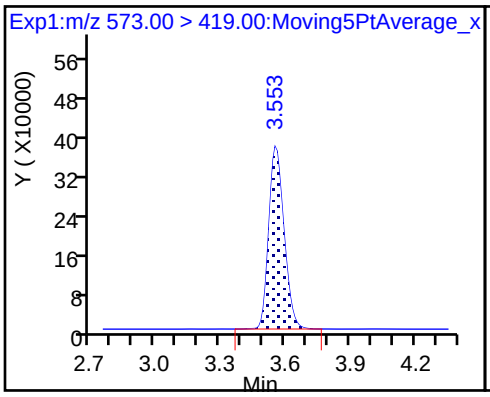
24 Perfluorodecanoic acid



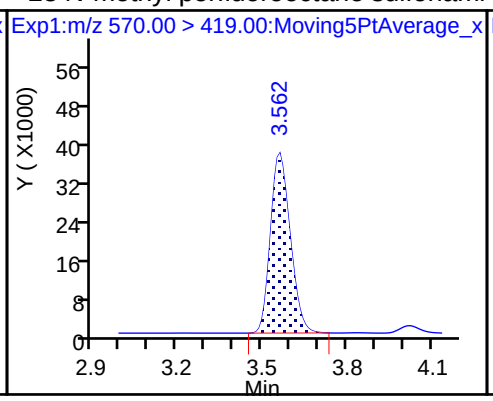
24 Perfluorodecanoic acid



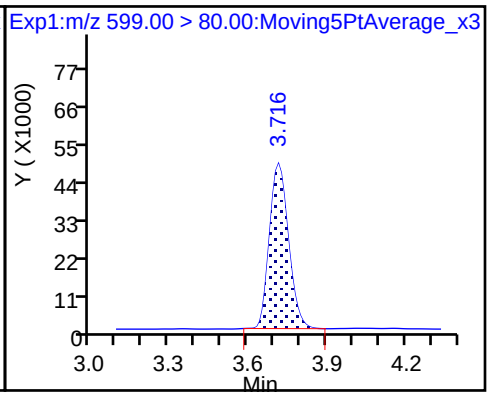
D 27 d3-NMeFOSAA



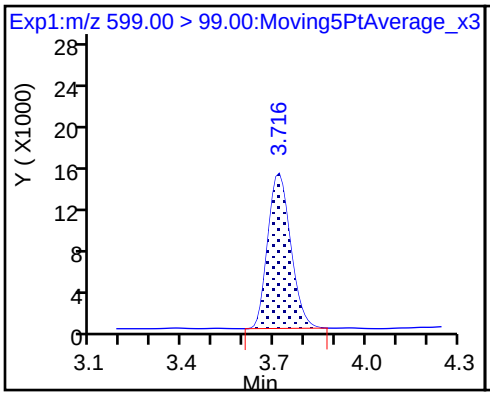
28 N-methyl perfluorooctane sulfonami



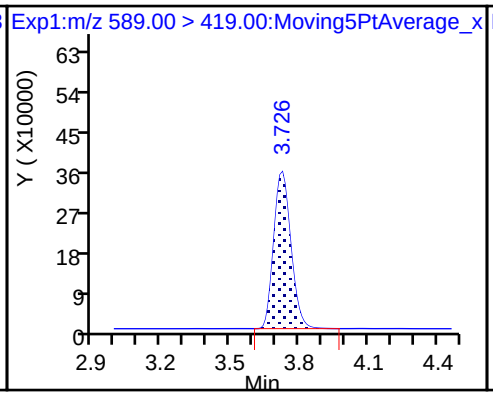
29 Perfluorodecane Sulfonic acid



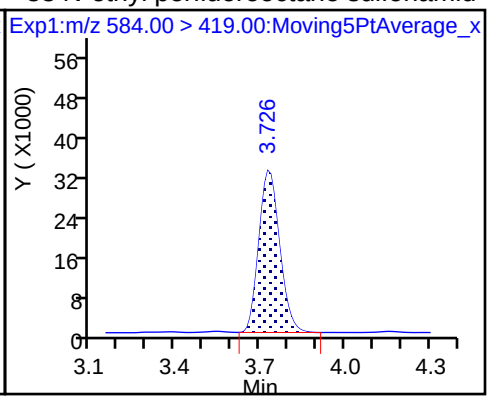
29 Perfluorodecane Sulfonic acid



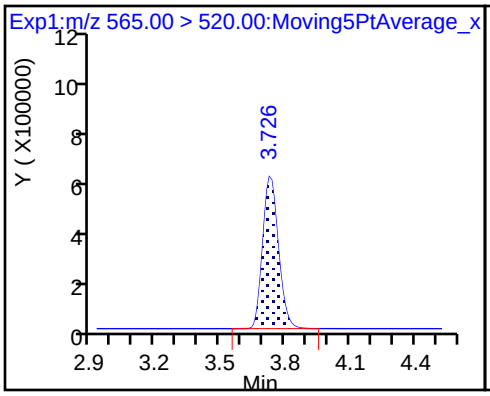
D 32 d5-NEtFOSAA



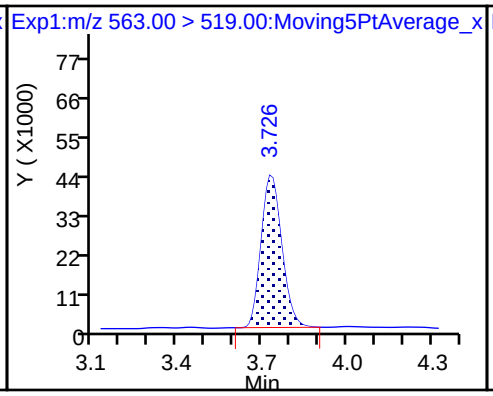
33 N-ethyl perfluorooctane sulfonamid



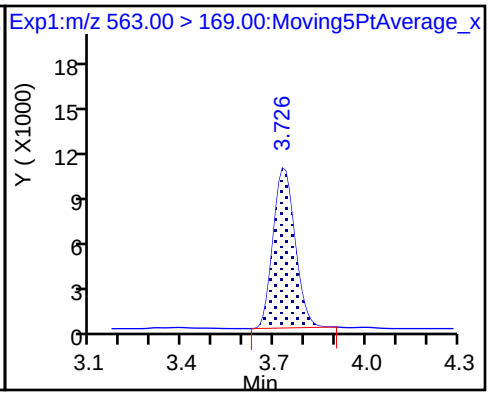
D 30 13C2 PFUnA



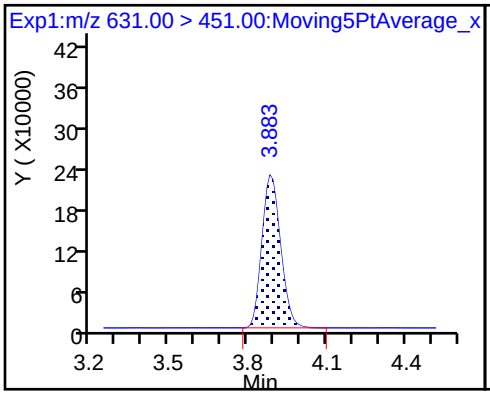
31 Perfluoroundecanoic acid



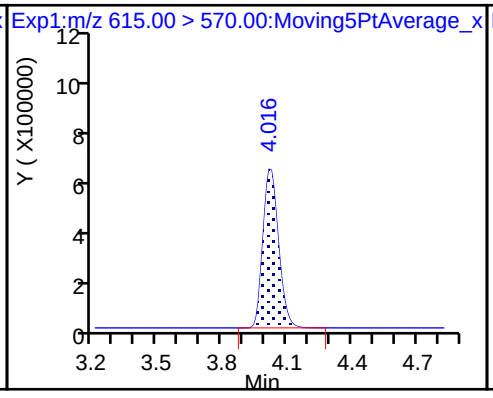
31 Perfluoroundecanoic acid



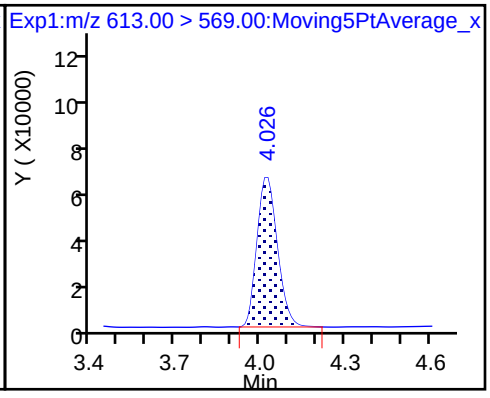
66 11-Chloroeicosafluoro-3-oxaundecan



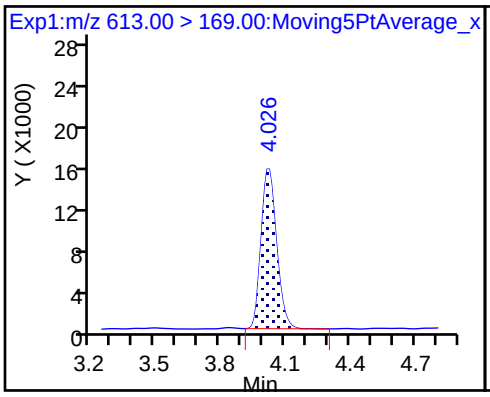
D 36 13C2 PFDoA



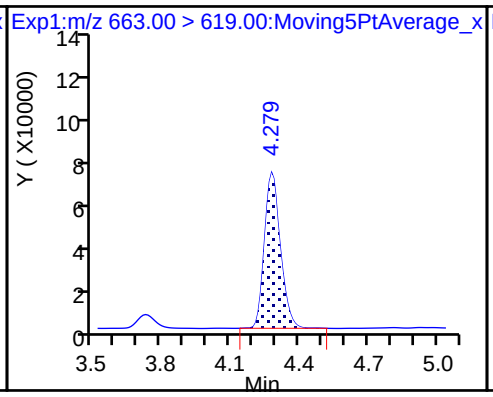
37 Perfluorododecanoic acid



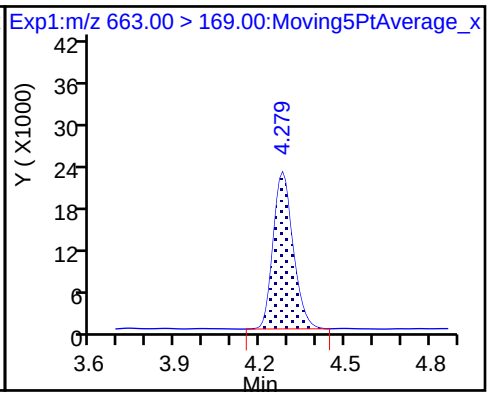
37 Perfluorododecanoic acid



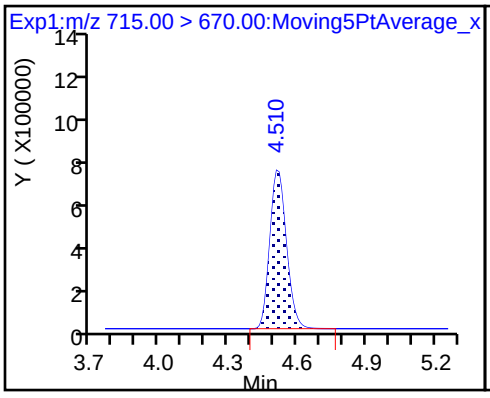
41 Perfluorotridecanoic acid



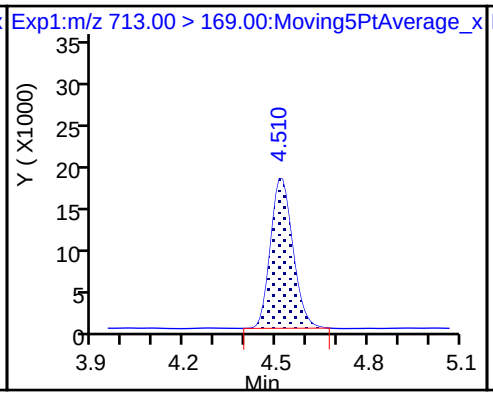
41 Perfluorotridecanoic acid



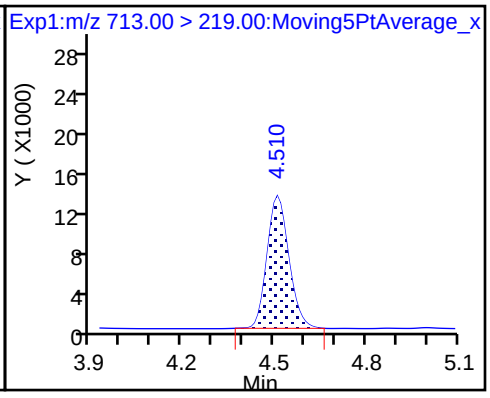
D 43 13C2-PFTeDA



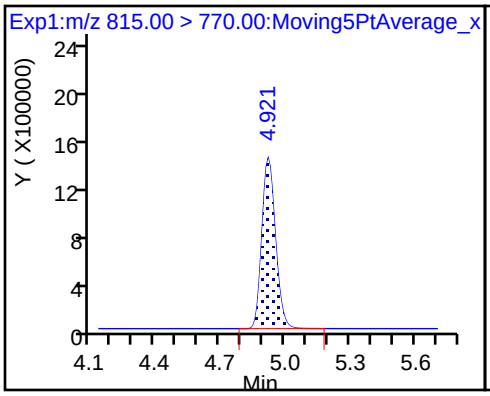
42 Perfluorotetradecanoic acid



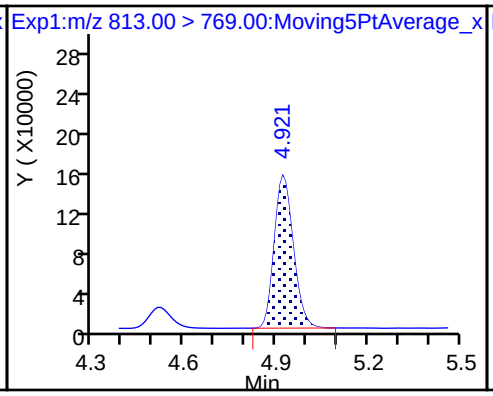
42 Perfluorotetradecanoic acid



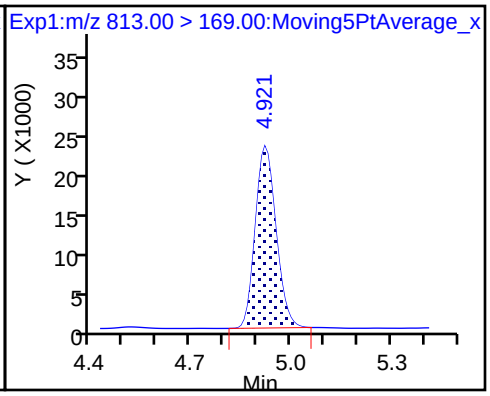
D 44 13C2-PFHxDA



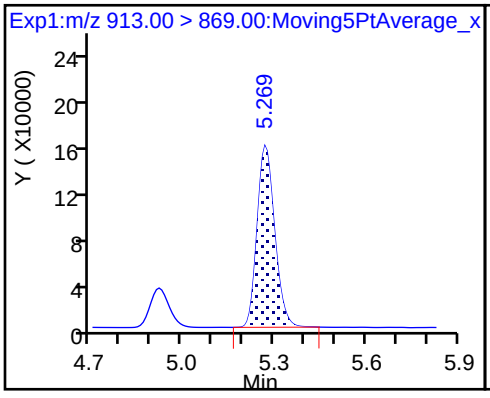
45 Perfluorohexadecanoic acid



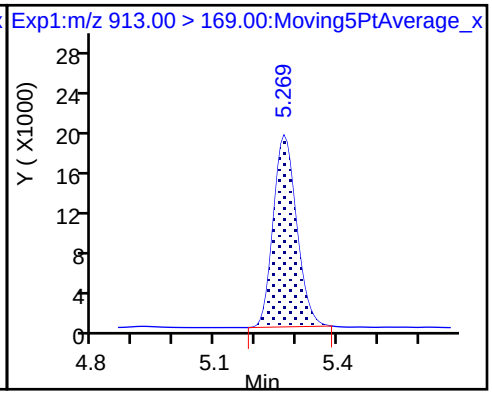
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 10-Apr-2018 19:03:10 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:08 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:18:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	6139471	2.47		98.7	48680	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	2238331	0.9816		98.2	1326	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.699	-0.005	0.557	3994638	2.49		99.6	84241	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.699	-0.005	1.000	1831380	0.9617		96.2	1761	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.735	-0.005	1.000	87216	2.37		102	926	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.003	1.005	2489261	0.8476		95.9	14542	
298.90 > 99.00	1.730	1.736	-0.006	1.000	1026363		2.43(1.25-3.74)	95.9	13875	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	538908	0.8961		95.9	32256	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	623892	2.37		101	7451	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.985	-0.003	1.000	1813678	1.02		102	3998	
313.00 > 119.00	1.982	1.985	-0.003	1.000	170514		10.64(5.03-15.10)	102	2276	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4391788	2.48		99.0	110601	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.008	-0.003	1.000	2448518	0.9128		97.3	20312	
349.00 > 99.00	2.005	2.008	-0.003	1.000	889950		2.75(1.36-4.07)	97.3	22028	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	279991	2.55		102	7988	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.087	-0.003	1.000	295687	0.9479		94.8	2375	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.314	-0.006	1.000	4282212	2.48		99.2	70470	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.314	-0.006	1.000	1720489	1.00		100	2264	
363.00 > 169.00	2.308	2.314	-0.006	1.000	645805		2.66(1.13-3.40)	100	2862	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.323	-0.002	1.000	2023389	0.8443		92.8	6640	
399.00 > 99.00	2.321	2.323	-0.002	1.000	680836		2.97(1.50-4.49)	92.8	7311	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.327	-0.006	1.000	5007633	2.35		99.4	102844	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	5740779	1.11		111	74377	
377.00 > 85.00	2.360	2.360	0.0	1.000	3274137		1.75(0.84-2.53)	111	78247	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.649	-0.005	1.000	892700	2.41		102	13338	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.649	-0.005	1.000	594490	0.9356		98.7	14992	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4283435	2.50		99.9	79564	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.674	-0.007		4623888	2.50			81419	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.674	-0.007	1.000	1852208	0.9356		93.6	1057	
413.00 > 169.00	2.667	2.674	-0.007	1.000	965583		1.92(0.84-2.52)	93.6	3850	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.680	-0.005	1.000	1862796	0.9363		98.4	15147	
449.00 > 99.00	2.675	2.680	-0.005	1.000	507863		3.67(1.94-5.82)	98.4	12696	
D 18 13C4 PFOS										
503.00 > 80.00	3.039	3.041	-0.002	1.000	3581436	2.40		100	25084	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.039	3.042	-0.003	1.000	1466540	0.8996		96.9	6157	
499.00 > 99.00	3.039	3.042	-0.003	1.000	330120		4.44(2.31-6.93)	96.9	8806	
20 Perfluorononanoic acid										
463.00 > 419.00	3.039	3.043	-0.004	1.000	1529838	1.00		99.7	3704	
463.00 > 169.00	3.039	3.043	-0.004	1.000	361461		4.23(1.90-5.69)	99.7	8802	
D 19 13C5 PFNA										
468.00 > 423.00	3.039	3.045	-0.006	1.000	3677661	2.49		99.8	74488	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.247	3.253	-0.006	1.000	2661617	0.9422		101	59184	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.380	3.388	-0.008	1.000	1034931	0.8640		90.0	11093	
549.00 > 99.00	3.380	3.388	-0.008	1.000	415423		2.49(1.33-3.97)	90.0	9871	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.390	-0.001	1.000	1093693	2.46		103	11489	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.389	3.393	-0.004	1.000	537990	0.9310		97.2	28178	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.397	-0.008	1.000	4725832	2.54		101	62563	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.401	-0.002	1.003	1898032	0.99		99.3	33374	
D 23 13C2 PFDA										
515.00 > 470.00	3.399	3.401	-0.002	1.000	3187733	2.57		103	83926	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.399	3.402	-0.003	1.000	1275776	0.9699		97.0	5989	
513.00 > 169.00	3.399	3.402	-0.003	1.000	223055		5.72(2.36-7.09)	97.0	4231	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.548	3.553	-0.005	1.000	1818526	2.59		104	25217	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.557	3.558	-0.001	1.003	694281	0.9570		95.7	4614	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.709	3.715	-0.006	1.000	935700	0.9618		99.8	9931	
599.00 > 99.00	3.709	3.715	-0.006	1.000	313308		2.99(1.39-4.16)	99.8	9034	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.720	3.722	-0.002	1.000	1716798	2.48		99.0	15143	
D 30 13C2 PFUnA										
565.00 > 520.00	3.720	3.727	-0.007	1.000	2598322	2.43		97.2	73211	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.720	3.727	-0.007	1.000	636880	0.99		99.2	12406	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.720	3.727	-0.007	1.000	822546	0.9365		93.6	3940	
563.00 > 169.00	3.720	3.727	-0.007	1.000	193601		4.25(2.12-6.36)	93.6	4746	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.876	3.883	-0.007	1.000	4412145	1.01		107	64014	
D 36 13C2 PFDoA										
615.00 > 570.00	4.009	4.017	-0.008	1.000	3058842	2.65		106	28121	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.020	4.020	0.0	1.003	1173427	0.9196		92.0	1328	
613.00 > 169.00	4.009	4.020	-0.011	1.000	277484		4.23(2.13-6.40)	92.0	3949	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.272	4.278	-0.006	1.000	1346073	0.9052		90.5	1176	
663.00 > 169.00	4.272	4.278	-0.006	1.000	415749		3.24(1.25-3.76)	90.5	4126	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.513	-0.001	1.000	3824690	2.61		105	24410	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.513	-0.001	1.000	376531	0.9800		98.0	4038	
713.00 > 219.00	4.502	4.513	-0.011	0.998	255558		1.47(0.71-2.13)	98.0	4003	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.914	4.918	-0.004	1.000	5981114	2.51		100	18136	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.914	4.920	-0.006	1.000	2337041	1.01		101	753	
813.00 > 169.00	4.914	4.920	-0.006	1.000	365367		6.40(2.86-8.58)	101	2438	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.263	5.268	-0.005	1.000	2359770	0.9824		98.2	640	
913.00 > 169.00	5.263	5.268	-0.005	1.000	281134		8.39(3.83-11.48)	98.2	1988	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_005.d

Injection Date: 10-Apr-2018 19:03:10 Instrument ID: A8_N

Lims ID: IC L4 Full

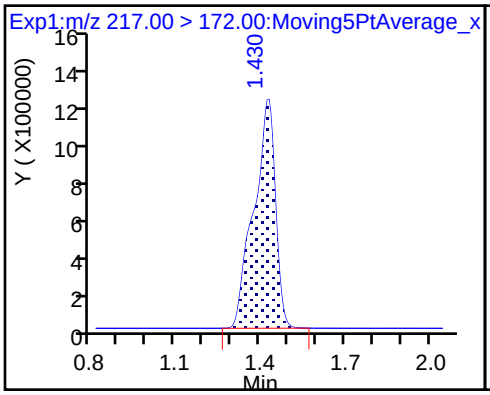
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

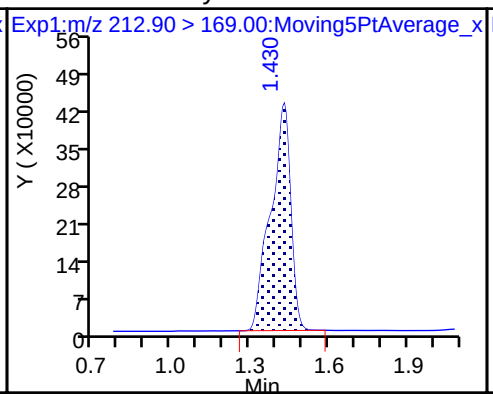
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

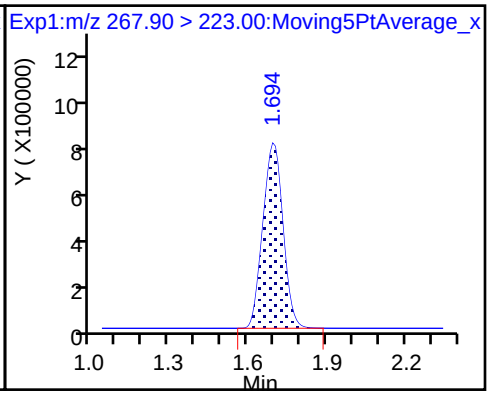
D 1 13C4 PFBA



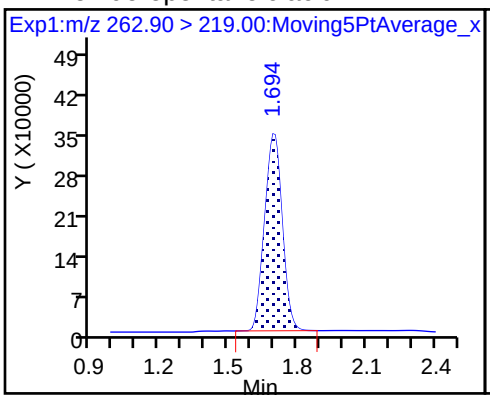
2 Perfluorobutyric acid



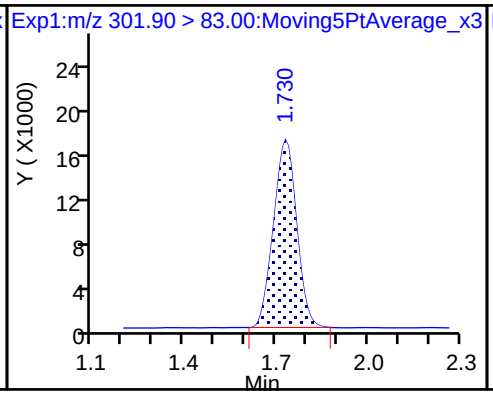
D 3 13C5-PFPeA



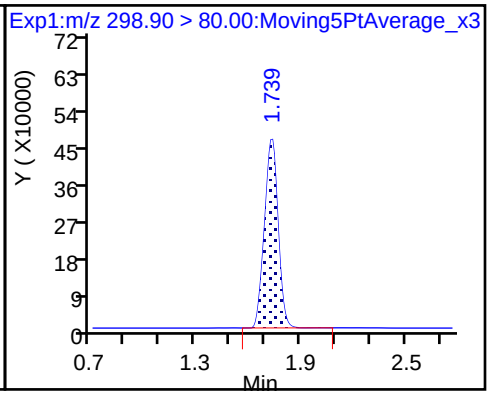
4 Perfluoropentanoic acid



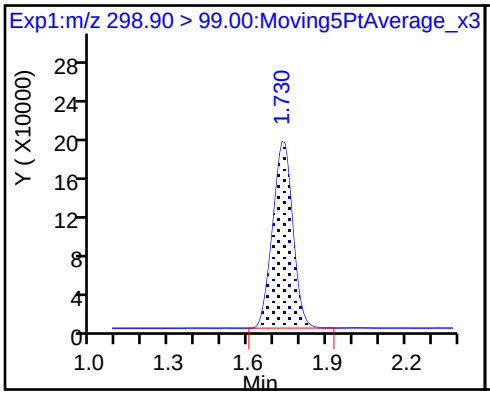
D 47 13C3-PFBS



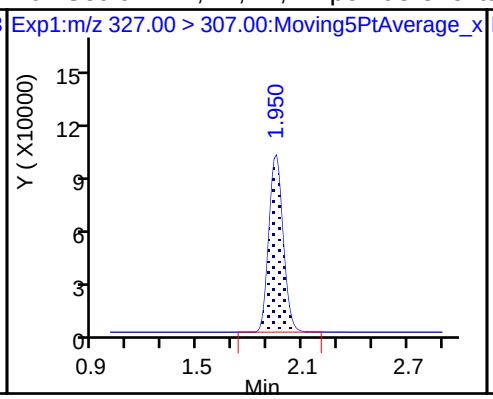
5 Perfluorobutanesulfonic acid



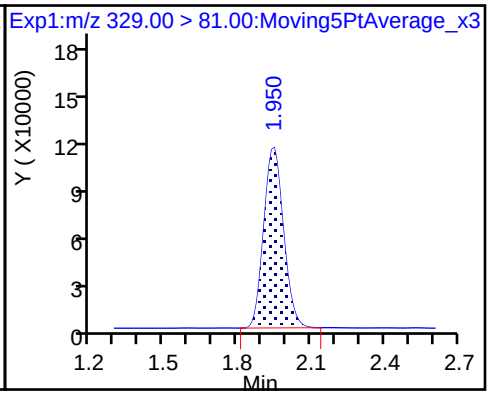
5 Perfluorobutanesulfonic acid



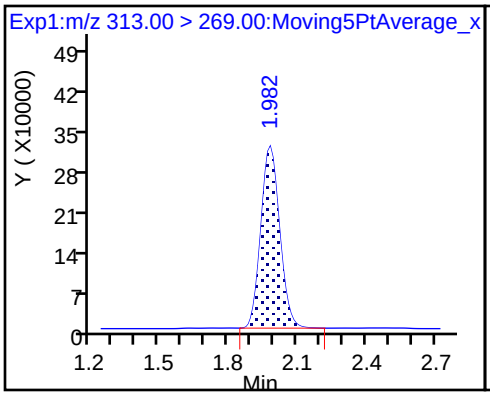
61 Sodium 1H,1H,2H,2H-perfluorohexane



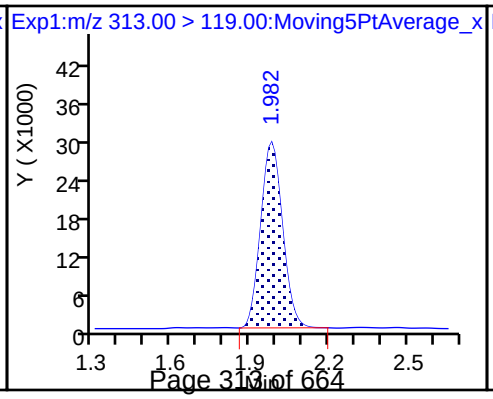
D 60 M2-4:2FTS



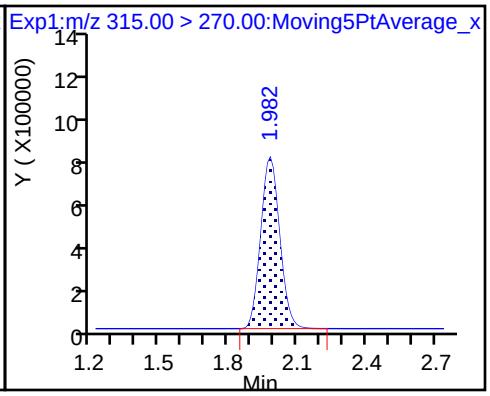
6 Perfluorohexanoic acid



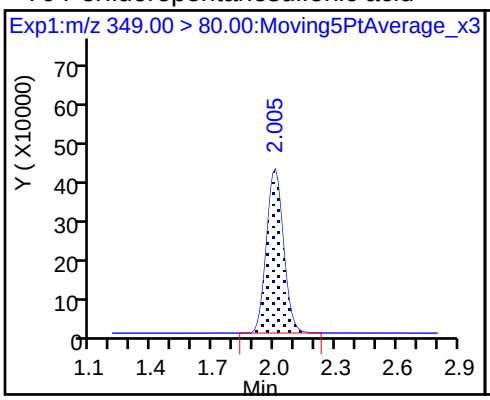
6 Perfluorohexanoic acid



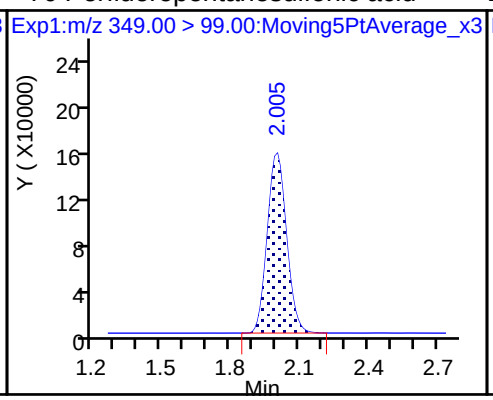
D 7 13C2 PFHxA



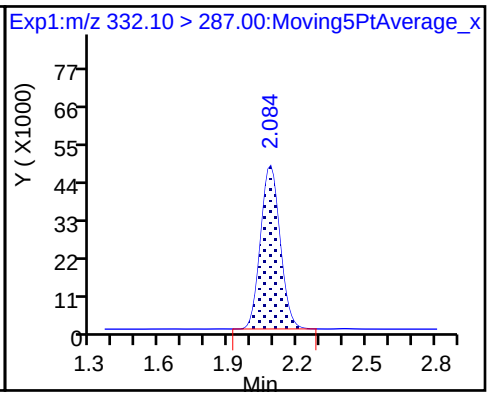
70 Perfluoropentanesulfonic acid



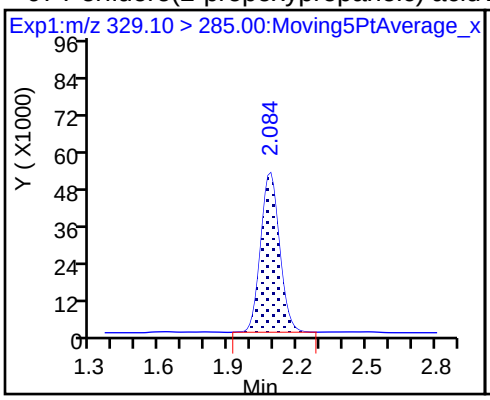
70 Perfluoropentanesulfonic acid



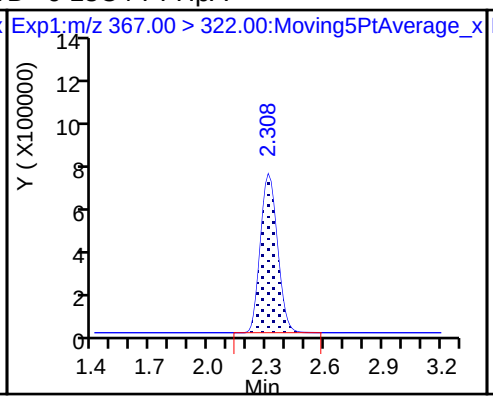
D 64 13C3 HFPO-DA



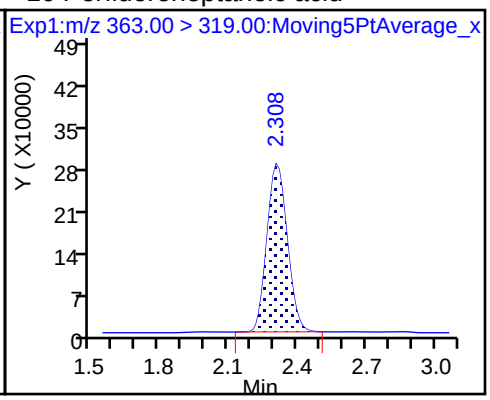
67 Perfluoro(2-propoxypropanoic) acid



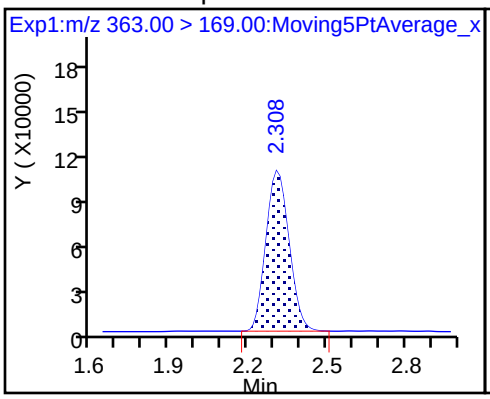
D 9 13C4-PFHpA



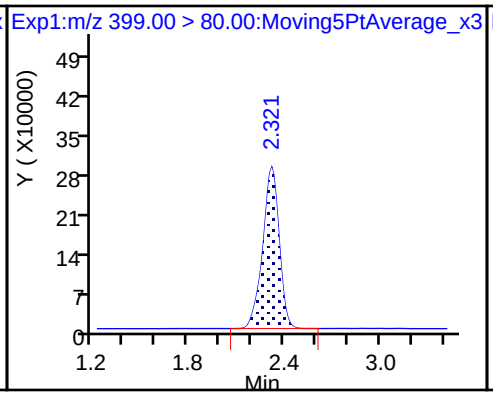
10 Perfluoroheptanoic acid



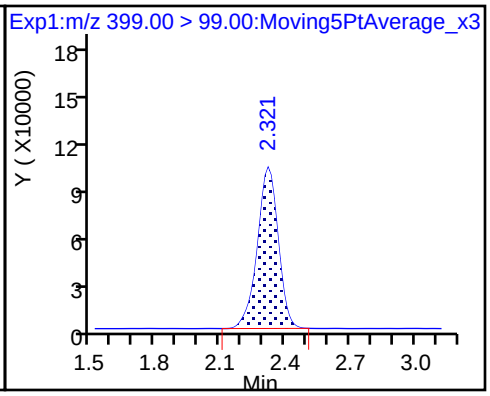
10 Perfluoroheptanoic acid



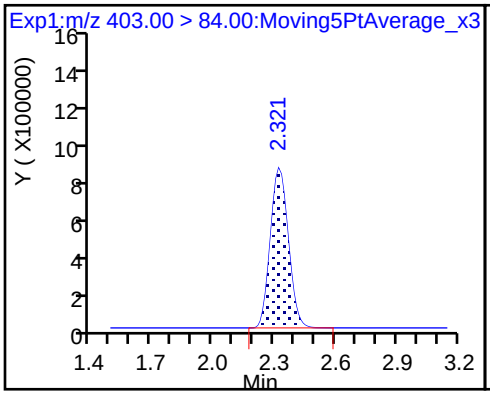
8 Perfluorohexanesulfonic acid



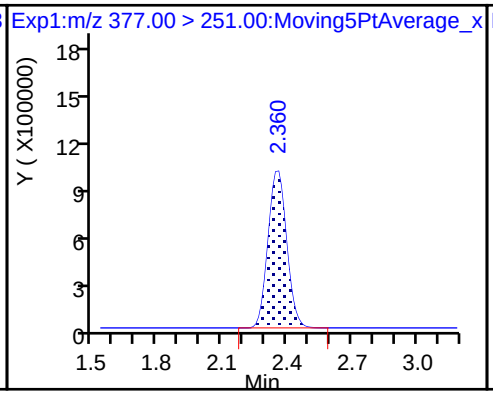
8 Perfluorohexanesulfonic acid



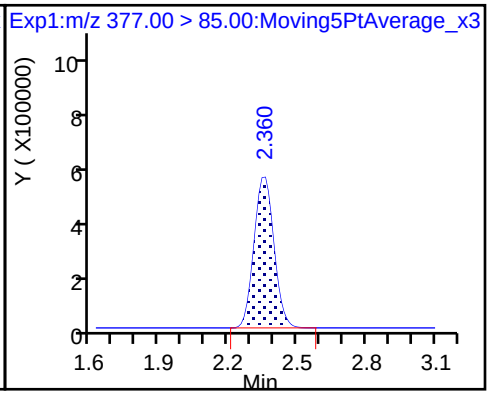
D 11 18O2 PFHxS



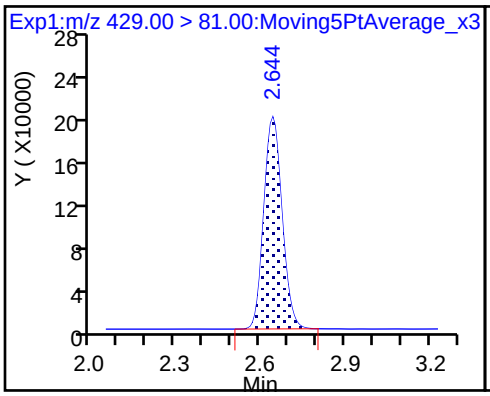
65 Adona



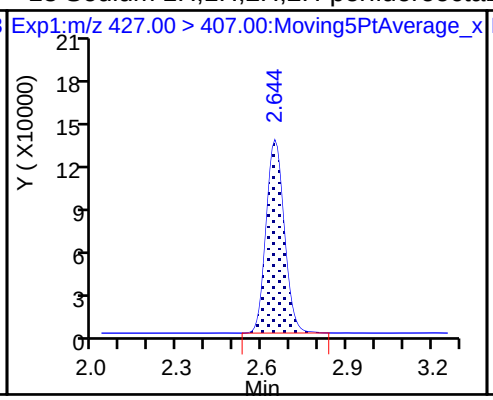
65 Adona



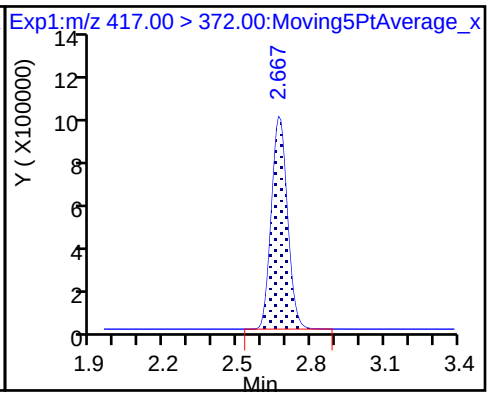
D 12 M2-6:2FTS



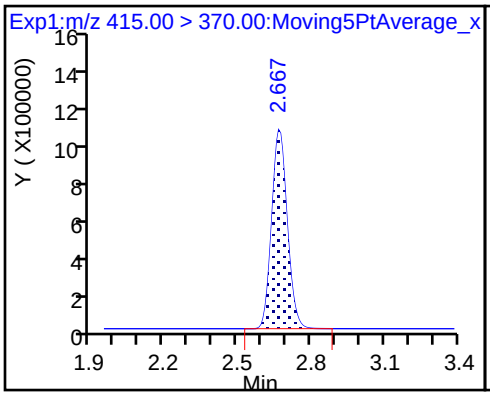
13 Sodium 1H,1H,2H,2H-perfluorooctane



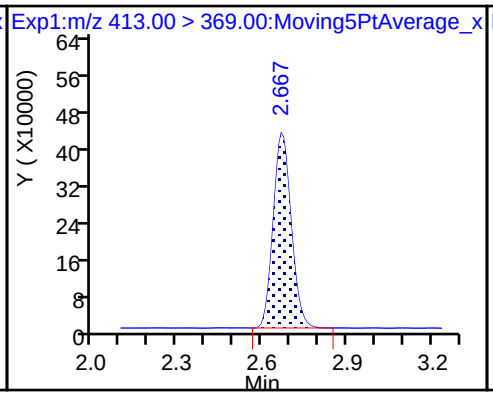
D 14 13C4 PFOA



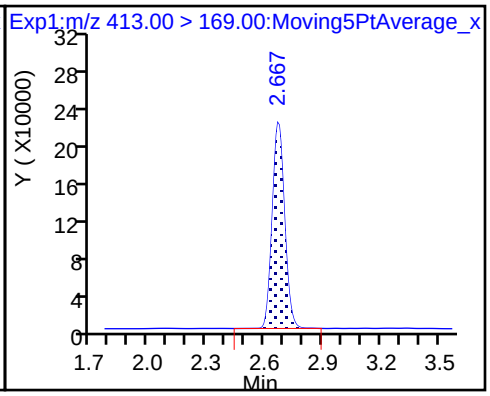
* 62 13C2-PFOA



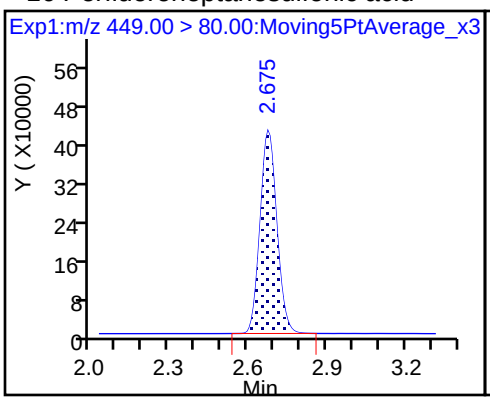
15 Perfluorooctanoic acid



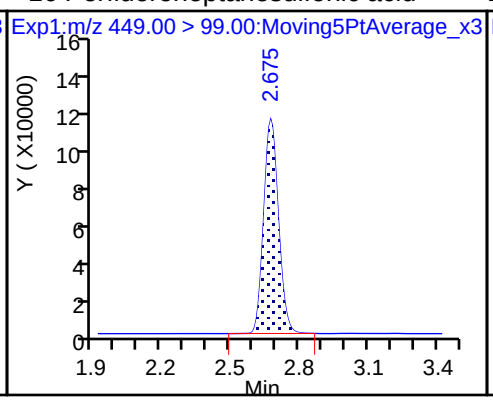
15 Perfluorooctanoic acid



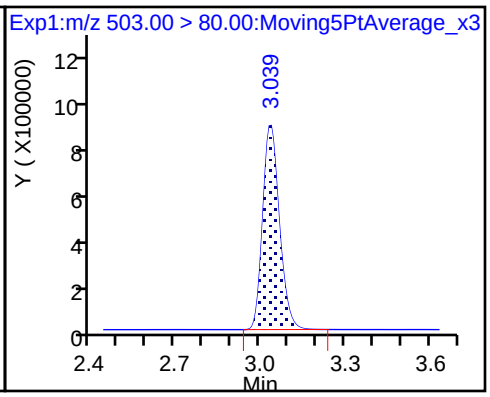
16 Perfluoroheptanesulfonic acid



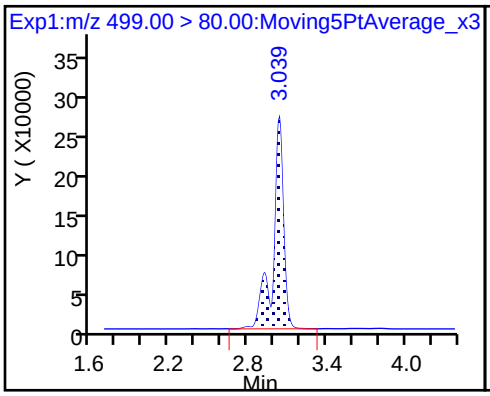
16 Perfluoroheptanesulfonic acid



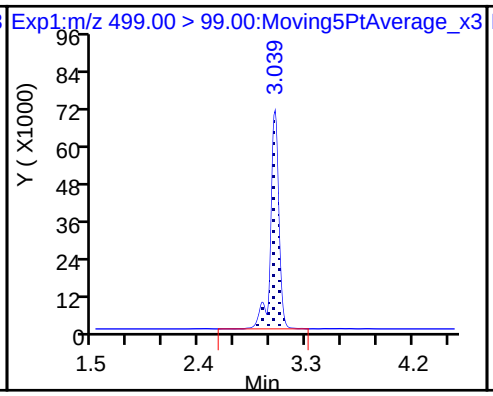
D 18 13C4 PFOS



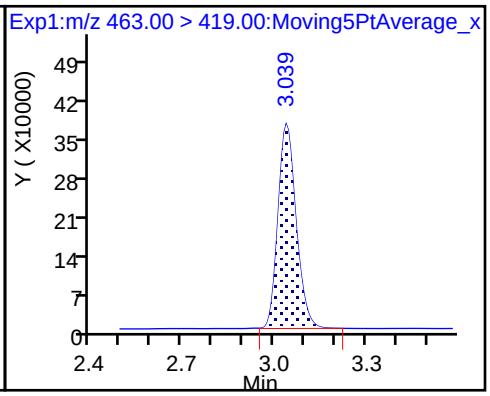
17 Perfluorooctane sulfonic acid



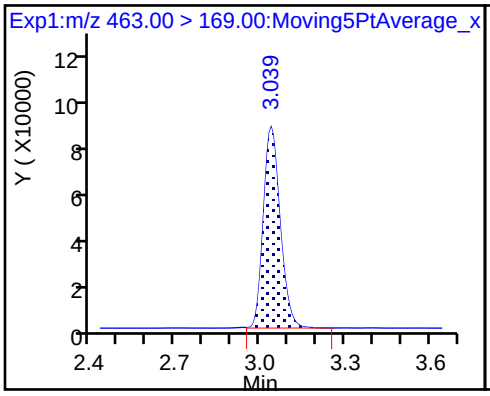
17 Perfluorooctane sulfonic acid



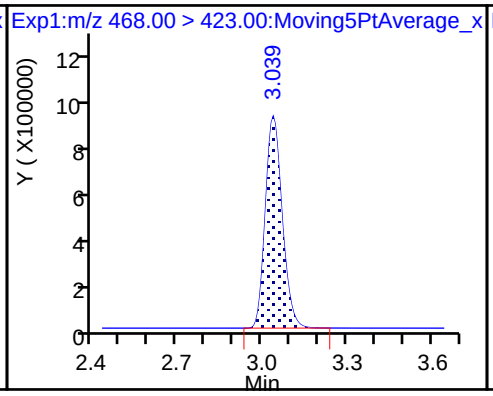
20 Perfluorononanoic acid



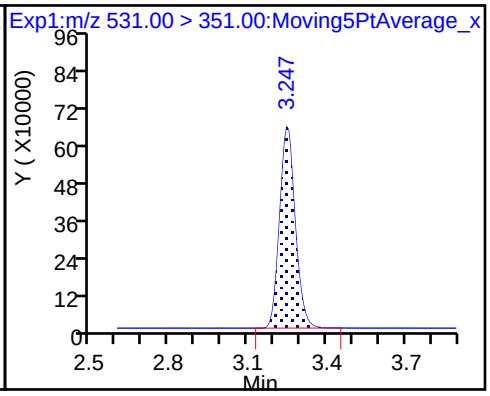
20 Perfluorononanoic acid



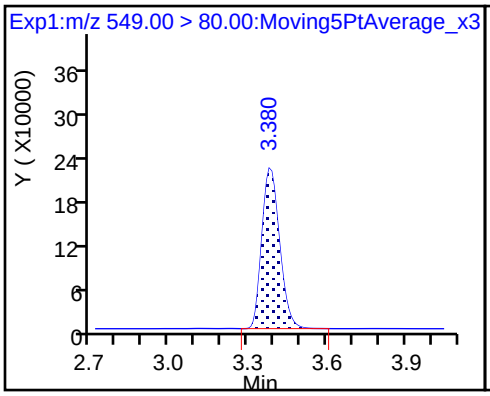
D 19 13C5 PFNA



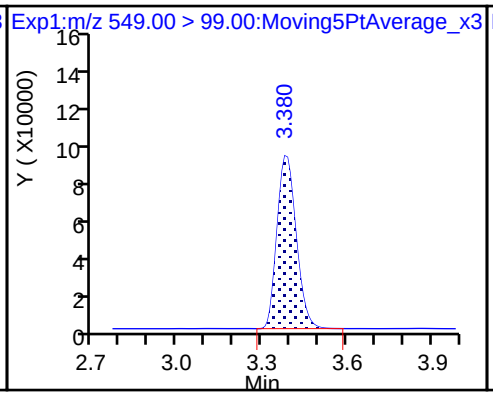
69 9-Chlorohexadecafluoro-3-oxanonane



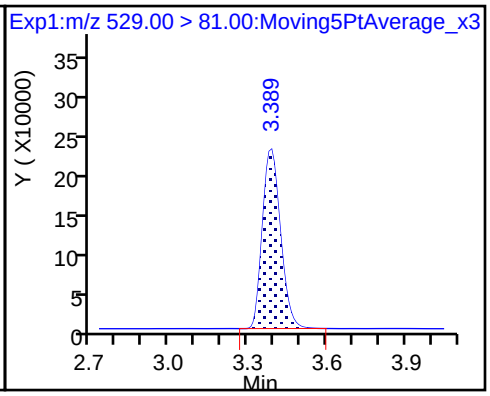
68 Perfluorononanesulfonic acid



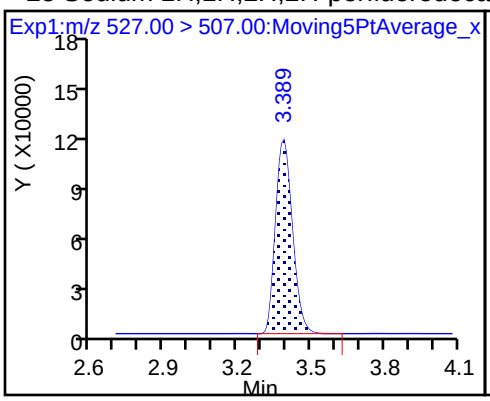
68 Perfluorononanesulfonic acid



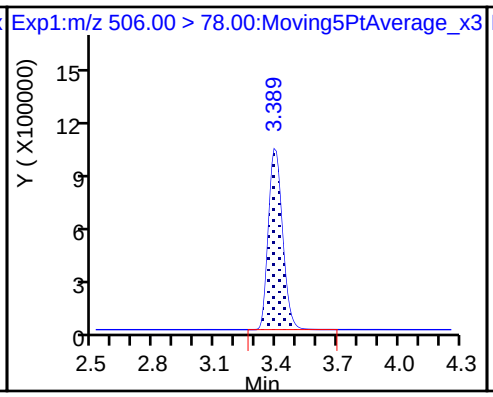
D 26 M2-8:2FTS



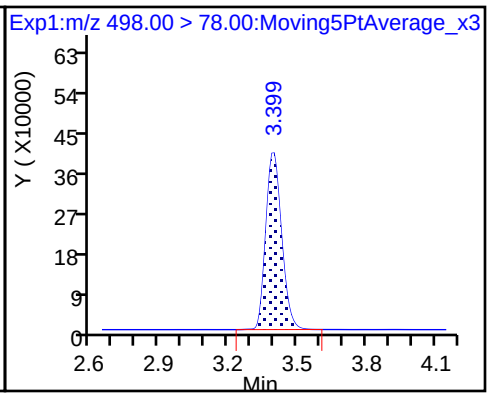
25 Sodium 1H,1H,2H,2H-perfluorodecane



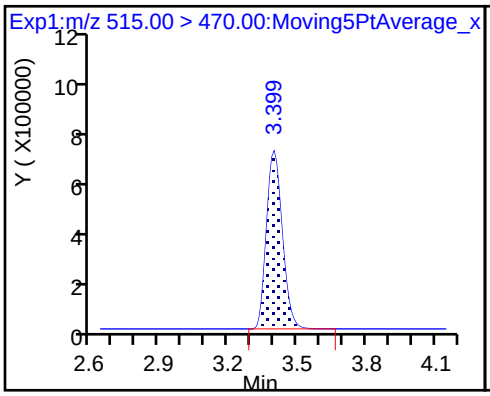
D 21 13C8 FOSA



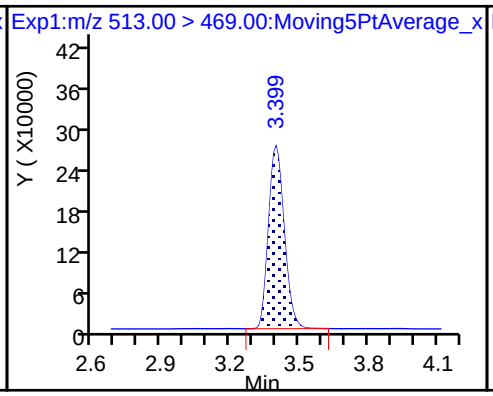
22 Perfluorooctane Sulfonamide



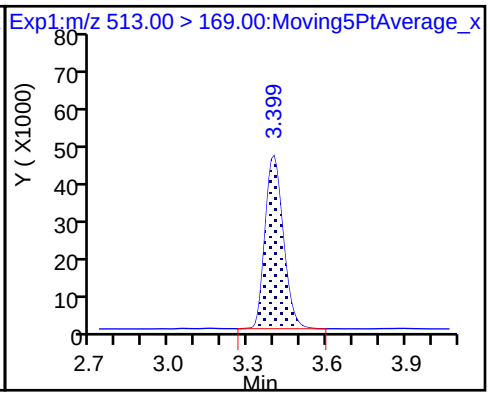
D 23 13C2 PFDA



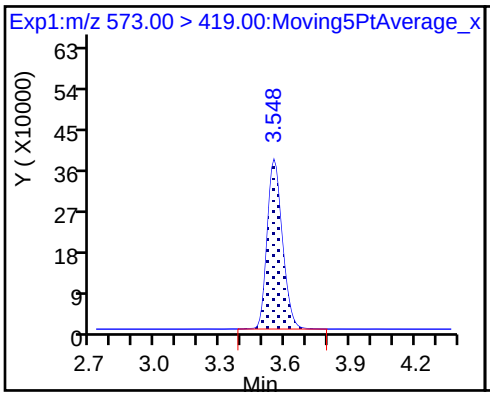
24 Perfluorodecanoic acid



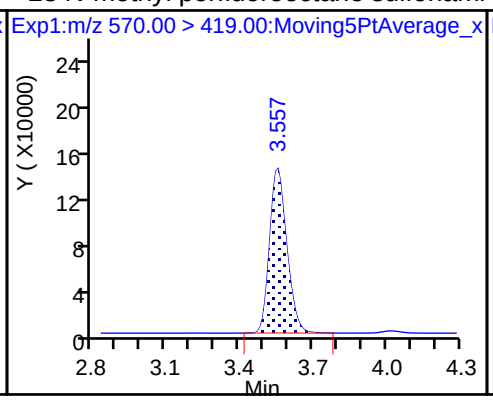
24 Perfluorodecanoic acid



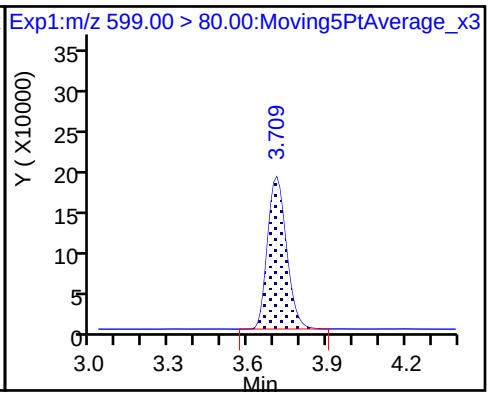
D 27 d3-NMeFOSAA



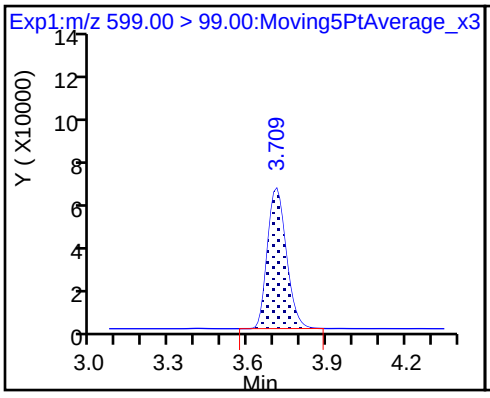
28 N-methyl perfluorooctane sulfonami



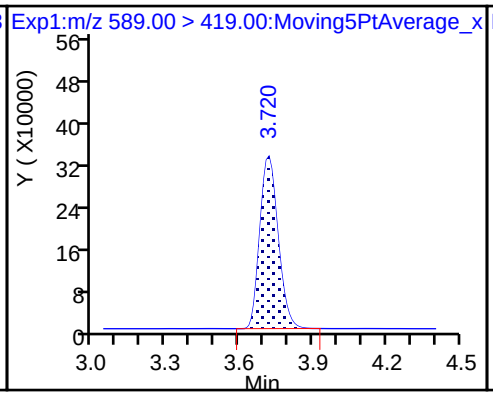
29 Perfluorodecane Sulfonic acid



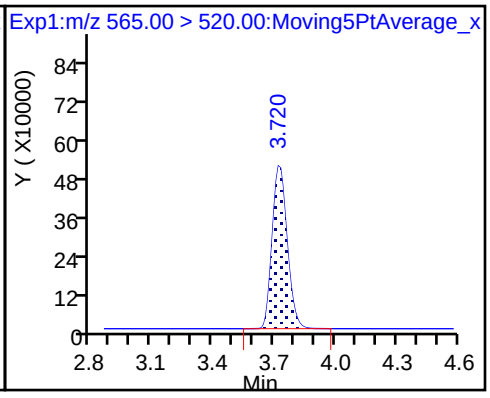
29 Perfluorodecane Sulfonic acid



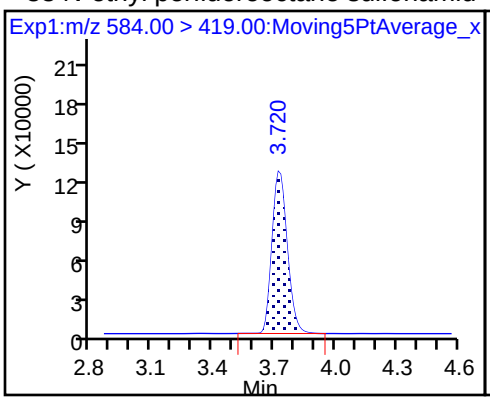
D 32 d5-NEtFOSAA



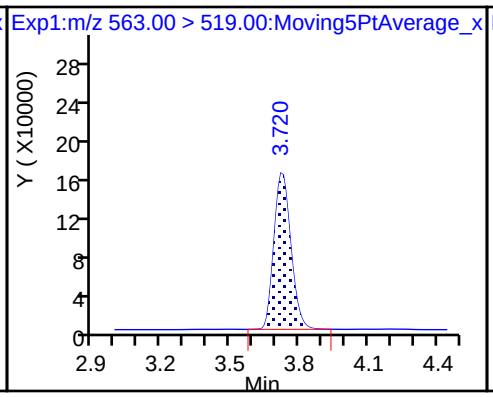
D 30 13C2 PFUnA



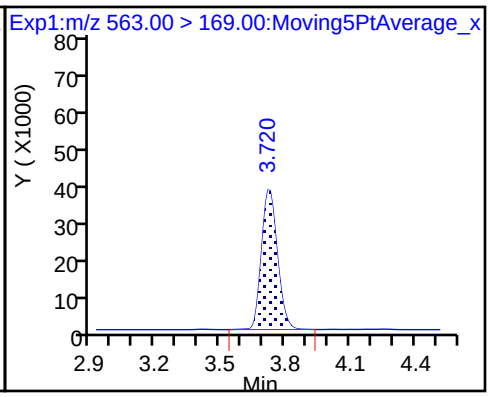
33 N-ethyl perfluorooctane sulfonamid



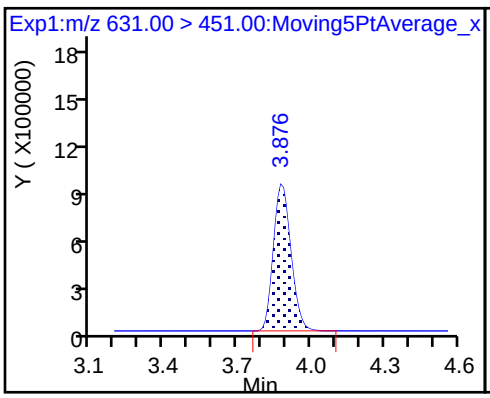
31 Perfluoroundecanoic acid



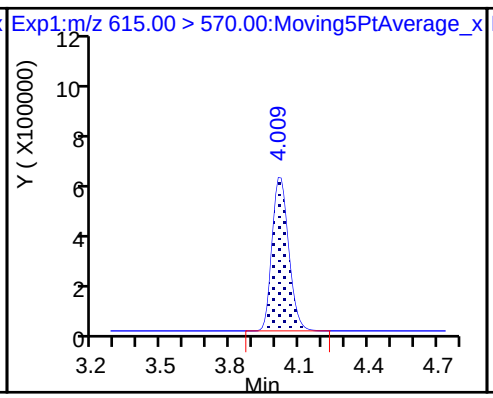
31 Perfluoroundecanoic acid



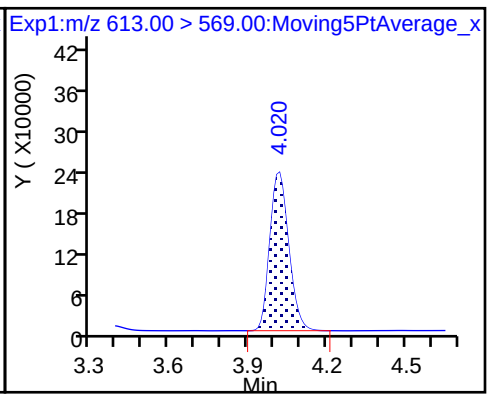
66 11-Chloroeicosafluoro-3-oxaundecan



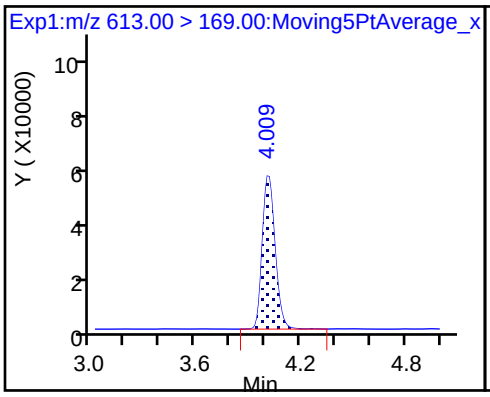
D 36 13C2 PFDoA



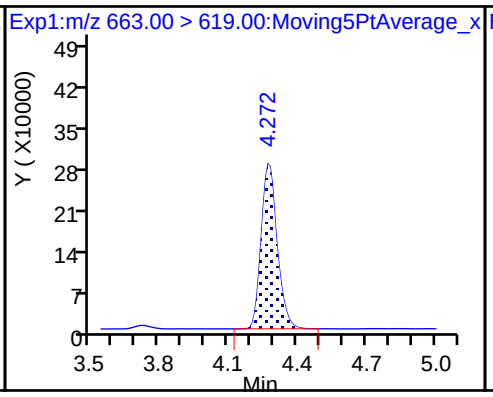
37 Perfluorododecanoic acid



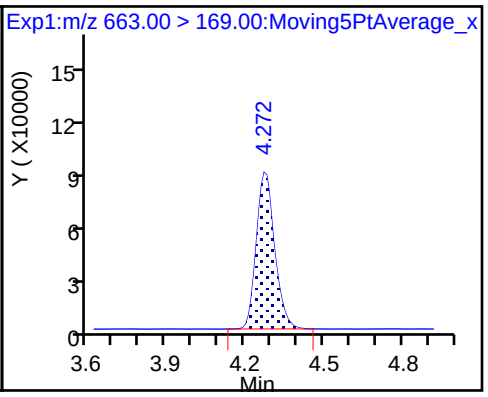
37 Perfluorododecanoic acid



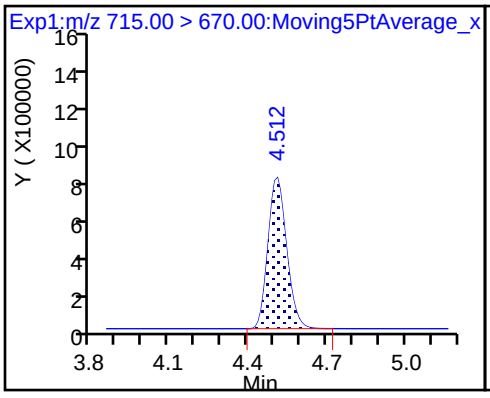
41 Perfluorotridecanoic acid



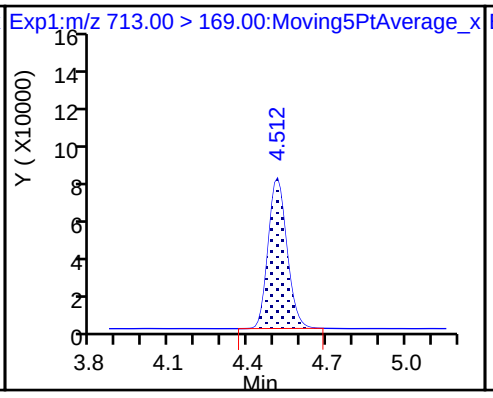
41 Perfluorotridecanoic acid



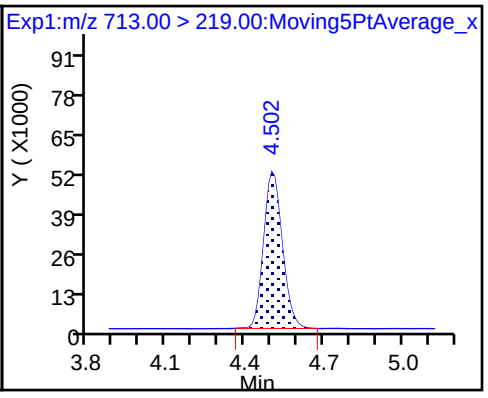
D 43 13C2-PFTeDA



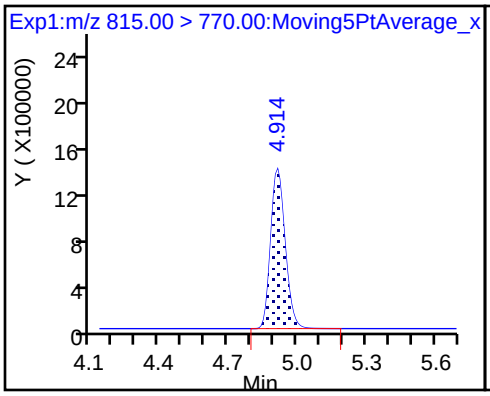
42 Perfluorotetradecanoic acid



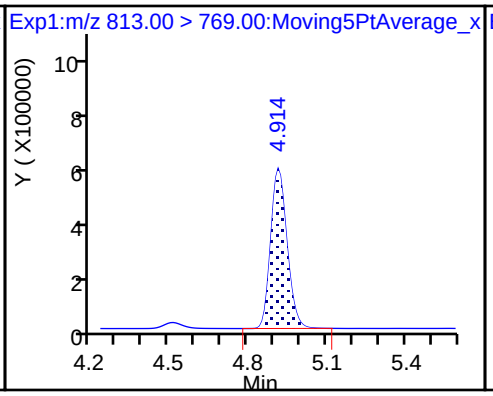
42 Perfluorotetradecanoic acid



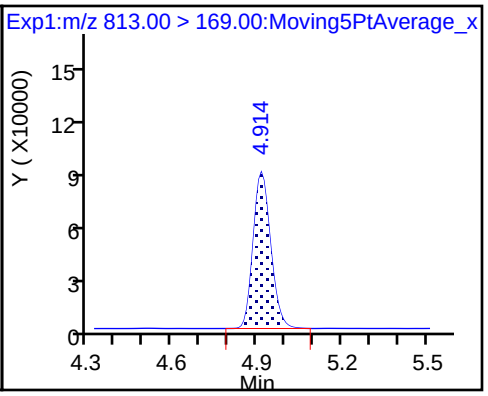
D 44 13C2-PFHxDA



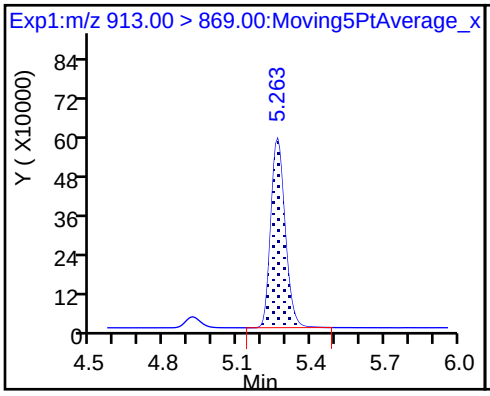
45 Perfluorohexadecanoic acid



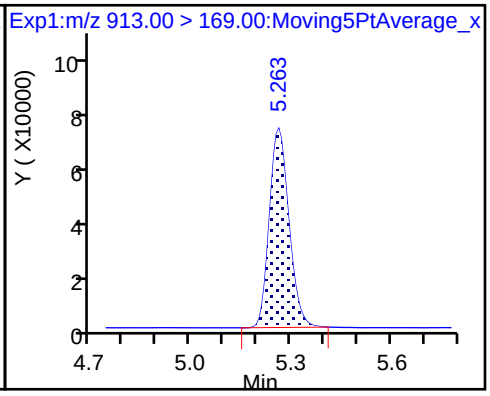
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 10-Apr-2018 19:10:58 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:11 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:19:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	6113537	2.46		98.3	50691	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	5819896	2.56		103	2506	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.693	1.699	-0.006	1.000	4844578	2.57		103	4840	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.699	-0.006	0.558	3952401	2.46		98.6	74416	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.735	-0.006	1.000	83922	2.28		98.1	740	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.736	-0.007	1.000	6477140	2.29		104	28669	
298.90 > 99.00	1.729	1.736	-0.007	1.000	2643044		2.45(1.25-3.74)	104	34961	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.950	-0.002	1.000	615130	2.33		99.9	6761	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.950	-0.002	1.000	1359770	2.35		101	79419	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4266668	2.41		96.2	93064	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.985	-0.004	1.000	4512177	2.60		104	11165	
313.00 > 119.00	1.981	1.985	-0.004	1.000	415818		10.85(5.03-15.10)	104	4827	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.008	-0.005	1.000	6143254	2.38		101	39164	
349.00 > 99.00	2.003	2.008	-0.005	1.000	2304917		2.67(1.36-4.07)	101	57041	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.084	-0.002	1.000	282614	2.58		103	8102	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.082	2.087	-0.005	1.000	771939	2.45		98.1	6105	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.306	2.314	-0.008	1.000	4571563	2.62		105	6057	
363.00 > 169.00	2.306	2.314	-0.008	1.000	1750162		2.61(1.13-3.40)	105	10592	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.314	-0.008	1.000	4357585	2.52		101	88768	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.323	-0.004	1.000	5199428	2.21		97.1	17064	
399.00 > 99.00	2.319	2.323	-0.004	1.000	1684954		3.09(1.50-4.49)	97.1	15461	
D 11 18O2 PFHxS										
403.00 > 84.00	2.319	2.327	-0.008	1.000	4919272	2.31		97.6	100471	
65 Adona										
377.00 > 251.00	2.358	2.360	-0.002	1.000	13509817	2.70		108	130340	
377.00 > 85.00	2.345	2.360	-0.015	0.994	7737038		1.75(0.84-2.53)	108	141597	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.649	-0.005	1.000	1407564	2.24		94.7	22058	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.649	-0.005	1.000	880882	2.38		100	13167	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4288230	2.50		100.0	57314	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.674	-0.007	1.000	4910933	2.48		99.1	2984	
413.00 > 169.00	2.667	2.674	-0.007	1.000	2476515		1.98(0.84-2.52)	99.1	13949	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.674	-0.007		4623543	2.50			75604	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.680	-0.005	1.000	4867309	2.54		107	34655	
449.00 > 99.00	2.675	2.680	-0.005	1.000	1250756		3.89(1.94-5.82)	107	35350	
D 18 13C4 PFOS										
503.00 > 80.00	3.035	3.041	-0.006	1.000	3447017	2.31		96.7	25534	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.035	3.042	-0.007	1.000	3684174	2.35		101	15653	
499.00 > 99.00	3.035	3.042	-0.007	1.000	824846		4.47(2.31-6.93)	101	12600	
20 Perfluorononanoic acid										
463.00 > 419.00	3.035	3.043	-0.008	1.000	3792206	2.49		99.6	9277	
463.00 > 169.00	3.042	3.043	-0.001	1.002	865580		4.38(1.90-5.69)	99.6	18899	
D 19 13C5 PFNA										
468.00 > 423.00	3.035	3.045	-0.010	1.000	3653281	2.48		99.1	80277	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.250	3.253	-0.003	1.000	6954333	2.56		110	142943	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.384	3.388	-0.004	1.000	2870093	2.49		104	29938	
549.00 > 99.00	3.384	3.388	-0.004	1.000	1016002		2.82(1.33-3.97)	104	24257	
D 26 M2-8:2FTS										
529.00 > 81.00	3.384	3.390	-0.006	1.000	1063168	2.39		99.7	11071	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.384	3.393	-0.009	1.000	1298898	2.31		96.6	67638	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.397	-0.004	1.000	4533137	2.43		97.3	60119	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.401	-0.008	1.000	4752476	2.59		104	78074	
D 23 13C2 PFDA										
515.00 > 470.00	3.393	3.401	-0.008	1.000	2967373	2.39		95.8	61893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.393	3.402	-0.009	1.000	3158094	2.58		103	14590	
513.00 > 169.00	3.393	3.402	-0.009	1.000	519040		6.08(2.36-7.09)	103	12013	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.551	3.553	-0.002	1.000	1707705	2.43		97.2	23521	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.551	3.558	-0.007	1.000	1802851	2.65		106	12762	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.711	3.715	-0.004	1.000	2376399	2.54		105	29437	
599.00 > 99.00	3.711	3.715	-0.004	1.000	777508		3.06(1.39-4.16)	105	25627	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.722	3.722	0.0	1.000	1729345	2.49		99.8	19661	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.722	3.727	-0.005	1.000	1669717	2.58		103	29608	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.727	-0.005	1.000	2601195	2.43		97.3	36634	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.727	-0.005	1.000	2103252	2.39		95.7	10698	
563.00 > 169.00	3.722	3.727	-0.005	1.000	525073		4.01(2.12-6.36)	95.7	20485	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.880	3.883	-0.003	1.000	10487942	2.50		106	87880	
D 36 13C2 PFDoA										
615.00 > 570.00	4.013	4.017	-0.004	1.000	2745849	2.38		95.1	29081	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.013	4.020	-0.007	1.000	3013785	2.63		105	3414	
613.00 > 169.00	4.013	4.020	-0.007	1.000	730770		4.12(2.13-6.40)	105	9810	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.276	4.278	-0.002	1.000	3391923	2.54		102	3159	
663.00 > 169.00	4.276	4.278	-0.002	1.000	1004489		3.38(1.25-3.76)	102	9947	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.508	4.513	-0.005	1.000	3639964	2.49		99.5	25555	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.508	4.513	-0.005	1.000	872520	2.39		95.4	8442	
713.00 > 219.00	4.508	4.513	-0.005	1.000	674330		1.29(0.71-2.13)	95.4	11267	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.910	4.918	-0.008	1.000	5731595	2.41		96.3	16637	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.919	4.920	-0.001	1.002	5739538	2.62		105	1768	
813.00 > 169.00	4.919	4.920	-0.001	1.002	919527		6.24(2.86-8.58)	105	5404	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.267	5.268	-0.001	1.000	5927518	2.57		103	1545	
913.00 > 169.00	5.260	5.268	-0.008	0.999	709210		8.36(3.83-11.48)	103	3575	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_006.d

Injection Date: 10-Apr-2018 19:10:58 Instrument ID: A8_N

Lims ID: IC L5 Full

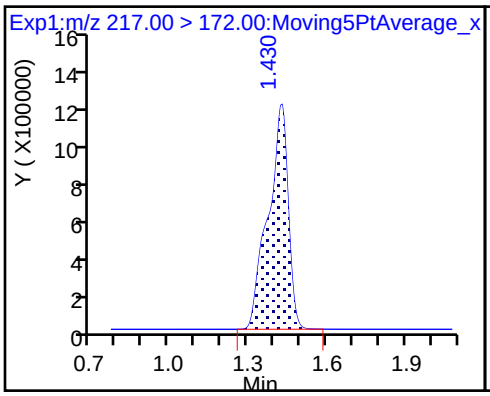
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

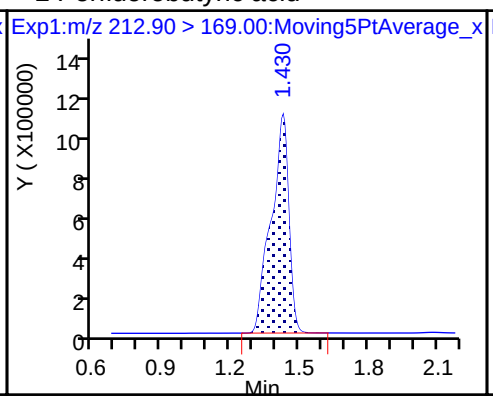
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

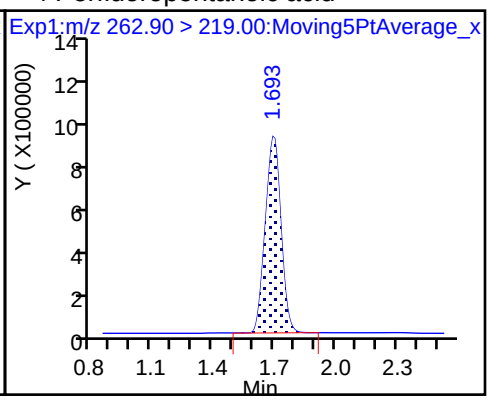
D 1 13C4 PFBA



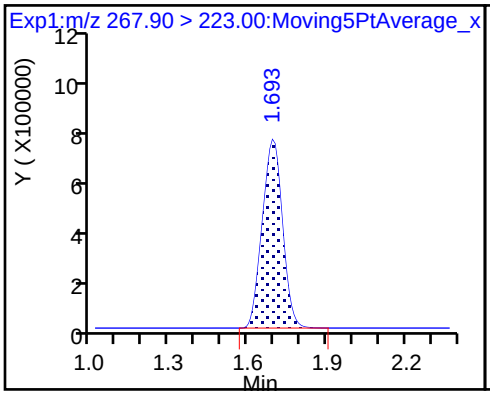
2 Perfluorobutyric acid



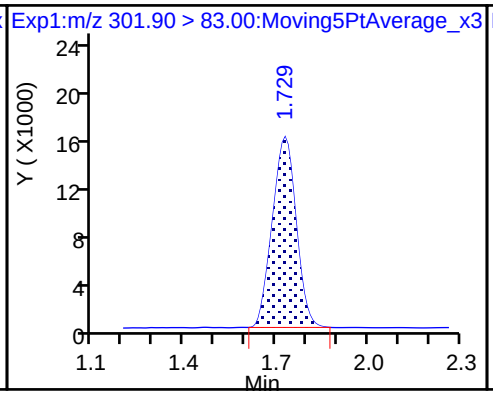
4 Perfluoropentanoic acid



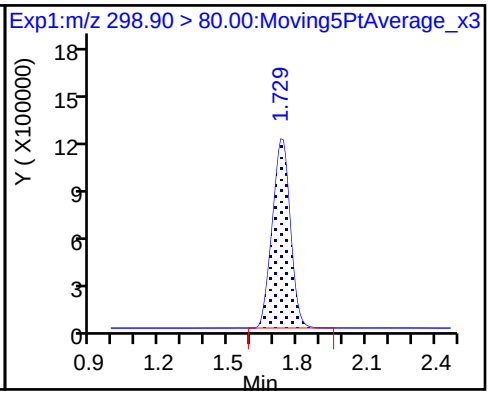
D 3 13C5-PFPeA



D 47 13C3-PFBS



5 Perfluorobutanesulfonic acid



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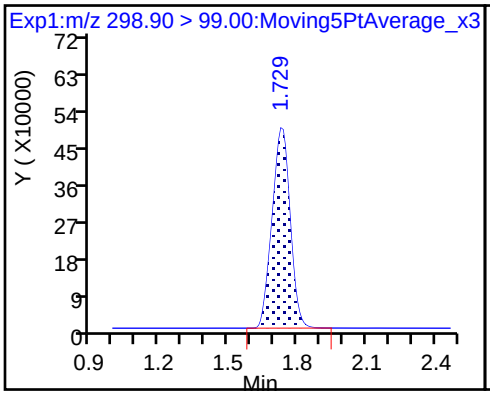
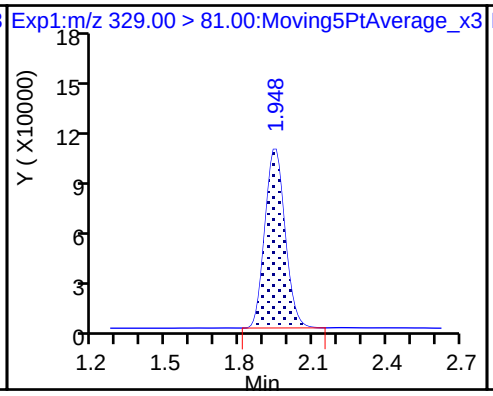
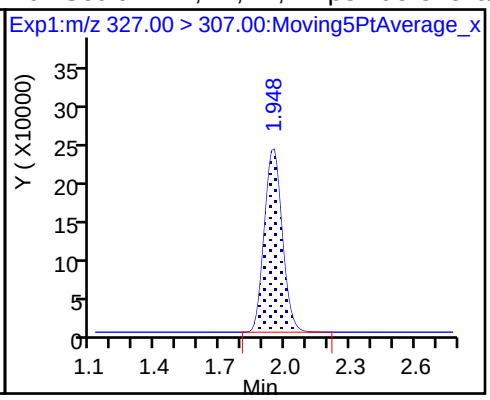


D 60 M2-4:2FTS



61 Sodium 1H,1H,2H,2H-perfluorohexane



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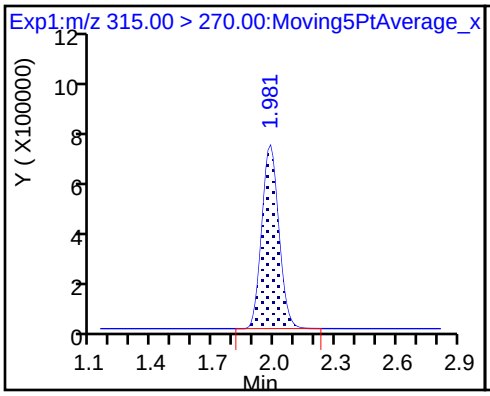
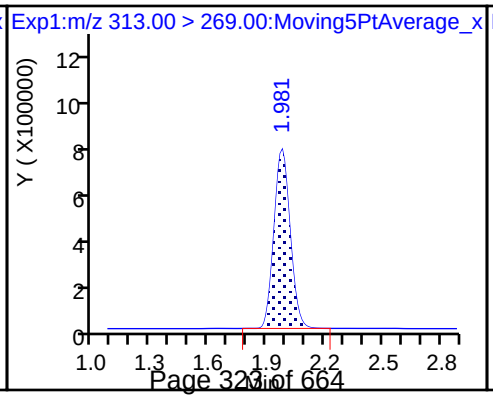


6 Perfluorohexanoic acid



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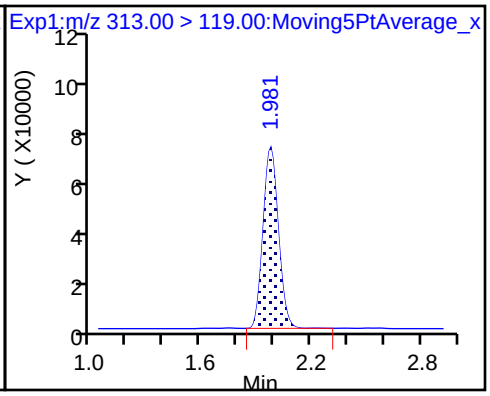
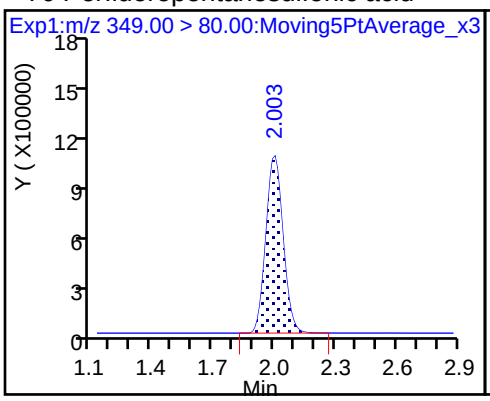


70 Perfluoropentanesulfonic acid



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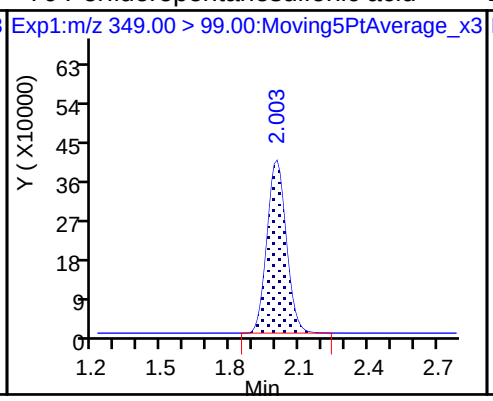
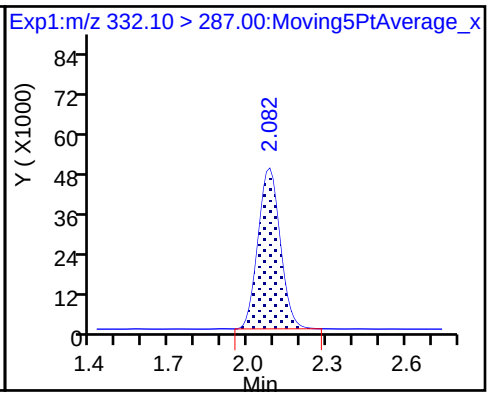
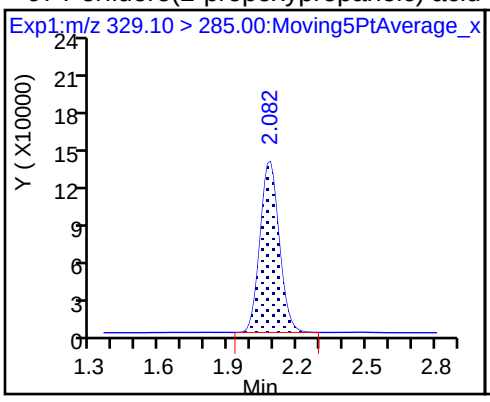


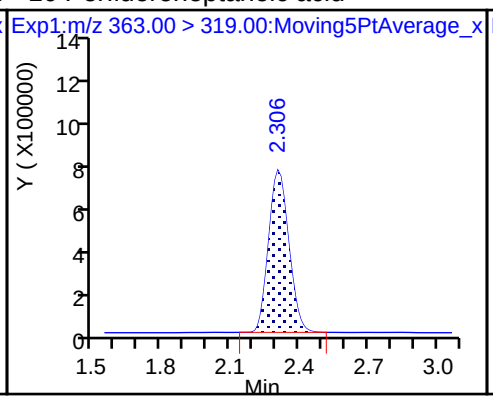
D 64 13C3 HFPO-DA



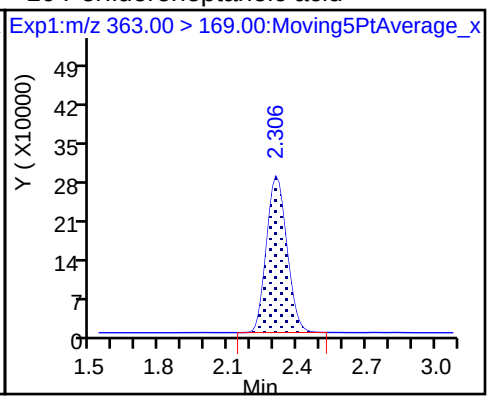
67 Perfluoro(2-propoxypropanoic) acid



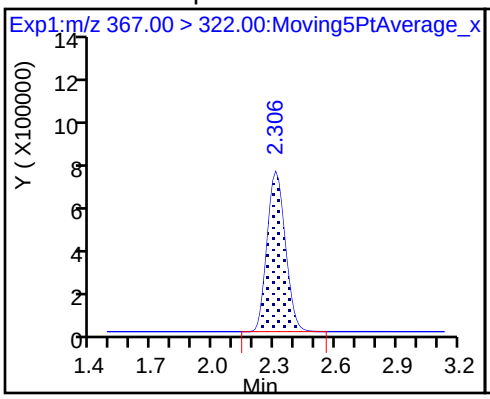
10 Perfluoroheptanoic acid



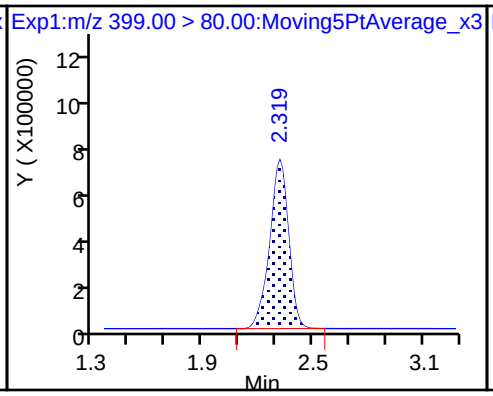
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid



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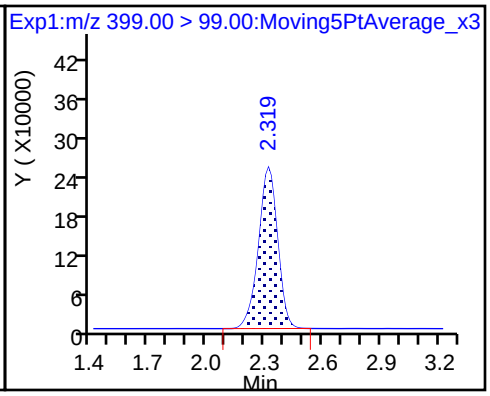
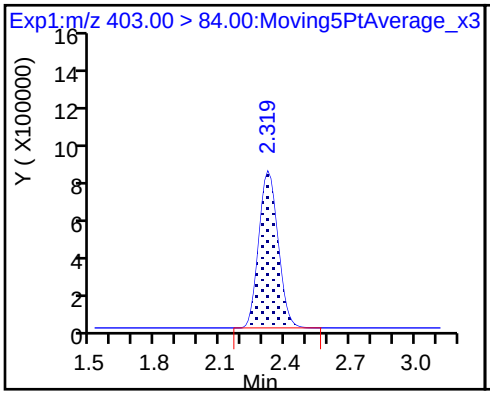
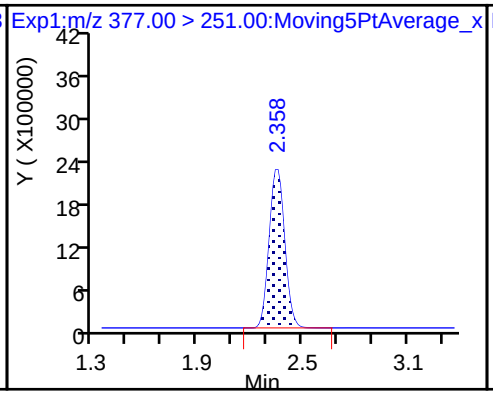


D 11 18O2 PFHxS



65 Adona



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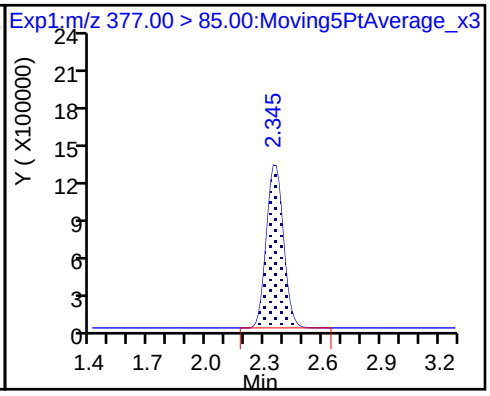
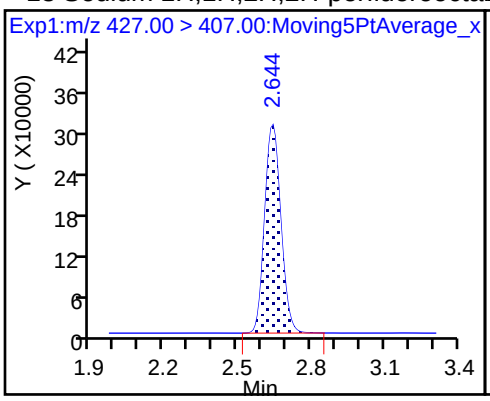
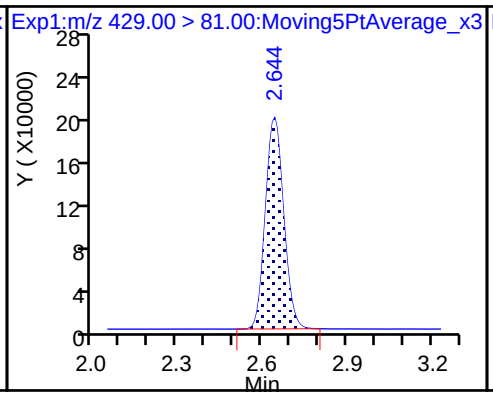


13 Sodium 1H,1H,2H,2H-perfluorooctane



D 12 M2-6:2FTS



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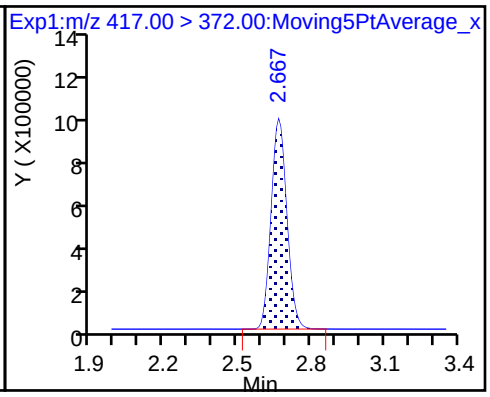
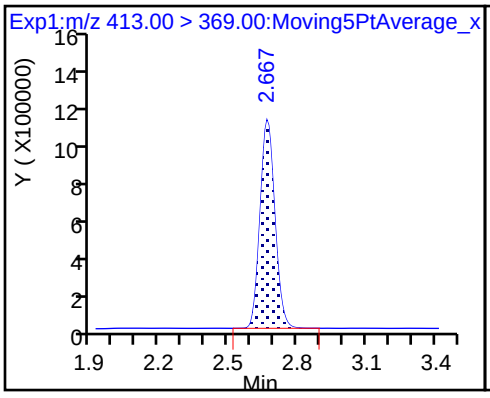


15 Perfluorooctanoic acid



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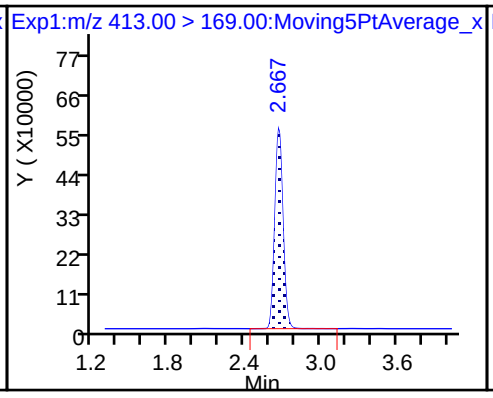
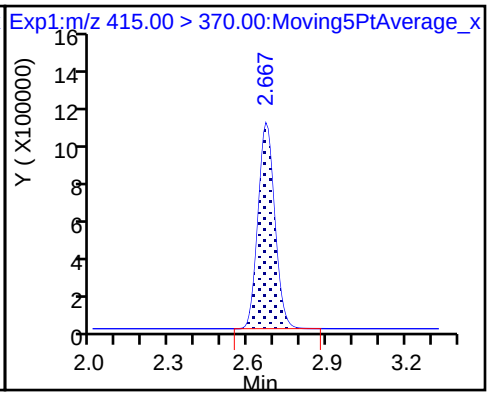
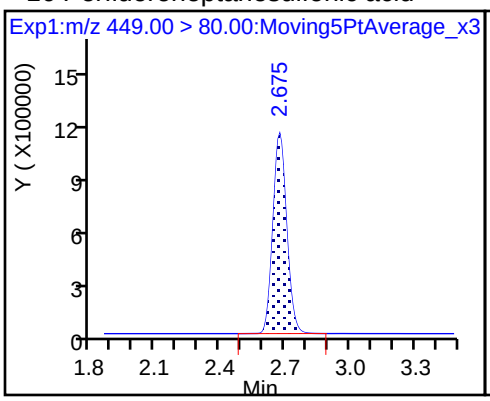


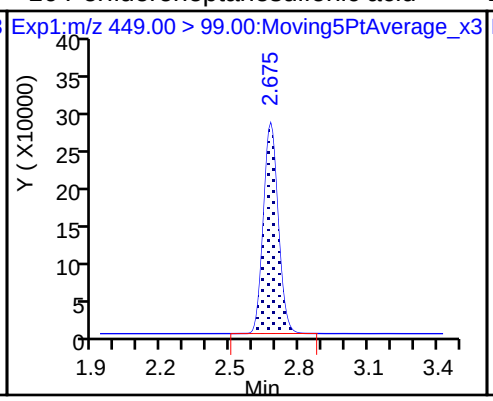
* 62 13C2-PFOA



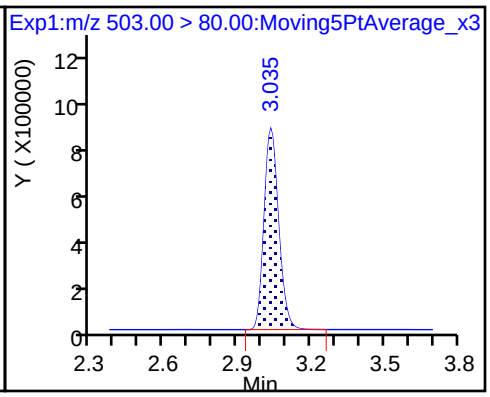
16 Perfluoroheptanesulfonic acid



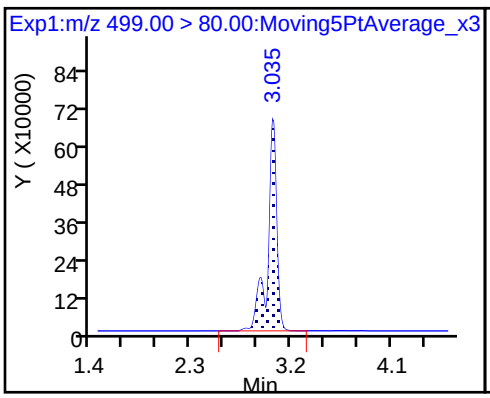
16 Perfluoroheptanesulfonic acid



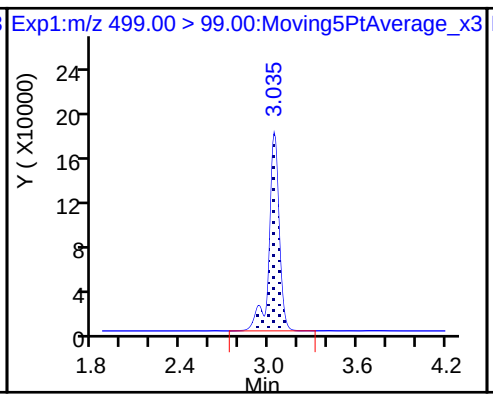
D 18 13C4 PFOS



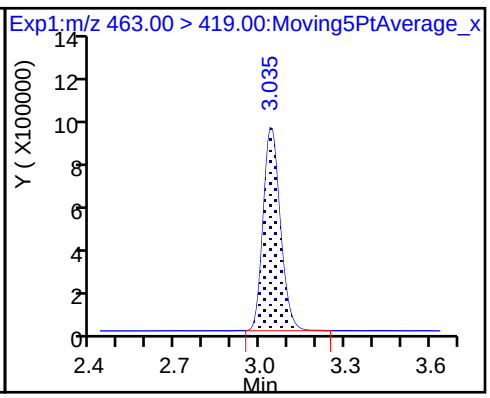
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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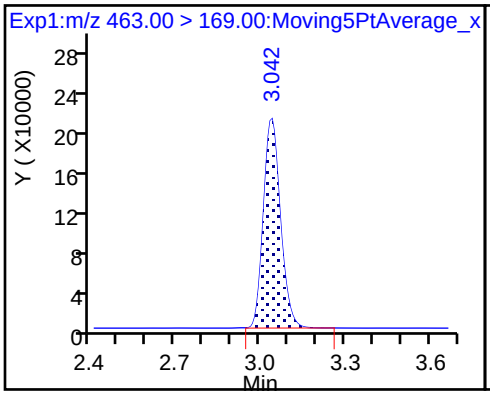
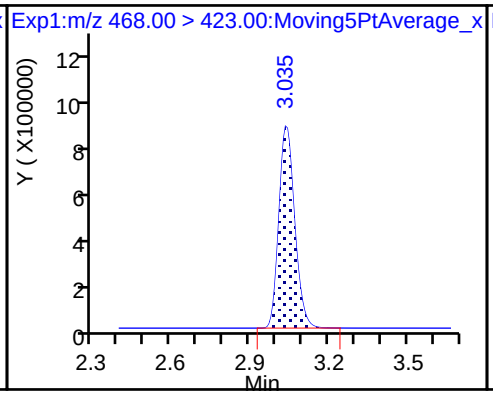
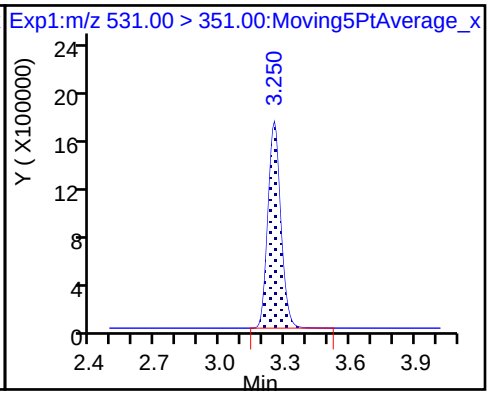


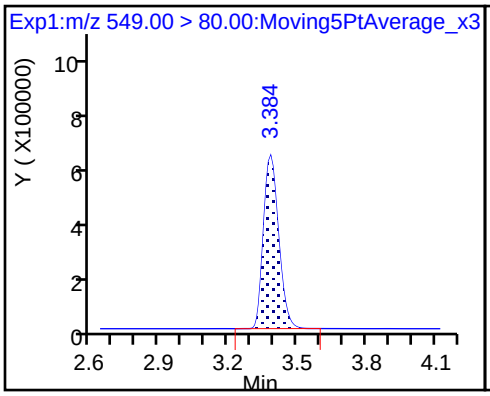
D 19 13C5 PFNA



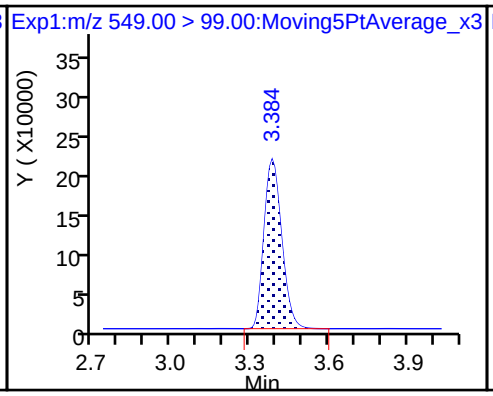
69 9-Chlorohexadecafluoro-3-oxanonane



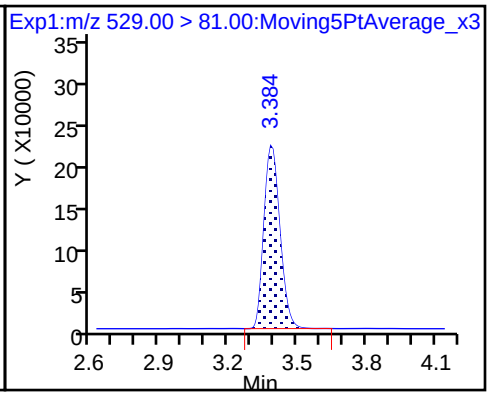
68 Perfluorononanesulfonic acid



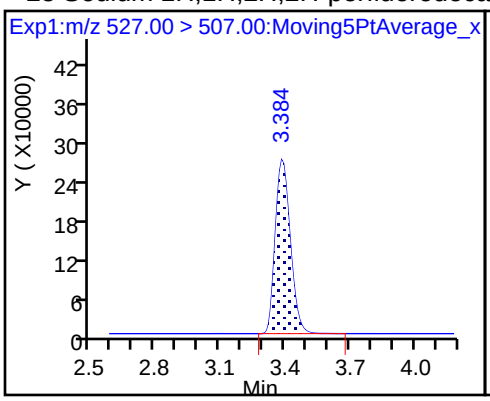
68 Perfluorononanesulfonic acid



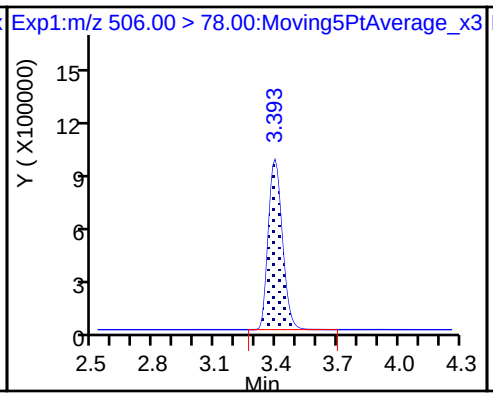
D 26 M2-8:2FTS



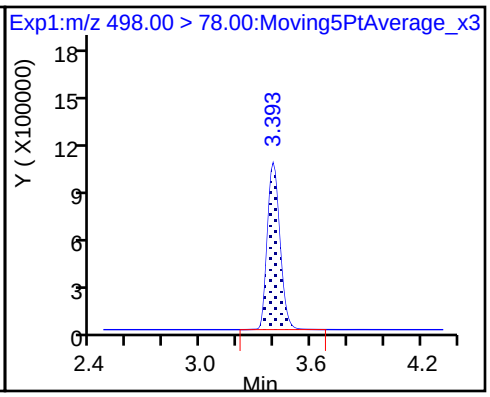
25 Sodium 1H,1H,2H,2H-perfluorodecane



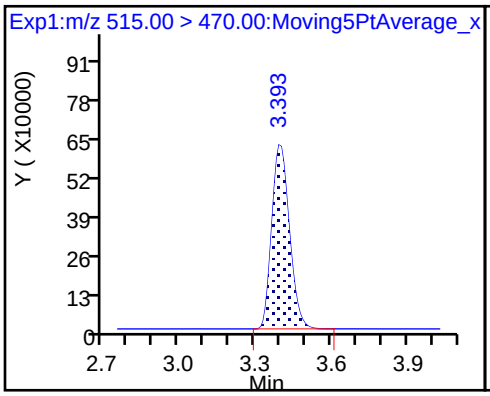
D 21 13C8 FOSA



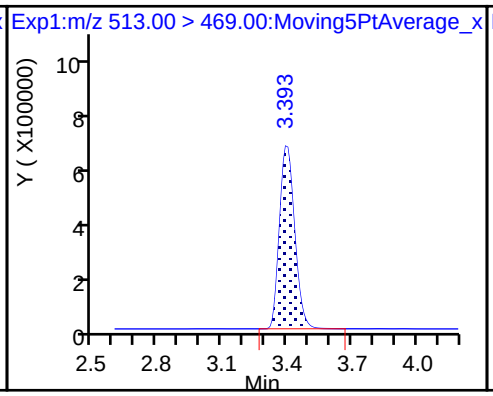
22 Perfluorooctane Sulfonamide



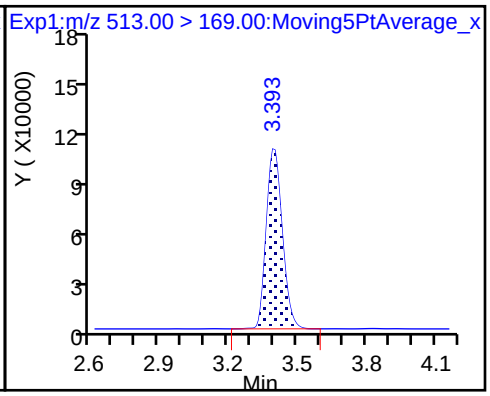
D 23 13C2 PFDA



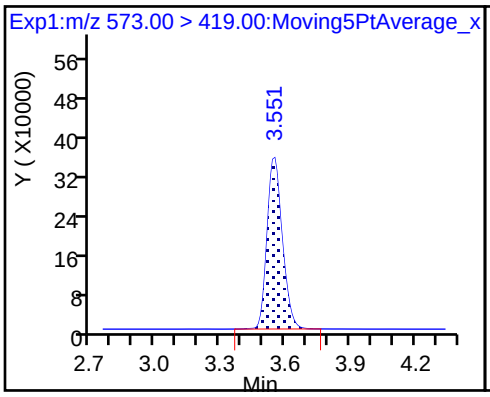
24 Perfluorodecanoic acid



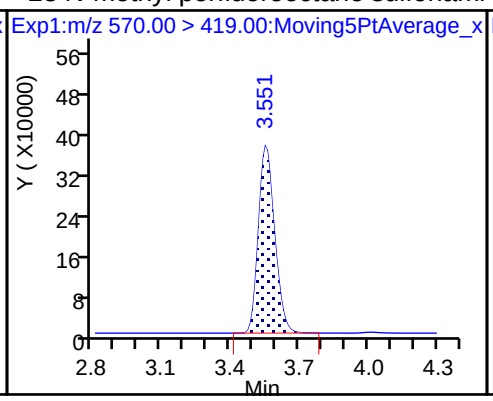
24 Perfluorodecanoic acid



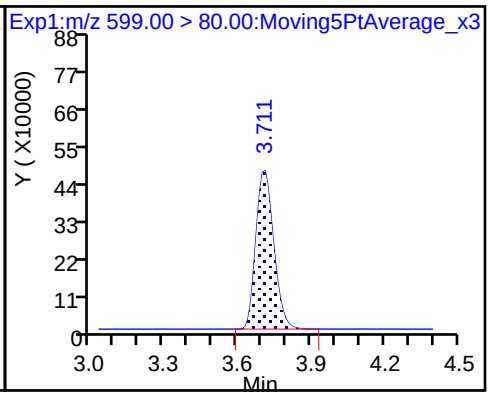
D 27 d3-NMeFOSAA



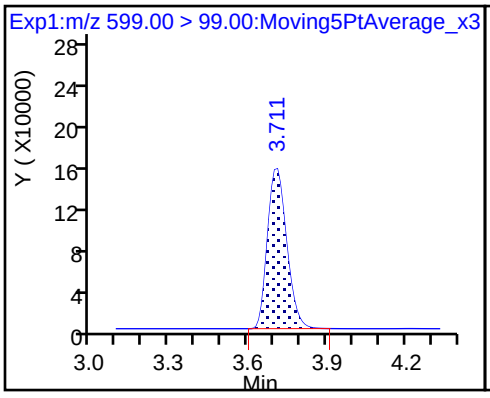
28 N-methyl perfluorooctane sulfonami



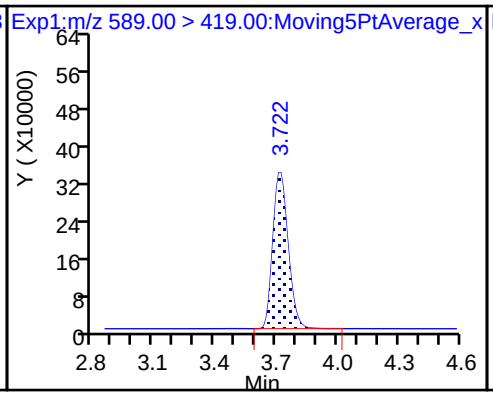
29 Perfluorodecane Sulfonic acid



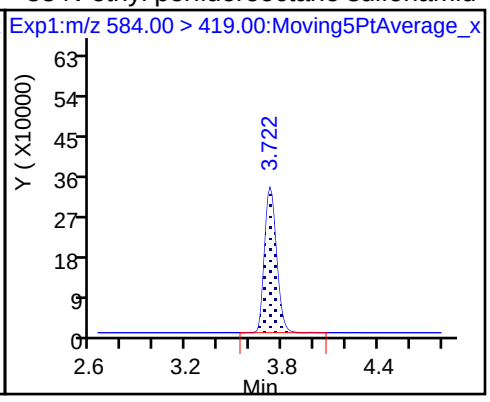
29 Perfluorodecane Sulfonic acid



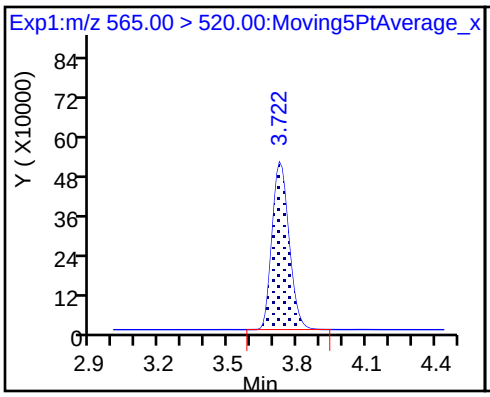
D 32 d5-NEtFOSAA



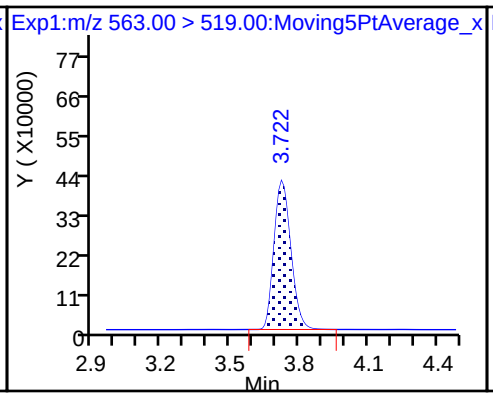
33 N-ethyl perfluorooctane sulfonamid



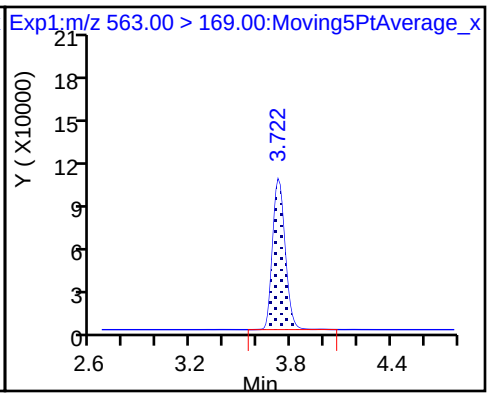
D 30 13C2 PFUnA



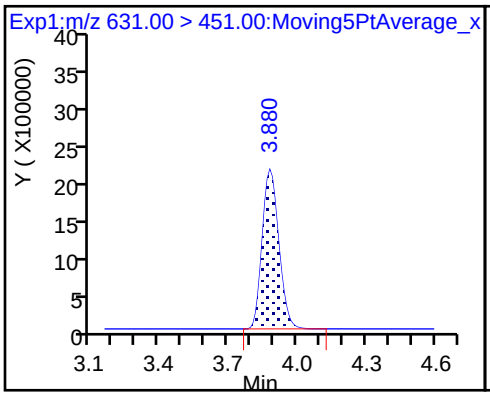
31 Perfluoroundecanoic acid



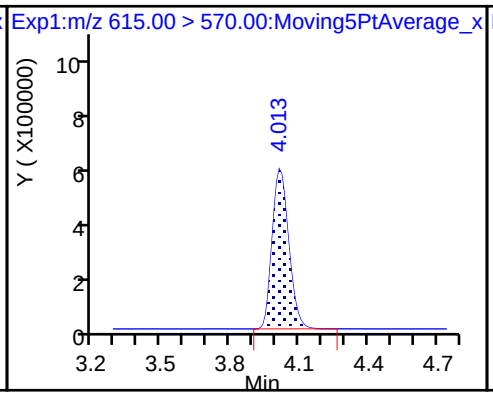
31 Perfluoroundecanoic acid



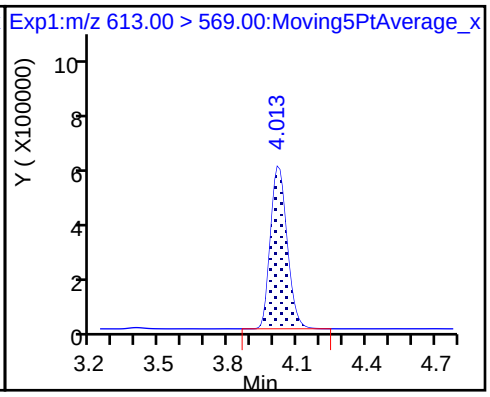
66 11-Chloroeicosafluoro-3-oxaundecan



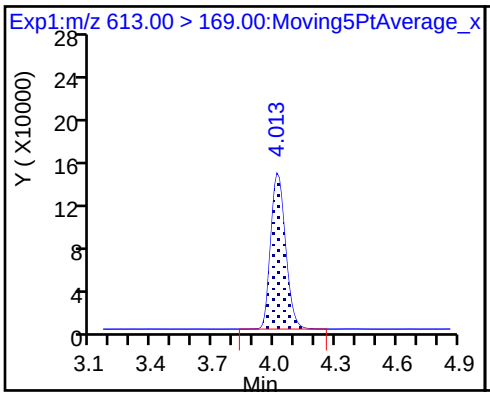
D 36 13C2 PFDoA



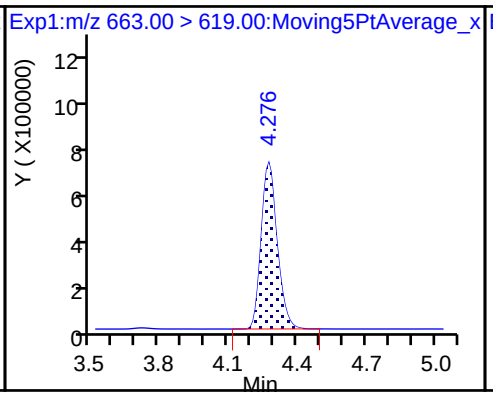
37 Perfluorododecanoic acid



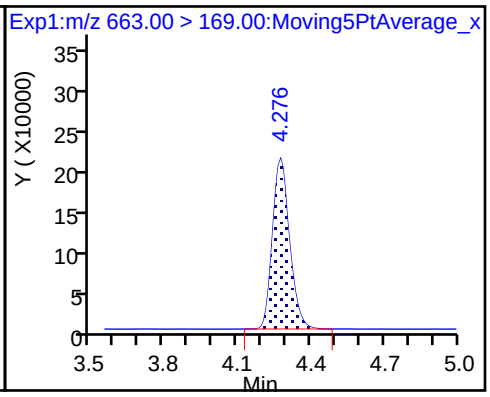
37 Perfluorododecanoic acid



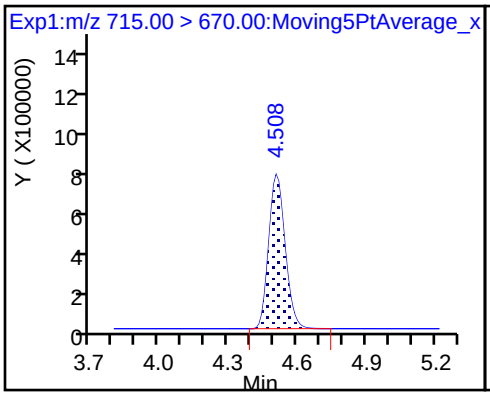
41 Perfluorotridecanoic acid



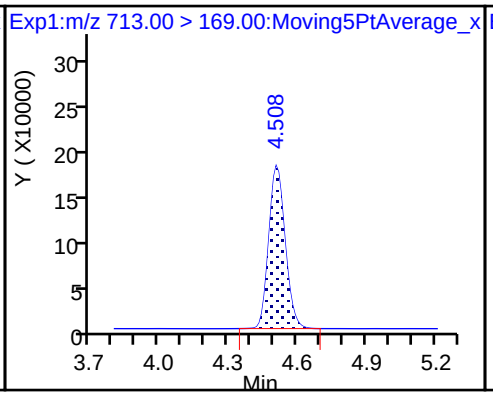
41 Perfluorotridecanoic acid



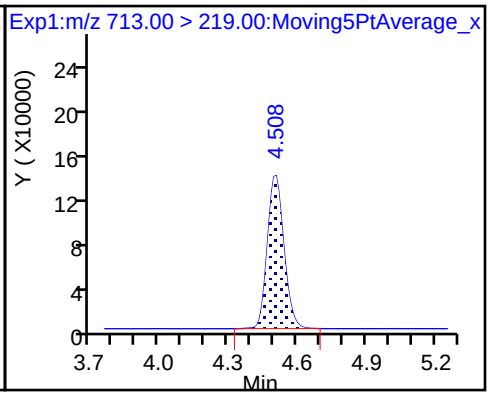
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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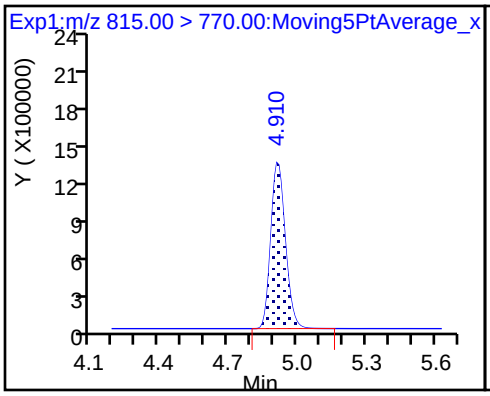
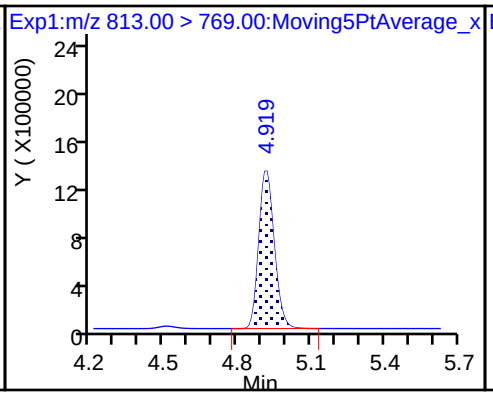
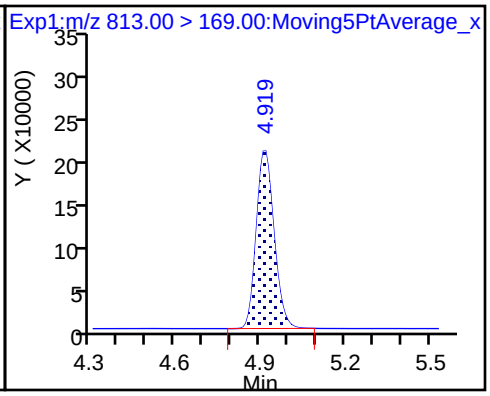


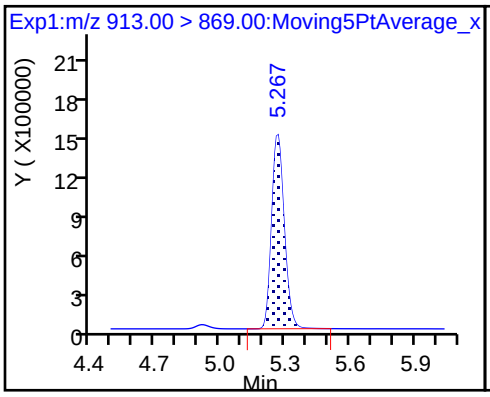
45 Perfluorohexadecanoic acid



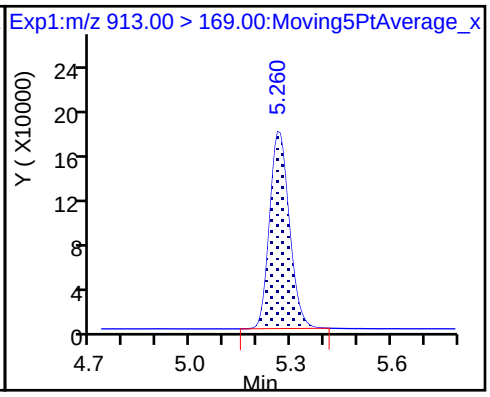
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-Apr-2018 19:18:46 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:14 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:20:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.425	1.431	-0.006	1.000	6997865	2.65		106	49847	
2 Perfluorobutyric acid										
212.90 > 169.00	1.431	1.432	-0.001	1.004	13377174	5.15		103	7717	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.699	-0.005	0.557	4492903	2.64		105	81359	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.699	-0.005	1.000	10497161	4.90		98.0	10563	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.735	-0.005	1.000	92353	2.36		102	1083	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.736	-0.006	1.000	14347107	4.61		104	64269	
298.90 > 99.00	1.730	1.736	-0.006	1.000	6127625		2.34(1.25-3.74)	104	70987	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	3030208	4.76		102	141069	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	668373	2.39		102	7685	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.985	-0.003	1.000	10489823	5.40		108	24333	
313.00 > 119.00	1.982	1.985	-0.003	1.000	894344		11.73(5.03-15.10)	108	11532	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4780636	2.54		101	96741	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.008	-0.003	1.000	13627914	4.80		102	98334	
349.00 > 99.00	2.005	2.008	-0.003	1.000	5231254		2.61(1.36-4.07)	102	95005	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	274179	2.35		94.0	8284	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.087	-0.003	1.000	1870994	6.12		122	12525	
D 9 13C4-PFHpA										
367.00 > 322.00	2.310	2.314	-0.004	1.000	4543925	2.48		99.1	68671	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.314	-0.004	1.000	9662627	5.31		106	14097	
363.00 > 169.00	2.310	2.314	-0.004	1.000	4011641		2.41(1.13-3.40)	106	22953	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.323	0.0	1.000	11450464	4.41		96.8	31512	
399.00 > 99.00	2.323	2.323	0.0	1.000	3849777		2.97(1.50-4.49)	96.8	34232	
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.327	-0.004	1.000	5430236	2.40		101	91039	
65 Adona										
377.00 > 251.00	2.362	2.360	0.002	1.000	26999565	4.80		95.9	217494	
377.00 > 85.00	2.362	2.360	0.002	1.000	16841301		1.60(0.84-2.53)	95.9	159720	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.649	-0.004	1.000	950305	2.42		102	15598	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.649	-0.004	1.000	3314359	4.90		103	51474	
D 14 13C4 PFOA										
417.00 > 372.00	2.668	2.673	-0.005	1.000	4688766	2.57		103	76247	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.674	0.002		4914871	2.50			59774	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.674	0.002	1.003	11016957	5.08		102	7204	
413.00 > 169.00	2.676	2.674	0.002	1.003	5404594		2.04(0.84-2.52)	102	21416	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	10719572	4.97		104	63342	
449.00 > 99.00	2.676	2.680	-0.004	0.997	2882422		3.72(1.94-5.82)	104	51468	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3884830	2.45		103	25175	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.042	0.001	1.000	8615775	4.87		105	37504	
499.00 > 99.00	3.043	3.042	0.001	1.000	1907418		4.52(2.31-6.93)	105	40242	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	1.000	8663453	5.40		108	21881	
463.00 > 169.00	3.043	3.043	0.0	1.000	1977379		4.38(1.90-5.69)	108	42954	
D 19 13C5 PFNA										
468.00 > 423.00	3.043	3.045	-0.002	1.000	3844023	2.45		98.1	71022	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.252	3.253	-0.001	1.000	15327887	5.00		107	237615	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.387	3.388	-0.001	1.000	6392773	4.92		102	46125	
549.00 > 99.00	3.387	3.388	-0.001	1.000	2379569		2.69(1.33-3.97)	102	42811	
D 26 M2-8:2FTS										
529.00 > 81.00	3.387	3.390	-0.003	1.000	1111203	2.35		98.0	12960	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.396	3.393	0.003	1.003	2936296	5.00		104	87146	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.397	-0.001	1.000	4967723	2.51		100	59122	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.401	-0.005	1.000	10640158	5.29		106	83571	
D 23 13C2 PFDA										
515.00 > 470.00	3.405	3.401	0.004	1.000	3590754	2.73		109	63551	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.405	3.402	0.003	1.000	7080425	4.78		95.6	42943	
513.00 > 169.00	3.405	3.402	0.003	1.000	1224285		5.78(2.36-7.09)	95.6	19818	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.555	3.553	0.002	1.000	1906740	2.55		102	32484	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.555	3.558	-0.003	1.000	4211279	5.54		111	24793	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.715	0.002	1.000	5591516	5.30		110	68704	
599.00 > 99.00	3.717	3.715	0.002	1.000	1873892		2.98(1.39-4.16)	110	41042	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.717	3.722	-0.005	1.000	1869135	2.54		101	18949	
D 30 13C2 PFUnA										
565.00 > 520.00	3.728	3.727	0.001	1.000	2905024	2.56		102	63455	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.728	3.727	0.001	1.003	3584245	5.13		103	43487	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.728	3.727	0.001	1.000	5051597	5.14		103	23183	
563.00 > 169.00	3.728	3.727	0.001	1.000	1197755		4.22(2.12-6.36)	103	29187	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.886	3.883	0.003	1.000	21858692	4.62		98.0	132441	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.017	0.002	1.000	3059706	2.49		99.7	34585	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.020	-0.001	1.000	6635970	5.20		104	7407	
613.00 > 169.00	4.019	4.020	-0.001	1.000	1580285		4.20(2.13-6.40)	104	18694	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.278	0.003	1.000	7847307	5.28		106	6944	
663.00 > 169.00	4.281	4.278	0.003	1.000	2374861		3.30(1.25-3.76)	106	19843	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.513	-0.001	1.000	3906384	2.51		100	23277	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.513	-0.001	1.000	2025257	5.16		103	14592	
713.00 > 219.00	4.512	4.513	-0.001	1.000	1435695		1.41(0.71-2.13)	103	15337	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.923	4.918	0.005	1.000	6481798	2.56		102	19589	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.923	4.920	0.003	1.000	11955765	4.85		97.0	3378	
813.00 > 169.00	4.923	4.920	0.003	1.000	2040197		5.86(2.86-8.58)	97.0	10211	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.270	5.268	0.002	1.000	12855038	4.94		98.8	2871	
913.00 > 169.00	5.270	5.268	0.002	1.000	1566786		8.20(3.83-11.48)	98.8	6806	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_007.d

Injection Date: 10-Apr-2018 19:18:46 Instrument ID: A8_N

Lims ID: IC L6 Full

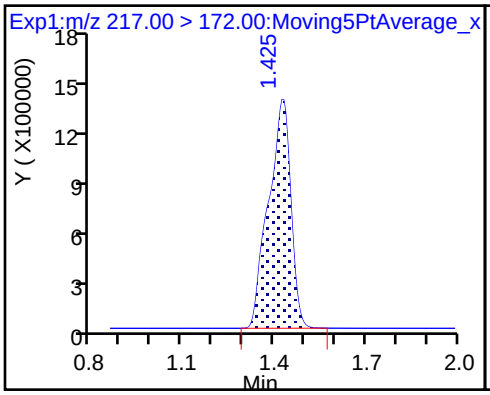
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

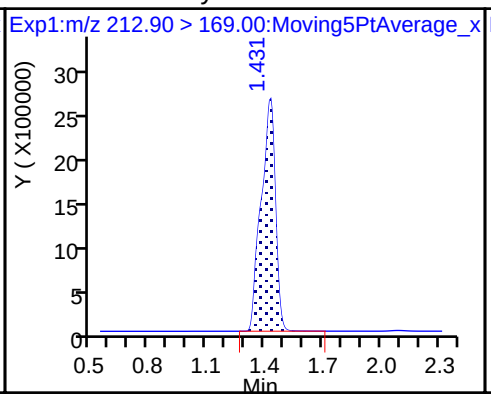
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

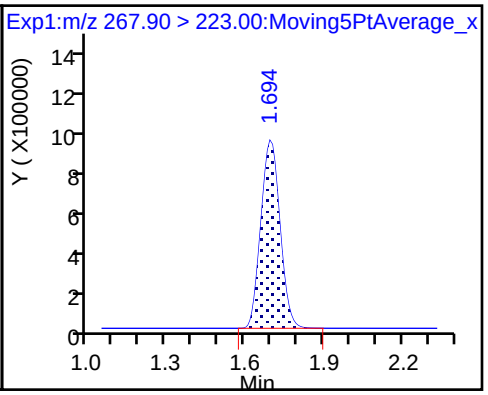
D 1 13C4 PFBA



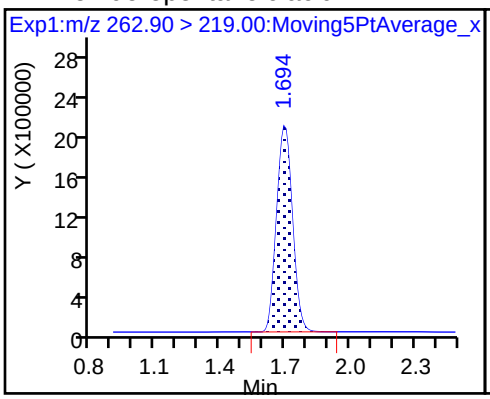
2 Perfluorobutyric acid



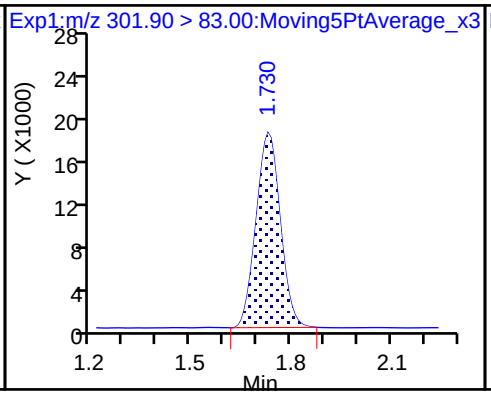
D 3 13C5-PFPeA



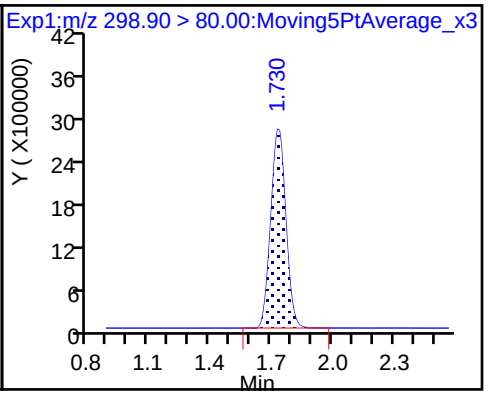
4 Perfluoropentanoic acid



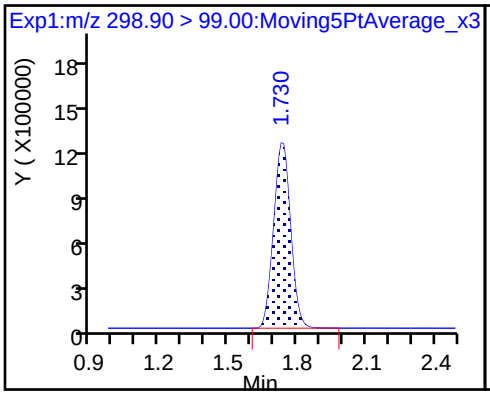
D 47 13C3-PFBS



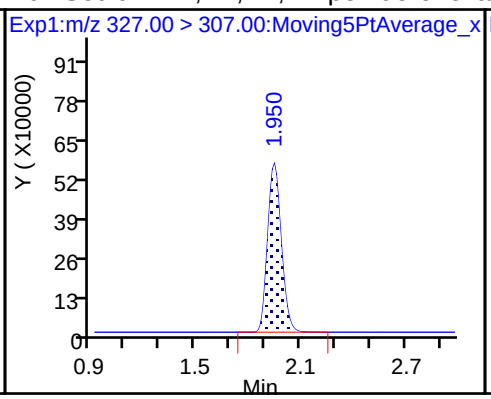
5 Perfluorobutanesulfonic acid



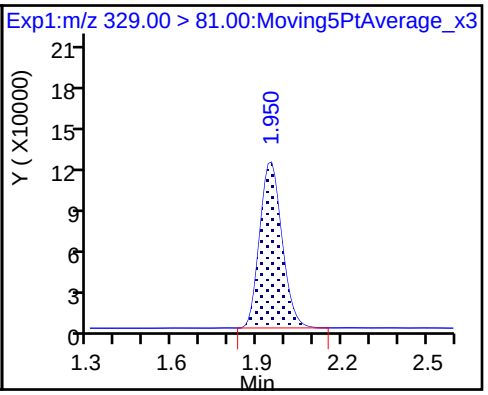
5 Perfluorobutanesulfonic acid



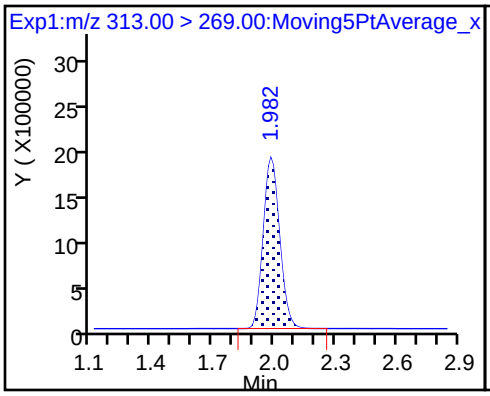
61 Sodium 1H,1H,2H,2H-perfluorohexane



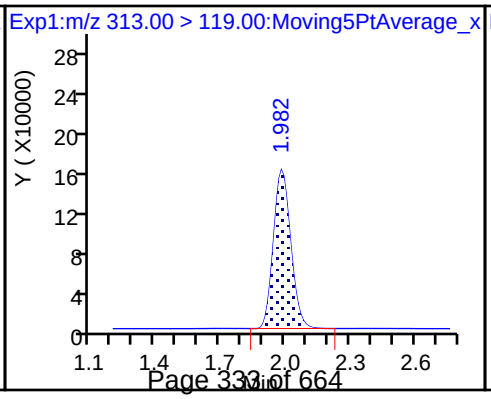
D 60 M2-4:2FTS



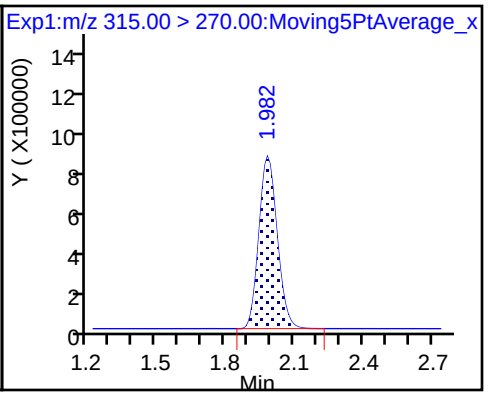
6 Perfluorohexanoic acid



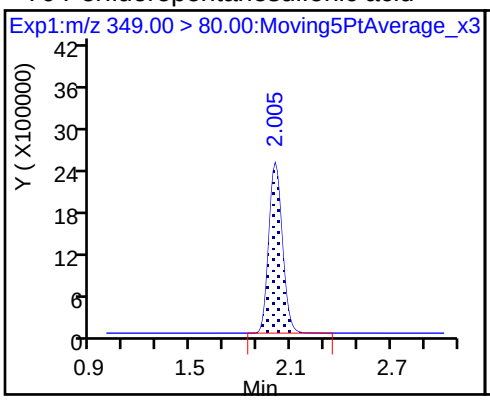
6 Perfluorohexanoic acid



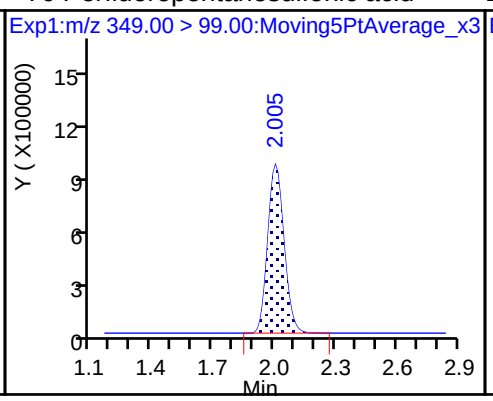
D 7 13C2 PFHxA



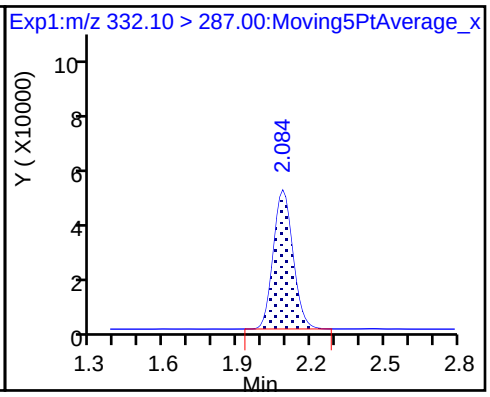
70 Perfluoropentanesulfonic acid



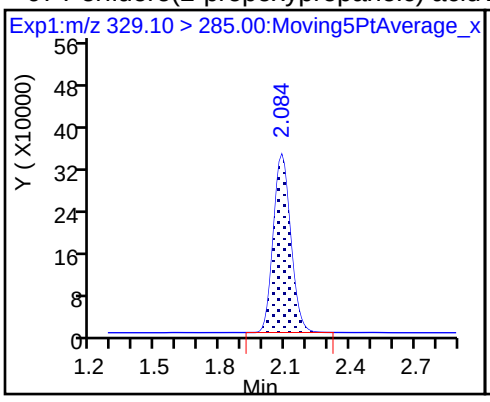
70 Perfluoropentanesulfonic acid



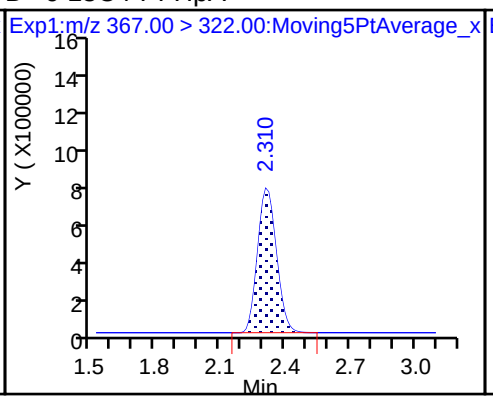
D 64 13C3 HFPO-DA



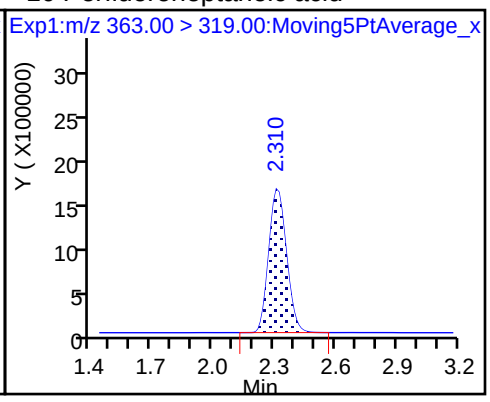
67 Perfluoro(2-propoxypropanoic) acid



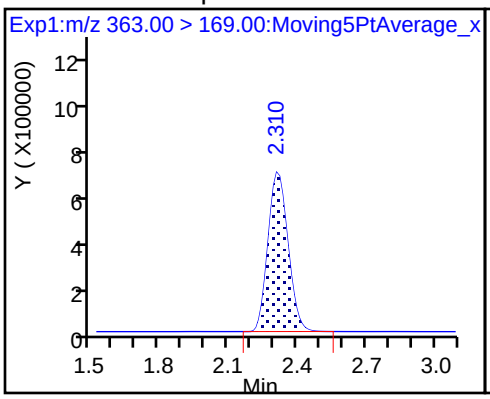
D 9 13C4-PFHpA



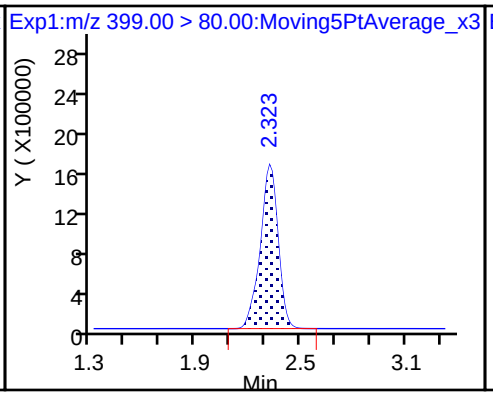
10 Perfluoroheptanoic acid



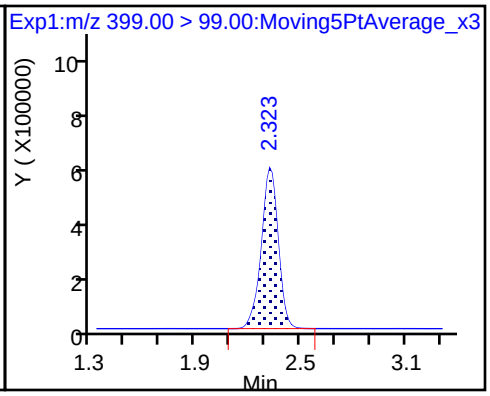
10 Perfluoroheptanoic acid



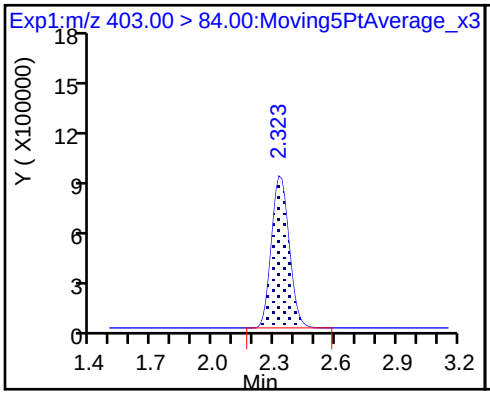
8 Perfluorohexanesulfonic acid



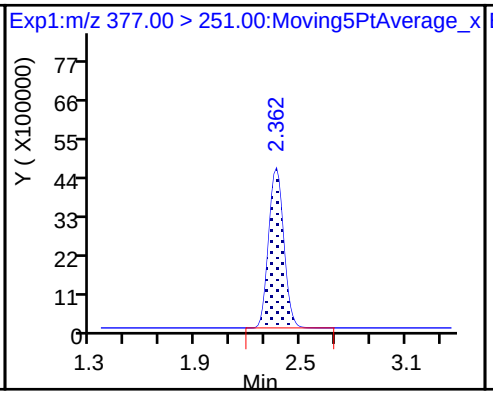
8 Perfluorohexanesulfonic acid



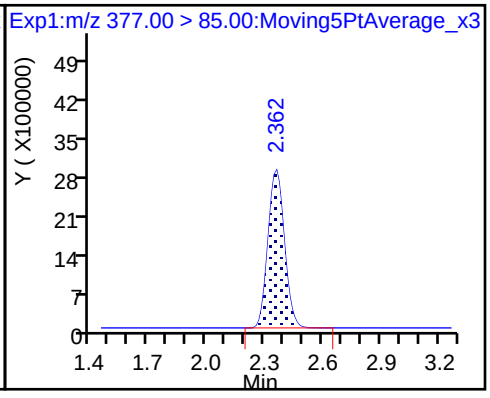
D 11 18O2 PFHxS



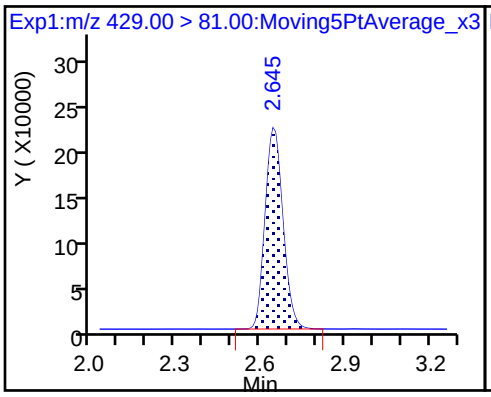
65 Adona



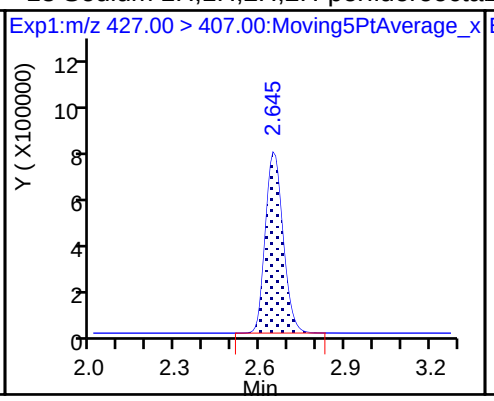
65 Adona



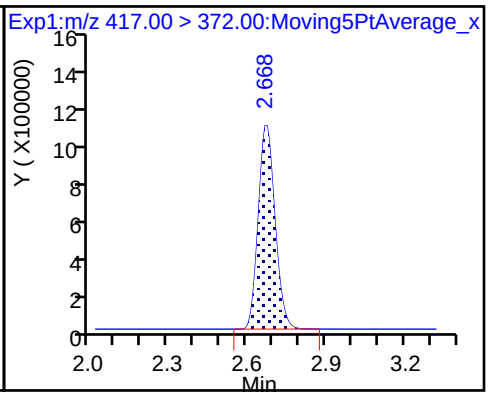
D 12 M2-6:2FTS



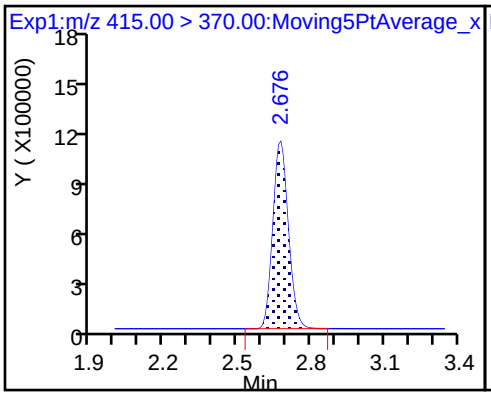
13 Sodium 1H,1H,2H,2H-perfluorooctane



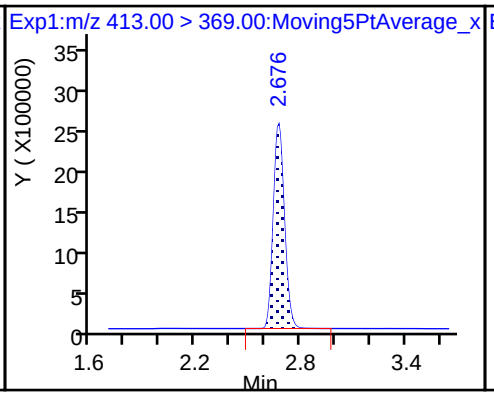
D 14 13C4 PFOA



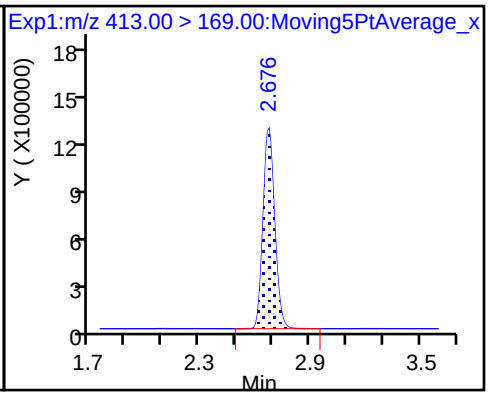
* 62 13C2-PFOA



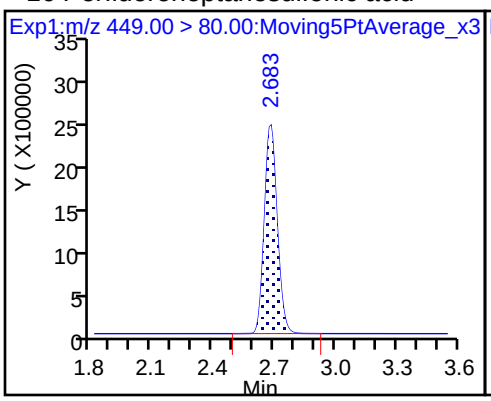
15 Perfluorooctanoic acid



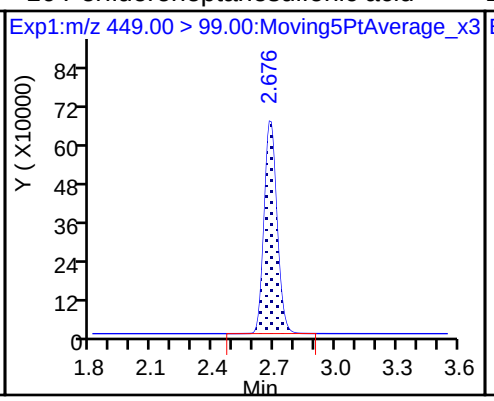
15 Perfluorooctanoic acid



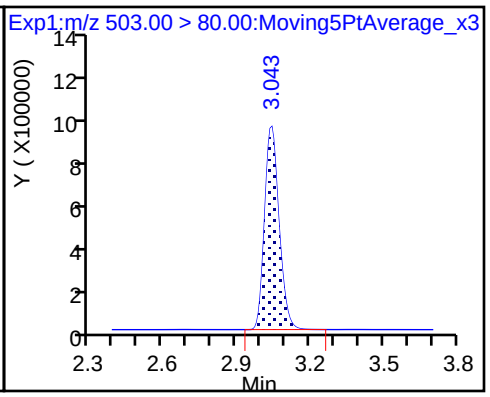
16 Perfluoroheptanesulfonic acid



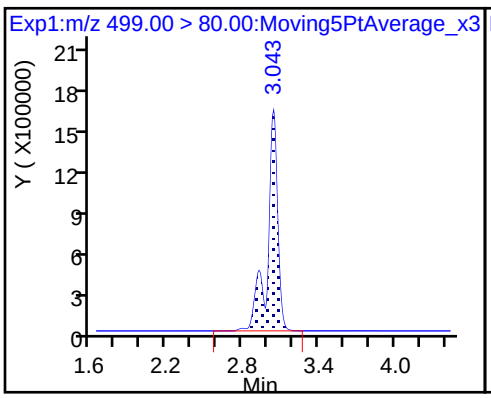
16 Perfluoroheptanesulfonic acid



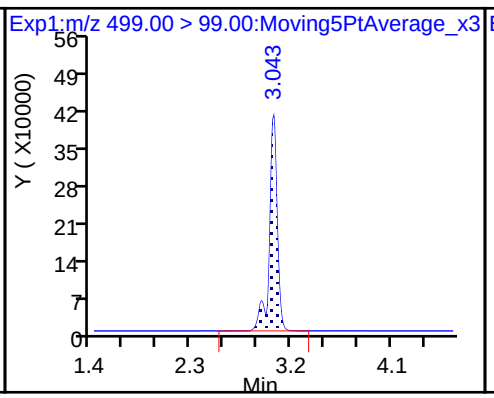
D 18 13C4 PFOS



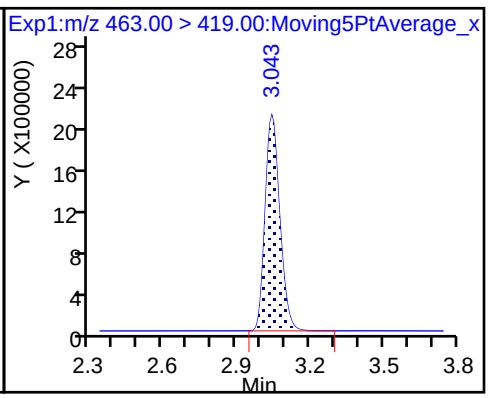
17 Perfluorooctane sulfonic acid



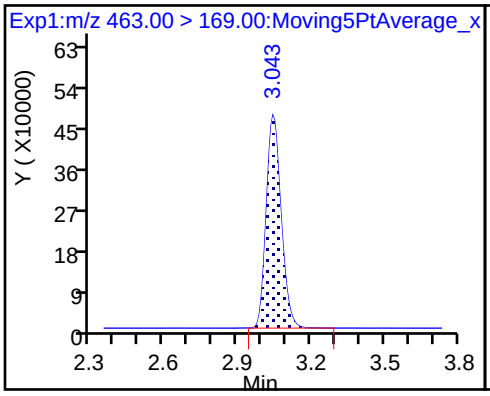
17 Perfluorooctane sulfonic acid



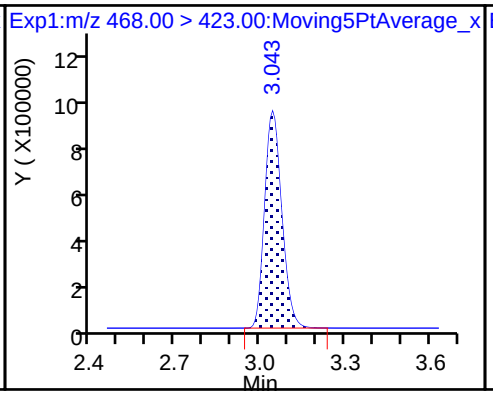
20 Perfluorononanoic acid



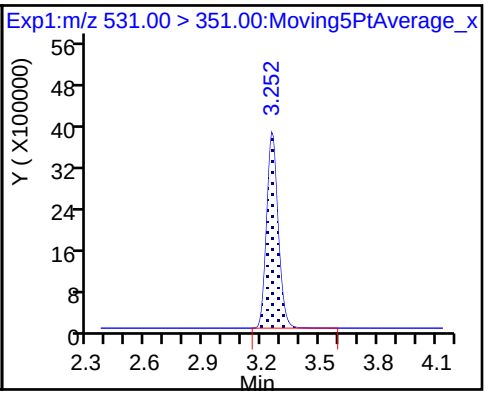
20 Perfluorononanoic acid



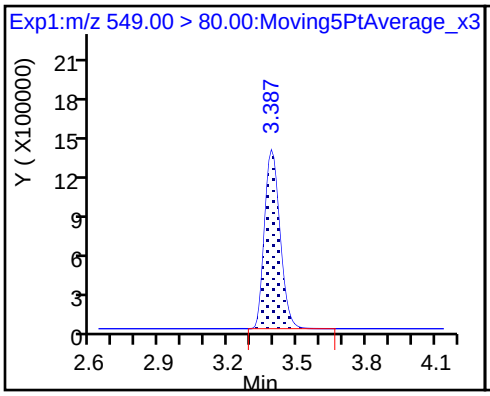
D 19 13C5 PFNA



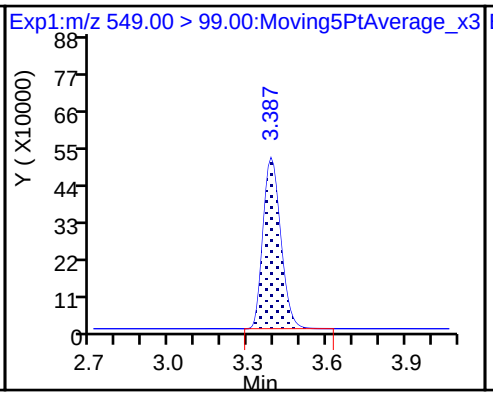
69 9-Chlorohexadecafluoro-3-oxanonane



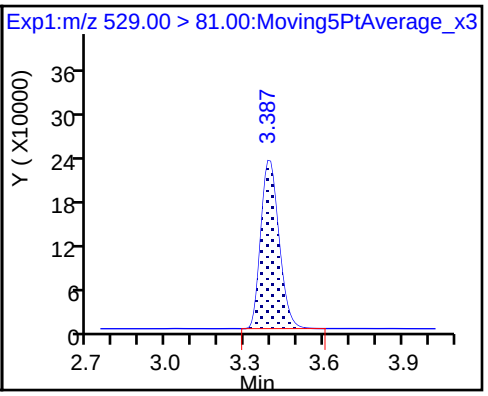
68 Perfluorononanesulfonic acid



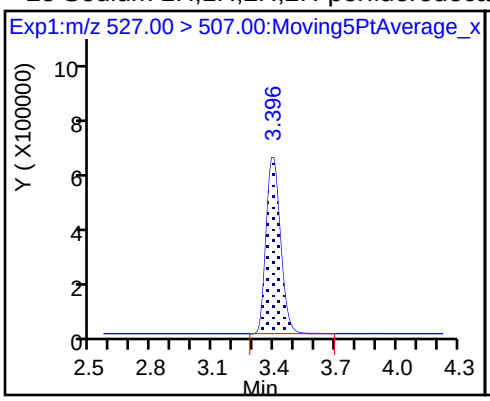
68 Perfluorononanesulfonic acid



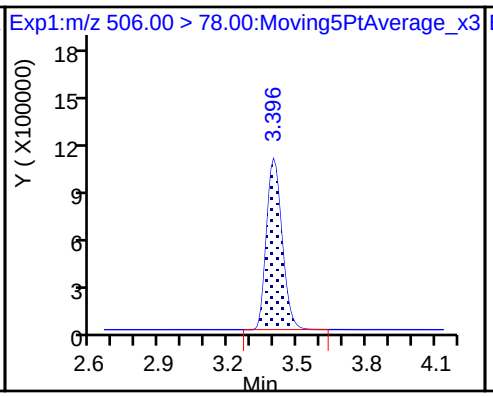
D 26 M2-8:2FTS



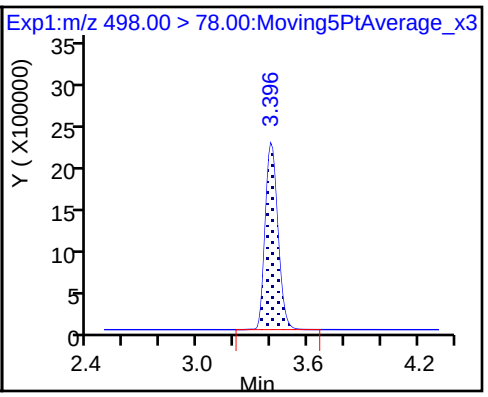
25 Sodium 1H,1H,2H,2H-perfluorodecane



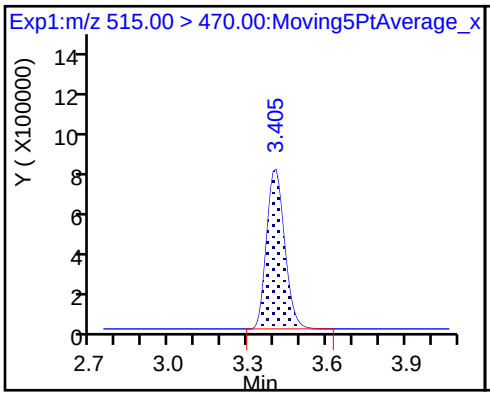
D 21 13C8 FOSA



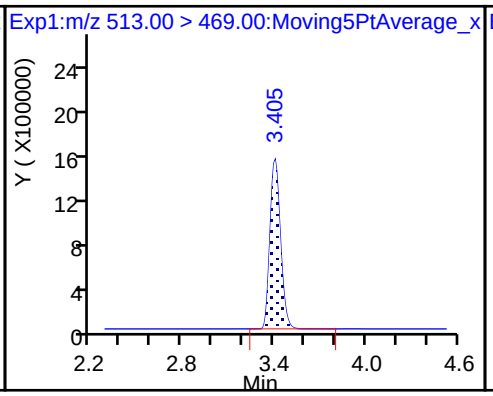
22 Perfluorooctane Sulfonamide



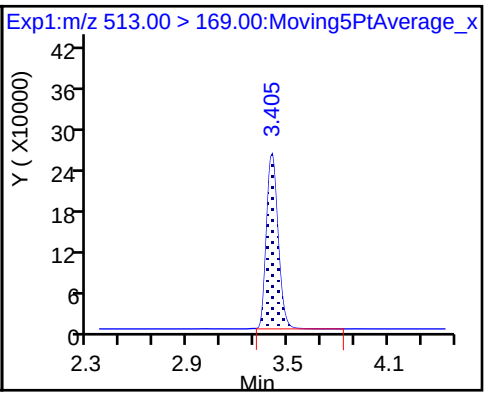
D 23 13C2 PFDA



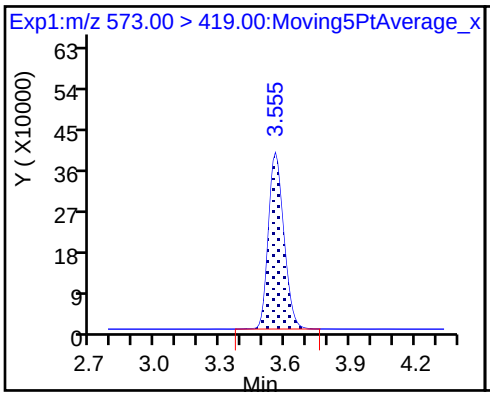
24 Perfluorodecanoic acid



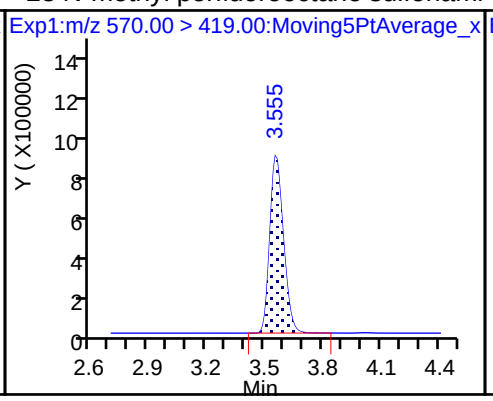
24 Perfluorodecanoic acid



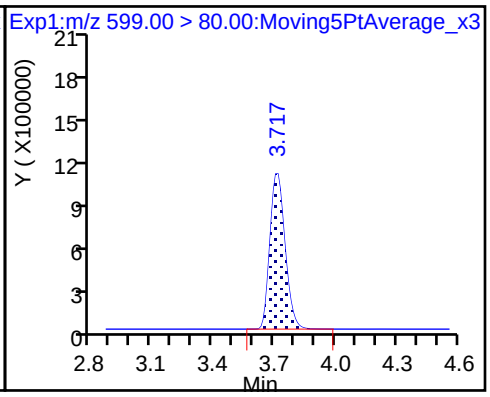
D 27 d3-NMeFOSAA



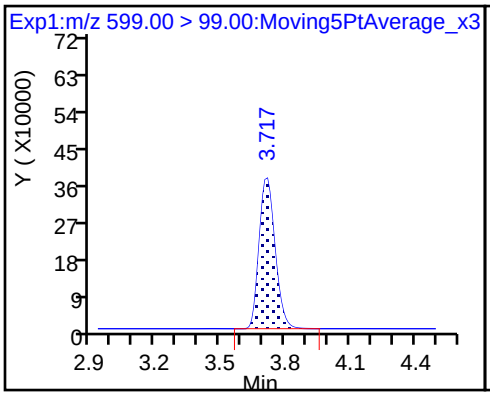
28 N-methyl perfluorooctane sulfonami



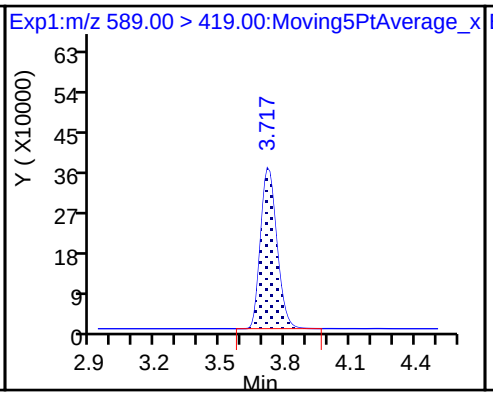
29 Perfluorodecane Sulfonic acid



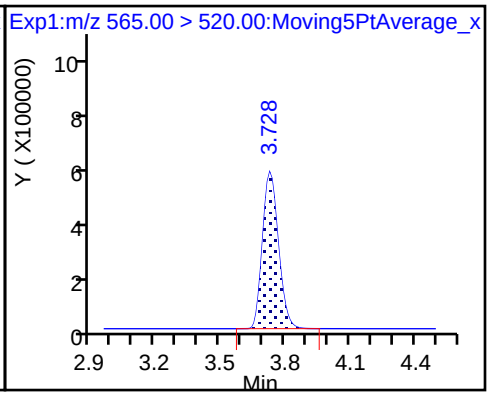
29 Perfluorodecane Sulfonic acid



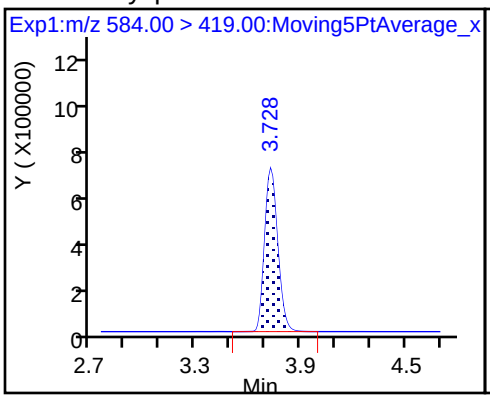
D 32 d5-NEtFOSAA



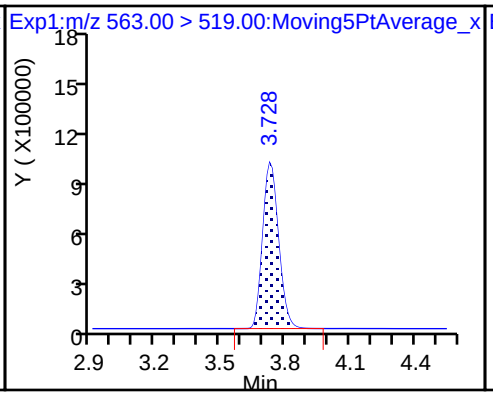
D 30 13C2 PFUnA



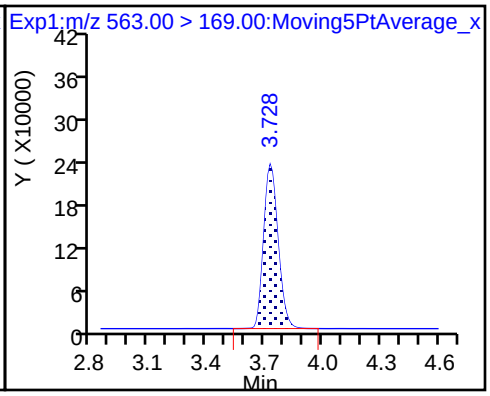
33 N-ethyl perfluorooctane sulfonamid



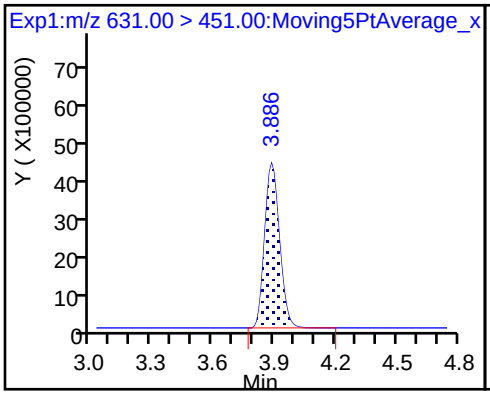
31 Perfluoroundecanoic acid



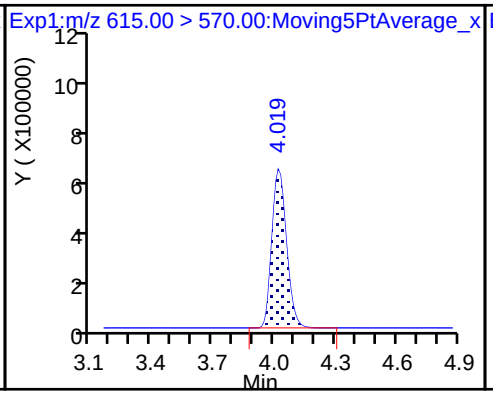
31 Perfluoroundecanoic acid



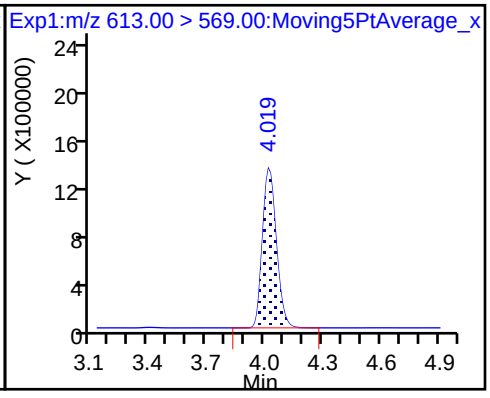
66 11-Chloroeicosafluoro-3-oxaundecan



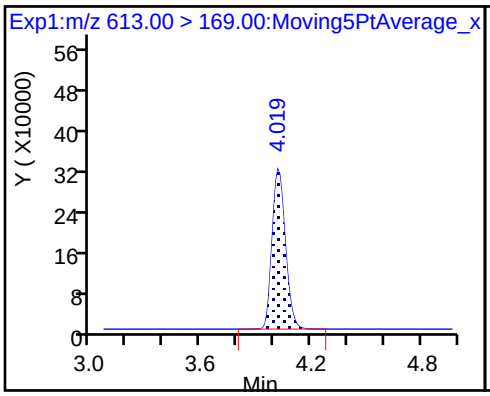
D 36 13C2 PFDoA



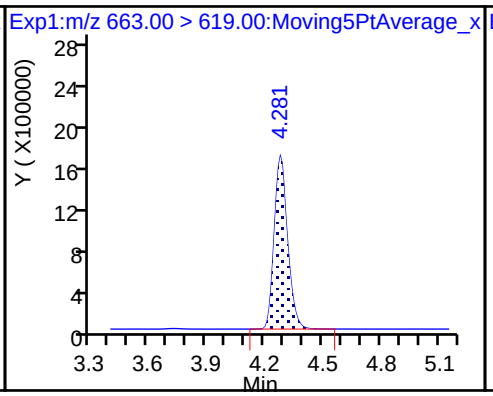
37 Perfluorododecanoic acid



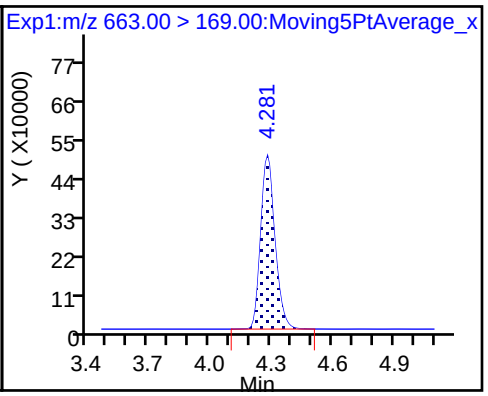
37 Perfluorododecanoic acid



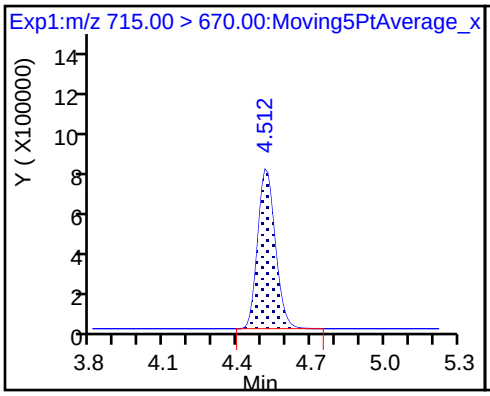
41 Perfluorotridecanoic acid



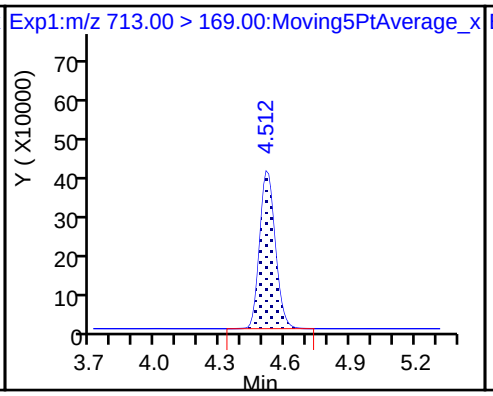
41 Perfluorotridecanoic acid



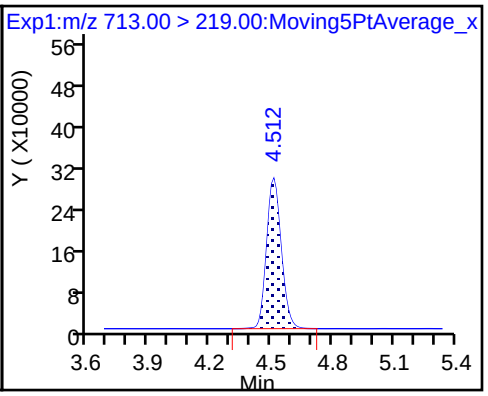
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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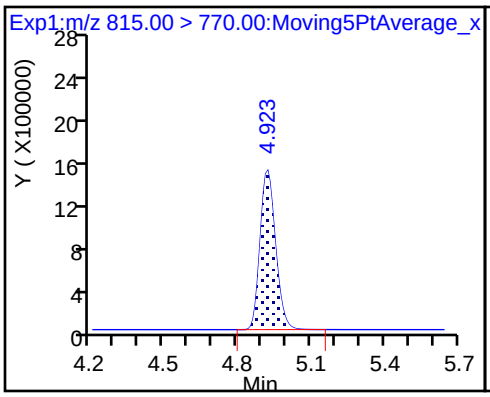
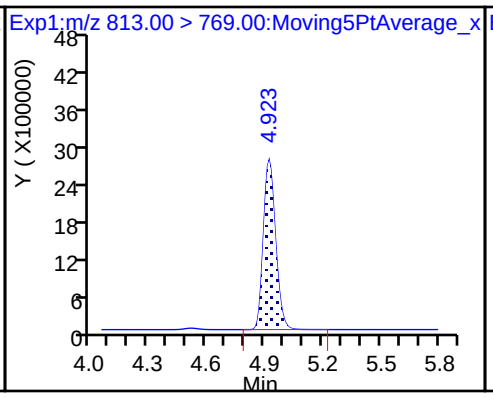
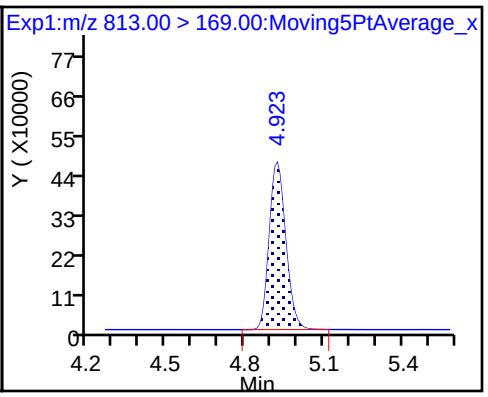


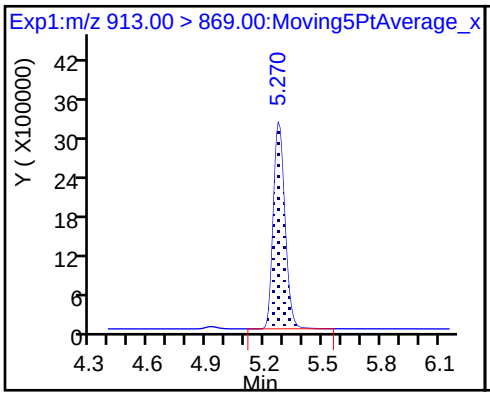
45 Perfluorohexadecanoic acid



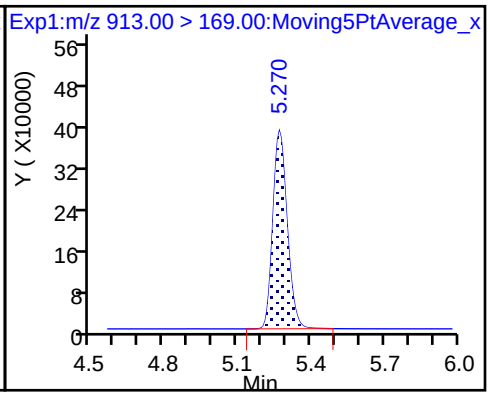
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 10-Apr-2018 19:26:34 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:18 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:20:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	5884851	2.66		106	46581	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	21784128	9.97		99.7	11333	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	17503102	9.84		98.4	16746	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	3729652	2.61		105	78108	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.735	0.003	1.000	82834	2.53		109	829	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.736	0.002	1.000	22532715	8.08		91.4	76780	
298.90 > 99.00	1.738	1.736	0.002	1.000	10095018		2.23(1.25-3.74)	91.4	146676	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.950	-0.001	1.000	563434	2.40		103	6225	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	5473778	9.58		103	195589	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4231897	2.68		107	122911	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.985	-0.004	1.000	16596765	9.65		96.5	37407	
313.00 > 119.00	1.981	1.985	-0.004	1.000	1629067		10.19(5.03-15.10)	96.5	18942	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.008	-0.005	1.000	22248169	8.73		93.1	165195	
349.00 > 99.00	2.003	2.008	-0.005	1.000	8727242		2.55(1.36-4.07)	93.1	125798	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	242908	2.49		99.5	8616	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.087	-0.004	1.000	2803143	10.4		104	17925	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	16683281	10.9		109	20962	
363.00 > 169.00	2.320	2.314	0.006	1.000	6590526		2.53(1.13-3.40)	109	34535	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	3828332	2.49		99.7	77251	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.323	-0.003	0.994	18531754	8.49		93.3	42607	
399.00 > 99.00	2.320	2.323	-0.003	0.994	6460937		2.87(1.50-4.49)	93.3	47012	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	4559710	2.41		102	82801	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	39451342	8.40		84.0	277885	
377.00 > 85.00	2.359	2.360	-0.001	1.000	26259771		1.50(0.84-2.53)	84.0	255143	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	5439954	9.93		105	66881	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	769923	2.34		98.5	9054	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	3866213	2.53		101	50638	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	17251700	9.65		96.5	9651	
413.00 > 169.00	2.675	2.674	0.001	1.000	9097235		1.90(0.84-2.52)	96.5	29224	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4114287	2.50			76246	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	16945821	9.42		98.9	66065	
449.00 > 99.00	2.683	2.680	0.003	1.000	4841116		3.50(1.94-5.82)	98.9	91269	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3239063	2.44		102	17414	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.042	0.001	1.000	14391699	9.76		105	52846	
499.00 > 99.00	3.043	3.042	0.001	1.000	3174442		4.53(2.31-6.93)	105	34754	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	0.998	13696835	9.77		97.7	34474	
463.00 > 169.00	3.043	3.043	0.0	0.998	3462437		3.96(1.90-5.69)	97.7	45718	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3361051	2.56		102	67264	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	23669204	9.26		99.4	298503	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.395	3.388	0.007	1.000	10381596	9.58		99.8	64461	
549.00 > 99.00	3.395	3.388	0.007	1.000	3993295		2.60(1.33-3.97)	99.8	65048	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	929210	2.34		97.9	9349	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	4704229	9.58		100	196732	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.397	-0.002	1.000	4196317	2.53		101	46250	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.003	16450280	9.69		96.9	74333	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	2846573	2.58		103	67167	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	11538792	9.82		98.2	37953	
513.00 > 169.00	3.404	3.402	0.002	1.000	2042111		5.65(2.36-7.09)	98.2	47982	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1702670	2.72		109	20225	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.563	3.558	0.005	1.003	7221428	10.6		106	41843	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	9173589	10.4		108	56586	
599.00 > 99.00	3.716	3.715	0.001	1.000	3114281		2.95(1.39-4.16)	108	76561	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.722	0.005	1.000	1478400	2.40		95.9	16640	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.727	0.010	1.003	5812610	10.5		105	50290	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.727	0.010	1.000	2344065	2.46		98.6	49963	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.727	3.727	0.0	0.997	7810732	9.86		98.6	36756	
563.00 > 169.00	3.727	3.727	0.0	0.997	1900318		4.11(2.12-6.36)	98.6	52722	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.885	3.883	0.002	1.000	32450794	8.22		87.3	180198	
D 36 13C2 PFDoA										
615.00 > 570.00	4.018	4.017	0.001	1.000	2618174	2.55		102	22873	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.020	-0.002	1.000	11350274	10.4		104	14082	
613.00 > 169.00	4.028	4.020	0.008	1.003	2800305		4.05(2.13-6.40)	104	29481	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.278	0.002	1.000	12743041	10.0		100	11764	
663.00 > 169.00	4.280	4.278	0.002	1.000	3998604		3.19(1.25-3.76)	100	28384	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.522	4.513	0.009	1.000	3344927	2.57		103	23122	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.513	0.009	1.000	3357209	10.0		99.9	21100	
713.00 > 219.00	4.512	4.513	-0.001	0.998	2463893		1.36(0.71-2.13)	99.9	21721	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.922	4.918	0.004	1.000	5522067	2.61		104	17481	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.922	4.920	0.002	1.000	20182542	9.63		96.3	5657	
813.00 > 169.00	4.922	4.920	0.002	1.000	3386021		5.96(2.86-8.58)	96.3	12815	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.277	5.268	0.009	1.000	21808387	9.83		98.3	4861	
913.00 > 169.00	5.277	5.268	0.009	1.000	2810004		7.76(3.83-11.48)	98.3	7858	

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:19 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Injection Date: 10-Apr-2018 19:26:34 Instrument ID: A8_N

Lims ID: IC L7 Full

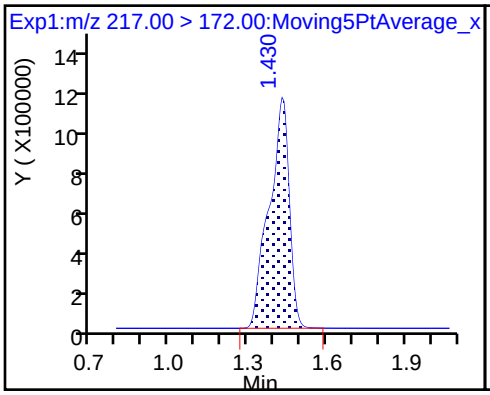
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

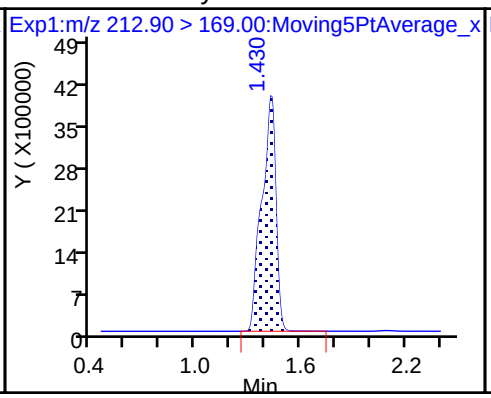
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

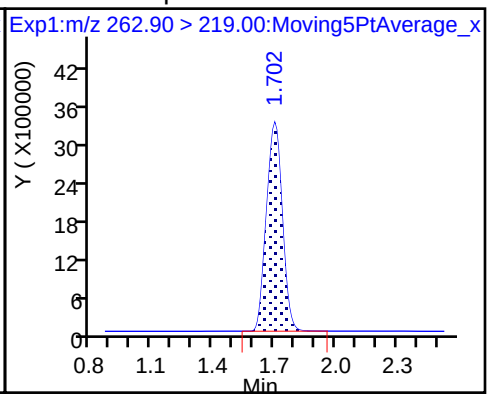
D 1 13C4 PFBA



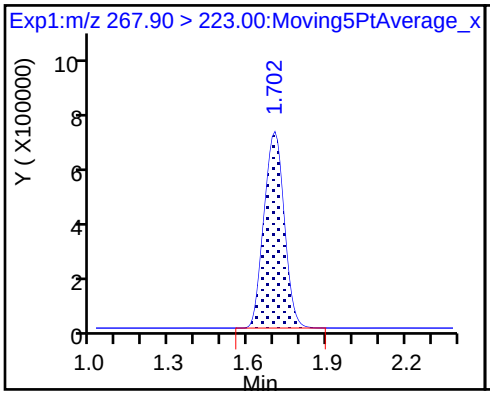
2 Perfluorobutyric acid



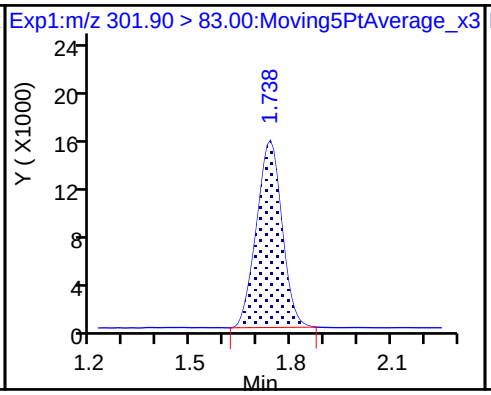
4 Perfluoropentanoic acid



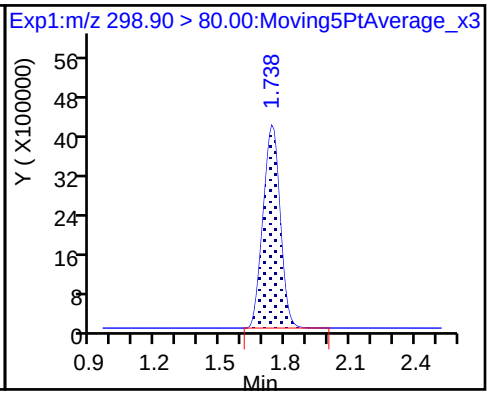
D 3 13C5-PFPeA



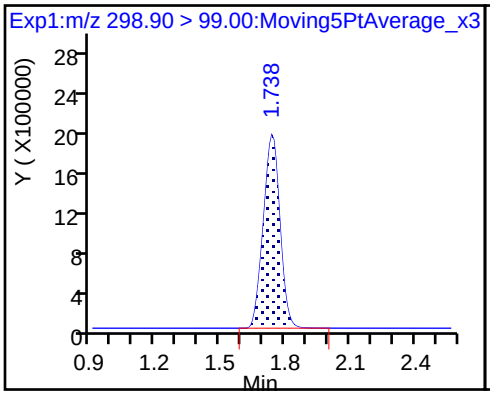
D 47 13C3-PFBS



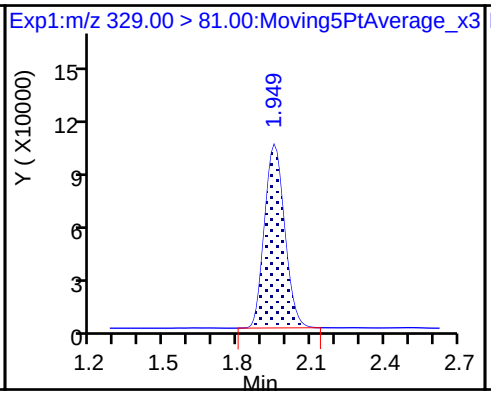
5 Perfluorobutanesulfonic acid



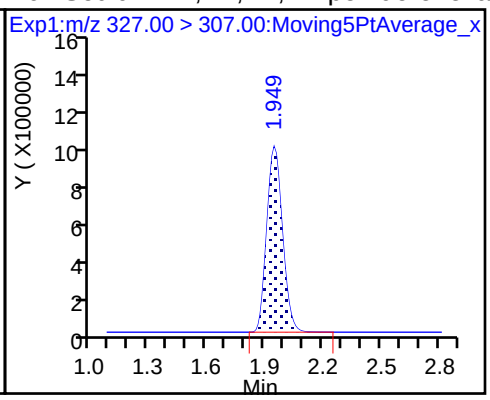
5 Perfluorobutanesulfonic acid



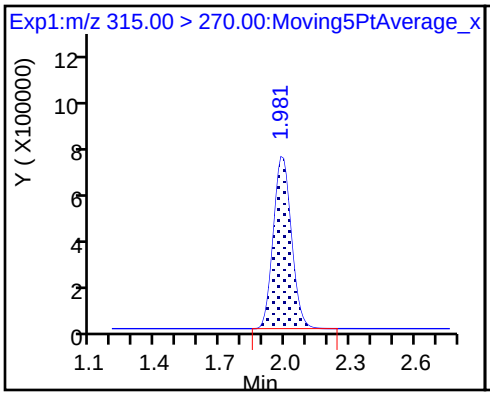
D 60 M2-4:2FTS



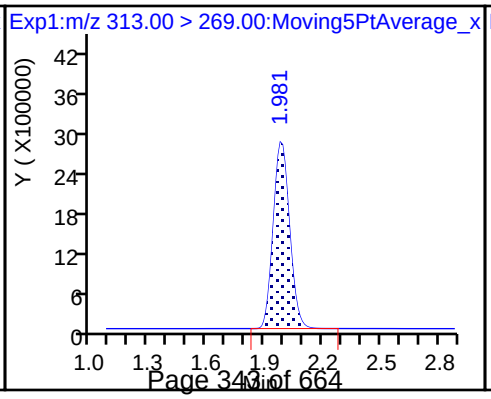
61 Sodium 1H,1H,2H,2H-perfluorohexane



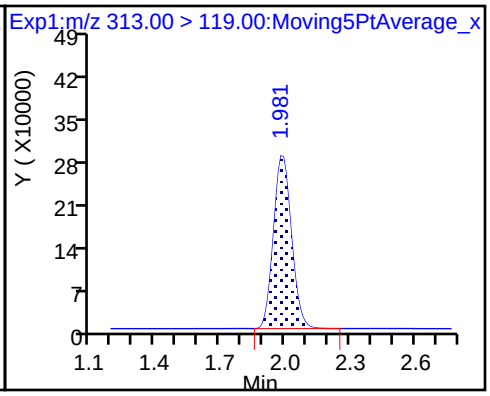
D 7 13C2 PFHxA



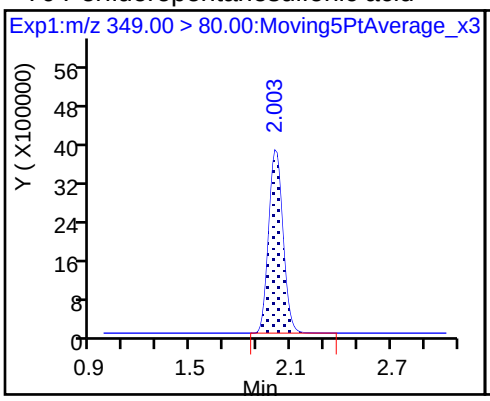
6 Perfluorohexanoic acid



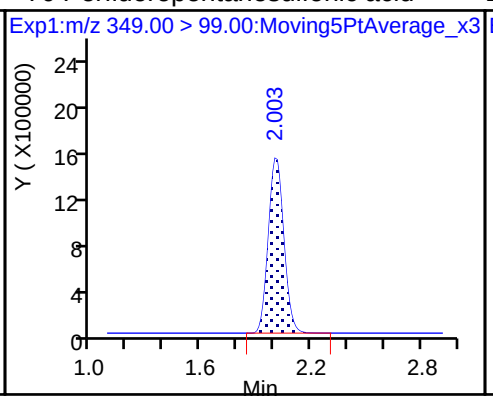
6 Perfluorohexanoic acid



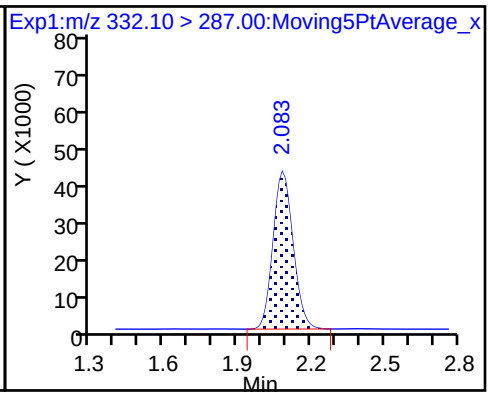
70 Perfluoropentanesulfonic acid



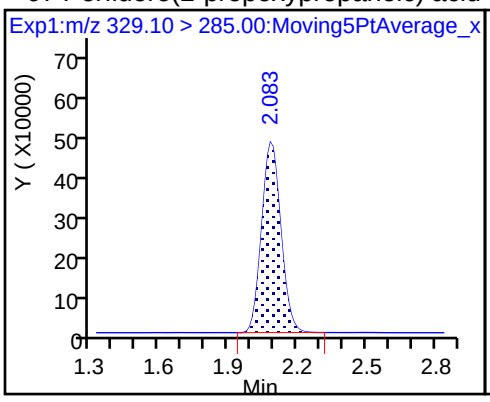
70 Perfluoropentanesulfonic acid



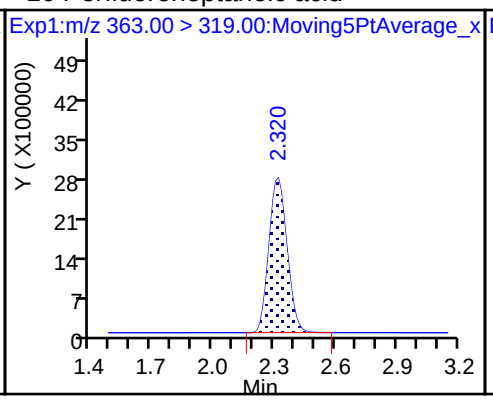
D 64 13C3 HFPO-DA



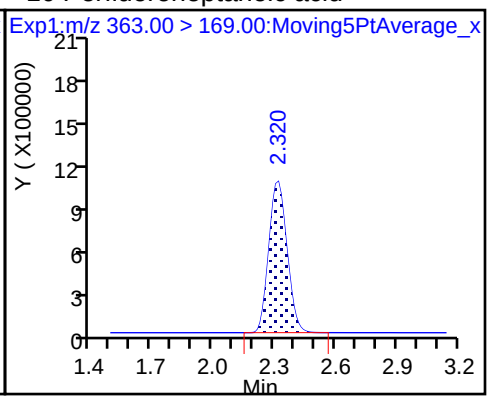
67 Perfluoro(2-propoxypropanoic) acid



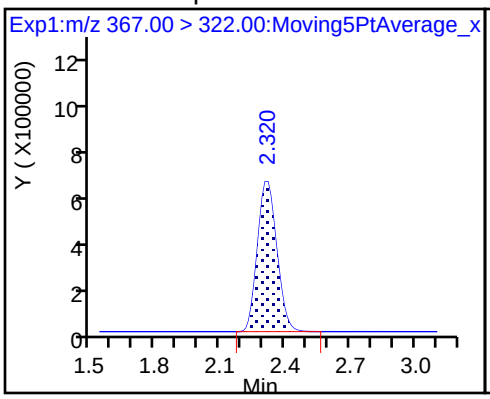
10 Perfluoroheptanoic acid



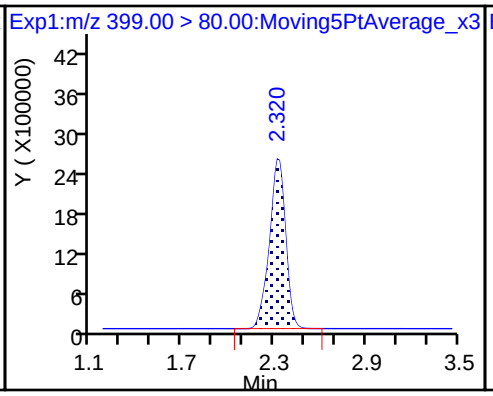
10 Perfluoroheptanoic acid



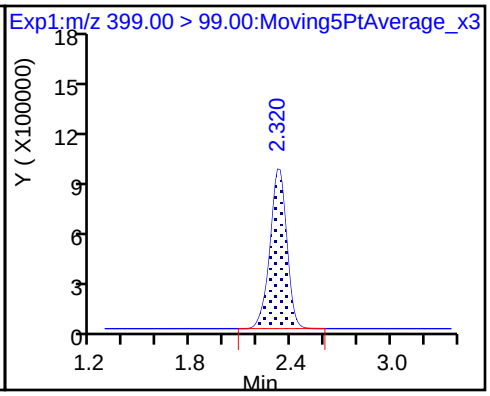
D 9 13C4-PFHpA



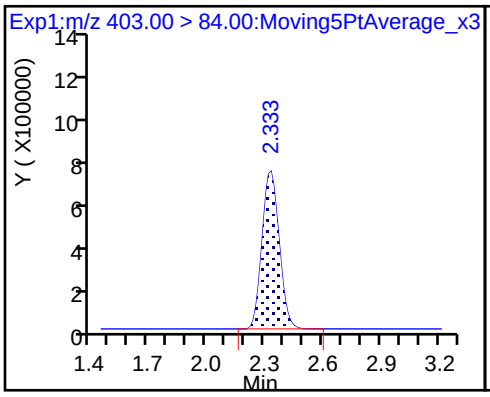
8 Perfluorohexanesulfonic acid



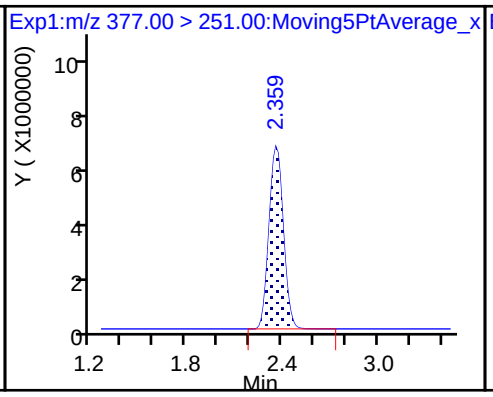
8 Perfluorohexanesulfonic acid



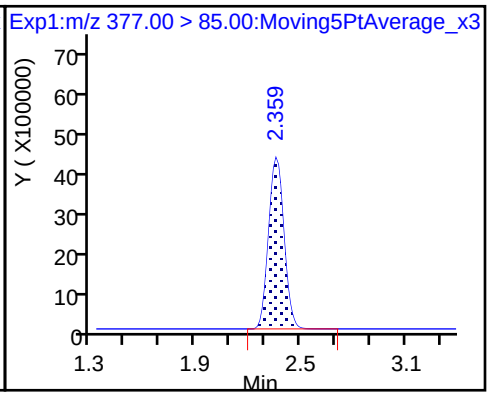
D 11 18O2 PFHxS



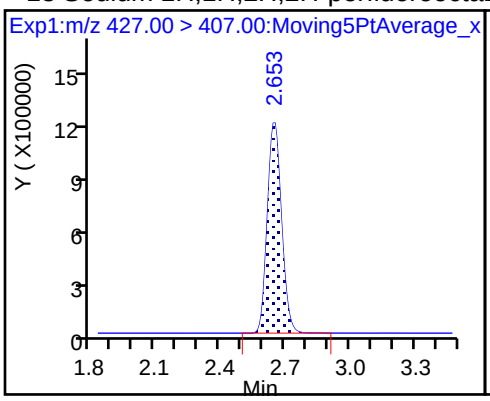
65 Adona



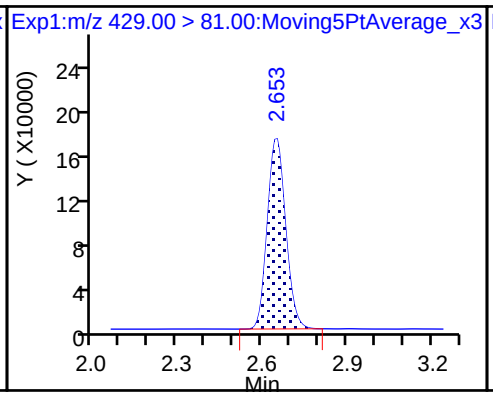
65 Adona



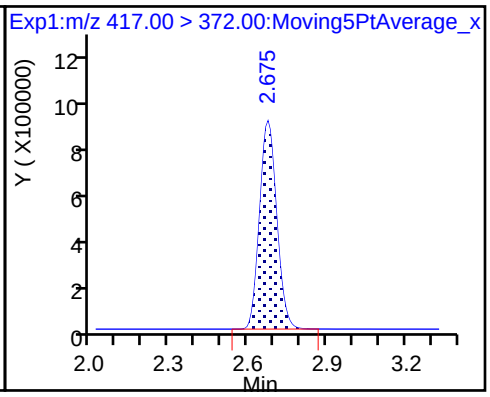
13 Sodium 1H,1H,2H,2H-perfluorooctane



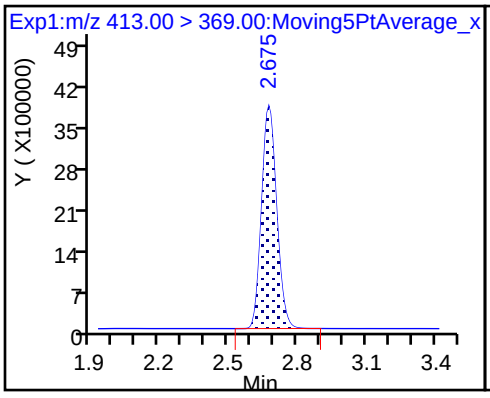
D 12 M2-6:2FTS



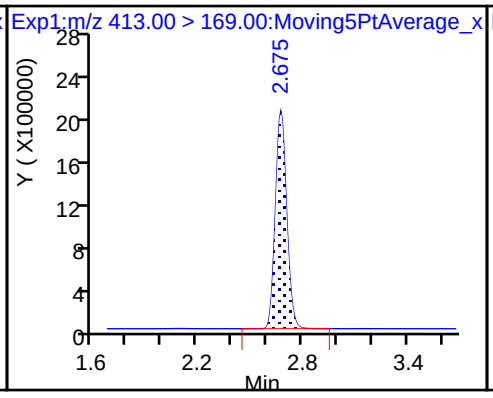
D 14 13C4 PFOA



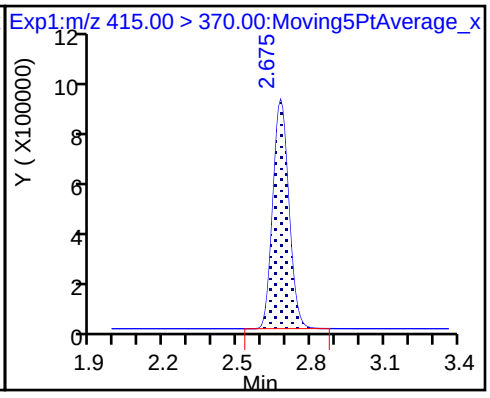
15 Perfluorooctanoic acid



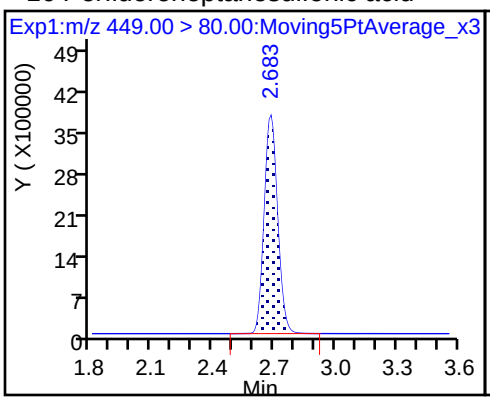
15 Perfluorooctanoic acid



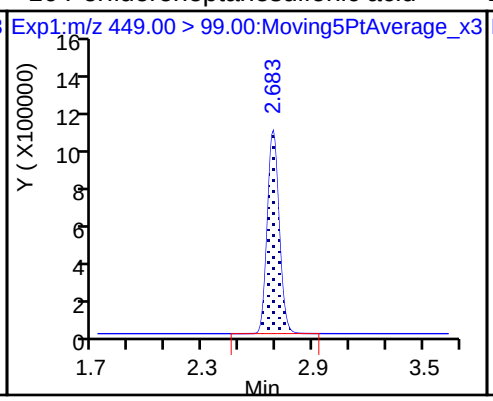
* 62 13C2-PFOA



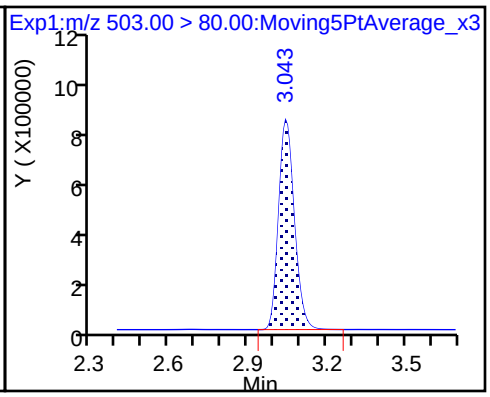
16 Perfluoroheptanesulfonic acid



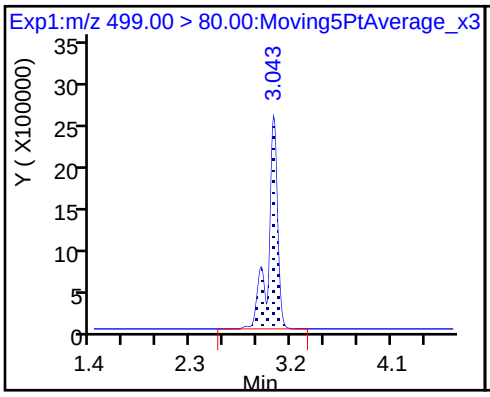
16 Perfluoroheptanesulfonic acid



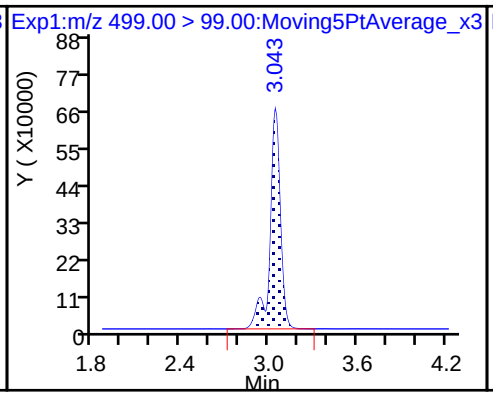
D 18 13C4 PFOS



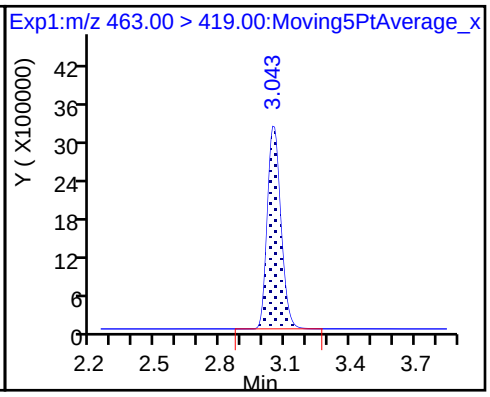
17 Perfluorooctane sulfonic acid



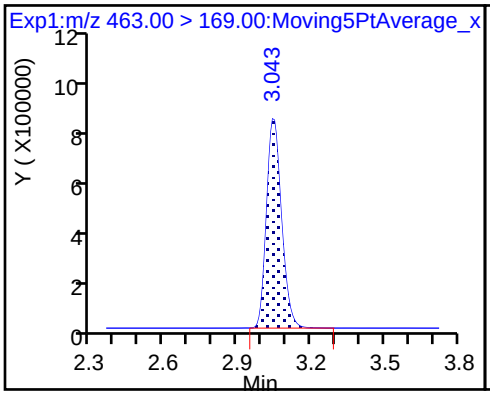
17 Perfluorooctane sulfonic acid



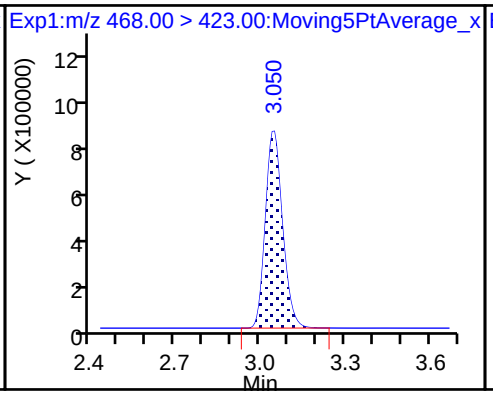
20 Perfluorononanoic acid



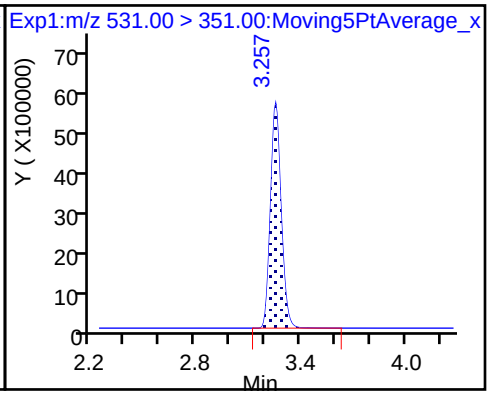
20 Perfluorononanoic acid



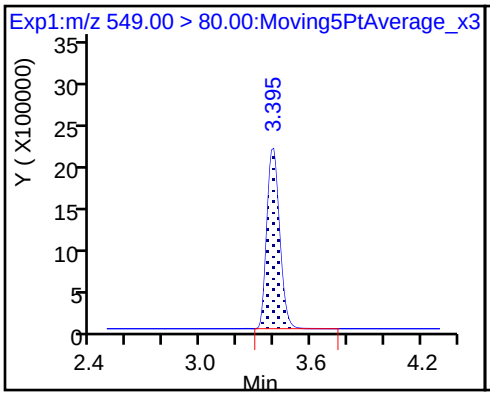
D 19 13C5 PFNA



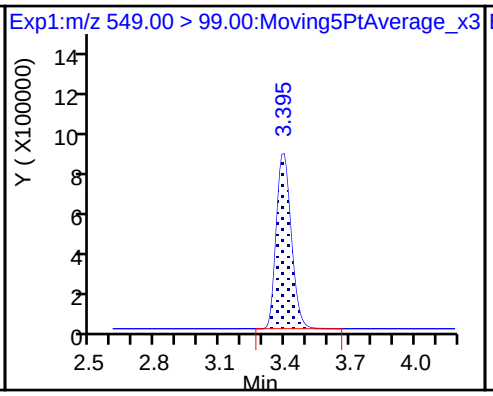
69 9-Chlorohexadecafluoro-3-oxanonane



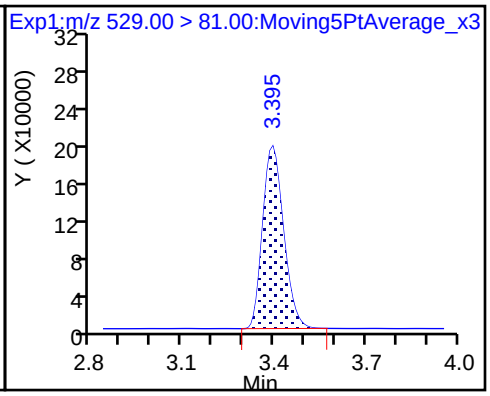
68 Perfluorononanesulfonic acid



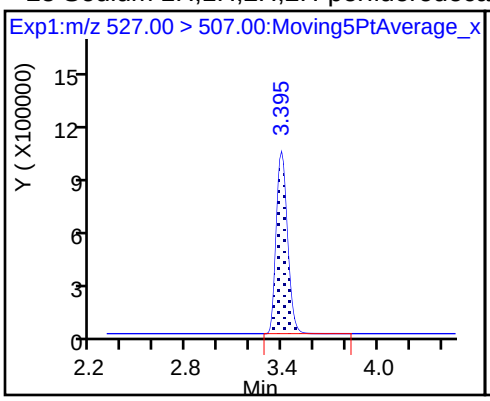
68 Perfluorononanesulfonic acid



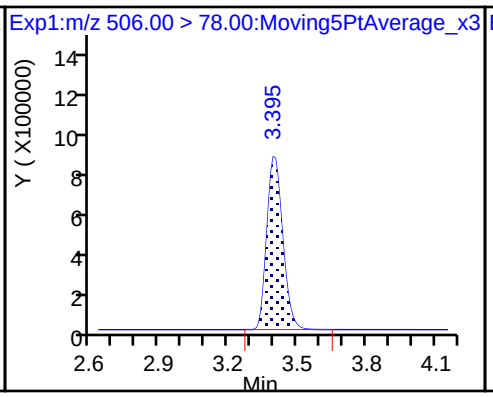
D 26 M2-8:2FTS



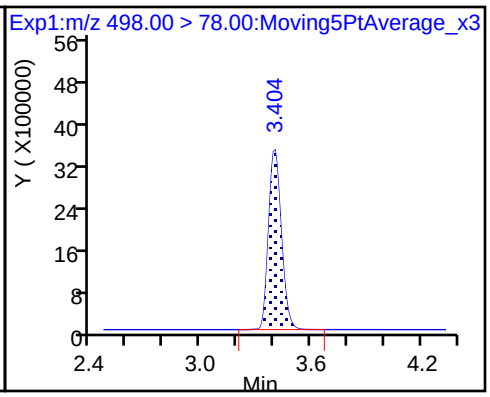
25 Sodium 1H,1H,2H,2H-perfluorodecane



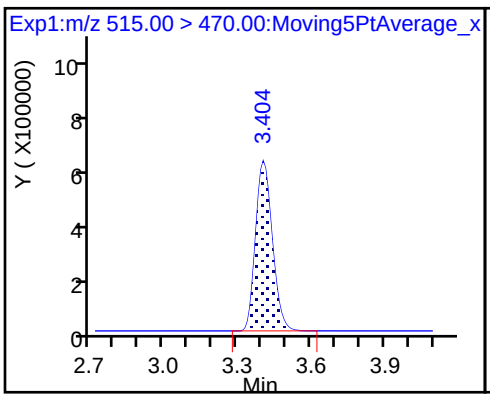
D 21 13C8 FOSA



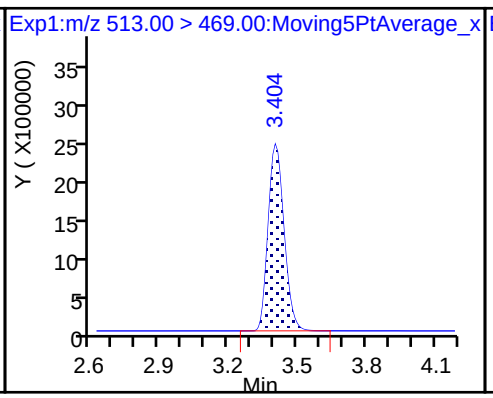
22 Perfluorooctane Sulfonamide



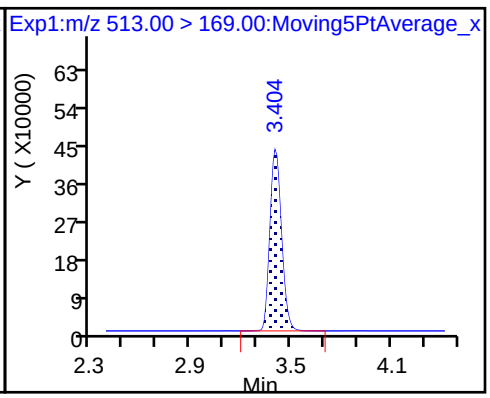
D 23 13C2 PFDA



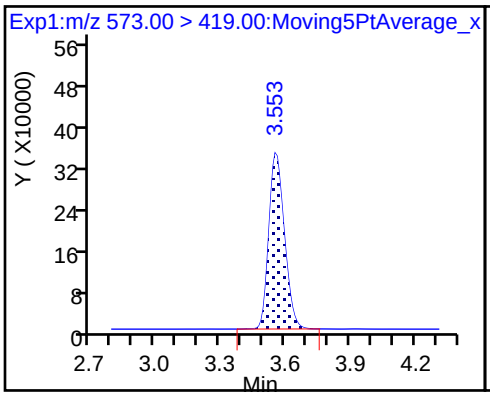
24 Perfluorodecanoic acid



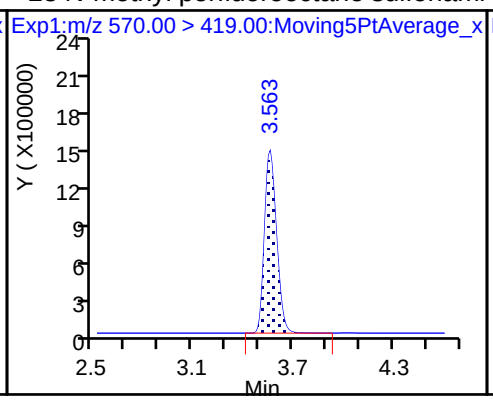
24 Perfluorodecanoic acid



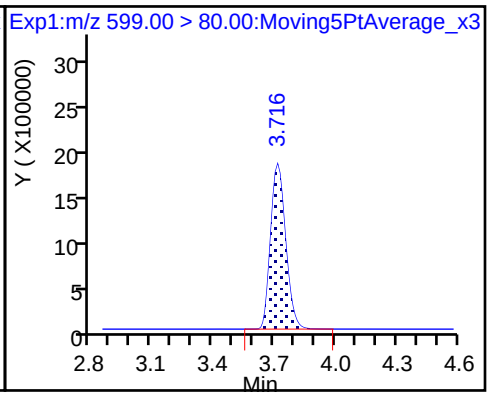
D 27 d3-NMeFOSAA



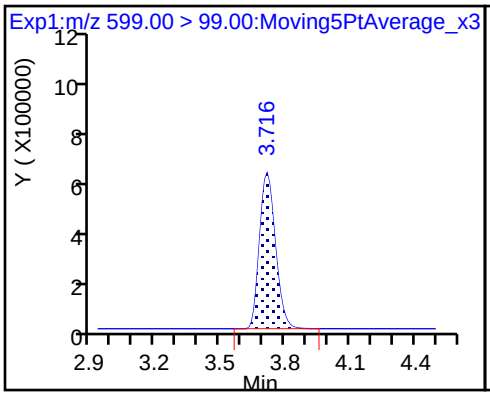
28 N-methyl perfluorooctane sulfonami



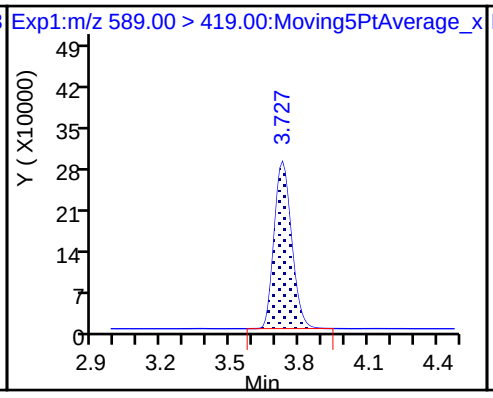
29 Perfluorodecane Sulfonic acid



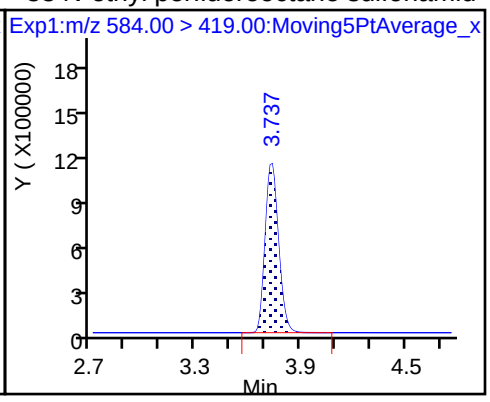
29 Perfluorodecane Sulfonic acid



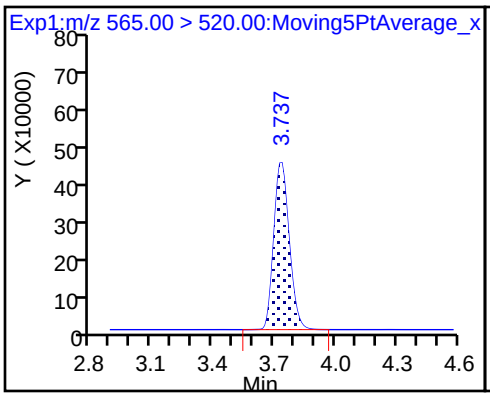
D 32 d5-NEtFOSAA



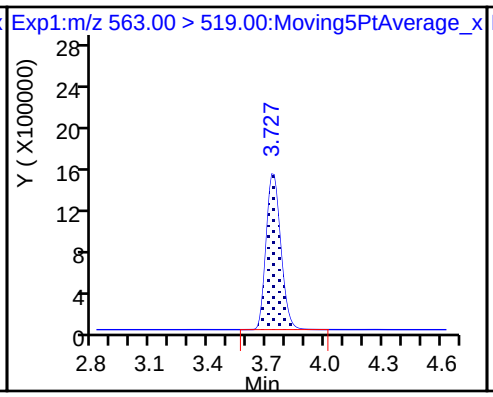
33 N-ethyl perfluorooctane sulfonamid



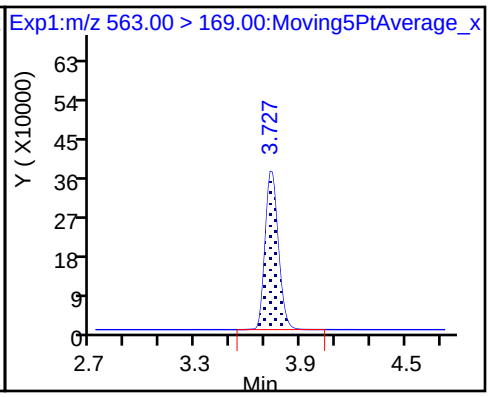
D 30 13C2 PFUnA



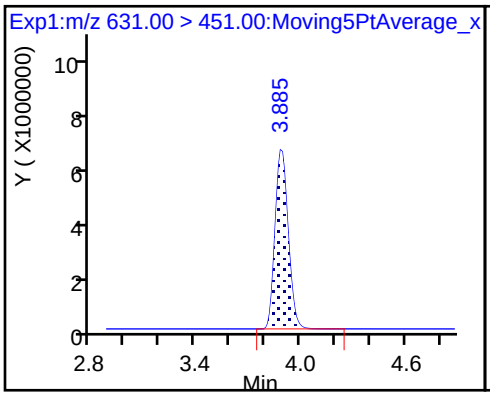
31 Perfluoroundecanoic acid



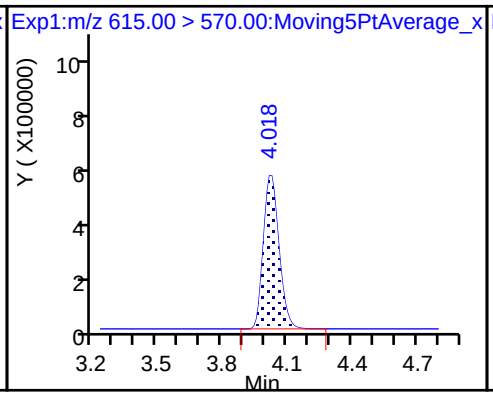
31 Perfluoroundecanoic acid



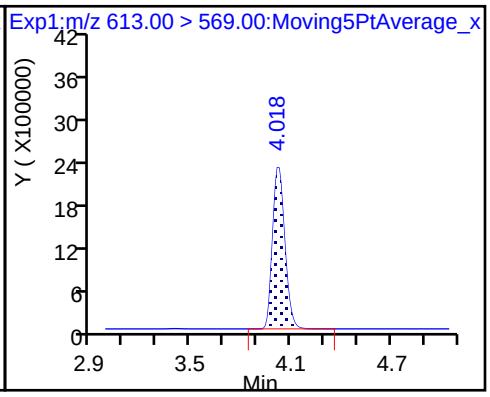
66 11-Chloroeicosafluoro-3-oxaundecan



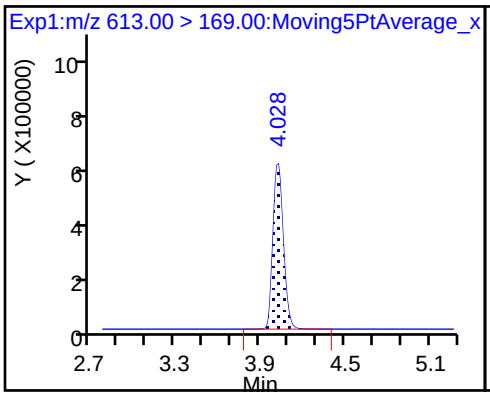
D 36 13C2 PFDoA



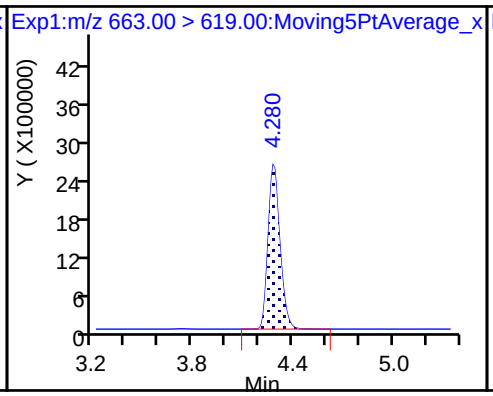
37 Perfluorododecanoic acid



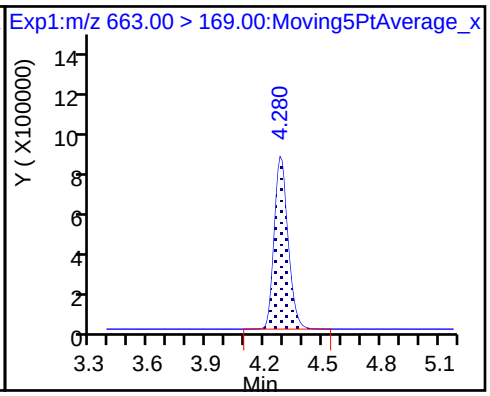
37 Perfluorododecanoic acid



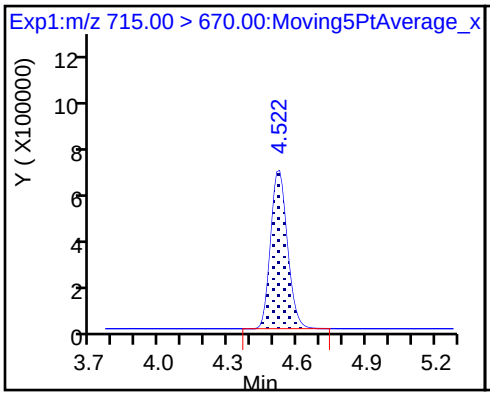
41 Perfluorotridecanoic acid



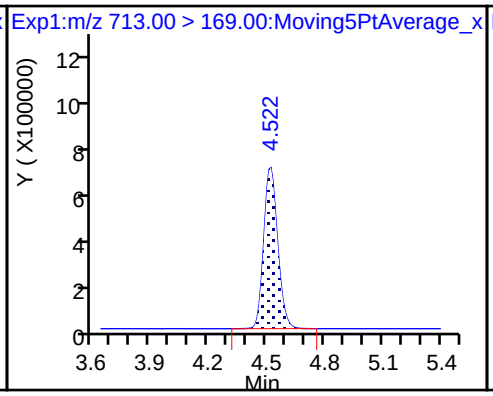
41 Perfluorotridecanoic acid



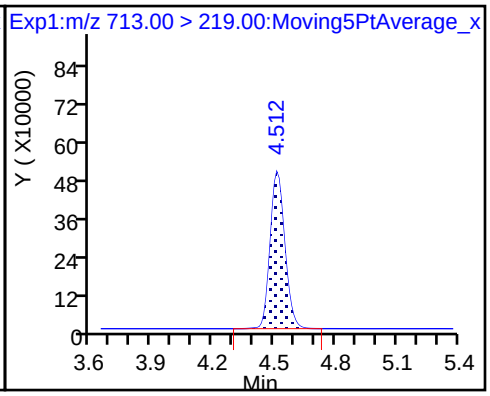
D 43 13C2-PFTeDA



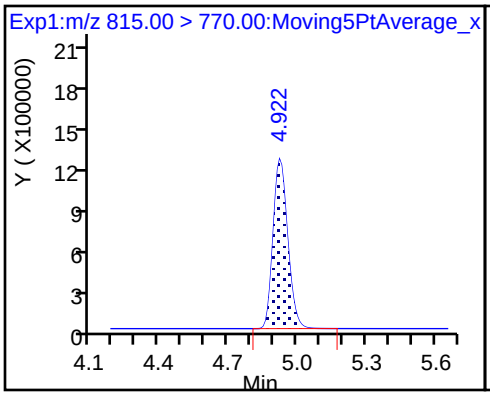
42 Perfluorotetradecanoic acid



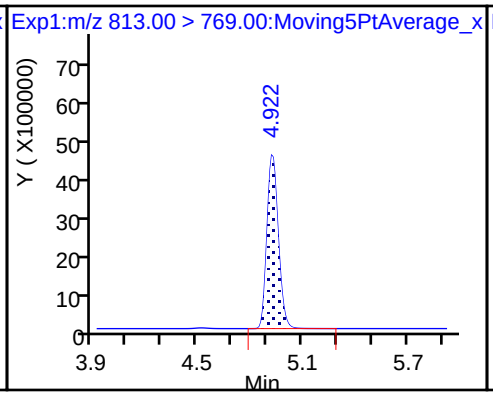
42 Perfluorotetradecanoic acid



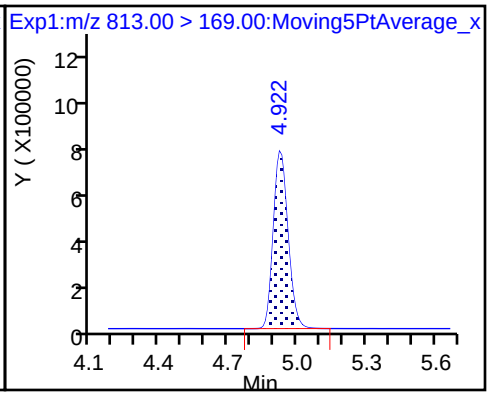
D 44 13C2-PFHxDA



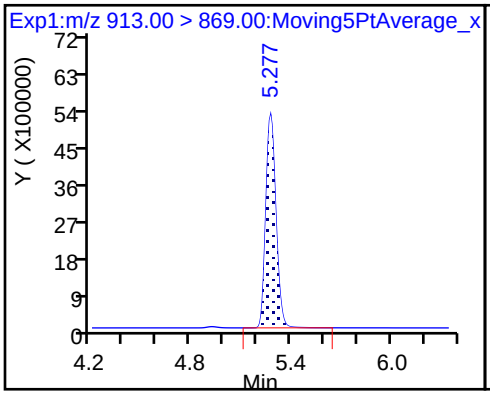
45 Perfluorohexadecanoic acid



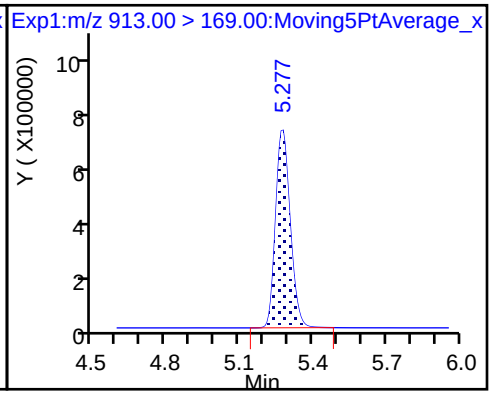
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: ICV 320-217359/10 Calibration Date: 04/10/2018 19:42

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.10LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9456		2.55	2.50	1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.133		2.38	2.50	-5.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	82.79		2.34	2.21	5.8	50.0
4:2 FTS	AveID	16.03	17.79		2.59	2.34	11.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.124		2.77	2.50	10.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	72.96		2.40	2.35	2.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.549		2.29	2.50	-8.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.015		2.54	2.50	1.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.112		2.24	2.28	-1.7	40.0
Adona	AveID	3.464	3.350		2.42	2.50	-3.3	50.0
6:2FTS	AveID	1.691	1.750		2.46	2.38	3.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.174		2.54	2.50	1.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.287		2.30	2.38	-3.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.033		2.48	2.50	-0.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.066		2.27	2.31	-2.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.806		2.23	2.33	-4.2	50.0
8:2FTS	AveID	1.265	1.321		2.51	2.40	4.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7710		2.32	2.40	-3.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.008		2.44	2.50	-2.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.087		2.69	2.50	7.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.055		2.65	2.50	5.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6537		2.43	2.41	0.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9922		2.65	2.50	6.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8169		2.42	2.50	-3.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.801		2.27	2.36	-3.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.064		2.55	2.50	2.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.212		2.49	2.50	-0.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2481		2.47	2.50	-1.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9405		2.46	2.50	-1.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: ICV 320-217359/10 Calibration Date: 04/10/2018 19:42

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.10LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.011		2.52	2.50	0.7	50.0
13C4 PFBA	Ave	1.345	1.348		2.51	2.50	0.2	50.0
13C5 PFPeA	Ave	0.8672	0.8855		2.55	2.50	2.1	50.0
13C3-PFBS	Ave	0.0199	0.0197		2.31	2.33	-0.8	50.0
M2-4:2FTS	Ave	0.1425	0.1499		2.46	2.34	5.1	50.0
13C2 PFHxA	Ave	0.9590	0.9273		2.42	2.50	-3.3	50.0
13C3 HFPO-DA	Ave	0.0593	0.0610		2.57	2.50	2.9	50.0
13C4-PFHpA	Ave	0.9333	0.9503		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	1.152	1.130		2.32	2.37	-1.9	50.0
M2-6:2FTS	Ave	0.2000	0.1936		2.30	2.38	-3.2	40.0
13C4 PFOA	Ave	0.9276	0.9247		2.49	2.50	-0.3	50.0
13C4 PFOS	Ave	0.8066	0.8532		2.53	2.39	5.8	50.0
13C5 PFNA	Ave	0.7973	0.8279		2.60	2.50	3.8	50.0
M2-8:2FTS	Ave	0.2409	0.2384		2.37	2.40	-1.0	40.0
13C2 PFDA	Ave	0.6701	0.6944		2.59	2.50	3.6	50.0
13C8 FOSA	Ave	1.007	1.012		2.51	2.50	0.5	50.0
d3-NMeFOSAA	Ave	0.3798	0.3981		2.62	2.50	4.8	50.0
d5-NEtFOSAA	Ave	0.3749	0.3684		2.46	2.50	-1.7	50.0
13C2 PFUnA	Ave	0.5781	0.5516		2.39	2.50	-4.6	50.0
13C2 PFDoA	Ave	0.6242	0.6257		2.51	2.50	0.2	50.0
13C2-PFTeDA	Ave	0.7915	0.8266		2.61	2.50	4.4	50.0
13C2-PFHxDA	Ave	1.288	1.382		2.68	2.50	7.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 10-Apr-2018 19:42:10 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:23:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.431	0.004	1.000	5903140	2.51		100	42897	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.432	0.003	1.000	5582092	2.55			3157	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	3876443	2.55		102	71438	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	4390263	2.38			3574	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.735	0.003	1.000	80328	2.31		99.2	737	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.002	1.000	6328944	2.34			26552	
298.90 > 99.00	1.739	1.736	0.002	1.000	2603286		2.43(1.25-3.74)		34374	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	1436925	2.59			63389	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.950	-0.001	1.000	612715	2.46		105	5966	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.985	0.008	1.006	4562329	2.77			12399	
313.00 > 119.00	1.981	1.985	-0.004	1.000	384388		11.87(5.03-15.10)		6555	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4059281	2.42		96.7	114705	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.008	-0.004	1.000	5923371	2.40			37471	
349.00 > 99.00	2.004	2.008	-0.004	1.000	2141440		2.77(1.36-4.07)		32919	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	267167	2.57		103	7732	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.087	-0.004	1.000	680925	2.29			4640	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	4159917	2.55		102	83647	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	4222004	2.54			5555	
363.00 > 169.00	2.320	2.314	0.006	1.000	1656229		2.55(1.13-3.40)		8075	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.323	0.010	1.000	5017849	2.24			13906	
399.00 > 99.00	2.333	2.323	0.010	1.000	1647913		3.04(1.50-4.49)		14109	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	4679824	2.32		98.1	94921	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	12510918	2.42			98964	
377.00 > 85.00	2.359	2.360	-0.001	1.000	7623155		1.64(0.84-2.53)		115527	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	805312	2.30		96.8	15934	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	1408901	2.46			22533	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.673	0.003	1.000	4047870	2.49		99.7	60383	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.674	0.002		4377627	2.50			57743	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.674	0.002	1.000	4752903	2.54			3234	
413.00 > 169.00	2.676	2.674	0.002	1.000	2366488		2.01(0.84-2.52)		10676	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	4566459	2.30			32288	
449.00 > 99.00	2.683	2.680	0.003	1.000	1249476		3.65(1.94-5.82)		23451	
D 18 13C4 PFOS										
503.00 > 80.00	3.049	3.041	0.008	1.000	3570537	2.53		106	24066	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.049	3.042	0.007	1.000	3685601	2.27			15600	
499.00 > 99.00	3.049	3.042	0.007	1.000	812986		4.53(2.31-6.93)		15657	
20 Perfluorononanoic acid										
463.00 > 419.00	3.049	3.043	0.006	1.000	3743693	2.48			9400	
463.00 > 169.00	3.049	3.043	0.006	1.000	898645		4.17(1.90-5.69)		36471	
D 19 13C5 PFNA										
468.00 > 423.00	3.049	3.045	0.004	1.000	3624090	2.60		104	67532	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	6286262	2.23			103380	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.394	3.388	0.006	1.000	2764509	2.31			32991	
549.00 > 99.00	3.394	3.388	0.006	1.000	1003388		2.76(1.33-3.97)		19714	
D 26 M2-8:2FTS										
529.00 > 81.00	3.394	3.390	0.004	1.000	999777	2.37		99.0	10613	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.394	3.393	0.001	1.000	1323882	2.51			55023	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4432045	2.51		101	58050	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	4817944	2.69			67785	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	3039987	2.59		104	79981	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	3064833	2.44			12447	
513.00 > 169.00	3.404	3.402	0.002	1.000	528428		5.80(2.36-7.09)		18431	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.553	0.009	1.000	1742858	2.62		105	25420	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.558	0.004	1.000	1839262	2.65			12104	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.715	3.715	0.0	1.000	2356067	2.43			29098	
599.00 > 99.00	3.715	3.715	0.0	1.000	795988		2.96(1.39-4.16)		22459	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.722	0.004	1.000	1612562	2.46		98.3	9989	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.727	0.010	1.000	2414889	2.39		95.4	67805	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.727	0.010	1.003	1599970	2.65			18023	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.727	0.010	1.000	1972744	2.42			8361	
563.00 > 169.00	3.737	3.727	0.010	1.000	467144		4.22(2.12-6.36)		11394	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.894	3.883	0.011	1.000	9854892	2.26			104542	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.017	0.010	1.000	2739185	2.51		100	21240	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.027	4.020	0.007	1.000	2914311	2.55			3322	
613.00 > 169.00	4.027	4.020	0.007	1.000	731402		3.98(2.13-6.40)		7033	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.289	4.278	0.011	1.000	3318610	2.49			3147	
663.00 > 169.00	4.289	4.278	0.011	1.000	1033553		3.21(1.25-3.76)		10706	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.513	0.008	1.000	3618492	2.61		104	23098	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.513	0.008	1.000	897606	2.47			8678	
713.00 > 219.00	4.511	4.513	-0.002	0.998	658771		1.36(0.71-2.13)		10322	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.930	4.918	0.012	1.000	6051317	2.68		107	16293	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.930	4.920	0.010	1.000	5691508	2.46			1760	
813.00 > 169.00	4.930	4.920	0.010	1.000	909536		6.26(2.86-8.58)		5961	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.277	5.268	0.009	1.000	6120324	2.52			1552	
913.00 > 169.00	5.277	5.268	0.009	1.000	734463		8.33(3.83-11.48)		3317	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_010.d

Injection Date: 10-Apr-2018 19:42:10 Instrument ID: A8_N

Lims ID: ICV Full

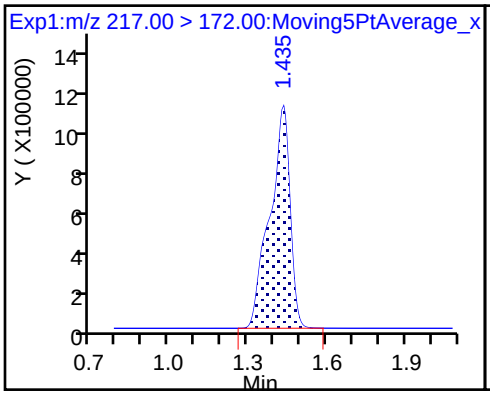
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

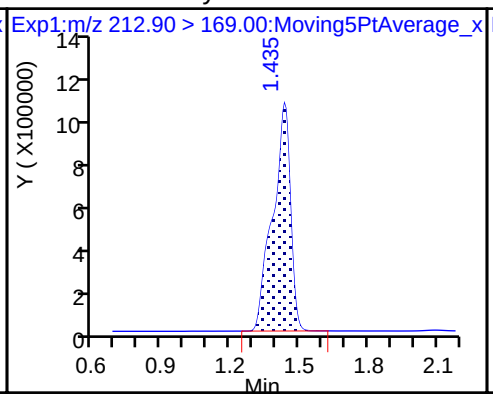
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

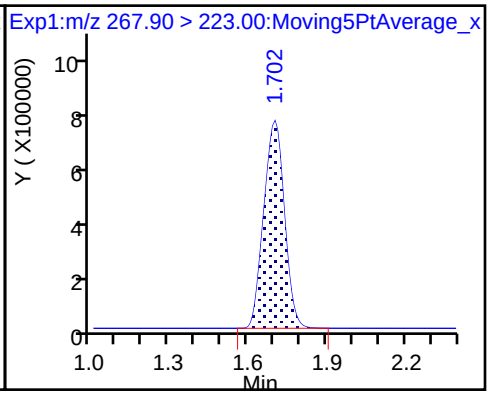
D 1 13C4 PFBA



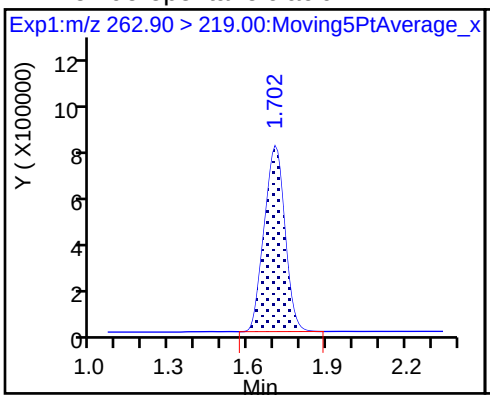
2 Perfluorobutyric acid



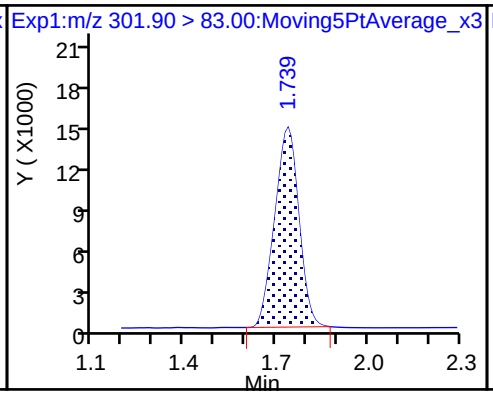
D 3 13C5-PFPeA



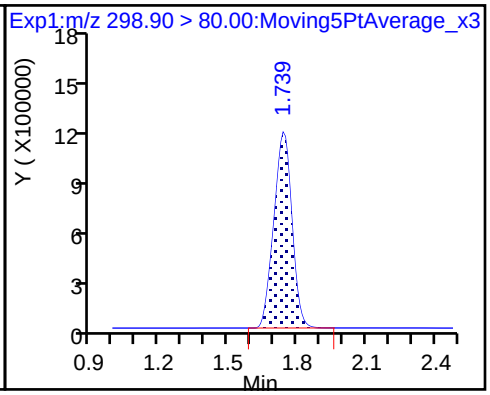
4 Perfluoropentanoic acid



D 47 13C3-PFBS



5 Perfluorobutanesulfonic acid



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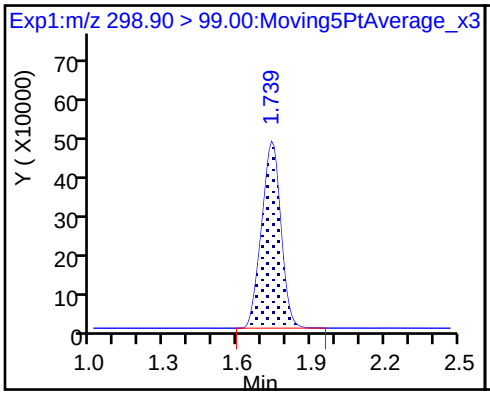
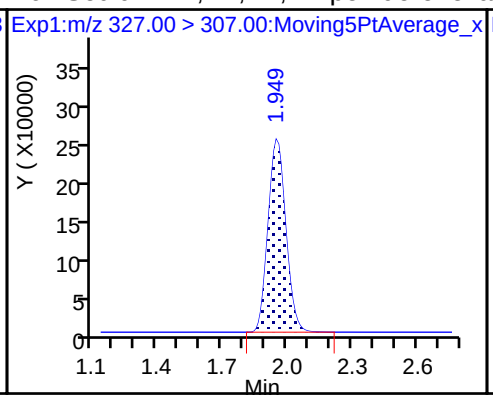
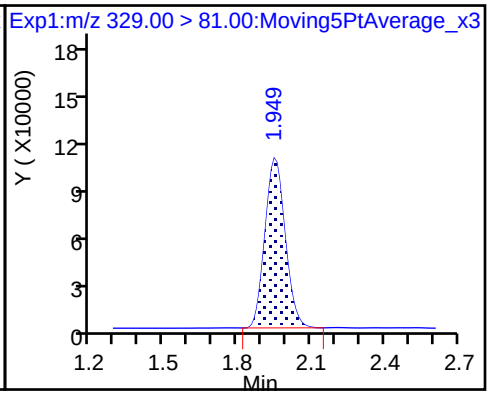


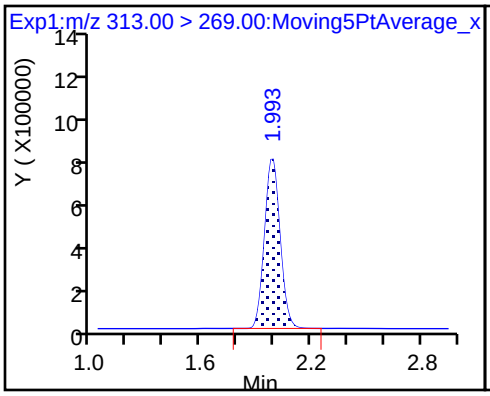
61 Sodium 1H,1H,2H,2H-perfluorohexane



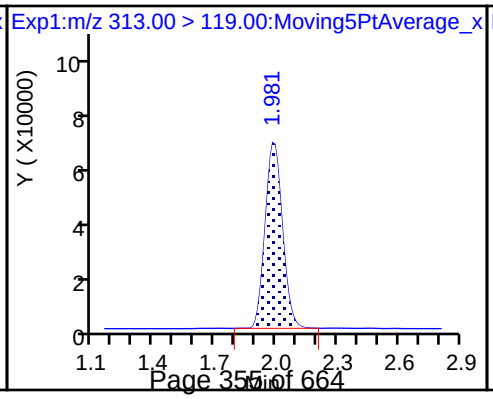
D 60 M2-4:2FTS



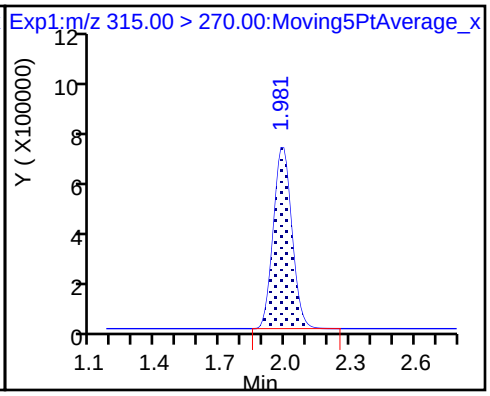
6 Perfluorohexanoic acid



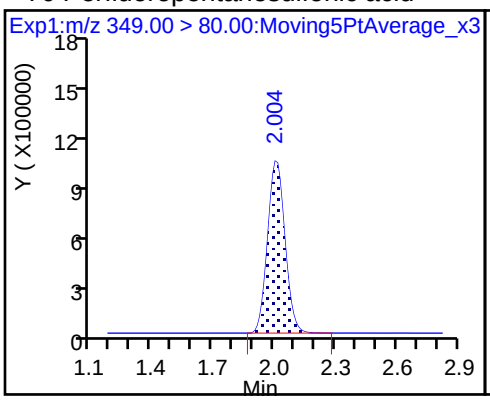
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



70 Perfluoropentanesulfonic acid



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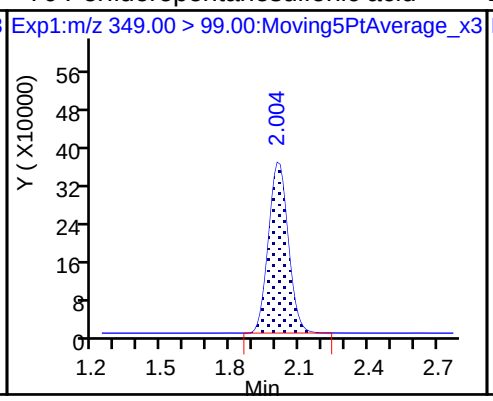
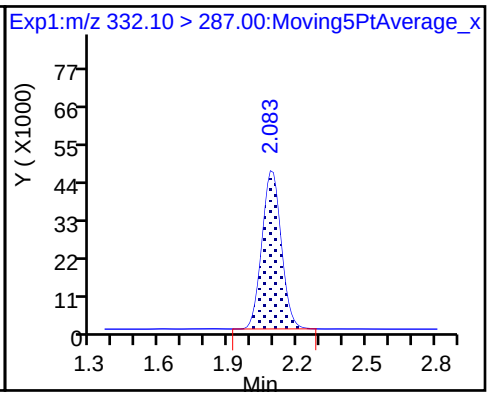
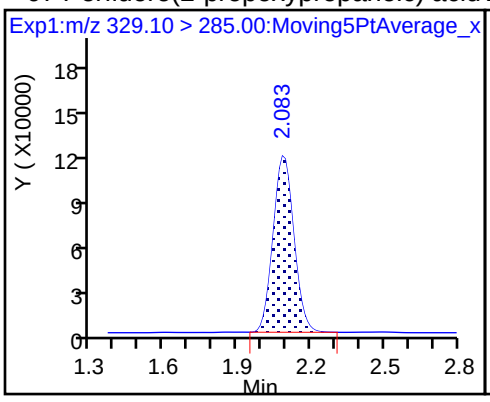


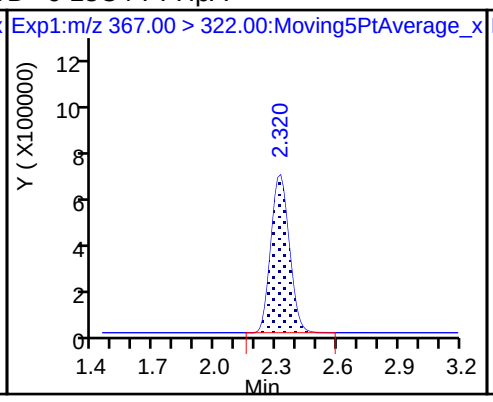
D 64 13C3 HFPO-DA



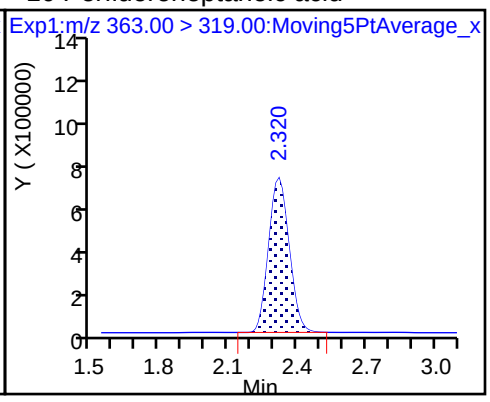
67 Perfluoro(2-propoxypropanoic) acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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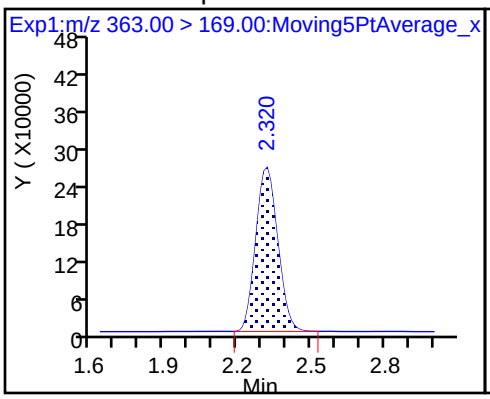
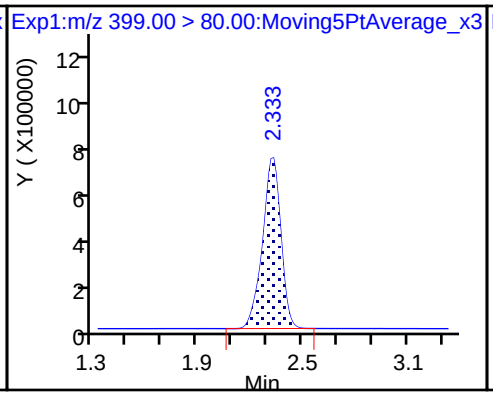


8 Perfluorohexanesulfonic acid



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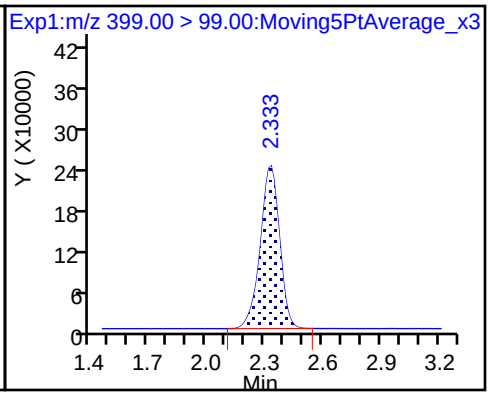
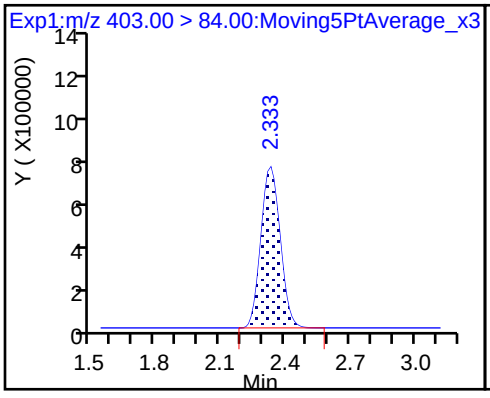
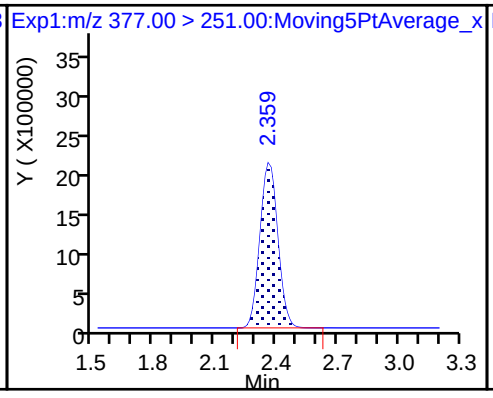


D 11 18O2 PFHxS



65 Adona



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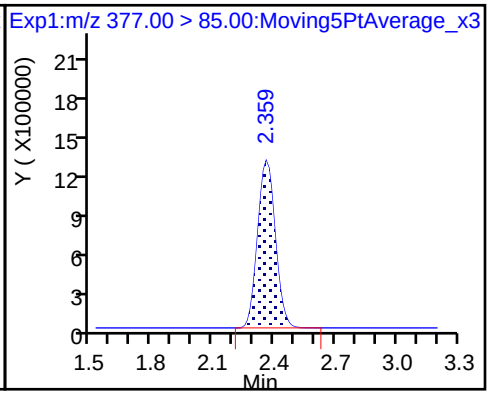
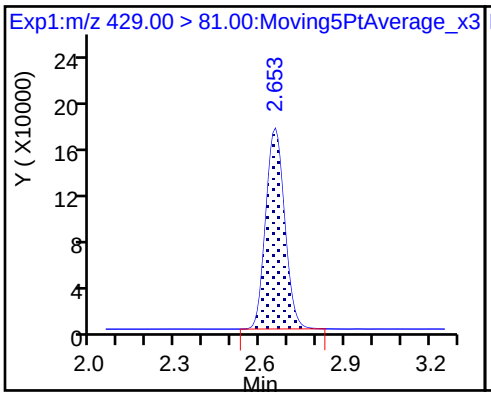
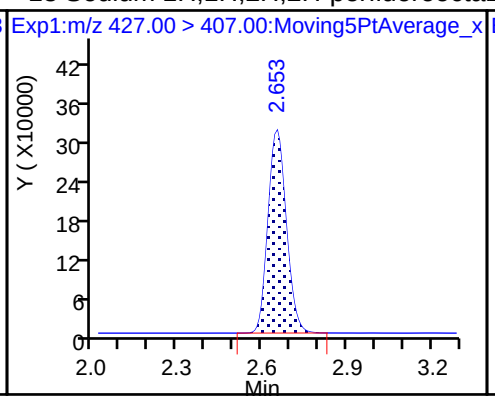


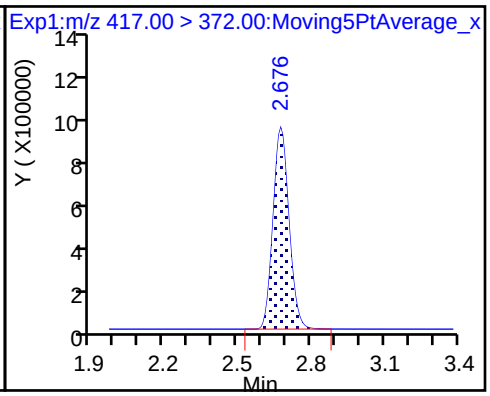
D 12 M2-6:2FTS



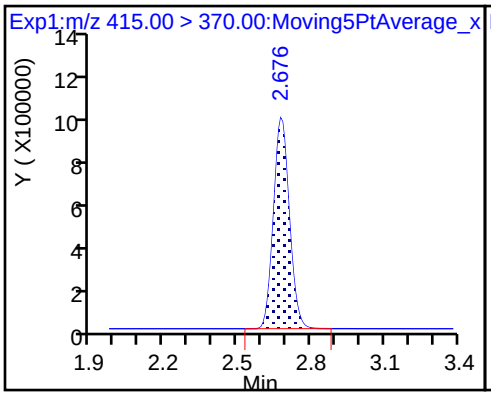
13 Sodium 1H,1H,2H,2H-perfluorooctane



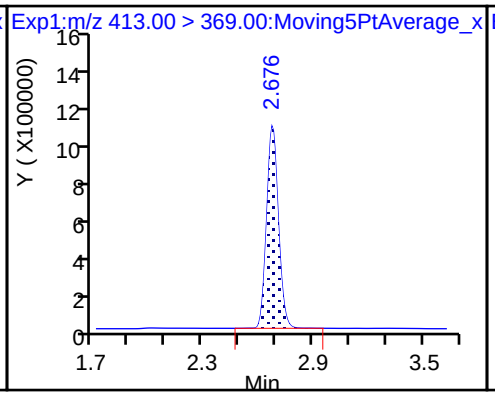
D 14 13C4 PFOA



* 62 13C2-PFOA



15 Perfluorooctanoic acid



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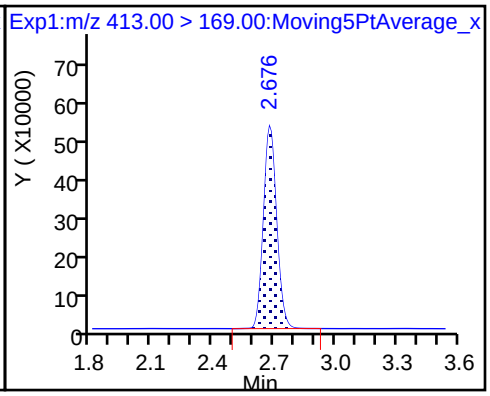
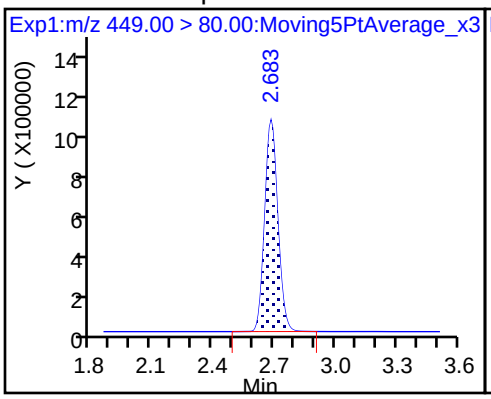
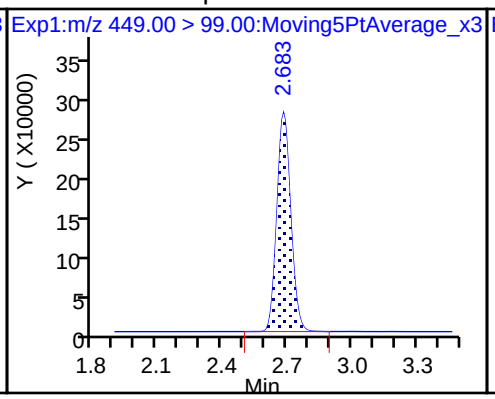


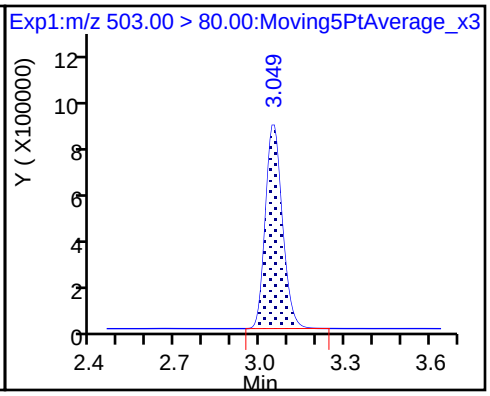
16 Perfluoroheptanesulfonic acid



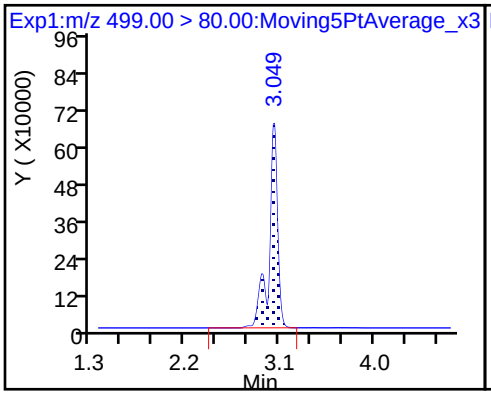
16 Perfluoroheptanesulfonic acid



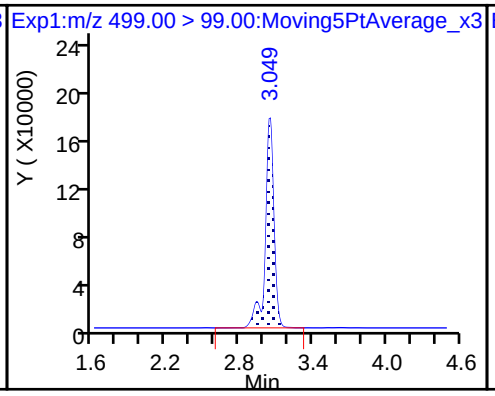
D 18 13C4 PFOS



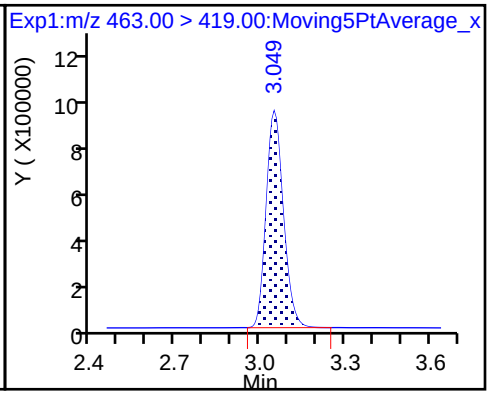
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid



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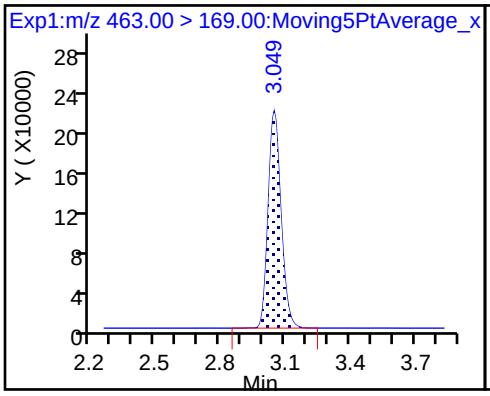
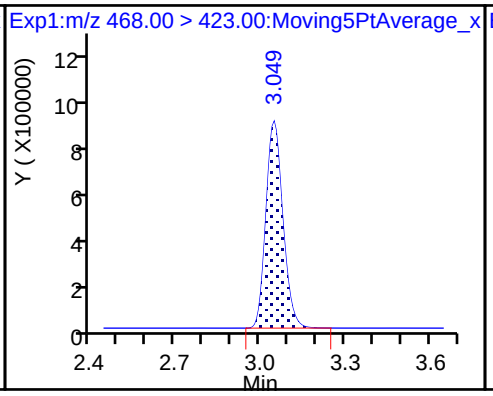
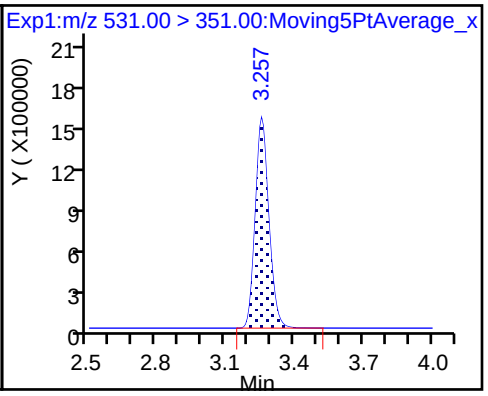


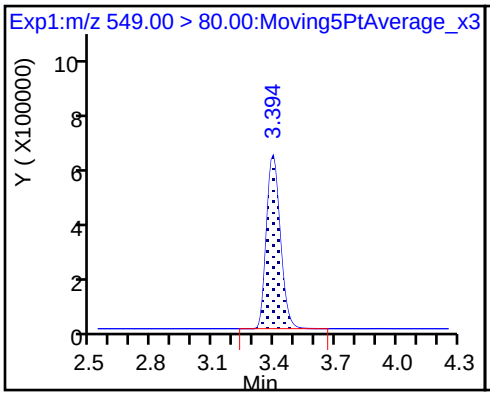
D 19 13C5 PFNA



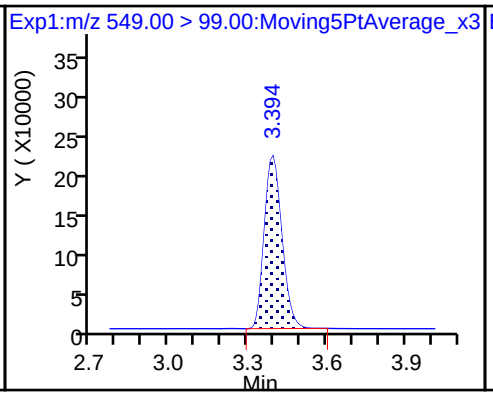
69 9-Chlorohexadecafluoro-3-oxanonane



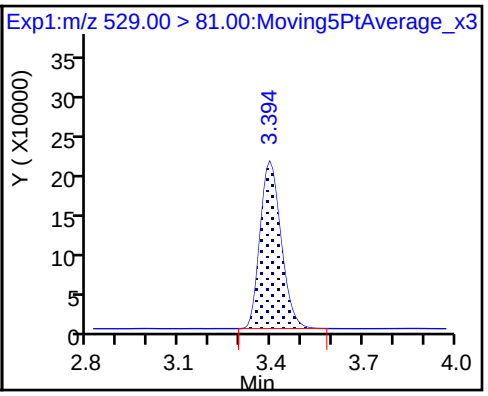
68 Perfluorononanesulfonic acid



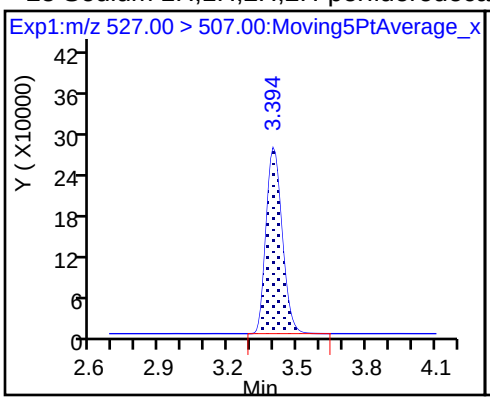
68 Perfluorononanesulfonic acid



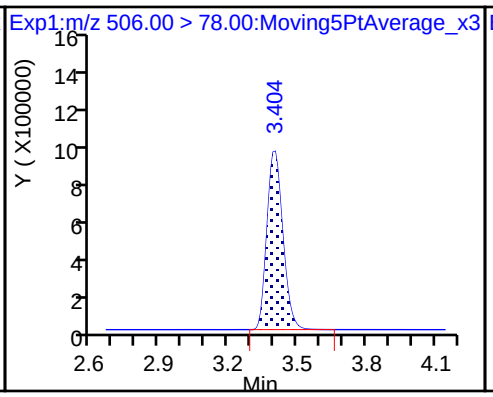
D 26 M2-8:2FTS



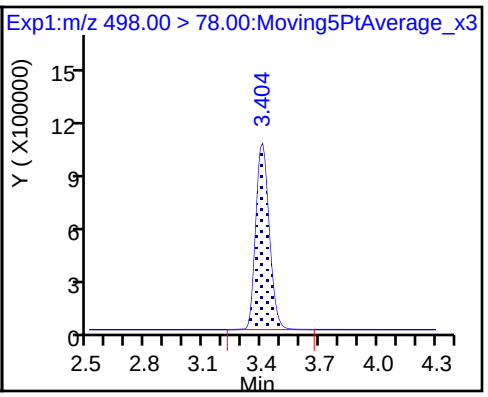
25 Sodium 1H,1H,2H,2H-perfluorodecane



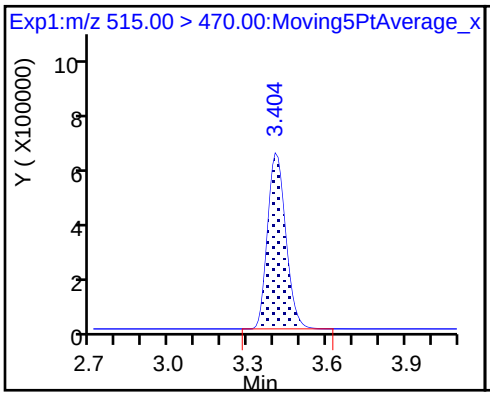
D 21 13C8 FOSA



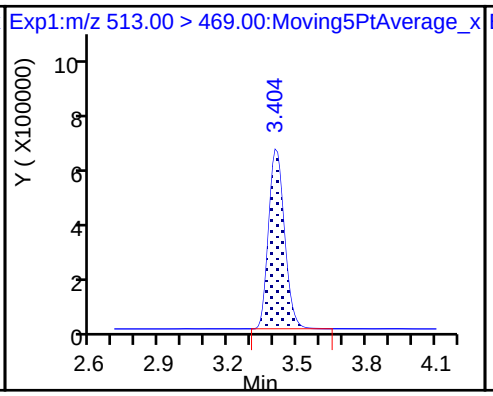
22 Perfluorooctane Sulfonamide



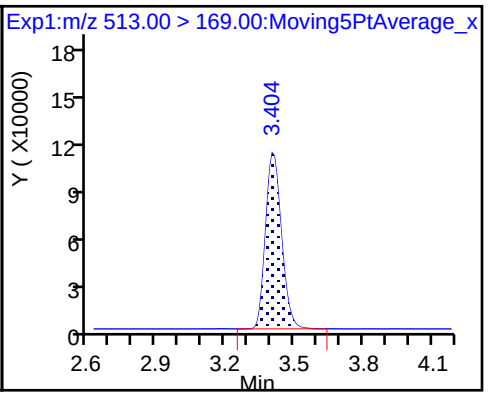
D 23 13C2 PFDA



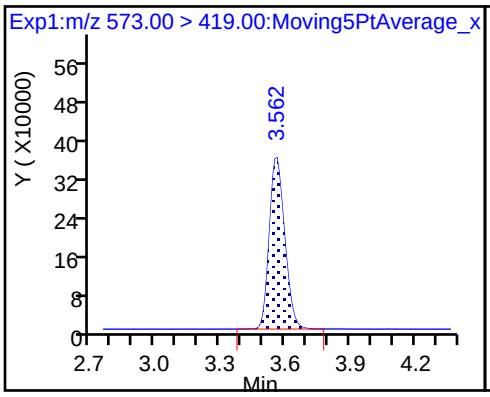
24 Perfluorodecanoic acid



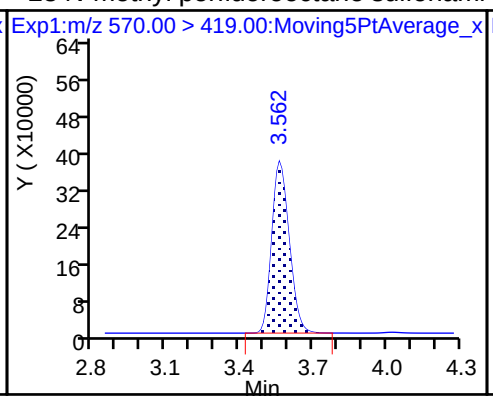
24 Perfluorodecanoic acid



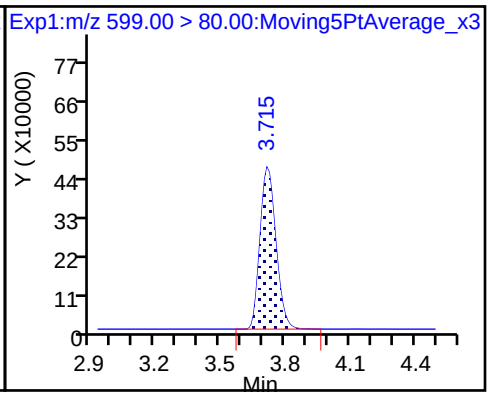
D 27 d3-NMeFOSAA



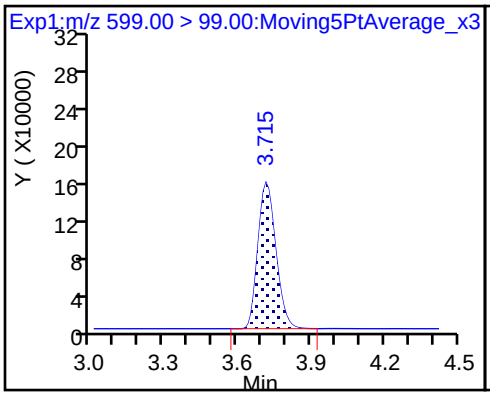
28 N-methyl perfluorooctane sulfonami



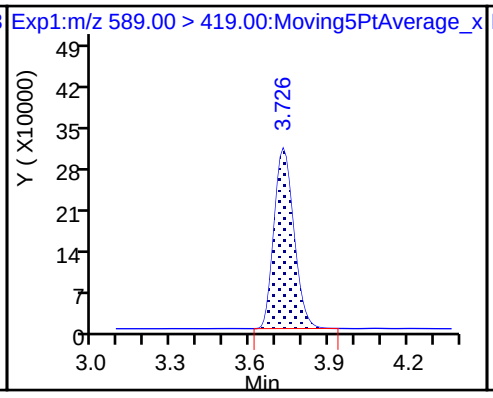
29 Perfluorodecane Sulfonic acid



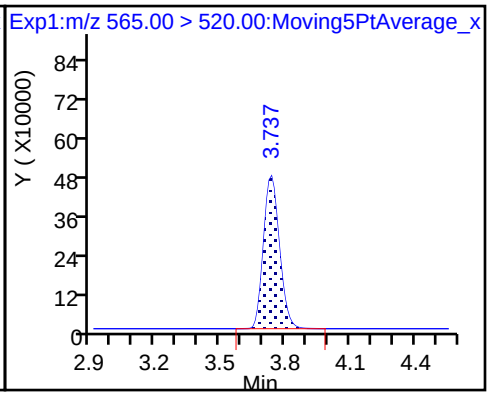
29 Perfluorodecane Sulfonic acid



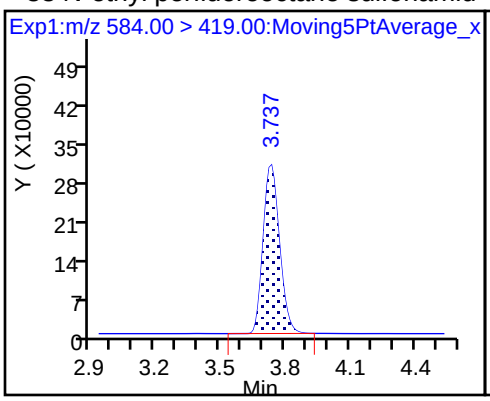
D 32 d5-NEtFOSAA



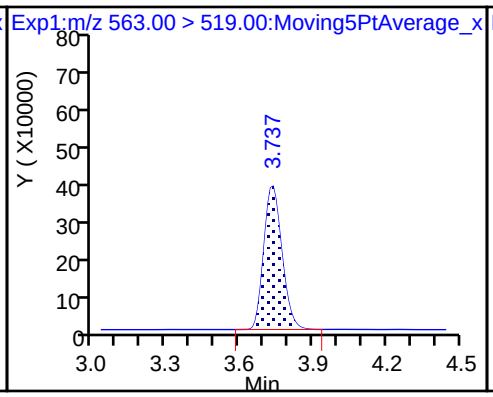
D 30 13C2 PFUnA



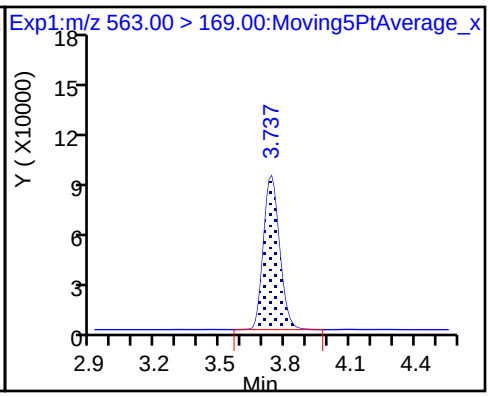
33 N-ethyl perfluorooctane sulfonamid



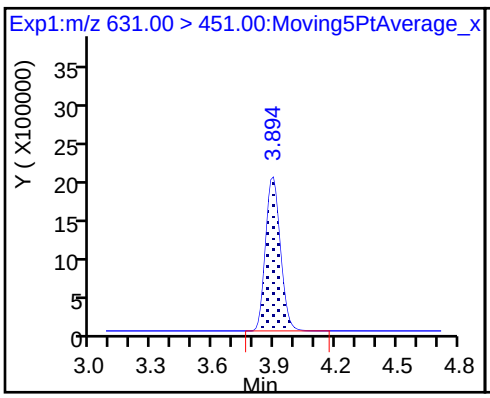
31 Perfluoroundecanoic acid



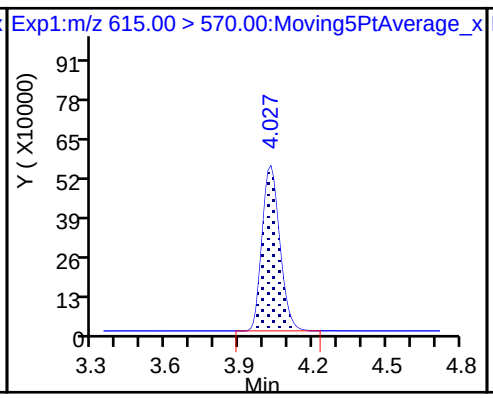
31 Perfluoroundecanoic acid



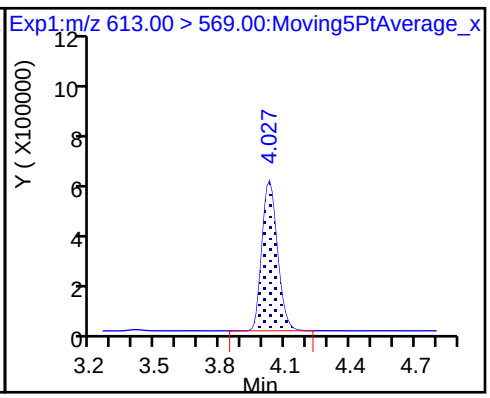
66 11-Chloroeicosafluoro-3-oxaundecan



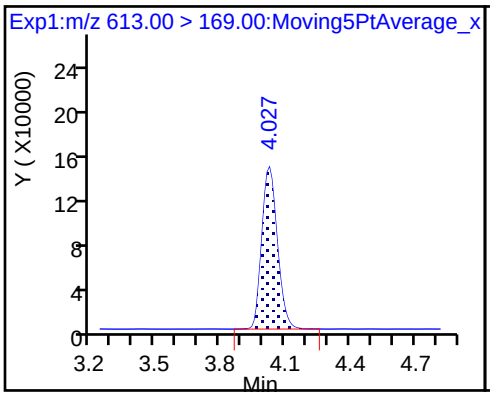
D 36 13C2 PFDoA



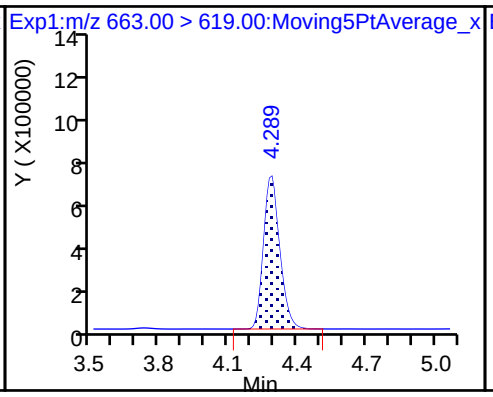
37 Perfluorododecanoic acid



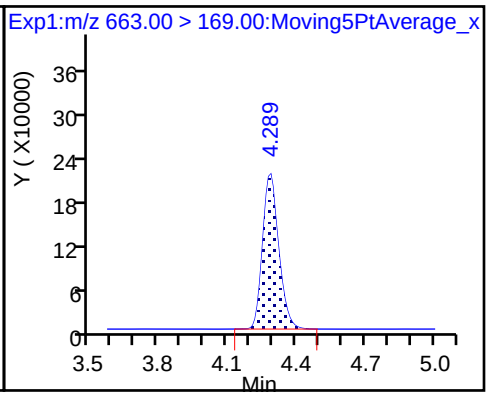
37 Perfluorododecanoic acid



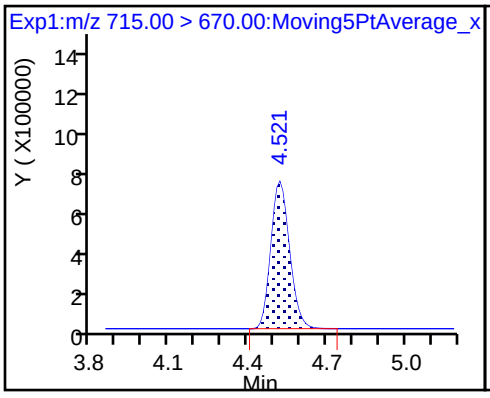
41 Perfluorotridecanoic acid



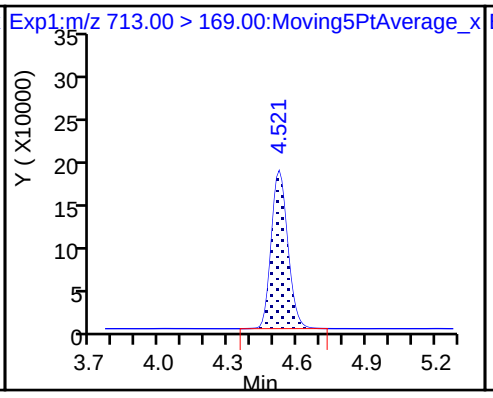
41 Perfluorotridecanoic acid



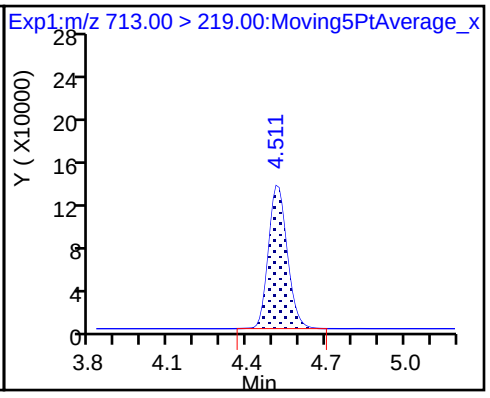
D 43 13C2-PFTeDA



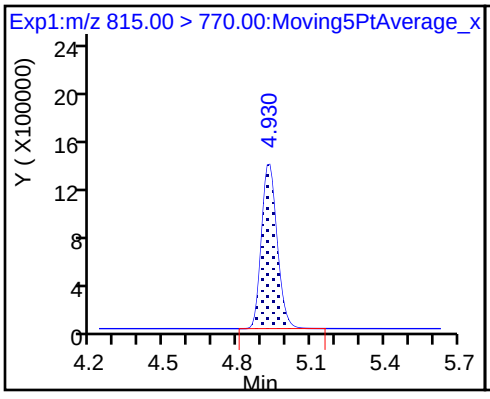
42 Perfluorotetradecanoic acid



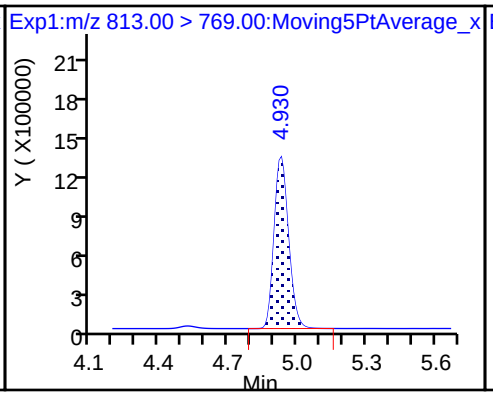
42 Perfluorotetradecanoic acid



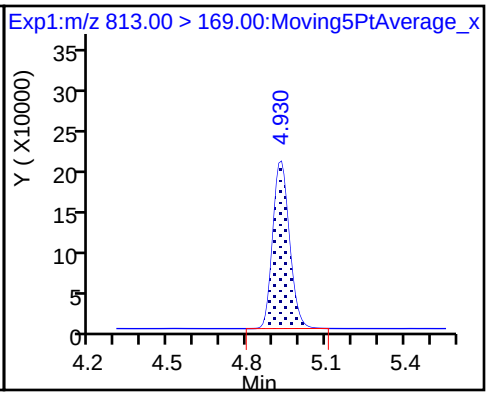
D 44 13C2-PFHxDA



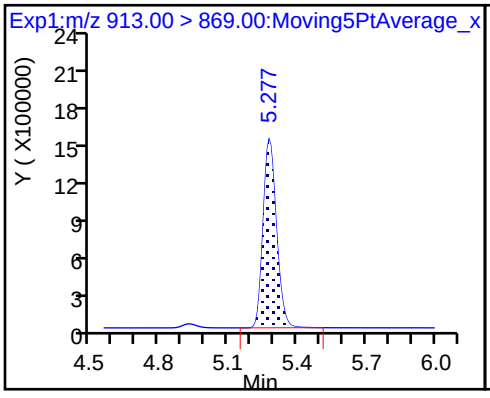
45 Perfluorohexadecanoic acid



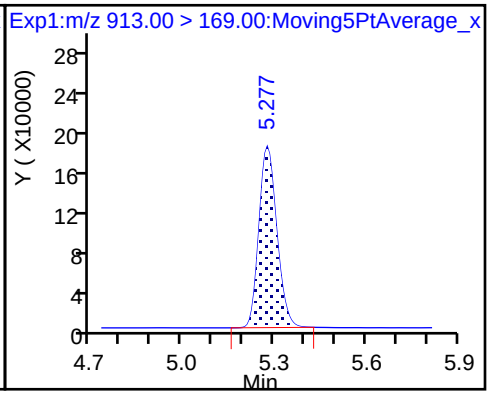
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCVL 320-219129/2 Calibration Date: 04/21/2018 05:31

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLAAX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9825		0.0529	0.0500	5.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.252		0.0525	0.0500	5.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	77.06		0.0435	0.0442	-1.6	50.0
4:2 FTS	AveID	16.03	18.11		0.130	0.0467	12.9	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9885		0.0486	0.0500	-2.7	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	69.36		0.0455	0.0469	-3.0	50.0
HFPO-DA (GenX)	AveID	2.785	3.135		0.0563	0.0500	12.5	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.074		0.0537	0.0500	7.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.134		0.0456	0.0455	0.2	50.0
Adona	AveID	3.464	3.384		0.0488	0.0500	-2.3	50.0
6:2FTS	AveID	1.691	2.482		0.0696	0.0474	46.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.209		0.0523	0.0500	4.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.300		0.0466	0.0476	-2.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.053		0.0505	0.0500	1.0	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.099		0.0469	0.0464	1.0	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.912		0.0473	0.0466	1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.045		0.0517	0.0500	3.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7958		0.0478	0.0480	-0.4	50.0
8:2FTS	AveID	1.265	1.089		0.0500	0.0479	-14.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.049		0.0509	0.0500	1.7	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9937		0.0780	0.0500	-0.4	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6704		0.0498	0.0482	3.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8567		0.0480	0.0500	-8.3	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8855		0.0524	0.0500	4.8	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.842		0.0460	0.0471	-2.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	0.9908		0.0475	0.0500	-5.0	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.247		0.0513	0.0500	2.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2616		0.0521	0.0500	4.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.323		0.0476	0.0500	-4.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCVL 320-219129/2 Calibration Date: 04/21/2018 05:31

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLAAX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.011		0.0503	0.0500	0.6	50.0
13C4 PFBA	Ave	1.345	1.365		2.54	2.50	1.5	50.0
13C5 PFPeA	Ave	0.8672	0.8963		2.58	2.50	3.3	50.0
13C3-PFBS	Ave	0.0199	0.0202		2.36	2.33	1.6	50.0
M2-4:2FTS	Ave	0.1425	0.1473		2.41	2.34	3.3	50.0
13C2 PFHxA	Ave	0.9590	1.010		2.63	2.50	5.3	50.0
13C3 HFPO-DA	Ave	0.0593	0.0479		2.02	2.50	-19.3	50.0
13C4-PFHpA	Ave	0.9333	0.9473		2.54	2.50	1.5	50.0
18O2 PFHxS	Ave	1.152	1.186		2.44	2.37	3.0	50.0
M2-6:2FTS	Ave	0.2000	0.2232		2.65	2.38	11.6	50.0
13C4 PFOA	Ave	0.9276	0.9624		2.59	2.50	3.8	50.0
13C4 PFOS	Ave	0.8066	0.8133		2.41	2.39	0.8	50.0
13C5 PFNA	Ave	0.7973	0.7904		2.48	2.50	-0.9	50.0
13C8 FOSA	Ave	1.007	1.025		2.54	2.50	1.8	50.0
M2-8:2FTS	Ave	0.2409	0.2518		2.50	2.40	4.5	50.0
13C2 PFDA	Ave	0.6701	0.6819		2.54	2.50	1.8	50.0
d3-NMeFOSAA	Ave	0.3798	0.4113		2.71	2.50	8.3	50.0
d5-NEtFOSAA	Ave	0.3749	0.4368		2.91	2.50	16.5	50.0
13C2 PFUnA	Ave	0.5781	0.5636		2.44	2.50	-2.5	50.0
13C2 PFDoA	Ave	0.6242	0.6190		2.48	2.50	-0.8	50.0
13C2-PFTeDA	Ave	0.7915	0.7845		2.48	2.50	-0.9	50.0
13C2-PFHxDA	Ave	1.288	1.417		2.75	2.50	10.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b\2018.04.20LLAAX_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 21-Apr-2018 05:31:51 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 23-Apr-2018 14:19:18 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.434	1.433	0.001	1.000	127185	0.0529		106	58.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.439	-0.005	1.000	6472676	2.54		101	41580	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.698	0.001	1.000	106371	0.0525		105	75.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.699	0.0	0.556	4248568	2.58		103	73482	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.734	0.001	1.000	130569	0.0435		98.4	412	
298.90 > 99.00	1.735	1.734	0.001	1.000	57636		2.27(1.25-3.74)		359	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.735	0.0	1.000	89131	2.36		102	792	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	32417	0.0527		113	1824	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.956	-0.011	1.000	652005	2.41		103	4687	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.978	1.988	-0.010	1.000	94636	0.0486		97.3	100	
313.00 > 119.00	1.988	1.988	0.0	1.005	8015		11.81(5.03-15.10)		61.1	
D 7 13C2 PFHxA										
315.00 > 270.00	1.978	1.988	-0.010	1.000	4787021	2.63		105	90994	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.011	0.0	1.000	124713	0.0455		97.0	1111	
349.00 > 99.00	2.000	2.011	-0.011	0.994	49417		2.52(1.36-4.07)		518	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.090	-0.011	1.000	14224	0.0563		113	78.2	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.090	-0.011	1.000	226875	2.02		80.7	6366	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.316	0.0	1.000	96487	0.0537		107	99.5	
363.00 > 169.00	2.316	2.316	0.0	1.000	38510		2.51(1.13-3.40)		146	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.316	0.0	1.000	4490449	2.54		102	64698	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.329	0.0	1.000	116060	0.0456		100	289	
399.00 > 99.00	2.329	2.329	0.0	1.000	38333		3.03(1.50-4.49)		180	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.329	0.0	1.000	5319582	2.44		103	65061	
65 Adona										
377.00 > 251.00	2.355	2.368	-0.013	1.000	260929	0.0488		97.7	4242	
377.00 > 85.00	2.369	2.368	0.001	1.006	169241		1.54(0.84-2.53)		3015	
D 12 M2-6:2FTS										
429.00 > 81.00	2.658	2.651	0.007	1.000	1005017	2.65		112	16397	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.658	2.658	0.0	1.000	49774	0.0696		147	527	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4740408	2.50			55949	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	4562381	2.59		104	60427	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.688	-0.007	1.000	110360	0.0523		105	59.0	
413.00 > 169.00	2.681	2.688	-0.007	1.000	60312		1.83(0.84-2.52)		173	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	95465	0.0466		98.0	871	
449.00 > 99.00	2.688	2.688	0.0	1.000	28173		3.39(1.94-5.82)		458	
D 19 13C5 PFNA										
468.00 > 423.00	3.054	3.050	0.004	1.000	3746832	2.48		99.1	60128	
D 18 13C4 PFOS										
503.00 > 80.00	3.054	3.050	0.004	1.000	3685819	2.41		101	19821	
20 Perfluorononanoic acid										
463.00 > 419.00	3.054	3.058	-0.004	1.000	78902	0.0505		101	233	
463.00 > 169.00	3.054	3.058	-0.004	1.000	21284		3.71(1.90-5.69)		323	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.054	3.058	-0.004	1.000	78638	0.0469		101	257	
499.00 > 99.00	3.054	3.058	-0.004	1.000	20500		3.84(2.31-6.93)		190	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.267	3.265	0.002	1.000	137380	0.0473		101	2596	
D 21 13C8 FOSA										
506.00 > 78.00	3.390	3.386	0.004	1.000	4859313	2.54		102	54619	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.390	3.397	-0.007	1.000	101578	0.0517		103	2530	
D 26 M2-8:2FTS										
529.00 > 81.00	3.409	3.405	0.004	1.000	1143517	2.50		105	14218	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.400	3.406	-0.006	1.000	58912	0.0478		99.6	602	
549.00 > 99.00	3.409	3.406	0.003	1.003	21332		2.76(1.33-3.97)		342	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.409	3.406	0.003	1.000	24897	0.0412		86.0	1247	
D 23 13C2 PFDA										
515.00 > 470.00	3.418	3.414	0.004	1.000	3232304	2.54		102	58063	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.418	3.415	0.003	1.000	67831	0.0509		102	287	
513.00 > 169.00	3.418	3.415	0.003	1.000	12602		5.38(2.36-7.09)		253	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.567	3.563	0.004	1.000	1949547	2.71		108	33833	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.577	3.573	0.004	1.003	38745	0.0498		99.6	256	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.731	3.728	0.003	1.000	49835	0.0498		103	531	
599.00 > 99.00	3.731	3.728	0.003	1.000	15801		3.15(1.39-4.16)		418	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.742	3.738	0.004	1.000	2070788	2.91		117	25864	
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.748	0.004	1.000	2671506	2.44		97.5	55168	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.752	3.749	0.003	1.000	47312	0.0524		105	254	
563.00 > 169.00	3.752	3.749	0.003	1.000	9777		4.84(2.12-6.36)		253	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.752	3.749	0.003	1.003	35481	0.0458		91.7	712	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.909	3.906	0.003	1.000	206468	0.0460		97.6	4336	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.037	0.004	1.000	2934312	2.48		99.2	25528	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.049	0.002	1.003	58145	0.0475		95.0	73.3	
613.00 > 169.00	4.051	4.049	0.002	1.003	15632		3.72(2.13-6.40)		300	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.307	0.001	1.000	73167	0.0513		103	82.0	
663.00 > 169.00	4.308	4.307	0.001	1.000	21299		3.44(1.25-3.76)		237	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.542	0.0	1.000	3718626	2.48		99.1	29083	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.542	4.542	0.0	1.000	19456	0.0521		104	238	
713.00 > 219.00	4.542	4.542	0.0	1.000	16481		1.18(0.71-2.13)		400	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.957	4.965	-0.008	1.000	6717950	2.75		110	19499	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.966	-0.001	1.002	177750	0.0476		95.1	73.6	
813.00 > 169.00	4.957	4.966	-0.009	1.000	30396		5.85(2.86-8.58)		279	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.328	5.328	0.0	1.000	135770	0.0503		101	43.2	
913.00 > 169.00	5.328	5.328	0.0	1.000	16793		8.08(3.83-11.48)		189	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 23-Apr-2018 14:19:19 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b\2018.04.20LLAAX_005.d

Injection Date: 21-Apr-2018 05:31:51 Instrument ID: A8_N

Lims ID: CCVL

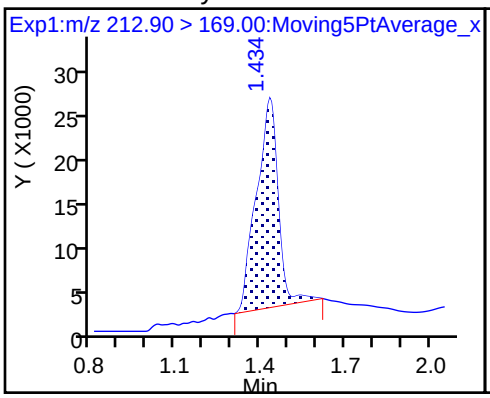
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

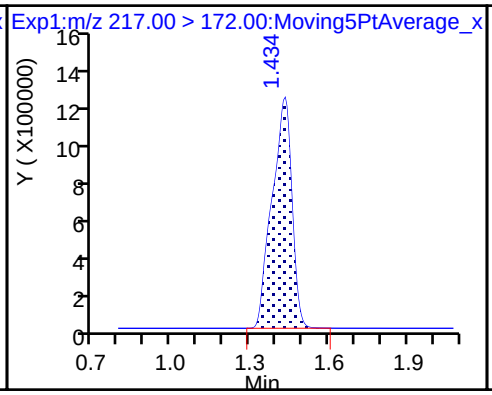
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

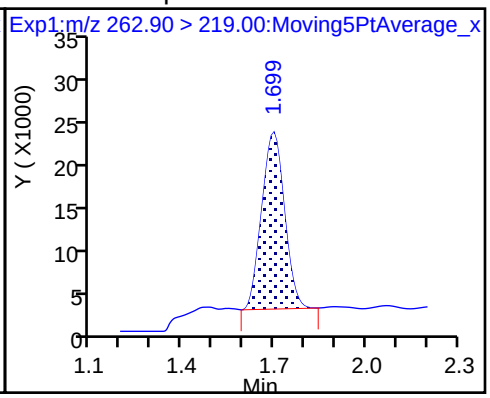
2 Perfluorobutyric acid



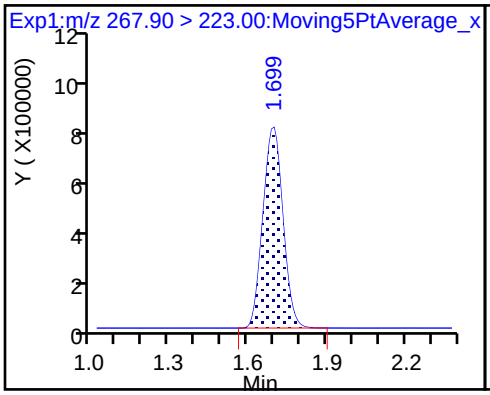
D 1 13C4 PFBA



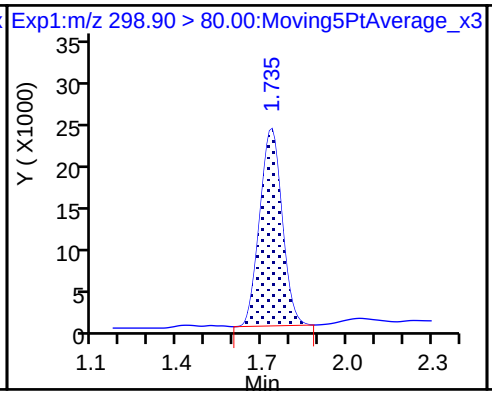
4 Perfluoropentanoic acid



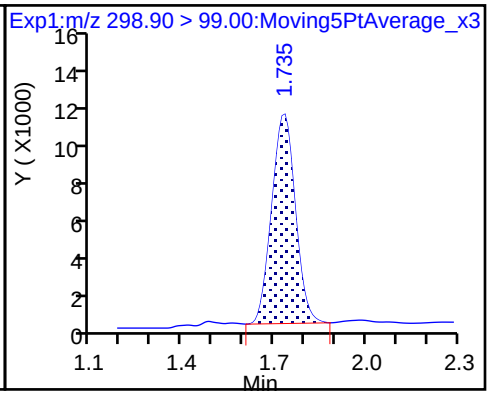
D 3 13C5-PFPeA



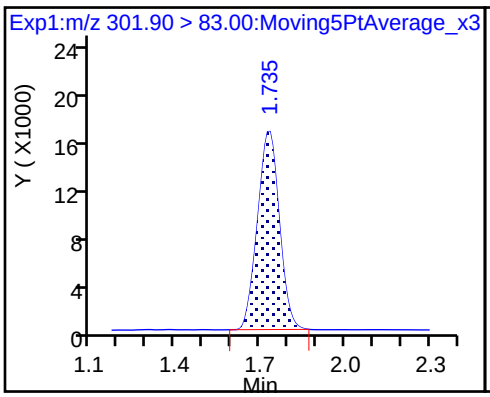
5 Perfluorobutanesulfonic acid



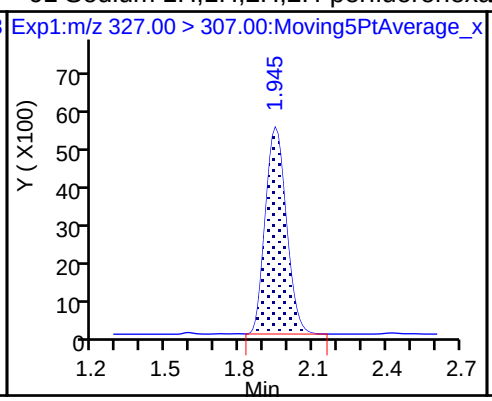
5 Perfluorobutanesulfonic acid



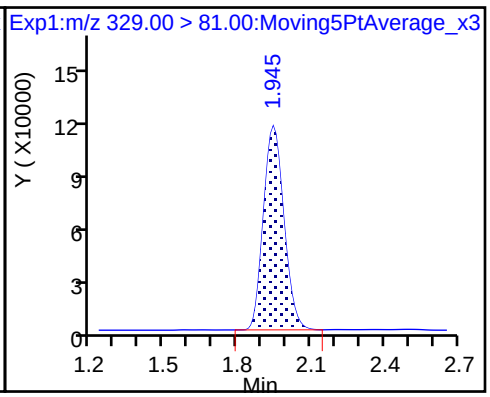
D 47 13C3-PFBS



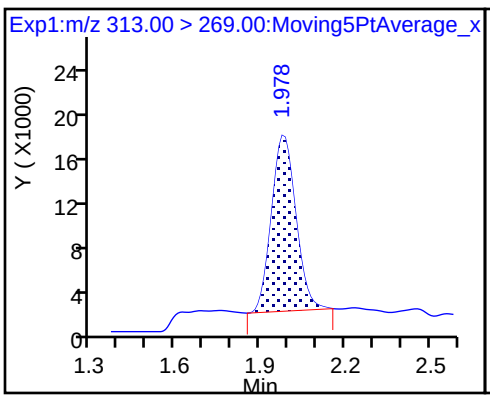
61 Sodium 1H,1H,2H,2H-perfluorohexane



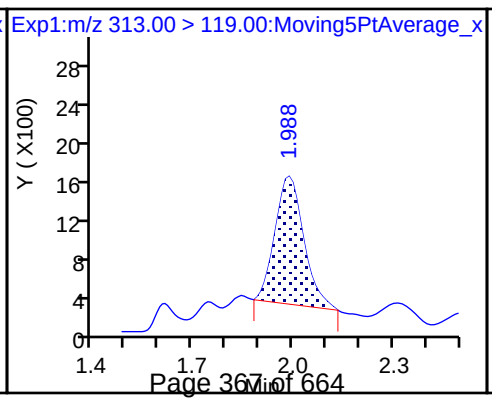
D 60 M2-4:2FTS



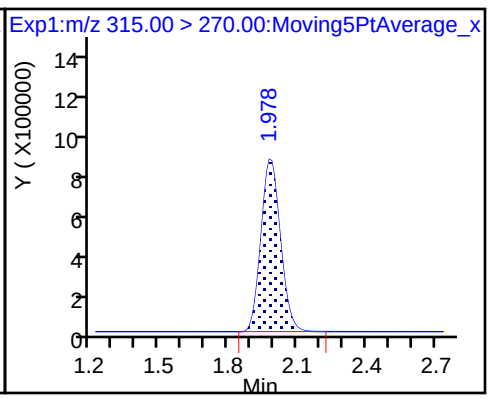
6 Perfluorohexanoic acid



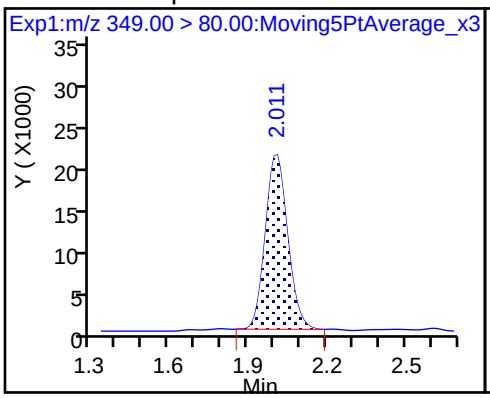
6 Perfluorohexanoic acid



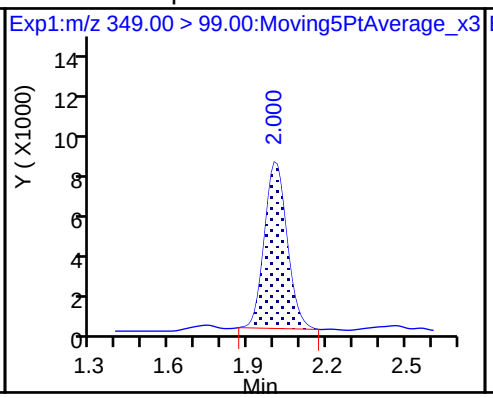
D 7 13C2 PFHxA



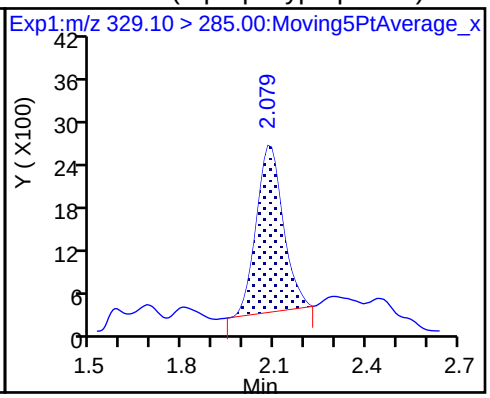
70 Perfluoropentanesulfonic acid



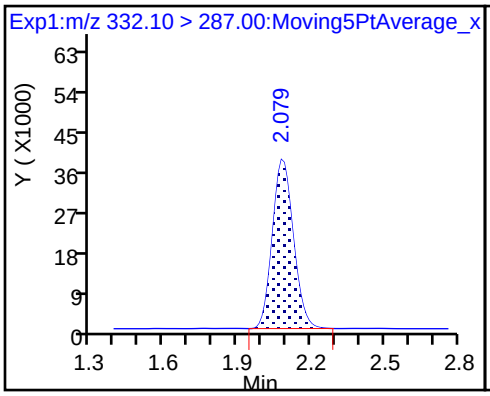
70 Perfluoropentanesulfonic acid



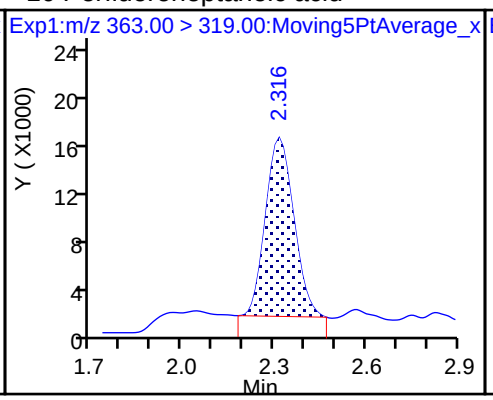
67 Perfluoro(2-propoxypropanoic) acid



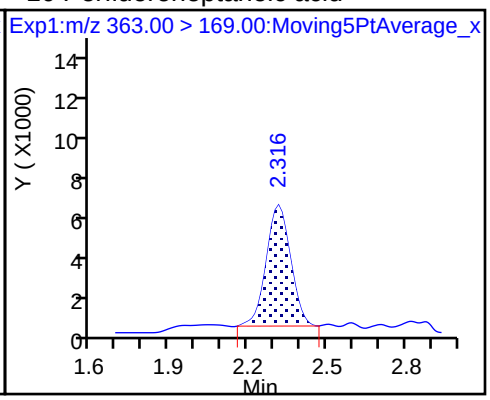
D 64 13C3 HFPO-DA



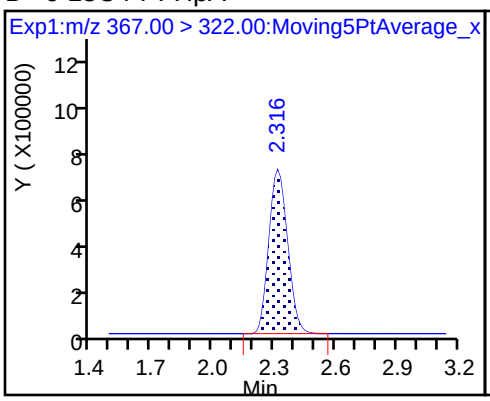
10 Perfluoroheptanoic acid



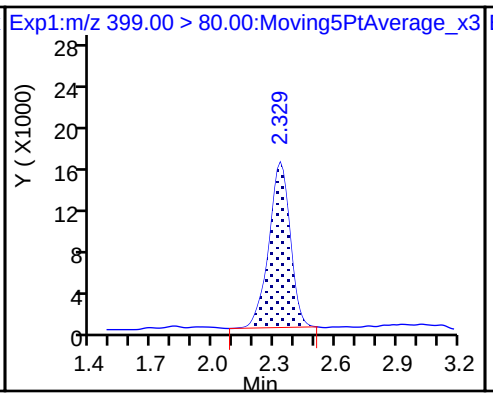
10 Perfluoroheptanoic acid



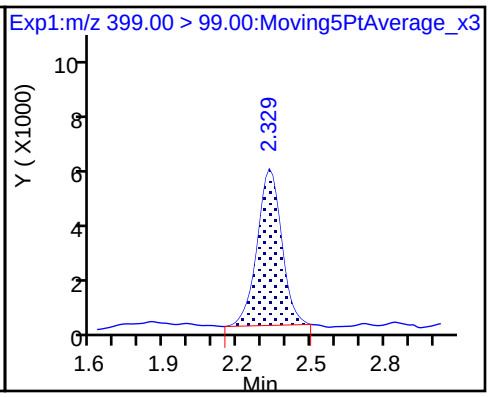
D 9 13C4-PFHpA



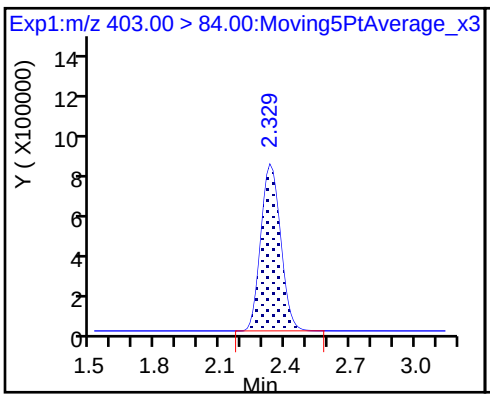
8 Perfluorohexanesulfonic acid



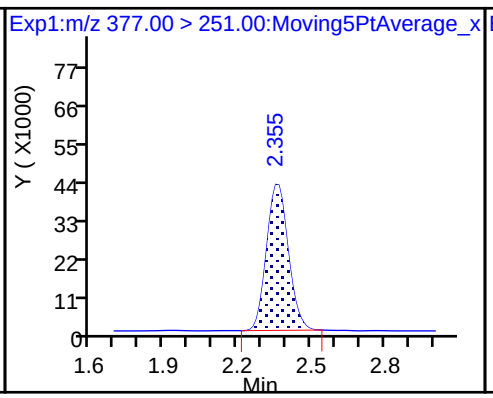
8 Perfluorohexanesulfonic acid



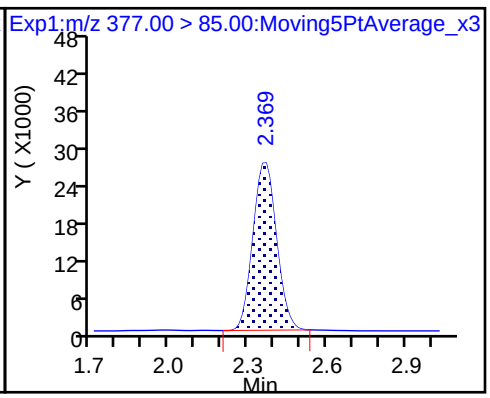
D 11 18O2 PFHxS



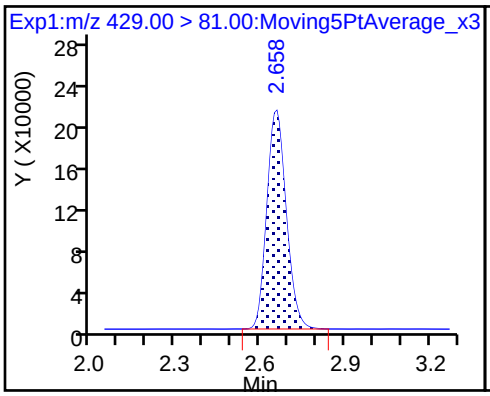
65 Adona



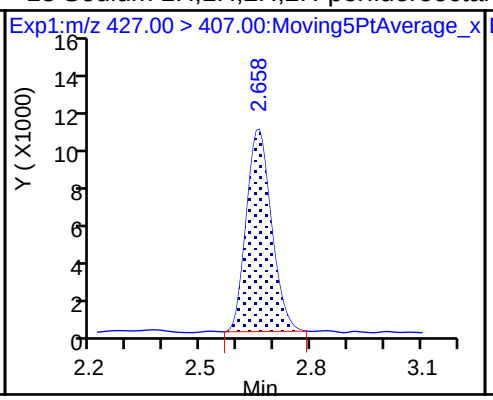
65 Adona

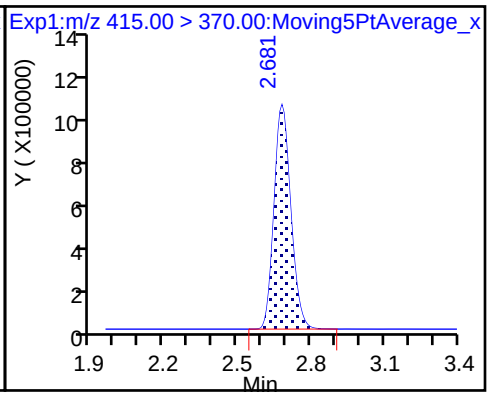


D 12 M2-6:2FTS

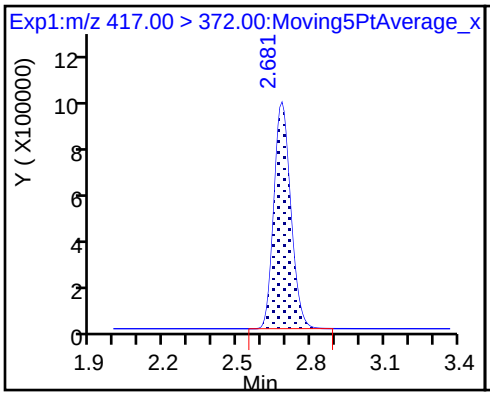


13 Sodium 1H,1H,2H,2H-perfluorooctane*62 13C2-PFOA

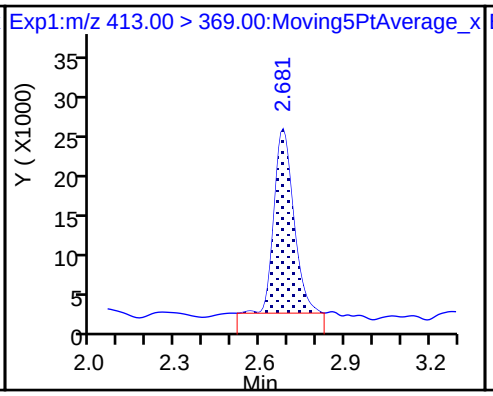




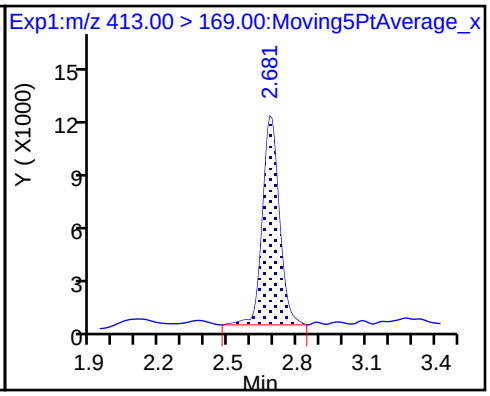
D 14 13C4 PFOA



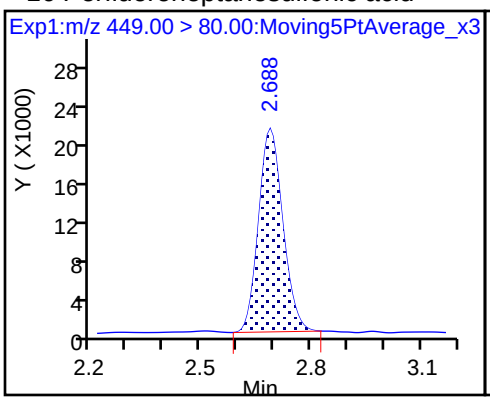
15 Perfluorooctanoic acid



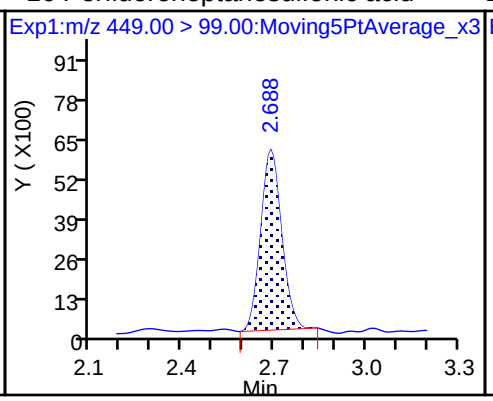
15 Perfluorooctanoic acid



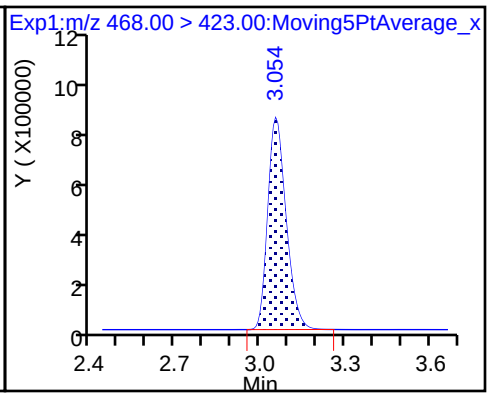
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 19 13C5 PFNA



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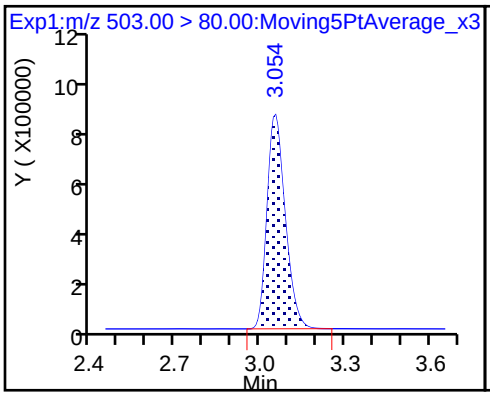
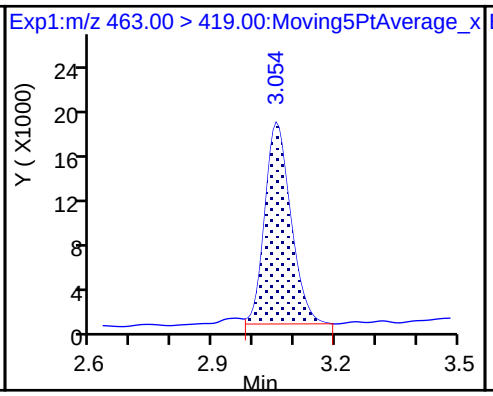
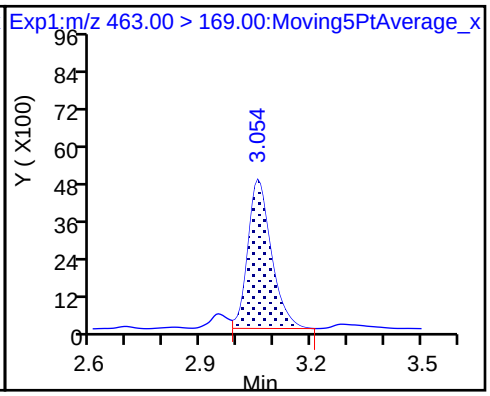


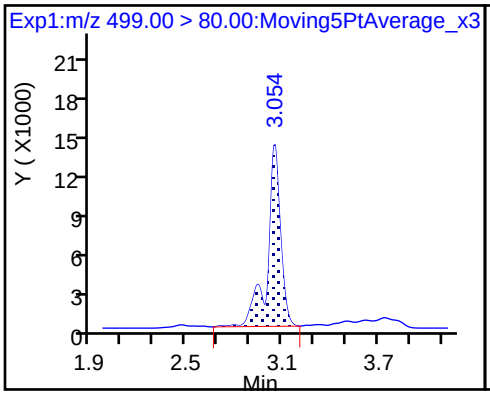
20 Perfluorononanoic acid



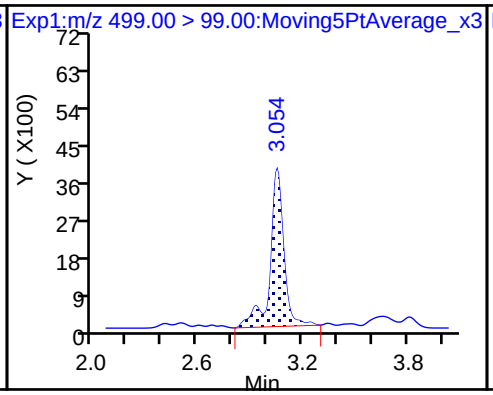
20 Perfluorononanoic acid



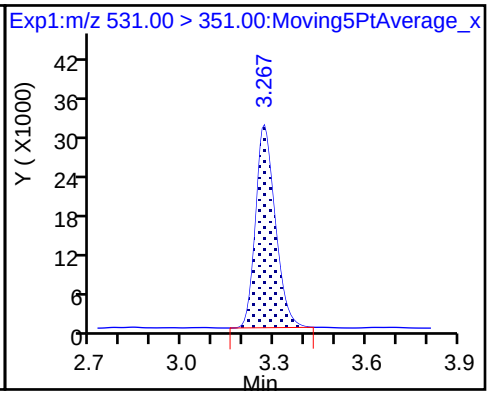
17 Perfluorooctane sulfonic acid



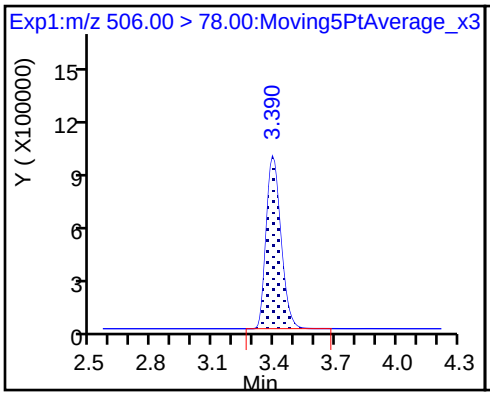
17 Perfluorooctane sulfonic acid



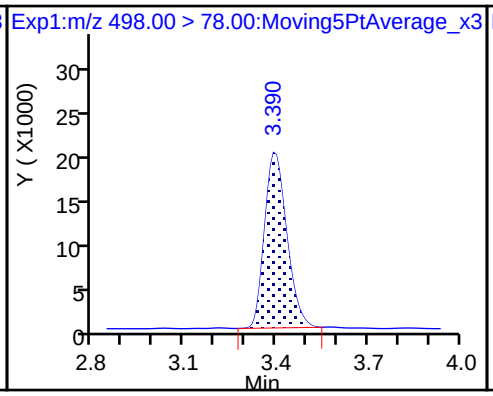
69 9-Chlorohexadecafluoro-3-oxanonane



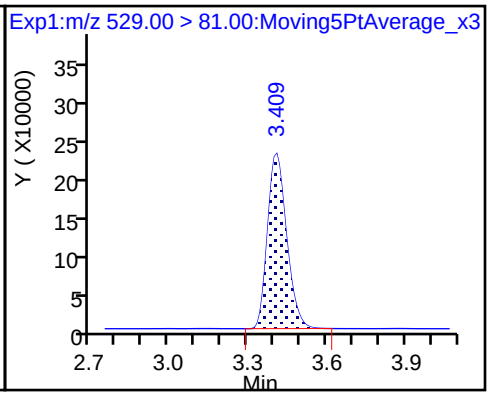
D 21 13C8 FOSA



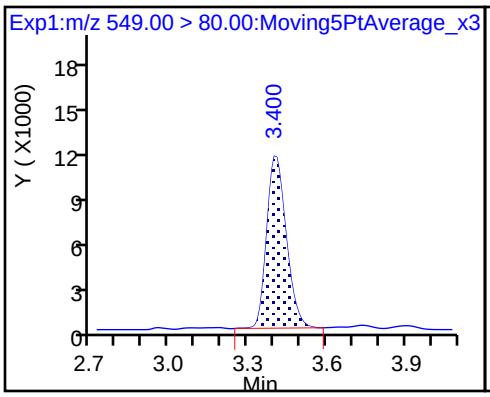
22 Perfluorooctane Sulfonamide



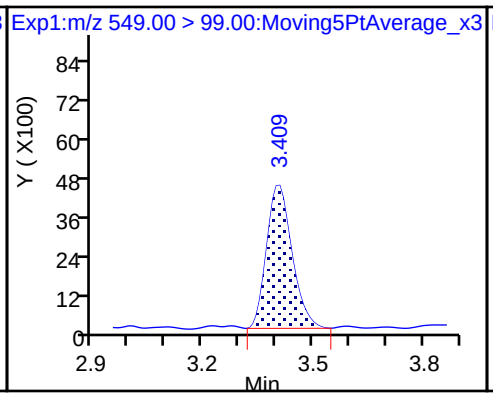
D 26 M2-8:2FTS



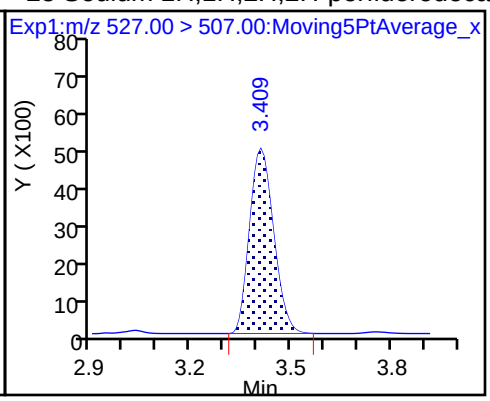
68 Perfluorononanesulfonic acid



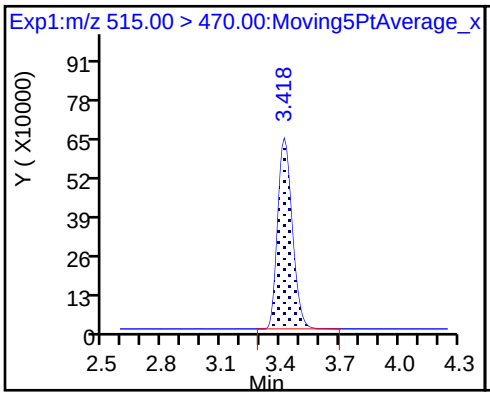
68 Perfluorononanesulfonic acid



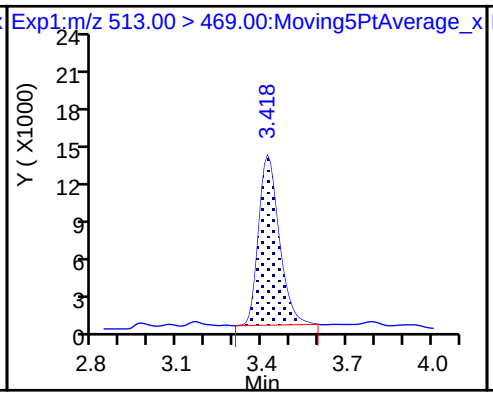
25 Sodium 1H,1H,2H,2H-perfluorodecane



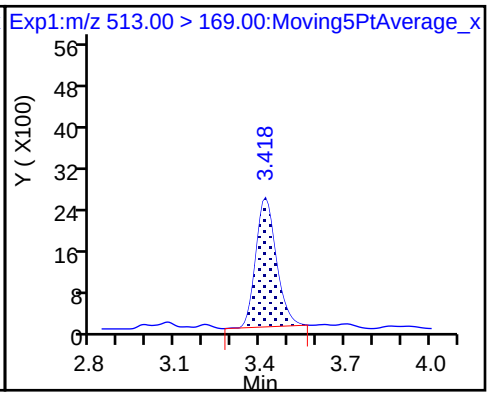
D 23 13C2 PFDA



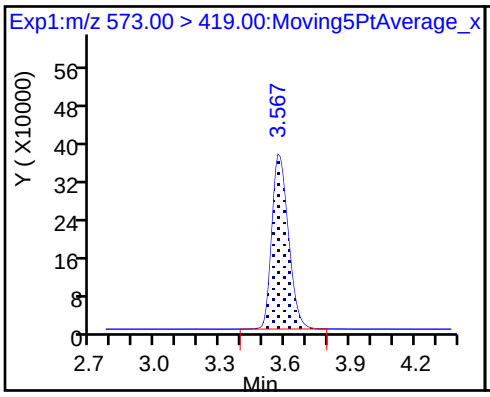
24 Perfluorodecanoic acid



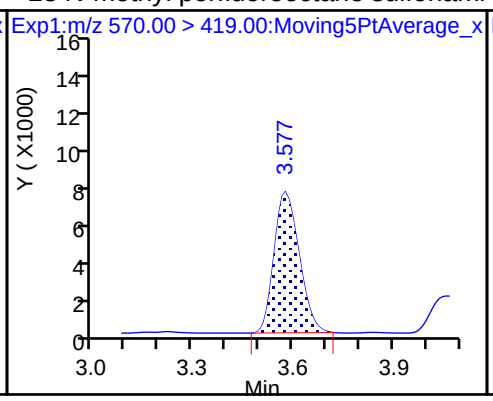
24 Perfluorodecanoic acid



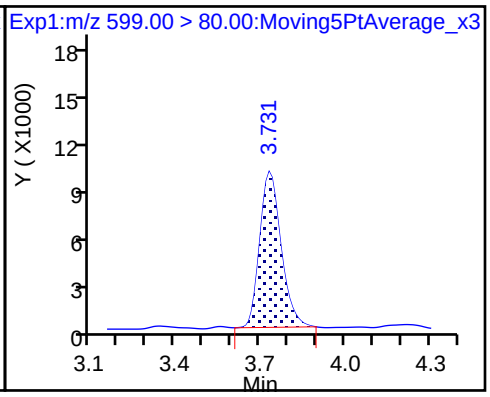
D 27 d3-NMeFOSAA



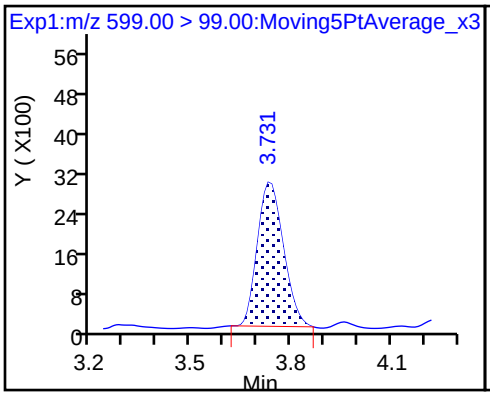
28 N-methyl perfluorooctane sulfonami



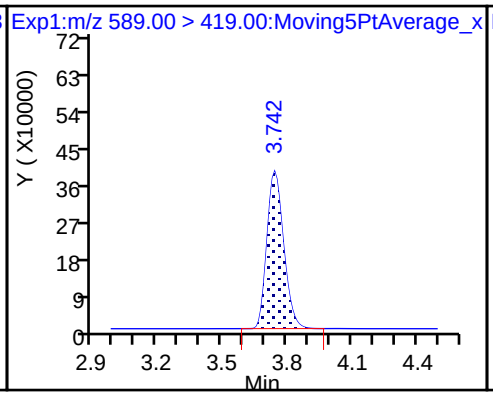
29 Perfluorodecane Sulfonic acid



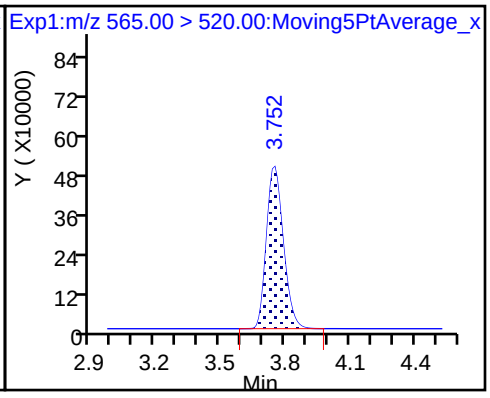
29 Perfluorodecane Sulfonic acid



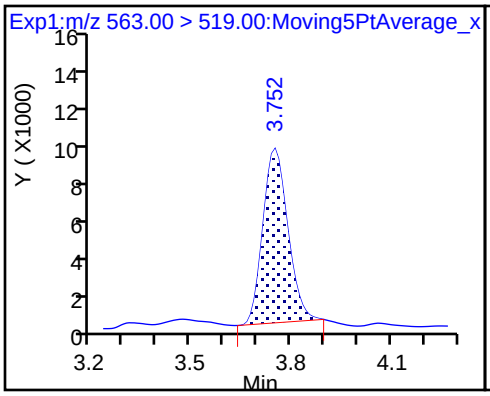
D 32 d5-NEtFOSAA



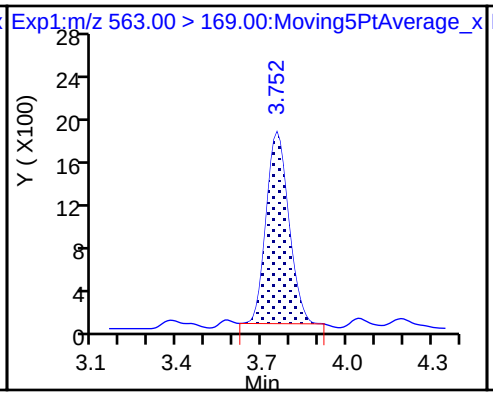
D 30 13C2 PFUnA



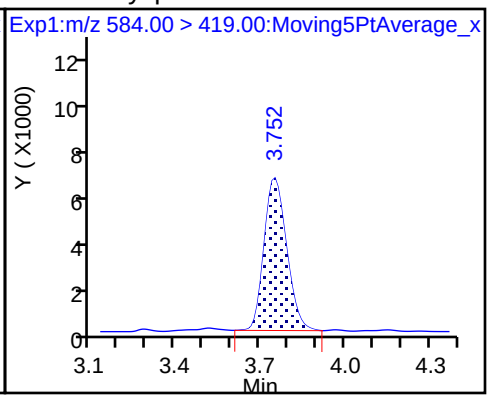
31 Perfluoroundecanoic acid



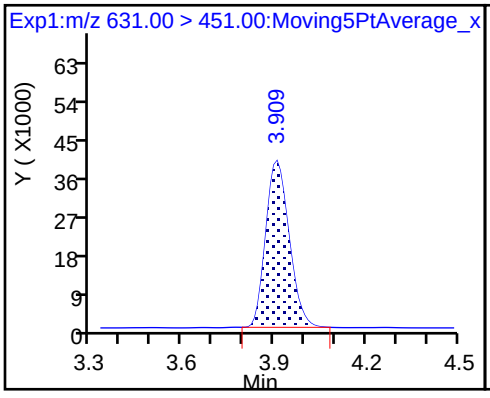
31 Perfluoroundecanoic acid



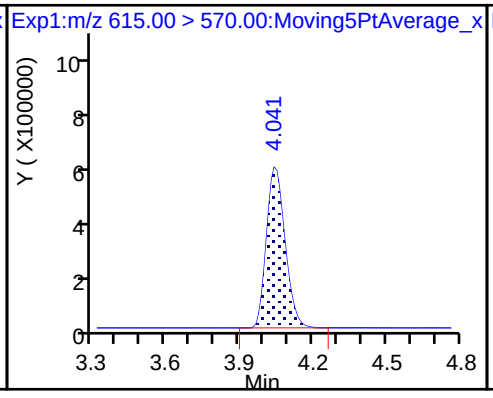
33 N-ethyl perfluorooctane sulfonamid



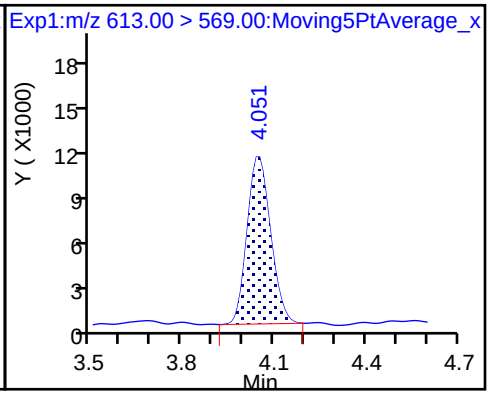
66 11-Chloroeicosafluoro-3-oxaundecan



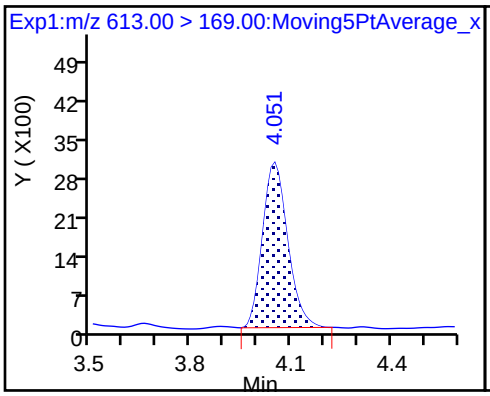
D 36 13C2 PFDoA



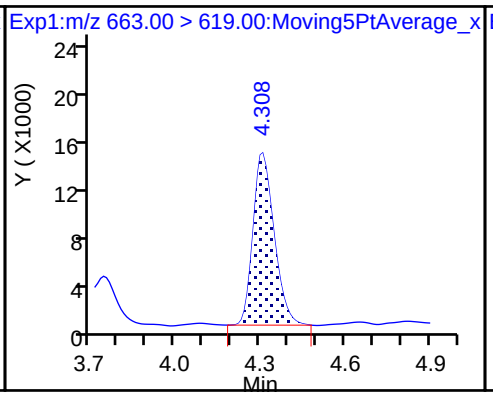
37 Perfluorododecanoic acid



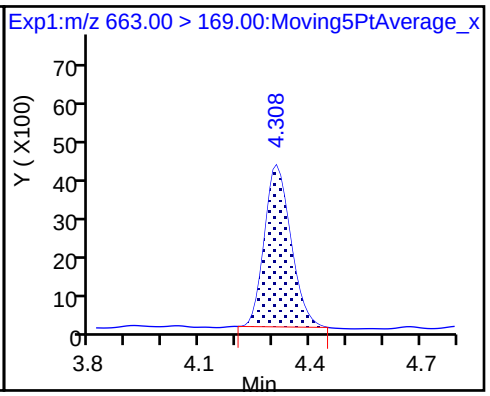
37 Perfluorododecanoic acid



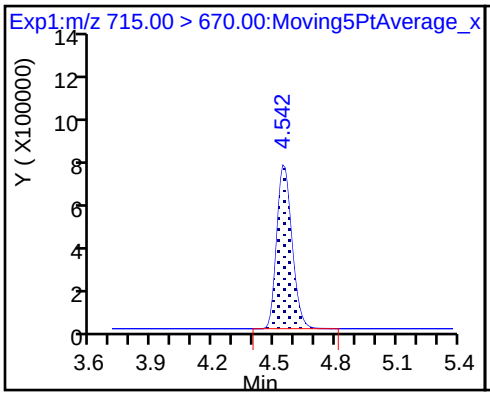
41 Perfluorotridecanoic acid



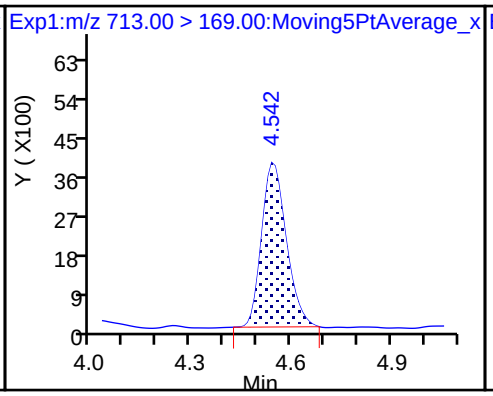
41 Perfluorotridecanoic acid



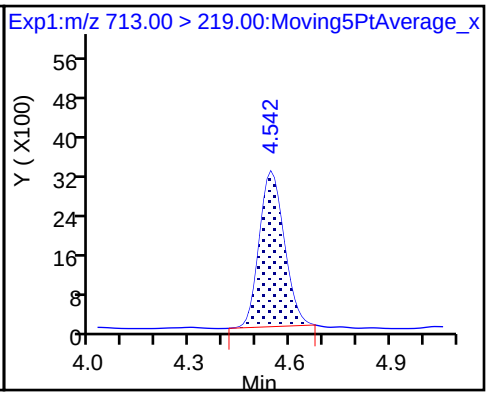
D 43 13C2-PFTeDA



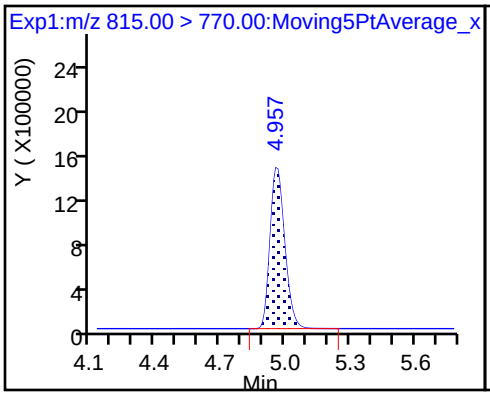
42 Perfluorotetradecanoic acid



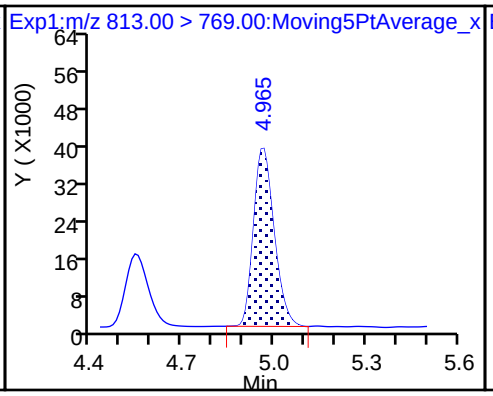
42 Perfluorotetradecanoic acid



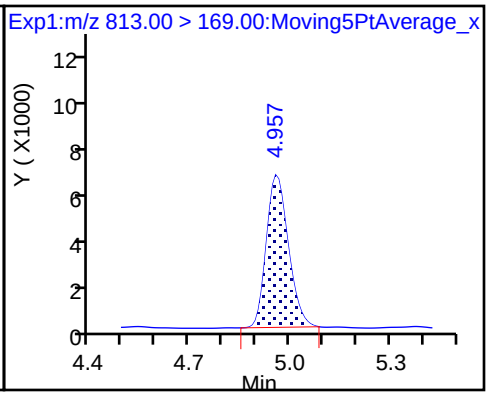
D 44 13C2-PFHxDA



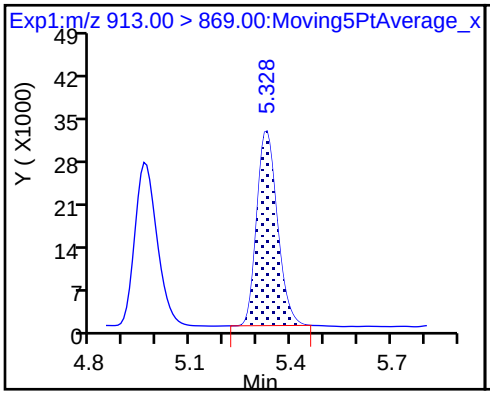
45 Perfluorohexadecanoic acid



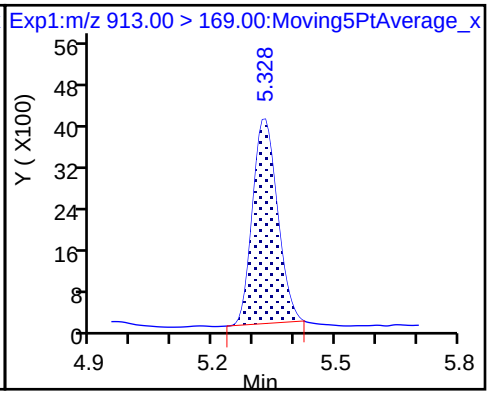
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219129/3 Calibration Date: 04/21/2018 05:39

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLAAX_059.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.8978		0.967	1.00	-3.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.104		0.926	1.00	-7.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	78.67		0.888	0.884	0.5	50.0
4:2 FTS	AveID	16.03	17.33		1.01	0.934	8.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.019		1.00	1.00	0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	71.54		0.938	0.938	0.0	50.0
HFPO-DA (GenX)	AveID	2.785	3.041		1.09	1.00	9.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	0.999		0.998	1.00	-0.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.077		0.866	0.910	-4.9	40.0
Adona	AveID	3.464	3.583		1.03	1.00	3.4	50.0
6:2FTS	AveID	1.691	1.633		0.916	0.948	-3.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.366		0.979	0.952	2.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.103		0.954	1.00	-4.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9936		0.953	1.00	-4.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.095		0.934	0.928	0.7	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.904		0.941	0.932	1.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.028		1.02	1.00	1.7	40.0
8:2FTS	AveID	1.265	1.225		0.928	0.958	-3.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7630		0.916	0.960	-4.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.029		0.997	1.00	-0.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.067		1.07	1.00	7.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6825		1.01	0.964	5.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9081		0.972	1.00	-2.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7975		0.944	1.00	-5.6	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	3.061		0.990	0.942	5.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.038		0.996	1.00	-0.4	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.213		0.998	1.00	-0.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2542		1.01	1.00	1.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9335		0.964	1.00	-3.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219129/3 Calibration Date: 04/21/2018 05:39

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLAAX_059.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9890		0.985	1.00	-1.5	50.0
13C4 PFBA	Ave	1.345	1.359		2.53	2.50	1.0	50.0
13C5 PFPeA	Ave	0.8672	0.9177		2.65	2.50	5.8	50.0
13C3-PFBS	Ave	0.0199	0.0193		2.26	2.33	-2.8	50.0
M2-4:2FTS	Ave	0.1425	0.1602		2.63	2.34	12.4	50.0
13C2 PFHxA	Ave	0.9590	0.9652		2.52	2.50	0.7	50.0
13C3 HFPO-DA	Ave	0.0593	0.0463		1.95	2.50	-21.9	50.0
13C4-PFHpA	Ave	0.9333	0.9634		2.58	2.50	3.2	50.0
18O2 PFHxS	Ave	1.152	1.120		2.30	2.37	-2.7	50.0
M2-6:2FTS	Ave	0.2000	0.2202		2.62	2.38	10.1	40.0
13C4 PFOA	Ave	0.9276	0.9332		2.52	2.50	0.6	50.0
13C4 PFOS	Ave	0.8066	0.8007		2.37	2.39	-0.7	50.0
13C5 PFNA	Ave	0.7973	0.8180		2.57	2.50	2.6	50.0
13C8 FOSA	Ave	1.007	0.9912		2.46	2.50	-1.6	50.0
M2-8:2FTS	Ave	0.2409	0.2477		2.46	2.40	2.8	40.0
13C2 PFDA	Ave	0.6701	0.6969		2.60	2.50	4.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.4054		2.67	2.50	6.7	50.0
d5-NEtFOSAA	Ave	0.3749	0.4201		2.80	2.50	12.1	50.0
13C2 PFUnA	Ave	0.5781	0.5711		2.47	2.50	-1.2	50.0
13C2 PFDoA	Ave	0.6242	0.6080		2.44	2.50	-2.6	50.0
13C2-PFTeDA	Ave	0.7915	0.7355		2.32	2.50	-7.1	50.0
13C2-PFHxDA	Ave	1.288	1.233		2.39	2.50	-4.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b\2018.04.20LLAAX_059.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 21-Apr-2018 05:39:40 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 23-Apr-2018 14:19:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK022

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.433	1.433	0.0	1.000	2372694	0.9669		96.7	1086	
D 1 13C4 PFBA										
217.00 > 172.00	1.433	1.439	-0.006	1.000	6607113	2.53		101	40268	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.698	1.698	0.0	1.000	1969759	0.9262		92.6	1475	
D 3 13C5-PFPeA										
267.90 > 223.00	1.698	1.699	-0.001	0.555	4461460	2.65		106	65783	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.734	1.734	0.0	1.000	2615807	0.8884		100	8176	
298.90 > 99.00	1.734	1.734	0.0	1.000	1108426		2.36(1.25-3.74)		6615	
D 47 13C3-PFBS										
301.90 > 83.00	1.734	1.735	-0.001	1.000	87446	2.26		97.2	703	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.945	0.0	1.000	608761	1.01		108	35072	
D 60 M2-4:2FTS										
329.00 > 81.00	1.945	1.956	-0.011	1.000	727603	2.63		112	6347	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.988	0.0	1.000	1912819	1.00		100	2515	
313.00 > 119.00	1.988	1.988	0.0	1.000	169519		11.28(5.03-15.10)		2174	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.988	0.0	1.000	4692829	2.52		101	100113	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.011	0.0	1.000	2523842	0.9384		100	20267	
349.00 > 99.00	2.011	2.011	0.0	1.000	927316		2.72(1.36-4.07)		10449	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.090	0.0	1.000	273974	1.09		109	1912	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.090	2.090	0.0	1.000	225210	1.95		78.1	4616	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.316	0.0	1.000	1871355	1.00		99.8	1935	
363.00 > 169.00	2.316	2.316	0.0	1.000	721683		2.59(1.13-3.40)		3181	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.316	0.0	1.000	4683784	2.58		103	67515	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.329	0.0	1.000	2135099	0.8658		95.1	5351	
399.00 > 99.00	2.329	2.329	0.0	1.000	703470		3.04(1.50-4.49)		3083	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.329	0.0	1.000	5153085	2.30		97.3	54459	
65 Adona										
377.00 > 251.00	2.368	2.368	0.0	1.000	5578892	1.03		103	53369	
377.00 > 85.00	2.368	2.368	0.0	1.000	3333375		1.67(0.84-2.53)		36587	
D 12 M2-6:2FTS										
429.00 > 81.00	2.658	2.651	0.007	1.000	1017215	2.62		110	11987	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.658	2.658	0.0	1.000	663093	0.9158		96.6	6745	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4861849	2.50			52279	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.681	0.0	1.000	4537083	2.51		101	81097	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.688	0.0	1.003	2001342	0.9544		95.4	1159	
413.00 > 169.00	2.688	2.688	0.0	1.003	1052774		1.90(0.84-2.52)		3701	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	2024930	0.9794		103	13370	
449.00 > 99.00	2.688	2.688	0.0	1.000	537257		3.77(1.94-5.82)		7654	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.050	0.008	1.000	3976971	2.56		103	88126	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.050	0.008	1.000	3721726	2.37		99.3	27767	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.058	0.0	1.000	1580616	0.9529		95.3	4484	
463.00 > 169.00	3.058	3.058	0.0	1.000	380855		4.15(1.90-5.69)		5986	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.058	0.0	1.000	1582295	0.9341		101	5361	
499.00 > 99.00	3.058	3.058	0.0	1.000	343446		4.61(2.31-6.93)		4708	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.265	3.265	0.0	1.000	2762748	0.9412		101	34799	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.386	0.011	1.000	4819052	2.46		98.4	44065	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.397	0.0	1.000	1982312	1.02		102	49084	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.405	0.001	1.000	1153482	2.46		103	11853	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.406	3.406	0.0	1.000	1140672	0.9163		95.5	10969	
549.00 > 99.00	3.406	3.406	0.0	1.000	427938		2.67(1.33-3.97)		10827	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.406	3.406	0.0	1.000	565427	0.9278		96.8	22743	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.414	0.001	1.000	3388182	2.60		104	61024	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.415	0.0	1.000	1394266	1.00		99.7	4085	
513.00 > 169.00	3.415	3.415	0.0	1.000	233776		5.96(2.36-7.09)		5207	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.563	0.010	1.000	1970821	2.67		107	22241	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.573	3.573	0.0	1.000	841506	1.07		107	7958	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.728	3.728	0.0	1.000	1024458	1.01		105	10680	
599.00 > 99.00	3.739	3.728	0.011	1.003	343938		2.98(1.39-4.16)		7215	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.739	3.738	0.001	1.000	2042274	2.80		112	20743	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.748	0.001	1.000	2776519	2.47		98.8	52008	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.749	3.749	0.0	1.000	885720	0.9437		94.4	4556	
563.00 > 169.00	3.749	3.749	0.0	1.000	231905		3.82(2.12-6.36)		6156	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.749	3.749	0.0	1.003	741848	0.9718		97.2	11257	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.906	3.906	0.0	1.000	4490062	0.99		105	62118	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.037	0.012	1.000	2956023	2.44		97.4	31235	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.049	0.0	1.000	1227849	1.00		99.6	1476	
613.00 > 169.00	4.049	4.049	0.0	1.000	317986		3.86(2.13-6.40)		4390	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	1434182	1.00		99.8	1608	
663.00 > 169.00	4.307	4.307	0.0	1.000	432391		3.32(1.25-3.76)		4676	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.542	0.0	1.000	3575861	2.32		92.9	18664	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.542	4.542	0.0	1.000	363638	1.01		101	3313	
713.00 > 219.00	4.542	4.542	0.0	1.000	254433		1.43(0.71-2.13)		5426	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.957	4.965	-0.008	1.000	5994345	2.39		95.7	16707	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.966	0.0	1.002	2238217	0.9635		96.4	884	
813.00 > 169.00	4.966	4.966	0.0	1.002	371903		6.02(2.86-8.58)		2450	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.328	5.328	0.0	1.000	2371395	0.9850		98.5	783	
913.00 > 169.00	5.321	5.328	-0.007	0.999	293461		8.08(3.83-11.48)		2529	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 23-Apr-2018 14:19:24 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b\2018.04.20LLAAX_059.d

Injection Date: 21-Apr-2018 05:39:40 Instrument ID: A8_N

Lims ID: CCV L4

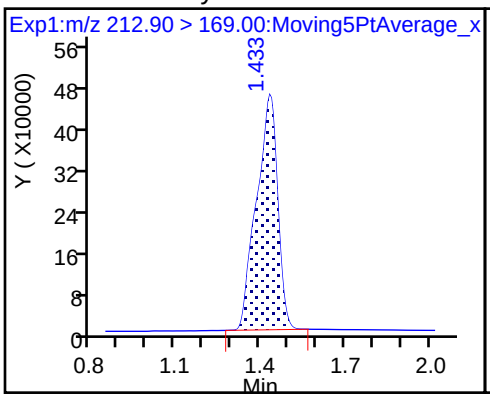
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 3

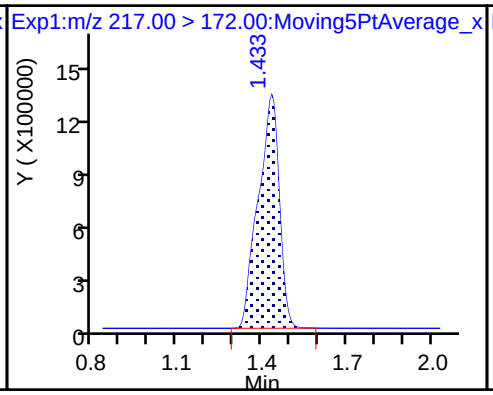
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

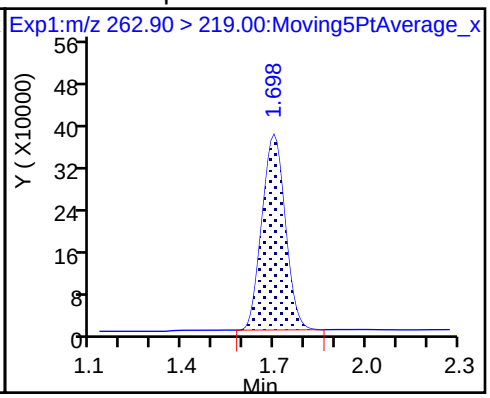
2 Perfluorobutyric acid



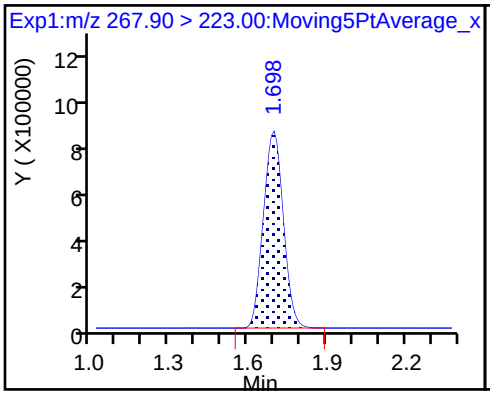
D 1 13C4 PFBA



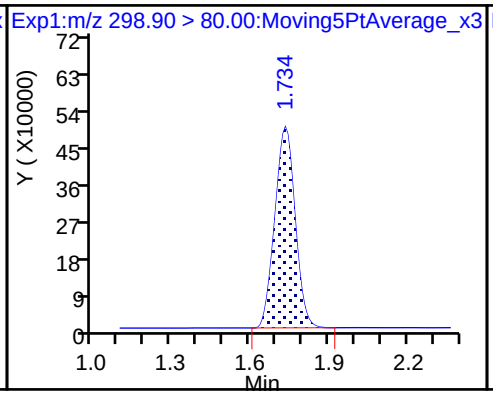
4 Perfluoropentanoic acid



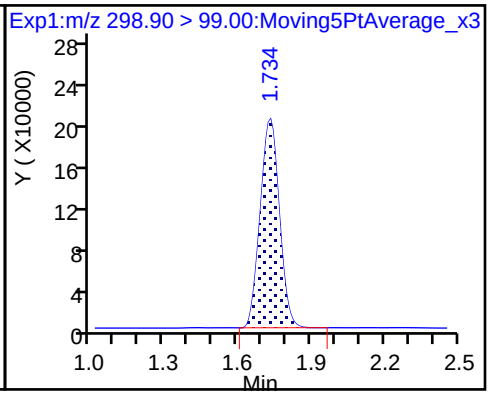
D 3 13C5-PFPeA



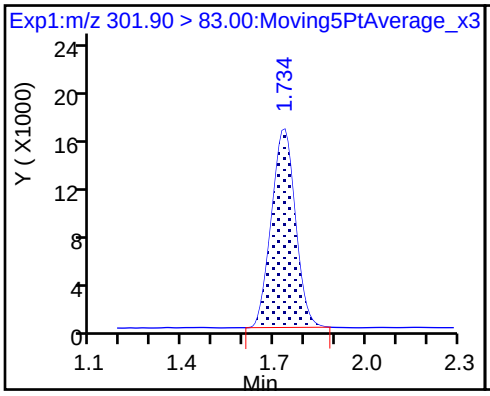
5 Perfluorobutanesulfonic acid



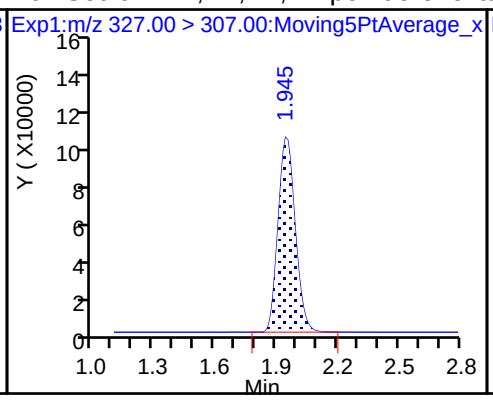
5 Perfluorobutanesulfonic acid



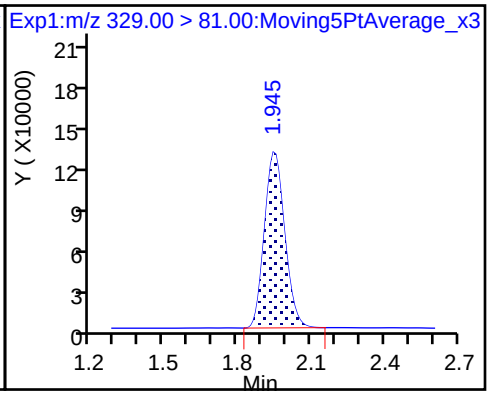
D 47 13C3-PFBS



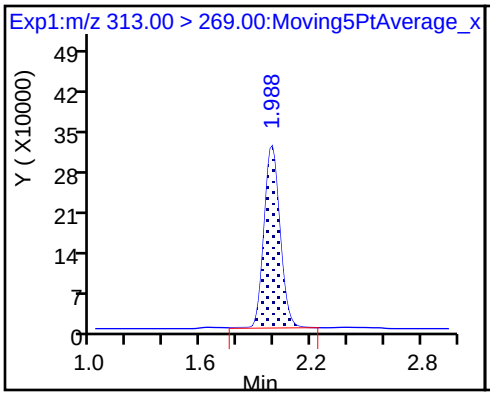
61 Sodium 1H,1H,2H,2H-perfluorohexane



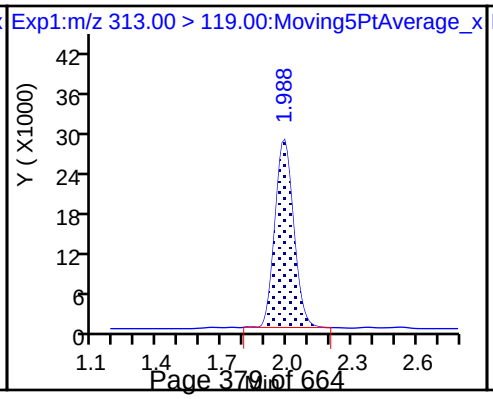
D 60 M2-4:2FTS



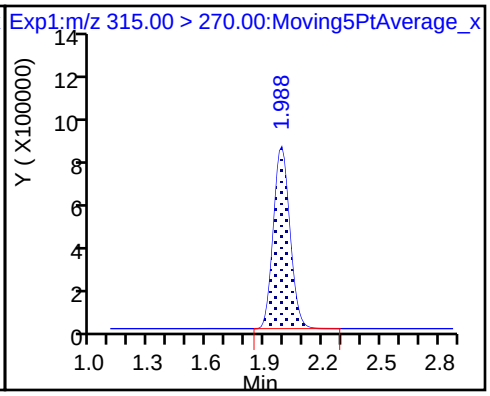
6 Perfluorohexanoic acid



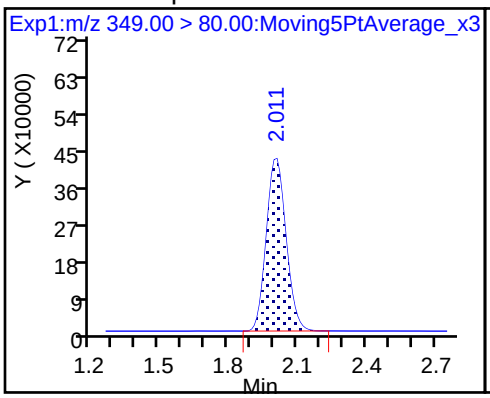
6 Perfluorohexanoic acid



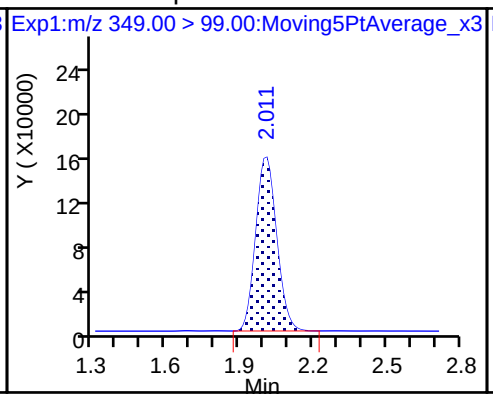
D 7 13C2 PFHxA



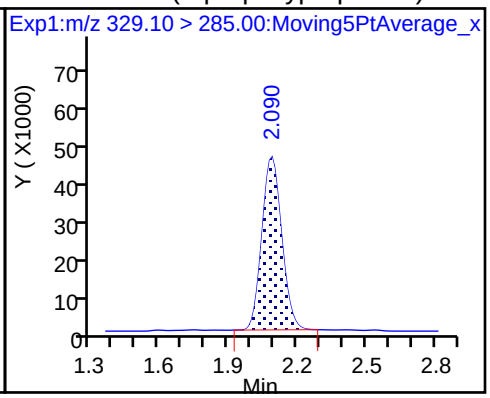
70 Perfluoropentanesulfonic acid



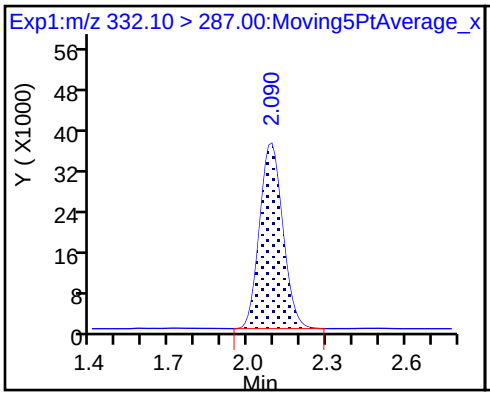
70 Perfluoropentanesulfonic acid



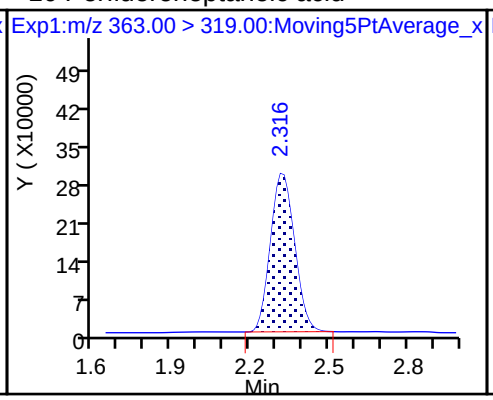
67 Perfluoro(2-propoxypropanoic) acid



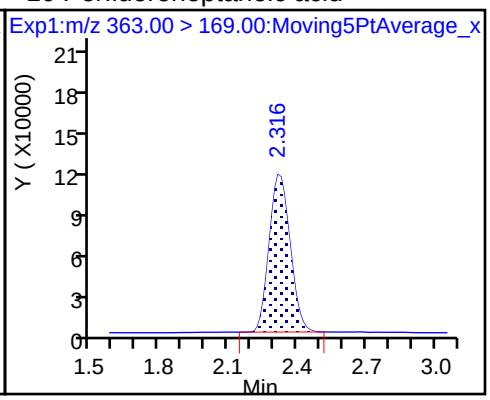
D 64 13C3 HFPO-DA



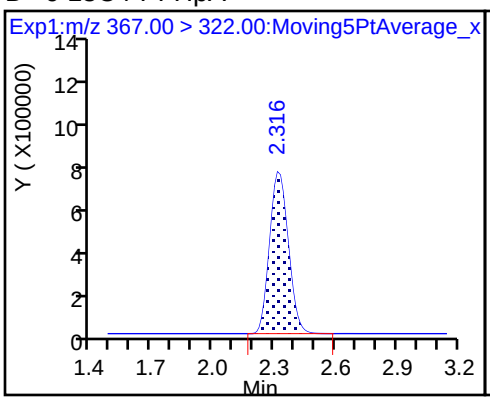
10 Perfluoroheptanoic acid



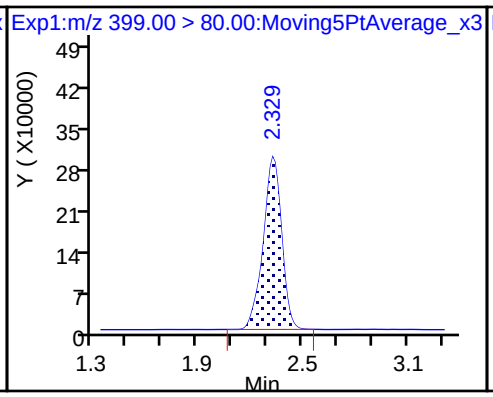
10 Perfluoroheptanoic acid



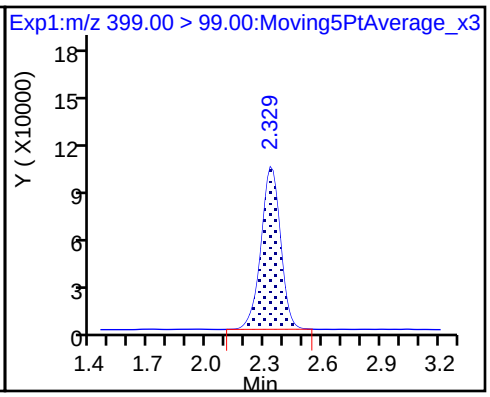
D 9 13C4-PFHpA



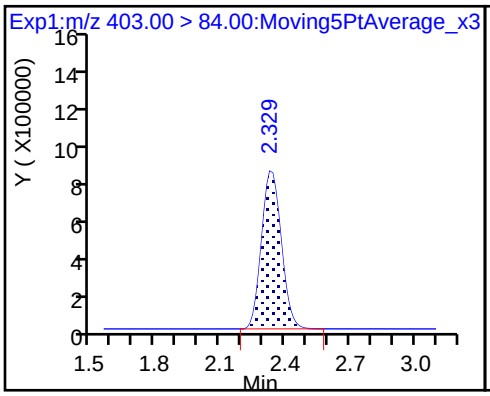
8 Perfluorohexanesulfonic acid



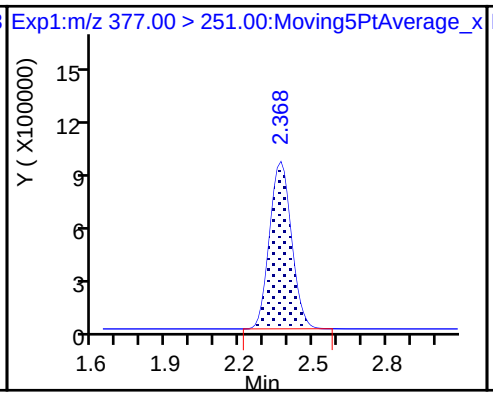
8 Perfluorohexanesulfonic acid



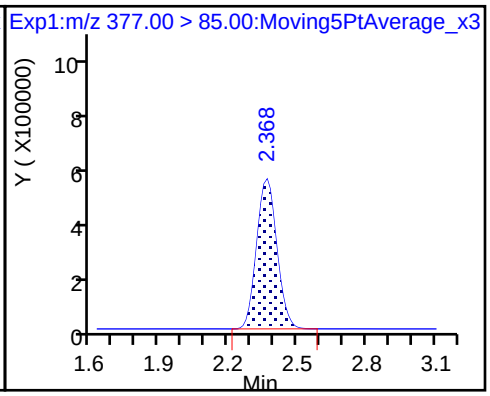
D 11 18O2 PFHxS



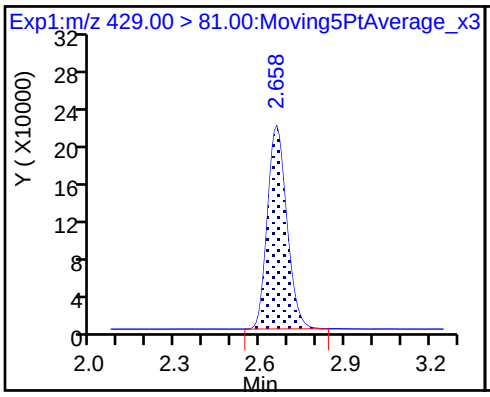
65 Adona



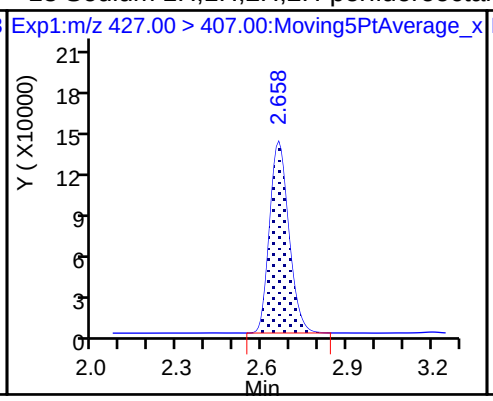
65 Adona



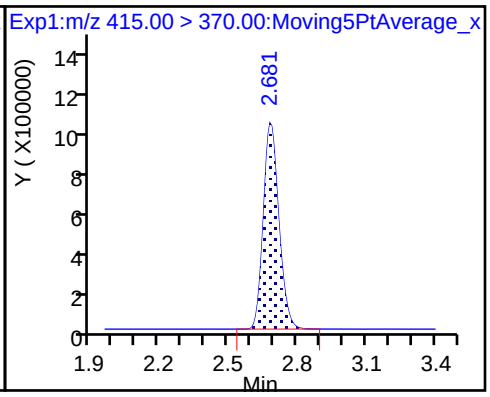
D 12 M2-6:2FTS



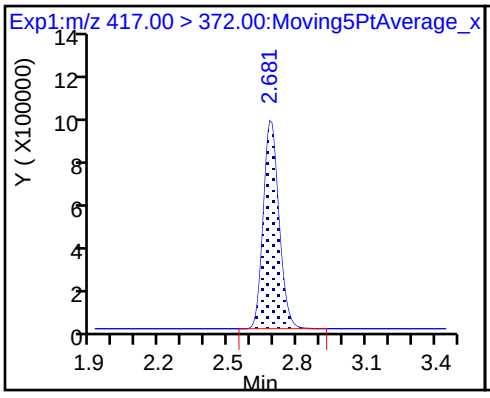
13 Sodium 1H,1H,2H,2H-perfluorooctane



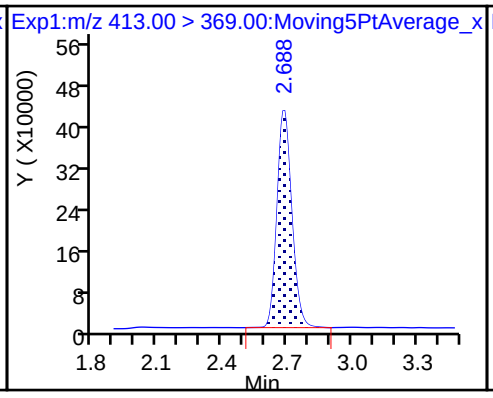
M2 13C2-PFOA



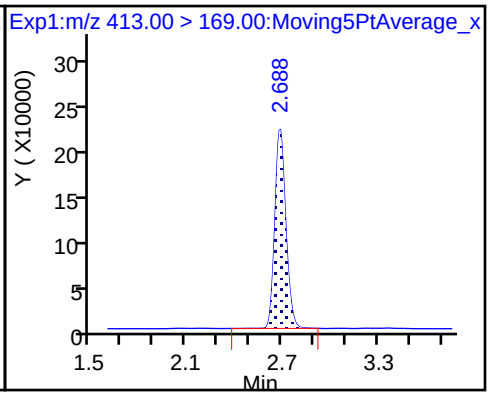
D 14 13C4 PFOA



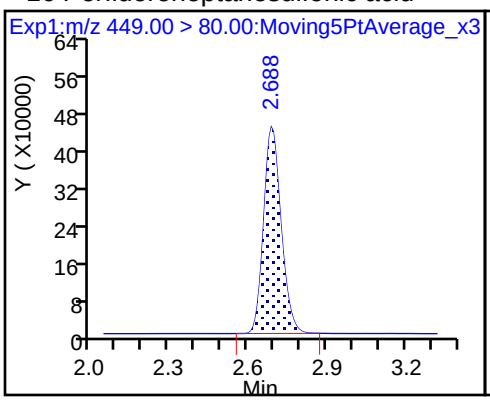
15 Perfluorooctanoic acid



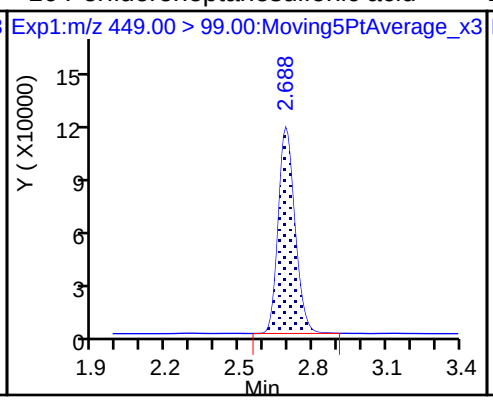
15 Perfluorooctanoic acid



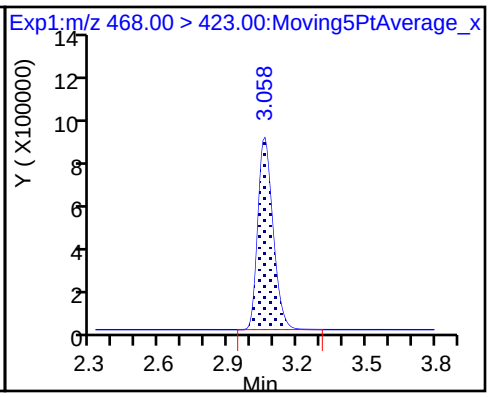
16 Perfluoroheptanesulfonic acid



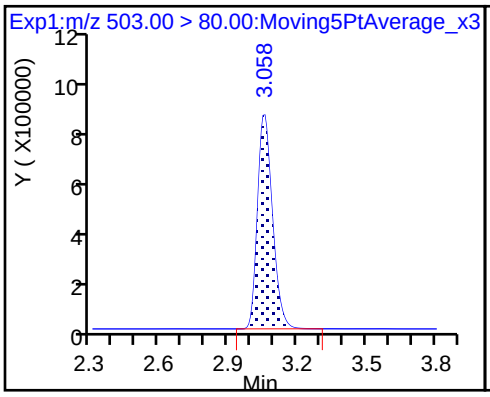
16 Perfluoroheptanesulfonic acid



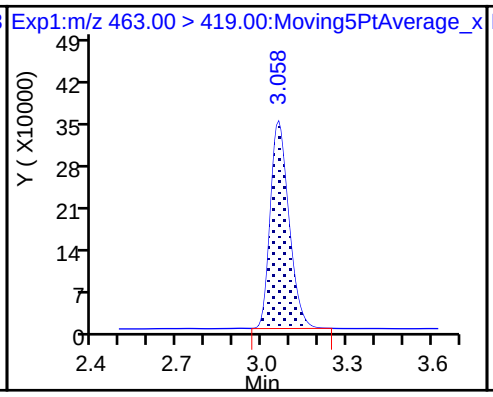
D 19 13C5 PFNA



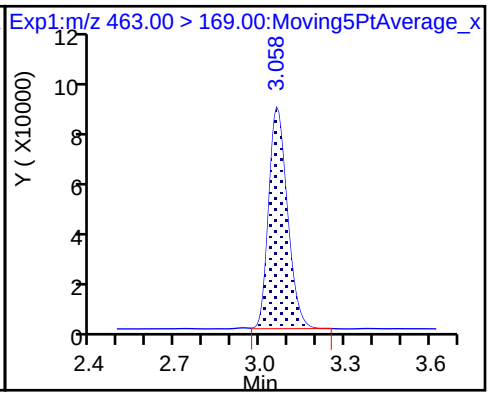
D 18 13C4 PFOS



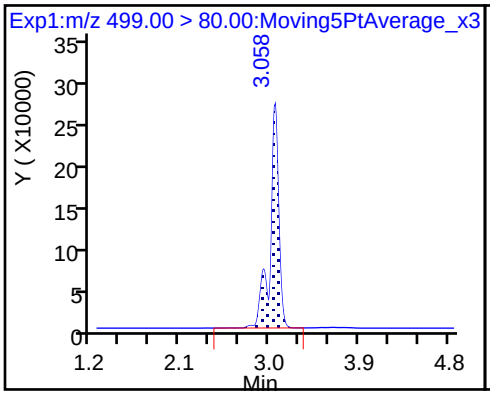
20 Perfluorononanoic acid



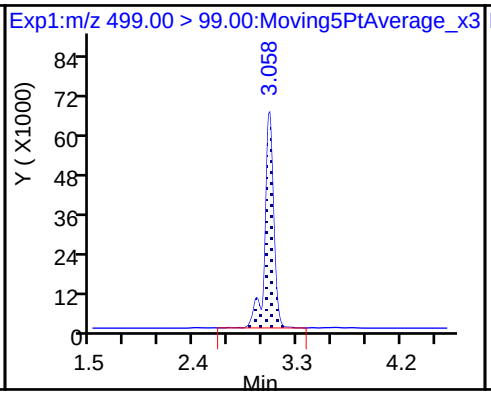
20 Perfluorononanoic acid



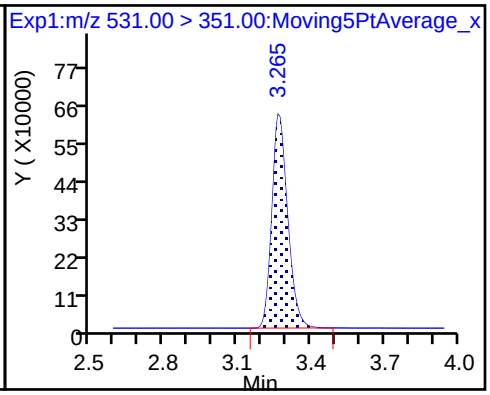
17 Perfluorooctane sulfonic acid



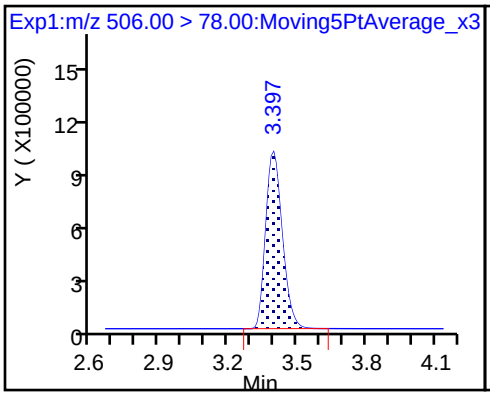
17 Perfluorooctane sulfonic acid



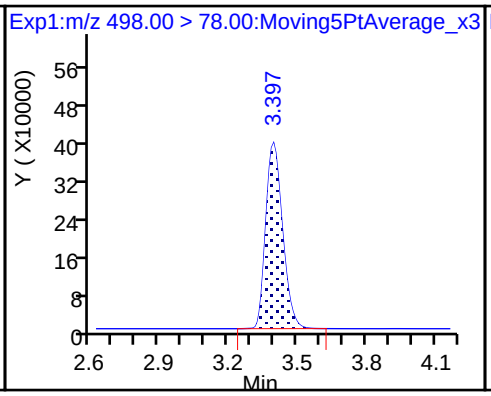
69 9-Chlorohexadecafluoro-3-oxanonane



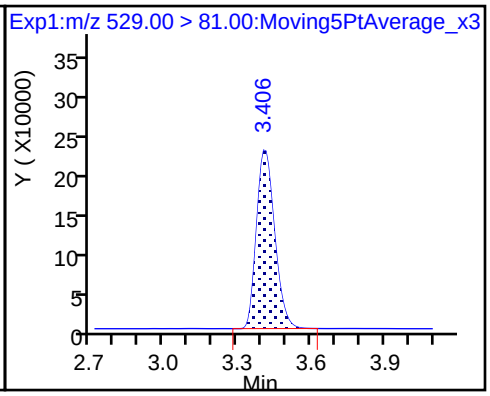
D 21 13C8 FOSA



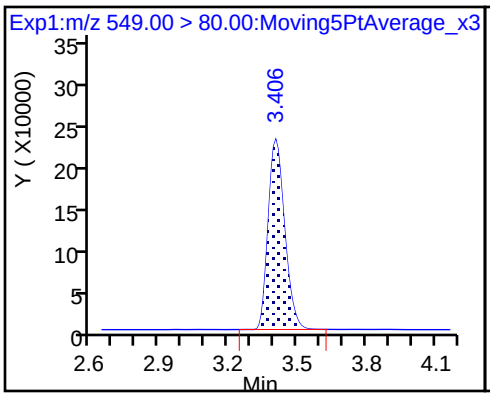
22 Perfluorooctane Sulfonamide



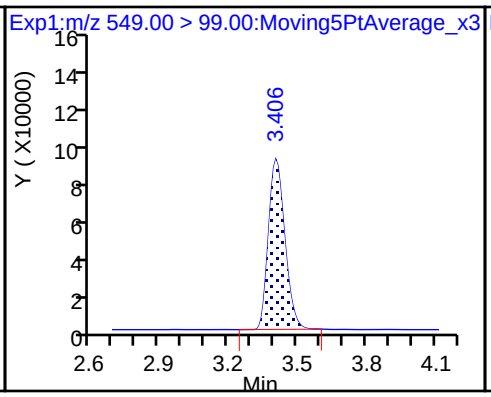
D 26 M2-8:2FTS



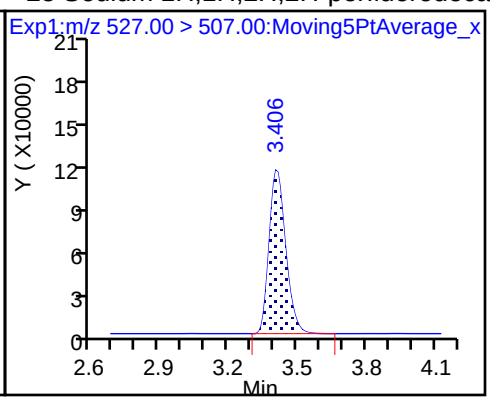
68 Perfluorononanesulfonic acid



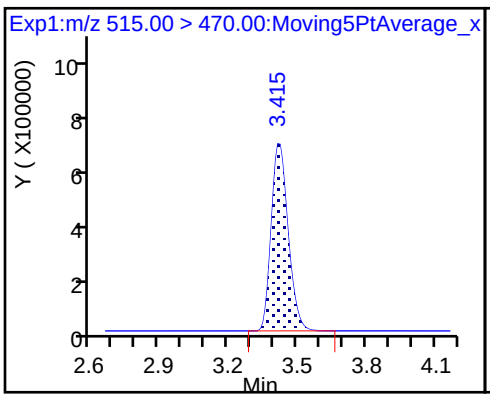
68 Perfluorononanesulfonic acid



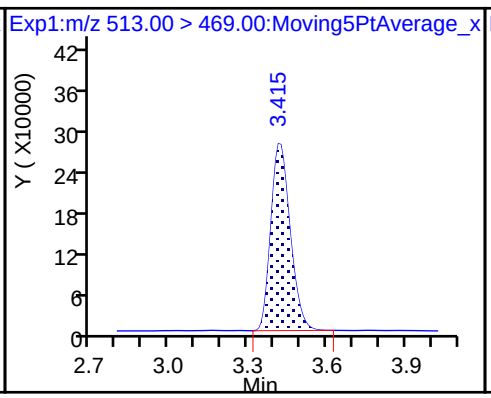
25 Sodium 1H,1H,2H,2H-perfluorodecane



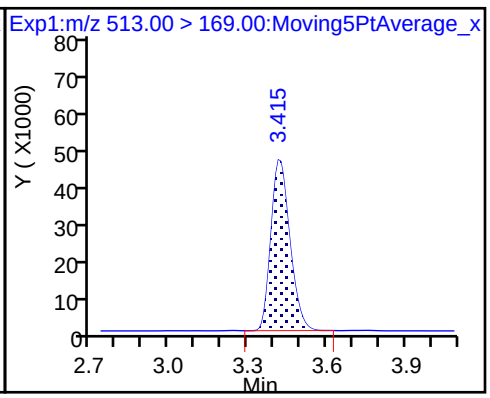
D 23 13C2 PFDA



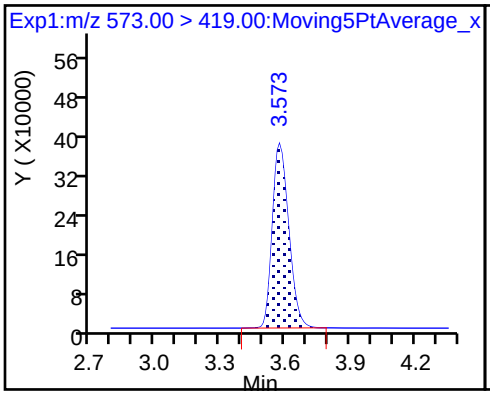
24 Perfluorodecanoic acid



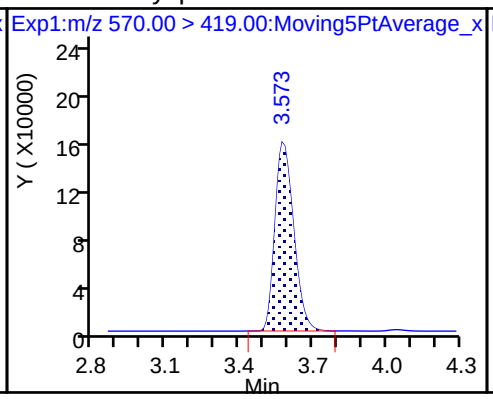
24 Perfluorodecanoic acid



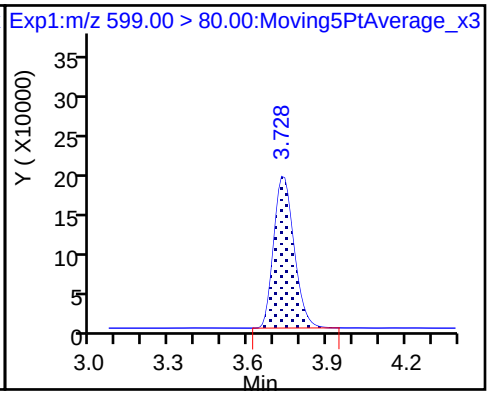
D 27 d3-NMeFOSAA



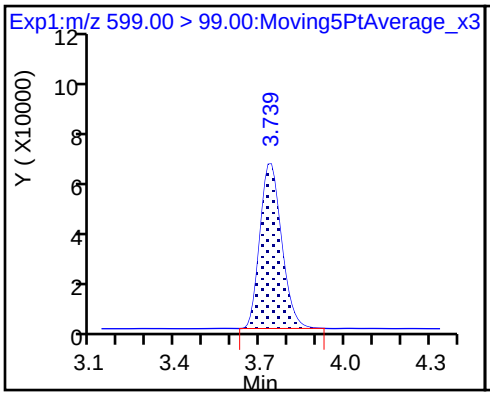
28 N-methyl perfluorooctane sulfonami



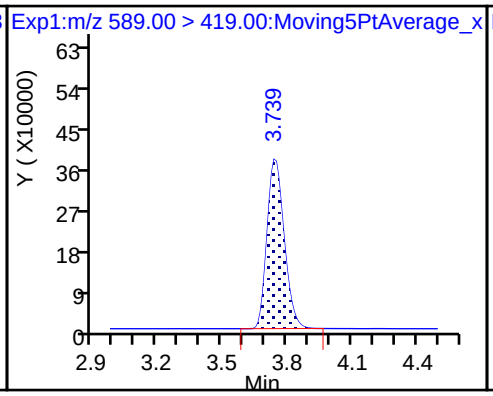
29 Perfluorodecane Sulfonic acid



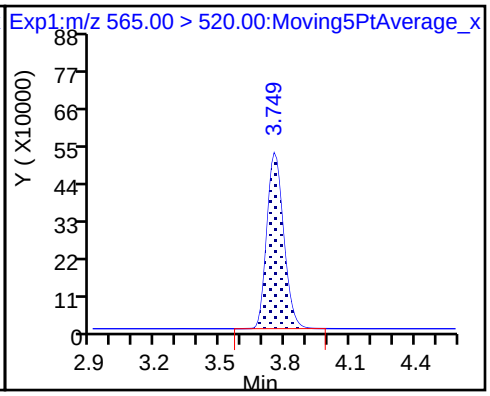
29 Perfluorodecane Sulfonic acid



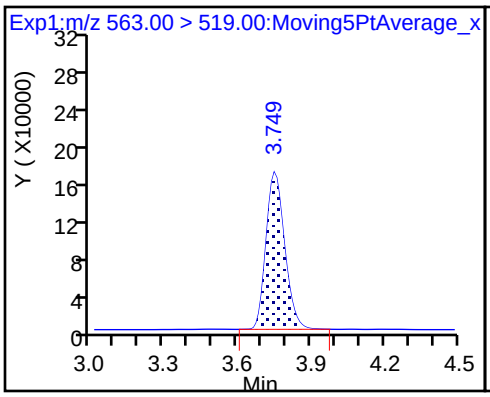
D 32 d5-NEtFOSAA



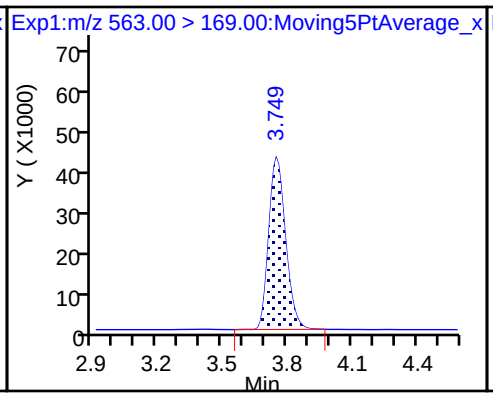
D 30 13C2 PFUnA



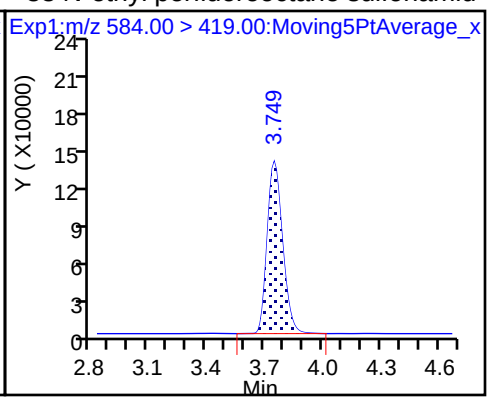
31 Perfluoroundecanoic acid



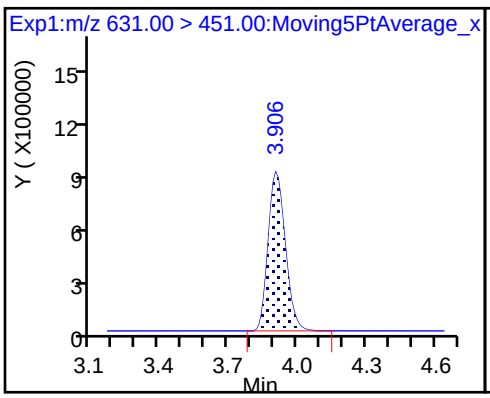
31 Perfluoroundecanoic acid



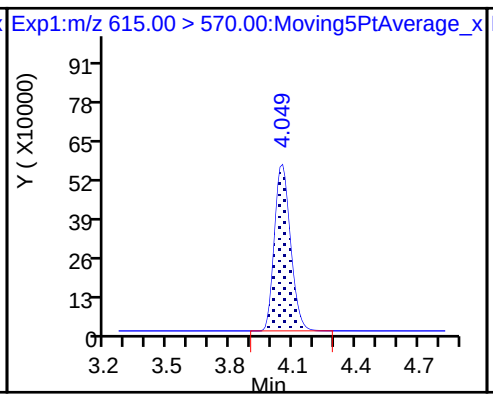
33 N-ethyl perfluorooctane sulfonamid



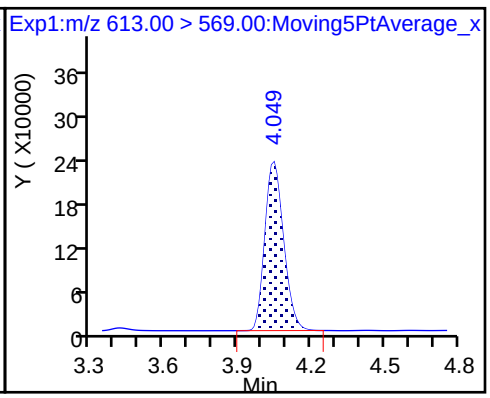
66 11-Chloroeicosafluoro-3-oxaundecan



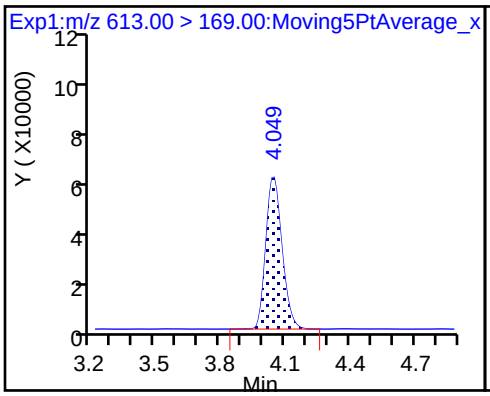
D 36 13C2 PFDoA



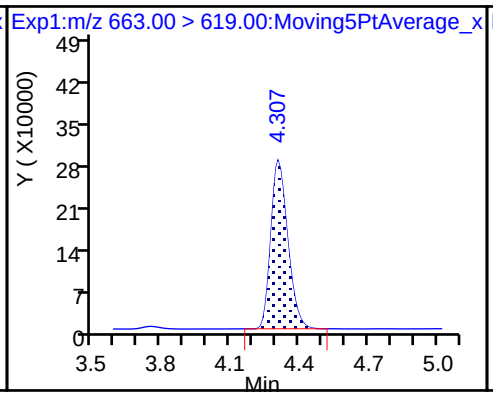
37 Perfluorododecanoic acid



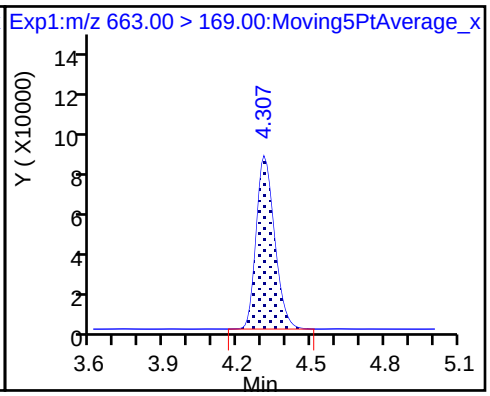
37 Perfluorododecanoic acid



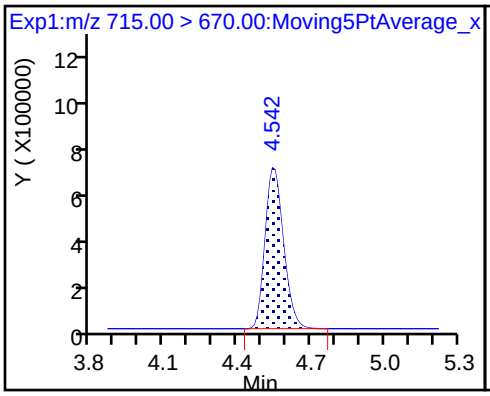
41 Perfluorotridecanoic acid



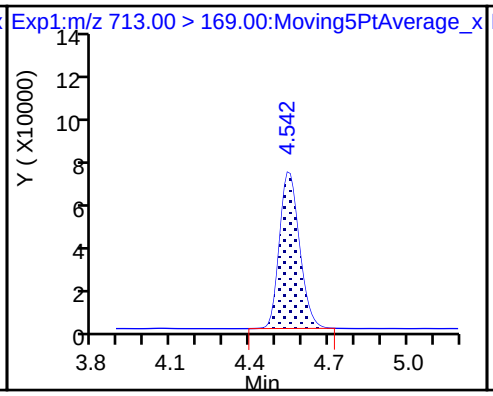
41 Perfluorotridecanoic acid



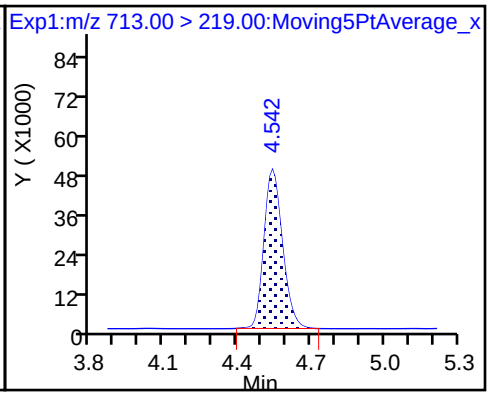
D 43 13C2-PFTeDA



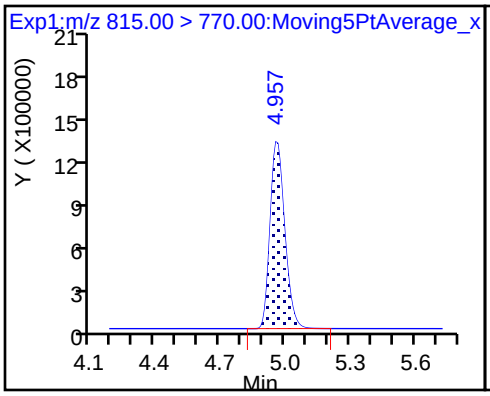
42 Perfluorotetradecanoic acid



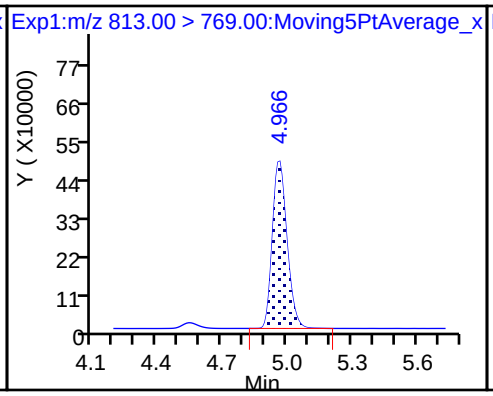
42 Perfluorotetradecanoic acid



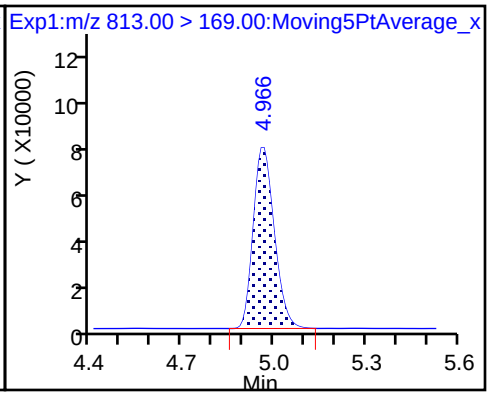
D 44 13C2-PFHxDA



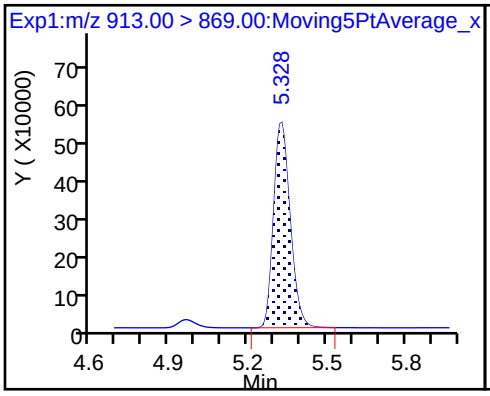
45 Perfluorohexadecanoic acid



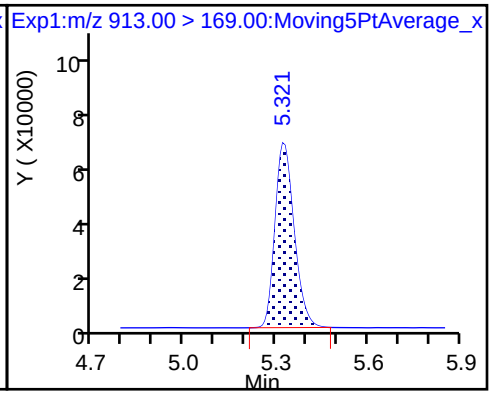
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219143/1 Calibration Date: 04/21/2018 09:50

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLC_023.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9533		2.57	2.50	2.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.148		2.41	2.50	-3.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	80.06		2.26	2.21	2.3	50.0
4:2 FTS	AveID	16.03	16.34		2.38	2.34	1.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.050		2.58	2.50	3.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.24		2.30	2.35	-1.8	50.0
HFPO-DA (GenX)	AveID	2.785	3.018		2.71	2.50	8.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.095		2.74	2.50	9.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.079		2.17	2.28	-4.7	40.0
Adona	AveID	3.464	3.737		2.70	2.50	7.9	50.0
6:2FTS	AveID	1.691	1.781		2.50	2.37	5.3	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.095		2.37	2.50	-5.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.393		2.50	2.38	4.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.037		2.49	2.50	-0.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.075		2.29	2.32	-1.2	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.879		2.32	2.33	-0.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.035		2.56	2.50	2.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7946		2.39	2.40	-0.6	50.0
8:2FTS	AveID	1.265	1.211		2.29	2.40	-4.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9391		2.28	2.50	-9.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.061		2.66	2.50	6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6593		2.45	2.41	1.5	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8910		2.38	2.50	-4.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8085		2.39	2.50	-4.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.853		2.31	2.36	-2.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.136		2.72	2.50	8.9	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.292		2.66	2.50	6.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2698		2.69	2.50	7.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9302		2.43	2.50	-2.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219143/1 Calibration Date: 04/21/2018 09:50

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLC_023.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.003		2.50	2.50	-0.1	50.0
13C4 PFBA	Ave	1.345	1.371		2.55	2.50	1.9	50.0
13C5 PFPeA	Ave	0.8672	0.8892		2.56	2.50	2.5	50.0
13C3-PFBS	Ave	0.0199	0.0206		2.41	2.33	3.4	50.0
M2-4:2FTS	Ave	0.1425	0.1539		2.52	2.34	8.0	50.0
13C2 PFHxA	Ave	0.9590	0.9499		2.48	2.50	-0.9	50.0
13C3 HFPO-DA	Ave	0.0593	0.0512		2.16	2.50	-13.7	50.0
13C4-PFHpA	Ave	0.9333	0.9211		2.47	2.50	-1.3	50.0
18O2 PFHxS	Ave	1.152	1.136		2.33	2.37	-1.4	50.0
M2-6:2FTS	Ave	0.2000	0.2090		2.48	2.38	4.5	40.0
13C4 PFOA	Ave	0.9276	0.9484		2.56	2.50	2.2	50.0
13C4 PFOS	Ave	0.8066	0.8199		2.43	2.39	1.6	50.0
13C5 PFNA	Ave	0.7973	0.7883		2.47	2.50	-1.1	50.0
13C8 FOSA	Ave	1.007	0.995		2.47	2.50	-1.2	50.0
M2-8:2FTS	Ave	0.2409	0.2492		2.48	2.40	3.5	40.0
13C2 PFDA	Ave	0.6701	0.7303		2.72	2.50	9.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3943		2.60	2.50	3.8	50.0
d5-NEtFOSAA	Ave	0.3749	0.4007		2.67	2.50	6.9	50.0
13C2 PFUnA	Ave	0.5781	0.5590		2.42	2.50	-3.3	50.0
13C2 PFDoA	Ave	0.6242	0.5726		2.29	2.50	-8.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7211		2.28	2.50	-8.9	50.0
13C2-PFHxDA	Ave	1.288	1.285		2.49	2.50	-0.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_023.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Apr-2018 09:50:04 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 24-Apr-2018 11:28:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	6250975	2.55		102	42923	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	5959114	2.57		103	3170	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.701	0.002	0.557	4053460	2.56		103	75824	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	4652860	2.41		96.3	3750	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	87242	2.40		103	587	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	6638980	2.26		102	20876	
298.90 > 99.00	1.739	1.739	0.0	1.000	2737006		2.43(1.25-3.74)		16277	
D 60 M2-4:2FTS										
329.00 > 81.00	1.947	1.948	-0.001	1.000	655063	2.52		108	4472	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.947	1.947	0.0	1.000	1431687	2.38		102	80337	
D 7 13C2 PFHxA										
315.00 > 270.00	1.990	1.980	0.010	1.000	4330053	2.48		99.1	89623	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.990	1.990	0.0	1.000	4547998	2.58		103	6407	
313.00 > 119.00	1.990	1.990	0.0	1.000	422522		10.76(5.03-15.10)		4663	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.001	2.001	0.0	1.000	6180646	2.30		98.2	37976	
349.00 > 99.00	2.001	2.001	0.0	1.000	2337381		2.64(1.36-4.07)		22989	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.092	2.082	0.010	1.000	233369	2.16		86.3	6360	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.092	2.092	0.0	1.000	704330	2.71		108	4212	
D 9 13C4-PFHpA										
367.00 > 322.00	2.318	2.319	-0.001	1.000	4198456	2.47		98.7	94646	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.318	2.318	0.0	1.000	4597789	2.74		109	5634	
363.00 > 169.00	2.318	2.318	0.0	1.000	1856308		2.48(1.13-3.40)		9839	
D 11 18O2 PFHxS										
403.00 > 84.00	2.331	2.332	-0.001	1.000	4899235	2.33		98.6	51509	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.331	2.331	0.0	1.000	5084731	2.17		95.3	10942	
399.00 > 99.00	2.331	2.331	0.0	1.000	1678120		3.03(1.50-4.49)		6988	
65 Adona										
377.00 > 251.00	2.370	2.370	0.0	1.000	13965416	2.70		108	106071	
377.00 > 85.00	2.357	2.370	-0.013	0.994	8082672		1.73(0.84-2.53)		76411	
D 12 M2-6:2FTS										
429.00 > 81.00	2.658	2.652	0.006	1.000	904986	2.48		104	11159	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.658	2.658	0.0	1.000	1608001	2.50		105	12133	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.682	-0.001	1.000	4323032	2.56		102	57236	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	4732713	2.37		94.8	3356	
413.00 > 169.00	2.681	2.681	0.0	1.000	2533685		1.87(0.84-2.52)		7878	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4558323	2.50			60560	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.688	0.0	1.000	4954869	2.50		105	26999	
449.00 > 99.00	2.688	2.688	0.0	1.000	1282458		3.86(1.94-5.82)		24296	
D 18 13C4 PFOS										
503.00 > 80.00	3.054	3.055	-0.001	1.000	3572929	2.43		102	17746	
D 19 13C5 PFNA										
468.00 > 423.00	3.054	3.055	-0.001	1.000	3593403	2.47		98.9	65309	
20 Perfluorononanoic acid										
463.00 > 419.00	3.054	3.054	0.0	1.000	3725253	2.49		99.4	12252	
463.00 > 169.00	3.054	3.054	0.0	1.000	934006		3.99(1.90-5.69)		17050	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.054	3.054	0.0	1.000	3729316	2.29		98.8	16890	M
499.00 > 99.00	3.054	3.054	0.0	1.000	843086		4.42(2.31-6.93)		7696	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.268	3.268	0.0	1.000	6545884	2.32		99.7	54490	
D 21 13C8 FOSA										
506.00 > 78.00	3.391	3.393	-0.002	1.000	4537627	2.47		98.8	53421	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.391	3.391	0.0	1.000	4694196	2.56		102	42042	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.400	3.400	0.0	1.000	2851064	2.39		99.4	22628	
549.00 > 99.00	3.400	3.400	0.0	1.000	1079188		2.64(1.33-3.97)		12711	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.410	0.0	1.000	1317503	2.29		95.7	63781	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.411	-0.001	1.000	1088244	2.48		103	10640	
D 23 13C2 PFDA										
515.00 > 470.00	3.419	3.420	-0.001	1.000	3328732	2.72		109	51647	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.419	3.419	0.0	1.000	3126016	2.28		91.0	11729	
513.00 > 169.00	3.419	3.419	0.0	1.000	584267		5.35(2.36-7.09)		11472	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.568	3.569	-0.001	1.000	1797309	2.60		104	21324	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.577	3.577	0.0	1.003	1906569	2.66		106	11839	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.732	3.732	0.0	1.000	2375246	2.45		102	16016	
599.00 > 99.00	3.732	3.732	0.0	1.000	789050		3.01(1.39-4.16)		13443	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.743	0.0	1.000	1826348	2.67		107	18357	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.753	3.753	0.0	1.000	2060372	2.39		95.7	12238	
563.00 > 169.00	3.753	3.753	0.0	1.000	501328		4.11(2.12-6.36)		11305	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.753	3.753	0.0	1.003	1627283	2.38		95.3	22545	
D 30 13C2 PFUnA										
565.00 > 520.00	3.753	3.754	-0.001	1.000	2548300	2.42		96.7	33634	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.911	3.911	0.0	1.000	10045064	2.31		98.0	100420	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.042	0.0	1.000	2609885	2.29		91.7	27476	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.042	4.042	0.0	1.000	2964376	2.72		109	3680	
613.00 > 169.00	4.042	4.042	0.0	1.000	720698		4.11(2.13-6.40)		10498	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.301	4.301	0.0	1.000	3372788	2.66		106	4376	
663.00 > 169.00	4.301	4.301	0.0	1.000	1029185		3.28(1.25-3.76)		8591	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.547	4.548	-0.001	1.000	3286796	2.28		91.1	17670	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.547	4.547	0.0	1.000	886674	2.69		107	7156	
713.00 > 219.00	4.537	4.547	-0.010	0.998	608241		1.46(0.71-2.13)		7203	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.961	4.961	0.0	1.000	5857770	2.49		99.8	16605	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.961	4.961	0.0	1.000	5449016	2.43		97.3	2302	
813.00 > 169.00	4.961	4.961	0.0	1.000	907331		6.01(2.86-8.58)		5300	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.324	5.324	0.0	1.000	5874957	2.50		99.9	1786	
913.00 > 169.00	5.324	5.324	0.0	1.000	757393		7.76(3.83-11.48)		3971	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 24-Apr-2018 16:41:54 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_023.d

Injection Date: 21-Apr-2018 09:50:04 Instrument ID: A8_N

Lims ID: CCV L5

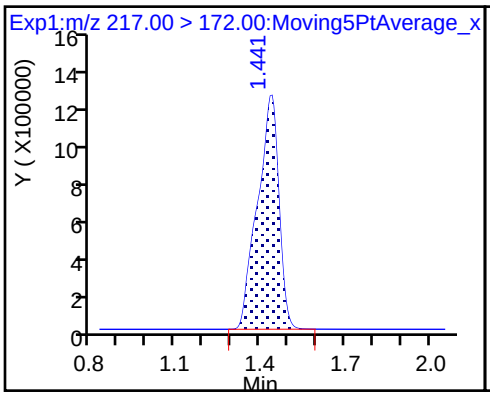
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1

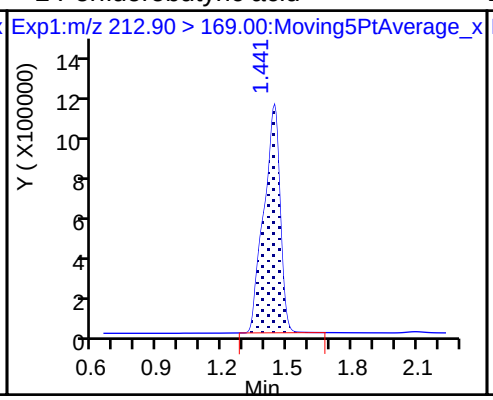
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

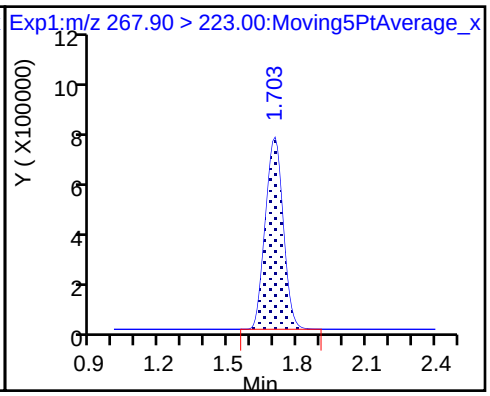
D 1 13C4 PFBA



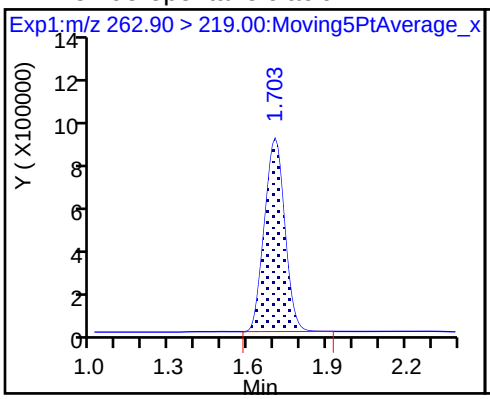
2 Perfluorobutyric acid



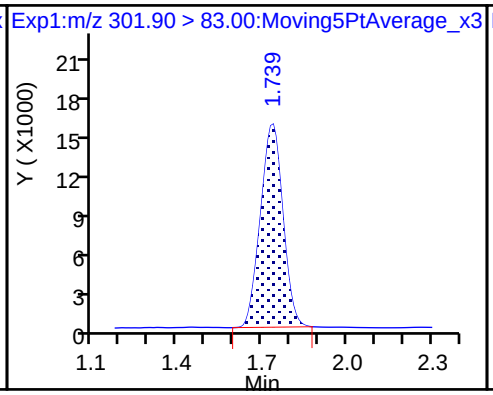
D 3 13C5-PFPeA



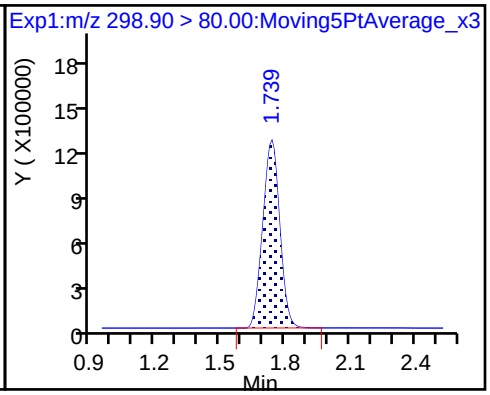
4 Perfluoropentanoic acid



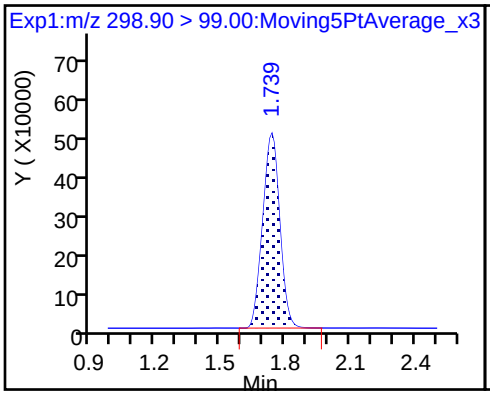
D 47 13C3-PFBS



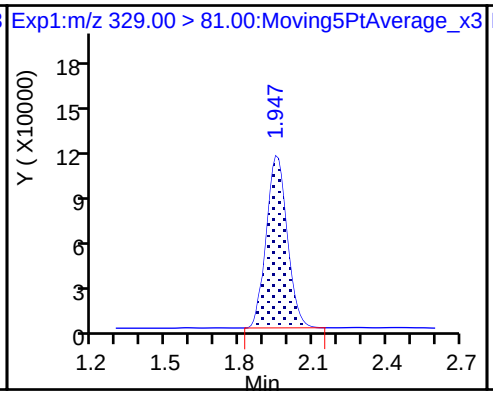
5 Perfluorobutanesulfonic acid



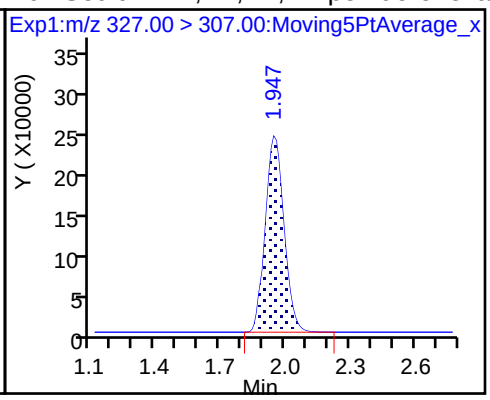
5 Perfluorobutanesulfonic acid



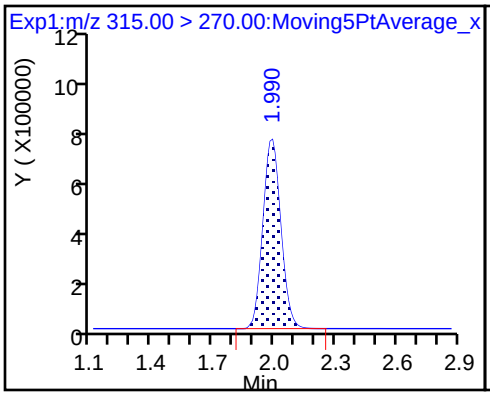
D 60 M2-4:2FTS



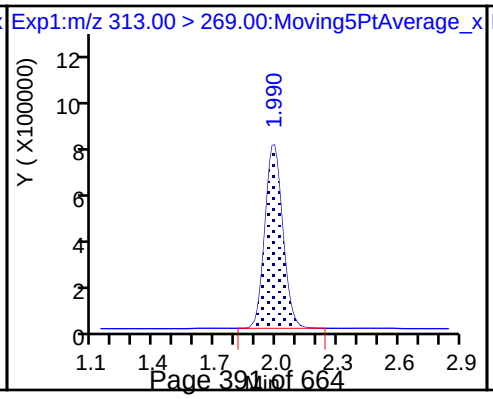
61 Sodium 1H,1H,2H,2H-perfluorohexane



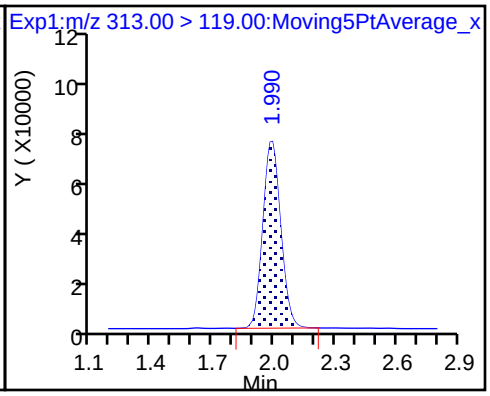
D 7 13C2 PFHxA



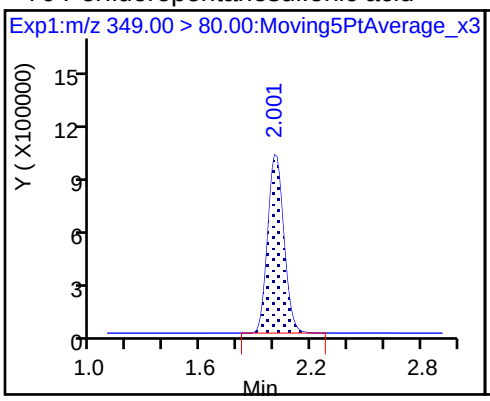
6 Perfluorohexanoic acid



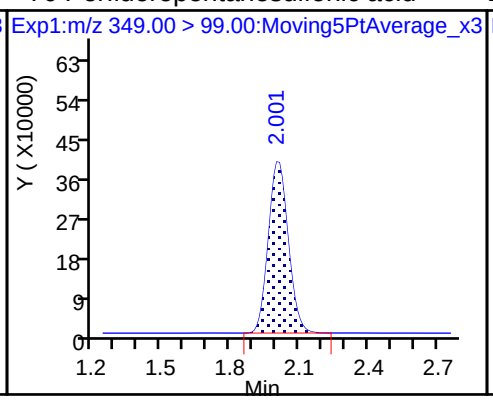
6 Perfluorohexanoic acid



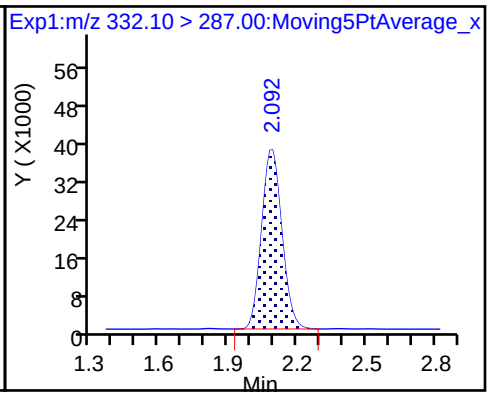
70 Perfluoropentanesulfonic acid



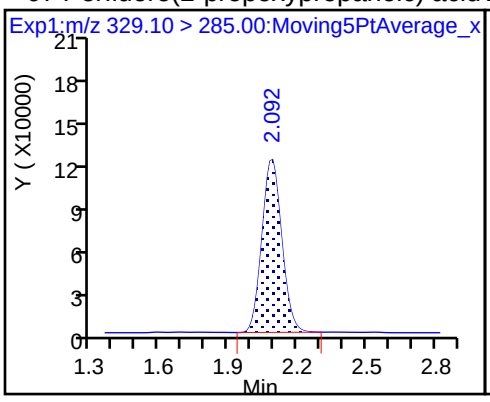
70 Perfluoropentanesulfonic acid



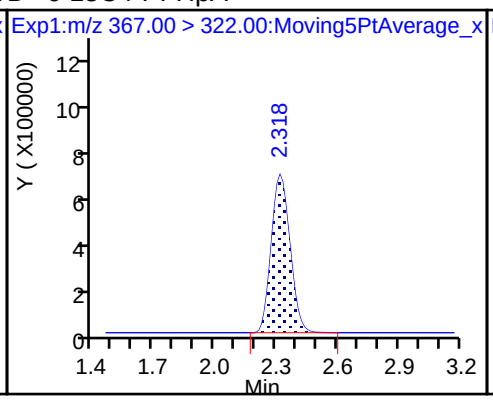
D 64 13C3 HFPO-DA



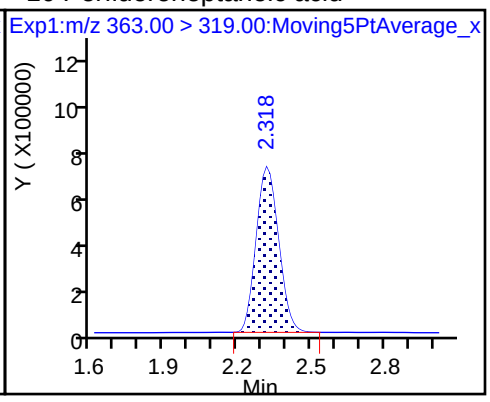
67 Perfluoro(2-propoxypropanoic) acid



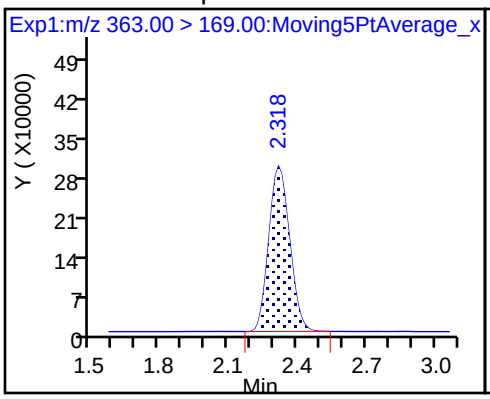
D 9 13C4-PFHpA



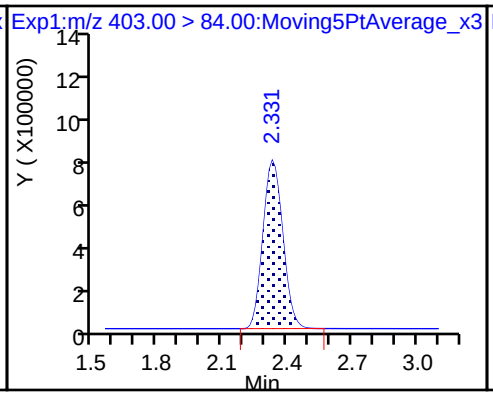
10 Perfluoroheptanoic acid



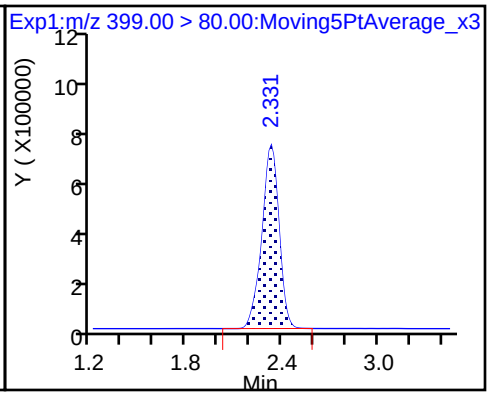
10 Perfluoroheptanoic acid



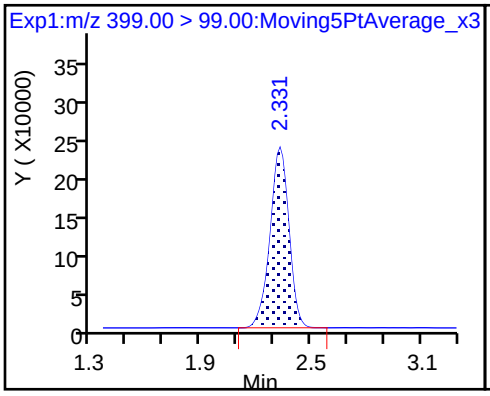
D 11 18O2 PFHxS



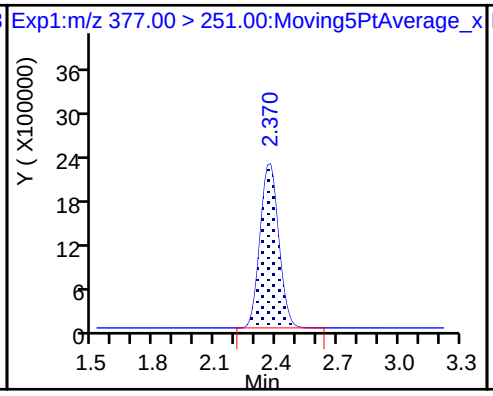
8 Perfluorohexanesulfonic acid



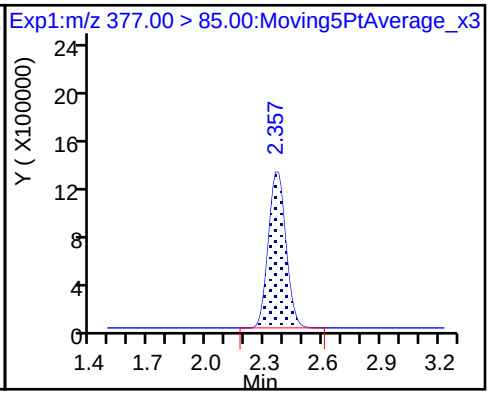
8 Perfluorohexanesulfonic acid



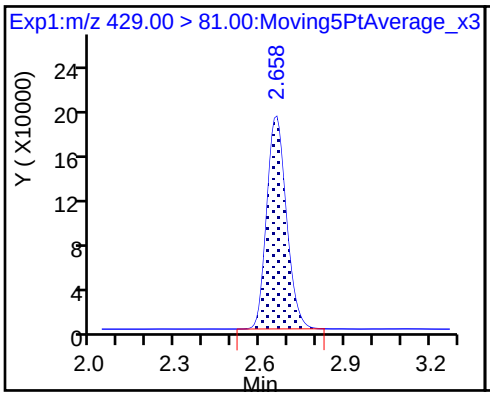
65 Adona



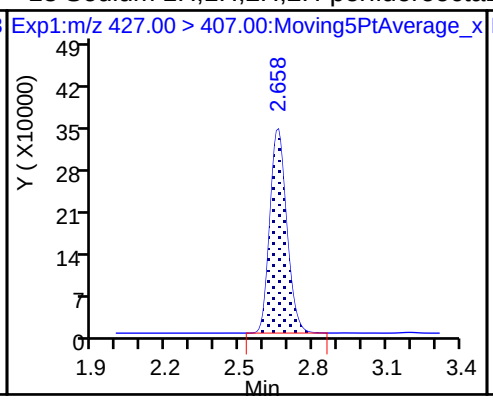
65 Adona



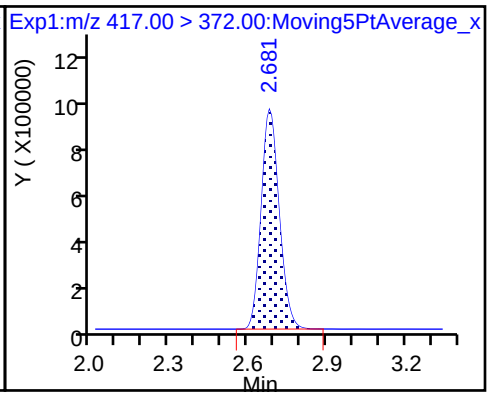
D 12 M2-6:2FTS



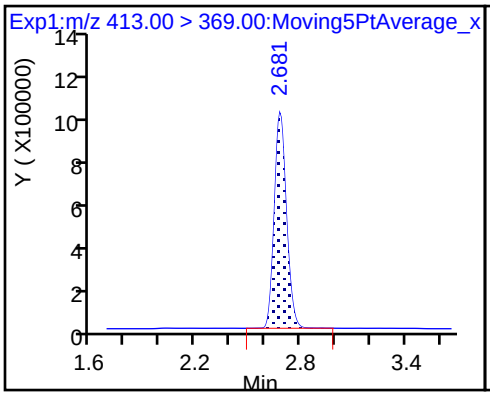
13 Sodium 1H,1H,2H,2H-perfluorooctane



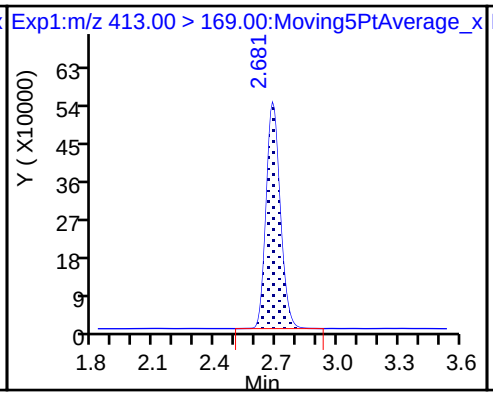
D 14 13C4 PFOA



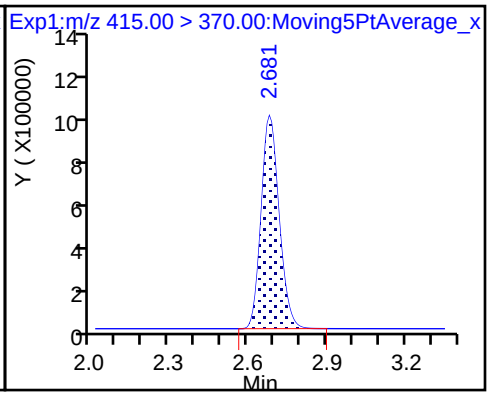
15 Perfluorooctanoic acid



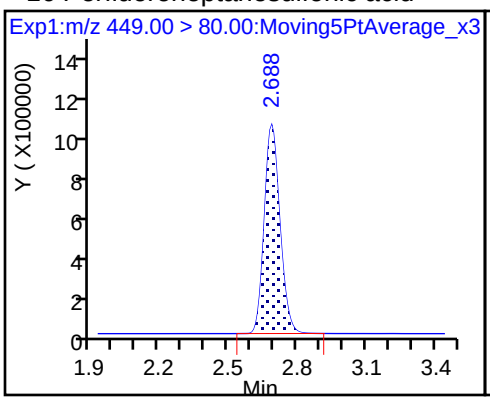
15 Perfluorooctanoic acid



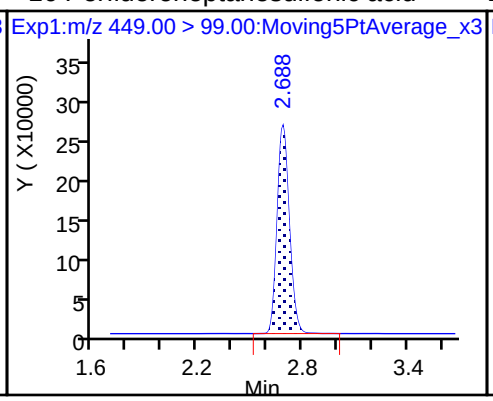
* 62 13C2-PFOA



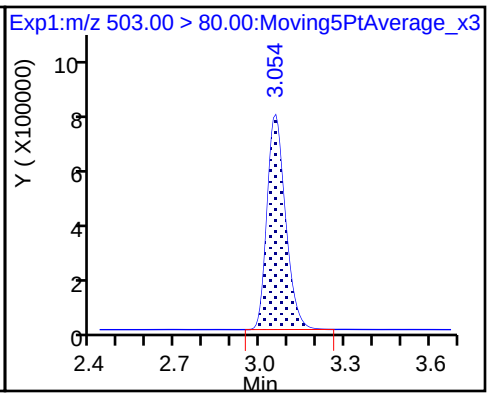
16 Perfluoroheptanesulfonic acid



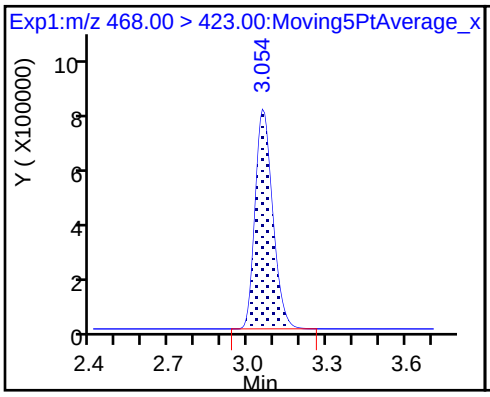
16 Perfluoroheptanesulfonic acid



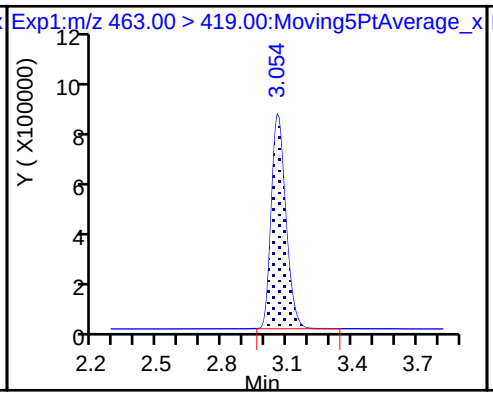
D 18 13C4 PFOS



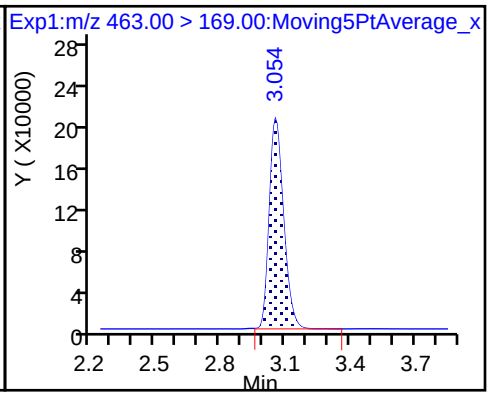
D 19 13C5 PFNA



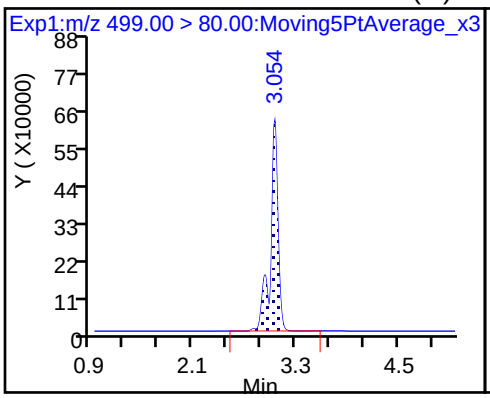
20 Perfluorononanoic acid



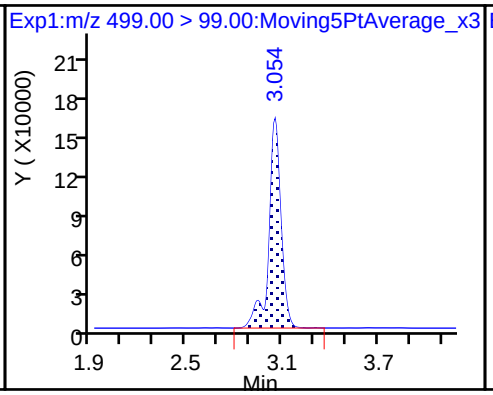
20 Perfluorononanoic acid



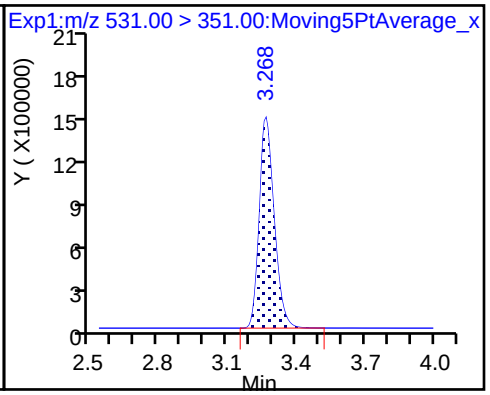
17 Perfluorooctane sulfonic acid (M)



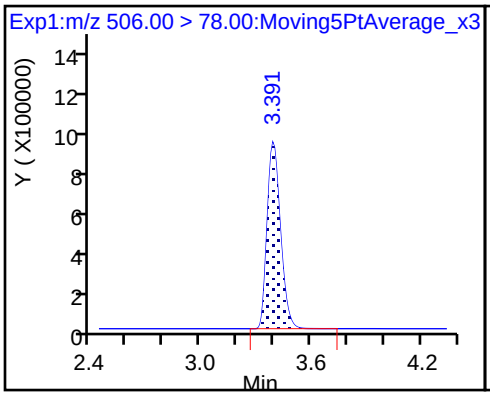
17 Perfluorooctane sulfonic acid



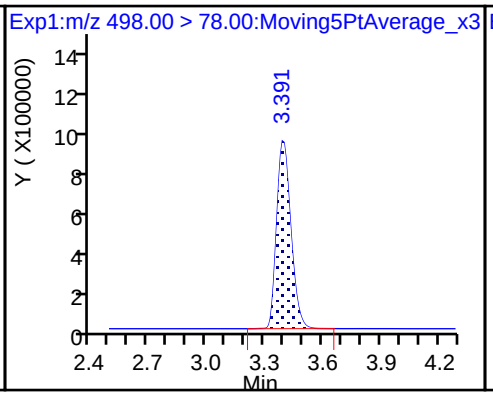
69 9-Chlorohexadecafluoro-3-oxanonane



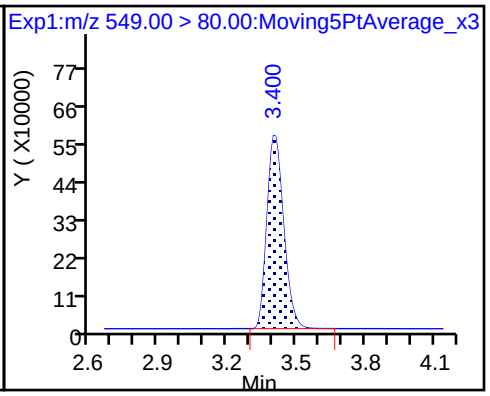
D 21 13C8 FOSA



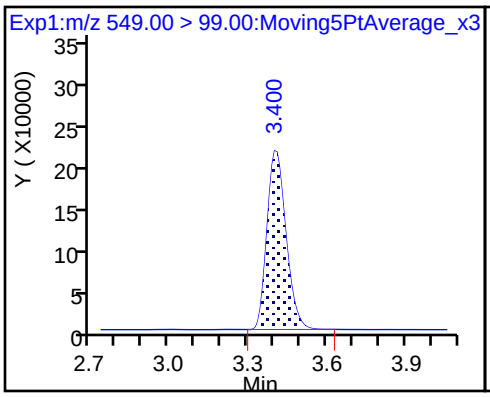
22 Perfluorooctane Sulfonamide



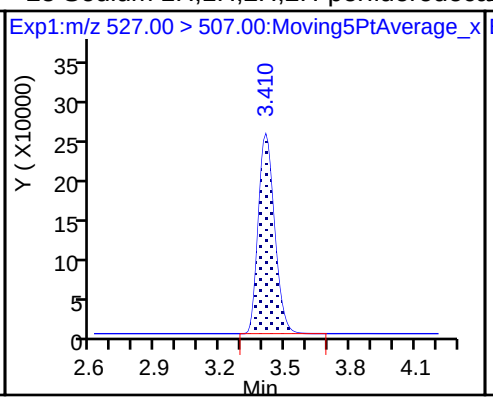
68 Perfluorononanesulfonic acid



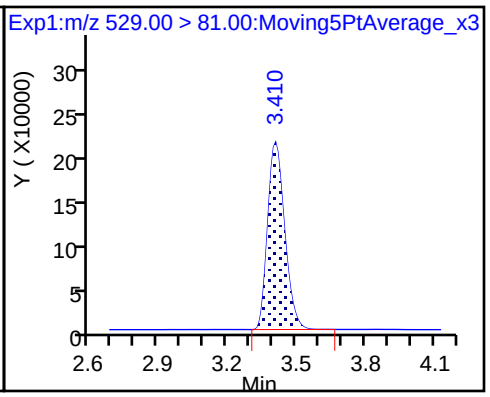
68 Perfluorononanesulfonic acid



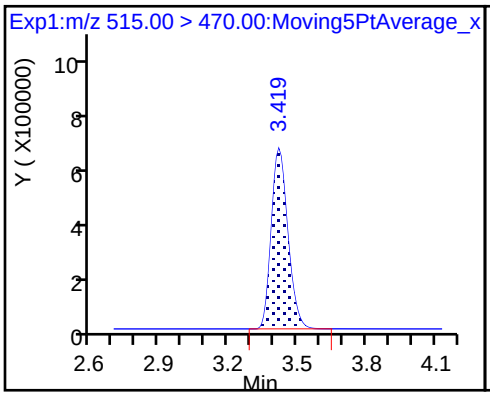
25 Sodium 1H,1H,2H,2H-perfluorodecane



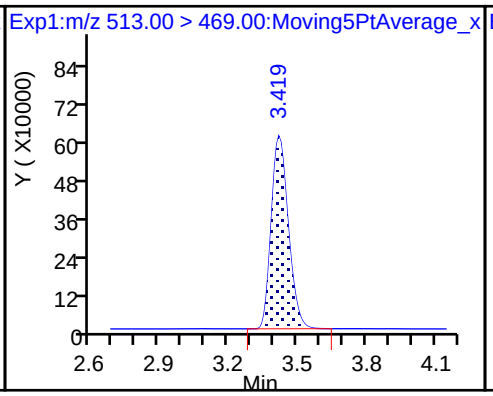
D 26 M2-8:2FTS



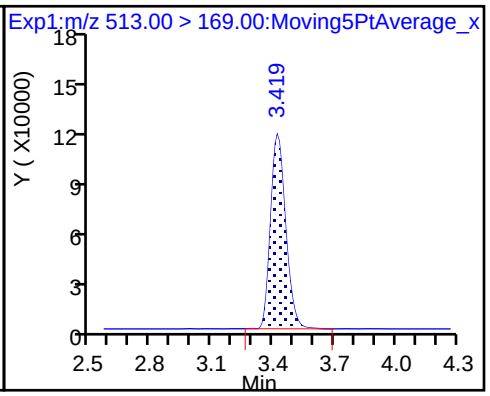
D 23 13C2 PFDA



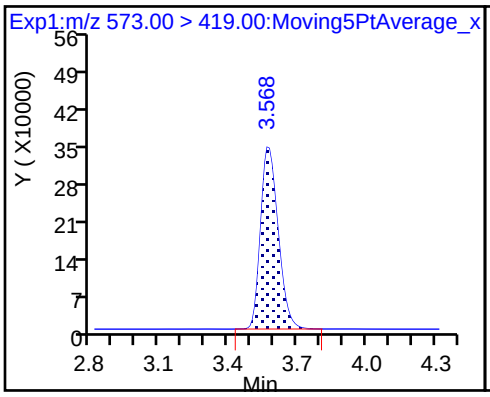
24 Perfluorodecanoic acid



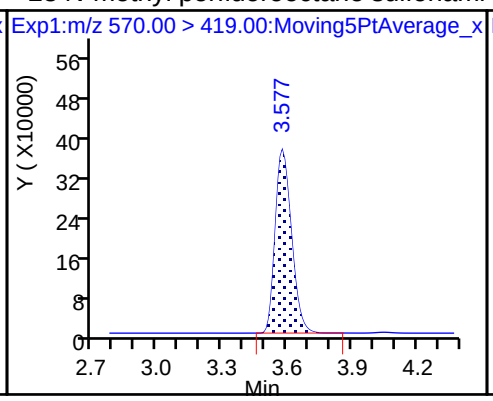
24 Perfluorodecanoic acid



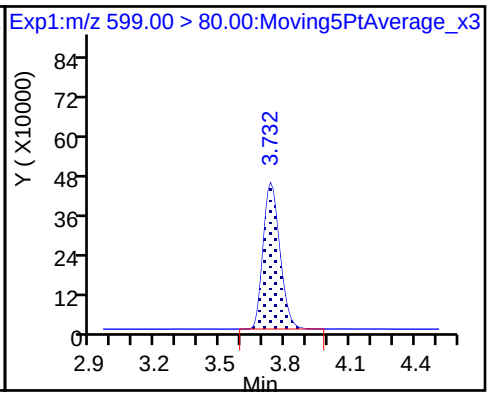
D 27 d3-NMeFOSAA



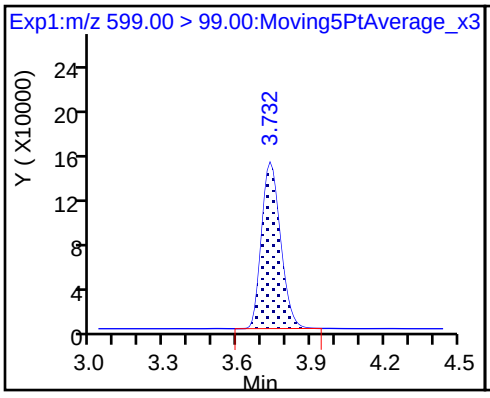
28 N-methyl perfluorooctane sulfonami



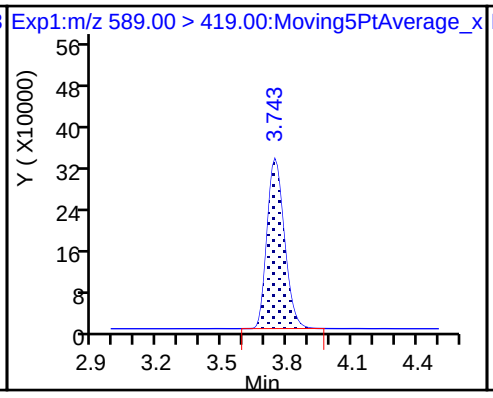
29 Perfluorodecane Sulfonic acid



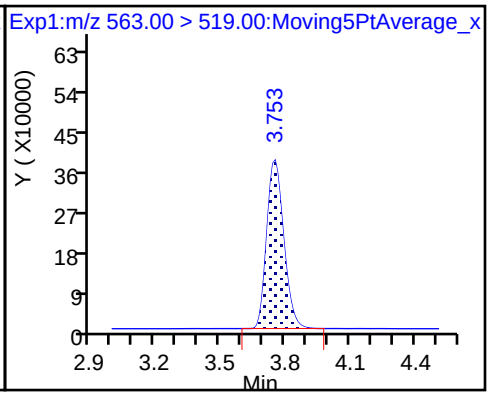
29 Perfluorodecane Sulfonic acid



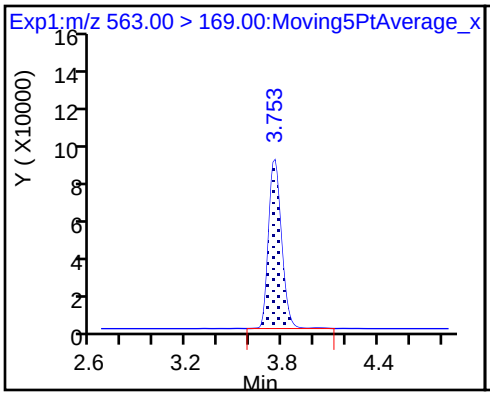
D 32 d5-NEtFOSAA



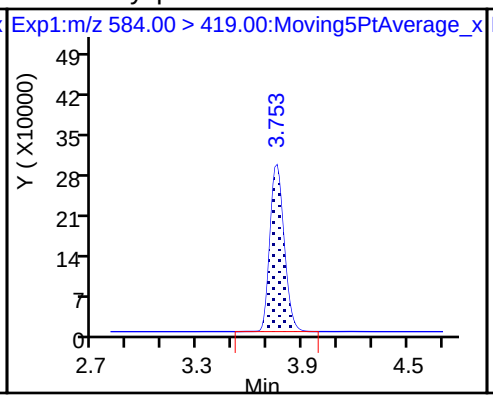
31 Perfluoroundecanoic acid



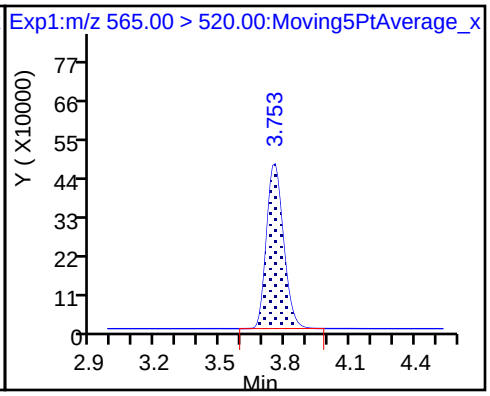
31 Perfluoroundecanoic acid



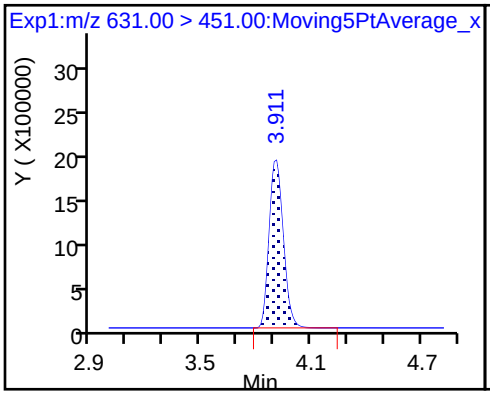
33 N-ethyl perfluorooctane sulfonamid



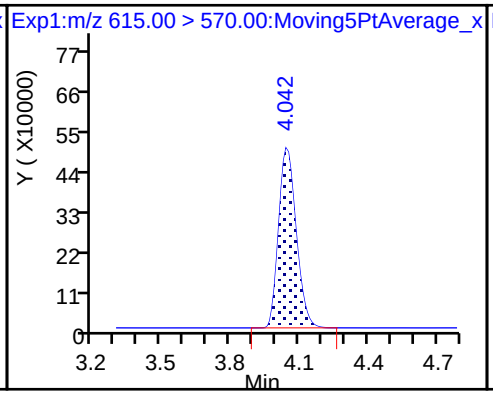
D 30 13C2 PFUnA



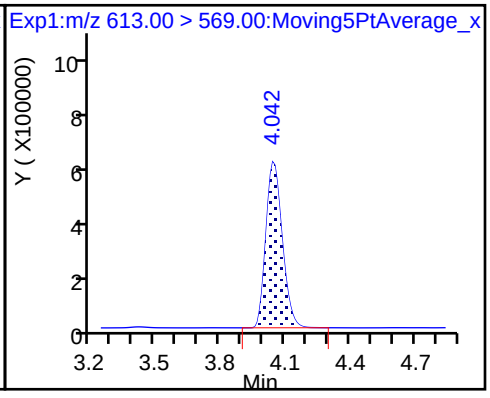
66 11-Chloroeicosafluoro-3-oxaundecan



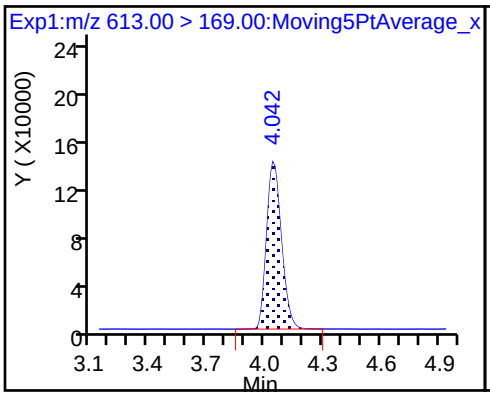
D 36 13C2 PFDoA



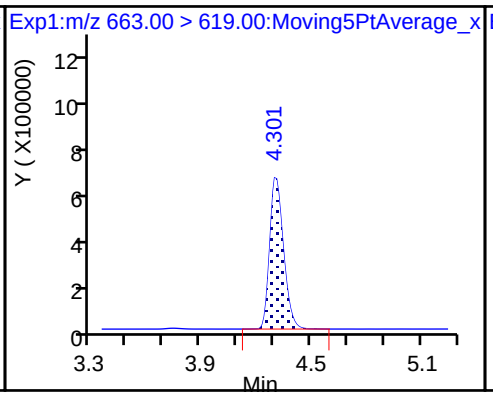
37 Perfluorododecanoic acid



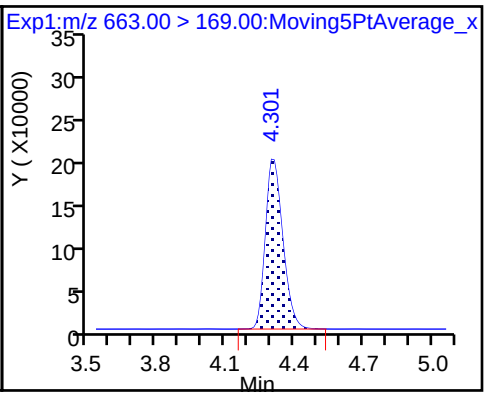
37 Perfluorododecanoic acid



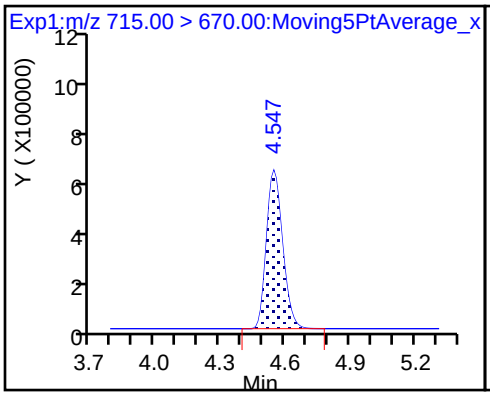
41 Perfluorotridecanoic acid



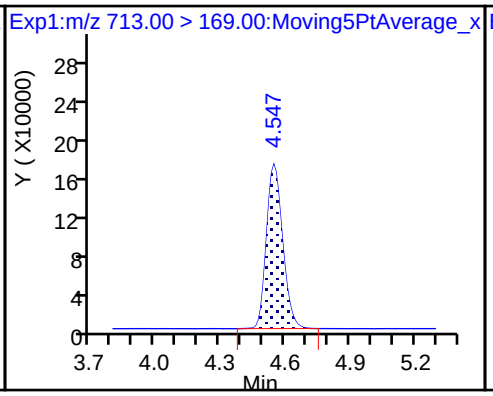
41 Perfluorotridecanoic acid



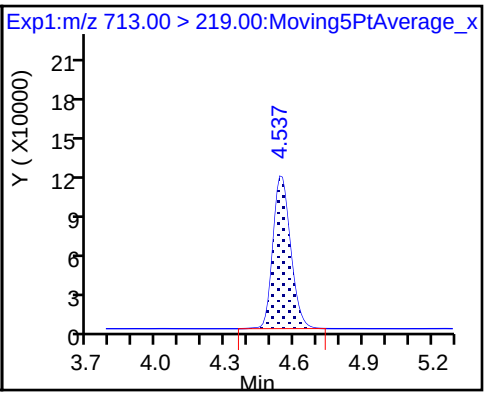
D 43 13C2-PFTeDA



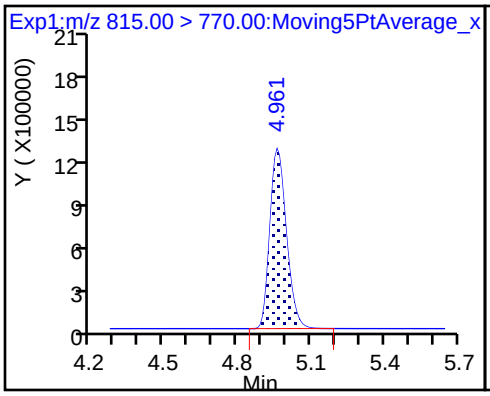
42 Perfluorotetradecanoic acid



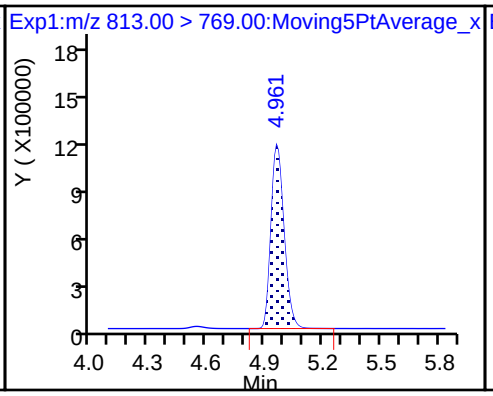
42 Perfluorotetradecanoic acid



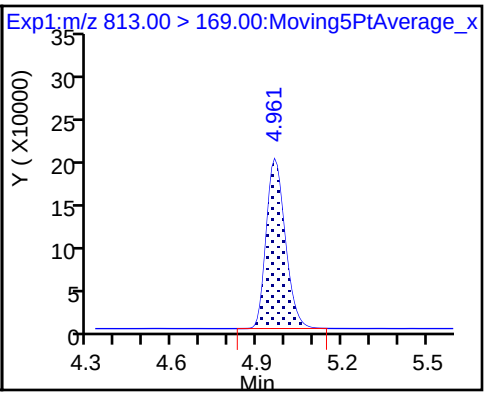
D 44 13C2-PFHxDA



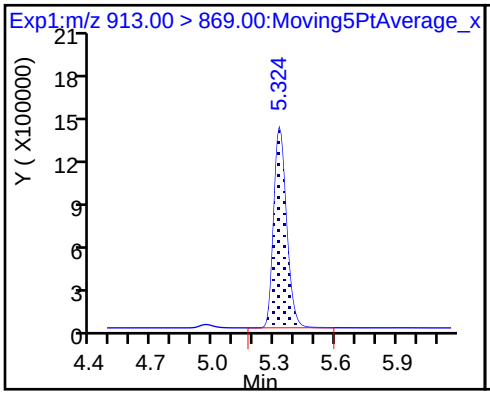
45 Perfluorohexadecanoic acid



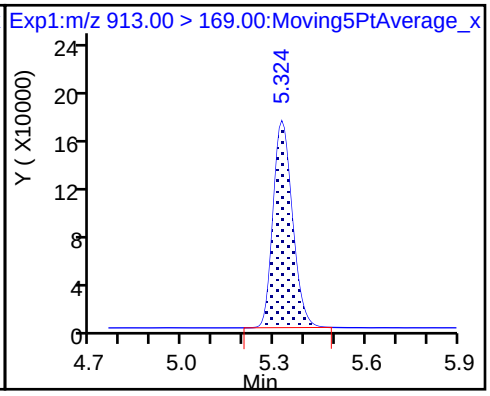
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

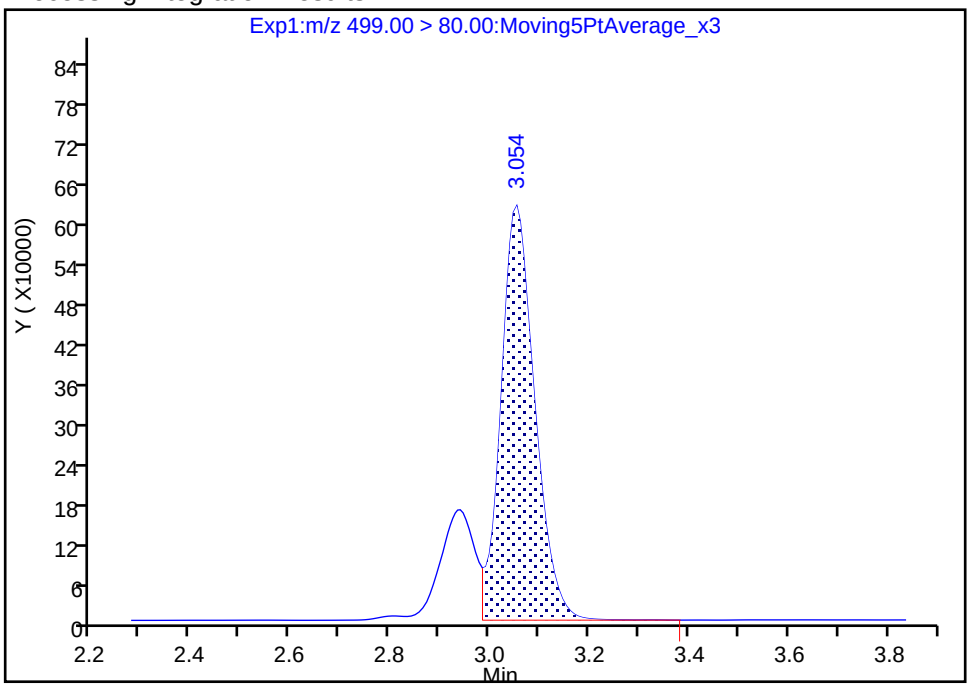
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_023.d
Injection Date: 21-Apr-2018 09:50:04 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

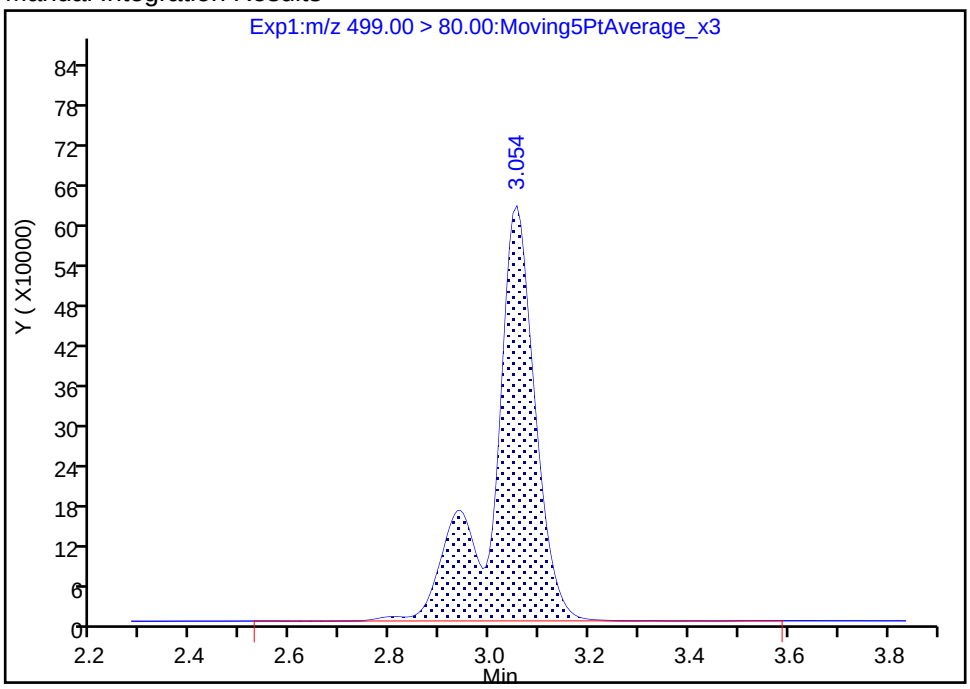
Processing Integration Results

RT: 3.05
Area: 2930110
Amount: 1.801749
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 3729316
Amount: 2.293187
Amount Units: ng/ml



Reviewer: westendorfc, 24-Apr-2018 11:28:43
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219143/12 Calibration Date: 04/21/2018 11:16

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLC_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9304		1.00	1.00	0.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.163		0.976	1.00	-2.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	78.21		0.883	0.884	-0.1	50.0
4:2 FTS	AveID	16.03	17.57		1.02	0.934	9.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.021		1.01	1.00	0.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	68.39		0.897	0.938	-4.4	50.0
HFPO-DA (GenX)	AveID	2.785	3.184		1.14	1.00	14.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.007		1.01	1.00	0.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.007		0.810	0.910	-11.0	40.0
Adona	AveID	3.464	3.632		1.05	1.00	4.9	50.0
6:2FTS	AveID	1.691	1.635		0.917	0.948	-3.3	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.082		0.936	1.00	-6.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.285		0.922	0.952	-3.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9853		0.945	1.00	-5.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.094		0.934	0.928	0.6	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.793		0.886	0.932	-4.9	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.002		0.991	1.00	-0.9	40.0
8:2FTS	AveID	1.265	1.337		1.01	0.958	5.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7550		0.907	0.960	-5.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9893		0.959	1.00	-4.1	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9873		0.990	1.00	-1.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6840		1.02	0.964	5.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8996		0.963	1.00	-3.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7991		0.946	1.00	-5.4	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.801		0.906	0.942	-3.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.000		0.959	1.00	-4.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.217		1.00	1.00	0.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2516		1.00	1.00	0.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9310		0.961	1.00	-3.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219143/12 Calibration Date: 04/21/2018 11:16

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLC_034.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9546		0.951	1.00	-4.9	50.0
13C4 PFBA	Ave	1.345	1.338		2.49	2.50	-0.5	50.0
13C5 PFPeA	Ave	0.8672	0.8761		2.53	2.50	1.0	50.0
13C3-PFBS	Ave	0.0199	0.0202		2.36	2.33	1.3	50.0
M2-4:2FTS	Ave	0.1425	0.1590		2.61	2.34	11.5	50.0
13C2 PFHxA	Ave	0.9590	0.9758		2.54	2.50	1.8	50.0
13C3 HFPO-DA	Ave	0.0593	0.0450		1.90	2.50	-24.2	50.0
13C4-PFHpA	Ave	0.9333	0.9475		2.54	2.50	1.5	50.0
18O2 PFHxS	Ave	1.152	1.158		2.38	2.37	0.5	50.0
M2-6:2FTS	Ave	0.2000	0.2165		2.57	2.38	8.3	40.0
13C4 PFOA	Ave	0.9276	0.9795		2.64	2.50	5.6	50.0
13C4 PFOS	Ave	0.8066	0.8187		2.43	2.39	1.5	50.0
13C5 PFNA	Ave	0.7973	0.8267		2.59	2.50	3.7	50.0
13C8 FOSA	Ave	1.007	0.997		2.47	2.50	-1.0	50.0
M2-8:2FTS	Ave	0.2409	0.2492		2.48	2.40	3.5	40.0
13C2 PFDA	Ave	0.6701	0.6914		2.58	2.50	3.2	50.0
d3-NMeFOSAA	Ave	0.3798	0.3981		2.62	2.50	4.8	50.0
d5-NEtFOSAA	Ave	0.3749	0.4194		2.80	2.50	11.9	50.0
13C2 PFUnA	Ave	0.5781	0.5603		2.42	2.50	-3.1	50.0
13C2 PFDoA	Ave	0.6242	0.6053		2.42	2.50	-3.0	50.0
13C2-PFTeDA	Ave	0.7915	0.7618		2.41	2.50	-3.8	50.0
13C2-PFHxDA	Ave	1.288	1.222		2.37	2.50	-5.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_034.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 21-Apr-2018 11:16:08 ALS Bottle#: 13 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:42:16 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:19:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	6086061	2.49		99.5	40277	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.447	0.0	1.004	2265003	1.00		100	997	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.701	0.002	0.556	3984340	2.53		101	67766	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.712	1.712	0.0	1.005	1853523	0.9759		97.6	1419	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	85275	2.36		101	674	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2535635	0.8831		99.9	9420	
298.90 > 99.00	1.739	1.739	0.0	1.000	1049361		2.42(1.25-3.74)		6189	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.960	0.0	1.000	601913	1.02		110	34763	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.948	0.012	1.000	675320	2.60		112	5214	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.980	0.013	1.000	4438088	2.54		102	82709	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.993	0.0	1.000	1812581	1.00		100	2368	
313.00 > 119.00	1.993	1.993	0.0	1.000	161310		11.24(5.03-15.10)		1957	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2352924	0.8971		95.6	17837	
349.00 > 99.00	2.016	2.016	0.0	1.000	868968		2.71(1.36-4.07)		9078	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.082	0.013	1.000	204494	1.89		75.8	5697	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.000	260454	1.14		114	1659	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1735229	1.01		101	2059	
363.00 > 169.00	2.321	2.321	0.0	1.000	635569		2.73(1.13-3.40)		3422	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.319	0.002	1.000	4309315	2.54		102	67032	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	1930630	0.8099		89.0	5076	
399.00 > 99.00	2.334	2.334	0.0	1.000	713915		2.70(1.50-4.49)		2783	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.332	0.002	1.000	4981291	2.38		101	60088	
65 Adona										
377.00 > 251.00	2.373	2.373	0.0	1.000	5409887	1.05		105	73287	
377.00 > 85.00	2.373	2.373	0.0	1.000	3080107		1.76(0.84-2.53)		41802	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.652	0.009	1.000	935539	2.57		108	10403	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.661	0.0	1.000	610563	0.9169		96.7	5571	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.684	0.0		4548019	2.50			67512	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.684	0.0	1.000	1927159	0.9360		93.6	1406	
413.00 > 169.00	2.691	2.684	0.007	1.003	1004780		1.92(0.84-2.52)		3429	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.682	0.002	1.000	4454833	2.64		106	68237	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.691	0.0	1.000	1822396	0.9217		96.8	11714	
449.00 > 99.00	2.691	2.691	0.0	1.000	508199		3.59(1.94-5.82)		8236	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.060	3.060	0.0	1.002	1512428	0.9335		101	16233	
499.00 > 99.00	3.060	3.060	0.0	1.002	335982		4.50(2.31-6.93)		4530	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.060	0.0	1.000	1481873	0.9450		94.5	4174	
463.00 > 169.00	3.060	3.060	0.0	1.000	346661		4.27(1.90-5.69)		6835	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.055	0.005	1.000	3759790	2.59		104	75699	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.055	-0.002	1.000	3559456	2.43		101	23537	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.273	3.273	0.0	1.000	2488349	0.8863		95.1	35400	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1817762	0.99		99.1	7026	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.393	0.005	1.000	4533520	2.47		99.0	33499	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.407	3.407	0.0	1.000	1079434	0.9067		94.4	10247	
549.00 > 99.00	3.407	3.407	0.0	1.000	398772		2.71(1.33-3.97)		7955	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.407	0.0	1.000	580643	1.01		106	16088	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.411	-0.004	1.000	1085751	2.48		103	8510	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.426	0.0	1.000	1244297	0.9590		95.9	5621	
513.00 > 169.00	3.426	3.426	0.0	1.000	211413		5.89(2.36-7.09)		5193	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.420	0.006	1.000	3144345	2.58		103	52068	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.569	0.006	1.000	1810351	2.62		105	17932	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.575	0.0	1.000	714914	0.9899		99.0	5117	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.740	0.0	1.000	982043	1.02		105	7076	
599.00 > 99.00	3.740	3.740	0.0	1.000	311029		3.16(1.39-4.16)		7331	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.743	-0.003	1.000	1907617	2.80		112	23207	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.751	0.0	1.000	814522	0.9456		94.6	4117	
563.00 > 169.00	3.751	3.751	0.0	1.000	224359		3.63(2.12-6.36)		3550	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.751	0.0	1.003	686469	0.9627		96.3	10446	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.754	-0.003	1.000	2548207	2.42		96.9	53087	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.907	3.907	0.0	1.000	3930134	0.9061		96.2	50419	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.050	0.0	1.000	1101568	0.9593		95.9	1426	
613.00 > 169.00	4.050	4.050	0.0	1.000	280479		3.93(2.13-6.40)		3768	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.042	0.008	1.000	2752855	2.42		97.0	26120	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.307	0.0	1.000	1340499	1.00		100	1525	
663.00 > 169.00	4.307	4.307	0.0	1.000	418974		3.20(1.25-3.76)		4254	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	348747	1.00		100	2903	
713.00 > 219.00	4.543	4.553	-0.010	0.998	255495		1.36(0.71-2.13)		3522	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.548	0.005	1.000	3464701	2.41		96.2	22283	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.966	0.0	1.000	2069445	0.9609		96.1	895	
813.00 > 169.00	4.966	4.966	0.0	1.000	354353		5.84(2.86-8.58)		2191	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.961	0.005	1.000	5556861	2.37		94.9	19803	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.329	5.329	0.0	1.000	2121774	0.9507		95.1	754	
913.00 > 169.00	5.329	5.329	0.0	1.000	266803		7.95(3.83-11.48)		1834	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 24-Apr-2018 16:42:17 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_034.d

Injection Date: 21-Apr-2018 11:16:08 Instrument ID: A8_N

Lims ID: CCV L4

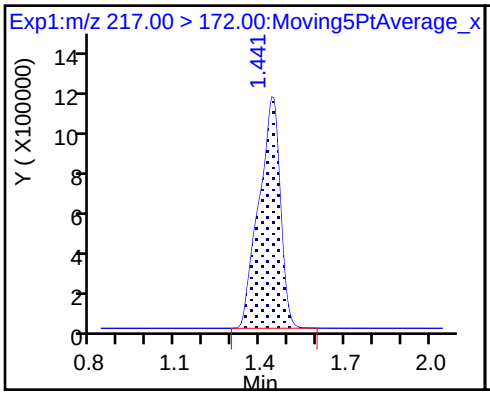
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 12

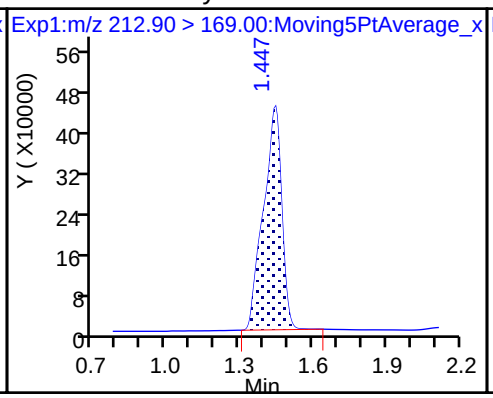
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

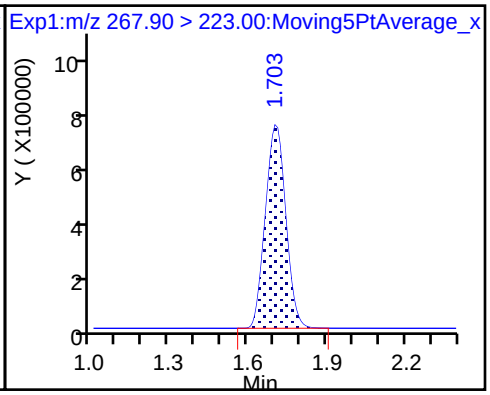
D 1 13C4 PFBA



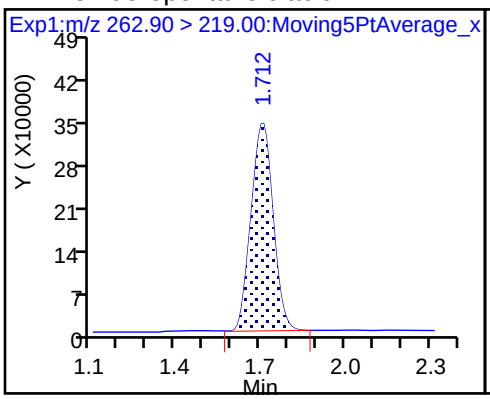
2 Perfluorobutyric acid



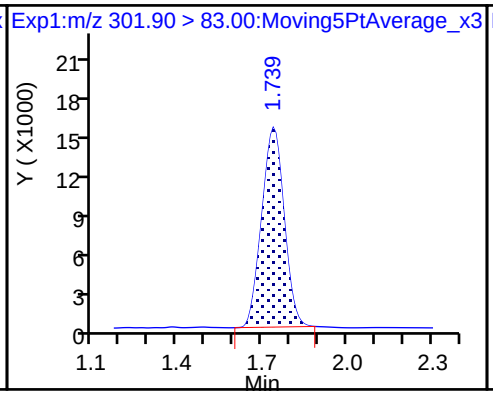
D 3 13C5-PFPeA



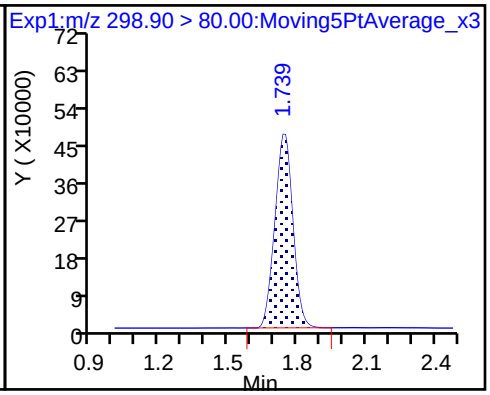
4 Perfluoropentanoic acid



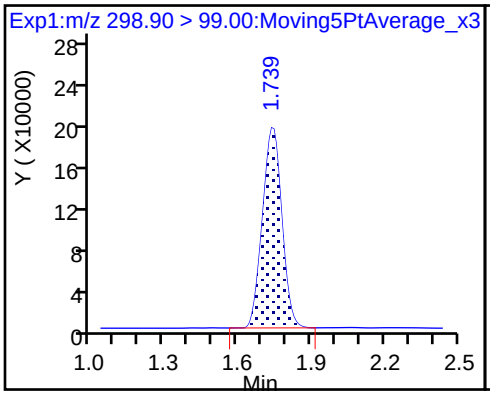
D 47 13C3-PFBS



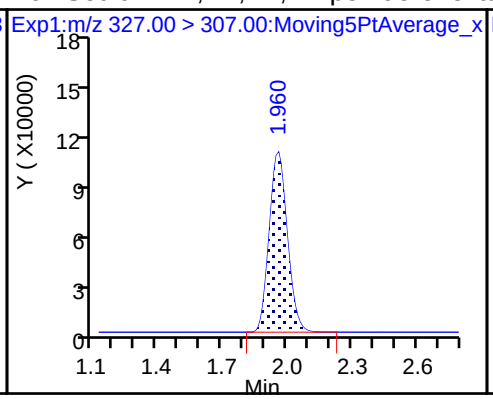
5 Perfluorobutanesulfonic acid



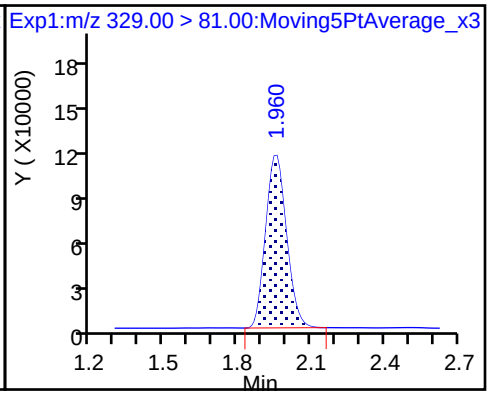
5 Perfluorobutanesulfonic acid



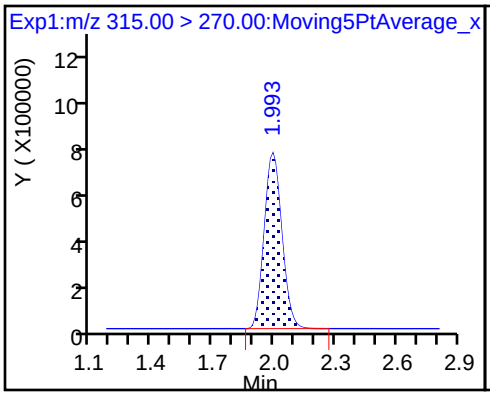
61 Sodium 1H,1H,2H,2H-perfluorohexane



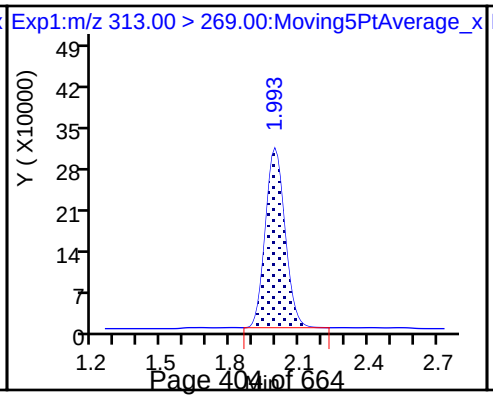
D 60 M2-4:2FTS



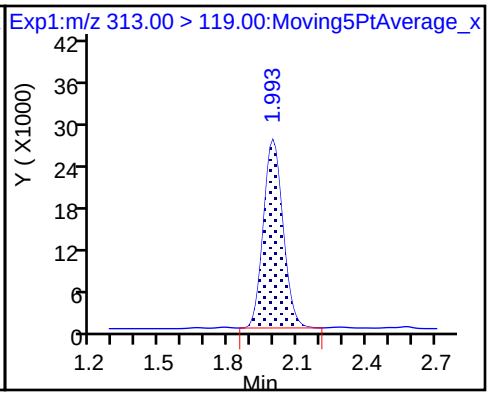
D 7 13C2 PFHxA



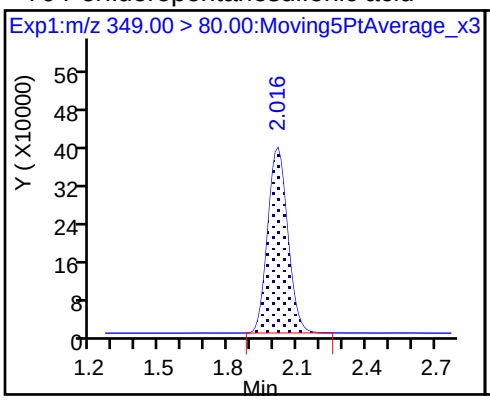
6 Perfluorohexanoic acid



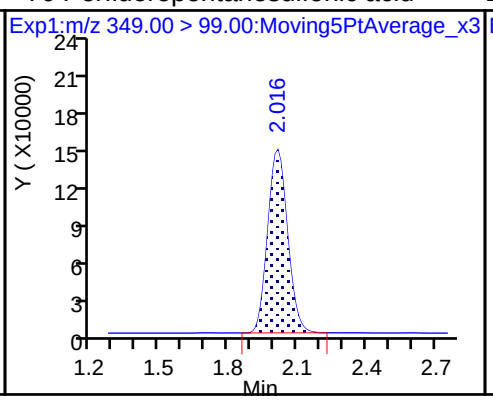
6 Perfluorohexanoic acid



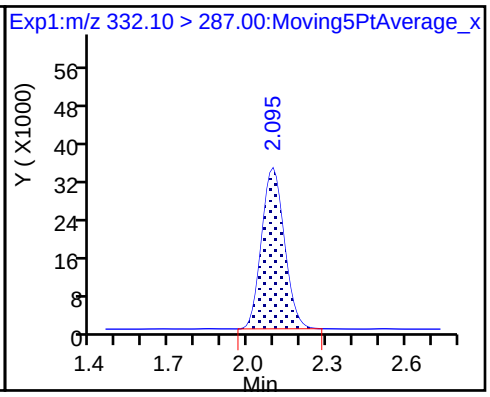
70 Perfluoropentanesulfonic acid



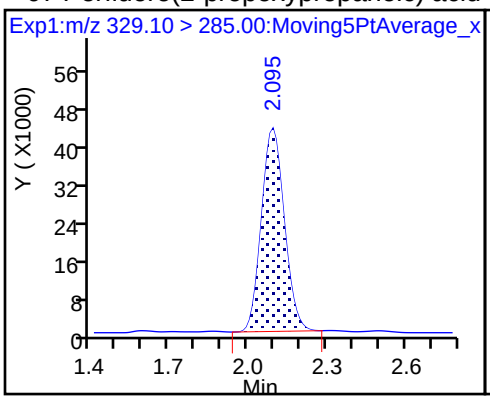
70 Perfluoropentanesulfonic acid



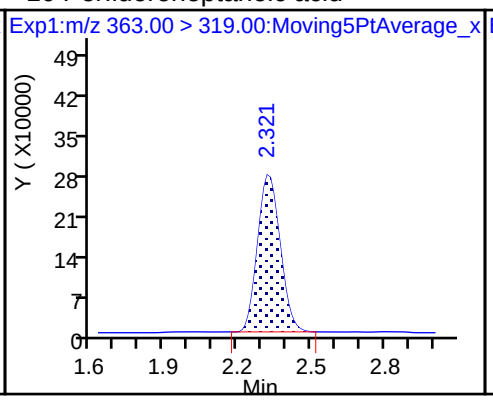
D 64 13C3 HFPO-DA



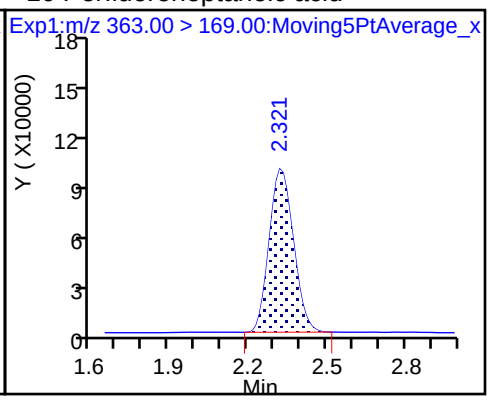
67 Perfluoro(2-propoxypropanoic) acid



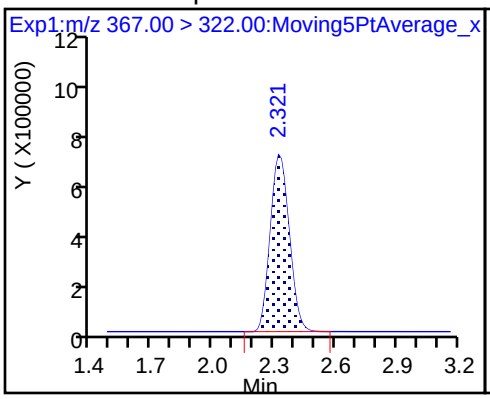
10 Perfluoroheptanoic acid



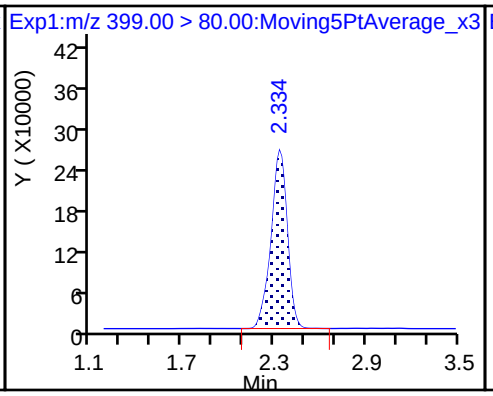
10 Perfluoroheptanoic acid



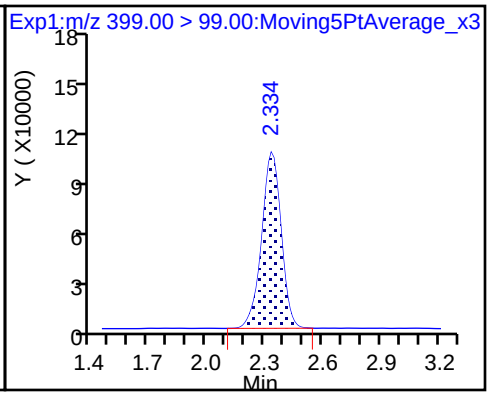
D 9 13C4-PFHpA



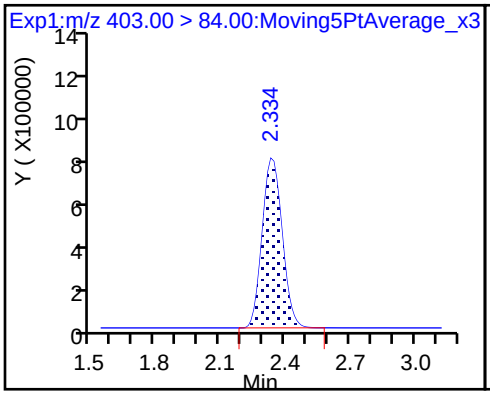
8 Perfluorohexanesulfonic acid



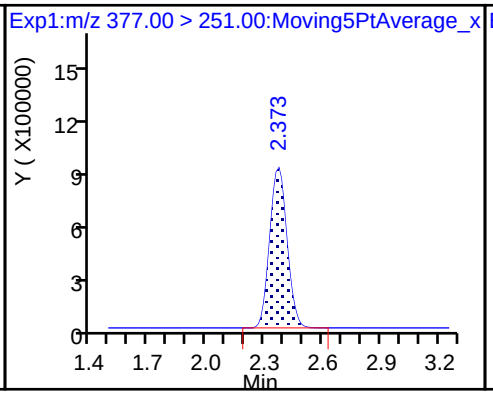
8 Perfluorohexanesulfonic acid



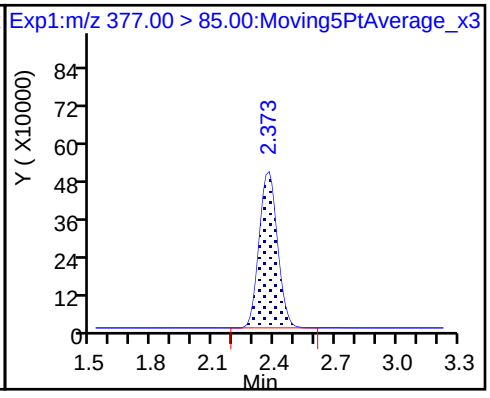
D 11 18O2 PFHxS



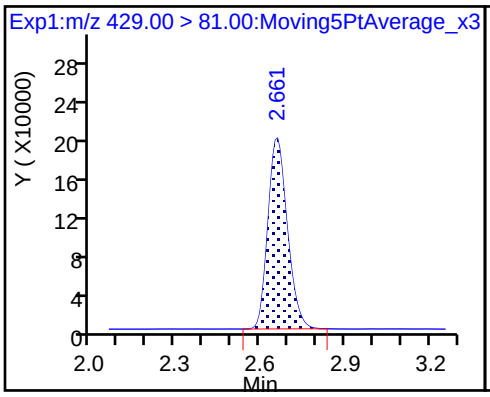
65 Adona



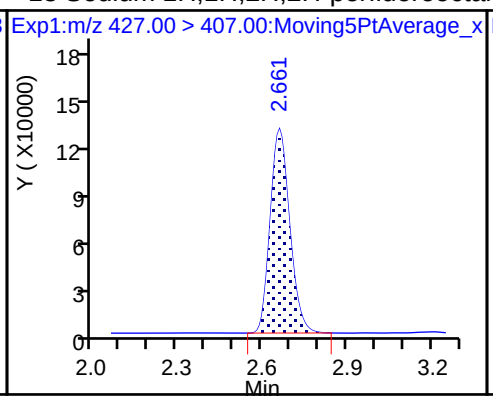
65 Adona



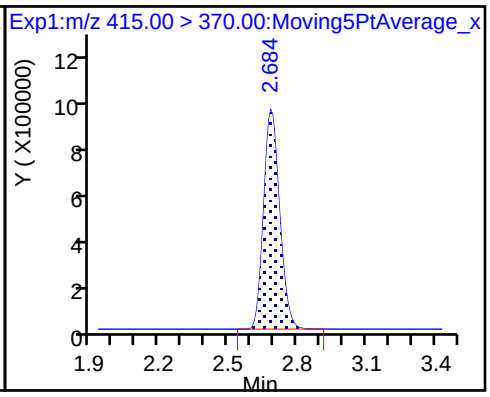
D 12 M2-6:2FTS



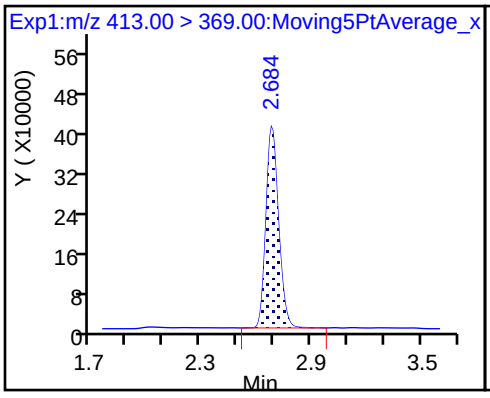
13 Sodium 1H,1H,2H,2H-perfluorooctane



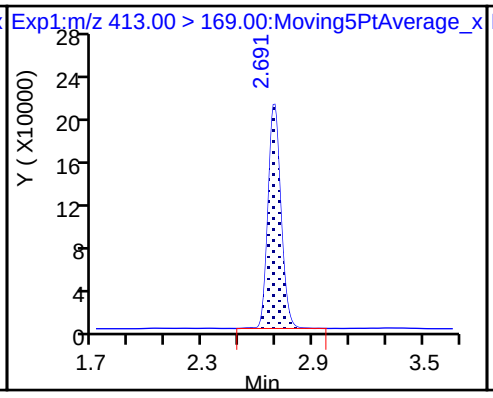
M62 13C2-PFOA



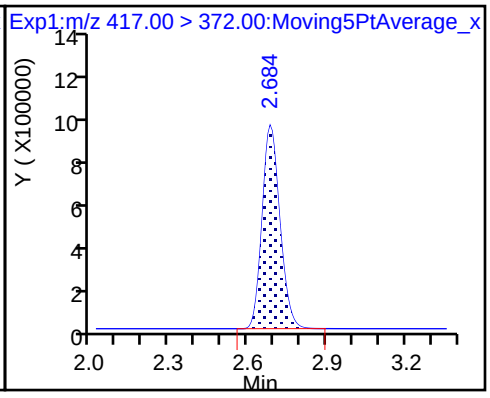
15 Perfluorooctanoic acid



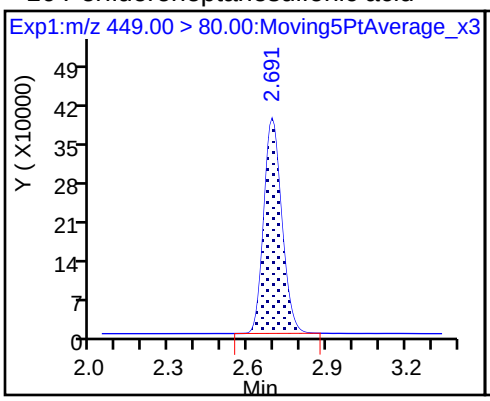
15 Perfluorooctanoic acid



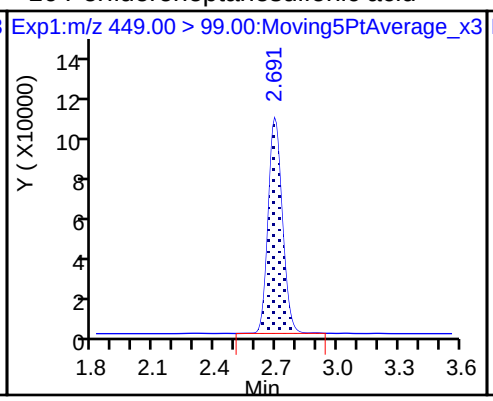
D 14 13C4 PFOA



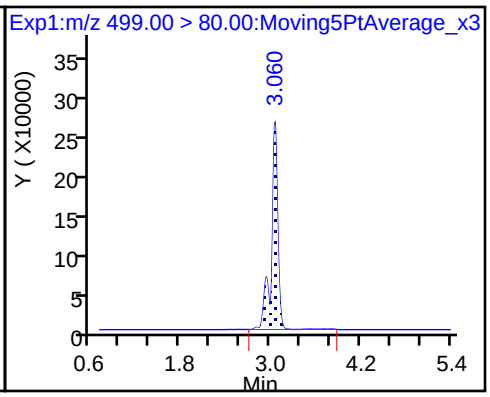
16 Perfluoroheptanesulfonic acid



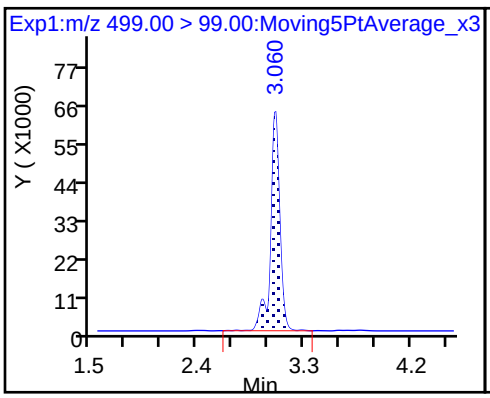
16 Perfluoroheptanesulfonic acid



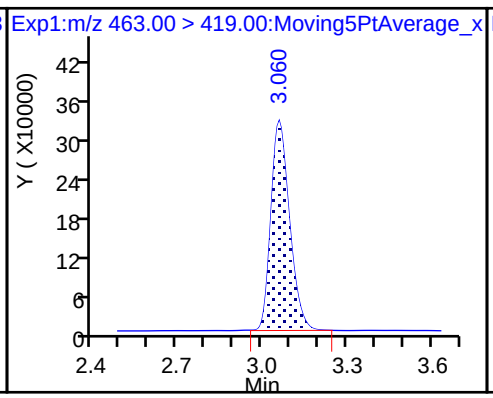
17 Perfluorooctane sulfonic acid



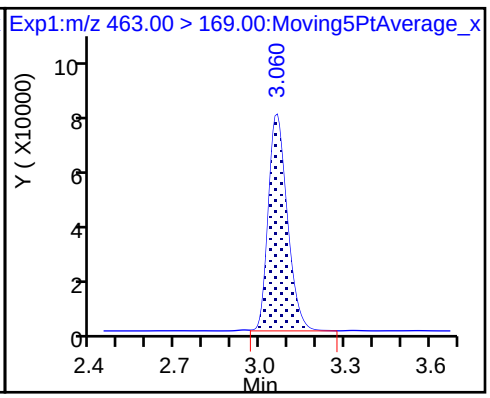
17 Perfluorooctane sulfonic acid



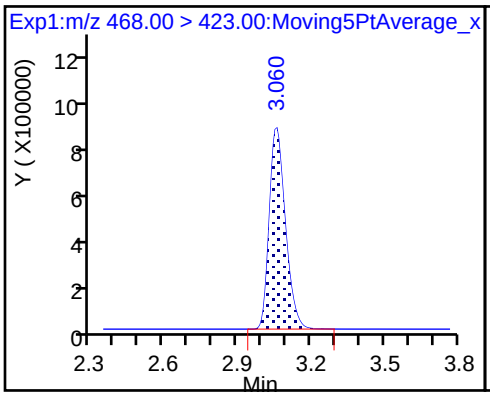
20 Perfluorononanoic acid



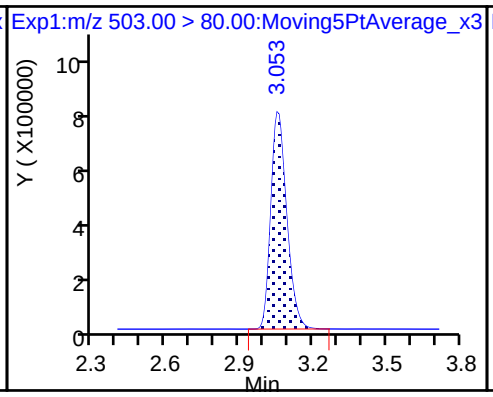
20 Perfluorononanoic acid



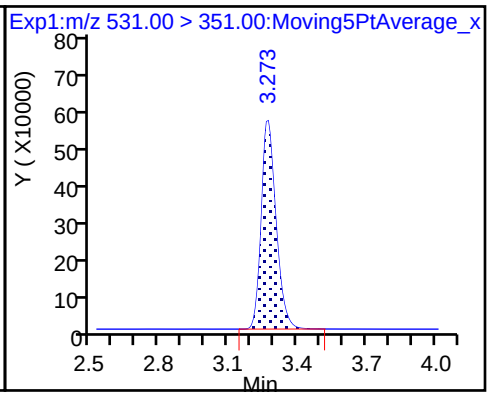
D 19 13C5 PFNA



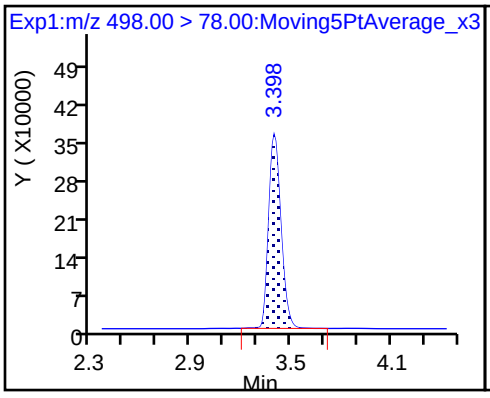
D 18 13C4 PFOS



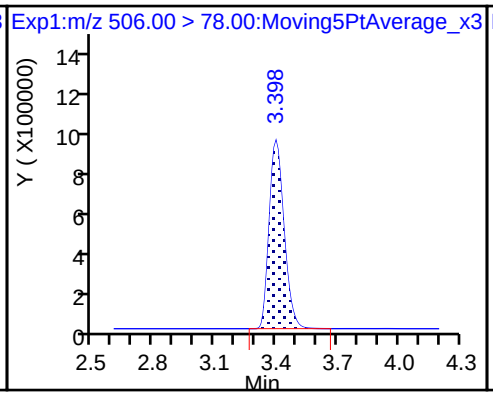
69 9-Chlorohexadecafluoro-3-oxanonane



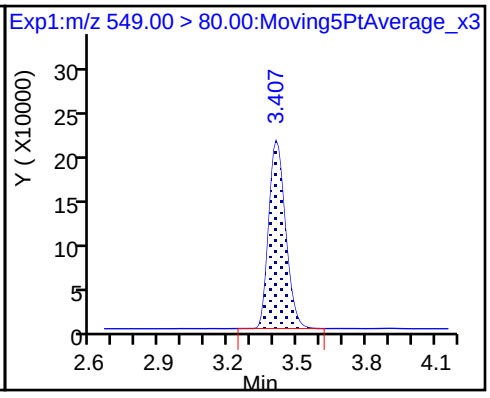
22 Perfluorooctane Sulfonamide



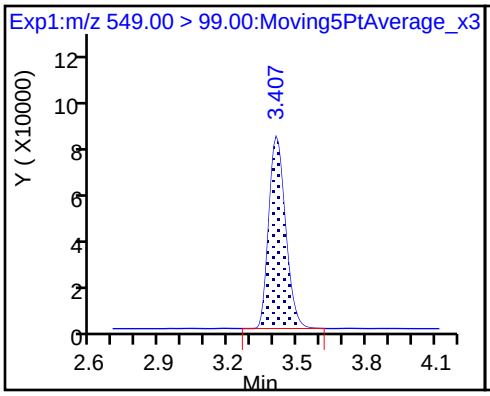
D 21 13C8 FOSA



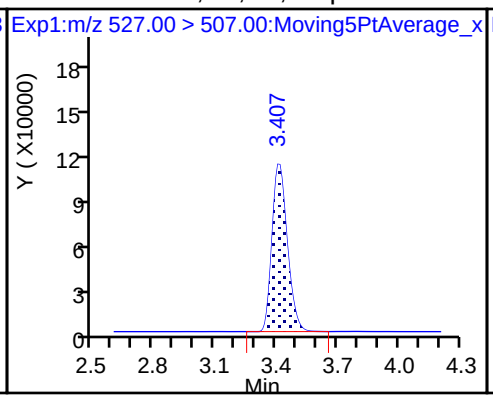
68 Perfluorononanesulfonic acid



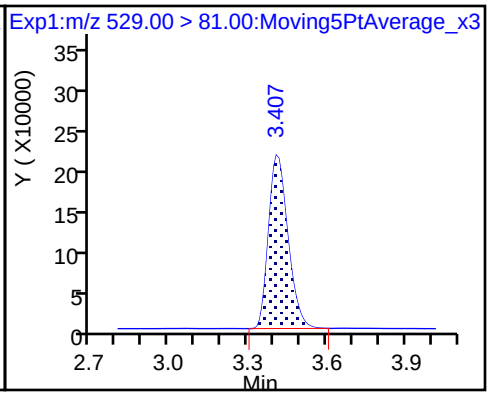
68 Perfluorononanesulfonic acid



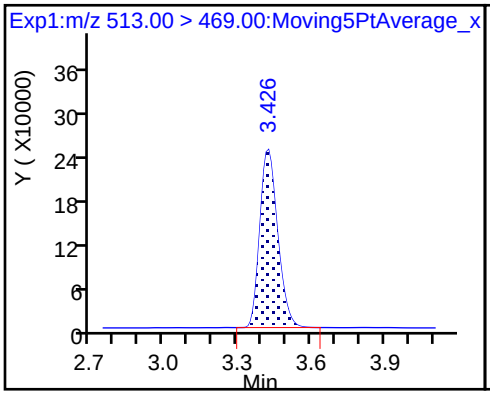
25 Sodium 1H,1H,2H,2H-perfluorodecane



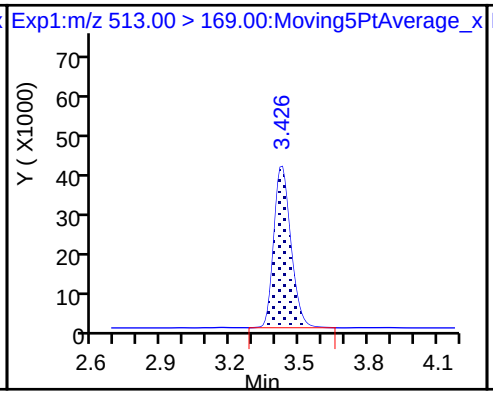
D 26 M2-8:2FTS



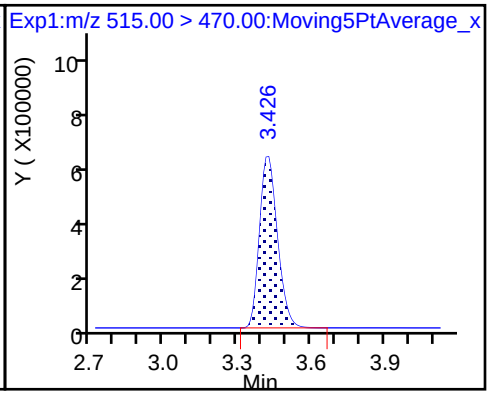
24 Perfluorodecanoic acid



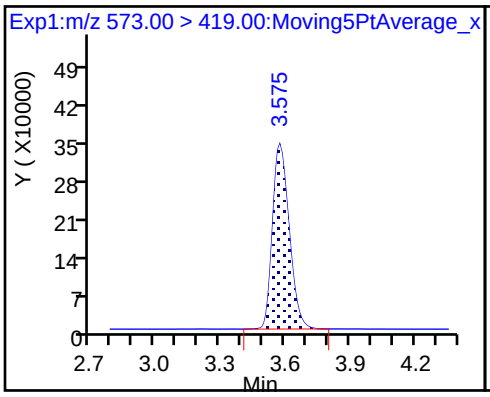
24 Perfluorodecanoic acid



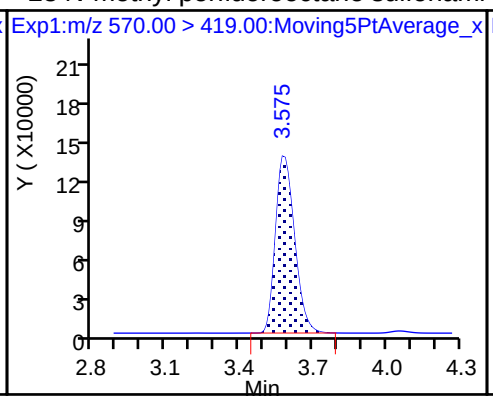
D 23 13C2 PFDA



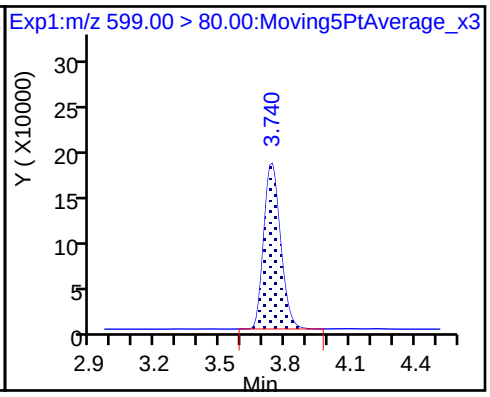
D 27 d3-NMeFOSAA



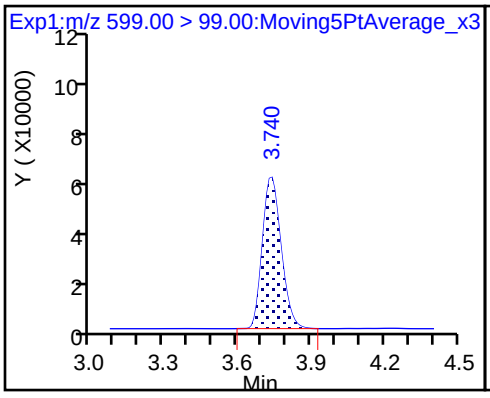
28 N-methyl perfluorooctane sulfonami



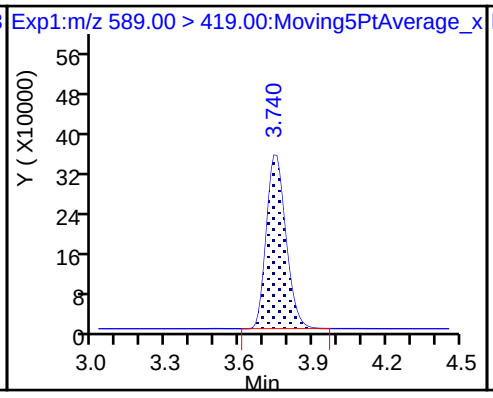
29 Perfluorodecane Sulfonic acid



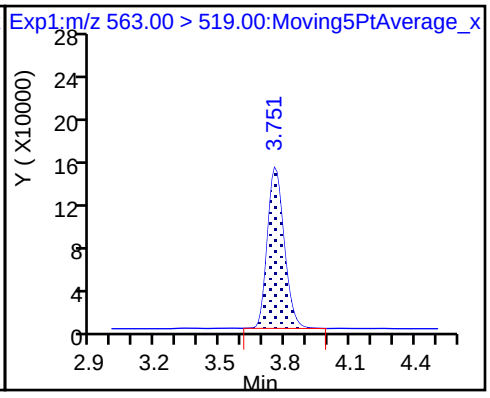
29 Perfluorodecane Sulfonic acid



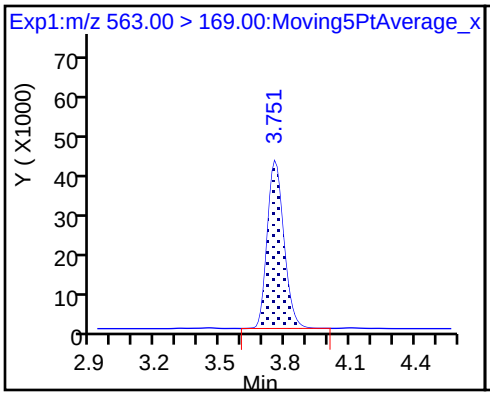
D 32 d5-NEtFOSAA



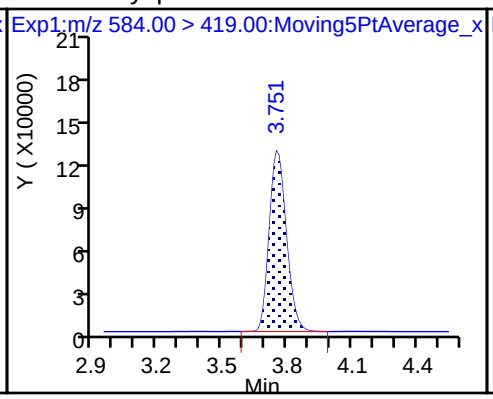
31 Perfluoroundecanoic acid



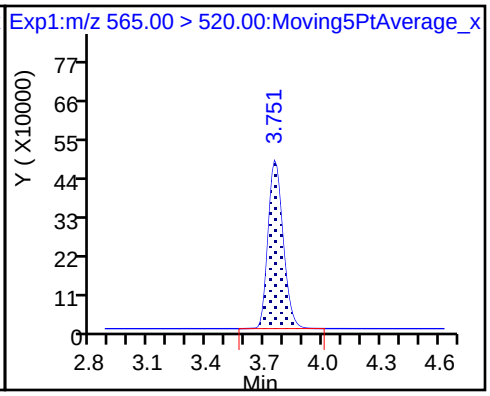
31 Perfluoroundecanoic acid



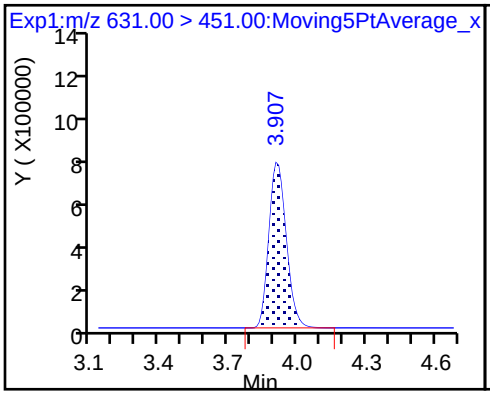
33 N-ethyl perfluorooctane sulfonamid



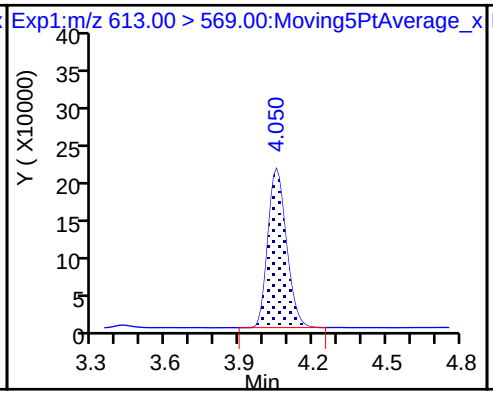
D 30 13C2 PFUnA



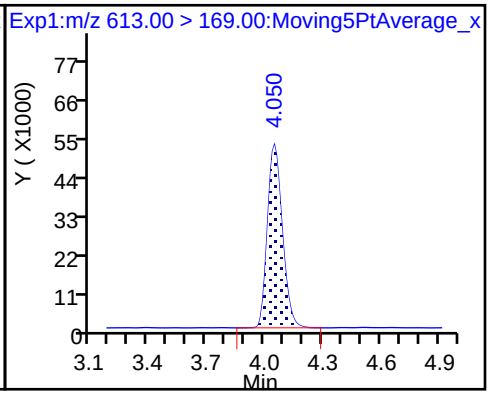
66 11-Chloroeicosafluoro-3-oxaundecan



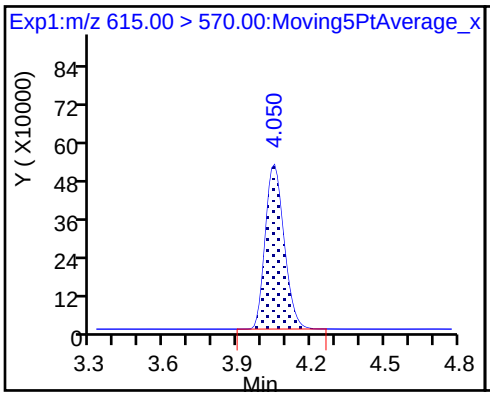
37 Perfluorododecanoic acid



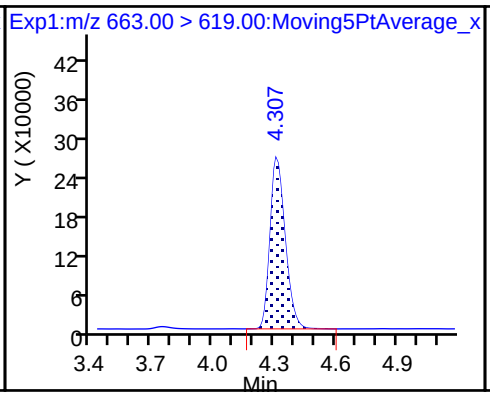
37 Perfluorododecanoic acid



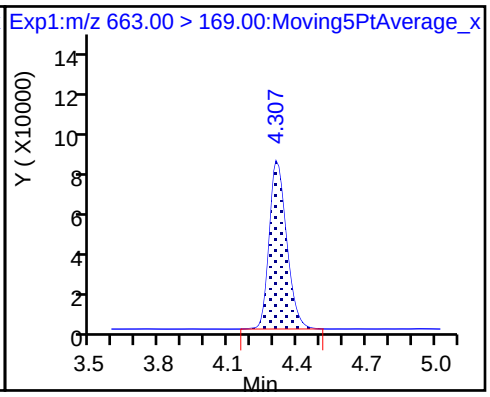
D 36 13C2 PFDoA



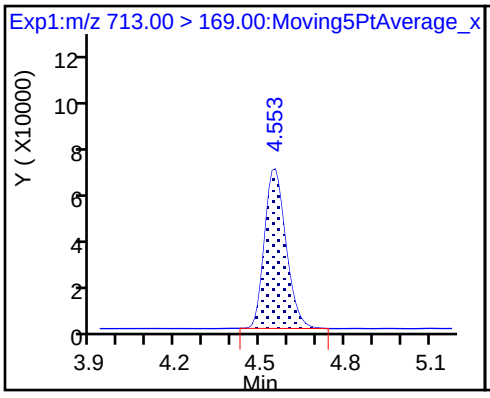
41 Perfluorotridecanoic acid



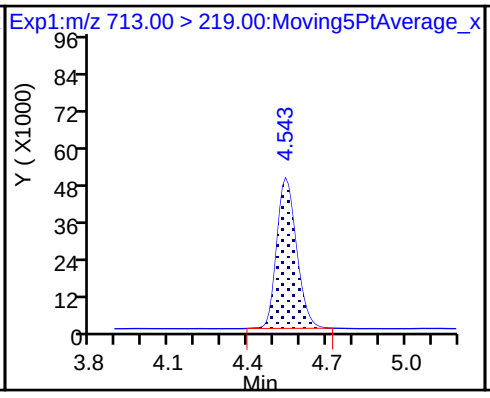
41 Perfluorotridecanoic acid



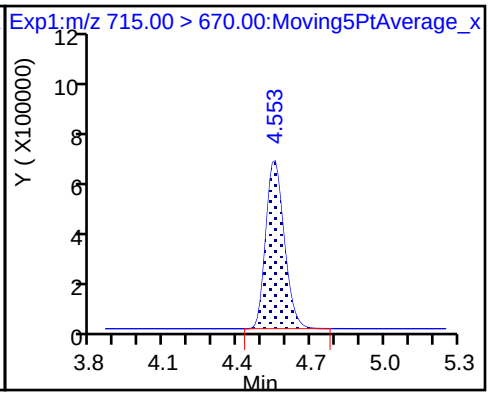
42 Perfluorotetradecanoic acid



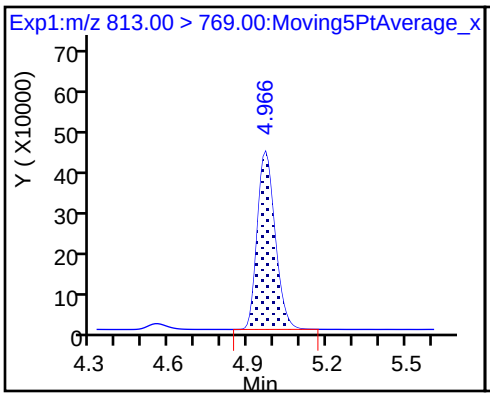
42 Perfluorotetradecanoic acid



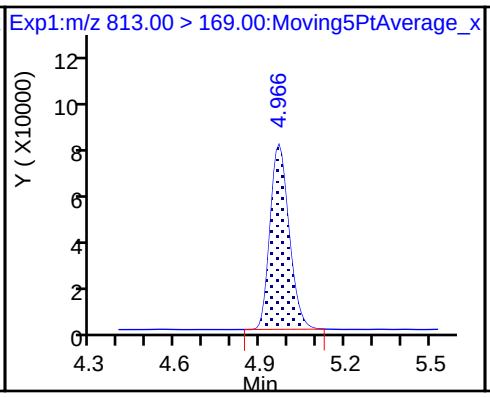
D 43 13C2-PFTeDA



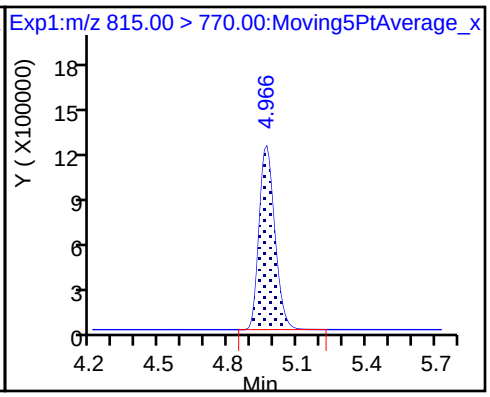
45 Perfluorohexadecanoic acid



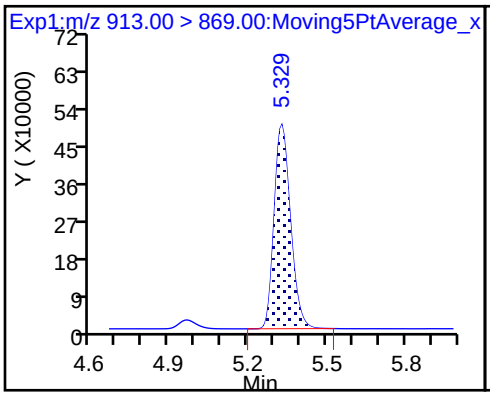
45 Perfluorohexadecanoic acid



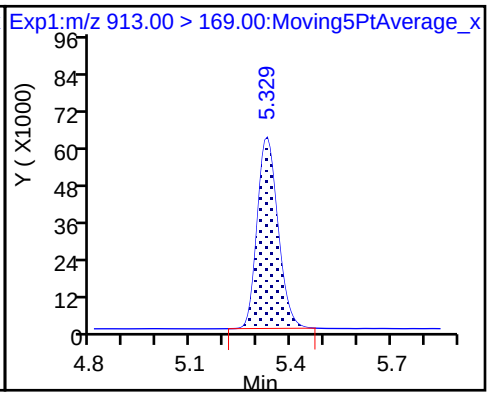
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219143/14 Calibration Date: 04/21/2018 11:31

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLC_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9611		2.59	2.50	3.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.154		2.42	2.50	-3.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	81.28		2.29	2.21	3.8	50.0
4:2 FTS	AveID	16.03	17.93		2.61	2.34	11.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.006		2.48	2.50	-1.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	73.98		2.43	2.35	3.5	50.0
HFPO-DA (GenX)	AveID	2.785	3.110		2.79	2.50	11.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.057		2.64	2.50	5.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.119		2.25	2.28	-1.1	40.0
Adona	AveID	3.464	3.669		2.65	2.50	5.9	50.0
6:2FTS	AveID	1.691	1.765		2.47	2.37	4.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.096		2.37	2.50	-5.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.379		2.47	2.38	3.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.148		2.45	2.32	5.5	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.039		2.49	2.50	-0.4	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.914		2.37	2.33	1.6	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.004		2.48	2.50	-0.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7748		2.33	2.40	-3.1	50.0
8:2FTS	AveID	1.265	1.242		2.35	2.40	-1.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9867		2.39	2.50	-4.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.055		2.64	2.50	5.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6510		2.42	2.41	0.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9310		2.49	2.50	-0.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8627		2.55	2.50	2.1	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.893		2.34	2.36	-0.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.030		2.47	2.50	-1.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.194		2.46	2.50	-1.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2533		2.52	2.50	0.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9887		2.59	2.50	3.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219143/14 Calibration Date: 04/21/2018 11:31

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.20LLC_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9459		2.36	2.50	-5.8	50.0
13C4 PFBA	Ave	1.345	1.310		2.43	2.50	-2.6	50.0
13C5 PFPeA	Ave	0.8672	0.8676		2.50	2.50	0.0	50.0
13C3-PFBS	Ave	0.0199	0.0193		2.25	2.33	-3.2	50.0
M2-4:2FTS	Ave	0.1425	0.1465		2.40	2.34	2.8	50.0
13C2 PFHxA	Ave	0.9590	0.9294		2.42	2.50	-3.1	50.0
13C3 HFPO-DA	Ave	0.0593	0.0497		2.10	2.50	-16.2	50.0
13C4-PFHpA	Ave	0.9333	0.9065		2.43	2.50	-2.9	50.0
18O2 PFHxS	Ave	1.152	1.104		2.27	2.37	-4.2	50.0
M2-6:2FTS	Ave	0.2000	0.2034		2.42	2.38	1.7	40.0
13C4 PFOA	Ave	0.9276	0.9395		2.53	2.50	1.3	50.0
13C4 PFOS	Ave	0.8066	0.7755		2.30	2.39	-3.9	50.0
13C5 PFNA	Ave	0.7973	0.7781		2.44	2.50	-2.4	50.0
13C8 FOSA	Ave	1.007	0.9584		2.38	2.50	-4.8	50.0
M2-8:2FTS	Ave	0.2409	0.2441		2.43	2.40	1.3	40.0
13C2 PFDA	Ave	0.6701	0.6473		2.42	2.50	-3.4	50.0
d3-NMeFOSAA	Ave	0.3798	0.3774		2.48	2.50	-0.6	50.0
d5-NEtFOSAA	Ave	0.3749	0.3903		2.60	2.50	4.1	50.0
13C2 PFUnA	Ave	0.5781	0.5398		2.34	2.50	-6.6	50.0
13C2 PFDoA	Ave	0.6242	0.5788		2.32	2.50	-7.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7395		2.34	2.50	-6.6	50.0
13C2-PFHxDA	Ave	1.288	1.245		2.42	2.50	-3.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_036.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 21-Apr-2018 11:31:50 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:42:20 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.441	0.0	1.000	6185307	2.43		97.4	39348	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	5944831	2.59		104	1702	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.701	0.002	0.556	4097135	2.50		100	59277	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	4728142	2.42		96.8	4397	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	84584	2.25		96.8	600	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	6534888	2.29		104	25112	
298.90 > 99.00	1.739	1.739	0.0	1.000	2648449		2.47(1.25-3.74)		20241	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.948	0.001	1.000	646336	2.40		103	5945	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.949	0.0	1.000	1523115	2.61		112	64126	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.980	0.013	1.000	4389079	2.42		96.9	91534	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.993	0.0	1.000	4415612	2.48		99.0	6760	
313.00 > 119.00	1.993	1.993	0.0	1.000	420832		10.49(5.03-15.10)		4670	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	6310971	2.43		103	38448	
349.00 > 99.00	2.004	2.016	-0.011	0.994	2292483		2.75(1.36-4.07)		31418	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.082	0.001	1.000	234882	2.10		83.8	9748	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.005	730548	2.79		112	4192	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.328	2.319	0.009	1.000	4280900	2.43		97.1	66325	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.328	2.328	0.0	1.000	4523689	2.64		106	6127	
363.00 > 169.00	2.328	2.328	0.0	1.000	1751216		2.58(1.13-3.40)		8006	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.332	0.009	1.000	4931931	2.27		95.8	51689	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.328	2.328	0.0	0.994	5307711	2.25		98.9	12302	
399.00 > 99.00	2.328	2.328	0.0	0.994	1724243		3.08(1.50-4.49)		8728	
65 Adona										
377.00 > 251.00	2.368	2.368	0.0	1.000	13435268	2.65		106	135440	
377.00 > 85.00	2.368	2.368	0.0	1.000	8248674		1.63(0.84-2.53)		96786	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.652	0.013	1.000	912697	2.42		102	10464	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.665	2.665	0.0	1.000	1607521	2.47		104	14675	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.682	0.006	1.000	4436578	2.53		101	78264	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.688	0.0	1.000	4861666	2.37		94.8	4103	
413.00 > 169.00	2.688	2.688	0.0	1.000	2647678		1.84(0.84-2.52)		9350	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.688	0.0		4722332	2.50			76339	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.695	2.695	0.0	1.000	4808314	2.47		104	26566	
449.00 > 99.00	2.695	2.695	0.0	1.000	1293008		3.72(1.94-5.82)		14967	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.055	0.005	1.000	3500907	2.30		96.1	23476	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.055	0.005	1.000	3674377	2.44		97.6	66561	
20 Perfluorononanoic acid										
463.00 > 419.00	3.067	3.067	0.0	1.002	3816096	2.49		99.6	11882	
463.00 > 169.00	3.060	3.067	-0.006	1.000	943423		4.04(1.90-5.69)		16105	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.060	3.060	0.0	1.000	3902036	2.45		106	10026	
499.00 > 99.00	3.060	3.060	0.0	1.000	841691		4.64(2.31-6.93)		7731	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.272	3.272	0.0	1.000	6534032	2.37		102	47508	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.393	0.005	1.000	4526002	2.38		95.2	35964	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	4545692	2.48		99.3	19957	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.407	3.407	0.0	1.000	2723753	2.33		96.9	22740	
549.00 > 99.00	3.416	3.407	0.009	1.003	1074291		2.54(1.33-3.97)		21294	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.416	0.0	1.000	1371379	2.35		98.2	45364	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.411	0.005	1.000	1104178	2.43		101	11492	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.420	0.006	1.000	3056632	2.41		96.6	86395	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.426	0.0	1.000	3016082	2.39		95.7	13235	
513.00 > 169.00	3.426	3.426	0.0	1.000	554310		5.44(2.36-7.09)		9020	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.569	0.006	1.000	1782356	2.48		99.4	19684	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.585	3.585	0.0	1.003	1879537	2.64		106	12710	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.740	0.0	1.000	2298075	2.42		100	17120	
599.00 > 99.00	3.740	3.740	0.0	1.000	746304		3.08(1.39-4.16)		15417	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.743	0.007	1.000	1843294	2.60		104	26006	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.000	2199123	2.55		102	9905	
563.00 > 169.00	3.761	3.761	0.0	1.000	539105		4.08(2.12-6.36)		16368	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.003	1716009	2.49		99.6	23925	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.754	0.007	1.000	2549236	2.33		93.4	52156	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.919	3.919	0.0	1.000	9979346	2.34		99.3	70343	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.042	0.009	1.000	2733414	2.32		92.7	32306	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	2815411	2.47		98.8	3514	
613.00 > 169.00	4.051	4.051	0.0	1.000	699498		4.02(2.13-6.40)		6693	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	3263165	2.46		98.2	3427	
663.00 > 169.00	4.319	4.319	0.0	1.000	1052293		3.10(1.25-3.76)		8111	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.554	4.548	0.006	1.000	3492121	2.34		93.4	25133	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.554	4.554	0.0	1.000	884363	2.52		101	8142	
713.00 > 219.00	4.554	4.554	0.0	1.000	617167		1.43(0.71-2.13)		7954	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.967	4.961	0.006	1.000	5880138	2.42		96.7	19063	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.967	0.0	1.000	5813536	2.59		104	2756	
813.00 > 169.00	4.967	4.967	0.0	1.000	943261		6.16(2.86-8.58)		6028	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.336	5.336	0.0	1.000	5561735	2.36		94.2	1979	
913.00 > 169.00	5.336	5.336	0.0	1.000	695480		8.00(3.83-11.48)		3887	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 24-Apr-2018 16:42:20 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_036.d

Injection Date: 21-Apr-2018 11:31:50 Instrument ID: A8_N

Lims ID: CCV L5

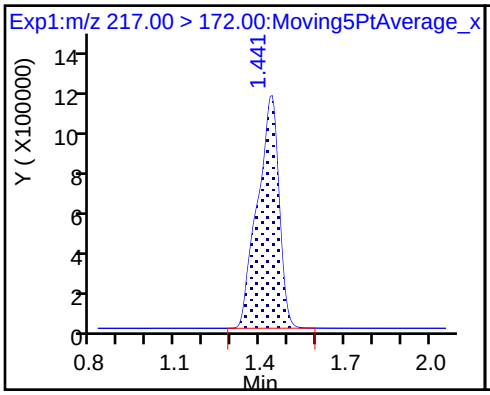
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 14

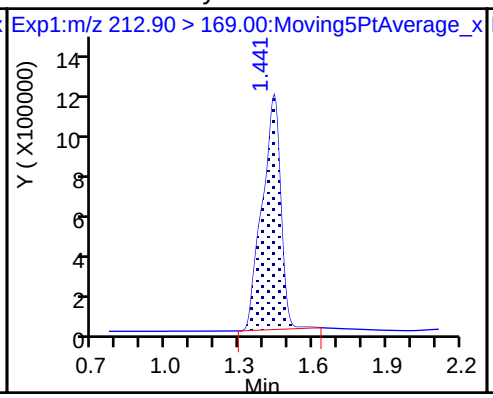
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

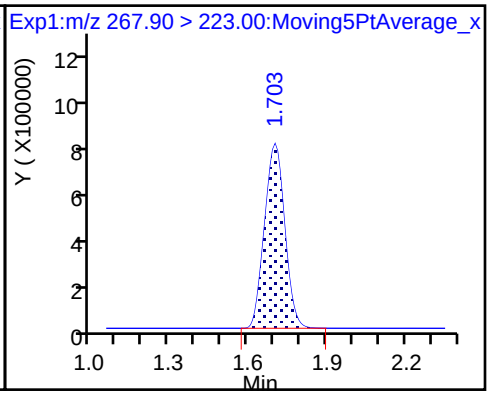
D 1 13C4 PFBA



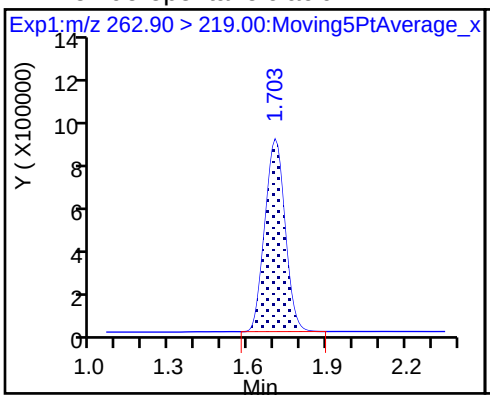
2 Perfluorobutyric acid



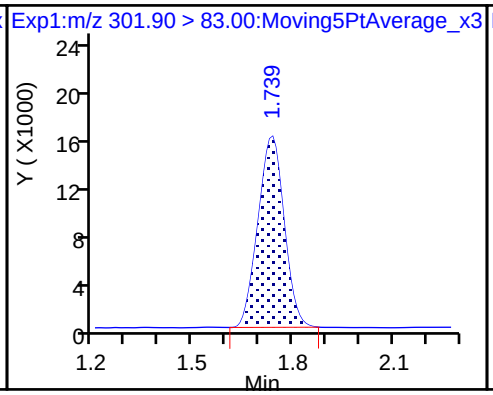
D 3 13C5-PFPeA



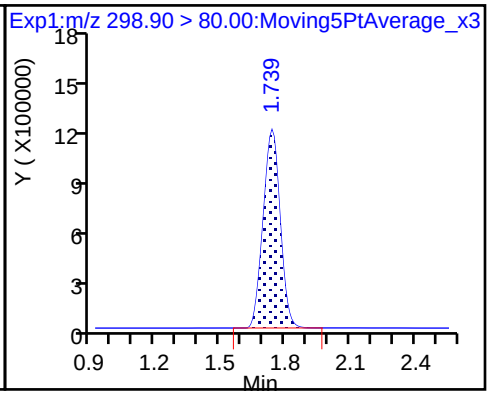
4 Perfluoropentanoic acid



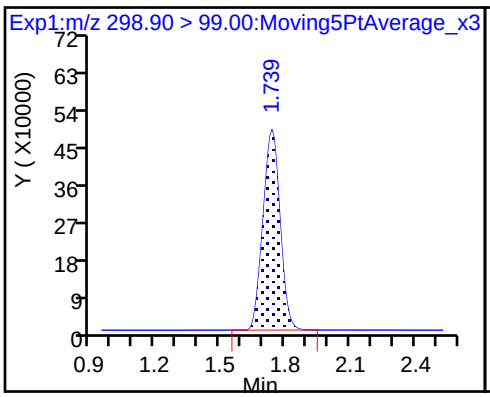
D 47 13C3-PFBS



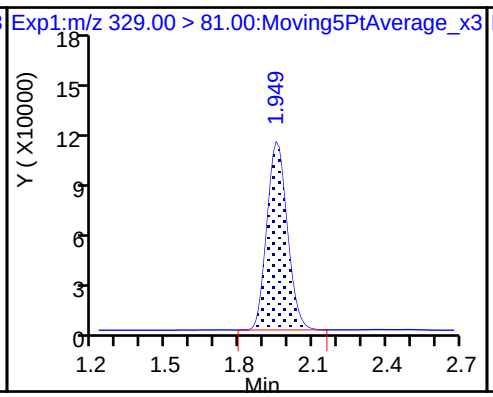
5 Perfluorobutanesulfonic acid



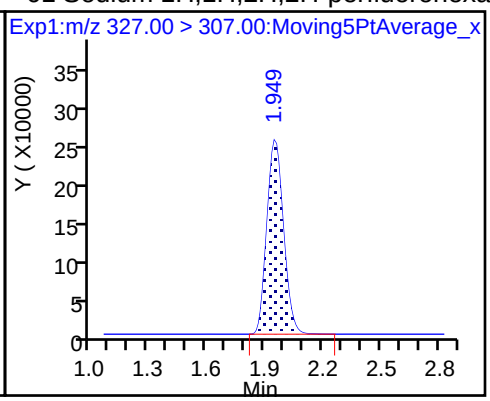
5 Perfluorobutanesulfonic acid



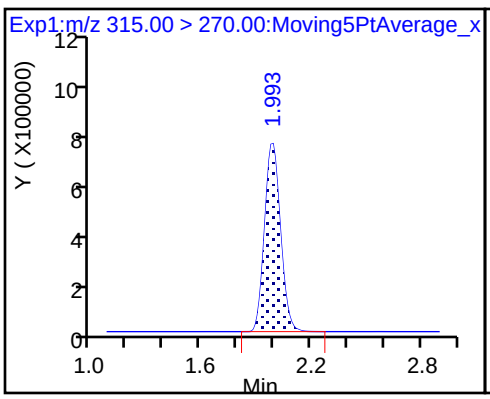
D 60 M2-4:2FTS



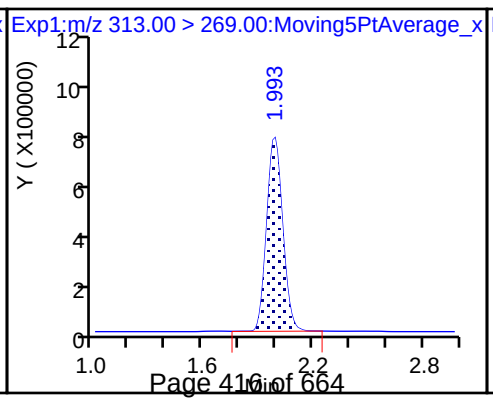
61 Sodium 1H,1H,2H,2H-perfluorohexane



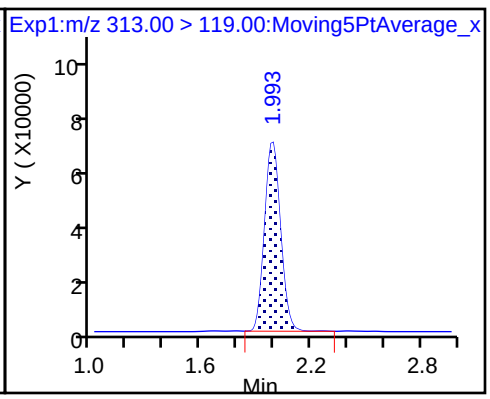
D 7 13C2 PFHxA



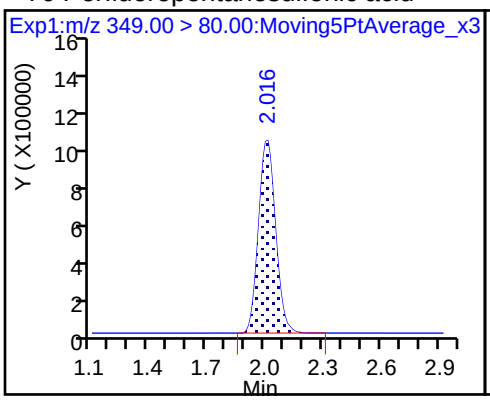
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid



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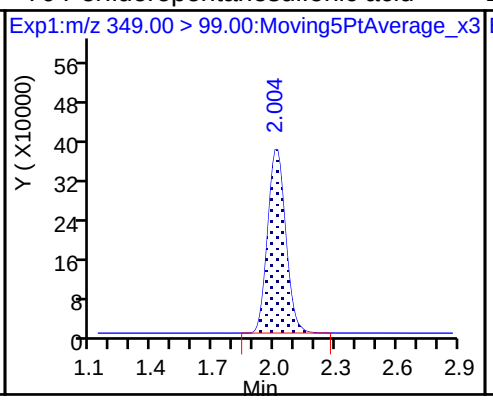
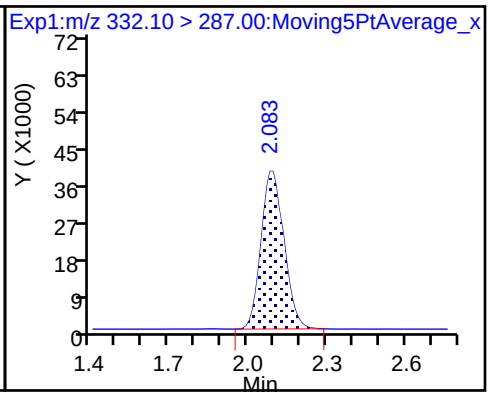
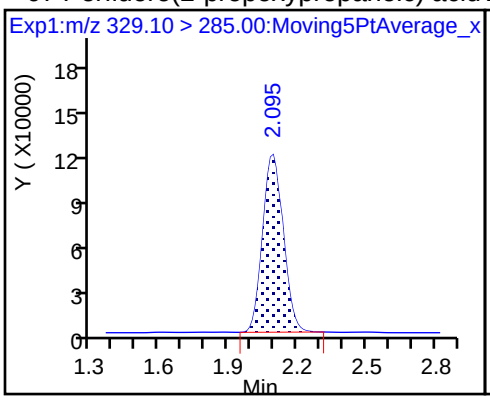


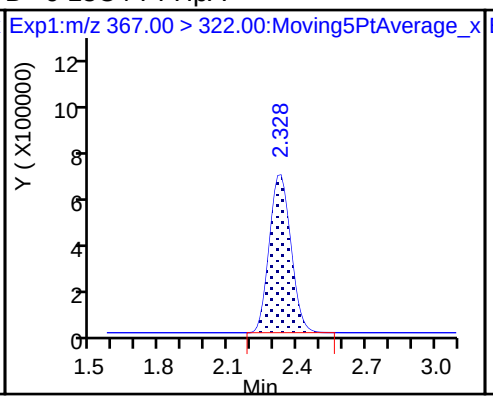
D 64 13C3 HFPO-DA



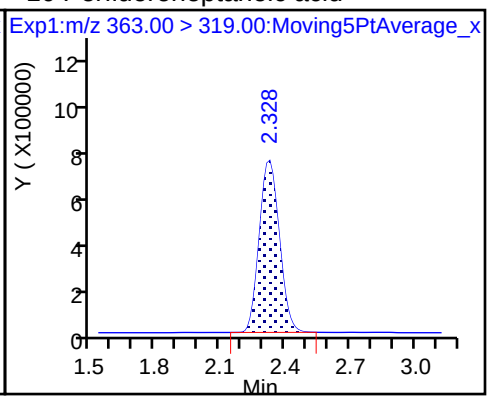
67 Perfluoro(2-propoxypropanoic) acid



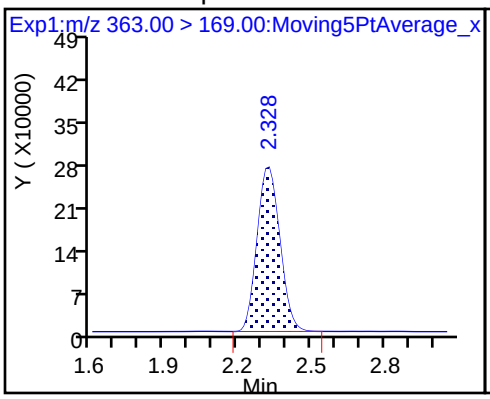
D 9 13C4-PFHpA



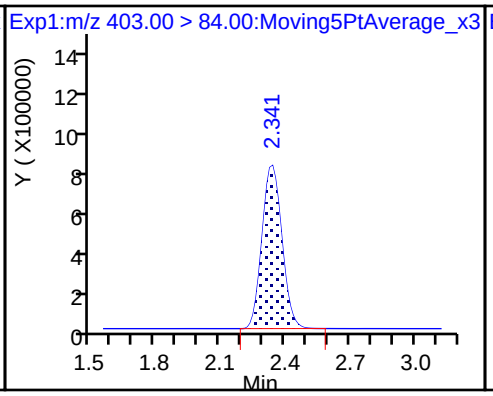
10 Perfluoroheptanoic acid



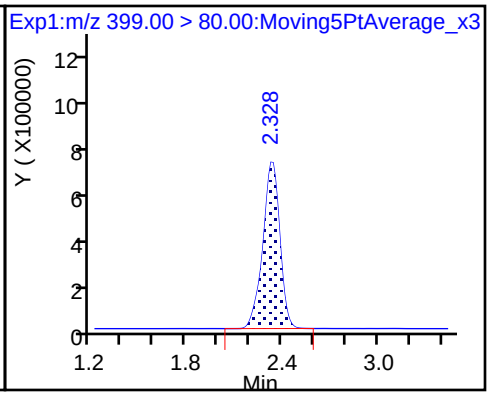
10 Perfluoroheptanoic acid



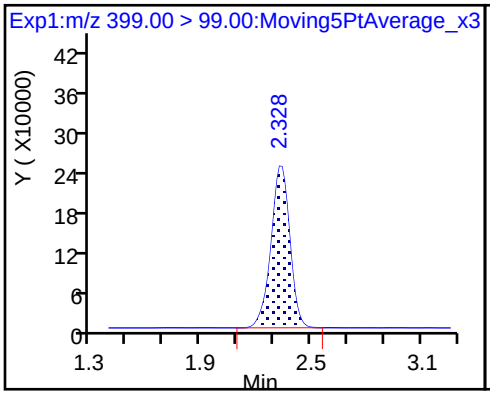
D 11 18O2 PFHxS



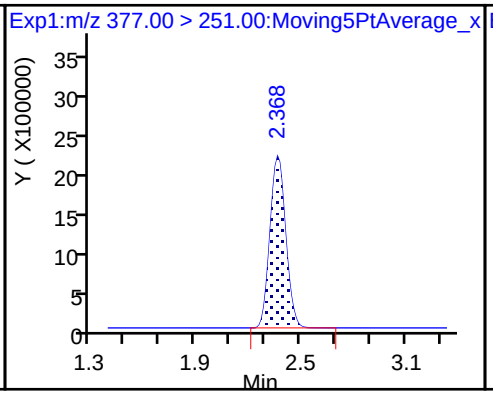
8 Perfluorohexanesulfonic acid



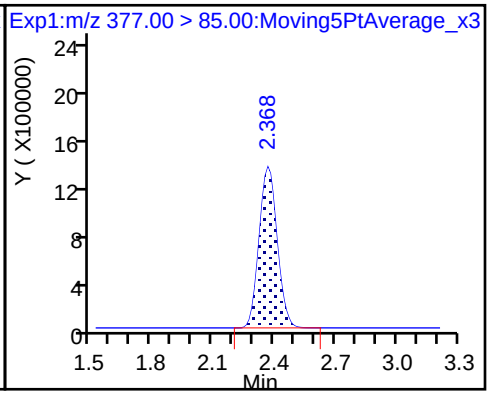
8 Perfluorohexanesulfonic acid



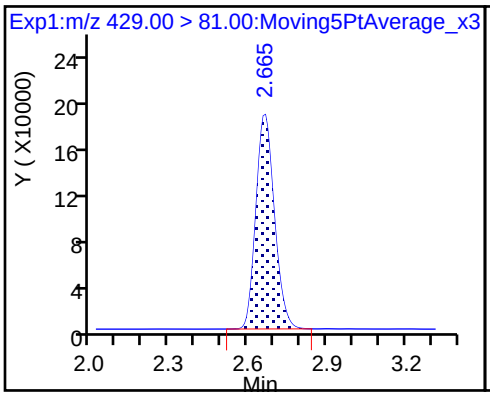
65 Adona



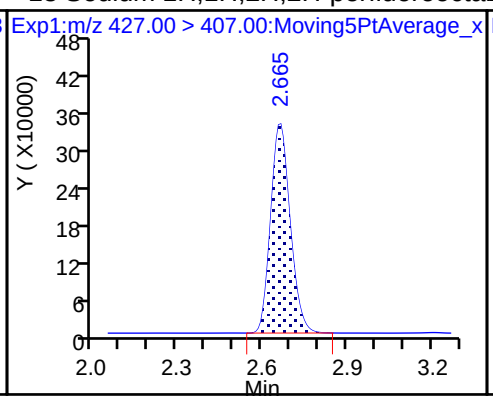
65 Adona



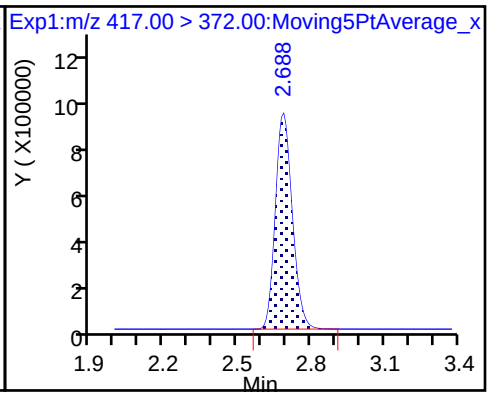
D 12 M2-6:2FTS



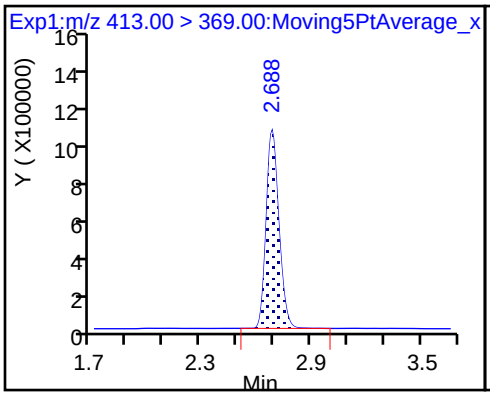
13 Sodium 1H,1H,2H,2H-perfluorooctane



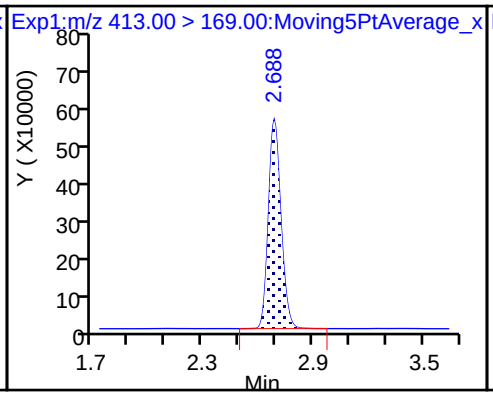
D 14 13C4 PFOA



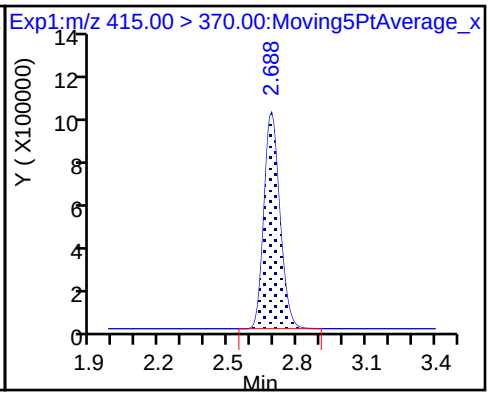
15 Perfluorooctanoic acid



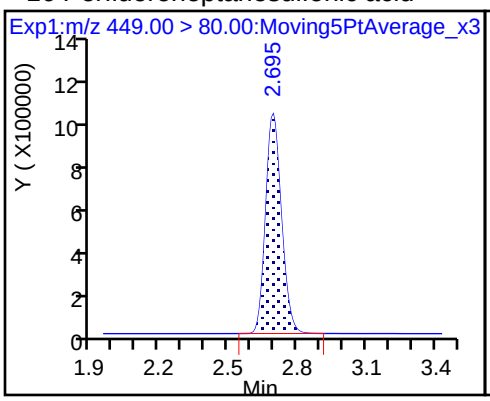
15 Perfluorooctanoic acid



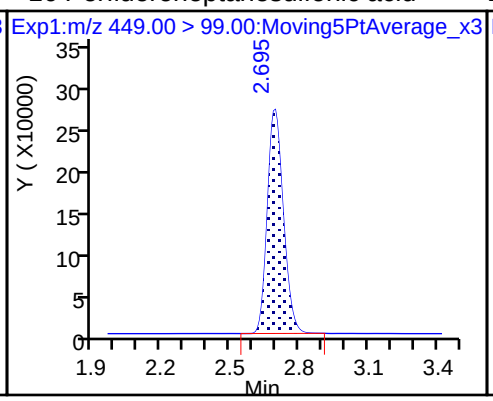
* 62 13C2-PFOA



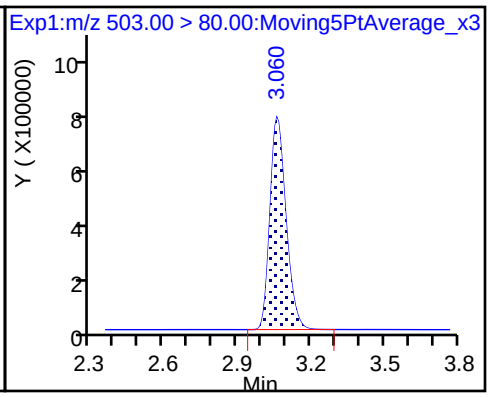
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 18 13C4 PFOS



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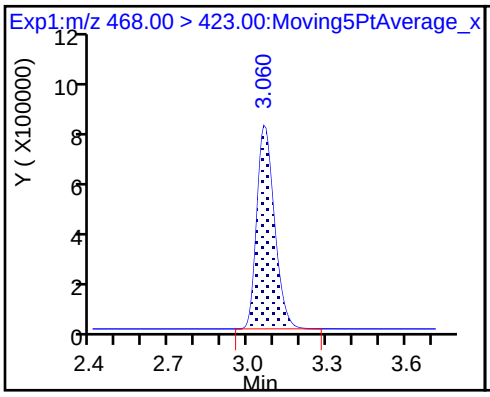
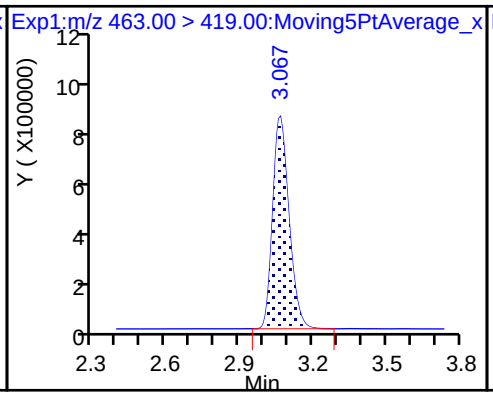
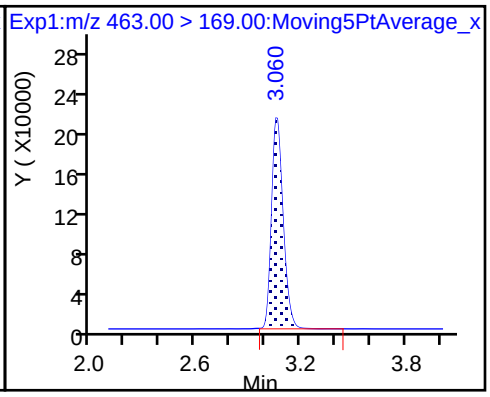


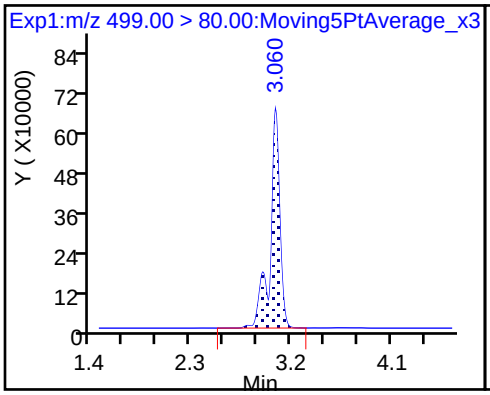
20 Perfluorononanoic acid



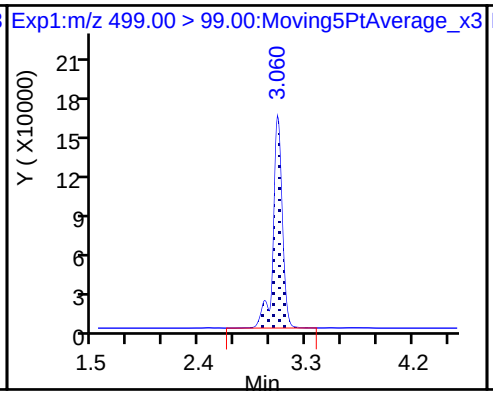
20 Perfluorononanoic acid



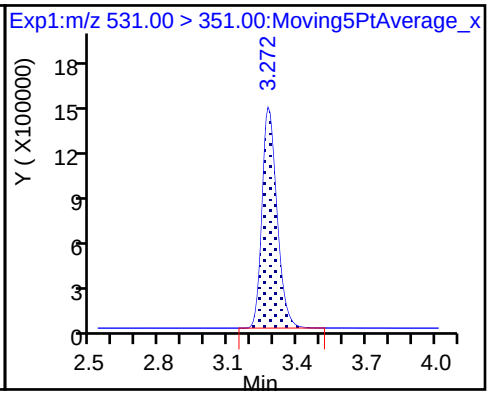
17 Perfluorooctane sulfonic acid



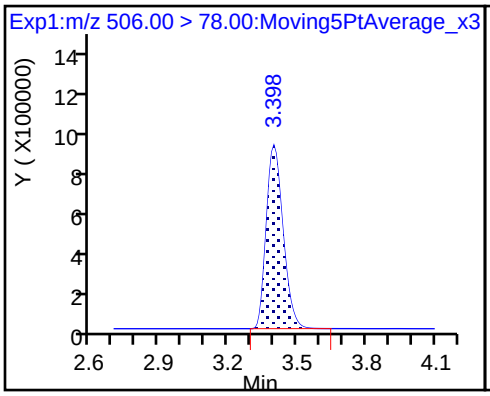
17 Perfluorooctane sulfonic acid



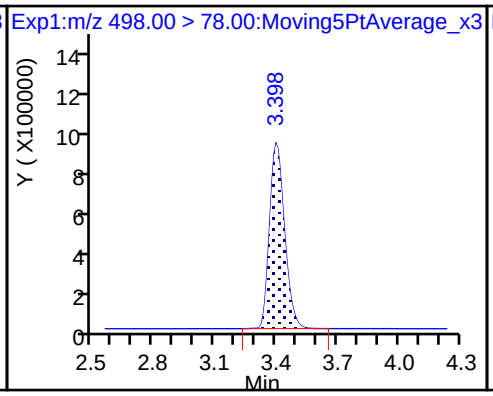
69 9-Chlorohexadecafluoro-3-oxanonane



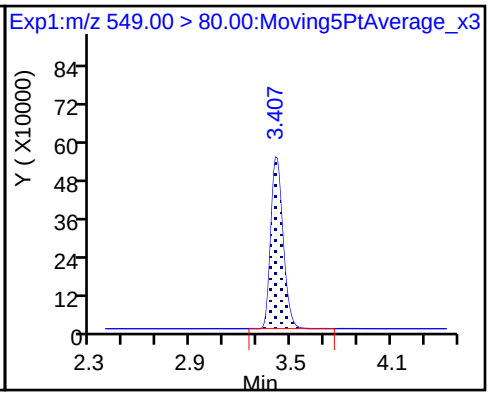
D 21 13C8 FOSA



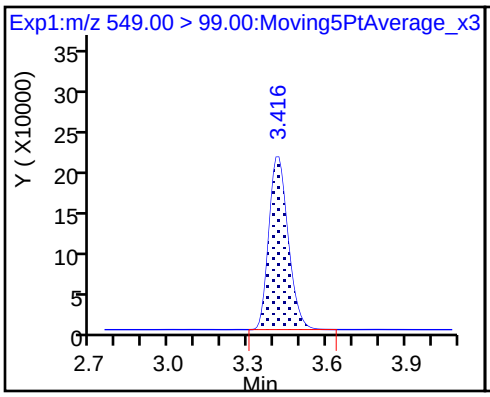
22 Perfluorooctane Sulfonamide



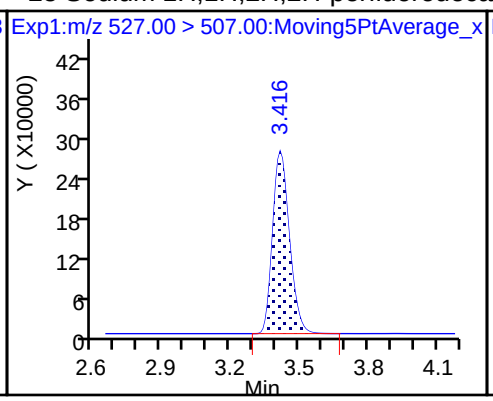
68 Perfluorononanesulfonic acid



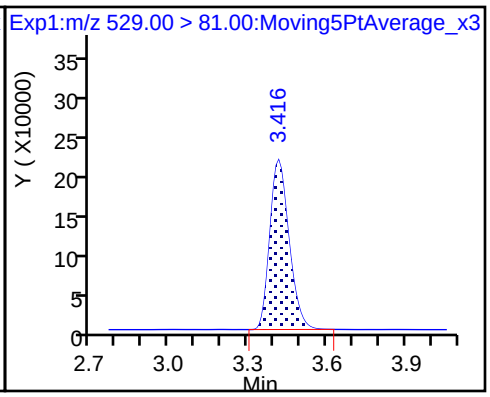
68 Perfluorononanesulfonic acid



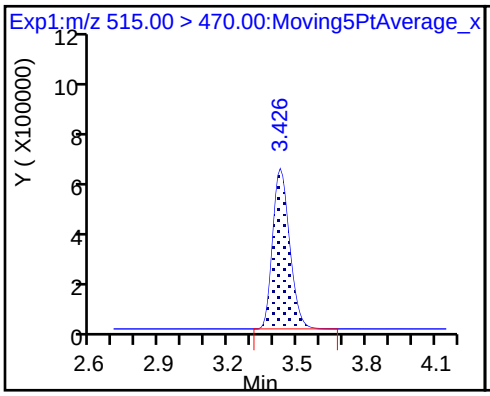
25 Sodium 1H,1H,2H,2H-perfluorodecane



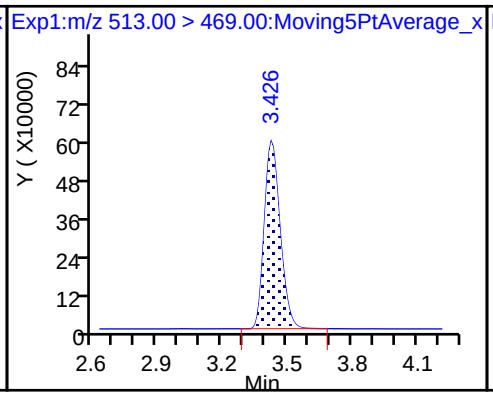
D 26 M2-8:2FTS



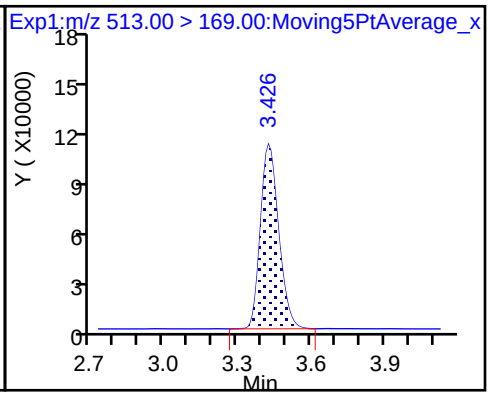
D 23 13C2 PFDA



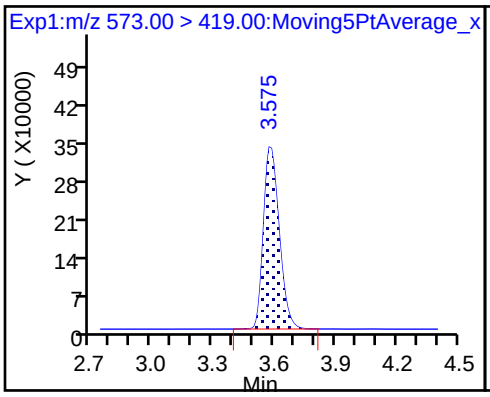
24 Perfluorodecanoic acid



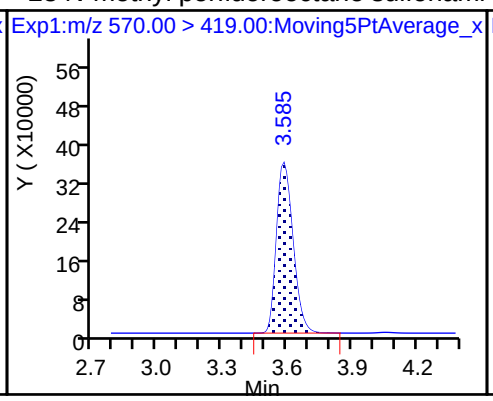
24 Perfluorodecanoic acid



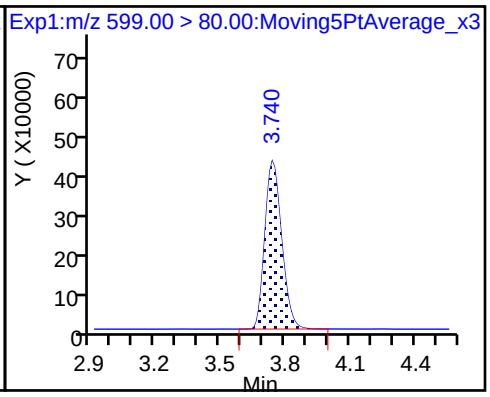
D 27 d3-NMeFOSAA



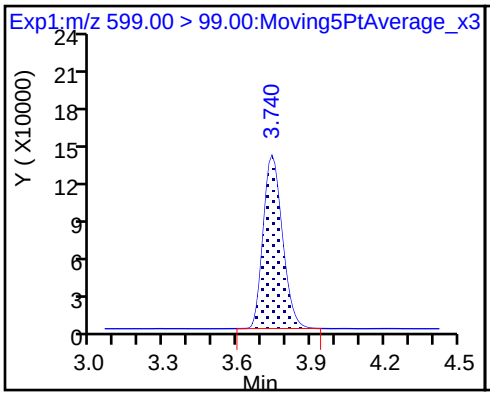
28 N-methyl perfluorooctane sulfonami



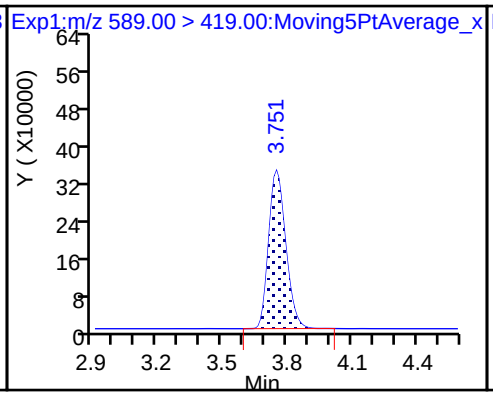
29 Perfluorodecane Sulfonic acid



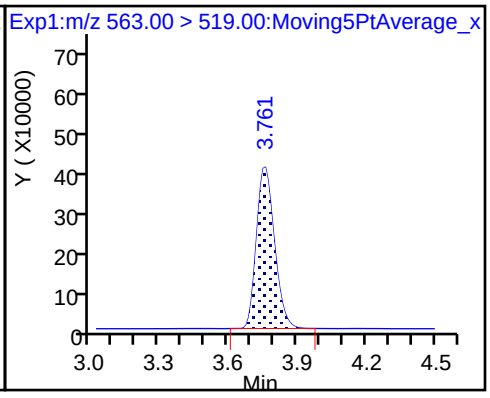
29 Perfluorodecane Sulfonic acid



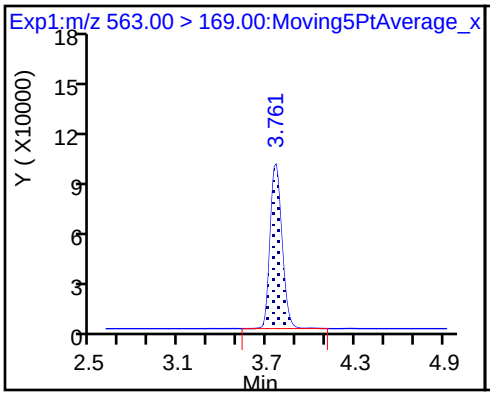
D 32 d5-NEtFOSAA



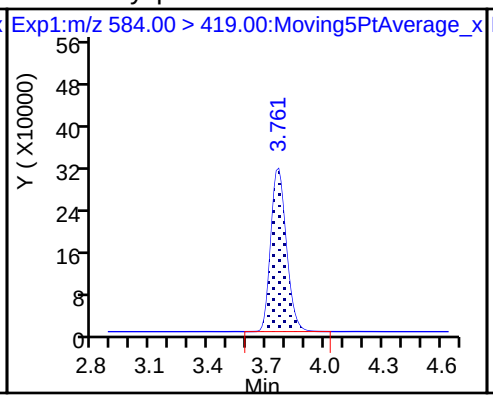
31 Perfluoroundecanoic acid



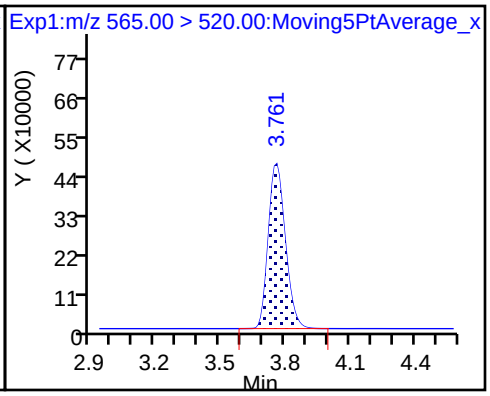
31 Perfluoroundecanoic acid



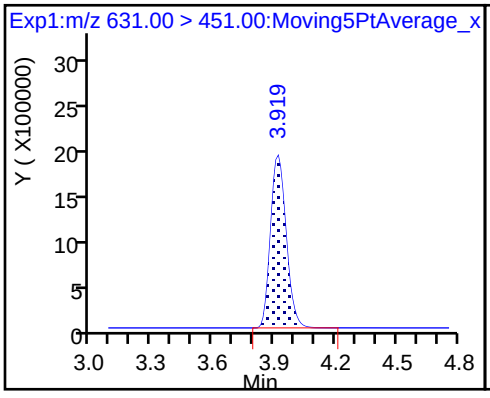
33 N-ethyl perfluorooctane sulfonamid



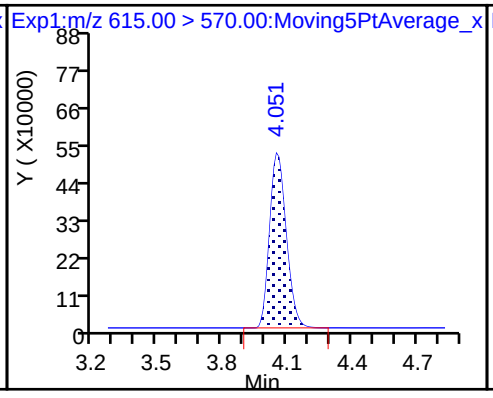
D 30 13C2 PFUnA



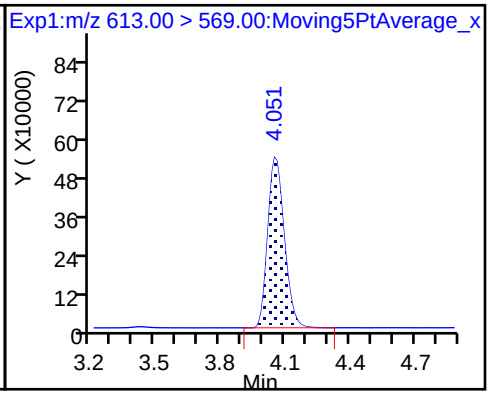
66 11-Chloroeicosafluoro-3-oxaundecan



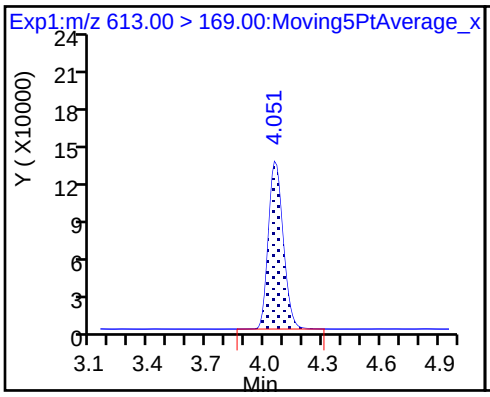
D 36 13C2 PFDoA



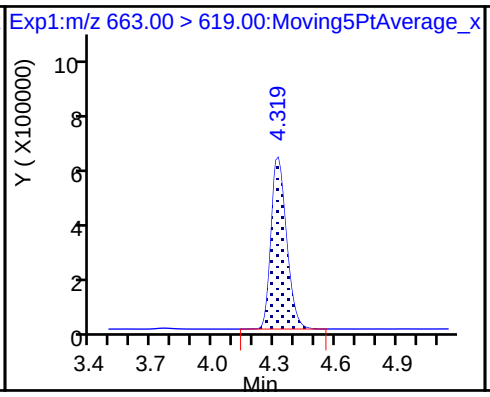
37 Perfluorododecanoic acid



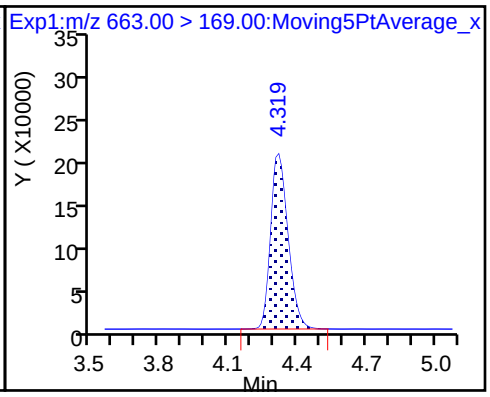
37 Perfluorododecanoic acid



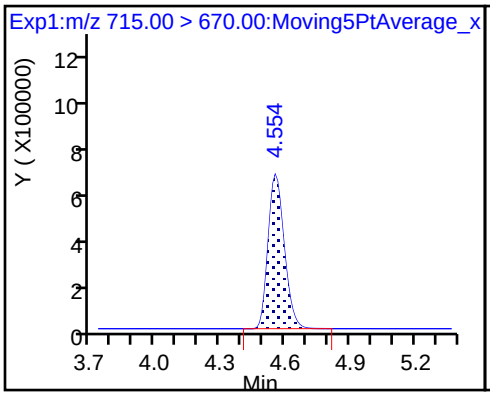
41 Perfluorotridecanoic acid



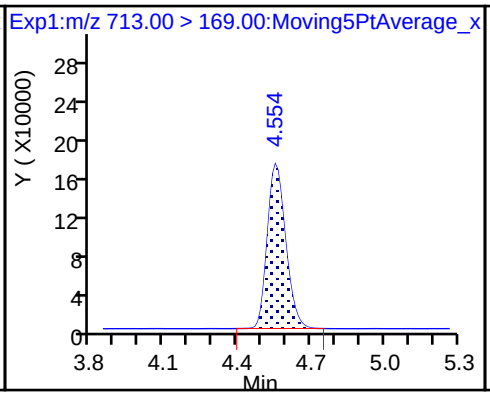
41 Perfluorotridecanoic acid



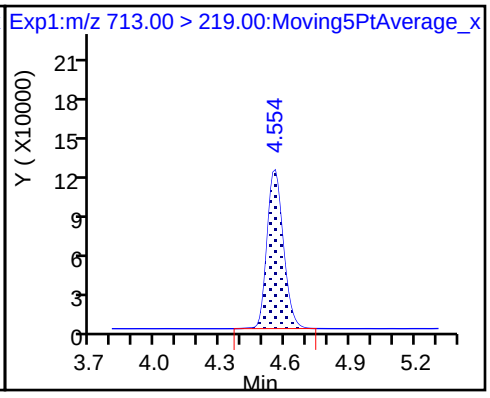
D 43 13C2-PFTeDA



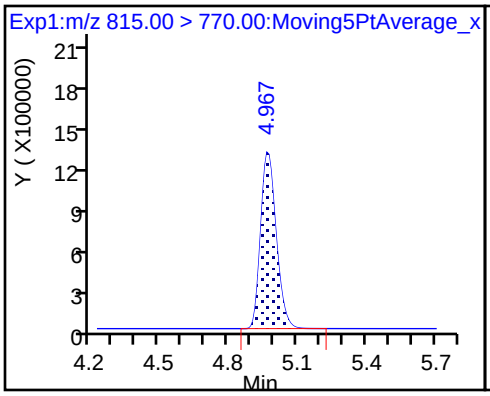
42 Perfluorotetradecanoic acid



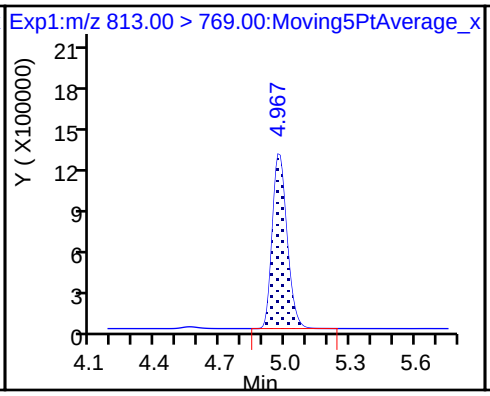
42 Perfluorotetradecanoic acid



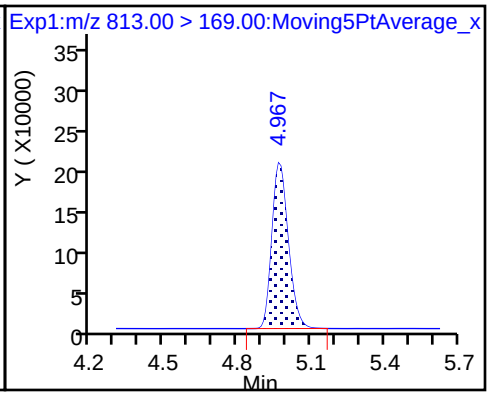
D 44 13C2-PFHxDA



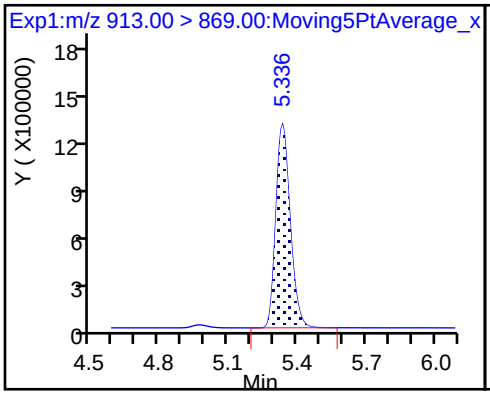
45 Perfluorohexadecanoic acid



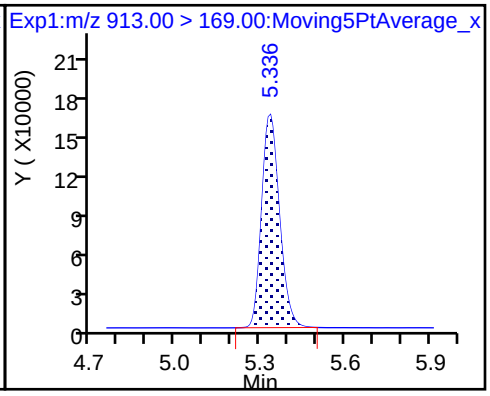
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCVL 320-219909/2 Calibration Date: 04/26/2018 06:01

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9874		0.0532	0.0500	6.3	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.227		0.0515	0.0500	2.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	79.47		0.0449	0.0442	1.5	50.0
4:2 FTS	AveID	16.03	15.11		0.130	0.0467	-5.8	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.059		0.0521	0.0500	4.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	67.86		0.0445	0.0469	-5.1	50.0
HFPO-DA (GenX)	AveID	2.785	2.774		0.0498	0.0500	-0.4	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.072		0.0536	0.0500	7.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.277		0.0513	0.0455	12.8	50.0
Adona	AveID	3.464	3.690		0.0533	0.0500	6.5	50.0
6:2FTS	AveID	1.691	1.791		0.0502	0.0474	6.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.351		0.0585	0.0500	16.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.347		0.0483	0.0476	1.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.122		0.0479	0.0464	3.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9946		0.0477	0.0500	-4.6	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.911		0.0472	0.0466	1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9717		0.0480	0.0500	-3.9	50.0
8:2FTS	AveID	1.265	1.320		0.0500	0.0479	4.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.8211		0.0493	0.0480	2.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9596		0.0465	0.0500	-7.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.054		0.0780	0.0500	5.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6314		0.0469	0.0482	-2.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9882		0.0529	0.0500	5.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8681		0.0514	0.0500	2.7	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	3.028		0.0490	0.0471	4.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.146		0.0549	0.0500	9.8	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.130		0.0465	0.0500	-7.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2448		0.0487	0.0500	-2.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.302		0.0465	0.0500	-7.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCVL 320-219909/2 Calibration Date: 04/26/2018 06:01

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9695		0.0483	0.0500	-3.4	50.0
13C4 PFBA	Ave	1.345	1.329		2.47	2.50	-1.2	50.0
13C5 PFPeA	Ave	0.8672	0.8824		2.54	2.50	1.8	50.0
13C3-PFBS	Ave	0.0199	0.0199		2.32	2.33	-0.0	50.0
M2-4:2FTS	Ave	0.1425	0.1476		2.42	2.34	3.6	50.0
13C2 PFHxA	Ave	0.9590	0.9613		2.51	2.50	0.2	50.0
13C3 HFPO-DA	Ave	0.0593	0.0535		2.26	2.50	-9.8	50.0
13C4-PFHpA	Ave	0.9333	0.9293		2.49	2.50	-0.4	50.0
18O2 PFHxS	Ave	1.152	1.119		2.30	2.37	-2.9	50.0
M2-6:2FTS	Ave	0.2000	0.2138		2.54	2.38	6.9	50.0
13C4 PFOA	Ave	0.9276	0.9027		2.43	2.50	-2.7	50.0
13C4 PFOS	Ave	0.8066	0.7636		2.26	2.39	-5.3	50.0
13C5 PFNA	Ave	0.7973	0.7840		2.46	2.50	-1.7	50.0
13C8 FOSA	Ave	1.007	0.9601		2.38	2.50	-4.7	50.0
M2-8:2FTS	Ave	0.2409	0.2257		2.24	2.40	-6.3	50.0
13C2 PFDA	Ave	0.6701	0.6675		2.49	2.50	-0.4	50.0
d3-NMeFOSAA	Ave	0.3798	0.3877		2.55	2.50	2.1	50.0
d5-NEtFOSAA	Ave	0.3749	0.3896		2.60	2.50	3.9	50.0
13C2 PFUnA	Ave	0.5781	0.5557		2.40	2.50	-3.9	50.0
13C2 PFDoA	Ave	0.6242	0.5826		2.33	2.50	-6.7	50.0
13C2-PFTeDA	Ave	0.7915	0.7562		2.39	2.50	-4.5	50.0
13C2-PFHxDA	Ave	1.288	1.294		2.51	2.50	0.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 26-Apr-2018 06:01:22 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:51 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	122849	0.0532		106	53.5	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6220605	2.47		98.8	36950	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.553	4129805	2.54		102	69434	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	101312	0.0515		103	86.1	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	86555	2.32		99.9	839	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	130763	0.0449		102	414	
298.90 > 99.00	1.739	1.739	0.0	1.005	53713		2.43(1.25-3.74)		615	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	645253	2.42		104	5765	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	26262	0.0440		94.2	1520	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4498852	2.51		100	94473	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.994	-0.012	1.000	95290	0.0521		104	80.1	
313.00 > 119.00	1.994	1.994	0.0	1.006	11984		7.95(5.03-15.10)		103	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.016	-0.011	1.000	118484	0.0445		94.9	693	
349.00 > 99.00	2.005	2.016	-0.011	1.000	43266		2.74(1.36-4.07)		877	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.095	-0.011	1.000	250452	2.26		90.2	7167	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.095	-0.011	1.000	13894	0.0498		99.6	89.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.321	0.001	1.000	4348964	2.49		99.6	76175	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.321	0.001	1.000	93280	0.0536		107	104	
363.00 > 169.00	2.322	2.321	0.001	1.000	34477		2.71(1.13-3.40)		141	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.334	0.001	1.000	4952718	2.30		97.1	60622	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.334	0.001	1.000	121643	0.0513		113	269	
399.00 > 99.00	2.335	2.334	0.001	1.000	38040		3.20(1.50-4.49)		296	
65 Adona										
377.00 > 251.00	2.374	2.372	0.002	1.000	263733	0.0533		107	3879	
377.00 > 85.00	2.361	2.372	-0.011	0.995	144510		1.83(0.84-2.53)		3357	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	950442	2.54		107	13333	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	33979	0.0502		106	935	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4680051	2.50			55018	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	4224629	2.43		97.3	46736	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	114152	0.0585		117	80.1	
413.00 > 169.00	2.690	2.690	0.0	1.003	59811		1.91(0.84-2.52)		174	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	91672	0.0483		101	659	
449.00 > 99.00	2.690	2.690	0.0	1.000	27463		3.34(1.94-5.82)		634	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	1.000	74447	0.0479		103	314	
499.00 > 99.00	3.057	3.059	-0.002	1.000	17982		4.14(2.31-6.93)		280	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.059	0.005	1.000	72984	0.0477		95.4	275	
463.00 > 169.00	3.057	3.059	-0.002	0.998	19978		3.65(1.90-5.69)		346	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.063	-0.006	1.000	3416275	2.26		94.7	23265	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.063	0.001	1.000	3669088	2.46		98.3	61500	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.273	-0.002	1.000	127286	0.0472		101	1946	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.399	-0.003	1.000	87329	0.0480		96.1	375	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	4493421	2.38		95.3	59941	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.414	3.408	0.006	1.000	56338	0.0493		103	625	
549.00 > 99.00	3.405	3.408	-0.003	0.997	20687		2.72(1.33-3.97)		582	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.417	-0.003	1.000	26718	0.0500		104	1324	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.423	-0.009	1.000	1011861	2.24		93.7	10957	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.427	0.006	1.003	59954	0.0465		93.0	299	
513.00 > 169.00	3.424	3.427	-0.003	1.000	11307		5.30(2.36-7.09)		204	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.432	-0.008	1.000	3123868	2.49		99.6	69001	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.582	0.002	1.000	1814283	2.55		102	22574	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.586	-0.002	1.000	38245	0.0528		106	221	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	43499	0.0469		97.2	335	
599.00 > 99.00	3.738	3.741	-0.003	1.000	18362		2.37(1.39-4.16)		669	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.758	0.001	1.000	2600619	2.40		96.1	40568	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.758	-0.009	1.000	1823192	2.60		104	27840	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.762	-0.003	1.000	45151	0.0514		103	263	
563.00 > 169.00	3.759	3.762	-0.003	1.000	12799		3.53(2.12-6.36)		372	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.762	-0.003	1.003	36034	0.0529		106	896	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.918	-0.002	1.000	203888	0.0490		104	2774	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.051	-0.003	1.000	62469	0.0549		110	82.9	
613.00 > 169.00	4.048	4.051	-0.003	1.000	14516		4.30(2.13-6.40)		205	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.059	-0.011	1.000	2726541	2.33		93.3	27014	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	61634	0.0465		93.0	71.3	
663.00 > 169.00	4.318	4.319	-0.001	1.000	22257		2.77(1.25-3.76)		231	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.563	-0.001	1.000	3539031	2.39		95.5	22400	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.562	4.564	-0.002	1.000	17327	0.0487		97.5	154	
713.00 > 219.00	4.551	4.564	-0.013	0.998	12526		1.38(0.71-2.13)		255	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.975	-0.002	1.000	6055812	2.51		100	14276	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.976	-0.003	1.000	157699	0.0465		92.9	72.2	
813.00 > 169.00	4.973	4.976	-0.003	1.000	25937		6.08(2.86-8.58)		185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.344	-0.002	1.000	117426	0.0483		96.6	50.0	
913.00 > 169.00	5.342	5.344	-0.002	1.000	13483		8.71(3.83-11.48)		121	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:36:52 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_005.d

Injection Date: 26-Apr-2018 06:01:22 Instrument ID: A8_N

Lims ID: CCVL

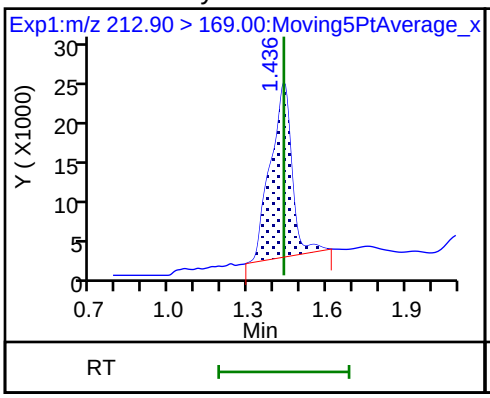
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

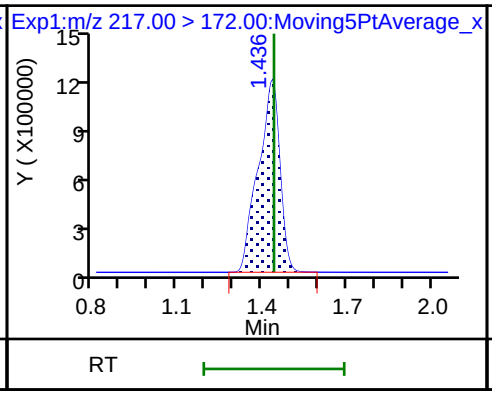
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

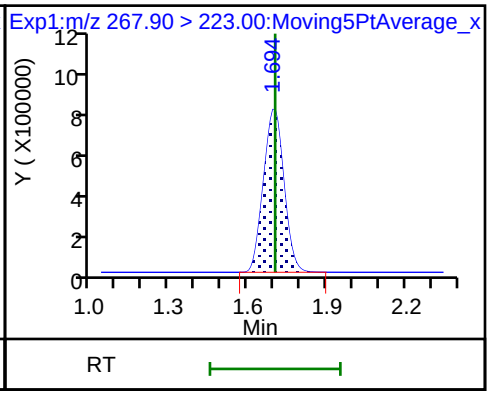
2 Perfluorobutyric acid



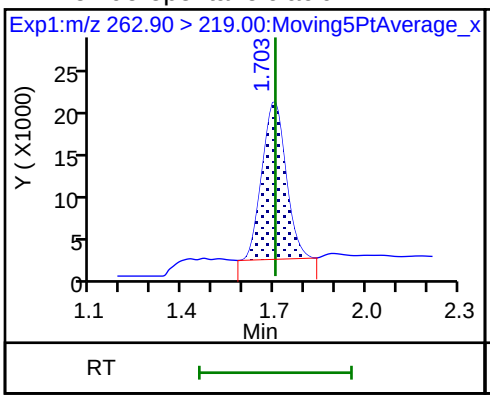
D 1 13C4 PFBA



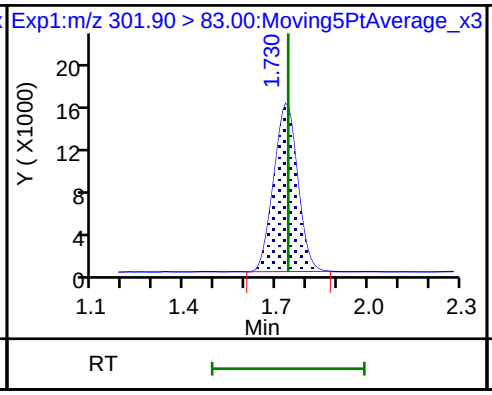
D 3 13C5-PFPeA



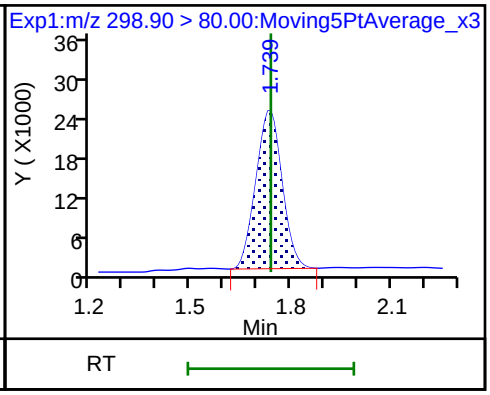
4 Perfluoropentanoic acid



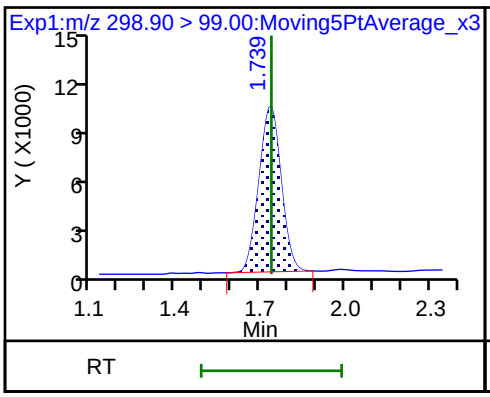
D 47 13C3-PFBS



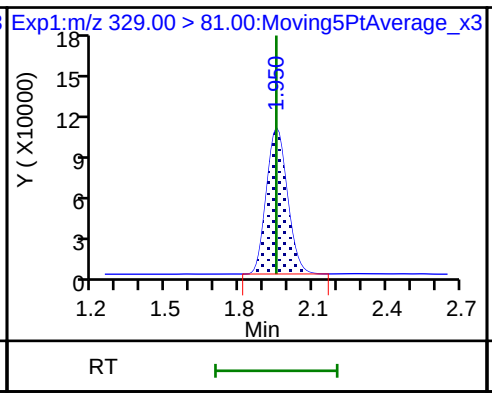
5 Perfluorobutanesulfonic acid



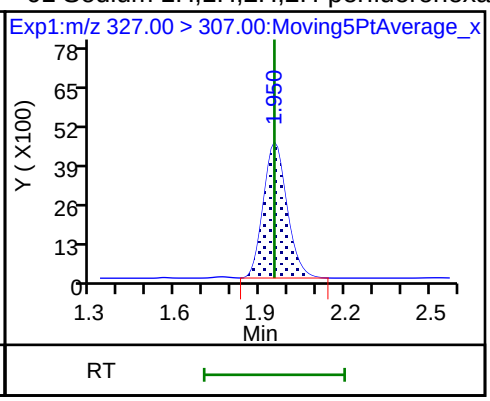
5 Perfluorobutanesulfonic acid



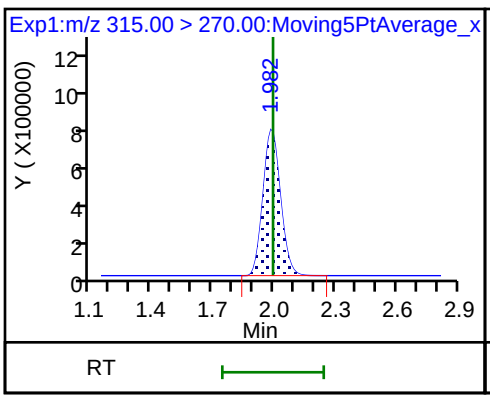
D 60 M2-4:2FTS



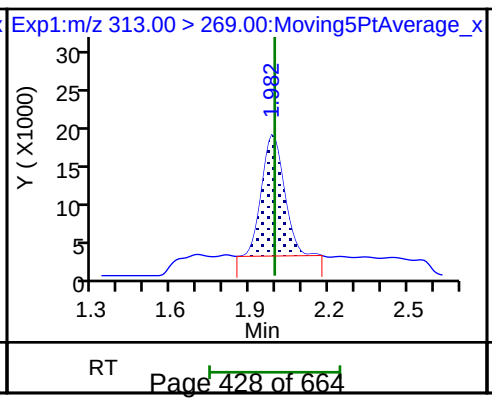
61 Sodium 1H,1H,2H,2H-perfluorohexane



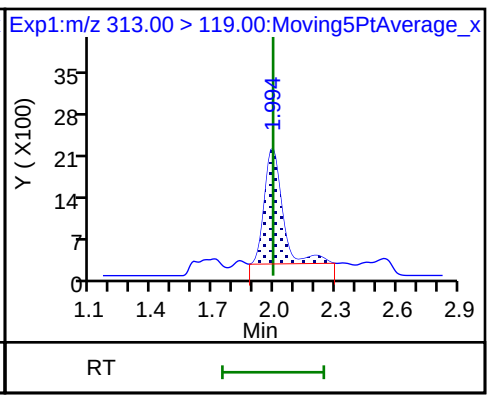
D 7 13C2 PFHxA



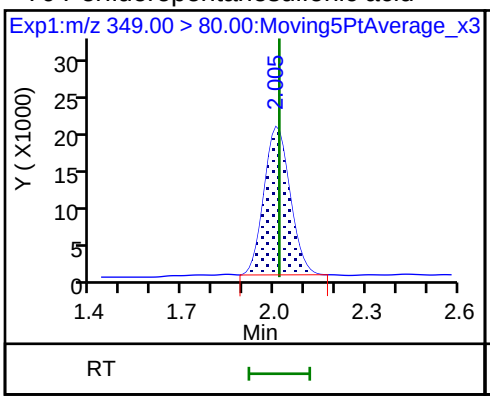
6 Perfluorohexanoic acid



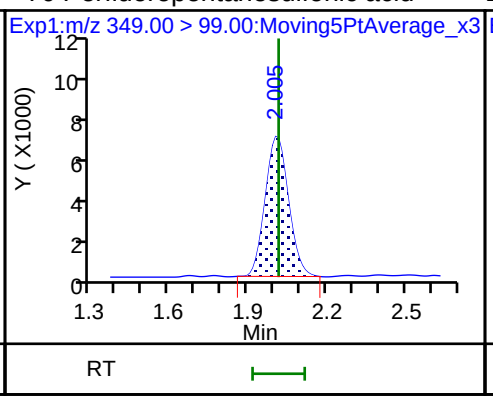
6 Perfluorohexanoic acid



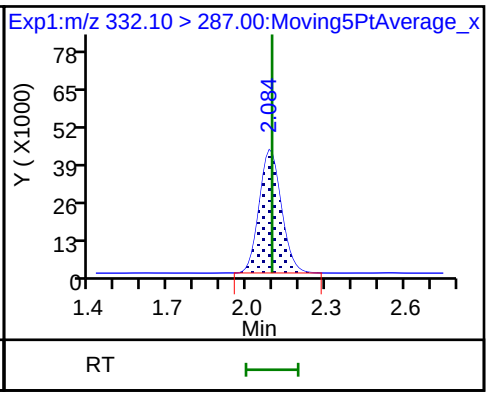
70 Perfluoropentanesulfonic acid



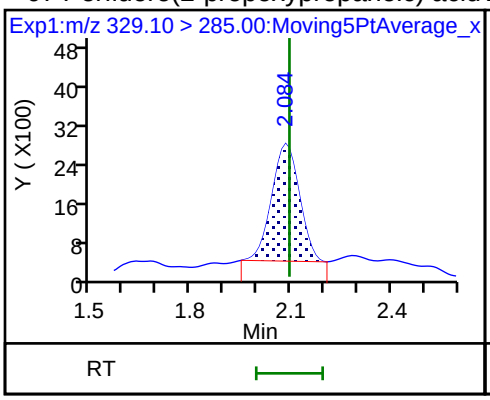
70 Perfluoropentanesulfonic acid



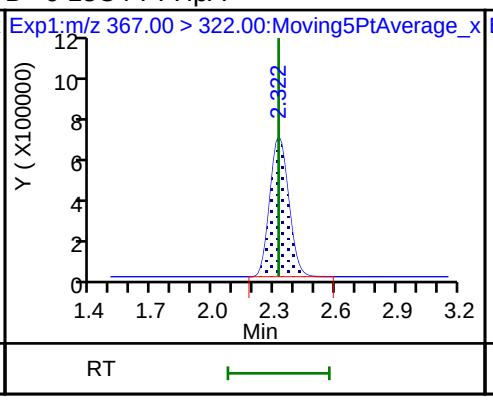
D 64 13C3 HFPO-DA



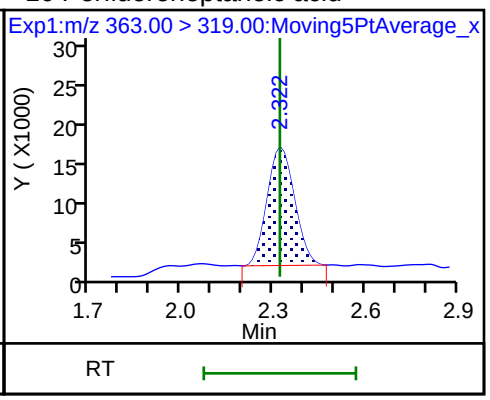
67 Perfluoro(2-propoxypropanoic) acid



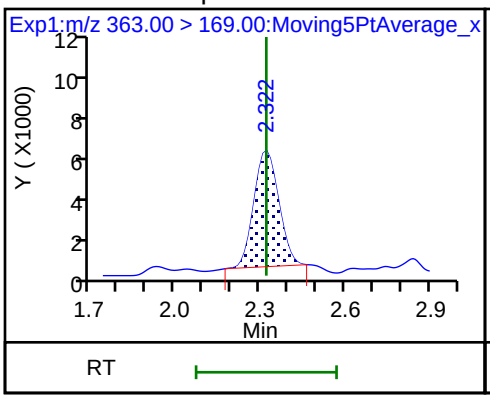
D 9 13C4-PFHpA



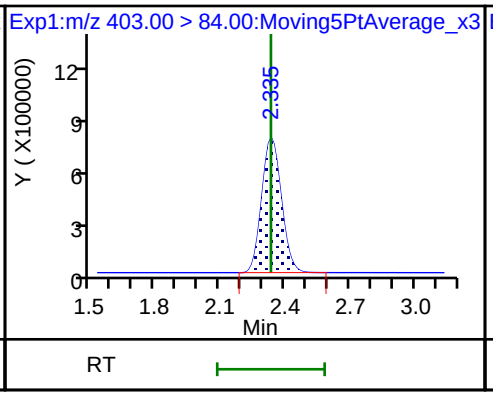
10 Perfluoroheptanoic acid



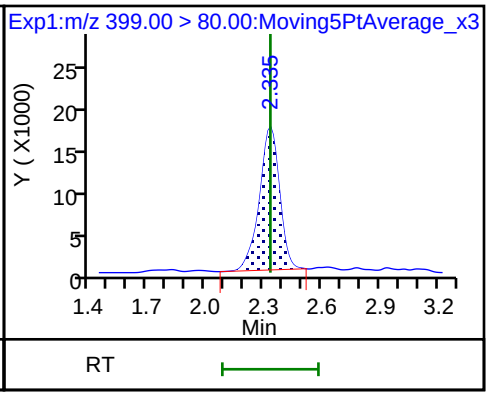
10 Perfluoroheptanoic acid



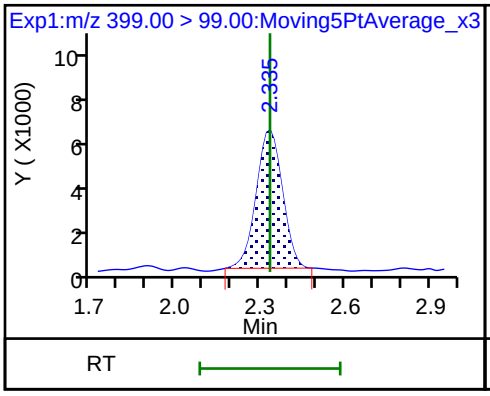
D 11 18O2 PFHxS



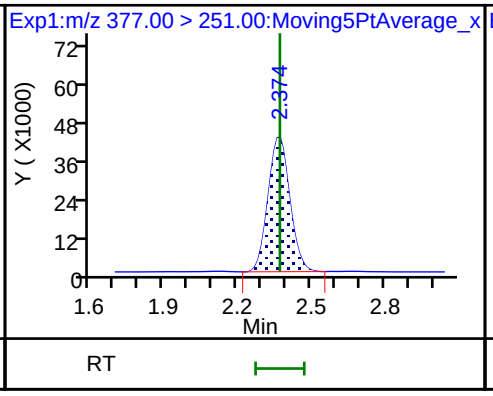
8 Perfluorohexanesulfonic acid



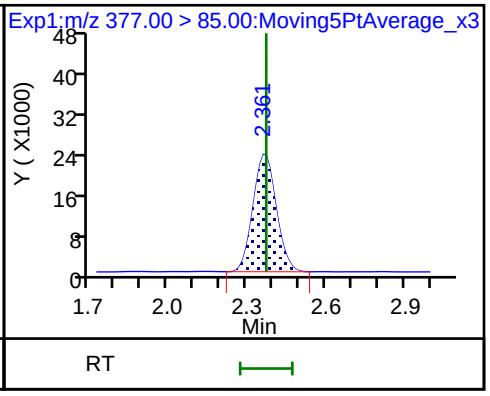
8 Perfluorohexanesulfonic acid



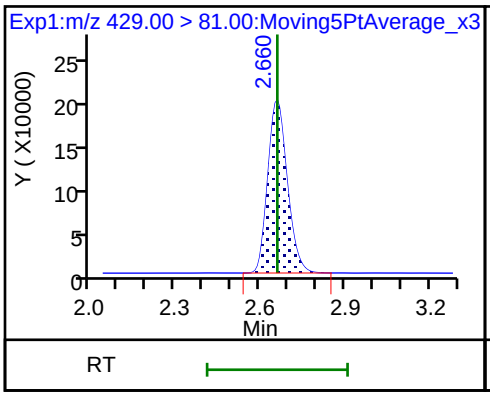
65 Adona



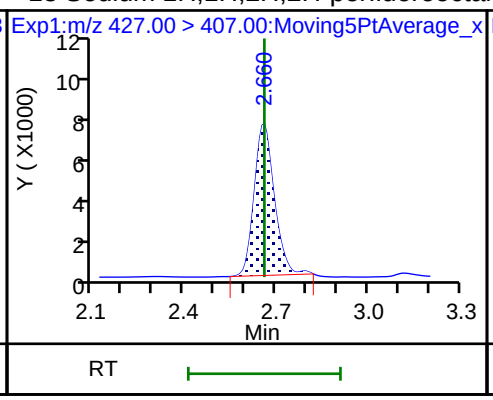
65 Adona



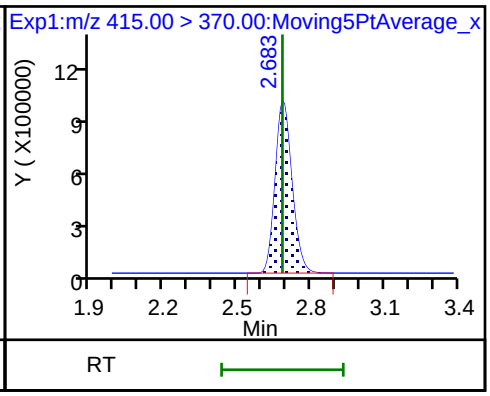
D 12 M2-6:2FTS



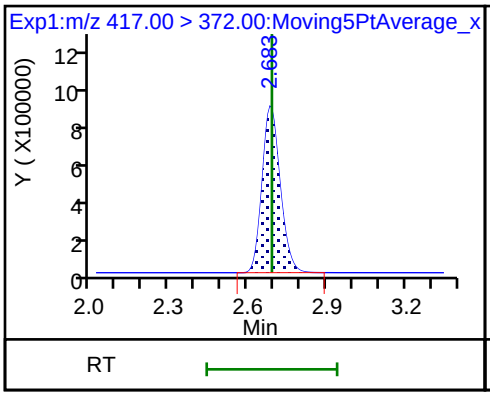
13 Sodium 1H,1H,2H,2H-perfluorooctane



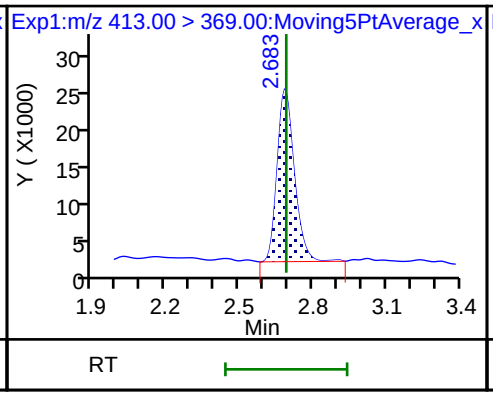
M62 13C2-PFOA



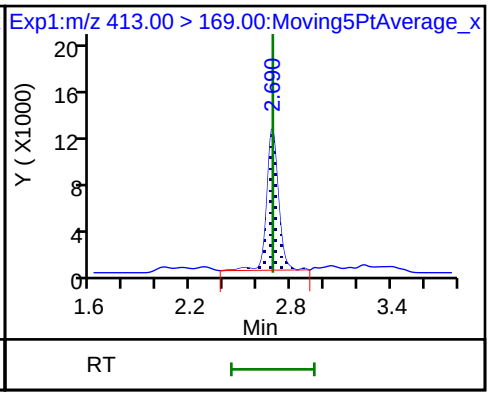
D 14 13C4 PFOA



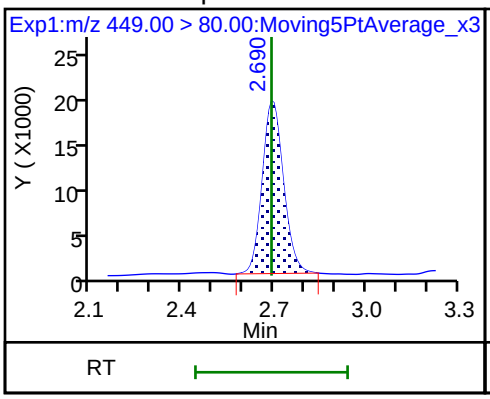
15 Perfluorooctanoic acid



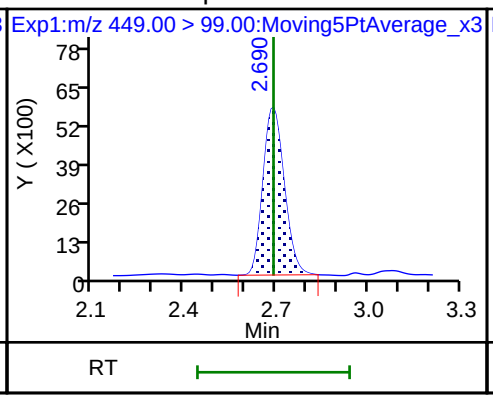
15 Perfluorooctanoic acid



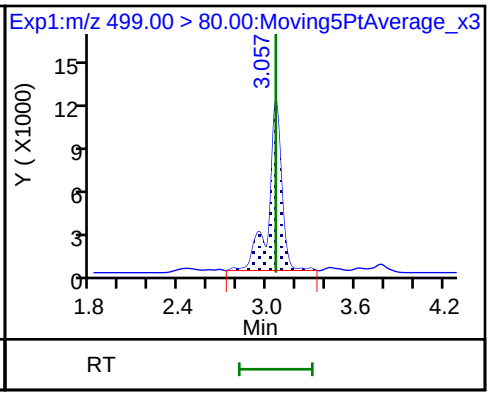
16 Perfluoroheptanesulfonic acid



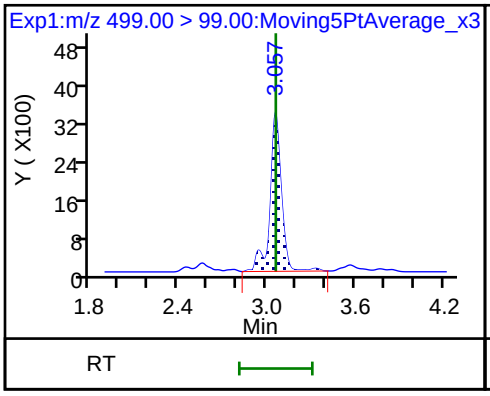
16 Perfluoroheptanesulfonic acid



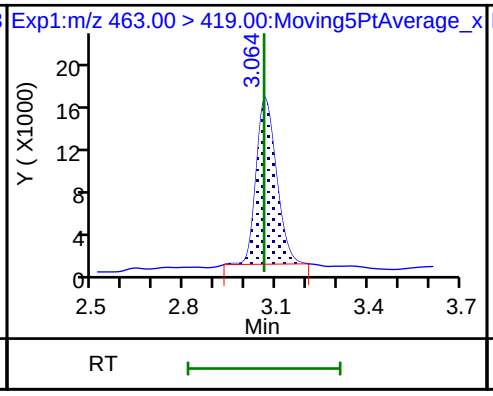
17 Perfluorooctane sulfonic acid



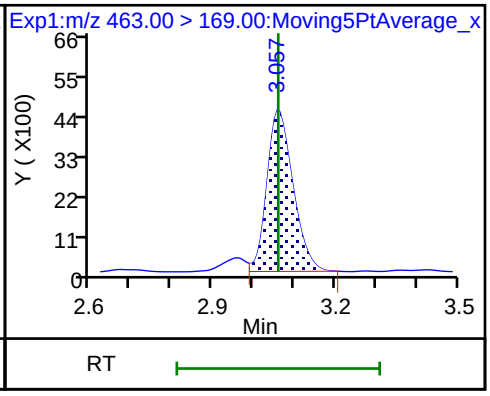
17 Perfluorooctane sulfonic acid



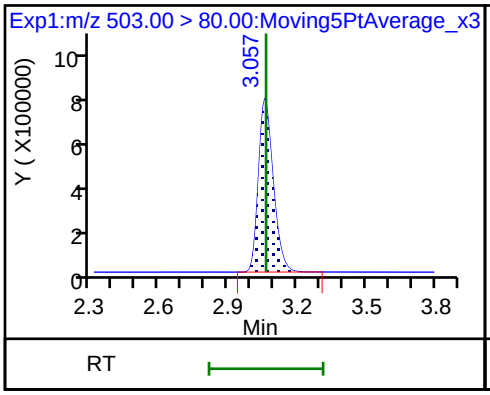
20 Perfluorononanoic acid



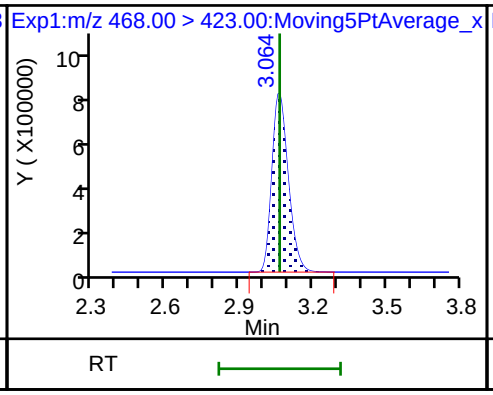
20 Perfluorononanoic acid



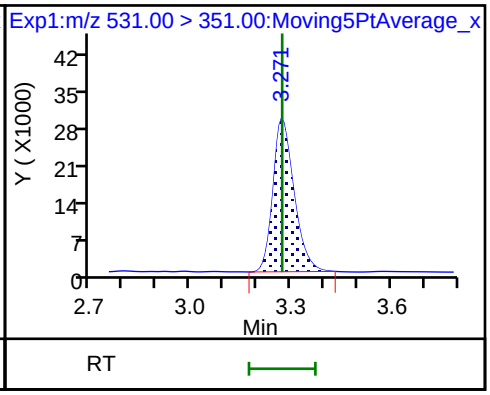
D 18 13C4 PFOS



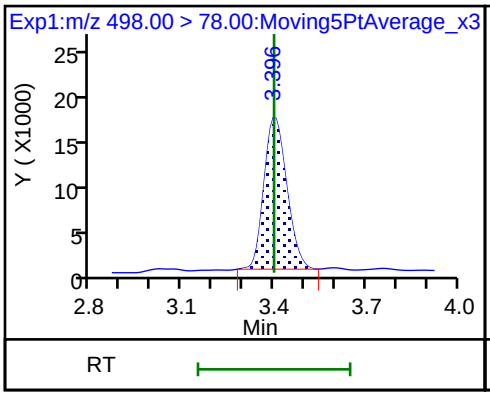
D 19 13C5 PFNA



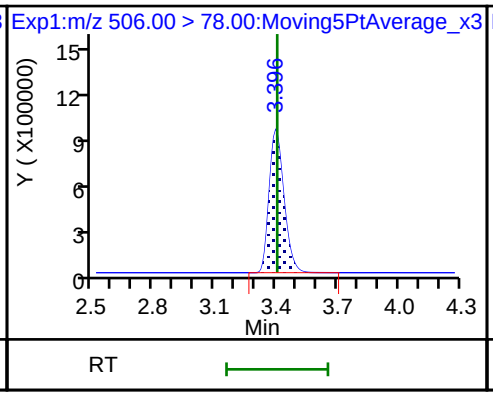
69 9-Chlorohexadecafluoro-3-oxanonane



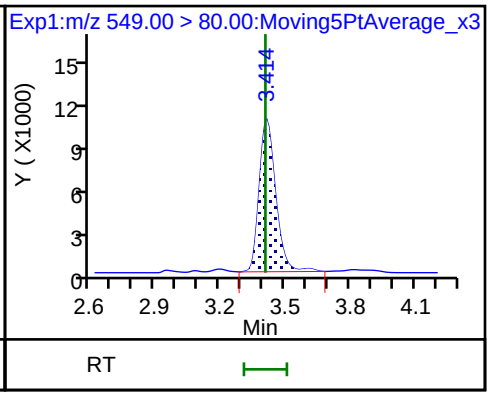
22 Perfluorooctane Sulfonamide



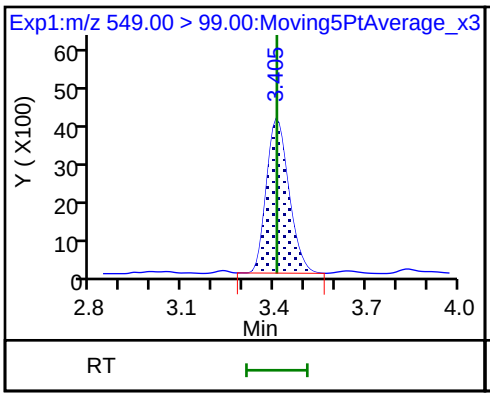
D 21 13C8 FOSA



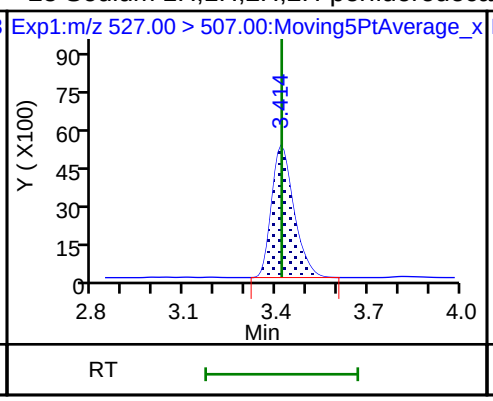
68 Perfluorononanesulfonic acid



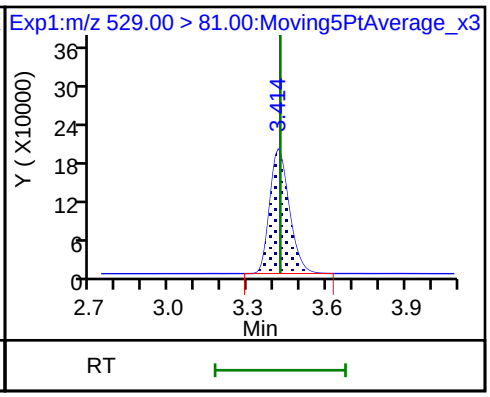
68 Perfluorononanesulfonic acid



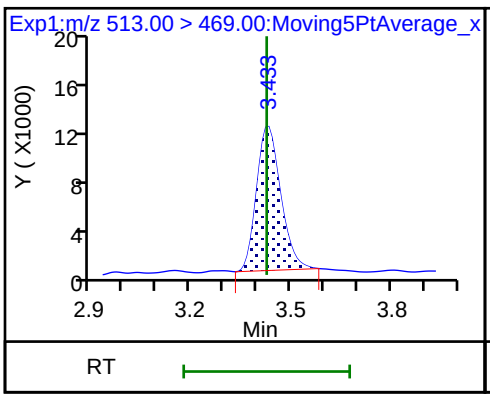
25 Sodium 1H,1H,2H,2H-perfluorodecane



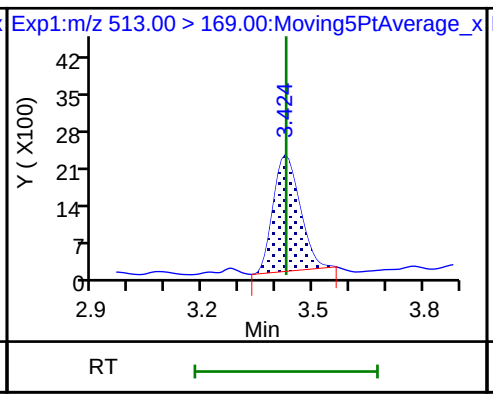
D 26 M2-8:2FTS



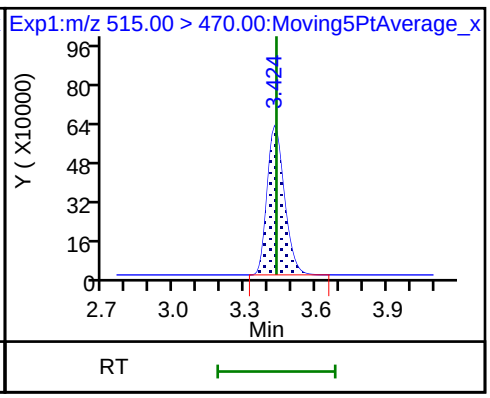
24 Perfluorodecanoic acid



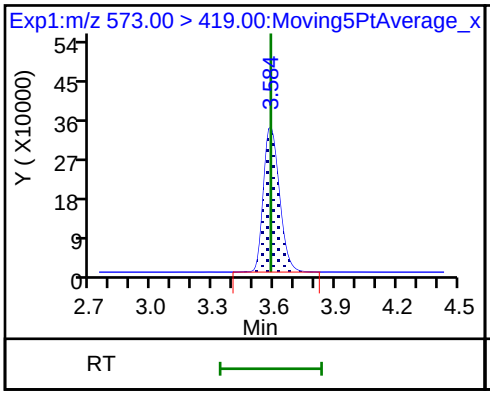
24 Perfluorodecanoic acid



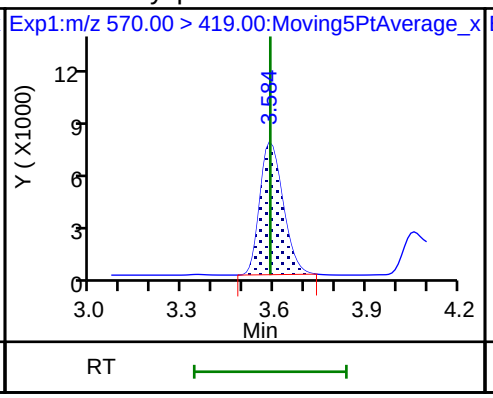
D 23 13C2 PFDA



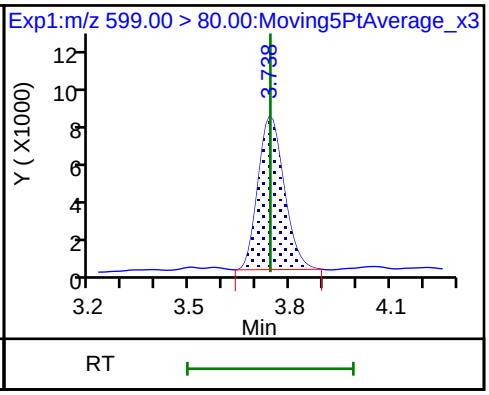
D 27 d3-NMeFOSAA



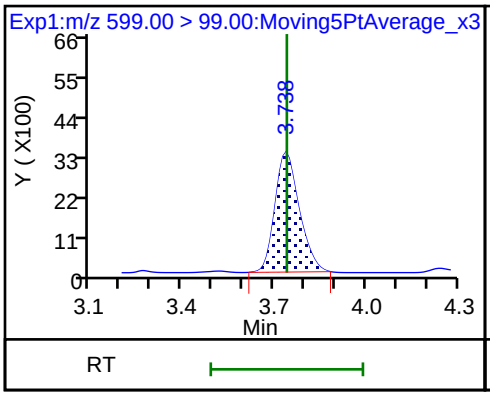
28 N-methyl perfluorooctane sulfonami



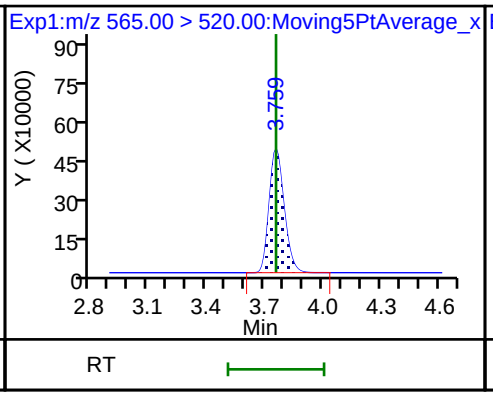
29 Perfluorodecane Sulfonic acid



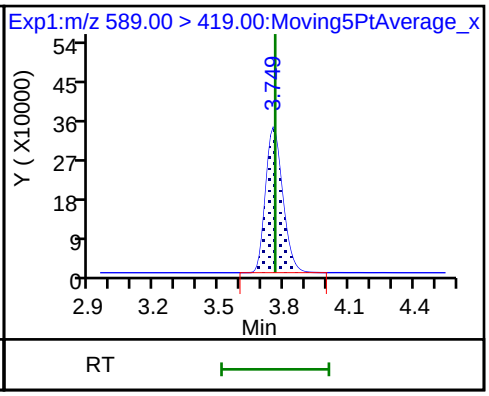
29 Perfluorodecane Sulfonic acid



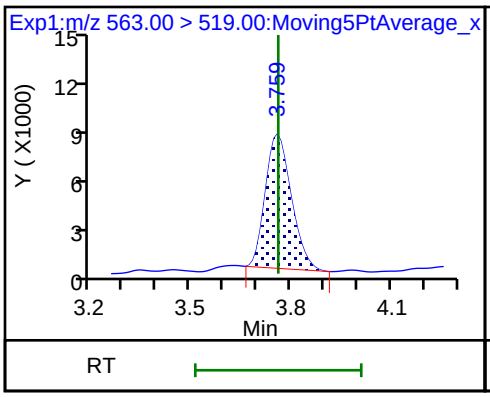
D 30 13C2 PFUnA



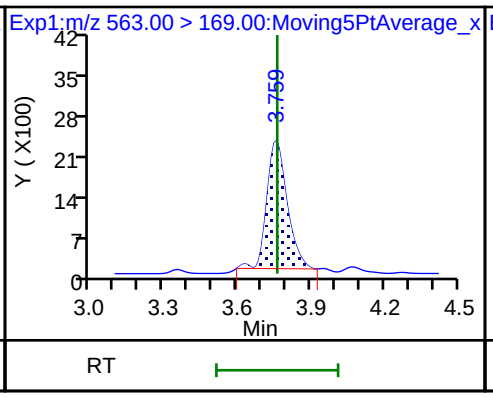
D 32 d5-NEtFOSAA



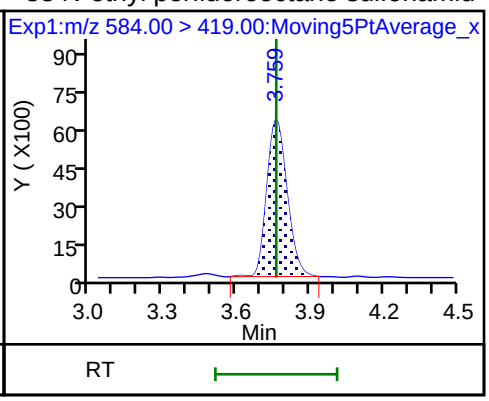
31 Perfluoroundecanoic acid



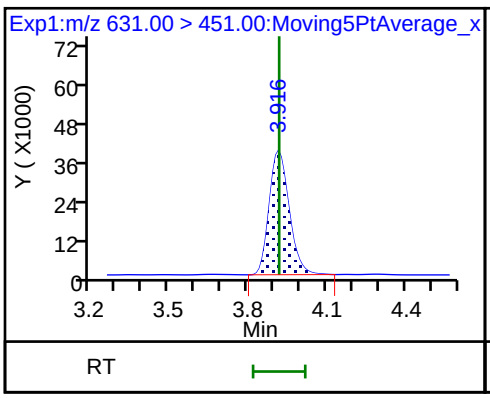
31 Perfluoroundecanoic acid



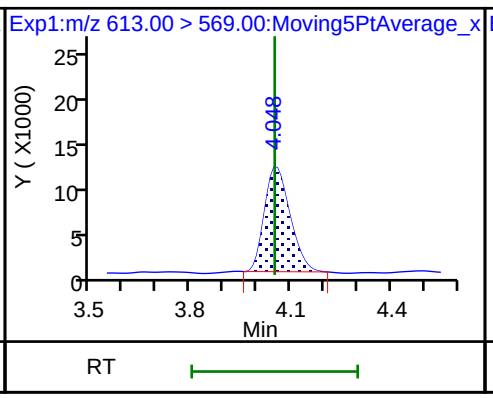
33 N-ethyl perfluorooctane sulfonamid



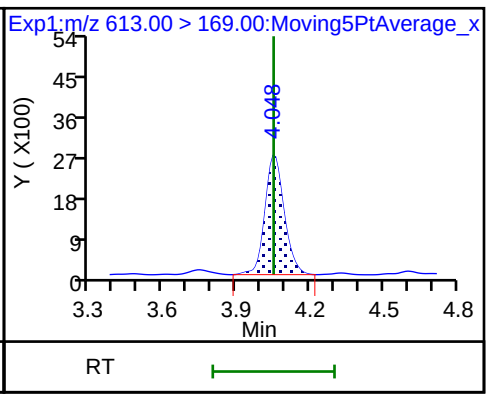
66 11-Chloroeicosafluoro-3-oxaundecan



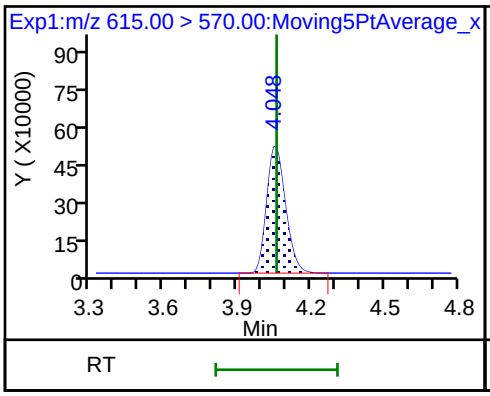
37 Perfluorododecanoic acid



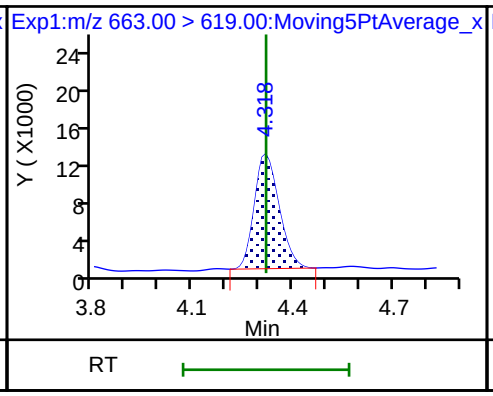
37 Perfluorododecanoic acid



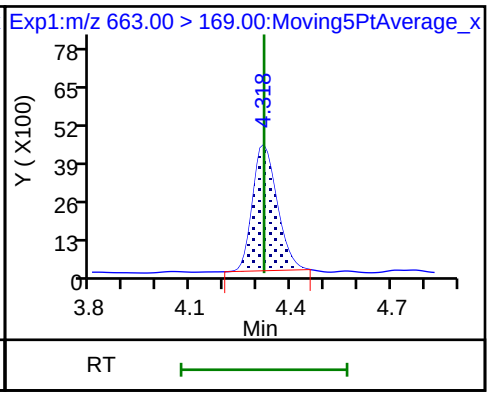
D 36 13C2 PFDoA



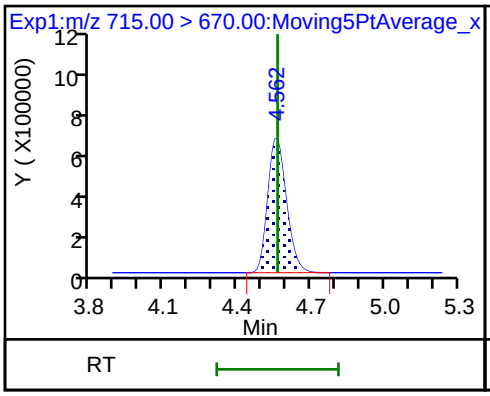
41 Perfluorotridecanoic acid



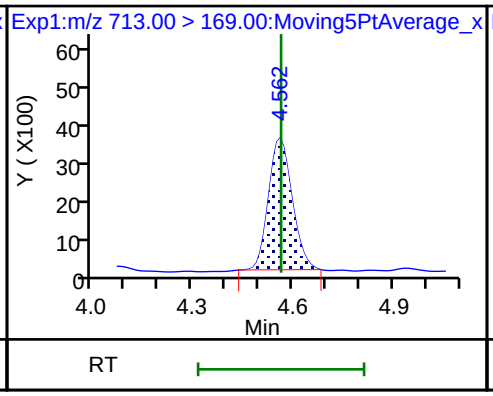
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



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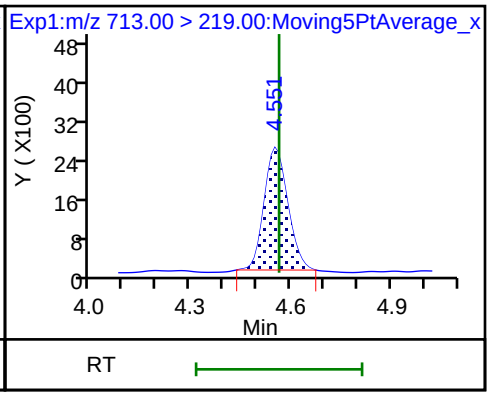
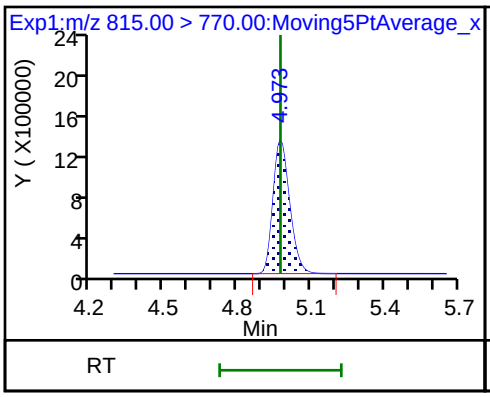
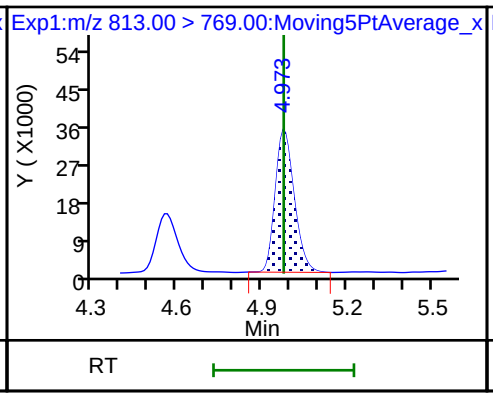


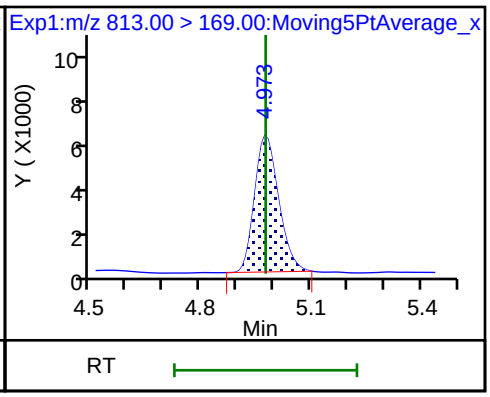
D 44 13C2-PFHxDA



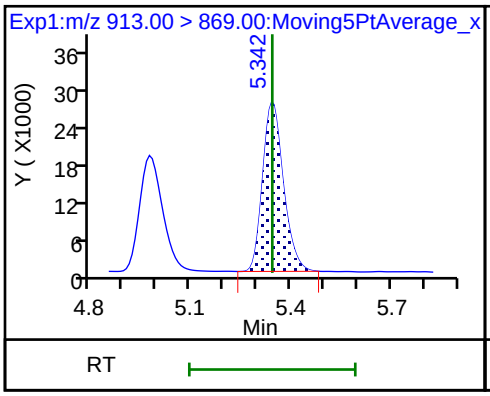
45 Perfluorohexadecanoic acid



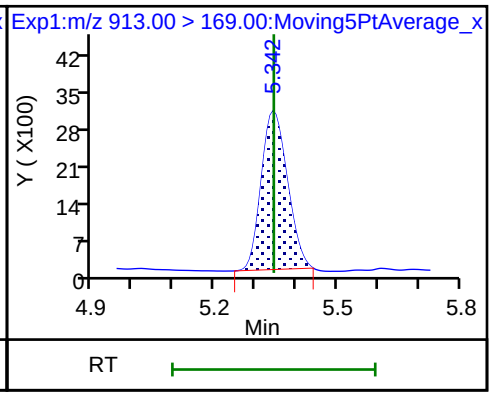
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219909/3 Calibration Date: 04/26/2018 06:09

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9057		0.975	1.00	-2.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.121		0.941	1.00	-5.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	76.16		0.860	0.884	-2.7	50.0
4:2 FTS	AveID	16.03	17.25		1.01	0.934	7.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9666		0.951	1.00	-4.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.10		0.920	0.938	-2.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.864		1.03	1.00	2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.087		1.09	1.00	8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.055		0.849	0.910	-6.7	40.0
Adona	AveID	3.464	3.679		1.06	1.00	6.2	50.0
6:2FTS	AveID	1.691	1.618		0.907	0.948	-4.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.352		0.969	0.952	1.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.045		0.905	1.00	-9.5	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.010		0.969	1.00	-3.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.090		0.930	0.928	0.2	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.858		0.919	0.932	-1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.017		1.01	1.00	0.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7341		0.882	0.960	-8.2	50.0
8:2FTS	AveID	1.265	1.219		0.923	0.958	-3.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9338		0.905	1.00	-9.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.033		1.04	1.00	3.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6515		0.967	0.964	0.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8836		0.946	1.00	-5.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7999		0.947	1.00	-5.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.841		0.919	0.942	-2.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.010		0.968	1.00	-3.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.127		0.927	1.00	-7.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2484		0.989	1.00	-1.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9126		0.941	1.00	-5.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219909/3 Calibration Date: 04/26/2018 06:09

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9590		0.955	1.00	-4.5	50.0
13C4 PFBA	Ave	1.345	1.393		2.59	2.50	3.6	50.0
13C5 PFPeA	Ave	0.8672	0.9054		2.61	2.50	4.4	50.0
13C3-PFBS	Ave	0.0199	0.0196		2.29	2.33	-1.6	50.0
M2-4:2FTS	Ave	0.1425	0.1467		2.40	2.34	2.9	50.0
13C2 PFHxA	Ave	0.9590	0.9941		2.59	2.50	3.7	50.0
13C3 HFPO-DA	Ave	0.0593	0.0537		2.26	2.50	-9.5	50.0
13C4-PFHpA	Ave	0.9333	0.9232		2.47	2.50	-1.1	50.0
18O2 PFHxS	Ave	1.152	1.161		2.38	2.37	0.7	50.0
M2-6:2FTS	Ave	0.2000	0.2122		2.52	2.38	6.1	40.0
13C4 PFOA	Ave	0.9276	0.9752		2.63	2.50	5.1	50.0
13C4 PFOS	Ave	0.8066	0.7898		2.34	2.39	-2.1	50.0
13C5 PFNA	Ave	0.7973	0.7883		2.47	2.50	-1.1	50.0
13C8 FOSA	Ave	1.007	0.9611		2.39	2.50	-4.6	50.0
M2-8:2FTS	Ave	0.2409	0.2443		2.43	2.40	1.4	40.0
13C2 PFDA	Ave	0.6701	0.6838		2.55	2.50	2.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3783		2.49	2.50	-0.4	50.0
d5-NEtFOSAA	Ave	0.3749	0.4215		2.81	2.50	12.4	50.0
13C2 PFUnA	Ave	0.5781	0.5510		2.38	2.50	-4.7	50.0
13C2 PFDoA	Ave	0.6242	0.6162		2.47	2.50	-1.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7495		2.37	2.50	-5.3	50.0
13C2-PFHxDA	Ave	1.288	1.308		2.54	2.50	1.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_070.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Apr-2018 06:09:11 ALS Bottle#: 28 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:20:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	2371118	0.9754		97.5	1163	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6544803	2.59		104	43669	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.557	4253073	2.61		104	66726	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1907431	0.9408		94.1	1928	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	85520	2.29		98.4	873	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2476394	0.8600		97.3	9732	
298.90 > 99.00	1.739	1.739	0.0	1.000	1052044		2.35(1.25-3.74)		10784	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	643696	2.40		103	5058	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	592642	1.00		108	25518	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4669922	2.59		104	112543	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.994	1.994	0.0	1.006	1805646	0.9513		95.1	1853	
313.00 > 119.00	1.994	1.994	0.0	1.006	167061		10.81(5.03-15.10)		1488	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2418745	0.9196		98.0	14931	
349.00 > 99.00	2.005	2.016	-0.011	0.994	891832		2.71(1.36-4.07)		13512	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.095	0.0	1.000	252262	2.26		90.5	7092	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.000	288996	1.03		103	2127	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.321	0.0	1.000	4336796	2.47		98.9	57141	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1885628	1.09		109	2139	
363.00 > 169.00	2.321	2.321	0.0	1.000	739486		2.55(1.13-3.40)		3152	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.334	0.0	1.000	5157263	2.38		101	45651	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	2094418	0.8486		93.3	4853	
399.00 > 99.00	2.334	2.334	0.0	1.000	700996		2.99(1.50-4.49)		5609	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	5459552	1.06		106	68228	
377.00 > 85.00	2.372	2.372	0.0	1.000	3273488		1.67(0.84-2.53)		66965	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	946855	2.52		106	15345	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	611477	0.9073		95.7	11617	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4697624	2.50			71186	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	4581275	2.63		105	69382	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.003	1915153	0.9045		90.5	1345	
413.00 > 169.00	2.683	2.690	-0.007	1.000	1016258		1.88(0.84-2.52)		3087	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	1910126	0.9695		102	11584	
449.00 > 99.00	2.690	2.690	0.0	1.000	515096		3.71(1.94-5.82)		13745	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.059	0.0	1.000	1500691	0.9296		100	8635	
499.00 > 99.00	3.059	3.059	0.0	1.000	335232		4.48(2.31-6.93)		9339	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.059	0.0	1.000	1496258	0.9687		96.9	4785	
463.00 > 169.00	3.059	3.059	0.0	1.000	358482		4.17(1.90-5.69)		7760	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.063	-0.004	1.000	3546761	2.34		97.9	19261	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.063	-0.004	1.000	3703188	2.47		98.9	50274	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.273	3.273	0.0	1.000	2569825	0.9186		98.6	31938	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.399	0.0	1.000	1836913	1.01		101	8515	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.404	-0.005	1.000	4514716	2.39		95.4	36012	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.408	0.0	1.000	1045819	0.8816		91.8	10859	
549.00 > 99.00	3.408	3.408	0.0	1.000	403716		2.59(1.33-3.97)		13268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	535826	0.9227		96.3	26171	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.423	-0.006	1.000	1099186	2.43		101	10281	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.427	3.427	0.0	1.000	1199847	0.9052		90.5	6234	
513.00 > 169.00	3.427	3.427	0.0	1.000	228703		5.25(2.36-7.09)		4967	
D 23 13C2 PFDA										
515.00 > 470.00	3.427	3.432	-0.005	1.000	3212364	2.55		102	70211	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.582	-0.006	1.000	1777310	2.49		99.6	19434	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.586	0.0	1.003	734680	1.04		104	6550	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	931958	0.9673		100	9651	
599.00 > 99.00	3.741	3.741	0.0	1.000	321949		2.89(1.39-4.16)		6044	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.758	0.004	1.000	2588545	2.38		95.3	34212	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.758	-0.007	1.000	1979807	2.81		112	27920	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	828228	0.9465		94.7	5658	
563.00 > 169.00	3.762	3.762	0.0	1.000	209057		3.96(2.12-6.36)		6437	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.762	0.0	1.003	699741	0.9455		94.6	12743	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.918	0.0	1.000	3971478	0.9189		97.5	42268	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1169417	0.9684		96.8	1725	
613.00 > 169.00	4.051	4.051	0.0	1.000	272815		4.29(2.13-6.40)		2430	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.059	-0.008	1.000	2894747	2.47		98.7	36204	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	1304378	0.9269		92.7	1457	
663.00 > 169.00	4.319	4.319	0.0	1.000	402017		3.24(1.25-3.76)		3637	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.563	0.001	1.000	3520633	2.37		94.7	23778	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	349817	0.9891		98.9	3349	
713.00 > 219.00	4.554	4.564	-0.010	0.998	255928		1.37(0.71-2.13)		4101	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.975	0.001	1.000	6143789	2.54		102	16546	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.976	4.976	0.0	1.000	2242678	0.9415		94.1	952	
813.00 > 169.00	4.976	4.976	0.0	1.000	361791		6.20(2.86-8.58)		2083	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2356736	0.9551		95.5	822	
913.00 > 169.00	5.344	5.344	0.0	1.000	302004		7.80(3.83-11.48)		2104	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:36:55 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_070.d

Injection Date: 26-Apr-2018 06:09:11 Instrument ID: A8_N

Lims ID: CCV L4

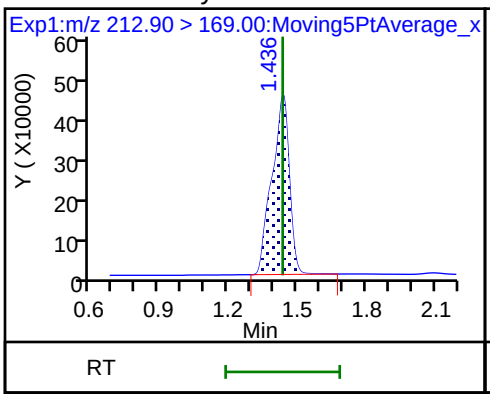
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 3

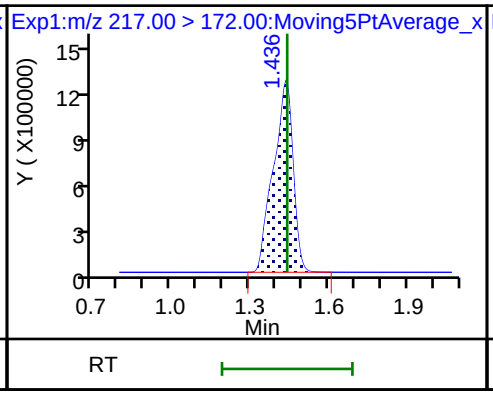
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

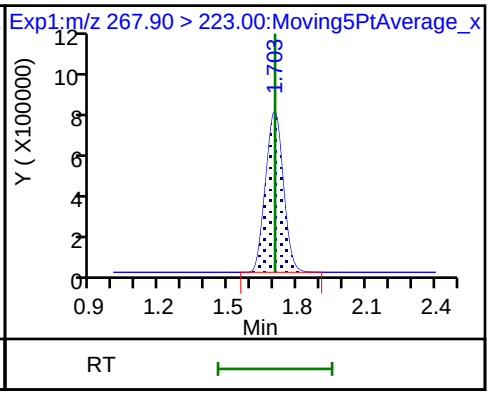
2 Perfluorobutyric acid



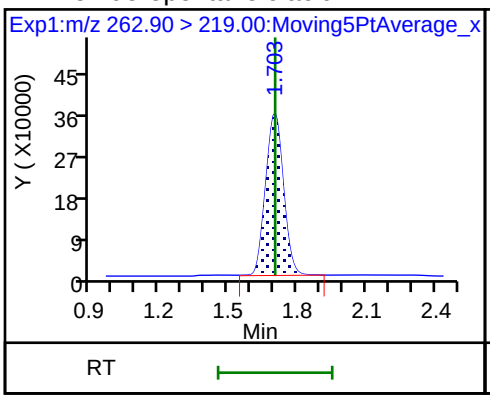
D 1 13C4 PFBA



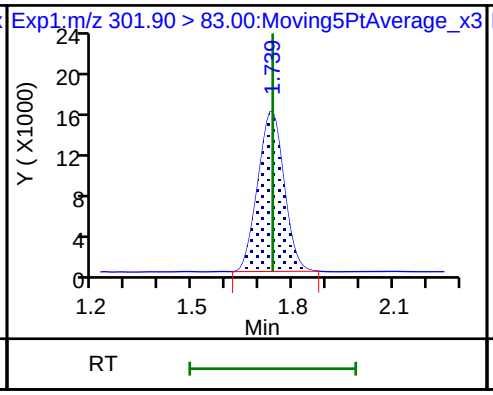
D 3 13C5-PFPeA



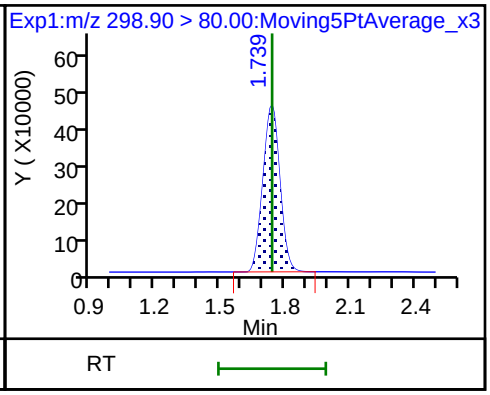
4 Perfluoropentanoic acid



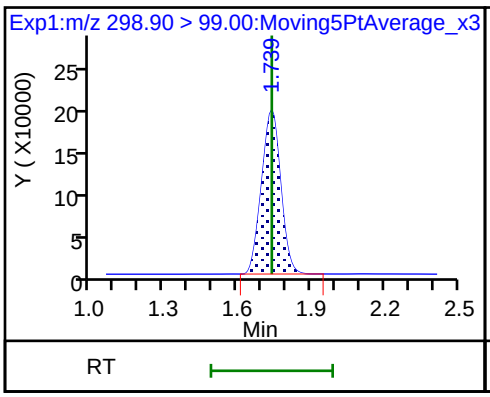
D 47 13C3-PFBS



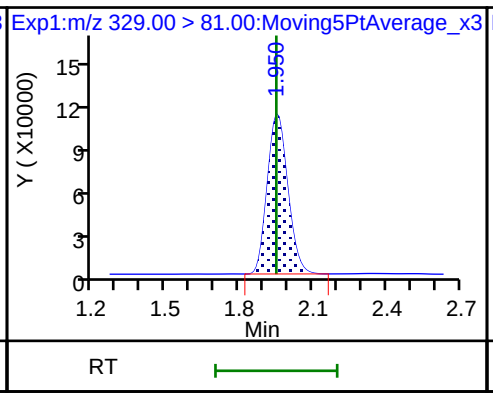
5 Perfluorobutanesulfonic acid



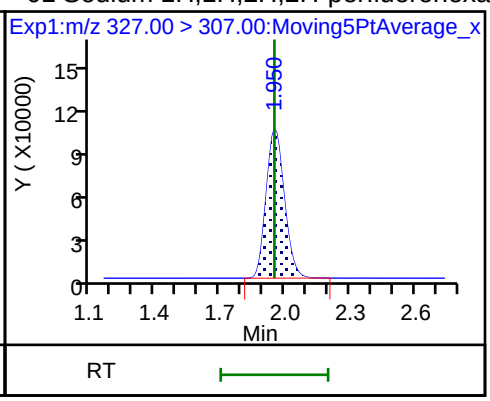
5 Perfluorobutanesulfonic acid



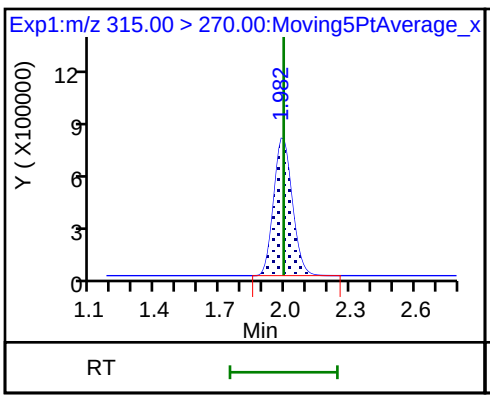
D 60 M2-4:2FTS



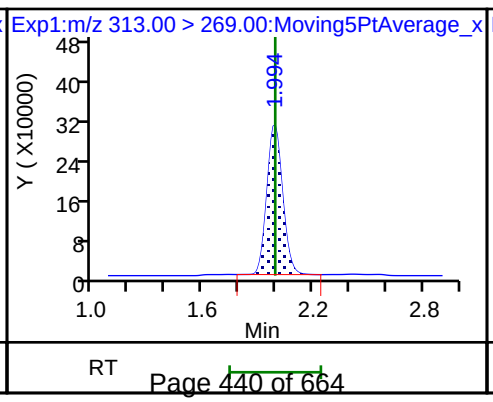
61 Sodium 1H,1H,2H,2H-perfluorohexane



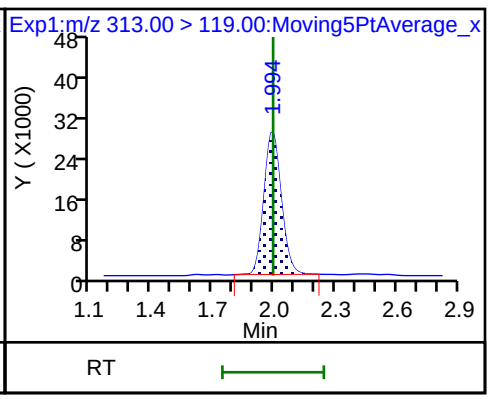
D 7 13C2 PFHxA



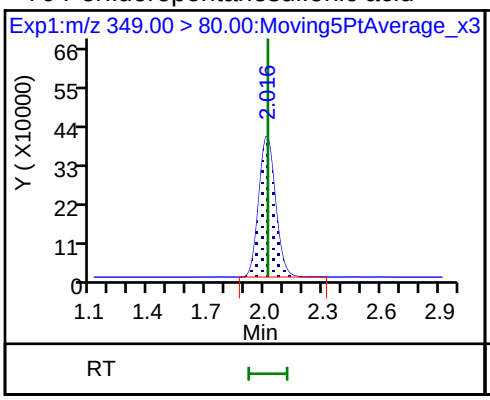
6 Perfluorohexanoic acid



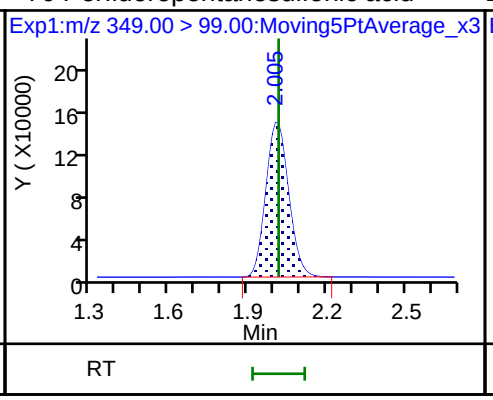
6 Perfluorohexanoic acid



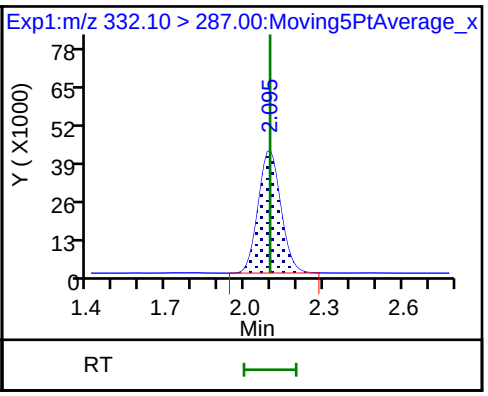
70 Perfluoropentanesulfonic acid



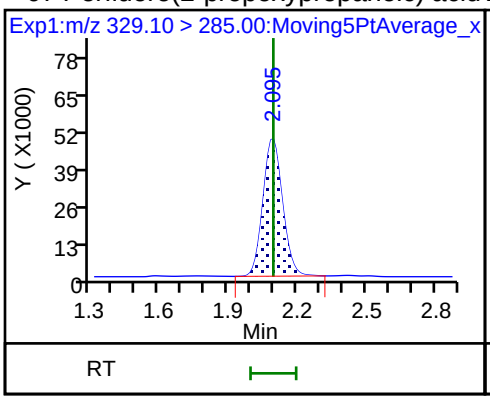
70 Perfluoropentanesulfonic acid



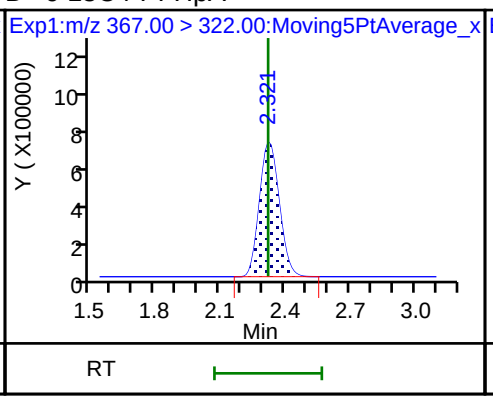
D 64 13C3 HFPO-DA



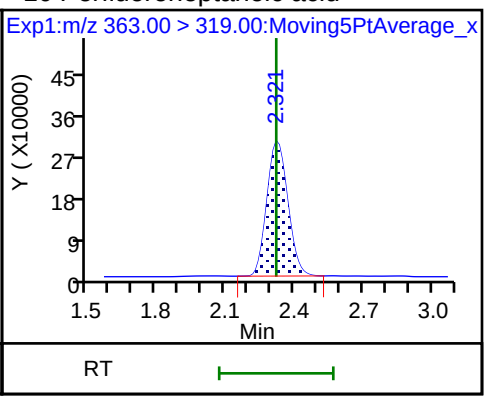
67 Perfluoro(2-propoxypropanoic) acid



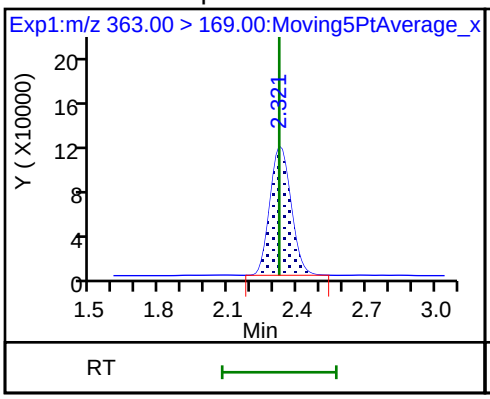
D 9 13C4-PFHpA



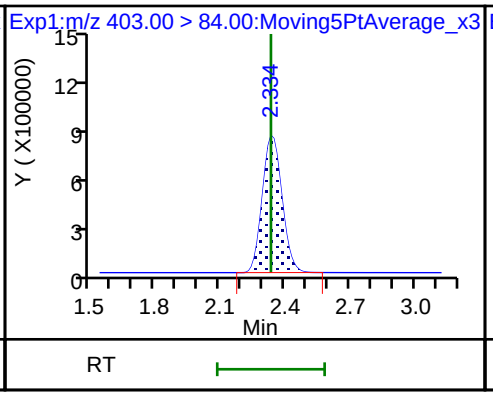
10 Perfluoroheptanoic acid



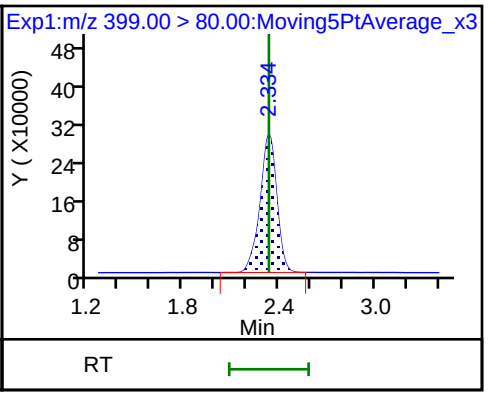
10 Perfluoroheptanoic acid



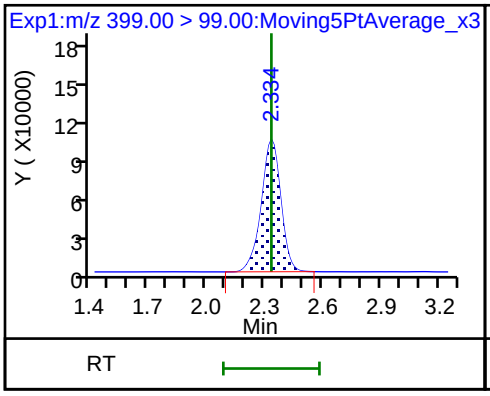
D 11 18O2 PFHxS



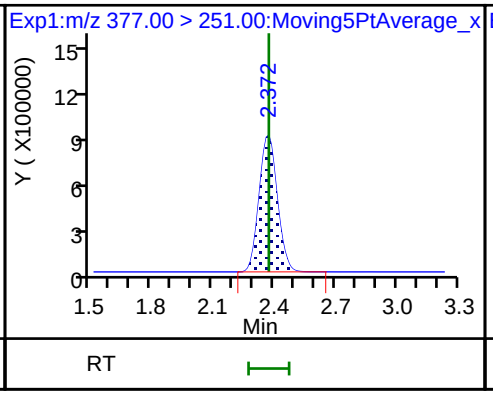
8 Perfluorohexanesulfonic acid



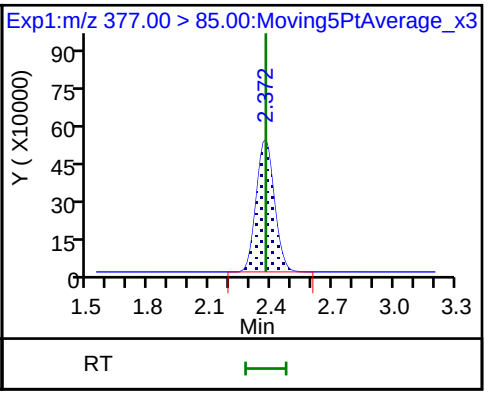
8 Perfluorohexanesulfonic acid



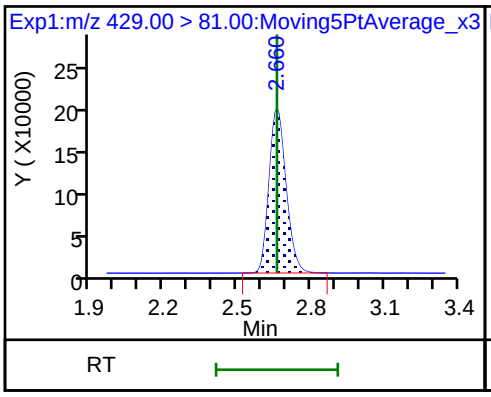
65 Adona



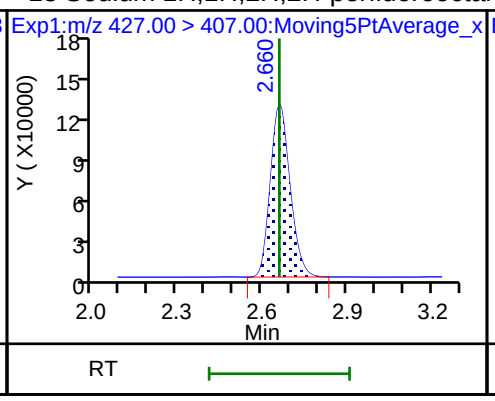
65 Adona



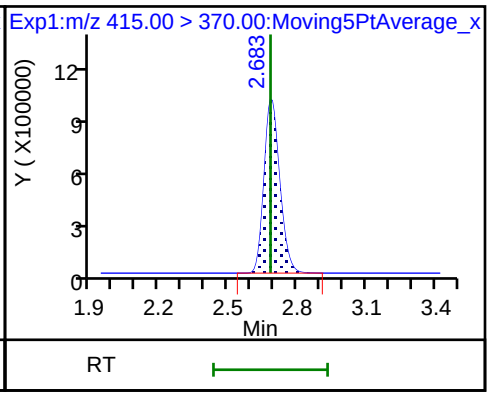
D 12 M2-6:2FTS



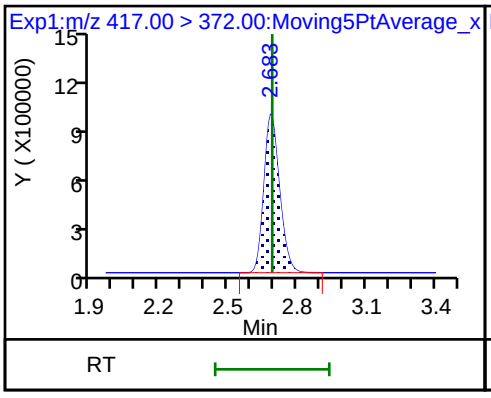
13 Sodium 1H,1H,2H,2H-perfluorooctane



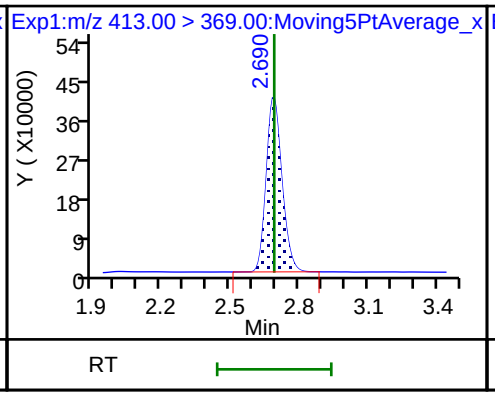
* 62 13C2-PFOA



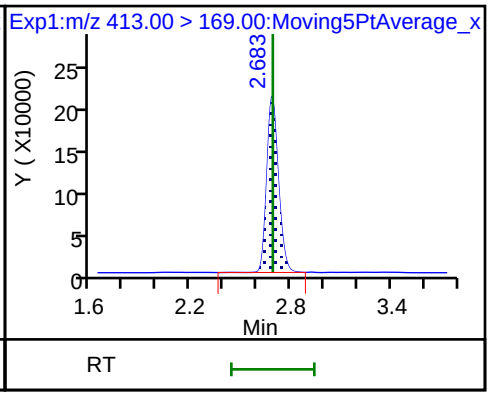
D 14 13C4 PFOA



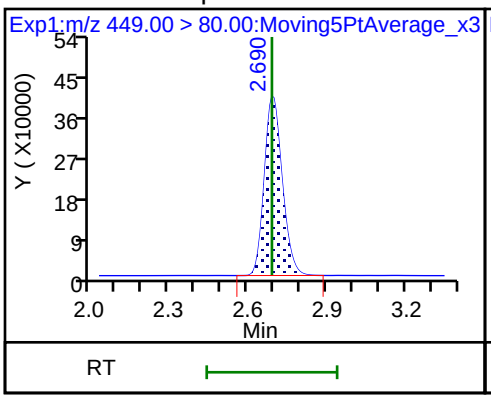
15 Perfluorooctanoic acid



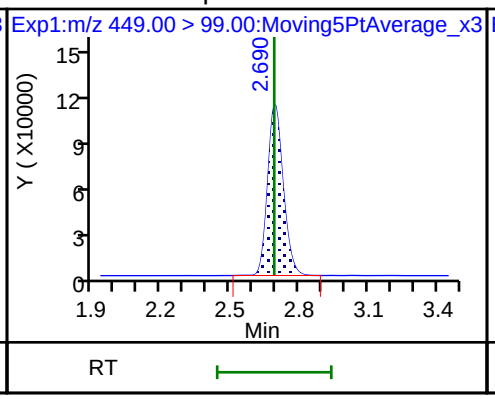
15 Perfluorooctanoic acid



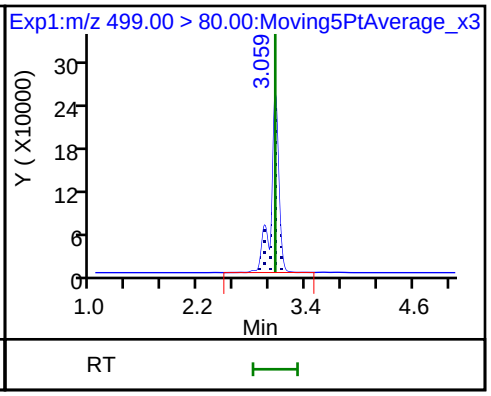
16 Perfluoroheptanesulfonic acid



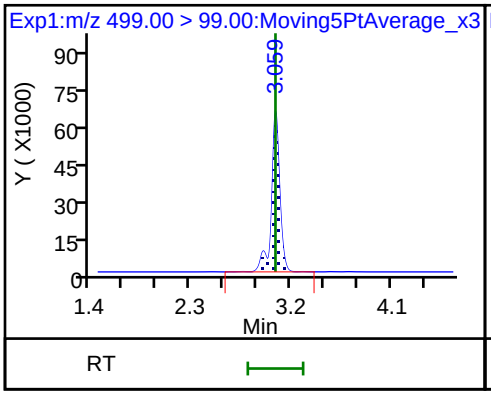
16 Perfluoroheptanesulfonic acid



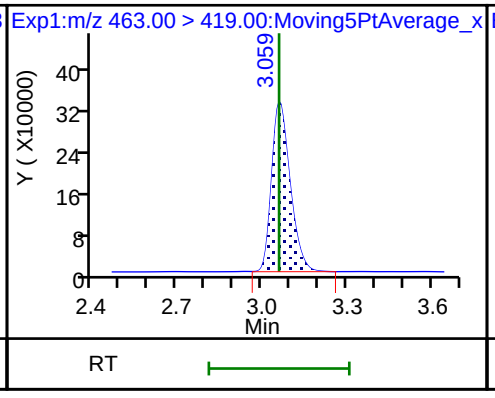
17 Perfluorooctane sulfonic acid



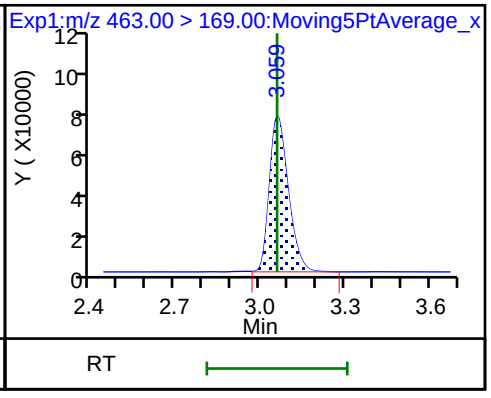
17 Perfluorooctane sulfonic acid



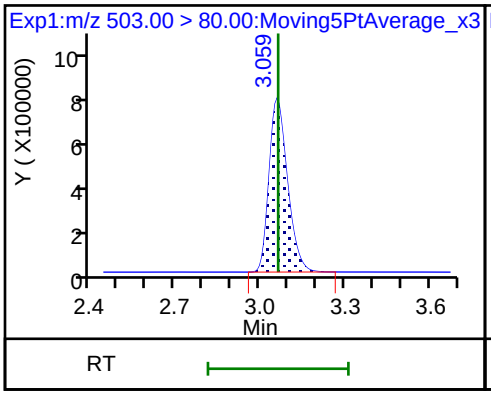
20 Perfluorononanoic acid



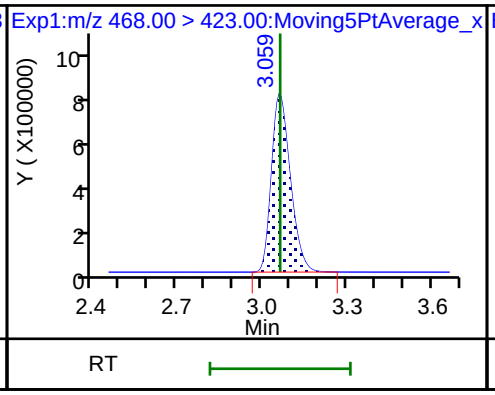
20 Perfluorononanoic acid



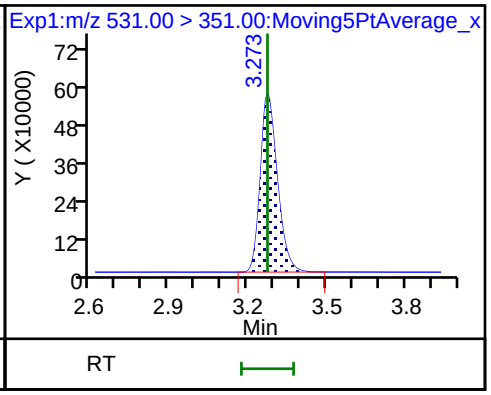
D 18 13C4 PFOS



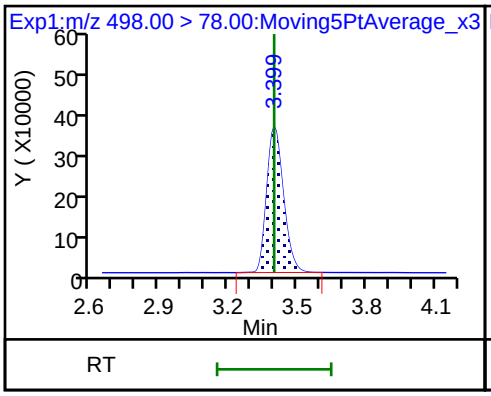
D 19 13C5 PFNA



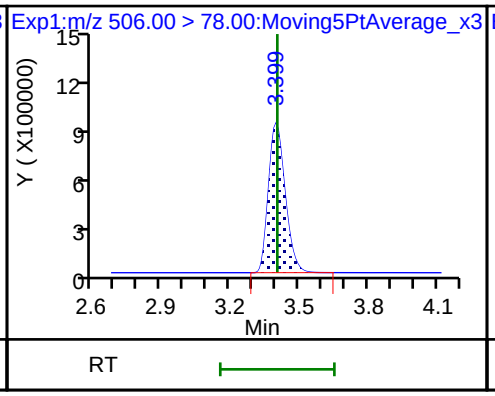
69 9-Chlorohexadecafluoro-3-oxanonane



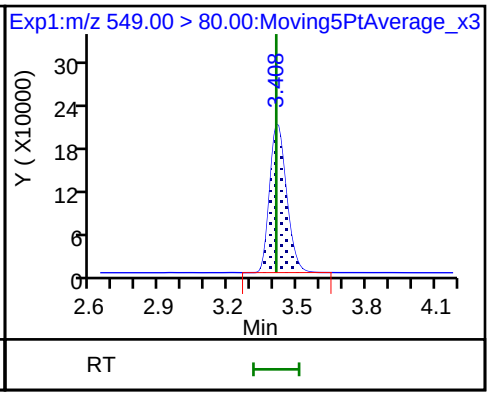
22 Perfluorooctane Sulfonamide



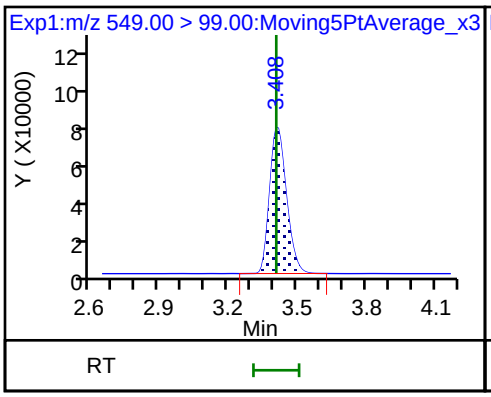
D 21 13C8 FOSA



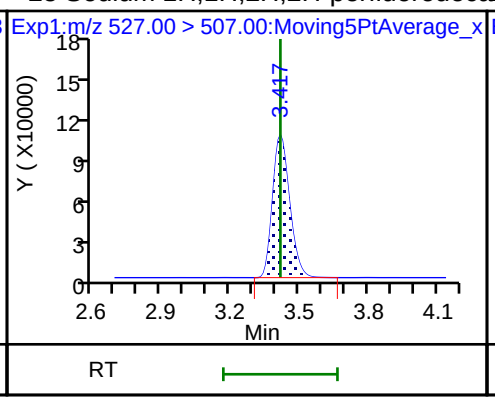
68 Perfluorononanesulfonic acid



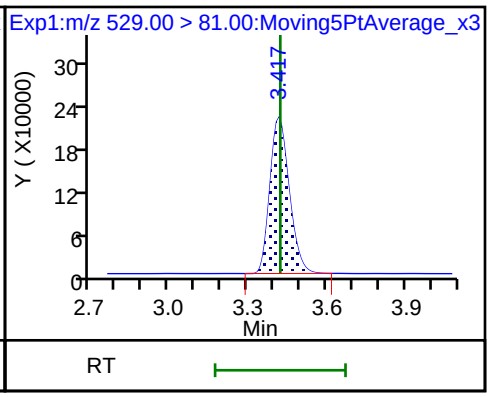
68 Perfluorononanesulfonic acid



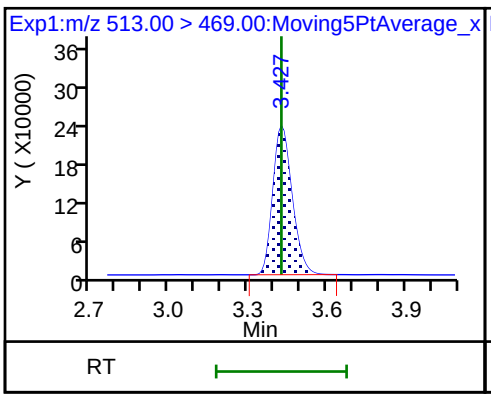
25 Sodium 1H,1H,2H,2H-perfluorodecane



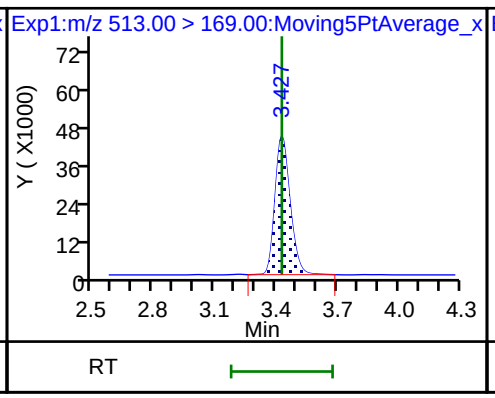
D 26 M2-8:2FTS



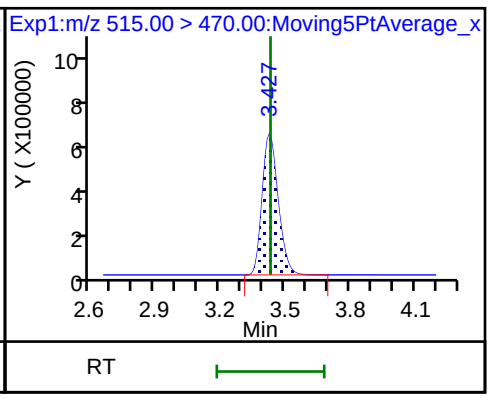
24 Perfluorodecanoic acid



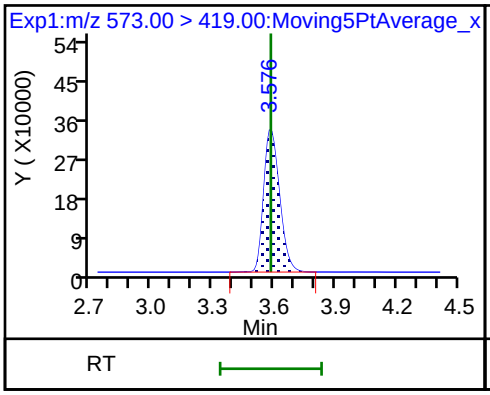
24 Perfluorodecanoic acid



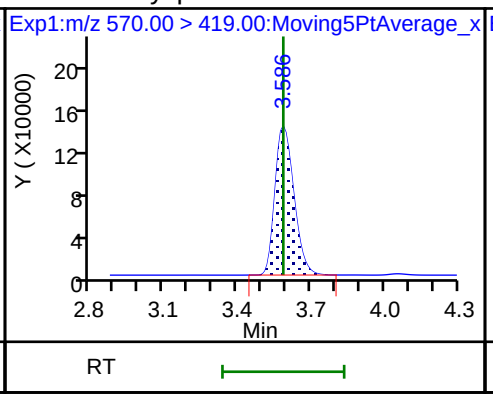
D 23 13C2 PFDA



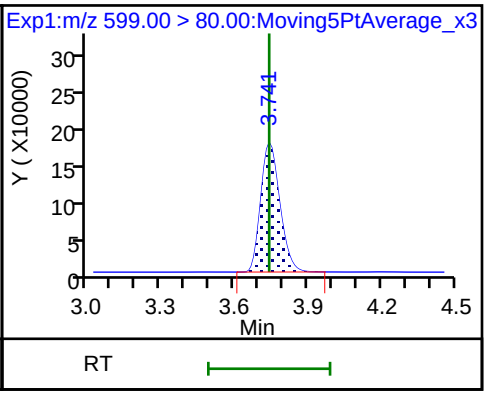
D 27 d3-NMeFOSAA



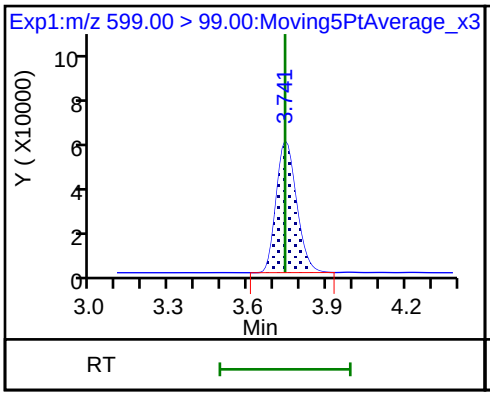
28 N-methyl perfluorooctane sulfonami



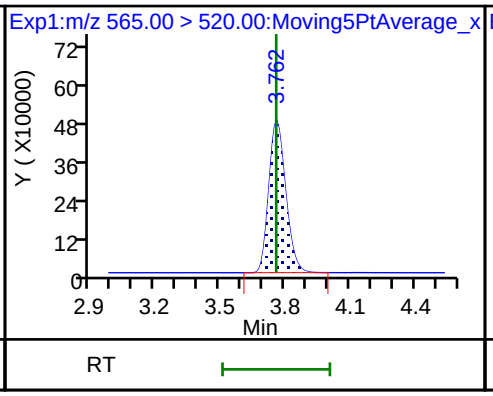
29 Perfluorodecane Sulfonic acid



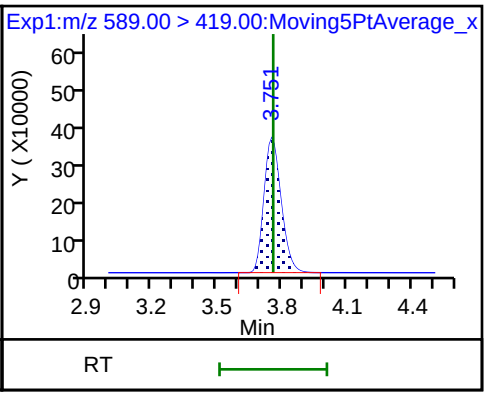
29 Perfluorodecane Sulfonic acid



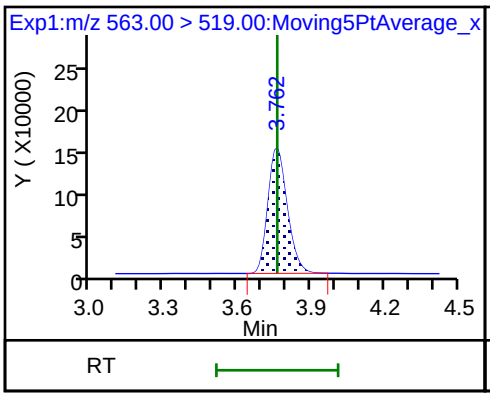
D 30 13C2 PFUnA



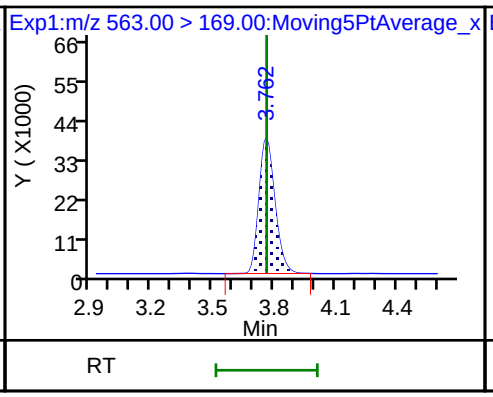
D 32 d5-NEtFOSAA



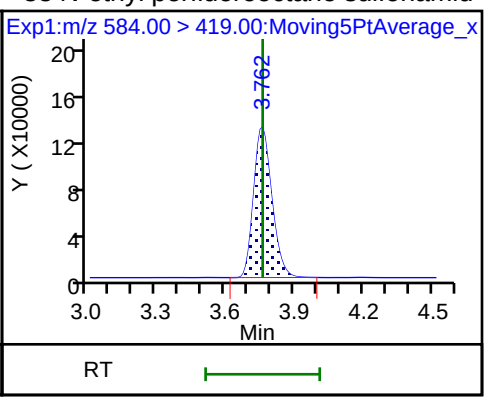
31 Perfluoroundecanoic acid



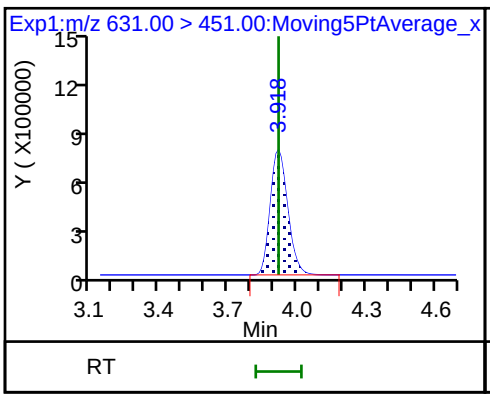
31 Perfluoroundecanoic acid



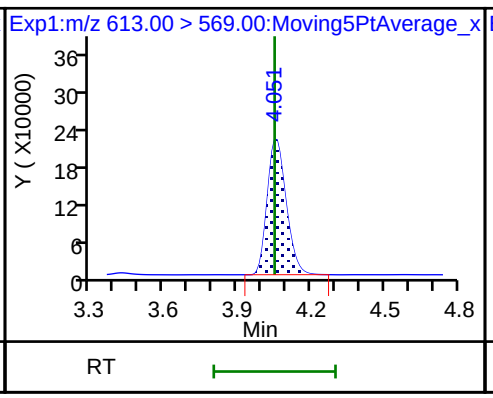
33 N-ethyl perfluorooctane sulfonamid



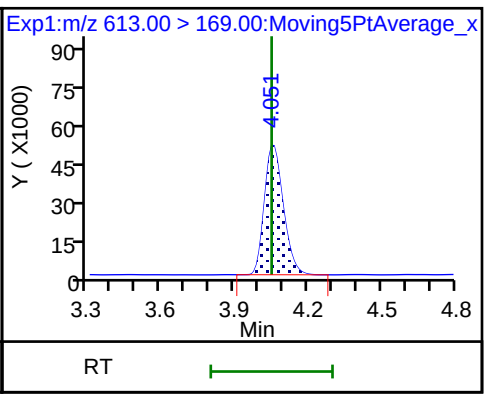
66 11-Chloroeicosafluoro-3-oxaundecan



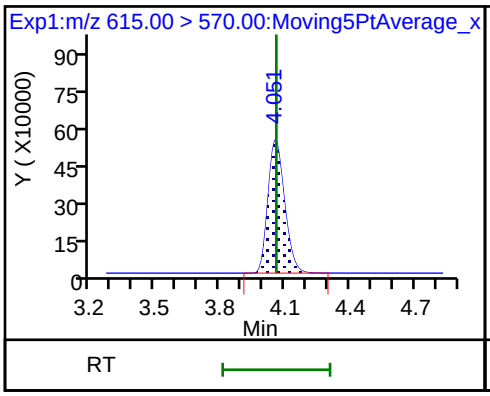
37 Perfluorododecanoic acid



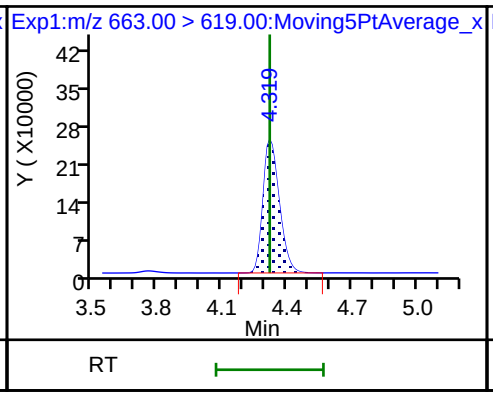
37 Perfluorododecanoic acid



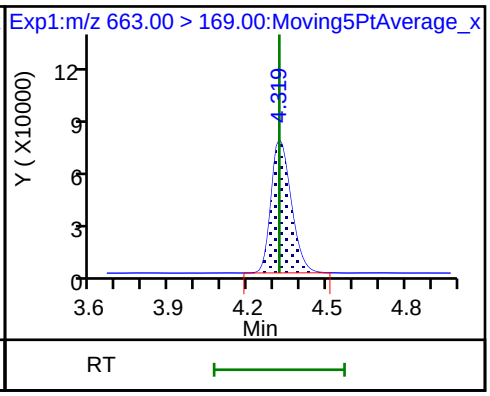
D 36 13C2 PFDoA



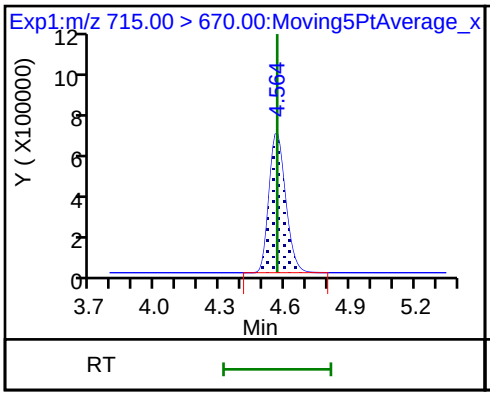
41 Perfluorotridecanoic acid



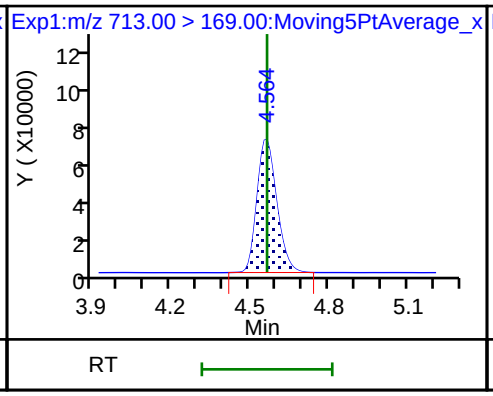
41 Perfluorotridecanoic acid



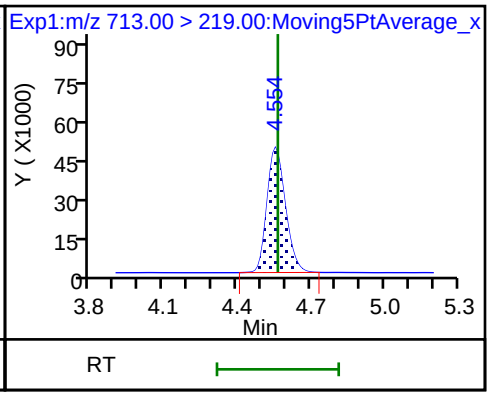
D 43 13C2-PFTeDA



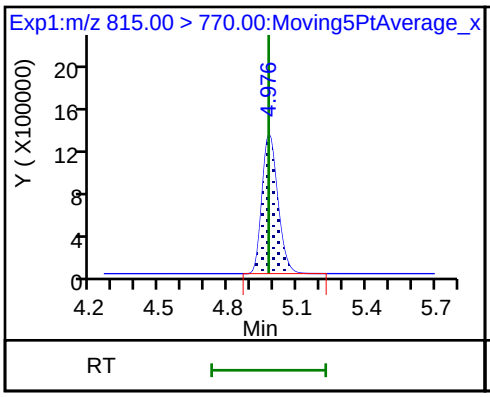
42 Perfluorotetradecanoic acid



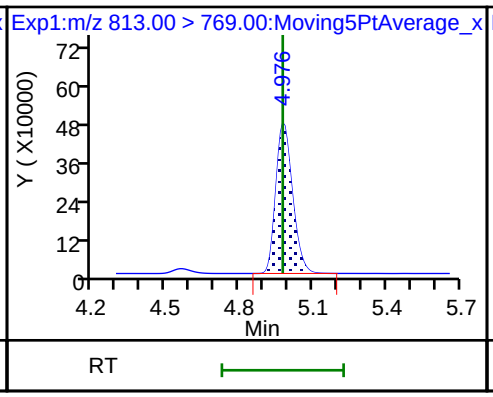
42 Perfluorotetradecanoic acid



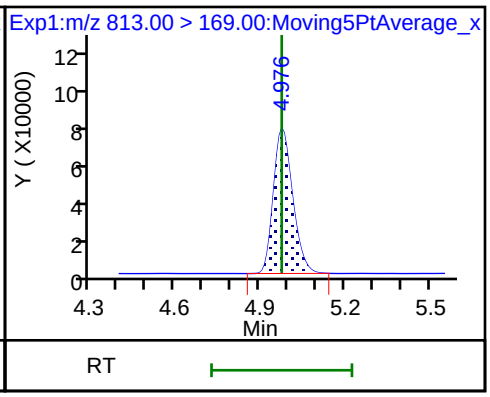
D 44 13C2-PFHxDA



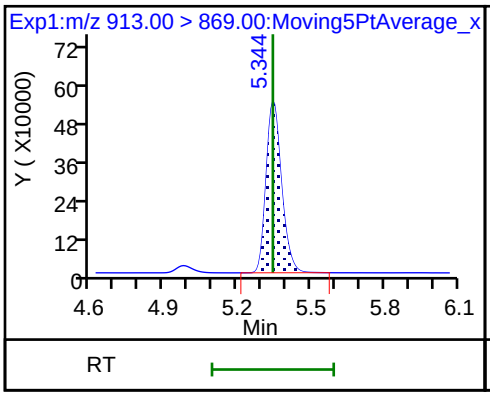
45 Perfluorohexadecanoic acid



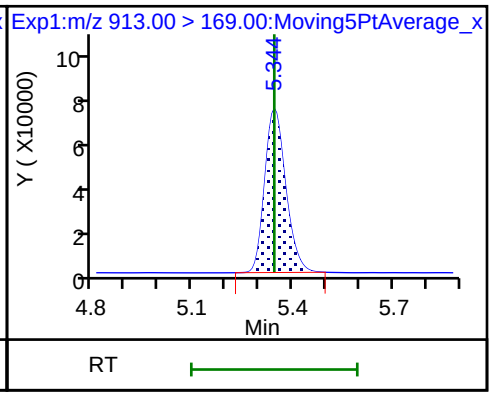
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219909/12 Calibration Date: 04/26/2018 07:19

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_079.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9103		0.980	1.00	-2.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.143		0.959	1.00	-4.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	76.24		0.861	0.884	-2.6	50.0
4:2 FTS	AveID	16.03	16.44		0.958	0.934	2.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9523		0.937	1.00	-6.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	68.01		0.892	0.938	-4.9	50.0
HFPO-DA (GenX)	AveID	2.785	3.171		1.14	1.00	13.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.019		1.02	1.00	1.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.029		0.828	0.910	-9.1	40.0
Adona	AveID	3.464	3.740		1.08	1.00	8.0	50.0
6:2FTS	AveID	1.691	1.661		0.932	0.948	-1.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.110		0.961	1.00	-3.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.341		0.962	0.952	1.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9739		0.934	1.00	-6.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.104		0.942	0.928	1.5	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.877		0.928	0.932	-0.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.004		0.993	1.00	-0.7	40.0
8:2FTS	AveID	1.265	1.251		0.947	0.958	-1.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7488		0.899	0.960	-6.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.045		1.01	1.00	1.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9237		0.926	1.00	-7.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6563		0.975	0.964	1.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8547		0.915	1.00	-8.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8214		0.972	1.00	-2.8	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.962		0.958	0.942	1.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.030		0.987	1.00	-1.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.171		0.964	1.00	-3.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2433		0.969	1.00	-3.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9026		0.931	1.00	-6.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-219909/12 Calibration Date: 04/26/2018 07:19

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_079.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9751		0.971	1.00	-2.9	50.0
13C4 PFBA	Ave	1.345	1.399		2.60	2.50	3.9	50.0
13C5 PFPeA	Ave	0.8672	0.8990		2.59	2.50	3.7	50.0
13C3-PFBS	Ave	0.0199	0.0203		2.37	2.33	2.0	50.0
M2-4:2FTS	Ave	0.1425	0.1454		2.38	2.34	2.0	50.0
13C2 PFHxA	Ave	0.9590	0.996		2.60	2.50	3.8	50.0
13C3 HFPO-DA	Ave	0.0593	0.0521		2.19	2.50	-12.2	50.0
13C4-PFHpA	Ave	0.9333	0.9461		2.53	2.50	1.4	50.0
18O2 PFHxS	Ave	1.152	1.176		2.42	2.37	2.1	50.0
M2-6:2FTS	Ave	0.2000	0.2097		2.49	2.38	4.9	40.0
13C4 PFOA	Ave	0.9276	0.9482		2.56	2.50	2.2	50.0
13C4 PFOS	Ave	0.8066	0.7967		2.36	2.39	-1.2	50.0
13C5 PFNA	Ave	0.7973	0.8380		2.63	2.50	5.1	50.0
13C8 FOSA	Ave	1.007	1.015		2.52	2.50	0.7	50.0
M2-8:2FTS	Ave	0.2409	0.2412		2.40	2.40	0.1	40.0
13C2 PFDA	Ave	0.6701	0.6823		2.55	2.50	1.8	50.0
d3-NMeFOSAA	Ave	0.3798	0.4016		2.64	2.50	5.7	50.0
d5-NEtFOSAA	Ave	0.3749	0.4141		2.76	2.50	10.5	50.0
13C2 PFUnA	Ave	0.5781	0.5712		2.47	2.50	-1.2	50.0
13C2 PFDoA	Ave	0.6242	0.6050		2.42	2.50	-3.1	50.0
13C2-PFTeDA	Ave	0.7915	0.7947		2.51	2.50	0.4	50.0
13C2-PFHxDA	Ave	1.288	1.336		2.59	2.50	3.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_079.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 07:19:30 ALS Bottle#: 28 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:37:10 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.437	1.437	0.0	1.004	2361102	0.9803		98.0	1083	
D 1 13C4 PFBA										
217.00 > 172.00	1.432	1.441	-0.009	1.000	6484668	2.60		104	41604	
D 3 13C5-PFPeA										
267.90 > 223.00	1.697	1.703	-0.006	0.555	4168563	2.59		104	71342	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.697	1.697	0.0	1.000	1906209	0.9592		95.9	2177	
D 47 13C3-PFBS										
301.90 > 83.00	1.733	1.739	-0.006	1.000	87507	2.37		102	780	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.733	1.733	0.0	1.000	2536682	0.8609		97.4	9335	
298.90 > 99.00	1.733	1.733	0.0	1.000	1068366		2.37(1.25-3.74)		15348	
D 60 M2-4:2FTS										
329.00 > 81.00	1.953	1.950	0.003	1.000	629442	2.38		102	5407	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.942	1.942	0.0	1.000	577983	0.9579		103	32885	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.993	-0.008	1.000	4616342	2.60		104	111347	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.985	0.0	1.000	1758410	0.9371		93.7	1681	
313.00 > 119.00	1.985	1.985	0.0	1.000	166957		10.53(5.03-15.10)		1242	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.008	2.008	0.0	1.000	2401132	0.8922		95.1	15604	
349.00 > 99.00	2.008	2.008	0.0	1.000	902699		2.66(1.36-4.07)		15196	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.087	2.095	-0.008	1.000	241450	2.19		87.8	8036	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.087	2.087	0.0	1.000	306302	1.14		114	2605	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.313	2.321	-0.008	1.000	4386644	2.53		101	57361	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.313	2.313	0.0	1.000	1787847	1.02		102	2101	
363.00 > 169.00	2.313	2.313	0.0	1.000	679798		2.63(1.13-3.40)		3223	
D 11 18O2 PFHxS										
403.00 > 84.00	2.326	2.334	-0.008	1.000	5158940	2.41		102	62608	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.326	2.326	0.0	1.000	2042979	0.8275		90.9	4647	
399.00 > 99.00	2.326	2.326	0.0	1.000	687017		2.97(1.50-4.49)		5486	
65 Adona										
377.00 > 251.00	2.366	2.366	0.0	1.000	5526584	1.08		108	81893	
377.00 > 85.00	2.366	2.366	0.0	1.000	3250902		1.70(0.84-2.53)		43851	
D 12 M2-6:2FTS										
429.00 > 81.00	2.656	2.660	-0.004	1.000	923676	2.49		105	16017	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.656	2.656	0.0	1.000	612523	0.9316		98.3	11845	
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.679	0.0		4636670	2.50			48237	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.690	-0.011	1.000	4396674	2.56		102	76891	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.679	2.679	0.0	1.000	1952149	0.9607		96.1	1498	
413.00 > 169.00	2.679	2.679	0.0	1.000	1015432		1.92(0.84-2.52)		3439	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.686	2.686	0.0	1.000	1886379	0.9616		101	11043	
449.00 > 99.00	2.686	2.686	0.0	1.000	508044		3.71(1.94-5.82)		9593	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.056	3.056	0.0	1.000	1513490	0.9416		101	15263	
499.00 > 99.00	3.056	3.056	0.0	1.000	319819		4.73(2.31-6.93)		8802	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.056	0.0	1.000	1513651	0.9340		93.4	5082	
463.00 > 169.00	3.056	3.056	0.0	1.000	372809		4.06(1.90-5.69)		6797	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.063	-0.007	1.000	3531522	2.36		98.8	21870	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.063	-0.007	1.000	3885478	2.63		105	85205	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.270	3.270	0.0	1.000	2584673	0.9279		99.6	34019	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.394	0.0	1.000	1889772	0.99		99.3	10486	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.404	-0.010	1.000	4704522	2.52		101	32239	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.413	0.0	1.000	1062238	0.8993		93.7	10047	
549.00 > 99.00	3.413	3.413	0.0	1.000	402458		2.64(1.33-3.97)		9854	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.413	0.0	1.000	536250	0.9473		98.9	26101	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.423	-0.010	1.000	1071426	2.40		100	11202	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.422	0.0	1.000	1321861	1.01		101	6452	
513.00 > 169.00	3.422	3.422	0.0	1.000	218437		6.05(2.36-7.09)		6105	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.432	-0.010	1.000	3163567	2.55		102	69309	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.582	0.0	1.000	1861908	2.64		106	19254	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.582	3.582	0.0	1.000	687897	0.9261		92.6	5376	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.736	3.736	0.0	1.000	934893	0.9745		101	6693	
599.00 > 99.00	3.736	3.736	0.0	1.000	308121		3.03(1.39-4.16)		6418	
D 30 13C2 PFUnA										
565.00 > 520.00	3.757	3.758	-0.001	1.000	2648482	2.47		98.8	61841	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.758	-0.011	1.000	1920022	2.76		110	26921	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.757	3.757	0.0	1.000	870220	0.9720		97.2	7021	
563.00 > 169.00	3.757	3.757	0.0	1.000	200178		4.35(2.12-6.36)		3423	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.757	3.757	0.0	1.003	656406	0.9146		91.5	10812	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.914	3.914	0.0	1.000	4122669	0.9580		102	52512	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.057	4.057	0.0	1.003	1155255	0.9873		98.7	1521	
613.00 > 169.00	4.057	4.057	0.0	1.003	281595		4.10(2.13-6.40)		2777	
D 36 13C2 PFDoA										
615.00 > 570.00	4.046	4.059	-0.013	1.000	2805052	2.42		96.9	26409	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.316	4.316	0.0	1.000	1314019	0.9636		96.4	1428	
663.00 > 169.00	4.316	4.316	0.0	1.000	407411		3.23(1.25-3.76)		3529	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.563	-0.012	1.000	3684759	2.51		100	22871	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.551	0.0	1.000	358594	0.9687		96.9	3260	
713.00 > 219.00	4.551	4.551	0.0	1.000	240236		1.49(0.71-2.13)		4583	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.975	-0.001	1.000	6193694	2.59		104	17934	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.974	0.0	1.000	2236124	0.9309		93.1	968	
813.00 > 169.00	4.974	4.974	0.0	1.000	376096		5.95(2.86-8.58)		2402	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.342	0.0	1.000	2415865	0.9712		97.1	839	
913.00 > 169.00	5.342	5.342	0.0	1.000	295768		8.17(3.83-11.48)		2112	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:37:11 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_079.d

Injection Date: 26-Apr-2018 07:19:30 Instrument ID: A8_N

Lims ID: CCV L4

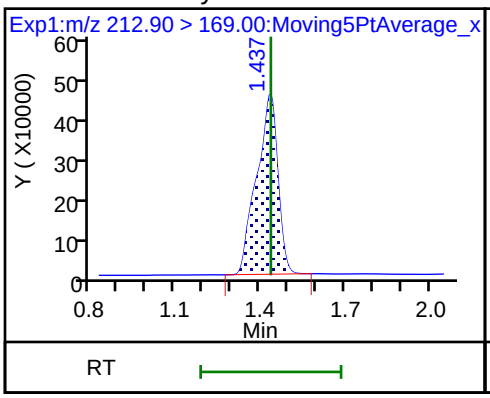
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 12

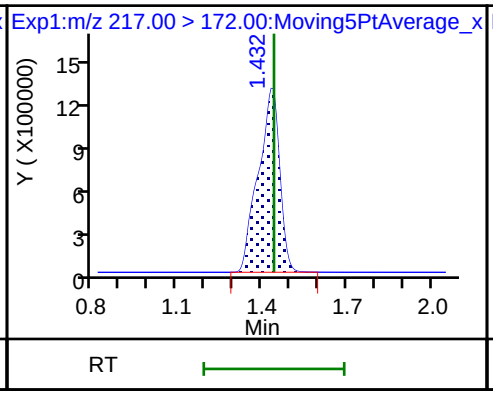
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

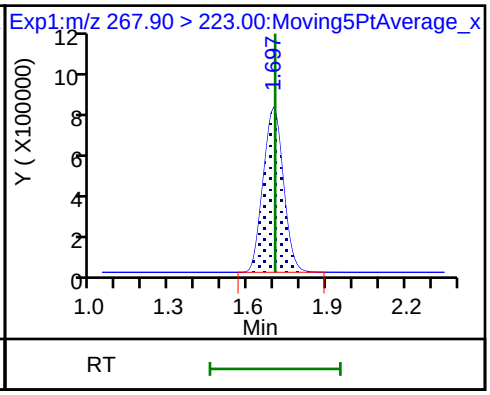
2 Perfluorobutyric acid



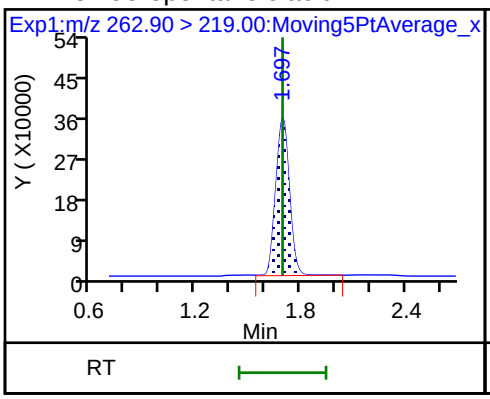
D 1 13C4 PFBA



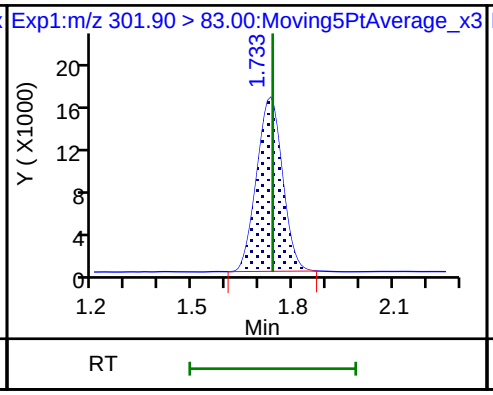
D 3 13C5-PFPeA



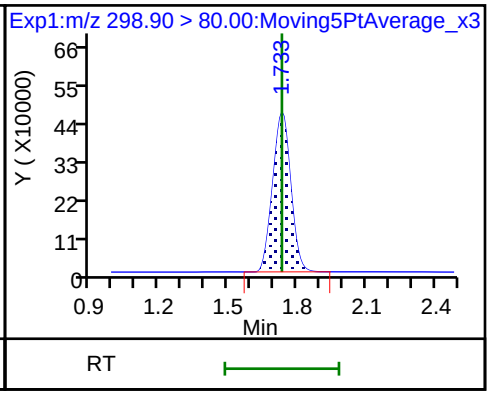
4 Perfluoropentanoic acid



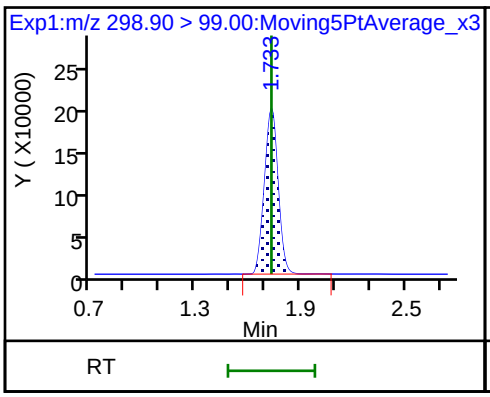
D 47 13C3-PFBS



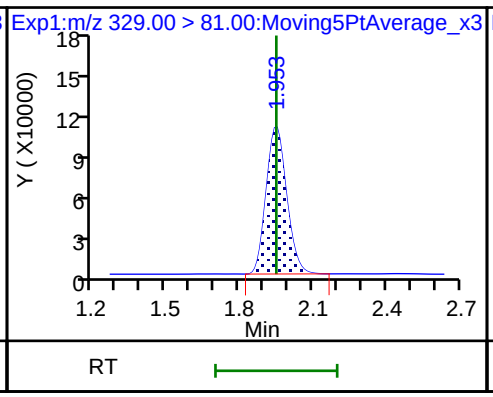
5 Perfluorobutanesulfonic acid



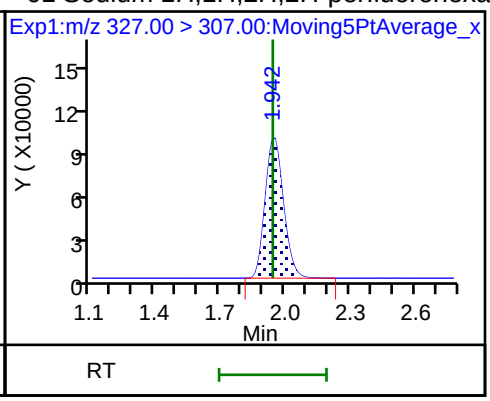
5 Perfluorobutanesulfonic acid



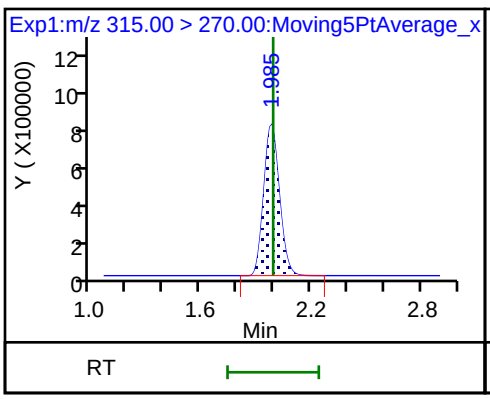
D 60 M2-4:2FTS



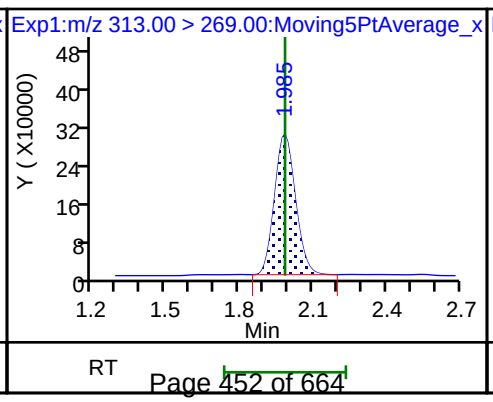
61 Sodium 1H,1H,2H,2H-perfluorohexane



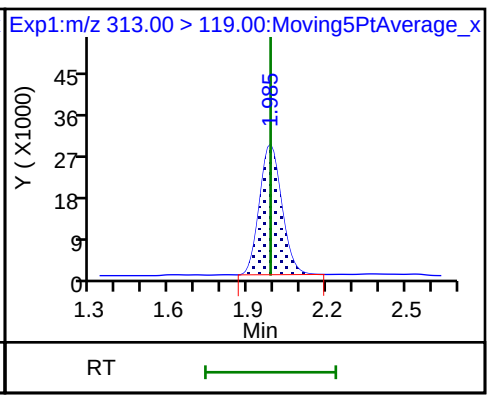
D 7 13C2 PFHxA



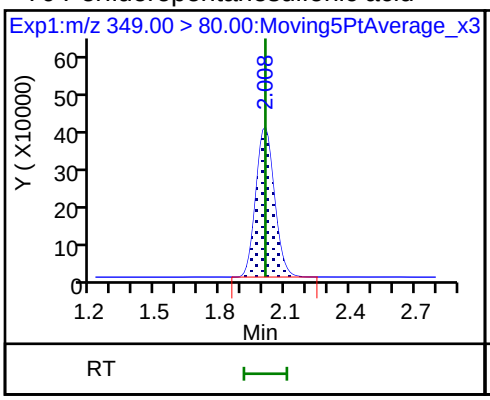
6 Perfluorohexanoic acid



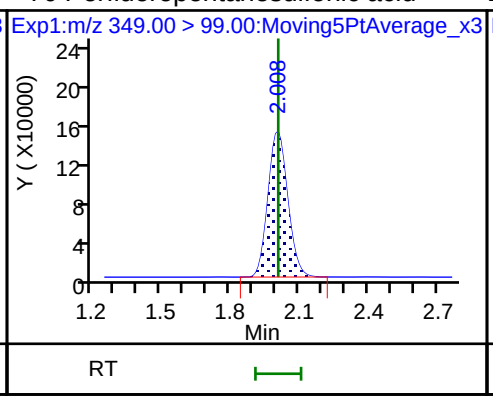
6 Perfluorohexanoic acid



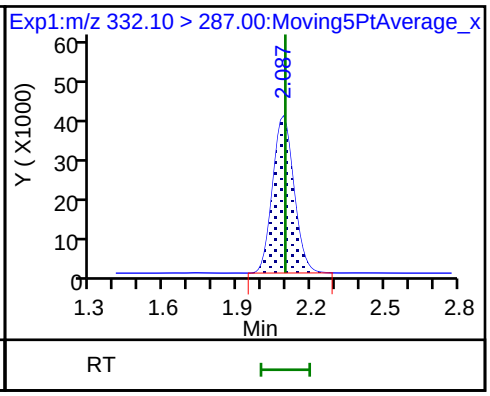
70 Perfluoropentanesulfonic acid



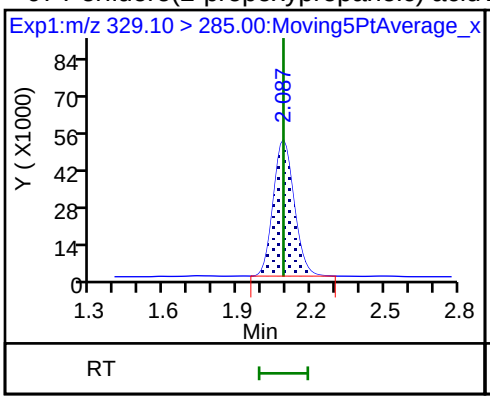
70 Perfluoropentanesulfonic acid



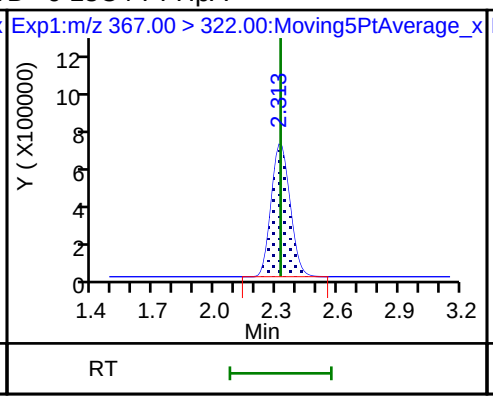
D 64 13C3 HFPO-DA



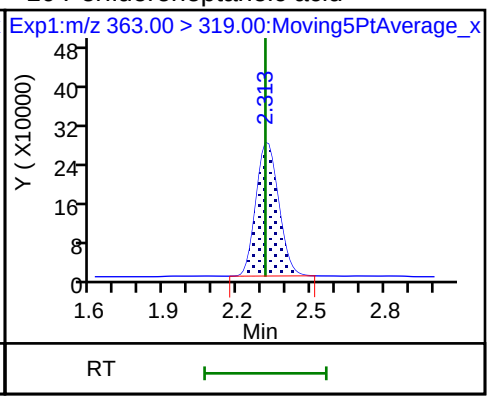
67 Perfluoro(2-propoxypropanoic) acid



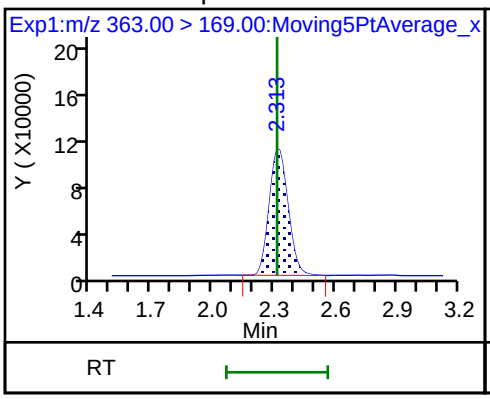
D 9 13C4-PFHpA



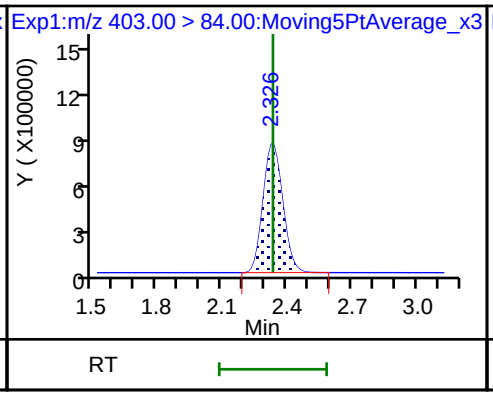
10 Perfluoroheptanoic acid



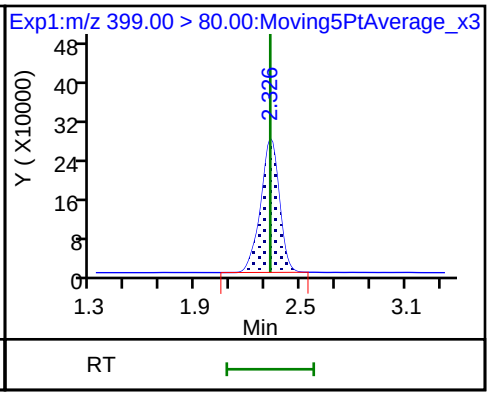
10 Perfluoroheptanoic acid



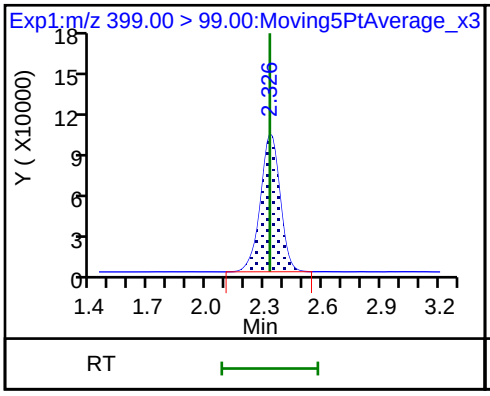
D 11 18O2 PFHxS



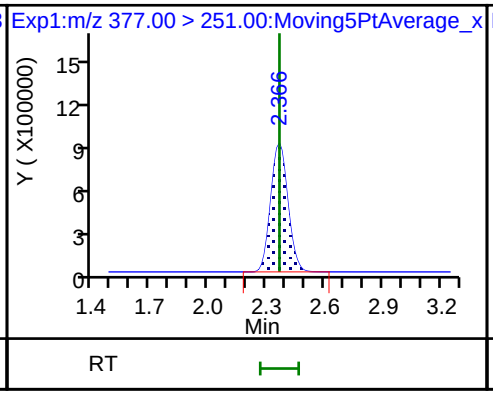
8 Perfluorohexanesulfonic acid



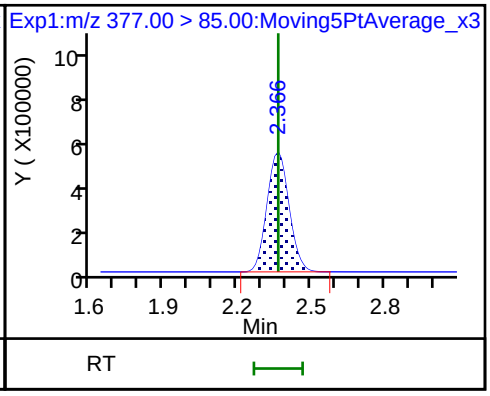
8 Perfluorohexanesulfonic acid



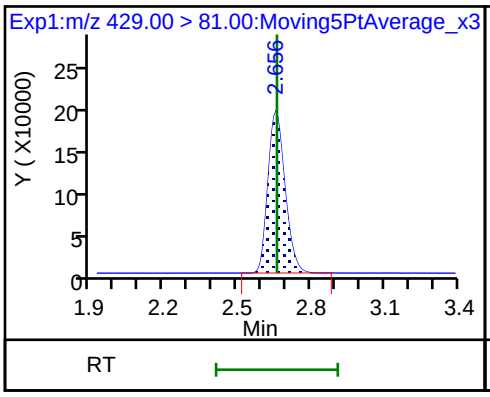
65 Adona



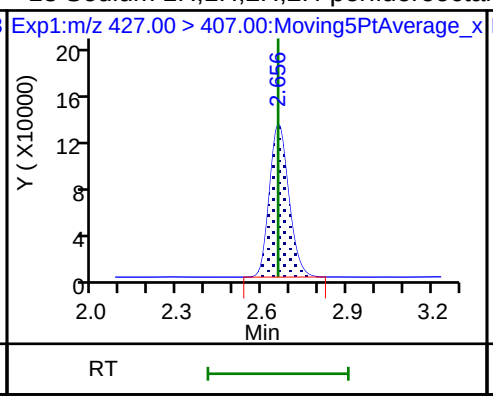
65 Adona



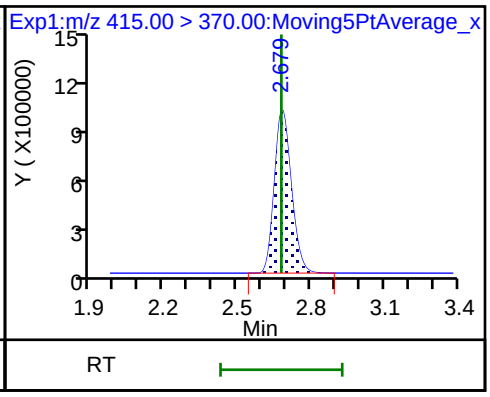
D 12 M2-6:2FTS



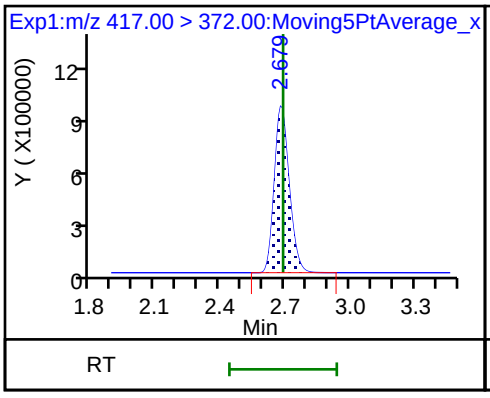
13 Sodium 1H,1H,2H,2H-perfluorooctane



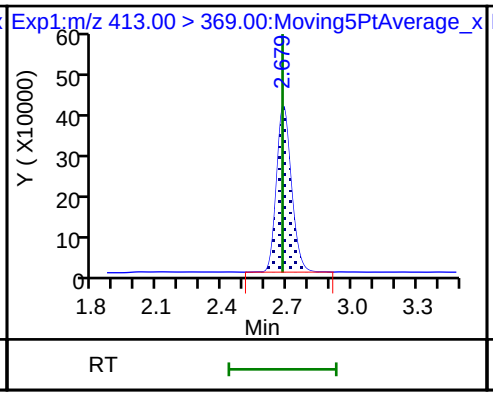
M2 13C2-PFOA



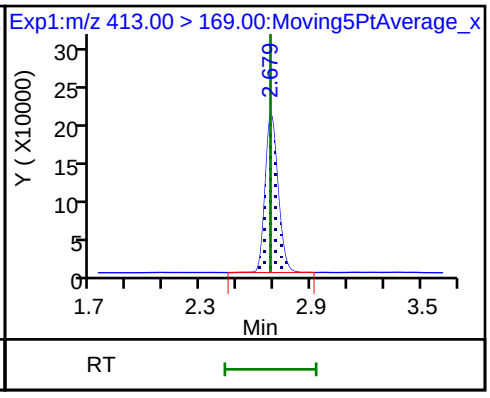
D 14 13C4 PFOA



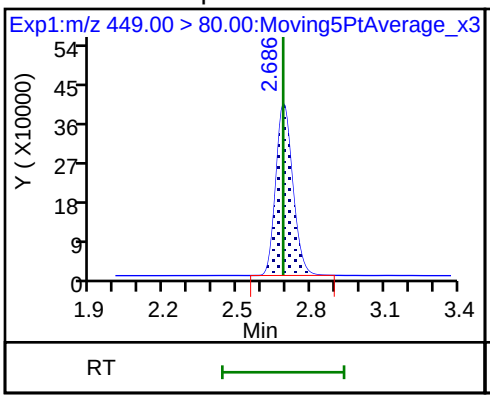
15 Perfluorooctanoic acid



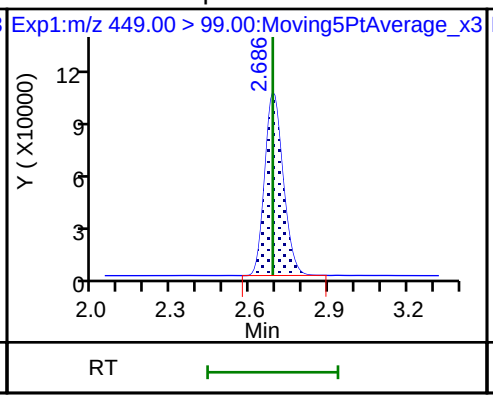
15 Perfluorooctanoic acid



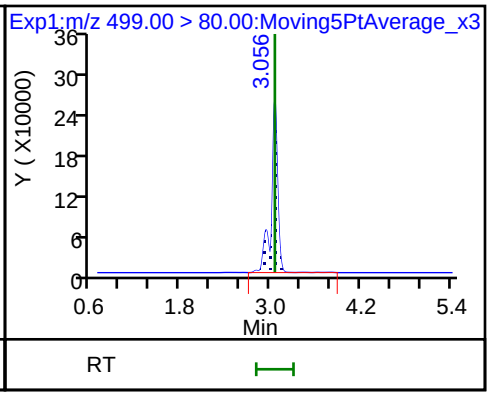
16 Perfluoroheptanesulfonic acid



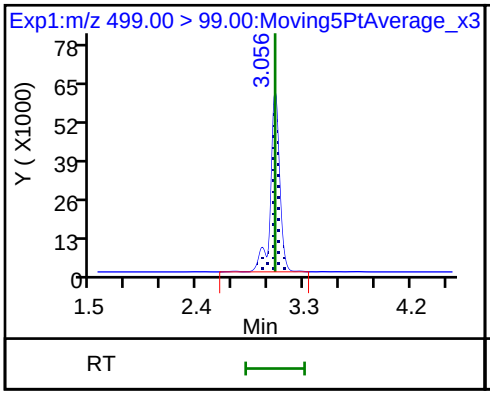
16 Perfluoroheptanesulfonic acid



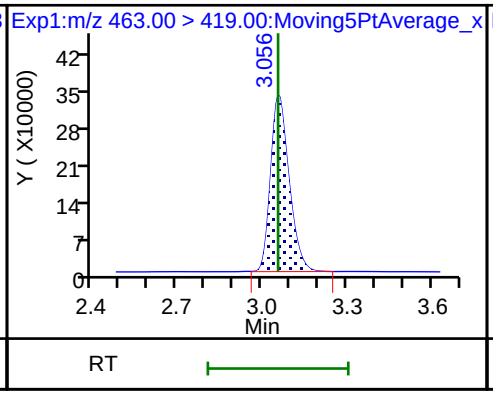
17 Perfluorooctane sulfonic acid



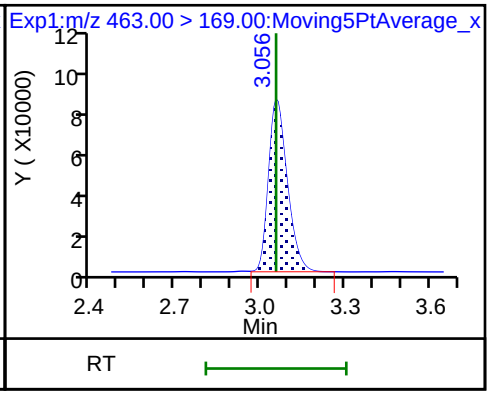
17 Perfluorooctane sulfonic acid



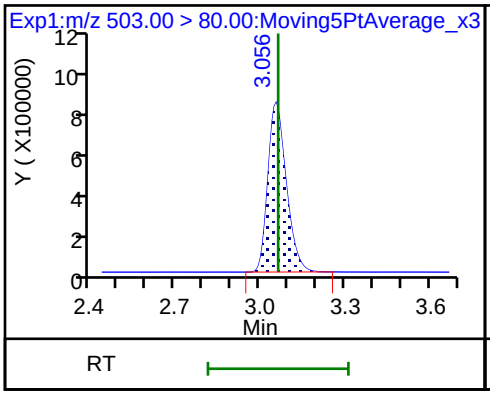
20 Perfluorononanoic acid



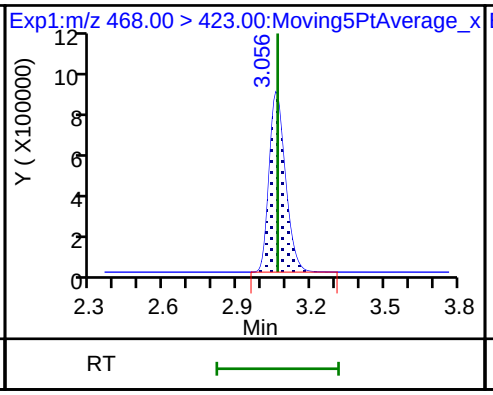
20 Perfluorononanoic acid



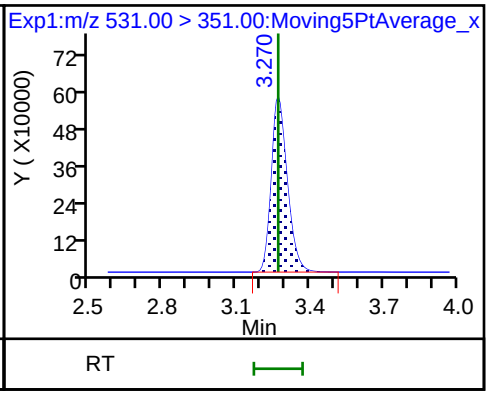
D 18 13C4 PFOS



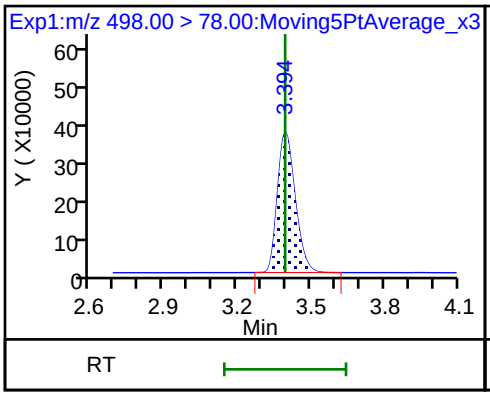
D 19 13C5 PFNA



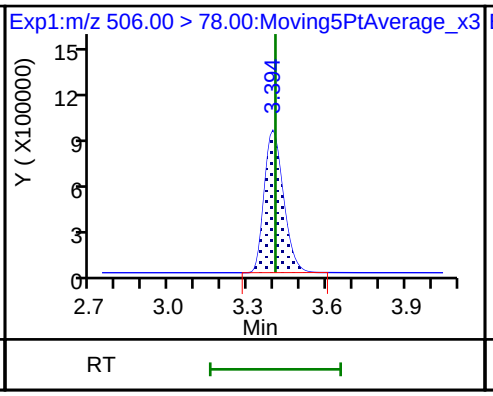
69 9-Chlorohexadecafluoro-3-oxanonane



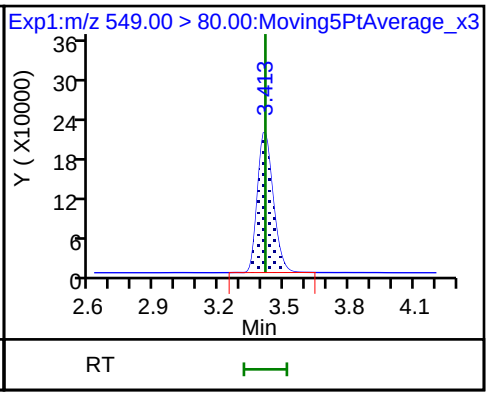
22 Perfluorooctane Sulfonamide



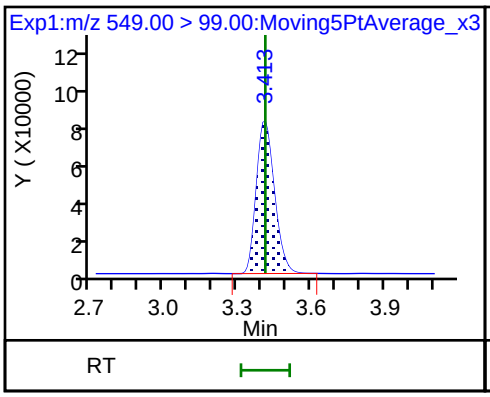
D 21 13C8 FOSA



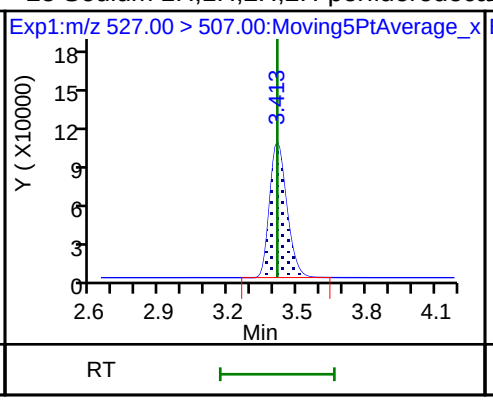
68 Perfluorononanesulfonic acid



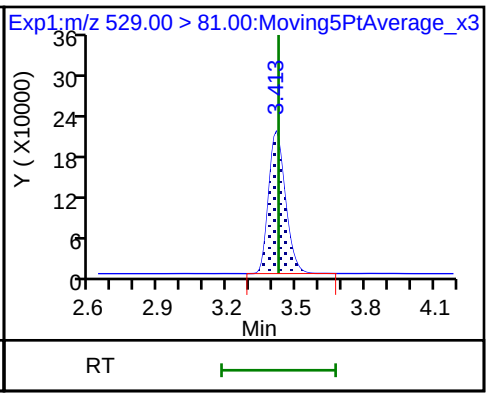
68 Perfluorononanesulfonic acid



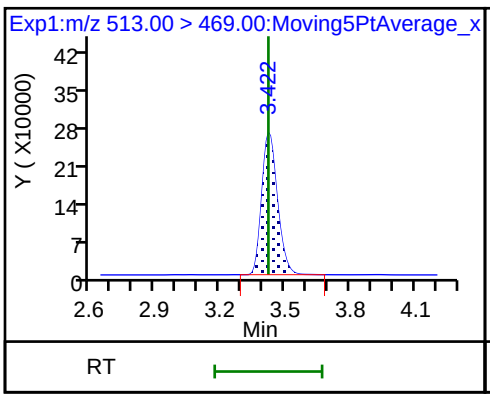
25 Sodium 1H,1H,2H,2H-perfluorodecane



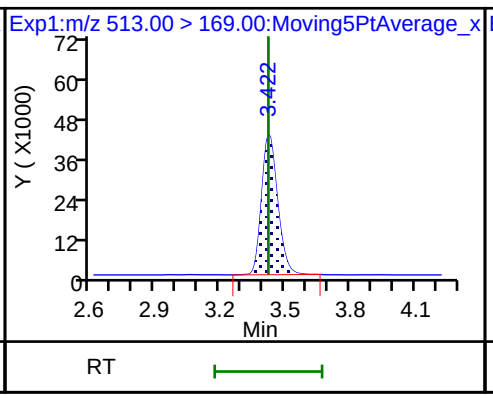
D 26 M2-8:2FTS



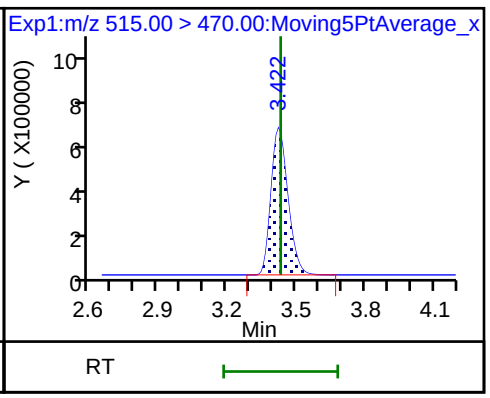
24 Perfluorodecanoic acid



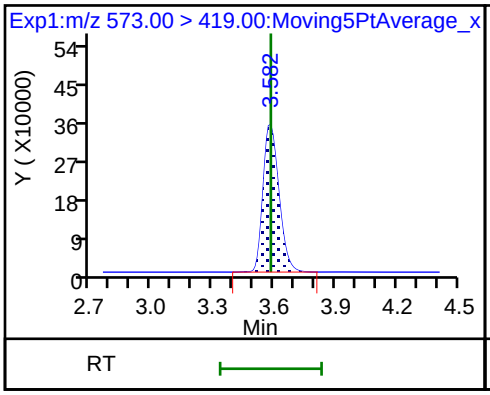
24 Perfluorodecanoic acid



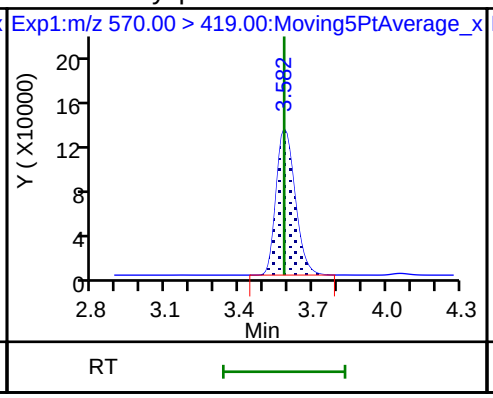
D 23 13C2 PFDA



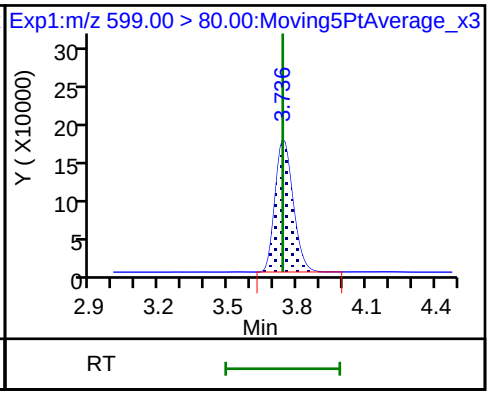
D 27 d3-NMeFOSAA



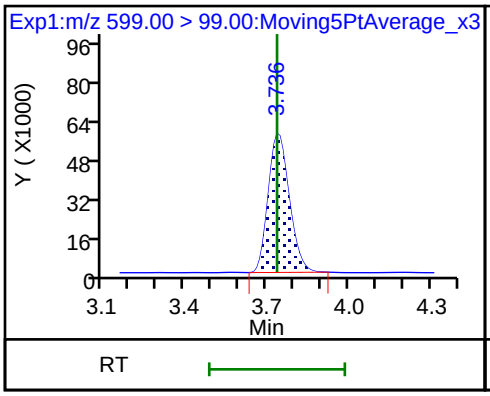
28 N-methyl perfluorooctane sulfonami



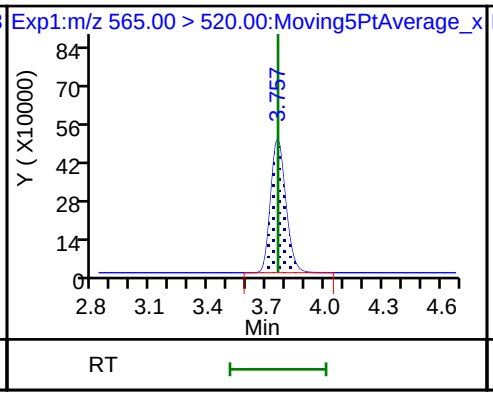
29 Perfluorodecane Sulfonic acid



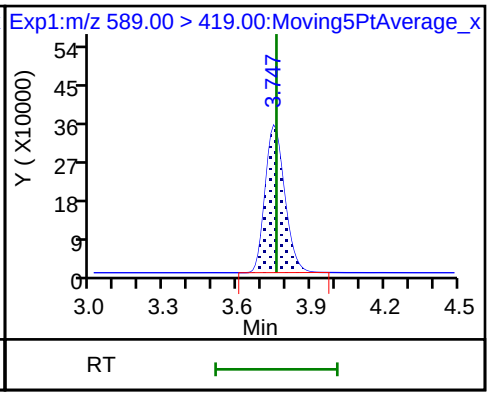
29 Perfluorodecane Sulfonic acid



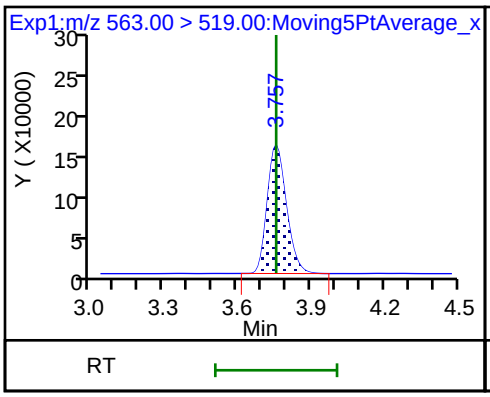
D 30 13C2 PFUnA



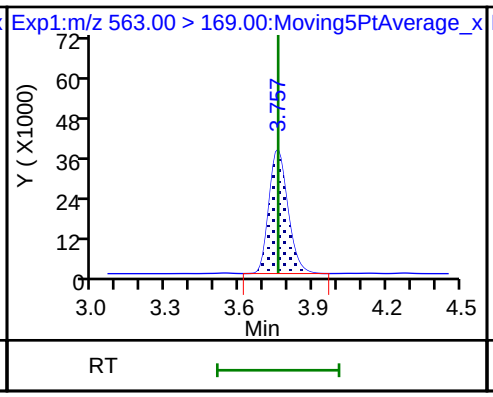
D 32 d5-NEtFOSAA



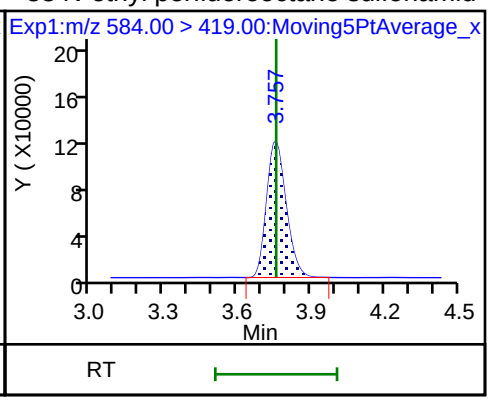
31 Perfluoroundecanoic acid



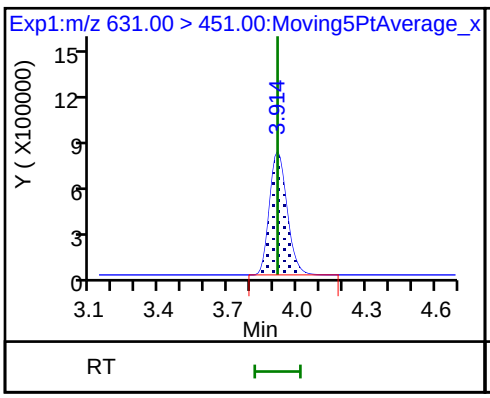
31 Perfluoroundecanoic acid



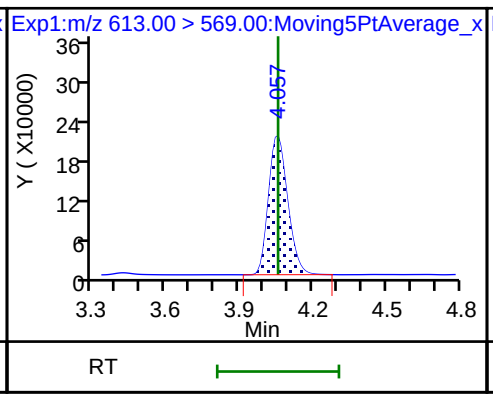
33 N-ethyl perfluorooctane sulfonamid



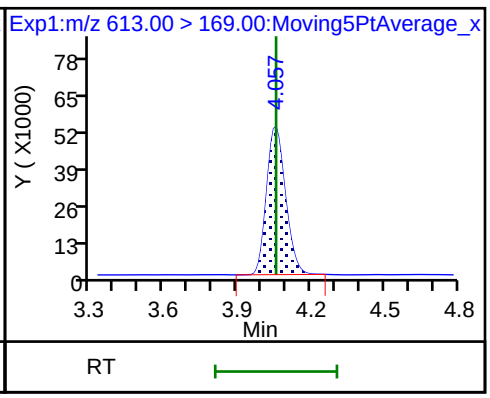
66 11-Chloroeicosafluoro-3-oxaundecan



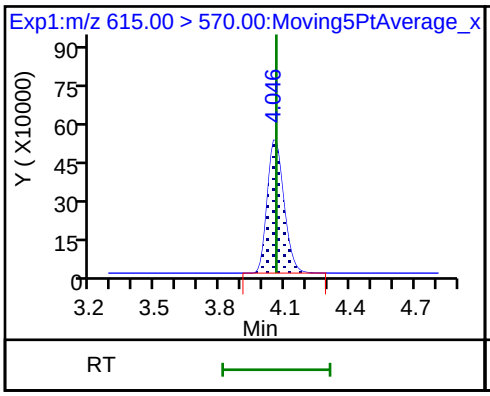
37 Perfluorododecanoic acid



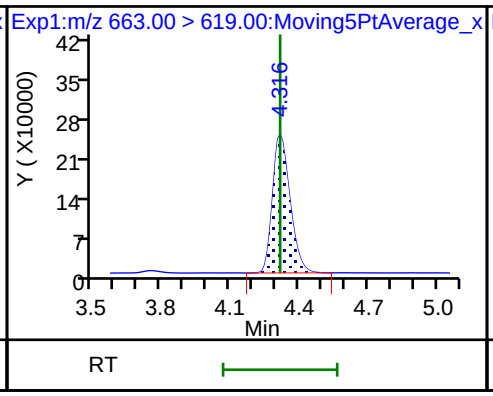
37 Perfluorododecanoic acid



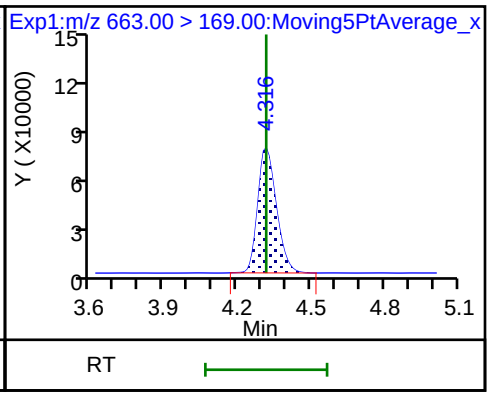
D 36 13C2 PFDoA



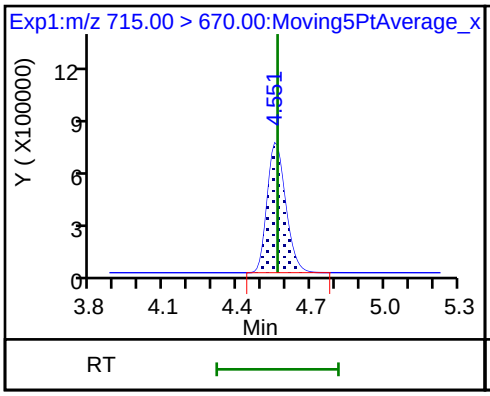
41 Perfluorotridecanoic acid



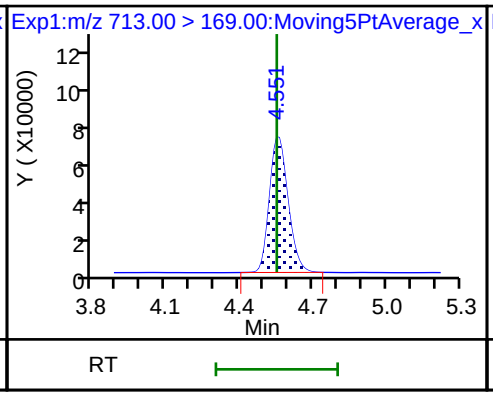
41 Perfluorotridecanoic acid



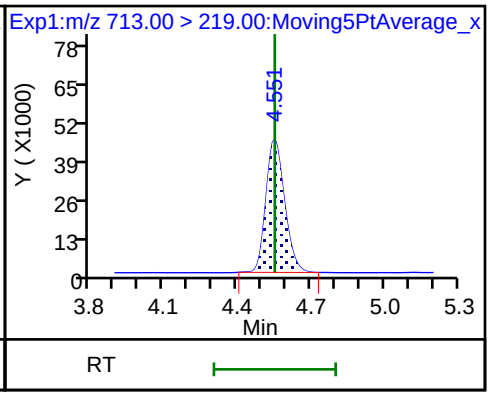
D 43 13C2-PFTeDA



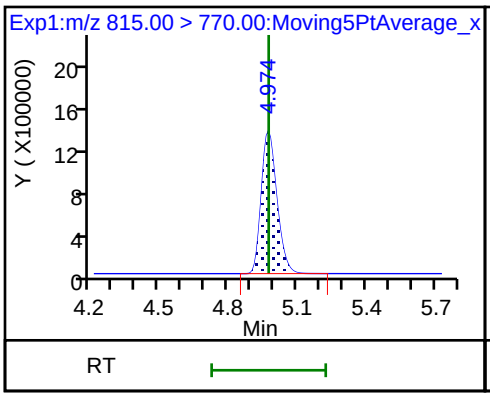
42 Perfluorotetradecanoic acid



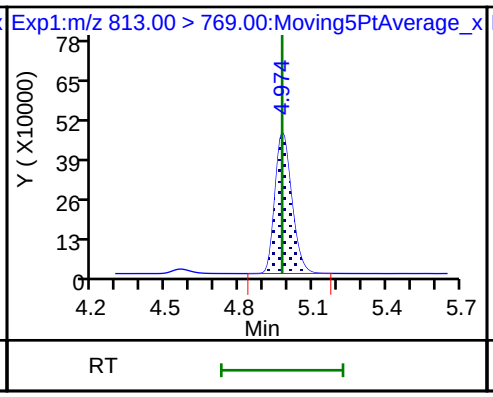
42 Perfluorotetradecanoic acid



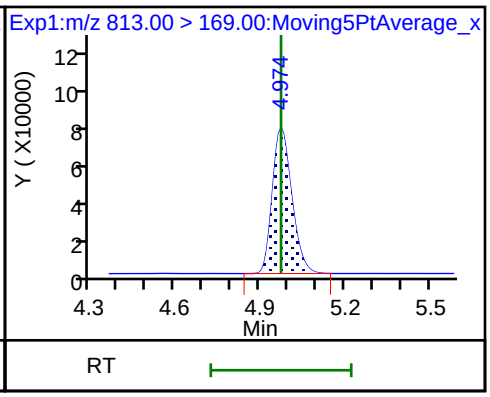
D 44 13C2-PFHxDA



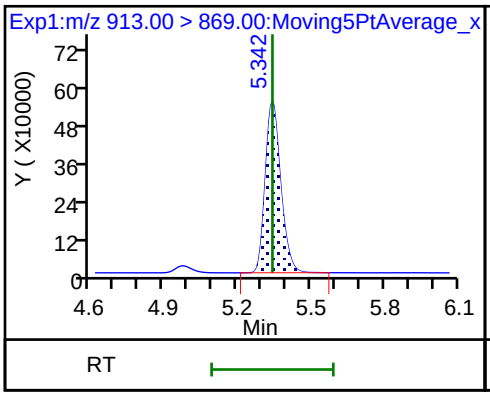
45 Perfluorohexadecanoic acid



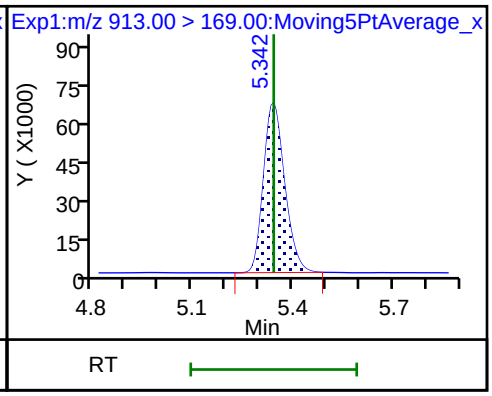
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220023/1 Calibration Date: 04/26/2018 12:21

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_009.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9129		0.983	1.00	-1.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.150		0.965	1.00	-3.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	75.74		0.855	0.884	-3.2	50.0
4:2 FTS	AveID	16.03	16.32		0.951	0.934	1.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9455		0.930	1.00	-7.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	69.56		0.912	0.938	-2.7	50.0
HFPO-DA (GenX)	AveID	2.785	3.007		1.08	1.00	7.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	0.996		0.995	1.00	-0.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.008		0.810	0.910	-11.0	40.0
Adona	AveID	3.464	3.742		1.08	1.00	8.0	50.0
6:2FTS	AveID	1.691	1.661		0.932	0.948	-1.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.103		0.955	1.00	-4.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.336		0.958	0.952	0.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.051		0.896	0.928	-3.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9499		0.911	1.00	-8.9	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.788		0.884	0.932	-5.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.997		0.986	1.00	-1.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7545		0.906	0.960	-5.6	50.0
8:2FTS	AveID	1.265	1.181		0.894	0.958	-6.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.8734		0.847	1.00	-15.3	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.005		1.01	1.00	0.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6405		0.951	0.964	-1.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8483		0.908	1.00	-9.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7877		0.932	1.00	-6.8	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.891		0.935	0.942	-0.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	0.9876		0.947	1.00	-5.3	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.103		0.908	1.00	-9.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2439		0.971	1.00	-2.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9404		0.971	1.00	-2.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220023/1 Calibration Date: 04/26/2018 12:21

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_009.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9232		0.919	1.00	-8.1	50.0
13C4 PFBA	Ave	1.345	1.368		2.54	2.50	1.7	50.0
13C5 PFPeA	Ave	0.8672	0.8949		2.58	2.50	3.2	50.0
13C3-PFBS	Ave	0.0199	0.0197		2.30	2.33	-0.9	50.0
M2-4:2FTS	Ave	0.1425	0.1494		2.45	2.34	4.9	50.0
13C2 PFHxA	Ave	0.9590	0.995		2.60	2.50	3.8	50.0
13C3 HFPO-DA	Ave	0.0593	0.0530		2.24	2.50	-10.6	50.0
13C4-PFHpA	Ave	0.9333	0.9505		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	1.152	1.156		2.37	2.37	0.3	50.0
M2-6:2FTS	Ave	0.2000	0.2088		2.48	2.38	4.4	40.0
13C4 PFOA	Ave	0.9276	0.9385		2.53	2.50	1.2	50.0
13C4 PFOS	Ave	0.8066	0.7970		2.36	2.39	-1.2	50.0
13C5 PFNA	Ave	0.7973	0.8187		2.57	2.50	2.7	50.0
13C8 FOSA	Ave	1.007	0.9903		2.46	2.50	-1.7	50.0
M2-8:2FTS	Ave	0.2409	0.2512		2.50	2.40	4.3	40.0
13C2 PFDA	Ave	0.6701	0.7032		2.62	2.50	4.9	50.0
d3-NMeFOSAA	Ave	0.3798	0.3852		2.54	2.50	1.4	50.0
13C2 PFUnA	Ave	0.5781	0.5775		2.50	2.50	-0.0	50.0
d5-NEtFOSAA	Ave	0.3749	0.4283		2.86	2.50	14.3	50.0
13C2 PFDoA	Ave	0.6242	0.6297		2.52	2.50	0.9	50.0
13C2-PFTeDA	Ave	0.7915	0.7613		2.40	2.50	-3.8	50.0
13C2-PFHxDA	Ave	1.288	1.294		2.51	2.50	0.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_009.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 12:21:03 ALS Bottle#: 13 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.435	0.006	1.000	6251884	2.54		102	40917	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2282934	0.9831		98.3	1204	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.702	0.0	0.554	4090191	2.58		103	69713	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.702	0.0	1.000	1881039	0.9647		96.5	1868	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	83787	2.30		99.1	620	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.747	1.747	0.0	1.005	2412981	0.8553		96.8	7688	
298.90 > 99.00	1.747	1.747	0.0	1.005	1029300		2.34(1.25-3.74)		9145	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.949	0.011	1.000	637988	2.45		105	5499	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.960	0.0	1.000	549311	0.9508		102	31198	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.992	0.001	1.000	4549487	2.59		104	84387	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.993	0.0	1.000	1720566	0.9305		93.0	1987	
313.00 > 119.00	1.993	1.993	0.0	1.000	170057		10.12(5.03-15.10)		1695	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.015	2.015	0.0	1.000	2351248	0.9124		97.3	15947	
349.00 > 99.00	2.015	2.015	0.0	1.000	863031		2.72(1.36-4.07)		11786	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.094	2.094	0.0	1.000	242444	2.24		89.4	6628	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.094	2.094	0.0	1.000	291585	1.08		108	1970	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.333	2.320	0.013	1.000	4344383	2.55		102	85552	
D 11 18O2 PFHxS										
403.00 > 84.00	2.346	2.333	0.013	1.000	4997156	2.37		100	55220	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.333	2.333	0.0	1.000	1730732	1.00		99.5	2193	
363.00 > 169.00	2.333	2.333	0.0	1.000	678563		2.55(1.13-3.40)		3339	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.346	2.346	0.0	1.000	1937578	0.8102		89.0	3981	
399.00 > 99.00	2.346	2.346	0.0	1.000	670638		2.89(1.50-4.49)		4125	
65 Adona										
377.00 > 251.00	2.373	2.373	0.0	1.000	5452555	1.08		108	48981	
377.00 > 85.00	2.373	2.373	0.0	1.000	3026039		1.80(0.84-2.53)		41097	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.661	0.007	1.000	906829	2.48		104	11289	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.668	0.0	1.000	601364	0.9317		98.3	9120	
D 14 13C4 PFOA										
417.00 > 372.00	2.698	2.683	0.015	1.000	4289670	2.53		101	44910	
* 62 13C2-PFOA										
415.00 > 370.00	2.698	2.698	0.0		4570767	2.50			51165	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.698	2.698	0.0	1.000	1892603	0.9546		95.5	1316	
413.00 > 169.00	2.698	2.698	0.0	1.000	981575		1.93(0.84-2.52)		3355	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.706	2.706	0.0	1.000	1852743	0.9577		101	9802	
449.00 > 99.00	2.706	2.706	0.0	1.000	504976		3.67(1.94-5.82)		9405	
D 19 13C5 PFNA										
468.00 > 423.00	3.074	3.060	0.014	1.000	3742181	2.57		103	66859	
D 18 13C4 PFOS										
503.00 > 80.00	3.067	3.060	0.007	1.000	3482470	2.36		98.8	20863	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.067	3.067	0.0	1.000	1420497	0.8962		96.6	5970	
499.00 > 99.00	3.067	3.067	0.0	1.000	321541		4.42(2.31-6.93)		5449	
20 Perfluorononanoic acid										
463.00 > 419.00	3.074	3.074	0.0	1.000	1421798	0.9109		91.1	4747	
463.00 > 169.00	3.074	3.074	0.0	1.000	356145		3.99(1.90-5.69)		9543	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.280	3.280	0.0	1.000	2428136	0.8840		94.8	48663	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.398	0.0	1.000	4526241	2.46		98.3	36227	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1805188	0.9857		98.6	15616	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.407	0.019	1.000	1099853	2.50		104	9682	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.417	3.417	0.0	1.000	1055464	0.9061		94.4	8935	
549.00 > 99.00	3.417	3.417	0.0	1.000	379677		2.78(1.33-3.97)		8393	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.436	3.426	0.010	1.000	3214185	2.62		105	70103	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	519401	0.8938		93.3	24860	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.436	3.436	0.0	1.000	1122954	0.8467		84.7	5223	
513.00 > 169.00	3.436	3.436	0.0	1.000	208883		5.38(2.36-7.09)		2741	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.586	3.575	0.011	1.000	1760769	2.54		101	21916	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.597	3.597	0.0	1.003	707728	1.01		101	4995	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.761	3.751	0.010	1.000	1957730	2.86		114	27482	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.751	0.010	1.000	2639764	2.50		99.9	69903	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.751	3.751	0.0	1.000	899734	0.9511		98.7	9802	
599.00 > 99.00	3.751	3.751	0.0	1.000	320294		2.81(1.39-4.16)		10009	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.000	664313	0.9078		90.8	17679	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.000	831763	0.9321		93.2	4175	
563.00 > 169.00	3.761	3.761	0.0	1.000	223368		3.72(2.12-6.36)		4085	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.918	0.0	1.000	3968778	0.9352		99.3	68768	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.050	0.011	1.000	2878339	2.52		101	24928	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	1137043	0.9470		94.7	1610	
613.00 > 169.00	4.061	4.061	0.0	1.000	285045		3.99(2.13-6.40)		2863	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	1270277	0.9078		90.8	1417	
663.00 > 169.00	4.319	4.319	0.0	1.000	416803		3.05(1.25-3.76)		3797	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.553	0.011	1.000	3479617	2.40		96.2	24533	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	339446	0.9711		97.1	3248	
713.00 > 219.00	4.564	4.564	0.0	1.000	243283		1.40(0.71-2.13)		4524	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.967	0.009	1.000	5912680	2.51		100	17836	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.984	4.984	0.0	1.002	2224213	0.9709		97.1	991	
813.00 > 169.00	4.984	4.984	0.0	1.002	363961		6.11(2.86-8.58)		2626	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.350	5.350	0.0	1.000	2183402	0.9195		91.9	772	
913.00 > 169.00	5.343	5.350	-0.007	0.999	270636		8.07(3.83-11.48)		2144	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 16:46:24 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_009.d

Injection Date: 26-Apr-2018 12:21:03 Instrument ID: A8_N

Lims ID: CCV L4

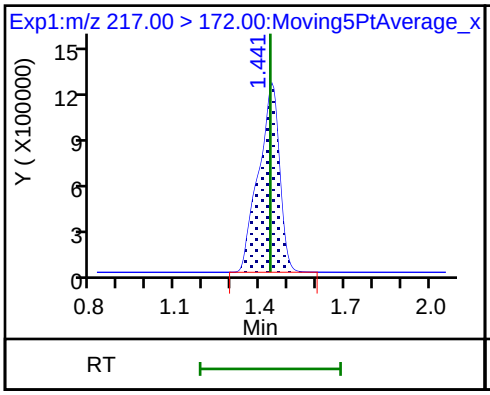
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 1

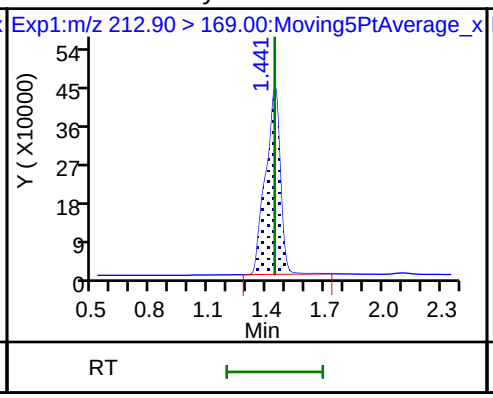
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

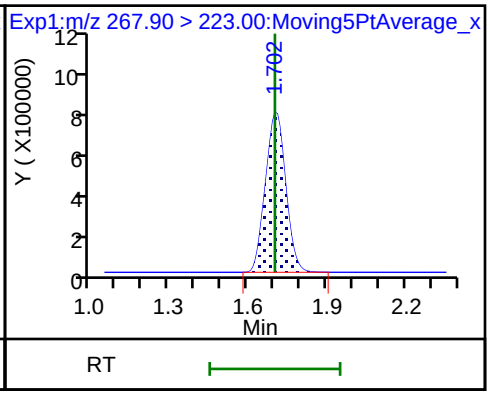
D 1 13C4 PFBA



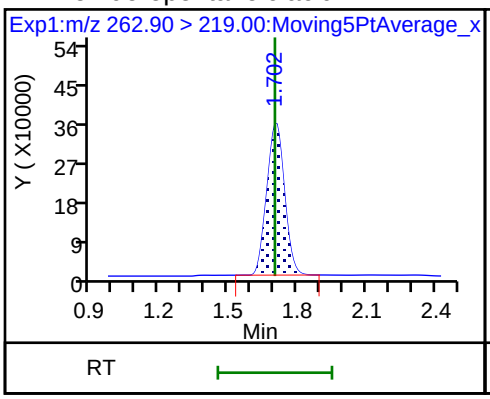
2 Perfluorobutyric acid



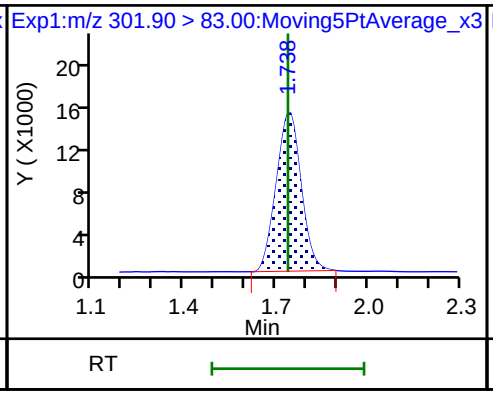
D 3 13C5-PFPeA



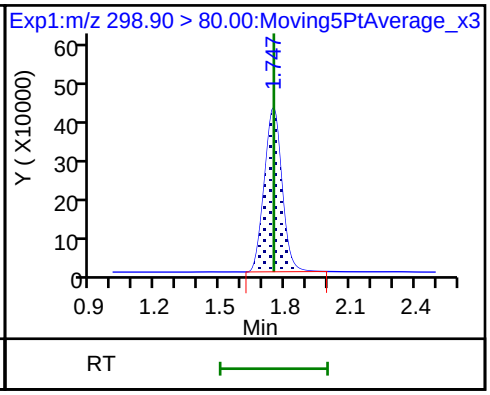
4 Perfluoropentanoic acid



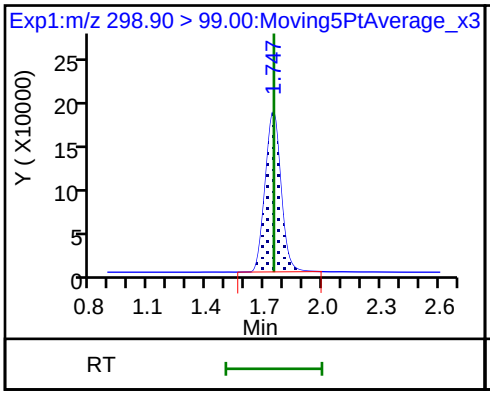
D 47 13C3-PFBS



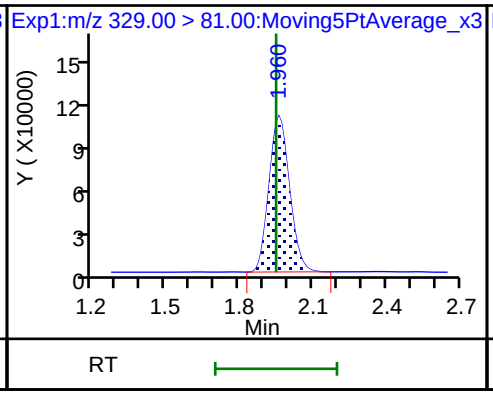
5 Perfluorobutanesulfonic acid



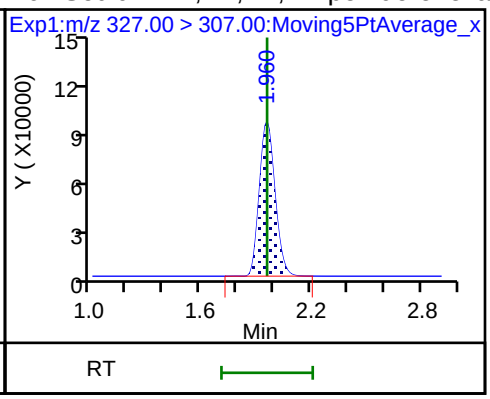
5 Perfluorobutanesulfonic acid



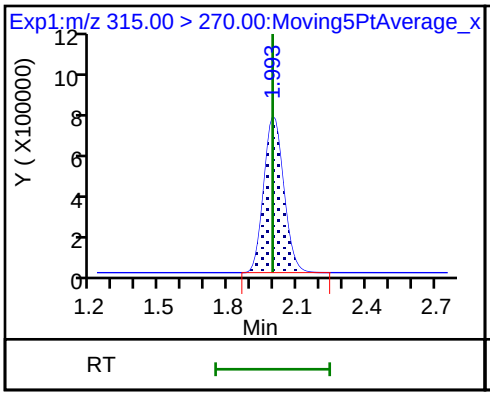
D 60 M2-4:2FTS



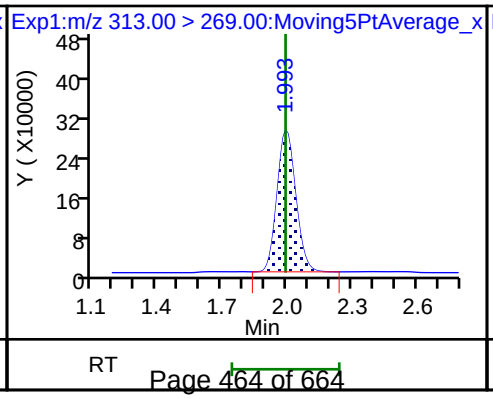
61 Sodium 1H,1H,2H,2H-perfluorohexane



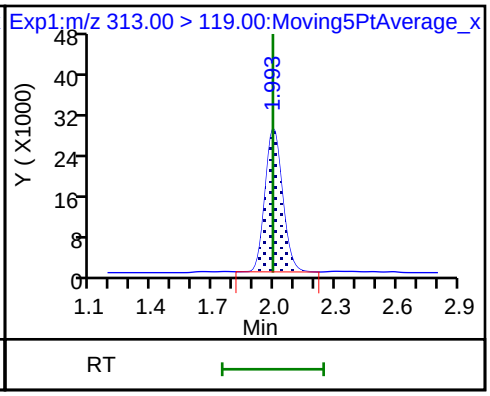
D 7 13C2 PFHxA



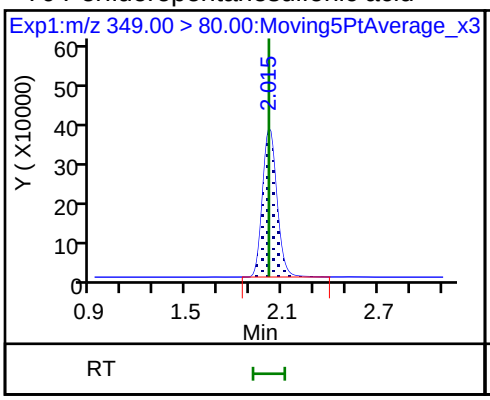
6 Perfluorohexanoic acid



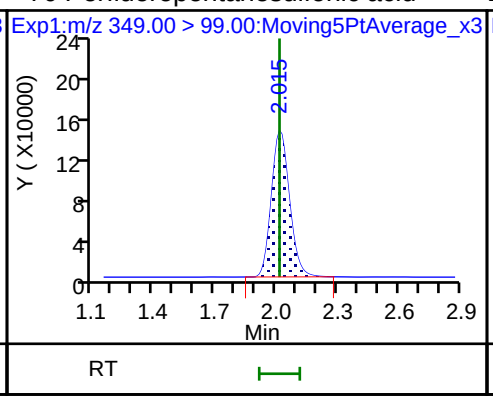
6 Perfluorohexanoic acid



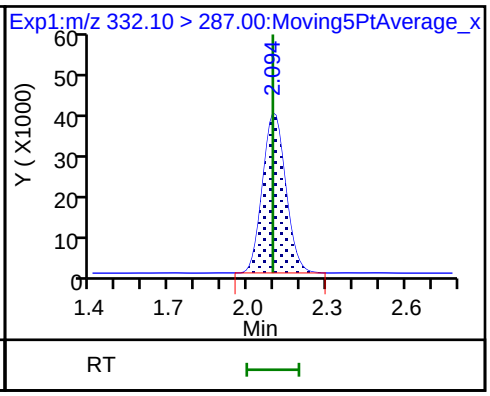
70 Perfluoropentanesulfonic acid



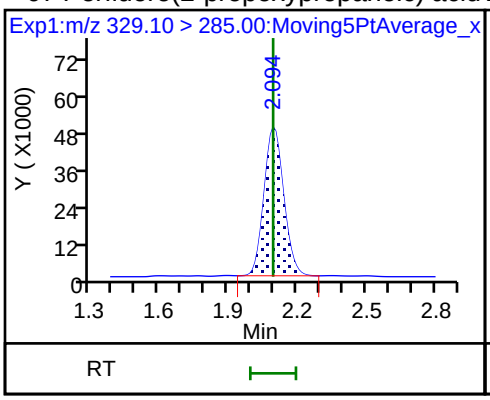
70 Perfluoropentanesulfonic acid



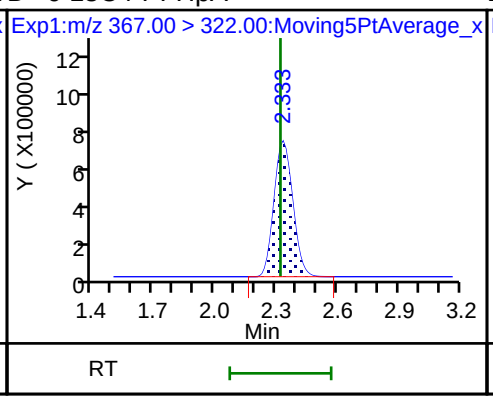
D 64 13C3 HFPO-DA



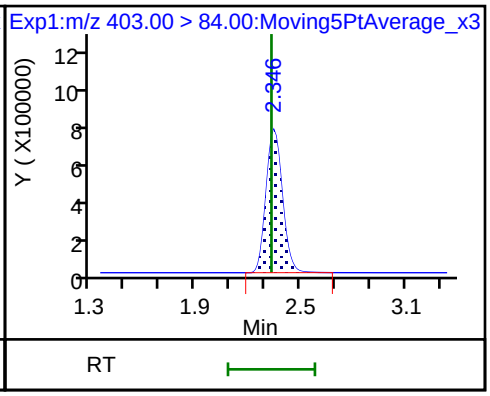
67 Perfluoro(2-propoxypropanoic) acid



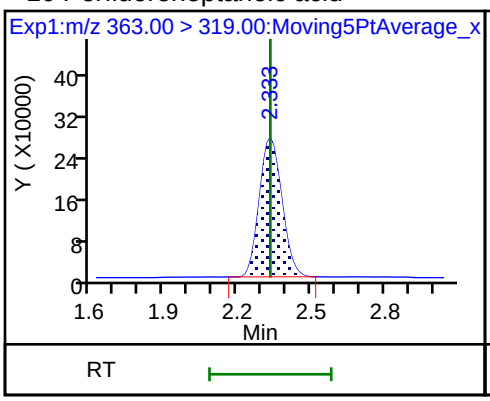
D 9 13C4-PFHpA



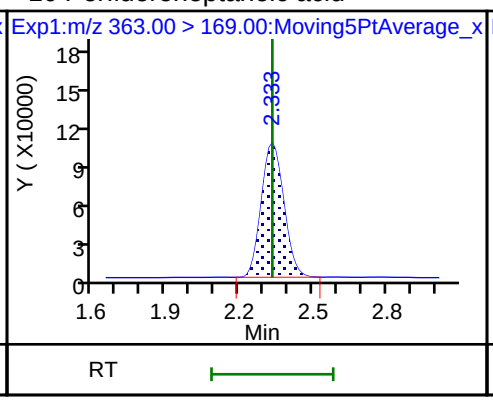
D 11 18O2 PFHxS



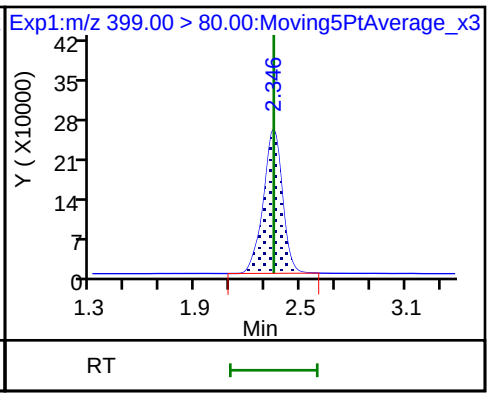
10 Perfluoroheptanoic acid



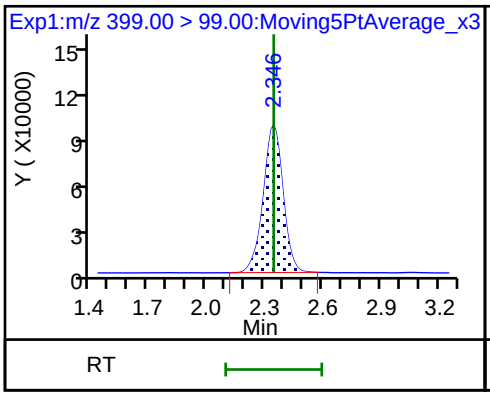
10 Perfluoroheptanoic acid



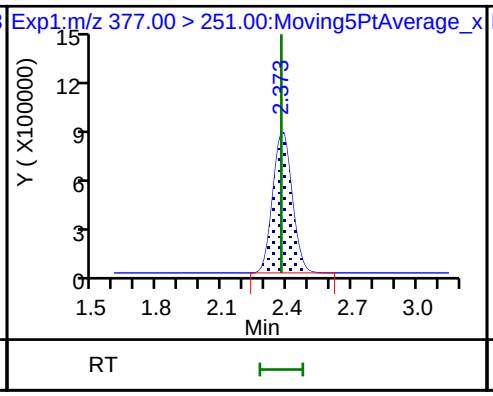
8 Perfluorohexanesulfonic acid



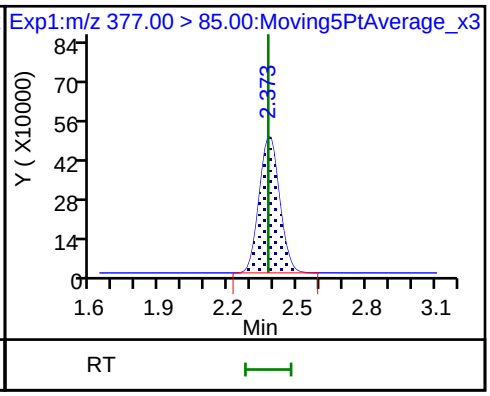
8 Perfluorohexanesulfonic acid



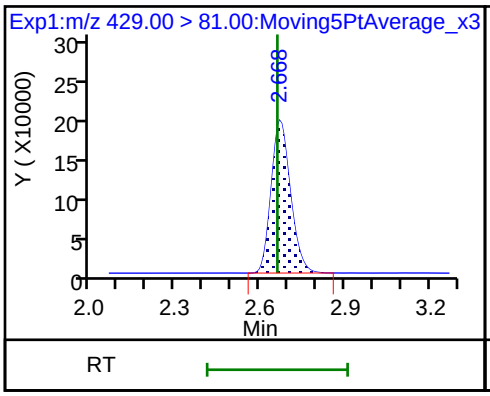
65 Adona



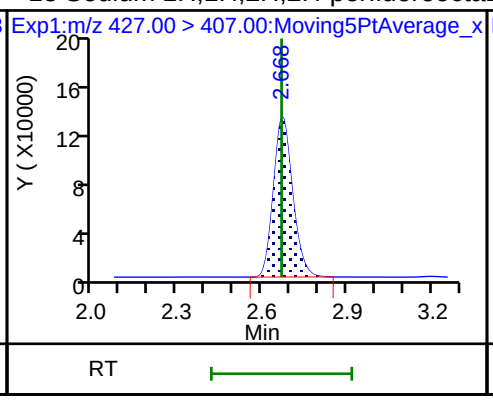
65 Adona



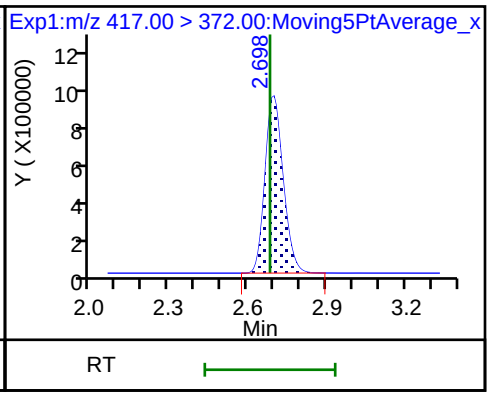
D 12 M2-6:2FTS



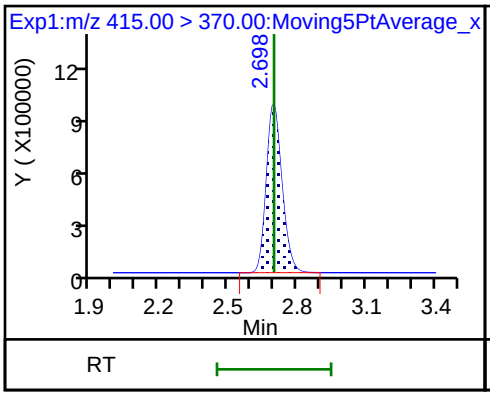
13 Sodium 1H,1H,2H,2H-perfluorooctane



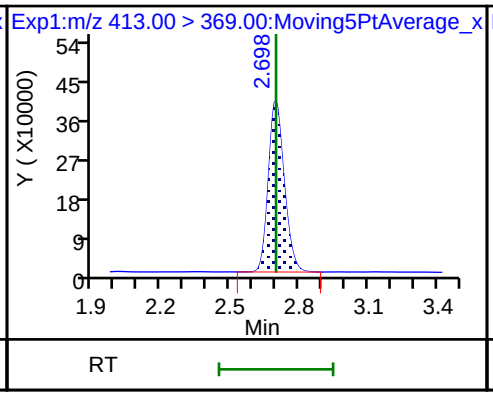
D 14 13C4 PFOA



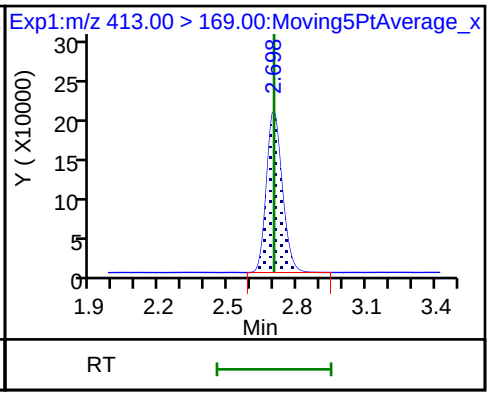
* 62 13C2-PFOA



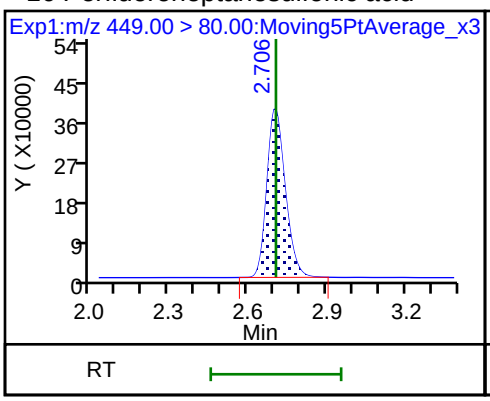
15 Perfluorooctanoic acid



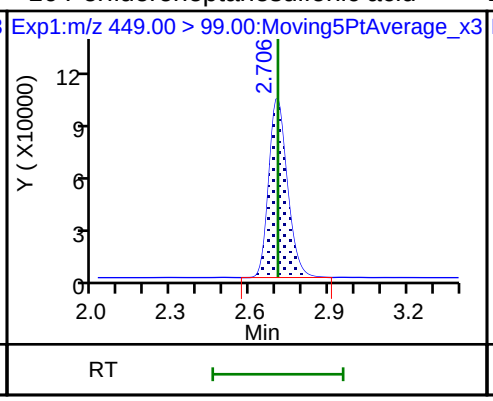
15 Perfluorooctanoic acid



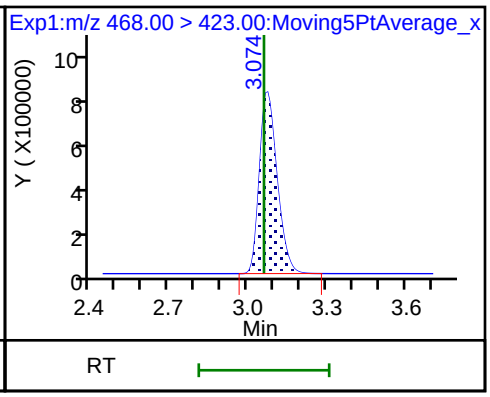
16 Perfluoroheptanesulfonic acid



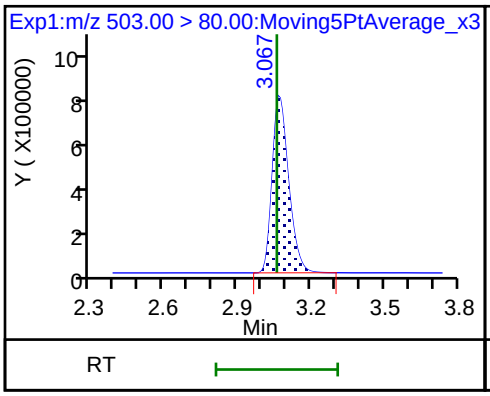
16 Perfluoroheptanesulfonic acid



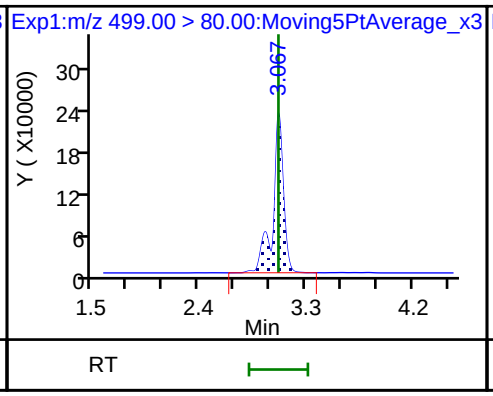
D 19 13C5 PFNA



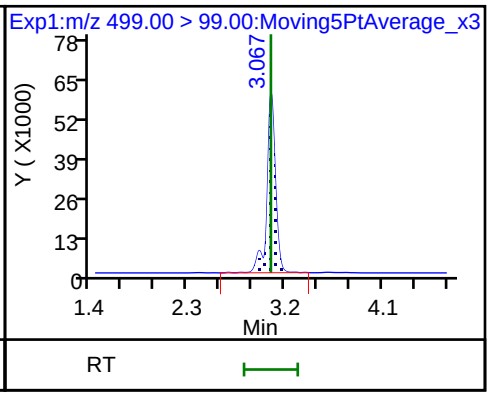
D 18 13C4 PFOS



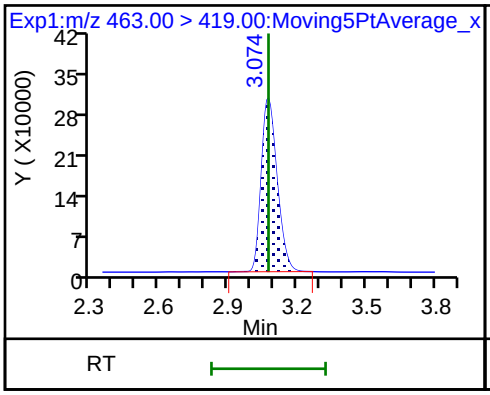
17 Perfluorooctane sulfonic acid



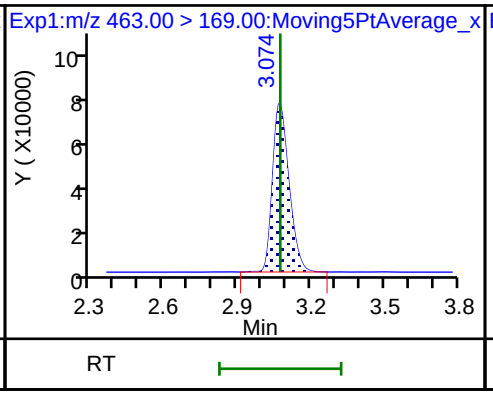
17 Perfluorooctane sulfonic acid



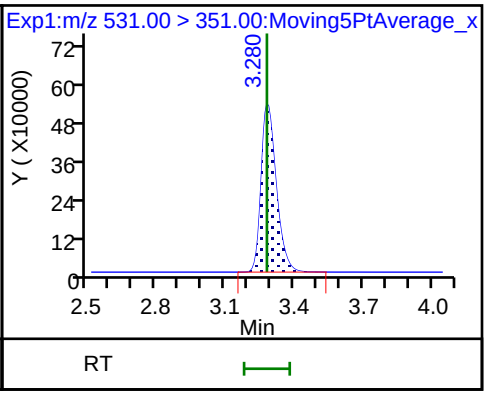
20 Perfluorononanoic acid



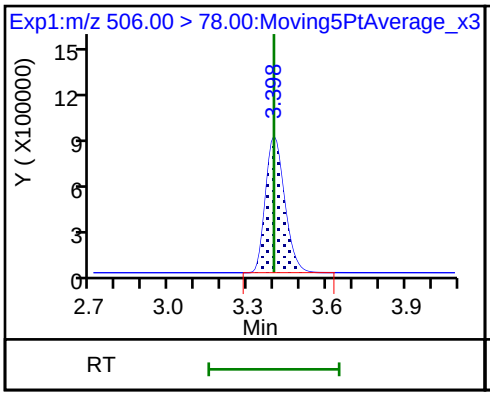
20 Perfluorononanoic acid



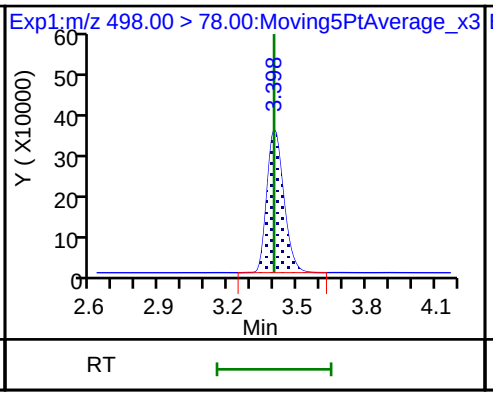
69 9-Chlorohexadecafluoro-3-oxanonane



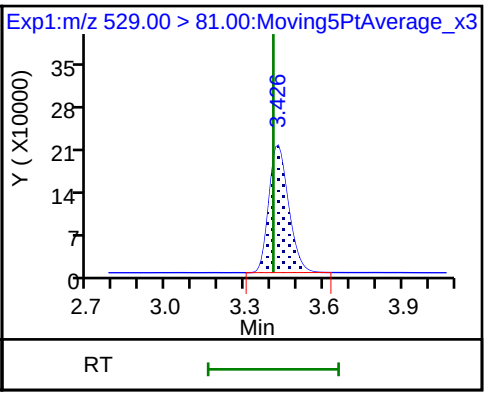
D 21 13C8 FOSA



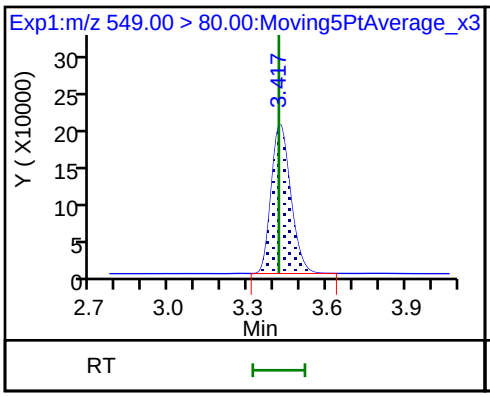
22 Perfluorooctane Sulfonamide



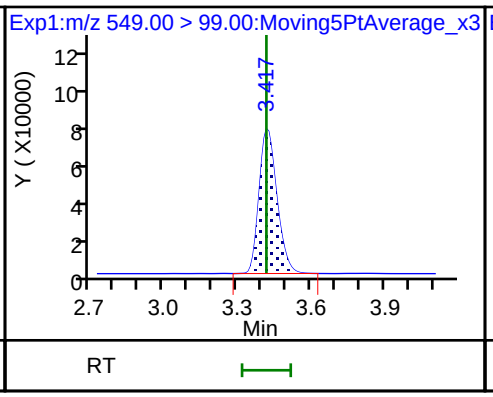
D 26 M2-8:2FTS



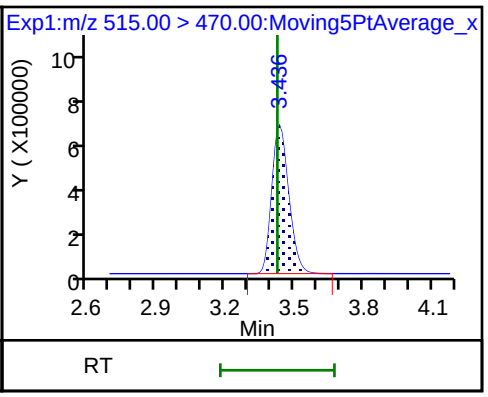
68 Perfluorononanesulfonic acid



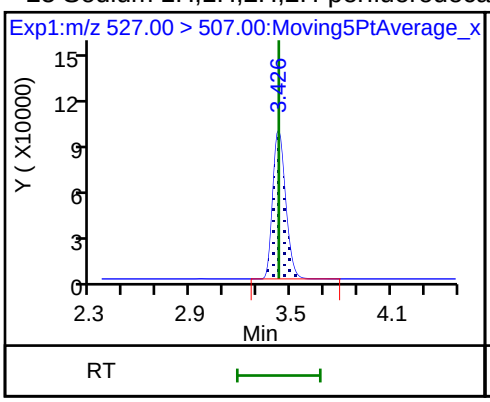
68 Perfluorononanesulfonic acid



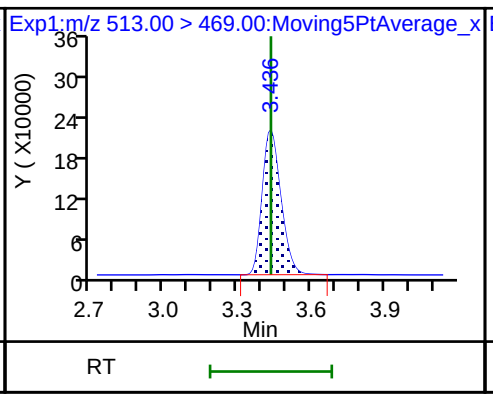
D 23 13C2 PFDA



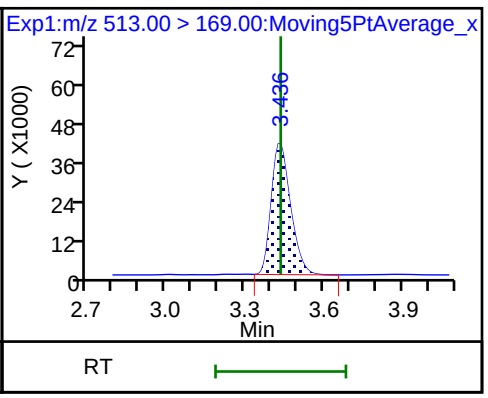
25 Sodium 1H,1H,2H,2H-perfluorodecane



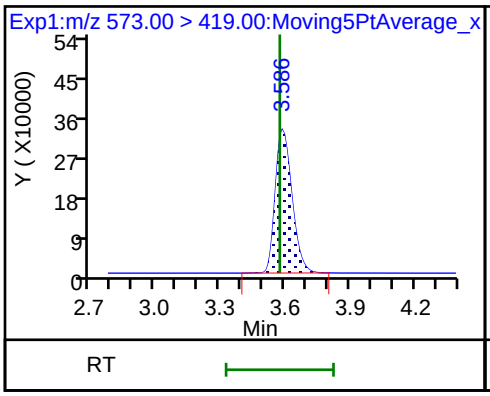
24 Perfluorodecanoic acid



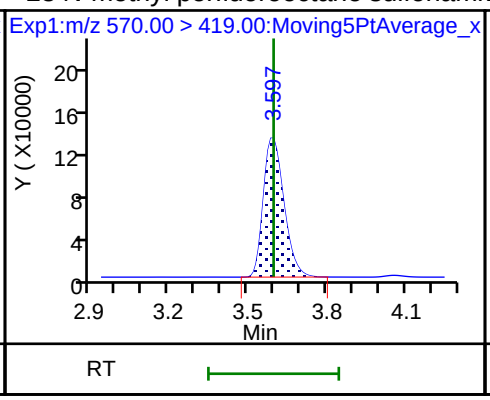
24 Perfluorodecanoic acid



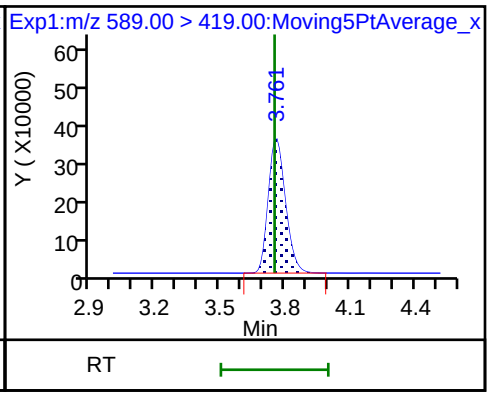
D 27 d3-NMeFOSAA



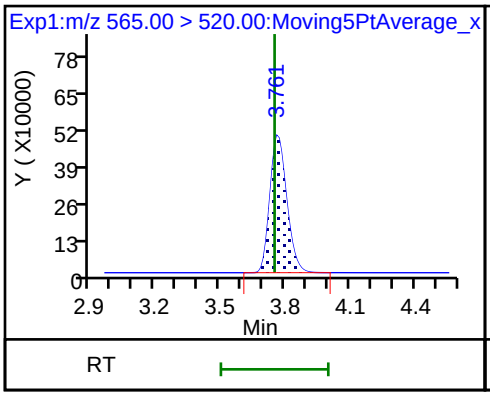
28 N-methyl perfluorooctane sulfonami



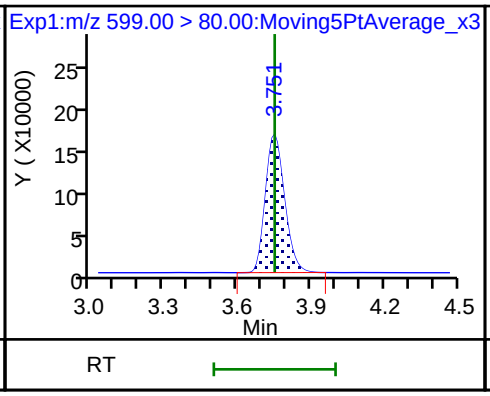
D 32 d5-NEtFOSAA



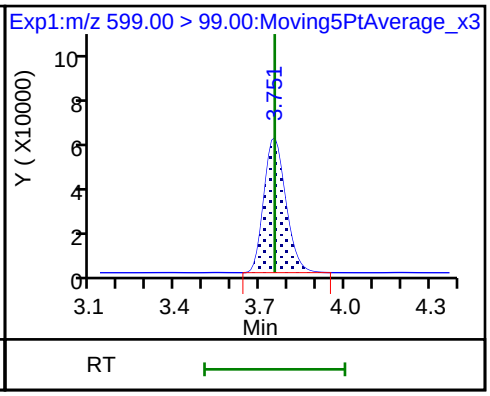
D 30 13C2 PFUnA



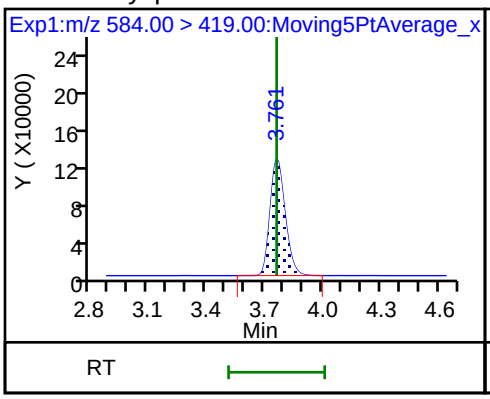
29 Perfluorodecane Sulfonic acid



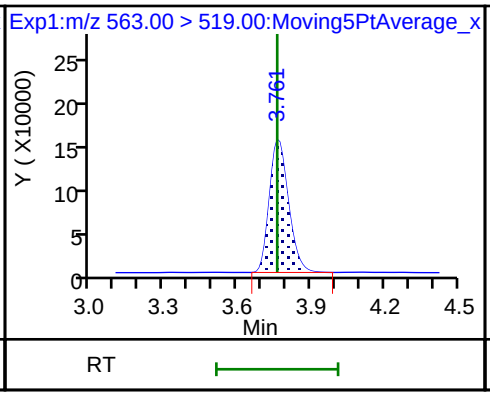
29 Perfluorodecane Sulfonic acid



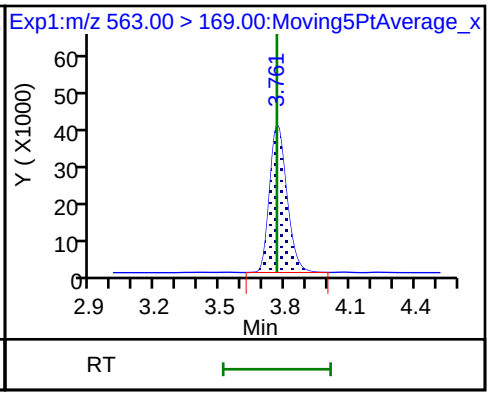
33 N-ethyl perfluorooctane sulfonamid



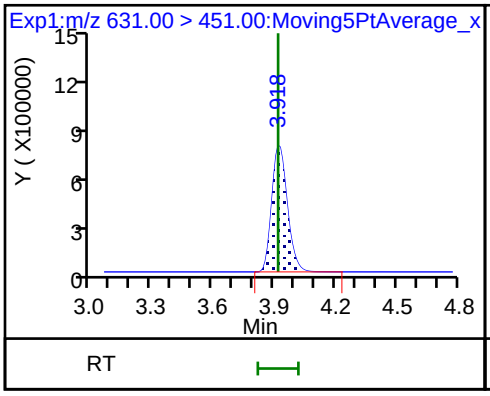
31 Perfluoroundecanoic acid



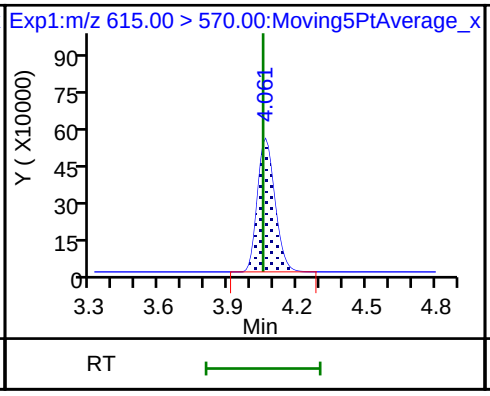
31 Perfluoroundecanoic acid



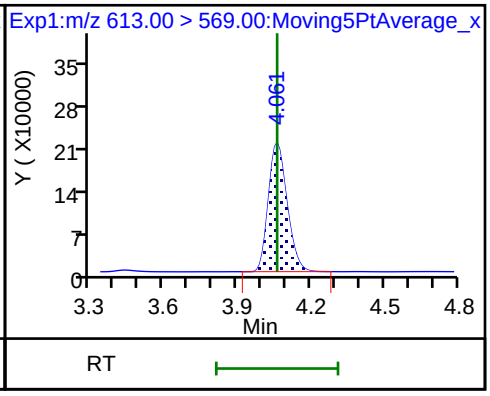
66 11-Chloroeicosafluoro-3-oxaundecan



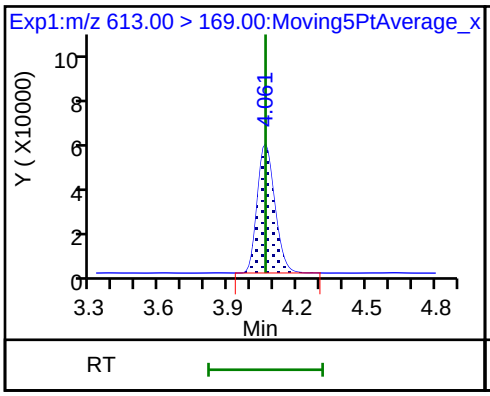
D 36 13C2 PFDoA



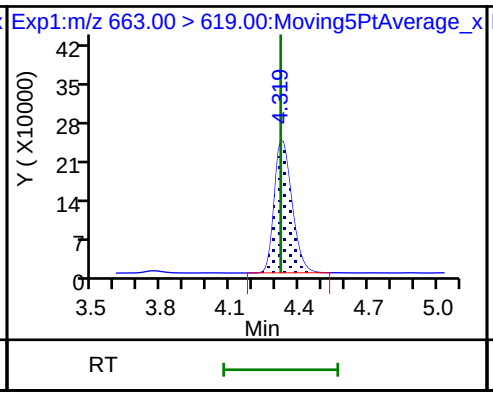
37 Perfluorododecanoic acid



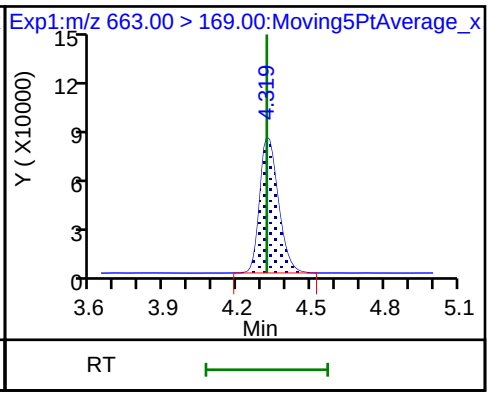
37 Perfluorododecanoic acid



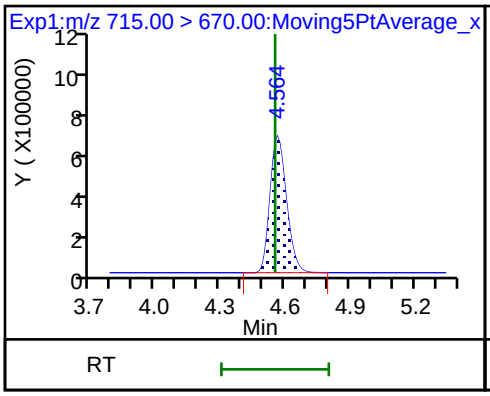
41 Perfluorotridecanoic acid



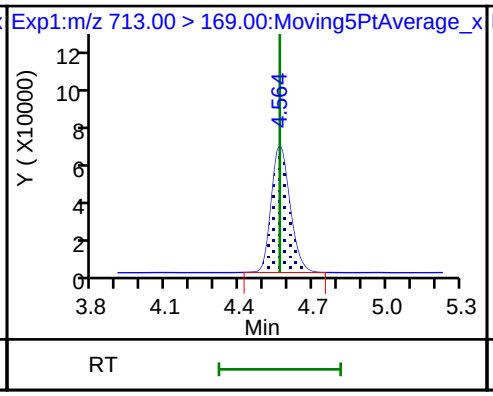
41 Perfluorotridecanoic acid



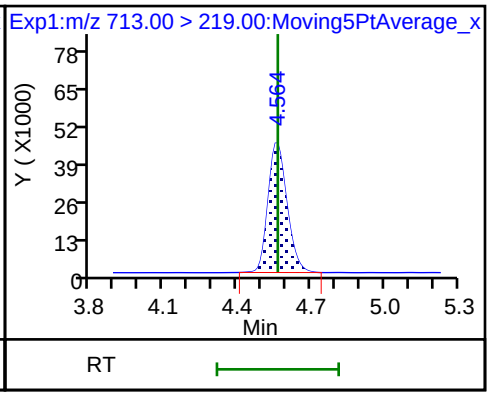
D 43 13C2-PFTeDA



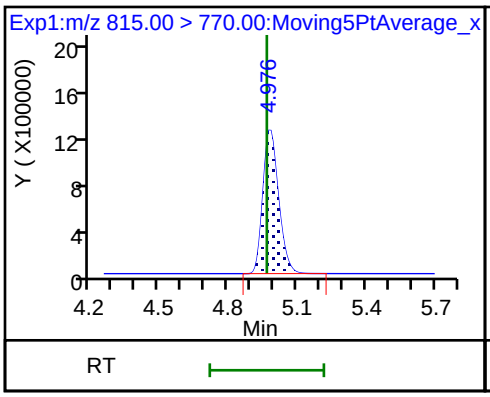
42 Perfluorotetradecanoic acid



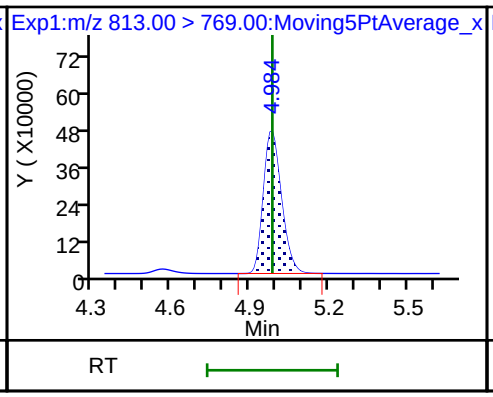
42 Perfluorotetradecanoic acid



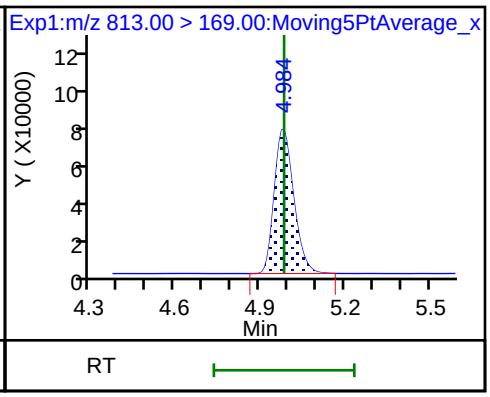
D 44 13C2-PFHxDA



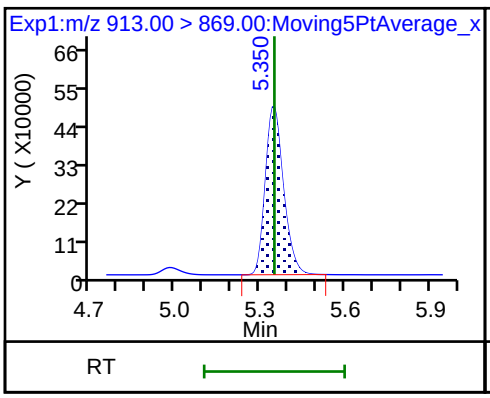
45 Perfluorohexadecanoic acid



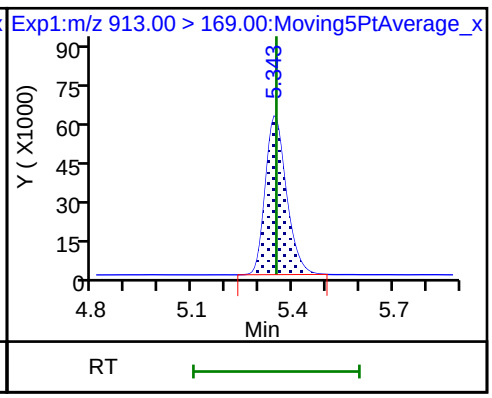
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220023/12 Calibration Date: 04/26/2018 13:47

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_020.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9420		2.54	2.50	1.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.216		2.55	2.50	2.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	83.79		2.37	2.21	7.0	50.0
4:2 FTS	AveID	16.03	17.34		2.53	2.34	8.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.026		2.53	2.50	1.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	76.25		2.50	2.35	6.6	50.0
HFPO-DA (GenX)	AveID	2.785	2.822		2.53	2.50	1.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.133		2.83	2.50	13.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.079		2.17	2.28	-4.6	40.0
Adona	AveID	3.464	3.819		2.76	2.50	10.2	50.0
6:2FTS	AveID	1.691	1.618		2.27	2.37	-4.3	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.146		2.48	2.50	-0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.381		2.48	2.38	4.0	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.084		2.31	2.32	-0.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.022		2.45	2.50	-2.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.869		2.31	2.33	-0.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.099		2.72	2.50	8.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7685		2.31	2.40	-3.9	50.0
8:2FTS	AveID	1.265	1.285		2.43	2.40	1.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.084		2.63	2.50	5.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.011		2.53	2.50	1.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6762		2.51	2.41	4.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9072		2.43	2.50	-2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8719		2.58	2.50	3.2	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.797		2.26	2.36	-4.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.060		2.54	2.50	1.6	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.200		2.47	2.50	-1.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2590		2.58	2.50	3.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9916		2.60	2.50	3.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220023/12 Calibration Date: 04/26/2018 13:47

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_020.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9709		2.42	2.50	-3.3	50.0
13C4 PFBA	Ave	1.345	1.420		2.64	2.50	5.5	50.0
13C5 PFPeA	Ave	0.8672	0.8937		2.58	2.50	3.1	50.0
13C3-PFBS	Ave	0.0199	0.0198		2.32	2.33	-0.3	50.0
M2-4:2FTS	Ave	0.1425	0.1516		2.48	2.34	6.4	50.0
13C2 PFHxA	Ave	0.9590	0.999		2.61	2.50	4.2	50.0
13C3 HFPO-DA	Ave	0.0593	0.0574		2.42	2.50	-3.2	50.0
13C4-PFHpA	Ave	0.9333	0.9381		2.51	2.50	0.5	50.0
18O2 PFHxS	Ave	1.152	1.163		2.39	2.37	0.9	50.0
M2-6:2FTS	Ave	0.2000	0.2183		2.59	2.38	9.2	40.0
13C4 PFOA	Ave	0.9276	0.9428		2.54	2.50	1.6	50.0
13C4 PFOS	Ave	0.8066	0.8219		2.44	2.39	1.9	50.0
13C5 PFNA	Ave	0.7973	0.8175		2.56	2.50	2.5	50.0
13C8 FOSA	Ave	1.007	0.9481		2.35	2.50	-5.9	50.0
M2-8:2FTS	Ave	0.2409	0.2475		2.46	2.40	2.7	40.0
13C2 PFDA	Ave	0.6701	0.6586		2.46	2.50	-1.7	50.0
d3-NMeFOSAA	Ave	0.3798	0.3794		2.50	2.50	-0.1	50.0
13C2 PFUnA	Ave	0.5781	0.5547		2.40	2.50	-4.0	50.0
d5-NEtFOSAA	Ave	0.3749	0.3931		2.62	2.50	4.9	50.0
13C2 PFDoA	Ave	0.6242	0.5794		2.32	2.50	-7.2	50.0
13C2-PFTeDA	Ave	0.7915	0.7372		2.33	2.50	-6.9	50.0
13C2-PFHxDA	Ave	1.288	1.264		2.45	2.50	-1.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_020.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 13:47:13 ALS Bottle#: 14 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:47:03 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:38:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.435	0.007	1.000	6537069	2.64		106	39938	
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.441	0.001	1.000	6157871	2.54		101	3062	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.702	0.001	0.555	4114488	2.58		103	57806	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.702	0.001	1.000	5002864	2.55		102	4653	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	84914	2.32		99.7	733	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.747	-0.008	1.000	6762797	2.37		107	22757	
298.90 > 99.00	1.739	1.747	-0.008	1.000	2763557		2.45(1.25-3.74)		20776	
D 60 M2-4:2FTS										
329.00 > 81.00	1.961	1.949	0.012	1.000	651783	2.48		106	5526	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.960	0.001	1.000	1478475	2.53		108	63222	
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	1.992	0.002	1.000	4600351	2.60		104	85076	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.994	1.993	0.001	1.000	4721267	2.52		101	5754	
313.00 > 119.00	1.994	1.993	0.001	1.000	428881		11.01(5.03-15.10)		3784	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.015	0.001	1.000	6530076	2.50		107	36124	
349.00 > 99.00	2.016	2.015	0.001	1.000	2378467		2.75(1.36-4.07)		35605	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.094	0.001	1.000	264456	2.42		96.8	8767	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.094	0.001	1.000	746279	2.53		101	4569	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.320	0.002	1.000	4319030	2.51		101	60976	
D 11 18O2 PFHxS										
403.00 > 84.00	2.349	2.333	0.016	1.000	5063537	2.39		101	46584	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.336	2.333	0.003	1.006	4893049	2.83		113	5993	
363.00 > 169.00	2.336	2.333	0.003	1.006	1801805		2.72(1.13-3.40)		7348	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.346	-0.010	0.994	5257580	2.17		95.4	10765	
399.00 > 99.00	2.336	2.346	-0.010	0.994	1768919		2.97(1.50-4.49)		9308	
65 Adona										
377.00 > 251.00	2.374	2.373	0.001	1.000	14448851	2.76		110	106887	
377.00 > 85.00	2.374	2.373	0.001	1.000	8229268		1.76(0.84-2.53)		83739	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.661	0.007	1.000	954821	2.59		109	11034	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.668	0.0	1.000	1541719	2.27		95.7	18781	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.683	0.008	1.000	4340311	2.54		102	53730	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.698	-0.007		4603817	2.50			53609	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.698	-0.007	1.000	4973552	2.48		99.2	4075	
413.00 > 169.00	2.691	2.698	-0.007	1.000	2604788		1.91(0.84-2.52)		10170	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.706	-0.008	1.000	4975851	2.48		104	27608	
449.00 > 99.00	2.698	2.706	-0.008	1.000	1310958		3.80(1.94-5.82)		15971	
D 19 13C5 PFNA										
468.00 > 423.00	3.071	3.060	0.011	1.000	3763628	2.56		103	67714	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.060	0.004	1.000	3617262	2.44		102	24142	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.064	3.067	-0.003	1.000	3807869	2.31		99.7	14996	
499.00 > 99.00	3.064	3.067	-0.003	1.000	842312		4.52(2.31-6.93)		15892	
20 Perfluorononanoic acid										
463.00 > 419.00	3.071	3.074	-0.003	1.000	3845071	2.45		98.0	12166	
463.00 > 169.00	3.071	3.074	-0.003	1.000	966742		3.98(1.90-5.69)		26005	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.278	3.280	-0.002	1.000	6591966	2.31		99.2	86375	
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.398	0.006	1.000	4364979	2.35		94.1	47489	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.398	0.006	1.000	4798323	2.72		109	35714	
D 26 M2-8:2FTS										
529.00 > 81.00	3.423	3.407	0.016	1.000	1091522	2.46		103	10492	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.414	3.417	-0.003	1.000	2791331	2.31		96.1	28570	
549.00 > 99.00	3.414	3.417	-0.003	1.000	1057685		2.64(1.33-3.97)		20511	
D 23 13C2 PFDA										
515.00 > 470.00	3.432	3.426	0.006	1.000	3031868	2.46		98.3	84539	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.423	3.426	-0.003	1.000	1402665	2.43		102	38961	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.432	3.436	-0.004	1.000	3285570	2.63		105	15518	
513.00 > 169.00	3.432	3.436	-0.004	1.000	559524		5.87(2.36-7.09)		13363	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.575	0.008	1.000	1746704	2.50		99.9	22648	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.594	3.597	-0.003	1.003	1765260	2.53		101	10089	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.759	3.751	0.008	1.000	1809693	2.62		105	23084	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.751	0.008	1.000	2553677	2.40		96.0	42594	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.748	3.751	-0.003	1.000	2466587	2.51		104	20920	
599.00 > 99.00	3.748	3.751	-0.003	1.000	807164		3.06(1.39-4.16)		16491	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.761	-0.002	1.000	1641708	2.43		97.1	26564	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.761	-0.002	1.000	2226432	2.58		103	15167	
563.00 > 169.00	3.759	3.761	-0.002	1.000	542736		4.10(2.12-6.36)		11065	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.917	3.918	-0.001	1.000	9968945	2.26		96.0	57473	
D 36 13C2 PFDoA										
615.00 > 570.00	4.060	4.050	0.010	1.000	2667345	2.32		92.8	26221	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.060	4.061	-0.001	1.000	2827561	2.54		102	4044	
613.00 > 169.00	4.060	4.061	-0.001	1.000	694996		4.07(2.13-6.40)		6798	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	3199911	2.47		98.7	3867	
663.00 > 169.00	4.318	4.319	-0.001	1.000	1025795		3.12(1.25-3.76)		9173	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.563	4.553	0.010	1.000	3394050	2.33		93.1	23854	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.563	4.564	-0.001	1.000	879076	2.58		103	6970	
713.00 > 219.00	4.553	4.564	-0.011	0.998	617499		1.42(0.71-2.13)		9026	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.967	0.008	1.000	5819476	2.45		98.1	16918	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.975	4.984	-0.009	1.000	5770825	2.60		104	2600	
813.00 > 169.00	4.975	4.984	-0.009	1.000	938328		6.15(2.86-8.58)		5241	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.350	-0.008	1.000	5649945	2.42		96.7	1751	
913.00 > 169.00	5.342	5.350	-0.008	1.000	683923		8.26(3.83-11.48)		3711	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 16:47:05 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_020.d

Injection Date: 26-Apr-2018 13:47:13 Instrument ID: A8_N

Lims ID: CCV L5

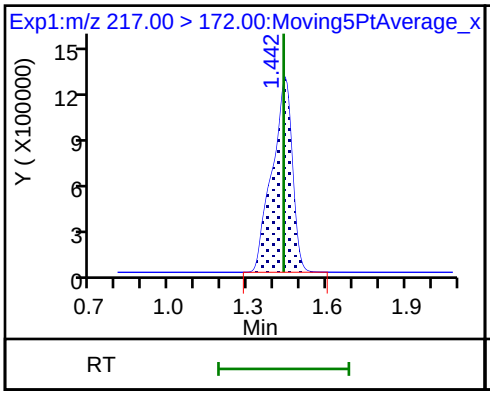
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 12

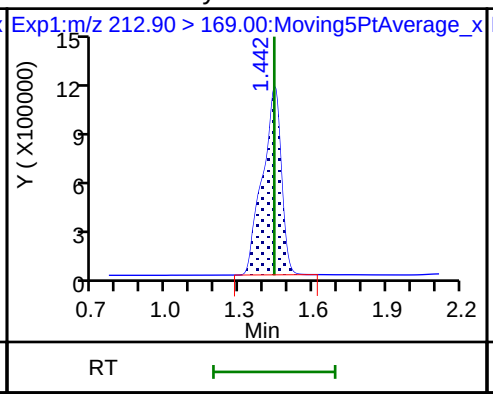
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

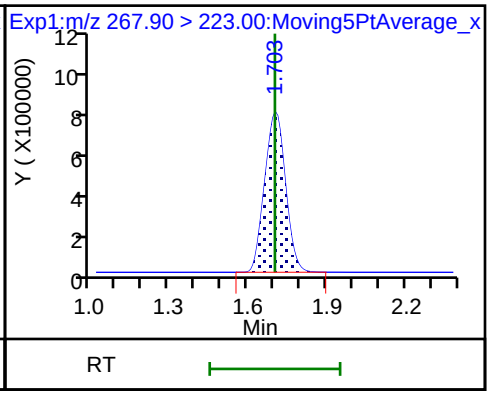
D 1 13C4 PFBA



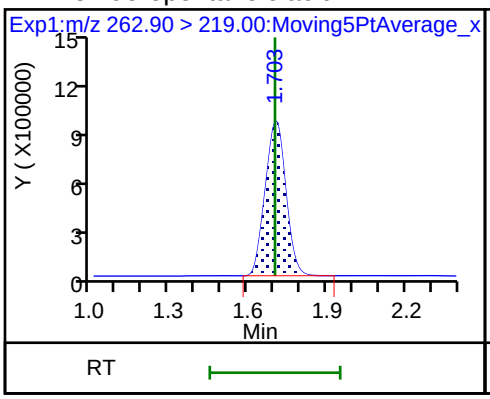
2 Perfluorobutyric acid



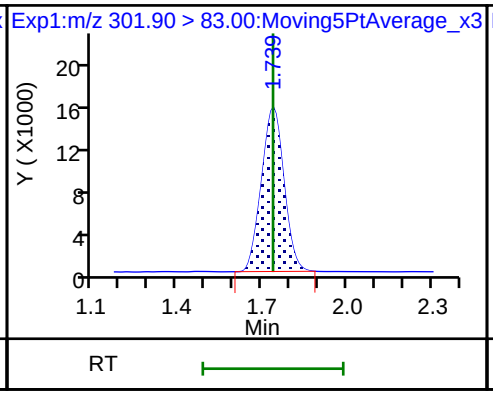
D 3 13C5-PFPeA



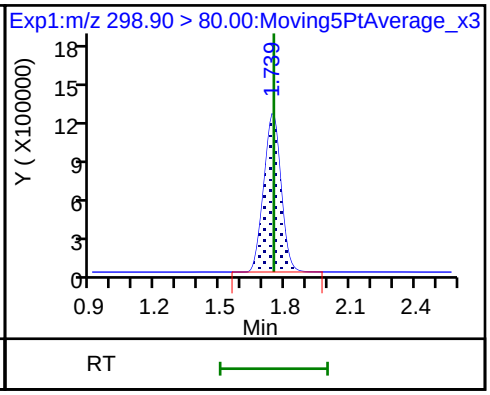
4 Perfluoropentanoic acid



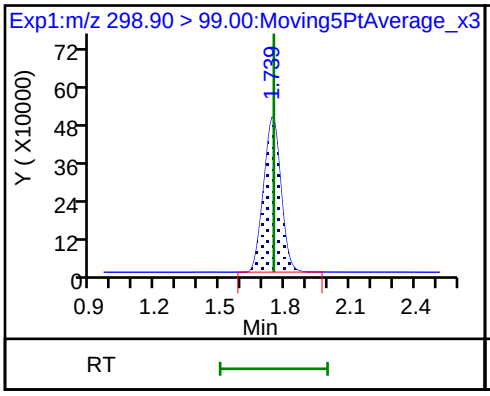
D 47 13C3-PFBS



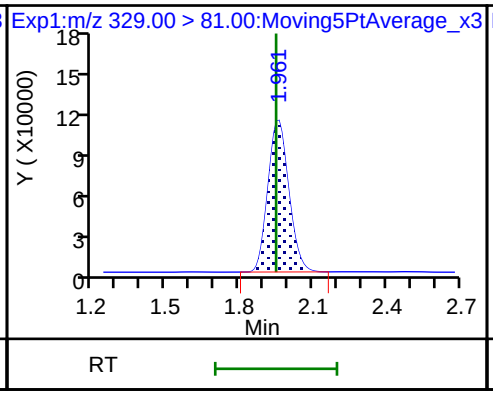
5 Perfluorobutanesulfonic acid



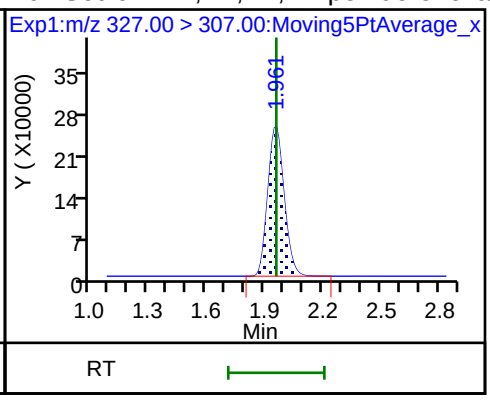
5 Perfluorobutanesulfonic acid



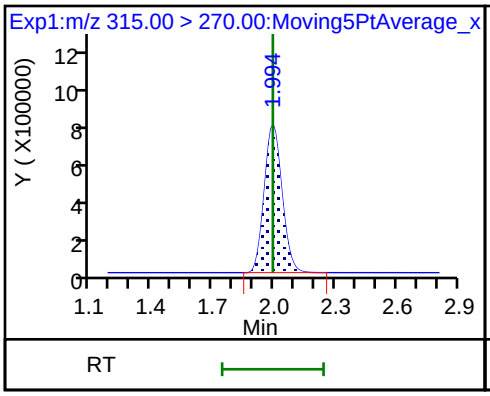
D 60 M2-4:2FTS



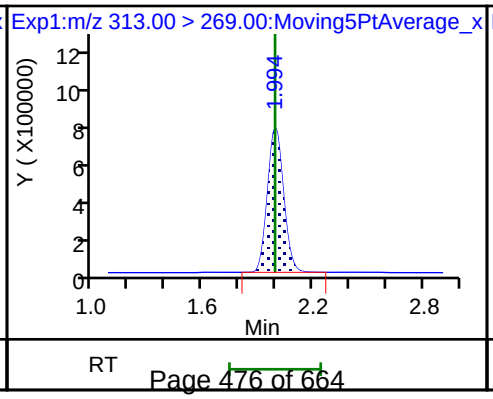
61 Sodium 1H,1H,2H,2H-perfluorohexane



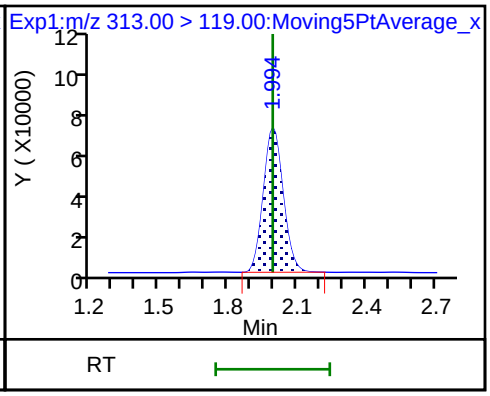
D 7 13C2 PFHxA



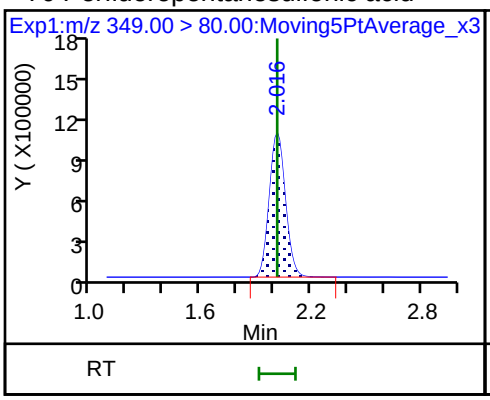
6 Perfluorohexanoic acid



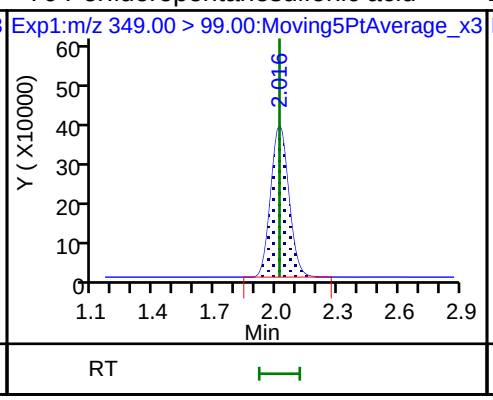
6 Perfluorohexanoic acid



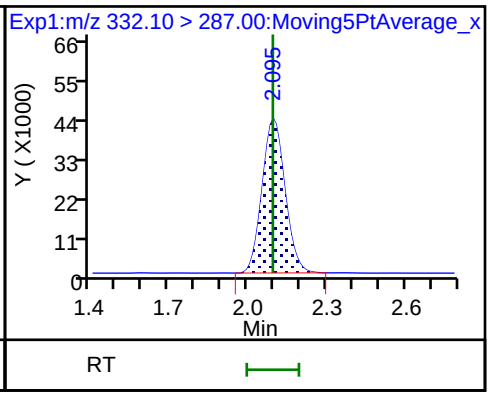
70 Perfluoropentanesulfonic acid



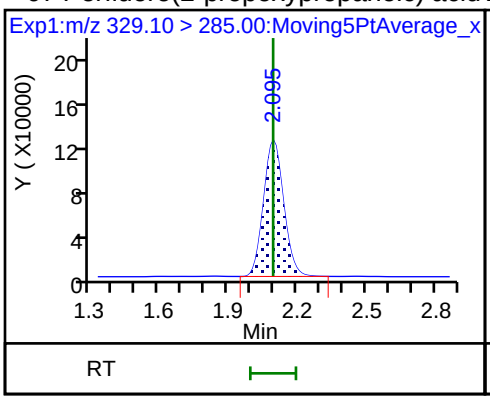
70 Perfluoropentanesulfonic acid



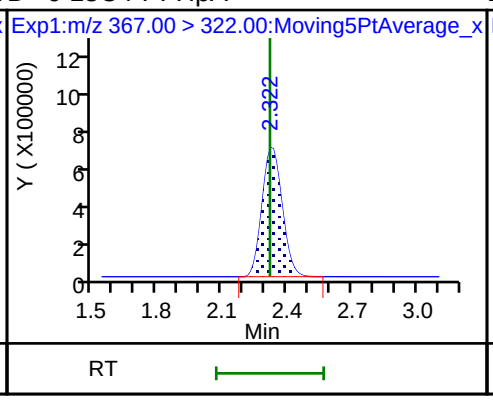
D 64 13C3 HFPO-DA



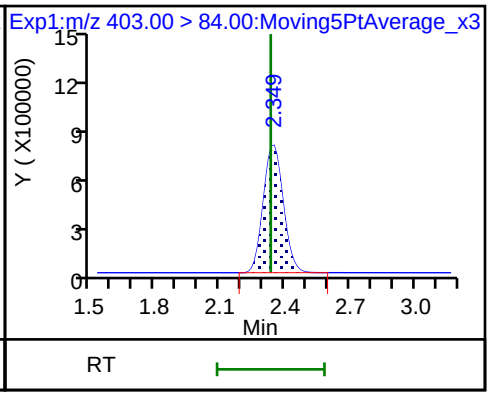
67 Perfluoro(2-propoxypropanoic) acid



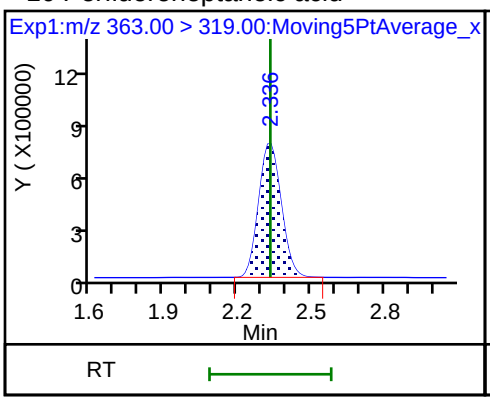
D 9 13C4-PFHpA



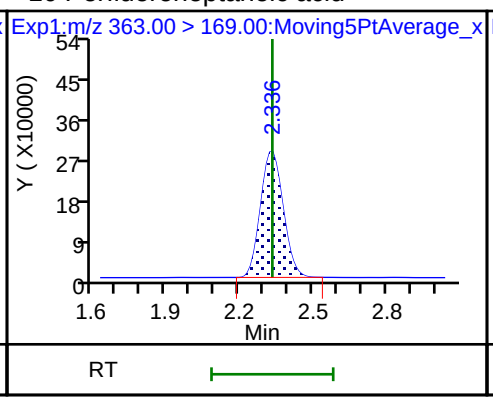
D 11 18O2 PFHxS



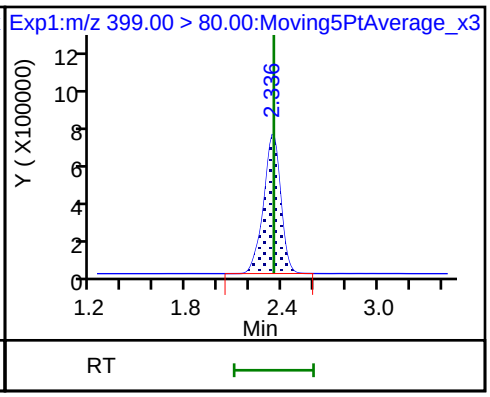
10 Perfluoroheptanoic acid



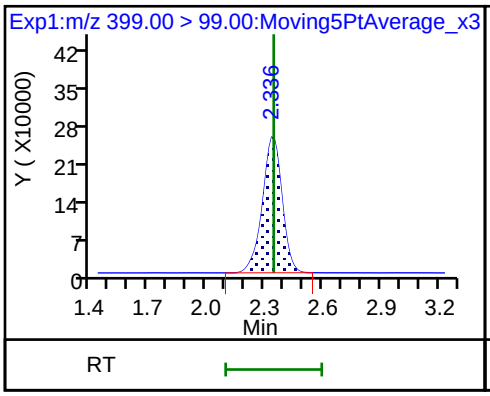
10 Perfluoroheptanoic acid



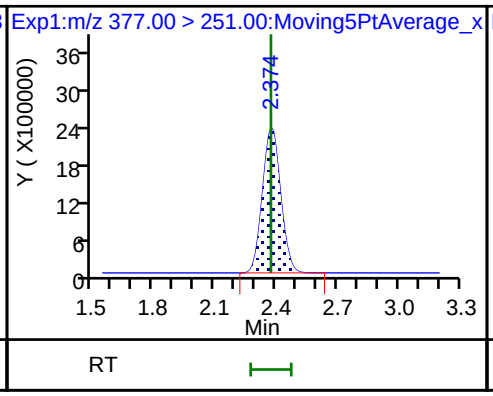
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid



65 Adona



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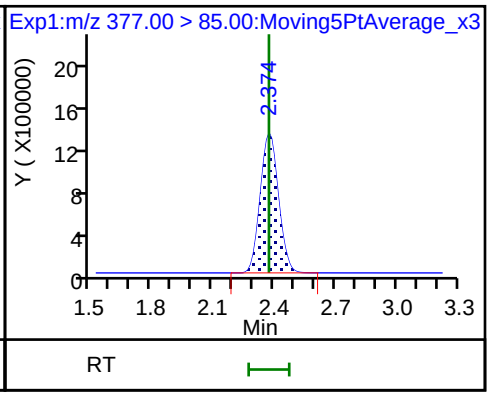
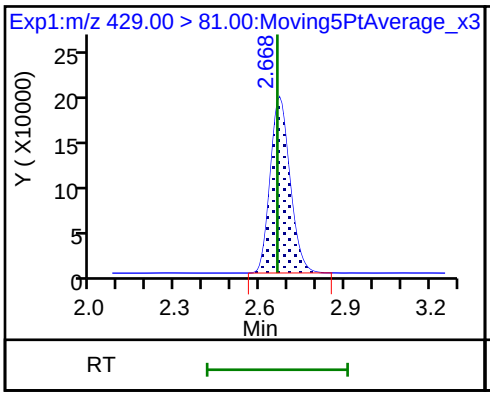
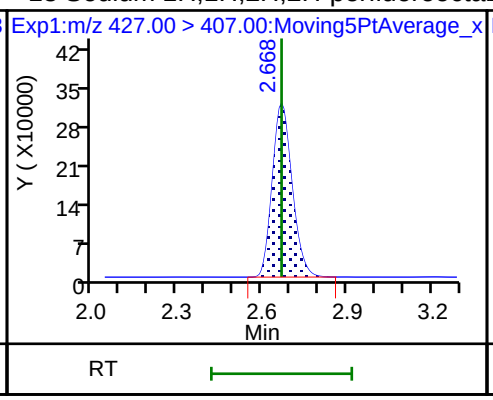


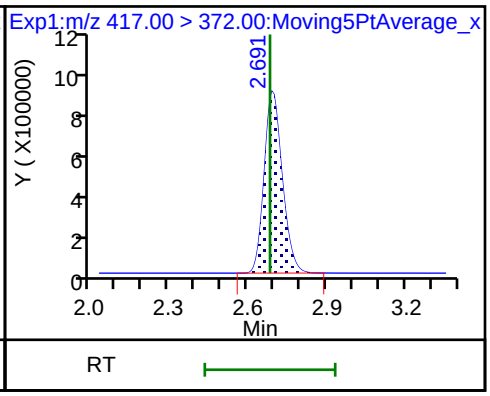
D 12 M2-6:2FTS



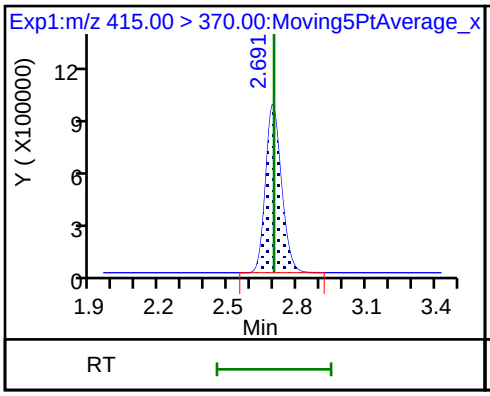
13 Sodium 1H,1H,2H,2H-perfluorooctane



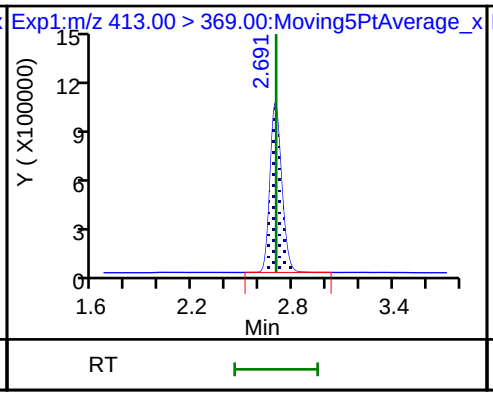
D 14 13C4 PFOA



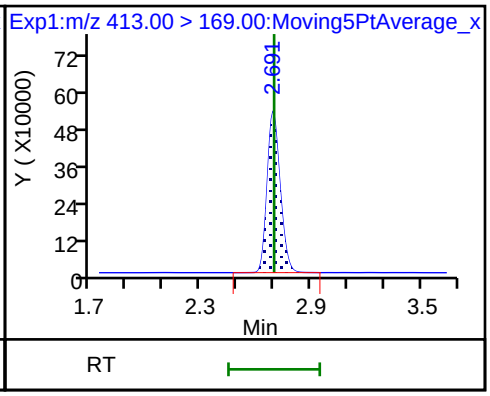
* 62 13C2-PFOA



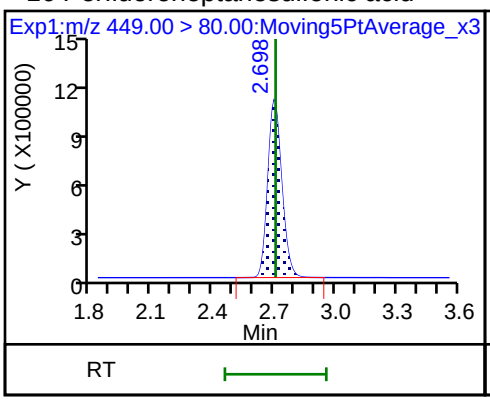
15 Perfluorooctanoic acid



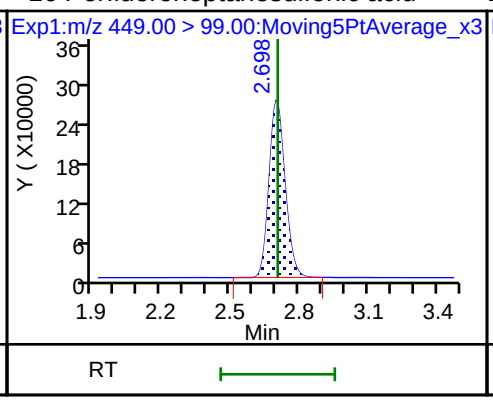
15 Perfluorooctanoic acid



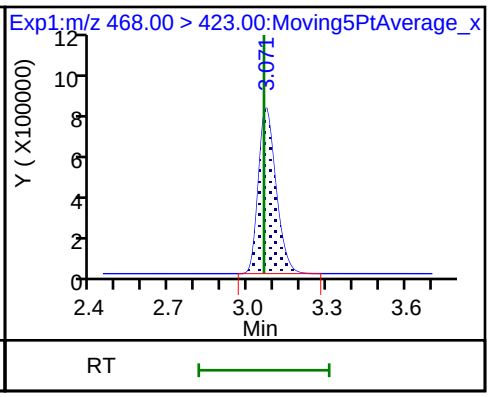
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



D 19 13C5 PFNA



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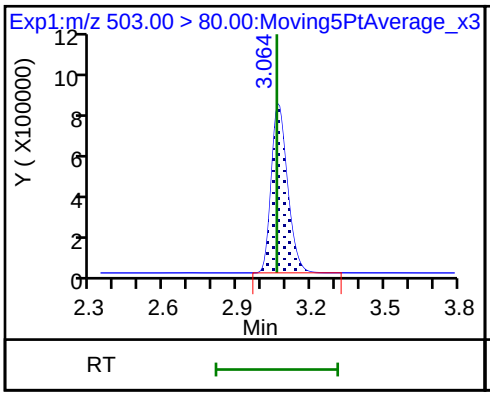
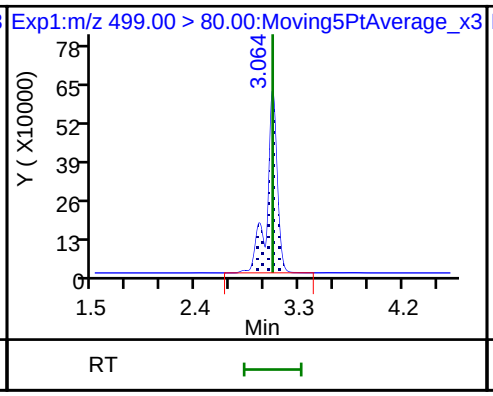
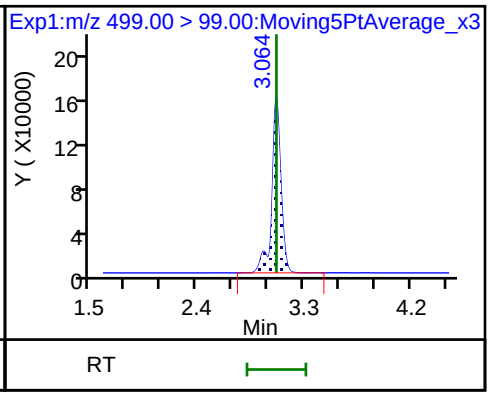


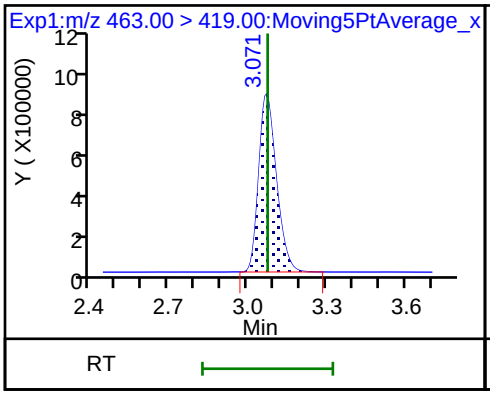
17 Perfluorooctane sulfonic acid



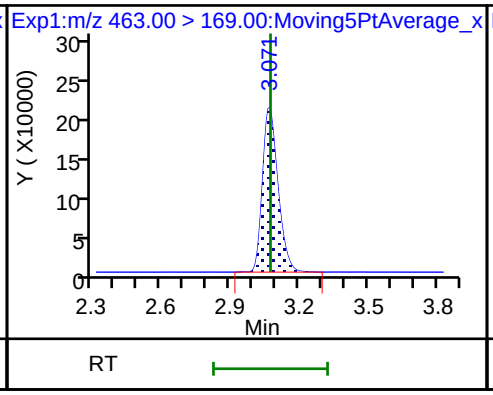
17 Perfluorooctane sulfonic acid



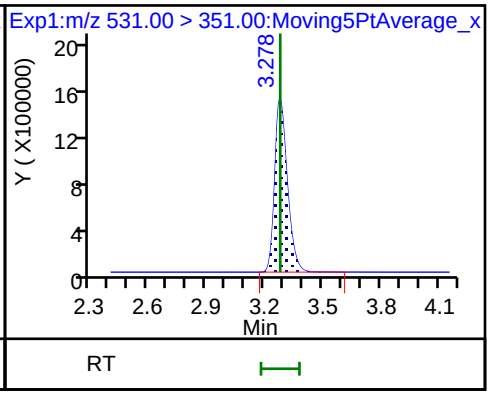
20 Perfluorononanoic acid



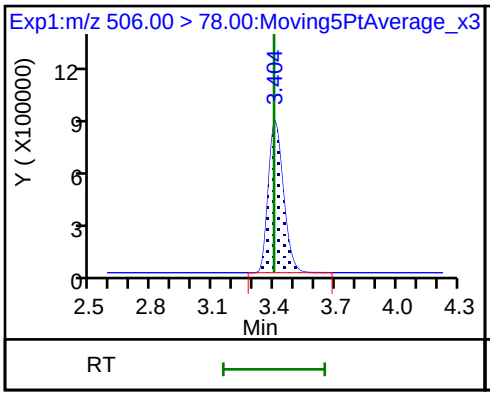
20 Perfluorononanoic acid



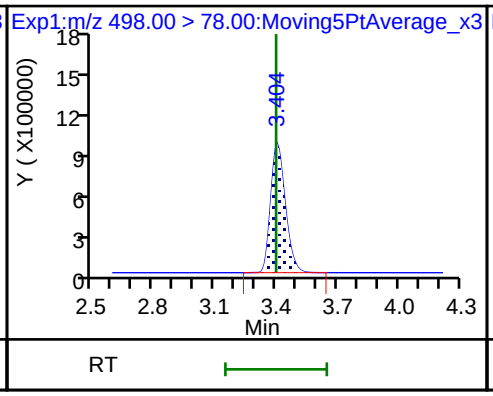
69 9-Chlorohexadecafluoro-3-oxanonane



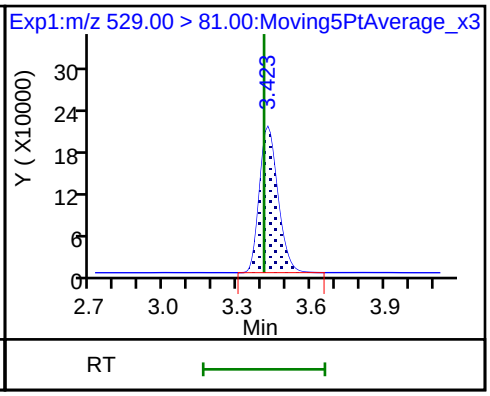
D 21 13C8 FOSA



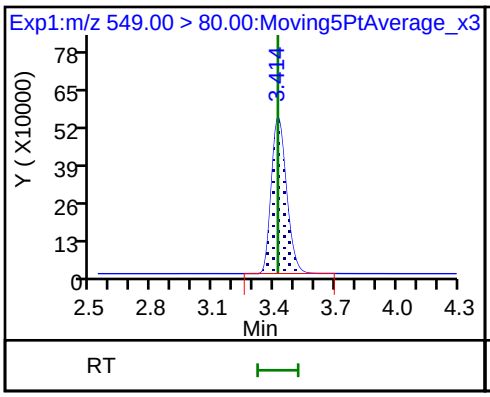
22 Perfluorooctane Sulfonamide



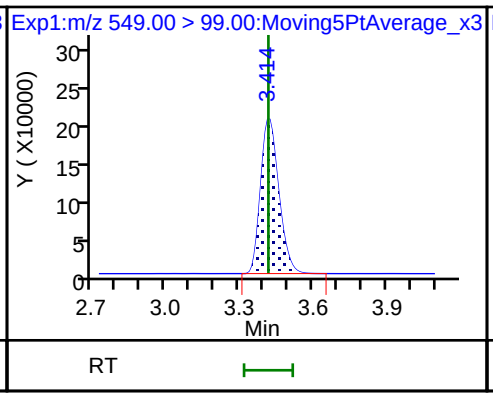
D 26 M2-8:2FTS



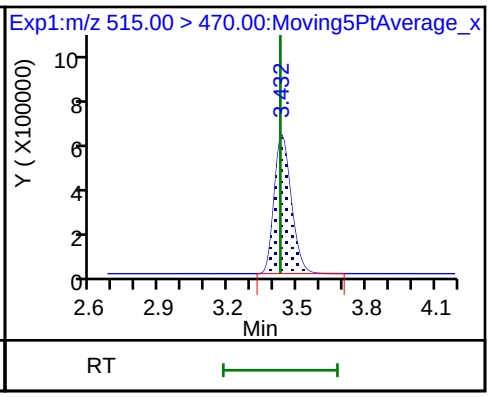
68 Perfluorononanesulfonic acid



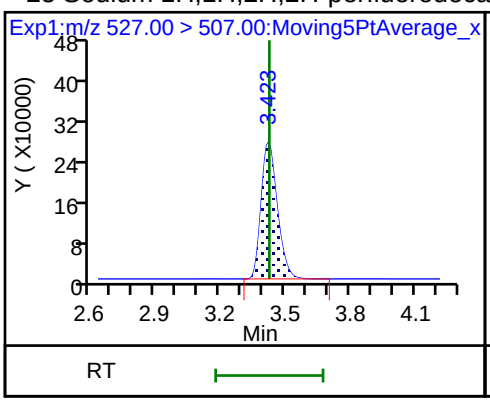
68 Perfluorononanesulfonic acid



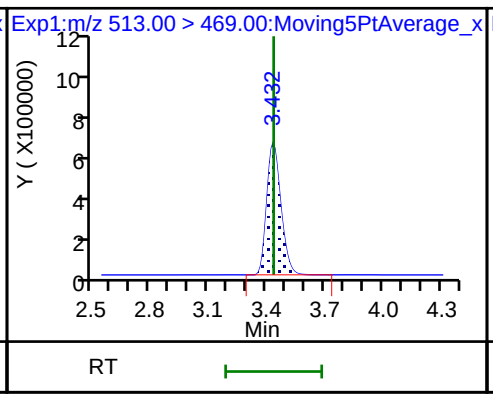
D 23 13C2 PFDA



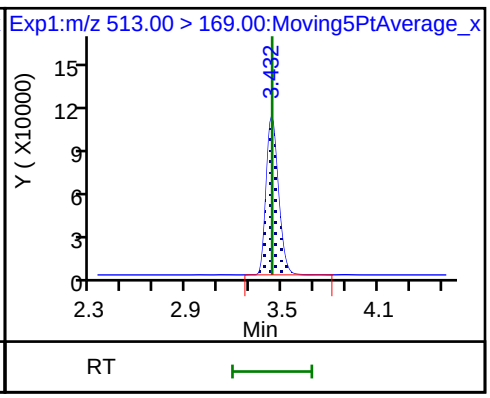
25 Sodium 1H,1H,2H,2H-perfluorodecane



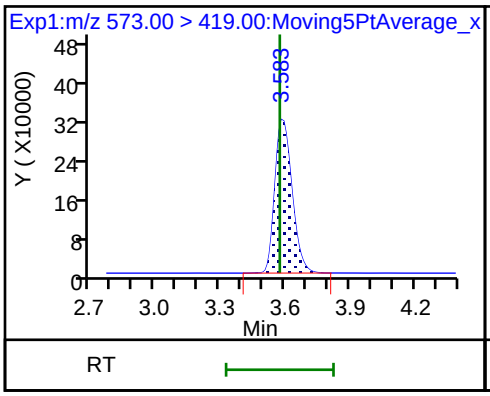
24 Perfluorodecanoic acid



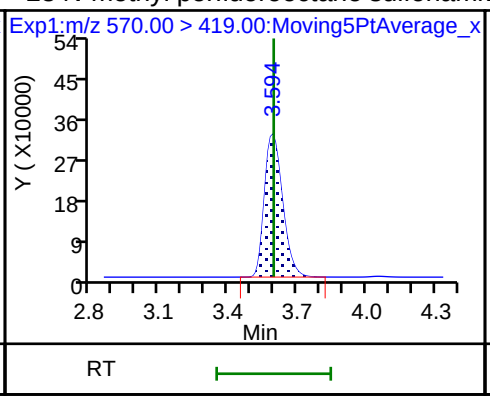
24 Perfluorodecanoic acid



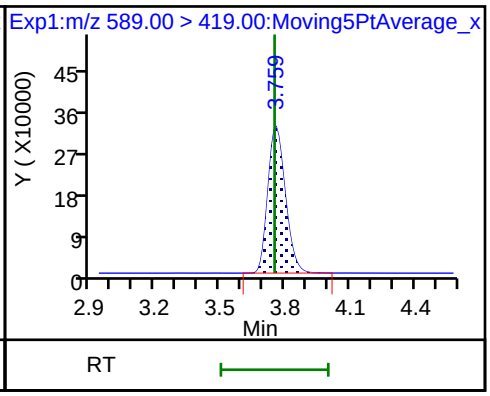
D 27 d3-NMeFOSAA



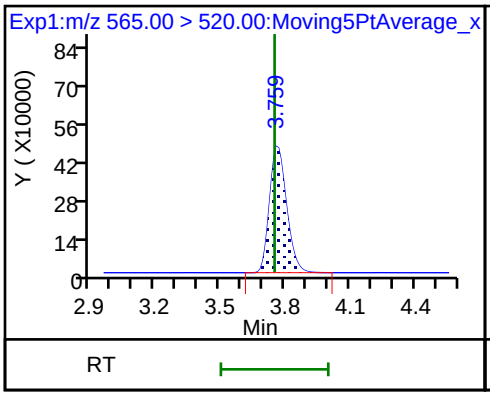
28 N-methyl perfluorooctane sulfonami



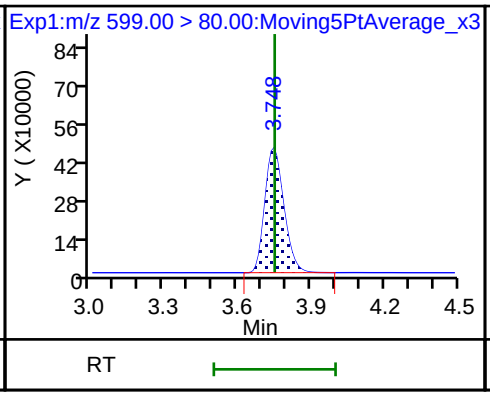
D 32 d5-NEtFOSAA



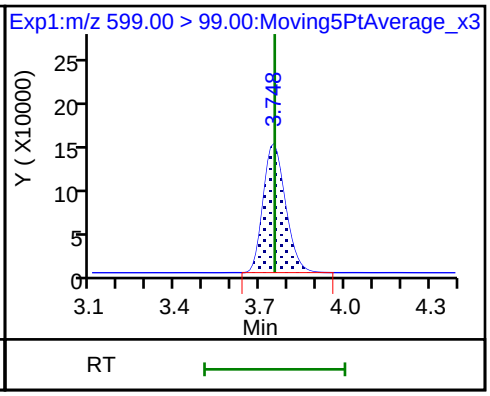
D 30 13C2 PFUnA



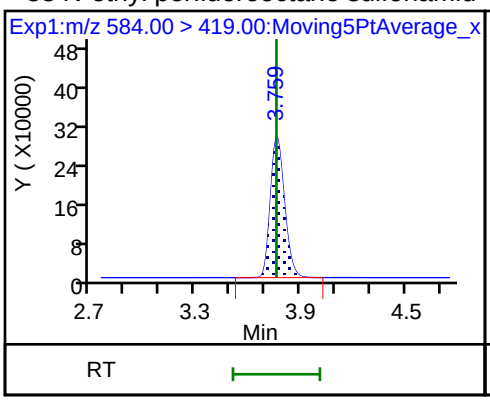
29 Perfluorodecane Sulfonic acid



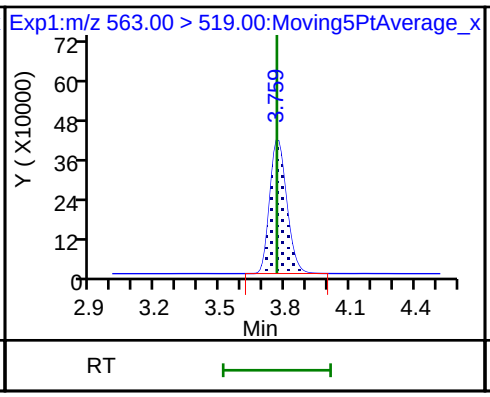
29 Perfluorodecane Sulfonic acid



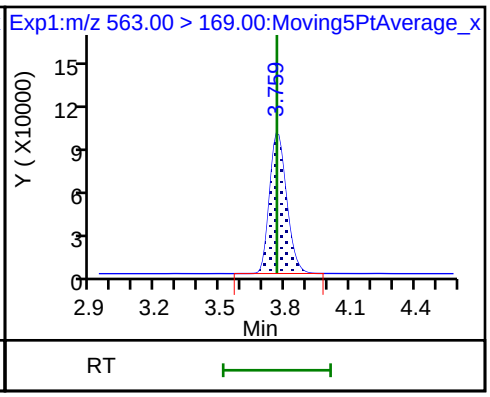
33 N-ethyl perfluorooctane sulfonamid



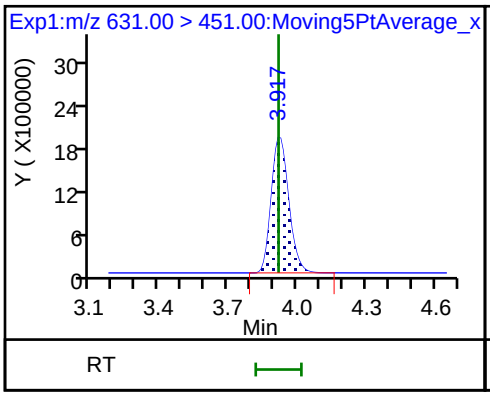
31 Perfluoroundecanoic acid



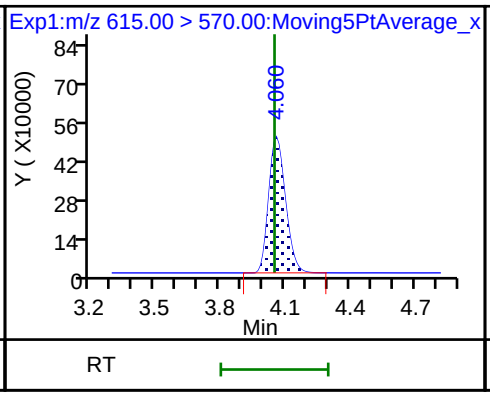
31 Perfluoroundecanoic acid



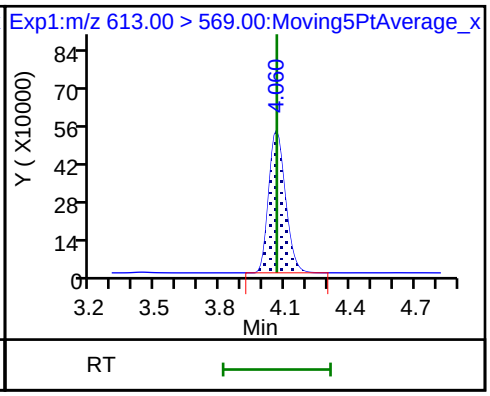
66 11-Chloroeicosafluoro-3-oxaundecan



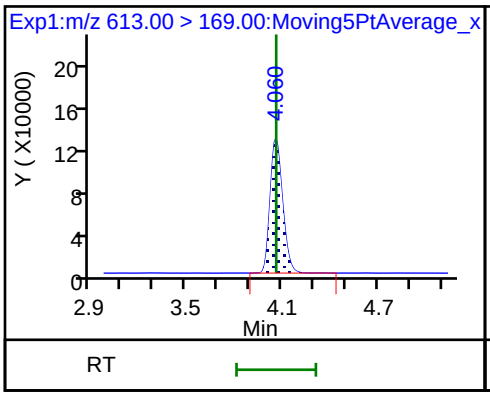
D 36 13C2 PFDoA



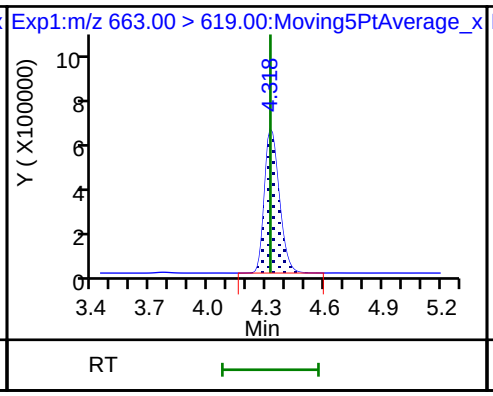
37 Perfluorododecanoic acid



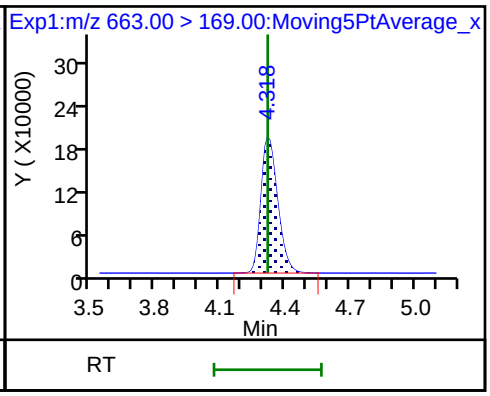
37 Perfluorododecanoic acid



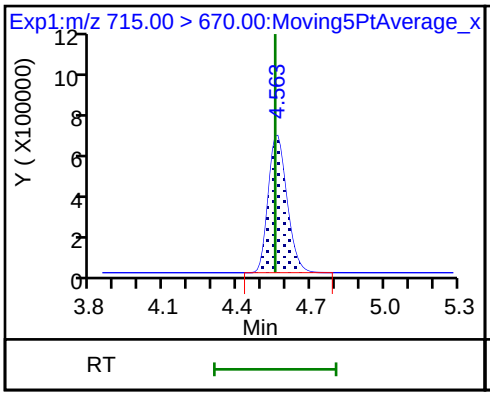
41 Perfluorotridecanoic acid



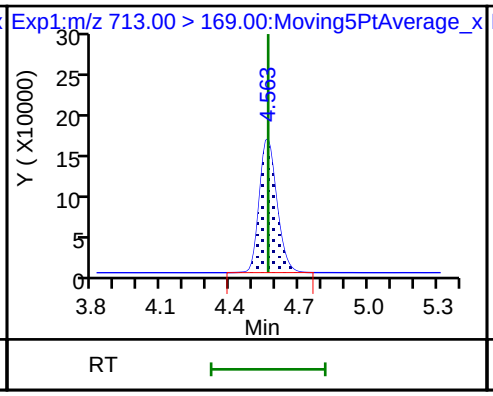
41 Perfluorotridecanoic acid



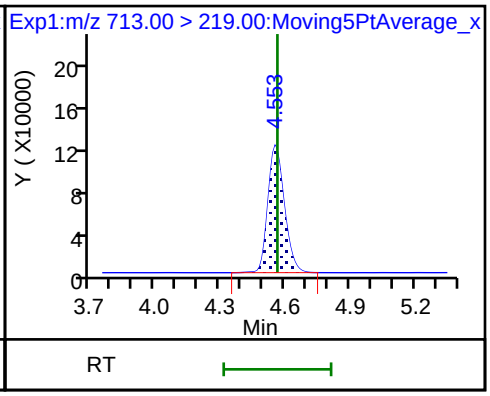
D 43 13C2-PFTeDA



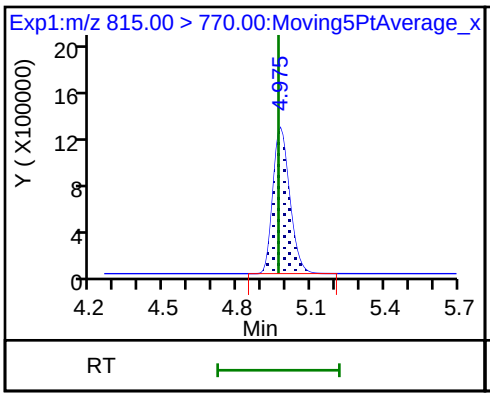
42 Perfluorotetradecanoic acid



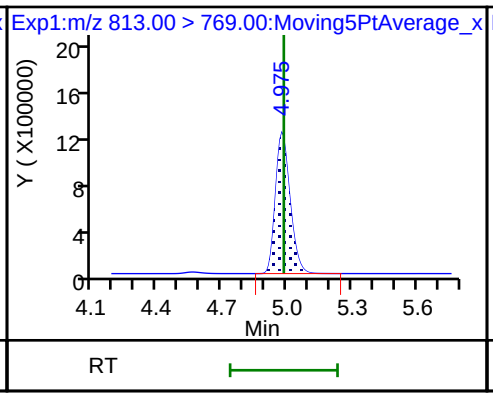
42 Perfluorotetradecanoic acid



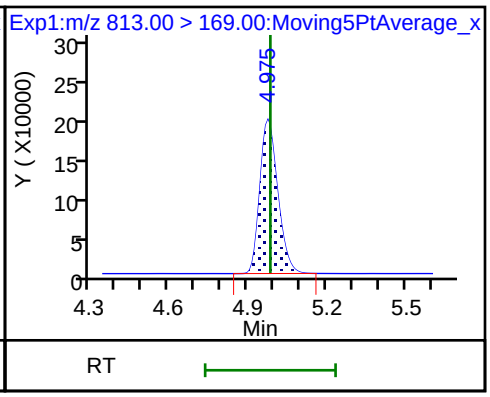
D 44 13C2-PFHxDA



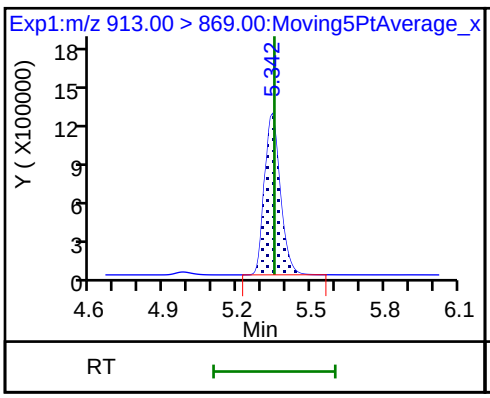
45 Perfluorohexadecanoic acid



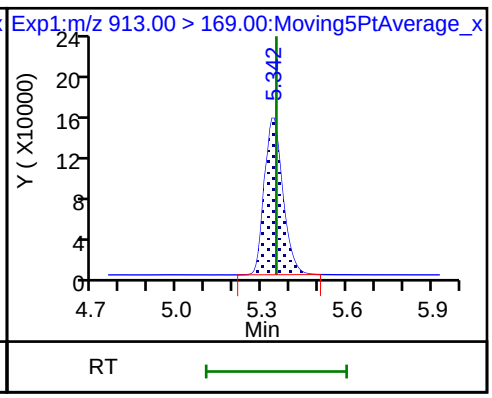
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220081/1 Calibration Date: 04/26/2018 15:52

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9563		2.58	2.50	3.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.205		2.53	2.50	1.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	78.74		2.22	2.21	0.6	50.0
4:2 FTS	AveID	16.03	16.72		2.44	2.34	4.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.012		2.49	2.50	-0.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	68.99		2.26	2.35	-3.5	50.0
HFPO-DA (GenX)	AveID	2.785	3.066		2.75	2.50	10.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.059		2.65	2.50	5.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.105		2.22	2.28	-2.3	40.0
Adona	AveID	3.464	3.786		2.73	2.50	9.3	50.0
6:2FTS	AveID	1.691	1.597		2.24	2.37	-5.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.164		2.52	2.50	0.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.392		2.50	2.38	4.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.098		2.34	2.32	1.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.061		2.54	2.50	1.7	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.889		2.34	2.33	0.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.060		2.62	2.50	4.8	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7563		2.27	2.40	-5.4	50.0
8:2FTS	AveID	1.265	1.264		2.39	2.40	-0.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9748		2.36	2.50	-5.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.995		2.49	2.50	-0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6490		2.41	2.41	-0.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9354		2.50	2.50	0.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8067		2.39	2.50	-4.5	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.844		2.30	2.36	-2.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.076		2.58	2.50	3.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.209		2.49	2.50	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2596		2.58	2.50	3.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9746		2.55	2.50	2.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220081/1 Calibration Date: 04/26/2018 15:52

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.997		2.48	2.50	-0.7	50.0
13C4 PFBA	Ave	1.345	1.377		2.56	2.50	2.4	50.0
13C5 PFPeA	Ave	0.8672	0.9109		2.63	2.50	5.0	50.0
13C3-PFBS	Ave	0.0199	0.0207		2.42	2.33	4.0	50.0
M2-4:2FTS	Ave	0.1425	0.1535		2.52	2.34	7.7	50.0
13C2 PFHxA	Ave	0.9590	1.010		2.63	2.50	5.3	50.0
13C3 HFPO-DA	Ave	0.0593	0.0531		2.24	2.50	-10.5	50.0
13C4-PFHpA	Ave	0.9333	0.9648		2.58	2.50	3.4	50.0
18O2 PFHxS	Ave	1.152	1.139		2.34	2.37	-1.1	50.0
M2-6:2FTS	Ave	0.2000	0.2189		2.60	2.38	9.5	40.0
13C4 PFOA	Ave	0.9276	0.9198		2.48	2.50	-0.9	50.0
13C4 PFOS	Ave	0.8066	0.7993		2.37	2.39	-0.9	50.0
13C5 PFNA	Ave	0.7973	0.7846		2.46	2.50	-1.6	50.0
13C8 FOSA	Ave	1.007	0.9281		2.30	2.50	-7.8	50.0
M2-8:2FTS	Ave	0.2409	0.2389		2.38	2.40	-0.8	40.0
13C2 PFDA	Ave	0.6701	0.6498		2.42	2.50	-3.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3822		2.52	2.50	0.6	50.0
d5-NEtFOSAA	Ave	0.3749	0.3704		2.47	2.50	-1.2	50.0
13C2 PFUnA	Ave	0.5781	0.5315		2.30	2.50	-8.1	50.0
13C2 PFDoA	Ave	0.6242	0.5629		2.25	2.50	-9.8	50.0
13C2-PFTeDA	Ave	0.7915	0.7160		2.26	2.50	-9.5	50.0
13C2-PFHxDA	Ave	1.288	1.230		2.39	2.50	-4.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\2018.04.26LLA_036.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 15:52:17 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 10:25:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 10:08:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.447	1.442	0.005	1.000	6449451	2.56		102	42477	
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.446	0.001	1.000	6167409	2.57		103	4272	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.555	4265151	2.63		105	78428	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.712	1.711	0.001	1.005	5140268	2.53		101	4964	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	90078	2.42		104	851	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.748	1.747	0.001	1.005	6741846	2.22		101	21071	
298.90 > 99.00	1.748	1.747	0.001	1.005	2770872		2.43(1.25-3.74)		23889	
D 60 M2-4:2FTS										
329.00 > 81.00	1.960	1.950	0.010	1.000	671300	2.51		108	5955	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.959	0.001	1.000	1512340	2.43		104	65006	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.994	-0.001	1.000	4728628	2.63		105	86909	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	2.003	-0.010	1.000	4782992	2.49		99.5	6034	
313.00 > 119.00	1.993	2.003	-0.010	1.000	447420		10.69(5.03-15.10)		3628	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.025	-0.009	1.000	6267932	2.26		96.5	35574	
349.00 > 99.00	2.016	2.025	-0.009	1.000	2381677		2.63(1.36-4.07)		32872	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.095	0.0	1.000	248613	2.24		89.5	8371	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.104	-0.009	1.000	762329	2.75		110	5132	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.321	0.013	1.000	4517630	2.58		103	58766	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.334	2.332	0.002	1.000	4785151	2.65		106	6127	
363.00 > 169.00	2.334	2.332	0.002	1.000	1806611		2.65(1.13-3.40)		8842	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.334	0.013	1.000	5044793	2.34		98.9	56662	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.345	0.002	1.000	5364140	2.22		97.7	10538	
399.00 > 99.00	2.347	2.345	0.002	1.000	1776163		3.02(1.50-4.49)		9837	
65 Adona										
377.00 > 251.00	2.372	2.384	-0.012	1.000	14171195	2.73		109	164024	
377.00 > 85.00	2.372	2.384	-0.012	1.000	8554278		1.66(0.84-2.53)		69680	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.660	0.007	1.000	973946	2.60		109	13524	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.667	0.0	1.000	1552125	2.24		94.5	22509	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.690	0.0	1.000	4306792	2.48		99.1	74630	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.697	-0.007		4682556	2.50			64603	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.697	-0.007	1.000	5011447	2.52		101	3313	
413.00 > 169.00	2.690	2.697	-0.007	1.000	2620690		1.91(0.84-2.52)		8383	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.705	-0.008	1.000	4958786	2.49		105	30382	
449.00 > 99.00	2.697	2.705	-0.008	1.000	1295780		3.83(1.94-5.82)		15914	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.060	0.004	1.000	3578205	2.37		99.1	19869	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.064	3.065	-0.001	1.000	3815089	2.34		101	14039	
499.00 > 99.00	3.064	3.065	-0.001	1.000	855870		4.46(2.31-6.93)		20399	
D 19 13C5 PFNA										
468.00 > 423.00	3.071	3.067	0.004	1.000	3673911	2.46		98.4	72381	
20 Perfluorononanoic acid										
463.00 > 419.00	3.071	3.072	-0.001	1.000	3896690	2.54		102	13960	
463.00 > 169.00	3.071	3.072	-0.001	1.000	951387		4.10(1.90-5.69)		28867	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.279	3.280	-0.001	1.000	6589129	2.33		100	49429	
D 21 13C8 FOSA										
506.00 > 78.00	3.406	3.398	0.008	1.000	4346054	2.30		92.2	42863	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.406	3.408	-0.002	1.000	4606136	2.62		105	36322	
D 26 M2-8:2FTS										
529.00 > 81.00	3.424	3.416	0.008	1.000	1071545	2.38		99.2	12375	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.415	3.417	-0.002	1.000	2717556	2.27		94.6	26625	
549.00 > 99.00	3.415	3.417	-0.002	1.000	1021062		2.66(1.33-3.97)		19908	
D 23 13C2 PFDA										
515.00 > 470.00	3.434	3.426	0.008	1.000	3042654	2.42		97.0	84195	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.424	3.426	-0.002	1.000	1354204	2.39		99.9	65532	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.434	3.436	-0.002	1.000	2965858	2.36		94.5	14288	
513.00 > 169.00	3.434	3.436	-0.002	1.000	517688		5.73(2.36-7.09)		10933	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.585	-0.001	1.000	1789867	2.52		101	22157	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.595	3.597	-0.002	1.003	1781080	2.49		99.8	11864	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.760	3.750	0.010	1.000	1734328	2.47		98.8	20807	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.749	3.751	-0.002	1.000	2341677	2.41		100.0	19560	
599.00 > 99.00	3.749	3.751	-0.002	1.000	803265		2.92(1.39-4.16)		20989	
D 30 13C2 PFUnA										
565.00 > 520.00	3.771	3.761	0.010	1.000	2488749	2.30		91.9	30236	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.761	-0.001	1.000	1622283	2.50		100	22198	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.771	3.761	0.010	1.000	2007669	2.39		95.5	10658	
563.00 > 169.00	3.771	3.761	0.010	1.000	503882		3.98(2.12-6.36)		11217	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.928	3.928	0.0	1.000	10026349	2.30		97.6	106054	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.060	0.001	1.000	2635889	2.25		90.2	26203	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	2836065	2.58		103	3830	
613.00 > 169.00	4.061	4.061	0.0	1.000	703649		4.03(2.13-6.40)		6573	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	3187522	2.49		99.5	3741	
663.00 > 169.00	4.318	4.318	0.0	1.000	966449		3.30(1.25-3.76)		6596	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.553	0.011	1.000	3352532	2.26		90.5	23729	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	870405	2.58		103	6183	
713.00 > 219.00	4.564	4.564	0.0	1.000	608562		1.43(0.71-2.13)		8172	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.975	0.0	1.000	5759590	2.39		95.5	16624	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.975	4.976	-0.001	1.000	5613551	2.55		102	2440	
813.00 > 169.00	4.975	4.976	-0.001	1.000	873913		6.42(2.86-8.58)		4950	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.343	0.001	1.000	5743584	2.48		99.3	1837	
913.00 > 169.00	5.344	5.343	0.001	1.000	688167		8.35(3.83-11.48)		3589	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 10:25:55 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\2018.04.26LLA_036.d

Injection Date: 26-Apr-2018 15:52:17 Instrument ID: A8_N

Lims ID: CCV L5

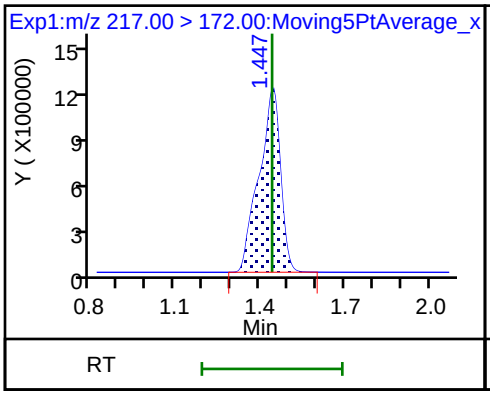
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1

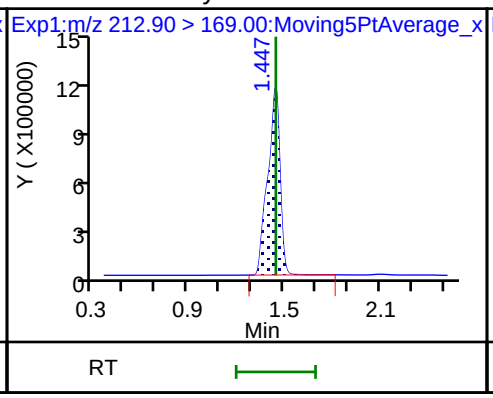
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

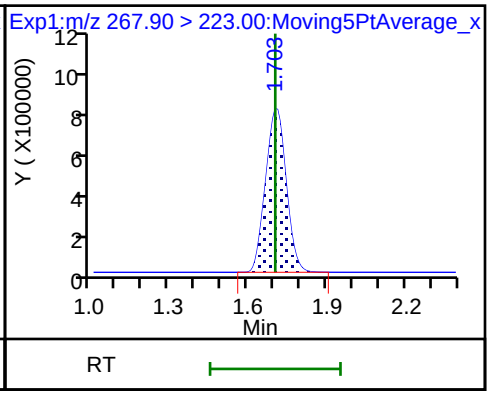
D 1 13C4 PFBA



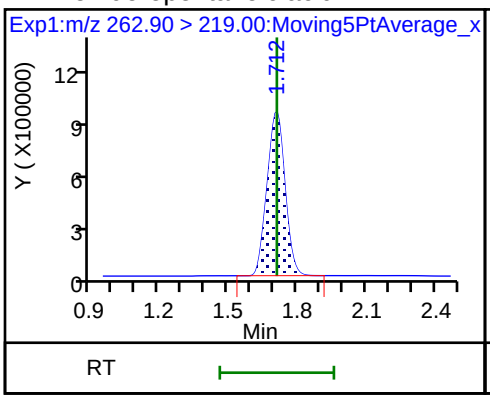
2 Perfluorobutyric acid



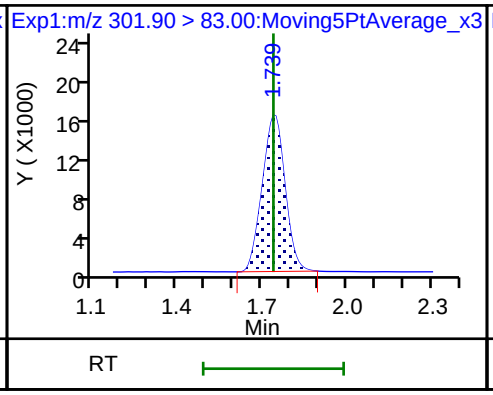
D 3 13C5-PFPeA



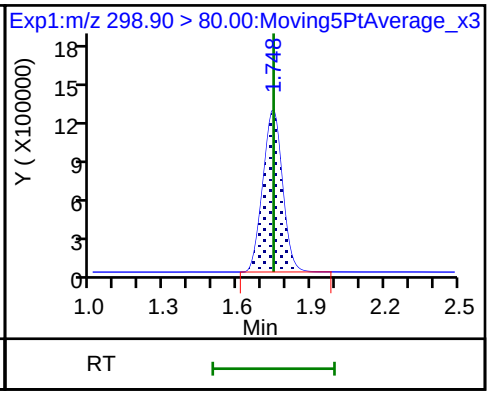
4 Perfluoropentanoic acid



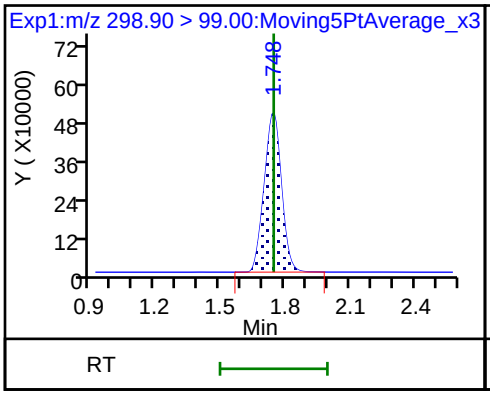
D 47 13C3-PFBS



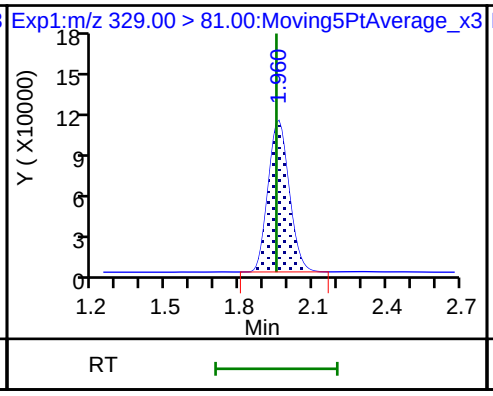
5 Perfluorobutanesulfonic acid



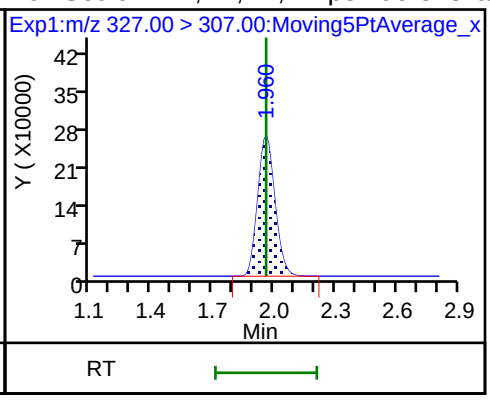
5 Perfluorobutanesulfonic acid



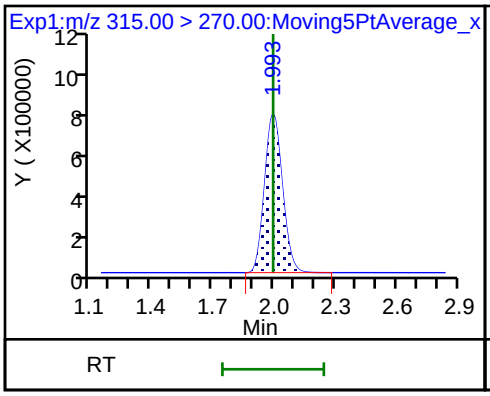
D 60 M2-4:2FTS



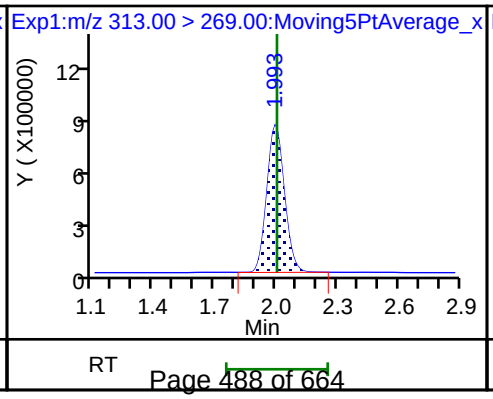
61 Sodium 1H,1H,2H,2H-perfluorohexane



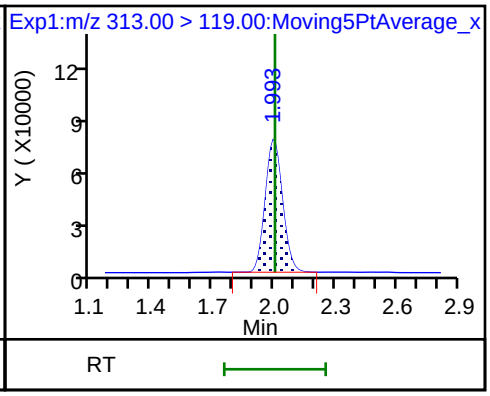
D 7 13C2 PFHxA



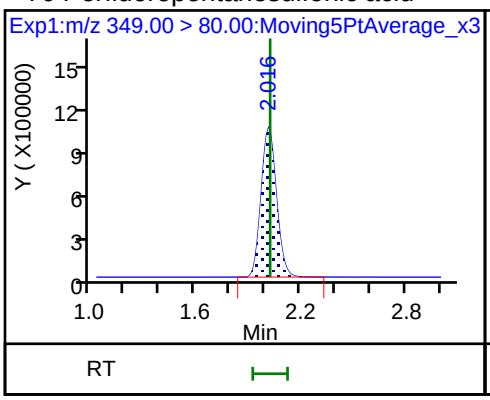
6 Perfluorohexanoic acid



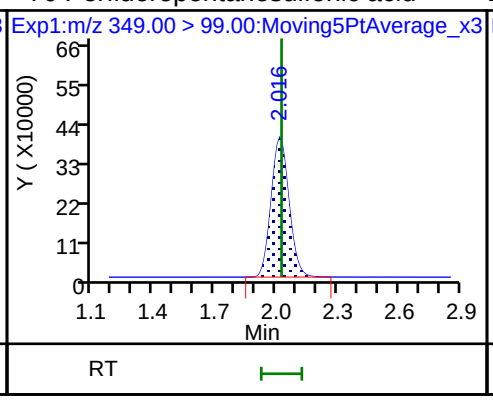
6 Perfluorohexanoic acid



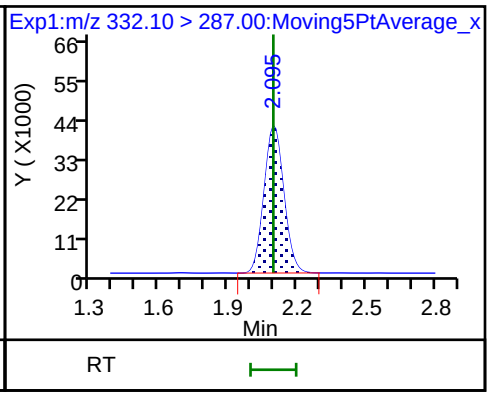
70 Perfluoropentanesulfonic acid



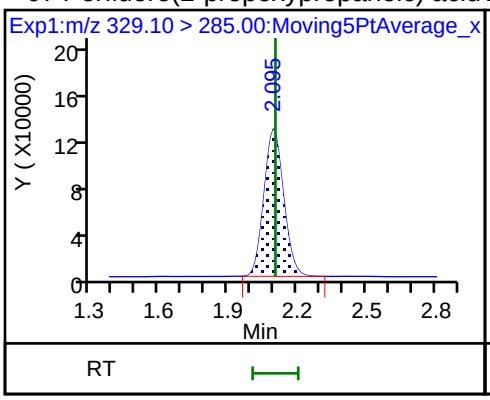
70 Perfluoropentanesulfonic acid



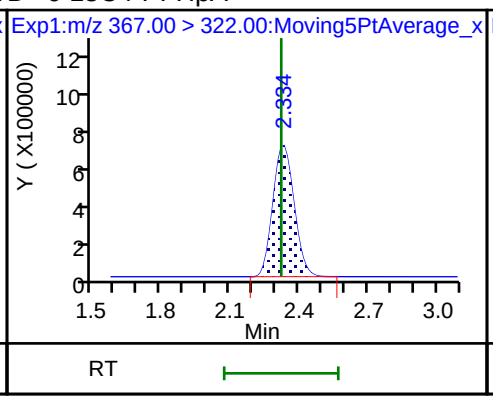
D 64 13C3 HFPO-DA



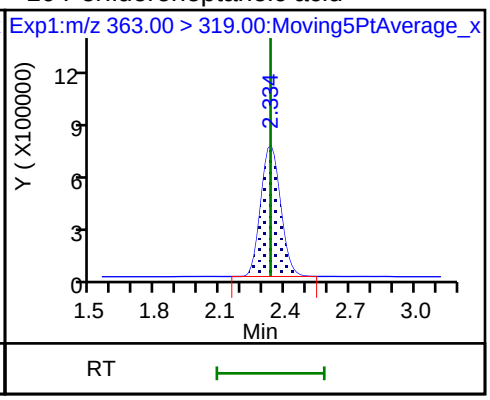
67 Perfluoro(2-propoxypropanoic) acid



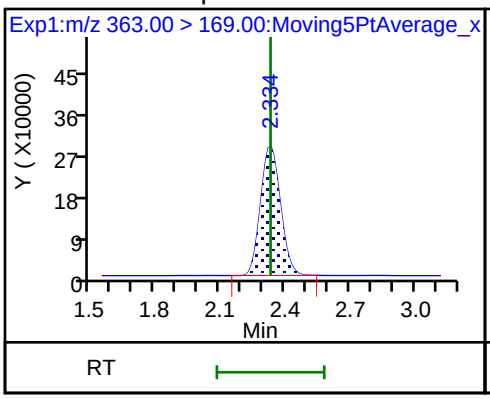
D 9 13C4-PFHpA



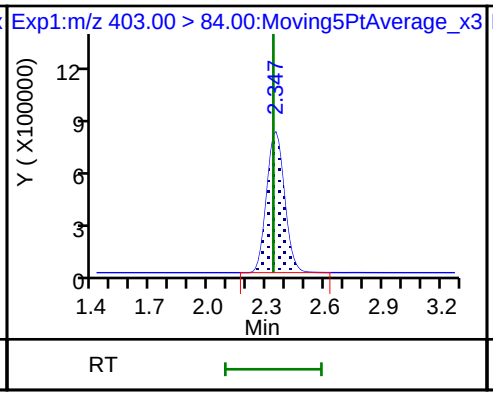
10 Perfluoroheptanoic acid



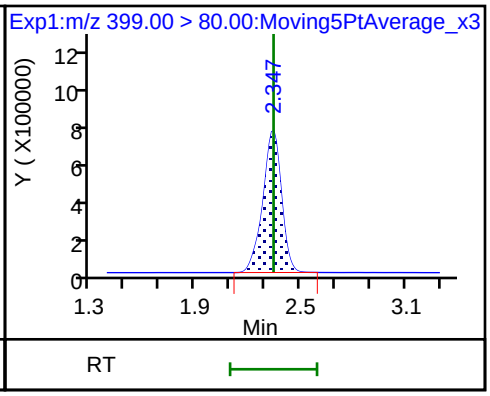
10 Perfluoroheptanoic acid



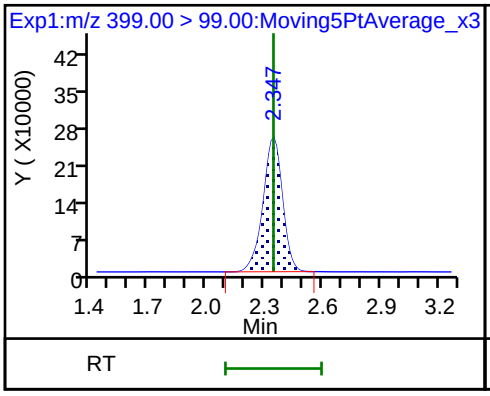
D 11 18O2 PFHxS



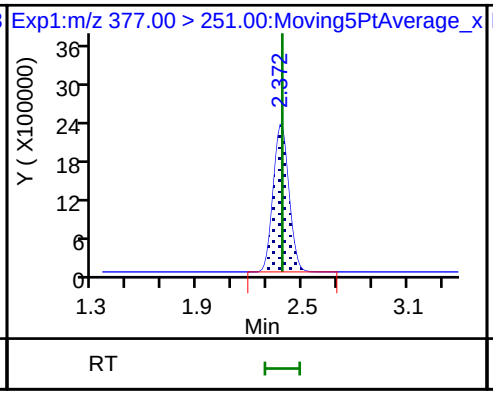
8 Perfluorohexanesulfonic acid



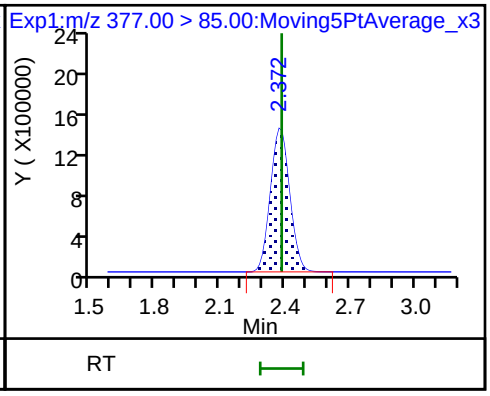
8 Perfluorohexanesulfonic acid



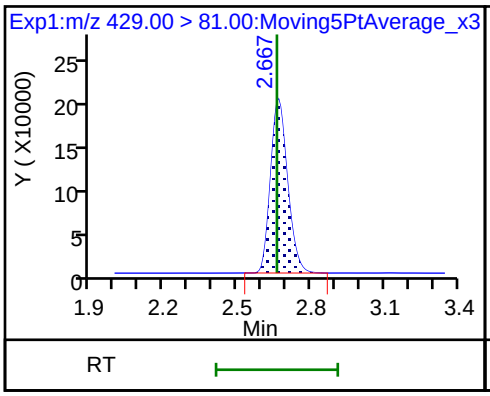
65 Adona



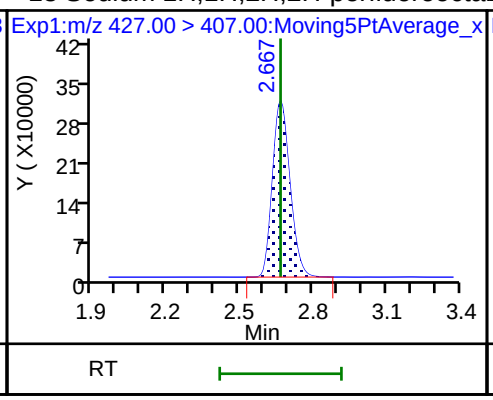
65 Adona



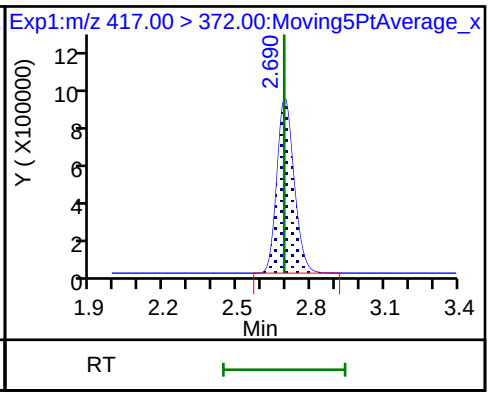
D 12 M2-6:2FTS



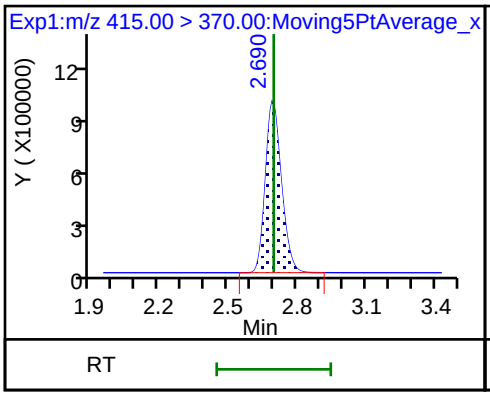
13 Sodium 1H,1H,2H,2H-perfluorooctane



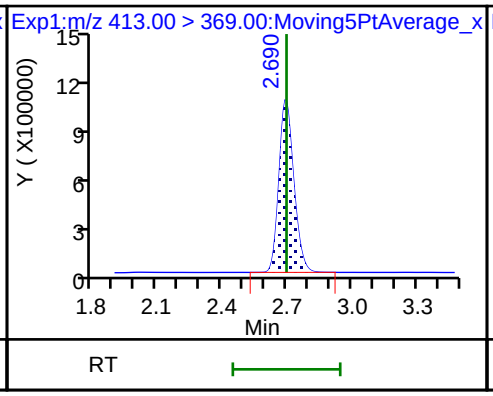
D 14 13C4 PFOA



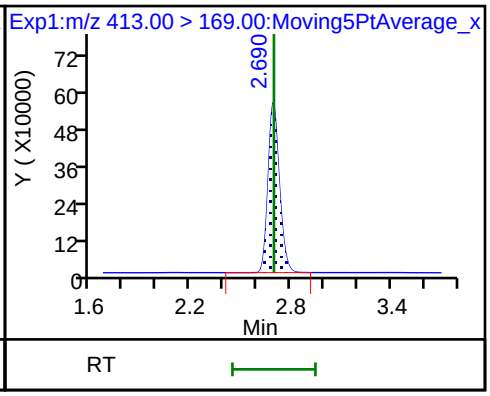
* 62 13C2-PFOA



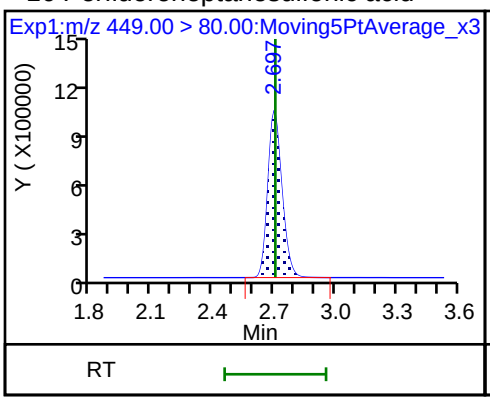
15 Perfluorooctanoic acid



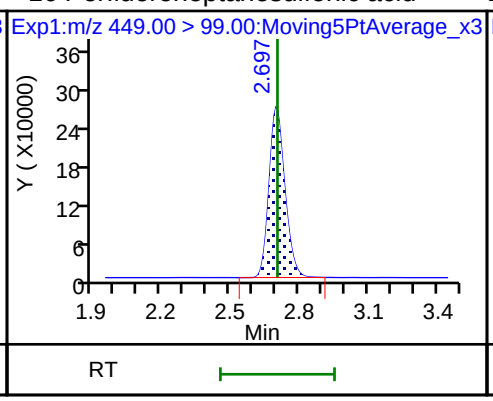
15 Perfluorooctanoic acid



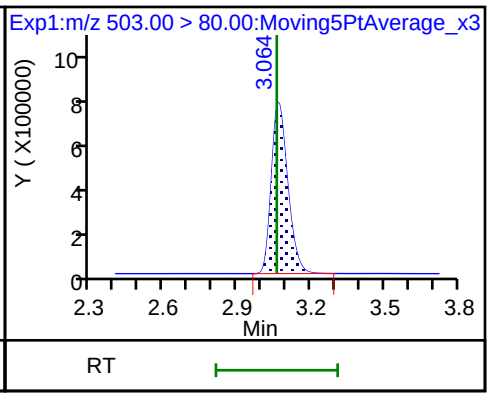
16 Perfluoroheptanesulfonic acid



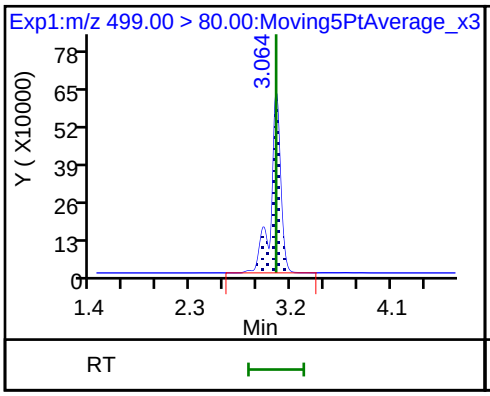
16 Perfluoroheptanesulfonic acid



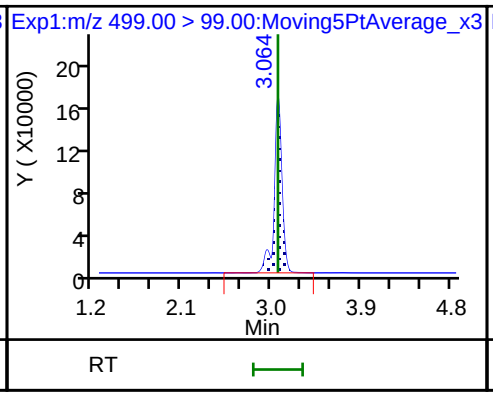
D 18 13C4 PFOS



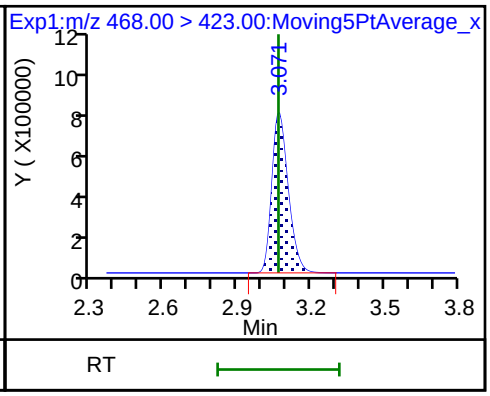
17 Perfluorooctane sulfonic acid



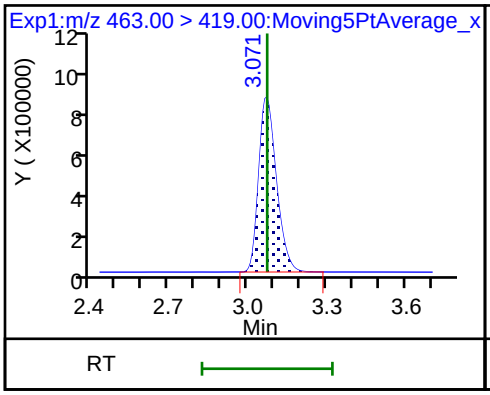
17 Perfluorooctane sulfonic acid



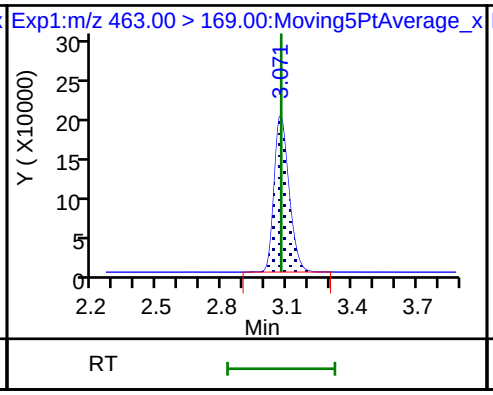
D 19 13C5 PFNA



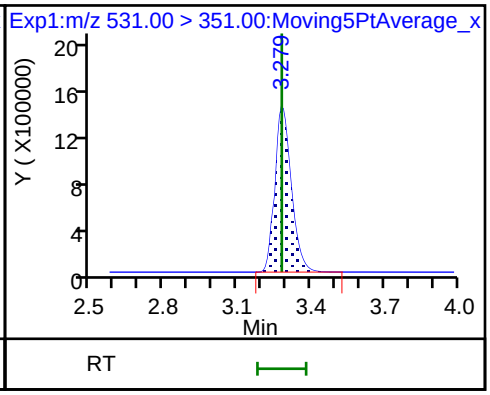
20 Perfluorononanoic acid



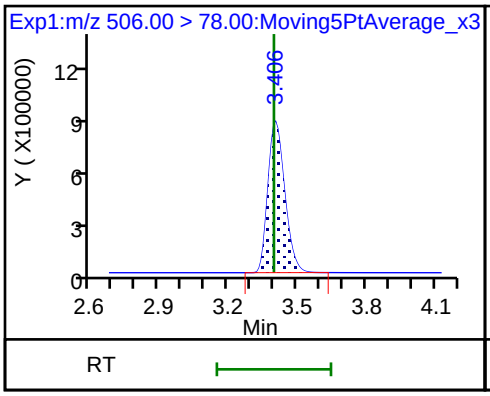
20 Perfluorononanoic acid



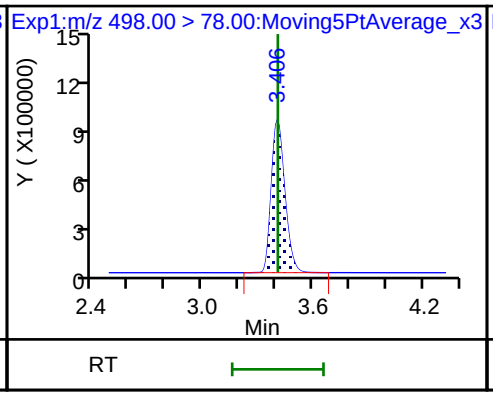
69 9-Chlorohexadecafluoro-3-oxanonane



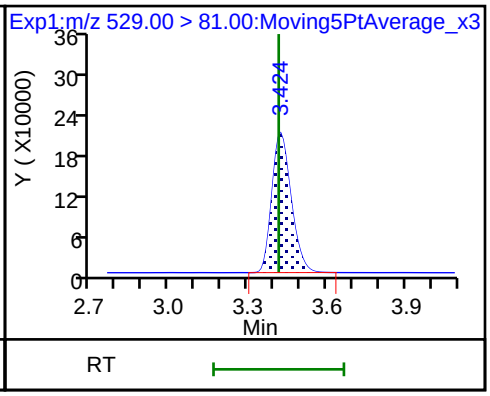
D 21 13C8 FOSA



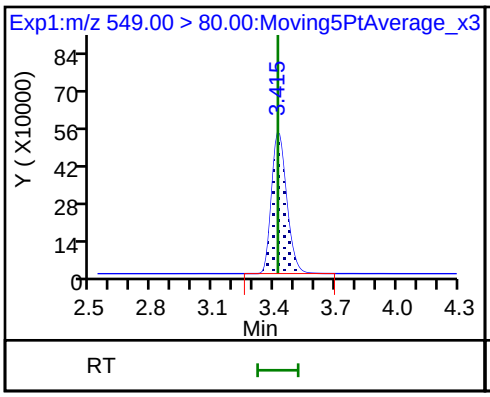
22 Perfluorooctane Sulfonamide



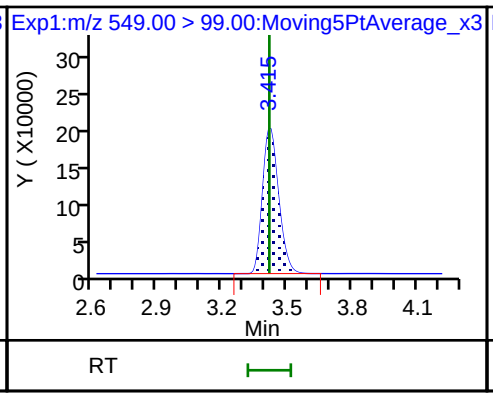
D 26 M2-8:2FTS



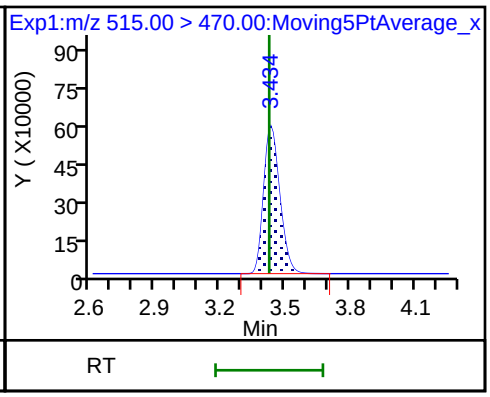
68 Perfluorononanesulfonic acid



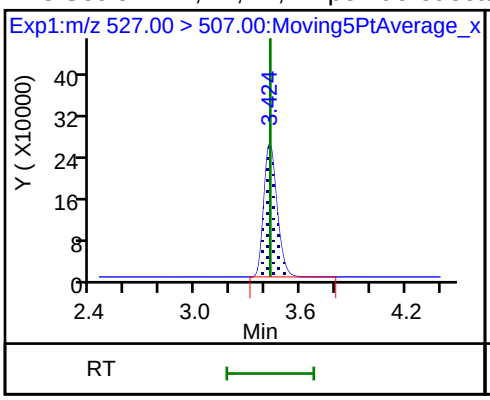
68 Perfluorononanesulfonic acid



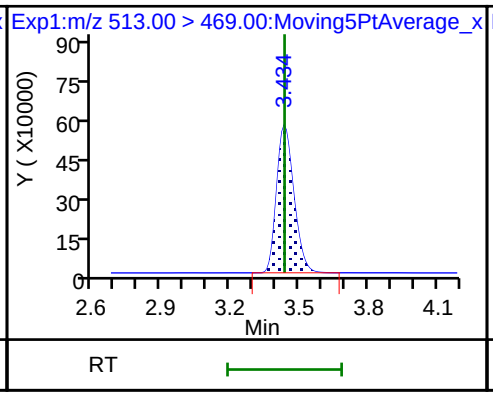
D 23 13C2 PFDA



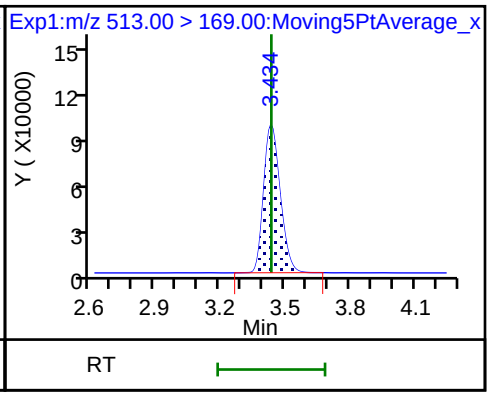
25 Sodium 1H,1H,2H,2H-perfluorodecane



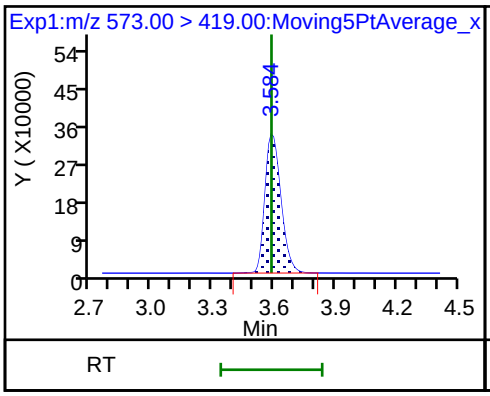
24 Perfluorodecanoic acid



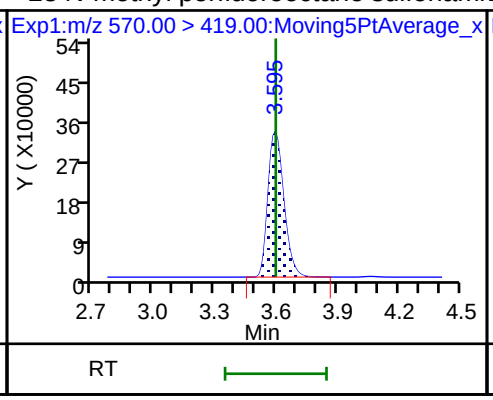
24 Perfluorodecanoic acid



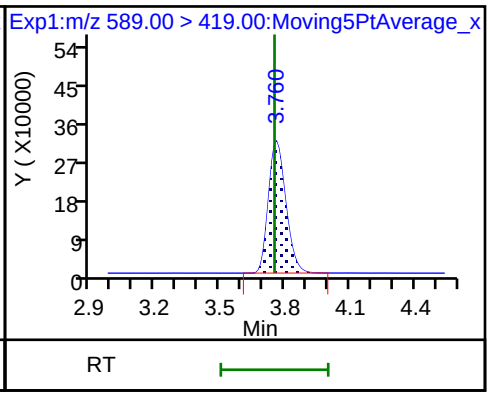
D 27 d3-NMeFOSAA



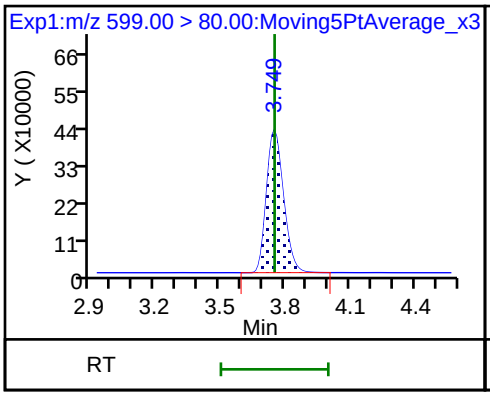
28 N-methyl perfluorooctane sulfonami



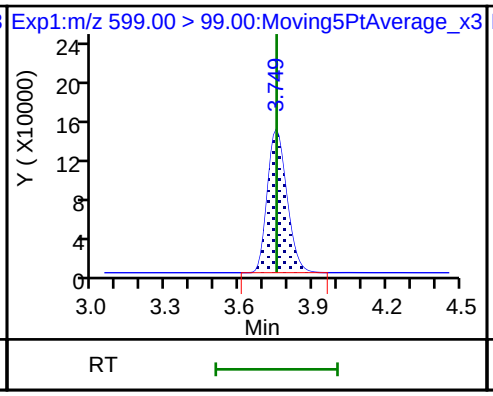
D 32 d5-NEtFOSAA



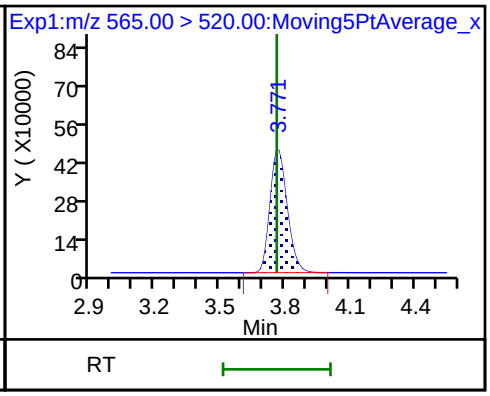
29 Perfluorodecane Sulfonic acid



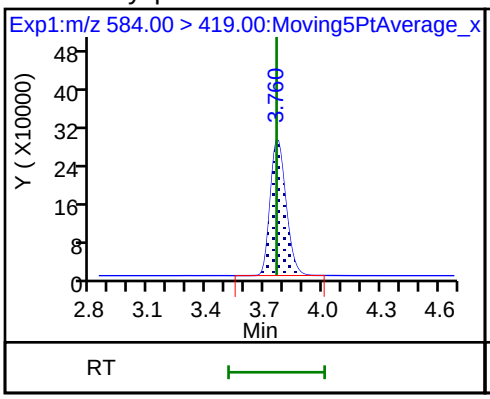
29 Perfluorodecane Sulfonic acid



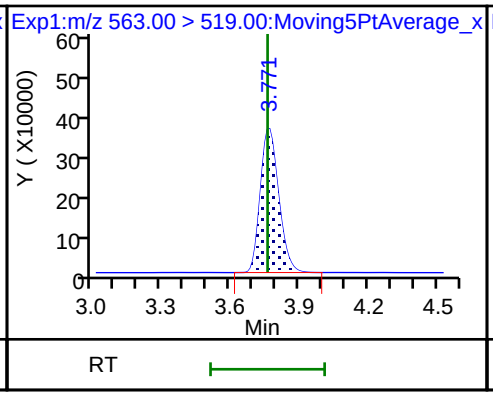
D 30 13C2 PFUnA



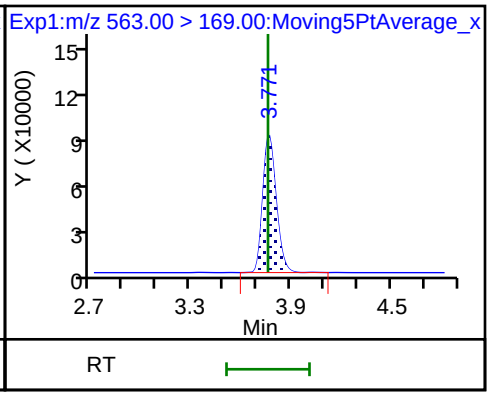
33 N-ethyl perfluorooctane sulfonamid



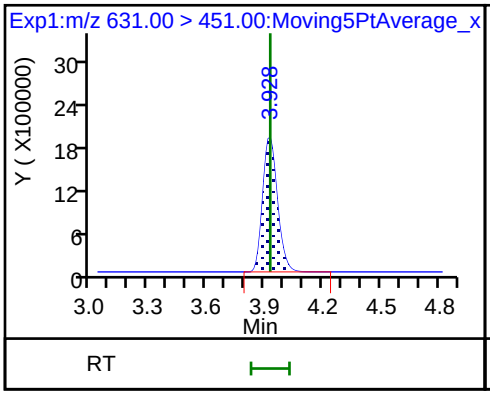
31 Perfluoroundecanoic acid



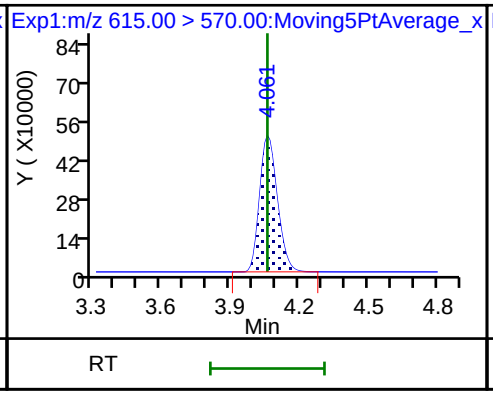
31 Perfluoroundecanoic acid



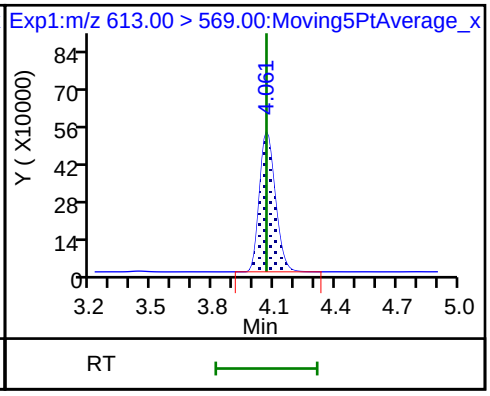
66 11-Chloroeicosafluoro-3-oxaundecan



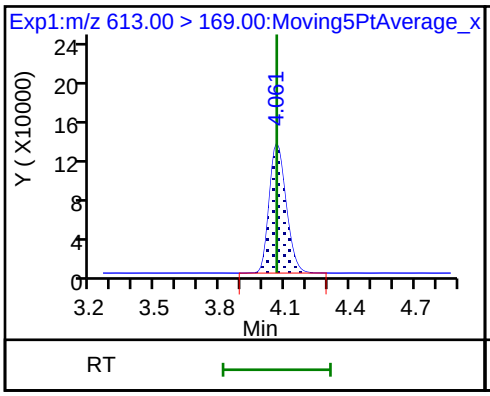
D 36 13C2 PFDoA



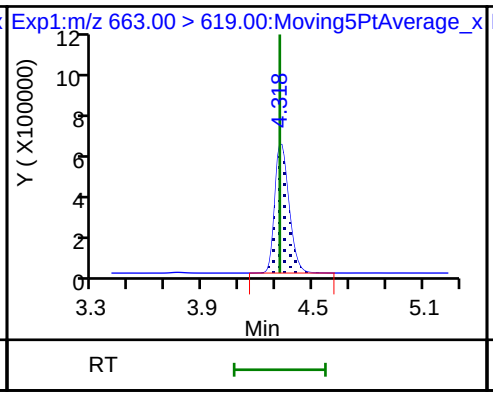
37 Perfluorododecanoic acid



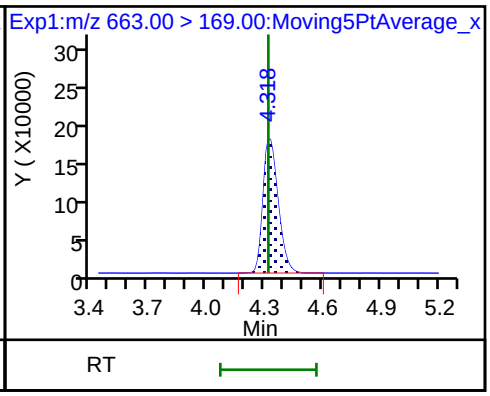
37 Perfluorododecanoic acid



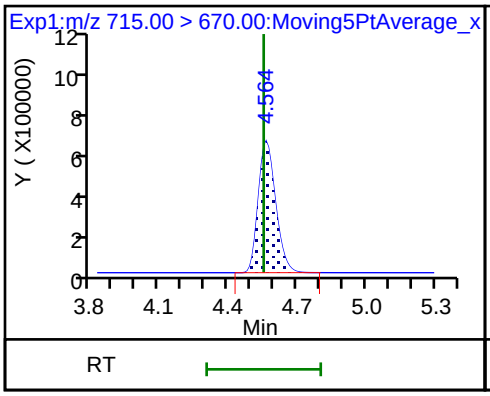
41 Perfluorotridecanoic acid



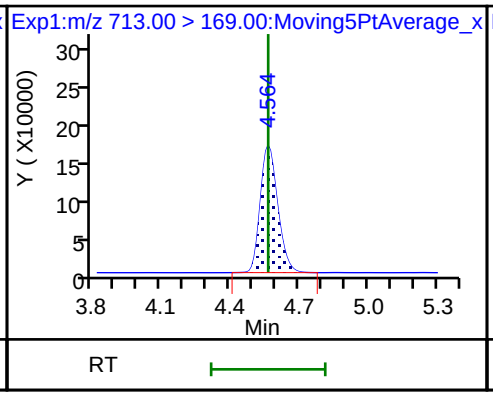
41 Perfluorotridecanoic acid



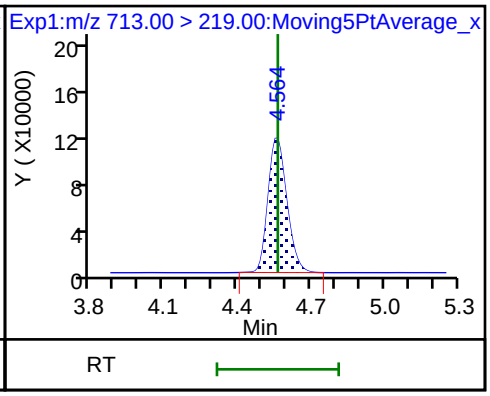
D 43 13C2-PFTeDA



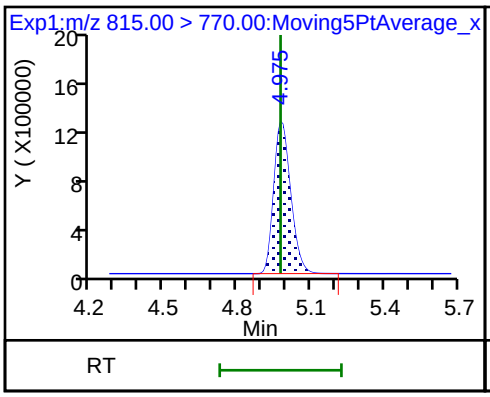
42 Perfluorotetradecanoic acid



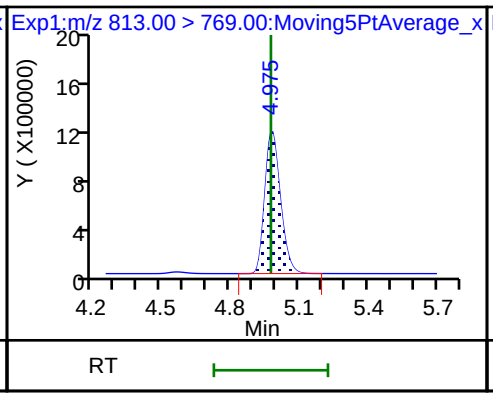
42 Perfluorotetradecanoic acid



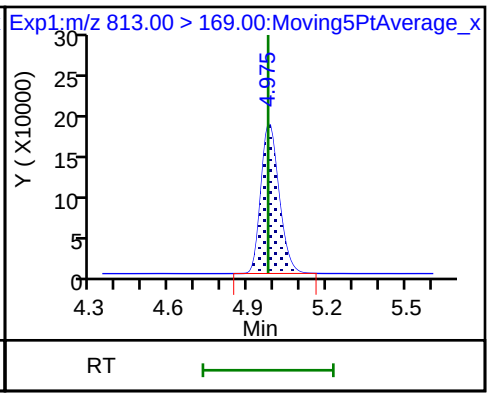
D 44 13C2-PFHxDA



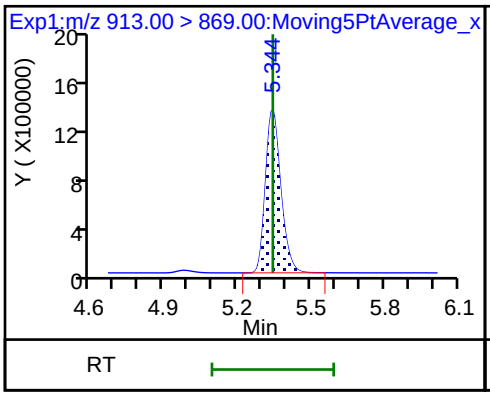
45 Perfluorohexadecanoic acid



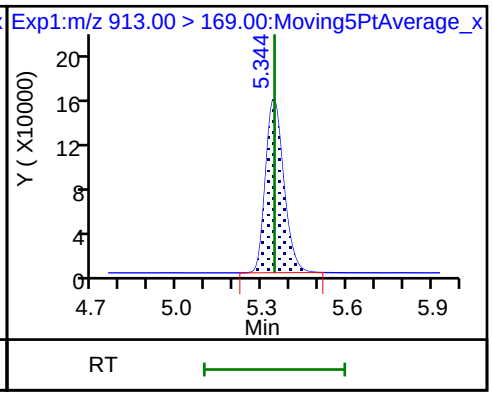
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220081/12 Calibration Date: 04/26/2018 17:18

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9113		0.981	1.00	-1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.126		0.945	1.00	-5.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	77.72		0.878	0.884	-0.7	50.0
4:2 FTS	AveID	16.03	17.84		1.04	0.934	11.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9879		0.972	1.00	-2.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	67.62		0.887	0.938	-5.4	50.0
HFPO-DA (GenX)	AveID	2.785	2.544		0.913	1.00	-8.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.058		1.06	1.00	5.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	0.999		0.803	0.910	-11.7	40.0
Adona	AveID	3.464	3.737		1.08	1.00	7.9	50.0
6:2FTS	AveID	1.691	1.728		0.969	0.948	2.2	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.119		0.969	1.00	-3.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.328		0.952	0.952	-0.0	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.058		0.902	0.928	-2.8	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.043		1.00	1.00	0.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.823		0.901	0.932	-3.3	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9496		0.939	1.00	-6.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7382		0.887	0.960	-7.7	50.0
8:2FTS	AveID	1.265	1.171		0.887	0.958	-7.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.013		0.982	1.00	-1.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9749		0.977	1.00	-2.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6634		0.985	0.964	2.2	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8719		0.933	1.00	-6.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7996		0.946	1.00	-5.4	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.914		0.942	0.942	0.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	0.999		0.958	1.00	-4.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.180		0.971	1.00	-2.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2409		0.959	1.00	-4.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9006		0.929	1.00	-7.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Lab Sample ID: CCV 320-220081/12 Calibration Date: 04/26/2018 17:18

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLA_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9654		0.961	1.00	-3.9	50.0
13C4 PFBA	Ave	1.345	1.346		2.50	2.50	0.0	50.0
13C5 PFPeA	Ave	0.8672	0.8576		2.47	2.50	-1.1	50.0
13C3-PFBS	Ave	0.0199	0.0197		2.30	2.33	-1.2	50.0
M2-4:2FTS	Ave	0.1425	0.1496		2.45	2.34	5.0	50.0
13C2 PFHxA	Ave	0.9590	0.9586		2.50	2.50	-0.0	50.0
13C3 HFPO-DA	Ave	0.0593	0.0558		2.35	2.50	-5.9	50.0
13C4-PFHpA	Ave	0.9333	0.8833		2.37	2.50	-5.4	50.0
18O2 PFHxS	Ave	1.152	1.132		2.32	2.37	-1.8	50.0
M2-6:2FTS	Ave	0.2000	0.1996		2.37	2.38	-0.2	40.0
13C4 PFOA	Ave	0.9276	0.9204		2.48	2.50	-0.8	50.0
13C4 PFOS	Ave	0.8066	0.7806		2.31	2.39	-3.2	50.0
13C5 PFNA	Ave	0.7973	0.7521		2.36	2.50	-5.7	50.0
13C8 FOSA	Ave	1.007	1.005		2.49	2.50	-0.3	50.0
M2-8:2FTS	Ave	0.2409	0.2441		2.43	2.40	1.3	40.0
13C2 PFDA	Ave	0.6701	0.6833		2.55	2.50	2.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3847		2.53	2.50	1.3	50.0
13C2 PFUnA	Ave	0.5781	0.5611		2.43	2.50	-2.9	50.0
d5-NEtFOSAA	Ave	0.3749	0.3970		2.65	2.50	5.9	50.0
13C2 PFDoA	Ave	0.6242	0.6051		2.42	2.50	-3.1	50.0
13C2-PFTeDA	Ave	0.7915	0.8025		2.54	2.50	1.4	50.0
13C2-PFHxDA	Ave	1.288	1.418		2.75	2.50	10.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\2018.04.26LLA_047.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 17:18:10 ALS Bottle#: 13 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 10:26:12 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.442	0.004	1.000	6190122	2.50		100	41545	
2 Perfluorobutyric acid										
212.90 > 169.00	1.446	1.446	0.0	1.000	2256513	0.9815		98.1	1145	
D 3 13C5-PFPeA										
267.90 > 223.00	1.711	1.703	0.008	0.557	3943458	2.47		98.9	73473	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.711	1.711	0.0	1.000	1776334	0.9449		94.5	1810	
D 47 13C3-PFBS										
301.90 > 83.00	1.747	1.739	0.008	1.000	84043	2.30		98.8	853	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.747	1.747	0.0	1.000	2483641	0.8777		99.3	8762	
298.90 > 99.00	1.747	1.747	0.0	1.000	1049391		2.37(1.25-3.74)		11183	
D 60 M2-4:2FTS										
329.00 > 81.00	1.959	1.950	0.009	1.000	642573	2.45		105	5461	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.959	1.959	0.0	1.000	602219	1.04		111	26041	
D 7 13C2 PFHxA										
315.00 > 270.00	2.003	1.994	0.009	1.000	4407743	2.50		100.0	91961	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.003	2.003	0.0	1.000	1741672	0.9722		97.2	2145	
313.00 > 119.00	2.003	2.003	0.0	1.000	159423		10.92(5.03-15.10)		1498	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.025	2.025	0.0	1.000	2292672	0.8870		94.6	13597	
349.00 > 99.00	2.014	2.025	-0.011	0.994	897096		2.56(1.36-4.07)		13429	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.093	2.095	-0.002	1.000	256587	2.35		94.1	7231	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.104	2.104	0.0	1.005	261147	0.9135		91.3	1563	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.332	2.321	0.011	1.000	4061763	2.37		94.6	63834	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.332	2.332	0.0	1.000	1719662	1.06		106	2160	
363.00 > 169.00	2.332	2.332	0.0	1.000	658712		2.61(1.13-3.40)		3074	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.334	0.011	1.000	4922173	2.32		98.2	45961	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.345	2.345	0.0	1.000	1892436	0.8034		88.3	4088	
399.00 > 99.00	2.345	2.345	0.0	1.000	623250		3.04(1.50-4.49)		3662	
65 Adona										
377.00 > 251.00	2.384	2.384	0.0	1.000	5365546	1.08		108	51703	
377.00 > 85.00	2.384	2.384	0.0	1.000	3026608		1.77(0.84-2.53)		48858	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.660	0.007	1.000	871834	2.37		99.8	10030	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.667	0.0	1.000	601483	0.9693		102	7826	
D 14 13C4 PFOA										
417.00 > 372.00	2.697	2.690	0.007	1.000	4232435	2.48		99.2	74145	
* 62 13C2-PFOA										
415.00 > 370.00	2.697	2.697	0.0		4598357	2.50			61068	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.697	2.697	0.0	1.000	1894959	0.9688		96.9	1289	
413.00 > 169.00	2.697	2.697	0.0	1.000	947950		2.00(0.84-2.52)		3239	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.705	0.0	1.000	1814596	0.9519		100	11217	
449.00 > 99.00	2.705	2.705	0.0	1.000	507376		3.58(1.94-5.82)		13025	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.060	0.005	1.000	3431502	2.31		96.8	20980	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.065	0.0	1.000	1409111	0.9022		97.2	5681	
499.00 > 99.00	3.065	3.065	0.0	1.000	313197		4.50(2.31-6.93)		4894	
D 19 13C5 PFNA										
468.00 > 423.00	3.072	3.067	0.005	1.000	3458378	2.36		94.3	57676	
20 Perfluorononanoic acid										
463.00 > 419.00	3.072	3.072	0.0	1.000	1442798	1.00		100	6167	
463.00 > 169.00	3.072	3.072	0.0	1.000	349637		4.13(1.90-5.69)		6853	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.280	3.280	0.0	1.000	2439723	0.9014		96.7	48921	
D 21 13C8 FOSA										
506.00 > 78.00	3.408	3.398	0.010	1.000	4619254	2.49		99.7	61171	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.408	0.0	1.000	1754612	0.9388		93.9	18160	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.416	0.010	1.000	1075335	2.43		101	9571	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.417	3.417	0.0	1.000	1017488	0.8865		92.3	11100	
549.00 > 99.00	3.417	3.417	0.0	1.000	391342		2.60(1.33-3.97)		12761	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.436	3.426	0.010	1.000	3141894	2.55		102	62193	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	503734	0.8866		92.6	19489	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.436	3.436	0.0	1.000	1273711	0.9825		98.2	5417	
513.00 > 169.00	3.436	3.436	0.0	1.000	226022		5.64(2.36-7.09)		3729	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.586	3.585	0.001	1.000	1768805	2.53		101	25127	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.597	3.597	0.0	1.003	689737	0.9775		97.7	4731	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.761	3.750	0.011	1.000	1825752	2.65		106	22106	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.751	3.751	0.0	1.000	918184	0.9850		102	8571	
599.00 > 99.00	3.751	3.751	0.0	1.000	307402		2.99(1.39-4.16)		9774	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.761	0.0	1.000	2580274	2.43		97.1	52903	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.000	636719	0.9330		93.3	12794	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.000	825235	0.9461		94.6	4664	
563.00 > 169.00	3.761	3.761	0.0	1.000	215717		3.83(2.12-6.36)		4445	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.928	3.928	0.0	1.000	3940845	0.9424		100	43976	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.060	0.001	1.000	2782341	2.42		96.9	34908	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	1112290	0.9583		95.8	1641	
613.00 > 169.00	4.061	4.061	0.0	1.000	283596		3.92(2.13-6.40)		3320	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1313645	0.9712		97.1	1467	
663.00 > 169.00	4.318	4.318	0.0	1.000	420365		3.13(1.25-3.76)		4172	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.553	0.011	1.000	3690147	2.53		101	25256	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	355510	0.9590		95.9	2624	
713.00 > 219.00	4.554	4.564	-0.010	0.998	250539		1.42(0.71-2.13)		4364	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.975	0.001	1.000	6520660	2.75		110	21348	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.976	4.976	0.0	1.000	2349013	0.9288		92.9	1051	
813.00 > 169.00	4.976	4.976	0.0	1.000	391267		6.00(2.86-8.58)		2512	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.343	5.343	0.0	1.000	2517919	0.9615		96.1	921	
913.00 > 169.00	5.343	5.343	0.0	1.000	309928		8.12(3.83-11.48)		2143	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 10:26:13 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b\2018.04.26LLA_047.d

Injection Date: 26-Apr-2018 17:18:10 Instrument ID: A8_N

Lims ID: CCV L4

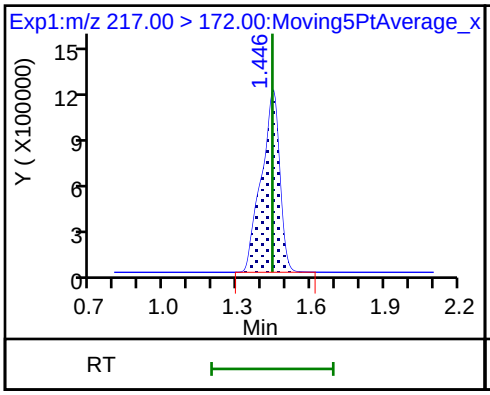
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 12

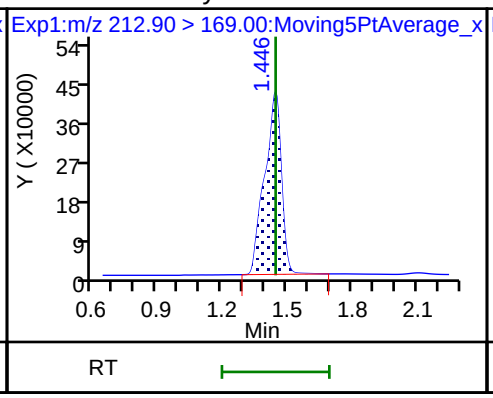
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

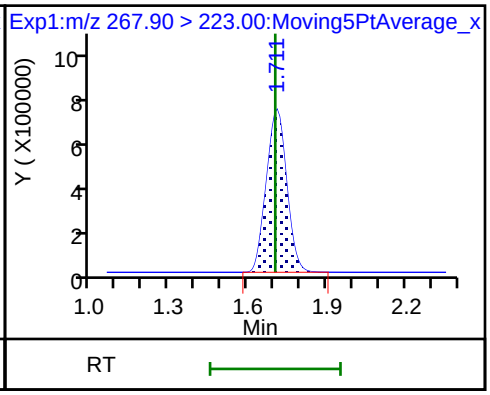
D 1 13C4 PFBA



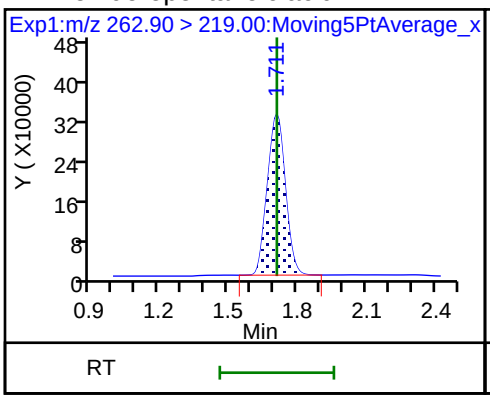
2 Perfluorobutyric acid



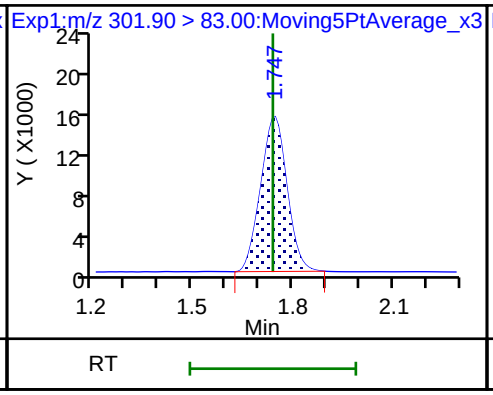
D 3 13C5-PFPeA



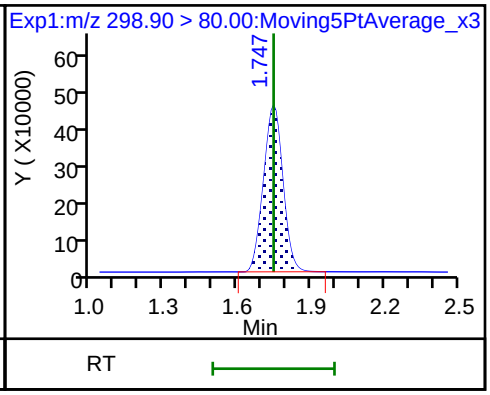
4 Perfluoropentanoic acid



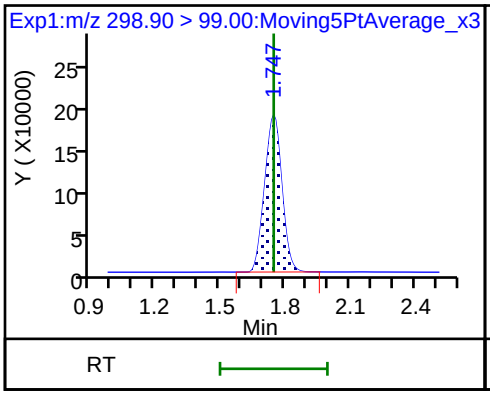
D 47 13C3-PFBS



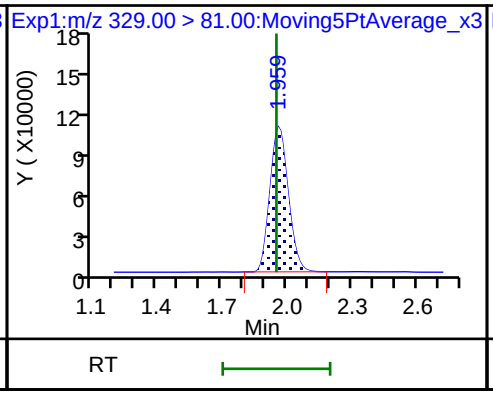
5 Perfluorobutanesulfonic acid



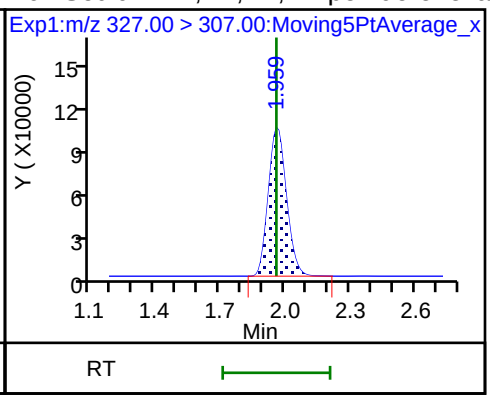
5 Perfluorobutanesulfonic acid



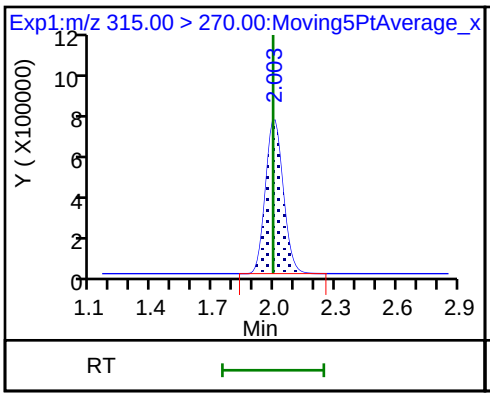
D 60 M2-4:2FTS



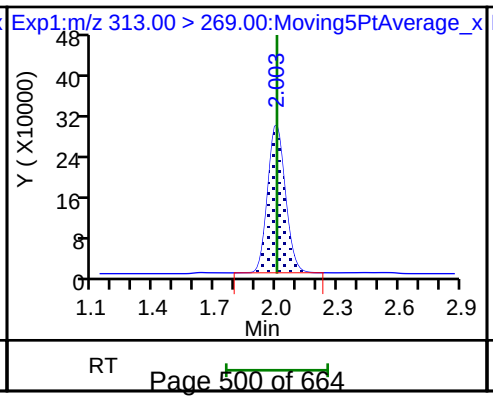
61 Sodium 1H,1H,2H,2H-perfluorohexane



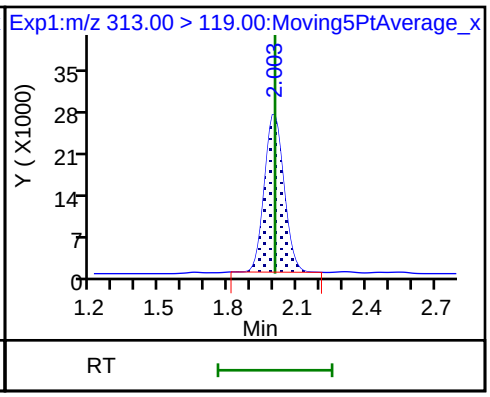
D 7 13C2 PFHxA



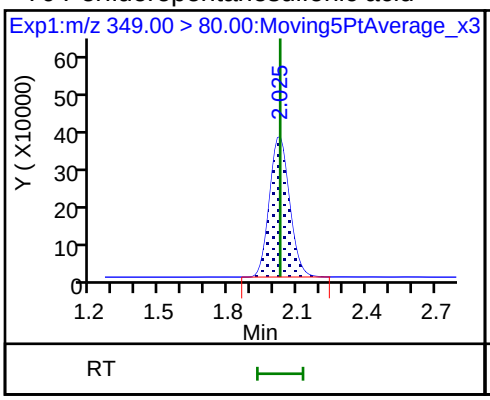
6 Perfluorohexanoic acid



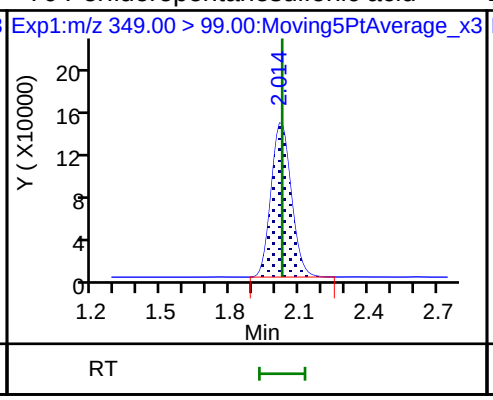
6 Perfluorohexanoic acid



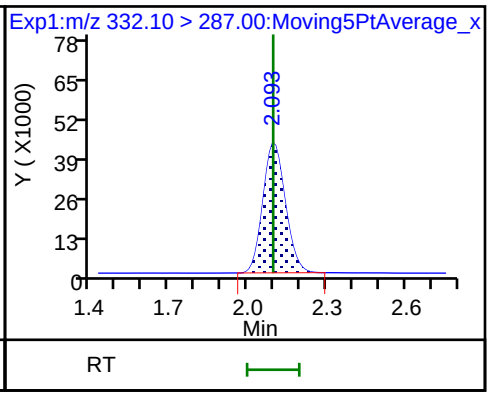
70 Perfluoropentanesulfonic acid



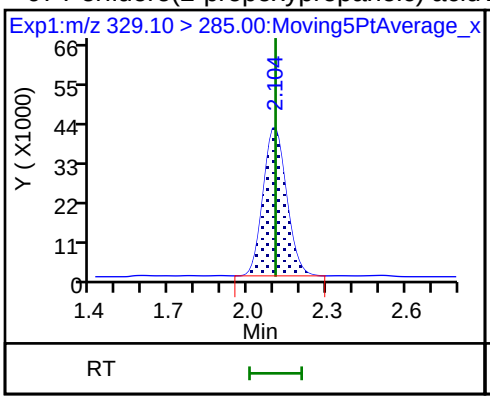
70 Perfluoropentanesulfonic acid



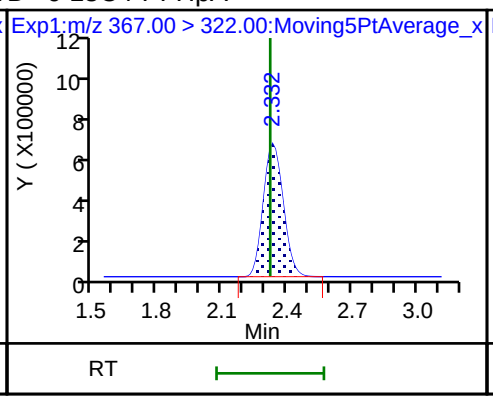
D 64 13C3 HFPO-DA



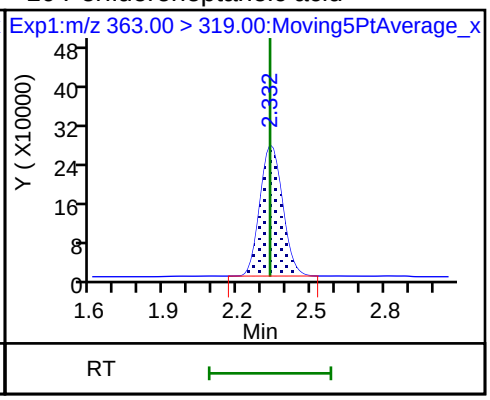
67 Perfluoro(2-propoxypropanoic) acid



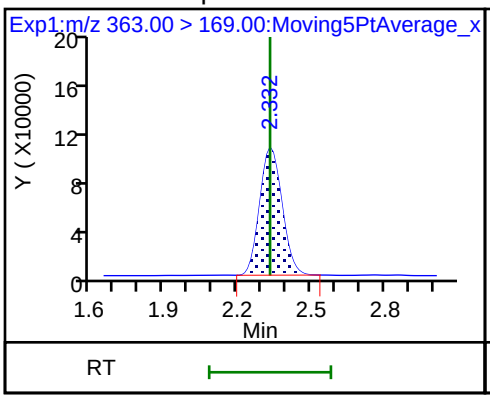
D 9 13C4-PFHpA



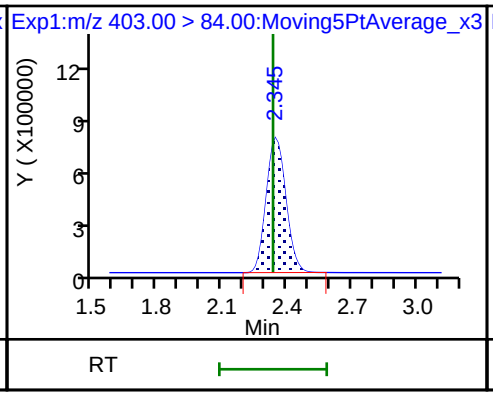
10 Perfluoroheptanoic acid



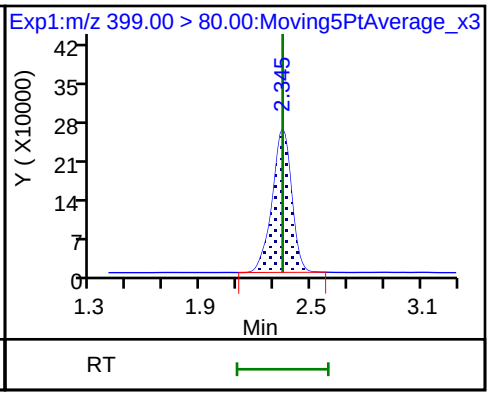
10 Perfluoroheptanoic acid



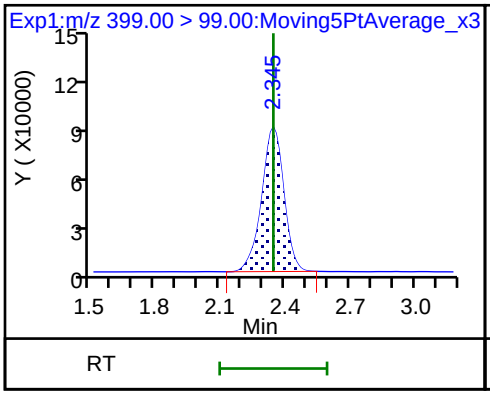
D 11 18O2 PFHxS



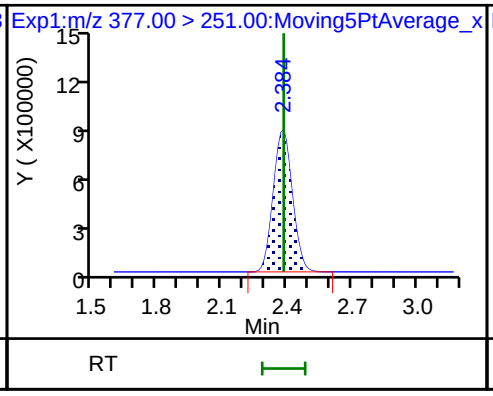
8 Perfluorohexanesulfonic acid



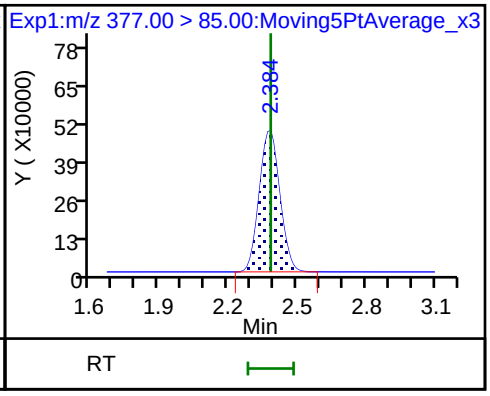
8 Perfluorohexanesulfonic acid



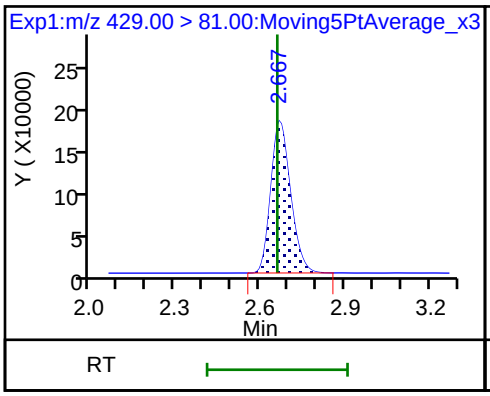
65 Adona



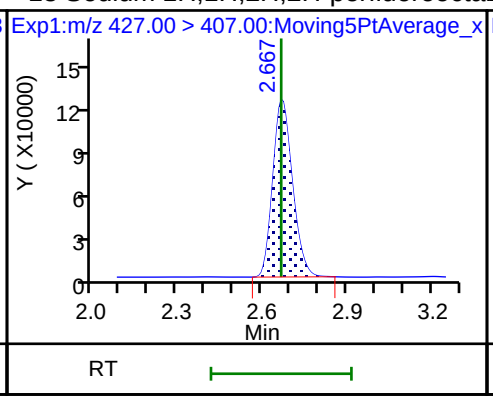
65 Adona



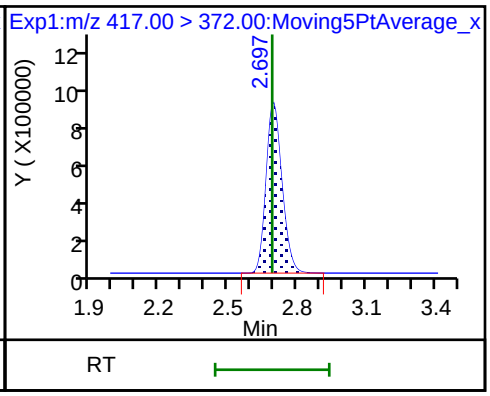
D 12 M2-6:2FTS



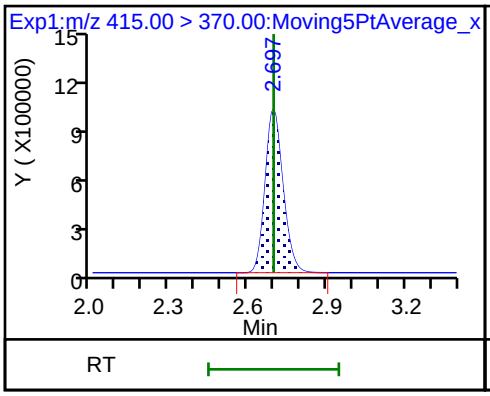
13 Sodium 1H,1H,2H,2H-perfluorooctane



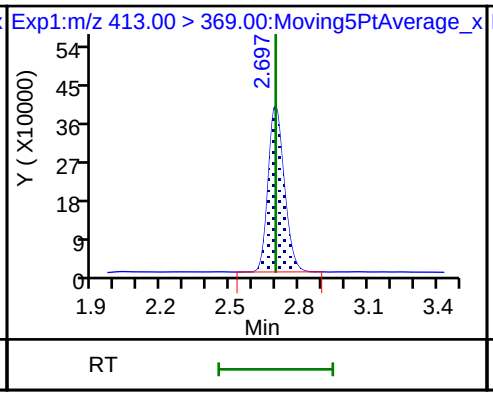
D 14 13C4 PFOA



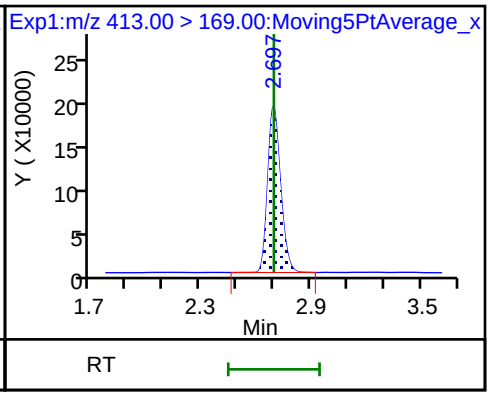
* 62 13C2-PFOA



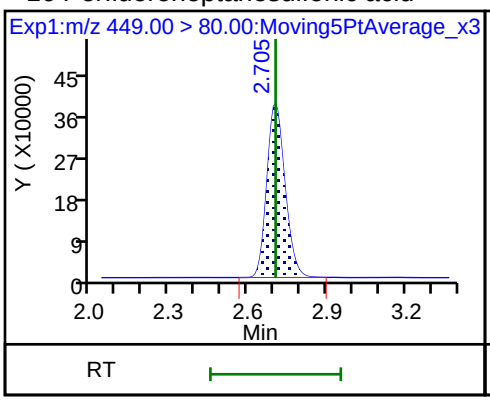
15 Perfluorooctanoic acid



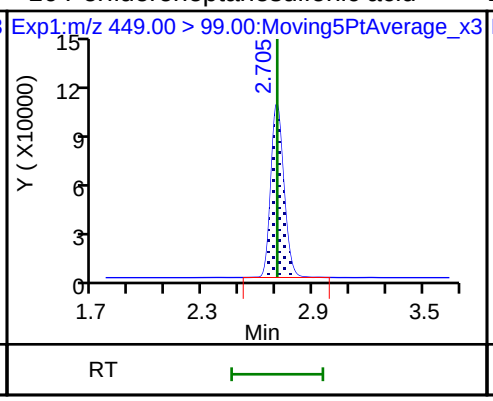
15 Perfluorooctanoic acid



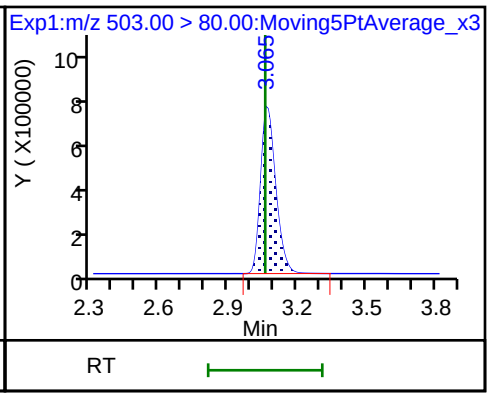
16 Perfluoroheptanesulfonic acid



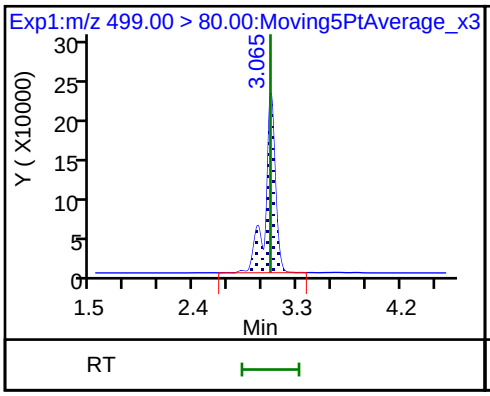
16 Perfluoroheptanesulfonic acid



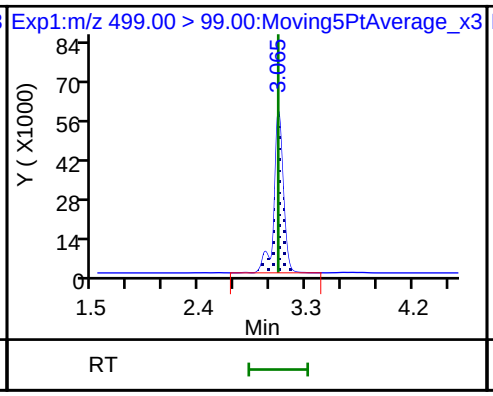
D 18 13C4 PFOS



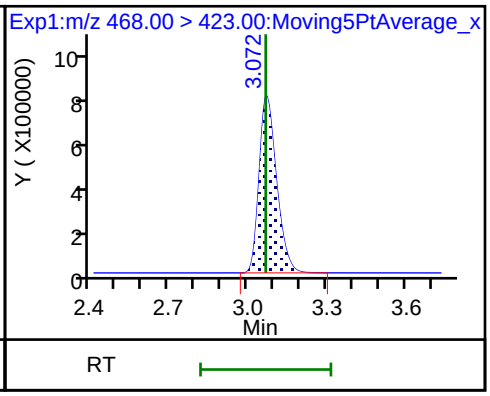
17 Perfluorooctane sulfonic acid



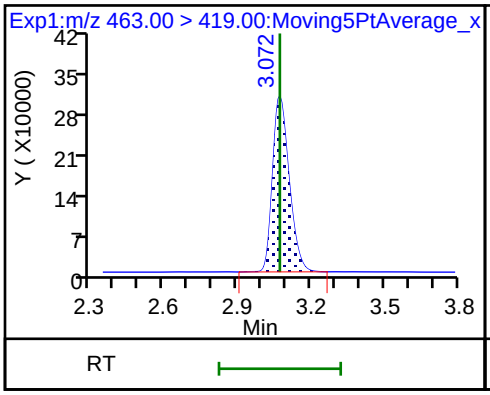
17 Perfluorooctane sulfonic acid



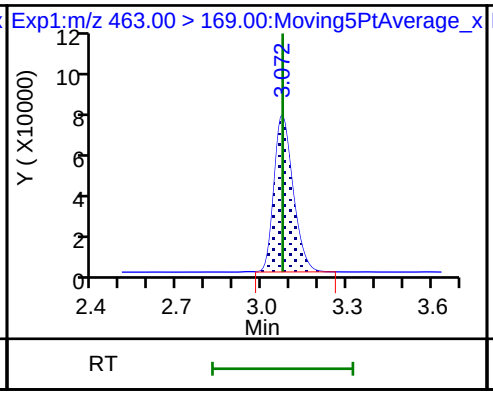
D 19 13C5 PFNA



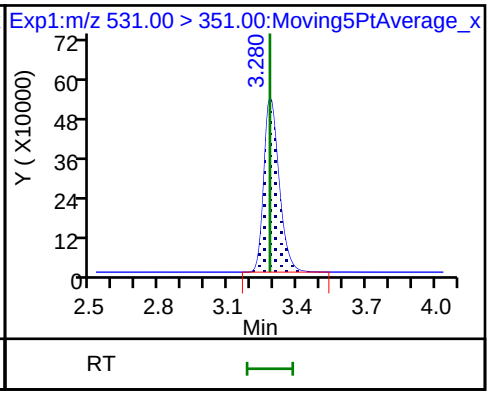
20 Perfluorononanoic acid



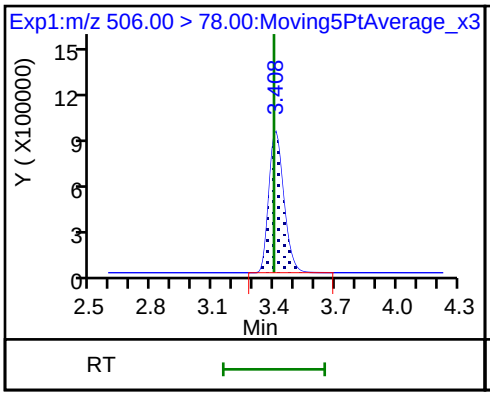
20 Perfluorononanoic acid



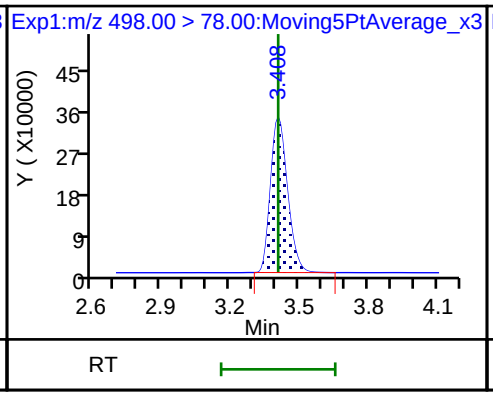
69 9-Chlorohexadecafluoro-3-oxanonane



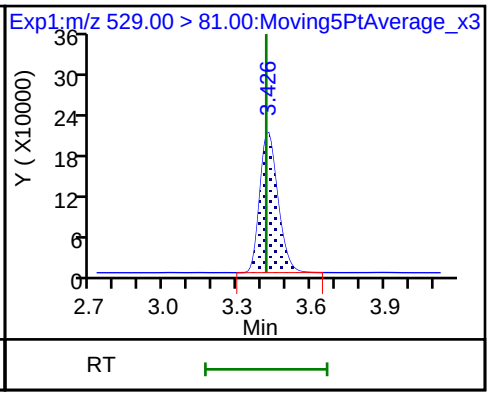
D 21 13C8 FOSA



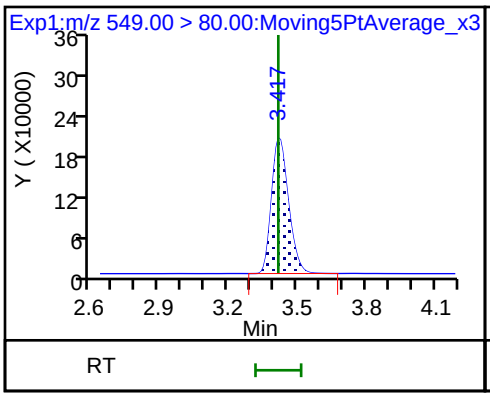
22 Perfluorooctane Sulfonamide



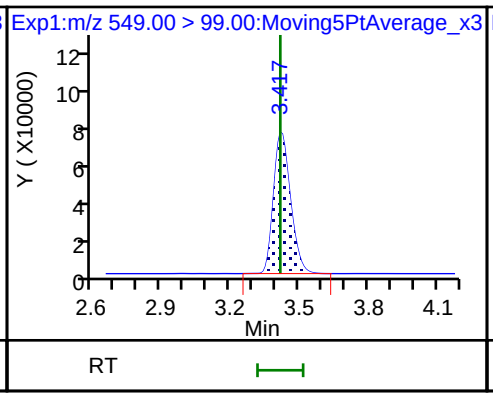
D 26 M2-8:2FTS



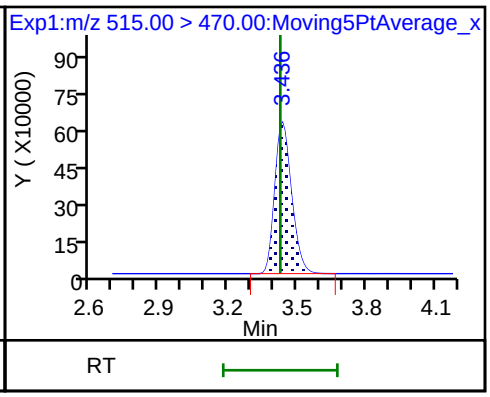
68 Perfluorononanesulfonic acid



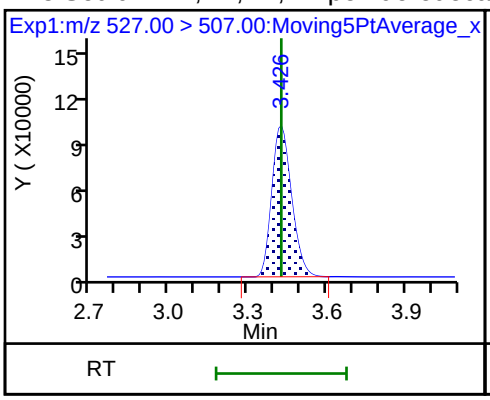
68 Perfluorononanesulfonic acid



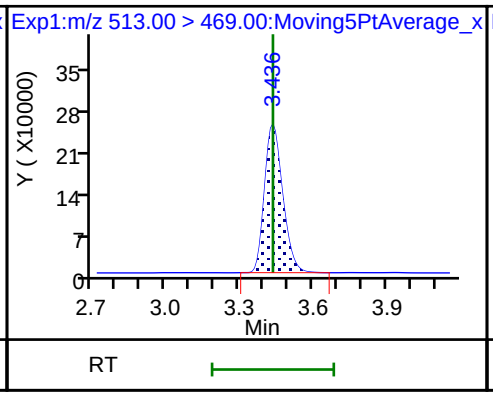
D 23 13C2 PFDA



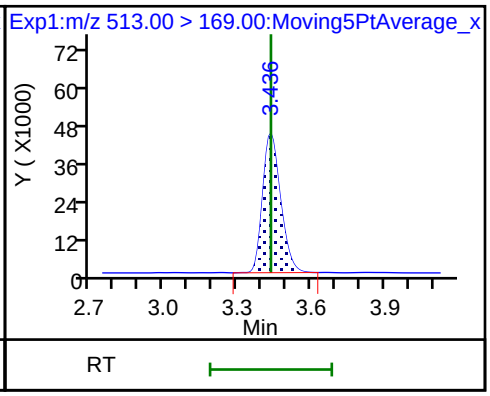
25 Sodium 1H,1H,2H,2H-perfluorodecane



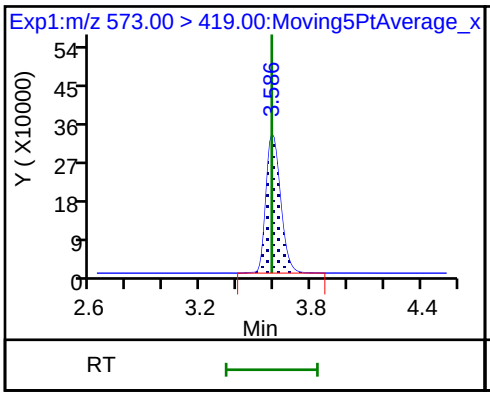
24 Perfluorodecanoic acid



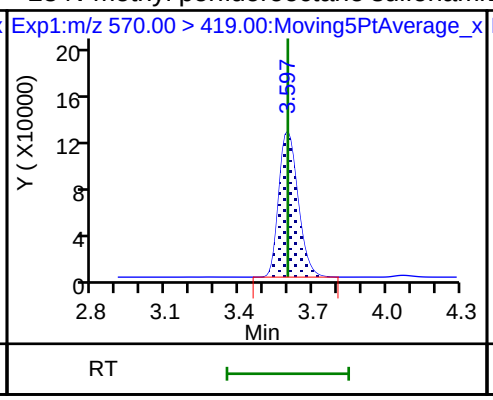
24 Perfluorodecanoic acid



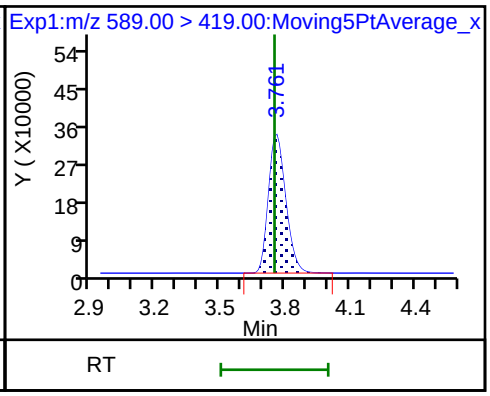
D 27 d3-NMeFOSAA



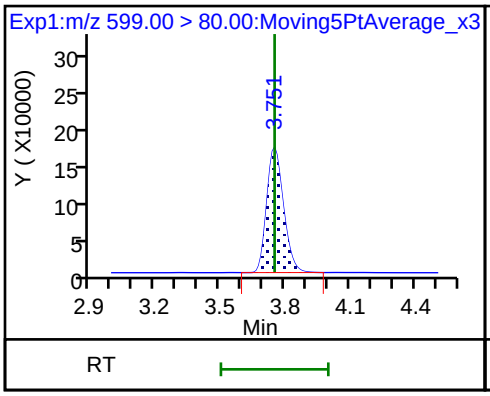
28 N-methyl perfluorooctane sulfonami



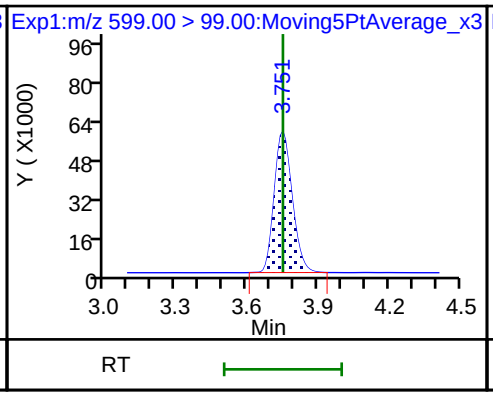
D 32 d5-NEtFOSAA



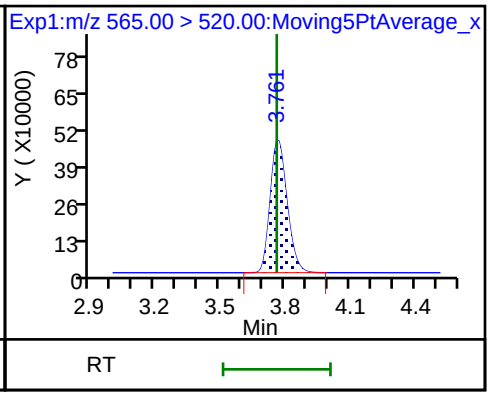
29 Perfluorodecane Sulfonic acid



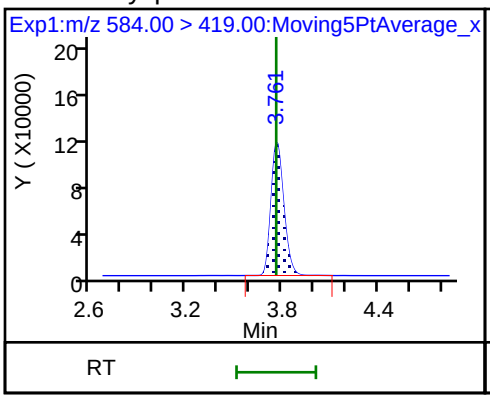
29 Perfluorodecane Sulfonic acid



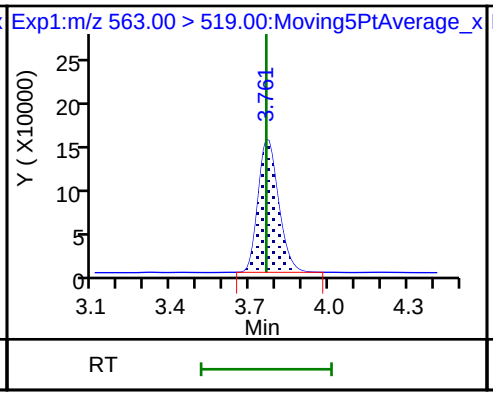
D 30 13C2 PFUnA



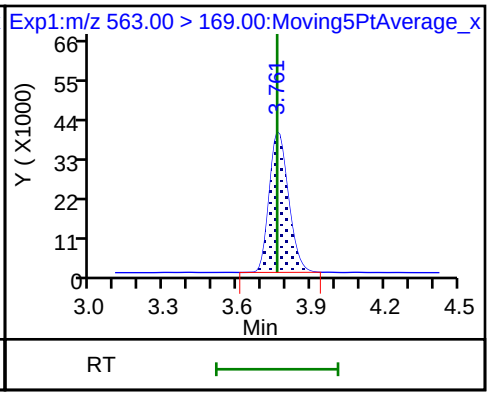
33 N-ethyl perfluorooctane sulfonamid



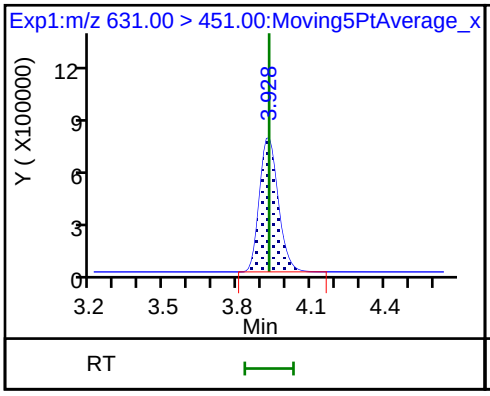
31 Perfluoroundecanoic acid



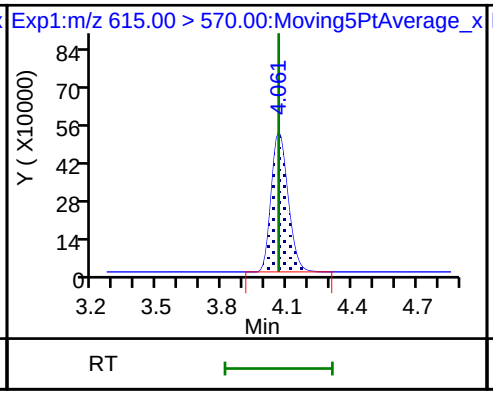
31 Perfluoroundecanoic acid



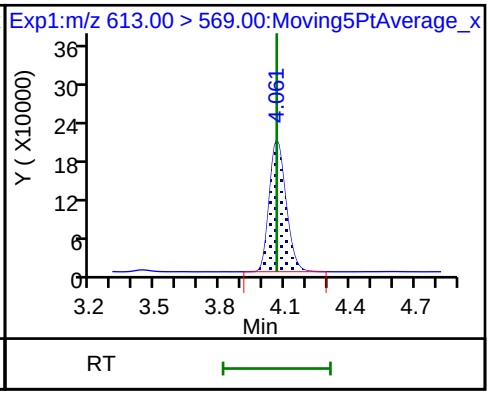
66 11-Chloroeicosafluoro-3-oxaundecan



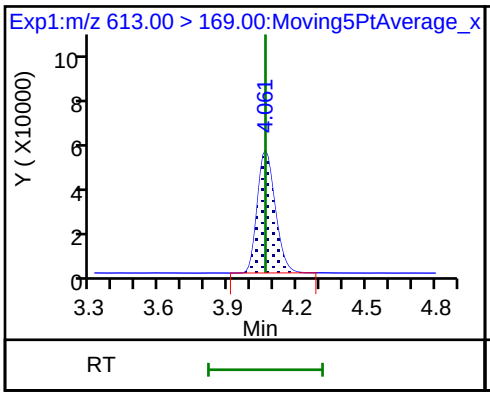
D 36 13C2 PFDoA



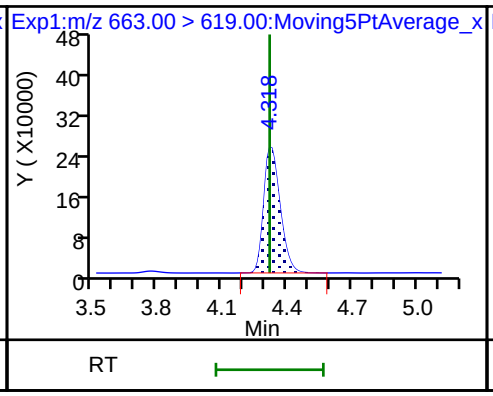
37 Perfluorododecanoic acid



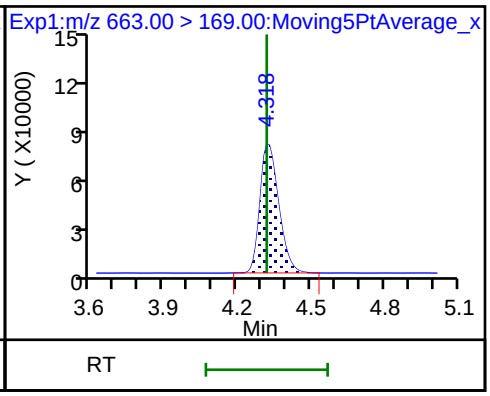
37 Perfluorododecanoic acid



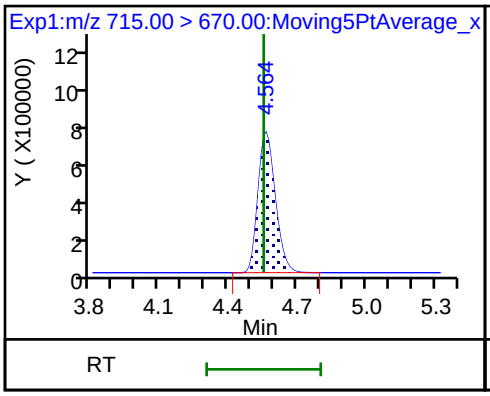
41 Perfluorotridecanoic acid



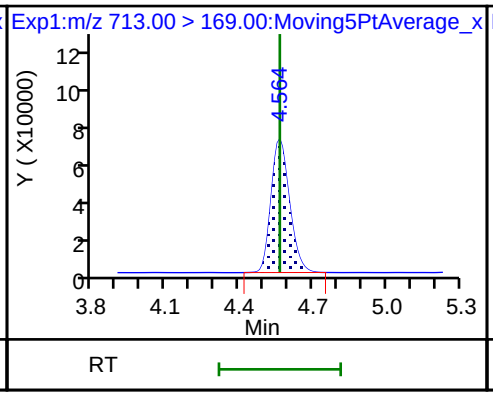
41 Perfluorotridecanoic acid



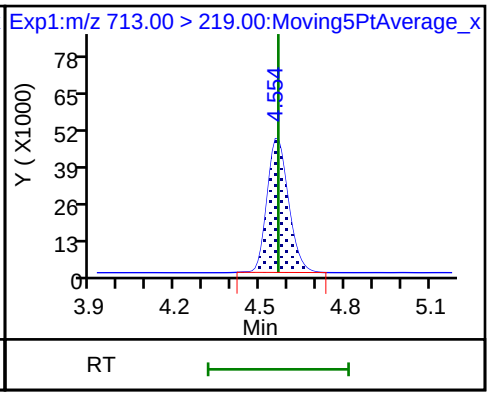
D 43 13C2-PFTeDA



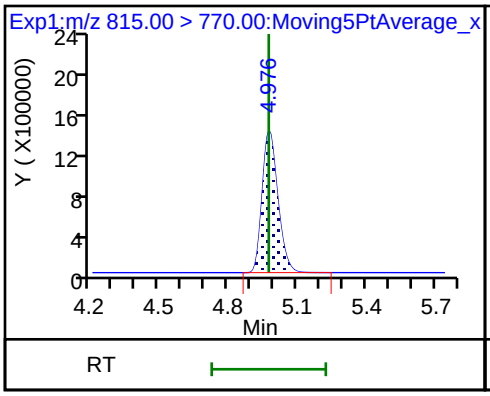
42 Perfluorotetradecanoic acid



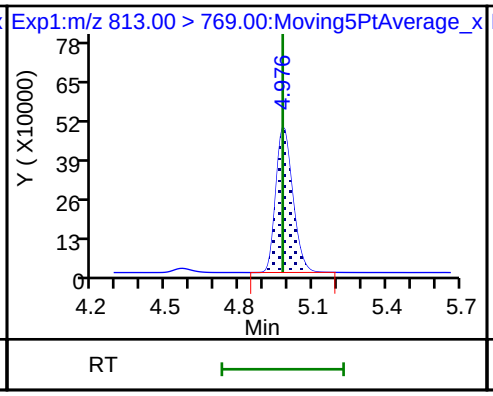
42 Perfluorotetradecanoic acid



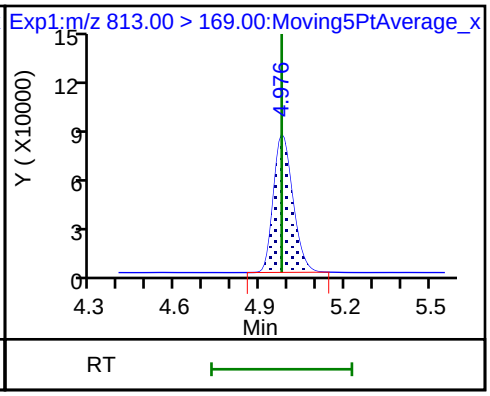
D 44 13C2-PFHxDA



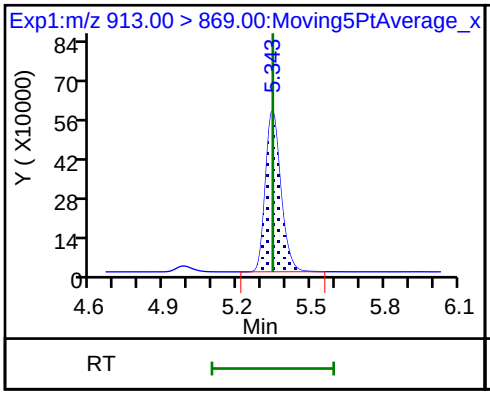
45 Perfluorohexadecanoic acid



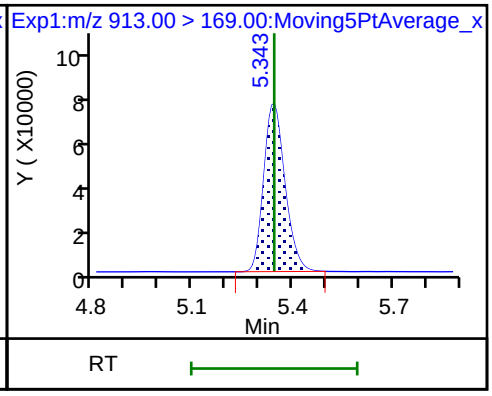
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218132/1-A

Matrix: Solid | Lab File ID: 2018.04.20LLC_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.00(g) | Date Analyzed: 04/21/2018 09:57

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.000028	U	0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.000077	U	0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.000042	U	0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.000029	U	0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.000086	U	0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.000036	U	0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.000022	U	0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.000036	U	0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.000067	U	0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.000051	U	0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.000054	U	0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.000025	U	0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.000031	U	0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.000035	U	0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00020	U	0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.000039	U	0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.000082	U	0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00039	U	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00037	U	0.0020	0.00037
27619-97-2	6:2FTS	0.00015	U	0.0020	0.00015
39108-34-4	8:2FTS	0.00025	U	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218132/1-A

Matrix: Solid | Lab File ID: 2018.04.20LLC_024.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.00(g) | Date Analyzed: 04/21/2018 09:57

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	97		25-150
STL01893	13C5 PFPeA	98		25-150
STL00993	13C2 PFHxA	89		25-150
STL01892	13C4-PFHpA	100		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	91		25-150
STL00998	13C2 PFDoA	94		25-150
STL02116	13C2-PFTeDA	95		25-150
STL02337	13C3-PFBS	93		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	98		25-150
STL01056	13C8 FOSA	88		25-150
STL02118	d3-NMeFOSAA	93		25-150
STL02117	d5-NEtFOSAA	101		25-150
STL02279	M2-6:2FTS	101		25-150
STL02280	M2-8:2FTS	100		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_024.d
Lims ID: MB 320-218132/1-A
Client ID:
Sample Type: MB
Inject. Date: 21-Apr-2018 09:57:52 ALS Bottle#: 16 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-218132/1-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 24-Apr-2018 11:29:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	7069027	2.43		97.0	45902	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.004	22375	0.008522			8.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.701	-0.007	0.554	4603712	2.45		98.0	56363	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.738	-0.008	1.000	92964	2.16		92.8	621	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.980	0.002	1.000	4602106	2.22		88.6	92495	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.319	0.002	1.000	5070295	2.51		100	98076	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.331	0.003	1.000	24161	0.008729			64.4	
399.00 > 99.00	2.321	2.331	-0.010	0.994	7870		3.07(1.50-4.49)		34.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.332	0.002	1.000	5784194	2.32		98.0	99752	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.652	0.001	1.000	1043537	2.41		101	13328	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.658	-0.005	1.000	16623	0.0224			153	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.681	0.002		5415621	2.50			70974	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.681	0.002	1.000	13252	0.005888			6.8	
413.00 > 169.00	2.681	2.681	0.0	0.999	0		0.00(0.84-2.52)			
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.682	0.001	1.000	4869726	2.42		96.9	63279	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.055	0.001	1.000	4281409	2.48		99.2	69885	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.055	-0.005	1.000	4086086	2.34		97.8	25841	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.391	0.010	1.003	4900	0.002530			99.5	
D 21 13C8 FOSA										
506.00 > 78.00	3.392	3.393	-0.001	1.000	4786170	2.19		87.7	56203	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.411	-0.001	1.000	1250886	2.40		100	10782	
D 23 13C2 PFDA										
515.00 > 470.00	3.420	3.420	0.0	1.000	3633239	2.50		100	81345	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.569	0.0	1.000	1919085	2.33		93.3	32760	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.589	3.577	0.012	1.006	2721	0.003554			22.6	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.742	3.743	-0.001	1.000	2045091	2.52		101	26577	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.742	3.753	-0.011	0.997	4523	0.004686			25.9	R
563.00 > 169.00	3.742	3.753	-0.011	0.997	2151		2.10(2.12-6.36)		52.6	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.752	3.753	-0.001	1.003	1827	0.002390			46.0	
D 30 13C2 PFUnA										
565.00 > 520.00	3.752	3.754	-0.002	1.000	2855069	2.28		91.2	66432	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.909	3.911	-0.002	1.000	4251	0.000854			83.9	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.042	-0.001	1.000	3161823	2.34		93.5	28944	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.548	-0.006	1.000	4079211	2.38		95.2	34341	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.957	4.961	-0.005	1.000	64126	0.002780			26.4	
813.00 > 169.00	4.965	4.961	0.004	1.002	10216		6.28(2.86-8.58)		72.6	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.957	4.961	-0.005	1.000	6755157	2.42		96.8	20072	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:41:56 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_024.d

Injection Date: 21-Apr-2018 09:57:52 Instrument ID: A8_N

Lims ID: MB 320-218132/1-A

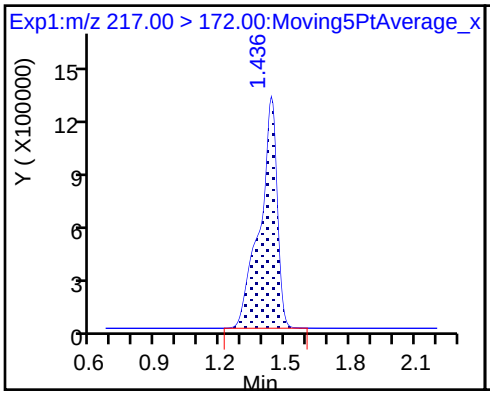
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 2

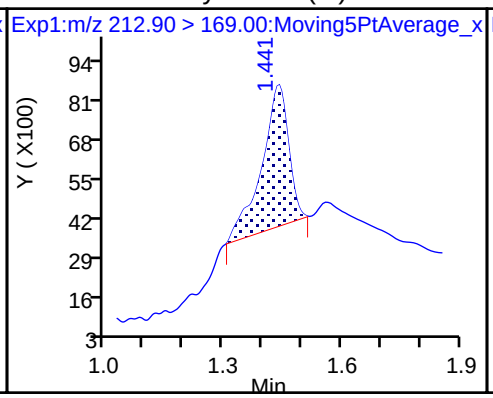
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

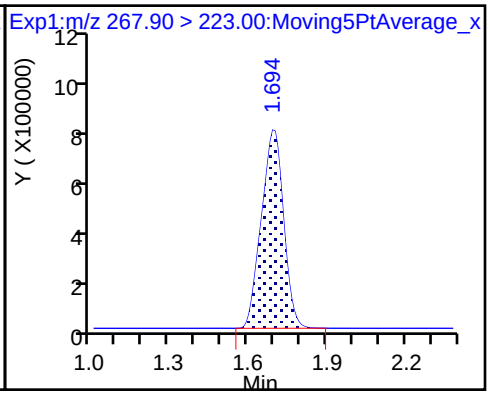
D 1 13C4 PFBA



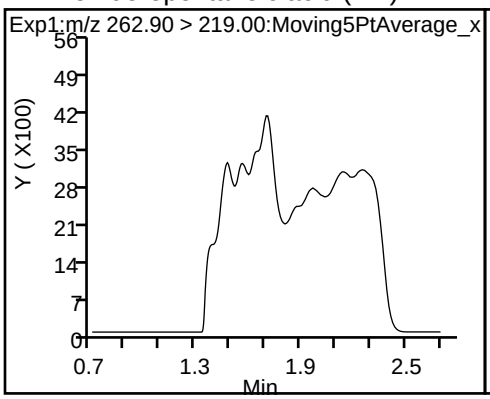
2 Perfluorobutyric acid (M)



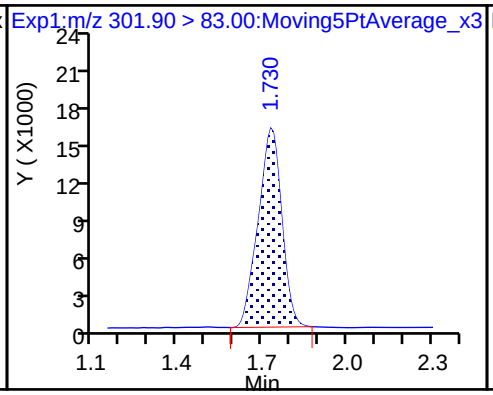
D 3 13C5-PFPeA



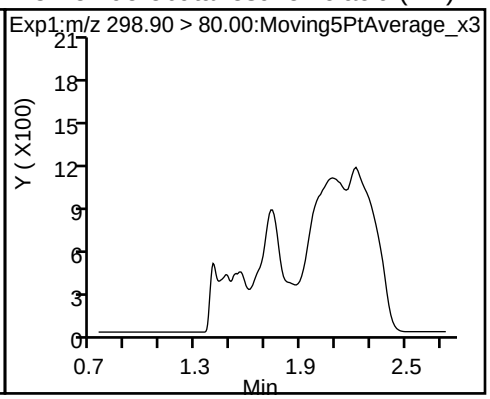
4 Perfluoropentanoic acid (ND)



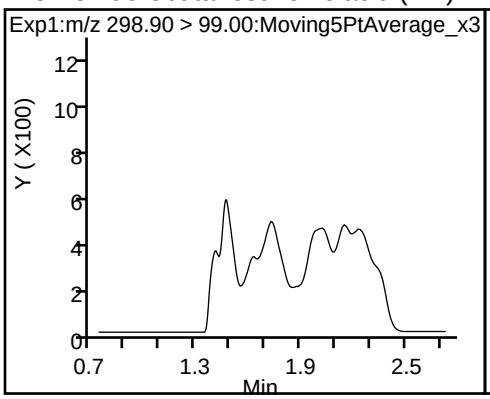
D 47 13C3-PFBS



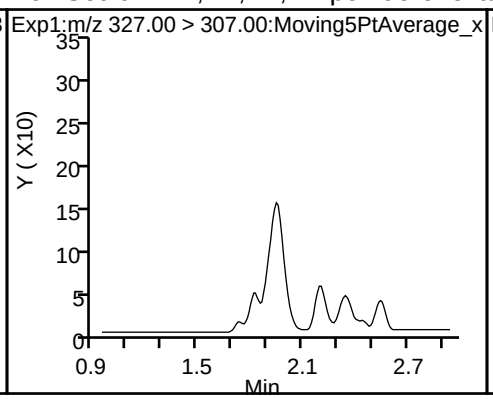
5 Perfluorobutanesulfonic acid (ND)



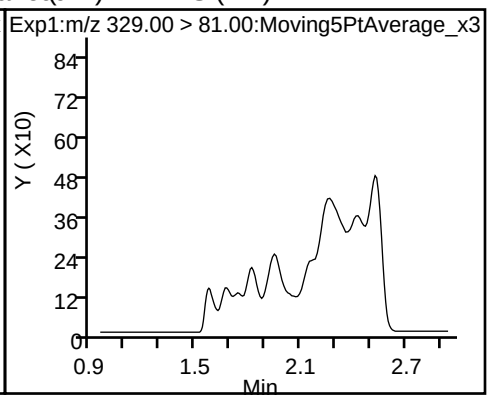
5 Perfluorobutanesulfonic acid (ND)



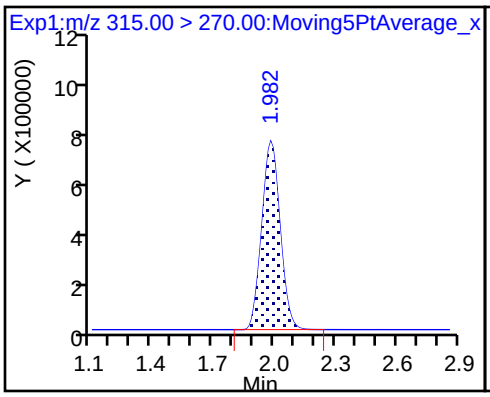
61 Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (ND)



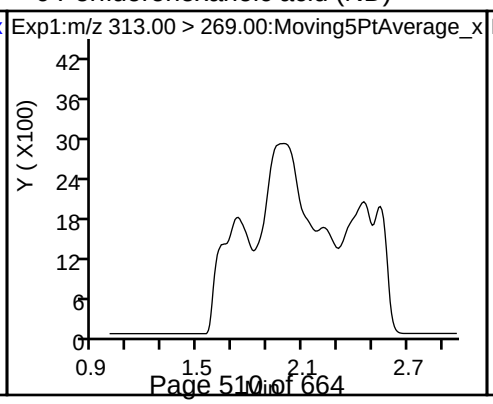
D 62 M2-4:2FTS (ND)



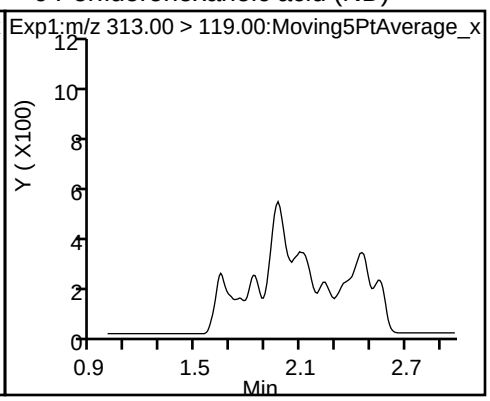
D 7 13C2 PFHxA



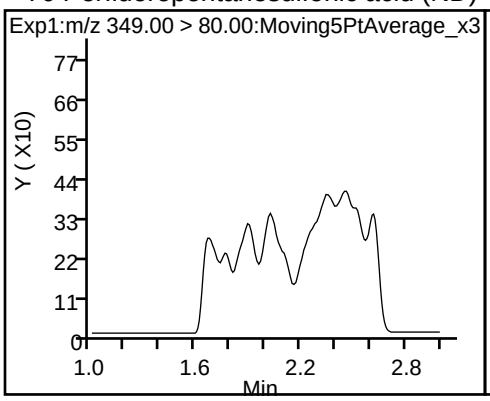
6 Perfluorohexanoic acid (ND)



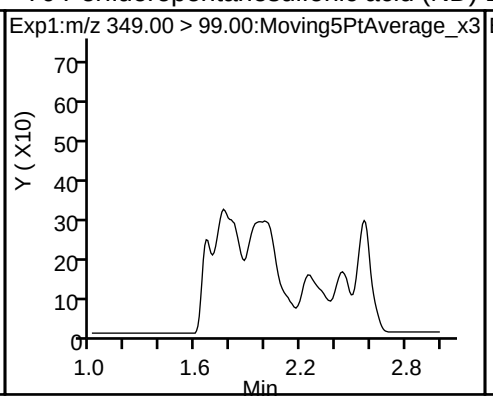
6 Perfluorohexanoic acid (ND)



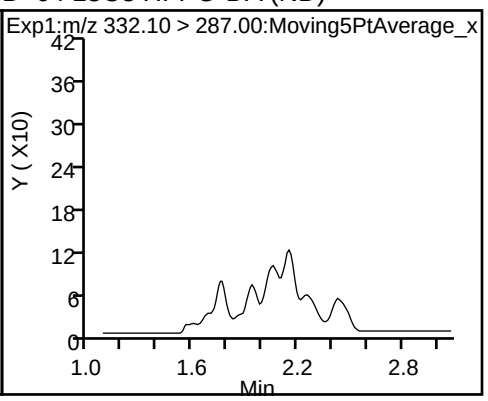
70 Perfluoropentanesulfonic acid (ND)



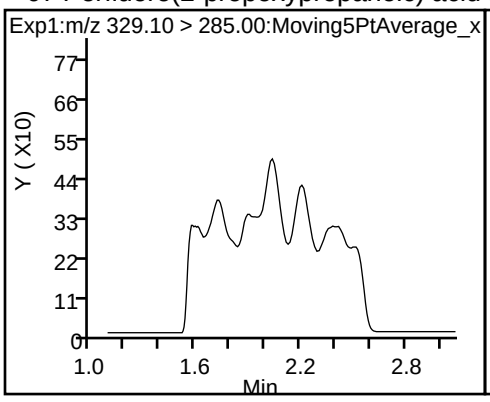
70 Perfluoropentanesulfonic acid (ND)



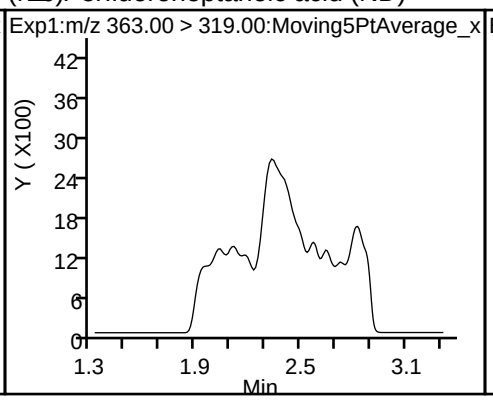
D 64 13C3 HFPO-DA (ND)



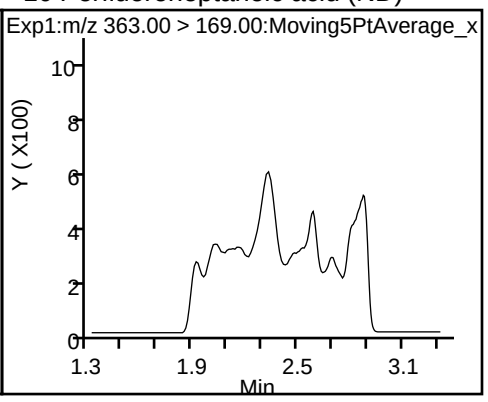
67 Perfluoro(2-propoxypropanoic) acid (ND)



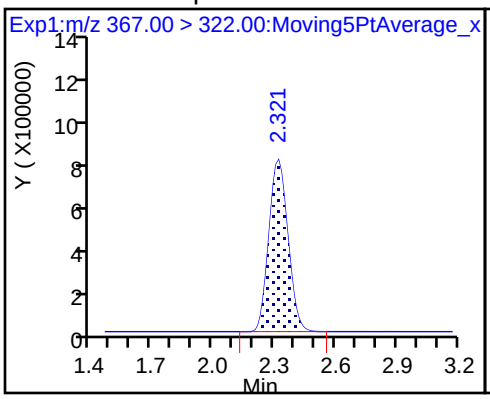
10 Perfluoroheptanoic acid (ND)



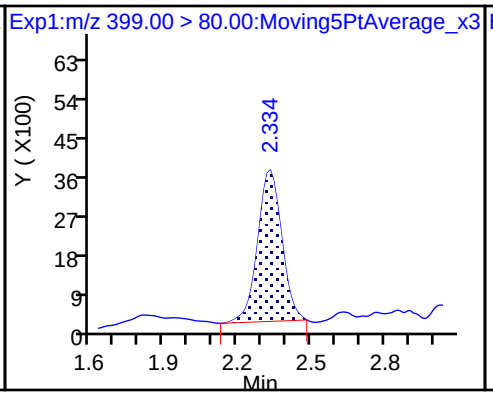
10 Perfluoroheptanoic acid (ND)



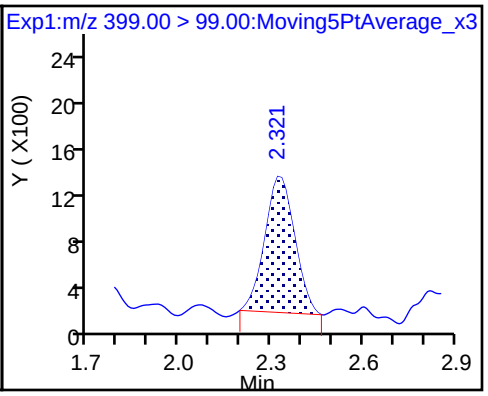
D 9 13C4-PFHpA



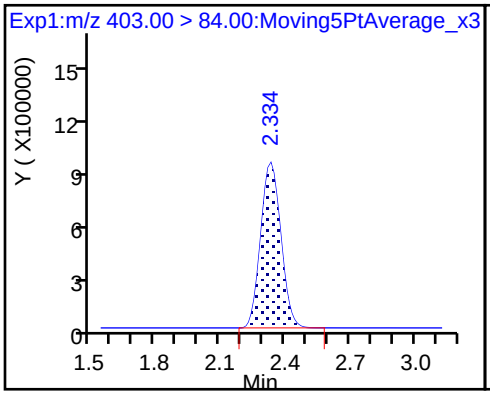
8 Perfluorohexanesulfonic acid



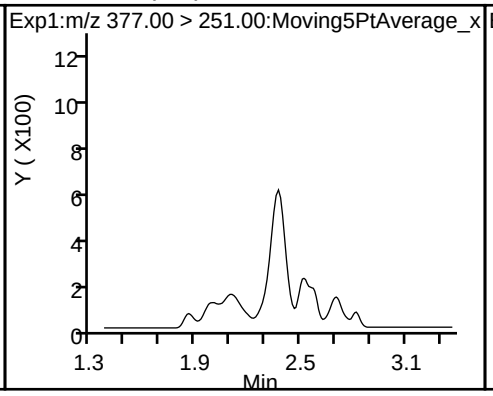
8 Perfluorohexanesulfonic acid



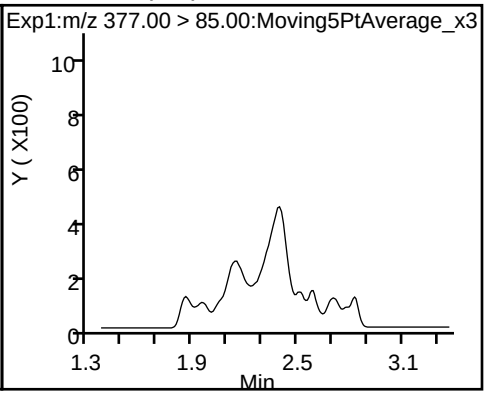
D 11 18O2 PFHxS



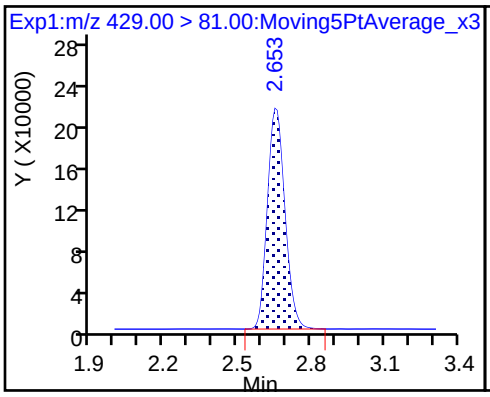
65 Adona (ND)



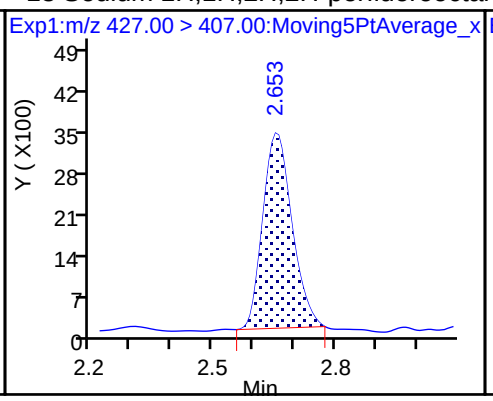
65 Adona (ND)



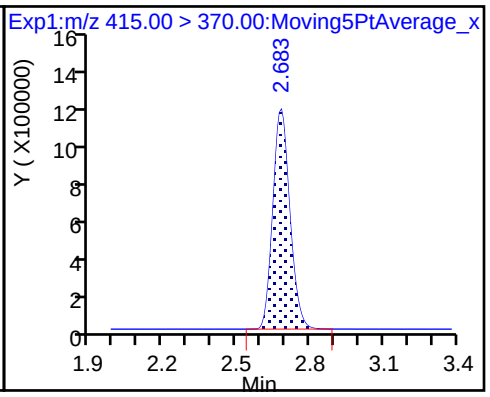
D 12 M2-6:2FTS



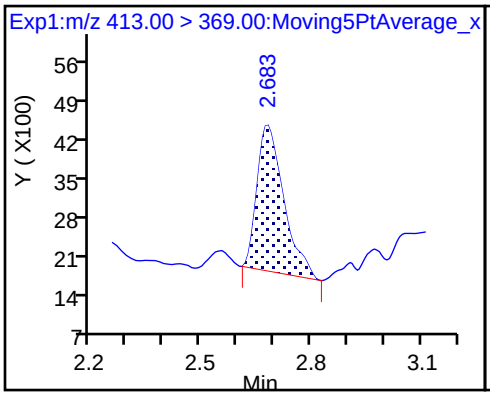
13 Sodium 1H,1H,2H,2H-perfluorooctane



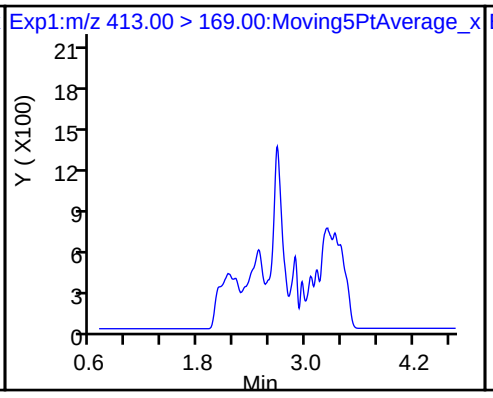
M62 13C2-PFOA



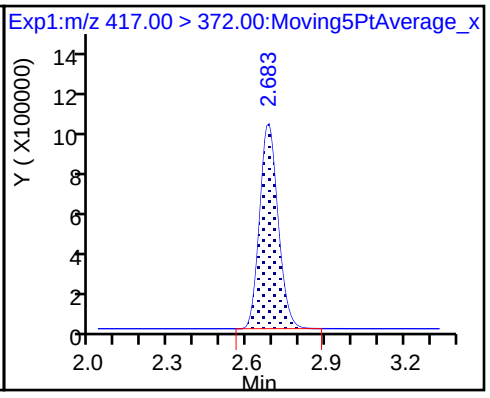
15 Perfluorooctanoic acid



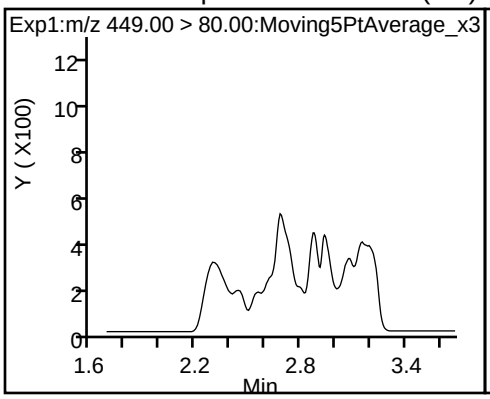
15 Perfluorooctanoic acid



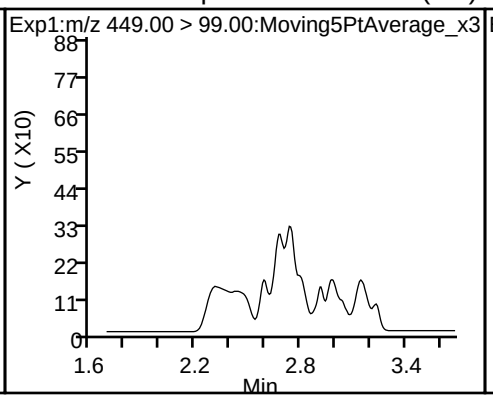
D 14 13C4 PFOA



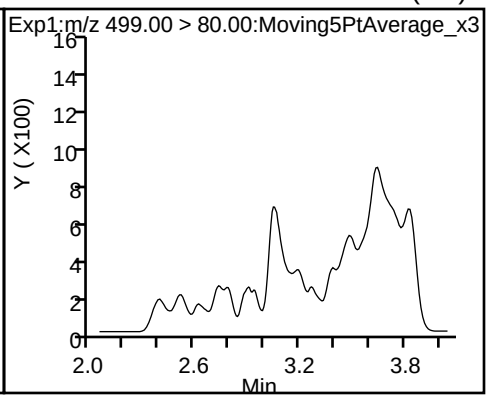
16 Perfluoroheptanesulfonic acid (ND)



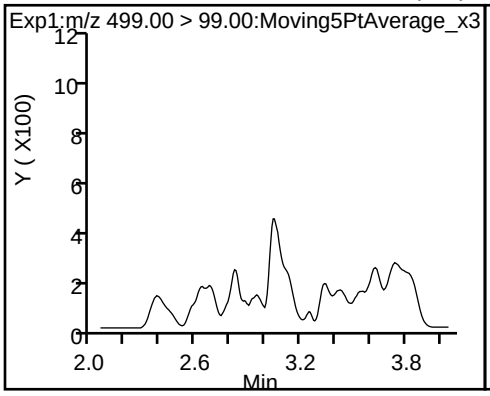
16 Perfluoroheptanesulfonic acid (ND)



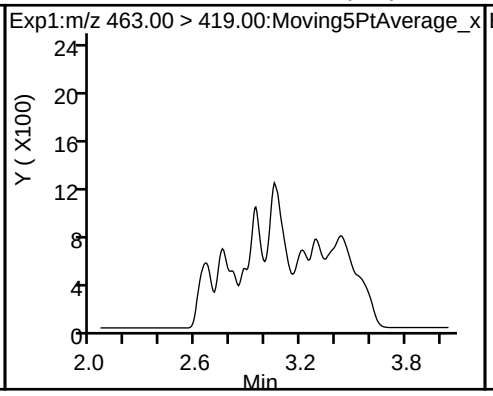
17 Perfluorooctane sulfonic acid (ND)



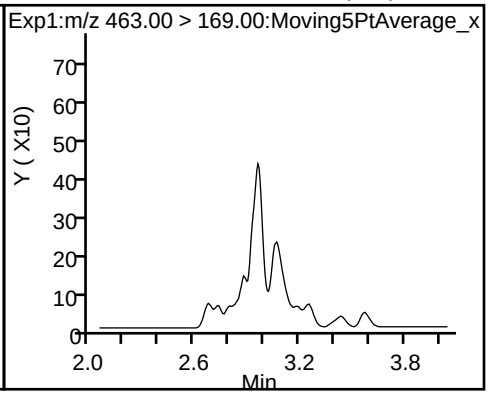
17 Perfluorooctane sulfonic acid (ND)



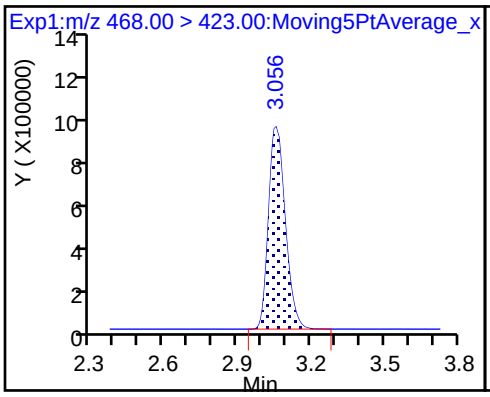
20 Perfluorononanoic acid (ND)



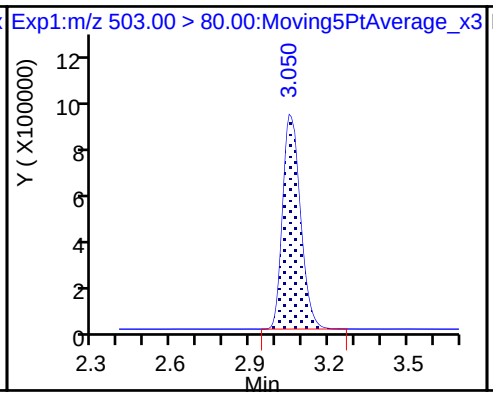
20 Perfluorononanoic acid (ND)



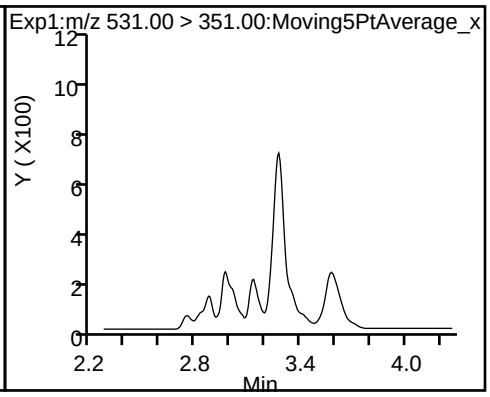
D 19 13C5 PFNA



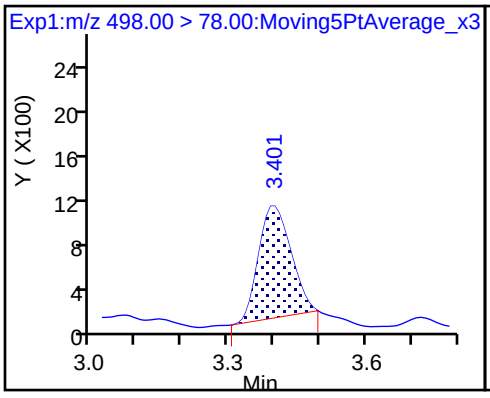
D 18 13C4 PFOS



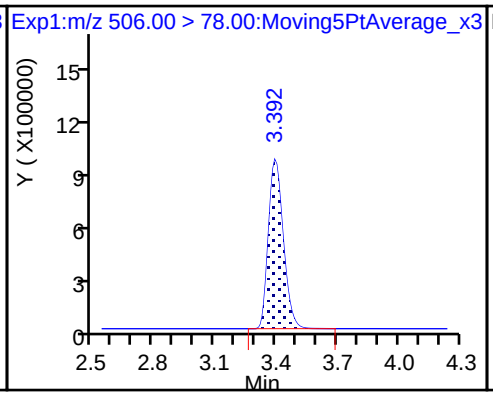
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



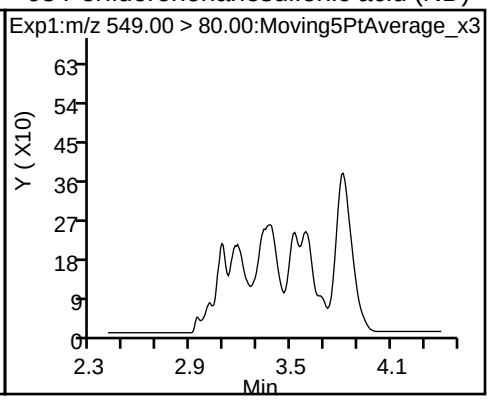
22 Perfluorooctane Sulfonamide



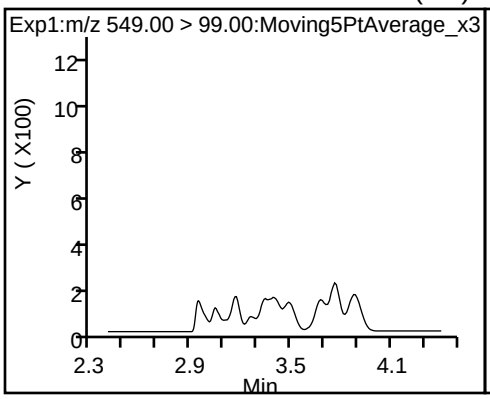
D 21 13C8 FOSA



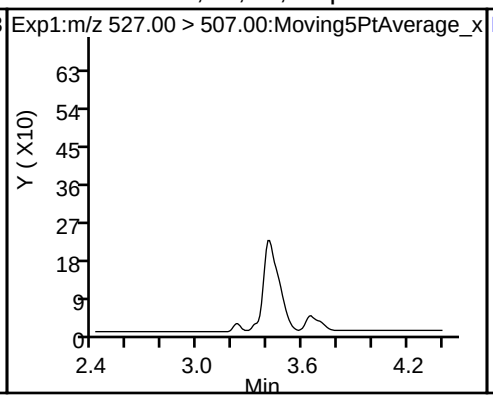
68 Perfluorononanesulfonic acid (ND)



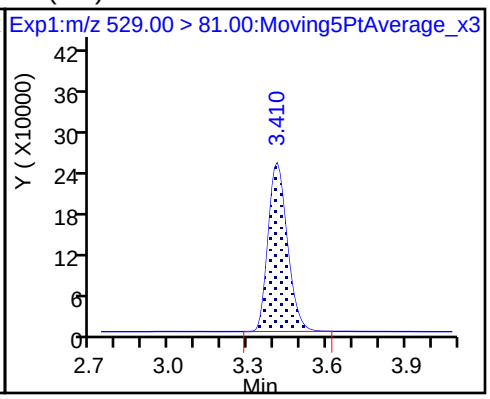
68 Perfluorononanesulfonic acid (ND)



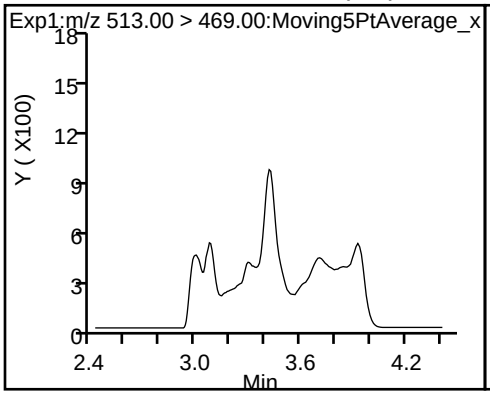
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



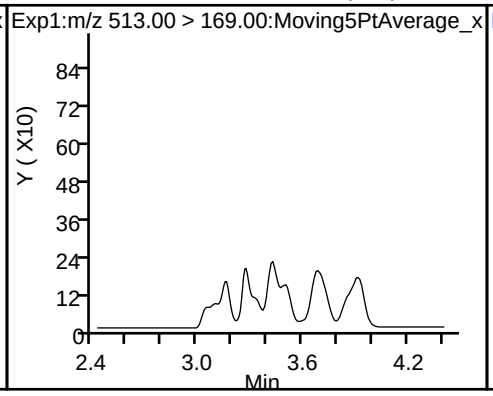
D 26 (ND) 8:2FTS



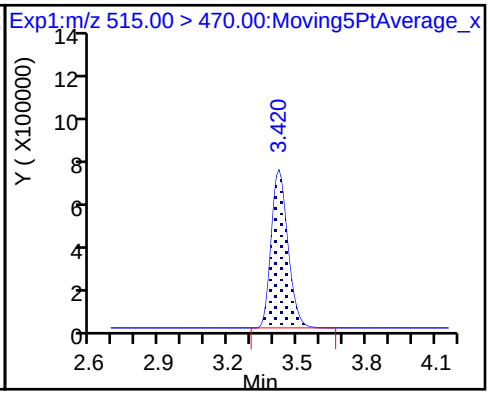
24 Perfluorodecanoic acid (ND)



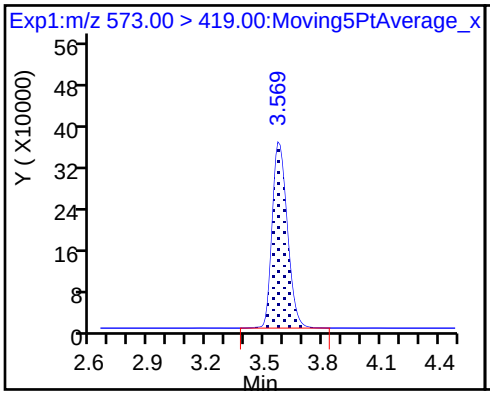
24 Perfluorodecanoic acid (ND)



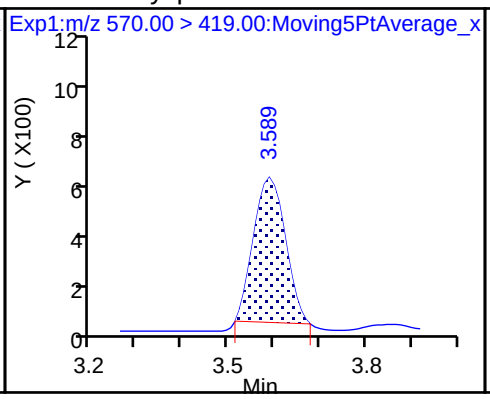
D 23 13C2 PFDA



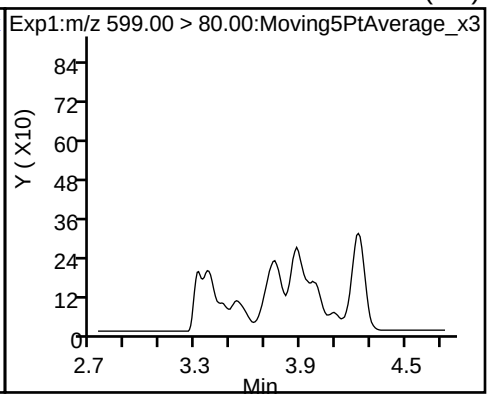
D 27 d3-NMeFOSAA



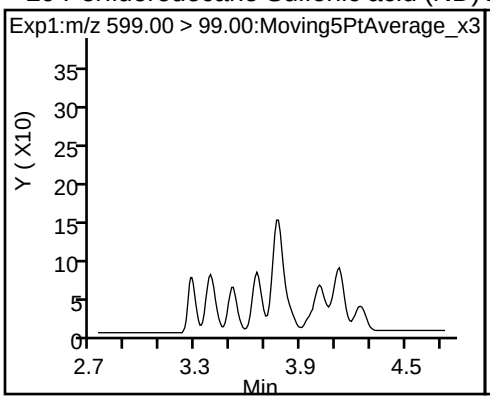
28 N-methyl perfluorooctane sulfonami



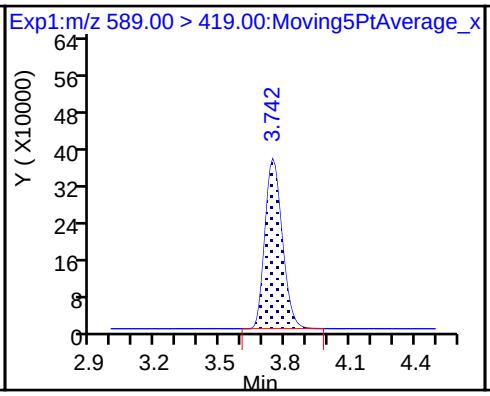
29 Perfluorodecane Sulfonic acid (ND)



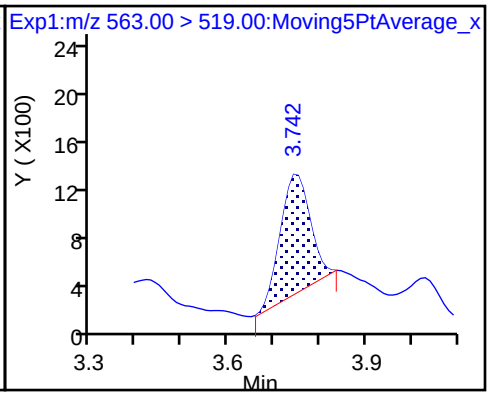
29 Perfluorodecane Sulfonic acid (ND)



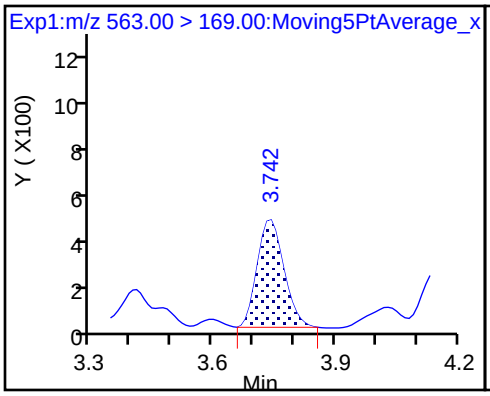
D 32 d5-NEtFOSAA



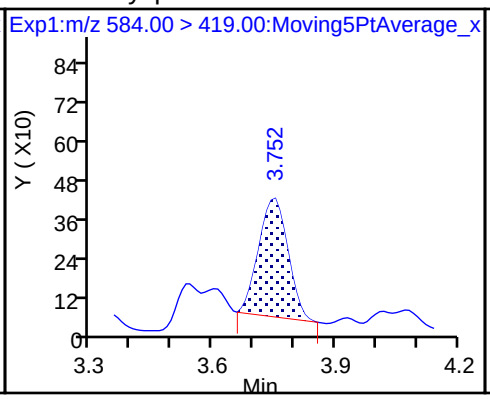
31 Perfluoroundecanoic acid



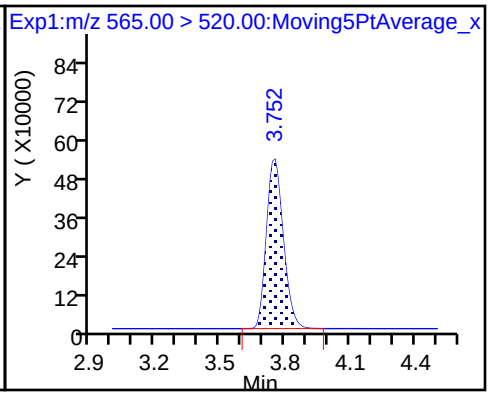
31 Perfluoroundecanoic acid



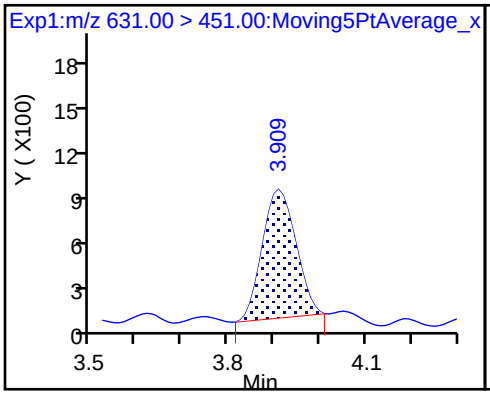
33 N-ethyl perfluorooctane sulfonamid



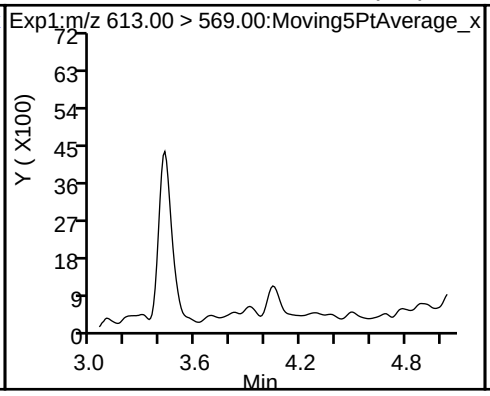
D 30 13C2 PFUnA



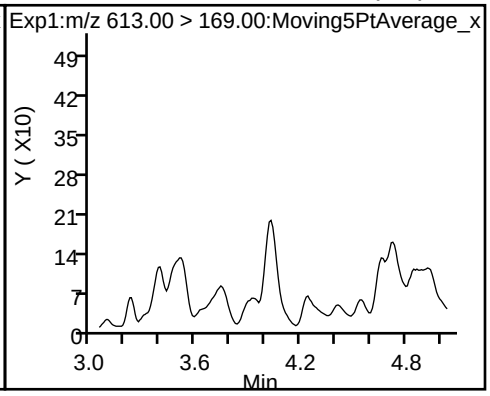
66 11-Chloroeicosafluoro-3-oxaundecan



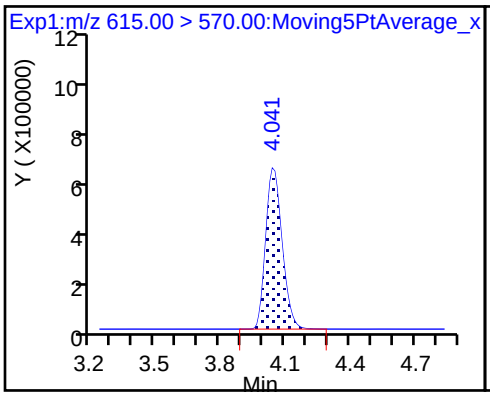
37 Perfluorododecanoic acid (ND)



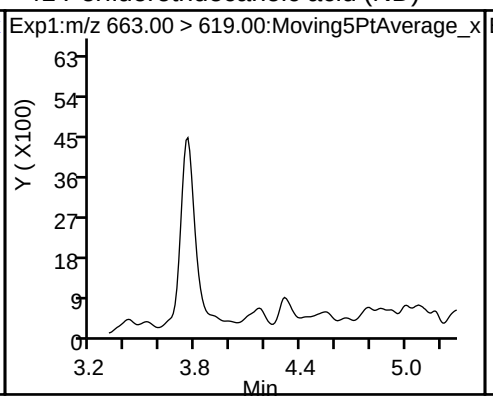
37 Perfluorododecanoic acid (ND)



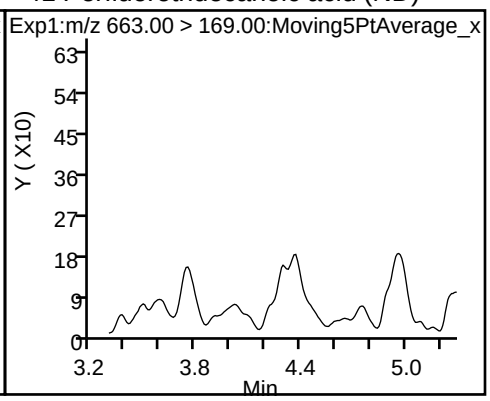
D 36 13C2 PFDoA



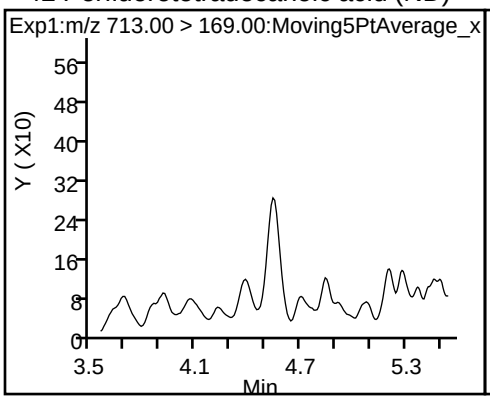
41 Perfluorotridecanoic acid (ND)



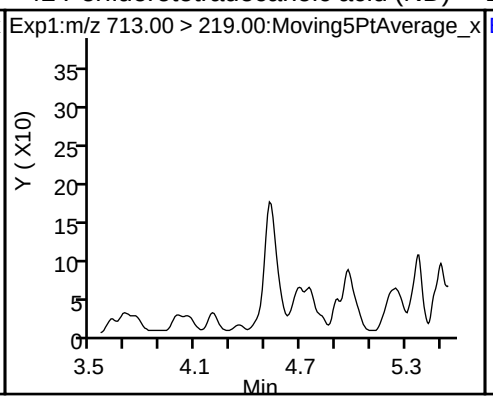
41 Perfluorotridecanoic acid (ND)



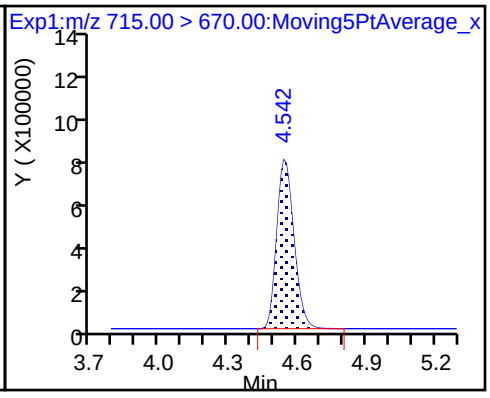
42 Perfluorotetradecanoic acid (ND)



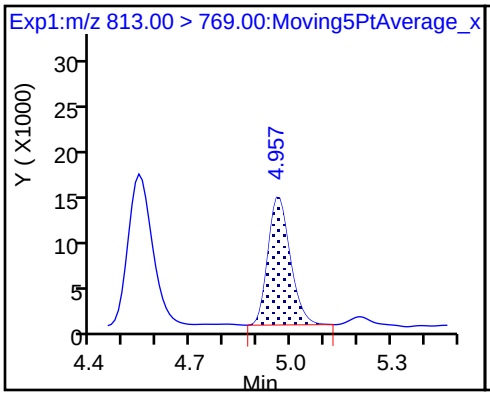
42 Perfluorotetradecanoic acid (ND)



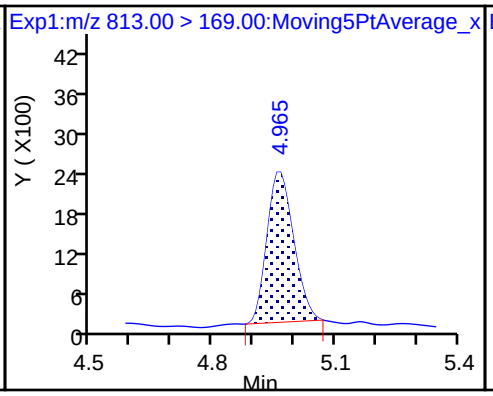
D 43 13C2-PFTeDA



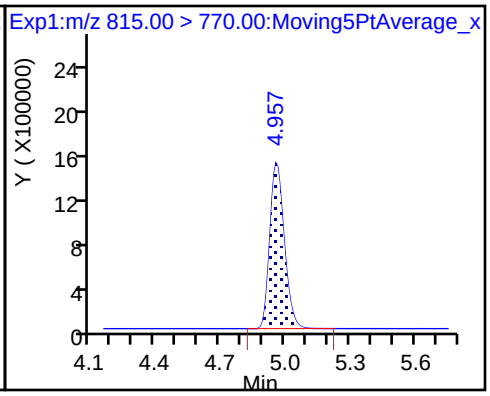
45 Perfluorohexadecanoic acid



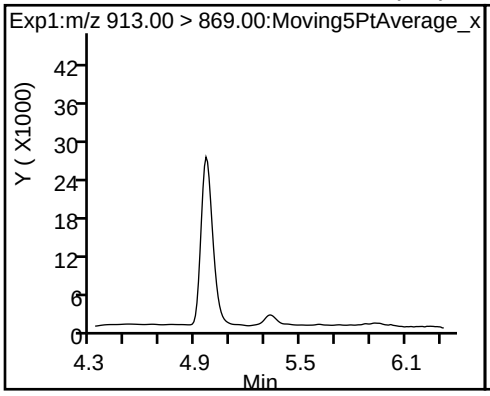
45 Perfluorohexadecanoic acid



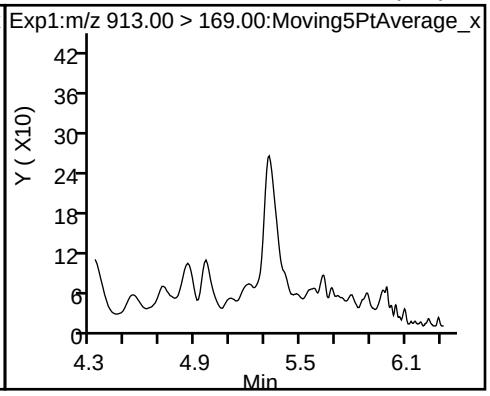
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

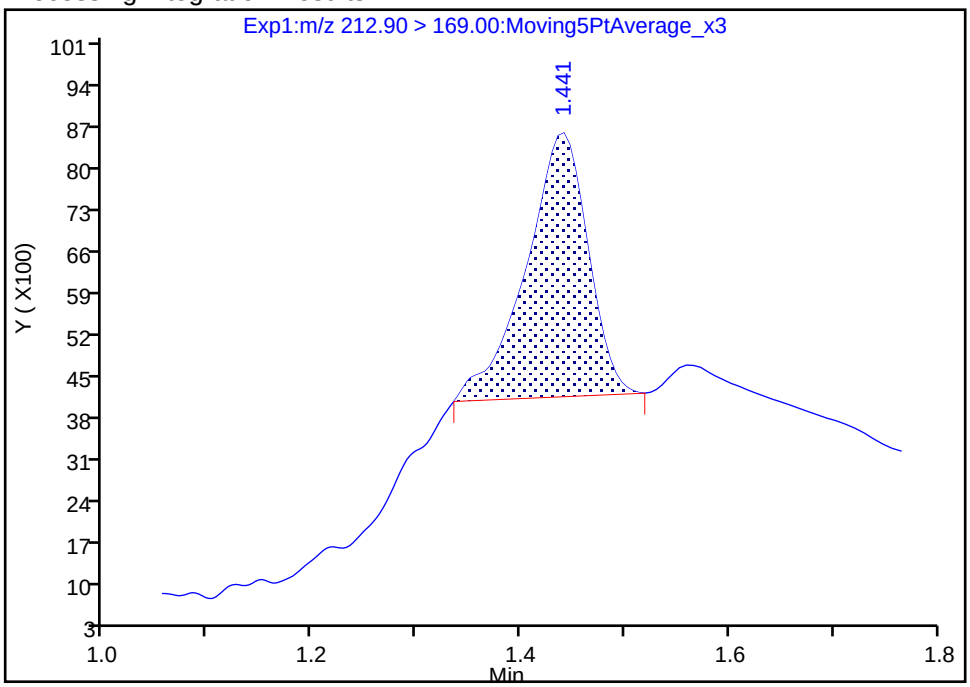
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_024.d
Injection Date: 21-Apr-2018 09:57:52 Instrument ID: A8_N
Lims ID: MB 320-218132/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

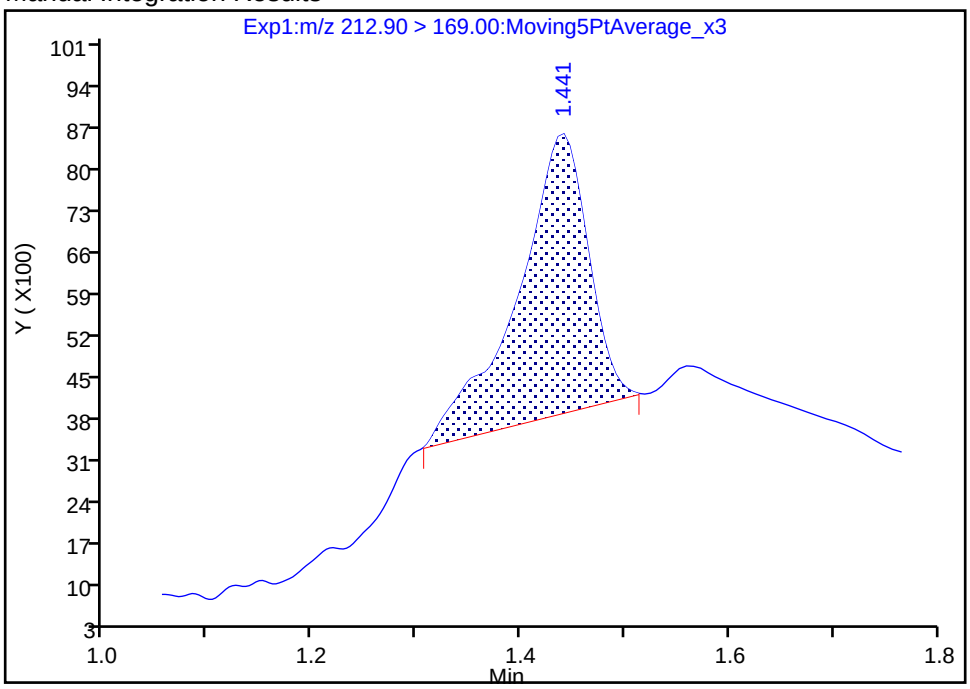
Processing Integration Results

RT: 1.44
Area: 18304
Amount: 0.006971
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 22375
Amount: 0.008522
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:20:08
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218597/1-A

Matrix: Water | Lab File ID: 2018.04.26LLA_010.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 250(mL) | Date Analyzed: 04/26/2018 12:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.35	U	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.360	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90
27619-97-2	6:2FTS	3.850	J	20.0	2.00
39108-34-4	8:2FTS	2.00	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-218597/1-A

Matrix: Water | Lab File ID: 2018.04.26LLA_010.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 250(mL) | Date Analyzed: 04/26/2018 12:28

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	90		25-150
STL01893	13C5 PFPeA	94		25-150
STL00993	13C2 PFHxA	89		25-150
STL01892	13C4-PFHpA	91		25-150
STL00990	13C4 PFOA	95		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	87		25-150
STL00998	13C2 PFDoA	83		25-150
STL02116	13C2-PFTeDA	83		25-150
STL02337	13C3-PFBS	90		25-150
STL00994	18O2 PFHxS	91		25-150
STL00991	13C4 PFOS	91		25-150
STL01056	13C8 FOSA	80		25-150
STL02118	d3-NMeFOSAA	86		25-150
STL02117	d5-NEtFOSAA	96		25-150
STL02279	M2-6:2FTS	105		25-150
STL02280	M2-8:2FTS	103		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_010.d
Lims ID: MB 320-218597/1-A
Client ID:
Sample Type: MB
Inject. Date: 26-Apr-2018 12:28:51 ALS Bottle#: 4 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-218597/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:39:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.437	1.435	0.002	1.000	6136807	2.26		90.2	40606	
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.441	0.001	1.004	8951	0.003927			3.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.704	1.702	0.002	0.556	4109639	2.34		93.7	73953	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.695	1.702	-0.007	0.995	7618	0.003889			5.9	
D 47 13C3-PFBS										
301.90 > 83.00	1.740	1.738	0.002	1.000	84250	2.09		90.0	792	
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	1.992	0.002	1.000	4336595	2.24		89.4	84981	
D 9 13C4-PFHpA										
367.00 > 322.00	2.336	2.320	0.016	1.000	4288206	2.27		90.9	76640	
D 11 18O2 PFHxS										
403.00 > 84.00	2.349	2.333	0.016	1.000	5000530	2.15		90.8	73993	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.349	2.346	0.003	1.000	21550	0.009005			55.8	
399.00 > 99.00	2.349	2.346	0.003	1.000	5707		3.78(1.50-4.49)		36.7	
D 12 M2-6:2FTS										
429.00 > 81.00	2.669	2.661	0.008	1.000	1004437	2.48		105	12109	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.669	2.668	0.001	1.000	68809	0.0962			1072	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.683	0.008	1.000	4478671	2.39		95.5	69293	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.698	-0.007		5056439	2.50			100598	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.699	2.698	0.001	1.003	12409	0.005995			8.2	
413.00 > 169.00	2.691	2.698	-0.007	1.000	5702		2.18(0.84-2.52)		21.9	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.060	0.005	1.000	3854853	2.39		95.6	71560	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.060	0.005	1.000	3542811	2.17		90.9	25629	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.398	-0.001	1.000	4056258	1.99		79.6	47568	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.407	0.018	1.000	1202484	2.47		103	13011	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.426	0.009	1.000	3190958	2.35		94.2	70290	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.585	3.575	0.010	1.000	1656106	2.16		86.2	24203	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.751	-0.001	1.000	1825883	2.41		96.3	23816	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.751	0.009	1.000	2542739	2.17		87.0	78689	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	-0.001	1.003	2105	0.003084			33.8	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.761	3.761	-0.001	1.000	3146	0.003660			18.3	R
563.00 > 169.00	3.761	3.761	-0.001	1.000	2188		1.44(2.12-6.36)		43.6	
D 36 13C2 PFDoA										
615.00 > 570.00	4.060	4.050	0.010	1.000	2615647	2.07		82.9	35310	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.553	0.009	1.000	3313116	2.07		82.8	30051	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.967	0.007	1.000	5193815	1.99		79.8	17371	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.984	-0.010	1.000	46284	0.001245			23.1	
813.00 > 169.00	4.974	4.984	-0.010	1.000	9155		5.06(2.86-8.58)		71.5	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Report Date: 26-Apr-2018 16:46:27 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_010.d

Injection Date: 26-Apr-2018 12:28:51 Instrument ID: A8_N

Lims ID: MB 320-218597/1-A

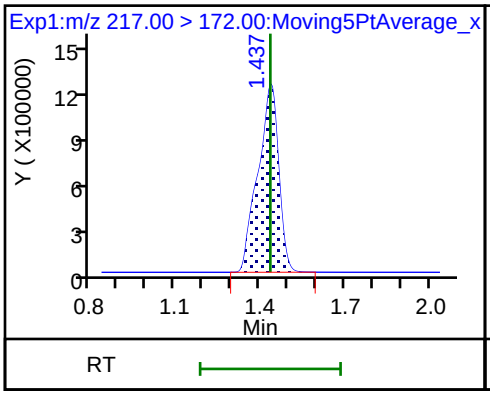
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 2

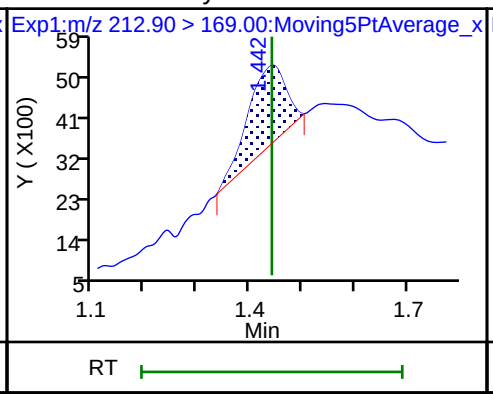
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

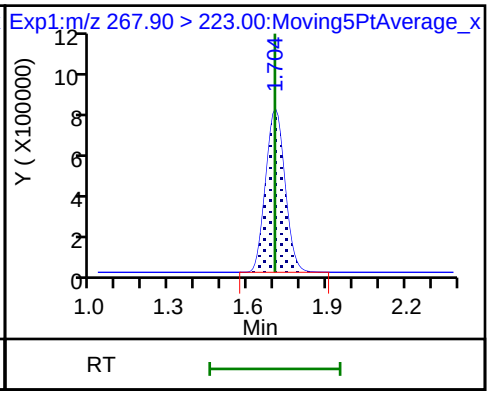
D 1 13C4 PFBA



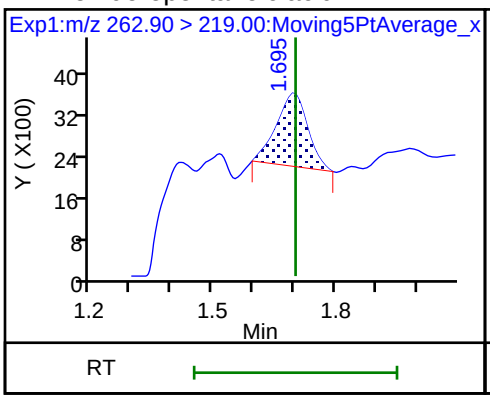
2 Perfluorobutyric acid



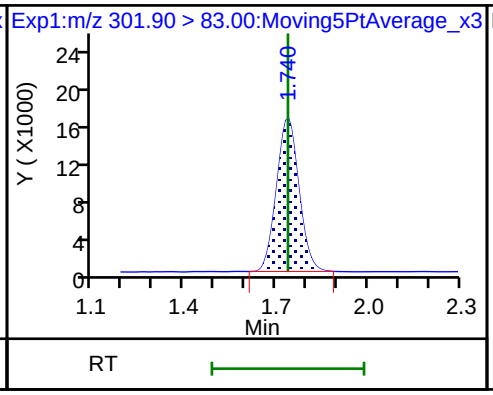
D 3 13C5-PFPeA



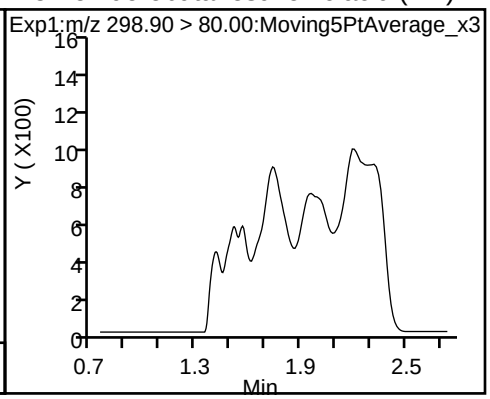
4 Perfluoropentanoic acid



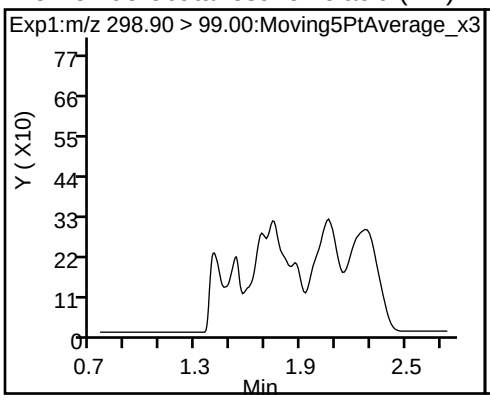
D 47 13C3-PFBS



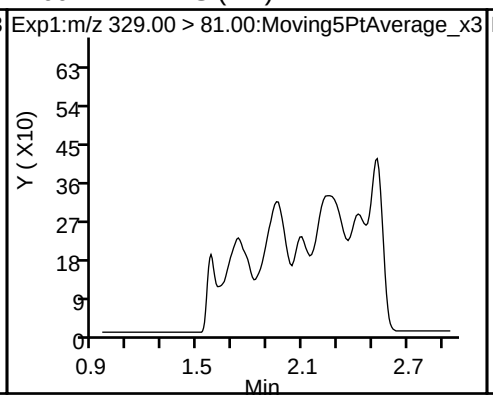
5 Perfluorobutanesulfonic acid (ND)



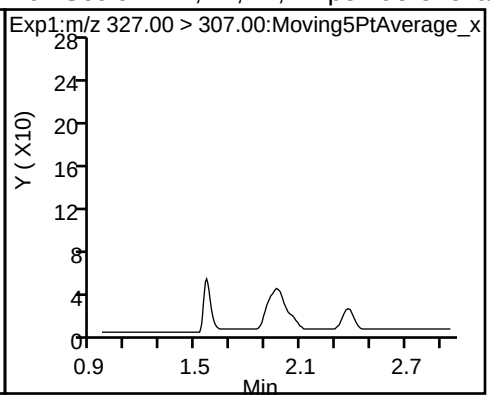
5 Perfluorobutanesulfonic acid (ND)



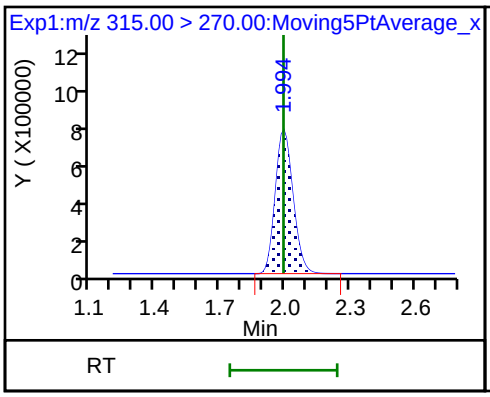
D 60 M2-4:2FTS (ND)



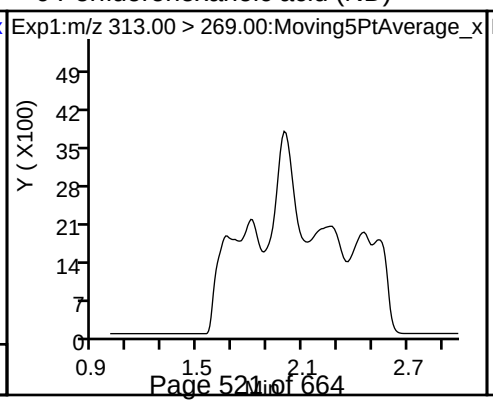
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



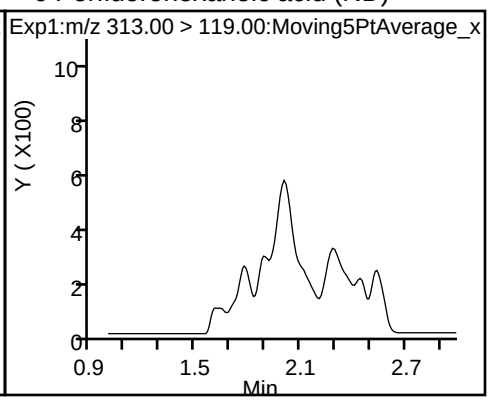
D 7 13C2 PFHxA



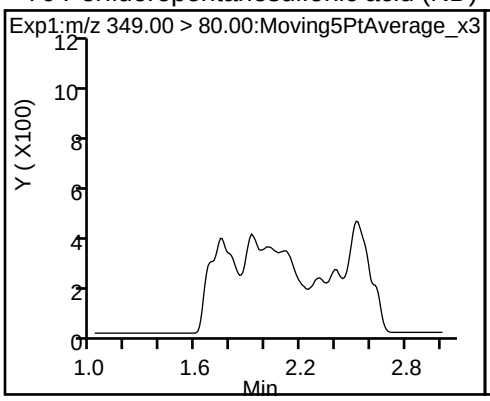
6 Perfluorohexanoic acid (ND)



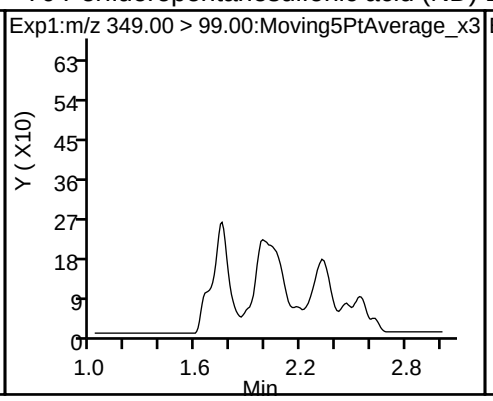
6 Perfluorohexanoic acid (ND)



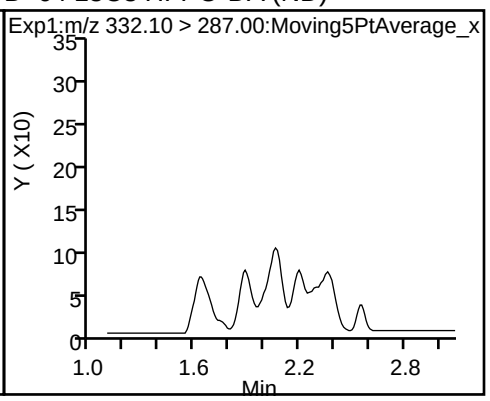
70 Perfluoropentanesulfonic acid (ND)



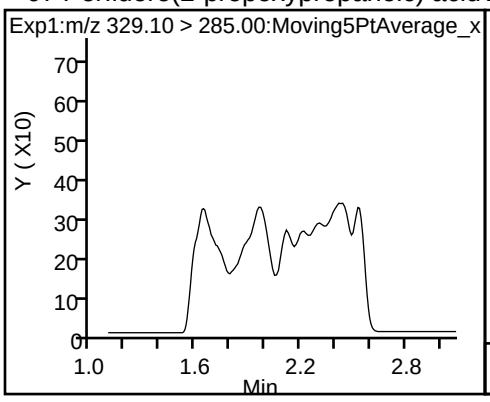
70 Perfluoropentanesulfonic acid (ND) D



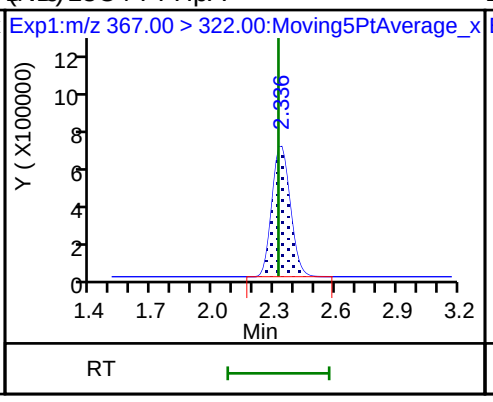
64 13C3 HFPO-DA (ND)



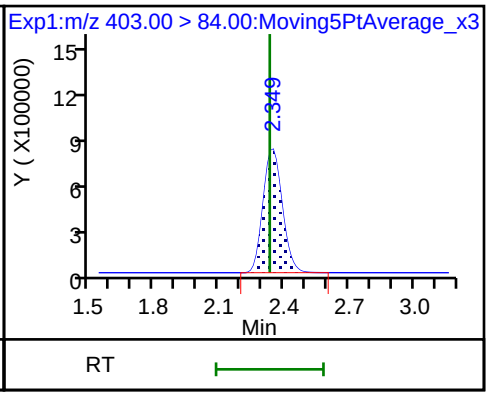
67 Perfluoro(2-propoxypropanoic) acid (ND)



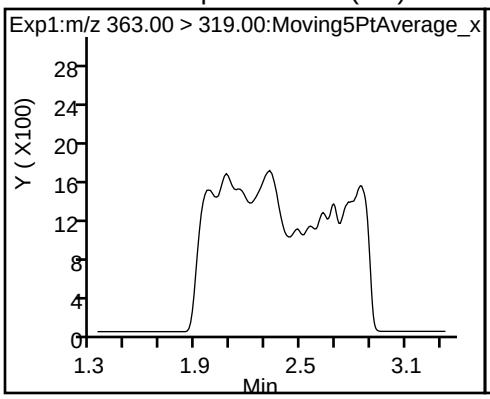
9 13C4-PFHpA



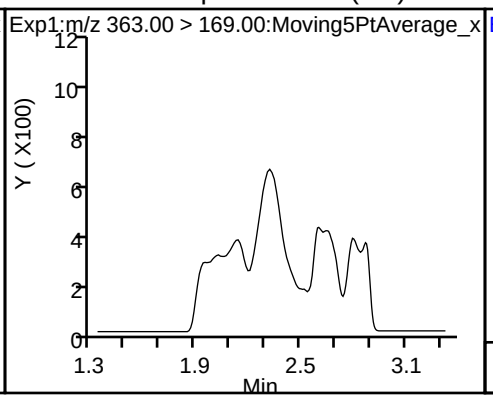
D 11 18O2 PFHxS



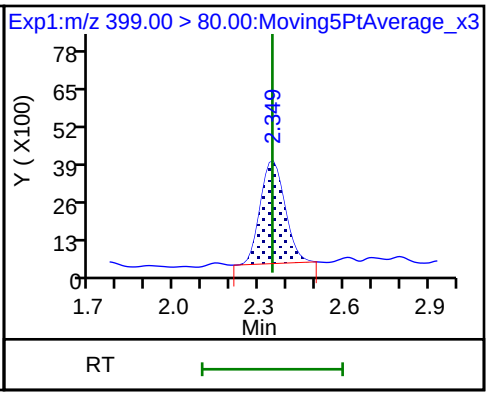
10 Perfluoroheptanoic acid (ND)



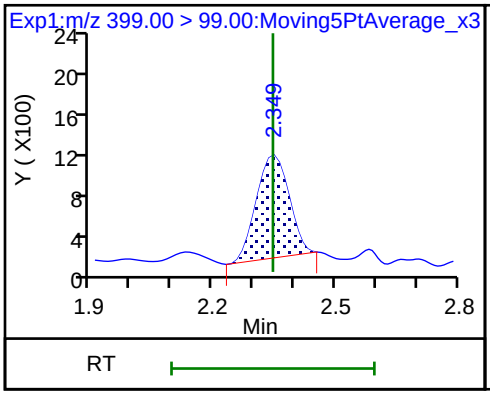
10 Perfluoroheptanoic acid (ND)



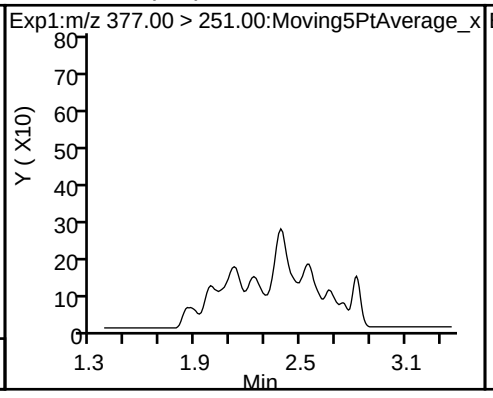
8 Perfluorohexanesulfonic acid



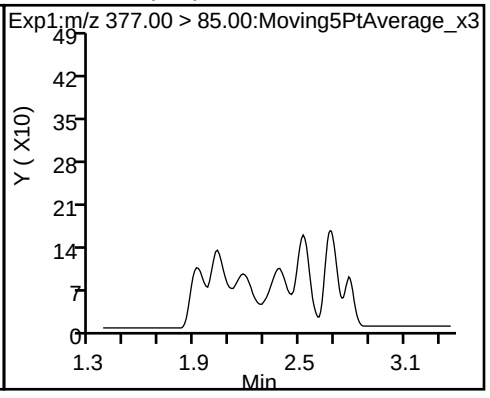
8 Perfluorohexanesulfonic acid



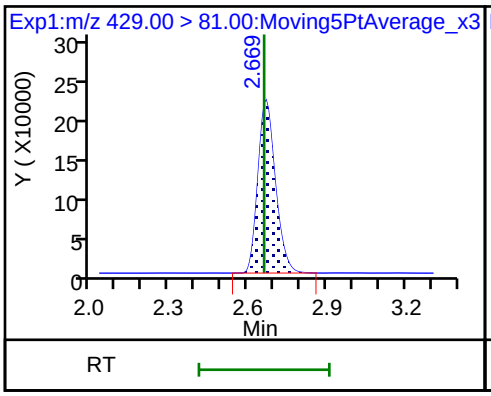
65 Adona (ND)



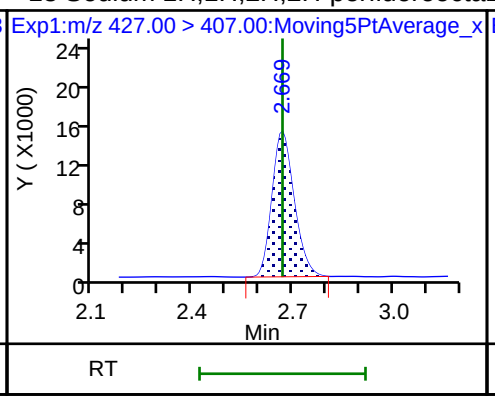
65 Adona (ND)



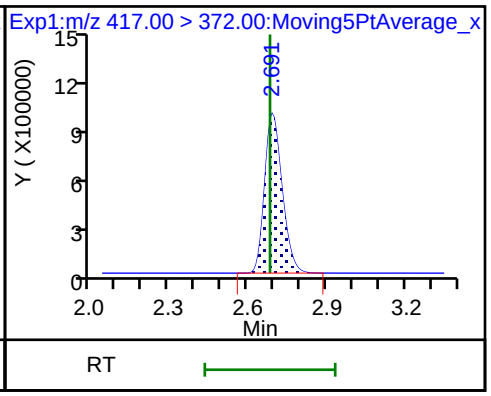
D 12 M2-6:2FTS



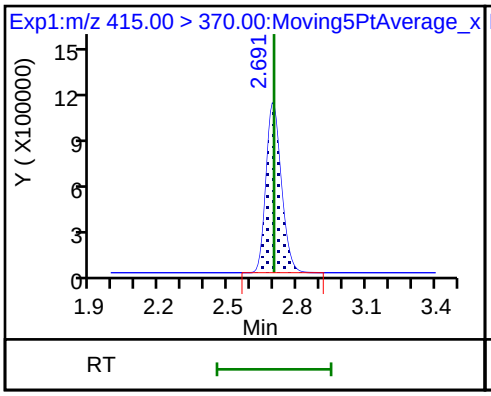
13 Sodium 1H,1H,2H,2H-perfluorooctane



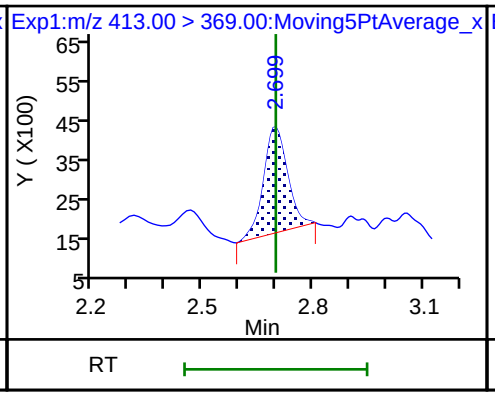
D 14 13C4 PFOA



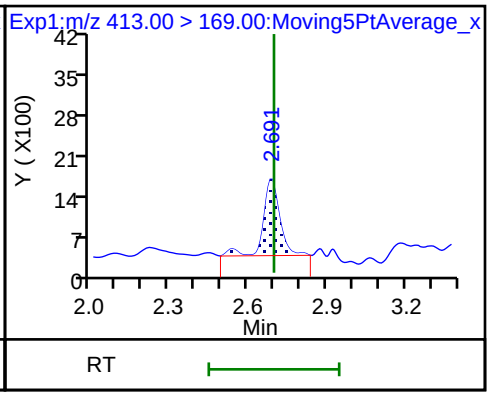
* 62 13C2-PFOA



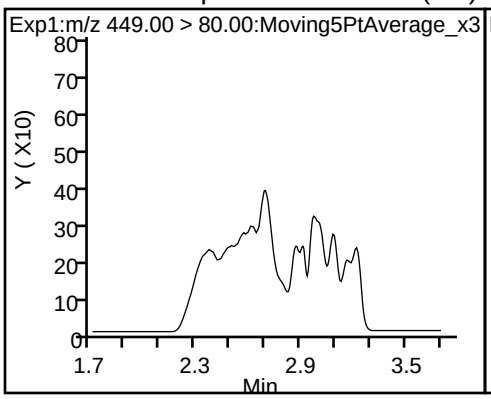
15 Perfluorooctanoic acid



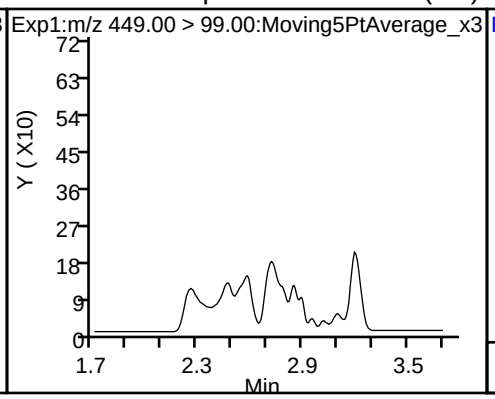
15 Perfluorooctanoic acid



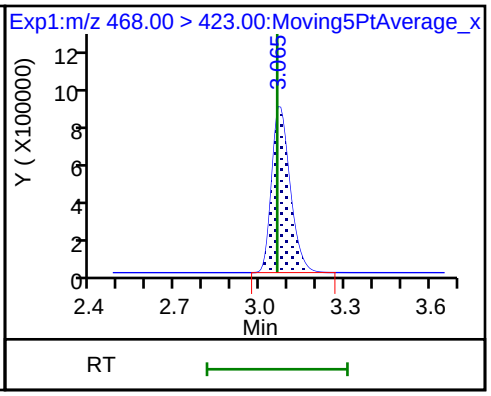
16 Perfluoroheptanesulfonic acid (ND)



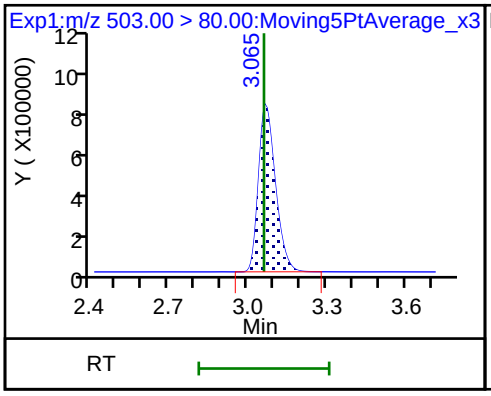
16 Perfluoroheptanesulfonic acid (ND)



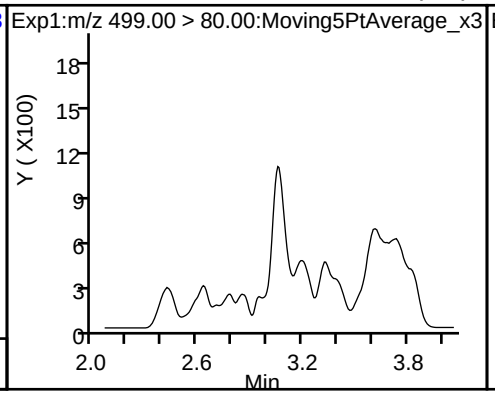
D 19 13C5 PFNA



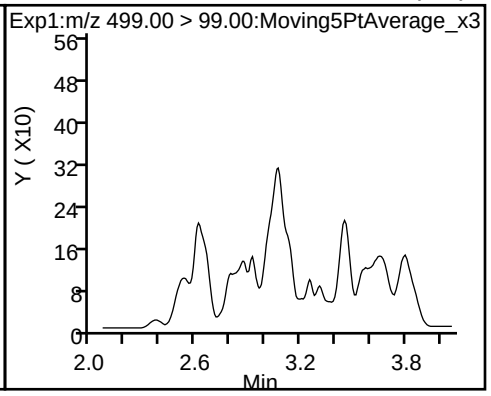
D 18 13C4 PFOS



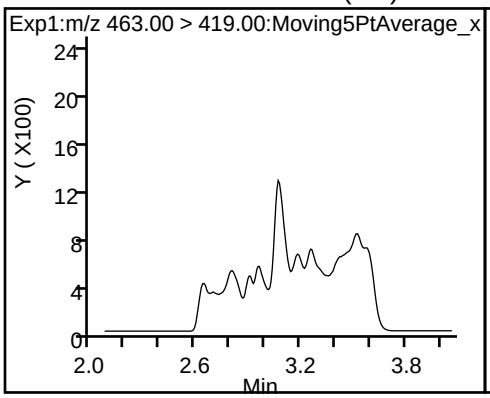
17 Perfluorooctane sulfonic acid (ND)



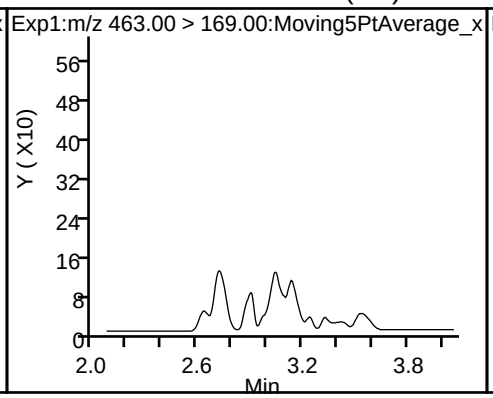
17 Perfluorooctane sulfonic acid (ND)



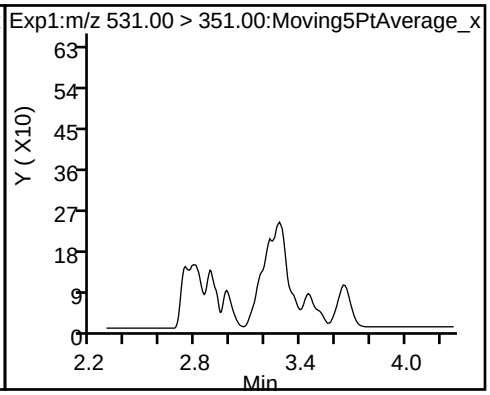
20 Perfluorononanoic acid (ND)



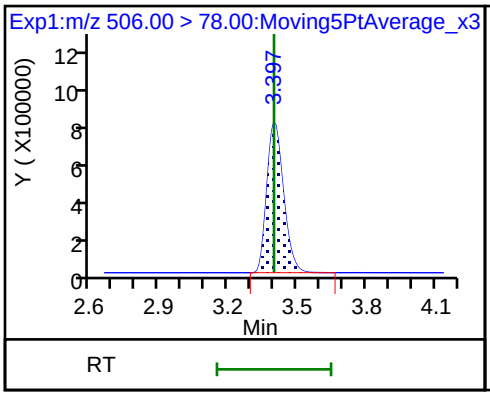
20 Perfluorononanoic acid (ND)



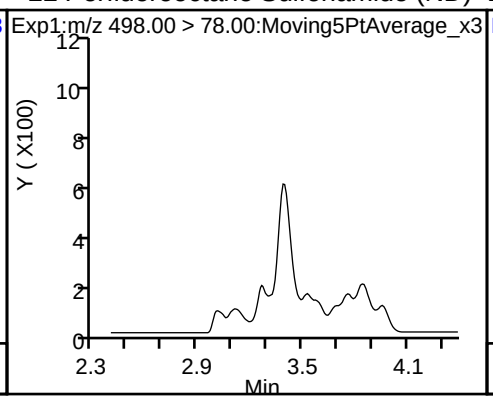
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



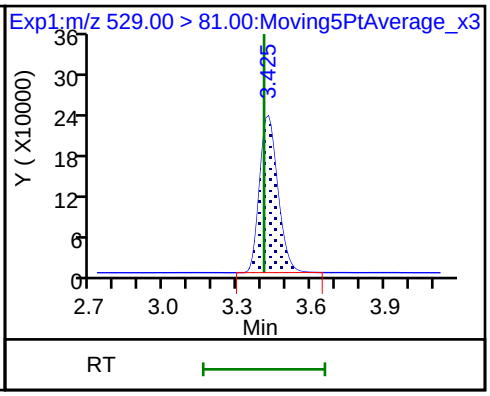
D 21 13C8 FOSA



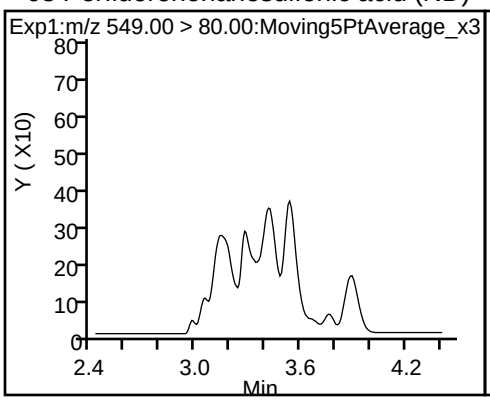
22 Perfluorooctane Sulfonamide (ND)



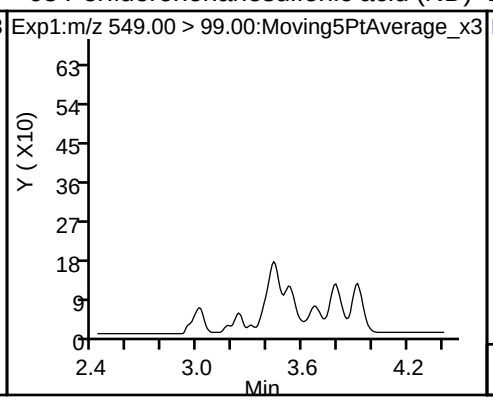
D 26 M2-8:2FTS



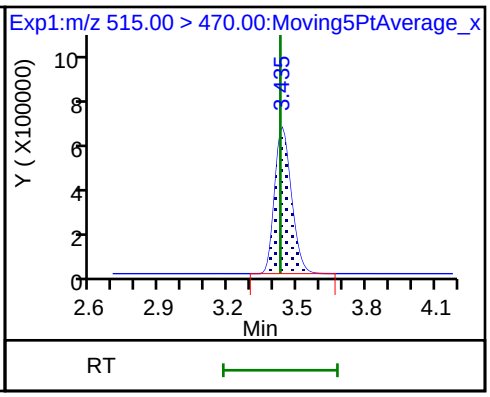
68 Perfluorononanesulfonic acid (ND)



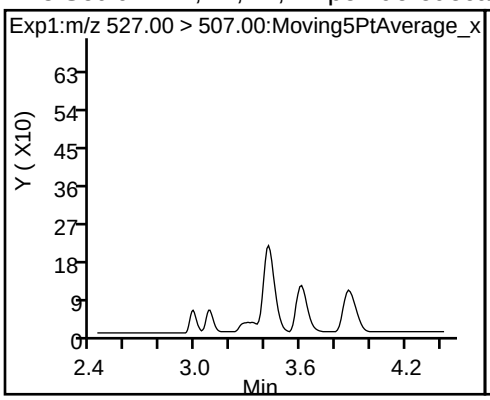
68 Perfluorononanesulfonic acid (ND)



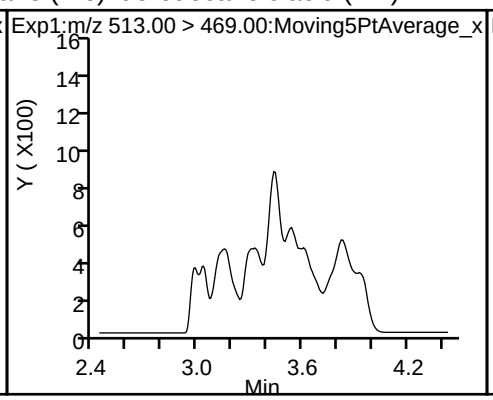
D 23 13C2 PFDA



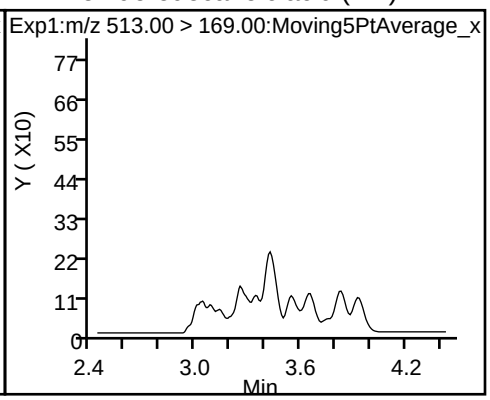
25 Sodium 1H,1H,2H,2H-perfluorodecane-1-sulfonate (ND)



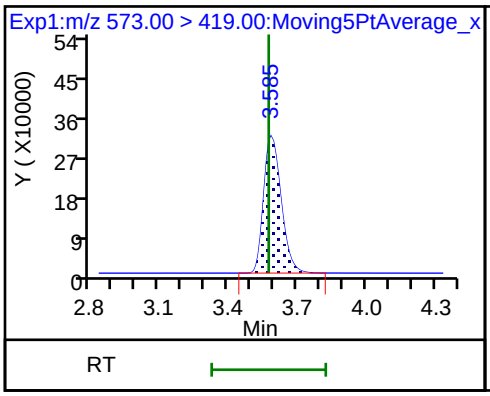
24 Perfluorodecanoic acid (ND)



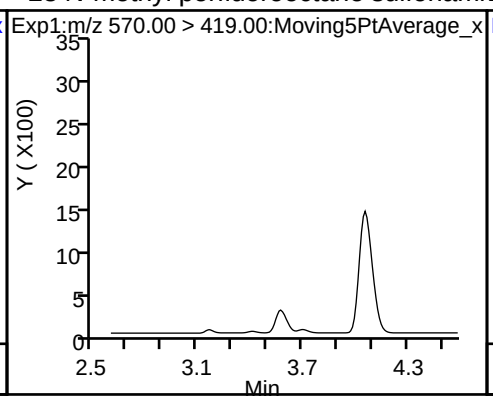
24 Perfluorodecanoic acid (ND)



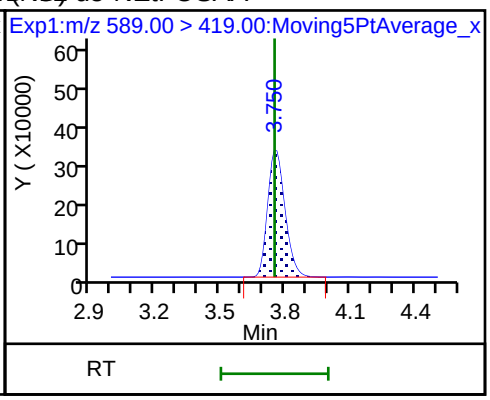
D 27 d3-NMeFOSAA



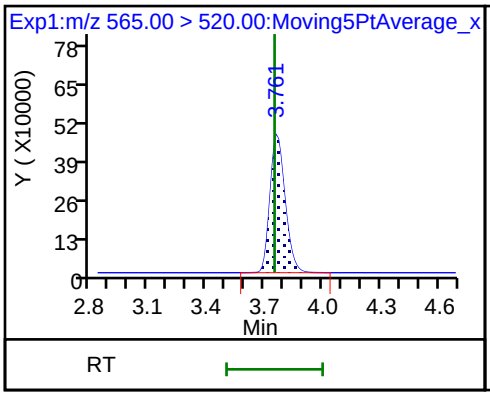
28 N-methyl perfluorooctane sulfonamid (ND)



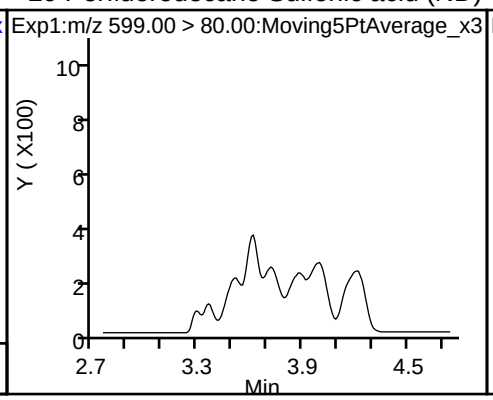
D 32 d5-NEtFOSAA



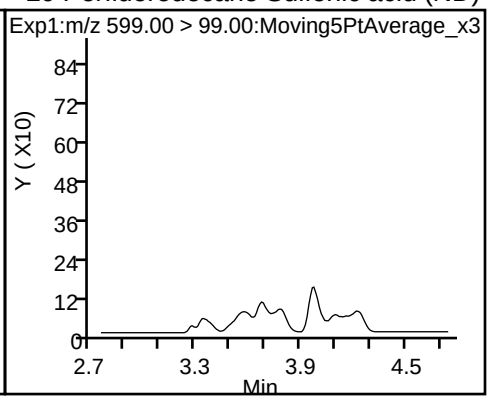
D 30 13C2 PFUnA



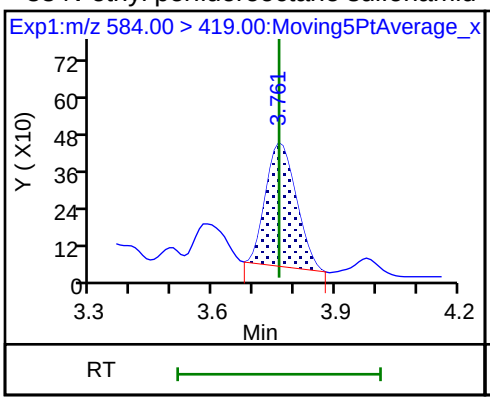
29 Perfluorodecane Sulfonic acid (ND)



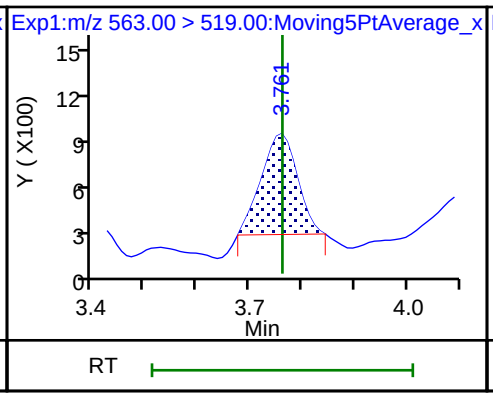
29 Perfluorodecane Sulfonic acid (ND)



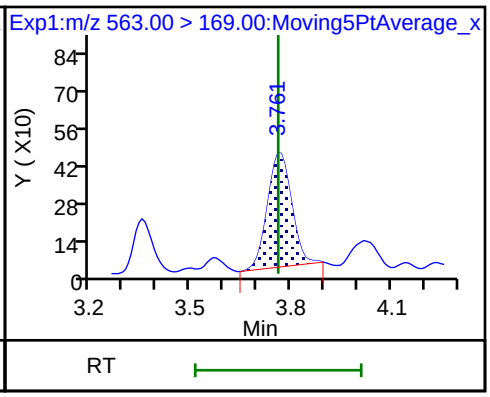
33 N-ethyl perfluorooctane sulfonamid



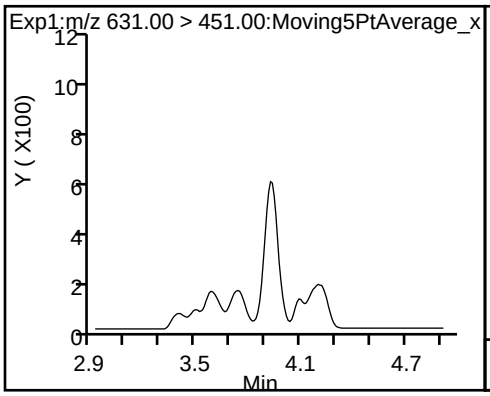
31 Perfluoroundecanoic acid



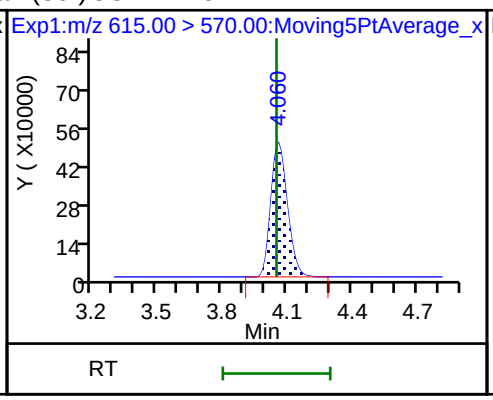
31 Perfluoroundecanoic acid



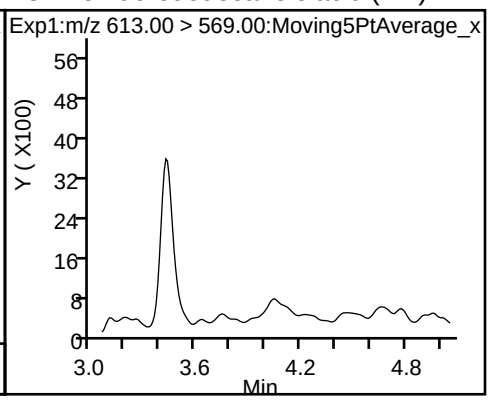
66 11-Chloroeicosafluoro-3-oxaundecan (ND)



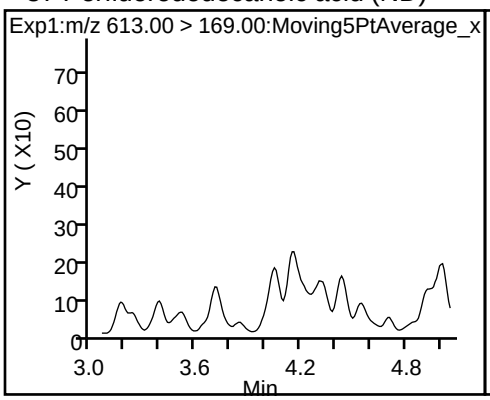
D 36 13C2 PFDoA



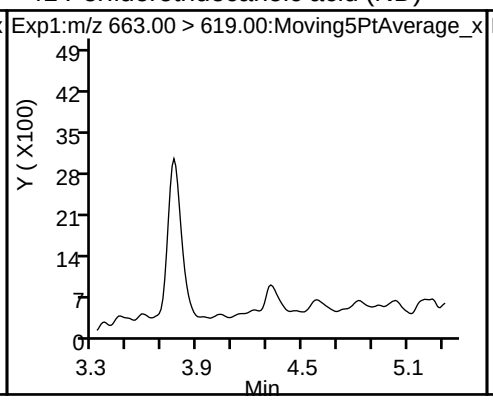
37 Perfluorododecanoic acid (ND)



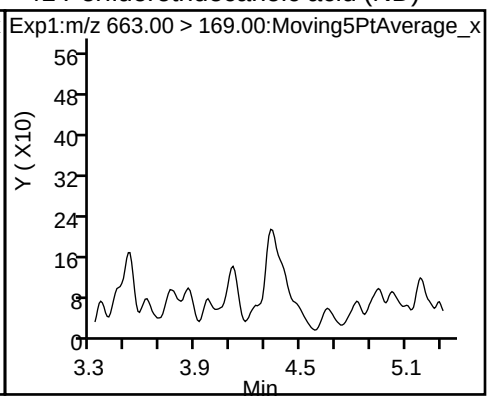
37 Perfluorododecanoic acid (ND)



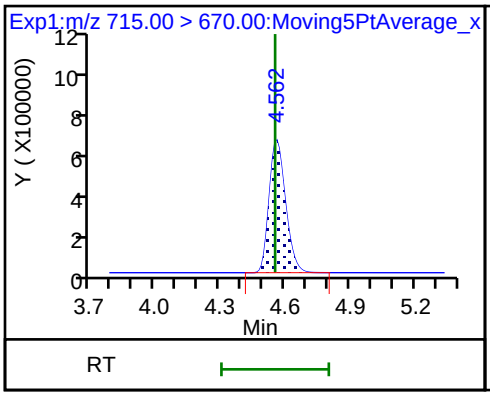
41 Perfluorotridecanoic acid (ND)



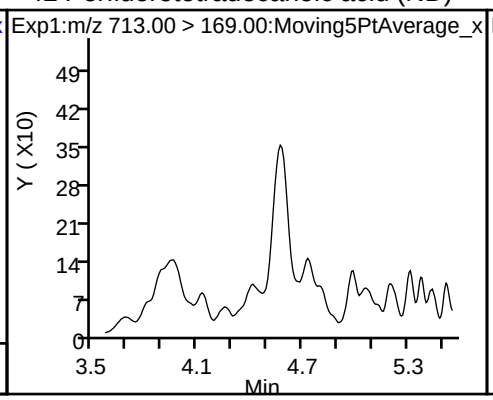
41 Perfluorotridecanoic acid (ND)



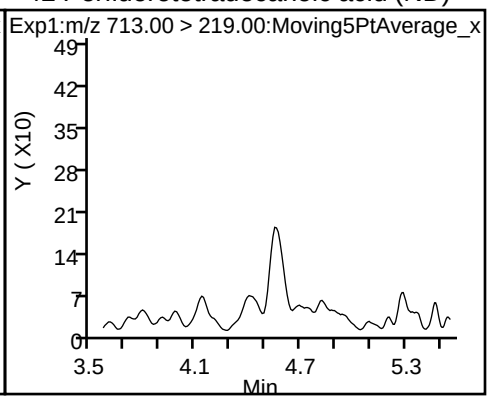
D 43 13C2-PFTeDA



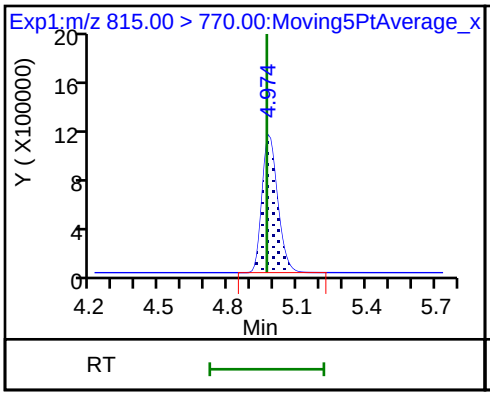
42 Perfluorotetradecanoic acid (ND)



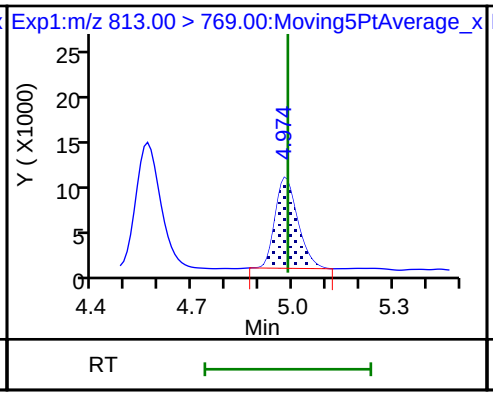
42 Perfluorotetradecanoic acid (ND)



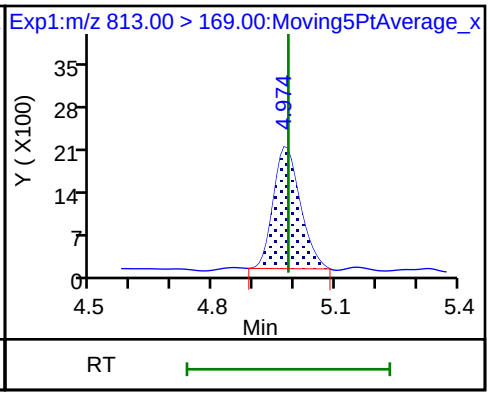
D 44 13C2-PFHxDA



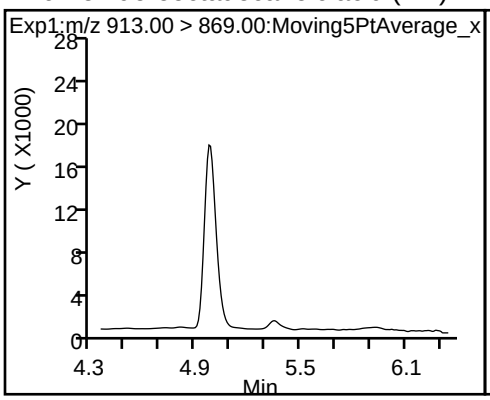
45 Perfluorohexadecanoic acid



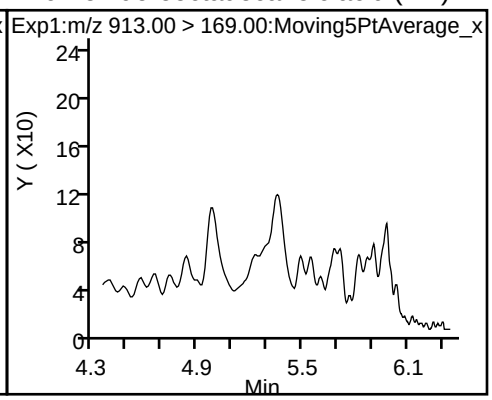
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218132/2-A

Matrix: Solid | Lab File ID: 2018.04.20LLC_025.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.00(g) | Date Analyzed: 04/21/2018 10:05

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00189		0.00020	0.000028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00179		0.00020	0.000077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00202		0.00020	0.000042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00199		0.00020	0.000029
335-67-1	Perfluorooctanoic acid (PFOA)	0.00170		0.00020	0.000086
375-95-1	Perfluorononanoic acid (PFNA)	0.00169		0.00020	0.000036
335-76-2	Perfluorodecanoic acid (PFDA)	0.00186		0.00020	0.000022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00172		0.00020	0.000036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00181		0.00020	0.000067
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00184		0.00020	0.000051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00173		0.00020	0.000054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00168		0.00020	0.000025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00161		0.00020	0.000031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00172		0.00020	0.000035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00172		0.00050	0.00020
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00171		0.00020	0.000039
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00181		0.00020	0.000082
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00184	J	0.0020	0.00039
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00195	J	0.0020	0.00037
27619-97-2	6:2FTS	0.00179	J	0.0020	0.00015
39108-34-4	8:2FTS	0.00178	J	0.0020	0.00025

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218132/2-A

Matrix: Solid | Lab File ID: 2018.04.20LLC_025.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.00(g) | Date Analyzed: 04/21/2018 10:05

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	96		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	88		25-150
STL01892	13C4-PFHpA	102		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	91		25-150
STL00998	13C2 PFDoA	92		25-150
STL02116	13C2-PFTeDA	91		25-150
STL02337	13C3-PFBS	95		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	94		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	100		25-150
STL02117	d5-NEtFOSAA	99		25-150
STL02279	M2-6:2FTS	107		25-150
STL02280	M2-8:2FTS	102		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_025.d
Lims ID: LCS 320-218132/2-A
Client ID:
Sample Type: LCS
Inject. Date: 21-Apr-2018 10:05:41 ALS Bottle#: 17 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-218132/2-a
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: westendorfc Date: 24-Apr-2018 11:29:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.439	1.441	-0.002	1.000	6010376	2.41		96.3	44720	
2 Perfluorobutyric acid										
212.90 > 169.00	1.439	1.441	-0.002	1.000	2114533	0.9472		94.7	872	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.701	-0.002	0.557	3867623	2.40		96.2	66590	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.703	-0.004	1.000	1650504	0.8952		89.5	1361	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.738	-0.003	1.000	81144	2.20		94.5	587	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.739	-0.004	1.000	2301002	0.8422		95.3	6824	
298.90 > 99.00	1.735	1.739	-0.004	1.000	975526		2.36(1.25-3.74)		4774	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.947	-0.001	1.000	552892	0.9881		106	30407	
D 7 13C2 PFHxA										
315.00 > 270.00	1.989	1.980	0.009	1.000	3923328	2.21		88.2	90973	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.978	1.990	-0.012	0.995	1611119	1.01		101	1900	
313.00 > 119.00	1.978	1.990	-0.012	0.995	140654		11.45(5.03-15.10)		1583	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.000	2.001	-0.001	1.000	2114955	0.8475		90.3	14134	
349.00 > 99.00	2.011	2.001	0.010	1.006	776298		2.72(1.36-4.07)		6219	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.092	-0.002	1.000	251922	NR		0.0	1468	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.318	-0.002	1.000	1762420	0.99		99.3	2159	
363.00 > 169.00	2.316	2.318	-0.002	1.000	666166		2.65(1.13-3.40)		3246	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.319	-0.003	1.000	4432016	2.56		102	98071	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.331	-0.002	1.000	1840565	0.8032		88.3	4408	
399.00 > 99.00	2.329	2.331	-0.002	1.000	627434		2.93(1.50-4.49)		2440	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.332	-0.003	1.000	4788415	2.24		94.8	105846	
65 Adona										
377.00 > 251.00	2.369	2.370	-0.001	1.000	4706339	0.9614		96.1	43644	
377.00 > 85.00	2.369	2.370	-0.001	1.000	2928003		1.61(0.84-2.53)		35827	
D 12 M2-6:2FTS										
429.00 > 81.00	2.651	2.652	-0.001	1.000	942601	2.54		107	9735	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.651	2.658	-0.007	1.000	600535	0.8951		94.4	5712	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4637712	2.50			82062	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	1711232	0.8524		85.2	1061	
413.00 > 169.00	2.681	2.681	0.0	1.000	870349		1.97(0.84-2.52)		3080	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.682	-0.001	1.000	4343836	2.52		101	81437	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.688	0.001	1.000	1615677	0.8612		90.5	10813	
449.00 > 99.00	2.689	2.688	0.001	1.000	440080		3.67(1.94-5.82)		6125	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.054	-0.004	1.000	1320184	0.8588		92.5	4328	
499.00 > 99.00	3.050	3.054	-0.004	1.000	299290		4.41(2.31-6.93)		3286	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.054	0.003	1.002	1286497	0.8456		84.6	4147	
463.00 > 169.00	3.057	3.054	0.003	1.002	336429		3.82(1.90-5.69)		5713	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.055	-0.005	1.000	3647607	2.47		98.6	114185	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.055	-0.005	1.000	3377372	2.26		94.4	21611	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.264	3.268	-0.004	1.000	2276386	0.8545		91.7	36903	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.391	0.004	1.000	1523078	0.9054		90.5	27509	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.393	0.002	1.000	4157876	2.23		89.0	45798	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.400	0.004	1.000	956779	0.8470		88.2	12023	
549.00 > 99.00	3.404	3.400	0.004	1.000	344416		2.78(1.33-3.97)		7666	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.404	3.410	-0.006	1.000	512436	0.8922		93.1	33921	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.411	-0.007	1.000	1087122	2.43		102	9001	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.414	3.419	-0.005	1.000	1157371	0.9301		93.0	4514	
513.00 > 169.00	3.423	3.419	0.004	1.003	206198		5.61(2.36-7.09)		2918	
D 23 13C2 PFDA										
515.00 > 470.00	3.414	3.420	-0.006	1.000	3015503	2.43		97.0	65960	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.569	0.003	1.000	1761079	2.50		100.0	28006	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.572	3.577	-0.005	1.000	646305	0.9200		92.0	6275	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.732	-0.005	1.000	783791	0.8543		88.6	8213	
599.00 > 99.00	3.727	3.732	-0.005	1.000	268936		2.91(1.39-4.16)		5073	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.743	-0.006	1.000	1719562	2.47		98.9	18547	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.748	3.753	-0.005	1.000	710517	0.8581		85.8	4192	
563.00 > 169.00	3.748	3.753	-0.005	1.000	184533		3.85(2.12-6.36)		3811	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.753	-0.005	1.003	626170	0.9742		97.4	14233	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.754	-0.006	1.000	2449591	2.28		91.4	37894	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.904	3.911	-0.007	1.000	3423783	0.8319		88.3	51057	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.042	0.005	1.000	1003486	0.9067		90.7	1441	
613.00 > 169.00	4.047	4.042	0.005	1.000	253470		3.96(2.13-6.40)		3663	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.042	0.005	1.000	2653078	2.29		91.6	38940	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.301	0.005	1.000	1187082	0.9204		92.0	1395	
663.00 > 169.00	4.306	4.301	0.005	1.000	361078		3.29(1.25-3.76)		3201	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.542	4.547	-0.005	1.000	289916	0.8646		86.5	3281	
713.00 > 219.00	4.542	4.547	-0.005	1.000	211882		1.37(0.71-2.13)		3660	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.548	-0.006	1.000	3337803	2.27		90.9	24751	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.956	4.961	-0.005	1.000	1954428	0.8972		89.7	853	
813.00 > 169.00	4.956	4.961	-0.005	1.000	311726		6.27(2.86-8.58)		2092	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.956	4.961	-0.005	1.000	5611552	2.35		93.9	17115	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.320	5.324	-0.004	1.000	2129627	0.9449		94.5	750	
913.00 > 169.00	5.320	5.324	-0.004	1.000	267364		7.97(3.83-11.48)		1926	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 24-Apr-2018 16:41:58 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_025.d

Injection Date: 21-Apr-2018 10:05:41 Instrument ID: A8_N

Lims ID: LCS 320-218132/2-A

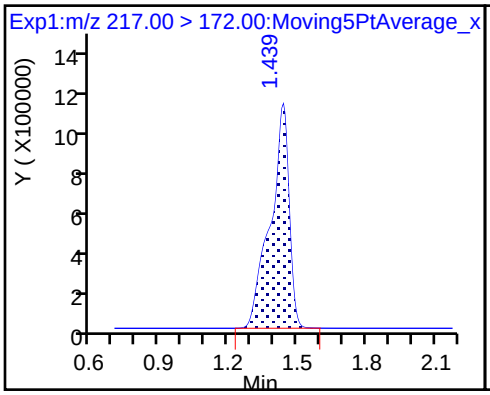
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 3

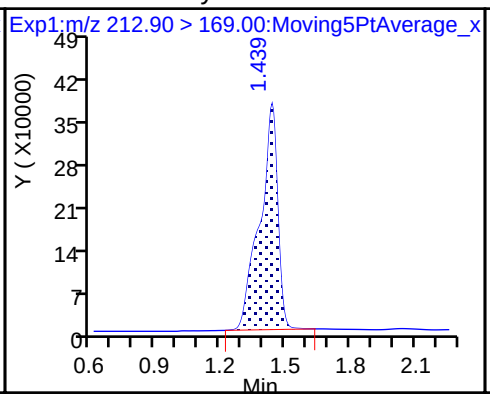
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

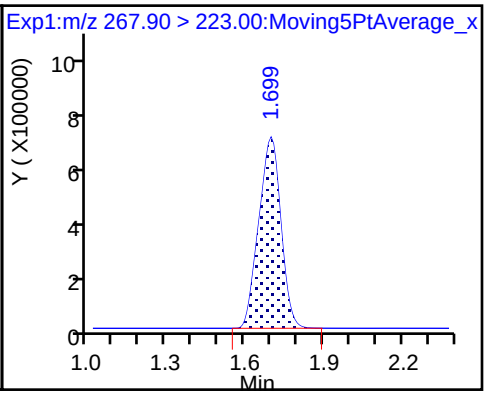
D 1 13C4 PFBA



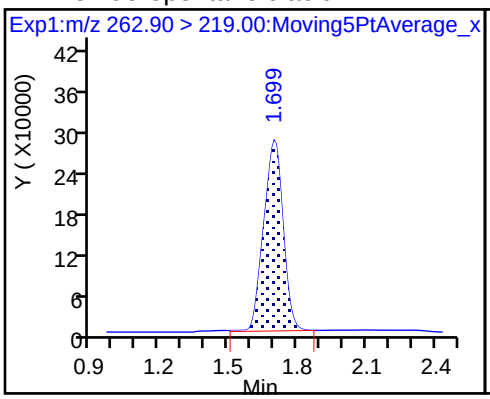
2 Perfluorobutyric acid



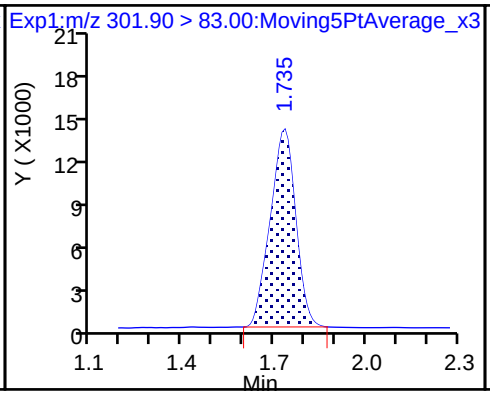
D 3 13C5-PFPeA



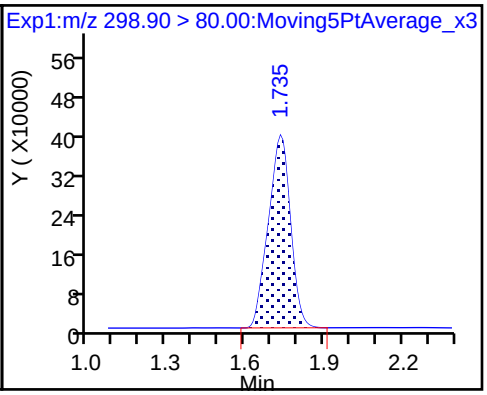
4 Perfluoropentanoic acid



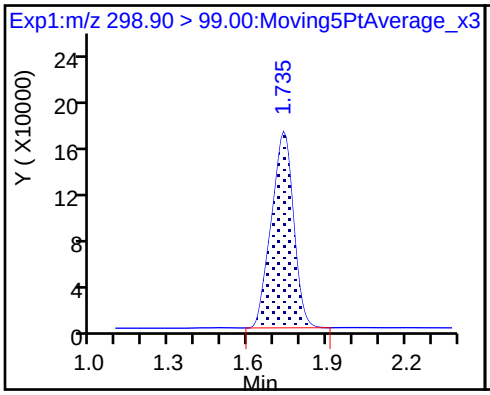
D 47 13C3-PFBS



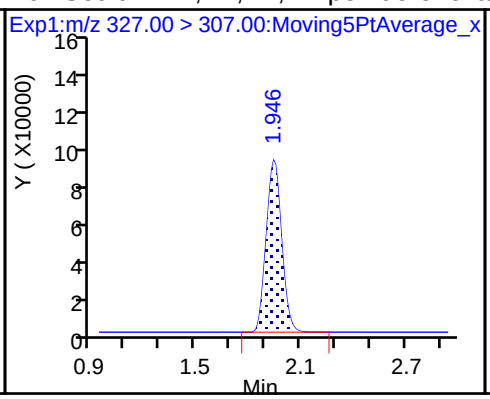
5 Perfluorobutanesulfonic acid



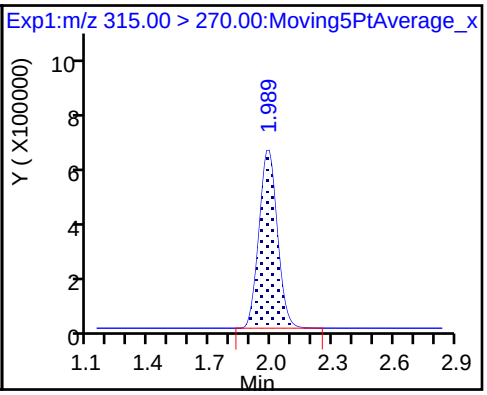
5 Perfluorobutanesulfonic acid



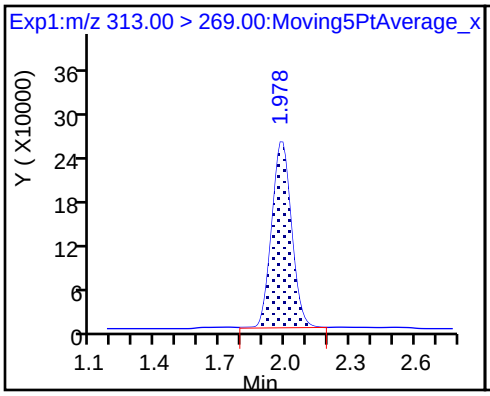
61 Sodium 1H,1H,2H,2H-perfluorohexa



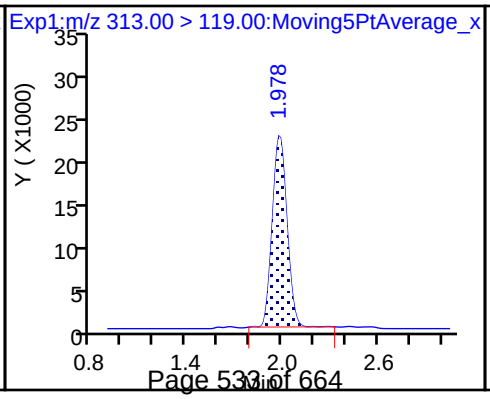
D 7 13C2 PFHxA



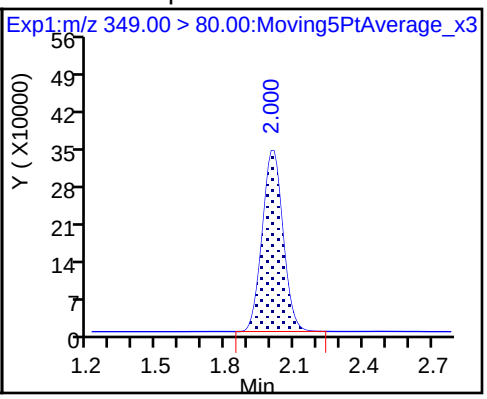
6 Perfluorohexanoic acid



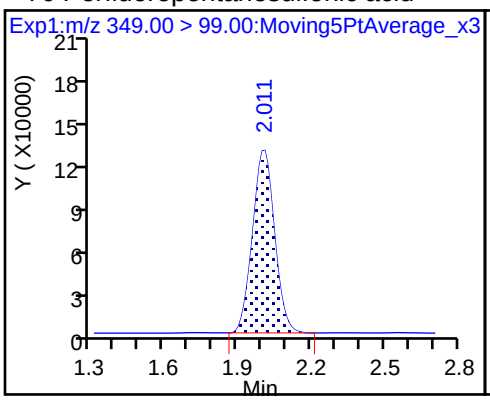
6 Perfluorohexanoic acid



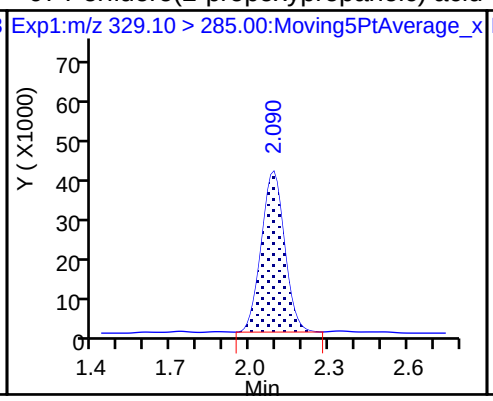
70 Perfluoropentanesulfonic acid



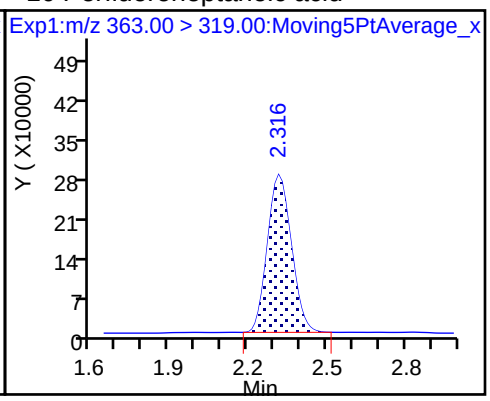
70 Perfluoropentanesulfonic acid



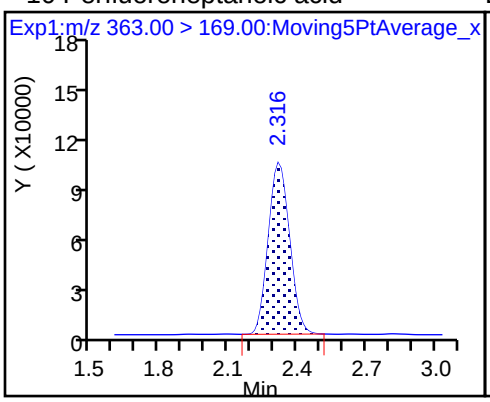
67 Perfluoro(2-propoxypropanoic) acid



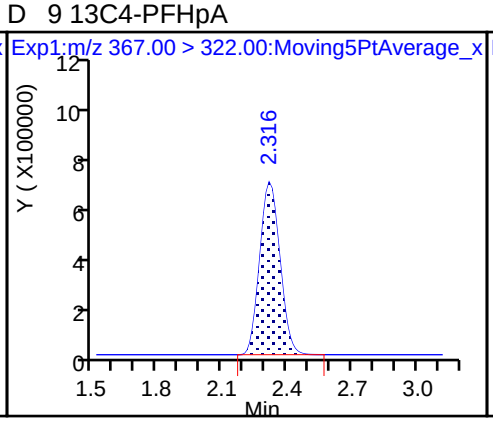
10 Perfluoroheptanoic acid



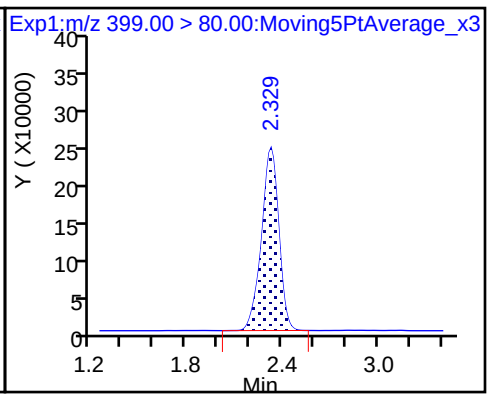
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid



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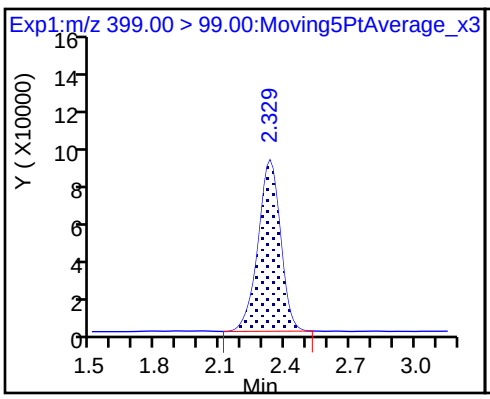
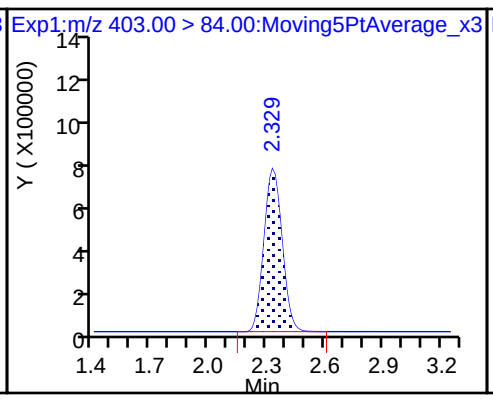
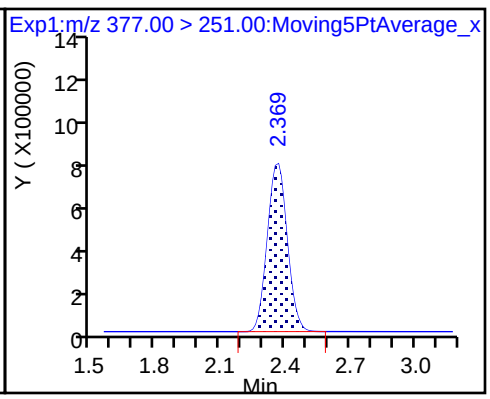


D 11 18O2 PFHxS



65 Adona



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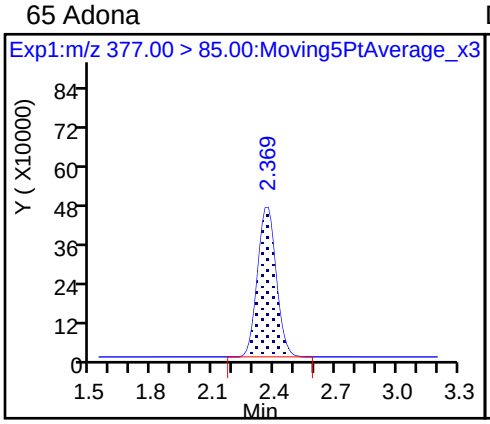
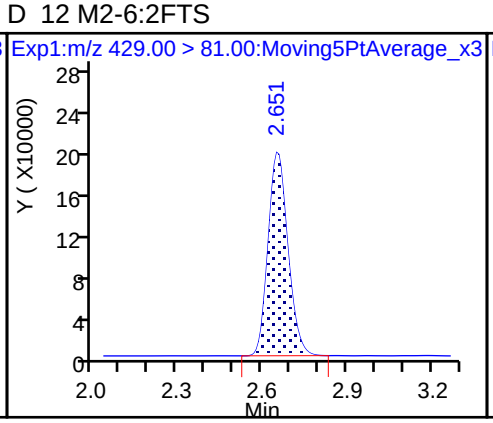
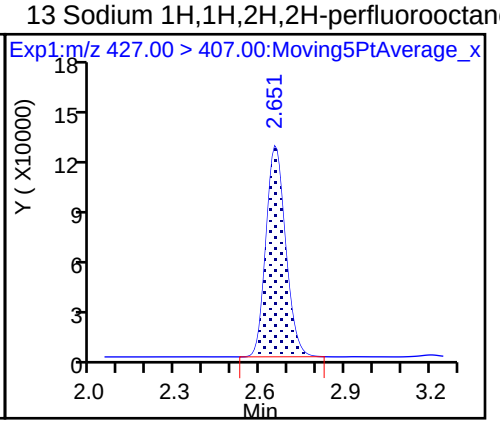


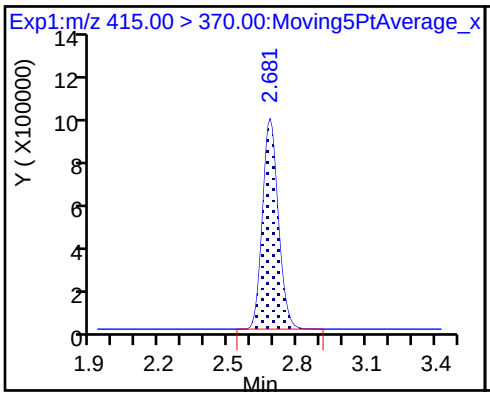
D 12 M2-6:2FTS



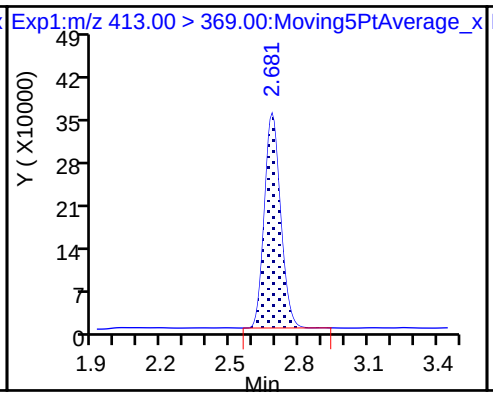
13 Sodium 1H,1H,2H,2H-perfluorooctane



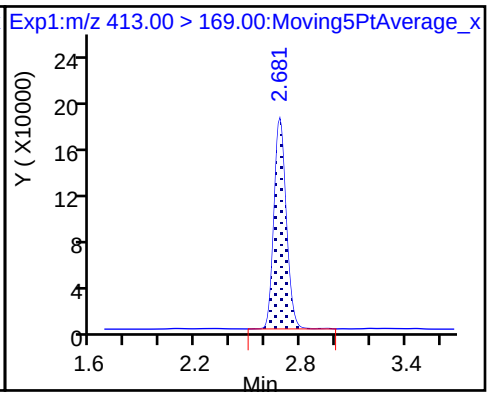
* 62 13C2-PFOA



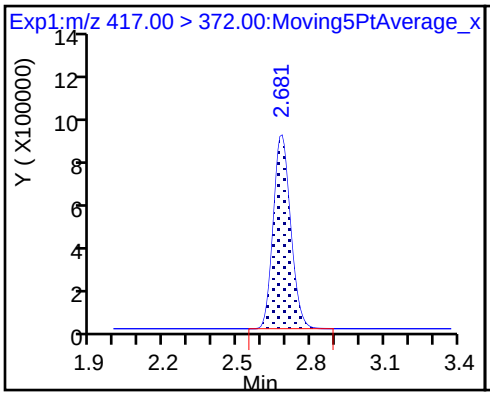
15 Perfluorooctanoic acid



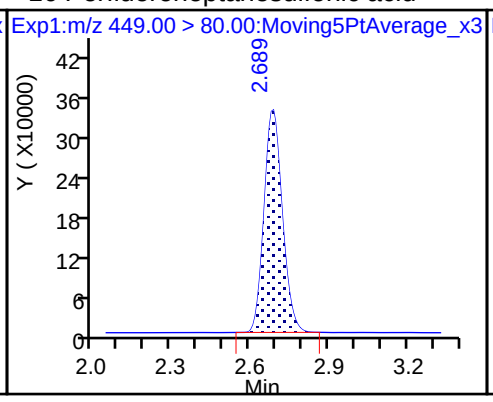
15 Perfluorooctanoic acid



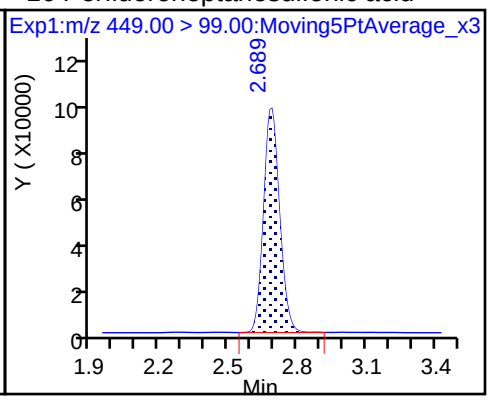
D 14 13C4 PFOA



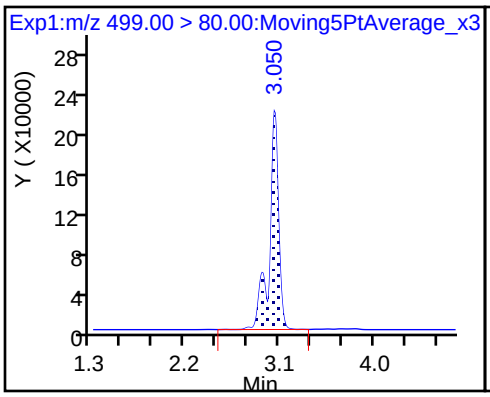
16 Perfluoroheptanesulfonic acid



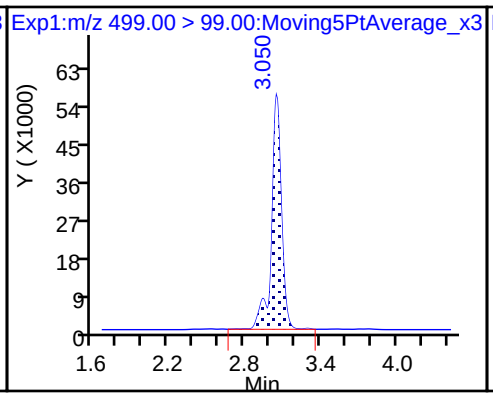
16 Perfluoroheptanesulfonic acid



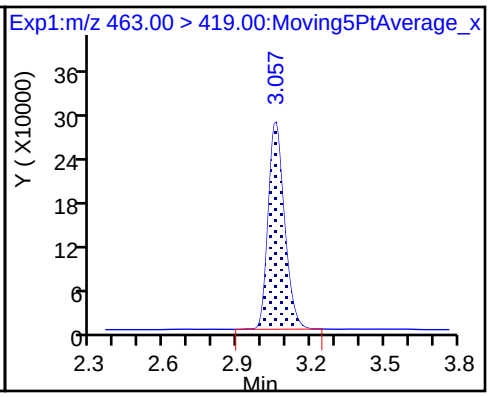
17 Perfluorooctane sulfonic acid



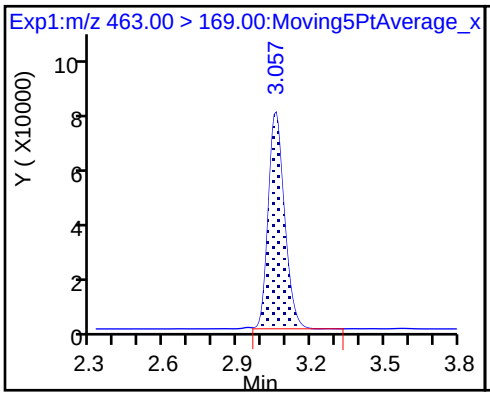
17 Perfluorooctane sulfonic acid



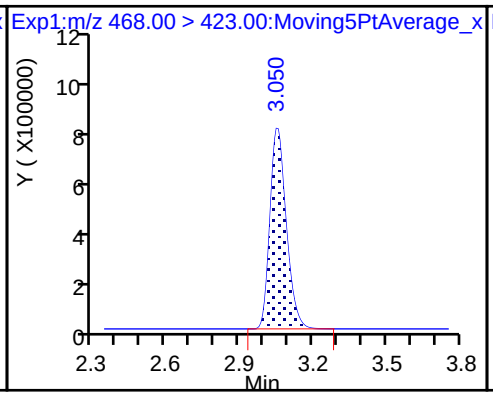
20 Perfluorononanoic acid



20 Perfluorononanoic acid



D 19 13C5 PFNA



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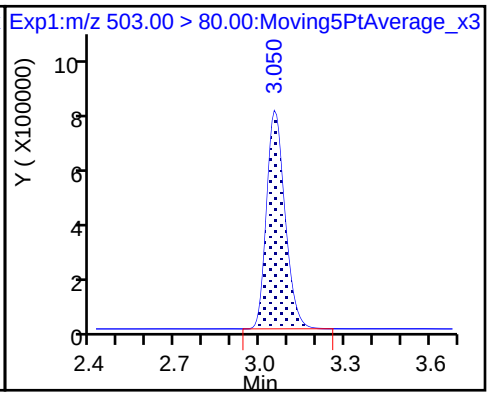
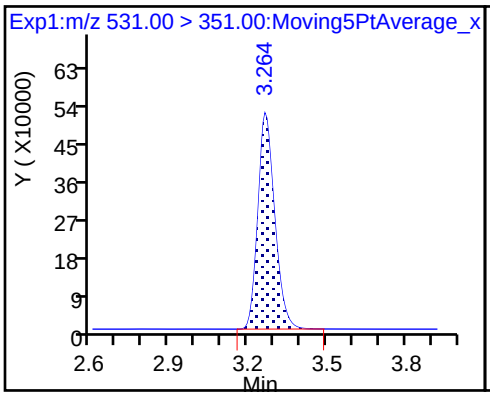
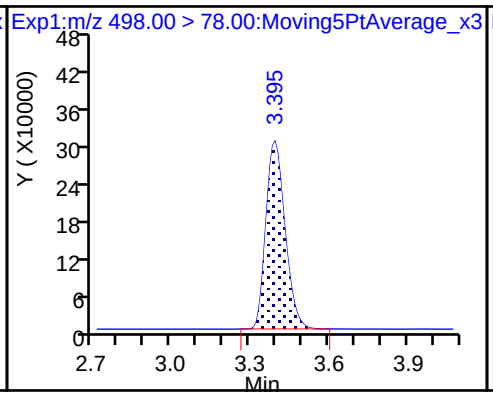


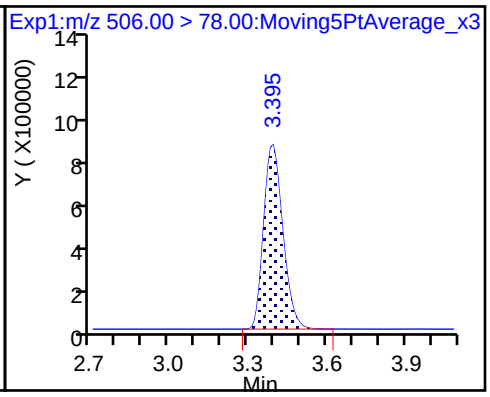
69 9-Chlorohexadecafluoro-3-oxanonane



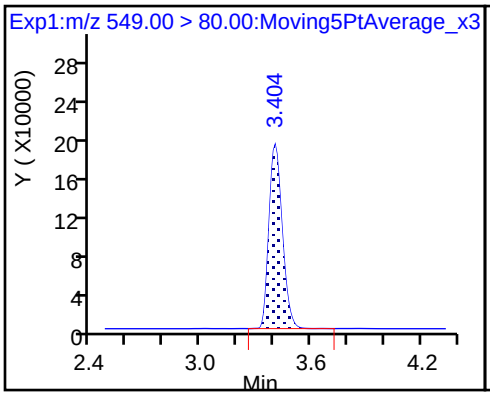
22 Perfluorooctane Sulfonamide



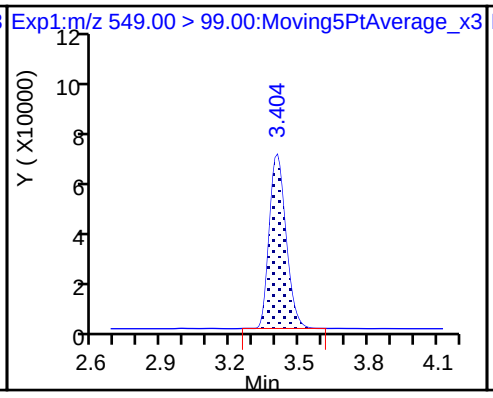
D 21 13C8 FOSA



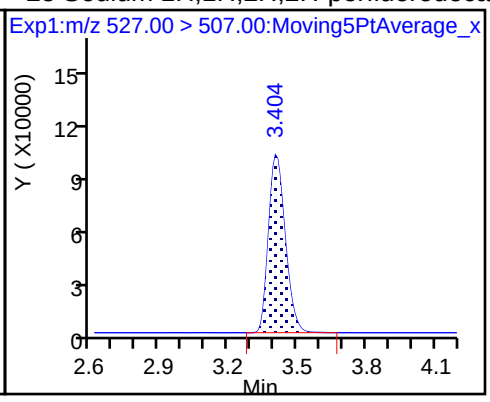
68 Perfluorononanesulfonic acid



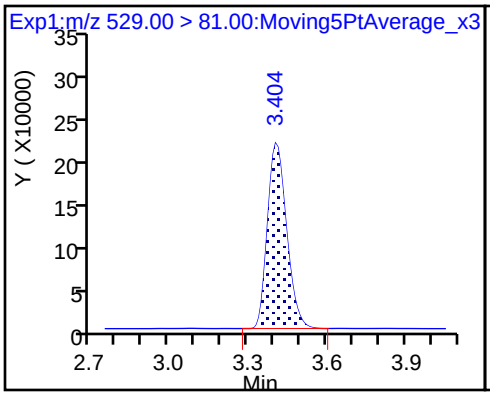
68 Perfluorononanesulfonic acid



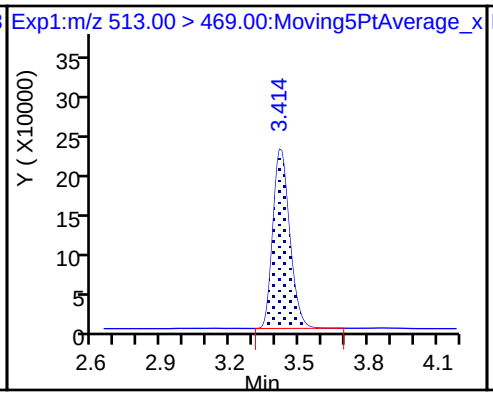
25 Sodium 1H,1H,2H,2H-perfluorodecane



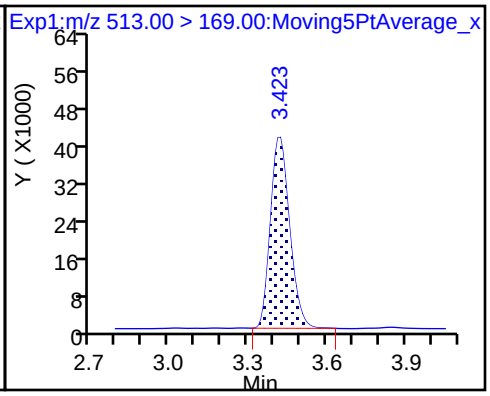
D 26 M2-8:2FTS



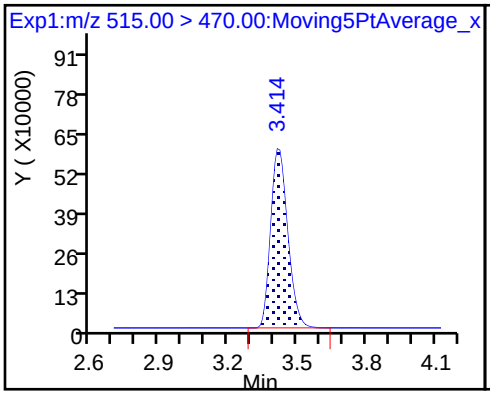
24 Perfluorodecanoic acid



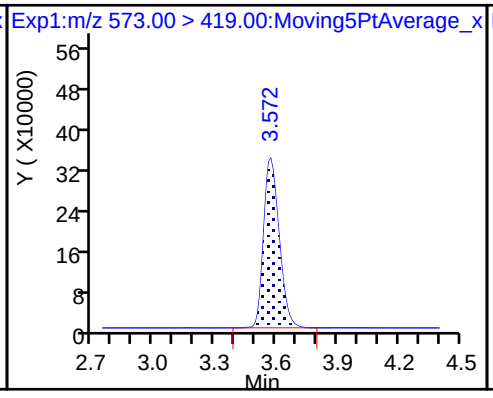
24 Perfluorodecanoic acid



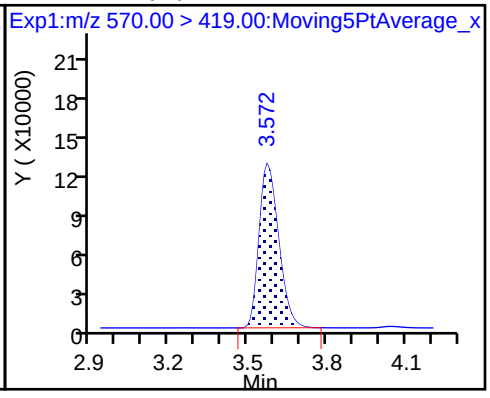
D 23 13C2 PFDA



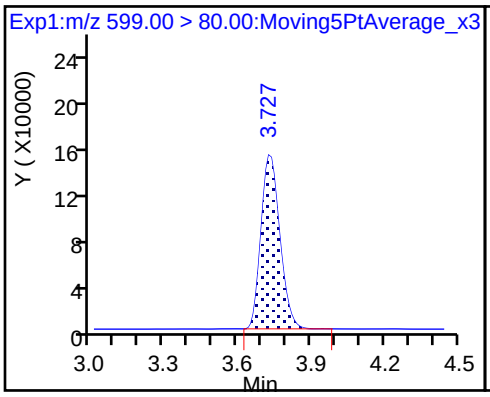
D 27 d3-NMeFOSAA



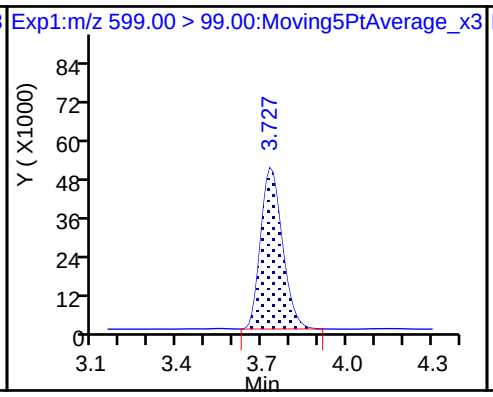
28 N-methyl perfluorooctane sulfonami



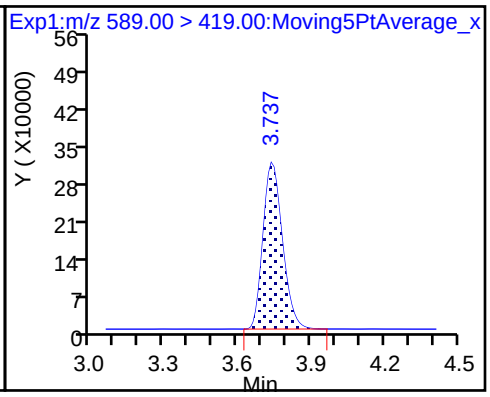
29 Perfluorodecane Sulfonic acid



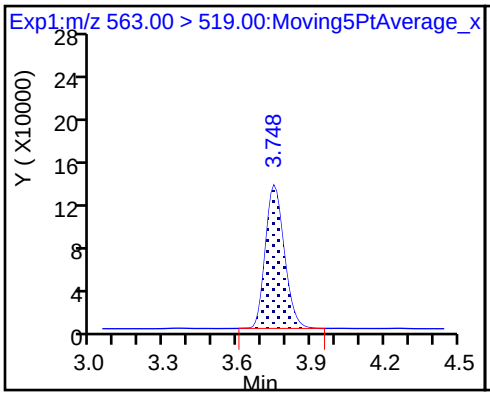
29 Perfluorodecane Sulfonic acid



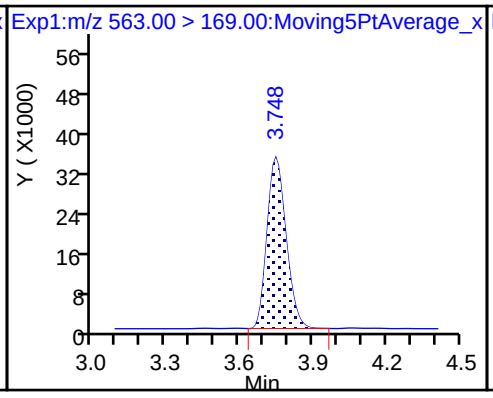
D 32 d5-NEtFOSAA



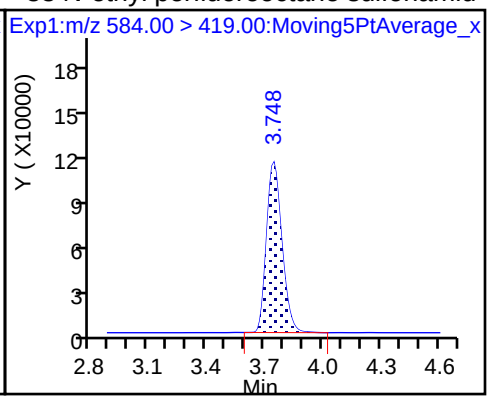
31 Perfluoroundecanoic acid



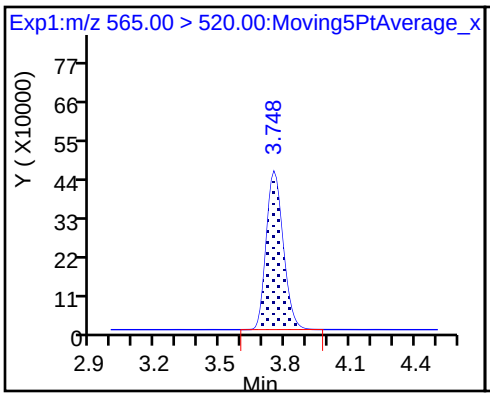
31 Perfluoroundecanoic acid



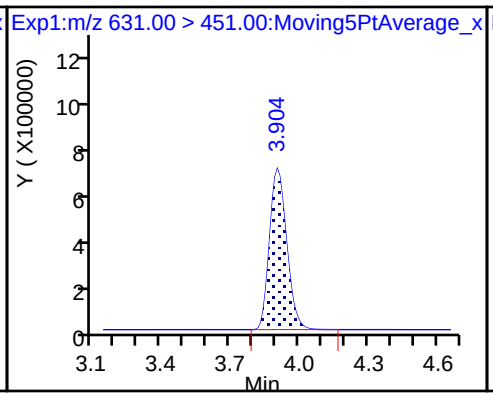
33 N-ethyl perfluorooctane sulfonamid



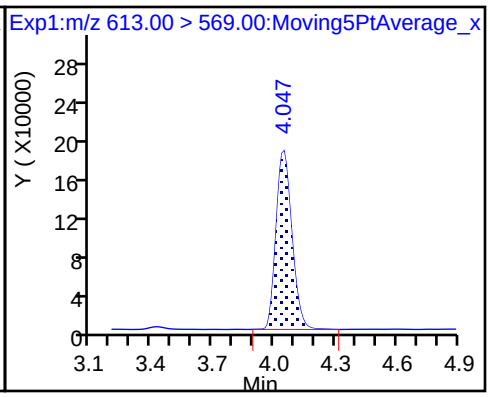
D 30 13C2 PFUnA



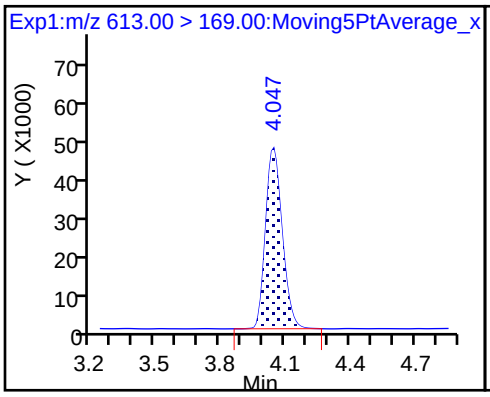
66 11-Chloroeicosafluoro-3-oxaundecan



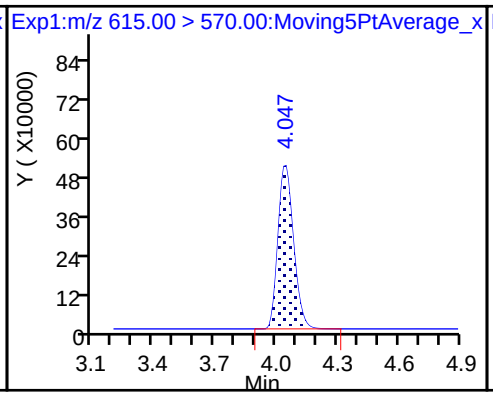
37 Perfluorododecanoic acid



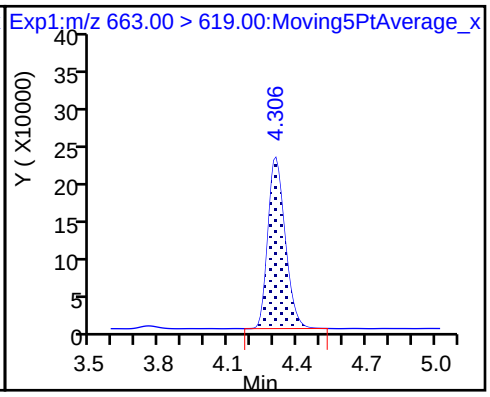
37 Perfluorododecanoic acid



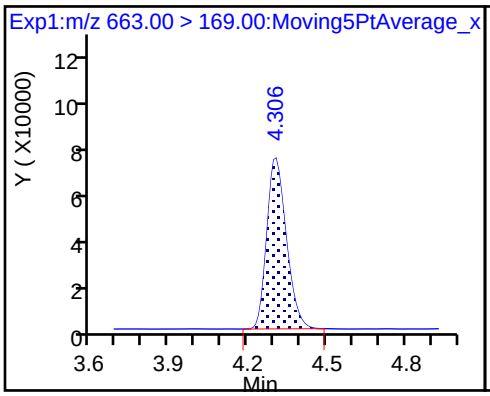
D 36 13C2 PFDoA



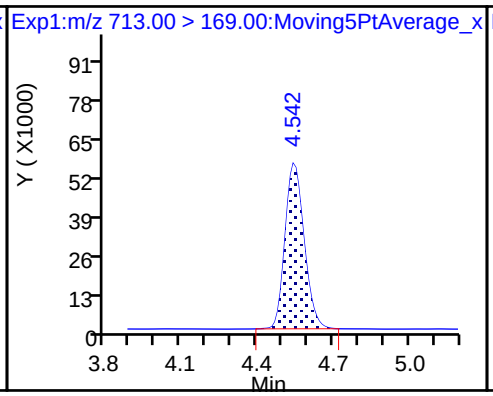
41 Perfluorotridecanoic acid



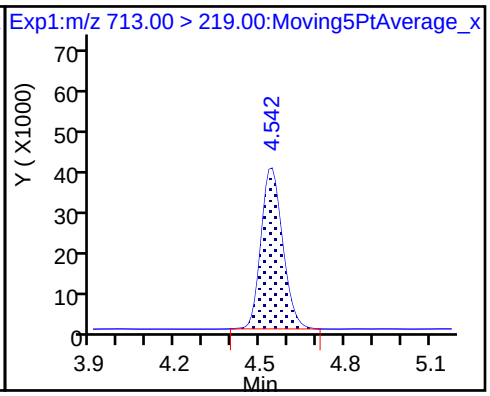
41 Perfluorotridecanoic acid



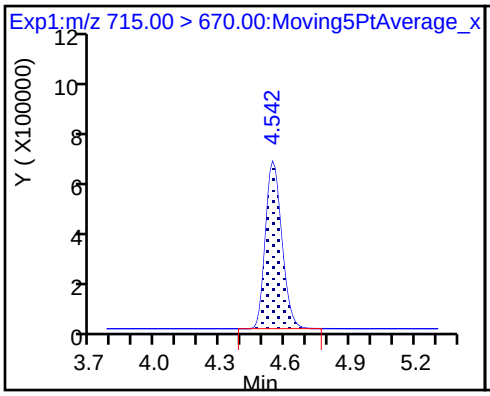
42 Perfluorotetradecanoic acid



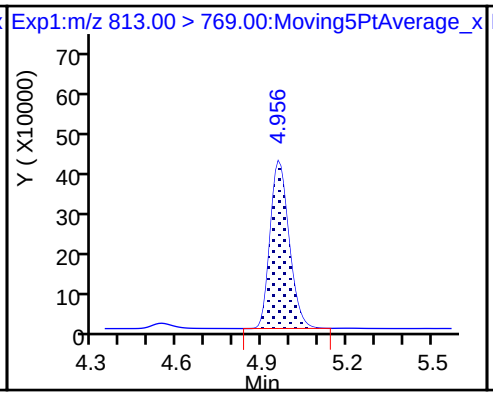
42 Perfluorotetradecanoic acid



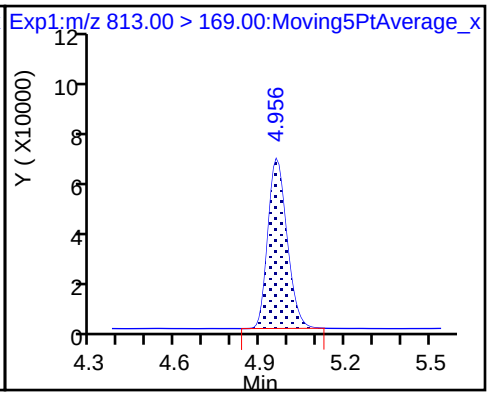
D 43 13C2-PFTeDA



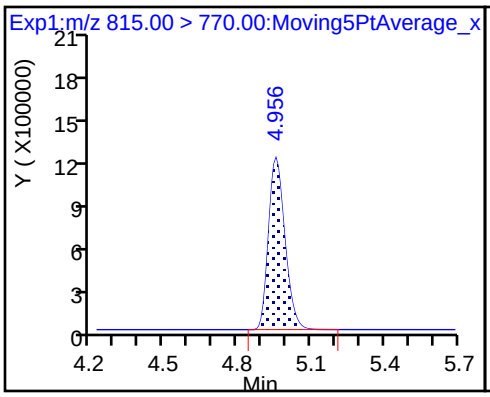
45 Perfluorohexadecanoic acid



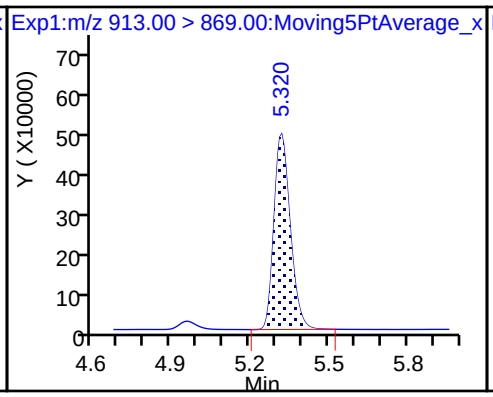
45 Perfluorohexadecanoic acid



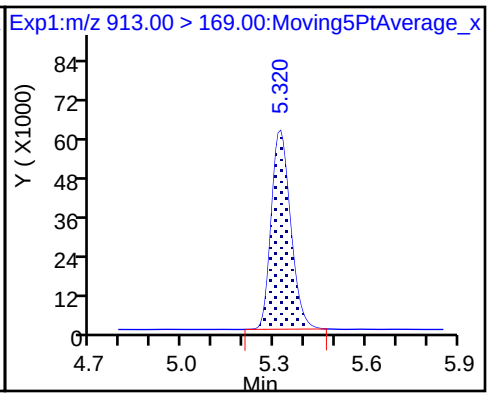
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218597/2-A

Matrix: Water | Lab File ID: 2018.04.26LLA_011.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 250(mL) | Date Analyzed: 04/26/2018 12:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.44		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	35.90		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	38.59		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	40.52		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	38.18		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	37.05		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	35.89		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	35.16		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	39.55		2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	38.58		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	37.47		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33.50		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.96		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.14		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37.36		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	34.81		2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	39.16		2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	42.94		20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	41.30		20.0	1.90
27619-97-2	6:2FTS	39.31		20.0	2.00
39108-34-4	8:2FTS	39.57		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-218597/2-A

Matrix: Water | Lab File ID: 2018.04.26LLA_011.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 250(mL) | Date Analyzed: 04/26/2018 12:36

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	89		25-150
STL01893	13C5 PFPeA	93		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4-PFHpA	90		25-150
STL00990	13C4 PFOA	91		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	93		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	80		25-150
STL02116	13C2-PFTeDA	83		25-150
STL02337	13C3-PFBS	91		25-150
STL00994	18O2 PFHxS	90		25-150
STL00991	13C4 PFOS	90		25-150
STL01056	13C8 FOSA	78		25-150
STL02118	d3-NMeFOSAA	81		25-150
STL02117	d5-NEtFOSAA	91		25-150
STL02279	M2-6:2FTS	103		25-150
STL02280	M2-8:2FTS	99		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_011.d
Lims ID: LCS 320-218597/2-A
Client ID:
Sample Type: LCS
Inject. Date: 26-Apr-2018 12:36:40 ALS Bottle#: 5 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-218597/2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:39:59

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.435	0.006	1.000	6165504	2.22		88.7	41797	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.000	2372559	1.04		104	1191	
D 3 13C5-PFPeA										
267.90 > 223.00	1.712	1.702	0.010	0.557	4157843	2.32		92.8	61480	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.712	1.702	0.010	1.000	1779045	0.8976		89.8	1581	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.738	0.001	1.000	86932	2.11		90.9	647	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.748	1.747	0.001	1.005	2451749	0.8376		94.8	8166	
298.90 > 99.00	1.748	1.747	0.001	1.005	1036737		2.36(1.25-3.74)		10319	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.960	1.960	0.0	1.000	624875	1.04		112	37015	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.992	0.001	1.000	4601488	2.32		92.9	101233	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.993	0.0	1.000	1804492	0.9648		96.5	2337	
313.00 > 119.00	1.993	1.993	0.0	1.000	166172		10.86(5.03-15.10)		1919	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.015	0.001	1.000	2279196	0.8525		90.9	15737	
349.00 > 99.00	2.016	2.015	0.001	1.000	810916		2.81(1.36-4.07)		12719	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.094	0.001	1.000	286652	NR		0.0	1967	
D 9 13C4-PFHpA										
367.00 > 322.00	2.334	2.320	0.014	1.000	4325759	2.24		89.7	63909	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.333	0.014	1.000	5055305	2.12		89.8	63639	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.334	2.333	0.001	1.000	1754272	1.01		101	2103	
363.00 > 169.00	2.334	2.333	0.001	1.000	679498		2.58(1.13-3.40)		3057	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.347	2.346	0.001	1.000	2053890	0.8490		92.6	4549	
399.00 > 99.00	2.347	2.346	0.001	1.000	694672		2.96(1.50-4.49)		3705	
65 Adona										
377.00 > 251.00	2.385	2.373	0.011	1.000	5290479	1.02		102	74276	
377.00 > 85.00	2.385	2.373	0.011	1.000	3179719		1.66(0.84-2.53)		58891	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.661	0.007	1.000	1006620	2.44		103	10806	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.668	0.007	1.003	704197	0.9828		104	10200	
D 14 13C4 PFOA										
417.00 > 372.00	2.698	2.683	0.015	1.000	4354617	2.27		90.9	62648	
* 62 13C2-PFOA										
415.00 > 370.00	2.698	2.698	0.0		5166070	2.50			70331	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.698	2.698	0.0	1.000	1920748	0.9544		94.7	1439	
413.00 > 169.00	2.698	2.698	0.0	1.000	1012105		1.90(0.84-2.52)		4451	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.706	-0.001	1.000	1841331	0.9284		97.5	13811	
449.00 > 99.00	2.705	2.706	-0.001	1.000	495193		3.72(1.94-5.82)		11911	
D 19 13C5 PFNA										
468.00 > 423.00	3.073	3.060	0.013	1.000	3868462	2.35		93.9	70835	
D 18 13C4 PFOS										
503.00 > 80.00	3.073	3.060	0.013	1.000	3570244	2.14		89.6	18950	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.073	3.067	0.006	1.000	1517739	0.9340		101	5755	
499.00 > 99.00	3.066	3.067	-0.001	0.998	334818		4.53(2.31-6.93)		5355	
20 Perfluorononanoic acid										
463.00 > 419.00	3.073	3.074	-0.001	1.000	1494650	0.9264		92.6	4655	
463.00 > 169.00	3.073	3.074	-0.001	1.000	382049		3.91(1.90-5.69)		9390	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.287	3.280	0.007	1.000	2416517	0.8581		92.1	42058	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.398	0.009	1.000	4052329	1.95		77.9	42420	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.398	0.009	1.000	1605114	0.9790		97.9	18757	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.407	0.019	1.000	1174504	2.36		98.5	12724	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.426	3.417	0.009	1.000	1040599	0.8714		90.8	8997	
549.00 > 99.00	3.426	3.417	0.009	1.000	402362		2.59(1.33-3.97)		9892	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.426	0.009	1.000	3207102	2.32		92.6	90838	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	613925	0.9894		103	23715	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.436	-0.001	1.000	1187287	0.8972		89.7	5052	
513.00 > 169.00	3.435	3.436	-0.001	1.000	213214		5.57(2.36-7.09)		3872	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.585	3.575	0.010	1.000	1580005	2.01		80.5	24469	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.596	3.597	-0.001	1.003	676704	1.07		107	5211	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.761	3.751	0.010	1.000	1760262	2.27		90.9	18673	
D 30 13C2 PFUnA										
565.00 > 520.00	3.771	3.751	0.020	1.000	2751492	2.30		92.1	63332	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.750	3.751	-0.001	1.000	844113	0.8703		90.3	8181	
599.00 > 99.00	3.750	3.751	-0.001	1.000	302255		2.79(1.39-4.16)		7144	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.771	3.761	0.010	1.003	679339	1.03		103	13441	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.771	3.761	0.010	1.000	817638	0.8791		87.5	4581	
563.00 > 169.00	3.761	3.761	0.0	0.997	215212		3.80(2.12-6.36)		4948	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.920	3.918	0.002	1.000	3638452	0.8363		88.8	58186	
D 36 13C2 PFDoA										
615.00 > 570.00	4.061	4.050	0.011	1.000	2566918	1.99		79.6	28663	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.061	4.061	0.0	1.000	1058832	0.9888		98.9	1545	
613.00 > 169.00	4.061	4.061	0.0	1.000	263722		4.01(2.13-6.40)		2773	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.330	4.319	0.011	1.000	1203598	0.9645		96.5	1431	
663.00 > 169.00	4.330	4.319	0.011	1.000	372814		3.23(1.25-3.76)		3167	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.553	0.011	1.000	3392953	2.07		83.0	28330	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	319285	0.9367		93.7	2541	
713.00 > 219.00	4.564	4.564	0.0	1.000	229995		1.39(0.71-2.13)		3619	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.967	0.009	1.000	5217922	1.96		78.4	17172	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.985	4.984	0.001	1.002	1927004	0.9527		94.6	953	
813.00 > 169.00	4.985	4.984	0.001	1.002	325509		5.92(2.86-8.58)		2269	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.350	-0.006	1.000	1853091	0.8843		88.4	845	
913.00 > 169.00	5.344	5.350	-0.006	1.000	226246		8.19(3.83-11.48)		1795	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 26-Apr-2018 16:46:30 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_011.d

Injection Date: 26-Apr-2018 12:36:40 Instrument ID: A8_N

Lims ID: LCS 320-218597/2-A

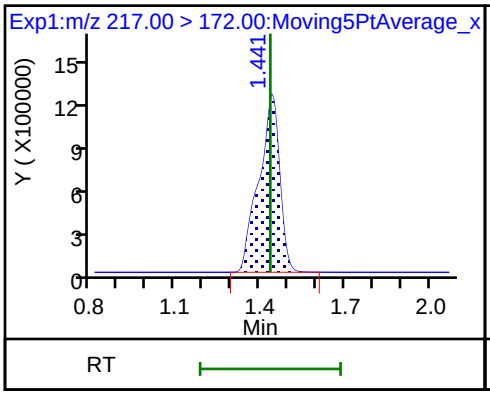
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 3

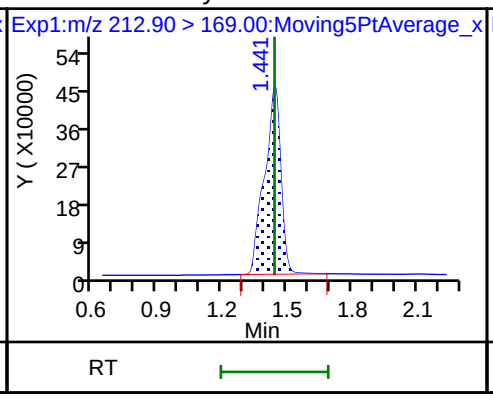
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

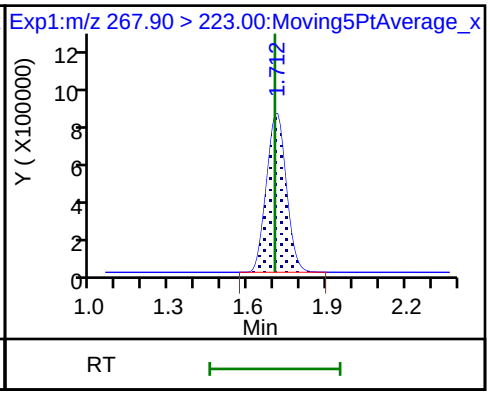
D 1 13C4 PFBA



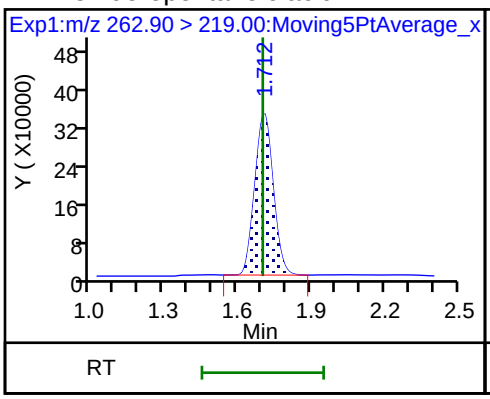
2 Perfluorobutyric acid



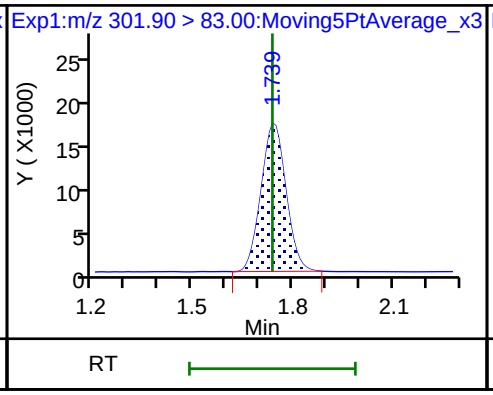
D 3 13C5-PFPeA



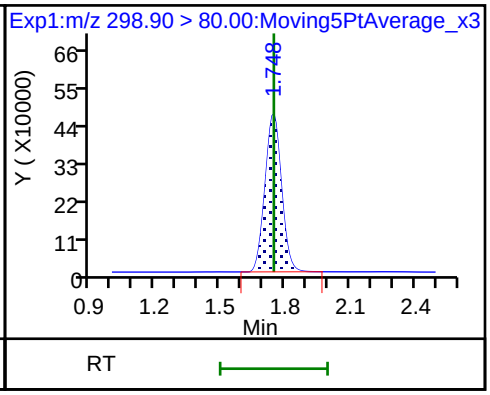
4 Perfluoropentanoic acid



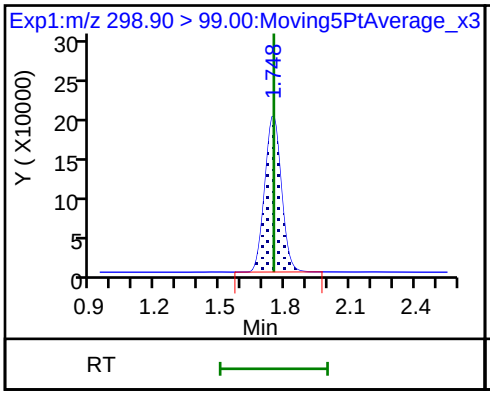
D 47 13C3-PFBS



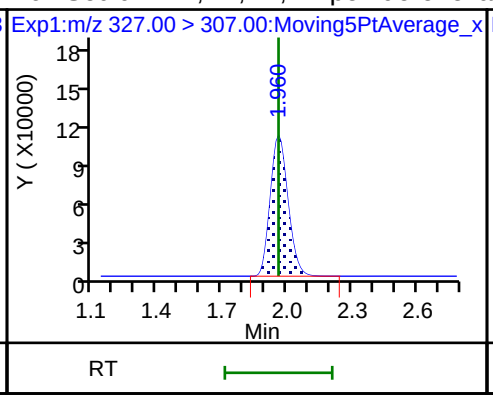
5 Perfluorobutanesulfonic acid



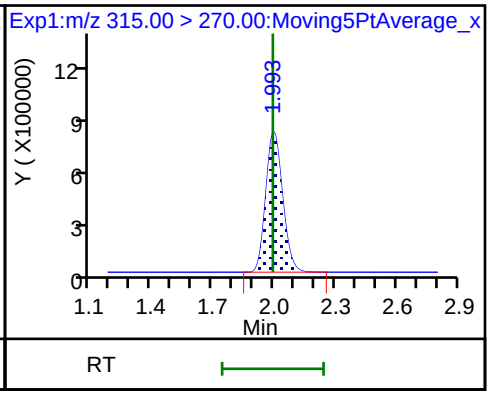
5 Perfluorobutanesulfonic acid



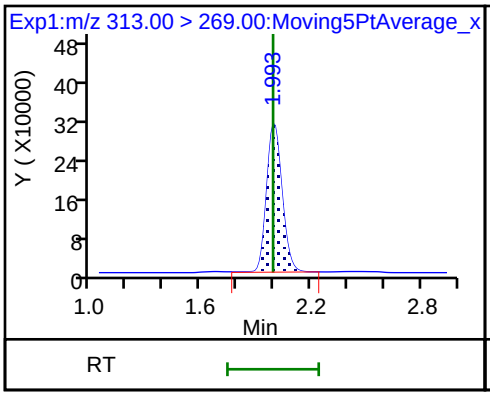
61 Sodium 1H,1H,2H,2H-perfluorohexa



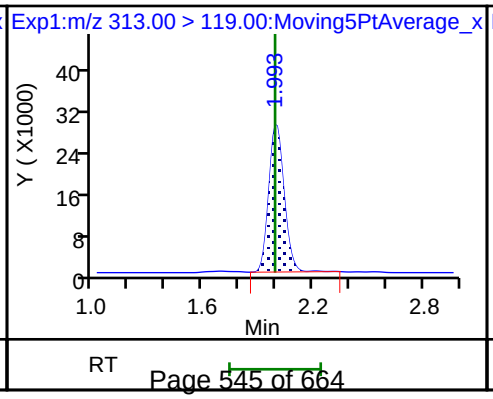
De 7 13C2 PFHxA



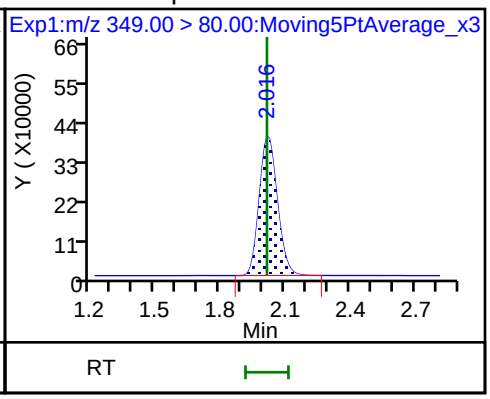
6 Perfluorohexanoic acid



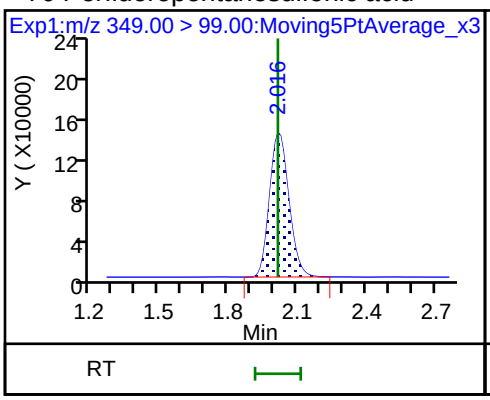
6 Perfluorohexanoic acid



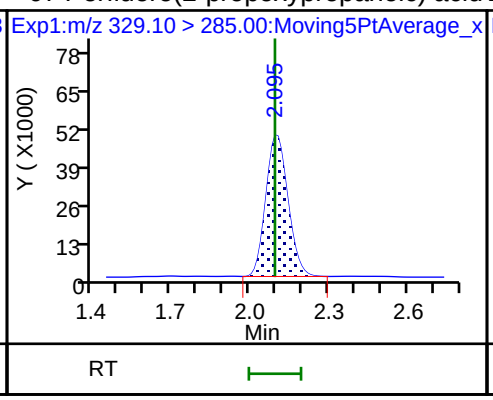
70 Perfluoropentanesulfonic acid



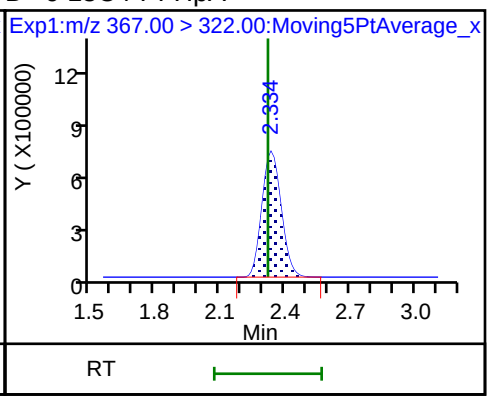
70 Perfluoropentanesulfonic acid



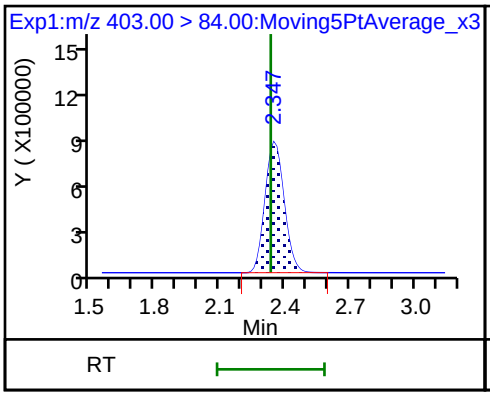
67 Perfluoro(2-propoxypropanoic) acid



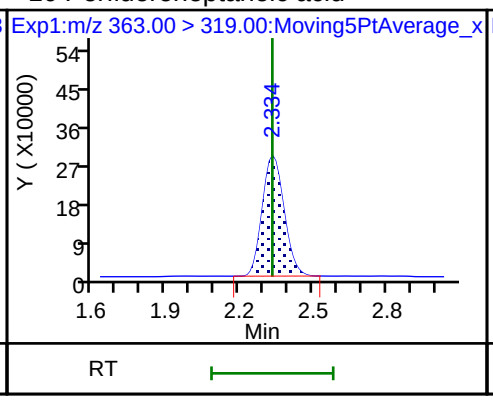
D 9 13C4-PFHpA



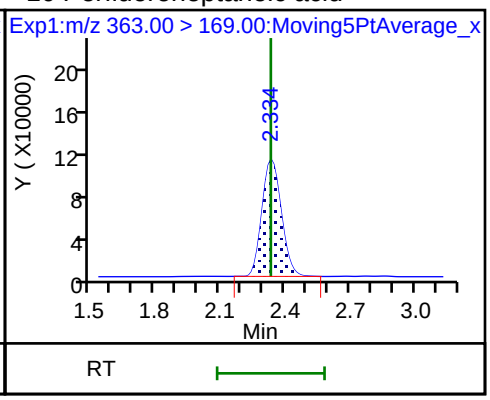
D 11 18O2 PFHxS



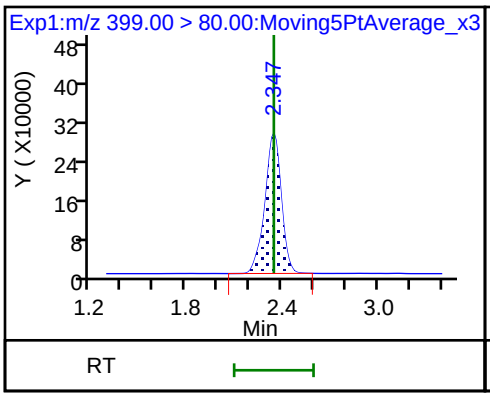
10 Perfluoroheptanoic acid



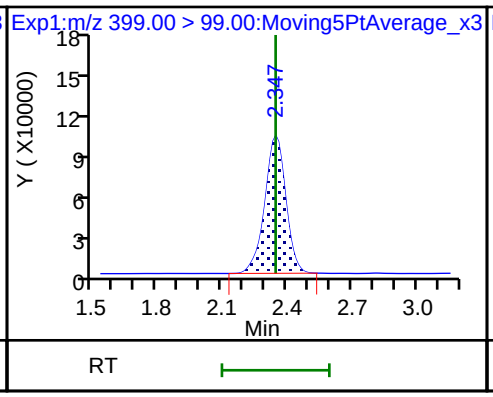
10 Perfluoroheptanoic acid



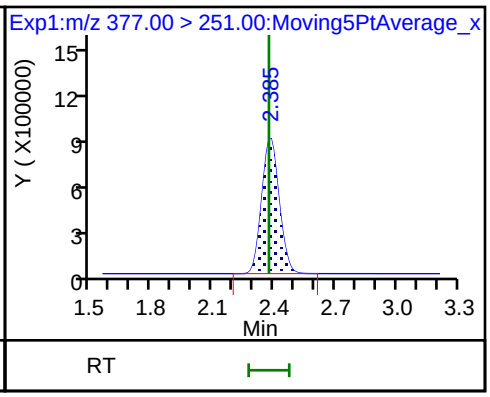
8 Perfluorohexanesulfonic acid



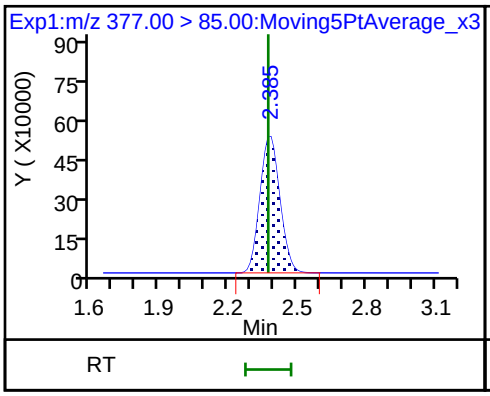
8 Perfluorohexanesulfonic acid



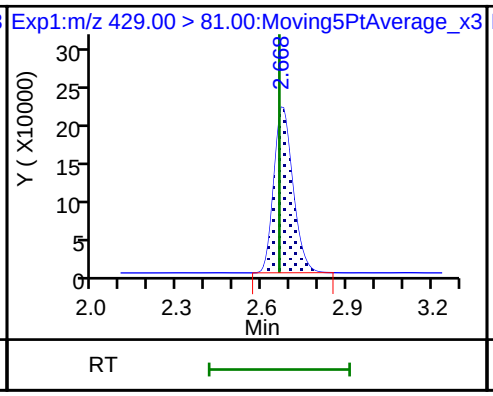
65 Adona



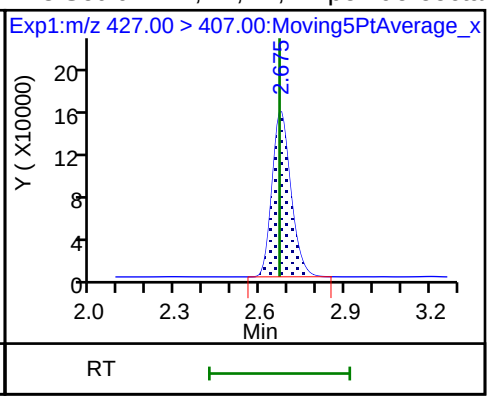
65 Adona



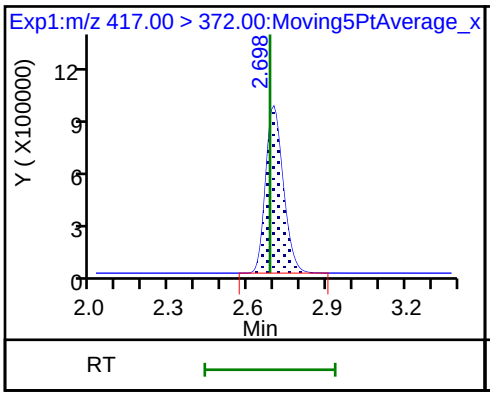
D 12 M2-6:2FTS



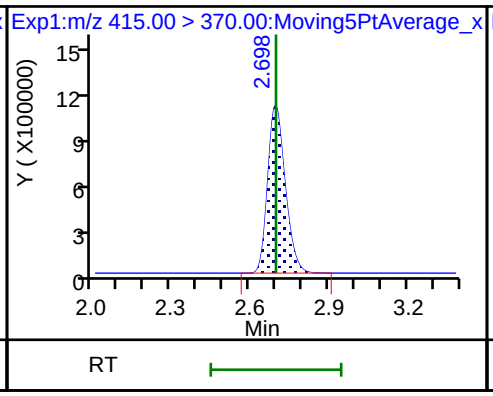
13 Sodium 1H,1H,2H,2H-perfluorooctane



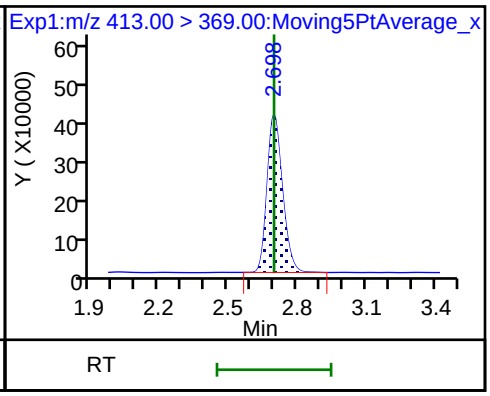
D 14 13C4 PFOA



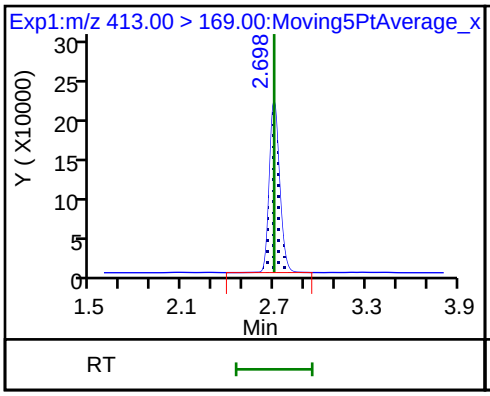
* 62 13C2-PFOA



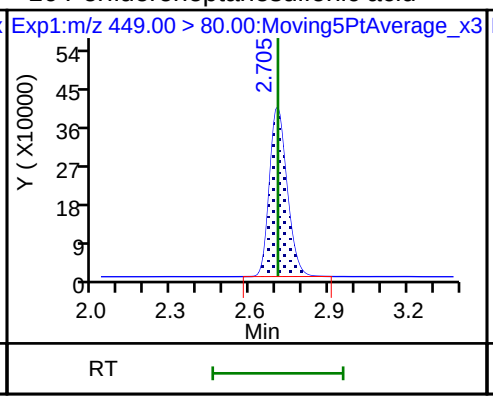
15 Perfluorooctanoic acid



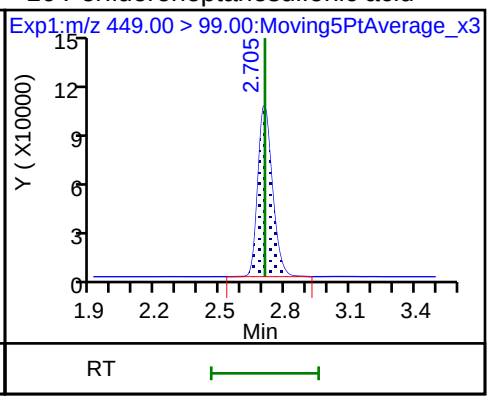
15 Perfluorooctanoic acid



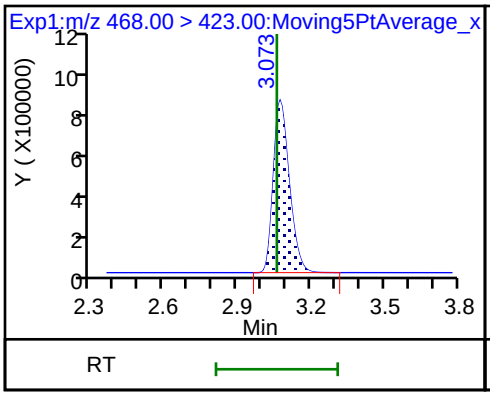
16 Perfluoroheptanesulfonic acid



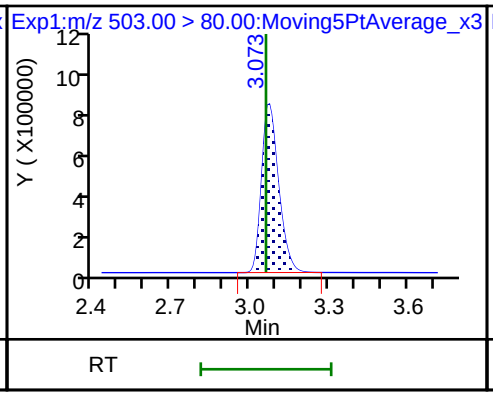
16 Perfluoroheptanesulfonic acid



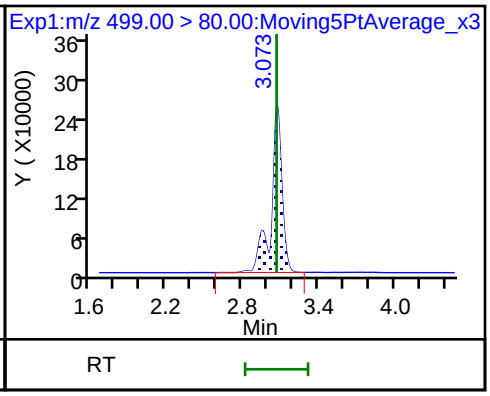
D 19 13C5 PFNA



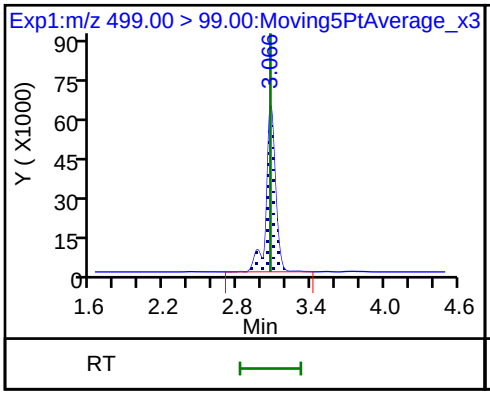
D 18 13C4 PFOS



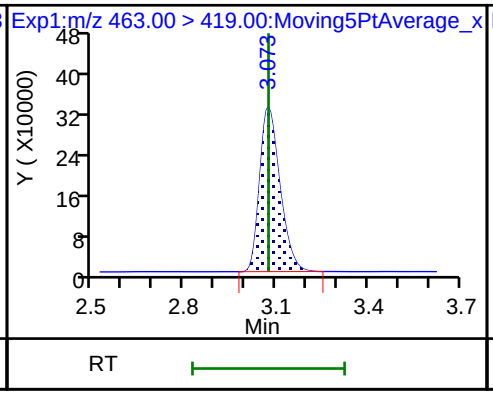
17 Perfluorooctane sulfonic acid



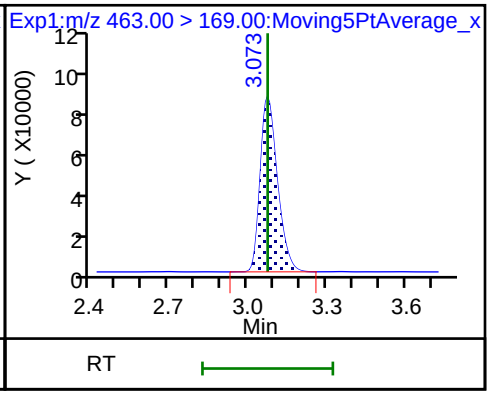
17 Perfluorooctane sulfonic acid



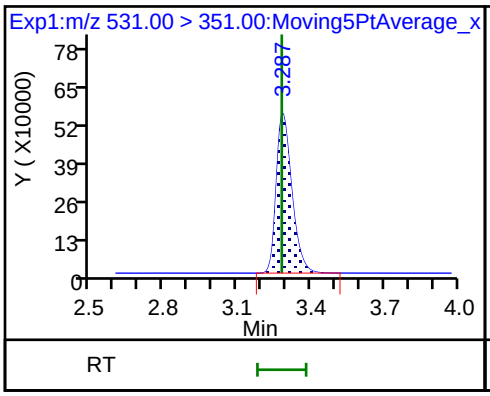
20 Perfluorononanoic acid



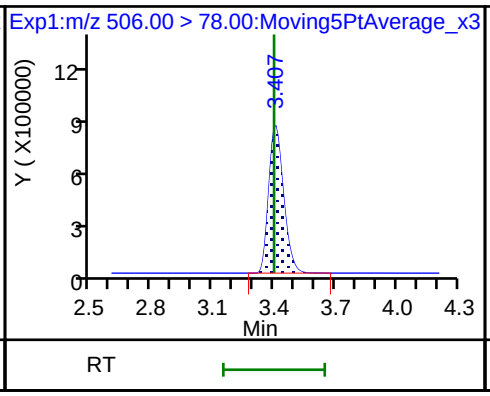
20 Perfluorononanoic acid



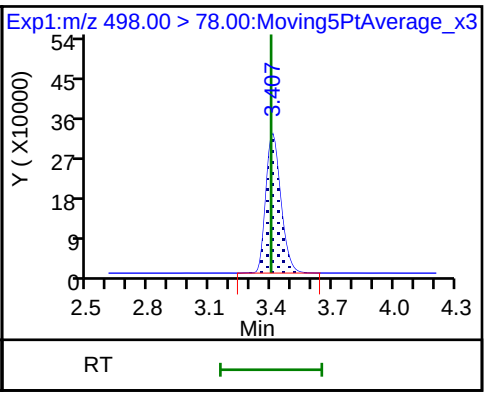
69 9-Chlorohexadecafluoro-3-oxanonane



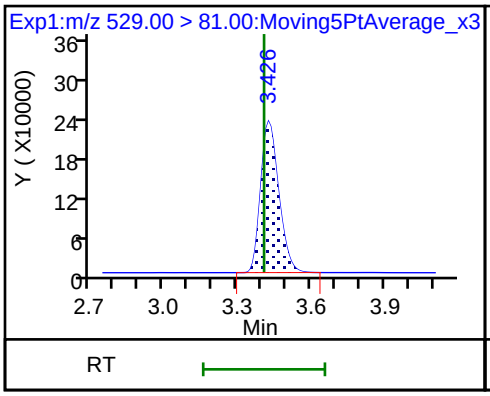
D 21 13C8 FOSA



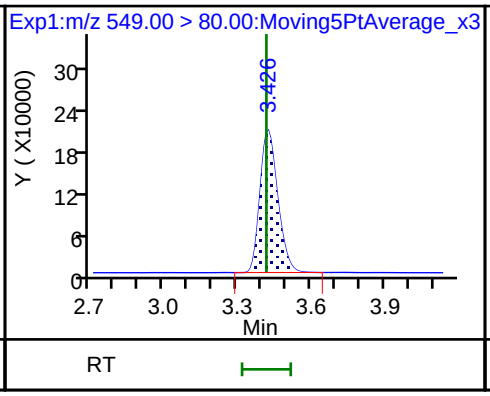
22 Perfluorooctane Sulfonamide



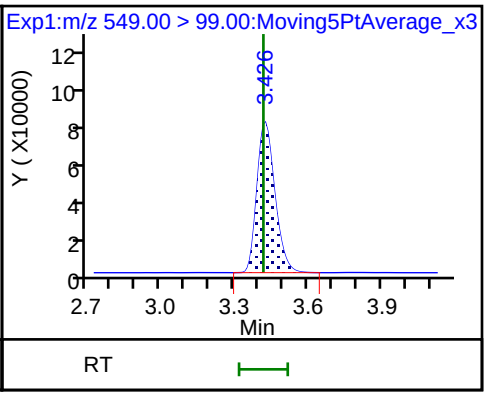
D 26 M2-8:2FTS



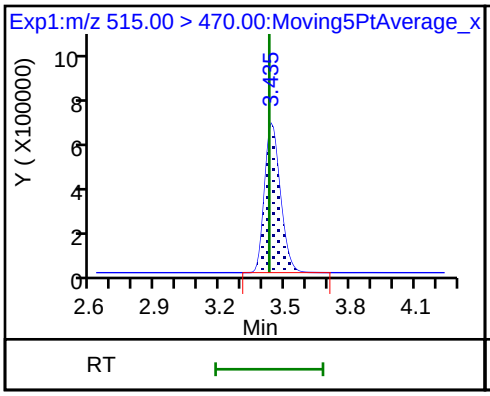
68 Perfluorononanesulfonic acid



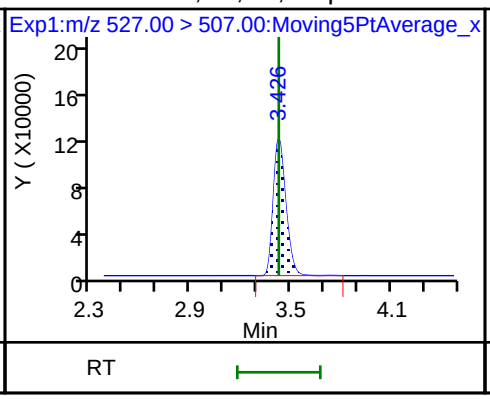
68 Perfluorononanesulfonic acid



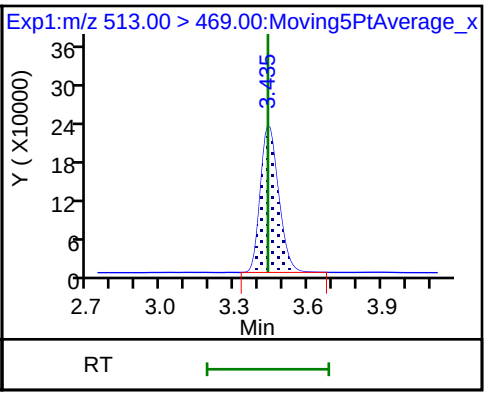
D 23 13C2 PFDA



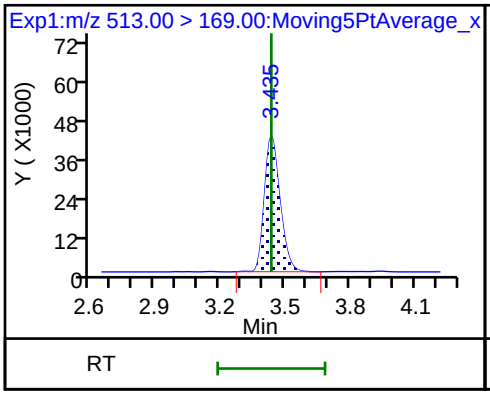
25 Sodium 1H,1H,2H,2H-perfluorodecane



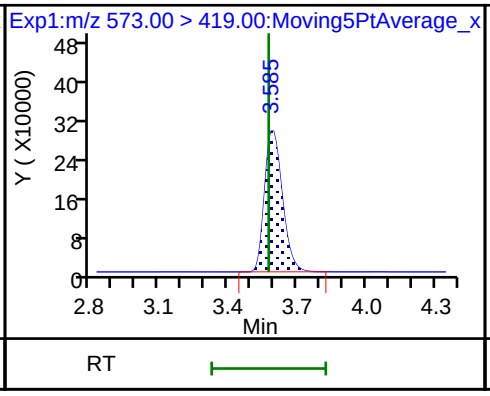
24 Perfluorodecanoic acid



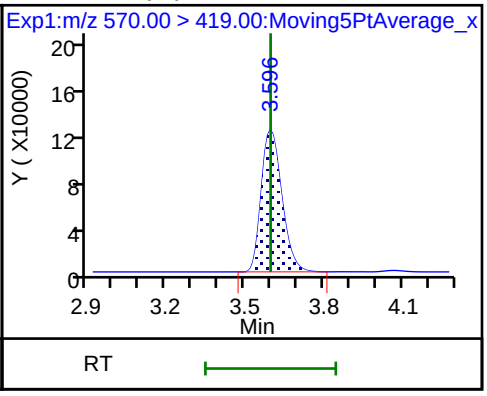
24 Perfluorodecanoic acid



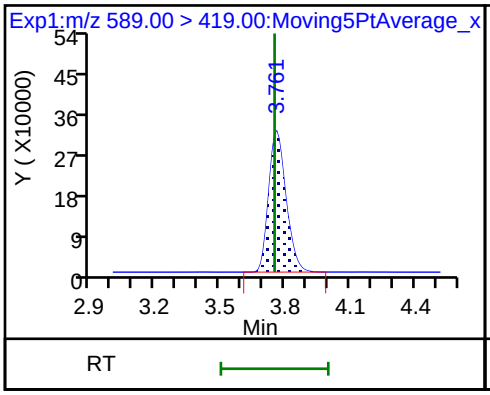
D 27 d3-NMeFOSAA



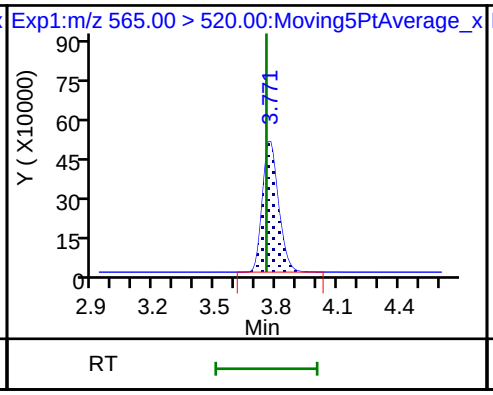
28 N-methyl perfluorooctane sulfonami



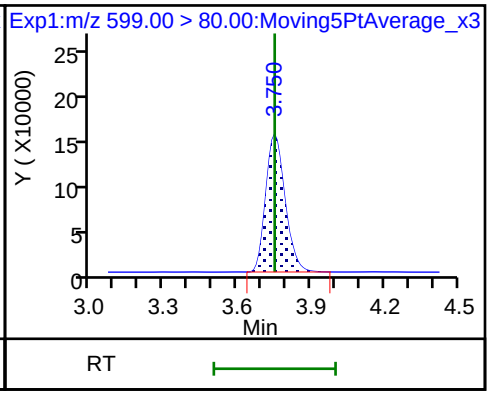
D 32 d5-NEtFOSAA



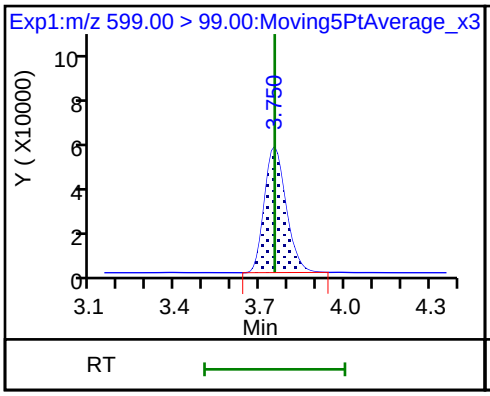
D 30 13C2 PFUnA



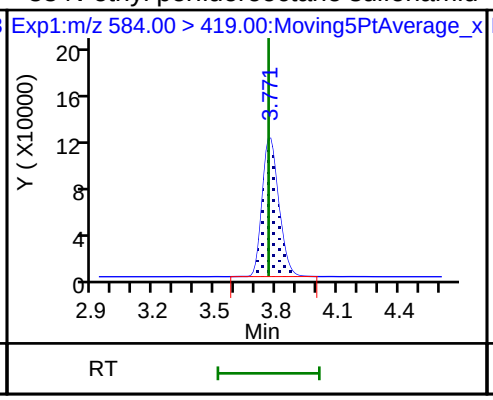
29 Perfluorodecane Sulfonic acid



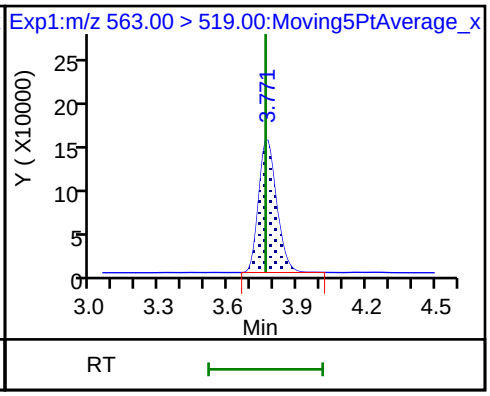
29 Perfluorodecane Sulfonic acid



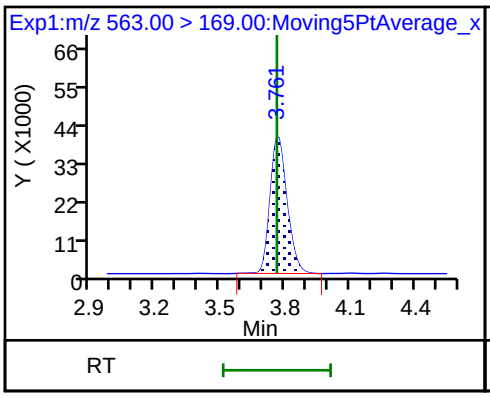
33 N-ethyl perfluorooctane sulfonamid



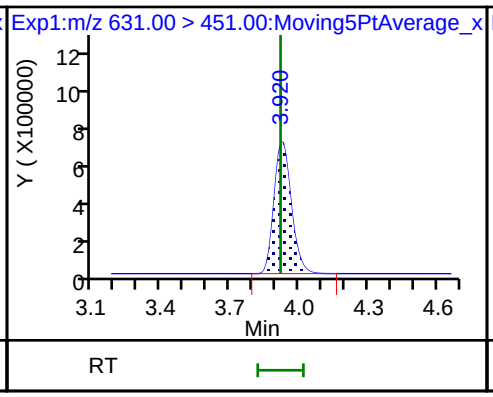
31 Perfluoroundecanoic acid



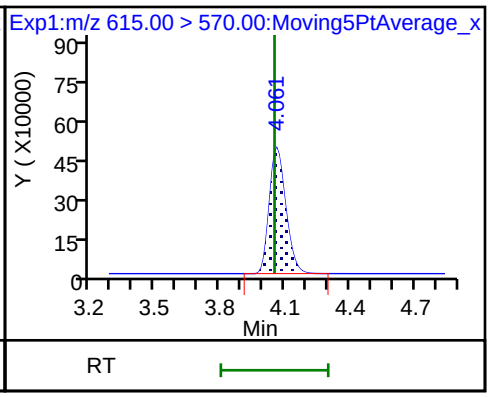
31 Perfluoroundecanoic acid



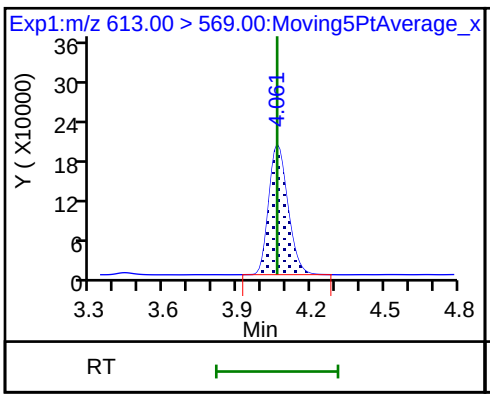
66 11-Chloroeicosafluoro-3-oxaundecan



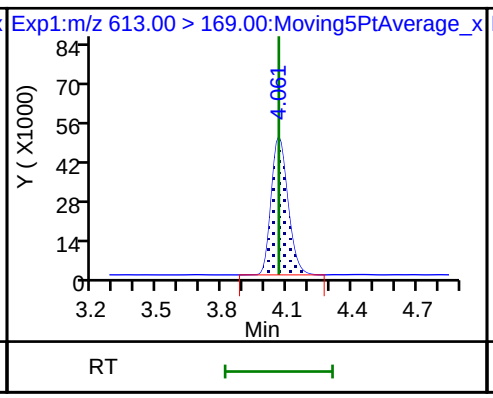
D 36 13C2 PFDoA



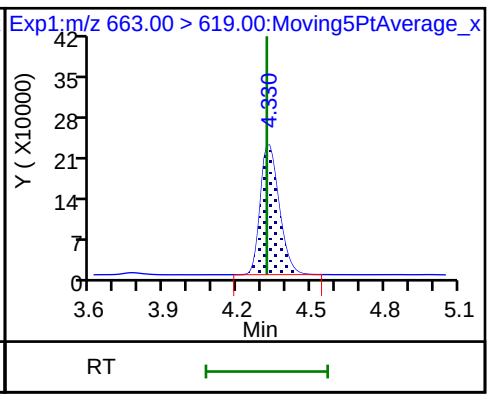
37 Perfluorododecanoic acid



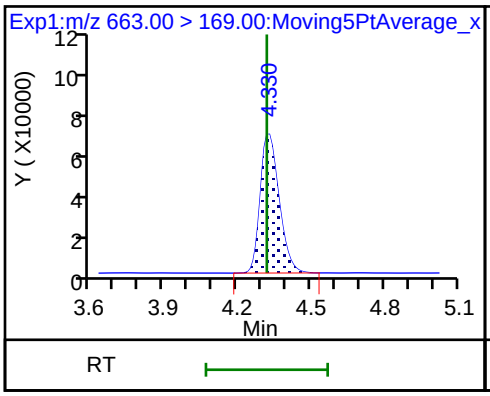
37 Perfluorododecanoic acid



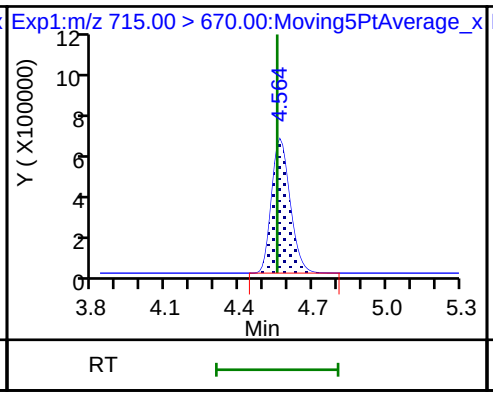
41 Perfluorotridecanoic acid



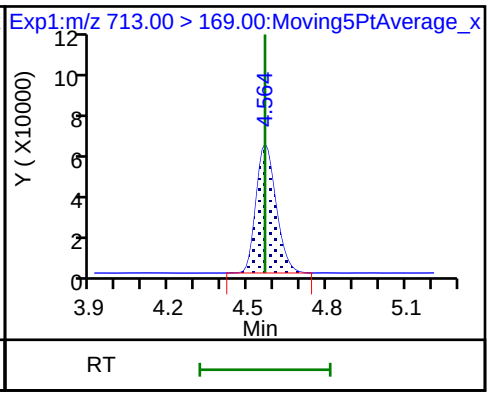
41 Perfluorotridecanoic acid



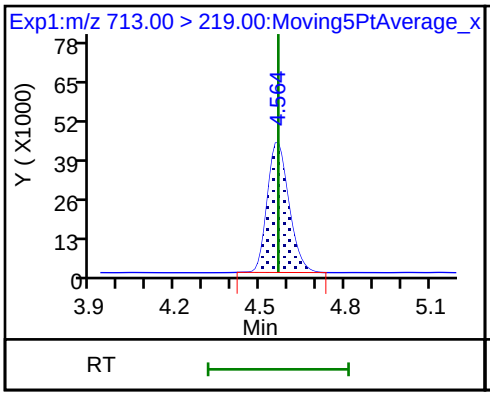
D 43 13C2-PFTeDA



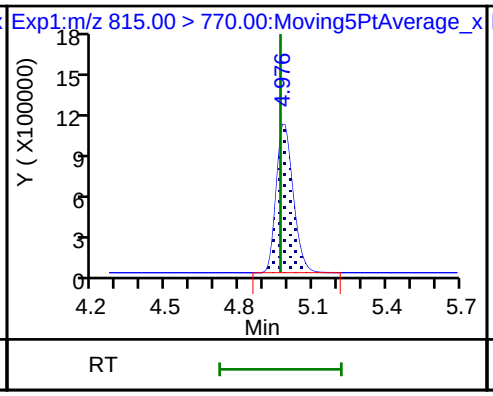
42 Perfluorotetradecanoic acid



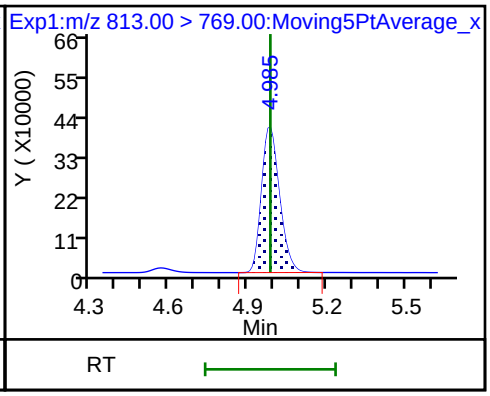
42 Perfluorotetradecanoic acid



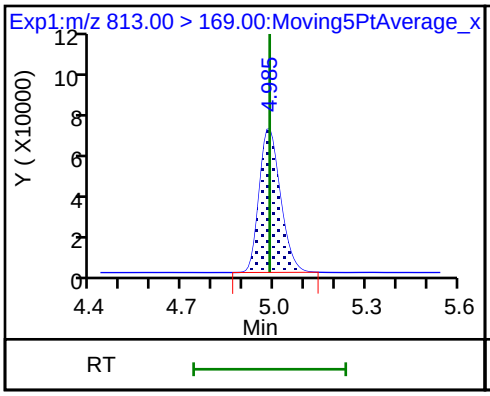
D 44 13C2-PFHxDA



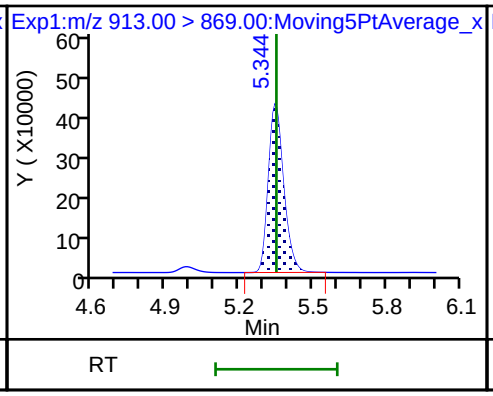
45 Perfluorohexadecanoic acid



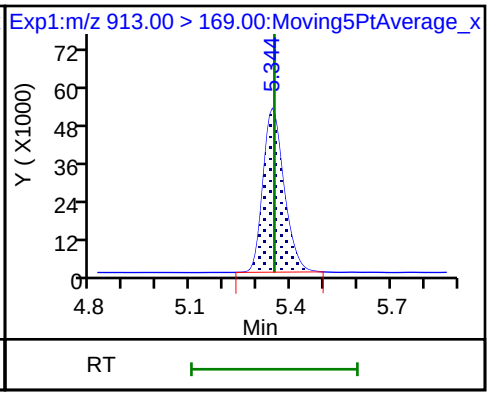
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB031(0-2) MS | Lab Sample ID: 320-38061-1 MS

Matrix: Solid | Lab File ID: 2018.04.20LLC_027.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.04(g) | Date Analyzed: 04/21/2018 10:21

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00210		0.00021	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00200		0.00021	0.000082
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00221		0.00021	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00221		0.00021	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.00202		0.00021	0.000091
375-95-1	Perfluorononanoic acid (PFNA)	0.00191		0.00021	0.000038
335-76-2	Perfluorodecanoic acid (PFDA)	0.00183		0.00021	0.000023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00218		0.00021	0.000038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00210		0.00021	0.000071
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00252		0.00021	0.000054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00200		0.00021	0.000057
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00171		0.00021	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00192		0.00021	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00182		0.00021	0.000037
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00530		0.00053	0.00021
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00177		0.00021	0.000041
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00212		0.00021	0.000087
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00195	J	0.0021	0.00041
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00204	J	0.0021	0.00039
27619-97-2	6:2FTS	0.00187	J	0.0021	0.00016
39108-34-4	8:2FTS	0.00187	J	0.0021	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB031(0-2) MS | Lab Sample ID: 320-38061-1 MS

Matrix: Solid | Lab File ID: 2018.04.20LLC_027.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.04(g) | Date Analyzed: 04/21/2018 10:21

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	90		25-150
STL01892	13C4-PFHpA	101		25-150
STL00990	13C4 PFOA	106		25-150
STL00995	13C5 PFNA	113		25-150
STL00996	13C2 PFDA	121		25-150
STL00997	13C2 PFUnA	113		25-150
STL00998	13C2 PFDoA	100		25-150
STL02116	13C2-PFTeDA	99		25-150
STL02337	13C3-PFBS	97		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	105		25-150
STL02118	d3-NMeFOSAA	148		25-150
STL02117	d5-NEtFOSAA	141		25-150
STL02279	M2-6:2FTS	214	*	25-150
STL02280	M2-8:2FTS	245	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d
Lims ID: 320-38061-A-1-B MS
Client ID:
Sample Type: MS
Inject. Date: 21-Apr-2018 10:21:21 ALS Bottle#: 19 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-1-b ms
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:25:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.439	1.441	-0.002	1.000	6044594	2.35		93.9	40143	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.445	1.441	0.004	1.004	2210889	0.9848		98.5	573	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.701	-0.002	0.556	4173968	2.52		101	53417	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.703	-0.004	1.000	1866679	0.9381		93.8	1021	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.738	-0.003	1.000	86239	2.27		97.4	278	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.739	-0.004	1.000	2336977	0.8048		91.0	4865	
298.90 > 99.00	1.735	1.739	-0.004	1.000	978429		2.39(1.25-3.74)		1712	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.945	1.947	-0.002	1.000	1890688	3.18		340	4287	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.980	0.008	1.000	4124488	2.25		89.9	86137	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.990	-0.002	1.000	1740282	1.04		104	1370	
313.00 > 119.00	1.988	1.990	-0.002	1.000	157533		11.05(5.03-15.10)		1192	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.001	0.010	1.000	2100584	0.7920		84.4	9568	
349.00 > 99.00	2.000	2.001	-0.001	0.994	769082		2.73(1.36-4.07)		5050	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.092	-0.013	1.000	272795	NR		0.0	1453	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.318	-0.002	1.000	1884376	1.04		104	2107	
363.00 > 169.00	2.316	2.318	-0.002	1.000	738571		2.55(1.13-3.40)		3135	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.319	-0.003	1.000	4525957	2.54		101	70873	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.331	-0.002	1.000	2189171	0.9037		99.3	3426	
399.00 > 99.00	2.329	2.331	-0.002	1.000	734811		2.98(1.50-4.49)		1888	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.332	-0.003	1.000	5062013	2.30		97.1	72575	
65 Adona										
377.00 > 251.00	2.369	2.370	-0.001	1.000	5079644	0.9337		93.4	67694	
377.00 > 85.00	2.369	2.370	-0.001	1.000	3011449		1.69(0.84-2.53)		31971	
D 12 M2-6:2FTS										
429.00 > 81.00	2.651	2.652	-0.001	1.000	1944295	5.08		214	8628	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.651	2.658	-0.007	1.000	1218203	0.8802		92.9	3820	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4782279	2.50			91299	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	2063488	0.9499		95.0	1756	
413.00 > 169.00	2.681	2.681	0.0	1.000	1105129		1.87(0.84-2.52)		3510	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.682	-0.001	1.000	4700184	2.65		106	90826	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.681	2.688	-0.007	1.000	1781397	0.8543		89.7	6885	
449.00 > 99.00	2.689	2.688	0.001	1.003	466425		3.82(1.94-5.82)		3248	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.050	3.054	-0.004	1.000	4255306	2.49		268	8242	M
499.00 > 99.00	3.050	3.054	-0.004	1.000	958312		4.44(2.31-6.93)		6578	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.054	0.003	1.000	1623401	0.8994		89.9	5456	
463.00 > 169.00	3.057	3.054	0.003	1.000	409542		3.96(1.90-5.69)		4054	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.055	0.002	1.000	4327460	2.84		113	74194	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.055	-0.005	1.000	3753561	2.43		102	16335	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.264	3.268	-0.004	1.000	2477531	0.8368		89.8	43713	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.391	0.004	1.000	2038182	1.00		99.7	1902	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.393	0.002	1.000	5051243	2.62		105	58906	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.400	0.004	1.000	1065096	0.8484		88.4	1131	
549.00 > 99.00	3.404	3.400	0.004	1.000	396424		2.69(1.33-3.97)		2207	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.410	0.004	1.000	1255726	0.8774		91.6	41108	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.411	0.003	1.000	2708786	5.88		245	14049	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.419	0.004	1.003	1383035	0.8612		86.1	4073	
513.00 > 169.00	3.423	3.419	0.004	1.003	243170		5.69(2.36-7.09)		2282	
D 23 13C2 PFDA										
515.00 > 470.00	3.414	3.420	-0.006	1.000	3891773	3.04		121	78004	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.569	0.003	1.000	2681144	3.69		148	36644	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.572	3.577	-0.005	1.000	979871	0.9161		91.6	6086	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.727	3.732	-0.005	1.000	846245	0.8299		86.1	1546	
599.00 > 99.00	3.737	3.732	0.005	1.003	286686		2.95(1.39-4.16)		3166	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.743	-0.006	1.000	2524778	3.52		141	35559	
31 Perfluoroundecanoic acid										Ma
563.00 > 519.00	3.748	3.753	-0.005	1.000	1080757	1.02		102	261	a
563.00 > 169.00	3.705	3.753	-0.048	0.989	269527		4.01(2.12-6.36)		52.0	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.748	3.753	-0.005	1.003	902950	0.9568		95.7	18316	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.754	-0.006	1.000	3125536	2.83		113	64863	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.904	3.911	-0.007	1.000	3526001	0.7709		81.8	52484	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.042	0.005	1.000	1228103	0.9886		98.9	1098	
613.00 > 169.00	4.047	4.042	0.005	1.000	344177		3.57(2.13-6.40)		2114	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.042	0.005	1.000	2977934	2.49		99.8	38161	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.306	4.301	0.005	1.000	1717535	1.19		119	275	M
663.00 > 169.00	4.289	4.301	-0.012	0.996	476872		3.60(1.25-3.76)		81.2	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.542	4.547	-0.005	1.000	351330	0.9378		93.8	3135	
713.00 > 219.00	4.542	4.547	-0.005	1.000	259030		1.36(0.71-2.13)		2598	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.548	-0.006	1.000	3729154	2.46		98.5	31232	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.961	0.004	1.002	2203922	0.9210		92.1	909	
813.00 > 169.00	4.957	4.961	-0.004	1.000	369971		5.96(2.86-8.58)		1983	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.957	4.961	-0.004	1.000	6168335	2.50		100	16911	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.321	5.324	-0.003	1.000	2373750	0.9582		95.8	784	
913.00 > 169.00	5.321	5.324	-0.003	1.000	305448		7.77(3.83-11.48)		2091	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 24-Apr-2018 16:42:03 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d

Injection Date: 21-Apr-2018 10:21:21 Instrument ID: A8_N

Lims ID: 320-38061-A-1-B MS

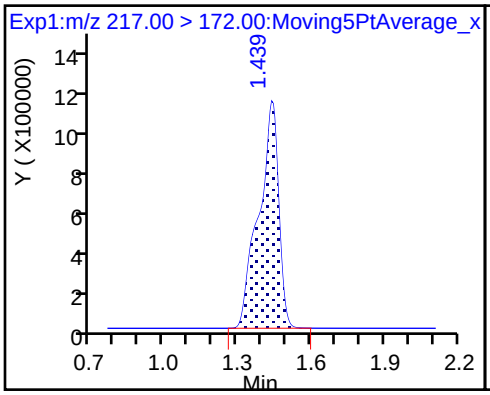
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 5

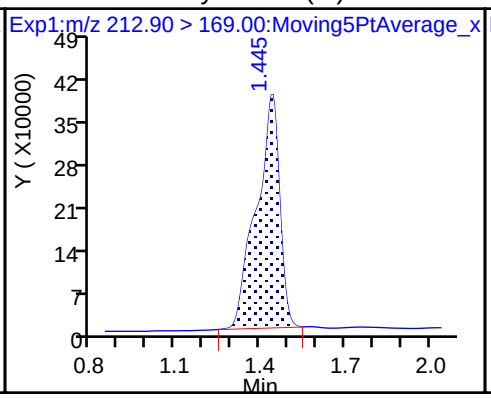
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

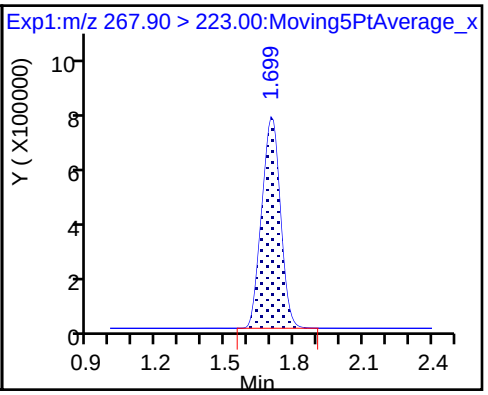
D 1 13C4 PFBA



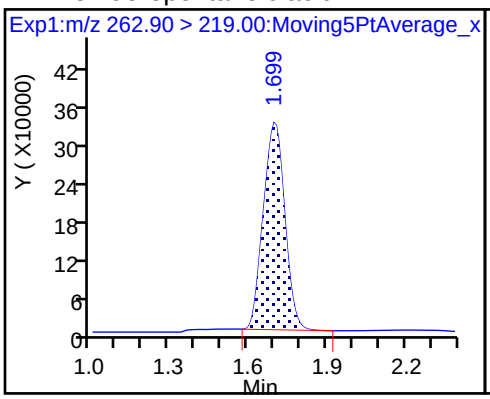
2 Perfluorobutyric acid (M)



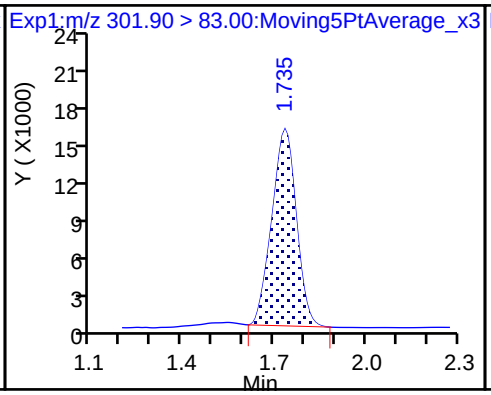
D 3 13C5-PFPeA



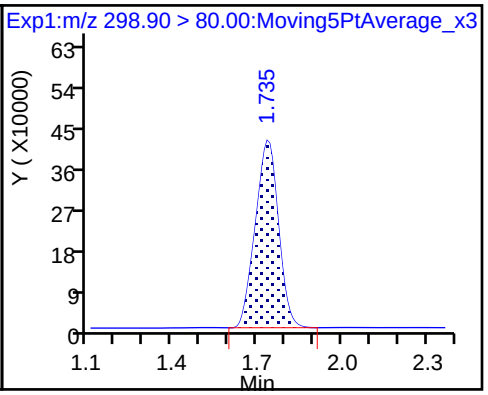
4 Perfluoropentanoic acid



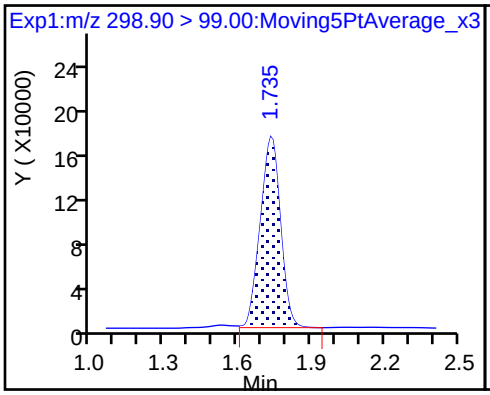
D 47 13C3-PFBS



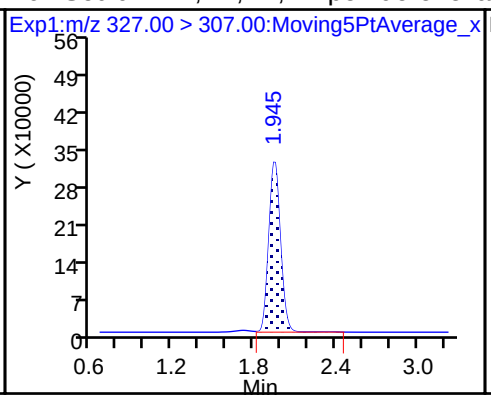
5 Perfluorobutanesulfonic acid



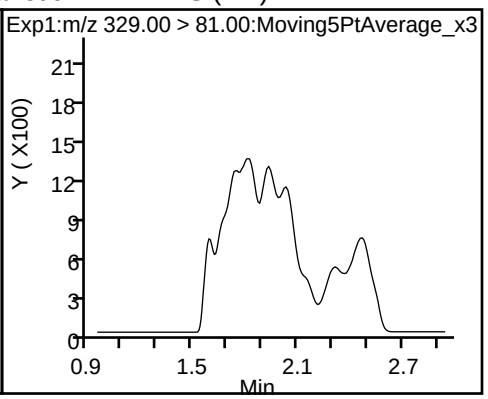
5 Perfluorobutanesulfonic acid



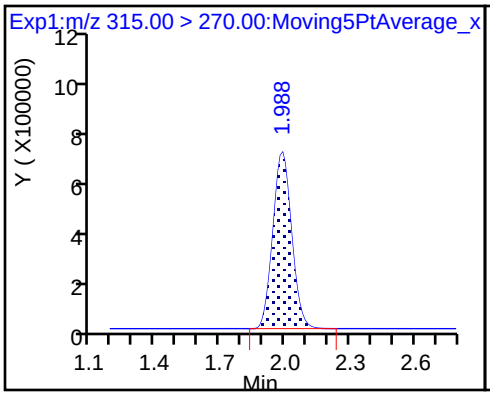
61 Sodium 1H,1H,2H,2H-perfluorohexa



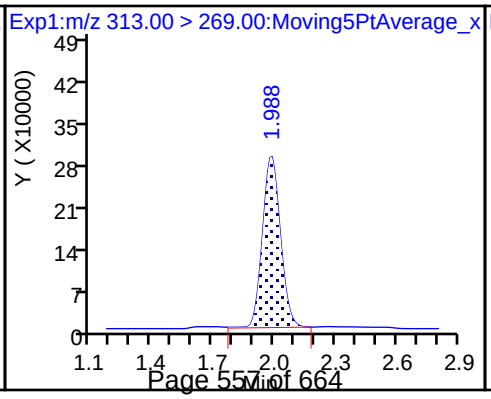
D 60 M2-4:2FTS (ND)



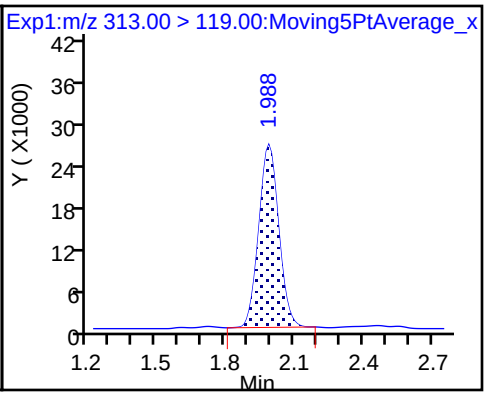
D 7 13C2 PFHxA



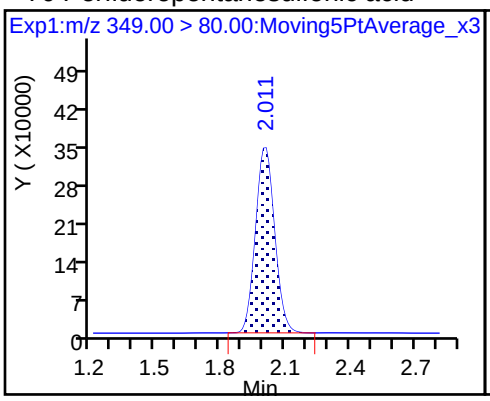
6 Perfluorohexanoic acid



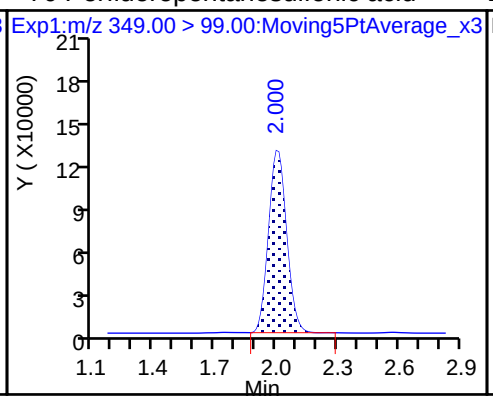
6 Perfluorohexanoic acid



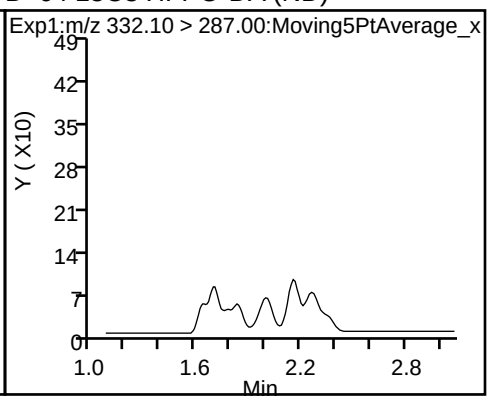
70 Perfluoropentanesulfonic acid



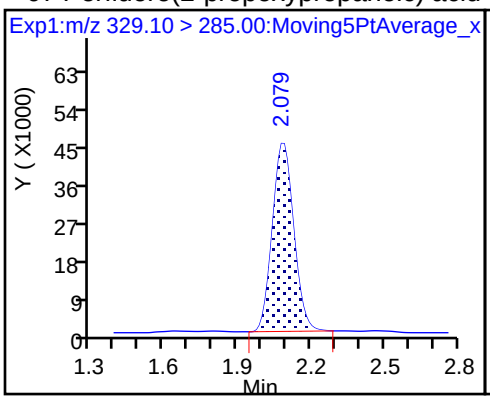
70 Perfluoropentanesulfonic acid



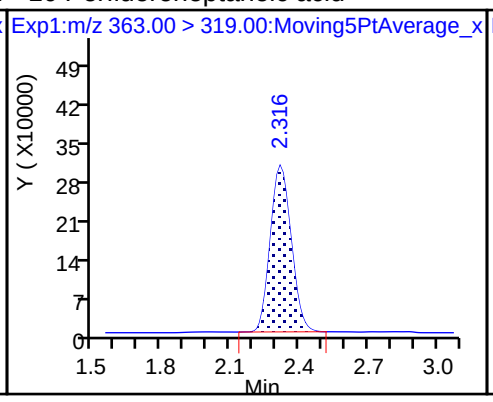
D 64 13C3 HFPO-DA (ND)



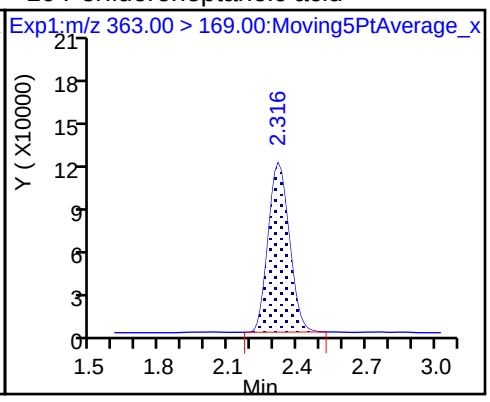
67 Perfluoro(2-propoxypropanoic) acid



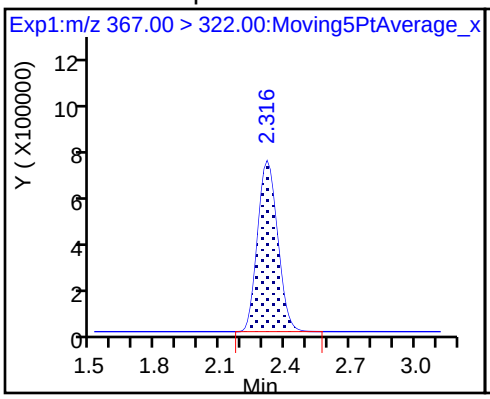
10 Perfluoroheptanoic acid



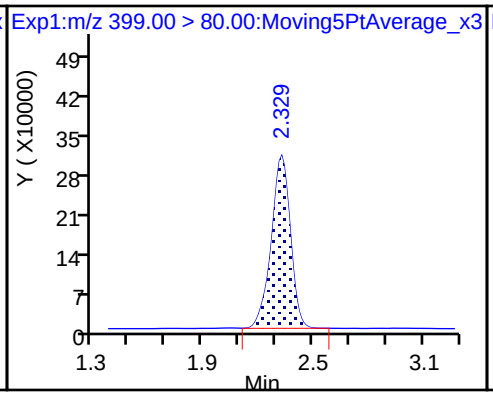
10 Perfluoroheptanoic acid



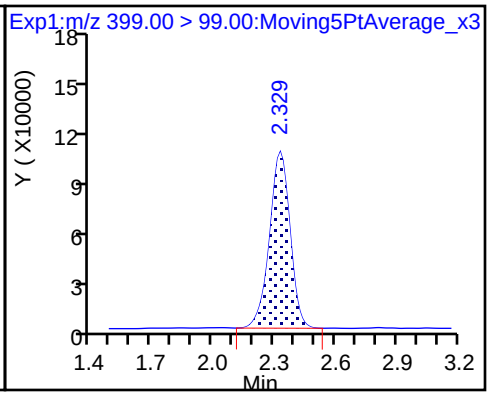
D 9 13C4-PFHpA



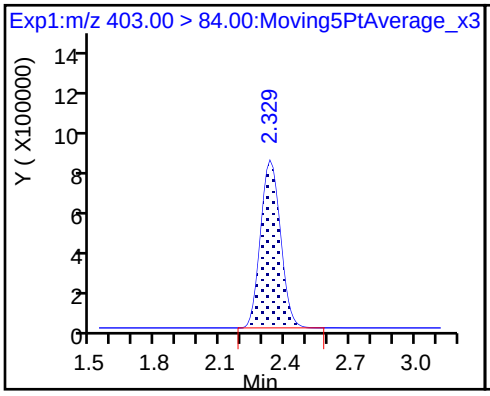
8 Perfluorohexanesulfonic acid



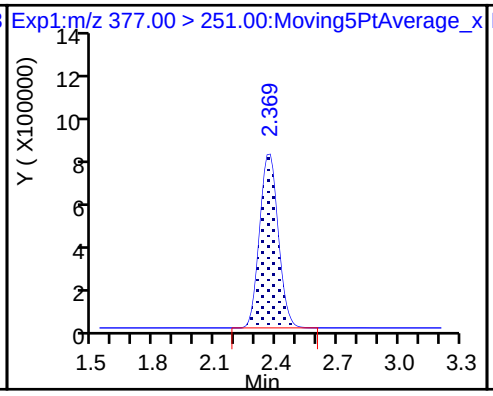
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS



65 Adona



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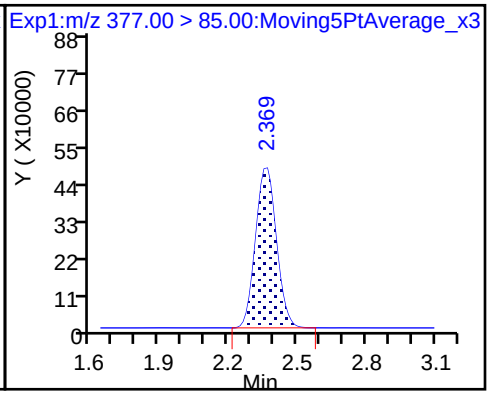
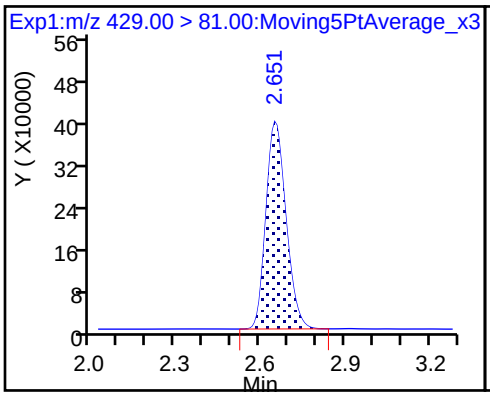
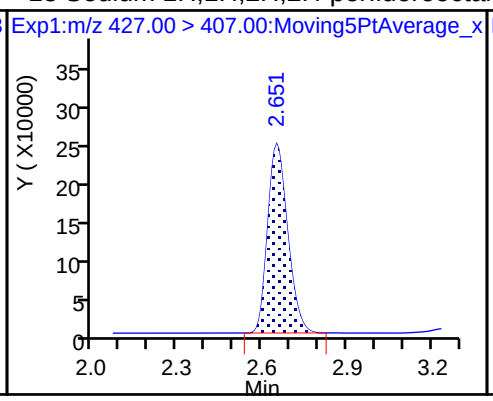


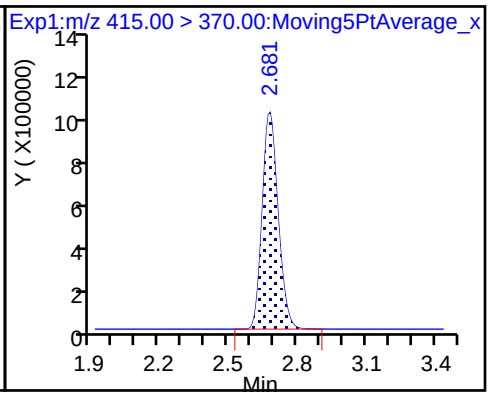
D 12 M2-6:2FTS



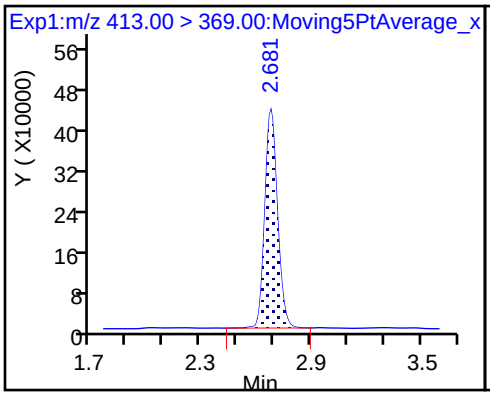
13 Sodium 1H,1H,2H,2H-perfluorooctane



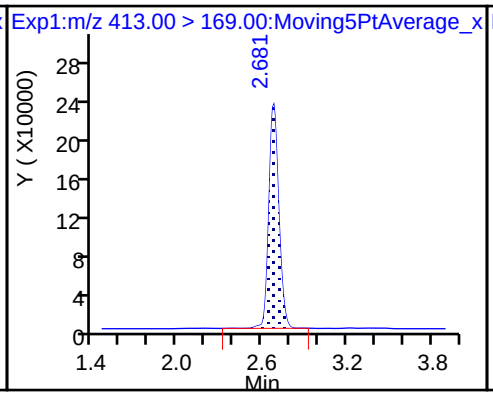
M62 13C2-PFOA



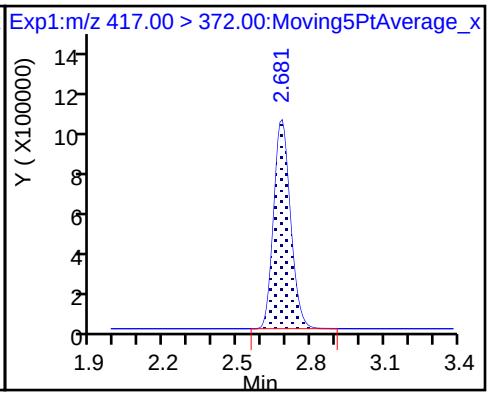
15 Perfluorooctanoic acid



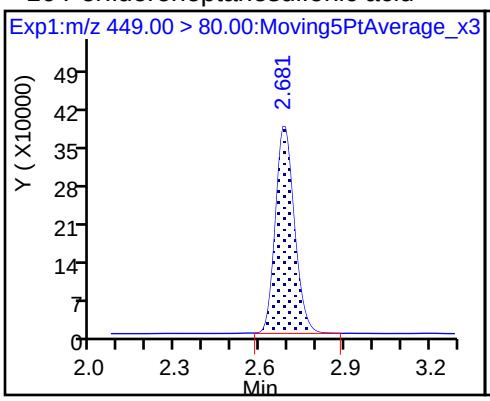
15 Perfluorooctanoic acid



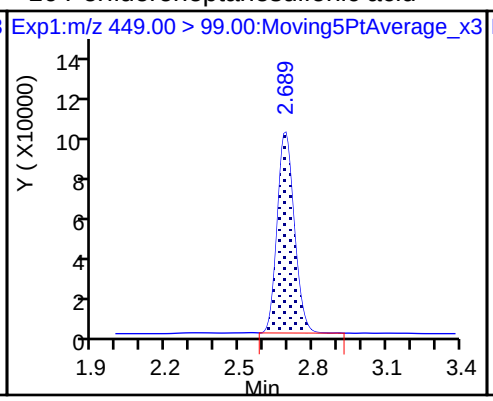
D 14 13C4 PFOA



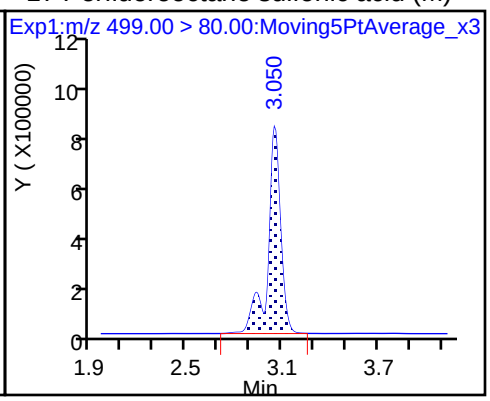
16 Perfluoroheptanesulfonic acid



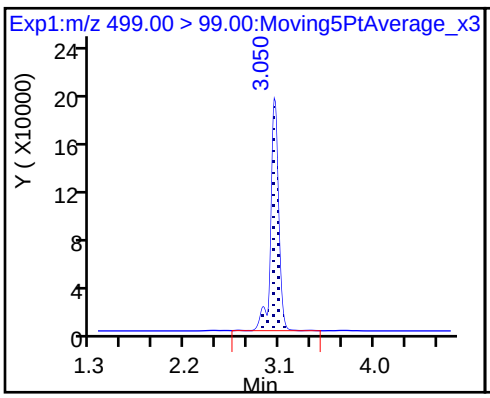
16 Perfluoroheptanesulfonic acid



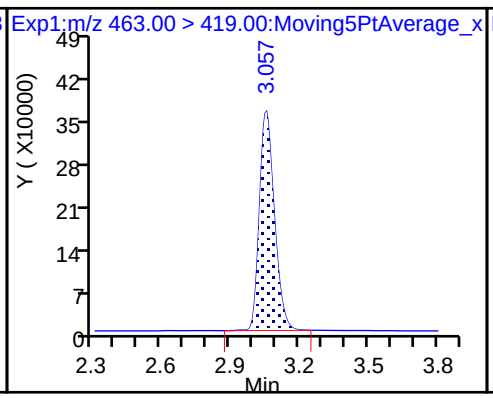
17 Perfluorooctane sulfonic acid (M)



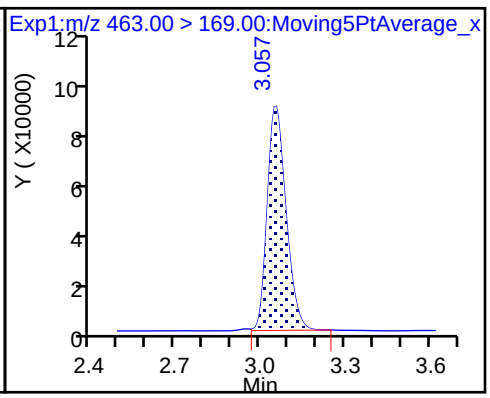
17 Perfluorooctane sulfonic acid



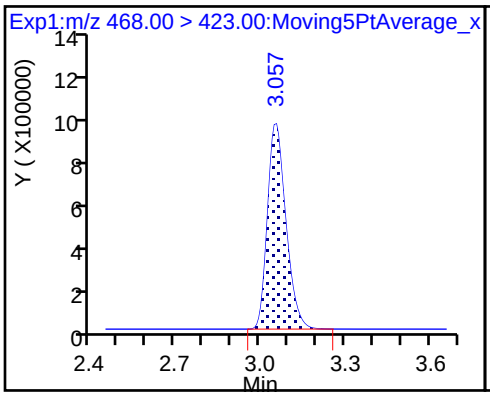
20 Perfluorononanoic acid



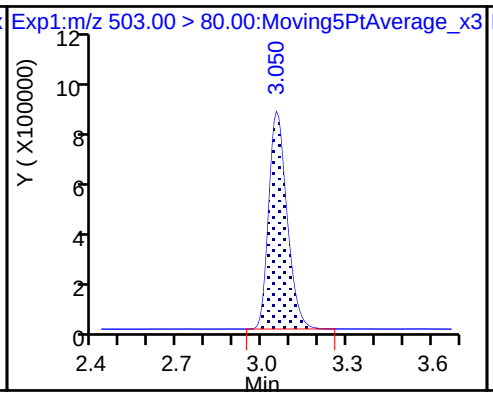
20 Perfluorononanoic acid



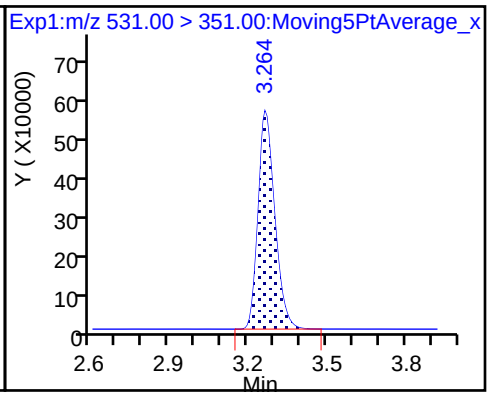
D 19 13C5 PFNA



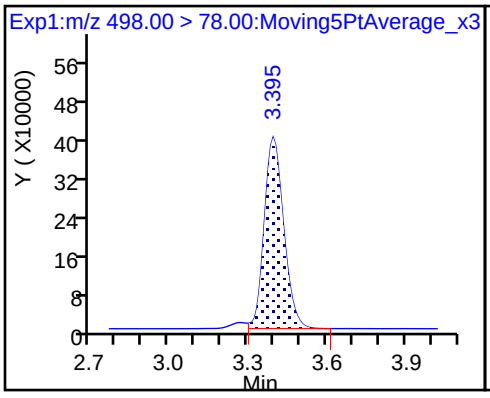
D 18 13C4 PFOS



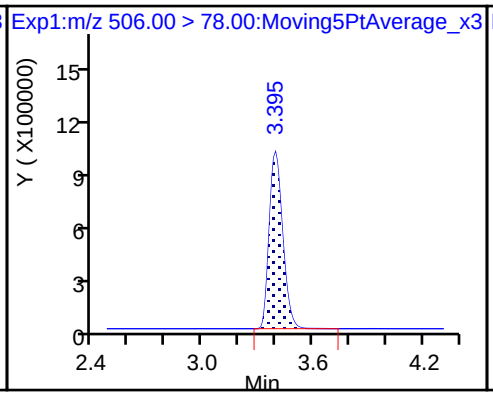
69 9-Chlorohexadecafluoro-3-oxanonane



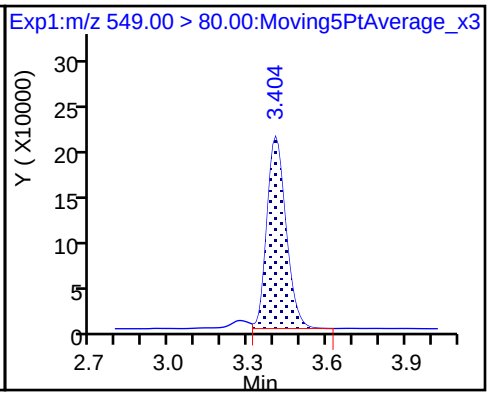
22 Perfluorooctane Sulfonamide



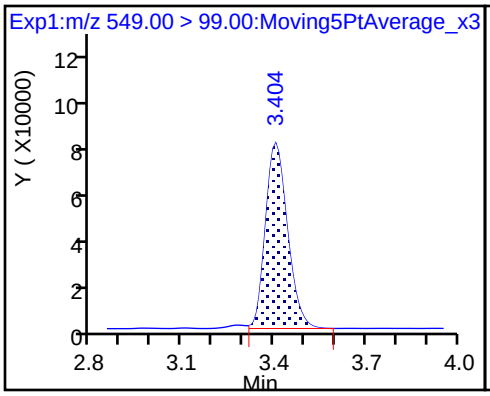
D 21 13C8 FOSA



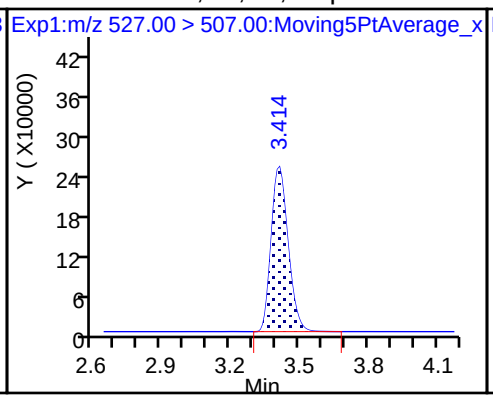
68 Perfluorononanesulfonic acid



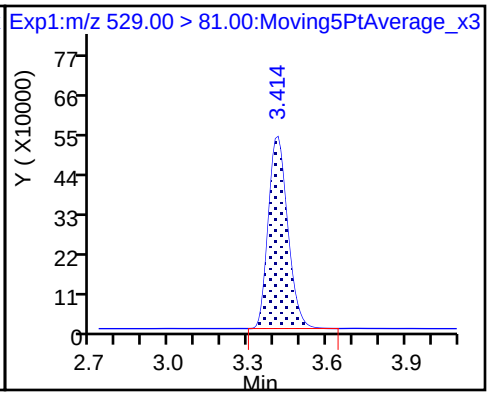
68 Perfluorononanesulfonic acid



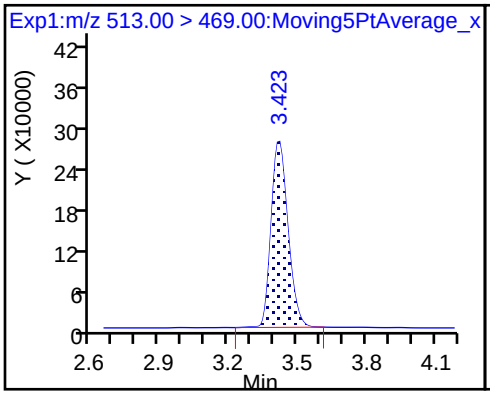
25 Sodium 1H,1H,2H,2H-perfluorodecane



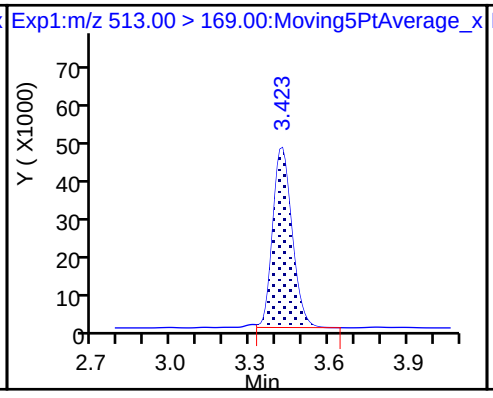
D 26 M2-8:2FTS



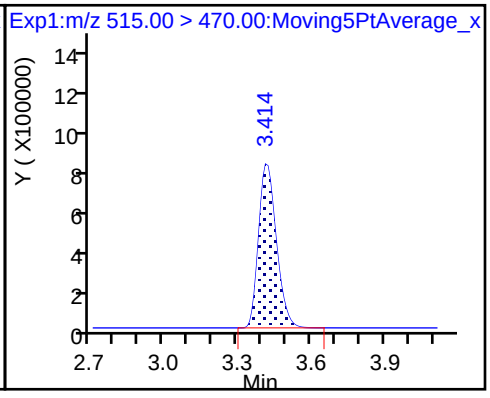
24 Perfluorodecanoic acid



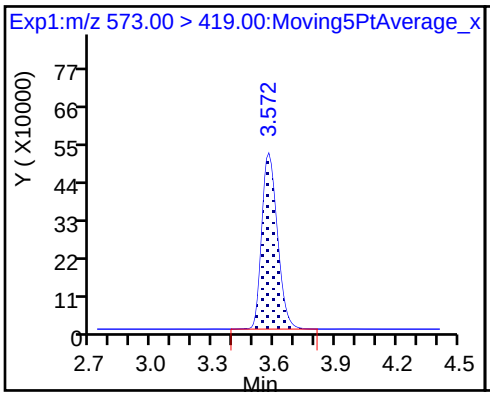
24 Perfluorodecanoic acid



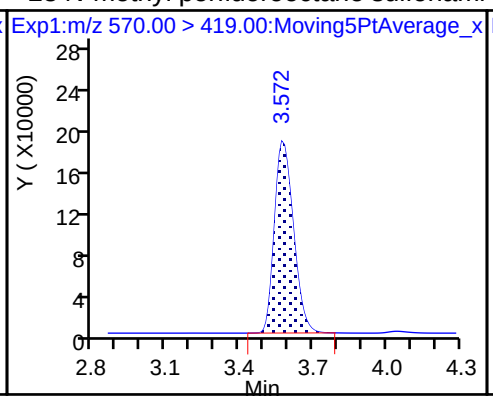
D 23 13C2 PFDA



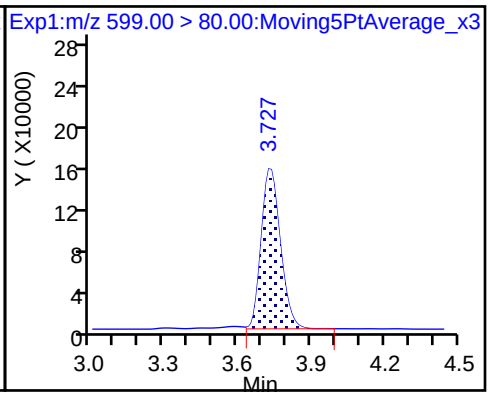
D 27 d3-NMeFOSAA



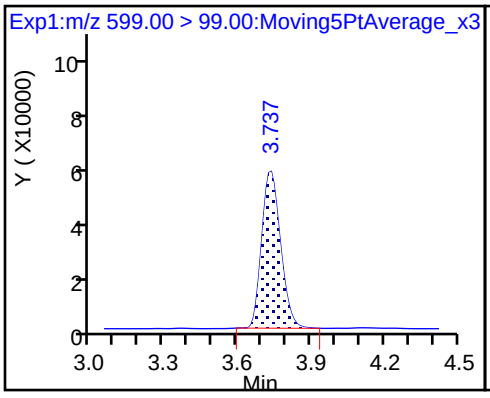
28 N-methyl perfluorooctane sulfonami



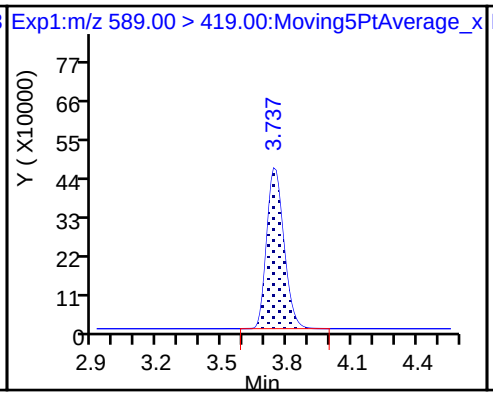
29 Perfluorodecane Sulfonic acid



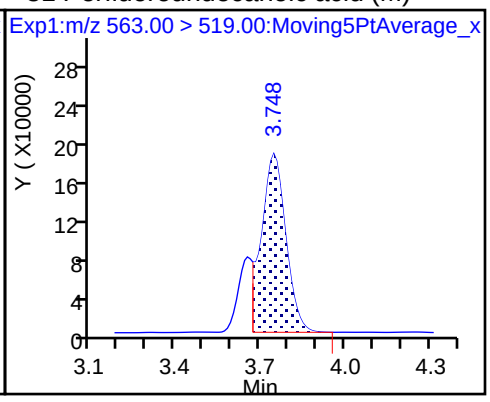
29 Perfluorodecane Sulfonic acid



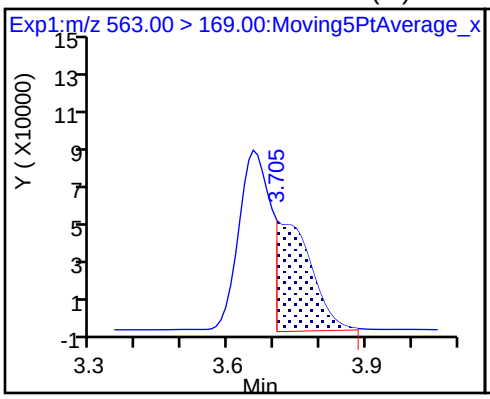
D 32 d5-NEtFOSAA



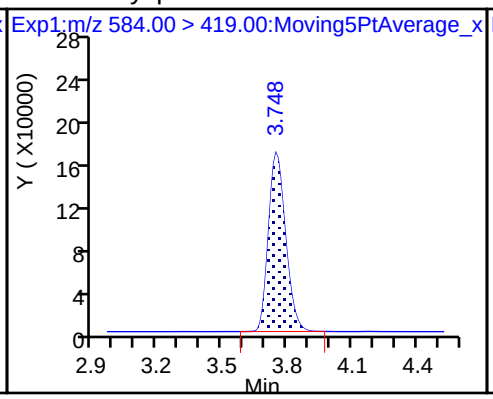
31 Perfluoroundecanoic acid (M)



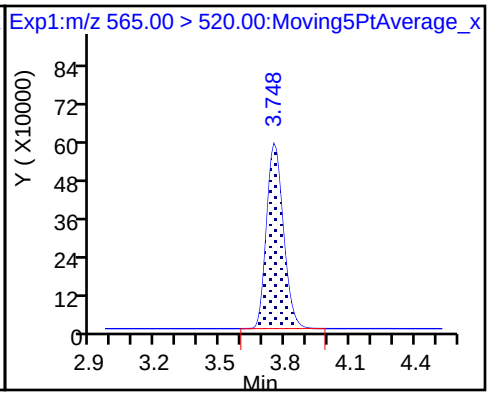
31 Perfluoroundecanoic acid (M)



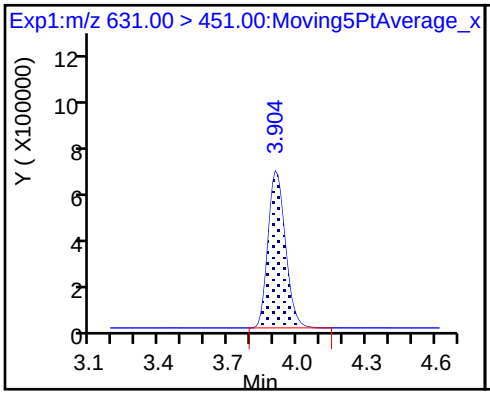
33 N-ethyl perfluorooctane sulfonamid



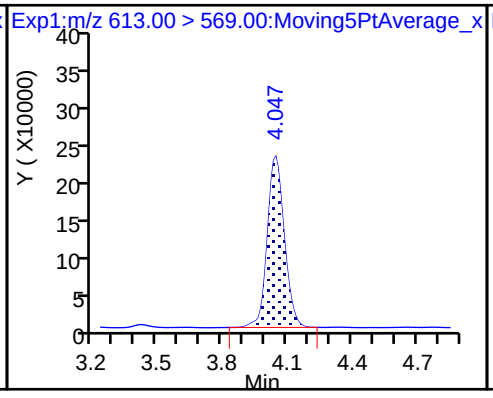
D 30 13C2 PFUnA



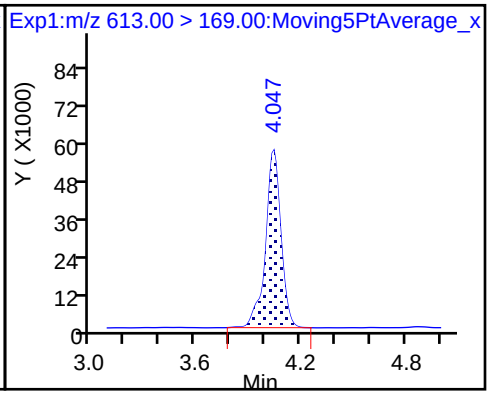
66 11-Chloroeicosafluoro-3-oxaundecan



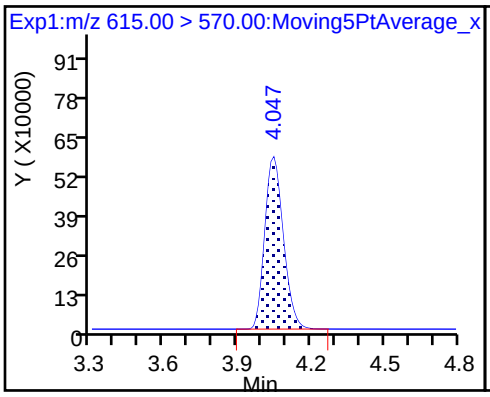
37 Perfluorododecanoic acid



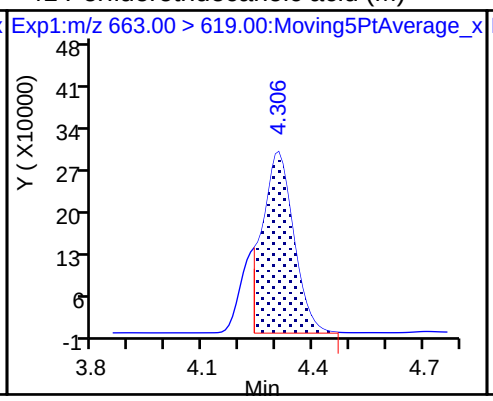
37 Perfluorododecanoic acid



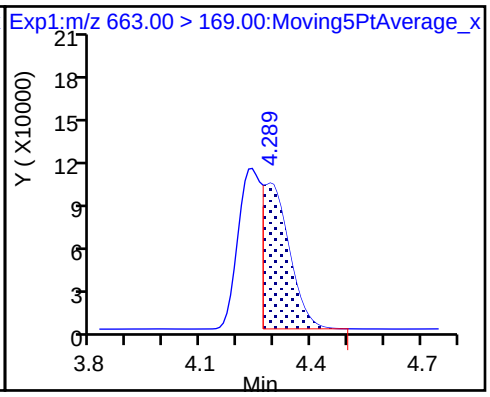
D 36 13C2 PFDoA



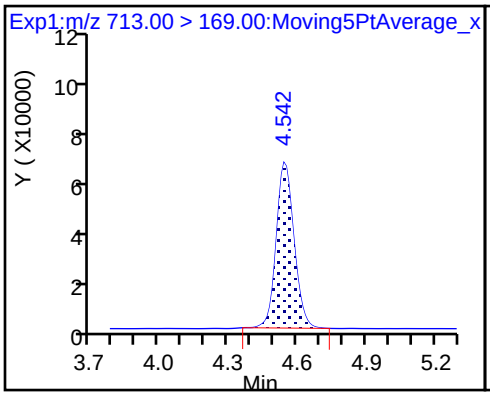
41 Perfluorotridecanoic acid (M)



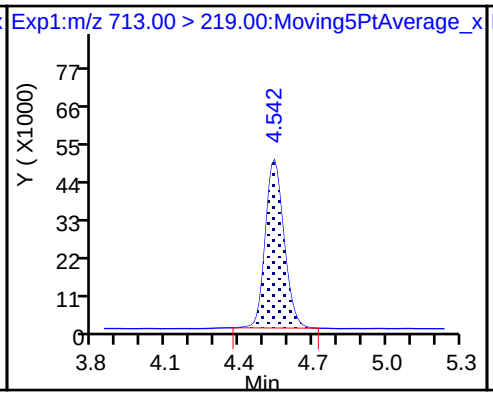
41 Perfluorotridecanoic acid



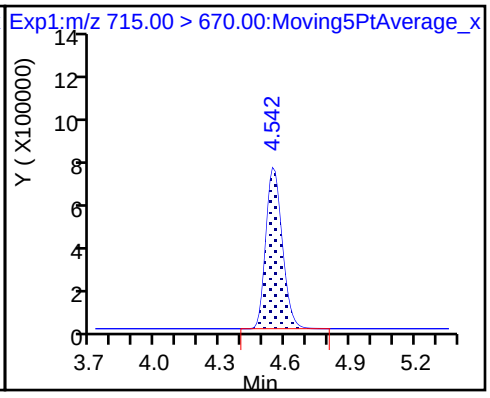
42 Perfluorotetradecanoic acid



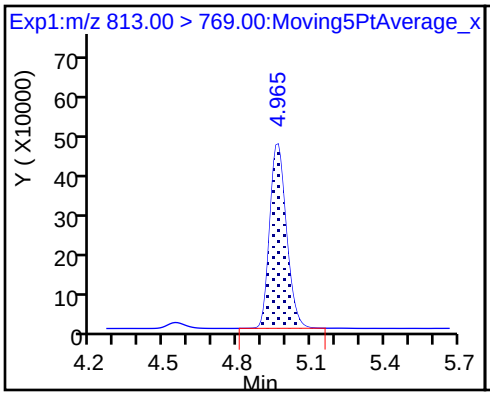
42 Perfluorotetradecanoic acid



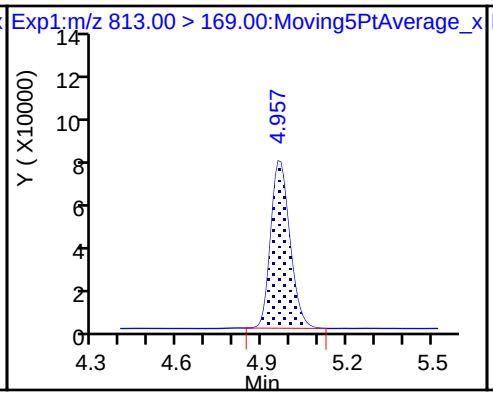
D 43 13C2-PFTeDA



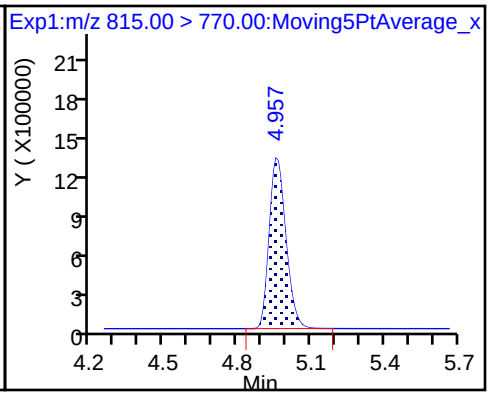
45 Perfluorohexadecanoic acid



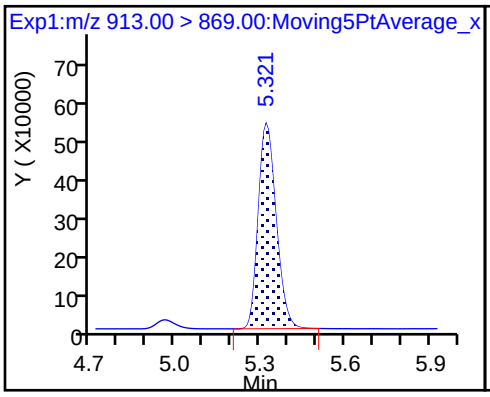
45 Perfluorohexadecanoic acid



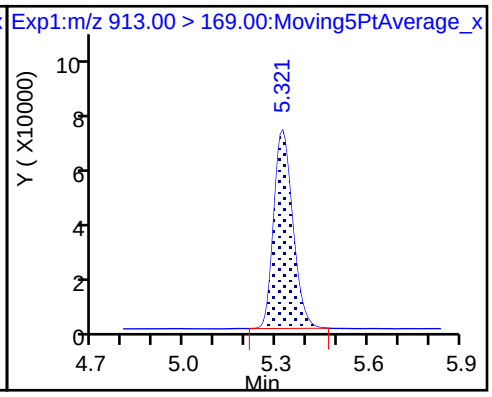
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

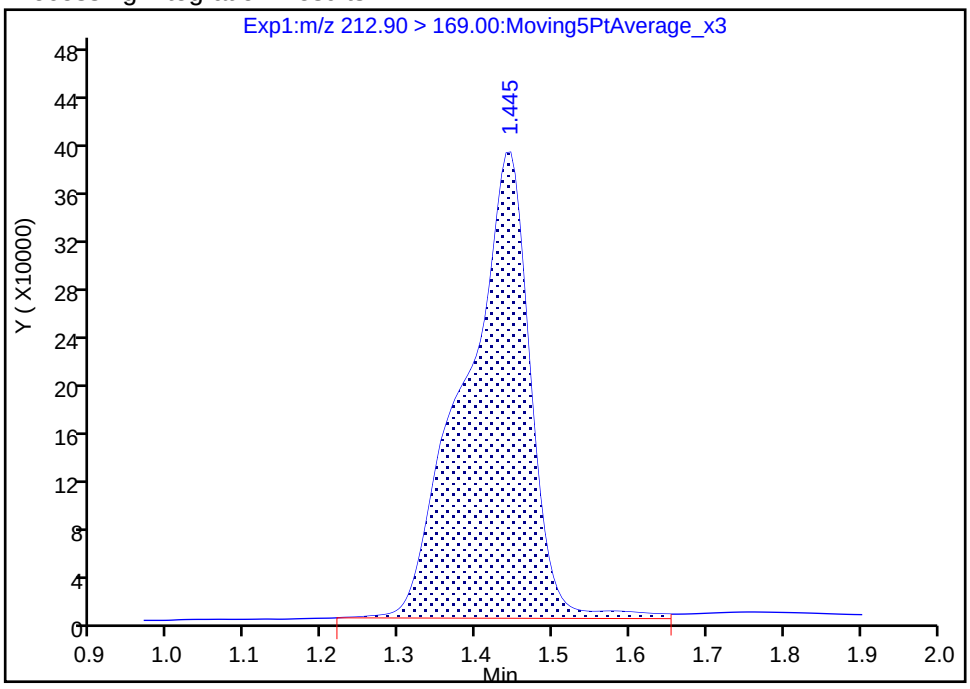
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d
Injection Date: 21-Apr-2018 10:21:21 Instrument ID: A8_N
Lims ID: 320-38061-A-1-B MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

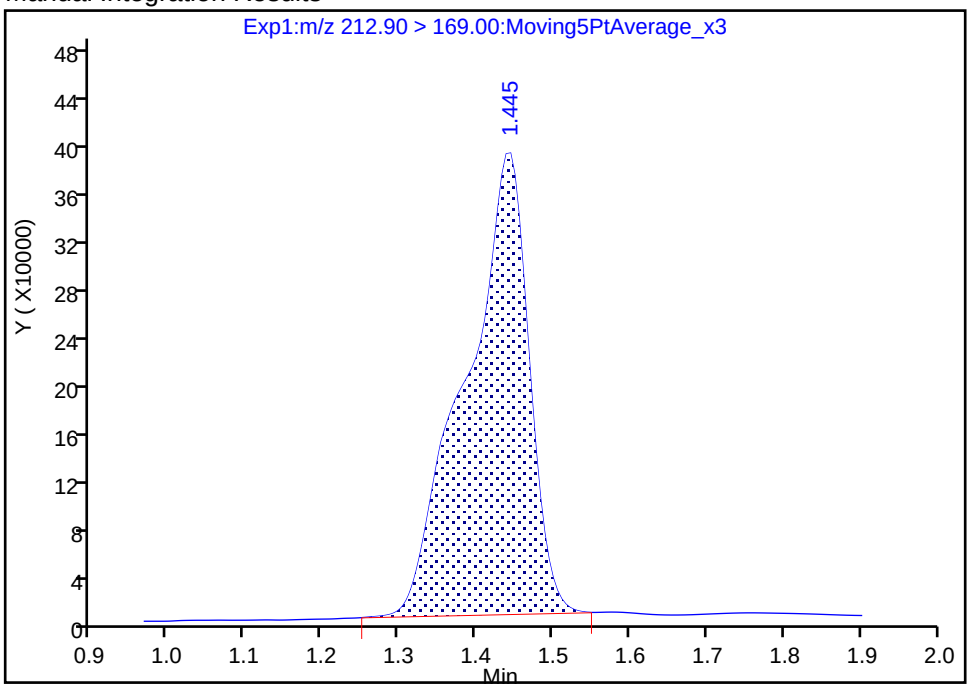
Processing Integration Results

RT: 1.44
Area: 2300187
Amount: 1.024533
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 2210889
Amount: 0.984759
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:23:03
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

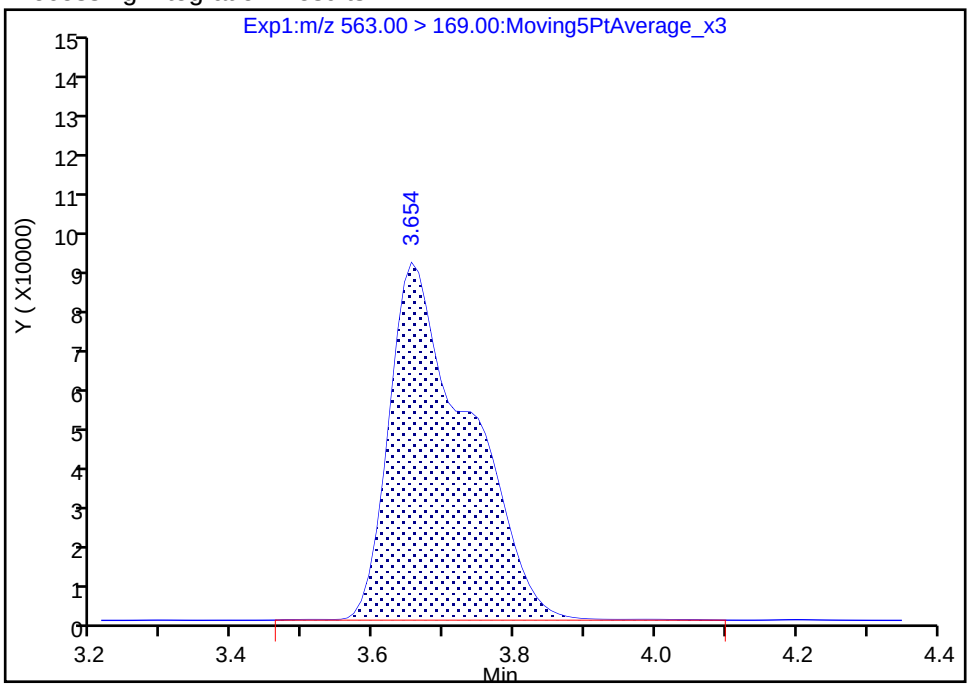
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d				
Injection Date:	21-Apr-2018 10:21:21	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-B MS				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

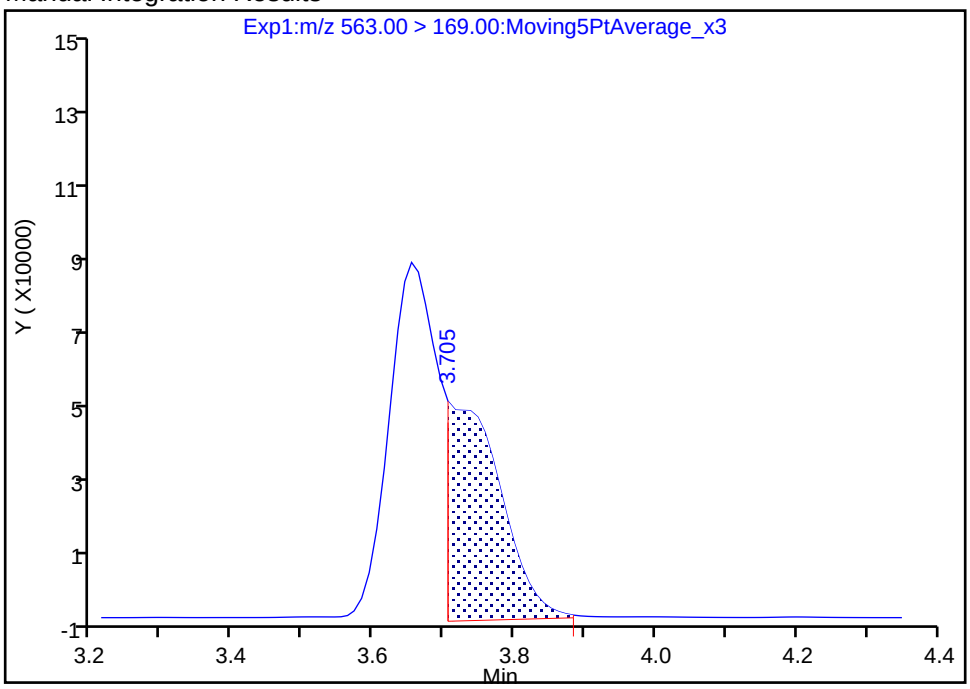
Processing Integration Results

RT: 3.65
Area: 676883
Amount: 0.248754
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 269527
Amount: 1.022907
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:24:08

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

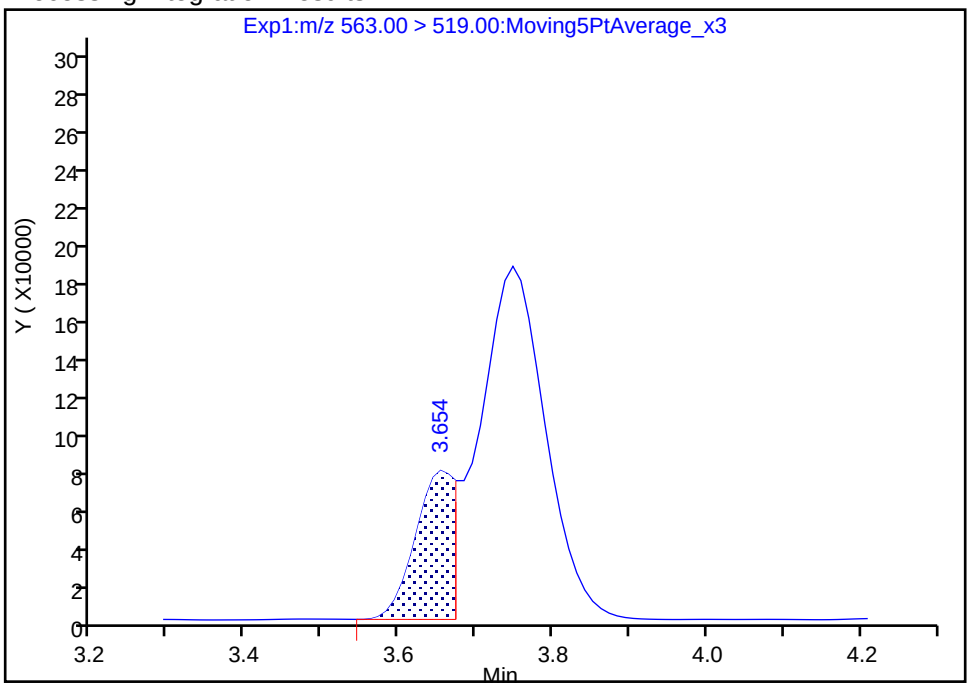
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d
Injection Date: 21-Apr-2018 10:21:21 Instrument ID: A8_N
Lims ID: 320-38061-A-1-B MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

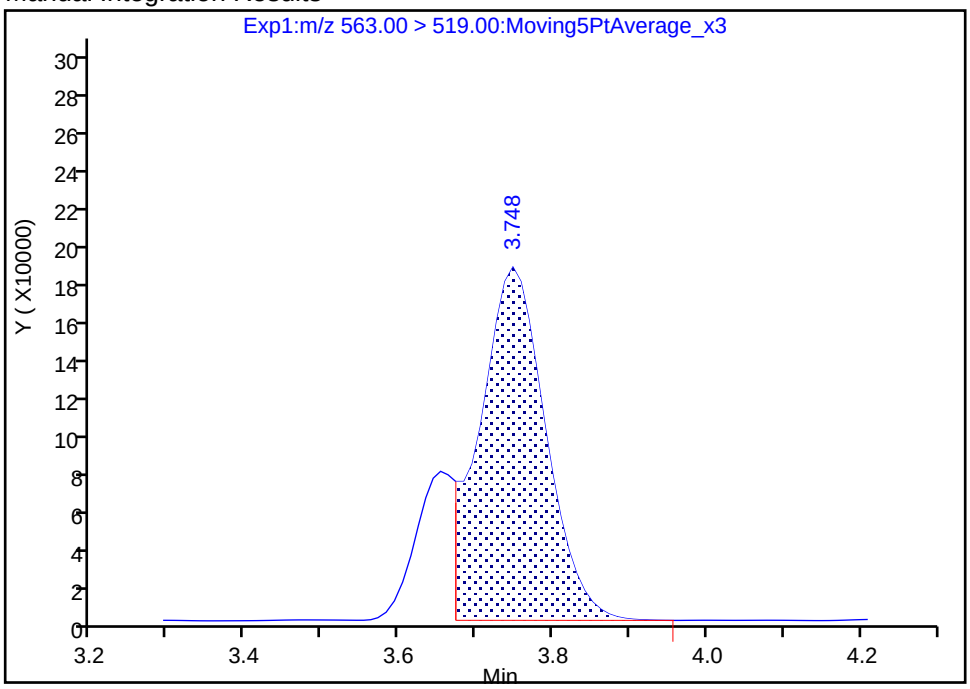
Processing Integration Results

RT: 3.65
Area: 262822
Amount: 0.248754
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 1080757
Amount: 1.022907
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:24:19
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

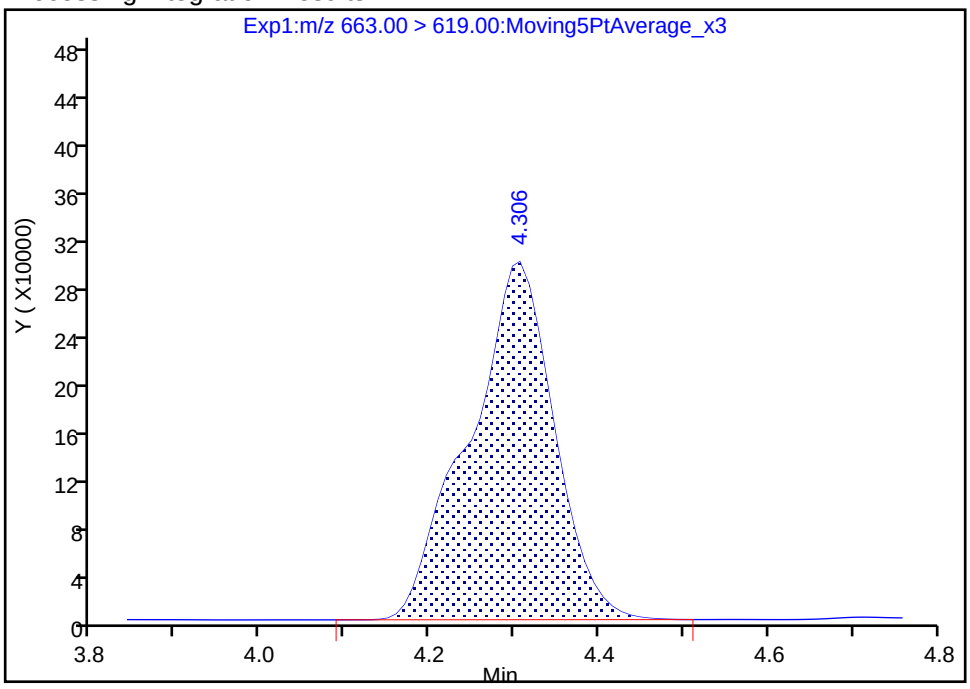
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d				
Injection Date:	21-Apr-2018 10:21:21	Instrument ID:	A8_N		
Lims ID:	320-38061-A-1-B MS				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	19	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

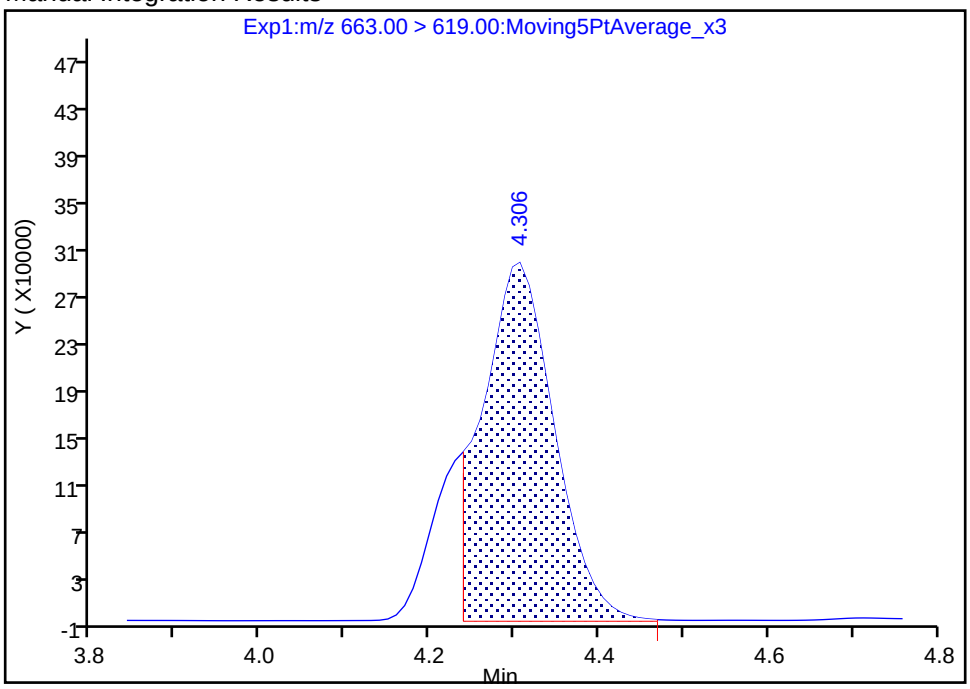
Processing Integration Results

RT: 4.31
Area: 2058200
Amount: 1.421717
Amount Units: ng/ml



Manual Integration Results

RT: 4.31
Area: 1717535
Amount: 1.186400
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:24:48

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

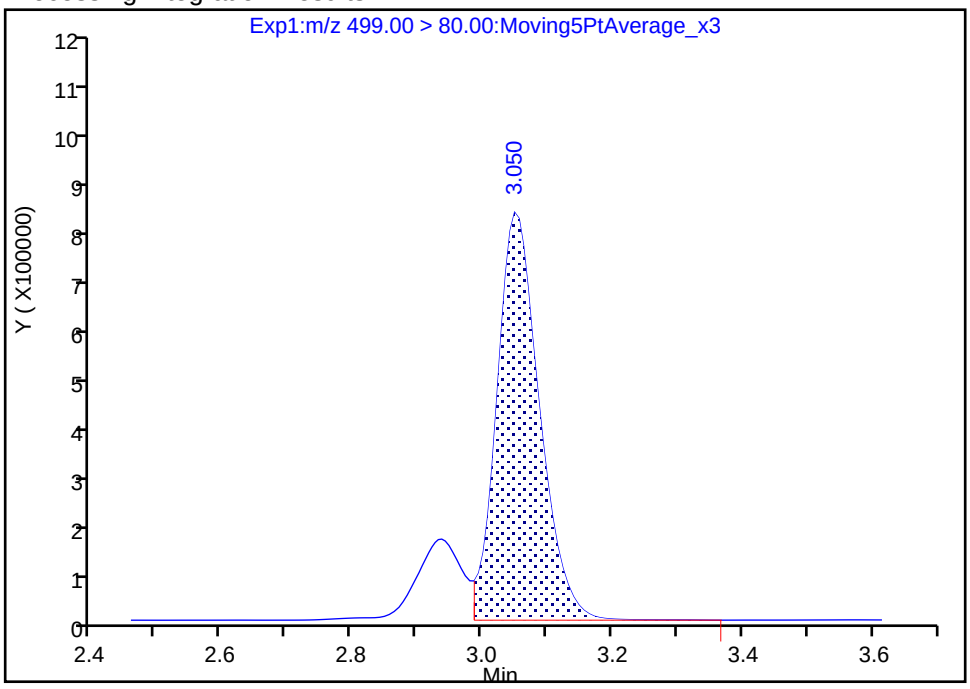
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_027.d
Injection Date: 21-Apr-2018 10:21:21 Instrument ID: A8_N
Lims ID: 320-38061-A-1-B MS
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

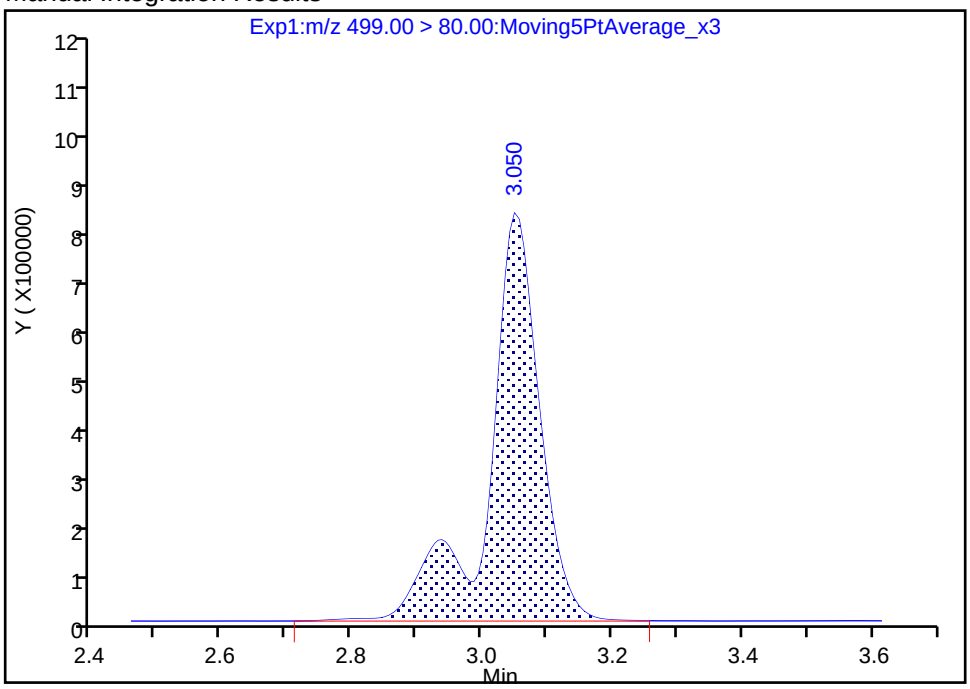
Processing Integration Results

RT: 3.05
Area: 3504618
Amount: 2.051313
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 4255306
Amount: 2.490703
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:23:29
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-38169-A-1-B MS

Matrix: Water | Lab File ID: 2018.04.26LLA_015.d

Analysis Method: 537 (modified) | Date Collected: 04/12/2018 10:35

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 257.8(mL) | Date Analyzed: 04/26/2018 13:08

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	92.31		1.94	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	139.2		1.94	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	112.3		1.94	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	100.2		1.94	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	74.24		1.94	0.82
375-95-1	Perfluorononanoic acid (PFNA)	41.23		1.94	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	38.72		1.94	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	33.67		1.94	1.07
307-55-1	Perfluorododecanoic acid (PFDoA)	36.97		1.94	0.53
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	35.27		1.94	1.26
376-06-7	Perfluorotetradecanoic acid (PFTeA)	37.65		1.94	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	40.54		1.94	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	55.22		1.94	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.86		1.94	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	61.99		1.94	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	33.22		1.94	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	35.80		1.94	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	39.80		19.4	3.01
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	37.19		19.4	1.84
27619-97-2	6:2FTS	40.09		19.4	1.94
39108-34-4	8:2FTS	35.86		19.4	1.94

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-38169-A-1-B MS

Matrix: Water | Lab File ID: 2018.04.26LLA_015.d

Analysis Method: 537 (modified) | Date Collected: 04/12/2018 10:35

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 257.8(mL) | Date Analyzed: 04/26/2018 13:08

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	38		25-150
STL01893	13C5 PFPeA	72		25-150
STL00993	13C2 PFHxA	82		25-150
STL01892	13C4-PFHpA	86		25-150
STL00990	13C4 PFOA	94		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	89		25-150
STL00997	13C2 PFUnA	88		25-150
STL00998	13C2 PFDoA	86		25-150
STL02116	13C2-PFTeDA	86		25-150
STL02337	13C3-PFBS	88		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	94		25-150
STL01056	13C8 FOSA	88		25-150
STL02118	d3-NMeFOSAA	91		25-150
STL02117	d5-NEtFOSAA	95		25-150
STL02279	M2-6:2FTS	134		25-150
STL02280	M2-8:2FTS	101		25-150

Report Date: 26-Apr-2018 16:46:45 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_015.d
Lims ID: 320-38169-A-1-B MS
Client ID: MW-1S
Sample Type: MS
Inject. Date: 26-Apr-2018 13:08:07 ALS Bottle#: 9 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38169-a-1-b ms
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:45:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.435	0.0	1.000	2663307	0.9579		38.3	16238	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.441	0.0	1.004	2353980	2.38		238	212	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.702	0.0	0.555	3232329	1.80		72.1	7335	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.702	1.702	0.0	1.000	5531029	3.59		359	216	M
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.738	0.0	1.000	84558	2.06		88.4	64.8	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.738	1.747	-0.009	1.000	2975621	1.05		118	254	M
298.90 > 99.00	1.738	1.747	-0.009	1.000	1207195		2.46(1.25-3.74)		392	
D 60 M2-4:2FTS										
329.00 > 81.00	1.702	1.949	-0.247	1.000	201408	0.6838		0.0	43.4	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.960	-0.012	1.000	1022380	1.75		188	19943	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.992	-0.001	1.000	4074717	2.06		82.2	59519	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.991	1.993	-0.002	1.000	4796859	2.90		290	570	M
313.00 > 119.00	1.991	1.993	-0.002	1.000	430203		11.15(5.03-15.10)		1600	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.014	2.015	-0.001	1.000	2610053	1.00		107	717	
349.00 > 99.00	2.014	2.015	-0.001	1.000	978121		2.67(1.36-4.07)		1045	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.093	2.094	-0.001	1.000	265040	NR		0.0	137	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.320	-0.001	1.000	4161815	2.16		86.3	60583	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.333	0.012	1.000	5456556	2.29		96.9	63049	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.319	2.333	-0.014	1.000	4305141	2.58		258	1306	
363.00 > 169.00	2.319	2.333	-0.014	1.000	1694356		2.54(1.13-3.40)		7109	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.346	-0.014	0.994	3717298	1.42		155	810	
399.00 > 99.00	2.332	2.346	-0.014	0.994	1209205		3.07(1.50-4.49)		1343	
65 Adona										
377.00 > 251.00	2.372	2.373	-0.001	1.000	5175347	0.9501		95.0	57833	
377.00 > 85.00	2.372	2.373	-0.001	1.000	3054970		1.69(0.84-2.53)		6546	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.661	-0.001	1.000	1312557	3.18		134	4626	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.668	-0.001	1.003	965498	1.03		109	10141	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.683	0.007	1.000	4524126	2.36		94.4	75296	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.698	-0.008		5166459	2.50			111339	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.698	-0.008	1.000	4001919	1.91		190	1678	
413.00 > 169.00	2.690	2.698	-0.008	1.000	2142987		1.87(0.84-2.52)		8378	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.706	-0.009	1.000	2037812	0.9761		103	5158	
449.00 > 99.00	2.697	2.706	-0.009	1.000	529563		3.85(1.94-5.82)		3692	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.060	0.005	1.000	3969235	2.41		96.4	74238	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.060	0.005	1.000	3758393	2.25		94.3	14801	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.067	-0.002	1.000	2733975	1.60		172	5140	
499.00 > 99.00	3.065	3.067	-0.002	1.000	534351		5.12(2.31-6.93)		4652	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.074	-0.009	1.000	1759654	1.06		106	4566	
463.00 > 169.00	3.065	3.074	-0.009	1.000	432820		4.07(1.90-5.69)		10339	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.279	3.280	-0.001	1.000	2451460	0.8270		88.7	32302	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.398	0.0	1.000	4575729	2.20		87.9	37773	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1708492	0.9228		92.3	16022	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.407	0.019	1.000	1203801	2.42		101	9426	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.416	3.417	-0.001	1.000	1074879	0.8551		89.1	9291	
549.00 > 99.00	3.416	3.417	-0.001	1.000	406263		2.65(1.33-3.97)		8057	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.426	0.009	1.000	3085249	2.23		89.1	60561	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	587947	0.9244		96.5	28541	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.436	-0.001	1.000	1270853	1.00		99.8	4486	
513.00 > 169.00	3.435	3.436	-0.001	1.000	221423		5.74(2.36-7.09)		3628	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.585	3.575	0.010	1.000	1777022	2.26		90.6	27989	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.585	3.597	-0.012	1.000	727415	1.03		103	4641	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.751	-0.001	1.000	1832448	2.37		94.6	30057	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.751	0.010	1.000	2621785	2.19		87.8	81557	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.751	-0.011	1.000	874494	0.8565		88.9	6501	
599.00 > 99.00	3.740	3.751	-0.011	1.000	317675		2.75(1.39-4.16)		7422	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.003	656798	0.9589		95.9	12013	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.000	769387	0.8681		86.4	4795	
563.00 > 169.00	3.761	3.761	0.0	1.000	198918		3.87(2.12-6.36)		5331	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.917	3.918	-0.001	1.000	3662847	0.7998		84.9	49859	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.050	0.0	1.000	2769595	2.15		85.9	30694	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.061	-0.011	1.000	1101266	0.9532		95.3	1532	
613.00 > 169.00	4.060	4.061	-0.001	1.003	279851		3.94(2.13-6.40)		3107	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	1224230	0.9093		90.9	1556	
663.00 > 169.00	4.318	4.319	-0.001	1.000	404104		3.03(1.25-3.76)		3685	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.553	0.0	1.000	3496811	2.14		85.5	24763	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.564	-0.011	1.000	340933	0.9705		97.1	3239	
713.00 > 219.00	4.553	4.564	-0.011	1.000	244438		1.39(0.71-2.13)		3913	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.967	0.008	1.000	5400993	2.03		81.2	16236	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.975	4.984	-0.009	1.000	2020860	0.9656		95.8	942	
813.00 > 169.00	4.975	4.984	-0.009	1.000	341641		5.92(2.86-8.58)		2434	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.336	5.350	-0.014	1.000	2081400	0.9595		96.0	752	
913.00 > 169.00	5.336	5.350	-0.014	1.000	260754		7.98(3.83-11.48)		1896	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 16:46:45 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_015.d

Injection Date: 26-Apr-2018 13:08:07 Instrument ID: A8_N

Lims ID: 320-38169-A-1-B MS

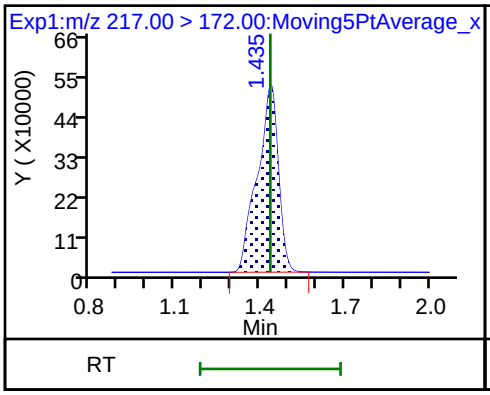
Client ID: MW-1S

Operator ID: SACINSTLCMS01 ALS Bottle#: 9 Worklist Smp#: 7

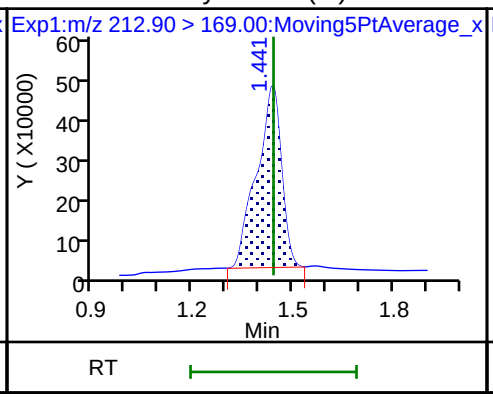
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

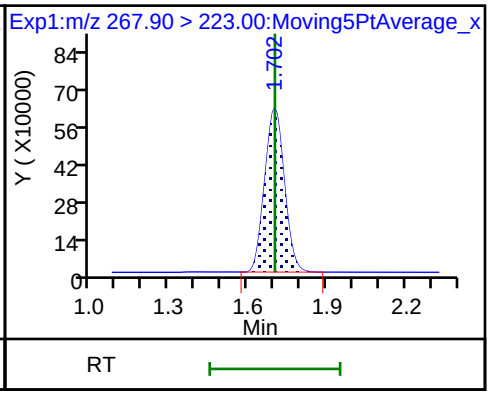
D 1 13C4 PFBA



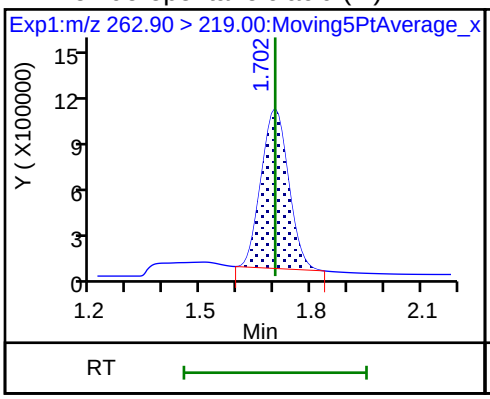
2 Perfluorobutyric acid (M)



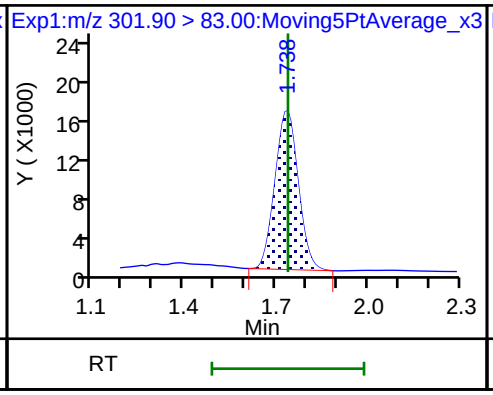
D 3 13C5-PFPeA



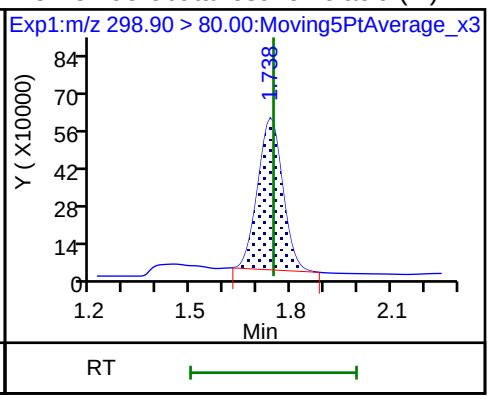
4 Perfluoropentanoic acid (M)



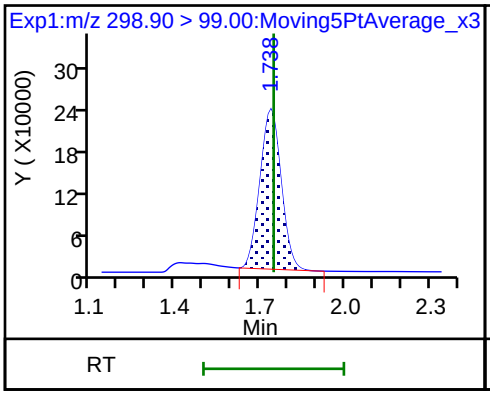
D 47 13C3-PFBS



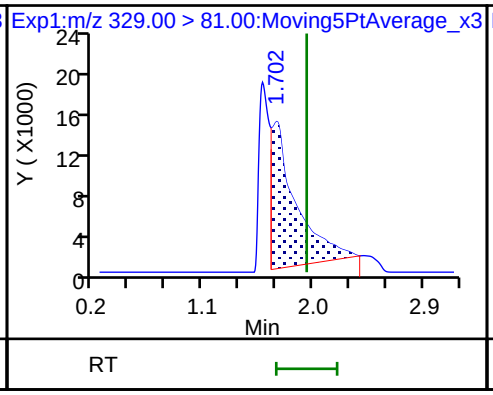
5 Perfluorobutanesulfonic acid (M)



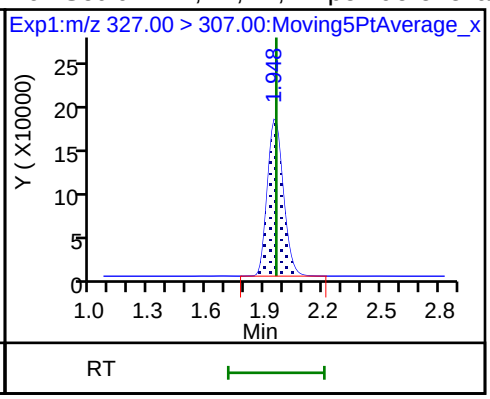
5 Perfluorobutanesulfonic acid



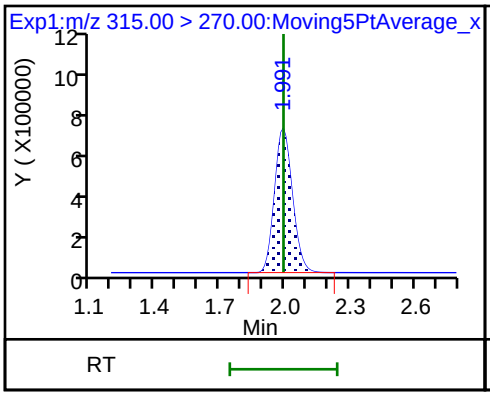
D 60 M2-4:2FTS



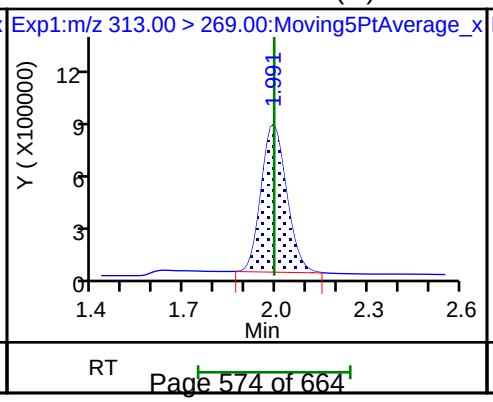
61 Sodium 1H,1H,2H,2H-perfluorohexane



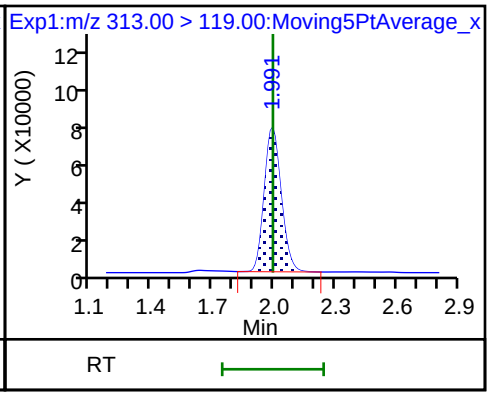
D 7 13C2 PFHxA



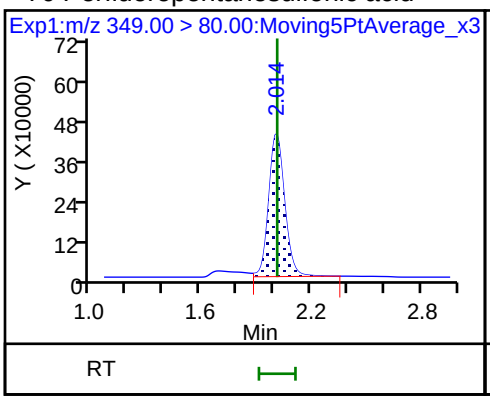
6 Perfluorohexanoic acid (M)



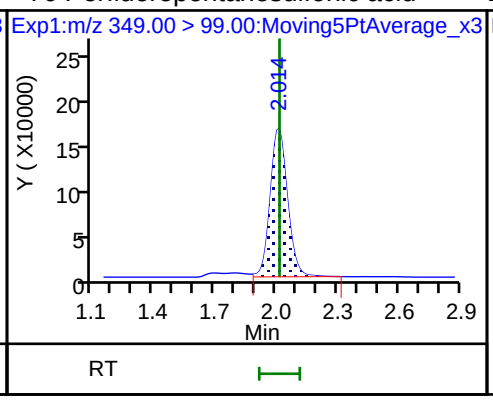
6 Perfluorohexanoic acid



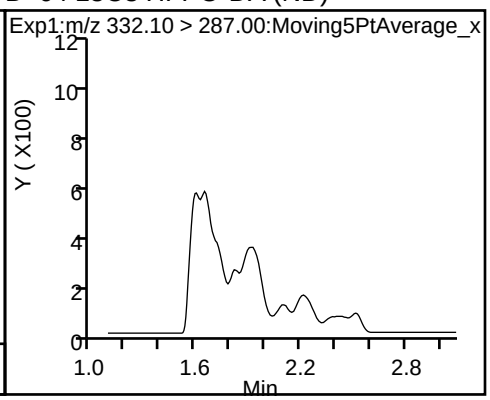
70 Perfluoropentanesulfonic acid



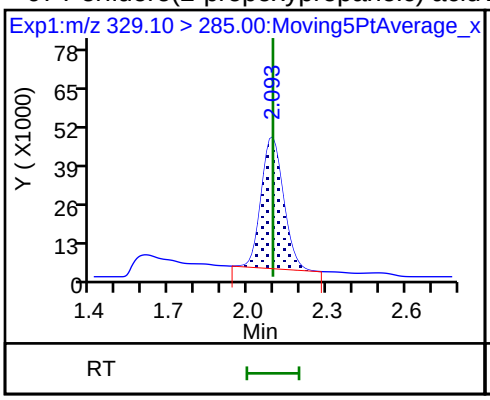
70 Perfluoropentanesulfonic acid



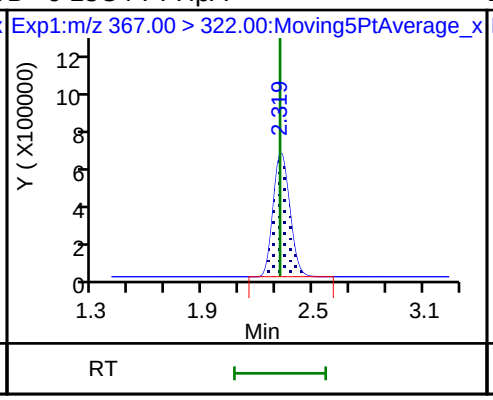
D 64 13C3 HFPO-DA (ND)



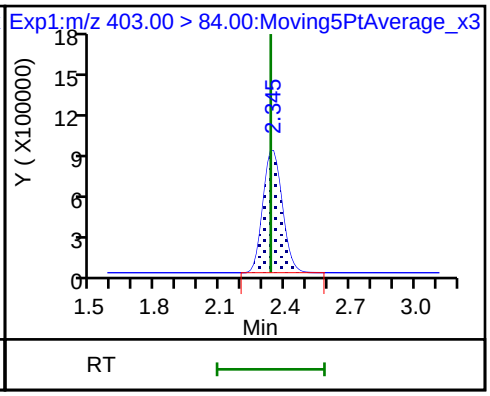
67 Perfluoro(2-propoxypropanoic) acid



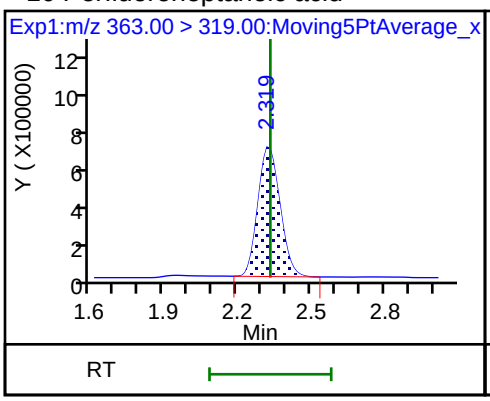
D 9 13C4-PFHpA



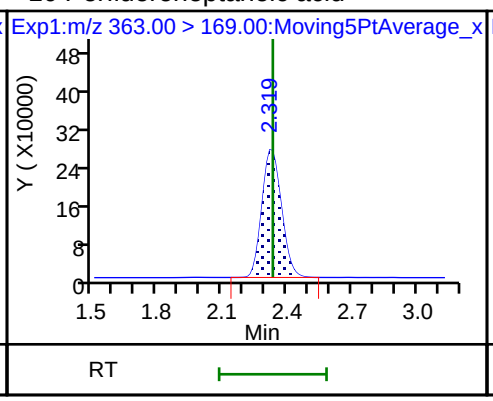
D 11 18O2 PFHxS



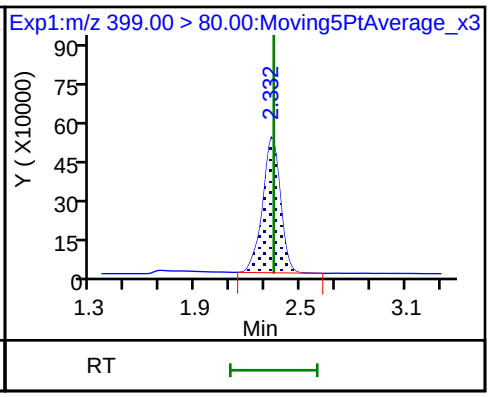
10 Perfluoroheptanoic acid



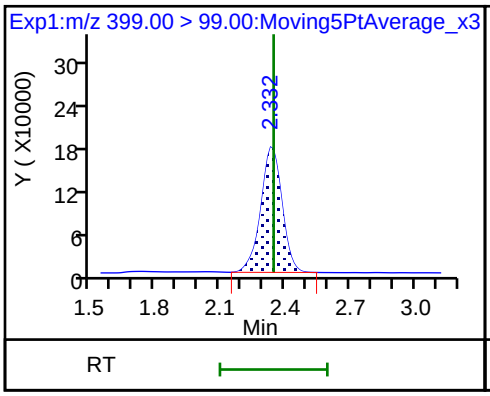
10 Perfluoroheptanoic acid



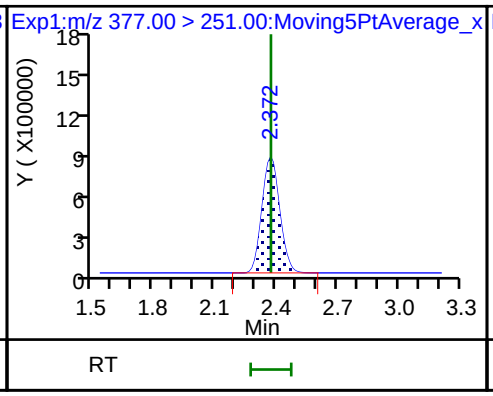
8 Perfluorohexanesulfonic acid



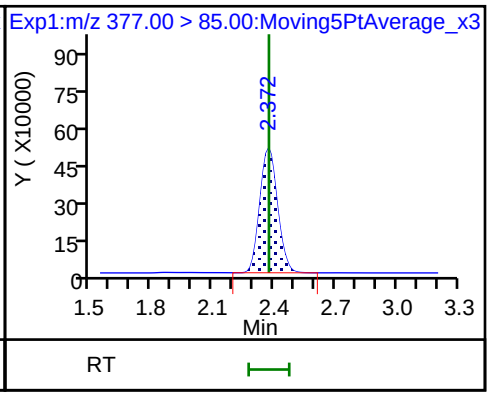
8 Perfluorohexanesulfonic acid



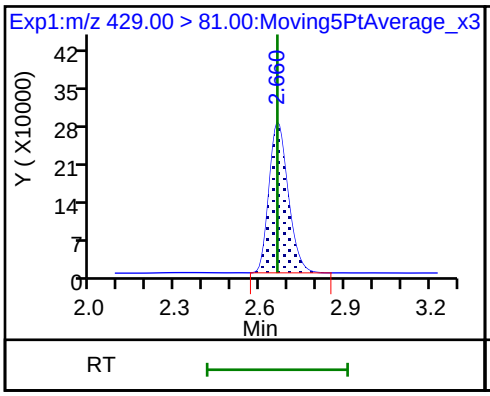
65 Adona



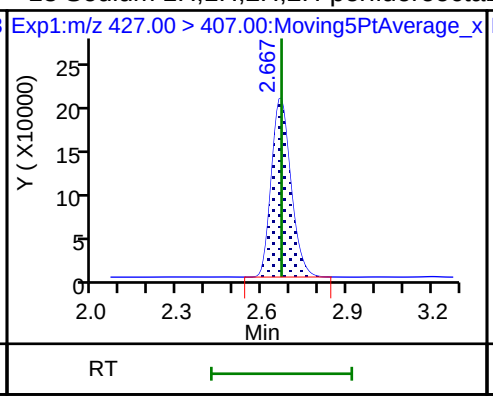
65 Adona



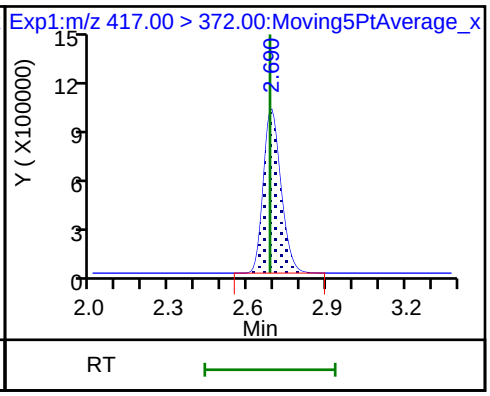
D 12 M2-6:2FTS



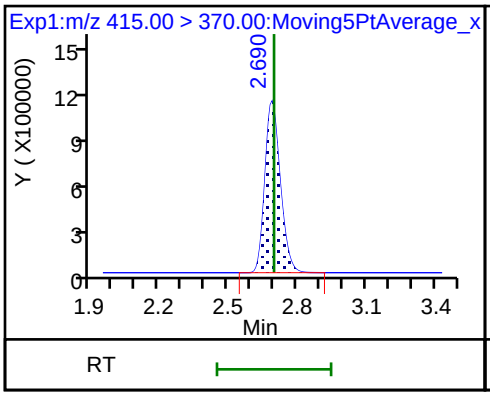
13 Sodium 1H,1H,2H,2H-perfluorooctane



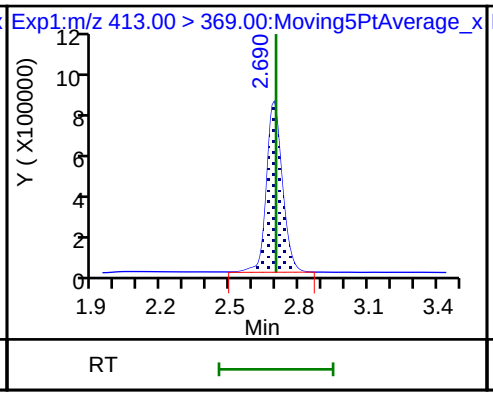
D 14 13C4 PFOA



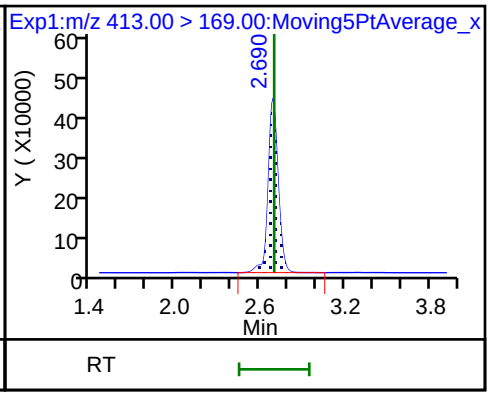
* 62 13C2-PFOA



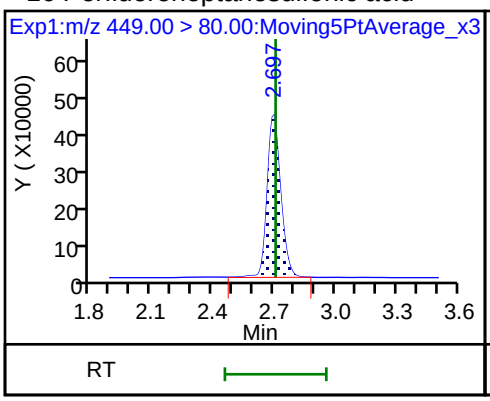
15 Perfluorooctanoic acid



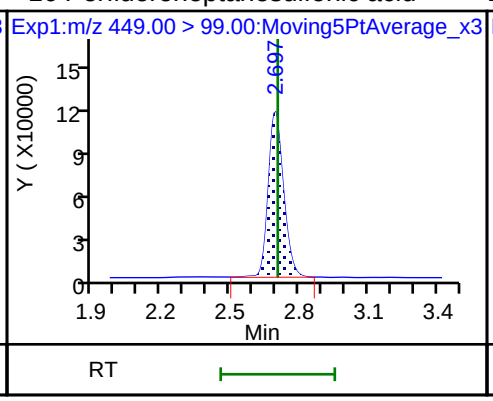
15 Perfluorooctanoic acid



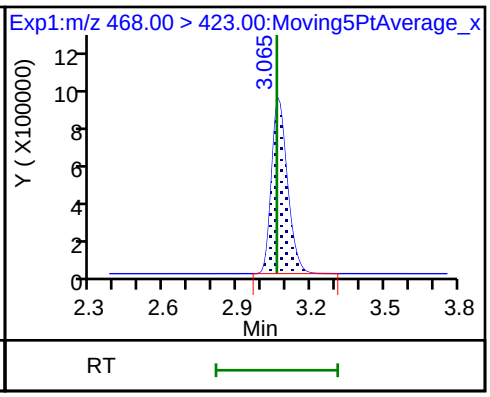
16 Perfluoroheptanesulfonic acid



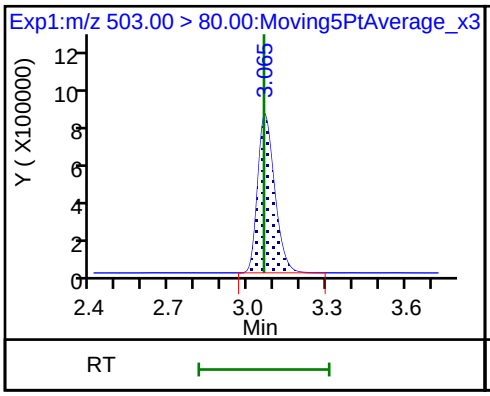
16 Perfluoroheptanesulfonic acid



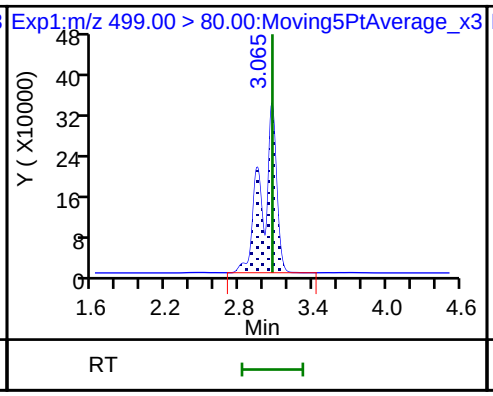
D 19 13C5 PFNA



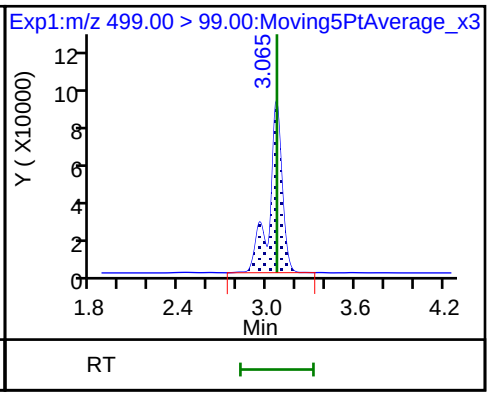
D 18 13C4 PFOS



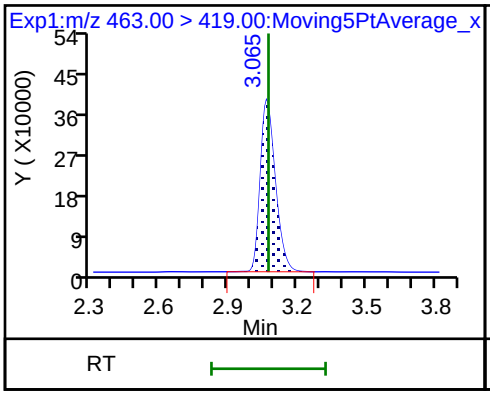
17 Perfluorooctane sulfonic acid



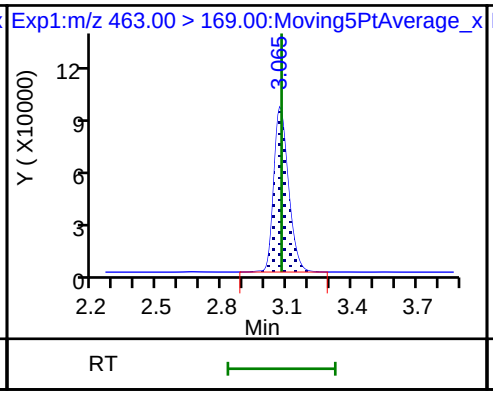
17 Perfluorooctane sulfonic acid



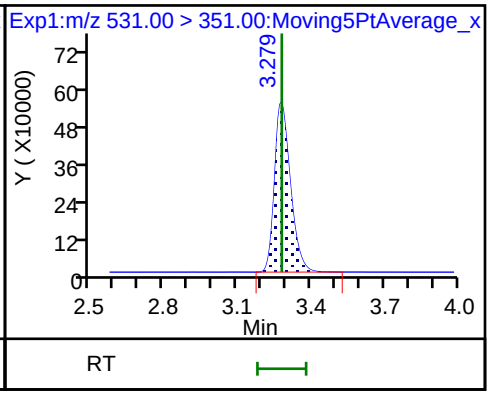
20 Perfluorononanoic acid



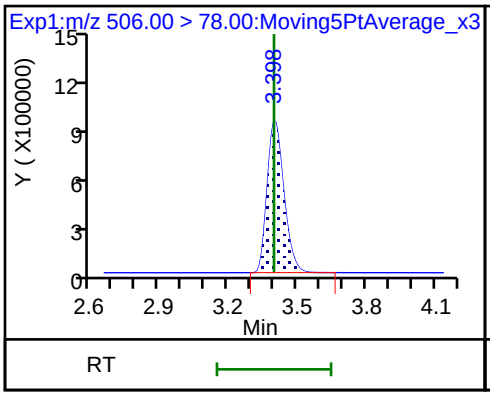
20 Perfluorononanoic acid



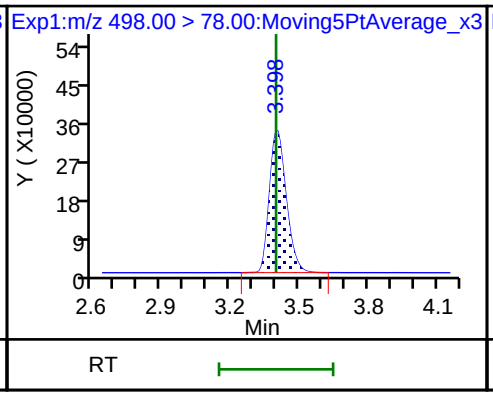
69 9-Chlorohexadecafluoro-3-oxanonane



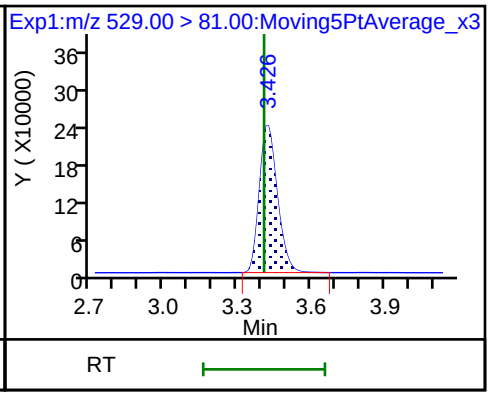
D 21 13C8 FOSA



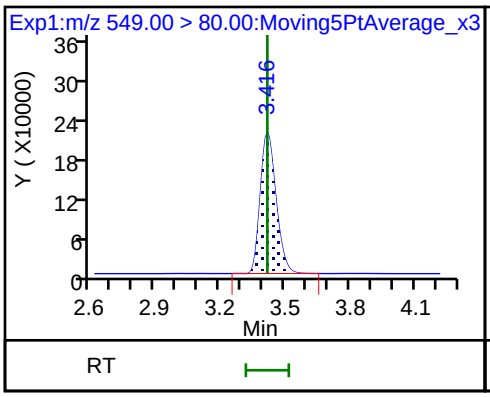
22 Perfluorooctane Sulfonamide



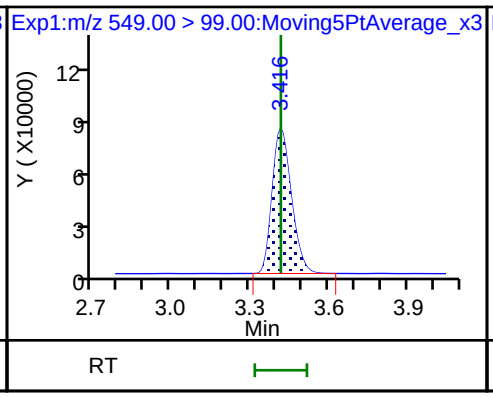
D 26 M2-8:2FTS



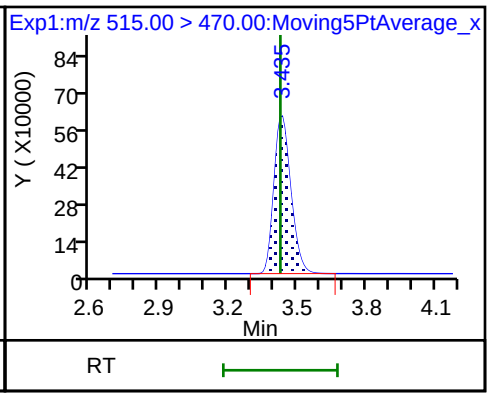
68 Perfluorononanesulfonic acid



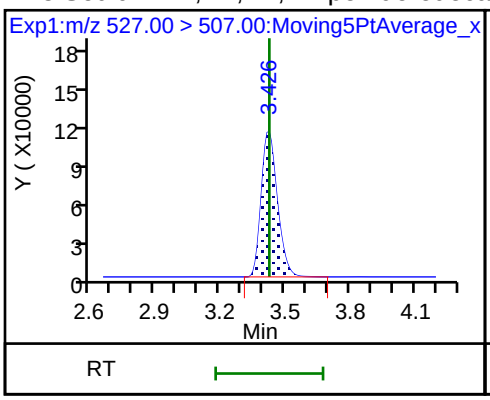
68 Perfluorononanesulfonic acid



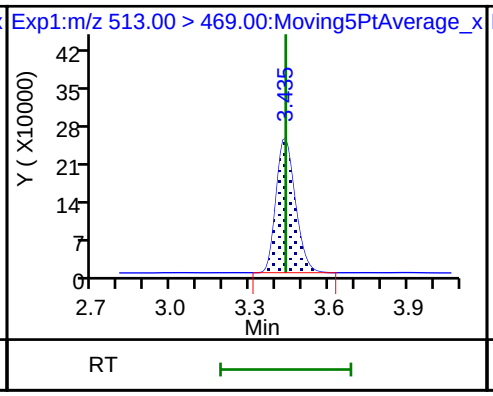
D 23 13C2 PFDA



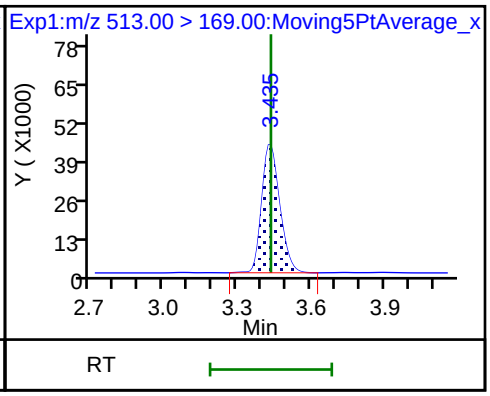
25 Sodium 1H,1H,2H,2H-perfluorodecane



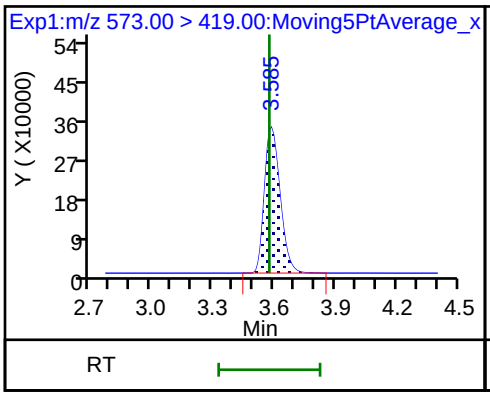
24 Perfluorodecanoic acid



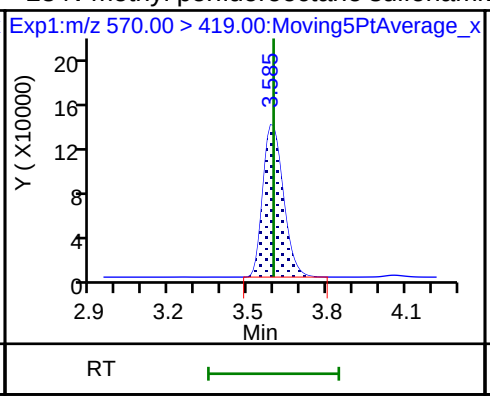
24 Perfluorodecanoic acid



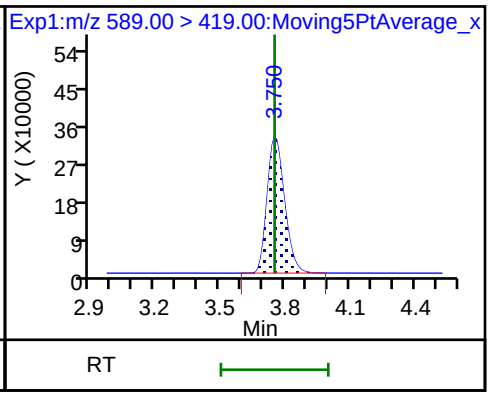
D 27 d3-NMeFOSAA



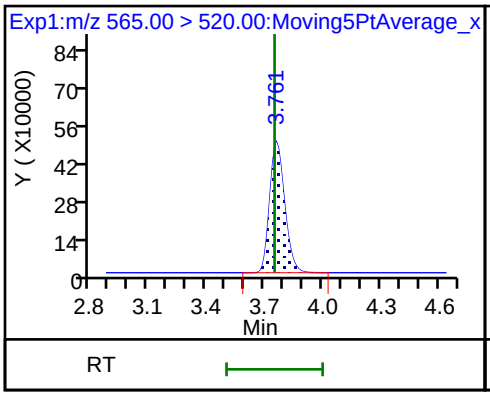
28 N-methyl perfluorooctane sulfonami



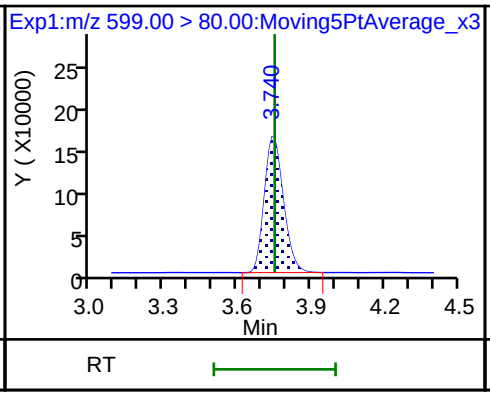
D 32 d5-NEtFOSAA



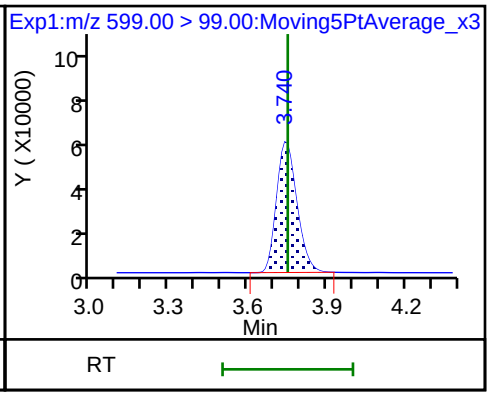
D 30 13C2 PFUnA



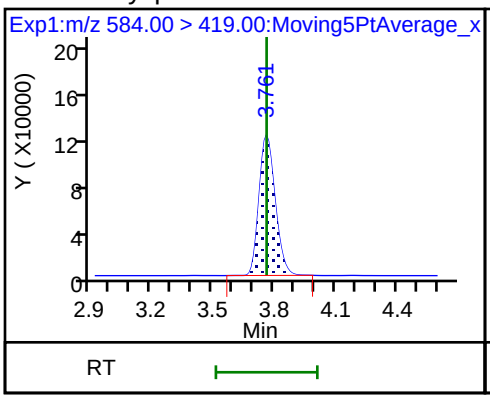
29 Perfluorodecane Sulfonic acid



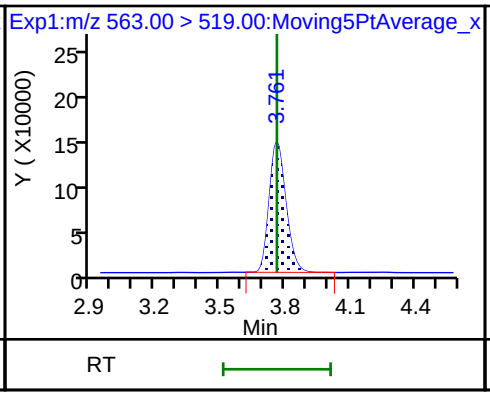
29 Perfluorodecane Sulfonic acid



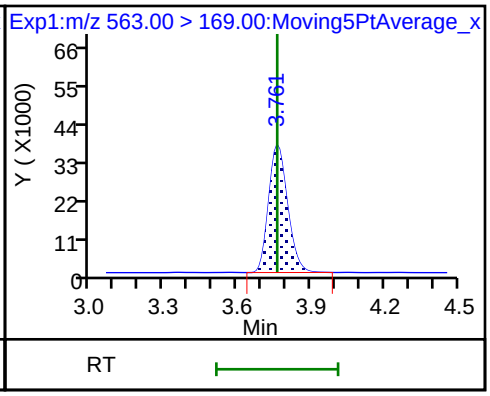
33 N-ethyl perfluorooctane sulfonamid



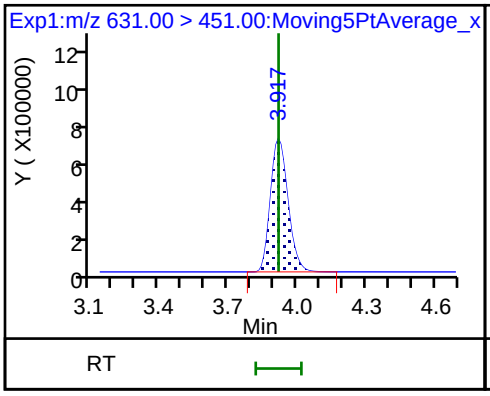
31 Perfluoroundecanoic acid



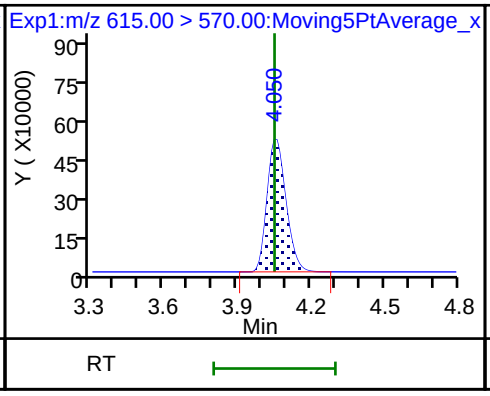
31 Perfluoroundecanoic acid



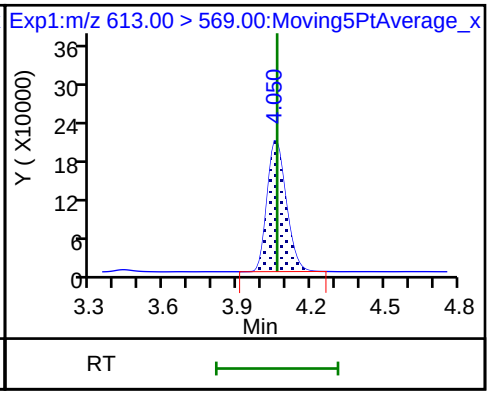
66 11-Chloroeicosafluoro-3-oxaundecan



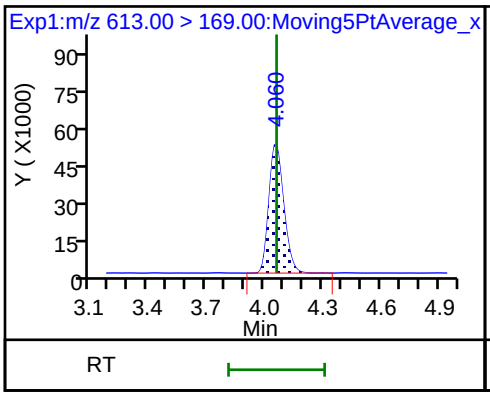
D 36 13C2 PFDoA



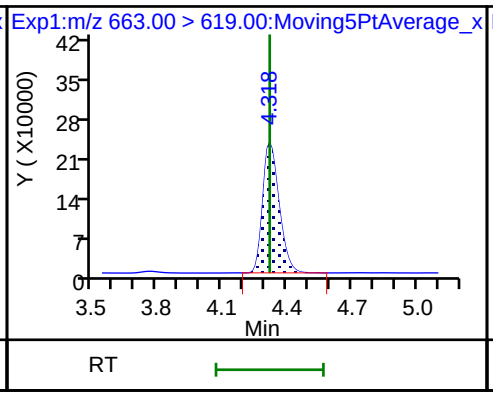
37 Perfluorododecanoic acid



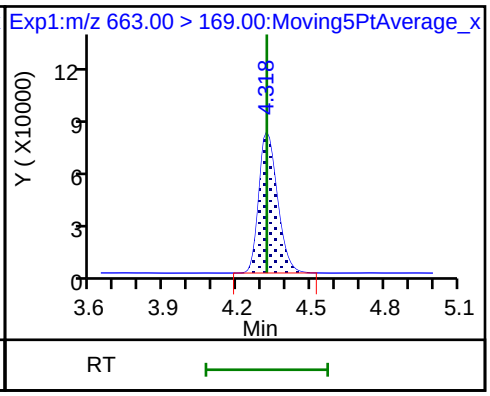
37 Perfluorododecanoic acid



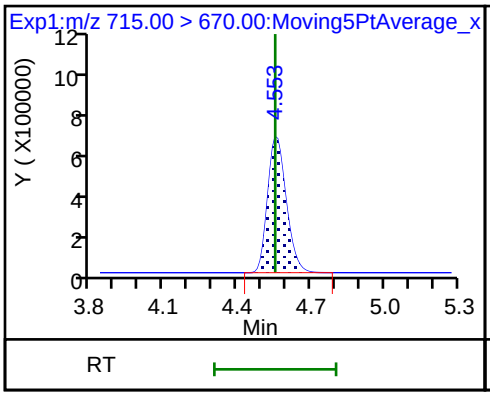
41 Perfluorotridecanoic acid



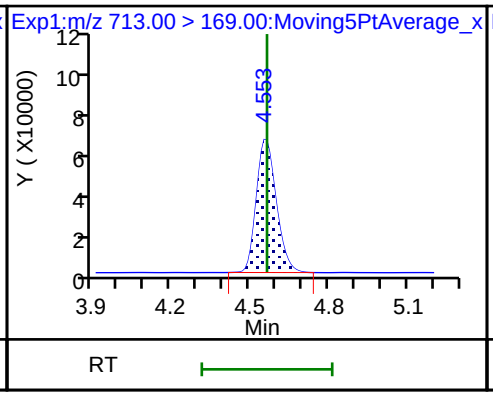
41 Perfluorotridecanoic acid



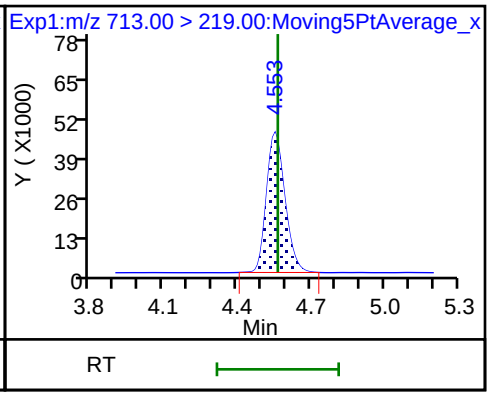
D 43 13C2-PFTeDA



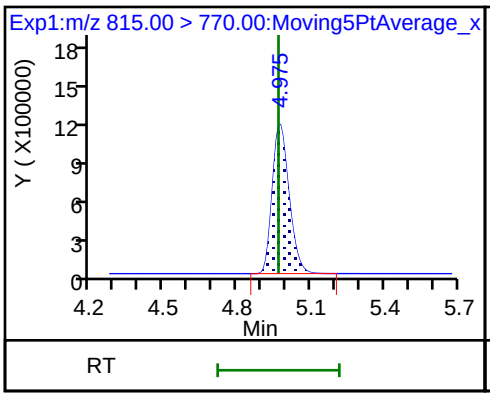
42 Perfluorotetradecanoic acid



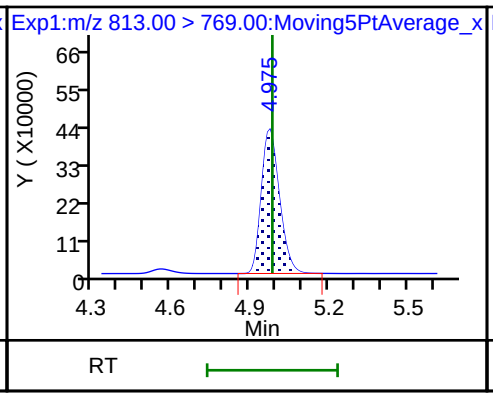
42 Perfluorotetradecanoic acid



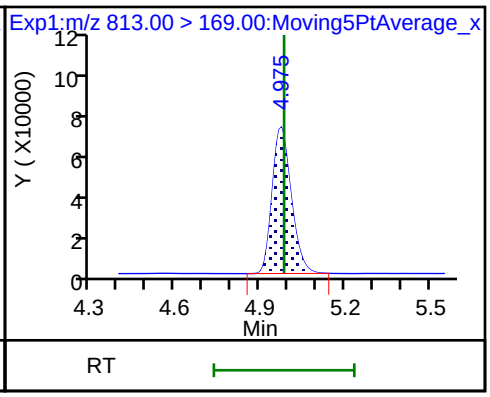
D 44 13C2-PFHxDA



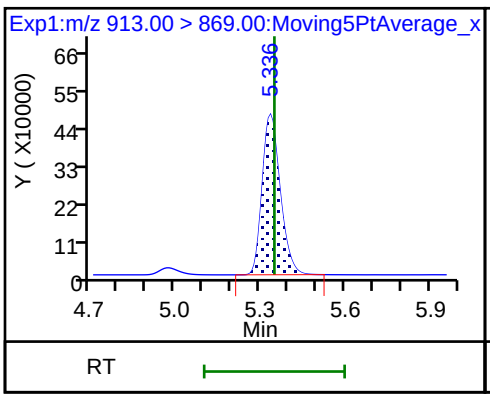
45 Perfluorohexadecanoic acid



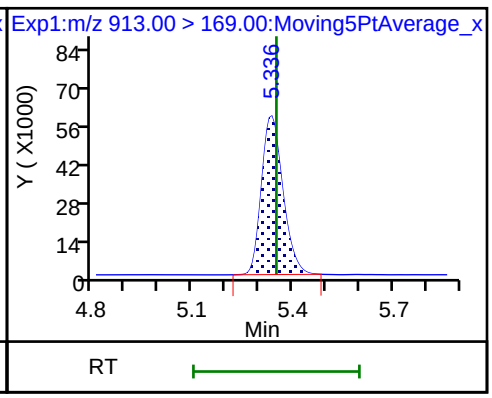
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

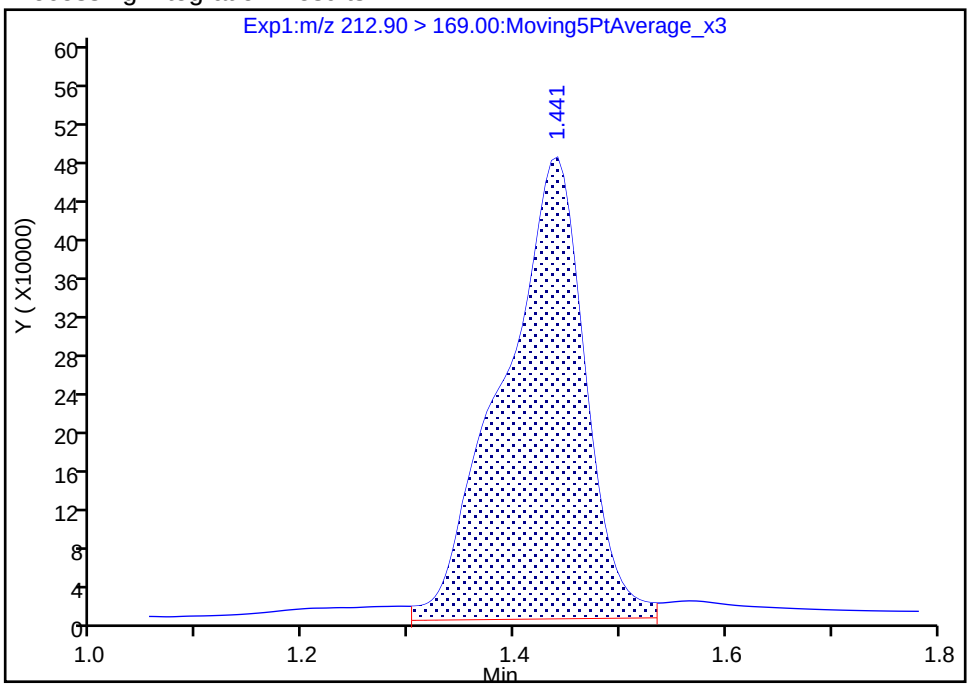
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_015.d				
Injection Date:	26-Apr-2018 13:08:07	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-B MS				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

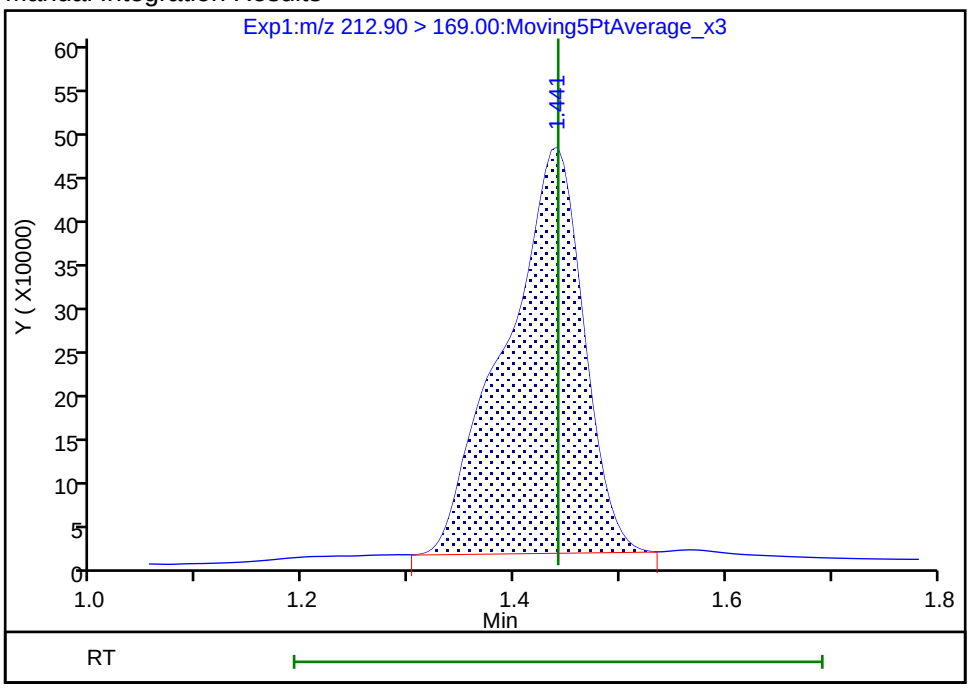
Processing Integration Results

RT: 1.44
Area: 2556386
Amount: 2.584254
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 2353980
Amount: 2.379642
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:44:41

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

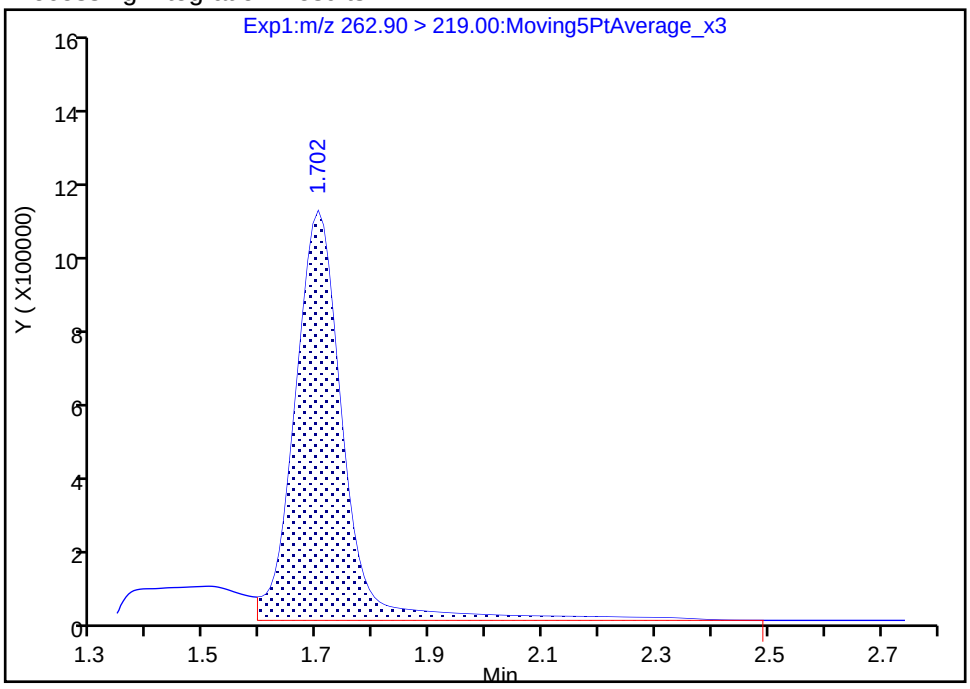
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_015.d				
Injection Date:	26-Apr-2018 13:08:07	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-B MS				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

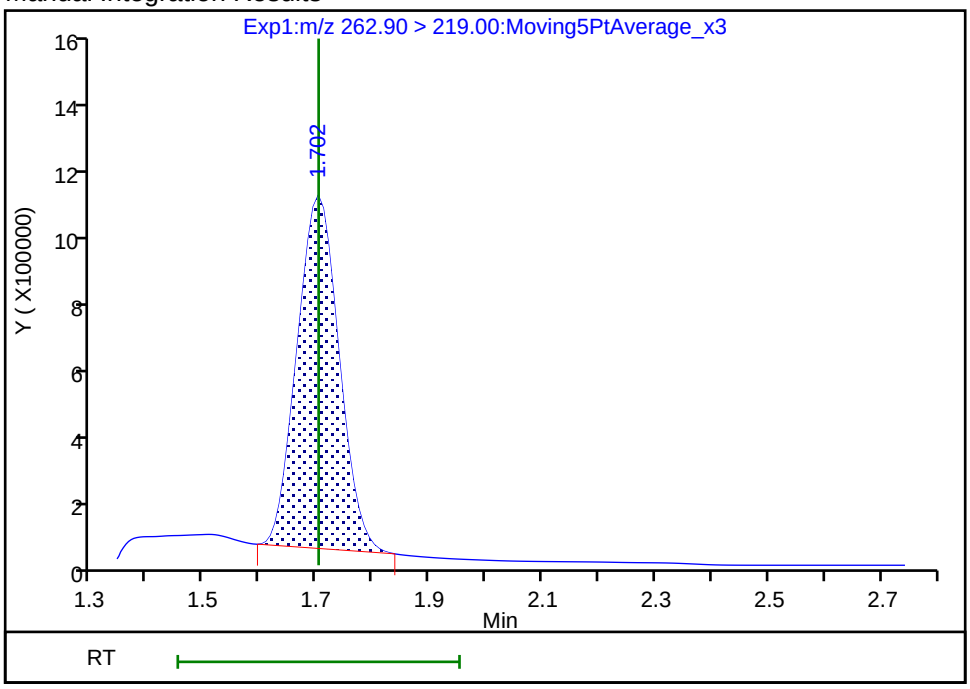
Processing Integration Results

RT: 1.70
Area: 6695200
Amount: 4.345056
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 5531029
Amount: 3.589531
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:44:52

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

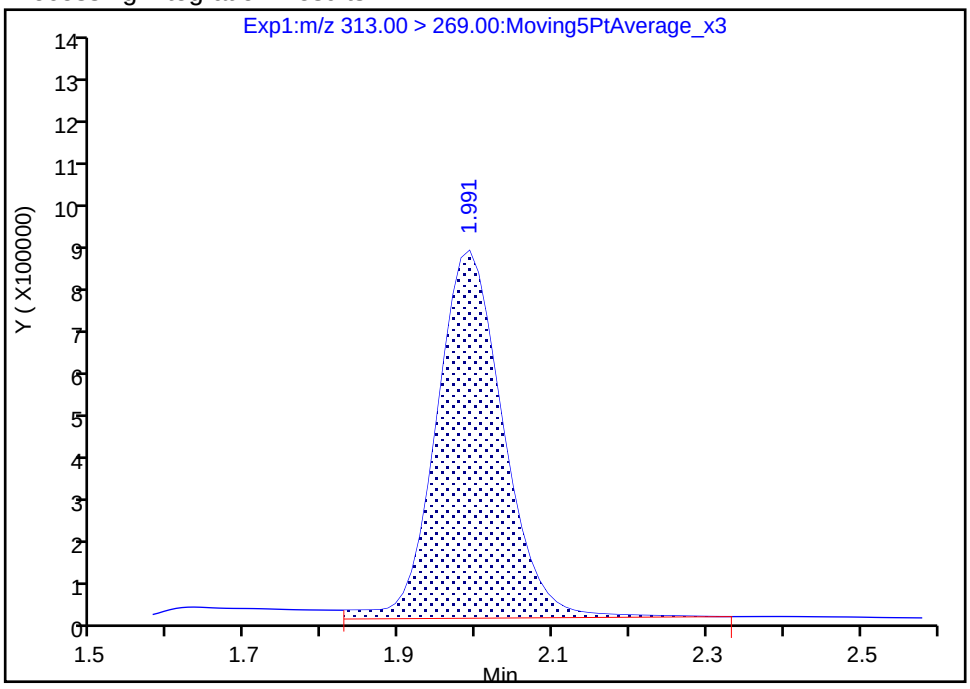
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_015.d				
Injection Date:	26-Apr-2018 13:08:07	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-B MS				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

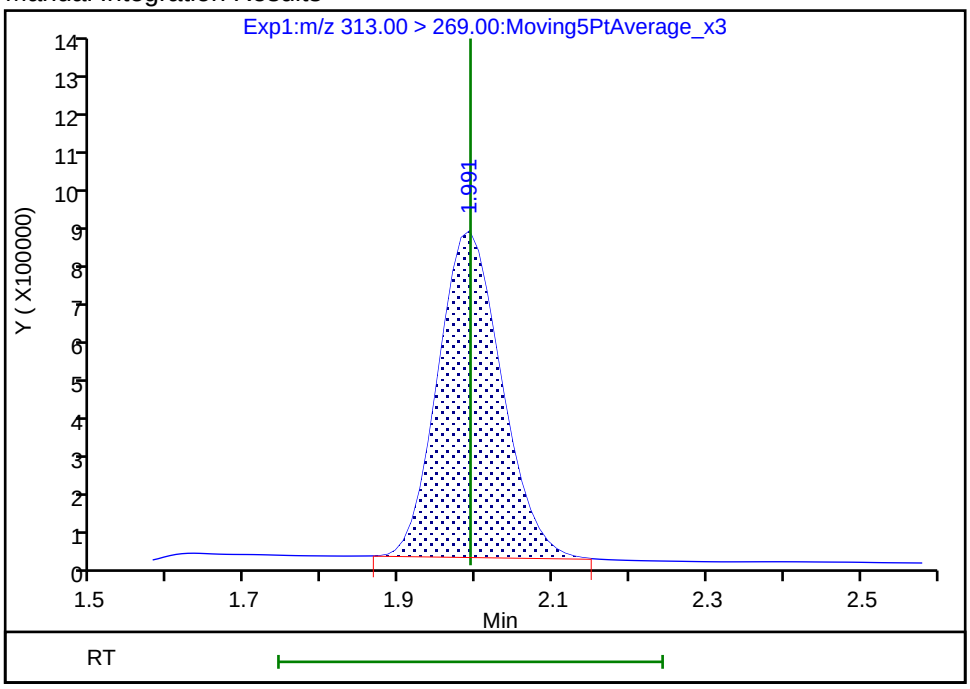
Processing Integration Results

RT: 1.99
Area: 5122972
Amount: 3.093208
Amount Units: ng/ml



Manual Integration Results

RT: 1.99
Area: 4796859
Amount: 2.896304
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:45:18

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

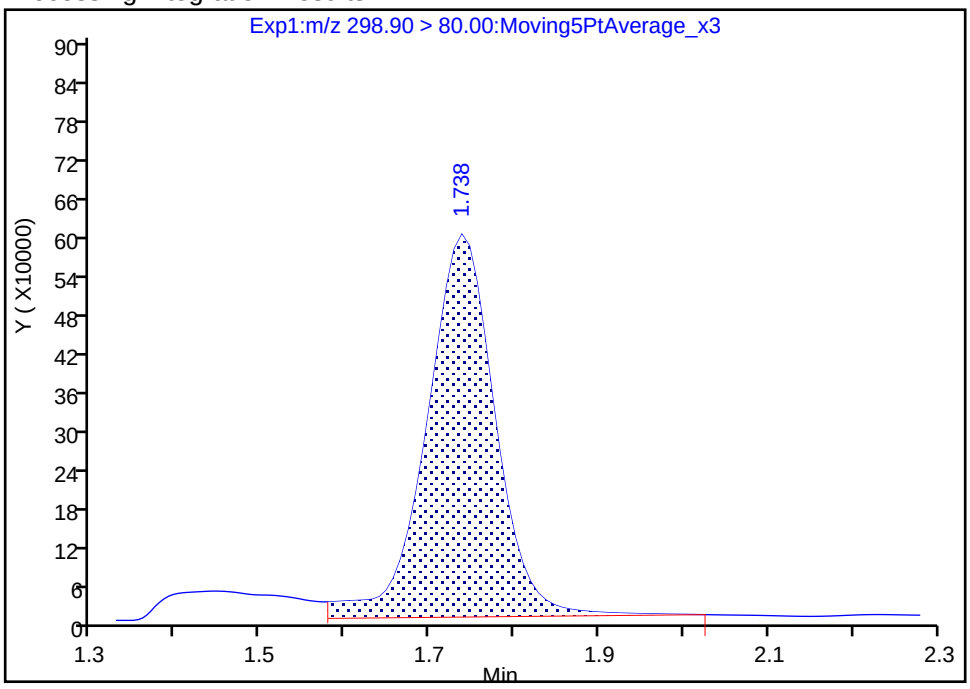
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_015.d				
Injection Date:	26-Apr-2018 13:08:07	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-B MS				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	9	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

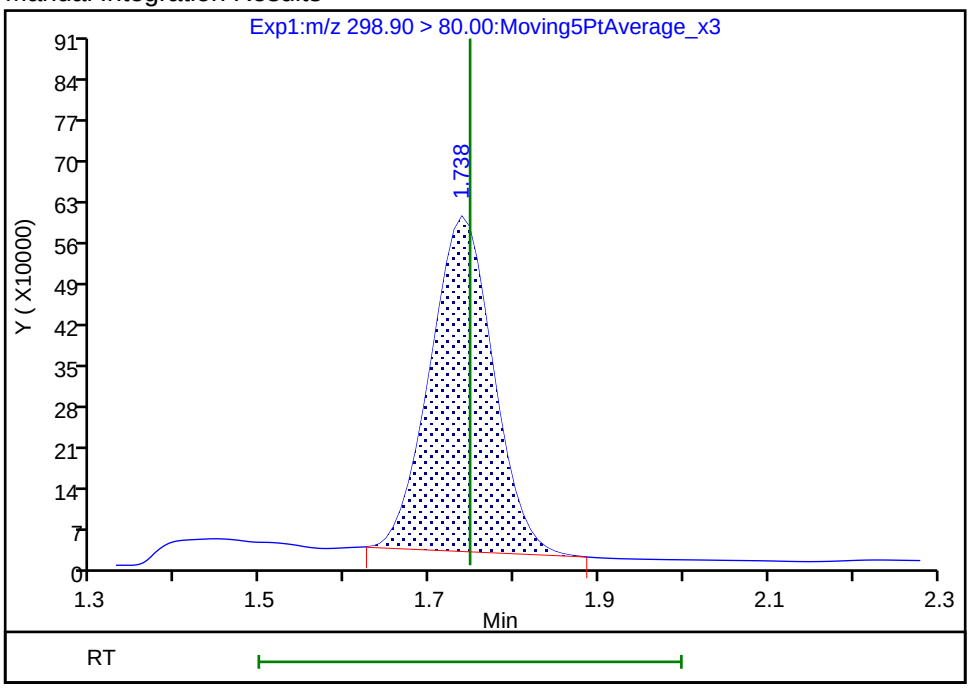
Processing Integration Results

RT: 1.74
Area: 3339007
Amount: 1.172734
Amount Units: ng/ml



Manual Integration Results

RT: 1.74
Area: 2975621
Amount: 1.045104
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:45:04

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB031(0-2) MSD | Lab Sample ID: 320-38061-1 MSD

Matrix: Solid | Lab File ID: 2018.04.20LLC_028.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.00(g) | Date Analyzed: 04/21/2018 10:29

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.00204		0.00021	0.000030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.00199		0.00021	0.000083
307-24-4	Perfluorohexanoic acid (PFHxA)	0.00231		0.00021	0.000045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.00194		0.00021	0.000031
335-67-1	Perfluorooctanoic acid (PFOA)	0.00205		0.00021	0.000092
375-95-1	Perfluorononanoic acid (PFNA)	0.00184		0.00021	0.000039
335-76-2	Perfluorodecanoic acid (PFDA)	0.00189		0.00021	0.000024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.00211		0.00021	0.000039
307-55-1	Perfluorododecanoic acid (PFDoA)	0.00214		0.00021	0.000072
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	0.00228		0.00021	0.000055
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.00193		0.00021	0.000058
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.00171		0.00021	0.000027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.00177		0.00021	0.000033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.00183		0.00021	0.000038
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.00486		0.00054	0.00021
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.00185		0.00021	0.000042
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.00214		0.00021	0.000088
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.00197	J	0.0021	0.00042
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.00205	J	0.0021	0.00040
27619-97-2	6:2FTS	0.00195	J	0.0021	0.00016
39108-34-4	8:2FTS	0.00199	J	0.0021	0.00027

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: SB031(0-2) MSD | Lab Sample ID: 320-38061-1 MSD

Matrix: Solid | Lab File ID: 2018.04.20LLC_028.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: SHAKE | Date Extracted: 04/16/2018 08:43

Sample wt/vol: 5.00(g) | Date Analyzed: 04/21/2018 10:29

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219143 | Units: mg/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	102		25-150
STL01893	13C5 PFPeA	103		25-150
STL00993	13C2 PFHxA	89		25-150
STL01892	13C4-PFHpA	106		25-150
STL00990	13C4 PFOA	108		25-150
STL00995	13C5 PFNA	116		25-150
STL00996	13C2 PFDA	115		25-150
STL00997	13C2 PFUnA	104		25-150
STL00998	13C2 PFDoA	100		25-150
STL02116	13C2-PFTeDA	104		25-150
STL02337	13C3-PFBS	98		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	100		25-150
STL02118	d3-NMeFOSAA	129		25-150
STL02117	d5-NEtFOSAA	119		25-150
STL02279	M2-6:2FTS	184	*	25-150
STL02280	M2-8:2FTS	179	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_028.d
Lims ID: 320-38061-A-1-C MSD
Client ID:
Sample Type: MSD
Inject. Date: 21-Apr-2018 10:29:10 ALS Bottle#: 20 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38061-a-1-c msd
Misc. Info.: Plate: 1 Rack: 6
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 24-Apr-2018 16:41:53 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK014

First Level Reviewer: barnettj Date: 24-Apr-2018 16:27:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6305282	2.54		102	39102	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.441	0.0	1.004	2231784	0.9530		95.3	642	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.701	-0.007	0.555	4096789	2.57		103	55931	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	1810591	0.9271		92.7	1039	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.738	-0.008	1.000	83078	2.27		97.5	265	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	2233766	0.7985		90.3	5055	
298.90 > 99.00	1.739	1.739	0.0	1.005	954789		2.34(1.25-3.74)		1966	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.947	0.003	1.000	1654569	2.89		309	5132	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.980	0.002	1.000	3913288	2.22		88.6	72759	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.990	-0.008	1.000	1712057	1.08		108	1810	
313.00 > 119.00	1.982	1.990	-0.008	1.000	145009		11.81(5.03-15.10)		1131	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.001	0.004	1.000	2025036	0.7925		84.5	8741	
349.00 > 99.00	2.005	2.001	0.004	1.000	746604		2.71(1.36-4.07)		5825	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.092	-0.008	1.000	246012	NR		0.0	1401	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.318	-0.010	1.000	1652164	0.9031		90.3	2028	
363.00 > 169.00	2.308	2.318	-0.010	1.000	667238		2.48(1.13-3.40)		2713	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.319	-0.011	1.000	4569733	2.66		106	71826	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.331	-0.010	1.000	1969939	0.8272		90.9	3540	
399.00 > 99.00	2.321	2.331	-0.010	1.000	667756		2.95(1.50-4.49)		2064	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.332	-0.011	1.000	4976666	2.35		99.2	98033	
65 Adona										
377.00 > 251.00	2.360	2.370	-0.010	1.000	4985601	0.9768		97.7	73507	
377.00 > 85.00	2.360	2.370	-0.010	1.000	2912438		1.71(0.84-2.53)		38876	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.652	-0.007	1.000	1607479	4.36		184	9507	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.658	-0.013	1.000	1042563	0.9112		96.1	3063	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.681	-0.006		4604152	2.50			64468	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.681	-0.006	1.000	2027138	0.9547		95.5	1637	
413.00 > 169.00	2.675	2.681	-0.006	1.000	1066730		1.90(0.84-2.52)		3661	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.682	-0.007	1.000	4594226	2.69		108	108864	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.688	-0.005	1.000	1664827	0.8511		89.4	7310	
449.00 > 99.00	2.683	2.688	-0.005	1.000	442285		3.76(1.94-5.82)		4710	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.044	3.054	-0.010	1.000	3634735	2.27		244	8052	M
499.00 > 99.00	3.044	3.054	-0.010	1.000	823651		4.41(2.31-6.93)		4330	
20 Perfluorononanoic acid										
463.00 > 419.00	3.051	3.054	-0.003	1.000	1521639	0.8599		86.0	4550	
463.00 > 169.00	3.051	3.054	-0.003	1.000	376941		4.04(1.90-5.69)		5204	
D 19 13C5 PFNA										
468.00 > 423.00	3.051	3.055	-0.004	1.000	4242719	2.89		116	78206	
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.055	-0.011	1.000	3521414	2.37		99.2	18157	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.259	3.268	-0.009	1.000	2474193	0.8908		95.6	51816	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.388	3.391	-0.003	1.000	1879001	1.00		100.0	2086	
D 21 13C8 FOSA										
506.00 > 78.00	3.388	3.393	-0.005	1.000	4646142	2.50		100	43950	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.398	3.400	-0.002	1.000	997407	0.8468		88.2	1122	
549.00 > 99.00	3.398	3.400	-0.002	1.000	377204		2.64(1.33-3.97)		2242	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.407	3.410	-0.003	1.000	932420	0.9276		96.8	44948	
D 26 M2-8:2FTS										
529.00 > 81.00	3.407	3.411	-0.004	1.000	1902663	4.29		179	12302	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.416	3.419	-0.003	1.000	1297039	0.8832		88.3	3094	
513.00 > 169.00	3.416	3.419	-0.003	1.000	240022		5.40(2.36-7.09)		4303	
D 23 13C2 PFDA										
515.00 > 470.00	3.416	3.420	-0.004	1.000	3559061	2.88		115	88145	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.565	3.569	-0.004	1.000	2250433	3.22		129	61924	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.565	3.577	-0.012	1.000	822600	0.9163		91.6	5237	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.729	3.732	-0.003	1.000	826420	0.8639		89.6	2084	
599.00 > 99.00	3.729	3.732	-0.003	1.000	283910		2.91(1.39-4.16)		3546	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.740	3.743	-0.003	1.000	2053247	2.97		119	30620	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.740	3.753	-0.013	1.000	919859	0.9861		98.6	234	M
563.00 > 169.00	3.729	3.753	-0.024	0.997	246770		3.73(2.12-6.36)		52.7	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.740	3.753	-0.013	1.000	735374	0.9581		95.8	14923	
D 30 13C2 PFUnA										
565.00 > 520.00	3.740	3.754	-0.014	1.000	2759624	2.59		104	72383	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.896	3.911	-0.015	1.000	3449605	0.8039		85.3	54976	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.039	4.042	-0.003	1.000	1193837	1.00		100	1164	
613.00 > 169.00	4.039	4.042	-0.003	1.000	320214		3.73(2.13-6.40)		2893	
D 36 13C2 PFDoA										
615.00 > 570.00	4.039	4.042	-0.003	1.000	2861531	2.49		99.6	32268	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.299	4.301	-0.002	1.000	1476391	1.06		106	293	M
663.00 > 169.00	4.290	4.301	-0.011	0.998	548481		2.69(1.25-3.76)		155	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.532	4.547	-0.015	0.998	341920	0.9007		90.1	2321	
713.00 > 219.00	4.532	4.547	-0.015	0.998	242390		1.41(0.71-2.13)		3098	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.548	-0.005	1.000	3778698	2.59		104	30457	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.957	4.961	-0.004	1.002	2145352	0.8992		89.9	885	
813.00 > 169.00	4.957	4.961	-0.004	1.002	367384		5.84(2.86-8.58)		2182	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.949	4.961	-0.012	1.000	6146968	2.59		104	20952	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.314	5.324	-0.010	1.000	2263689	0.9169		91.7	781	
913.00 > 169.00	5.314	5.324	-0.010	1.000	285771		7.92(3.83-11.48)		2128	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 24-Apr-2018 16:42:05 Chrom Revision: 2.2 17-Apr-2018 19:19:24

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_028.d

Injection Date: 21-Apr-2018 10:29:10 Instrument ID: A8_N

Lims ID: 320-38061-A-1-C MSD

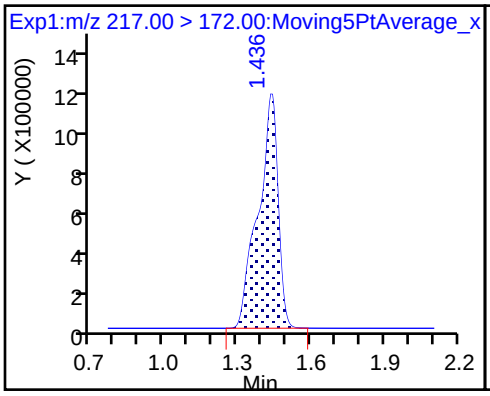
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 6

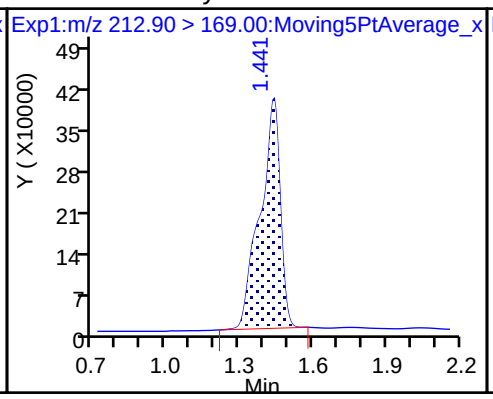
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

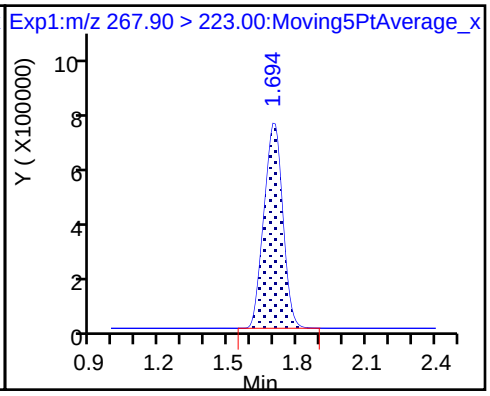
D 1 13C4 PFBA



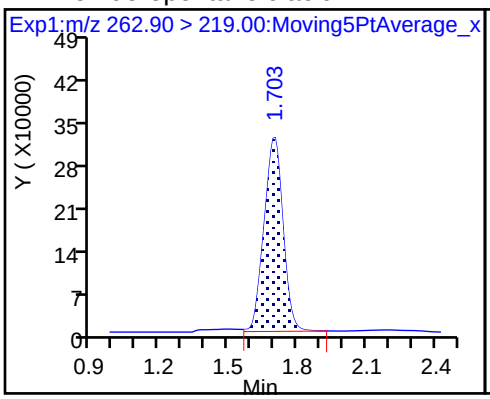
2 Perfluorobutyric acid



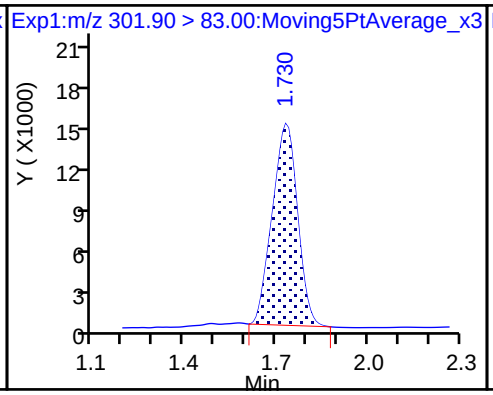
D 3 13C5-PFPeA



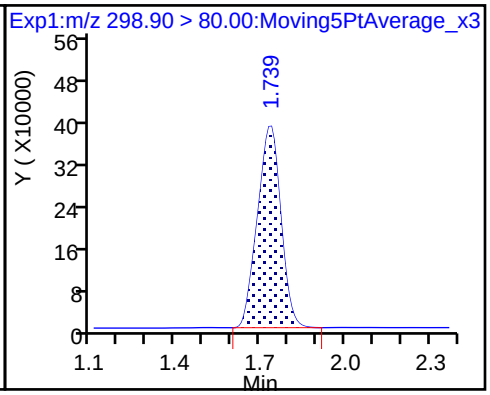
4 Perfluoropentanoic acid



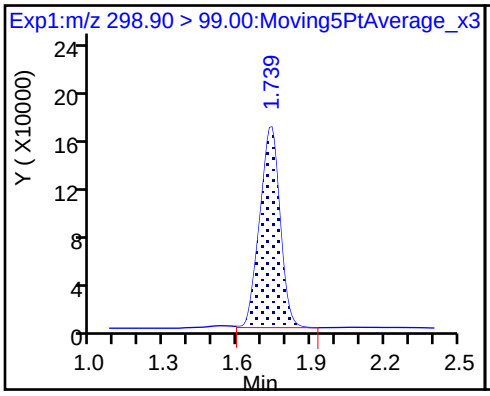
D 47 13C3-PFBS



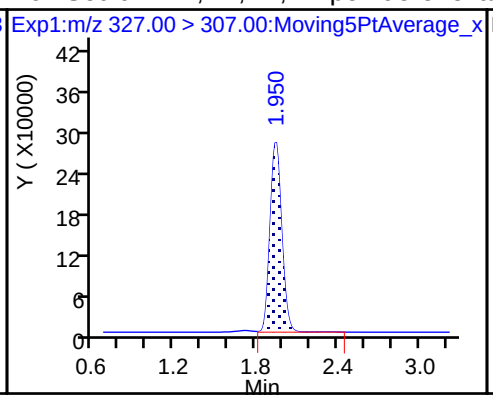
5 Perfluorobutanesulfonic acid



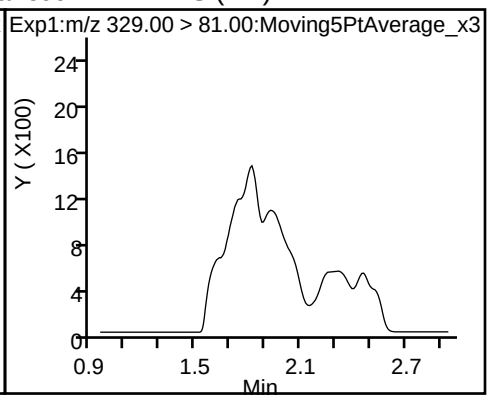
5 Perfluorobutanesulfonic acid



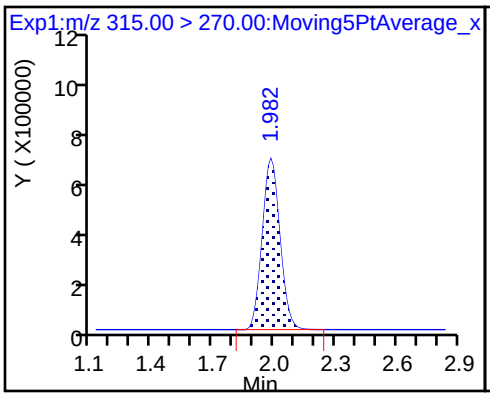
61 Sodium 1H,1H,2H,2H-perfluorohexane



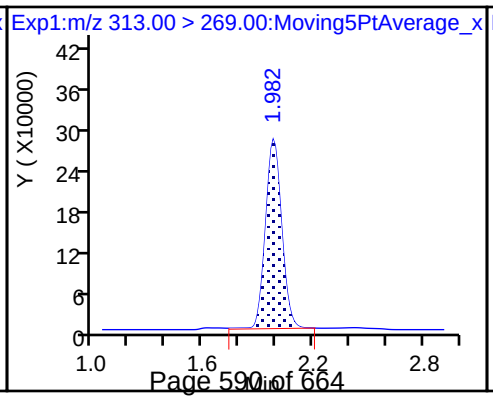
D 60 M2-4:2FTS (ND)



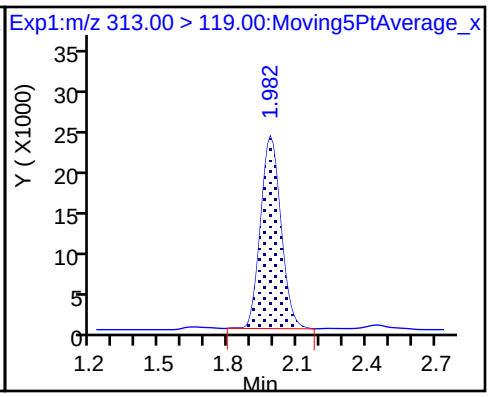
D 7 13C2 PFHxA



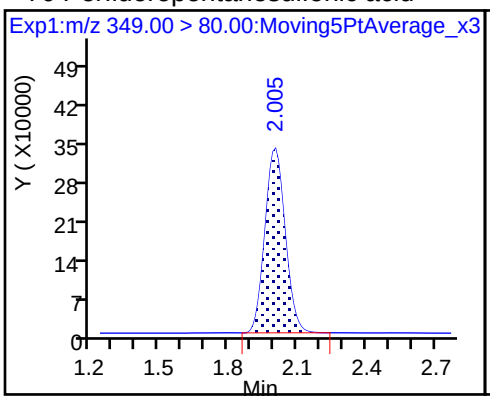
6 Perfluorohexanoic acid



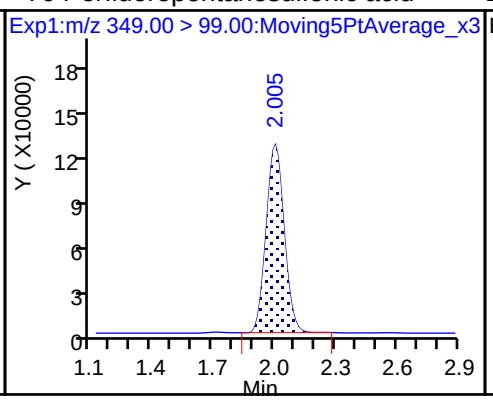
6 Perfluorohexanoic acid



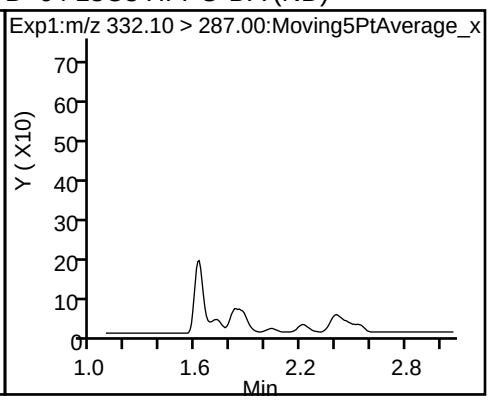
70 Perfluoropentanesulfonic acid



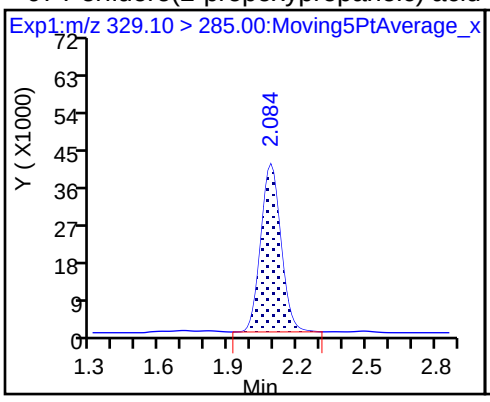
70 Perfluoropentanesulfonic acid



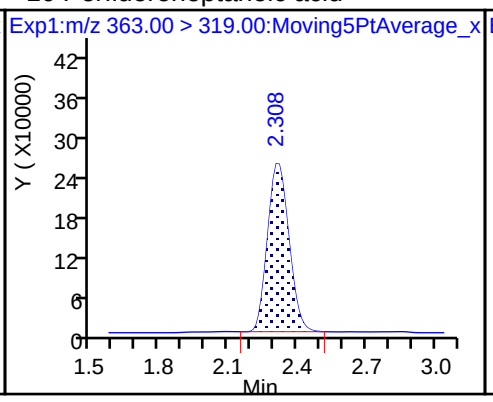
D 64 13C3 HFPO-DA (ND)



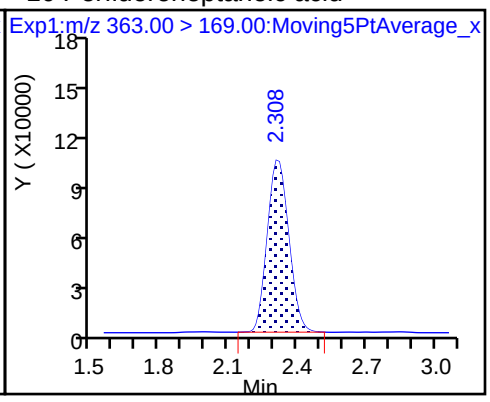
67 Perfluoro(2-propoxypropanoic) acid



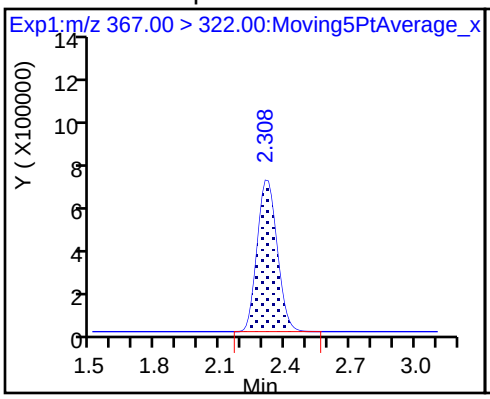
10 Perfluoroheptanoic acid



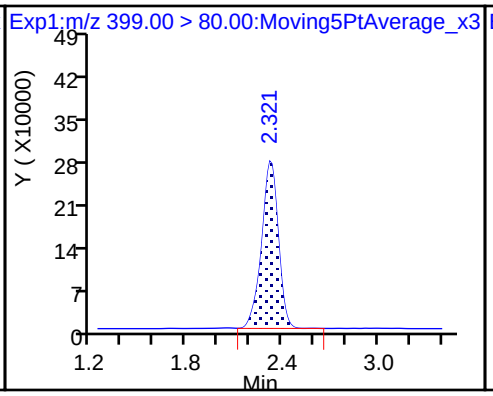
10 Perfluoroheptanoic acid



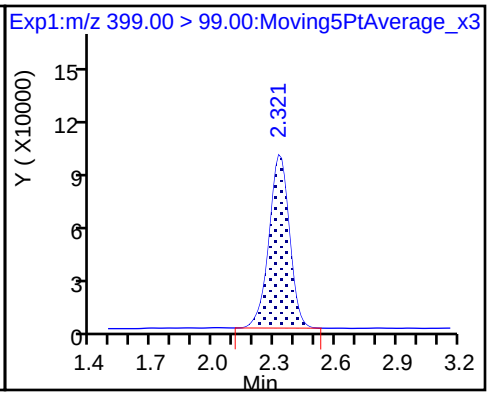
D 9 13C4-PFHpA



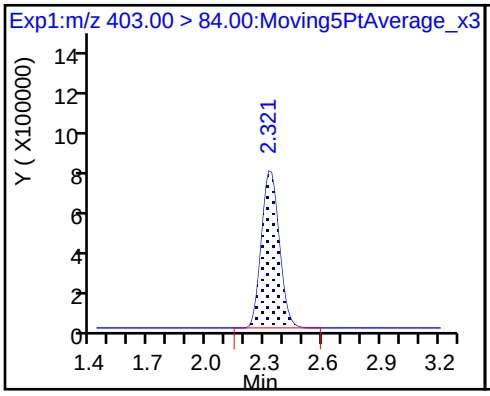
8 Perfluorohexanesulfonic acid



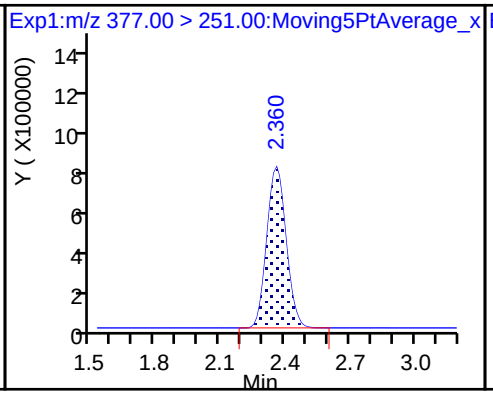
8 Perfluorohexanesulfonic acid



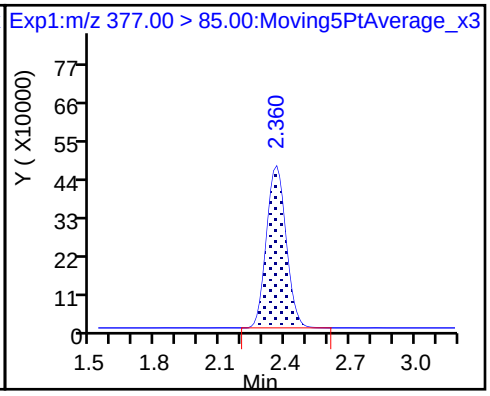
D 11 18O2 PFHxS



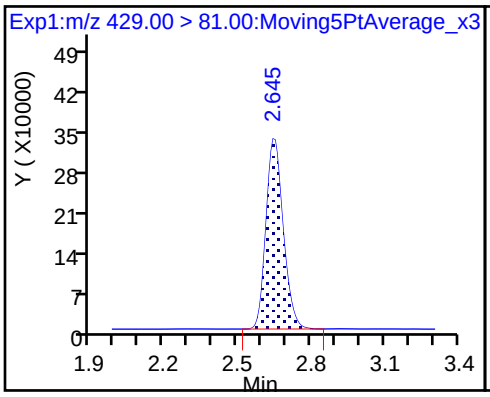
65 Adona



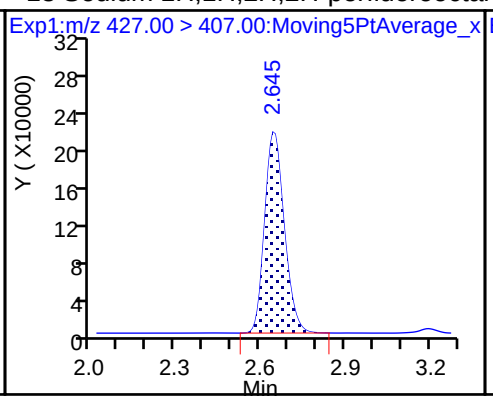
65 Adona



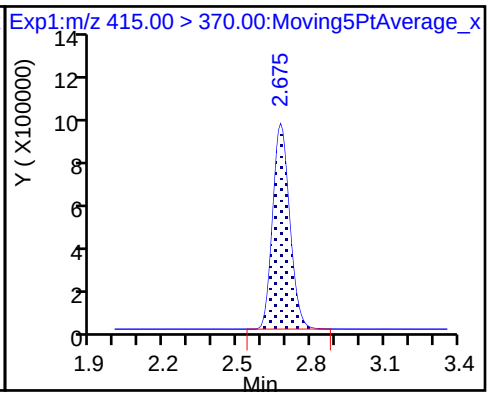
D 12 M2-6:2FTS



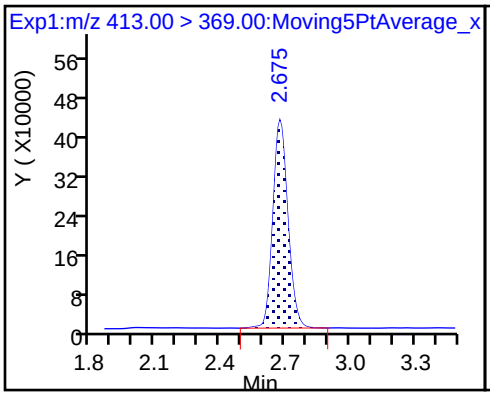
13 Sodium 1H,1H,2H,2H-perfluorooctane



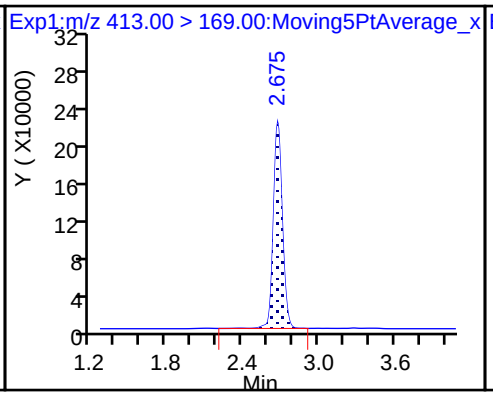
M62 13C2-PFOA



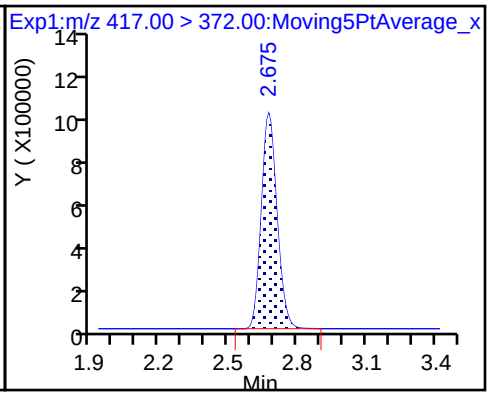
15 Perfluorooctanoic acid



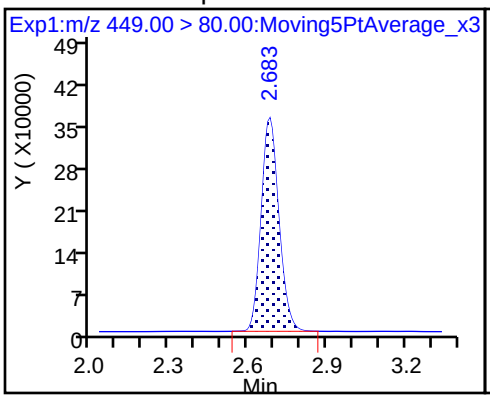
15 Perfluorooctanoic acid



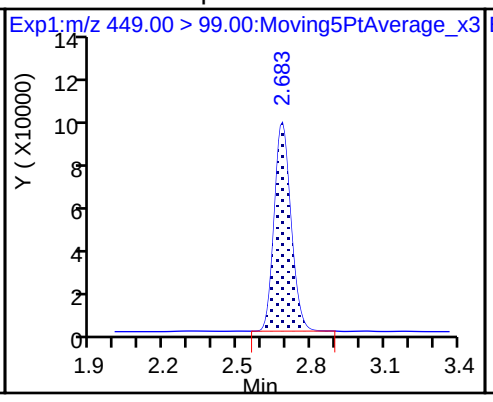
D 14 13C4 PFOA



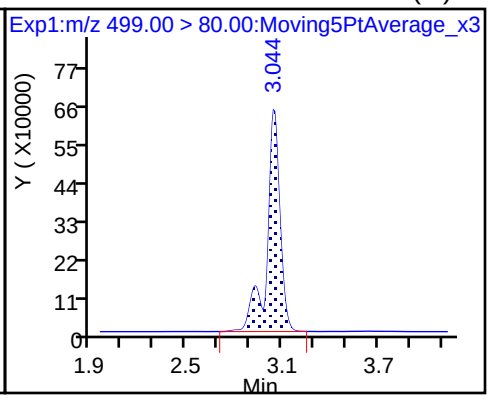
16 Perfluoroheptanesulfonic acid



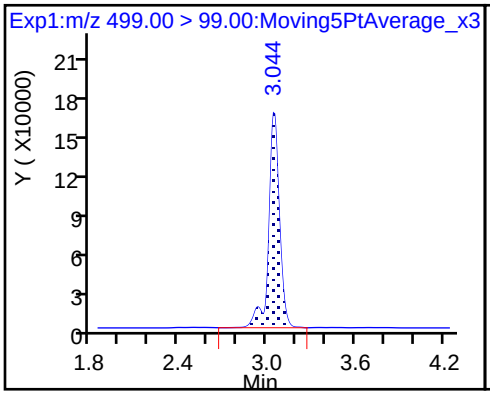
16 Perfluoroheptanesulfonic acid



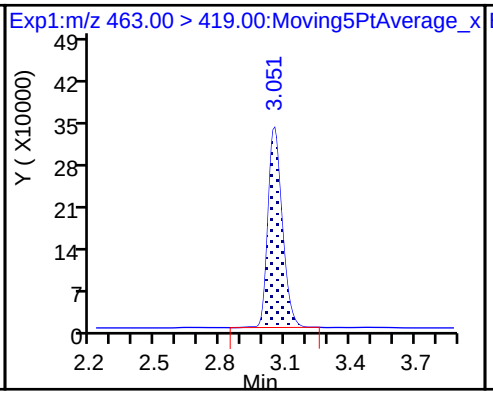
17 Perfluorooctane sulfonic acid (M)



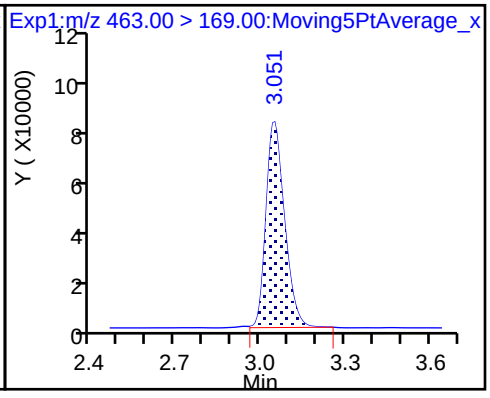
17 Perfluorooctane sulfonic acid



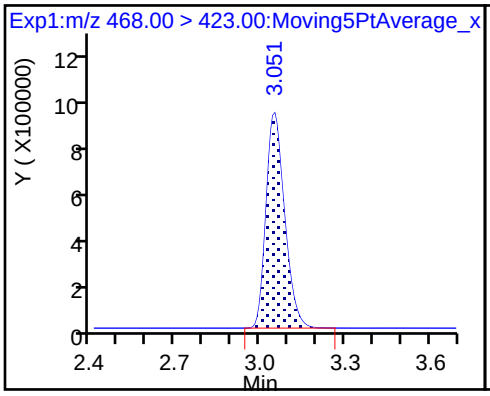
20 Perfluorononanoic acid



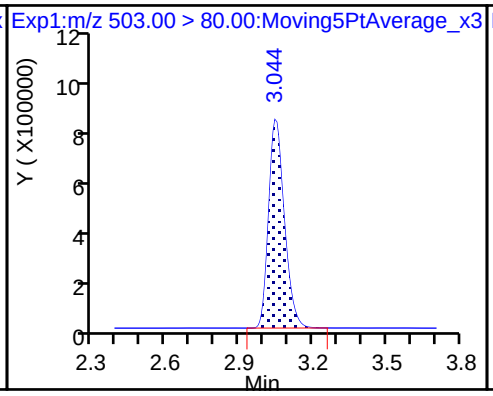
20 Perfluorononanoic acid



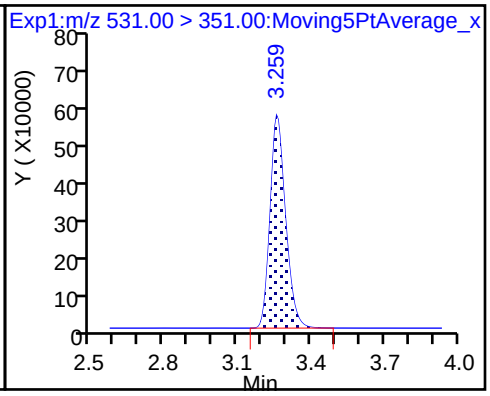
D 19 13C5 PFNA



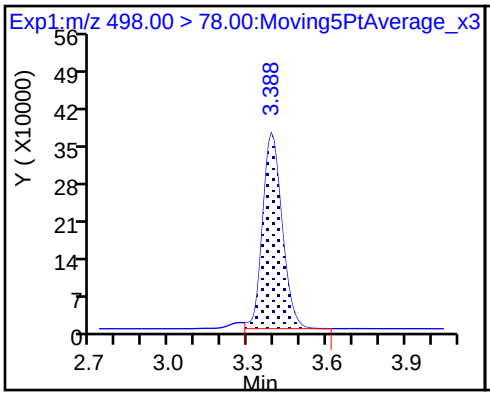
D 18 13C4 PFOS



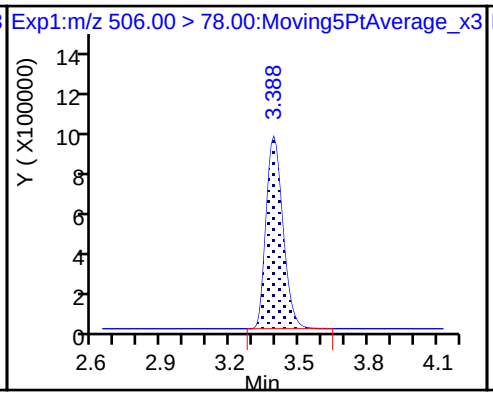
69 9-Chlorohexadecafluoro-3-oxanonane



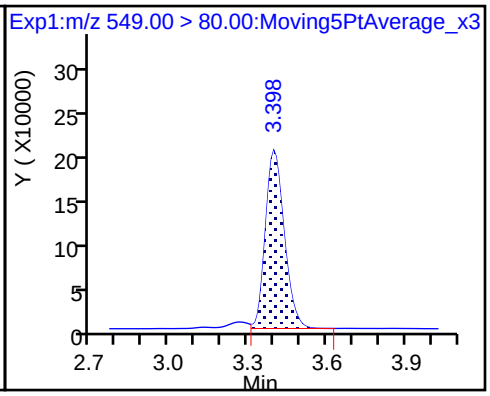
22 Perfluorooctane Sulfonamide



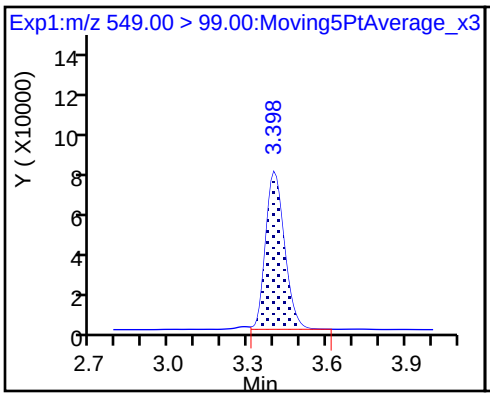
D 21 13C8 FOSA



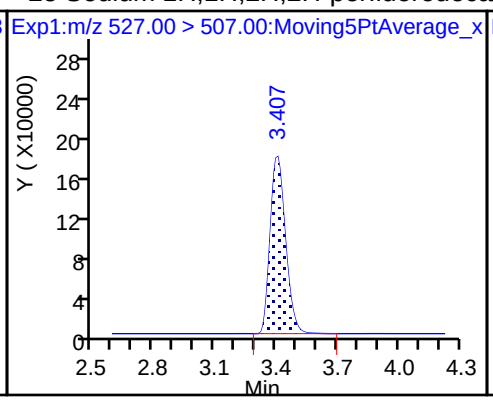
68 Perfluorononanesulfonic acid



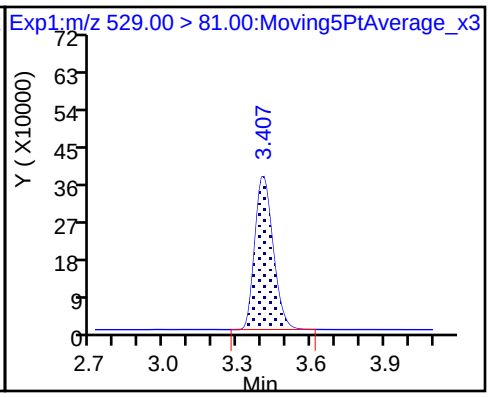
68 Perfluorononanesulfonic acid



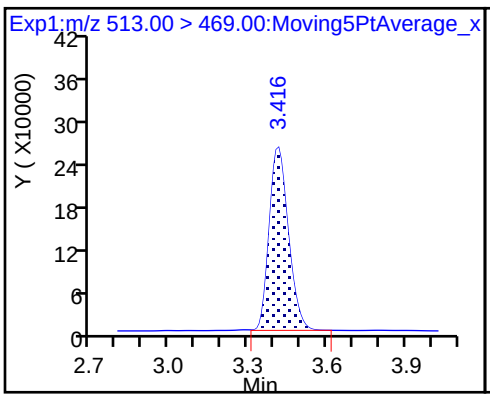
25 Sodium 1H,1H,2H,2H-perfluorodecane



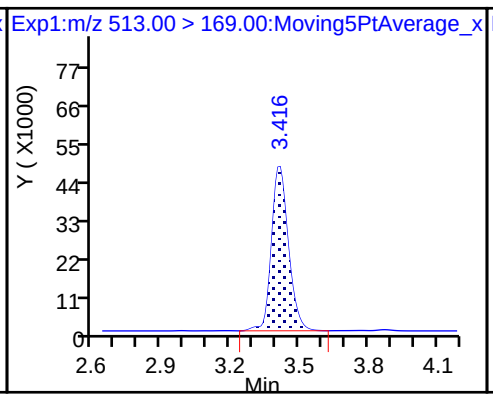
D 26 M2-8:2FTS



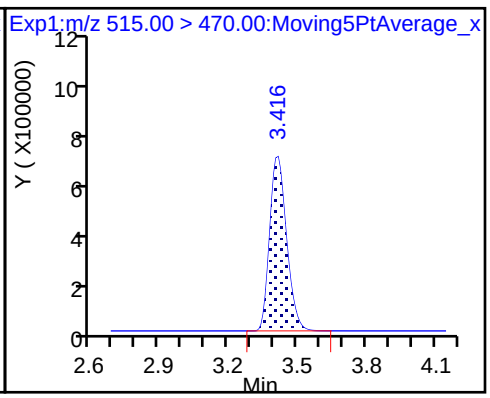
24 Perfluorodecanoic acid



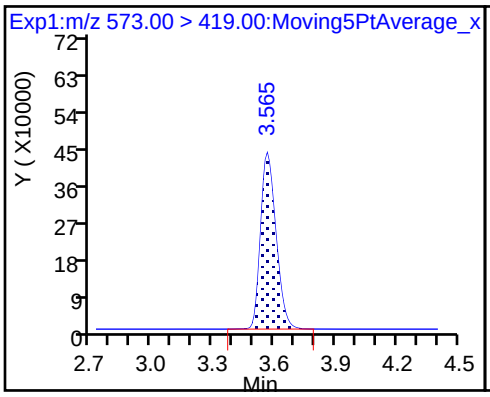
24 Perfluorodecanoic acid



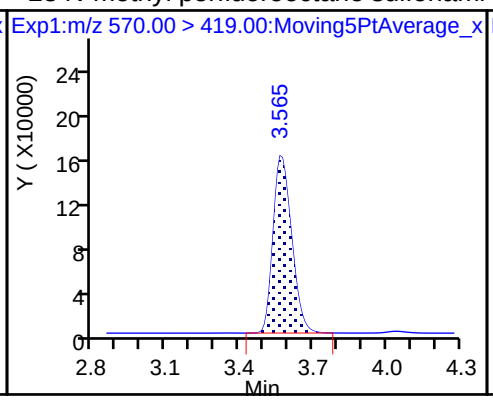
D 23 13C2 PFDA



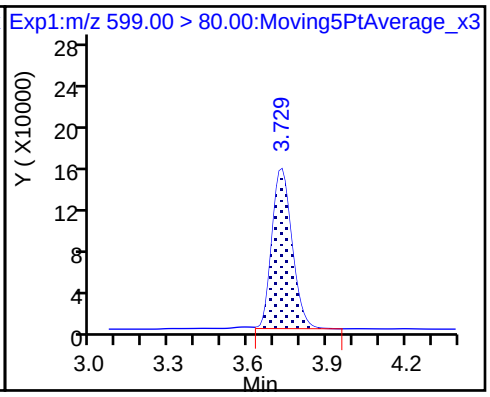
D 27 d3-NMeFOSAA



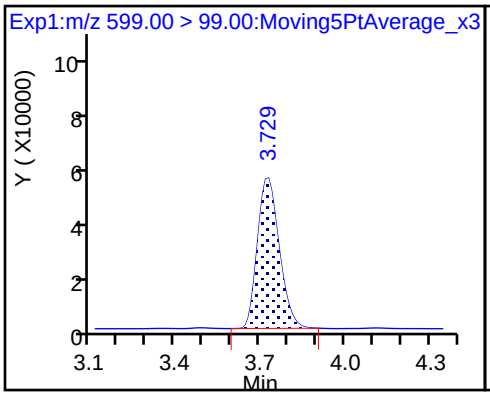
28 N-methyl perfluorooctane sulfonami



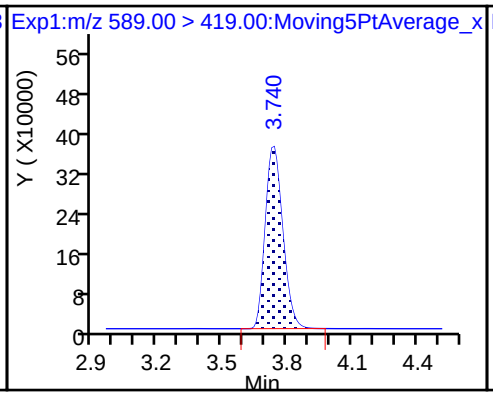
29 Perfluorodecane Sulfonic acid



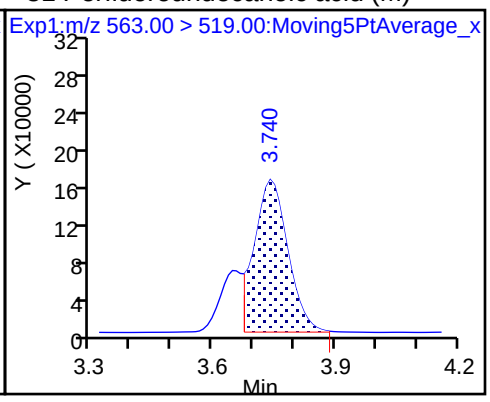
29 Perfluorodecane Sulfonic acid



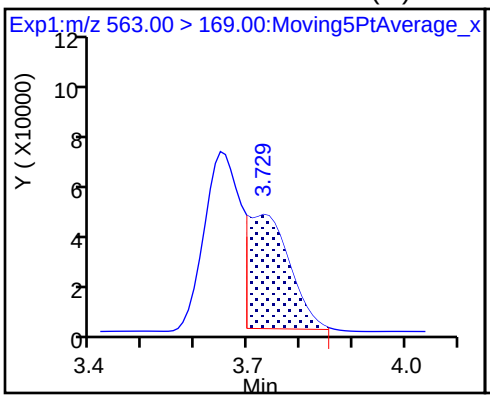
D 32 d5-NEtFOSAA



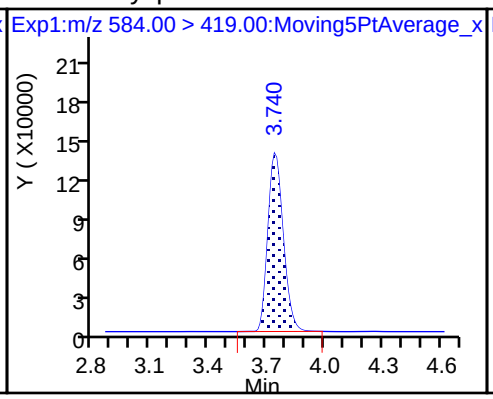
31 Perfluoroundecanoic acid (M)



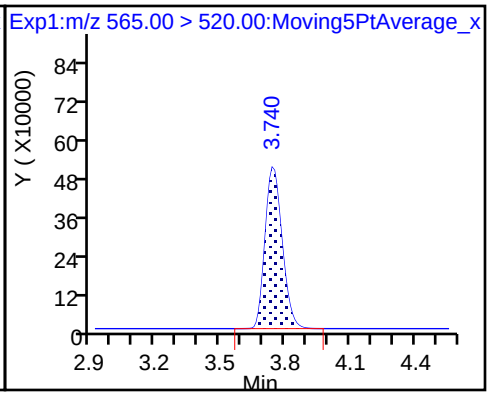
31 Perfluoroundecanoic acid (M)



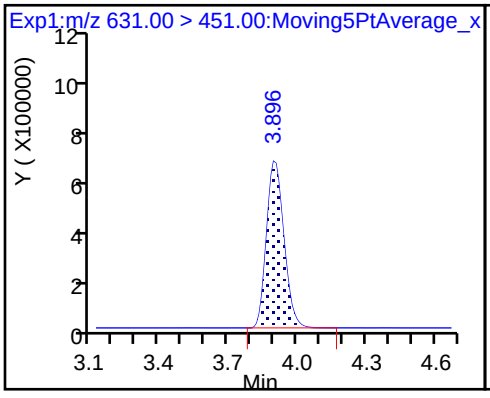
33 N-ethyl perfluorooctane sulfonamid



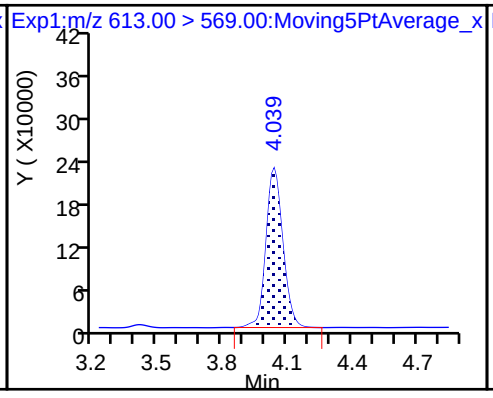
D 30 13C2 PFUnA



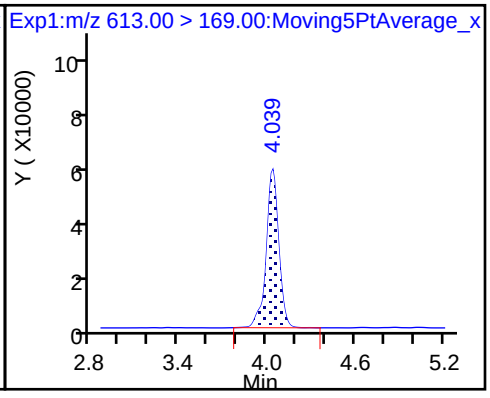
66 11-Chloroeicosafluoro-3-oxaundecan



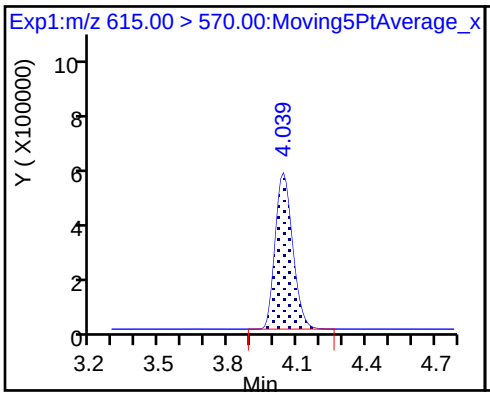
37 Perfluorododecanoic acid



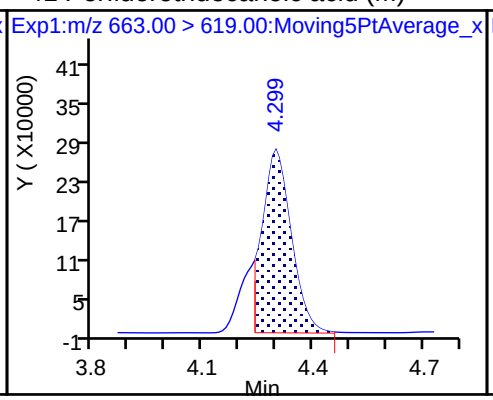
37 Perfluorododecanoic acid



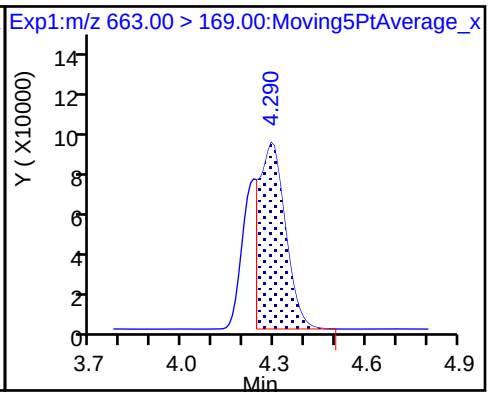
D 36 13C2 PFDoA



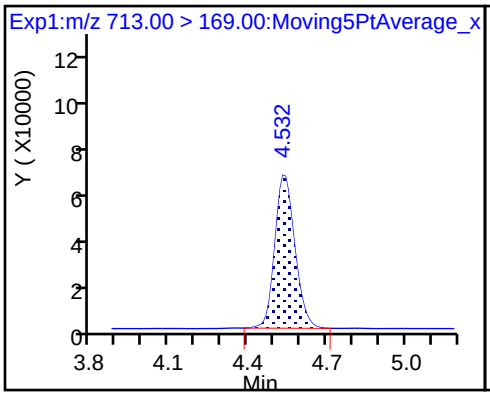
41 Perfluorotridecanoic acid (M)



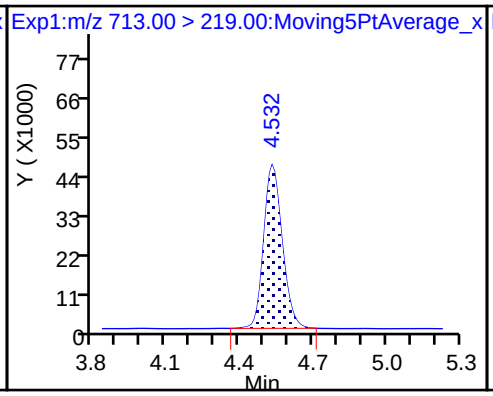
41 Perfluorotridecanoic acid



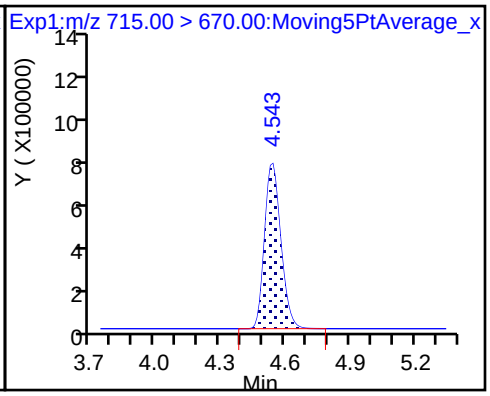
42 Perfluorotetradecanoic acid



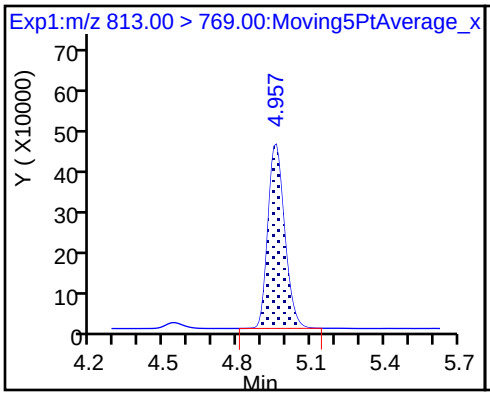
42 Perfluorotetradecanoic acid



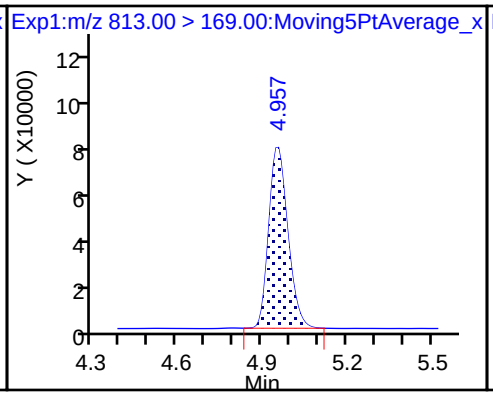
D 43 13C2-PFTeDA



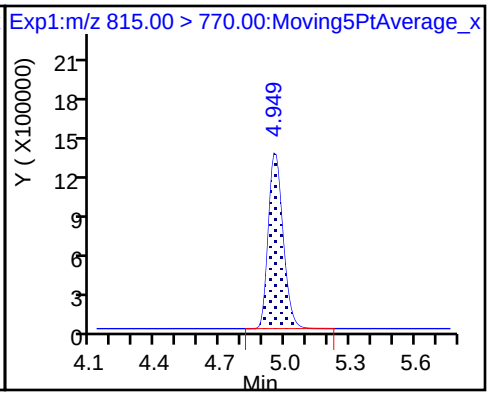
45 Perfluorohexadecanoic acid



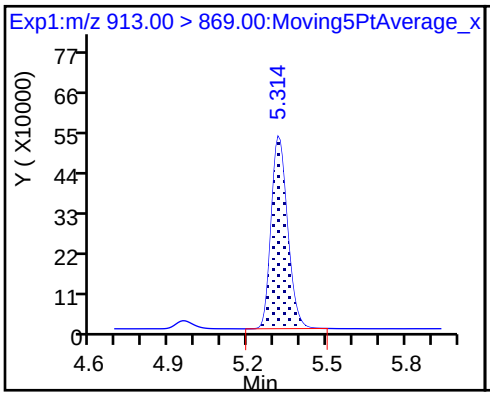
45 Perfluorohexadecanoic acid



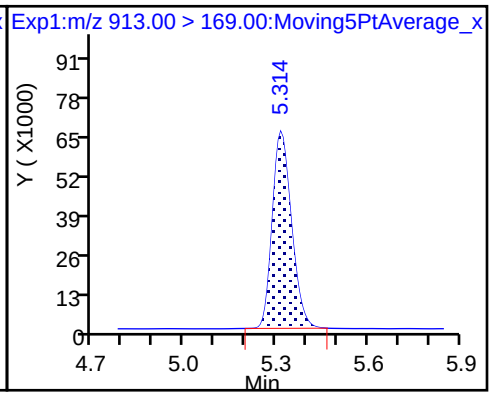
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

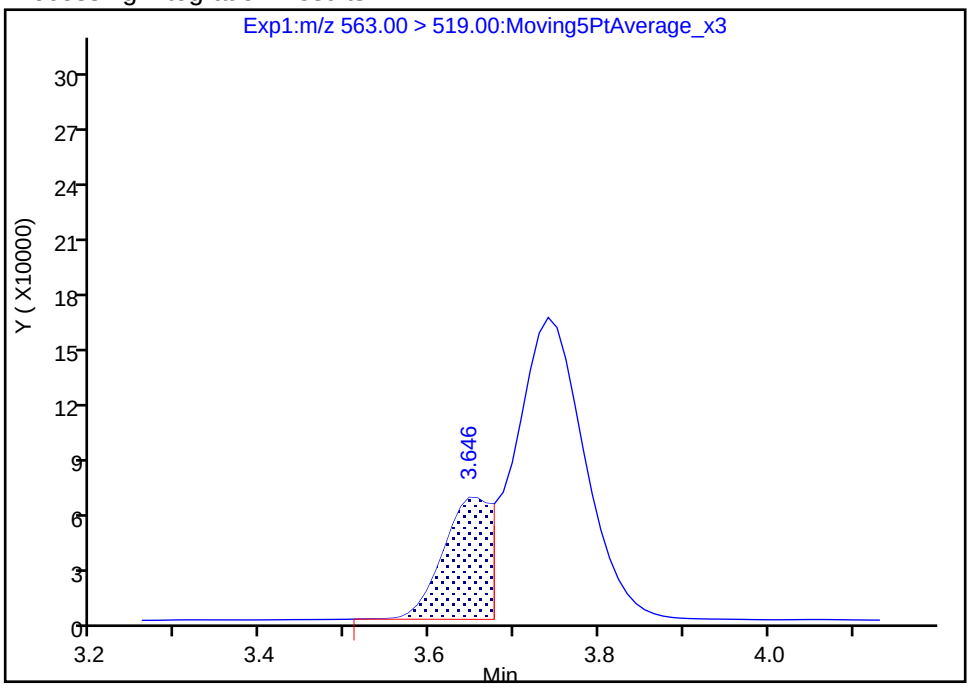
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_028.d
Injection Date: 21-Apr-2018 10:29:10 Instrument ID: A8_N
Lims ID: 320-38061-A-1-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

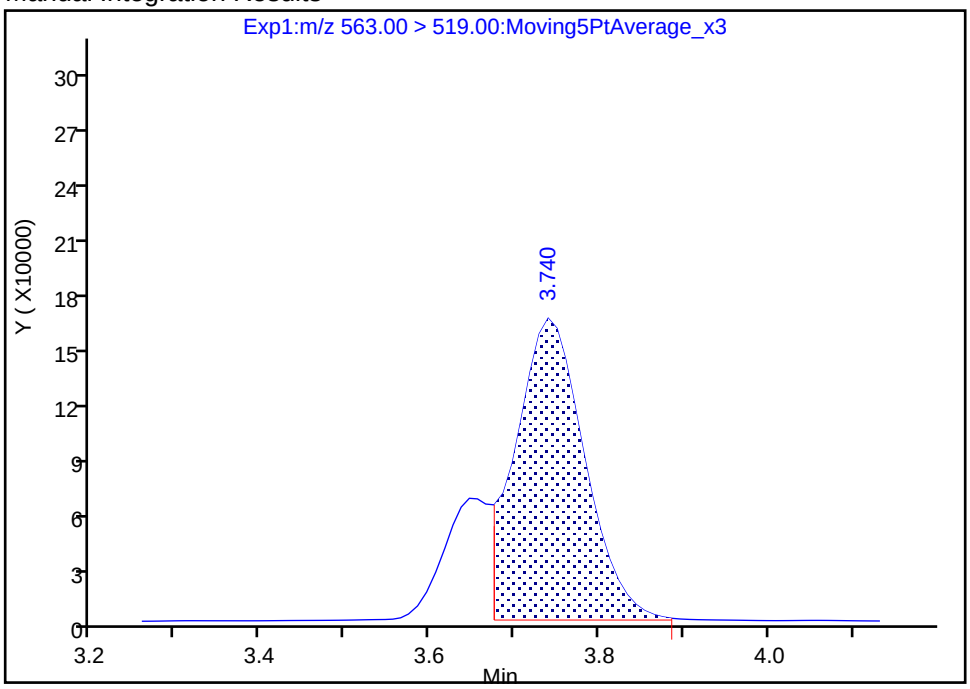
Processing Integration Results

RT: 3.65
Area: 257806
Amount: 0.276360
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 919859
Amount: 0.986061
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:26:17
Audit Action: Manually Integrated Audit Reason: Wrong peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

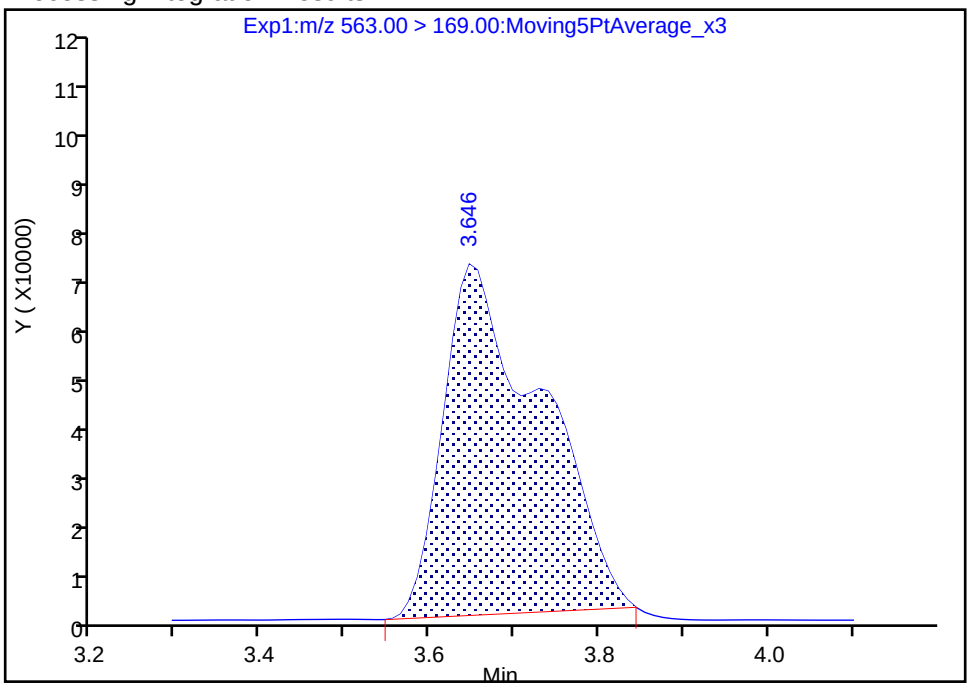
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_028.d
Injection Date: 21-Apr-2018 10:29:10 Instrument ID: A8_N
Lims ID: 320-38061-A-1-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

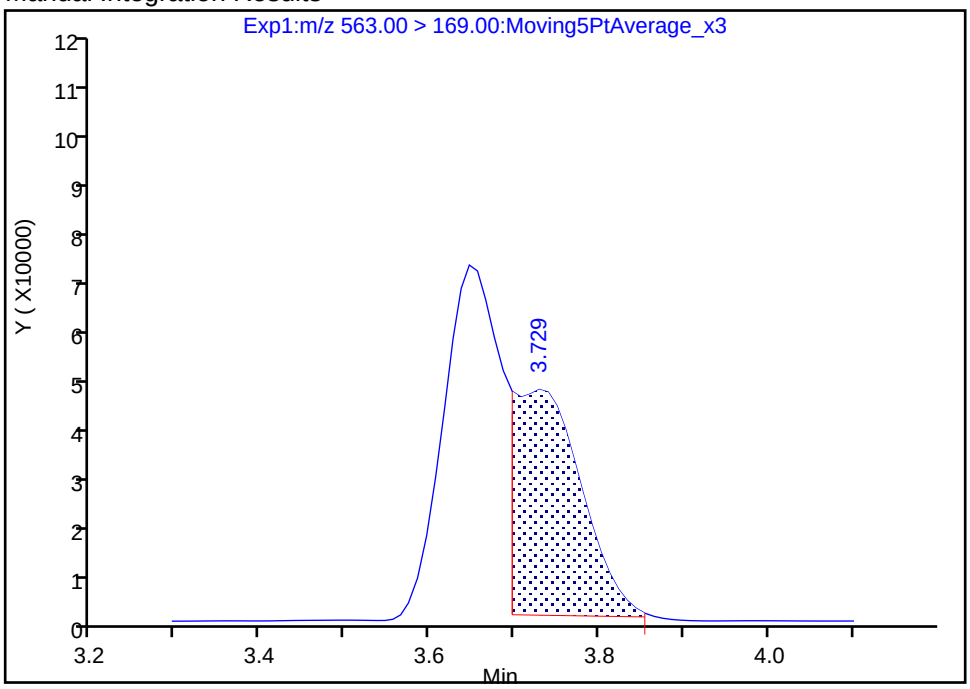
Processing Integration Results

RT: 3.65
Area: 574706
Amount: 0.276360
Amount Units: ng/ml



Manual Integration Results

RT: 3.73
Area: 246770
Amount: 0.986061
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:26:32
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

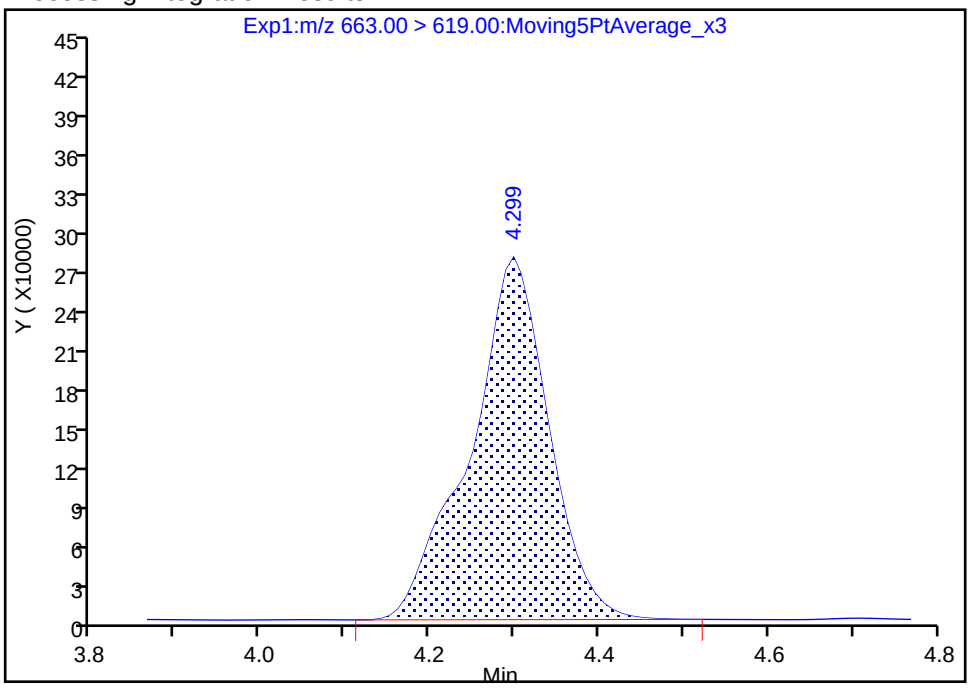
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_028.d
Injection Date: 21-Apr-2018 10:29:10 Instrument ID: A8_N
Lims ID: 320-38061-A-1-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

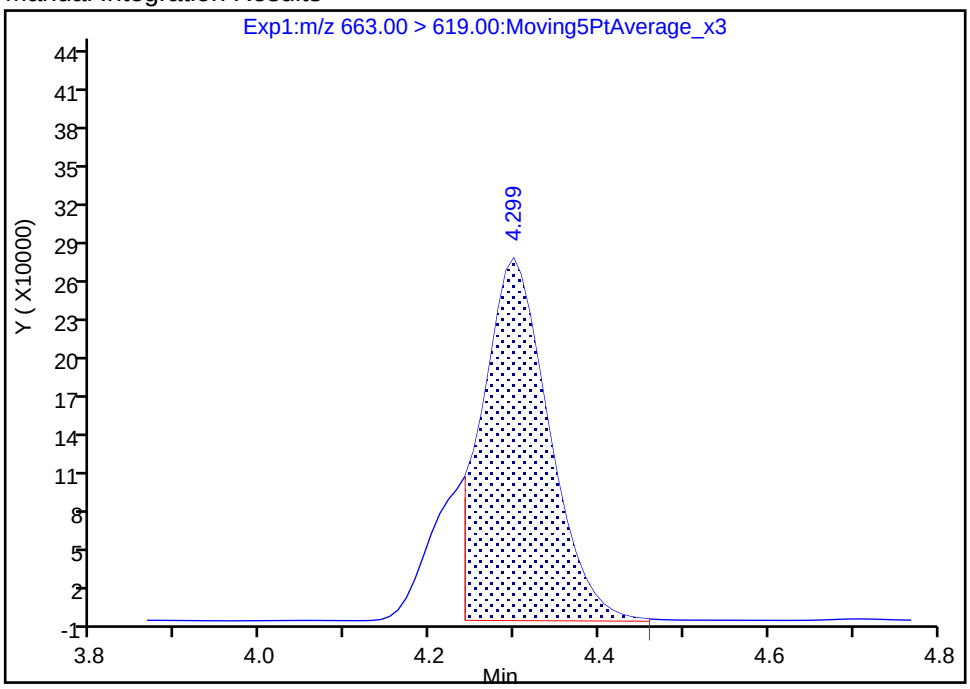
Processing Integration Results

RT: 4.30
Area: 1772622
Amount: 1.274261
Amount Units: ng/ml



Manual Integration Results

RT: 4.30
Area: 1476391
Amount: 1.061313
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:26:56
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

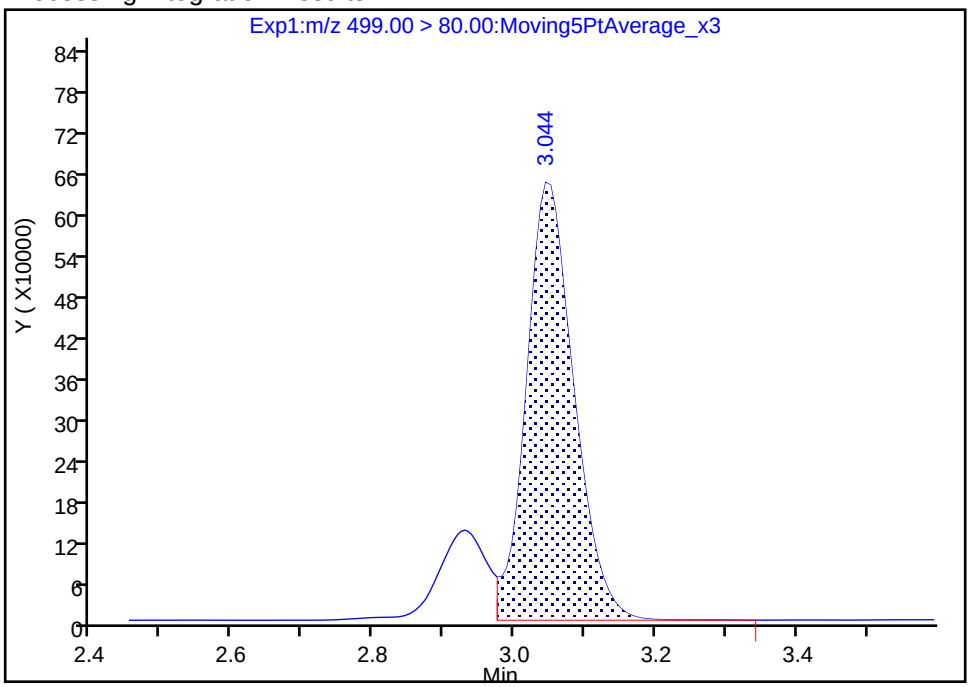
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b\2018.04.20LLC_028.d
Injection Date: 21-Apr-2018 10:29:10 Instrument ID: A8_N
Lims ID: 320-38061-A-1-C MSD
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

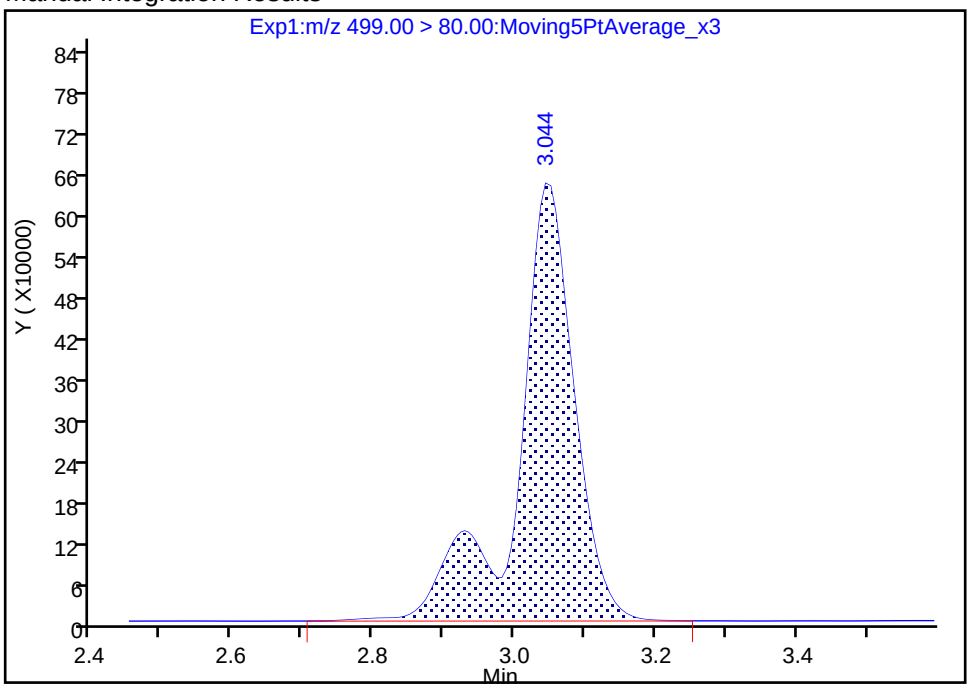
Processing Integration Results

RT: 3.04
Area: 3012348
Amount: 1.879415
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 3634735
Amount: 2.267725
Amount Units: ng/ml



Reviewer: barnettj, 24-Apr-2018 16:25:43
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-38169-A-1-C MSD

Matrix: Water | Lab File ID: 2018.04.26LLA_016.d

Analysis Method: 537 (modified) | Date Collected: 04/12/2018 10:35

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 259.5(mL) | Date Analyzed: 04/26/2018 13:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	89.31		1.93	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	137.1		1.93	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	110.0		1.93	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	90.00		1.93	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	72.96		1.93	0.82
375-95-1	Perfluorononanoic acid (PFNA)	41.87		1.93	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	36.36		1.93	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	34.45		1.93	1.06
307-55-1	Perfluorododecanoic acid (PFDoA)	37.73		1.93	0.53
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	34.79		1.93	1.25
376-06-7	Perfluorotetradecanoic acid (PFTeA)	34.75		1.93	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	40.73		1.93	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	54.98		1.93	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	36.47		1.93	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	62.29		1.93	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	33.82		1.93	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	36.22		1.93	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	42.01		19.3	2.99
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	37.62		19.3	1.83
27619-97-2	6:2FTS	39.16		19.3	1.93
39108-34-4	8:2FTS	33.96		19.3	1.93

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38061-1

SDG No.:

Client Sample ID: | Lab Sample ID: 320-38169-A-1-C MSD

Matrix: Water | Lab File ID: 2018.04.26LLA_016.d

Analysis Method: 537 (modified) | Date Collected: 04/12/2018 10:35

Extraction Method: 3535 | Date Extracted: 04/18/2018 10:41

Sample wt/vol: 259.5(mL) | Date Analyzed: 04/26/2018 13:15

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220023 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	38		25-150
STL01893	13C5 PFPeA	73		25-150
STL00993	13C2 PFHxA	81		25-150
STL01892	13C4-PFHpA	92		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	90		25-150
STL00997	13C2 PFUnA	88		25-150
STL00998	13C2 PFDoA	85		25-150
STL02116	13C2-PFTeDA	89		25-150
STL02337	13C3-PFBS	87		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	85		25-150
STL02117	d5-NEtFOSAA	91		25-150
STL02279	M2-6:2FTS	136		25-150
STL02280	M2-8:2FTS	105		25-150

Report Date: 26-Apr-2018 16:46:49 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_016.d
Lims ID: 320-38169-A-1-C MSD
Client ID: MW-1S
Sample Type: MSD
Inject. Date: 26-Apr-2018 13:15:55 ALS Bottle#: 10 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38169-a-1-c msd
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 16:46:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 15:47:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.446	1.435	0.011	1.000	2645998	0.9577		38.3	18781	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.446	1.441	0.005	1.000	2277820	2.32		232	206	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.711	1.702	0.009	0.557	3234222	1.82		72.6	8324	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.711	1.702	0.009	1.000	5484304	3.56		356	216	M
D 47 13C3-PFBS										
301.90 > 83.00	1.747	1.738	0.009	1.000	82302	2.01		86.6	69.6	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.747	1.747	0.0	1.000	2929289	1.06		120	268	M
298.90 > 99.00	1.747	1.747	0.0	1.000	1187044		2.47(1.25-3.74)		395	
D 60 M2-4:2FTS										
329.00 > 81.00	1.720	1.949	-0.229	1.000	99057	0.3385		0.0	26.1	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.959	1.960	-0.001	1.000	1081062	1.90		204	19242	
D 7 13C2 PFHxA										
315.00 > 270.00	2.003	1.992	0.011	1.000	3987248	2.02		81.0	53710	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.003	1.993	0.010	1.000	4624690	2.85		285	548	M
313.00 > 119.00	2.003	1.993	0.010	1.000	412134		11.22(5.03-15.10)		1776	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.015	2.015	0.0	1.000	2606129	1.03		110	774	
349.00 > 99.00	2.015	2.015	0.0	1.000	887685		2.94(1.36-4.07)		947	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.105	2.094	0.011	1.000	263294	NR		0.0	137	
D 9 13C4-PFHpA										
367.00 > 322.00	2.333	2.320	0.013	1.000	4403963	2.30		91.9	79075	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.346	2.333	0.013	1.000	5423964	2.29		97.0	68817	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.333	2.333	0.0	1.000	4117608	2.34		234	1355	
363.00 > 169.00	2.333	2.333	0.0	1.000	1671453		2.46(1.13-3.40)		8198	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.346	2.346	0.0	1.000	3703492	1.43		156	762	
399.00 > 99.00	2.346	2.346	0.0	1.000	1175106		3.15(1.50-4.49)		1346	
65 Adona										
377.00 > 251.00	2.385	2.373	0.012	1.000	5217416	0.99		99.1	48482	
377.00 > 85.00	2.385	2.373	0.012	1.000	2967575		1.76(0.84-2.53)		5718	
D 12 M2-6:2FTS										
429.00 > 81.00	2.668	2.661	0.007	1.000	1322816	3.22		136	5152	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.668	0.0	1.000	956757	1.02		107	14575	
D 14 13C4 PFOA										
417.00 > 372.00	2.698	2.683	0.015	1.000	4445453	2.33		93.3	64256	
* 62 13C2-PFOA										
415.00 > 370.00	2.698	2.698	0.0		5133657	2.50			74464	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.698	2.698	0.0	1.000	3890049	1.89		188	1778	
413.00 > 169.00	2.698	2.698	0.0	1.000	2089727		1.86(0.84-2.52)		7648	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.705	2.706	-0.001	1.000	1909292	0.9463		99.4	2927	
449.00 > 99.00	2.705	2.706	-0.001	1.000	521190		3.66(1.94-5.82)		3793	
D 19 13C5 PFNA										
468.00 > 423.00	3.073	3.060	0.013	1.000	3837270	2.34		93.8	93146	
D 18 13C4 PFOS										
503.00 > 80.00	3.073	3.060	0.013	1.000	3632174	2.19		91.7	13729	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.073	3.067	0.006	1.000	2672502	1.62		174	7375	
499.00 > 99.00	3.073	3.067	0.006	1.000	524850		5.09(2.31-6.93)		4136	
20 Perfluorononanoic acid										
463.00 > 419.00	3.073	3.074	-0.001	1.000	1738836	1.09		109	3362	
463.00 > 169.00	3.073	3.074	-0.001	1.000	426418		4.08(1.90-5.69)		11643	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.287	3.280	0.007	1.000	2388240	0.8336		89.4	31716	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.398	0.009	1.000	4428999	2.14		85.7	39898	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.398	0.009	1.000	1684467	0.9400		94.0	12775	
D 26 M2-8:2FTS										
529.00 > 81.00	3.426	3.407	0.019	1.000	1247324	2.52		105	9304	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.426	3.417	0.009	1.000	1030059	0.8479		88.3	6488	
549.00 > 99.00	3.426	3.417	0.009	1.000	397121		2.59(1.33-3.97)		13255	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.426	0.009	1.000	3108458	2.26		90.4	86895	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.426	3.426	0.0	1.000	580788	0.8813		92.0	22478	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.436	-0.001	1.000	1210341	0.9436		94.4	4207	
513.00 > 169.00	3.435	3.436	-0.001	1.000	226294		5.35(2.36-7.09)		3722	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.596	3.575	0.021	1.000	1665174	2.13		85.4	20473	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.596	3.597	-0.001	1.000	724210	1.09		109	8980	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.761	3.751	0.010	1.000	1744109	2.27		90.6	26166	
D 30 13C2 PFUnA										
565.00 > 520.00	3.771	3.751	0.020	1.000	2616574	2.20		88.2	60574	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.750	3.751	-0.001	1.000	866029	0.8777		91.0	8052	
599.00 > 99.00	3.750	3.751	-0.001	1.000	298272		2.90(1.39-4.16)		6175	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.771	3.761	0.010	1.003	636471	0.9763		97.6	16469	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.771	3.761	0.010	1.000	790738	0.8940		89.0	3610	
563.00 > 169.00	3.771	3.761	0.010	1.000	212114		3.73(2.12-6.36)		5643	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.928	3.918	0.010	1.000	3529718	0.7975		84.7	51734	
D 36 13C2 PFDoA										
615.00 > 570.00	4.060	4.050	0.010	1.000	2728293	2.13		85.1	32128	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.060	4.061	-0.001	1.000	1114221	0.9790		97.9	1428	
613.00 > 169.00	4.060	4.061	-0.001	1.000	268709		4.15(2.13-6.40)		2908	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.329	4.319	0.010	1.000	1197244	0.9027		90.3	1461	
663.00 > 169.00	4.329	4.319	0.010	1.000	375707		3.19(1.25-3.76)		3979	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.563	4.553	0.010	1.000	3620431	2.23		89.1	34935	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.563	4.564	-0.001	1.000	327930	0.9016		90.2	3339	
713.00 > 219.00	4.563	4.564	-0.001	1.000	245641		1.33(0.71-2.13)		4273	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.967	0.008	1.000	5614900	2.12		84.9	16996	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.984	4.984	0.0	1.002	2029617	0.9321		92.5	967	
813.00 > 169.00	4.984	4.984	0.0	1.002	347092		5.85(2.86-8.58)		2276	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.350	-0.006	1.000	2095011	0.9290		92.9	759	
913.00 > 169.00	5.344	5.350	-0.006	1.000	256960		8.15(3.83-11.48)		2042	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

M - Manually Integrated

Report Date: 26-Apr-2018 16:46:49 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_016.d

Injection Date: 26-Apr-2018 13:15:55 Instrument ID: A8_N

Lims ID: 320-38169-A-1-C MSD

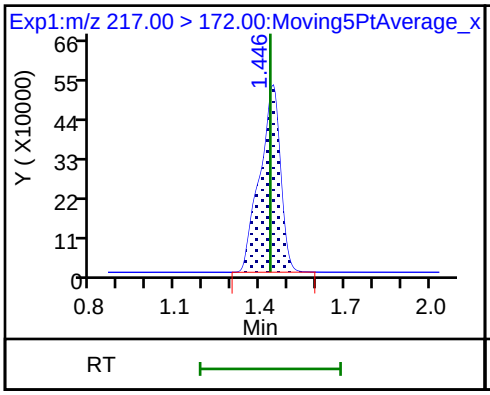
Client ID: MW-1S

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 8

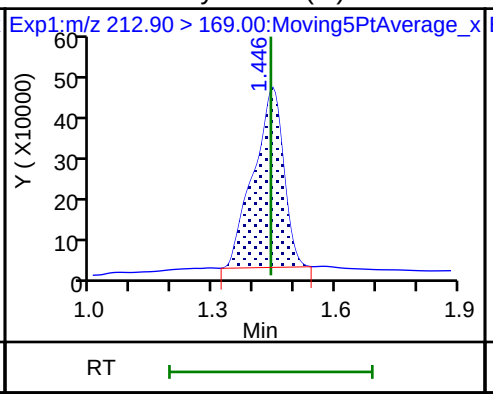
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

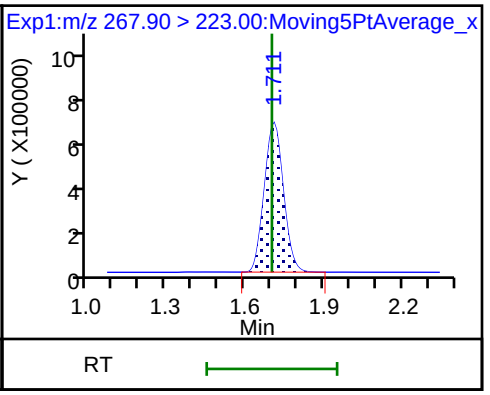
D 1 13C4 PFBA



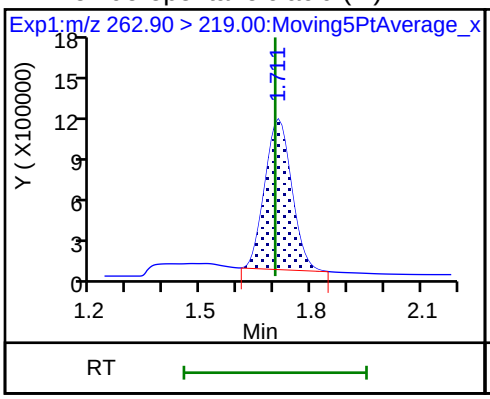
2 Perfluorobutyric acid (M)



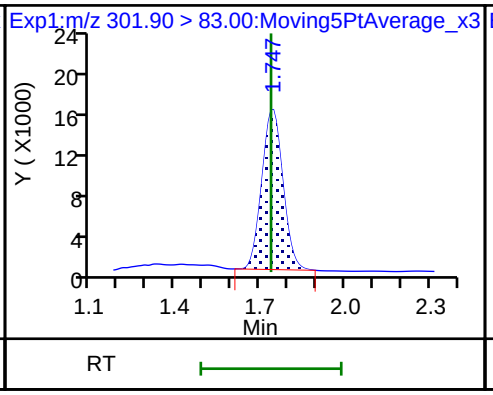
D 3 13C5-PFPeA



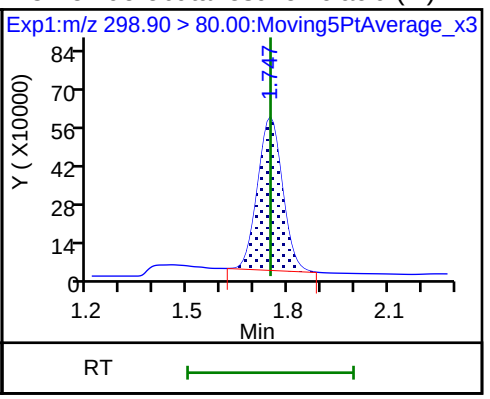
4 Perfluoropentanoic acid (M)



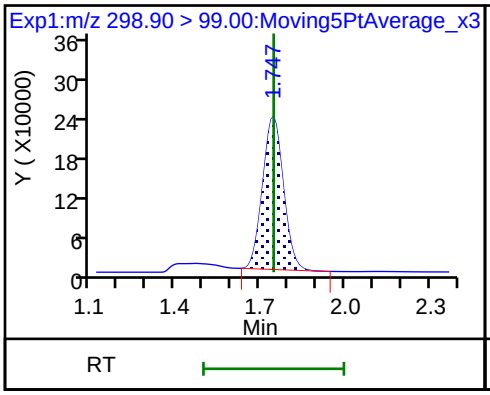
D 47 13C3-PFBS



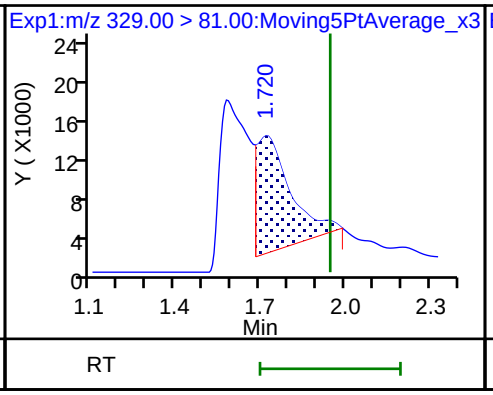
5 Perfluorobutanesulfonic acid (M)



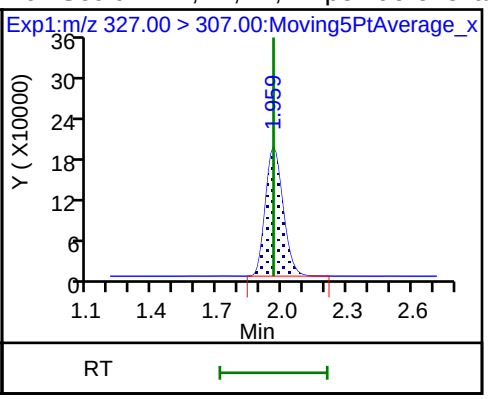
5 Perfluorobutanesulfonic acid



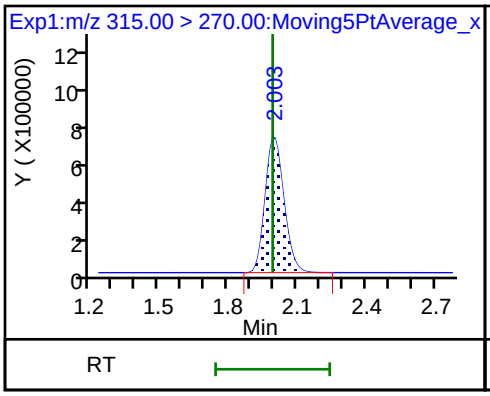
D 60 M2-4:2FTS



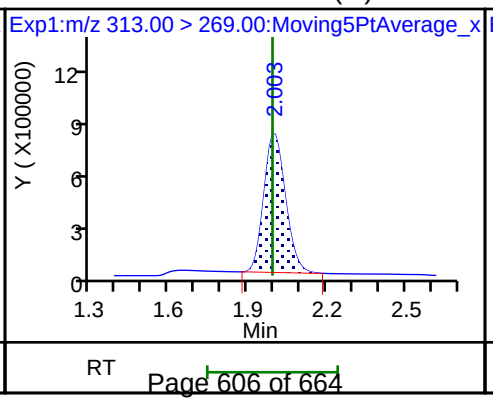
61 Sodium 1H,1H,2H,2H-perfluorohexane



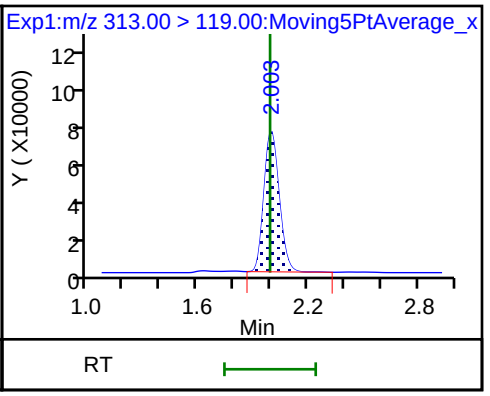
D 7 13C2 PFHxA



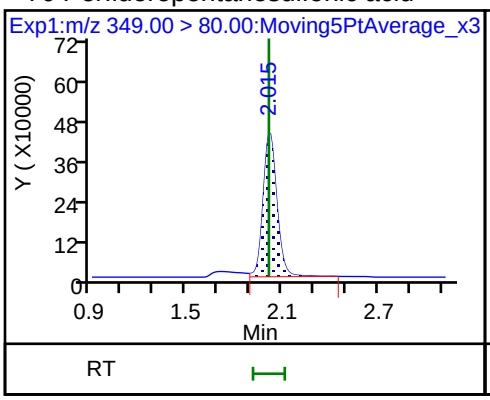
6 Perfluorohexanoic acid (M)



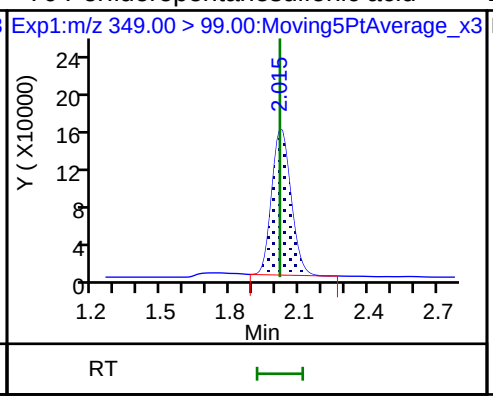
6 Perfluorohexanoic acid



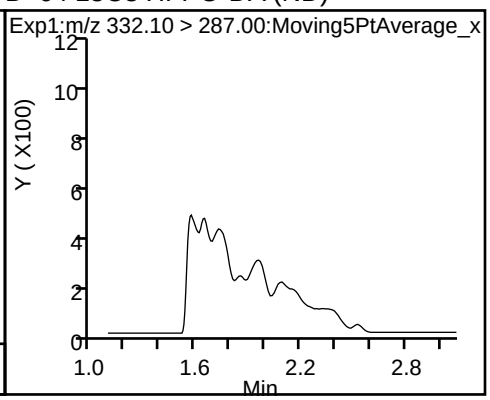
70 Perfluoropentanesulfonic acid



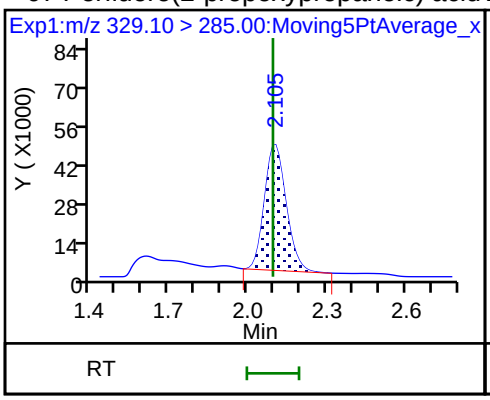
70 Perfluoropentanesulfonic acid



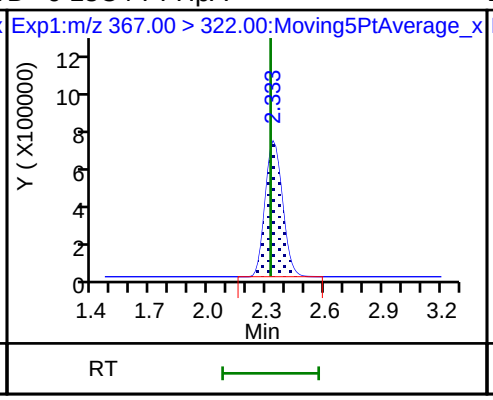
D 64 13C3 HFPO-DA (ND)



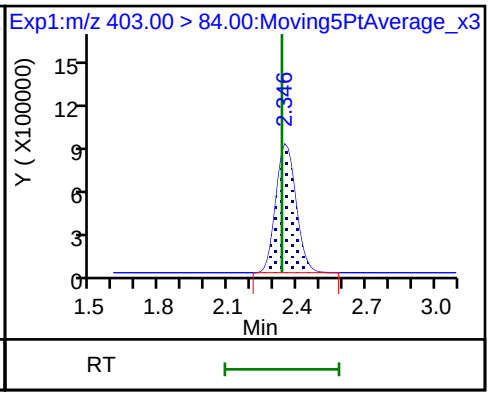
67 Perfluoro(2-propoxypropanoic) acid



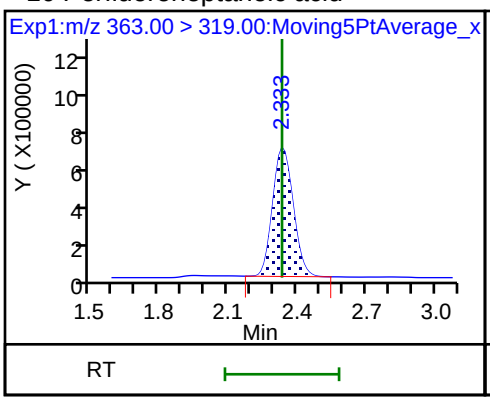
D 9 13C4-PFHpA



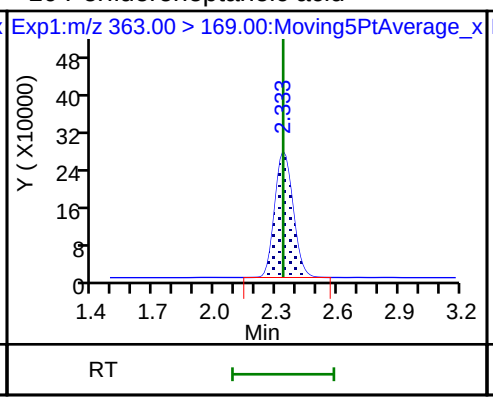
D 11 18O2 PFHxS



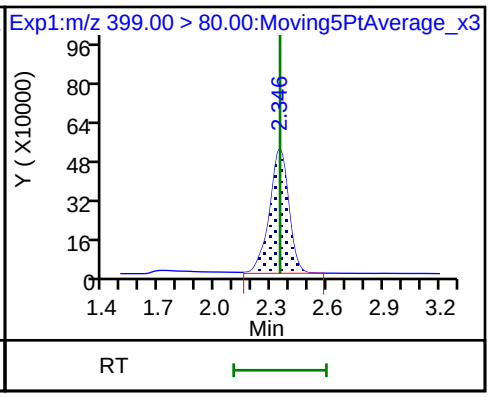
10 Perfluoroheptanoic acid



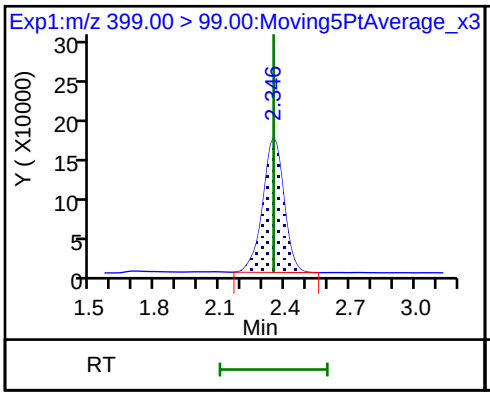
10 Perfluoroheptanoic acid



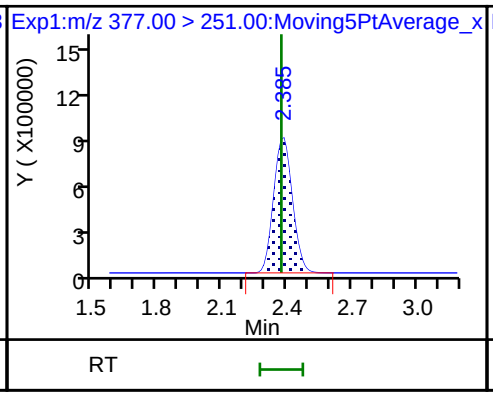
8 Perfluorohexanesulfonic acid



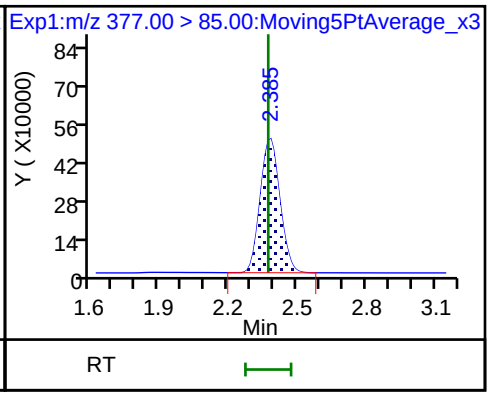
8 Perfluorohexanesulfonic acid



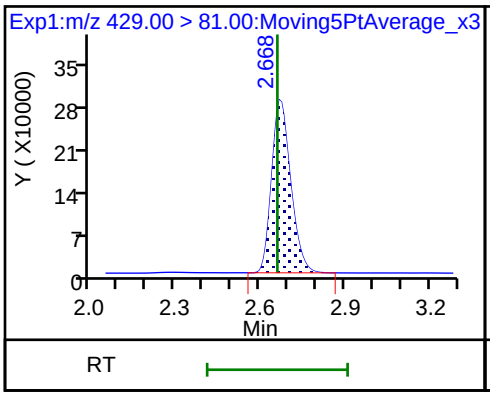
65 Adona



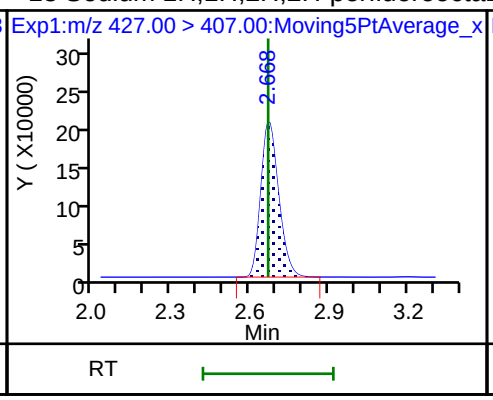
65 Adona



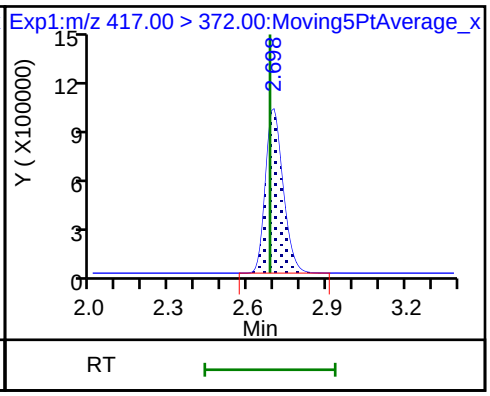
D 12 M2-6:2FTS



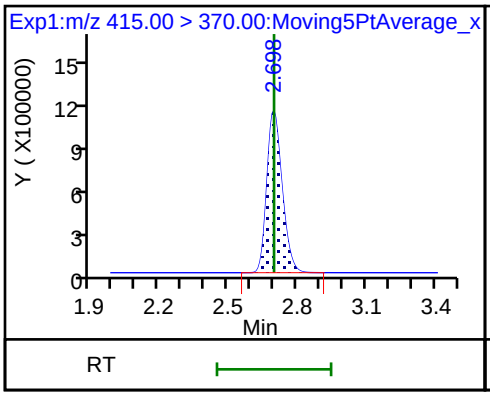
13 Sodium 1H,1H,2H,2H-perfluorooctane



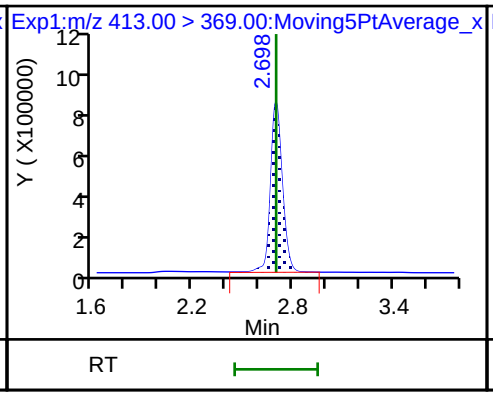
D 14 13C4 PFOA



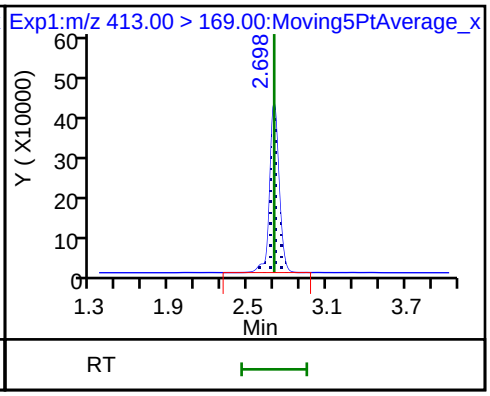
* 62 13C2-PFOA



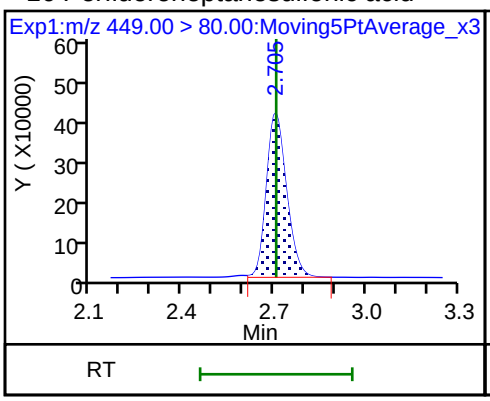
15 Perfluorooctanoic acid



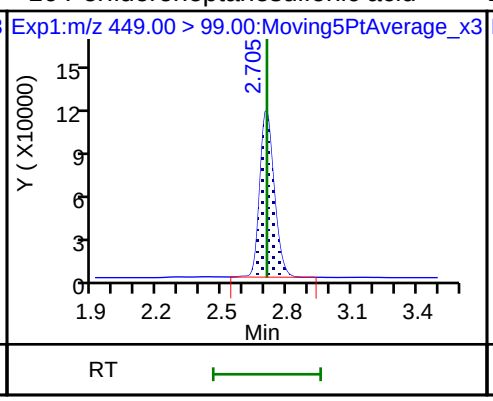
15 Perfluorooctanoic acid



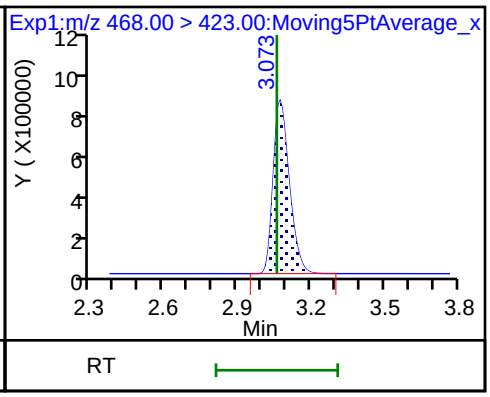
16 Perfluoroheptanesulfonic acid



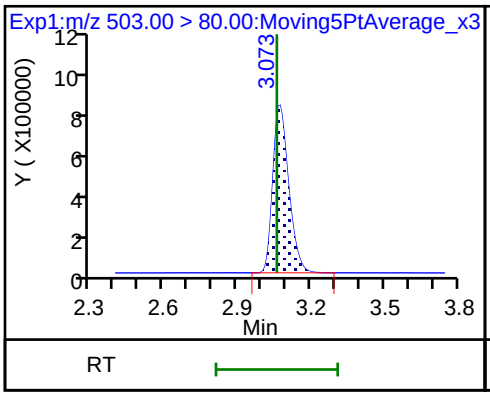
16 Perfluoroheptanesulfonic acid



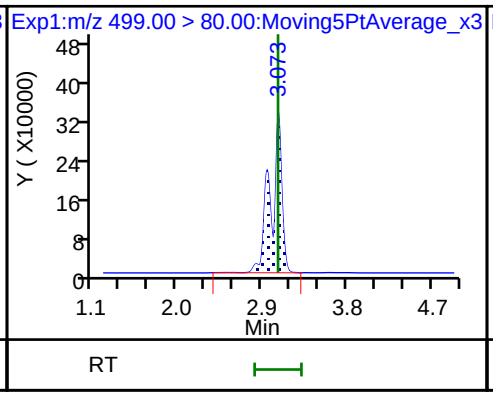
D 19 13C5 PFNA



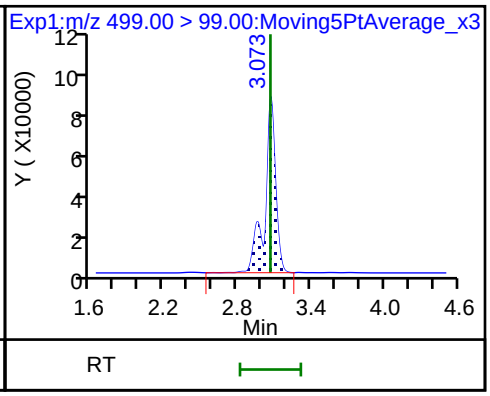
D 18 13C4 PFOS



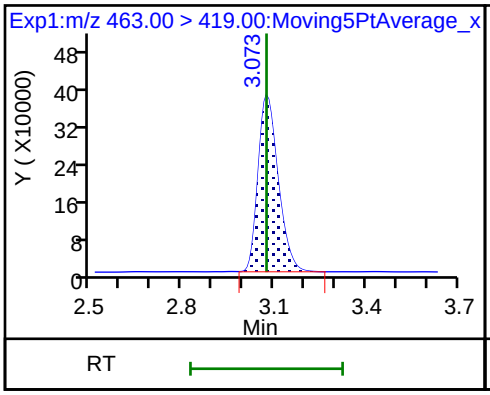
17 Perfluorooctane sulfonic acid



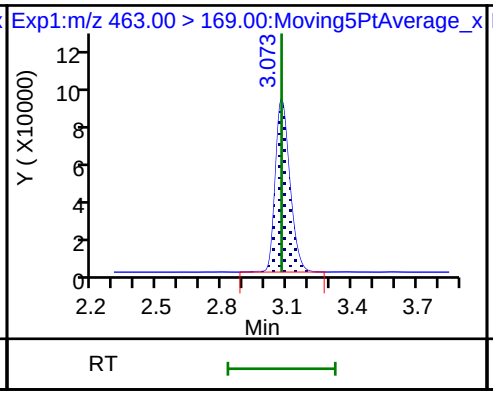
17 Perfluorooctane sulfonic acid



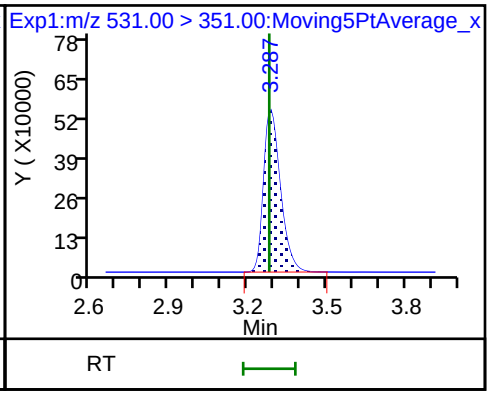
20 Perfluorononanoic acid



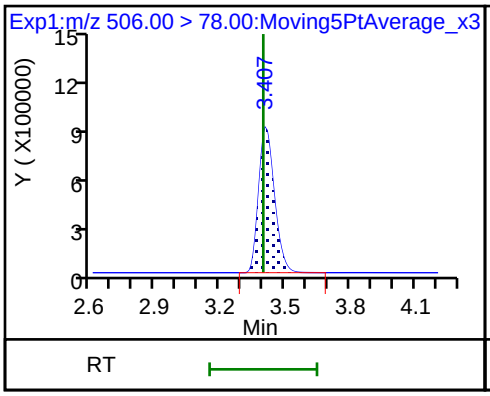
20 Perfluorononanoic acid



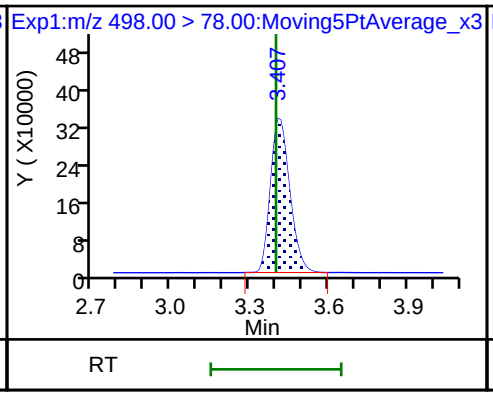
69 9-Chlorohexadecafluoro-3-oxanonane



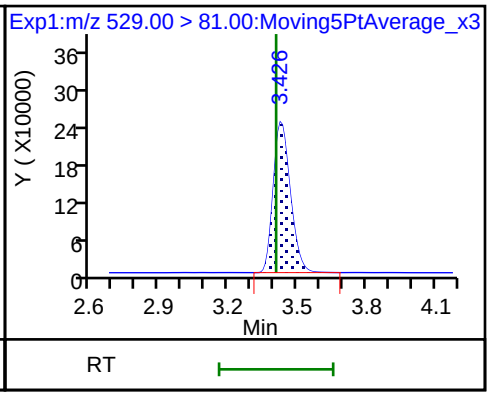
D 21 13C8 FOSA



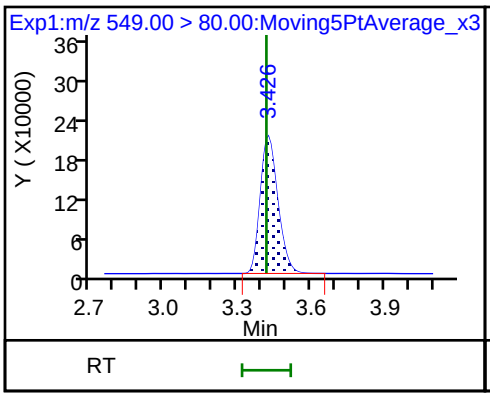
22 Perfluorooctane Sulfonamide



D 26 M2-8:2FTS



68 Perfluorononanesulfonic acid



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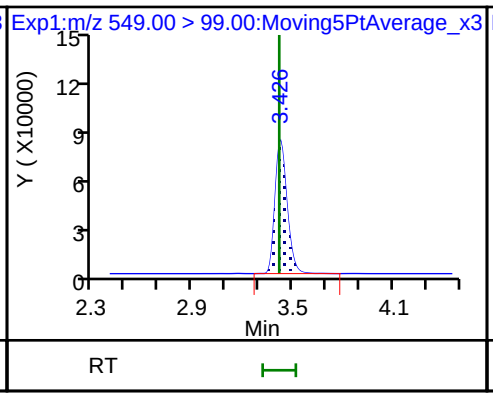
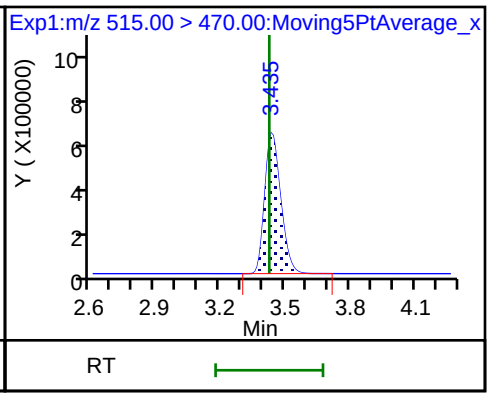
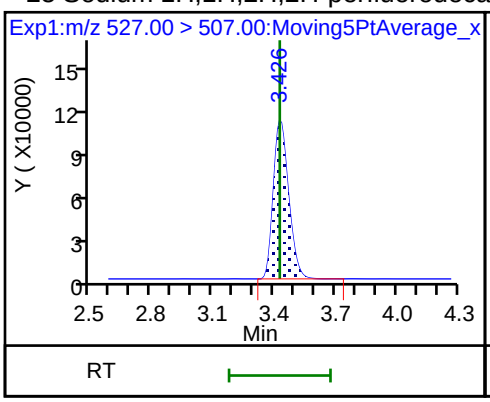


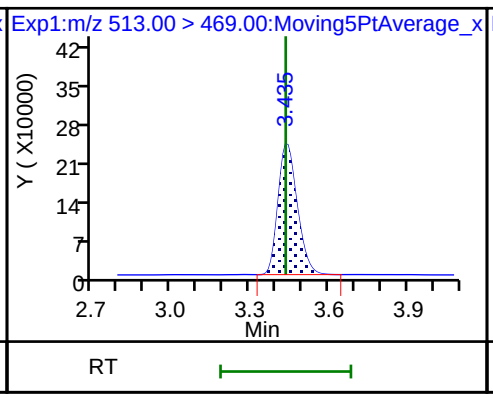
D 23 13C2 PFDA



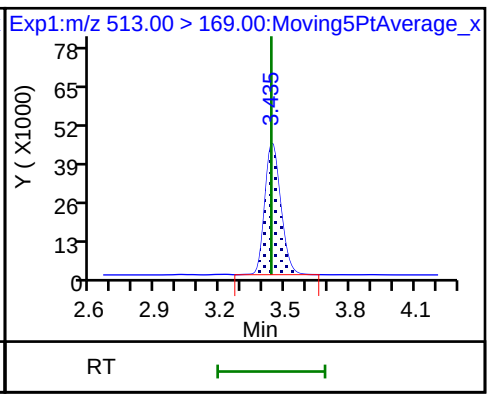
25 Sodium 1H,1H,2H,2H-perfluorodecane



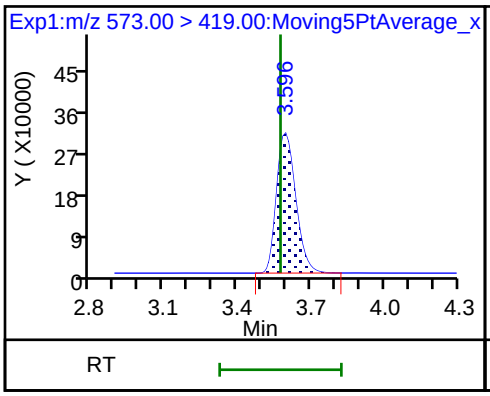
24 Perfluorodecanoic acid



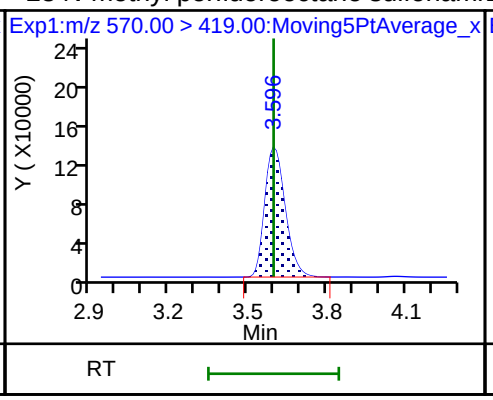
24 Perfluorodecanoic acid



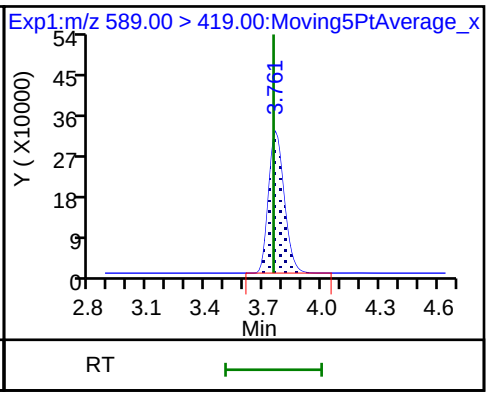
D 27 d3-NMeFOSAA



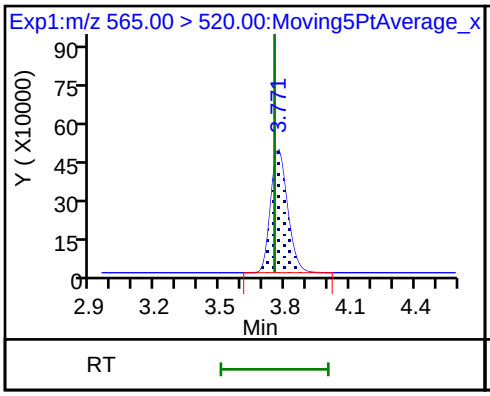
28 N-methyl perfluorooctane sulfonami



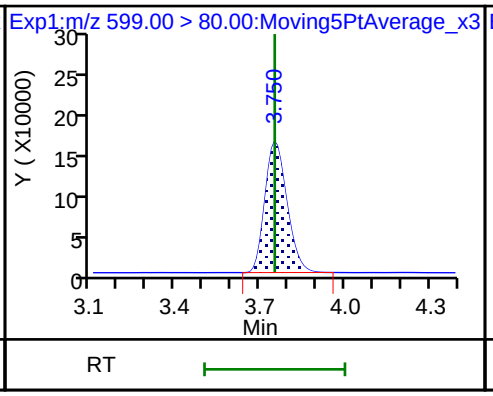
D 32 d5-NEtFOSAA



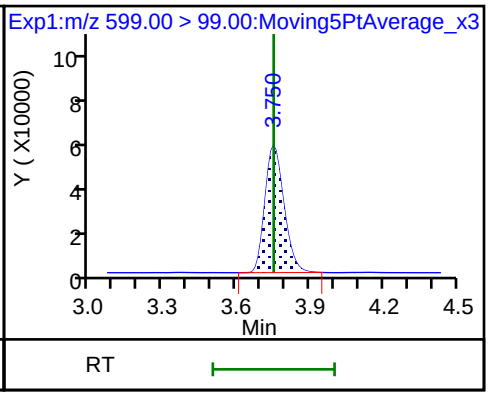
D 30 13C2 PFUnA



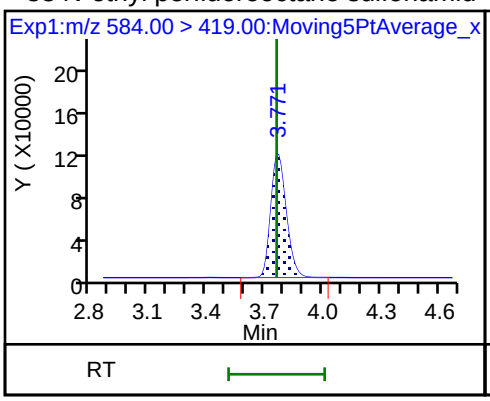
29 Perfluorodecane Sulfonic acid



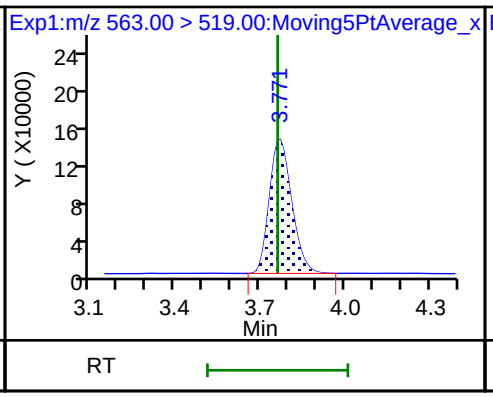
29 Perfluorodecane Sulfonic acid



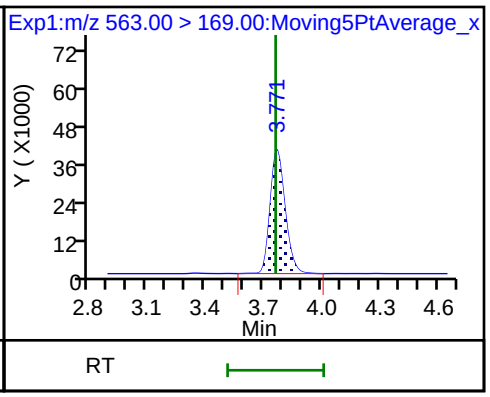
33 N-ethyl perfluorooctane sulfonamid



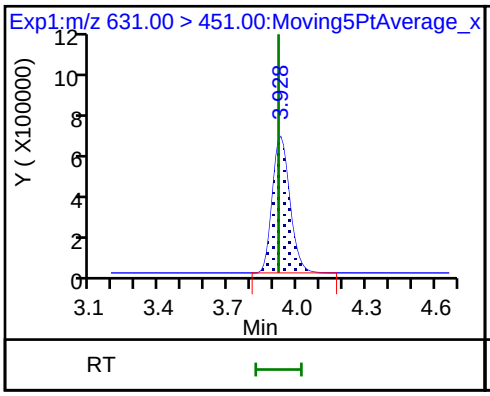
31 Perfluoroundecanoic acid



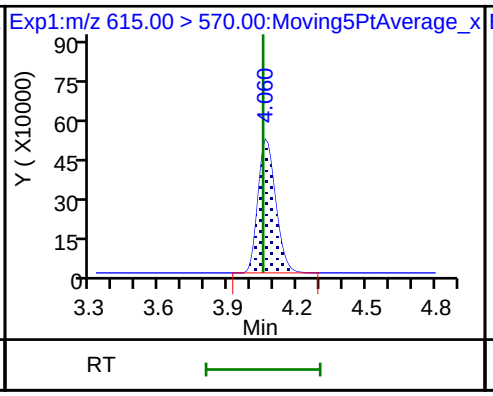
31 Perfluoroundecanoic acid



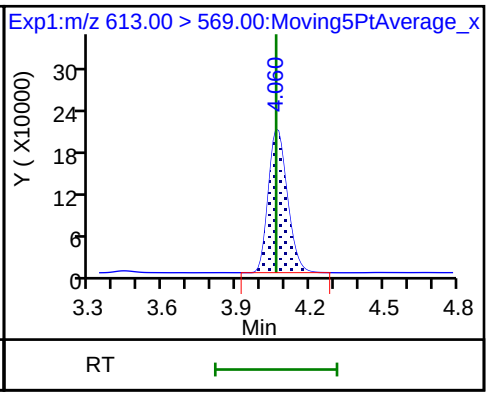
66 11-Chloroeicosafluoro-3-oxaundecan



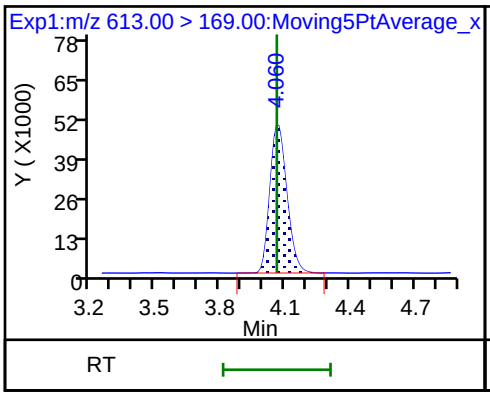
D 36 13C2 PFDoA



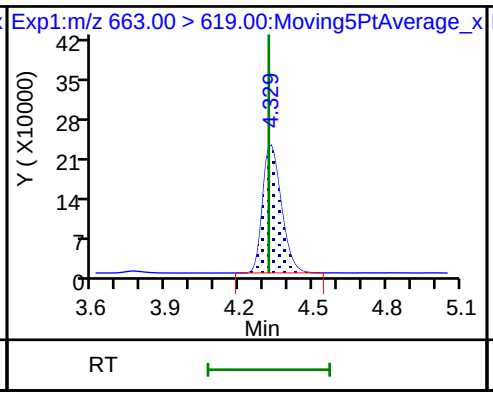
37 Perfluorododecanoic acid



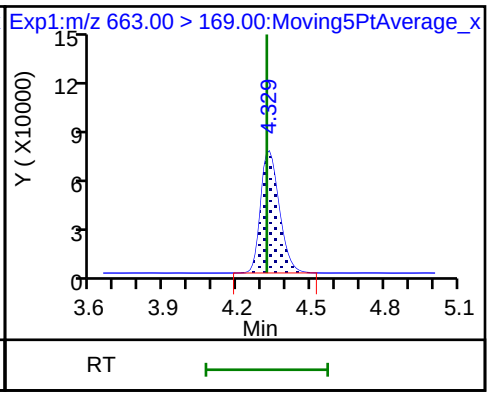
37 Perfluorododecanoic acid



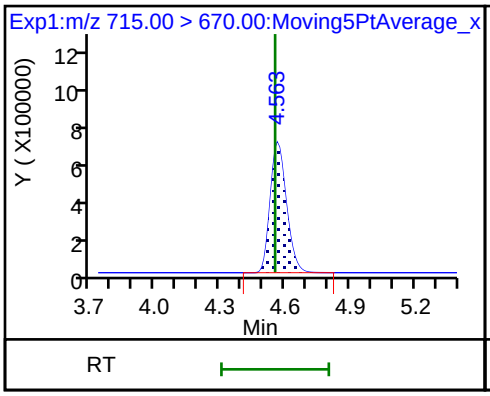
41 Perfluorotridecanoic acid



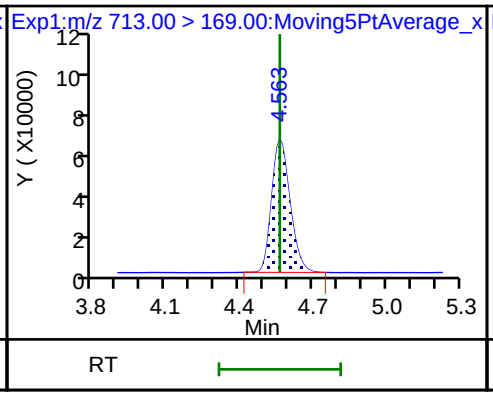
41 Perfluorotridecanoic acid



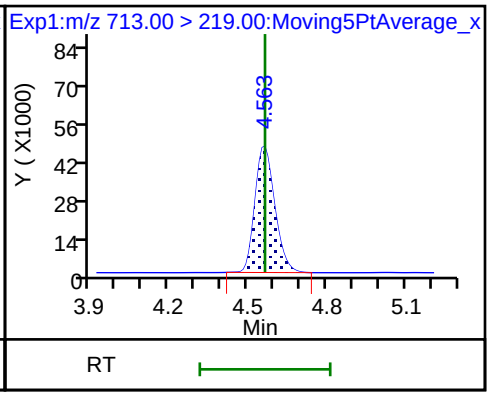
D 43 13C2-PFTeDA



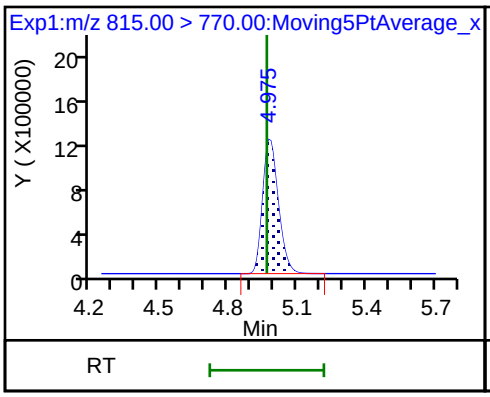
42 Perfluorotetradecanoic acid



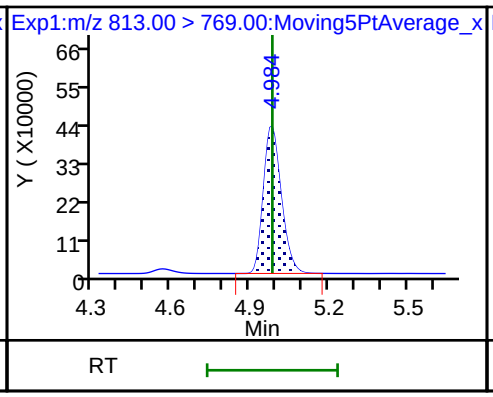
42 Perfluorotetradecanoic acid



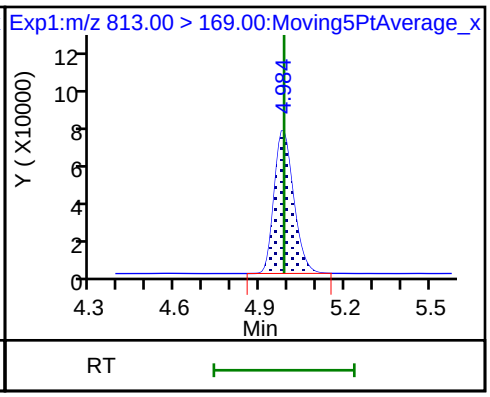
D 44 13C2-PFHxDA



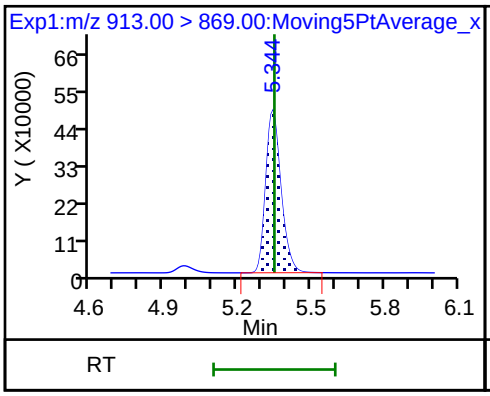
45 Perfluorohexadecanoic acid



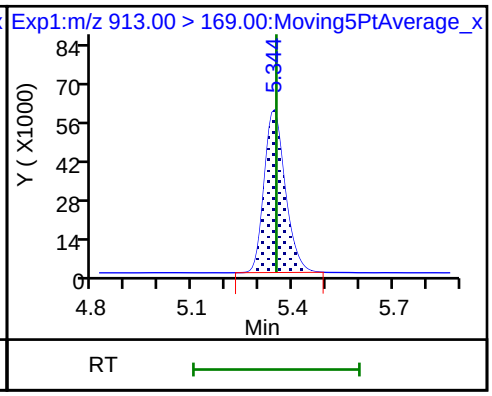
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

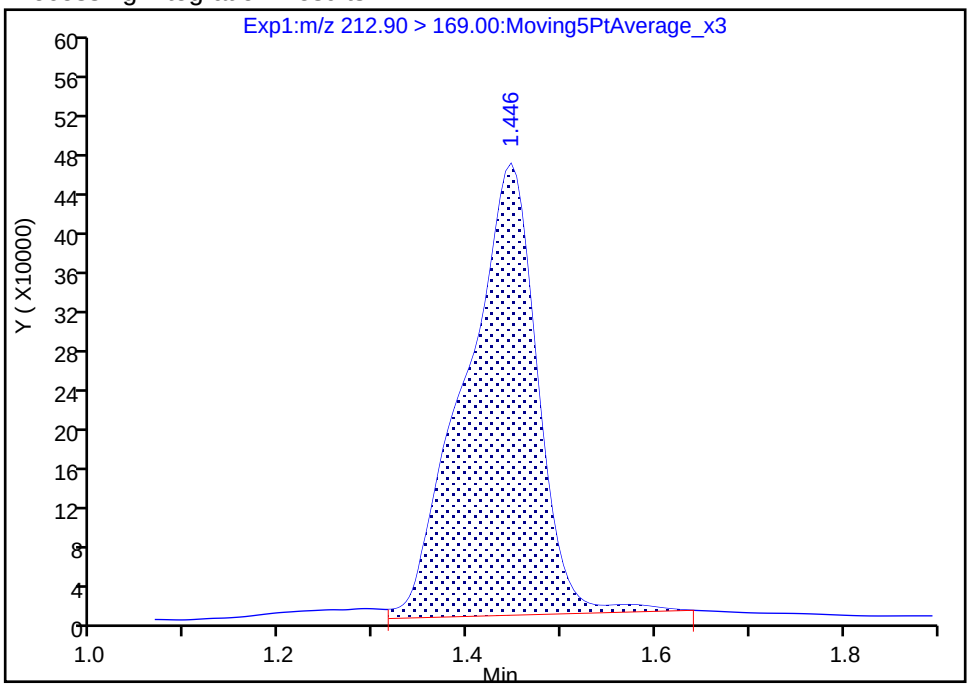
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_016.d				
Injection Date:	26-Apr-2018 13:15:55	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-C MSD				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

Processing Integration Results

RT: 1.45
Area: 2416352
Amount: 2.458673
Amount Units: ng/ml



Manual Integration Results

RT: 1.45
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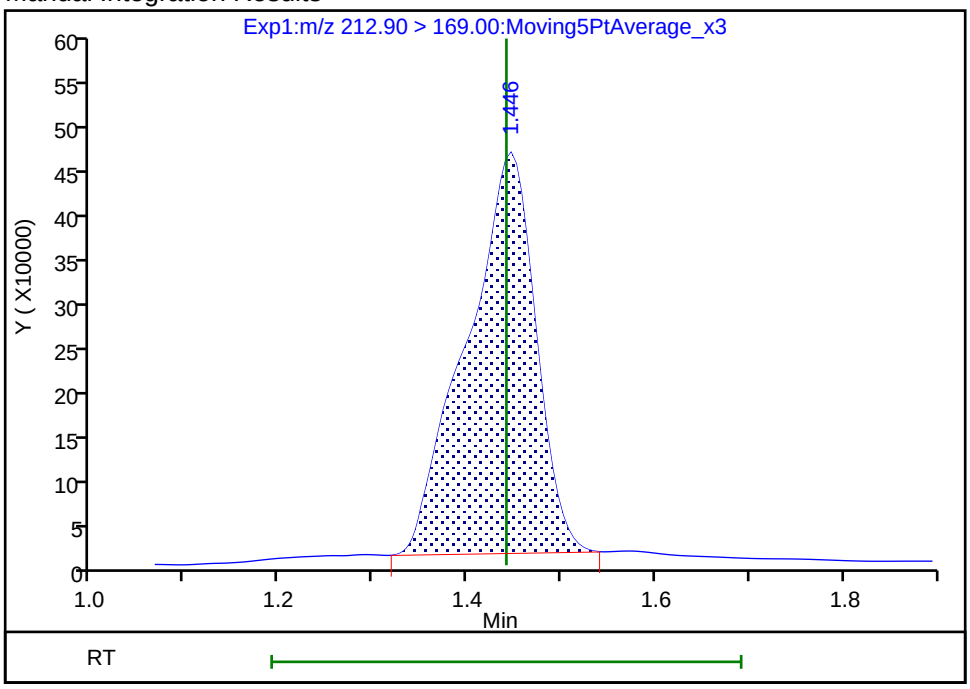
Amount: 2.317714
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:46:12

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

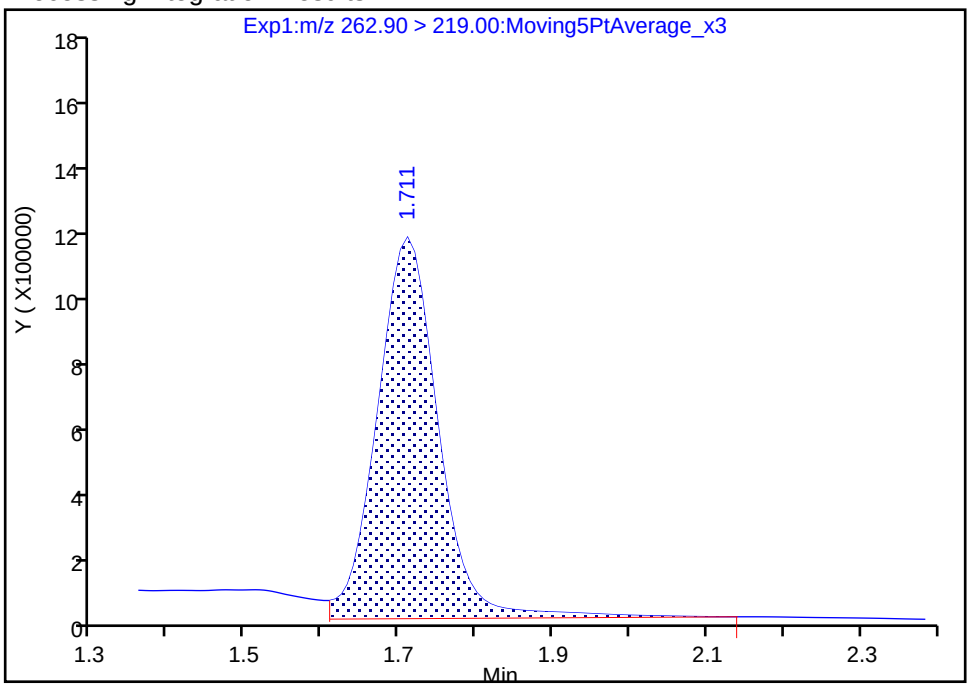
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_016.d				
Injection Date:	26-Apr-2018 13:15:55	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-C MSD				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

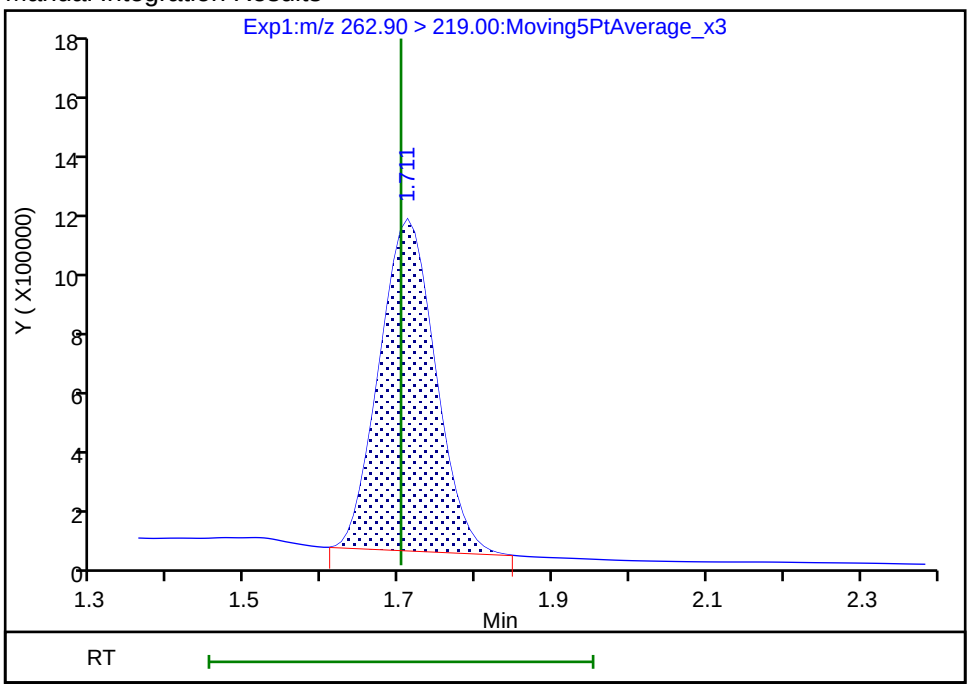
Processing Integration Results

RT: 1.71
Area: 6203546
Amount: 4.023626
Amount Units: ng/ml



Manual Integration Results

RT: 1.71
Area: 5484304
Amount: 3.557125
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:46:23

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

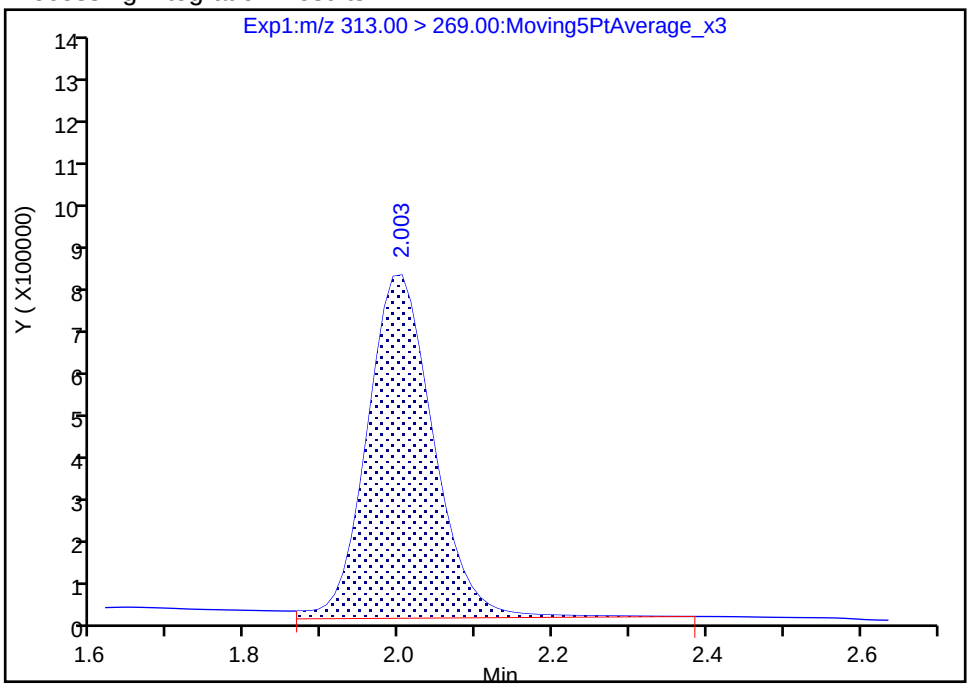
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_016.d				
Injection Date:	26-Apr-2018 13:15:55	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-C MSD				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

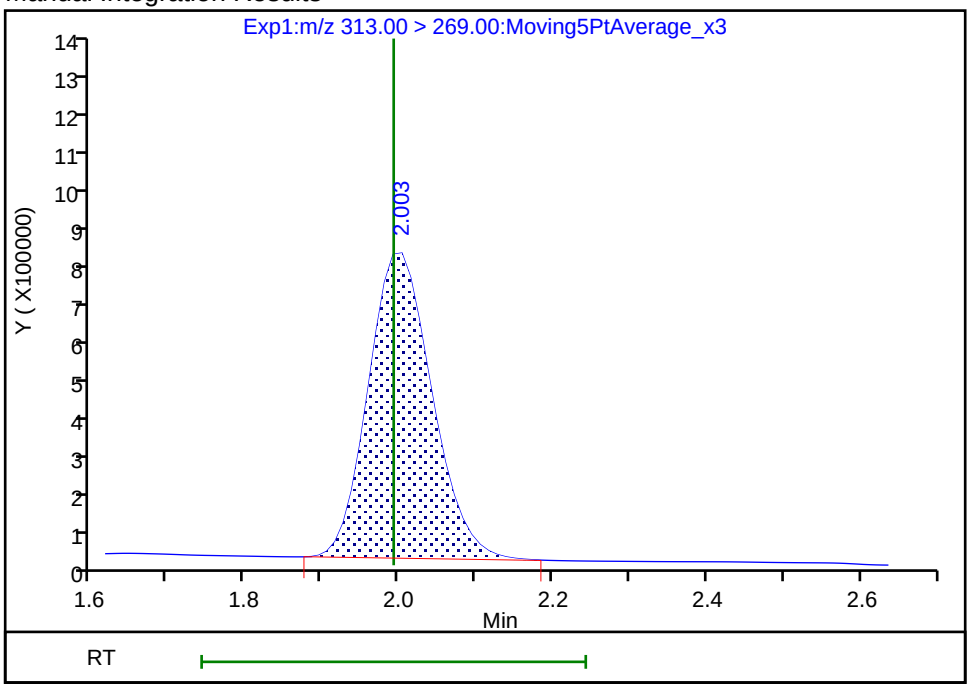
Processing Integration Results

RT: 2.00
Area: 4890783
Amount: 3.017796
Amount Units: ng/ml



Manual Integration Results

RT: 2.00
Area: 4624690
Amount: 2.853606
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:46:42

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

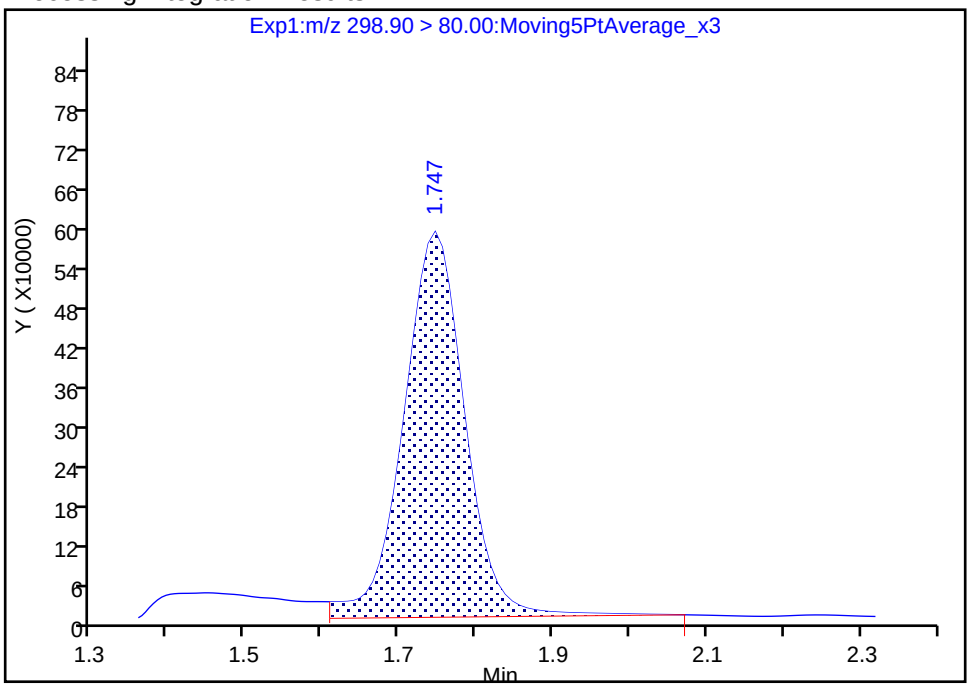
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b\2018.04.26LLA_016.d				
Injection Date:	26-Apr-2018 13:15:55	Instrument ID:	A8_N		
Lims ID:	320-38169-A-1-C MSD				
Client ID:	MW-1S				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

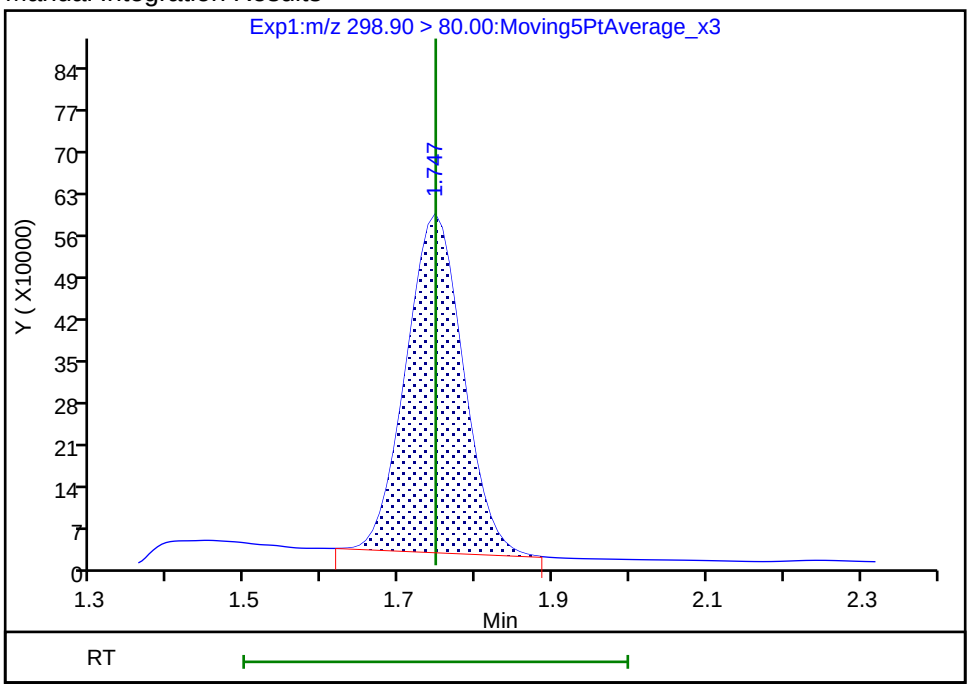
Processing Integration Results

RT: 1.75
Area: 3231474
Amount: 1.166077
Amount Units: ng/ml



Manual Integration Results

RT: 1.75
Area: 2929289
Amount: 1.057033
Amount Units: ng/ml



Reviewer: barnettj, 26-Apr-2018 15:46:33

Audit Action: Manually Integrated Audit Reason: Baseline

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: A8_N Start Date: 04/10/2018 18:31

Analysis Batch Number: 217359 End Date: 04/10/2018 19:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/10/2018 18:31	1		GeminiC18 3x100 3(mm)
IC 320-217359/2		04/10/2018 18:39	1	2018.04.10LLICAL 002.d	GeminiC18 3x100 3(mm)
IC 320-217359/3		04/10/2018 18:47	1	2018.04.10LLICAL 003.d	GeminiC18 3x100 3(mm)
IC 320-217359/4		04/10/2018 18:55	1	2018.04.10LLICAL 004.d	GeminiC18 3x100 3(mm)
IC 320-217359/5 ICIS		04/10/2018 19:03	1	2018.04.10LLICAL 005.d	GeminiC18 3x100 3(mm)
IC 320-217359/6		04/10/2018 19:10	1	2018.04.10LLICAL 006.d	GeminiC18 3x100 3(mm)
IC 320-217359/7		04/10/2018 19:18	1	2018.04.10LLICAL 007.d	GeminiC18 3x100 3(mm)
IC 320-217359/8		04/10/2018 19:26	1	2018.04.10LLICAL 008.d	GeminiC18 3x100 3(mm)
ICB 320-217359/9		04/10/2018 19:34	1	2018.04.10LLICAL 009.d	GeminiC18 3x100 3(mm)
ICV 320-217359/10		04/10/2018 19:42	1	2018.04.10LLICAL 010.d	GeminiC18 3x100 3(mm)
CCB 320-217359/11		04/10/2018 19:50	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: A8_N Start Date: 04/21/2018 05:24

Analysis Batch Number: 219129 End Date: 04/21/2018 05:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-219129/1		04/21/2018 05:24	1	2018.04.20LLAAX 004.d	GeminiC18 3x100 3(mm)
CCVL 320-219129/2		04/21/2018 05:31	1	2018.04.20LLAAX 005.d	GeminiC18 3x100 3(mm)
CCV 320-219129/3 CCVIS		04/21/2018 05:39	1	2018.04.20LLAAX 059.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: A8_N Start Date: 04/21/2018 09:50

Analysis Batch Number: 219143 End Date: 04/21/2018 11:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-219143/1		04/21/2018 09:50	1	2018.04.20LLC_023.d	GeminiC18 3x100 3(mm)
MB 320-218132/1-A		04/21/2018 09:57	1	2018.04.20LLC_024.d	GeminiC18 3x100 3(mm)
LCS 320-218132/2-A		04/21/2018 10:05	1	2018.04.20LLC_025.d	GeminiC18 3x100 3(mm)
320-38061-1		04/21/2018 10:13	1	2018.04.20LLC_026.d	GeminiC18 3x100 3(mm)
320-38061-1 MS		04/21/2018 10:21	1	2018.04.20LLC_027.d	GeminiC18 3x100 3(mm)
320-38061-1 MSD		04/21/2018 10:29	1	2018.04.20LLC_028.d	GeminiC18 3x100 3(mm)
320-38061-2		04/21/2018 10:36	1	2018.04.20LLC_029.d	GeminiC18 3x100 3(mm)
320-38061-3		04/21/2018 10:44	1	2018.04.20LLC_030.d	GeminiC18 3x100 3(mm)
320-38061-4		04/21/2018 10:52	1	2018.04.20LLC_031.d	GeminiC18 3x100 3(mm)
320-38061-5		04/21/2018 11:00	1	2018.04.20LLC_032.d	GeminiC18 3x100 3(mm)
320-38061-6		04/21/2018 11:08	1	2018.04.20LLC_033.d	GeminiC18 3x100 3(mm)
CCV 320-219143/12		04/21/2018 11:16	1	2018.04.20LLC_034.d	GeminiC18 3x100 3(mm)
320-38061-7		04/21/2018 11:23	1	2018.04.20LLC_035.d	GeminiC18 3x100 3(mm)
CCV 320-219143/14		04/21/2018 11:31	1	2018.04.20LLC_036.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 05:53

Analysis Batch Number: 219909 End Date: 04/26/2018 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-219909/1		04/26/2018 05:53	1	2018.04.25LLBX_004.d	GeminiC18 3x100 3(mm)
CCVL 320-219909/2		04/26/2018 06:01	1	2018.04.25LLBX_005.d	GeminiC18 3x100 3(mm)
CCV 320-219909/3 CCVIS		04/26/2018 06:09	1	2018.04.25LLBX_070.d	GeminiC18 3x100 3(mm)
320-38061-2 DL		04/26/2018 06:17	50	2018.04.25LLBX_071.d	GeminiC18 3x100 3(mm)
320-38061-3 DL		04/26/2018 06:24	5	2018.04.25LLBX_072.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:32	1		GeminiC18 3x100 3(mm)
320-38061-5 DL2		04/26/2018 06:40	50	2018.04.25LLBX_074.d	GeminiC18 3x100 3(mm)
320-38061-5 DL		04/26/2018 06:48	10	2018.04.25LLBX_075.d	GeminiC18 3x100 3(mm)
320-38061-6 DL		04/26/2018 07:03	5	2018.04.25LLBX_077.d	GeminiC18 3x100 3(mm)
320-38061-7 DL		04/26/2018 07:11	5	2018.04.25LLBX_078.d	GeminiC18 3x100 3(mm)
CCV 320-219909/12		04/26/2018 07:19	1	2018.04.25LLBX_079.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 12:21

Analysis Batch Number: 220023 End Date: 04/26/2018 15:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-220023/1		04/26/2018 12:21	1	2018.04.26LLA_009.d	GeminiC18 3x100 3(mm)
MB 320-218597/1-A		04/26/2018 12:28	1	2018.04.26LLA_010.d	GeminiC18 3x100 3(mm)
LCS 320-218597/2-A		04/26/2018 12:36	1	2018.04.26LLA_011.d	GeminiC18 3x100 3(mm)
320-38061-8		04/26/2018 12:44	1	2018.04.26LLA_012.d	GeminiC18 3x100 3(mm)
320-38061-9		04/26/2018 12:52	1	2018.04.26LLA_013.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 13:00	1		GeminiC18 3x100 3(mm)
320-38169-A-1-B MS		04/26/2018 13:08	1	2018.04.26LLA_015.d	GeminiC18 3x100 3(mm)
320-38169-A-1-C MSD		04/26/2018 13:15	1	2018.04.26LLA_016.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 13:23	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 13:31	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 13:39	1		GeminiC18 3x100 3(mm)
CCV 320-220023/12		04/26/2018 13:47	1	2018.04.26LLA_020.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 13:55	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:02	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:10	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:18	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:34	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:49	100		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 14:57	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 15:05	1		GeminiC18 3x100 3(mm)
CCV 320-220023/24		04/26/2018 15:20	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 15:52

Analysis Batch Number: 220081 End Date: 04/26/2018 17:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-220081/1		04/26/2018 15:52	1	2018.04.26LLA_036.d	GeminiC18 3x100 3(mm)
320-38061-5 DL3		04/26/2018 16:00	100	2018.04.26LLA_037.d	GeminiC18 3x100 3(mm)
CCV 320-220081/12		04/26/2018 17:18	1	2018.04.26LLA_047.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Batch Number: 218132 Batch Start Date: 04/16/18 08:43 Batch Analyst: Arauz, Horacio J

Batch Method: SHAKE Batch End Date: 04/18/18 16:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00047	LCPFC-IS 00036	LCPFCSP 00139	
MB 320-218132/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-218132/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-38061-A-1	SB031(0-2)	SHAKE, 537 (modified)	T	5.04 g	10.00 mL	500 uL	500 uL		
320-38061-A-1 MS	SB031(0-2)	SHAKE, 537 (modified)	T	5.04 g	10.00 mL	500 uL	500 uL	500 uL	
320-38061-A-1 MSD	SB031(0-2)	SHAKE, 537 (modified)	T	5.00 g	10.00 mL	500 uL	500 uL	500 uL	
320-38061-A-2	SB012(2-4)	SHAKE, 537 (modified)	T	5.03 g	10.00 mL	500 uL	500 uL		
320-38061-A-3	SB008(2-4)	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-38061-A-4	SB007(0-2)	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-38061-A-5	SB003(0-2)	SHAKE, 537 (modified)	T	5.09 g	10.00 mL	500 uL	500 uL		
320-38061-A-6	SB004(8-10)	SHAKE, 537 (modified)	T	5.05 g	10.00 mL	500 uL	500 uL		
320-38061-A-7	SB013(8-10)	SHAKE, 537 (modified)	T	5.02 g	10.00 mL	500 uL	500 uL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Batch Number: 218132 Batch Start Date: 04/16/18 08:43 Batch Analyst: Arauz, Horacio J

Batch Method: SHAKE Batch End Date: 04/18/18 16:30

Batch Notes	
Acetic Acid ID	985731
Analyst ID - Aliquot Step	HJA
Balance ID	QA-070
Batch Comment	Sample labels match client IDs HJA
Analyst ID - Final Volume Step	HJA
Hexane ID	1175187
Internal Standard ID#	1208926
Manifold ID	13
Methanol ID	1207211
Methanolic Potassium Hydroxide ID	1209314
Millipore Water Dispense Date	4-12-18
Sodium Hydroxide ID	1196582
Ammonium Hydroxide/MeOH ID	1213087
pH Indicator ID	3817
Analyst ID - Reagent Drop Witness	TWL
Analyst ID - IS Reagent Drop	HJA
Analyst ID - IS Reagent Drop Witness	TWL
Blank Sand Lot #	162639
SPE Cartridge Lot ID	017637348A
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Batch Number: 218597 Batch Start Date: 04/18/18 10:39 Batch Analyst: Long, Tyrel W

Batch Method: 3535 Batch End Date: 04/18/18 17:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00054	LCPFC-IS 00036
MB 320-218597/1		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCS 320-218597/2		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
320-38061-A-8	FB008	3535, 537 (modified)	T	303.86 g	28.18 g	275.7 mL	10.00 mL	500 uL	500 uL
320-38061-A-9	EB008	3535, 537 (modified)	T	311.02 g	28.45 g	282.6 mL	10.00 mL	500 uL	500 uL
320-38169-A-1 MS		3535, 537 (modified)	T	285.00 g	27.19 g	257.8 mL	10.00 mL	500 uL	500 uL
320-38169-A-1 MSD		3535, 537 (modified)	T	286.69 g	27.24 g	259.5 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00138					
MB 320-218597/1		3535, 537 (modified)							
LCS 320-218597/2		3535, 537 (modified)		500 uL					
320-38061-A-8	FB008	3535, 537 (modified)	T						
320-38061-A-9	EB008	3535, 537 (modified)	T						
320-38169-A-1 MS		3535, 537 (modified)	T	500 uL					
320-38169-A-1 MSD		3535, 537 (modified)	T	500 uL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Batch Number: 218597 Batch Start Date: 04/18/18 10:39 Batch Analyst: Long, Tyrel W

Batch Method: 3535 Batch End Date: 04/18/18 17:45

Batch Notes	
Analyst ID - Aliquot Step	TWL
Balance ID	QA-078
Batch Comment	client labels match: TWL
Analyst ID - Final Volume Step	TWL
H2O ID	04/18/18
Hexane ID	1175187
Internal Standard ID#	1208926
Manifold ID	5,14
Methanol ID	1207207
Sodium Hydroxide ID	1196582
Pipette ID	I46360G
Analyst ID - Reagent Drop	TWL
Analyst ID - IS Reagent Drop	TWL
Analyst ID - IS Reagent Drop Witness	VPM
Analyst ID - SU Reagent Drop	TWL
Analyst ID - SU Reagent Drop Witness	SKD
Solvent Lot #	1213091
Solvent Name	0.3%NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003737320A

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 38061 Work List ID(s): 57025, 57241, 57278

Extraction Batch: 218132 Analysis Batch(es): 219143, 219909, 220081

Delivery Rank 4 Due Date: 4-30-18

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 217359	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).			✓
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?			✓
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits? NCM	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted. NCM	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?			✓
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation 123545 123343 123543			
1. Are all non-conformances documented/attached? NCM# 123405	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): JRB Date: 4-27-18

2nd Level Reviewer: [signature] Date: 4/27/2018

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 21APR2018NCF_PFC Worklist Number: 57025
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch: 219143
# 1 CCV L5	# 1 CCV L5
# 2 MB 320-218132/1-A	# 2 MB 320-218132/1-A
# 3 LCS 320-218132/2-A	# 3 LCS 320-218132/2-A
# 4 320-38061-A-1-A	# 4 320-38061-A-1-A
# 5 320-38061-A-1-B MS	# 5 320-38061-A-1-B MS
# 6 320-38061-A-1-C MSD	# 6 320-38061-A-1-C MSD
# 7 320-38061-A-2-A	# 7 320-38061-A-2-A
# 8 320-38061-A-3-A	# 8 320-38061-A-3-A
# 9 320-38061-A-4-A	# 9 320-38061-A-4-A
#10 320-38061-A-5-A	#10 320-38061-A-5-A
#11 320-38061-A-6-A	#11 320-38061-A-6-A
#12 CCV L4	#12 CCV L4
#13 320-38061-A-7-A	#13 320-38061-A-7-A
#14 CCV L5	#14 CCV L5

CCVL in 219129

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 21APR2018NCF_PFC Worklist Num: 57025
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57025.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L5	320-0057025-001	CCV	21-Apr-2018 09:50:04	2018.04.20LLC_023.d	14	1.0		sv
MB 320-218132/1-A	320-0057025-002	MB	21-Apr-2018 09:57:52	2018.04.20LLC_024.d	16	1.0		sv
LCS 320-218132/2-A	320-0057025-003	LCS	21-Apr-2018 10:05:41	2018.04.20LLC_025.d	17	1.0		sv
320-38061-A-1-A	320-0057025-004	Client	21-Apr-2018 10:13:33	2018.04.20LLC_026.d	18	1.0	SB031(0-2)	sv
320-38061-A-1-B MS	320-0057025-005	MS	21-Apr-2018 10:21:21	2018.04.20LLC_027.d	19	1.0		sv
320-38061-A-1-C MSD	320-0057025-006	MSD	21-Apr-2018 10:29:10	2018.04.20LLC_028.d	20	1.0		sv
320-38061-A-2-A	320-0057025-007	Client	21-Apr-2018 10:36:59	2018.04.20LLC_029.d	21	1.0	SB012(2-4)	sv
320-38061-A-3-A	320-0057025-008	Client	21-Apr-2018 10:44:50	2018.04.20LLC_030.d	22	1.0	SB008(2-4)	sv
320-38061-A-4-A	320-0057025-009	Client	21-Apr-2018 10:52:40	2018.04.20LLC_031.d	23	1.0	SB007(0-2)	sv
320-38061-A-5-A	320-0057025-010	Client	21-Apr-2018 11:00:30	2018.04.20LLC_032.d	24	1.0	SB003(0-2)	sv
320-38061-A-6-A	320-0057025-011	Client	21-Apr-2018 11:08:19	2018.04.20LLC_033.d	25	1.0	SB004(8-10)	sv
CCV L4	320-0057025-012	CCV	21-Apr-2018 11:16:08	2018.04.20LLC_034.d	13	1.0		sv
320-38061-A-7-A	320-0057025-013	Client	21-Apr-2018 11:23:58	2018.04.20LLC_035.d	26	1.0	SB013(8-10)	sv
CCV L5	320-0057025-014	CCV	21-Apr-2018 11:31:50	2018.04.20LLC_036.d	14	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 21APR2018NCA_PFC Worklist Num: 57019
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180421-57019.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Fract
CCB	320-0057019-001	CCB	21-Apr-2018 05:24:01	2018.04.20LLAAX_004.d	20	1.0	sv
CCVL	320-0057019-002	CCVL	21-Apr-2018 05:31:51	2018.04.20LLAAX_005.d	21	1.0	sv
CCV L4	320-0057019-003	CCVIS	21-Apr-2018 05:39:40	2018.04.20LLAAX_059.d	13	1.0	sv
TUBE ADT EX MB	320-0057019-004	Client	21-Apr-2018 05:47:27	2018.04.20LLAAX_060.d	40	1.0	sv
TUBE ADT EX LCS	320-0057019-005	Client	21-Apr-2018 05:55:16	2018.04.20LLAAX_061.d	41	1.0	sv
TUBE ADT EX LCS	320-0057019-006	Client	21-Apr-2018 06:03:04	2018.04.20LLAAX_062.d	42	1.0	sv
TUBE ADT EX LCS	320-0057019-007	Client	21-Apr-2018 06:10:52	2018.04.20LLAAX_063.d	43	1.0	sv
TUBE ADT EX LCS	320-0057019-008	Client	21-Apr-2018 06:18:39	2018.04.20LLAAX_064.d	44	1.0	sv
CCV L5	320-0057019-009	CCV	21-Apr-2018 06:26:29	2018.04.20LLAAX_065.d	14	1.0	sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26APR2018NCA_PFC Worklist Number: 57241
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 219908	LC PFC ICAL Raw Batch: 219909	LC PFC_QSM5-1 ICAL Raw Batch: 219910
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 320-38061-A-2-A		# 4 320-38061-A-2-A	
# 5 320-38061-A-3-A		# 5 320-38061-A-3-A	
# 6 320-38061-A-4-A		# 6 320-38061-A-4-A	
# 7 320-38061-A-5-A		# 7 320-38061-A-5-A	
# 8 320-38061-A-5-A		# 8 320-38061-A-5-A	
# 9 RB		# 9 RB	
#10 320-38061-A-6-A		#10 320-38061-A-6-A	
#11 320-38061-A-7-A		#11 320-38061-A-7-A	
#12 CCV L4		#12 CCV L4	

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCA_PFC Worklist Num: 57241
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057241-001	CCB	26-Apr-2018 05:53:34	2018.04.25LLBX_004.d	20	1.0		sv
CCVL	320-0057241-002	CCVL	26-Apr-2018 06:01:22	2018.04.25LLBX_005.d	21	1.0		sv
CCV L4	320-0057241-003	CCVIS	26-Apr-2018 06:09:11	2018.04.25LLBX_070.d	28	1.0		sv
320-38061-A-2-A	320-0057241-004	Client	26-Apr-2018 06:17:00	2018.04.25LLBX_071.d	47	50.0	SB012(2-4)	sv
320-38061-A-3-A	320-0057241-005	Client	26-Apr-2018 06:24:48	2018.04.25LLBX_072.d	48	5.0	SB008(2-4)	sv
320-38061-A-4-A	320-0057241-006	Client	26-Apr-2018 06:32:37	2018.04.25LLBX_073.d	49	1.0	SB007(0-2)	sv
320-38061-A-5-A	320-0057241-007	Client	26-Apr-2018 06:40:27	2018.04.25LLBX_074.d	50	50.0	SB003(0-2)	sv
320-38061-A-5-A	320-0057241-008	Client	26-Apr-2018 06:48:16	2018.04.25LLBX_075.d	51	10.0	SB003(0-2)	sv
RB	320-0057241-009	RB	26-Apr-2018 06:56:05	2018.04.25LLBX_076.d	54	1.0		sv
320-38061-A-6-A	320-0057241-010	Client	26-Apr-2018 07:03:52	2018.04.25LLBX_077.d	52	5.0	SB004(8-10)	sv
320-38061-A-7-A	320-0057241-011	Client	26-Apr-2018 07:11:42	2018.04.25LLBX_078.d	53	5.0	SB013(8-10)	sv
CCV L4	320-0057241-012	CCV	26-Apr-2018 07:19:30	2018.04.25LLBX_079.d	28	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26APR2018NCH_PFC Worklist Number: 57287
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_QSM5-1 ICAL Raw Batch: 220080	LC PFC ICAL Raw Batch: 220081
# 1 CCV L5	# 1 CCV L5	# 1 CCV L5
# 2 320-38061-A-5-A		# 2 320-38061-A-5-A
# 3 320-38022-A-17-A	# 3 320-38022-A-17-A	
# 4 320-38022-A-19-A	# 4 320-38022-A-19-A	
# 5 320-38022-A-20-A	# 5 320-38022-A-20-A	
# 6 320-38022-A-20-B MS	# 6 320-38022-A-20-B MS	
# 7 320-38022-A-20-C MSD	# 7 320-38022-A-20-C MSD	
# 8 320-38022-A-21-A	# 8 320-38022-A-21-A	
# 9 320-38022-A-22-A	# 9 320-38022-A-22-A	
#10 320-38022-A-23-A	#10 320-38022-A-23-A	
#11 320-38022-A-24-A	#11 320-38022-A-24-A	
#12 CCV L4	#12 CCV L4	#12 CCV L4
#13 320-38022-A-25-A	#13 320-38022-A-25-A	
#14 320-38022-A-26-A	#14 320-38022-A-26-A	
#15 320-38022-A-27-A	#15 320-38022-A-27-A	
#16 320-38022-A-29-A	#16 320-38022-A-29-A	
#17 CCV L5	#17 CCV L5	

CCVL in AB 219909

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCH_PFC Worklist Num: 57287
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57287.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L5	320-0057287-001	CCV	26-Apr-2018 15:52:17	2018.04.26LLA_036.d	14	1.0		sv
320-38061-A-5-A	320-0057287-002	Client	26-Apr-2018 16:00:03	2018.04.26LLA_037.d	25	100.	SB003(0-2)	sv
320-38022-A-17-A	320-0057287-003	Client	26-Apr-2018 16:07:51	2018.04.26LLA_038.d	26	5.0	REN05-SB2-01	sv
320-38022-A-19-A	320-0057287-004	Client	26-Apr-2018 16:15:40	2018.04.26LLA_039.d	27	100.	REN06-SB1-01	sv
320-38022-A-20-A	320-0057287-005	Client	26-Apr-2018 16:23:28	2018.04.26LLA_040.d	28	20.0	REN06-SB1-02	sv
320-38022-A-20-B MS	320-0057287-006	MS	26-Apr-2018 16:31:17	2018.04.26LLA_041.d	29	20.0	REN06-SB1-02	sv
320-38022-A-20-C MSD	320-0057287-007	MSD	26-Apr-2018 16:39:06	2018.04.26LLA_042.d	30	20.0	REN06-SB1-02	sv
320-38022-A-21-A	320-0057287-008	Client	26-Apr-2018 16:46:55	2018.04.26LLA_043.d	31	20.0	REN06-SB2-01	sv
320-38022-A-22-A	320-0057287-009	Client	26-Apr-2018 16:54:44	2018.04.26LLA_044.d	32	5.0	REN06-SB2-02	sv
320-38022-A-23-A	320-0057287-010	Client	26-Apr-2018 17:02:33	2018.04.26LLA_045.d	33	5.0	REN07-SB1-01	sv
320-38022-A-24-A	320-0057287-011	Client	26-Apr-2018 17:10:22	2018.04.26LLA_046.d	34	5.0	REN07-SB1-02	sv
CCV L4	320-0057287-012	CCV	26-Apr-2018 17:18:10	2018.04.26LLA_047.d	13	1.0		sv
320-38022-A-25-A	320-0057287-013	Client	26-Apr-2018 17:25:58	2018.04.26LLA_048.d	35	20.0	REN07-SB2-01	sv
320-38022-A-26-A	320-0057287-014	Client	26-Apr-2018 17:33:47	2018.04.26LLA_049.d	36	50.0	REN07-SB2-02	sv
320-38022-A-27-A	320-0057287-015	Client	26-Apr-2018 17:41:35	2018.04.26LLA_050.d	37	1.0	REN08-SB1-01	sv
320-38022-A-29-A	320-0057287-016	Client	26-Apr-2018 17:49:24	2018.04.26LLA_051.d	38	5.0	REN08-SB2-01	sv
CCV L5	320-0057287-017	CCV	26-Apr-2018 17:57:13	2018.04.26LLA_052.d	14	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCA_PFC Worklist Num: 57241
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057241-001	CCB	26-Apr-2018 05:53:34	2018.04.25LLBX_004.d	20	1.0		sv
CCVL	320-0057241-002	CCVL	26-Apr-2018 06:01:22	2018.04.25LLBX_005.d	21	1.0		sv
CCV L4	320-0057241-003	CCVIS	26-Apr-2018 06:09:11	2018.04.25LLBX_070.d	28	1.0		sv
320-38061-A-2-A	320-0057241-004	Client	26-Apr-2018 06:17:00	2018.04.25LLBX_071.d	47	50.0	SB012(2-4)	sv
320-38061-A-3-A	320-0057241-005	Client	26-Apr-2018 06:24:48	2018.04.25LLBX_072.d	48	5.0	SB008(2-4)	sv
320-38061-A-4-A	320-0057241-006	Client	26-Apr-2018 06:32:37	2018.04.25LLBX_073.d	49	1.0	SB007(0-2)	sv
320-38061-A-5-A	320-0057241-007	Client	26-Apr-2018 06:40:27	2018.04.25LLBX_074.d	50	50.0	SB003(0-2)	sv
320-38061-A-5-A	320-0057241-008	Client	26-Apr-2018 06:48:16	2018.04.25LLBX_075.d	51	10.0	SB003(0-2)	sv
RB	320-0057241-009	RB	26-Apr-2018 06:56:05	2018.04.25LLBX_076.d	54	1.0		sv
320-38061-A-6-A	320-0057241-010	Client	26-Apr-2018 07:03:52	2018.04.25LLBX_077.d	52	5.0	SB004(8-10)	sv
320-38061-A-7-A	320-0057241-011	Client	26-Apr-2018 07:11:42	2018.04.25LLBX_078.d	53	5.0	SB013(8-10)	sv
CCV L4	320-0057241-012	CCV	26-Apr-2018 07:19:30	2018.04.25LLBX_079.d	28	1.0		sv

AR 4/17/18

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Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218132 ✓ Analyst: Arauz, Horacio J Batch Open: 4/16/2018 8:43:00AM

Method Code: 320-Shake_Bath_14D-320 Batch End: 4/18/2018 4:30:00PM

Shake Extraction with Ultrasonic Bath Extraction

Due: 5/2

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-218132/1 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		MB 320-218132/1-A
2	LCS-320-218132/2 N/A	N/A	5.00 g	10.00 mL	N/A	N/A	N/A		LCS 320-218132/2-A
3	320-38061-A-1 (PFC_IDA) 5/2	N/A (320-38061-1)	5.04 g	10.00 mL	4/17/18	12_Days	4		320-38061-A-1-A
4	320-38061-A-1-MS (PFC_IDA)	N/A (320-38061-1)	5.04 g	10.00 mL	4/17/18	12_Days	4		320-38061-A-1-B MS
5	320-38061-A-1-MSD (PFC_IDA)	N/A (320-38061-1)	5.00 g	10.00 mL	4/17/18	12_Days	4		320-38061-A-1-C MSD
6	320-38061-A-2 (PFC_IDA)	N/A (320-38061-1)	5.03 g	10.00 mL	4/17/18	12_Days	4	50X	320-38061-A-2-A
7	320-38061-A-3 (PFC_IDA)	N/A (320-38061-1)	5.09 g	10.00 mL	4/17/18	12_Days	4	5X	320-38061-A-3-A
8	320-38061-A-4 (PFC_IDA)	N/A (320-38061-1)	5.09 g	10.00 mL	4/17/18	12_Days	4	RI	320-38061-A-4-A
9	320-38061-A-5 (PFC_IDA)	N/A (320-38061-1)	5.09 g	10.00 mL	4/17/18	12_Days	4	10X, 50X, 100X	320-38061-A-5-A
10	320-38061-A-6 (PFC_IDA)	N/A (320-38061-1)	5.05 g	10.00 mL	4/17/18	12_Days	4	5X	320-38061-A-6-A
11	320-38061-A-7 (PFC_IDA)	N/A (320-38061-1)	5.02 g	10.00 mL	4/17/18	12_Days	4	5X	320-38061-A-7-A

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218132 | Analyst: Arauz, Horacio J | Batch Open: 4/16/2018 8:43:00AM

Method Code: 320-Shake_Bath_14D-320 | Batch End:

Batch Notes

Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	4-12-18
Analyst ID - Reagent Drop Witness	TWL
SPE Cartridge Lot ID	0176373348A
SPE Cartridge Type	WAX 150mg
Hexane ID	1175187
Methanol ID	1207211
Ammonium Hydroxide/MeOH ID	1213087
Sodium Hydroxide ID	1196582
Methanolic Potassium Hydroxide ID	1209314
Manifold ID	13
Interference check solution ID	NA
Acetic Acid ID	985731
pH Indicator ID	3817
Analyst ID - IS Reagent Drop	HSA
Analyst ID - IS Reagent Drop Witness	TWL
Internal Standard ID#	1208926
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	HJA

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218132 Analyst: Arauz, Horacio J Batch Open: 4/16/2018 8:43:00AM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Analyst ID - Final Volume Step	HJA
Batch Comment	Sample labels match client IDs HJA Envi-Carb lot

Comments

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218132 Analyst: Arauz, Horacio J Batch Open: 4/16/2018 8:43:00AM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218132/1	LCMPFC_ALL_SU_00047	500 uL	10.00 mL	HJA 4-16-18	DMZ 4-16-18
LCS 320-218132/2	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
LCS 320-218132/2	LCPFCSP_00139	500 uL	10.00 mL		
320-38061-A-1	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-1 MS	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-1 MS	LCPFCSP_00139	500 uL	10.00 mL		
320-38061-A-1 MSD	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-1 MSD	LCPFCSP_00139	500 uL	10.00 mL		
320-38061-A-2	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-3	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-4	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-5	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-6	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		
320-38061-A-7	LCMPFC_ALL_SU_00047	500 uL	10.00 mL		

Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218132 Analyst: Arauz, Horacio J Batch Open: 4/16/2018 8:43:00AM

Method Code: 320-Shake_Bath_14D-320 Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 320-218132 Test PFC-S

Earliest Holding Time 4-24-18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	—	✓
All necessary batch information complete and entered into TALS correctly	—	✓
BD, FV, and AL initials are transcribed into the batch comment	—	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	NA	NA
All NCMs include method code, matrix, and prep batch	NA	NA
Method/sample/login/QAS checked and correct	—	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	—	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	NA	NA
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	—	✓
Internal Standard is added to the reagents	—	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: HSA Date: 4-18-18

2nd Level Reviewer: VPM Date: 4/18/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PEC. IDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** L.C. 80:20 - 00003

Date 4/25/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-38061	2	10,000	30	1500	50
	3		60	300	5
	5		30	300	10
	5		30	1500	50
	6		60	300	5
	7		60	300	5

AKH 4/25/18

Comments:

Q:\Document-Management\Forms\QA-747 SampleDilutionRecord.doc 1/29/20187 RE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC_IDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** LC-80:20-0000

Date 4/26/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-38061	5	10,000	15	1500	100

ABH 4/26/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 38061, 38169, 38006 Work List ID(s): 57274

Extraction Batch: 218597 Analysis Batch(es): 220023

Delivery Rank 4, 2, 4 Due Date: 4-27-18

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# 217359	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).			✓
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?			✓
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?			✓
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation 123459 123456			
1. Are all non-conformances documented/attached? NCM# 123457	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1st Level (Analyst): JRB Date: 4-27-18

2nd Level Reviewer: [signature] Date: 4/27/2018

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26APR2018NCF_PFC Worklist Number: 57274
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch 220023
# 1 CCV L4	# 1 CCV L4
# 2 MB 320-218597/1-A	# 2 MB 320-218597/1-A
# 3 LCS 320-218597/2-A	# 3 LCS 320-218597/2-A
# 4 320-38061-A-8-A	# 4 320-38061-A-8-A
# 5 320-38061-A-9-A	# 5 320-38061-A-9-A
# 6 320-38169-A-1-A	# 6 320-38169-A-1-A
# 7 320-38169-A-1-B MS	# 7 320-38169-A-1-B MS
# 8 320-38169-A-1-C MSD	# 8 320-38169-A-1-C MSD
# 9 320-38169-A-2-A	# 9 320-38169-A-2-A
#10 320-38169-A-3-A	#10 320-38169-A-3-A
#11 320-38169-A-4-A	#11 320-38169-A-4-A
#12 CCV L5	#12 CCV L5
#13 320-38169-A-5-A	#13 320-38169-A-5-A
#14 320-38169-A-6-A	#14 320-38169-A-6-A
#15 320-38006-A-1-A	#15 320-38006-A-1-A
#16 320-38006-A-2-A	#16 320-38006-A-2-A
#17 320-38006-A-3-A	#17 320-38006-A-3-A
#18 320-38006-A-4-A	#18 320-38006-A-4-A
#19 320-38006-A-5-A	#19 320-38006-A-5-A
#20 320-38006-A-6-A	#20 320-38006-A-6-A
#21 320-38006-A-6-A	#21 320-38006-A-6-A
#22 320-38006-A-6-A	#22 320-38006-A-6-A
#23 RB	#23 RB
#24 CCV L4	#24 CCV L4

CCVL in AB 219909

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCF_PFC Worklist Num: 57274
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57274.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L4	320-0057274-001	CCV	26-Apr-2018 12:21:03	2018.04.26LLA_009.d	13	1.0		sv
MB 320-218597/1-A	320-0057274-002	MB	26-Apr-2018 12:28:51	2018.04.26LLA_010.d	4	1.0		sv
LCS 320-218597/2-A	320-0057274-003	LCS	26-Apr-2018 12:36:40	2018.04.26LLA_011.d	5	1.0		sv
320-38061-A-8-A	320-0057274-004	Client	26-Apr-2018 12:44:33	2018.04.26LLA_012.d	6	1.0	FB008	sv
320-38061-A-9-A	320-0057274-005	Client	26-Apr-2018 12:52:24	2018.04.26LLA_013.d	7	1.0	EB008	sv
320-38169-A-1-A	320-0057274-006	Client	26-Apr-2018 13:00:17	2018.04.26LLA_014.d	8	1.0	MW-1S	sv
320-38169-A-1-B MS	320-0057274-007	MS	26-Apr-2018 13:08:07	2018.04.26LLA_015.d	9	1.0	MW-1S	sv
320-38169-A-1-C MSD	320-0057274-008	MSD	26-Apr-2018 13:15:55	2018.04.26LLA_016.d	10	1.0	MW-1S	sv
320-38169-A-2-A	320-0057274-009	Client	26-Apr-2018 13:23:46	2018.04.26LLA_017.d	11	1.0	MW-5S	sv
320-38169-A-3-A	320-0057274-010	Client	26-Apr-2018 13:31:35	2018.04.26LLA_018.d	12	1.0	MW-3S	sv
320-38169-A-4-A	320-0057274-011	Client	26-Apr-2018 13:39:24	2018.04.26LLA_019.d	13	1.0	FD-01	sv
CCV L5	320-0057274-012	CCV	26-Apr-2018 13:47:13	2018.04.26LLA_020.d	14	1.0		sv
320-38169-A-5-A	320-0057274-013	Client	26-Apr-2018 13:55:00	2018.04.26LLA_021.d	14	1.0	FB-01	sv
320-38169-A-6-A	320-0057274-014	Client	26-Apr-2018 14:02:48	2018.04.26LLA_022.d	15	1.0	FB-02	sv
320-38006-A-1-A	320-0057274-015	Client	26-Apr-2018 14:10:37	2018.04.26LLA_023.d	16	1.0	VP-16 (18-23)	sv
320-38006-A-2-A	320-0057274-016	Client	26-Apr-2018 14:18:25	2018.04.26LLA_024.d	17	1.0	VP-16 (28-33)	sv
320-38006-A-3-A	320-0057274-017	Client	26-Apr-2018 14:26:13	2018.04.26LLA_025.d	18	1.0	VP-16(37-42)	sv
320-38006-A-4-A	320-0057274-018	Client	26-Apr-2018 14:34:02	2018.04.26LLA_026.d	19	1.0	VP-12 (33-37)	sv
320-38006-A-5-A	320-0057274-019	Client	26-Apr-2018 14:41:50	2018.04.26LLA_027.d	20	1.0	VP-12 (23-28)	sv
320-38006-A-6-A	320-0057274-020	Client	26-Apr-2018 14:49:42	2018.04.26LLA_028.d	21	100.	VP-12 (18-23)	sv
320-38006-A-6-A	320-0057274-021	Client	26-Apr-2018 14:57:32	2018.04.26LLA_029.d	22	10.0	VP-12 (18-23)	sv
320-38006-A-6-A	320-0057274-022	Client	26-Apr-2018 15:05:21	2018.04.26LLA_030.d	23	1.0	VP-12 (18-23)	sv
RB	320-0057274-023	RB	26-Apr-2018 15:13:10	2018.04.26LLA_031.d	54	1.0		sv
CCV L4	320-0057274-024	CCV	26-Apr-2018 15:20:56	2018.04.26LLA_032.d	13	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCA_PFC Worklist Num: 57241
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057241-001	CCB	26-Apr-2018 05:53:34	2018.04.25LLBX_004.d	20	1.0		sv
CCVL	320-0057241-002	CCVL	26-Apr-2018 06:01:22	2018.04.25LLBX_005.d	21	1.0		sv
CCV L4	320-0057241-003	CCVIS	26-Apr-2018 06:09:11	2018.04.25LLBX_070.d	28	1.0		sv
320-38061-A-2-A	320-0057241-004	Client	26-Apr-2018 06:17:00	2018.04.25LLBX_071.d	47	50.0	SB012(2-4)	sv
320-38061-A-3-A	320-0057241-005	Client	26-Apr-2018 06:24:48	2018.04.25LLBX_072.d	48	5.0	SB008(2-4)	sv
320-38061-A-4-A	320-0057241-006	Client	26-Apr-2018 06:32:37	2018.04.25LLBX_073.d	49	1.0	SB007(0-2)	sv
320-38061-A-5-A	320-0057241-007	Client	26-Apr-2018 06:40:27	2018.04.25LLBX_074.d	50	50.0	SB003(0-2)	sv
320-38061-A-5-A	320-0057241-008	Client	26-Apr-2018 06:48:16	2018.04.25LLBX_075.d	51	10.0	SB003(0-2)	sv
RB	320-0057241-009	RB	26-Apr-2018 06:56:05	2018.04.25LLBX_076.d	54	1.0		sv
320-38061-A-6-A	320-0057241-010	Client	26-Apr-2018 07:03:52	2018.04.25LLBX_077.d	52	5.0	SB004(8-10)	sv
320-38061-A-7-A	320-0057241-011	Client	26-Apr-2018 07:11:42	2018.04.25LLBX_078.d	53	5.0	SB013(8-10)	sv
CCV L4	320-0057241-012	CCV	26-Apr-2018 07:19:30	2018.04.25LLBX_079.d	28	1.0		sv

*possible High levels

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

67 AK 4/23/18 AS 4/24/18

Batch Number: 320-218597 ✓

Method Code: 320-3535_PFC-320

Analyst: Long, Tyrel W

Batch Open: 4/18/2018 10:39:00AM

Batch End: 4/18/2018 5:45:00PM

Solid-Phase Extraction (SPE)

Due: 4/27

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB-320-218597/1 N/A	N/A		250 mL	NA			N/A	N/A	N/A		
				10.00 mL								
2	LCS-320-218597/2 N/A	N/A		250 mL	NA			N/A	N/A	N/A	K1	
				10.00 mL								
3	320-38061-A-8 (PFC_IDA)	N/A (320-38061-1)	303.86 g	275.7 mL	NA			4/27/18	12_Days	4		
			28.18 g	10.00 mL								
4	320-38061-A-9 (PFC_IDA) 5/2	N/A (320-38061-1)	311.02 g	282.6 mL	NA			4/27/18	12_Days	4		
			28.45 g	10.00 mL								
5	320-38169-A-1 (PFC_IDA) 4/27	N/A (320-38169-1)	289.65 g	261.6 mL	NA			4/25/18	8_Day_Rush	2		
			28.04 g	10.00 mL							100x screen 1X	
6	320-38169-A-1~MS (PFC_IDA)	N/A (320-38169-1)	285.00 g	257.8 mL	NA			4/25/18	8_Day_Rush	2		
			27.19 g	10.00 mL								
7	320-38169-A-1~MSD (PFC_IDA)	N/A (320-38169-1)	286.69 g	259.5 mL	NA			4/25/18	8_Day_Rush	2		
			27.24 g	10.00 mL								
8	320-38169-A-2 (PFC_IDA)	N/A (320-38169-1)	280.84 g	253 mL	NA			4/25/18	8_Day_Rush	2		
			27.87 g	10.00 mL								
9	320-38169-A-3 (PFC_IDA)	N/A (320-38169-1)	304.01 g	275.2 mL	NA			4/25/18	8_Day_Rush	2		
			28.77 g	10.00 mL								
10	320-38169-A-4 (PFC_IDA)	N/A (320-38169-1)	287.95 g	260.6 mL	NA			4/25/18	8_Day_Rush	2		
			27.39 g	10.00 mL								

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218597 Analyst: Long, Tyrel W Batch Open: 4/18/2018 10:39:00AM

Method Code: 320-3535_PFC-320 Batch End: 4/18/2018 5:45:00PM

11	320-38169-A-5 (PFC_IDA)	N/A (320-38169-1)	296.45 g 28.98 g	267.5 mL 10.00 mL	NA			4/25/18	8_Day_Rush	2	100X screen 1X
12	320-38169-A-6 (PFC_IDA)	N/A (320-38169-1)	306.67 g 28.79 g	277.9 mL 10.00 mL	NA			4/25/18	8_Day_Rush	2	100X screen 1X
13	320-38006-A-1 (PFC_IDA) 5|	N/A (320-38006-1)	279.37 g 27.32 g	252.1 mL 10.00 mL	NA			4/26/18	12_Days	4	K1
14	320-38006-A-2 (PFC_IDA)	N/A (320-38006-1)	281.25 g 27.19 g	254.1 mL 10.00 mL	NA			4/26/18	12_Days	4	
15	320-38006-A-3 (PFC_IDA)	N/A (320-38006-1)	299.34 g 30.06 g	269.3 mL 10.00 mL	NA			4/26/18	12_Days	4	
16	320-38006-A-4 (PFC_IDA)	N/A (320-38006-1)	298.46 g 29.79 g	268.7 mL 10.00 mL	NA			4/26/18	12_Days	4	
17	320-38006-A-5 (PFC_IDA)	N/A (320-38006-1)	277.62 g 28.42 g	249.2 mL 10.00 mL	NA			4/26/18	12_Days	4	
18	320-38006-A-6 (PFC_IDA)	N/A (320-38006-1)	278.47 g 27.21 g	251.3 mL 10.00 mL	NA			4/26/18	12_Days	4	10X and 100X

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218597

Analyst: Long, Tyrel W

Batch Open: 4/18/2018 10:39:00AM

Method Code: 320-3535_PFC-320

Batch End: 4/18/2018 5:45:00PM

Batch Notes

Manifold ID	5,14
Methanol ID	1207207
Hexane ID	1175187
Sodium Hydroxide ID	1196582
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003737320A
Balance ID	QA-078
H2O ID	04/18/18
Pipette ID	I46360G
Solvent Name	0.3%NH4OH/MeOH
Solvent Lot #	1213091
Analyst ID - Reagent Drop	TWL
Analyst ID - SU Reagent Drop	TWL
Analyst ID - SU Reagent Drop Witness	SKD
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
Analyst ID - IS Reagent Drop	TWL

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218597

Analyst: Long, Tyrel W

Batch Open: 4/18/2018 10:39:00AM

Method Code: 320-3535_PFC-320

Batch End: 4/18/2018 5:45:00PM

Analyst ID - IS Reagent Drop Witness	VPM
Internal Standard ID#	1208926
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	TWL
Analyst ID - Final Volume Step	TWL
SOP Number	WS-LC-0025
Batch Comment	client labels match: TWL

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Comments

320-38169-A-1	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-1~MS	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-1~MSD	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-2	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-3	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-4	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-5	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS
320-38169-A-6	Method Comments:	ISOLATE SAMPLES - POSSIBLE HIGH LEVELS

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218597

Analyst: Long, Tyrel W

Batch Open: 4/18/2018 10:39:00AM

Method Code: 320-3535_PFC-320

Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-218597/1	LCMPFC_ALL_SU_00049	500 uL	10.00 mL	TLL 4-18-18	SKD 4/18/18
LCS 320-218597/2	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
LCS 320-218597/2	LCPFCSP_00138	500 uL	10.00 mL		
320-38061-A-8	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38061-A-9	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-1	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-1 MS	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-1 MS	LCPFCSP_00138	500 uL	10.00 mL		
320-38169-A-1 MSD	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-1 MSD	LCPFCSP_00138	500 uL	10.00 mL		
320-38169-A-2	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-3	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-4	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-5	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38169-A-6	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38006-A-1	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38006-A-2	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		
320-38006-A-3	LCMPFC_ALL_SU_00049	500 uL	10.00 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-218597

Analyst: Long, Tyrel W

Batch Open: 4/18/2018 10:39:00AM

Method Code: 320-3535_PFC-320

Batch End:

320-38006-A-4	LCMPFC_ALL_SU_00049	500 uL	10.00 mL	TMR 4-18-18	SKD 4/18/18
320-38006-A-5	LCMPFC_ALL_SU_00049	500 uL	10.00 mL	"	"
320-38006-A-6	LCMPFC_ALL_SU_00049	500 uL	10.00 mL	"	"

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 218597 Test 3535-PFC

Earliest Holding Time 4/20/18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	**1st Level Reviewer**	**2nd Level Reviewer**
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	NA	NA
NCM for any anomalies filed	✓	✓
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	✓	✓
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	**1st Level Reviewer**	**2nd Level Reviewer**
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: [signature] Date: 4/18/18

2nd Level Reviewer: VPM Date: 4/18/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC_IDA

Analyst (Print Name) Amani Rayes **Reagent ID** LC-80:20_00003

Date 4/24/18 (23) aaw 4/23/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-37947	2	10,000	30	300	10X
320-38169	1		15	1500	100
	1MS				
	1MSD				
	2				
	3				
	4				
	5				
	6				

aaw 4/23/18

Comments:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC_IDA

Analyst (Print Name) Alyssa Hannigan **Reagent ID** LC_80:20_00004

Date 4/26/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-38006	6	10,000	30	300	10
1	6	"	15	1500	100

ABH 4/26/18

Comments:

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38061-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB031(0-2)	320-38061-1
SB012(2-4)	320-38061-2
SB008(2-4)	320-38061-3
SB007(0-2)	320-38061-4
SB003(0-2)	320-38061-5
SB004(8-10)	320-38061-6
SB013(8-10)	320-38061-7

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38061-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38061-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 04/18/2018 11:53 End Date: 04/18/2018 11:53

Lab Sample ID	D / F	Type	Time	Analytes																				
				% Sol	Moist																			
ZZZZZZ			11:53																					
320-38061-1	1	T	11:53	X	X																			
320-38061-1 DU	1	T	11:53	X	X																			
320-38061-2	1	T	11:53	X	X																			
320-38061-3	1	T	11:53	X	X																			
320-38061-4	1	T	11:53	X	X																			
320-38061-5	1	T	11:53	X	X																			
320-38061-6	1	T	11:53	X	X																			
320-38061-7	1	T	11:53	X	X																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
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ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38061-1

SDG No.:

Batch Number: 218606 Batch Start Date: 04/18/18 11:53 Batch Analyst: Saechao, Tammy C

Batch Method: D 2216 Batch End Date: 04/19/18 09:14

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-38061-A-1	SB031(0-2)	D 2216	T	2	1.06 g	11.29 g	10.60 g		
320-38061-A-1 DU	SB031(0-2)	D 2216	T	3	1.02 g	14.97 g	14.01 g		
320-38061-A-2	SB012(2-4)	D 2216	T	4	1.03 g	10.24 g	9.61 g		
320-38061-A-3	SB008(2-4)	D 2216	T	5	1.01 g	8.28 g	7.23 g		
320-38061-A-4	SB007(0-2)	D 2216	T	6	1.03 g	10.46 g	8.41 g		
320-38061-A-5	SB003(0-2)	D 2216	T	7	1.00 g	7.08 g	6.38 g		
320-38061-A-6	SB004(8-10)	D 2216	T	8	1.03 g	12.80 g	12.48 g		
320-38061-A-7	SB013(8-10)	D 2216	T	9	1.02 g	10.42 g	10.10 g		

Batch Notes	
Balance ID	QA-068
Date and Time Samples in Desiccator	04/19/2018 08:21
Date and Time Samples out of Desiccator	04/19/2018 09:14
Date samples were placed in the oven	04/18/2018
Oven Temp In	112 Degrees C
Time samples were place in the oven	11:53
Date samples were removed from oven	04/19/2018
Oven Temp Out	115 Degrees C
Time Samples were removed from oven	08:21
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

NYSC
460501

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

Chain of Custody Record

TestAmerica
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Client Information	Sampler: Nick Kassel	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-589-6353	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:
Address: 630 Johnson Ave Suite 7	Due Date Requested:	**Analysis Requested**		
City: Bohemia	TAT Requested (days): 15 days			Preservation Codes: A - HCL, B - NaOH, M - Hexane, N - None
State, Zip: NY, 11716				
Phone: 631-589-6353(Tel)	PO #: SH01801			
Email: andyl@pwgrosser.com	WO #: SH01801			320-38061 Chain of Custody
Project Name: Suffolk County Firematics Site	Project #: 46024260			
Site:	SSOW#:			Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	SPLP PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of cor	Special Instructions/Note:
			Preservation Code:				N			
SB031(0-2')	4-10-18	915	G	S			X		1	
SB012(2-4')		945					X		1	
SB008(2-4')		1000					X		1	
SB007(0-2')		1045					X		1	
SB003(0-2')		1111					X		1	
SB004(8-10)		1130					X		1	
SB013(8-10)		1215					X		1	
FB008		1230					X		2	
EB008		1230					X		2	
~~FB010~~		~~1245~~					~~X~~			NR
~~EB010~~		~~1245~~					~~X~~			NR

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4-10-18 1425			4/10/18 1430	
2		4/10/18 1720	TA		4-11-18 845	TA W SEC
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.7°C ice AL-2

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-38061-1

Login Number: 38061
List Number: 1
Creator: Turpen, Troy

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Job Number: 320-38063-1

Job Description: Suffolk County Firematics Site

For:
PW Grosser Consulting
630 Johnson Ave
Suite 7
Bohemia, NY 11716

Attention: Ms. Heather Moran-Botta

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
4/30/2018 2:41 PM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
04/30/2018

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 320-38063-1

Job Description: Suffolk County Firematics Site

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
4/30/2018 2:41 PM

Melissa Haas

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CASE NARRATIVE

Client: PW Grosser Consulting

Project: Suffolk County Firematics Site

Report Number: 320-38063-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 4/11/2018 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. The sample collection date was only recorded for the first sample. The sample type and matrix were not recorded for any samples on the COC. In addition, the client requested that all sample IDs have the same naming convention. The foot markers in the IDs were removed per client request.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

PERFLUORINATED ALKYL SUBSTANCES (PFAS)

Samples SB031(0-2)-SPLP (320-38063-1), SB012(2-4)-SPLP (320-38063-2), SB008(2-4)-SPLP (320-38063-3), SB007(0-2)-SPLP (320-38063-4), SB003(0-2)-SPLP (320-38063-5), SB004(8-10)-SPLP (320-38063-6) and SB013(8-10)-SPLP (320-38063-7) were analyzed for Perfluorinated Alkyl Substances (PFAS) in accordance with PFC. The samples were leached on 04/18/2018, prepared on 04/23/2018 and analyzed on 04/26/2018.

Internal standard (ISTD) response for the following sample was outside control limits: SB013(8-10)-SPLP (320-38063-7). The sample was re-analyzed at dilution with concurring results. Both sets of data have been reported.

The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for several IDA: SB013(8-10)-SPLP (320-38063-7). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C4 PFOS: SB013(8-10)-SPLP (320-38063-7). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Isotope Dilution Analyte (IDA) recovery for M2-8:2FTS is above the method recommended limit for the following sample: SB003(0-2) -SPLP (320-38063-5). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Results for samples SB012(2-4)-SPLP (320-38063-2), SB008(2-4)-SPLP (320-38063-3), SB003(0-2)-SPLP (320-38063-5), SB004(8-10) -SPLP (320-38063-6) and SB013(8-10)-SPLP (320-38063-7) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

6:2FTS, Perfluorobutanoic acid (PFBA) and Perfluorohexanesulfonic acid (PFHxS) were detected in method blank LB 320-218620/8-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report

for details.

No other difficulties were encountered during the PFCs analysis.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS/PERCENT MOISTURE

Samples SB031(0-2)-SPLP (320-38063-1), SB012(2-4)-SPLP (320-38063-2), SB008(2-4)-SPLP (320-38063-3), SB007(0-2)-SPLP (320-38063-4), SB003(0-2)-SPLP (320-38063-5), SB004(8-10)-SPLP (320-38063-6) and SB013(8-10)-SPLP (320-38063-7) were analyzed for percent solids/percent moisture in accordance with EPA Method CLPISM01.2 (Exhibit D) Modified. The samples were analyzed on 04/18/2018.

No difficulties were encountered during the %solids/moisture analysis.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38063-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-38063-1	SB031(0-2)-SPLP	Solid	04/10/18 09:15	04/11/18 08:45
320-38063-2	SB012(2-4)-SPLP	Solid	04/10/18 09:45	04/11/18 08:45
320-38063-3	SB008(2-4)-SPLP	Solid	04/10/18 10:00	04/11/18 08:45
320-38063-4	SB007(0-2)-SPLP	Solid	04/10/18 10:45	04/11/18 08:45
320-38063-5	SB003(0-2)-SPLP	Solid	04/10/18 11:11	04/11/18 08:45
320-38063-6	SB004(8-10)-SPLP	Solid	04/10/18 11:30	04/11/18 08:45
320-38063-7	SB013(8-10)-SPLP	Solid	04/10/18 12:15	04/11/18 08:45

Detection Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38063-1

Client Sample ID: SB031(0-2)-SPLP — Lab Sample ID: 320-38063-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.06	B	1.95	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	3.48		1.95	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	3.39		1.95	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	2.38		1.95	0.24	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	3.38		1.95	0.83	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	4.07		1.95	0.26	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	1.98		1.95	0.30	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	7.86		1.95	1.07	ng/L	1		537 (modified)	SPLP East
Perfluorotridecanoic Acid (PFTriA)	1.31	J	1.95	1.27	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	2.19	B	1.95	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	0.25	J	1.95	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	109		1.95	0.53	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	15.1		1.95	0.34	ng/L	1		537 (modified)	SPLP East
8:2FTS	7.30	J	19.5	1.95	ng/L	1		537 (modified)	SPLP East

Client Sample ID: SB012(2-4)-SPLP — Lab Sample ID: 320-38063-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	48.5	B	1.98	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	3.89		1.98	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	30.4		1.98	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	8.93		1.98	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	76.3		1.98	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	57.1		1.98	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	187		1.98	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	14.8		1.98	1.09	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	9.89		1.98	0.20	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	19.8		1.98	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	10.5		1.98	0.35	ng/L	1		537 (modified)	SPLP East
8:2FTS	28.1		19.8	1.98	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS) - DL	377	D B	3.96	0.34	ng/L	2		537 (modified)	SPLP East
6:2FTS - DL	269	D B	39.6	3.96	ng/L	2		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL2	19200	D	198	53.4	ng/L	100		537 (modified)	SPLP East

Client Sample ID: SB008(2-4)-SPLP — Lab Sample ID: 320-38063-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.79	B	1.96	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	8.75		1.96	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	8.82		1.96	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	5.65		1.96	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	9.40		1.96	0.83	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	17.5		1.96	0.26	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	33.3		1.96	0.30	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	18.5		1.96	1.08	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	0.57	J	1.96	0.20	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	24.7	B	1.96	0.17	ng/L	1		537 (modified)	SPLP East

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB008(2-4)-SPLP (Continued) — Lab Sample ID: 320-38063-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanesulfonic Acid (PFHpS)	2.66		1.96	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	70.1		1.96	0.34	ng/L	1		537 (modified)	SPLP East
6:2FTS	6.60	J B	19.6	1.96	ng/L	1		537 (modified)	SPLP East
8:2FTS	87.5		19.6	1.96	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	1240	D	19.6	5.29	ng/L	10		537 (modified)	SPLP East

Client Sample ID: SB007(0-2)-SPLP — Lab Sample ID: 320-38063-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.17	B	1.99	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	7.58		1.99	0.49	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	4.18		1.99	0.58	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	2.15		1.99	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	3.40		1.99	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	1.33	J	1.99	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	2.04		1.99	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	4.97		1.99	1.09	ng/L	1		537 (modified)	SPLP East
Perfluorododecanoic acid (PFDoA)	7.71		1.99	0.55	ng/L	1		537 (modified)	SPLP East
Perfluorotridecanoic Acid (PFTriA)	16.0		1.99	1.29	ng/L	1		537 (modified)	SPLP East
Perfluorotetradecanoic acid (PFTeA)	0.62	J	1.99	0.29	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	2.00	B	1.99	0.17	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	12.8		1.99	0.54	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	34.2		1.99	0.35	ng/L	1		537 (modified)	SPLP East
6:2FTS	12.9	J B	19.9	1.99	ng/L	1		537 (modified)	SPLP East
8:2FTS	12.5	J	19.9	1.99	ng/L	1		537 (modified)	SPLP East

Client Sample ID: SB003(0-2)-SPLP — Lab Sample ID: 320-38063-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	12.2	B	1.92	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	23.0		1.92	0.47	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	29.3		1.92	0.56	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	19.7		1.92	0.24	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	54.5		1.92	0.82	ng/L	1		537 (modified)	SPLP East
Perfluorododecanoic acid (PFDoA)	12.9		1.92	0.53	ng/L	1		537 (modified)	SPLP East
Perfluorotridecanoic Acid (PFTriA)	43.3		1.92	1.25	ng/L	1		537 (modified)	SPLP East
Perfluorotetradecanoic acid (PFTeA)	1.69	J	1.92	0.28	ng/L	1		537 (modified)	SPLP East
Perfluorobutanesulfonic acid (PFBS)	2.03		1.92	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	73.9	B	1.92	0.16	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	43.5		1.92	0.18	ng/L	1		537 (modified)	SPLP East
Perfluorodecanesulfonic acid (PFDS)	201		1.92	0.31	ng/L	1		537 (modified)	SPLP East
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	13.9	J	19.2	1.82	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA) - DL	2210	D	19.2	2.59	ng/L	10		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA) - DL	1280	D	19.2	2.98	ng/L	10		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA) - DL	2720	D	19.2	10.6	ng/L	10		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA) - DL	622	D	19.2	3.36	ng/L	10		537 (modified)	SPLP East

This Detection Summary does not include radiochemical test results.

Client Sample ID: SB003(0-2)-SPLP (Continued)

Lab Sample ID: 320-38063-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2FTS - DL	630	D B	192	19.2	ng/L	10		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL2	13900	D	192	51.8	ng/L	100		537 (modified)	SPLP East
8:2FTS - DL2	8150	D	1920	192	ng/L	100		537 (modified)	SPLP East

Client Sample ID: SB004(8-10)-SPLP

Lab Sample ID: 320-38063-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.43	B	1.97	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	3.99		1.97	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	5.37		1.97	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	31.4		1.97	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	144		1.97	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	8.82		1.97	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	5.63		1.97	1.08	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	57.5	B	1.97	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	15.2		1.97	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	0.91	J	1.97	0.34	ng/L	1		537 (modified)	SPLP East
8:2FTS	69.3		19.7	1.97	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA) - DL	396	D	19.7	2.66	ng/L	10		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	995	D	19.7	5.31	ng/L	10		537 (modified)	SPLP East
6:2FTS - DL	1490	D B	197	19.7	ng/L	10		537 (modified)	SPLP East

Client Sample ID: SB013(8-10)-SPLP

Lab Sample ID: 320-38063-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.63	J B	1.97	0.35	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	0.96	J	1.97	0.48	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	5.39		1.97	0.57	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	3.01		1.97	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	6.37		1.97	0.84	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	3.42		1.97	0.27	ng/L	1		537 (modified)	SPLP East
Perfluorodecanoic acid (PFDA)	0.68	J	1.97	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroundecanoic acid (PFUnA)	10.4		1.97	1.09	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	73.2	B	1.97	0.17	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanesulfonic Acid (PFHpS)	2.16		1.97	0.19	ng/L	1		537 (modified)	SPLP East
Perfluorooctane Sulfonamide (FOSA)	6.70		1.97	0.35	ng/L	1		537 (modified)	SPLP East
6:2FTS	183	B	19.7	1.97	ng/L	1		537 (modified)	SPLP East
8:2FTS	6.91	J	19.7	1.97	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS) - DL	1020	D	19.7	5.33	ng/L	10		537 (modified)	SPLP East

This Detection Summary does not include radiochemical test results.

Method Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38063-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC
1312	SPLP Extraction	SW846	TAL SAC
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: SB031(0-2)-SPLP

Date Collected: 04/10/18 09:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-1

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.06**	**B**	1.95	0.34	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluoropentanoic acid (PFPeA)	**3.48**		1.95	0.48	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorohexanoic acid (PFHxA)	**3.39**		1.95	0.57	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluoroheptanoic acid (PFHpA)	**2.38**		1.95	0.24	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorooctanoic acid (PFOA)	**3.38**		1.95	0.83	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorononanoic acid (PFNA)	**4.07**		1.95	0.26	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorodecanoic acid (PFDA)	**1.98**		1.95	0.30	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluoroundecanoic acid (PFUnA)	**7.86**		1.95	1.07	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.95	0.54	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorotridecanoic Acid (PFTriA)	**1.31**	**J**	1.95	1.27	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorotetradecanoic acid (PFTeA)	0.28	U	1.95	0.28	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.95	0.20	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorohexanesulfonic acid (PFHxS)	**2.19**	**B**	1.95	0.17	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.25**	**J**	1.95	0.19	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorooctanesulfonic acid (PFOS)	**109**		1.95	0.53	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.95	0.31	ng/L		04/23/18 10:11	04/26/18 08:06	1
Perfluorooctane Sulfonamide (FOSA)	**15.1**		1.95	0.34	ng/L		04/23/18 10:11	04/26/18 08:06	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.03	U	19.5	3.03	ng/L		04/23/18 10:11	04/26/18 08:06	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	19.5	1.86	ng/L		04/23/18 10:11	04/26/18 08:06	1
6:2FTS	1.95	U	19.5	1.95	ng/L		04/23/18 10:11	04/26/18 08:06	1
8:2FTS	**7.30**	**J**	19.5	1.95	ng/L		04/23/18 10:11	04/26/18 08:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C5 PFPeA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C2 PFHxA	*102*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C4-PFHpA	*99*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C4 PFOA	*104*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C5 PFNA	*99*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C2 PFDA	*103*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C2 PFUnA	*96*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C2 PFDoA	*98*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C2-PFTeDA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C3-PFBS	*98*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
18O2 PFHxS	*98*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C4 PFOS	*93*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
13C8 FOSA	*91*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
d3-NMeFOSAA	*107*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
d5-NEtFOSAA	*106*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
M2-6:2FTS	*110*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*
M2-8:2FTS	*107*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:06*	*1*

Client Sample ID: SB012(2-4)-SPLP

Date Collected: 04/10/18 09:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-2

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**48.5**	**B**	1.98	0.35	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluoropentanoic acid (PFPeA)	**3.89**		1.98	0.48	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorohexanoic acid (PFHxA)	**30.4**		1.98	0.57	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluoroheptanoic acid (PFHpA)	**8.93**		1.98	0.25	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorooctanoic acid (PFOA)	**76.3**		1.98	0.84	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorononanoic acid (PFNA)	**57.1**		1.98	0.27	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorodecanoic acid (PFDA)	**187**		1.98	0.31	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluoroundecanoic acid (PFUnA)	**14.8**		1.98	1.09	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.98	0.54	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorotridecanoic Acid (PFTriA)	1.29	U	1.98	1.29	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.98	0.29	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorobutanesulfonic acid (PFBS)	**9.89**		1.98	0.20	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	**19.8**		1.98	0.19	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32	ng/L		04/23/18 10:11	04/26/18 08:14	1
Perfluorooctane Sulfonamide (FOSA)	**10.5**		1.98	0.35	ng/L		04/23/18 10:11	04/26/18 08:14	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.07	U	19.8	3.07	ng/L		04/23/18 10:11	04/26/18 08:14	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88	ng/L		04/23/18 10:11	04/26/18 08:14	1
8:2FTS	**28.1**		19.8	1.98	ng/L		04/23/18 10:11	04/26/18 08:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C5 PFPeA	*93*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C2 PFHxA	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C4-PFHpA	*96*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C4 PFOA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C5 PFNA	*46*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C2 PFDA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C2 PFUnA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C2 PFDoA	*94*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C2-PFTeDA	*89*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C3-PFBS	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C4 PFOS	*42*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
13C8 FOSA	*98*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
d3-NMeFOSAA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
d5-NEtFOSAA	*115*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*
M2-8:2FTS	*129*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:14*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	**377**	**D B**	3.96	0.34	ng/L		04/23/18 10:11	04/26/18 19:54	2
6:2FTS	**269**	**D B**	39.6	3.96	ng/L		04/23/18 10:11	04/26/18 19:54	2

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
18O2 PFHxS	*92*		*25 - 150*	*04/23/18 10:11*	*04/26/18 19:54*	*2*
M2-6:2FTS	*134*		*25 - 150*	*04/23/18 10:11*	*04/26/18 19:54*	*2*

Client Sample ID: SB012(2-4)-SPLP

Date Collected: 04/10/18 09:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-2

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**19200**	**D**	198	53.4	ng/L		04/23/18 10:11	04/26/18 19:46	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*85*		*25 - 150*	*04/23/18 10:11*	*04/26/18 19:46*	*100*

Client Sample ID: SB008(2-4)-SPLP

Date Collected: 04/10/18 10:00
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-3

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.79**	**B**	1.96	0.34	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluoropentanoic acid (PFPeA)	**8.75**		1.96	0.48	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorohexanoic acid (PFHxA)	**8.82**		1.96	0.57	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluoroheptanoic acid (PFHpA)	**5.65**		1.96	0.25	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorooctanoic acid (PFOA)	**9.40**		1.96	0.83	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorononanoic acid (PFNA)	**17.5**		1.96	0.26	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorodecanoic acid (PFDA)	**33.3**		1.96	0.30	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluoroundecanoic acid (PFUnA)	**18.5**		1.96	1.08	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.96	0.54	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorotridecanoic Acid (PFTriA)	1.27	U	1.96	1.27	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorotetradecanoic acid (PFTeA)	0.28	U	1.96	0.28	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorobutanesulfonic acid (PFBS)	**0.57**	**J**	1.96	0.20	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorohexanesulfonic acid (PFHxS)	**24.7**	**B**	1.96	0.17	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.66**		1.96	0.19	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.96	0.31	ng/L		04/23/18 10:11	04/26/18 08:22	1
Perfluorooctane Sulfonamide (FOSA)	**70.1**		1.96	0.34	ng/L		04/23/18 10:11	04/26/18 08:22	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.04	U	19.6	3.04	ng/L		04/23/18 10:11	04/26/18 08:22	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	19.6	1.86	ng/L		04/23/18 10:11	04/26/18 08:22	1
6:2FTS	**6.60**	**J B**	19.6	1.96	ng/L		04/23/18 10:11	04/26/18 08:22	1
8:2FTS	**87.5**		19.6	1.96	ng/L		04/23/18 10:11	04/26/18 08:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*94*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C5 PFPeA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C2 PFHxA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C4-PFHpA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C4 PFOA	*103*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C5 PFNA	*88*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C2 PFDA	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C2 PFUnA	*96*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C2 PFDoA	*93*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C2-PFTeDA	*90*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C3-PFBS	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
18O2 PFHxS	*97*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*

Client Sample ID: SB008(2-4)-SPLP

Date Collected: 04/10/18 10:00
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-3
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*87*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
13C8 FOSA	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
d3-NMeFOSAA	*98*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
d5-NEtFOSAA	*104*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
M2-6:2FTS	*125*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*
M2-8:2FTS	*106*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:22*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**1240**	**D**	19.6	5.29	ng/L		04/23/18 10:11	04/26/18 20:10	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*88*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:10*	*10*

Client Sample ID: SB007(0-2)-SPLP

Date Collected: 04/10/18 10:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-4
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.17**	**B**	1.99	0.35	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluoropentanoic acid (PFPeA)	**7.58**		1.99	0.49	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorohexanoic acid (PFHxA)	**4.18**		1.99	0.58	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluoroheptanoic acid (PFHpA)	**2.15**		1.99	0.25	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorooctanoic acid (PFOA)	**3.40**		1.99	0.84	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorononanoic acid (PFNA)	**1.33**	**J**	1.99	0.27	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorodecanoic acid (PFDA)	**2.04**		1.99	0.31	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluoroundecanoic acid (PFUnA)	**4.97**		1.99	1.09	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorododecanoic acid (PFDoA)	**7.71**		1.99	0.55	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorotridecanoic Acid (PFTriA)	**16.0**		1.99	1.29	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorotetradecanoic acid (PFTeA)	**0.62**	**J**	1.99	0.29	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.99	0.20	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorohexanesulfonic acid (PFHxS)	**2.00**	**B**	1.99	0.17	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.99	0.19	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorooctanesulfonic acid (PFOS)	**12.8**		1.99	0.54	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.99	0.32	ng/L		04/23/18 10:11	04/26/18 08:29	1
Perfluorooctane Sulfonamide (FOSA)	**34.2**		1.99	0.35	ng/L		04/23/18 10:11	04/26/18 08:29	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.08	U	19.9	3.08	ng/L		04/23/18 10:11	04/26/18 08:29	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.89	U	19.9	1.89	ng/L		04/23/18 10:11	04/26/18 08:29	1
6:2FTS	**12.9**	**J B**	19.9	1.99	ng/L		04/23/18 10:11	04/26/18 08:29	1
8:2FTS	**12.5**	**J**	19.9	1.99	ng/L		04/23/18 10:11	04/26/18 08:29	1

Client Sample ID: SB007(0-2)-SPLP

Date Collected: 04/10/18 10:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-4
Matrix: Solid

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	94		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C5 PFPeA	92		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C2 PFHxA	94		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C4-PFHpA	89		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C4 PFOA	92		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C5 PFNA	97		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C2 PFDA	92		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C2 PFUnA	94		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C2 PFDoA	89		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C2-PFTeDA	78		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C3-PFBS	91		25 - 150	04/23/18 10:11	04/26/18 08:29	1
18O2 PFHxS	90		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C4 PFOS	87		25 - 150	04/23/18 10:11	04/26/18 08:29	1
13C8 FOSA	86		25 - 150	04/23/18 10:11	04/26/18 08:29	1
d3-NMeFOSAA	94		25 - 150	04/23/18 10:11	04/26/18 08:29	1
d5-NEtFOSAA	103		25 - 150	04/23/18 10:11	04/26/18 08:29	1
M2-6:2FTS	106		25 - 150	04/23/18 10:11	04/26/18 08:29	1
M2-8:2FTS	111		25 - 150	04/23/18 10:11	04/26/18 08:29	1

Client Sample ID: SB003(0-2)-SPLP

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-5
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**12.2**	**B**	1.92	0.34	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluoropentanoic acid (PFPeA)	**23.0**		1.92	0.47	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorohexanoic acid (PFHxA)	**29.3**		1.92	0.56	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluoroheptanoic acid (PFHpA)	**19.7**		1.92	0.24	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorooctanoic acid (PFOA)	**54.5**		1.92	0.82	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorododecanoic acid (PFDoA)	**12.9**		1.92	0.53	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorotridecanoic Acid (PFTriA)	**43.3**		1.92	1.25	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorotetradecanoic acid (PFTeA)	**1.69**	**J**	1.92	0.28	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorobutanesulfonic acid (PFBS)	**2.03**		1.92	0.19	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorohexanesulfonic acid (PFHxS)	**73.9**	**B**	1.92	0.16	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	**43.5**		1.92	0.18	ng/L		04/23/18 10:11	04/26/18 08:37	1
Perfluorodecanesulfonic acid (PFDS)	**201**		1.92	0.31	ng/L		04/23/18 10:11	04/26/18 08:37	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.98	U	19.2	2.98	ng/L		04/23/18 10:11	04/26/18 08:37	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	**13.9**	**J**	19.2	1.82	ng/L		04/23/18 10:11	04/26/18 08:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	138		25 - 150	04/23/18 10:11	04/26/18 08:37	1
13C5 PFPeA	139		25 - 150	04/23/18 10:11	04/26/18 08:37	1
13C2 PFHxA	133		25 - 150	04/23/18 10:11	04/26/18 08:37	1

Client Sample ID: SB003(0-2)-SPLP

Date Collected: 04/10/18 11:11
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-5
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4-PFHpA	*129*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
13C4 PFOA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
13C2 PFDoA	*116*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
13C2-PFTeDA	*59*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
13C3-PFBS	*138*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
18O2 PFHxS	*128*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
13C4 PFOS	*59*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
d3-NMeFOSAA	*125*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*
d5-NEtFOSAA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:37*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**2210**	**D**	19.2	2.59	ng/L		04/23/18 10:11	04/26/18 20:33	10
Perfluorodecanoic acid (PFDA)	**1280**	**D**	19.2	2.98	ng/L		04/23/18 10:11	04/26/18 20:33	10
Perfluoroundecanoic acid (PFUnA)	**2720**	**D**	19.2	10.6	ng/L		04/23/18 10:11	04/26/18 20:33	10
Perfluorooctane Sulfonamide (FOSA)	**622**	**D**	19.2	3.36	ng/L		04/23/18 10:11	04/26/18 20:33	10
6:2FTS	**630**	**D B**	192	19.2	ng/L		04/23/18 10:11	04/26/18 20:33	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*90*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:33*	*10*
13C2 PFDA	*90*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:33*	*10*
13C2 PFUnA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:33*	*10*
13C8 FOSA	*85*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:33*	*10*
M2-6:2FTS	*124*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:33*	*10*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**13900**	**D**	192	51.8	ng/L		04/23/18 10:11	04/26/18 20:25	100
8:2FTS	**8150**	**D**	1920	192	ng/L		04/23/18 10:11	04/26/18 20:25	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*75*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:25*	*100*
M2-8:2FTS	*222*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 20:25*	*100*

Client Sample ID: SB004(8-10)-SPLP

Date Collected: 04/10/18 11:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-6
Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**2.43**	**B**	1.97	0.34	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluoropentanoic acid (PFPeA)	**3.99**		1.97	0.48	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorohexanoic acid (PFHxA)	**5.37**		1.97	0.57	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluoroheptanoic acid (PFHpA)	**31.4**		1.97	0.25	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorooctanoic acid (PFOA)	**144**		1.97	0.84	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorodecanoic acid (PFDA)	**8.82**		1.97	0.31	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluoroundecanoic acid (PFUnA)	**5.63**		1.97	1.08	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28	ng/L		04/23/18 10:11	04/26/18 08:45	1

Client Sample ID: SB004(8-10)-SPLP

Date Collected: 04/10/18 11:30
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-6

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.97	0.20	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorohexanesulfonic acid (PFHxS)	**57.5**	**B**	1.97	0.17	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluoroheptanesulfonic Acid (PFHpS)	**15.2**		1.97	0.19	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.97	0.31	ng/L		04/23/18 10:11	04/26/18 08:45	1
Perfluorooctane Sulfonamide (FOSA)	**0.91**	**J**	1.97	0.34	ng/L		04/23/18 10:11	04/26/18 08:45	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.05	U	19.7	3.05	ng/L		04/23/18 10:11	04/26/18 08:45	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87	ng/L		04/23/18 10:11	04/26/18 08:45	1
8:2FTS	**69.3**		19.7	1.97	ng/L		04/23/18 10:11	04/26/18 08:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C5 PFPeA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C2 PFHxA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C4-PFHpA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C4 PFOA	*96*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C2 PFDA	*103*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C2 PFUnA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C2 PFDoA	*99*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C2-PFTeDA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C3-PFBS	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
18O2 PFHxS	*98*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C4 PFOS	*88*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
13C8 FOSA	*91*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
d3-NMeFOSAA	*102*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
d5-NEtFOSAA	*112*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*
M2-8:2FTS	*121*		*25 - 150*	*04/23/18 10:11*	*04/26/18 08:45*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**396**	**D**	19.7	2.66	ng/L		04/23/18 10:11	04/26/18 20:49	10
Perfluorooctanesulfonic acid (PFOS)	**995**	**D**	19.7	5.31	ng/L		04/23/18 10:11	04/26/18 20:49	10
6:2FTS	**1490**	**D B**	197	19.7	ng/L		04/23/18 10:11	04/26/18 20:49	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:49*	*10*
13C4 PFOS	*93*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:49*	*10*
M2-6:2FTS	*115*		*25 - 150*	*04/23/18 10:11*	*04/26/18 20:49*	*10*

Client Sample ID: SB013(8-10)-SPLP

Date Collected: 04/10/18 12:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-7

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.63**	**J B**	1.97	0.35	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluoropentanoic acid (PFPeA)	**0.96**	**J**	1.97	0.48	ng/L		04/23/18 10:11	04/26/18 09:01	1

Client Sample ID: SB013(8-10)-SPLP

Date Collected: 04/10/18 12:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-7

Matrix: Solid

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	**5.39**		1.97	0.57	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluoroheptanoic acid (PFHpA)	**3.01**		1.97	0.25	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorooctanoic acid (PFOA)	**6.37**		1.97	0.84	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorononanoic acid (PFNA)	**3.42**		1.97	0.27	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorodecanoic acid (PFDA)	**0.68**	**J**	1.97	0.31	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluoroundecanoic acid (PFUnA)	**10.4**		1.97	1.09	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.97	0.20	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorohexanesulfonic acid (PFHxS)	**73.2**	**B**	1.97	0.17	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.16**		1.97	0.19	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.97	0.32	ng/L		04/23/18 10:11	04/26/18 09:01	1
Perfluorooctane Sulfonamide (FOSA)	**6.70**		1.97	0.35	ng/L		04/23/18 10:11	04/26/18 09:01	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.06	U	19.7	3.06	ng/L		04/23/18 10:11	04/26/18 09:01	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87	ng/L		04/23/18 10:11	04/26/18 09:01	1
6:2FTS	**183**	**B**	19.7	1.97	ng/L		04/23/18 10:11	04/26/18 09:01	1
8:2FTS	**6.91**	**J**	19.7	1.97	ng/L		04/23/18 10:11	04/26/18 09:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*23*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C5 PFPeA	*26*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C2 PFHxA	*26*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C4-PFHpA	*26*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C4 PFOA	*25*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C5 PFNA	*25*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C2 PFDA	*25*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C2 PFUnA	*23*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C2 PFDoA	*21*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C2-PFTeDA	*23*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C3-PFBS	*26*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
18O2 PFHxS	*26*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C4 PFOS	*23*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
13C8 FOSA	*23*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
d3-NMeFOSAA	*26*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
d5-NEtFOSAA	*27*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
M2-6:2FTS	*27*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*
M2-8:2FTS	*29*		*25 - 150*	*04/23/18 10:11*	*04/26/18 09:01*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**1020**	**D**	19.7	5.33	ng/L		04/23/18 10:11	04/26/18 20:57	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*23*	*	*25 - 150*	*04/23/18 10:11*	*04/26/18 20:57*	*10*

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38063-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
LCS 320-219273/2-A	Lab Control Sample	101	99	102	98	104	101	96	94
LCSD 320-219273/3-A	Lab Control Sample Dup	93	96	93	94	98	94	95	92
MB 320-219273/1-A	Method Blank	102	103	101	101	101	106	102	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3-NMeFOSA (25-150)	d5-NEtFOSA (25-150)
LCS 320-219273/2-A	Lab Control Sample	91	93	99	96	94	87	92	98
LCSD 320-219273/3-A	Lab Control Sample Dup	90	91	94	93	90	83	88	95
MB 320-219273/1-A	Method Blank	96	100	95	95	95	93	99	105

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
LCS 320-219273/2-A	Lab Control Sample	106	101
LCSD 320-219273/3-A	Lab Control Sample Dup	104	98
MB 320-219273/1-A	Method Blank	109	116

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-38063-1	SB031(0-2)-SPLP	100	101	102	99	104	99	103	96
320-38063-2	SB012(2-4)-SPLP	69	93	95	96	101	46	101	100
320-38063-2 - DL2	SB012(2-4)-SPLP								
320-38063-2 - DL	SB012(2-4)-SPLP								
320-38063-3	SB008(2-4)-SPLP	94	100	101	101	103	88	95	96
320-38063-3 - DL	SB008(2-4)-SPLP								
320-38063-4	SB007(0-2)-SPLP	94	92	94	89	92	97	92	94

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38063-5	SB003(0-2)-SPLP	138	139	133	129	101			
320-38063-5 - DL	SB003(0-2)-SPLP						90	90	101
320-38063-5 - DL2	SB003(0-2)-SPLP								
320-38063-6	SB004(8-10)-SPLP	101	100	100	100	96		103	101
320-38063-6 - DL	SB004(8-10)-SPLP						101		
320-38063-7	SB013(8-10)-SPLP	23 *	26	26	26	25	25	25	23 *
320-38063-7 - DL	SB013(8-10)-SPLP								
LB 320-218620/8-B	Method Blank	98	101	99	103	102	102	100	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	3C3-PFBS	PFHxS	PFOS	PFOSA	-NMeFOSA	-NEtFOSA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-38063-1	SB031(0-2)-SPLP	98	100	98	98	93	91	107	106
320-38063-2	SB012(2-4)-SPLP	94	89	95		42	98	101	115
320-38063-2 - DL2	SB012(2-4)-SPLP					85			
320-38063-2 - DL	SB012(2-4)-SPLP				92				
320-38063-3	SB008(2-4)-SPLP	93	90	100	97	87	95	98	104
320-38063-3 - DL	SB008(2-4)-SPLP					88			
320-38063-4	SB007(0-2)-SPLP	89	78	91	90	87	86	94	103
320-38063-5	SB003(0-2)-SPLP	116	59	138	128	59		125	101
320-38063-5 - DL	SB003(0-2)-SPLP						85		
320-38063-5 - DL2	SB003(0-2)-SPLP					75			
320-38063-6	SB004(8-10)-SPLP	99	100	101	98	88	91	102	112
320-38063-6 - DL	SB004(8-10)-SPLP					93			
320-38063-7	SB013(8-10)-SPLP	21 *	23 *	26	26	23 *	23 *	26	27
320-38063-7 - DL	SB013(8-10)-SPLP					23 *			
LB 320-218620/8-B	Method Blank	87	98	98	97	95	91	93	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
320-38063-1	SB031(0-2)-SPLP	110	107						
320-38063-2	SB012(2-4)-SPLP		129						
320-38063-2 - DL2	SB012(2-4)-SPLP								
320-38063-2 - DL	SB012(2-4)-SPLP	134							
320-38063-3	SB008(2-4)-SPLP	125	106						
320-38063-3 - DL	SB008(2-4)-SPLP								
320-38063-4	SB007(0-2)-SPLP	106	111						
320-38063-5	SB003(0-2)-SPLP								
320-38063-5 - DL	SB003(0-2)-SPLP	124							
320-38063-5 - DL2	SB003(0-2)-SPLP		222 *						
320-38063-6	SB004(8-10)-SPLP		121						
320-38063-6 - DL	SB004(8-10)-SPLP	115							
320-38063-7	SB013(8-10)-SPLP	27	29						
320-38063-7 - DL	SB013(8-10)-SPLP								
LB 320-218620/8-B	Method Blank	108	106						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA

Isotope Dilution Summary

Client: PW Grosser Consulting
Project/Site: Suffolk County Firematics Site

TestAmerica Job ID: 320-38063-1

PFHpA = 13C4-PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2-PFTeDA
13C3-PFBS = 13C3-PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2FTS
M282FTS = M2-8:2FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-219273/1-A
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 219273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.389	J	2.00	0.35	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorohexanesulfonic acid (PFHxS)	0.317	J	2.00	0.17	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32	ng/L		04/23/18 10:11	04/26/18 07:35	1
Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35	ng/L		04/23/18 10:11	04/26/18 07:35	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10	ng/L		04/23/18 10:11	04/26/18 07:35	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90	ng/L		04/23/18 10:11	04/26/18 07:35	1
6:2FTS	2.00	U	20.0	2.00	ng/L		04/23/18 10:11	04/26/18 07:35	1
8:2FTS	2.00	U	20.0	2.00	ng/L		04/23/18 10:11	04/26/18 07:35	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*102*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C5 PFPeA	*103*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C2 PFHxA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C4-PFHpA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C4 PFOA	*101*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C5 PFNA	*106*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C2 PFDA	*102*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C2 PFUnA	*102*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C2 PFDoA	*96*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C2-PFTeDA	*100*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C3-PFBS	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
18O2 PFHxS	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C4 PFOS	*95*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
13C8 FOSA	*93*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
d3-NMeFOSAA	*99*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
d5-NEtFOSAA	*105*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
M2-6:2FTS	*109*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*
M2-8:2FTS	*116*		*25 - 150*	*04/23/18 10:11*	*04/26/18 07:35*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-219273/2-A
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 219273

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorobutanoic acid (PFBA)			40.0	41.45		ng/L		104	70 - 130		
Perfluoropentanoic acid (PFPeA)			40.0	39.05		ng/L		98	66 - 126		
Perfluorohexanoic acid (PFHxA)			40.0	38.46		ng/L		96	66 - 126		
Perfluoroheptanoic acid (PFHpA)			40.0	40.68		ng/L		102	66 - 126		
Perfluorooctanoic acid (PFOA)			40.0	37.05		ng/L		93	64 - 124		
Perfluorononanoic acid (PFNA)			40.0	38.75		ng/L		97	68 - 128		
Perfluorodecanoic acid (PFDA)			40.0	38.89		ng/L		97	69 - 129		
Perfluoroundecanoic acid (PFUnA)			40.0	34.73		ng/L		87	60 - 120		
Perfluorododecanoic acid (PFDoA)			40.0	38.72		ng/L		97	71 - 131		
Perfluorotridecanoic Acid (PFTriA)			40.0	35.40		ng/L		89	72 - 132		
Perfluorotetradecanoic acid (PFTeA)			40.0	38.35		ng/L		96	68 - 128		
Perfluorobutanesulfonic acid (PFBS)			35.4	34.07		ng/L		96	73 - 133		
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.78		ng/L		93	63 - 123		
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	37.64		ng/L		99	68 - 128		
Perfluorooctanesulfonic acid (PFOS)			37.1	37.83		ng/L		102	67 - 127		
Perfluorodecanesulfonic acid (PFDS)			38.6	37.41		ng/L		97	68 - 128		
Perfluorooctane Sulfonamide (FOSA)			40.0	37.89		ng/L		95	70 - 130		
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)			40.0	41.75		ng/L		104	67 - 127		
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)			40.0	39.00		ng/L		97	65 - 125		
6:2FTS			37.9	39.05		ng/L		103	66 - 126		
8:2FTS			38.3	40.44		ng/L		106	67 - 127		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*101*		*25 - 150*
13C5 PFPeA	*99*		*25 - 150*
13C2 PFHxA	*102*		*25 - 150*
13C4-PFHpA	*98*		*25 - 150*
13C4 PFOA	*104*		*25 - 150*
13C5 PFNA	*101*		*25 - 150*
13C2 PFDA	*96*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
13C2 PFDoA	*91*		*25 - 150*
13C2-PFTeDA	*93*		*25 - 150*
13C3-PFBS	*99*		*25 - 150*
18O2 PFHxS	*96*		*25 - 150*
13C4 PFOS	*94*		*25 - 150*
13C8 FOSA	*87*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-219273/2-A
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 219273

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
d3-NMeFOSAA	92		25 - 150
d5-NEtFOSAA	98		25 - 150
M2-6:2FTS	106		25 - 150
M2-8:2FTS	101		25 - 150

Lab Sample ID: LCSD 320-219273/3-A
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 219273

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	42.70		ng/L		107	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)			40.0	37.24		ng/L		93	66 - 126	5	30
Perfluorohexanoic acid (PFHxA)			40.0	40.06		ng/L		100	66 - 126	4	30
Perfluoroheptanoic acid (PFHpA)			40.0	41.53		ng/L		104	66 - 126	2	30
Perfluorooctanoic acid (PFOA)			40.0	37.79		ng/L		94	64 - 124	2	30
Perfluorononanoic acid (PFNA)			40.0	40.04		ng/L		100	68 - 128	3	30
Perfluorodecanoic acid (PFDA)			40.0	40.75		ng/L		102	69 - 129	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.96		ng/L		100	60 - 120	14	30
Perfluorododecanoic acid (PFDoA)			40.0	39.77		ng/L		99	71 - 131	3	30
Perfluorotridecanoic Acid (PFTriA)			40.0	37.33		ng/L		93	72 - 132	5	30
Perfluorotetradecanoic acid (PFTeA)			40.0	37.41		ng/L		94	68 - 128	2	30
Perfluorobutanesulfonic acid (PFBS)			35.4	34.03		ng/L		96	73 - 133	0	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.88		ng/L		93	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	37.98		ng/L		100	68 - 128	1	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.56		ng/L		104	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)			38.6	36.12		ng/L		94	68 - 128	3	30
Perfluorooctane Sulfonamide (FOSA)			40.0	37.96		ng/L		95	70 - 130	0	30
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)			40.0	44.87		ng/L		112	67 - 127	7	30
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)			40.0	38.61		ng/L		97	65 - 125	1	30
6:2FTS			37.9	38.86		ng/L		102	66 - 126	0	30
8:2FTS			38.3	38.44		ng/L		100	67 - 127	5	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	93		25 - 150
13C5 PFPeA	96		25 - 150
13C2 PFHxA	93		25 - 150
13C4-PFHpA	94		25 - 150
13C4 PFOA	98		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-219273/3-A
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 219273

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C5 PFNA	94		25 - 150
13C2 PFDA	95		25 - 150
13C2 PFUnA	92		25 - 150
13C2 PFDoA	90		25 - 150
13C2-PFTeDA	91		25 - 150
13C3-PFBS	94		25 - 150
18O2 PFHxS	93		25 - 150
13C4 PFOS	90		25 - 150
13C8 FOSA	83		25 - 150
d3-NMeFOSAA	88		25 - 150
d5-NEtFOSAA	95		25 - 150
M2-6:2FTS	104		25 - 150
M2-8:2FTS	98		25 - 150

Lab Sample ID: LB 320-218620/8-B
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 219273

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.448	J	1.99	0.35	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluoropentanoic acid (PFPeA)	0.49	U	1.99	0.49	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorohexanoic acid (PFHxA)	0.58	U	1.99	0.58	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluoroheptanoic acid (PFHpA)	0.25	U	1.99	0.25	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorooctanoic acid (PFOA)	0.85	U	1.99	0.85	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorononanoic acid (PFNA)	0.27	U	1.99	0.27	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorodecanoic acid (PFDA)	0.31	U	1.99	0.31	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluoroundecanoic acid (PFUnA)	1.10	U	1.99	1.10	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorododecanoic acid (PFDoA)	0.55	U	1.99	0.55	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorotridecanoic Acid (PFTriA)	1.30	U	1.99	1.30	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.99	0.29	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.99	0.20	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorohexanesulfonic acid (PFHxS)	0.340	J	1.99	0.17	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.99	0.19	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorooctanesulfonic acid (PFOS)	0.54	U	1.99	0.54	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.99	0.32	ng/L		04/23/18 10:11	04/26/18 07:58	1
Perfluorooctane Sulfonamide (FOSA)	0.35	U	1.99	0.35	ng/L		04/23/18 10:11	04/26/18 07:58	1
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.09	U	19.9	3.09	ng/L		04/23/18 10:11	04/26/18 07:58	1
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.89	U	19.9	1.89	ng/L		04/23/18 10:11	04/26/18 07:58	1
6:2FTS	2.696	J	19.9	1.99	ng/L		04/23/18 10:11	04/26/18 07:58	1
8:2FTS	1.99	U	19.9	1.99	ng/L		04/23/18 10:11	04/26/18 07:58	1

Isotope Dilution	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C5 PFPeA	101		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C2 PFHxA	99		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C4-PFHpA	103		25 - 150	04/23/18 10:11	04/26/18 07:58	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LB 320-218620/8-B
Matrix: Solid
Analysis Batch: 219912

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 219273

Isotope Dilution	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	102		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C5 PFNA	102		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C2 PFDA	100		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C2 PFUnA	90		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C2 PFDoA	87		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C2-PFTeDA	98		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C3-PFBS	98		25 - 150	04/23/18 10:11	04/26/18 07:58	1
18O2 PFHxS	97		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C4 PFOS	95		25 - 150	04/23/18 10:11	04/26/18 07:58	1
13C8 FOSA	91		25 - 150	04/23/18 10:11	04/26/18 07:58	1
d3-NMeFOSAA	93		25 - 150	04/23/18 10:11	04/26/18 07:58	1
d5-NEtFOSAA	103		25 - 150	04/23/18 10:11	04/26/18 07:58	1
M2-6:2FTS	108		25 - 150	04/23/18 10:11	04/26/18 07:58	1
M2-8:2FTS	106		25 - 150	04/23/18 10:11	04/26/18 07:58	1

Qualifiers

LCMS

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
*	Isotope Dilution analyte is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Leach Batch: 218620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38063-1	SB031(0-2)-SPLP	SPLP East	Solid	1312	
320-38063-2 - DL2	SB012(2-4)-SPLP	SPLP East	Solid	1312	
320-38063-2	SB012(2-4)-SPLP	SPLP East	Solid	1312	
320-38063-2 - DL	SB012(2-4)-SPLP	SPLP East	Solid	1312	
320-38063-3	SB008(2-4)-SPLP	SPLP East	Solid	1312	
320-38063-3 - DL	SB008(2-4)-SPLP	SPLP East	Solid	1312	
320-38063-4	SB007(0-2)-SPLP	SPLP East	Solid	1312	
320-38063-5	SB003(0-2)-SPLP	SPLP East	Solid	1312	
320-38063-5 - DL	SB003(0-2)-SPLP	SPLP East	Solid	1312	
320-38063-5 - DL2	SB003(0-2)-SPLP	SPLP East	Solid	1312	
320-38063-6	SB004(8-10)-SPLP	SPLP East	Solid	1312	
320-38063-6 - DL	SB004(8-10)-SPLP	SPLP East	Solid	1312	
320-38063-7	SB013(8-10)-SPLP	SPLP East	Solid	1312	
320-38063-7 - DL	SB013(8-10)-SPLP	SPLP East	Solid	1312	
LB 320-218620/8-B	Method Blank	SPLP East	Solid	1312	

Prep Batch: 219273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38063-1	SB031(0-2)-SPLP	SPLP East	Solid	3535	218620
320-38063-2	SB012(2-4)-SPLP	SPLP East	Solid	3535	218620
320-38063-2 - DL	SB012(2-4)-SPLP	SPLP East	Solid	3535	218620
320-38063-2 - DL2	SB012(2-4)-SPLP	SPLP East	Solid	3535	218620
320-38063-3	SB008(2-4)-SPLP	SPLP East	Solid	3535	218620
320-38063-3 - DL	SB008(2-4)-SPLP	SPLP East	Solid	3535	218620
320-38063-4	SB007(0-2)-SPLP	SPLP East	Solid	3535	218620
320-38063-5	SB003(0-2)-SPLP	SPLP East	Solid	3535	218620
320-38063-5 - DL2	SB003(0-2)-SPLP	SPLP East	Solid	3535	218620
320-38063-5 - DL	SB003(0-2)-SPLP	SPLP East	Solid	3535	218620
320-38063-6 - DL	SB004(8-10)-SPLP	SPLP East	Solid	3535	218620
320-38063-6	SB004(8-10)-SPLP	SPLP East	Solid	3535	218620
320-38063-7 - DL	SB013(8-10)-SPLP	SPLP East	Solid	3535	218620
320-38063-7	SB013(8-10)-SPLP	SPLP East	Solid	3535	218620
LB 320-218620/8-B	Method Blank	SPLP East	Solid	3535	218620
MB 320-219273/1-A	Method Blank	Total/NA	Solid	3535	
LCS 320-219273/2-A	Lab Control Sample	Total/NA	Solid	3535	
LCSD 320-219273/3-A	Lab Control Sample Dup	Total/NA	Solid	3535	

Analysis Batch: 219912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38063-1	SB031(0-2)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-2	SB012(2-4)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-3	SB008(2-4)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-4	SB007(0-2)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-5	SB003(0-2)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-6	SB004(8-10)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-7	SB013(8-10)-SPLP	SPLP East	Solid	537 (modified)	219273
LB 320-218620/8-B	Method Blank	SPLP East	Solid	537 (modified)	219273
MB 320-219273/1-A	Method Blank	Total/NA	Solid	537 (modified)	219273
LCS 320-219273/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	219273
LCSD 320-219273/3-A	Lab Control Sample Dup	Total/NA	Solid	537 (modified)	219273

LCMS (Continued)

Analysis Batch: 220094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38063-2 - DL2	SB012(2-4)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-2 - DL	SB012(2-4)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-3 - DL	SB008(2-4)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-5 - DL2	SB003(0-2)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-5 - DL	SB003(0-2)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-6 - DL	SB004(8-10)-SPLP	SPLP East	Solid	537 (modified)	219273
320-38063-7 - DL	SB013(8-10)-SPLP	SPLP East	Solid	537 (modified)	219273

General Chemistry

Analysis Batch: 218606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-38063-1	SB031(0-2)-SPLP	Total/NA	Solid	D 2216	
320-38063-2	SB012(2-4)-SPLP	Total/NA	Solid	D 2216	
320-38063-3	SB008(2-4)-SPLP	Total/NA	Solid	D 2216	
320-38063-4	SB007(0-2)-SPLP	Total/NA	Solid	D 2216	
320-38063-5	SB003(0-2)-SPLP	Total/NA	Solid	D 2216	
320-38063-6	SB004(8-10)-SPLP	Total/NA	Solid	D 2216	
320-38063-7	SB013(8-10)-SPLP	Total/NA	Solid	D 2216	
320-38061-A-1 DU	Duplicate	Total/NA	Solid	D 2216	

Client Sample ID: SB031(0-2)-SPLP
Date Collected: 04/10/18 09:15
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 08:06	JRB	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB012(2-4)-SPLP
Date Collected: 04/10/18 09:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 08:14	JRB	TAL SAC
SPLP East	Leach	1312	DL2		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL2		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL2	100	220094	04/26/18 19:46	CBW	TAL SAC
SPLP East	Leach	1312	DL		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	2	220094	04/26/18 19:54	CBW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB008(2-4)-SPLP
Date Collected: 04/10/18 10:00
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 08:22	JRB	TAL SAC
SPLP East	Leach	1312	DL		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	10	220094	04/26/18 20:10	CBW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB007(0-2)-SPLP
Date Collected: 04/10/18 10:45
Date Received: 04/11/18 08:45

Lab Sample ID: 320-38063-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 08:29	JRB	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB003(0-2)-SPLP

Lab Sample ID: 320-38063-5

Date Collected: 04/10/18 11:11

Matrix: Solid

Date Received: 04/11/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 08:37	JRB	TAL SAC
SPLP East	Leach	1312	DL2		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL2		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL2	100	220094	04/26/18 20:25	CBW	TAL SAC
SPLP East	Leach	1312	DL		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	10	220094	04/26/18 20:33	CBW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB004(8-10)-SPLP

Lab Sample ID: 320-38063-6

Date Collected: 04/10/18 11:30

Matrix: Solid

Date Received: 04/11/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 08:45	JRB	TAL SAC
SPLP East	Leach	1312	DL		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	10	220094	04/26/18 20:49	CBW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Client Sample ID: SB013(8-10)-SPLP

Lab Sample ID: 320-38063-7

Date Collected: 04/10/18 12:15

Matrix: Solid

Date Received: 04/11/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535			219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)		1	219912	04/26/18 09:01	JRB	TAL SAC
SPLP East	Leach	1312	DL		218620	04/18/18 15:35	GSH	TAL SAC
SPLP East	Prep	3535	DL		219273	04/23/18 10:11	KMK	TAL SAC
SPLP East	Analysis	537 (modified)	DL	10	220094	04/26/18 20:57	CBW	TAL SAC
Total/NA	Analysis	D 2216		1	218606	04/18/18 11:53	TCS	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PW Grosser Consulting
TestAmerica Job ID: 320-38063-1
Project/Site: Suffolk County Firematics Site

Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
Arizona	State Program	9	AZ0708	08-11-18
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-18
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18
L-A-B	DoD ELAP		L2468	01-20-21
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-14-20
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-19
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	07-31-18
USDA	Federal		P330-11-00436	01-17-21
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

Laboratory: TestAmerica Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-18
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-18
New Jersey	NELAP	2	12028	06-30-18
New York	NELAP	2	11452	04-01-19
Pennsylvania	NELAP	3	68-00522	02-28-19
Rhode Island	State Program	1	LAO00132	12-30-18
USDA	Federal		NJCA-003-08	06-13-20

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	PFNA #	PFOS #
SB004(8-10)-SPLP DL	320-38063-6 DL	115	101	93

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	M262FTS #	PFNA #	PFOSA #	PFDA #	PFUnA #
SB003(0-2)-SPLP DL	320-38063-5 DL	124	90	85	90	101

	QC LIMITS
M262FTS = M2-6:2FTS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
SB031(0-2)-SPLP	320-38063-1	100	101	98	102	99	98	110	104
SB008(2-4)-SPLP	320-38063-3	94	100	100	101	101	97	125	103
SB007(0-2)-SPLP	320-38063-4	94	92	91	94	89	90	106	92
SB013(8-10)-SPLP	320-38063-7	23 *	26	26	26	26	26	27	25
	MB 320-219273/1-A	102	103	95	101	101	95	109	101
	LB 320-218620/8-B	98	101	98	99	103	97	108	102
	LCS 320-219273/2-A	101	99	99	102	98	96	106	104
	LCSD 320-219273/3-A	93	96	94	93	94	93	104	98

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
SB031(0-2)-SPLP	320-38063-1	99	93	91	107	103	107	106	96
SB008(2-4)-SPLP	320-38063-3	88	87	95	106	95	98	104	96
SB007(0-2)-SPLP	320-38063-4	97	87	86	111	92	94	103	94
SB013(8-10)-SPLP	320-38063-7	25	23 *	23 *	29	25	26	27	23 *
	MB 320-219273/1-A	106	95	93	116	102	99	105	102
	LB 320-218620/8-B	102	95	91	106	100	93	103	90
	LCS 320-219273/2-A	101	94	87	101	96	92	98	94
	LCSD 320-219273/3-A	94	90	83	98	95	88	95	92

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
SB031(0-2)-SPLP	320-38063-1	98	100
SB008(2-4)-SPLP	320-38063-3	93	90
SB007(0-2)-SPLP	320-38063-4	89	78
SB013(8-10)-SPLP	320-38063-7	21 *	23 *
	MB 320-219273/1-A	96	100
	LB 320-218620/8-B	87	98
	LCS 320-219273/2-A	91	93
	LCSD 320-219273/3-A	90	91

	QC LIMITS
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB003(0-2)-SPLP	320-38063-5	138	139	138	133	129	128	101	59

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	d3NMFOS #	d5NEFOS #	PFDoA #	PFTDA #
SB003(0-2)-SPLP	320-38063-5	125	101	116	59

	QC LIMITS
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
SB004(8-10)-SPLP	320-38063-6	101	100	101	100	100	98	96	88

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
SB004(8-10)-SPLP	320-38063-6	91	121	103	102	112	101	99	100

	QC LIMITS
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFOA #	PFNA #	PFOS #
SB012(2-4)-SPLP	320-38063-2	69	93	95	95	96	101	46	42

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFBS = 13C3-PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4-PFHpA	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
SB012(2-4)-SPLP	320-38063-2	98	129	101	101	115	100	94	89

	QC LIMITS
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2-PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	M262FTS #
SB012(2-4)-SPLP DL	320-38063-2 DL	92	134

	QC LIMITS
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS	#
SB012(2-4)-SPLP DL2	320-38063-2 DL2	85	
SB008(2-4)-SPLP DL	320-38063-3 DL	88	
SB013(8-10)-SPLP DL	320-38063-7 DL	23	*

	QC LIMITS
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS	#	M282FTS	#
SB003(0-2)-SPLP DL2	320-38063-5 DL2	75		222	*

	QC LIMITS
PFOS = 13C4 PFOS	25-150
M282FTS = M2-8:2FTS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.25LLBX_038.d

Lab ID: LCS 320-219273/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.45	104	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	39.05	98	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	38.46	96	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	40.68	102	66-126	
Perfluorooctanoic acid (PFOA)	40.0	37.05	93	64-124	
Perfluorononanoic acid (PFNA)	40.0	38.75	97	68-128	
Perfluorodecanoic acid (PFDA)	40.0	38.89	97	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	34.73	87	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	38.72	97	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	35.40	89	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	38.35	96	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	34.07	96	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.78	93	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.64	99	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	37.83	102	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	37.41	97	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	37.89	95	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	41.75	104	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	39.00	97	65-125	
6:2FTS	37.9	39.05	103	66-126	
8:2FTS	38.3	40.44	106	67-127	
13C4 PFBA	100	101.4	101	25-150	
13C5 PFPeA	100	98.72	99	25-150	
13C2 PFHxA	100	101.6	102	25-150	
13C4-PFHpA	100	97.53	98	25-150	
13C4 PFOA	100	104.4	104	25-150	
13C5 PFNA	100	101.1	101	25-150	
13C2 PFDA	100	96.46	96	25-150	
13C2 PFUnA	100	93.84	94	25-150	
13C2 PFDoA	100	91.44	91	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.25LLBX_038.d

Lab ID: LCS 320-219273/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C2-PFTeDA	100	92.79	93	25-150	
13C3-PFBS	93.0	91.88	99	25-150	
18O2 PFHxS	94.6	90.40	96	25-150	
13C4 PFOS	95.6	90.00	94	25-150	
13C8 FOSA	100	87.14	87	25-150	
d3-NMeFOSAA	100	92.04	92	25-150	
d5-NEtFOSAA	100	98.24	98	25-150	
M2-6:2FTS	95.0	101.1	106	25-150	
M2-8:2FTS	95.8	96.42	101	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.25LLBX_039.d

Lab ID: LCSD 320-219273/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	42.70	107	3	30	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	37.24	93	5	30	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	40.06	100	4	30	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	41.53	104	2	30	66-126	
Perfluorooctanoic acid (PFOA)	40.0	37.79	94	2	30	64-124	
Perfluorononanoic acid (PFNA)	40.0	40.04	100	3	30	68-128	
Perfluorodecanoic acid (PFDA)	40.0	40.75	102	5	30	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	39.96	100	14	30	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	39.77	99	3	30	71-131	
Perfluorotridecanoic Acid (PFTriA)	40.0	37.33	93	5	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	37.41	94	2	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	34.03	96	0	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.88	93	0	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.98	100	1	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.56	104	2	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	36.12	94	3	30	68-128	
Perfluorooctane Sulfonamide (FOSA)	40.0	37.96	95	0	30	70-130	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	40.0	44.87	112	7	30	67-127	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	40.0	38.61	97	1	30	65-125	
6:2FTS	37.9	38.86	102	0	30	66-126	
8:2FTS	38.3	38.44	100	5	30	67-127	
13C4 PFBA	100	92.85	93			25-150	
13C5 PFPeA	100	96.07	96			25-150	
13C2 PFHxA	100	93.38	93			25-150	
13C4-PFHpA	100	93.78	94			25-150	
13C4 PFOA	100	98.00	98			25-150	
13C5 PFNA	100	93.71	94			25-150	
13C2 PFDA	100	95.30	95			25-150	
13C2 PFUnA	100	92.04	92			25-150	
13C2 PFDoA	100	89.64	90			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.04.25LLBX_039.d

Lab ID: LCSD 320-219273/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
13C2-PFTeDA	100	91.10	91			25-150	
13C3-PFBS	93.0	87.67	94			25-150	
18O2 PFHxS	94.6	87.60	93			25-150	
13C4 PFOS	95.6	86.35	90			25-150	
13C8 FOSA	100	83.05	83			25-150	
d3-NMeFOSAA	100	88.07	88			25-150	
d5-NEtFOSAA	100	94.54	95			25-150	
M2-6:2FTS	95.0	98.78	104			25-150	
M2-8:2FTS	95.8	93.97	98			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab File ID: 2018.04.25LLBX_037.d Lab Sample ID: MB 320-219273/1-A

Matrix: Water Date Extracted: 04/23/2018 10:11

Instrument ID: A8_N Date Analyzed: 04/26/2018 07:35

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-219273/2-A	2018.04.25LLBX_038.d	04/26/2018 07:42
	LCSD 320-219273/3-A	2018.04.25LLBX_039.d	04/26/2018 07:50
	LB 320-218620/8-B	2018.04.25LLBX_040.d	04/26/2018 07:58
SB031(0-2)-SPLP	320-38063-1	2018.04.25LLBX_041.d	04/26/2018 08:06
SB012(2-4)-SPLP	320-38063-2	2018.04.25LLBX_042.d	04/26/2018 08:14
SB008(2-4)-SPLP	320-38063-3	2018.04.25LLBX_043.d	04/26/2018 08:22
SB007(0-2)-SPLP	320-38063-4	2018.04.25LLBX_044.d	04/26/2018 08:29
SB003(0-2)-SPLP	320-38063-5	2018.04.25LLBX_045.d	04/26/2018 08:37
SB004(8-10)-SPLP	320-38063-6	2018.04.25LLBX_046.d	04/26/2018 08:45
SB013(8-10)-SPLP	320-38063-7	2018.04.25LLBX_048.d	04/26/2018 09:01
SB012(2-4)-SPLP DL2	320-38063-2 DL2	2018.04.26LLB_006.d	04/26/2018 19:46
SB012(2-4)-SPLP DL	320-38063-2 DL	2018.04.26LLB_007.d	04/26/2018 19:54
SB008(2-4)-SPLP DL	320-38063-3 DL	2018.04.26LLB_009.d	04/26/2018 20:10
SB003(0-2)-SPLP DL2	320-38063-5 DL2	2018.04.26LLB_011.d	04/26/2018 20:25
SB003(0-2)-SPLP DL	320-38063-5 DL	2018.04.26LLB_012.d	04/26/2018 20:33
SB004(8-10)-SPLP DL	320-38063-6 DL	2018.04.26LLB_014.d	04/26/2018 20:49
SB013(8-10)-SPLP DL	320-38063-7 DL	2018.04.26LLB_015.d	04/26/2018 20:57

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Sample No.: IC 320-217359/5 Date Analyzed: 04/10/2018 19:03

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.10LLICAL_00 Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4623888	2.67				
UPPER LIMIT		6935832	2.87				
LOWER LIMIT		2311944	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 320-217359/10		4377627	2.68				
CCV 320-219909/3 CCVIS		4697624	2.68				
CCV 320-220094/3 CCVIS		4742897	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Sample No.: CCV 320-219909/3 Date Analyzed: 04/26/2018 06:09

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.25LLBX_070. Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4697624	2.68				
UPPER LIMIT		7046436	2.88				
LOWER LIMIT		2348812	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-219909/1		4591124	2.68				
CCVL 320-219909/2		4680051	2.68				
CCV 320-219912/1		4687397	2.69				
MB 320-219273/1-A		4493297	2.69				
LCS 320-219273/2-A		4546695	2.69				
LCSD 320-219273/3-A		4637562	2.68				
LB 320-218620/8-B		4761624	2.68				
320-38063-2	SB012(2-4)-SPLP	4641668	2.68				
320-38063-3	SB008(2-4)-SPLP	4599015	2.69				
320-38063-4	SB007(0-2)-SPLP	5018376	2.68				
320-38063-5	SB003(0-2)-SPLP	3314906	2.68				
320-38063-6	SB004(8-10)-SPLP	4673628	2.68				
CCV 320-219912/12		4798682	2.68				
320-38063-7	SB013(8-10)-SPLP	11579442*	2.68				
CCV 320-219912/14		4611666	2.68				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Sample No.: CCV 320-220094/3 Date Analyzed: 04/26/2018 19:38

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.04.26LLB_005.d Heated Purge: (Y/N) N

Calibration ID: 38527

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4742897	2.68				
UPPER LIMIT		7114346	2.88				
LOWER LIMIT		2371449	2.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-220094/1		4321124	2.68				
CCVL 320-220094/2		4601144	2.68				
320-38063-2 DL2	SB012(2-4)-SPLP DL2	49998*	2.68				
320-38063-2 DL	SB012(2-4)-SPLP DL	2370669*	2.68				
320-38063-3 DL	SB008(2-4)-SPLP DL	522812*	2.69				
320-38063-5 DL2	SB003(0-2)-SPLP DL2	52575*	2.69				
320-38063-5 DL	SB003(0-2)-SPLP DL	429506*	2.69				
320-38063-6 DL	SB004(8-10)-SPLP DL	440366*	2.68				
320-38063-7 DL	SB013(8-10)-SPLP DL	964204*	2.68				
CCV 320-220094/14		4609772	2.69				

13PFOA = 13C2-PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB031(0-2)-SPLP | Lab Sample ID: 320-38063-1

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_041.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 256(mL) | Date Analyzed: 04/26/2018 08:06

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.06	B	1.95	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.48		1.95	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	3.39		1.95	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.38		1.95	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	3.38		1.95	0.83
375-95-1	Perfluorononanoic acid (PFNA)	4.07		1.95	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.98		1.95	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	7.86		1.95	1.07
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.95	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.31	J	1.95	1.27
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.28	U	1.95	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.95	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.19	B	1.95	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.25	J	1.95	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	109		1.95	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.95	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	15.1		1.95	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.03	U	19.5	3.03
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	19.5	1.86
27619-97-2	6:2FTS	1.95	U	19.5	1.95
39108-34-4	8:2FTS	7.30	J	19.5	1.95

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB031(0-2)-SPLP | Lab Sample ID: 320-38063-1

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_041.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:15

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 256(mL) | Date Analyzed: 04/26/2018 08:06

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	100		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4-PFHpA	99		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2-PFTeDA	100		25-150
STL02337	13C3-PFBS	98		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	107		25-150
STL02117	d5-NEtFOSAA	106		25-150
STL02279	M2-6:2FTS	110		25-150
STL02280	M2-8:2FTS	107		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d
Lims ID: 320-38063-A-1-C
Client ID: SB031(0-2)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 08:06:24 ALS Bottle#: 30 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-1-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 30-Apr-2018 08:59:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK021

First Level Reviewer: krenns Date: 30-Apr-2018 08:59:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.432	-0.001	1.000	6412761	2.51		100	39267	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.436	0.0	1.004	125449	0.0527			35.6	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	4168482	2.53		101	57050	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.703	-0.009	1.000	177250	0.0892			113	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	86323	2.28		98.2	443	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	163228	0.0868			149	
313.00 > 119.00	1.982	1.982	0.0	1.000	12864		12.69(5.03-15.10)		115	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4626857	2.54		102	101188	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.313	0.008	1.000	4391065	2.48		99.1	64292	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.323	-0.001	1.000	107052	0.0609			114	
363.00 > 169.00	2.321	2.323	-0.001	1.000	42453		2.52(1.13-3.40)		198	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	5047273	2.31		97.5	68728	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.336	-0.002	1.000	135600	0.0561			243	
399.00 > 99.00	2.334	2.336	-0.002	1.000	43436		3.12(1.50-4.49)		206	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.656	-0.003	1.000	989528	2.61		110	10437	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.661	-0.008	1.000	33326	0.0473			619	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.679	-0.004	1.000	4585323	2.60		104	90498	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.003	183484	0.0866			141	
413.00 > 169.00	2.683	2.683	0.0	1.003	93105		1.97(0.84-2.52)		324	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4748178	2.50			78718	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	12344	0.006526			76.2	
449.00 > 99.00	2.683	2.691	-0.008	0.997	4262		2.90(1.94-5.82)		76.9	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.057	3.053	0.004	1.000	4343097	2.80			10665	M
499.00 > 99.00	3.057	3.053	0.004	1.000	942071		4.61(2.31-6.93)		10905	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.056	0.001	1.000	3404835	2.22		93.0	16937	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.056	0.001	1.000	3742314	2.47		98.9	64008	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.060	-0.003	1.000	162792	0.1043			396	
463.00 > 169.00	3.057	3.060	-0.003	1.000	35919		4.53(1.90-5.69)		590	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.394	0.001	1.000	4333466	2.27		90.6	48406	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.395	3.398	-0.003	1.000	679002	0.3873			201	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.408	0.005	1.000	116055	0.1869			5757	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1175555	2.57		107	10927	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.423	3.417	0.006	1.000	68540	0.0507			193	
513.00 > 169.00	3.423	3.417	0.006	1.000	10105		6.78(2.36-7.09)		125	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.422	0.001	1.000	3278704	2.58		103	73222	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.582	-0.010	1.000	1930410	2.68		107	30480	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.747	0.001	1.000	1893208	2.66		106	26271	
31 Perfluoroundecanoic acid										Ma
563.00 > 519.00	3.748	3.751	-0.003	1.000	178341	0.2011			69.2	a
563.00 > 169.00	3.716	3.751	-0.035	0.992	55127		3.24(2.12-6.36)		35.1	M
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.758	3.751	0.007	1.003	3780	0.005341			60.6	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.757	-0.009	1.000	2623059	2.39		95.6	69217	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.000	2901924	2.45		97.9	42421	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.239	4.308	-0.069	1.000	47254	0.0335			36.3	
663.00 > 169.00	4.239	4.308	-0.069	1.000	25808		1.83(1.25-3.76)		314	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.551	0.0	1.000	3764756	2.50		100	24289	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 30-Apr-2018 08:59:06 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d

Injection Date: 26-Apr-2018 08:06:24 Instrument ID: A8_N

Lims ID: 320-38063-A-1-C Lab Sample ID: 320-38063-1

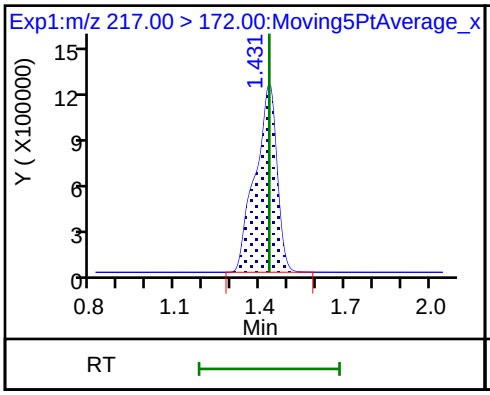
Client ID: SB031(0-2)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 30 Worklist Smp#: 6

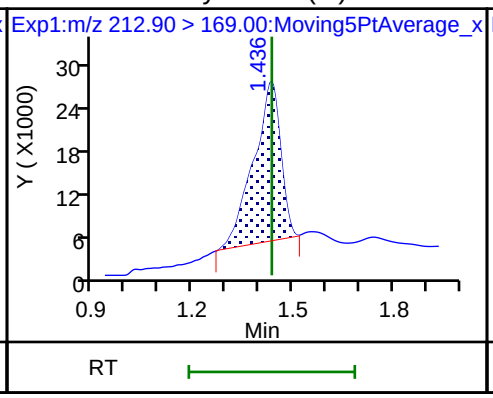
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

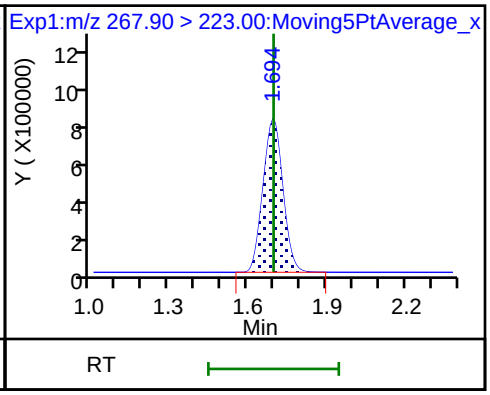
D 1 13C4 PFBA



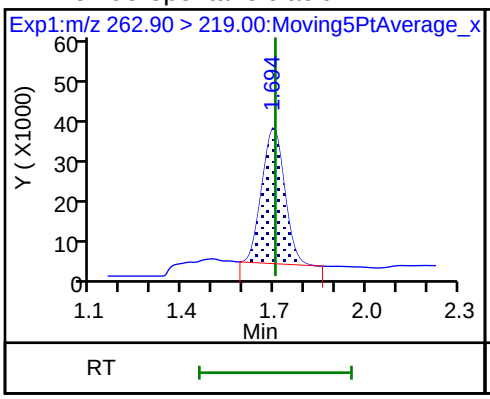
2 Perfluorobutyric acid (M)



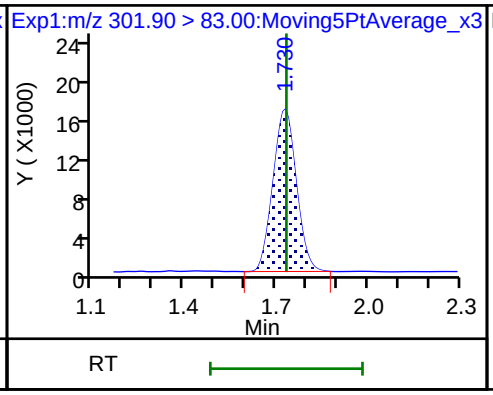
D 3 13C5-PFPeA



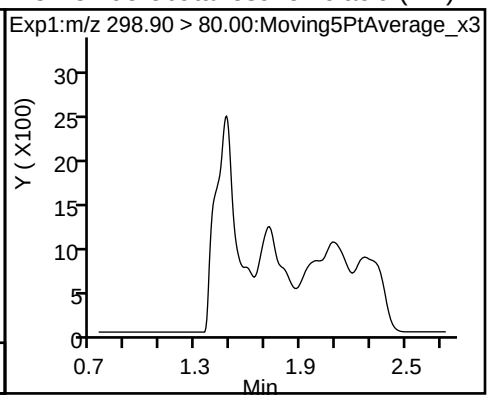
4 Perfluoropentanoic acid



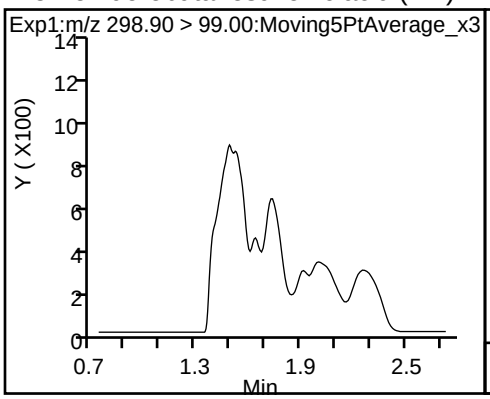
D 47 13C3-PFBS



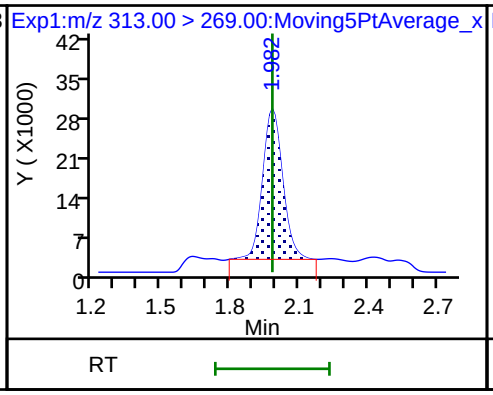
5 Perfluorobutanesulfonic acid (ND)



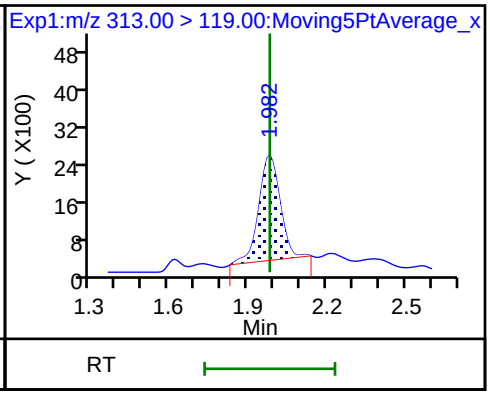
5 Perfluorobutanesulfonic acid (ND)



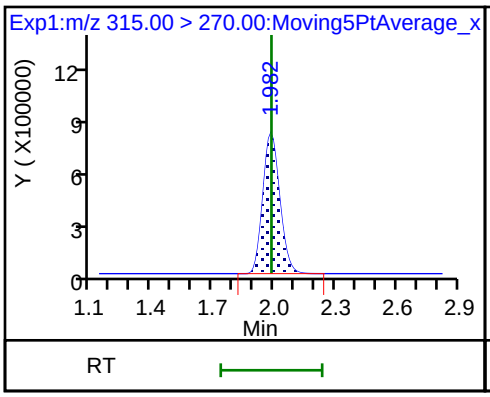
6 Perfluorohexanoic acid



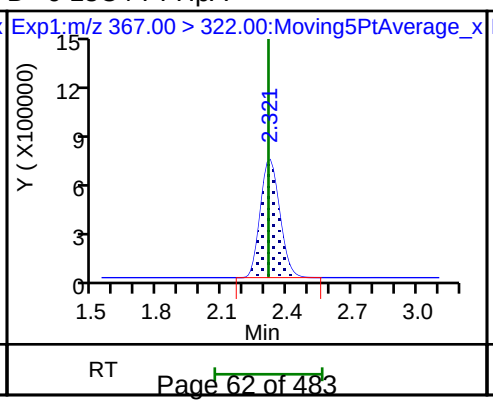
6 Perfluorohexanoic acid



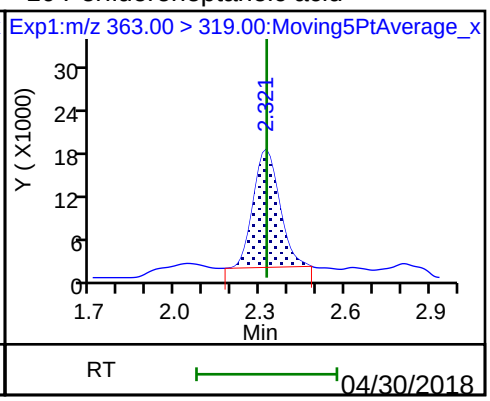
D 7 13C2 PFHxA



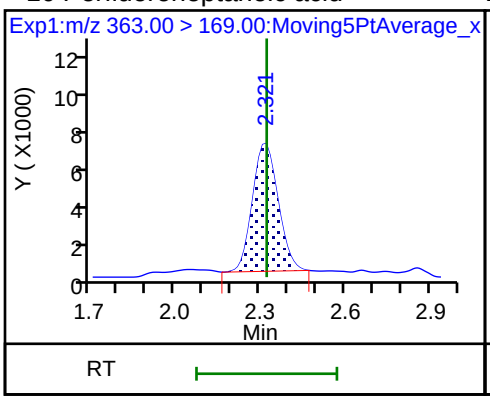
D 9 13C4-PFHpA



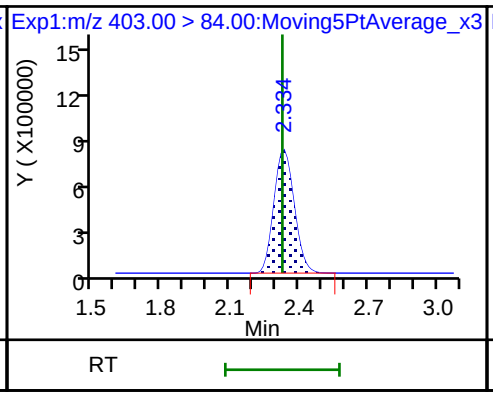
10 Perfluoroheptanoic acid



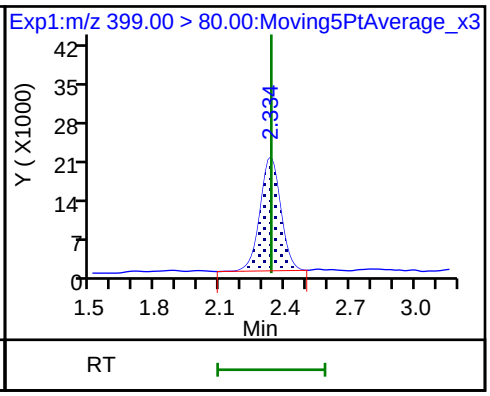
10 Perfluoroheptanoic acid



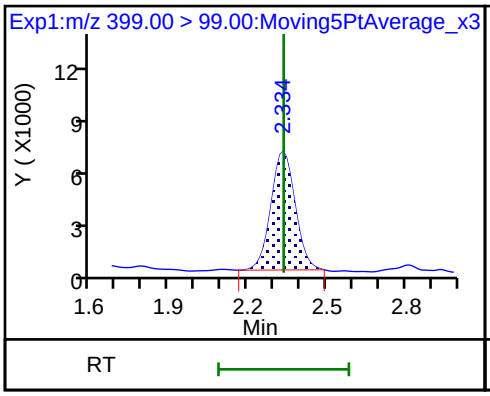
D 11 18O2 PFHxS



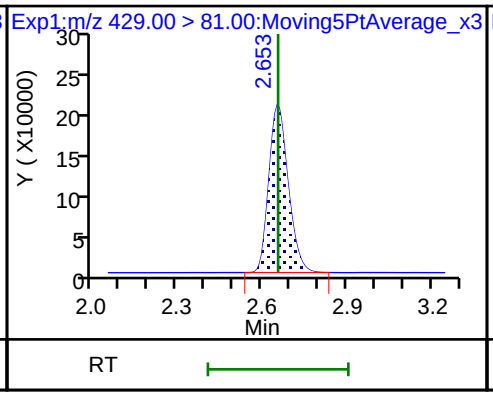
8 Perfluorohexanesulfonic acid



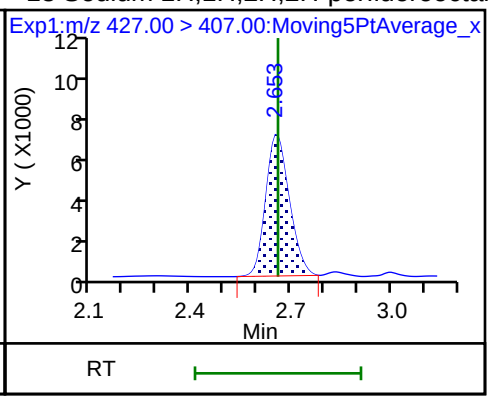
8 Perfluorohexanesulfonic acid



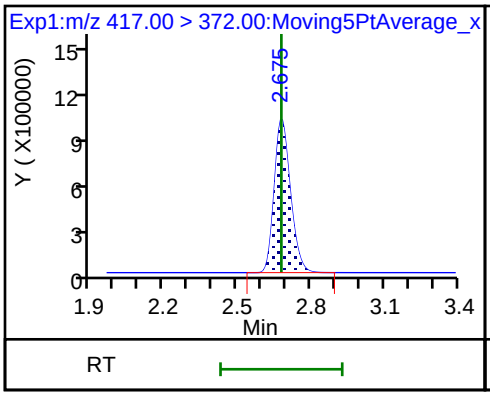
D 12 M2-6:2FTS



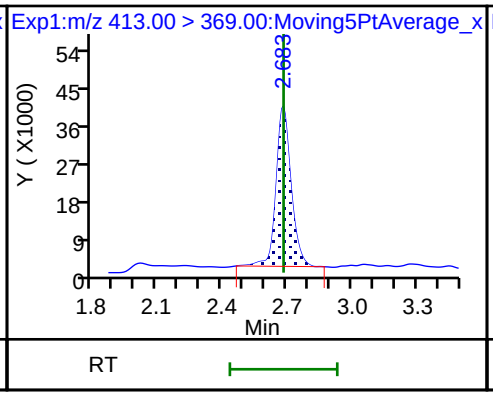
13 Sodium 1H,1H,2H,2H-perfluorooctane



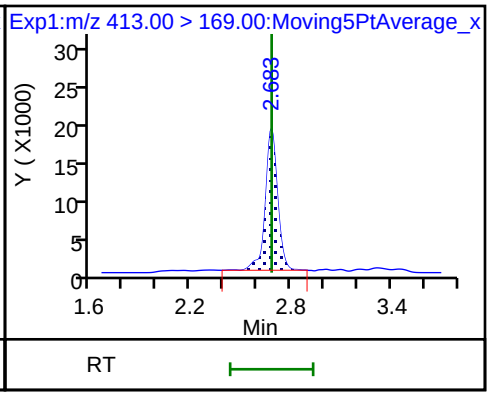
D 14 13C4 PFOA



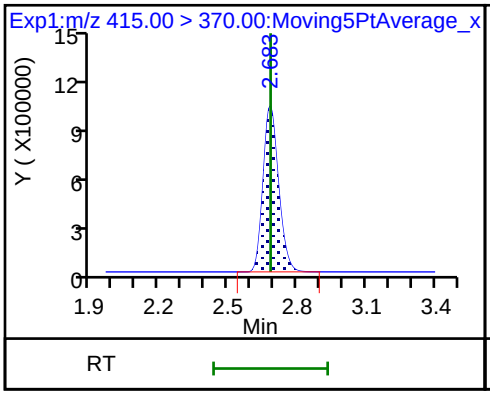
15 Perfluorooctanoic acid



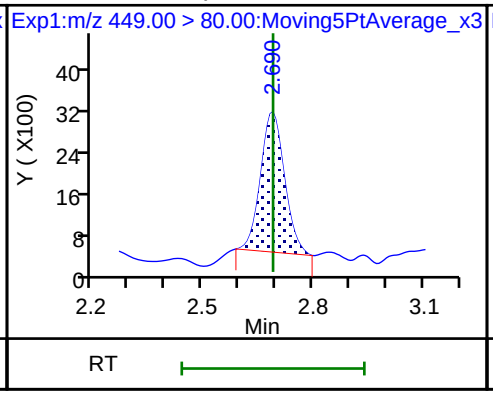
15 Perfluorooctanoic acid



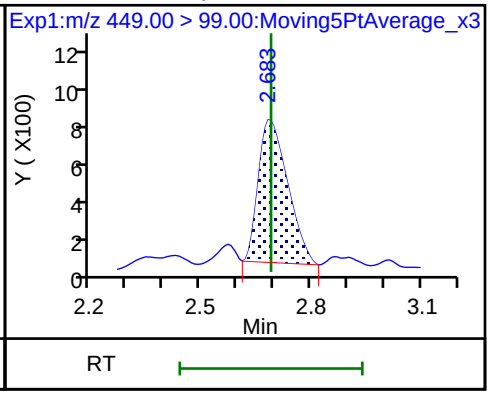
* 62 13C2-PFOA



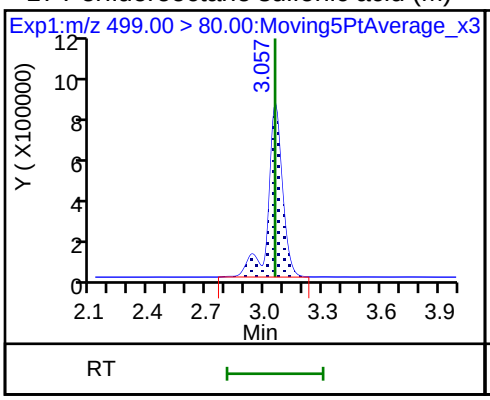
16 Perfluoroheptanesulfonic acid



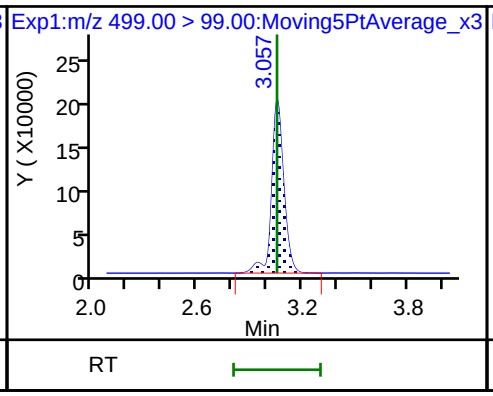
16 Perfluoroheptanesulfonic acid



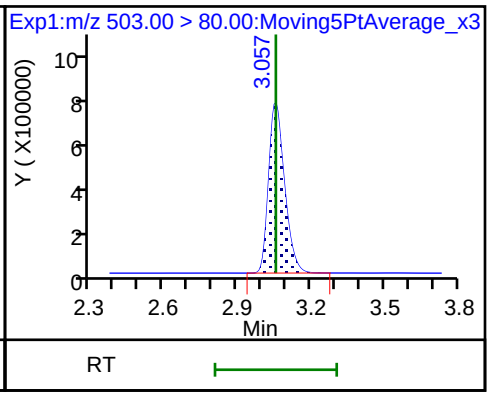
17 Perfluorooctane sulfonic acid (M)



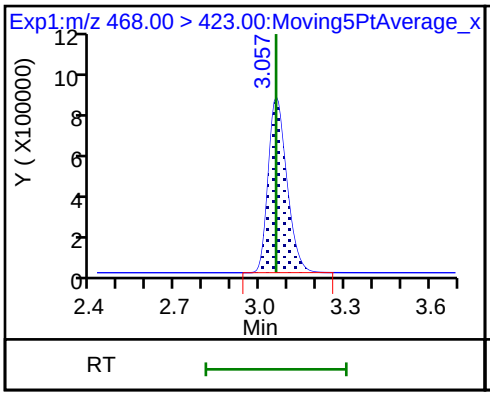
17 Perfluorooctane sulfonic acid



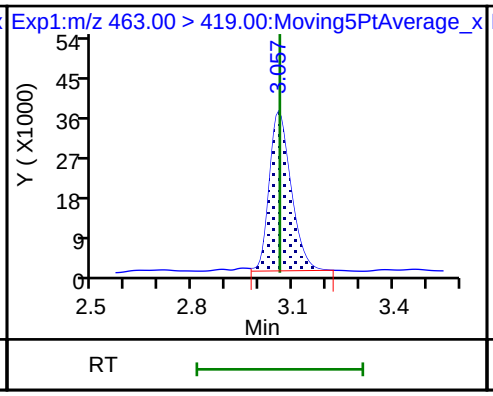
D 18 13C4 PFOS



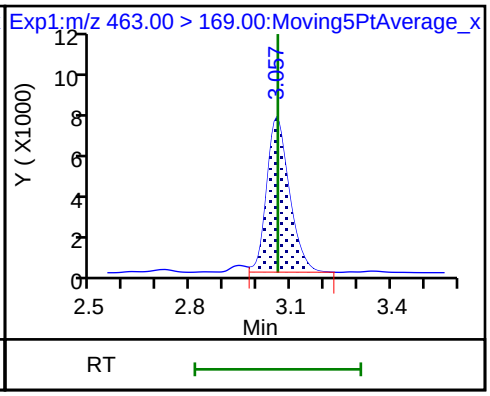
D 19 13C5 PFNA



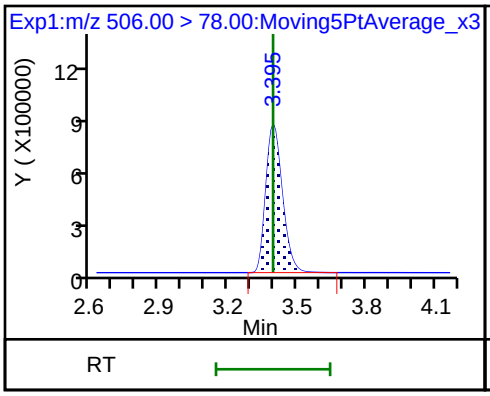
20 Perfluorononanoic acid



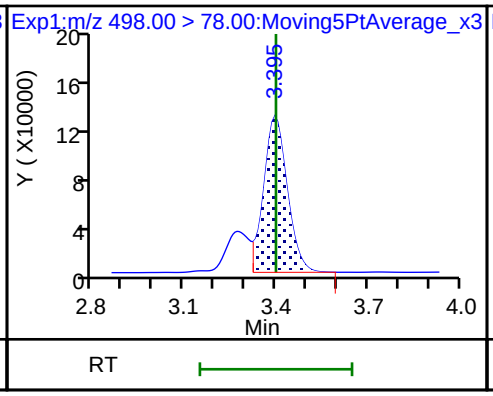
20 Perfluorononanoic acid



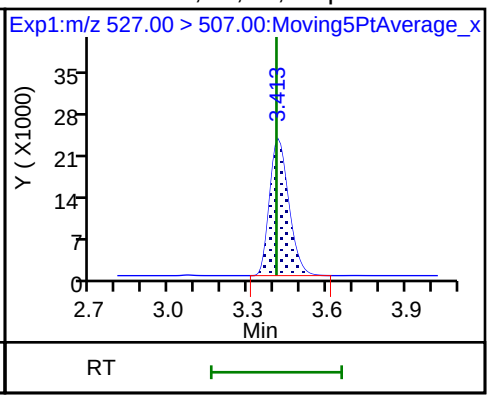
D 21 13C8 FOSA



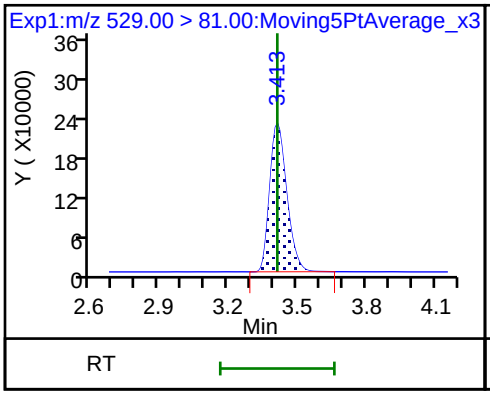
22 Perfluorooctane Sulfonamide



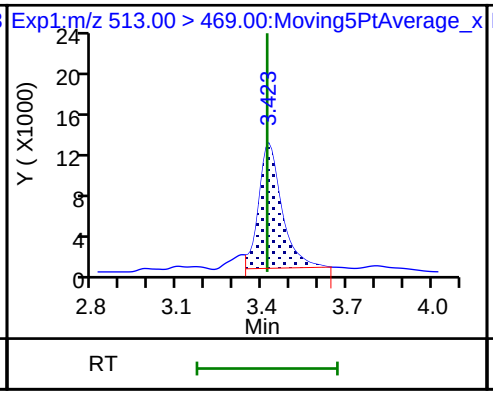
25 Sodium 1H,1H,2H,2H-perfluorodecane



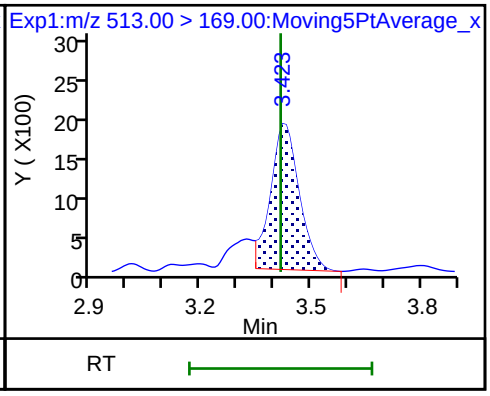
D 26 M2-8:2FTS



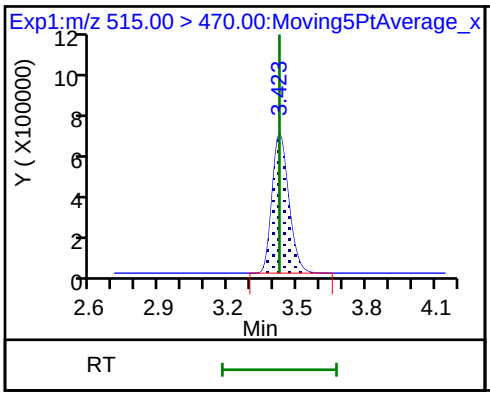
24 Perfluorodecanoic acid



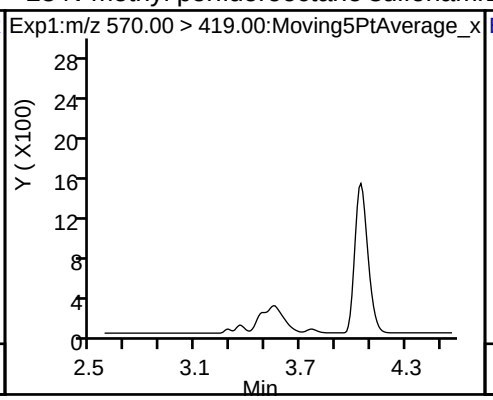
24 Perfluorodecanoic acid



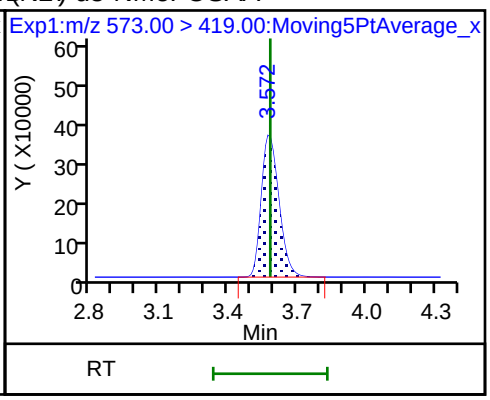
D 23 13C2 PFDA



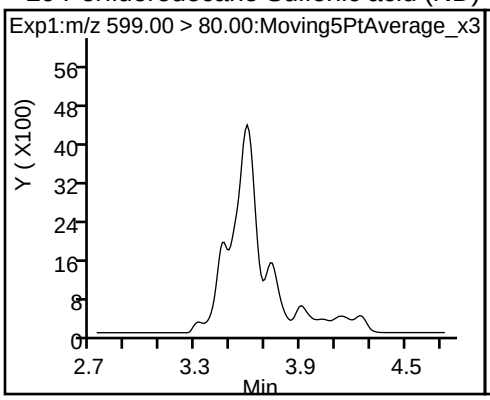
28 N-methyl perfluorooctane sulfonamid (ND)



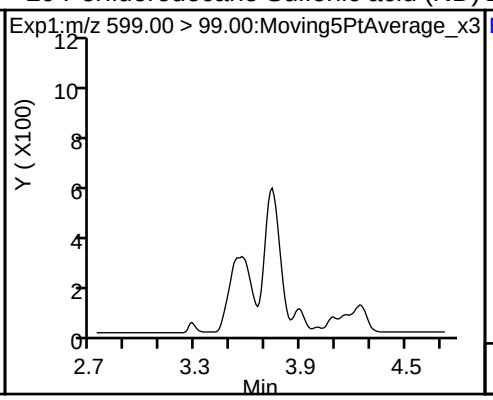
D 27 d3-NMeFOSAA



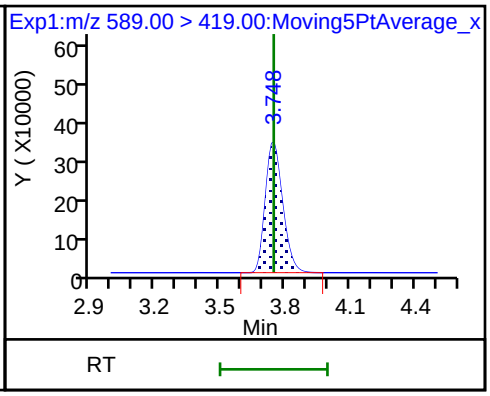
29 Perfluorodecane Sulfonic acid (ND)



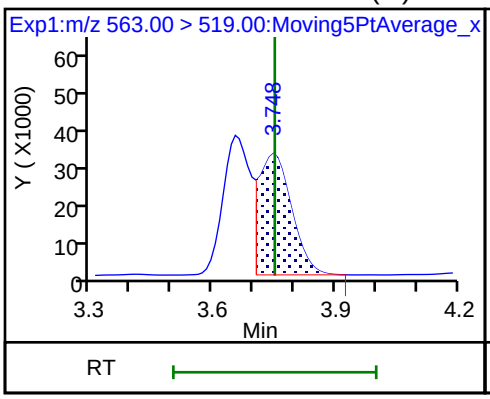
29 Perfluorodecane Sulfonic acid (ND)



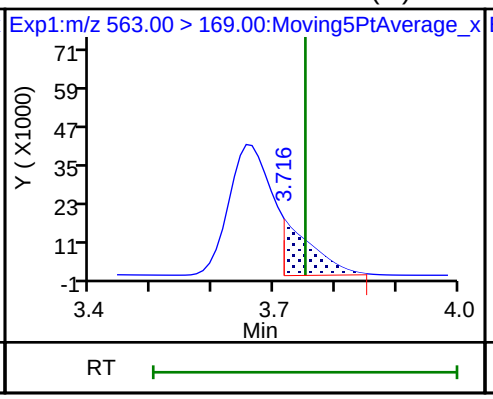
D 32 d5-NEtFOSAA



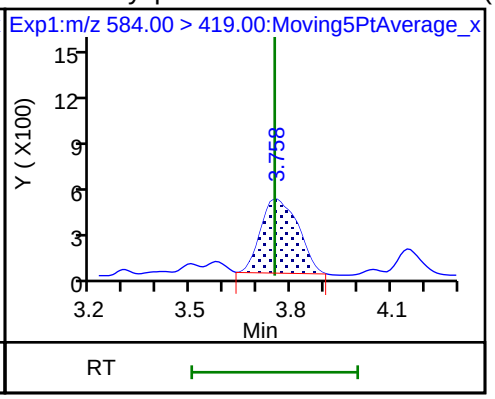
31 Perfluoroundecanoic acid (M)



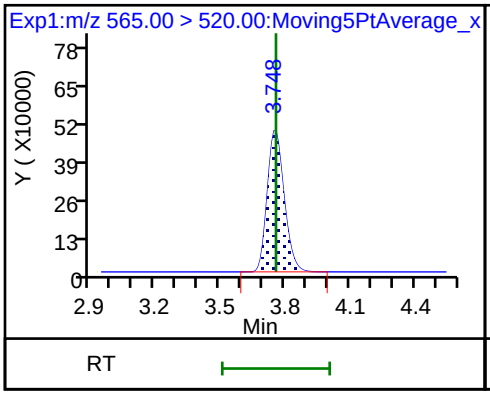
31 Perfluoroundecanoic acid (M)



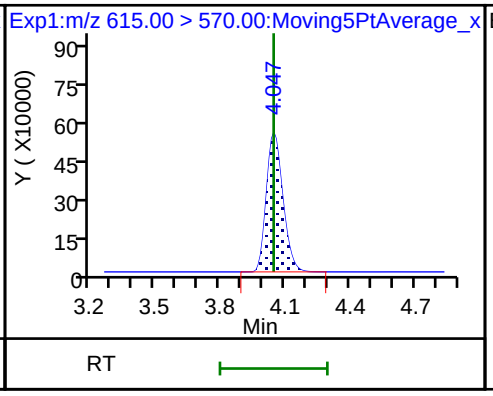
33 N-ethyl perfluorooctane sulfonamid (M)



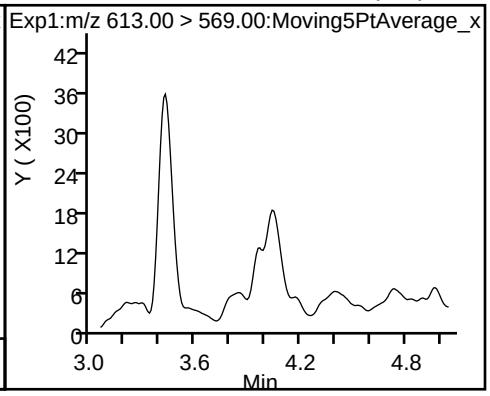
D 30 13C2 PFUnA



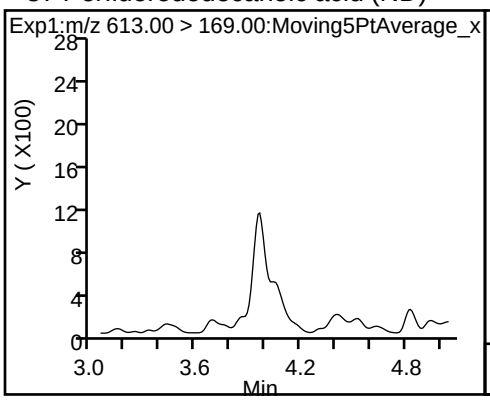
D 36 13C2 PFDoA



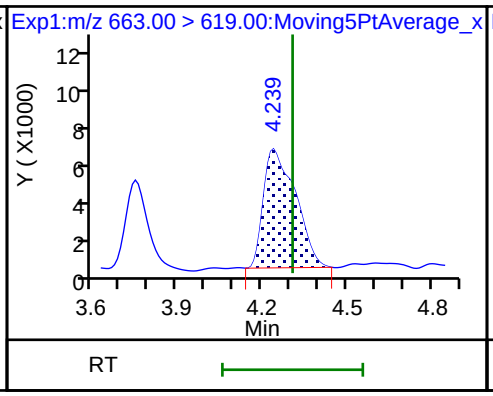
37 Perfluorododecanoic acid (ND)



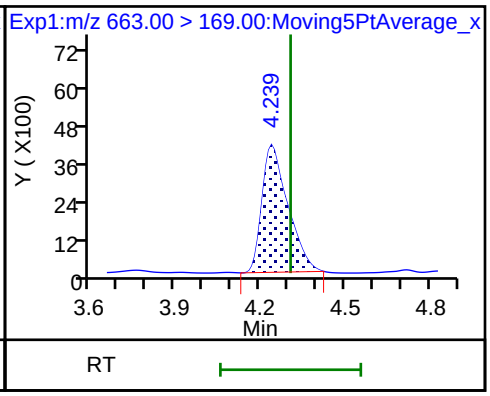
37 Perfluorododecanoic acid (ND)



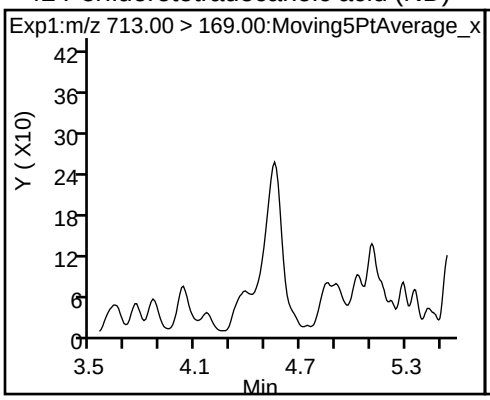
41 Perfluorotridecanoic acid



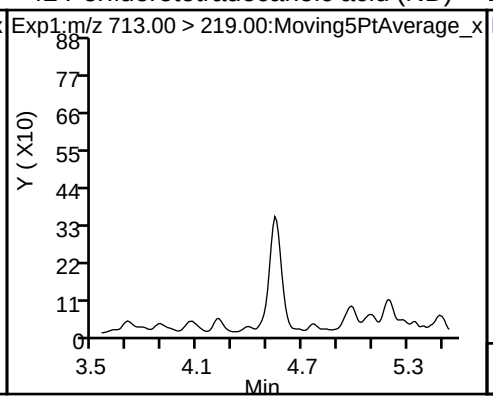
41 Perfluorotridecanoic acid



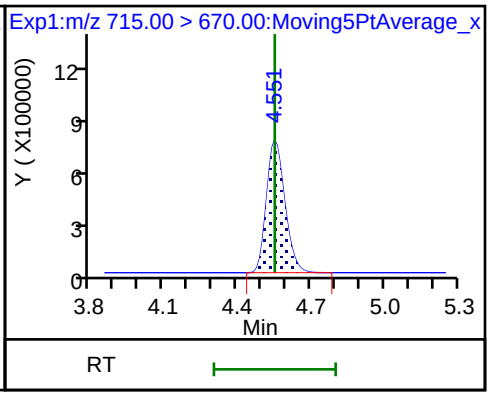
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

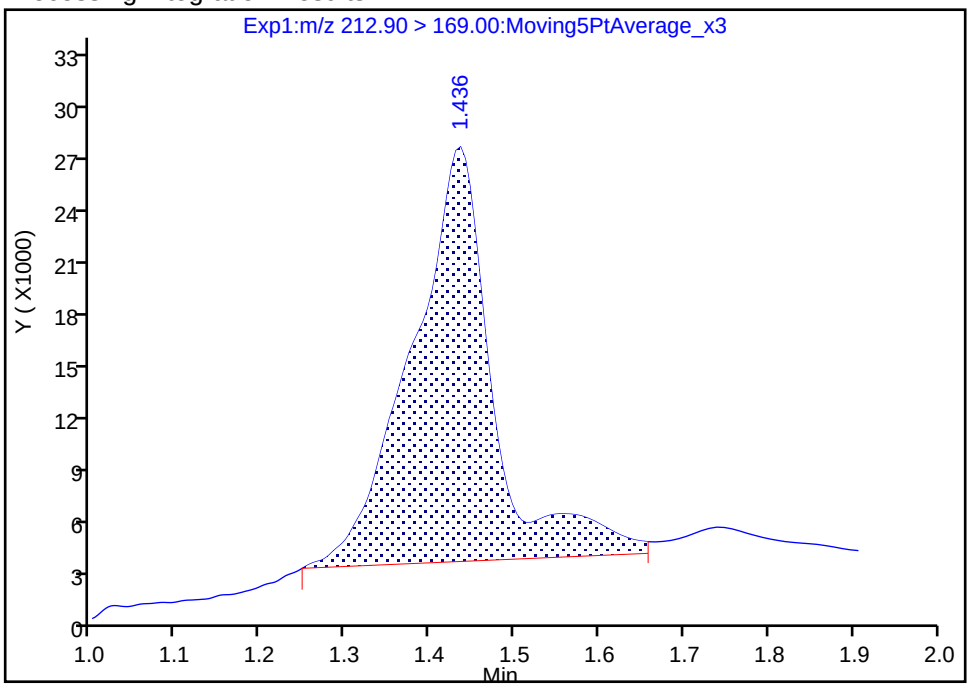
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d				
Injection Date:	26-Apr-2018 08:06:24	Instrument ID:	A8_N		
Lims ID:	320-38063-A-1-C	Lab Sample ID:	320-38063-1		
Client ID:	SB031(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

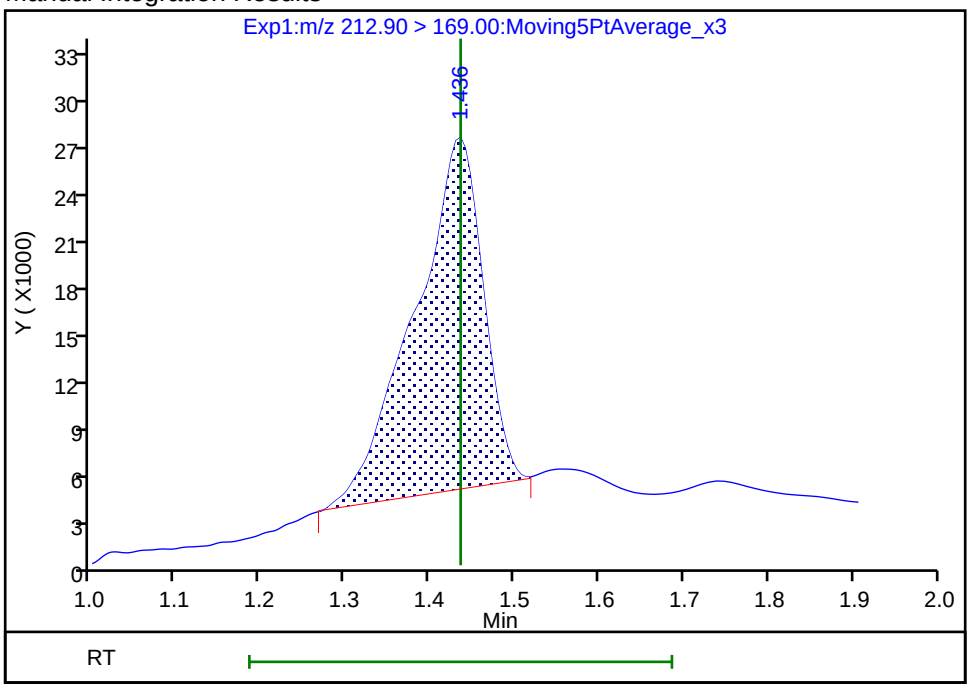
Processing Integration Results

RT: 1.44
Area: 158725
Amount: 0.066639
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 125449
Amount: 0.052669
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:07:51

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

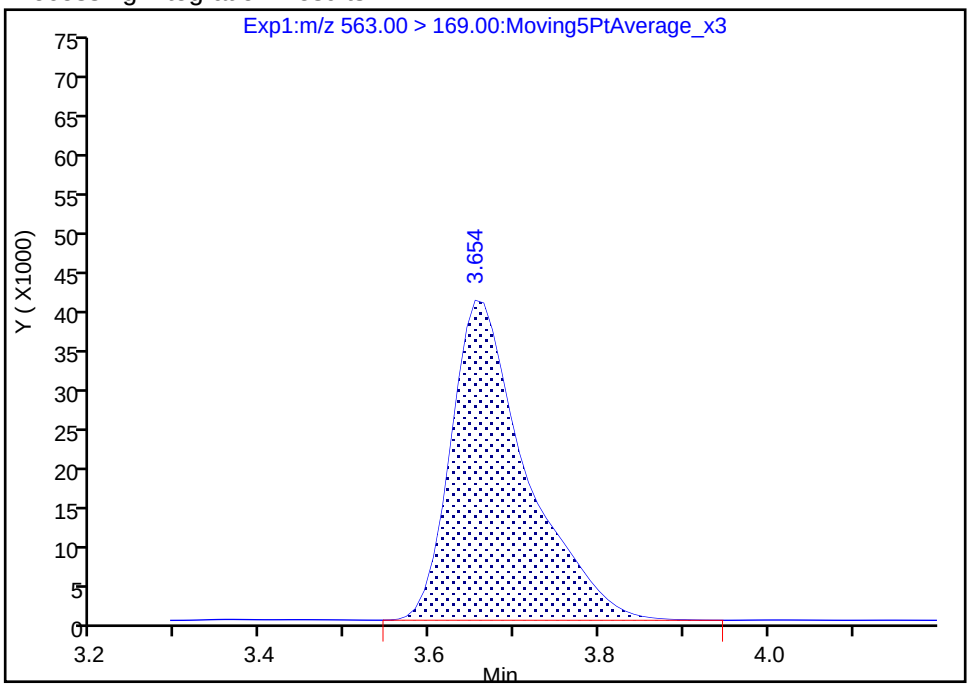
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d				
Injection Date:	26-Apr-2018 08:06:24	Instrument ID:	A8_N		
Lims ID:	320-38063-A-1-C	Lab Sample ID:	320-38063-1		
Client ID:	SB031(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

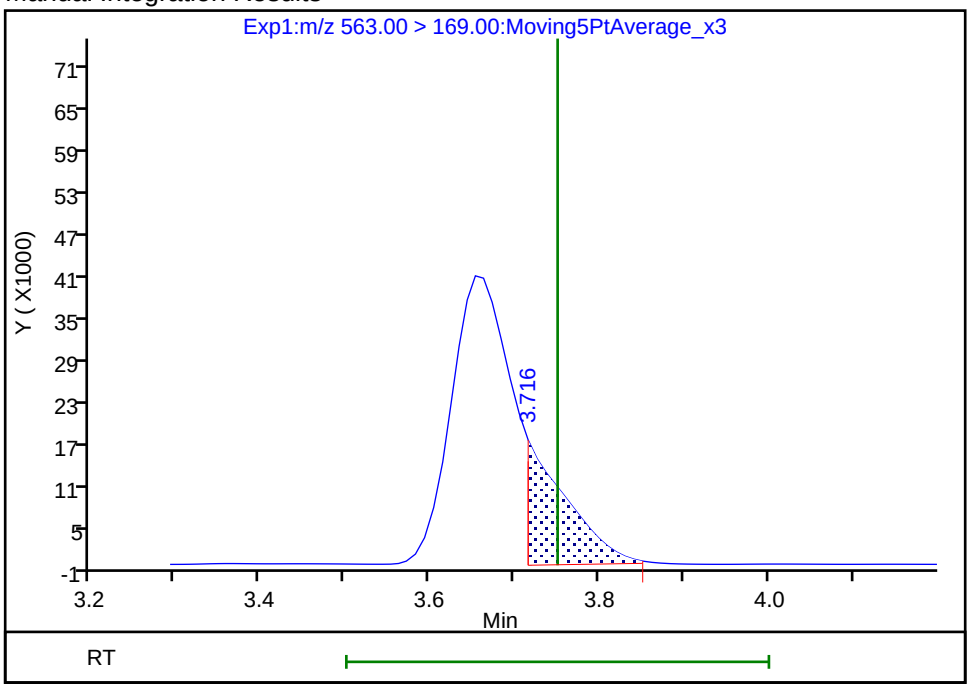
Processing Integration Results

RT: 3.65
Area: 253040
Amount: 0.202169
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 55127
Amount: 0.201129
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:09:15

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

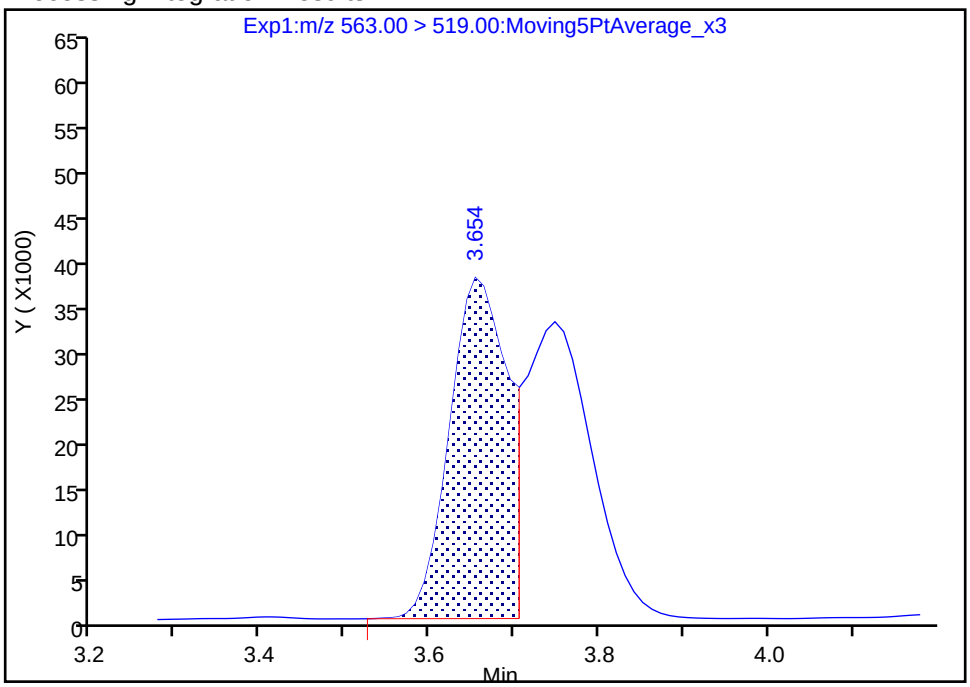
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d				
Injection Date:	26-Apr-2018 08:06:24	Instrument ID:	A8_N		
Lims ID:	320-38063-A-1-C	Lab Sample ID:	320-38063-1		
Client ID:	SB031(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

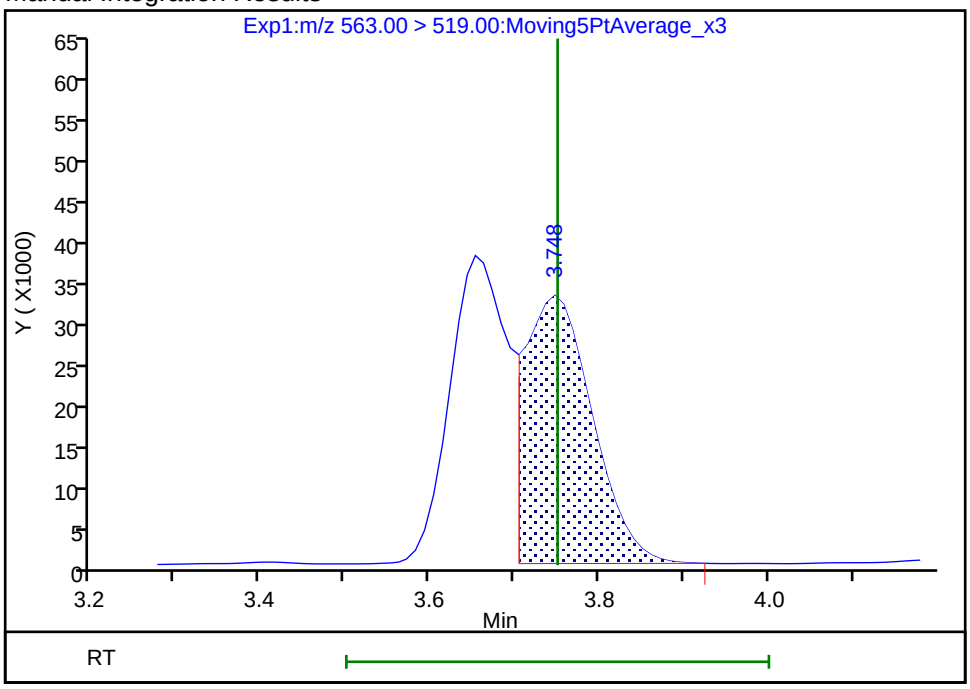
Processing Integration Results

RT: 3.65
Area: 179263
Amount: 0.202169
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 178341
Amount: 0.201129
Amount Units: ng/ml



Reviewer: krenns, 30-Apr-2018 08:58:56
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason:

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

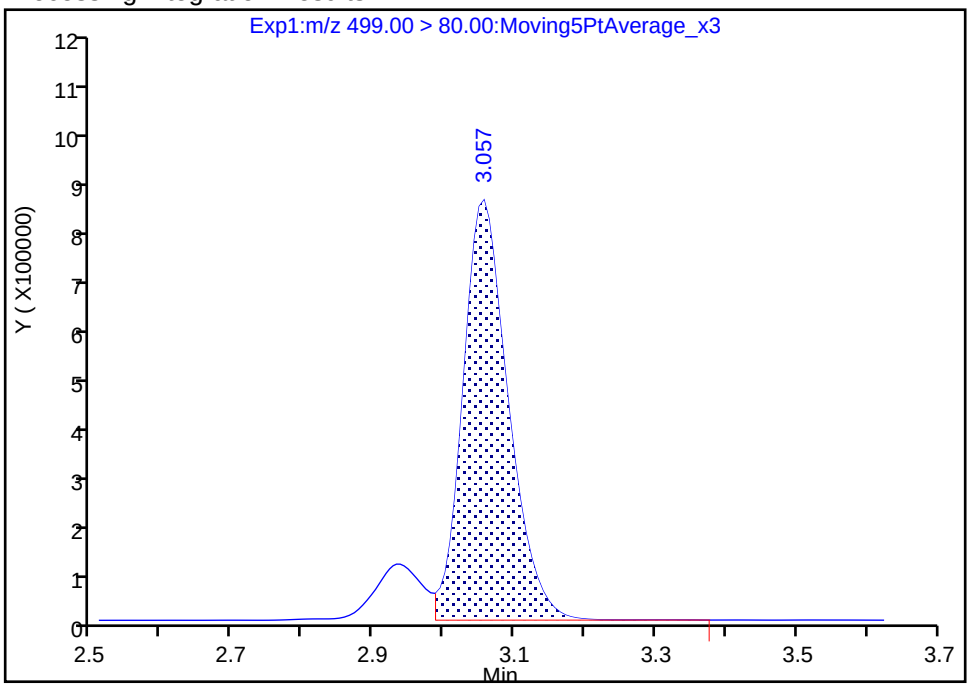
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d				
Injection Date:	26-Apr-2018 08:06:24	Instrument ID:	A8_N		
Lims ID:	320-38063-A-1-C	Lab Sample ID:	320-38063-1		
Client ID:	SB031(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

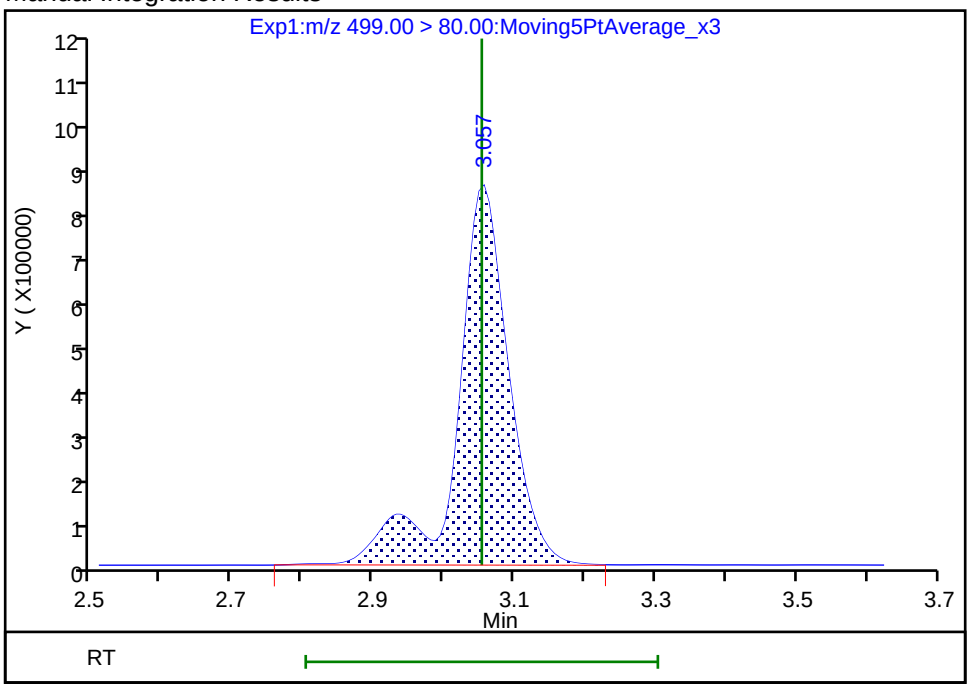
Processing Integration Results

RT: 3.06
Area: 3810229
Amount: 2.458610
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 4343097
Amount: 2.802452
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:08:17

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

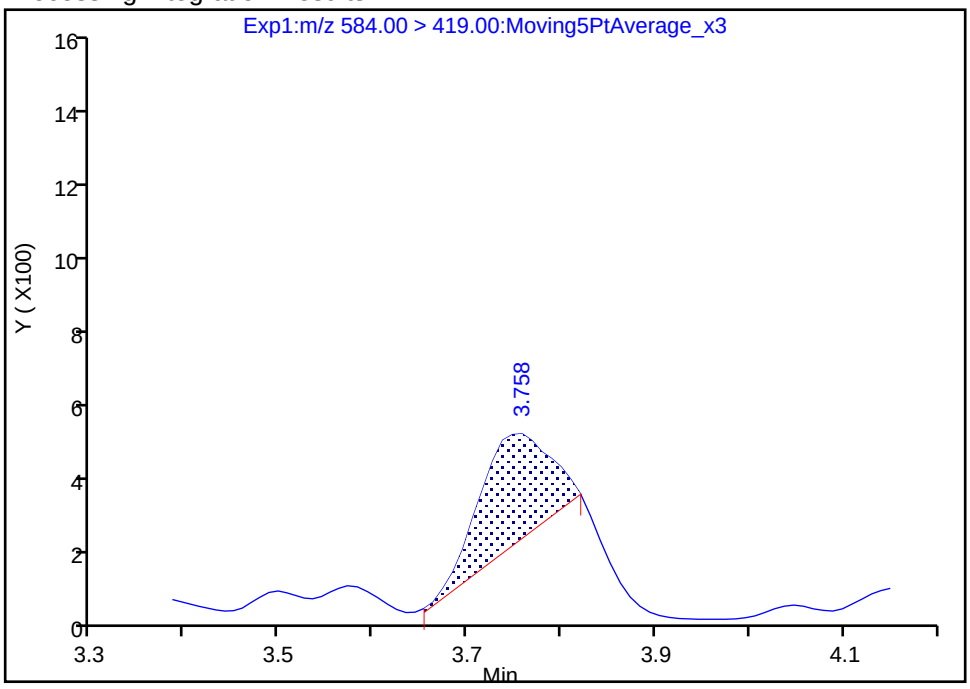
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_041.d				
Injection Date:	26-Apr-2018 08:06:24	Instrument ID:	A8_N		
Lims ID:	320-38063-A-1-C	Lab Sample ID:	320-38063-1		
Client ID:	SB031(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	30	Worklist Smp#:	6
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

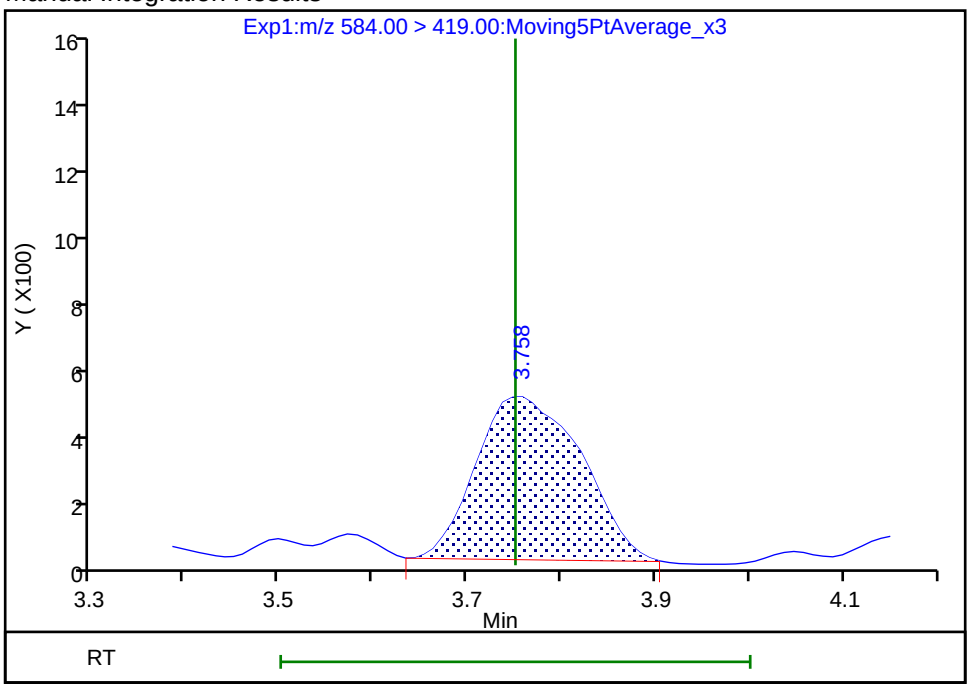
Processing Integration Results

RT: 3.76
Area: 1549
Amount: 0.002189
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 3780
Amount: 0.005341
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:09:35

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB012(2-4)-SPLP | Lab Sample ID: 320-38063-2

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_042.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:45

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 252.7(mL) | Date Analyzed: 04/26/2018 08:14

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	48.5	B	1.98	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.89		1.98	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	30.4		1.98	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	8.93		1.98	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	76.3		1.98	0.84
375-95-1	Perfluorononanoic acid (PFNA)	57.1		1.98	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	187		1.98	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	14.8		1.98	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.98	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.29	U	1.98	1.29
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.98	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	9.89		1.98	0.20
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	19.8		1.98	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.98	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	10.5		1.98	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.07	U	19.8	3.07
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.88	U	19.8	1.88
39108-34-4	8:2FTS	28.1		19.8	1.98

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB012(2-4)-SPLP | Lab Sample ID: 320-38063-2

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_042.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:45

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 252.7(mL) | Date Analyzed: 04/26/2018 08:14

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	69		25-150
STL01893	13C5 PFPeA	93		25-150
STL00993	13C2 PFHxA	95		25-150
STL01892	13C4-PFHpA	96		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	46		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	100		25-150
STL00998	13C2 PFDoA	94		25-150
STL02116	13C2-PFTeDA	89		25-150
STL02337	13C3-PFBS	95		25-150
STL00991	13C4 PFOS	42		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	101		25-150
STL02117	d5-NEtFOSAA	115		25-150
STL02280	M2-8:2FTS	129		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d
Lims ID: 320-38063-A-2-C
Client ID: SB012(2-4)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 08:14:14 ALS Bottle#: 31 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-2-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 26-Apr-2018 14:23:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.432	-0.002	1.000	4310959	1.73		69.0	18563	
2 Perfluorobutyric acid										
212.90 > 169.00	1.525	1.436	0.089	1.066	1960418	1.22			16.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	3734875	2.32		92.8	5484	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.703	-0.009	1.000	174981	0.0983			2.9	M
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	81868	2.22		95.3	144	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.730	1.739	-0.009	1.000	689007	0.2499			330	M
298.90 > 99.00	1.730	1.739	-0.009	1.000	247521		2.78(1.25-3.74)		170	M
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.982	1.982	0.0	1.000	1314132	0.7680			106	M
313.00 > 119.00	1.982	1.982	0.0	1.000	115264		11.40(5.03-15.10)		506	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4209782	2.36		94.6	57413	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.313	-0.005	1.000	4159446	2.40		96.0	67318	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.323	-0.001	1.006	375745	0.2256			106	
363.00 > 169.00	2.308	2.323	-0.014	1.000	156098		2.41(1.13-3.40)		610	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	4537261	2.12		89.7	81257	
8 Perfluorohexanesulfonic acid										E
399.00 > 80.00	2.321	2.336	-0.015	0.994	20620684	9.50			16753	E
399.00 > 99.00	2.321	2.336	-0.015	0.994	6569720		3.14(1.50-4.49)		12876	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.652	2.656	-0.004	1.000	1497845	4.03		170	6282	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.652	2.661	-0.009	1.000	6944513	6.51			103691	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.679	-0.004	1.000	4355893	2.53		101	72927	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.683	-0.008	1.000	3883331	1.93			1226	
413.00 > 169.00	2.675	2.683	-0.008	1.000	2320712		1.67(0.84-2.52)		5832	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.683	-0.008		4641668	2.50			70878	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.691	-0.008	1.000	414740	0.4993			296	
449.00 > 99.00	2.683	2.691	-0.008	1.000	111645		3.71(1.94-5.82)		544	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.056	3.053	0.003	1.002	188788026	277.4			6424978	E
499.00 > 99.00	3.056	3.053	0.003	1.002	64389299		2.93(2.31-6.93)		207040	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.056	-0.006	1.000	1495435	1.00		41.8	3991	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.056	0.0	1.000	1695453	1.15		45.8	27276	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.060	-0.004	1.000	1020995	1.44			678	
463.00 > 169.00	3.056	3.060	-0.004	1.000	263623		3.87(1.90-5.69)		796	
D 21 13C8 FOSA										
506.00 > 78.00	3.385	3.394	-0.009	1.000	4579668	2.45		98.0	28782	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.385	3.398	-0.013	1.000	492098	0.2656			80.5	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.404	3.408	-0.004	1.000	516036	0.7091			14402	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.413	-0.009	1.000	1377333	3.08		129	6084	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.413	3.417	-0.004	1.000	6100207	4.72			5432	
513.00 > 169.00	3.413	3.417	-0.004	1.000	1062841		5.74(2.36-7.09)		1559	
D 23 13C2 PFDA										
515.00 > 470.00	3.413	3.422	-0.009	1.000	3135364	2.52		101	44341	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.582	-0.010	1.000	1776125	2.52		101	20002	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.747	-0.010	1.000	1993676	2.86		115	36235	
31 Perfluoroundecanoic acid										Ma
563.00 > 519.00	3.747	3.751	-0.004	1.000	337602	0.3730			250	a
563.00 > 169.00	3.737	3.751	-0.014	0.997	84356		4.00(2.12-6.36)		60.7	M
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.751	-0.004	1.003	5800	0.007783			130	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.757	-0.010	1.000	2677415	2.49		99.8	124495	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.046	-0.008	1.000	2730061	2.36		94.2	39318	
37 Perfluorododecanoic acid										R
613.00 > 569.00	4.049	4.051	-0.002	1.003	5816	0.005107			7.7	R
613.00 > 169.00	4.038	4.051	-0.013	1.000	3399		1.71(2.13-6.40)		25.8	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.308	-0.001	1.000	22637	0.0171			24.1	
663.00 > 169.00	4.307	4.308	-0.001	1.000	8895		2.54(1.25-3.76)		61.1	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.551	0.0	1.000	3254201	2.21		88.6	27311	

QC Flag Legend

Processing Flags
- R - Failed Signal Ratio Test
- E - Exceeded Maximum Amount

Review Flags
- M - Manually Integrated
- a - User Assigned ID

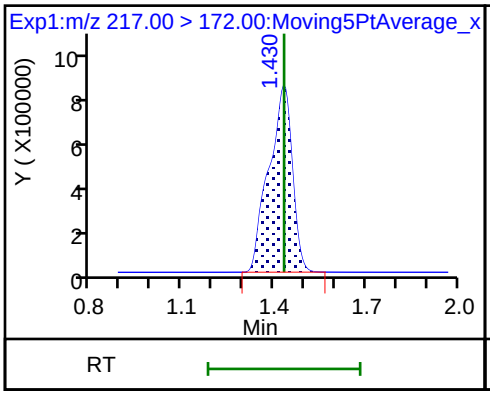
Report Date: 27-Apr-2018 15:27:42 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

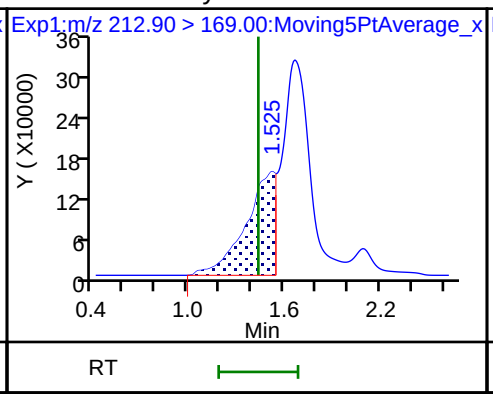
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d

Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

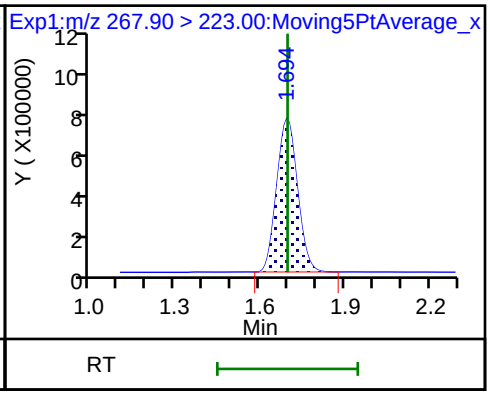
D 1 13C4 PFBA



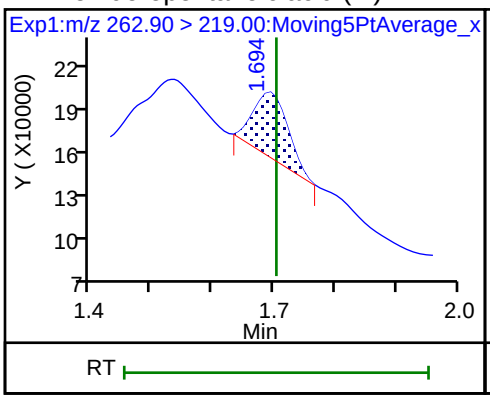
2 Perfluorobutyric acid



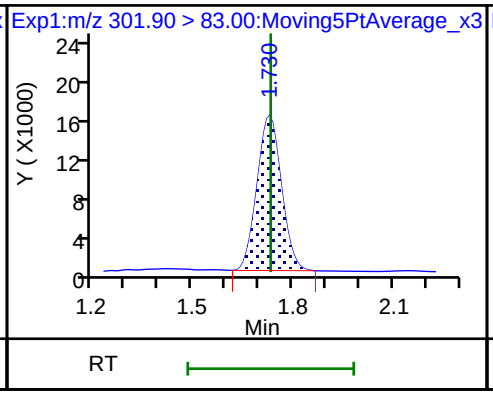
D 3 13C5-PFPeA



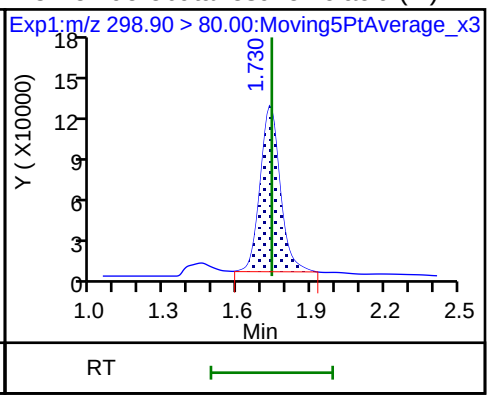
4 Perfluoropentanoic acid (M)



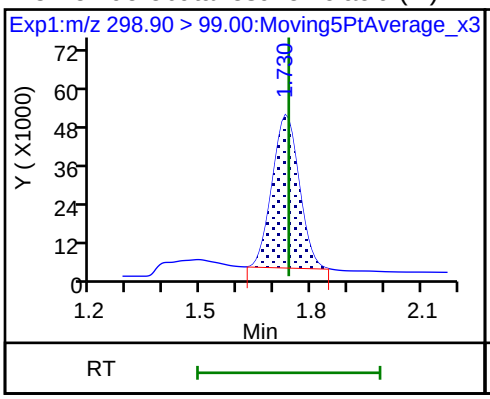
D 47 13C3-PFBS



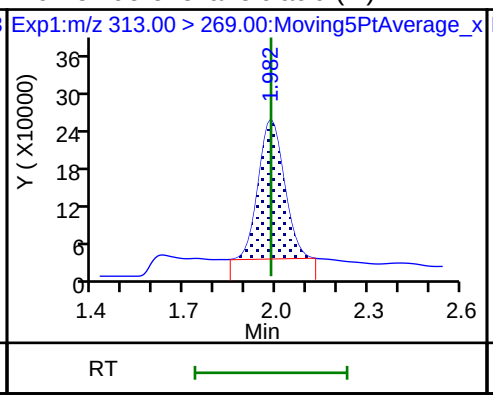
5 Perfluorobutanesulfonic acid (M)



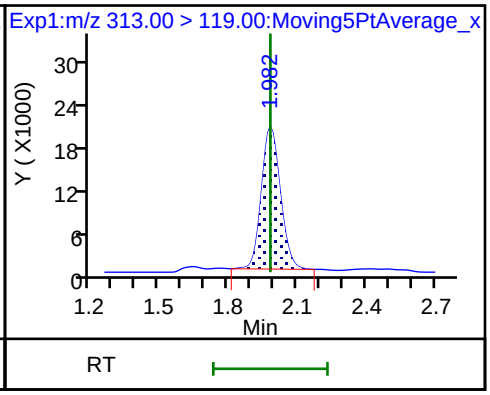
5 Perfluorobutanesulfonic acid (M)



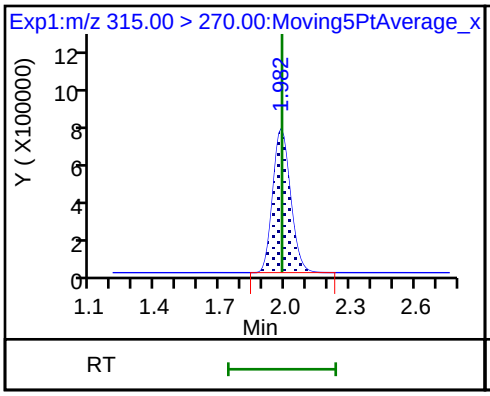
6 Perfluorohexanoic acid (M)



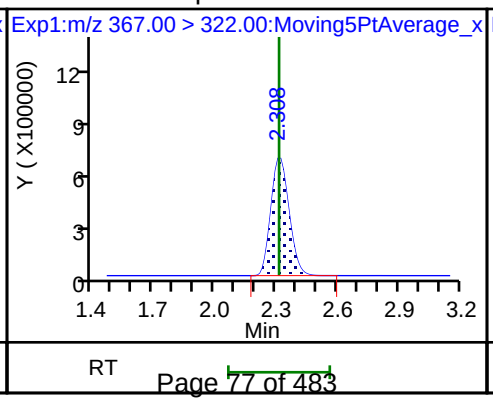
6 Perfluorohexanoic acid



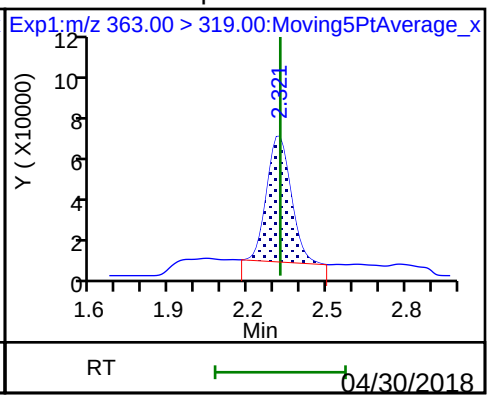
D 7 13C2 PFHxA



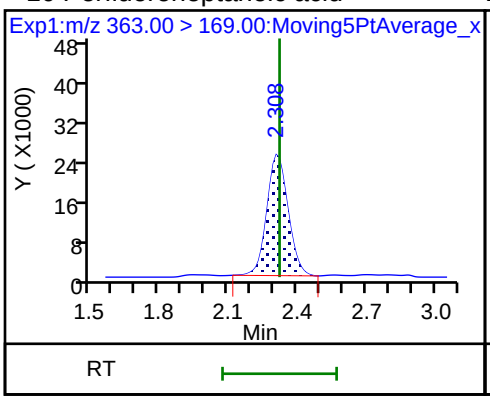
D 9 13C4-PFHpA



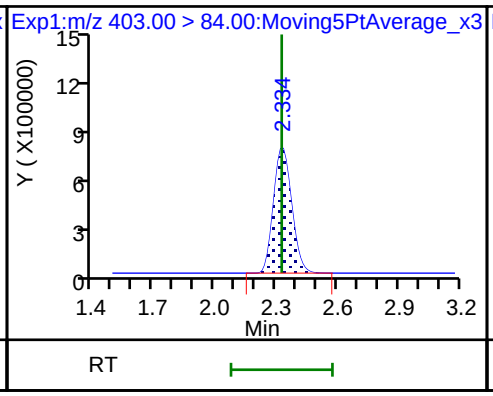
10 Perfluoroheptanoic acid



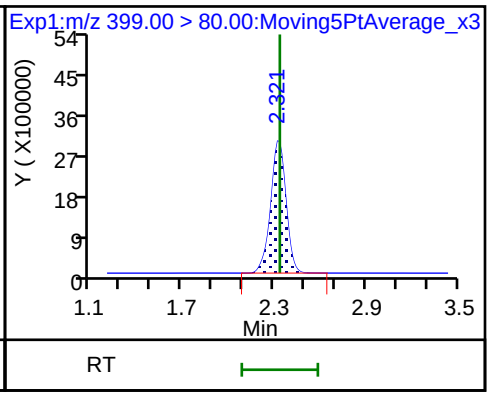
10 Perfluoroheptanoic acid



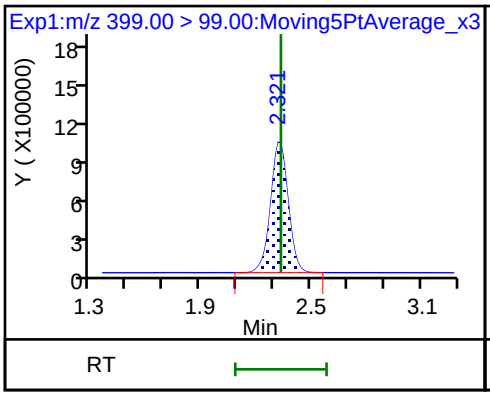
D 11 18O2 PFHxS



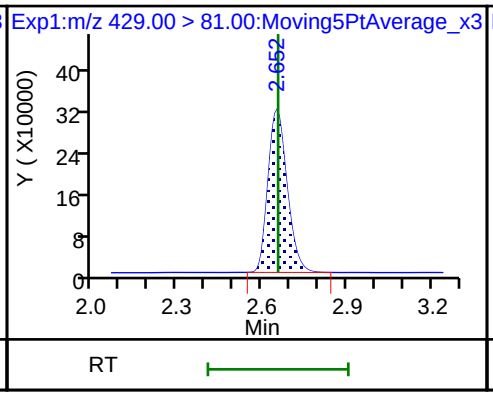
8 Perfluorohexanesulfonic acid



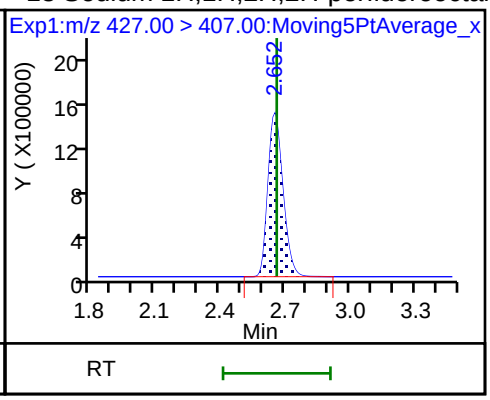
8 Perfluorohexanesulfonic acid



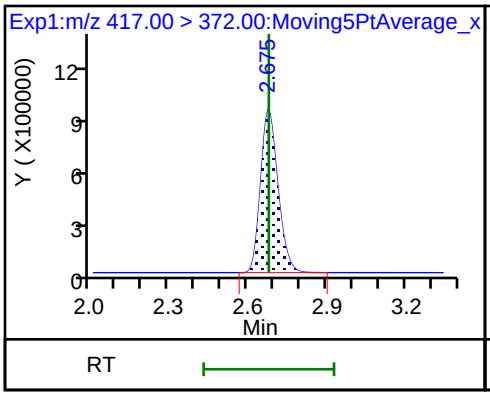
D 12 M2-6:2FTS



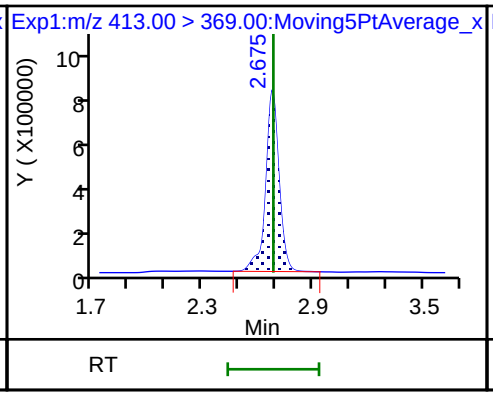
13 Sodium 1H,1H,2H,2H-perfluorooctane



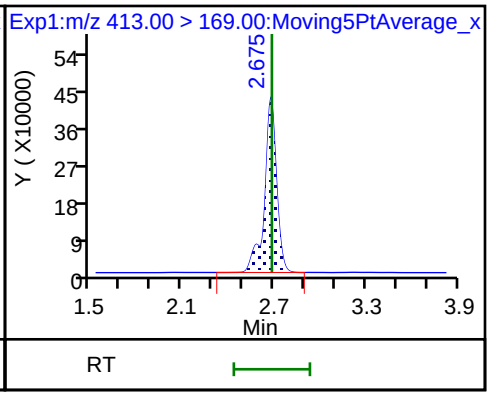
D 14 13C4 PFOA



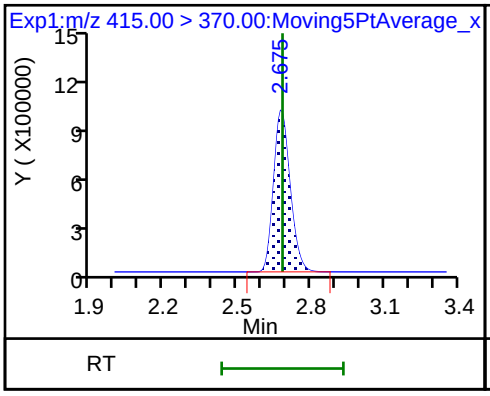
15 Perfluorooctanoic acid



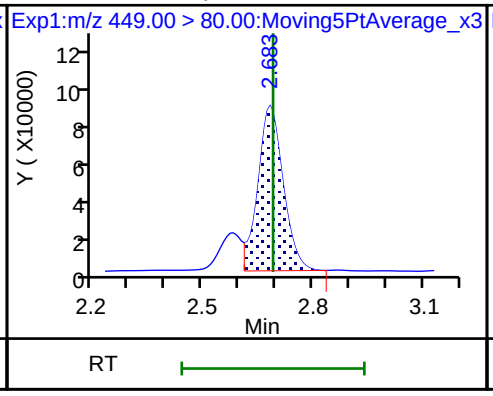
15 Perfluorooctanoic acid



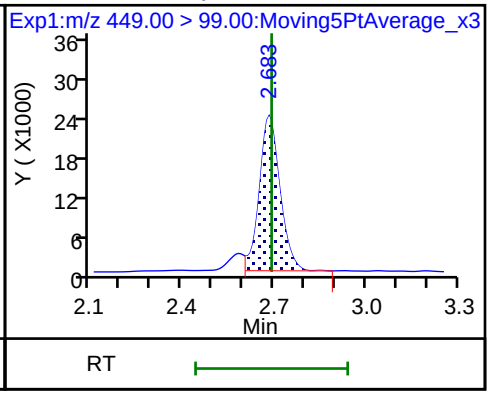
* 62 13C2-PFOA



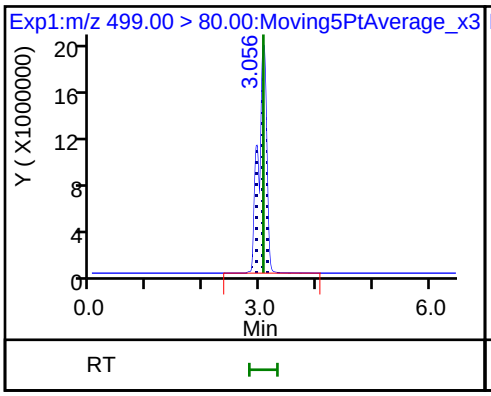
16 Perfluoroheptanesulfonic acid



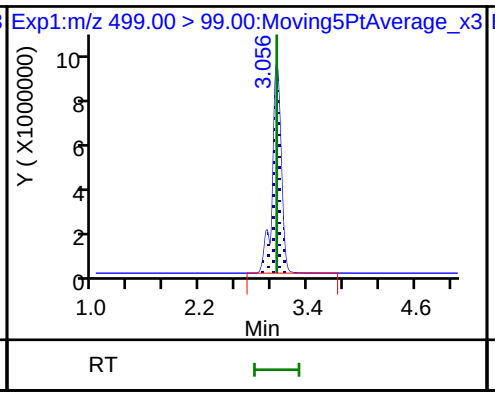
16 Perfluoroheptanesulfonic acid



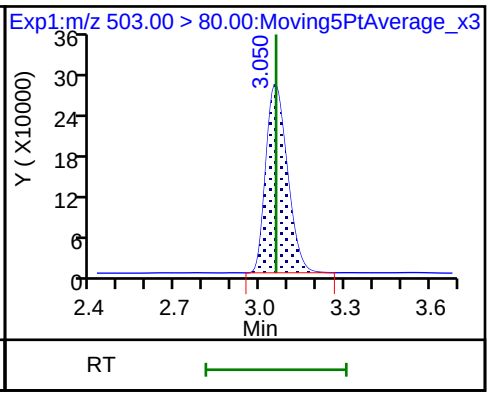
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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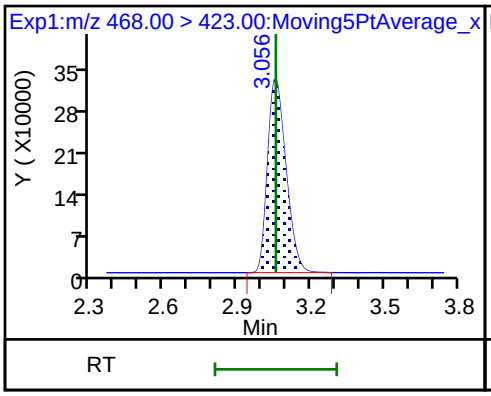
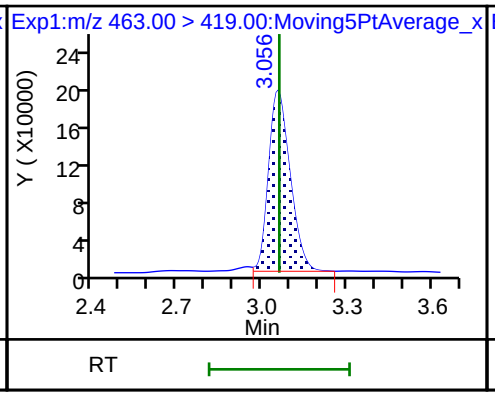
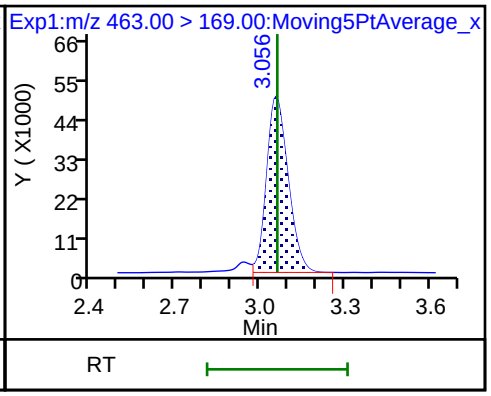


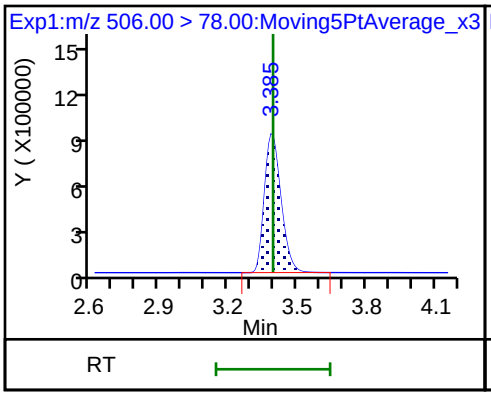
20 Perfluorononanoic acid



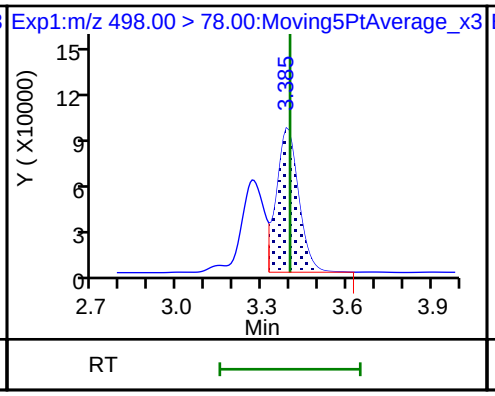
20 Perfluorononanoic acid



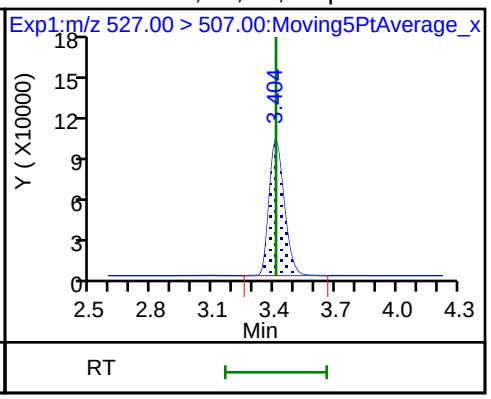
D 21 13C8 FOSA



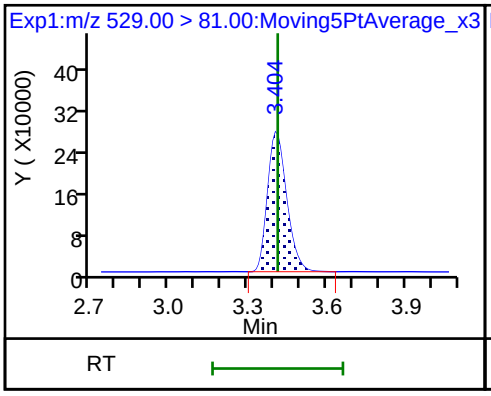
22 Perfluorooctane Sulfonamide



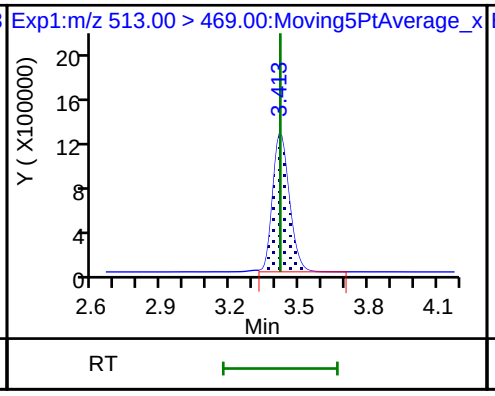
25 Sodium 1H,1H,2H,2H-perfluorodecane



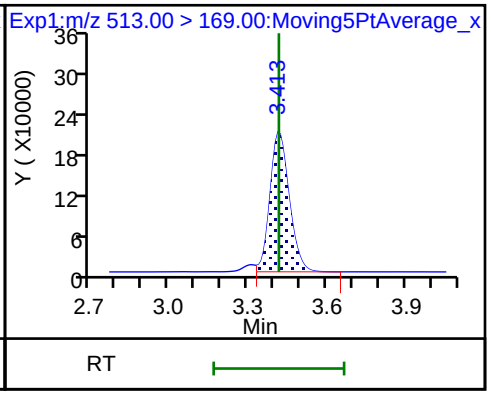
D 26 M2-8:2FTS



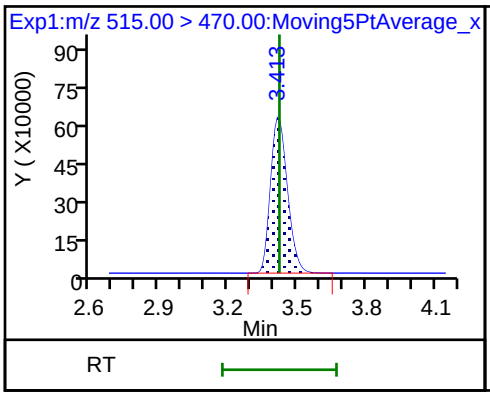
24 Perfluorodecanoic acid



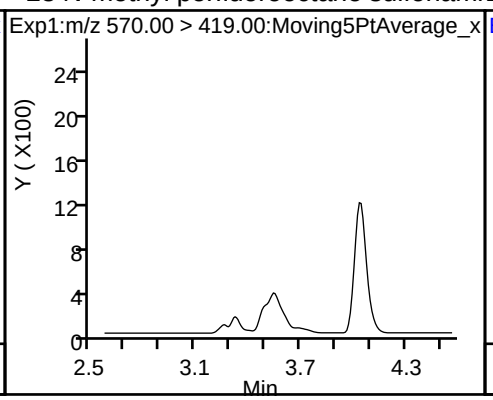
24 Perfluorodecanoic acid



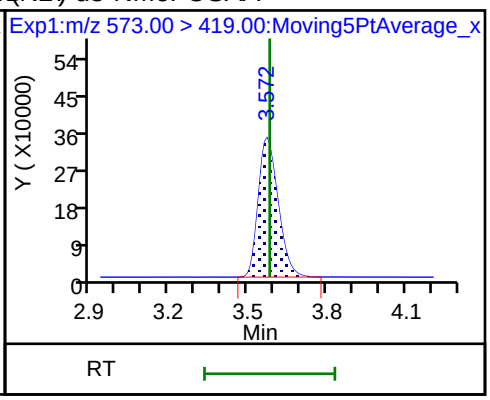
D 23 13C2 PFDA



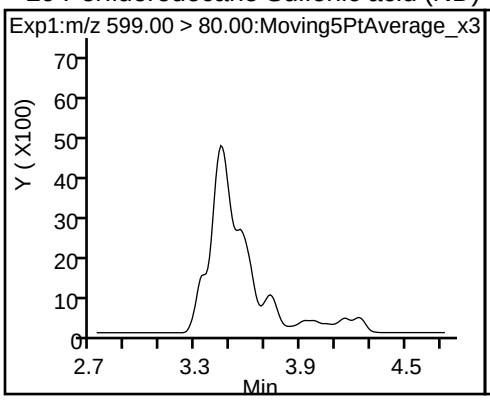
28 N-methyl perfluorooctane sulfonamid (ND)



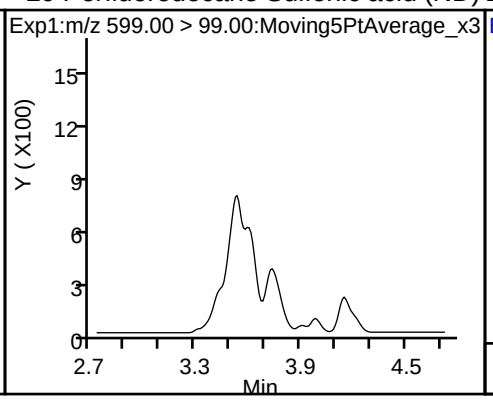
D 27 d3-NMeFOSAA



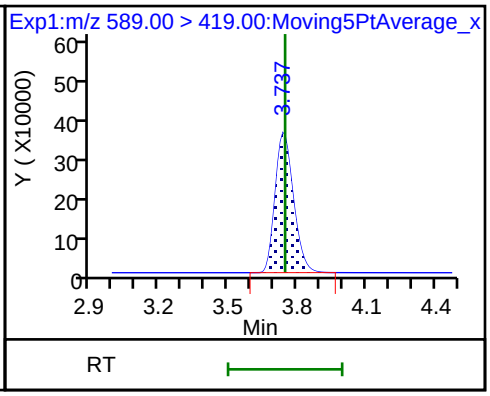
29 Perfluorodecane Sulfonic acid (ND)



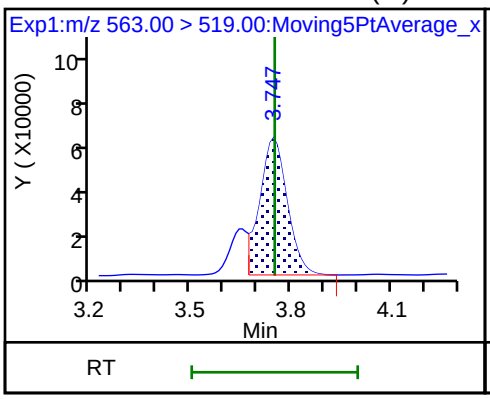
29 Perfluorodecane Sulfonic acid (ND)



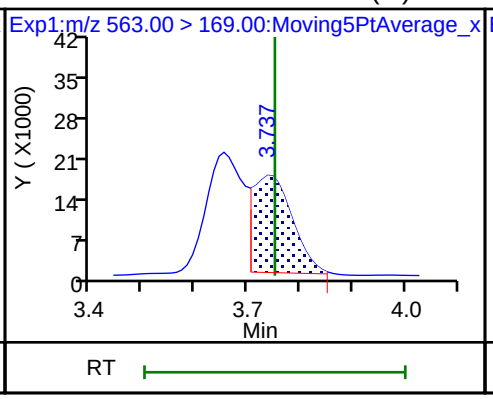
D 32 d5-NEtFOSAA



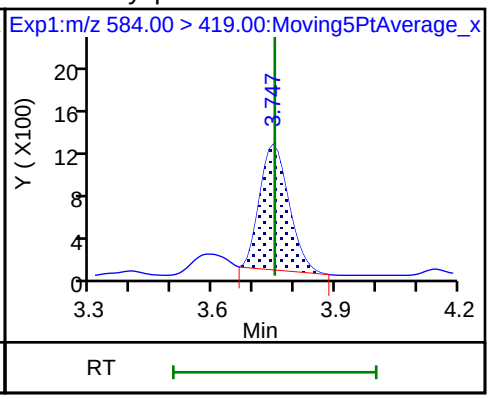
31 Perfluoroundecanoic acid (M)



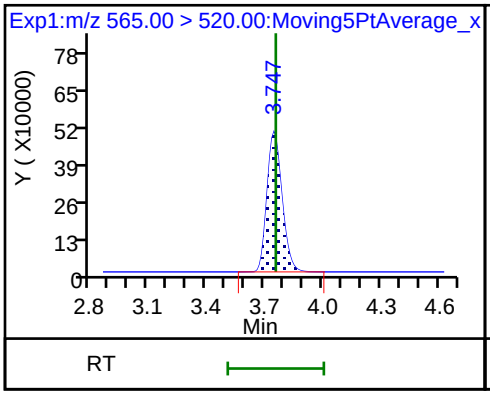
31 Perfluoroundecanoic acid (M)



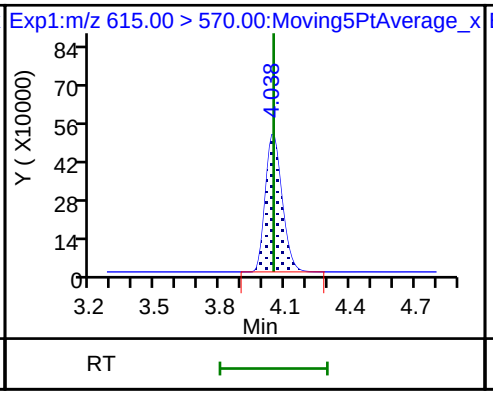
33 N-ethyl perfluorooctane sulfonamid



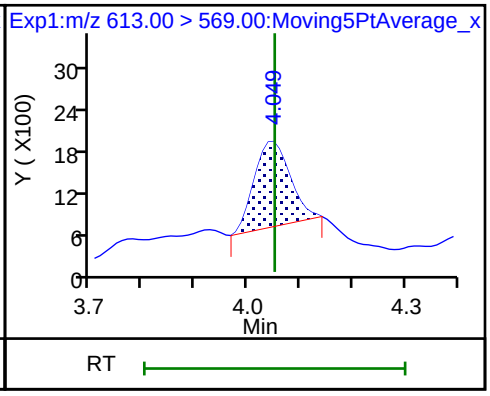
D 30 13C2 PFUnA



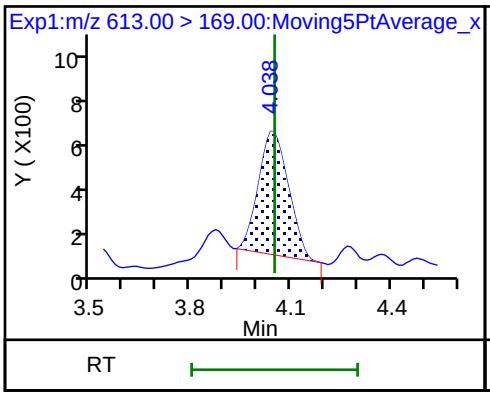
D 36 13C2 PFDoA



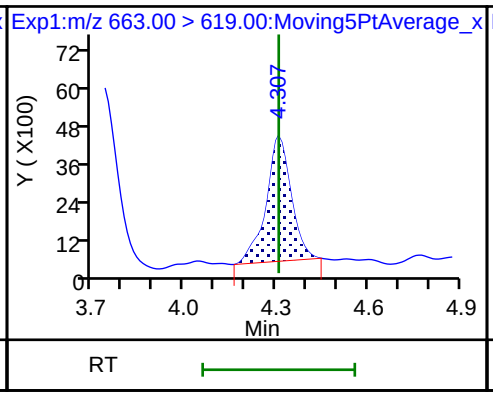
37 Perfluorododecanoic acid



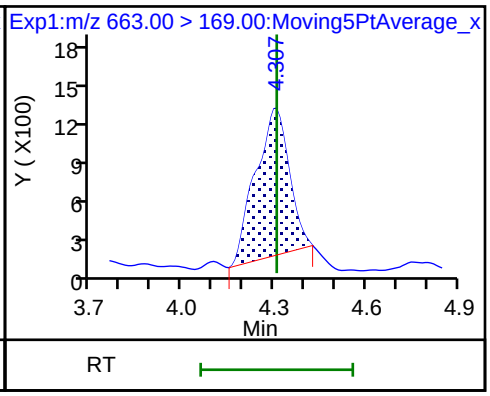
37 Perfluorododecanoic acid



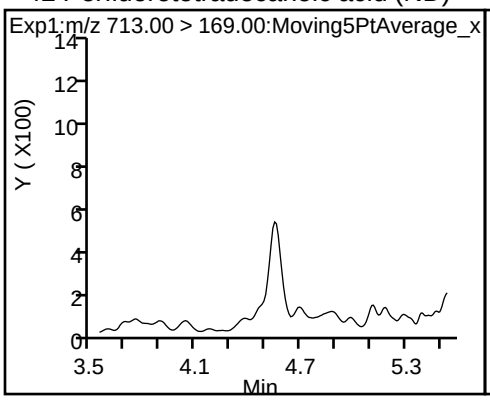
41 Perfluorotridecanoic acid



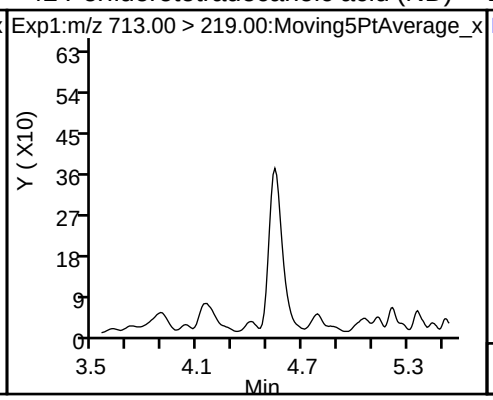
41 Perfluorotridecanoic acid



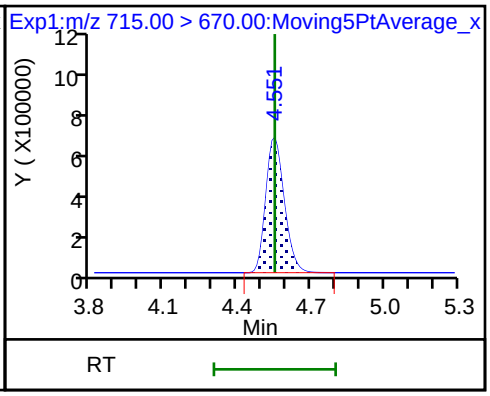
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

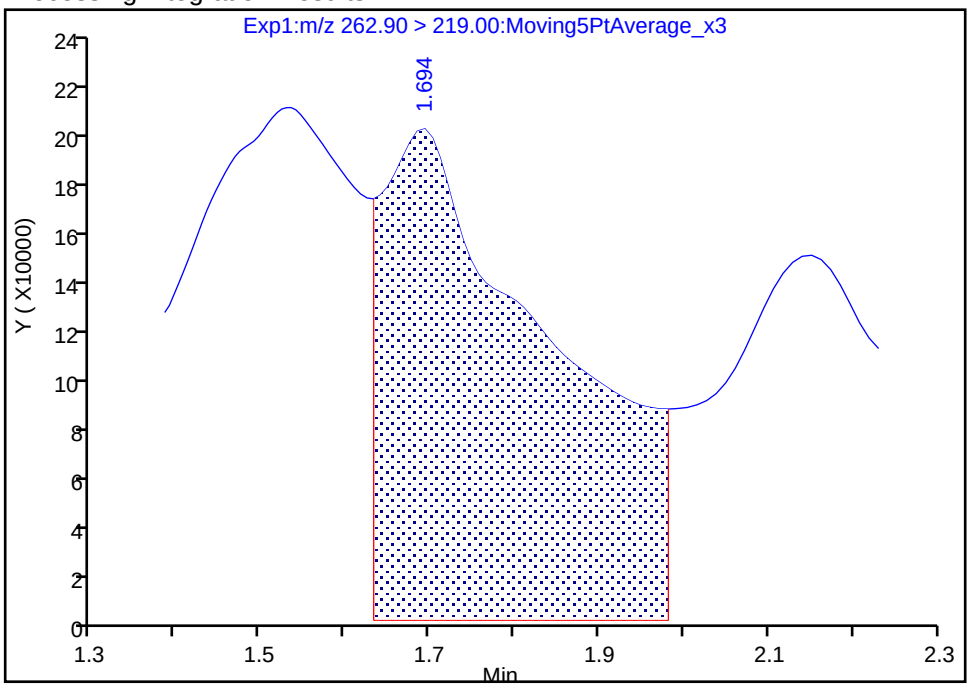
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d				
Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

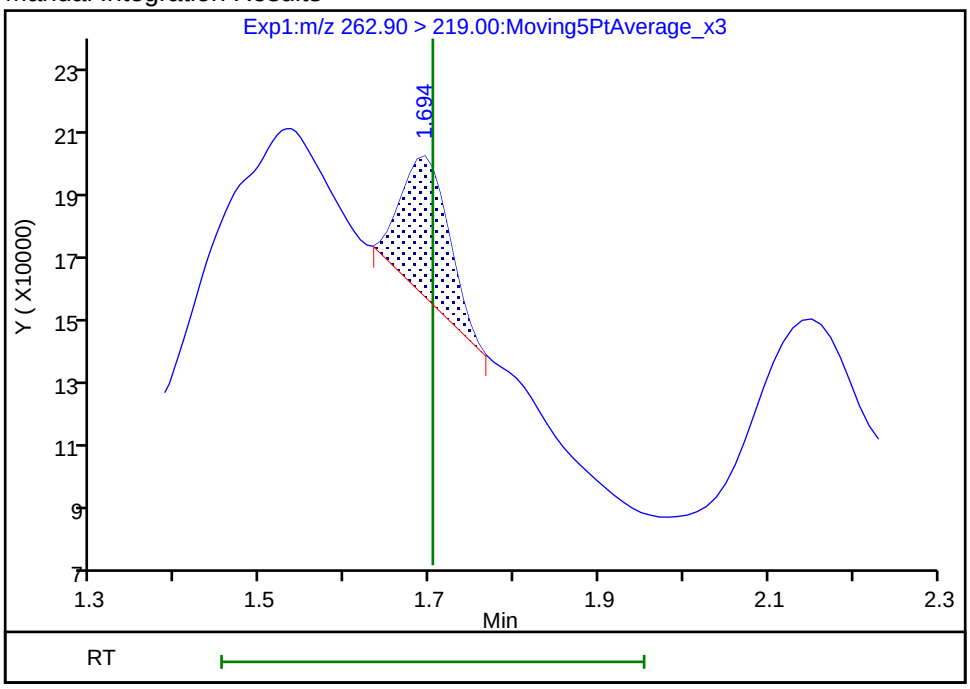
Processing Integration Results

RT: 1.69
Area: 2820520
Amount: 1.584165
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 174981
Amount: 0.098279
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:15:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

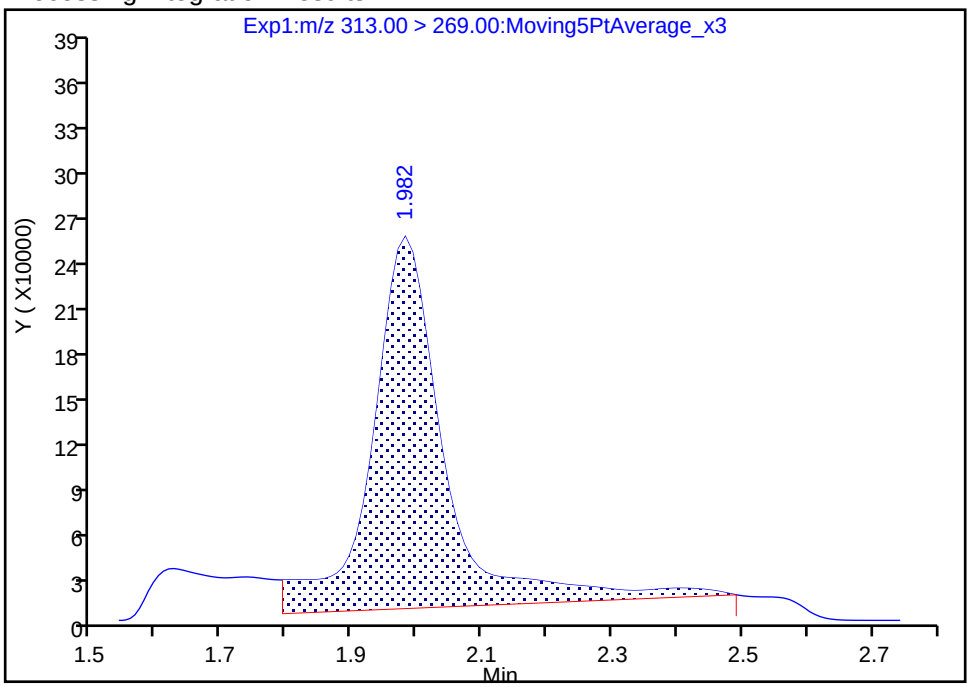
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d				
Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

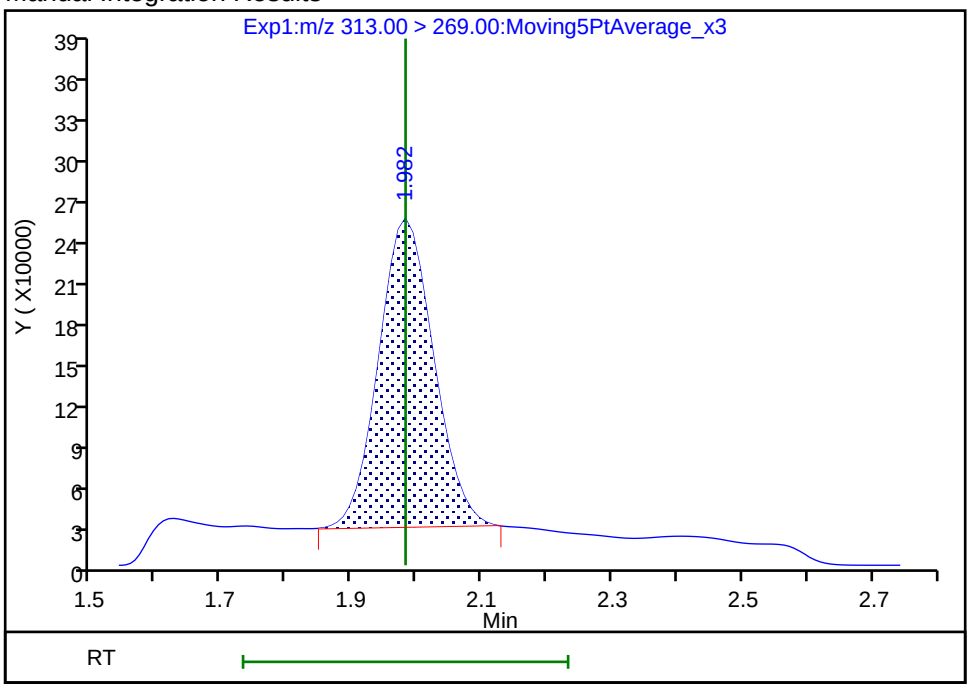
RT: 1.98
Area: 1904116
Amount: 1.112803
Amount Units: ng/ml

Processing Integration Results



RT: 1.98
Area: 1314132
Amount: 0.768005
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 27-Apr-2018 15:15:40
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

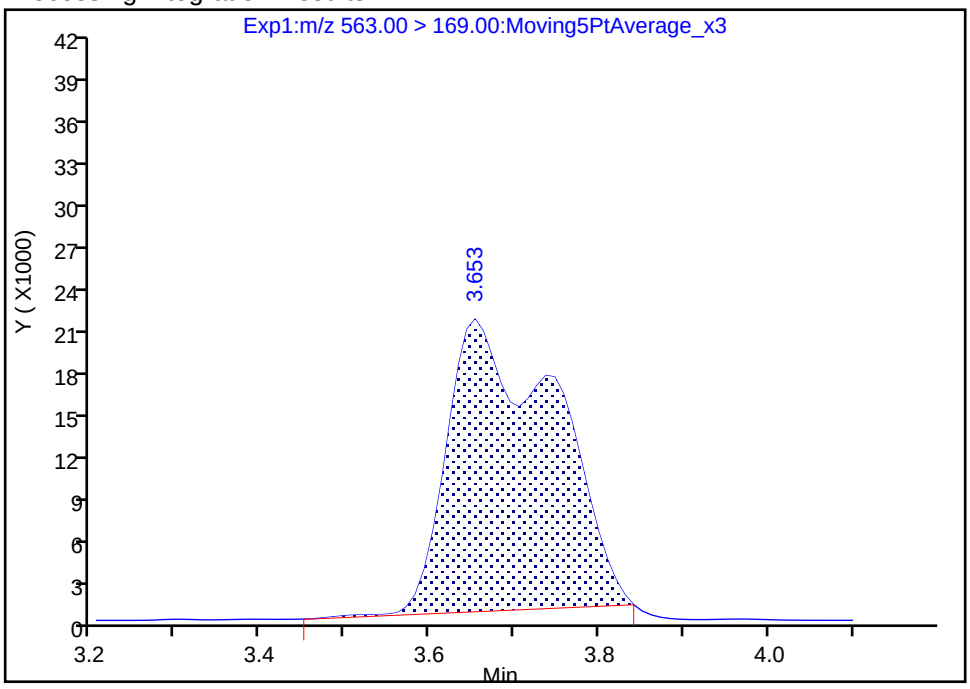
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d				
Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

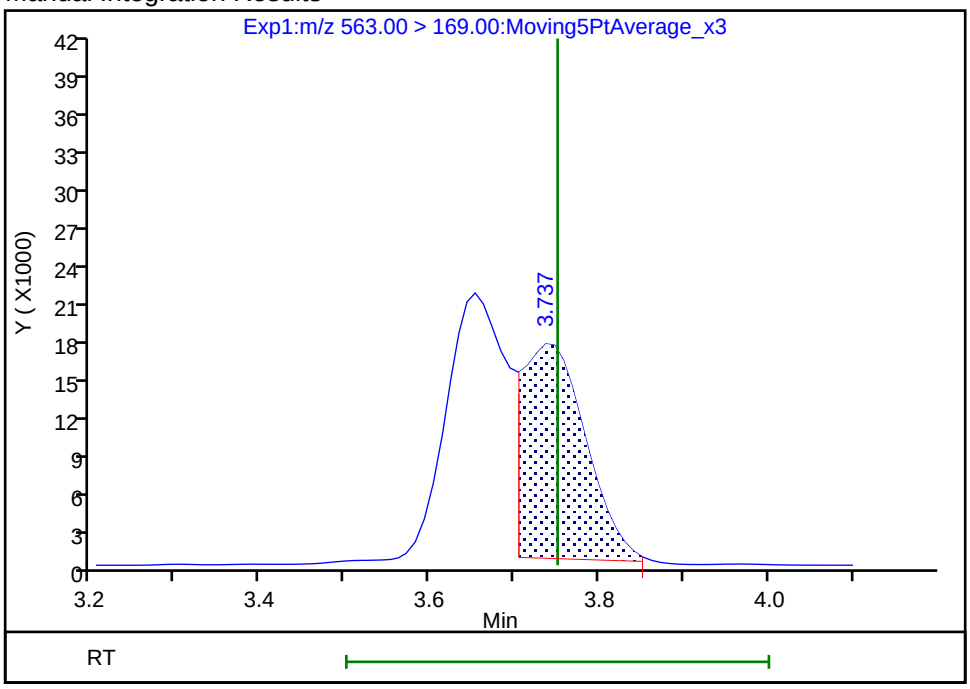
Processing Integration Results

RT: 3.65
Area: 182834
Amount: 0.082676
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 84356
Amount: 0.373011
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:16:22

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

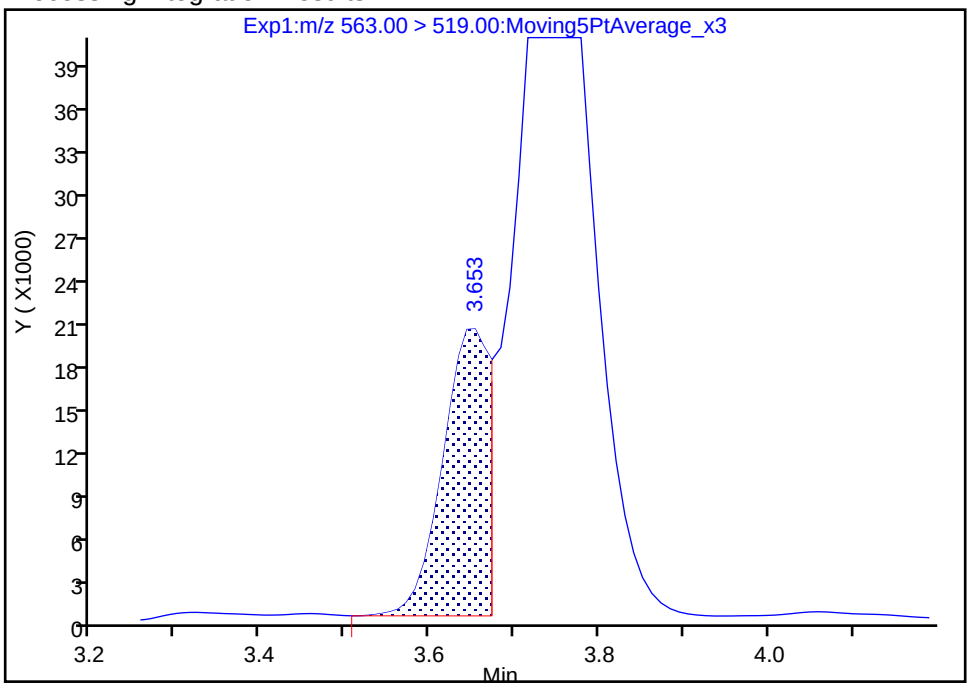
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d				
Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

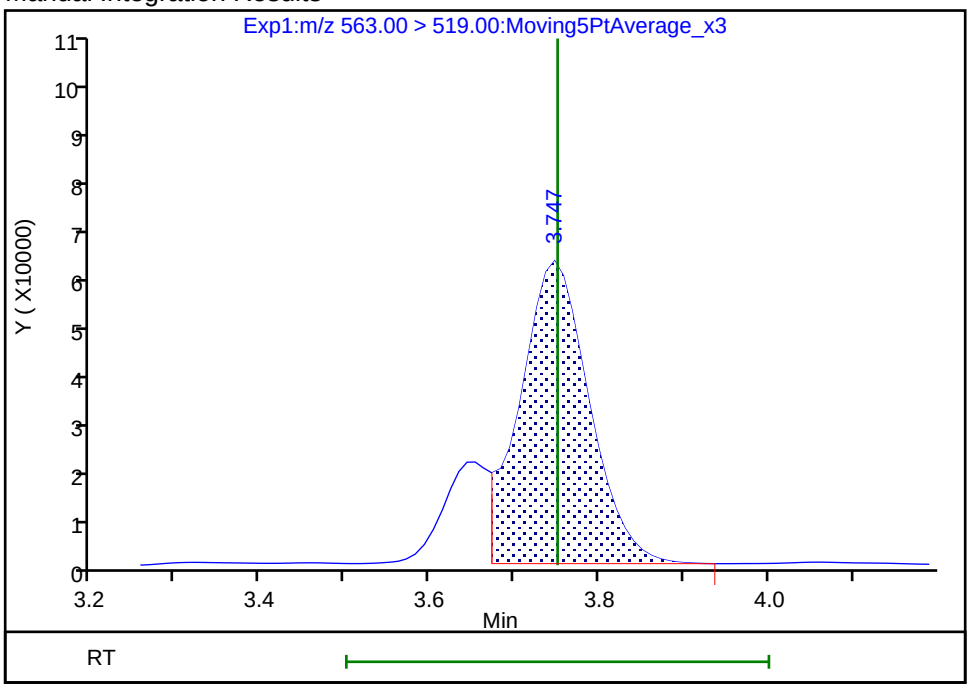
Processing Integration Results

RT: 3.65
Area: 74828
Amount: 0.082676
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 337602
Amount: 0.373011
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:16:32
Audit Action: Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

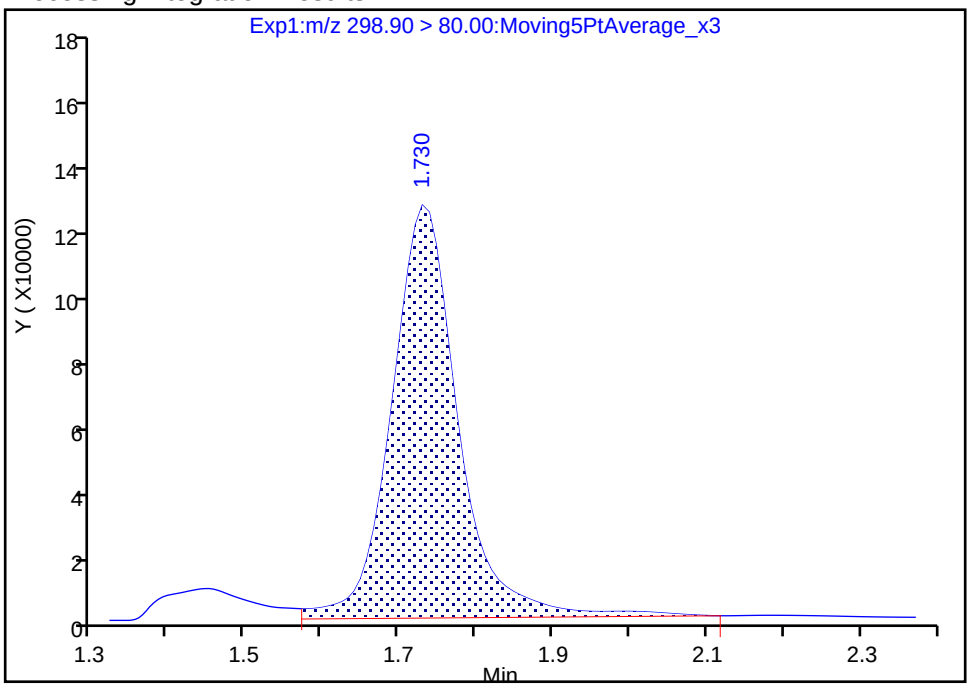
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d				
Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

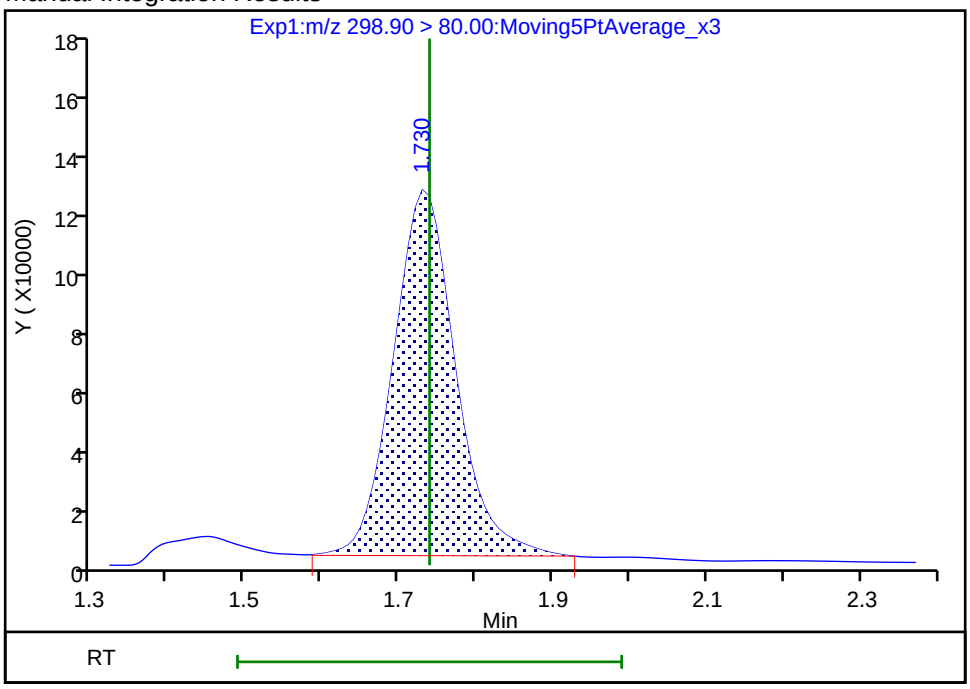
Processing Integration Results

RT: 1.73
Area: 753680
Amount: 0.273407
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 689007
Amount: 0.249946
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:15:23

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

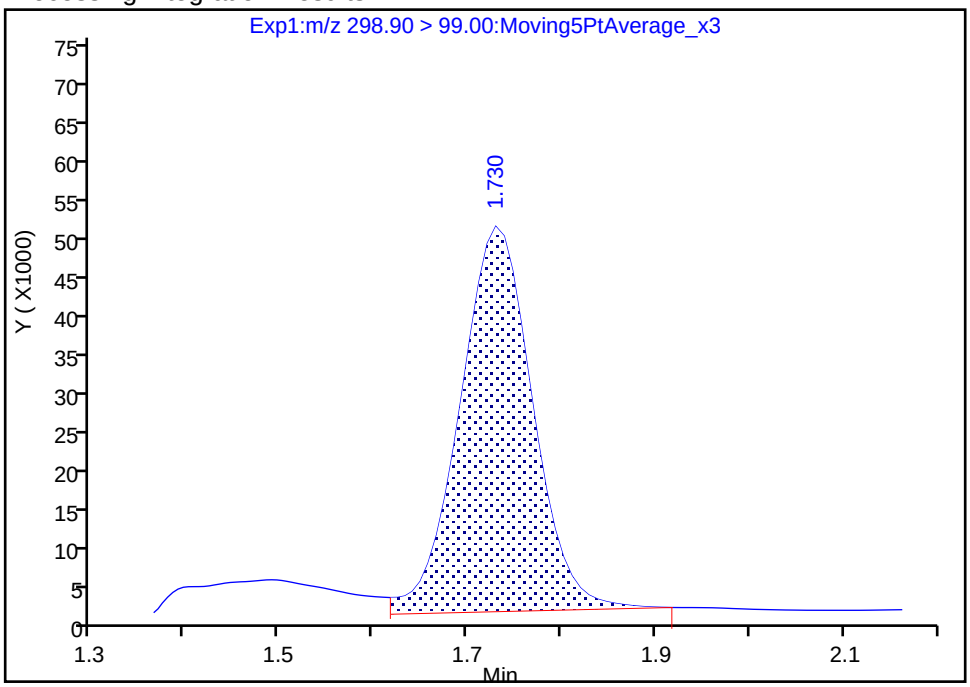
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_042.d				
Injection Date:	26-Apr-2018 08:14:14	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	31	Worklist Smp#:	7
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

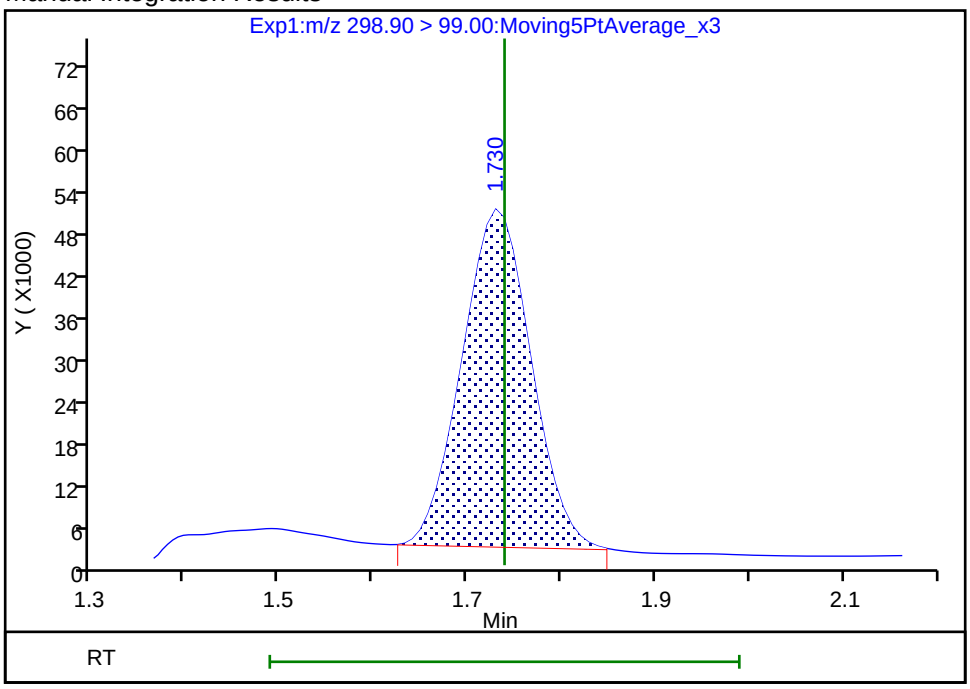
Processing Integration Results

RT: 1.73
Area: 269061
Amount: 0.273407
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 247521
Amount: 0.249946
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:15:30

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB012(2-4)-SPLP DL | Lab Sample ID: 320-38063-2 DL

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.26LLB_007.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:45

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 252.7(mL) | Date Analyzed: 04/26/2018 19:54

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 2

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	377	D B	3.96	0.34
27619-97-2	6:2FTS	269	D B	39.6	3.96

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00994	18O2 PFHxS	92		25-150
STL02279	M2-6:2FTS	134		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_007.d
Lims ID: 320-38063-A-2-C
Client ID: SB012(2-4)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 19:54:33 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 2.0000
Sample Info: 320-38063-a-2-c 2X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:45:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.530	1.442	0.088	1.066	1336419	0.7399			20.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	2431479	0.9529		76.2	12625	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.703	-0.009	0.995	70725	0.0404			2.1	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.556	1834395	1.12		89.2	4032	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	331384	0.1195			305	
298.90 > 99.00	1.730	1.739	-0.009	1.000	120570		2.75(1.25-3.74)		141	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	41173	1.09		93.9	128	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.982	1.993	-0.011	1.000	734380	0.4330			102	M
313.00 > 119.00	1.982	1.993	-0.011	1.000	63741		11.52(5.03-15.10)		391	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.994	-0.012	1.000	2086272	1.15		91.8	36195	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	181965	0.1094			85.8	
363.00 > 169.00	2.321	2.321	0.0	1.000	82214		2.21(1.13-3.40)		340	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.322	-0.001	1.000	2076567	1.17		93.9	37444	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	10813740	4.76			12490	
399.00 > 99.00	2.334	2.334	0.0	1.000	3546728		3.05(1.50-4.49)		10648	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	2372173	1.09		91.8	47797	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	2925077	3.39			34784	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.661	-0.001	1.000	605344	1.60		134	4428	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.683	-0.001	1.000	2138214	1.22		97.2	41921	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.690	-0.008	1.000	1966077	0.99			968	
413.00 > 169.00	2.682	2.690	-0.008	1.000	1121997		1.75(0.84-2.52)		3646	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.690	-0.008		2370669	1.25			39457	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.698	-0.008	1.000	190682	0.1793			218	
449.00 > 99.00	2.690	2.698	-0.008	1.000	50075		3.81(1.94-5.82)		347	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.059	0.004	1.000	670696	0.7493			777	
463.00 > 169.00	3.063	3.059	0.004	1.000	171955		3.90(1.90-5.69)		1044	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.063	3.059	0.004	1.002	137918094	158.3			5746920	E
499.00 > 99.00	3.056	3.059	-0.003	1.000	44516309		3.10(2.31-6.93)		171766	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.061	-0.005	1.000	957051	0.6256		52.4	3365	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.061	0.002	1.000	1073058	0.7096		56.8	26400	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.398	-0.004	1.000	239227	0.1382			83.5	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.400	-0.006	1.000	2138913	1.12		89.6	23569	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.416	-0.003	1.000	214354	0.3493			6837	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.418	-0.005	1.000	580693	1.27		106	3520	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.426	-0.004	1.000	2762447	2.17			3916	
513.00 > 169.00	3.422	3.426	-0.004	1.000	484940		5.70(2.36-7.09)		1250	
D 23 13C2 PFDA										
515.00 > 470.00	3.422	3.427	-0.005	1.000	1545099	1.22		97.3	43442	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.576	-0.005	1.000	832957	1.16		92.5	14340	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.752	-0.005	1.000	879821	1.24		99.0	20061	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.737	3.761	-0.024	0.997	2978	0.004528			60.9	M
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.747	3.761	-0.014	0.997	161023	0.1899			195	M
563.00 > 169.00	3.747	3.761	-0.014	0.997	38989		4.13(2.12-6.36)		54.9	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.762	-0.004	1.000	1254315	1.14		91.5	38443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.051	-0.003	1.000	1256597	1.06		84.9	16880	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.317	4.318	-0.001	1.000	8020	0.006564			11.3	
663.00 > 169.00	4.306	4.318	-0.012	0.997	2279		3.52(1.25-3.76)		26.5	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.553	-0.002	1.000	1534537	1.02		81.8	18418	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

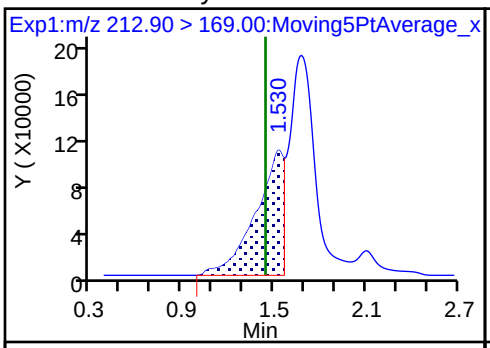
Report Date: 27-Apr-2018 15:54:19 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

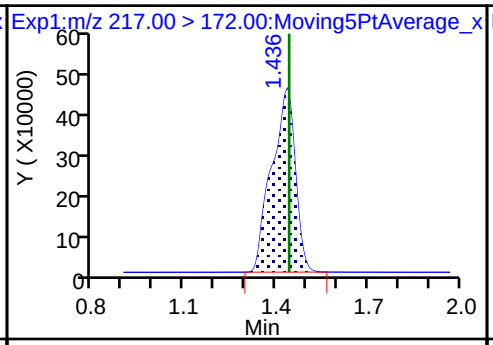
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_007.d

Injection Date:	26-Apr-2018 19:54:33	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	5
Injection Vol:	2.0 ul	Dil. Factor:	2.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

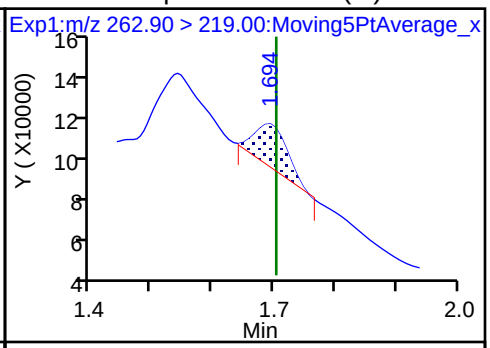
2 Perfluorobutyric acid



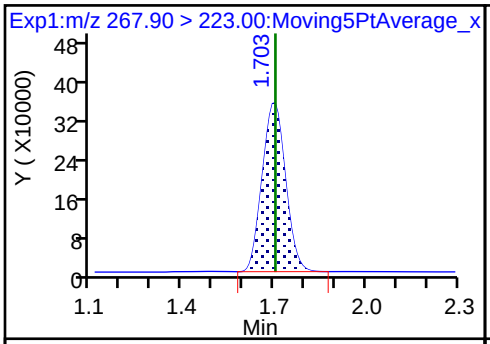
D 1 13C4 PFBA



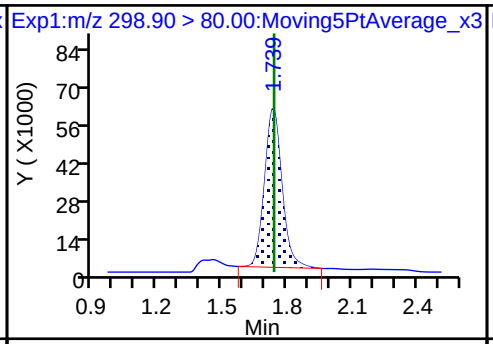
4 Perfluoropentanoic acid (M)



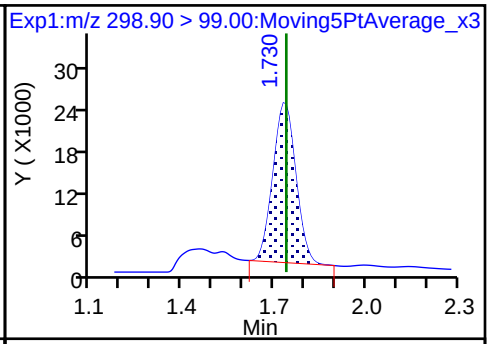
D 3 13C5-PFPeA



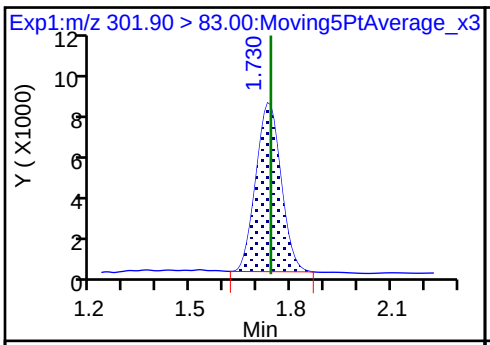
5 Perfluorobutanesulfonic acid



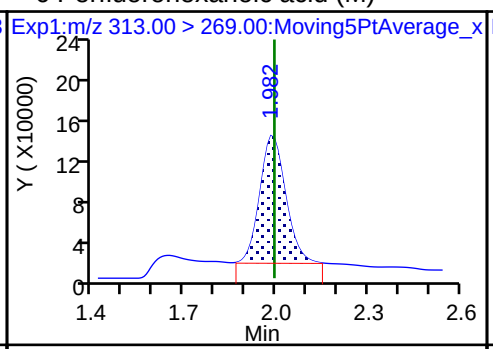
5 Perfluorobutanesulfonic acid



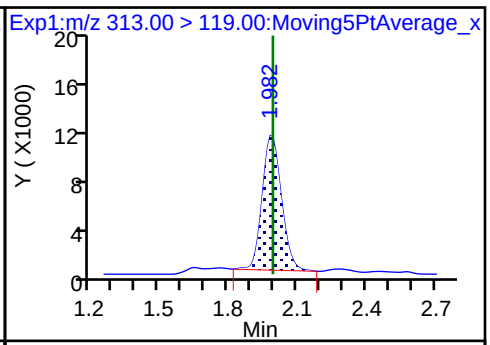
D 47 13C3-PFBS



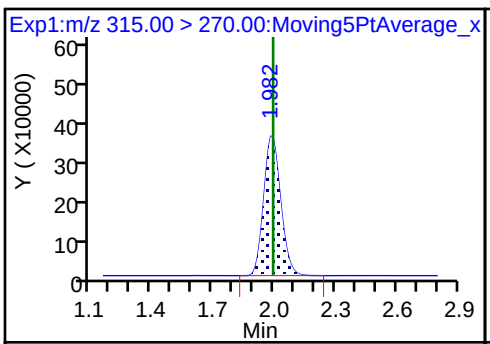
6 Perfluorohexanoic acid (M)



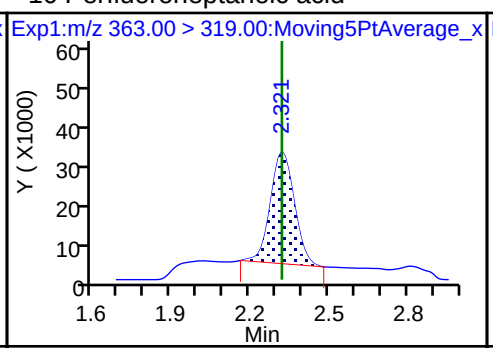
6 Perfluorohexanoic acid



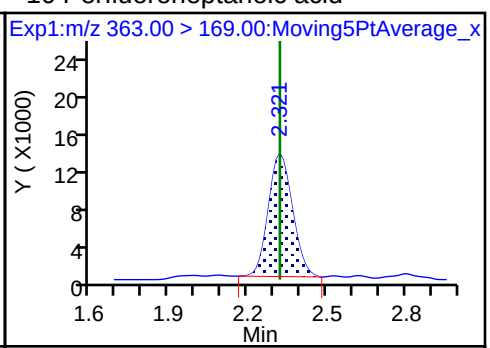
D 7 13C2 PFHxA



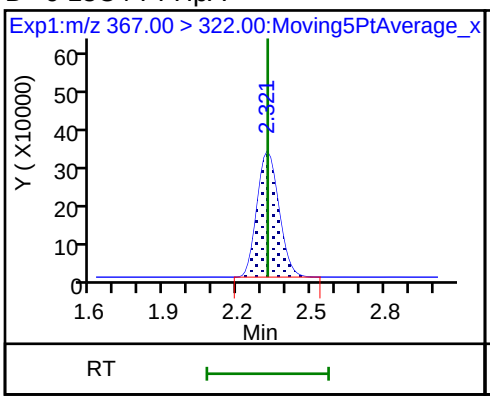
10 Perfluoroheptanoic acid



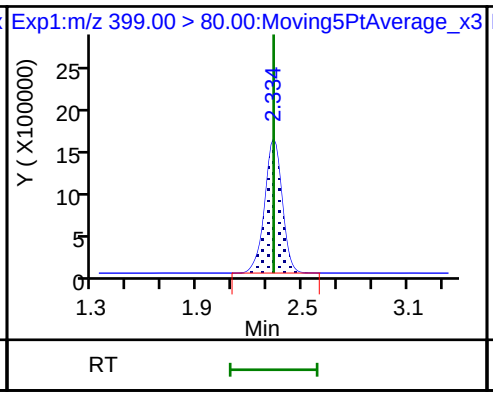
10 Perfluoroheptanoic acid



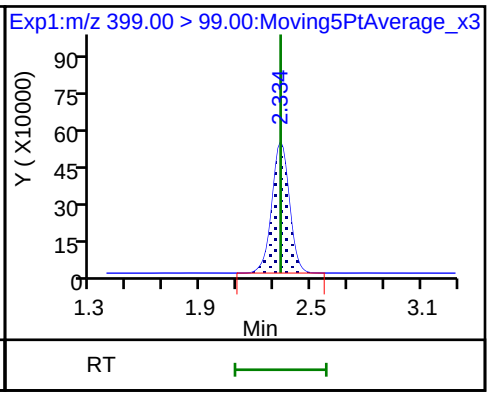
D 9 13C4-PFHpA



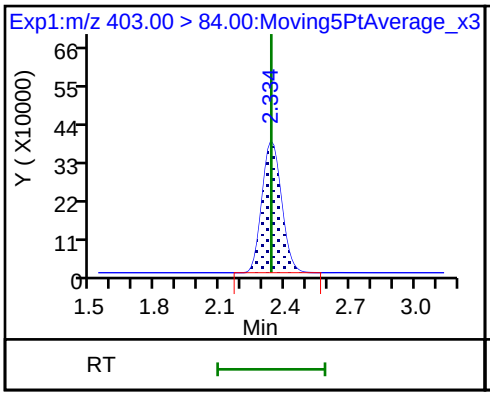
8 Perfluorohexanesulfonic acid



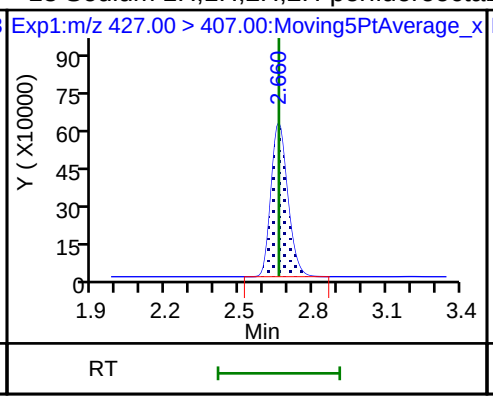
8 Perfluorohexanesulfonic acid



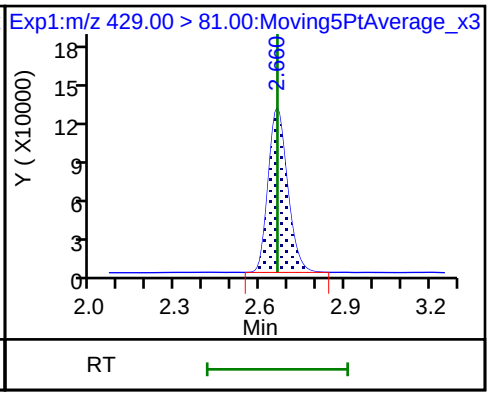
D 11 18O2 PFHxS



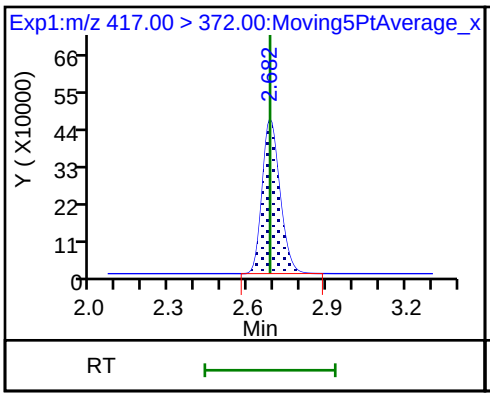
13 Sodium 1H,1H,2H,2H-perfluorooctane



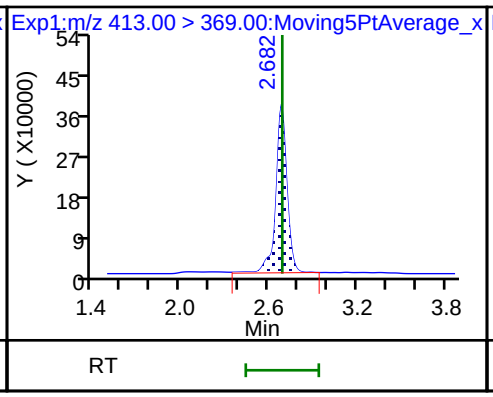
D 12 M2-6:2FTS



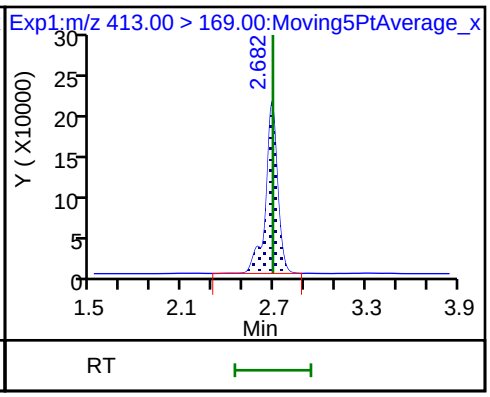
D 14 13C4 PFOA



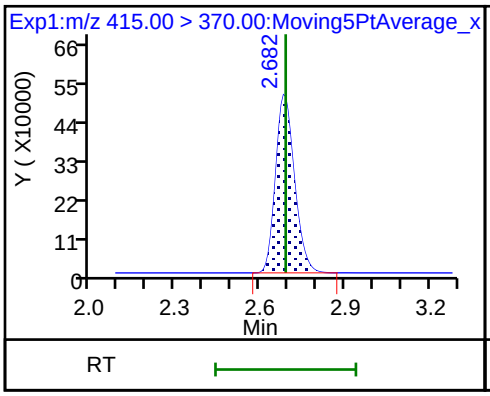
15 Perfluorooctanoic acid



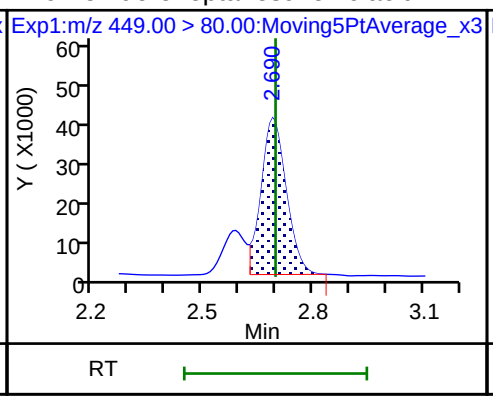
15 Perfluorooctanoic acid



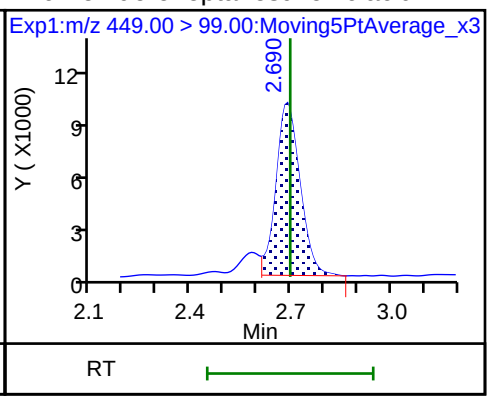
* 62 13C2-PFOA



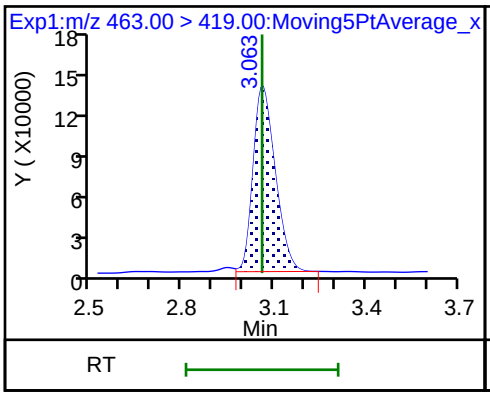
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



20 Perfluorononanoic acid



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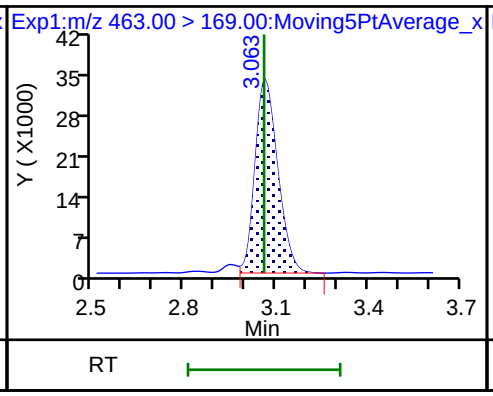
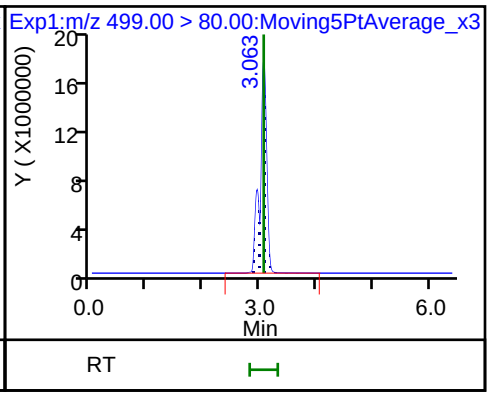
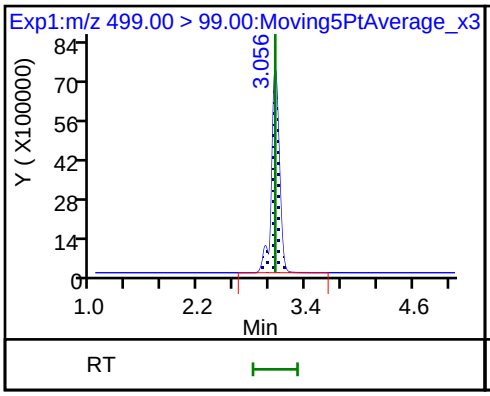


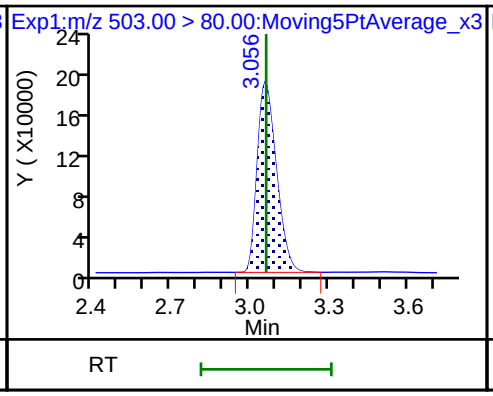
17 Perfluorooctane sulfonic acid



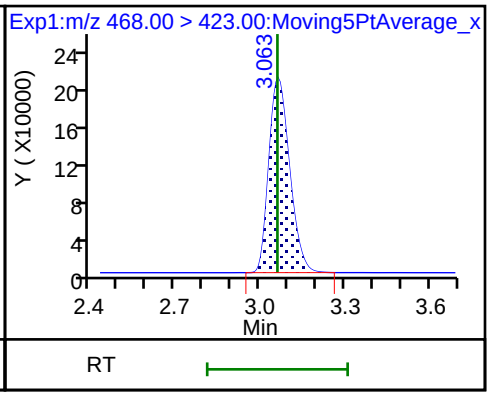
17 Perfluorooctane sulfonic acid



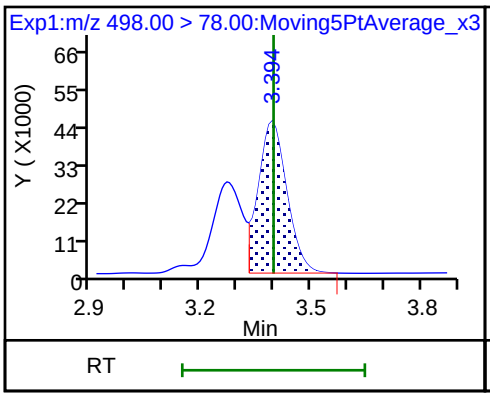
D 18 13C4 PFOS



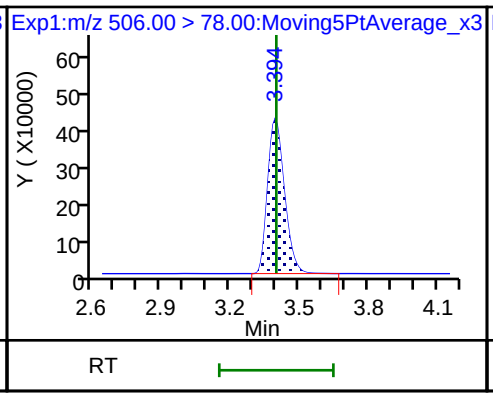
D 19 13C5 PFNA



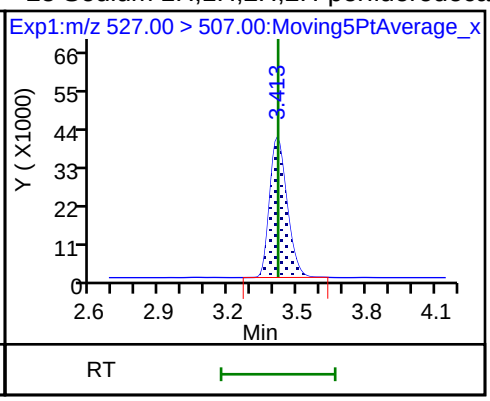
22 Perfluorooctane Sulfonamide



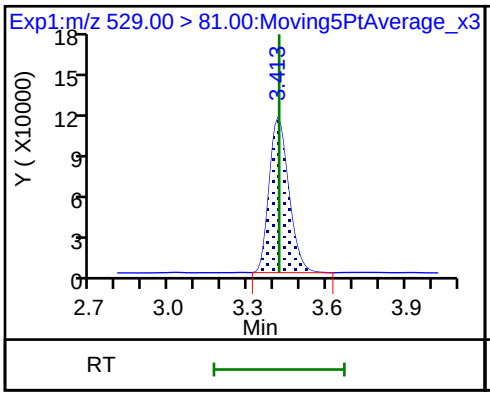
D 21 13C8 FOSA



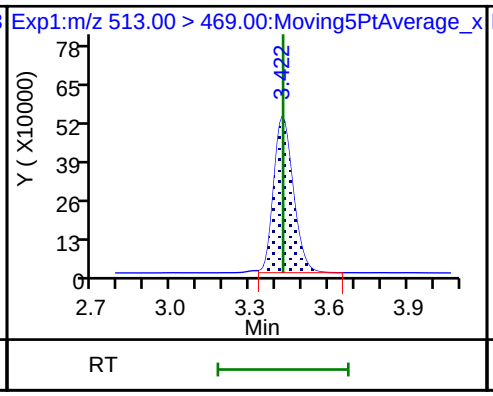
25 Sodium 1H,1H,2H,2H-perfluorodecane



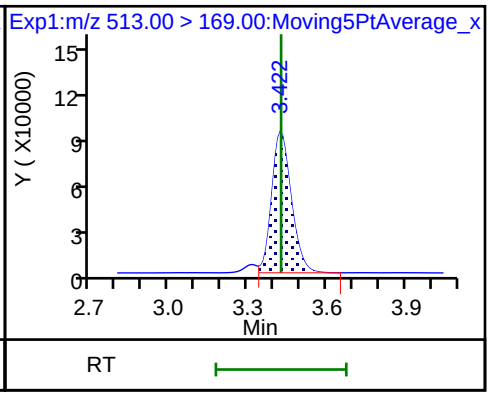
D 26 M2-8:2FTS



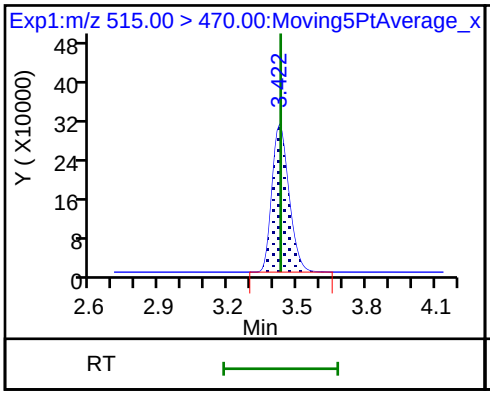
24 Perfluorodecanoic acid



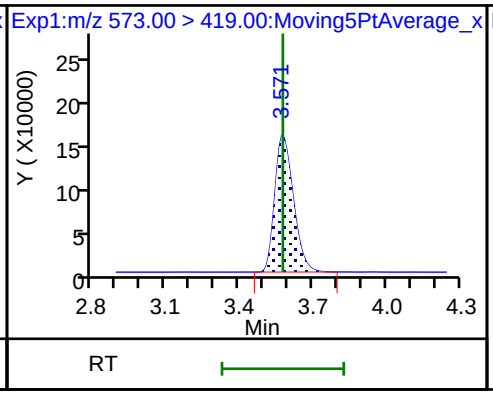
24 Perfluorodecanoic acid



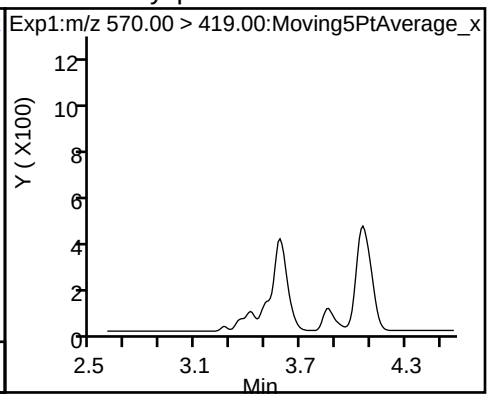
D 23 13C2 PFDA



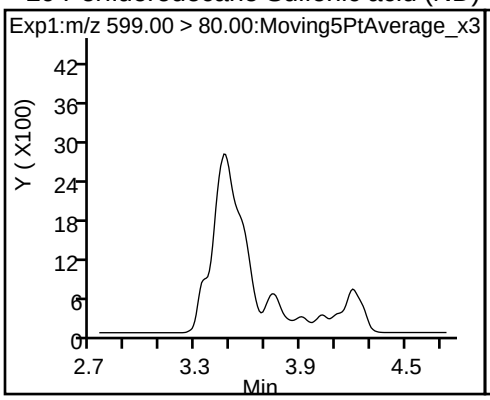
D 27 d3-NMeFOSAA



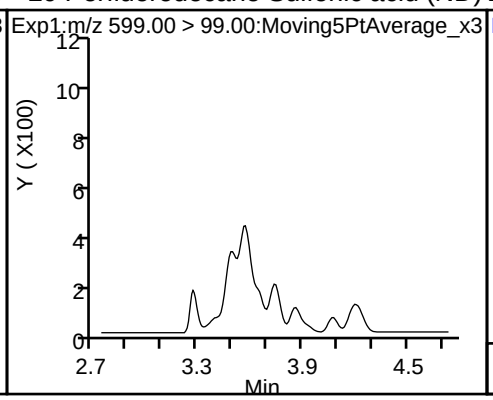
28 N-methyl perfluorooctane sulfonami (ND)



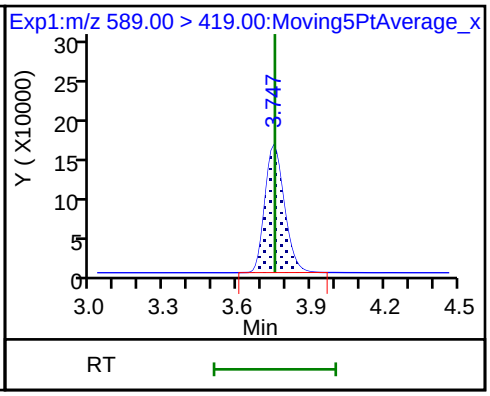
29 Perfluorodecane Sulfonic acid (ND)



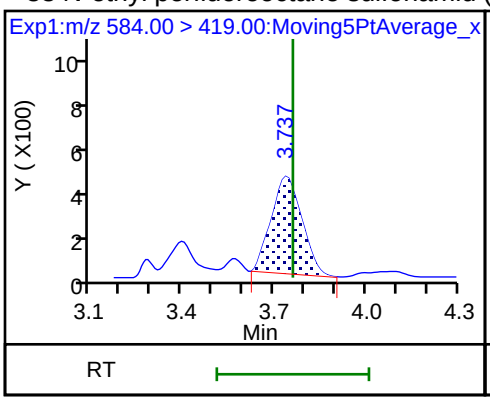
29 Perfluorodecane Sulfonic acid (ND)



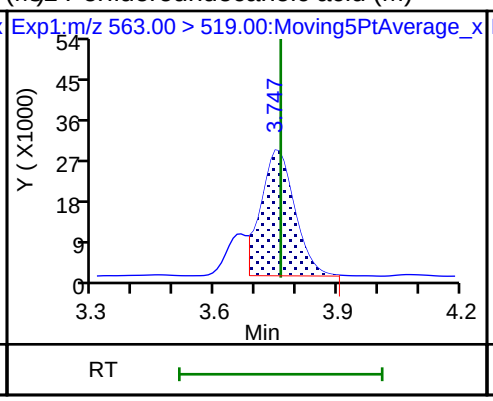
D 32 d5-NEtFOSAA



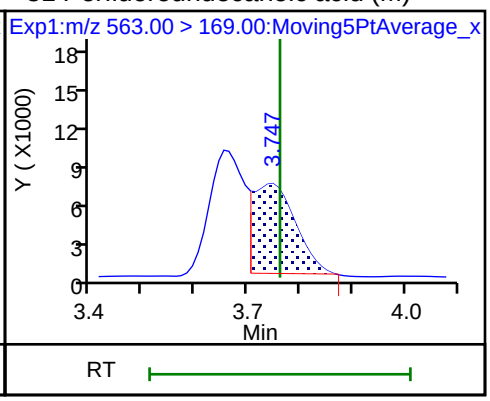
33 N-ethyl perfluorooctane sulfonamid (M)



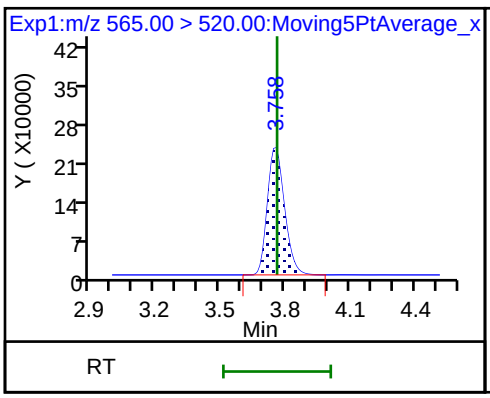
31 Perfluoroundecanoic acid (M)



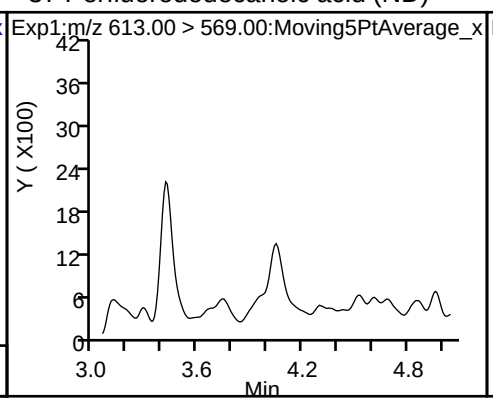
31 Perfluoroundecanoic acid (M)



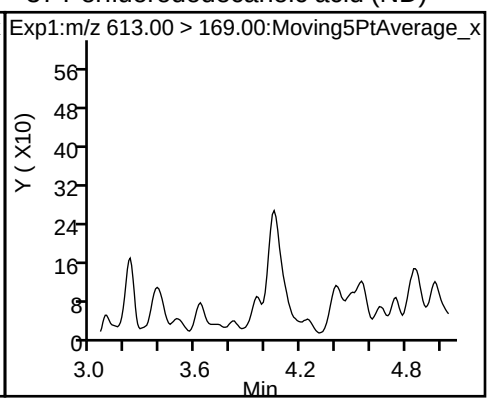
D 30 13C2 PFUnA



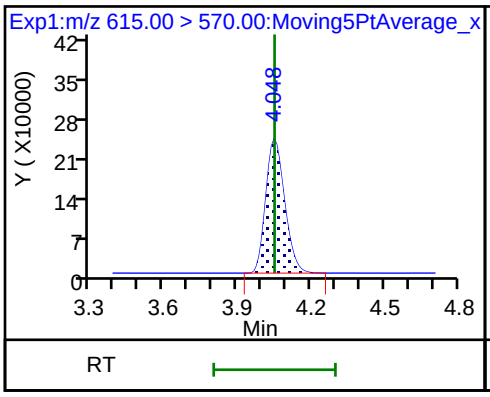
37 Perfluorododecanoic acid (ND)



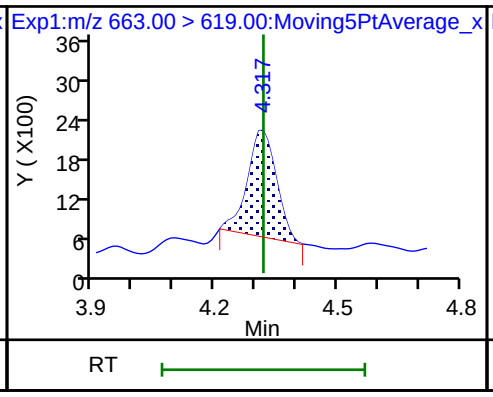
37 Perfluorododecanoic acid (ND)



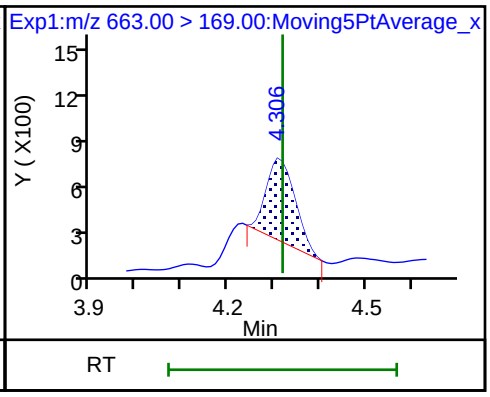
D 36 13C2 PFDoA



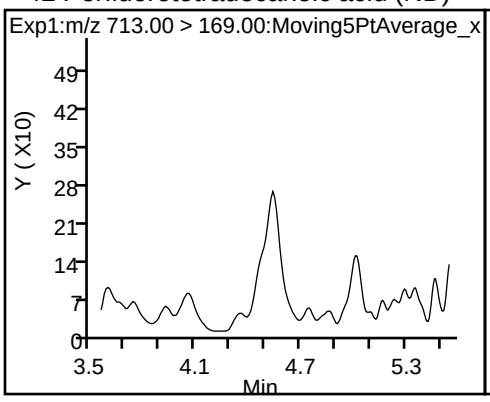
41 Perfluorotridecanoic acid



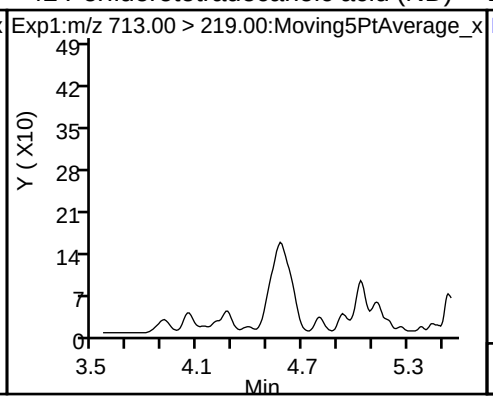
41 Perfluorotridecanoic acid



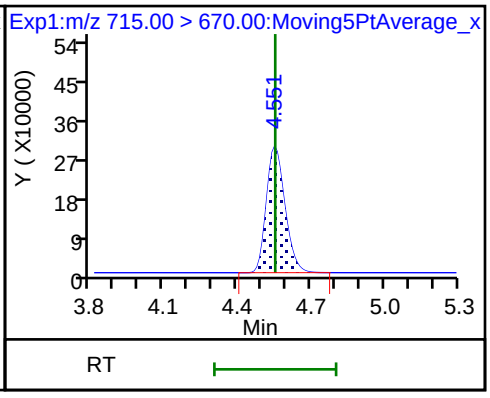
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB012(2-4)-SPLP DL2 | Lab Sample ID: 320-38063-2 DL2

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.26LLB_006.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 09:45

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 252.7(mL) | Date Analyzed: 04/26/2018 19:46

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 100

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	19200	D	198	53.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	85		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_006.d
Lims ID: 320-38063-A-2-C
Client ID: SB012(2-4)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 19:46:41 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38063-a-2-c 100X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 27-Apr-2018 09:42:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.535	1.442	0.093	1.069	17069	0.007787			3.9	M
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.442	-0.007	1.000	59012	0.0219		87.7	562	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	-0.001	0.558	38471	0.0222		88.7	677	
D 47 13C3-PFBS										M
301.90 > 83.00	1.729	1.739	-0.010	1.000	819	0.0206		88.5	6.6	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.994	-0.013	1.000	44433	0.0232		92.7	1251	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.322	-0.002	1.000	43728	0.0234		93.7	1171	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.334	-0.001	1.000	223171	0.0955			529	
399.00 > 99.00	2.333	2.334	-0.001	1.000	69443		3.21(1.50-4.49)		458	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.335	-0.002	1.000	48809	0.0212		89.6	1594	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.675	2.660	0.015	1.000	101786	0.0640			1668	
D 12 M2-6:2FTS										
429.00 > 81.00	2.675	2.661	0.014	1.000	22358	0.0559		235	246	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.683	-0.008	1.000	50132	0.0270		108	1503	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.003	42114	0.0182			25.1	
413.00 > 169.00	2.683	2.690	-0.007	1.003	23628		1.78(0.84-2.52)		75.0	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.690	-0.015		49998	0.0250			1324	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.059	-0.002	1.002	26691	0.0167			75.9	
463.00 > 169.00	3.043	3.059	-0.016	0.998	6157		4.34(1.90-5.69)		157	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.050	3.059	-0.009	1.000	7262751	4.84			16096	M
499.00 > 99.00	3.050	3.059	-0.009	1.000	1674988		4.34(2.31-6.93)		27197	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.061	-0.011	1.000	32950	0.0204		85.5	230	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.061	-0.011	1.000	38279	0.0240		96.0	1476	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.398	-0.002	1.003	4542	0.002237			30.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.400	-0.013	1.000	50194	0.0249		99.7	1080	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.416	-0.001	1.003	5096	0.008178			292	
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.418	-0.012	1.000	11794	0.0245		102	111	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.426	-0.011	1.000	55767	0.0553			233	
513.00 > 169.00	3.415	3.426	-0.011	1.000	8049		6.93(2.36-7.09)		98.4	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.427	-0.012	1.000	24454	0.0182		73.0	1241	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.564	3.576	-0.012	1.000	17958	0.0236		94.6	266	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.739	3.752	-0.013	1.000	17305	0.0231		92.3	234	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.761	-0.002	1.006	937	0.001449			20.6	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.739	3.761	-0.022	0.997	5948	0.006914			32.9	
563.00 > 169.00	3.759	3.761	-0.002	1.003	1701		3.50(2.12-6.36)		34.1	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.762	-0.013	1.000	25450	0.0220		88.1	914	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.051	-0.002	1.000	23953	0.0192		76.7	428	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.553	-0.002	1.000	32381	0.0205		81.8	292	

QC Flag Legend

Review Flags

M - Manually Integrated

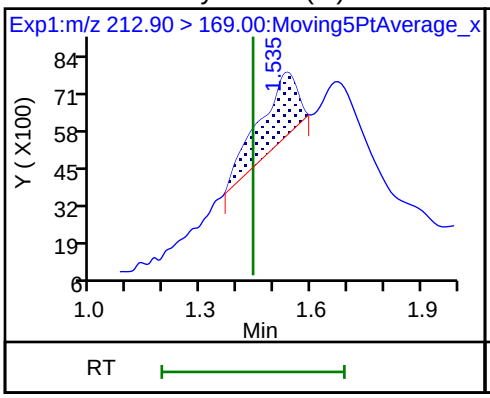
Report Date: 27-Apr-2018 15:54:17 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

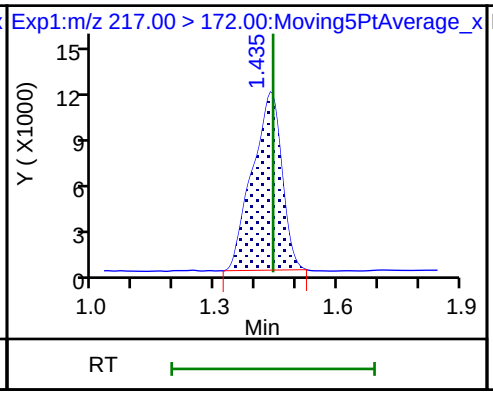
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_006.d

Injection Date:	26-Apr-2018 19:46:41	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

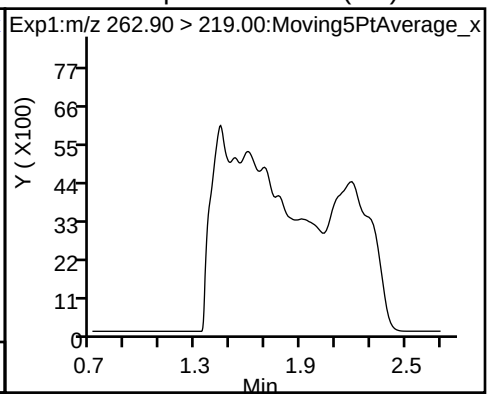
2 Perfluorobutyric acid (M)



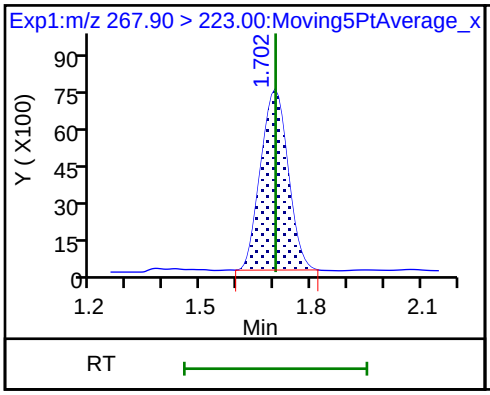
D 1 13C4 PFBA



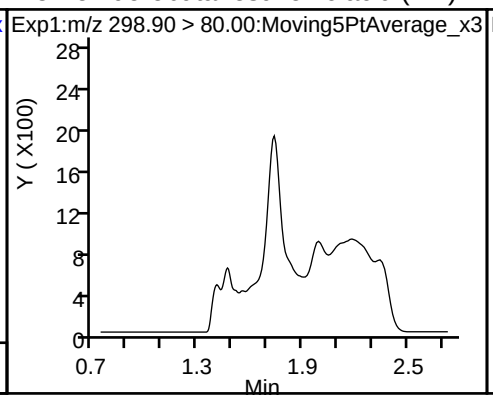
4 Perfluoropentanoic acid (ND)



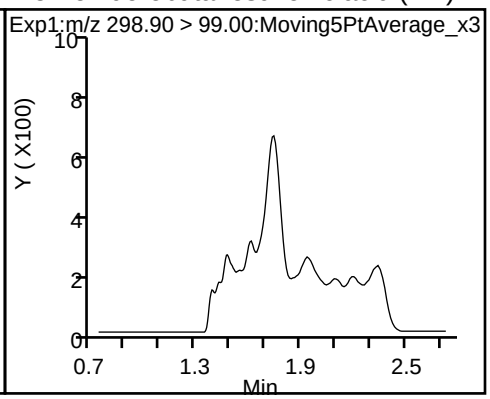
D 3 13C5-PFPeA



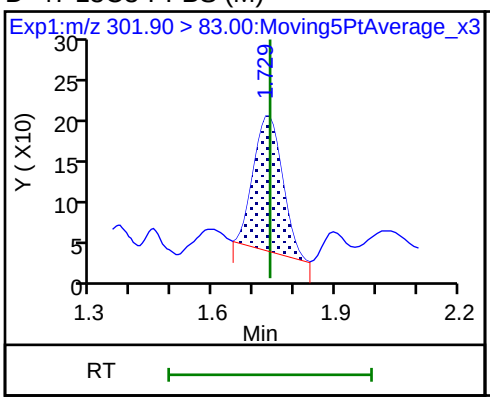
5 Perfluorobutanesulfonic acid (ND)



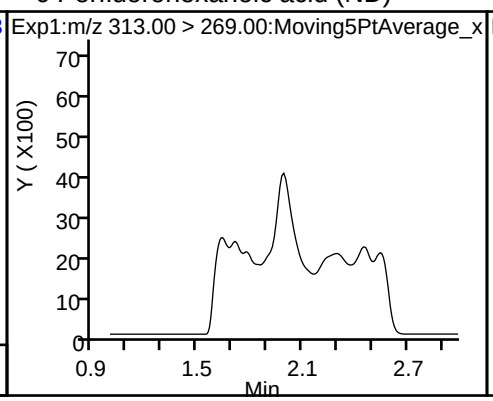
5 Perfluorobutanesulfonic acid (ND)



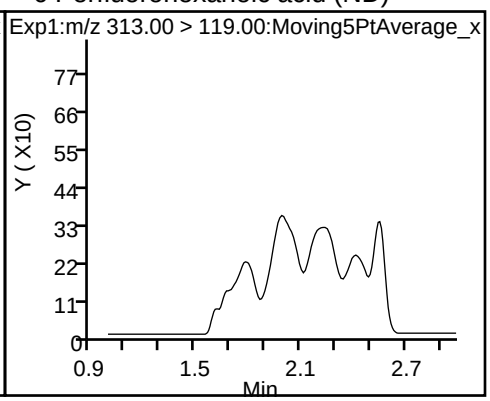
D 47 13C3-PFBS (M)



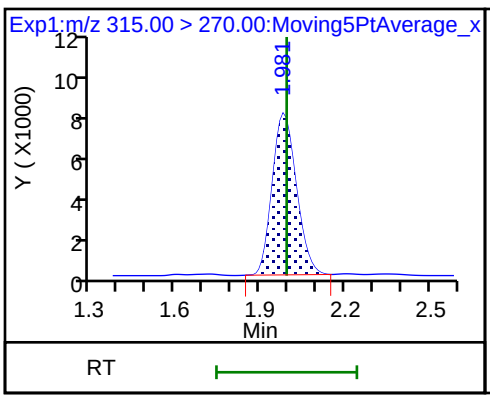
6 Perfluorohexanoic acid (ND)



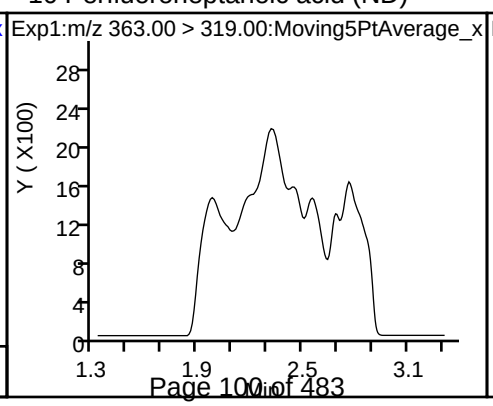
6 Perfluorohexanoic acid (ND)



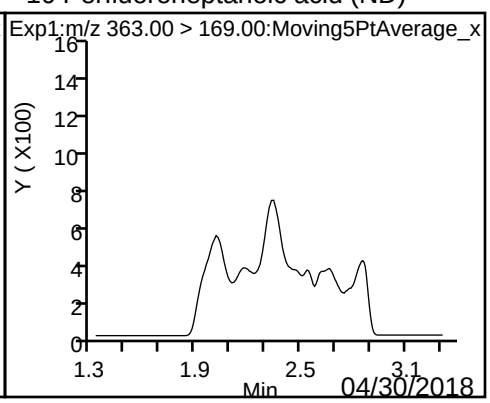
D 7 13C2 PFHxA



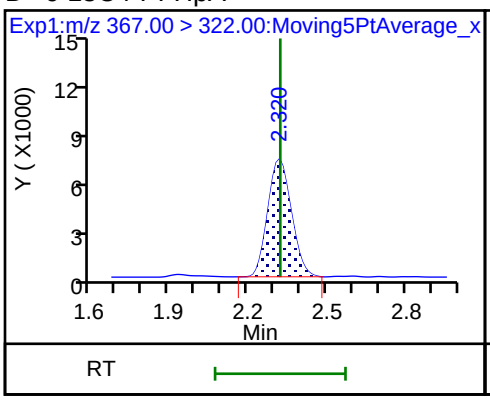
10 Perfluoroheptanoic acid (ND)



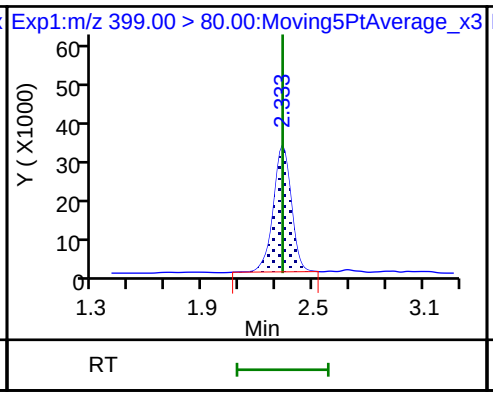
10 Perfluoroheptanoic acid (ND)



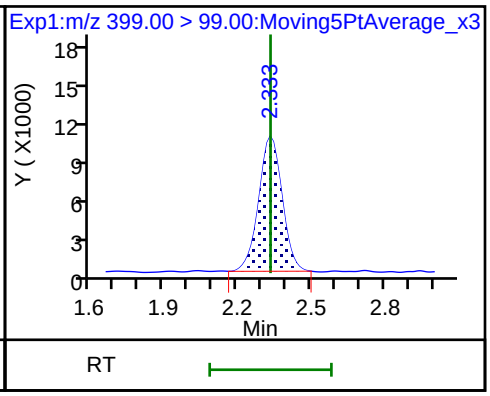
D 9 13C4-PFHpA



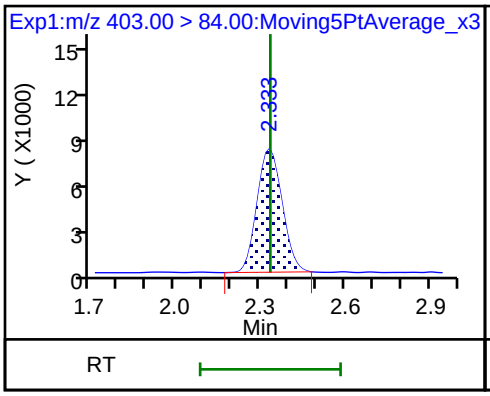
8 Perfluorohexanesulfonic acid



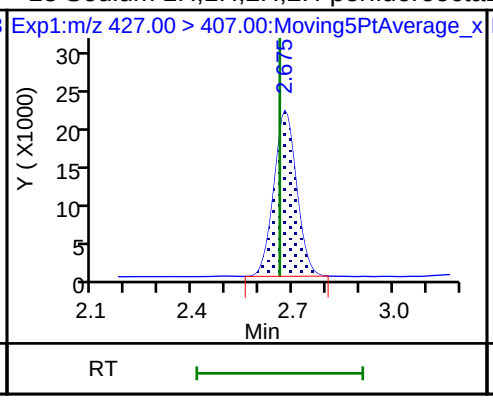
8 Perfluorohexanesulfonic acid



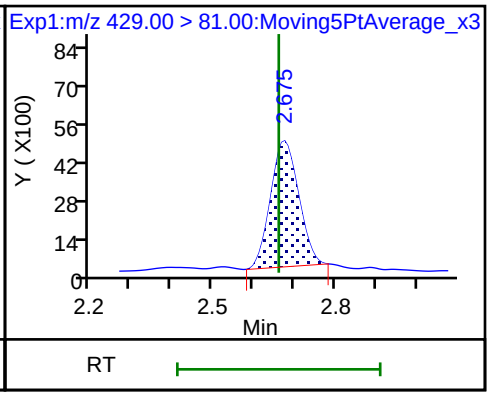
D 11 18O2 PFHxS



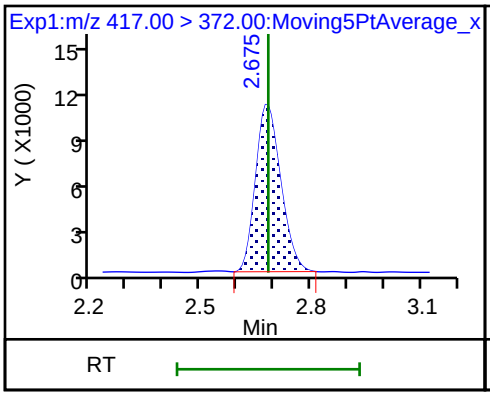
13 Sodium 1H,1H,2H,2H-perfluorooctane



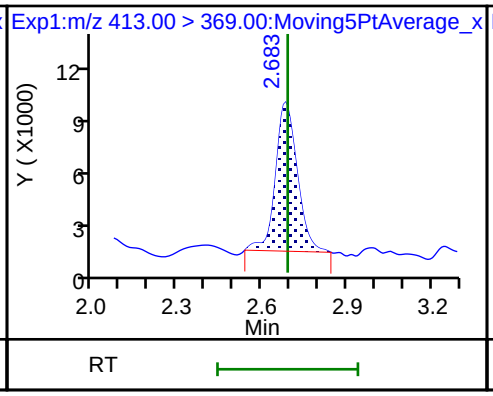
D 12 M2-6:2FTS



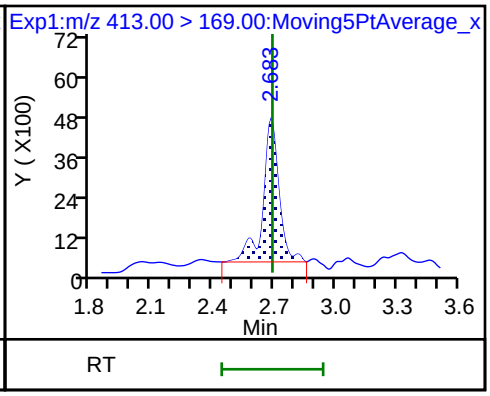
D 14 13C4 PFOA



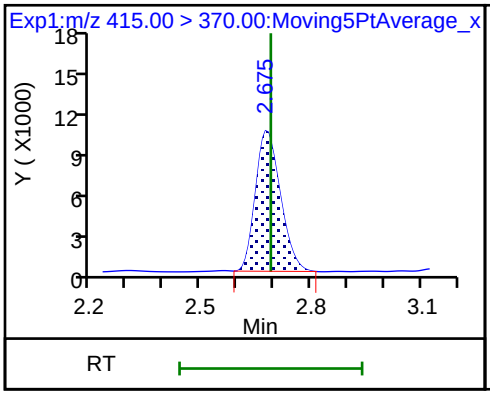
15 Perfluorooctanoic acid



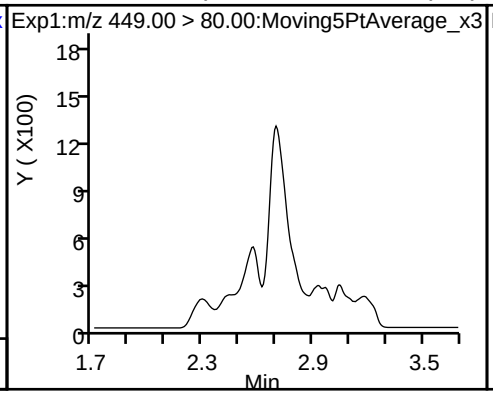
15 Perfluorooctanoic acid



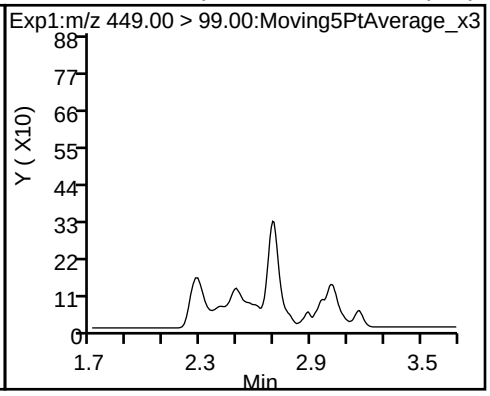
* 62 13C2-PFOA



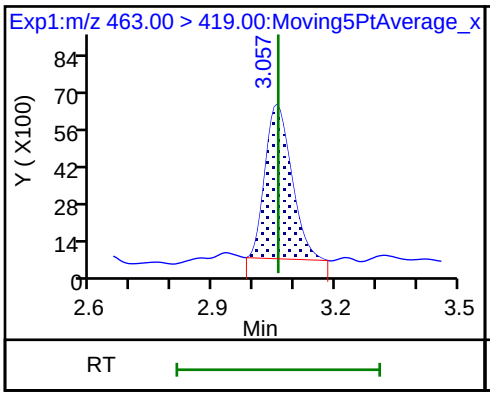
16 Perfluoroheptanesulfonic acid (ND)



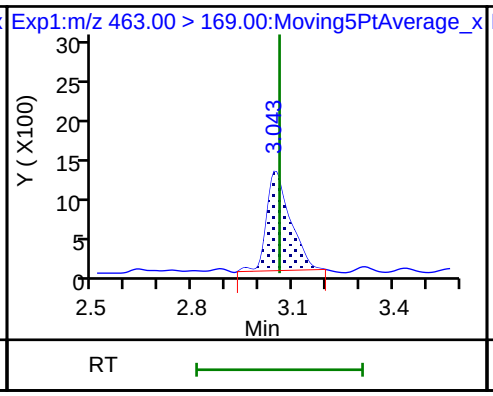
16 Perfluoroheptanesulfonic acid (ND)



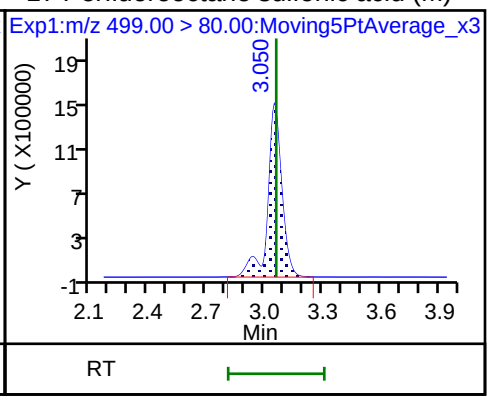
20 Perfluorononanoic acid



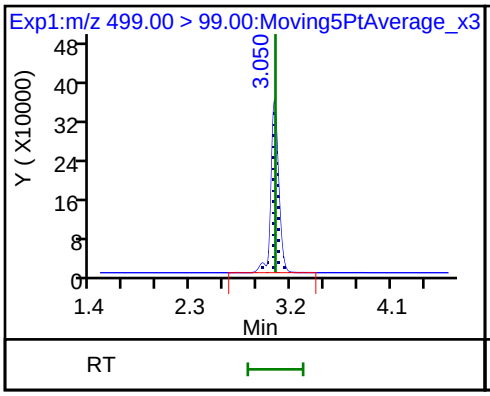
20 Perfluorononanoic acid



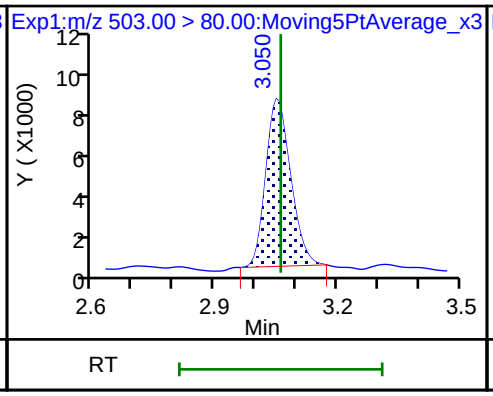
17 Perfluorooctane sulfonic acid (M)



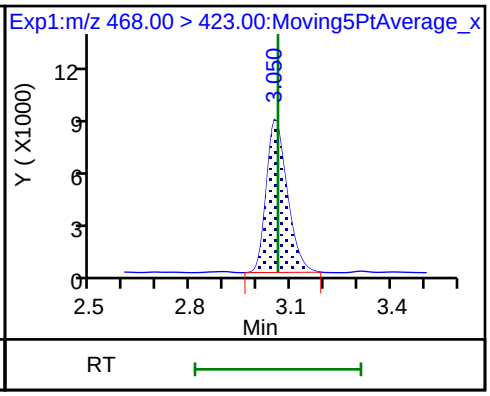
17 Perfluorooctane sulfonic acid



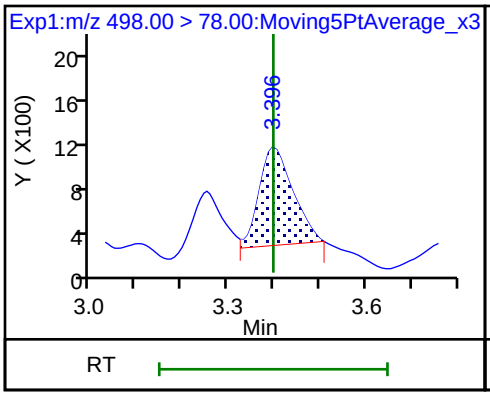
D 18 13C4 PFOS



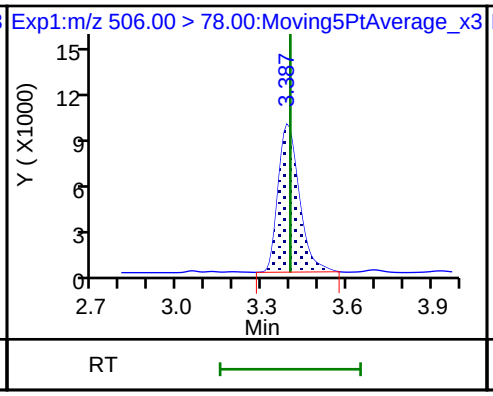
D 19 13C5 PFNA



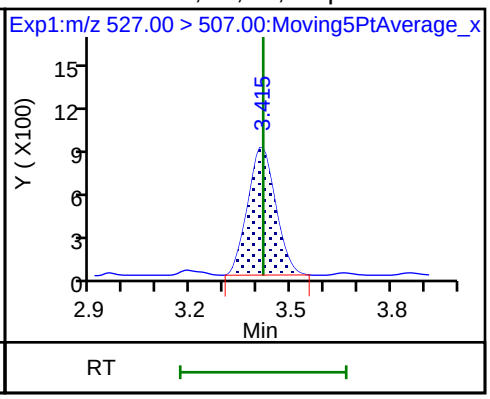
22 Perfluorooctane Sulfonamide



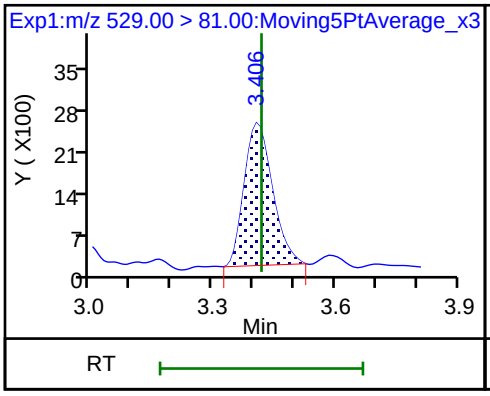
D 21 13C8 FOSA



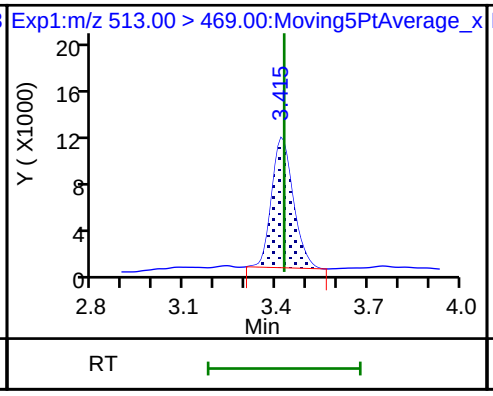
25 Sodium 1H,1H,2H,2H-perfluorodecane



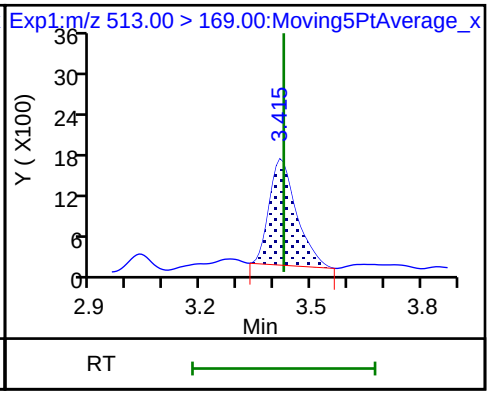
D 26 M2-8:2FTS



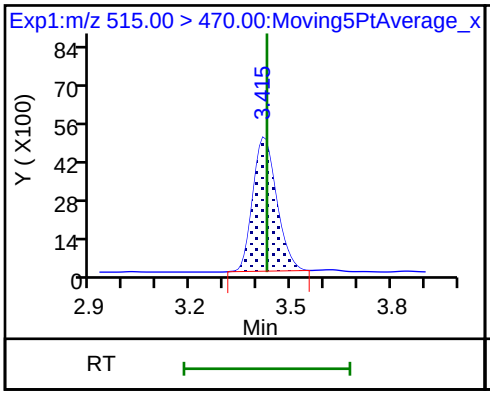
24 Perfluorodecanoic acid



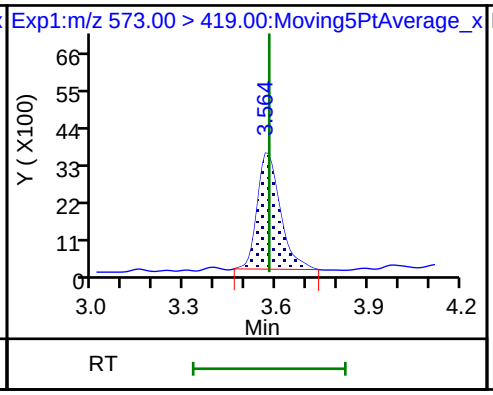
24 Perfluorodecanoic acid



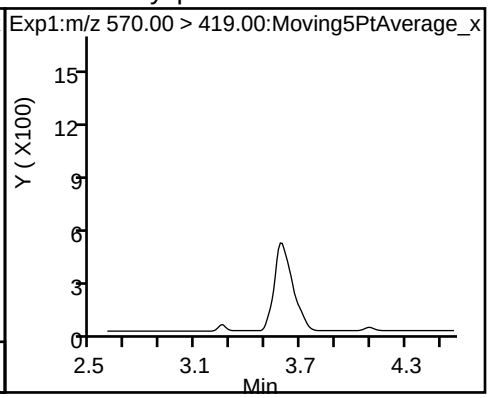
D 23 13C2 PFDA



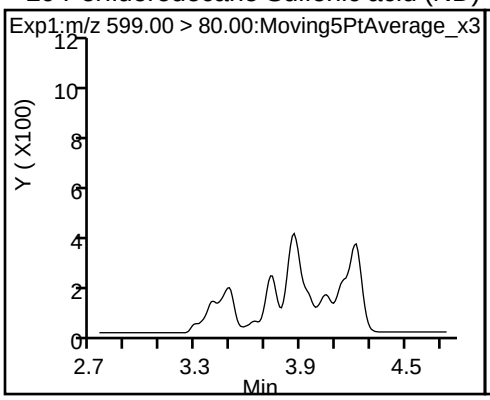
D 27 d3-NMeFOSAA



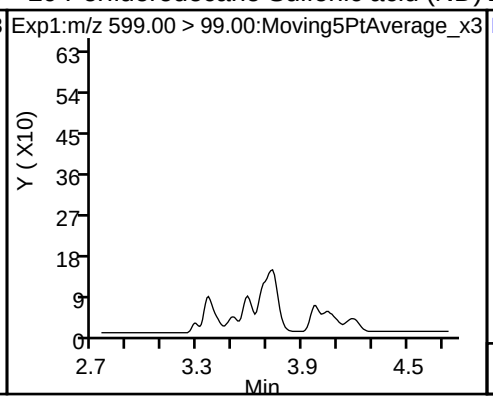
28 N-methyl perfluorooctane sulfonami (ND)



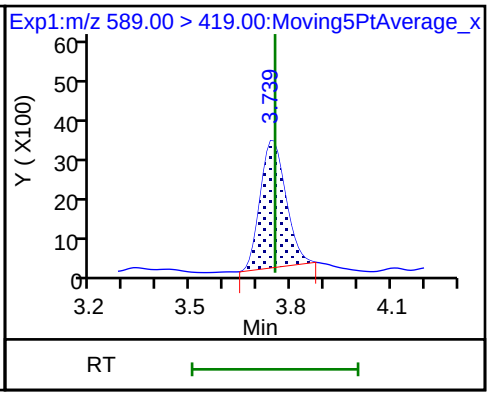
29 Perfluorodecane Sulfonic acid (ND)



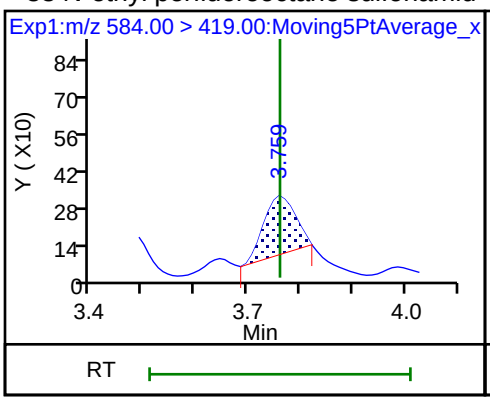
29 Perfluorodecane Sulfonic acid (ND)



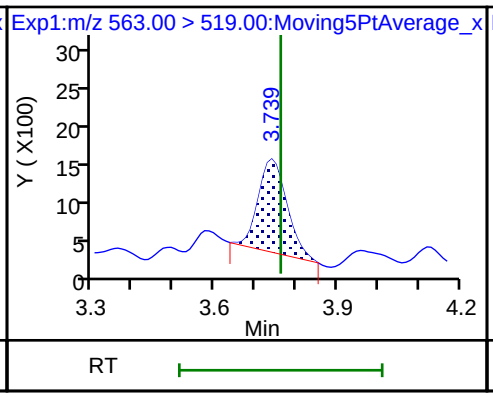
D 32 d5-NEtFOSAA



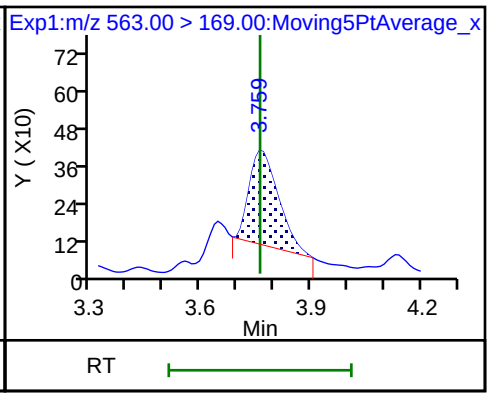
33 N-ethyl perfluorooctane sulfonamid



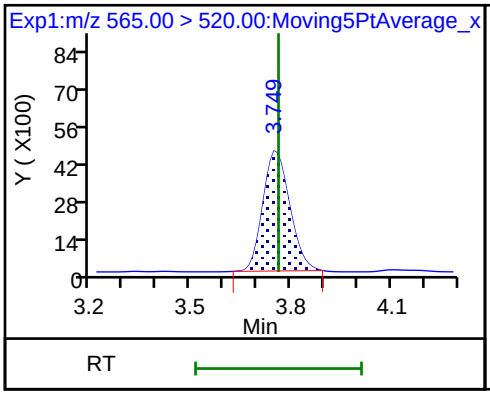
31 Perfluoroundecanoic acid



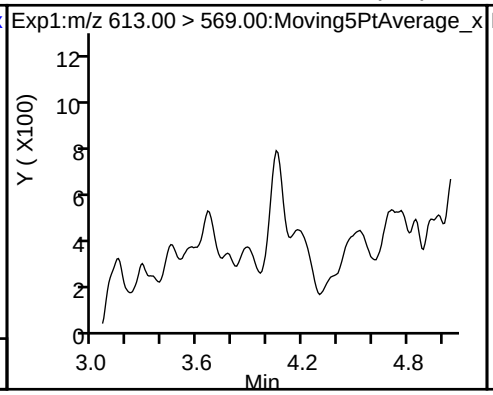
31 Perfluoroundecanoic acid



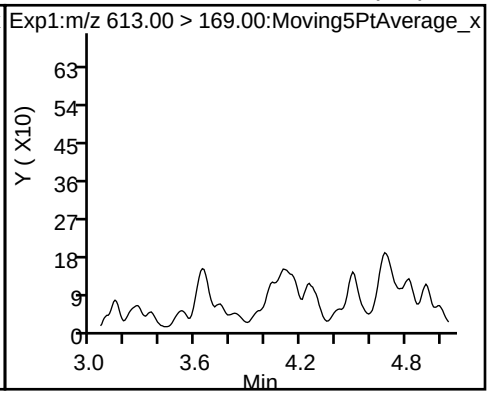
D 30 13C2 PFUnA



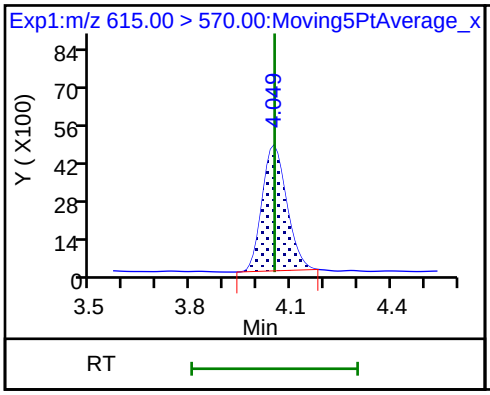
37 Perfluorododecanoic acid (ND)



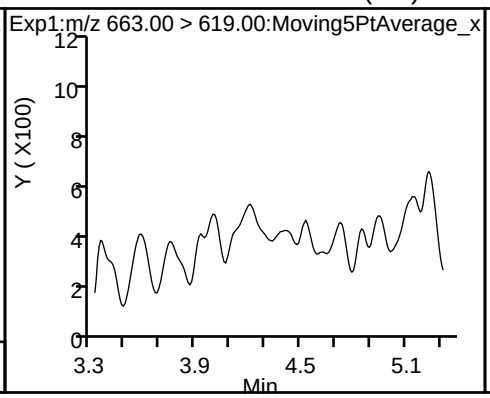
37 Perfluorododecanoic acid (ND)



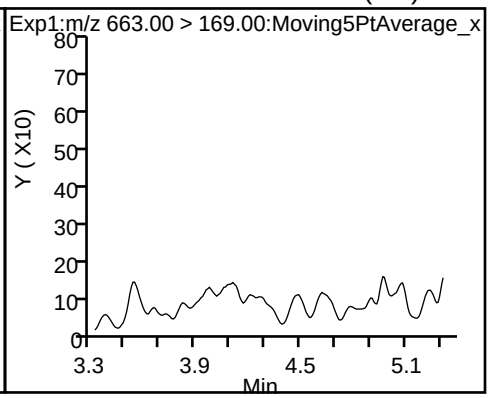
D 36 13C2 PFDoA



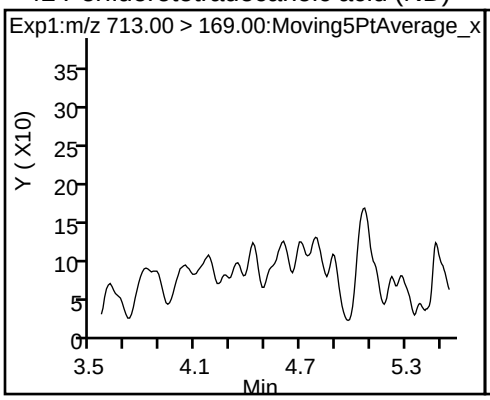
41 Perfluorotridecanoic acid (ND)



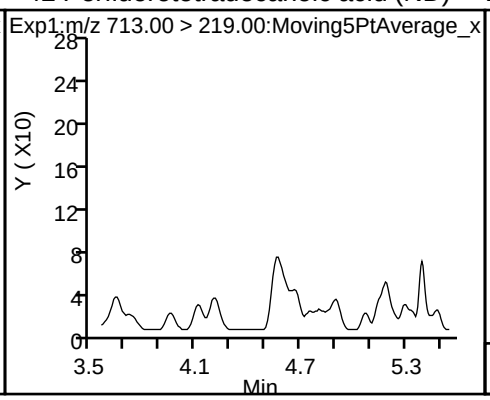
41 Perfluorotridecanoic acid (ND)



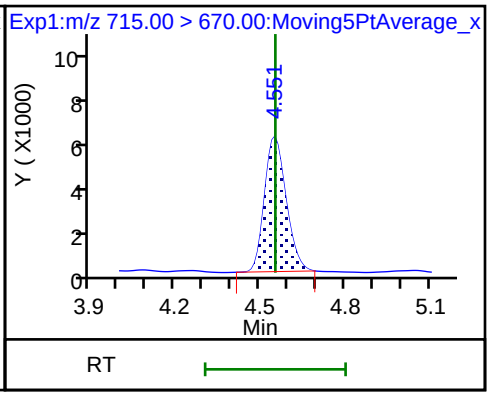
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

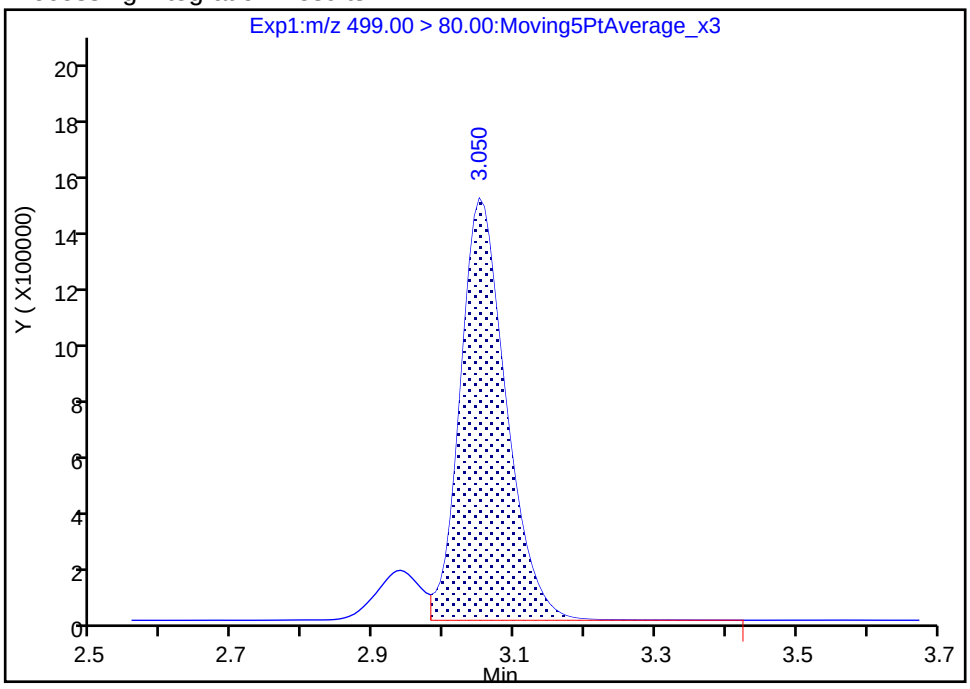
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_006.d				
Injection Date:	26-Apr-2018 19:46:41	Instrument ID:	A8_N		
Lims ID:	320-38063-A-2-C	Lab Sample ID:	320-38063-2		
Client ID:	SB012(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	100.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

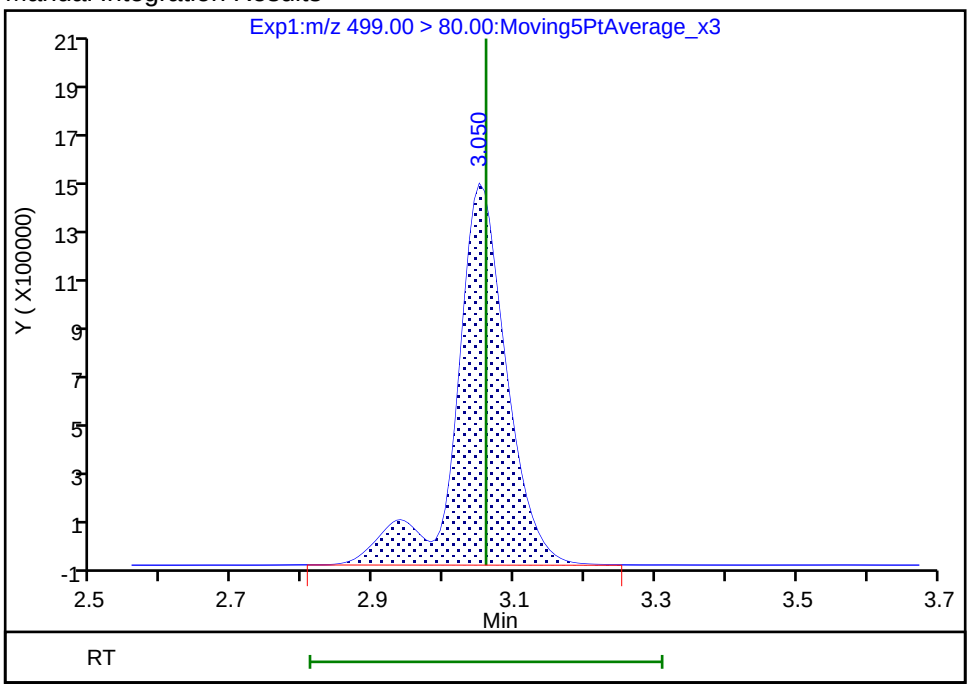
Processing Integration Results

RT: 3.05
Area: 6517282
Amount: 4.345560
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 7262751
Amount: 4.842620
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:42:40

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB008(2-4)-SPLP | Lab Sample ID: 320-38063-3

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_043.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:00

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 255.1(mL) | Date Analyzed: 04/26/2018 08:22

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	3.79	B	1.96	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	8.75		1.96	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	8.82		1.96	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.65		1.96	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	9.40		1.96	0.83
375-95-1	Perfluorononanoic acid (PFNA)	17.5		1.96	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	33.3		1.96	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	18.5		1.96	1.08
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.96	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.27	U	1.96	1.27
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.28	U	1.96	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.57	J	1.96	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	24.7	B	1.96	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.66		1.96	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.96	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	70.1		1.96	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.04	U	19.6	3.04
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.86	U	19.6	1.86
27619-97-2	6:2FTS	6.60	J B	19.6	1.96
39108-34-4	8:2FTS	87.5		19.6	1.96

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB008(2-4)-SPLP | Lab Sample ID: 320-38063-3

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_043.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:00

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 255.1(mL) | Date Analyzed: 04/26/2018 08:22

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	101		25-150
STL01892	13C4-PFHpA	101		25-150
STL00990	13C4 PFOA	103		25-150
STL00995	13C5 PFNA	88		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	93		25-150
STL02116	13C2-PFTeDA	90		25-150
STL02337	13C3-PFBS	100		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	87		25-150
STL01056	13C8 FOSA	95		25-150
STL02118	d3-NMeFOSAA	98		25-150
STL02117	d5-NEtFOSAA	104		25-150
STL02279	M2-6:2FTS	125		25-150
STL02280	M2-8:2FTS	106		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_043.d
Lims ID: 320-38063-A-3-C
Client ID: SB008(2-4)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 08:22:03 ALS Bottle#: 32 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-3-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 26-Apr-2018 14:23:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.432	1.432	0.0	1.000	5822062	2.35		94.1	37119	
2 Perfluorobutyric acid										
212.90 > 169.00	1.432	1.436	-0.004	1.000	208912	0.0966			54.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.697	1.697	0.0	0.555	3976127	2.49		99.7	34859	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.697	1.703	-0.006	1.000	423133	0.2232			104	
D 47 13C3-PFBS										
301.90 > 83.00	1.733	1.733	0.0	1.000	84850	2.32		99.7	464	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.733	1.739	-0.006	1.000	41797	0.0146			72.8	M
298.90 > 99.00	1.733	1.739	-0.006	1.000	18765		2.23(1.25-3.74)		41.6	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.982	0.004	1.000	407578	0.2250			186	
313.00 > 119.00	1.986	1.982	0.004	1.000	35033		11.63(5.03-15.10)		323	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.985	0.001	1.000	4456985	2.53		101	97157	
D 9 13C4-PFHpA										
367.00 > 322.00	2.313	2.313	0.0	1.000	4338646	2.53		101	69101	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.313	2.323	-0.009	1.000	250536	0.1442			195	
363.00 > 169.00	2.313	2.323	-0.009	1.000	96965		2.58(1.13-3.40)		418	
D 11 18O2 PFHxS										
403.00 > 84.00	2.339	2.326	0.013	1.000	4876501	2.30		97.3	97843	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.326	2.336	-0.010	0.994	1471618	0.6306			2552	
399.00 > 99.00	2.326	2.336	-0.010	0.994	478886		3.07(1.50-4.49)		1490	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.656	2.656	0.0	1.000	1094399	2.97		125	9731	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.656	2.661	-0.005	1.000	131164	0.1684			1391	
D 14 13C4 PFOA										
417.00 > 372.00	2.686	2.679	0.007	1.000	4406921	2.58		103	86371	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.686	2.683	0.003	1.000	488287	0.2397			292	
413.00 > 169.00	2.686	2.683	0.003	1.000	263787		1.85(0.84-2.52)		646	
* 62 13C2-PFOA										
415.00 > 370.00	2.686	2.683	0.003		4599015	2.50			90352	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.694	2.691	0.003	1.000	116266	0.0678			313	
449.00 > 99.00	2.686	2.691	-0.005	0.997	30883		3.76(1.94-5.82)		383	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.060	3.053	0.007	1.000	39584474	28.2			61899	E
499.00 > 99.00	3.060	3.053	0.007	1.000	10465608		3.78(2.31-6.93)		67482	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.056	0.004	1.000	3085859	2.08		87.0	14795	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.056	0.004	1.000	3236921	2.21		88.3	46361	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.060	0.0	1.000	603323	0.4469			1265	
463.00 > 169.00	3.060	3.060	0.0	1.000	150533		4.01(1.90-5.69)		2388	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.394	0.004	1.000	4410344	2.38		95.2	46517	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	3191578	1.79			80.4	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.408	0.008	1.000	1321929	2.23			42437	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.413	0.003	1.000	1121012	2.53		106	9158	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.417	0.009	1.000	1029606	0.8496			2648	
513.00 > 169.00	3.426	3.417	0.009	1.000	188836		5.45(2.36-7.09)		1551	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.422	0.004	1.000	2936893	2.38		95.3	82898	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.582	-0.007	1.000	1718895	2.46		98.4	19233	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.747	0.003	1.000	1788513	2.59		104	19217	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.751	-0.001	1.000	405976	0.4725			2185	
563.00 > 169.00	3.761	3.751	0.010	1.003	112121		3.62(2.12-6.36)		2908	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.757	-0.007	1.000	2541941	2.39		95.6	59558	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.046	0.004	1.000	2671736	2.33		93.1	39050	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.551	0.001	1.000	3280965	2.25		90.1	23373	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:44 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_043.d

Injection Date: 26-Apr-2018 08:22:03 Instrument ID: A8_N

Lims ID: 320-38063-A-3-C Lab Sample ID: 320-38063-3

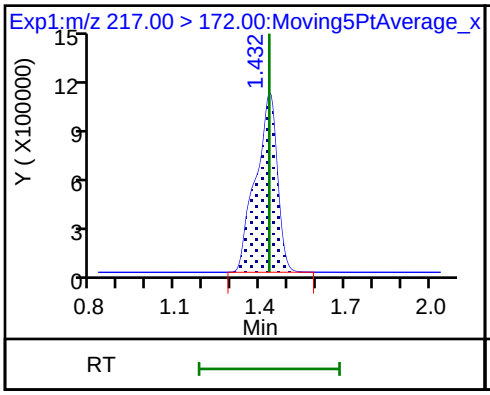
Client ID: SB008(2-4)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 32 Worklist Smp#: 8

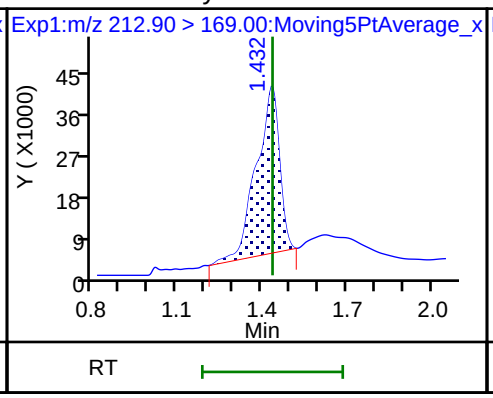
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

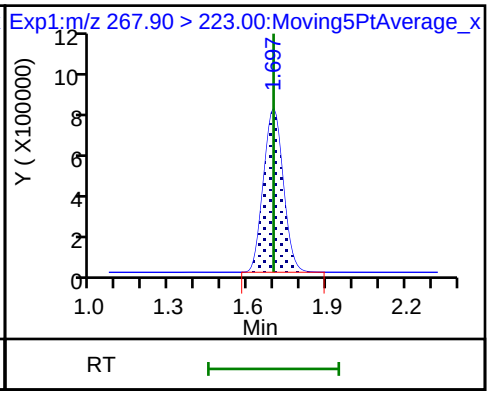
D 1 13C4 PFBA



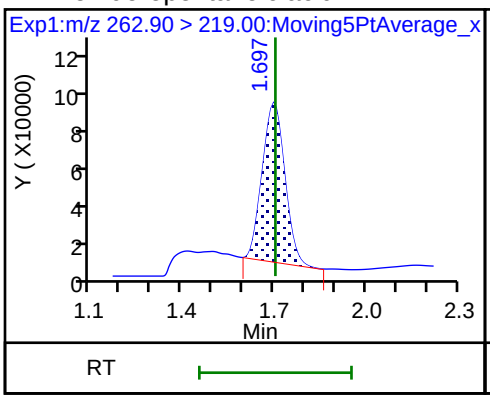
2 Perfluorobutyric acid



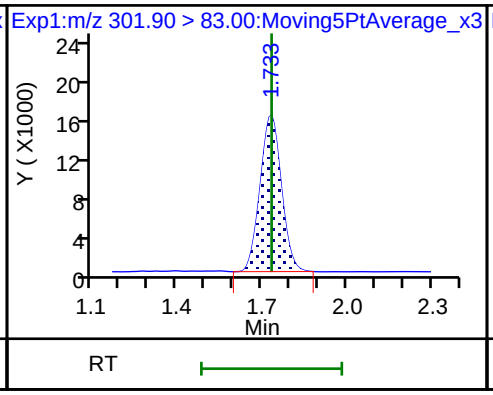
D 3 13C5-PFPeA



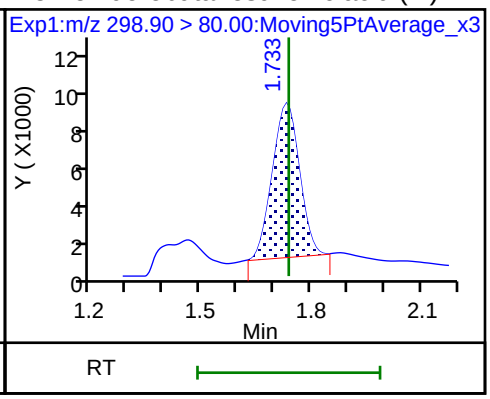
4 Perfluoropentanoic acid



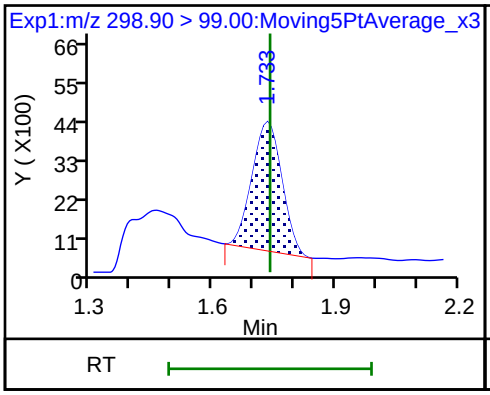
D 47 13C3-PFBS



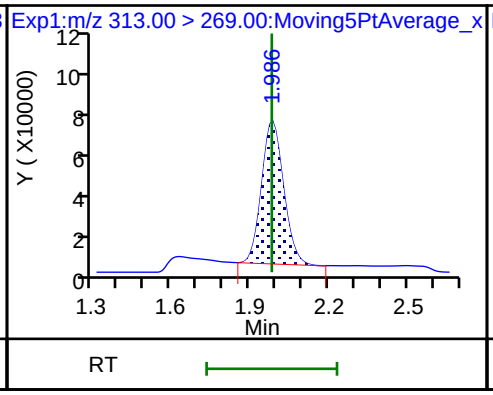
5 Perfluorobutanesulfonic acid (M)



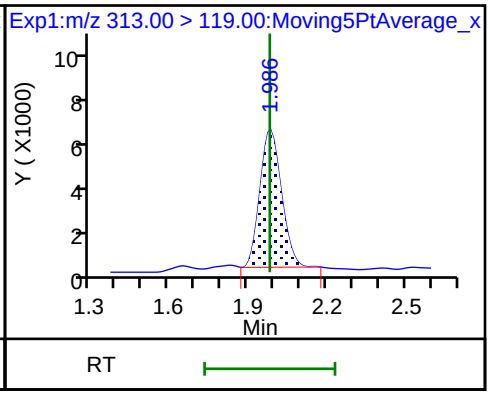
5 Perfluorobutanesulfonic acid



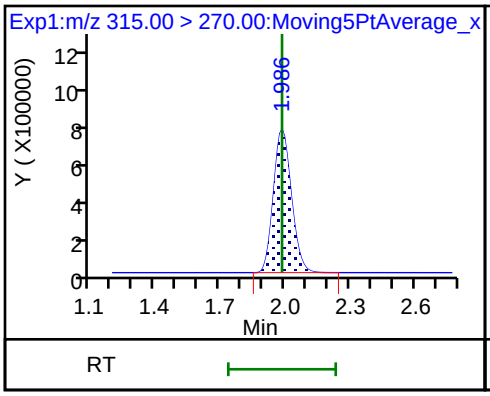
6 Perfluorohexanoic acid



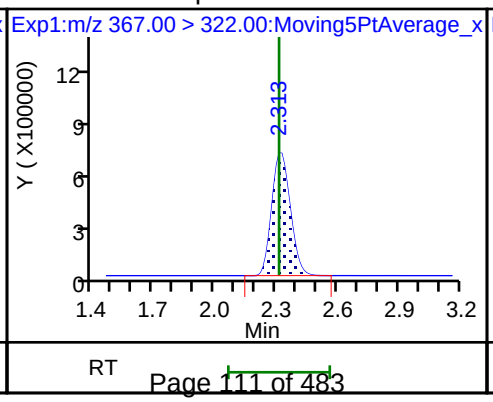
6 Perfluorohexanoic acid



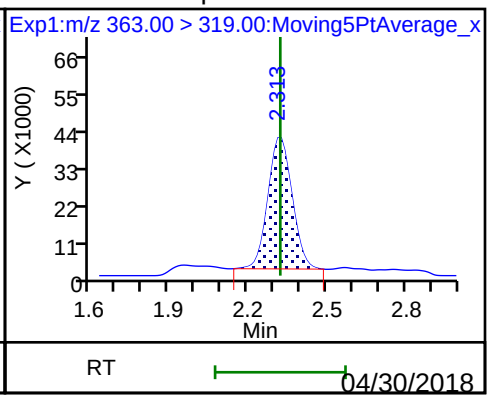
D 7 13C2 PFHxA



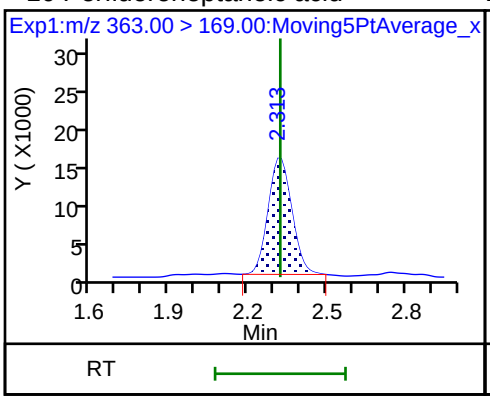
D 9 13C4-PFHpA



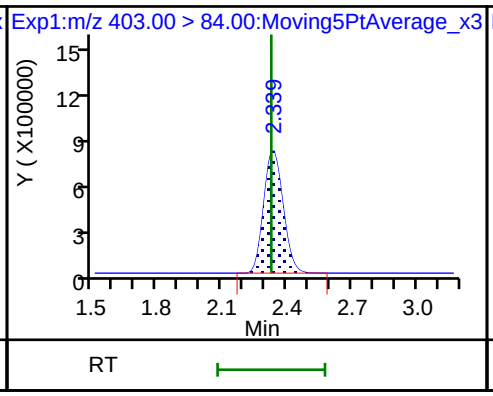
10 Perfluoroheptanoic acid



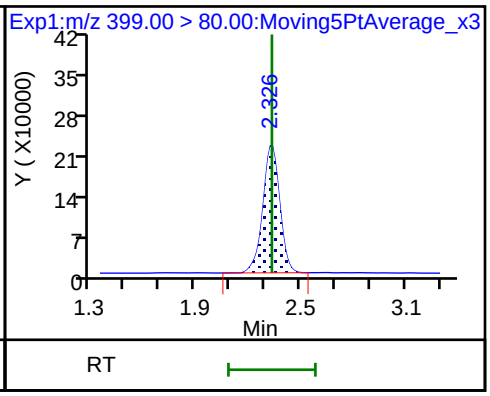
10 Perfluoroheptanoic acid



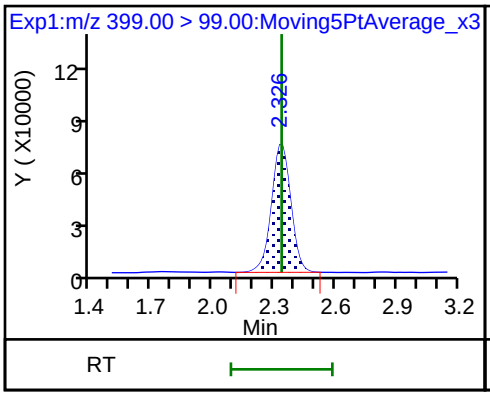
D 11 18O2 PFHxS



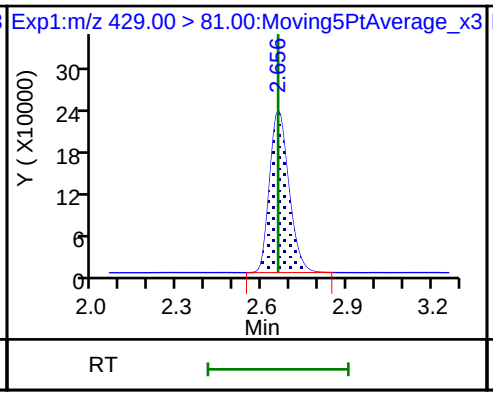
8 Perfluorohexanesulfonic acid



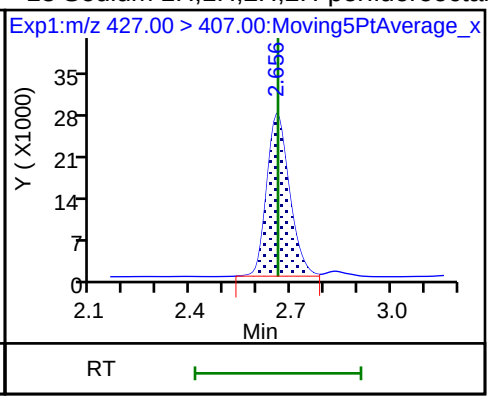
8 Perfluorohexanesulfonic acid



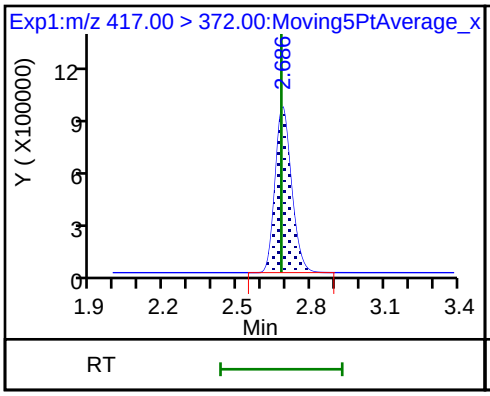
D 12 M2-6:2FTS



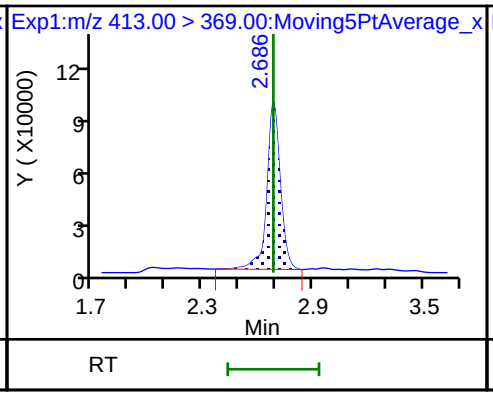
13 Sodium 1H,1H,2H,2H-perfluorooctane



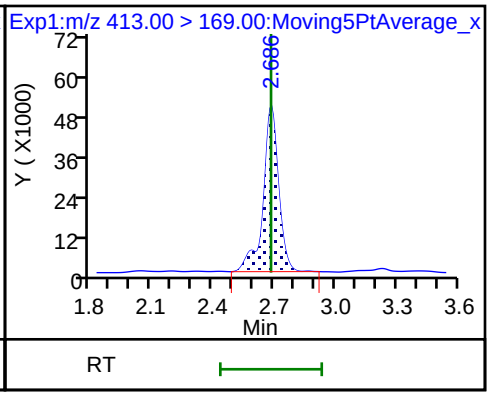
D 14 13C4 PFOA



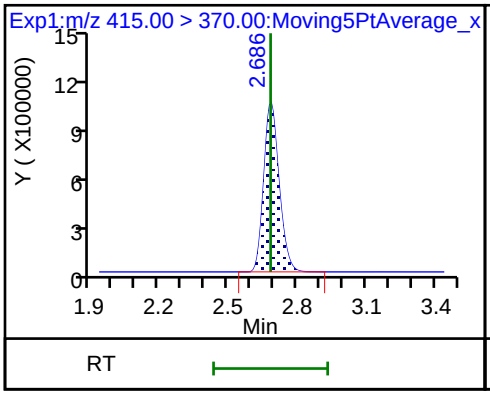
15 Perfluorooctanoic acid



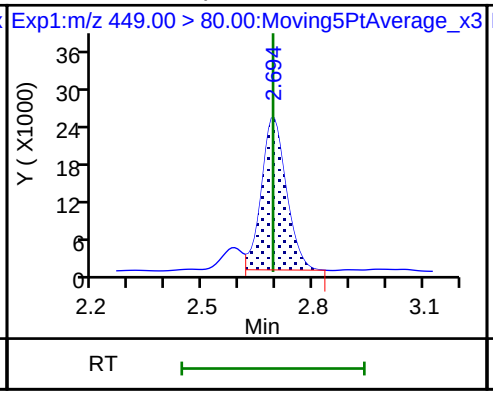
15 Perfluorooctanoic acid



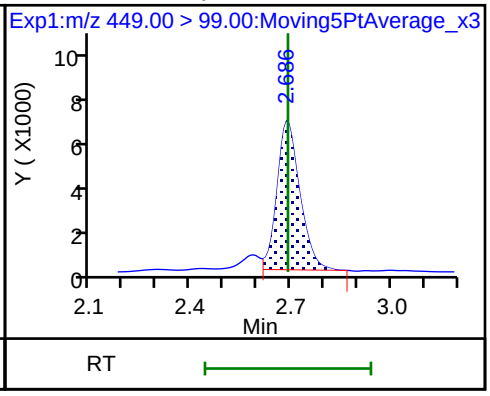
* 62 13C2-PFOA



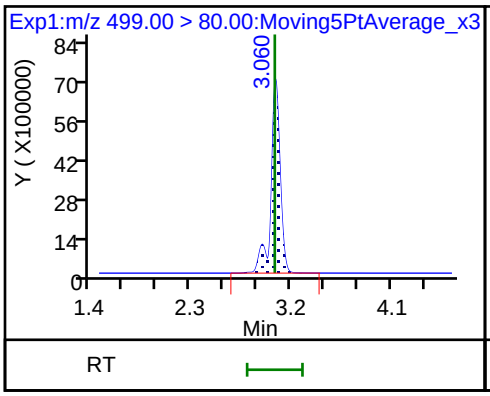
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



17 Perfluorooctane sulfonic acid



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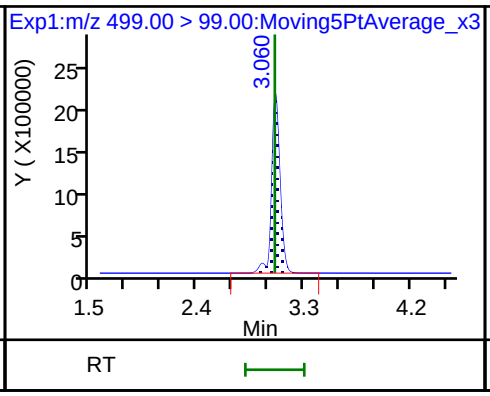
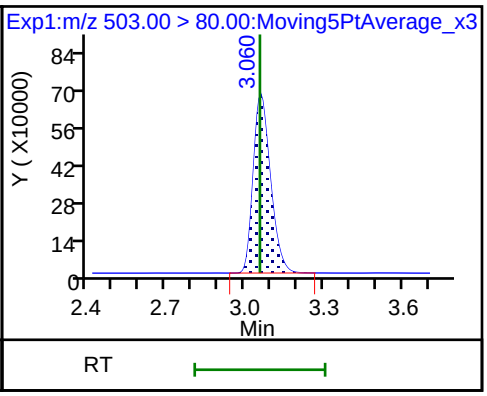
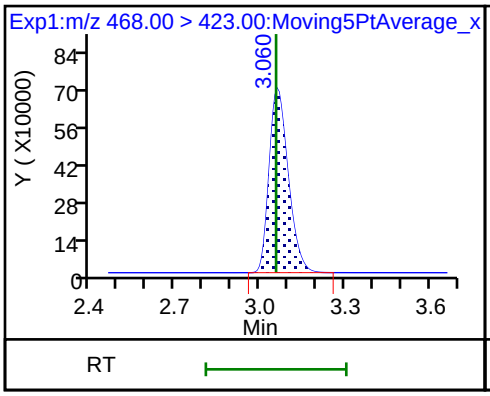


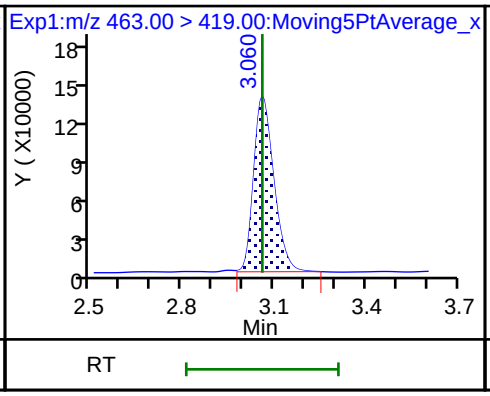
D 18 13C4 PFOS



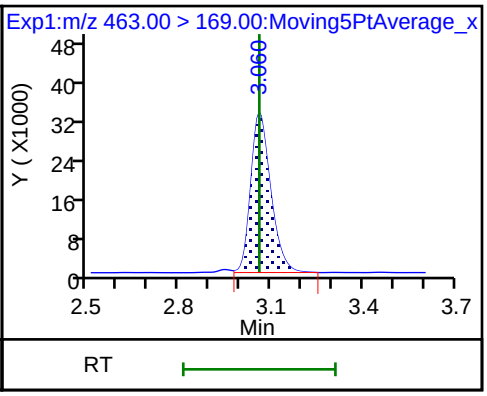
D 19 13C5 PFNA



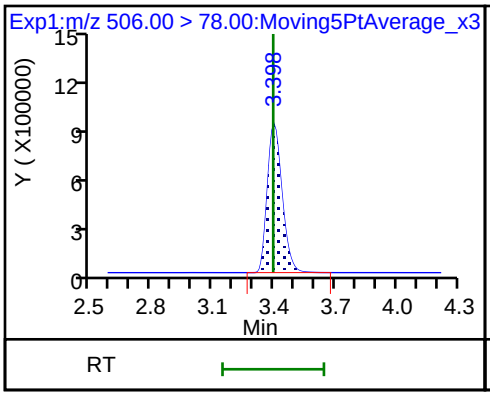
20 Perfluorononanoic acid



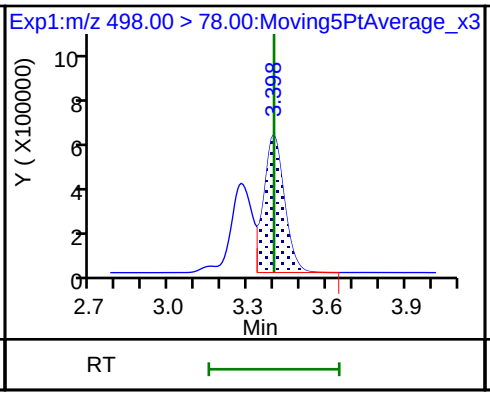
20 Perfluorononanoic acid



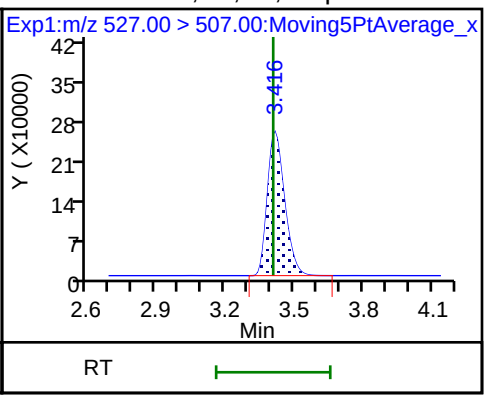
D 21 13C8 FOSA



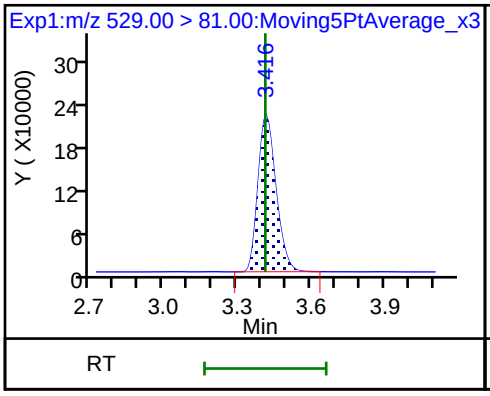
22 Perfluorooctane Sulfonamide



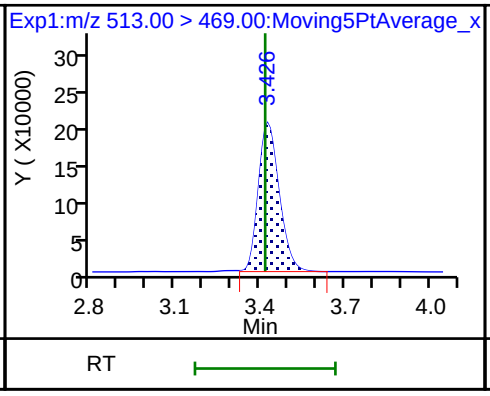
25 Sodium 1H,1H,2H,2H-perfluorodecane



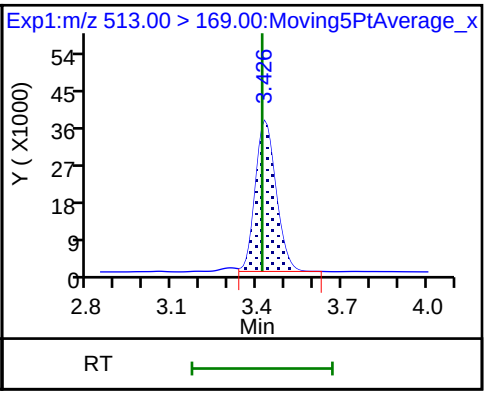
D 26 M2-8:2FTS



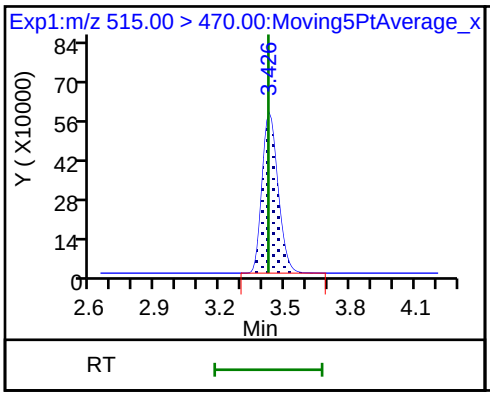
24 Perfluorodecanoic acid



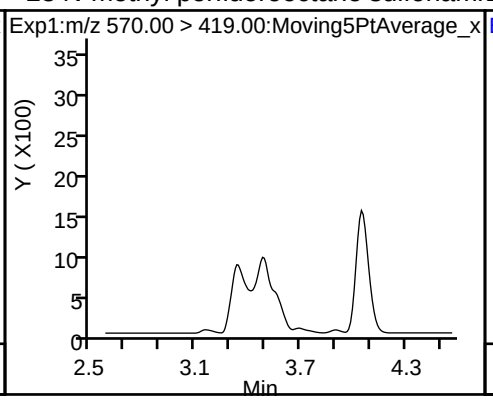
24 Perfluorodecanoic acid



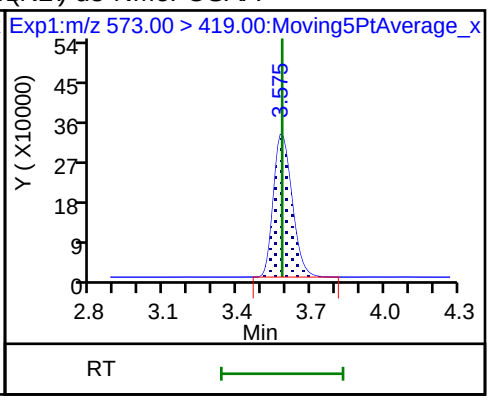
D 23 13C2 PFDA



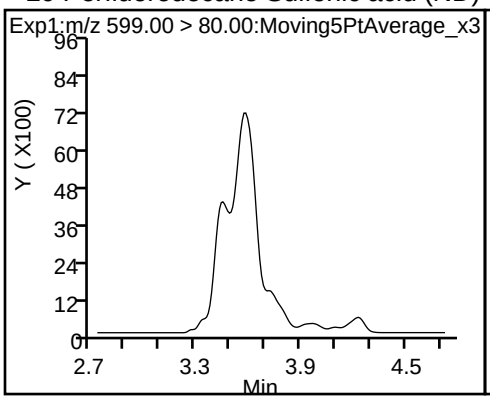
28 N-methyl perfluorooctane sulfonamid (ND)



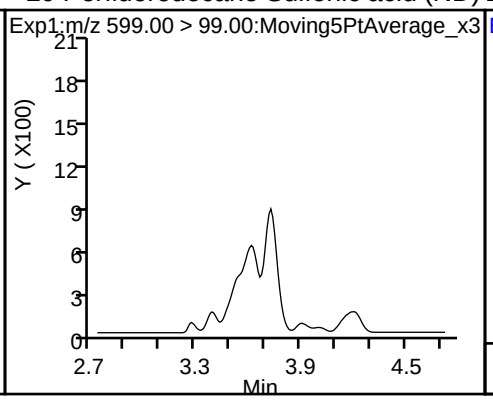
D 27 d3-NMeFOSAA



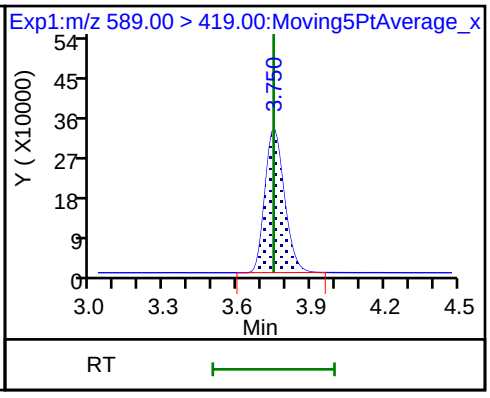
29 Perfluorodecane Sulfonic acid (ND)



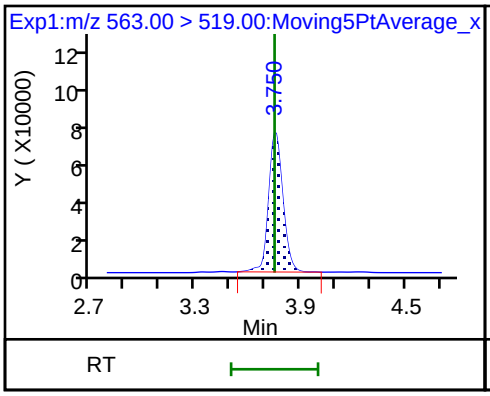
29 Perfluorodecane Sulfonic acid (ND)



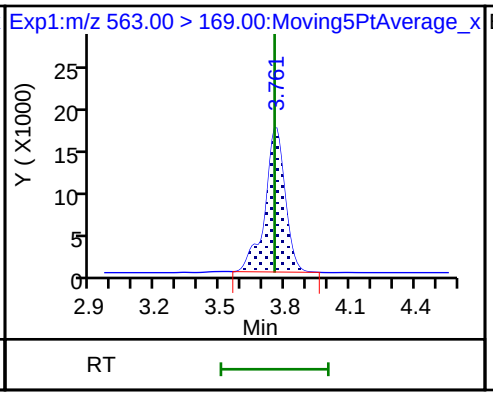
D 32 d5-NEtFOSAA



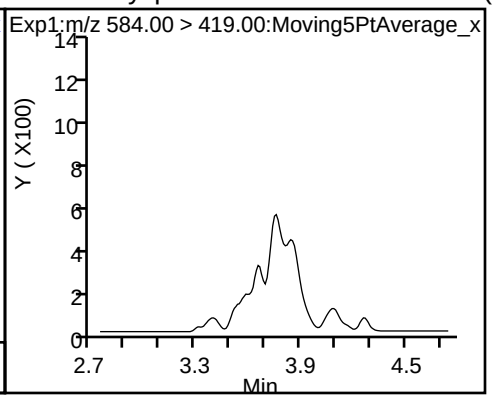
31 Perfluoroundecanoic acid



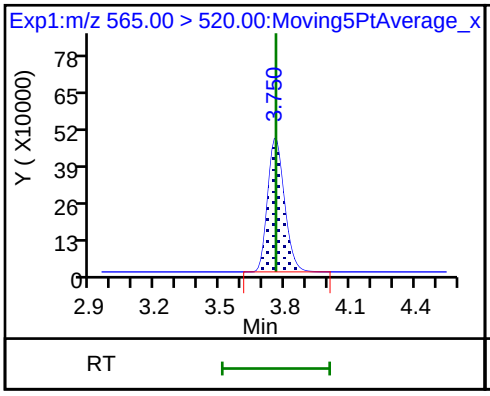
31 Perfluoroundecanoic acid



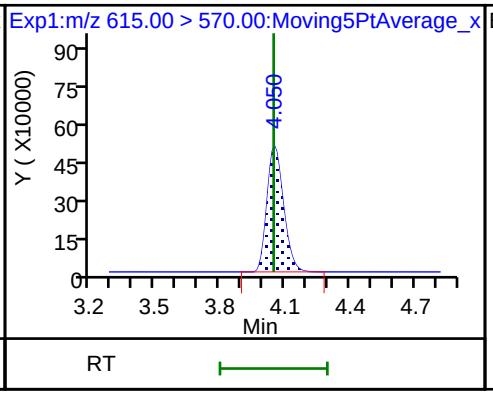
33 N-ethyl perfluorooctane sulfonamid (ND)



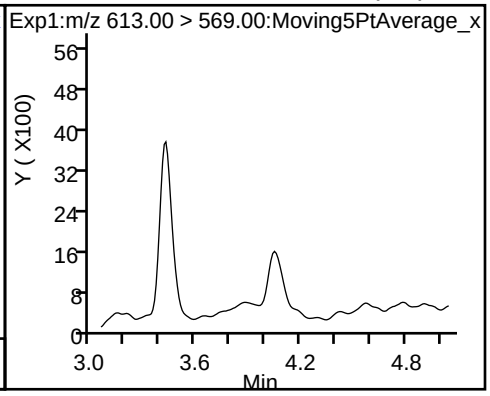
D 30 13C2 PFUnA



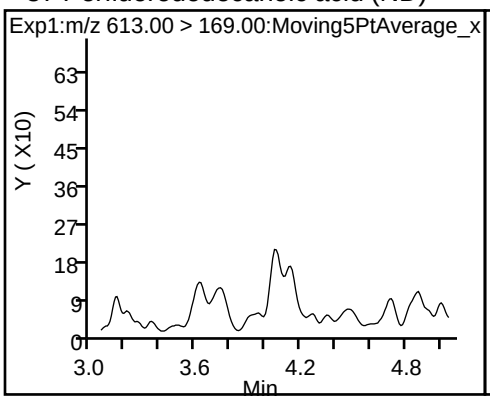
D 36 13C2 PFDoA



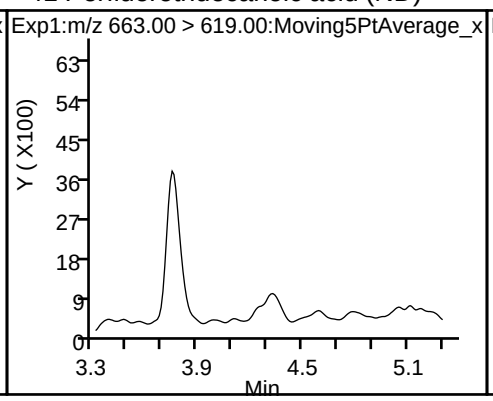
37 Perfluorododecanoic acid (ND)



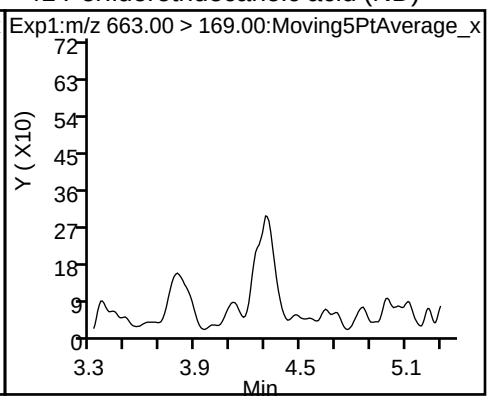
37 Perfluorododecanoic acid (ND)



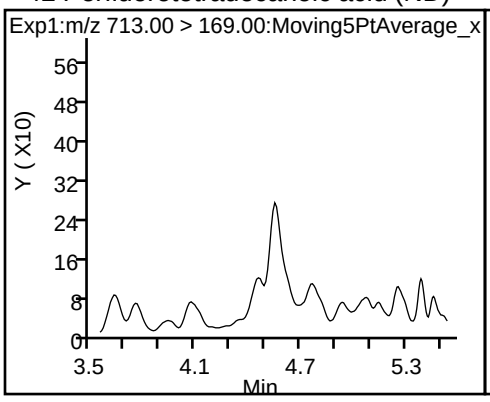
41 Perfluorotridecanoic acid (ND)



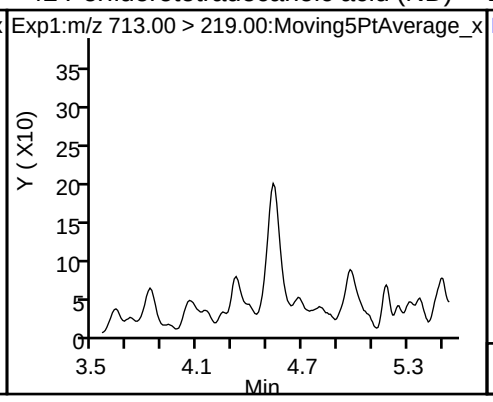
41 Perfluorotridecanoic acid (ND)



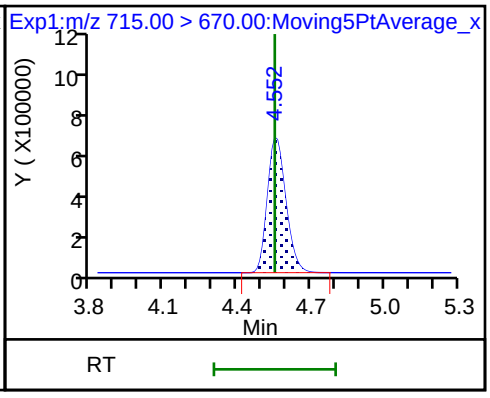
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

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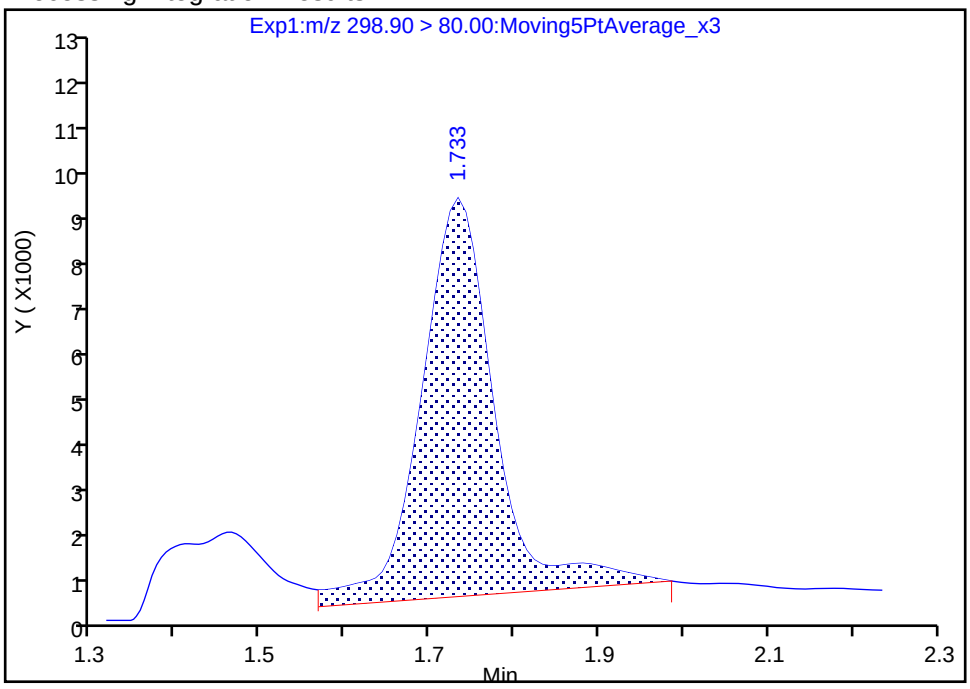
Lims ID:	320-38063-A-3-C	Lab Sample ID:	320-38063-3		
Client ID:	SB008(2-4)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	32	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

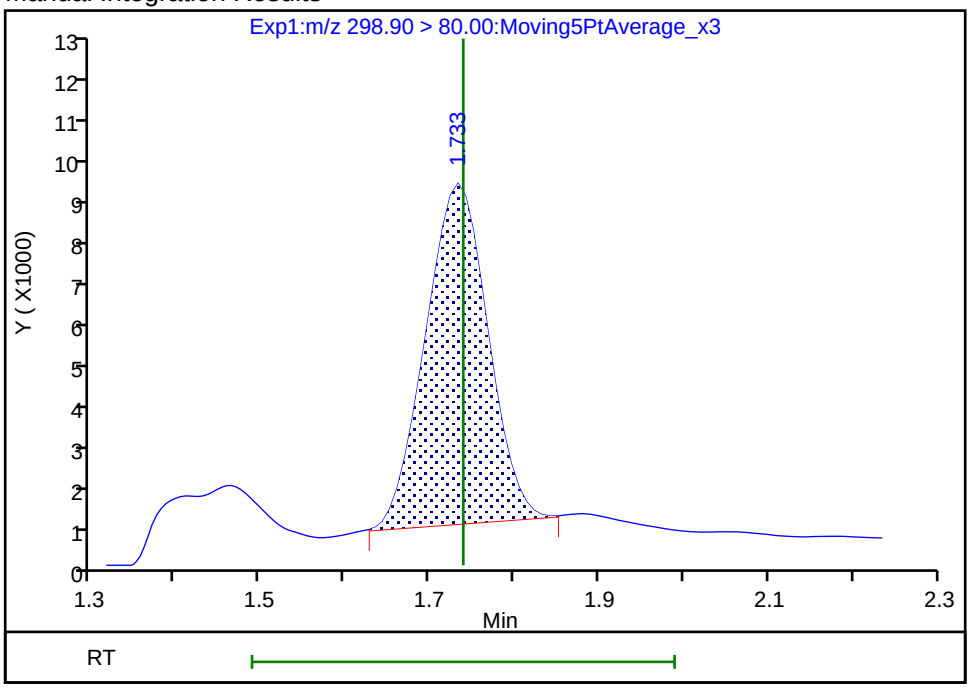
Processing Integration Results

RT: 1.73
Area: 52014
Amount: 0.018206
Amount Units: ng/ml



Manual Integration Results

RT: 1.73
Area: 41797
Amount: 0.014630
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:17:24

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB008(2-4)-SPLP DL Lab Sample ID: 320-38063-3 DL

Matrix: Solid (SPLP East) Lab File ID: 2018.04.26LLB_009.d

Analysis Method: 537 (modified) Date Collected: 04/10/2018 10:00

Extraction Method: 3535 Date Extracted: 04/23/2018 10:11

Sample wt/vol: 255.1(mL) Date Analyzed: 04/26/2018 20:10

Con. Extract Vol.: 10.0(mL) Dilution Factor: 10

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1240	D	19.6	5.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	88		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_009.d
Lims ID: 320-38063-A-3-C
Client ID: SB008(2-4)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 20:10:15 ALS Bottle#: 3 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38063-a-3-c 10X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:46:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.442	-0.001	1.000	26809	0.0105			10.9	
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.442	-0.001	1.000	687613	0.2444		97.8	6349	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.706	1.703	0.003	1.000	47714	0.0224			29.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.706	1.703	0.003	0.558	446114	0.2460		98.4	7818	
D 47 13C3-PFBS										
301.90 > 83.00	1.742	1.739	0.003	1.000	8800	0.2115		91.0	86.2	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.994	-0.008	1.000	489492	0.2441		97.6	10529	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.327	2.321	0.005	1.000	31969	0.0169			37.6	
363.00 > 169.00	2.327	2.321	0.005	1.000	10401		3.07(1.13-3.40)		58.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.327	2.322	0.004	1.000	473365	0.2425		97.0	12497	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.340	2.334	0.006	1.000	160114	0.0619			382	
399.00 > 99.00	2.340	2.334	0.006	1.000	51799		3.09(1.50-4.49)		380	
D 11 18O2 PFHxS										
403.00 > 84.00	2.340	2.335	0.005	1.000	540361	0.2243		94.8	17258	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.658	2.660	-0.002	0.997	15648	0.0211			248	
D 12 M2-6:2FTS										
429.00 > 81.00	2.665	2.661	0.004	1.000	104125	0.2490		105	1360	
D 14 13C4 PFOA										
417.00 > 372.00	2.688	2.683	0.005	1.000	471940	0.2433		97.3	14275	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.690	-0.002	1.000	49482	0.0227			32.2	
413.00 > 169.00	2.688	2.690	-0.002	1.000	32094		1.54(0.84-2.52)		103	
* 62 13C2-PFOA										
415.00 > 370.00	2.688	2.690	-0.002		522812	0.2500			16119	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.695	2.698	-0.003	1.000	12845	0.006494			70.0	
449.00 > 99.00	2.688	2.698	-0.010	0.997	4579		2.81(1.94-5.82)		85.1	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.059	0.001	1.000	81766	0.0507			259	
463.00 > 169.00	3.060	3.059	0.001	1.000	19564		4.18(1.90-5.69)		496	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.060	3.059	0.001	1.000	5142889	3.17			551	
499.00 > 99.00	3.060	3.059	0.001	1.000	1290282		3.99(2.31-6.93)		17923	
D 18 13C4 PFOS										
503.00 > 80.00	3.060	3.061	-0.001	1.000	356043	0.2111		88.3	2399	
D 19 13C5 PFNA										
468.00 > 423.00	3.060	3.061	-0.001	1.000	386545	0.2318		92.7	17021	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	352446	0.1816			75.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.400	-0.002	1.000	479795	0.2278		91.1	8663	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.416	0.0	1.000	133862	0.2308			8774	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.418	-0.002	1.000	109787	0.2180		91.0	946	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.426	0.0	1.000	126723	0.0943			554	
513.00 > 169.00	3.426	3.426	0.0	1.000	22161		5.72(2.36-7.09)		304	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.427	-0.001	1.000	325558	0.2323		92.9	9134	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.576	-0.001	1.000	176262	0.2219		88.8	2681	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.752	-0.002	1.000	198170	0.2528		101	2977	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.000	44932	0.0480			235	
563.00 > 169.00	3.761	3.761	0.0	1.000	11229		4.00(2.12-6.36)		198	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.762	-0.001	1.000	276643	0.2288		91.5	10174	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.051	-0.001	1.000	284835	0.2182		87.3	5346	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.553	-0.001	1.000	346308	0.2092		83.7	2962	

Report Date: 27-Apr-2018 15:54:22 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_009.d

Injection Date: 26-Apr-2018 20:10:15 Instrument ID: A8_N

Lims ID: 320-38063-A-3-C Lab Sample ID: 320-38063-3

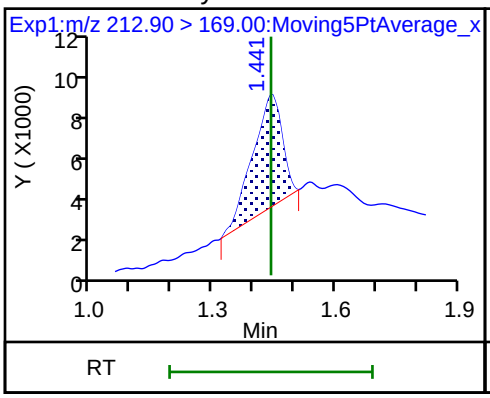
Client ID: SB008(2-4)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 7

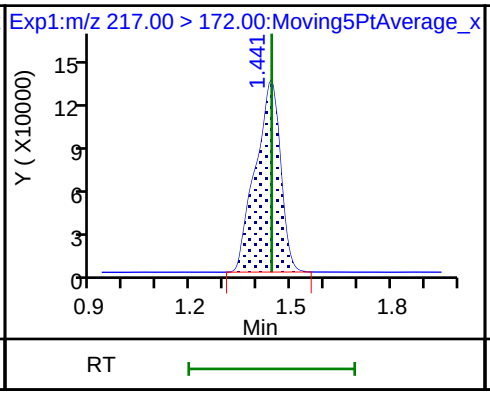
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

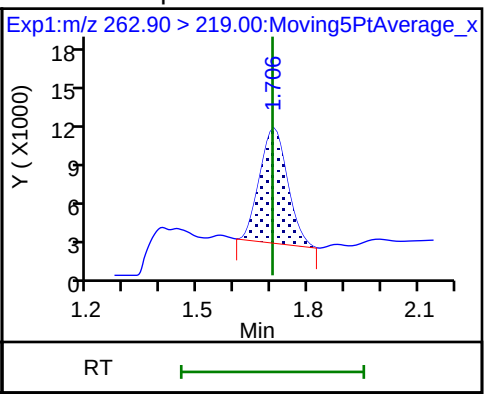
2 Perfluorobutyric acid



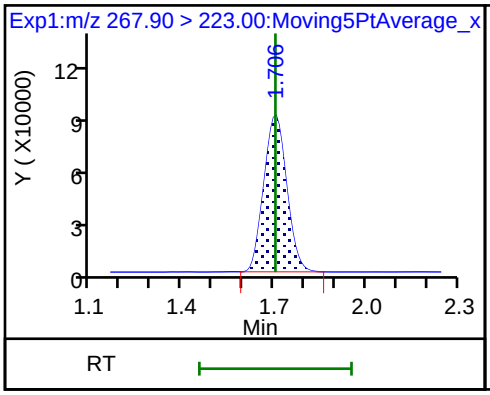
D 1 13C4 PFBA



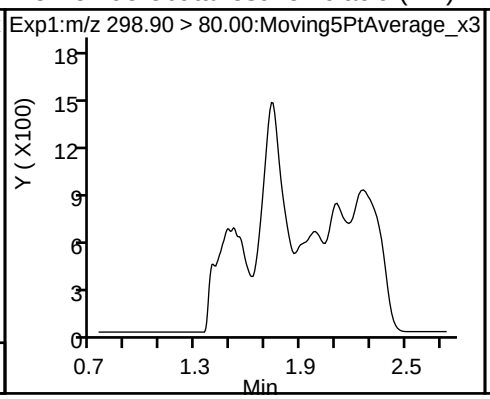
4 Perfluoropentanoic acid



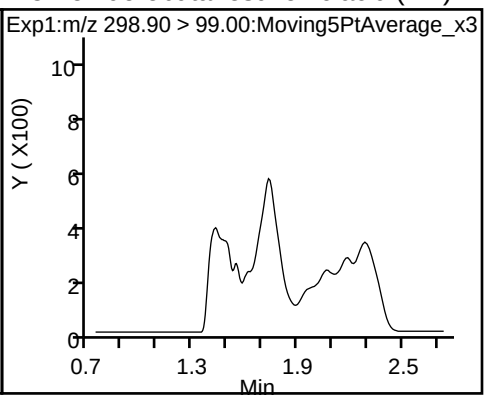
D 3 13C5-PFPeA



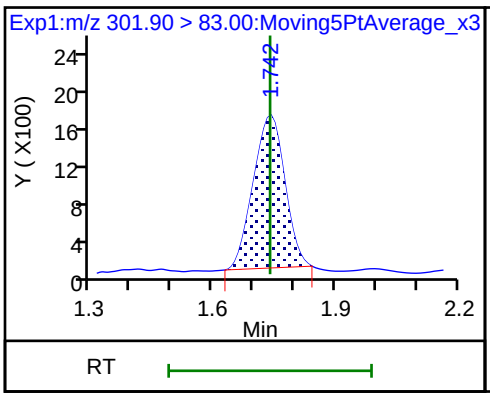
5 Perfluorobutanesulfonic acid (ND)



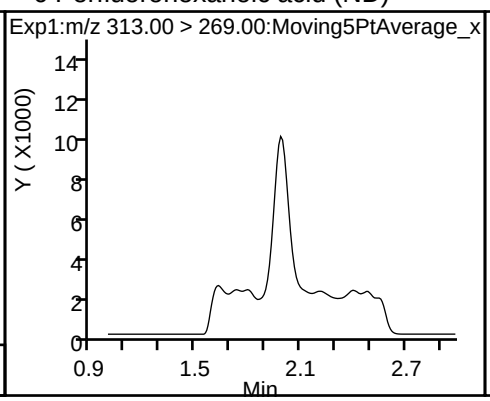
5 Perfluorobutanesulfonic acid (ND)



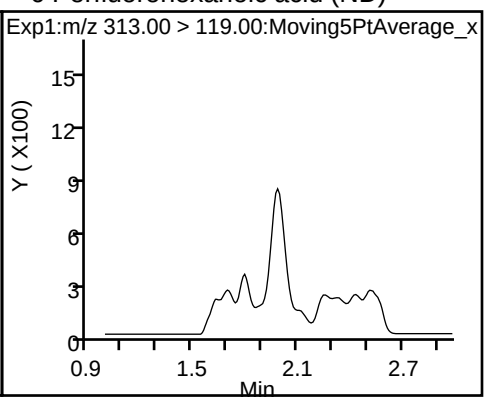
D 47 13C3-PFBS



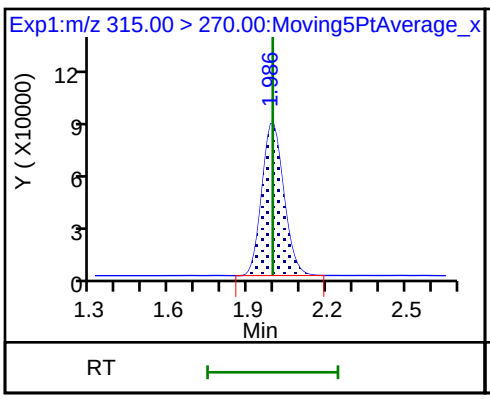
6 Perfluorohexanoic acid (ND)



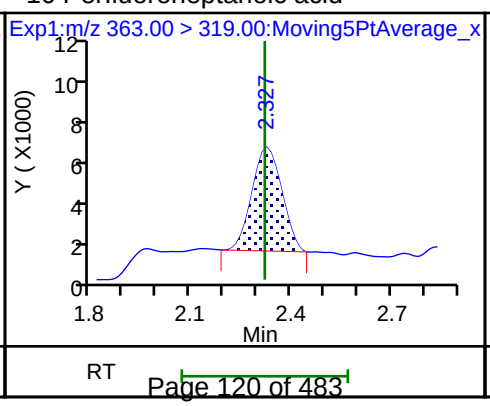
6 Perfluorohexanoic acid (ND)



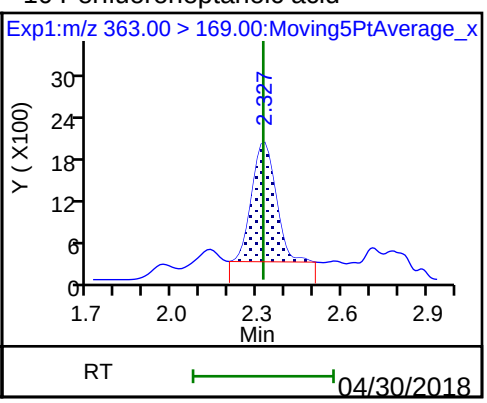
D 7 13C2 PFHxA



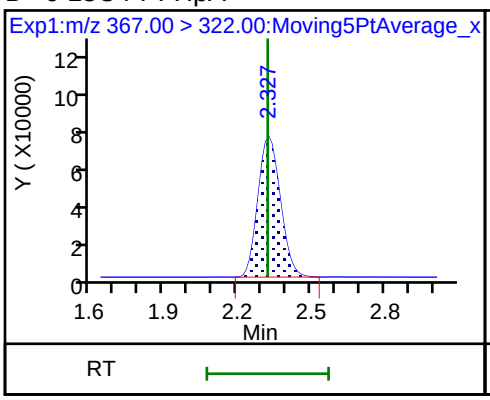
10 Perfluoroheptanoic acid



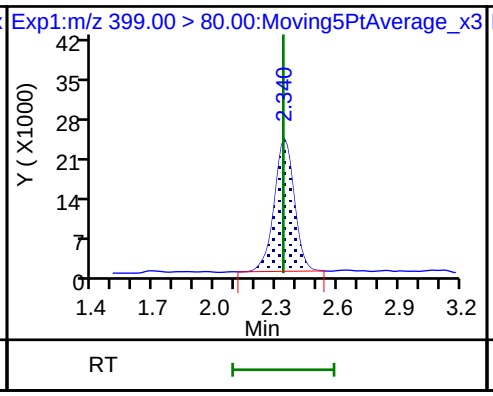
10 Perfluoroheptanoic acid



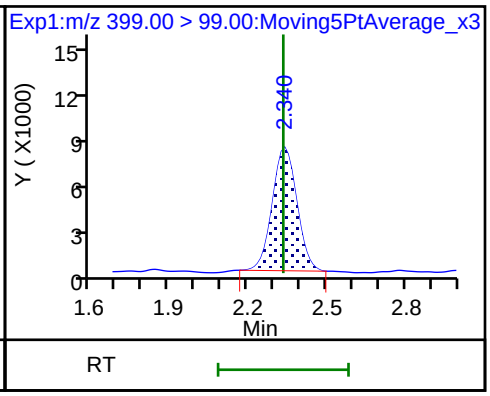
D 9 13C4-PFHpA



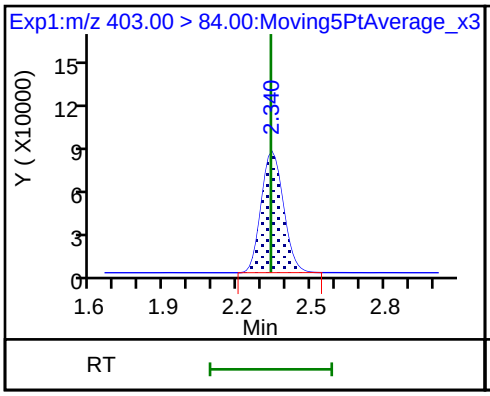
8 Perfluorohexanesulfonic acid



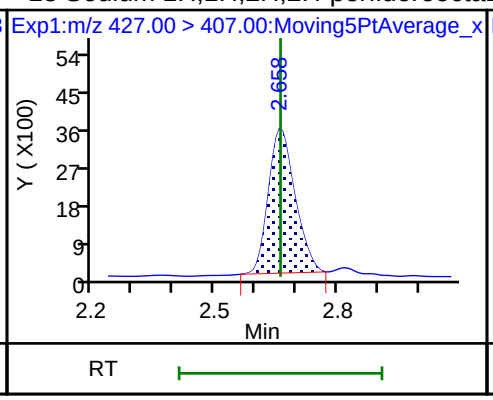
8 Perfluorohexanesulfonic acid



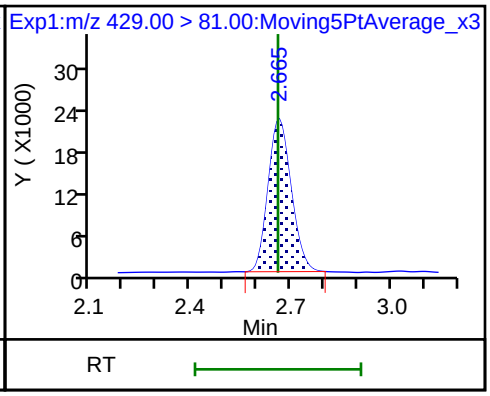
D 11 18O2 PFHxS



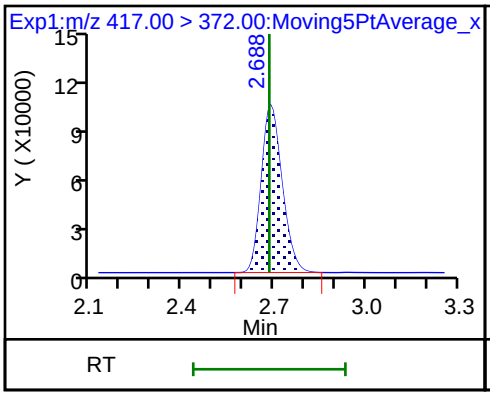
13 Sodium 1H,1H,2H,2H-perfluorooctane



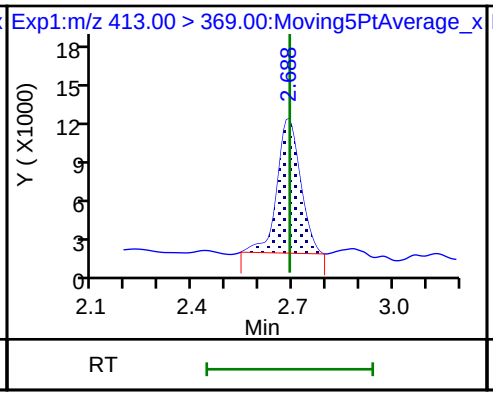
D 12 M2-6:2FTS



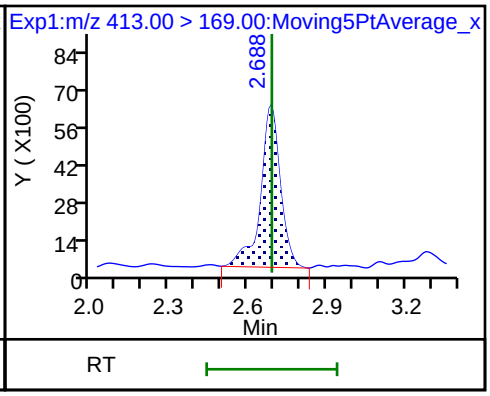
D 14 13C4 PFOA



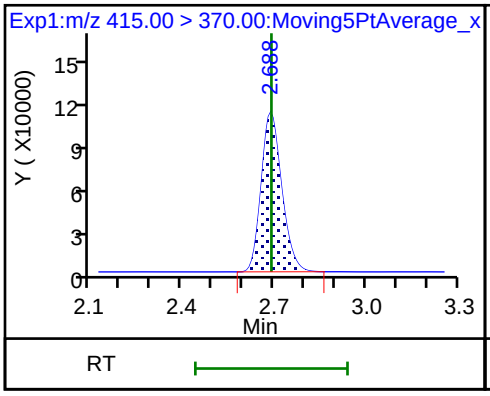
15 Perfluorooctanoic acid



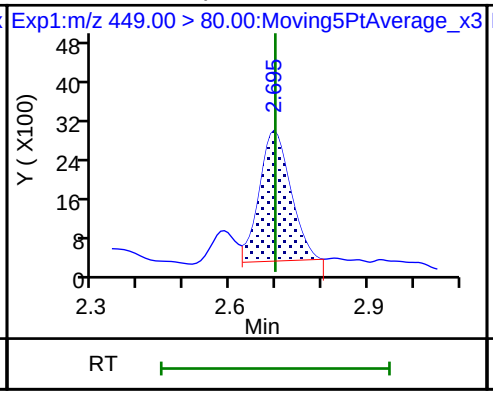
15 Perfluorooctanoic acid



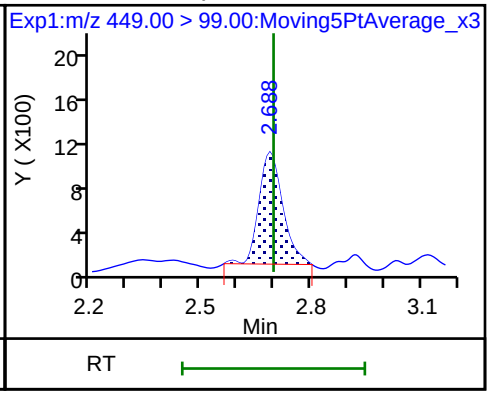
* 62 13C2-PFOA



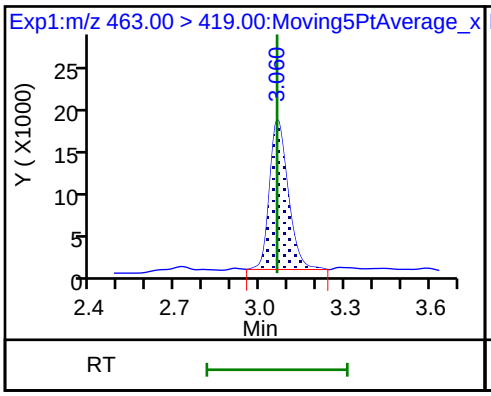
16 Perfluoroheptanesulfonic acid



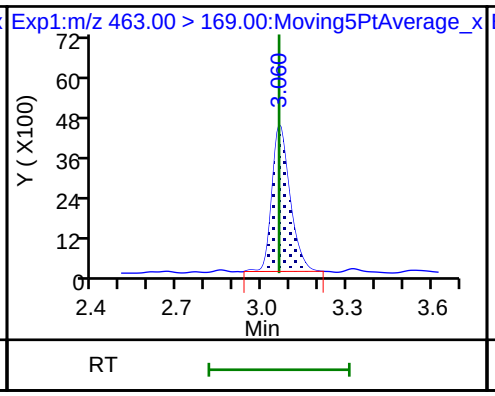
16 Perfluoroheptanesulfonic acid



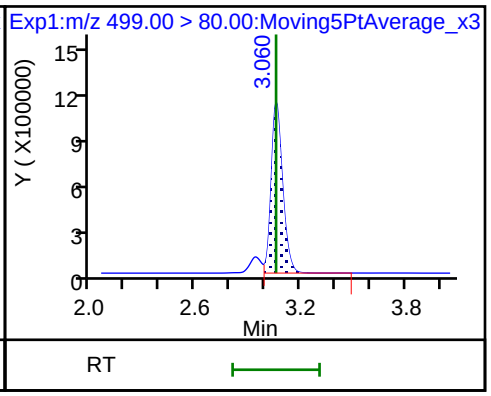
20 Perfluorononanoic acid



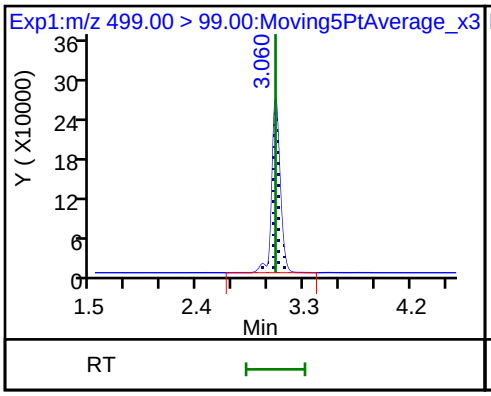
20 Perfluorononanoic acid



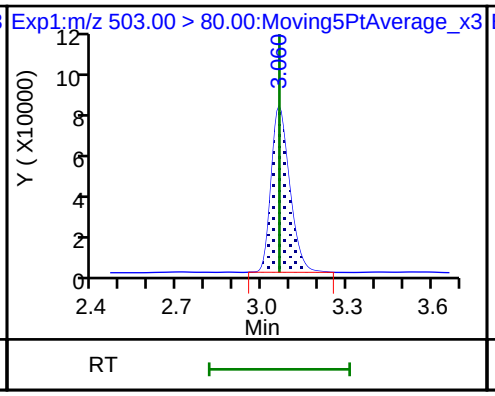
17 Perfluorooctane sulfonic acid



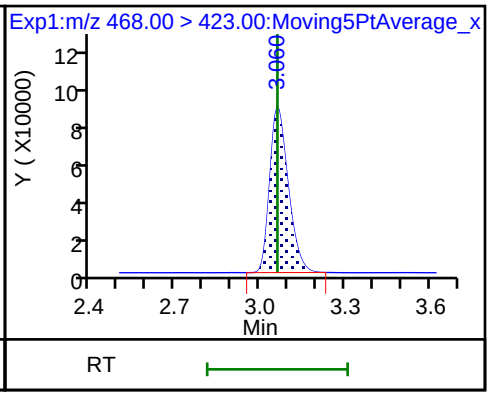
17 Perfluorooctane sulfonic acid



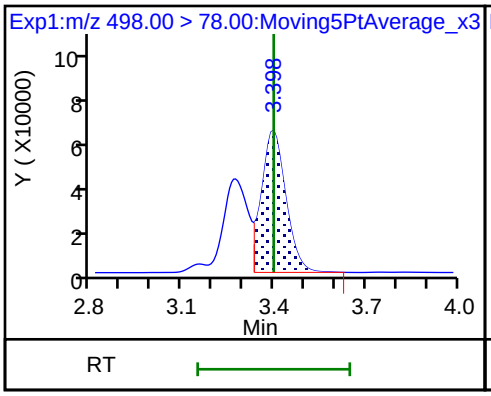
D 18 13C4 PFOS



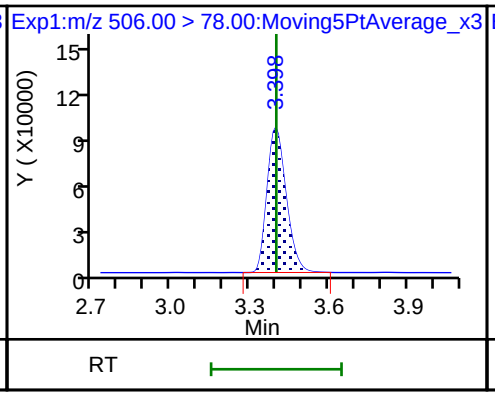
D 19 13C5 PFNA



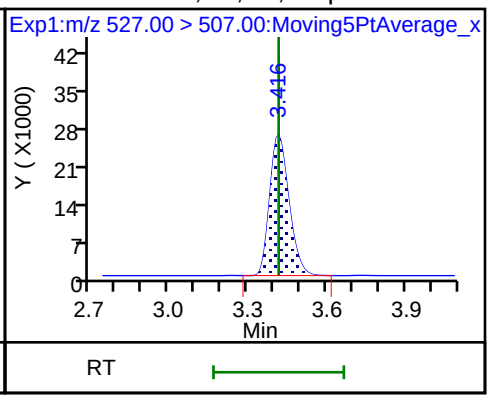
22 Perfluorooctane Sulfonamide



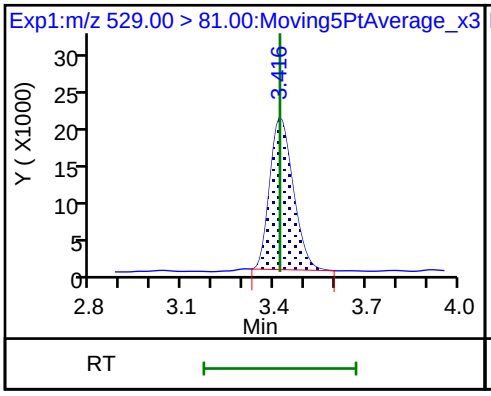
D 21 13C8 FOSA



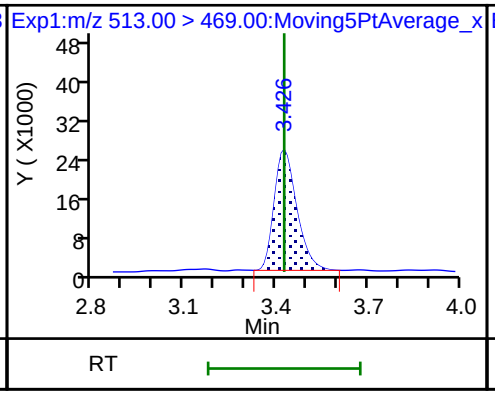
25 Sodium 1H,1H,2H,2H-perfluorodecane



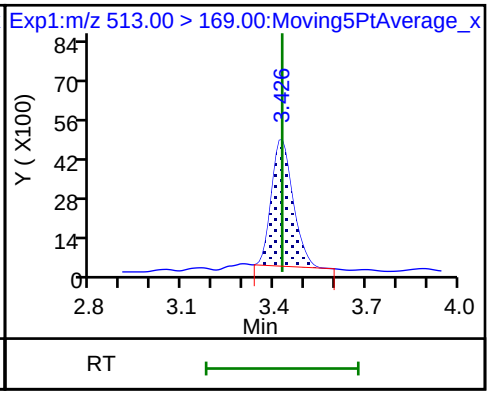
D 26 M2-8:2FTS



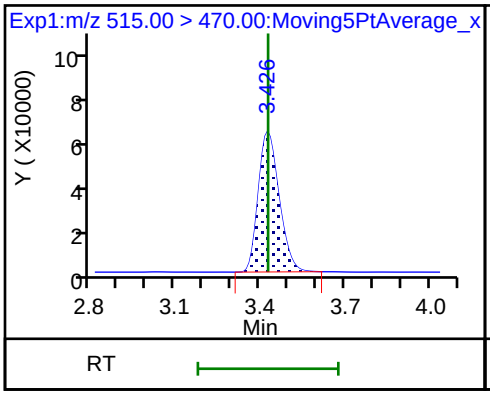
24 Perfluorodecanoic acid



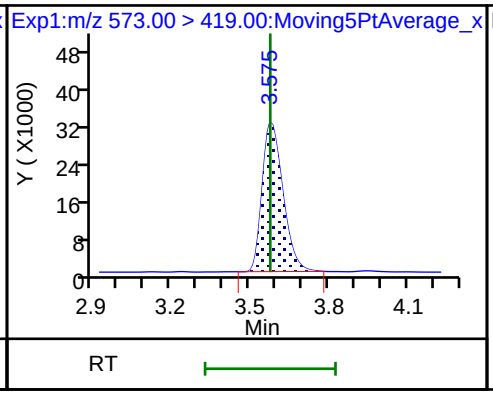
24 Perfluorodecanoic acid



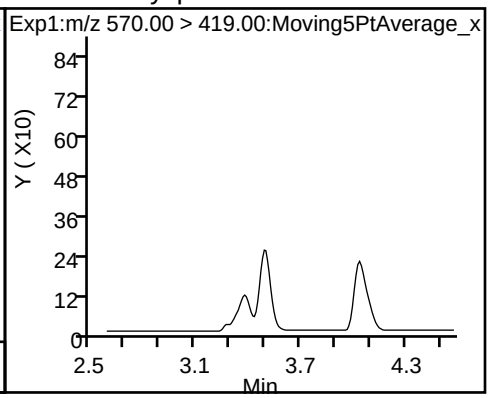
D 23 13C2 PFDA



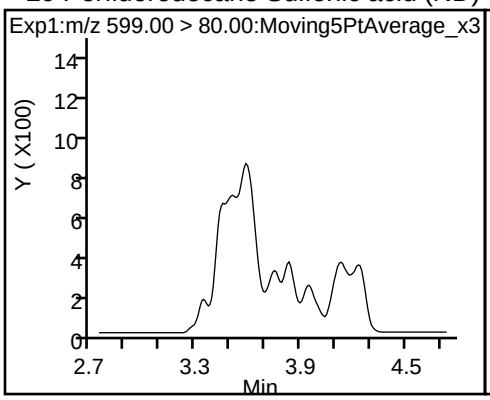
D 27 d3-NMeFOSAA



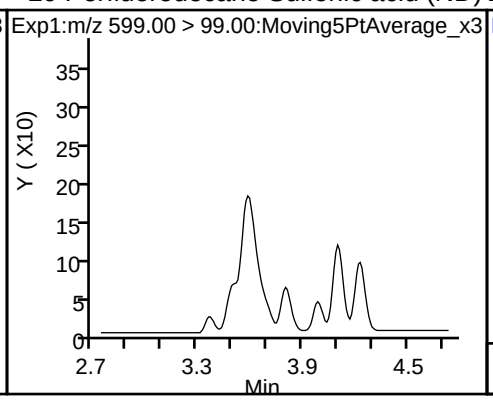
28 N-methyl perfluorooctane sulfonami (ND)



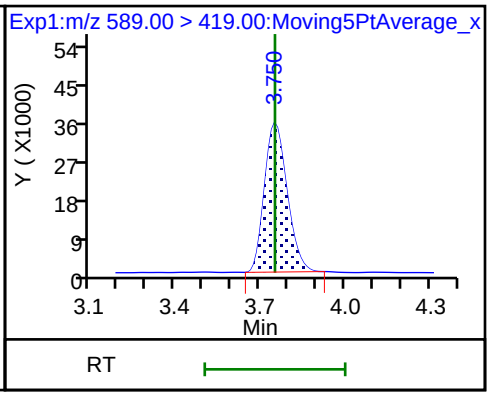
29 Perfluorodecane Sulfonic acid (ND)



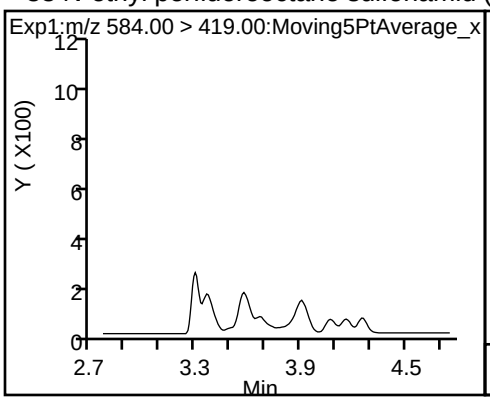
29 Perfluorodecane Sulfonic acid (ND)

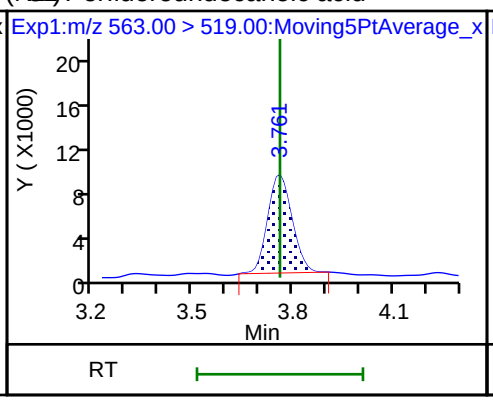


D 32 d5-NEtFOSAA

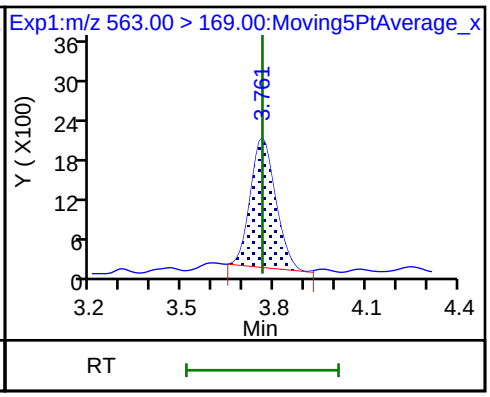


33 N-ethyl perfluorooctane sulfonamid (N31) Perfluoroundecanoic acid

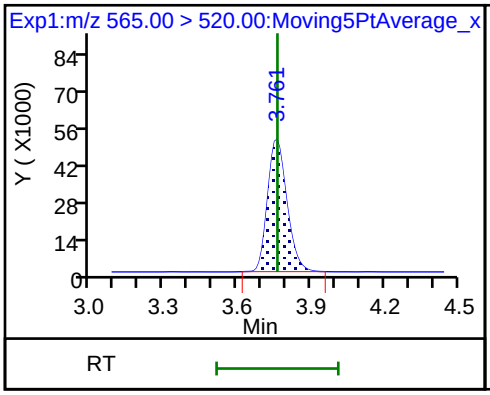




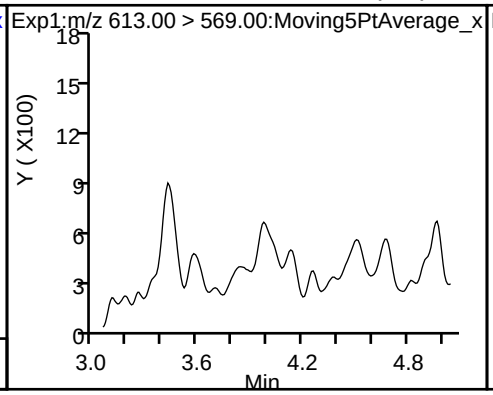
31 Perfluoroundecanoic acid



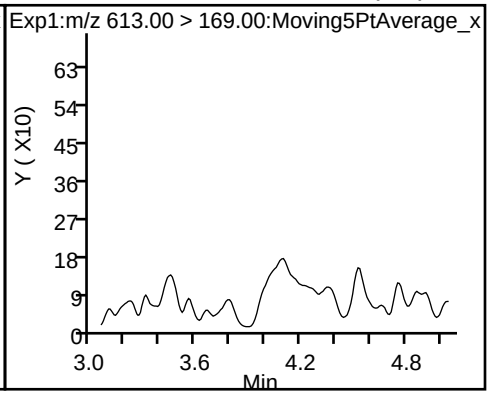
D 30 13C2 PFUnA



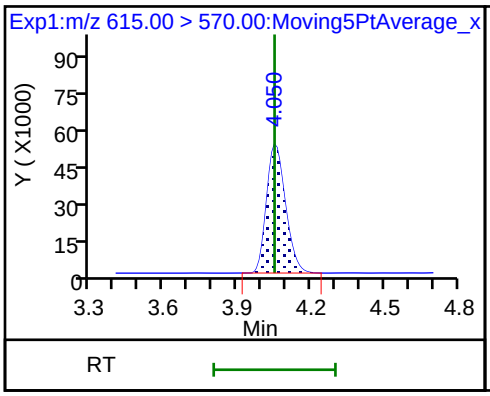
37 Perfluorododecanoic acid (ND)



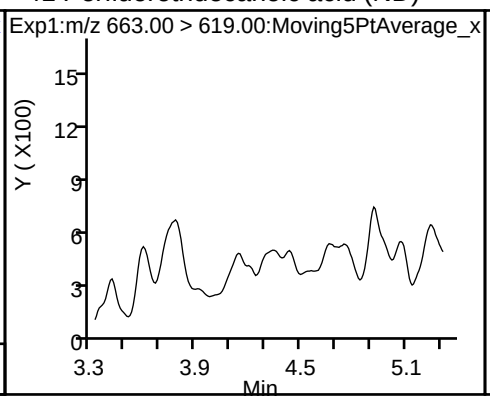
37 Perfluorododecanoic acid (ND)



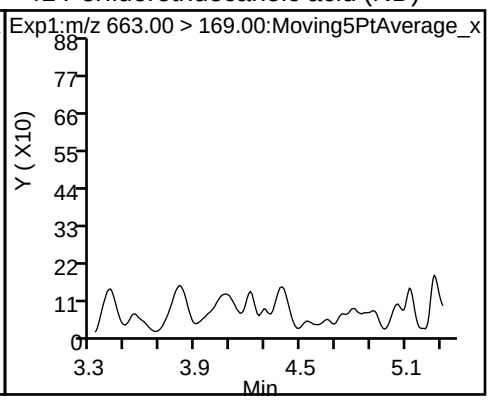
D 36 13C2 PFDoA



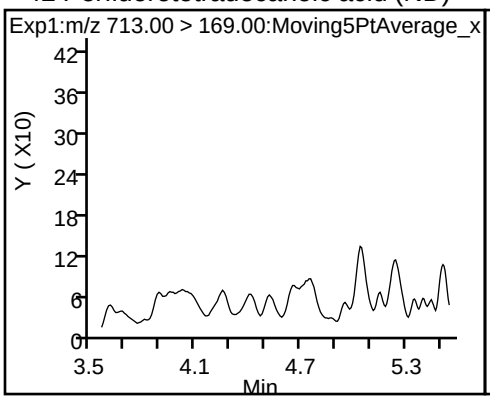
41 Perfluorotridecanoic acid (ND)



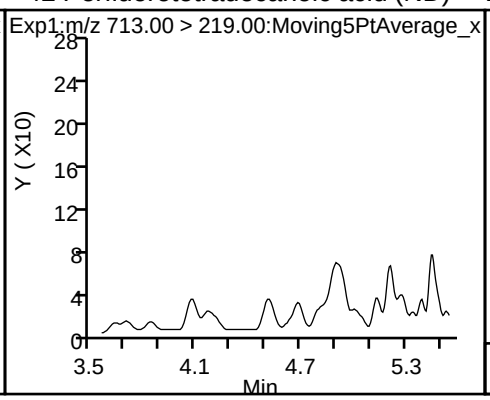
41 Perfluorotridecanoic acid (ND)



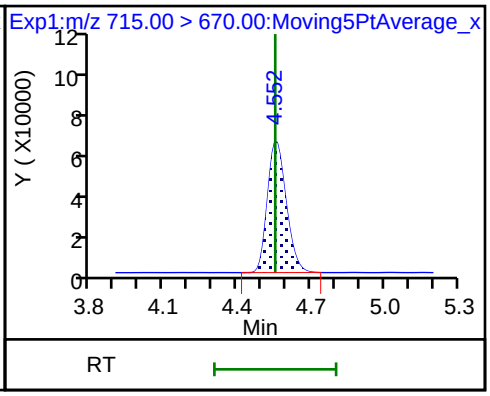
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB007(0-2)-SPLP | Lab Sample ID: 320-38063-4

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_044.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:45

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 251.7(mL) | Date Analyzed: 04/26/2018 08:29

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	3.17	B	1.99	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	7.58		1.99	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	4.18		1.99	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.15		1.99	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	3.40		1.99	0.84
375-95-1	Perfluorononanoic acid (PFNA)	1.33	J	1.99	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.04		1.99	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	4.97		1.99	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	7.71		1.99	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	16.0		1.99	1.29
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.62	J	1.99	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.99	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.00	B	1.99	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.99	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	12.8		1.99	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.99	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	34.2		1.99	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.08	U	19.9	3.08
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.89	U	19.9	1.89
27619-97-2	6:2FTS	12.9	J B	19.9	1.99
39108-34-4	8:2FTS	12.5	J	19.9	1.99

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB007(0-2)-SPLP | Lab Sample ID: 320-38063-4

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_044.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 10:45

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 251.7(mL) | Date Analyzed: 04/26/2018 08:29

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4-PFHpA	89		25-150
STL00990	13C4 PFOA	92		25-150
STL00995	13C5 PFNA	97		25-150
STL00996	13C2 PFDA	92		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2-PFTeDA	78		25-150
STL02337	13C3-PFBS	91		25-150
STL00994	18O2 PFHxS	90		25-150
STL00991	13C4 PFOS	87		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	94		25-150
STL02117	d5-NEtFOSAA	103		25-150
STL02279	M2-6:2FTS	106		25-150
STL02280	M2-8:2FTS	111		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_044.d
Lims ID: 320-38063-A-4-C
Client ID: SB007(0-2)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 08:29:52 ALS Bottle#: 33 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-4-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:19:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	6345817	2.35		94.0	41634	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	187933	0.0797			43.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	4010345	2.30		92.2	58261	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.703	1.703	0.0	1.005	364760	0.1908			139	M
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	84055	2.10		90.5	418	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	8980	0.003173			6.9	
298.90 > 99.00	1.730	1.739	-0.009	1.000	4173		2.15(1.25-3.74)		15.0	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	192379	0.1051			113	
313.00 > 119.00	1.982	1.982	0.0	1.000	17091		11.26(5.03-15.10)		114	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4501656	2.34		93.5	86668	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.313	0.008	1.000	4187538	2.24		89.4	74990	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.323	-0.001	1.000	90888	0.0542			82.1	
363.00 > 169.00	2.321	2.323	-0.001	1.000	39050		2.33(1.13-3.40)		181	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	4905744	2.12		89.7	113783	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.336	-0.002	1.000	118157	0.0503			192	
399.00 > 99.00	2.334	2.336	-0.002	1.000	35525		3.33(1.50-4.49)		163	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.662	2.656	0.006	1.000	1010214	2.52		106	11324	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.662	2.661	0.001	1.000	233137	0.3242			3262	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.679	0.005	1.000	4301605	2.31		92.4	70946	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.683	0.001	1.000	170330	0.0857			116	
413.00 > 169.00	2.684	2.683	0.001	1.000	88165		1.93(0.84-2.52)		255	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.683	0.001		5018376	2.50			121623	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.058	3.053	0.005	1.000	494937	0.3223			973	
499.00 > 99.00	3.058	3.053	0.005	1.000	106686		4.64(2.31-6.93)		1092	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.056	0.002	1.000	3373429	2.08		87.2	17329	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.056	0.002	1.000	3862333	2.41		96.5	108882	
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.060	-0.002	1.000	53794	0.0334			91.4	
463.00 > 169.00	3.058	3.060	-0.002	1.000	13500		3.98(1.90-5.69)		394	
D 21 13C8 FOSA										
506.00 > 78.00	3.397	3.394	0.003	1.000	4342350	2.15		85.9	57235	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.397	3.398	-0.001	1.000	1511037	0.8601			498	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.408	0.007	1.000	212204	0.3134			10321	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.413	0.002	1.000	1281499	2.65		111	10358	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.425	3.417	0.008	1.000	65748	0.0514			248	
513.00 > 169.00	3.425	3.417	0.008	1.000	12142		5.41(2.36-7.09)		229	
D 23 13C2 PFDA										
515.00 > 470.00	3.425	3.422	0.003	1.000	3097338	2.30		92.1	87658	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.574	3.582	-0.008	1.000	1799698	2.36		94.4	37293	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.739	3.730	0.009	1.000	6693	0.007304			25.5	
599.00 > 99.00	3.739	3.730	0.009	1.000	3048		2.20(1.39-4.16)		89.9	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.747	0.003	1.000	1934644	2.57		103	29223	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.751	-0.001	1.000	115303	0.1251			613	
563.00 > 169.00	3.750	3.751	-0.001	1.000	32646		3.53(2.12-6.36)		873	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.760	3.751	0.009	1.003	14066	0.0195			258	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.757	-0.007	1.000	2725800	2.35		94.0	102127	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.046	0.003	1.000	2786693	2.22		89.0	43635	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.051	-0.002	1.000	225499	0.1940			298	
613.00 > 169.00	4.049	4.051	-0.002	1.000	59095		3.82(2.13-6.40)		698	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.307	4.308	-0.001	1.000	545924	0.4030			708	
663.00 > 169.00	4.307	4.308	-0.001	1.000	167297		3.26(1.25-3.76)		1987	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.552	4.543	0.009	1.000	4820	0.0155			45.5	
713.00 > 219.00	4.541	4.543	-0.002	0.998	3392		1.42(0.71-2.13)		47.9	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.551	0.001	1.000	3094836	1.95		77.9	28281	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:46 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_044.d

Injection Date: 26-Apr-2018 08:29:52 Instrument ID: A8_N

Lims ID: 320-38063-A-4-C Lab Sample ID: 320-38063-4

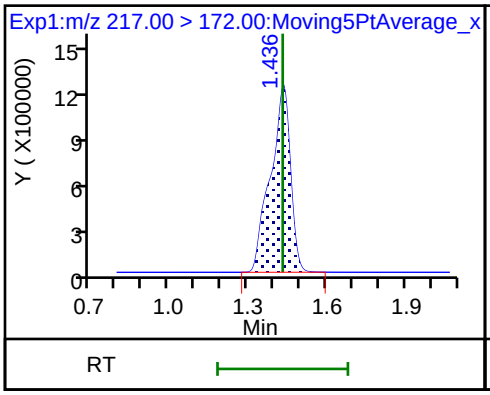
Client ID: SB007(0-2)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 33 Worklist Smp#: 9

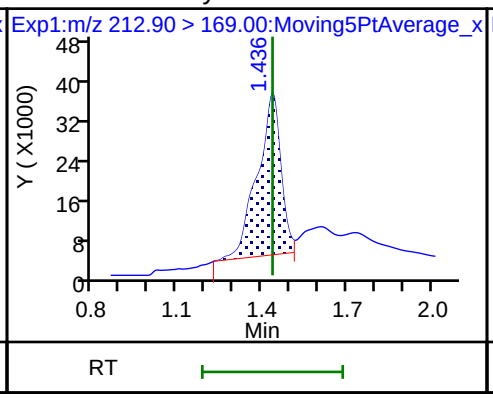
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

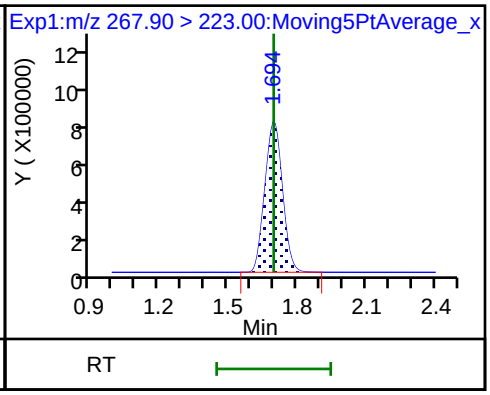
D 1 13C4 PFBA



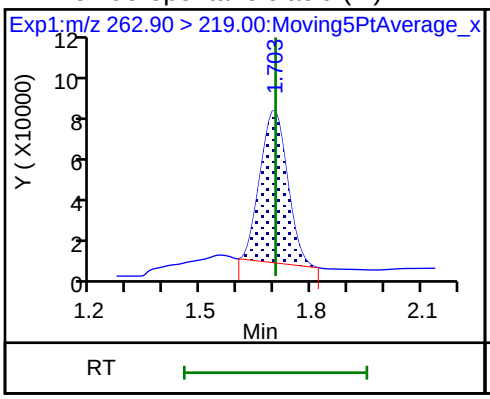
2 Perfluorobutyric acid



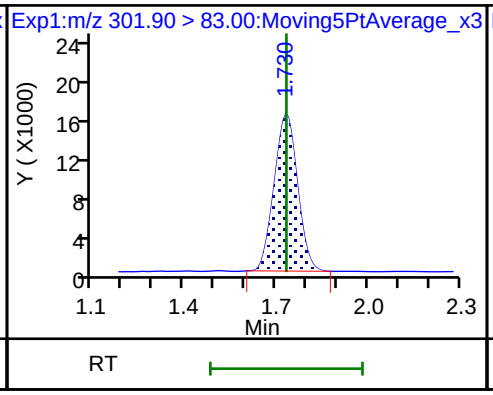
D 3 13C5-PFPeA



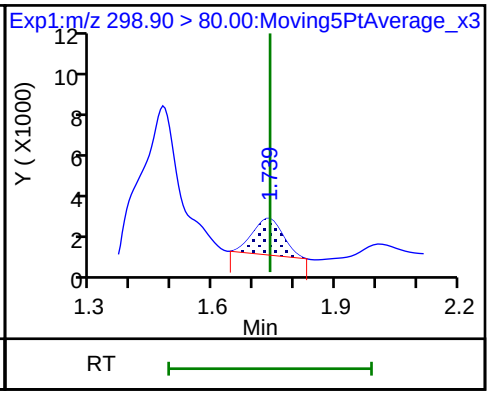
4 Perfluoropentanoic acid (M)



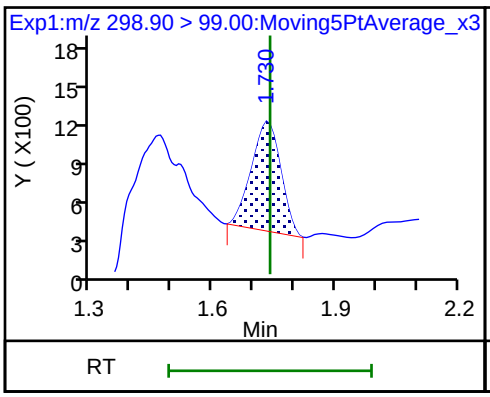
D 47 13C3-PFBS



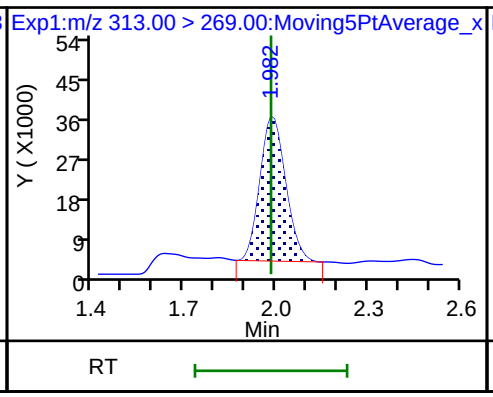
5 Perfluorobutanesulfonic acid



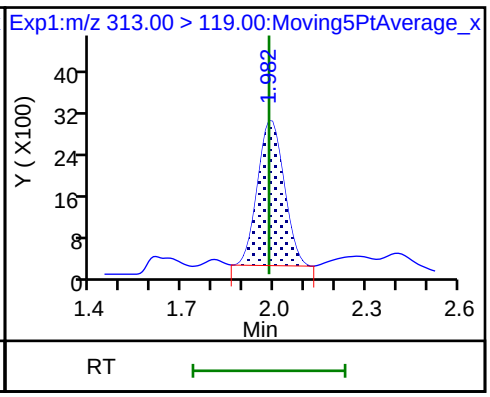
5 Perfluorobutanesulfonic acid



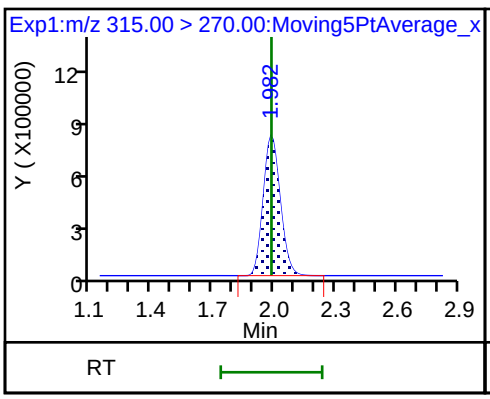
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



D 7 13C2 PFHxA



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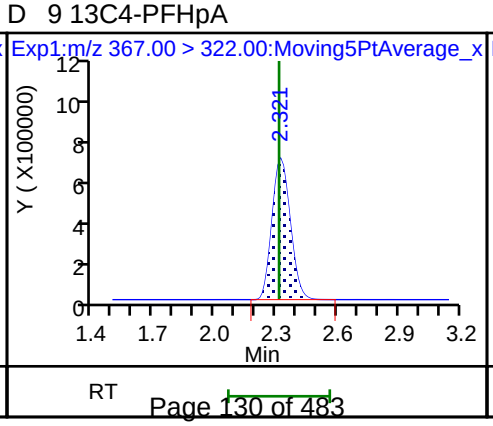

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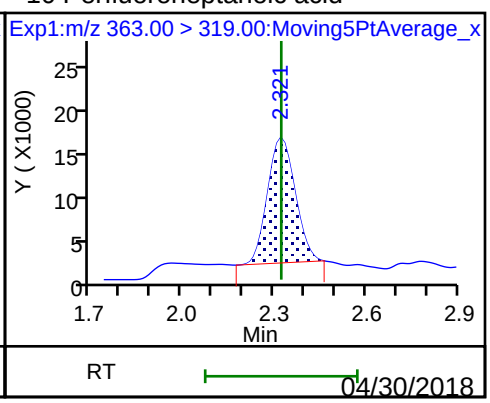

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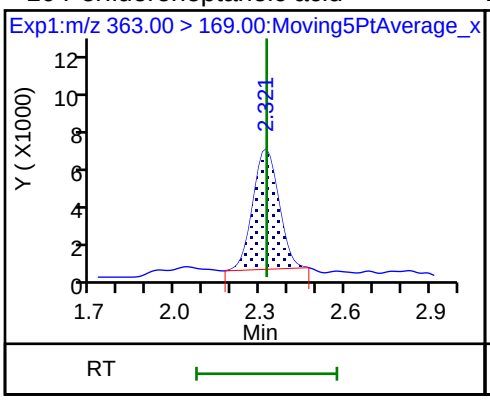
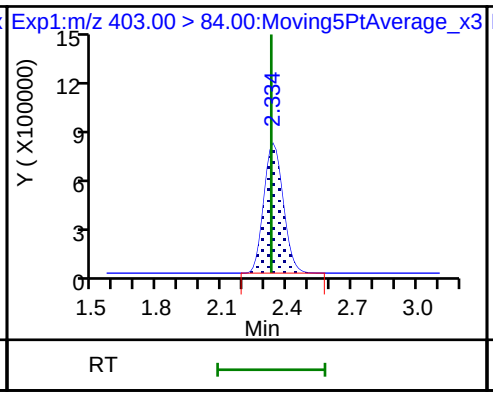
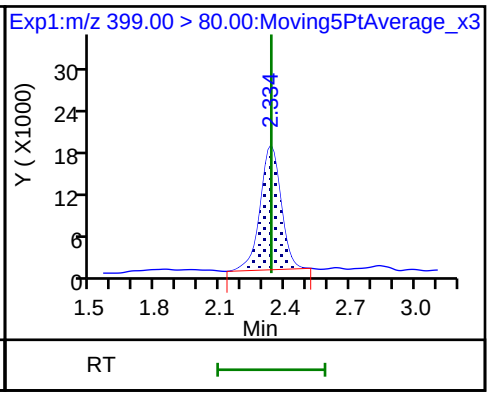


D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid



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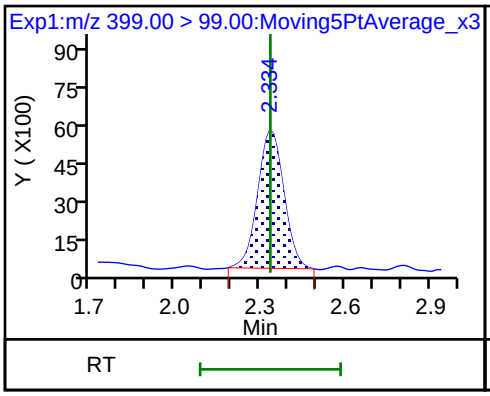
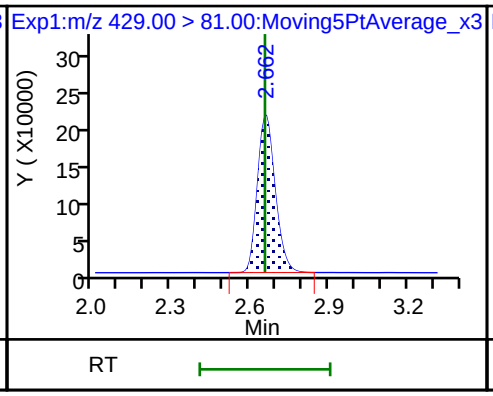
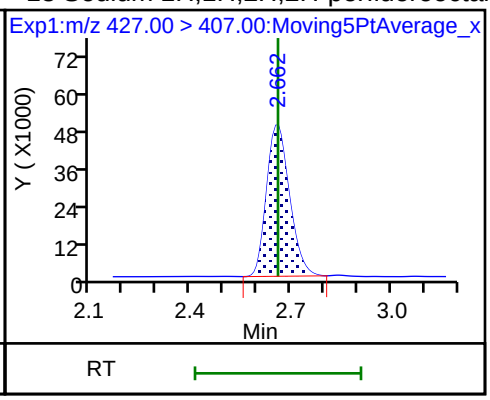


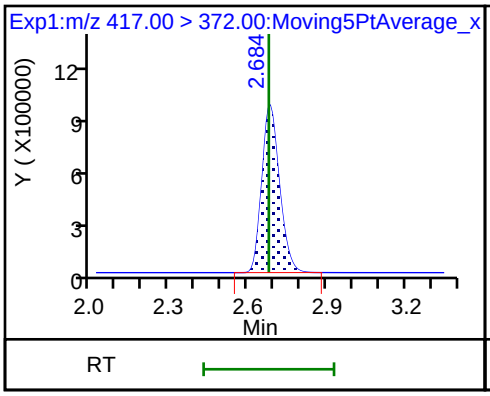
D 12 M2-6:2FTS



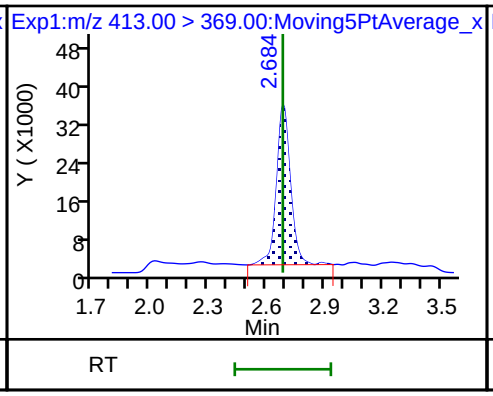
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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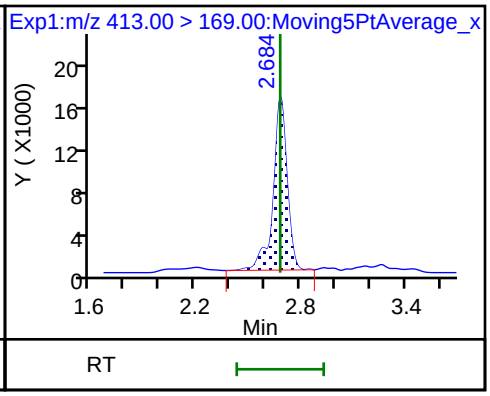
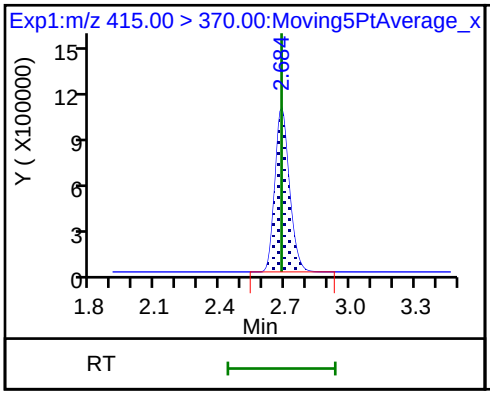
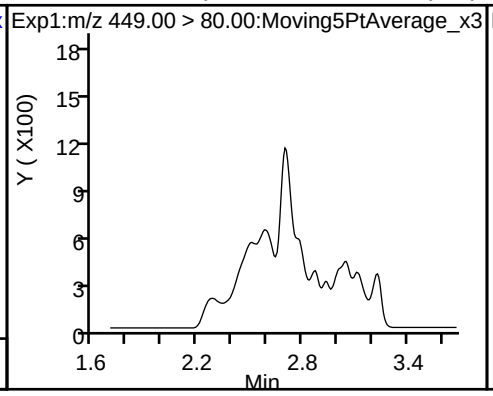


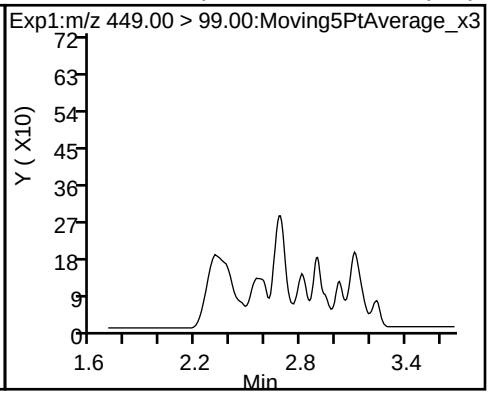
* 62 13C2-PFOA



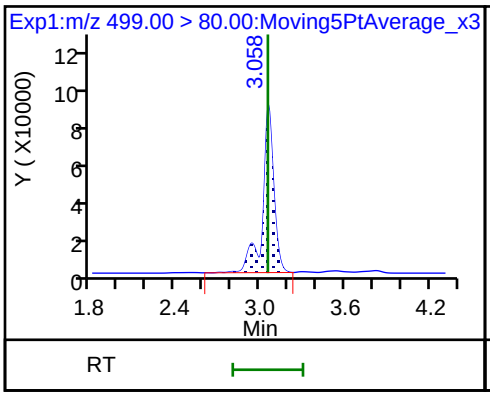
16 Perfluoroheptanesulfonic acid (ND)



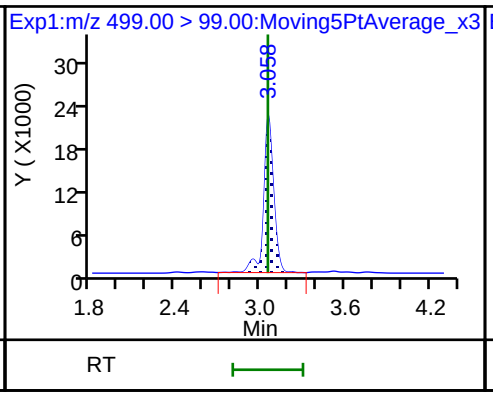
16 Perfluoroheptanesulfonic acid (ND)



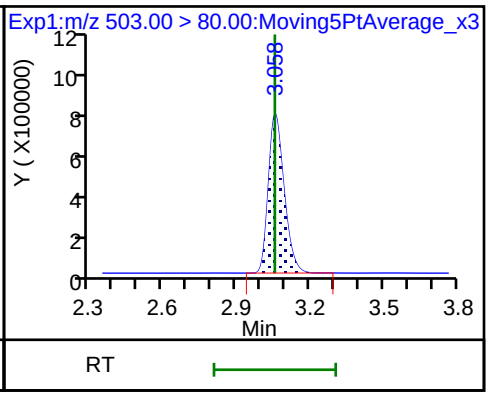
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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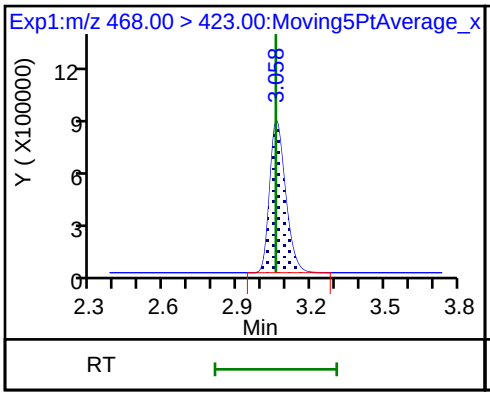
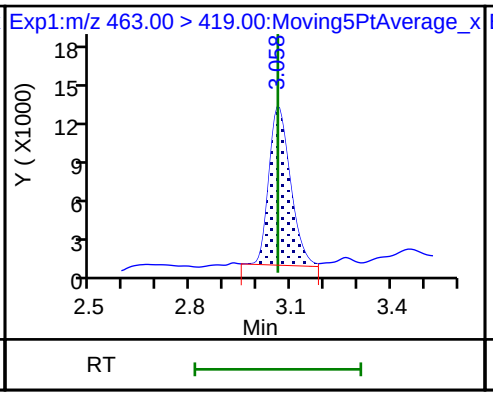


20 Perfluorononanoic acid



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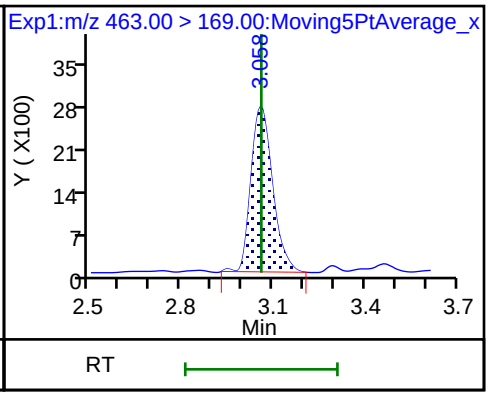
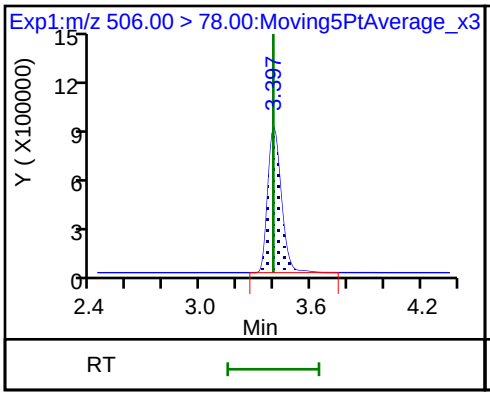
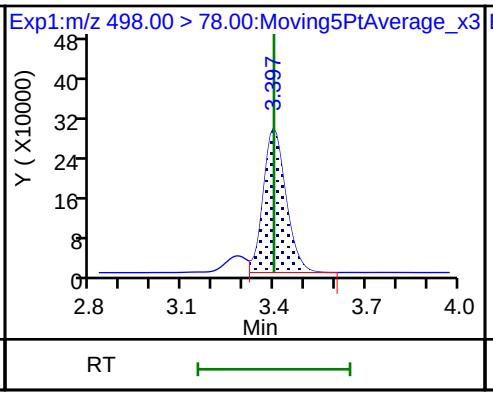


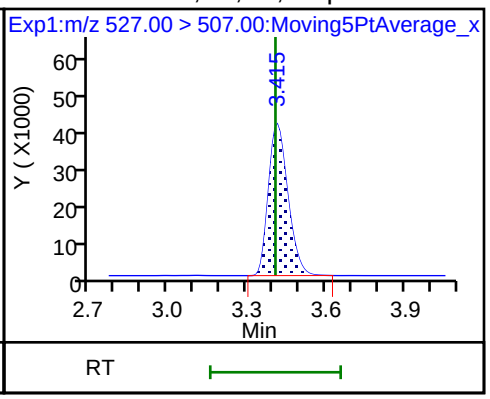
D 21 13C8 FOSA



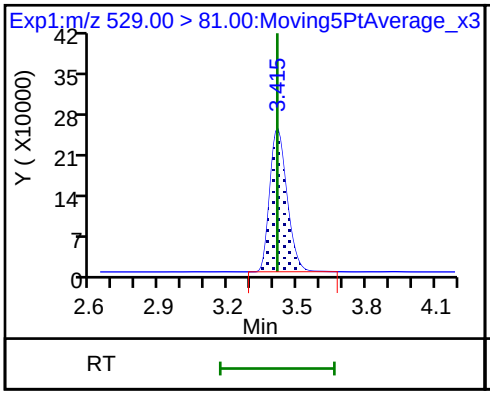
22 Perfluorooctane Sulfonamide



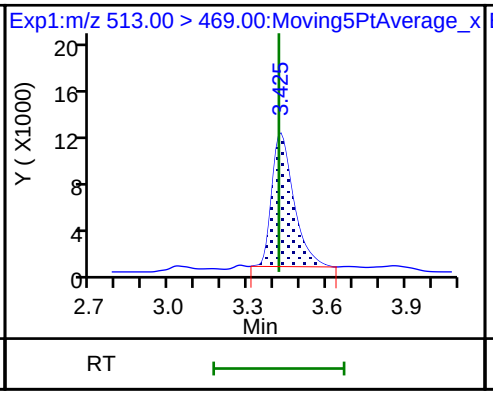
25 Sodium 1H,1H,2H,2H-perfluorodecane



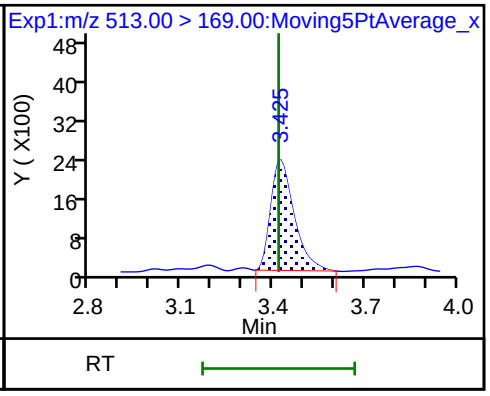
D 26 M2-8:2FTS



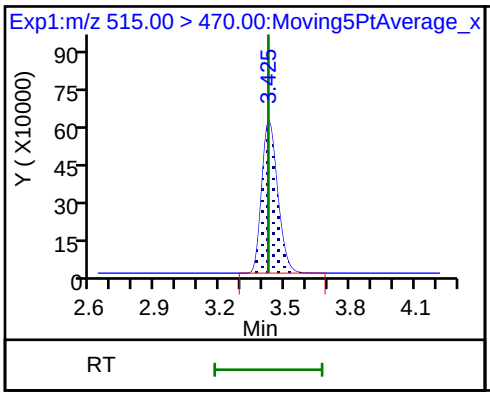
24 Perfluorodecanoic acid



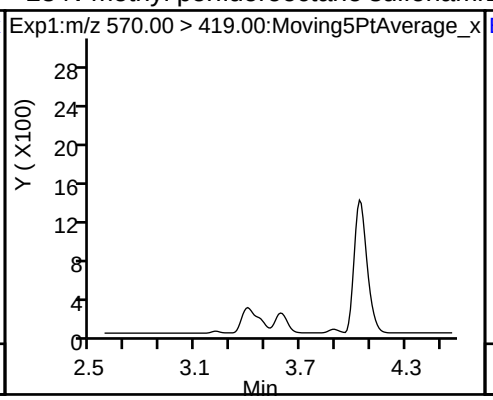
24 Perfluorodecanoic acid



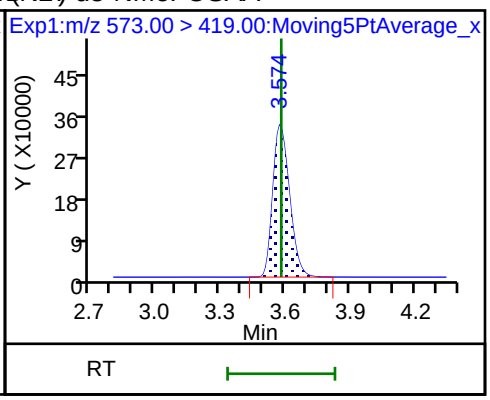
D 23 13C2 PFDA



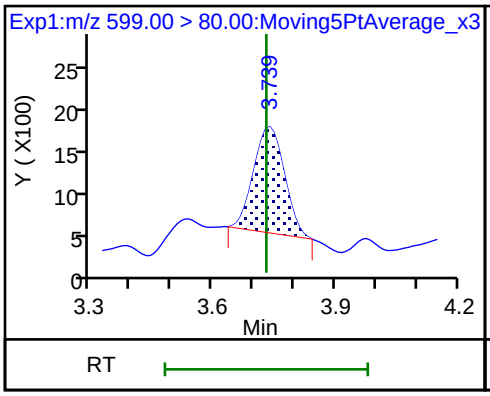
28 N-methyl perfluorooctane sulfonamid



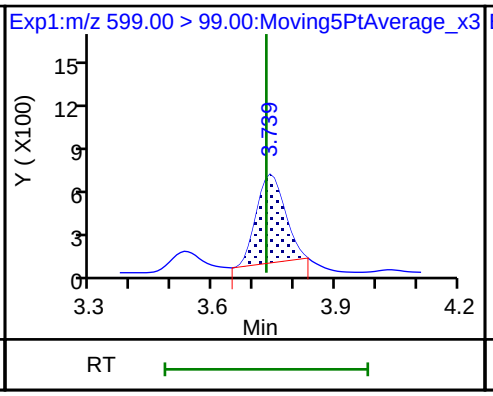
D 27 d3-NMeFOSAA



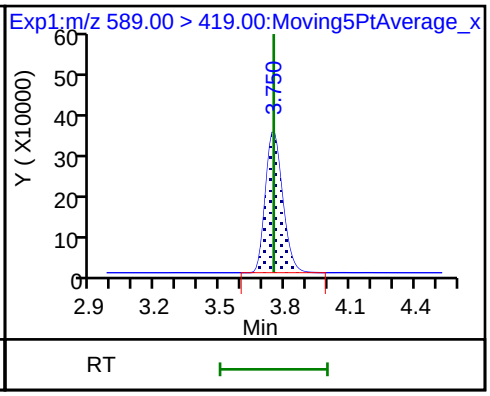
29 Perfluorodecane Sulfonic acid



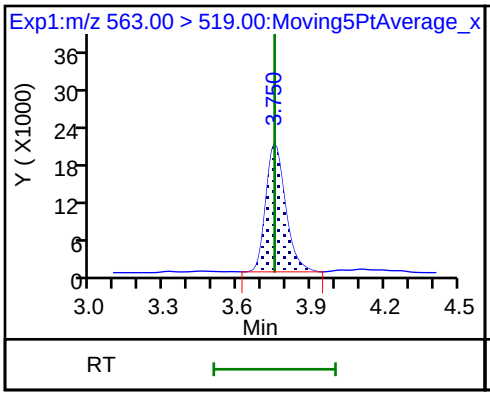
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



31 Perfluoroundecanoic acid



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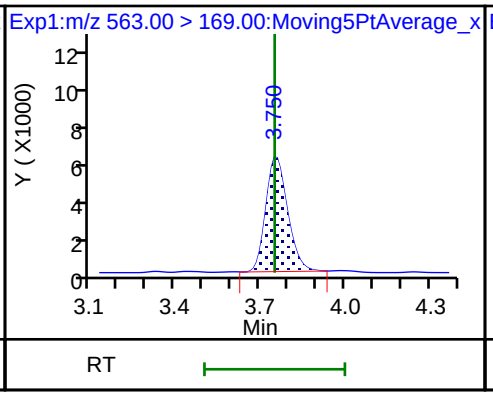
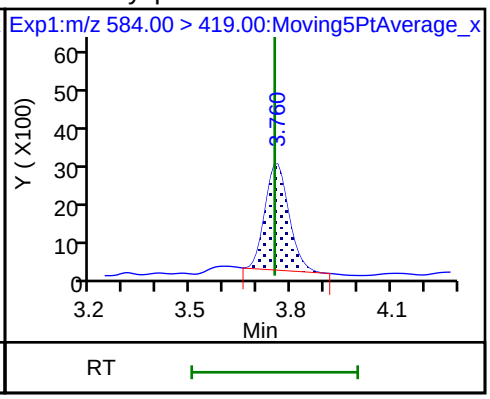
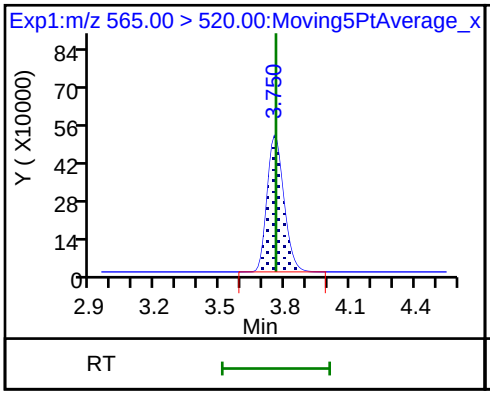


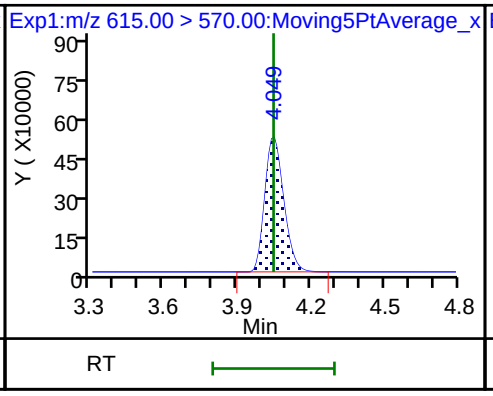
33 N-ethyl perfluorooctane sulfonamid



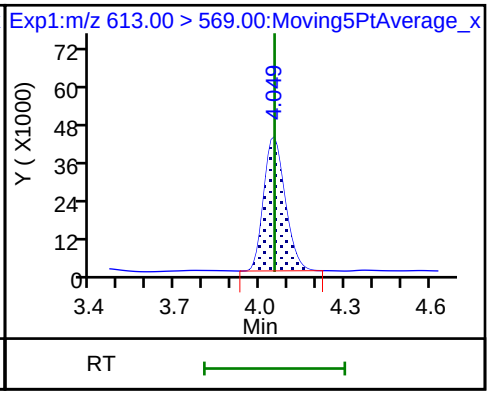
D 30 13C2 PFUnA



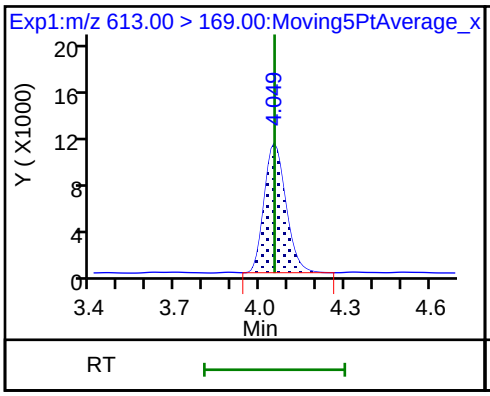
D 36 13C2 PFDoA



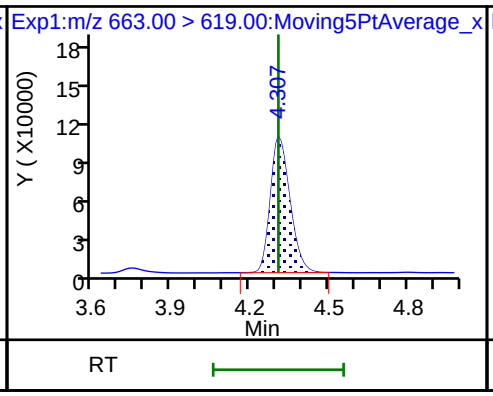
37 Perfluorododecanoic acid



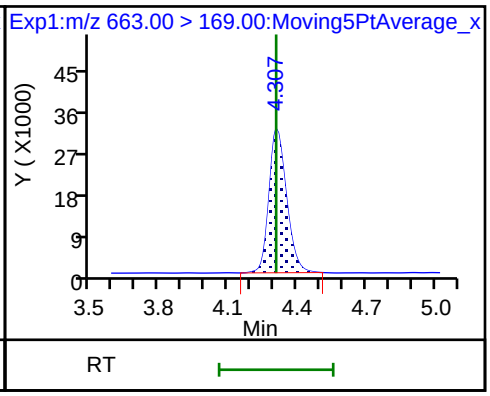
37 Perfluorododecanoic acid



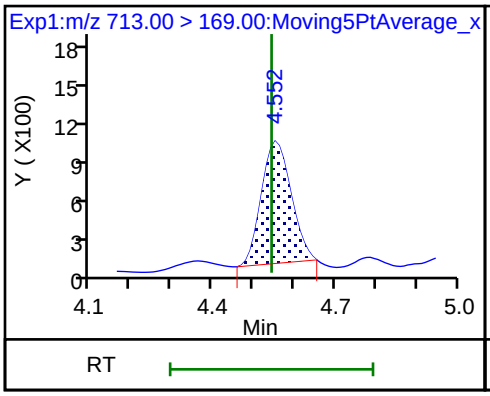
41 Perfluorotridecanoic acid



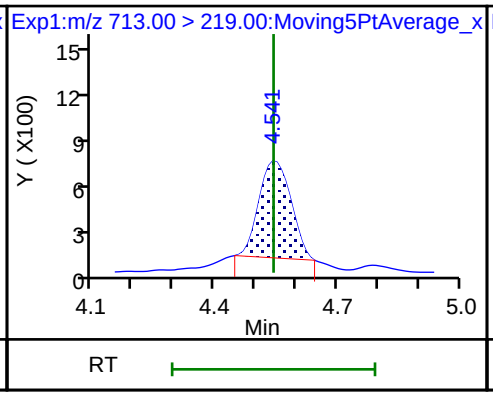
41 Perfluorotridecanoic acid



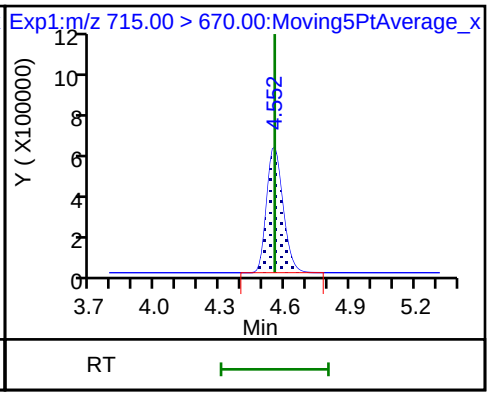
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

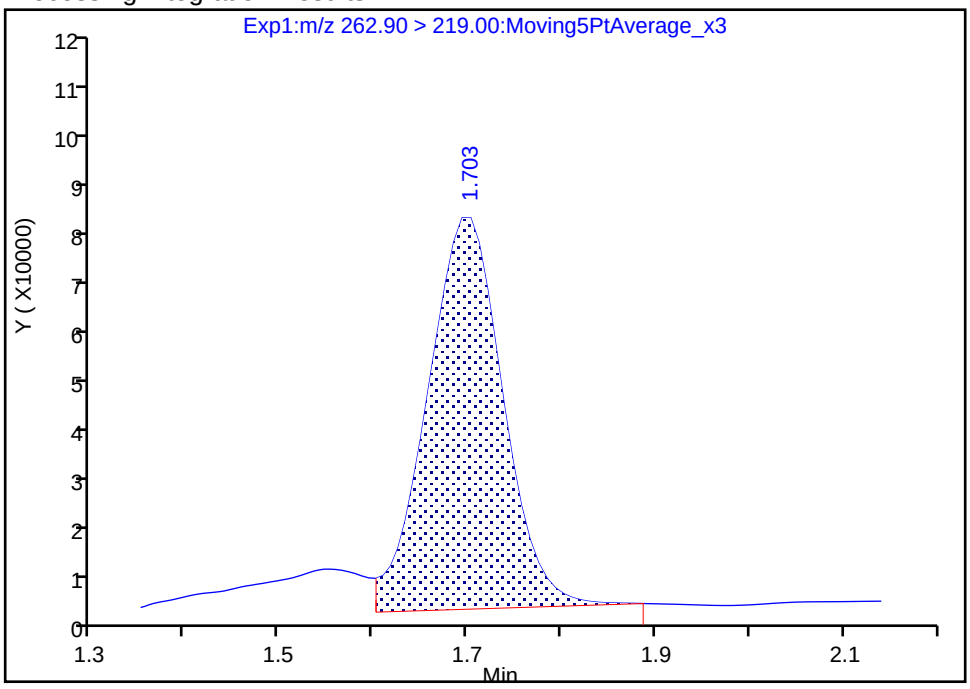
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_044.d				
Injection Date:	26-Apr-2018 08:29:52	Instrument ID:	A8_N		
Lims ID:	320-38063-A-4-C	Lab Sample ID:	320-38063-4		
Client ID:	SB007(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	33	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

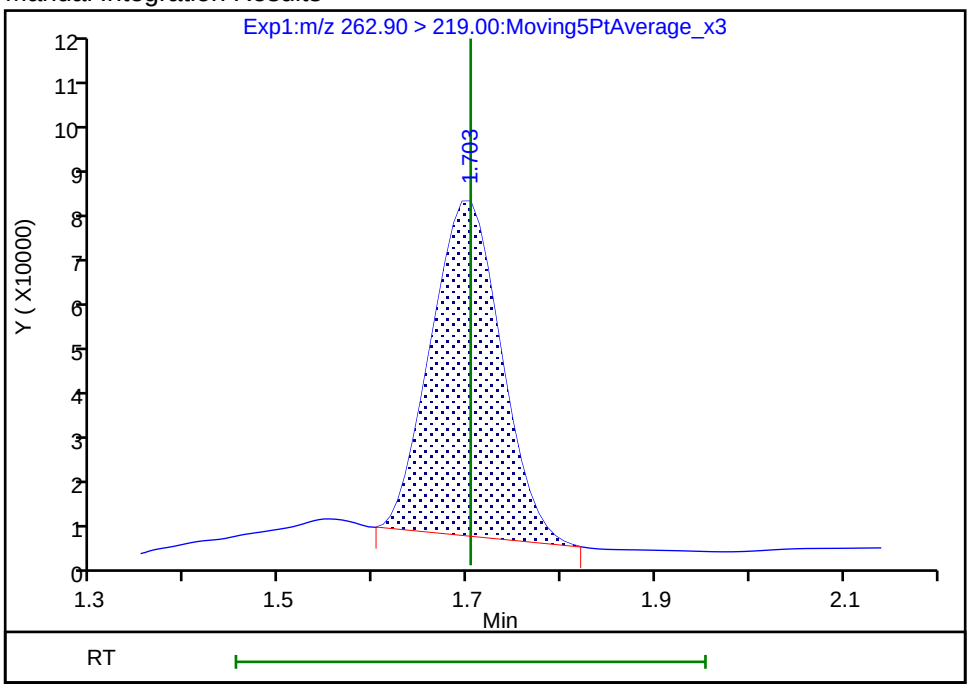
Processing Integration Results

RT: 1.70
Area: 415092
Amount: 0.217125
Amount Units: ng/ml



Manual Integration Results

RT: 1.70
Area: 364760
Amount: 0.190798
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:18:43

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB003(0-2)-SPLP | Lab Sample ID: 320-38063-5

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_045.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:11

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 260.5(mL) | Date Analyzed: 04/26/2018 08:37

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	12.2	B	1.92	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	23.0		1.92	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	29.3		1.92	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	19.7		1.92	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	54.5		1.92	0.82
307-55-1	Perfluorododecanoic acid (PFDoA)	12.9		1.92	0.53
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	43.3		1.92	1.25
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.69	J	1.92	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.03		1.92	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	73.9	B	1.92	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	43.5		1.92	0.18
335-77-3	Perfluorodecanesulfonic acid (PFDS)	201		1.92	0.31
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2.98	U	19.2	2.98
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	13.9	J	19.2	1.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	138		25-150
STL01893	13C5 PFPeA	139		25-150
STL00993	13C2 PFHxA	133		25-150
STL01892	13C4-PFHpA	129		25-150
STL00990	13C4 PFOA	101		25-150
STL00998	13C2 PFDoA	116		25-150
STL02116	13C2-PFTeDA	59		25-150
STL02337	13C3-PFBS	138		25-150
STL00994	18O2 PFHxS	128		25-150
STL00991	13C4 PFOS	59		25-150
STL02118	d3-NMeFOSAA	125		25-150
STL02117	d5-NEtFOSAA	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_045.d
Lims ID: 320-38063-A-5-C
Client ID: SB003(0-2)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 08:37:41 ALS Bottle#: 34 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-5-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 26-Apr-2018 14:25:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.432	-0.001	1.000	6143486	3.44		138	37450	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.004	725688	0.3180			182	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	3985359	3.47		139	54505	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.703	-0.009	1.000	1139615	0.5998			381	M
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	84637	3.21		138	460	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.739	-0.009	1.000	150959	0.0530			383	
298.90 > 99.00	1.730	1.739	-0.009	1.000	64501		2.34(1.25-3.74)		191	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	1311767	0.7636			926	
313.00 > 119.00	1.982	1.982	0.0	1.000	118188		11.10(5.03-15.10)		1016	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4226222	3.32		133	92403	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.313	0.009	1.000	3988054	3.22		129	79507	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.323	0.0	1.000	820027	0.5136			1012	
363.00 > 169.00	2.322	2.323	0.0	1.000	330893		2.48(1.13-3.40)		1796	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.326	0.009	1.000	4626822	3.03		128	124285	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.336	-0.001	1.000	4262224	1.92			5445	
399.00 > 99.00	2.335	2.336	-0.001	1.000	1304285		3.27(1.50-4.49)		4209	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.656	0.005	1.000	663398	2.50		105	1297	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.661	2.661	0.0	1.000	8340382	17.7			2159	E
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.679	0.004	1.000	3096855	2.52		101	61169	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.000	2033761	1.42			1954	
413.00 > 169.00	2.683	2.683	0.0	1.000	1084217		1.88(0.84-2.52)		2292	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		3314906	2.50			59996	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.691	0.0	1.000	953879	1.13			2705	
449.00 > 99.00	2.691	2.691	0.0	1.000	251252		3.80(1.94-5.82)		3476	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.057	3.053	0.004	1.000	142604475	207.0			6029235	E
499.00 > 99.00	3.057	3.053	0.004	1.000	48410332		2.95(2.31-6.93)		170240	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.056	0.001	1.000	1513678	1.42		59.2	7093	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.056	0.001	1.000	1768514	1.67		66.9	43391	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.057	3.060	-0.003	1.000	36953970	50.1			186493	E
463.00 > 169.00	3.057	3.060	-0.003	1.000	10497691		3.52(1.90-5.69)		75874	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.394	-0.007	1.000	2837803	2.12		85.0	425	
22 Perfluorooctane Sulfonamide										E
498.00 > 78.00	3.387	3.398	-0.011	1.000	17216835	15.0			42.7	E
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.415	3.408	0.007	1.003	96061889	108.6			82335	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.406	3.413	-0.007	1.000	1674427	5.24		219	12375	
24 Perfluorodecanoic acid										E
513.00 > 469.00	3.424	3.417	0.007	1.000	22582595	28.1			89458	E
513.00 > 169.00	3.424	3.417	0.007	1.000	4250203		5.31(2.36-7.09)		41715	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.422	0.002	1.000	1950607	2.20		87.8	45395	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.573	3.575	-0.002	1.000	37459	0.0597			21.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.582	-0.009	1.000	1572684	3.12		125	25047	
29 Perfluorodecane Sulfonic acid										R
599.00 > 80.00	3.573	3.730	-0.157	1.000	2149368	5.23			10101	R
599.00 > 99.00	3.595	3.730	-0.135	1.006	152701		14.08(1.39-4.16)		134	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.739	3.747	-0.008	1.000	1250744	2.52		101	12205	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										E
563.00 > 519.00	3.749	3.751	-0.002	1.000	45896722	69.4			140070	E
563.00 > 169.00	3.749	3.751	-0.002	1.000	12403612		3.70(2.12-6.36)		159	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.749	3.751	-0.002	1.003	169148	0.3618			158	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.757	-0.008	1.000	1957734	2.55		102	50703	
D 36 13C2 PFDoA										
615.00 > 570.00	4.042	4.046	-0.004	1.000	2399843	2.90		116	28646	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.042	4.051	-0.009	1.000	336358	0.3360			317	M
613.00 > 169.00	4.042	4.051	-0.009	1.000	83348		4.04(2.13-6.40)		125	M
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.301	4.308	-0.007	1.000	1315295	1.13			1505	
663.00 > 169.00	4.301	4.308	-0.007	1.000	451569		2.91(1.25-3.76)		1900	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.546	4.543	0.003	1.000	6882	0.0441			44.8	
713.00 > 219.00	4.536	4.543	-0.007	0.998	3761		1.83(0.71-2.13)		52.4	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.546	4.551	-0.005	1.000	1552766	1.48		59.2	13605	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:48 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_045.d

Injection Date: 26-Apr-2018 08:37:41 Instrument ID: A8_N

Lims ID: 320-38063-A-5-C Lab Sample ID: 320-38063-5

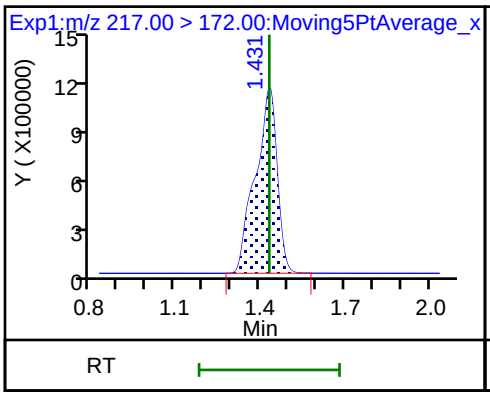
Client ID: SB003(0-2)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 34 Worklist Smp#: 10

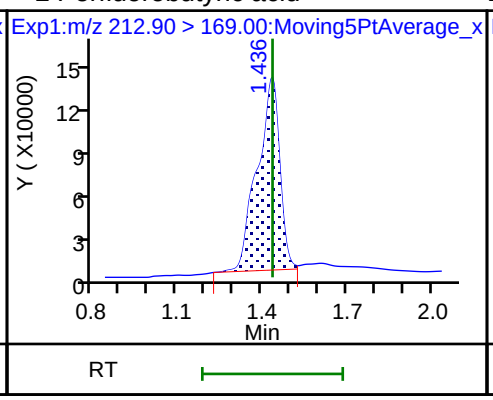
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

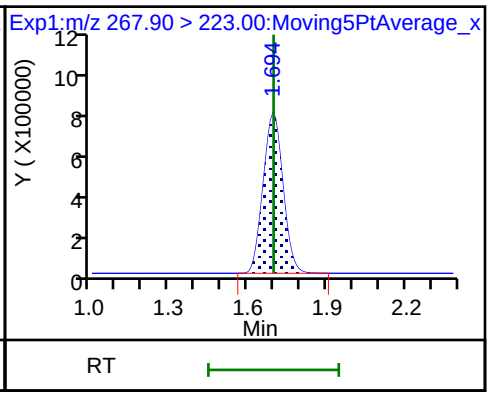
D 1 13C4 PFBA



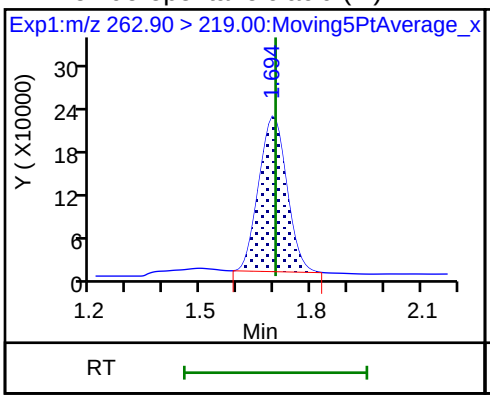
2 Perfluorobutyric acid



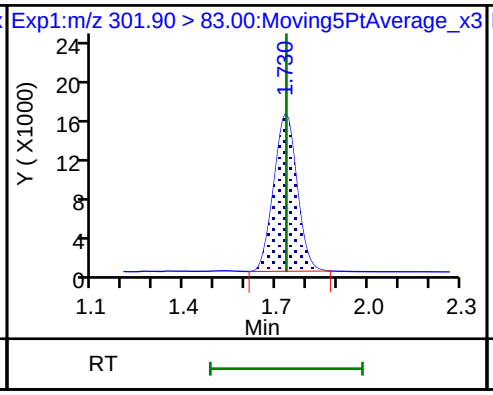
D 3 13C5-PFPeA



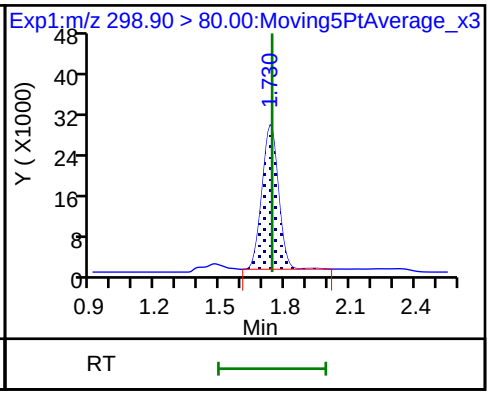
4 Perfluoropentanoic acid (M)



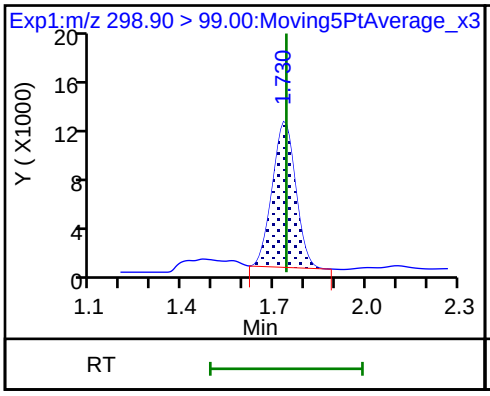
D 47 13C3-PFBS



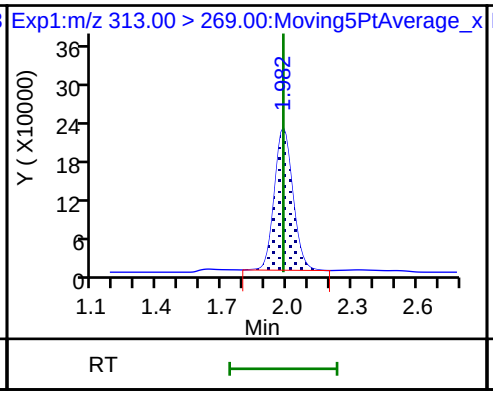
5 Perfluorobutanesulfonic acid



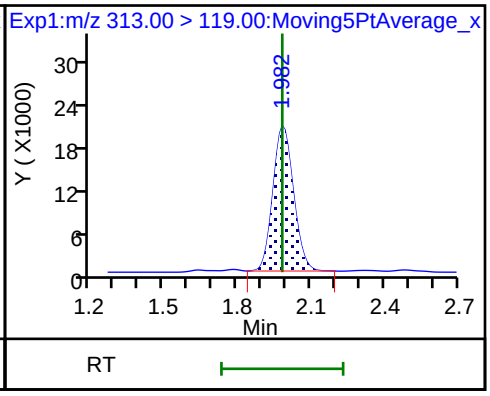
5 Perfluorobutanesulfonic acid



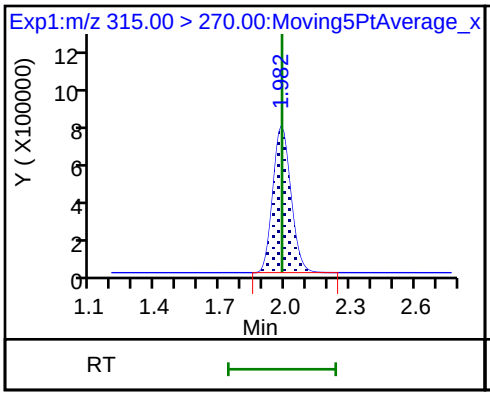
6 Perfluorohexanoic acid



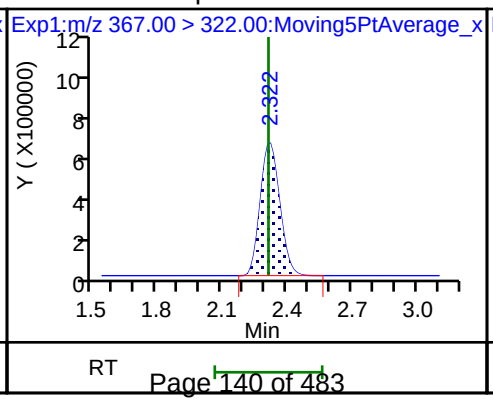
6 Perfluorohexanoic acid



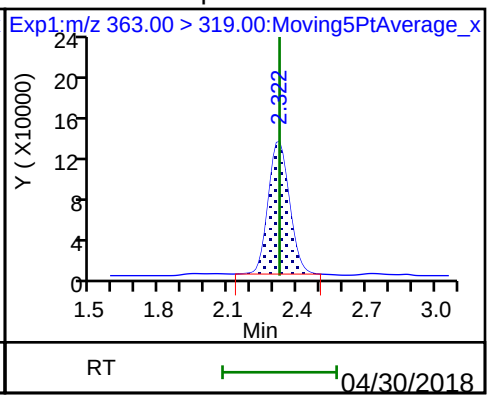
D 7 13C2 PFHxA



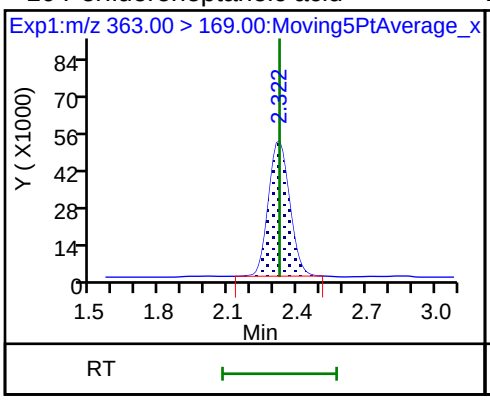
D 9 13C4-PFHpA



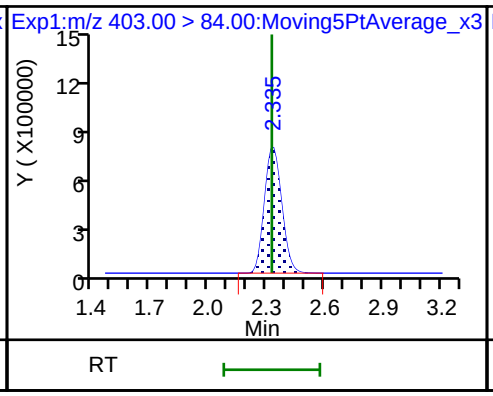
10 Perfluoroheptanoic acid



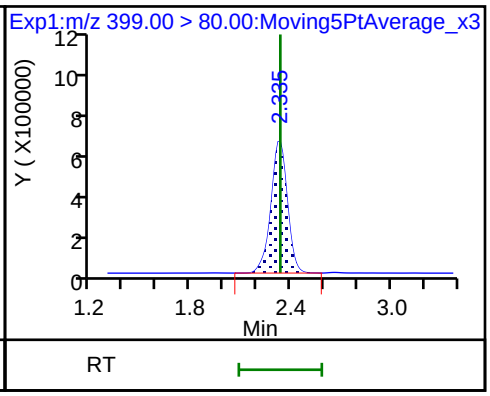
10 Perfluoroheptanoic acid



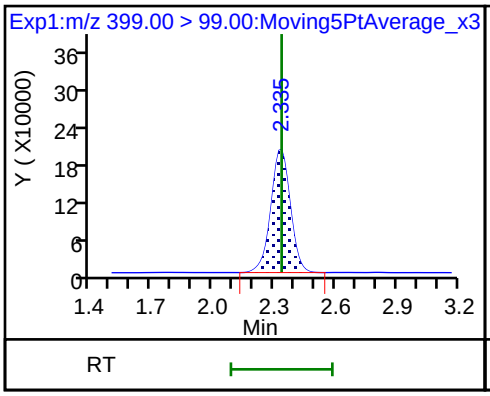
D 11 18O2 PFHxS



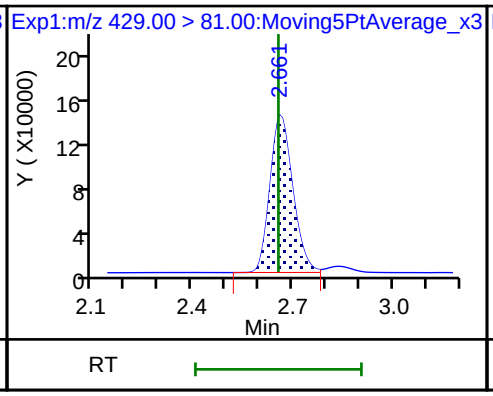
8 Perfluorohexanesulfonic acid



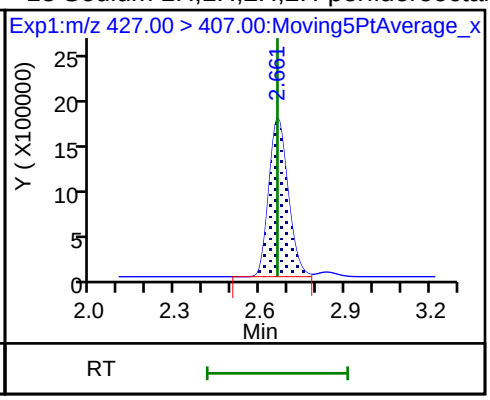
8 Perfluorohexanesulfonic acid



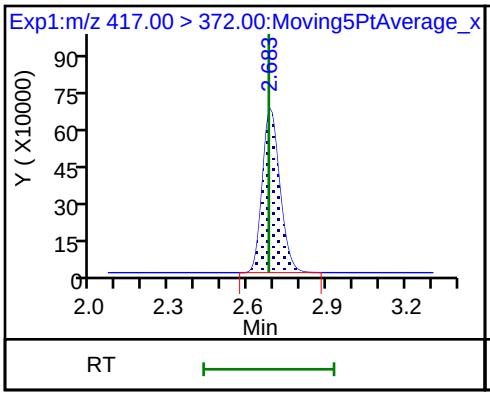
D 12 M2-6:2FTS



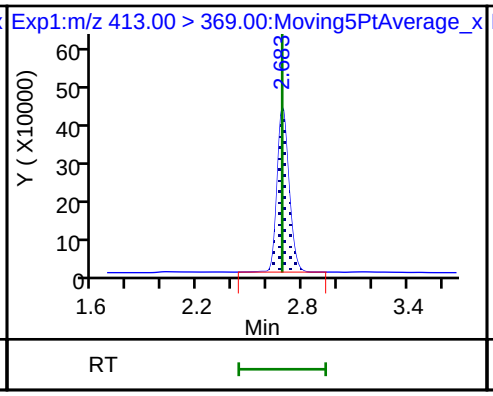
13 Sodium 1H,1H,2H,2H-perfluorooctane



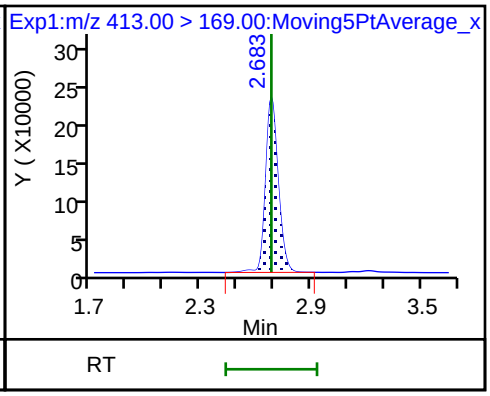
D 14 13C4 PFOA



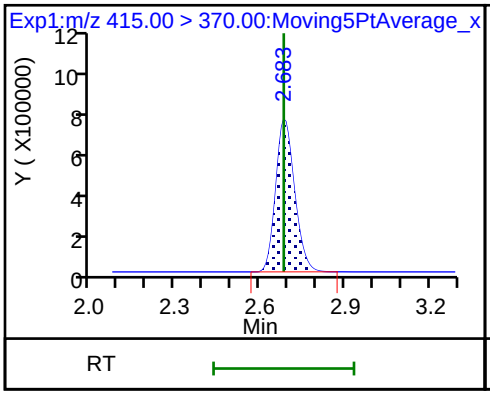
15 Perfluorooctanoic acid



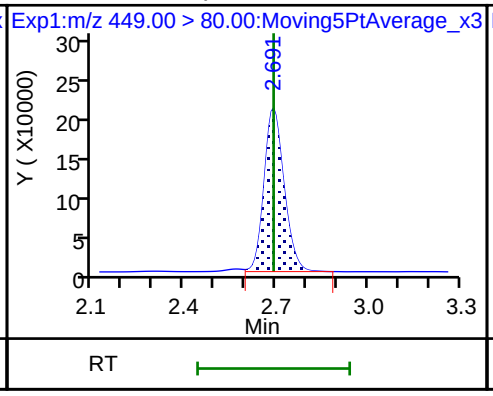
15 Perfluorooctanoic acid



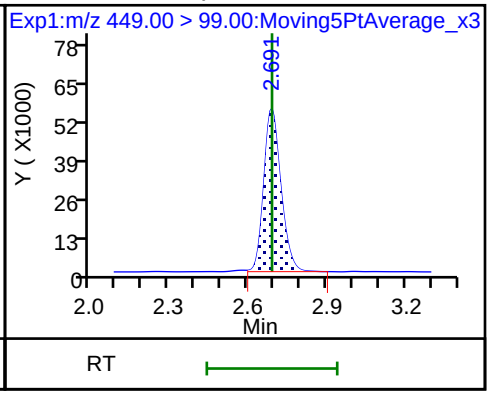
* 62 13C2-PFOA



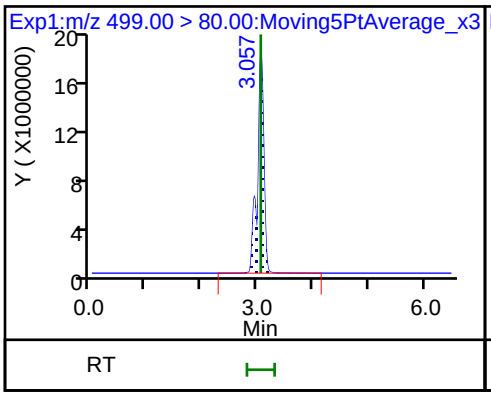
16 Perfluoroheptanesulfonic acid



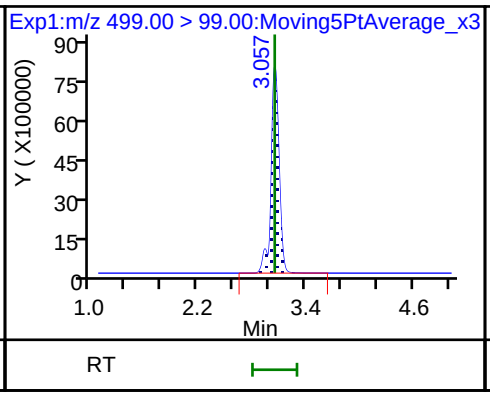
16 Perfluoroheptanesulfonic acid



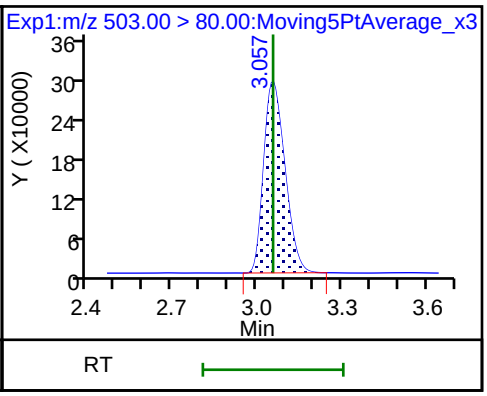
17 Perfluorooctane sulfonic acid



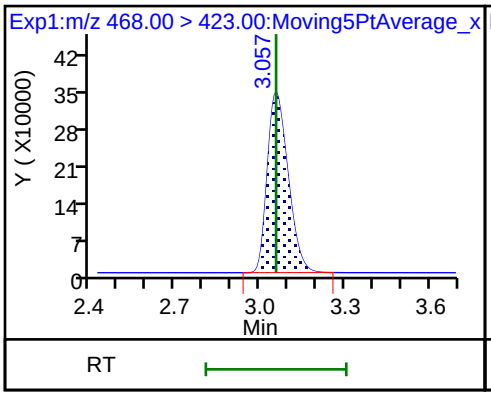
17 Perfluorooctane sulfonic acid



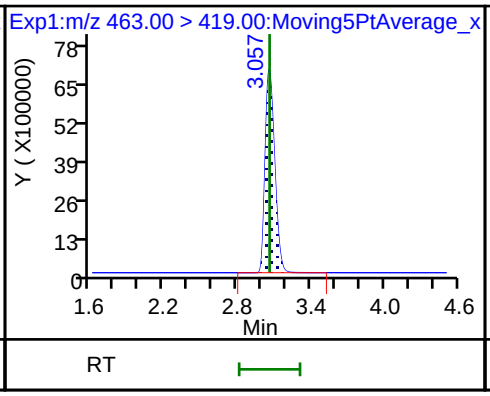
D 18 13C4 PFOS



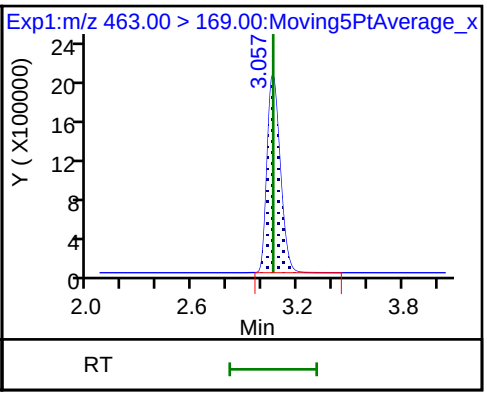
D 19 13C5 PFNA



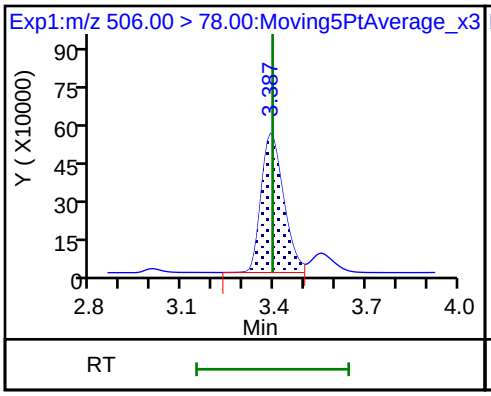
20 Perfluorononanoic acid



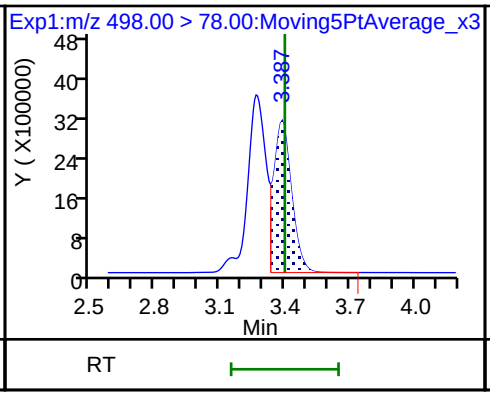
20 Perfluorononanoic acid



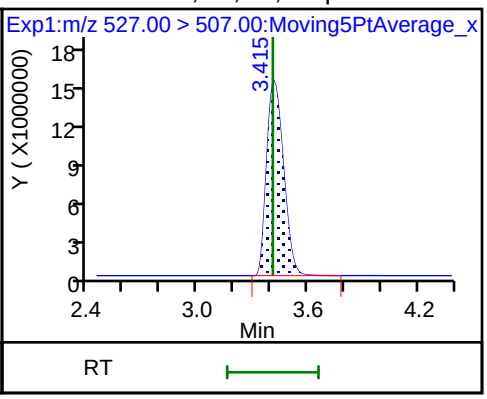
D 21 13C8 FOSA



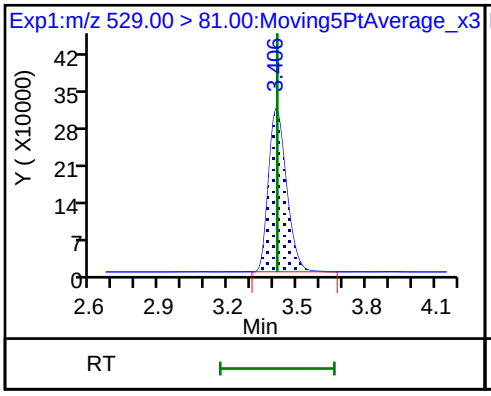
22 Perfluorooctane Sulfonamide



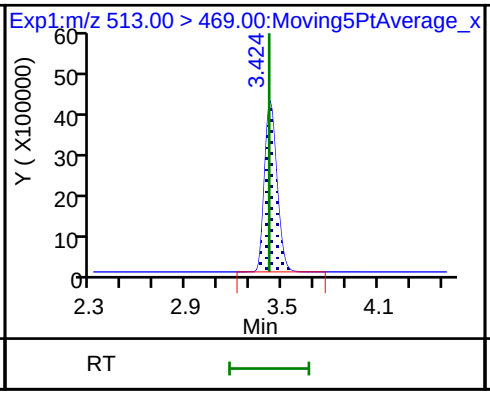
25 Sodium 1H,1H,2H,2H-perfluorodecane



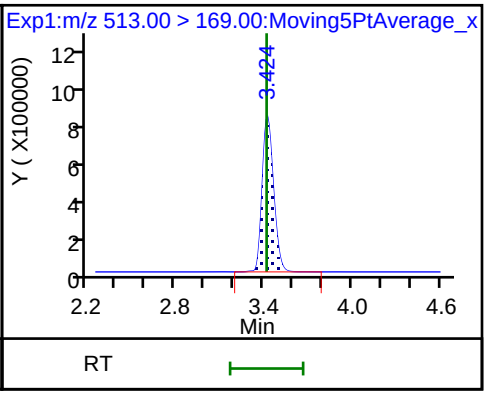
D 26 M2-8:2FTS



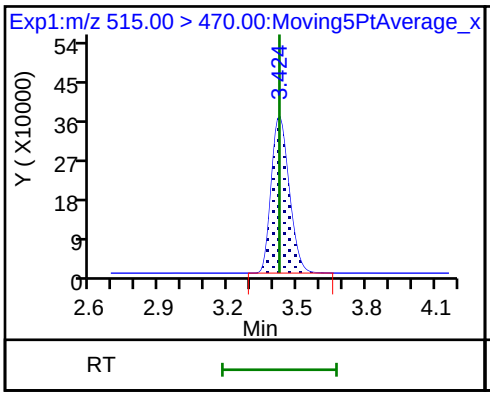
24 Perfluorodecanoic acid



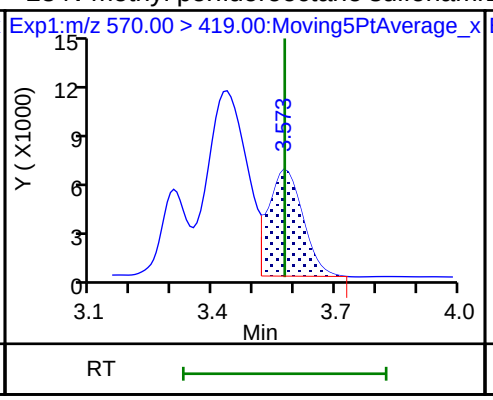
24 Perfluorodecanoic acid



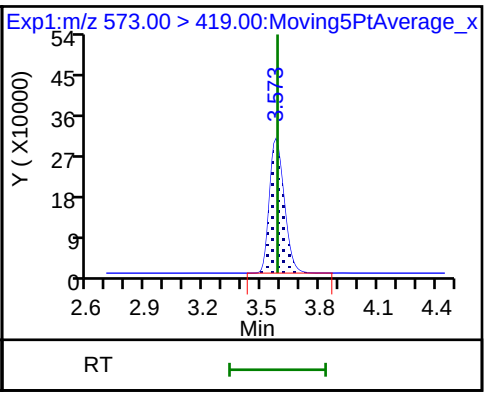
D 23 13C2 PFDA



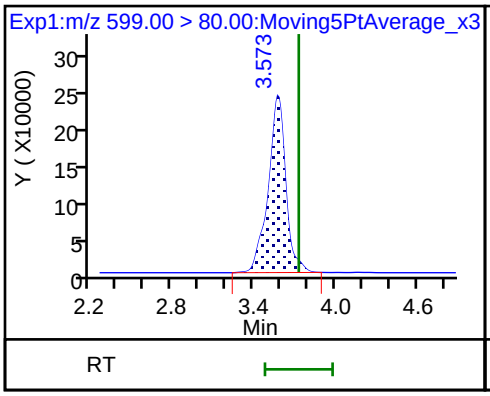
28 N-methyl perfluorooctane sulfonami



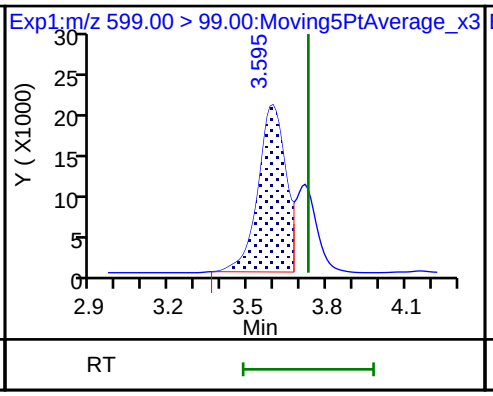
D 27 d3-NMeFOSAA



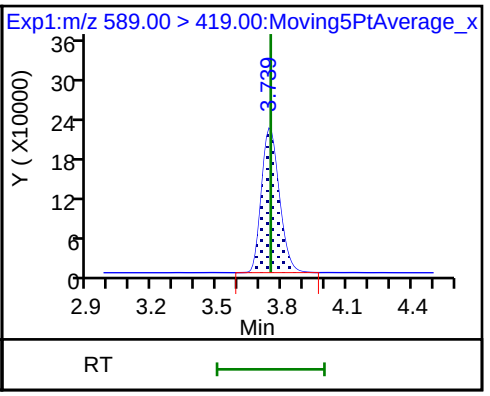
29 Perfluorodecane Sulfonic acid



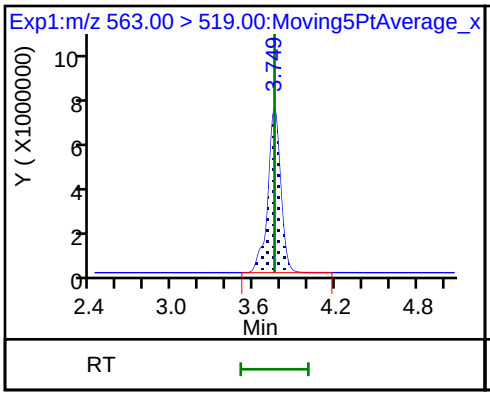
29 Perfluorodecane Sulfonic acid



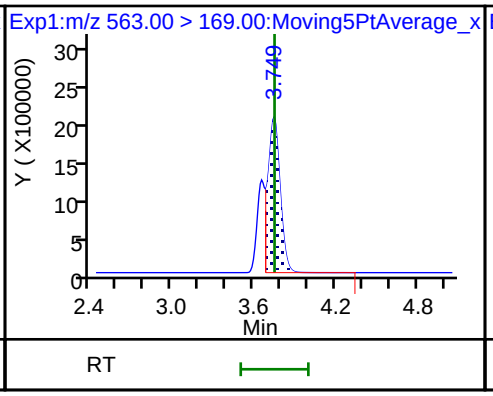
D 32 d5-NEtFOSAA



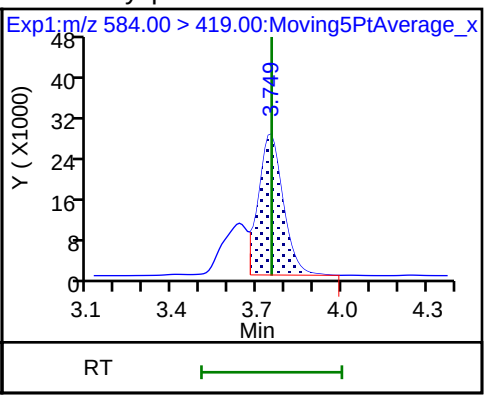
31 Perfluoroundecanoic acid



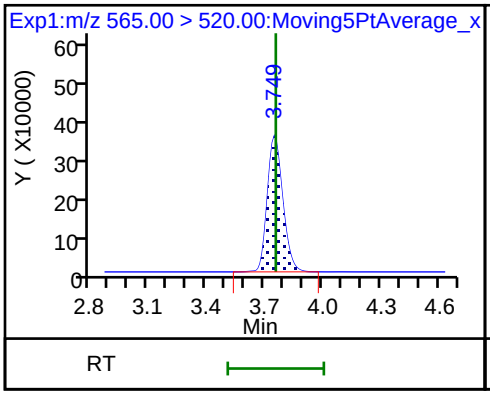
31 Perfluoroundecanoic acid



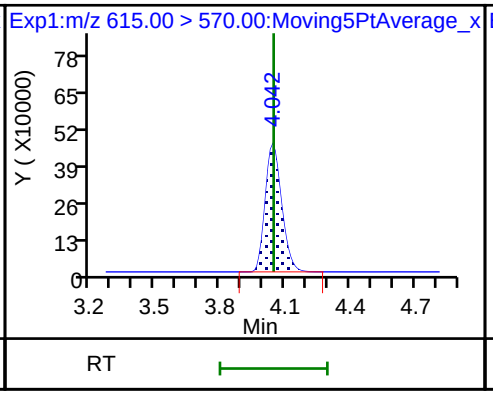
33 N-ethyl perfluorooctane sulfonamid



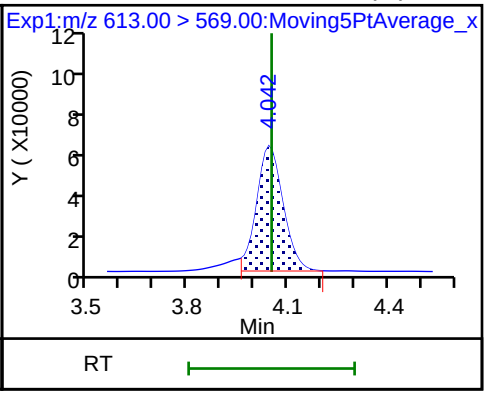
D 30 13C2 PFUnA



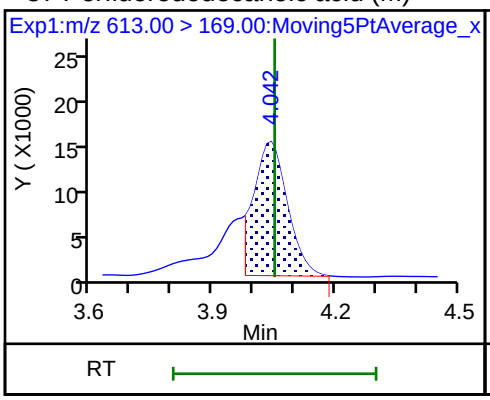
D 36 13C2 PFDoA



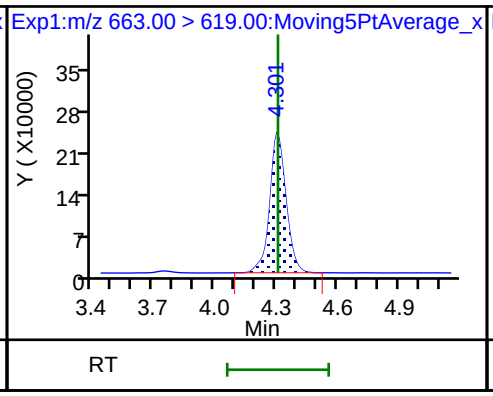
37 Perfluorododecanoic acid (M)



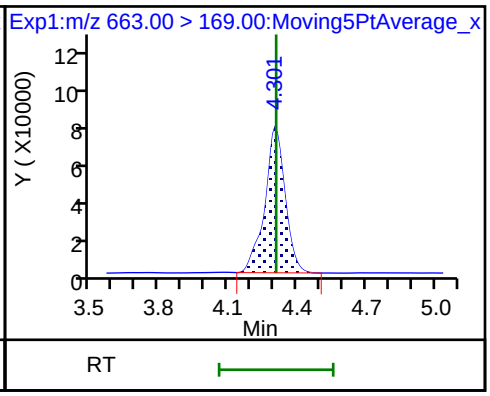
37 Perfluorododecanoic acid (M)



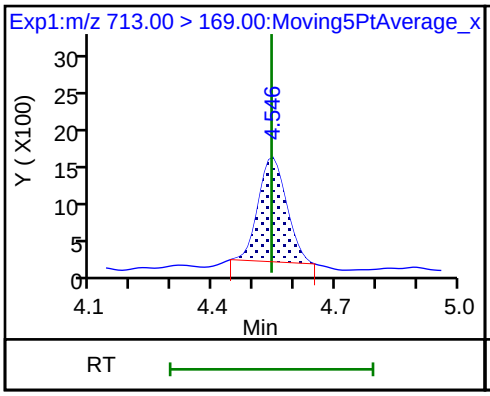
41 Perfluorotridecanoic acid



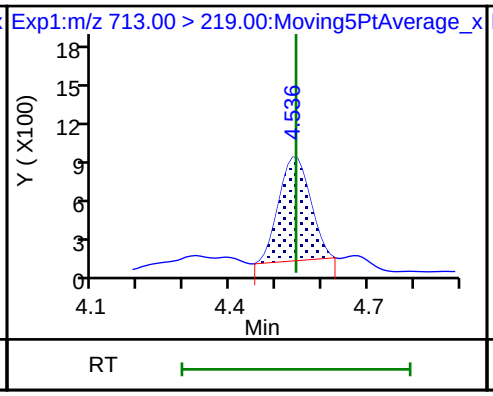
41 Perfluorotridecanoic acid



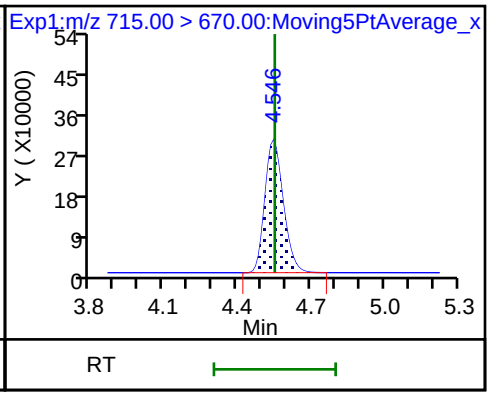
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

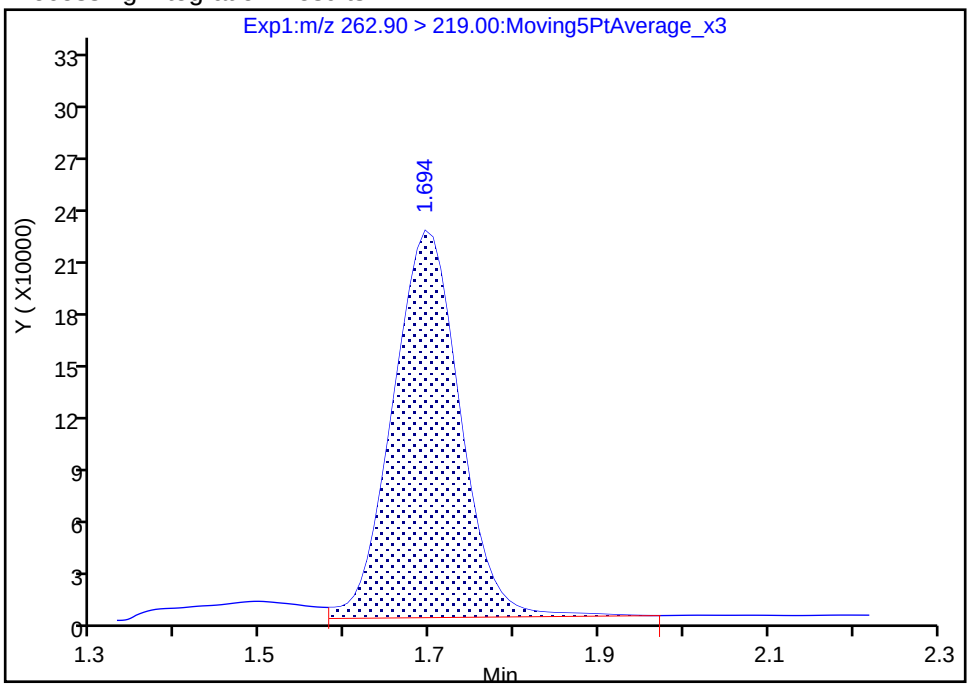
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_045.d				
Injection Date:	26-Apr-2018 08:37:41	Instrument ID:	A8_N		
Lims ID:	320-38063-A-5-C	Lab Sample ID:	320-38063-5		
Client ID:	SB003(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

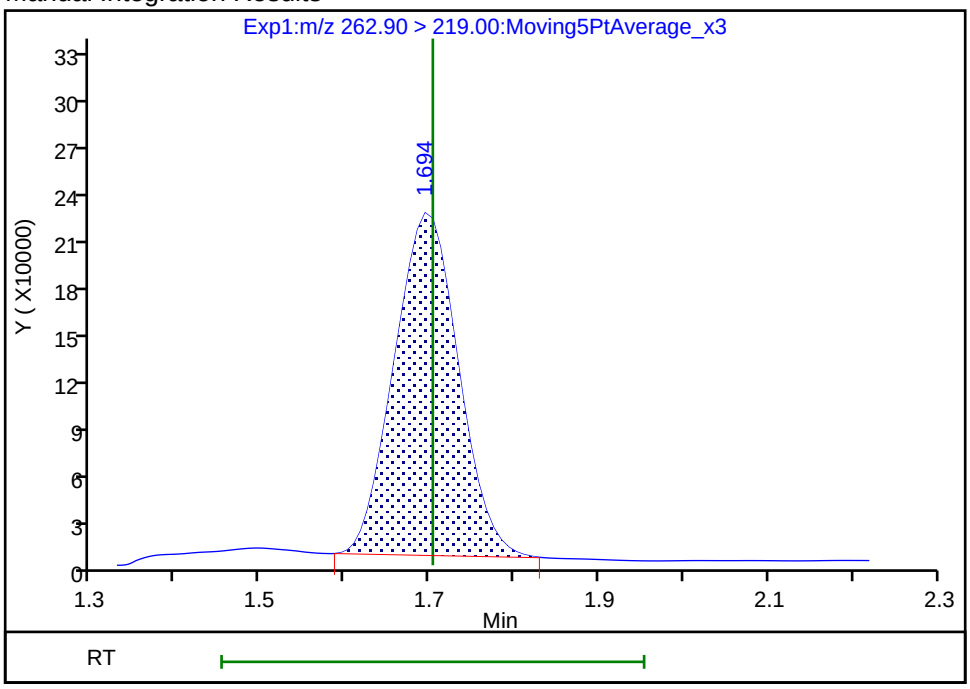
Processing Integration Results

RT: 1.69
Area: 1217057
Amount: 0.640606
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 1139615
Amount: 0.599844
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:20:16

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

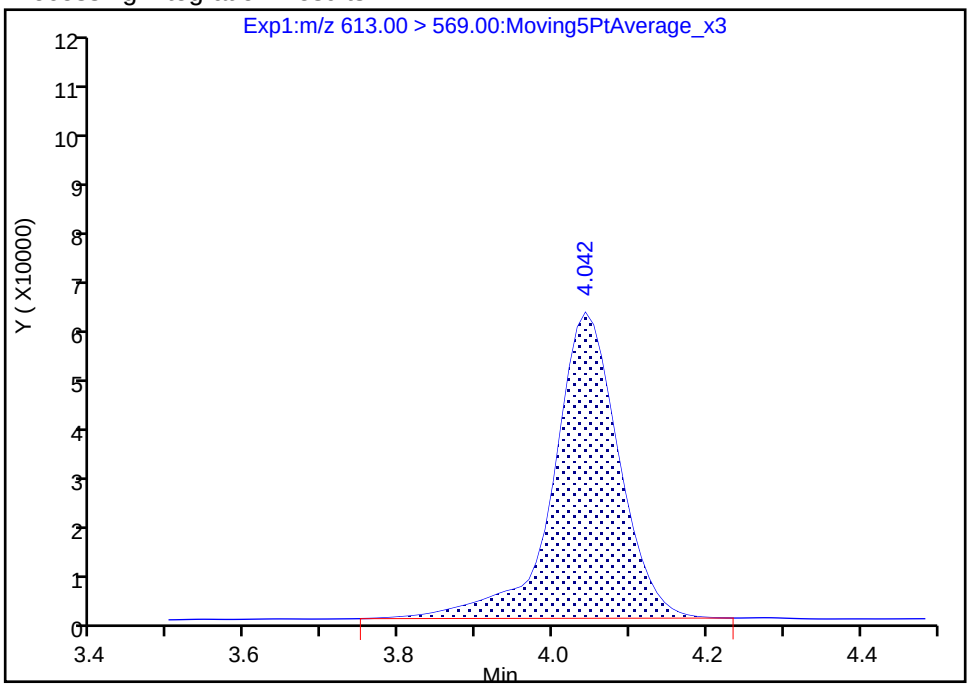
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_045.d				
Injection Date:	26-Apr-2018 08:37:41	Instrument ID:	A8_N		
Lims ID:	320-38063-A-5-C	Lab Sample ID:	320-38063-5		
Client ID:	SB003(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

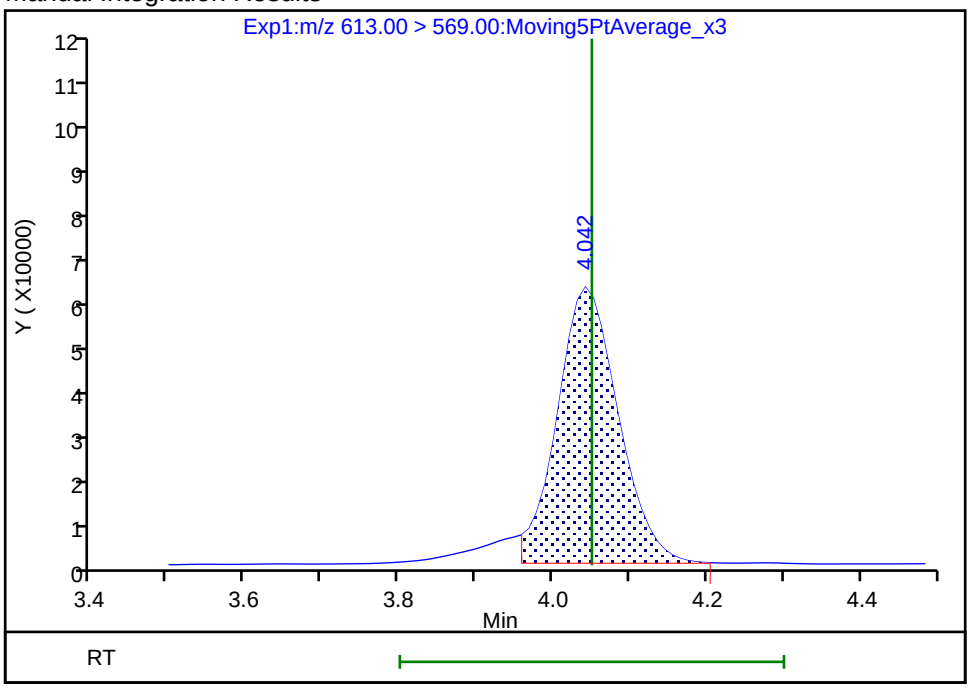
Processing Integration Results

RT: 4.04
Area: 363411
Amount: 0.363015
Amount Units: ng/ml



Manual Integration Results

RT: 4.04
Area: 336358
Amount: 0.335991
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:21:10

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

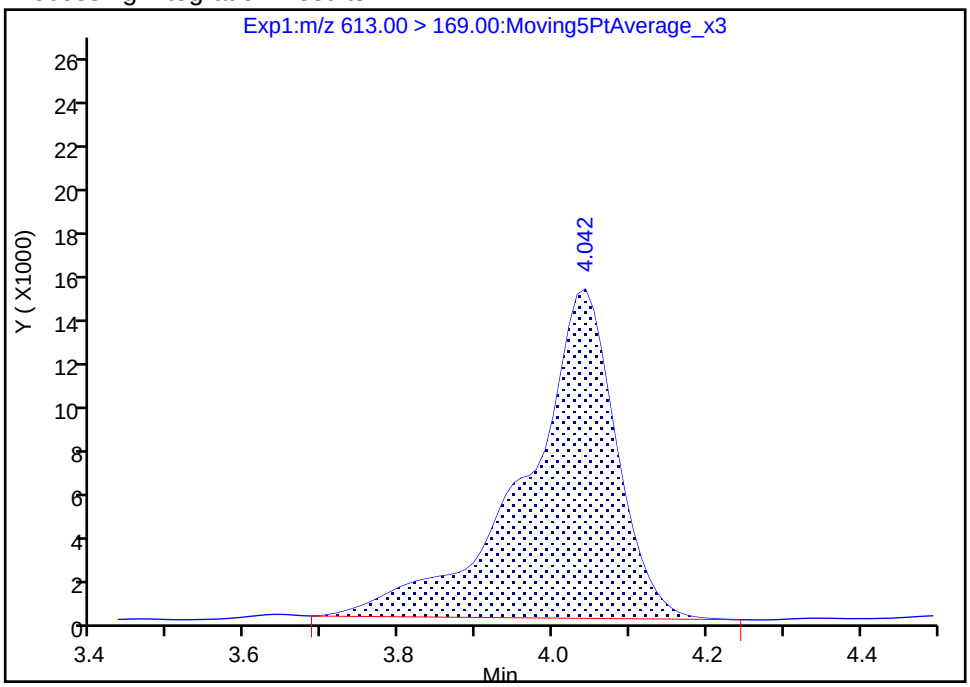
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_045.d				
Injection Date:	26-Apr-2018 08:37:41	Instrument ID:	A8_N		
Lims ID:	320-38063-A-5-C	Lab Sample ID:	320-38063-5		
Client ID:	SB003(0-2)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	34	Worklist Smp#:	10
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

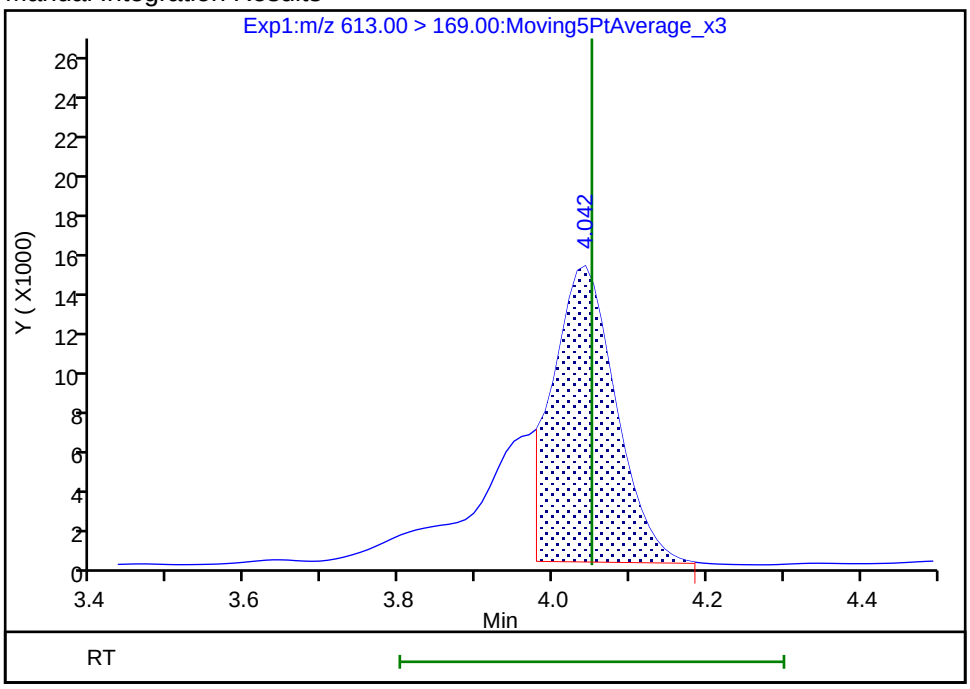
Processing Integration Results

RT: 4.04
Area: 122854
Amount: 0.363015
Amount Units: ng/ml



Manual Integration Results

RT: 4.04
Area: 83348
Amount: 0.335991
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:21:15

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB003(0-2)-SPLP DL Lab Sample ID: 320-38063-5 DL

Matrix: Solid (SPLP East) Lab File ID: 2018.04.26LLB_012.d

Analysis Method: 537 (modified) Date Collected: 04/10/2018 11:11

Extraction Method: 3535 Date Extracted: 04/23/2018 10:11

Sample wt/vol: 260.5(mL) Date Analyzed: 04/26/2018 20:33

Con. Extract Vol.: 10.0(mL) Dilution Factor: 10

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	2210	D	19.2	2.59
335-76-2	Perfluorodecanoic acid (PFDA)	1280	D	19.2	2.98
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2720	D	19.2	10.6
754-91-6	Perfluorooctane Sulfonamide (FOSA)	622	D	19.2	3.36
27619-97-2	6:2FTS	630	D B	192	19.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	90		25-150
STL00996	13C2 PFDA	90		25-150
STL00997	13C2 PFUnA	101		25-150
STL01056	13C8 FOSA	85		25-150
STL02279	M2-6:2FTS	124		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_012.d
Lims ID: 320-38063-A-5-C
Client ID: SB003(0-2)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 20:33:48 ALS Bottle#: 6 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38063-a-5-c 10X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:50:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.441	1.442	-0.001	1.000	72172	0.0329			30.5	M
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.442	-0.001	1.000	589795	0.2552		102	5201	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.703	-0.001	1.000	116107	0.0613			87.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.703	-0.001	0.555	397292	0.2667		107	8493	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.739	-0.001	1.000	14332	0.005341			46.6	
298.90 > 99.00	1.747	1.739	0.008	1.005	6785		2.11(1.25-3.74)		60.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.739	-0.001	1.000	7969	0.2331		100	62.3	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.993	-0.001	1.000	144330	0.0813			168	
313.00 > 119.00	1.992	1.993	-0.001	1.000	13085		11.03(5.03-15.10)		126	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.994	-0.002	1.000	436987	0.2652		106	10768	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.321	-0.001	1.000	87810	0.0540			109	
363.00 > 169.00	2.320	2.321	-0.001	1.000	29130		3.01(1.13-3.40)		153	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.322	-0.002	1.000	405968	0.2532		101	10739	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.334	-0.001	1.000	427457	0.2056			985	
399.00 > 99.00	2.346	2.334	0.012	1.006	135200		3.16(1.50-4.49)		871	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.335	-0.002	1.000	434402	0.2195		92.8	13781	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.668	2.660	0.008	1.003	1182875	1.64			1705	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.661	0.0	1.000	101318	0.2949		124	648	
D 14 13C4 PFOA										
417.00 > 372.00	2.691	2.683	0.008	1.000	406524	0.2551		102	10918	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.691	2.690	0.001	1.000	251066	0.1336			178	
413.00 > 169.00	2.691	2.690	0.001	1.000	147592		1.70(0.84-2.52)		500	
* 62 13C2-PFOA										
415.00 > 370.00	2.691	2.690	0.001		429506	0.2500			11517	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.698	0.0	1.000	117566	0.0753			729	
449.00 > 99.00	2.691	2.698	-0.007	0.997	29992		3.92(1.94-5.82)		533	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.059	0.005	1.000	7426040	5.77			25029	
463.00 > 169.00	3.064	3.059	0.005	1.000	1798253		4.13(1.90-5.69)		34978	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.064	3.059	0.005	1.000	38479760	30.1			107385	E
499.00 > 99.00	3.064	3.059	0.005	1.000	10915231		3.53(2.31-6.93)		132772	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.061	0.003	1.000	281131	0.2029		84.9	1807	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.061	0.003	1.000	308576	0.2253		90.1	9386	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.398	-0.002	1.000	2418060	1.62			62.6	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.400	-0.004	1.000	369066	0.2133		85.3	540	
25 Sodium 1H,1H,2H,2H-perfluorodecane										E
527.00 > 507.00	3.415	3.416	-0.001	1.000	26394178	22.0			551682	E
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.418	-0.003	1.000	227101	0.5488		229	1655	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.426	-0.002	1.000	3591250	3.35			12339	
513.00 > 169.00	3.424	3.426	-0.002	1.000	616846		5.82(2.36-7.09)		7075	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.427	-0.003	1.000	260115	0.2259		90.4	8130	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.576	0.008	1.000	156531	0.2399		95.9	1971	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.585	-0.001	1.000	5490	0.008792			26.0	
29 Perfluorodecane Sulfonic acid										R
599.00 > 80.00	3.584	3.740	-0.156	1.000	231295	0.3029			1780	R
599.00 > 99.00	3.626	3.740	-0.114	1.012	9015		25.66(1.39-4.16)		48.7	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.752	-0.003	1.000	158058	0.2454		98.2	3239	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.761	-0.002	1.003	22973	0.0389			172	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.761	-0.002	1.000	6025463	7.08			32201	
563.00 > 169.00	3.759	3.761	-0.002	1.000	1589356		3.79(2.12-6.36)		268	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.762	-0.003	1.000	251917	0.2537		101	6533	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.060	4.050	0.010	1.003	34581	0.0373			59.5	
613.00 > 169.00	4.060	4.050	0.010	1.003	10041		3.44(2.13-6.40)		75.7	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.051	-0.001	1.000	222053	0.2071		82.8	4135	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	125041	0.1158			231	
663.00 > 169.00	4.318	4.318	0.0	1.000	41129		3.04(1.25-3.76)		369	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.553	0.009	1.000	152164	0.1119		44.8	1695	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:54:28 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_012.d

Injection Date: 26-Apr-2018 20:33:48 Instrument ID: A8_N

Lims ID: 320-38063-A-5-C Lab Sample ID: 320-38063-5

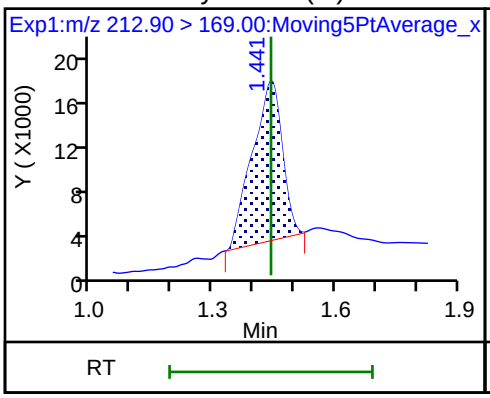
Client ID: SB003(0-2)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 6 Worklist Smp#: 10

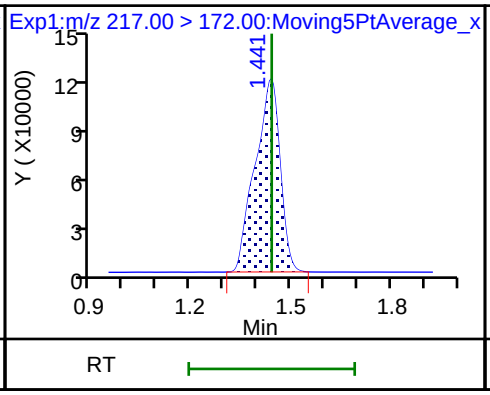
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

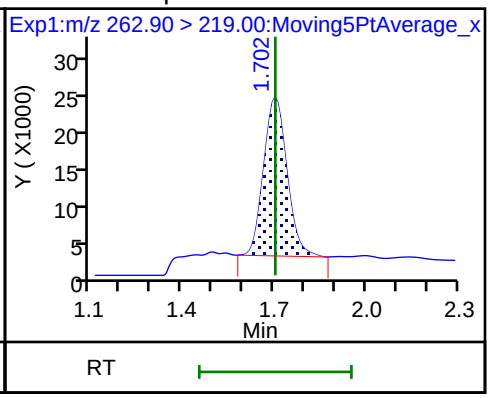
2 Perfluorobutyric acid (M)



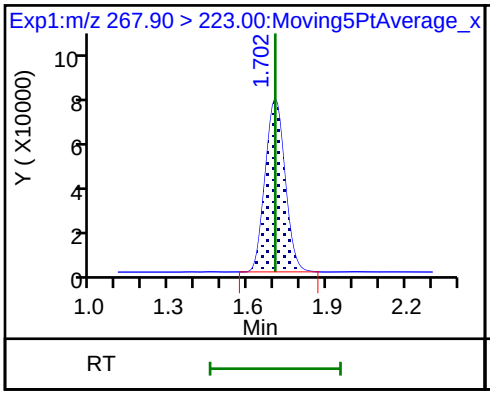
D 1 13C4 PFBA



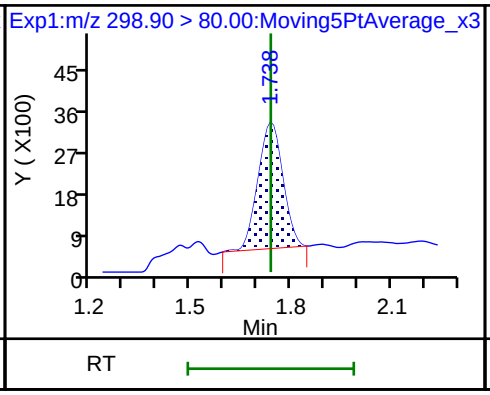
4 Perfluoropentanoic acid



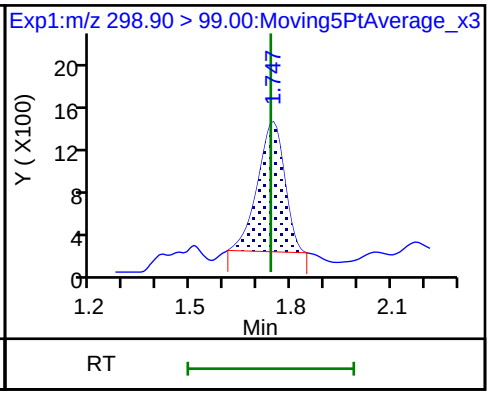
D 3 13C5-PFPeA



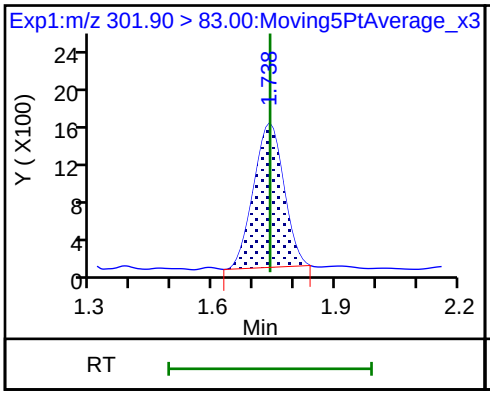
5 Perfluorobutanesulfonic acid



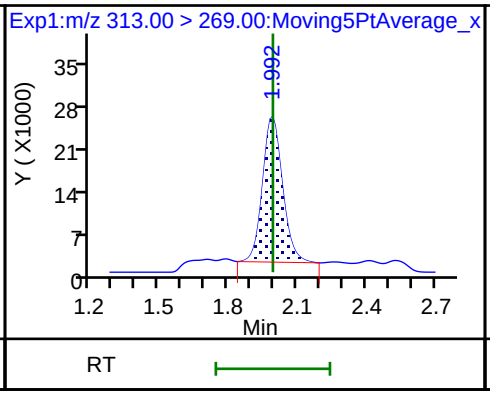
5 Perfluorobutanesulfonic acid



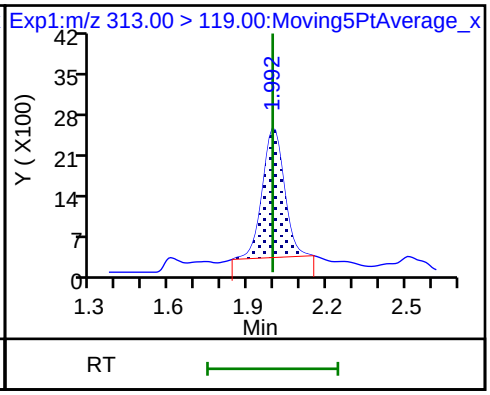
D 47 13C3-PFBS



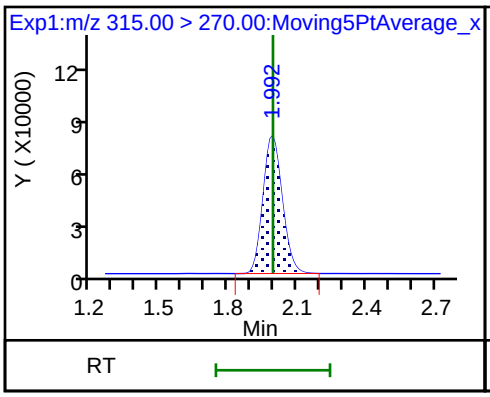
6 Perfluorohexanoic acid



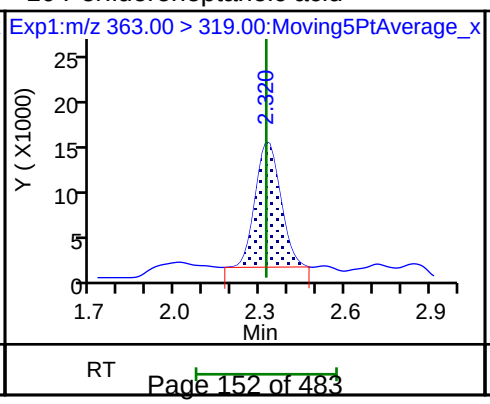
6 Perfluorohexanoic acid



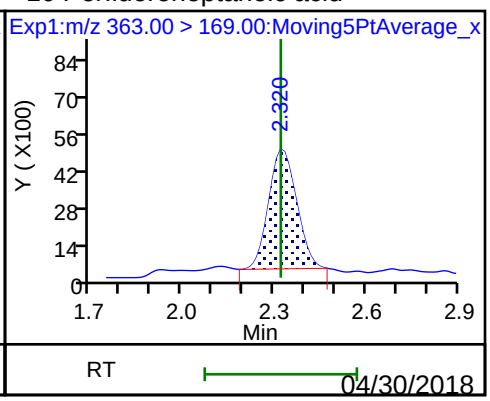
D 7 13C2 PFHxA



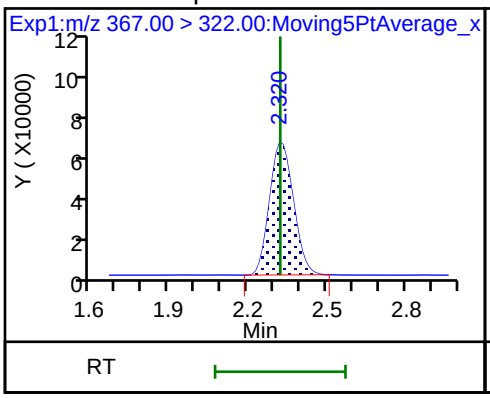
10 Perfluoroheptanoic acid



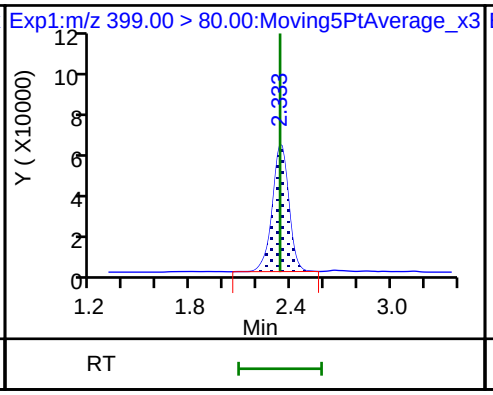
10 Perfluoroheptanoic acid



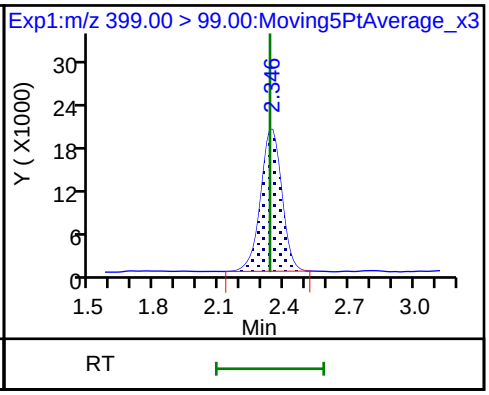
D 9 13C4-PFHpA



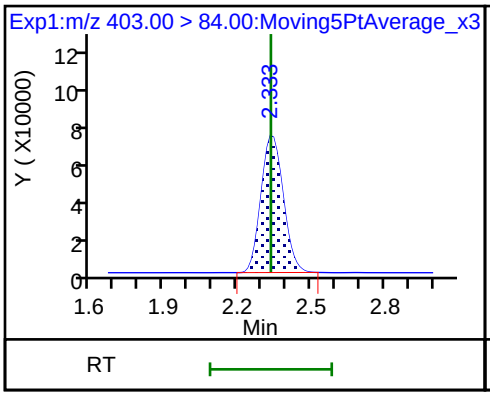
8 Perfluorohexanesulfonic acid



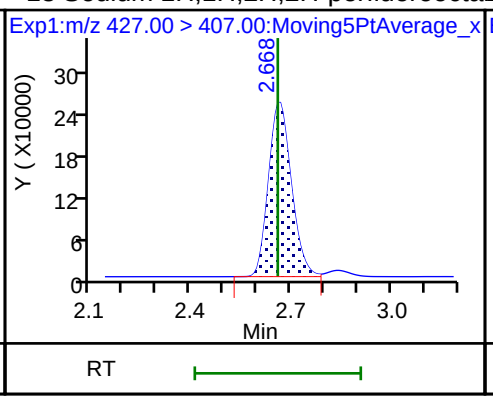
8 Perfluorohexanesulfonic acid



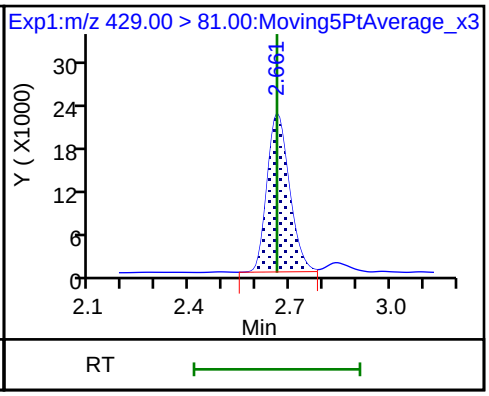
D 11 18O2 PFHxS



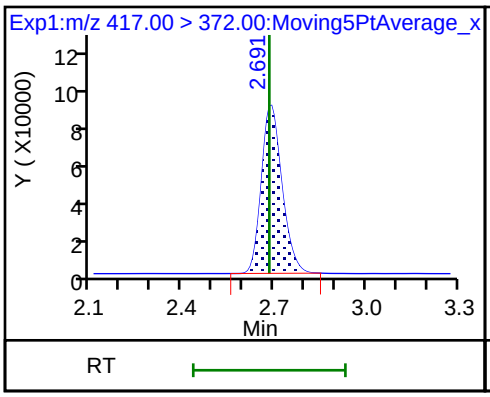
13 Sodium 1H,1H,2H,2H-perfluorooctane



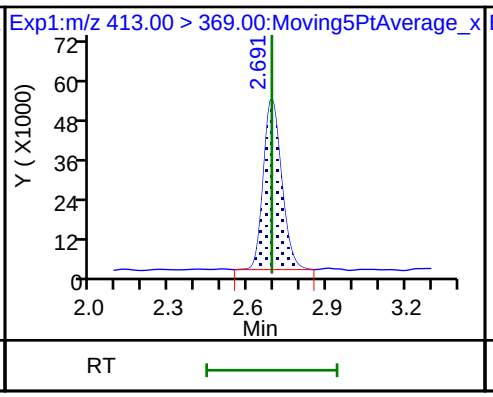
D 12 M2-6:2FTS



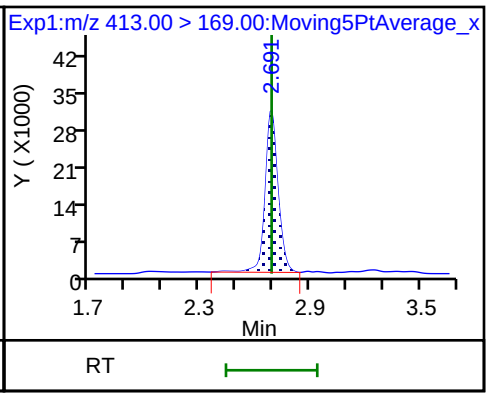
D 14 13C4 PFOA



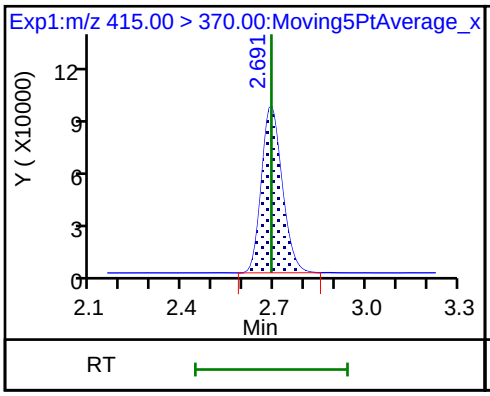
15 Perfluorooctanoic acid



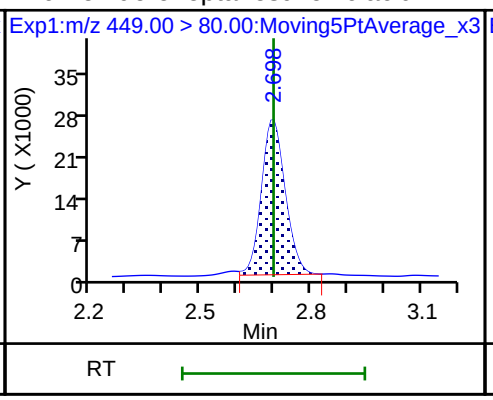
15 Perfluorooctanoic acid



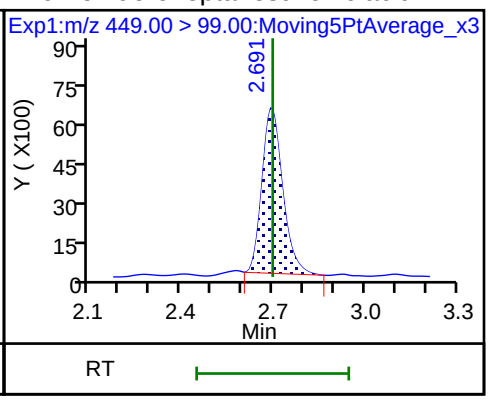
* 62 13C2-PFOA



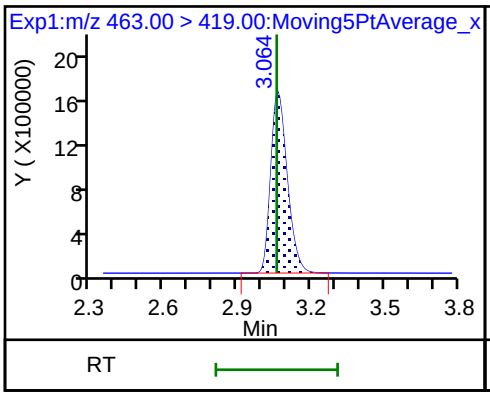
16 Perfluoroheptanesulfonic acid



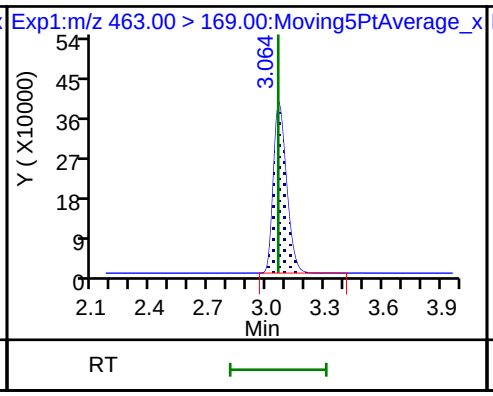
16 Perfluoroheptanesulfonic acid



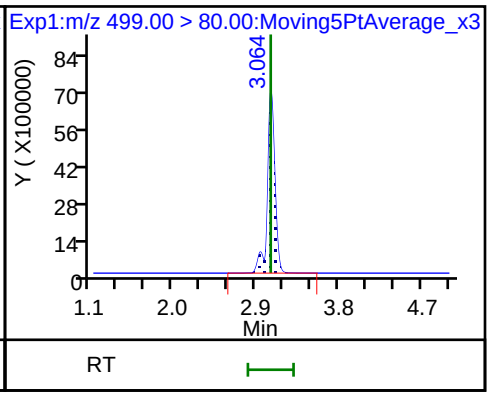
20 Perfluorononanoic acid



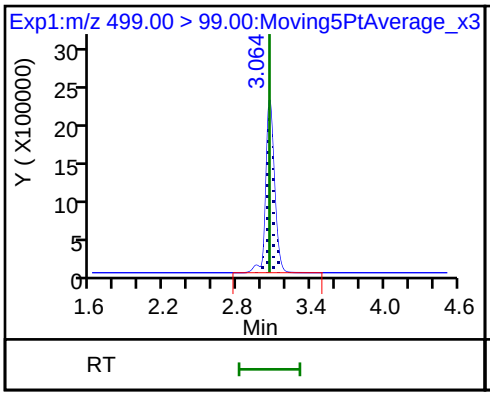
20 Perfluorononanoic acid



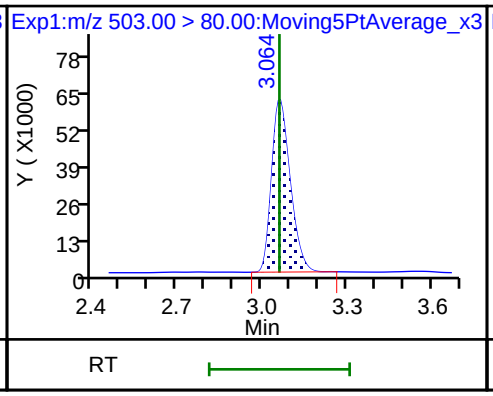
17 Perfluorooctane sulfonic acid



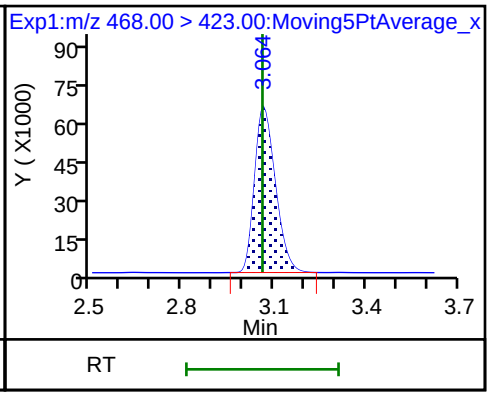
17 Perfluorooctane sulfonic acid



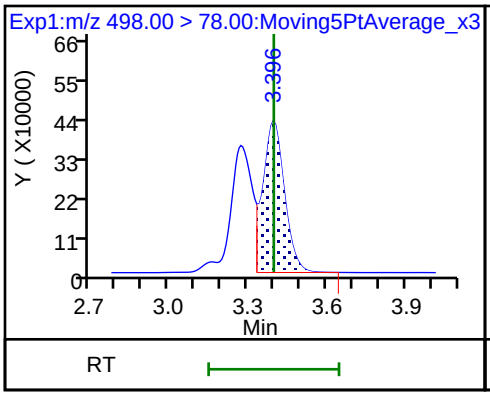
D 18 13C4 PFOS



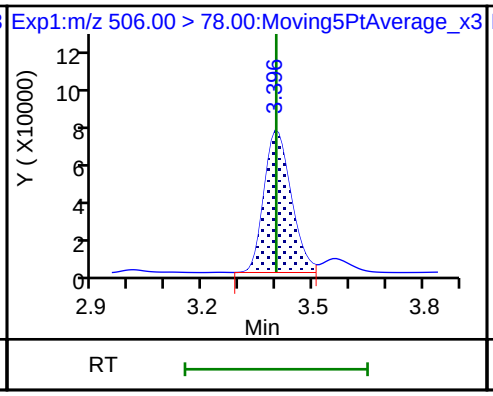
D 19 13C5 PFNA



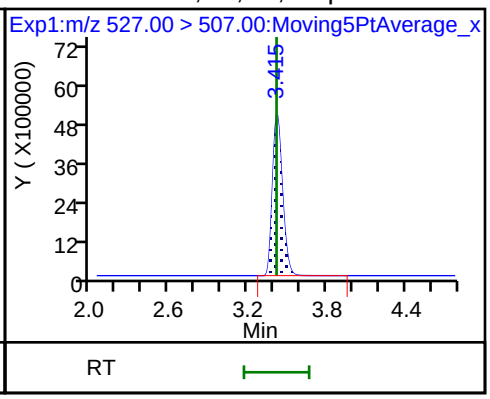
22 Perfluorooctane Sulfonamide



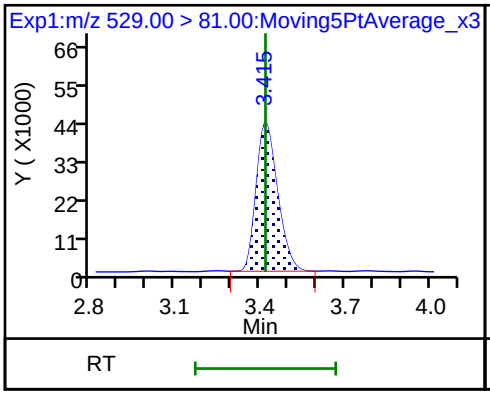
D 21 13C8 FOSA



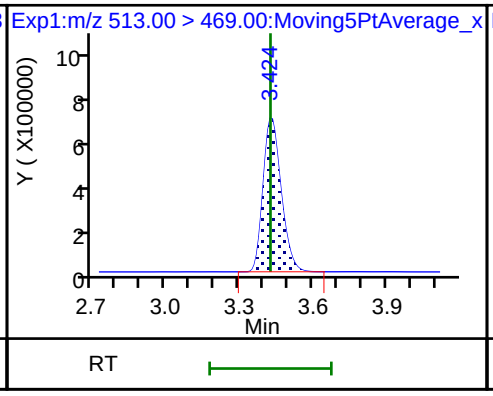
25 Sodium 1H,1H,2H,2H-perfluorodecane



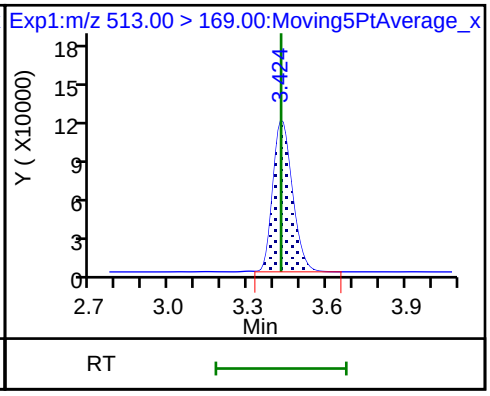
D 26 M2-8:2FTS



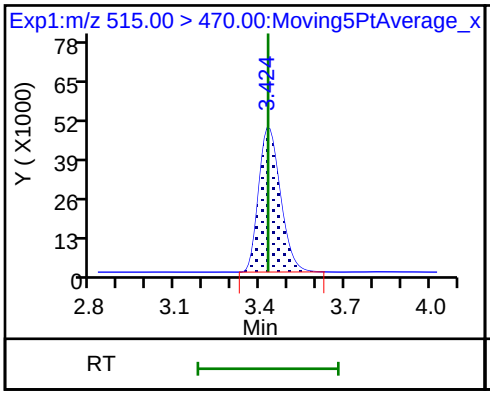
24 Perfluorodecanoic acid



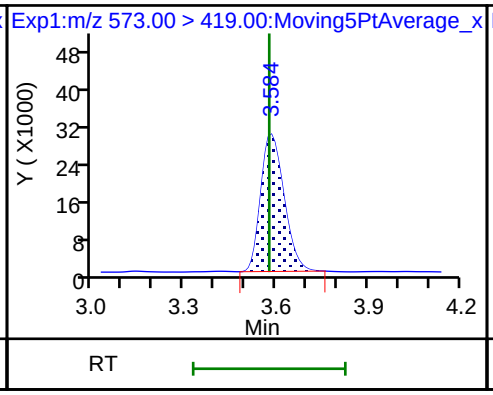
24 Perfluorodecanoic acid



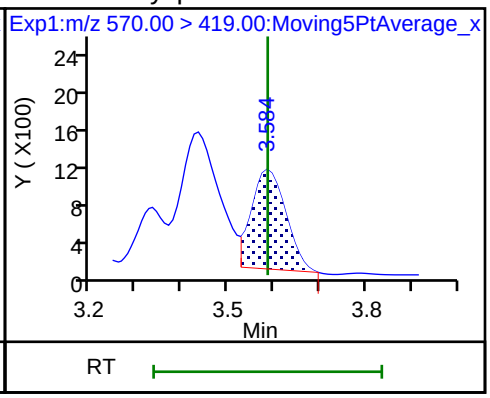
D 23 13C2 PFDA



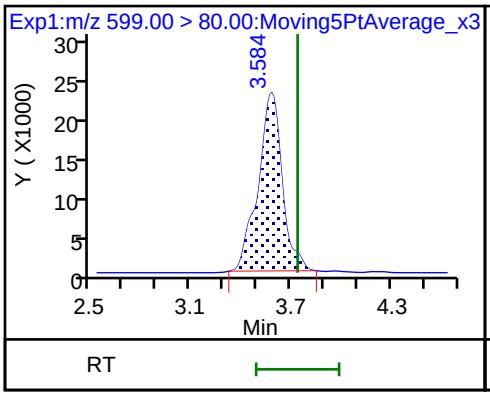
D 27 d3-NMeFOSAA



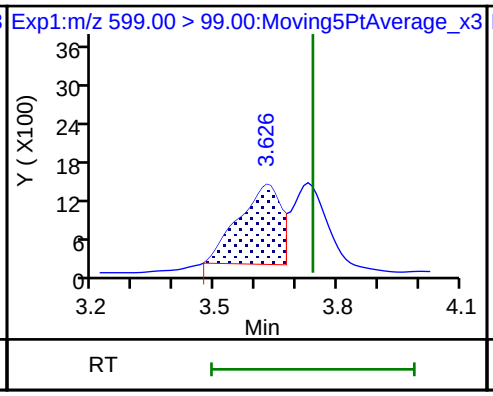
28 N-methyl perfluorooctane sulfonami



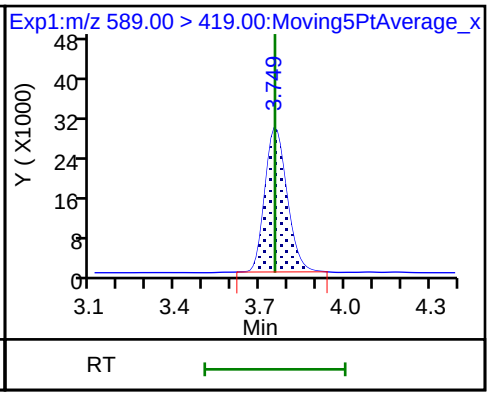
29 Perfluorodecane Sulfonic acid



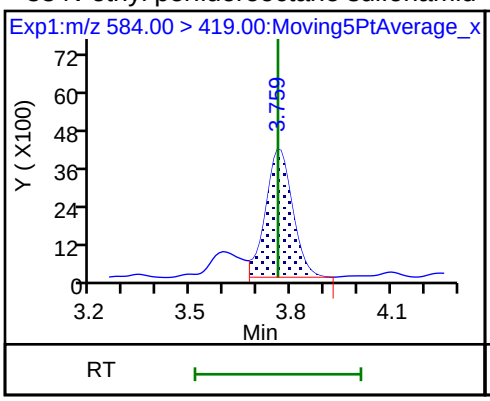
29 Perfluorodecane Sulfonic acid



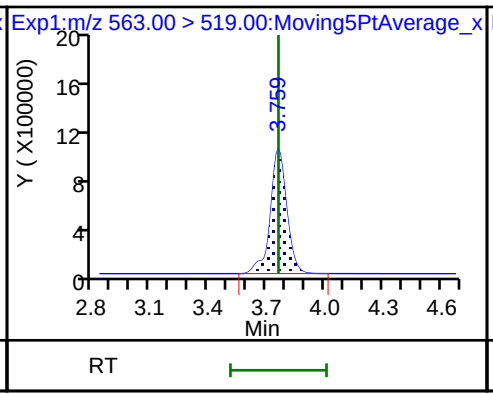
D 32 d5-NEtFOSAA



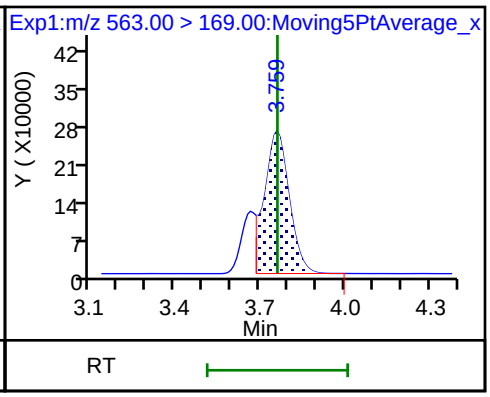
33 N-ethyl perfluorooctane sulfonamid



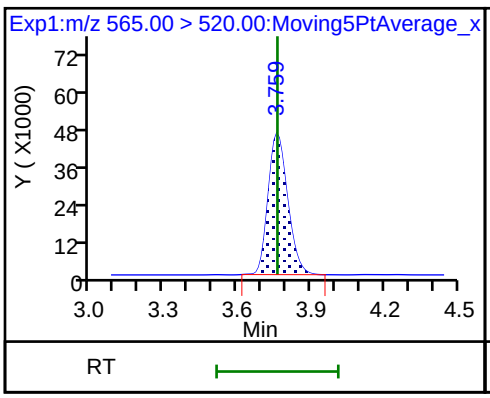
31 Perfluoroundecanoic acid



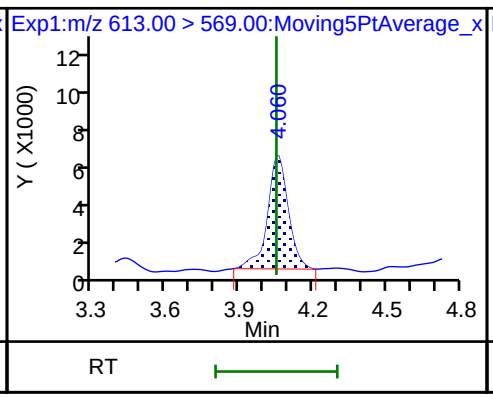
31 Perfluoroundecanoic acid



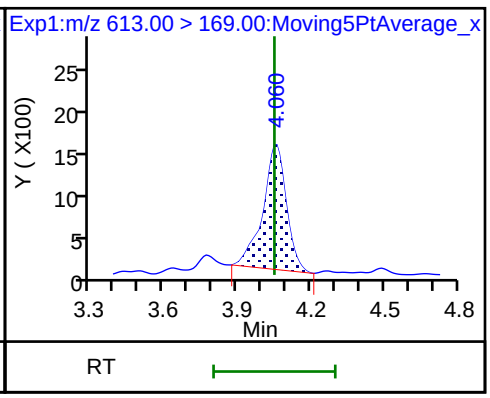
D 30 13C2 PFUnA



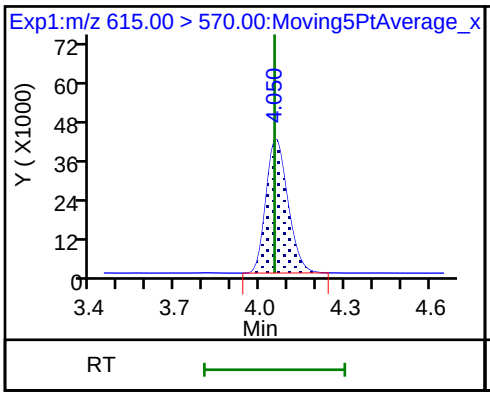
37 Perfluorododecanoic acid



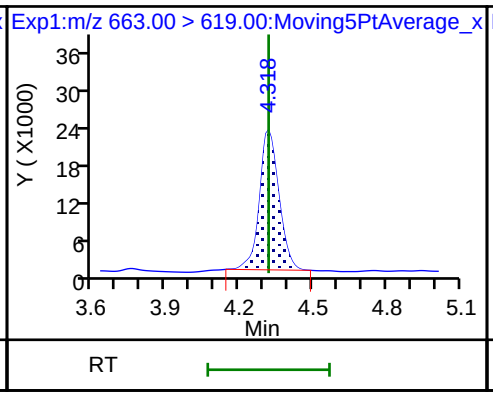
37 Perfluorododecanoic acid



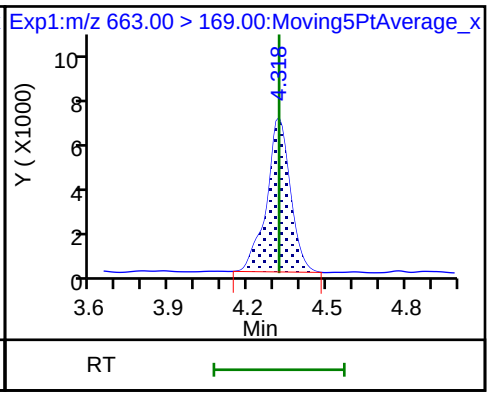
D 36 13C2 PFDoA



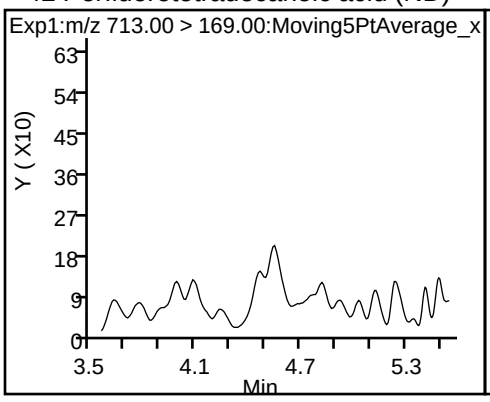
41 Perfluorotridecanoic acid



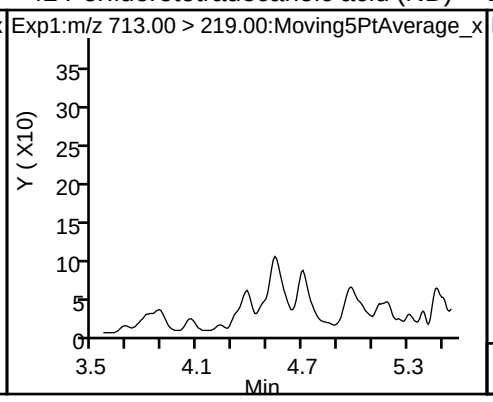
41 Perfluorotridecanoic acid



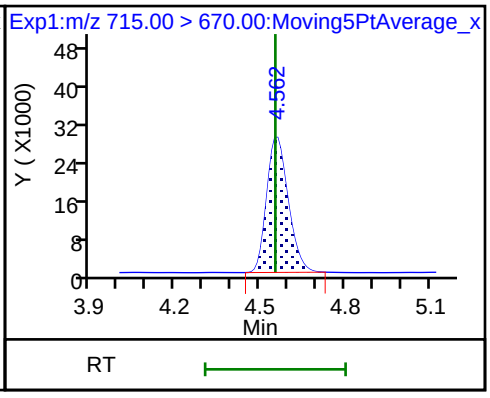
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB003(0-2)-SPLP DL2 Lab Sample ID: 320-38063-5 DL2

Matrix: Solid (SPLP East) Lab File ID: 2018.04.26LLB_011.d

Analysis Method: 537 (modified) Date Collected: 04/10/2018 11:11

Extraction Method: 3535 Date Extracted: 04/23/2018 10:11

Sample wt/vol: 260.5(mL) Date Analyzed: 04/26/2018 20:25

Con. Extract Vol.: 10.0(mL) Dilution Factor: 100

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	13900	D	192	51.8
39108-34-4	8:2FTS	8150	D	1920	192

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	75		25-150
STL02280	M2-8:2FTS	222	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_011.d
Lims ID: 320-38063-A-5-C
Client ID: SB003(0-2)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 20:25:55 ALS Bottle#: 5 Worklist Smp#: 9
Injection Vol: 2.0 ul Dil. Factor: 100.0000
Sample Info: 320-38063-a-5-c 100X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:49:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.442	0.005	1.004	10637	0.005063			5.4	
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.442	0.0	1.000	56563	0.0200		80.0	501	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	10900	0.006383			10.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.556	35822	0.0196		78.6	704	
D 47 13C3-PFBS										M
301.90 > 83.00	1.730	1.739	-0.009	1.000	861	0.0206		88.5	10.1	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	1.994	0.0	1.000	37667	0.0187		74.7	747	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.321	2.321	0.0	1.000	9269	0.005444			9.5	M
363.00 > 169.00	2.321	2.321	0.0	1.000	5077		1.83(1.13-3.40)		20.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.322	-0.001	1.000	42530	0.0217		86.7	988	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	42657	0.0181			84.0	
399.00 > 99.00	2.334	2.334	0.0	1.000	14238		3.00(1.50-4.49)		99.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.335	-0.001	1.000	49232	0.0203		85.9	2006	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.683	2.660	0.023	1.000	248170	0.1655			3732	
D 12 M2-6:2FTS										
429.00 > 81.00	2.683	2.661	0.022	1.000	21068	0.0501		211	268	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.683	0.007	1.000	46551	0.0239		95.4	1657	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.690	2.690	0.0	1.000	35401	0.0165			20.9	M
413.00 > 169.00	2.683	2.690	-0.007	0.997	19008		1.86(0.84-2.52)		61.3	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.690	0.0		52575	0.0250			1841	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.698	0.0	1.000	12511	0.007374			88.8	
449.00 > 99.00	2.698	2.698	0.0	1.000	3456		3.62(1.94-5.82)		77.9	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.059	-0.002	0.998	823250	0.5649			2925	
463.00 > 169.00	3.064	3.059	0.005	1.000	187964		4.38(1.90-5.69)		5899	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	0.998	5022628	3.61			21647	
499.00 > 99.00	3.057	3.059	-0.002	0.998	1129459		4.45(2.31-6.93)		21874	
D 18 13C4 PFOS										
503.00 > 80.00	3.064	3.061	0.003	1.000	30541	0.0180		75.3	173	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.061	0.003	1.000	34940	0.0208		83.4	1236	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.398	-0.002	1.000	227775	0.1583			59.9	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.400	-0.004	1.000	35552	0.0168		67.1	369	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.416	-0.002	1.000	3025343	2.12			149820	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.418	-0.004	1.000	26955	0.0532		222	205	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.426	-0.002	1.000	364131	0.3486			1905	
513.00 > 169.00	3.424	3.426	-0.002	1.000	61097		5.96(2.36-7.09)		793	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.427	-0.003	1.000	25314	0.0180		71.9	642	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.583	3.576	0.007	1.000	21276	0.0266		107	326	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.752	-0.004	1.000	15153	0.0192		76.9	198	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.761	-0.002	1.000	570466	0.6951			3623	
563.00 > 169.00	3.759	3.761	-0.002	1.000	165248		3.45(2.12-6.36)		241	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.762	-0.003	1.000	24279	0.0200		79.9	944	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.051	-0.003	1.000	22153	0.0169		67.5	388	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	12261	0.0114			18.7	
663.00 > 169.00	4.318	4.318	0.0	1.000	3633		3.37(1.25-3.76)		33.9	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.553	0.009	1.000	13983	0.008400		33.6	142	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:54:26 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_011.d

Injection Date: 26-Apr-2018 20:25:55 Instrument ID: A8_N

Lims ID: 320-38063-A-5-C Lab Sample ID: 320-38063-5

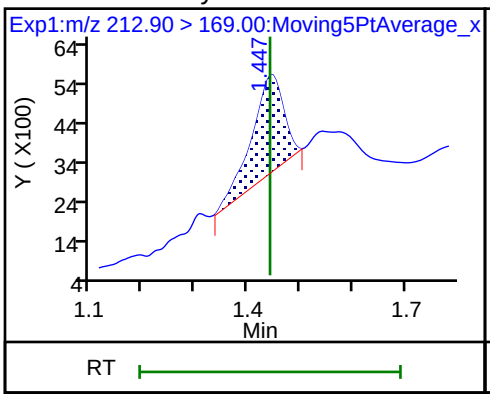
Client ID: SB003(0-2)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 9

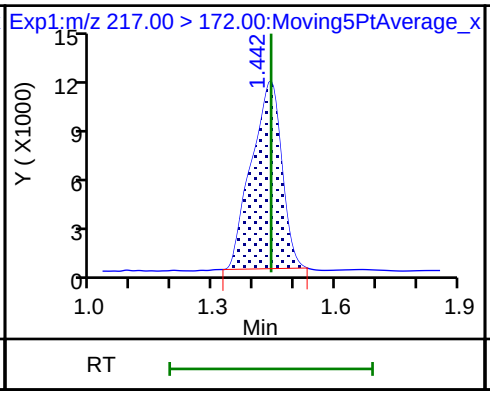
Injection Vol: 2.0 ul Dil. Factor: 100.0000

Method: A8_N Limit Group: LC PFC ICAL

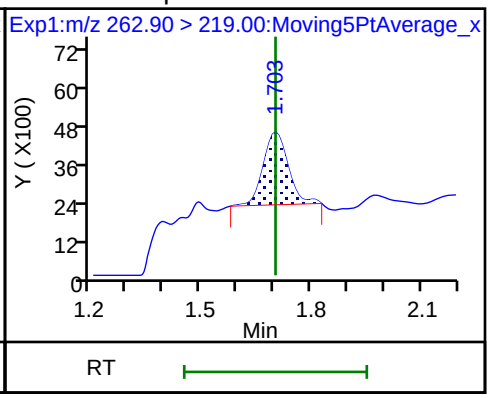
2 Perfluorobutyric acid



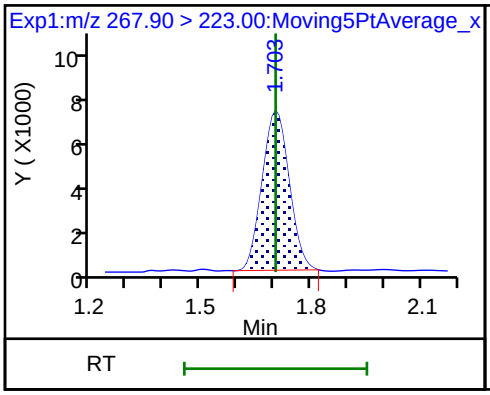
D 1 13C4 PFBA



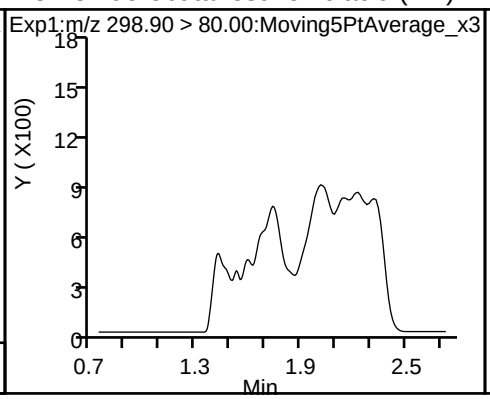
4 Perfluoropentanoic acid



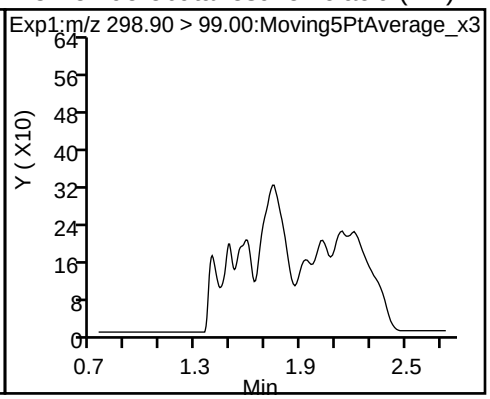
D 3 13C5-PFPeA



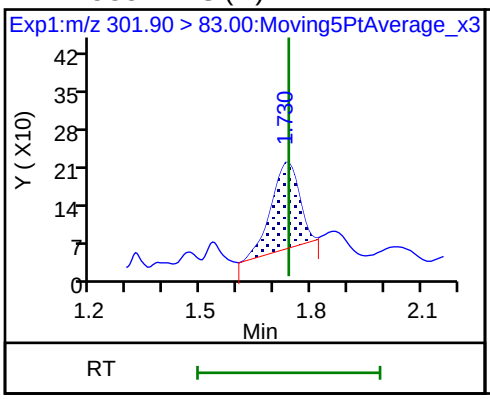
5 Perfluorobutanesulfonic acid (ND)



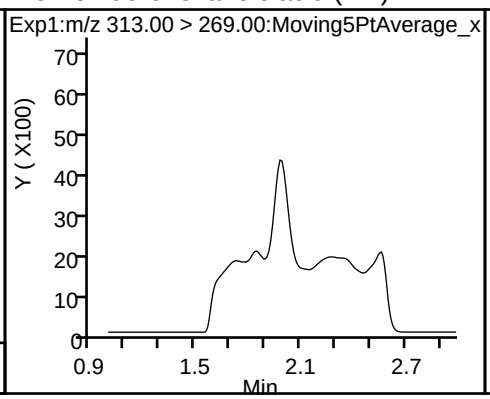
5 Perfluorobutanesulfonic acid (ND)



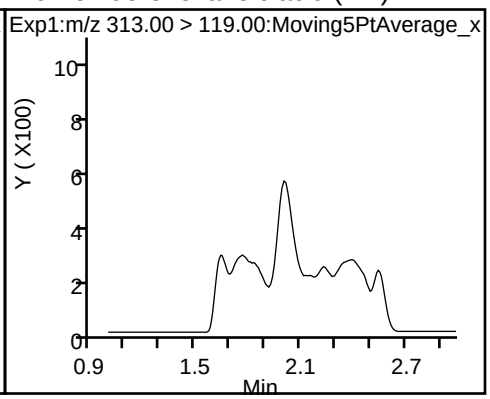
D 47 13C3-PFBS (M)



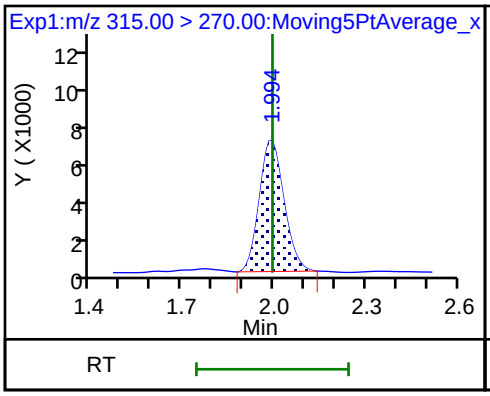
6 Perfluorohexanoic acid (ND)



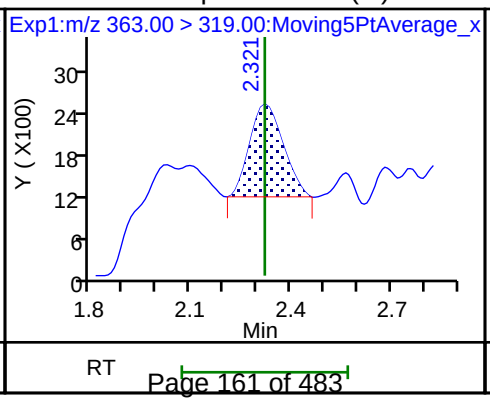
6 Perfluorohexanoic acid (ND)



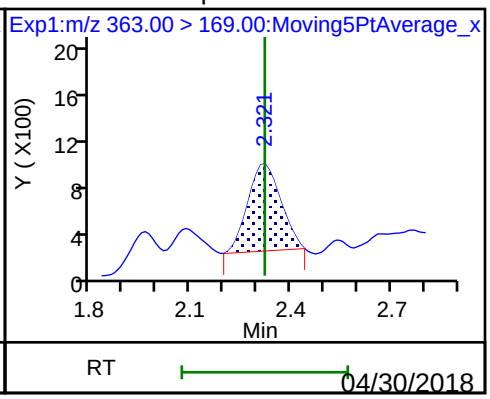
D 7 13C2 PFHxA



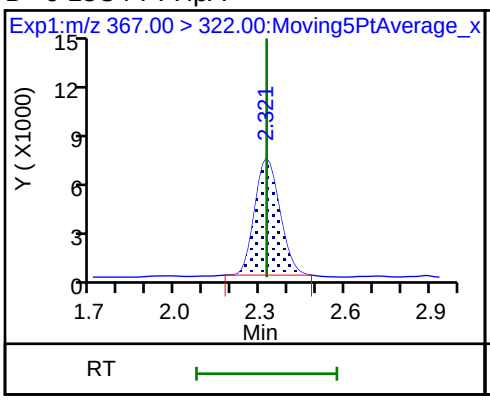
10 Perfluoroheptanoic acid (M)



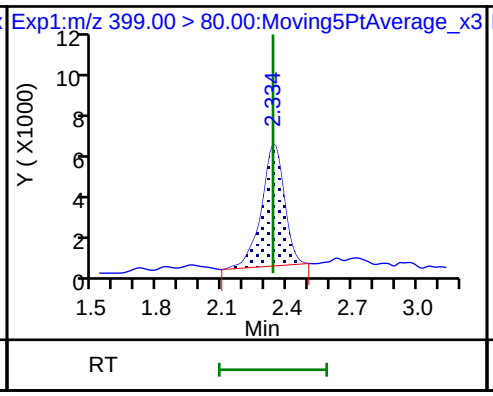
10 Perfluoroheptanoic acid



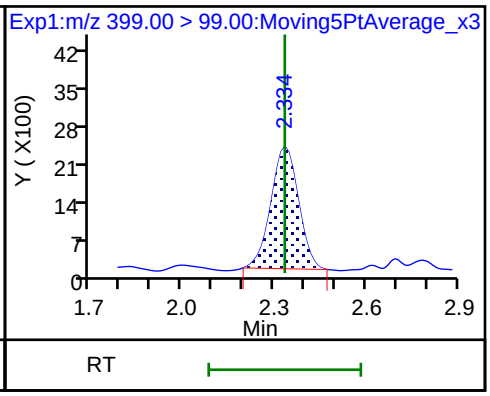
D 9 13C4-PFHpA



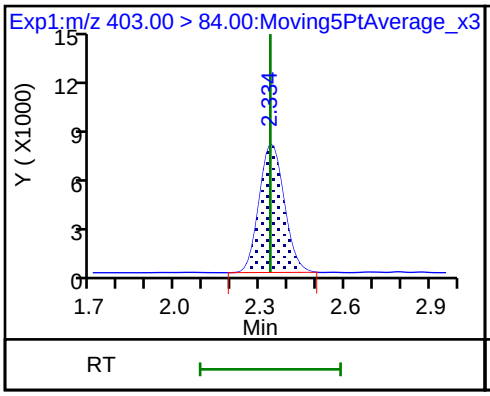
8 Perfluorohexanesulfonic acid



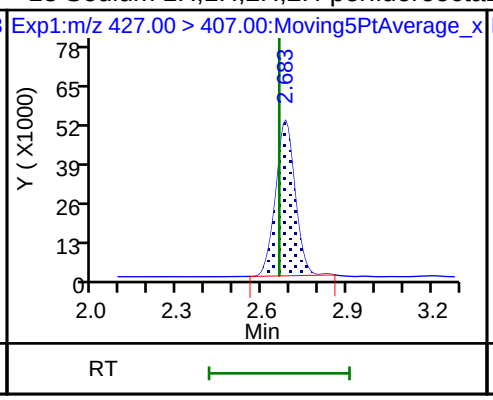
8 Perfluorohexanesulfonic acid



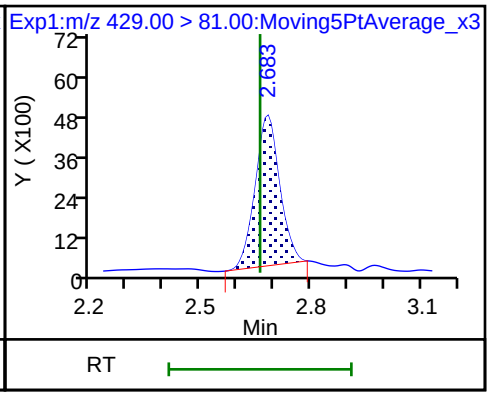
D 11 18O2 PFHxS



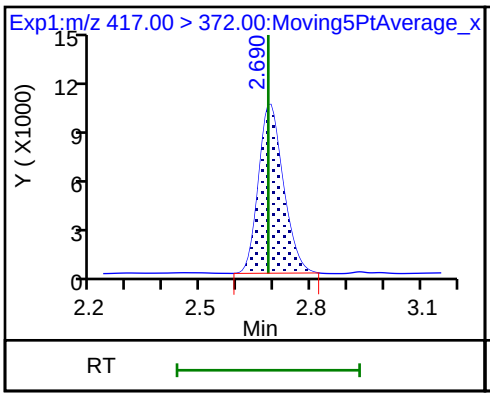
13 Sodium 1H,1H,2H,2H-perfluorooctane



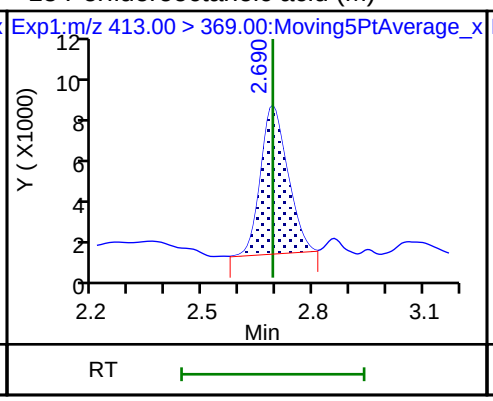
D 12 M2-6:2FTS



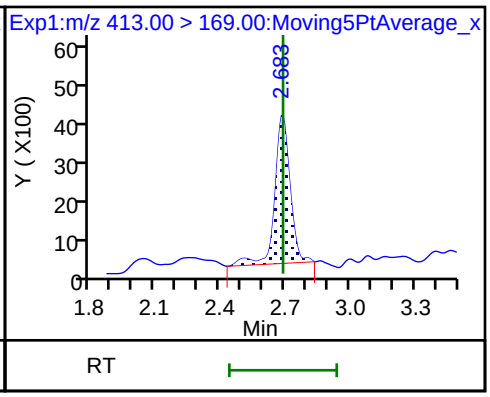
D 14 13C4 PFOA



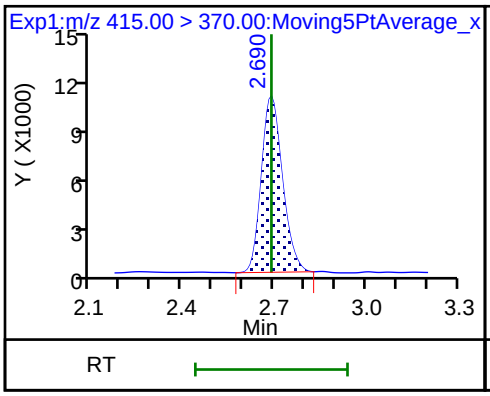
15 Perfluorooctanoic acid (M)



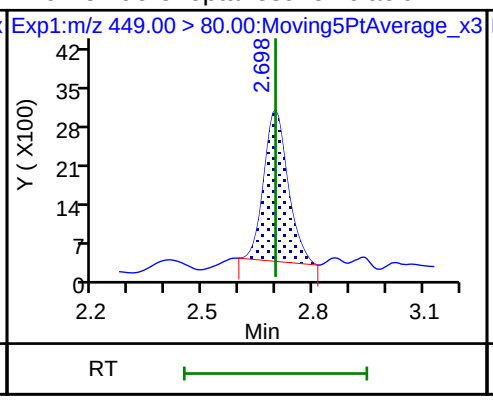
15 Perfluorooctanoic acid



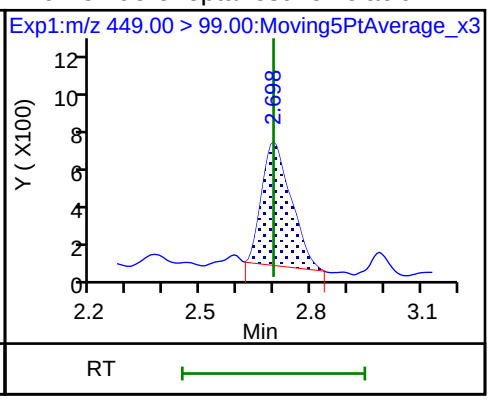
* 62 13C2-PFOA



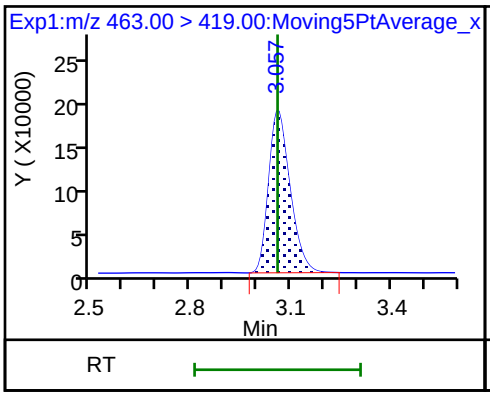
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid



20 Perfluorononanoic acid



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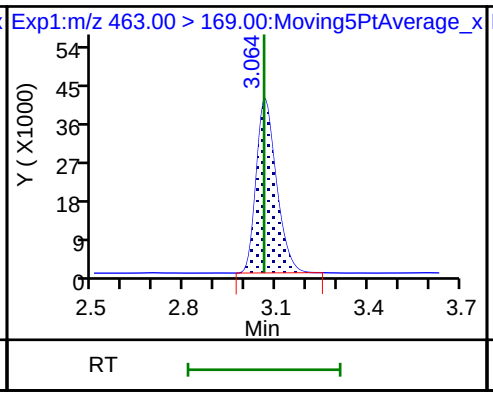
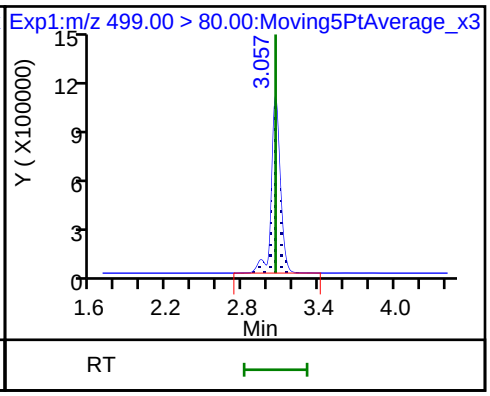
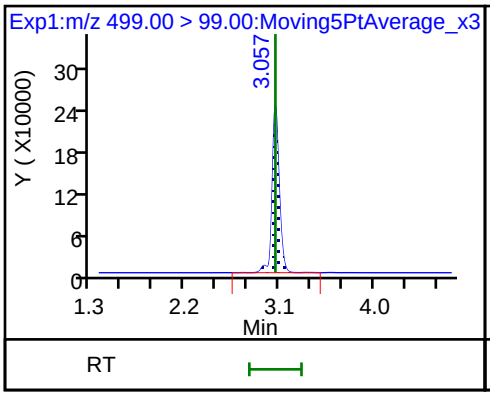


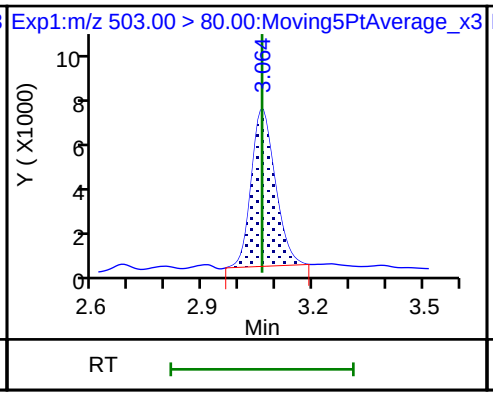
17 Perfluorooctane sulfonic acid



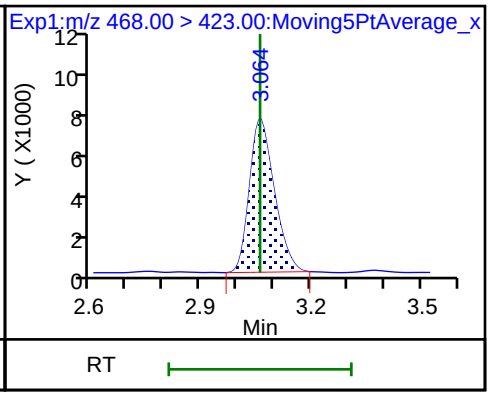
17 Perfluorooctane sulfonic acid



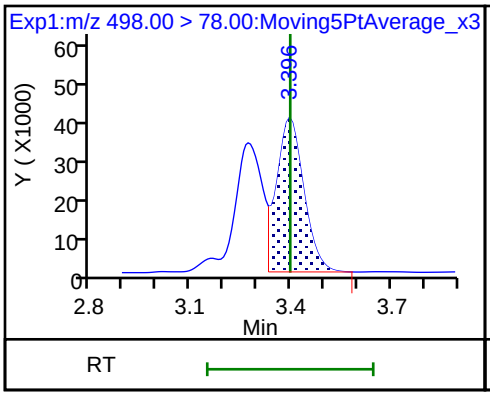
D 18 13C4 PFOS



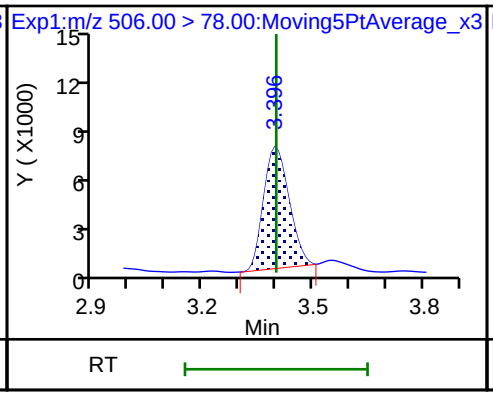
D 19 13C5 PFNA



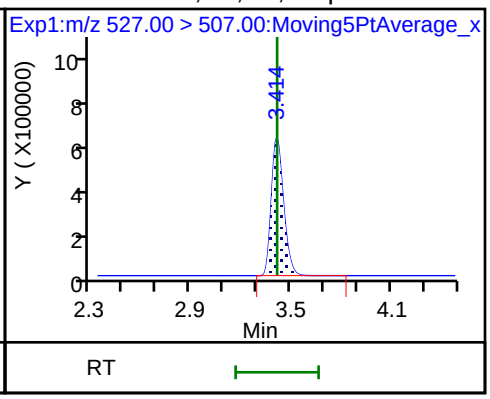
22 Perfluorooctane Sulfonamide



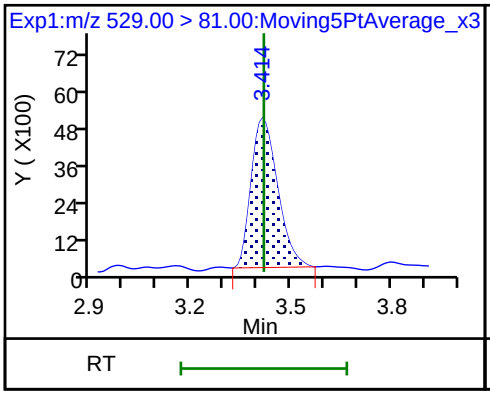
D 21 13C8 FOSA



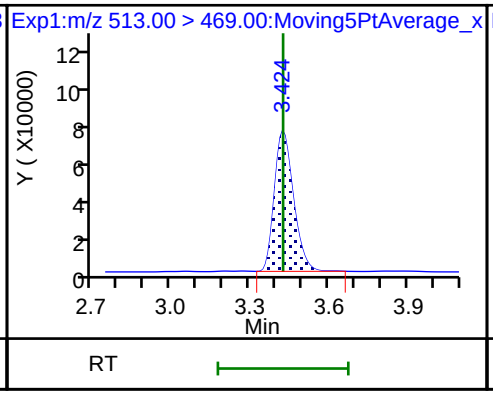
25 Sodium 1H,1H,2H,2H-perfluorodecane



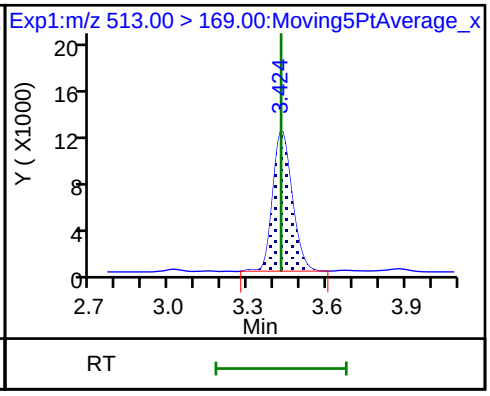
D 26 M2-8:2FTS



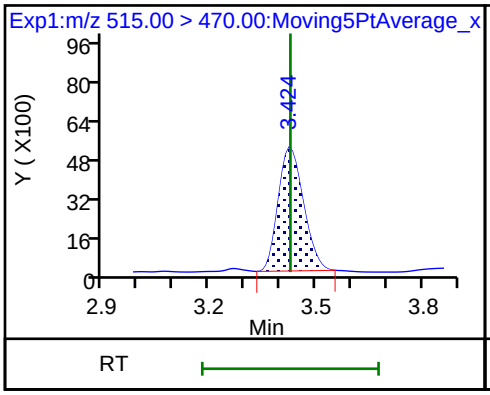
24 Perfluorodecanoic acid



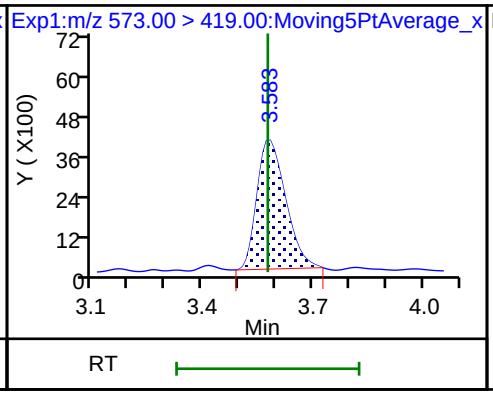
24 Perfluorodecanoic acid



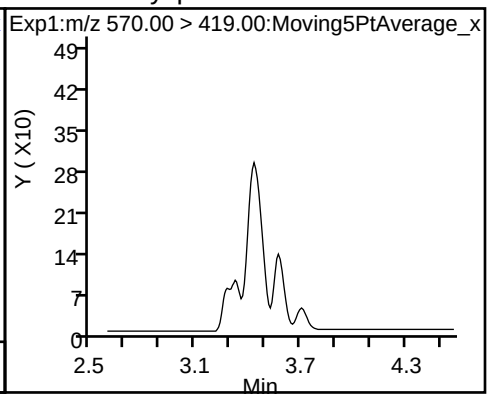
D 23 13C2 PFDA



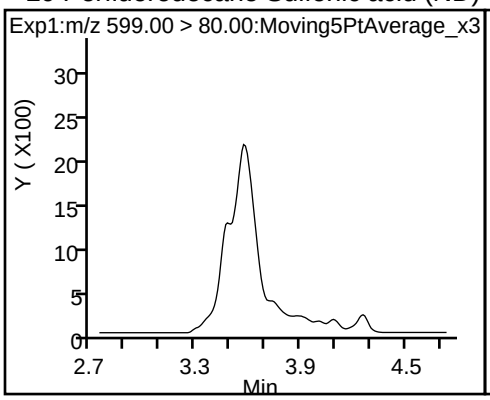
D 27 d3-NMeFOSAA



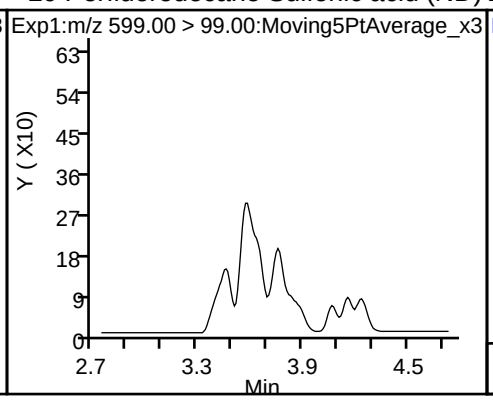
28 N-methyl perfluorooctane sulfonami (ND)



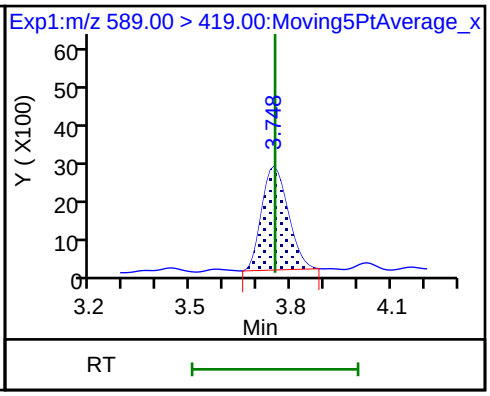
29 Perfluorodecane Sulfonic acid (ND)



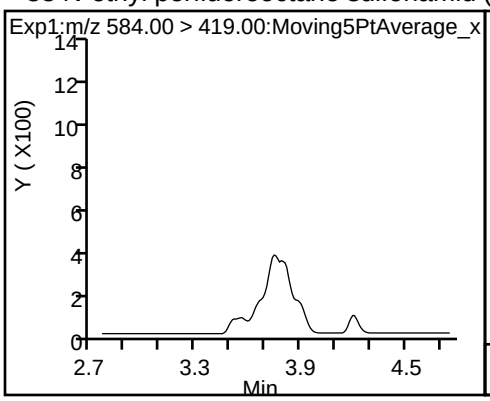
29 Perfluorodecane Sulfonic acid (ND)



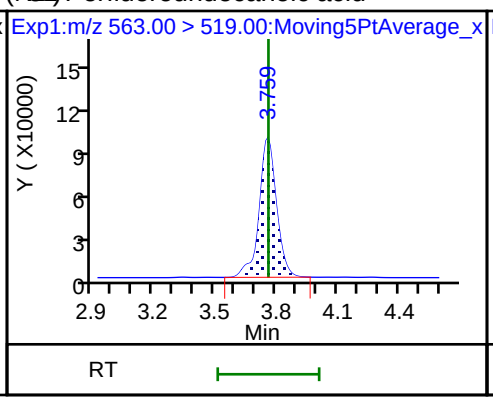
D 32 d5-NEtFOSAA



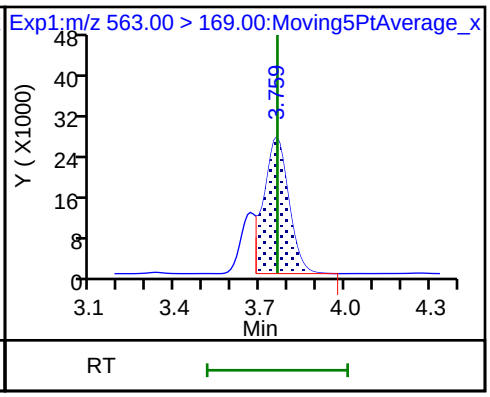
33 N-ethyl perfluorooctane sulfonamid (N...



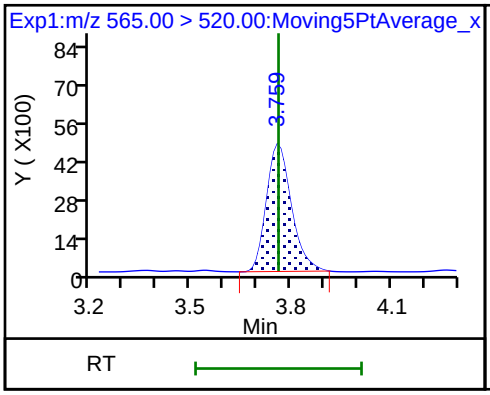
31 Perfluoroundecanoic acid



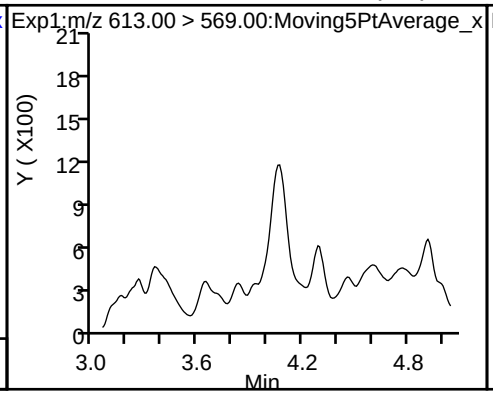
31 Perfluoroundecanoic acid



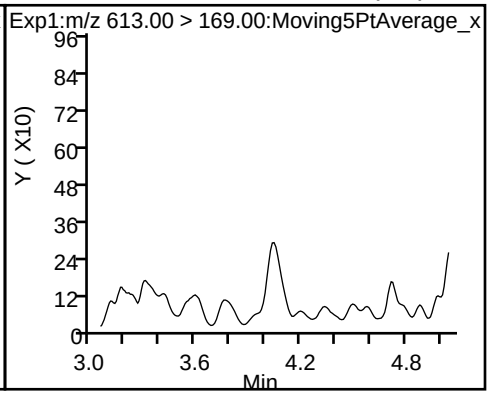
D 30 13C2 PFUnA



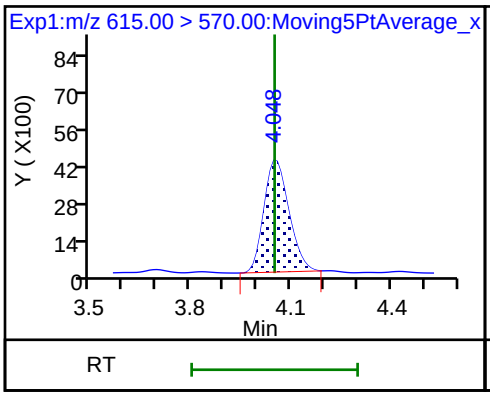
37 Perfluorododecanoic acid (ND)



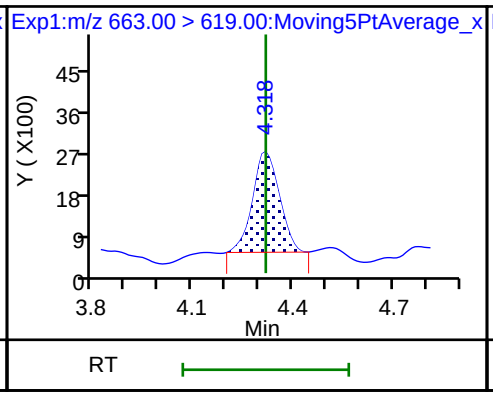
37 Perfluorododecanoic acid (ND)



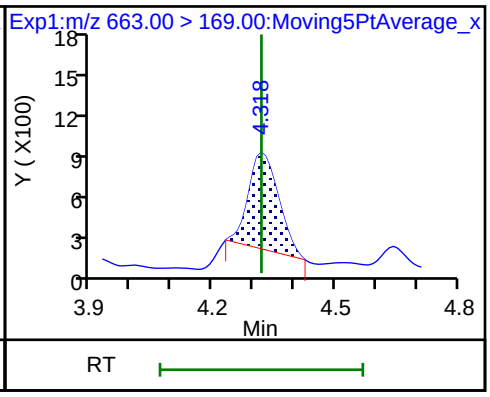
D 36 13C2 PFDoA



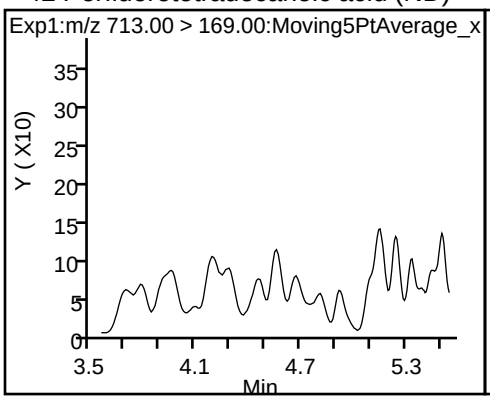
41 Perfluorotridecanoic acid



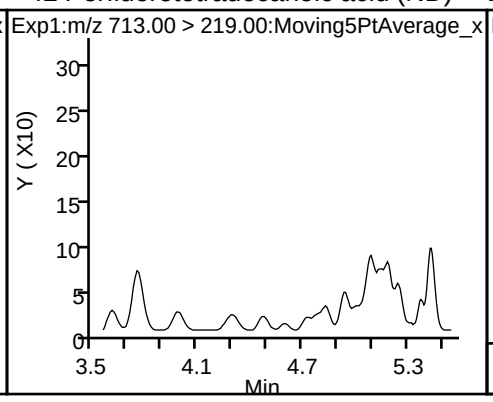
41 Perfluorotridecanoic acid



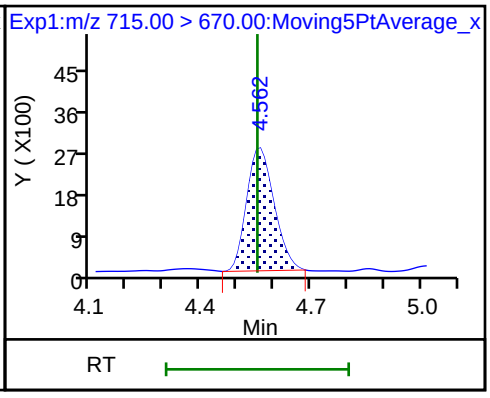
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB004(8-10)-SPLP | Lab Sample ID: 320-38063-6

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_046.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:30

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 254(mL) | Date Analyzed: 04/26/2018 08:45

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.43	B	1.97	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.99		1.97	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	5.37		1.97	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	31.4		1.97	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	144		1.97	0.84
335-76-2	Perfluorodecanoic acid (PFDA)	8.82		1.97	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	5.63		1.97	1.08
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.97	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	57.5	B	1.97	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	15.2		1.97	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.31	U	1.97	0.31
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.91	J	1.97	0.34
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.05	U	19.7	3.05
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87
39108-34-4	8:2FTS	69.3		19.7	1.97

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB004(8-10)-SPLP | Lab Sample ID: 320-38063-6

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_046.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 11:30

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 254(mL) | Date Analyzed: 04/26/2018 08:45

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	101		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	100		25-150
STL01892	13C4-PFHpA	100		25-150
STL00990	13C4 PFOA	96		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	101		25-150
STL00998	13C2 PFDoA	99		25-150
STL02116	13C2-PFTeDA	100		25-150
STL02337	13C3-PFBS	101		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	88		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	102		25-150
STL02117	d5-NEtFOSAA	112		25-150
STL02280	M2-8:2FTS	121		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_046.d
Lims ID: 320-38063-A-6-C
Client ID: SB004(8-10)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 08:45:29 ALS Bottle#: 35 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-6-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 26-Apr-2018 14:26:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	6367543	2.53		101	37544	
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.436	0.006	1.004	145944	0.0617			41.3	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.697	0.002	0.555	4051156	2.50		100.0	51962	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.703	-0.004	1.000	195938	0.1015			156	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.733	0.002	1.000	87698	2.36		101	530	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.982	0.006	1.000	247541	0.1364			209	
313.00 > 119.00	1.978	1.982	-0.004	0.995	23016		10.76(5.03-15.10)		181	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.985	0.003	1.000	4464954	2.49		99.6	77968	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.313	0.003	1.000	4365151	2.50		100	77942	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.323	-0.006	1.000	1394966	0.7982			1888	
363.00 > 169.00	2.316	2.323	-0.006	1.000	560569		2.49(1.13-3.40)		2562	
D 11 18O2 PFHxS										
403.00 > 84.00	2.342	2.326	0.016	1.000	4994803	2.32		98.1	72737	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.336	-0.007	0.994	3493121	1.46			5501	
399.00 > 99.00	2.329	2.336	-0.007	0.994	1128971		3.09(1.50-4.49)		5417	
D 12 M2-6:2FTS										
429.00 > 81.00	2.658	2.656	0.002	1.000	1026269	2.74		116	6593	
13 Sodium 1H,1H,2H,2H-perfluorooctane										E
427.00 > 407.00	2.658	2.661	-0.003	1.000	24493776	33.5			165749	E

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.679	0.002	1.000	4170104	2.40		96.2	49286	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.688	2.683	0.005	1.003	7065551	3.67			7177	
413.00 > 169.00	2.688	2.683	0.005	1.003	3712215		1.90(0.84-2.52)		13749	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.683	-0.002		4673628	2.50			84407	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.688	2.691	-0.003	1.000	680911	0.3865			909	
449.00 > 99.00	2.688	2.691	-0.003	1.000	177795		3.83(1.94-5.82)		1456	
17 Perfluorooctane sulfonic acid										EM
499.00 > 80.00	3.061	3.053	0.008	1.002	33753883	23.4			22703	EM
499.00 > 99.00	3.054	3.053	0.001	1.000	7891238		4.28(2.31-6.93)		81055	
D 18 13C4 PFOS										
503.00 > 80.00	3.054	3.056	-0.002	1.000	3171206	2.10		88.0	13480	
D 19 13C5 PFNA										
468.00 > 423.00	3.061	3.056	0.005	1.000	3342861	2.24		89.7	72651	
20 Perfluorononanoic acid										E
463.00 > 419.00	3.061	3.060	0.001	1.000	14091063	10.1			24404	E
463.00 > 169.00	3.061	3.060	0.001	1.000	3452792		4.08(1.90-5.69)		39718	
D 21 13C8 FOSA										
506.00 > 78.00	3.401	3.394	0.007	1.000	4298892	2.28		91.3	23088	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.401	3.398	0.003	1.000	40085	0.0230			65.6	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.410	3.408	0.002	1.000	1209350	1.76			12475	
D 26 M2-8:2FTS										
529.00 > 81.00	3.410	3.413	-0.003	1.000	1300577	2.89		121	10664	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.419	3.417	0.002	1.000	299366	0.2241			401	
513.00 > 169.00	3.419	3.417	0.002	1.000	54397		5.50(2.36-7.09)		90.8	
D 23 13C2 PFDA										
515.00 > 470.00	3.419	3.422	-0.003	1.000	3237620	2.58		103	80706	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.577	3.582	-0.005	1.000	1809564	2.55		102	22787	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.747	-0.004	1.000	1956523	2.79		112	44562	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.753	3.751	0.002	1.000	132074	0.1430			231	M
563.00 > 169.00	3.743	3.751	-0.008	0.997	28519		4.63(2.12-6.36)		47.0	M
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.753	3.751	0.002	1.003	1767	0.002416			56.6	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.753	3.757	-0.004	1.000	2732123	2.53		101	85814	
D 36 13C2 PFDoA										
615.00 > 570.00	4.041	4.046	-0.005	1.000	2879132	2.47		98.7	28505	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorododecanoic acid										
613.00 > 569.00	4.041	4.051	-0.010	1.000	6348	0.005285			9.1	
613.00 > 169.00	4.041	4.051	-0.010	1.000	2055		3.09(2.13-6.40)		20.9	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.308	0.0	1.000	8164	0.005833			12.0	
663.00 > 169.00	4.308	4.308	0.0	1.000	2300		3.55(1.25-3.76)		32.2	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.551	0.001	1.000	3710577	2.51		100	28693	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:49 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_046.d

Injection Date: 26-Apr-2018 08:45:29 Instrument ID: A8_N

Lims ID: 320-38063-A-6-C Lab Sample ID: 320-38063-6

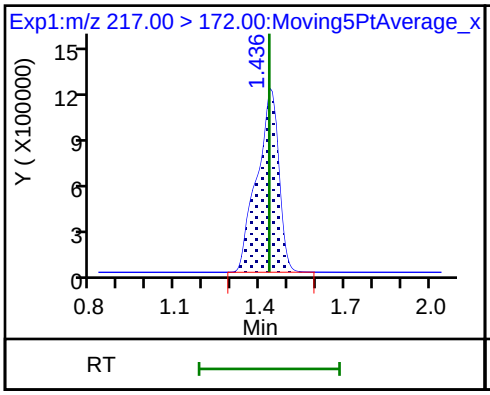
Client ID: SB004(8-10)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 11

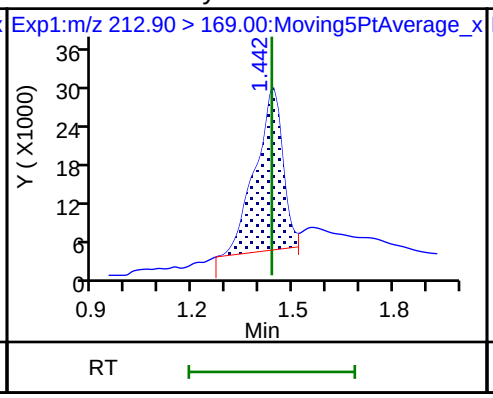
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

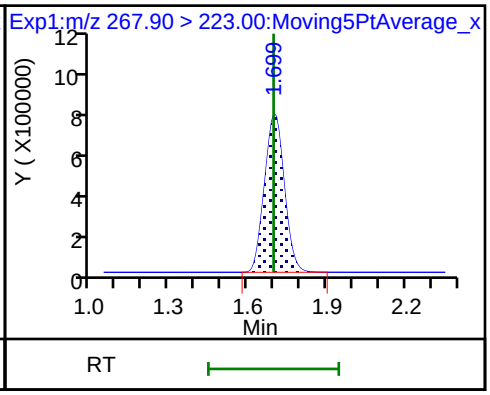
D 1 13C4 PFBA



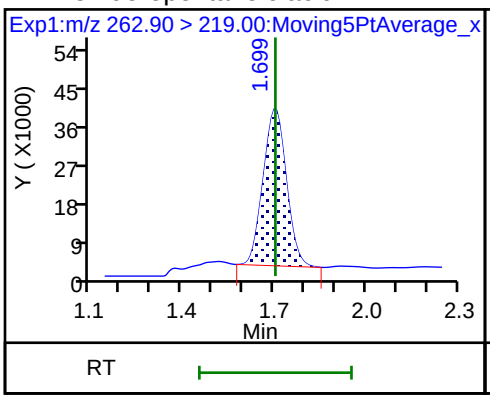
2 Perfluorobutyric acid



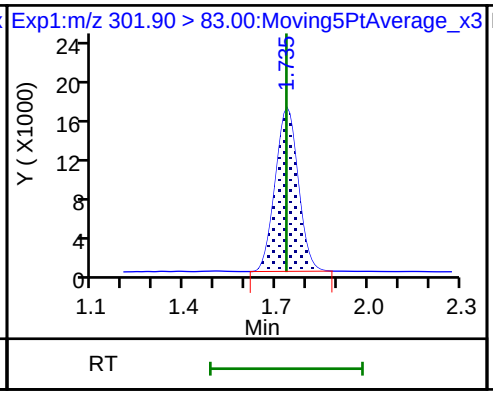
D 3 13C5-PFPeA



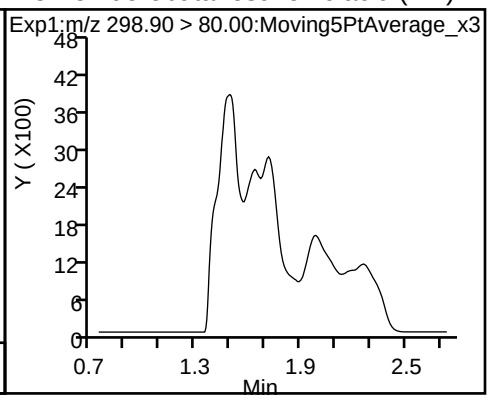
4 Perfluoropentanoic acid



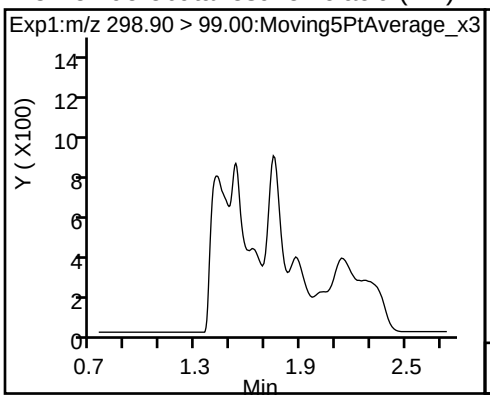
D 47 13C3-PFBS



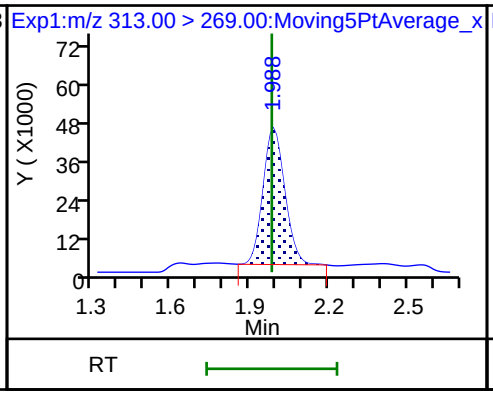
5 Perfluorobutanesulfonic acid (ND)



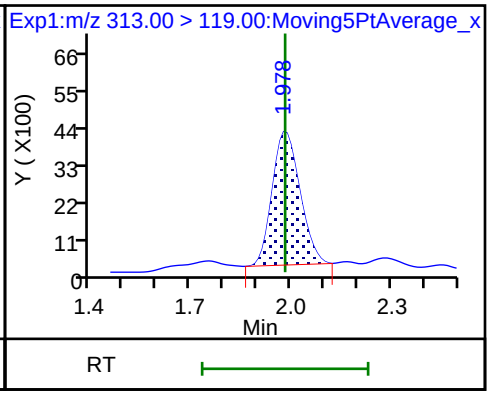
5 Perfluorobutanesulfonic acid (ND)



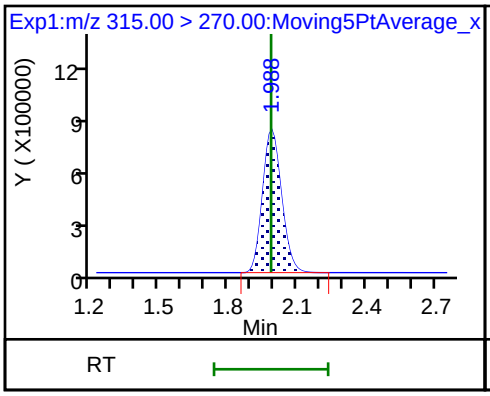
6 Perfluorohexanoic acid



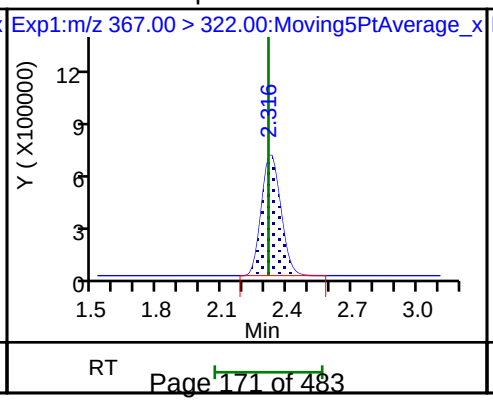
6 Perfluorohexanoic acid



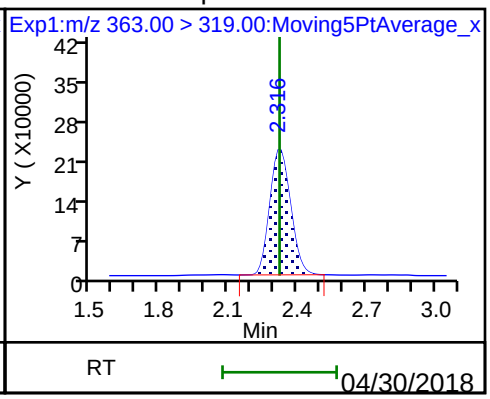
D 7 13C2 PFHxA



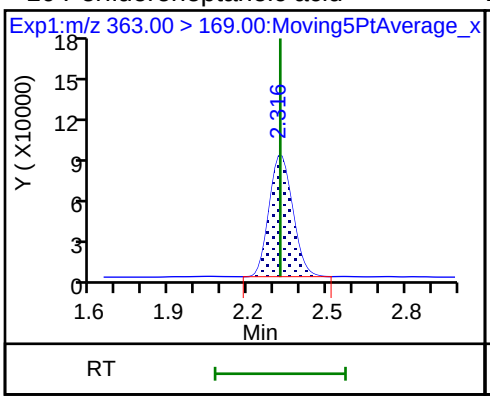
D 9 13C4-PFHpA



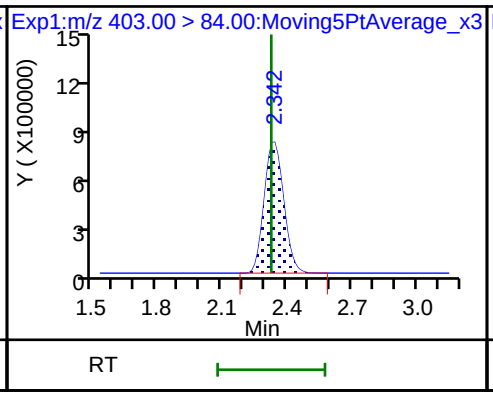
10 Perfluoroheptanoic acid



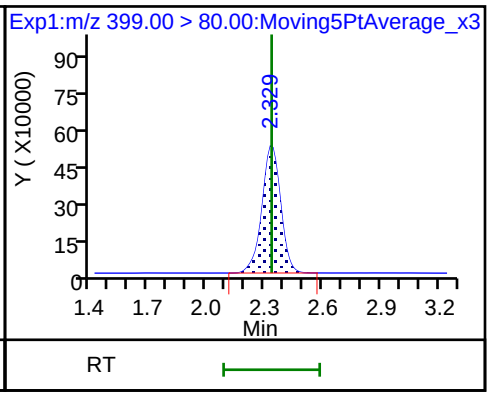
10 Perfluoroheptanoic acid



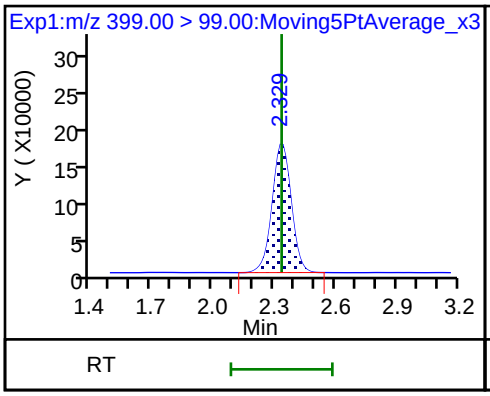
D 11 18O2 PFHxS



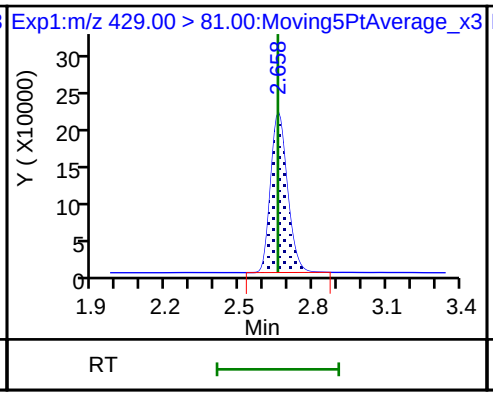
8 Perfluorohexanesulfonic acid



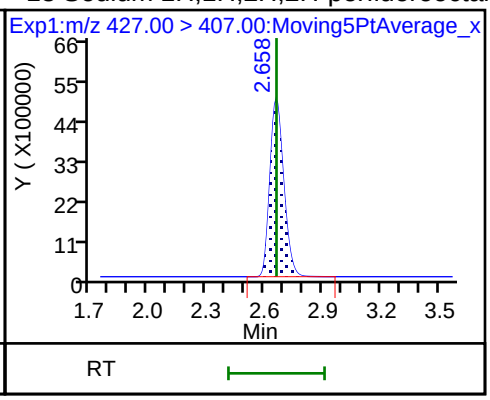
8 Perfluorohexanesulfonic acid



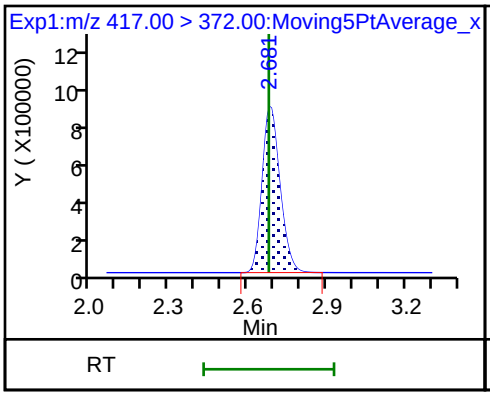
D 12 M2-6:2FTS



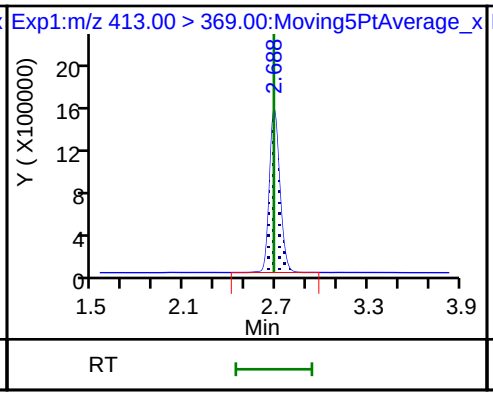
13 Sodium 1H,1H,2H,2H-perfluorooctane



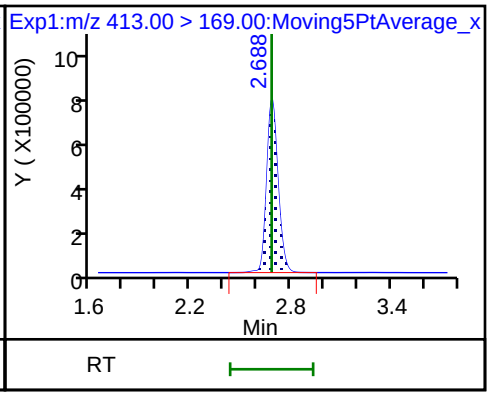
D 14 13C4 PFOA



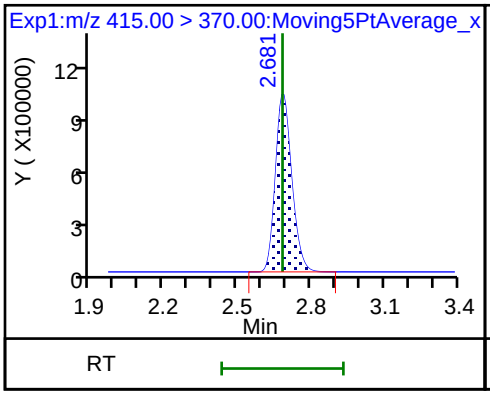
15 Perfluorooctanoic acid



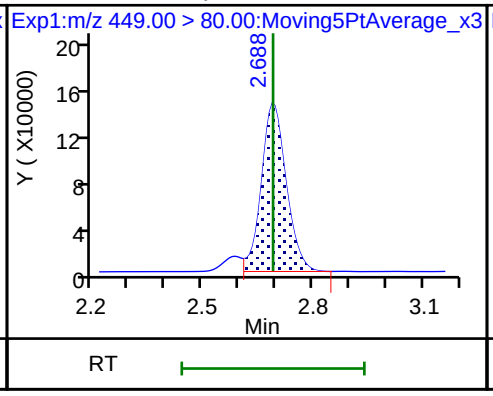
15 Perfluorooctanoic acid



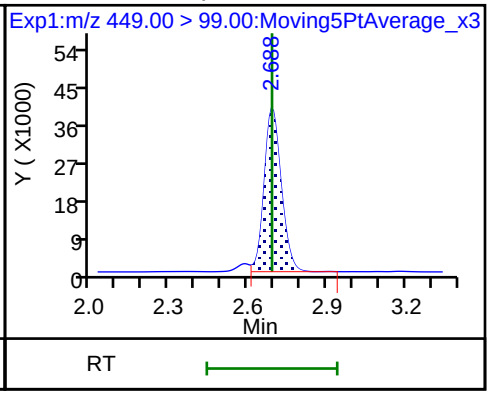
* 62 13C2-PFOA



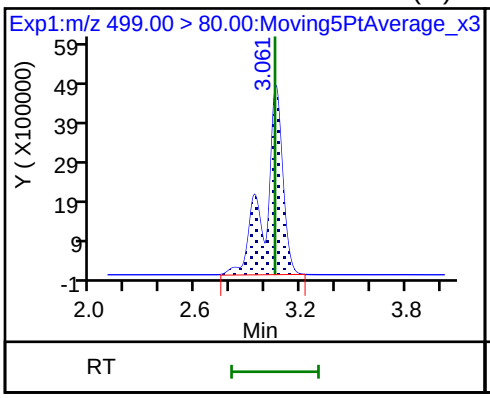
16 Perfluoroheptanesulfonic acid



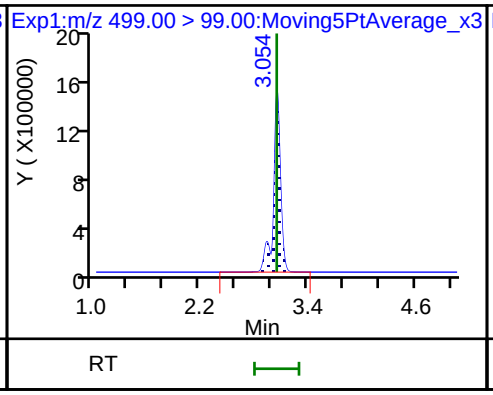
16 Perfluoroheptanesulfonic acid



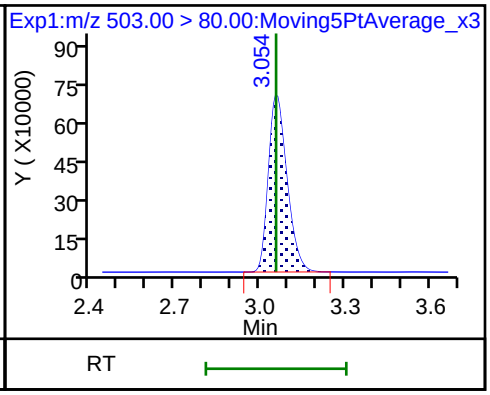
17 Perfluorooctane sulfonic acid (M)



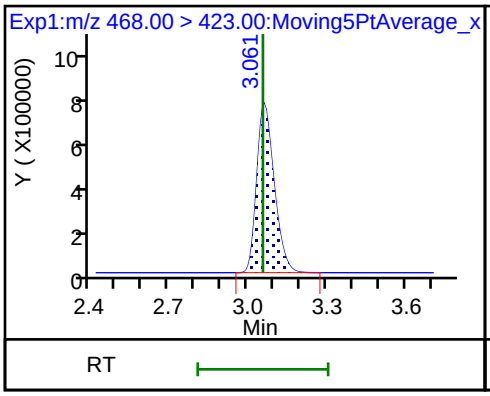
17 Perfluorooctane sulfonic acid



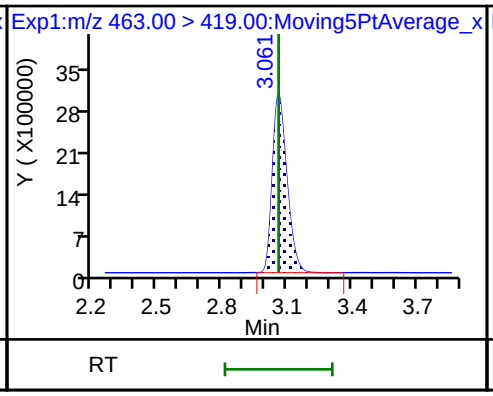
D 18 13C4 PFOS



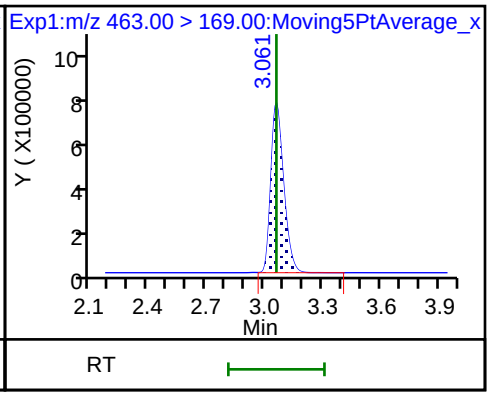
D 19 13C5 PFNA



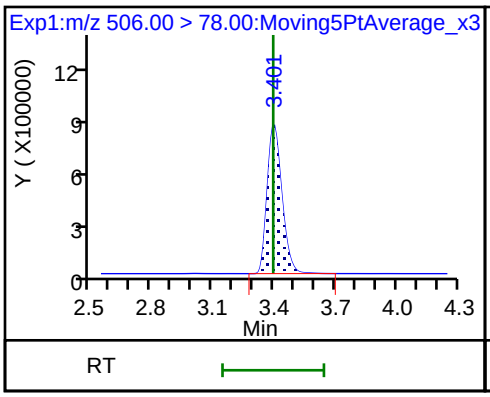
20 Perfluorononanoic acid



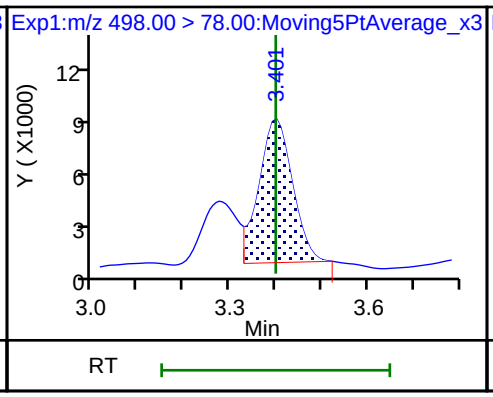
20 Perfluorononanoic acid



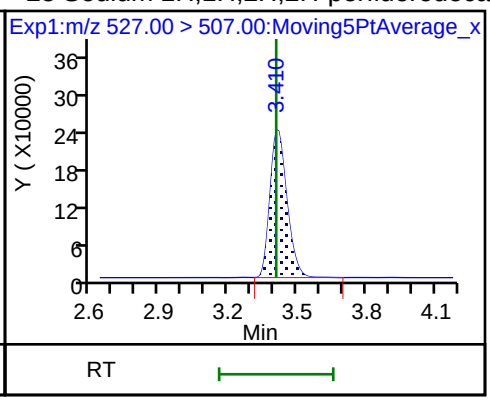
D 21 13C8 FOSA



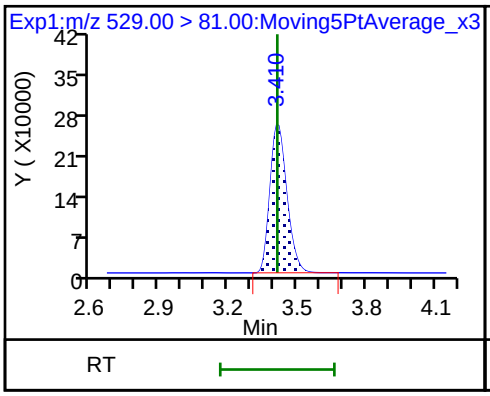
22 Perfluorooctane Sulfonamide



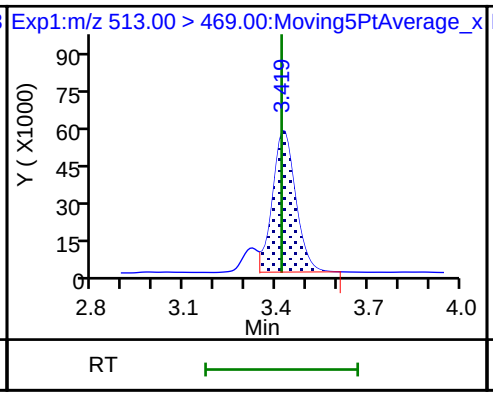
25 Sodium 1H,1H,2H,2H-perfluorodecane



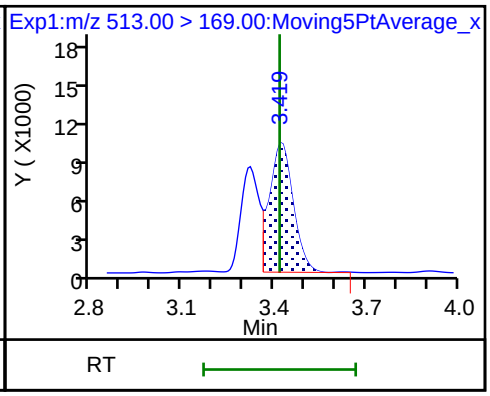
D 26 M2-8:2FTS



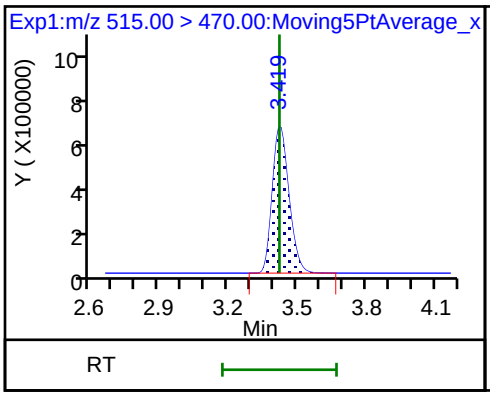
24 Perfluorodecanoic acid



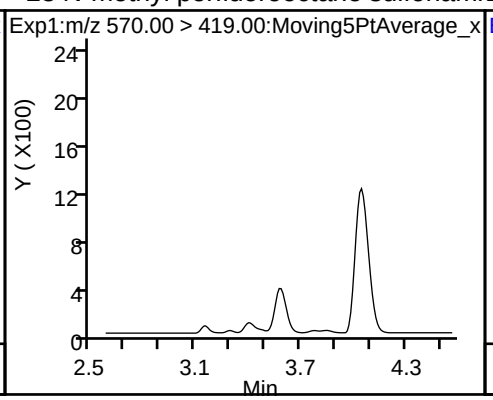
24 Perfluorodecanoic acid



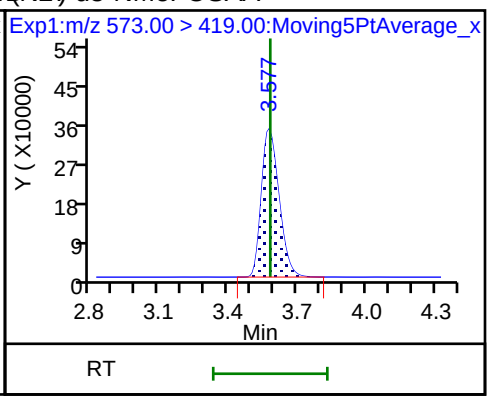
D 23 13C2 PFDA



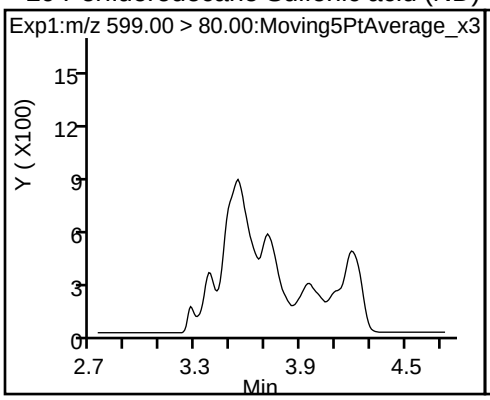
28 N-methyl perfluorooctane sulfonamid (ND)



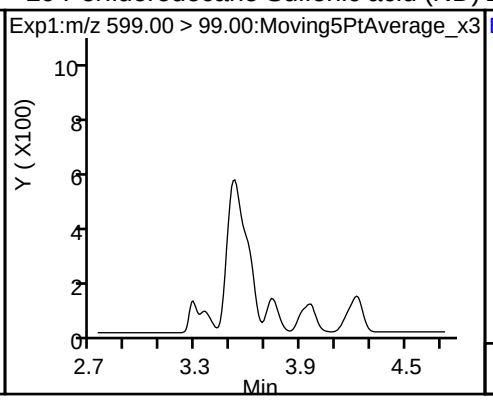
D 27 d3-NMeFOSAA



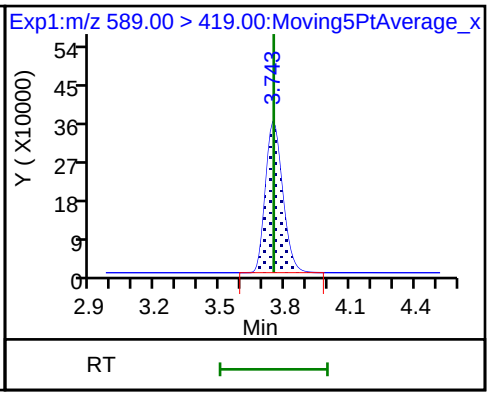
29 Perfluorodecane Sulfonic acid (ND)



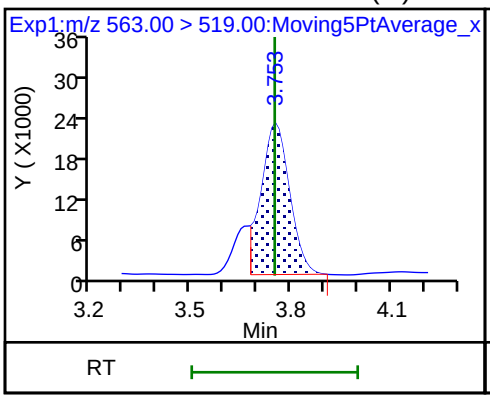
29 Perfluorodecane Sulfonic acid (ND)



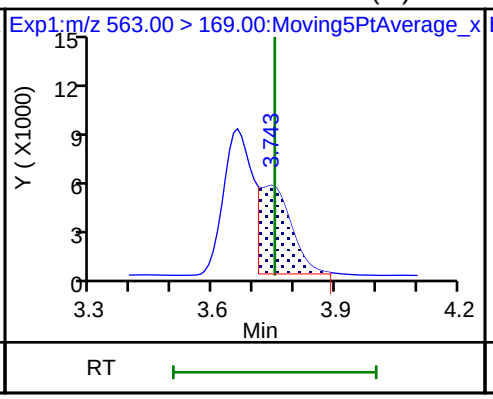
D 32 d5-NEtFOSAA



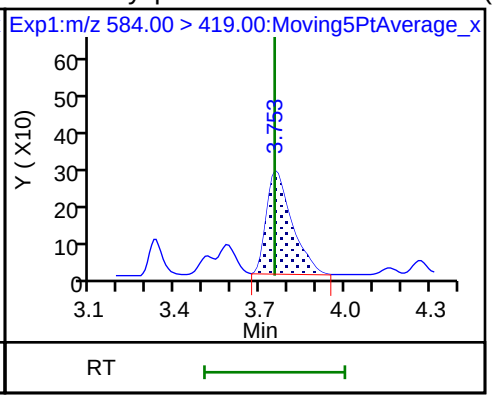
31 Perfluoroundecanoic acid (M)



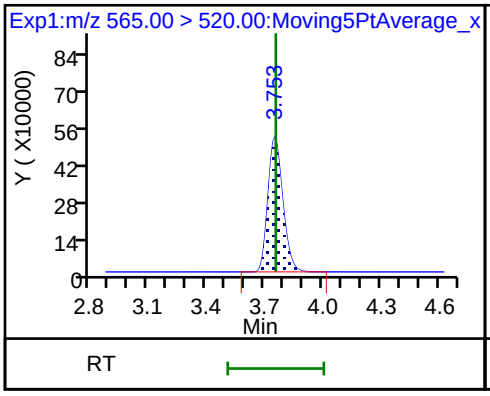
31 Perfluoroundecanoic acid (M)



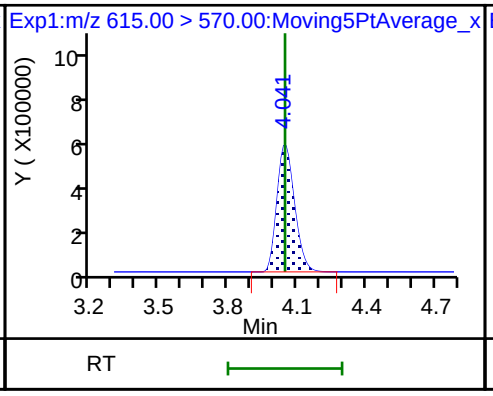
33 N-ethyl perfluorooctane sulfonamid (M)



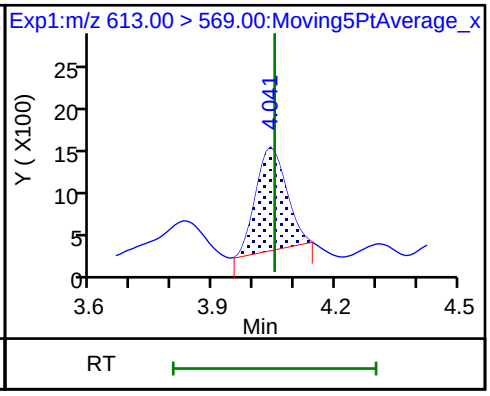
D 30 13C2 PFUnA



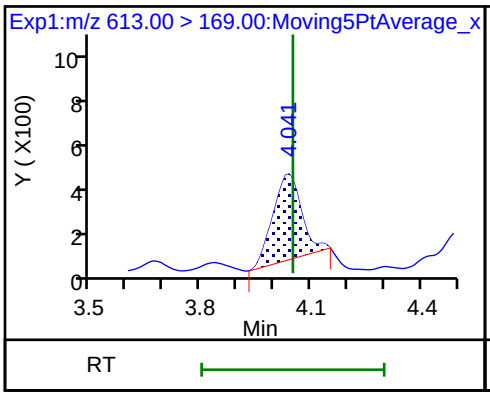
D 36 13C2 PFDoA



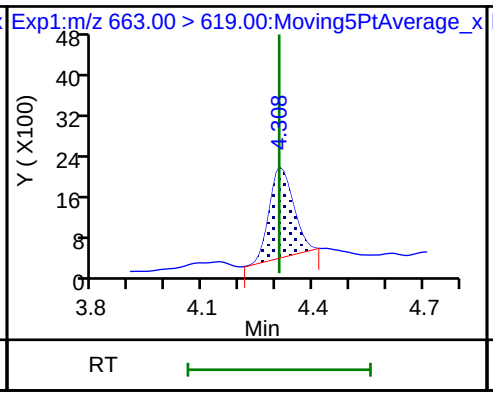
37 Perfluorododecanoic acid



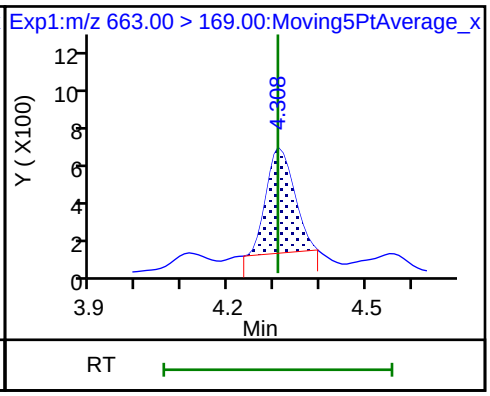
37 Perfluorododecanoic acid



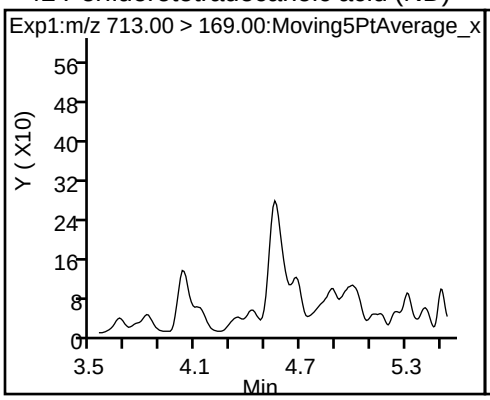
41 Perfluorotridecanoic acid



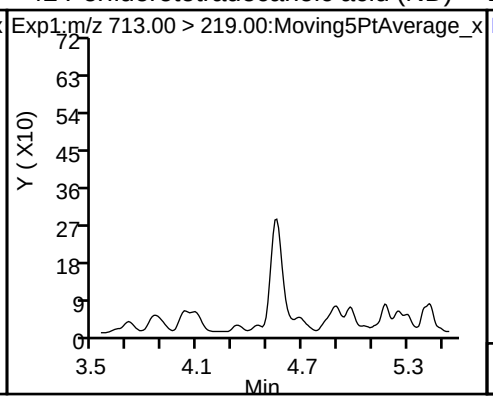
41 Perfluorotridecanoic acid



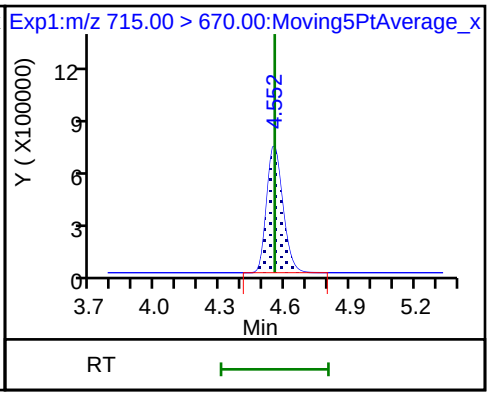
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

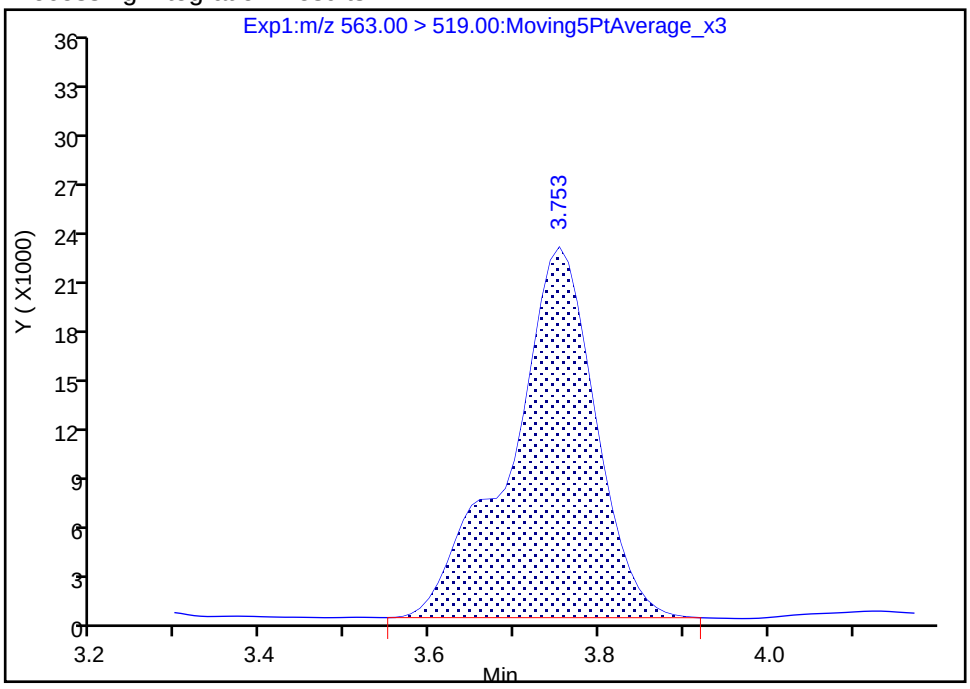
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_046.d				
Injection Date:	26-Apr-2018 08:45:29	Instrument ID:	A8_N		
Lims ID:	320-38063-A-6-C	Lab Sample ID:	320-38063-6		
Client ID:	SB004(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

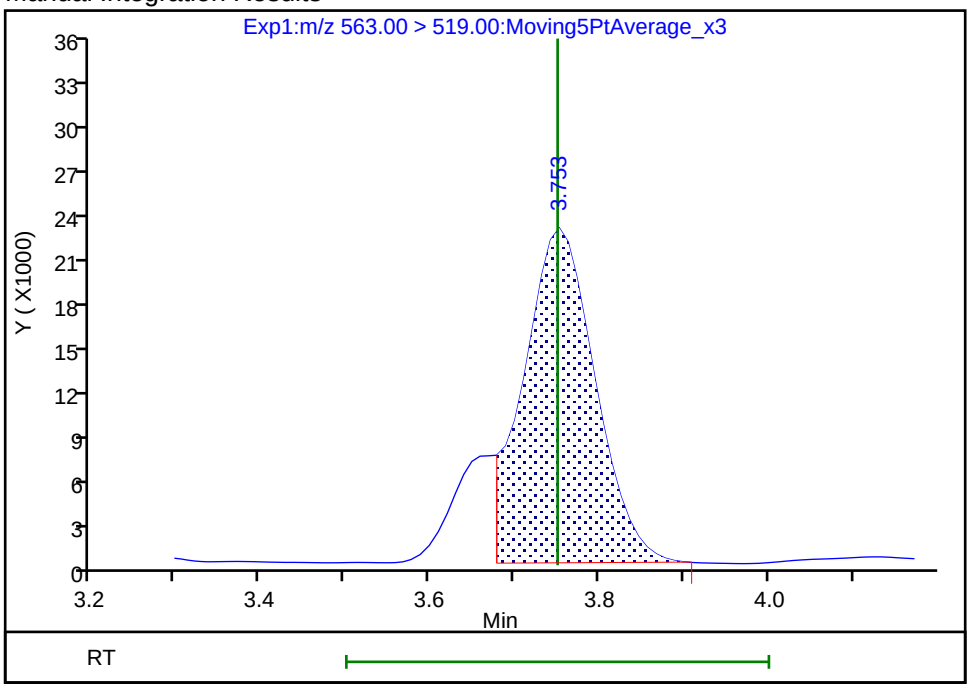
Processing Integration Results

RT: 3.75
Area: 157845
Amount: 0.170908
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 132074
Amount: 0.143004
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:22:21

Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

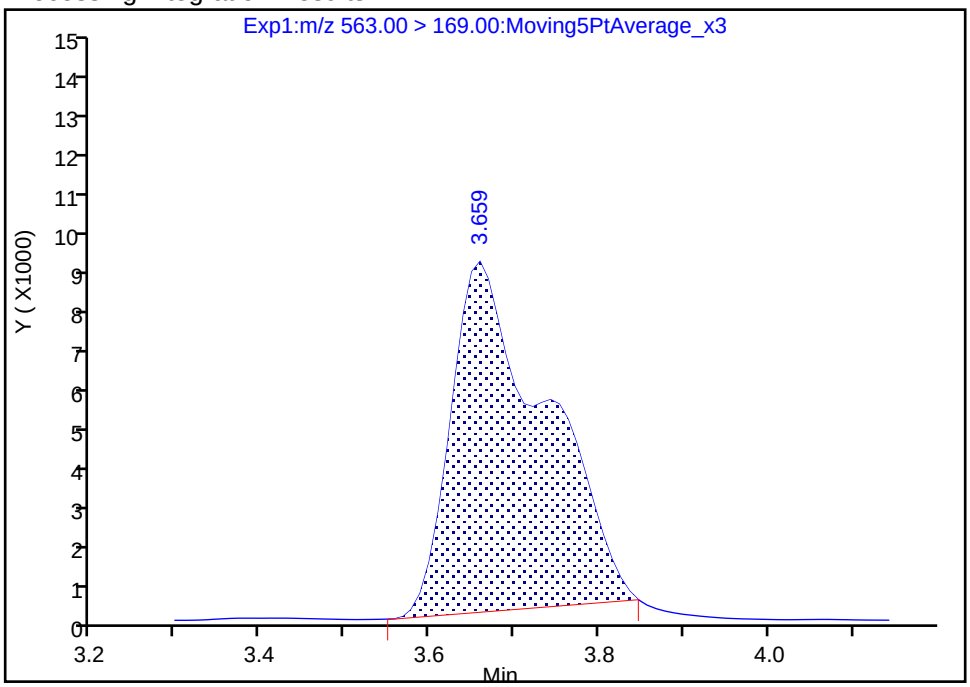
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_046.d				
Injection Date:	26-Apr-2018 08:45:29	Instrument ID:	A8_N		
Lims ID:	320-38063-A-6-C	Lab Sample ID:	320-38063-6		
Client ID:	SB004(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

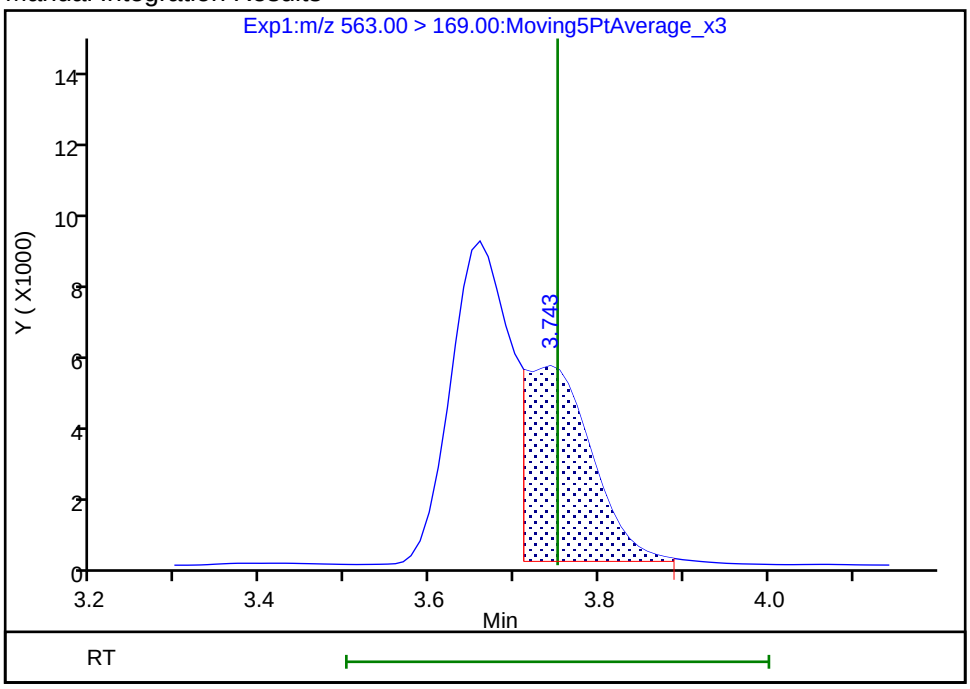
Processing Integration Results

RT: 3.66
Area: 67871
Amount: 0.170908
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 28519
Amount: 0.143004
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:22:28
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

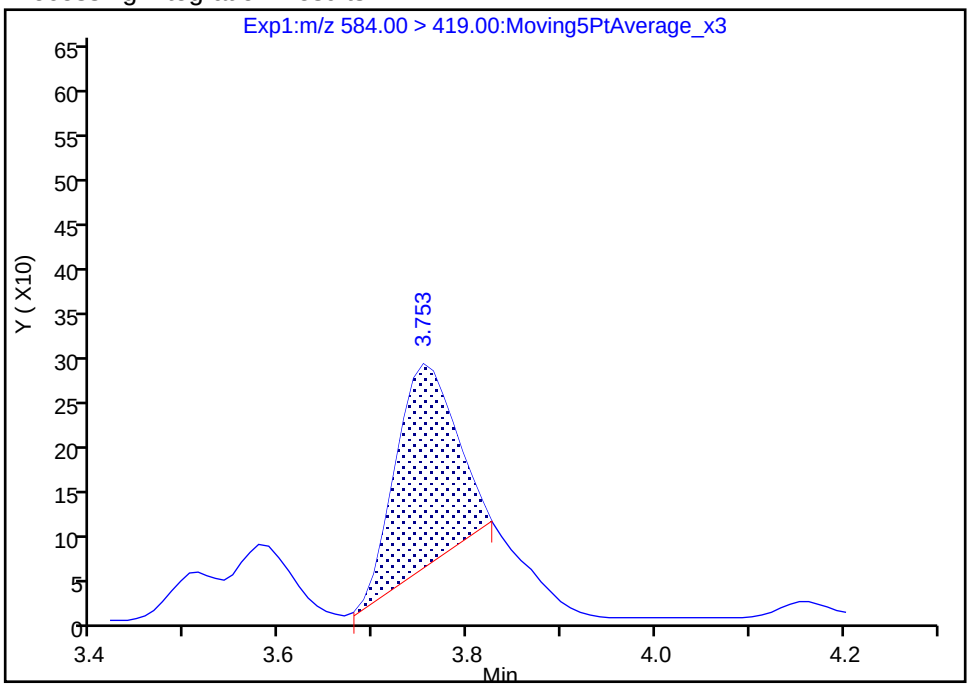
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_046.d				
Injection Date:	26-Apr-2018 08:45:29	Instrument ID:	A8_N		
Lims ID:	320-38063-A-6-C	Lab Sample ID:	320-38063-6		
Client ID:	SB004(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	35	Worklist Smp#:	11
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

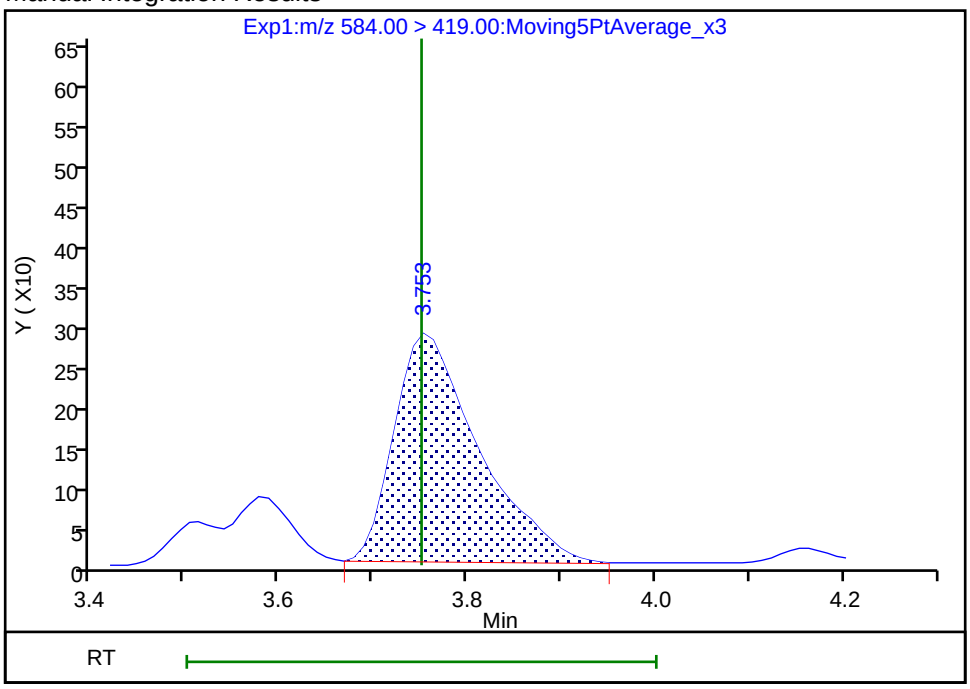
Processing Integration Results

RT: 3.75
Area: 1008
Amount: 0.001378
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 1767
Amount: 0.002416
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:22:49

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB004(8-10)-SPLP DL Lab Sample ID: 320-38063-6 DL

Matrix: Solid (SPLP East) Lab File ID: 2018.04.26LLB_014.d

Analysis Method: 537 (modified) Date Collected: 04/10/2018 11:30

Extraction Method: 3535 Date Extracted: 04/23/2018 10:11

Sample wt/vol: 254(mL) Date Analyzed: 04/26/2018 20:49

Con. Extract Vol.: 10.0(mL) Dilution Factor: 10

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-95-1	Perfluorononanoic acid (PFNA)	396	D	19.7	2.66
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	995	D	19.7	5.31
27619-97-2	6:2FTS	1490	D B	197	19.7

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00995	13C5 PFNA	101		25-150
STL00991	13C4 PFOS	93		25-150
STL02279	M2-6:2FTS	115		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_014.d
Lims ID: 320-38063-A-6-C
Client ID: SB004(8-10)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 20:49:30 ALS Bottle#: 7 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38063-a-6-c 10X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:53:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.436	1.442	-0.006	1.000	16955	0.007702			7.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	592707	0.2501		100	4605	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.703	1.703	0.0	1.005	15840	0.008804			13.2	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.554	377439	0.2471		98.8	7222	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	8105	0.2312		99.5	75.9	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.994	-0.012	1.000	441126	0.2611		104	10998	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.321	0.001	1.000	124299	0.0714			137	
363.00 > 169.00	2.322	2.321	0.001	1.000	53336		2.33(1.13-3.40)		236	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.322	0.0	1.000	434711	0.2644		106	11768	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.334	0.001	1.000	329416	0.1443			739	
399.00 > 99.00	2.335	2.334	0.001	1.000	102726		3.21(1.50-4.49)		717	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.335	0.0	1.000	476931	0.2351		99.4	12747	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.003	2581738	3.78			34061	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.661	-0.008	1.000	96082	0.2727		115	1066	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.683	0.0	1.000	402283	0.2462		98.5	12075	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	702462	0.3778			501	
413.00 > 169.00	2.683	2.690	-0.007	1.000	352346		1.99(0.84-2.52)		1177	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.690	-0.007		440366	0.2500			9364	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.698	-0.008	1.000	65471	0.0373			317	
449.00 > 99.00	2.683	2.698	-0.015	0.997	18408		3.56(1.94-5.82)		380	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.059	-0.002	1.000	1486071	1.00			4691	
463.00 > 169.00	3.057	3.059	-0.002	1.000	358171		4.15(1.90-5.69)		11186	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	1.000	3638548	2.53			13604	
499.00 > 99.00	3.057	3.059	-0.002	1.000	789134		4.61(2.31-6.93)		8845	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.061	-0.004	1.000	316373	0.2227		93.2	1920	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.061	-0.004	1.000	354591	0.2525		101	13170	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.398	-0.002	1.000	3745	0.002380			26.9	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.400	-0.004	1.000	388850	0.2192		87.7	4583	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.416	-0.002	1.000	100864	0.1720			4871	
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.418	-0.004	1.000	110996	0.2616		109	863	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.427	-0.003	1.000	291232	0.2467		98.7	9376	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.576	-0.003	1.000	157239	0.2350		94.0	2660	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.752	-0.004	1.000	195721	0.2964		119	3935	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.748	3.761	-0.013	1.000	11610	0.0148			47.2	
563.00 > 169.00	3.748	3.761	-0.013	1.000	3817		3.04(2.12-6.36)		38.9	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.762	-0.014	1.000	231716	0.2276		91.0	8595	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.051	-0.003	1.000	264157	0.2402		96.1	3342	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.553	-0.002	1.000	342178	0.2454		98.2	3884	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:54:31 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_014.d

Injection Date: 26-Apr-2018 20:49:30 Instrument ID: A8_N

Lims ID: 320-38063-A-6-C Lab Sample ID: 320-38063-6

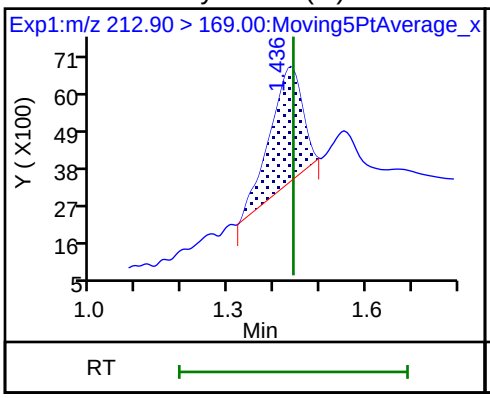
Client ID: SB004(8-10)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 7 Worklist Smp#: 12

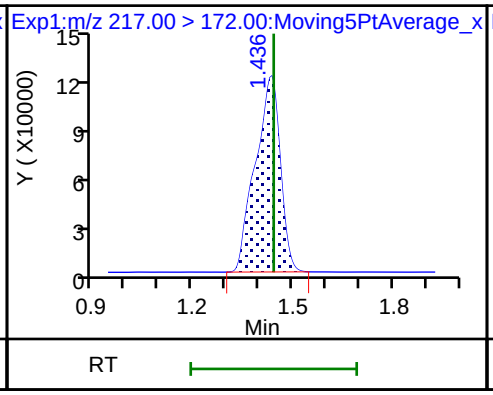
Injection Vol: 2.0 ul Dil. Factor: 10.0000

Method: A8_N Limit Group: LC PFC ICAL

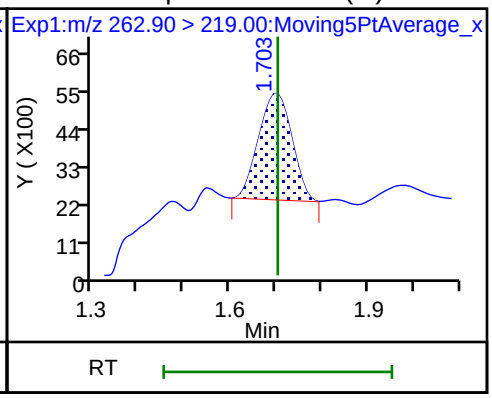
2 Perfluorobutyric acid (M)



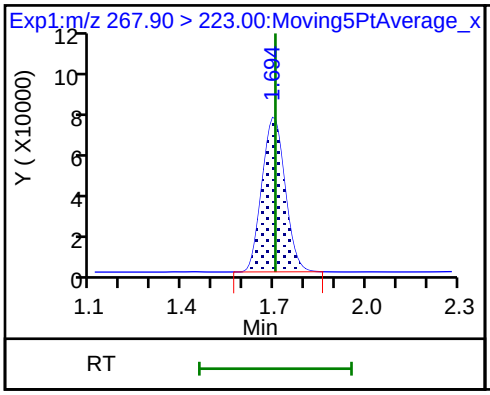
D 1 13C4 PFBA



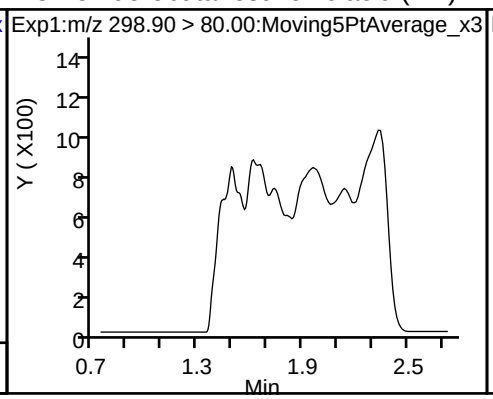
4 Perfluoropentanoic acid (M)



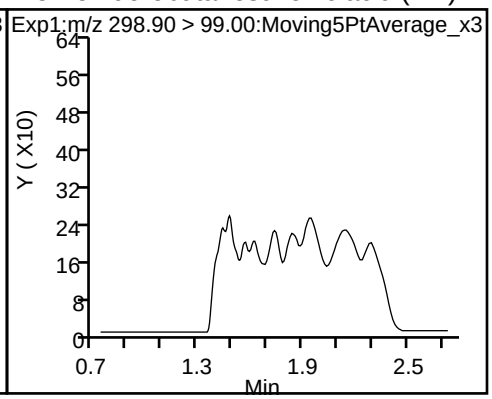
D 3 13C5-PFPeA



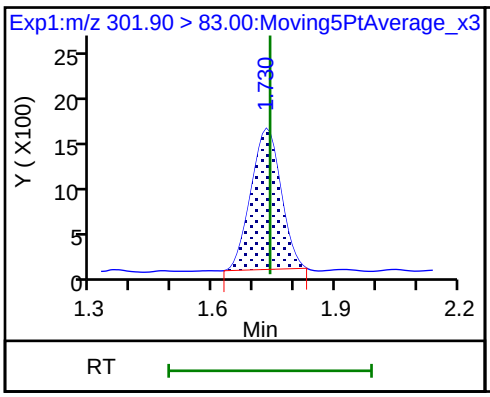
5 Perfluorobutanesulfonic acid (ND)



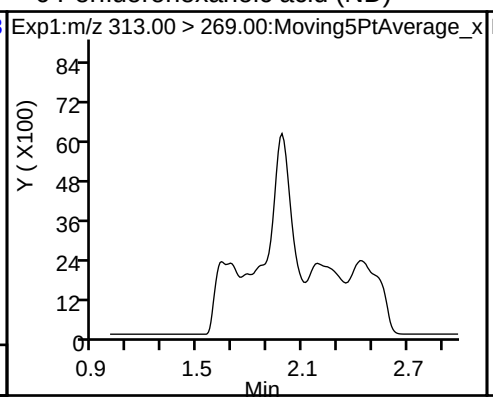
5 Perfluorobutanesulfonic acid (ND)



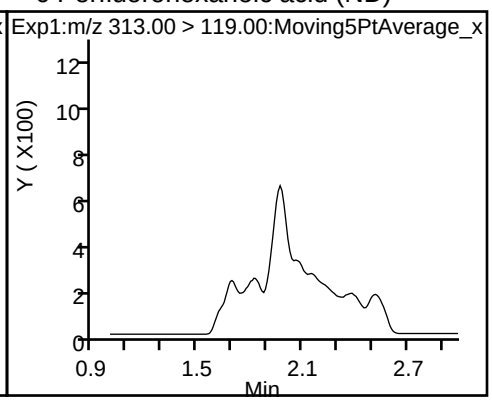
D 47 13C3-PFBS



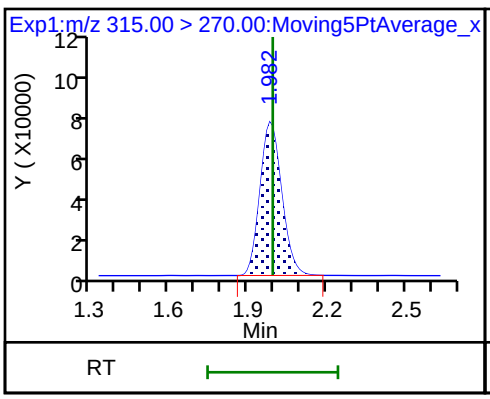
6 Perfluorohexanoic acid (ND)



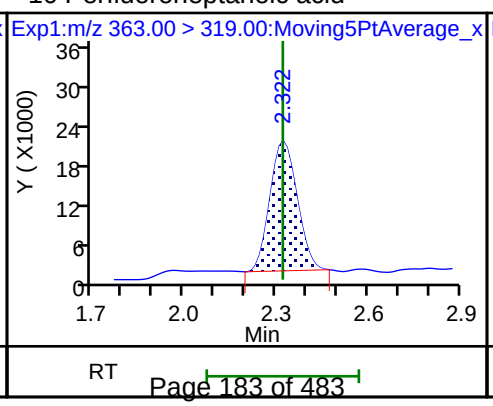
6 Perfluorohexanoic acid (ND)



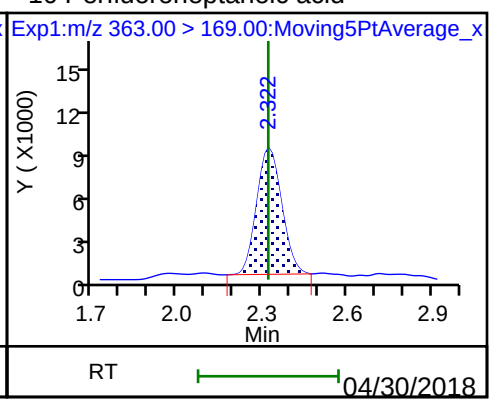
D 7 13C2 PFHxA



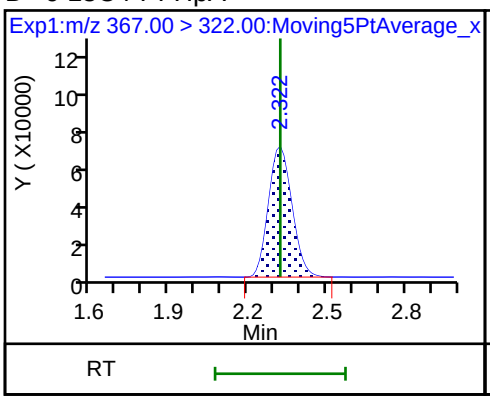
10 Perfluoroheptanoic acid



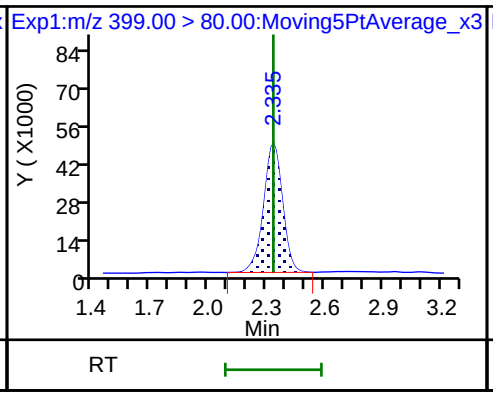
10 Perfluoroheptanoic acid



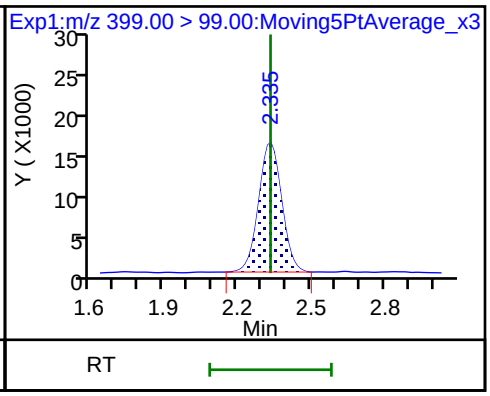
D 9 13C4-PFHpA



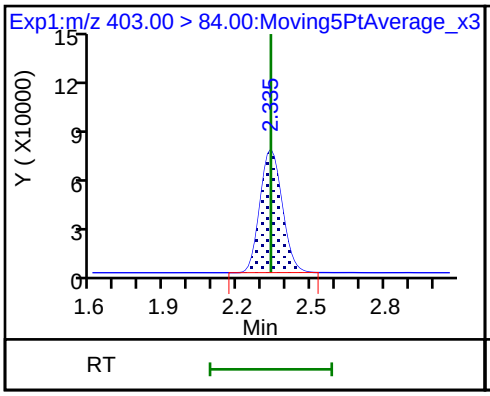
8 Perfluorohexanesulfonic acid



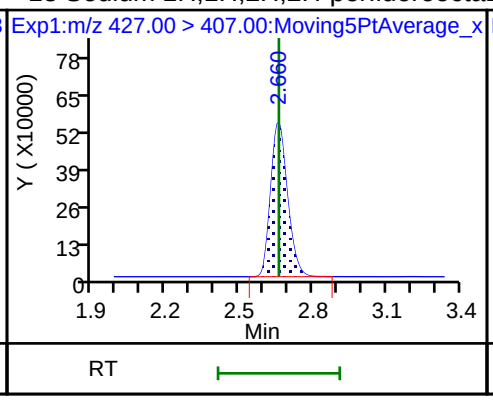
8 Perfluorohexanesulfonic acid



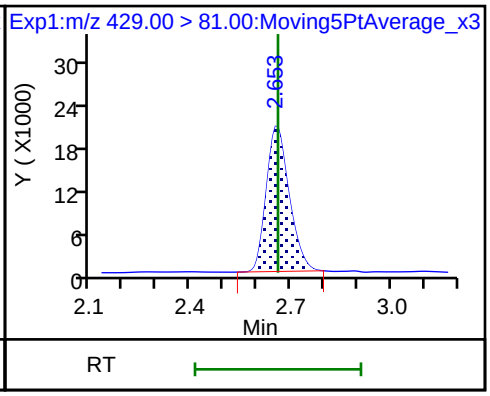
D 11 18O2 PFHxS



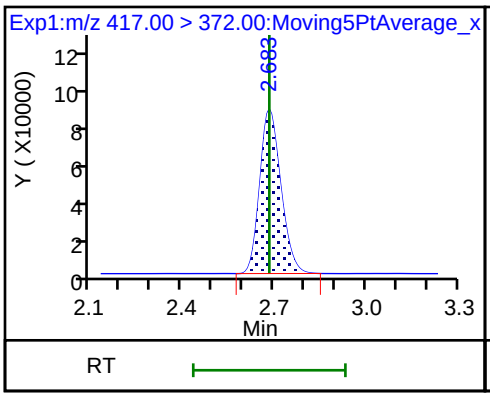
13 Sodium 1H,1H,2H,2H-perfluorooctane



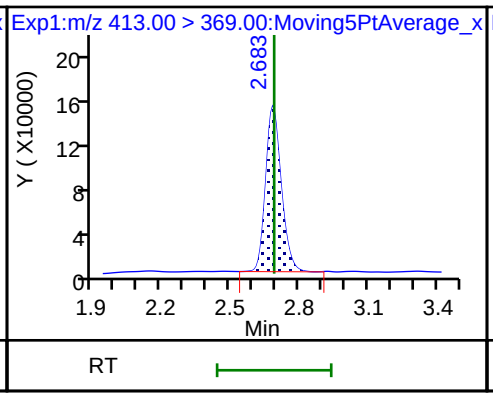
D 12 M2-6:2FTS



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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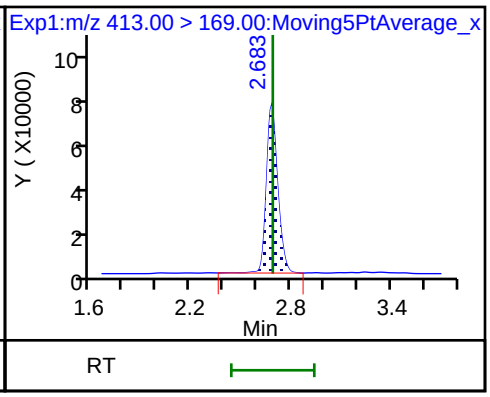
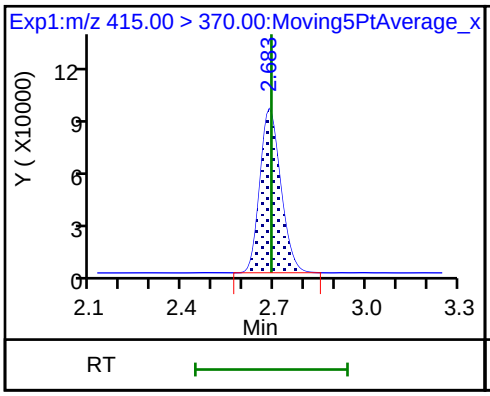
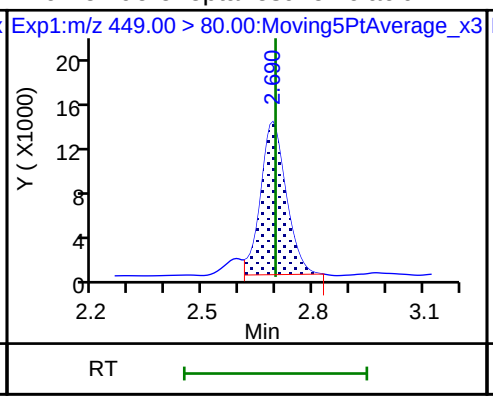


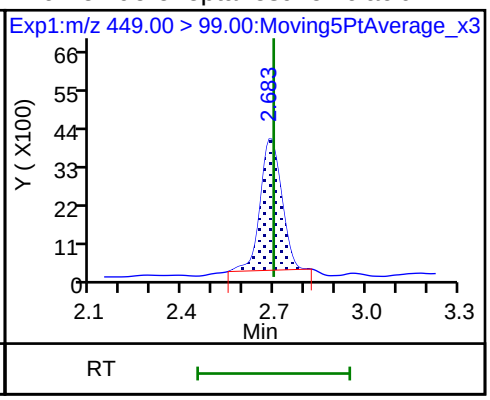
* 62 13C2-PFOA



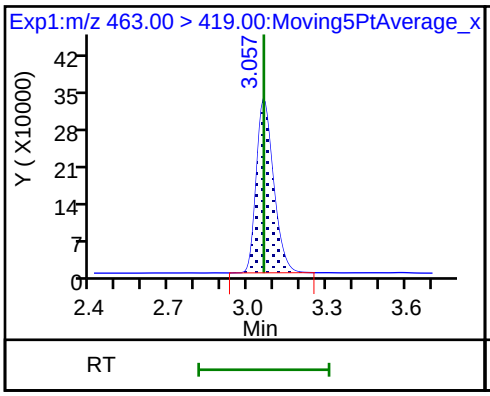
16 Perfluoroheptanesulfonic acid



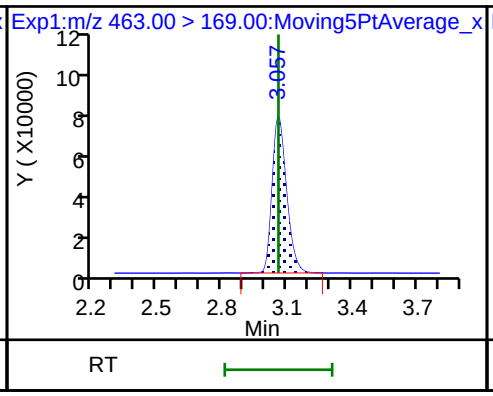
16 Perfluoroheptanesulfonic acid



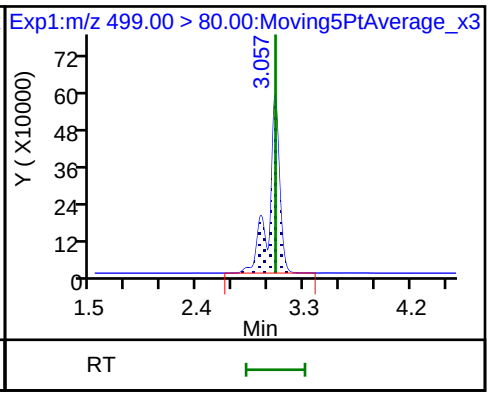
20 Perfluorononanoic acid



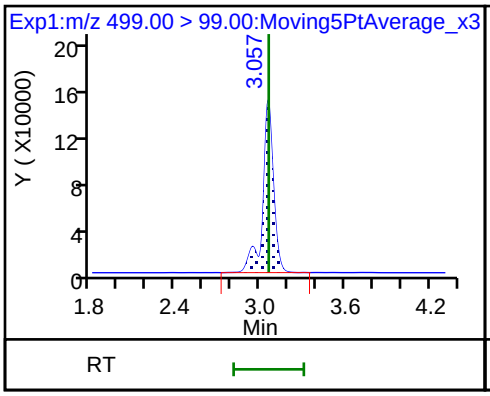
20 Perfluorononanoic acid



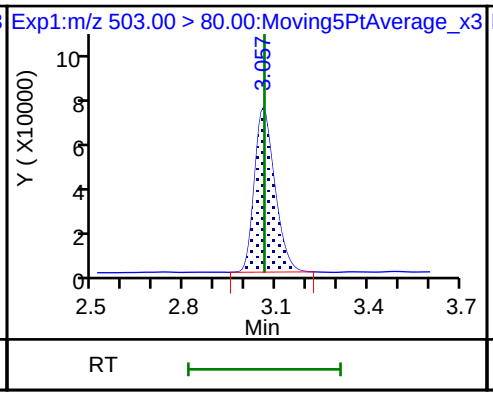
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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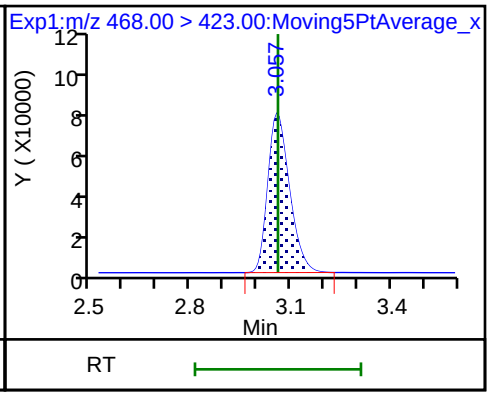
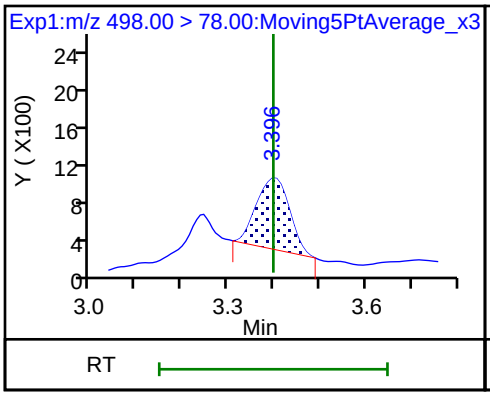
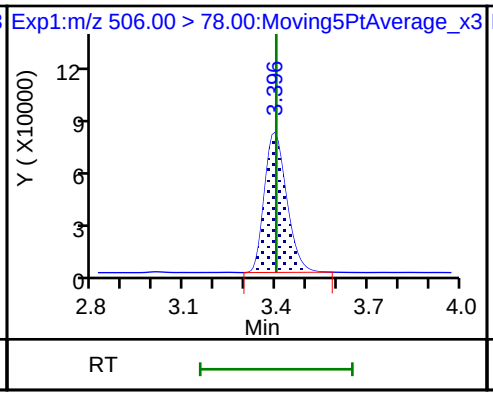


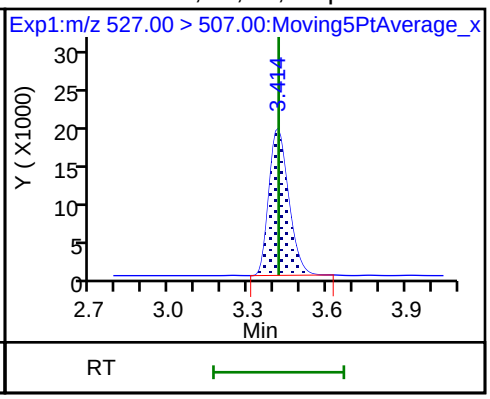
22 Perfluorooctane Sulfonamide



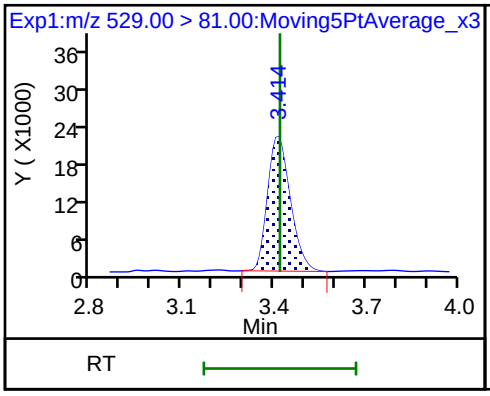
D 21 13C8 FOSA



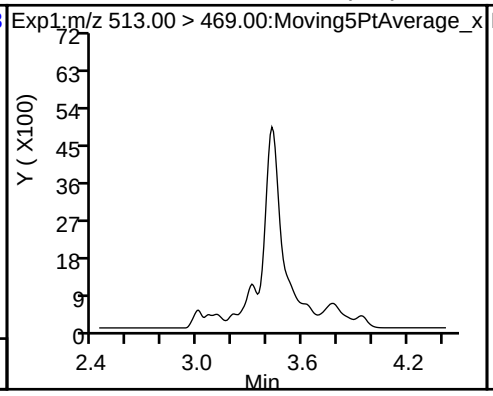
25 Sodium 1H,1H,2H,2H-perfluorodecane



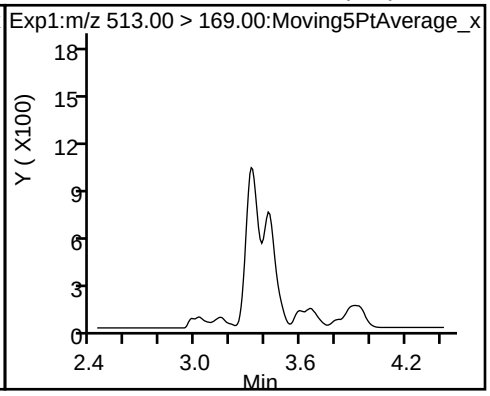
D 26 M2-8:2FTS



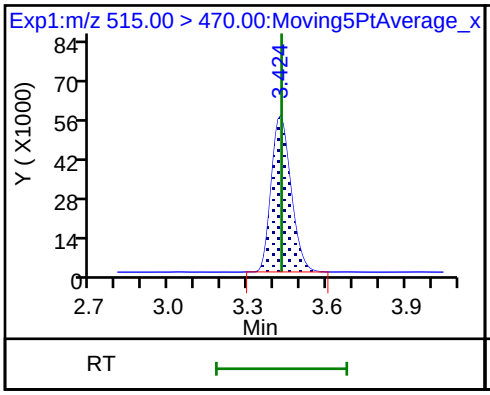
24 Perfluorodecanoic acid (ND)



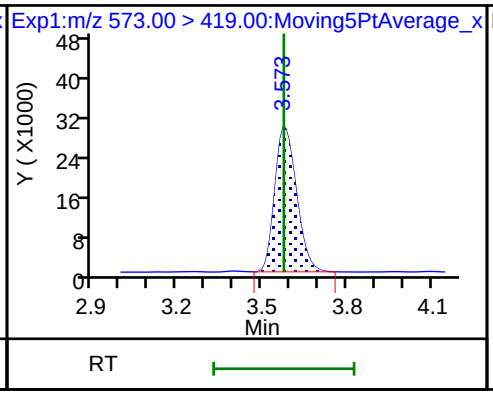
24 Perfluorodecanoic acid (ND)



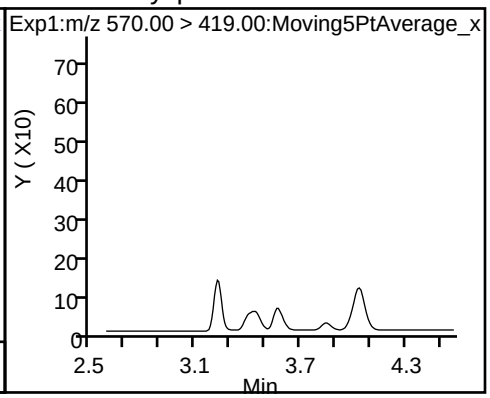
D 23 13C2 PFDA



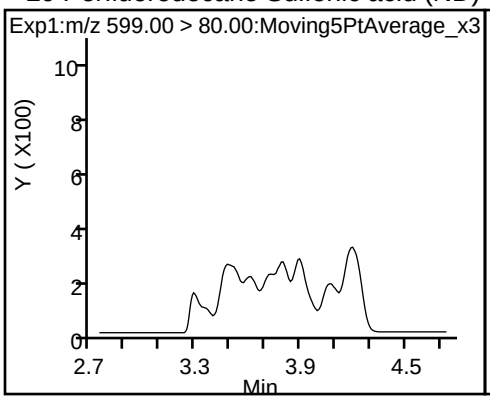
D 27 d3-NMeFOSAA



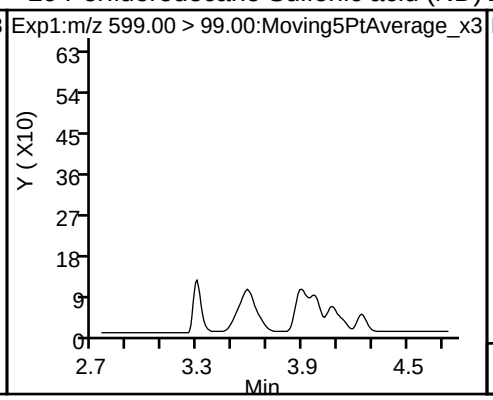
28 N-methyl perfluorooctane sulfonami (ND)



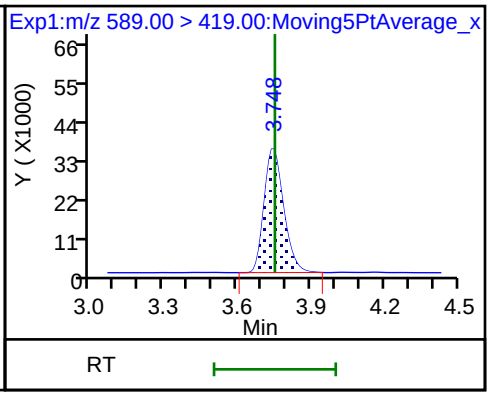
29 Perfluorodecane Sulfonic acid (ND)



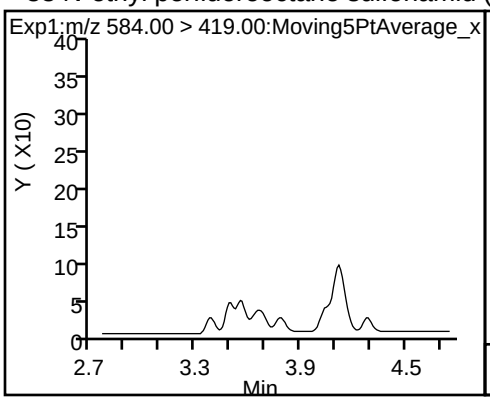
29 Perfluorodecane Sulfonic acid (ND)



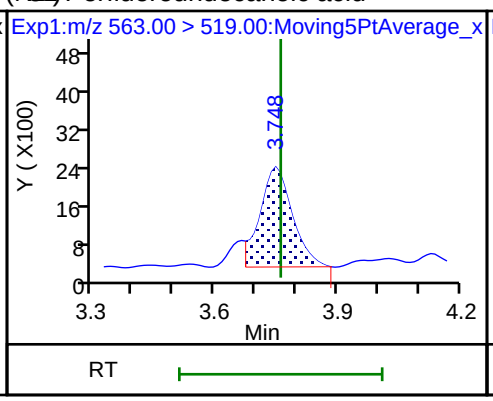
D 32 d5-NEtFOSAA



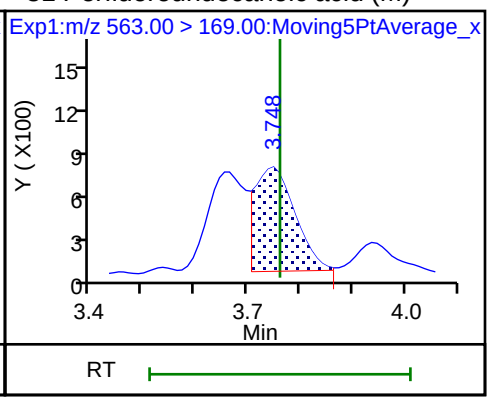
33 N-ethyl perfluorooctane sulfonamid (N)



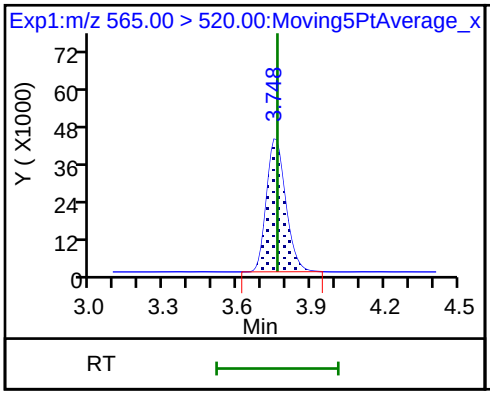
31 Perfluoroundecanoic acid



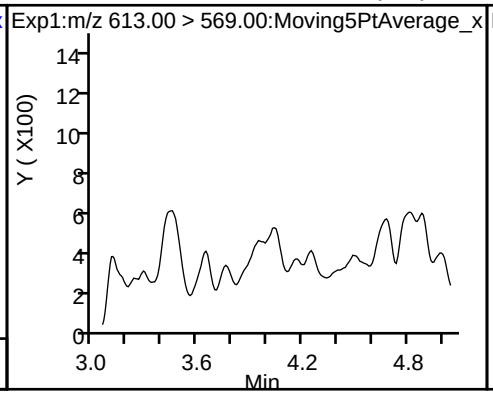
31 Perfluoroundecanoic acid (M)



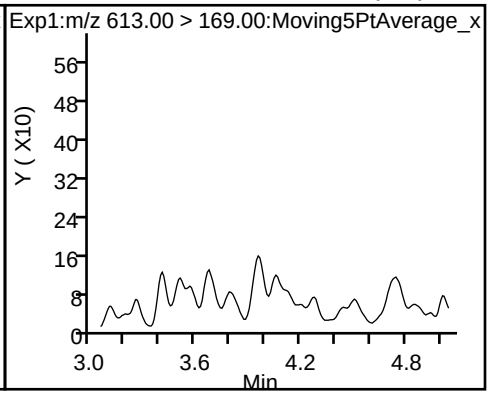
D 30 13C2 PFUnA



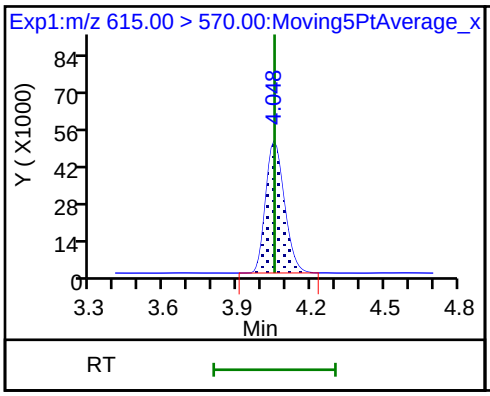
37 Perfluorododecanoic acid (ND)



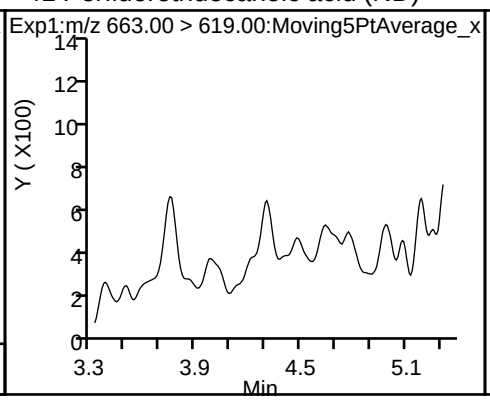
37 Perfluorododecanoic acid (ND)



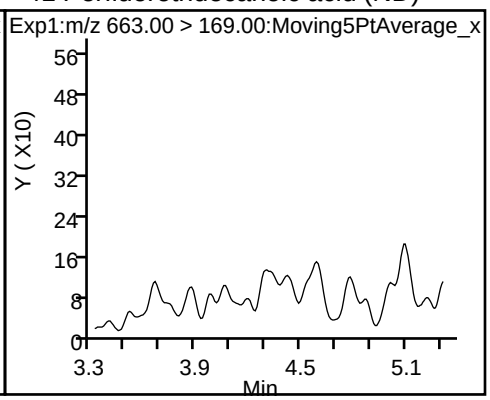
D 36 13C2 PFDoA



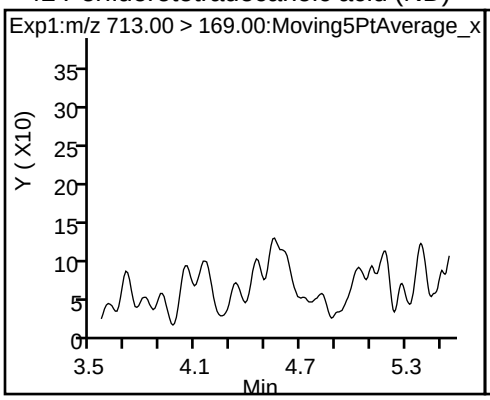
41 Perfluorotridecanoic acid (ND)



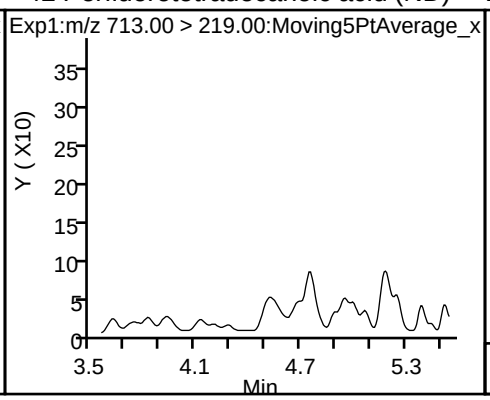
41 Perfluorotridecanoic acid (ND)



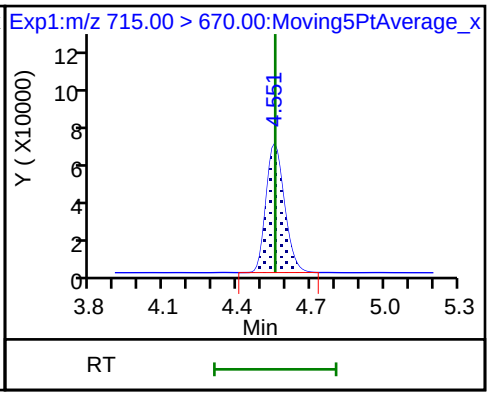
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB013(8-10)-SPLP | Lab Sample ID: 320-38063-7

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_048.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:15

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 253.4(mL) | Date Analyzed: 04/26/2018 09:01

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.63	J B	1.97	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.96	J	1.97	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	5.39		1.97	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.01		1.97	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	6.37		1.97	0.84
375-95-1	Perfluorononanoic acid (PFNA)	3.42		1.97	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.68	J	1.97	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	10.4		1.97	1.09
307-55-1	Perfluorododecanoic acid (PFDoA)	0.54	U	1.97	0.54
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.28	U	1.97	1.28
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.97	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.97	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	73.2	B	1.97	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.16		1.97	0.19
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.97	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	6.70		1.97	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.06	U	19.7	3.06
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.87	U	19.7	1.87
27619-97-2	6:2FTS	183	B	19.7	1.97
39108-34-4	8:2FTS	6.91	J	19.7	1.97

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB013(8-10)-SPLP | Lab Sample ID: 320-38063-7

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_048.d

Analysis Method: 537 (modified) | Date Collected: 04/10/2018 12:15

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 253.4(mL) | Date Analyzed: 04/26/2018 09:01

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	23	*	25-150
STL01893	13C5 PFPeA	26		25-150
STL00993	13C2 PFHxA	26		25-150
STL01892	13C4-PFHpA	26		25-150
STL00990	13C4 PFOA	25		25-150
STL00995	13C5 PFNA	25		25-150
STL00996	13C2 PFDA	25		25-150
STL00997	13C2 PFUnA	23	*	25-150
STL00998	13C2 PFDoA	21	*	25-150
STL02116	13C2-PFTeDA	23	*	25-150
STL02337	13C3-PFBS	26		25-150
STL00994	18O2 PFHxS	26		25-150
STL00991	13C4 PFOS	23	*	25-150
STL01056	13C8 FOSA	23	*	25-150
STL02118	d3-NMeFOSAA	26		25-150
STL02117	d5-NEtFOSAA	27		25-150
STL02279	M2-6:2FTS	27		25-150
STL02280	M2-8:2FTS	29		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_048.d
Lims ID: 320-38063-A-7-C
Client ID: SB013(8-10)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 09:01:07 ALS Bottle#: 36 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-38063-a-7-c
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:51 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 26-Apr-2018 14:27:30

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	3571046	0.5730		22.9	30954	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.442	1.436	0.006	1.004	21019	0.0158			6.9	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.697	0.006	0.558	2600112	0.6473		25.9	41344	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.694	1.703	-0.009	0.995	30103	0.0243			18.1	M
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.733	0.006	1.000	56008	0.6077		26.1	296	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.982	1.982	0.0	1.000	157704	0.1367			124	M
313.00 > 119.00	1.982	1.982	0.0	1.000	16544		9.53(5.03-15.10)		93.1	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	2838204	0.6390		25.6	47013	
D 9 13C4-PFHpA										
367.00 > 322.00	2.309	2.313	-0.004	1.000	2786362	0.6446		25.8	52756	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.309	2.323	-0.013	1.000	85051	0.0762			92.2	
363.00 > 169.00	2.309	2.323	-0.013	1.000	33826		2.51(1.13-3.40)		108	
D 11 18O2 PFHxS										
403.00 > 84.00	2.322	2.326	-0.004	1.000	3284213	0.6156		26.0	54029	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.322	2.336	-0.014	1.000	2916788	1.86			5397	
399.00 > 99.00	2.322	2.336	-0.014	1.000	915901		3.18(1.50-4.49)		3468	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.656	-0.003	1.000	601903	0.6498		27.4	5935	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.661	-0.008	1.000	1990715	4.65			17834	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.679	-0.003	1.000	2735426	0.6366		25.5	58680	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.003	204079	0.1614			119	
413.00 > 169.00	2.676	2.683	-0.007	1.000	113126		1.80(0.84-2.52)		291	
* 62 13C2-PFOA										s
415.00 > 370.00	2.676	2.683	-0.007		11579442	2.50			110451	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.691	-0.008	1.000	63399	0.0547			293	
449.00 > 99.00	2.683	2.691	-0.008	1.000	15662		4.05(1.94-5.82)		165	
17 Perfluorooctane sulfonic acid										E
499.00 > 80.00	3.050	3.053	-0.003	1.000	21501461	22.6			51195	E
499.00 > 99.00	3.050	3.053	-0.003	1.000	5092469		4.22(2.31-6.93)		40621	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.056	-0.006	1.000	2086884	0.5586		23.4	9611	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.056	-0.006	1.000	2286323	0.6191		24.8	43766	
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.060	-0.010	1.000	82633	0.0867			178	
463.00 > 169.00	3.050	3.060	-0.010	1.000	19057		4.34(1.90-5.69)		519	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.394	-0.007	1.000	2680371	0.5746		23.0	39260	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.398	-0.011	1.000	184027	0.1697			165	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.405	3.408	-0.003	1.000	72861	0.1751			2221	
D 26 M2-8:2FTS										
529.00 > 81.00	3.405	3.413	-0.008	1.000	787464	0.7058		29.5	5867	
24 Perfluorodecanoic acid										R
513.00 > 469.00	3.415	3.417	-0.002	1.000	13748	0.0172			45.2	R
513.00 > 169.00	3.424	3.417	0.007	1.003	1316		10.45(2.36-7.09)		20.8	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.422	-0.007	1.000	1933471	0.6229		24.9	53097	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.564	3.582	-0.018	1.000	1129210	0.6418		25.7	15923	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.738	3.747	-0.009	1.000	1173317	0.6757		27.0	18881	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.749	3.751	-0.002	1.000	137930	0.2635			751	
563.00 > 169.00	3.749	3.751	-0.002	1.000	33619		4.10(2.12-6.36)		398	
33 N-ethyl perfluorooctane sulfonamid										M
584.00 > 419.00	3.749	3.751	-0.002	1.003	1476	0.003365			32.8	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.757	-0.008	1.000	1548693	0.5784		23.1	46012	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.046	-0.008	1.000	1533085	0.5302		21.2	17694	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.541	4.551	-0.010	1.000	2103687	0.5738		23.0	17545	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

E - Exceeded Maximum Amount

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:53 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_048.d

Injection Date: 26-Apr-2018 09:01:07 Instrument ID: A8_N

Lims ID: 320-38063-A-7-C Lab Sample ID: 320-38063-7

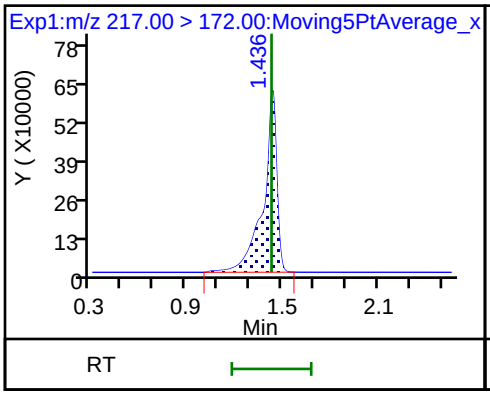
Client ID: SB013(8-10)-SPLP

Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 13

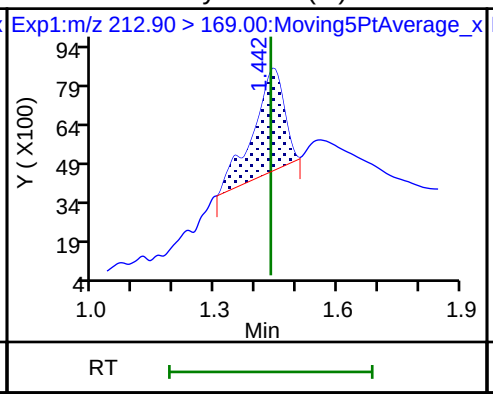
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

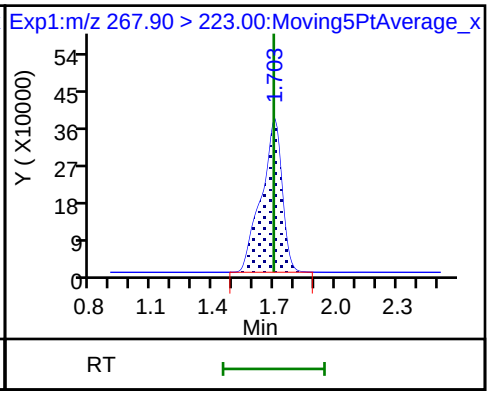
D 1 13C4 PFBA



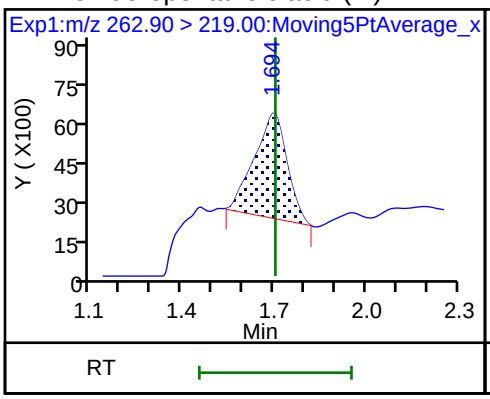
2 Perfluorobutyric acid (M)



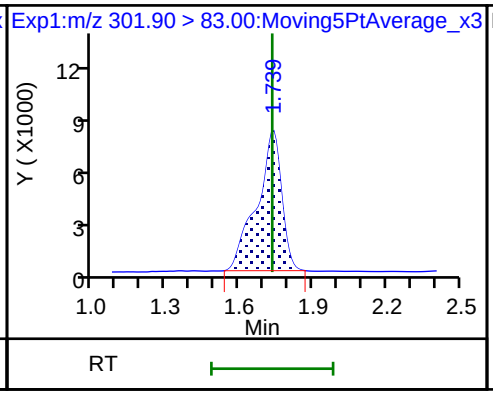
D 3 13C5-PFPeA



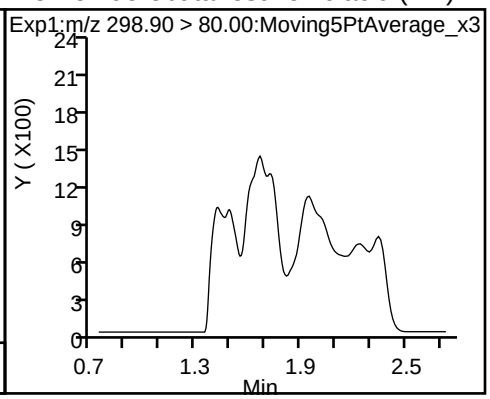
4 Perfluoropentanoic acid (M)



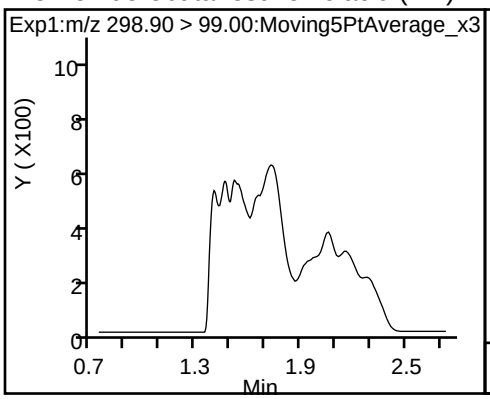
D 47 13C3-PFBS



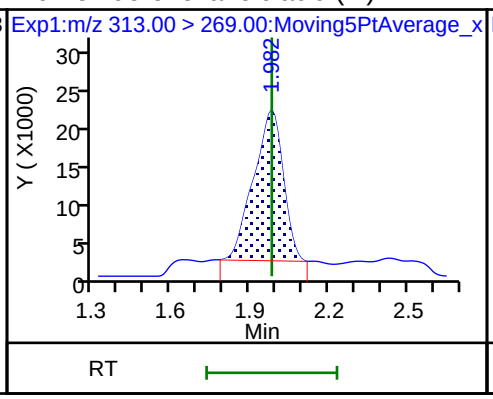
5 Perfluorobutanesulfonic acid (ND)



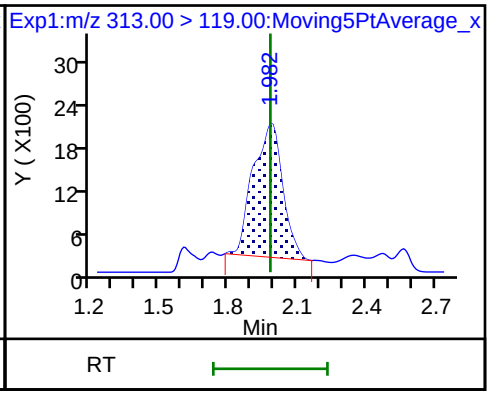
5 Perfluorobutanesulfonic acid (ND)



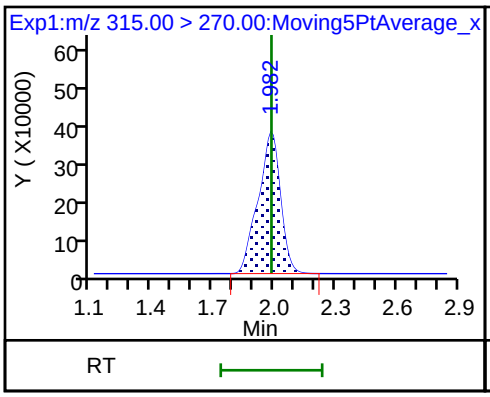
6 Perfluorohexanoic acid (M)



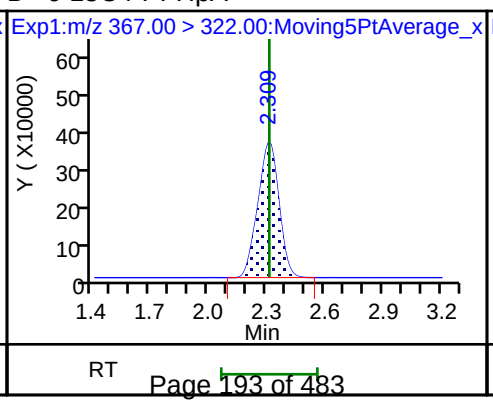
6 Perfluorohexanoic acid



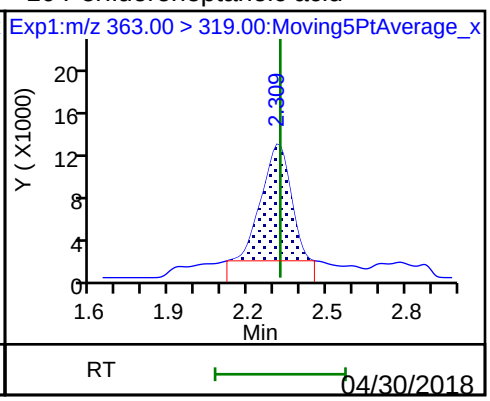
D 7 13C2 PFHxA



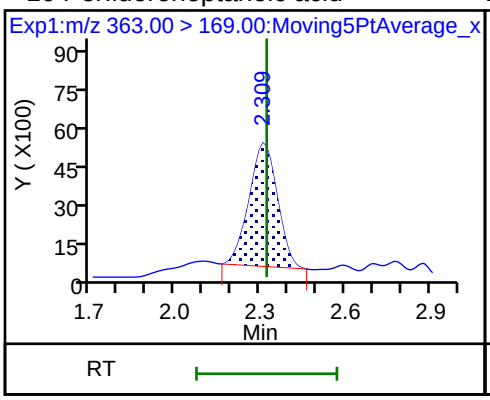
D 9 13C4-PFHpA



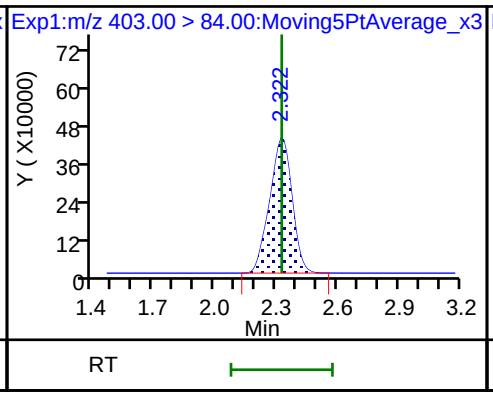
10 Perfluoroheptanoic acid



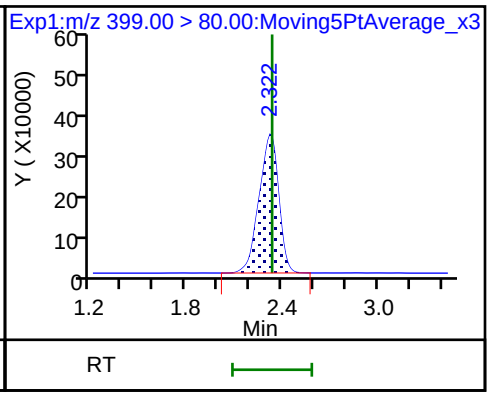
10 Perfluoroheptanoic acid



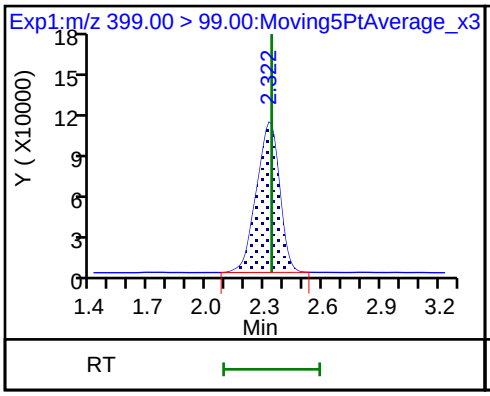
D 11 18O2 PFHxS



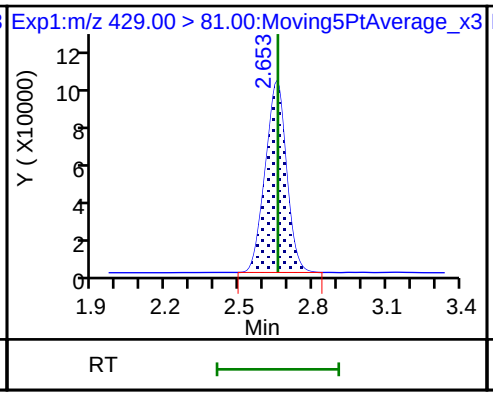
8 Perfluorohexanesulfonic acid



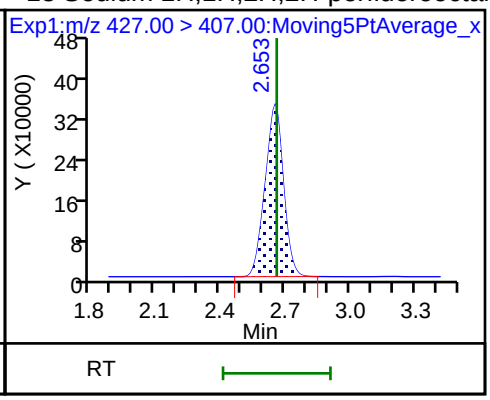
8 Perfluorohexanesulfonic acid



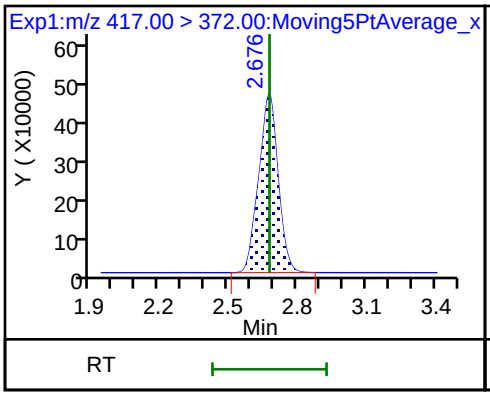
D 12 M2-6:2FTS



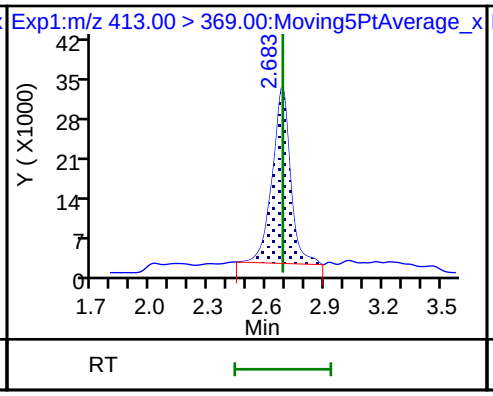
13 Sodium 1H,1H,2H,2H-perfluorooctane



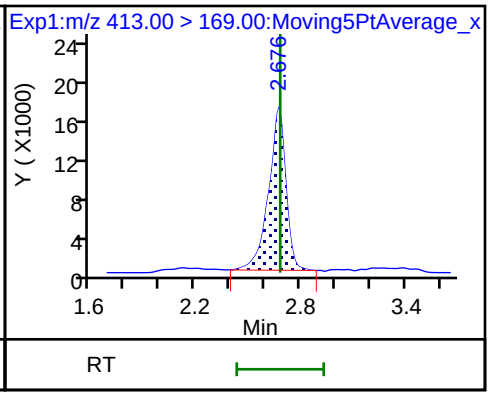
D 14 13C4 PFOA



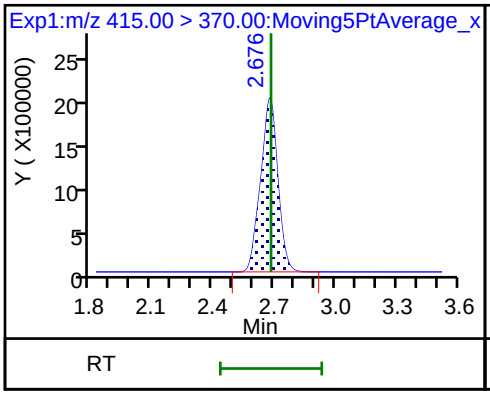
15 Perfluorooctanoic acid



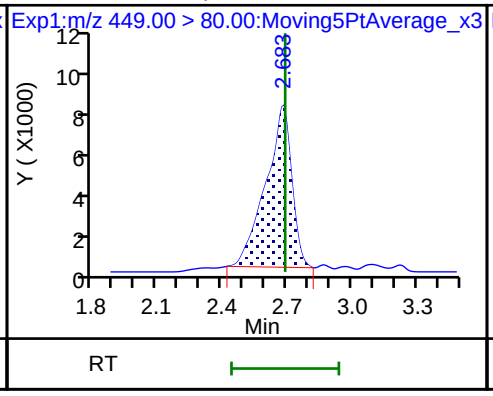
15 Perfluorooctanoic acid



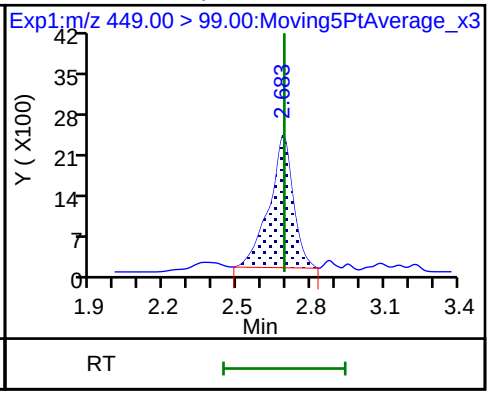
* 62 13C2-PFOA



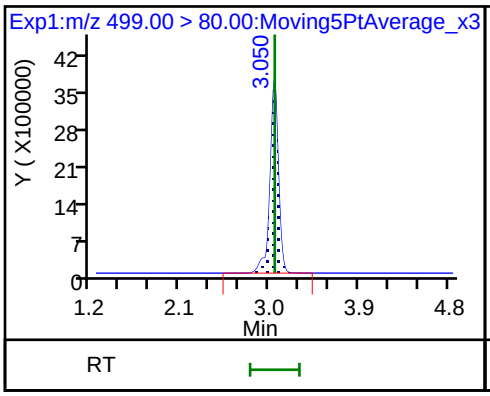
16 Perfluoroheptanesulfonic acid



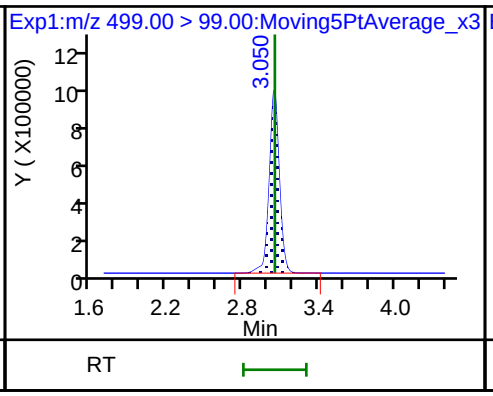
16 Perfluoroheptanesulfonic acid



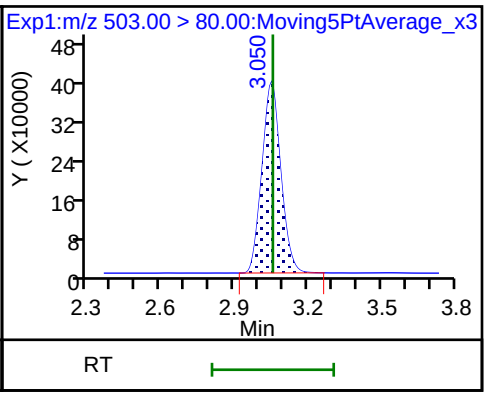
17 Perfluorooctane sulfonic acid



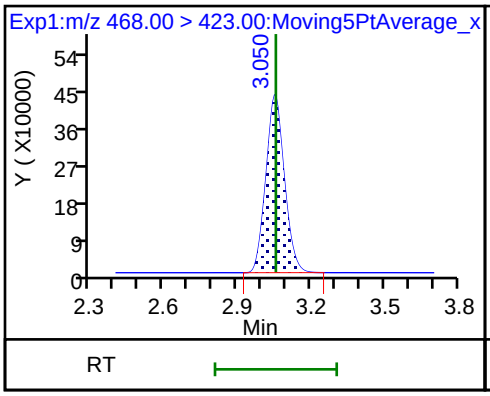
17 Perfluorooctane sulfonic acid



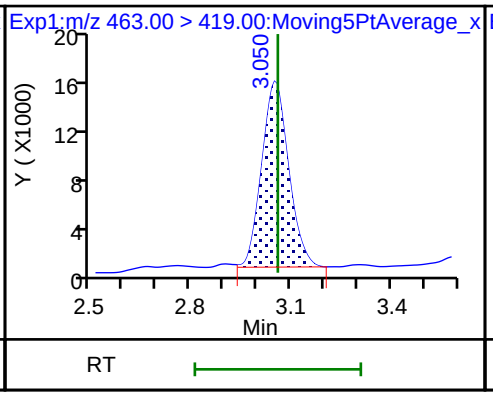
D 18 13C4 PFOS



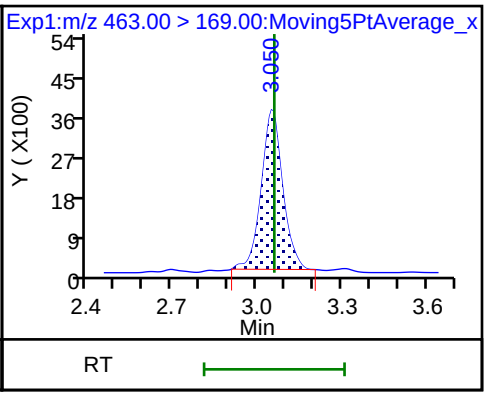
D 19 13C5 PFNA



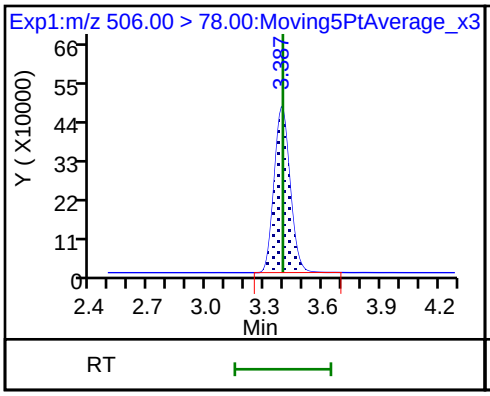
20 Perfluorononanoic acid



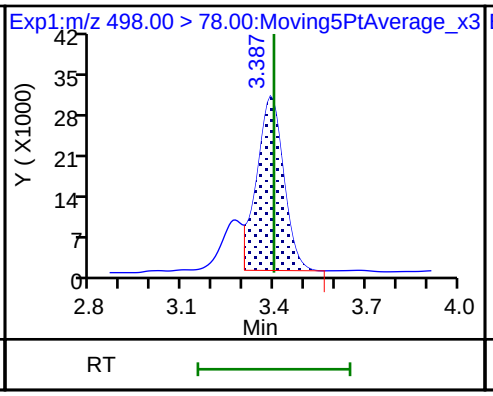
20 Perfluorononanoic acid



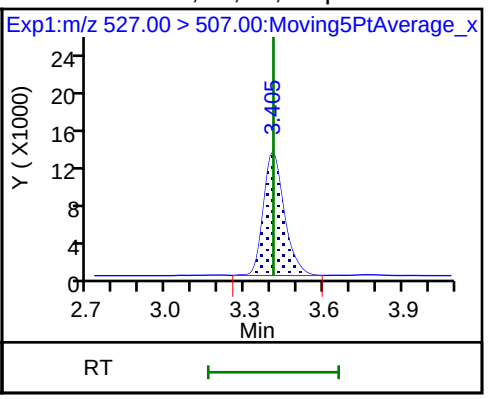
D 21 13C8 FOSA



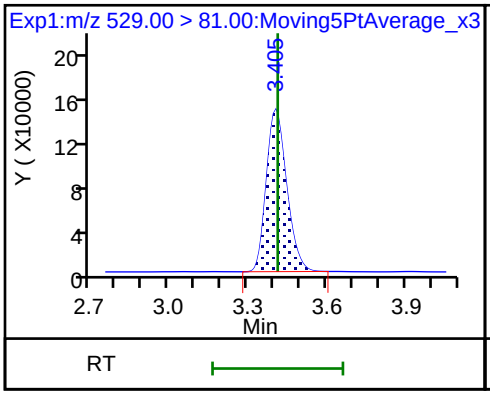
22 Perfluorooctane Sulfonamide



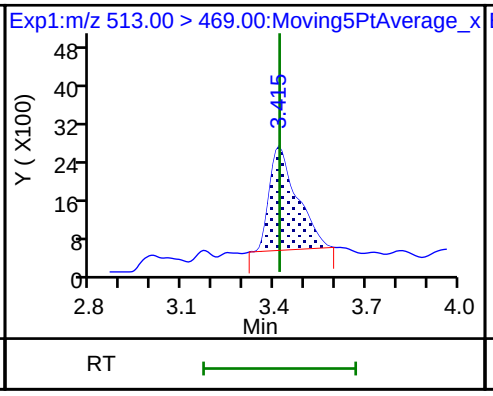
25 Sodium 1H,1H,2H,2H-perfluorodecane



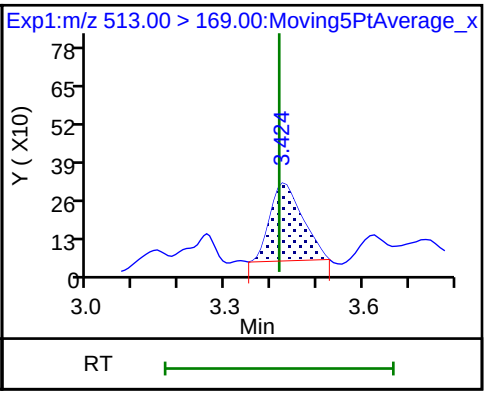
D 26 M2-8:2FTS



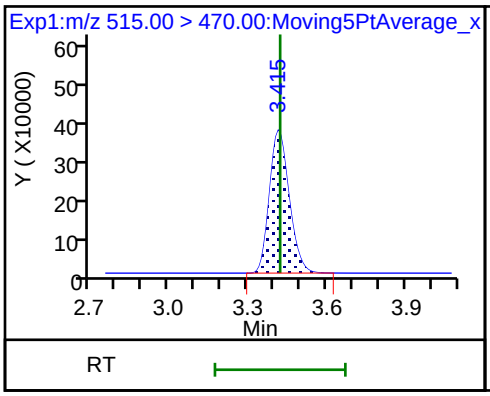
24 Perfluorodecanoic acid



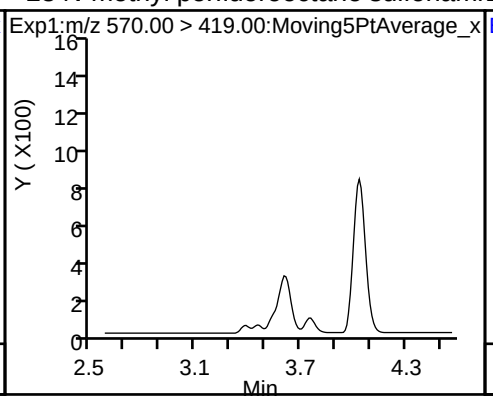
24 Perfluorodecanoic acid



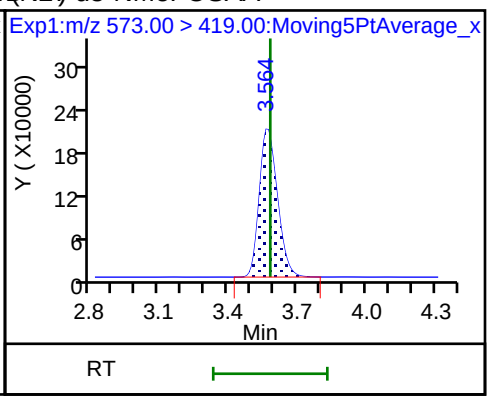
D 23 13C2 PFDA



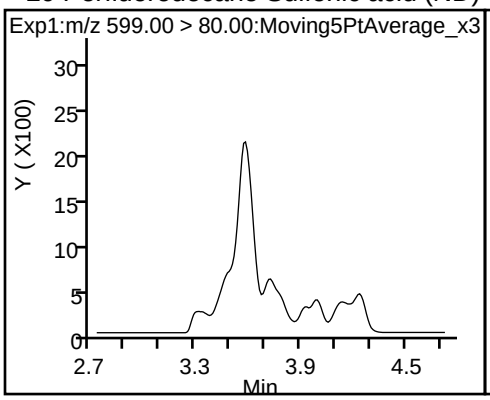
28 N-methyl perfluorooctane sulfonamid (ND)



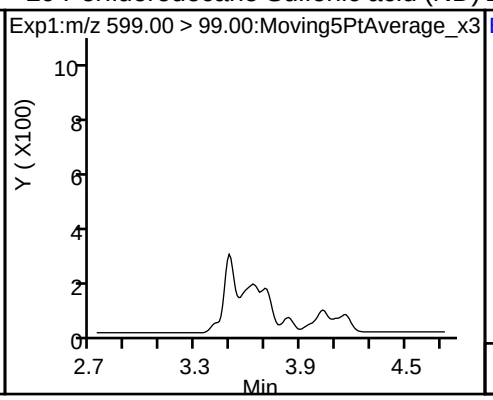
D 27 d3-NMeFOSAA



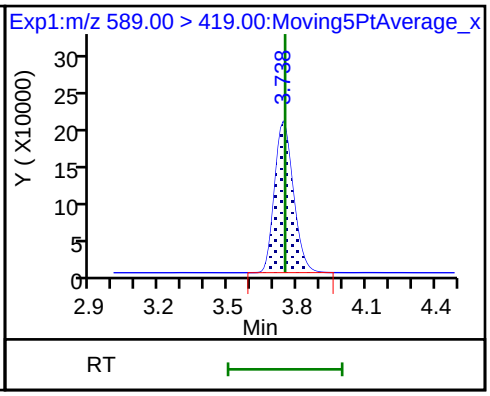
29 Perfluorodecane Sulfonic acid (ND)



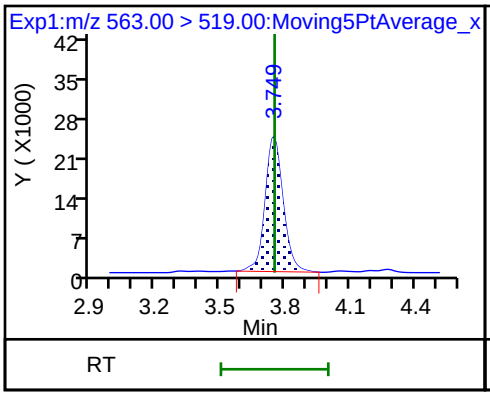
29 Perfluorodecane Sulfonic acid (ND)



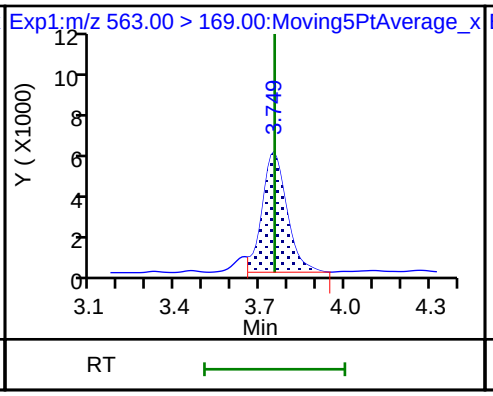
D 32 d5-NEtFOSAA



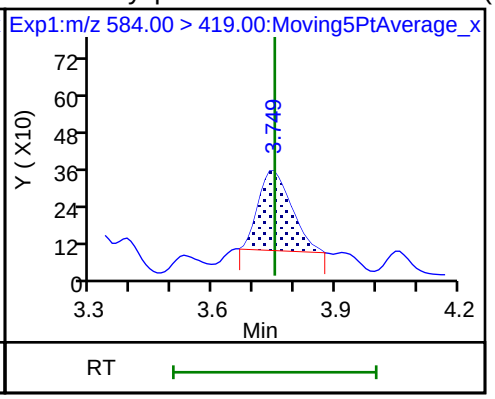
31 Perfluoroundecanoic acid



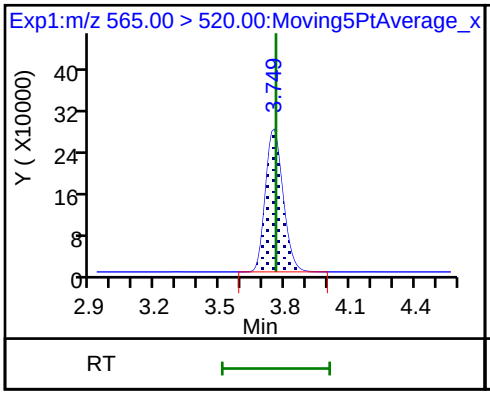
31 Perfluoroundecanoic acid



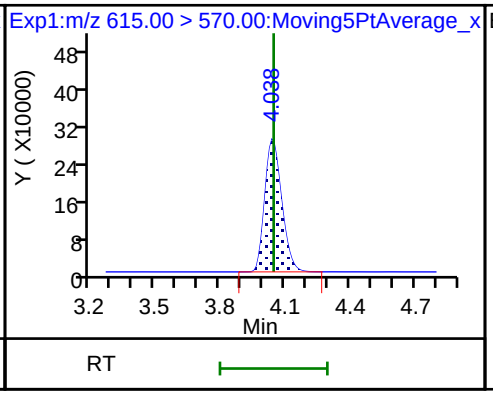
33 N-ethyl perfluorooctane sulfonamid (M)



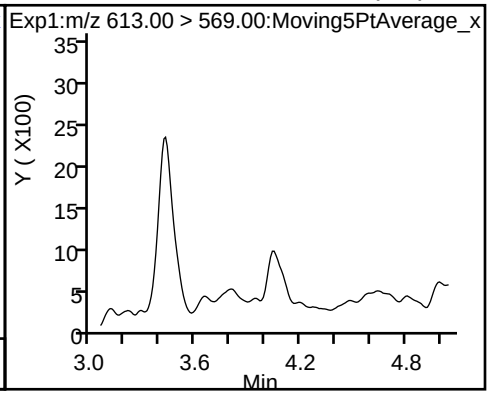
D 30 13C2 PFUnA



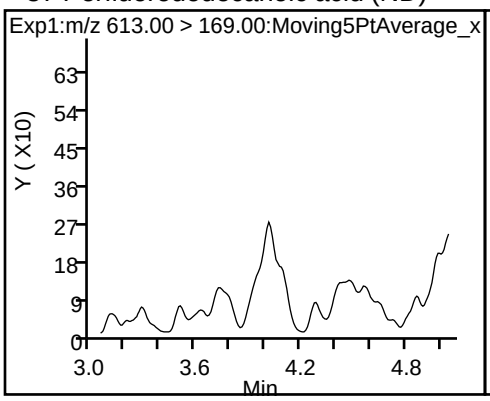
D 36 13C2 PFDoA



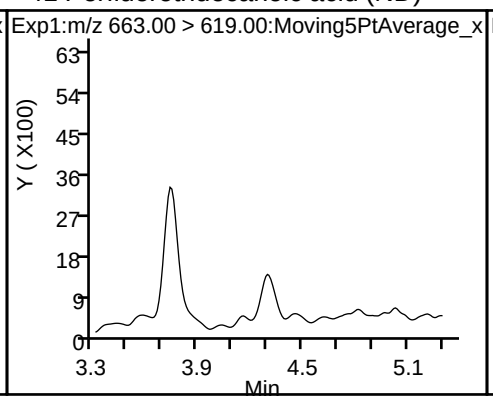
37 Perfluorododecanoic acid (ND)



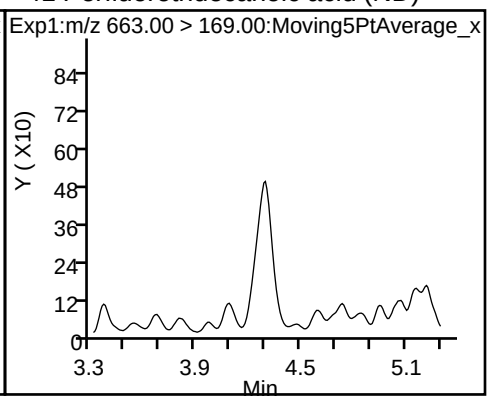
37 Perfluorododecanoic acid (ND)



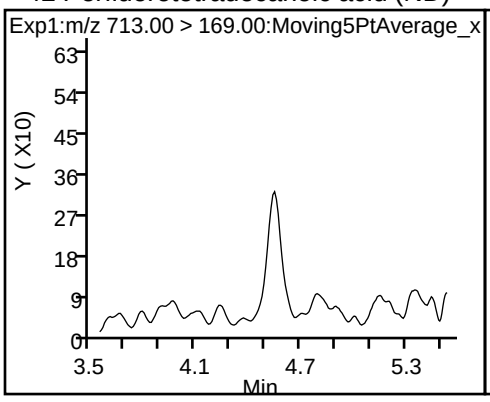
41 Perfluorotridecanoic acid (ND)



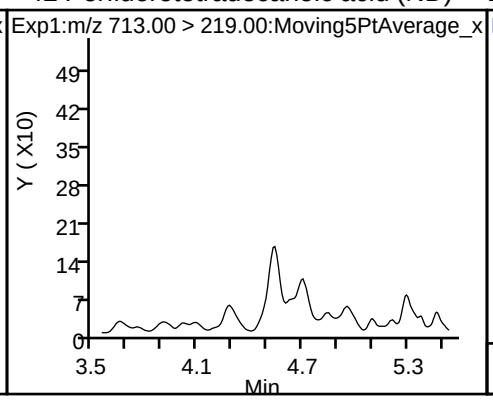
41 Perfluorotridecanoic acid (ND)



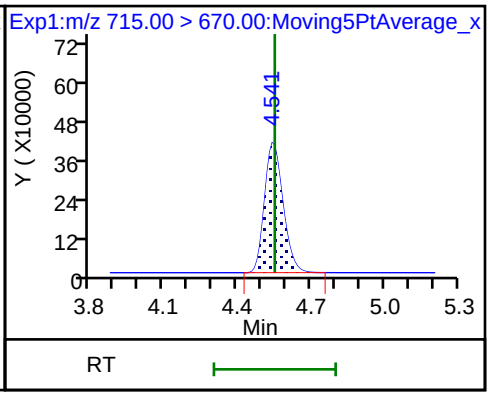
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

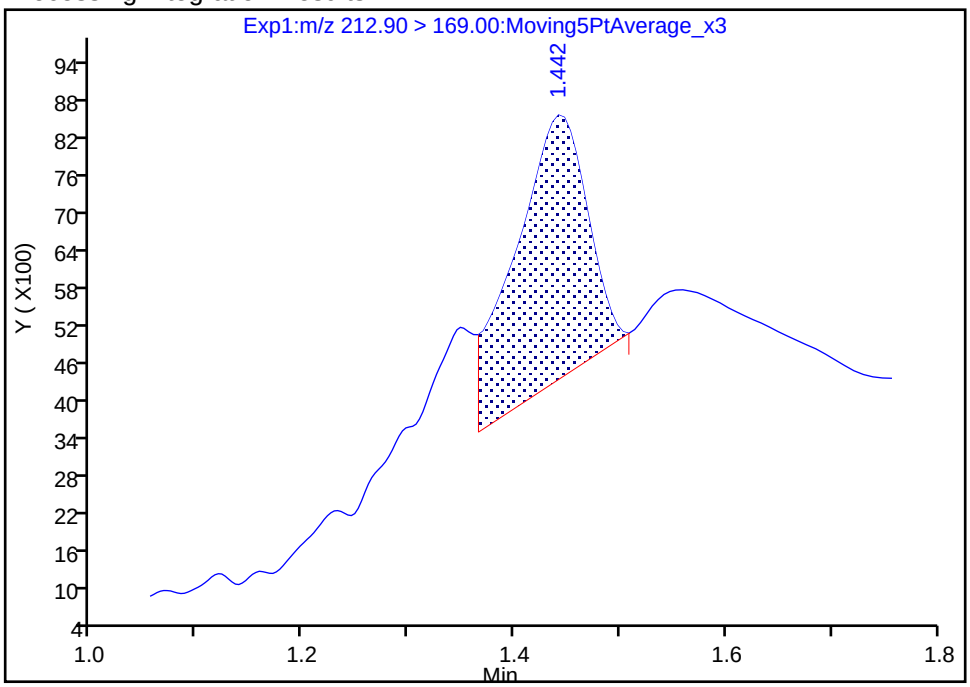
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_048.d				
Injection Date:	26-Apr-2018 09:01:07	Instrument ID:	A8_N		
Lims ID:	320-38063-A-7-C	Lab Sample ID:	320-38063-7		
Client ID:	SB013(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

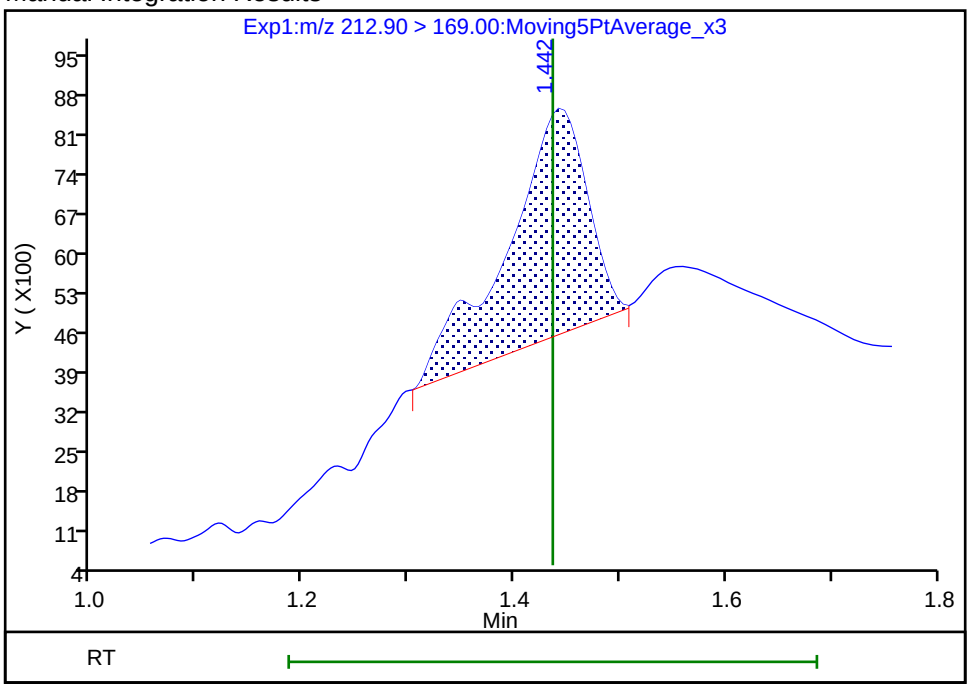
Processing Integration Results

RT: 1.44
Area: 20225
Amount: 0.015248
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 21019
Amount: 0.015847
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:23:41

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

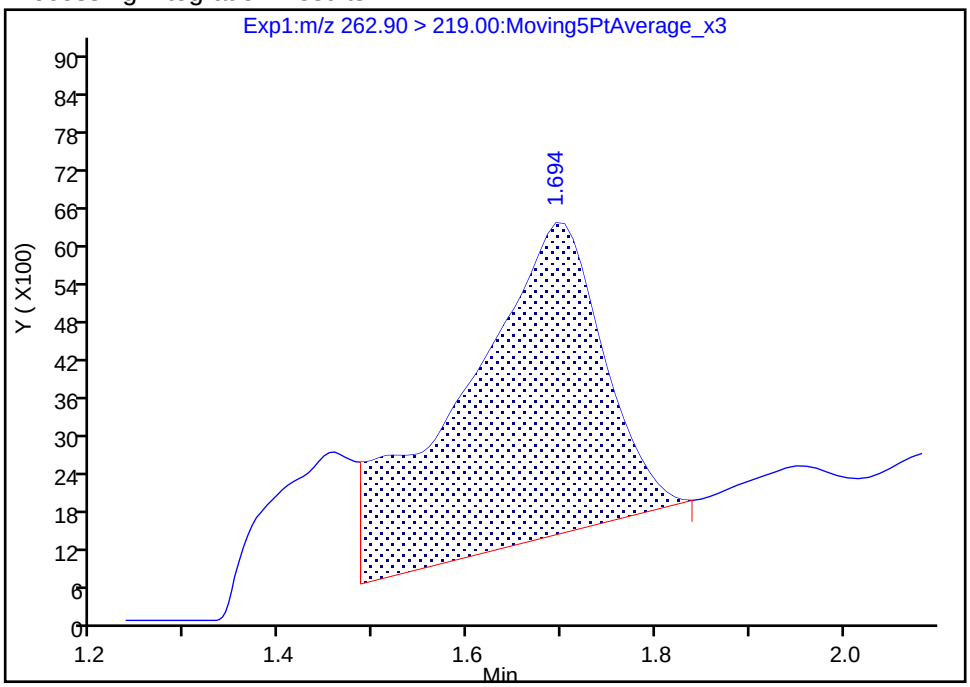
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_048.d				
Injection Date:	26-Apr-2018 09:01:07	Instrument ID:	A8_N		
Lims ID:	320-38063-A-7-C	Lab Sample ID:	320-38063-7		
Client ID:	SB013(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

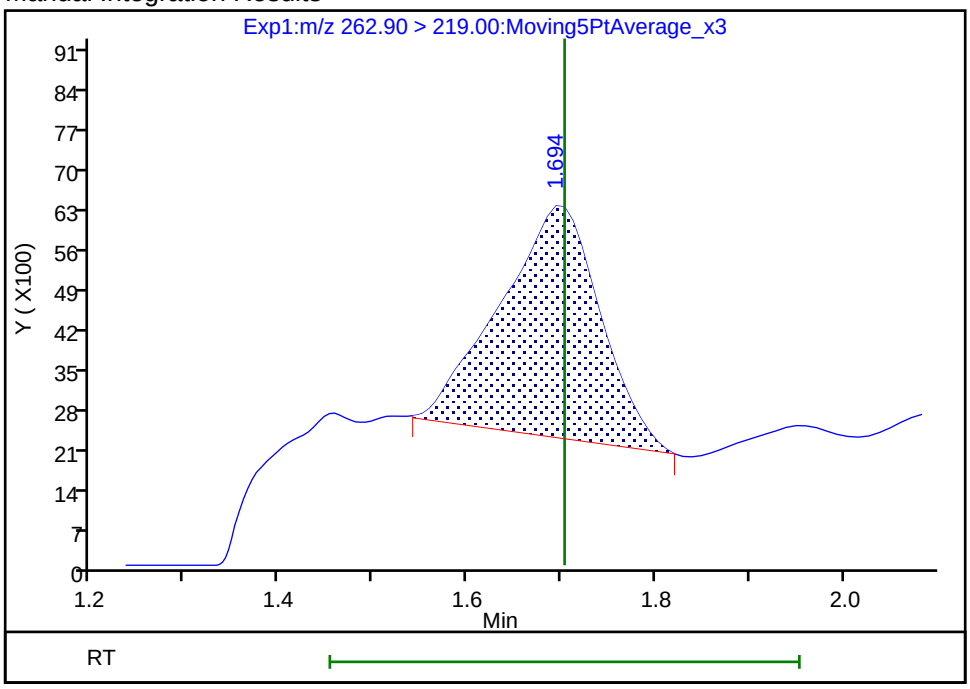
Processing Integration Results

RT: 1.69
Area: 52549
Amount: 0.042396
Amount Units: ng/ml



Manual Integration Results

RT: 1.69
Area: 30103
Amount: 0.024287
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:24:22

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

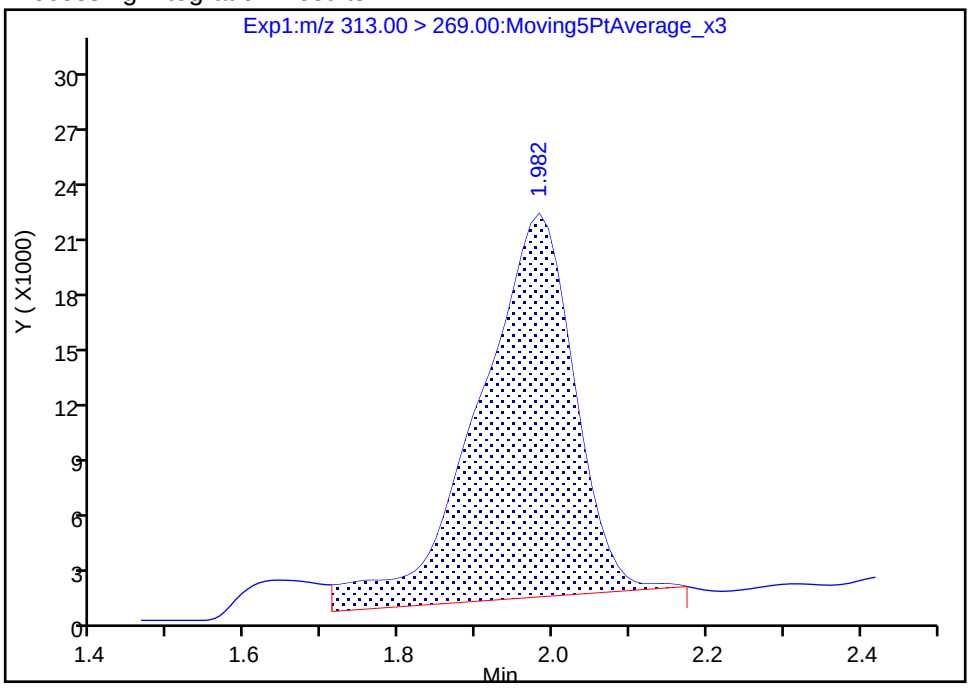
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_048.d				
Injection Date:	26-Apr-2018 09:01:07	Instrument ID:	A8_N		
Lims ID:	320-38063-A-7-C	Lab Sample ID:	320-38063-7		
Client ID:	SB013(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

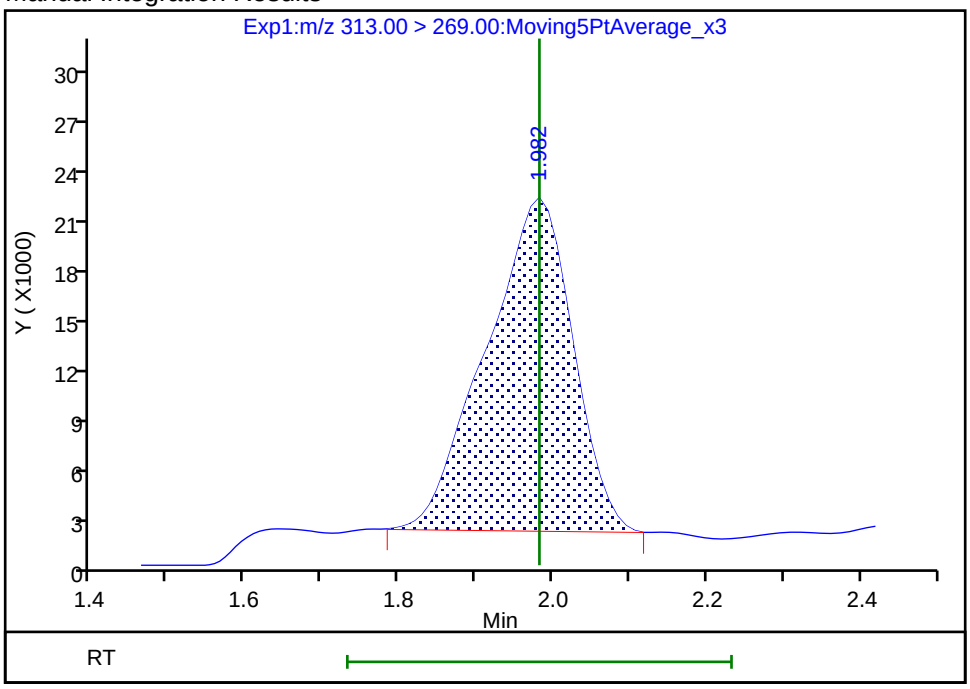
Processing Integration Results

RT: 1.98
Area: 182577
Amount: 0.158266
Amount Units: ng/ml



Manual Integration Results

RT: 1.98
Area: 157704
Amount: 0.136705
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:24:34

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

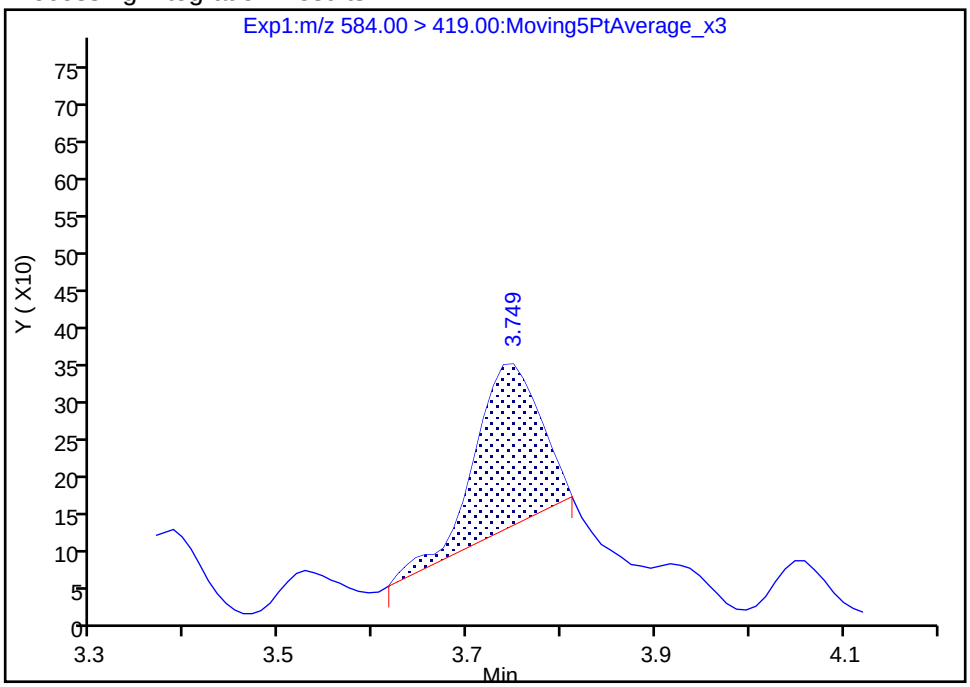
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_048.d				
Injection Date:	26-Apr-2018 09:01:07	Instrument ID:	A8_N		
Lims ID:	320-38063-A-7-C	Lab Sample ID:	320-38063-7		
Client ID:	SB013(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	36	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

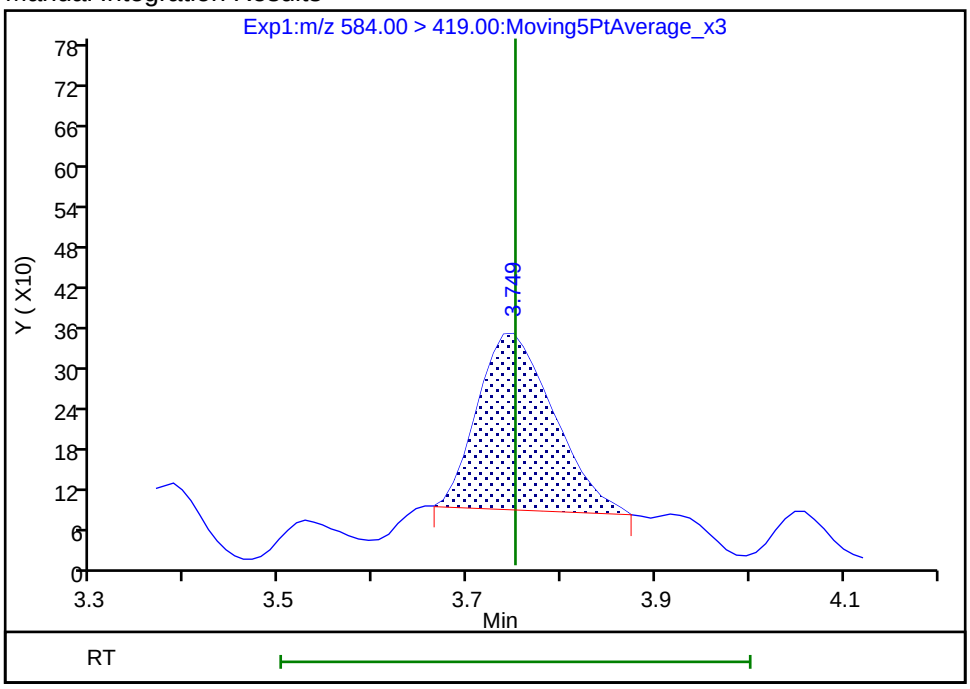
Processing Integration Results

RT: 3.75
Area: 1058
Amount: 0.002412
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 1476
Amount: 0.003365
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:25:05

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Client Sample ID: SB013(8-10)-SPLP DL Lab Sample ID: 320-38063-7 DL

Matrix: Solid (SPLP East) Lab File ID: 2018.04.26LLB_015.d

Analysis Method: 537 (modified) Date Collected: 04/10/2018 12:15

Extraction Method: 3535 Date Extracted: 04/23/2018 10:11

Sample wt/vol: 253.4(mL) Date Analyzed: 04/26/2018 20:57

Con. Extract Vol.: 10.0(mL) Dilution Factor: 10

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 220094 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1020	D	19.7	5.33

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00991	13C4 PFOS	23	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_015.d
Lims ID: 320-38063-A-7-C
Client ID: SB013(8-10)-SPLP
Sample Type: Client
Inject. Date: 26-Apr-2018 20:57:17 ALS Bottle#: 8 Worklist Smp#: 13
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Sample Info: 320-38063-a-7-c 10X
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:53:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:41:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.442	-0.006	1.000	3810	0.003221			1.4	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.442	-0.006	1.000	318487	0.0614		24.6	2777	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.554	207584	0.0621		24.8	3865	
D 47 13C3-PFBS										M
301.90 > 83.00	1.730	1.739	-0.009	1.000	4452	0.0580		25.0	37.4	M
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.994	-0.012	1.000	237108	0.0641		25.6	8127	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.322	0.001	1.000	236025	0.0656		26.2	5400	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.334	0.002	1.000	240953	0.1854			643	
399.00 > 99.00	2.336	2.334	0.002	1.000	80767		2.98(1.50-4.49)		512	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.335	0.001	1.000	271592	0.0611		25.8	10922	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.660	0.001	1.000	171891	0.5320			2111	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.661	0.0	1.000	45397	0.0589		24.8	508	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.683	0.0	1.000	221990	0.0620		24.8	7777	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.690	-0.014	0.997	13450	0.0131			9.2	
413.00 > 169.00	2.676	2.690	-0.014	0.997	11502		1.17(0.84-2.52)		27.3	
* 62 13C2-PFOA										s
415.00 > 370.00	2.683	2.690	-0.007		964204	0.2500			28801	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
20 Perfluorononanoic acid										M
463.00 > 419.00	3.057	3.059	-0.002	1.000	7382	0.008940			19.9	M
463.00 > 169.00	3.064	3.059	0.005	1.002	1793		4.12(1.90-5.69)		43.9	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	1.000	1967485	2.58			8237	
499.00 > 99.00	3.057	3.059	-0.002	1.000	432269		4.55(2.31-6.93)		7037	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.061	-0.004	1.000	167680	0.0539		22.6	1130	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.061	-0.004	1.000	197965	0.0644		25.8	8876	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.398	-0.002	1.000	18967	0.0224			112	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.400	-0.004	1.000	208980	0.0538		21.5	2943	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.415	3.416	-0.001	1.000	6420	0.0221			411	
D 26 M2-8:2FTS										
529.00 > 81.00	3.415	3.418	-0.003	1.000	55014	0.0592		24.7	491	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.427	-0.003	1.000	150915	0.0584		23.4	4254	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.576	-0.003	1.000	86863	0.0593		23.7	1228	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.752	-0.003	1.000	98059	0.0678		27.1	1599	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.749	3.761	-0.012	1.000	9468	0.0225			44.4	
563.00 > 169.00	3.739	3.761	-0.022	0.997	3538		2.68(2.12-6.36)		56.2	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.762	-0.013	1.000	124693	0.0559		22.4	5870	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.051	-0.002	1.000	125808	0.0523		20.9	1699	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.553	-0.002	1.000	164176	0.0538		21.5	2090	

QC Flag Legend

Processing Flags

s - Failed ISTD Recovery Test

Review Flags

M - Manually Integrated

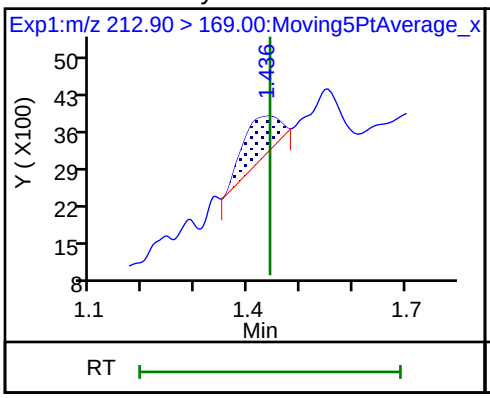
Report Date: 27-Apr-2018 15:54:33 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

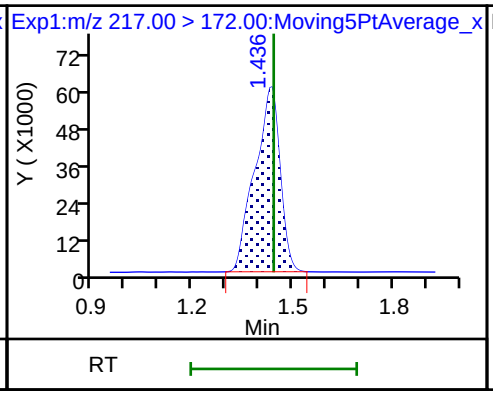
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_015.d

Injection Date:	26-Apr-2018 20:57:17	Instrument ID:	A8_N		
Lims ID:	320-38063-A-7-C	Lab Sample ID:	320-38063-7		
Client ID:	SB013(8-10)-SPLP				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	8	Worklist Smp#:	13
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		

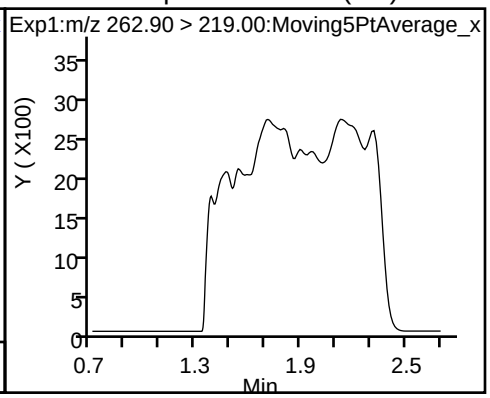
2 Perfluorobutyric acid



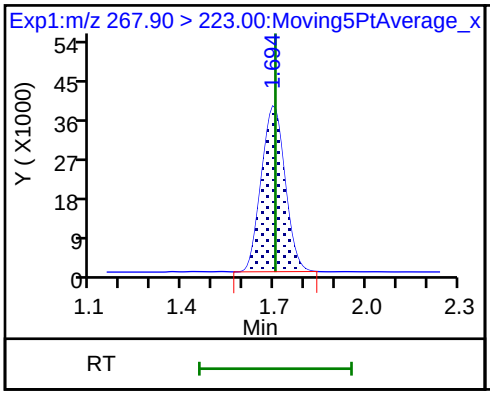
D 1 13C4 PFBA



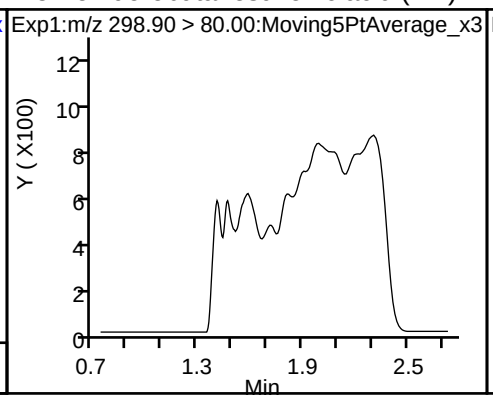
4 Perfluoropentanoic acid (ND)



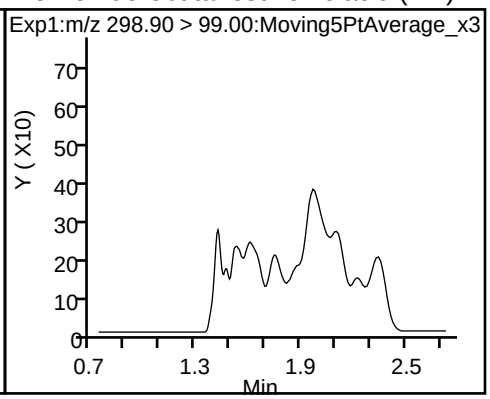
D 3 13C5-PFPeA



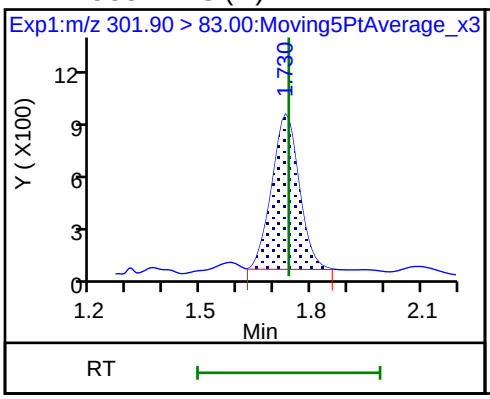
5 Perfluorobutanesulfonic acid (ND)



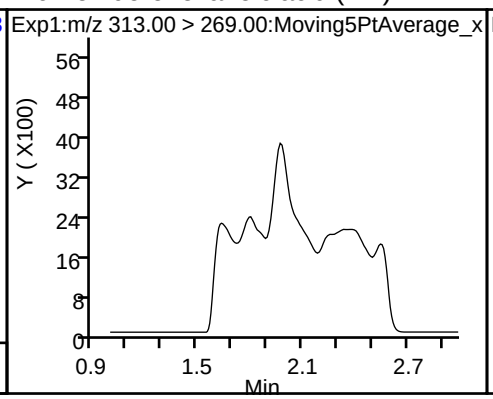
5 Perfluorobutanesulfonic acid (ND)



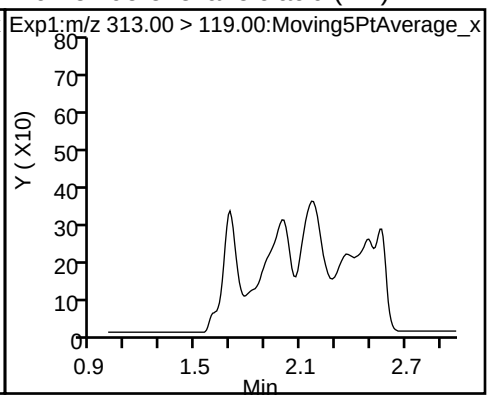
D 47 13C3-PFBS (M)



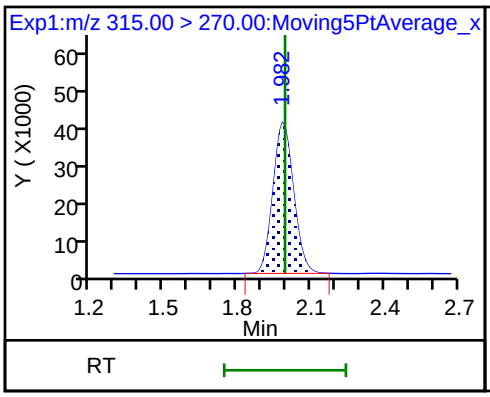
6 Perfluorohexanoic acid (ND)



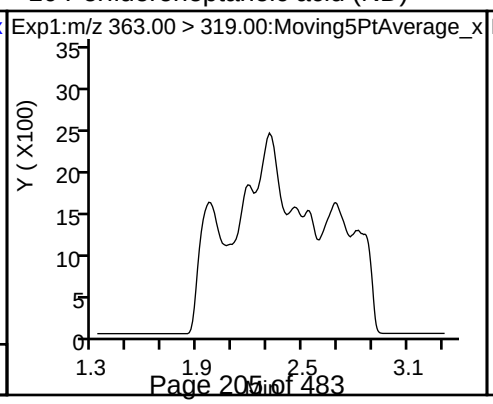
6 Perfluorohexanoic acid (ND)



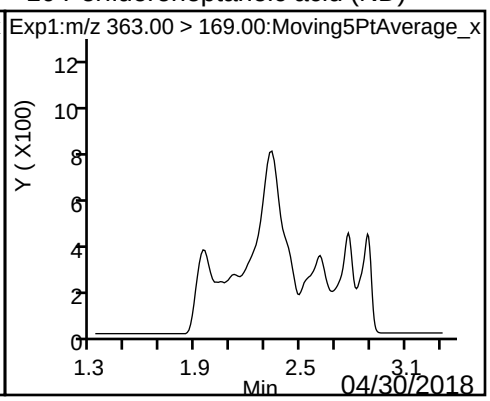
D 7 13C2 PFHxA



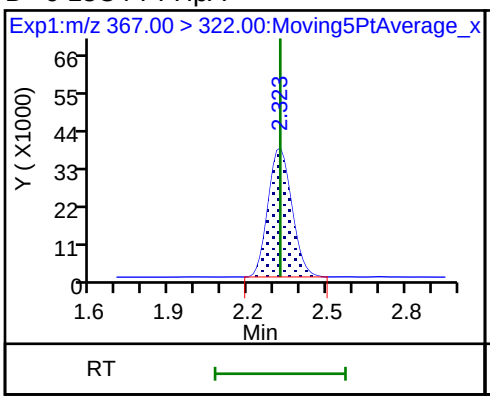
10 Perfluoroheptanoic acid (ND)



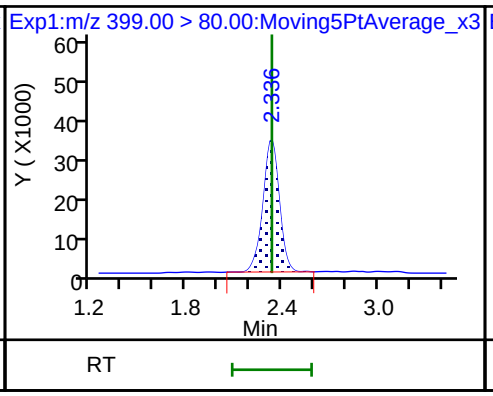
10 Perfluoroheptanoic acid (ND)



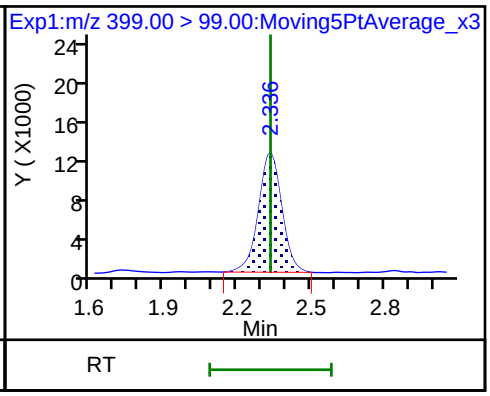
D 9 13C4-PFHpA



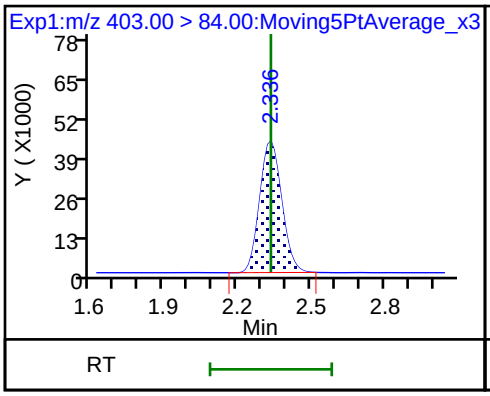
8 Perfluorohexanesulfonic acid



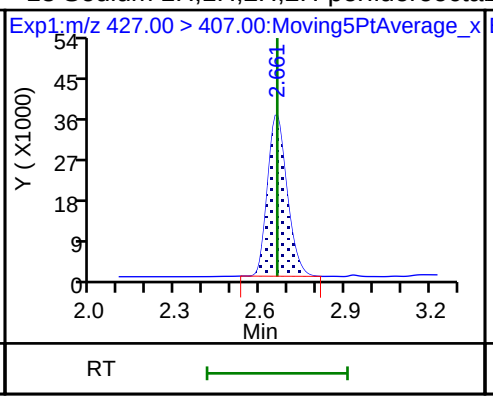
8 Perfluorohexanesulfonic acid



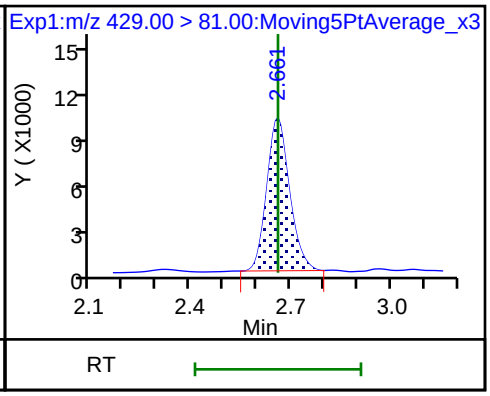
D 11 18O2 PFHxS



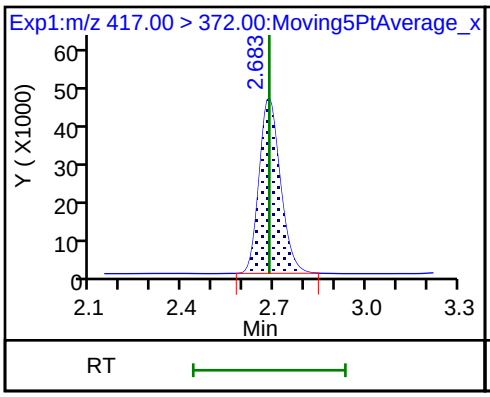
13 Sodium 1H,1H,2H,2H-perfluorooctane



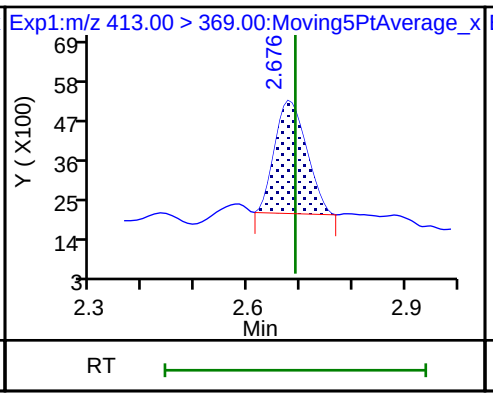
D 12 M2-6:2FTS



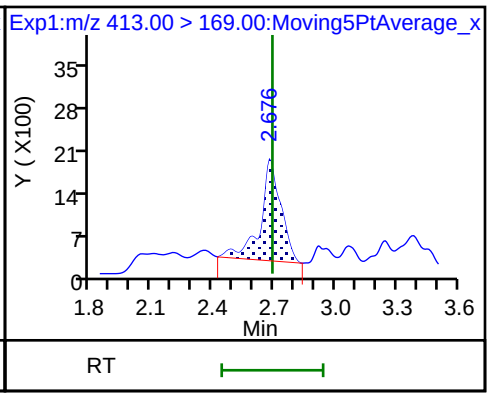
D 14 13C4 PFOA



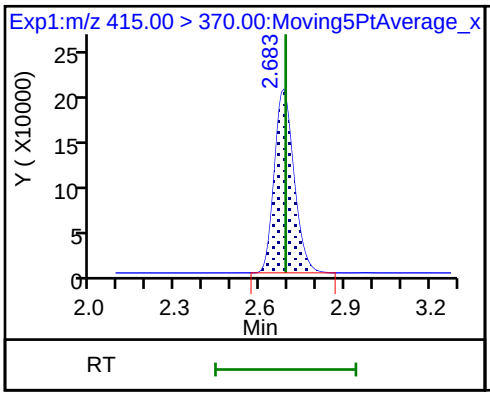
15 Perfluorooctanoic acid



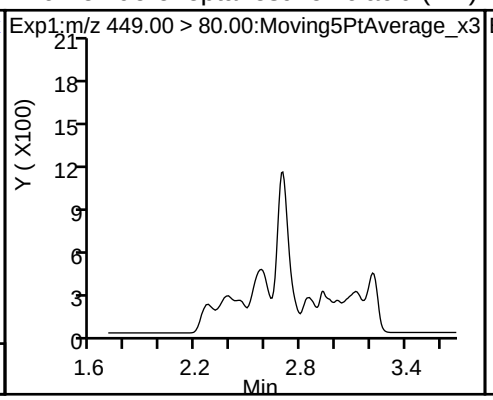
15 Perfluorooctanoic acid



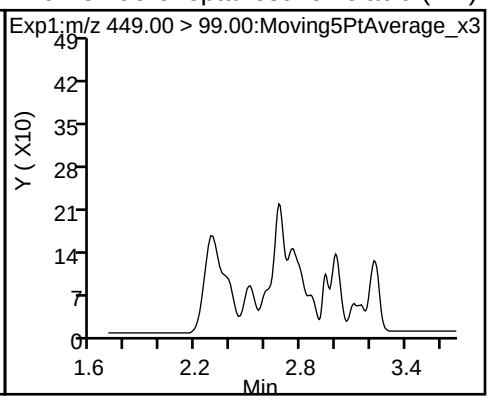
* 62 13C2-PFOA



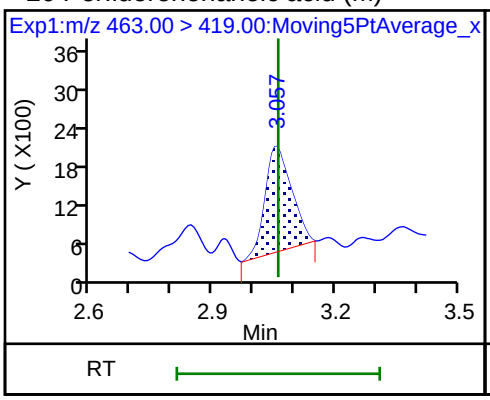
16 Perfluoroheptanesulfonic acid (ND)



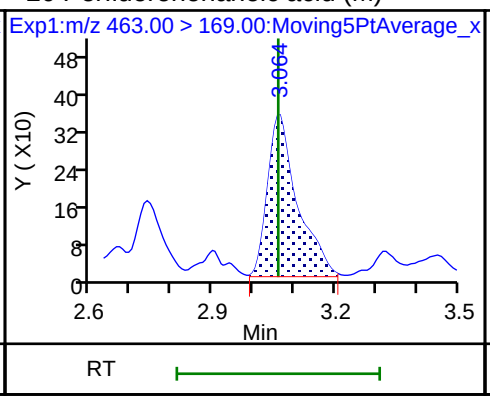
16 Perfluoroheptanesulfonic acid (ND)



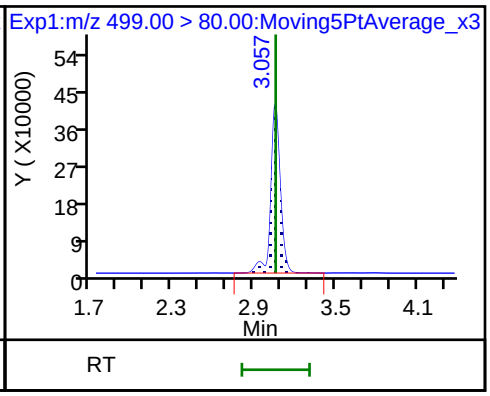
20 Perfluorononanoic acid (M)



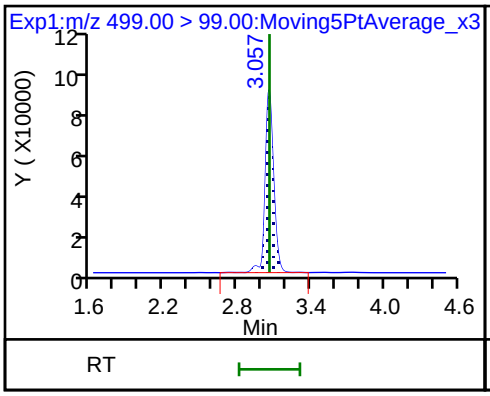
20 Perfluorononanoic acid (M)



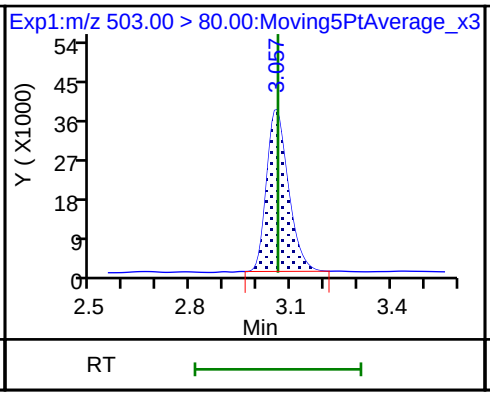
17 Perfluorooctane sulfonic acid



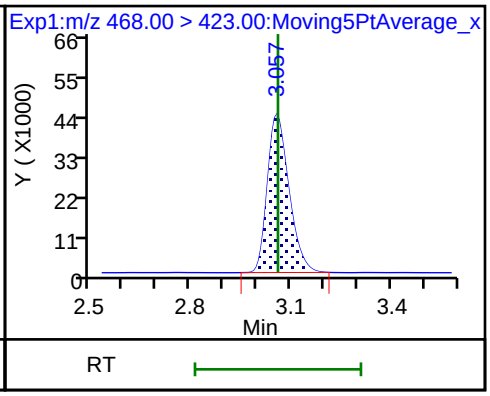
17 Perfluorooctane sulfonic acid



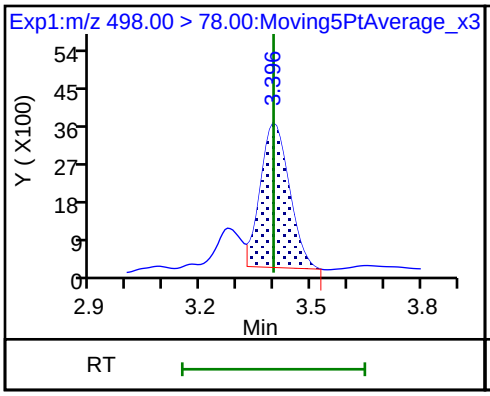
D 18 13C4 PFOS



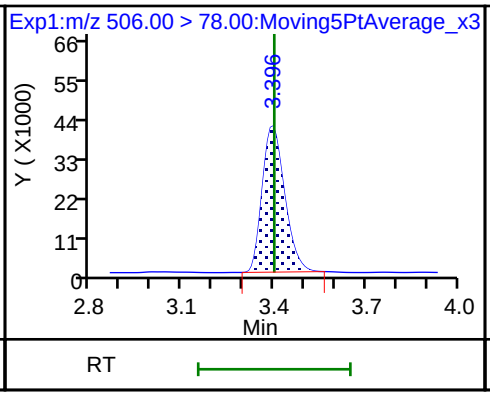
D 19 13C5 PFNA



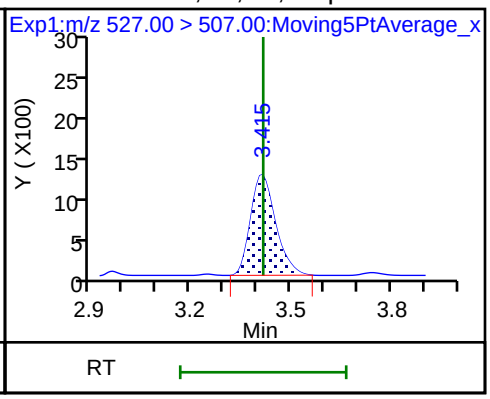
22 Perfluorooctane Sulfonamide



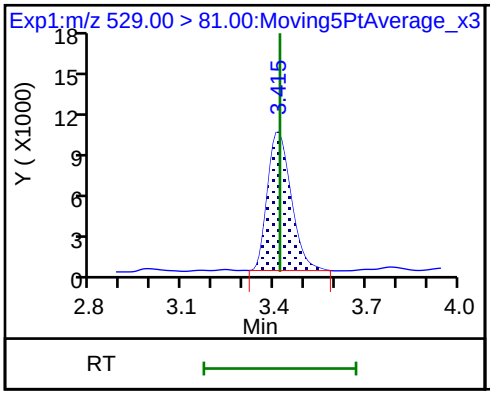
D 21 13C8 FOSA



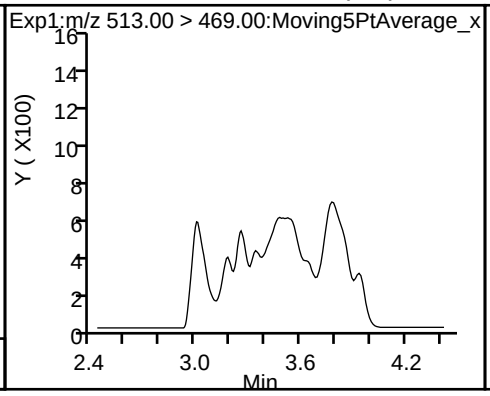
25 Sodium 1H,1H,2H,2H-perfluorodecane



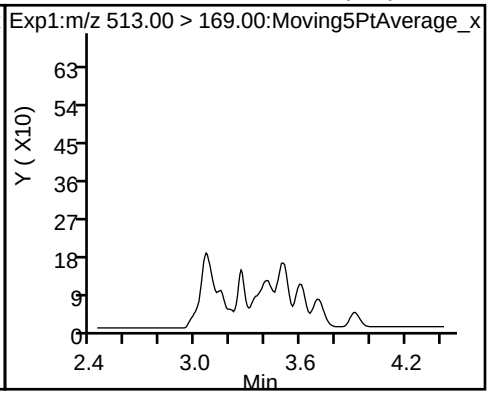
D 26 M2-8:2FTS



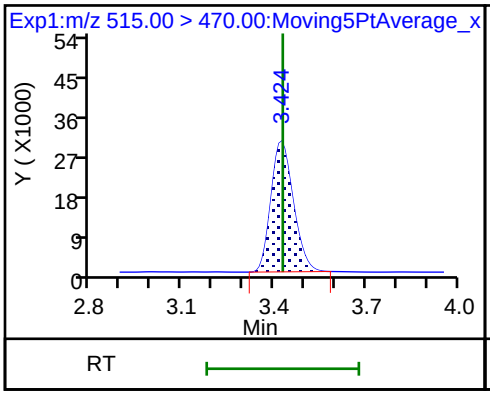
24 Perfluorodecanoic acid (ND)



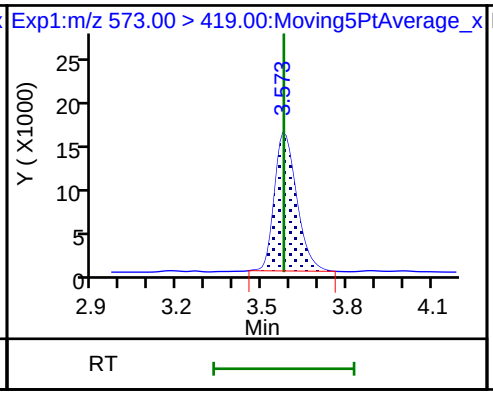
24 Perfluorodecanoic acid (ND)



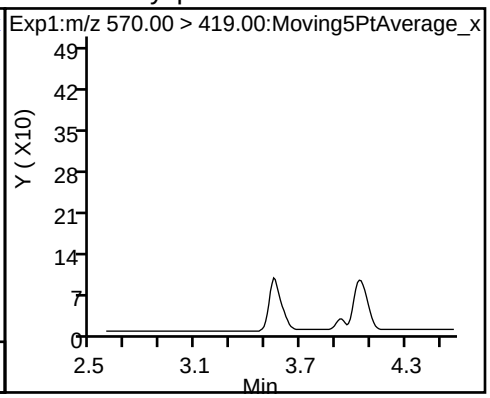
D 23 13C2 PFDA



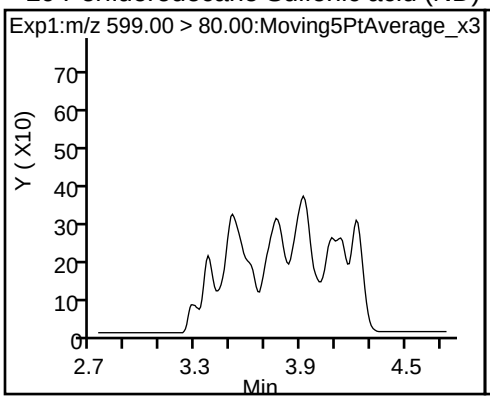
D 27 d3-NMeFOSAA



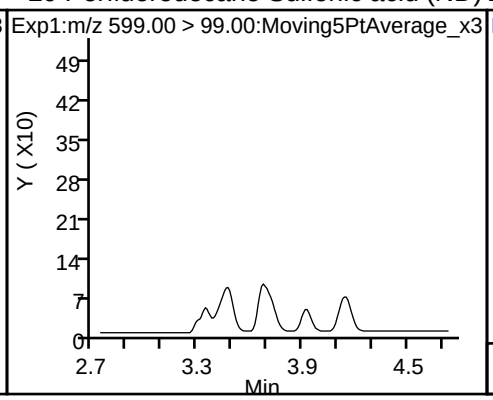
28 N-methyl perfluorooctane sulfonami (ND)



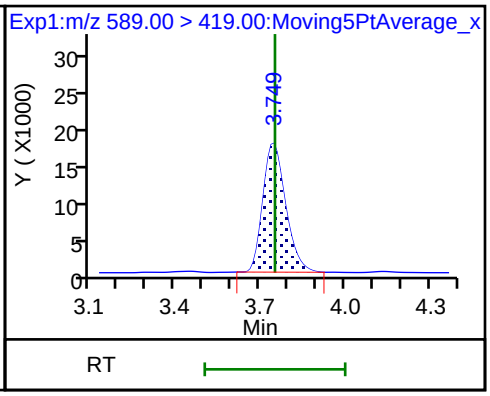
29 Perfluorodecane Sulfonic acid (ND)



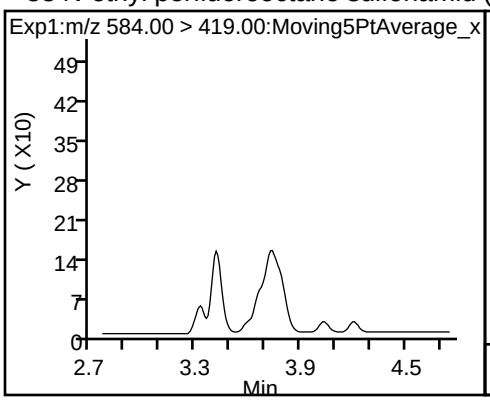
29 Perfluorodecane Sulfonic acid (ND)



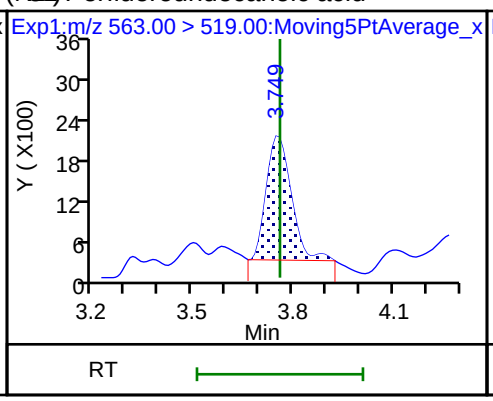
D 32 d5-NEtFOSAA



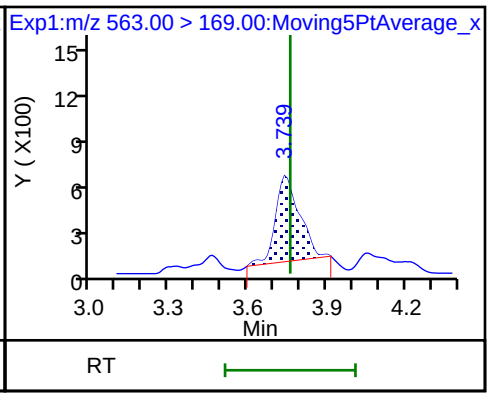
33 N-ethyl perfluorooctane sulfonamid (ND)



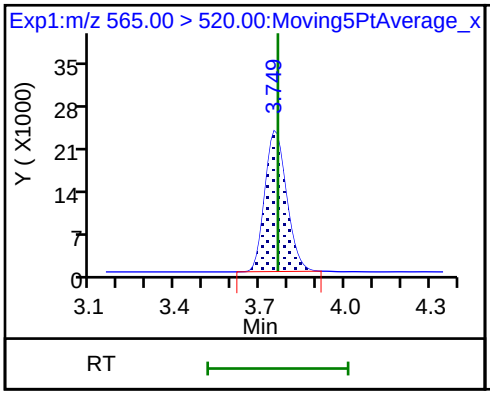
31 Perfluoroundecanoic acid



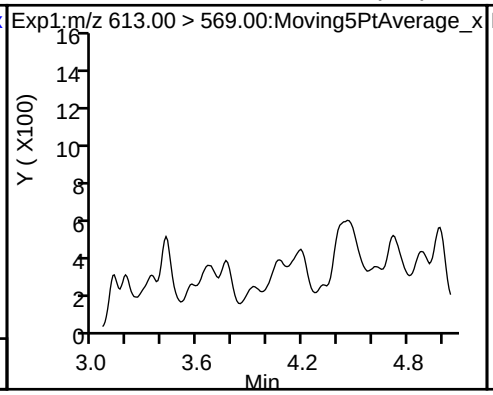
31 Perfluoroundecanoic acid



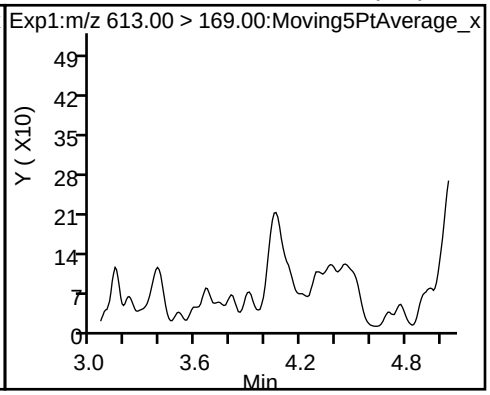
D 30 13C2 PFUnA



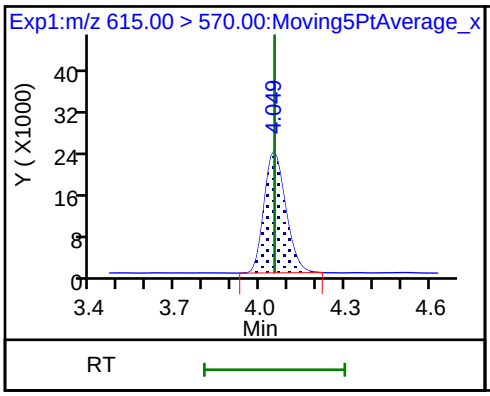
37 Perfluorododecanoic acid (ND)



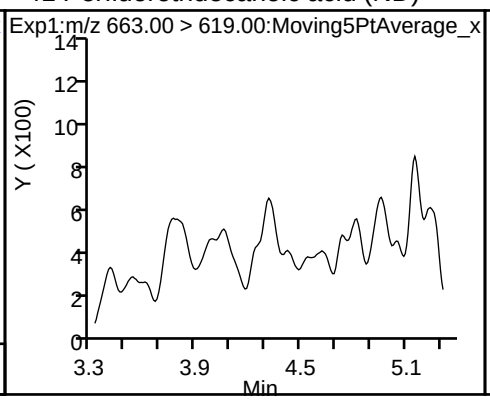
37 Perfluorododecanoic acid (ND)



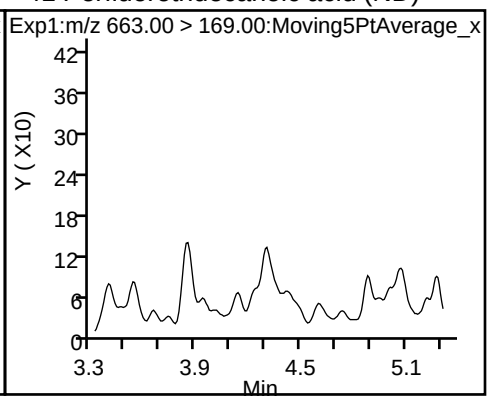
D 36 13C2 PFDoA



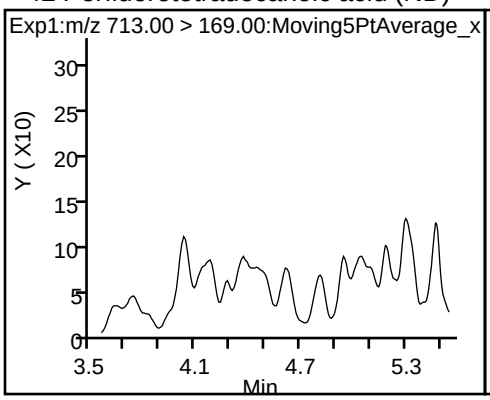
41 Perfluorotridecanoic acid (ND)



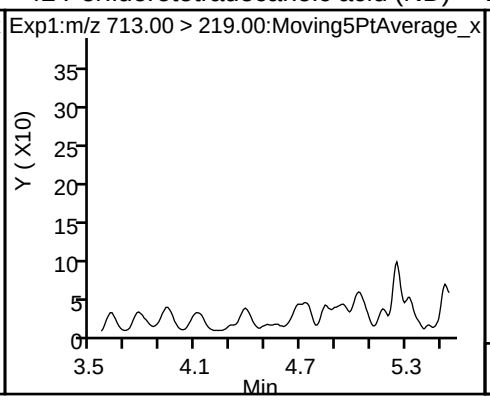
41 Perfluorotridecanoic acid (ND)



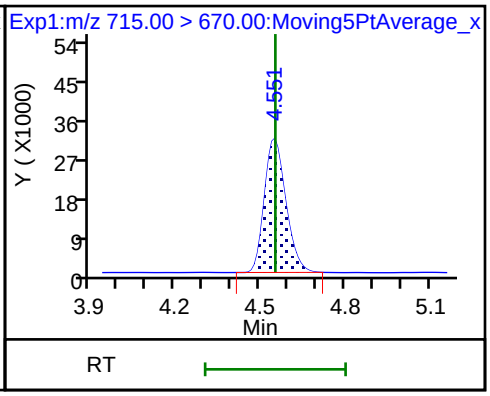
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2-PFTeDA



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-217359/2	2018.04.10LLICAL_002.d
Level 2	IC 320-217359/3	2018.04.10LLICAL_003.d
Level 3	IC 320-217359/4	2018.04.10LLICAL_004.d
Level 4	IC 320-217359/5	2018.04.10LLICAL_005.d
Level 5	IC 320-217359/6	2018.04.10LLICAL_006.d
Level 6	IC 320-217359/7	2018.04.10LLICAL_007.d
Level 7	IC 320-217359/8	2018.04.10LLICAL_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9087 0.9558	0.9215 0.9254	0.9250	0.9115	0.9520	AveID		0.9286				2.0		35.0			
Perfluoropentanoic acid (PFPeA)	1.2578 1.1682	1.2108 1.1732	1.1604	1.1461	1.2257	AveID		1.1918				3.4		35.0			
Perfluorobutanesulfonic acid (PFBS)	76.893 81.717	82.786 71.544	78.801	75.066	81.197	AveID		78.286				5.2		50.0			
4:2 FTS	14.379 16.335	17.388 16.450	16.158	15.381	16.133	AveID		16.032				5.9		50.0			
Perfluorohexanoic acid (PFHxA)	0.9165 1.0971	1.0419 0.9805	0.9871	1.0324	1.0575	AveID		1.0161				5.9		35.0			
Perfluoropentanesulfonic acid (PFPeS)	72.651 73.152	73.718 66.574	72.295	69.587	72.578	AveID		71.508				3.6		50.0			
HFPO-DA (GenX)	2.6776 3.4120	2.2053 2.8850	2.9463	2.6401	2.7314	AveID		2.7854				13.1		35.0			
Perfluoroheptanoic acid (PFHpA)	0.8886 1.0632	0.8961 1.0895	1.0153	1.0044	1.0491	AveID		1.0009				7.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3313 1.0960	1.2076 1.0563	1.0824	1.0501	1.0988	AveID		1.1318				9.0		35.0			
Adona	3.4574 3.3221	3.5134 2.9110	3.4665	3.8310	3.7468	AveID		3.4640				8.7		50.0			
6:2FTS	1.5421 1.7475	1.9455 1.7701	1.5586	1.6684	1.6013	AveID		1.6905				8.5		35.0			
Perfluorooctanoic acid (PFOA)	1.2196 1.1748	1.2108 1.1155	1.1409	1.0810	1.1452	AveID		1.1554				4.3		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2050 1.3855	1.3067 1.3134	1.3594	1.3058	1.4180	AveID		1.3277				5.2		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.0579 1.1424	1.0586 1.1443	1.0560	1.0546	1.1010	AveID		1.0878				3.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	0.9233 1.1269	1.1068 1.0188	1.0452	1.0400	1.0380	AveID		1.0427				6.3		35.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate	1.6407 2.0236	1.8519 1.8739	1.8303	1.9058	2.0694	AveID		1.8851				7.4		50.0			
Perfluorononanesulfonic acid (PFNS)	0.8421 0.8194	0.8119 0.7979	0.7759	0.7194	0.8292	AveID		0.7994				5.2		50.0			
8:2FTS	1.4631 1.3212	1.2394 1.2657	1.1167	1.2298	1.2217	AveID		1.2654				8.4		35.0			
Perfluorooctane Sulfonamide (FOSA)	0.9307 1.0709	1.0441 0.9800	1.0023	1.0041	1.0484	AveID		1.0115				4.7		35.0			
Perfluorodecanoic acid (PFDA)	1.0885 0.9859	1.1057 1.0134	0.9627	1.0005	1.0643	AveID		1.0316				5.3		35.0			
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9083 1.1043	0.8872 1.0603	1.0109	0.9545	1.0557	AveID		0.9973				8.3		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.5294 0.7137	0.6184 0.7022	0.6496	0.6477	0.6837	AveID		0.6492				9.6		50.0			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.7913 0.9588	0.9928 0.9829	0.9228	0.9274	0.9655	AveID		0.9345				7.3		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9440 0.8695	0.9150 0.8330	0.7542	0.7914	0.8086	AveID		0.8451				8.1		35.0			
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate	2.7334 2.8552	3.0246 2.5419	3.0187	3.1256	3.0878	AveID		2.9125				7.3		50.0			
Perfluorododecanoic acid (PFDoA)	1.0500 1.0844	0.9584 1.0838	1.0669	0.9590	1.0976	AveID		1.0429				5.7		35.0			
Perfluorotridecanoic Acid (PFTriA)	1.2989 1.2824	1.2093 1.2168	1.1646	1.1001	1.2353	AveID		1.2153				5.6		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2445 0.2592	0.2707 0.2509	0.2469	0.2461	0.2397	AveID		0.2511				4.2		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.8074 0.9223	1.3282 0.9137	1.0648	0.9768	1.0014	L2ID	0.0211	0.9469							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.0226 0.9916	0.9945 0.9873	1.0118	0.9863	1.0342	AveID		1.0041				1.9		50.0			
13C4 PFBA	1.2940 1.4238	1.3269 1.4303	1.2929	1.3278	1.3223	Ave		1.3454				4.3		50.0			
13C5 PFPeA	0.8504 0.9141	0.8510 0.9065	0.8296	0.8639	0.8548	Ave		0.8672				3.6		50.0			
13C3-PFBS	0.0195 0.0202	0.0192 0.0216	0.0190	0.0203	0.0195	Ave		0.0199				4.6		50.0			
M2-4:2FTS	0.1407 0.1456	0.1400 0.1466	0.1378	0.1445	0.1424	Ave		0.1425				2.3		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFHxA	0.9705 0.9727	0.9235 1.0286	0.9450	0.9498	0.9228	Ave		0.9590				3.8		50.0			
13C3 HFPO-DA	0.0607 0.0558	0.0645 0.0590	0.0536	0.0606	0.0611	Ave		0.0593				6.1		50.0			
13C4-PFHpA	0.9512 0.9245	0.9580 0.9305	0.9001	0.9261	0.9425	Ave		0.9333				2.1		50.0			
18O2 PFHxS	1.1389 1.1679	1.1640 1.1715	1.1515	1.1448	1.1247	Ave		1.1519				1.5		50.0			
M2-6:2FTS	0.2013 0.2035	0.1892 0.1970	0.2051	0.2032	0.2005	Ave		0.2000				2.7		50.0			
13C4 PFOA	0.9343 0.9540	0.9073 0.9397	0.9043	0.9264	0.9275	Ave		0.9276				1.9		50.0			
13C4 PFOS	0.7935 0.8268	0.8168 0.8235	0.7958	0.8102	0.7798	Ave		0.8066				2.2		50.0			
13C5 PFNA	0.8203 0.7821	0.8002 0.8169	0.7761	0.7954	0.7901	Ave		0.7973				2.1		50.0			
M2-8:2FTS	0.2407 0.2360	0.2491 0.2358	0.2375	0.2469	0.2400	Ave		0.2409				2.2		50.0			
13C8 FOSA	1.0076 1.0108	1.0097 1.0199	0.9999	1.0220	0.9804	Ave		1.0072				1.4		50.0			
13C2 PFDA	0.6589 0.7306	0.6313 0.6919	0.6468	0.6894	0.6418	Ave		0.6701				5.3		50.0			
d3-NMeFOSAA	0.3521 0.3880	0.3703 0.4138	0.3721	0.3933	0.3693	Ave		0.3798				5.3		50.0			
d5-NEtFOSAA	0.3917 0.3803	0.3750 0.3593	0.3725	0.3713	0.3740	Ave		0.3749				2.6		50.0			
13C2 PFUnA	0.5883 0.5911	0.5771 0.5697	0.5957	0.5619	0.5626	Ave		0.5781				2.4		50.0			
13C2 PFDoA	0.5964 0.6225	0.6348 0.6364	0.6241	0.6615	0.5939	Ave		0.6242				3.8		50.0			
13C2-PFTeDA	0.7749 0.7948	0.7757 0.8130	0.7679	0.8272	0.7873	Ave		0.7915				2.8		50.0			
13C2-PFHxDA	1.2936 1.3188	1.2730 1.3422	1.2549	1.2935	1.2397	Ave		1.2879				2.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-217359/2	2018.04.10LLICAL_002.d
Level 2	IC 320-217359/3	2018.04.10LLICAL_003.d
Level 3	IC 320-217359/4	2018.04.10LLICAL_004.d
Level 4	IC 320-217359/5	2018.04.10LLICAL_005.d
Level 5	IC 320-217359/6	2018.04.10LLICAL_006.d
Level 6	IC 320-217359/7	2018.04.10LLICAL_007.d
Level 7	IC 320-217359/8	2018.04.10LLICAL_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	56172 13377174	112834 21784128	580880	2238331	5819896	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	51097 10497161	95082 17503102	467549	1831380	4844578	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	63156 14347107	129549 22532715	642890	2489261	6477140	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	12478 3030208	28749 5473778	139275	538908	1359770	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	42489 10489823	88785 16596765	453023	1813678	4512177	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	63317 13627914	122406 22248169	625836	2448518	6143254	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	7766 1870994	13126 2803143	76650	295687	771939	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	40376 9662627	79218 16683281	443829	1720489	4571563	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	65909 11450464	118037 18531754	550837	2023389	5199428	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
Adona		AveID	131051 26999565	264804 39451342	1339859	5740779	13509817	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
6:2FTS		AveID	14055 3314359	32205 5439954	147222	594490	1407564	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	54434 11016957	101372 17251700	501075	1852208	4910933	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	43482 10719572	93755 16945821	500192	1862796	4867309	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	37213 8615775	74043 14391699	378769	1466540	3684174	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	36180 8663453	81721 13696835	394004	1529838	3792206	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate		AveID	57962 15327887	130088 23669204	659333	2661617	6954333	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	30641 6392773	58744 10381596	287902	1034931	2870093	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2FTS		AveID	16119 2936296	27294 4704229	123407	537990	1298898	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorooctane Sulfonamide (FOSA)		AveID	44800 10640158	97271 16450280	486733	1898032	4752476	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanoic acid (PFDA)		AveID	34262 7080425	64415 11538792	302427	1275776	3158094	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	15277 4211279	30316 7221428	182686	694281	1802851	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	19344 5591516	44930 9173589	242056	935700	2376399	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	14805 3584245	34358 5812610	166943	636880	1669717	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	26530 5051597	48726 7810732	218231	822546	2103252	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonate		AveID	97600 21858692	214741 32450794	1099095	4412145	10487942	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	29913 6635970	56140 11350274	323392	1173427	3013785	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotridecanoic Acid (PFTriA)		AveID	37004 7847307	70835 12743041	353030	1346073	3391923	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	9052 2025257	19373 3357209	92073	376531	872520	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	111692 11955765	156018 20182542	648936	2337041	5739538	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	63194 12855038	116814 21808387	616691	2359770	5927518	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PFOA	Ave	6181350 6997865	6122262 5884851	6279614	6139471	6113537	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PFOA	Ave	4062250 4492903	3926283 3729652	4029236	3994638	3952401	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3-PFBS	13PFOA	Ave	86409 92353	82315 82834	85829	87216	83922	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2FTS	13PFOA	Ave	627830 668373	603123 563434	625222	623892	615130	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PFOA	Ave	4636047 4780636	4260718 4231897	4589544	4391788	4266668	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PFOA	Ave	290038 274179	297607 242908	260156	279991	282614	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1 Analy Batch No.: 217359

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/10/2018 18:39 Calibration End Date: 04/10/2018 19:26 Calibration ID: 38527

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4-PFHpA	13PF OA	Ave	4543661 4543925	4420246 3828332	4371595	4282212	4357585	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5146760 5430236	5080567 4559710	5290521	5007633	4919272	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2FTS	13PF OA	Ave	913336 950305	829435 769923	946554	892700	880882	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	4463374 4688766	4186198 3866213	4391971	4283435	4288230	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	3623690 3884830	3602676 3239063	3695054	3581436	3447017	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3918358 3844023	3691890 3361051	3769499	3677661	3653281	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2FTS	13PF OA	Ave	1101720 1111203	1101099 929210	1105113	1093693	1063168	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C8 FOSA	13PF OA	Ave	4813462 4967723	4658336 4196317	4856180	4725832	4533137	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	3147491 3590754	2912736 2846573	3141564	3187733	2967373	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1681961 1906740	1708589 1702670	1807153	1818526	1707705	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1870983 1869135	1730407 1478400	1809132	1716798	1729345	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2810450 2905024	2662627 2344065	2893419	2598322	2601195	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2848895 3059706	2928766 2618174	3031255	3058842	2745849	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFTeDA	13PF OA	Ave	3701548 3906384	3578927 3344927	3729686	3824690	3639964	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2-PFHxDA	13PF OA	Ave	6179539 6481798	5873165 5522067	6094708	5981114	5731595	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-Apr-2018 18:39:37 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L1-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:50:57 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:12:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.432	1.431	0.001	1.000	6181350	2.40		96.2	51986	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.432	1.432	0.0	1.000	56172	0.0245		97.9	31.7	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.706	1.699	0.007	1.000	51097	0.0264		106	41.9	
D 3 13C5-PFPeA										
267.90 > 223.00	1.706	1.699	0.007	0.560	4062250	2.45		98.1	95308	
D 47 13C3-PFBS										
301.90 > 83.00	1.742	1.735	0.007	1.000	86409	2.27		97.7	767	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.736	0.006	1.000	63156	0.0217		98.2	279	
298.90 > 99.00	1.742	1.736	0.006	1.000	27507		2.30(1.25-3.74)	98.2	389	
D 60 M2-4:2FTS										
329.00 > 81.00	1.953	1.950	0.003	1.000	627830	2.31		98.7	7913	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.953	1.950	0.003	1.000	12478	0.0209		89.7	710	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.985	0.001	1.000	4636047	2.53		101	101202	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.985	0.001	1.000	42489	0.0225		90.2	86.3	
313.00 > 119.00	1.986	1.985	0.001	1.000	5567		7.63(5.03-15.10)	90.2	74.7	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.008	2.008	0.0	1.000	63317	0.0238		102	545	
349.00 > 99.00	2.008	2.008	0.0	1.000	22154		2.86(1.36-4.07)	102	547	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.087	2.084	0.003	1.000	290038	2.56		102	7460	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.087	2.087	0.0	1.000	7766	0.0240		96.1	49.1	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.313	2.314	-0.001	1.000	40376	0.0222		88.8	47.6	
363.00 > 169.00	2.313	2.314	-0.001	1.000	16255		2.48(1.13-3.40)	88.8	62.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.313	2.314	-0.001	1.000	4543661	2.55		102	82661	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.326	2.323	0.003	1.000	65909	0.0268		118	260	
399.00 > 99.00	2.326	2.323	0.003	1.000	23111		2.85(1.50-4.49)	118	253	
D 11 18O2 PFHxS										
403.00 > 84.00	2.326	2.327	-0.001	1.000	5146760	2.34		98.9	93287	
65 Adona										
377.00 > 251.00	2.366	2.360	0.006	1.000	131051	0.0250		99.8	1983	
377.00 > 85.00	2.352	2.360	-0.008	0.994	76139		1.72(0.84-2.53)	99.8	2103	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.648	2.649	-0.001	1.000	14055	0.0216		91.2	251	
D 12 M2-6:2FTS										
429.00 > 81.00	2.648	2.649	-0.001	1.000	913336	2.39		101	13873	
D 14 13C4 PFOA										
417.00 > 372.00	2.679	2.673	0.006	1.000	4463374	2.52		101	72271	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.679	2.674	0.005	1.000	54434	0.0264		106	31.2	
413.00 > 169.00	2.679	2.674	0.005	1.000	29641		1.84(0.84-2.52)	106	116	M
* 62 13C2-PFOA										
415.00 > 370.00	2.679	2.674	0.005		4776998	2.50			72796	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.679	2.680	-0.001	1.000	43482	0.0216		90.8	413	
449.00 > 99.00	2.686	2.680	0.006	1.003	12993		3.35(1.94-5.82)	90.8	376	
D 18 13C4 PFOS										
503.00 > 80.00	3.039	3.041	-0.002	1.000	3623690	2.35		98.4	29511	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.039	3.042	-0.003	1.000	37213	0.0226		97.3	125	
499.00 > 99.00	3.039	3.042	-0.003	1.000	9288		4.01(2.31-6.93)	97.3	122	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.046	3.043	0.003	1.000	36180	0.0221		88.6	86.3	
463.00 > 169.00	3.046	3.043	0.003	1.000	9677		3.74(1.90-5.69)	88.6	183	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.045	0.001	1.000	3918358	2.57		103	96245	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.253	3.253	0.0	1.000	57962	0.0203		87.0	1598	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.389	3.388	0.001	1.000	30641	0.0253		105	390	
549.00 > 99.00	3.389	3.388	0.001	1.000	9777		3.13(1.33-3.97)	105	297	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.390	-0.001	1.000	1101720	2.39		99.9	9765	
25 Sodium 1H,1H,2H,2H-perfluorodecane										M
527.00 > 507.00	3.398	3.393	0.005	1.003	16119	0.0277		116	867	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.397	0.001	1.000	4813462	2.50		100	67909	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.401	0.006	1.003	44800	0.0230		92.0	1056	
D 23 13C2 PFDA										
515.00 > 470.00	3.398	3.401	-0.003	1.000	3147491	2.46		98.3	66677	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.407	3.402	0.005	1.003	34262	0.0264		106	145	
513.00 > 169.00	3.407	3.402	0.005	1.003	5026		6.82(2.36-7.09)	106	79.2	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.557	3.553	0.004	1.000	1681961	2.32		92.7	20302	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.557	3.558	-0.001	1.000	15277	0.0228		91.1	111	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.719	3.715	0.004	1.000	19344	0.0197		81.5	163	
599.00 > 99.00	3.708	3.715	-0.007	0.997	6967		2.78(1.39-4.16)	81.5	357	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.719	3.722	-0.003	1.000	1870983	2.61		104	18488	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.730	3.727	0.003	1.003	14805	0.0212		84.7	220	
D 30 13C2 PFUnA										
565.00 > 520.00	3.730	3.727	0.003	1.000	2810450	2.54		102	70104	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.730	3.727	0.003	1.000	26530	0.0279		112	97.5	
563.00 > 169.00	3.730	3.727	0.003	1.000	6718		3.95(2.12-6.36)	112	163	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.886	3.883	0.003	1.000	97600	0.0221		93.9	2230	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.017	0.002	1.000	2848895	2.39		95.5	25147	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.020	-0.001	1.000	29913	0.0252		101	33.4	
613.00 > 169.00	4.019	4.020	-0.001	1.000	6518		4.59(2.13-6.40)	101	83.8	
41 Perfluorotridecanoic acid										M
663.00 > 619.00	4.281	4.278	0.003	1.000	37004	0.0267		107	34.1	
663.00 > 169.00	4.281	4.278	0.003	1.000	11098		3.33(1.25-3.76)	107	130	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.511	4.513	-0.002	1.000	3701548	2.45		97.9	26989	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.513	0.008	1.002	9052	0.0243		97.4	86.8	
713.00 > 219.00	4.511	4.513	-0.002	1.000	5901		1.53(0.71-2.13)	97.4	99.4	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.913	4.918	-0.005	1.000	6179539	2.51		100	17318	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.922	4.920	0.002	1.002	111692	0.0254		102	37.2	
813.00 > 169.00	4.913	4.920	-0.007	1.000	18001		6.20(2.86-8.58)	102	160	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.262	5.268	-0.006	1.000	63194	0.0255		102	18.7	
913.00 > 169.00	5.262	5.268	-0.006	1.000	7131		8.86(3.83-11.48)	102	64.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00005 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:50:59 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d

Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N

Lims ID: IC L1 Full

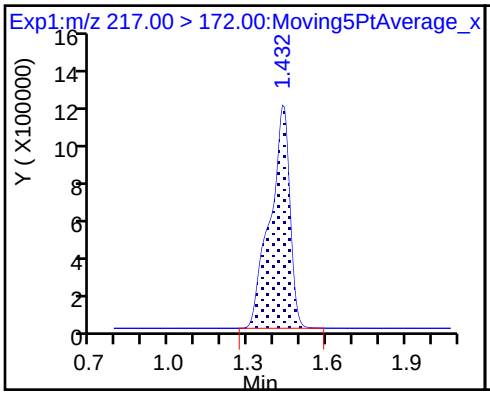
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2

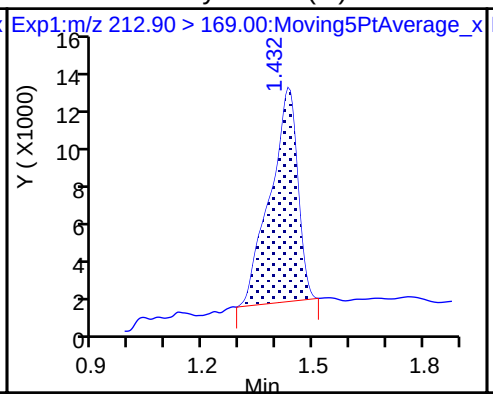
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

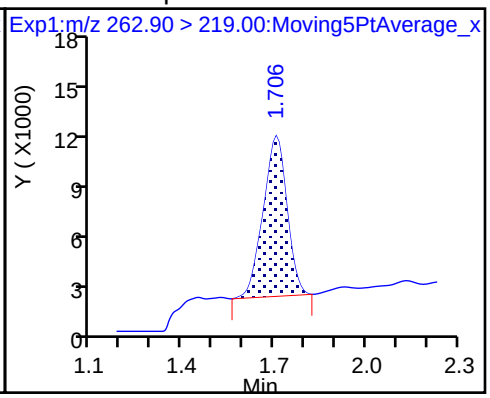
D 1 13C4 PFBA



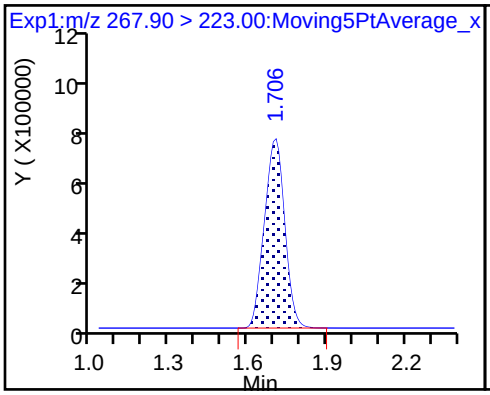
2 Perfluorobutyric acid (M)



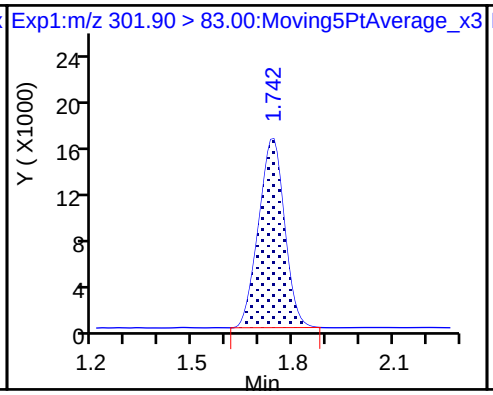
4 Perfluoropentanoic acid



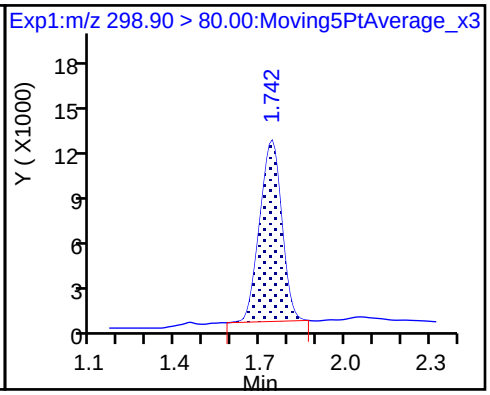
D 3 13C5-PFPeA



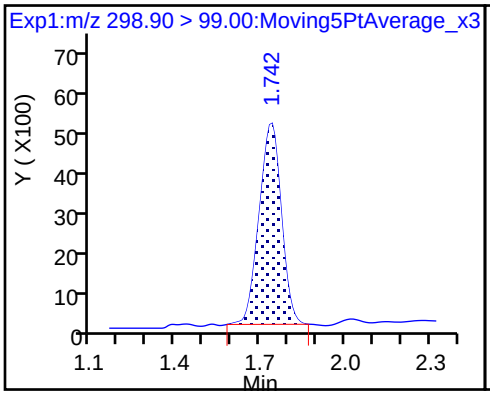
D 47 13C3-PFBS



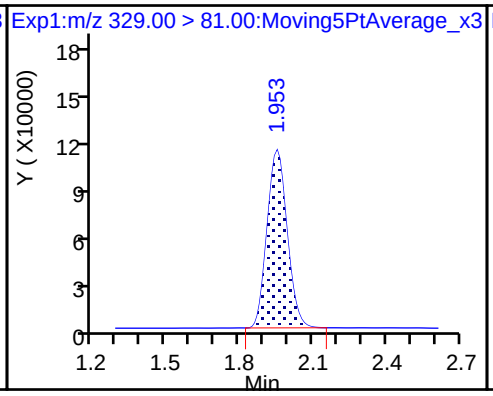
5 Perfluorobutanesulfonic acid



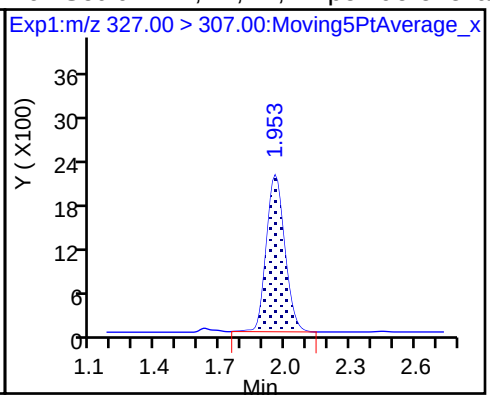
5 Perfluorobutanesulfonic acid



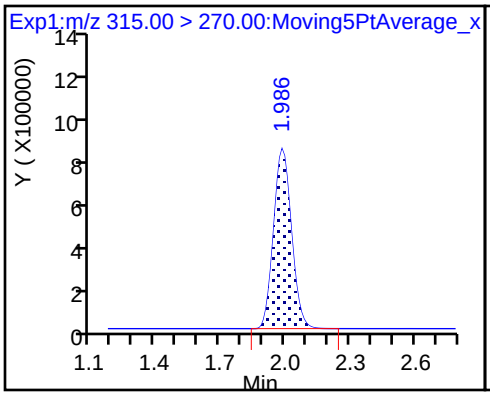
D 60 M2-4:2FTS



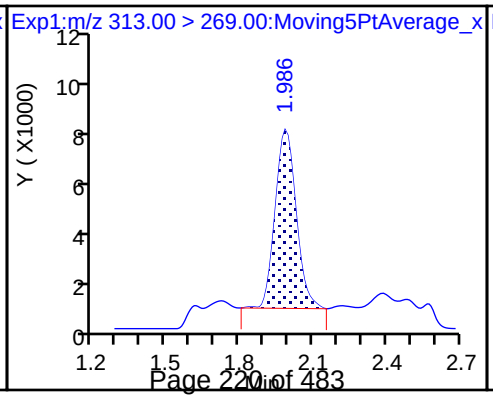
61 Sodium 1H,1H,2H,2H-perfluorohexane



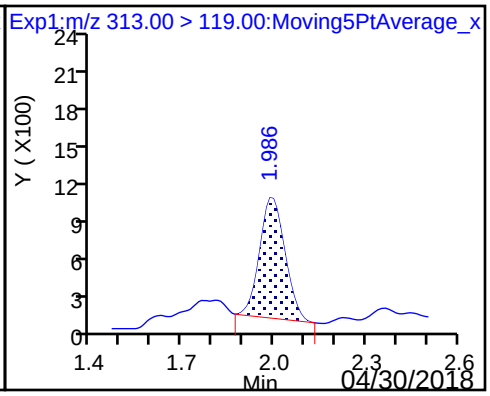
D 7 13C2 PFHxA



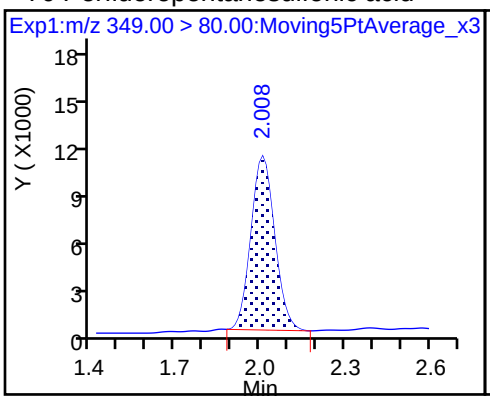
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid



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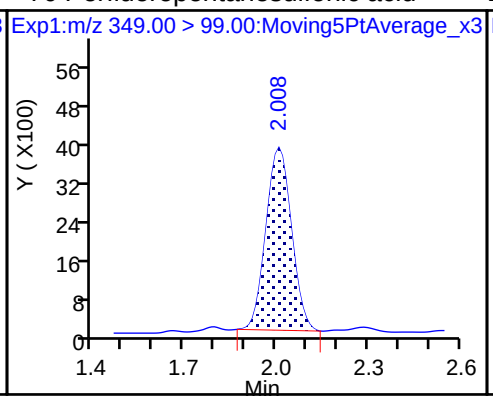
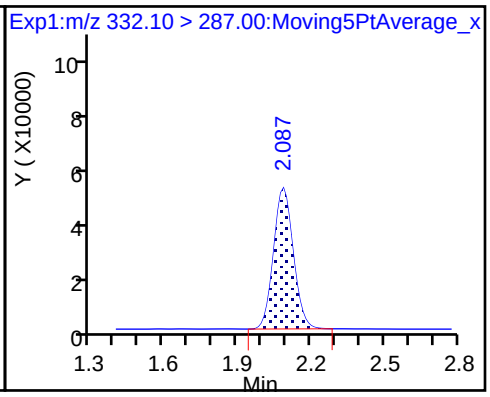
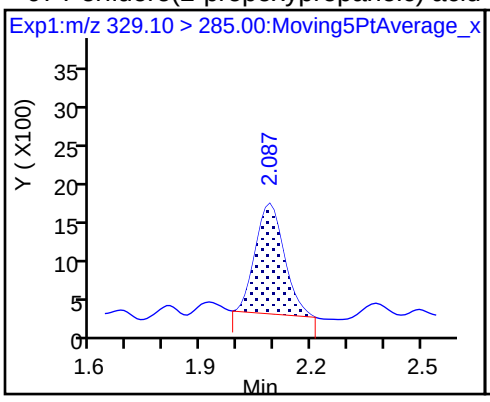


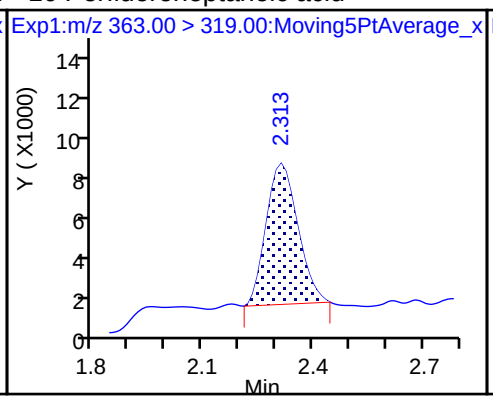
D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid



10 Perfluoroheptanoic acid



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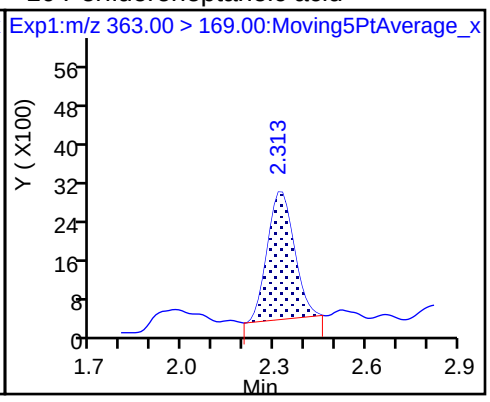
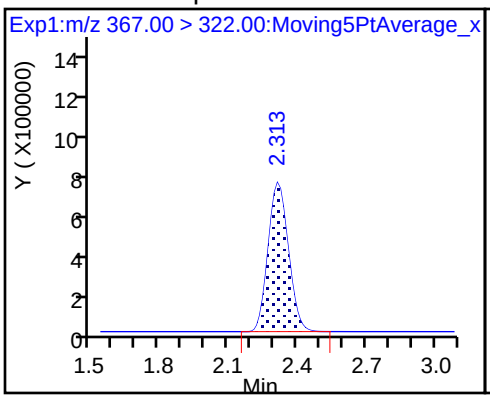
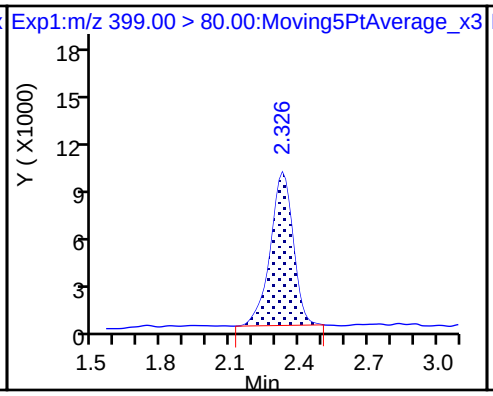


D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid



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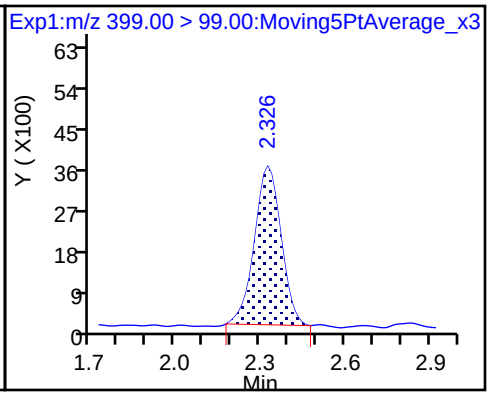
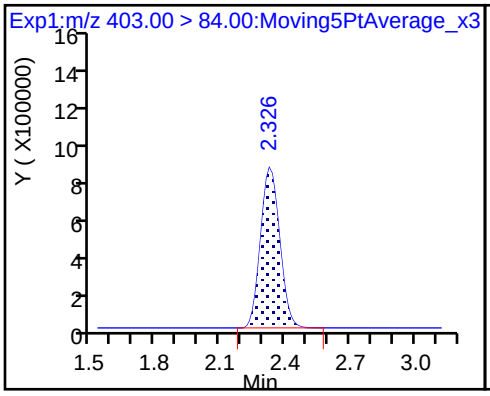
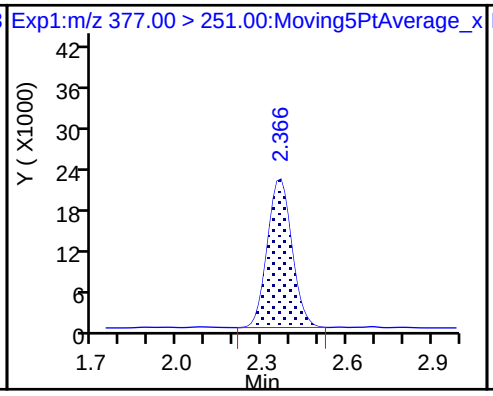


D 11 18O2 PFHxS



65 Adona



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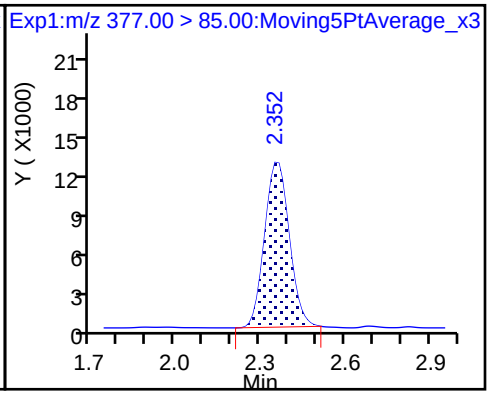
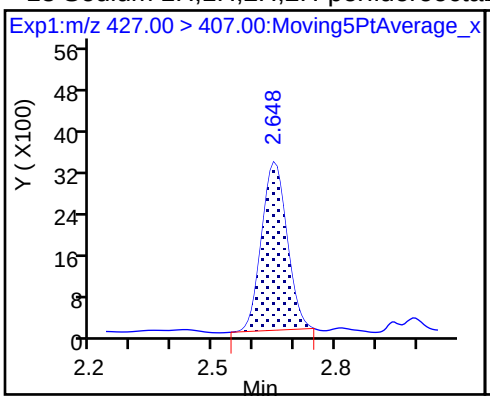
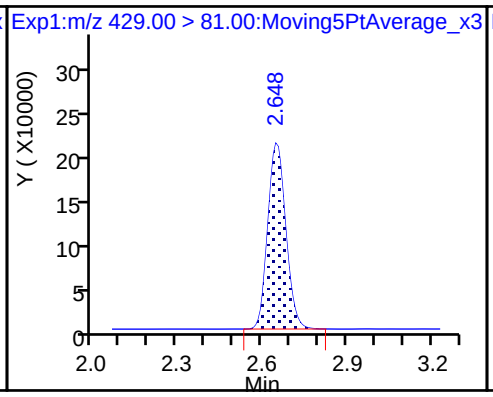


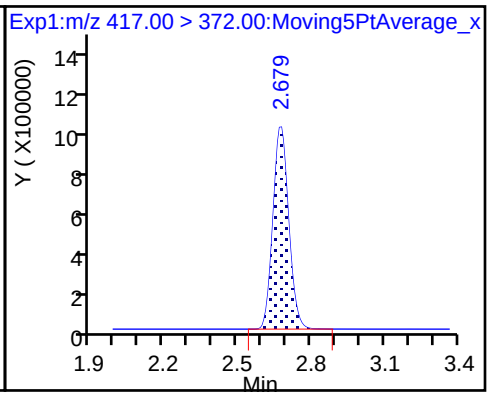
13 Sodium 1H,1H,2H,2H-perfluorooctane



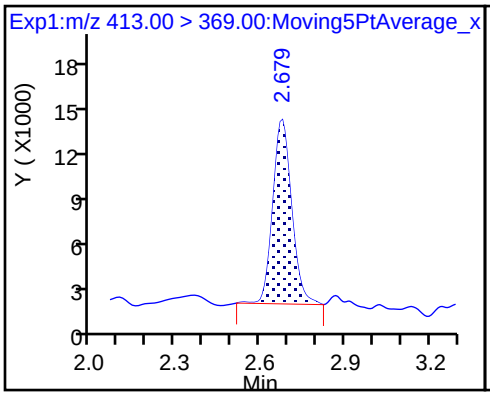
D 12 M2-6:2FTS



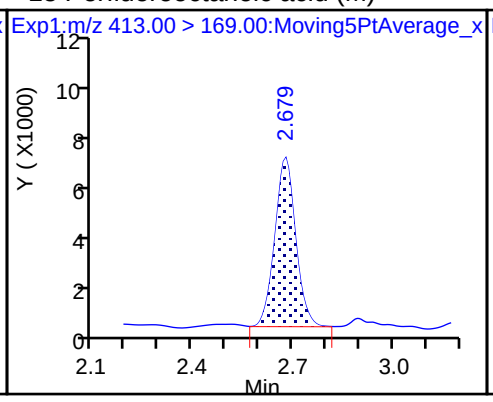
D 14 13C4 PFOA



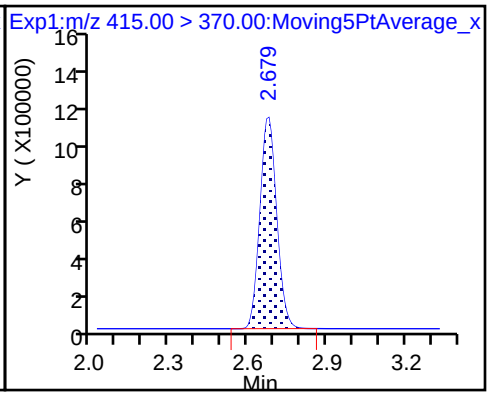
15 Perfluorooctanoic acid



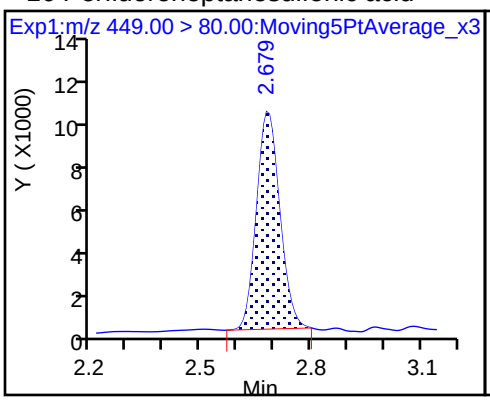
15 Perfluorooctanoic acid (M)



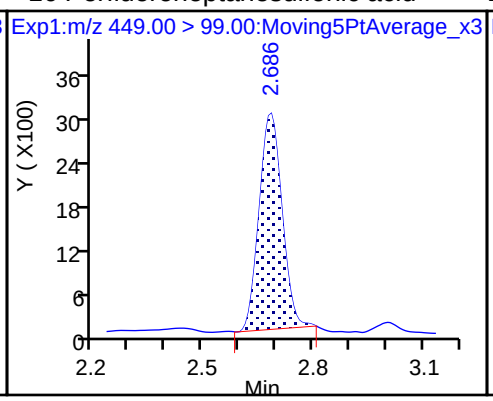
* 62 13C2-PFOA



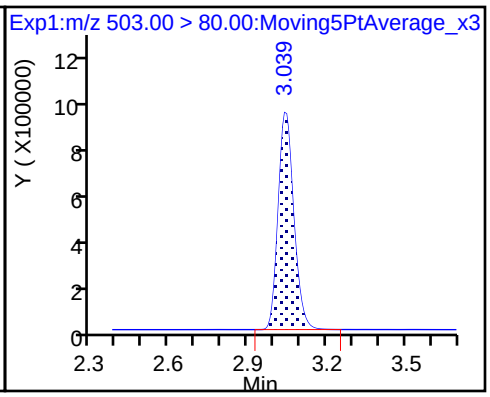
16 Perfluoroheptanesulfonic acid



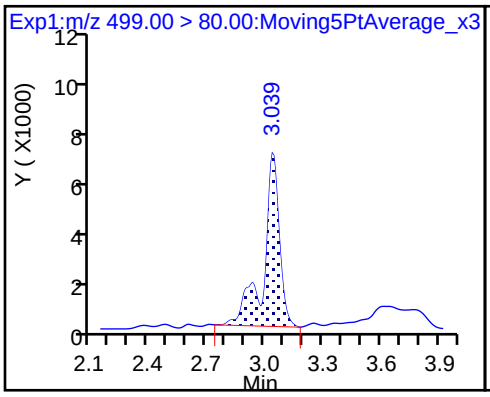
16 Perfluoroheptanesulfonic acid



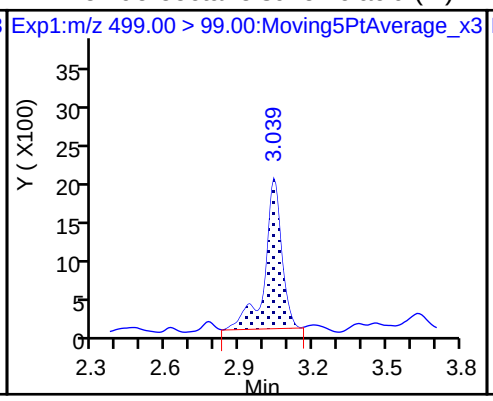
D 18 13C4 PFOS



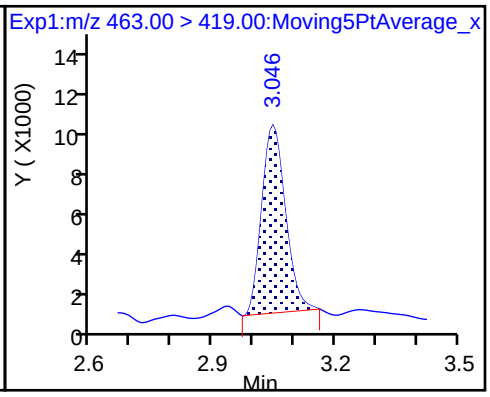
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid (M)



20 Perfluorononanoic acid



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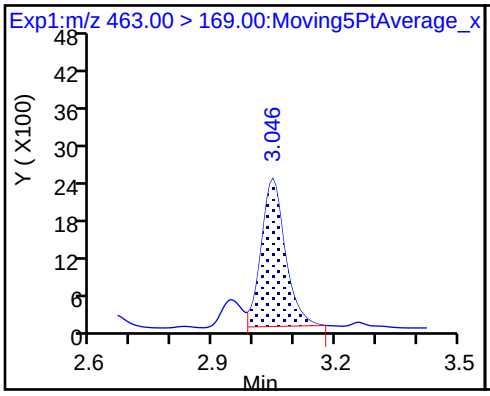
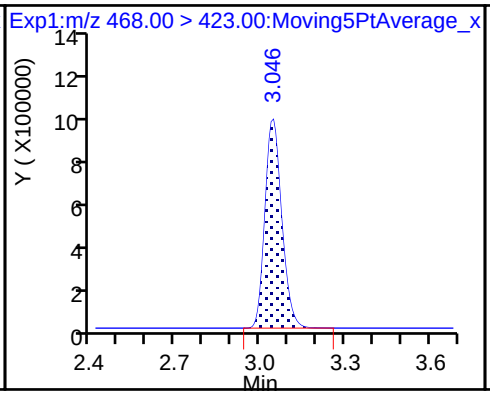
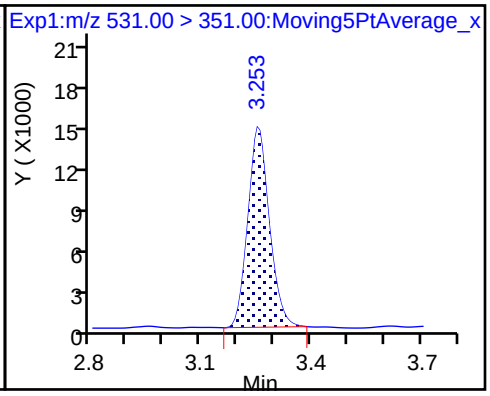


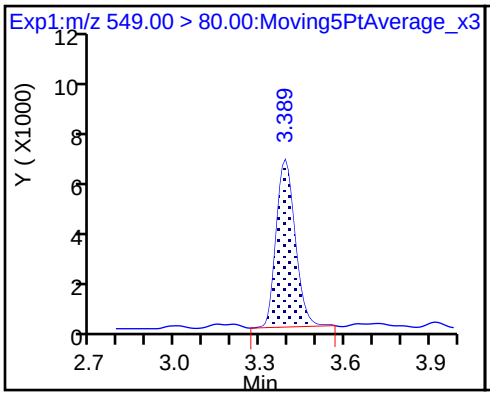
D 19 13C5 PFNA



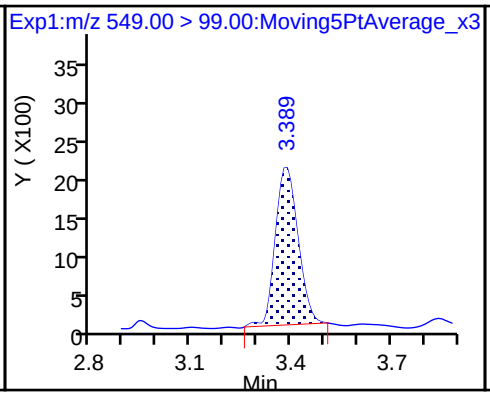
69 9-Chlorohexadecafluoro-3-oxanonane



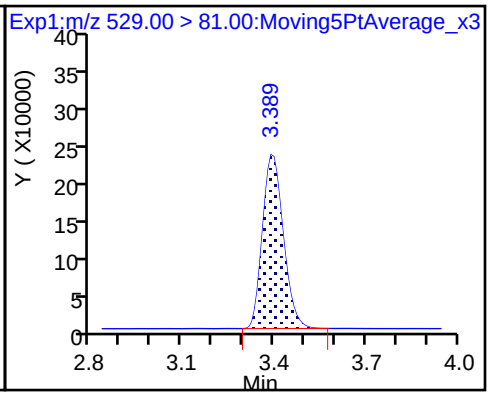
68 Perfluorononanesulfonic acid



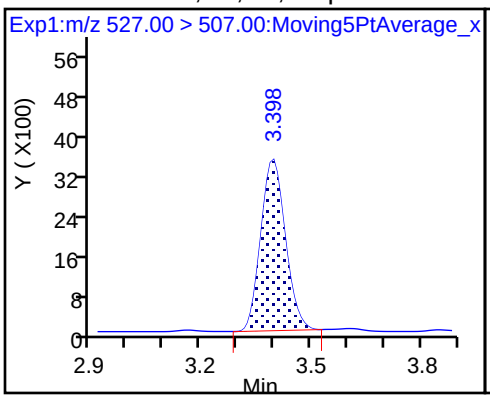
68 Perfluorononanesulfonic acid



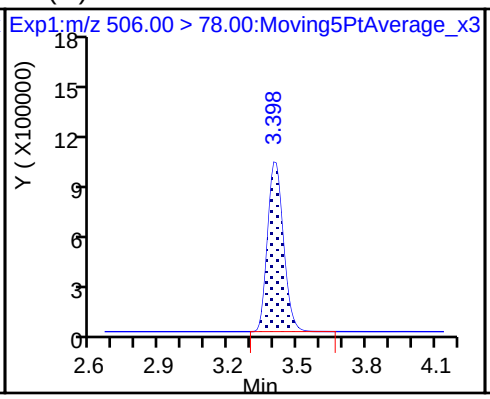
D 26 M2-8:2FTS



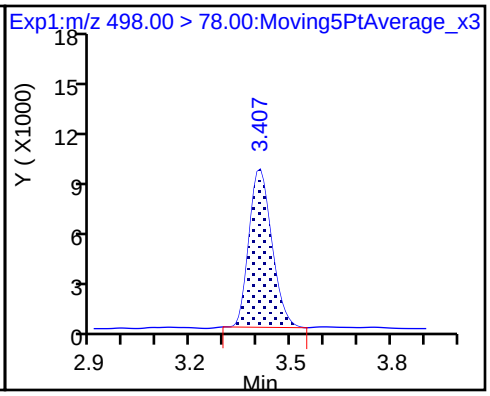
25 Sodium 1H,1H,2H,2H-perfluorodecane(1)



D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide



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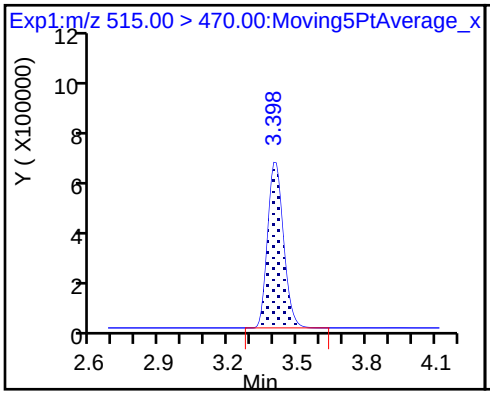
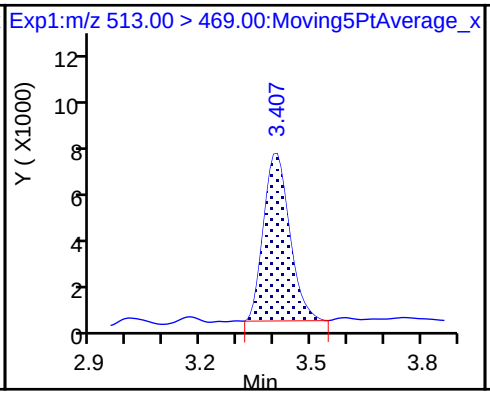
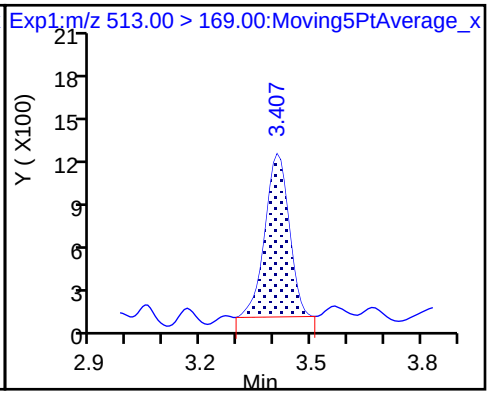


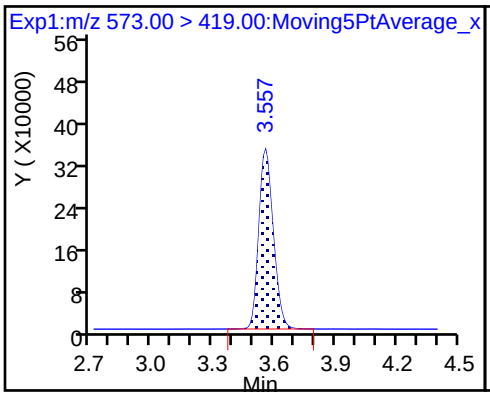
24 Perfluorodecanoic acid



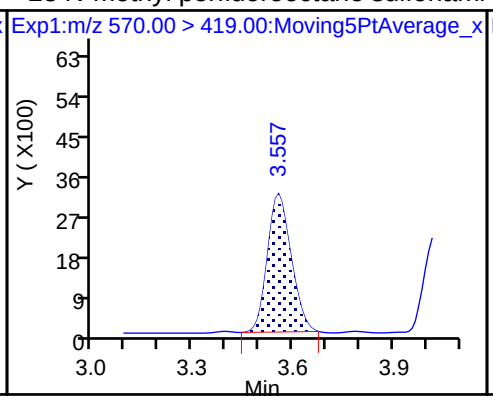
24 Perfluorodecanoic acid



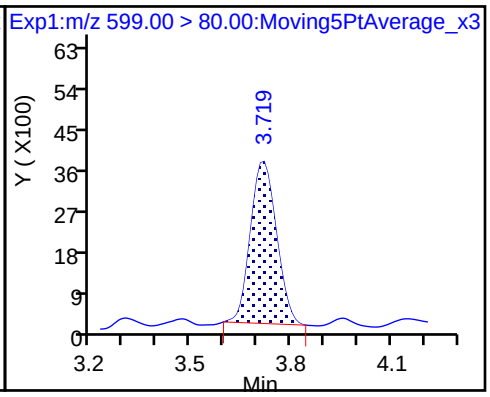
D 27 d3-NMeFOSAA



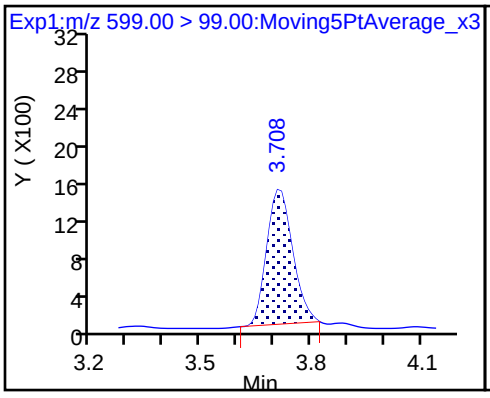
28 N-methyl perfluorooctane sulfonami



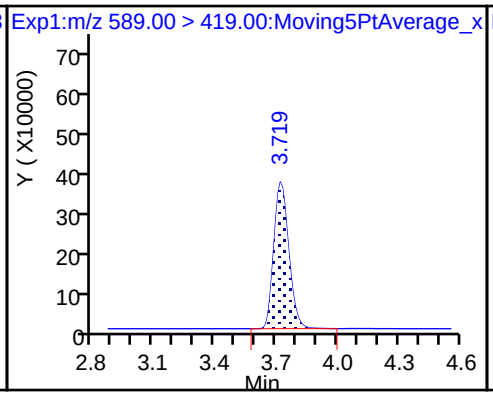
29 Perfluorodecane Sulfonic acid



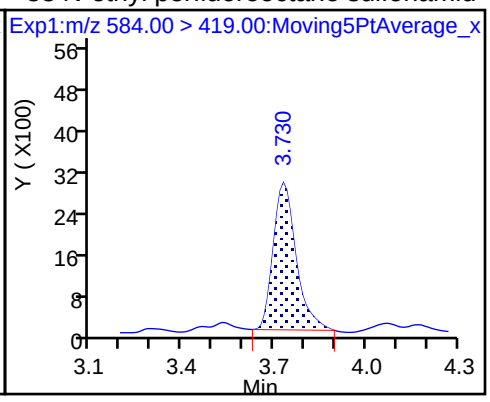
29 Perfluorodecane Sulfonic acid



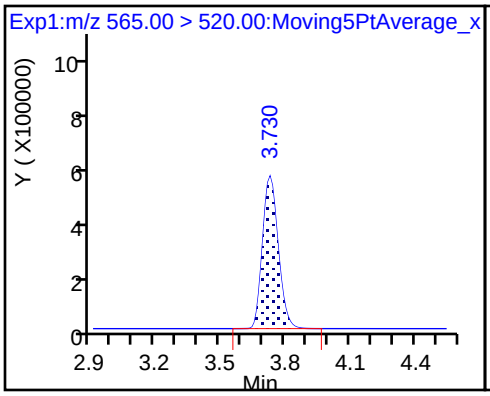
D 32 d5-NEtFOSAA



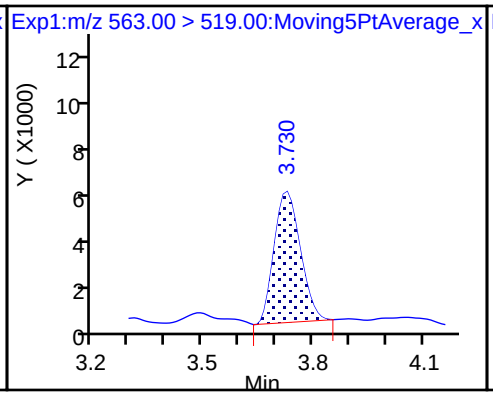
33 N-ethyl perfluorooctane sulfonamid



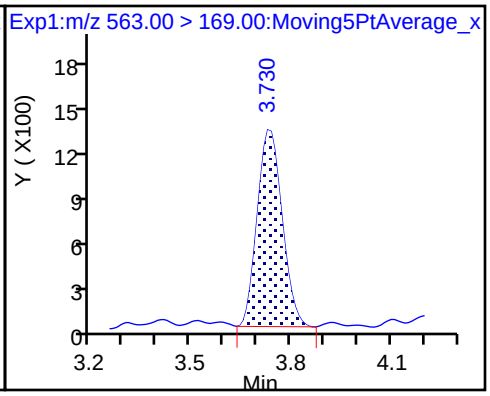
D 30 13C2 PFUnA



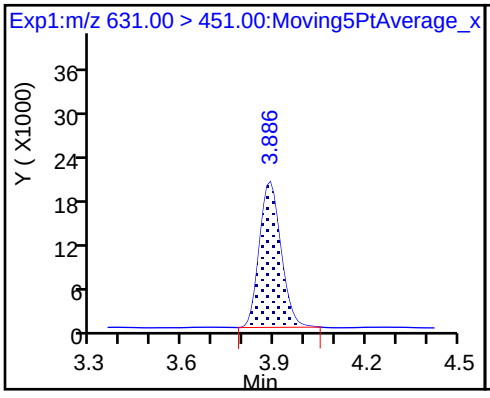
31 Perfluoroundecanoic acid



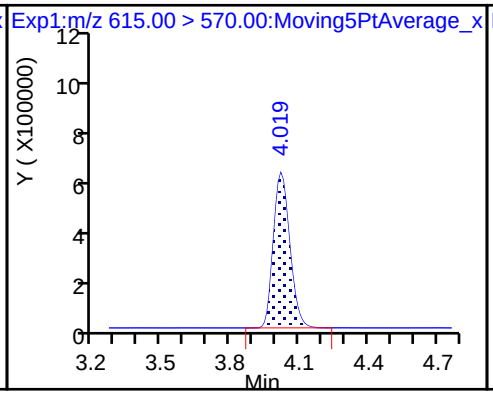
31 Perfluoroundecanoic acid



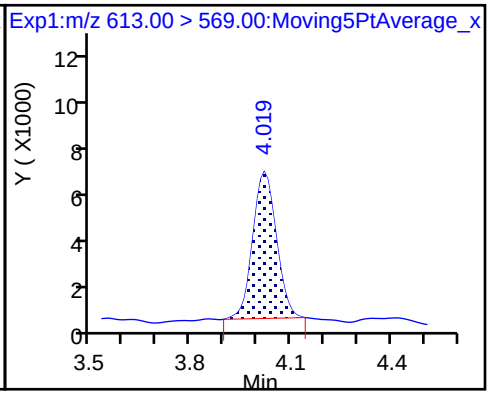
66 11-Chloroeicosafluoro-3-oxaundecan



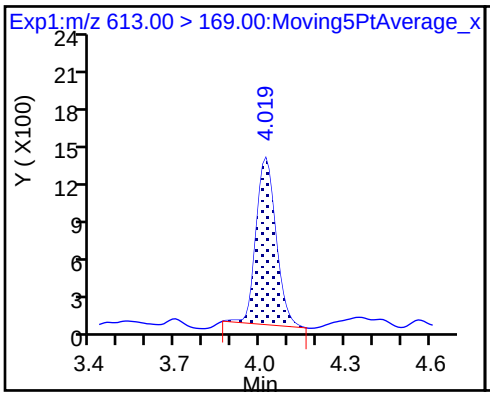
D 36 13C2 PFDoA



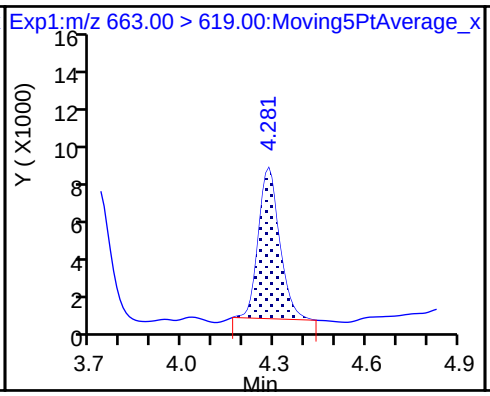
37 Perfluorododecanoic acid



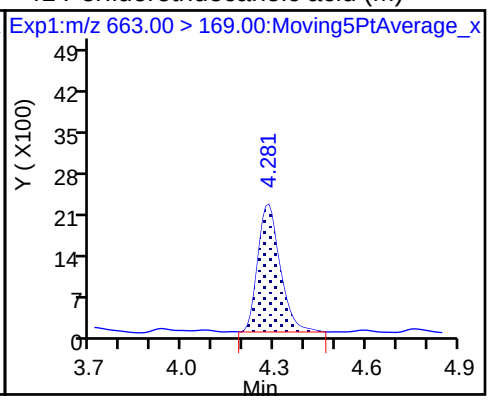
37 Perfluorododecanoic acid



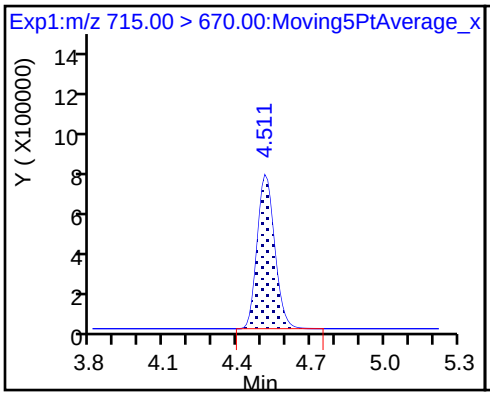
41 Perfluorotridecanoic acid



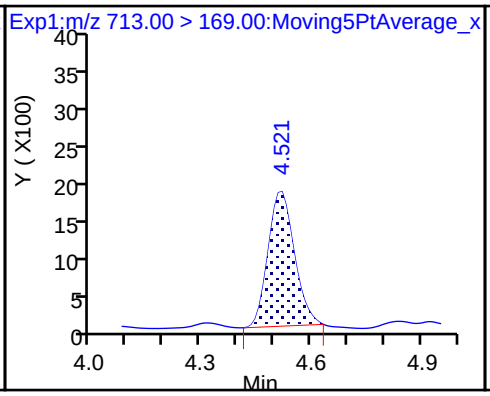
41 Perfluorotridecanoic acid (M)



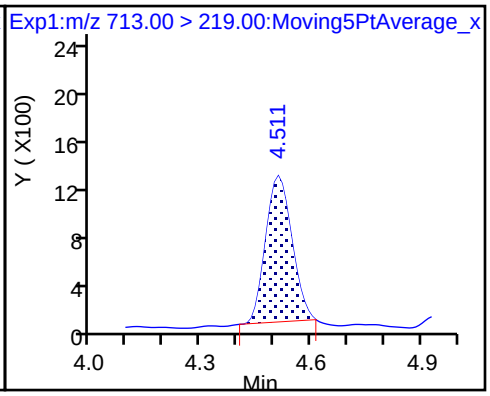
D 43 13C2-PFTeDA



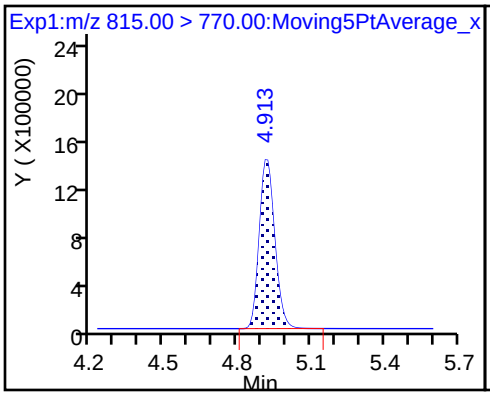
42 Perfluorotetradecanoic acid



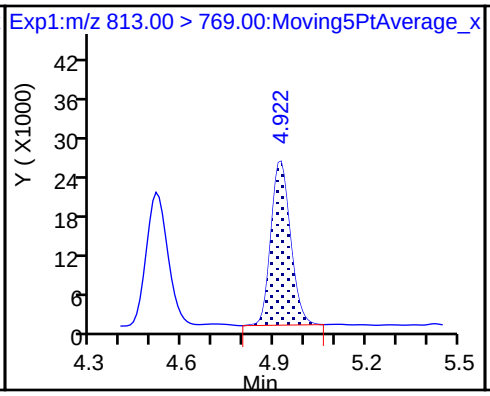
42 Perfluorotetradecanoic acid



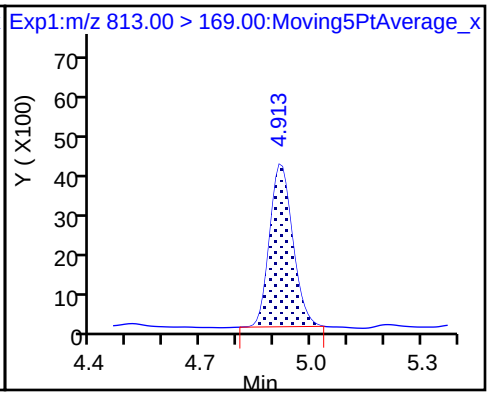
D 44 13C2-PFHxDA



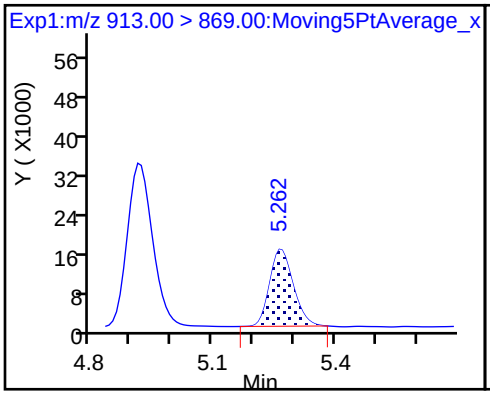
45 Perfluorohexadecanoic acid



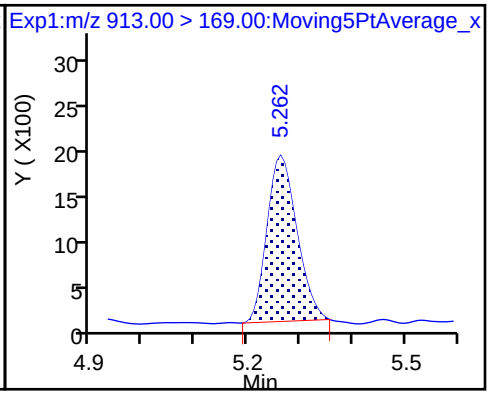
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

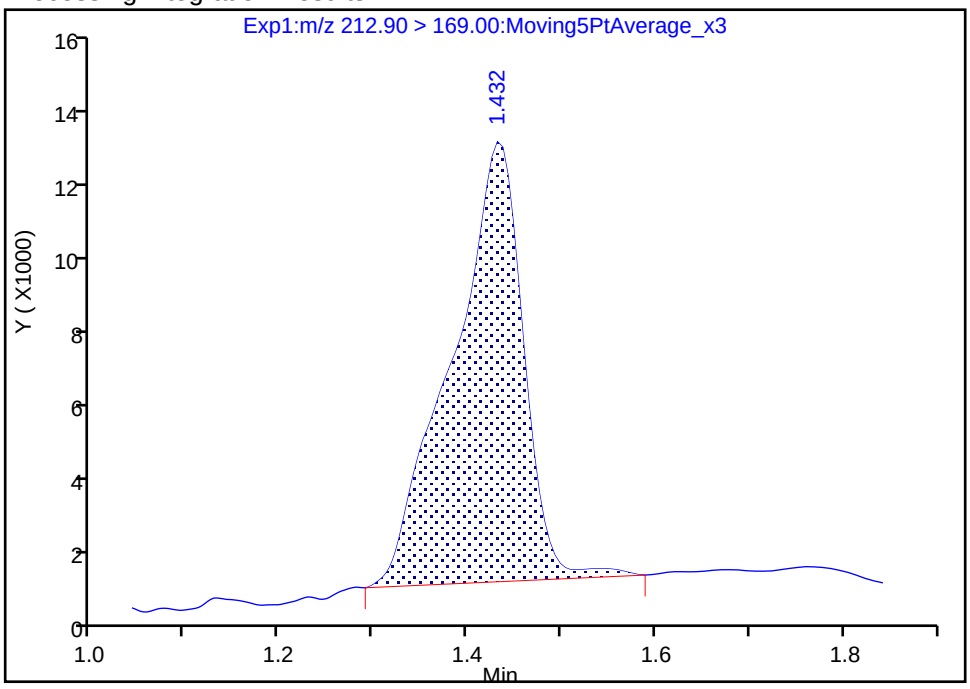
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

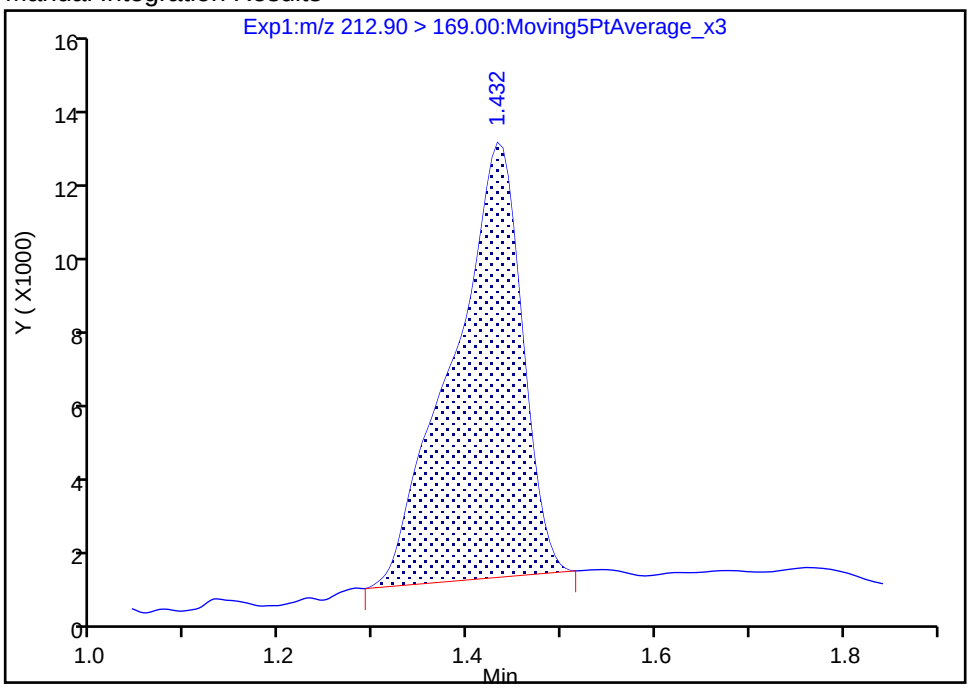
Processing Integration Results

RT: 1.43
Area: 58250
Amount: 0.025241
Amount Units: ng/ml



Manual Integration Results

RT: 1.43
Area: 56172
Amount: 0.024466
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:46
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

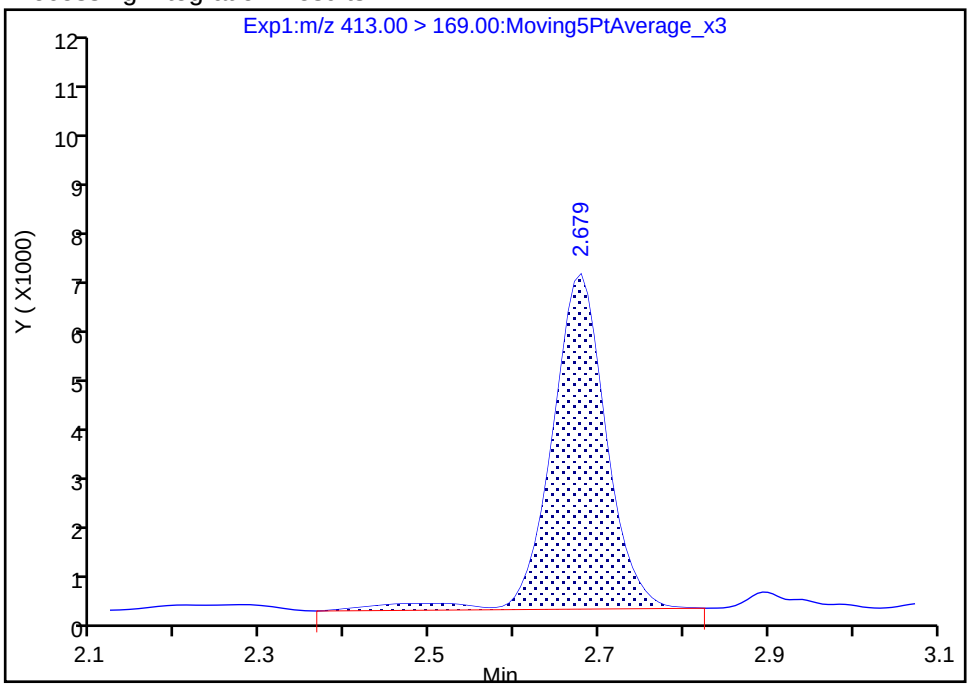
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

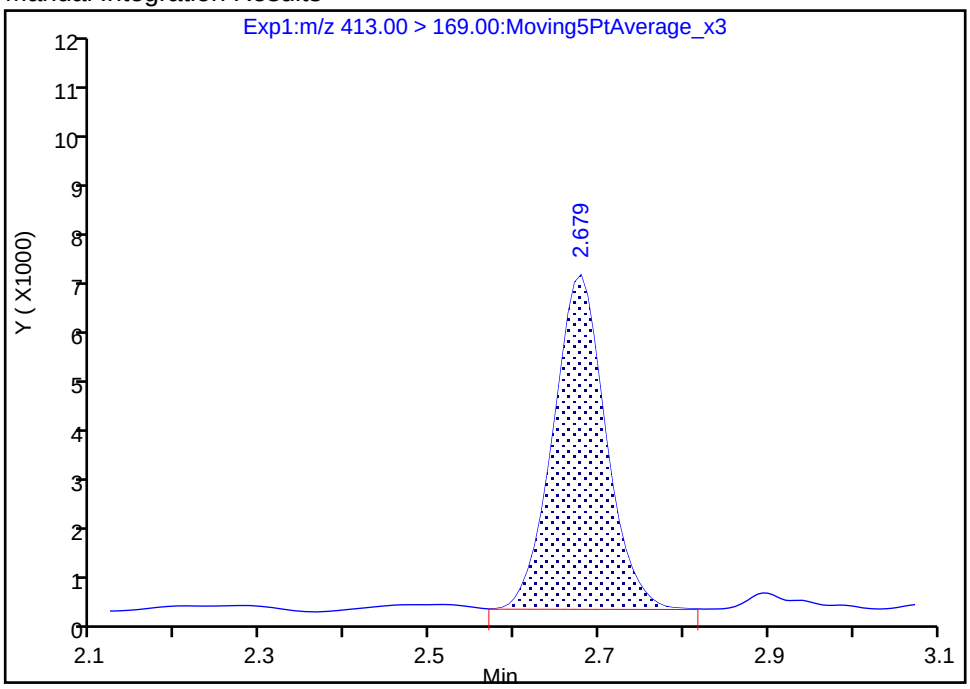
Processing Integration Results

RT: 2.68
Area: 30899
Amount: 0.026388
Amount Units: ng/ml



Manual Integration Results

RT: 2.68
Area: 29641
Amount: 0.026388
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

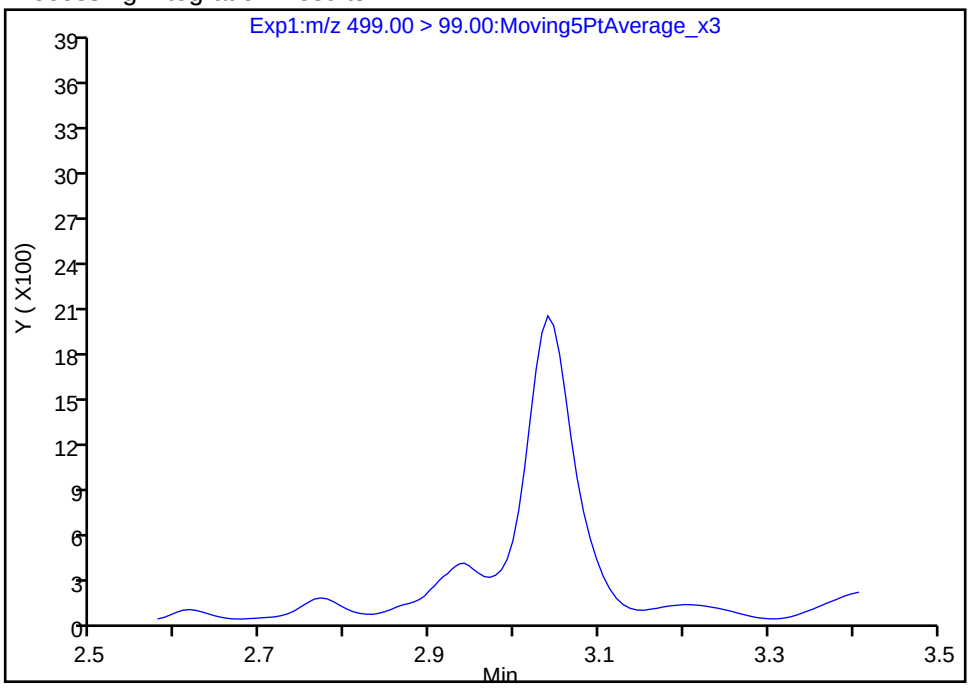
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

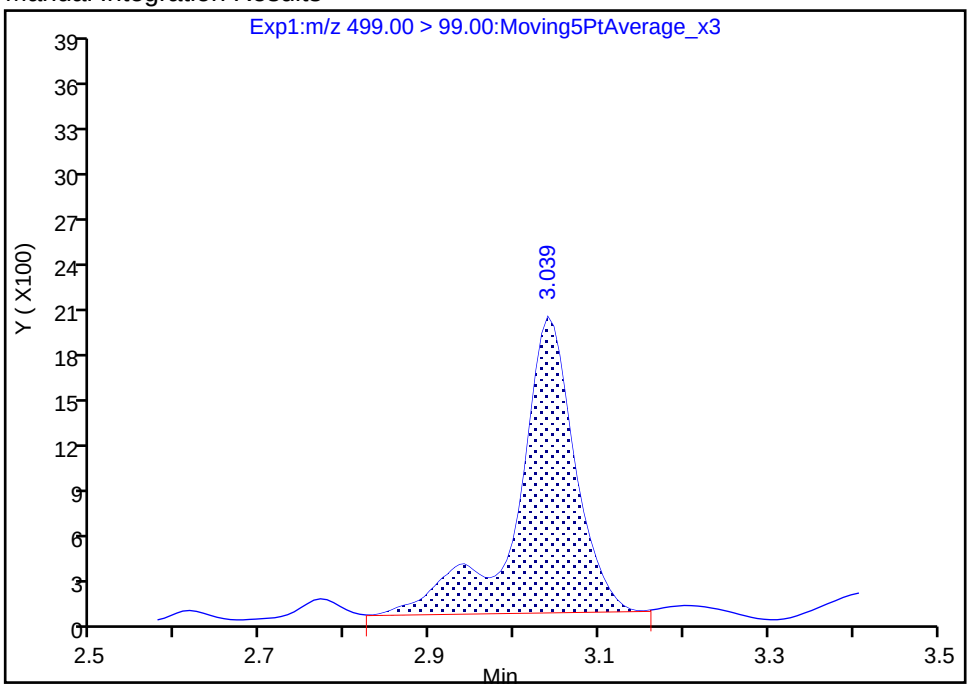
Processing Integration Results

RT: 3.04
Area: 0
Amount: 0.022562
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 9288
Amount: 0.022562
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:10:29
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

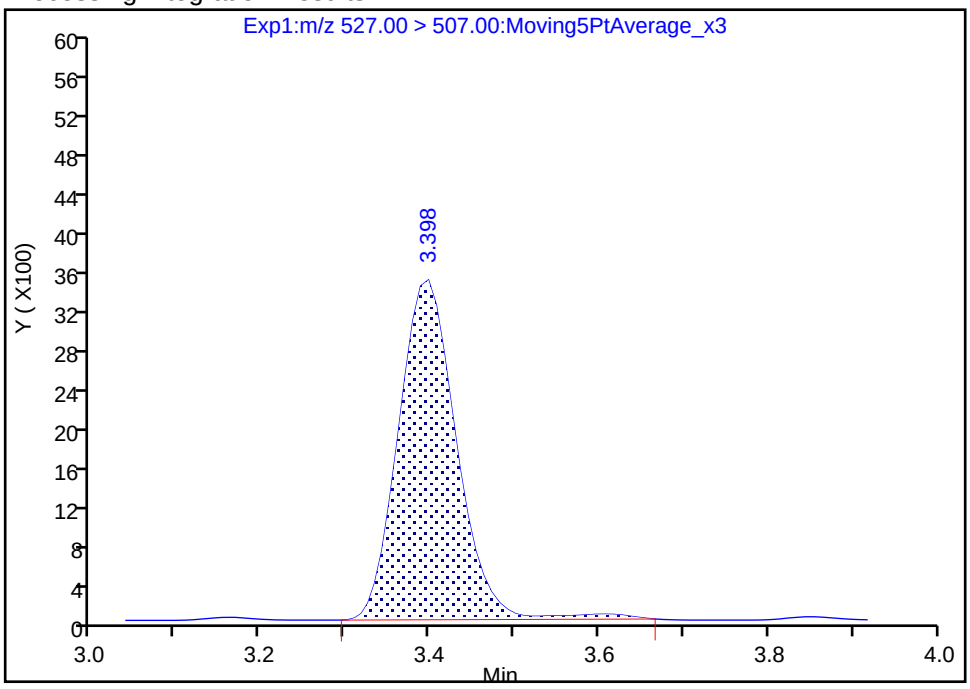
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

25 Sodium 1H,1H,2H,2H-perfluorodecane sulfonate, CAS: 39108-34-4

Signal: 1

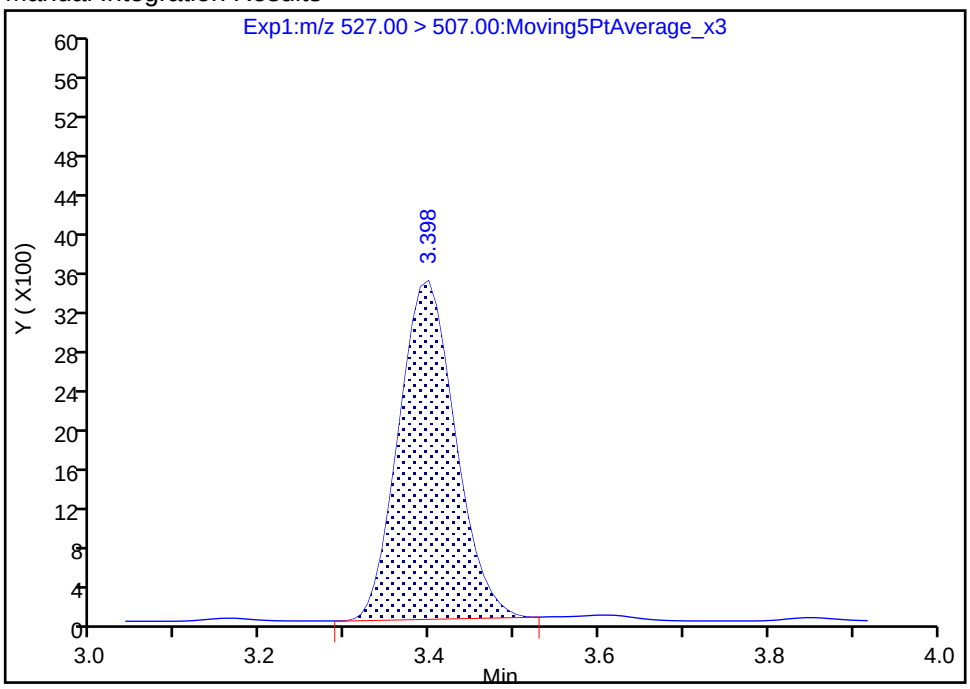
Processing Integration Results

RT: 3.40
Area: 16622
Amount: 0.028410
Amount Units: ng/ml



Manual Integration Results

RT: 3.40
Area: 16119
Amount: 0.027692
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:11:26
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

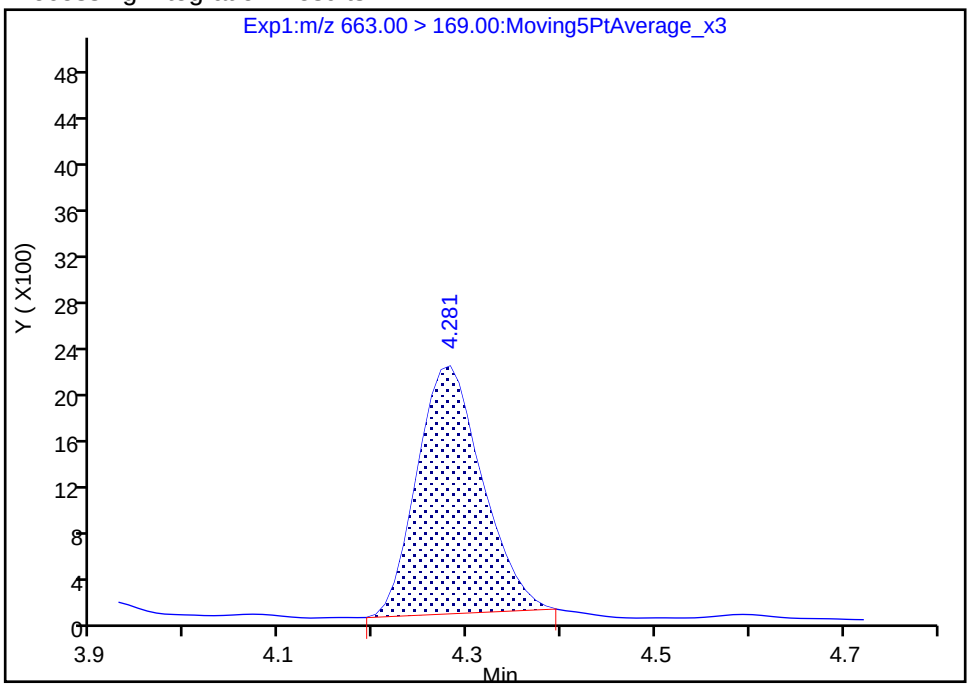
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_002.d
Injection Date: 10-Apr-2018 18:39:37 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

41 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 2

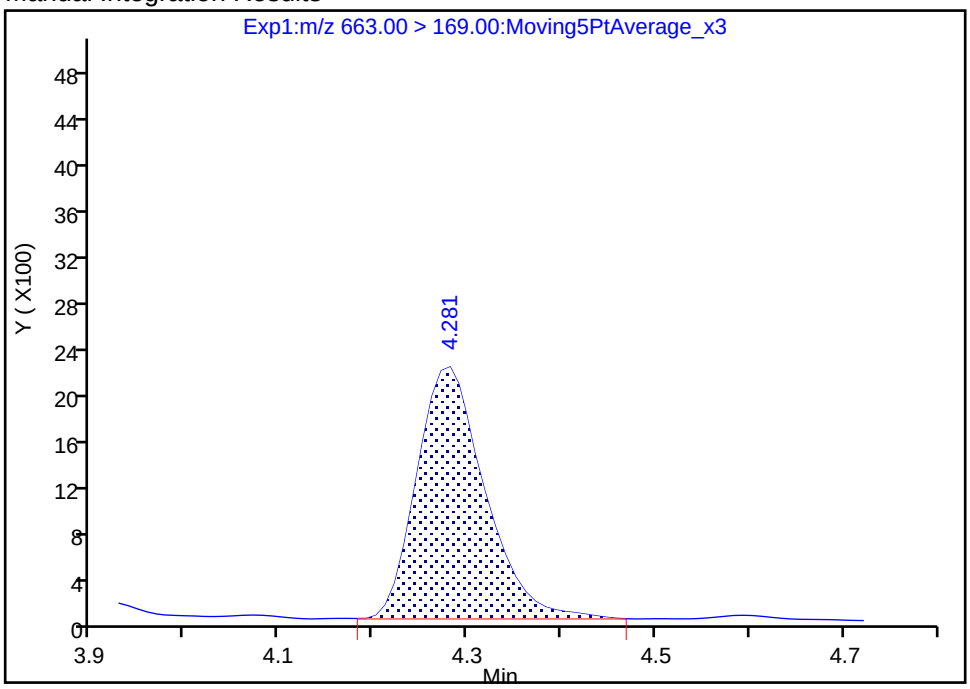
Processing Integration Results

RT: 4.28
Area: 10435
Amount: 0.026719
Amount Units: ng/ml



Manual Integration Results

RT: 4.28
Area: 11098
Amount: 0.026719
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:11:49
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-Apr-2018 18:47:28 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L2-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:01 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:13:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.431	0.005	1.000	6122262	2.47		98.6	45490	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.432	0.004	1.000	112834	0.0496		99.2	64.1	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.699	0.004	0.558	3926283	2.45		98.1	81057	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.699	0.004	1.000	95082	0.0508		102	82.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.735	0.004	1.000	82315	2.24		96.4	726	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.003	1.000	129549	0.0467		106	581	
298.90 > 99.00	1.739	1.736	0.003	1.000	54808		2.36(1.25-3.74)	106	750	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	28749	0.0506		108	1649	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	603123	2.29		98.2	6638	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.985	0.008	1.000	88785	0.0513		103	187	
313.00 > 119.00	1.993	1.985	0.008	1.000	8724		10.18(5.03-15.10)	103	121	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.985	0.008	1.000	4260718	2.41		96.3	104826	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.008	0.008	1.000	122406	0.0483		103	896	
349.00 > 99.00	2.004	2.008	-0.004	0.994	46264		2.65(1.36-4.07)	103	913	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	297607	2.72		109	6443	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.087	0.008	1.005	13126	0.0396		79.2	93.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.314	0.007	1.000	4420246	2.57		103	71318	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.314	0.007	1.000	79218	0.0448		89.5	85.7	
363.00 > 169.00	2.321	2.314	0.007	1.000	35808		2.21(1.13-3.40)	89.5	164	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.323	-0.002	0.994	118037	0.0485		107	408	
399.00 > 99.00	2.334	2.323	0.011	1.000	37872		3.12(1.50-4.49)	107	437	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.327	0.007	1.000	5080567	2.39		101	118670	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	264804	0.0507		101	3382	
377.00 > 85.00	2.360	2.360	0.0	1.000	154875		1.71(0.84-2.53)	101	3689	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	829435	2.25		94.6	10696	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	32205	0.0545		115	547	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	4186198	2.45		97.8	105368	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4613805	2.50			88596	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	101372	0.0524		105	60.7	
413.00 > 169.00	2.675	2.674	0.001	1.000	56802		1.78(0.84-2.52)	105	205	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	93755	0.0468		98.4	815	
449.00 > 99.00	2.683	2.680	0.003	1.000	23808		3.94(1.94-5.82)	98.4	554	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3602676	2.42		101	24509	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.043	3.042	0.001	1.000	74043	0.0452		97.3	267	
499.00 > 99.00	3.050	3.042	0.008	1.002	15924		4.65(2.31-6.93)	97.3	249	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.043	0.007	1.000	81721	0.0531		106	203	
463.00 > 169.00	3.050	3.043	0.007	1.000	20435		4.00(1.90-5.69)	106	366	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3691890	2.51		100	88911	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	130088	0.0458		98.2	3608	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.395	3.388	0.007	1.000	58744	0.0488		102	794	
549.00 > 99.00	3.395	3.388	0.007	1.000	21166		2.78(1.33-3.97)	102	527	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	1101099	2.48		103	10682	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	27294	0.0469		97.9	1136	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4658336	2.51		100	52005	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	97271	0.0516		103	2312	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	2912736	2.36		94.2	67644	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	64415	0.0536		107	275	
513.00 > 169.00	3.404	3.402	0.002	1.000	11191		5.76(2.36-7.09)	107	302	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1708589	2.44		97.5	20700	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.563	3.558	0.005	1.003	30316	0.0445		89.0	308	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	44930	0.0459		95.2	493	
599.00 > 99.00	3.716	3.715	0.001	1.000	14514		3.10(1.39-4.16)	95.2	960	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.722	0.005	1.000	1730407	2.50		100	16886	
D 30 13C2 PFUnA										
565.00 > 520.00	3.727	3.727	0.0	1.000	2662627	2.50		99.8	58782	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.727	3.727	0.0	1.000	34358	0.0531		106	684	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.727	0.010	1.003	48726	0.0541		108	200	
563.00 > 169.00	3.727	3.727	0.0	1.000	13759		3.54(2.12-6.36)	108	342	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	214741	0.0489		104	3908	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.017	0.010	1.000	2928766	2.54		102	34702	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.027	4.020	0.007	1.000	56140	0.0460		91.9	63.9	
613.00 > 169.00	4.027	4.020	0.007	1.000	16582		3.39(2.13-6.40)	91.9	256	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.278	0.001	1.000	70835	0.0498		99.5	65.7	
663.00 > 169.00	4.279	4.278	0.001	1.000	22777		3.11(1.25-3.76)	99.5	277	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.520	4.513	0.007	1.000	3578927	2.45		98.0	23308	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.510	4.513	-0.003	0.998	19373	0.0539		108	235	
713.00 > 219.00	4.510	4.513	-0.003	0.998	13443		1.44(0.71-2.13)	108	289	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.918	0.003	1.000	5873165	2.47		98.8	20125	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.920	0.001	1.000	156018	0.0479		95.7	51.2	
813.00 > 169.00	4.921	4.920	0.001	1.000	25268		6.17(2.86-8.58)	95.7	222	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.268	0.001	1.000	116814	0.0495		99.0	34.4	
913.00 > 169.00	5.269	5.268	0.001	1.000	14479		8.07(3.83-11.48)	99.0	141	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:02 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d

Injection Date: 10-Apr-2018 18:47:28 Instrument ID: A8_N

Lims ID: IC L2 Full

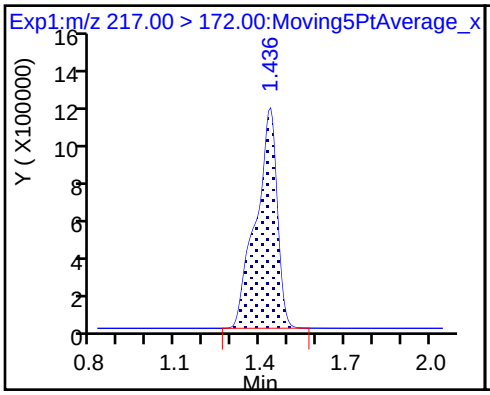
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3

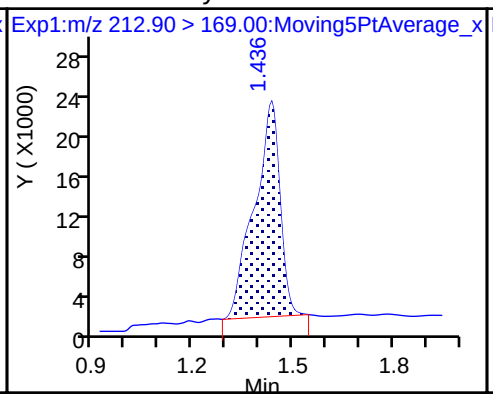
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

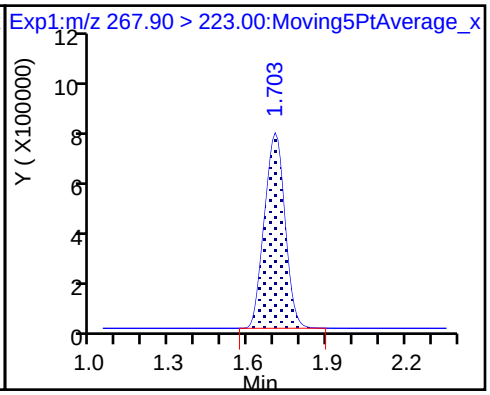
D 1 13C4 PFBA



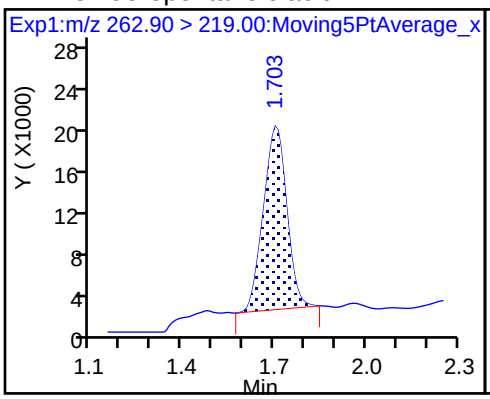
2 Perfluorobutyric acid



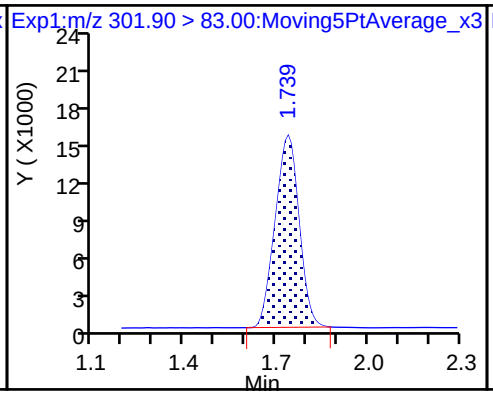
D 3 13C5-PFPeA



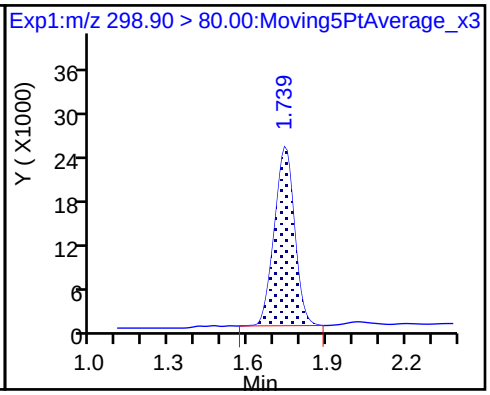
4 Perfluoropentanoic acid



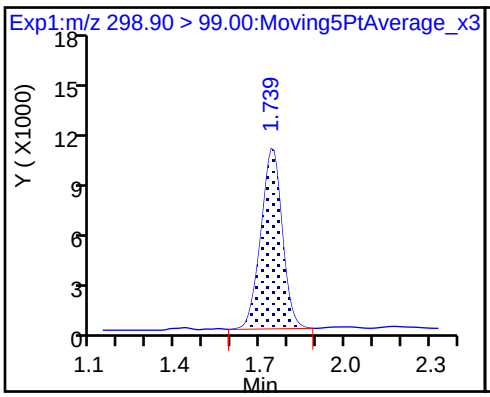
D 47 13C3-PFBS



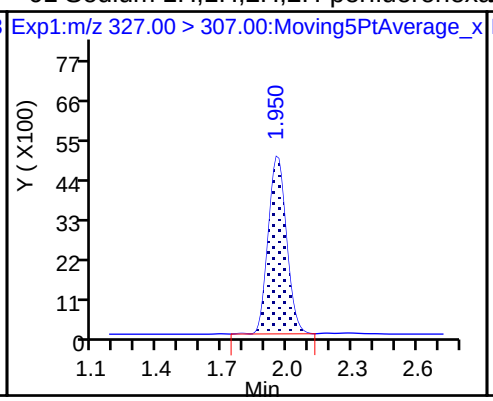
5 Perfluorobutanesulfonic acid



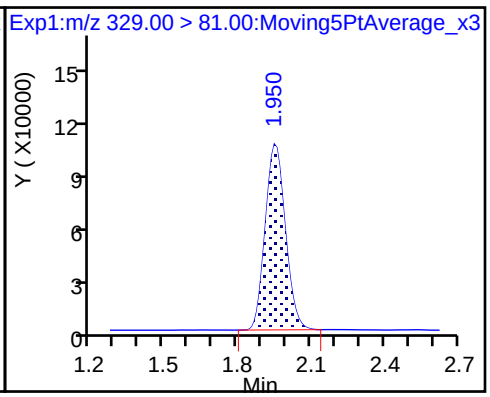
5 Perfluorobutanesulfonic acid



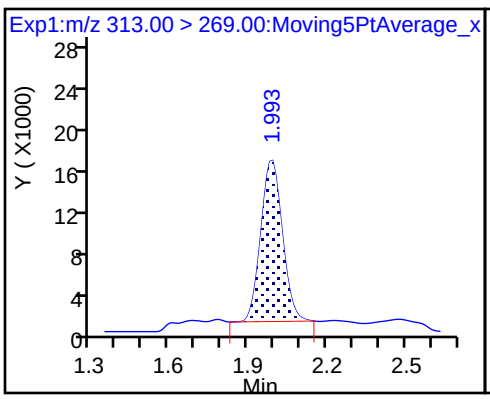
61 Sodium 1H,1H,2H,2H-perfluorohexane



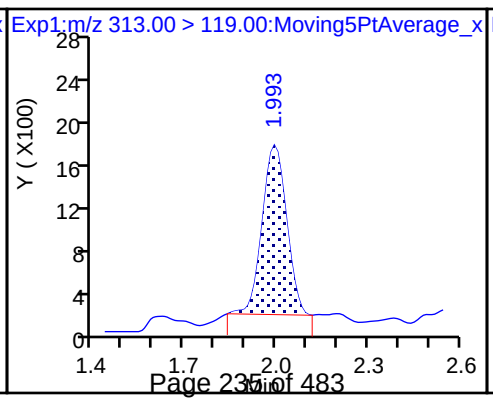
D 60 M2-4:2FTS



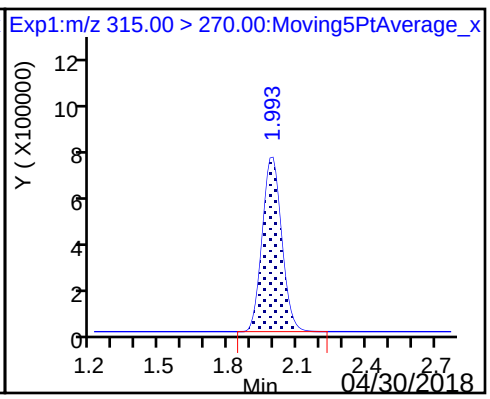
6 Perfluorohexanoic acid



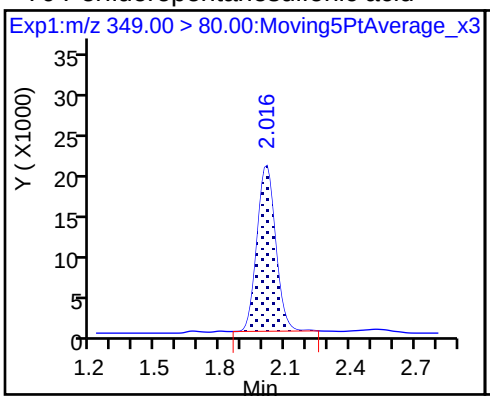
6 Perfluorohexanoic acid



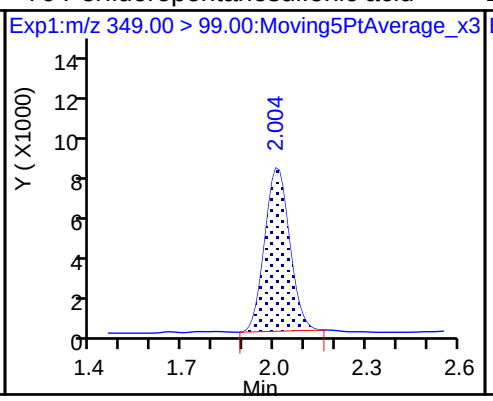
D 7 13C2 PFHxA



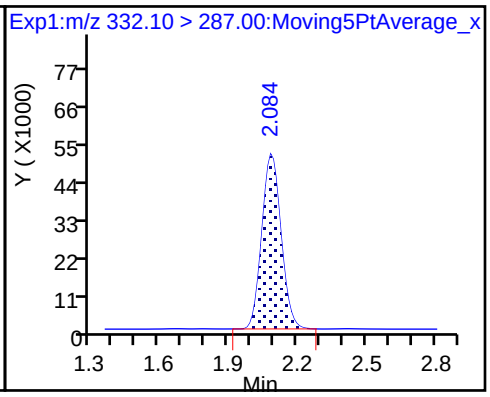
70 Perfluoropentanesulfonic acid



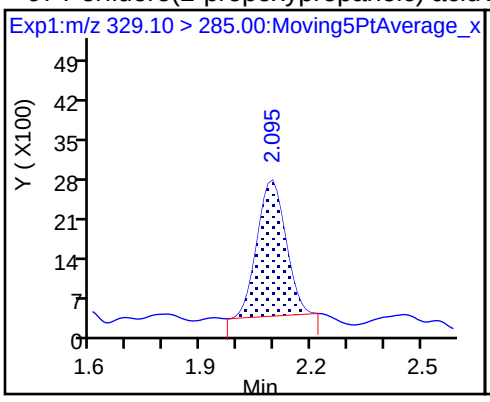
70 Perfluoropentanesulfonic acid



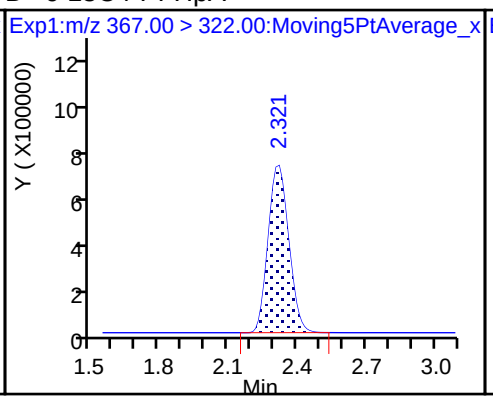
D 64 13C3 HFPO-DA



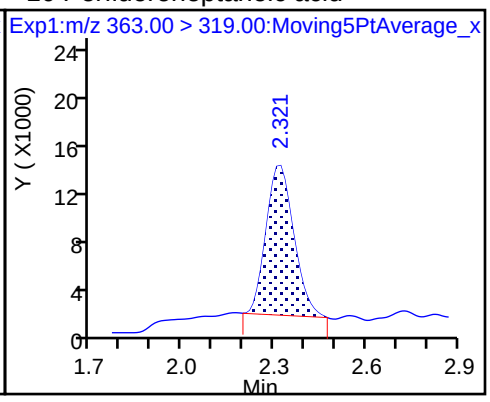
67 Perfluoro(2-propoxypropanoic) acid



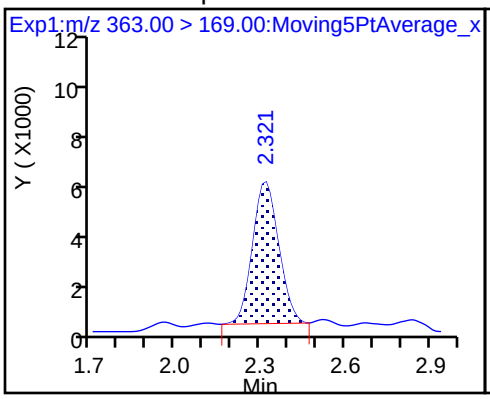
D 9 13C4-PFHpA



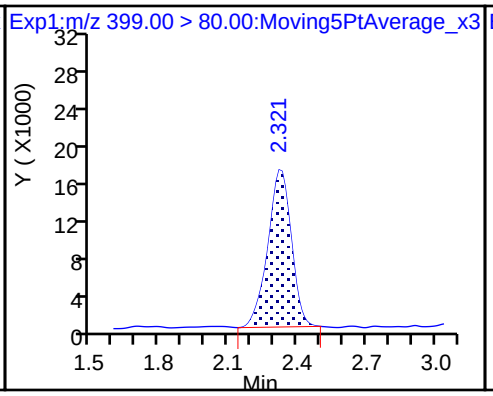
10 Perfluoroheptanoic acid



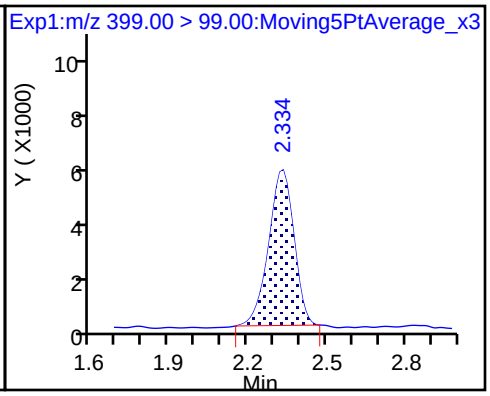
10 Perfluoroheptanoic acid



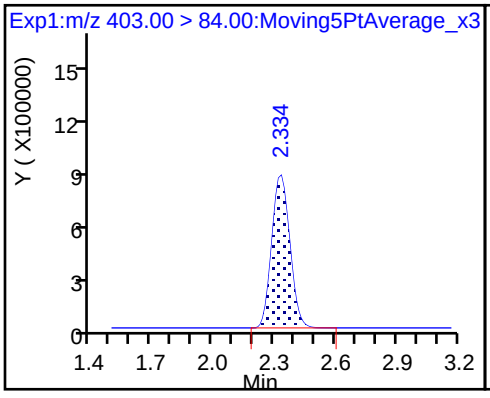
8 Perfluorohexanesulfonic acid



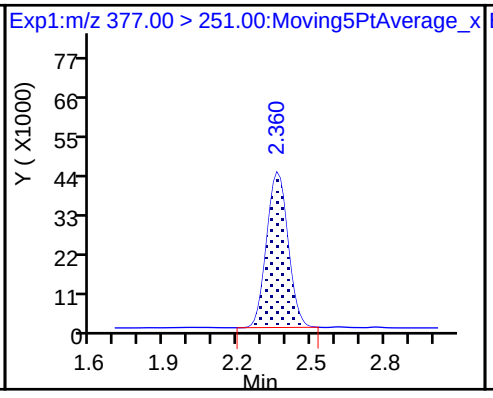
8 Perfluorohexanesulfonic acid



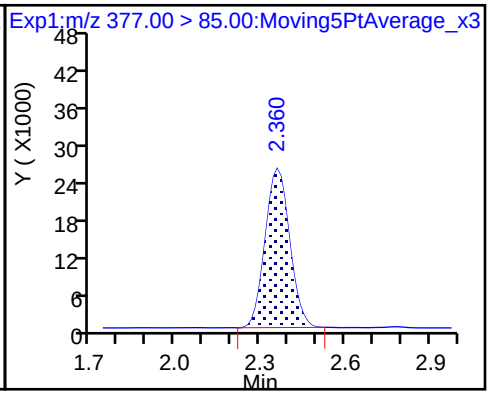
D 11 18O2 PFHxS



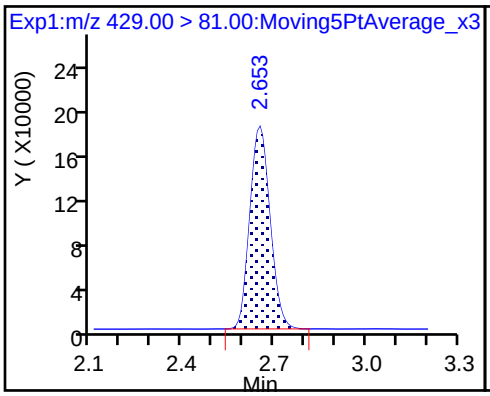
65 Adona



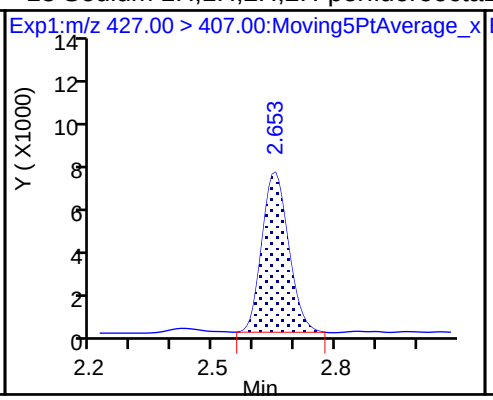
65 Adona



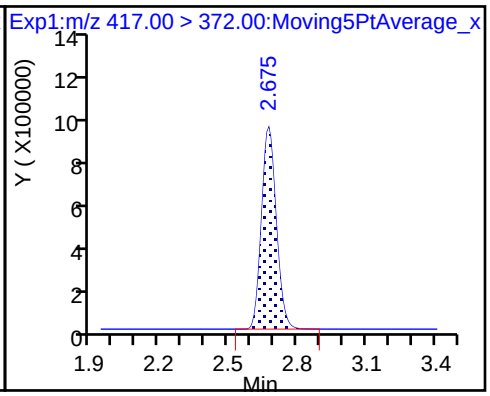
D 12 M2-6:2FTS



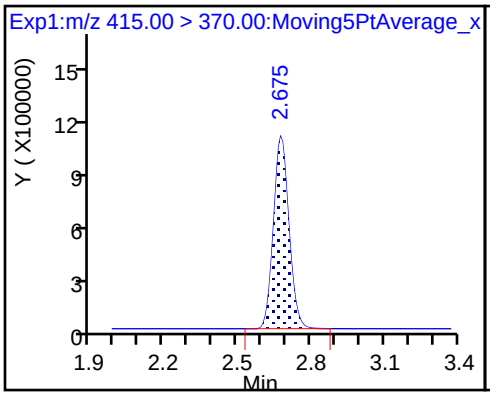
13 Sodium 1H,1H,2H,2H-perfluorooctane



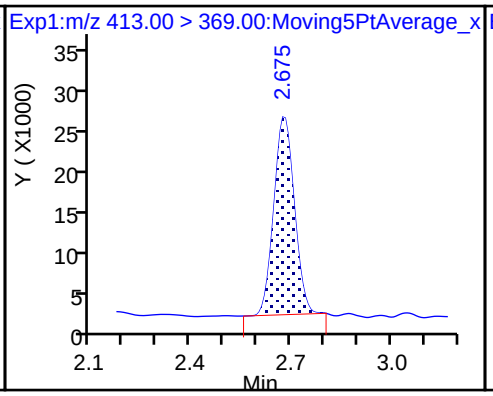
D 14 13C4 PFOA



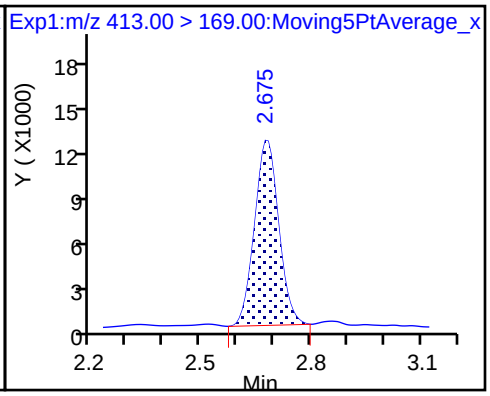
* 62 13C2-PFOA



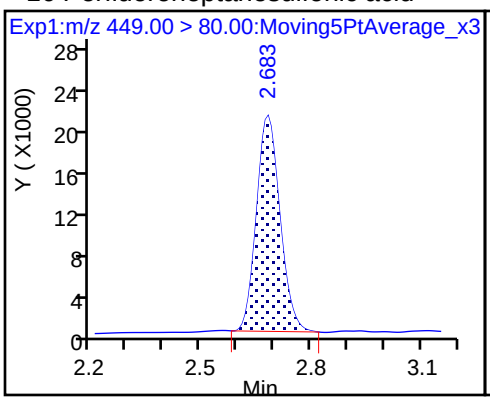
15 Perfluorooctanoic acid



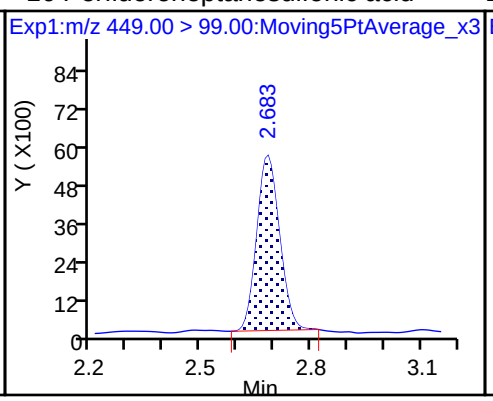
15 Perfluorooctanoic acid



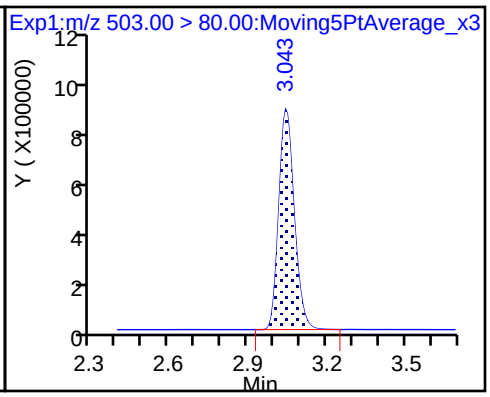
16 Perfluoroheptanesulfonic acid



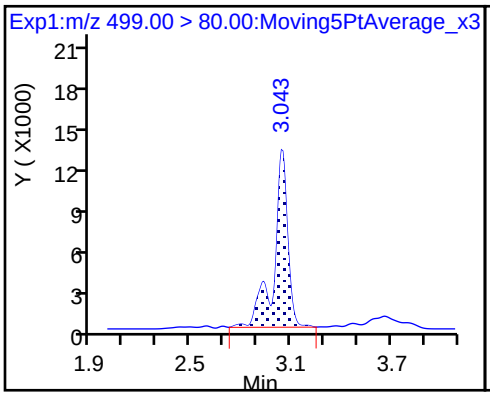
16 Perfluoroheptanesulfonic acid



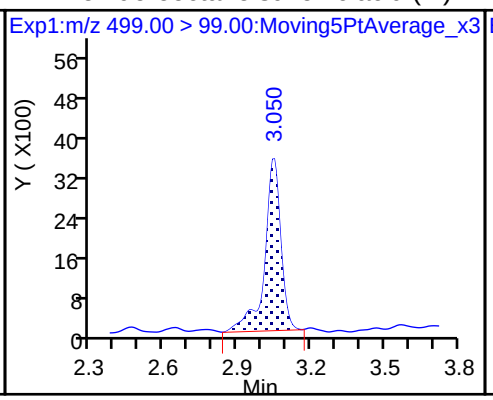
D 18 13C4 PFOS



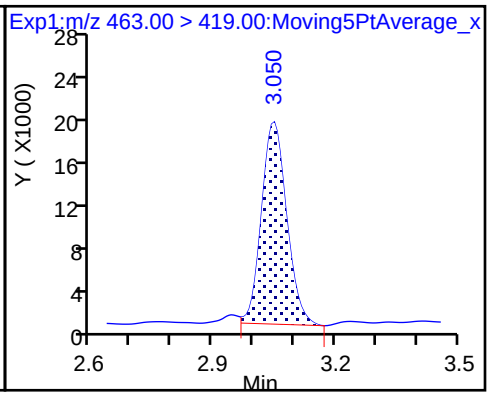
17 Perfluorooctane sulfonic acid



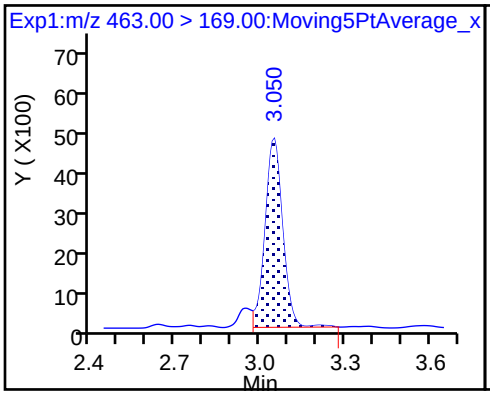
17 Perfluorooctane sulfonic acid (M)



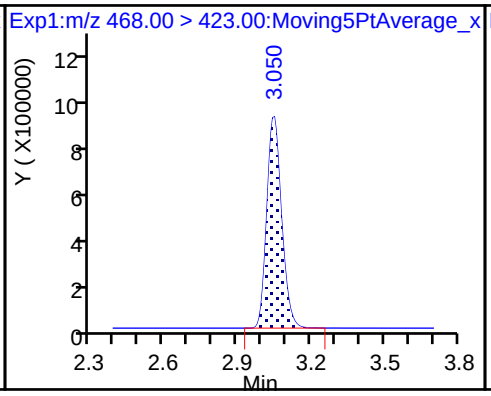
20 Perfluorononanoic acid



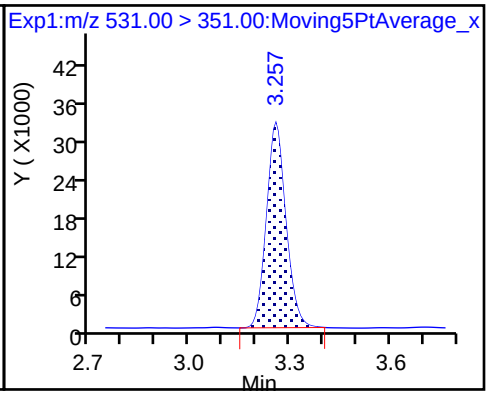
20 Perfluorononanoic acid



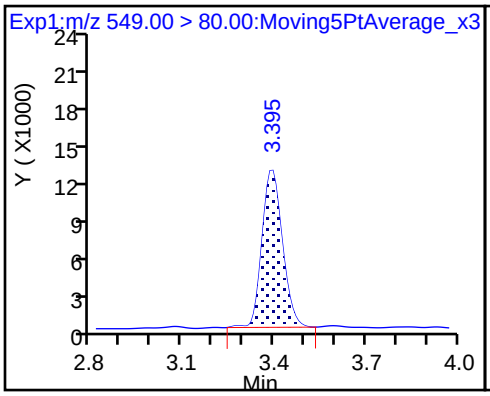
D 19 13C5 PFNA



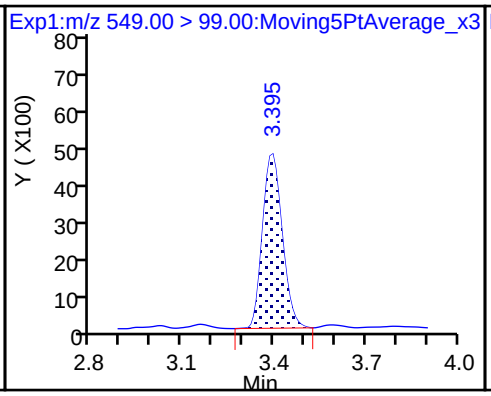
69 9-Chlorohexadecafluoro-3-oxanonane



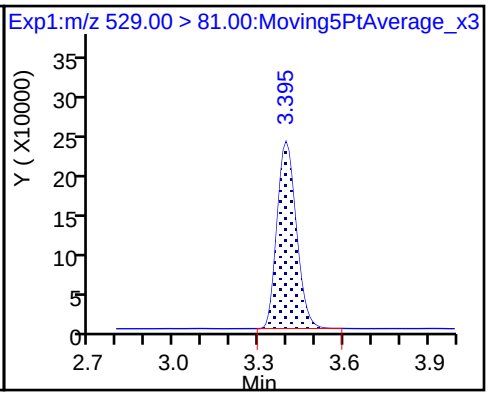
68 Perfluorononanesulfonic acid



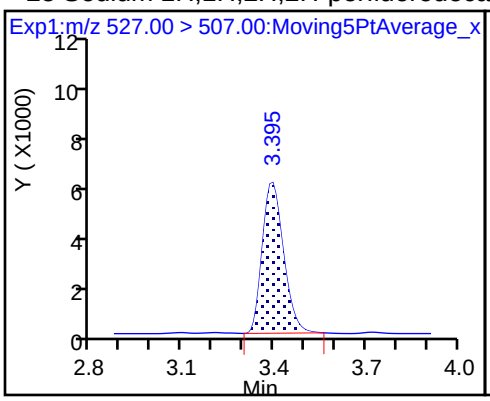
68 Perfluorononanesulfonic acid



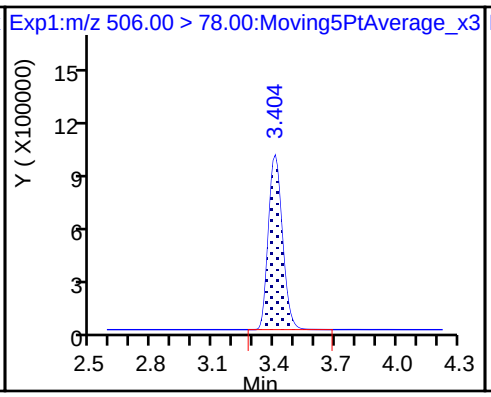
D 26 M2-8:2FTS



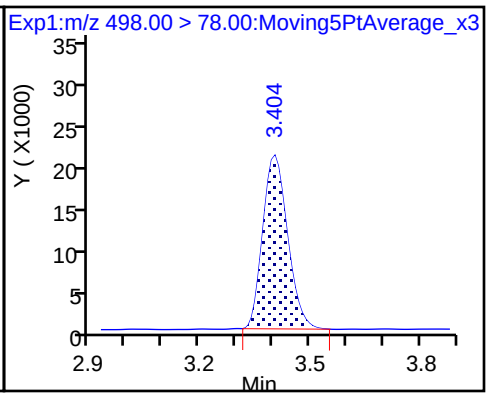
25 Sodium 1H,1H,2H,2H-perfluorodecane



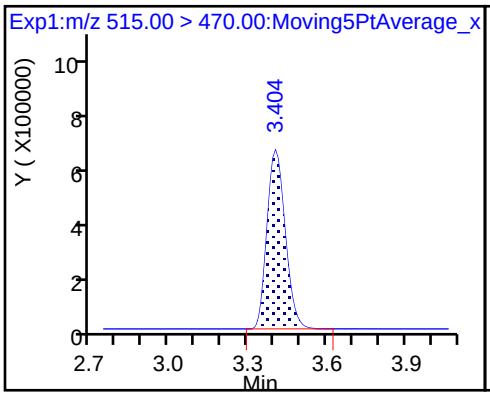
D 21 13C8 FOSA



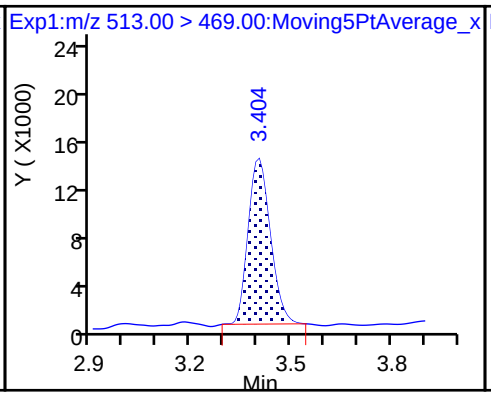
22 Perfluorooctane Sulfonamide



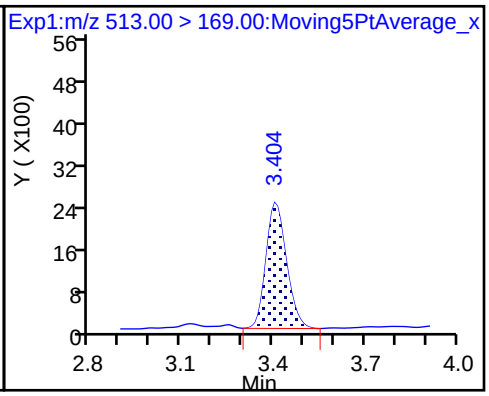
D 23 13C2 PFDA



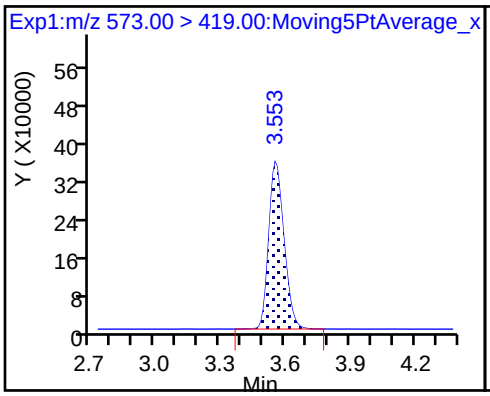
24 Perfluorodecanoic acid



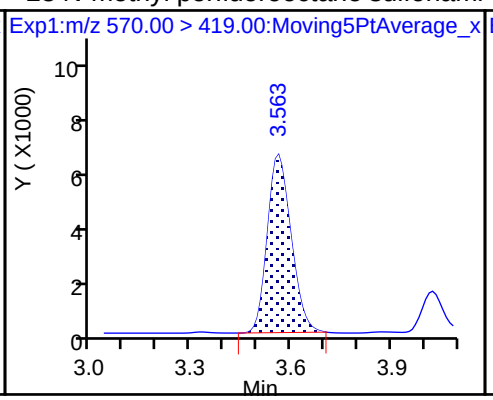
24 Perfluorodecanoic acid



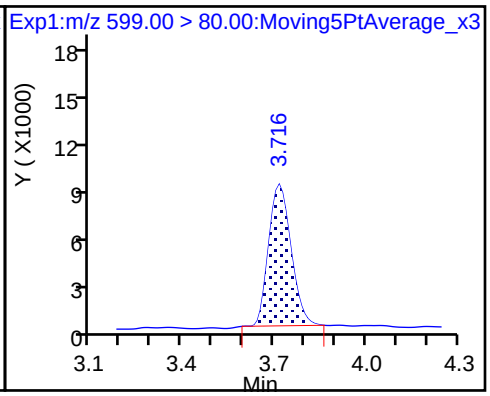
D 27 d3-NMeFOSAA



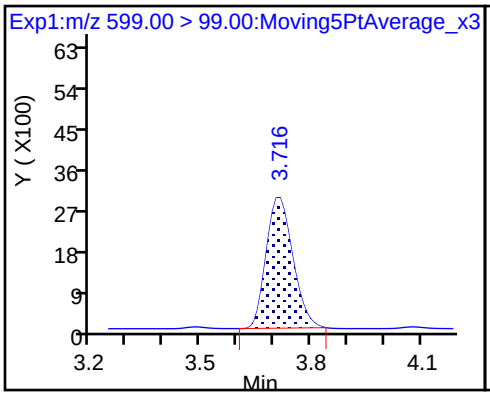
28 N-methyl perfluorooctane sulfonami



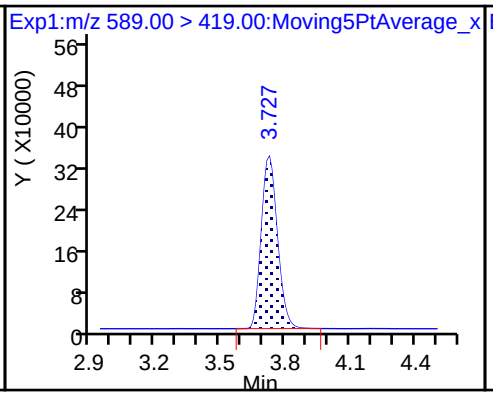
29 Perfluorodecane Sulfonic acid



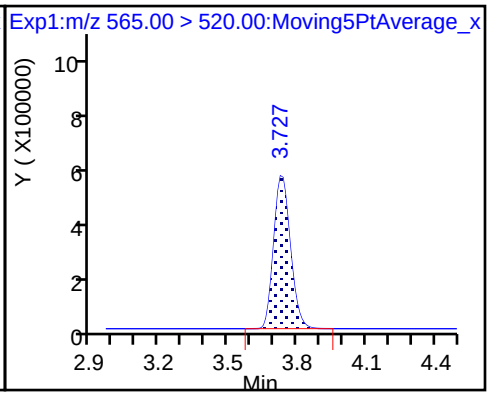
29 Perfluorodecane Sulfonic acid



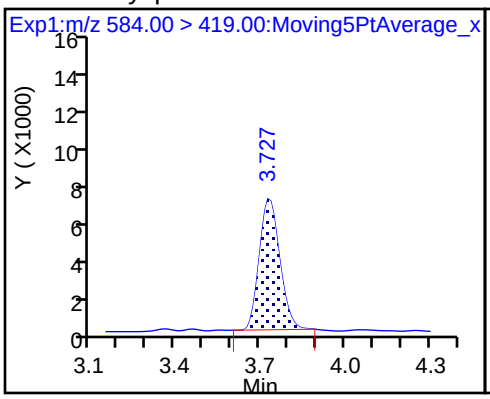
D 32 d5-NEtFOSAA



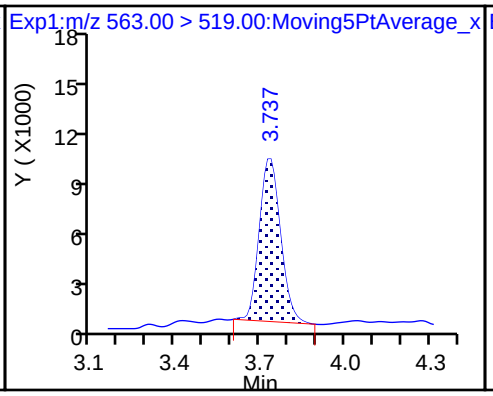
D 30 13C2 PFUnA



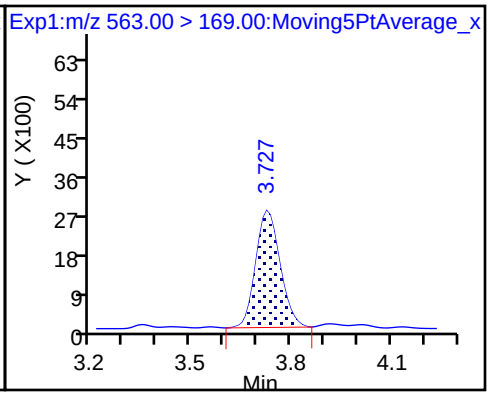
33 N-ethyl perfluorooctane sulfonamid



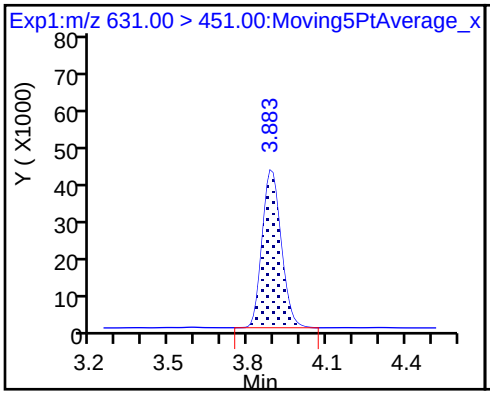
31 Perfluoroundecanoic acid



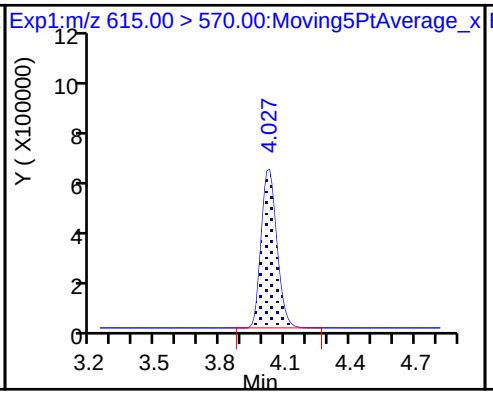
31 Perfluoroundecanoic acid



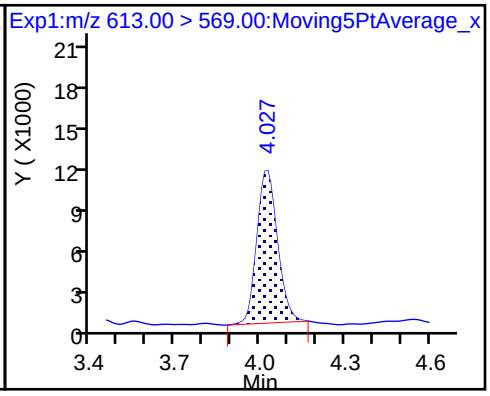
66 11-Chloroeicosafluoro-3-oxaundecan



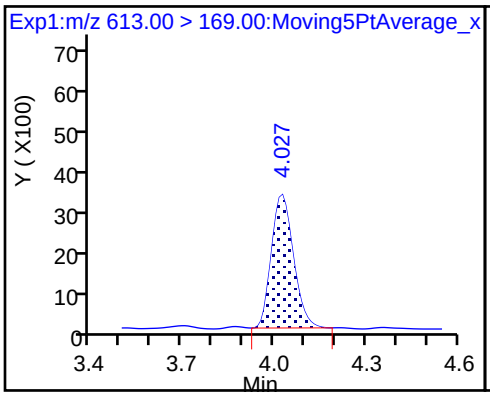
D 36 13C2 PFDoA



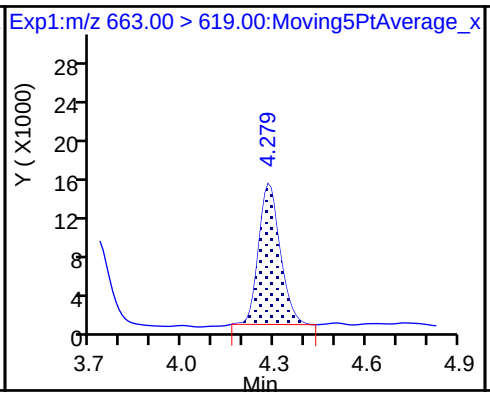
37 Perfluorododecanoic acid



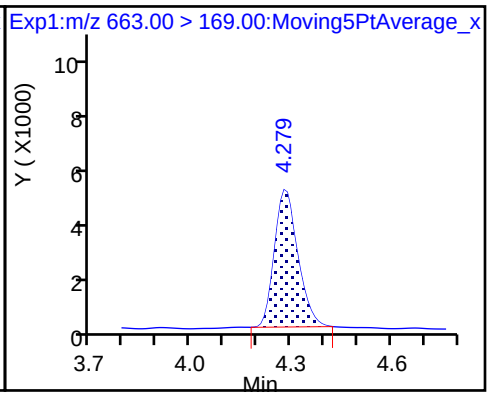
37 Perfluorododecanoic acid



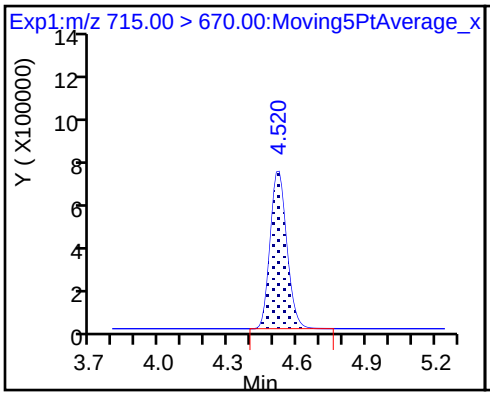
41 Perfluorotridecanoic acid



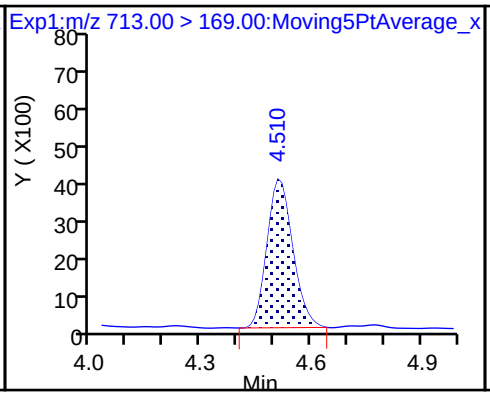
41 Perfluorotridecanoic acid



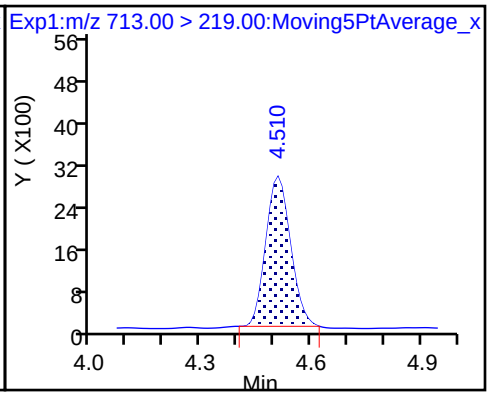
D 43 13C2-PFTeDA



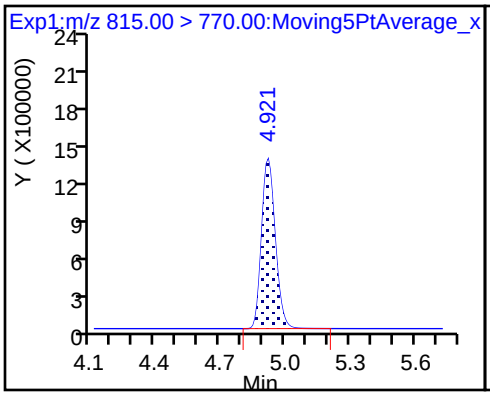
42 Perfluorotetradecanoic acid



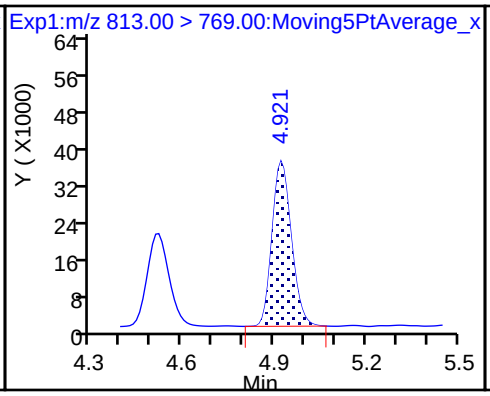
42 Perfluorotetradecanoic acid



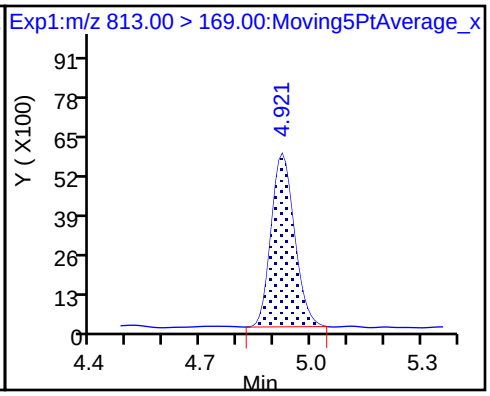
D 44 13C2-PFHxDA



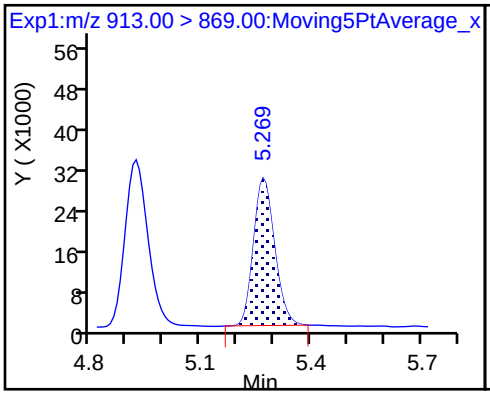
45 Perfluorohexadecanoic acid



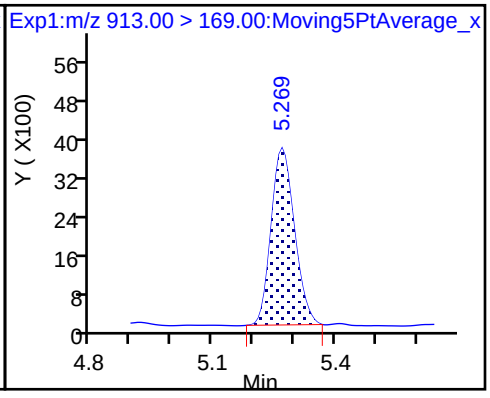
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

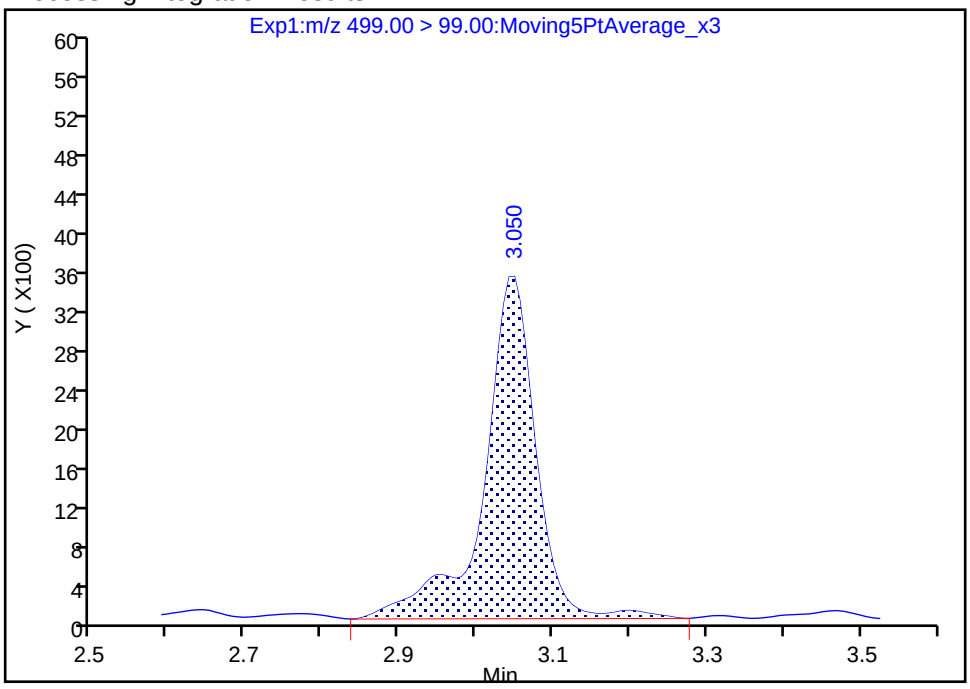
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_003.d
Injection Date: 10-Apr-2018 18:47:28 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

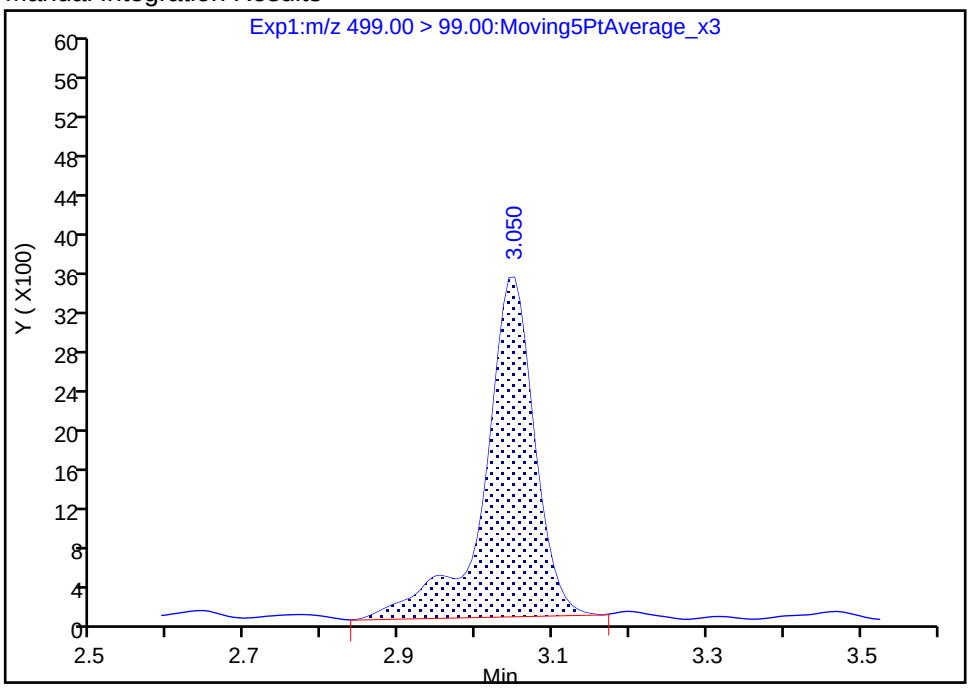
Processing Integration Results

RT: 3.05
Area: 16662
Amount: 0.045154
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 15924
Amount: 0.045154
Amount Units: ng/ml



Reviewer: roycea, 11-Apr-2018 09:13:05
Audit Action: Manually Integrated Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-Apr-2018 18:55:18 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L3-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:05 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:15:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.431	0.004	1.000	6279614	2.40		96.1	48122	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.432	0.003	1.000	580880	0.2490		99.6	342	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	467549	0.2434		97.4	427	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	4029236	2.39		95.7	84337	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.735	0.003	1.000	85829	2.22		95.5	892	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.736	0.002	1.000	642890	0.2225		101	3140	
298.90 > 99.00	1.738	1.736	0.002	1.000	274212		2.34(1.25-3.74)	101	4317	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.950	-0.002	1.000	625222	2.26		96.7	5849	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.950	-0.002	1.000	139275	0.2353		101	8215	
D 7 13C2 PFHxA										
315.00 > 270.00	1.992	1.985	0.007	1.000	4589544	2.46		98.5	114865	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.992	1.985	0.007	1.000	453023	0.2428		97.1	1126	
313.00 > 119.00	1.992	1.985	0.007	1.000	45129		10.04(5.03-15.10)	97.1	510	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.015	2.008	0.007	1.000	625836	0.2371		101	5727	
349.00 > 99.00	2.003	2.008	-0.005	0.994	236948		2.64(1.36-4.07)	101	6870	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.084	-0.002	1.000	260156	2.26		90.3	6351	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.094	2.087	0.007	1.005	76650	0.2644		106	612	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	443829	0.2536		101	594	
363.00 > 169.00	2.320	2.314	0.006	1.000	183548		2.42(1.13-3.40)	101	819	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	4371595	2.41		96.4	64932	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.323	0.010	1.000	550837	0.2176		95.6	1709	
399.00 > 99.00	2.333	2.323	0.010	1.000	175057		3.15(1.50-4.49)	95.6	1638	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	5290521	2.36		100.0	79356	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	1339859	0.2502		100	20372	
377.00 > 85.00	2.359	2.360	-0.001	1.000	772157		1.74(0.84-2.53)	100	16304	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	147222	0.2185		92.2	3008	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	946554	2.44		103	15607	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	4391971	2.44		97.5	89680	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	501075	0.2469		98.7	266	
413.00 > 169.00	2.675	2.674	0.001	1.000	260669		1.92(0.84-2.52)	98.7	1136	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4856867	2.50			62253	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	500192	0.2437		102	4655	
449.00 > 99.00	2.683	2.680	0.003	1.000	131175		3.81(1.94-5.82)	102	3786	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3695054	2.36		98.7	32380	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.042	0.008	1.002	378769	0.2252		97.1	1651	
499.00 > 99.00	3.043	3.042	0.001	1.000	94059		4.03(2.31-6.93)	97.1	1374	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	0.998	394004	0.2506		100	1139	
463.00 > 169.00	3.050	3.043	0.007	1.000	89167		4.42(1.90-5.69)	100	1764	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3769499	2.43		97.3	82628	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	659333	0.2262		97.1	17883	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.385	3.388	-0.003	1.000	287902	0.2330		97.1	4091	
549.00 > 99.00	3.395	3.388	0.007	1.003	106966		2.69(1.33-3.97)	97.1	2580	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	1105113	2.36		98.6	11270	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	123407	0.2114		88.3	6419	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4856180	2.48		99.3	57058	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	486733	0.2477		99.1	17148	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	3141564	2.41		96.5	74258	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	302427	0.2333		93.3	1146	
513.00 > 169.00	3.404	3.402	0.002	1.000	51441		5.88(2.36-7.09)	93.3	1188	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1807153	2.45		98.0	18609	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.558	0.004	1.003	182686	0.2534		101	1647	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	242056	0.2411		100	3016	
599.00 > 99.00	3.716	3.715	0.001	1.000	77912		3.11(1.39-4.16)	100	1891	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.722	0.004	1.000	1809132	2.48		99.4	15271	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.726	3.727	-0.001	1.000	166943	0.2469		98.7	2050	
D 30 13C2 PFUnA										
565.00 > 520.00	3.726	3.727	-0.001	1.000	2893419	2.58		103	82331	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.726	3.727	-0.001	1.000	218231	0.2231		89.2	981	
563.00 > 169.00	3.726	3.727	-0.001	1.000	53370		4.09(2.12-6.36)	89.2	1795	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.883	3.883	0.0	1.000	1099095	0.2441		104	17279	
D 36 13C2 PFDoA										
615.00 > 570.00	4.016	4.017	-0.001	1.000	3031255	2.50		100.0	32020	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.026	4.020	0.006	1.003	323392	0.2558		102	356	
613.00 > 169.00	4.026	4.020	0.006	1.003	76615		4.22(2.13-6.40)	102	964	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.278	0.001	1.000	353030	0.2396		95.8	325	
663.00 > 169.00	4.279	4.278	0.001	1.000	109952		3.21(1.25-3.76)	95.8	1133	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.510	4.513	-0.003	1.000	3729686	2.43		97.0	27846	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.510	4.513	-0.003	1.000	92073	0.2457		98.3	961	
713.00 > 219.00	4.510	4.513	-0.003	1.000	66153		1.39(0.71-2.13)	98.3	1347	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.921	4.918	0.003	1.000	6094708	2.44		97.4	18710	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.921	4.920	0.001	1.000	648936	0.2588		104	210	
813.00 > 169.00	4.921	4.920	0.001	1.000	100021		6.49(2.86-8.58)	104	777	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.269	5.268	0.001	1.000	616691	0.2519		101	178	
913.00 > 169.00	5.269	5.268	0.001	1.000	75406		8.18(3.83-11.48)	101	660	

Reagents:

LCPFC_LL3_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:06 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_004.d

Injection Date: 10-Apr-2018 18:55:18 Instrument ID: A8_N

Lims ID: IC L3 Full

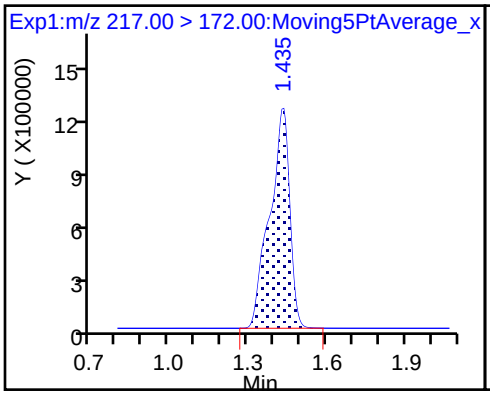
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4

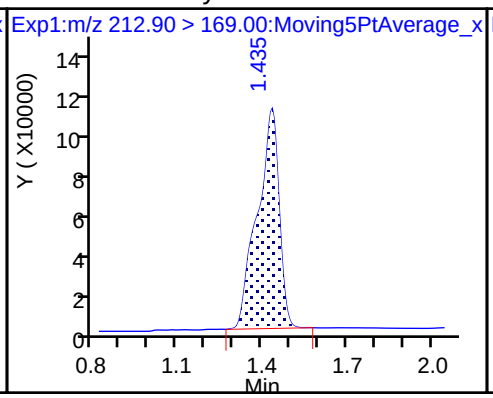
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

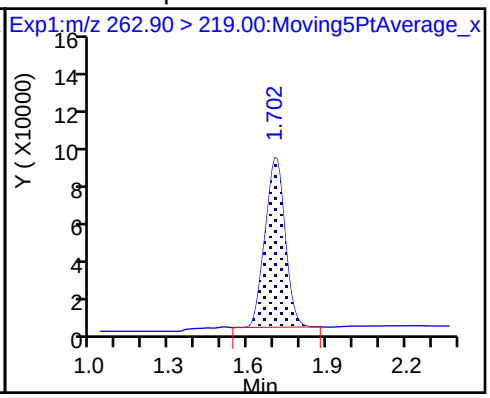
D 1 13C4 PFBA



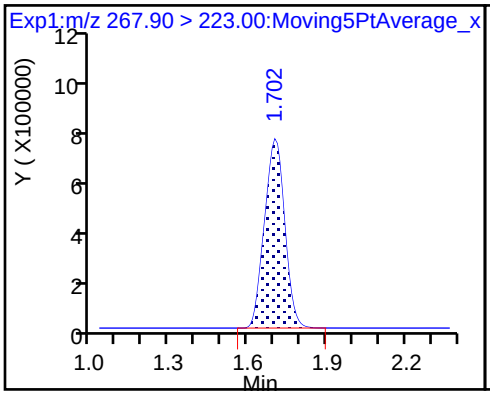
2 Perfluorobutyric acid



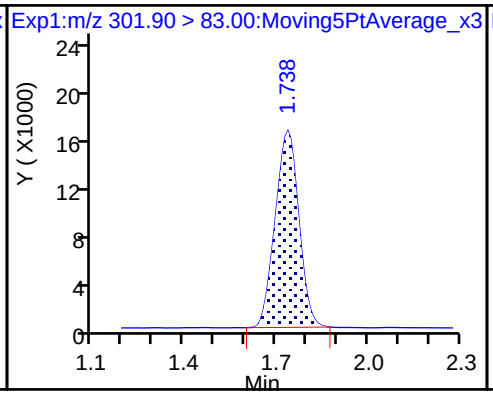
4 Perfluoropentanoic acid



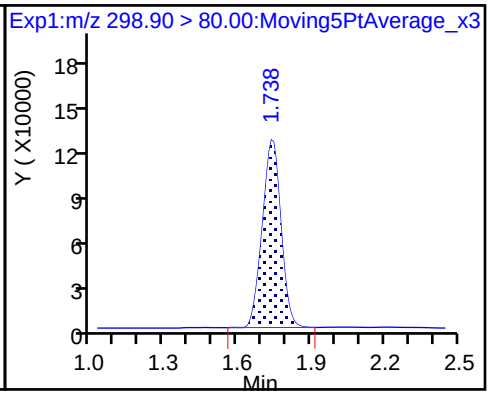
D 3 13C5-PFPeA



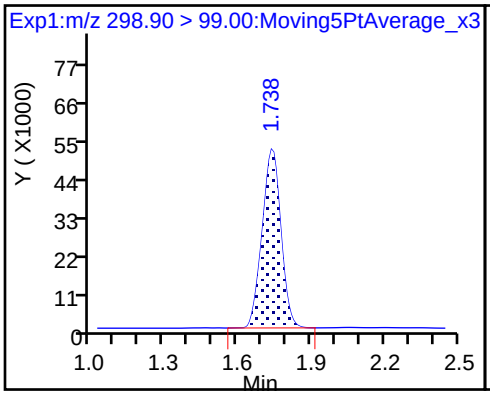
D 47 13C3-PFBS



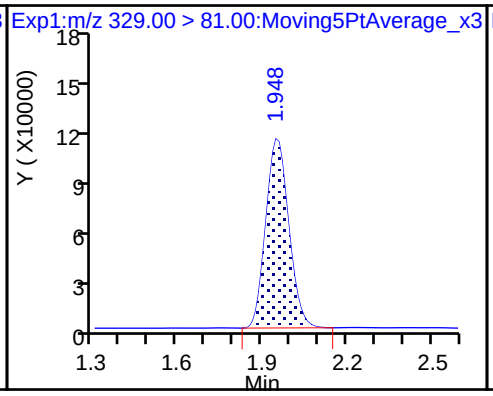
5 Perfluorobutanesulfonic acid



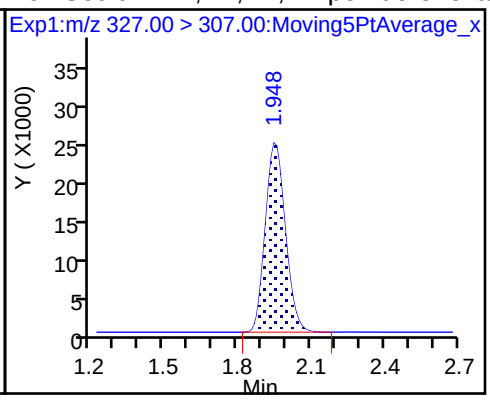
5 Perfluorobutanesulfonic acid



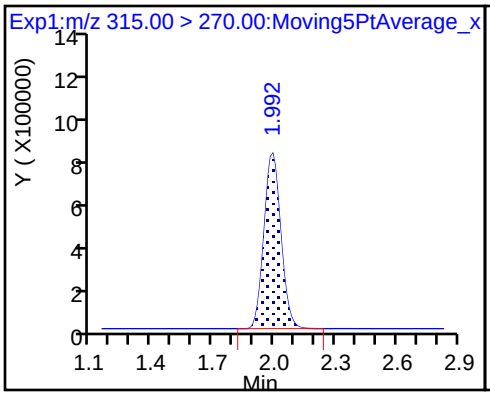
D 60 M2-4:2FTS



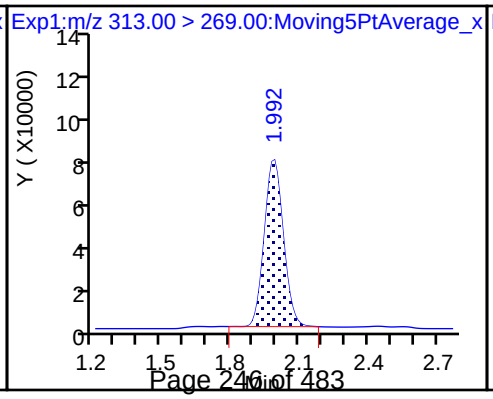
61 Sodium 1H,1H,2H,2H-perfluorohexane



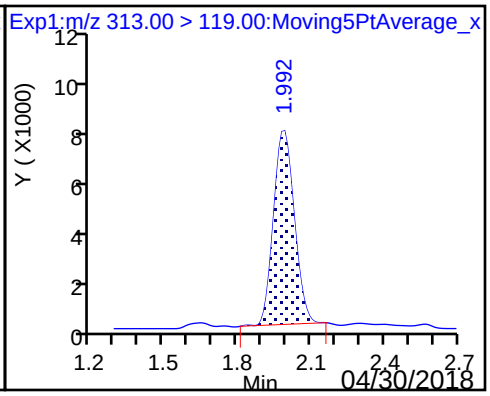
D 7 13C2 PFHxA



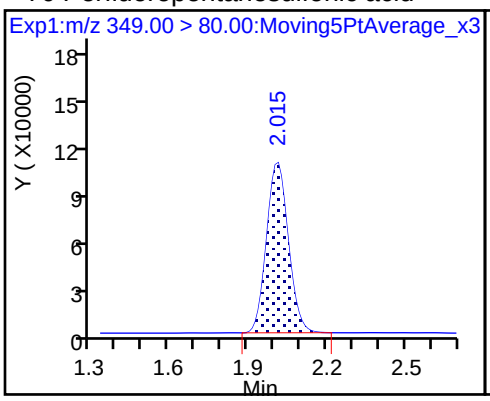
6 Perfluorohexanoic acid



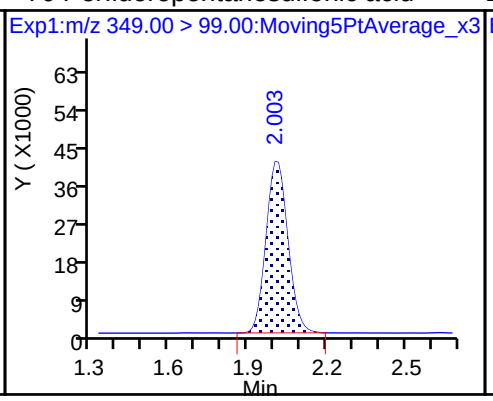
6 Perfluorohexanoic acid



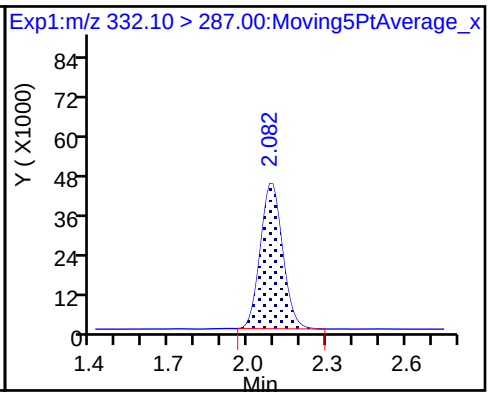
70 Perfluoropentanesulfonic acid



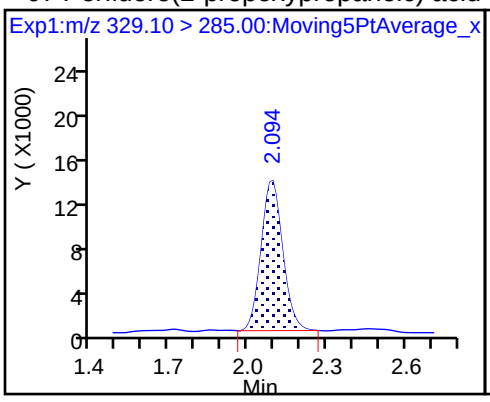
70 Perfluoropentanesulfonic acid



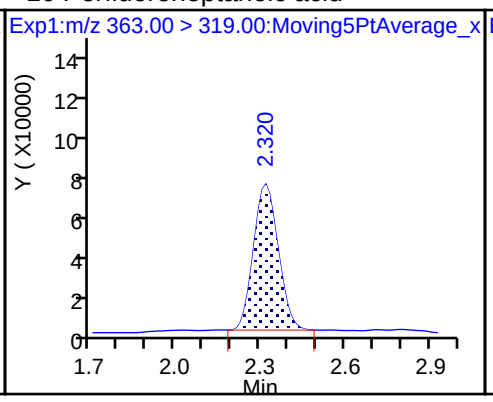
D 64 13C3 HFPO-DA



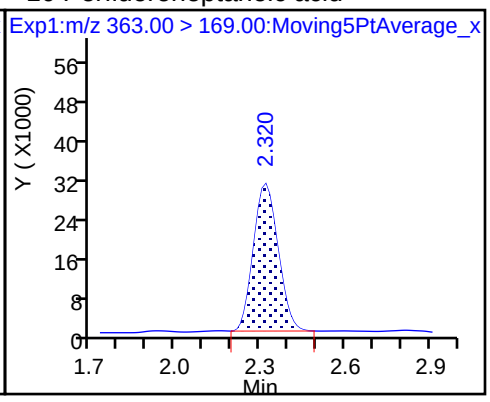
67 Perfluoro(2-propoxypropanoic) acid



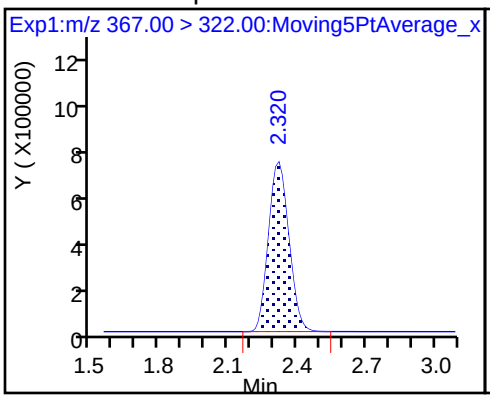
10 Perfluoroheptanoic acid



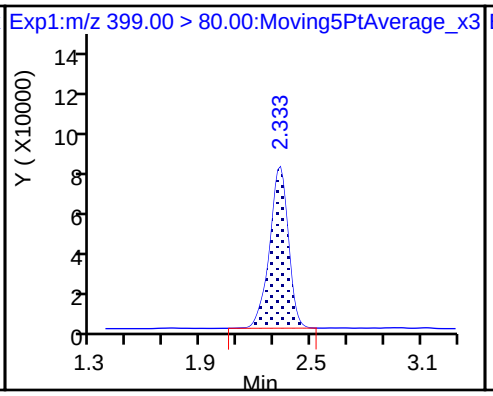
10 Perfluoroheptanoic acid



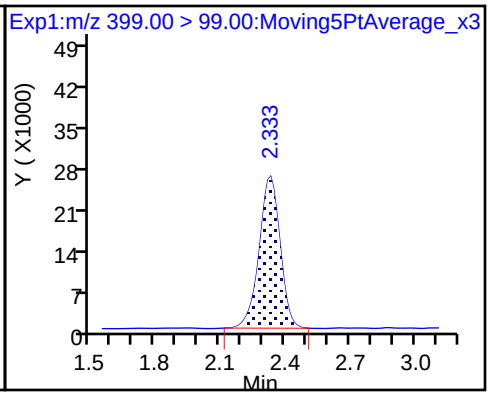
D 9 13C4-PFHpA



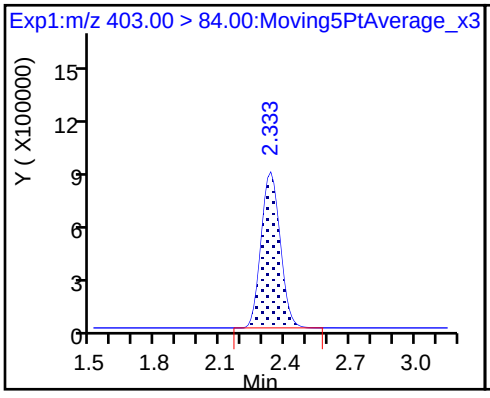
8 Perfluorohexanesulfonic acid



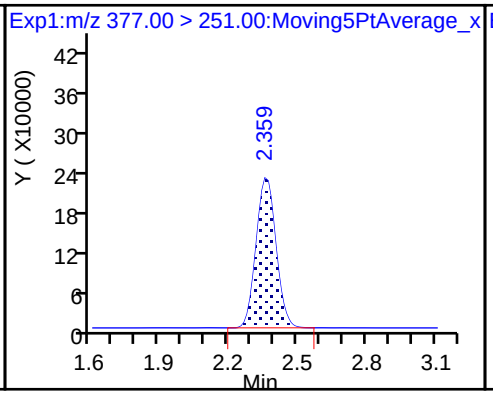
8 Perfluorohexanesulfonic acid



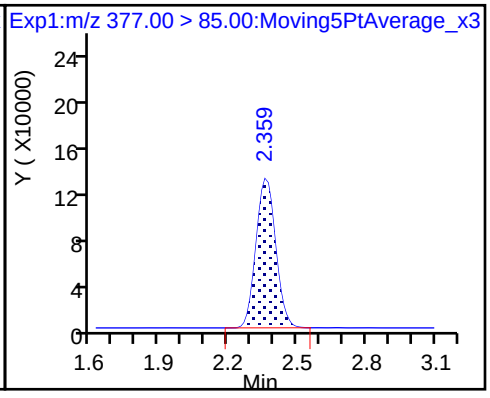
D 11 18O2 PFHxS



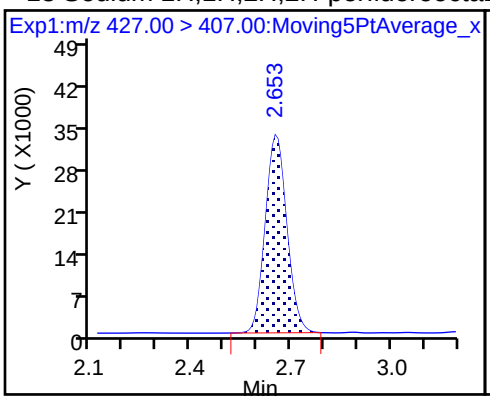
65 Adona



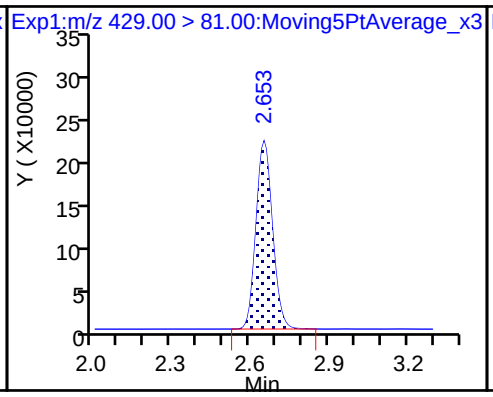
65 Adona



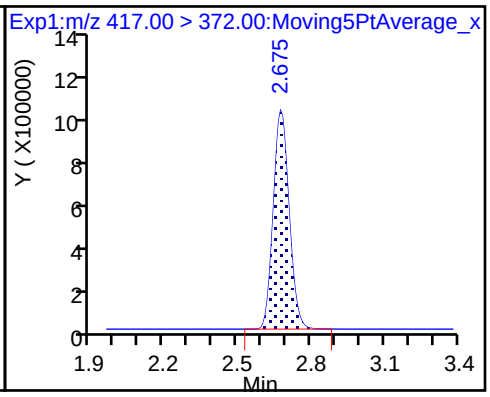
13 Sodium 1H,1H,2H,2H-perfluorooctane



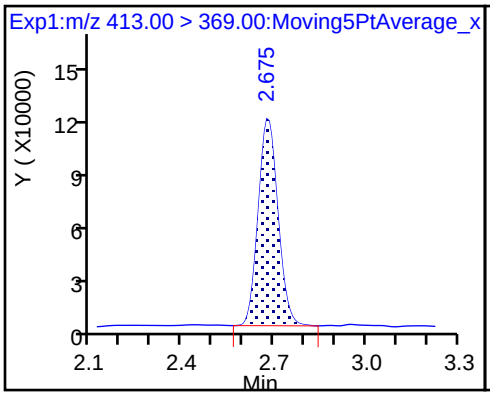
D 12 M2-6:2FTS



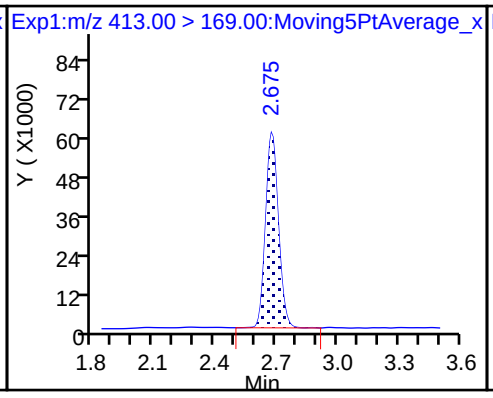
D 14 13C4 PFOA



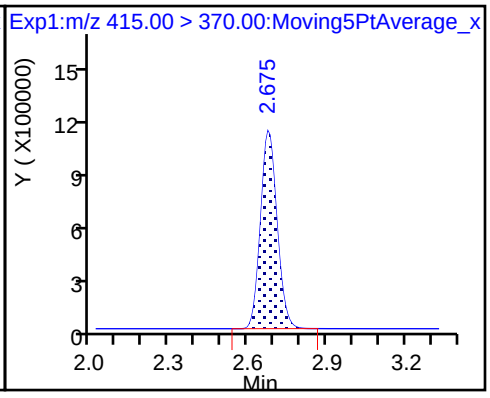
15 Perfluorooctanoic acid



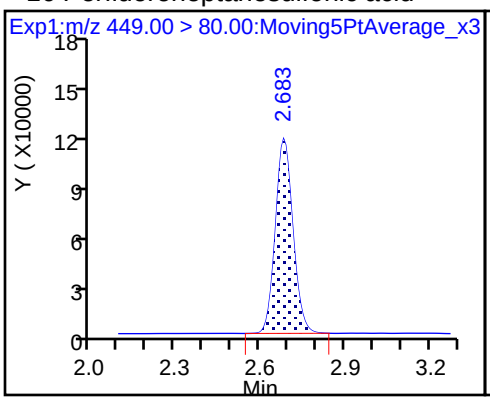
15 Perfluorooctanoic acid



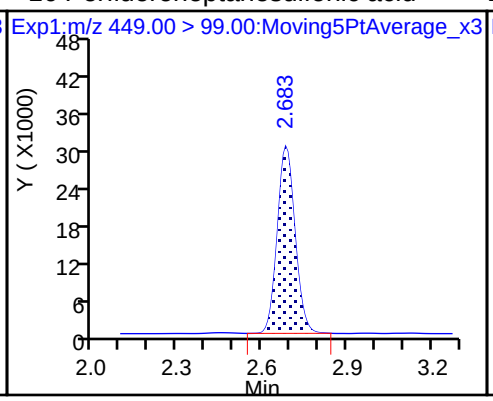
* 62 13C2-PFOA



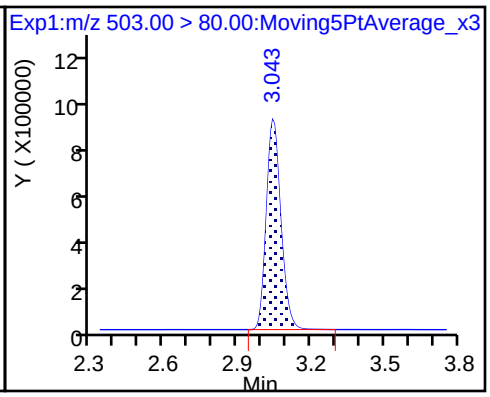
16 Perfluoroheptanesulfonic acid



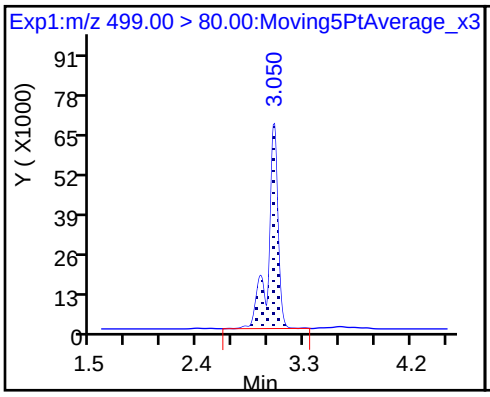
16 Perfluoroheptanesulfonic acid



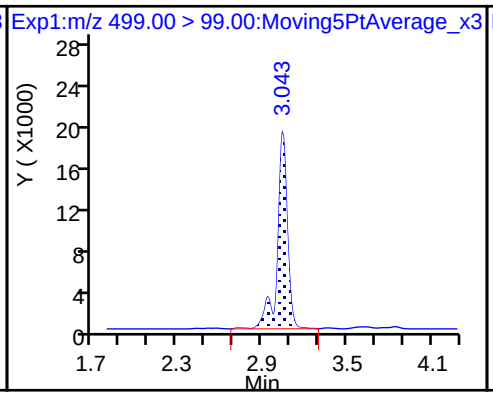
D 18 13C4 PFOS



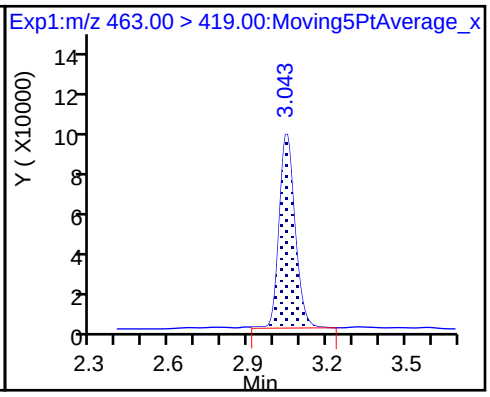
17 Perfluorooctane sulfonic acid



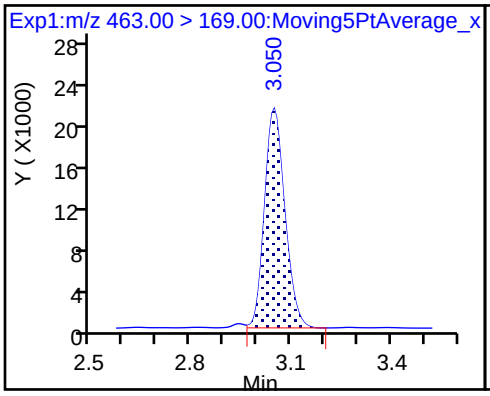
17 Perfluorooctane sulfonic acid



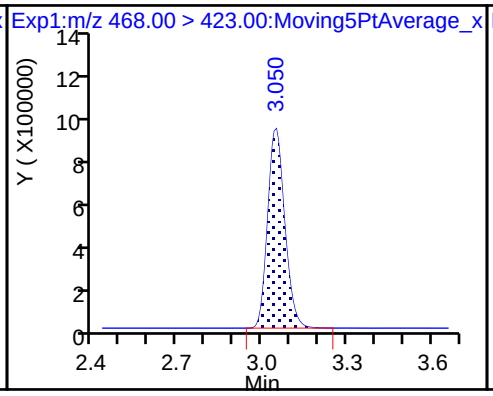
20 Perfluorononanoic acid



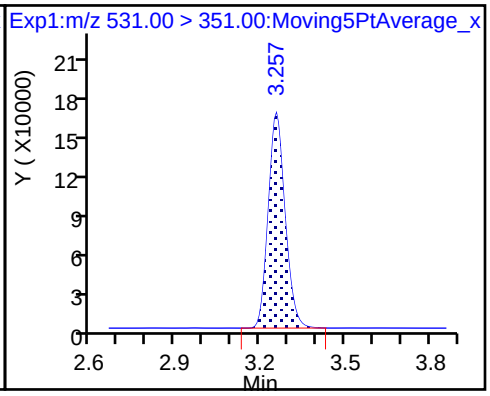
20 Perfluorononanoic acid



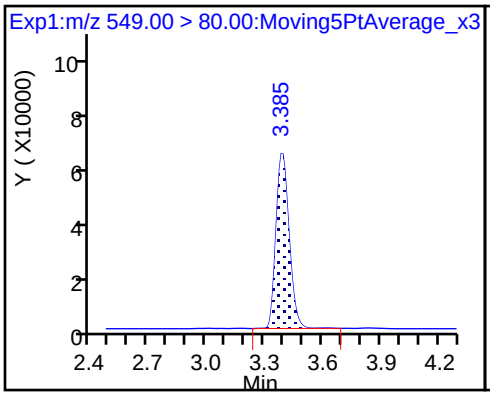
D 19 13C5 PFNA



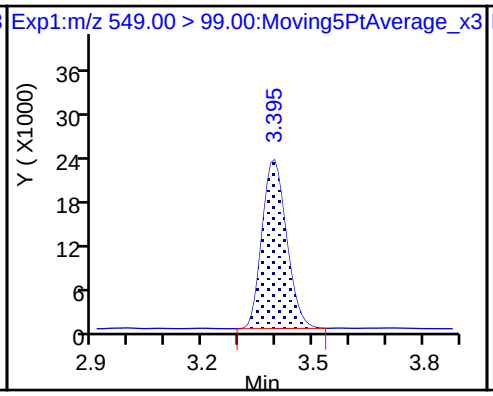
69 9-Chlorohexadecafluoro-3-oxanonane



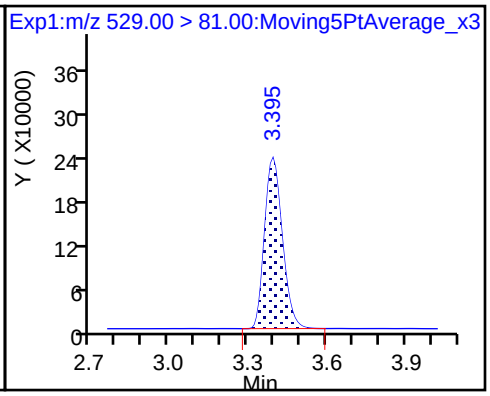
68 Perfluorononanesulfonic acid



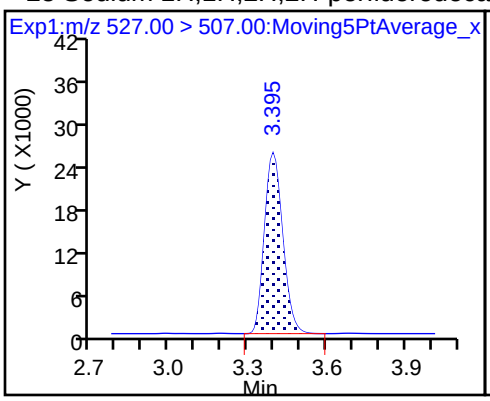
68 Perfluorononanesulfonic acid



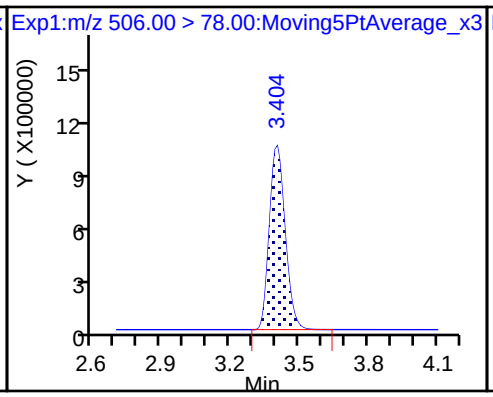
D 26 M2-8:2FTS



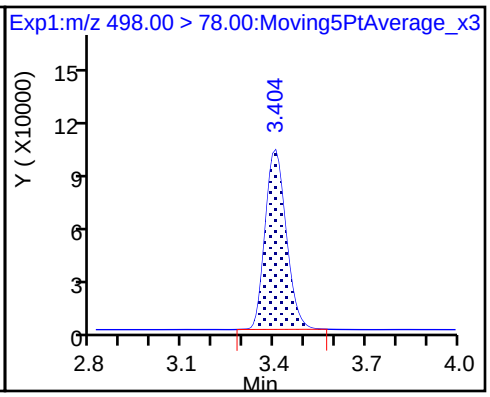
25 Sodium 1H,1H,2H,2H-perfluorodecane



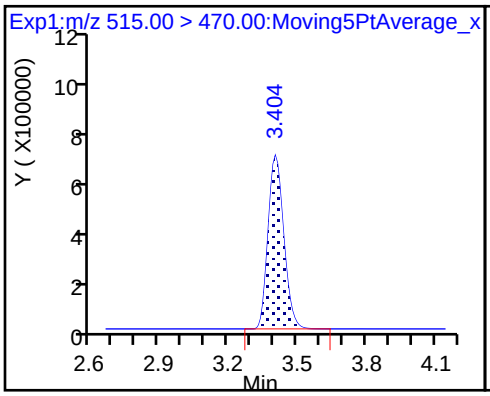
D 21 13C8 FOSA



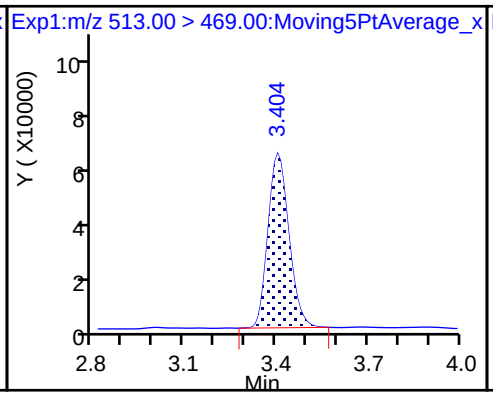
22 Perfluorooctane Sulfonamide



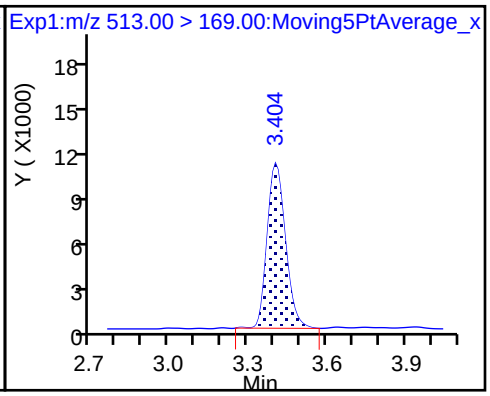
D 23 13C2 PFDA



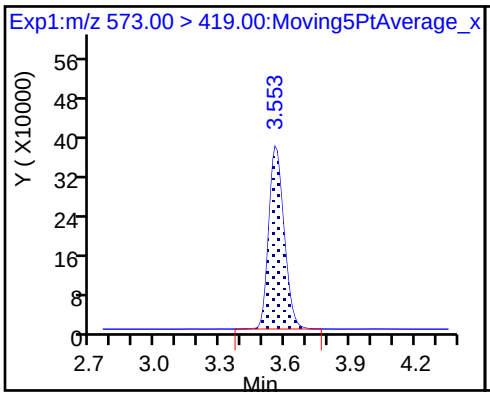
24 Perfluorodecanoic acid



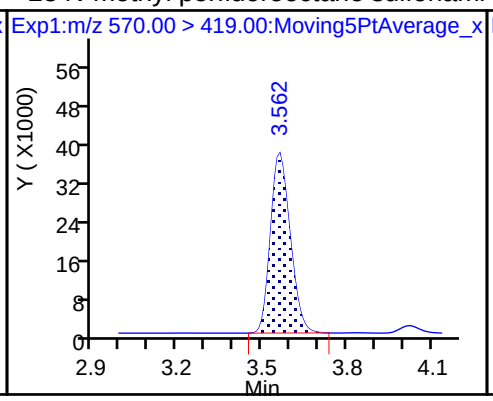
24 Perfluorodecanoic acid



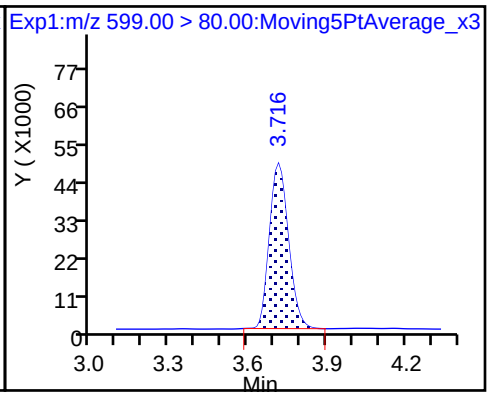
D 27 d3-NMeFOSAA



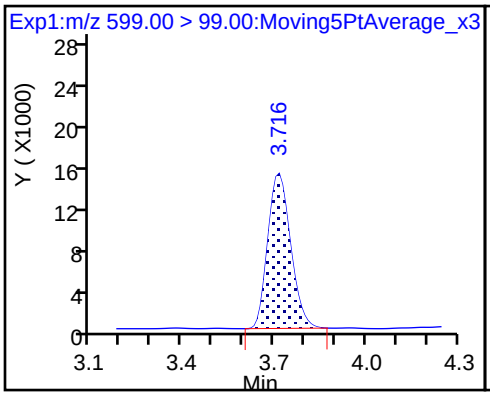
28 N-methyl perfluorooctane sulfonami



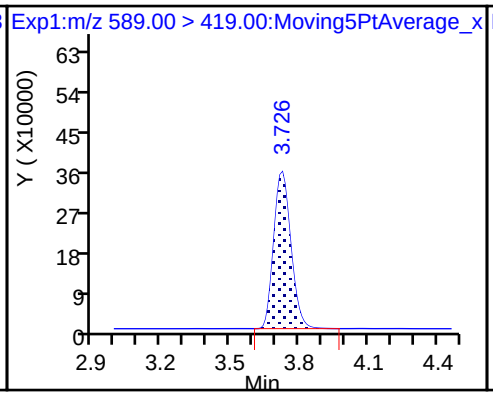
29 Perfluorodecane Sulfonic acid



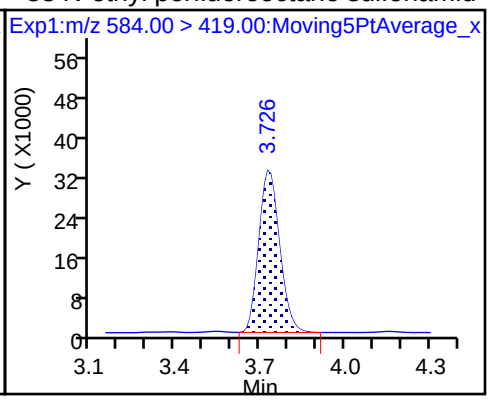
29 Perfluorodecane Sulfonic acid



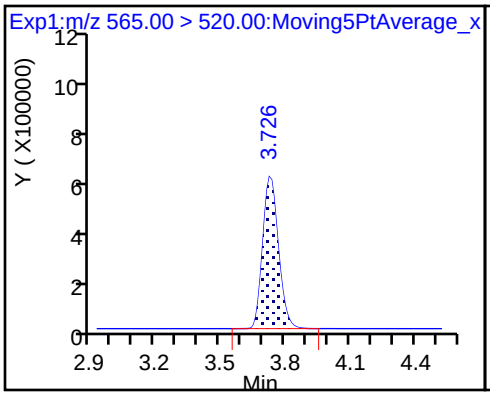
D 32 d5-NEtFOSAA



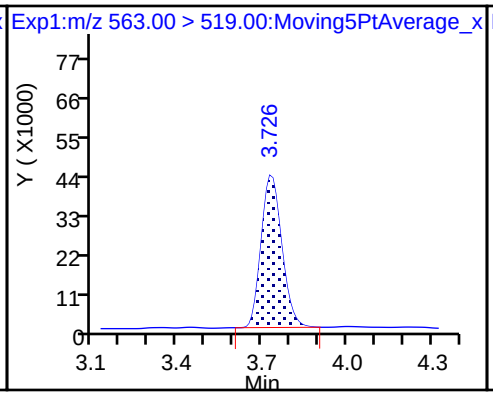
33 N-ethyl perfluorooctane sulfonamid



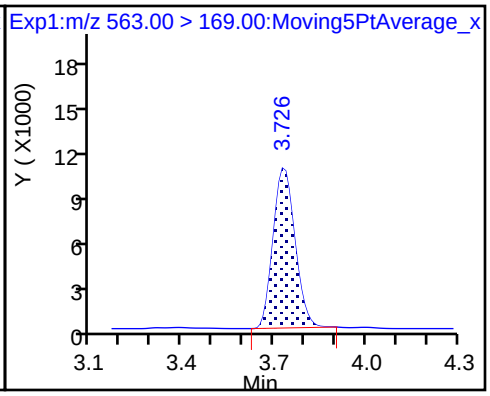
D 30 13C2 PFUnA



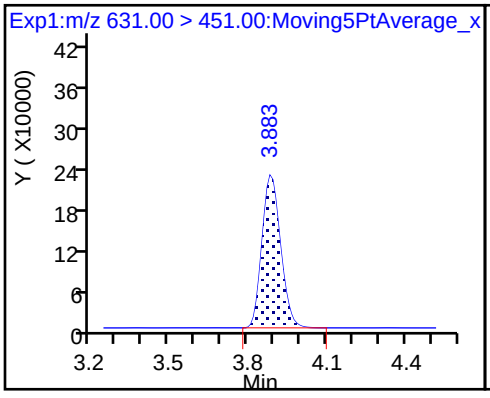
31 Perfluoroundecanoic acid



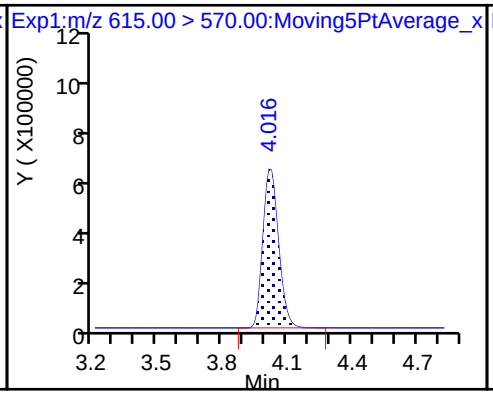
31 Perfluoroundecanoic acid



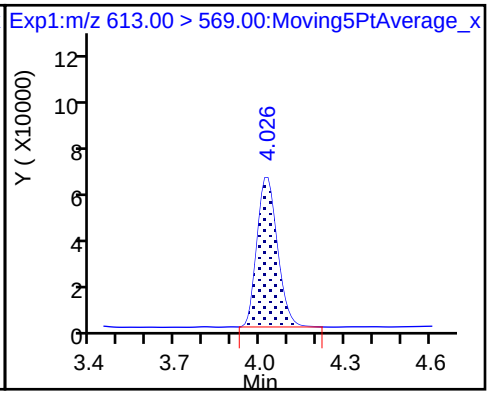
66 11-Chloroeicosafluoro-3-oxaundecan



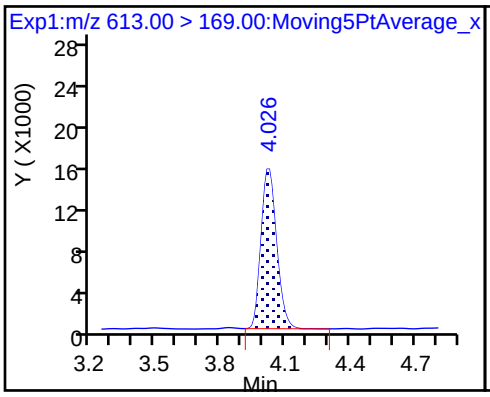
D 36 13C2 PFDoA



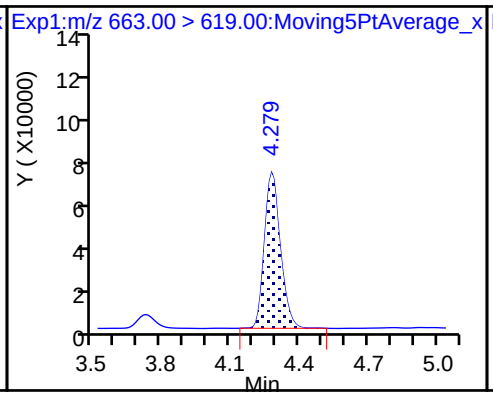
37 Perfluorododecanoic acid



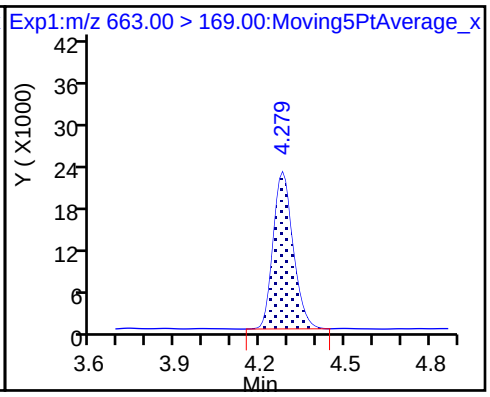
37 Perfluorododecanoic acid



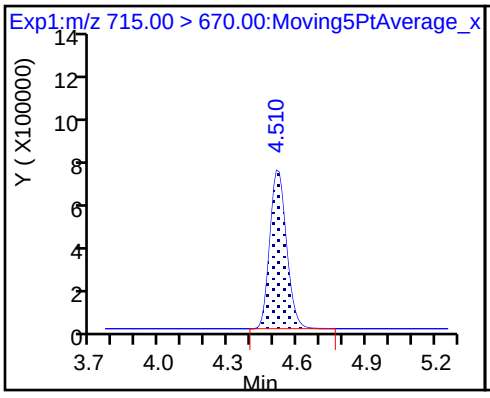
41 Perfluorotridecanoic acid



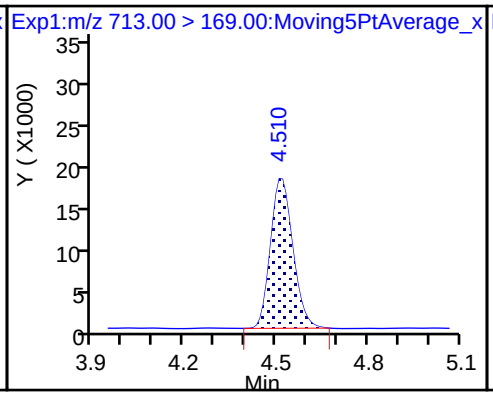
41 Perfluorotridecanoic acid



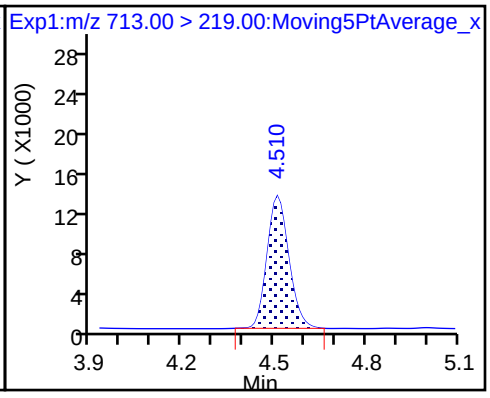
D 43 13C2-PFTeDA



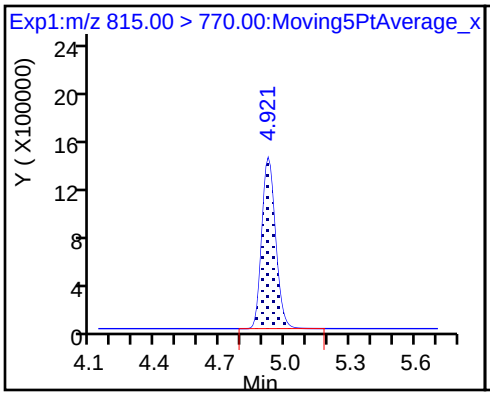
42 Perfluorotetradecanoic acid



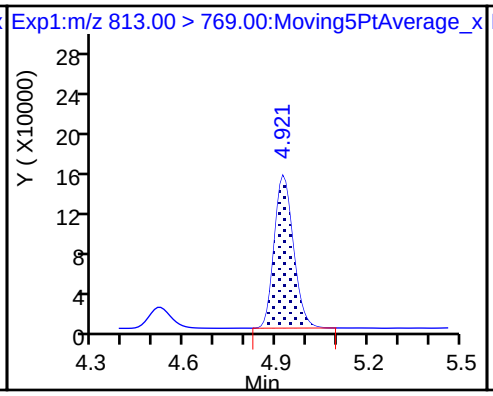
42 Perfluorotetradecanoic acid



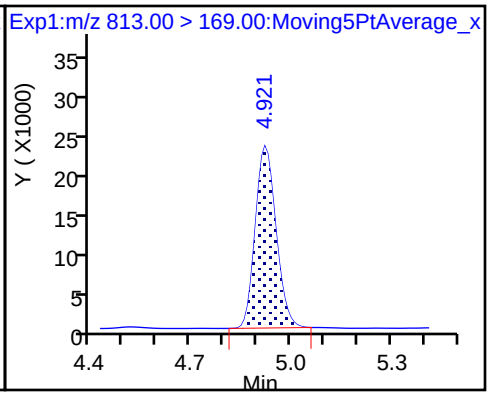
D 44 13C2-PFHxDA



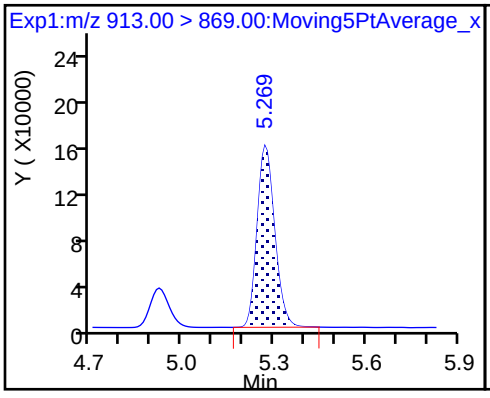
45 Perfluorohexadecanoic acid



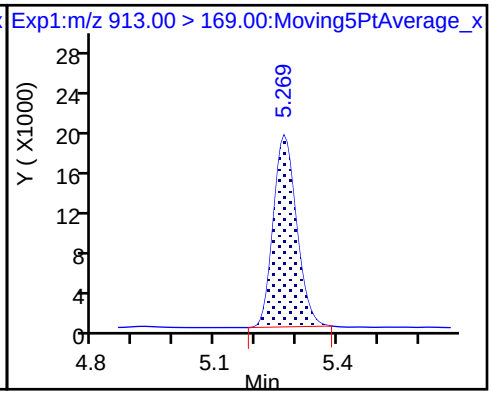
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 10-Apr-2018 19:03:10 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L4-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:08 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:18:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	6139471	2.47		98.7	48680	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	2238331	0.9816		98.2	1326	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.699	-0.005	0.557	3994638	2.49		99.6	84241	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.699	-0.005	1.000	1831380	0.9617		96.2	1761	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.735	-0.005	1.000	87216	2.37		102	926	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.003	1.005	2489261	0.8476		95.9	14542	
298.90 > 99.00	1.730	1.736	-0.006	1.000	1026363		2.43(1.25-3.74)	95.9	13875	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	538908	0.8961		95.9	32256	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	623892	2.37		101	7451	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.985	-0.003	1.000	1813678	1.02		102	3998	
313.00 > 119.00	1.982	1.985	-0.003	1.000	170514		10.64(5.03-15.10)	102	2276	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4391788	2.48		99.0	110601	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.008	-0.003	1.000	2448518	0.9128		97.3	20312	
349.00 > 99.00	2.005	2.008	-0.003	1.000	889950		2.75(1.36-4.07)	97.3	22028	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	279991	2.55		102	7988	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.087	-0.003	1.000	295687	0.9479		94.8	2375	
D 9 13C4-PFHpA										
367.00 > 322.00	2.308	2.314	-0.006	1.000	4282212	2.48		99.2	70470	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.314	-0.006	1.000	1720489	1.00		100	2264	
363.00 > 169.00	2.308	2.314	-0.006	1.000	645805		2.66(1.13-3.40)	100	2862	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.323	-0.002	1.000	2023389	0.8443		92.8	6640	
399.00 > 99.00	2.321	2.323	-0.002	1.000	680836		2.97(1.50-4.49)	92.8	7311	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.327	-0.006	1.000	5007633	2.35		99.4	102844	
65 Adona										
377.00 > 251.00	2.360	2.360	0.0	1.000	5740779	1.11		111	74377	
377.00 > 85.00	2.360	2.360	0.0	1.000	3274137		1.75(0.84-2.53)	111	78247	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.649	-0.005	1.000	892700	2.41		102	13338	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.649	-0.005	1.000	594490	0.9356		98.7	14992	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4283435	2.50		99.9	79564	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.674	-0.007		4623888	2.50			81419	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.674	-0.007	1.000	1852208	0.9356		93.6	1057	
413.00 > 169.00	2.667	2.674	-0.007	1.000	965583		1.92(0.84-2.52)	93.6	3850	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.680	-0.005	1.000	1862796	0.9363		98.4	15147	
449.00 > 99.00	2.675	2.680	-0.005	1.000	507863		3.67(1.94-5.82)	98.4	12696	
D 18 13C4 PFOS										
503.00 > 80.00	3.039	3.041	-0.002	1.000	3581436	2.40		100	25084	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.039	3.042	-0.003	1.000	1466540	0.8996		96.9	6157	
499.00 > 99.00	3.039	3.042	-0.003	1.000	330120		4.44(2.31-6.93)	96.9	8806	
20 Perfluorononanoic acid										
463.00 > 419.00	3.039	3.043	-0.004	1.000	1529838	1.00		99.7	3704	
463.00 > 169.00	3.039	3.043	-0.004	1.000	361461		4.23(1.90-5.69)	99.7	8802	
D 19 13C5 PFNA										
468.00 > 423.00	3.039	3.045	-0.006	1.000	3677661	2.49		99.8	74488	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.247	3.253	-0.006	1.000	2661617	0.9422		101	59184	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.380	3.388	-0.008	1.000	1034931	0.8640		90.0	11093	
549.00 > 99.00	3.380	3.388	-0.008	1.000	415423		2.49(1.33-3.97)	90.0	9871	
D 26 M2-8:2FTS										
529.00 > 81.00	3.389	3.390	-0.001	1.000	1093693	2.46		103	11489	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.389	3.393	-0.004	1.000	537990	0.9310		97.2	28178	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.397	-0.008	1.000	4725832	2.54		101	62563	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.401	-0.002	1.003	1898032	0.99		99.3	33374	
D 23 13C2 PFDA										
515.00 > 470.00	3.399	3.401	-0.002	1.000	3187733	2.57		103	83926	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.399	3.402	-0.003	1.000	1275776	0.9699		97.0	5989	
513.00 > 169.00	3.399	3.402	-0.003	1.000	223055		5.72(2.36-7.09)	97.0	4231	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.548	3.553	-0.005	1.000	1818526	2.59		104	25217	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.557	3.558	-0.001	1.003	694281	0.9570		95.7	4614	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.709	3.715	-0.006	1.000	935700	0.9618		99.8	9931	
599.00 > 99.00	3.709	3.715	-0.006	1.000	313308		2.99(1.39-4.16)	99.8	9034	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.720	3.722	-0.002	1.000	1716798	2.48		99.0	15143	
D 30 13C2 PFUnA										
565.00 > 520.00	3.720	3.727	-0.007	1.000	2598322	2.43		97.2	73211	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.720	3.727	-0.007	1.000	636880	0.99		99.2	12406	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.720	3.727	-0.007	1.000	822546	0.9365		93.6	3940	
563.00 > 169.00	3.720	3.727	-0.007	1.000	193601		4.25(2.12-6.36)	93.6	4746	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.876	3.883	-0.007	1.000	4412145	1.01		107	64014	
D 36 13C2 PFDoA										
615.00 > 570.00	4.009	4.017	-0.008	1.000	3058842	2.65		106	28121	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.020	4.020	0.0	1.003	1173427	0.9196		92.0	1328	
613.00 > 169.00	4.009	4.020	-0.011	1.000	277484		4.23(2.13-6.40)	92.0	3949	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.272	4.278	-0.006	1.000	1346073	0.9052		90.5	1176	
663.00 > 169.00	4.272	4.278	-0.006	1.000	415749		3.24(1.25-3.76)	90.5	4126	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.513	-0.001	1.000	3824690	2.61		105	24410	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.513	-0.001	1.000	376531	0.9800		98.0	4038	
713.00 > 219.00	4.502	4.513	-0.011	0.998	255558		1.47(0.71-2.13)	98.0	4003	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.914	4.918	-0.004	1.000	5981114	2.51		100	18136	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.914	4.920	-0.006	1.000	2337041	1.01		101	753	
813.00 > 169.00	4.914	4.920	-0.006	1.000	365367		6.40(2.86-8.58)	101	2438	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.263	5.268	-0.005	1.000	2359770	0.9824		98.2	640	
913.00 > 169.00	5.263	5.268	-0.005	1.000	281134		8.39(3.83-11.48)	98.2	1988	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:09 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_005.d

Injection Date: 10-Apr-2018 19:03:10 Instrument ID: A8_N

Lims ID: IC L4 Full

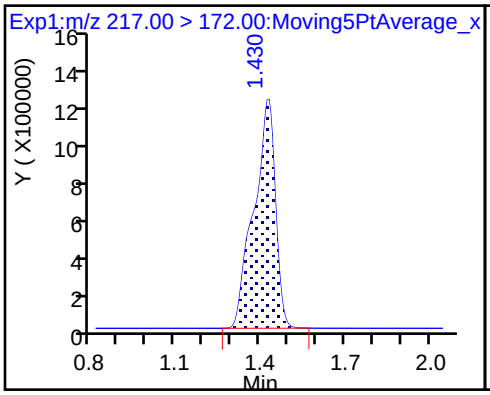
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5

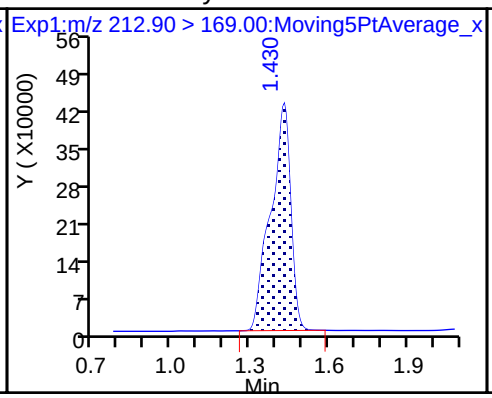
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

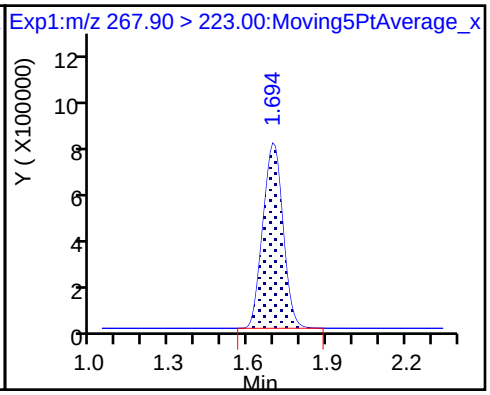
D 1 13C4 PFBA



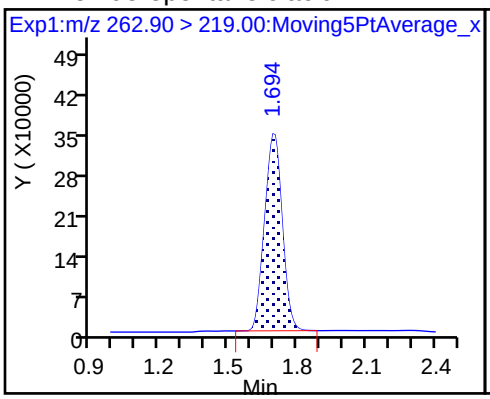
2 Perfluorobutyric acid



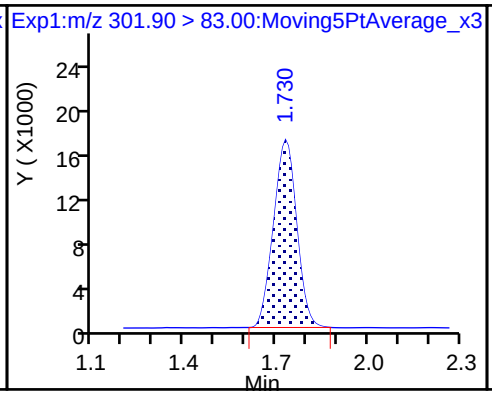
D 3 13C5-PFPeA



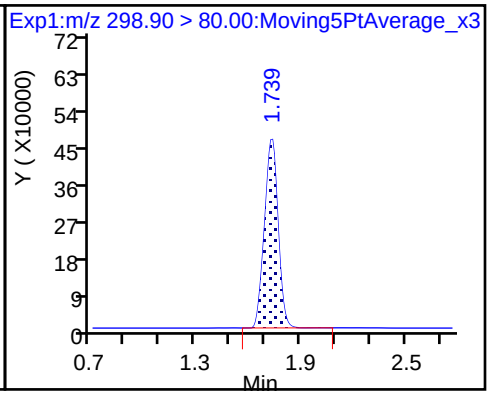
4 Perfluoropentanoic acid



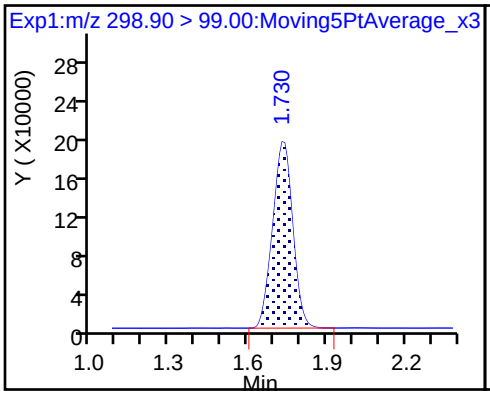
D 47 13C3-PFBS



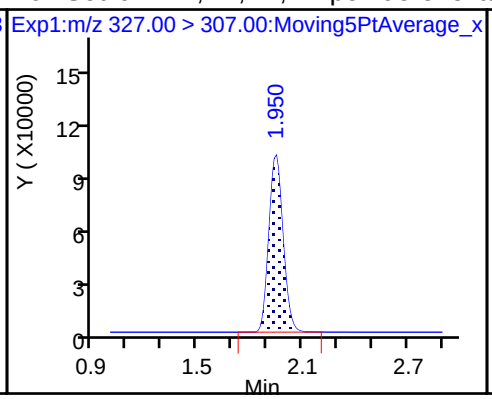
5 Perfluorobutanesulfonic acid



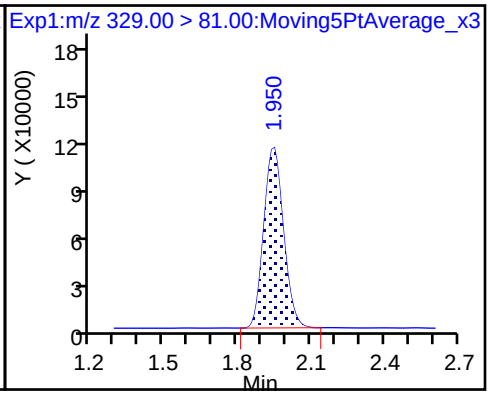
5 Perfluorobutanesulfonic acid



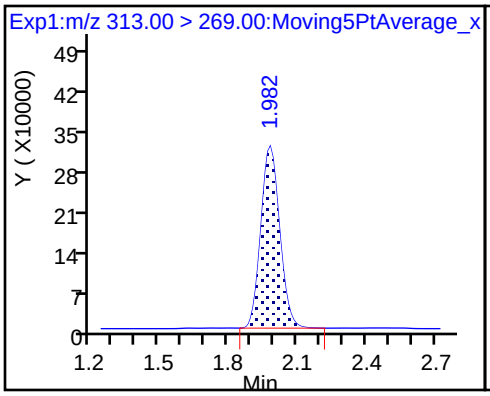
61 Sodium 1H,1H,2H,2H-perfluorohexane



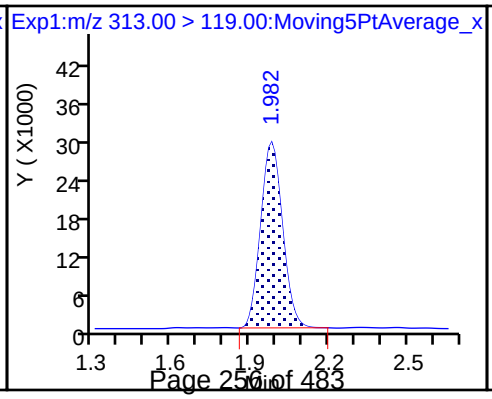
D 60 M2-4:2FTS



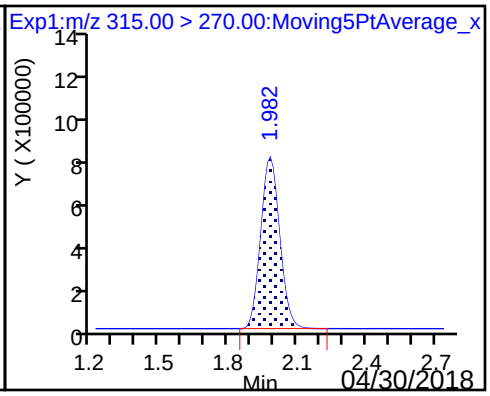
6 Perfluorohexanoic acid



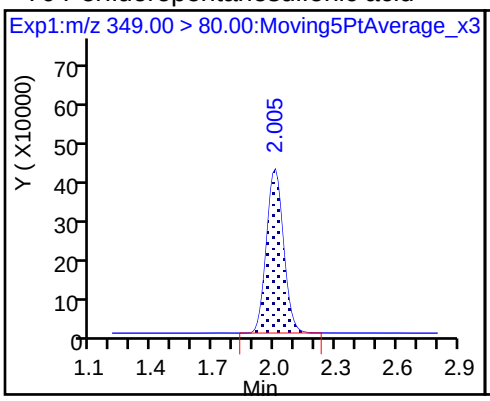
6 Perfluorohexanoic acid



D 7 13C2 PFHxA



70 Perfluoropentanesulfonic acid



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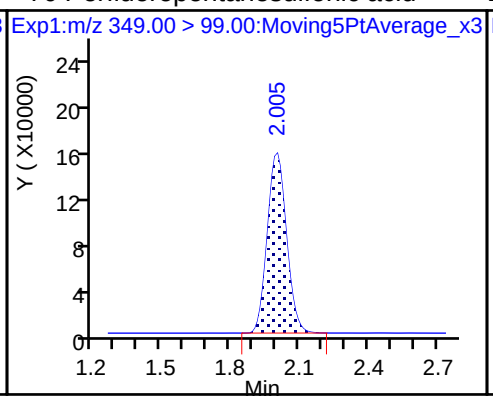
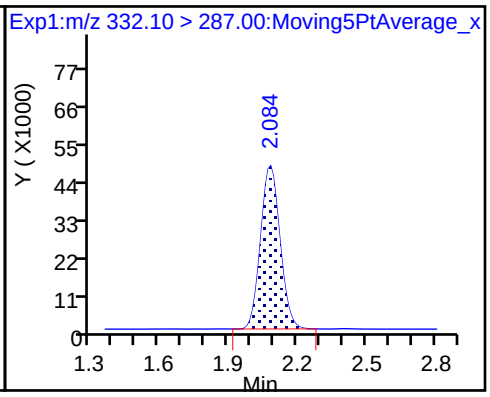
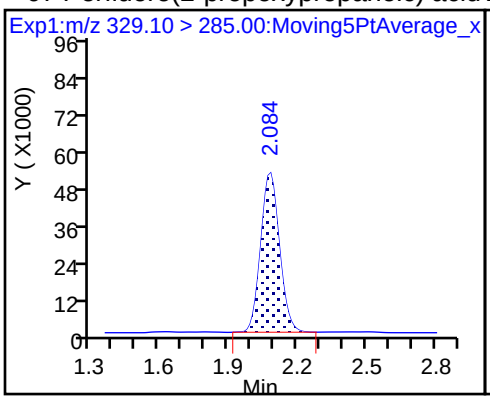


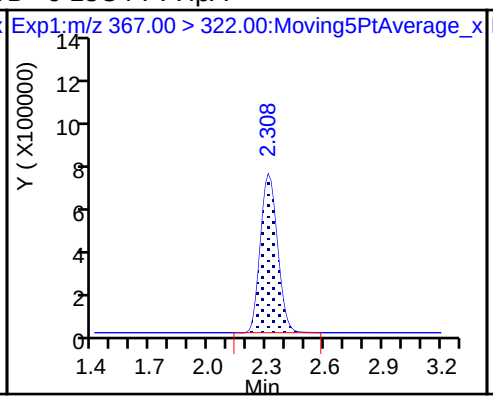
D 64 13C3 HFPO-DA



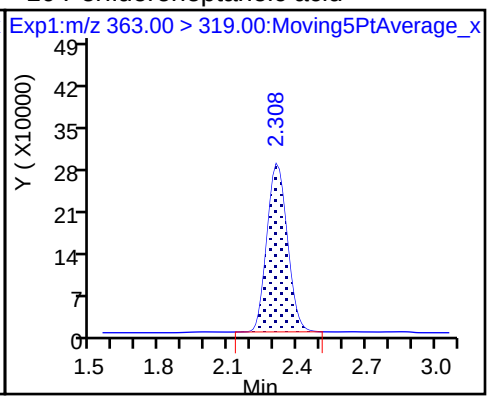
67 Perfluoro(2-propoxypropanoic) acid



D 9 13C4-PFHpA



10 Perfluoroheptanoic acid



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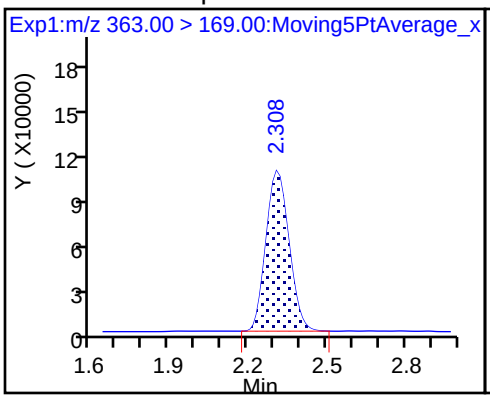
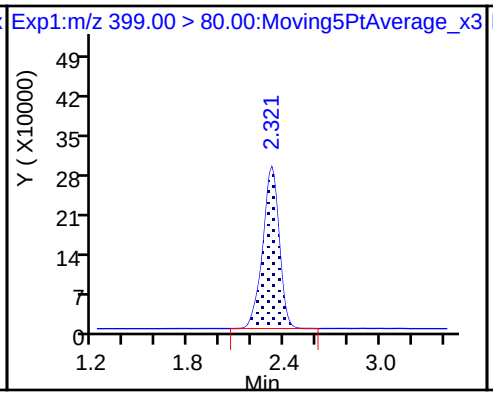


8 Perfluorohexanesulfonic acid



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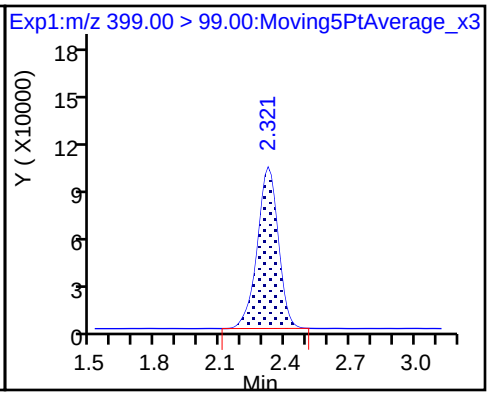
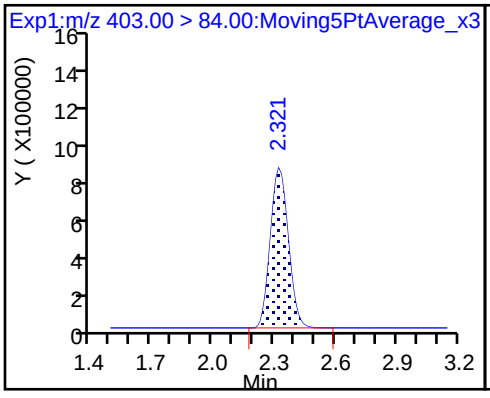
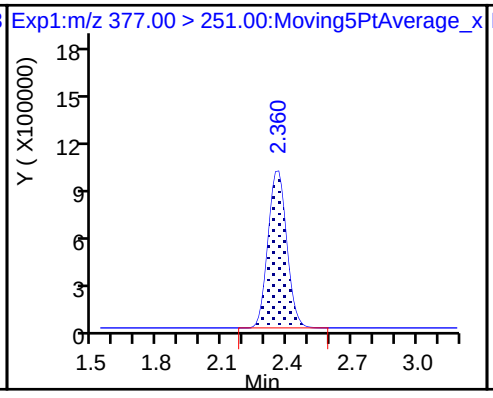


D 11 18O2 PFHxS



65 Adona



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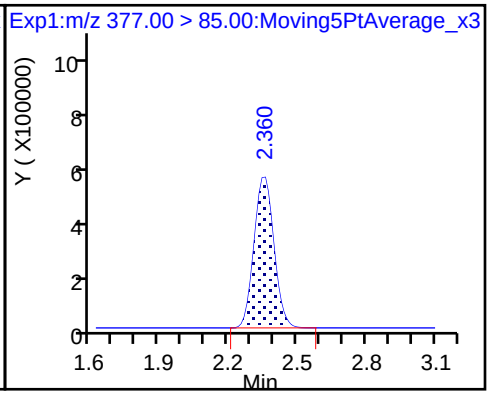
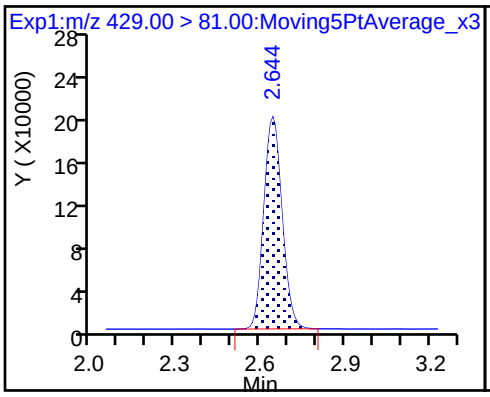
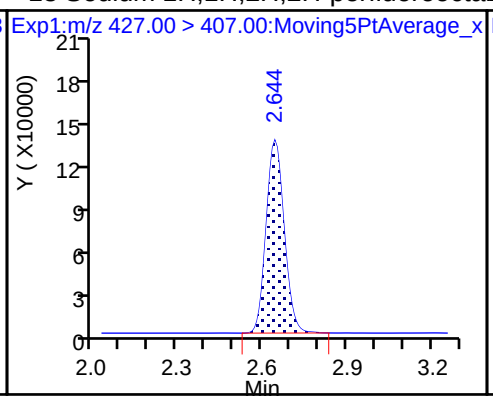


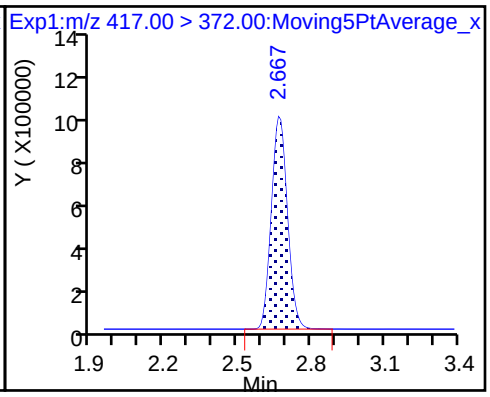
D 12 M2-6:2FTS



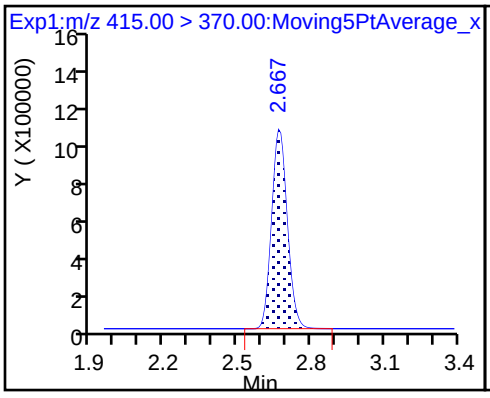
13 Sodium 1H,1H,2H,2H-perfluorooctane



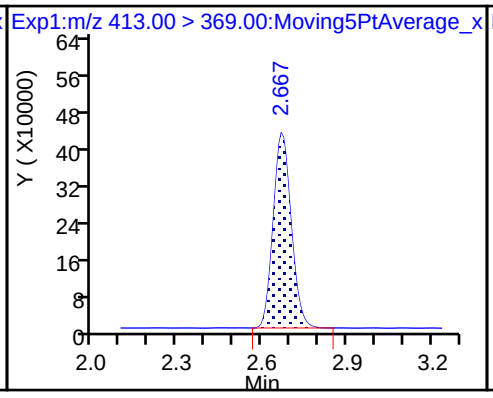
D 14 13C4 PFOA



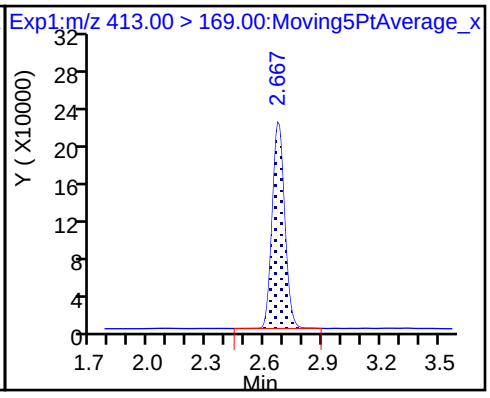
* 62 13C2-PFOA



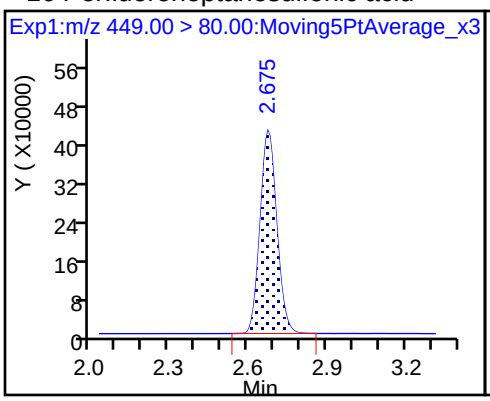
15 Perfluorooctanoic acid



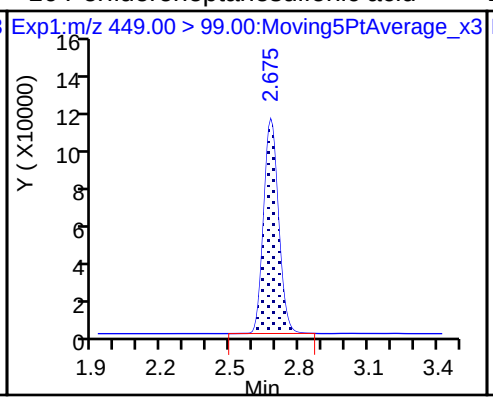
15 Perfluorooctanoic acid



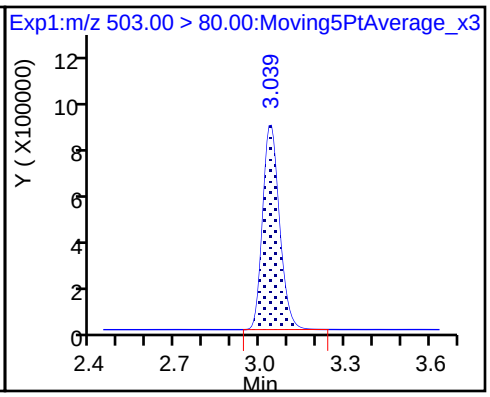
16 Perfluoroheptanesulfonic acid



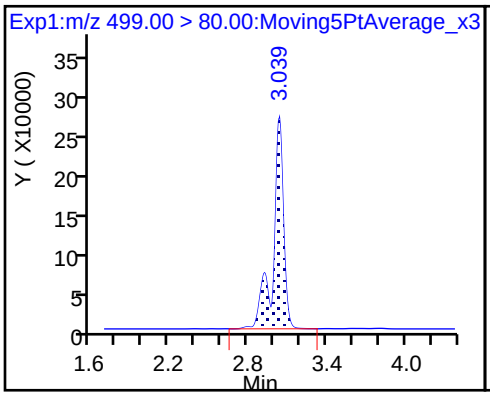
16 Perfluoroheptanesulfonic acid



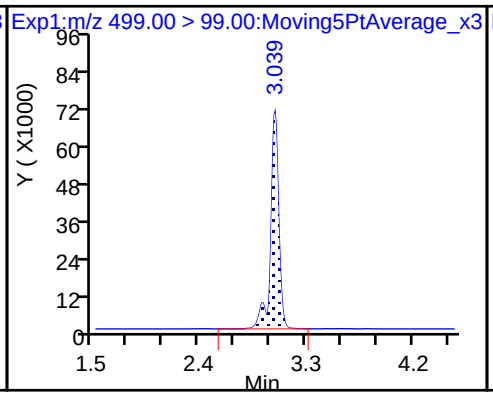
D 18 13C4 PFOS



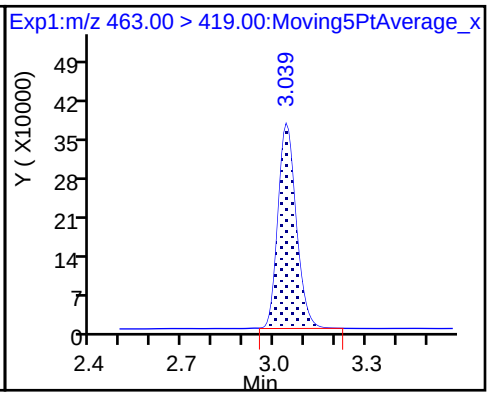
17 Perfluorooctane sulfonic acid



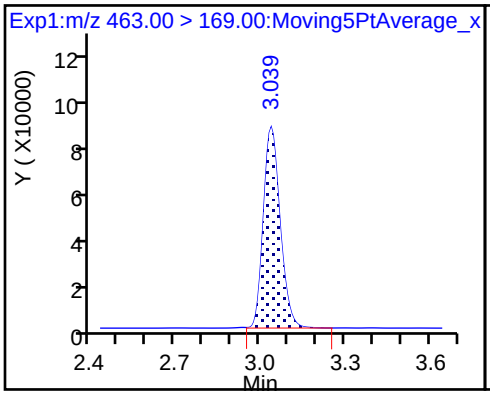
17 Perfluorooctane sulfonic acid



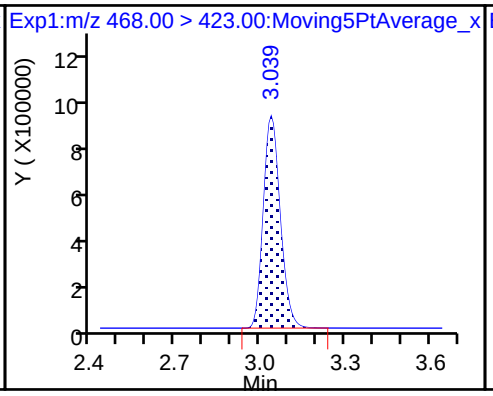
20 Perfluorononanoic acid



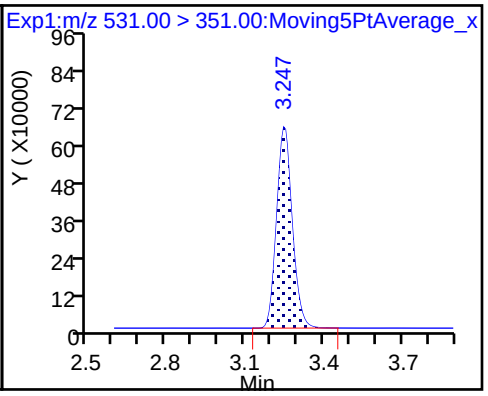
20 Perfluorononanoic acid



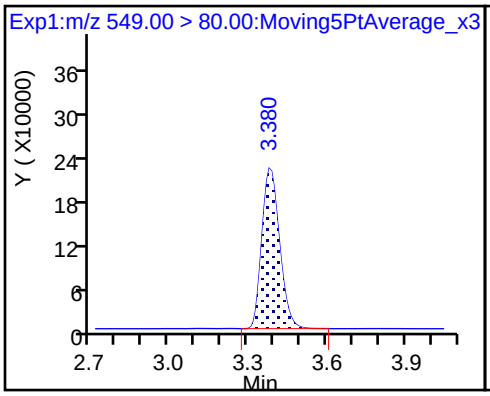
D 19 13C5 PFNA



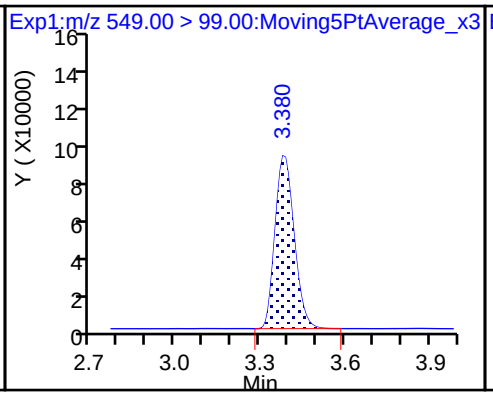
69 9-Chlorohexadecafluoro-3-oxanonane



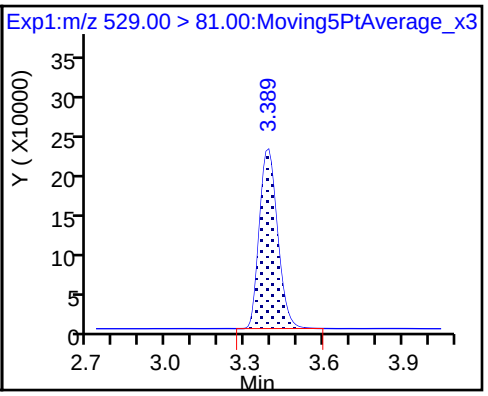
68 Perfluorononanesulfonic acid



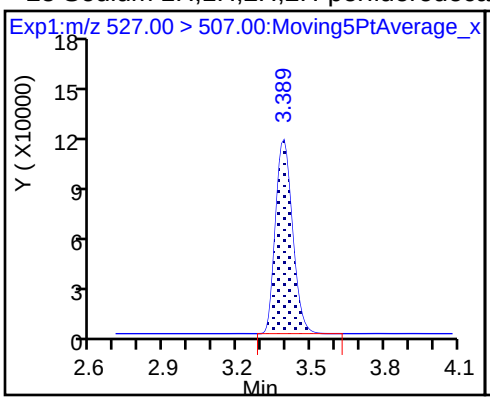
68 Perfluorononanesulfonic acid



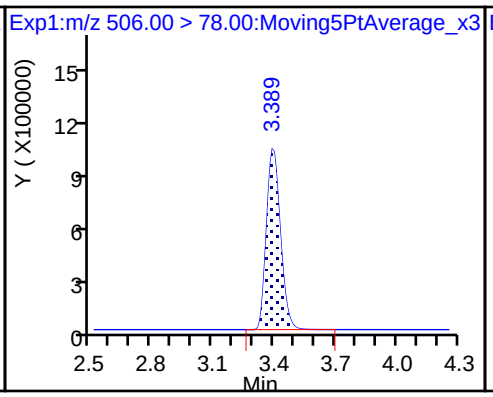
D 26 M2-8:2FTS



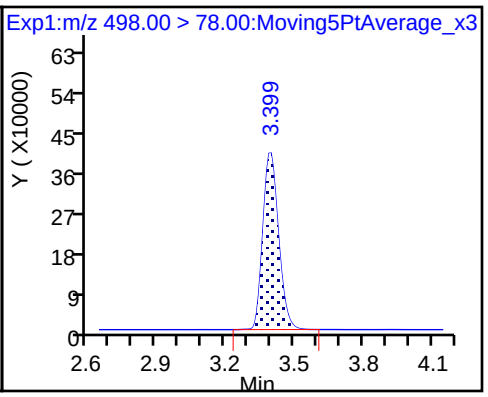
25 Sodium 1H,1H,2H,2H-perfluorodecane



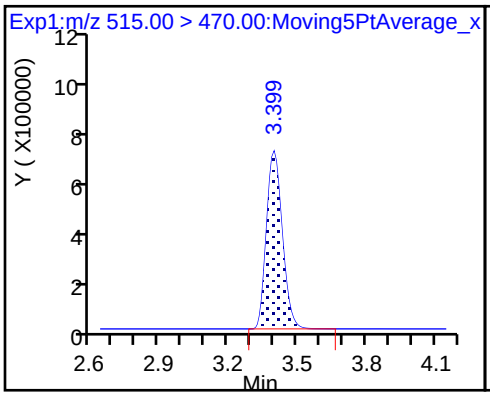
D 21 13C8 FOSA



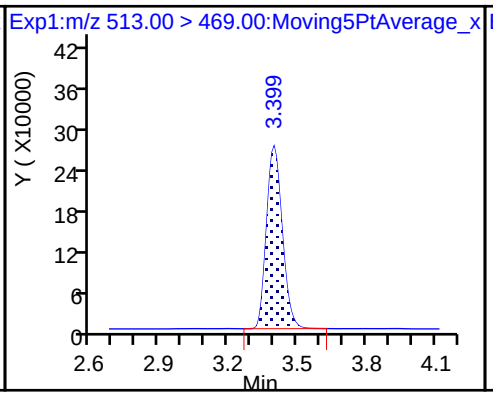
22 Perfluorooctane Sulfonamide



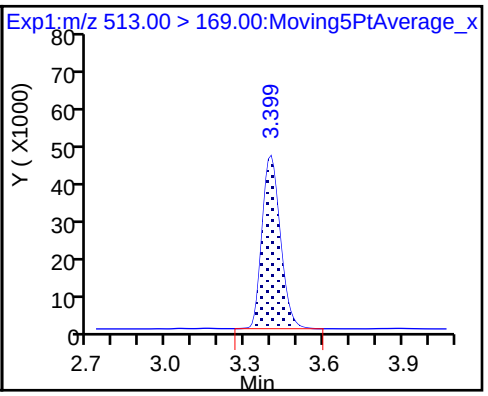
D 23 13C2 PFDA



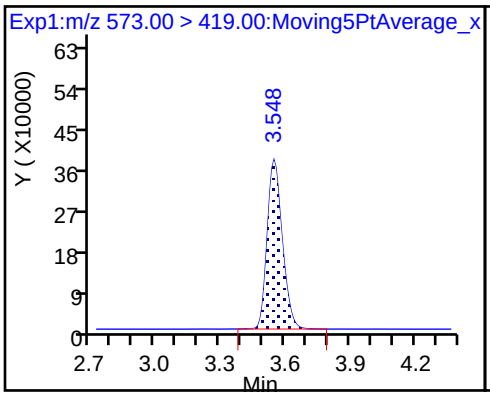
24 Perfluorodecanoic acid



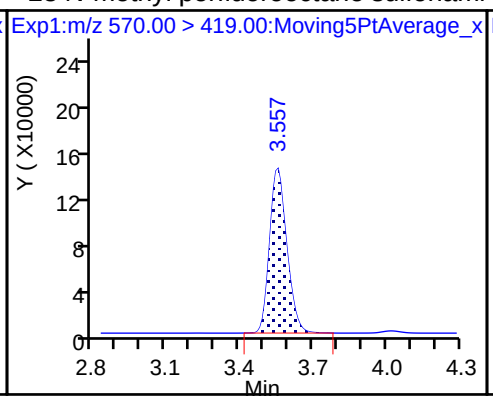
24 Perfluorodecanoic acid



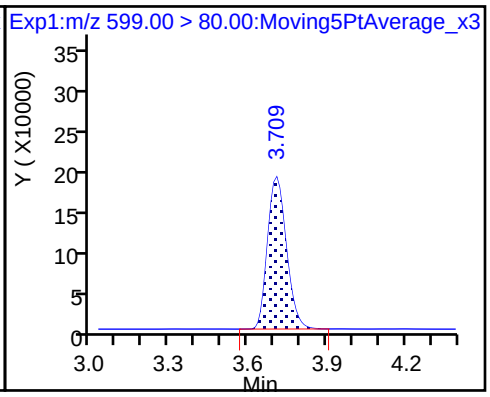
D 27 d3-NMeFOSAA



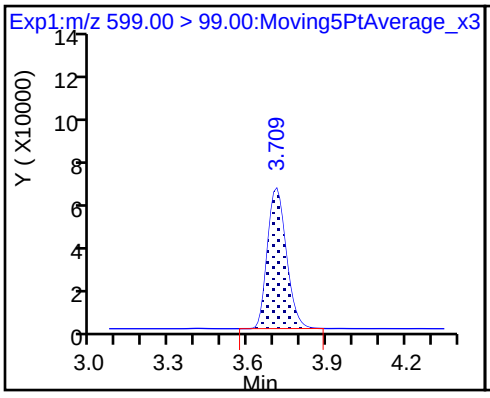
28 N-methyl perfluorooctane sulfonami



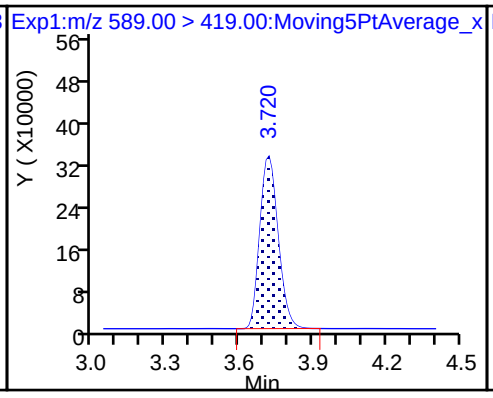
29 Perfluorodecane Sulfonic acid



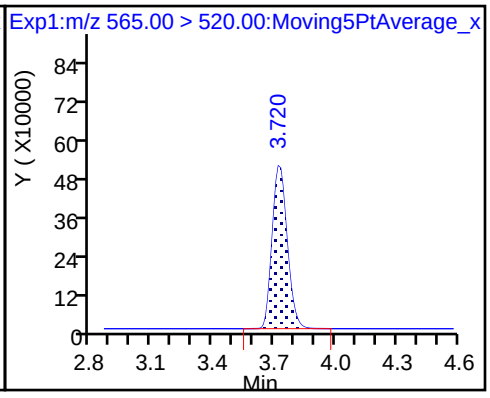
29 Perfluorodecane Sulfonic acid



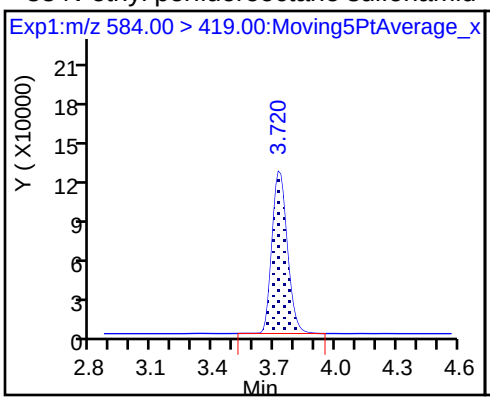
D 32 d5-NEtFOSAA



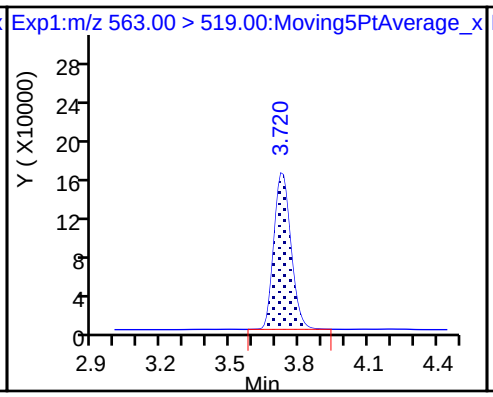
D 30 13C2 PFUnA



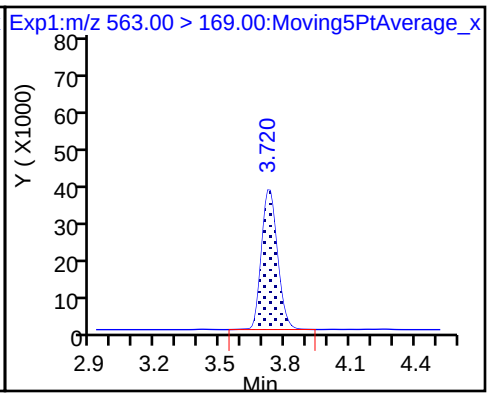
33 N-ethyl perfluorooctane sulfonamid



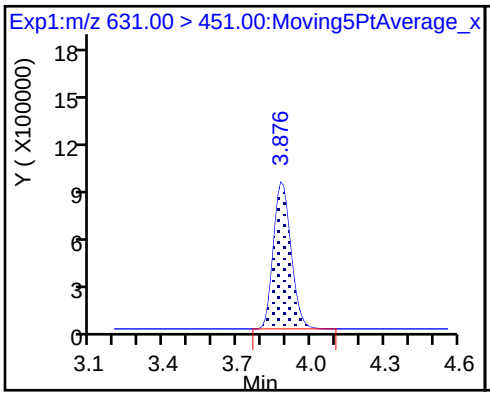
31 Perfluoroundecanoic acid



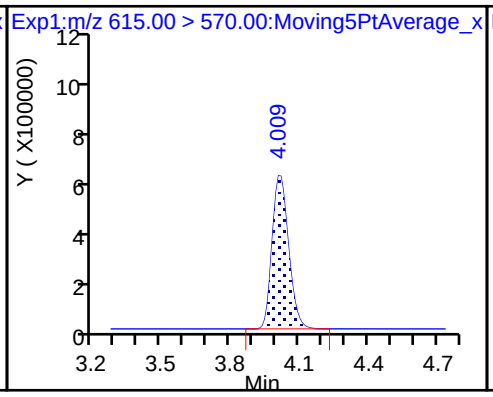
31 Perfluoroundecanoic acid



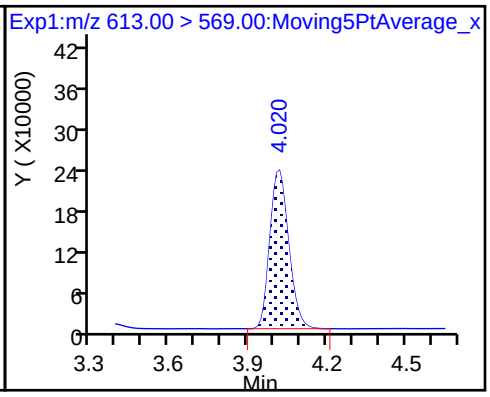
66 11-Chloroeicosafluoro-3-oxaundecan



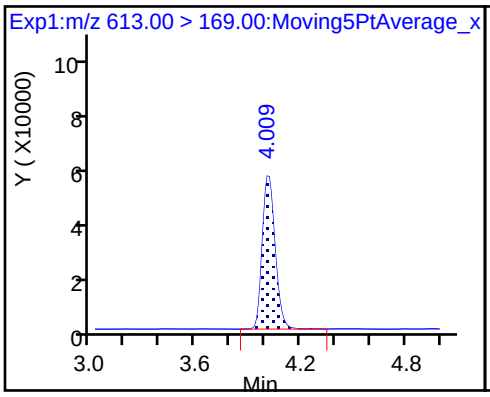
D 36 13C2 PFDoA



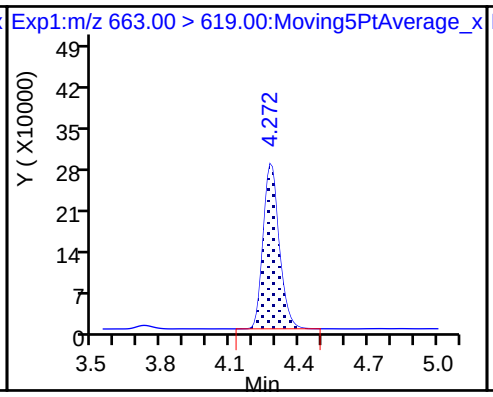
37 Perfluorododecanoic acid



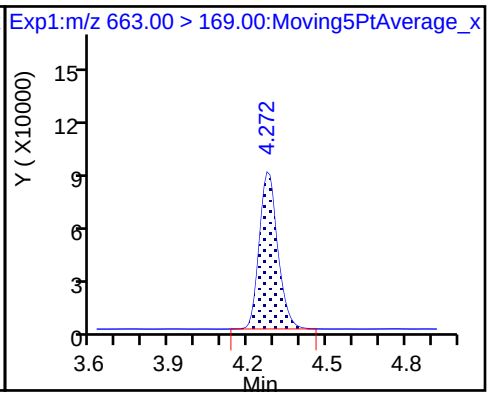
37 Perfluorododecanoic acid



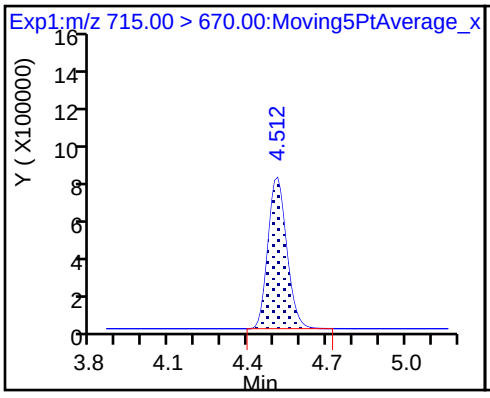
41 Perfluorotridecanoic acid



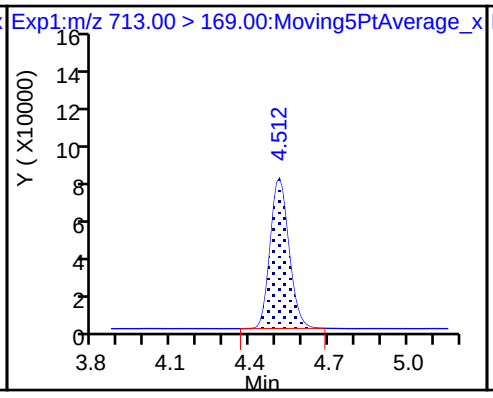
41 Perfluorotridecanoic acid



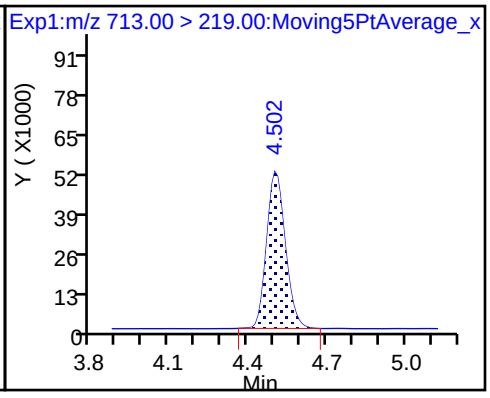
D 43 13C2-PFTeDA



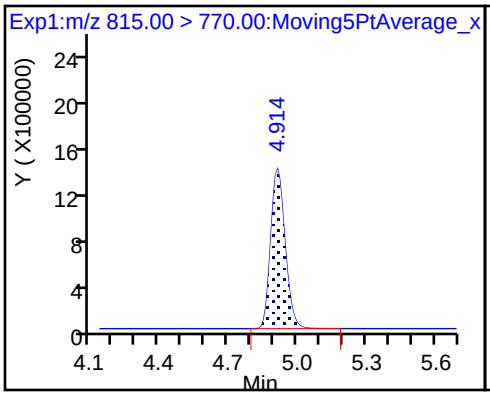
42 Perfluorotetradecanoic acid



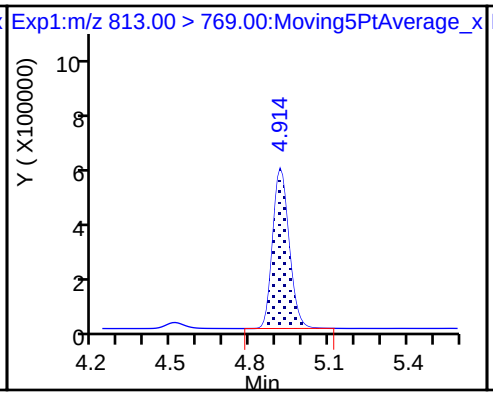
42 Perfluorotetradecanoic acid



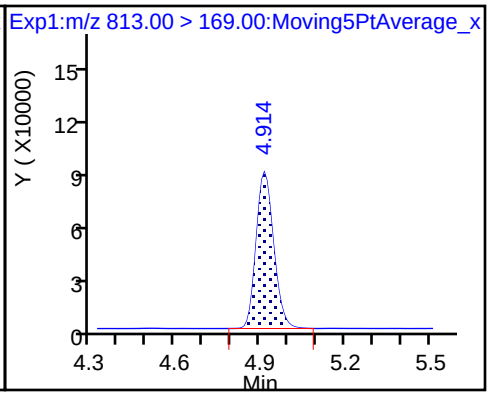
D 44 13C2-PFHxDA



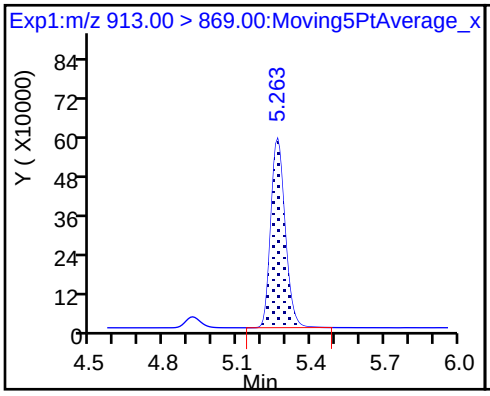
45 Perfluorohexadecanoic acid



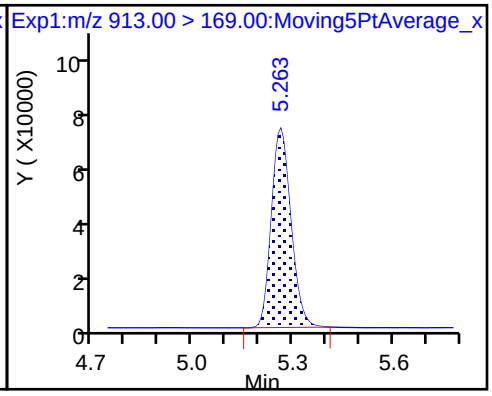
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 10-Apr-2018 19:10:58 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L5-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:11 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:19:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	6113537	2.46		98.3	50691	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	5819896	2.56		103	2506	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.693	1.699	-0.006	1.000	4844578	2.57		103	4840	
D 3 13C5-PFPeA										
267.90 > 223.00	1.693	1.699	-0.006	0.558	3952401	2.46		98.6	74416	
D 47 13C3-PFBS										
301.90 > 83.00	1.729	1.735	-0.006	1.000	83922	2.28		98.1	740	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.729	1.736	-0.007	1.000	6477140	2.29		104	28669	
298.90 > 99.00	1.729	1.736	-0.007	1.000	2643044		2.45(1.25-3.74)	104	34961	
D 60 M2-4:2FTS										
329.00 > 81.00	1.948	1.950	-0.002	1.000	615130	2.33		99.9	6761	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.950	-0.002	1.000	1359770	2.35		101	79419	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4266668	2.41		96.2	93064	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.985	-0.004	1.000	4512177	2.60		104	11165	
313.00 > 119.00	1.981	1.985	-0.004	1.000	415818		10.85(5.03-15.10)	104	4827	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.008	-0.005	1.000	6143254	2.38		101	39164	
349.00 > 99.00	2.003	2.008	-0.005	1.000	2304917		2.67(1.36-4.07)	101	57041	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.082	2.084	-0.002	1.000	282614	2.58		103	8102	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.082	2.087	-0.005	1.000	771939	2.45		98.1	6105	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.306	2.314	-0.008	1.000	4571563	2.62		105	6057	
363.00 > 169.00	2.306	2.314	-0.008	1.000	1750162		2.61(1.13-3.40)	105	10592	
D 9 13C4-PFHpA										
367.00 > 322.00	2.306	2.314	-0.008	1.000	4357585	2.52		101	88768	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.319	2.323	-0.004	1.000	5199428	2.21		97.1	17064	
399.00 > 99.00	2.319	2.323	-0.004	1.000	1684954		3.09(1.50-4.49)	97.1	15461	
D 11 18O2 PFHxS										
403.00 > 84.00	2.319	2.327	-0.008	1.000	4919272	2.31		97.6	100471	
65 Adona										
377.00 > 251.00	2.358	2.360	-0.002	1.000	13509817	2.70		108	130340	
377.00 > 85.00	2.345	2.360	-0.015	0.994	7737038		1.75(0.84-2.53)	108	141597	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.644	2.649	-0.005	1.000	1407564	2.24		94.7	22058	
D 12 M2-6:2FTS										
429.00 > 81.00	2.644	2.649	-0.005	1.000	880882	2.38		100	13167	
D 14 13C4 PFOA										
417.00 > 372.00	2.667	2.673	-0.006	1.000	4288230	2.50		100.0	57314	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.667	2.674	-0.007	1.000	4910933	2.48		99.1	2984	
413.00 > 169.00	2.667	2.674	-0.007	1.000	2476515		1.98(0.84-2.52)	99.1	13949	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.674	-0.007		4623543	2.50			75604	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.675	2.680	-0.005	1.000	4867309	2.54		107	34655	
449.00 > 99.00	2.675	2.680	-0.005	1.000	1250756		3.89(1.94-5.82)	107	35350	
D 18 13C4 PFOS										
503.00 > 80.00	3.035	3.041	-0.006	1.000	3447017	2.31		96.7	25534	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.035	3.042	-0.007	1.000	3684174	2.35		101	15653	
499.00 > 99.00	3.035	3.042	-0.007	1.000	824846		4.47(2.31-6.93)	101	12600	
20 Perfluorononanoic acid										
463.00 > 419.00	3.035	3.043	-0.008	1.000	3792206	2.49		99.6	9277	
463.00 > 169.00	3.042	3.043	-0.001	1.002	865580		4.38(1.90-5.69)	99.6	18899	
D 19 13C5 PFNA										
468.00 > 423.00	3.035	3.045	-0.010	1.000	3653281	2.48		99.1	80277	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.250	3.253	-0.003	1.000	6954333	2.56		110	142943	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.384	3.388	-0.004	1.000	2870093	2.49		104	29938	
549.00 > 99.00	3.384	3.388	-0.004	1.000	1016002		2.82(1.33-3.97)	104	24257	
D 26 M2-8:2FTS										
529.00 > 81.00	3.384	3.390	-0.006	1.000	1063168	2.39		99.7	11071	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.384	3.393	-0.009	1.000	1298898	2.31		96.6	67638	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.397	-0.004	1.000	4533137	2.43		97.3	60119	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.401	-0.008	1.000	4752476	2.59		104	78074	
D 23 13C2 PFDA										
515.00 > 470.00	3.393	3.401	-0.008	1.000	2967373	2.39		95.8	61893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.393	3.402	-0.009	1.000	3158094	2.58		103	14590	
513.00 > 169.00	3.393	3.402	-0.009	1.000	519040		6.08(2.36-7.09)	103	12013	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.551	3.553	-0.002	1.000	1707705	2.43		97.2	23521	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.551	3.558	-0.007	1.000	1802851	2.65		106	12762	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.711	3.715	-0.004	1.000	2376399	2.54		105	29437	
599.00 > 99.00	3.711	3.715	-0.004	1.000	777508		3.06(1.39-4.16)	105	25627	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.722	3.722	0.0	1.000	1729345	2.49		99.8	19661	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.722	3.727	-0.005	1.000	1669717	2.58		103	29608	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.727	-0.005	1.000	2601195	2.43		97.3	36634	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.727	-0.005	1.000	2103252	2.39		95.7	10698	
563.00 > 169.00	3.722	3.727	-0.005	1.000	525073		4.01(2.12-6.36)	95.7	20485	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.880	3.883	-0.003	1.000	10487942	2.50		106	87880	
D 36 13C2 PFDoA										
615.00 > 570.00	4.013	4.017	-0.004	1.000	2745849	2.38		95.1	29081	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.013	4.020	-0.007	1.000	3013785	2.63		105	3414	
613.00 > 169.00	4.013	4.020	-0.007	1.000	730770		4.12(2.13-6.40)	105	9810	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.276	4.278	-0.002	1.000	3391923	2.54		102	3159	
663.00 > 169.00	4.276	4.278	-0.002	1.000	1004489		3.38(1.25-3.76)	102	9947	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.508	4.513	-0.005	1.000	3639964	2.49		99.5	25555	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.508	4.513	-0.005	1.000	872520	2.39		95.4	8442	
713.00 > 219.00	4.508	4.513	-0.005	1.000	674330		1.29(0.71-2.13)	95.4	11267	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.910	4.918	-0.008	1.000	5731595	2.41		96.3	16637	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.919	4.920	-0.001	1.002	5739538	2.62		105	1768	
813.00 > 169.00	4.919	4.920	-0.001	1.002	919527		6.24(2.86-8.58)	105	5404	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.267	5.268	-0.001	1.000	5927518	2.57		103	1545	
913.00 > 169.00	5.260	5.268	-0.008	0.999	709210		8.36(3.83-11.48)	103	3575	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:12 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_006.d

Injection Date: 10-Apr-2018 19:10:58 Instrument ID: A8_N

Lims ID: IC L5 Full

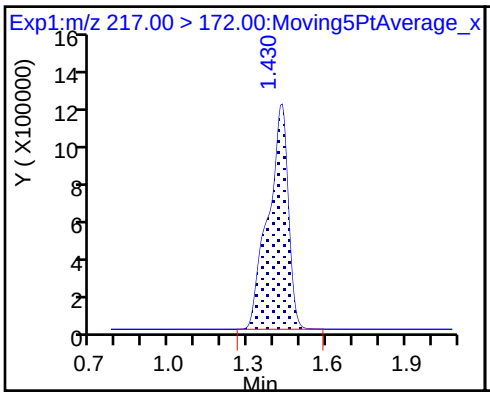
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6

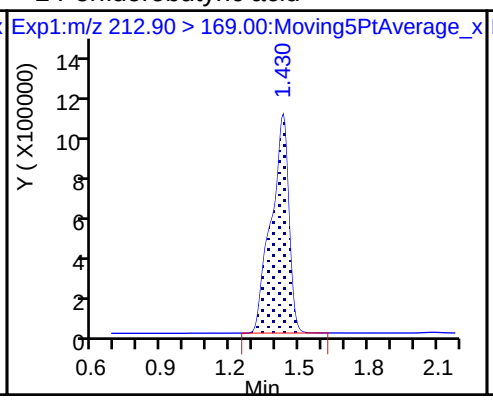
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

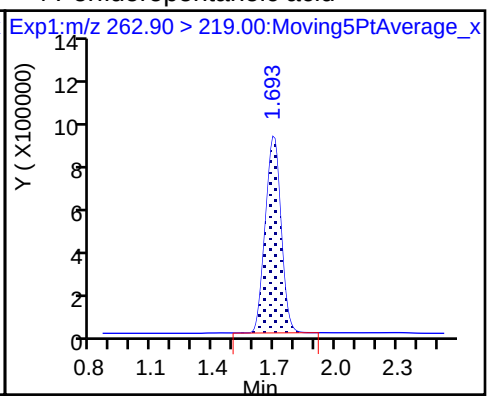
D 1 13C4 PFBA



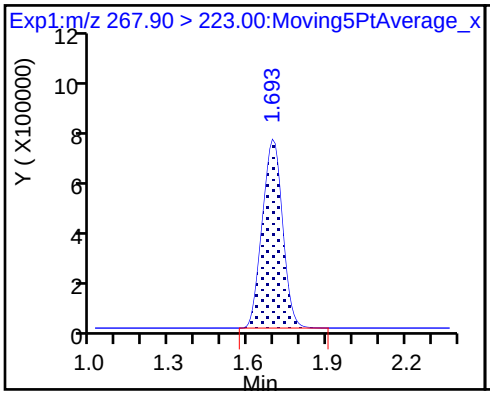
2 Perfluorobutyric acid



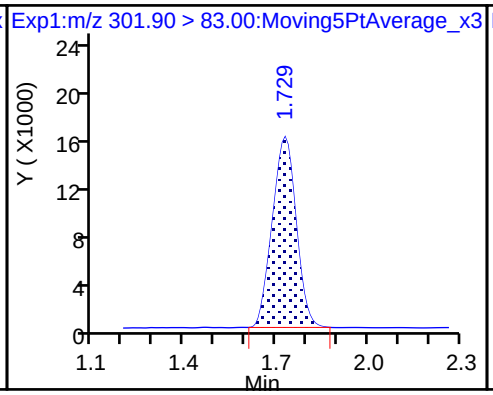
4 Perfluoropentanoic acid



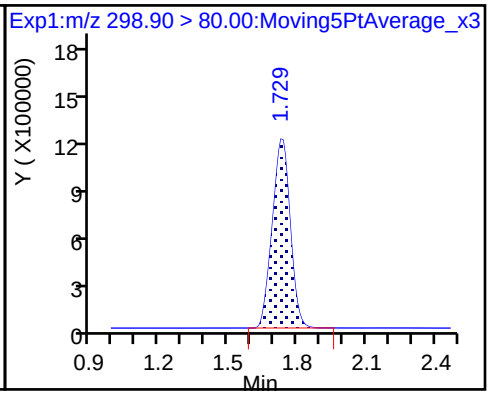
D 3 13C5-PFPeA



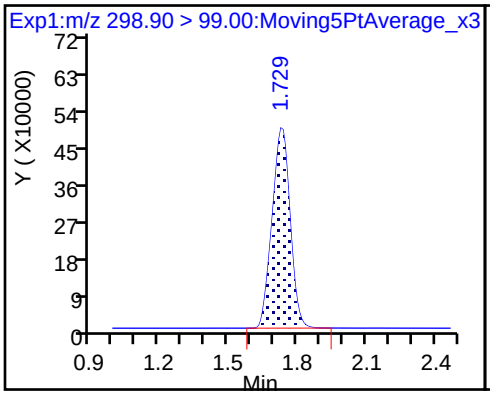
D 47 13C3-PFBS



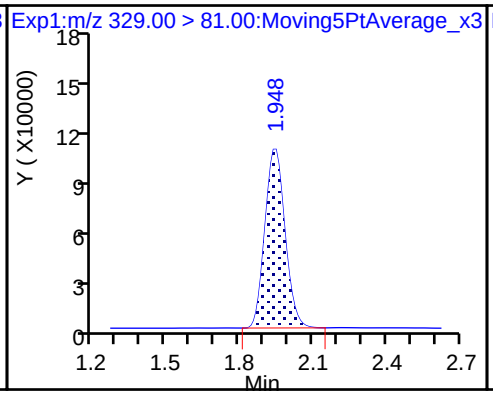
5 Perfluorobutanesulfonic acid



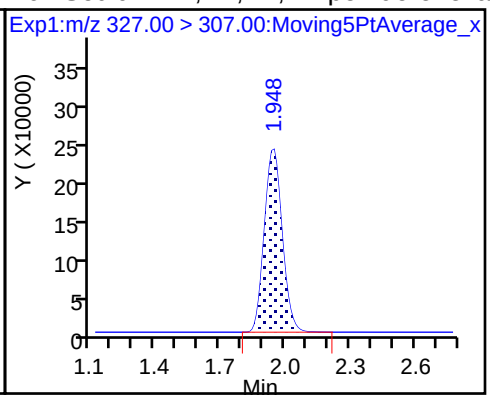
5 Perfluorobutanesulfonic acid



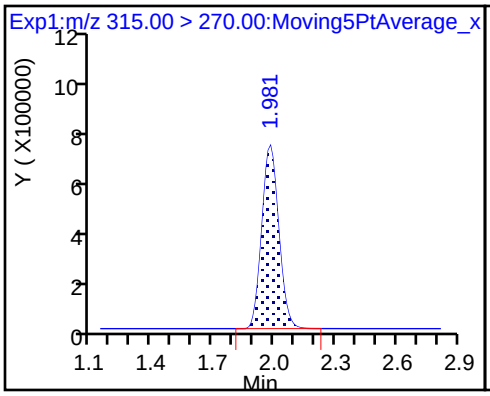
D 60 M2-4:2FTS



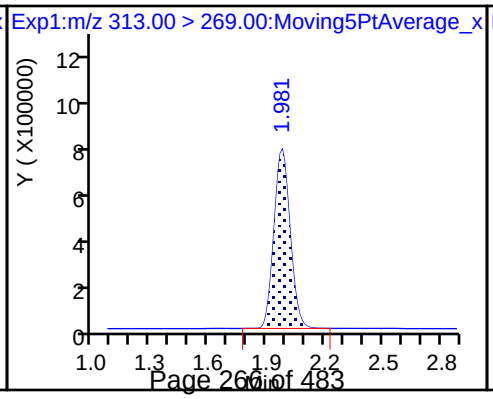
61 Sodium 1H,1H,2H,2H-perfluorohexane



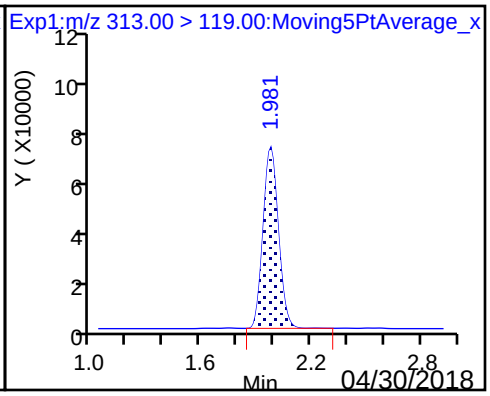
D 7 13C2 PFHxA



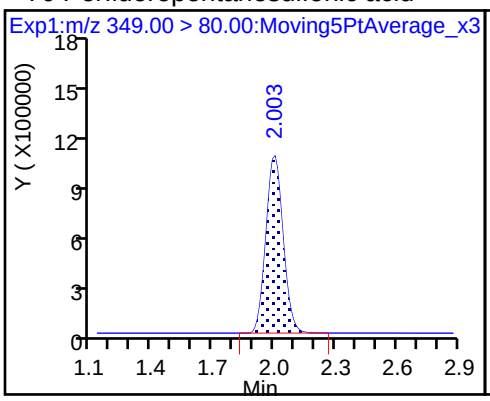
6 Perfluorohexanoic acid



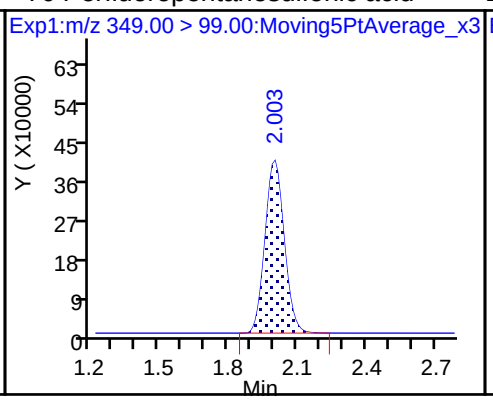
6 Perfluorohexanoic acid



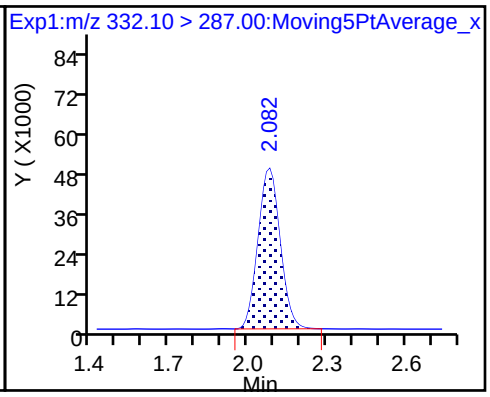
70 Perfluoropentanesulfonic acid



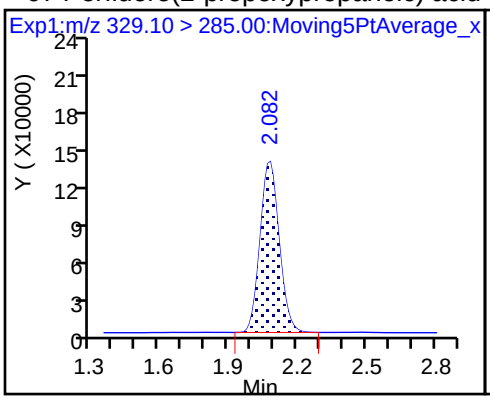
70 Perfluoropentanesulfonic acid



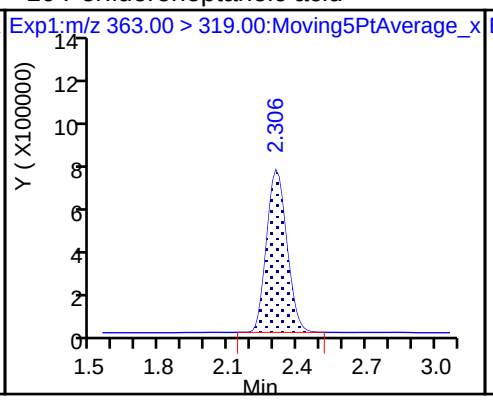
D 64 13C3 HFPO-DA



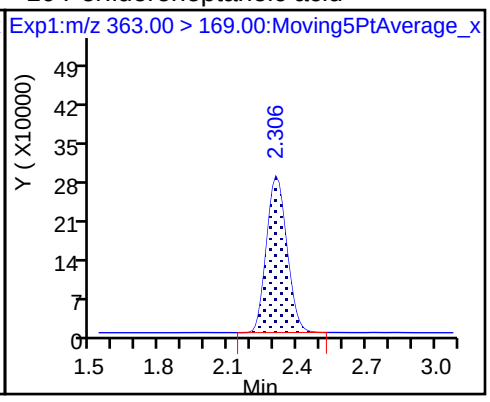
67 Perfluoro(2-propoxypropanoic) acid



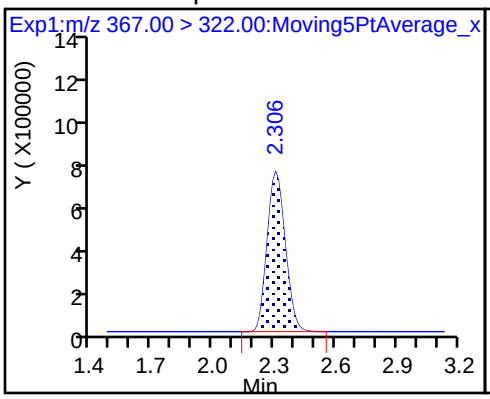
10 Perfluoroheptanoic acid



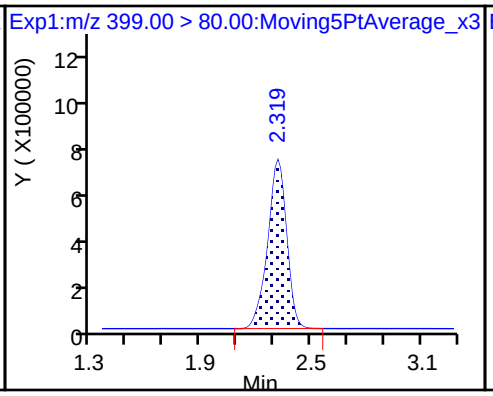
10 Perfluoroheptanoic acid



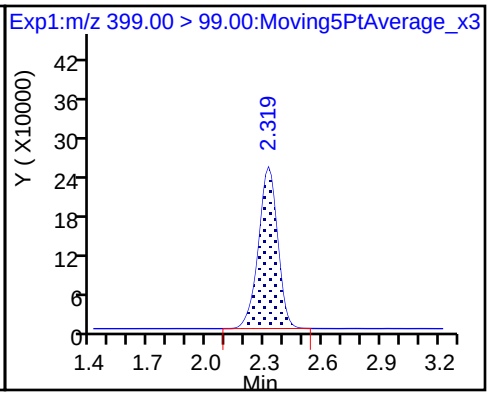
D 9 13C4-PFHpA



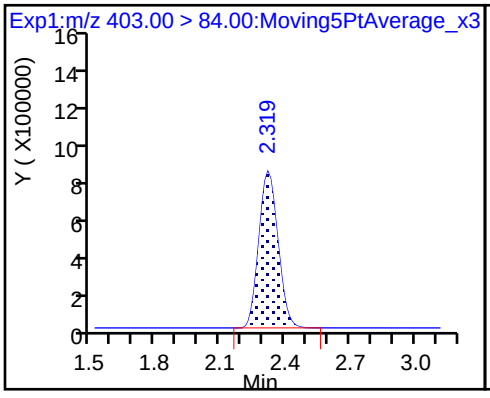
8 Perfluorohexanesulfonic acid



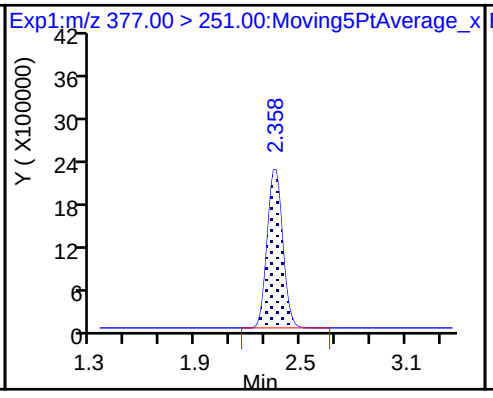
8 Perfluorohexanesulfonic acid



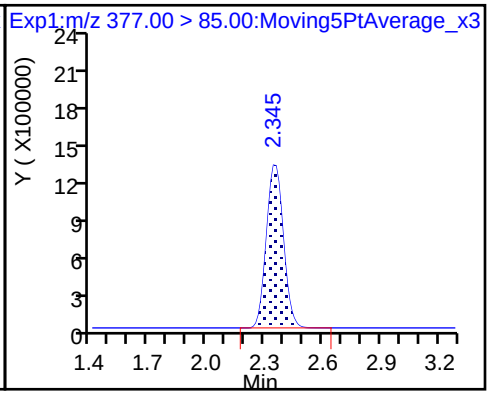
D 11 18O2 PFHxS



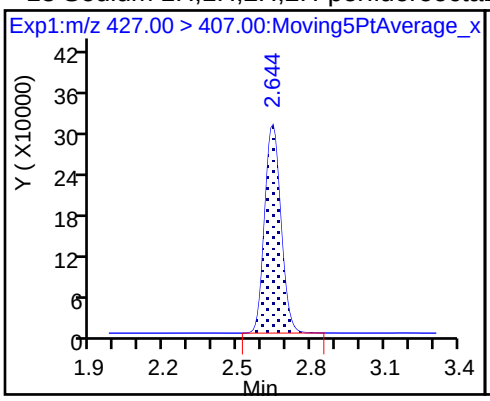
65 Adona



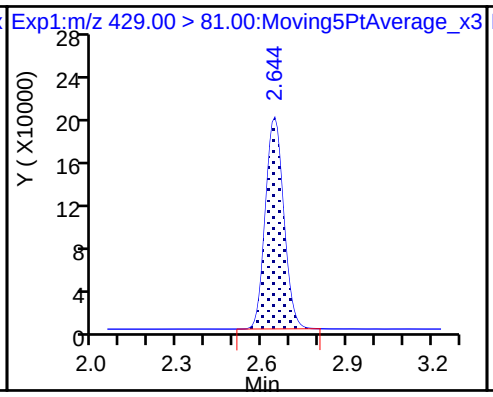
65 Adona



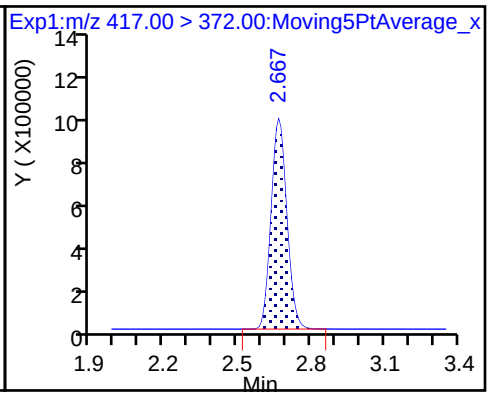
13 Sodium 1H,1H,2H,2H-perfluorooctane



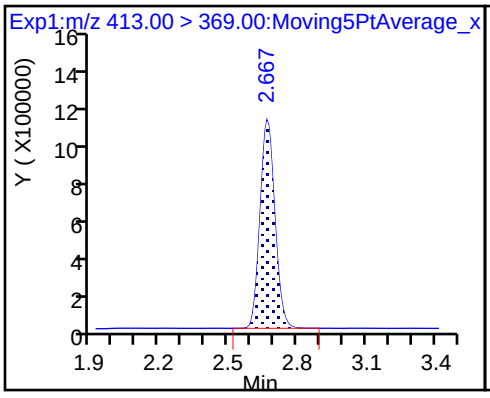
D 12 M2-6:2FTS



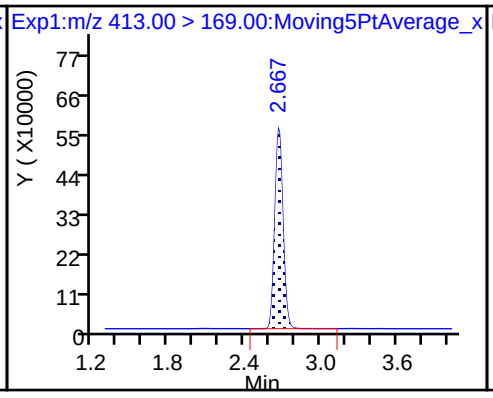
D 14 13C4 PFOA



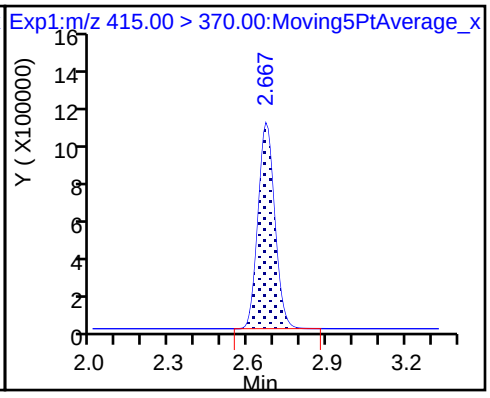
15 Perfluorooctanoic acid



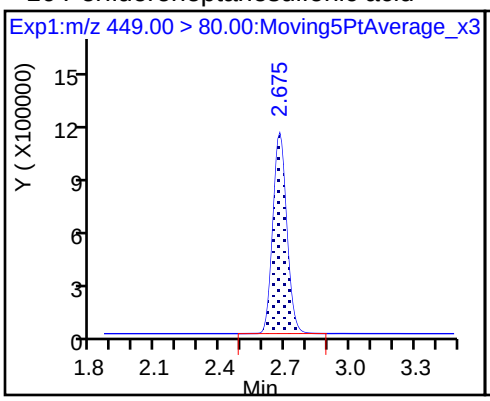
15 Perfluorooctanoic acid



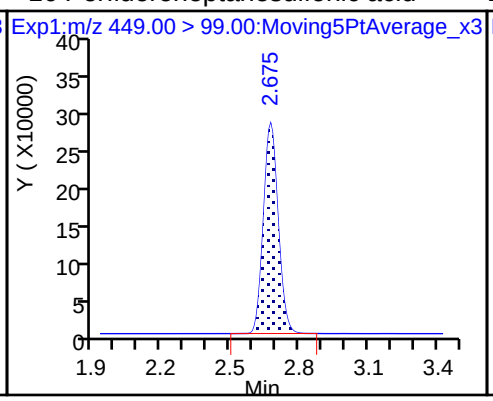
* 62 13C2-PFOA



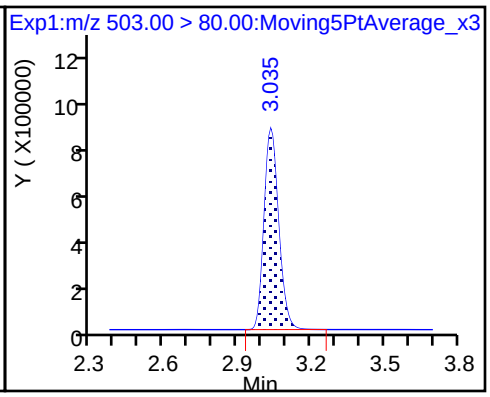
16 Perfluoroheptanesulfonic acid



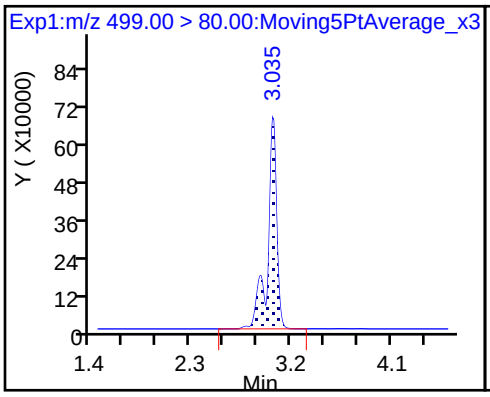
16 Perfluoroheptanesulfonic acid



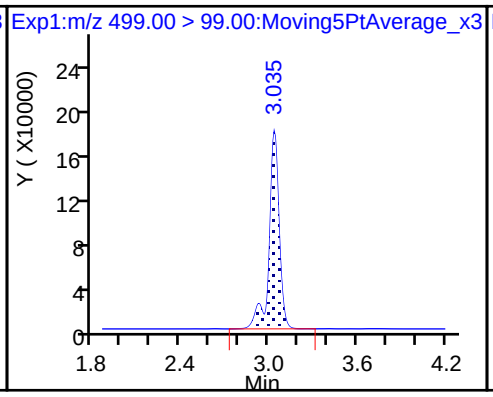
D 18 13C4 PFOS



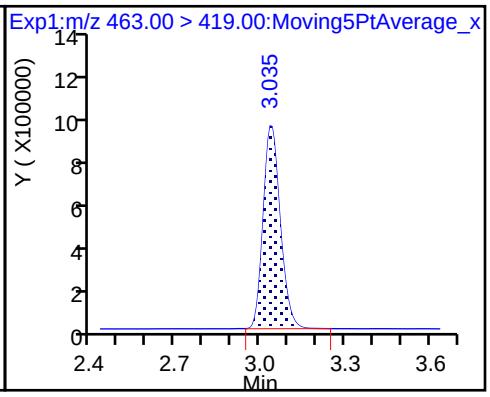
17 Perfluorooctane sulfonic acid



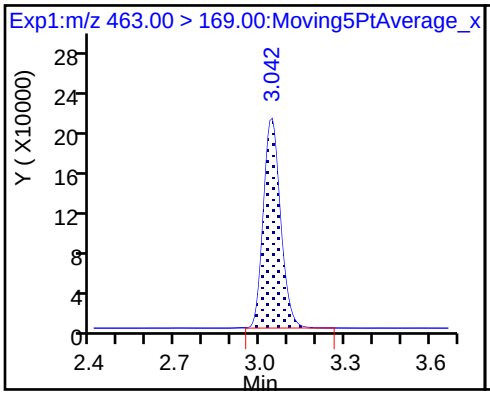
17 Perfluorooctane sulfonic acid



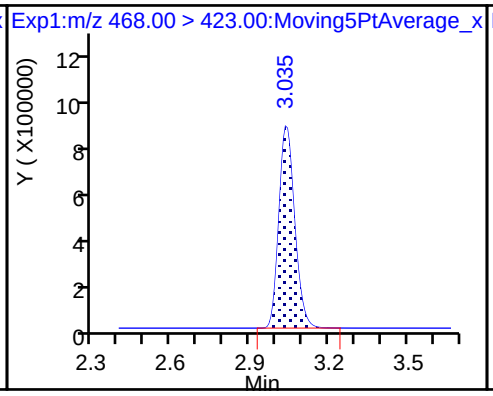
20 Perfluorononanoic acid



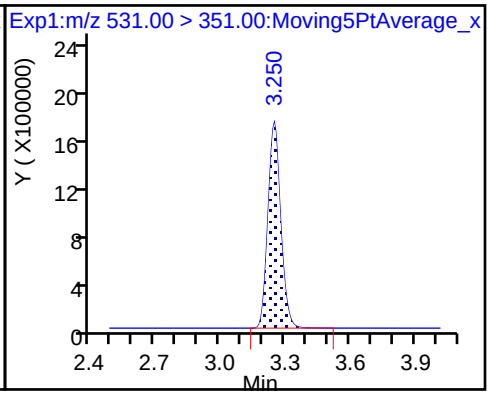
20 Perfluorononanoic acid



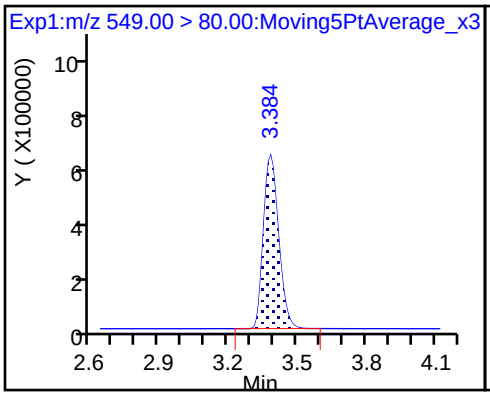
D 19 13C5 PFNA



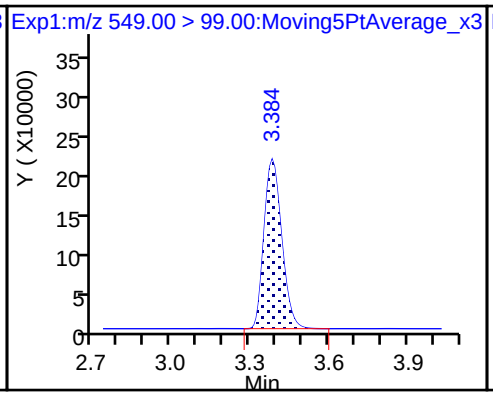
69 9-Chlorohexadecafluoro-3-oxanonane



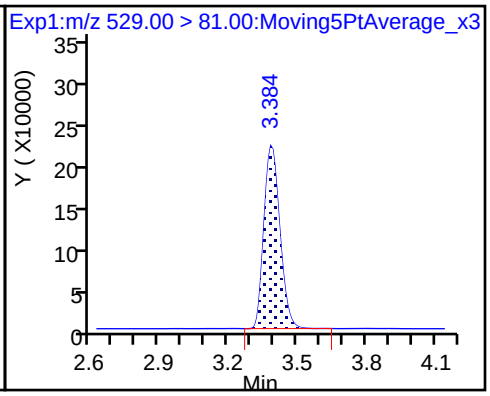
68 Perfluorononanesulfonic acid



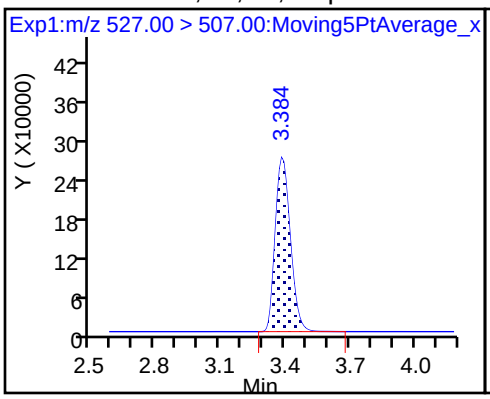
68 Perfluorononanesulfonic acid



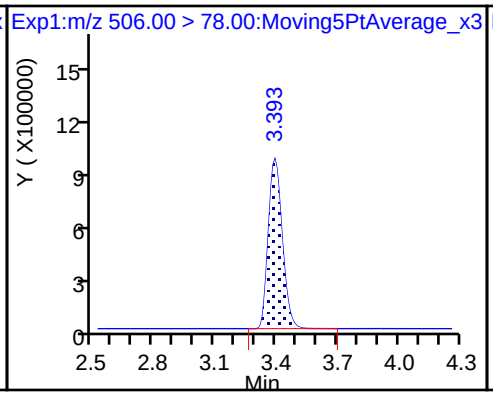
D 26 M2-8:2FTS



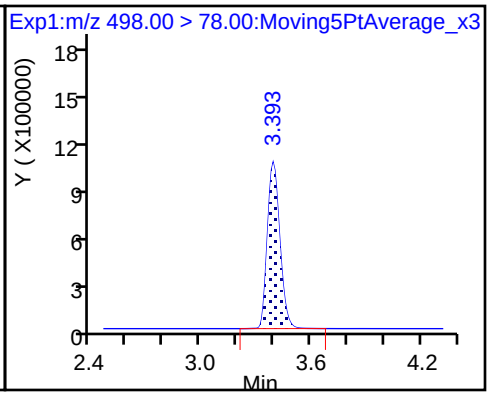
25 Sodium 1H,1H,2H,2H-perfluorodecane



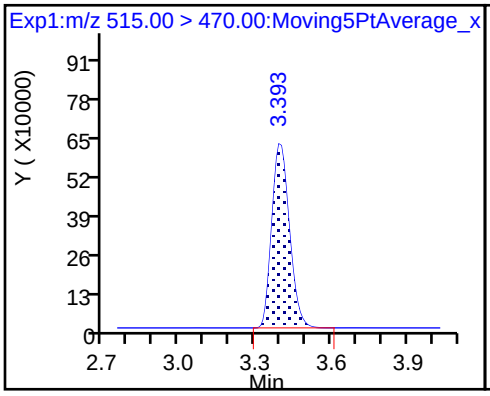
D 21 13C8 FOSA



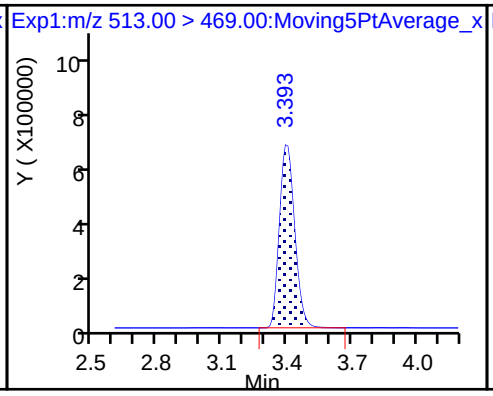
22 Perfluorooctane Sulfonamide



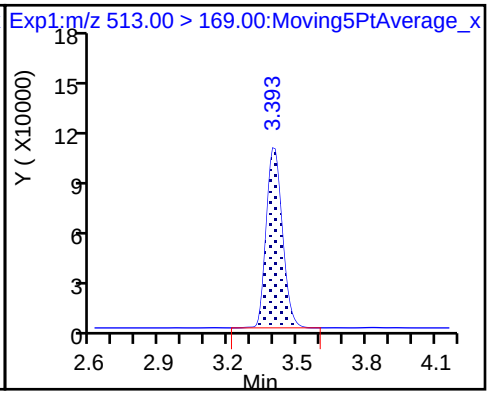
D 23 13C2 PFDA



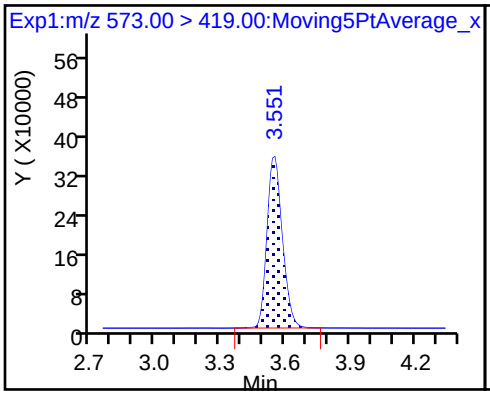
24 Perfluorodecanoic acid



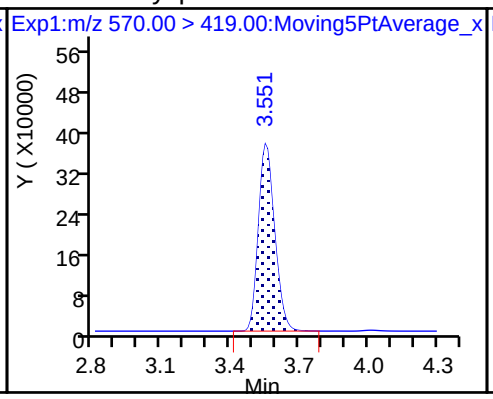
24 Perfluorodecanoic acid



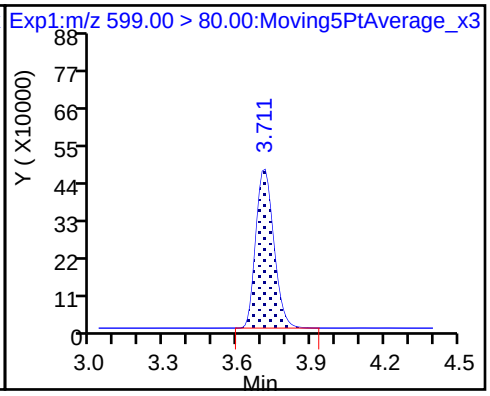
D 27 d3-NMeFOSAA



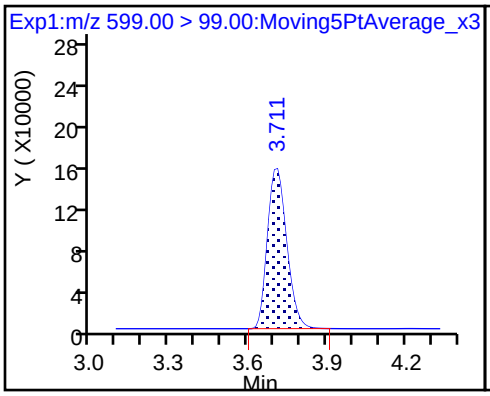
28 N-methyl perfluorooctane sulfonami



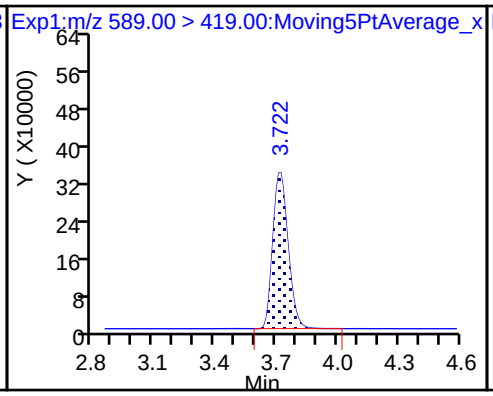
29 Perfluorodecane Sulfonic acid



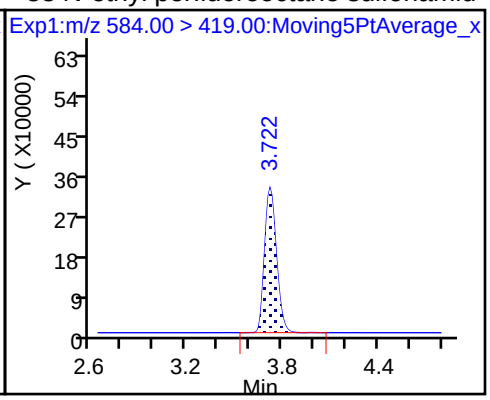
29 Perfluorodecane Sulfonic acid



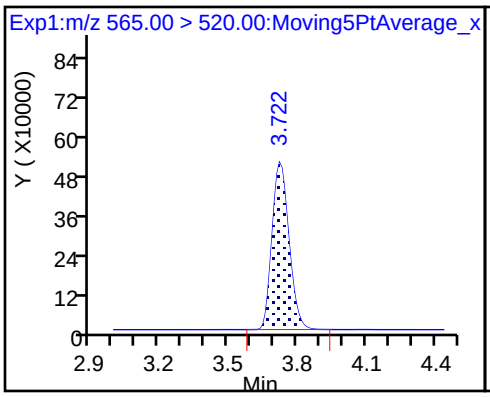
D 32 d5-NEtFOSAA



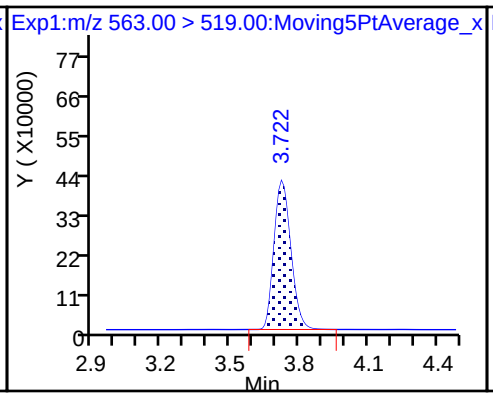
33 N-ethyl perfluorooctane sulfonamid



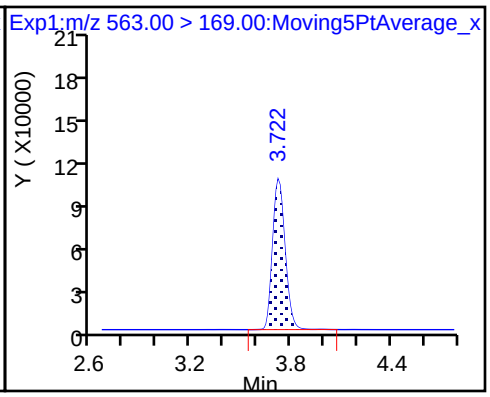
D 30 13C2 PFUnA



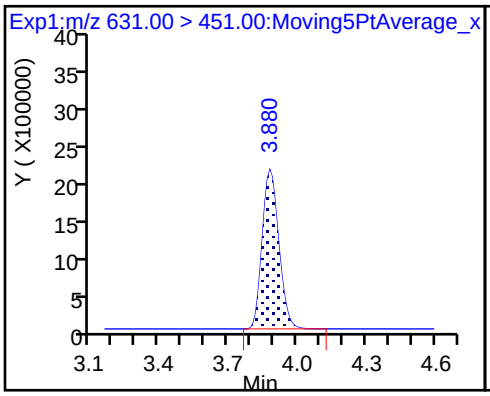
31 Perfluoroundecanoic acid



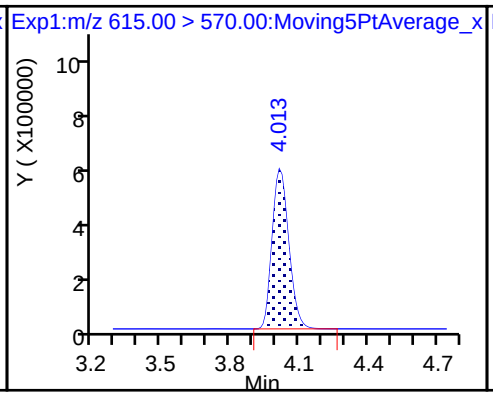
31 Perfluoroundecanoic acid



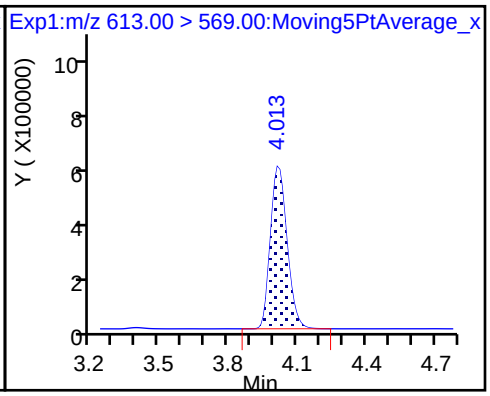
66 11-Chloroeicosafluoro-3-oxaundecan



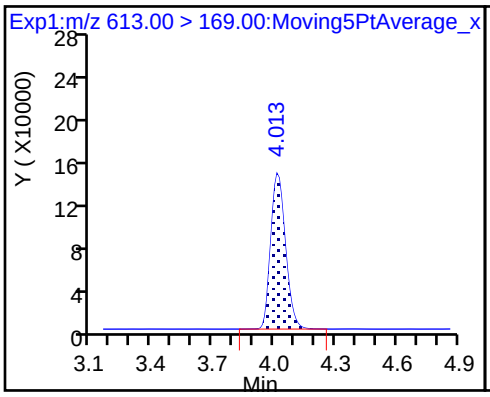
D 36 13C2 PFDoA



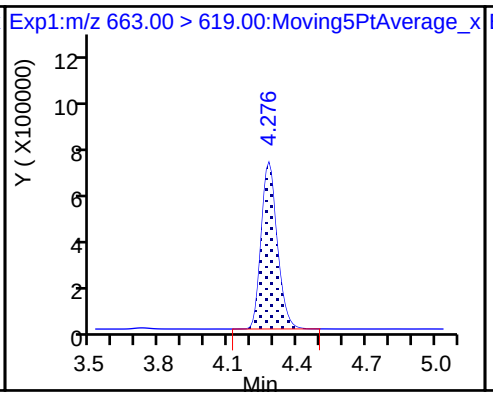
37 Perfluorododecanoic acid



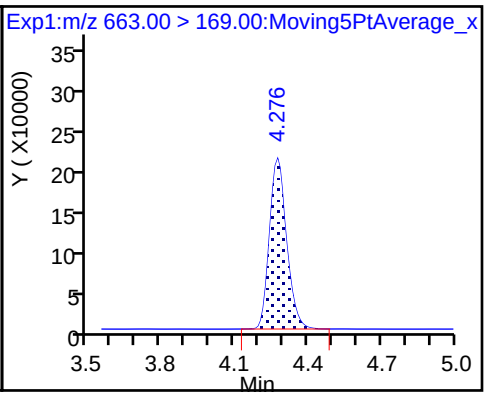
37 Perfluorododecanoic acid



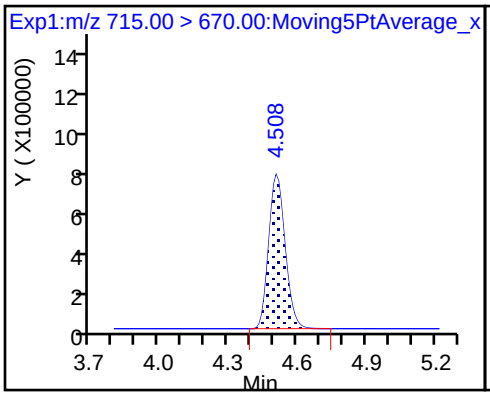
41 Perfluorotridecanoic acid



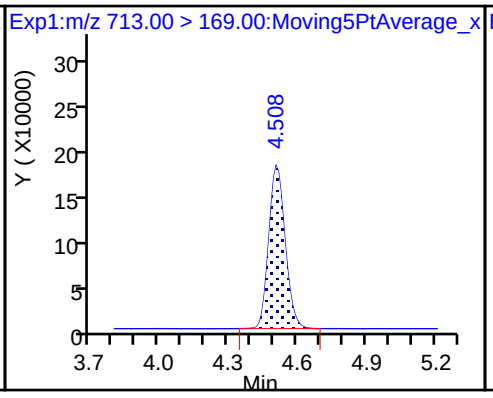
41 Perfluorotridecanoic acid



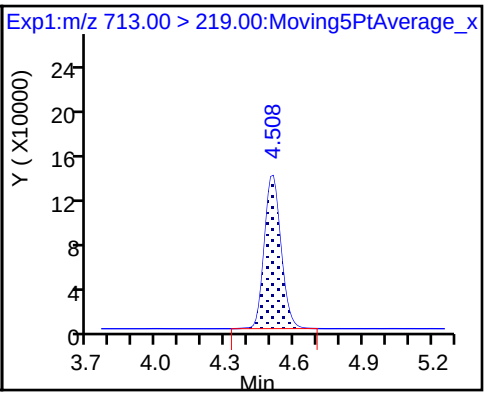
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid



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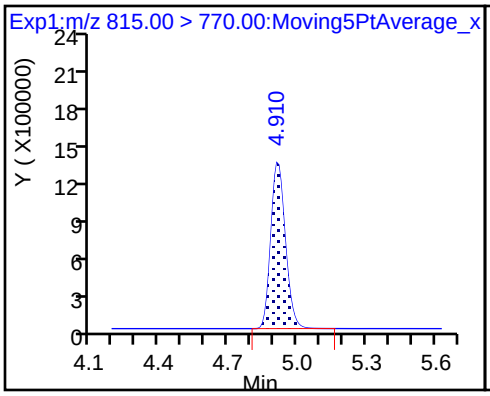
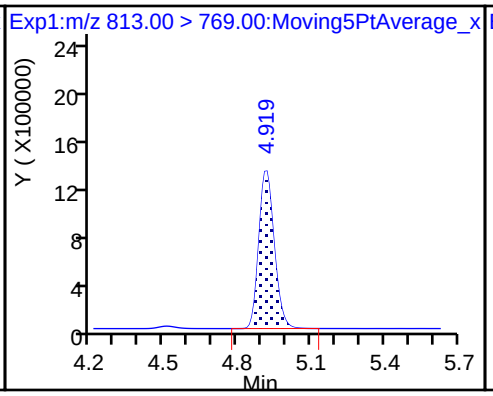
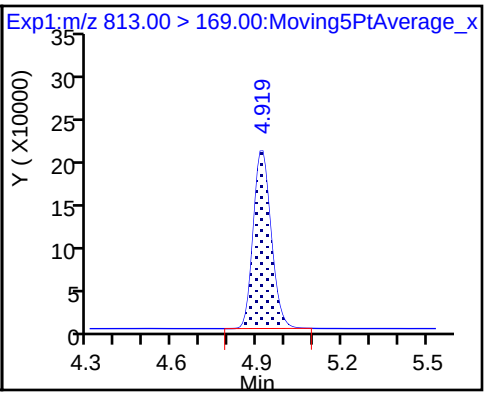


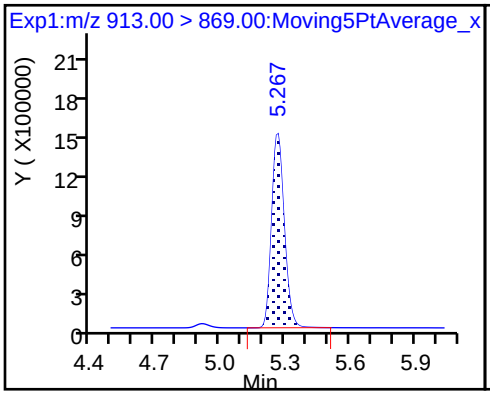
45 Perfluorohexadecanoic acid



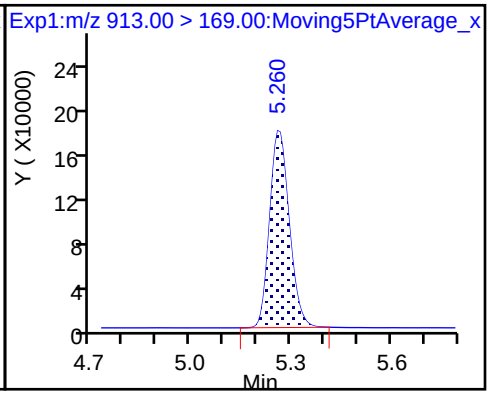
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-Apr-2018 19:18:46 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L6-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:14 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:20:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.425	1.431	-0.006	1.000	6997865	2.65		106	49847	
2 Perfluorobutyric acid										
212.90 > 169.00	1.431	1.432	-0.001	1.004	13377174	5.15		103	7717	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.699	-0.005	0.557	4492903	2.64		105	81359	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.699	-0.005	1.000	10497161	4.90		98.0	10563	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.735	-0.005	1.000	92353	2.36		102	1083	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.736	-0.006	1.000	14347107	4.61		104	64269	
298.90 > 99.00	1.730	1.736	-0.006	1.000	6127625		2.34(1.25-3.74)	104	70987	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	3030208	4.76		102	141069	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	668373	2.39		102	7685	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.985	-0.003	1.000	10489823	5.40		108	24333	
313.00 > 119.00	1.982	1.985	-0.003	1.000	894344		11.73(5.03-15.10)	108	11532	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4780636	2.54		101	96741	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.008	-0.003	1.000	13627914	4.80		102	98334	
349.00 > 99.00	2.005	2.008	-0.003	1.000	5231254		2.61(1.36-4.07)	102	95005	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.084	0.0	1.000	274179	2.35		94.0	8284	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.087	-0.003	1.000	1870994	6.12		122	12525	
D 9 13C4-PFHpA										
367.00 > 322.00	2.310	2.314	-0.004	1.000	4543925	2.48		99.1	68671	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.314	-0.004	1.000	9662627	5.31		106	14097	
363.00 > 169.00	2.310	2.314	-0.004	1.000	4011641		2.41(1.13-3.40)	106	22953	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.323	0.0	1.000	11450464	4.41		96.8	31512	
399.00 > 99.00	2.323	2.323	0.0	1.000	3849777		2.97(1.50-4.49)	96.8	34232	
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.327	-0.004	1.000	5430236	2.40		101	91039	
65 Adona										
377.00 > 251.00	2.362	2.360	0.002	1.000	26999565	4.80		95.9	217494	
377.00 > 85.00	2.362	2.360	0.002	1.000	16841301		1.60(0.84-2.53)	95.9	159720	
D 12 M2-6:2FTS										
429.00 > 81.00	2.645	2.649	-0.004	1.000	950305	2.42		102	15598	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.645	2.649	-0.004	1.000	3314359	4.90		103	51474	
D 14 13C4 PFOA										
417.00 > 372.00	2.668	2.673	-0.005	1.000	4688766	2.57		103	76247	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.674	0.002		4914871	2.50			59774	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.674	0.002	1.003	11016957	5.08		102	7204	
413.00 > 169.00	2.676	2.674	0.002	1.003	5404594		2.04(0.84-2.52)	102	21416	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	10719572	4.97		104	63342	
449.00 > 99.00	2.676	2.680	-0.004	0.997	2882422		3.72(1.94-5.82)	104	51468	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3884830	2.45		103	25175	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.042	0.001	1.000	8615775	4.87		105	37504	
499.00 > 99.00	3.043	3.042	0.001	1.000	1907418		4.52(2.31-6.93)	105	40242	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	1.000	8663453	5.40		108	21881	
463.00 > 169.00	3.043	3.043	0.0	1.000	1977379		4.38(1.90-5.69)	108	42954	
D 19 13C5 PFNA										
468.00 > 423.00	3.043	3.045	-0.002	1.000	3844023	2.45		98.1	71022	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.252	3.253	-0.001	1.000	15327887	5.00		107	237615	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.387	3.388	-0.001	1.000	6392773	4.92		102	46125	
549.00 > 99.00	3.387	3.388	-0.001	1.000	2379569		2.69(1.33-3.97)	102	42811	
D 26 M2-8:2FTS										
529.00 > 81.00	3.387	3.390	-0.003	1.000	1111203	2.35		98.0	12960	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.396	3.393	0.003	1.003	2936296	5.00		104	87146	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.397	-0.001	1.000	4967723	2.51		100	59122	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.401	-0.005	1.000	10640158	5.29		106	83571	
D 23 13C2 PFDA										
515.00 > 470.00	3.405	3.401	0.004	1.000	3590754	2.73		109	63551	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.405	3.402	0.003	1.000	7080425	4.78		95.6	42943	
513.00 > 169.00	3.405	3.402	0.003	1.000	1224285		5.78(2.36-7.09)	95.6	19818	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.555	3.553	0.002	1.000	1906740	2.55		102	32484	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.555	3.558	-0.003	1.000	4211279	5.54		111	24793	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.717	3.715	0.002	1.000	5591516	5.30		110	68704	
599.00 > 99.00	3.717	3.715	0.002	1.000	1873892		2.98(1.39-4.16)	110	41042	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.717	3.722	-0.005	1.000	1869135	2.54		101	18949	
D 30 13C2 PFUnA										
565.00 > 520.00	3.728	3.727	0.001	1.000	2905024	2.56		102	63455	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.728	3.727	0.001	1.003	3584245	5.13		103	43487	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.728	3.727	0.001	1.000	5051597	5.14		103	23183	
563.00 > 169.00	3.728	3.727	0.001	1.000	1197755		4.22(2.12-6.36)	103	29187	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.886	3.883	0.003	1.000	21858692	4.62		98.0	132441	
D 36 13C2 PFDoA										
615.00 > 570.00	4.019	4.017	0.002	1.000	3059706	2.49		99.7	34585	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.020	-0.001	1.000	6635970	5.20		104	7407	
613.00 > 169.00	4.019	4.020	-0.001	1.000	1580285		4.20(2.13-6.40)	104	18694	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.278	0.003	1.000	7847307	5.28		106	6944	
663.00 > 169.00	4.281	4.278	0.003	1.000	2374861		3.30(1.25-3.76)	106	19843	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.512	4.513	-0.001	1.000	3906384	2.51		100	23277	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.513	-0.001	1.000	2025257	5.16		103	14592	
713.00 > 219.00	4.512	4.513	-0.001	1.000	1435695		1.41(0.71-2.13)	103	15337	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.923	4.918	0.005	1.000	6481798	2.56		102	19589	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.923	4.920	0.003	1.000	11955765	4.85		97.0	3378	
813.00 > 169.00	4.923	4.920	0.003	1.000	2040197		5.86(2.86-8.58)	97.0	10211	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.270	5.268	0.002	1.000	12855038	4.94		98.8	2871	
913.00 > 169.00	5.270	5.268	0.002	1.000	1566786		8.20(3.83-11.48)	98.8	6806	

Reagents:

LCPFC_LL6_00005 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:15 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_007.d

Injection Date: 10-Apr-2018 19:18:46 Instrument ID: A8_N

Lims ID: IC L6 Full

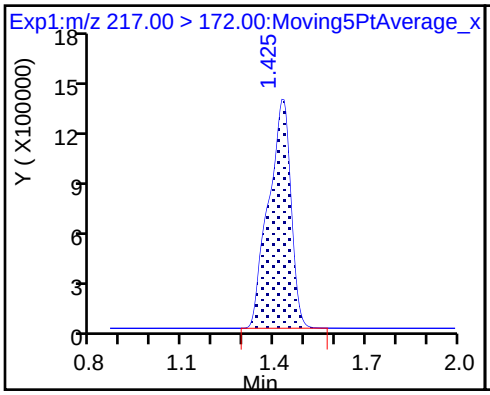
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7

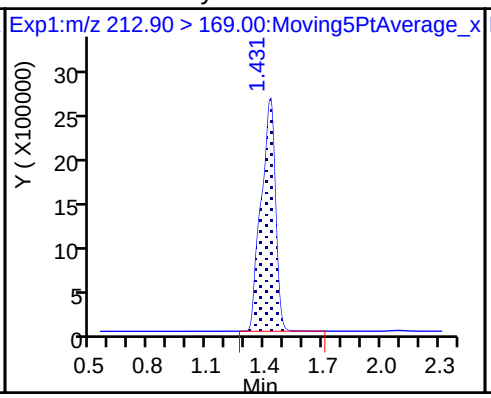
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

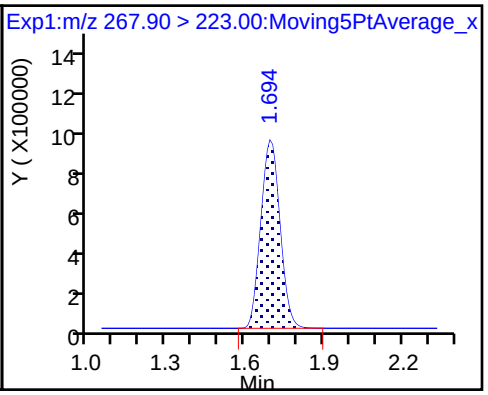
D 1 13C4 PFBA



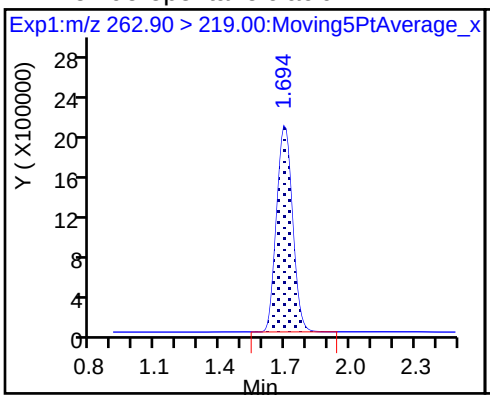
2 Perfluorobutyric acid



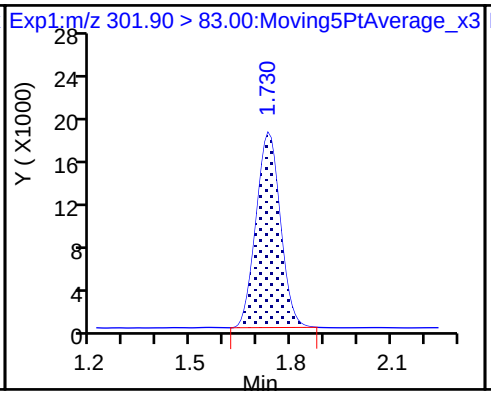
D 3 13C5-PFPeA



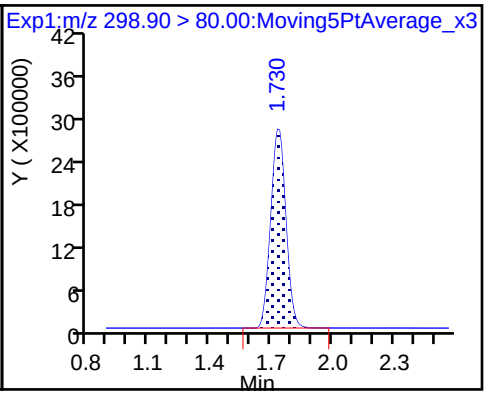
4 Perfluoropentanoic acid



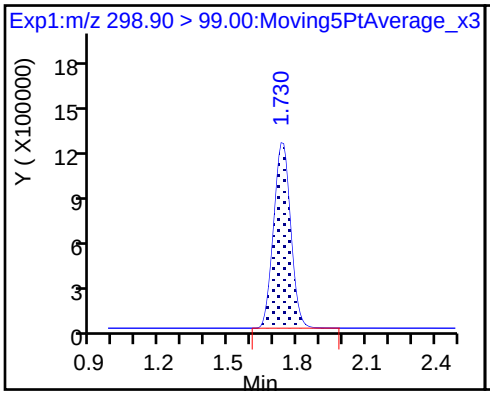
D 47 13C3-PFBS



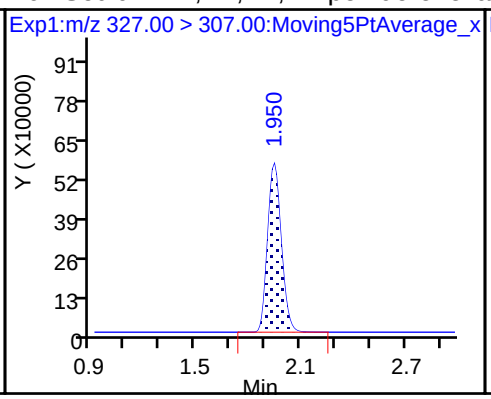
5 Perfluorobutanesulfonic acid



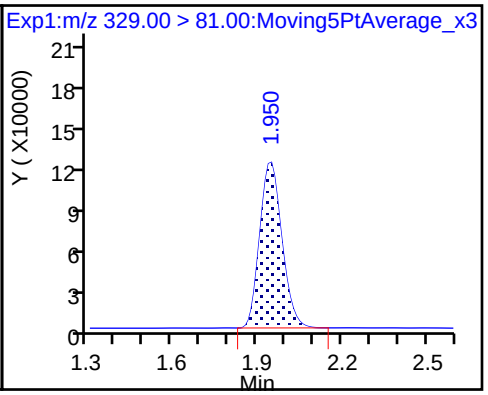
5 Perfluorobutanesulfonic acid



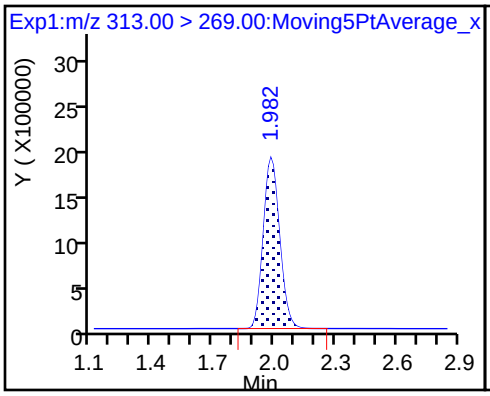
61 Sodium 1H,1H,2H,2H-perfluorohexane



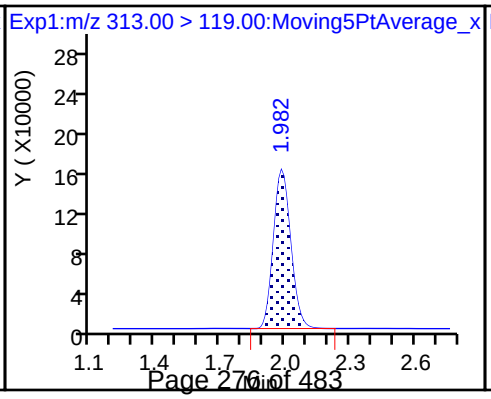
D 60 M2-4:2FTS



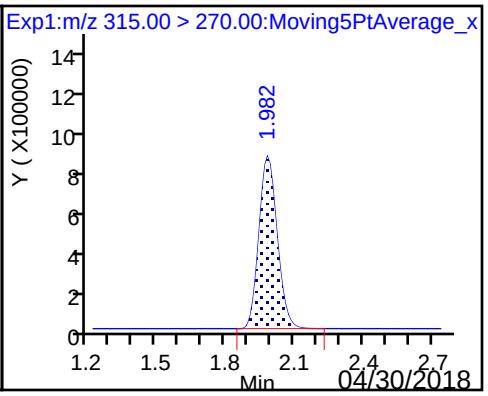
6 Perfluorohexanoic acid



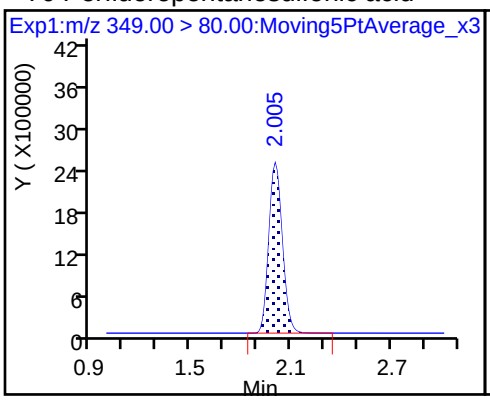
6 Perfluorohexanoic acid



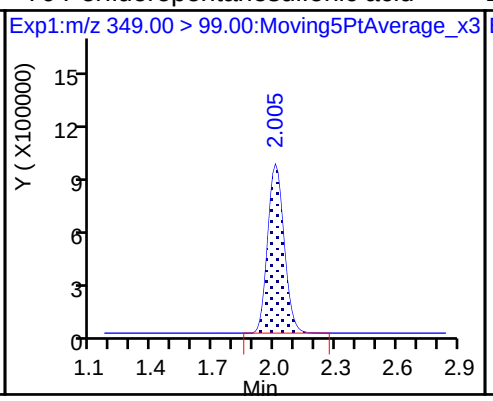
D 7 13C2 PFHxA



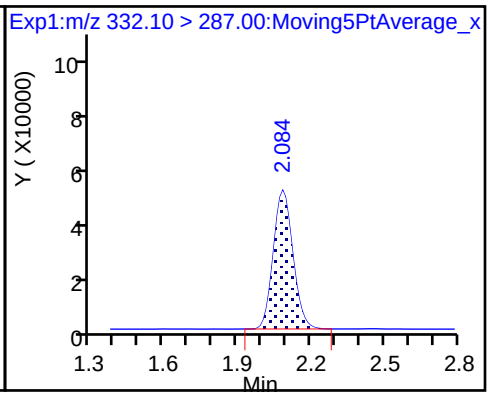
70 Perfluoropentanesulfonic acid



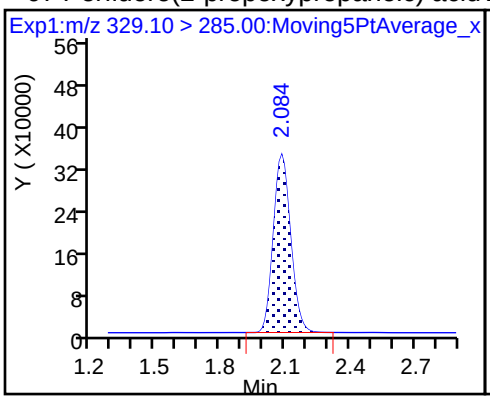
70 Perfluoropentanesulfonic acid



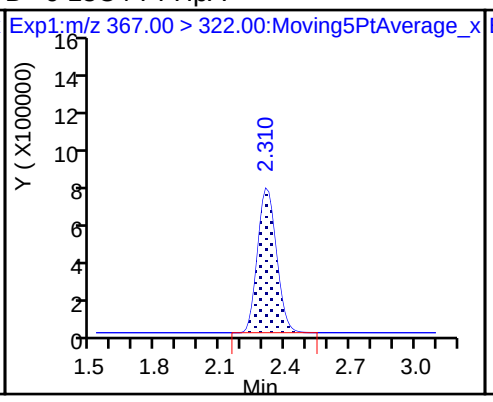
D 64 13C3 HFPO-DA



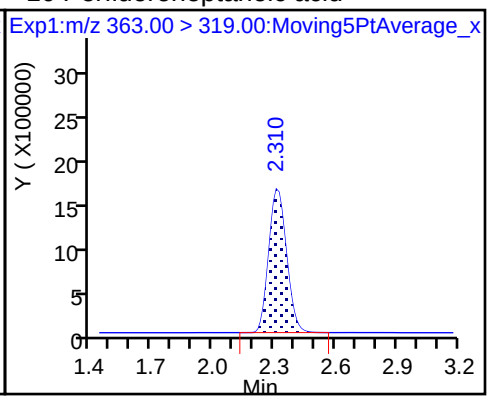
67 Perfluoro(2-propoxypropanoic) acid



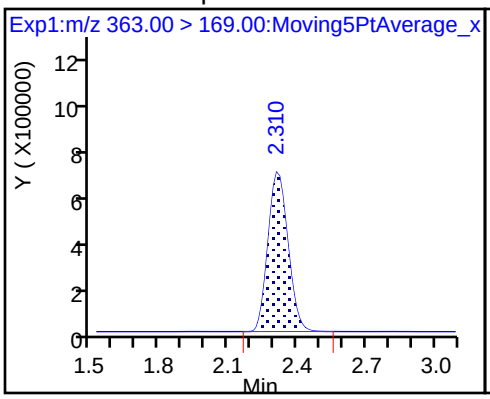
D 9 13C4-PFHpA



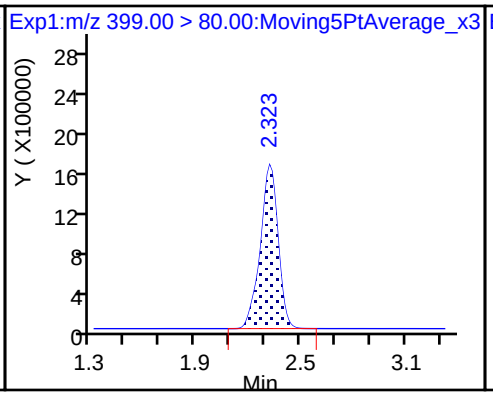
10 Perfluoroheptanoic acid



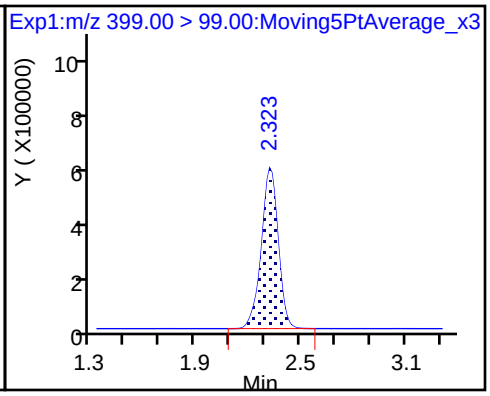
10 Perfluoroheptanoic acid



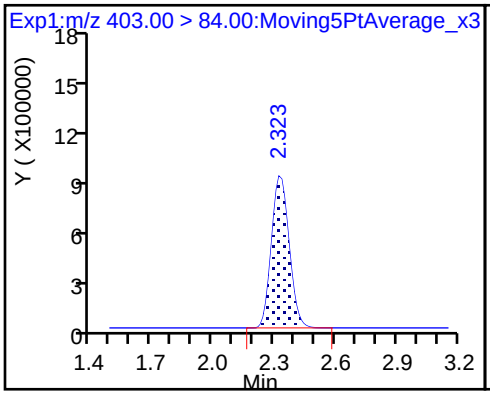
8 Perfluorohexanesulfonic acid



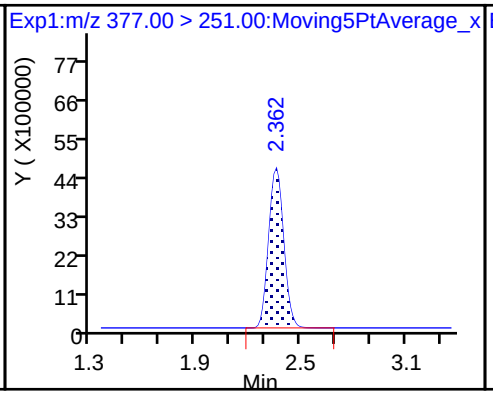
8 Perfluorohexanesulfonic acid



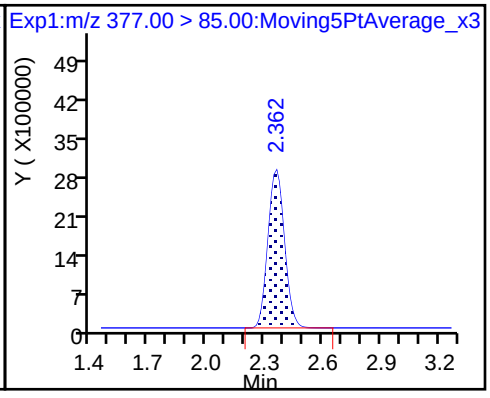
D 11 18O2 PFHxS



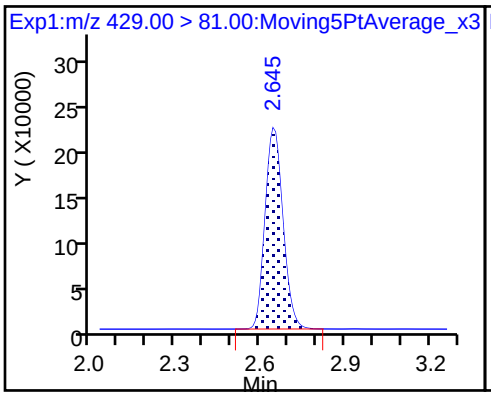
65 Adona



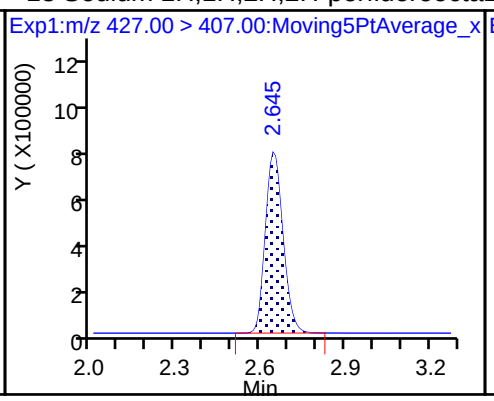
65 Adona



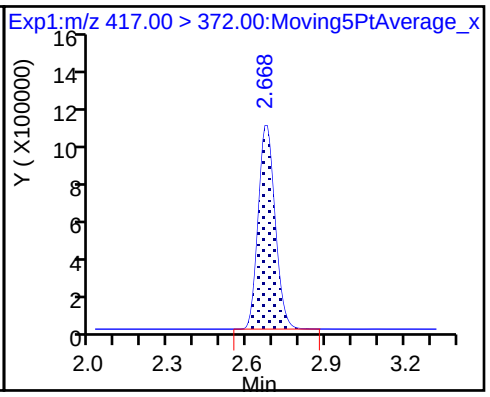
D 12 M2-6:2FTS



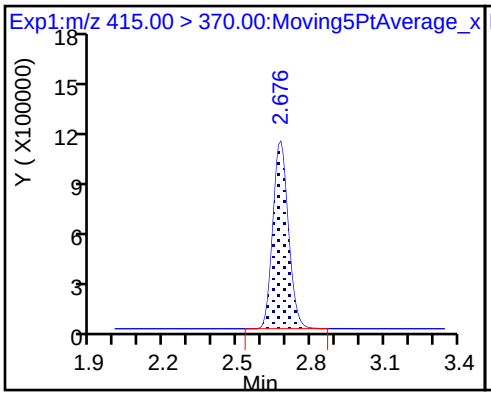
13 Sodium 1H,1H,2H,2H-perfluorooctane



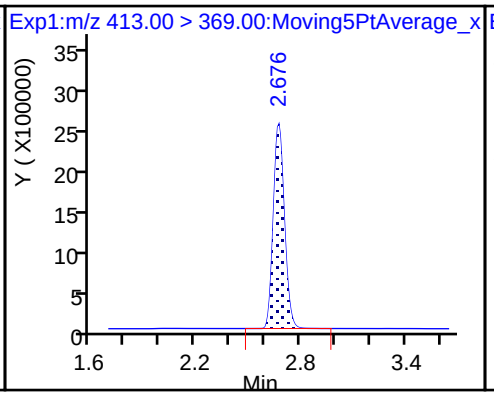
D 14 13C4 PFOA



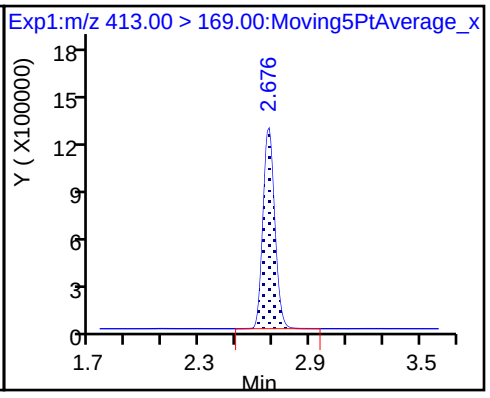
* 62 13C2-PFOA



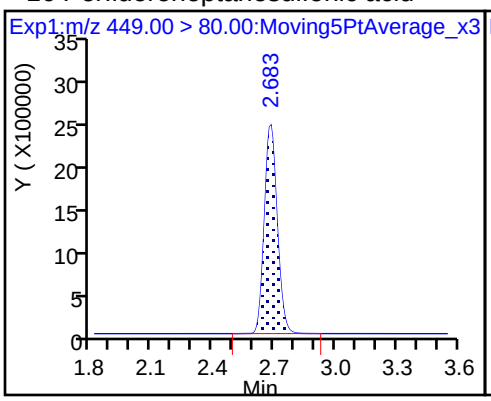
15 Perfluorooctanoic acid



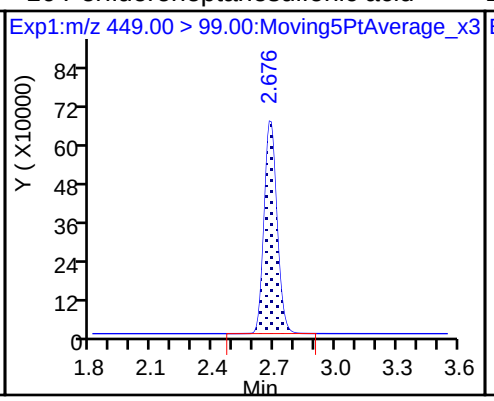
15 Perfluorooctanoic acid



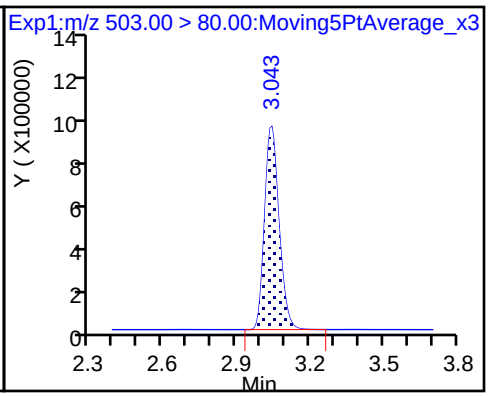
16 Perfluoroheptanesulfonic acid



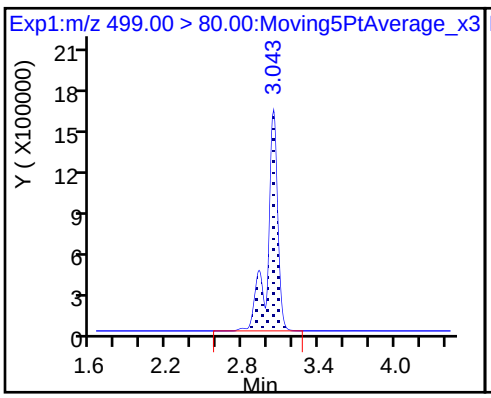
16 Perfluoroheptanesulfonic acid



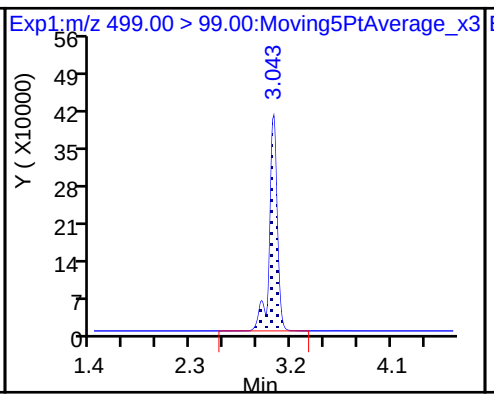
D 18 13C4 PFOS



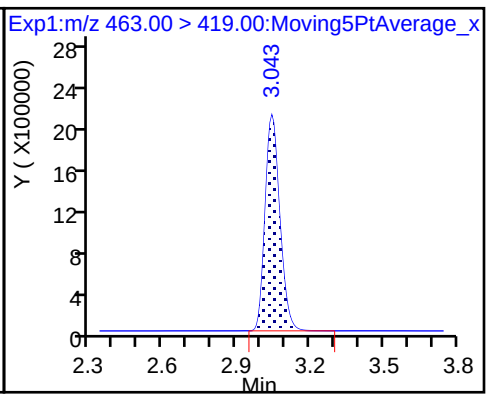
17 Perfluorooctane sulfonic acid



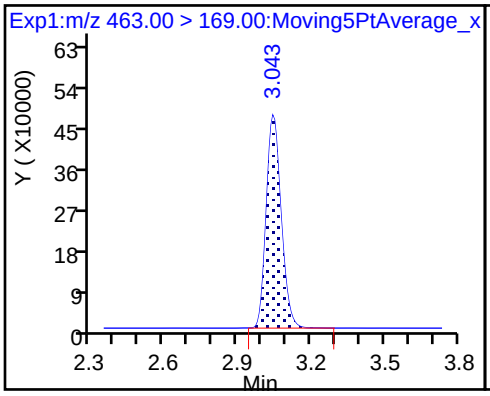
17 Perfluorooctane sulfonic acid



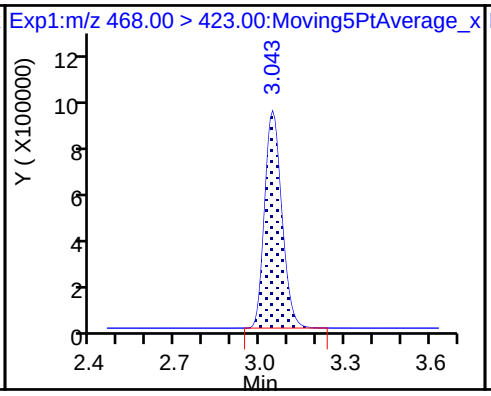
20 Perfluorononanoic acid



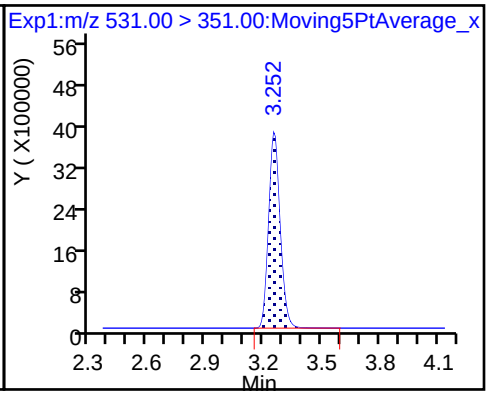
20 Perfluorononanoic acid



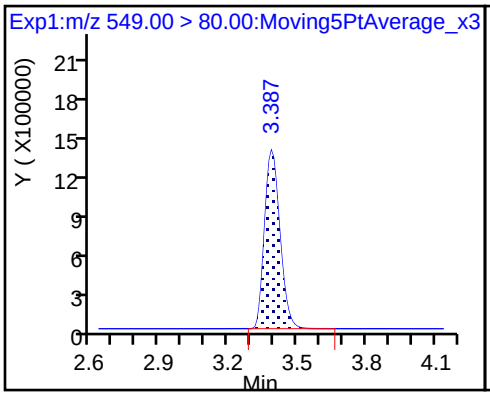
D 19 13C5 PFNA



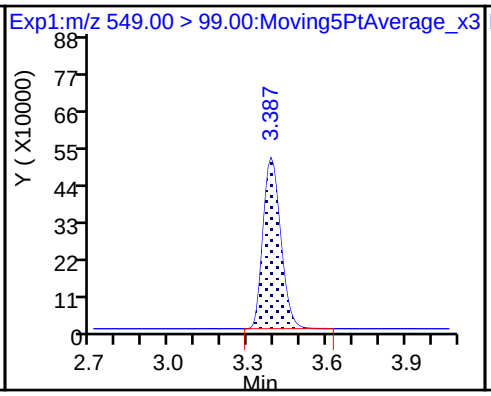
69 9-Chlorohexadecafluoro-3-oxanonane



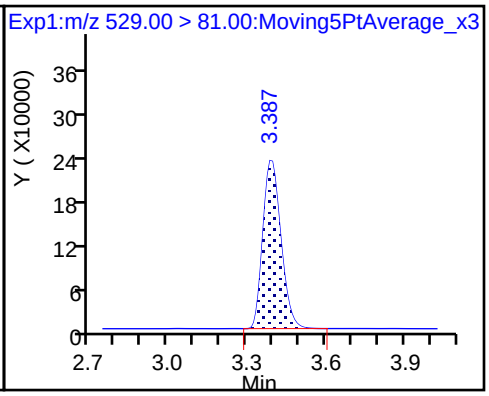
68 Perfluorononanesulfonic acid



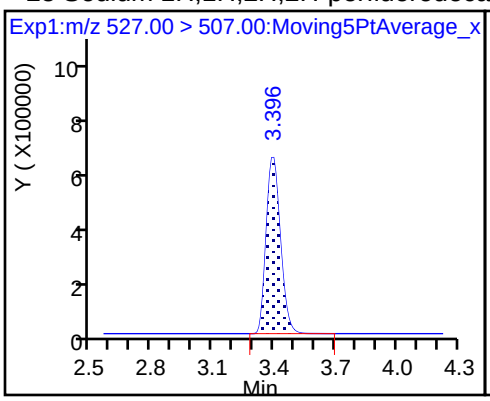
68 Perfluorononanesulfonic acid



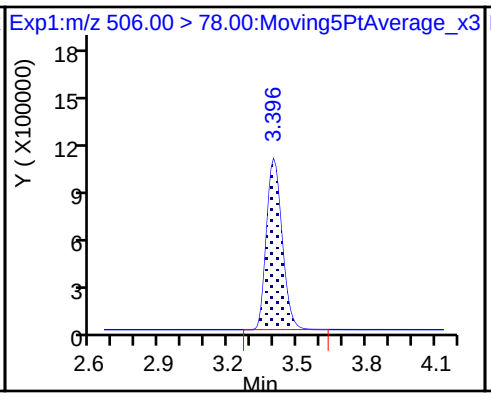
D 26 M2-8:2FTS



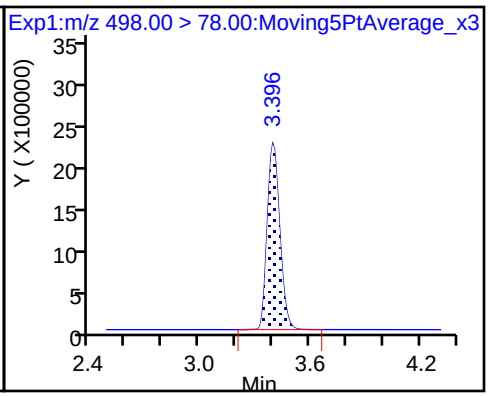
25 Sodium 1H,1H,2H,2H-perfluorodecane



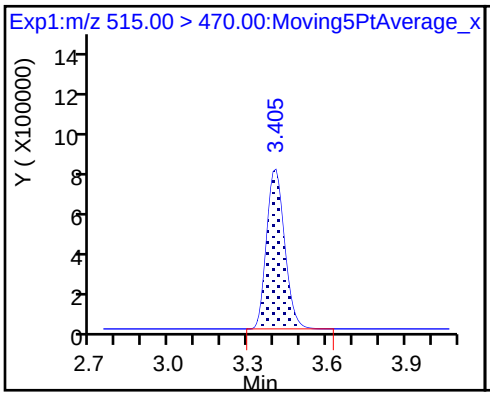
D 21 13C8 FOSA



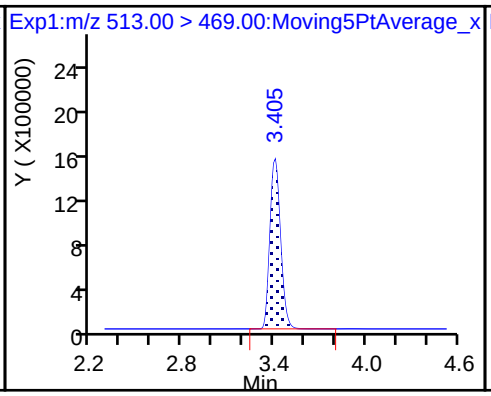
22 Perfluorooctane Sulfonamide



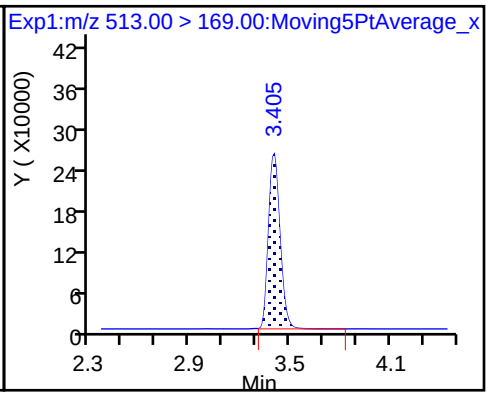
D 23 13C2 PFDA



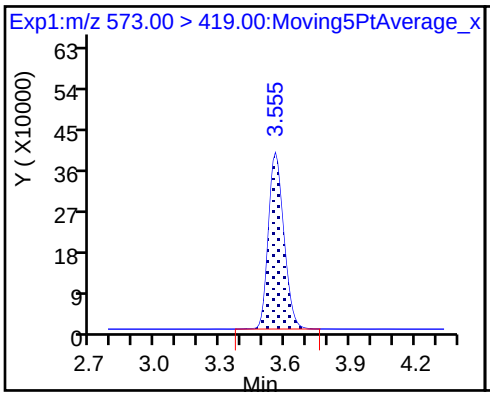
24 Perfluorodecanoic acid



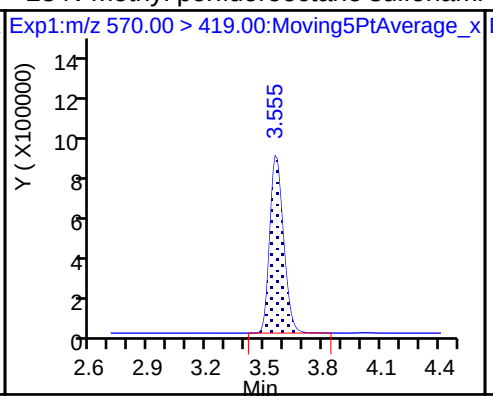
24 Perfluorodecanoic acid



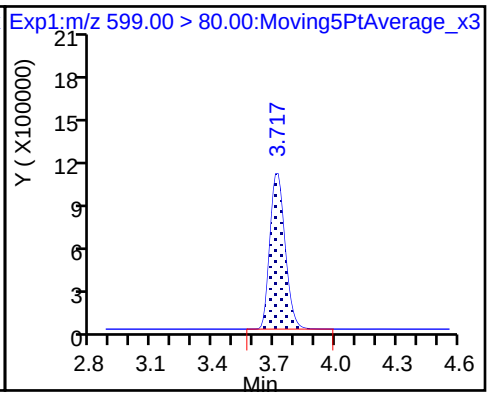
D 27 d3-NMeFOSAA



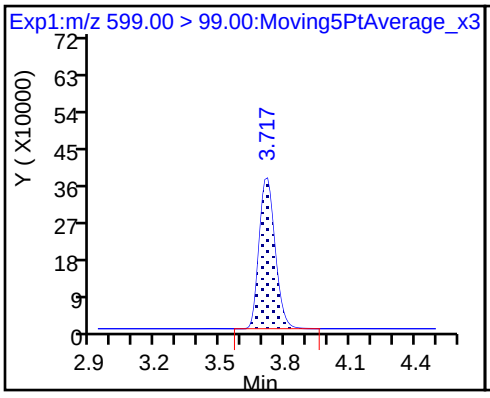
28 N-methyl perfluorooctane sulfonami



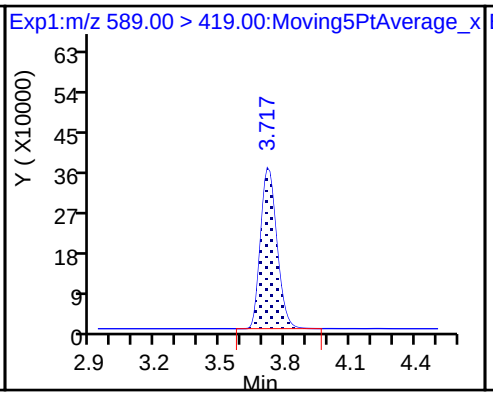
29 Perfluorodecane Sulfonic acid



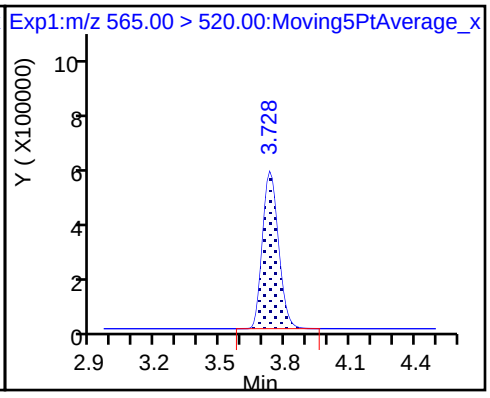
29 Perfluorodecane Sulfonic acid



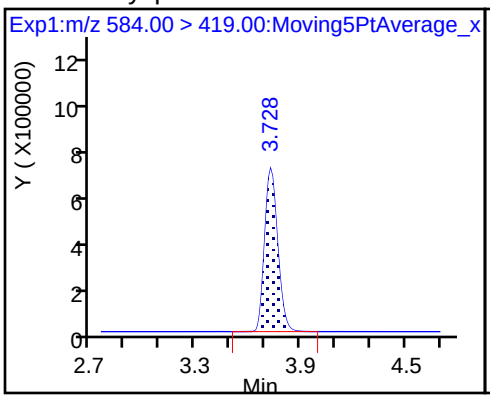
D 32 d5-NEtFOSAA



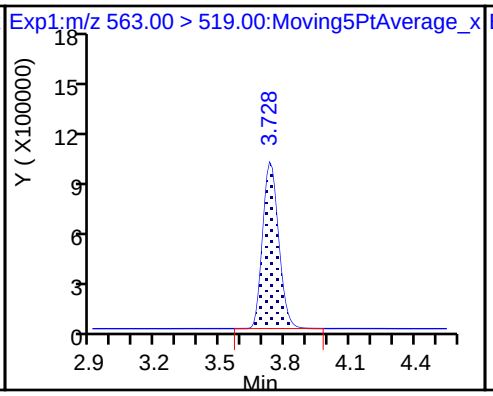
D 30 13C2 PFUnA



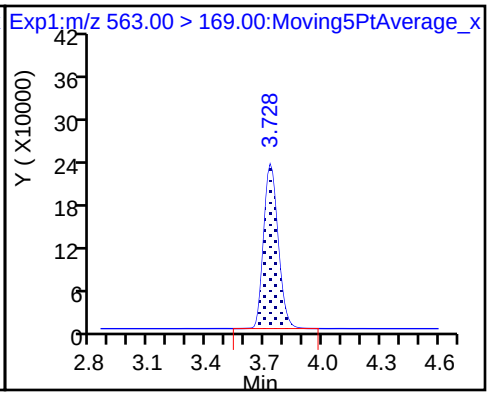
33 N-ethyl perfluorooctane sulfonamid



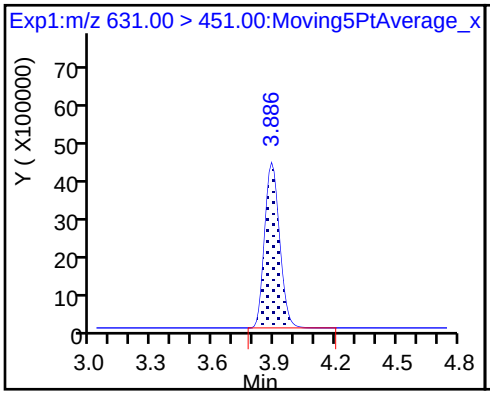
31 Perfluoroundecanoic acid



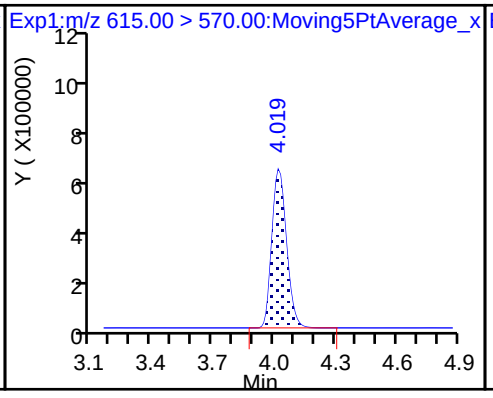
31 Perfluoroundecanoic acid



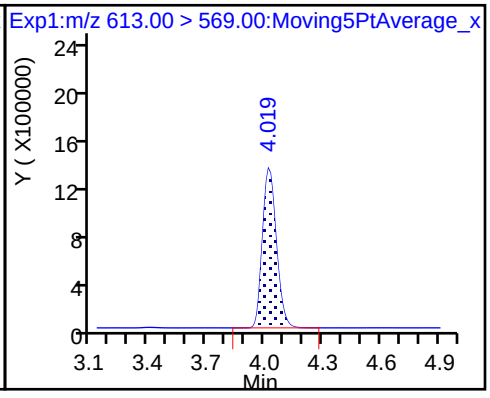
66 11-Chloroeicosafluoro-3-oxaundecan



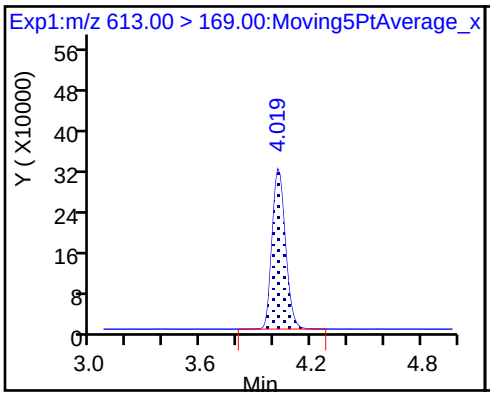
D 36 13C2 PFDoA



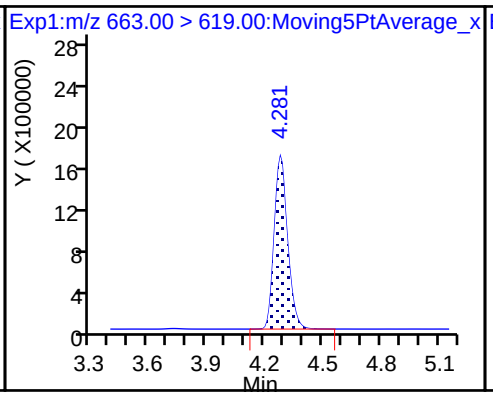
37 Perfluorododecanoic acid



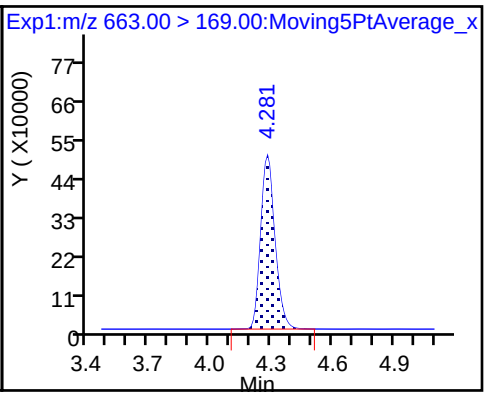
37 Perfluorododecanoic acid



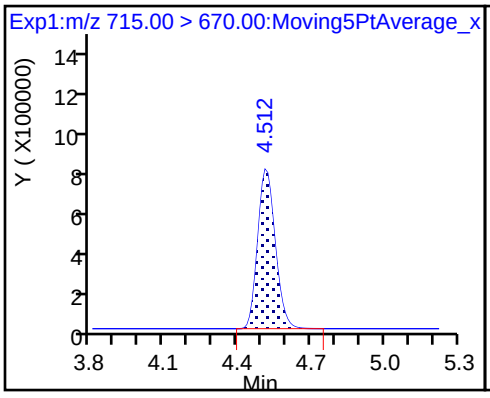
41 Perfluorotridecanoic acid



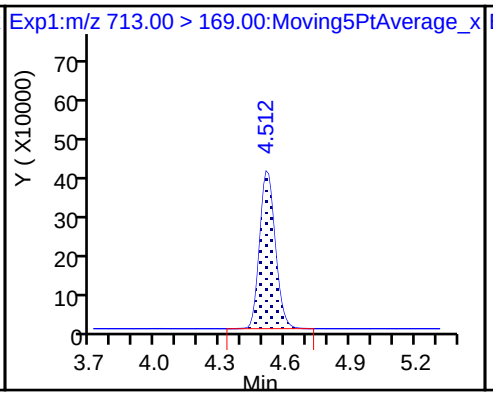
41 Perfluorotridecanoic acid



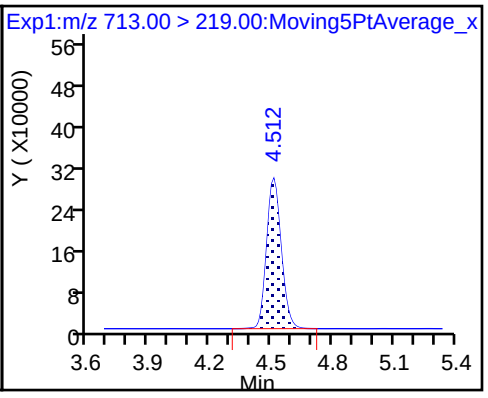
D 43 13C2-PFTeDA



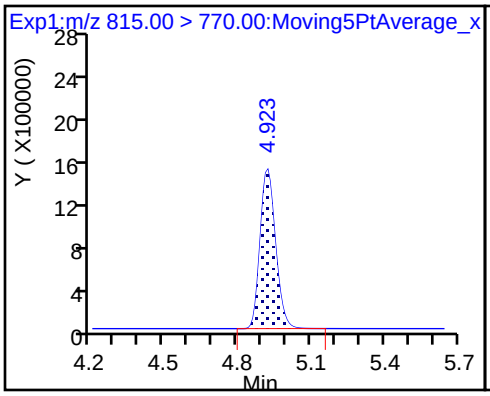
42 Perfluorotetradecanoic acid



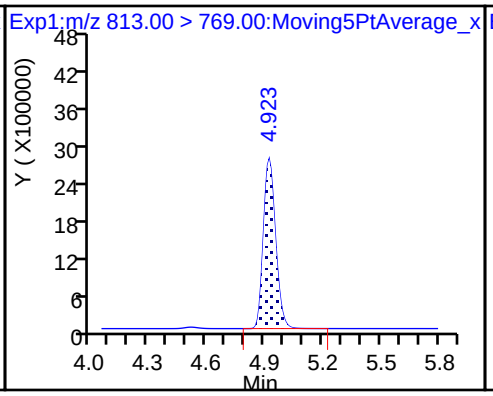
42 Perfluorotetradecanoic acid



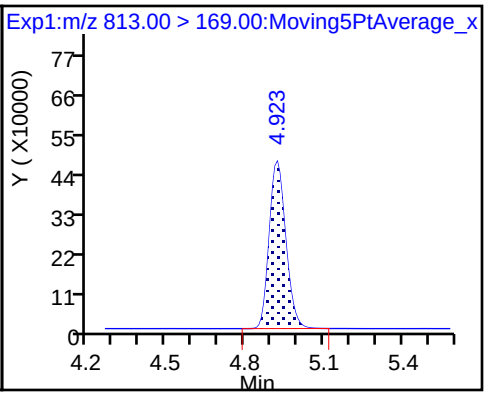
D 44 13C2-PFHxDA



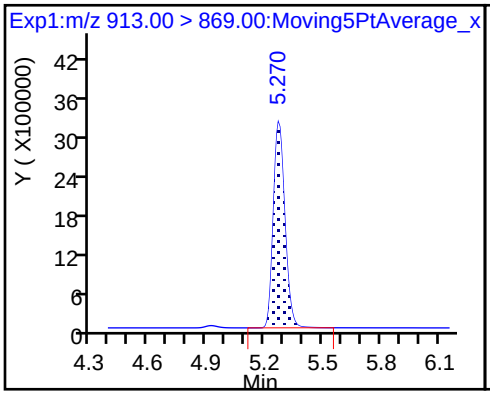
45 Perfluorohexadecanoic acid



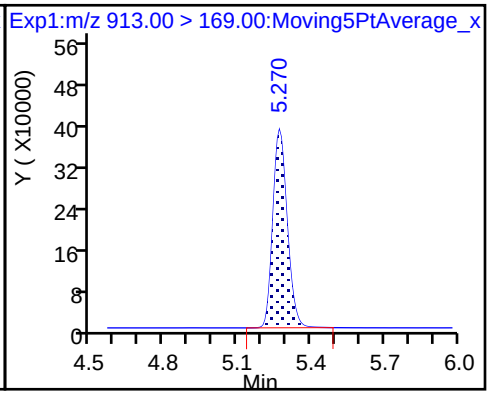
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 10-Apr-2018 19:26:34 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: L7-FULL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:18 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:20:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.430	1.431	-0.001	1.000	5884851	2.66		106	46581	
2 Perfluorobutyric acid										
212.90 > 169.00	1.430	1.432	-0.002	1.000	21784128	9.97		99.7	11333	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	17503102	9.84		98.4	16746	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	3729652	2.61		105	78108	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.735	0.003	1.000	82834	2.53		109	829	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.736	0.002	1.000	22532715	8.08		91.4	76780	
298.90 > 99.00	1.738	1.736	0.002	1.000	10095018		2.23(1.25-3.74)	91.4	146676	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.950	-0.001	1.000	563434	2.40		103	6225	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	5473778	9.58		103	195589	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4231897	2.68		107	122911	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.985	-0.004	1.000	16596765	9.65		96.5	37407	
313.00 > 119.00	1.981	1.985	-0.004	1.000	1629067		10.19(5.03-15.10)	96.5	18942	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.008	-0.005	1.000	22248169	8.73		93.1	165195	
349.00 > 99.00	2.003	2.008	-0.005	1.000	8727242		2.55(1.36-4.07)	93.1	125798	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	242908	2.49		99.5	8616	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.087	-0.004	1.000	2803143	10.4		104	17925	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	16683281	10.9		109	20962	
363.00 > 169.00	2.320	2.314	0.006	1.000	6590526		2.53(1.13-3.40)	109	34535	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	3828332	2.49		99.7	77251	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.320	2.323	-0.003	0.994	18531754	8.49		93.3	42607	
399.00 > 99.00	2.320	2.323	-0.003	0.994	6460937		2.87(1.50-4.49)	93.3	47012	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	4559710	2.41		102	82801	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	39451342	8.40		84.0	277885	
377.00 > 85.00	2.359	2.360	-0.001	1.000	26259771		1.50(0.84-2.53)	84.0	255143	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	5439954	9.93		105	66881	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	769923	2.34		98.5	9054	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	3866213	2.53		101	50638	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	17251700	9.65		96.5	9651	
413.00 > 169.00	2.675	2.674	0.001	1.000	9097235		1.90(0.84-2.52)	96.5	29224	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.674	0.001		4114287	2.50			76246	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	16945821	9.42		98.9	66065	
449.00 > 99.00	2.683	2.680	0.003	1.000	4841116		3.50(1.94-5.82)	98.9	91269	
D 18 13C4 PFOS										
503.00 > 80.00	3.043	3.041	0.002	1.000	3239063	2.44		102	17414	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.043	3.042	0.001	1.000	14391699	9.76		105	52846	
499.00 > 99.00	3.043	3.042	0.001	1.000	3174442		4.53(2.31-6.93)	105	34754	
20 Perfluorononanoic acid										
463.00 > 419.00	3.043	3.043	0.0	0.998	13696835	9.77		97.7	34474	
463.00 > 169.00	3.043	3.043	0.0	0.998	3462437		3.96(1.90-5.69)	97.7	45718	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.045	0.005	1.000	3361051	2.56		102	67264	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	23669204	9.26		99.4	298503	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.395	3.388	0.007	1.000	10381596	9.58		99.8	64461	
549.00 > 99.00	3.395	3.388	0.007	1.000	3993295		2.60(1.33-3.97)	99.8	65048	
D 26 M2-8:2FTS										
529.00 > 81.00	3.395	3.390	0.005	1.000	929210	2.34		97.9	9349	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.395	3.393	0.002	1.000	4704229	9.58		100	196732	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.397	-0.002	1.000	4196317	2.53		101	46250	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.003	16450280	9.69		96.9	74333	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	2846573	2.58		103	67167	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	11538792	9.82		98.2	37953	
513.00 > 169.00	3.404	3.402	0.002	1.000	2042111		5.65(2.36-7.09)	98.2	47982	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.553	3.553	0.0	1.000	1702670	2.72		109	20225	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.563	3.558	0.005	1.003	7221428	10.6		106	41843	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.715	0.001	1.000	9173589	10.4		108	56586	
599.00 > 99.00	3.716	3.715	0.001	1.000	3114281		2.95(1.39-4.16)	108	76561	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.727	3.722	0.005	1.000	1478400	2.40		95.9	16640	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.727	0.010	1.003	5812610	10.5		105	50290	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.727	0.010	1.000	2344065	2.46		98.6	49963	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.727	3.727	0.0	0.997	7810732	9.86		98.6	36756	
563.00 > 169.00	3.727	3.727	0.0	0.997	1900318		4.11(2.12-6.36)	98.6	52722	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.885	3.883	0.002	1.000	32450794	8.22		87.3	180198	
D 36 13C2 PFDoA										
615.00 > 570.00	4.018	4.017	0.001	1.000	2618174	2.55		102	22873	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.020	-0.002	1.000	11350274	10.4		104	14082	
613.00 > 169.00	4.028	4.020	0.008	1.003	2800305		4.05(2.13-6.40)	104	29481	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.278	0.002	1.000	12743041	10.0		100	11764	
663.00 > 169.00	4.280	4.278	0.002	1.000	3998604		3.19(1.25-3.76)	100	28384	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.522	4.513	0.009	1.000	3344927	2.57		103	23122	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.513	0.009	1.000	3357209	10.0		99.9	21100	
713.00 > 219.00	4.512	4.513	-0.001	0.998	2463893		1.36(0.71-2.13)	99.9	21721	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.922	4.918	0.004	1.000	5522067	2.61		104	17481	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.922	4.920	0.002	1.000	20182542	9.63		96.3	5657	
813.00 > 169.00	4.922	4.920	0.002	1.000	3386021		5.96(2.86-8.58)	96.3	12815	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.277	5.268	0.009	1.000	21808387	9.83		98.3	4861	
913.00 > 169.00	5.277	5.268	0.009	1.000	2810004		7.76(3.83-11.48)	98.3	7858	

Reagents:

LCPFC_LL7_00004 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:19 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Injection Date: 10-Apr-2018 19:26:34 Instrument ID: A8_N

Lims ID: IC L7 Full

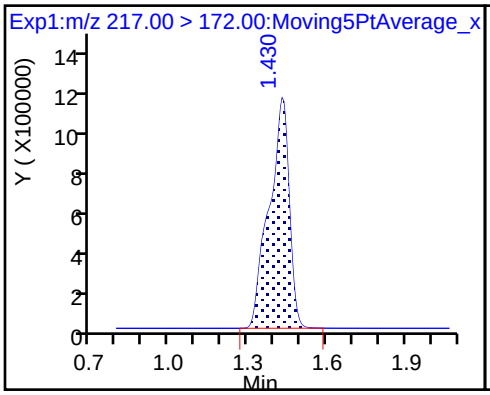
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8

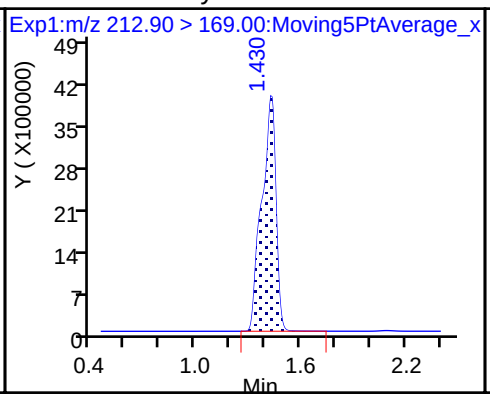
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

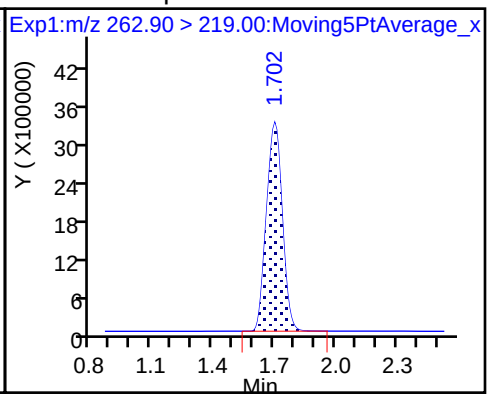
D 1 13C4 PFBA



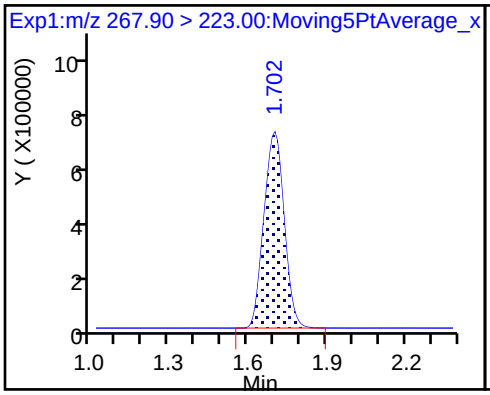
2 Perfluorobutyric acid



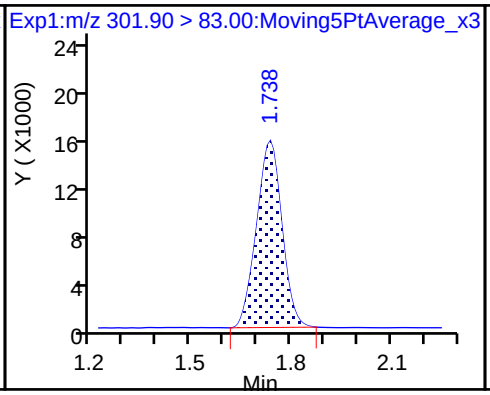
4 Perfluoropentanoic acid



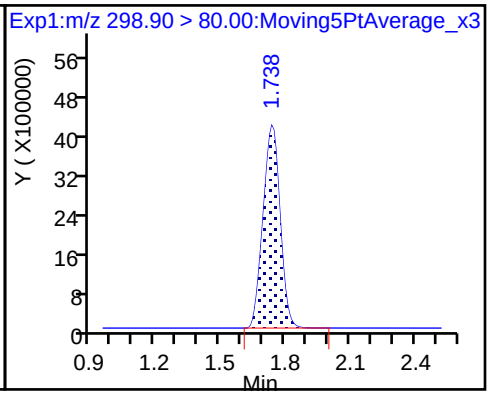
D 3 13C5-PFPeA



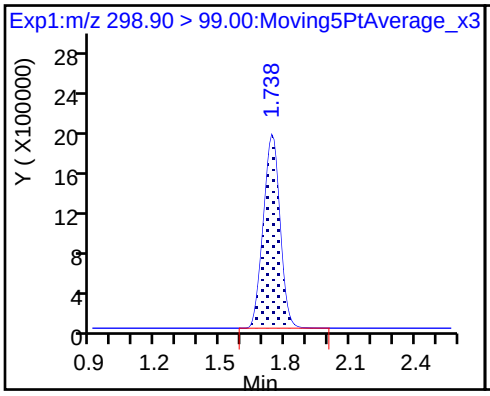
D 47 13C3-PFBS



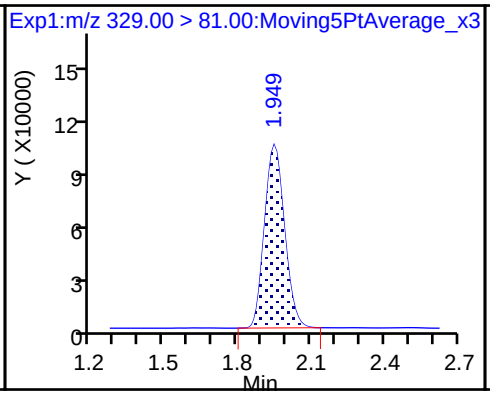
5 Perfluorobutanesulfonic acid



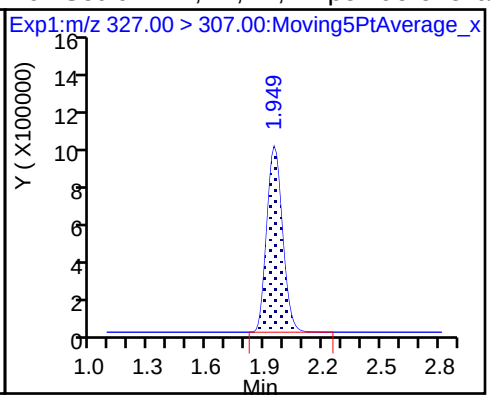
5 Perfluorobutanesulfonic acid



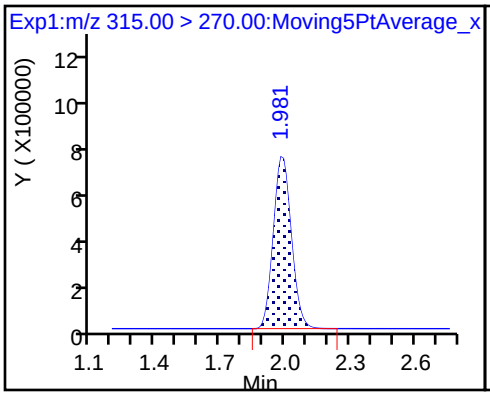
D 60 M2-4:2FTS



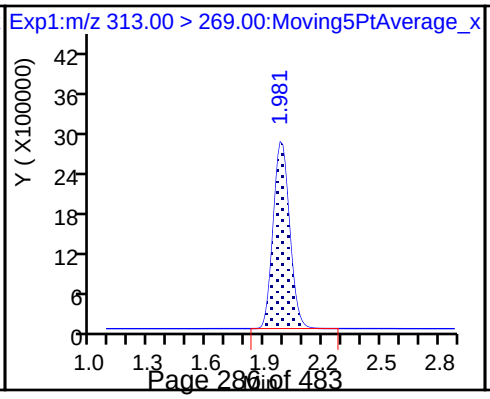
61 Sodium 1H,1H,2H,2H-perfluorohexane



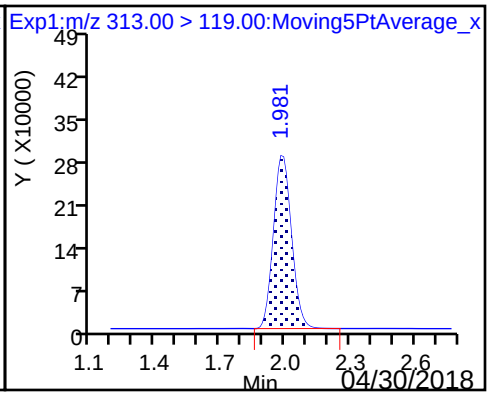
D 7 13C2 PFHxA



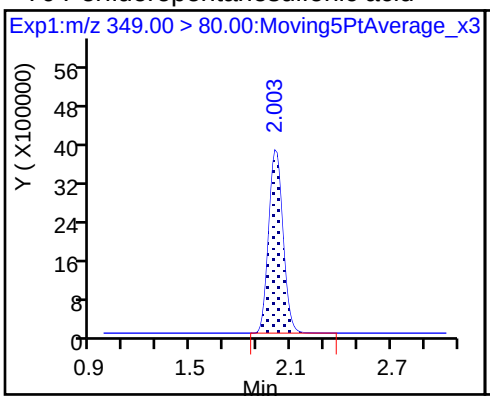
6 Perfluorohexanoic acid



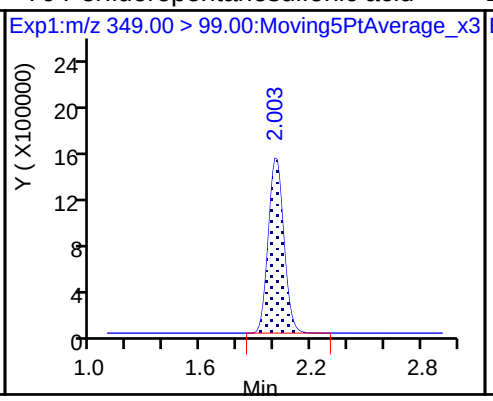
6 Perfluorohexanoic acid



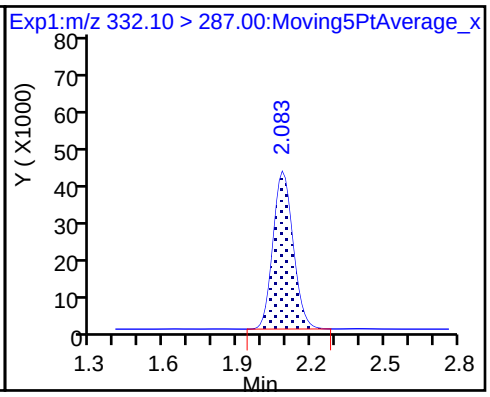
70 Perfluoropentanesulfonic acid



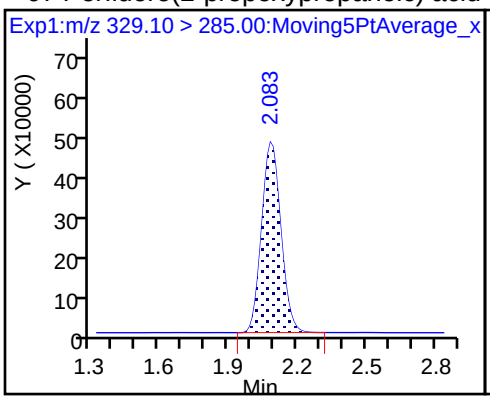
70 Perfluoropentanesulfonic acid



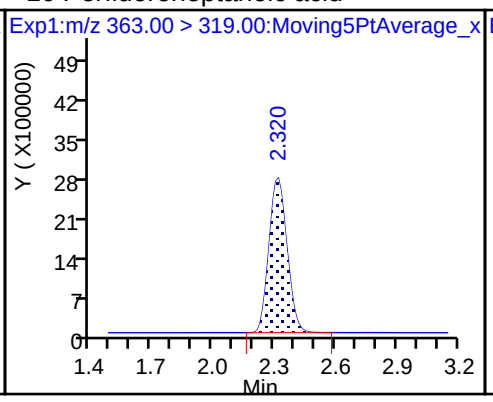
D 64 13C3 HFPO-DA



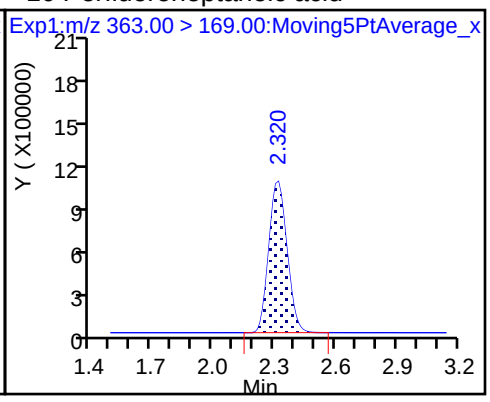
67 Perfluoro(2-propoxypropanoic) acid



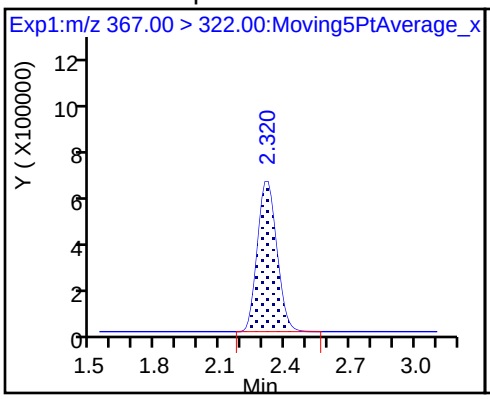
10 Perfluoroheptanoic acid



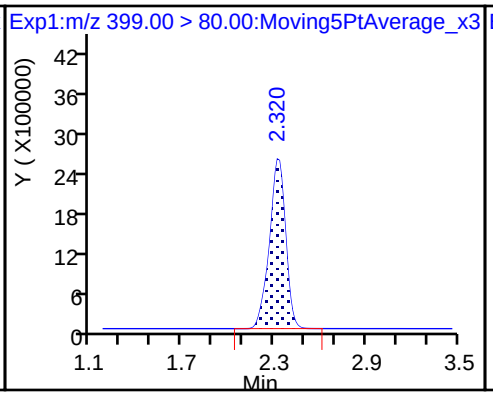
10 Perfluoroheptanoic acid



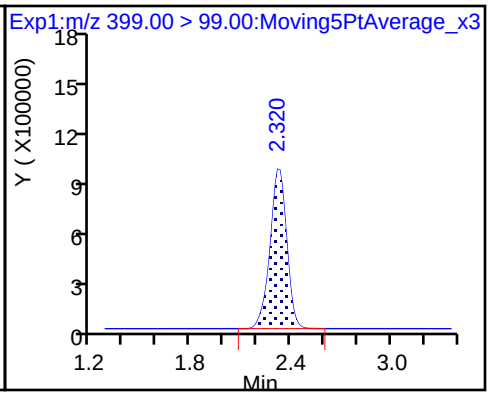
D 9 13C4-PFHpA



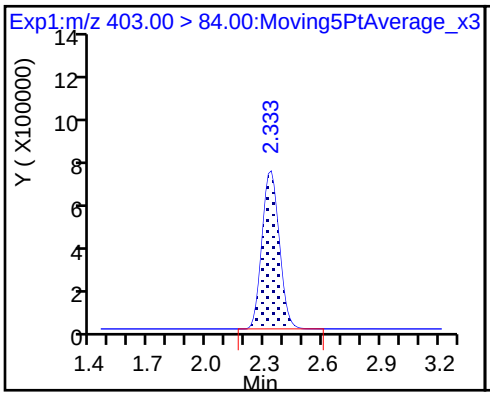
8 Perfluorohexanesulfonic acid



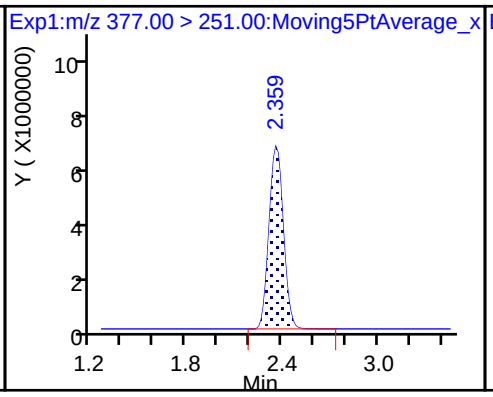
8 Perfluorohexanesulfonic acid



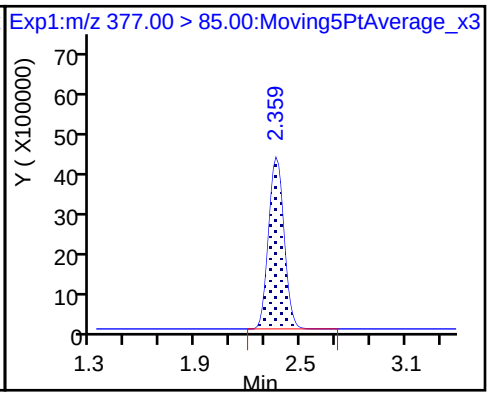
D 11 18O2 PFHxS



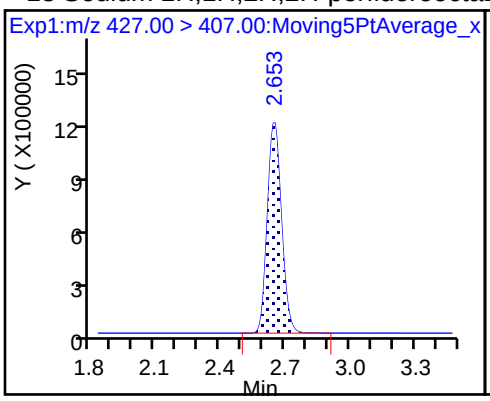
65 Adona



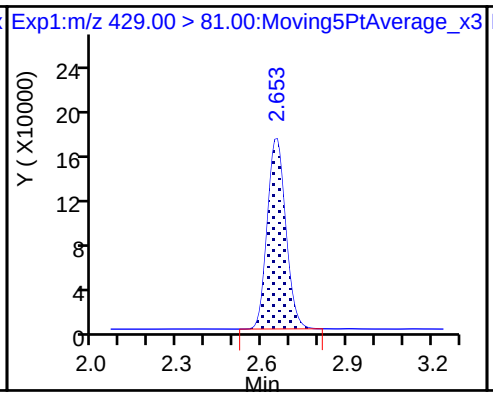
65 Adona



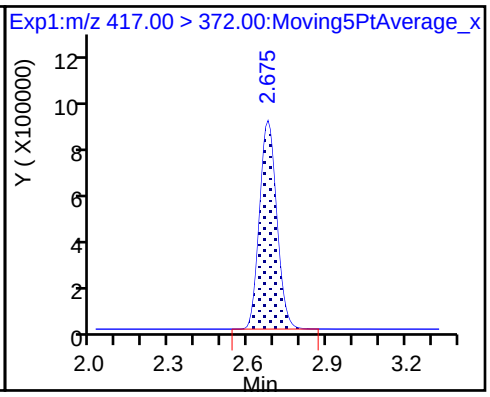
13 Sodium 1H,1H,2H,2H-perfluorooctane



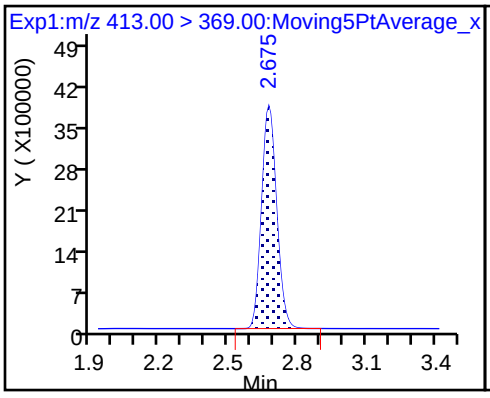
D 12 M2-6:2FTS



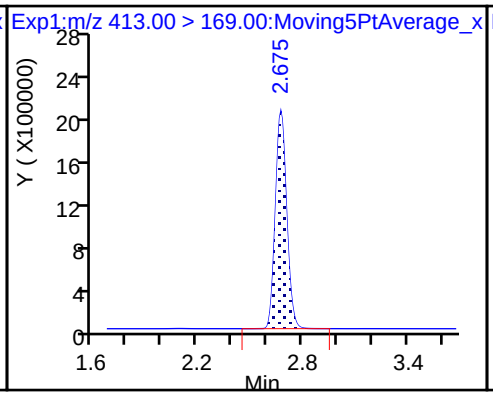
D 14 13C4 PFOA



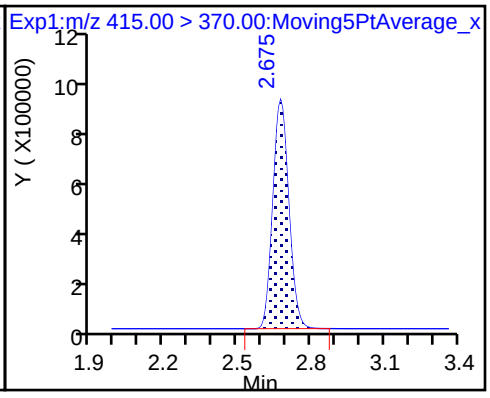
15 Perfluorooctanoic acid



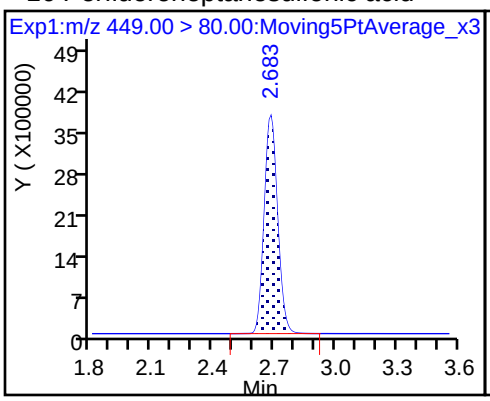
15 Perfluorooctanoic acid



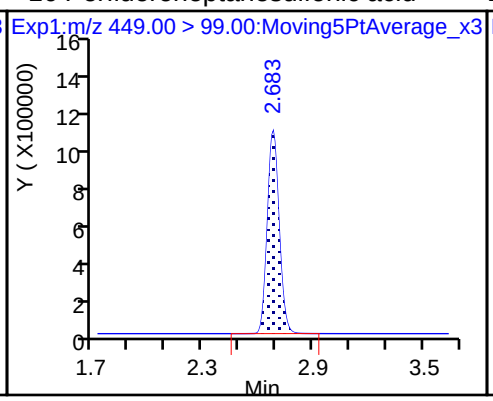
* 62 13C2-PFOA



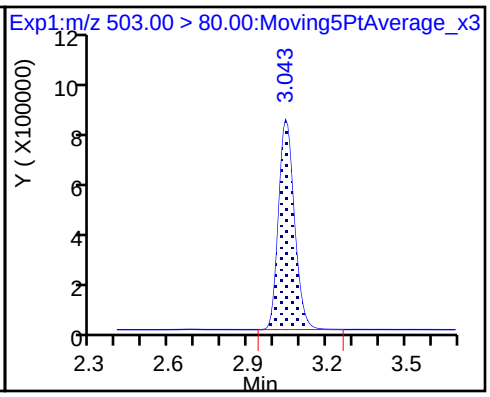
16 Perfluoroheptanesulfonic acid



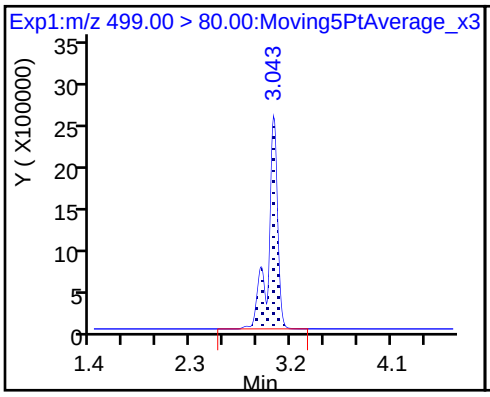
16 Perfluoroheptanesulfonic acid



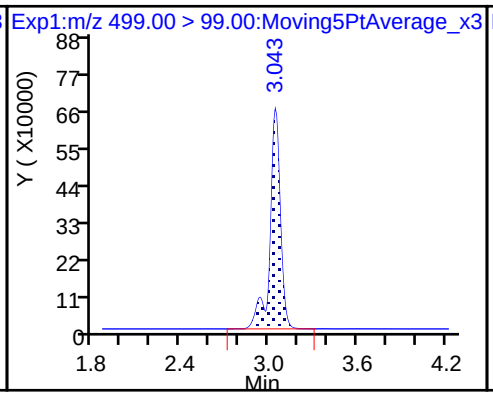
D 18 13C4 PFOS



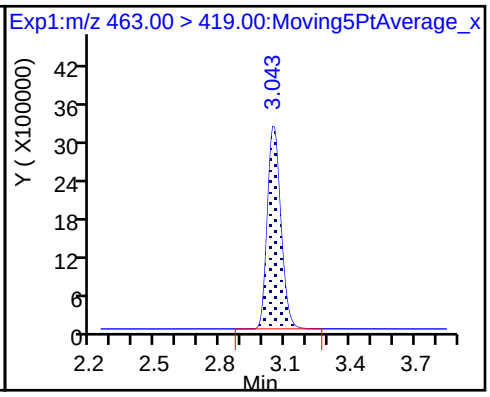
17 Perfluorooctane sulfonic acid



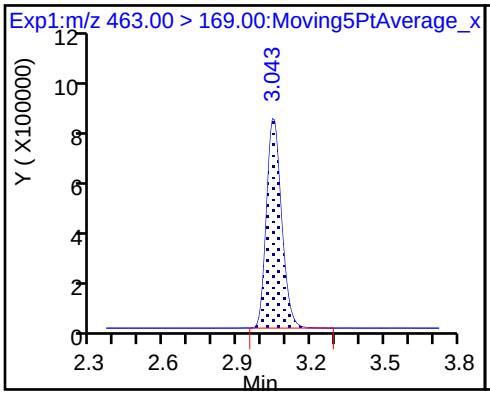
17 Perfluorooctane sulfonic acid



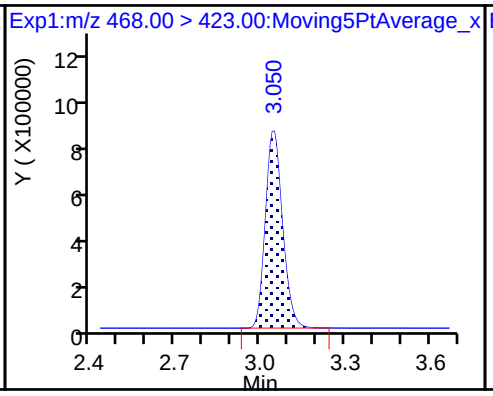
20 Perfluorononanoic acid



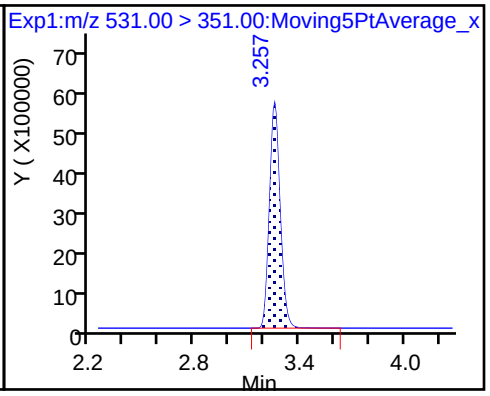
20 Perfluorononanoic acid



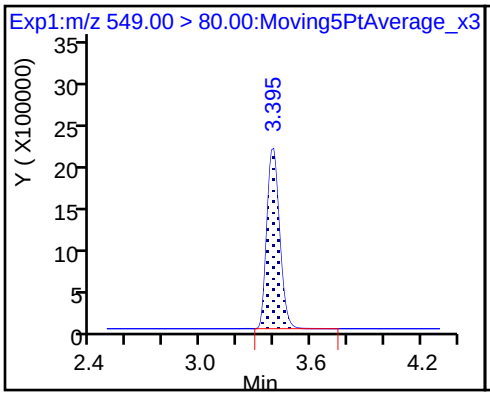
D 19 13C5 PFNA



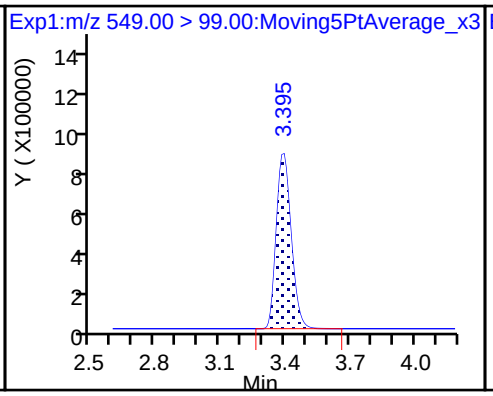
69 9-Chlorohexadecafluoro-3-oxanonane



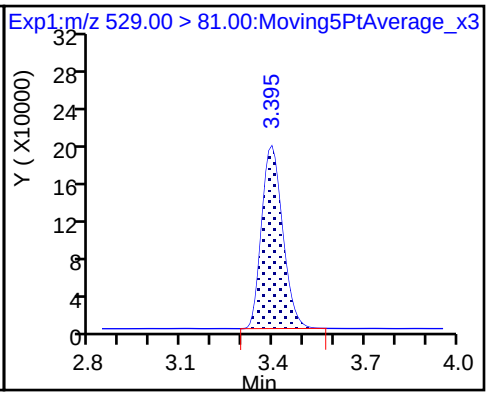
68 Perfluorononanesulfonic acid



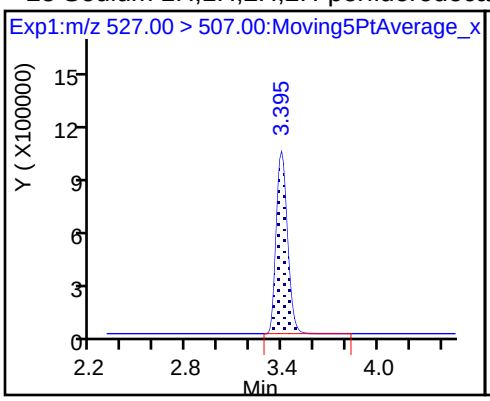
68 Perfluorononanesulfonic acid



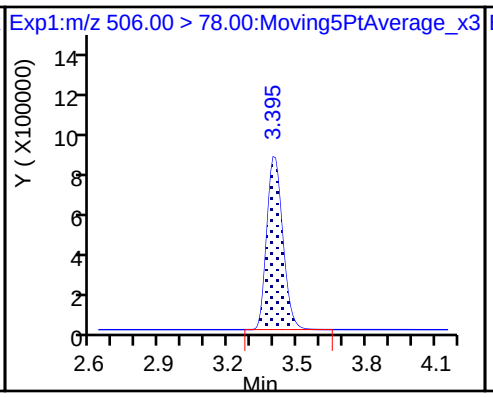
D 26 M2-8:2FTS



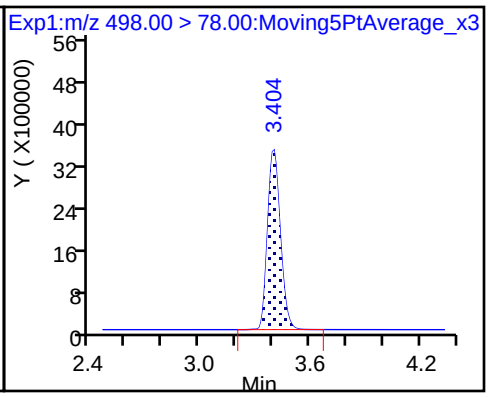
25 Sodium 1H,1H,2H,2H-perfluorodecane



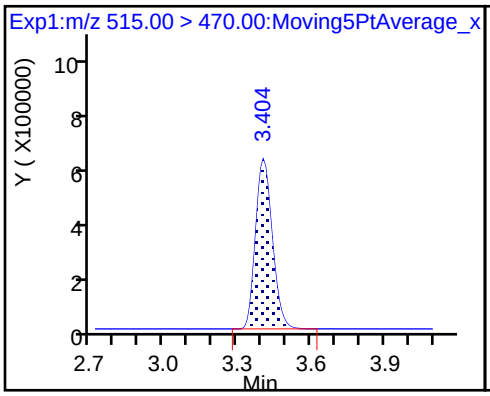
D 21 13C8 FOSA



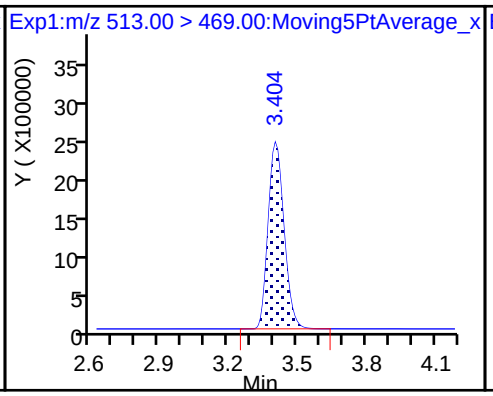
22 Perfluorooctane Sulfonamide



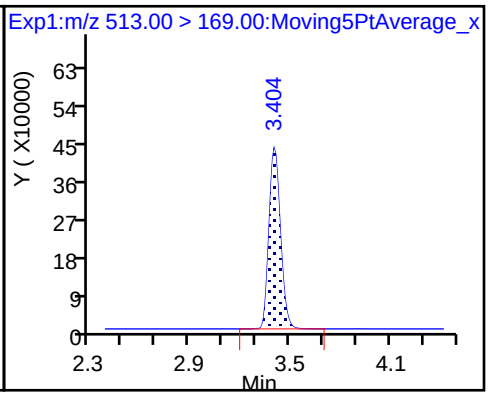
D 23 13C2 PFDA



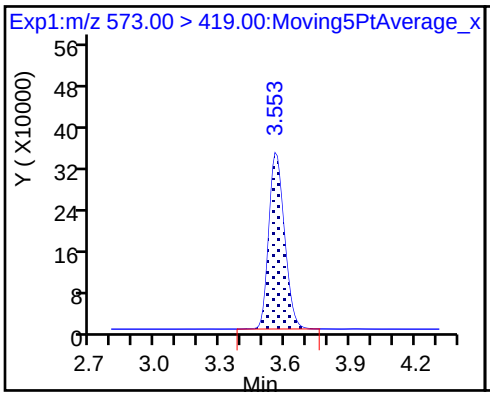
24 Perfluorodecanoic acid



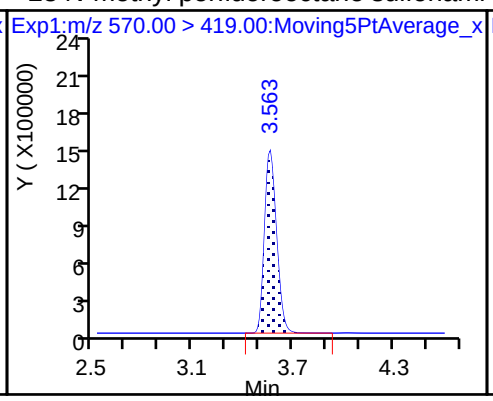
24 Perfluorodecanoic acid



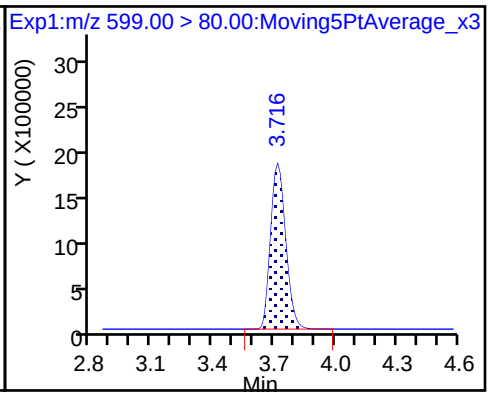
D 27 d3-NMeFOSAA



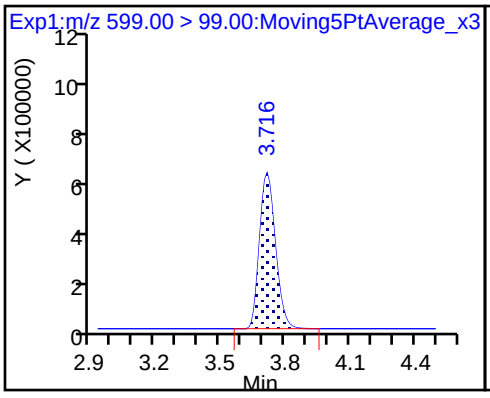
28 N-methyl perfluorooctane sulfonami



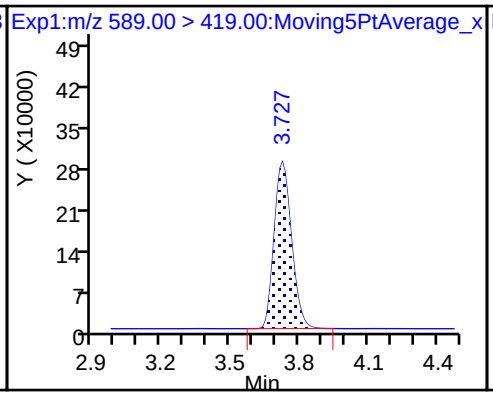
29 Perfluorodecane Sulfonic acid



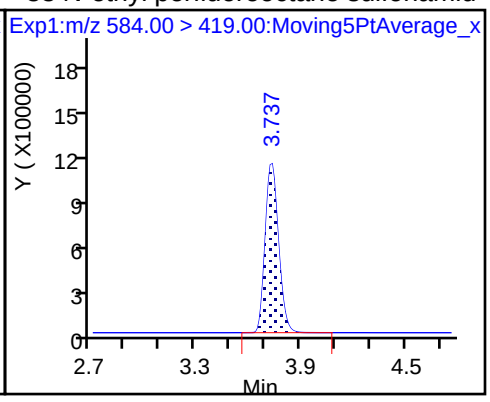
29 Perfluorodecane Sulfonic acid



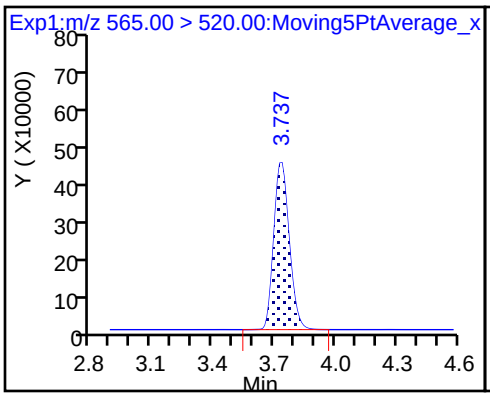
D 32 d5-NEtFOSAA



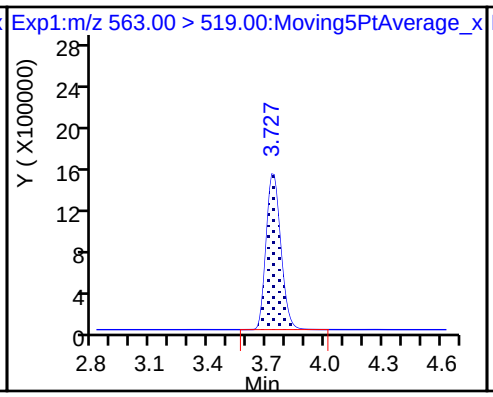
33 N-ethyl perfluorooctane sulfonamid



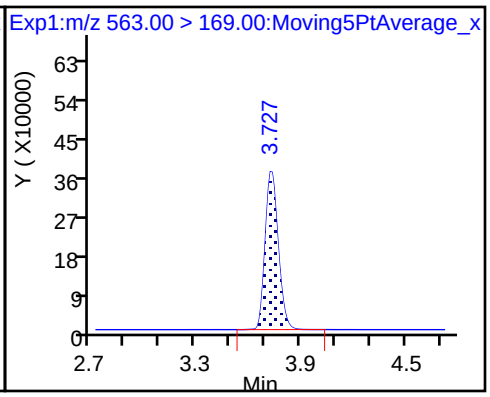
D 30 13C2 PFUnA



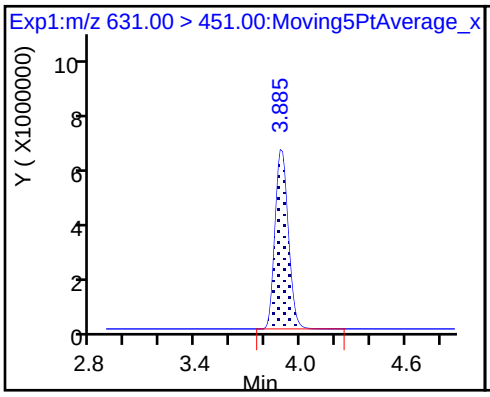
31 Perfluoroundecanoic acid



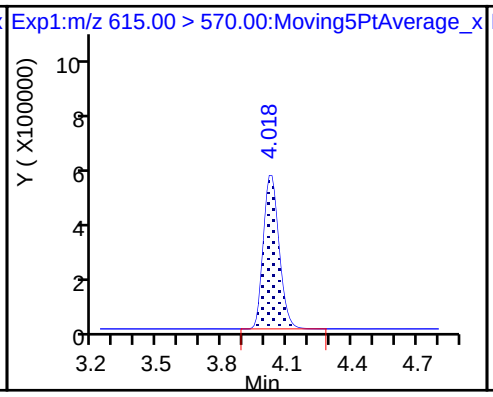
31 Perfluoroundecanoic acid



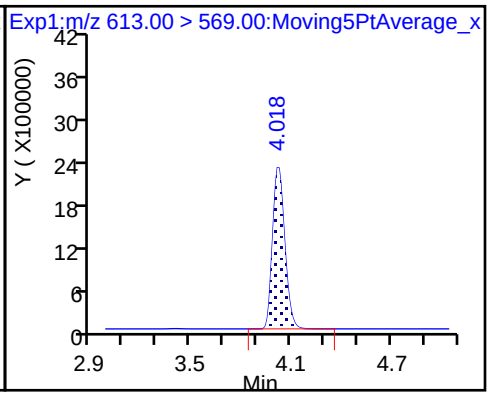
66 11-Chloroeicosafluoro-3-oxaundecan



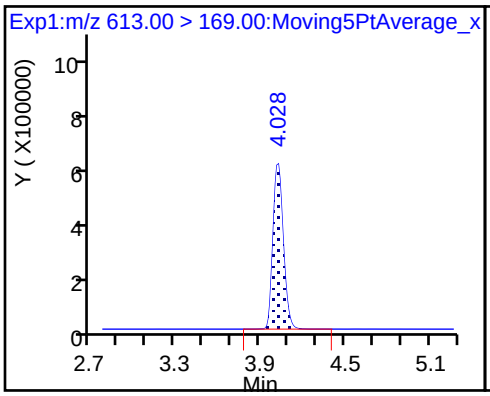
D 36 13C2 PFDoA



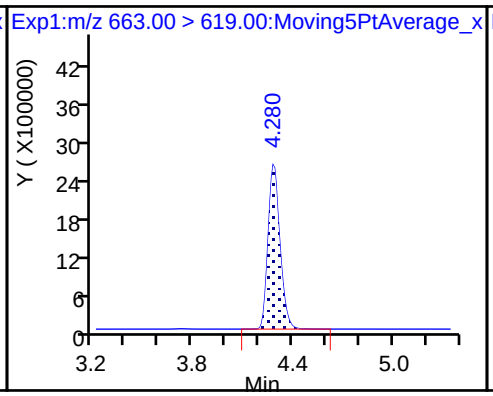
37 Perfluorododecanoic acid



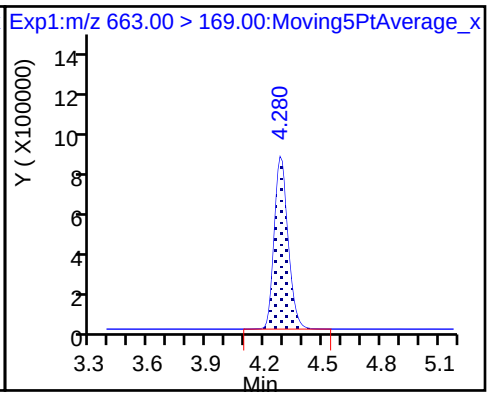
37 Perfluorododecanoic acid



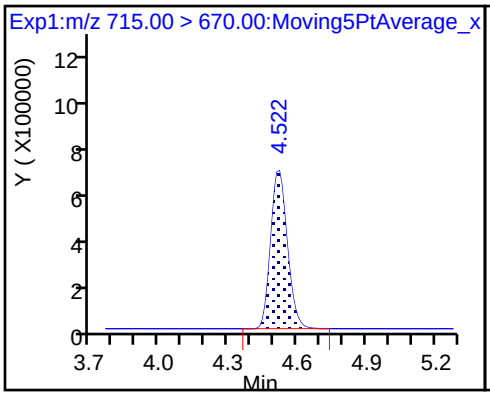
41 Perfluorotridecanoic acid



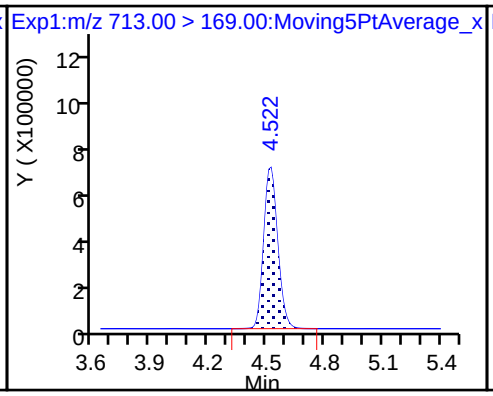
41 Perfluorotridecanoic acid



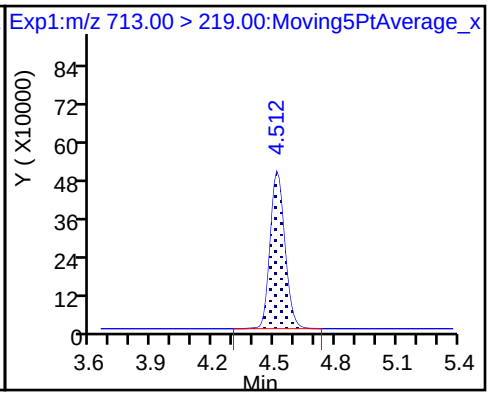
D 43 13C2-PFTeDA



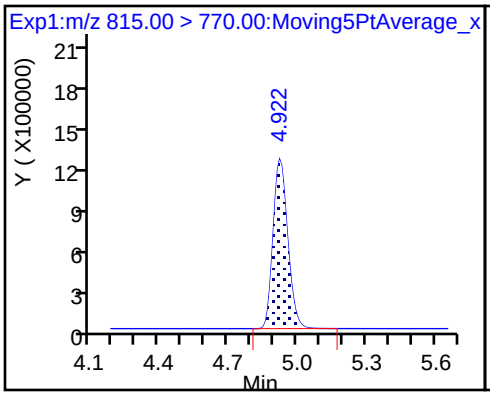
42 Perfluorotetradecanoic acid



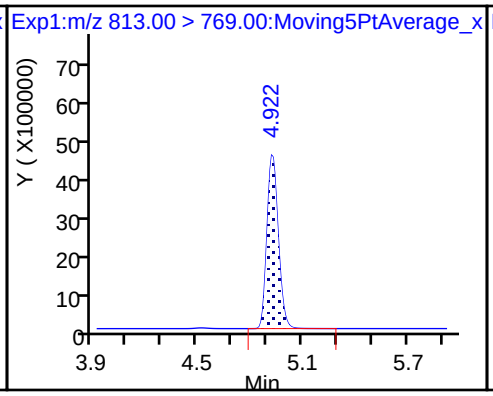
42 Perfluorotetradecanoic acid



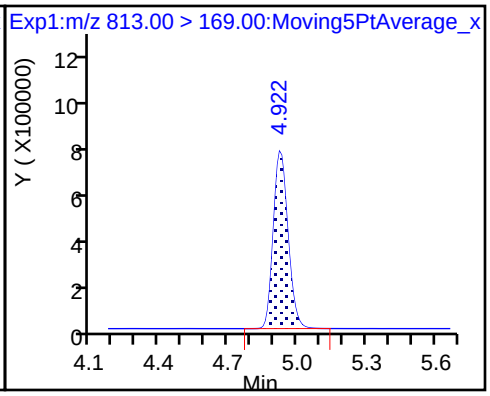
D 44 13C2-PFHxDA



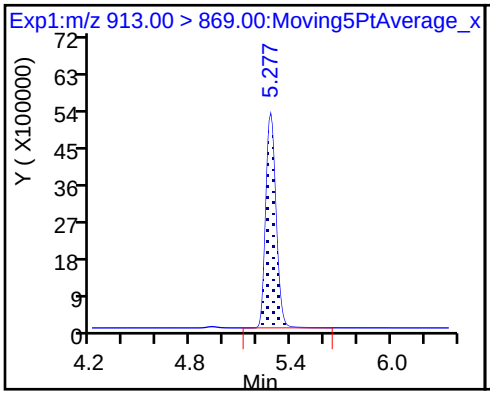
45 Perfluorohexadecanoic acid



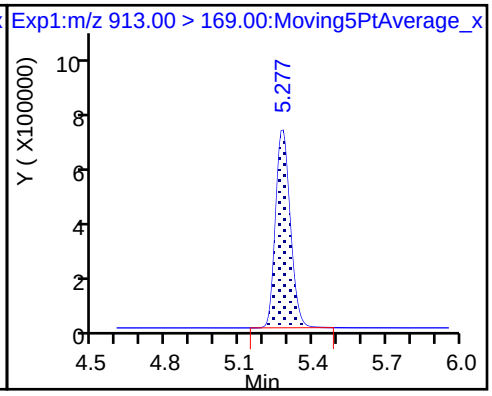
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: ICV 320-217359/10 Calibration Date: 04/10/2018 19:42

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.10LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9456		2.55	2.50	1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.133		2.38	2.50	-5.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	82.79		2.34	2.21	5.8	50.0
4:2 FTS	AveID	16.03	17.79		2.59	2.34	11.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.124		2.77	2.50	10.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	72.96		2.40	2.35	2.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.549		2.29	2.50	-8.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.015		2.54	2.50	1.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.112		2.24	2.28	-1.7	40.0
Adona	AveID	3.464	3.350		2.42	2.50	-3.3	50.0
6:2FTS	AveID	1.691	1.750		2.46	2.38	3.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.174		2.54	2.50	1.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.287		2.30	2.38	-3.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.033		2.48	2.50	-0.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.066		2.27	2.31	-2.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.806		2.23	2.33	-4.2	50.0
8:2FTS	AveID	1.265	1.321		2.51	2.40	4.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7710		2.32	2.40	-3.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.008		2.44	2.50	-2.3	40.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.087		2.69	2.50	7.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.055		2.65	2.50	5.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6537		2.43	2.41	0.7	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9922		2.65	2.50	6.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8169		2.42	2.50	-3.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.801		2.27	2.36	-3.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.064		2.55	2.50	2.0	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.212		2.49	2.50	-0.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2481		2.47	2.50	-1.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9405		2.46	2.50	-1.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: ICV 320-217359/10 Calibration Date: 04/10/2018 19:42

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.10LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.011		2.52	2.50	0.7	50.0
13C4 PFBA	Ave	1.345	1.348		2.51	2.50	0.2	50.0
13C5 PFPeA	Ave	0.8672	0.8855		2.55	2.50	2.1	50.0
13C3-PFBS	Ave	0.0199	0.0197		2.31	2.33	-0.8	50.0
M2-4:2FTS	Ave	0.1425	0.1499		2.46	2.34	5.1	50.0
13C2 PFHxA	Ave	0.9590	0.9273		2.42	2.50	-3.3	50.0
13C3 HFPO-DA	Ave	0.0593	0.0610		2.57	2.50	2.9	50.0
13C4-PFHpA	Ave	0.9333	0.9503		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	1.152	1.130		2.32	2.37	-1.9	50.0
M2-6:2FTS	Ave	0.2000	0.1936		2.30	2.38	-3.2	40.0
13C4 PFOA	Ave	0.9276	0.9247		2.49	2.50	-0.3	50.0
13C4 PFOS	Ave	0.8066	0.8532		2.53	2.39	5.8	50.0
13C5 PFNA	Ave	0.7973	0.8279		2.60	2.50	3.8	50.0
M2-8:2FTS	Ave	0.2409	0.2384		2.37	2.40	-1.0	40.0
13C2 PFDA	Ave	0.6701	0.6944		2.59	2.50	3.6	50.0
13C8 FOSA	Ave	1.007	1.012		2.51	2.50	0.5	50.0
d3-NMeFOSAA	Ave	0.3798	0.3981		2.62	2.50	4.8	50.0
d5-NEtFOSAA	Ave	0.3749	0.3684		2.46	2.50	-1.7	50.0
13C2 PFUnA	Ave	0.5781	0.5516		2.39	2.50	-4.6	50.0
13C2 PFDoA	Ave	0.6242	0.6257		2.51	2.50	0.2	50.0
13C2-PFTeDA	Ave	0.7915	0.8266		2.61	2.50	4.4	50.0
13C2-PFHxDA	Ave	1.288	1.382		2.68	2.50	7.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_010.d
Lims ID: ICV Full
Client ID:
Sample Type: ICV
Inject. Date: 10-Apr-2018 19:42:10 ALS Bottle#: 18 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 11-Apr-2018 10:51:23 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK002

First Level Reviewer: roycea Date: 11-Apr-2018 09:23:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.435	1.431	0.004	1.000	5903140	2.51		100	42897	
2 Perfluorobutyric acid										
212.90 > 169.00	1.435	1.432	0.003	1.000	5582092	2.55			3157	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.699	0.003	0.558	3876443	2.55		102	71438	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.699	0.003	1.000	4390263	2.38			3574	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.735	0.003	1.000	80328	2.31		99.2	737	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.736	0.002	1.000	6328944	2.34			26552	
298.90 > 99.00	1.739	1.736	0.002	1.000	2603286		2.43(1.25-3.74)		34374	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.950	-0.001	1.000	1436925	2.59			63389	
D 60 M2-4:2FTS										
329.00 > 81.00	1.949	1.950	-0.001	1.000	612715	2.46		105	5966	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.985	0.008	1.006	4562329	2.77			12399	
313.00 > 119.00	1.981	1.985	-0.004	1.000	384388		11.87(5.03-15.10)		6555	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.985	-0.004	1.000	4059281	2.42		96.7	114705	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.004	2.008	-0.004	1.000	5923371	2.40			37471	
349.00 > 99.00	2.004	2.008	-0.004	1.000	2141440		2.77(1.36-4.07)		32919	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.083	2.084	-0.001	1.000	267167	2.57		103	7732	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.083	2.087	-0.004	1.000	680925	2.29			4640	
D 9 13C4-PFHpA										
367.00 > 322.00	2.320	2.314	0.006	1.000	4159917	2.55		102	83647	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.320	2.314	0.006	1.000	4222004	2.54			5555	
363.00 > 169.00	2.320	2.314	0.006	1.000	1656229		2.55(1.13-3.40)		8075	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.323	0.010	1.000	5017849	2.24			13906	
399.00 > 99.00	2.333	2.323	0.010	1.000	1647913		3.04(1.50-4.49)		14109	
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.327	0.006	1.000	4679824	2.32		98.1	94921	
65 Adona										
377.00 > 251.00	2.359	2.360	-0.001	1.000	12510918	2.42			98964	
377.00 > 85.00	2.359	2.360	-0.001	1.000	7623155		1.64(0.84-2.53)		115527	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.649	0.004	1.000	805312	2.30		96.8	15934	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.649	0.004	1.000	1408901	2.46			22533	
D 14 13C4 PFOA										
417.00 > 372.00	2.676	2.673	0.003	1.000	4047870	2.49		99.7	60383	
* 62 13C2-PFOA										
415.00 > 370.00	2.676	2.674	0.002		4377627	2.50			57743	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.676	2.674	0.002	1.000	4752903	2.54			3234	
413.00 > 169.00	2.676	2.674	0.002	1.000	2366488		2.01(0.84-2.52)		10676	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.680	0.003	1.000	4566459	2.30			32288	
449.00 > 99.00	2.683	2.680	0.003	1.000	1249476		3.65(1.94-5.82)		23451	
D 18 13C4 PFOS										
503.00 > 80.00	3.049	3.041	0.008	1.000	3570537	2.53		106	24066	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.049	3.042	0.007	1.000	3685601	2.27			15600	
499.00 > 99.00	3.049	3.042	0.007	1.000	812986		4.53(2.31-6.93)		15657	
20 Perfluorononanoic acid										
463.00 > 419.00	3.049	3.043	0.006	1.000	3743693	2.48			9400	
463.00 > 169.00	3.049	3.043	0.006	1.000	898645		4.17(1.90-5.69)		36471	
D 19 13C5 PFNA										
468.00 > 423.00	3.049	3.045	0.004	1.000	3624090	2.60		104	67532	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.257	3.253	0.004	1.000	6286262	2.23			103380	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.394	3.388	0.006	1.000	2764509	2.31			32991	
549.00 > 99.00	3.394	3.388	0.006	1.000	1003388		2.76(1.33-3.97)		19714	
D 26 M2-8:2FTS										
529.00 > 81.00	3.394	3.390	0.004	1.000	999777	2.37		99.0	10613	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.394	3.393	0.001	1.000	1323882	2.51			55023	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.397	0.007	1.000	4432045	2.51		101	58050	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.401	0.003	1.000	4817944	2.69			67785	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.401	0.003	1.000	3039987	2.59		104	79981	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.402	0.002	1.000	3064833	2.44			12447	
513.00 > 169.00	3.404	3.402	0.002	1.000	528428		5.80(2.36-7.09)		18431	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.562	3.553	0.009	1.000	1742858	2.62		105	25420	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.562	3.558	0.004	1.000	1839262	2.65			12104	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.715	3.715	0.0	1.000	2356067	2.43			29098	
599.00 > 99.00	3.715	3.715	0.0	1.000	795988		2.96(1.39-4.16)		22459	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.726	3.722	0.004	1.000	1612562	2.46		98.3	9989	
D 30 13C2 PFUnA										
565.00 > 520.00	3.737	3.727	0.010	1.000	2414889	2.39		95.4	67805	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.737	3.727	0.010	1.003	1599970	2.65			18023	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.737	3.727	0.010	1.000	1972744	2.42			8361	
563.00 > 169.00	3.737	3.727	0.010	1.000	467144		4.22(2.12-6.36)		11394	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.894	3.883	0.011	1.000	9854892	2.26			104542	
D 36 13C2 PFDoA										
615.00 > 570.00	4.027	4.017	0.010	1.000	2739185	2.51		100	21240	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.027	4.020	0.007	1.000	2914311	2.55			3322	
613.00 > 169.00	4.027	4.020	0.007	1.000	731402		3.98(2.13-6.40)		7033	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.289	4.278	0.011	1.000	3318610	2.49			3147	
663.00 > 169.00	4.289	4.278	0.011	1.000	1033553		3.21(1.25-3.76)		10706	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.521	4.513	0.008	1.000	3618492	2.61		104	23098	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.513	0.008	1.000	897606	2.47			8678	
713.00 > 219.00	4.511	4.513	-0.002	0.998	658771		1.36(0.71-2.13)		10322	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.930	4.918	0.012	1.000	6051317	2.68		107	16293	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.930	4.920	0.010	1.000	5691508	2.46			1760	
813.00 > 169.00	4.930	4.920	0.010	1.000	909536		6.26(2.86-8.58)		5961	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.277	5.268	0.009	1.000	6120324	2.52			1552	
913.00 > 169.00	5.277	5.268	0.009	1.000	734463		8.33(3.83-11.48)		3317	

Reagents:

LCPFCIC_FULL_00011 Amount Added: 1.00 Units: mL

Report Date: 11-Apr-2018 10:51:24 Chrom Revision: 2.2 13-Mar-2018 08:45:20

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_010.d

Injection Date: 10-Apr-2018 19:42:10 Instrument ID: A8_N

Lims ID: ICV Full

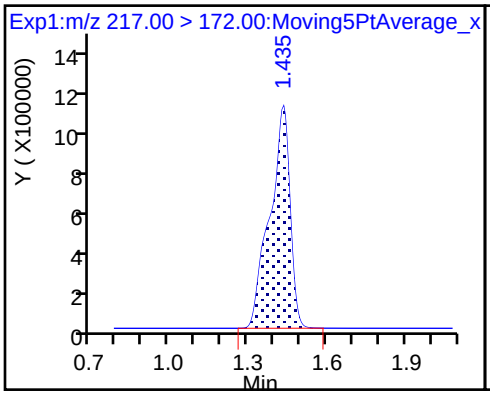
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 10

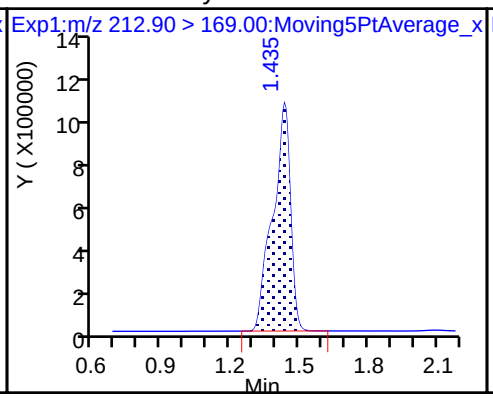
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

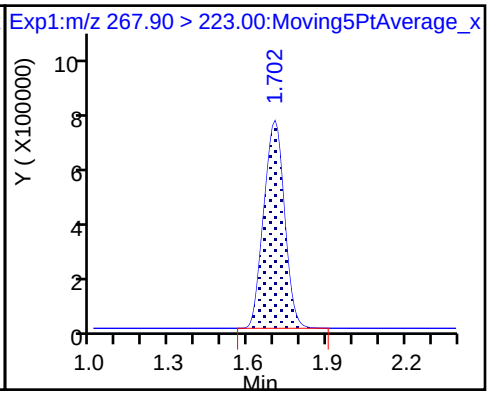
D 1 13C4 PFBA



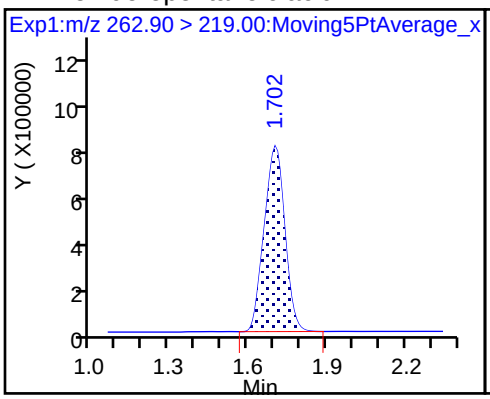
2 Perfluorobutyric acid



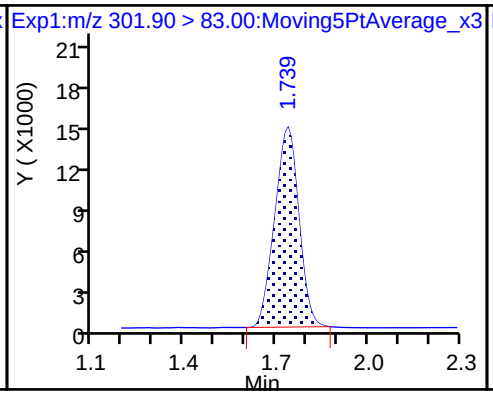
D 3 13C5-PFPeA



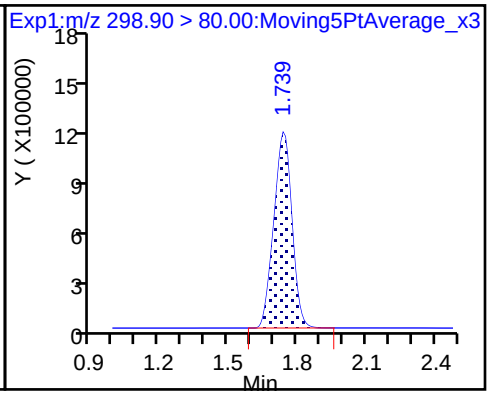
4 Perfluoropentanoic acid



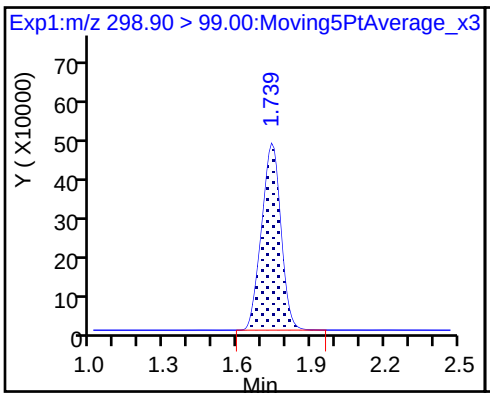
D 47 13C3-PFBS



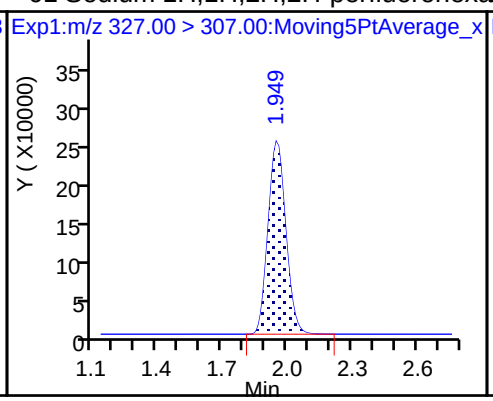
5 Perfluorobutanesulfonic acid



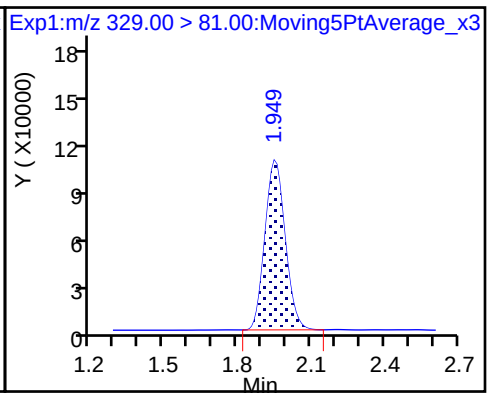
5 Perfluorobutanesulfonic acid



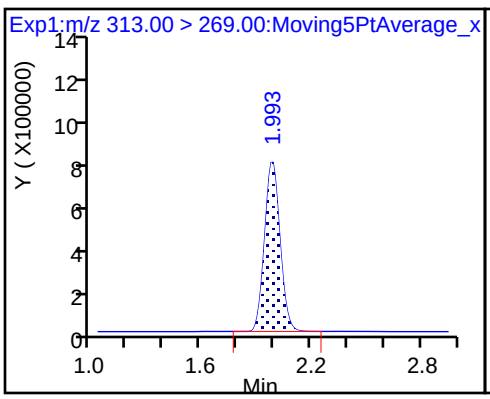
61 Sodium 1H,1H,2H,2H-perfluorohexane



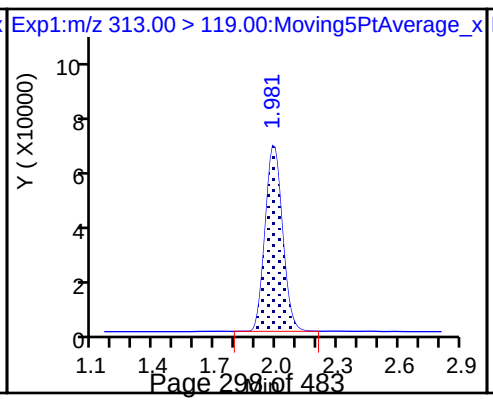
D 60 M2-4:2FTS



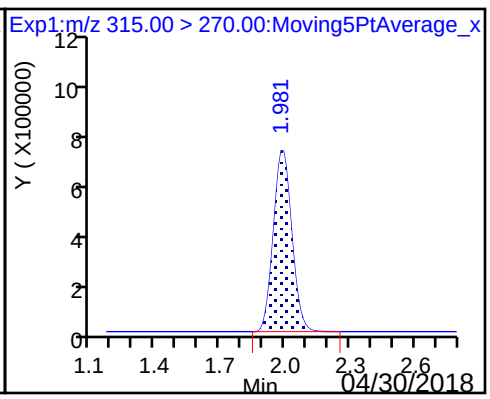
6 Perfluorohexanoic acid



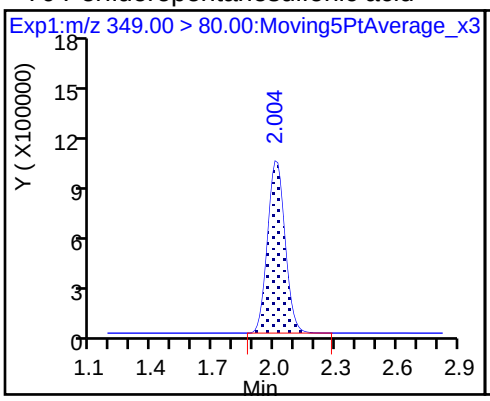
6 Perfluorohexanoic acid



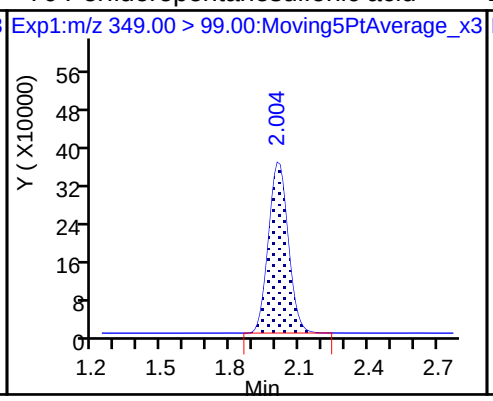
D 7 13C2 PFHxA



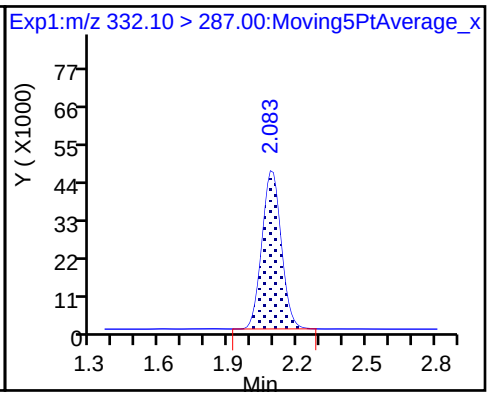
70 Perfluoropentanesulfonic acid



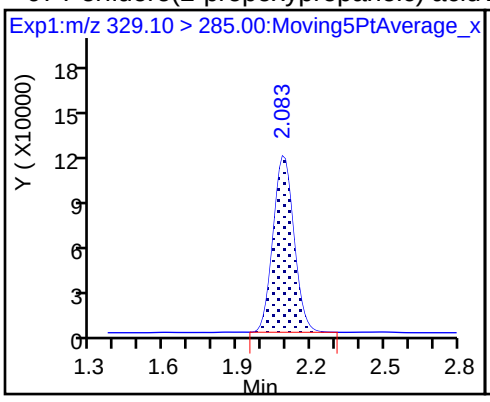
70 Perfluoropentanesulfonic acid



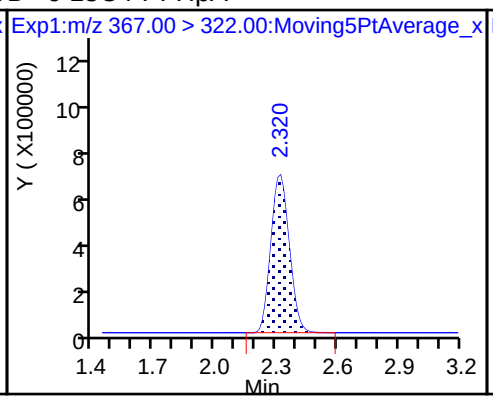
D 64 13C3 HFPO-DA



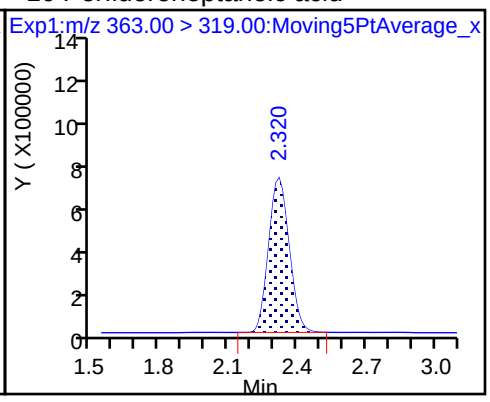
67 Perfluoro(2-propoxypropanoic) acid



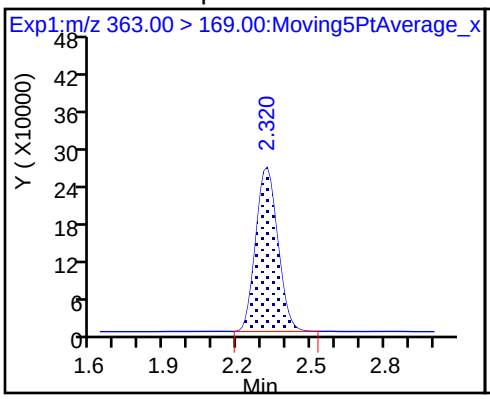
D 9 13C4-PFHpA



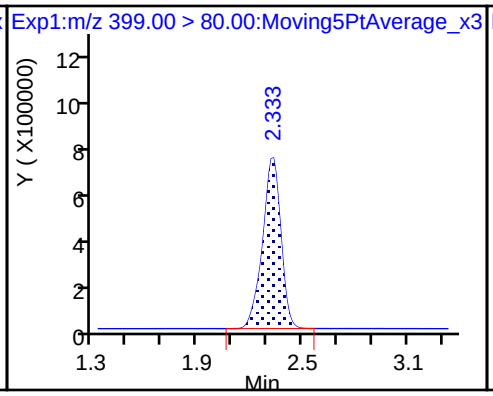
10 Perfluoroheptanoic acid



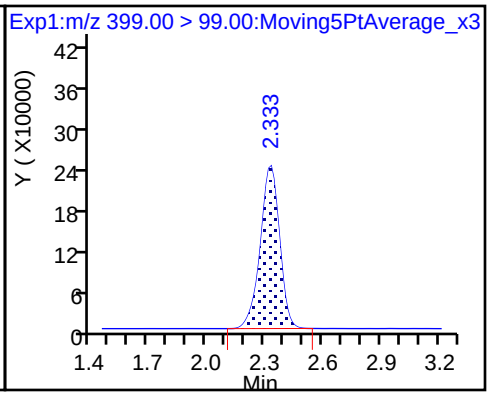
10 Perfluoroheptanoic acid



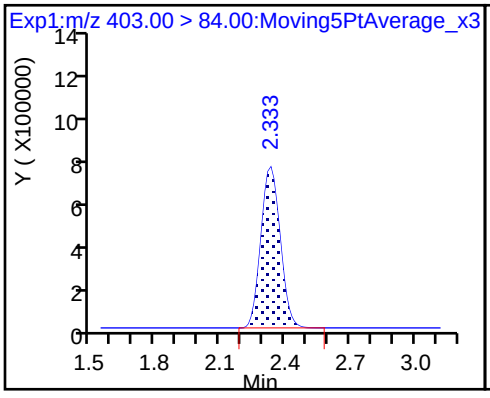
8 Perfluorohexanesulfonic acid



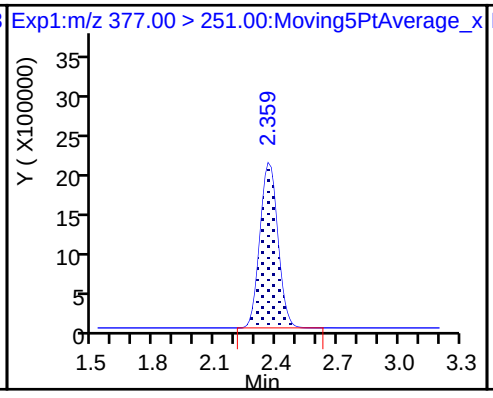
8 Perfluorohexanesulfonic acid



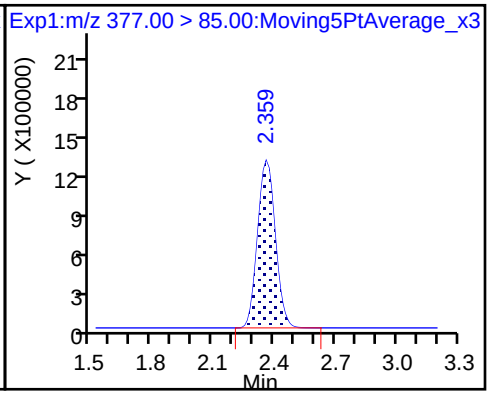
D 11 18O2 PFHxS



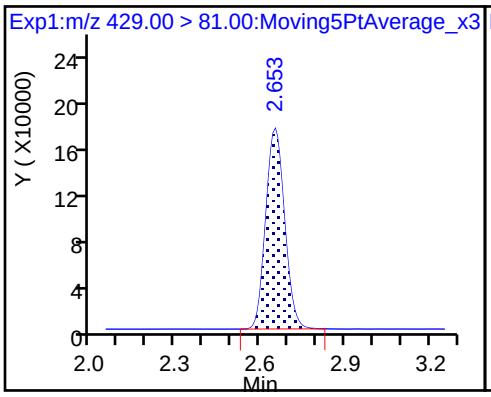
65 Adona



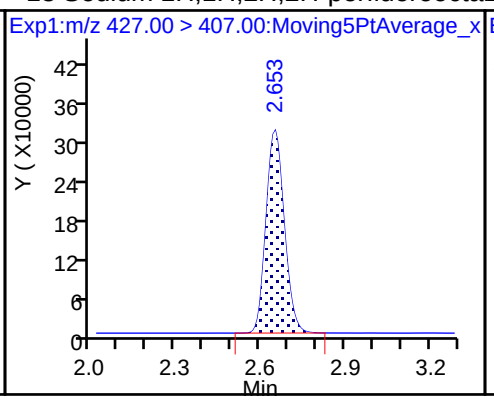
65 Adona



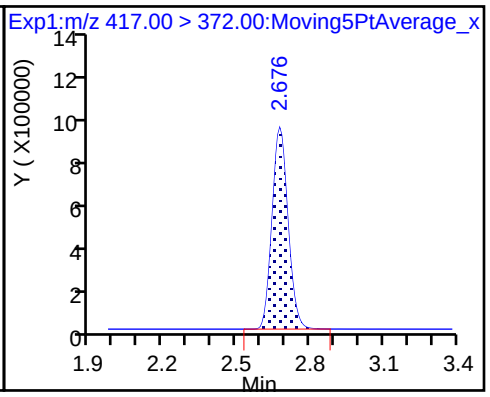
D 12 M2-6:2FTS



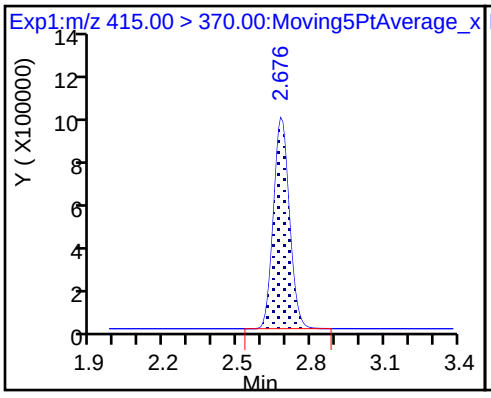
13 Sodium 1H,1H,2H,2H-perfluorooctane



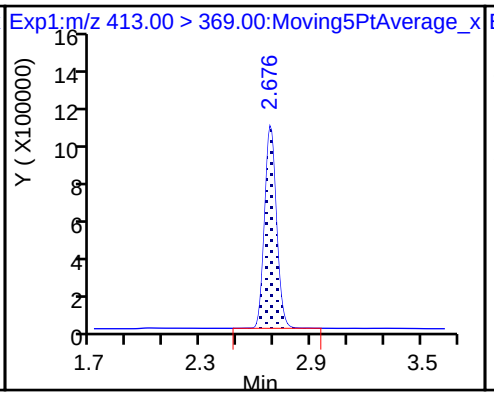
D 14 13C4 PFOA



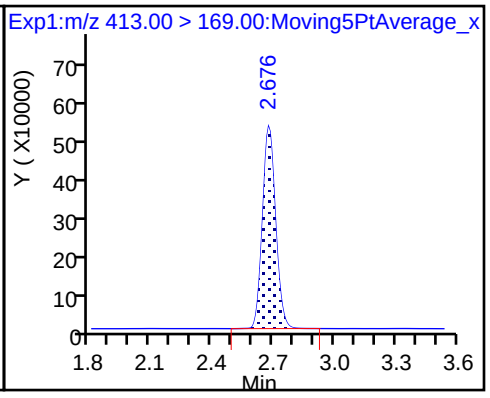
* 62 13C2-PFOA



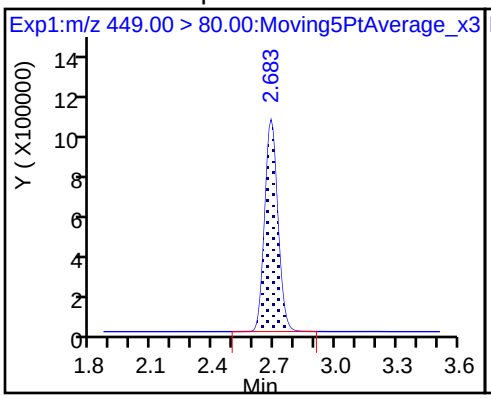
15 Perfluorooctanoic acid



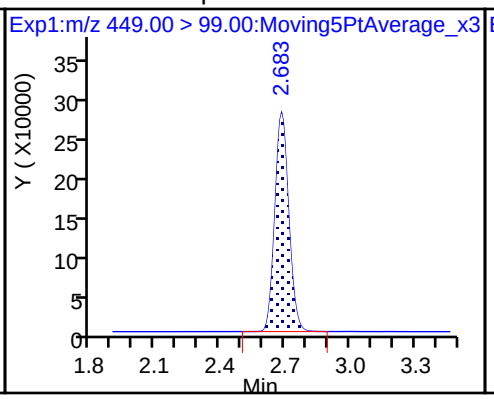
15 Perfluorooctanoic acid



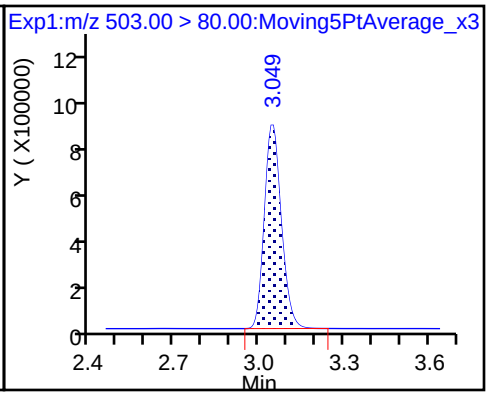
16 Perfluoroheptanesulfonic acid



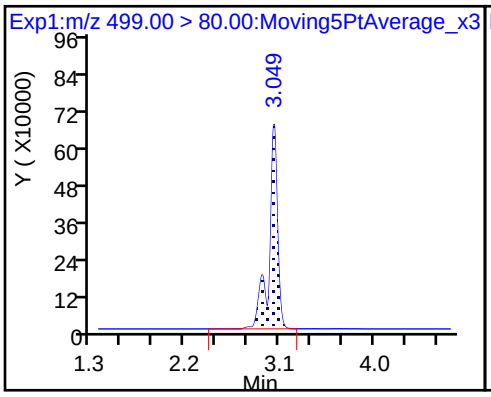
16 Perfluoroheptanesulfonic acid



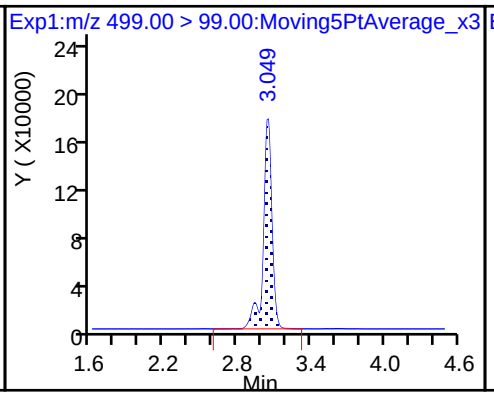
D 18 13C4 PFOS



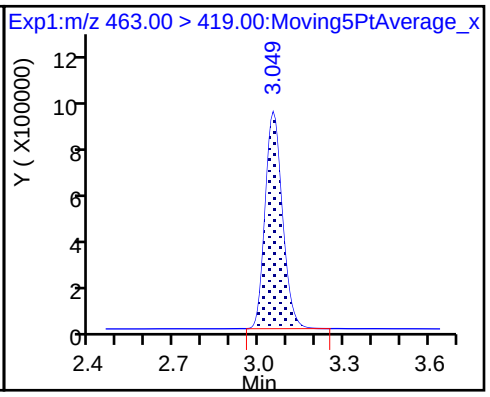
17 Perfluorooctane sulfonic acid



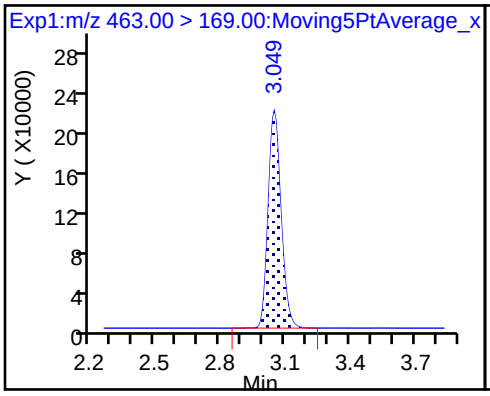
17 Perfluorooctane sulfonic acid



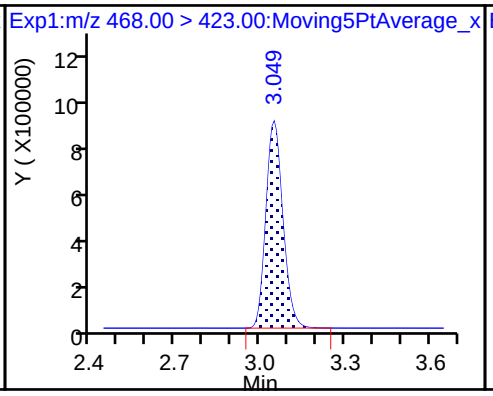
20 Perfluorononanoic acid



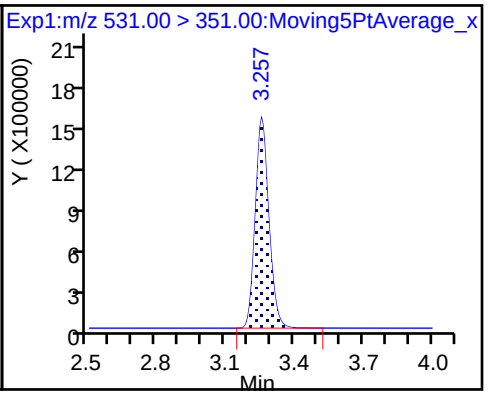
20 Perfluorononanoic acid



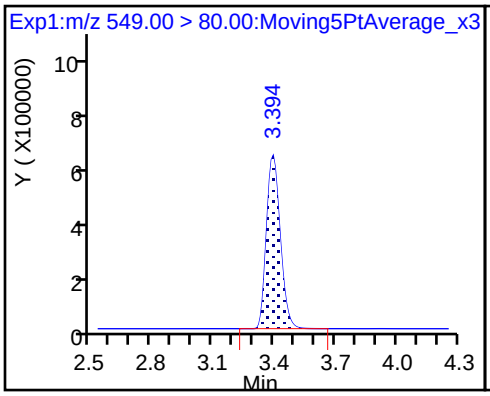
D 19 13C5 PFNA



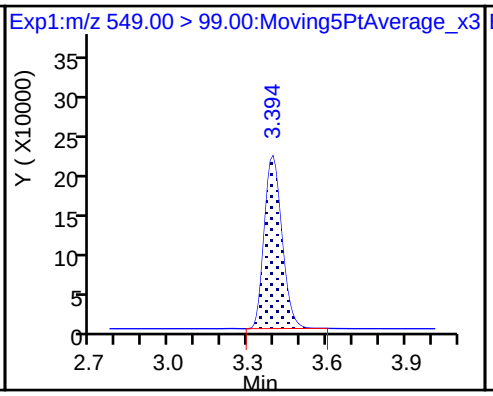
69 9-Chlorohexadecafluoro-3-oxanonane



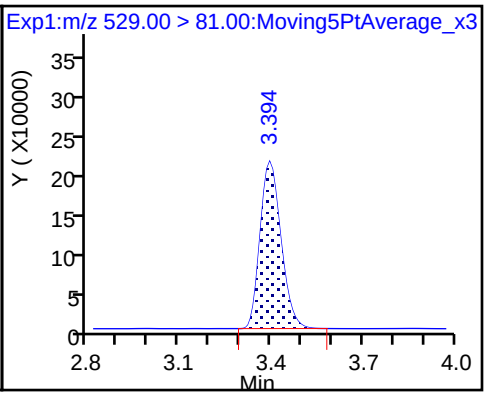
68 Perfluorononanesulfonic acid



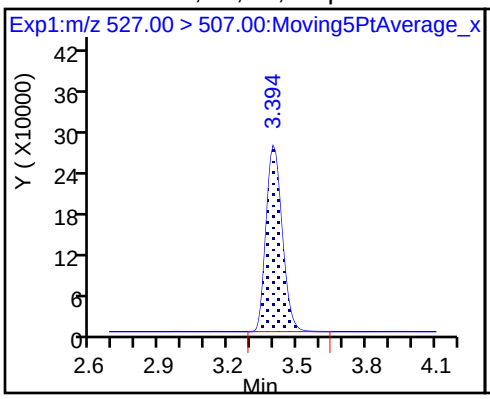
68 Perfluorononanesulfonic acid



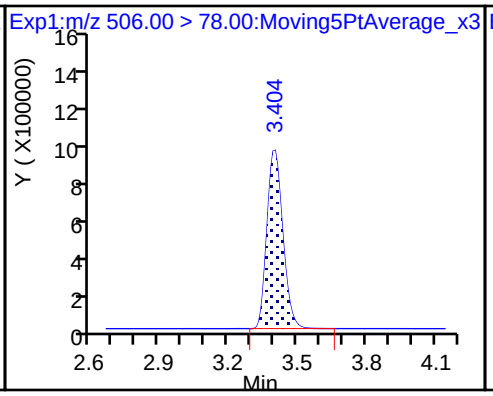
D 26 M2-8:2FTS



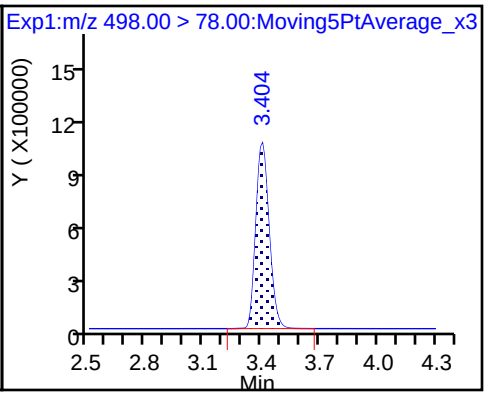
25 Sodium 1H,1H,2H,2H-perfluorodecane



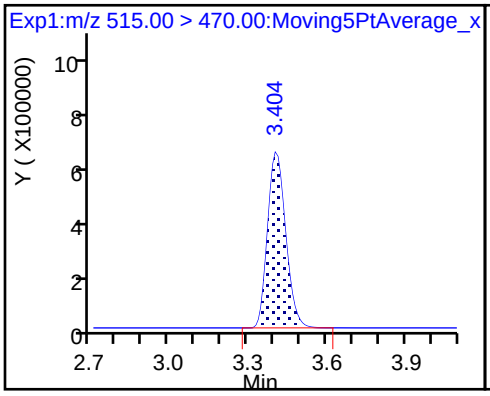
D 21 13C8 FOSA



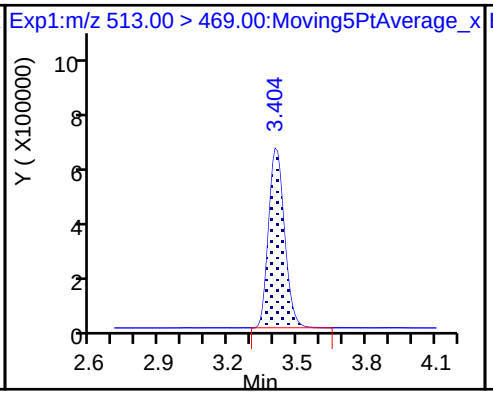
22 Perfluorooctane Sulfonamide



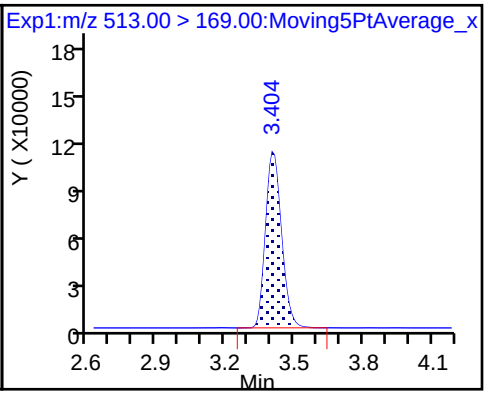
D 23 13C2 PFDA



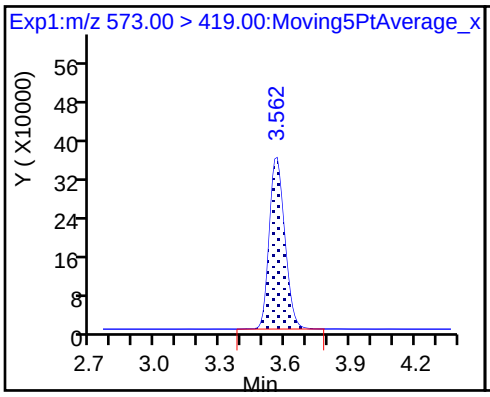
24 Perfluorodecanoic acid



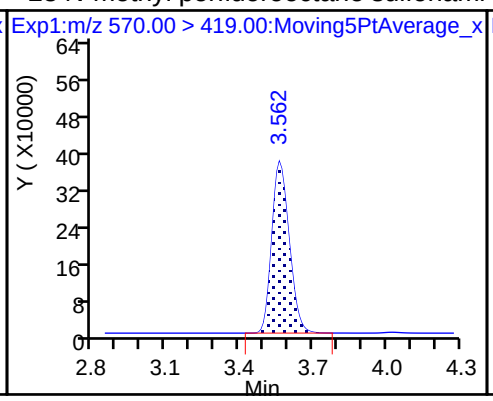
24 Perfluorodecanoic acid



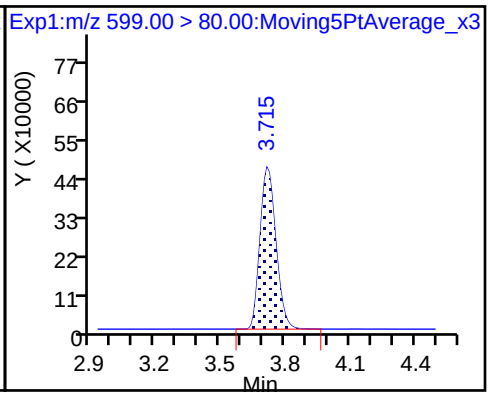
D 27 d3-NMeFOSAA



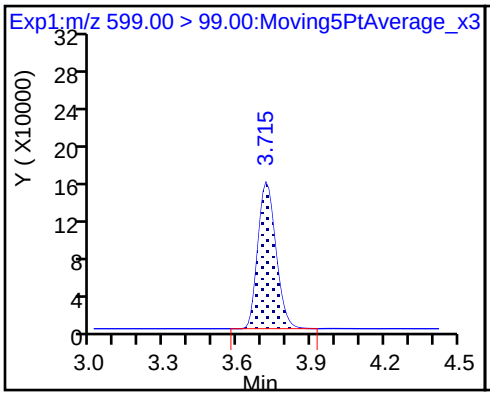
28 N-methyl perfluorooctane sulfonami



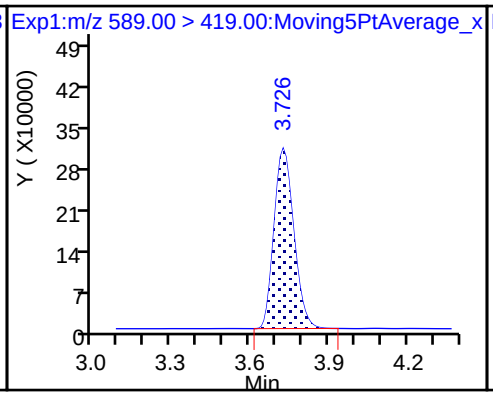
29 Perfluorodecane Sulfonic acid



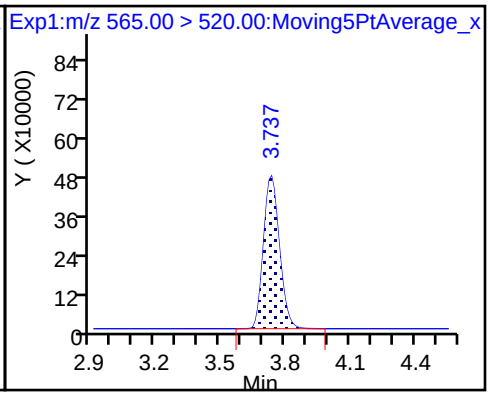
29 Perfluorodecane Sulfonic acid



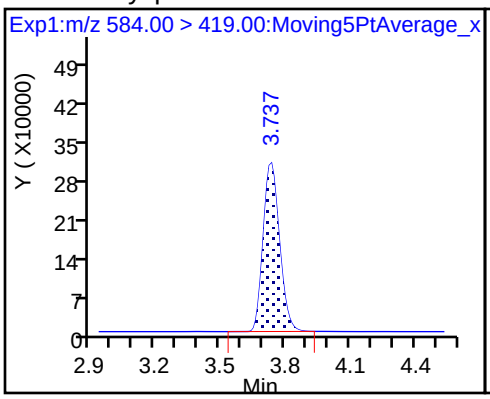
D 32 d5-NEtFOSAA



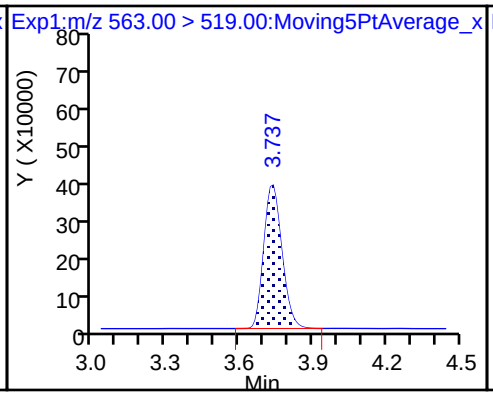
D 30 13C2 PFUnA



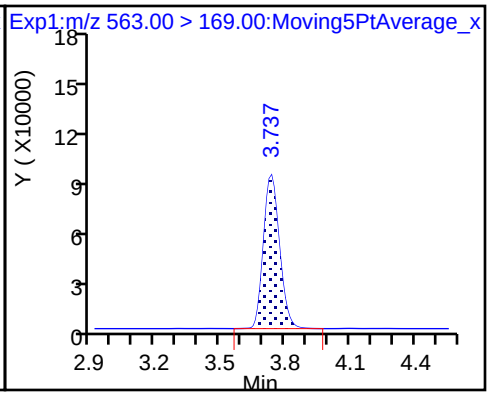
33 N-ethyl perfluorooctane sulfonamid



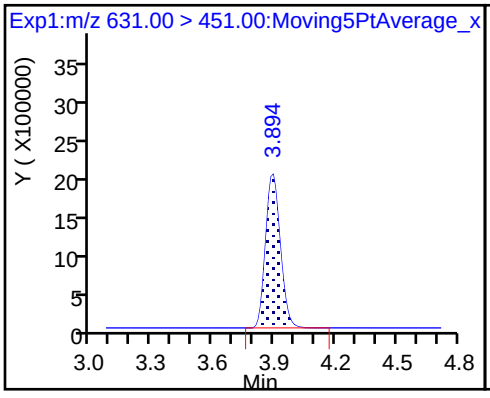
31 Perfluoroundecanoic acid



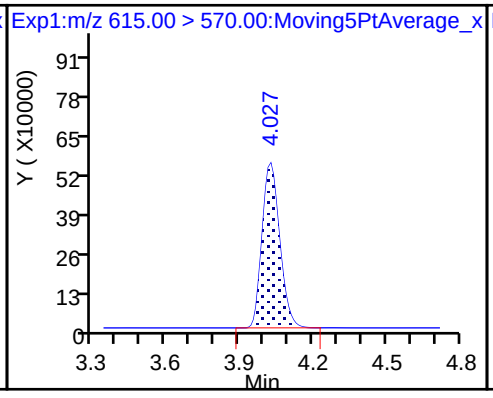
31 Perfluoroundecanoic acid



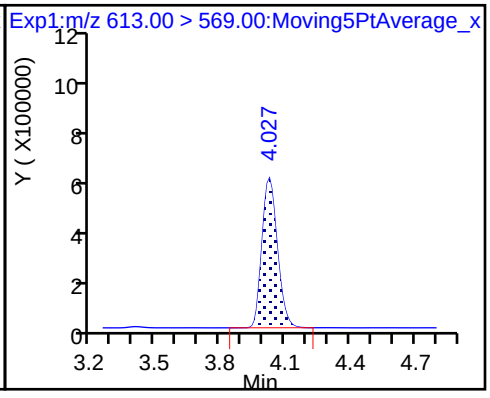
66 11-Chloroeicosafluoro-3-oxaundecan



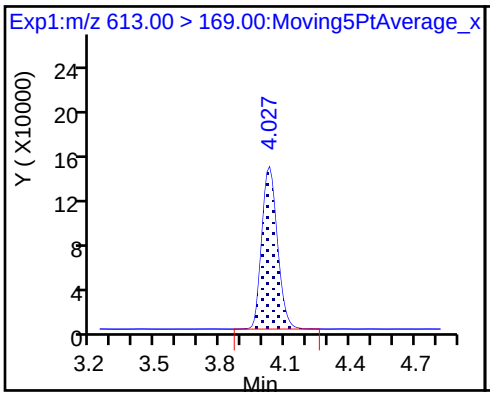
D 36 13C2 PFDoA



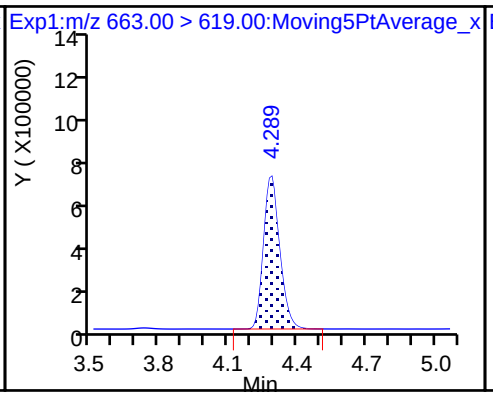
37 Perfluorododecanoic acid



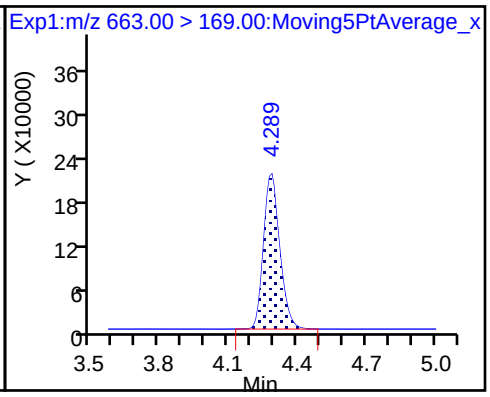
37 Perfluorododecanoic acid



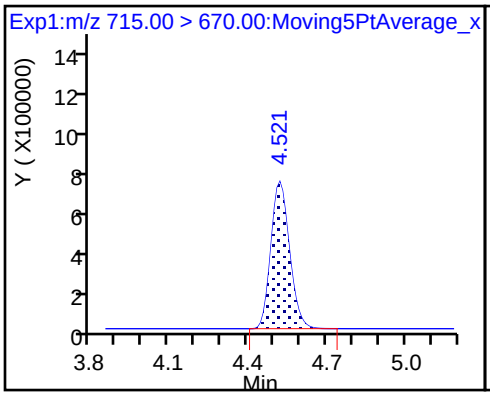
41 Perfluorotridecanoic acid



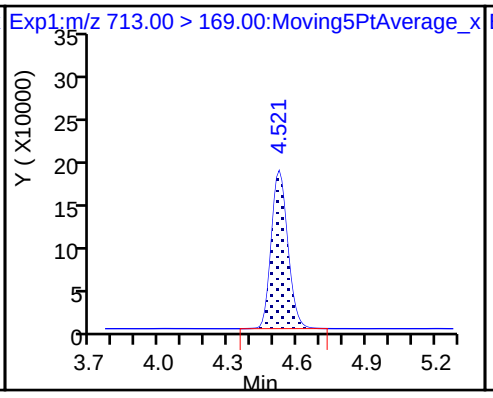
41 Perfluorotridecanoic acid



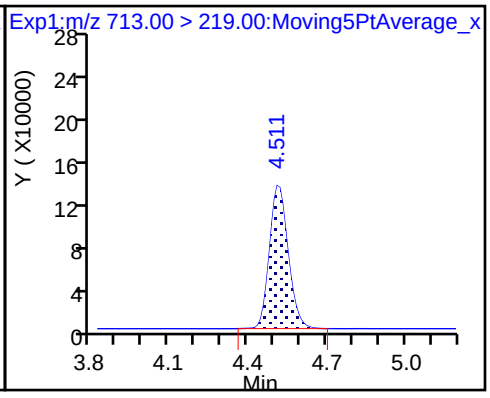
D 43 13C2-PFTeDA



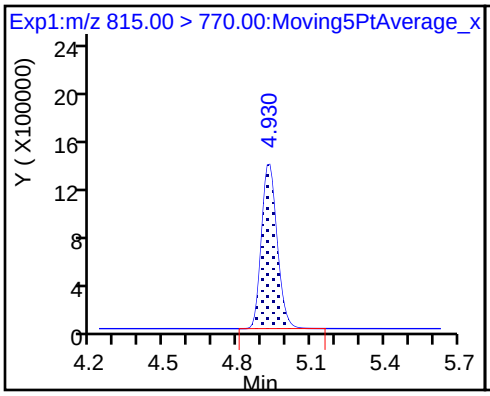
42 Perfluorotetradecanoic acid



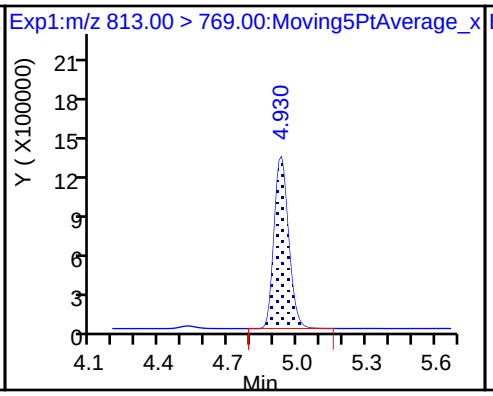
42 Perfluorotetradecanoic acid



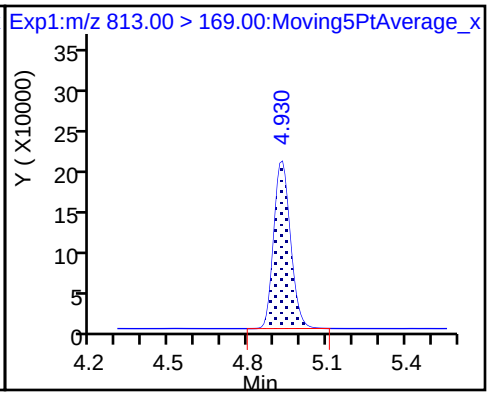
D 44 13C2-PFHxDA



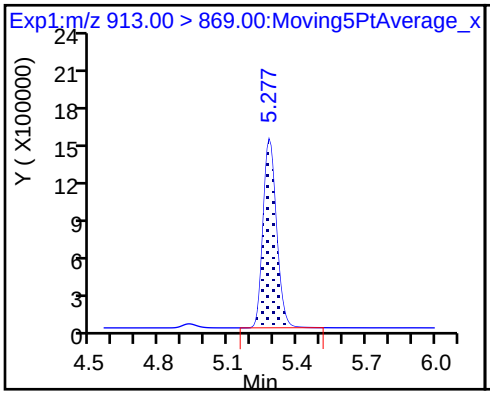
45 Perfluorohexadecanoic acid



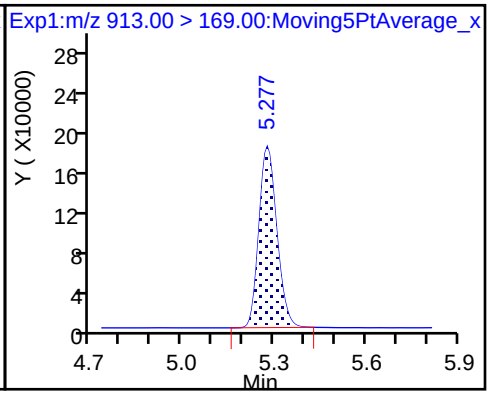
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCVL 320-219909/2 Calibration Date: 04/26/2018 06:01

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9874		0.0532	0.0500	6.3	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.227		0.0515	0.0500	2.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	79.47		0.0449	0.0442	1.5	50.0
4:2 FTS	AveID	16.03	15.11		0.130	0.0467	-5.8	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.059		0.0521	0.0500	4.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	67.86		0.0445	0.0469	-5.1	50.0
HFPO-DA (GenX)	AveID	2.785	2.774		0.0498	0.0500	-0.4	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.072		0.0536	0.0500	7.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.277		0.0513	0.0455	12.8	50.0
Adona	AveID	3.464	3.690		0.0533	0.0500	6.5	50.0
6:2FTS	AveID	1.691	1.791		0.0502	0.0474	6.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.351		0.0585	0.0500	16.9	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.347		0.0483	0.0476	1.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.122		0.0479	0.0464	3.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9946		0.0477	0.0500	-4.6	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.911		0.0472	0.0466	1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9717		0.0480	0.0500	-3.9	50.0
8:2FTS	AveID	1.265	1.320		0.0500	0.0479	4.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.8211		0.0493	0.0480	2.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9596		0.0465	0.0500	-7.0	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.054		0.0780	0.0500	5.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6314		0.0469	0.0482	-2.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9882		0.0529	0.0500	5.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8681		0.0514	0.0500	2.7	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	3.028		0.0490	0.0471	4.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.146		0.0549	0.0500	9.8	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.130		0.0465	0.0500	-7.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2448		0.0487	0.0500	-2.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.302		0.0465	0.0500	-7.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCVL 320-219909/2 Calibration Date: 04/26/2018 06:01

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9695		0.0483	0.0500	-3.4	50.0
13C4 PFBA	Ave	1.345	1.329		2.47	2.50	-1.2	50.0
13C5 PFPeA	Ave	0.8672	0.8824		2.54	2.50	1.8	50.0
13C3-PFBS	Ave	0.0199	0.0199		2.32	2.33	-0.0	50.0
M2-4:2FTS	Ave	0.1425	0.1476		2.42	2.34	3.6	50.0
13C2 PFHxA	Ave	0.9590	0.9613		2.51	2.50	0.2	50.0
13C3 HFPO-DA	Ave	0.0593	0.0535		2.26	2.50	-9.8	50.0
13C4-PFHpA	Ave	0.9333	0.9293		2.49	2.50	-0.4	50.0
18O2 PFHxS	Ave	1.152	1.119		2.30	2.37	-2.9	50.0
M2-6:2FTS	Ave	0.2000	0.2138		2.54	2.38	6.9	50.0
13C4 PFOA	Ave	0.9276	0.9027		2.43	2.50	-2.7	50.0
13C4 PFOS	Ave	0.8066	0.7636		2.26	2.39	-5.3	50.0
13C5 PFNA	Ave	0.7973	0.7840		2.46	2.50	-1.7	50.0
13C8 FOSA	Ave	1.007	0.9601		2.38	2.50	-4.7	50.0
M2-8:2FTS	Ave	0.2409	0.2257		2.24	2.40	-6.3	50.0
13C2 PFDA	Ave	0.6701	0.6675		2.49	2.50	-0.4	50.0
d3-NMeFOSAA	Ave	0.3798	0.3877		2.55	2.50	2.1	50.0
d5-NEtFOSAA	Ave	0.3749	0.3896		2.60	2.50	3.9	50.0
13C2 PFUnA	Ave	0.5781	0.5557		2.40	2.50	-3.9	50.0
13C2 PFDoA	Ave	0.6242	0.5826		2.33	2.50	-6.7	50.0
13C2-PFTeDA	Ave	0.7915	0.7562		2.39	2.50	-4.5	50.0
13C2-PFHxDA	Ave	1.288	1.294		2.51	2.50	0.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 26-Apr-2018 06:01:22 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:51 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	122849	0.0532		106	53.5	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6220605	2.47		98.8	36950	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.703	-0.009	0.553	4129805	2.54		102	69434	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	101312	0.0515		103	86.1	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.739	-0.009	1.000	86555	2.32		99.9	839	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	130763	0.0449		102	414	
298.90 > 99.00	1.739	1.739	0.0	1.005	53713		2.43(1.25-3.74)		615	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	645253	2.42		104	5765	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	26262	0.0440		94.2	1520	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4498852	2.51		100	94473	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.994	-0.012	1.000	95290	0.0521		104	80.1	
313.00 > 119.00	1.994	1.994	0.0	1.006	11984		7.95(5.03-15.10)		103	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.016	-0.011	1.000	118484	0.0445		94.9	693	
349.00 > 99.00	2.005	2.016	-0.011	1.000	43266		2.74(1.36-4.07)		877	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.095	-0.011	1.000	250452	2.26		90.2	7167	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.095	-0.011	1.000	13894	0.0498		99.6	89.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.321	0.001	1.000	4348964	2.49		99.6	76175	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.321	0.001	1.000	93280	0.0536		107	104	
363.00 > 169.00	2.322	2.321	0.001	1.000	34477		2.71(1.13-3.40)		141	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.334	0.001	1.000	4952718	2.30		97.1	60622	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.334	0.001	1.000	121643	0.0513		113	269	
399.00 > 99.00	2.335	2.334	0.001	1.000	38040		3.20(1.50-4.49)		296	
65 Adona										
377.00 > 251.00	2.374	2.372	0.002	1.000	263733	0.0533		107	3879	
377.00 > 85.00	2.361	2.372	-0.011	0.995	144510		1.83(0.84-2.53)		3357	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	950442	2.54		107	13333	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	33979	0.0502		106	935	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4680051	2.50			55018	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	4224629	2.43		97.3	46736	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.690	-0.007	1.000	114152	0.0585		117	80.1	
413.00 > 169.00	2.690	2.690	0.0	1.003	59811		1.91(0.84-2.52)		174	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	91672	0.0483		101	659	
449.00 > 99.00	2.690	2.690	0.0	1.000	27463		3.34(1.94-5.82)		634	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.059	-0.002	1.000	74447	0.0479		103	314	
499.00 > 99.00	3.057	3.059	-0.002	1.000	17982		4.14(2.31-6.93)		280	
20 Perfluorononanoic acid										
463.00 > 419.00	3.064	3.059	0.005	1.000	72984	0.0477		95.4	275	
463.00 > 169.00	3.057	3.059	-0.002	0.998	19978		3.65(1.90-5.69)		346	
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.063	-0.006	1.000	3416275	2.26		94.7	23265	
D 19 13C5 PFNA										
468.00 > 423.00	3.064	3.063	0.001	1.000	3669088	2.46		98.3	61500	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.273	-0.002	1.000	127286	0.0472		101	1946	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.396	3.399	-0.003	1.000	87329	0.0480		96.1	375	
D 21 13C8 FOSA										
506.00 > 78.00	3.396	3.404	-0.008	1.000	4493421	2.38		95.3	59941	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.414	3.408	0.006	1.000	56338	0.0493		103	625	
549.00 > 99.00	3.405	3.408	-0.003	0.997	20687		2.72(1.33-3.97)		582	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.414	3.417	-0.003	1.000	26718	0.0500		104	1324	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.414	3.423	-0.009	1.000	1011861	2.24		93.7	10957	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.433	3.427	0.006	1.003	59954	0.0465		93.0	299	
513.00 > 169.00	3.424	3.427	-0.003	1.000	11307		5.30(2.36-7.09)		204	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.432	-0.008	1.000	3123868	2.49		99.6	69001	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.584	3.582	0.002	1.000	1814283	2.55		102	22574	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.586	-0.002	1.000	38245	0.0528		106	221	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.741	-0.003	1.000	43499	0.0469		97.2	335	
599.00 > 99.00	3.738	3.741	-0.003	1.000	18362		2.37(1.39-4.16)		669	
D 30 13C2 PFUnA										
565.00 > 520.00	3.759	3.758	0.001	1.000	2600619	2.40		96.1	40568	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.758	-0.009	1.000	1823192	2.60		104	27840	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.759	3.762	-0.003	1.000	45151	0.0514		103	263	
563.00 > 169.00	3.759	3.762	-0.003	1.000	12799		3.53(2.12-6.36)		372	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.759	3.762	-0.003	1.003	36034	0.0529		106	896	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.918	-0.002	1.000	203888	0.0490		104	2774	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.051	-0.003	1.000	62469	0.0549		110	82.9	
613.00 > 169.00	4.048	4.051	-0.003	1.000	14516		4.30(2.13-6.40)		205	
D 36 13C2 PFDoA										
615.00 > 570.00	4.048	4.059	-0.011	1.000	2726541	2.33		93.3	27014	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.319	-0.001	1.000	61634	0.0465		93.0	71.3	
663.00 > 169.00	4.318	4.319	-0.001	1.000	22257		2.77(1.25-3.76)		231	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.562	4.563	-0.001	1.000	3539031	2.39		95.5	22400	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.562	4.564	-0.002	1.000	17327	0.0487		97.5	154	
713.00 > 219.00	4.551	4.564	-0.013	0.998	12526		1.38(0.71-2.13)		255	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.973	4.975	-0.002	1.000	6055812	2.51		100	14276	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.973	4.976	-0.003	1.000	157699	0.0465		92.9	72.2	
813.00 > 169.00	4.973	4.976	-0.003	1.000	25937		6.08(2.86-8.58)		185	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.342	5.344	-0.002	1.000	117426	0.0483		96.6	50.0	
913.00 > 169.00	5.342	5.344	-0.002	1.000	13483		8.71(3.83-11.48)		121	

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:36:52 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_005.d

Injection Date: 26-Apr-2018 06:01:22 Instrument ID: A8_N

Lims ID: CCVL

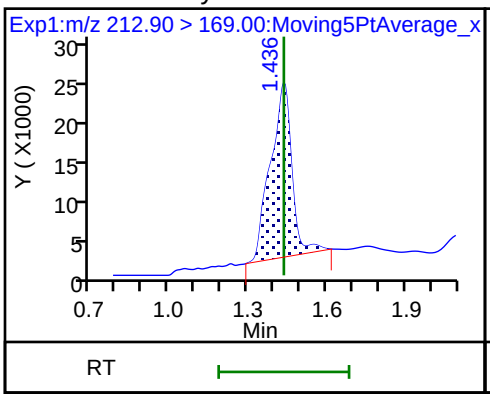
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

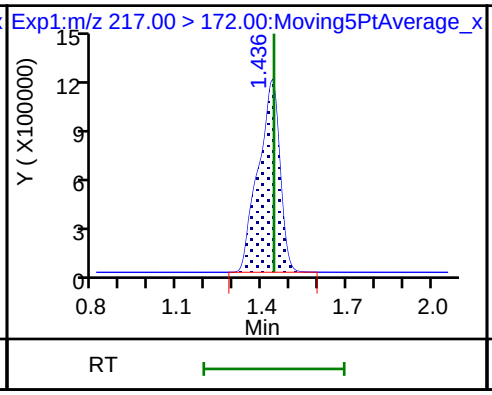
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

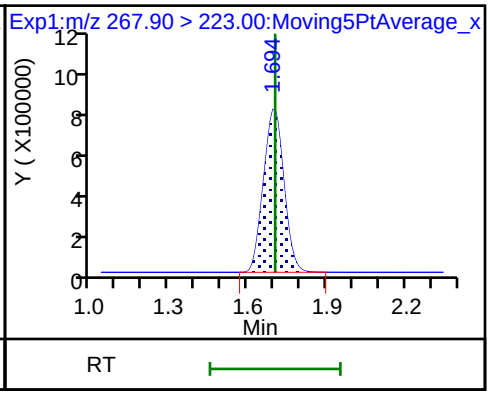
2 Perfluorobutyric acid



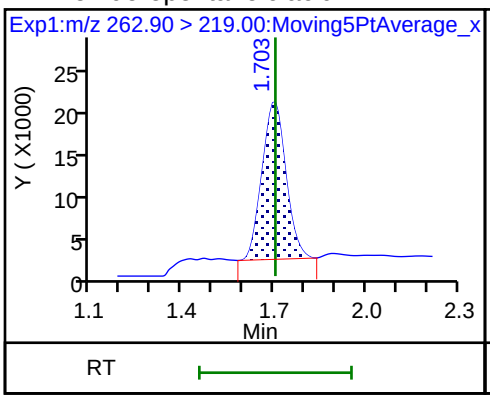
D 1 13C4 PFBA



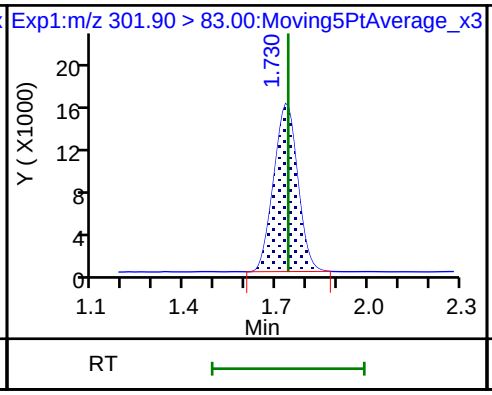
D 3 13C5-PFPeA



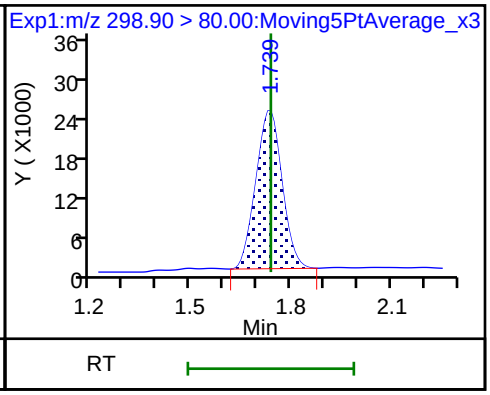
4 Perfluoropentanoic acid



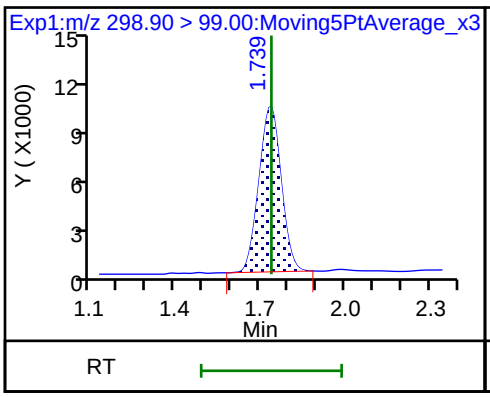
D 47 13C3-PFBS



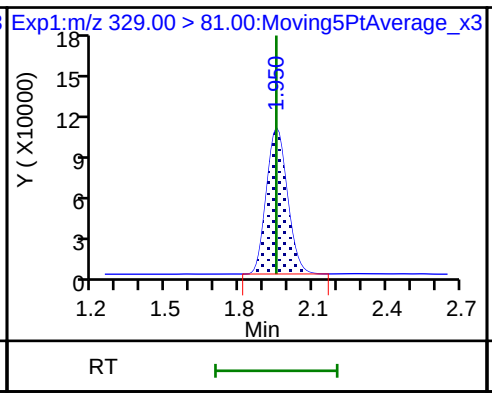
5 Perfluorobutanesulfonic acid



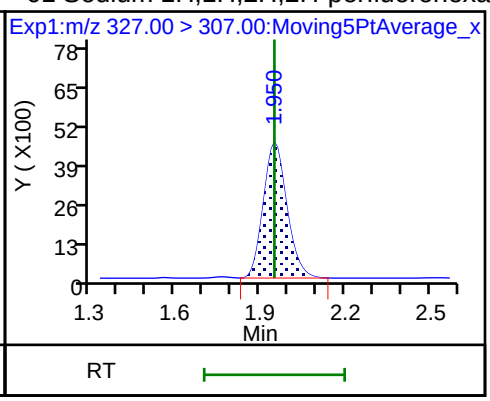
5 Perfluorobutanesulfonic acid



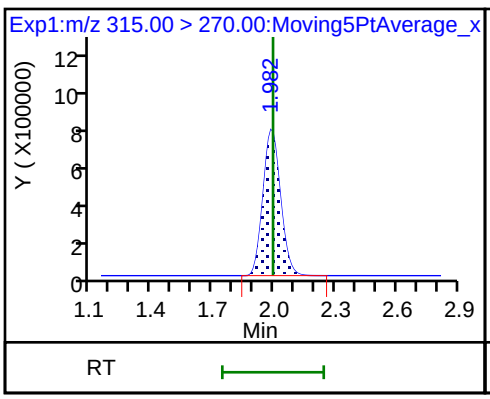
D 60 M2-4:2FTS



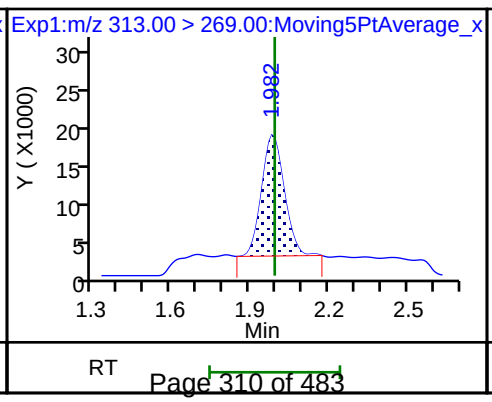
61 Sodium 1H,1H,2H,2H-perfluorohexane



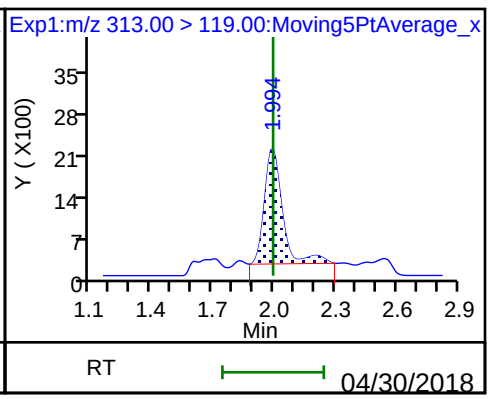
D 7 13C2 PFHxA



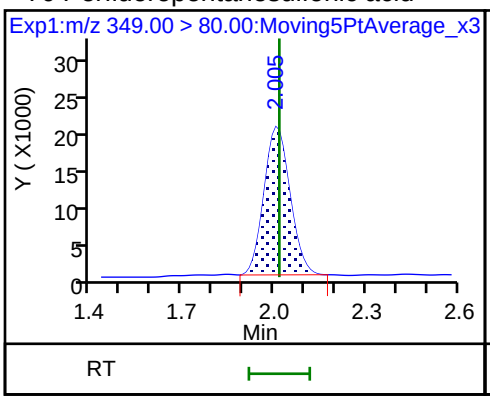
6 Perfluorohexanoic acid



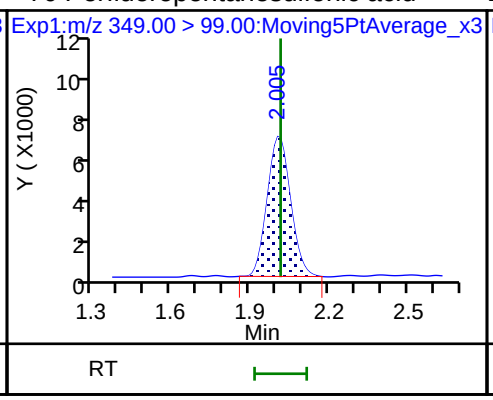
6 Perfluorohexanoic acid



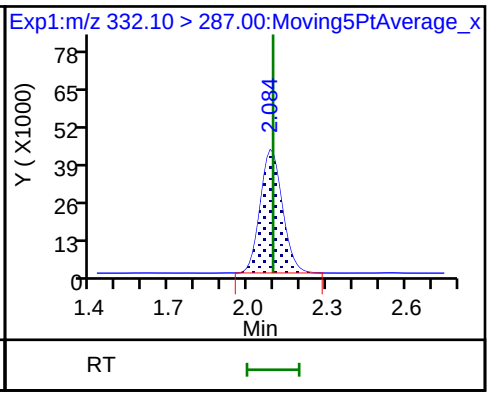
70 Perfluoropentanesulfonic acid



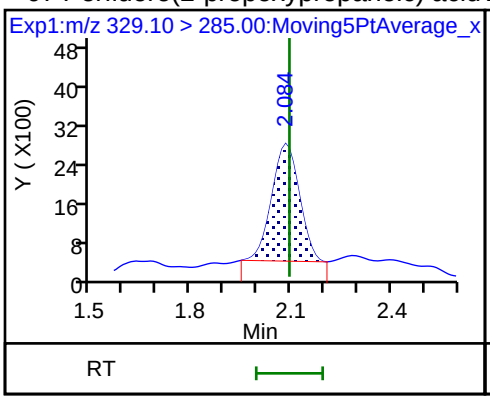
70 Perfluoropentanesulfonic acid



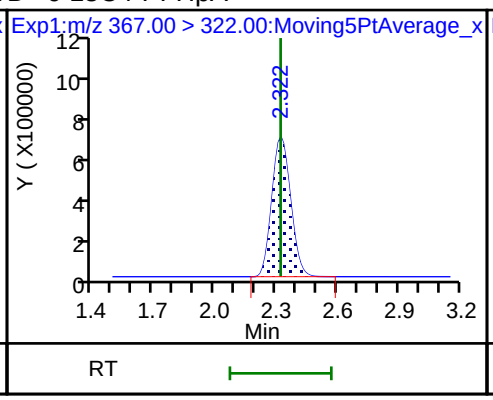
D 64 13C3 HFPO-DA



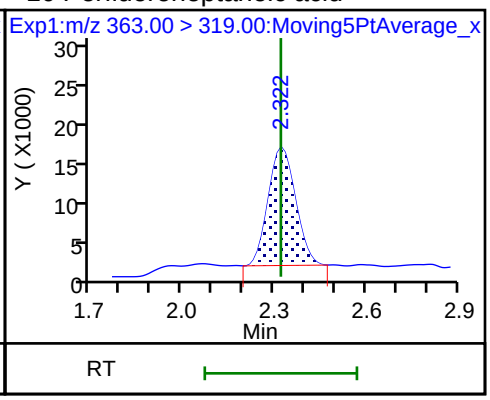
67 Perfluoro(2-propoxypropanoic) acid



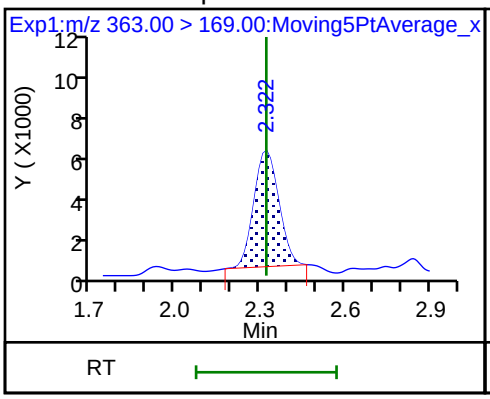
D 9 13C4-PFHpA



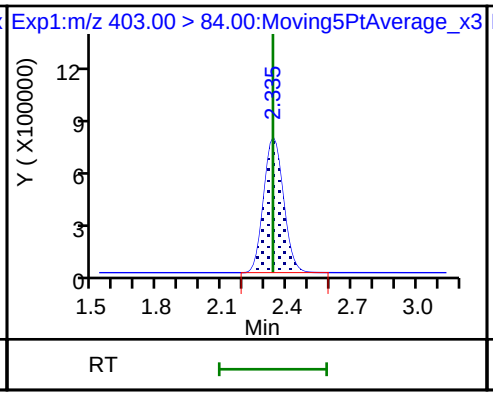
10 Perfluoroheptanoic acid



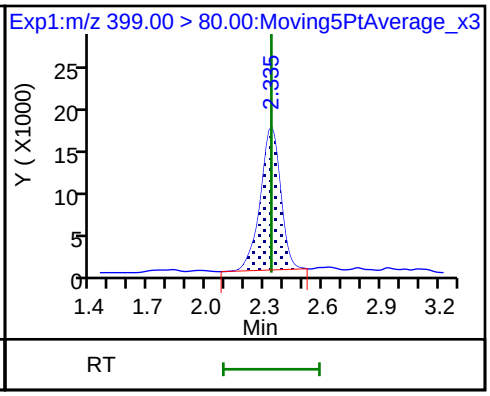
10 Perfluoroheptanoic acid



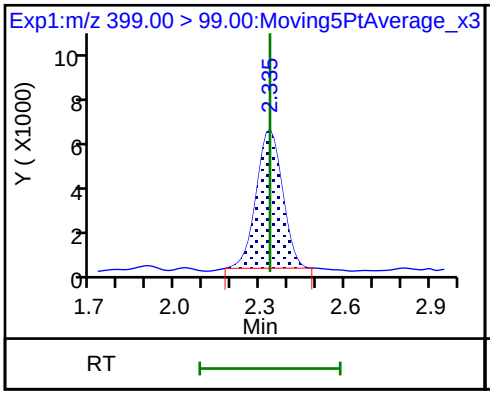
D 11 18O2 PFHxS



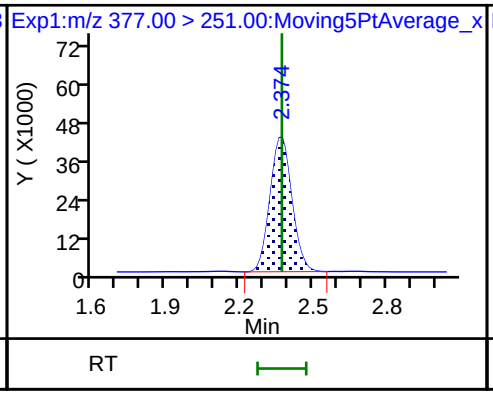
8 Perfluorohexanesulfonic acid



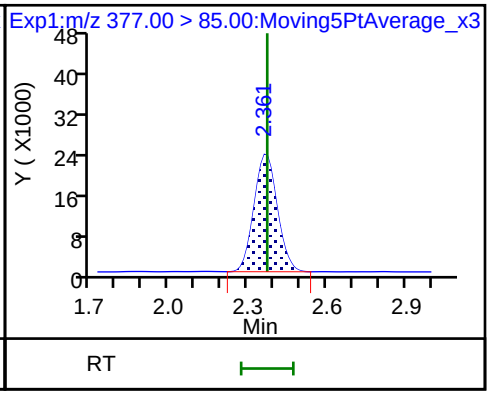
8 Perfluorohexanesulfonic acid



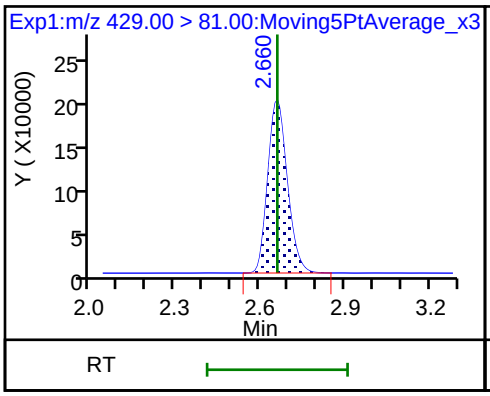
65 Adona



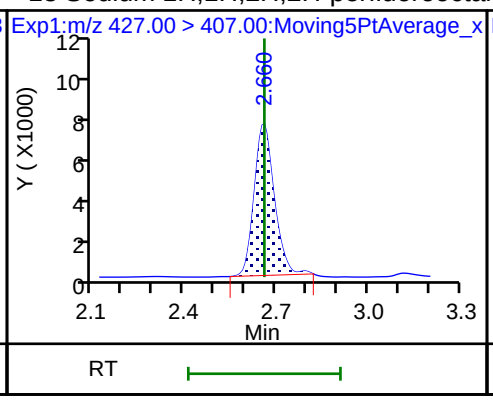
65 Adona



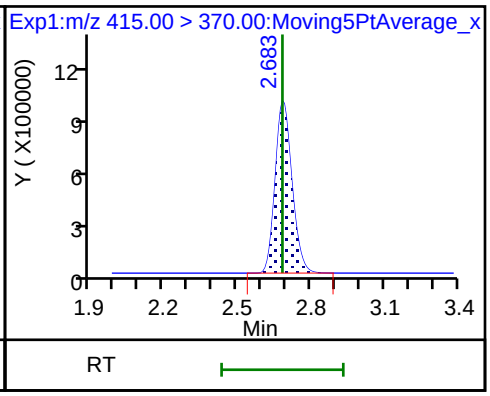
D 12 M2-6:2FTS



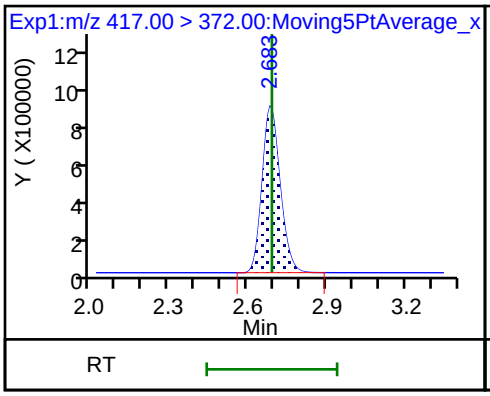
13 Sodium 1H,1H,2H,2H-perfluorooctane



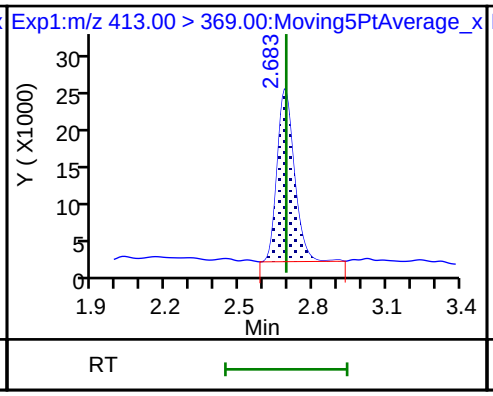
M2 13C2-PFOA



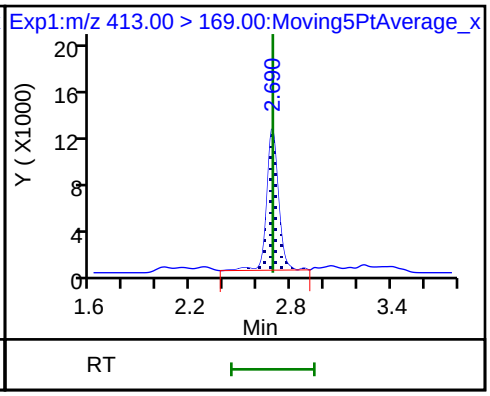
D 14 13C4 PFOA



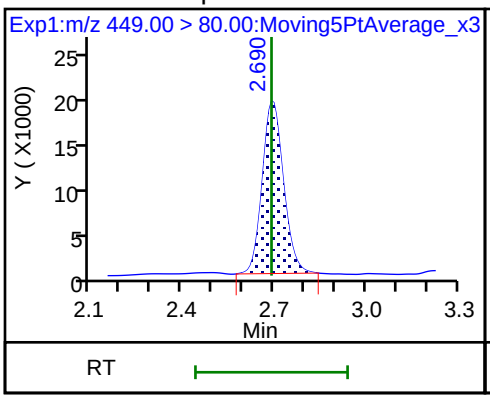
15 Perfluorooctanoic acid



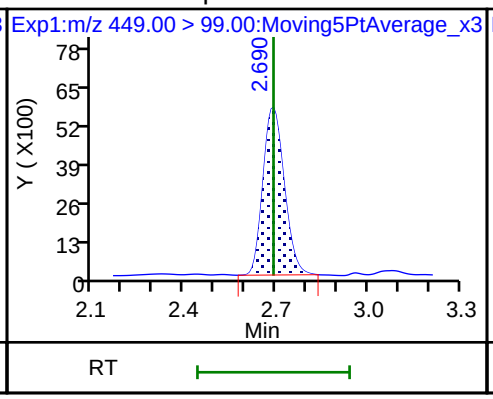
15 Perfluorooctanoic acid



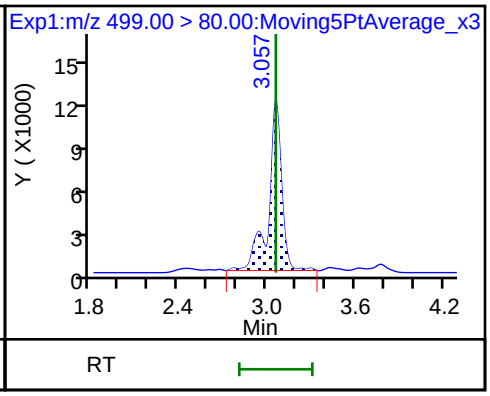
16 Perfluoroheptanesulfonic acid



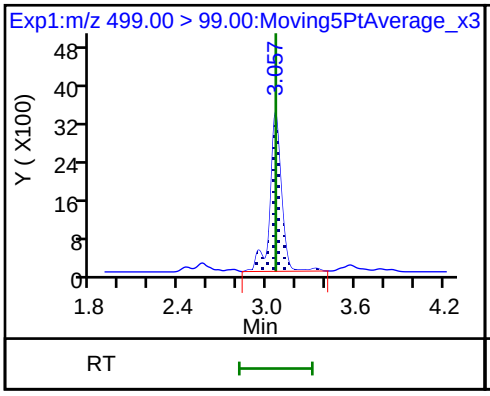
16 Perfluoroheptanesulfonic acid



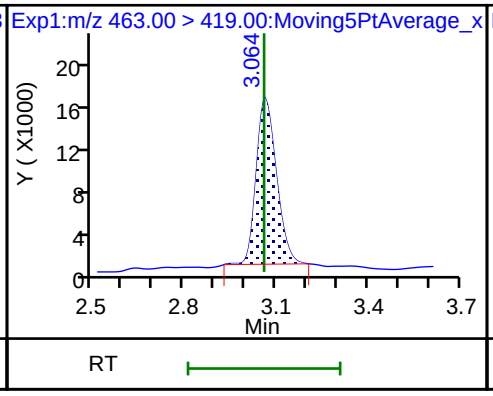
17 Perfluorooctane sulfonic acid



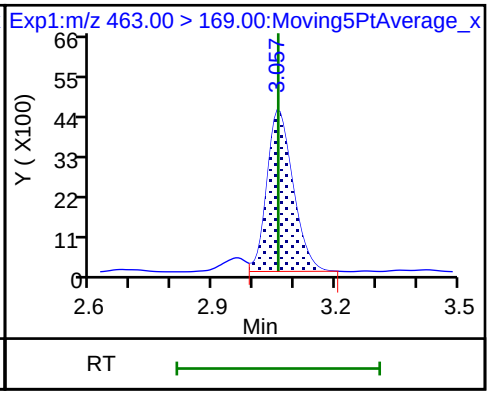
17 Perfluorooctane sulfonic acid



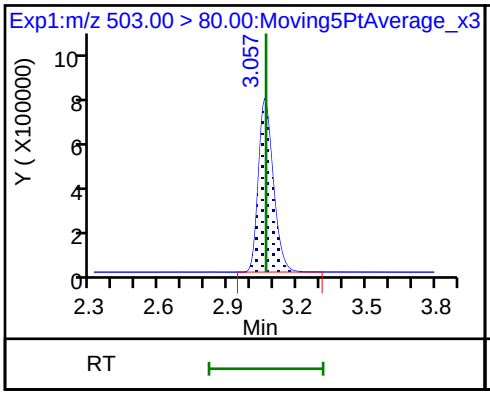
20 Perfluorononanoic acid



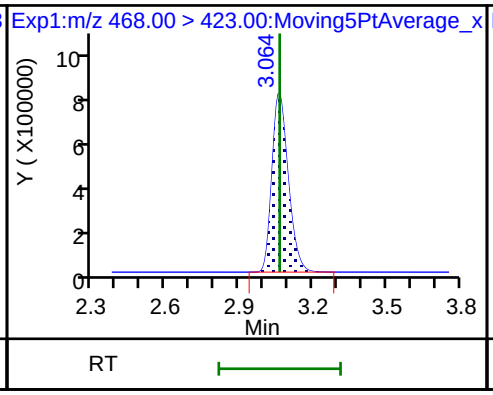
20 Perfluorononanoic acid



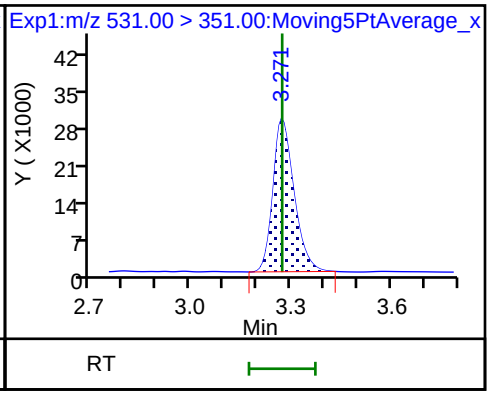
D 18 13C4 PFOS



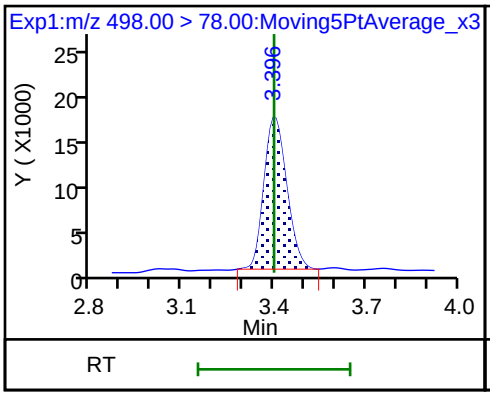
D 19 13C5 PFNA



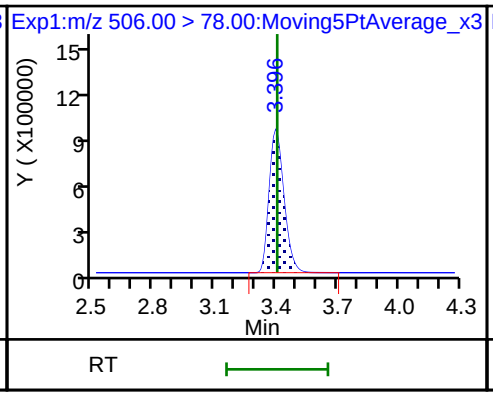
69 9-Chlorohexadecafluoro-3-oxanonane



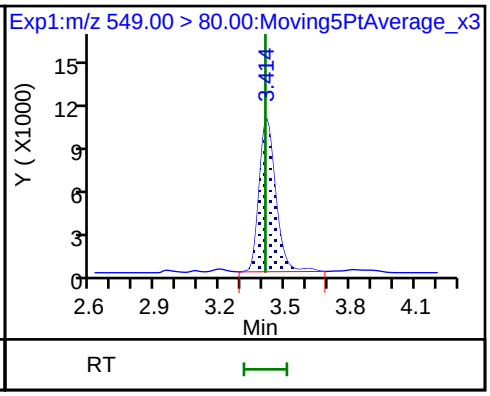
22 Perfluorooctane Sulfonamide



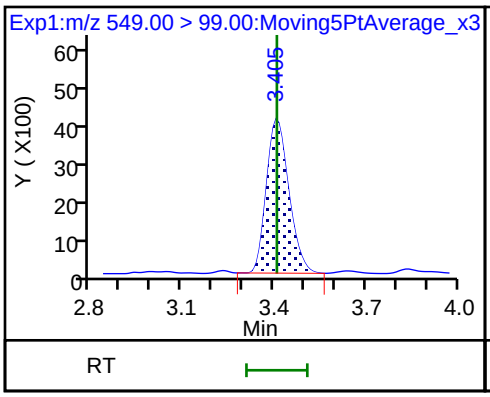
D 21 13C8 FOSA



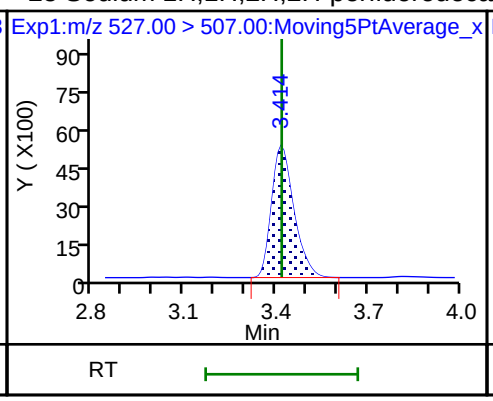
68 Perfluorononanesulfonic acid



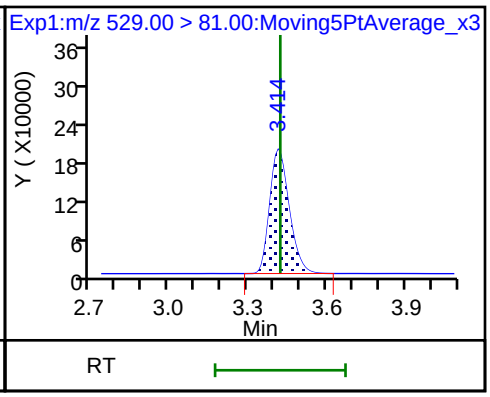
68 Perfluorononanesulfonic acid



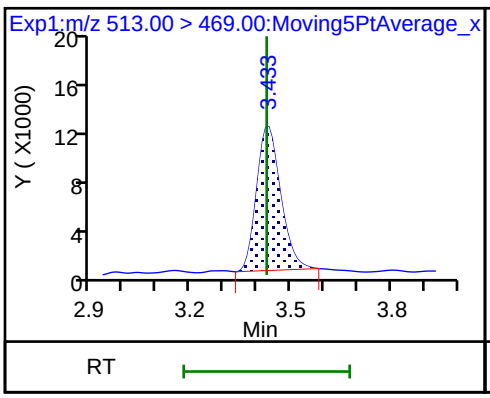
25 Sodium 1H,1H,2H,2H-perfluorodecane



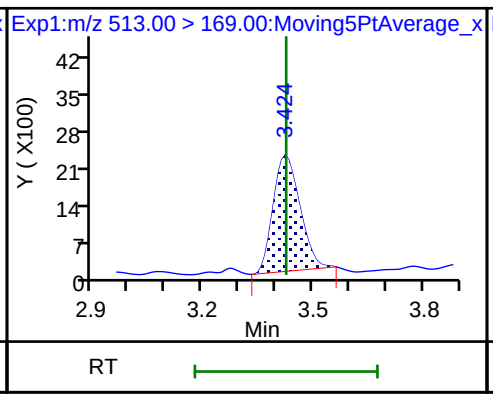
D 26 M2-8:2FTS



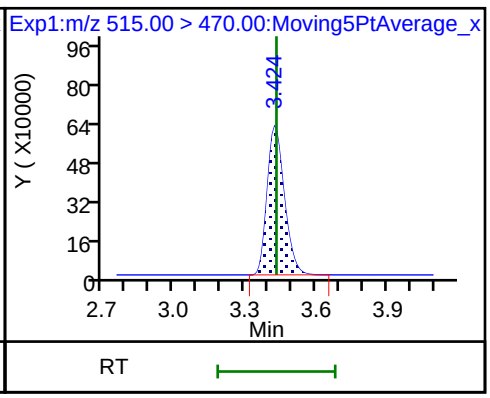
24 Perfluorodecanoic acid



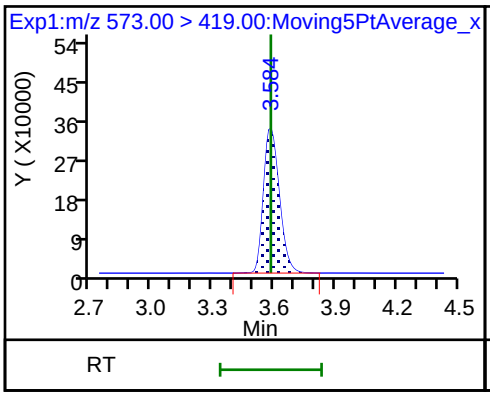
24 Perfluorodecanoic acid



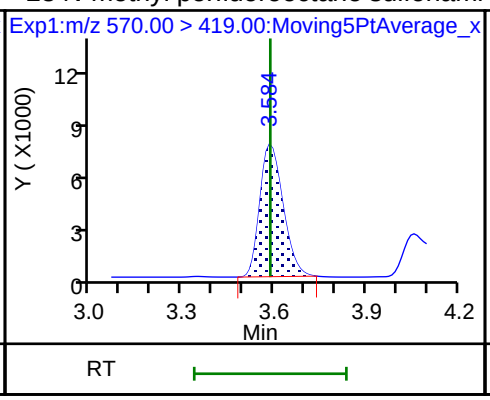
D 23 13C2 PFDA



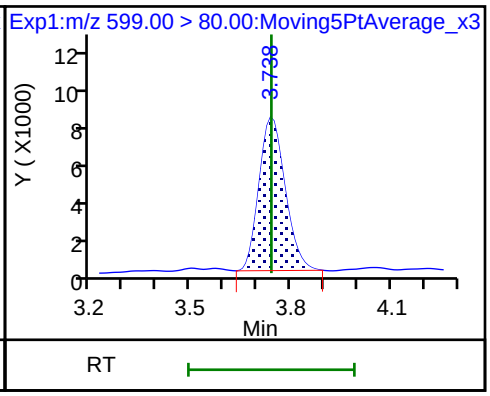
D 27 d3-NMeFOSAA



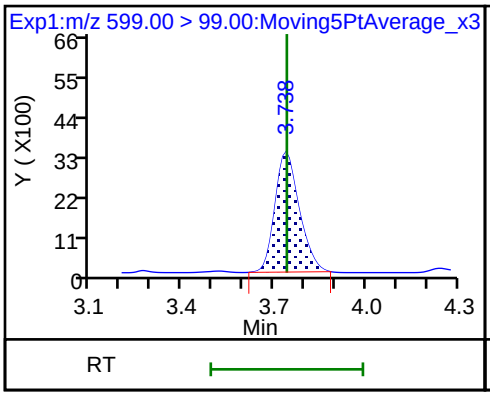
28 N-methyl perfluorooctane sulfonami



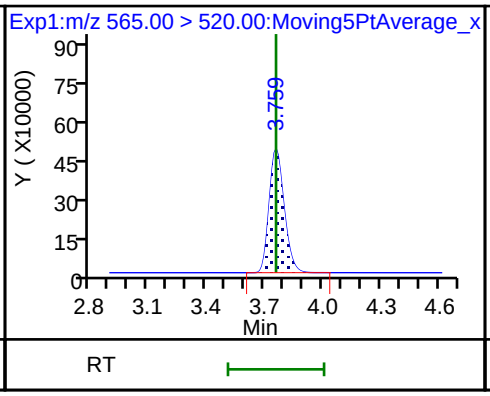
29 Perfluorodecane Sulfonic acid



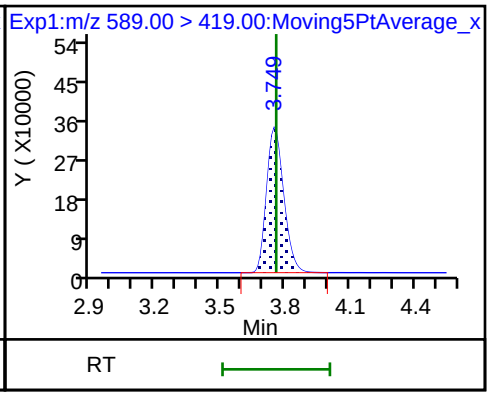
29 Perfluorodecane Sulfonic acid



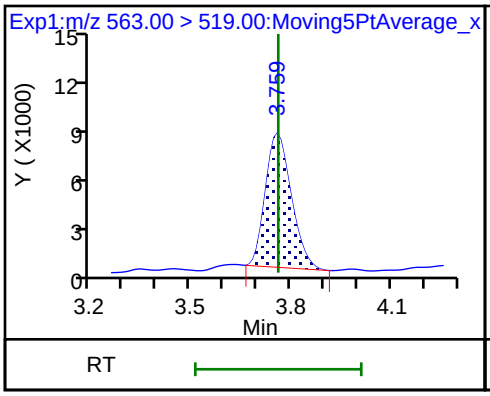
D 30 13C2 PFUnA



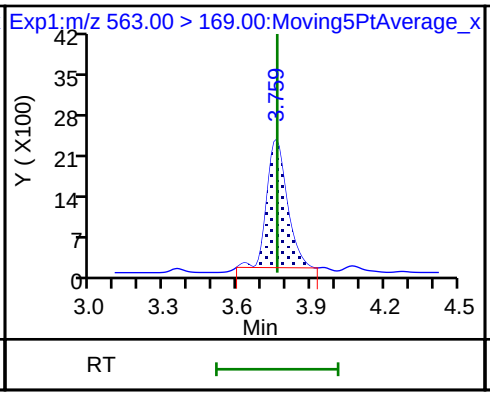
D 32 d5-NEtFOSAA



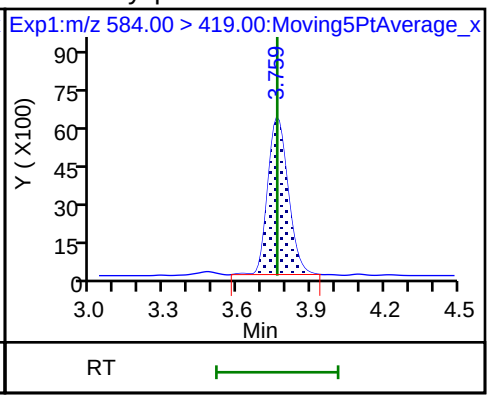
31 Perfluoroundecanoic acid



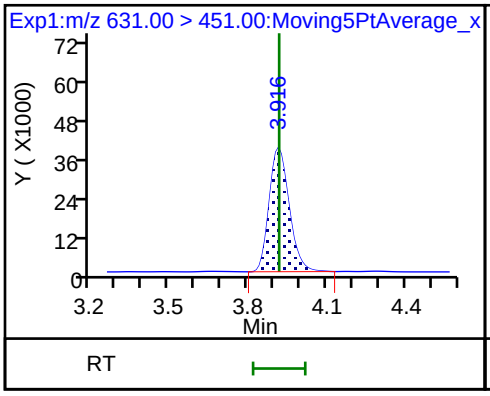
31 Perfluoroundecanoic acid



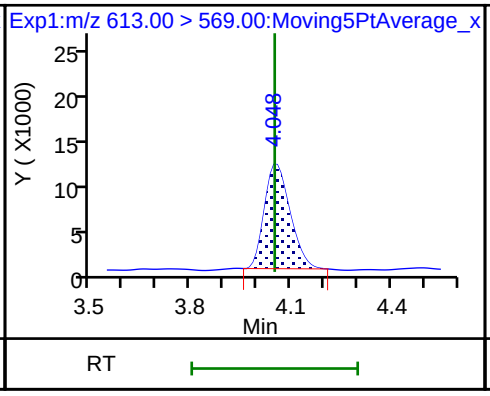
33 N-ethyl perfluorooctane sulfonamid



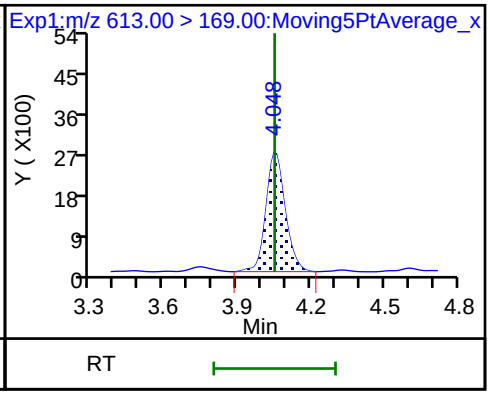
66 11-Chloroeicosafluoro-3-oxaundecan



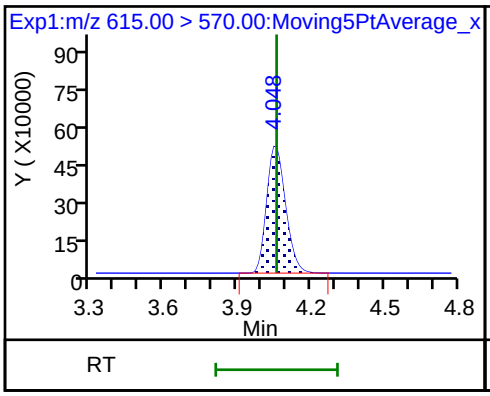
37 Perfluorododecanoic acid



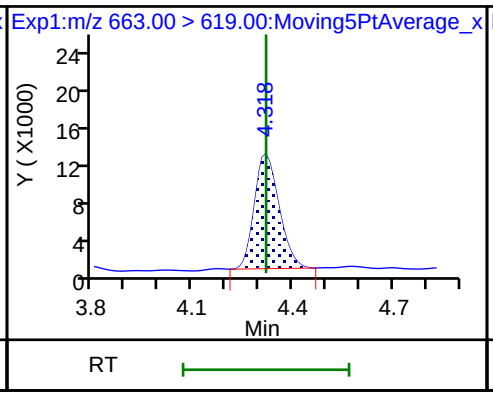
37 Perfluorododecanoic acid



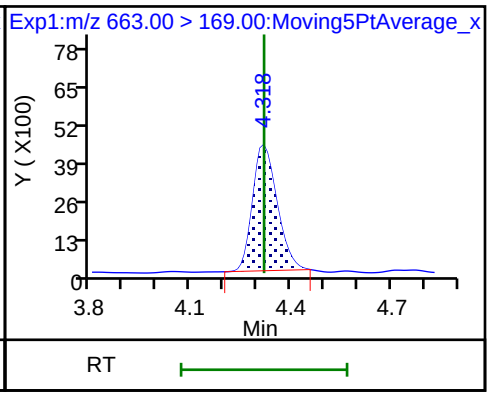
D 36 13C2 PFDoA



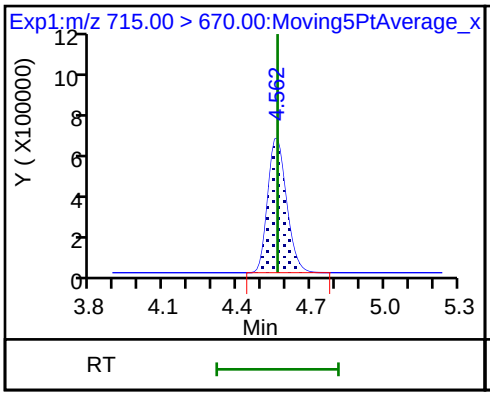
41 Perfluorotridecanoic acid



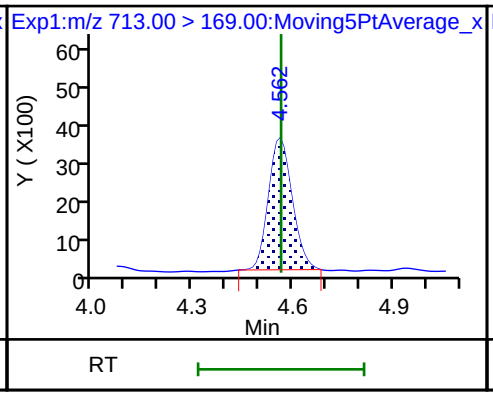
41 Perfluorotridecanoic acid



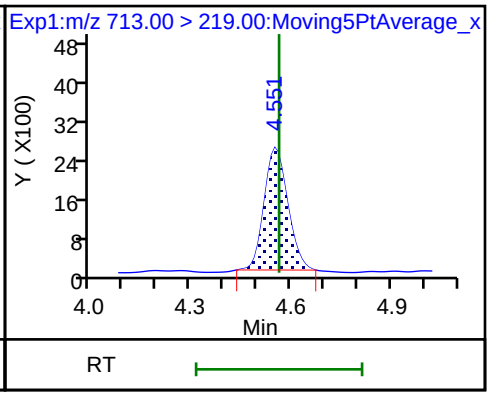
D 43 13C2-PFTeDA



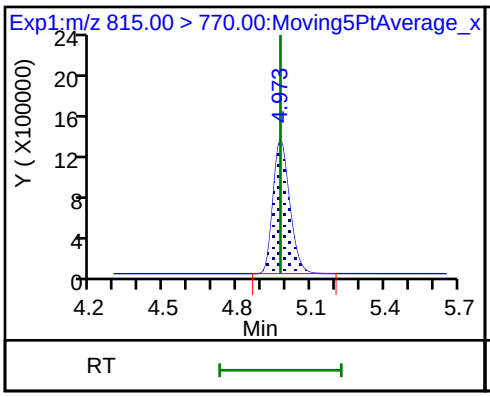
42 Perfluorotetradecanoic acid



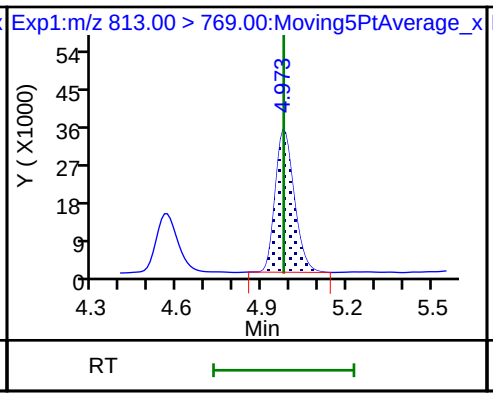
42 Perfluorotetradecanoic acid



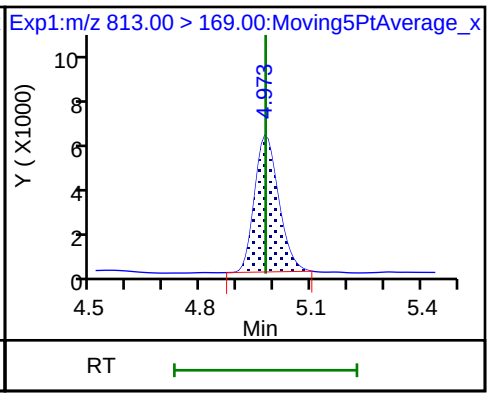
D 44 13C2-PFHxDA



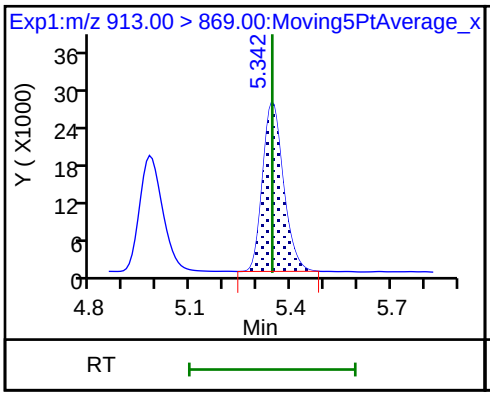
45 Perfluorohexadecanoic acid



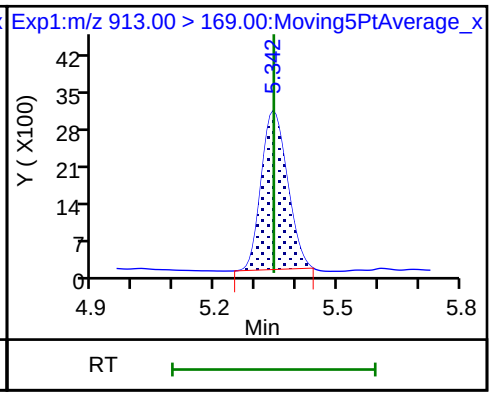
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219909/3 Calibration Date: 04/26/2018 06:09

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9057		0.975	1.00	-2.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.121		0.941	1.00	-5.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	76.16		0.860	0.884	-2.7	50.0
4:2 FTS	AveID	16.03	17.25		1.01	0.934	7.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9666		0.951	1.00	-4.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.10		0.920	0.938	-2.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.864		1.03	1.00	2.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.087		1.09	1.00	8.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.055		0.849	0.910	-6.7	40.0
Adona	AveID	3.464	3.679		1.06	1.00	6.2	50.0
6:2FTS	AveID	1.691	1.618		0.907	0.948	-4.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.352		0.969	0.952	1.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.045		0.905	1.00	-9.5	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.010		0.969	1.00	-3.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.090		0.930	0.928	0.2	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.858		0.919	0.932	-1.4	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.017		1.01	1.00	0.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7341		0.882	0.960	-8.2	50.0
8:2FTS	AveID	1.265	1.219		0.923	0.958	-3.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9338		0.905	1.00	-9.5	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.033		1.04	1.00	3.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6515		0.967	0.964	0.3	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8836		0.946	1.00	-5.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7999		0.947	1.00	-5.3	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.841		0.919	0.942	-2.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.010		0.968	1.00	-3.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.127		0.927	1.00	-7.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2484		0.989	1.00	-1.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9126		0.941	1.00	-5.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219909/3 Calibration Date: 04/26/2018 06:09

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9590		0.955	1.00	-4.5	50.0
13C4 PFBA	Ave	1.345	1.393		2.59	2.50	3.6	50.0
13C5 PFPeA	Ave	0.8672	0.9054		2.61	2.50	4.4	50.0
13C3-PFBS	Ave	0.0199	0.0196		2.29	2.33	-1.6	50.0
M2-4:2FTS	Ave	0.1425	0.1467		2.40	2.34	2.9	50.0
13C2 PFHxA	Ave	0.9590	0.9941		2.59	2.50	3.7	50.0
13C3 HFPO-DA	Ave	0.0593	0.0537		2.26	2.50	-9.5	50.0
13C4-PFHpA	Ave	0.9333	0.9232		2.47	2.50	-1.1	50.0
18O2 PFHxS	Ave	1.152	1.161		2.38	2.37	0.7	50.0
M2-6:2FTS	Ave	0.2000	0.2122		2.52	2.38	6.1	40.0
13C4 PFOA	Ave	0.9276	0.9752		2.63	2.50	5.1	50.0
13C4 PFOS	Ave	0.8066	0.7898		2.34	2.39	-2.1	50.0
13C5 PFNA	Ave	0.7973	0.7883		2.47	2.50	-1.1	50.0
13C8 FOSA	Ave	1.007	0.9611		2.39	2.50	-4.6	50.0
M2-8:2FTS	Ave	0.2409	0.2443		2.43	2.40	1.4	40.0
13C2 PFDA	Ave	0.6701	0.6838		2.55	2.50	2.0	50.0
d3-NMeFOSAA	Ave	0.3798	0.3783		2.49	2.50	-0.4	50.0
d5-NEtFOSAA	Ave	0.3749	0.4215		2.81	2.50	12.4	50.0
13C2 PFUnA	Ave	0.5781	0.5510		2.38	2.50	-4.7	50.0
13C2 PFDoA	Ave	0.6242	0.6162		2.47	2.50	-1.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7495		2.37	2.50	-5.3	50.0
13C2-PFHxDA	Ave	1.288	1.308		2.54	2.50	1.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_070.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Apr-2018 06:09:11 ALS Bottle#: 28 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 26-Apr-2018 10:36:54 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK015

First Level Reviewer: barnettj Date: 26-Apr-2018 10:20:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	2371118	0.9754		97.5	1163	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.441	-0.005	1.000	6544803	2.59		104	43669	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.557	4253073	2.61		104	66726	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1907431	0.9408		94.1	1928	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	85520	2.29		98.4	873	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2476394	0.8600		97.3	9732	
298.90 > 99.00	1.739	1.739	0.0	1.000	1052044		2.35(1.25-3.74)		10784	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	643696	2.40		103	5058	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	592642	1.00		108	25518	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.993	-0.011	1.000	4669922	2.59		104	112543	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.994	1.994	0.0	1.006	1805646	0.9513		95.1	1853	
313.00 > 119.00	1.994	1.994	0.0	1.006	167061		10.81(5.03-15.10)		1488	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2418745	0.9196		98.0	14931	
349.00 > 99.00	2.005	2.016	-0.011	0.994	891832		2.71(1.36-4.07)		13512	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.095	0.0	1.000	252262	2.26		90.5	7092	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.000	288996	1.03		103	2127	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.321	0.0	1.000	4336796	2.47		98.9	57141	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1885628	1.09		109	2139	
363.00 > 169.00	2.321	2.321	0.0	1.000	739486		2.55(1.13-3.40)		3152	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.334	0.0	1.000	5157263	2.38		101	45651	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	1.000	2094418	0.8486		93.3	4853	
399.00 > 99.00	2.334	2.334	0.0	1.000	700996		2.99(1.50-4.49)		5609	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	5459552	1.06		106	68228	
377.00 > 85.00	2.372	2.372	0.0	1.000	3273488		1.67(0.84-2.53)		66965	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.660	0.0	1.000	946855	2.52		106	15345	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	611477	0.9073		95.7	11617	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4697624	2.50			71186	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.690	-0.007	1.000	4581275	2.63		105	69382	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.003	1915153	0.9045		90.5	1345	
413.00 > 169.00	2.683	2.690	-0.007	1.000	1016258		1.88(0.84-2.52)		3087	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.690	0.0	1.000	1910126	0.9695		102	11584	
449.00 > 99.00	2.690	2.690	0.0	1.000	515096		3.71(1.94-5.82)		13745	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.059	0.0	1.000	1500691	0.9296		100	8635	
499.00 > 99.00	3.059	3.059	0.0	1.000	335232		4.48(2.31-6.93)		9339	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.059	0.0	1.000	1496258	0.9687		96.9	4785	
463.00 > 169.00	3.059	3.059	0.0	1.000	358482		4.17(1.90-5.69)		7760	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.063	-0.004	1.000	3546761	2.34		97.9	19261	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.063	-0.004	1.000	3703188	2.47		98.9	50274	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.273	3.273	0.0	1.000	2569825	0.9186		98.6	31938	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.399	3.399	0.0	1.000	1836913	1.01		101	8515	
D 21 13C8 FOSA										
506.00 > 78.00	3.399	3.404	-0.005	1.000	4514716	2.39		95.4	36012	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.408	0.0	1.000	1045819	0.8816		91.8	10859	
549.00 > 99.00	3.408	3.408	0.0	1.000	403716		2.59(1.33-3.97)		13268	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.417	3.417	0.0	1.000	535826	0.9227		96.3	26171	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.423	-0.006	1.000	1099186	2.43		101	10281	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.427	3.427	0.0	1.000	1199847	0.9052		90.5	6234	
513.00 > 169.00	3.427	3.427	0.0	1.000	228703		5.25(2.36-7.09)		4967	
D 23 13C2 PFDA										
515.00 > 470.00	3.427	3.432	-0.005	1.000	3212364	2.55		102	70211	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.576	3.582	-0.006	1.000	1777310	2.49		99.6	19434	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.586	0.0	1.003	734680	1.04		104	6550	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.741	3.741	0.0	1.000	931958	0.9673		100	9651	
599.00 > 99.00	3.741	3.741	0.0	1.000	321949		2.89(1.39-4.16)		6044	
D 30 13C2 PFUnA										
565.00 > 520.00	3.762	3.758	0.004	1.000	2588545	2.38		95.3	34212	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.758	-0.007	1.000	1979807	2.81		112	27920	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.762	3.762	0.0	1.000	828228	0.9465		94.7	5658	
563.00 > 169.00	3.762	3.762	0.0	1.000	209057		3.96(2.12-6.36)		6437	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.762	3.762	0.0	1.003	699741	0.9455		94.6	12743	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.918	0.0	1.000	3971478	0.9189		97.5	42268	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1169417	0.9684		96.8	1725	
613.00 > 169.00	4.051	4.051	0.0	1.000	272815		4.29(2.13-6.40)		2430	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.059	-0.008	1.000	2894747	2.47		98.7	36204	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.319	4.319	0.0	1.000	1304378	0.9269		92.7	1457	
663.00 > 169.00	4.319	4.319	0.0	1.000	402017		3.24(1.25-3.76)		3637	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.564	4.563	0.001	1.000	3520633	2.37		94.7	23778	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.564	0.0	1.000	349817	0.9891		98.9	3349	
713.00 > 219.00	4.554	4.564	-0.010	0.998	255928		1.37(0.71-2.13)		4101	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.976	4.975	0.001	1.000	6143789	2.54		102	16546	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.976	4.976	0.0	1.000	2242678	0.9415		94.1	952	
813.00 > 169.00	4.976	4.976	0.0	1.000	361791		6.20(2.86-8.58)		2083	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.344	0.0	1.000	2356736	0.9551		95.5	822	
913.00 > 169.00	5.344	5.344	0.0	1.000	302004		7.80(3.83-11.48)		2104	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 26-Apr-2018 10:36:55 Chrom Revision: 2.2 24-Apr-2018 15:54:26

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b\2018.04.25LLBX_070.d

Injection Date: 26-Apr-2018 06:09:11 Instrument ID: A8_N

Lims ID: CCV L4

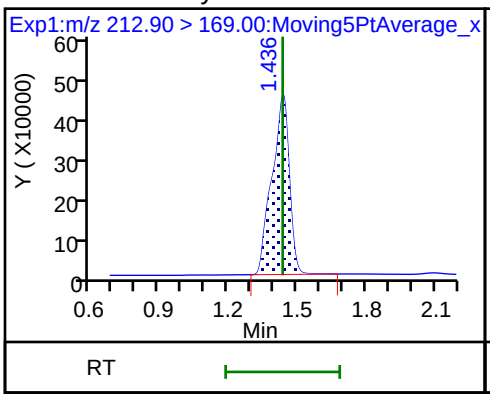
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 3

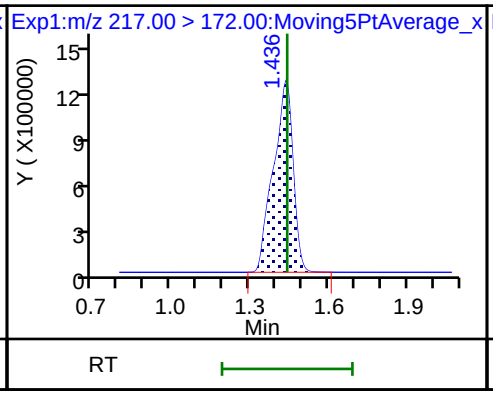
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

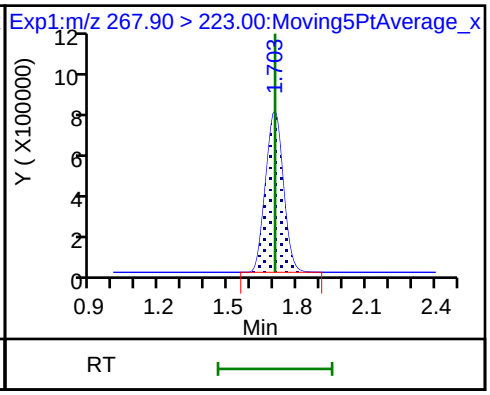
2 Perfluorobutyric acid



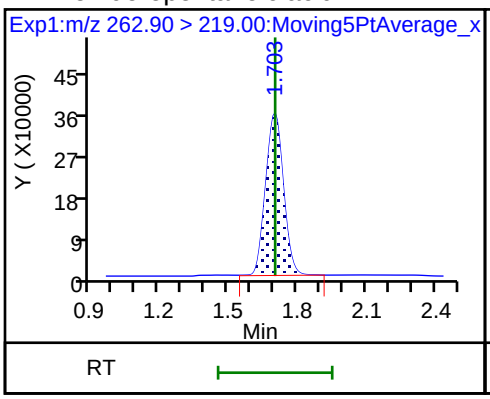
D 1 13C4 PFBA



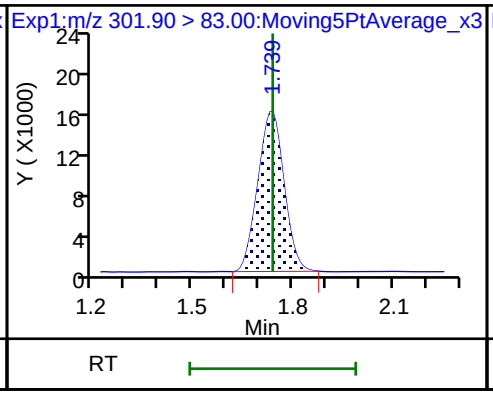
D 3 13C5-PFPeA



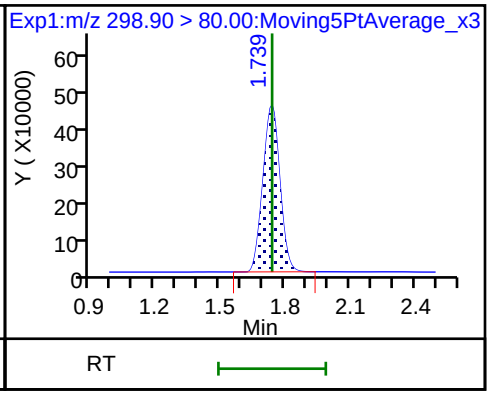
4 Perfluoropentanoic acid



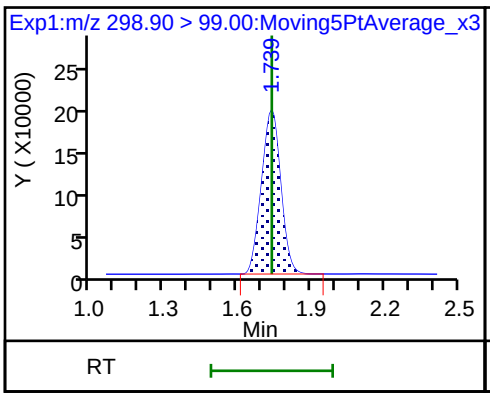
D 47 13C3-PFBS



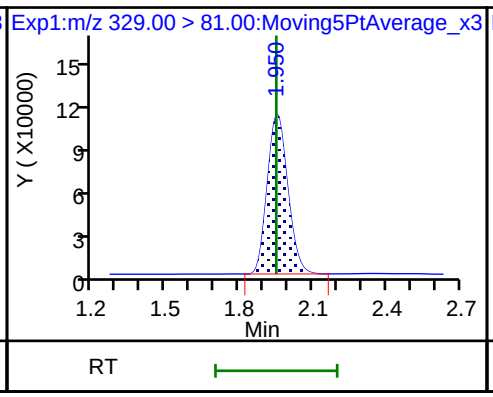
5 Perfluorobutanesulfonic acid



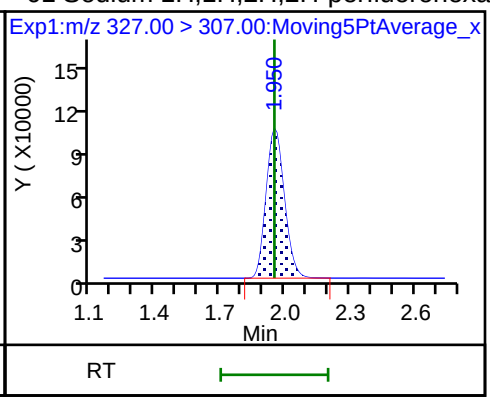
5 Perfluorobutanesulfonic acid



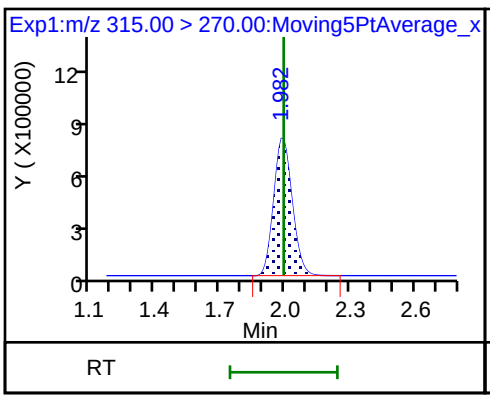
D 60 M2-4:2FTS



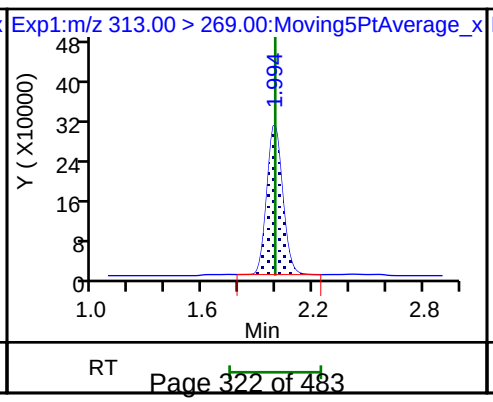
61 Sodium 1H,1H,2H,2H-perfluorohexane



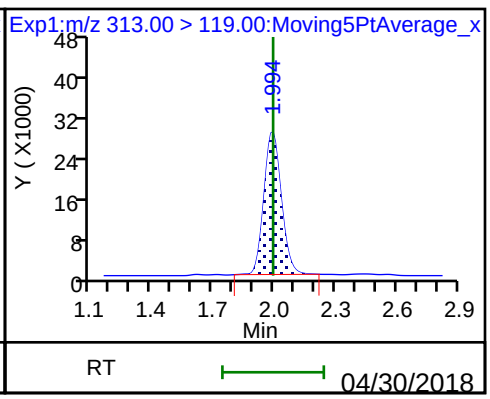
D 7 13C2 PFHxA



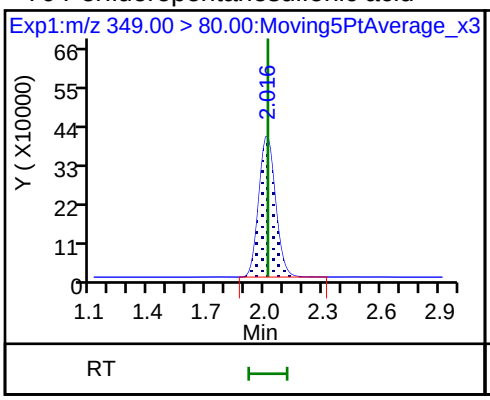
6 Perfluorohexanoic acid



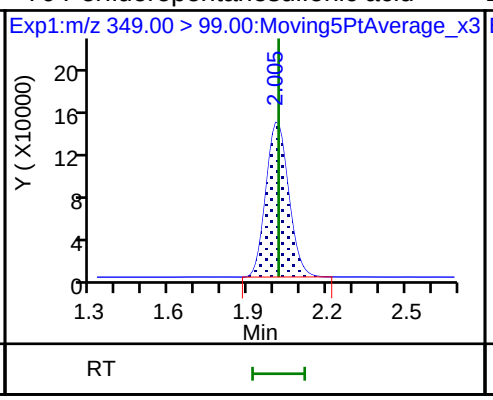
6 Perfluorohexanoic acid



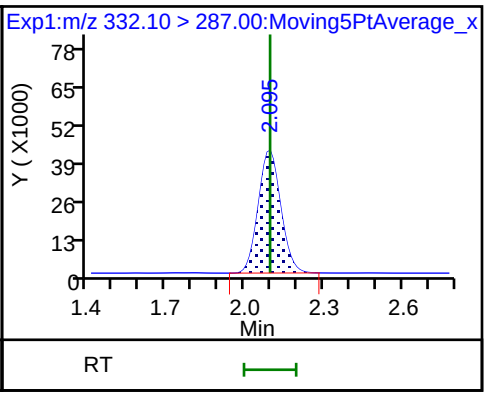
70 Perfluoropentanesulfonic acid



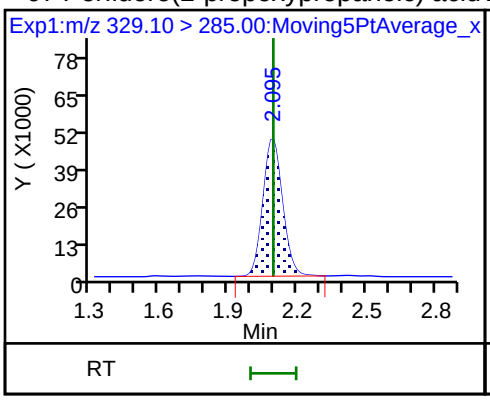
70 Perfluoropentanesulfonic acid



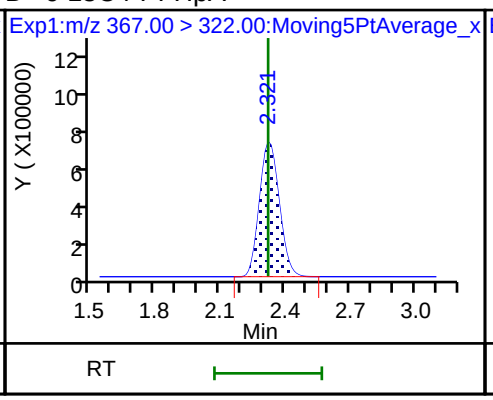
D 64 13C3 HFPO-DA



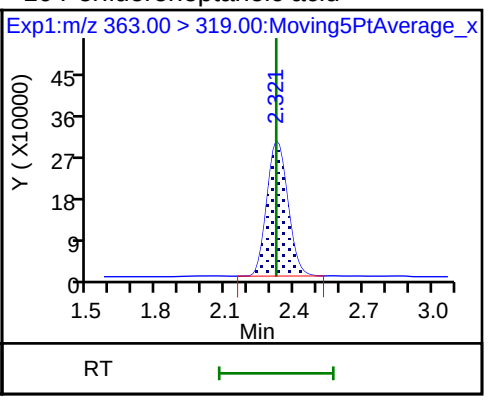
67 Perfluoro(2-propoxypropanoic) acid



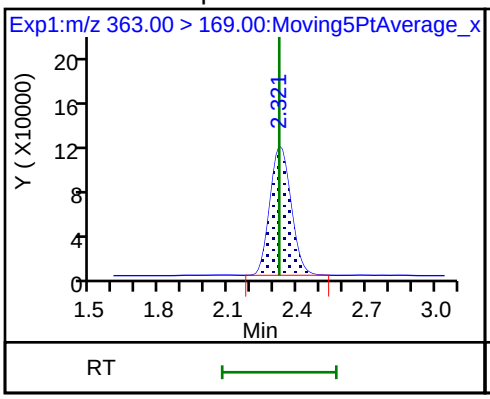
D 9 13C4-PFHpA



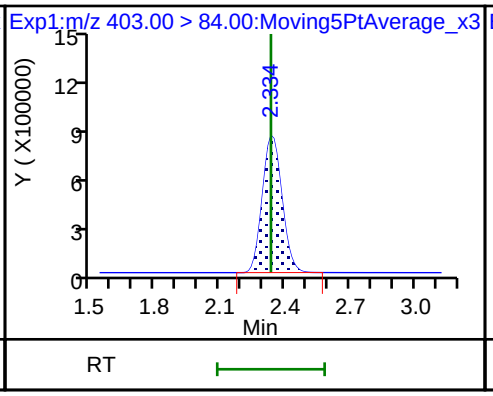
10 Perfluoroheptanoic acid



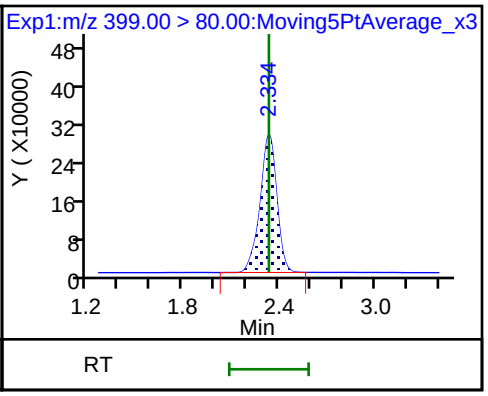
10 Perfluoroheptanoic acid



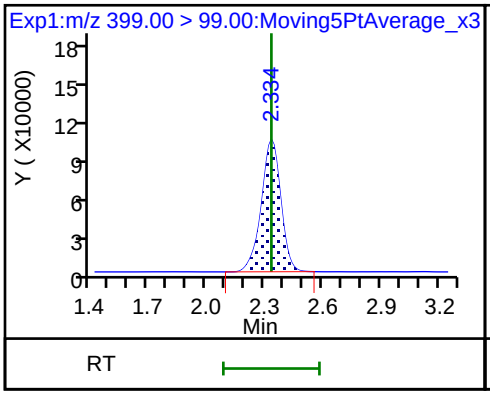
D 11 18O2 PFHxS



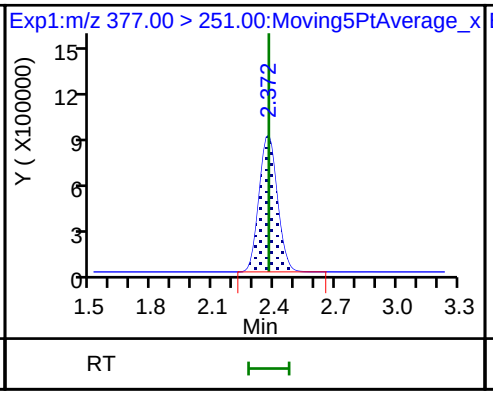
8 Perfluorohexanesulfonic acid



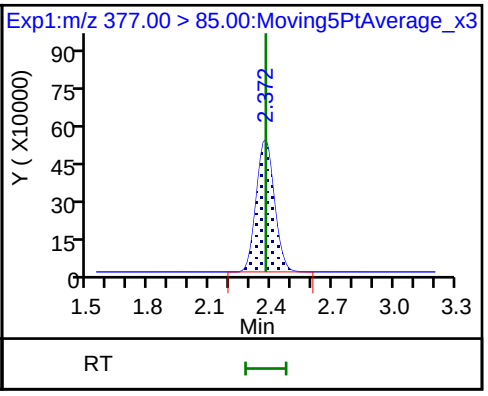
8 Perfluorohexanesulfonic acid



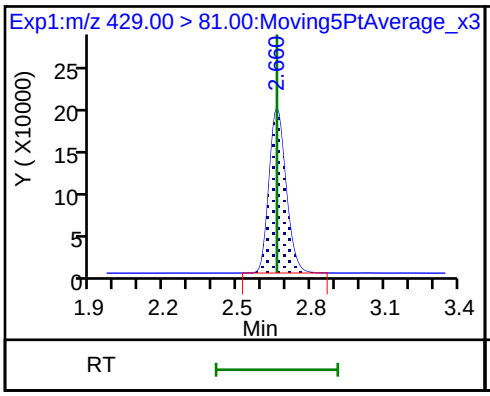
65 Adona



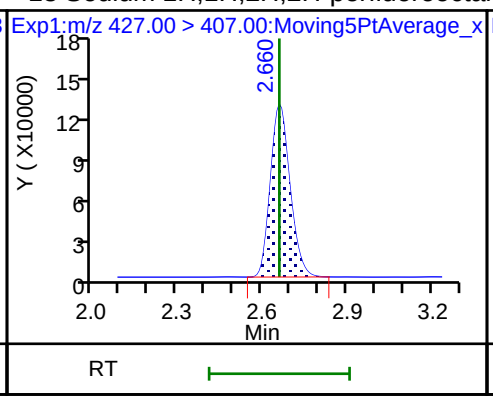
65 Adona



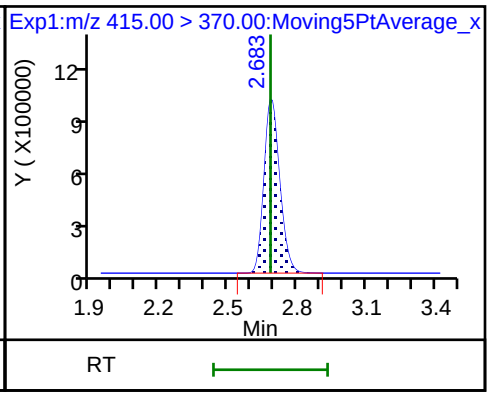
D 12 M2-6:2FTS



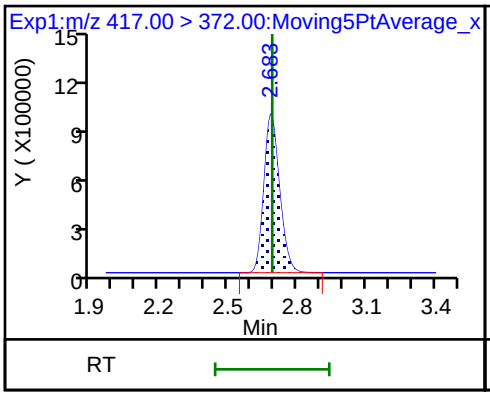
13 Sodium 1H,1H,2H,2H-perfluorooctane



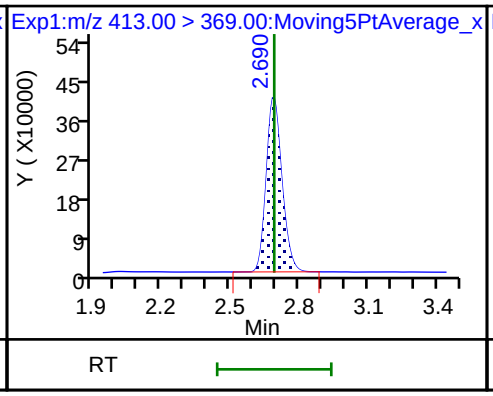
M62 13C2-PFOA



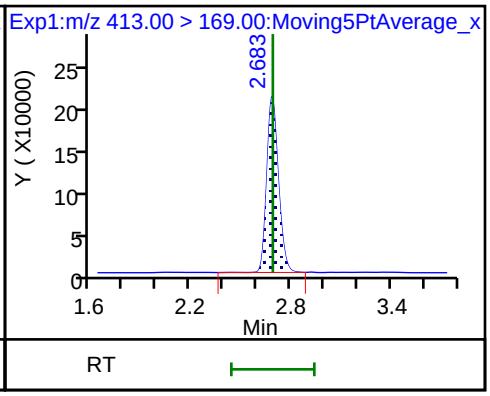
D 14 13C4 PFOA



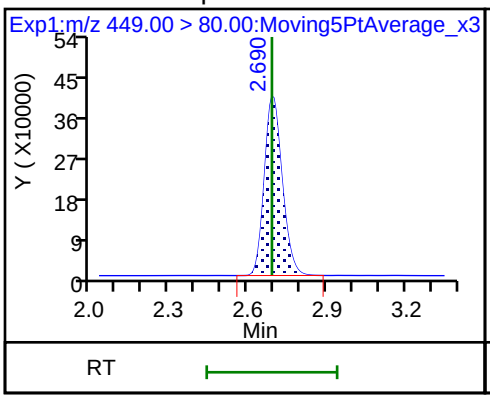
15 Perfluorooctanoic acid



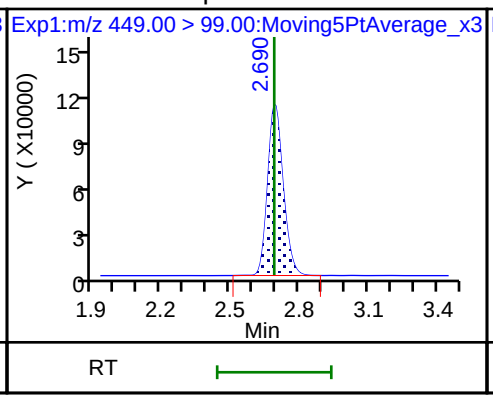
15 Perfluorooctanoic acid



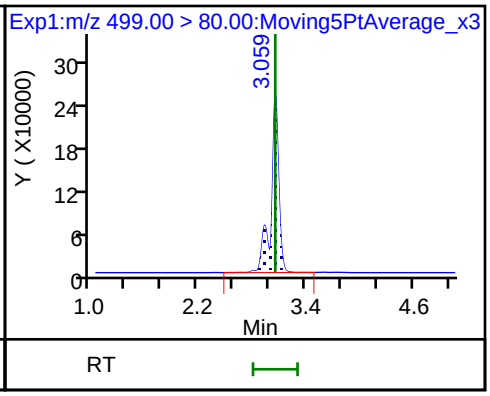
16 Perfluoroheptanesulfonic acid



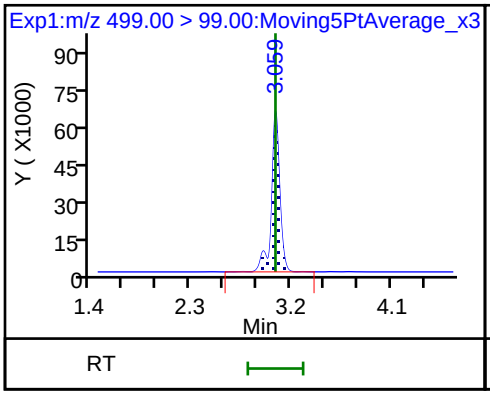
16 Perfluoroheptanesulfonic acid



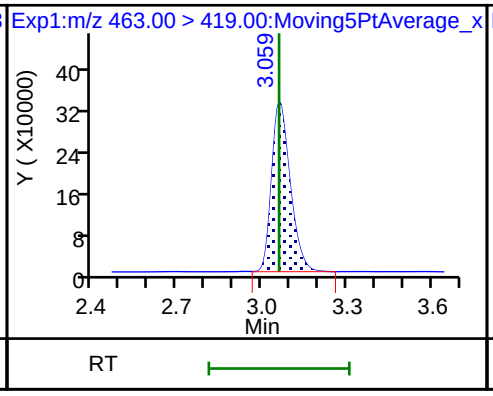
17 Perfluorooctane sulfonic acid



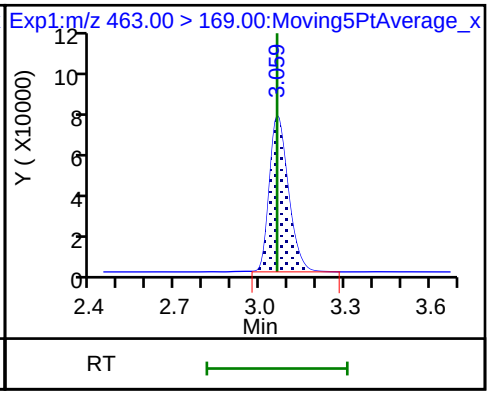
17 Perfluorooctane sulfonic acid



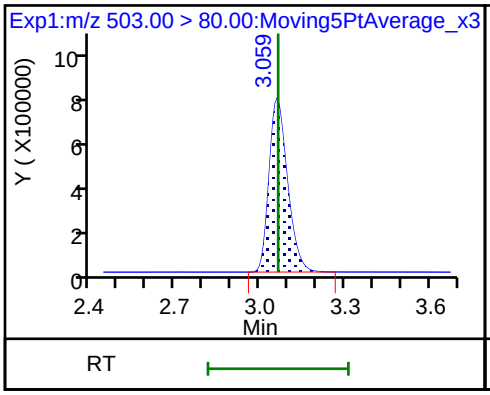
20 Perfluorononanoic acid



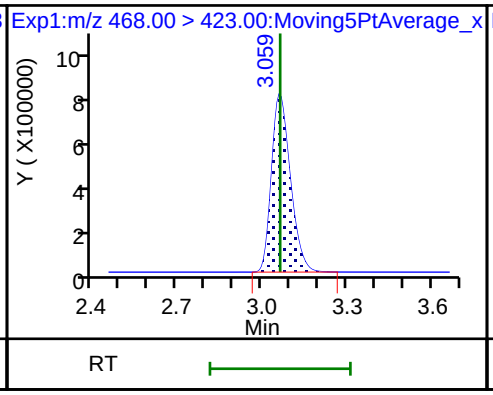
20 Perfluorononanoic acid



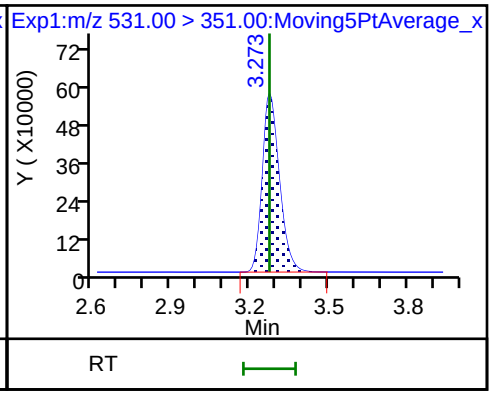
D 18 13C4 PFOS



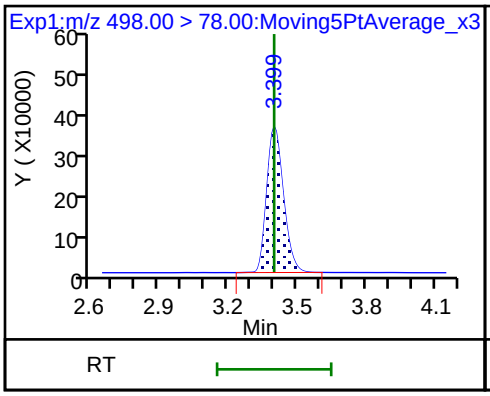
D 19 13C5 PFNA



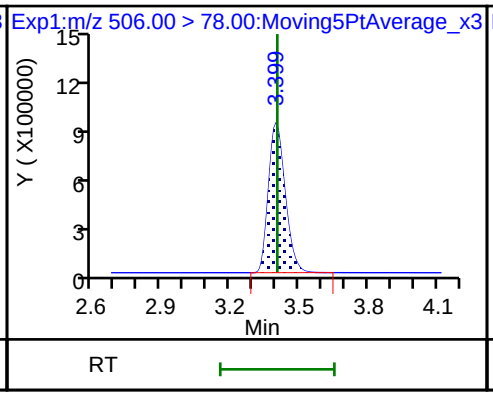
69 9-Chlorohexadecafluoro-3-oxanonane



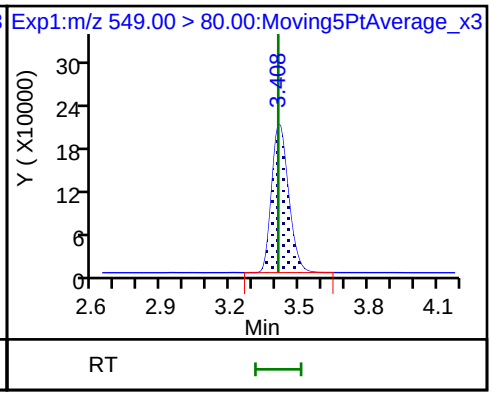
22 Perfluorooctane Sulfonamide



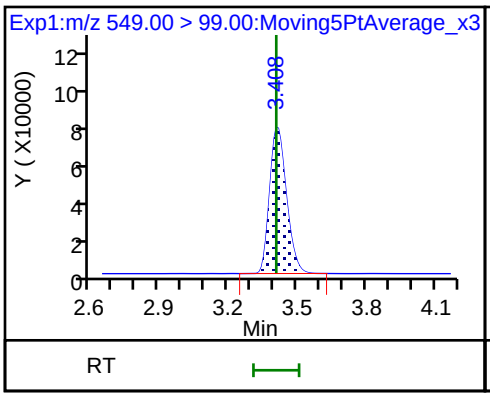
D 21 13C8 FOSA



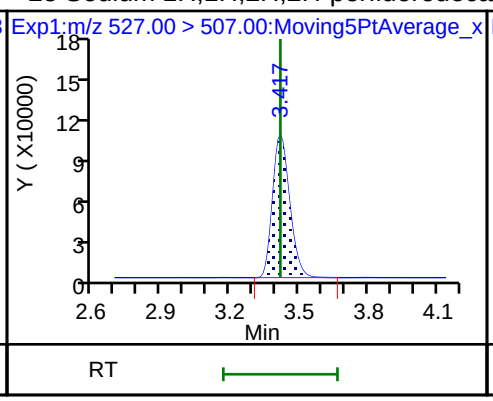
68 Perfluorononanesulfonic acid



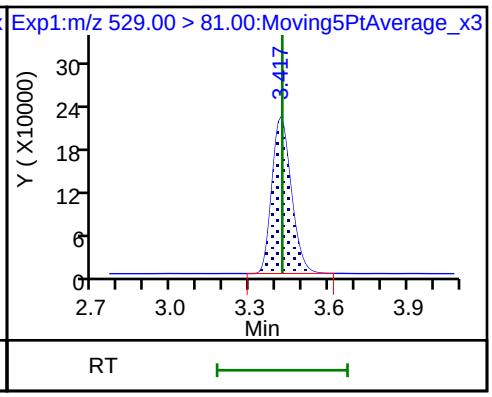
68 Perfluorononanesulfonic acid



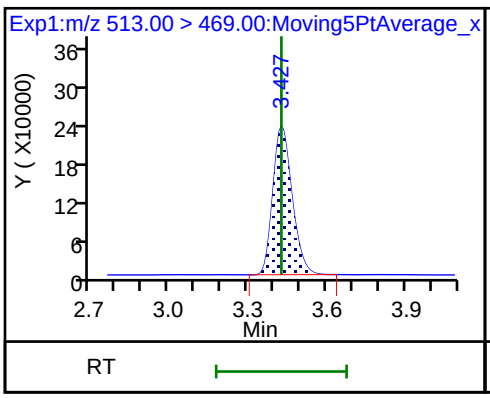
25 Sodium 1H,1H,2H,2H-perfluorodecane



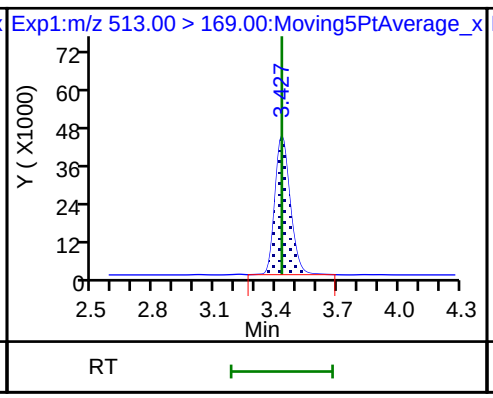
D 26 M2-8:2FTS



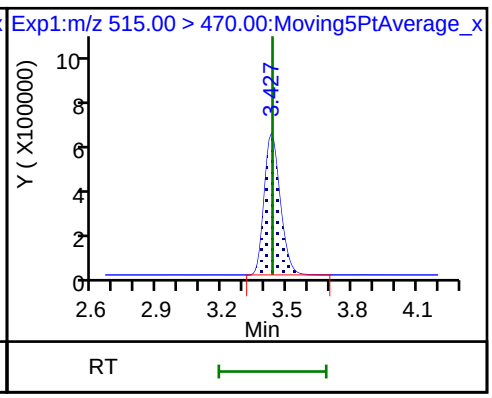
24 Perfluorodecanoic acid



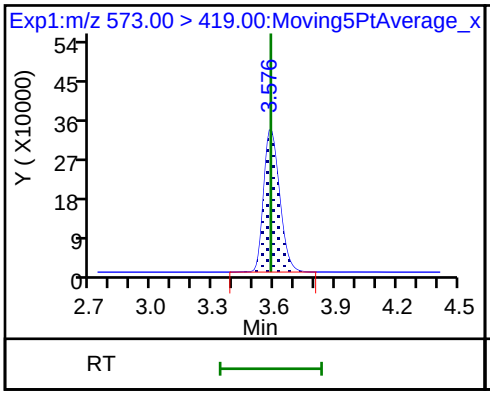
24 Perfluorodecanoic acid



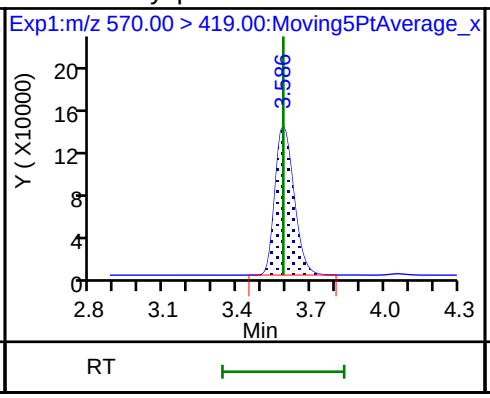
D 23 13C2 PFDA



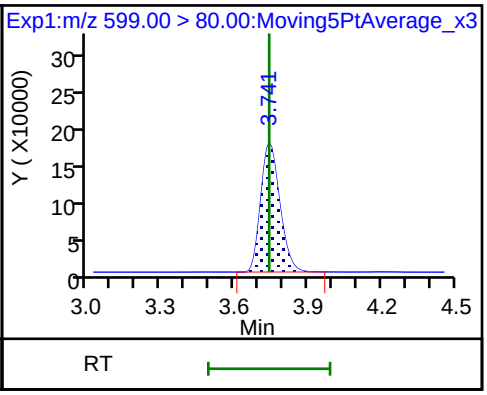
D 27 d3-NMeFOSAA



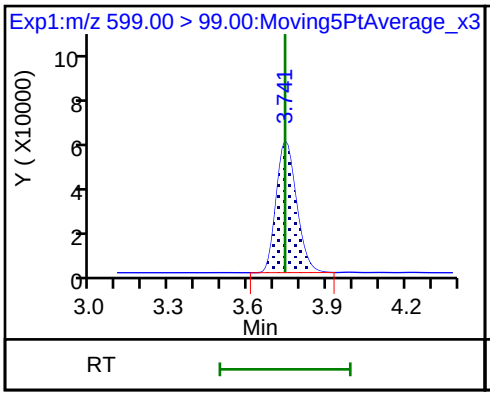
28 N-methyl perfluorooctane sulfonami



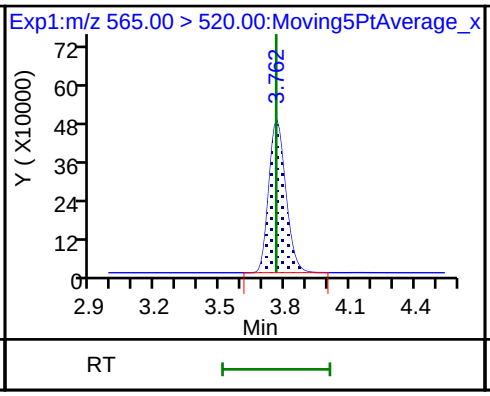
29 Perfluorodecane Sulfonic acid



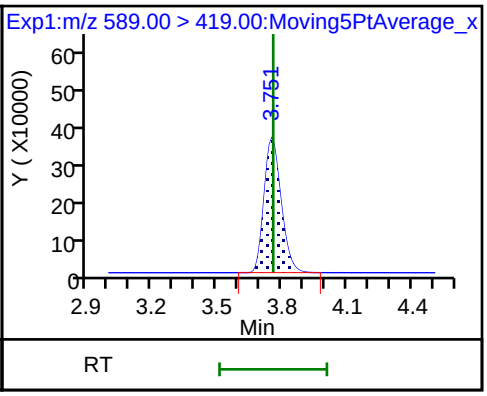
29 Perfluorodecane Sulfonic acid



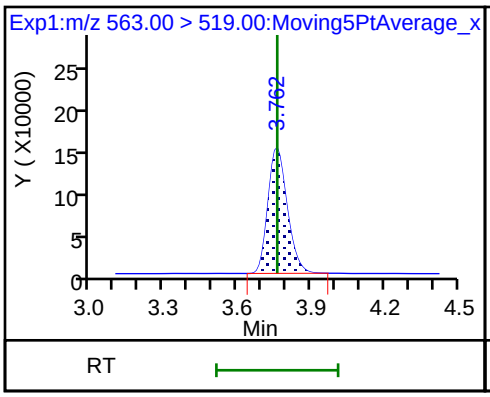
D 30 13C2 PFUnA



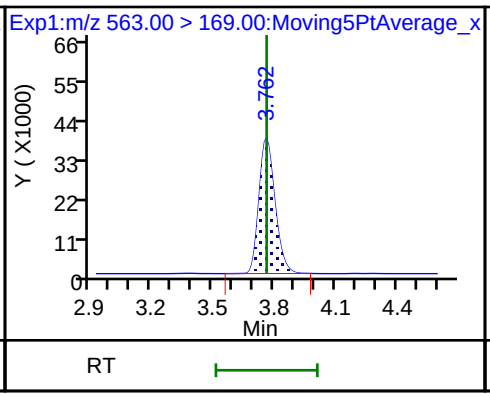
D 32 d5-NEtFOSAA



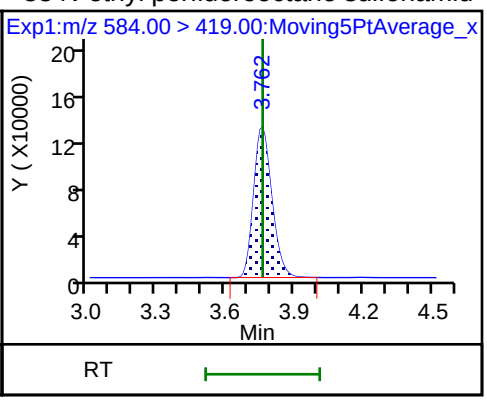
31 Perfluoroundecanoic acid



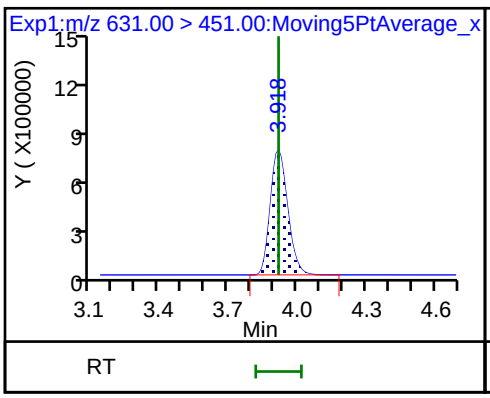
31 Perfluoroundecanoic acid



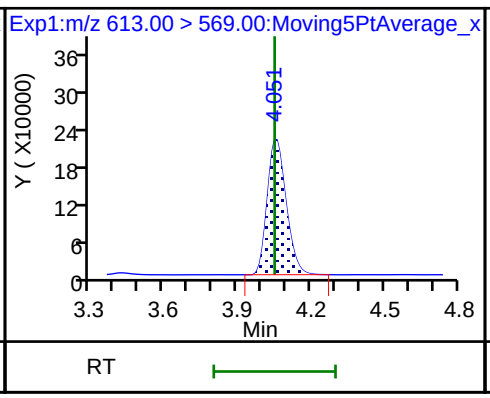
33 N-ethyl perfluorooctane sulfonamid



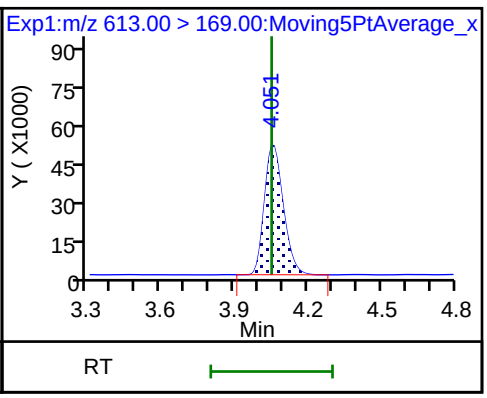
66 11-Chloroeicosafluoro-3-oxaundecan



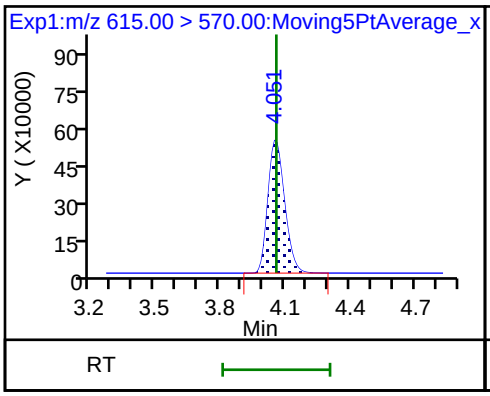
37 Perfluorododecanoic acid



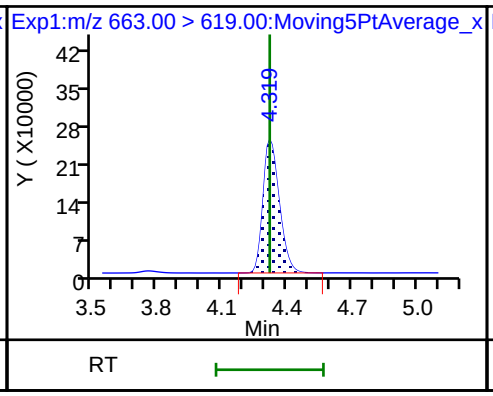
37 Perfluorododecanoic acid



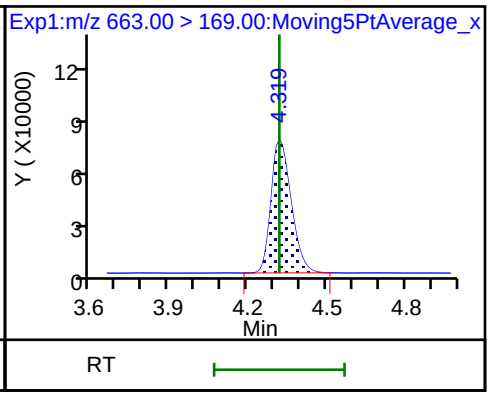
D 36 13C2 PFDoA



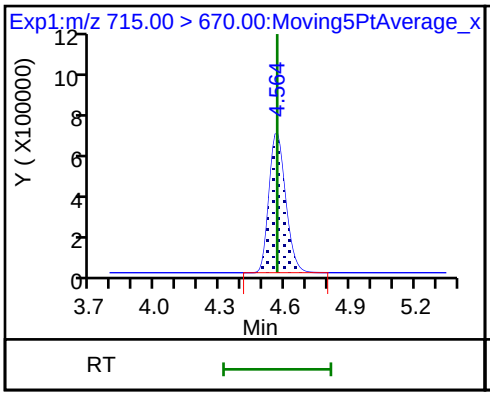
41 Perfluorotridecanoic acid



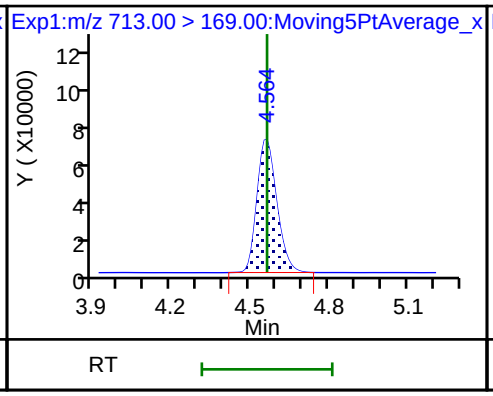
41 Perfluorotridecanoic acid



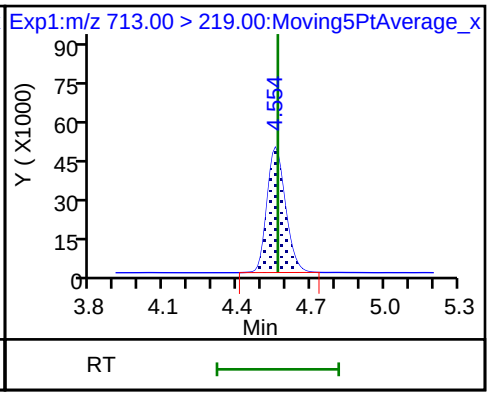
D 43 13C2-PFTeDA



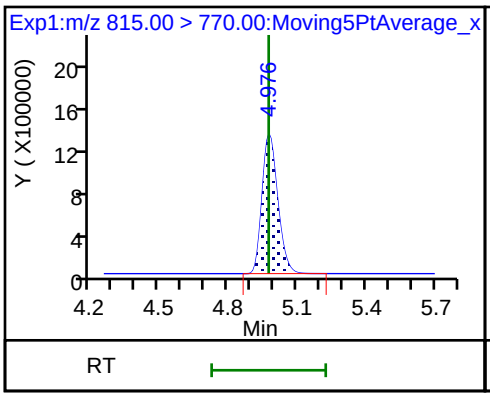
42 Perfluorotetradecanoic acid



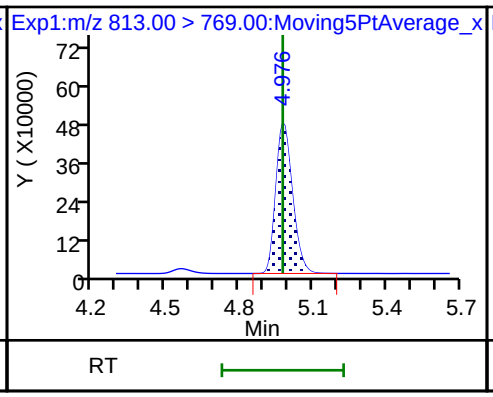
42 Perfluorotetradecanoic acid



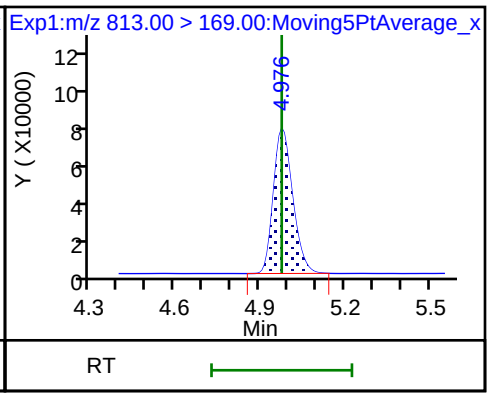
D 44 13C2-PFHxDA



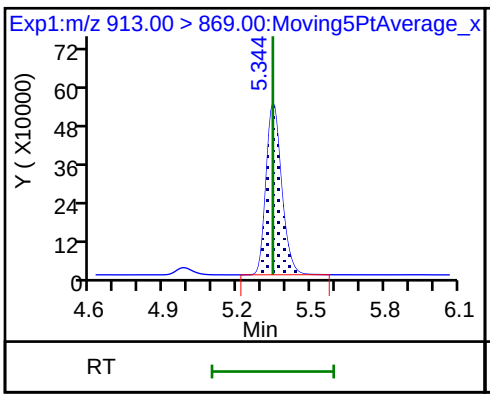
45 Perfluorohexadecanoic acid



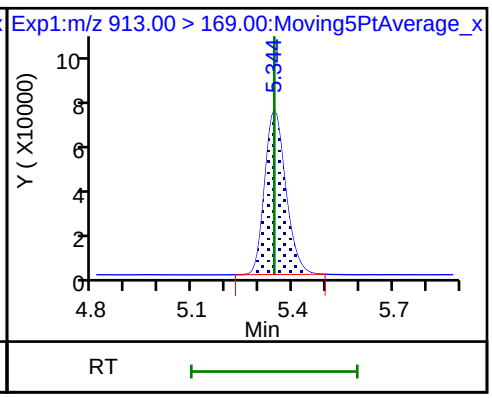
45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219912/1 Calibration Date: 04/26/2018 07:27

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9653		2.60	2.50	4.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.186		2.49	2.50	-0.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	82.66		2.33	2.21	5.6	50.0
4:2 FTS	AveID	16.03	16.32		2.38	2.34	1.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.064		2.62	2.50	4.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	74.17		2.43	2.35	3.7	50.0
HFPO-DA (GenX)	AveID	2.785	2.961		2.66	2.50	6.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.035		2.58	2.50	3.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.110		2.23	2.28	-2.0	40.0
Adona	AveID	3.464	3.813		2.75	2.50	10.1	50.0
6:2FTS	AveID	1.691	1.699		2.38	2.37	0.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.409		2.53	2.38	6.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.139		2.47	2.50	-1.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.055		2.53	2.50	1.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.125		2.40	2.32	3.4	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.959		2.42	2.33	3.9	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.081		2.67	2.50	6.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7760		2.33	2.40	-2.9	50.0
8:2FTS	AveID	1.265	1.243		2.35	2.40	-1.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.042		2.53	2.50	1.0	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.044		2.62	2.50	4.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6306		2.34	2.41	-2.9	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9224		2.47	2.50	-1.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8128		2.40	2.50	-3.8	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.924		2.36	2.36	0.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.041		2.50	2.50	-0.2	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.154		2.37	2.50	-5.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2593		2.58	2.50	3.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9360		2.45	2.50	-2.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219912/1 Calibration Date: 04/26/2018 07:27

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9193		2.29	2.50	-8.4	50.0
13C4 PFBA	Ave	1.345	1.338		2.49	2.50	-0.5	50.0
13C5 PFPeA	Ave	0.8672	0.8755		2.52	2.50	1.0	50.0
13C3-PFBS	Ave	0.0199	0.0195		2.28	2.33	-2.0	50.0
M2-4:2FTS	Ave	0.1425	0.1438		2.36	2.34	0.9	50.0
13C2 PFHxA	Ave	0.9590	0.9449		2.46	2.50	-1.5	50.0
13C3 HFPO-DA	Ave	0.0593	0.0539		2.27	2.50	-9.1	50.0
13C4-PFHpA	Ave	0.9333	0.9553		2.56	2.50	2.4	50.0
18O2 PFHxS	Ave	1.152	1.117		2.29	2.37	-3.1	50.0
M2-6:2FTS	Ave	0.2000	0.1970		2.34	2.38	-1.5	40.0
13C4 PFOA	Ave	0.9276	0.9161		2.47	2.50	-1.2	50.0
13C4 PFOS	Ave	0.8066	0.7652		2.27	2.39	-5.1	50.0
13C5 PFNA	Ave	0.7973	0.7974		2.50	2.50	0.0	50.0
13C8 FOSA	Ave	1.007	0.9361		2.32	2.50	-7.1	50.0
M2-8:2FTS	Ave	0.2409	0.2284		2.27	2.40	-5.2	40.0
13C2 PFDA	Ave	0.6701	0.6519		2.43	2.50	-2.7	50.0
d3-NMeFOSAA	Ave	0.3798	0.3804		2.50	2.50	0.2	50.0
13C2 PFUnA	Ave	0.5781	0.5292		2.29	2.50	-8.5	50.0
d5-NEtFOSAA	Ave	0.3749	0.3703		2.47	2.50	-1.2	50.0
13C2 PFDoA	Ave	0.6242	0.5770		2.31	2.50	-7.6	50.0
13C2-PFTeDA	Ave	0.7915	0.7273		2.30	2.50	-8.1	50.0
13C2-PFHxDA	Ave	1.288	1.276		2.48	2.50	-0.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_036.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 07:27:19 ALS Bottle#: 29 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.432	0.010	1.000	6273463	2.49		99.5	40826	
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.436	0.006	1.000	6055490	2.60		104	3260	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.697	0.006	0.556	4103707	2.52		101	53758	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	4867850	2.49		99.5	4778	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.733	0.006	1.000	85006	2.28		98.0	2575	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	6679224	2.33		106	20353	
298.90 > 99.00	1.739	1.739	0.0	1.000	2694758		2.48(1.25-3.74)		25873	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	1393452	2.38		102	78483	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.953	-0.003	1.000	629708	2.36		101	5435	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	4711043	2.62		105	5266	
313.00 > 119.00	1.982	1.982	0.0	1.000	400474		11.76(5.03-15.10)		3173	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4429045	2.46		98.5	73625	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.005	0.0	1.000	6358985	2.43		104	36342	
349.00 > 99.00	2.005	2.005	0.0	1.000	2270270		2.80(1.36-4.07)		47103	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	748660	2.66		106	4933	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.087	-0.003	1.000	252828	2.27		90.9	5851	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.313	0.008	1.000	4477937	2.56		102	78458	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.323	-0.001	1.000	4632515	2.58		103	5019	
363.00 > 169.00	2.321	2.323	-0.001	1.000	1828693		2.53(1.13-3.40)		8295	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	4951169	2.29		96.9	78614	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.336	-0.002	1.000	5284920	2.23		98.0	12774	
399.00 > 99.00	2.334	2.336	-0.002	1.000	1664125		3.18(1.50-4.49)		8797	
65 Adona										
377.00 > 251.00	2.372	2.362	0.010	1.000	13674166	2.75		110	122830	
377.00 > 85.00	2.372	2.362	0.010	1.000	7824076		1.75(0.84-2.53)		104397	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.656	0.004	1.000	877172	2.34		98.5	12078	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.661	-0.001	1.000	1486867	2.38		100	20475	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.679	0.004	1.000	4294014	2.47		98.8	59502	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.683	0.007	1.003	4891830	2.46		98.6	3172	
413.00 > 169.00	2.690	2.683	0.007	1.003	2439598		2.01(0.84-2.52)		8678	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.683	0.007		4687397	2.50			57602	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	4811174	2.53		106	25377	
449.00 > 99.00	2.690	2.691	-0.001	1.000	1284223		3.75(1.94-5.82)		20882	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.063	3.053	0.010	1.000	3743022	2.40		103	16779	
499.00 > 99.00	3.063	3.053	0.010	1.000	814986		4.59(2.31-6.93)		11910	
D 18 13C4 PFOS										
503.00 > 80.00	3.063	3.056	0.007	1.000	3428768	2.27		94.9	18389	
D 19 13C5 PFNA										
468.00 > 423.00	3.063	3.056	0.007	1.000	3737765	2.50		100	59203	
20 Perfluorononanoic acid										
463.00 > 419.00	3.063	3.060	0.003	1.000	3943906	2.53		101	12038	
463.00 > 169.00	3.063	3.060	0.003	1.000	911414		4.33(1.90-5.69)		18032	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.277	3.266	0.011	1.000	6549306	2.42		104	59132	
D 21 13C8 FOSA										
506.00 > 78.00	3.404	3.394	0.010	1.000	4388001	2.32		92.9	39557	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.398	0.006	1.000	4742619	2.67		107	29353	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.413	3.408	0.005	1.000	2671776	2.33		97.1	18213	
549.00 > 99.00	3.413	3.408	0.005	1.000	1006592		2.65(1.33-3.97)		28619	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.422	3.408	0.014	1.003	1275446	2.35		98.3	60992	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1025736	2.27		94.8	8595	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.432	3.417	0.015	1.000	3185034	2.53		101	13998	
513.00 > 169.00	3.432	3.417	0.015	1.000	567103		5.62(2.36-7.09)		10021	
D 23 13C2 PFDA										
515.00 > 470.00	3.432	3.422	0.010	1.000	3055870	2.43		97.3	85962	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.593	3.575	0.018	1.003	1861900	2.62		105	11819	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.582	3.582	0.0	1.000	1783222	2.50		100	30500	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.747	3.730	0.017	1.000	2180177	2.34		97.1	18209	
599.00 > 99.00	3.747	3.730	0.017	1.000	782845		2.78(1.39-4.16)		18213	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.758	3.747	0.011	1.000	1735872	2.47		98.8	22038	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.758	3.751	0.007	1.000	2016205	2.40		96.2	13511	
563.00 > 169.00	3.758	3.751	0.007	1.000	510764		3.95(2.12-6.36)		9107	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.758	3.751	0.007	1.000	1601216	2.47		98.7	40568	
D 30 13C2 PFUnA										
565.00 > 520.00	3.758	3.757	0.001	1.000	2480670	2.29		91.5	74796	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.916	3.907	0.009	1.000	9877838	2.36		100	75549	
D 36 13C2 PFDoA										
615.00 > 570.00	4.059	4.046	0.013	1.000	2704730	2.31		92.4	28375	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.059	4.051	0.008	1.000	2815872	2.50		99.8	3787	
613.00 > 169.00	4.059	4.051	0.008	1.000	698891		4.03(2.13-6.40)		7190	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.308	0.010	1.000	3120216	2.37		94.9	3689	
663.00 > 169.00	4.318	4.308	0.010	1.000	1012540		3.08(1.25-3.76)		8671	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.563	4.543	0.020	1.000	884010	2.58		103	7112	
713.00 > 219.00	4.553	4.543	0.010	0.998	615221		1.44(0.71-2.13)		7728	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.563	4.551	0.012	1.000	3408916	2.30		91.9	21042	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.983	4.967	0.016	1.000	5597480	2.45		98.0	2377	
813.00 > 169.00	4.983	4.967	0.016	1.000	927445		6.04(2.86-8.58)		4786	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.983	4.974	0.009	1.000	5980203	2.48		99.1	16235	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.350	5.321	0.029	1.000	5497817	2.29		91.6	1794	
913.00 > 169.00	5.343	5.321	0.022	0.999	690325		7.96(3.83-11.48)		3869	

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 15:27:31 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_036.d

Injection Date: 26-Apr-2018 07:27:19 Instrument ID: A8_N

Lims ID: CCV L5

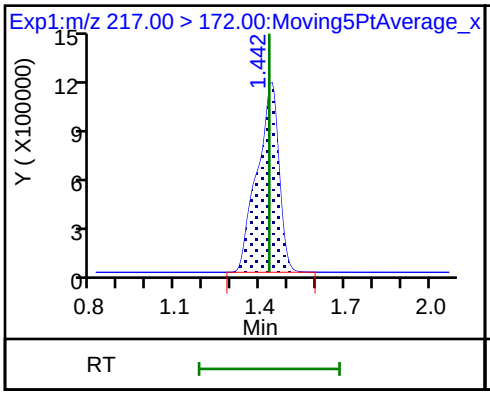
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 1

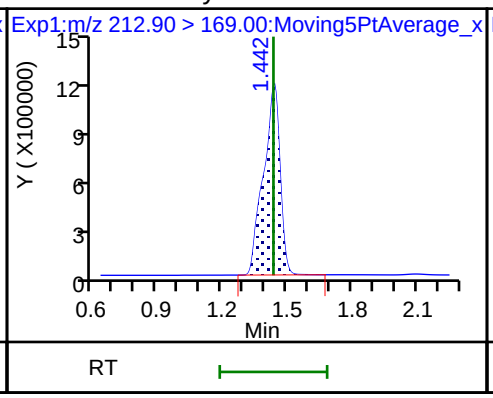
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

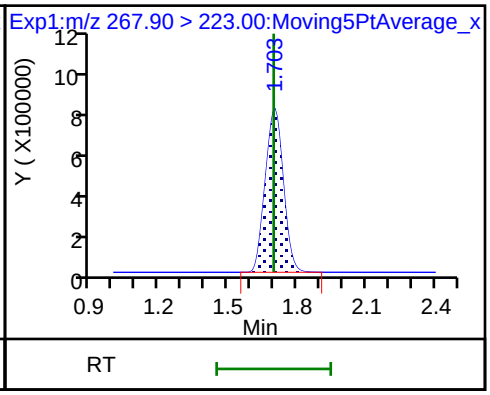
D 1 13C4 PFBA



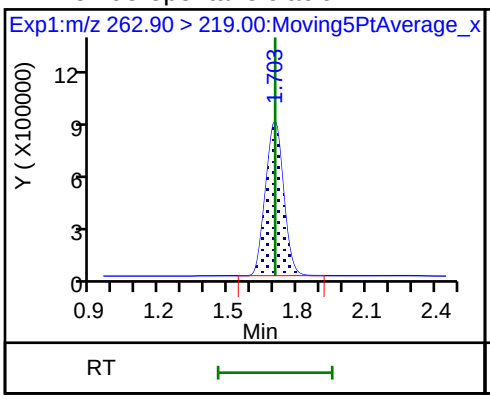
2 Perfluorobutyric acid



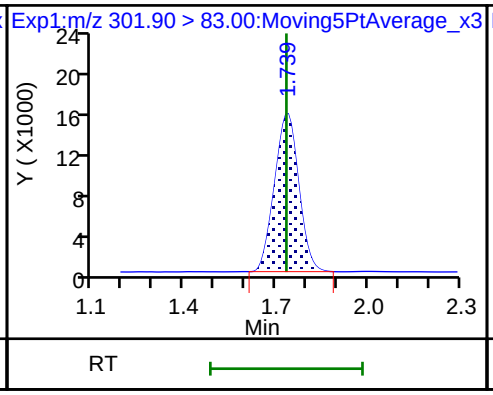
D 3 13C5-PFPeA



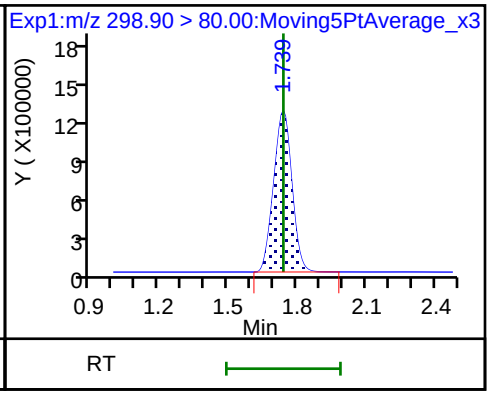
4 Perfluoropentanoic acid



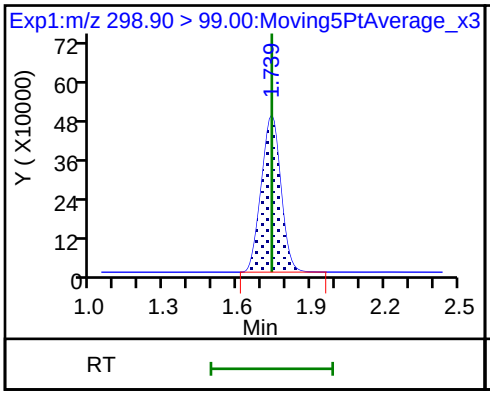
D 47 13C3-PFBS



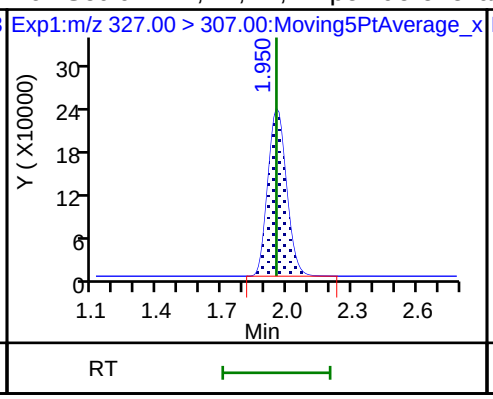
5 Perfluorobutanesulfonic acid



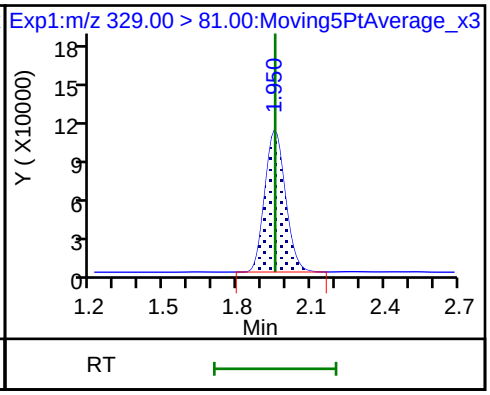
5 Perfluorobutanesulfonic acid



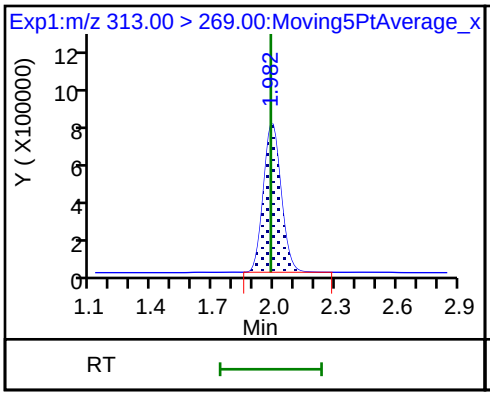
61 Sodium 1H,1H,2H,2H-perfluorohexane



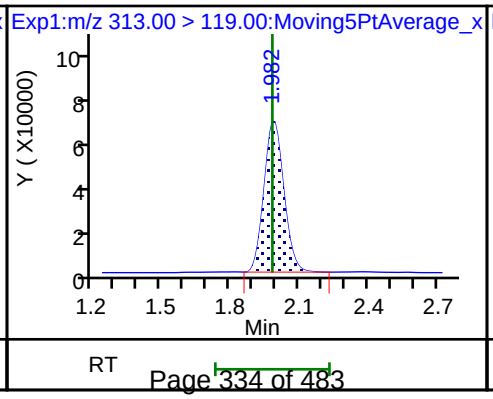
D 60 M2-4:2FTS



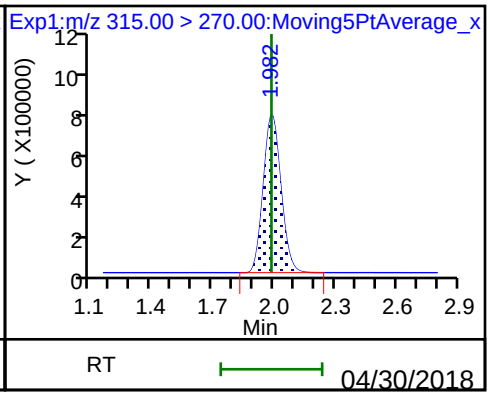
6 Perfluorohexanoic acid



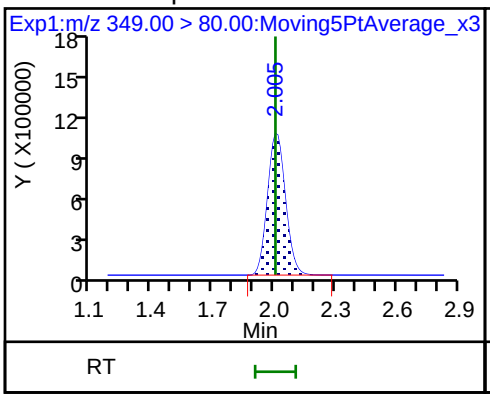
6 Perfluorohexanoic acid



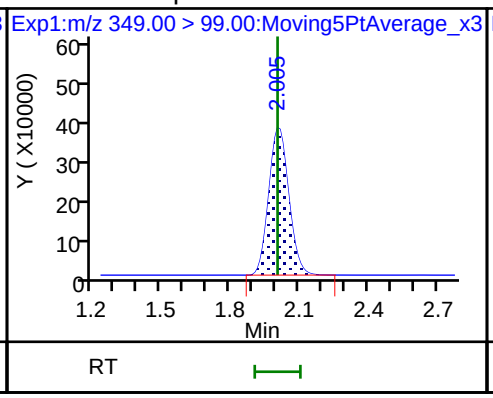
D 7 13C2 PFHxA



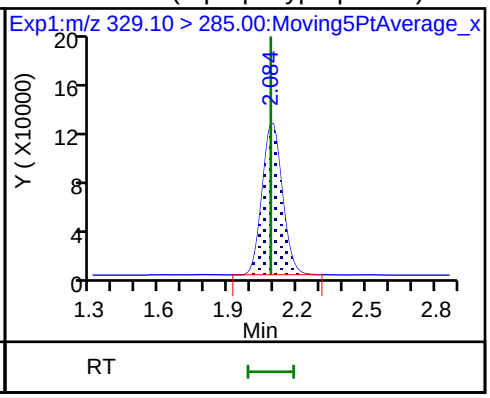
70 Perfluoropentanesulfonic acid



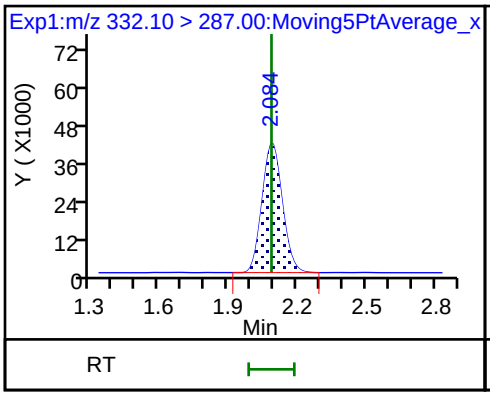
70 Perfluoropentanesulfonic acid



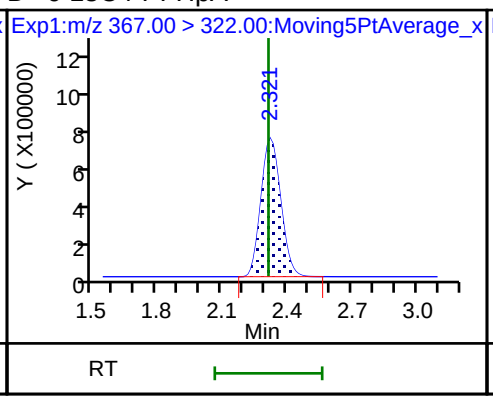
67 Perfluoro(2-propoxypropanoic) acid



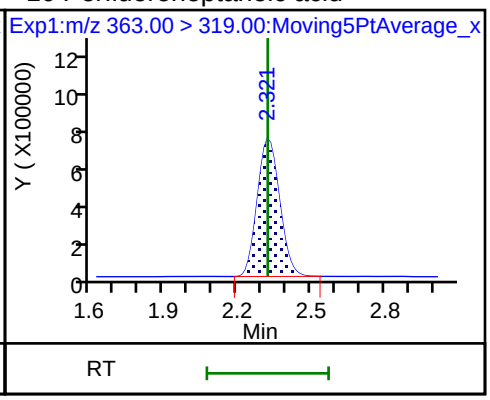
D 64 13C3 HFPO-DA



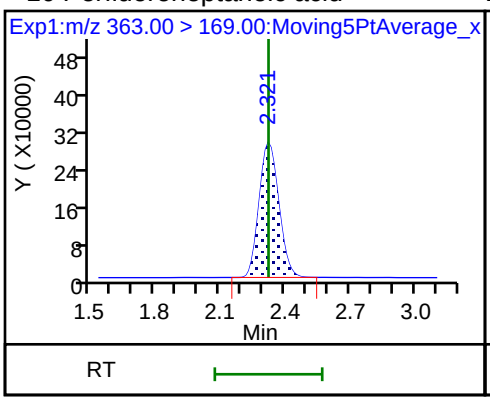
D 9 13C4-PFHpA



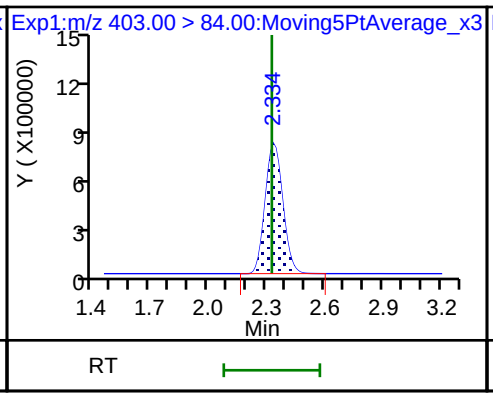
10 Perfluoroheptanoic acid



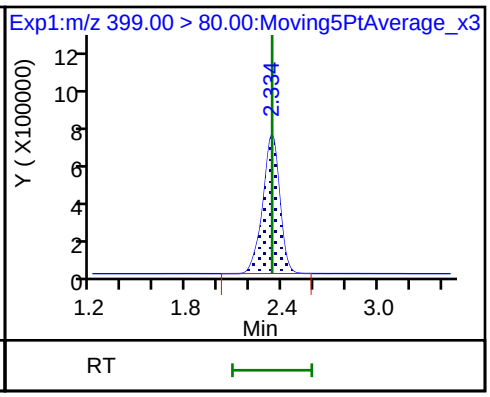
10 Perfluoroheptanoic acid



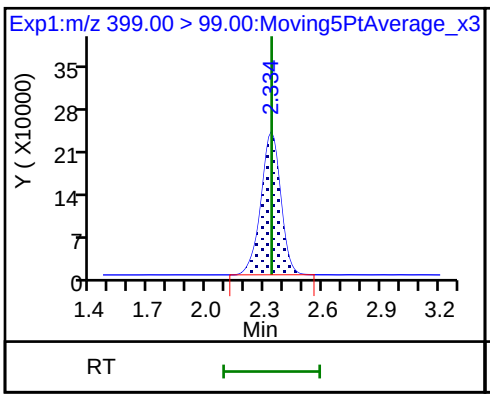
D 11 18O2 PFHxS



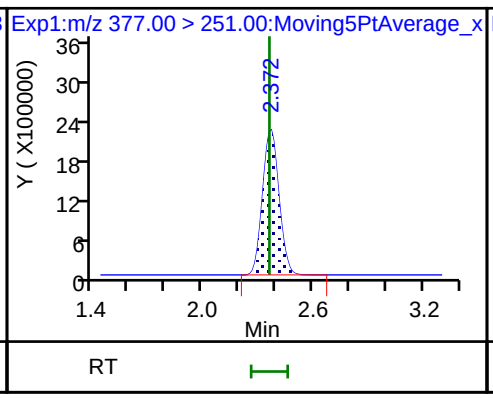
8 Perfluorohexanesulfonic acid



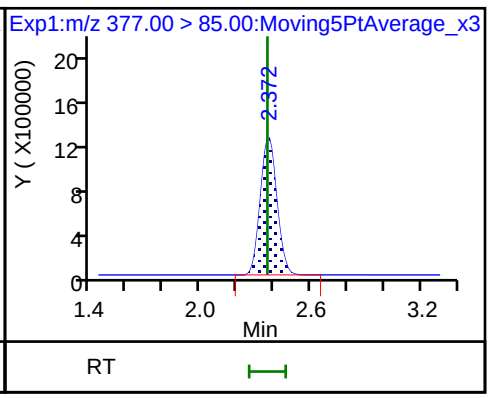
8 Perfluorohexanesulfonic acid



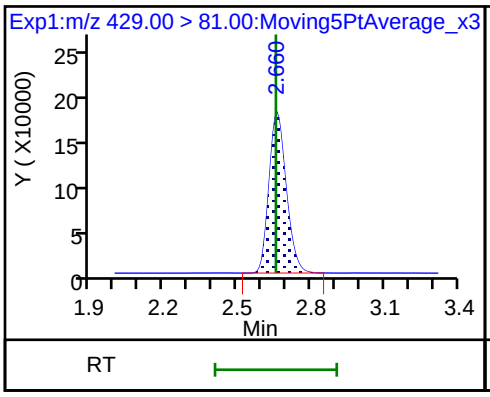
65 Adona



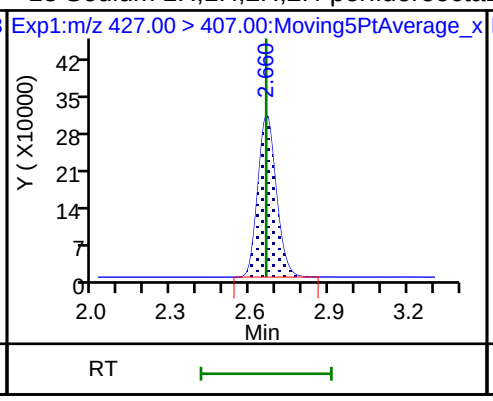
65 Adona



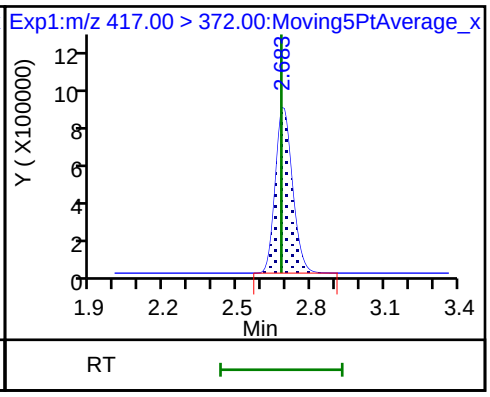
D 12 M2-6:2FTS



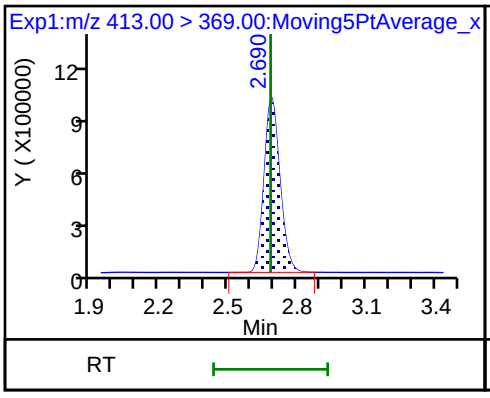
13 Sodium 1H,1H,2H,2H-perfluorooctane



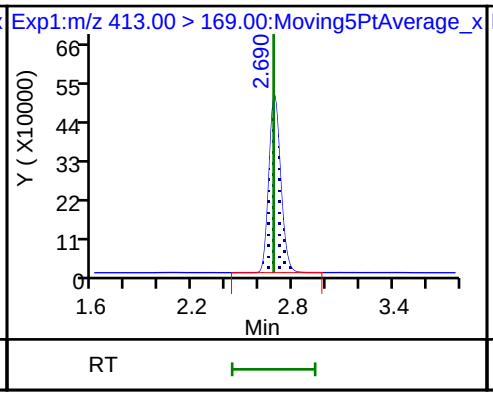
D 14 13C4 PFOA



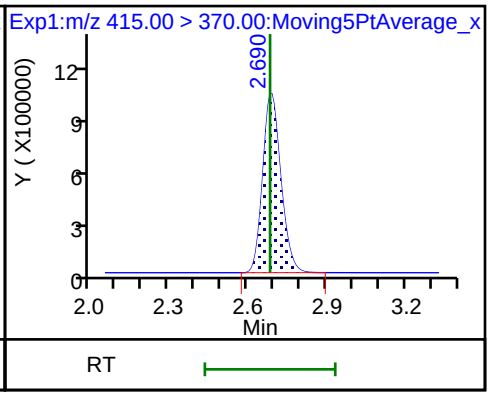
15 Perfluorooctanoic acid



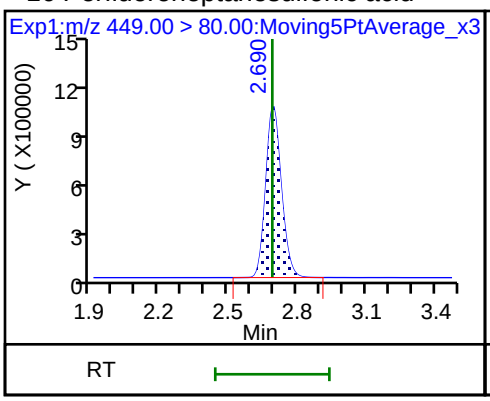
15 Perfluorooctanoic acid



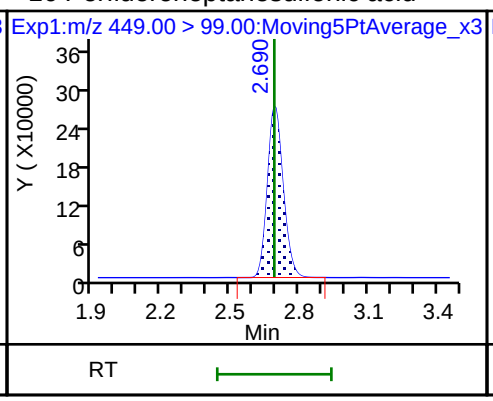
* 62 13C2-PFOA



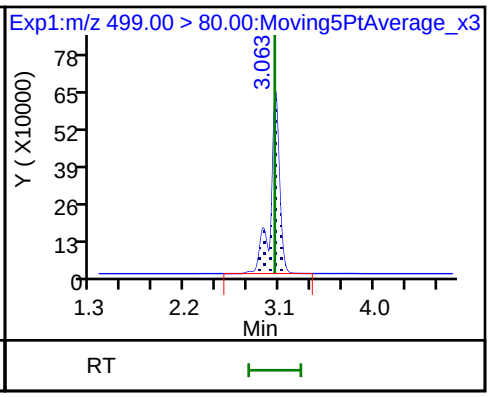
16 Perfluoroheptanesulfonic acid



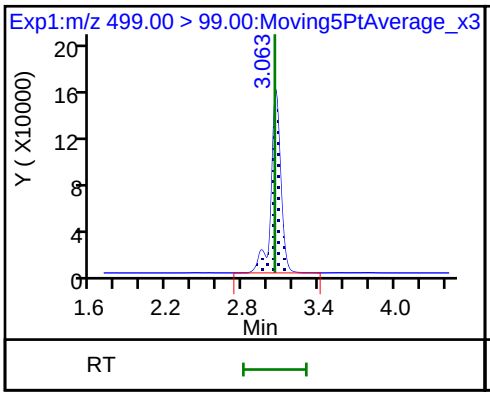
16 Perfluoroheptanesulfonic acid



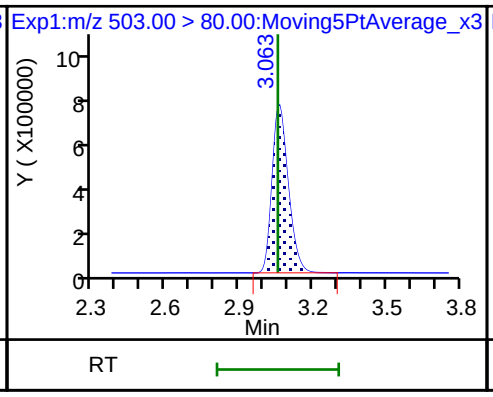
17 Perfluorooctane sulfonic acid



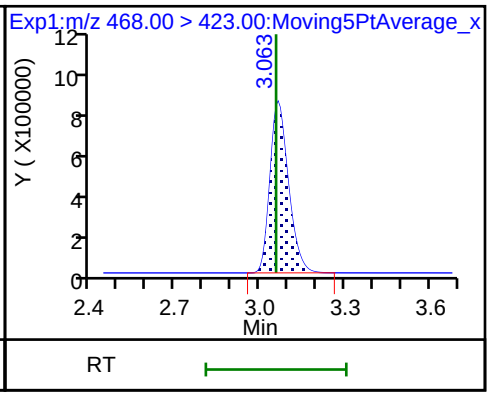
17 Perfluorooctane sulfonic acid



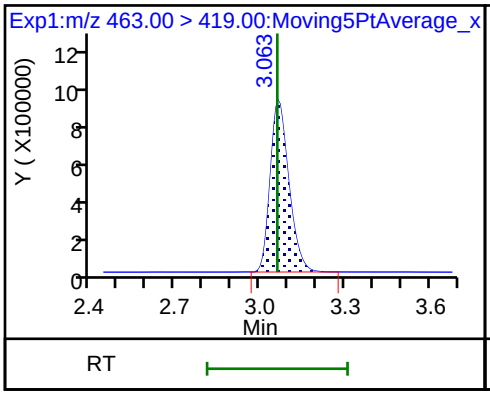
D 18 13C4 PFOS



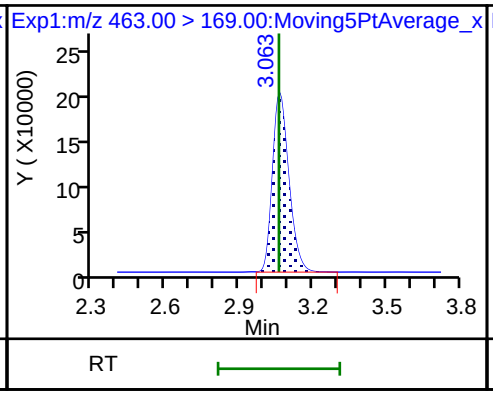
D 19 13C5 PFNA



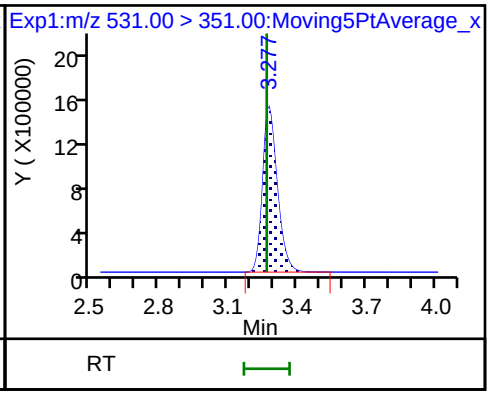
20 Perfluorononanoic acid



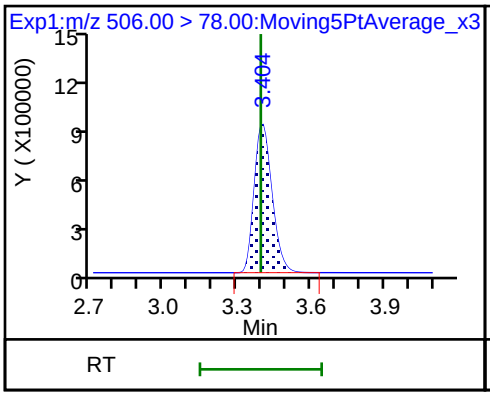
20 Perfluorononanoic acid



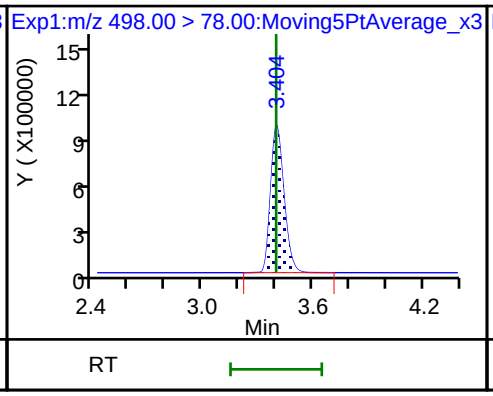
69 9-Chlorohexadecafluoro-3-oxanonane



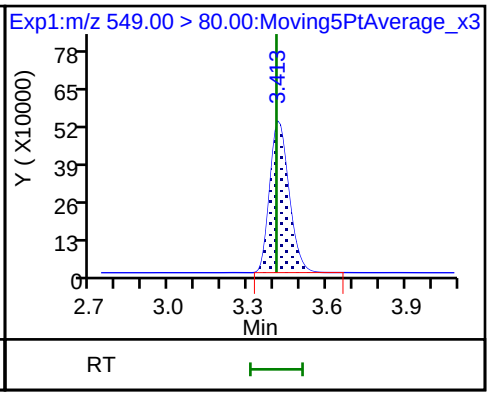
D 21 13C8 FOSA



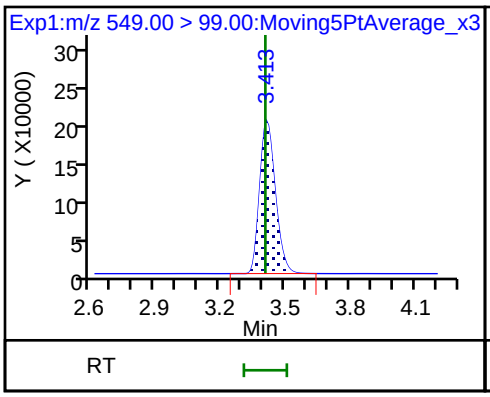
22 Perfluorooctane Sulfonamide



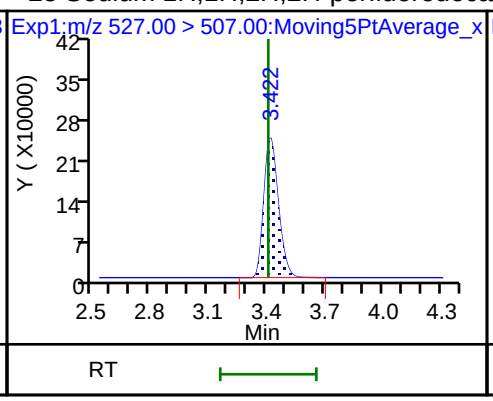
68 Perfluorononanesulfonic acid



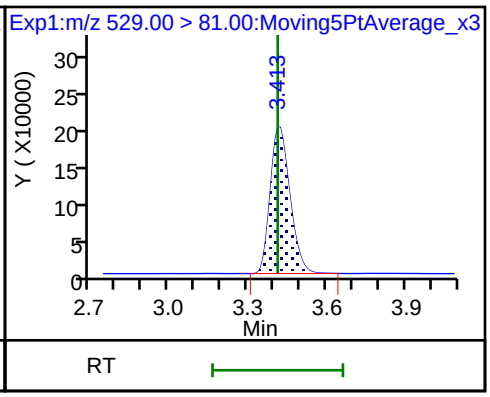
68 Perfluorononanesulfonic acid



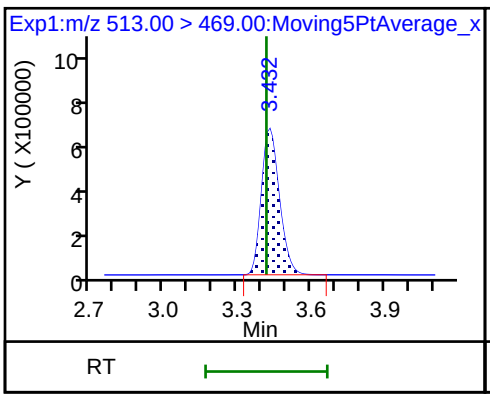
25 Sodium 1H,1H,2H,2H-perfluorodecane



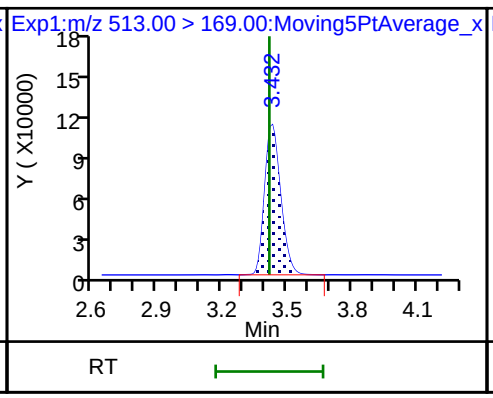
D 26 M2-8:2FTS



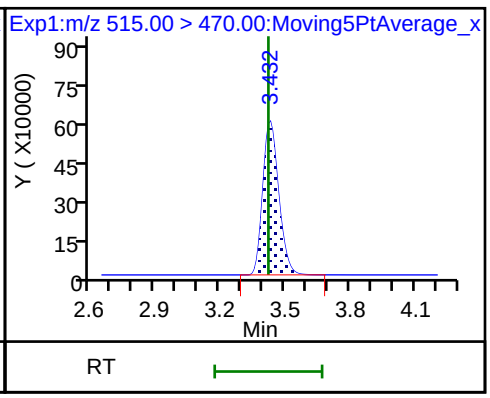
24 Perfluorodecanoic acid



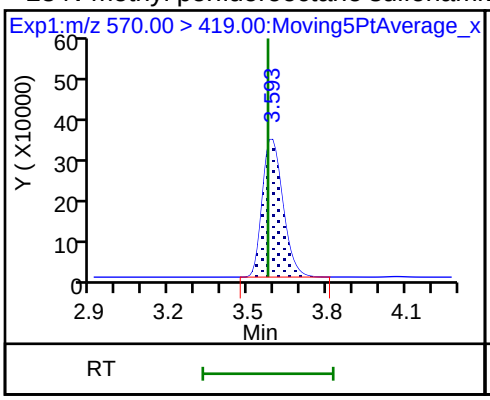
24 Perfluorodecanoic acid



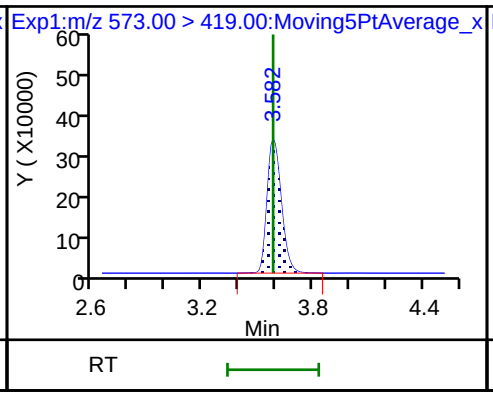
D 23 13C2 PFDA



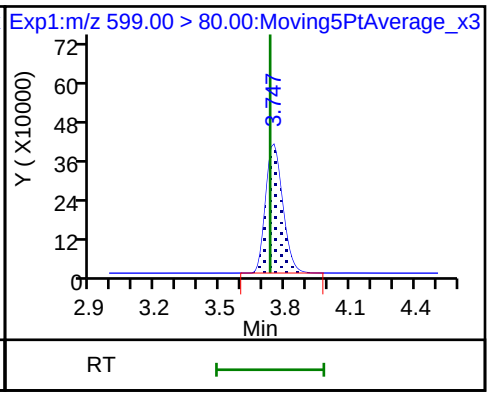
28 N-methyl perfluorooctane sulfonami



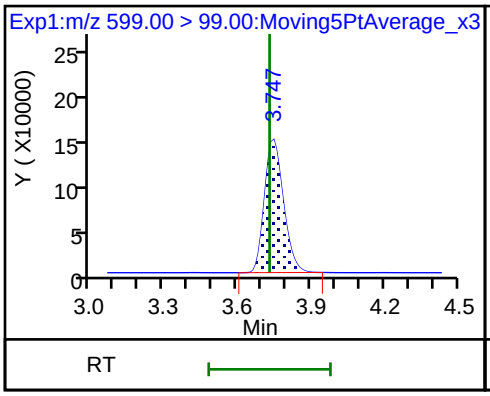
D 27 d3-NMeFOSAA



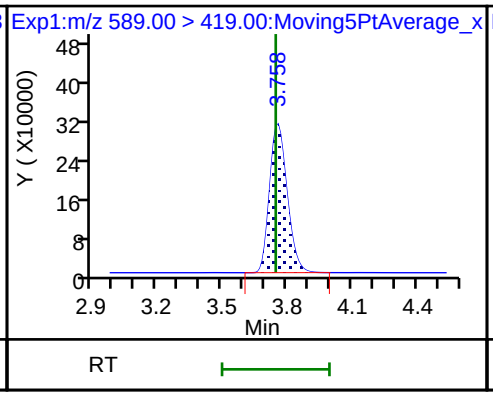
29 Perfluorodecane Sulfonic acid



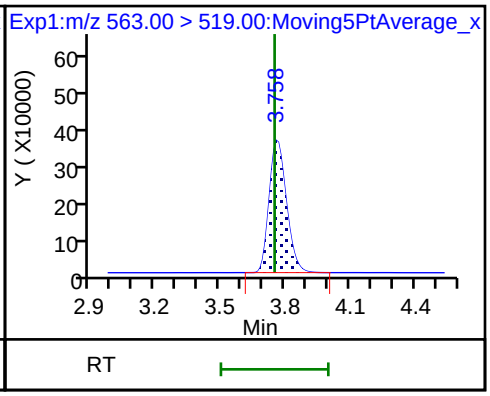
29 Perfluorodecane Sulfonic acid



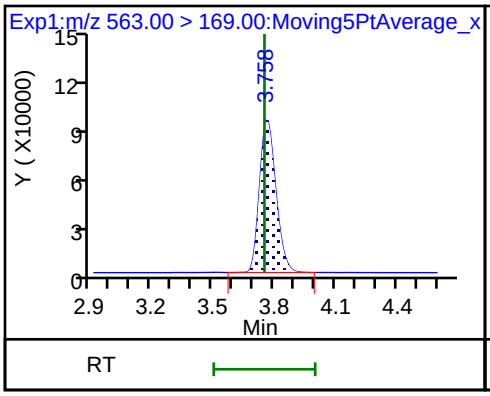
D 32 d5-NEtFOSAA



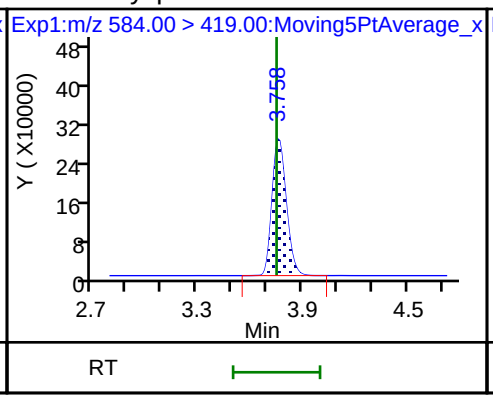
31 Perfluoroundecanoic acid



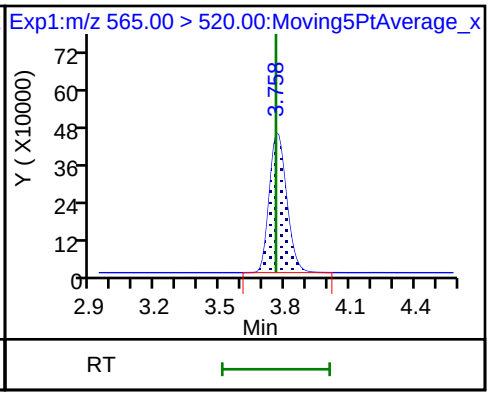
31 Perfluoroundecanoic acid



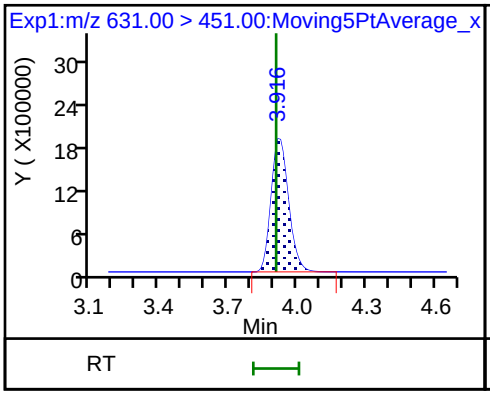
33 N-ethyl perfluorooctane sulfonamid



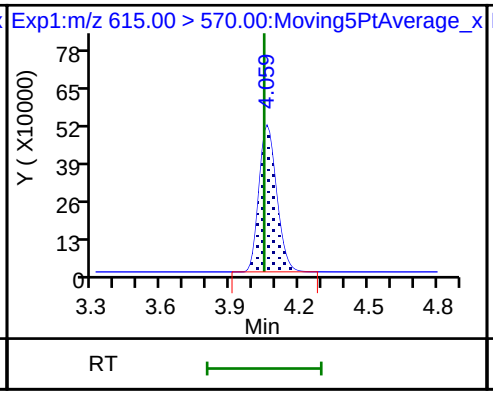
D 30 13C2 PFUnA



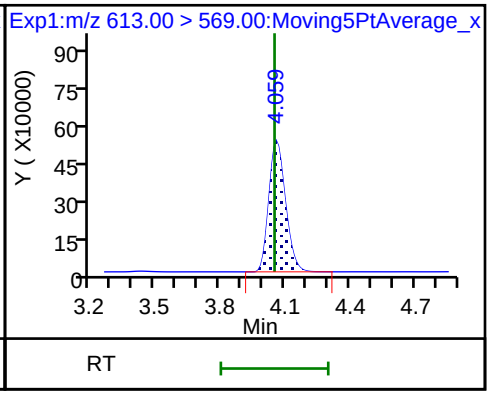
66 11-Chloroeicosafluoro-3-oxaundecan



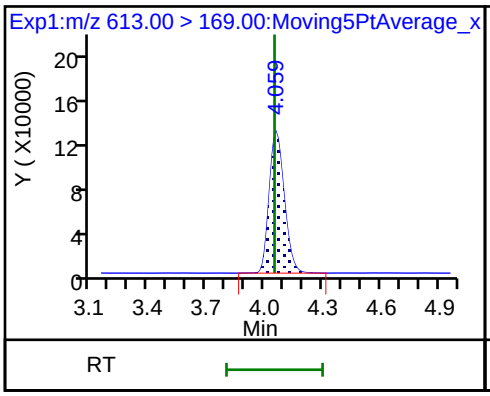
D 36 13C2 PFDoA



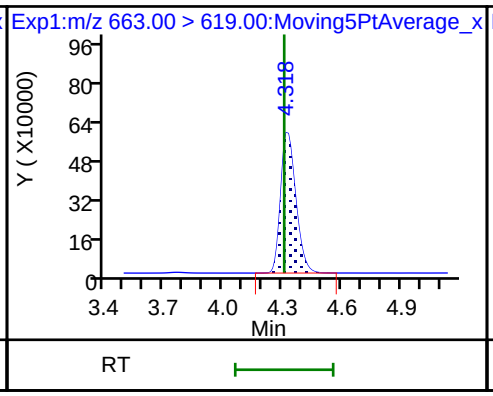
37 Perfluorododecanoic acid



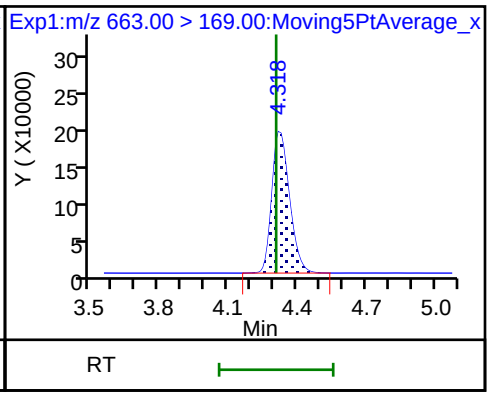
37 Perfluorododecanoic acid



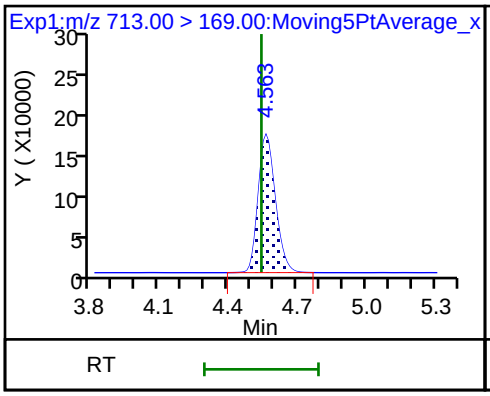
41 Perfluorotridecanoic acid



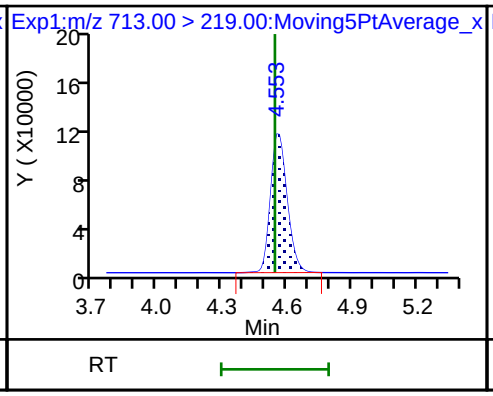
41 Perfluorotridecanoic acid



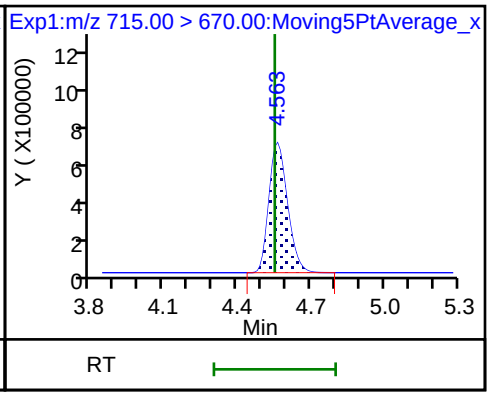
42 Perfluorotetradecanoic acid



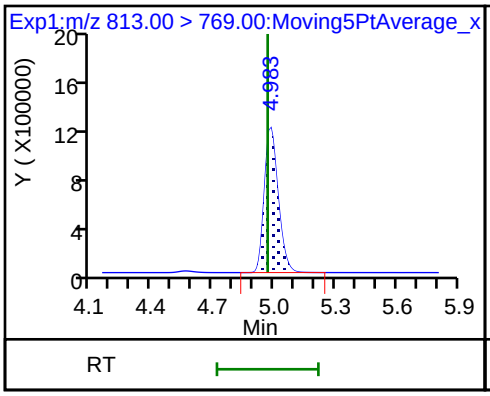
42 Perfluorotetradecanoic acid



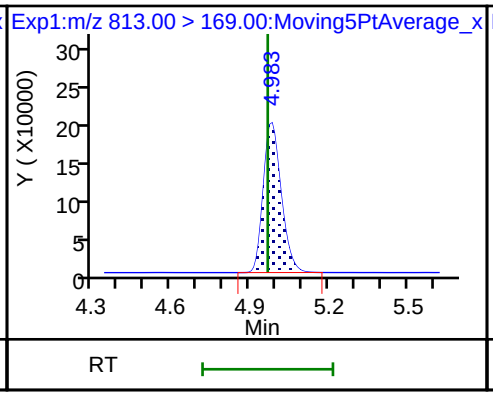
D 43 13C2-PFTeDA



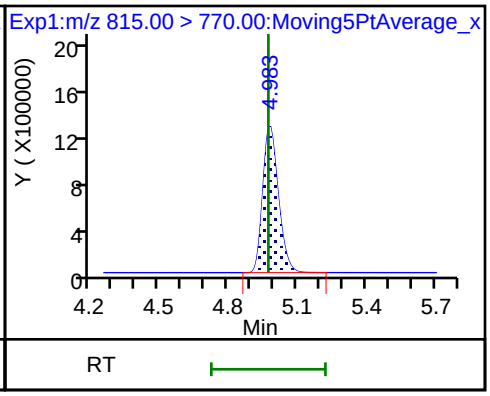
45 Perfluorohexadecanoic acid



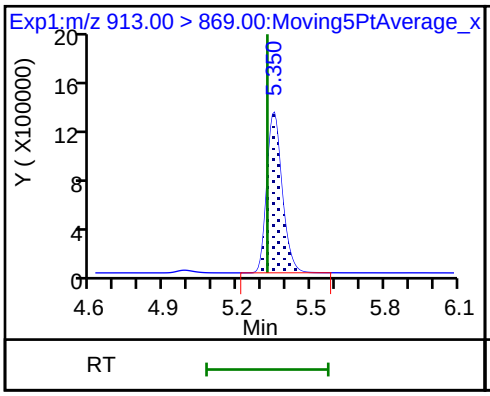
45 Perfluorohexadecanoic acid



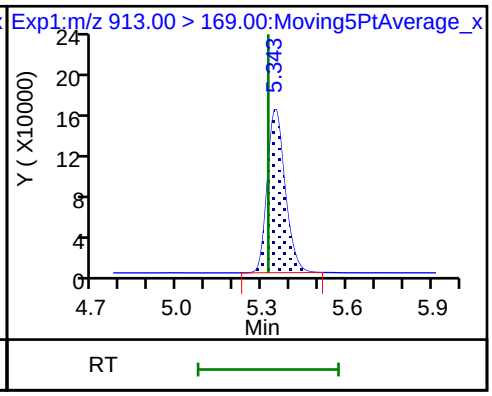
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219912/12 Calibration Date: 04/26/2018 08:53

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9319		1.00	1.00	0.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.172		0.984	1.00	-1.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	79.03		0.892	0.884	0.9	50.0
4:2 FTS	AveID	16.03	17.62		1.03	0.934	9.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	0.9500		0.935	1.00	-6.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	68.81		0.903	0.938	-3.8	50.0
HFPO-DA (GenX)	AveID	2.785	3.085		1.11	1.00	10.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.053		1.05	1.00	5.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.039		0.836	0.910	-8.2	40.0
Adona	AveID	3.464	3.574		1.03	1.00	3.2	50.0
6:2FTS	AveID	1.691	1.684		0.945	0.948	-0.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.040		0.900	1.00	-10.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.321		0.948	0.952	-0.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.076		0.918	0.928	-1.1	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.008		0.967	1.00	-3.3	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.832		0.906	0.932	-2.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.020		1.01	1.00	0.8	40.0
8:2FTS	AveID	1.265	1.281		0.970	0.958	1.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7695		0.924	0.960	-3.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9725		0.943	1.00	-5.7	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9773		0.980	1.00	-2.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6485		0.963	0.964	-0.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8845		0.947	1.00	-5.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7856		0.930	1.00	-7.0	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	3.013		0.974	0.942	3.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.027		0.984	1.00	-1.6	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.146		0.943	1.00	-5.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2525		1.01	1.00	0.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9484		0.979	1.00	-2.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219912/12 Calibration Date: 04/26/2018 08:53

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_047.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.037		1.03	1.00	3.3	50.0
13C4 PFBA	Ave	1.345	1.328		2.47	2.50	-1.3	50.0
13C5 PFPeA	Ave	0.8672	0.8600		2.48	2.50	-0.8	50.0
13C3-PFBS	Ave	0.0199	0.0192		2.24	2.33	-3.6	50.0
M2-4:2FTS	Ave	0.1425	0.1529		2.50	2.34	7.3	50.0
13C2 PFHxA	Ave	0.9590	0.9684		2.52	2.50	1.0	50.0
13C3 HFPO-DA	Ave	0.0593	0.0495		2.09	2.50	-16.6	50.0
13C4-PFHpA	Ave	0.9333	0.8889		2.38	2.50	-4.8	50.0
18O2 PFHxS	Ave	1.152	1.098		2.26	2.37	-4.7	50.0
M2-6:2FTS	Ave	0.2000	0.2039		2.42	2.38	2.0	40.0
13C4 PFOA	Ave	0.9276	0.9337		2.52	2.50	0.7	50.0
13C4 PFOS	Ave	0.8066	0.7635		2.26	2.39	-5.4	50.0
13C5 PFNA	Ave	0.7973	0.7641		2.40	2.50	-4.2	50.0
13C8 FOSA	Ave	1.007	0.9368		2.33	2.50	-7.0	50.0
M2-8:2FTS	Ave	0.2409	0.2269		2.26	2.40	-5.8	40.0
13C2 PFDA	Ave	0.6701	0.6575		2.45	2.50	-1.9	50.0
d3-NMeFOSAA	Ave	0.3798	0.3775		2.49	2.50	-0.6	50.0
d5-NEtFOSAA	Ave	0.3749	0.4060		2.71	2.50	8.3	50.0
13C2 PFUnA	Ave	0.5781	0.5618		2.43	2.50	-2.8	50.0
13C2 PFDoA	Ave	0.6242	0.5860		2.35	2.50	-6.1	50.0
13C2-PFTeDA	Ave	0.7915	0.7331		2.32	2.50	-7.4	50.0
13C2-PFHxDA	Ave	1.288	1.244		2.42	2.50	-3.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_047.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 08:53:18 ALS Bottle#: 28 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:51 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:10:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	6372671	2.47		98.7	41087	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	2375459	1.00		100	1179	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.555	4127053	2.48		99.2	63894	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	1935275	0.9837		98.4	2251	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	85628	2.24		96.4	879	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	2572953	0.8924		101	10629	
298.90 > 99.00	1.739	1.739	0.0	1.005	1090796		2.36(1.25-3.74)		12592	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	606046	1.03		110	35547	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.953	-0.003	1.000	685105	2.50		107	5644	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	1765760	0.9349		93.5	2046	
313.00 > 119.00	1.982	1.982	0.0	1.000	168609		10.47(5.03-15.10)		1434	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4646890	2.52		101	112514	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.005	0.0	1.000	2377050	0.9026		96.2	18017	
349.00 > 99.00	2.005	2.005	0.0	1.000	892553		2.66(1.36-4.07)		14905	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	292963	1.11		111	1972	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.087	-0.003	1.000	237424	2.08		83.4	7994	
D 9 13C4-PFHpA										
367.00 > 322.00	2.323	2.313	0.009	1.000	4265648	2.38		95.2	75139	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.323	2.323	0.0	1.000	1797114	1.05		105	2063	
363.00 > 169.00	2.323	2.323	0.0	1.000	724922		2.48(1.13-3.40)		3309	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.326	0.010	1.000	4984997	2.25		95.3	56382	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.336	0.0	1.000	1993176	0.8355		91.8	4804	
399.00 > 99.00	2.336	2.336	0.0	1.000	677032		2.94(1.50-4.49)		4212	
65 Adona										
377.00 > 251.00	2.362	2.362	0.0	1.000	5238076	1.03		103	57077	
377.00 > 85.00	2.362	2.362	0.0	1.000	3165519		1.65(0.84-2.53)		47036	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.656	-0.003	1.000	929665	2.42		102	12937	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.661	0.0	1.003	625026	0.9445		99.6	10057	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.679	0.004	1.000	4480624	2.52		101	63115	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.000	1864307	0.9003		90.0	1302	
413.00 > 169.00	2.683	2.683	0.0	1.000	975682		1.91(0.84-2.52)		3222	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4798682	2.50			68022	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.691	0.0	1.000	1843581	0.9475		99.5	15030	
449.00 > 99.00	2.691	2.691	0.0	1.000	500272		3.69(1.94-5.82)		9598	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.053	3.053	0.0	1.000	1463093	0.9178		98.9	5747	
499.00 > 99.00	3.053	3.053	0.0	1.000	346634		4.22(2.31-6.93)		5126	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.056	-0.003	1.000	3502486	2.26		94.6	19499	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.056	-0.003	1.000	3666673	2.40		95.8	66937	
20 Perfluorononanoic acid										
463.00 > 419.00	3.060	3.060	0.0	1.002	1478253	0.9666		96.7	4384	
463.00 > 169.00	3.053	3.060	-0.007	1.000	360054		4.11(1.90-5.69)		15494	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.266	3.266	0.0	1.000	2502661	0.9059		97.2	40383	
D 21 13C8 FOSA										
506.00 > 78.00	3.389	3.394	-0.005	1.000	4495180	2.33		93.0	35446	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.003	1833481	1.01		101	9482	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.408	3.408	0.0	1.000	1082516	0.9241		96.3	11366	
549.00 > 99.00	3.408	3.408	0.0	1.000	411875		2.63(1.33-3.97)		8911	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.408	3.408	0.0	1.000	534522	0.9698		101	11680	
D 26 M2-8:2FTS										
529.00 > 81.00	3.408	3.413	-0.005	1.000	1043219	2.26		94.2	8963	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.417	3.417	0.0	1.000	1227344	0.9427		94.3	6121	
513.00 > 169.00	3.417	3.417	0.0	1.000	211099		5.81(2.36-7.09)		3461	
D 23 13C2 PFDA										
515.00 > 470.00	3.417	3.422	-0.005	1.000	3155272	2.45		98.1	69905	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.575	0.0	1.000	708103	0.9799		98.0	6059	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.582	-0.007	1.000	1811472	2.48		99.4	31040	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.730	3.730	0.0	1.000	916072	0.9628		99.9	10039	
599.00 > 99.00	3.730	3.730	0.0	1.000	313155		2.93(1.39-4.16)		9733	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.741	3.747	-0.007	1.000	1948354	2.71		108	35462	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.751	3.751	0.0	1.000	847109	0.9296		93.0	4383	
563.00 > 169.00	3.751	3.751	0.0	1.000	215710		3.93(2.12-6.36)		3093	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.751	0.0	1.003	689336	0.9465		94.7	10513	
D 30 13C2 PFUnA										
565.00 > 520.00	3.751	3.757	-0.006	1.000	2695783	2.43		97.2	62469	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.907	3.907	0.0	1.000	4159245	0.9745		103	49482	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.046	0.005	1.000	2811774	2.35		93.9	31053	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.051	4.051	0.0	1.000	1154523	0.9843		98.4	1590	
613.00 > 169.00	4.051	4.051	0.0	1.000	279547		4.13(2.13-6.40)		3306	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.308	4.308	0.0	1.000	1289230	0.9432		94.3	1590	
663.00 > 169.00	4.308	4.308	0.0	1.000	417746		3.09(1.25-3.76)		4054	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.543	4.543	0.0	1.000	355252	1.01		101	2604	
713.00 > 219.00	4.543	4.543	0.0	1.000	264277		1.34(0.71-2.13)		4213	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.543	4.551	-0.008	1.000	3517937	2.32		92.6	20938	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.967	4.967	0.0	1.002	2264771	0.9793		97.9	1083	
813.00 > 169.00	4.967	4.967	0.0	1.002	387076		5.85(2.86-8.58)		2351	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.958	4.974	-0.016	1.000	5970209	2.41		96.6	16183	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.321	5.321	0.0	1.000	2476389	1.03		103	847	
913.00 > 169.00	5.321	5.321	0.0	1.000	310288		7.98(3.83-11.48)		2395	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 15:27:52 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_047.d

Injection Date: 26-Apr-2018 08:53:18 Instrument ID: A8_N

Lims ID: CCV L4

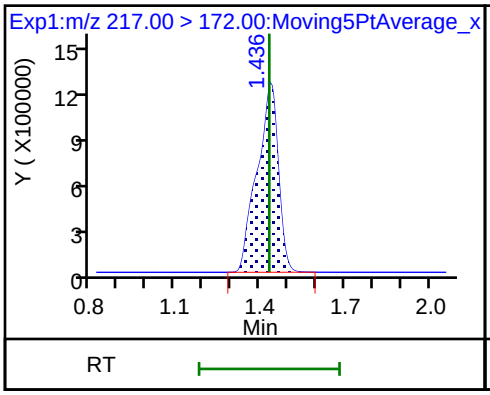
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 12

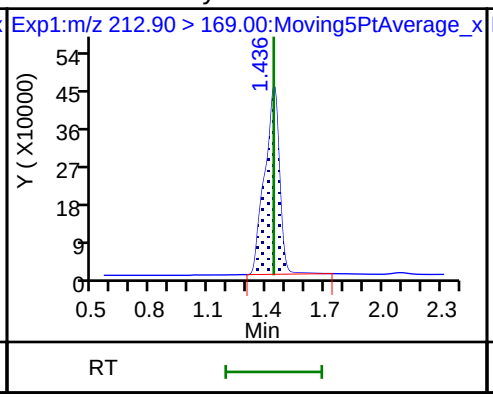
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

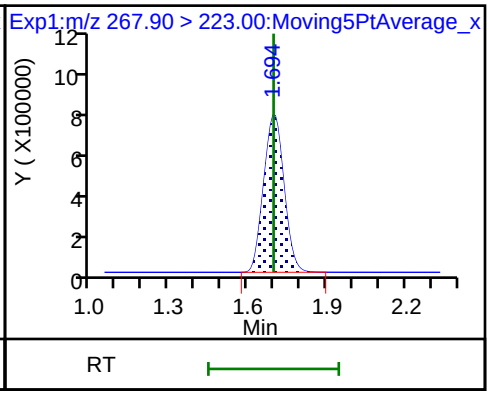
D 1 13C4 PFBA



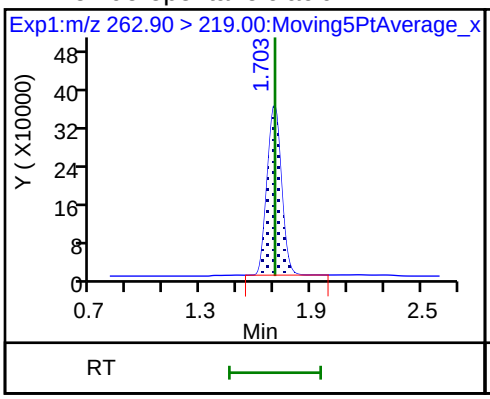
2 Perfluorobutyric acid



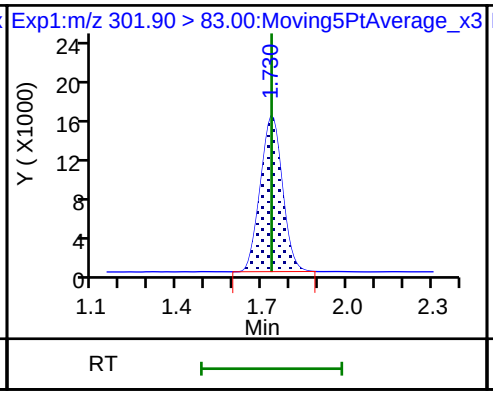
D 3 13C5-PFPeA



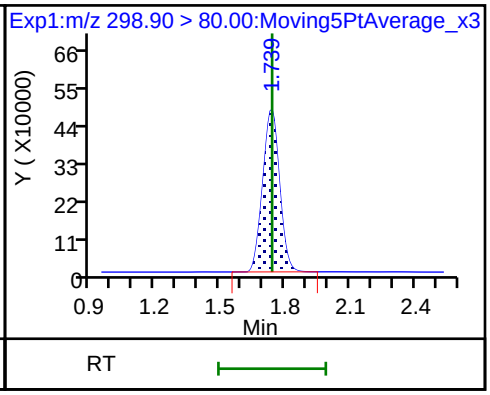
4 Perfluoropentanoic acid



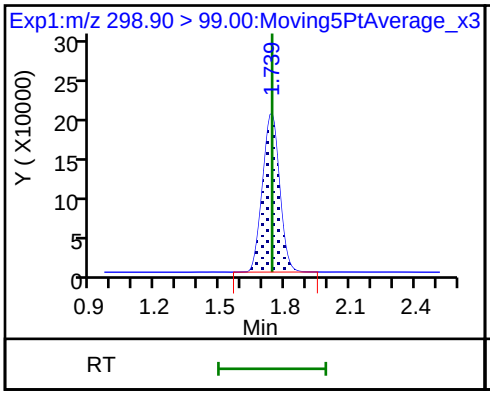
D 47 13C3-PFBS



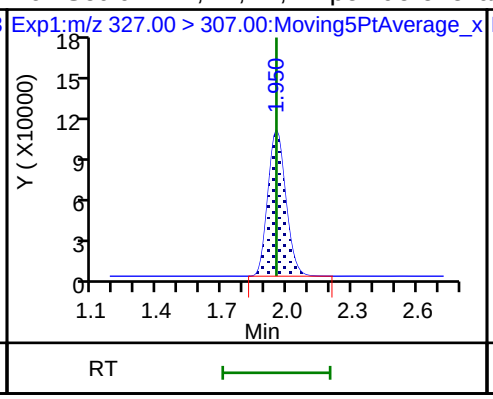
5 Perfluorobutanesulfonic acid



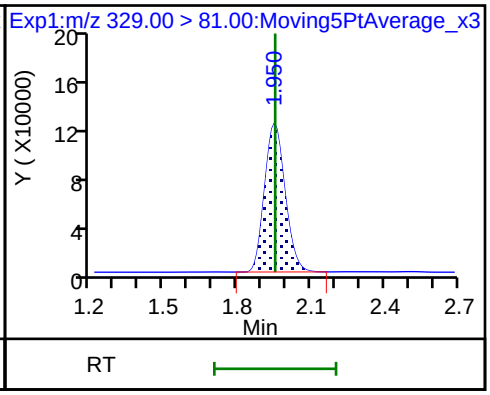
5 Perfluorobutanesulfonic acid



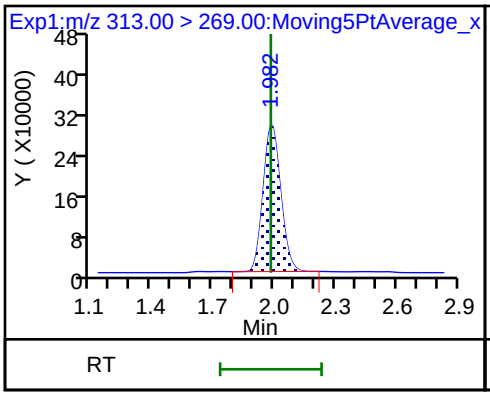
61 Sodium 1H,1H,2H,2H-perfluorohexane



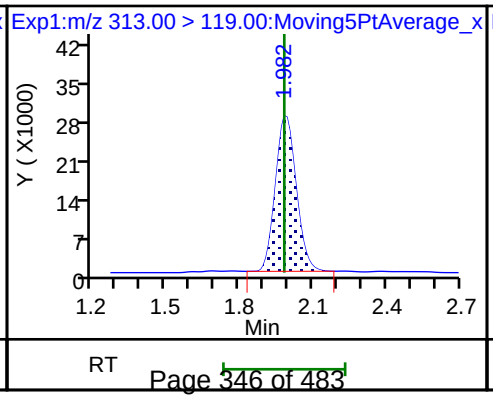
D 60 M2-4:2FTS



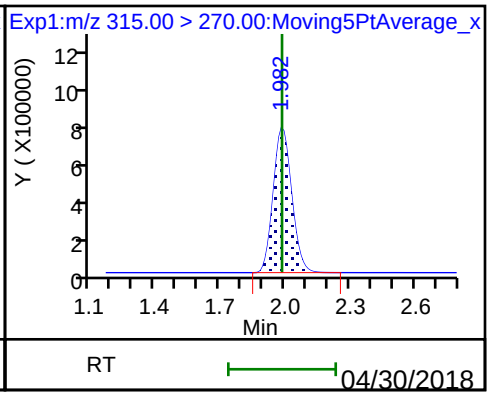
6 Perfluorohexanoic acid



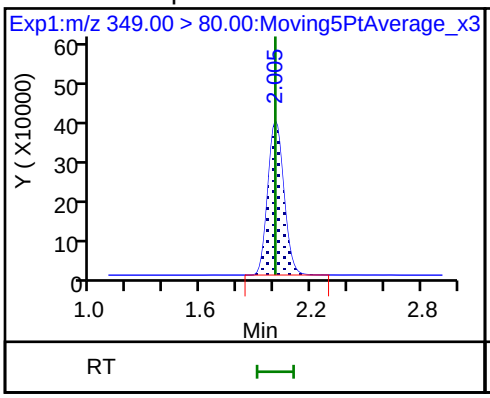
6 Perfluorohexanoic acid



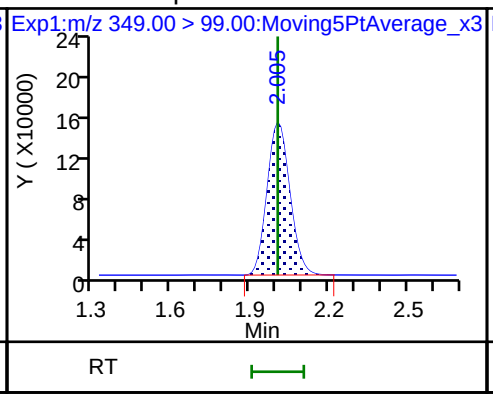
D 7 13C2 PFHxA



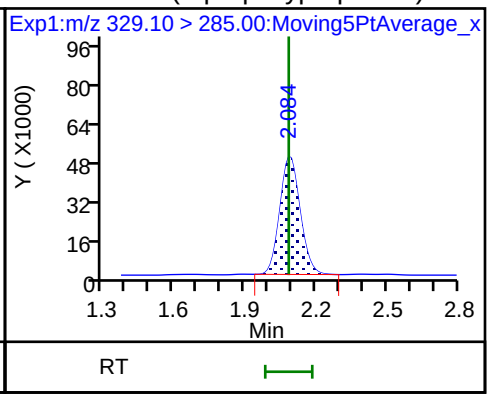
70 Perfluoropentanesulfonic acid



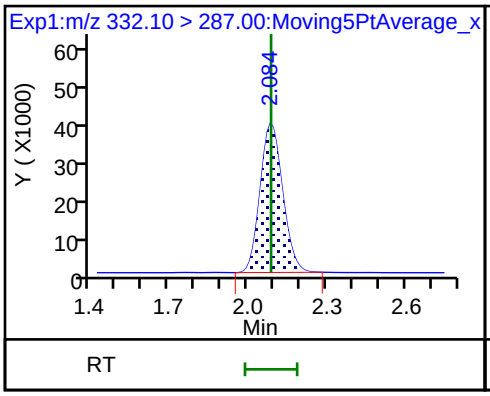
70 Perfluoropentanesulfonic acid



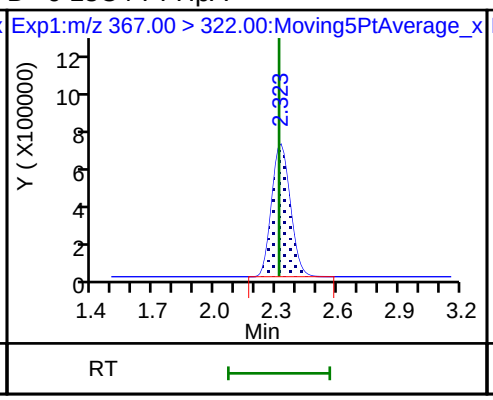
67 Perfluoro(2-propoxypropanoic) acid



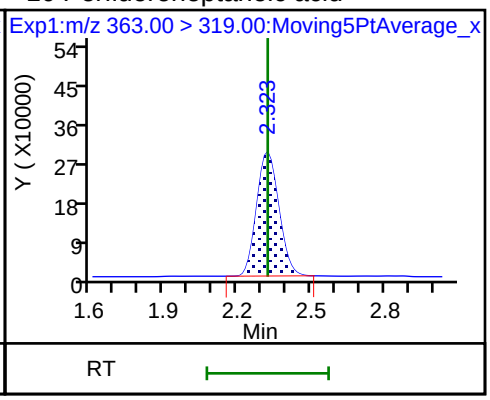
D 64 13C3 HFPO-DA



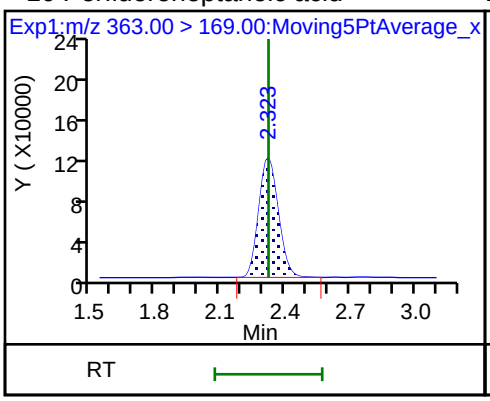
D 9 13C4-PFHpA



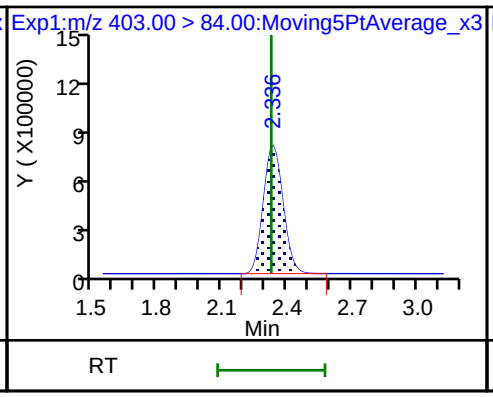
10 Perfluoroheptanoic acid



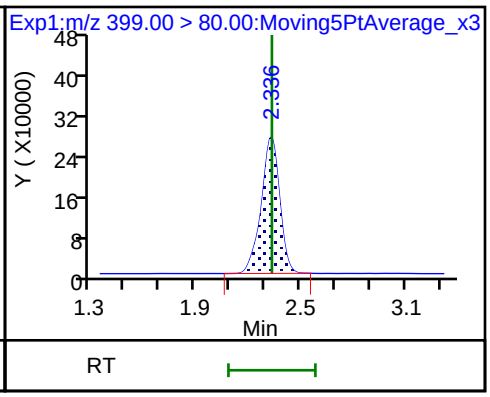
10 Perfluoroheptanoic acid



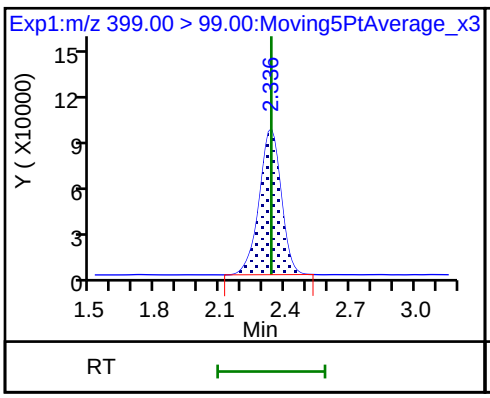
D 11 18O2 PFHxS



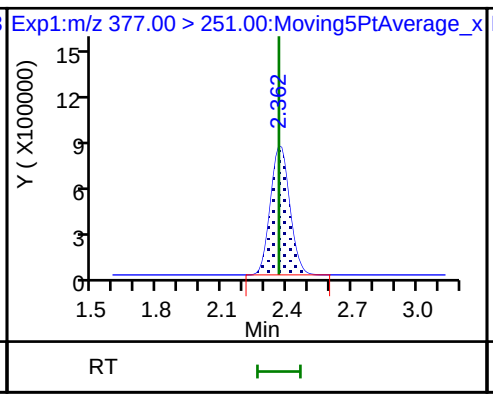
8 Perfluorohexanesulfonic acid



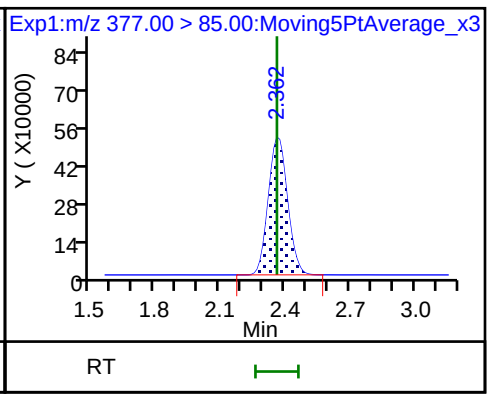
8 Perfluorohexanesulfonic acid



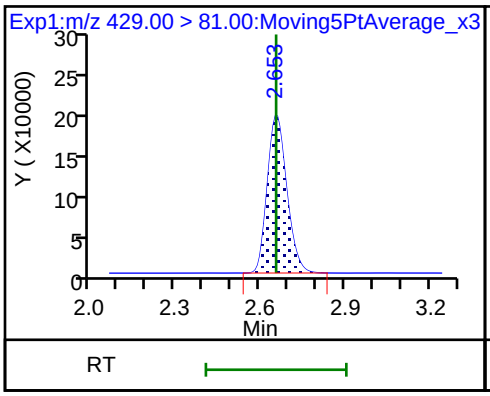
65 Adona



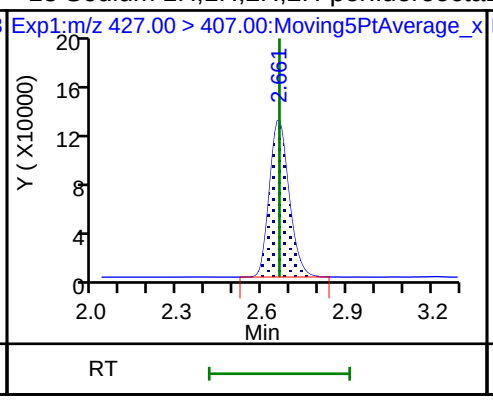
65 Adona



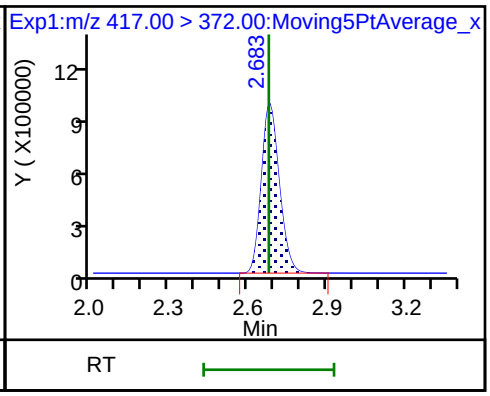
D 12 M2-6:2FTS



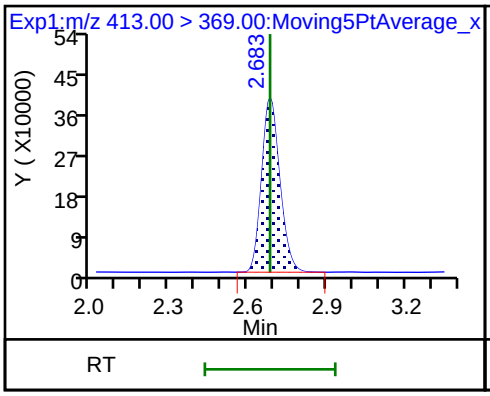
13 Sodium 1H,1H,2H,2H-perfluorooctane



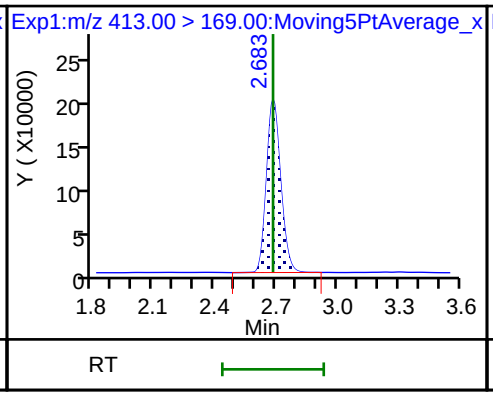
D 14 13C4 PFOA



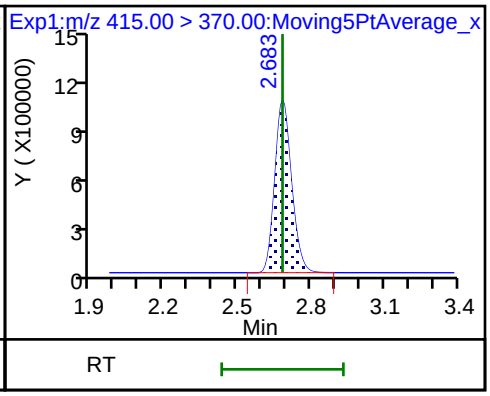
15 Perfluorooctanoic acid



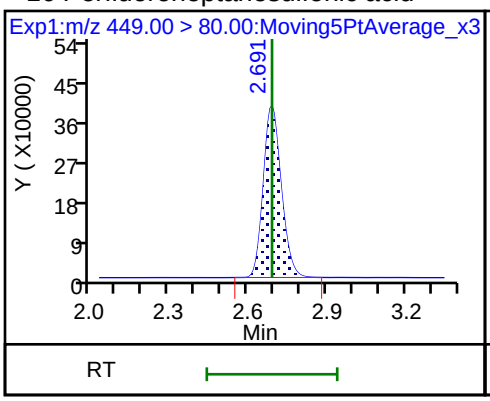
15 Perfluorooctanoic acid



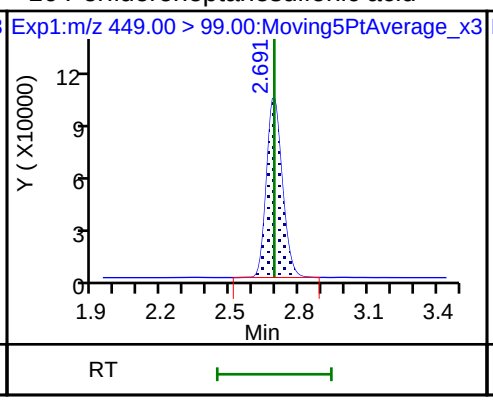
* 62 13C2-PFOA



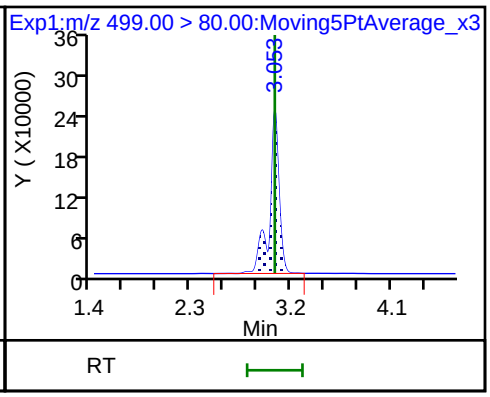
16 Perfluoroheptanesulfonic acid



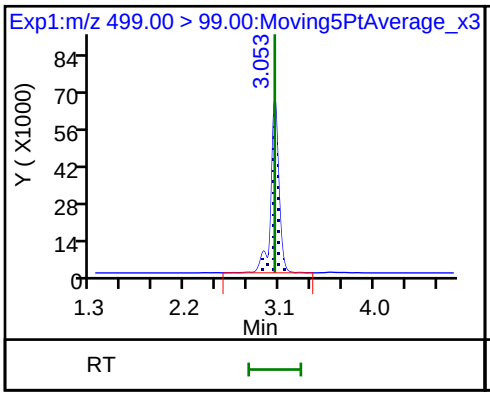
16 Perfluoroheptanesulfonic acid



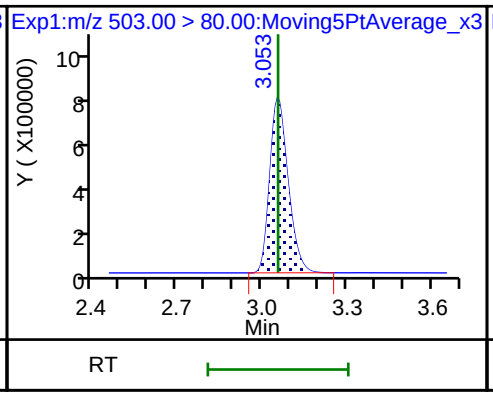
17 Perfluorooctane sulfonic acid



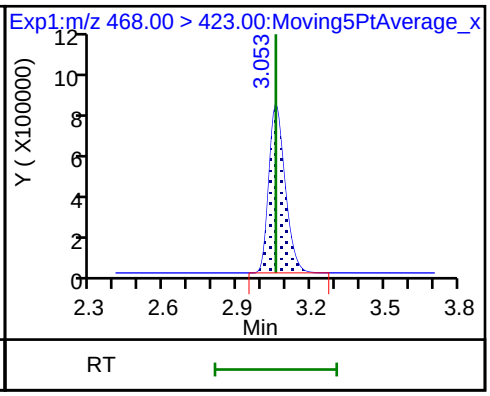
17 Perfluorooctane sulfonic acid



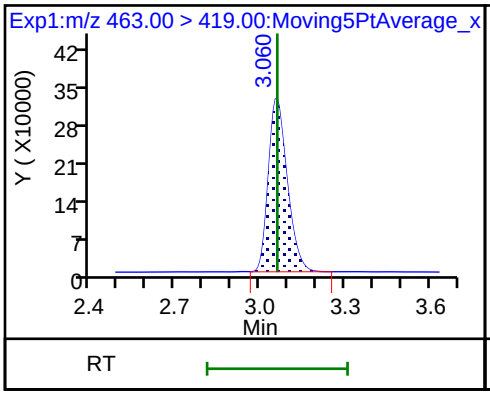
D 18 13C4 PFOS



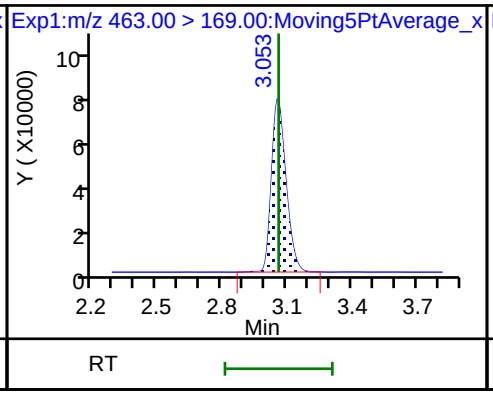
D 19 13C5 PFNA



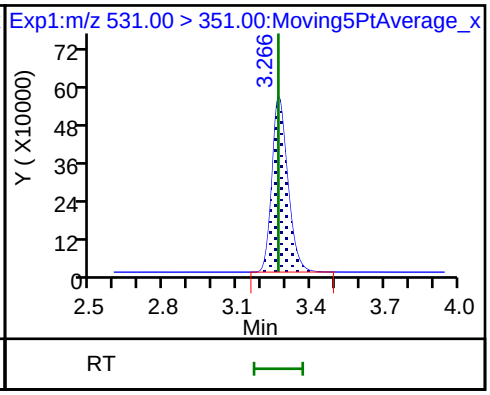
20 Perfluorononanoic acid



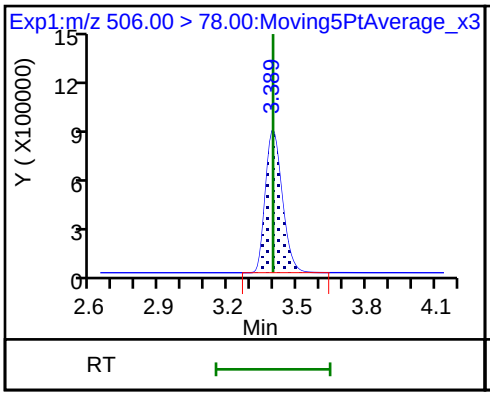
20 Perfluorononanoic acid



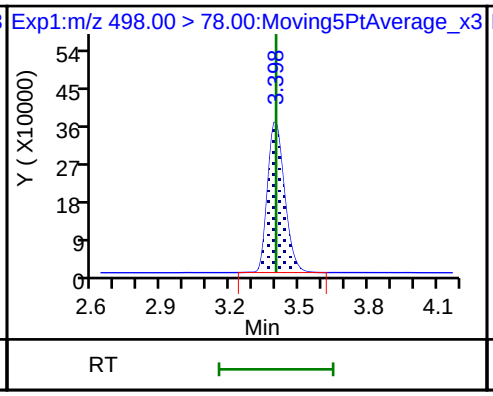
69 9-Chlorohexadecafluoro-3-oxanonane



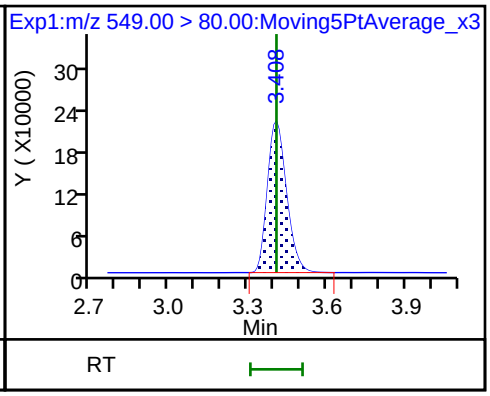
D 21 13C8 FOSA



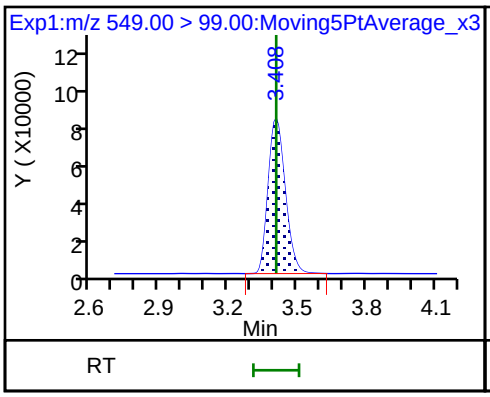
22 Perfluorooctane Sulfonamide



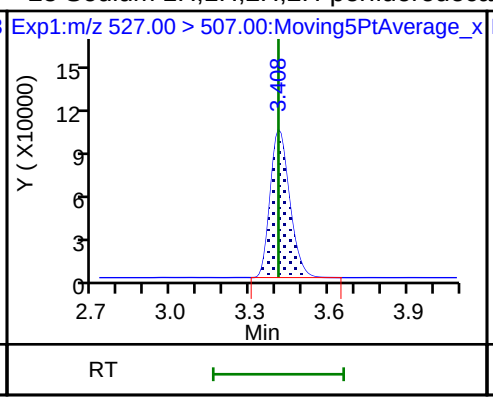
68 Perfluorononanesulfonic acid



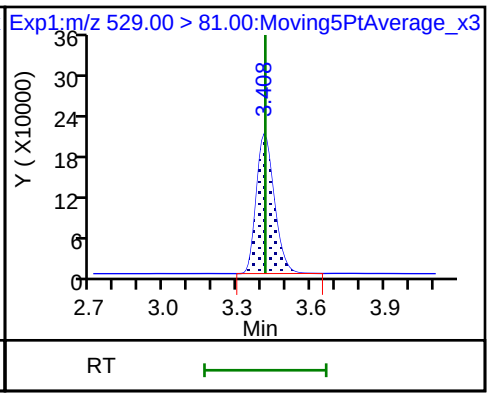
68 Perfluorononanesulfonic acid



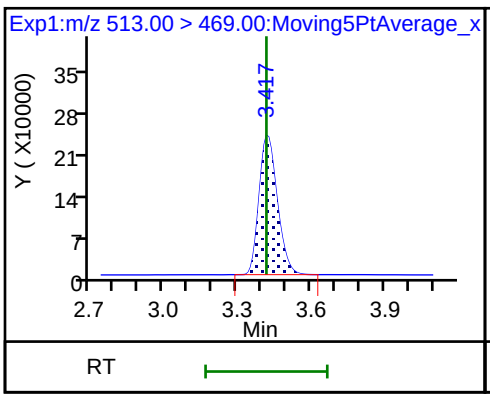
25 Sodium 1H,1H,2H,2H-perfluorodecane



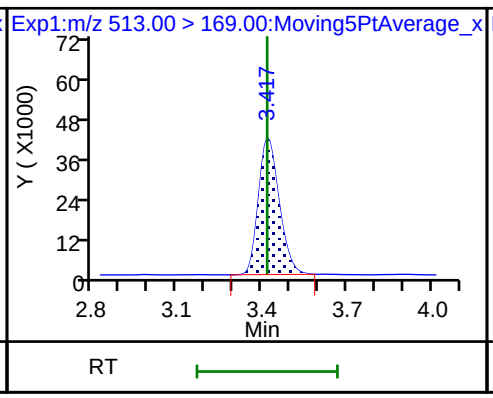
D 26 M2-8:2FTS



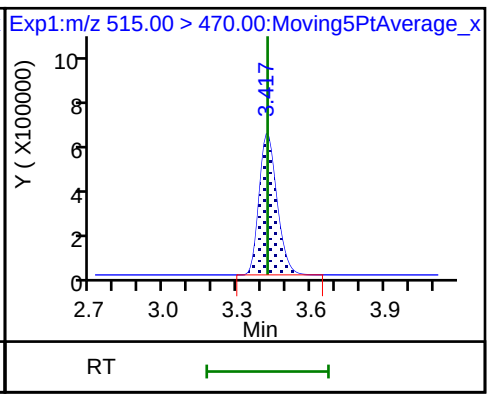
24 Perfluorodecanoic acid



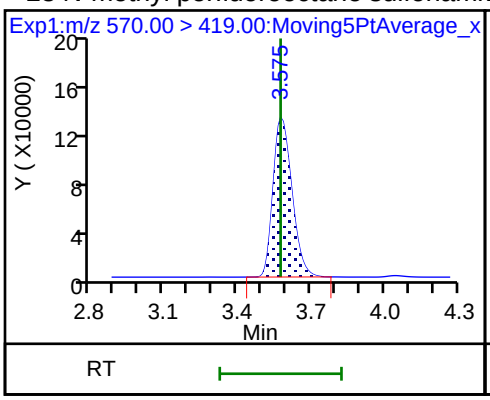
24 Perfluorodecanoic acid



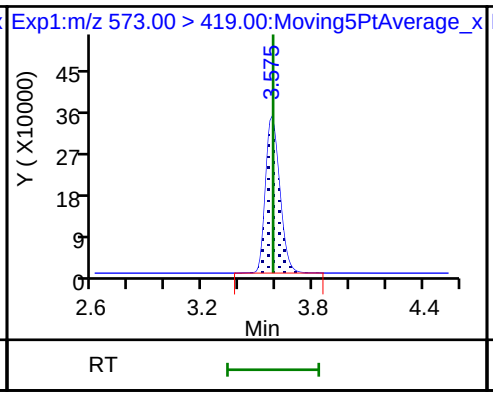
D 23 13C2 PFDA



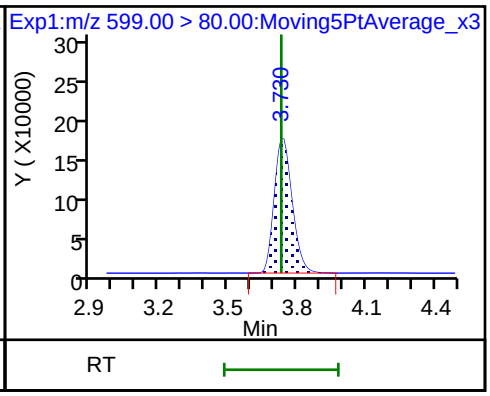
28 N-methyl perfluorooctane sulfonami



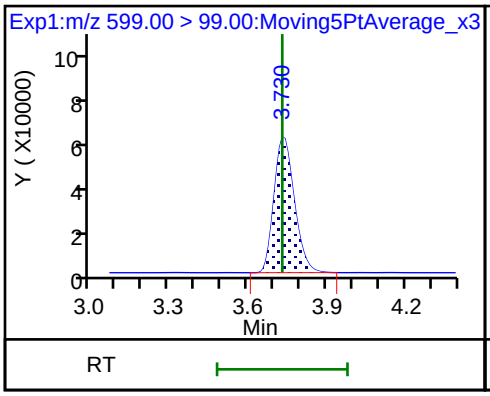
D 27 d3-NMeFOSAA



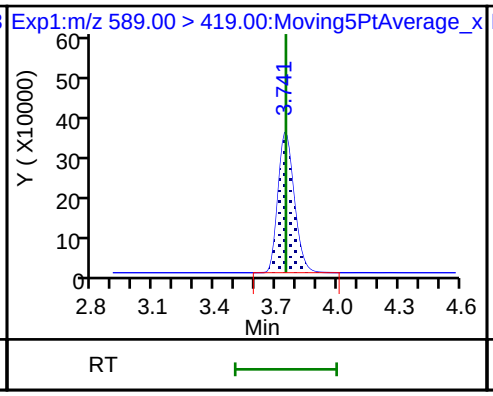
29 Perfluorodecane Sulfonic acid



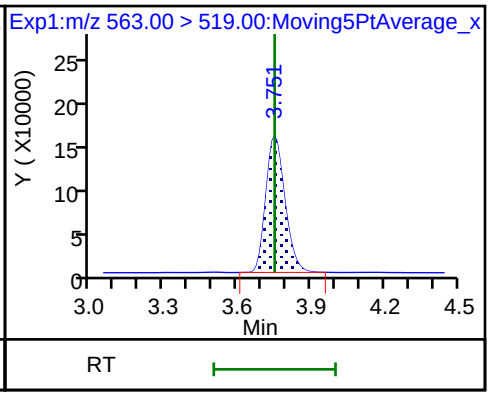
29 Perfluorodecane Sulfonic acid



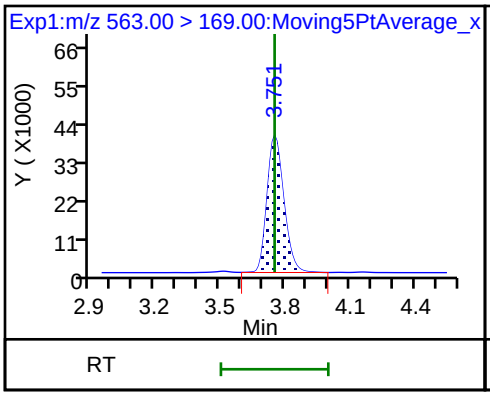
D 32 d5-NEtFOSAA



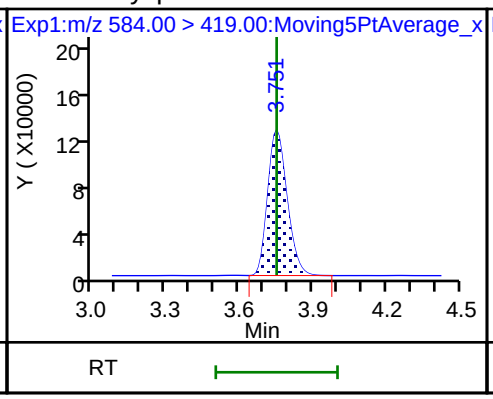
31 Perfluoroundecanoic acid



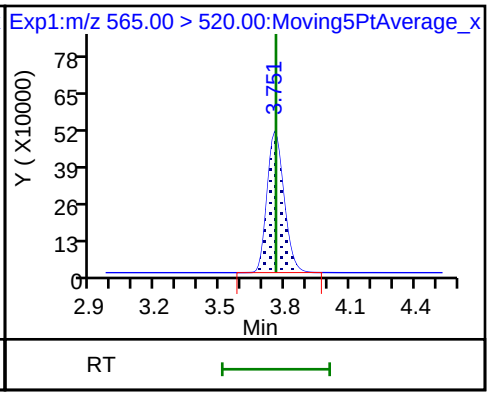
31 Perfluoroundecanoic acid



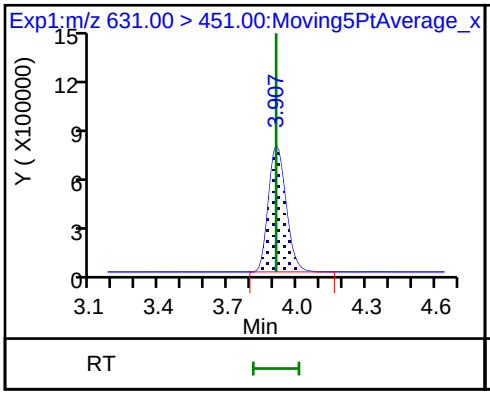
33 N-ethyl perfluorooctane sulfonamid



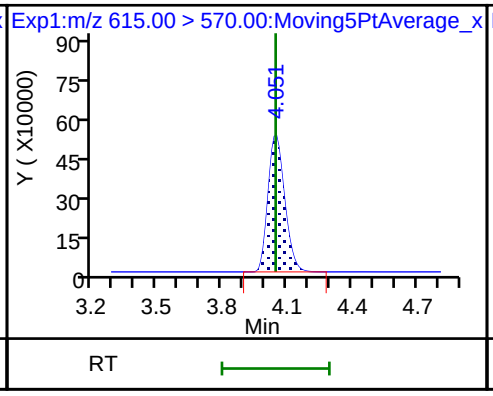
D 30 13C2 PFUnA



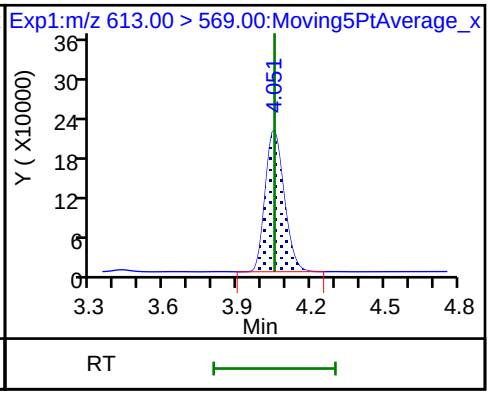
66 11-Chloroeicosafluoro-3-oxaundecan



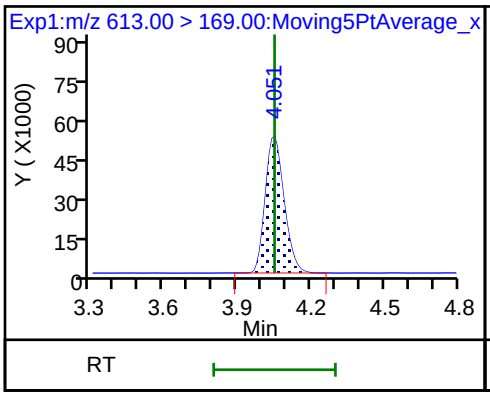
D 36 13C2 PFDoA



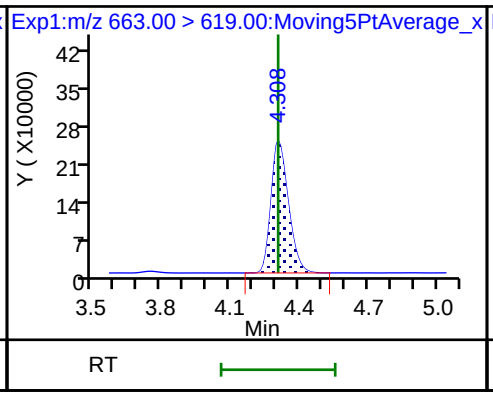
37 Perfluorododecanoic acid



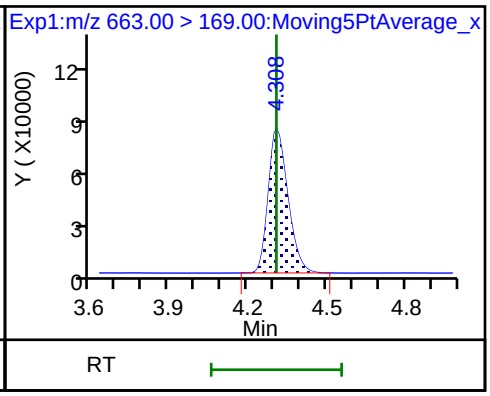
37 Perfluorododecanoic acid



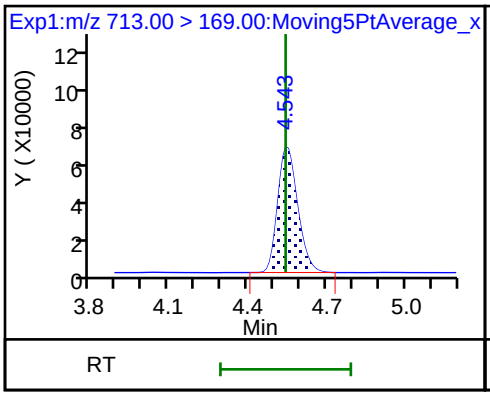
41 Perfluorotridecanoic acid



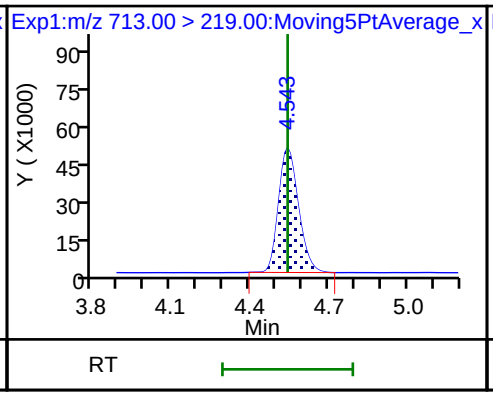
41 Perfluorotridecanoic acid



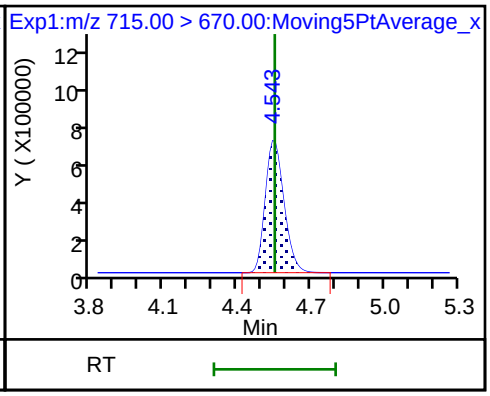
42 Perfluorotetradecanoic acid



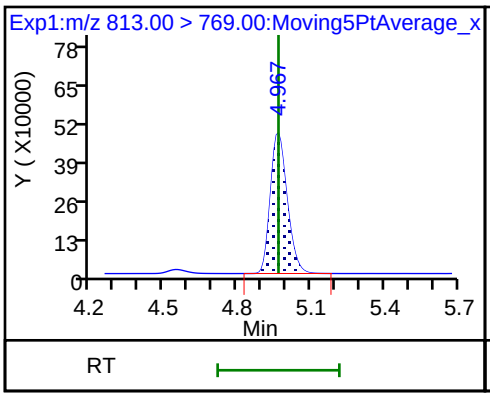
42 Perfluorotetradecanoic acid



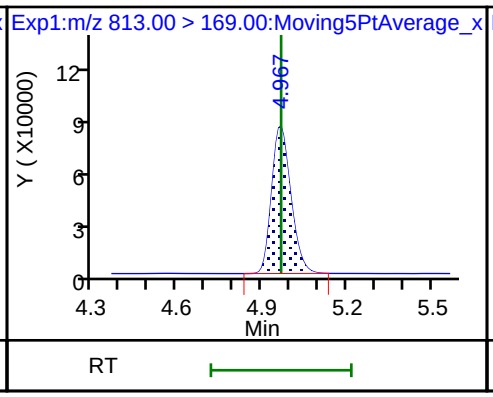
D 43 13C2-PFTeDA



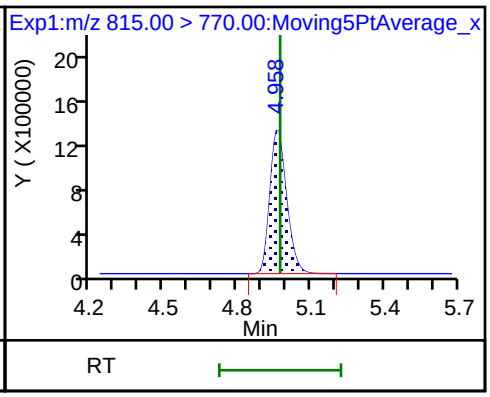
45 Perfluorohexadecanoic acid



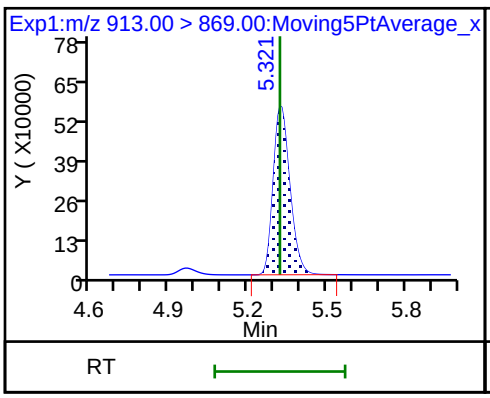
45 Perfluorohexadecanoic acid



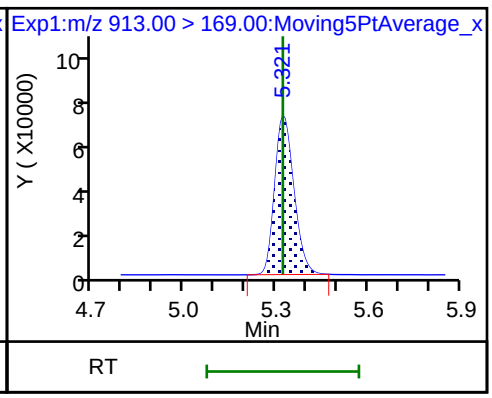
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219912/14 Calibration Date: 04/26/2018 09:08

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_049.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9584		2.58	2.50	3.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.187		2.49	2.50	-0.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	82.61		2.33	2.21	5.5	50.0
4:2 FTS	AveID	16.03	16.88		2.46	2.34	5.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.039		2.56	2.50	2.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	73.66		2.42	2.35	3.0	50.0
HFPO-DA (GenX)	AveID	2.785	2.960		2.66	2.50	6.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.092		2.73	2.50	9.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.062		2.13	2.28	-6.2	40.0
Adona	AveID	3.464	3.700		2.67	2.50	6.8	50.0
6:2FTS	AveID	1.691	1.669		2.34	2.37	-1.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.353		2.43	2.38	1.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.137		2.46	2.50	-1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.087		2.32	2.32	-0.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.046		2.51	2.50	0.3	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.920		2.37	2.33	1.8	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.023		2.53	2.50	1.2	40.0
8:2FTS	AveID	1.265	1.241		2.35	2.40	-1.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7476		2.25	2.40	-6.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9621		2.33	2.50	-6.7	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.007		2.53	2.50	1.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6376		2.37	2.41	-1.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9473		2.53	2.50	1.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8292		2.45	2.50	-1.9	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.808		2.27	2.36	-3.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.110		2.66	2.50	6.5	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.266		2.60	2.50	4.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2476		2.47	2.50	-1.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9013		2.36	2.50	-5.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-219912/14 Calibration Date: 04/26/2018 09:08

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.25LLBX_049.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.8700		2.17	2.50	-13.4	50.0
13C4 PFBA	Ave	1.345	1.400		2.60	2.50	4.1	50.0
13C5 PFPeA	Ave	0.8672	0.9029		2.60	2.50	4.1	50.0
13C3-PFBS	Ave	0.0199	0.0205		2.40	2.33	3.0	50.0
M2-4:2FTS	Ave	0.1425	0.1548		2.54	2.34	8.6	50.0
13C2 PFHxA	Ave	0.9590	0.9729		2.54	2.50	1.4	50.0
13C3 HFPO-DA	Ave	0.0593	0.0549		2.31	2.50	-7.5	50.0
13C4-PFHpA	Ave	0.9333	0.9534		2.55	2.50	2.2	50.0
18O2 PFHxS	Ave	1.152	1.163		2.39	2.37	1.0	50.0
M2-6:2FTS	Ave	0.2000	0.2197		2.61	2.38	9.9	40.0
13C4 PFOA	Ave	0.9276	0.9610		2.59	2.50	3.6	50.0
13C4 PFOS	Ave	0.8066	0.8319		2.47	2.39	3.1	50.0
13C5 PFNA	Ave	0.7973	0.8304		2.60	2.50	4.1	50.0
13C8 FOSA	Ave	1.007	0.9737		2.42	2.50	-3.3	50.0
M2-8:2FTS	Ave	0.2409	0.2432		2.42	2.40	0.9	40.0
13C2 PFDA	Ave	0.6701	0.6613		2.47	2.50	-1.3	50.0
d3-NMeFOSAA	Ave	0.3798	0.4157		2.74	2.50	9.4	50.0
d5-NEtFOSAA	Ave	0.3749	0.3908		2.61	2.50	4.2	50.0
13C2 PFUnA	Ave	0.5781	0.5581		2.41	2.50	-3.5	50.0
13C2 PFDoA	Ave	0.6242	0.5769		2.31	2.50	-7.6	50.0
13C2-PFTeDA	Ave	0.7915	0.7813		2.47	2.50	-1.3	50.0
13C2-PFHxDA	Ave	1.288	1.401		2.72	2.50	8.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_049.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 09:08:57 ALS Bottle#: 29 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:55 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: hannigana Date: 26-Apr-2018 14:28:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	6457694	2.60		104	43101	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	6188925	2.58		103	3336	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	4163839	2.60		104	57585	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.005	4942173	2.49		99.6	4281	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	87905	2.39		103	717	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.005	6902767	2.33		106	26300	
298.90 > 99.00	1.730	1.739	-0.009	1.000	2804988		2.46(1.25-3.74)		26424	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	1489809	2.46		105	83518	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.953	-0.003	1.000	666866	2.54		109	6243	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	4660577	2.56		102	4652	
313.00 > 119.00	1.982	1.982	0.0	1.000	436268		10.68(5.03-15.10)		3762	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4486554	2.54		101	73907	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.005	0.0	1.000	6530928	2.42		103	34694	
349.00 > 99.00	2.005	2.005	0.0	1.000	2356231		2.77(1.36-4.07)		35121	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	749134	2.66		106	5180	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.084	2.087	-0.003	1.000	253088	2.31		92.5	8491	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.313	0.008	1.000	4396616	2.55		102	75722	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.323	-0.001	1.000	4799810	2.73		109	5560	
363.00 > 169.00	2.321	2.323	-0.001	1.000	1825868		2.63(1.13-3.40)		8169	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	5073177	2.39		101	88503	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.336	-0.002	1.000	5181073	2.13		93.8	12553	
399.00 > 99.00	2.334	2.336	-0.002	1.000	1794864		2.89(1.50-4.49)		9738	
65 Adona										
377.00 > 251.00	2.360	2.362	-0.002	1.000	14195035	2.67		107	108795	
377.00 > 85.00	2.360	2.362	-0.002	1.000	8372802		1.70(0.84-2.53)		103975	
D 12 M2-6:2FTS										
429.00 > 81.00	2.653	2.656	-0.003	1.000	962628	2.61		110	11755	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.661	-0.008	1.000	1603300	2.34		98.7	21996	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.679	-0.004	1.000	4431820	2.59		104	57114	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.003	5038748	2.46		98.4	3759	
413.00 > 169.00	2.683	2.683	0.0	1.003	2569347		1.96(0.84-2.52)		9265	
* 62 13C2-PFOA										
415.00 > 370.00	2.675	2.683	-0.008		4611666	2.50			63710	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.683	2.691	-0.008	1.000	4941551	2.43		102	24793	
449.00 > 99.00	2.683	2.691	-0.008	1.000	1277770		3.87(1.94-5.82)		17441	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.049	3.053	-0.004	1.000	3871082	2.32		99.9	12191	M
499.00 > 99.00	3.049	3.053	-0.004	1.000	856993		4.52(2.31-6.93)		27262	
D 18 13C4 PFOS										
503.00 > 80.00	3.049	3.056	-0.007	1.000	3667774	2.46		103	22124	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.056	0.0	1.000	3829383	2.60		104	69140	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.060	-0.004	1.000	4006525	2.51		100	16048	
463.00 > 169.00	3.056	3.060	-0.004	1.000	946878		4.23(1.90-5.69)		22963	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.263	3.266	-0.003	1.000	6864642	2.37		102	76866	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.394	0.0	1.000	4490238	2.42		96.7	32857	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.398	-0.004	1.000	4594957	2.53		101	33389	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.404	3.408	-0.004	1.000	2753528	2.24		93.5	18080	
549.00 > 99.00	3.404	3.408	-0.004	1.000	1069890		2.57(1.33-3.97)		19323	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.404	3.408	-0.004	1.000	1333143	2.35		98.1	36942	
D 26 M2-8:2FTS										
529.00 > 81.00	3.404	3.413	-0.009	1.000	1074230	2.42		101	9386	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.422	3.417	0.005	1.003	2933869	2.33		93.3	13766	
513.00 > 169.00	3.413	3.417	-0.004	1.000	535492		5.48(2.36-7.09)		8586	
D 23 13C2 PFDA										
515.00 > 470.00	3.413	3.422	-0.009	1.000	3049609	2.47		98.7	59146	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.571	3.575	-0.004	1.000	1931107	2.53		101	10958	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.571	3.582	-0.011	1.000	1917112	2.74		109	30198	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.726	3.730	-0.004	1.000	2357952	2.37		98.2	25427	
599.00 > 99.00	3.726	3.730	-0.004	1.000	793362		2.97(1.39-4.16)		16109	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.737	3.747	-0.010	1.000	1802057	2.61		104	29465	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.747	3.751	-0.004	1.000	2134087	2.45		98.1	10586	
563.00 > 169.00	3.747	3.751	-0.004	1.000	506235		4.22(2.12-6.36)		13172	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.747	3.751	-0.004	1.003	1707008	2.53		101	21987	
D 30 13C2 PFUnA										
565.00 > 520.00	3.747	3.757	-0.010	1.000	2573813	2.41		96.5	68060	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.907	-0.002	1.000	10148820	2.27		96.4	60881	
D 36 13C2 PFDoA										
615.00 > 570.00	4.038	4.046	-0.008	1.000	2660231	2.31		92.4	31083	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.038	4.051	-0.013	1.000	2953723	2.66		106	3845	
613.00 > 169.00	4.048	4.051	-0.003	1.003	672537		4.39(2.13-6.40)		6629	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.308	-0.002	1.000	3367988	2.60		104	4355	
663.00 > 169.00	4.306	4.308	-0.002	1.000	1061274		3.17(1.25-3.76)		8468	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.542	4.543	-0.001	1.000	892239	2.47		98.6	7739	
713.00 > 219.00	4.542	4.543	-0.001	1.000	638223		1.40(0.71-2.13)		11101	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.542	4.551	-0.009	1.000	3602933	2.47		98.7	27595	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.967	-0.001	1.000	5820946	2.36		94.3	2500	
813.00 > 169.00	4.966	4.967	-0.001	1.000	1009648		5.77(2.86-8.58)		5338	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.974	-0.008	1.000	6458620	2.72		109	17801	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.321	5.321	0.0	1.000	5618647	2.17		86.6	1846	
913.00 > 169.00	5.321	5.321	0.0	1.000	692118		8.12(3.83-11.48)		4242	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 15:27:56 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_049.d

Injection Date: 26-Apr-2018 09:08:57 Instrument ID: A8_N

Lims ID: CCV L5

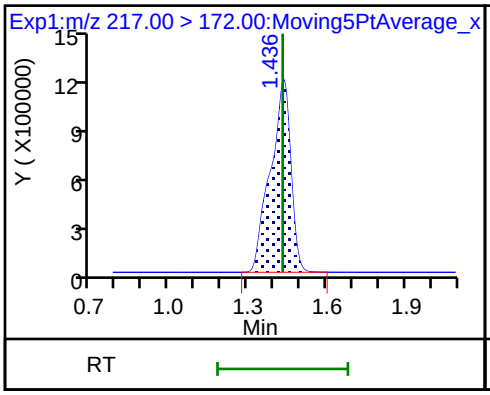
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 14

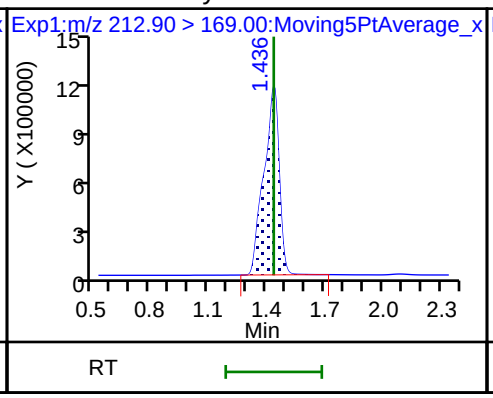
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

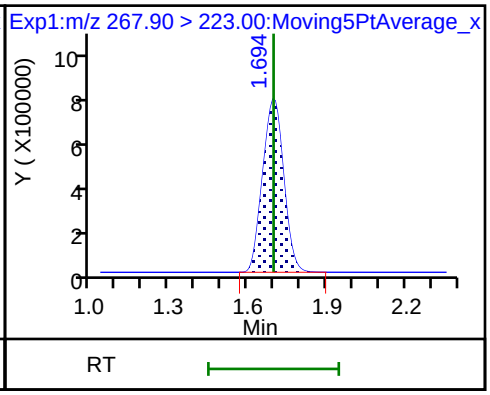
D 1 13C4 PFBA



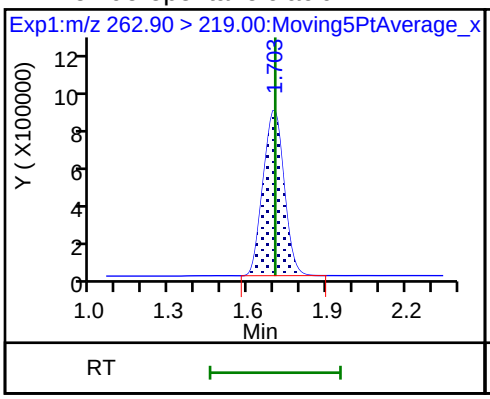
2 Perfluorobutyric acid



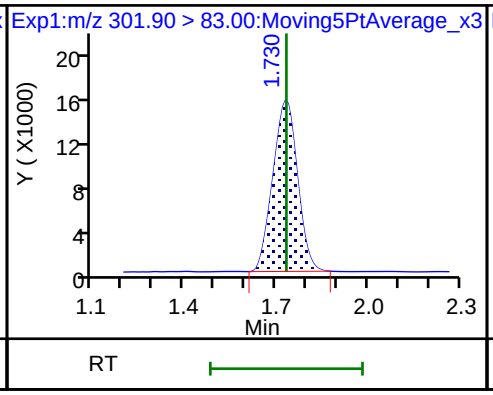
D 3 13C5-PFPeA



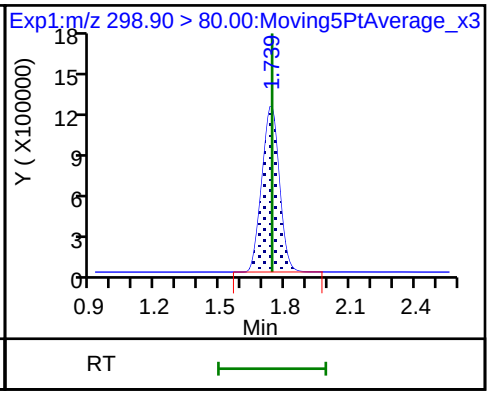
4 Perfluoropentanoic acid



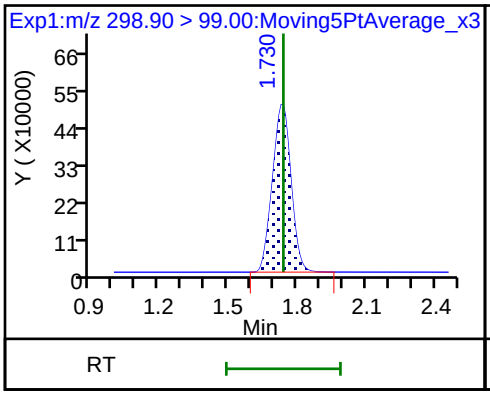
D 47 13C3-PFBS



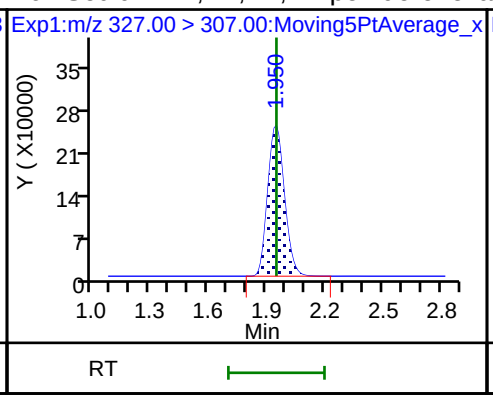
5 Perfluorobutanesulfonic acid



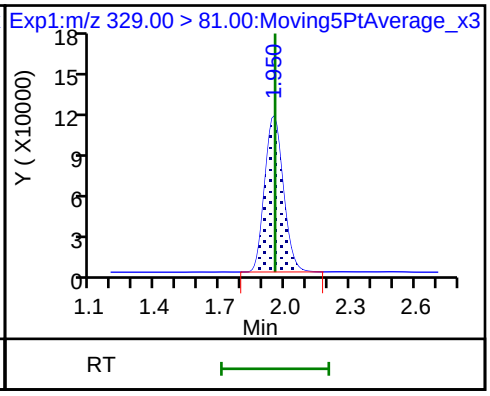
5 Perfluorobutanesulfonic acid



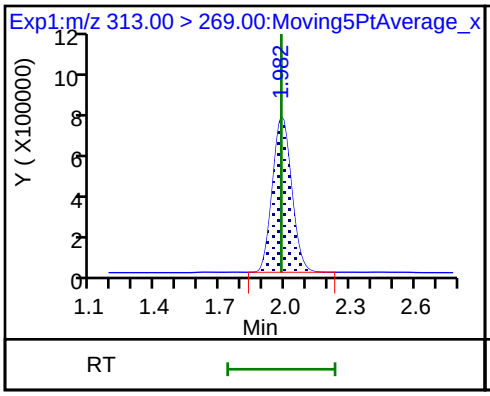
61 Sodium 1H,1H,2H,2H-perfluorohexane



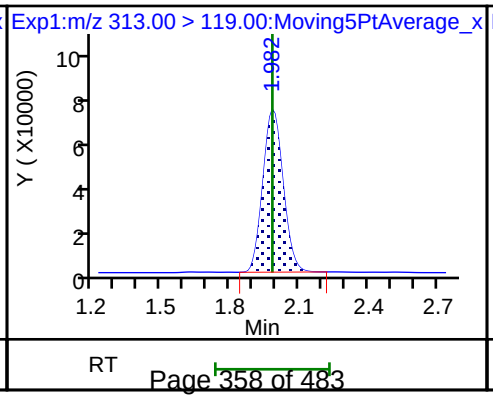
D 60 M2-4:2FTS



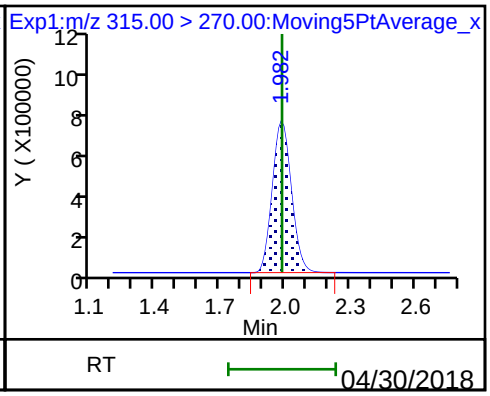
6 Perfluorohexanoic acid



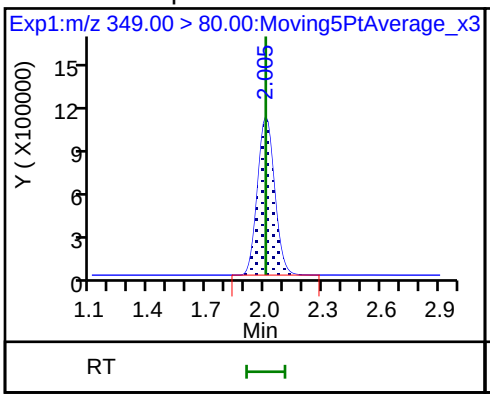
6 Perfluorohexanoic acid



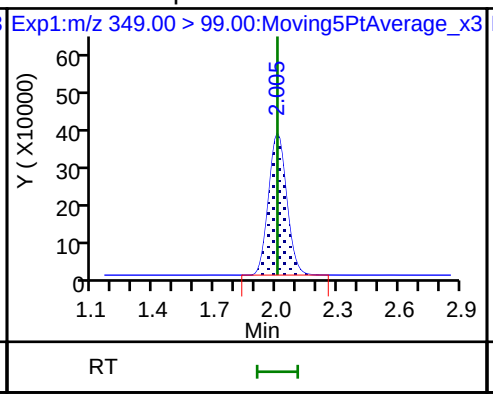
D 7 13C2 PFHxA



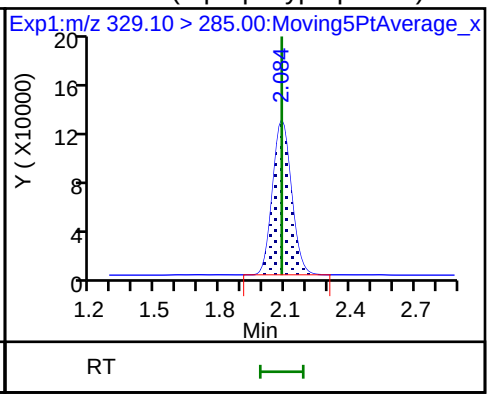
70 Perfluoropentanesulfonic acid



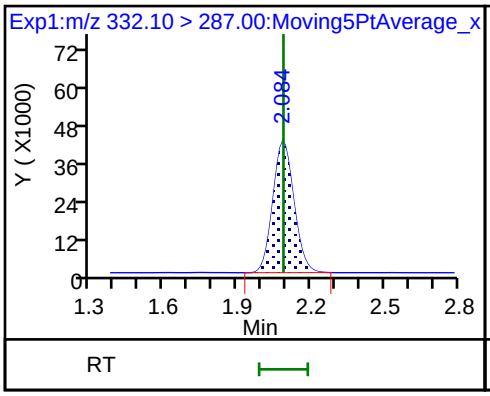
70 Perfluoropentanesulfonic acid



67 Perfluoro(2-propoxypropanoic) acid



D 64 13C3 HFPO-DA



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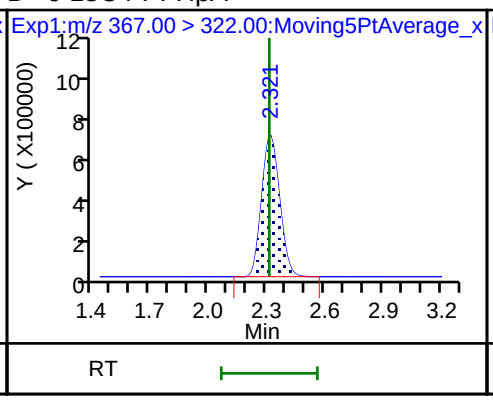
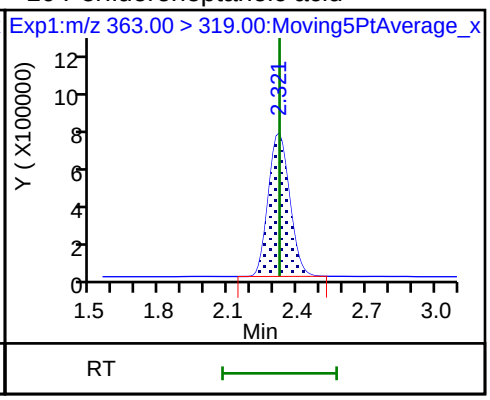
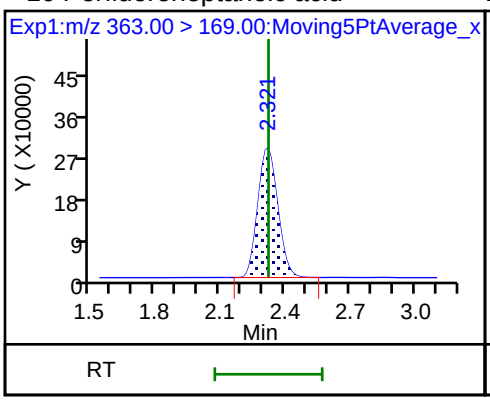


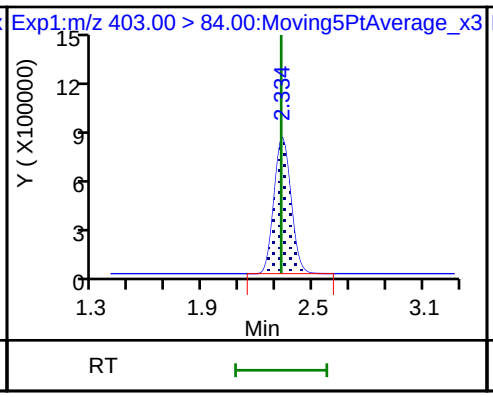
10 Perfluoroheptanoic acid



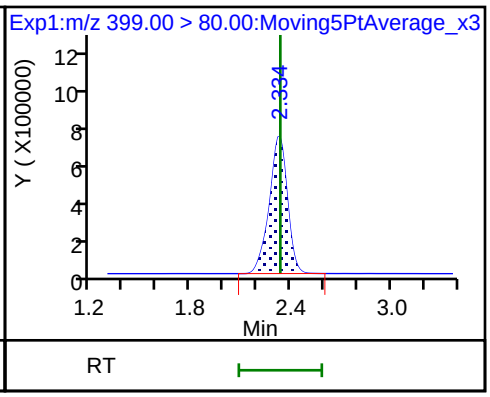
10 Perfluoroheptanoic acid



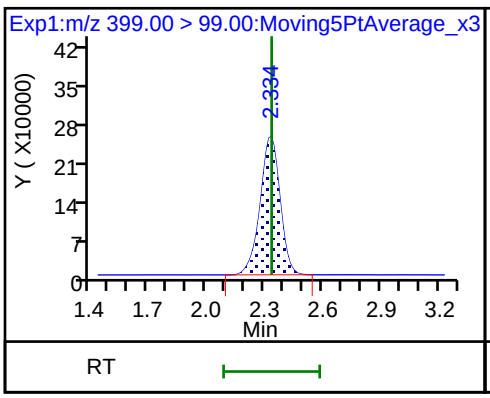
D 11 18O2 PFHxS



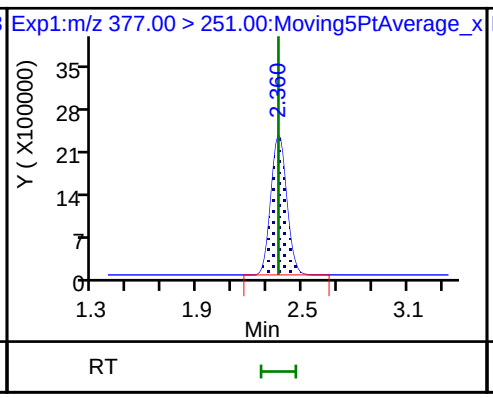
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid



65 Adona



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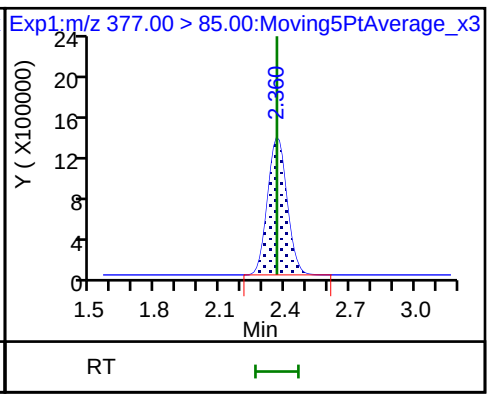
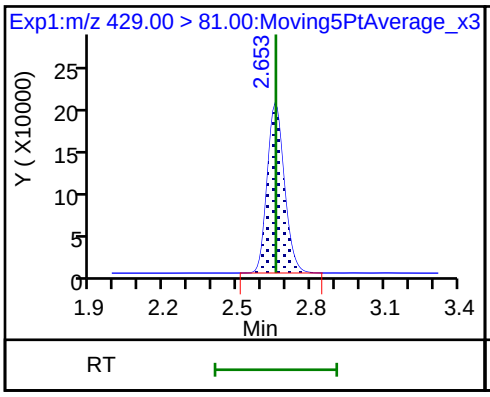
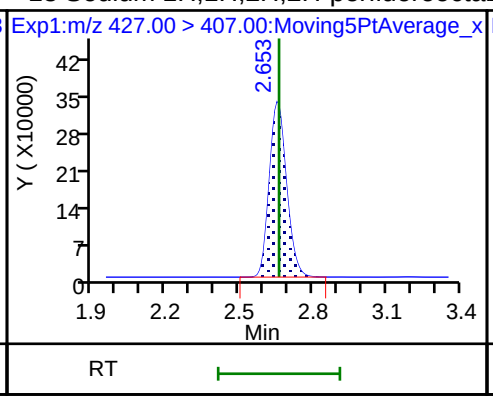


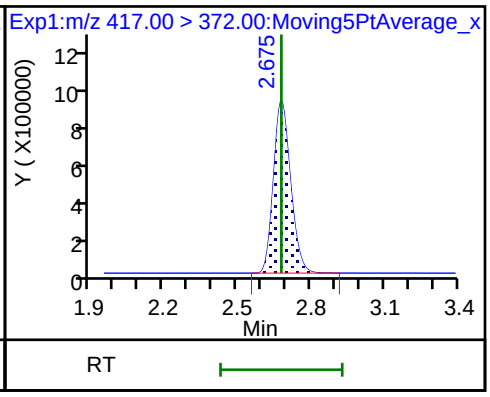
D 12 M2-6:2FTS



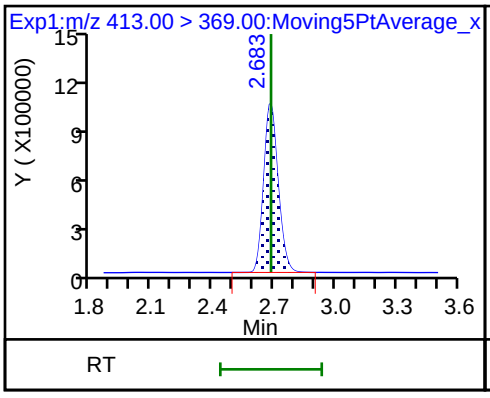
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA



15 Perfluorooctanoic acid



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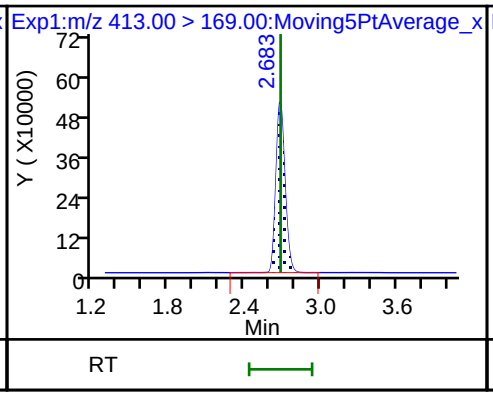
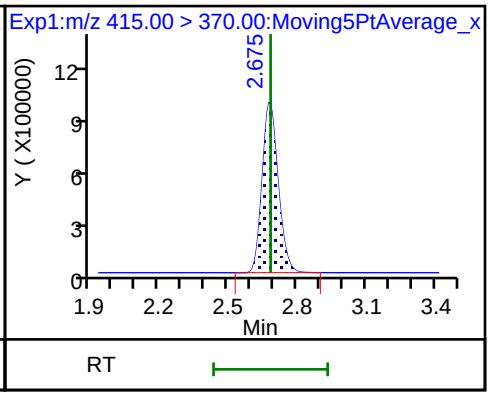
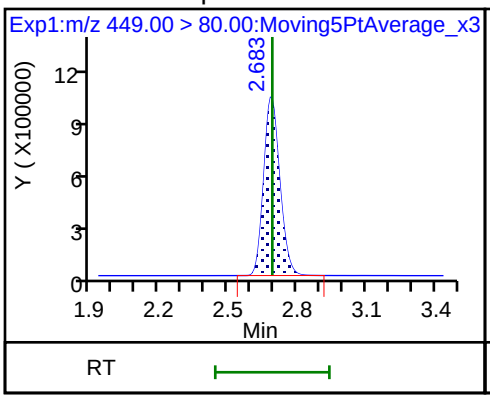


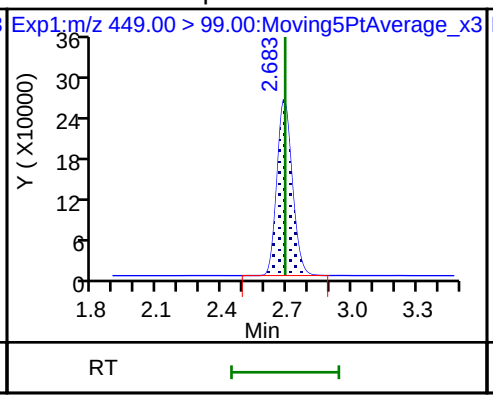
* 62 13C2-PFOA



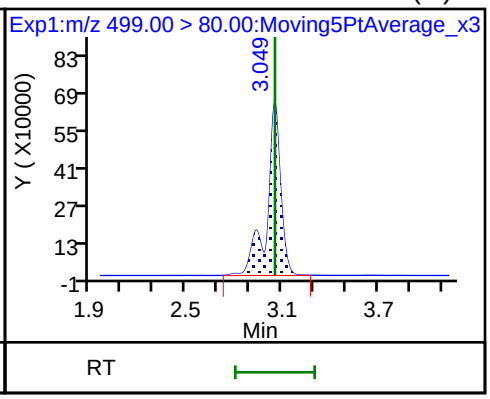
16 Perfluoroheptanesulfonic acid



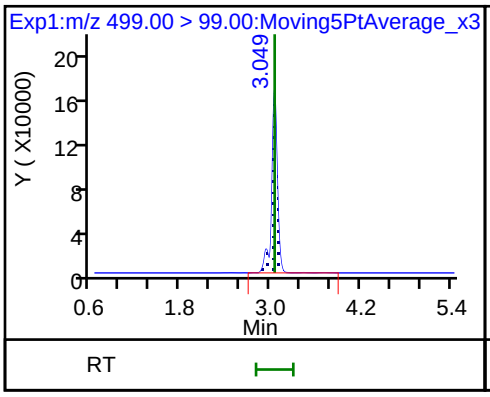
16 Perfluoroheptanesulfonic acid



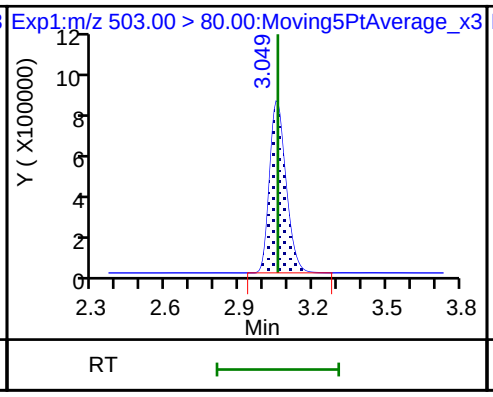
17 Perfluorooctane sulfonic acid (M)



17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



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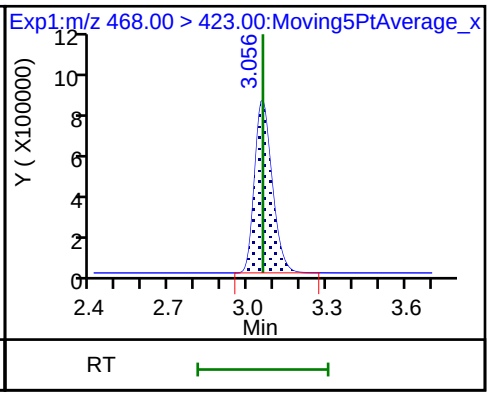
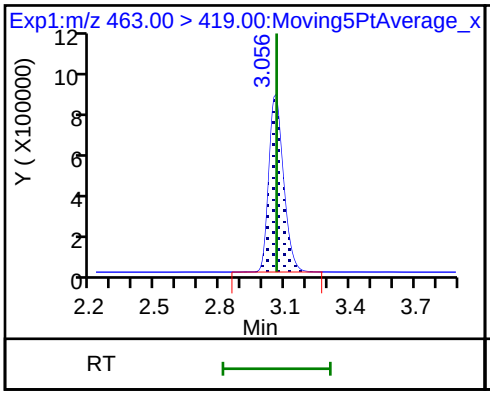


20 Perfluorononanoic acid



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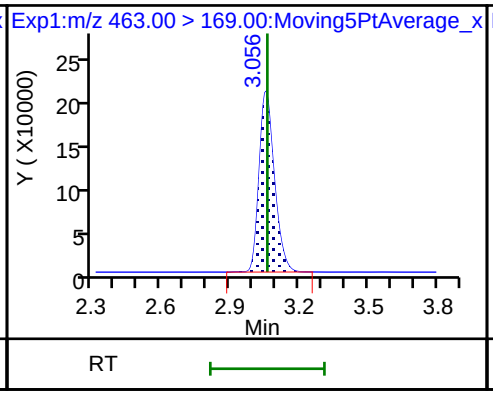
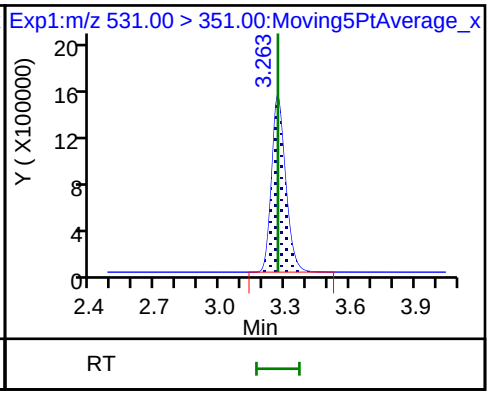
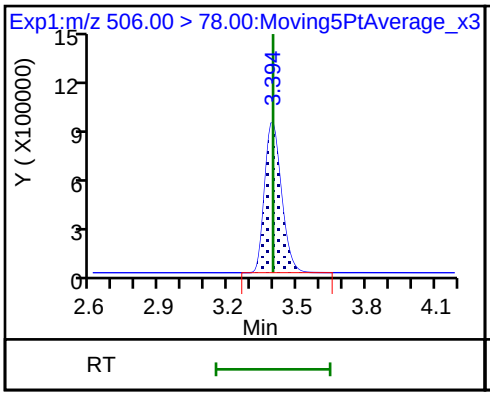


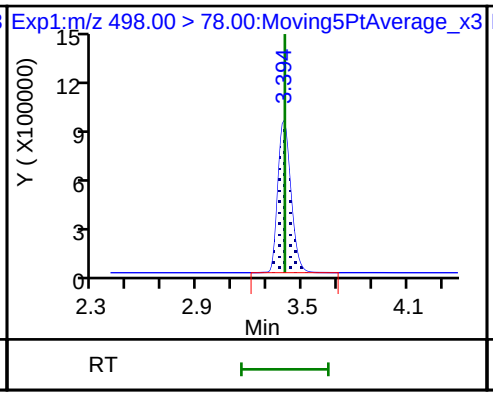
69 9-Chlorohexadecafluoro-3-oxanonane



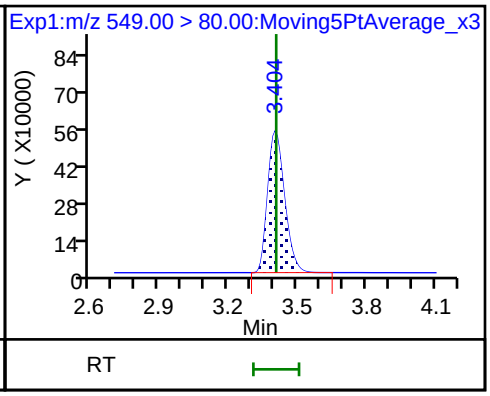
D 21 13C8 FOSA



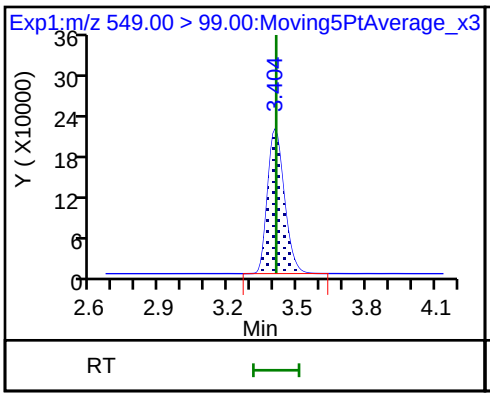
22 Perfluorooctane Sulfonamide



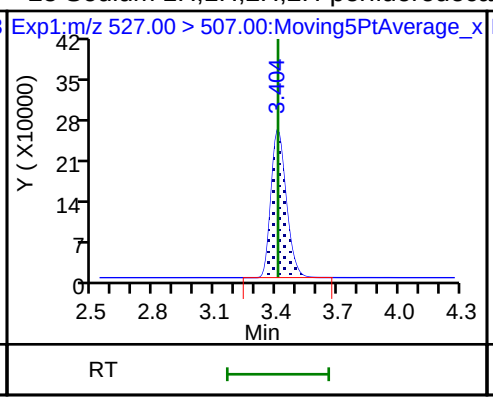
68 Perfluorononanesulfonic acid



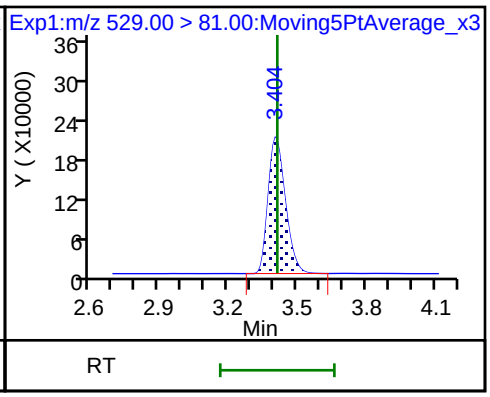
68 Perfluorononanesulfonic acid



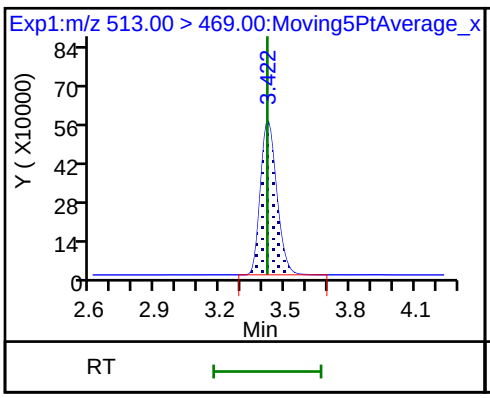
25 Sodium 1H,1H,2H,2H-perfluorodecane



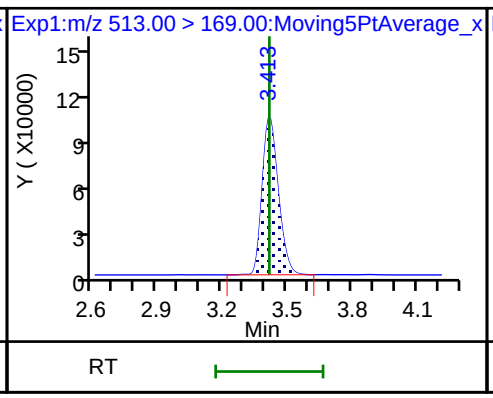
D 26 M2-8:2FTS



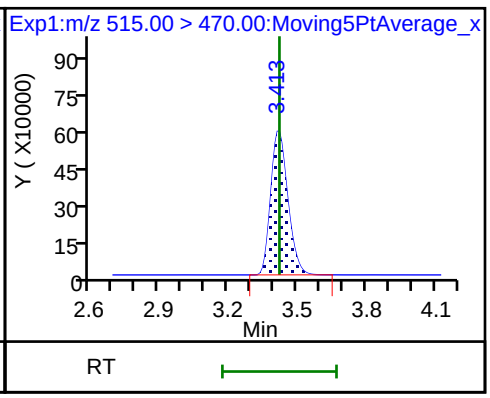
24 Perfluorodecanoic acid



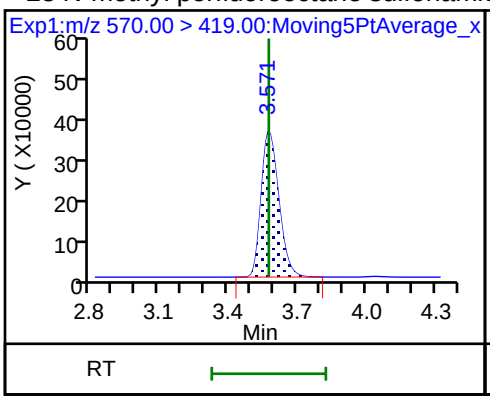
24 Perfluorodecanoic acid



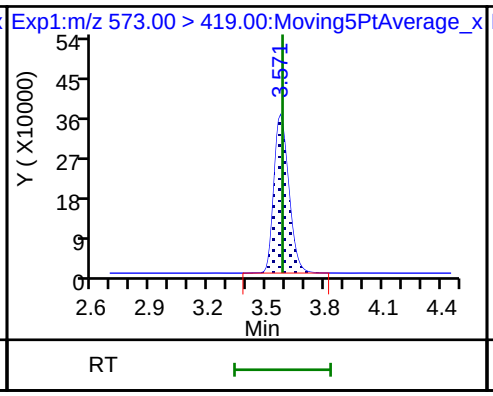
D 23 13C2 PFDA



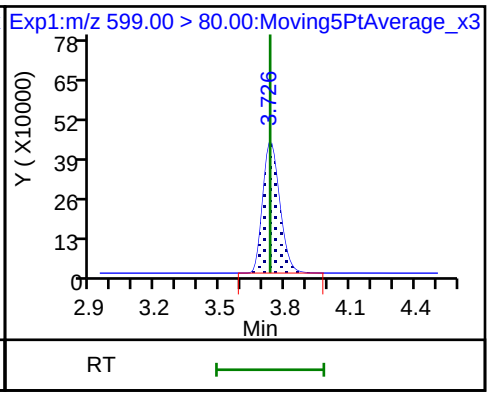
28 N-methyl perfluorooctane sulfonami



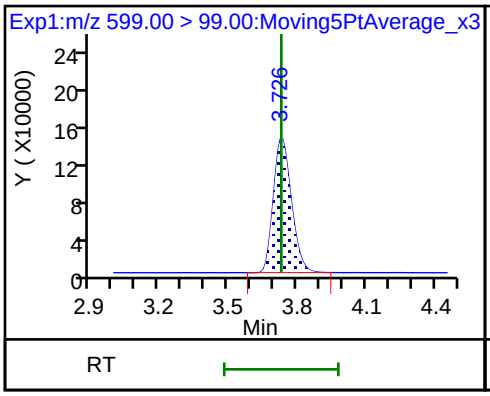
D 27 d3-NMeFOSAA



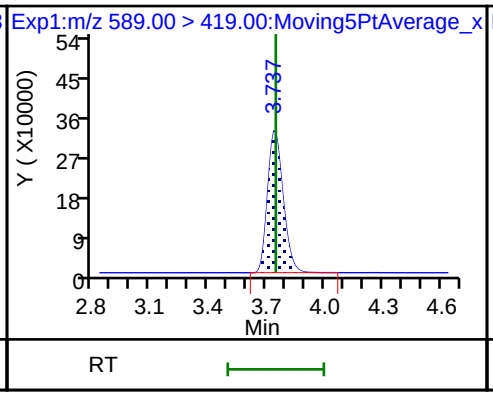
29 Perfluorodecane Sulfonic acid



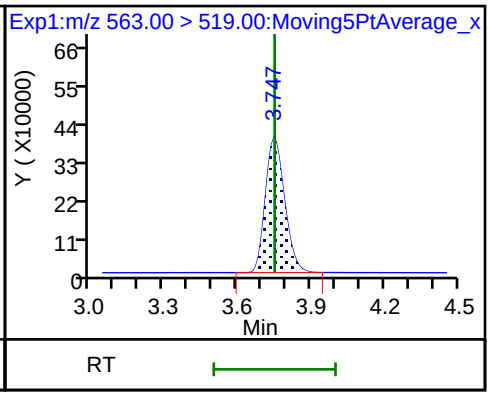
29 Perfluorodecane Sulfonic acid



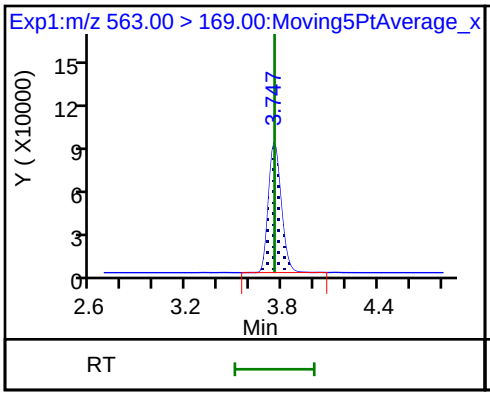
D 32 d5-NEtFOSAA



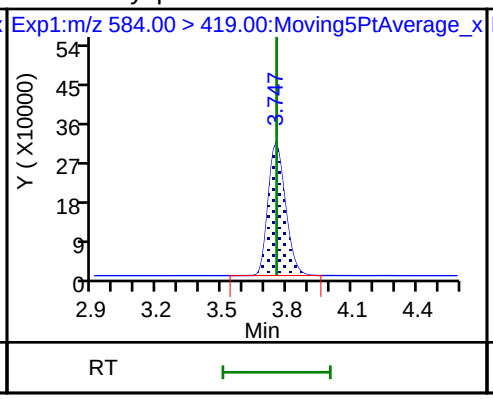
31 Perfluoroundecanoic acid



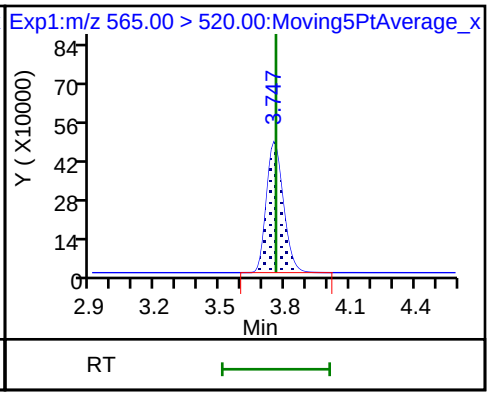
31 Perfluoroundecanoic acid



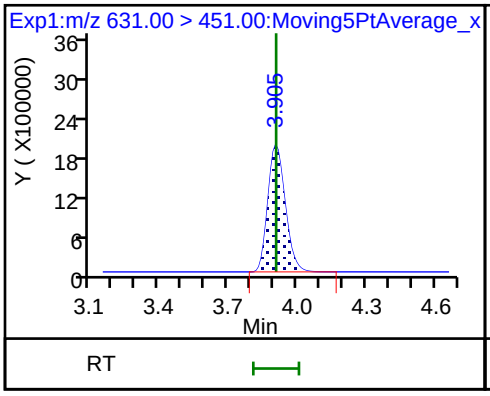
33 N-ethyl perfluorooctane sulfonamid



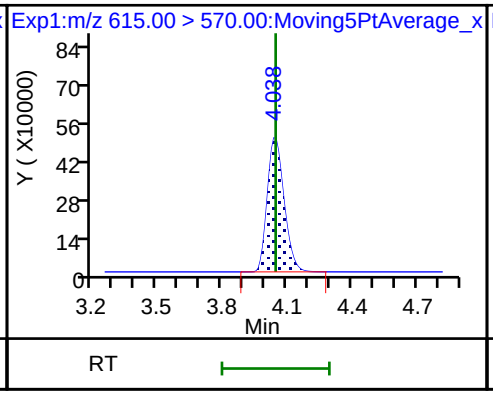
D 30 13C2 PFUnA



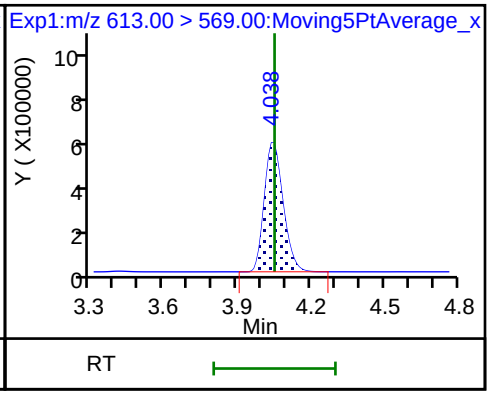
66 11-Chloroeicosafluoro-3-oxaundecan



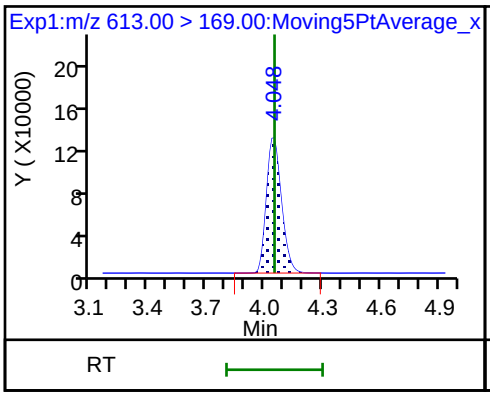
D 36 13C2 PFDoA



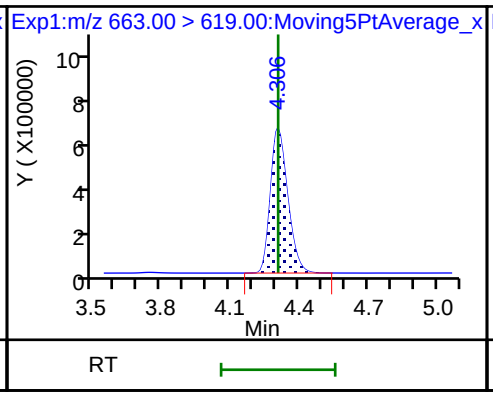
37 Perfluorododecanoic acid



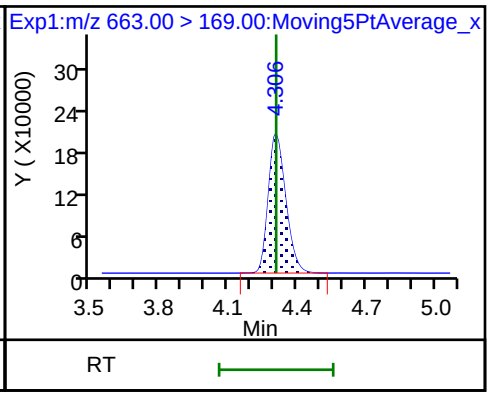
37 Perfluorododecanoic acid



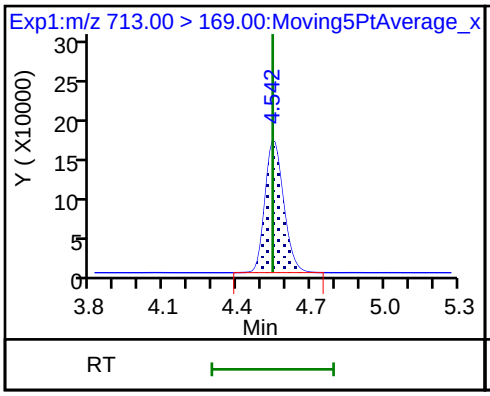
41 Perfluorotridecanoic acid



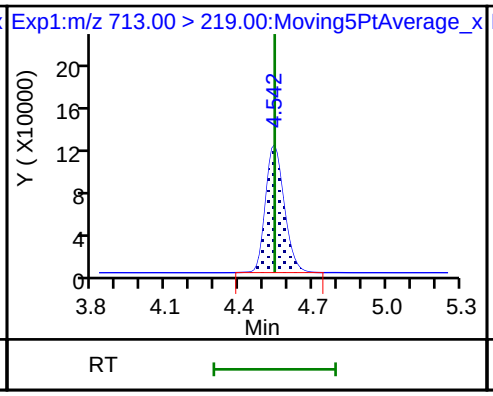
41 Perfluorotridecanoic acid



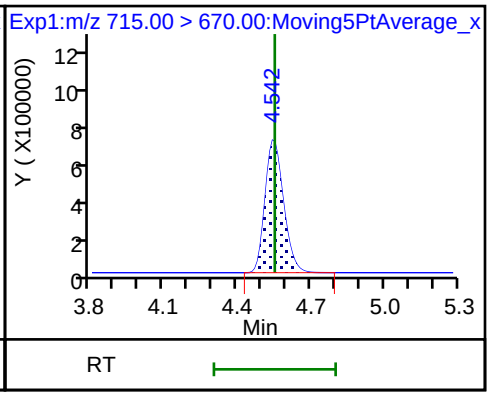
42 Perfluorotetradecanoic acid



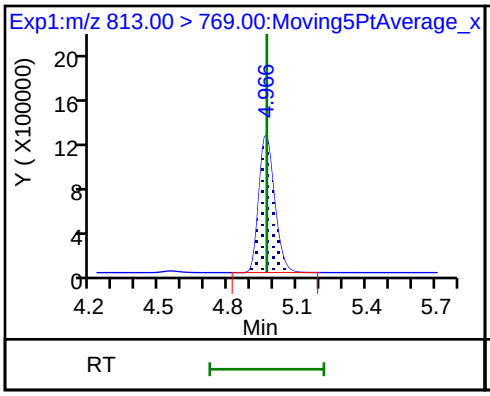
42 Perfluorotetradecanoic acid



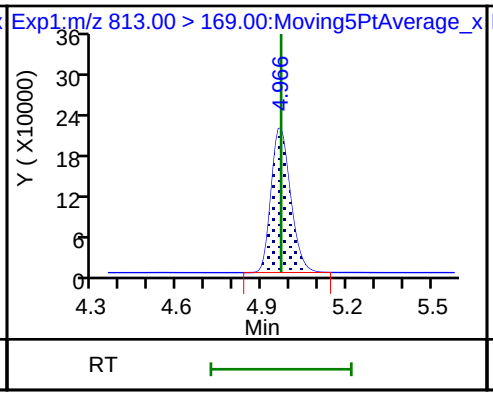
D 43 13C2-PFTeDA



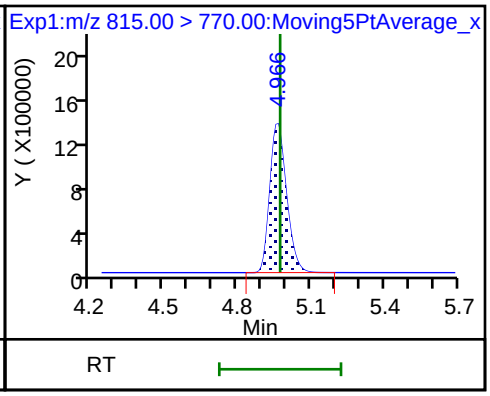
45 Perfluorohexadecanoic acid



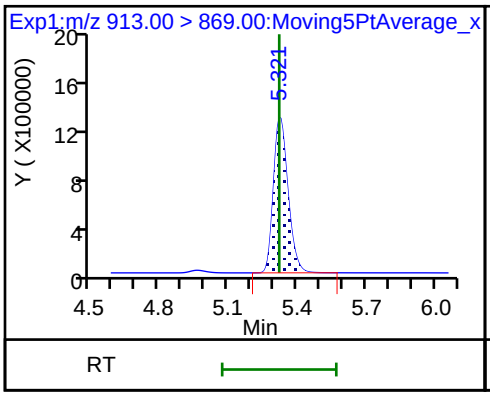
45 Perfluorohexadecanoic acid



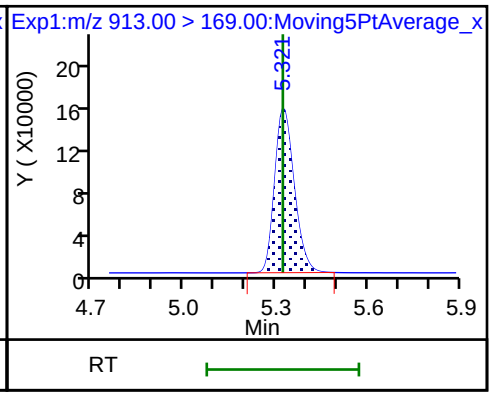
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

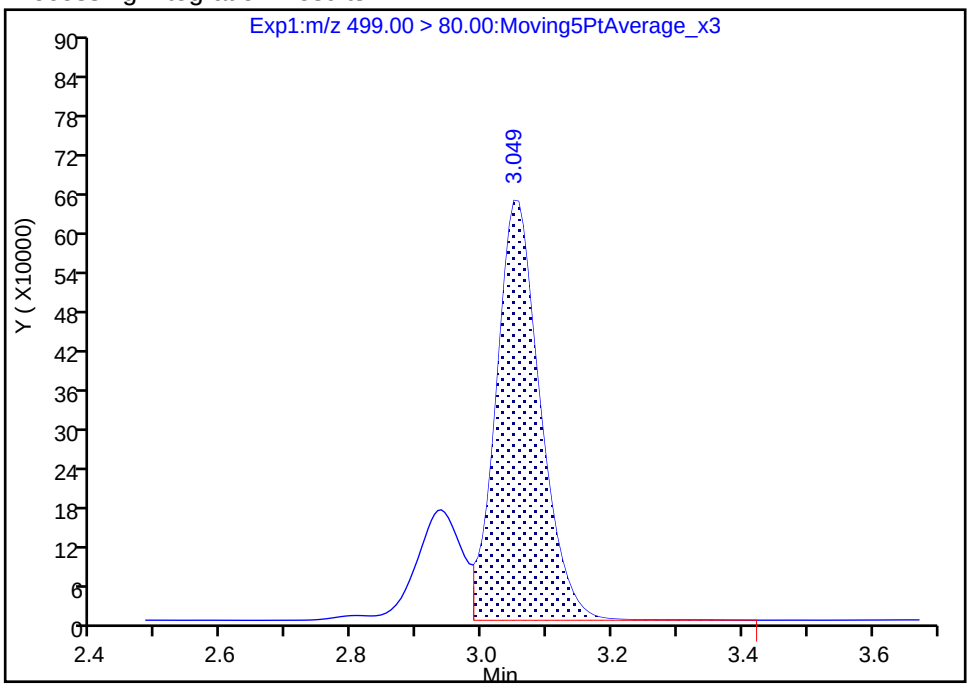
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_049.d
Injection Date: 26-Apr-2018 09:08:57 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

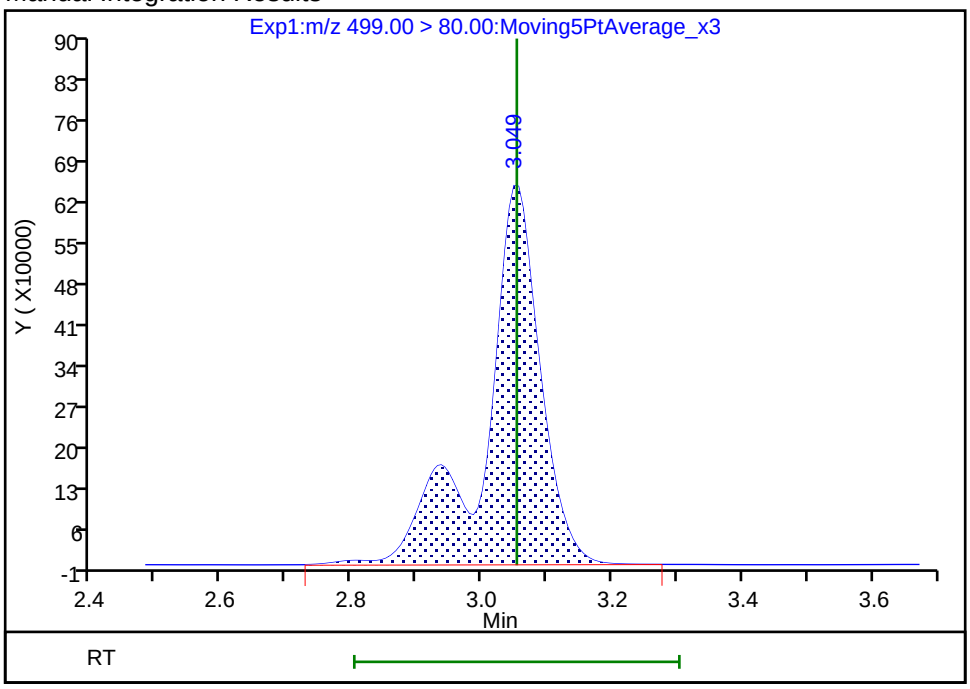
Processing Integration Results

RT: 3.05
Area: 3021920
Amount: 1.810152
Amount Units: ng/ml



Manual Integration Results

RT: 3.05
Area: 3871082
Amount: 2.318806
Amount Units: ng/ml



Reviewer: hannigana, 26-Apr-2018 14:27:47
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCVL 320-220094/2 Calibration Date: 04/26/2018 19:31

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLB_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	1.025		0.0552	0.0500	10.4	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.204		0.0505	0.0500	1.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	80.31		0.0453	0.0442	2.6	50.0
4:2 FTS	AveID	16.03	18.23		0.130	0.0467	13.7	
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.059		0.0521	0.0500	4.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	70.93		0.0465	0.0469	-0.8	50.0
HFPO-DA (GenX)	AveID	2.785	2.853		0.0512	0.0500	2.4	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.133		0.0566	0.0500	13.2	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.246		0.0501	0.0455	10.1	50.0
Adona	AveID	3.464	3.712		0.0536	0.0500	7.2	50.0
6:2FTS	AveID	1.691	1.796		0.0504	0.0474	6.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.266		0.0548	0.0500	9.6	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.358		0.0487	0.0476	2.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	0.9775		0.0469	0.0500	-6.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.058		0.0451	0.0464	-2.8	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.735		0.0429	0.0466	-8.0	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9108		0.0450	0.0500	-10.0	50.0
8:2FTS	AveID	1.265	1.354		0.0512	0.0479	7.0	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.6908		0.0415	0.0480	-13.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	0.9742		0.0472	0.0500	-5.6	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.999		0.0780	0.0500	0.1	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6932		0.0515	0.0482	6.8	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	1.027		0.0549	0.0500	9.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8035		0.0475	0.0500	-4.9	50.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.579		0.0417	0.0471	-11.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.127		0.0540	0.0500	8.0	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.220		0.0502	0.0500	0.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2349		0.0468	0.0500	-6.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.357		0.0494	0.0500	-1.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCVL 320-220094/2 Calibration Date: 04/26/2018 19:31

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLB_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	1.022		0.0509	0.0500	1.8	50.0
13C4 PFBA	Ave	1.345	1.370		2.55	2.50	1.9	50.0
13C5 PFPeA	Ave	0.8672	0.9155		2.64	2.50	5.6	50.0
13C3-PFBS	Ave	0.0199	0.0195		2.28	2.33	-2.0	50.0
M2-4:2FTS	Ave	0.1425	0.1534		2.51	2.34	7.6	50.0
13C2 PFHxA	Ave	0.9590	0.9651		2.52	2.50	0.6	50.0
13C3 HFPO-DA	Ave	0.0593	0.0511		2.15	2.50	-13.8	50.0
13C4-PFHpA	Ave	0.9333	0.9559		2.56	2.50	2.4	50.0
18O2 PFHxS	Ave	1.152	1.162		2.39	2.37	0.9	50.0
M2-6:2FTS	Ave	0.2000	0.2067		2.46	2.38	3.3	50.0
13C4 PFOA	Ave	0.9276	0.9649		2.60	2.50	4.0	50.0
13C4 PFOS	Ave	0.8066	0.8226		2.44	2.39	2.0	50.0
13C5 PFNA	Ave	0.7973	0.8083		2.54	2.50	1.4	50.0
13C8 FOSA	Ave	1.007	1.006		2.50	2.50	-0.2	50.0
M2-8:2FTS	Ave	0.2409	0.2545		2.53	2.40	5.7	50.0
13C2 PFDA	Ave	0.6701	0.6739		2.51	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.3798	0.3904		2.57	2.50	2.8	50.0
13C2 PFUnA	Ave	0.5781	0.5799		2.51	2.50	0.3	50.0
d5-NEtFOSAA	Ave	0.3749	0.4111		2.74	2.50	9.7	50.0
13C2 PFDoA	Ave	0.6242	0.5976		2.39	2.50	-4.3	50.0
13C2-PFTeDA	Ave	0.7915	0.7121		2.25	2.50	-10.0	50.0
13C2-PFHxDA	Ave	1.288	1.117		2.17	2.50	-13.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_004.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 26-Apr-2018 19:31:05 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 09:42:29 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK040

First Level Reviewer: hannigana Date: 27-Apr-2018 09:41:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.447	1.439	0.008	1.004	129260	0.0552		110	61.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.442	0.0	1.000	6305397	2.55		102	41525	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.699	0.004	1.000	101437	0.0505		101	95.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.557	4212379	2.64		106	71005	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.735	0.004	1.000	127438	0.0453		103	420	
298.90 > 99.00	1.739	1.735	0.004	1.000	54791		2.33(1.25-3.74)		539	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	83474	2.28		98.0	715	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.961	1.946	0.015	1.000	30558	0.0531		114	1688	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	659181	2.51		108	5635	
6 Perfluorohexanoic acid										M
313.00 > 269.00	1.994	1.988	0.006	1.000	94057	0.0521		104	110	M
313.00 > 119.00	1.982	1.988	-0.006	0.994	11039		8.52(5.03-15.10)		114	
D 7 13C2 PFHxA										
315.00 > 270.00	1.994	1.994	0.0	1.000	4440690	2.52		101	105454	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.011	0.005	1.000	119443	0.0465		99.2	740	
349.00 > 99.00	2.005	2.011	-0.006	0.994	51777		2.31(1.36-4.07)		777	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.084	0.011	1.000	235196	2.15		86.2	7712	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.090	-0.006	0.995	13421	0.0512		102	79.9	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.316	0.006	1.000	99633	0.0566		113	122	
363.00 > 169.00	2.322	2.316	0.006	1.000	37644		2.65(1.13-3.40)		165	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.322	0.0	1.000	4398237	2.56		102	62996	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.329	0.007	1.000	121284	0.0501		110	288	
399.00 > 99.00	2.336	2.329	0.007	1.000	36516		3.32(1.50-4.49)		239	
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.335	0.001	1.000	5058220	2.39		101	56512	
65 Adona										
377.00 > 251.00	2.362	2.369	-0.007	1.000	280991	0.0536		107	4465	
377.00 > 85.00	2.374	2.369	0.005	1.005	164410		1.71(0.84-2.53)		3301	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.661	2.659	0.002	1.000	32390	0.0504		106	524	
D 12 M2-6:2FTS										
429.00 > 81.00	2.661	2.661	0.0	1.000	903448	2.45		103	13166	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.681	0.002	1.000	112417	0.0548		110	71.4	
413.00 > 169.00	2.683	2.681	0.002	1.000	57330		1.96(0.84-2.52)		193	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.681	0.002		4601144	2.50			48145	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.683	0.0	1.000	4439539	2.60		104	58535	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.691	2.689	0.002	1.000	97838	0.0487		102	761	
449.00 > 99.00	2.691	2.689	0.002	1.000	28067		3.49(1.94-5.82)		667	
20 Perfluorononanoic acid										
463.00 > 419.00	3.057	3.055	0.002	1.000	72708	0.0469		93.7	212	
463.00 > 169.00	3.057	3.055	0.002	1.000	19074		3.81(1.90-5.69)		348	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.057	3.055	0.002	1.000	74291	0.0451		97.2	278	
499.00 > 99.00	3.057	3.055	0.002	1.000	15445		4.81(2.31-6.93)		177	M
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.061	-0.004	1.000	3618539	2.44		102	28145	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.061	-0.004	1.000	3719210	2.53		101	80446	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.269	0.002	1.000	122411	0.0429		92.0	2111	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.387	3.393	-0.006	1.000	84292	0.0450		90.0	1379	
D 21 13C8 FOSA										
506.00 > 78.00	3.387	3.400	-0.013	1.000	4627178	2.50		99.8	41566	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.405	3.402	0.003	1.000	50204	0.0415		86.4	624	
549.00 > 99.00	3.405	3.402	0.003	1.000	24758		2.03(1.33-3.97)		706	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.405	3.411	-0.006	1.000	30378	0.0512		107	1520	
D 26 M2-8:2FTS										
529.00 > 81.00	3.405	3.418	-0.013	1.000	1121929	2.53		106	12123	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.424	3.421	0.003	1.000	60418	0.0472		94.4	278	
513.00 > 169.00	3.424	3.421	0.003	1.000	12802		4.72(2.36-7.09)		235	
D 23 13C2 PFDA										
515.00 > 470.00	3.424	3.427	-0.003	1.000	3100792	2.51		101	66479	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.576	-0.003	1.000	1796487	2.57		103	20205	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.584	3.579	0.005	1.003	35881	0.0501		100	298	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.738	3.732	0.006	1.000	50589	0.0515		107	563	
599.00 > 99.00	3.738	3.732	0.006	1.000	19064		2.65(1.39-4.16)		499	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.749	3.752	-0.003	1.000	1891521	2.74		110	28524	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.749	3.754	-0.005	1.000	38848	0.0549		110	706	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.749	3.754	-0.005	1.000	42875	0.0475		95.1	220	
563.00 > 169.00	3.749	3.754	-0.005	1.000	11293		3.80(2.12-6.36)		232	
D 30 13C2 PFUnA										
565.00 > 520.00	3.749	3.762	-0.013	1.000	2668087	2.51		100	44865	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.905	3.911	-0.006	1.000	183880	0.0417		88.5	3834	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.049	4.044	0.005	1.000	61948	0.0540		108	80.5	
613.00 > 169.00	4.049	4.044	0.005	1.000	15153		4.09(2.13-6.40)		151	
D 36 13C2 PFDoA										
615.00 > 570.00	4.049	4.051	-0.002	1.000	2749433	2.39		95.7	23433	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.314	0.004	1.000	67102	0.0502		100	80.3	
663.00 > 169.00	4.307	4.314	-0.007	0.997	18505		3.63(1.25-3.76)		187	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.551	4.550	0.001	1.000	15391	0.0468		93.5	143	
713.00 > 219.00	4.551	4.550	0.001	1.000	13658		1.13(0.71-2.13)		257	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.553	-0.002	1.000	3276679	2.25		90.0	23126	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.965	4.964	0.001	1.000	139503	0.0494		98.7	66.6	
813.00 > 169.00	4.965	4.964	0.001	1.000	23128		6.03(2.86-8.58)		163	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.965	4.967	-0.002	1.000	5141285	2.17		86.8	17191	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.335	5.327	0.008	1.000	105051	0.0509		102	44.4	
913.00 > 169.00	5.335	5.327	0.008	1.000	14004		7.50(3.83-11.48)		135	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 09:42:31 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_004.d

Injection Date: 26-Apr-2018 19:31:05 Instrument ID: A8_N

Lims ID: CCVL

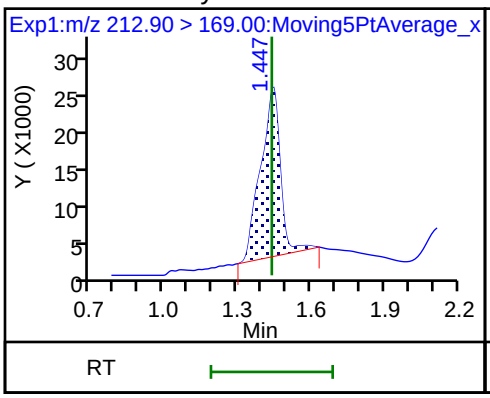
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2

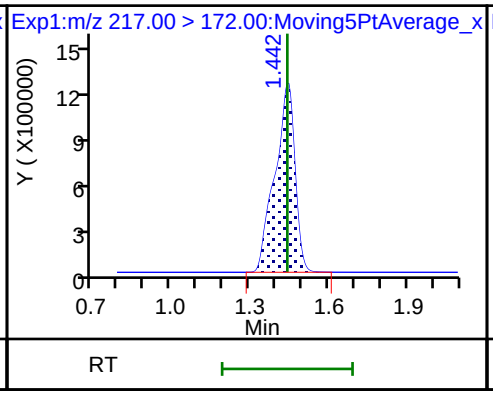
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

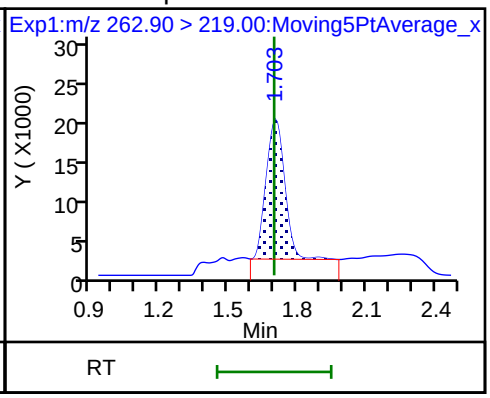
2 Perfluorobutyric acid



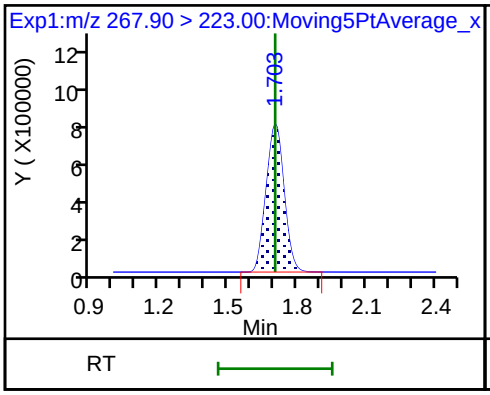
D 1 13C4 PFBA



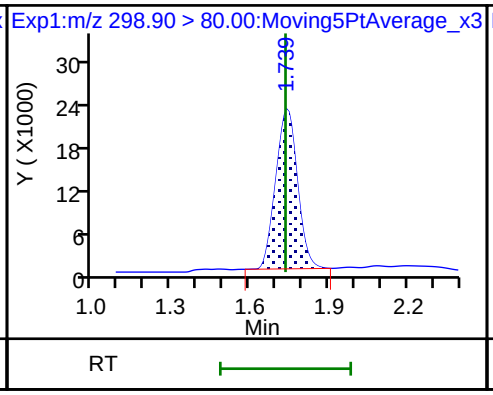
4 Perfluoropentanoic acid



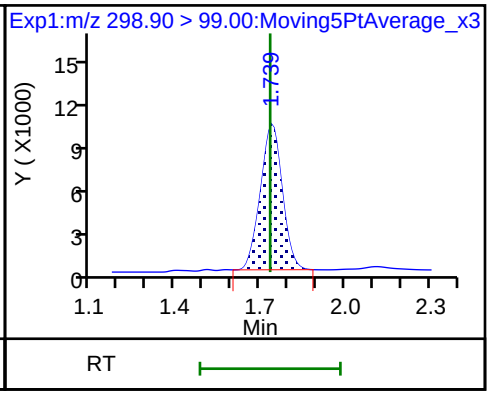
D 3 13C5-PFPeA



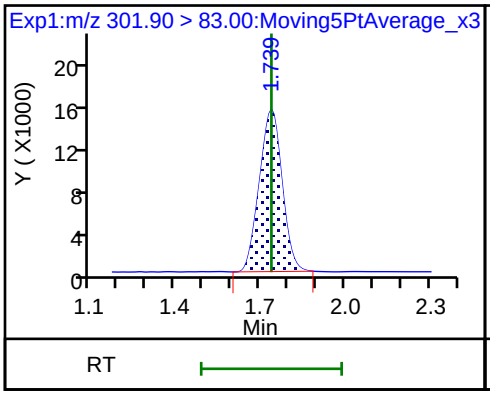
5 Perfluorobutanesulfonic acid



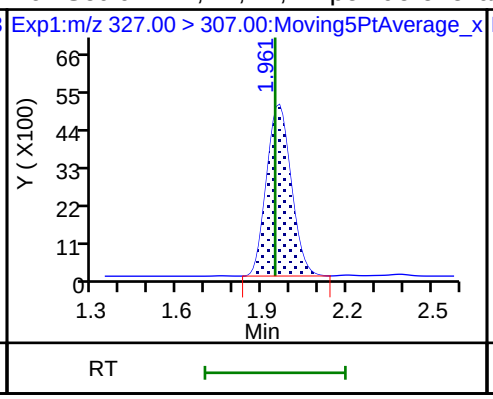
5 Perfluorobutanesulfonic acid



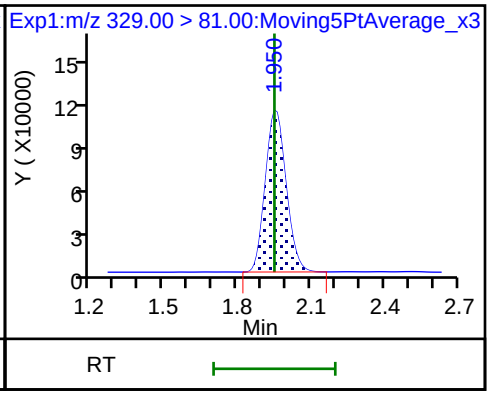
D 47 13C3-PFBS



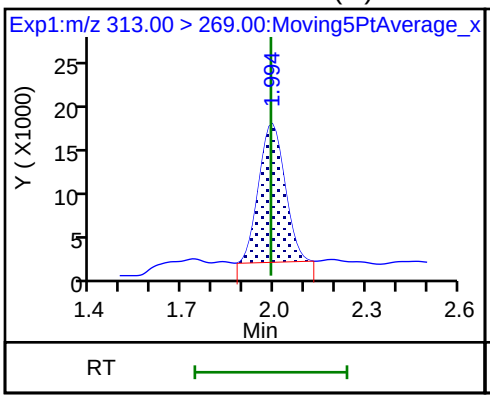
61 Sodium 1H,1H,2H,2H-perfluorohexane



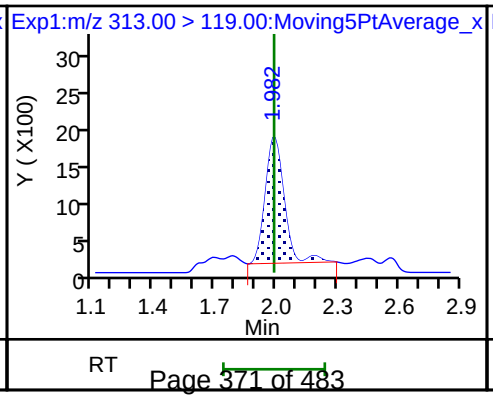
D 60 M2-4:2FTS



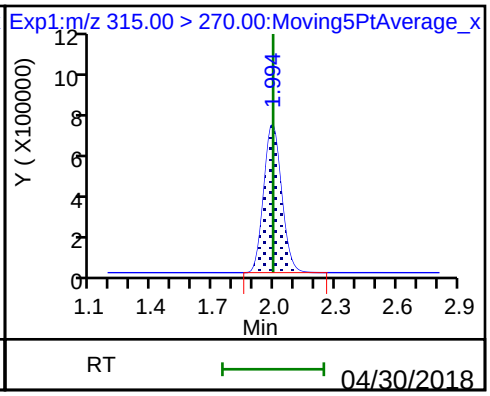
6 Perfluorohexanoic acid (M)



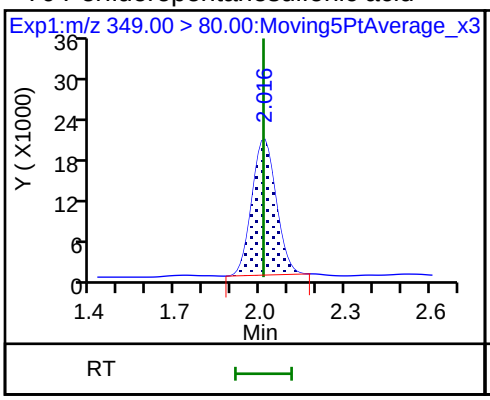
6 Perfluorohexanoic acid



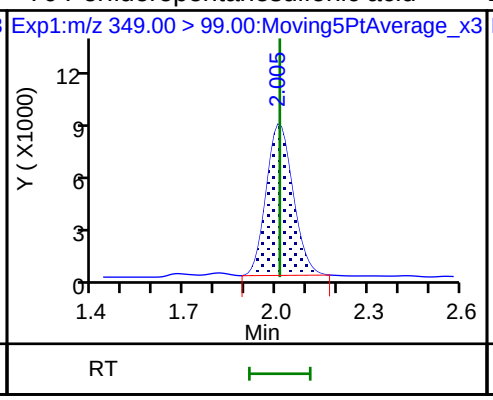
D 7 13C2 PFHxA



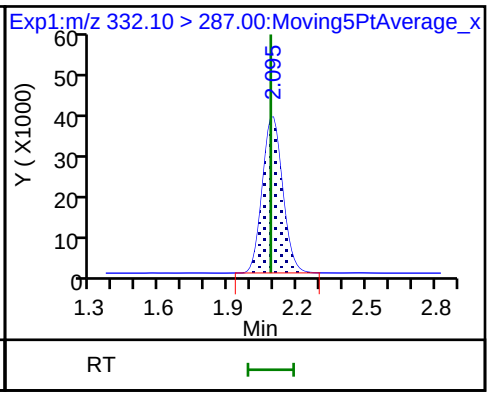
70 Perfluoropentanesulfonic acid



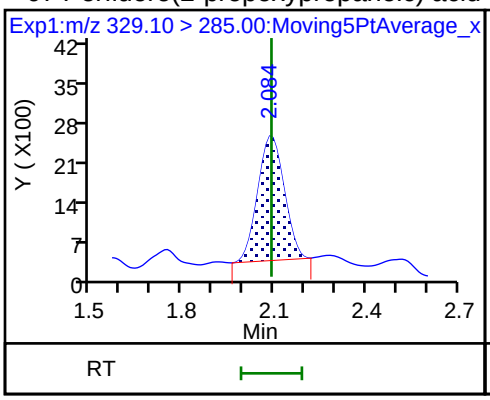
70 Perfluoropentanesulfonic acid



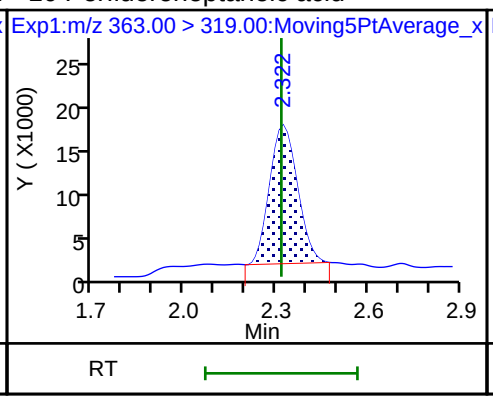
D 64 13C3 HFPO-DA



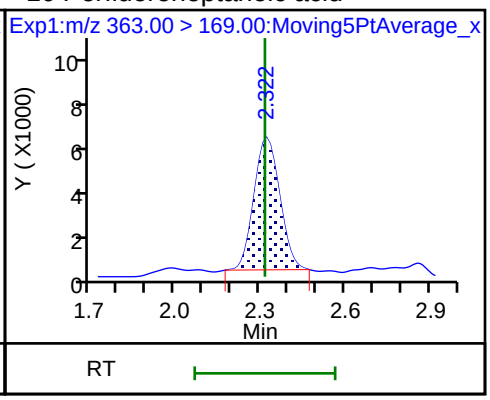
67 Perfluoro(2-propoxypropanoic) acid



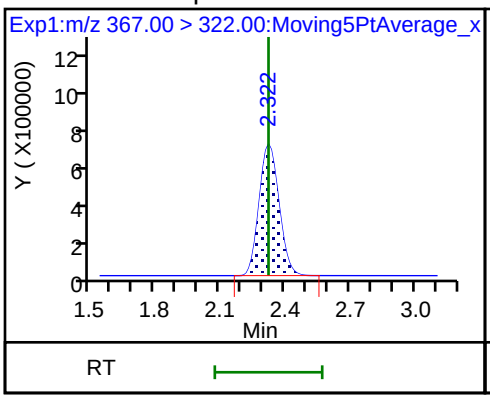
10 Perfluoroheptanoic acid



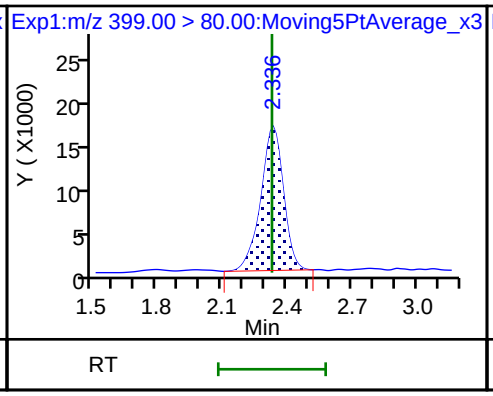
10 Perfluoroheptanoic acid



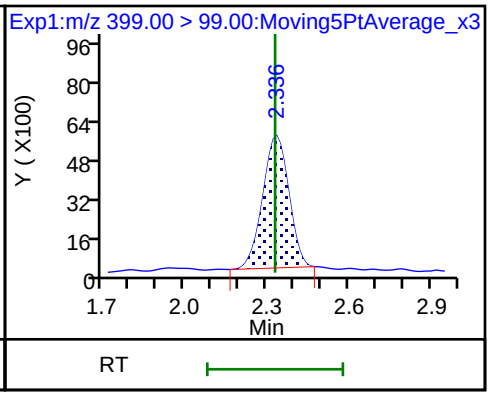
D 9 13C4-PFHpA



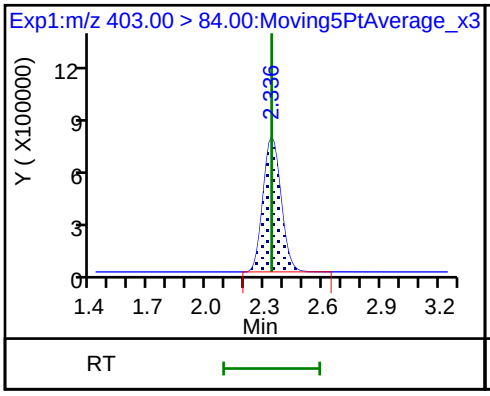
8 Perfluorohexanesulfonic acid



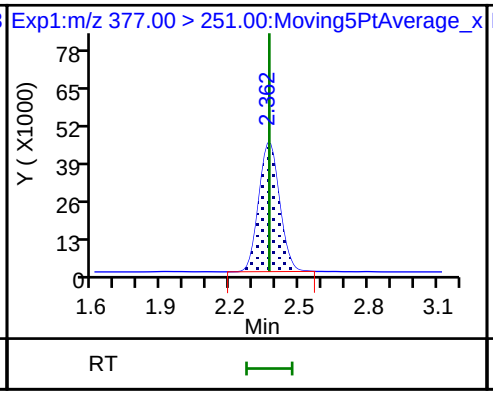
8 Perfluorohexanesulfonic acid



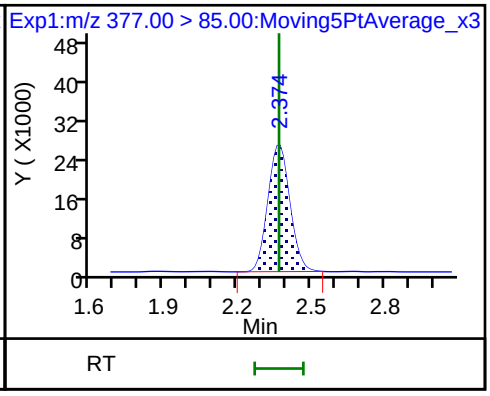
D 11 18O2 PFHxS



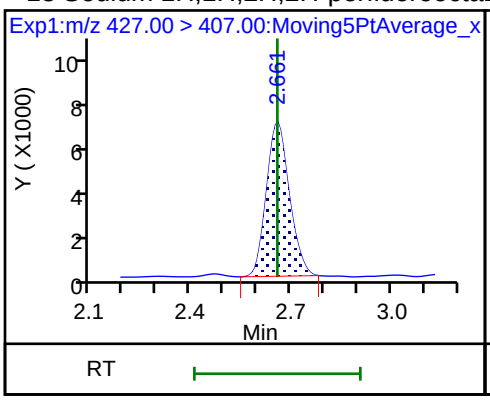
65 Adona



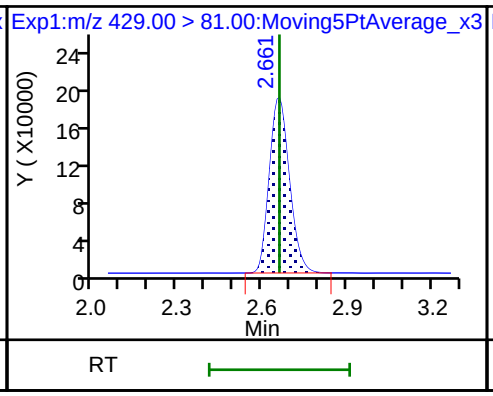
65 Adona



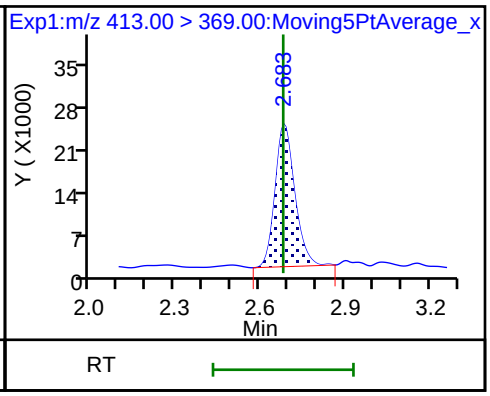
13 Sodium 1H,1H,2H,2H-perfluorooctane



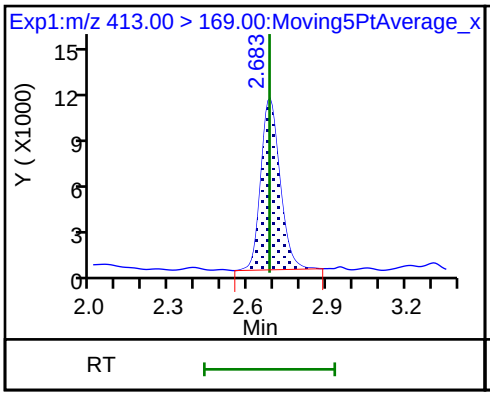
D 12 M2-6:2FTS



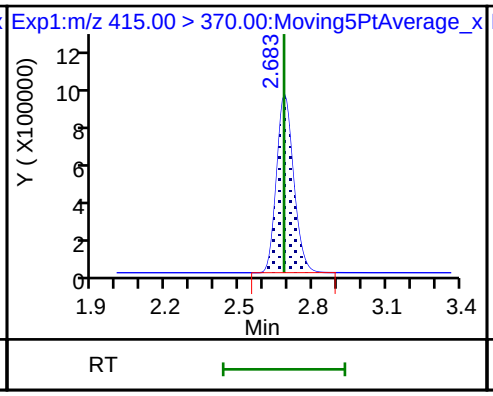
15 Perfluorooctanoic acid



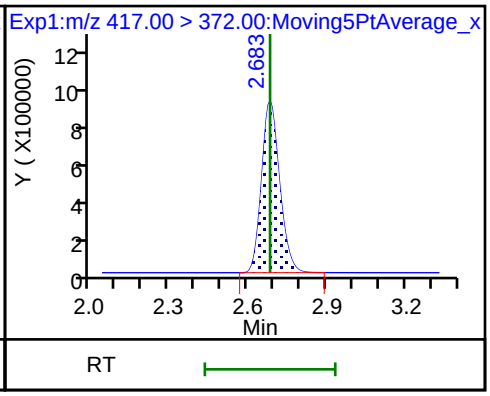
15 Perfluorooctanoic acid



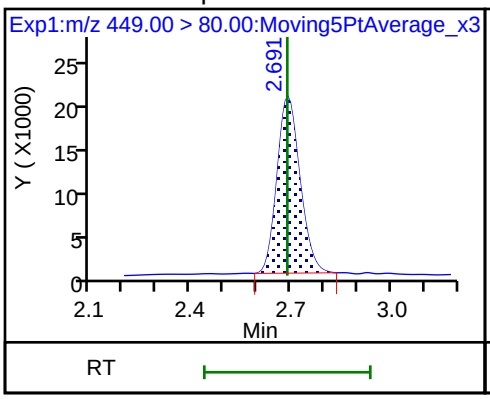
* 62 13C2-PFOA



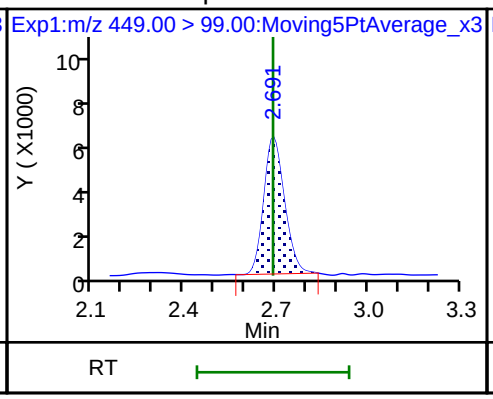
D 14 13C4 PFOA



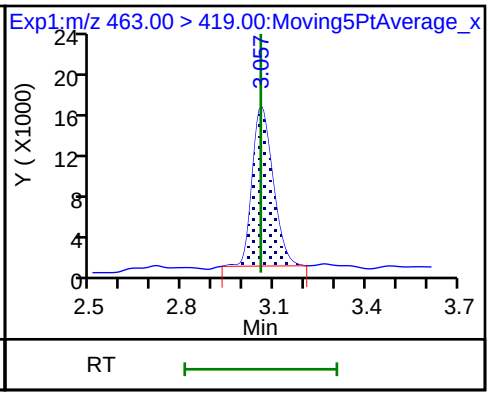
16 Perfluoroheptanesulfonic acid



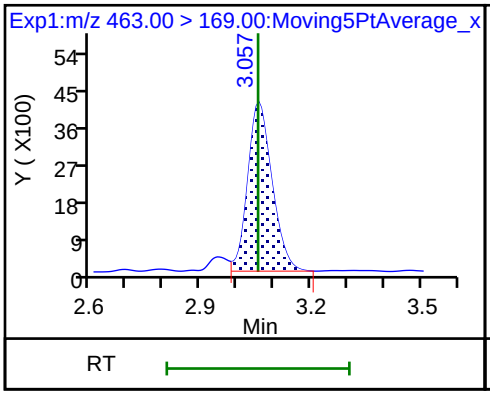
16 Perfluoroheptanesulfonic acid



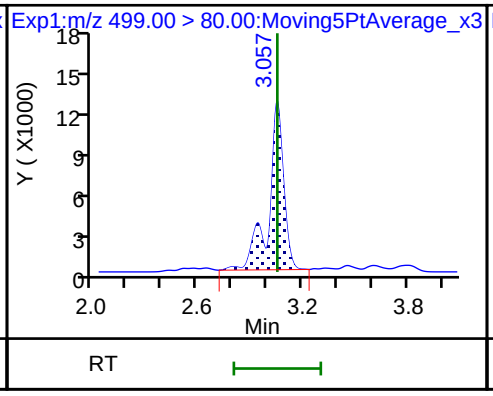
20 Perfluorononanoic acid



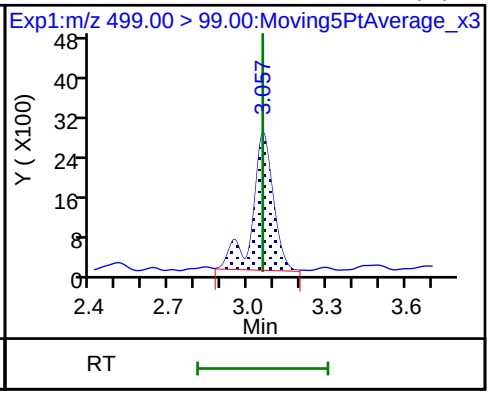
20 Perfluorononanoic acid



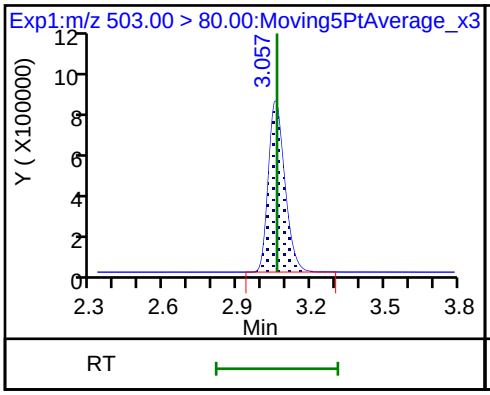
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid (M)



D 18 13C4 PFOS



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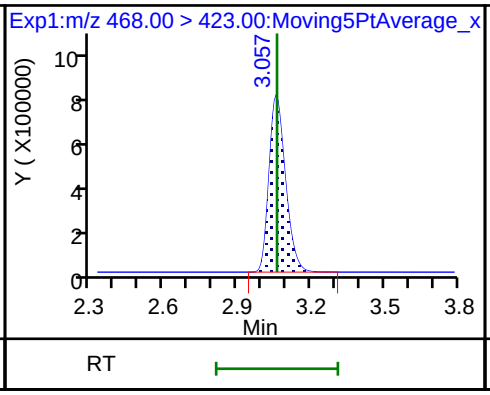
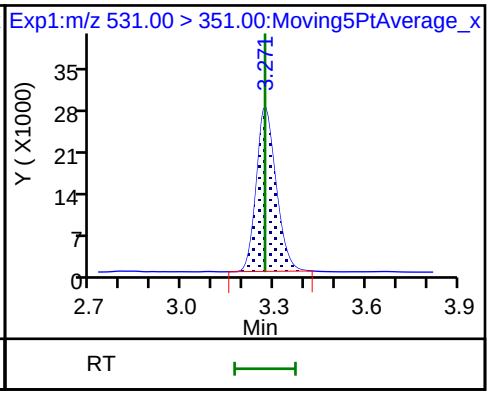
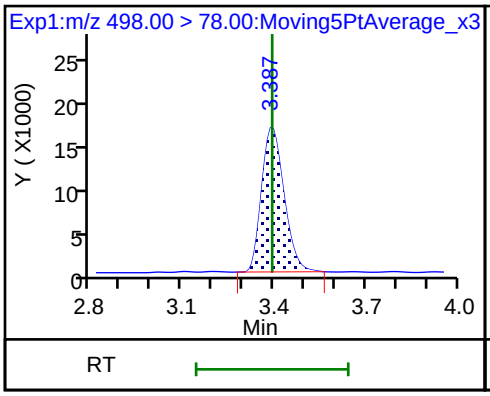


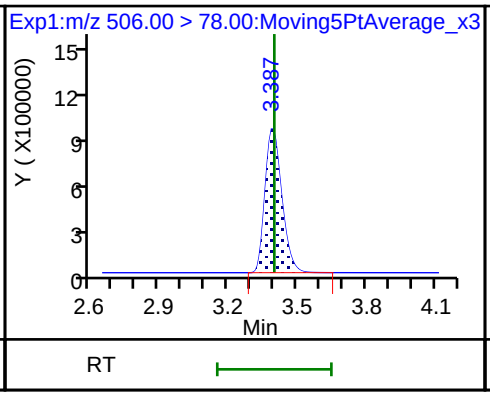
69 9-Chlorohexadecafluoro-3-oxanonane



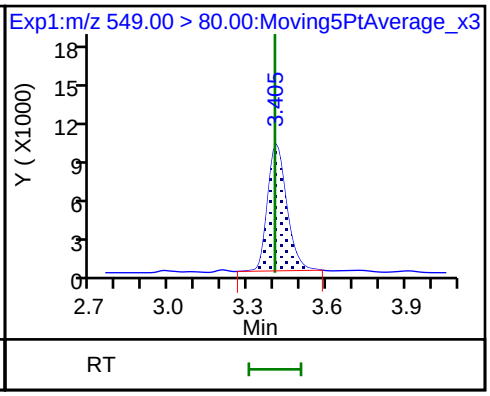
22 Perfluorooctane Sulfonamide



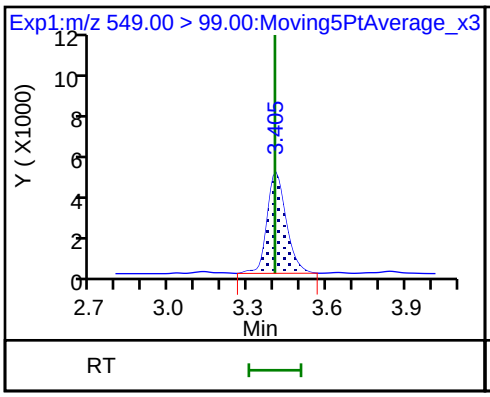
D 21 13C8 FOSA



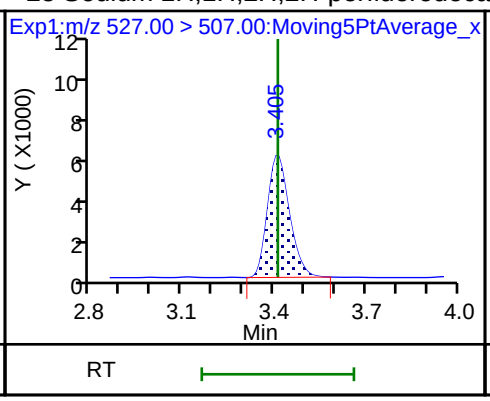
68 Perfluorononanesulfonic acid



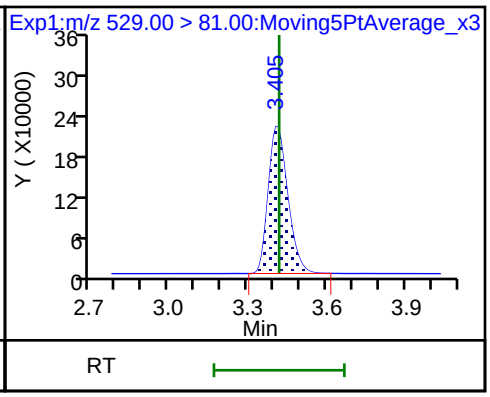
68 Perfluorononanesulfonic acid



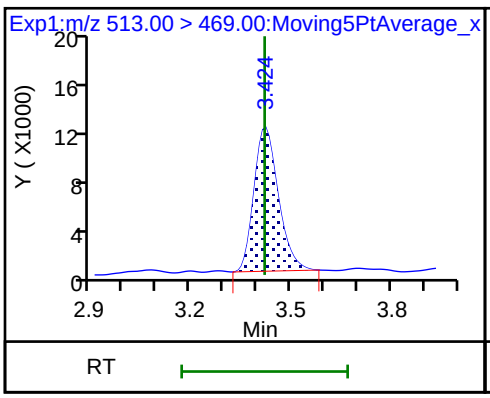
25 Sodium 1H,1H,2H,2H-perfluorodecane



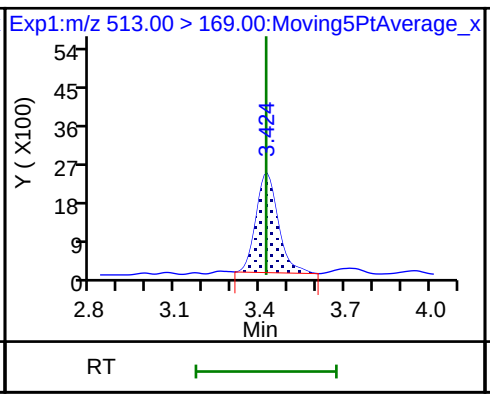
D 26 M2-8:2FTS



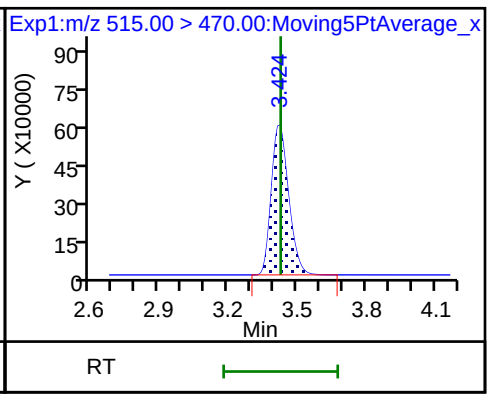
24 Perfluorodecanoic acid



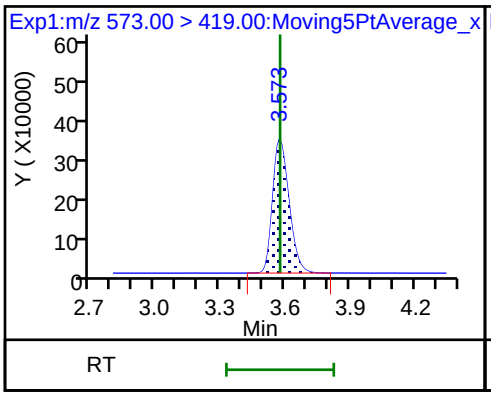
24 Perfluorodecanoic acid



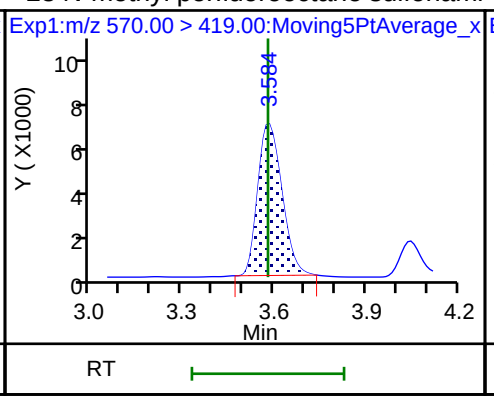
D 23 13C2 PFDA



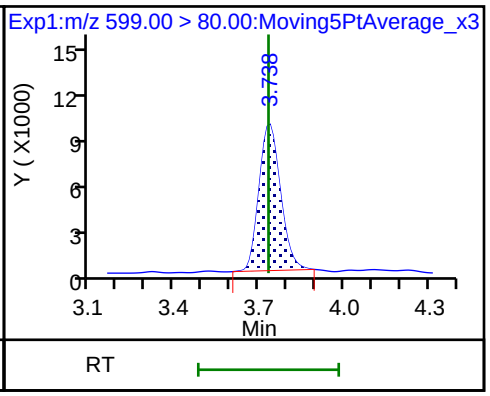
D 27 d3-NMeFOSAA



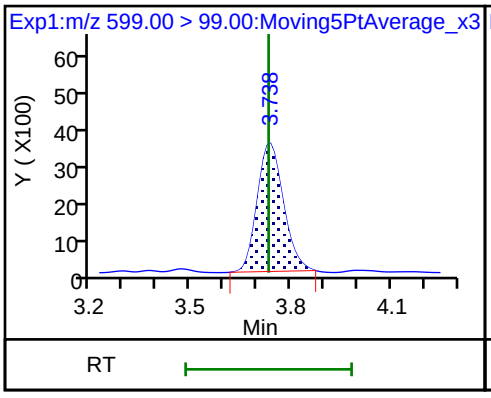
28 N-methyl perfluorooctane sulfonami



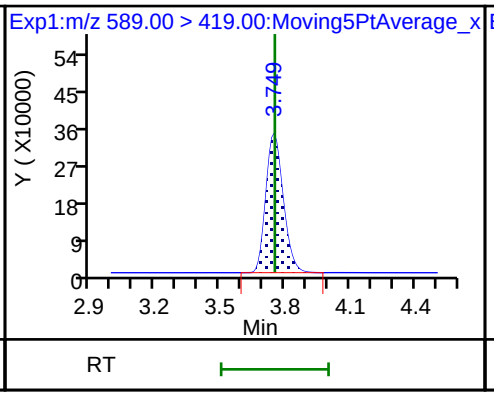
29 Perfluorodecane Sulfonic acid



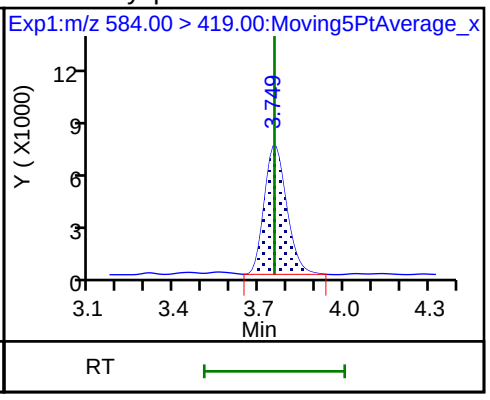
29 Perfluorodecane Sulfonic acid



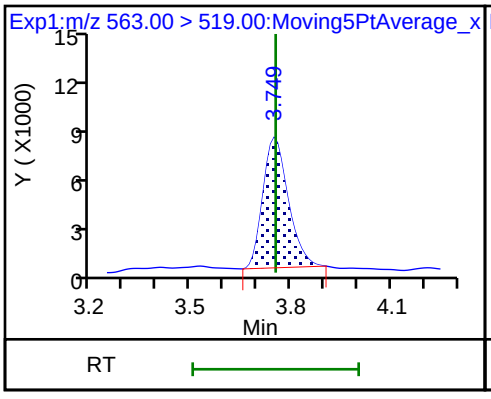
D 32 d5-NEtFOSAA



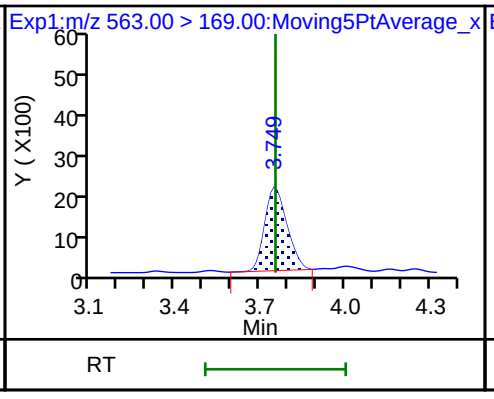
33 N-ethyl perfluorooctane sulfonamid



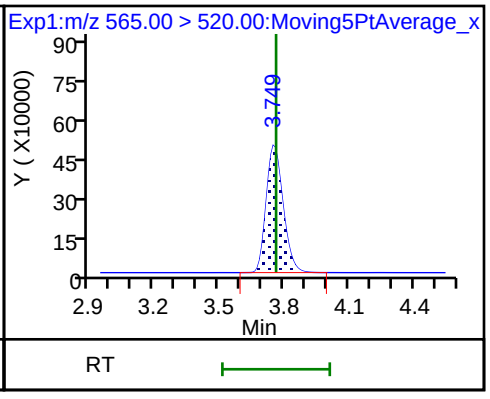
31 Perfluoroundecanoic acid



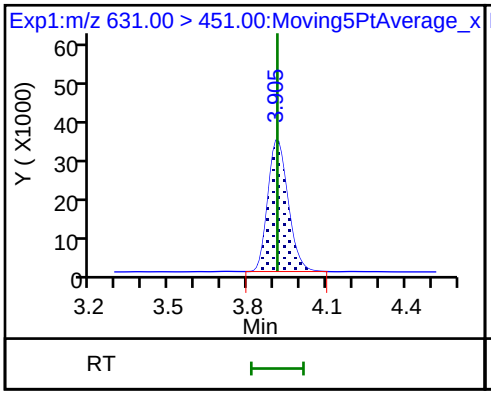
31 Perfluoroundecanoic acid



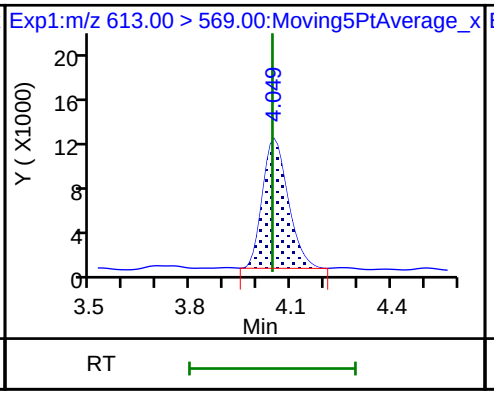
D 30 13C2 PFUnA



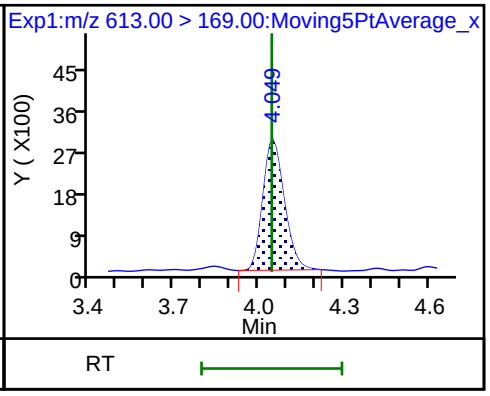
66 11-Chloroeicosafluoro-3-oxaundecan



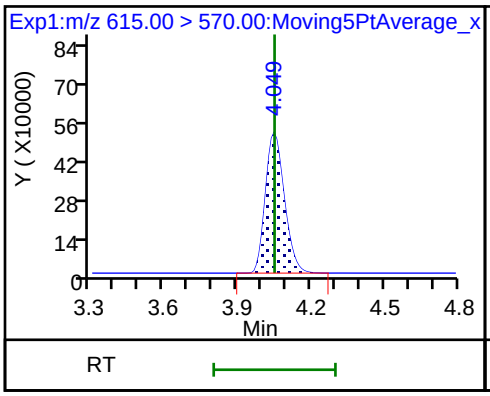
37 Perfluorododecanoic acid



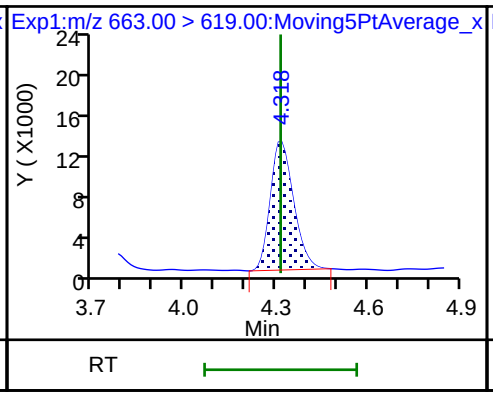
37 Perfluorododecanoic acid



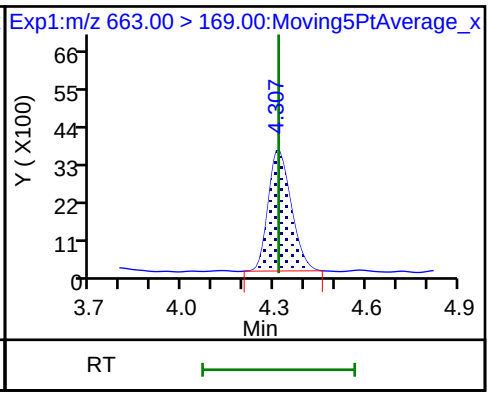
D 36 13C2 PFDoA



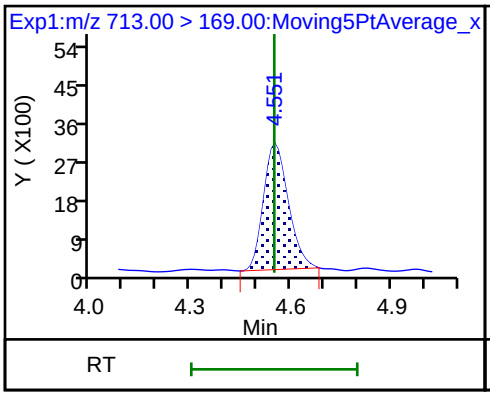
41 Perfluorotridecanoic acid



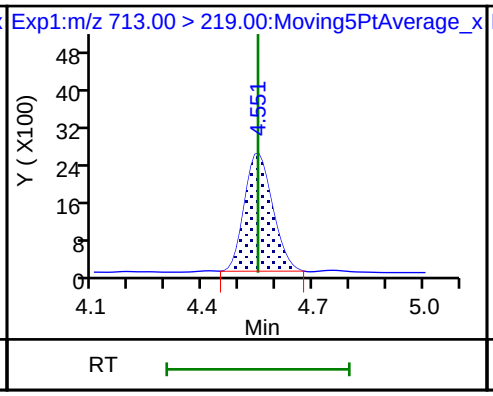
41 Perfluorotridecanoic acid



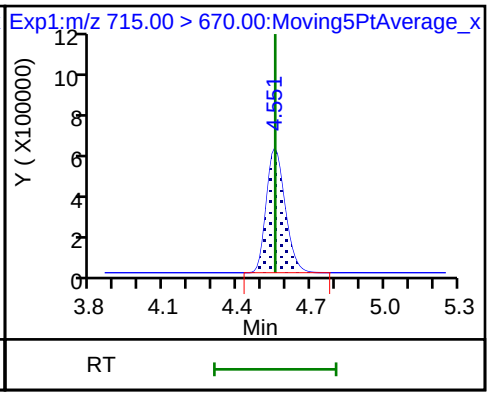
42 Perfluorotetradecanoic acid



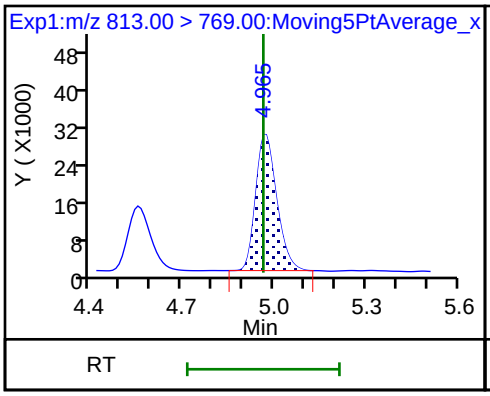
42 Perfluorotetradecanoic acid



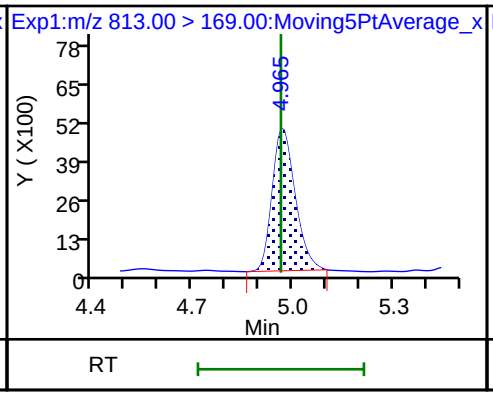
D 43 13C2-PFTeDA



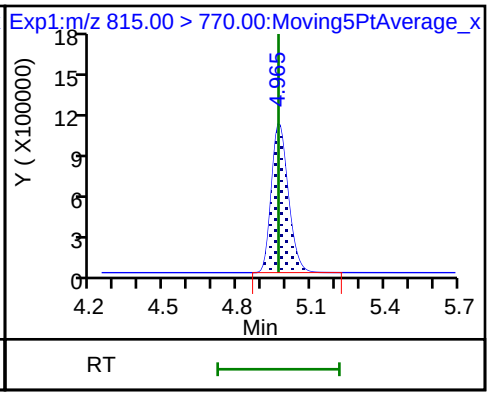
45 Perfluorohexadecanoic acid



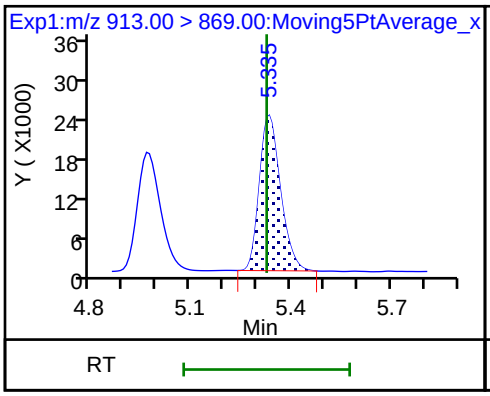
45 Perfluorohexadecanoic acid



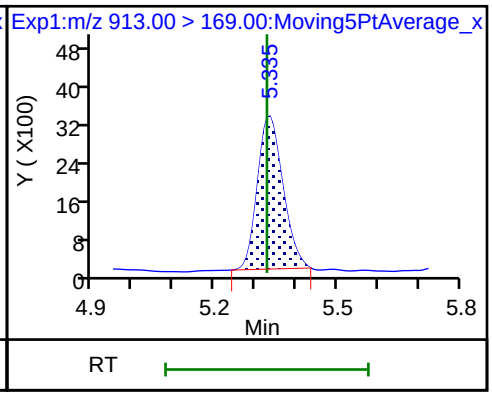
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

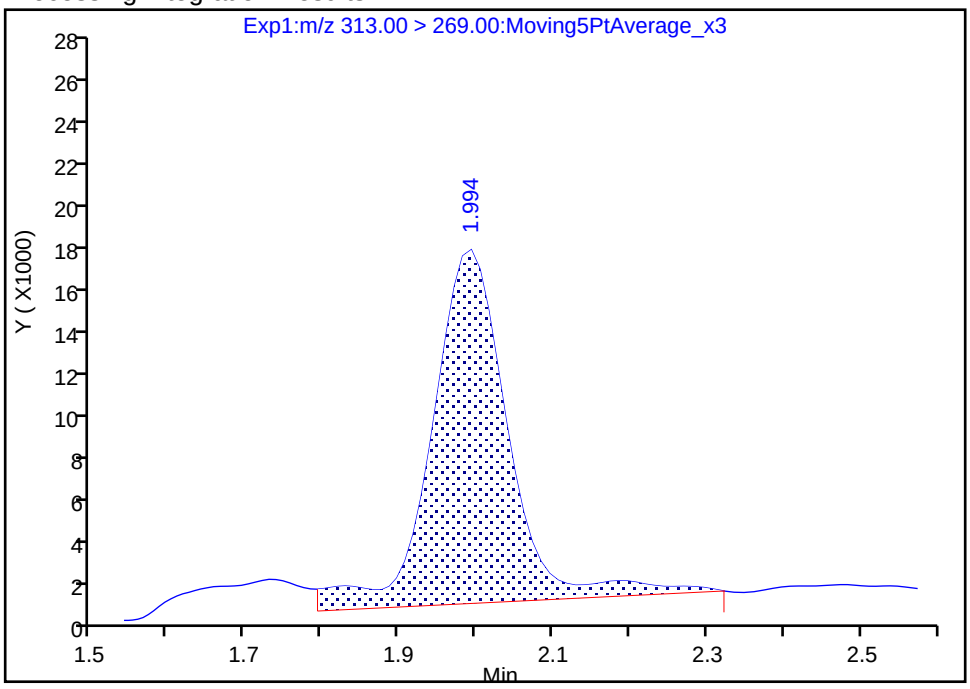
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_004.d
Injection Date: 26-Apr-2018 19:31:05 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

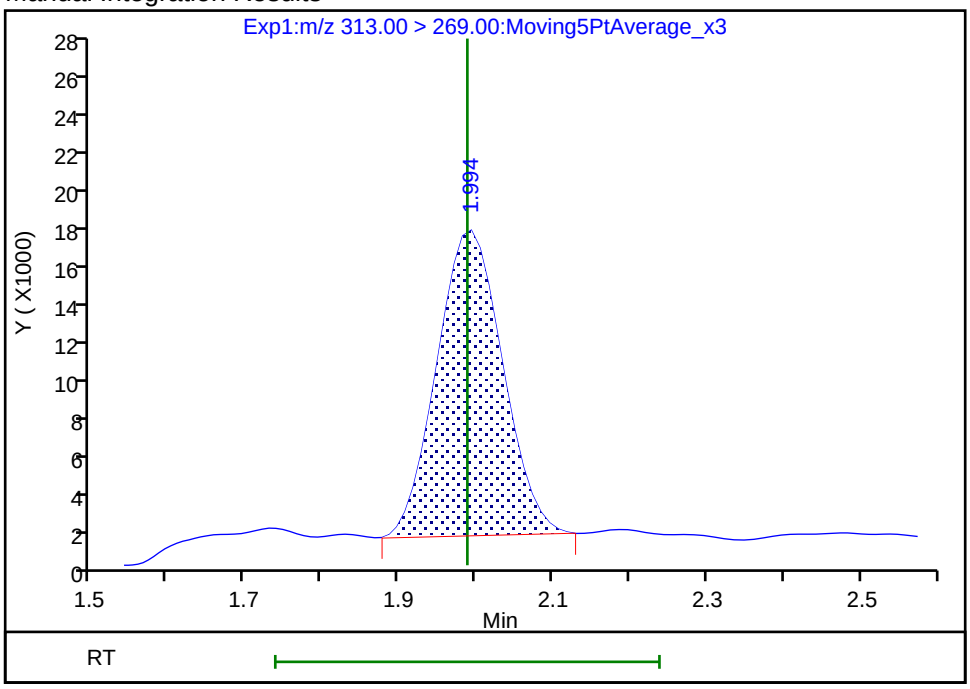
Processing Integration Results

RT: 1.99
Area: 115303
Amount: 0.063881
Amount Units: ng/ml



Manual Integration Results

RT: 1.99
Area: 94057
Amount: 0.052111
Amount Units: ng/ml



Reviewer: hannigana, 27-Apr-2018 09:40:47
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

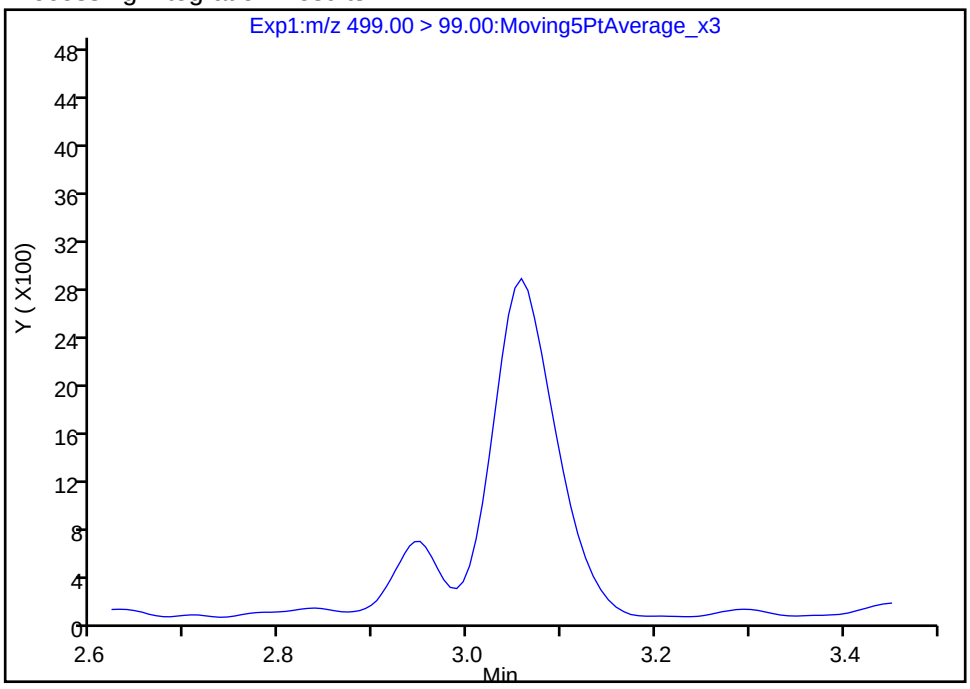
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_004.d
Injection Date: 26-Apr-2018 19:31:05 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

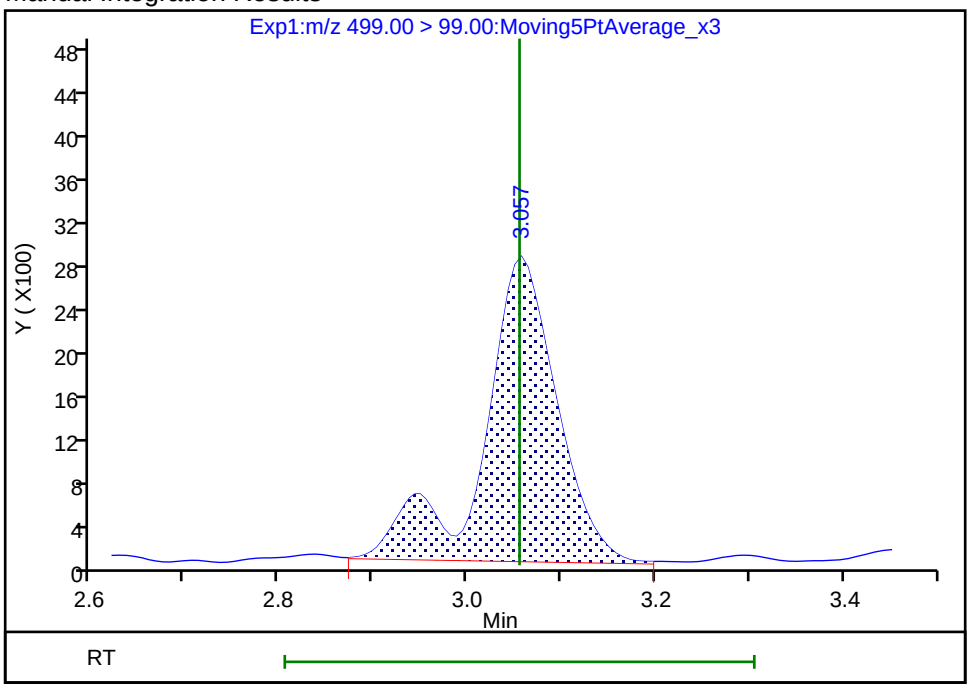
Processing Integration Results

RT: 3.06
Area: 0
Amount: 0.045106
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 15445
Amount: 0.045106
Amount Units: ng/ml



Reviewer: hannigana, 27-Apr-2018 09:41:05
Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-220094/3 Calibration Date: 04/26/2018 19:38

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9582		2.58	2.50	3.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.179		2.47	2.50	-1.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	81.53		2.30	2.21	4.1	50.0
4:2 FTS	AveID	16.03	17.70		2.58	2.34	10.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.083		2.66	2.50	6.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	72.50		2.38	2.35	1.4	50.0
HFPO-DA (GenX)	AveID	2.785	3.042		2.73	2.50	9.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.031		2.58	2.50	3.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.110		2.23	2.28	-2.0	40.0
Adona	AveID	3.464	3.920		2.83	2.50	13.2	50.0
6:2FTS	AveID	1.691	1.628		2.28	2.37	-3.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.141		2.47	2.50	-1.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.400		2.51	2.38	5.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.009		2.42	2.50	-3.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.159		2.47	2.32	6.6	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.954		2.42	2.33	3.7	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	1.021		2.52	2.50	0.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7908		2.37	2.40	-1.1	50.0
8:2FTS	AveID	1.265	1.258		2.38	2.40	-0.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.023		2.48	2.50	-0.8	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	1.036		2.60	2.50	3.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6555		2.43	2.41	1.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.9291		2.49	2.50	-0.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.8167		2.42	2.50	-3.4	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.954		2.39	2.36	1.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	1.035		2.48	2.50	-0.8	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.250		2.57	2.50	2.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2564		2.55	2.50	2.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9673		2.53	2.50	1.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-220094/3 Calibration Date: 04/26/2018 19:38

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9362		2.33	2.50	-6.8	50.0
13C4 PFBA	Ave	1.345	1.373		2.55	2.50	2.1	50.0
13C5 PFPeA	Ave	0.8672	0.8926		2.57	2.50	2.9	50.0
13C3-PFBS	Ave	0.0199	0.0199		2.32	2.33	-0.2	50.0
M2-4:2FTS	Ave	0.1425	0.1494		2.45	2.34	4.8	50.0
13C2 PFHxA	Ave	0.9590	0.9519		2.48	2.50	-0.7	50.0
13C3 HFPO-DA	Ave	0.0593	0.0488		2.06	2.50	-17.8	50.0
13C4-PFHpA	Ave	0.9333	0.9675		2.59	2.50	3.7	50.0
18O2 PFHxS	Ave	1.152	1.121		2.30	2.37	-2.7	50.0
M2-6:2FTS	Ave	0.2000	0.2097		2.49	2.38	4.9	40.0
13C4 PFOA	Ave	0.9276	0.9304		2.51	2.50	0.3	50.0
13C4 PFOS	Ave	0.8066	0.7748		2.30	2.39	-3.9	50.0
13C5 PFNA	Ave	0.7973	0.7981		2.50	2.50	0.1	50.0
13C8 FOSA	Ave	1.007	0.9320		2.31	2.50	-7.5	50.0
M2-8:2FTS	Ave	0.2409	0.2444		2.43	2.40	1.5	40.0
13C2 PFDA	Ave	0.6701	0.6423		2.40	2.50	-4.2	50.0
d3-NMeFOSAA	Ave	0.3798	0.3740		2.46	2.50	-1.5	50.0
d5-NEtFOSAA	Ave	0.3749	0.3800		2.53	2.50	1.4	50.0
13C2 PFUnA	Ave	0.5781	0.5251		2.27	2.50	-9.2	50.0
13C2 PFDoA	Ave	0.6242	0.5731		2.30	2.50	-8.2	50.0
13C2-PFTeDA	Ave	0.7915	0.7001		2.21	2.50	-11.6	50.0
13C2-PFHxDA	Ave	1.288	1.226		2.38	2.50	-4.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_005.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Apr-2018 19:38:53 ALS Bottle#: 14 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCVL5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 09:42:32 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK040

First Level Reviewer: hannigana Date: 27-Apr-2018 09:42:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.439	1.439	0.0	1.000	6239805	2.58		103	4327	
D 1 13C4 PFBA										
217.00 > 172.00	1.439	1.442	-0.003	1.000	6512378	2.55		102	45975	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.699	1.699	0.0	1.000	4992159	2.47		98.9	4874	
D 3 13C5-PFPeA										
267.90 > 223.00	1.699	1.703	-0.004	0.556	4233700	2.57		103	87607	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.735	1.735	0.0	1.000	6788805	2.30		104	21910	
298.90 > 99.00	1.735	1.735	0.0	1.000	2801669		2.42(1.25-3.74)		24088	
D 47 13C3-PFBS										
301.90 > 83.00	1.735	1.739	-0.004	1.000	87598	2.32		99.8	2287	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.946	1.946	0.0	1.000	1557545	2.58		110	66816	
D 60 M2-4:2FTS										
329.00 > 81.00	1.946	1.950	-0.004	1.000	661655	2.45		105	5954	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.988	1.988	0.0	1.000	4888814	2.66		107	6359	
313.00 > 119.00	1.988	1.988	0.0	1.000	434580		11.25(5.03-15.10)		6002	
D 7 13C2 PFHxA										
315.00 > 270.00	1.988	1.994	-0.006	1.000	4514608	2.48		99.3	93774	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.011	2.011	0.0	1.000	6405119	2.38		101	40617	
349.00 > 99.00	2.011	2.011	0.0	1.000	2360688		2.71(1.36-4.07)		29908	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.084	-0.005	1.000	231380	2.06		82.2	5347	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.090	0.0	1.005	703960	2.73		109	4665	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.316	2.316	0.0	1.000	4732342	2.58		103	6341	
363.00 > 169.00	2.316	2.316	0.0	1.000	1801821		2.63(1.13-3.40)		8817	
D 9 13C4-PFHpA										
367.00 > 322.00	2.316	2.322	-0.006	1.000	4588818	2.59		104	72084	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.329	2.329	0.0	1.000	5366934	2.23		98.0	11754	
399.00 > 99.00	2.329	2.329	0.0	1.000	1745282		3.08(1.50-4.49)		9914	
D 11 18O2 PFHxS										
403.00 > 84.00	2.329	2.335	-0.006	1.000	5028245	2.30		97.3	49288	
65 Adona										
377.00 > 251.00	2.369	2.369	0.0	1.000	14406766	2.83		113	88569	
377.00 > 85.00	2.369	2.369	0.0	1.000	8514495		1.69(0.84-2.53)		75972	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.659	2.659	0.0	1.003	1535014	2.28		96.3	21901	
D 12 M2-6:2FTS										
429.00 > 81.00	2.651	2.661	-0.010	1.000	944810	2.49		105	10437	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.681	2.681	0.0	1.000	5035498	2.47		98.8	3550	
413.00 > 169.00	2.681	2.681	0.0	1.000	2562953		1.96(0.84-2.52)		7563	
* 62 13C2-PFOA										
415.00 > 370.00	2.681	2.681	0.0		4742897	2.50			59349	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.683	-0.002	1.000	4412580	2.51		100	61621	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.689	2.689	0.0	1.000	4898056	2.51		105	19839	
449.00 > 99.00	2.689	2.689	0.0	1.000	1317387		3.72(1.94-5.82)		19431	
20 Perfluorononanoic acid										
463.00 > 419.00	3.055	3.055	0.0	1.000	3818584	2.42		96.7	11470	
463.00 > 169.00	3.055	3.055	0.0	1.000	923325		4.14(1.90-5.69)		22004	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.055	3.055	0.0	1.000	3954088	2.47		107	10582	M
499.00 > 99.00	3.055	3.055	0.0	1.000	831866		4.75(2.31-6.93)		13266	
D 18 13C4 PFOS										
503.00 > 80.00	3.055	3.061	-0.006	1.000	3513180	2.30		96.1	20783	
D 19 13C5 PFNA										
468.00 > 423.00	3.055	3.061	-0.006	1.000	3785371	2.50		100	92697	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.269	3.269	0.0	1.000	6694025	2.42		104	79342	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.393	3.393	0.0	1.000	4512360	2.52		101	44729	
D 21 13C8 FOSA										
506.00 > 78.00	3.393	3.400	-0.007	1.000	4420122	2.31		92.5	36133	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.402	3.402	0.0	1.000	2789787	2.37		98.9	18463	
549.00 > 99.00	3.402	3.402	0.0	1.000	990684		2.82(1.33-3.97)		17233	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.411	3.411	0.0	1.000	1397218	2.38		99.4	44666	
D 26 M2-8:2FTS										
529.00 > 81.00	3.411	3.418	-0.007	1.000	1110349	2.43		101	9781	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.421	3.421	0.0	1.000	3117095	2.48		99.2	12150	
513.00 > 169.00	3.421	3.421	0.0	1.000	538107		5.79(2.36-7.09)		9469	
D 23 13C2 PFDA										
515.00 > 470.00	3.421	3.427	-0.006	1.000	3046142	2.40		95.8	54345	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.570	3.576	-0.006	1.000	1773829	2.46		98.5	17589	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.579	3.579	0.0	1.003	1837517	2.60		104	12283	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.732	3.732	0.0	1.000	2321968	2.43		101	17058	
599.00 > 99.00	3.732	3.732	0.0	1.000	800143		2.90(1.39-4.16)		18257	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.743	3.752	-0.009	1.000	1802061	2.53		101	24867	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.754	3.754	0.0	1.003	1674274	2.49		99.4	25288	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.754	3.754	0.0	1.000	2033823	2.42		96.6	11393	
563.00 > 169.00	3.754	3.754	0.0	1.000	500895		4.06(2.12-6.36)		8972	
D 30 13C2 PFUnA										
565.00 > 520.00	3.754	3.762	-0.008	1.000	2490437	2.27		90.8	50338	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.911	3.911	0.0	1.000	10226800	2.39		101	96916	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.044	4.044	0.0	1.000	2811707	2.48		99.2	3954	
613.00 > 169.00	4.044	4.044	0.0	1.000	716997		3.92(2.13-6.40)		8401	
D 36 13C2 PFDoA										
615.00 > 570.00	4.044	4.051	-0.007	1.000	2717938	2.30		91.8	21383	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.314	4.314	0.0	1.000	3397662	2.57		103	4158	
663.00 > 169.00	4.303	4.314	-0.011	0.997	1021542		3.33(1.25-3.76)		10061	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.550	4.550	0.0	1.000	851411	2.55		102	6529	
713.00 > 219.00	4.539	4.550	-0.011	0.998	609763		1.40(0.71-2.13)		7673	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.550	4.553	-0.003	1.000	3320460	2.21		88.4	26364	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.964	4.964	0.0	1.000	5626339	2.53		101	2414	
813.00 > 169.00	4.964	4.964	0.0	1.000	918463		6.13(2.86-8.58)		5226	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.964	4.967	-0.003	1.000	5816370	2.38		95.2	18021	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.327	5.327	0.0	1.000	5445397	2.33		93.2	1816	
913.00 > 169.00	5.327	5.327	0.0	1.000	678907		8.02(3.83-11.48)		3871	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 09:42:33 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_005.d

Injection Date: 26-Apr-2018 19:38:53 Instrument ID: A8_N

Lims ID: CCV L5

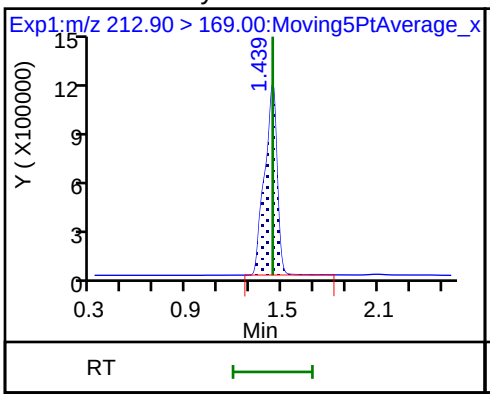
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 3

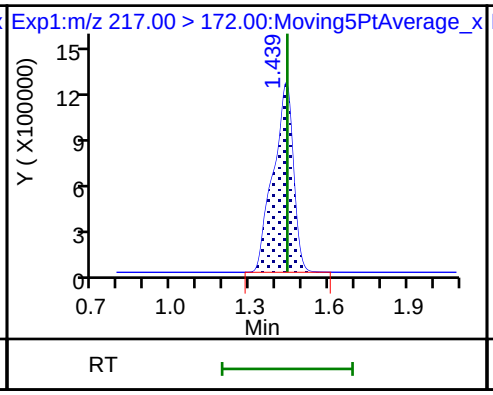
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

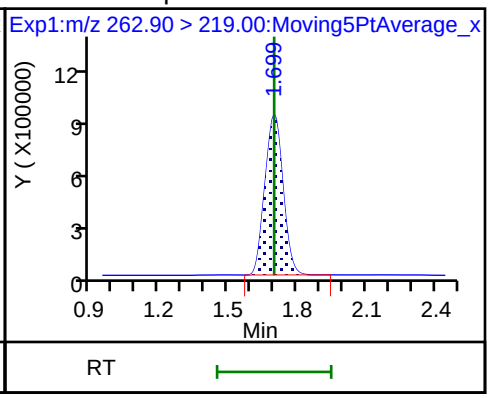
2 Perfluorobutyric acid



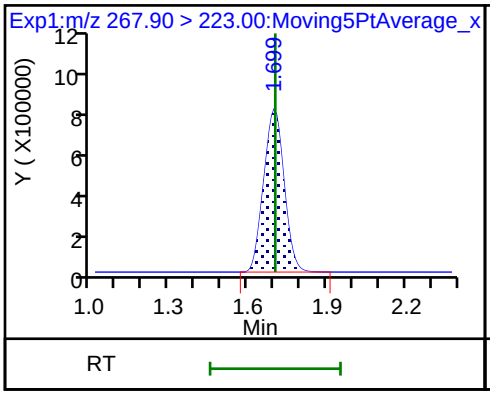
D 1 13C4 PFBA



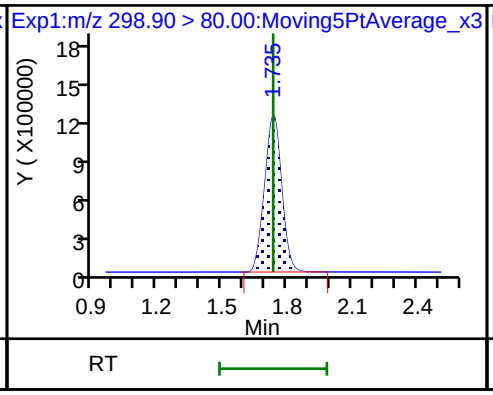
4 Perfluoropentanoic acid



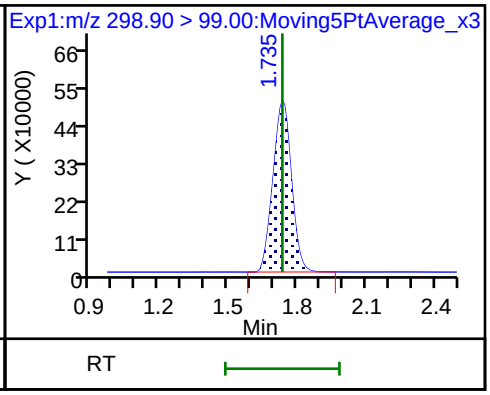
D 3 13C5-PFPeA



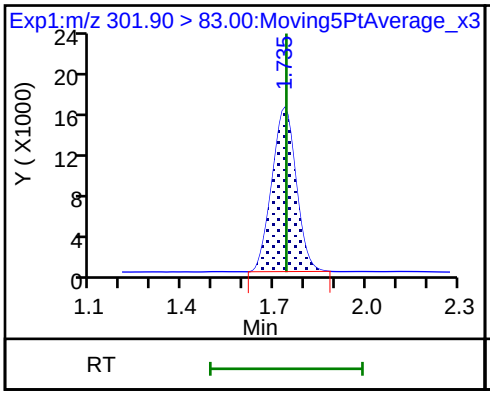
5 Perfluorobutanesulfonic acid



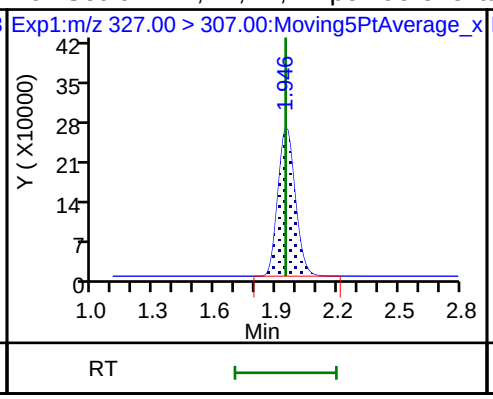
5 Perfluorobutanesulfonic acid



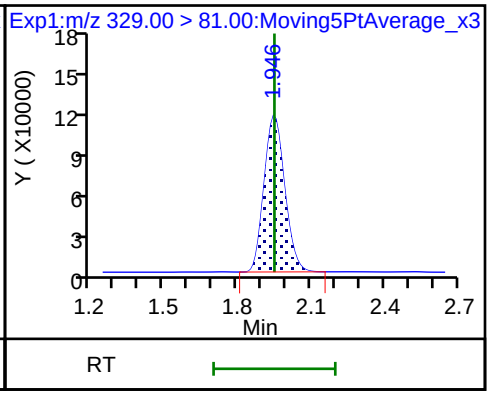
D 47 13C3-PFBS



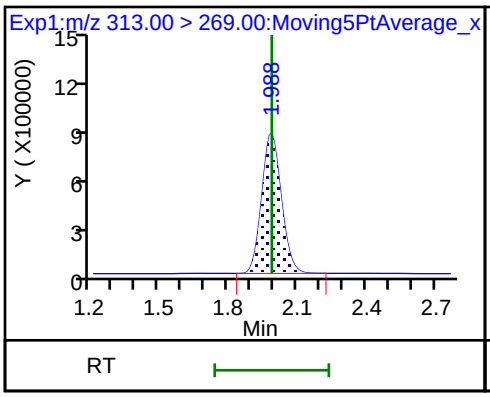
61 Sodium 1H,1H,2H,2H-perfluorohexa



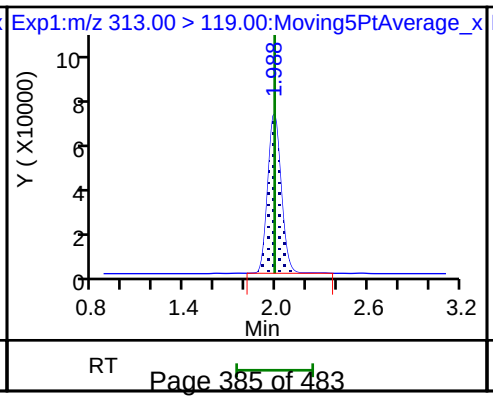
D 60 M2-4:2FTS



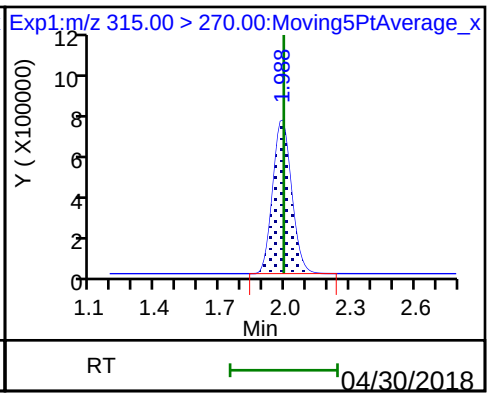
6 Perfluorohexanoic acid



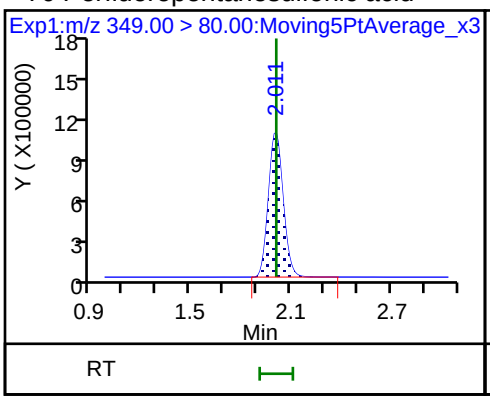
6 Perfluorohexanoic acid



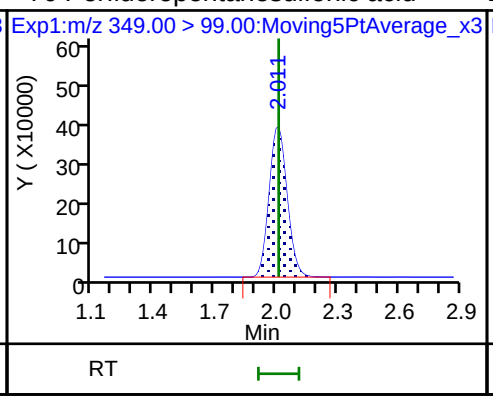
D 7 13C2 PFHxA



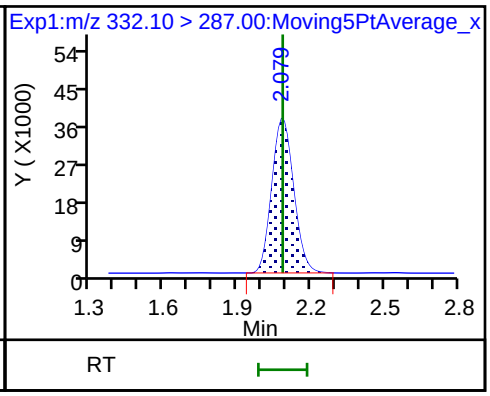
70 Perfluoropentanesulfonic acid



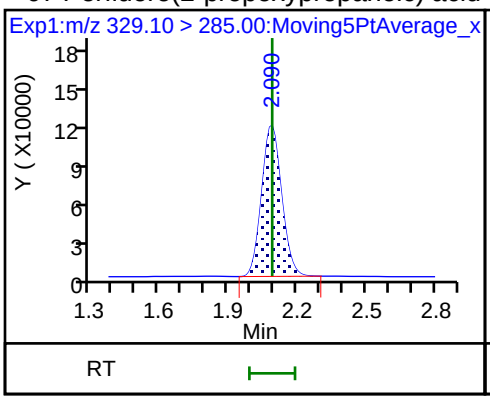
70 Perfluoropentanesulfonic acid



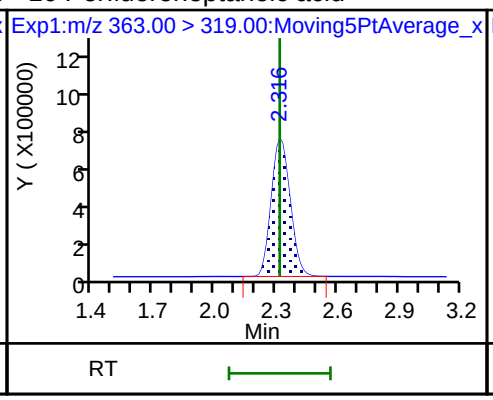
D 64 13C3 HFPO-DA



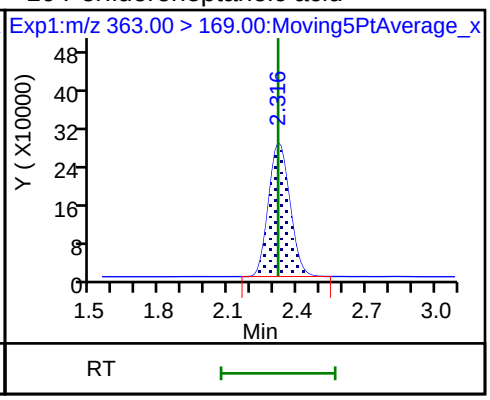
67 Perfluoro(2-propoxypropanoic) acid



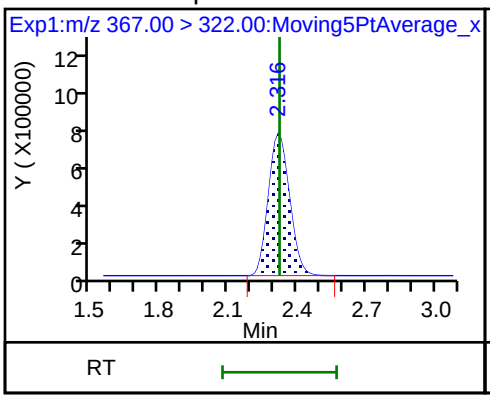
10 Perfluoroheptanoic acid



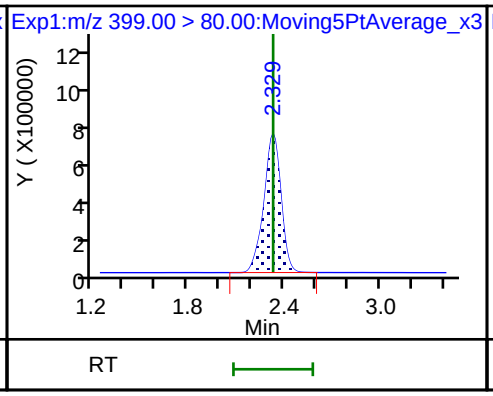
10 Perfluoroheptanoic acid



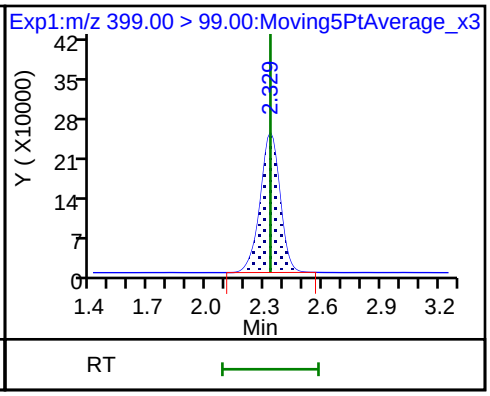
D 9 13C4-PFHpA



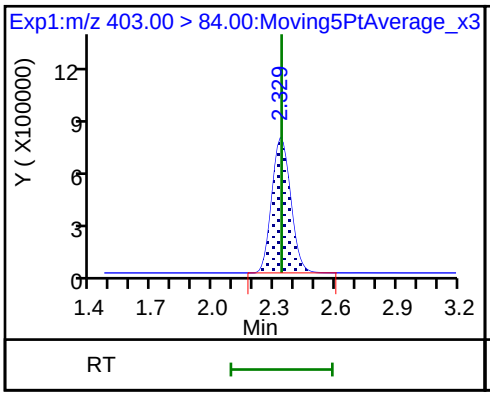
8 Perfluorohexanesulfonic acid



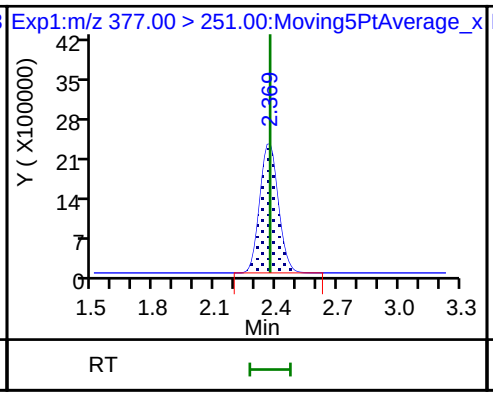
8 Perfluorohexanesulfonic acid



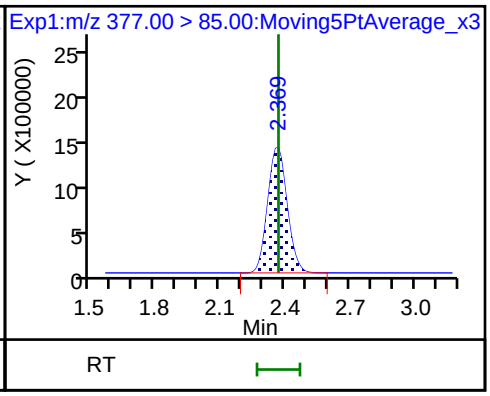
D 11 18O2 PFHxS



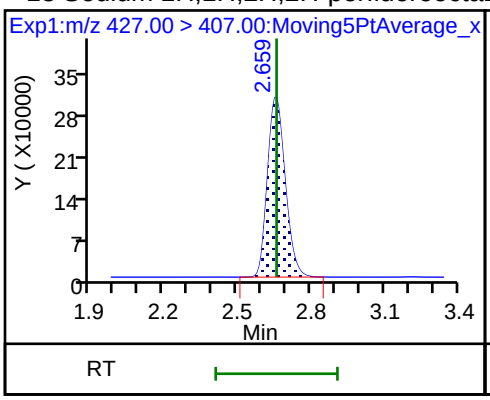
65 Adona



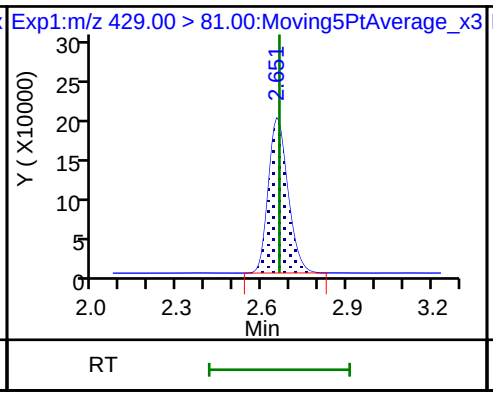
65 Adona



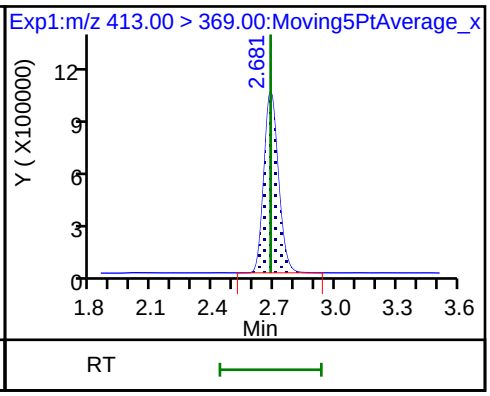
13 Sodium 1H,1H,2H,2H-perfluorooctane



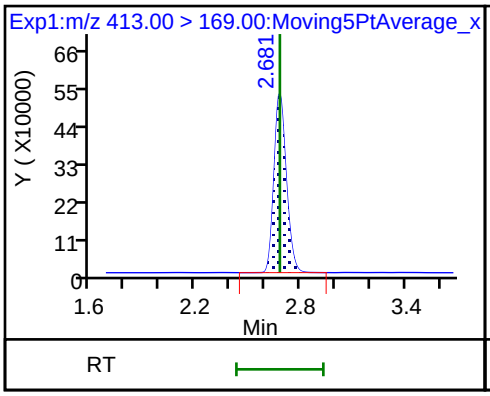
D 12 M2-6:2FTS



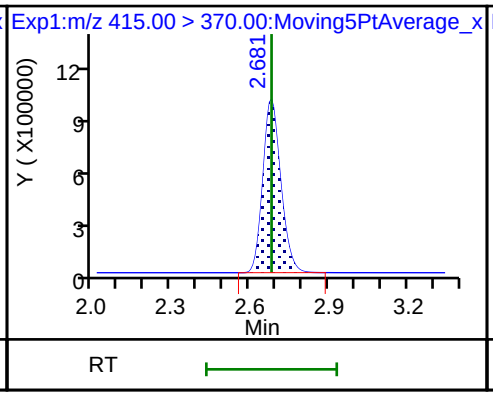
15 Perfluorooctanoic acid



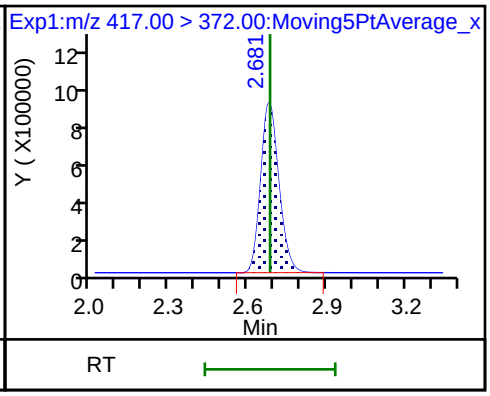
15 Perfluorooctanoic acid



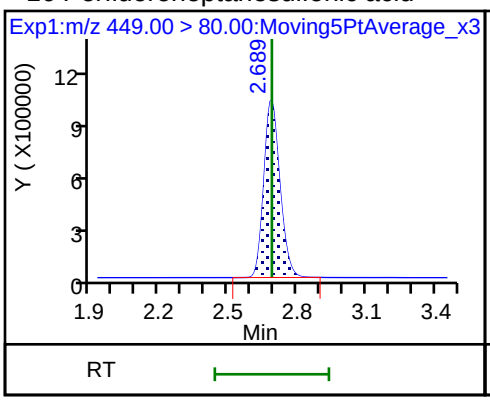
* 62 13C2-PFOA



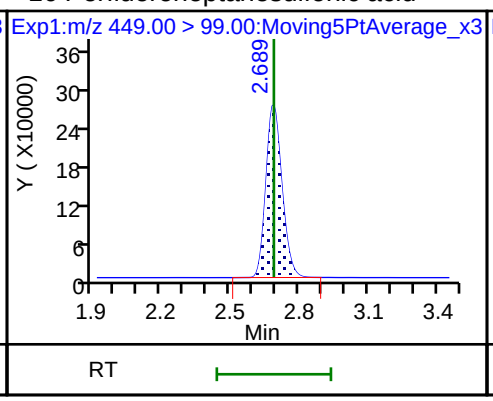
D 14 13C4 PFOA



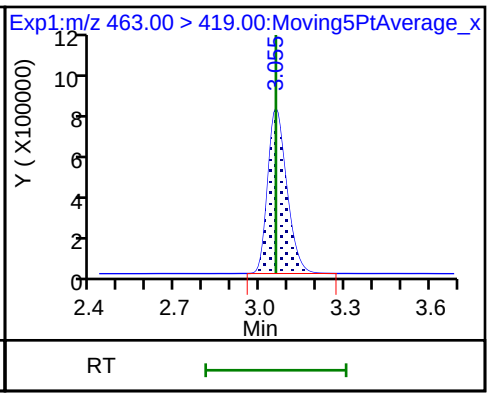
16 Perfluoroheptanesulfonic acid



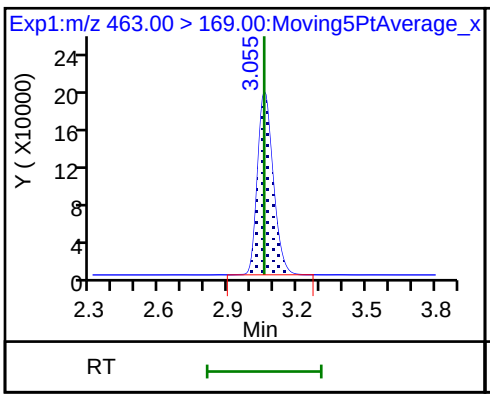
16 Perfluoroheptanesulfonic acid



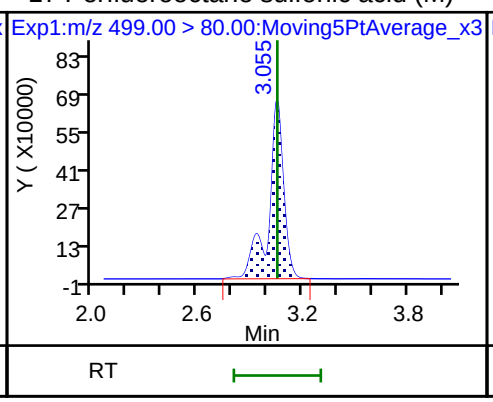
20 Perfluorononanoic acid



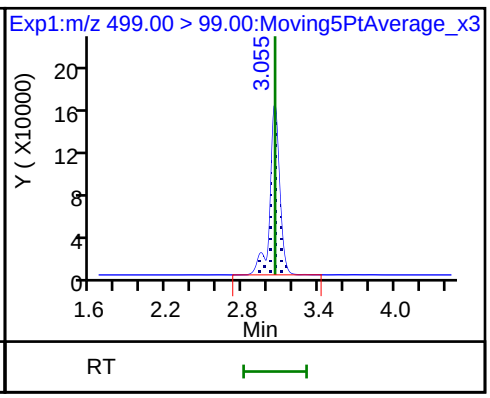
20 Perfluorononanoic acid



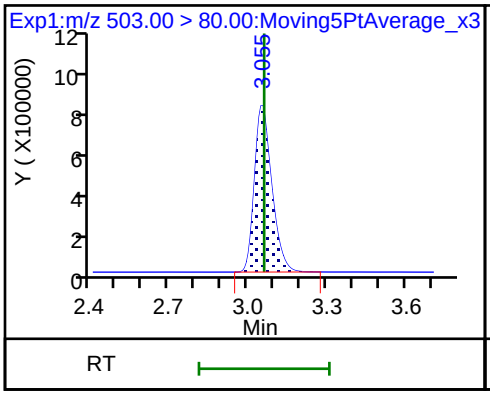
17 Perfluorooctane sulfonic acid (M)



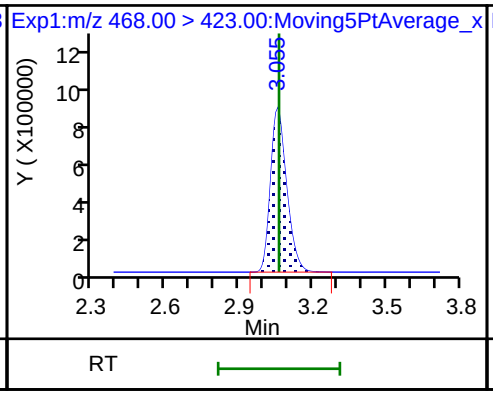
17 Perfluorooctane sulfonic acid



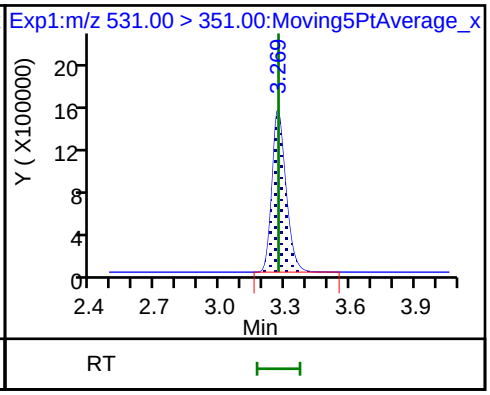
D 18 13C4 PFOS



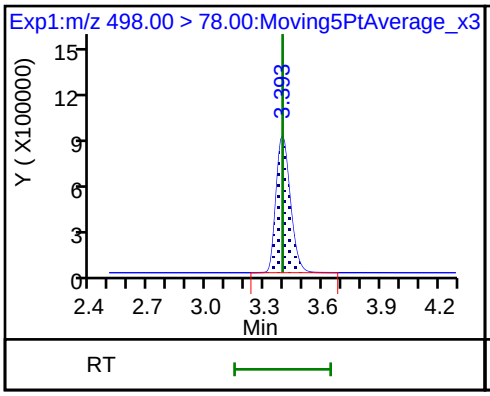
D 19 13C5 PFNA



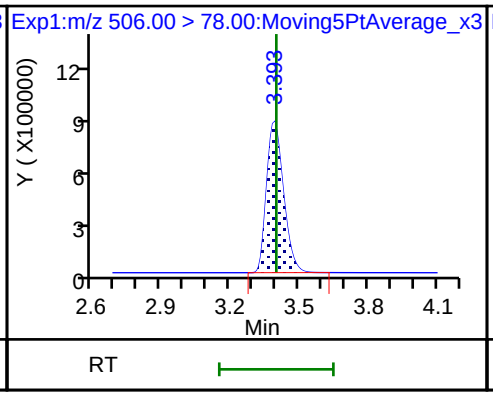
69 9-Chlorohexadecafluoro-3-oxanonane



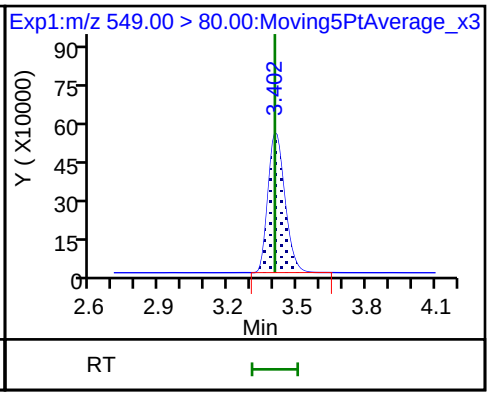
22 Perfluorooctane Sulfonamide



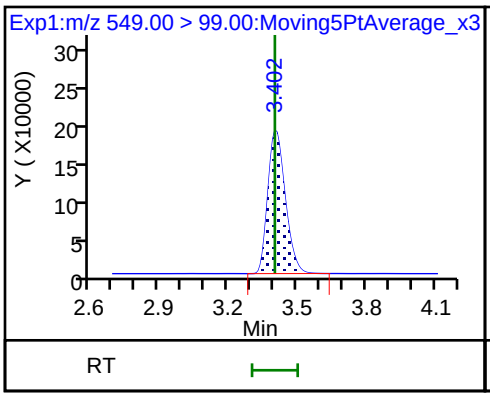
D 21 13C8 FOSA



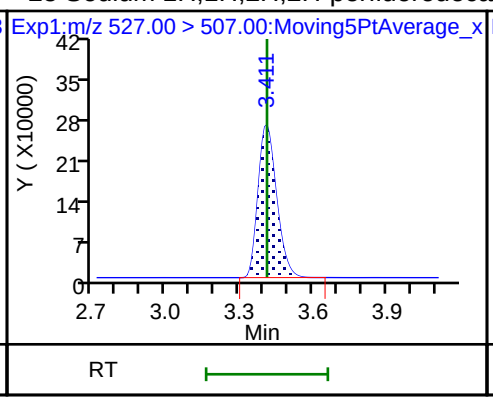
68 Perfluorononanesulfonic acid



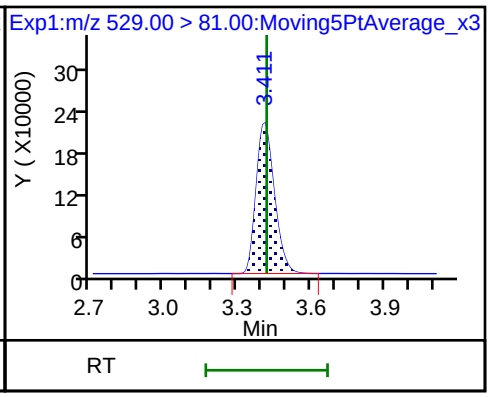
68 Perfluorononanesulfonic acid



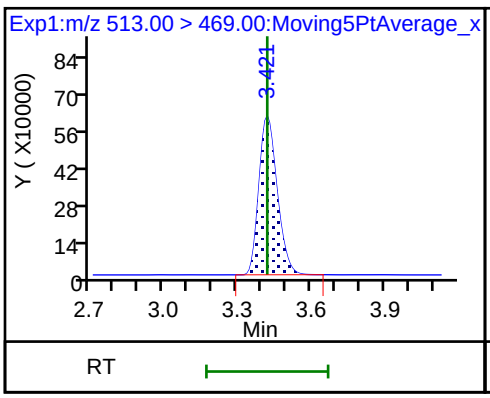
25 Sodium 1H,1H,2H,2H-perfluorodecane



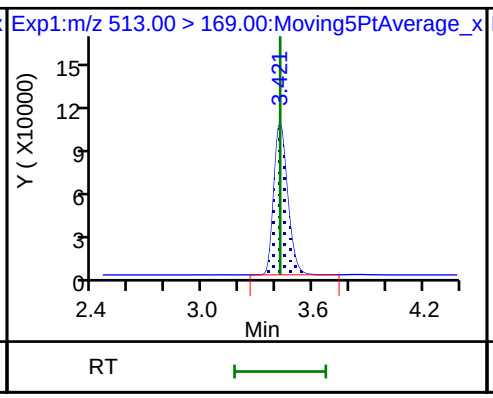
D 26 M2-8:2FTS



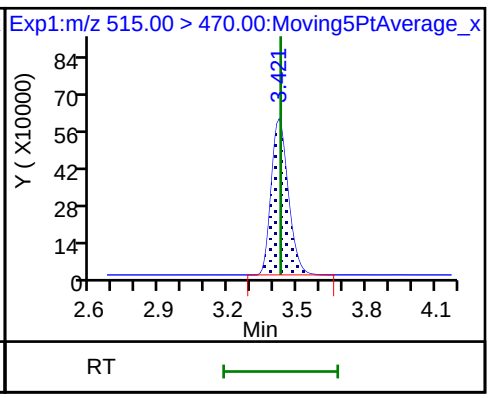
24 Perfluorodecanoic acid



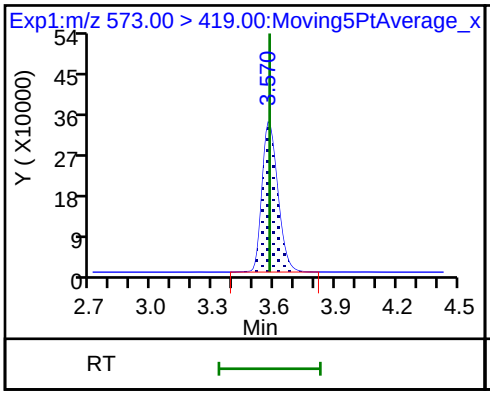
24 Perfluorodecanoic acid



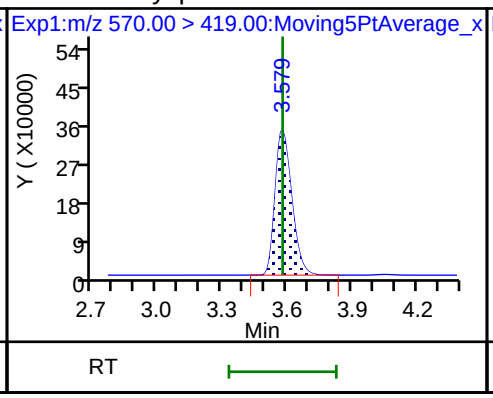
D 23 13C2 PFDA



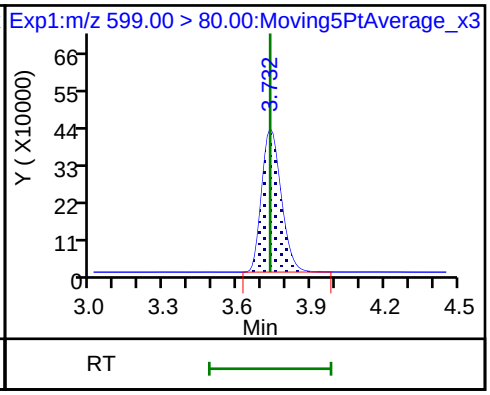
D 27 d3-NMeFOSAA



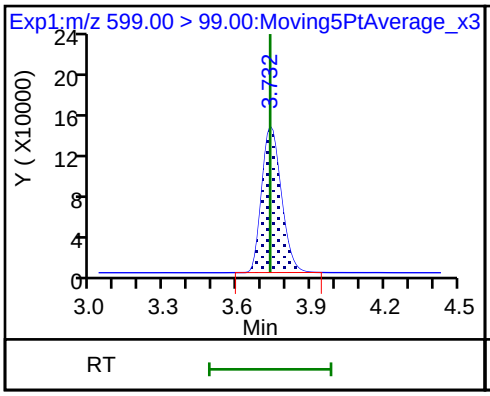
28 N-methyl perfluorooctane sulfonami



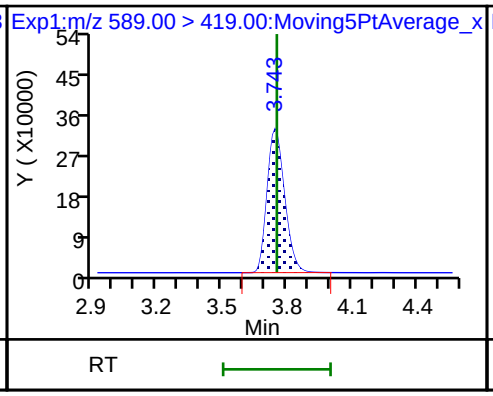
29 Perfluorodecane Sulfonic acid



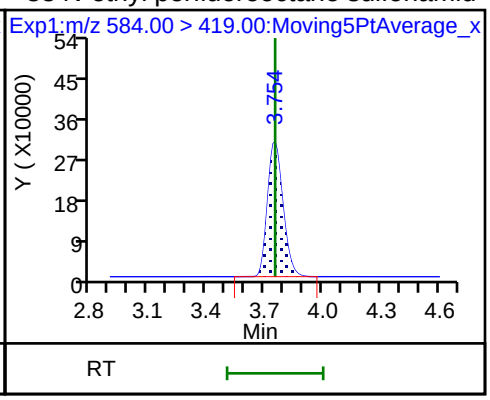
29 Perfluorodecane Sulfonic acid



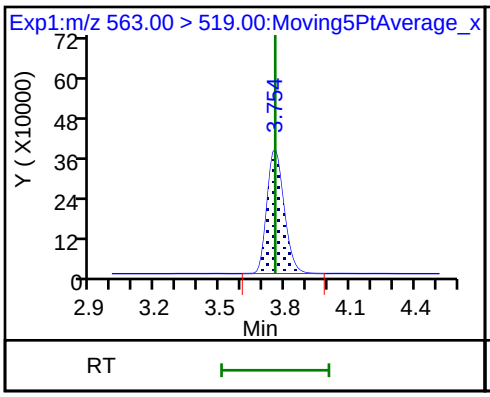
D 32 d5-NEtFOSAA



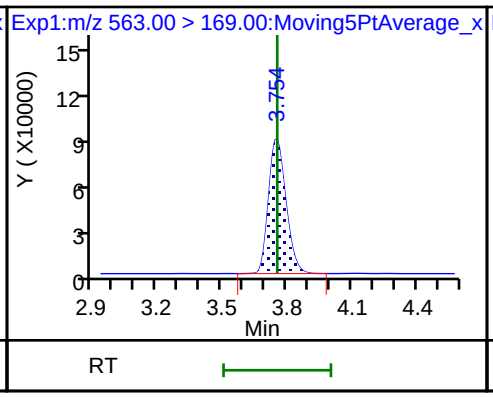
33 N-ethyl perfluorooctane sulfonamid



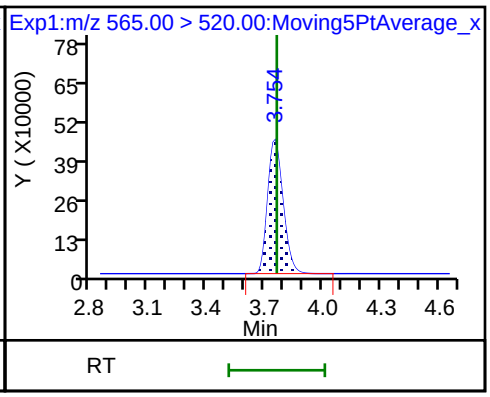
31 Perfluoroundecanoic acid



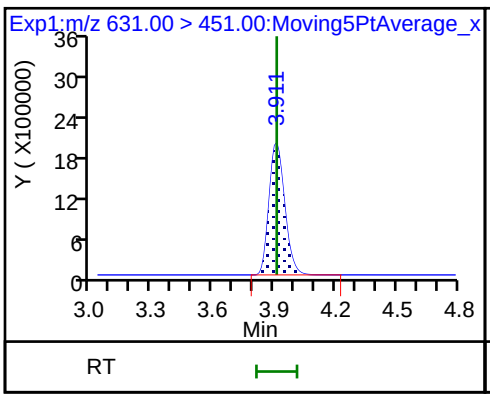
31 Perfluoroundecanoic acid



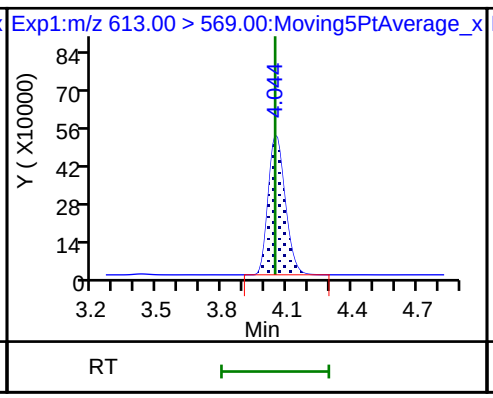
D 30 13C2 PFUnA



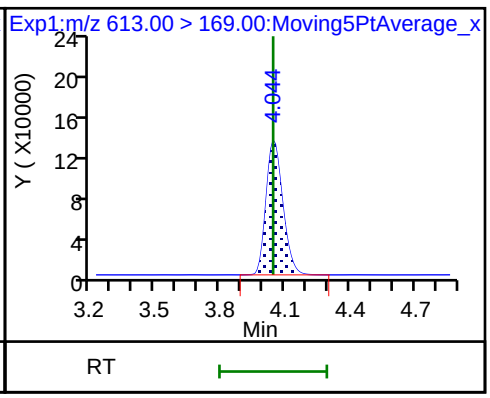
66 11-Chloroeicosafluoro-3-oxaundecan



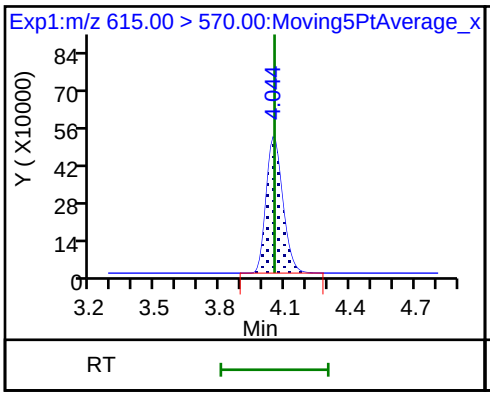
37 Perfluorododecanoic acid



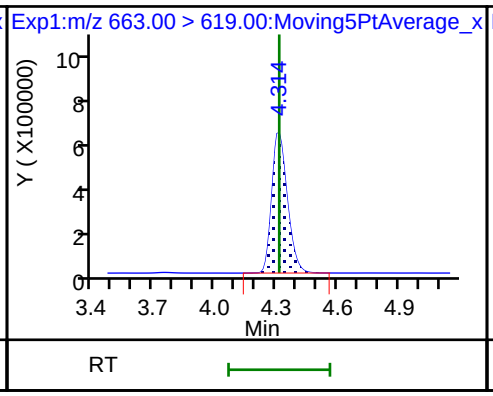
37 Perfluorododecanoic acid



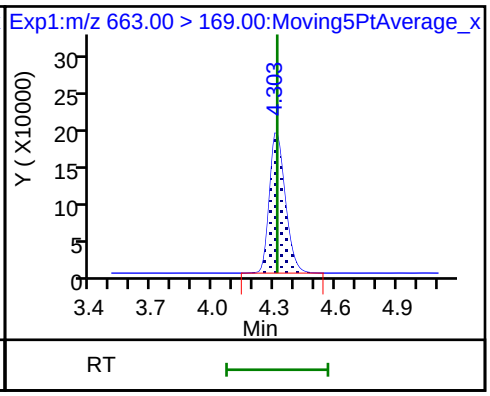
D 36 13C2 PFDoA



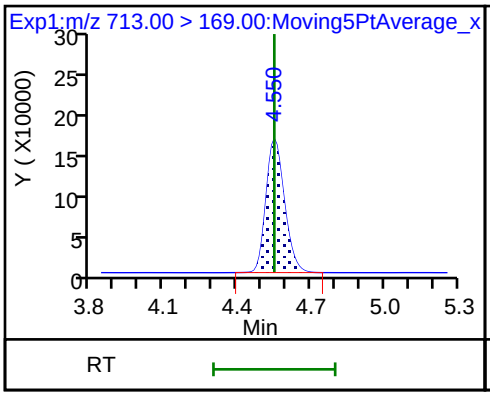
41 Perfluorotridecanoic acid



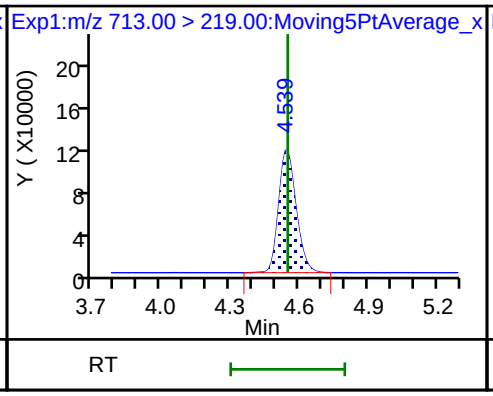
41 Perfluorotridecanoic acid



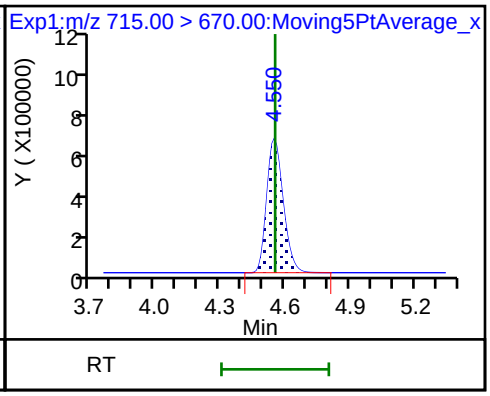
42 Perfluorotetradecanoic acid



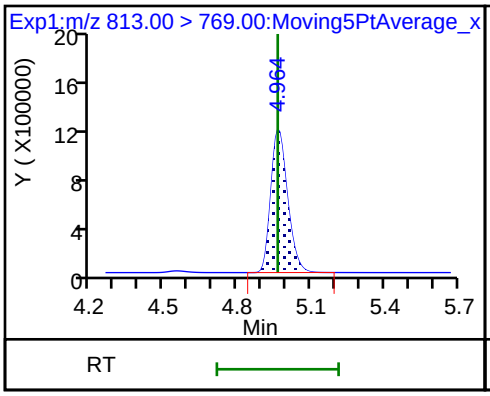
42 Perfluorotetradecanoic acid



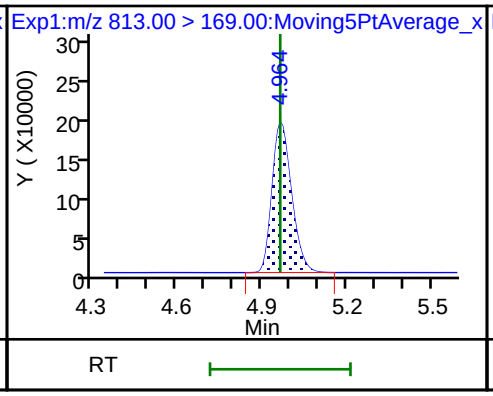
D 43 13C2-PFTeDA



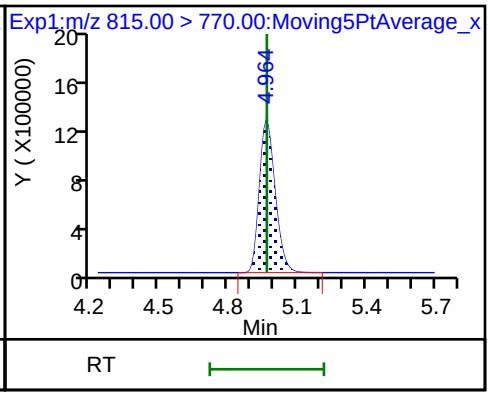
45 Perfluorohexadecanoic acid



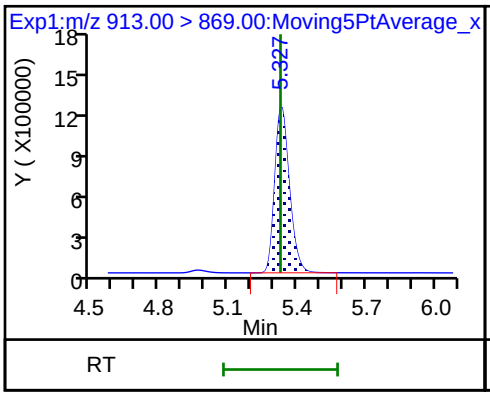
45 Perfluorohexadecanoic acid



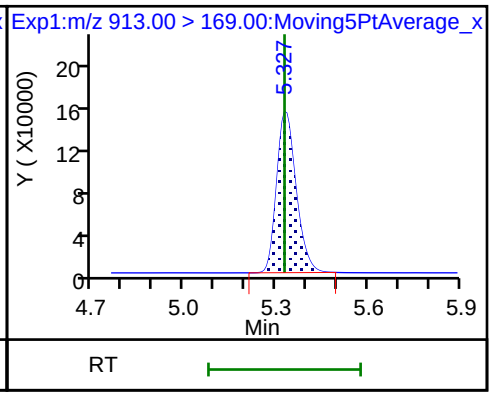
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

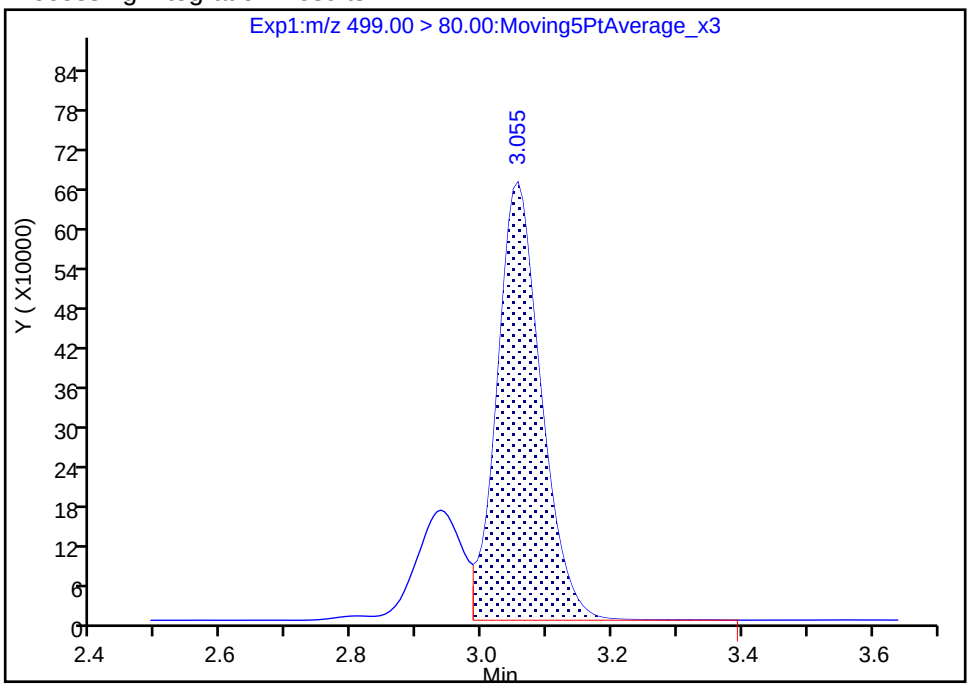
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_005.d
Injection Date: 26-Apr-2018 19:38:53 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

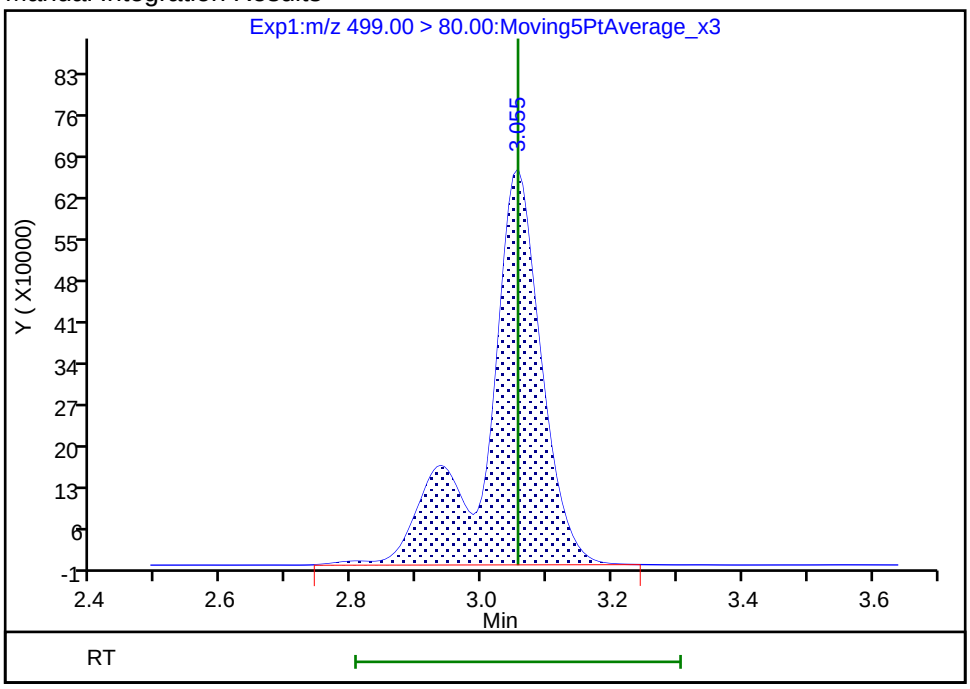
Processing Integration Results

RT: 3.06
Area: 3122086
Amount: 1.952446
Amount Units: ng/ml



Manual Integration Results

RT: 3.06
Area: 3954088
Amount: 2.472752
Amount Units: ng/ml



Reviewer: hannigana, 27-Apr-2018 09:41:58
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-220094/14 Calibration Date: 04/26/2018 21:05

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLB_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9286	0.9186		0.989	1.00	-1.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.192	1.146		0.961	1.00	-3.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.29	78.30		0.884	0.884	0.0	50.0
4:2 FTS	AveID	16.03	17.10		0.996	0.934	6.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.000		0.984	1.00	-1.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	71.51	71.81		0.942	0.938	0.4	50.0
HFPO-DA (GenX)	AveID	2.785	2.881		1.03	1.00	3.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.001	1.079		1.08	1.00	7.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.132	1.006		0.809	0.910	-11.1	40.0
Adona	AveID	3.464	3.704		1.07	1.00	6.9	50.0
6:2FTS	AveID	1.691	1.675		0.939	0.948	-0.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.155	1.123		0.972	1.00	-2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.328	1.272		0.912	0.952	-4.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.043	1.044		1.00	1.00	0.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.070		0.913	0.928	-1.6	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonate	AveID	1.885	1.761		0.870	0.932	-6.6	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	1.012	0.9638		0.953	1.00	-4.7	40.0
8:2FTS	AveID	1.265	1.241		0.940	0.958	-1.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7994	0.7189		0.863	0.960	-10.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.032	1.007		0.976	1.00	-2.4	40.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.997	0.9714		0.974	1.00	-2.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6492	0.6335		0.941	0.964	-2.4	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9345	0.8722		0.933	1.00	-6.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8451	0.7727		0.914	1.00	-8.6	40.0
11-Chloroeicosafluoro-3-oxau ndecane-1-sulfonate	AveID	2.912	2.869		0.928	0.942	-1.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.043	0.9582		0.919	1.00	-8.1	40.0
Perfluorotridecanoic Acid (PFTriA)	AveID	1.215	1.128		0.928	1.00	-7.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2511	0.2476		0.986	1.00	-1.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8888		0.916	1.00	-8.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Lab Sample ID: CCV 320-220094/14 Calibration Date: 04/26/2018 21:05

Instrument ID: A8_N Calib Start Date: 04/10/2018 18:39

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 04/10/2018 19:26

Lab File ID: 2018.04.26LLB_016.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.004	0.9885		0.985	1.00	-1.5	50.0
13C4 PFBA	Ave	1.345	1.366		2.54	2.50	1.6	50.0
13C5 PFPeA	Ave	0.8672	0.8941		2.58	2.50	3.1	50.0
13C3-PFBS	Ave	0.0199	0.0196		2.29	2.33	-1.6	50.0
M2-4:2FTS	Ave	0.1425	0.1495		2.45	2.34	4.9	50.0
13C2 PFHxA	Ave	0.9590	0.9702		2.53	2.50	1.2	50.0
13C3 HFPO-DA	Ave	0.0593	0.0528		2.22	2.50	-11.1	50.0
13C4-PFHpA	Ave	0.9333	0.9353		2.51	2.50	0.2	50.0
18O2 PFHxS	Ave	1.152	1.169		2.40	2.37	1.5	50.0
M2-6:2FTS	Ave	0.2000	0.2197		2.61	2.38	9.8	40.0
13C4 PFOA	Ave	0.9276	0.9434		2.54	2.50	1.7	50.0
13C4 PFOS	Ave	0.8066	0.8066		2.39	2.39	-0.0	50.0
13C5 PFNA	Ave	0.7973	0.7859		2.46	2.50	-1.4	50.0
13C8 FOSA	Ave	1.007	0.996		2.47	2.50	-1.1	50.0
M2-8:2FTS	Ave	0.2409	0.2277		2.26	2.40	-5.5	40.0
13C2 PFDA	Ave	0.6701	0.6665		2.49	2.50	-0.5	50.0
d3-NMeFOSAA	Ave	0.3798	0.3928		2.59	2.50	3.4	50.0
13C2 PFUnA	Ave	0.5781	0.5612		2.43	2.50	-2.9	50.0
d5-NEtFOSAA	Ave	0.3749	0.4087		2.73	2.50	9.0	50.0
13C2 PFDoA	Ave	0.6242	0.6177		2.47	2.50	-1.0	50.0
13C2-PFTeDA	Ave	0.7915	0.7760		2.45	2.50	-2.0	50.0
13C2-PFHxDA	Ave	1.288	1.417		2.75	2.50	10.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_016.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 26-Apr-2018 21:05:05 ALS Bottle#: 13 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A8_N
Sublist: chrom-A8_N*sub32

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:54:34 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:41:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.442	1.442	0.0	1.000	2314520	0.9893		98.9	1202	
D 1 13C4 PFBA										
217.00 > 172.00	1.442	1.442	0.0	1.000	6298945	2.54		102	41601	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.703	0.0	1.000	1889021	0.9615		96.1	2008	
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.703	0.0	0.557	4121482	2.58		103	76878	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.739	1.739	0.0	1.000	2499053	0.8842		100	9202	
298.90 > 99.00	1.739	1.739	0.0	1.000	1043712		2.39(1.25-3.74)		11223	
D 47 13C3-PFBS										
301.90 > 83.00	1.739	1.739	0.0	1.000	83943	2.29		98.4	637	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	576658	1.00		107	32685	
D 60 M2-4:2FTS										
329.00 > 81.00	1.950	1.950	0.0	1.000	643440	2.45		105	6453	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	1.993	0.0	1.000	1788339	0.9837		98.4	2578	
313.00 > 119.00	1.993	1.993	0.0	1.000	161741		11.06(5.03-15.10)		1796	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.994	-0.001	1.000	4472589	2.53		101	83607	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.016	2.016	0.0	1.000	2431884	0.9419		100	15573	
349.00 > 99.00	2.016	2.016	0.0	1.000	895342		2.72(1.36-4.07)		10586	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.095	2.084	0.011	1.000	243230	2.22		88.9	8224	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.095	2.095	0.0	1.000	280288	1.03		103	1883	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.321	0.0	1.000	1861380	1.08		108	2306	
363.00 > 169.00	2.321	2.321	0.0	1.000	678561		2.74(1.13-3.40)		3046	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.322	-0.001	1.000	4311596	2.51		100	67315	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.334	0.0	0.994	1974443	0.8091		88.9	4219	
399.00 > 99.00	2.334	2.334	0.0	0.994	670328		2.95(1.50-4.49)		4632	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.335	0.012	1.000	5099474	2.40		102	62041	
65 Adona										
377.00 > 251.00	2.372	2.372	0.0	1.000	5509116	1.07		107	56886	
377.00 > 85.00	2.372	2.372	0.0	1.000	3090552		1.78(0.84-2.53)		46020	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.660	0.0	1.000	643273	0.9394		99.1	10167	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.661	-0.001	1.000	962051	2.61		110	12545	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.683	0.007	1.000	4348922	2.54		102	61511	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.690	0.0	1.000	1953440	0.9719		97.2	1485	
413.00 > 169.00	2.690	2.690	0.0	1.000	979089		2.00(0.84-2.52)		3309	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.690	0.0		4609772	2.50			60065	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.698	2.698	0.0	1.000	1800377	0.9118		95.8	9304	
449.00 > 99.00	2.690	2.698	-0.008	0.997	477780		3.77(1.94-5.82)		11134	
20 Perfluorononanoic acid										
463.00 > 419.00	3.059	3.059	0.0	1.000	1512221	1.00		100	5325	
463.00 > 169.00	3.066	3.059	0.007	1.002	361083		4.19(1.90-5.69)		8586	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.059	0.0	1.000	1476649	0.9127		98.4	4979	
499.00 > 99.00	3.059	3.059	0.0	1.000	322317		4.58(2.31-6.93)		4759	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.061	-0.002	1.000	3554588	2.39		100	22437	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.061	-0.002	1.000	3622763	2.46		98.6	72002	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.272	3.272	0.0	1.000	2440409	0.8704		93.4	41705	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1769449	0.9529		95.3	25064	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.400	-0.002	1.000	4589606	2.47		98.9	53467	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.416	3.416	0.0	1.000	1026442	0.8633		89.9	10661	
549.00 > 99.00	3.416	3.416	0.0	1.000	395842		2.59(1.33-3.97)		12992	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.416	0.0	1.000	499162	0.9395		98.1	23951	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.418	-0.002	1.000	1005610	2.26		94.5	8872	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.426	0.0	1.000	1237815	0.9764		97.6	6760	
513.00 > 169.00	3.426	3.426	0.0	1.000	223814		5.53(2.36-7.09)		3666	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.427	-0.001	1.000	3072376	2.49		99.5	54867	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.576	-0.001	1.000	1810842	2.59		103	21373	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.585	3.585	0.0	1.003	703598	0.9740		97.4	5537	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.740	0.0	1.000	908271	0.9406		97.6	7962	
599.00 > 99.00	3.740	3.740	0.0	1.000	304345		2.98(1.39-4.16)		9433	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.752	-0.002	1.000	1883947	2.73		109	24740	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.761	0.0	1.003	657231	0.9333		93.3	13097	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.761	0.0	1.003	799586	0.9143		91.4	4451	
563.00 > 169.00	3.761	3.761	0.0	1.003	221791		3.61(2.12-6.36)		8106	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.762	-0.012	1.000	2587080	2.43		97.1	52685	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.917	3.917	0.0	1.000	4019362	0.9279		98.5	40320	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.050	0.0	1.000	1091373	0.9188		91.9	1610	
613.00 > 169.00	4.050	4.050	0.0	1.000	284655		3.83(2.13-6.40)		2420	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.051	-0.001	1.000	2847505	2.47		99.0	31540	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.318	0.0	1.000	1285154	0.9284		92.8	1621	
663.00 > 169.00	4.318	4.318	0.0	1.000	405376		3.17(1.25-3.76)		3396	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.553	0.0	1.000	354284	0.9858		98.6	2698	
713.00 > 219.00	4.553	4.553	0.0	1.000	258013		1.37(0.71-2.13)		4988	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.553	0.0	1.000	3577359	2.45		98.0	26314	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.966	4.966	0.0	1.000	2321604	0.9164		91.6	1054	
813.00 > 169.00	4.966	4.966	0.0	1.000	384857		6.03(2.86-8.58)		2369	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.966	4.967	-0.001	1.000	6529851	2.75		110	19401	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.336	5.336	0.0	1.000	2582002	0.9845		98.5	849	
913.00 > 169.00	5.336	5.336	0.0	1.000	318021		8.12(3.83-11.48)		2410	

Reagents:

LCPFC_LL4_00004 Amount Added: 1.00 Units: mL

Report Date: 27-Apr-2018 15:54:35 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b\2018.04.26LLB_016.d

Injection Date: 26-Apr-2018 21:05:05 Instrument ID: A8_N

Lims ID: CCV L4

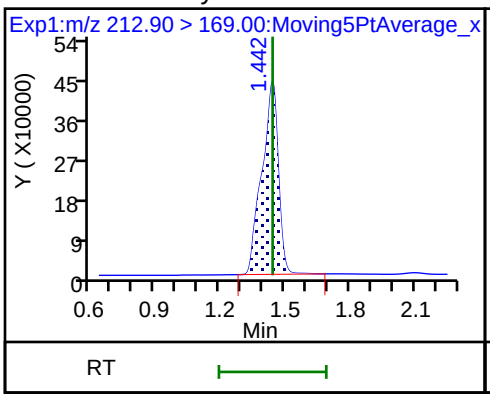
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 14

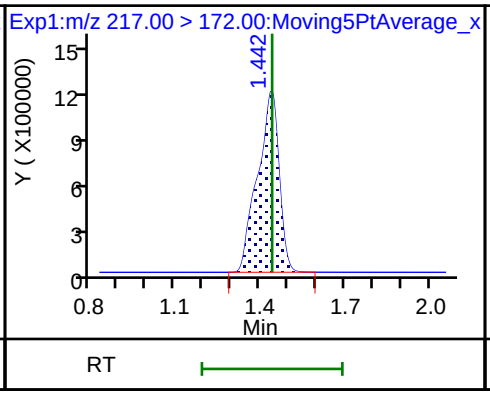
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

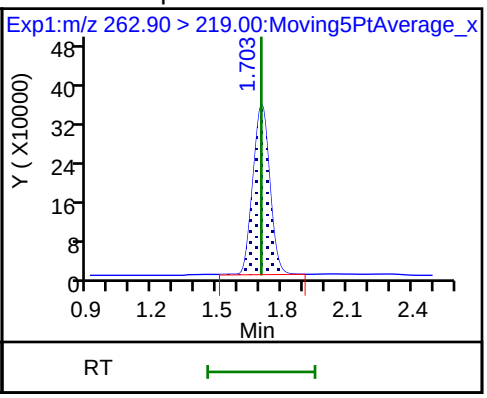
2 Perfluorobutyric acid



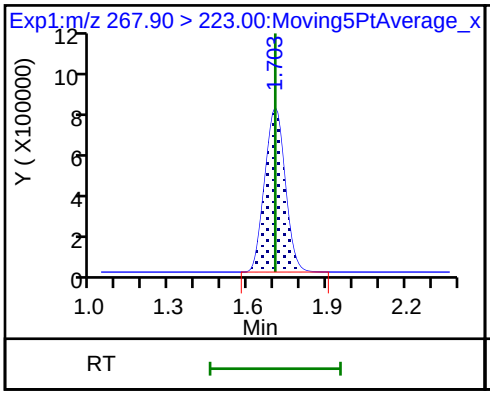
D 1 13C4 PFBA



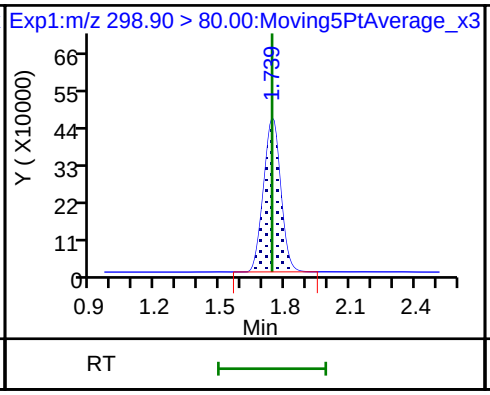
4 Perfluoropentanoic acid



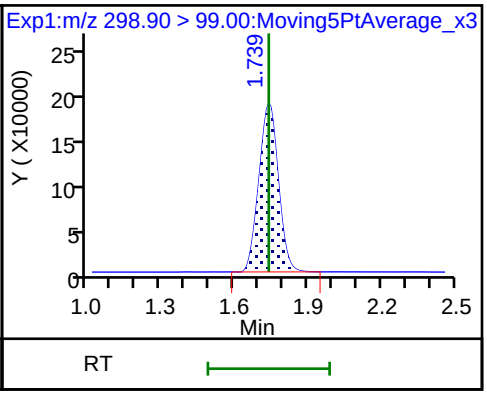
D 3 13C5-PFPeA



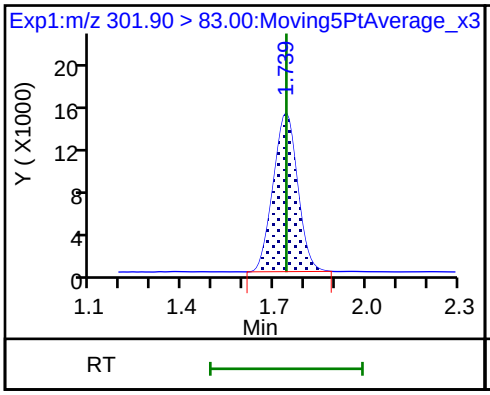
5 Perfluorobutanesulfonic acid



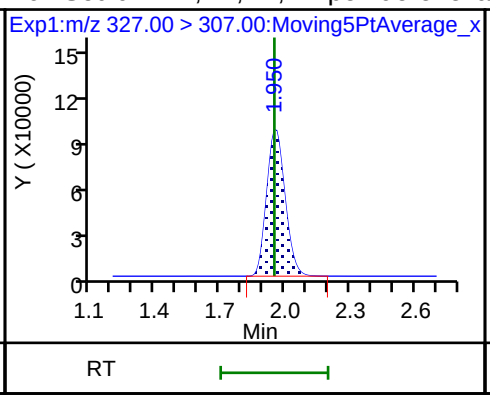
5 Perfluorobutanesulfonic acid



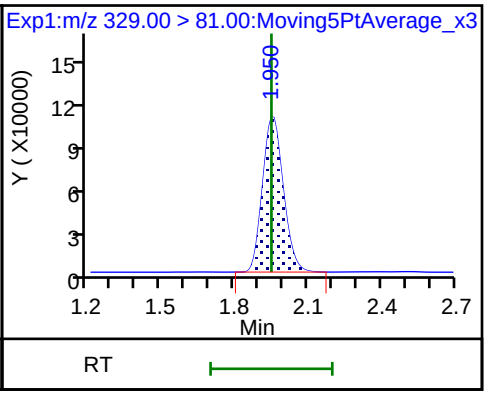
D 47 13C3-PFBS



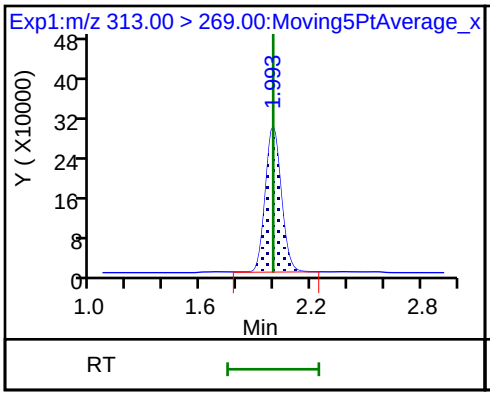
61 Sodium 1H,1H,2H,2H-perfluorohexane



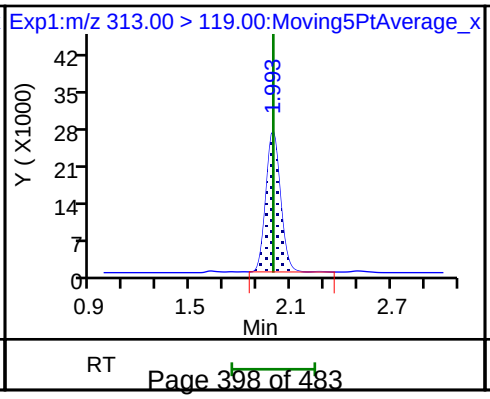
D 60 M2-4:2FTS



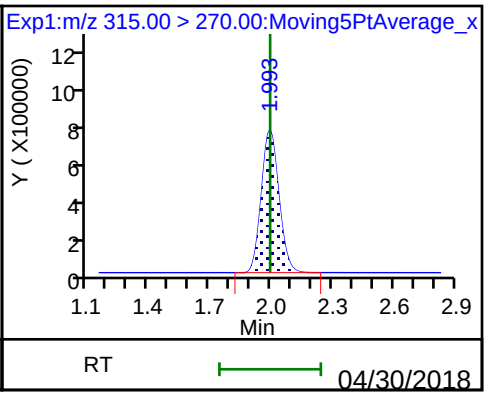
6 Perfluorohexanoic acid



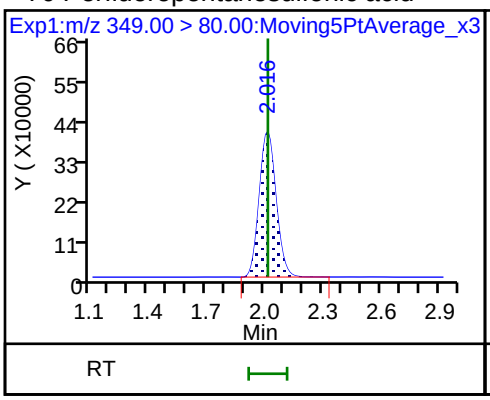
6 Perfluorohexanoic acid



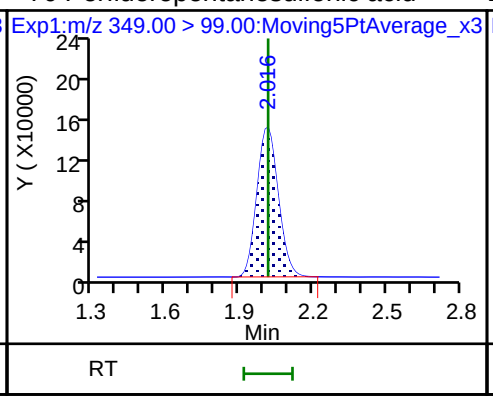
D 7 13C2 PFHxA



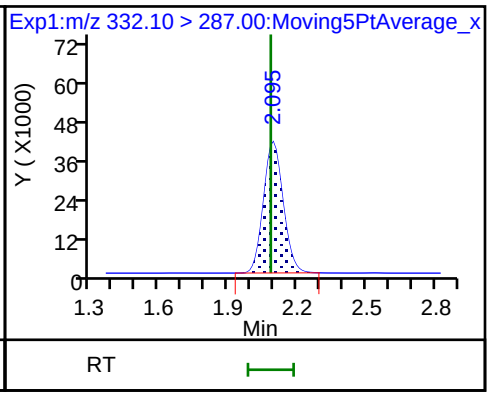
70 Perfluoropentanesulfonic acid



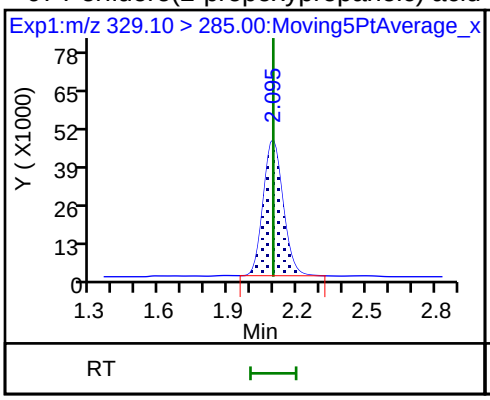
70 Perfluoropentanesulfonic acid



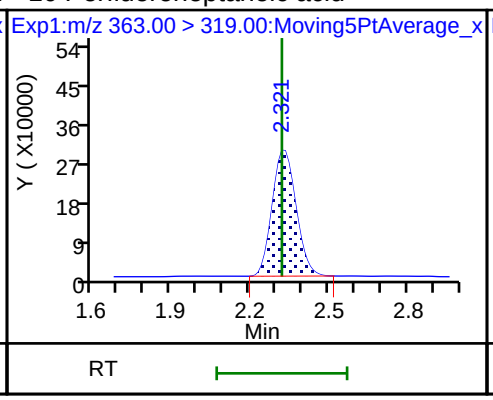
D 64 13C3 HFPO-DA



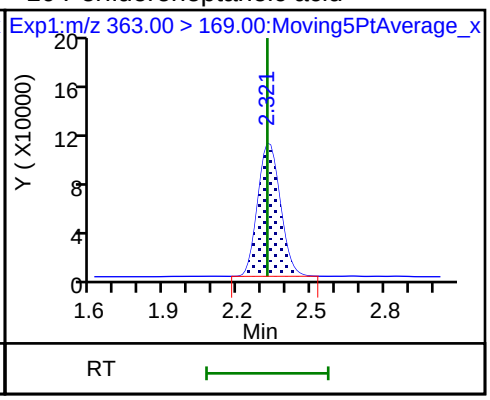
67 Perfluoro(2-propoxypropanoic) acid



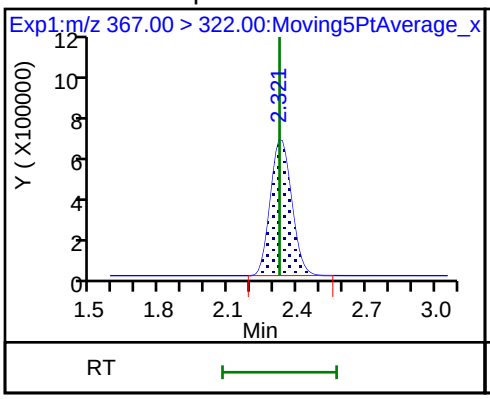
10 Perfluoroheptanoic acid



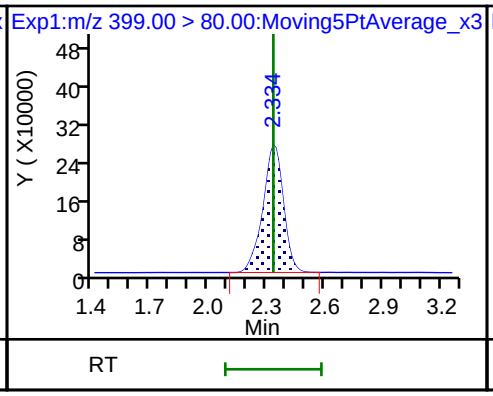
10 Perfluoroheptanoic acid



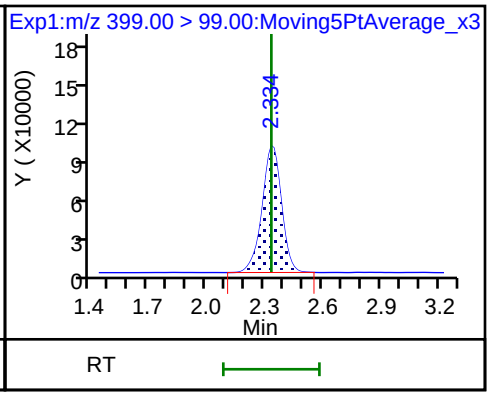
D 9 13C4-PFHpA



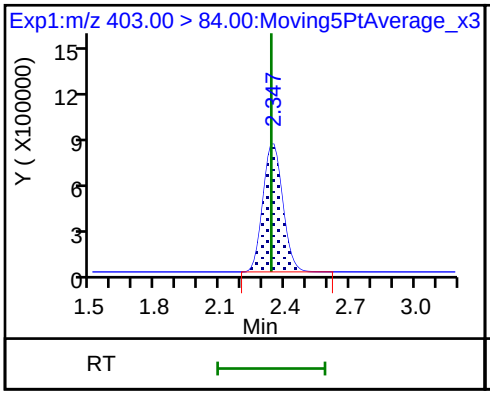
8 Perfluorohexanesulfonic acid



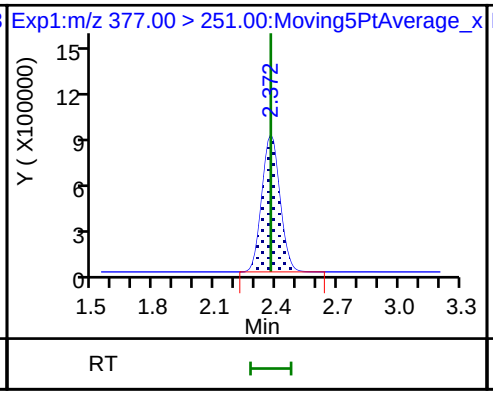
8 Perfluorohexanesulfonic acid



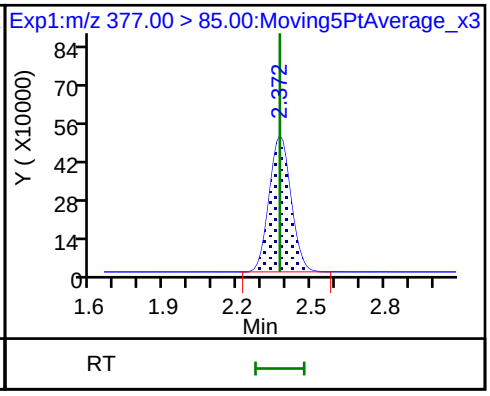
D 11 18O2 PFHxS



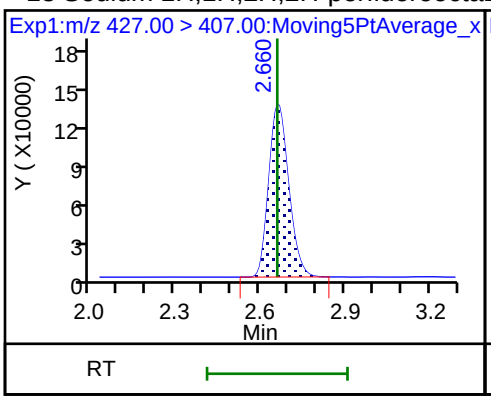
65 Adona



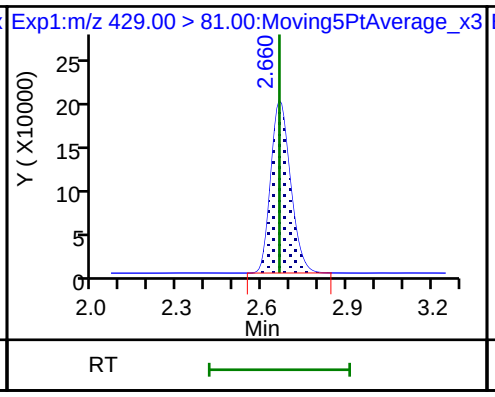
65 Adona



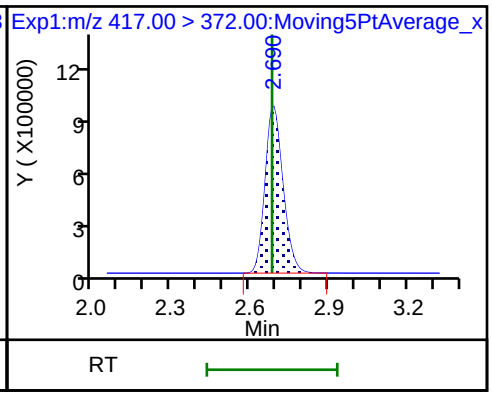
13 Sodium 1H,1H,2H,2H-perfluorooctane



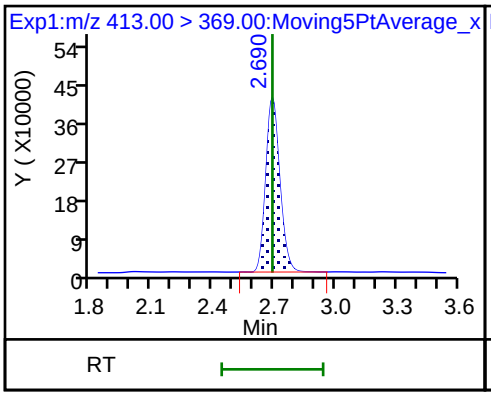
D 12 M2-6:2FTS



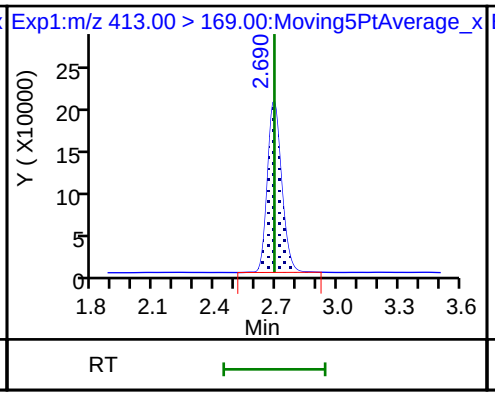
D 14 13C4 PFOA



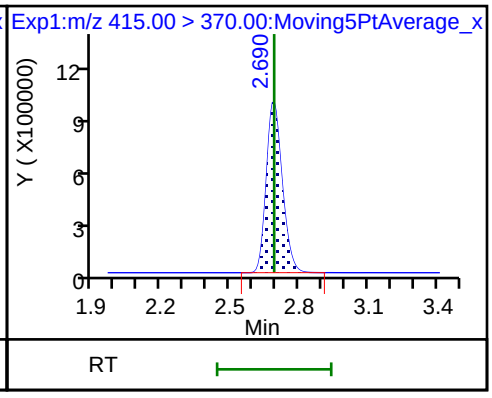
15 Perfluorooctanoic acid



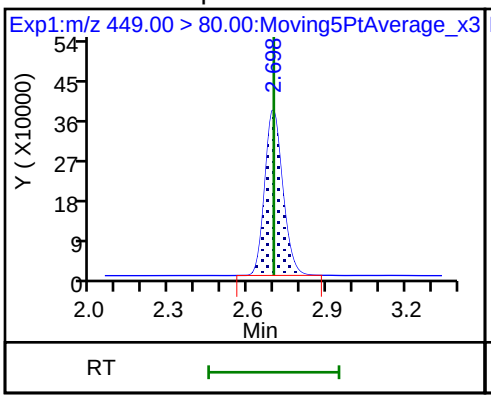
15 Perfluorooctanoic acid



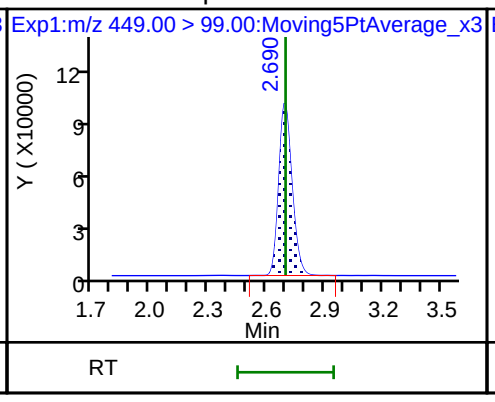
* 62 13C2-PFOA



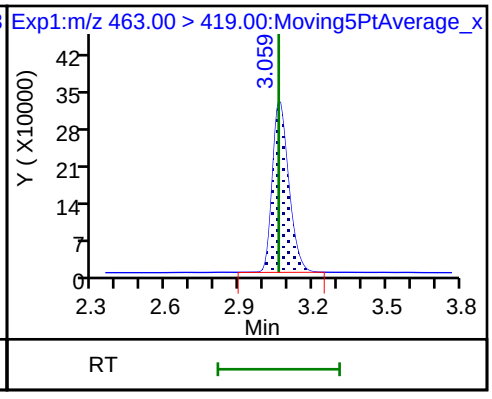
16 Perfluoroheptanesulfonic acid



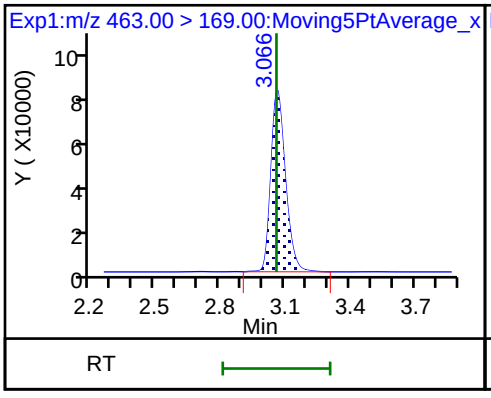
16 Perfluoroheptanesulfonic acid



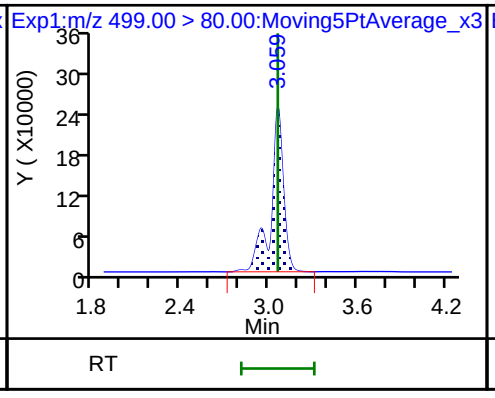
20 Perfluorononanoic acid



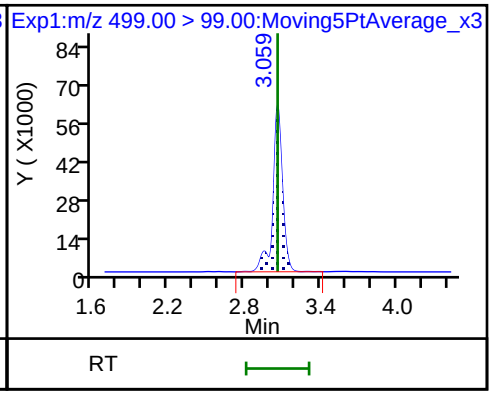
20 Perfluorononanoic acid



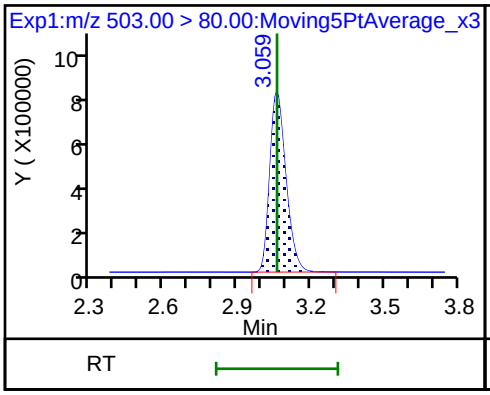
17 Perfluorooctane sulfonic acid



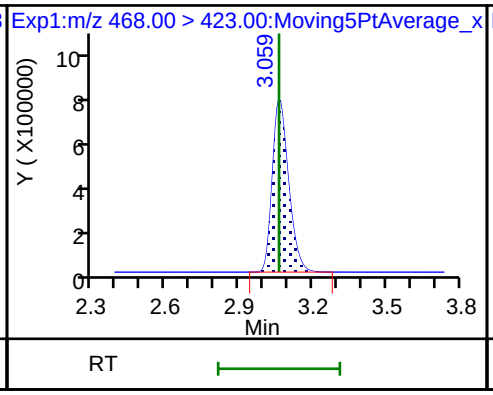
17 Perfluorooctane sulfonic acid



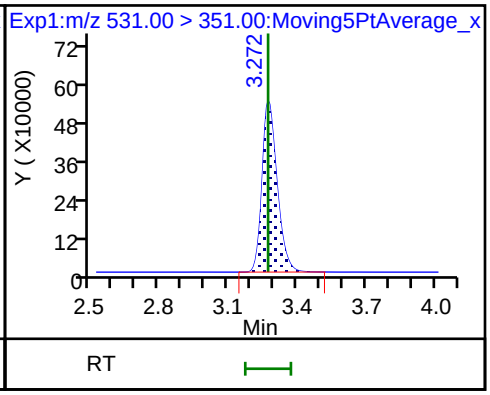
D 18 13C4 PFOS



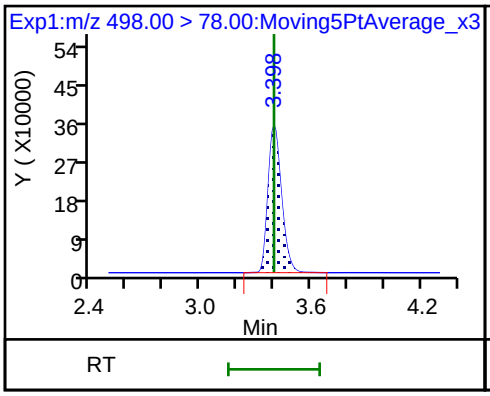
D 19 13C5 PFNA



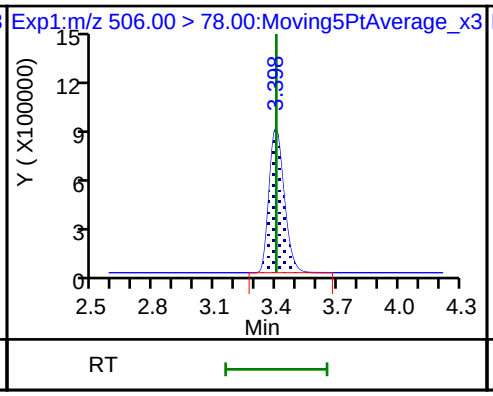
69 9-Chlorohexadecafluoro-3-oxanonane



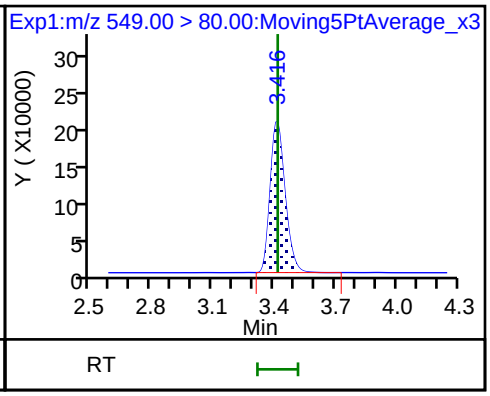
22 Perfluorooctane Sulfonamide



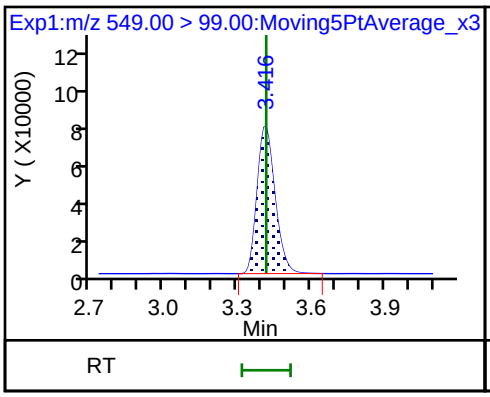
D 21 13C8 FOSA



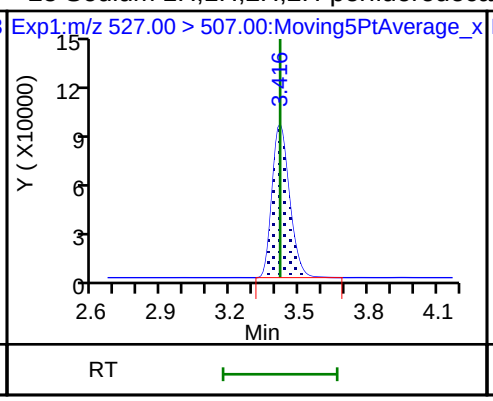
68 Perfluorononanesulfonic acid



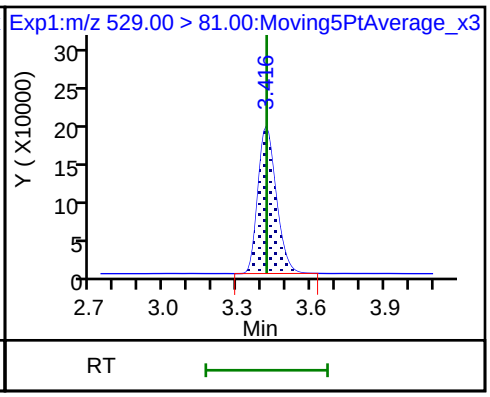
68 Perfluorononanesulfonic acid



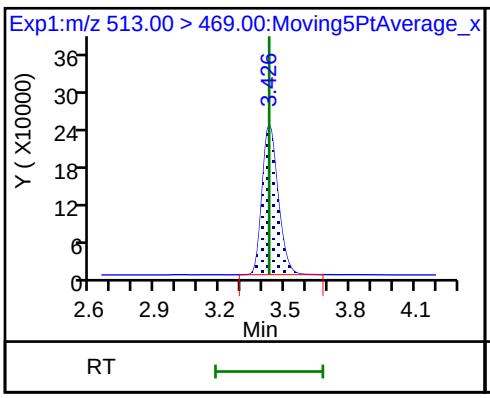
25 Sodium 1H,1H,2H,2H-perfluorodecane



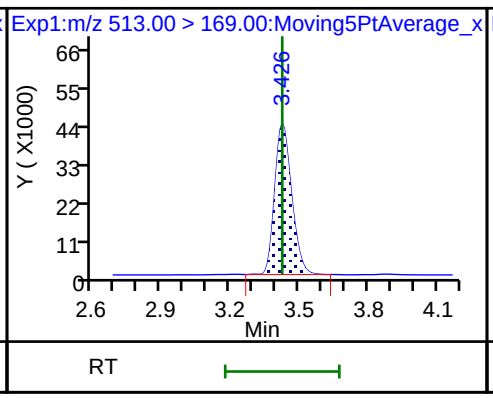
D 26 M2-8:2FTS



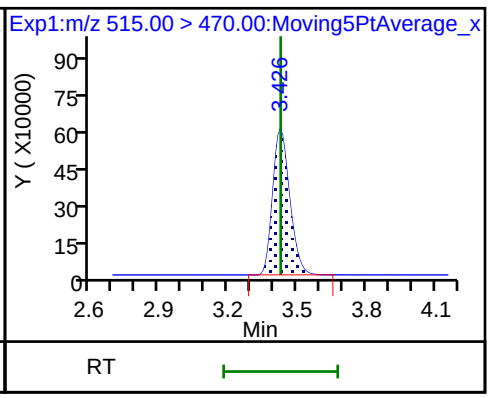
24 Perfluorodecanoic acid



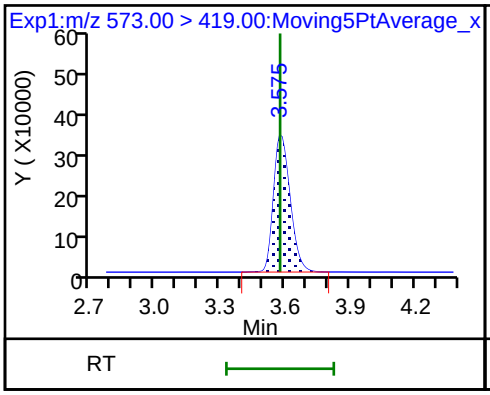
24 Perfluorodecanoic acid



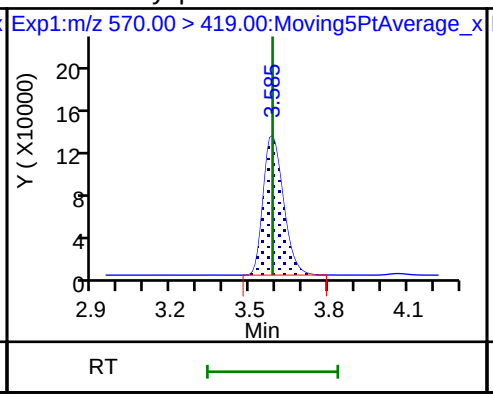
D 23 13C2 PFDA



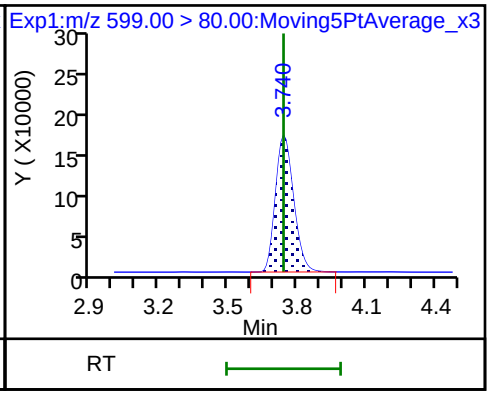
D 27 d3-NMeFOSAA



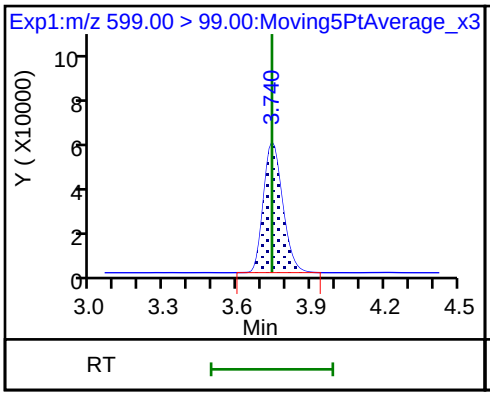
28 N-methyl perfluorooctane sulfonami



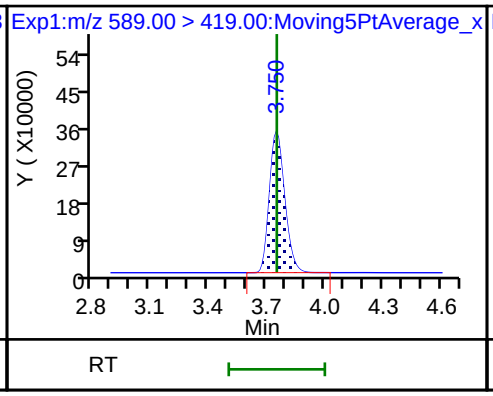
29 Perfluorodecane Sulfonic acid



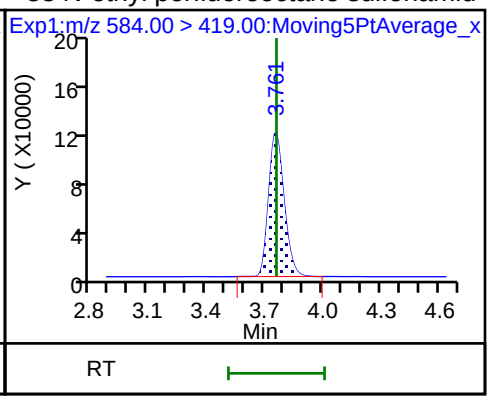
29 Perfluorodecane Sulfonic acid



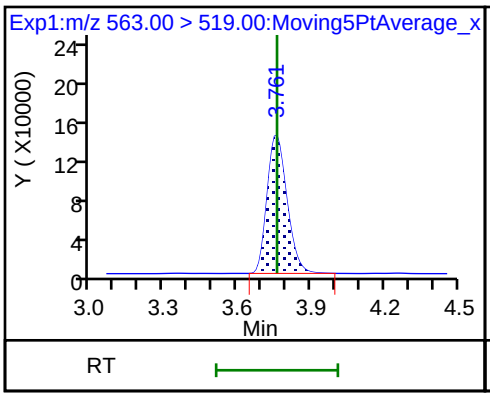
D 32 d5-NEtFOSAA



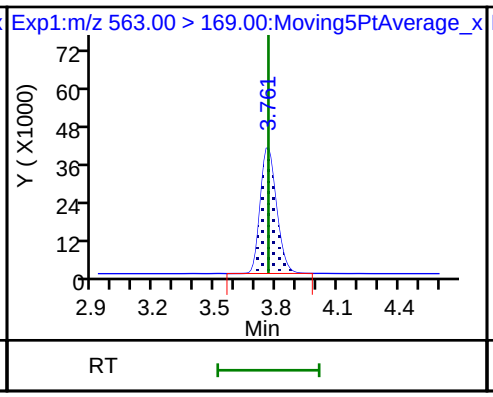
33 N-ethyl perfluorooctane sulfonamid



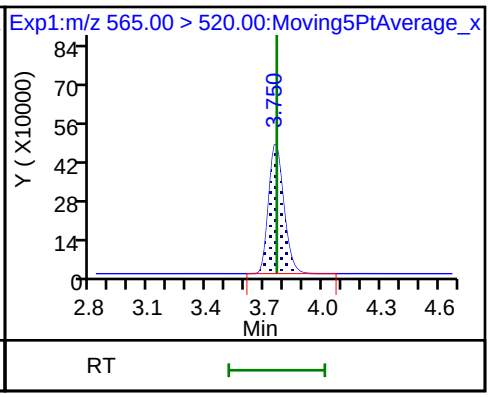
31 Perfluoroundecanoic acid



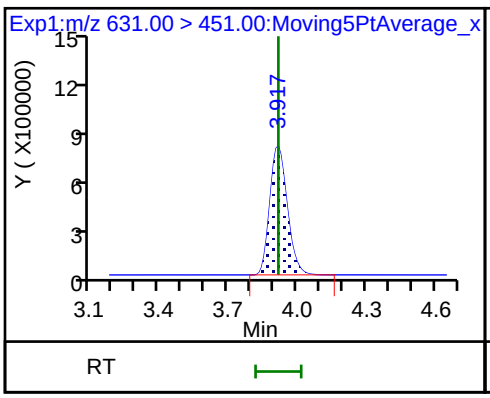
31 Perfluoroundecanoic acid



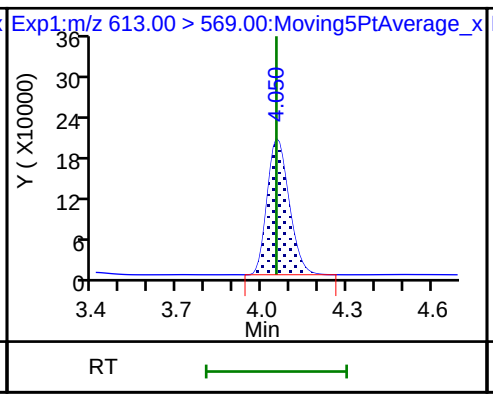
D 30 13C2 PFUnA



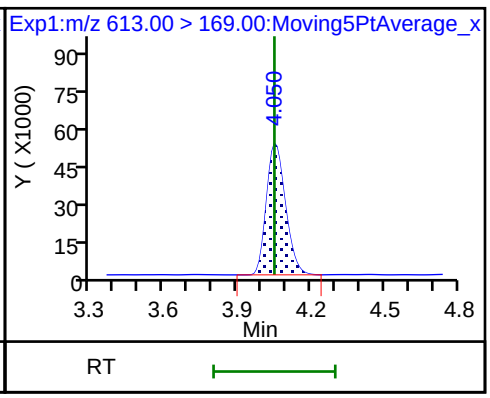
66 11-Chloroeicosafluoro-3-oxaundecan



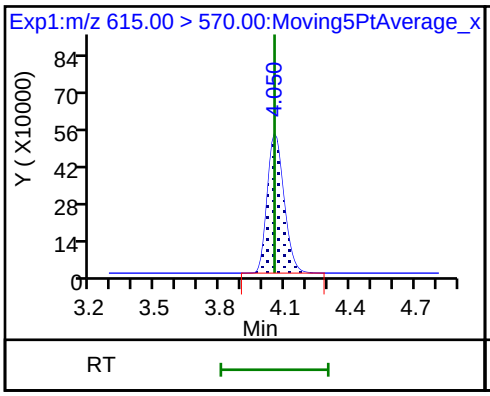
37 Perfluorododecanoic acid



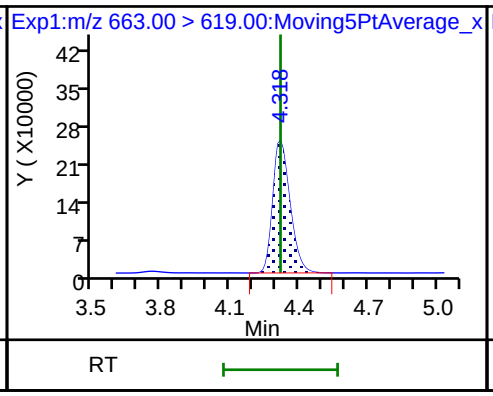
37 Perfluorododecanoic acid



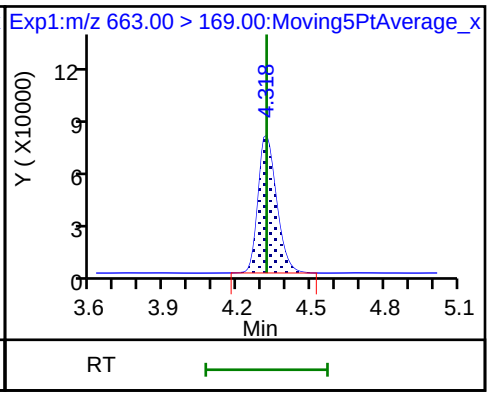
D 36 13C2 PFDoA



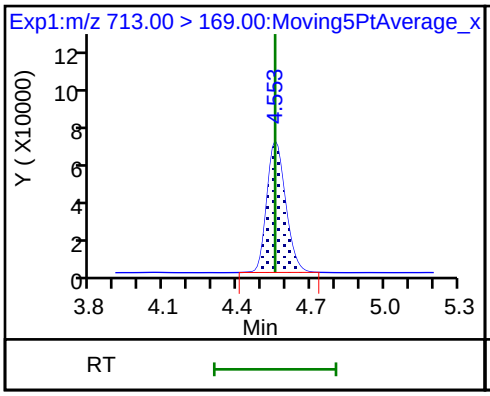
41 Perfluorotridecanoic acid



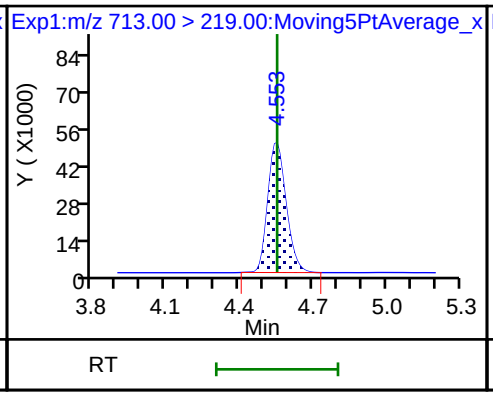
41 Perfluorotridecanoic acid



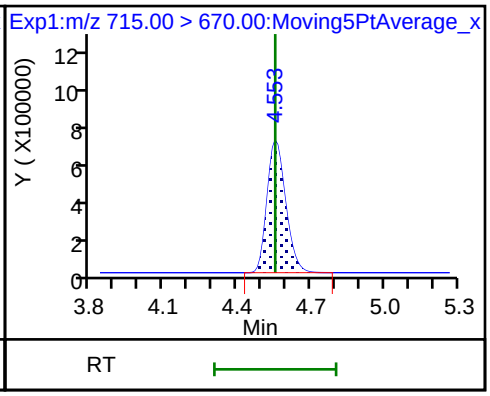
42 Perfluorotetradecanoic acid



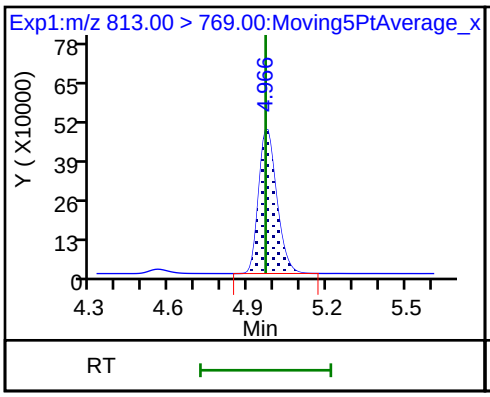
42 Perfluorotetradecanoic acid



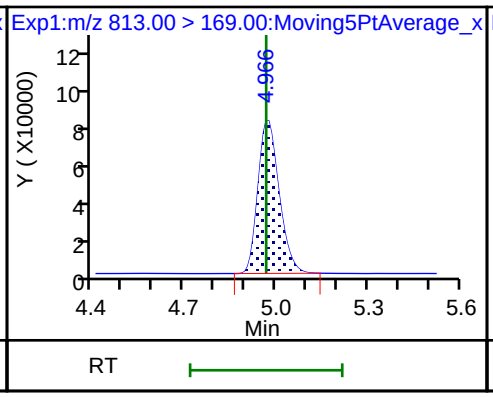
D 43 13C2-PFTeDA



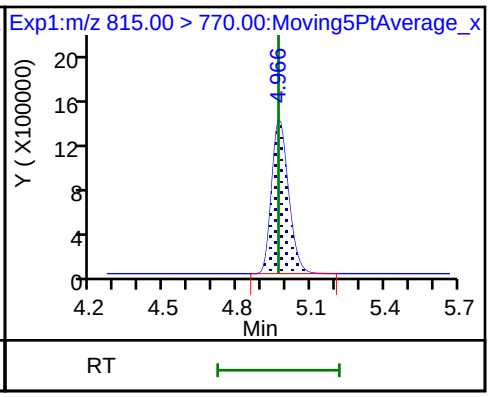
45 Perfluorohexadecanoic acid



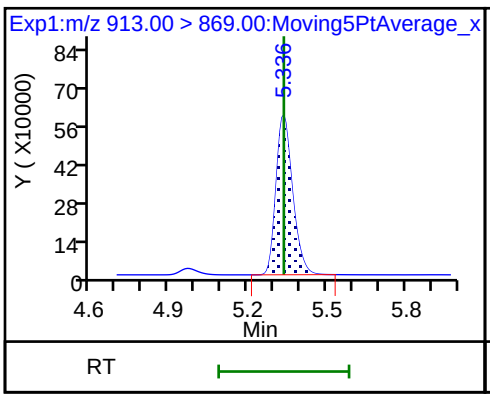
45 Perfluorohexadecanoic acid



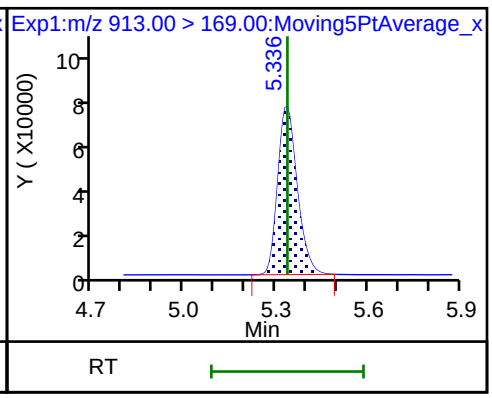
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-219273/1-A

Matrix: Solid | Lab File ID: 2018.04.25LLBX_037.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/26/2018 07:35

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.389	J	2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	U	2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	0.58	U	2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.25	U	2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.85	U	2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10	U	2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	0.55	U	2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.30	U	2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.317	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.54	U	2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35	U	2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.10	U	20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.90	U	20.0	1.90
27619-97-2	6:2FTS	2.00	U	20.0	2.00
39108-34-4	8:2FTS	2.00	U	20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-219273/1-A

Matrix: Solid | Lab File ID: 2018.04.25LLBX_037.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/26/2018 07:35

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	102		25-150
STL01893	13C5 PFPeA	103		25-150
STL00993	13C2 PFHxA	101		25-150
STL01892	13C4-PFHpA	101		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	102		25-150
STL00997	13C2 PFUnA	102		25-150
STL00998	13C2 PFDoA	96		25-150
STL02116	13C2-PFTeDA	100		25-150
STL02337	13C3-PFBS	95		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	95		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	105		25-150
STL02279	M2-6:2FTS	109		25-150
STL02280	M2-8:2FTS	116		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_037.d
Lims ID: MB 320-219273/1-A
Client ID:
Sample Type: MB
Inject. Date: 26-Apr-2018 07:35:07 ALS Bottle#: 26 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-219273/1-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:11:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	6167184	2.55		102	43883	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	22301	0.009736			10.0	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	4030482	2.59		103	70301	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.685	1.703	-0.018	0.995	4771	0.002483			4.0	M
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	79194	2.21		95.2	714	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4367343	2.53		101	108354	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.313	0.008	1.000	4220070	2.52		101	84346	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	4662841	2.25		95.2	83313	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.334	2.336	-0.002	1.000	17668	0.007918			41.7	M
399.00 > 99.00	2.334	2.336	-0.002	1.000	6141		2.88(1.50-4.49)		42.6	
D 12 M2-6:2FTS										
429.00 > 81.00	2.662	2.656	0.006	1.000	931088	2.59		109	14183	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.655	2.661	-0.006	0.997	19602	0.0296			431	
D 14 13C4 PFOA										
417.00 > 372.00	2.685	2.679	0.006	1.000	4227373	2.54		101	69405	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.685	2.683	0.002	1.000	14419	0.007380			9.5	
413.00 > 169.00	2.685	2.683	0.002	1.000	9403		1.53(0.84-2.52)		20.6	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA										
415.00 > 370.00	2.685	2.683	0.002		4493297	2.50			61209	
D 18 13C4 PFOS										
503.00 > 80.00	3.058	3.056	0.002	1.000	3306616	2.28		95.4	23708	
D 19 13C5 PFNA										
468.00 > 423.00	3.058	3.056	0.002	1.000	3790827	2.65		106	84758	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.060	0.005	1.002	1828	0.001156			7.7	
463.00 > 169.00	3.065	3.060	0.005	1.002	674		2.71(1.90-5.69)		17.7	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.266	3.266	0.0	1.000	1696	0.000650			34.5	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.394	0.004	1.000	4228052	2.34		93.4	47333	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.389	3.398	-0.009	0.997	2143	0.001253			14.7	
D 26 M2-8:2FTS										
529.00 > 81.00	3.417	3.413	0.004	1.000	1198071	2.77		116	9576	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.422	0.004	1.000	3061810	2.54		102	55305	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.575	3.575	0.0	1.000	2684	0.003973			21.3	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.582	-0.007	1.000	1693487	2.48		99.2	22679	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.747	0.004	1.000	1764576	2.62		105	36441	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.751	3.751	0.0	1.000	2589	0.003925			46.5	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.757	0.004	1.000	2642876	2.54		102	82043	
D 36 13C2 PFDoA										
615.00 > 570.00	4.051	4.046	0.005	1.000	2690566	2.40		95.9	28353	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.552	4.551	0.001	1.000	3569365	2.51		100	26275	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.967	0.007	1.000	48731	-0.00004716			21.7	
813.00 > 169.00	4.974	4.967	0.007	1.000	8398		5.80(2.86-8.58)		55.1	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.974	0.0	1.000	5786130	2.50		100.0	14836	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:32 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_037.d

Injection Date: 26-Apr-2018 07:35:07 Instrument ID: A8_N

Lims ID: MB 320-219273/1-A

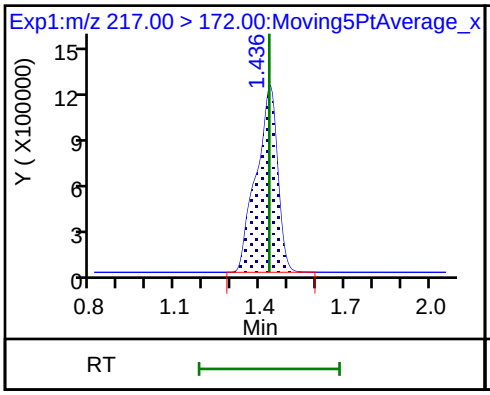
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 2

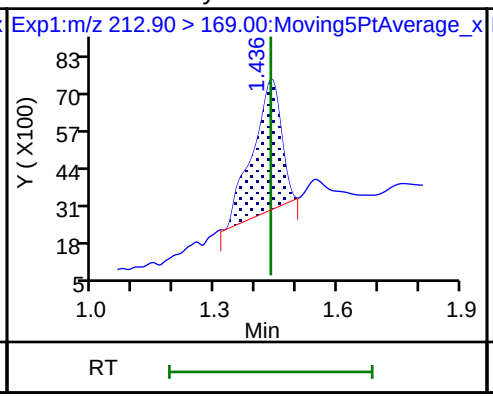
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

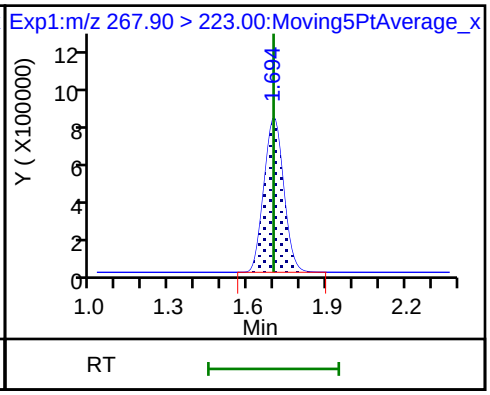
D 1 13C4 PFBA



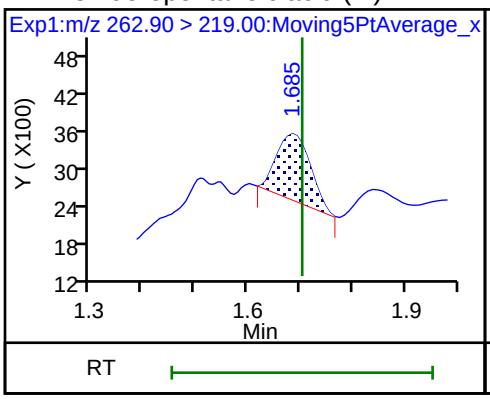
2 Perfluorobutyric acid



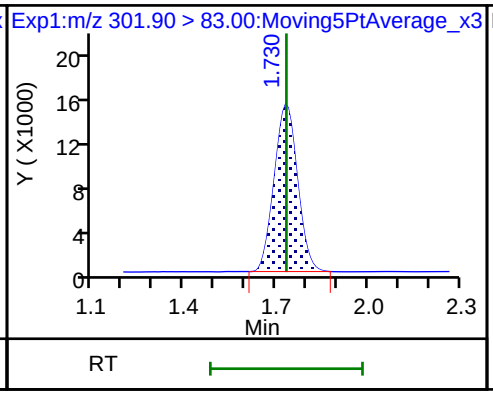
D 3 13C5-PFPeA



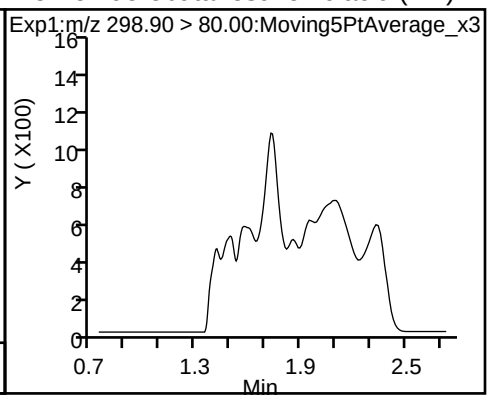
4 Perfluoropentanoic acid (M)



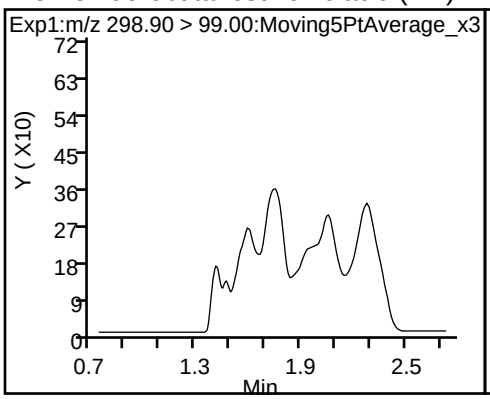
D 47 13C3-PFBS



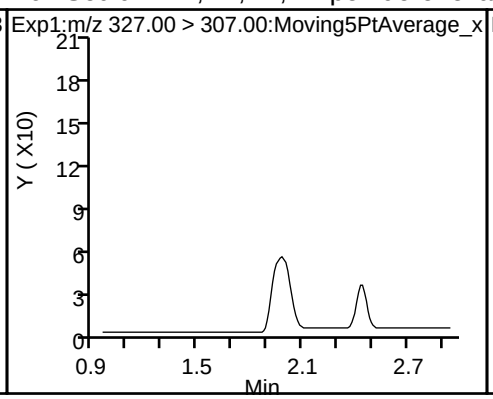
5 Perfluorobutanesulfonic acid (ND)



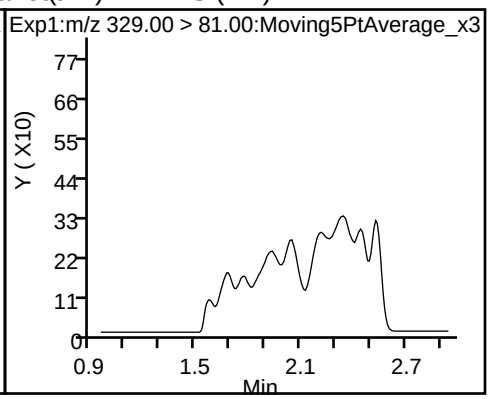
5 Perfluorobutanesulfonic acid (ND)



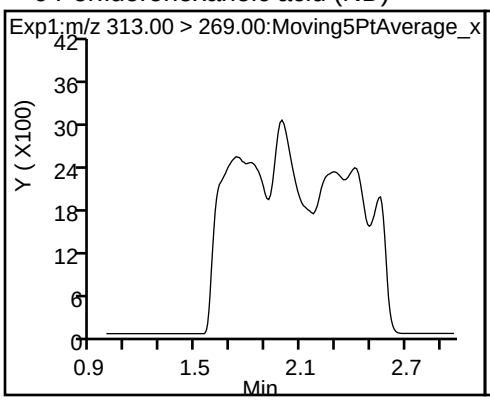
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



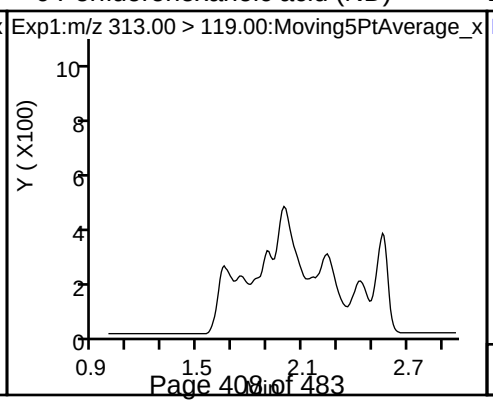
D 60 M2-4:2FTS (ND)



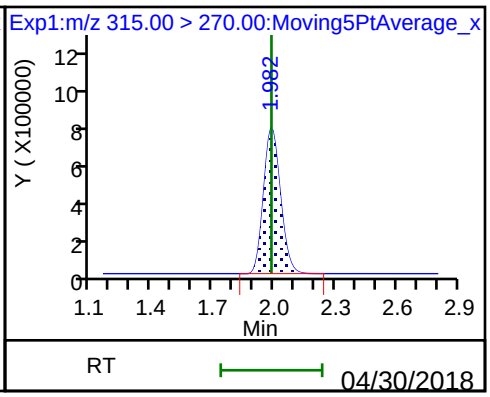
6 Perfluorohexanoic acid (ND)



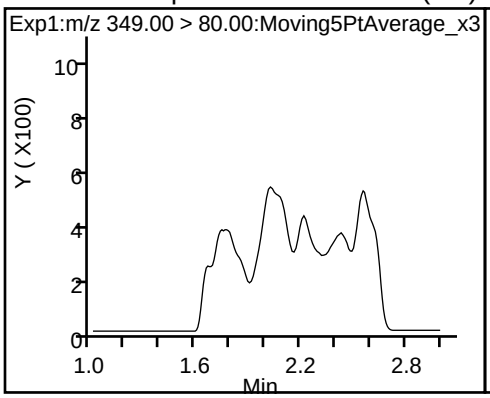
6 Perfluorohexanoic acid (ND)



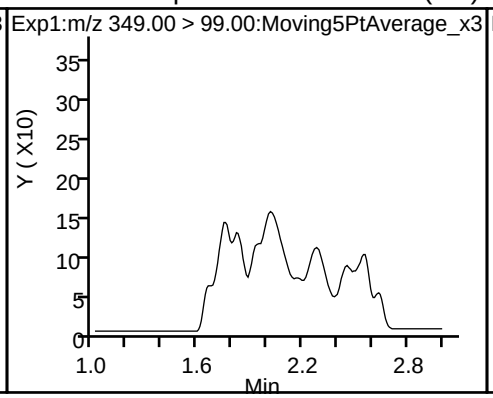
D 7 13C2 PFHxA



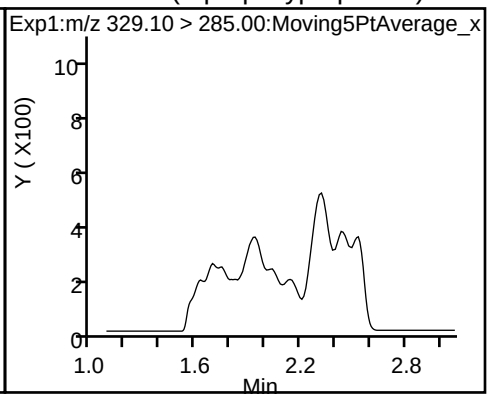
70 Perfluoropentanesulfonic acid (ND)



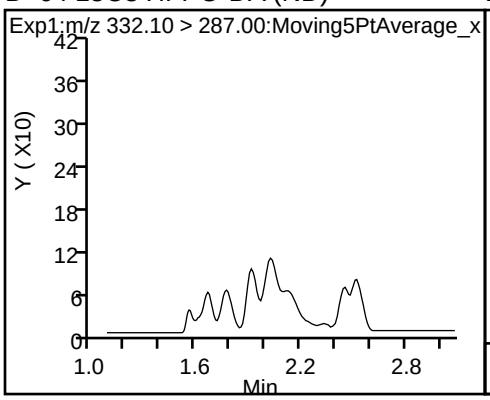
70 Perfluoropentanesulfonic acid (ND)



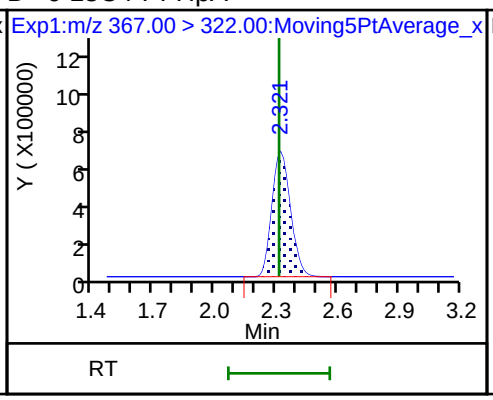
67 Perfluoro(2-propoxypropanoic) acid (ND)



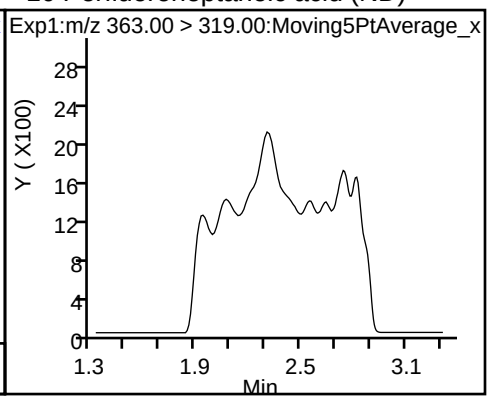
D 64 13C3 HFPO-DA (ND)



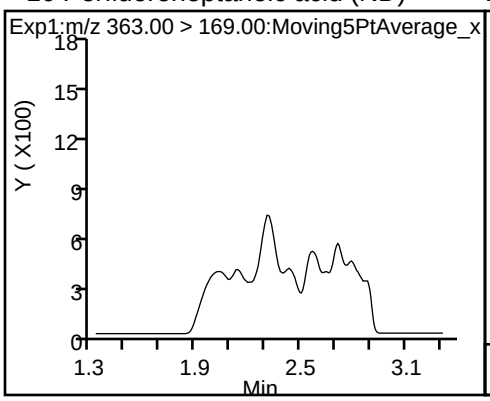
D 9 13C4-PFHpA



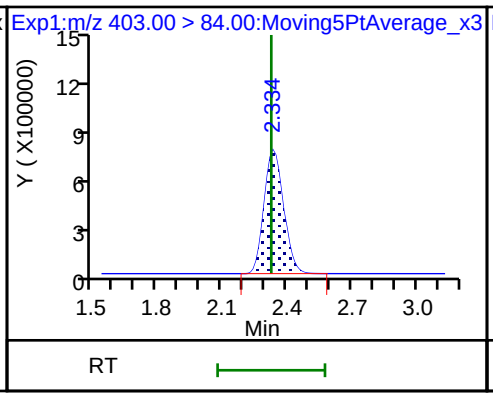
10 Perfluoroheptanoic acid (ND)



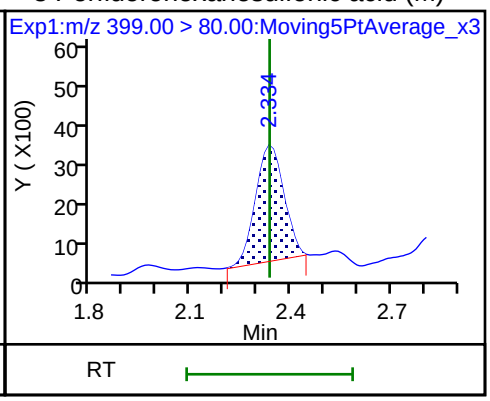
10 Perfluoroheptanoic acid (ND)



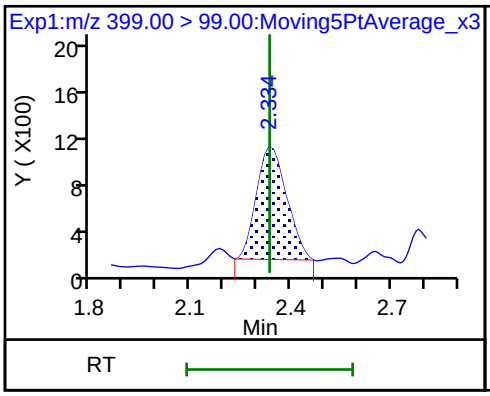
D 11 18O2 PFHxS



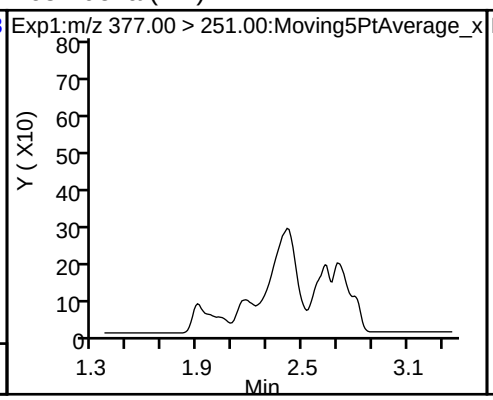
8 Perfluorohexanesulfonic acid (M)



8 Perfluorohexanesulfonic acid



65 Adona (ND)



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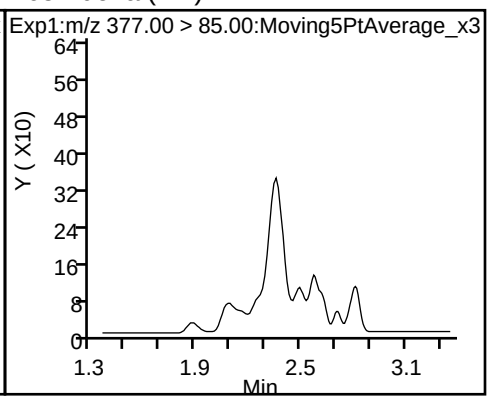
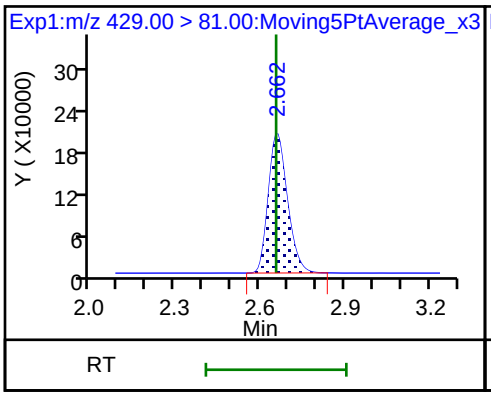
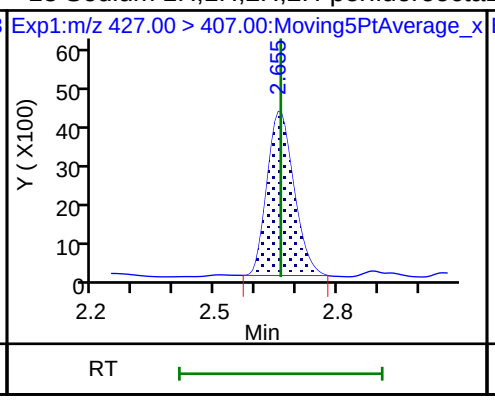


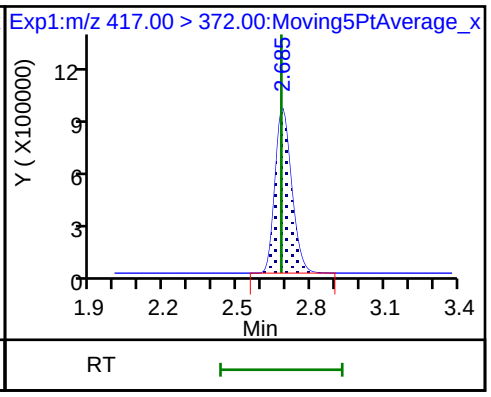
D 12 M2-6:2FTS



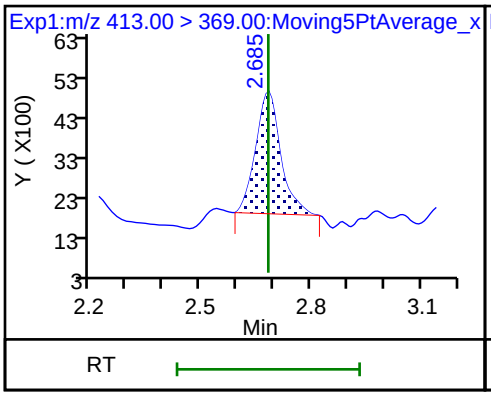
13 Sodium 1H,1H,2H,2H-perfluorooctane



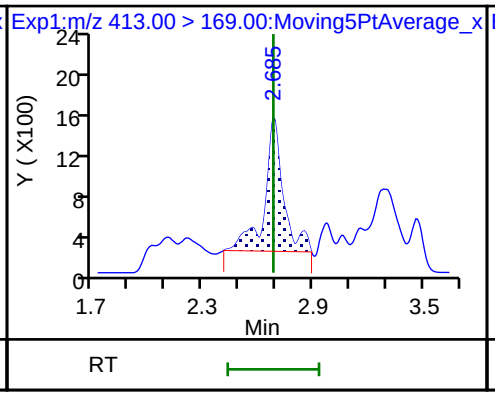
D 14 13C4 PFOA



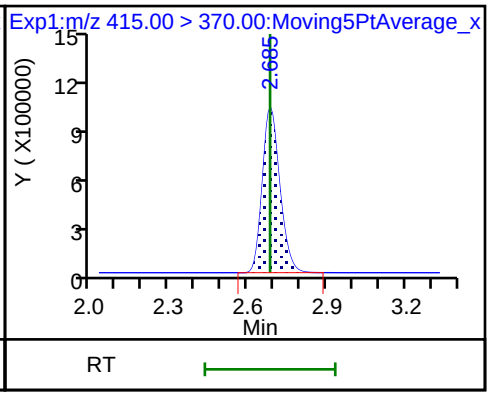
15 Perfluorooctanoic acid



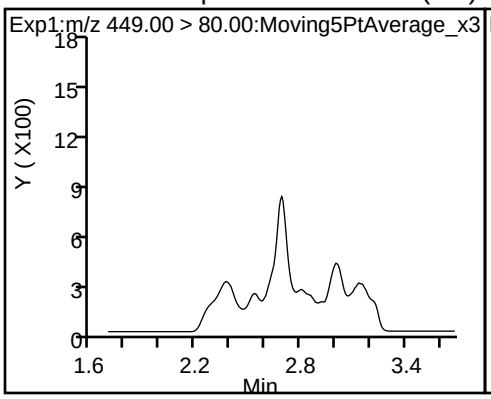
15 Perfluorooctanoic acid



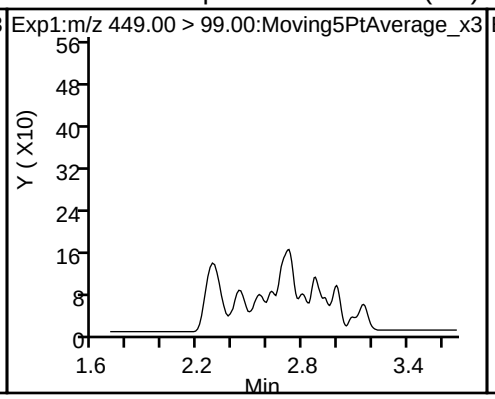
* 62 13C2-PFOA



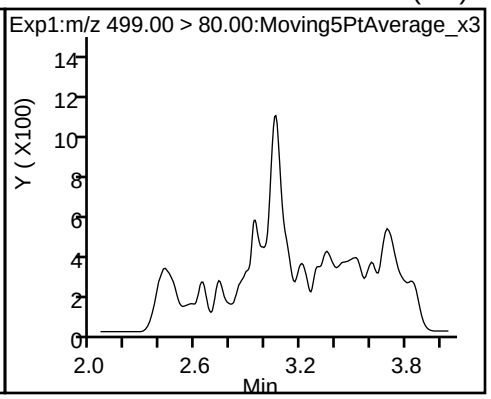
16 Perfluoroheptanesulfonic acid (ND)



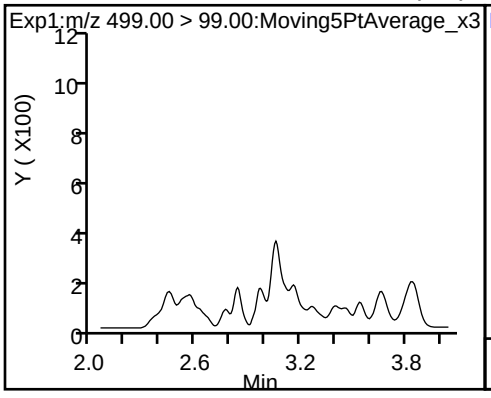
16 Perfluoroheptanesulfonic acid (ND)



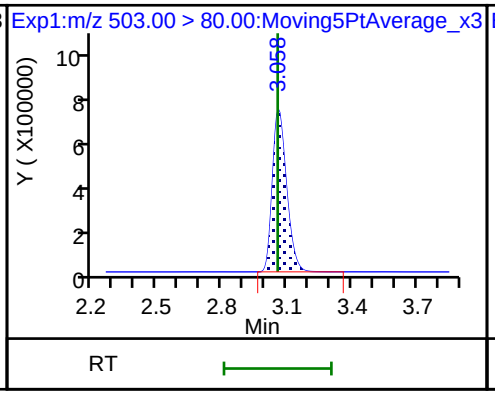
17 Perfluorooctane sulfonic acid (ND)



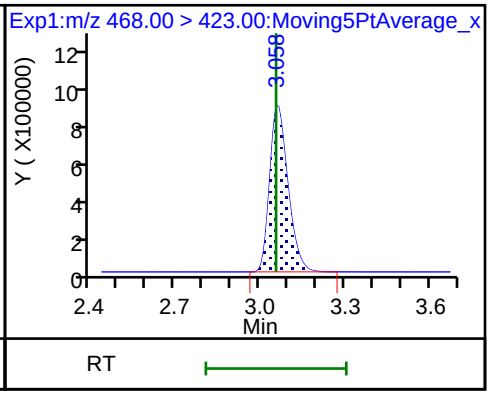
17 Perfluorooctane sulfonic acid (ND)



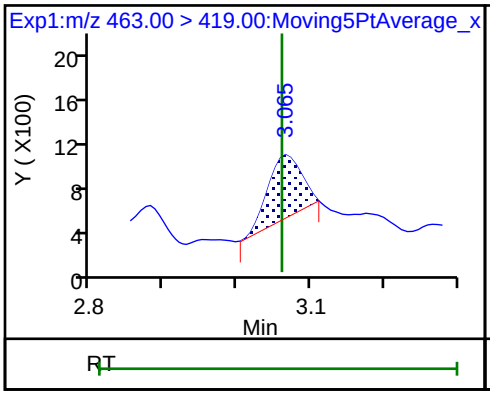
D 18 13C4 PFOS



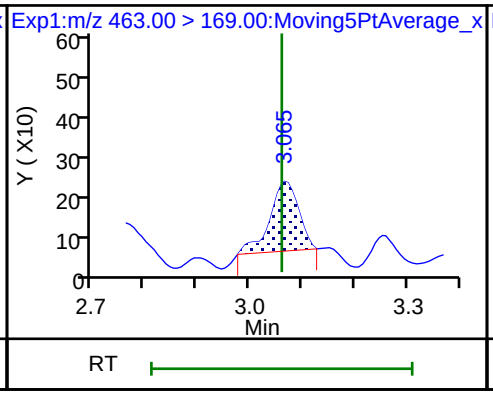
D 19 13C5 PFNA



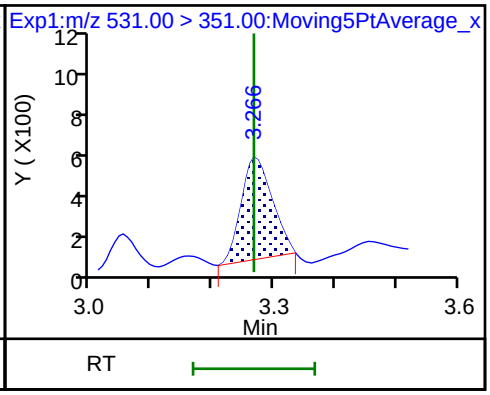
20 Perfluorononanoic acid



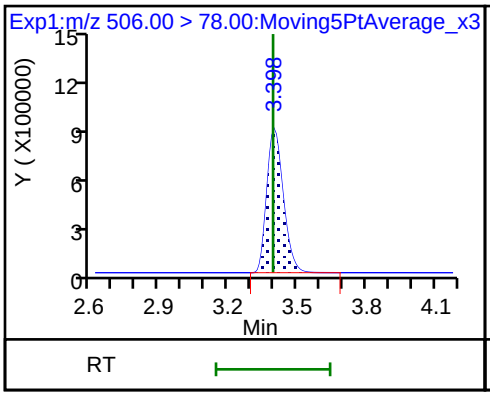
20 Perfluorononanoic acid



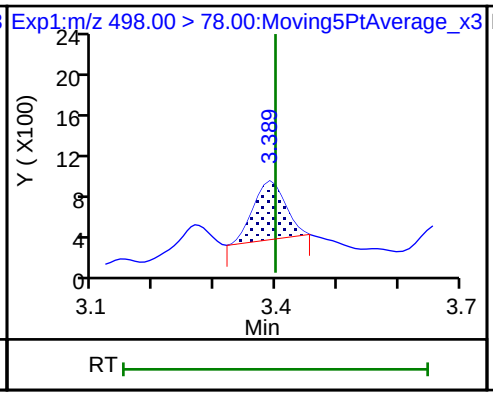
69 9-Chlorohexadecafluoro-3-oxanonane



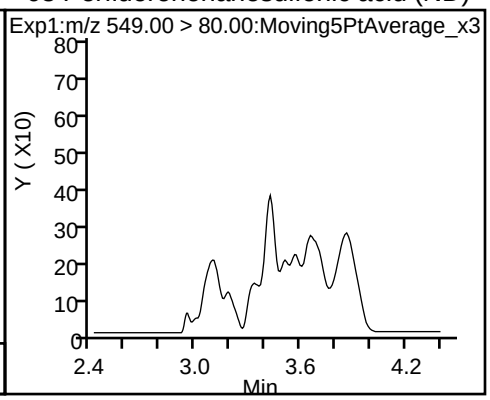
D 21 13C8 FOSA



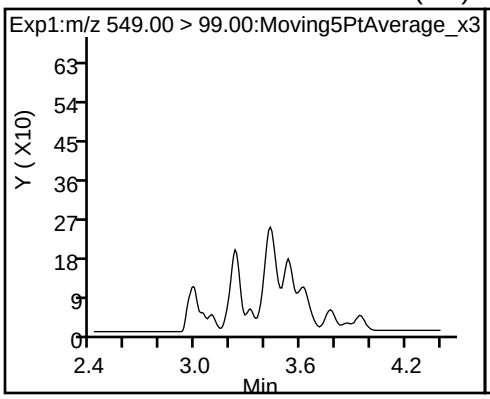
22 Perfluorooctane Sulfonamide



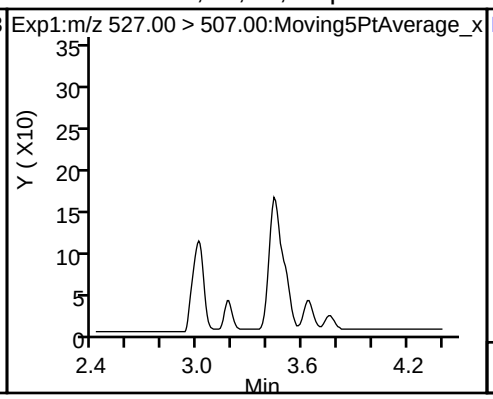
68 Perfluorononanesulfonic acid (ND)



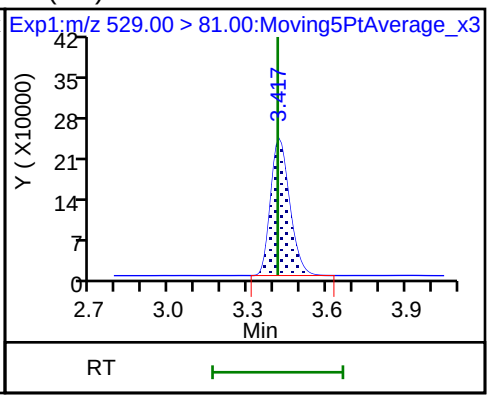
68 Perfluorononanesulfonic acid (ND)



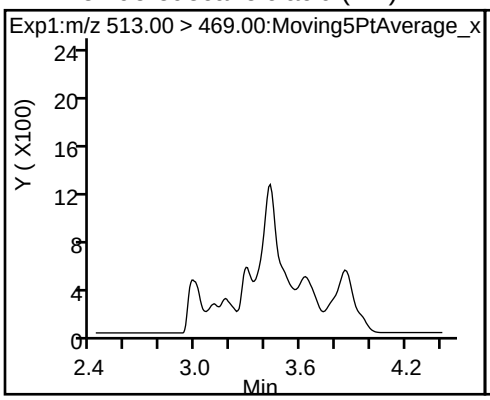
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



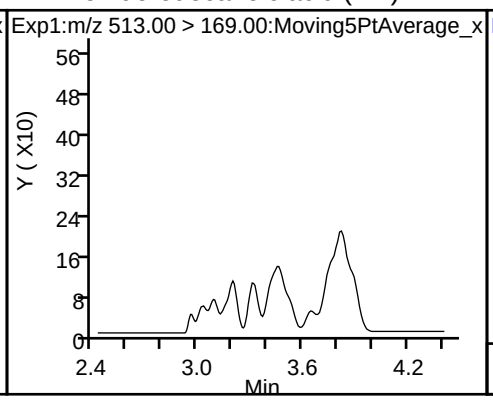
D 26 M2-8:2FTS



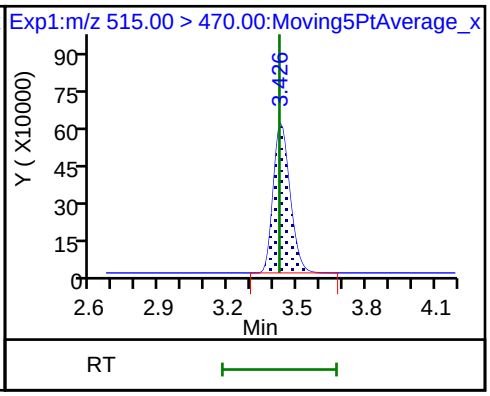
24 Perfluorodecanoic acid (ND)



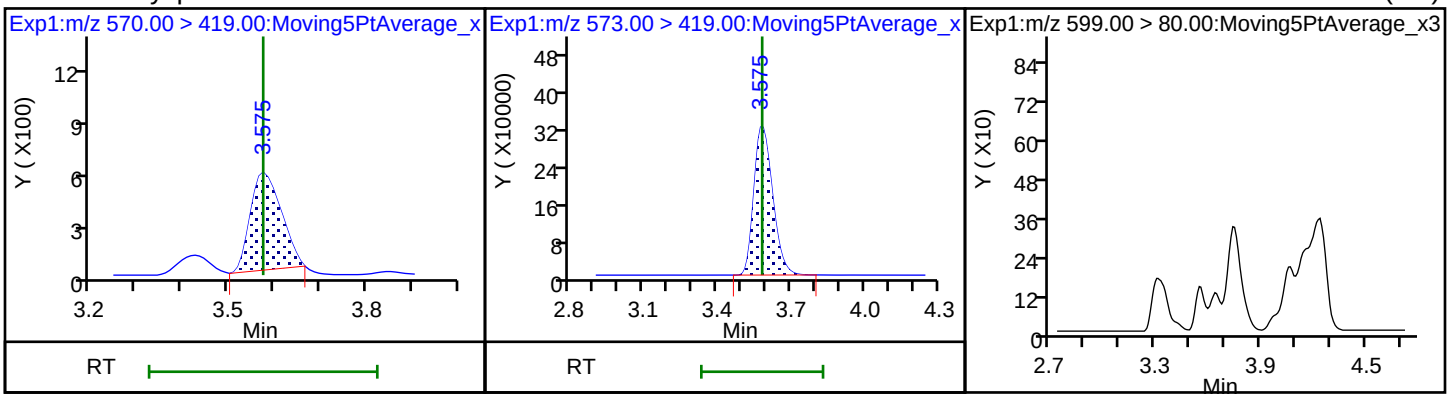
24 Perfluorodecanoic acid (ND)



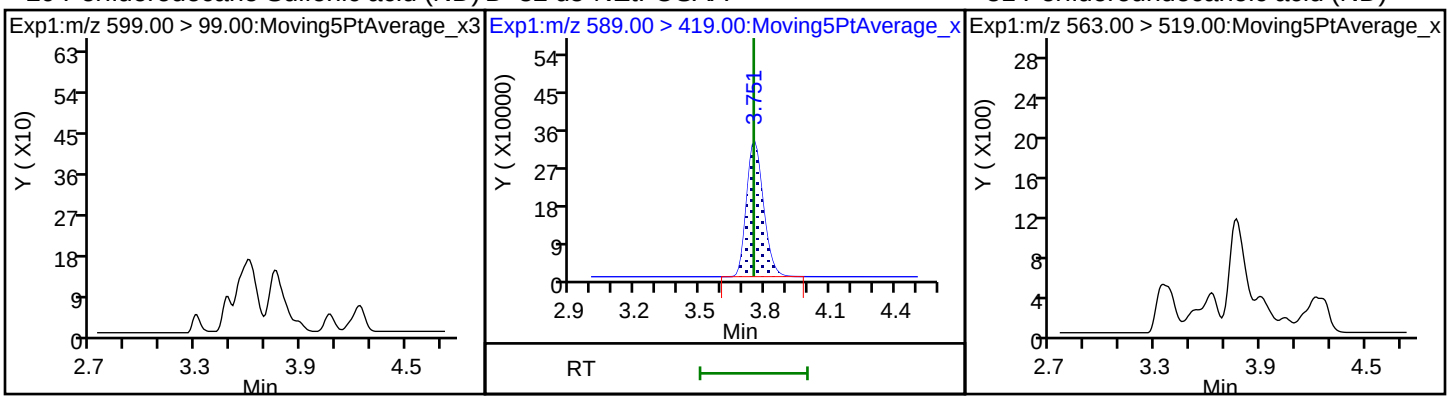
D 23 13C2 PFDA



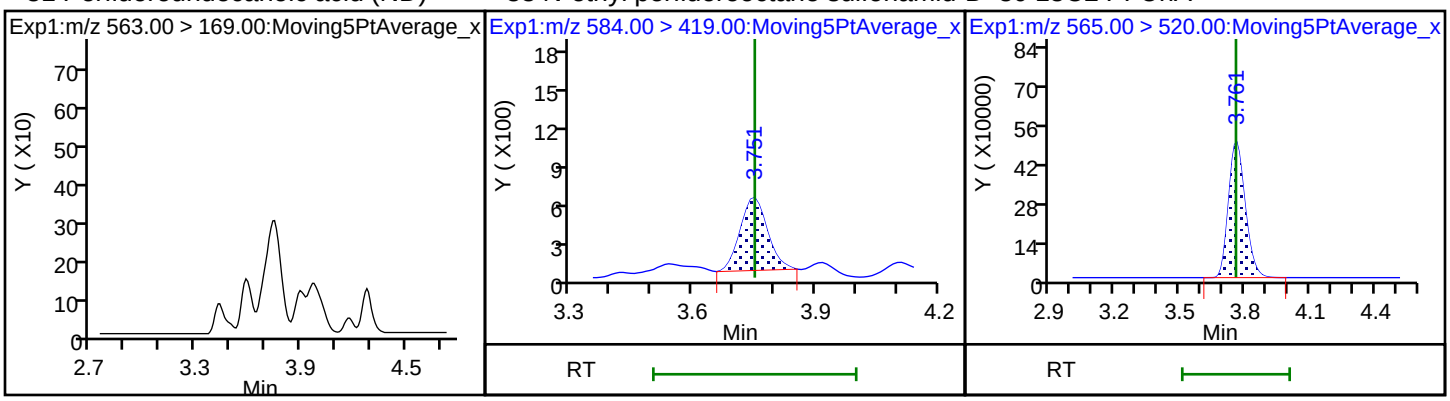
28 N-methyl perfluorooctane sulfonamiD 27 d3-NMeFOSAA 29 Perfluorodecane Sulfonic acid (ND)



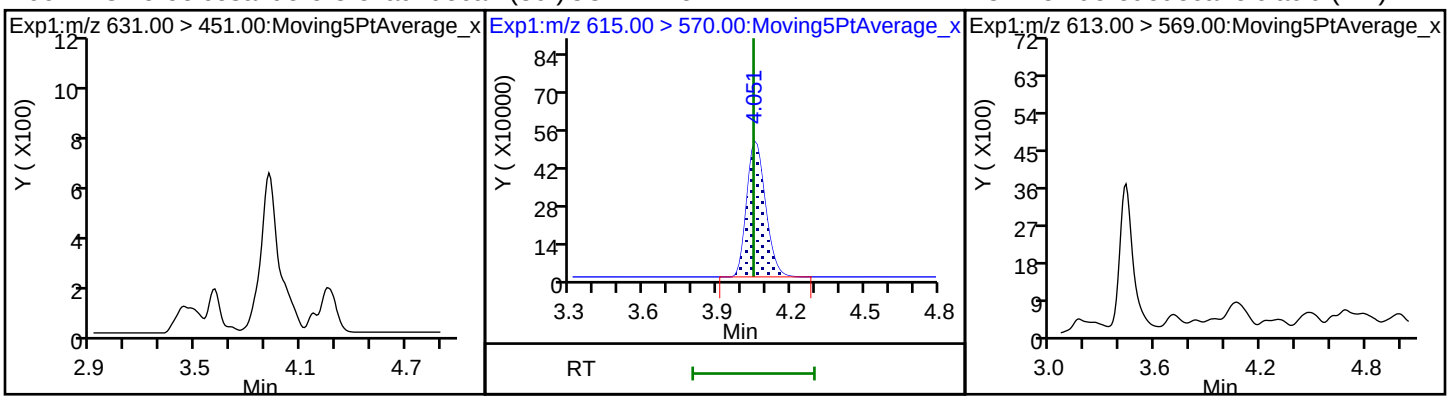
29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA 31 Perfluoroundecanoic acid (ND)



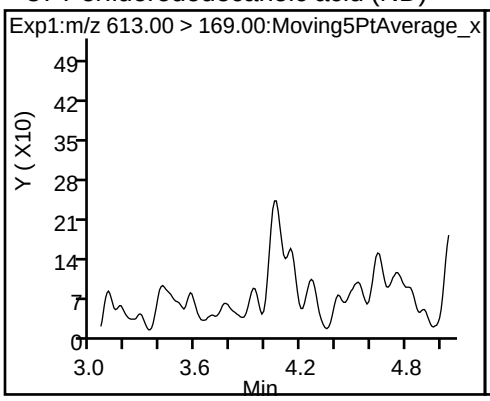
31 Perfluoroundecanoic acid (ND) 33 N-ethyl perfluorooctane sulfonamid D 30 13C2 PFUnA



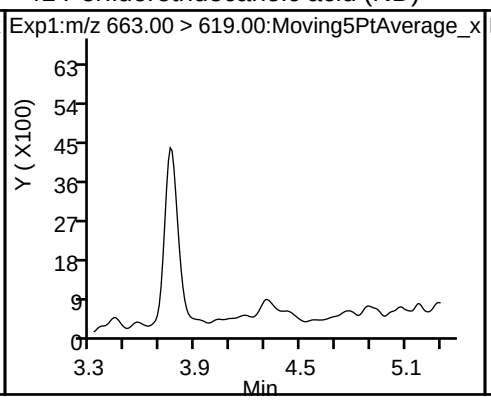
66 11-Chloroeicosafluoro-3-oxaundecan (ND) 36 13C2 PFDoA 37 Perfluorododecanoic acid (ND)



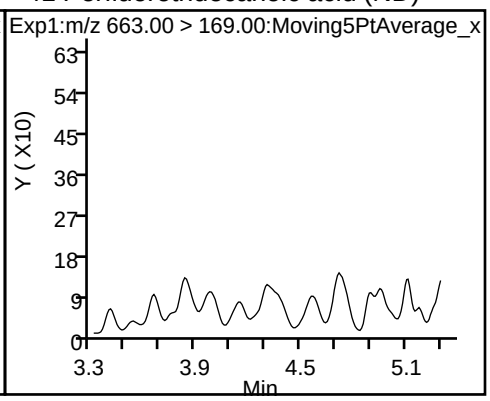
37 Perfluorododecanoic acid (ND)



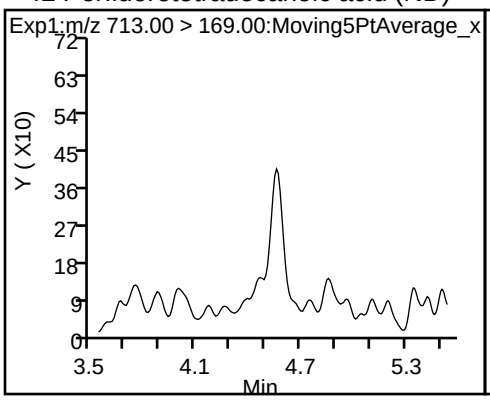
41 Perfluorotridecanoic acid (ND)



41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



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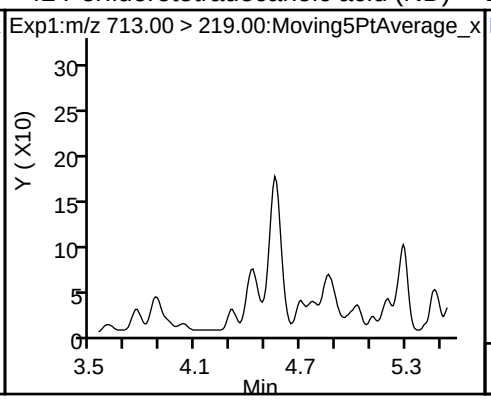
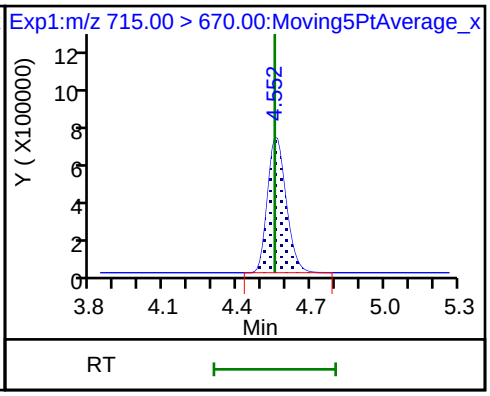
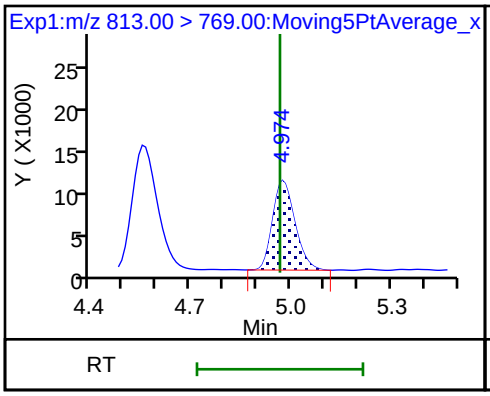


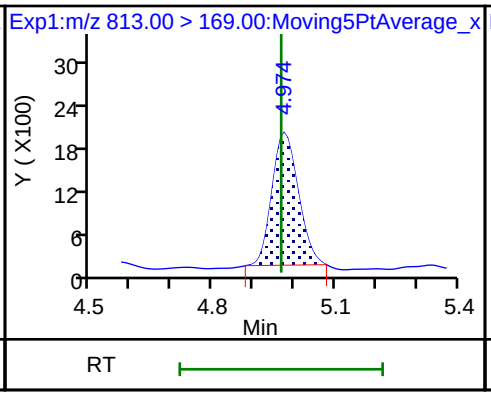
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid



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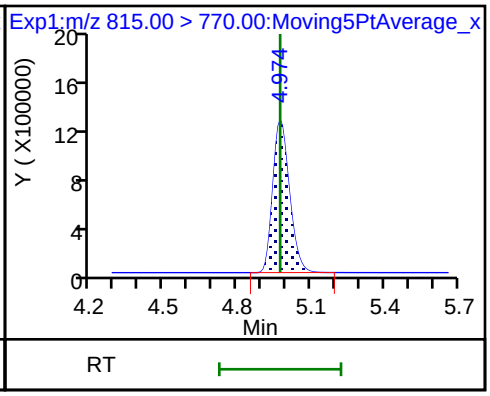
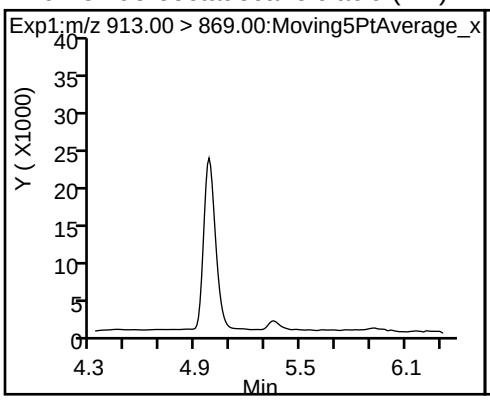
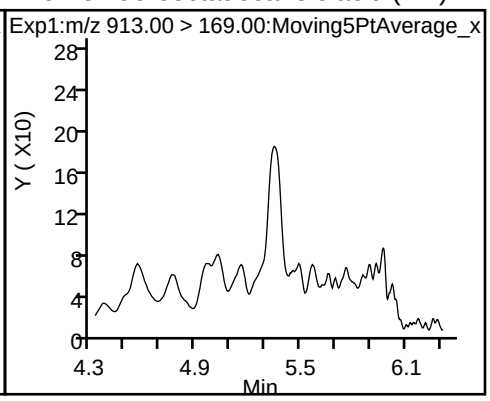


46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

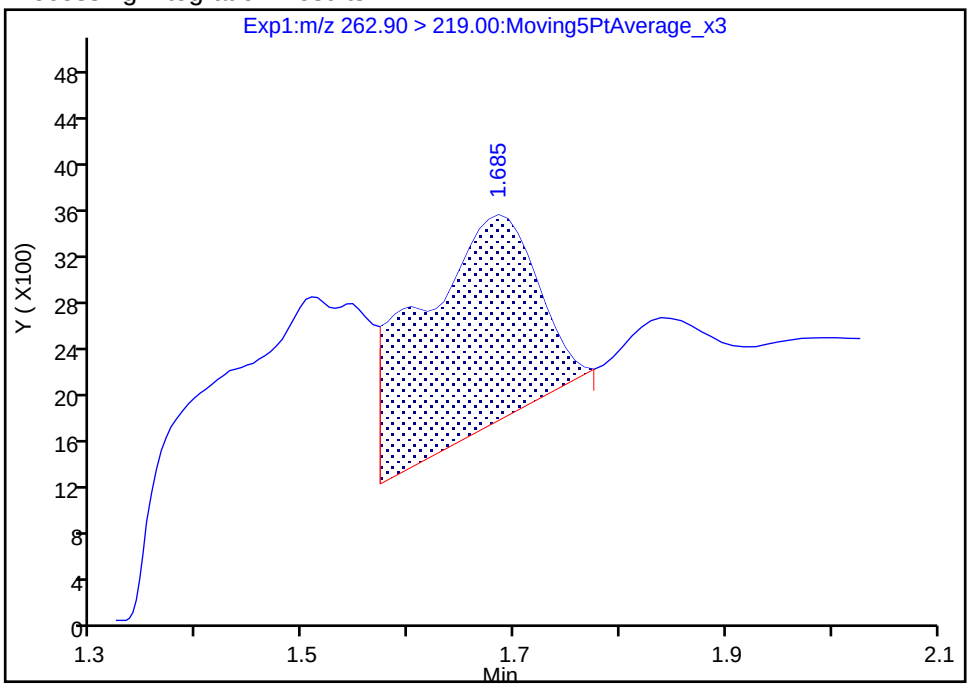
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_037.d
Injection Date: 26-Apr-2018 07:35:07 Instrument ID: A8_N
Lims ID: MB 320-219273/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

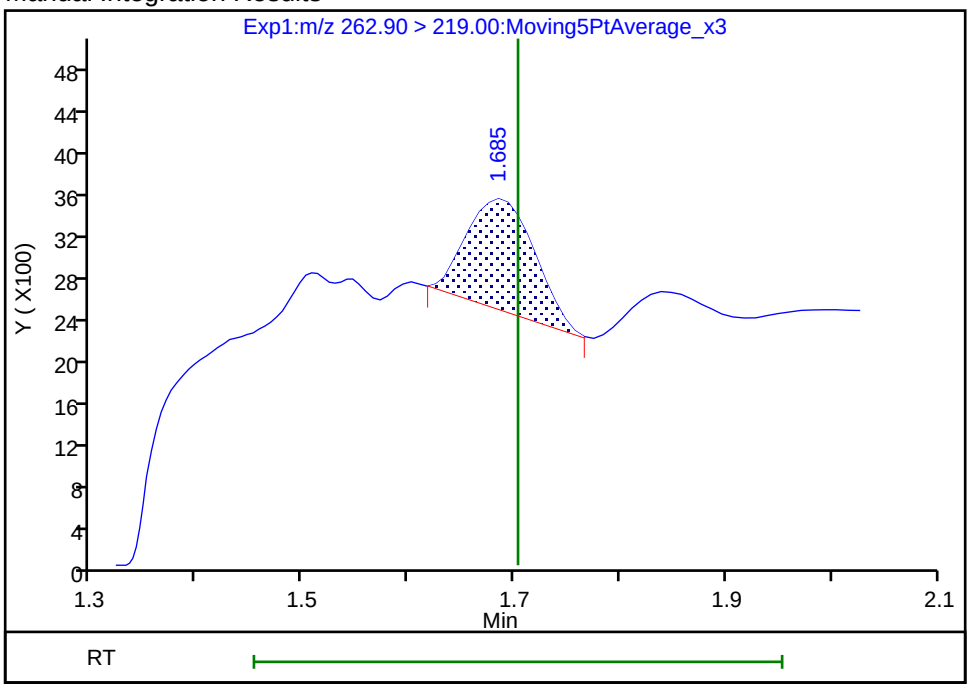
Processing Integration Results

RT: 1.68
Area: 14388
Amount: 0.007488
Amount Units: ng/ml



Manual Integration Results

RT: 1.68
Area: 4771
Amount: 0.002483
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:10:50
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

TestAmerica Sacramento

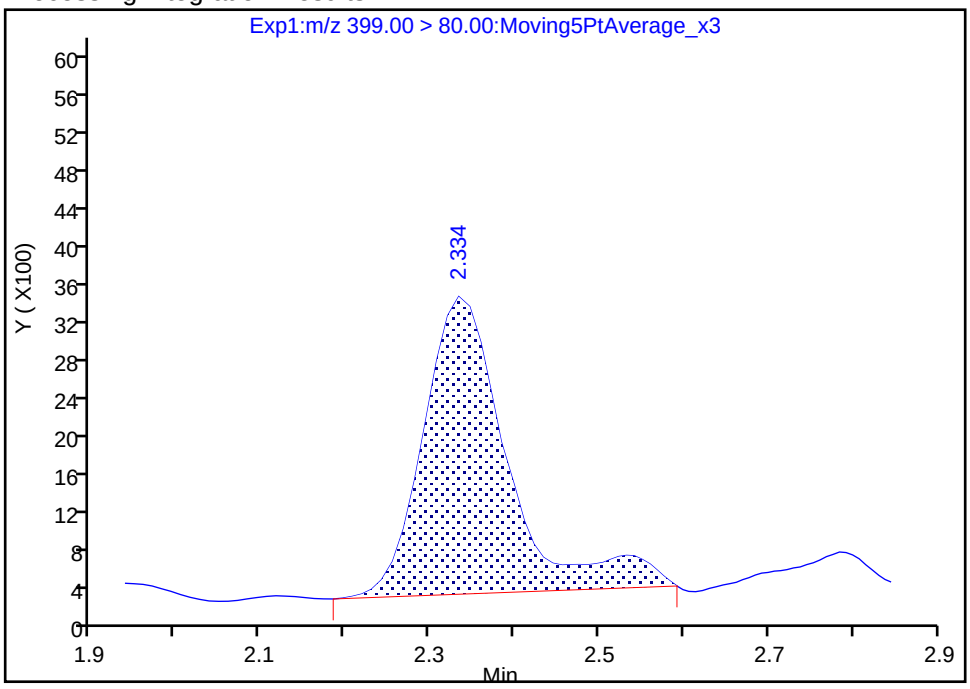
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_037.d
Injection Date: 26-Apr-2018 07:35:07 Instrument ID: A8_N
Lims ID: MB 320-219273/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 26 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

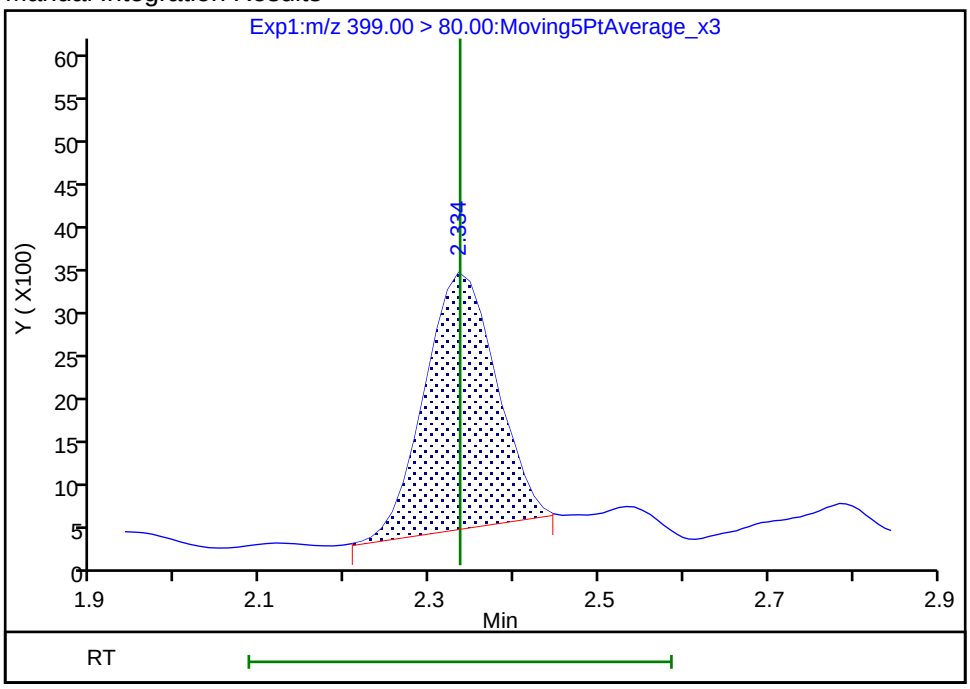
Processing Integration Results

RT: 2.33
Area: 21783
Amount: 0.009762
Amount Units: ng/ml



Manual Integration Results

RT: 2.33
Area: 17668
Amount: 0.007918
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:11:07
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-218620/8-B

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_040.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.8(mL) | Date Analyzed: 04/26/2018 07:58

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.448	J	1.99	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.49	U	1.99	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	0.58	U	1.99	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.25	U	1.99	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	0.85	U	1.99	0.85
375-95-1	Perfluorononanoic acid (PFNA)	0.27	U	1.99	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.31	U	1.99	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.10	U	1.99	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	0.55	U	1.99	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	1.30	U	1.99	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.29	U	1.99	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	U	1.99	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.340	J	1.99	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.19	U	1.99	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.54	U	1.99	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.32	U	1.99	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	0.35	U	1.99	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.09	U	19.9	3.09
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	1.89	U	19.9	1.89
27619-97-2	6:2FTS	2.696	J	19.9	1.99
39108-34-4	8:2FTS	1.99	U	19.9	1.99

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: LB 320-218620/8-B

Matrix: Solid (SPLP East) | Lab File ID: 2018.04.25LLBX_040.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.8(mL) | Date Analyzed: 04/26/2018 07:58

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	99		25-150
STL01892	13C4-PFHpA	103		25-150
STL00990	13C4 PFOA	102		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	90		25-150
STL00998	13C2 PFDoA	87		25-150
STL02116	13C2-PFTeDA	98		25-150
STL02337	13C3-PFBS	98		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	95		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	93		25-150
STL02117	d5-NEtFOSAA	103		25-150
STL02279	M2-6:2FTS	108		25-150
STL02280	M2-8:2FTS	106		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_040.d
Lims ID: LB 320-218620/8-B
Client ID:
Sample Type: LB
Inject. Date: 26-Apr-2018 07:58:35 ALS Bottle#: 29 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lb 320-218620/8-b
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 26-Apr-2018 14:55:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	6299987	2.46		98.3	41304	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.442	1.436	0.006	1.004	26283	0.0112			8.5	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.703	1.697	0.006	0.557	4180210	2.53		101	65684	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	86204	2.27		97.8	623	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4515776	2.47		98.9	87498	
D 9 13C4-PFHpA										
367.00 > 322.00	2.321	2.313	0.008	1.000	4566016	2.57		103	67248	
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.326	0.008	1.000	5035875	2.30		97.1	81964	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.334	2.336	-0.002	1.000	20543	0.008524			52.2	
399.00 > 99.00	2.334	2.336	-0.002	1.000	6228		3.30(1.50-4.49)		28.3	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.656	0.004	1.000	977493	2.57		108	10824	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.653	2.661	-0.008	0.997	47049	0.0676			887	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.679	0.004	1.000	4525914	2.56		102	81978	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.683	0.007	1.003	13070	0.006248			7.2	
413.00 > 169.00	2.679	2.683	-0.004	0.998	0		0.00(0.84-2.52)			
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4761624	2.50			68335	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.057	3.053	0.004	1.000	18435	0.0117			75.1	
499.00 > 99.00	3.056	3.053	0.003	1.000	0		0.00(2.31-6.93)			
D 18 13C4 PFOS										
503.00 > 80.00	3.057	3.056	0.001	1.000	3474948	2.26		94.6	21858	
D 19 13C5 PFNA										
468.00 > 423.00	3.057	3.056	0.001	1.000	3875959	2.55		102	109962	
D 21 13C8 FOSA										
506.00 > 78.00	3.395	3.394	0.001	1.000	4380084	2.28		91.3	48910	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.404	3.398	0.006	1.003	2905	0.001639			21.9	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.413	3.408	0.005	1.000	1806	0.002948			95.5	
D 26 M2-8:2FTS										
529.00 > 81.00	3.413	3.413	0.0	1.000	1159593	2.53		106	9964	
D 23 13C2 PFDA										
515.00 > 470.00	3.423	3.422	0.001	1.000	3199439	2.51		100	80413	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.572	3.582	-0.010	1.000	1689806	2.34		93.4	16536	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.748	3.747	0.001	1.000	1835942	2.57		103	23930	
31 Perfluoroundecanoic acid										R
563.00 > 519.00	3.758	3.751	0.007	1.003	7262	0.008630			40.1	R
563.00 > 169.00	3.758	3.751	0.007	1.003	986		7.37(2.12-6.36)		27.3	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.768	3.751	0.017	1.006	4447	0.006480			96.4	
D 30 13C2 PFUnA										
565.00 > 520.00	3.748	3.757	-0.009	1.000	2489228	2.26		90.4	51245	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.925	3.907	0.018	1.000	2335	0.000551			57.3	
D 36 13C2 PFDoA										
615.00 > 570.00	4.047	4.046	0.001	1.000	2581071	2.17		86.8	28484	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.047	4.051	-0.004	1.000	4119	0.003826			6.5	
613.00 > 169.00	4.037	4.051	-0.014	0.997	1027		4.01(2.13-6.40)		18.4	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.551	4.551	0.0	1.000	3680630	2.44		97.7	24509	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.967	0.007	1.000	55732	0.002956			25.8	
813.00 > 169.00	4.974	4.967	0.007	1.000	8290		6.72(2.86-8.58)		56.8	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.974	0.0	1.000	5829946	2.38		95.1	14791	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 27-Apr-2018 15:27:38 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_040.d

Injection Date: 26-Apr-2018 07:58:35 Instrument ID: A8_N

Lims ID: LB 320-218620/8-B

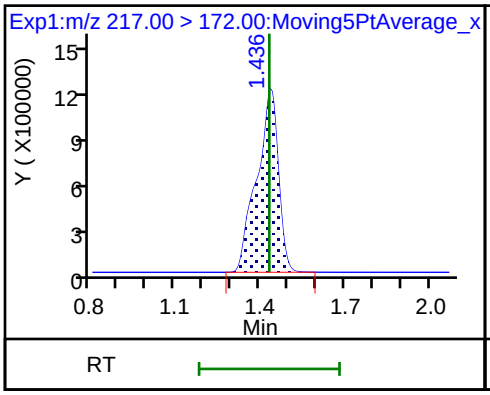
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 5

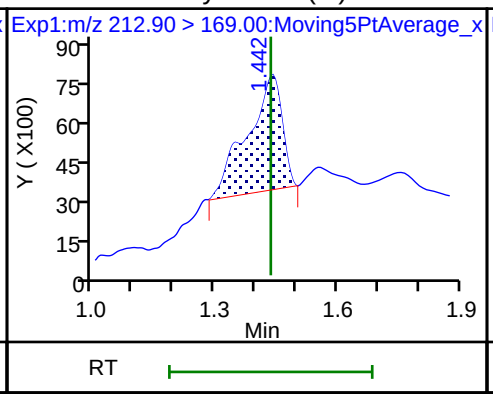
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

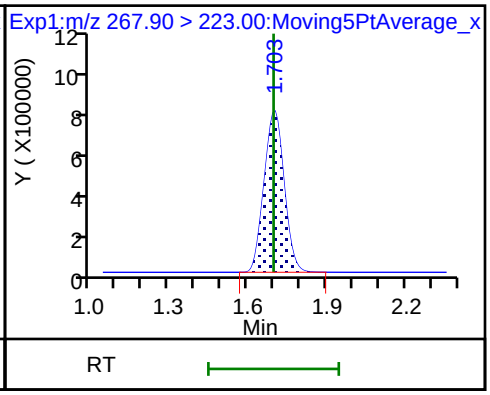
D 1 13C4 PFBA



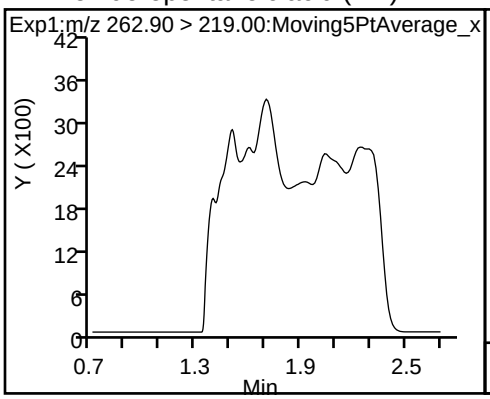
2 Perfluorobutyric acid (M)



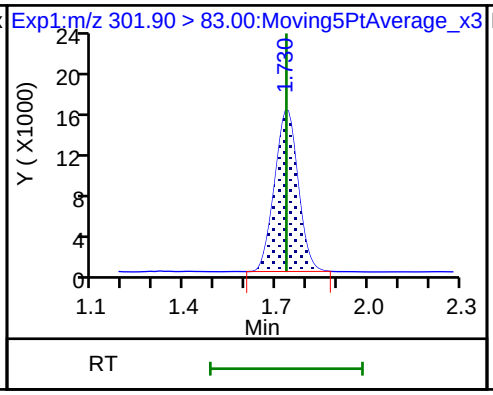
D 3 13C5-PFPeA



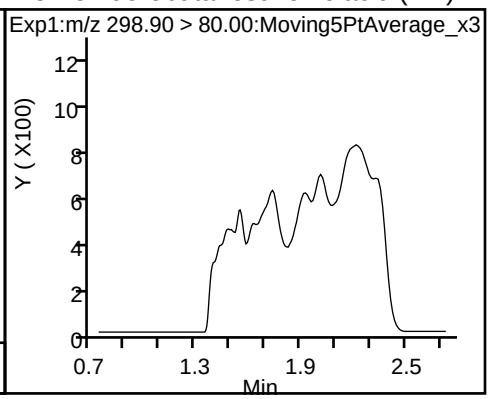
4 Perfluoropentanoic acid (ND)



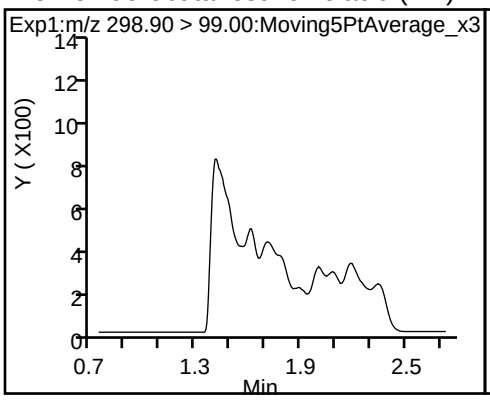
D 47 13C3-PFBS



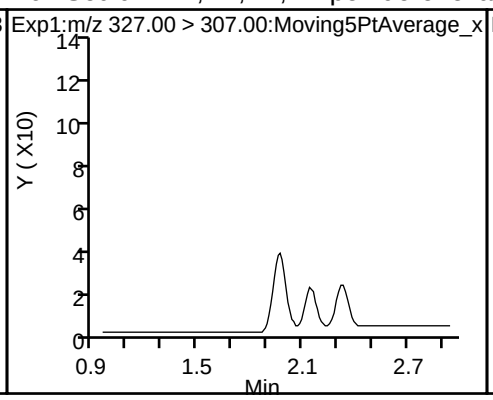
5 Perfluorobutanesulfonic acid (ND)



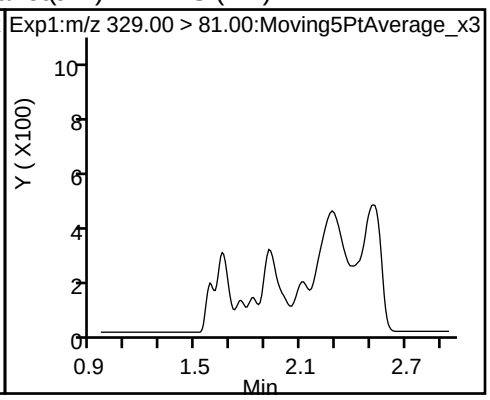
5 Perfluorobutanesulfonic acid (ND)



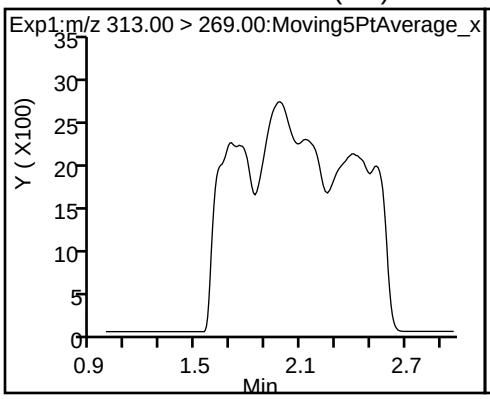
61 Sodium 1H,1H,2H,2H-perfluorohexane (ND)



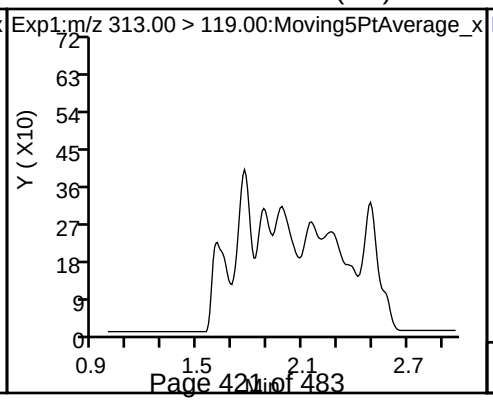
D 60 M2-4:2FTS (ND)



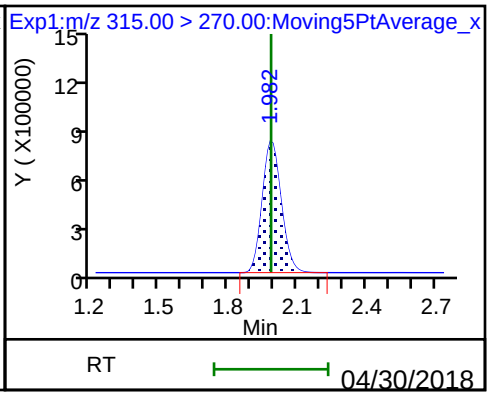
6 Perfluorohexanoic acid (ND)



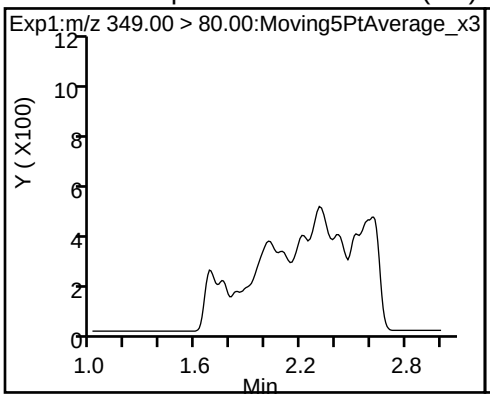
6 Perfluorohexanoic acid (ND)



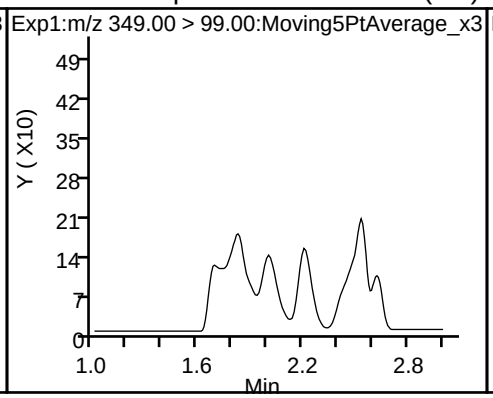
D 7 13C2 PFHxA



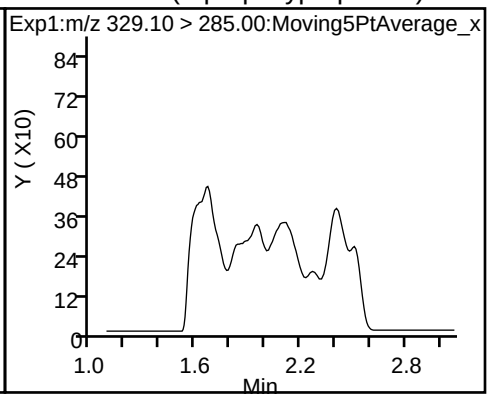
70 Perfluoropentanesulfonic acid (ND)



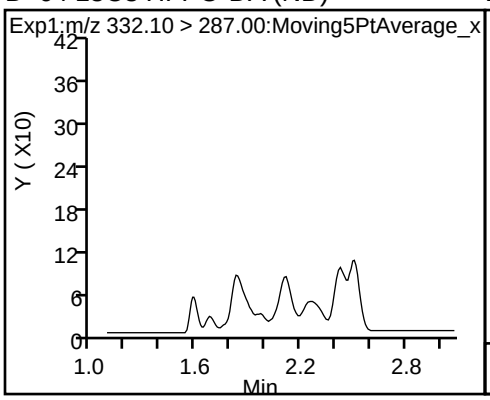
70 Perfluoropentanesulfonic acid (ND)



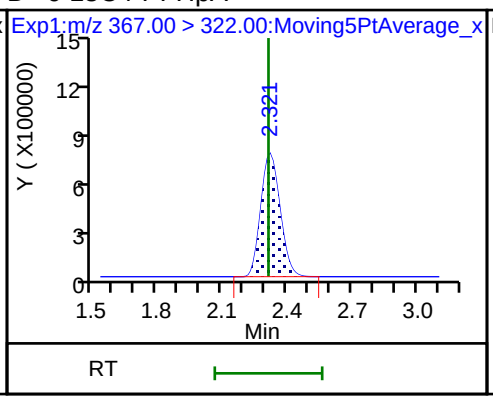
67 Perfluoro(2-propoxypropanoic) acid (ND)



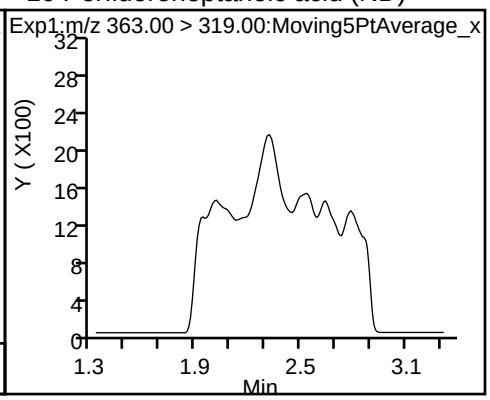
D 64 13C3 HFPO-DA (ND)



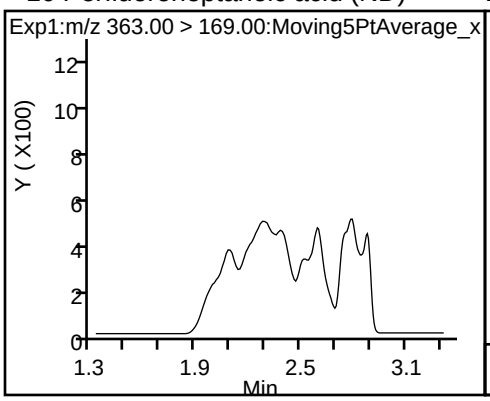
D 9 13C4-PFHpA



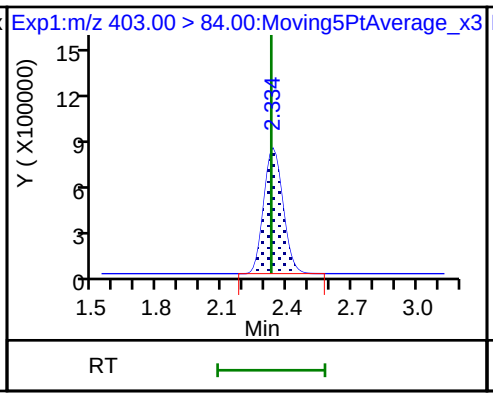
10 Perfluoroheptanoic acid (ND)



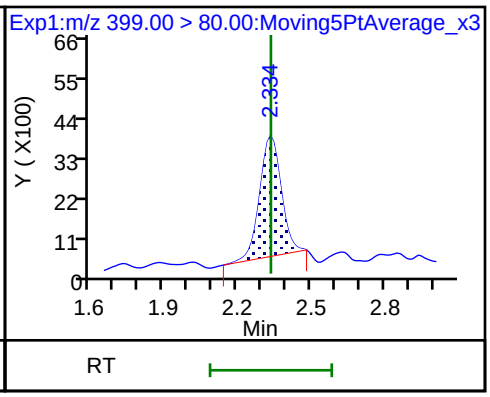
10 Perfluoroheptanoic acid (ND)



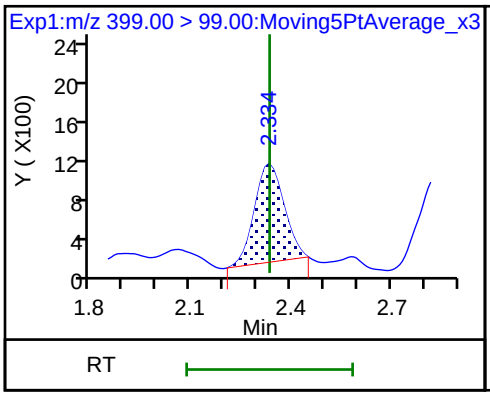
D 11 18O2 PFHxS



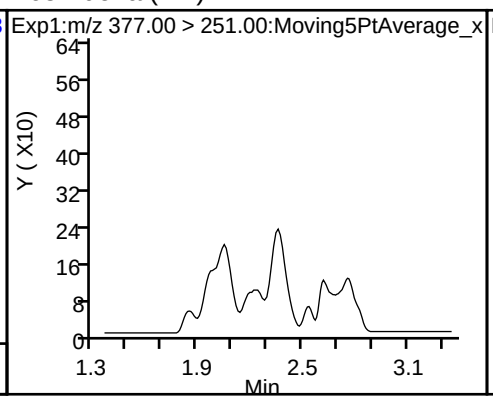
8 Perfluorohexanesulfonic acid



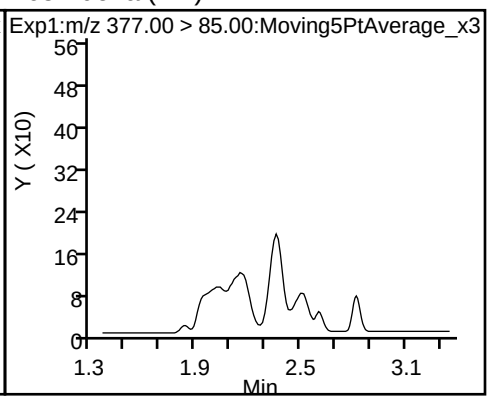
8 Perfluorohexanesulfonic acid



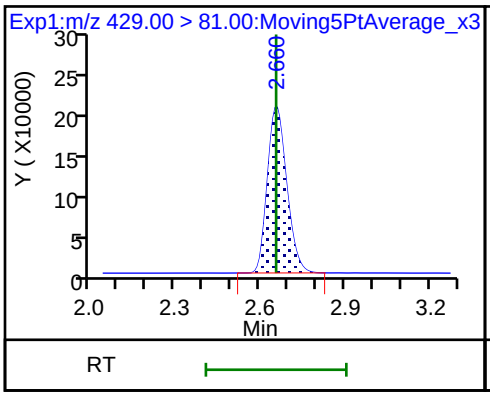
65 Adona (ND)



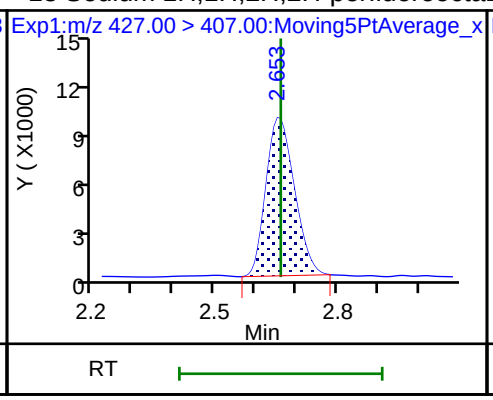
65 Adona (ND)



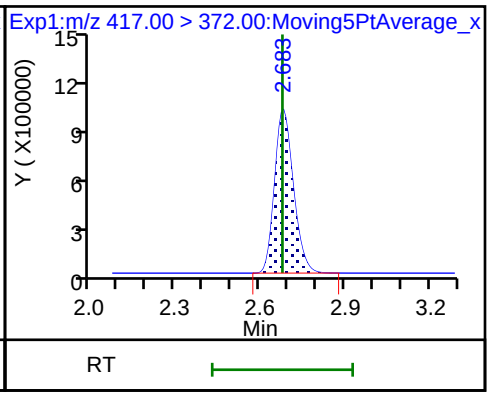
D 12 M2-6:2FTS



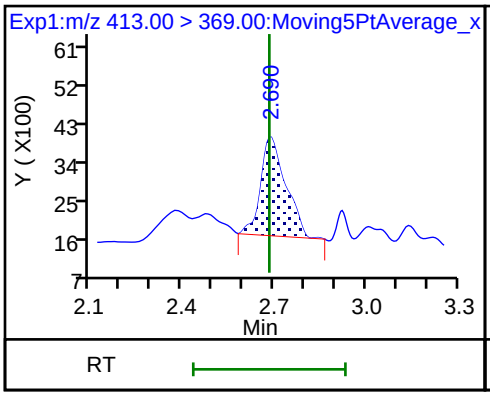
13 Sodium 1H,1H,2H,2H-perfluorooctane



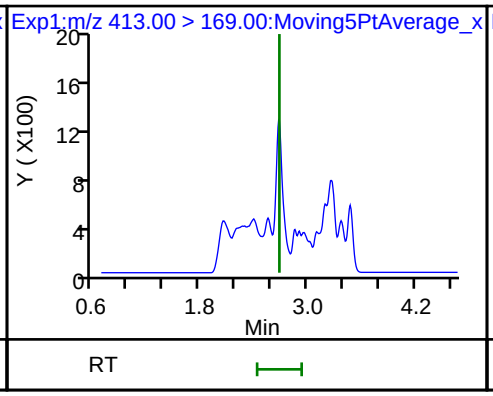
D 14 13C4 PFOA



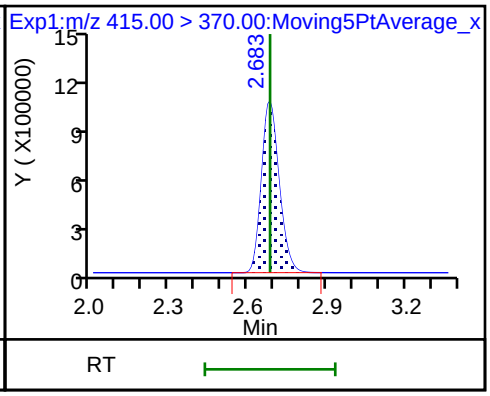
15 Perfluorooctanoic acid



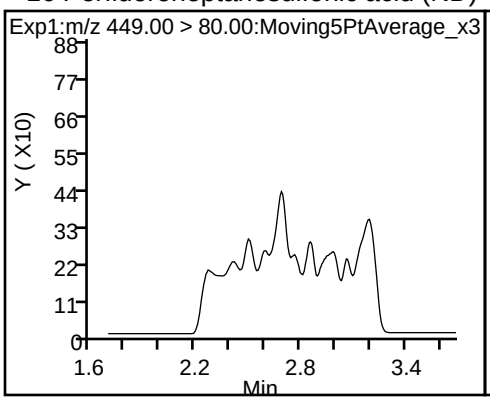
15 Perfluorooctanoic acid



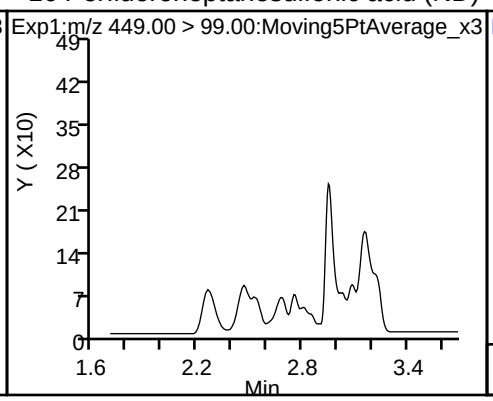
* 62 13C2-PFOA



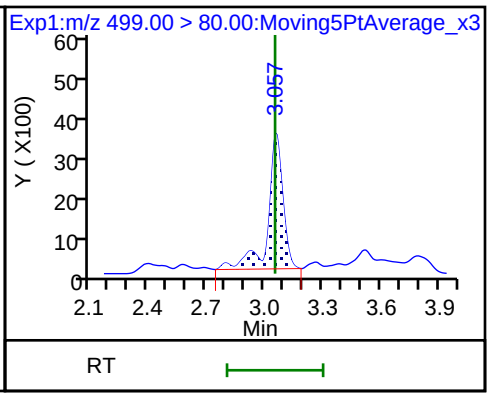
16 Perfluoroheptanesulfonic acid (ND)



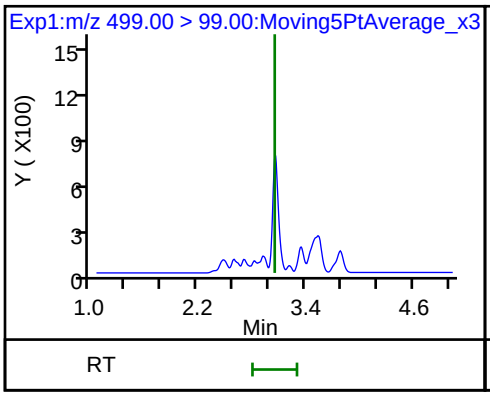
16 Perfluoroheptanesulfonic acid (ND)



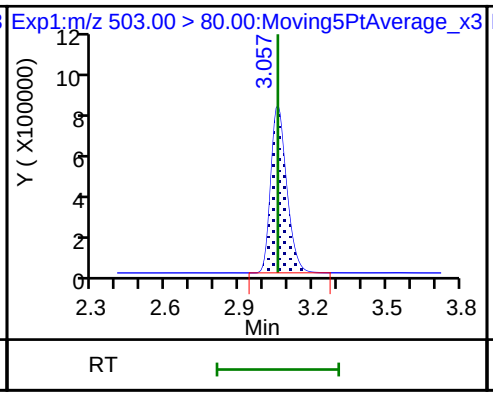
17 Perfluorooctane sulfonic acid



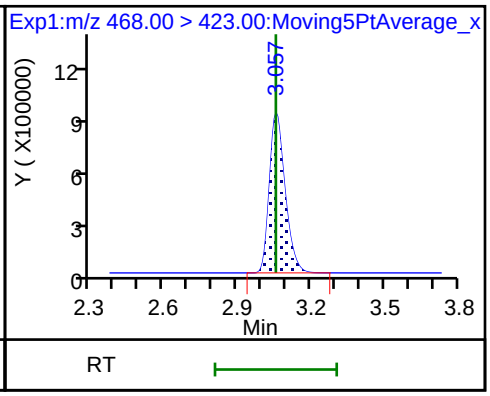
17 Perfluorooctane sulfonic acid



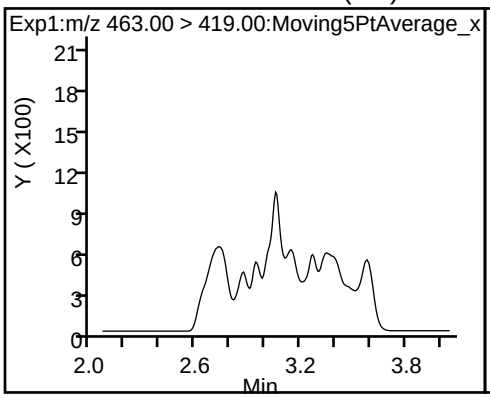
D 18 13C4 PFOS



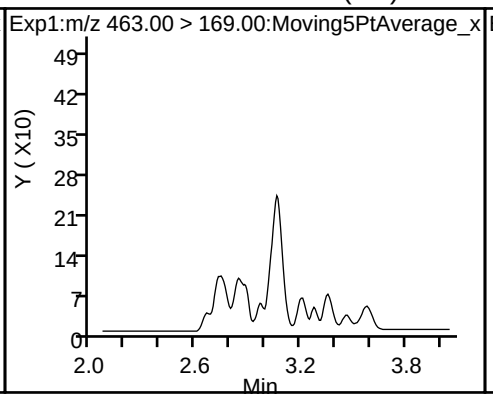
D 19 13C5 PFNA



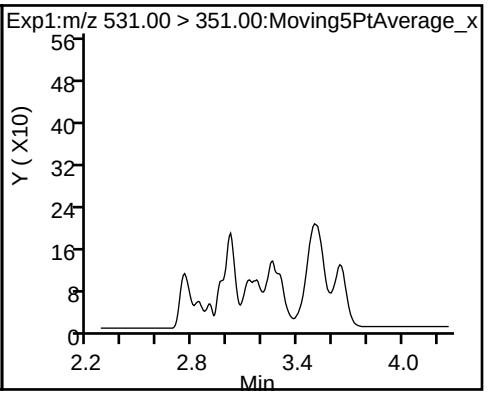
20 Perfluorononanoic acid (ND)



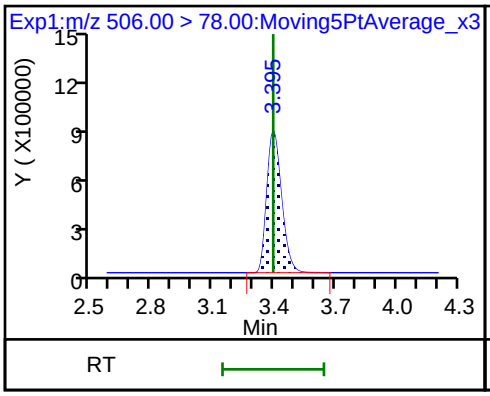
20 Perfluorononanoic acid (ND)



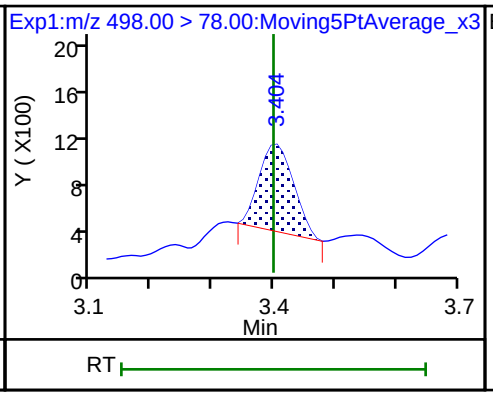
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



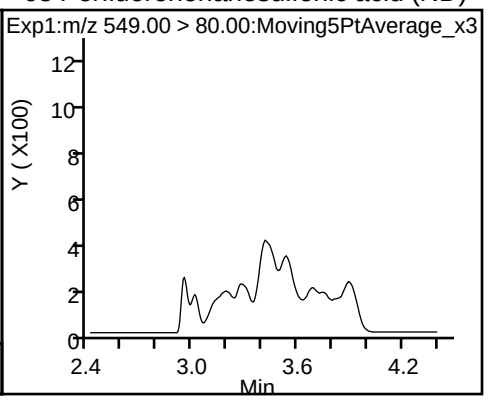
D 21 13C8 FOSA



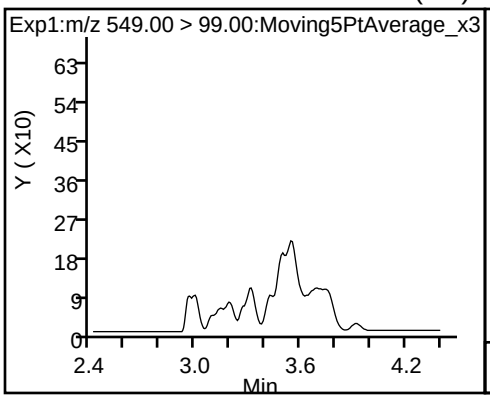
22 Perfluorooctane Sulfonamide



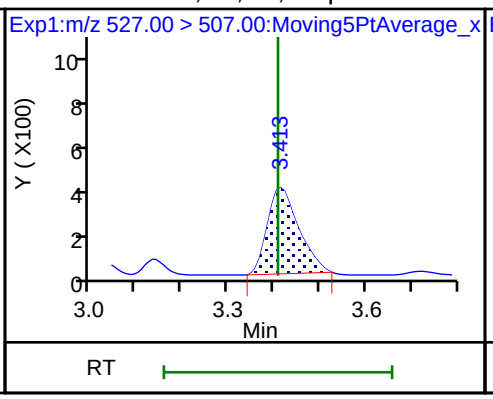
68 Perfluorononanesulfonic acid (ND)



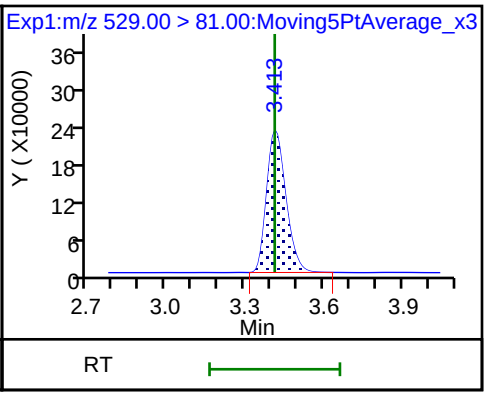
68 Perfluorononanesulfonic acid (ND)



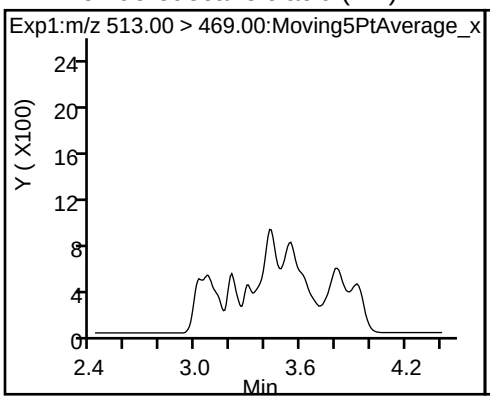
25 Sodium 1H,1H,2H,2H-perfluorodecane



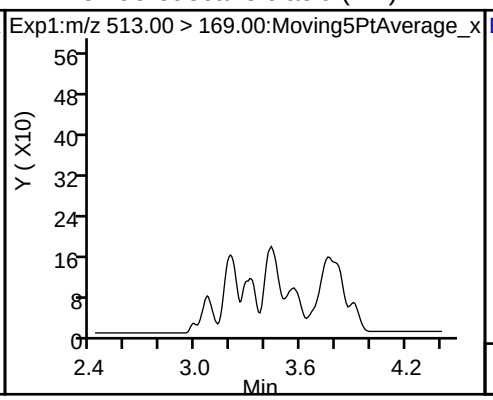
D 26 M2-8:2FTS



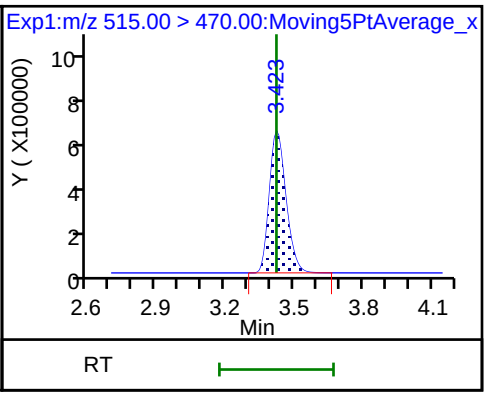
24 Perfluorodecanoic acid (ND)



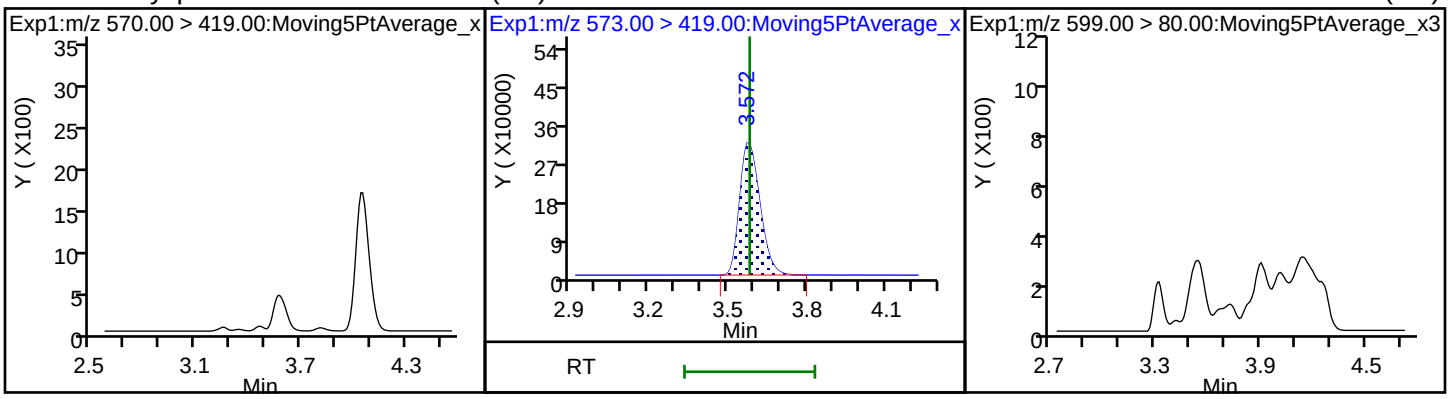
24 Perfluorodecanoic acid (ND)



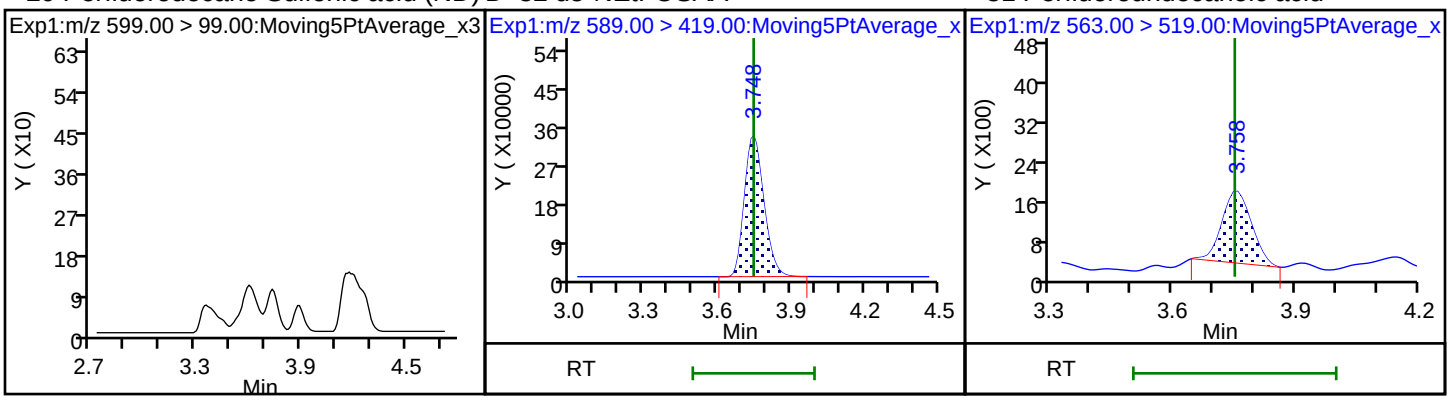
D 23 13C2 PFDA



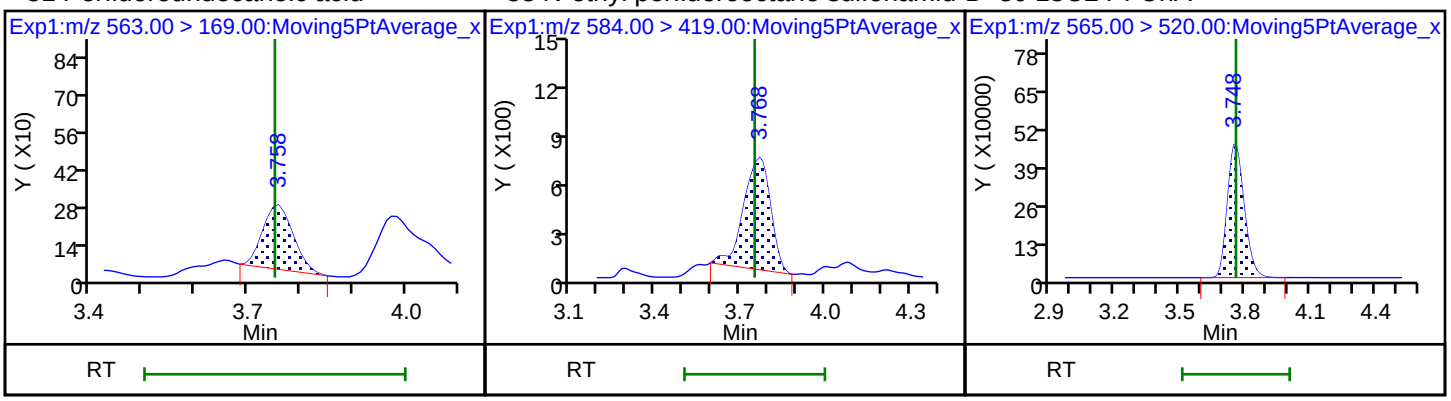
28 N-methyl perfluorooctane sulfonamid D 27 d3-NMeFOSAA 29 Perfluorodecane Sulfonic acid (ND)



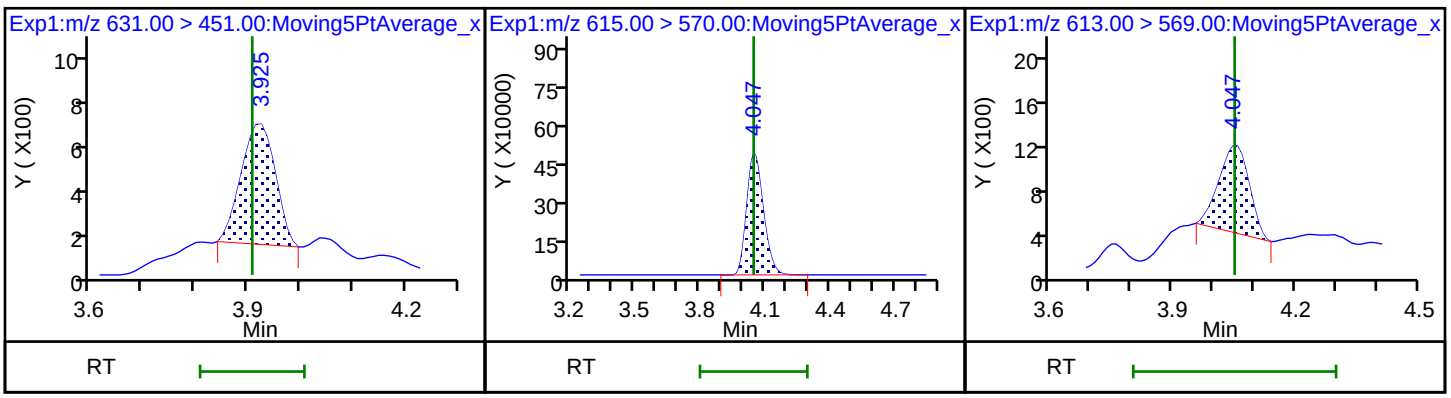
29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA 31 Perfluoroundecanoic acid



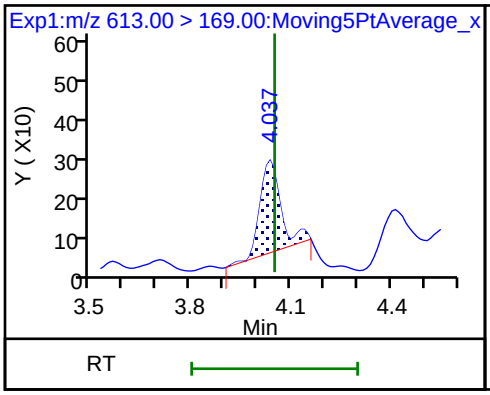
31 Perfluoroundecanoic acid 33 N-ethyl perfluorooctane sulfonamid D 30 13C2 PFUnA



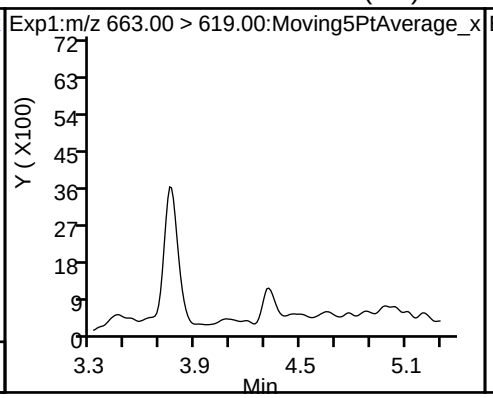
66 11-Chloroeicosafluoro-3-oxaundecan D 36 13C2 PFDoA 37 Perfluorododecanoic acid



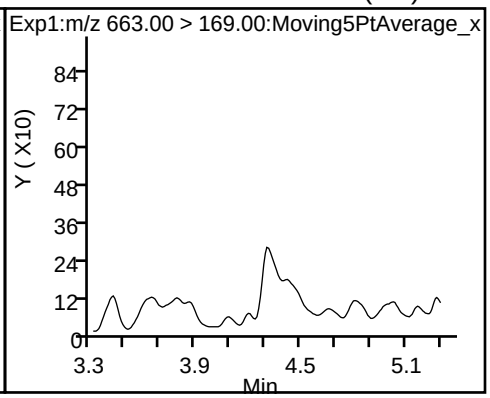
37 Perfluorododecanoic acid



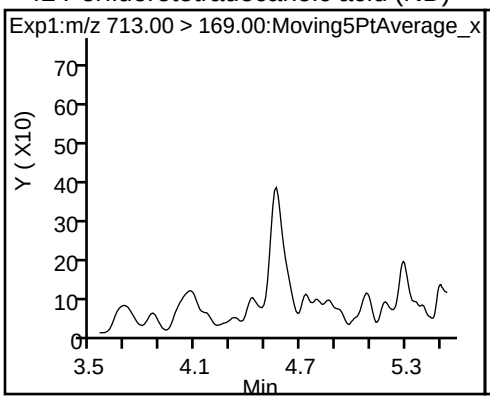
41 Perfluorotridecanoic acid (ND)



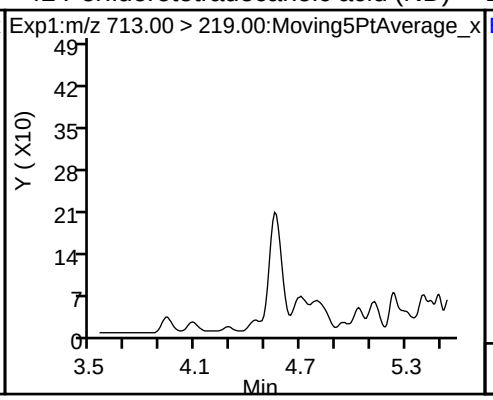
41 Perfluorotridecanoic acid (ND)



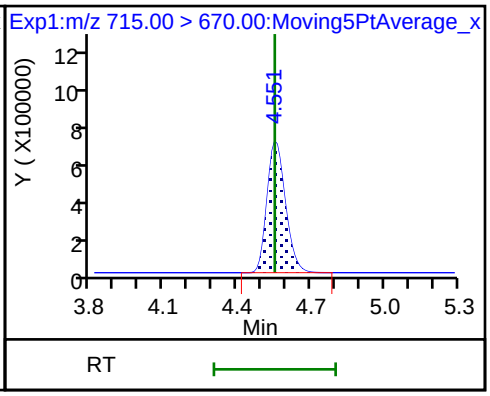
42 Perfluorotetradecanoic acid (ND)



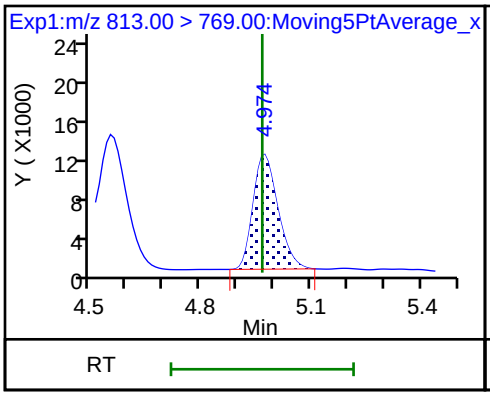
42 Perfluorotetradecanoic acid (ND)



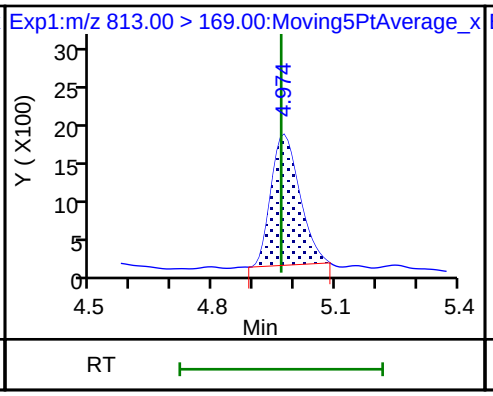
D 43 13C2-PFTeDA



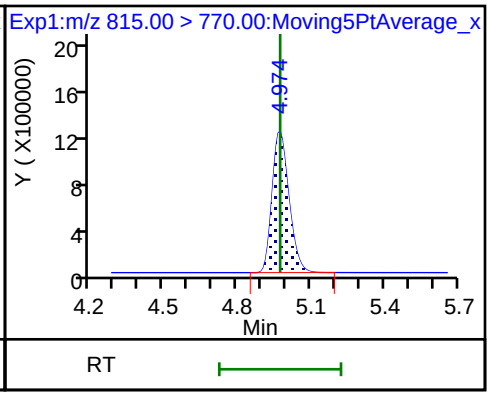
45 Perfluorohexadecanoic acid



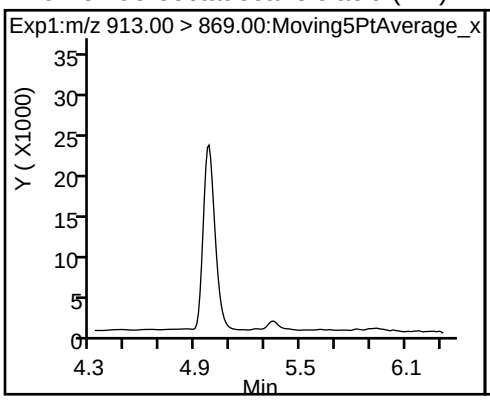
45 Perfluorohexadecanoic acid



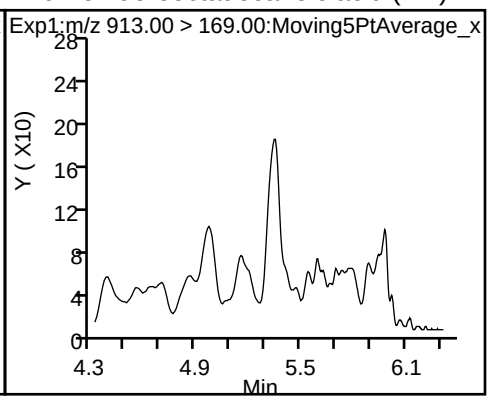
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

TestAmerica Sacramento

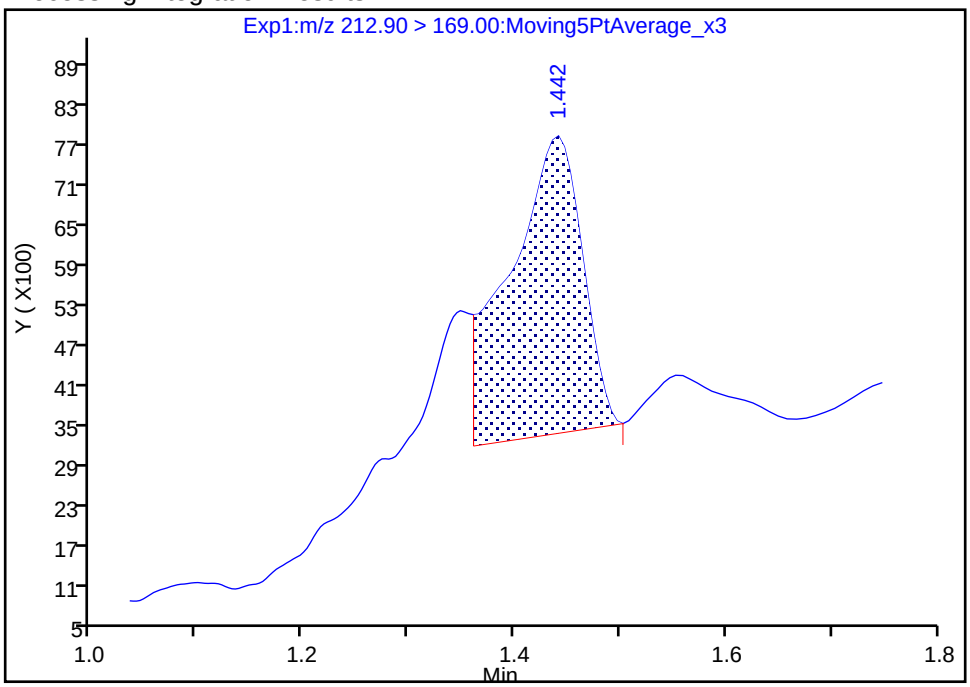
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_040.d
Injection Date: 26-Apr-2018 07:58:35 Instrument ID: A8_N
Lims ID: LB 320-218620/8-B
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

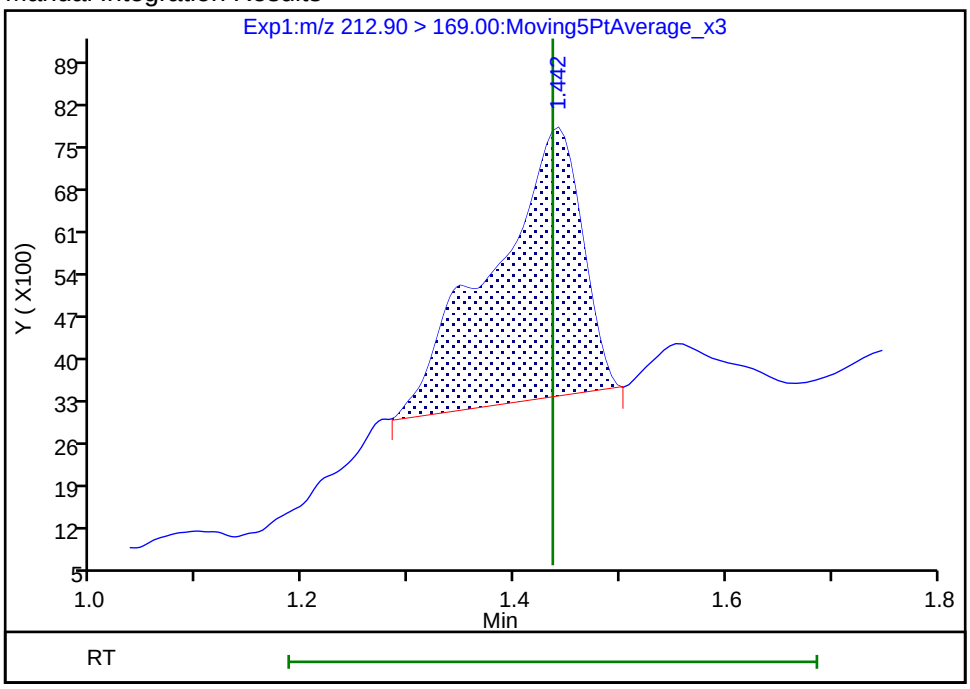
Processing Integration Results

RT: 1.44
Area: 21258
Amount: 0.009085
Amount Units: ng/ml



Manual Integration Results

RT: 1.44
Area: 26283
Amount: 0.011232
Amount Units: ng/ml



Reviewer: barnettj, 27-Apr-2018 15:13:44
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-219273/2-A

Matrix: Solid | Lab File ID: 2018.04.25LLBX_038.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/26/2018 07:42

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.45		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	39.05		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	38.46		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	40.68		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	37.05		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	38.75		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	38.89		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	34.73		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	38.72		2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	35.40		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	38.35		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34.07		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.78		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.64		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37.83		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	37.41		2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	37.89		2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	41.75		20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	39.00		20.0	1.90
27619-97-2	6:2FTS	39.05		20.0	2.00
39108-34-4	8:2FTS	40.44		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 320-219273/2-A

Matrix: Solid | Lab File ID: 2018.04.25LLBX_038.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/26/2018 07:42

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	101		25-150
STL01893	13C5 PFPeA	99		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4-PFHpA	98		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	91		25-150
STL02116	13C2-PFTeDA	93		25-150
STL02337	13C3-PFBS	99		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	94		25-150
STL01056	13C8 FOSA	87		25-150
STL02118	d3-NMeFOSAA	92		25-150
STL02117	d5-NEtFOSAA	98		25-150
STL02279	M2-6:2FTS	106		25-150
STL02280	M2-8:2FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_038.d
Lims ID: LCS 320-219273/2-A
Client ID:
Sample Type: LCS
Inject. Date: 26-Apr-2018 07:42:57 ALS Bottle#: 27 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-219273/2-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:12:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.441	1.432	0.009	1.000	6205985	2.54		101	40117	
2 Perfluorobutyric acid										
212.90 > 169.00	1.441	1.436	0.005	1.000	2388714	1.04		104	1437	
D 3 13C5-PFPeA										
267.90 > 223.00	1.702	1.697	0.005	0.555	3892386	2.47		98.7	57449	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.703	-0.001	1.000	1811525	0.9763		97.6	1844	
D 47 13C3-PFBS										
301.90 > 83.00	1.738	1.733	0.005	1.000	83122	2.30		98.8	811	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.738	1.739	-0.001	1.000	2383910	0.8517		96.4	8896	
298.90 > 99.00	1.738	1.739	-0.001	1.000	1002204		2.38(1.25-3.74)		12884	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.959	1.950	0.009	1.000	564830	0.9855		106	33618	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.991	1.982	0.009	1.000	1731171	0.9615		96.1	2542	
313.00 > 119.00	1.991	1.982	0.009	1.000	159330		10.87(5.03-15.10)		1182	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.985	0.006	1.000	4429751	2.54		102	112215	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.014	2.005	0.009	1.000	2223150	0.8696		92.7	16288	
349.00 > 99.00	2.014	2.005	0.009	1.000	796227		2.79(1.36-4.07)		15507	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.093	2.084	0.009	1.000	298704	NR		0.0	2361	
D 9 13C4-PFHpA										
367.00 > 322.00	2.319	2.313	0.006	1.000	4138392	2.44		97.5	65709	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.332	2.323	0.010	1.006	1685002	1.02		102	1844	
363.00 > 169.00	2.332	2.323	0.010	1.006	670816		2.51(1.13-3.40)		3362	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.326	0.019	1.000	4734461	2.26		95.6	109256	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.336	-0.004	0.994	1913159	0.8444		92.1	4556	
399.00 > 99.00	2.332	2.336	-0.004	0.994	640771		2.99(1.50-4.49)		4694	
65 Adona										
377.00 > 251.00	2.372	2.362	0.010	1.000	5146190	1.08		108	66199	
377.00 > 85.00	2.372	2.362	0.010	1.000	3071788		1.68(0.84-2.53)		64252	
D 12 M2-6:2FTS										
429.00 > 81.00	2.667	2.656	0.011	1.000	919475	2.53		106	9368	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.667	2.661	0.006	1.000	638914	0.9762		103	13421	
D 14 13C4 PFOA										
417.00 > 372.00	2.690	2.679	0.011	1.000	4402430	2.61		104	87471	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.690	2.683	0.007	1.000	1884618	0.9263		91.9	1410	
413.00 > 169.00	2.690	2.683	0.007	1.000	982775		1.92(0.84-2.52)		3078	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.683	0.007		4546695	2.50			75913	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.697	2.691	0.006	1.000	1725417	0.9410		98.8	12978	
449.00 > 99.00	2.697	2.691	0.006	1.000	480406		3.59(1.94-5.82)		13081	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.065	3.053	0.012	1.000	1420929	0.9457		102	6722	
499.00 > 99.00	3.065	3.053	0.012	1.000	308760		4.60(2.31-6.93)		6003	
D 18 13C4 PFOS										
503.00 > 80.00	3.065	3.056	0.009	1.000	3300928	2.25		94.1	21884	
D 19 13C5 PFNA										
468.00 > 423.00	3.065	3.056	0.009	1.000	3664694	2.53		101	58001	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.060	0.005	1.000	1480580	0.9687		96.9	6290	
463.00 > 169.00	3.065	3.060	0.005	1.000	360041		4.11(1.90-5.69)		8884	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.279	3.266	0.013	1.000	2343366	0.9001		96.6	38178	
D 21 13C8 FOSA										
506.00 > 78.00	3.407	3.394	0.013	1.000	3990512	2.18		87.1	39738	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.407	3.398	0.009	1.000	1529517	0.9473		94.7	7844	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.416	3.408	0.008	1.000	1071500	0.9705		101	15443	
549.00 > 99.00	3.416	3.408	0.008	1.000	392728		2.73(1.33-3.97)		7911	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.425	3.408	0.017	1.000	564017	1.01		106	36862	
D 26 M2-8:2FTS										
529.00 > 81.00	3.425	3.413	0.012	1.000	1055977	2.41		101	8581	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.435	3.417	0.018	1.000	1179109	0.9723		97.2	6635	
513.00 > 169.00	3.435	3.417	0.018	1.000	208565		5.65(2.36-7.09)		4581	
D 23 13C2 PFDA										
515.00 > 470.00	3.435	3.422	0.013	1.000	2938902	2.41		96.5	64140	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.585	3.575	0.010	1.000	661882	1.04		104	6515	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.585	3.582	0.003	1.000	1589631	2.30		92.0	15975	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.730	0.010	1.000	838561	0.9352		97.0	7480	
599.00 > 99.00	3.740	3.730	0.010	1.000	288472		2.91(1.39-4.16)		6654	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.750	3.747	0.003	1.000	1674525	2.46		98.2	30255	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.751	0.010	1.000	723971	0.8684		86.4	3935	
563.00 > 169.00	3.761	3.751	0.010	1.000	188943		3.83(2.12-6.36)		7108	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.751	0.010	1.003	610274	0.9750		97.5	12421	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.757	0.004	1.000	2466334	2.35		93.8	57432	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.917	3.907	0.010	1.000	3707854	0.9218		97.9	64645	
D 36 13C2 PFDoA										
615.00 > 570.00	4.060	4.046	0.014	1.000	2595147	2.29		91.4	37717	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.060	4.051	0.009	1.000	1047804	0.9679		96.8	1466	
613.00 > 169.00	4.060	4.051	0.009	1.000	271469		3.86(2.13-6.40)		3013	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.308	0.010	1.000	1116550	0.8850		88.5	1384	
663.00 > 169.00	4.318	4.308	0.010	1.000	345748		3.23(1.25-3.76)		3479	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.563	4.543	0.020	1.000	321604	0.9587		95.9	2649	
713.00 > 219.00	4.553	4.543	0.010	0.998	217538		1.48(0.71-2.13)		3731	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.563	4.551	0.012	1.000	3339203	2.32		92.8	25671	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.983	4.967	0.016	1.002	2079610	0.9720		96.5	936	
813.00 > 169.00	4.983	4.967	0.016	1.002	337035		6.17(2.86-8.58)		2020	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.975	4.974	0.001	1.000	5522166	2.36		94.3	14090	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.343	5.321	0.022	1.000	2245066	1.01		101	793	
913.00 > 169.00	5.343	5.321	0.022	1.000	273961		8.19(3.83-11.48)		2161	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 27-Apr-2018 15:27:34 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_038.d

Injection Date: 26-Apr-2018 07:42:57 Instrument ID: A8_N

Lims ID: LCS 320-219273/2-A

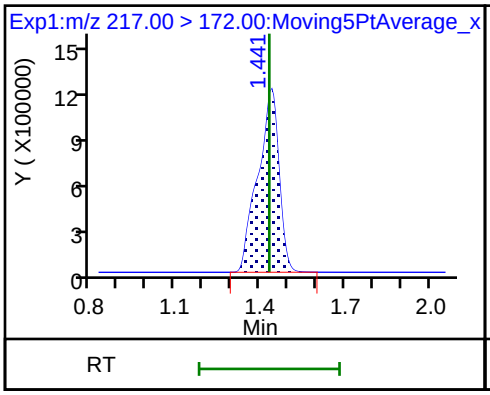
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 27 Worklist Smp#: 3

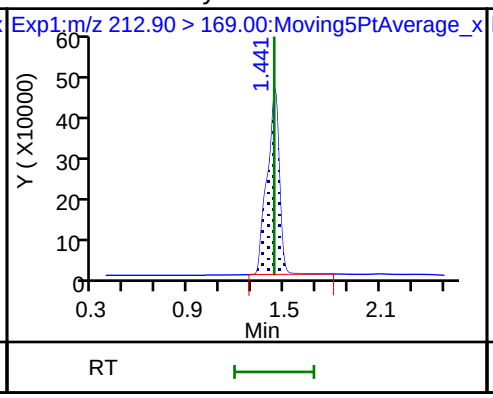
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

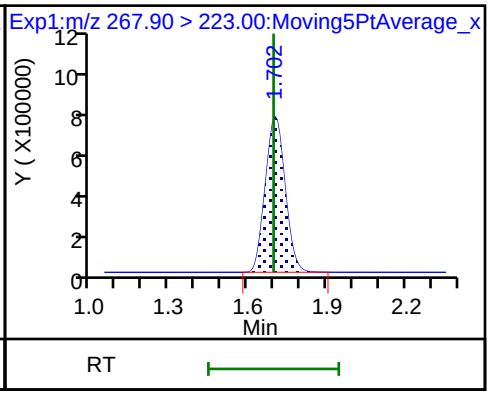
D 1 13C4 PFBA



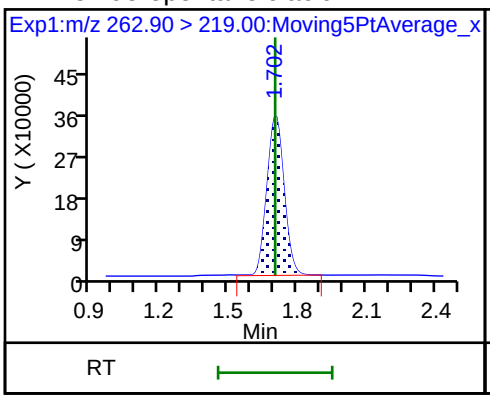
2 Perfluorobutyric acid



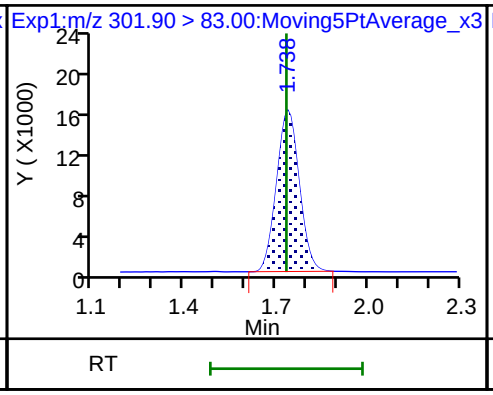
D 3 13C5-PFPeA



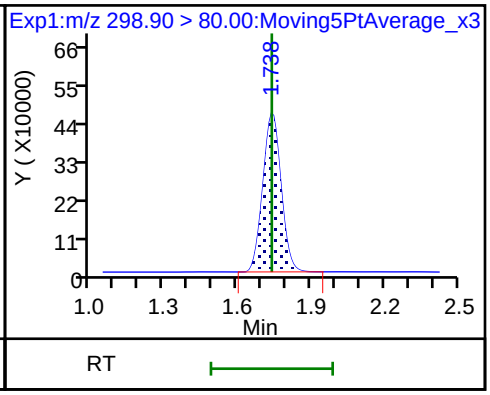
4 Perfluoropentanoic acid



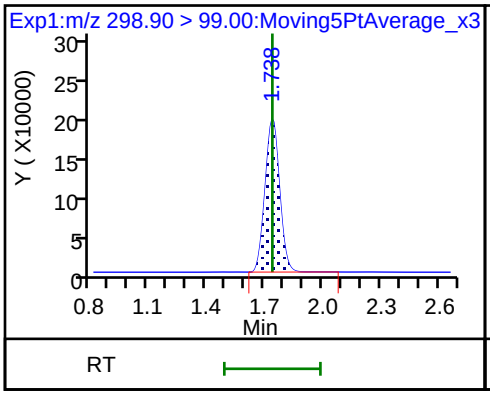
D 47 13C3-PFBS



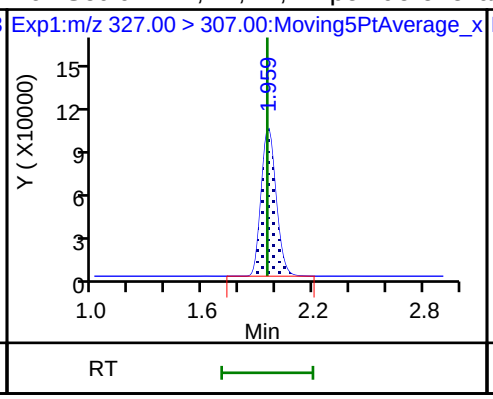
5 Perfluorobutanesulfonic acid



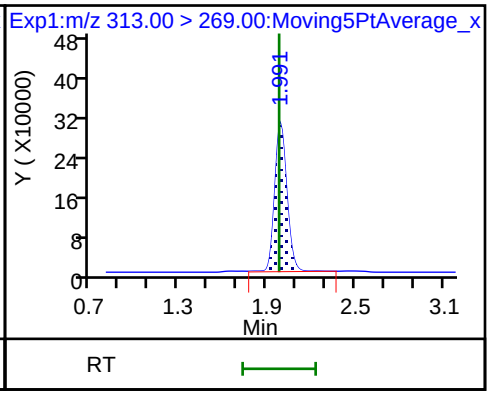
5 Perfluorobutanesulfonic acid



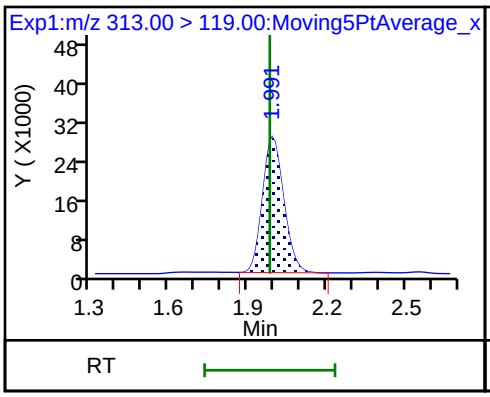
61 Sodium 1H,1H,2H,2H-perfluorohexane



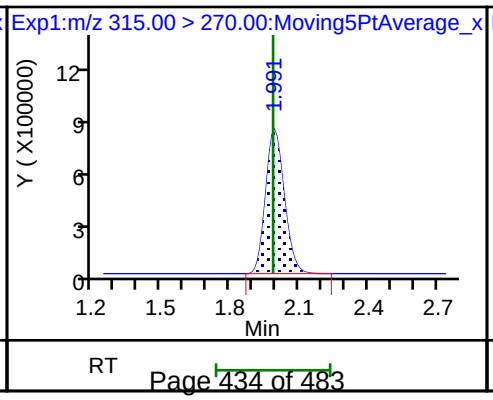
6 Perfluorohexanoic acid



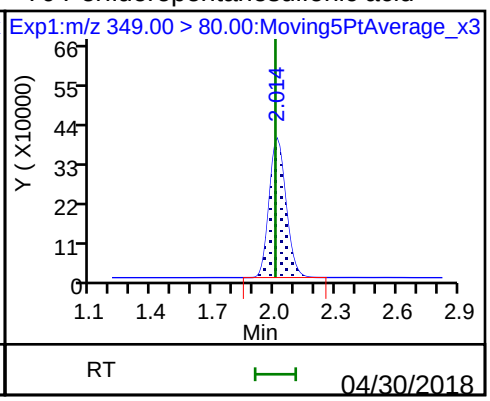
6 Perfluorohexanoic acid



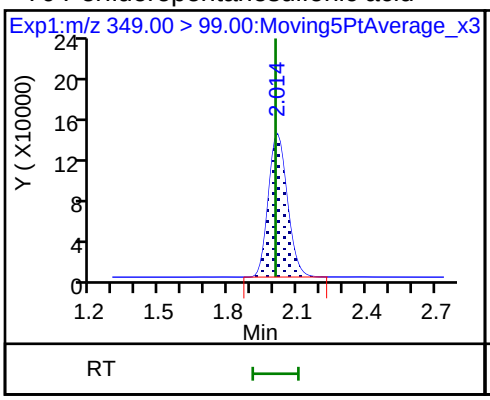
D 7 13C2 PFHxA



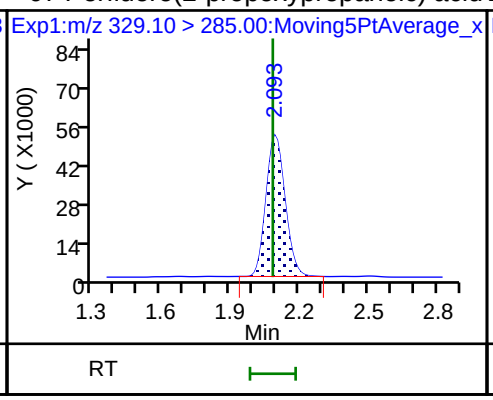
70 Perfluoropentanesulfonic acid



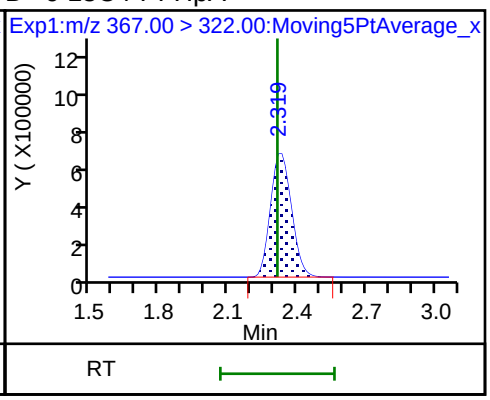
70 Perfluoropentanesulfonic acid



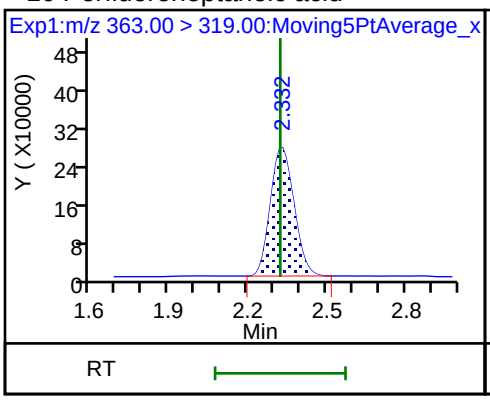
67 Perfluoro(2-propoxypropanoic) acid



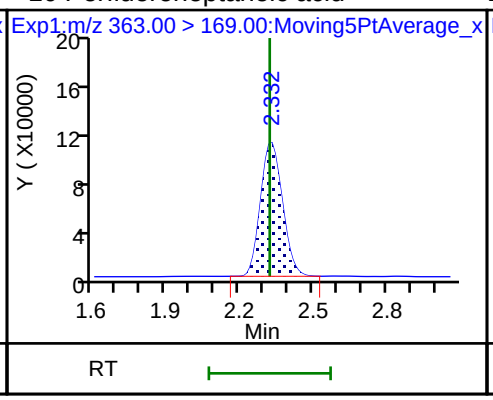
D 9 13C4-PFHpA



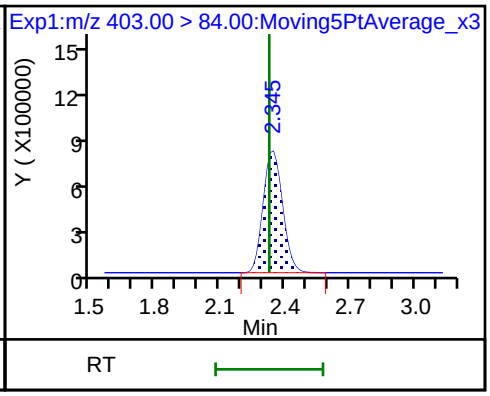
10 Perfluoroheptanoic acid



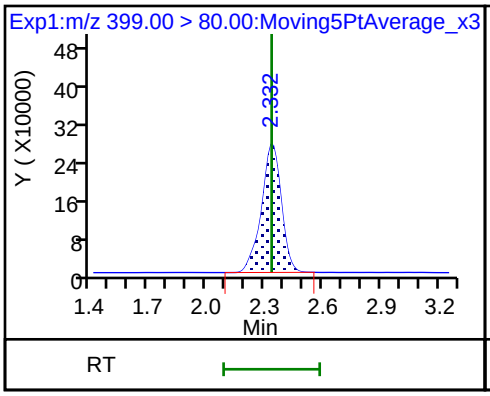
10 Perfluoroheptanoic acid



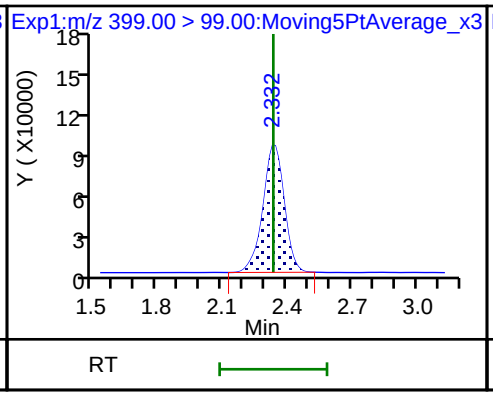
D 11 18O2 PFHxS



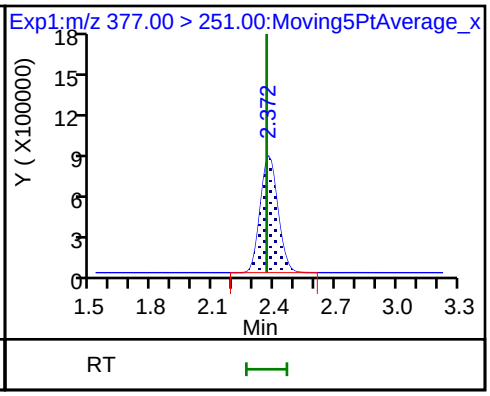
8 Perfluorohexanesulfonic acid



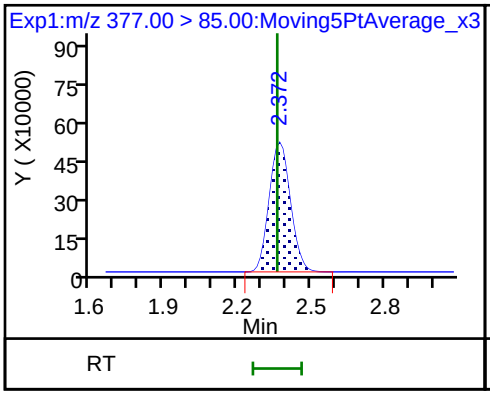
8 Perfluorohexanesulfonic acid



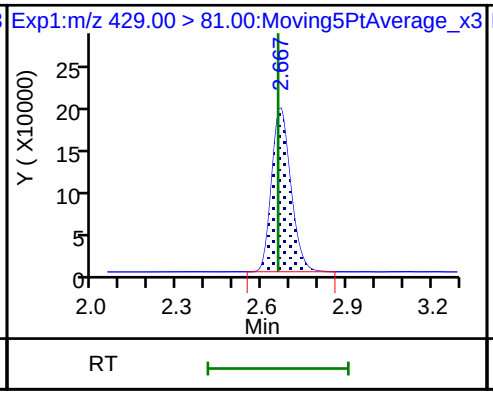
65 Adona



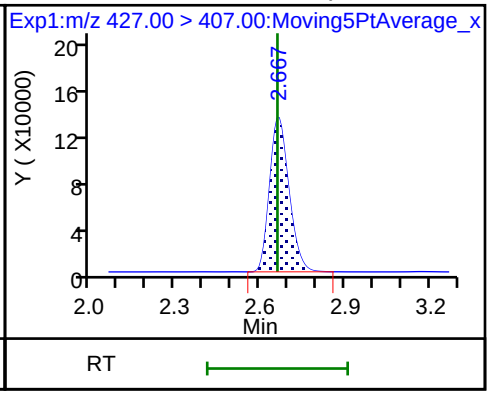
65 Adona



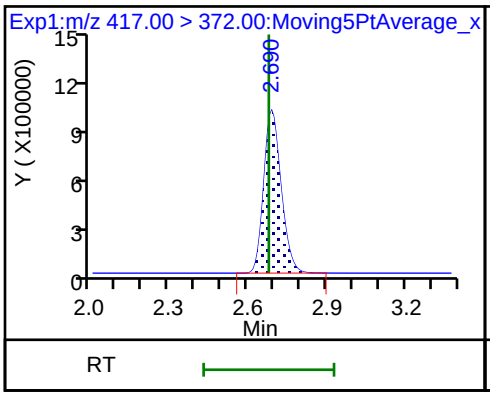
D 12 M2-6:2FTS



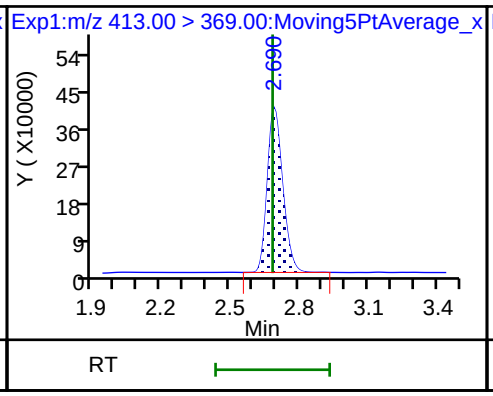
13 Sodium 1H,1H,2H,2H-perfluorooctane



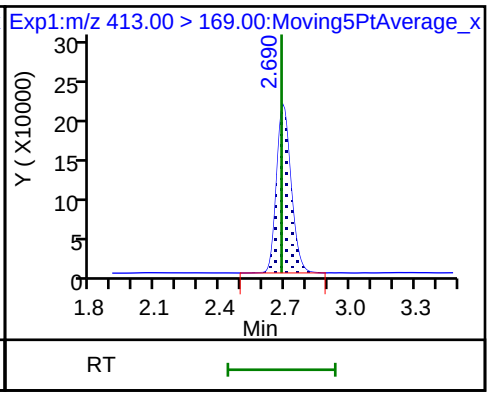
D 14 13C4 PFOA



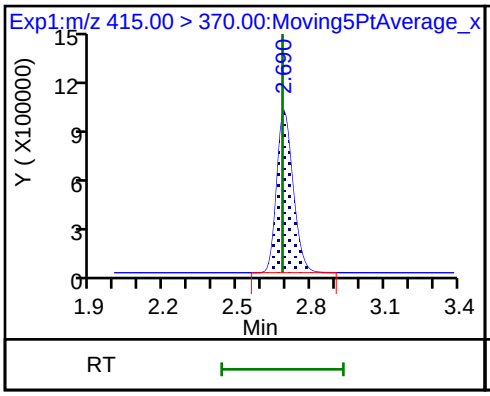
15 Perfluorooctanoic acid



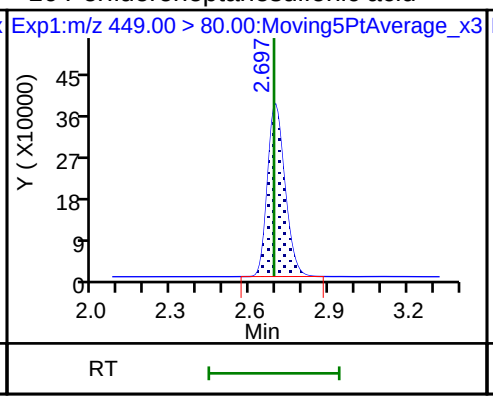
15 Perfluorooctanoic acid



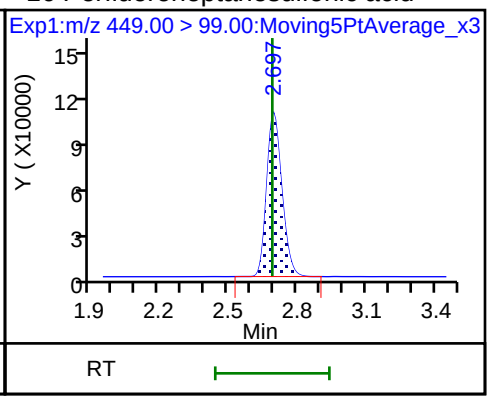
* 62 13C2-PFOA



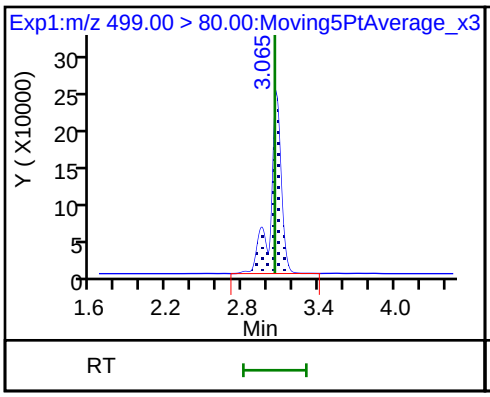
16 Perfluoroheptanesulfonic acid



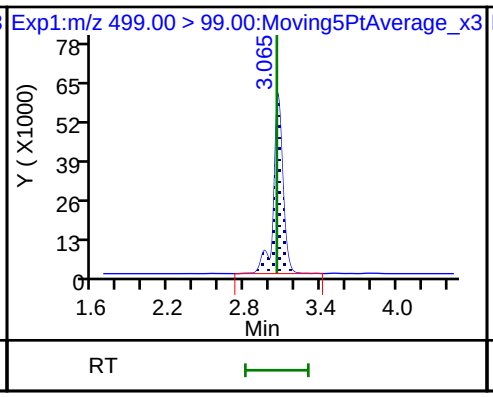
16 Perfluoroheptanesulfonic acid



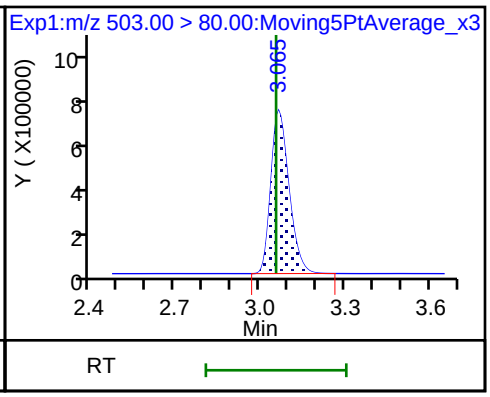
17 Perfluorooctane sulfonic acid



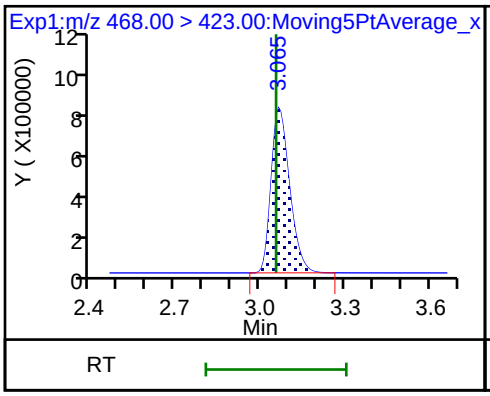
17 Perfluorooctane sulfonic acid



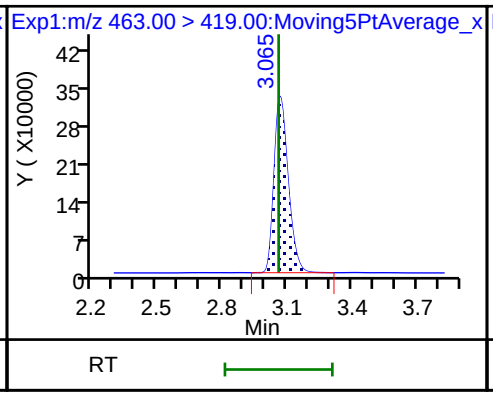
D 18 13C4 PFOS



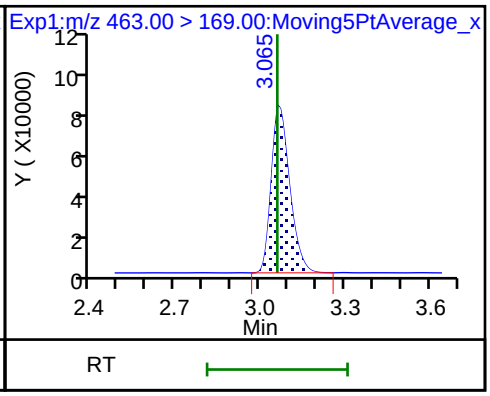
D 19 13C5 PFNA



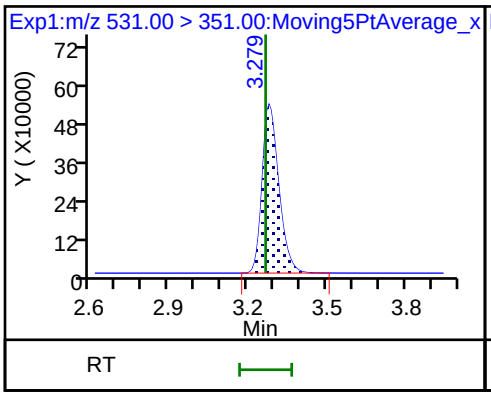
20 Perfluorononanoic acid



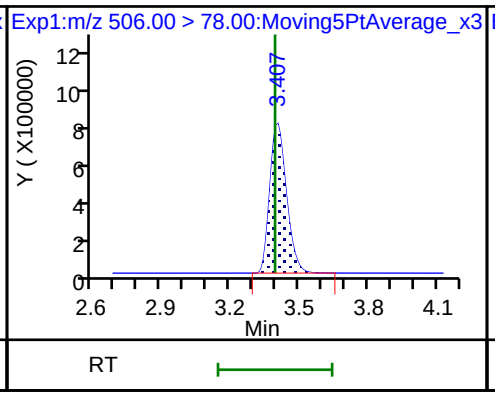
20 Perfluorononanoic acid



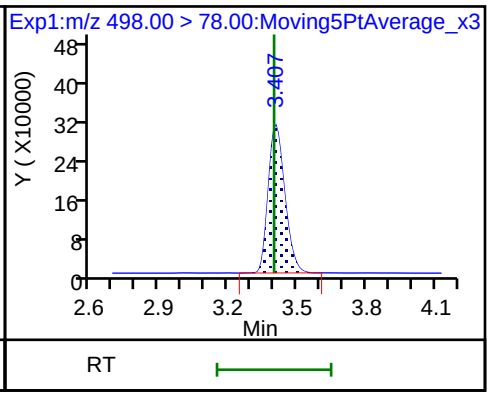
69 9-Chlorohexadecafluoro-3-oxanonane



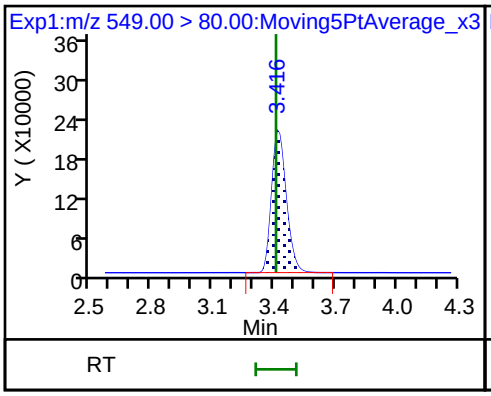
D 21 13C8 FOSA



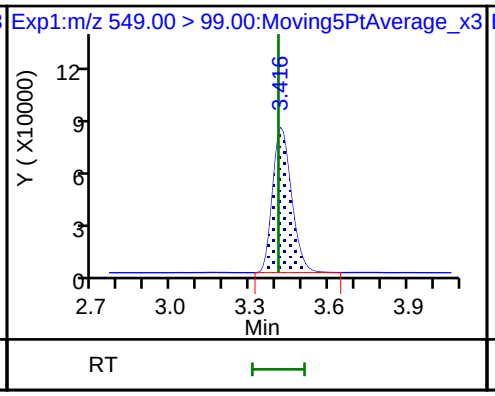
22 Perfluorooctane Sulfonamide



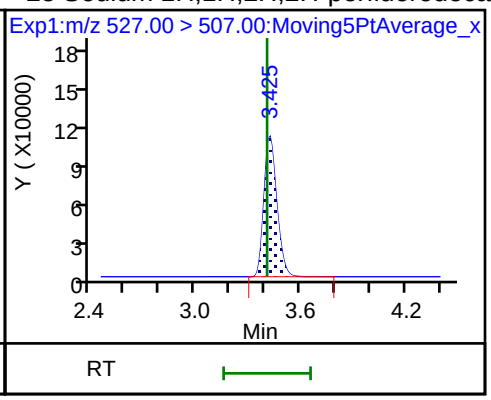
68 Perfluorononanesulfonic acid



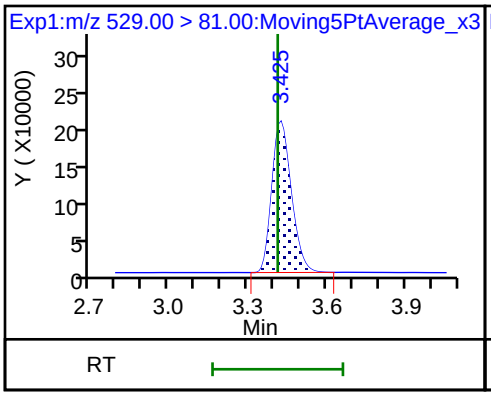
68 Perfluorononanesulfonic acid



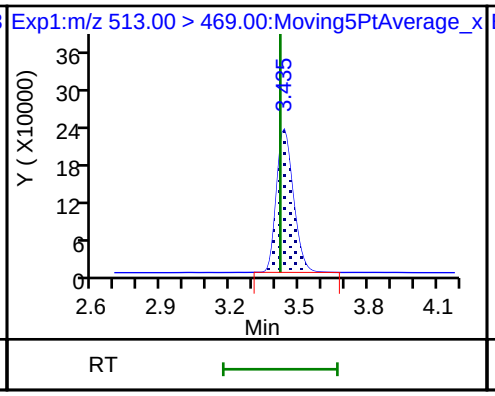
25 Sodium 1H,1H,2H,2H-perfluorodecane



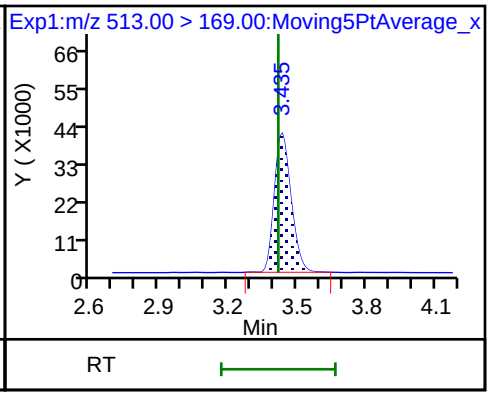
D 26 M2-8:2FTS



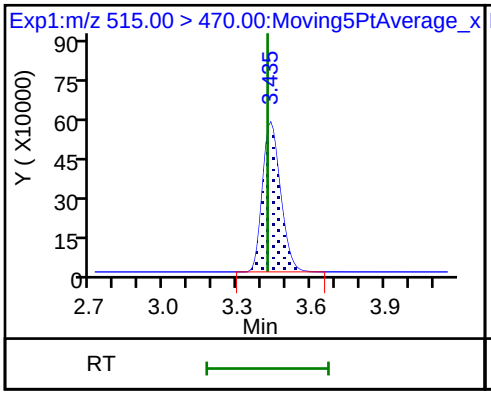
24 Perfluorodecanoic acid



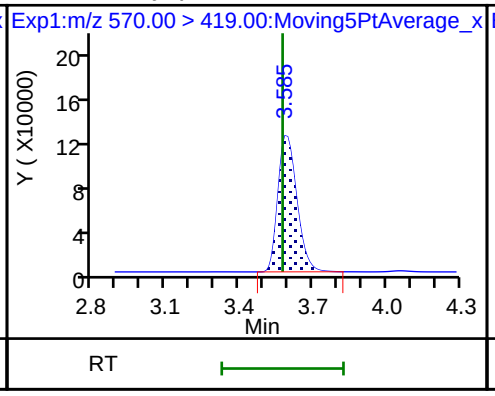
24 Perfluorodecanoic acid



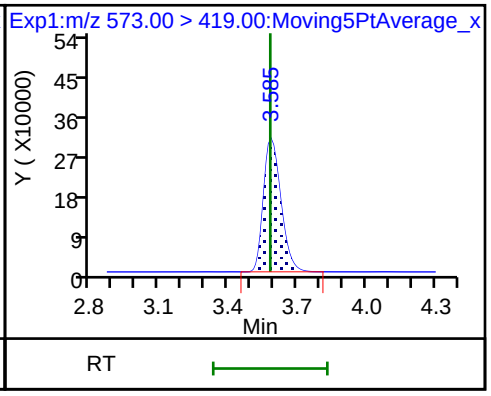
D 23 13C2 PFDA



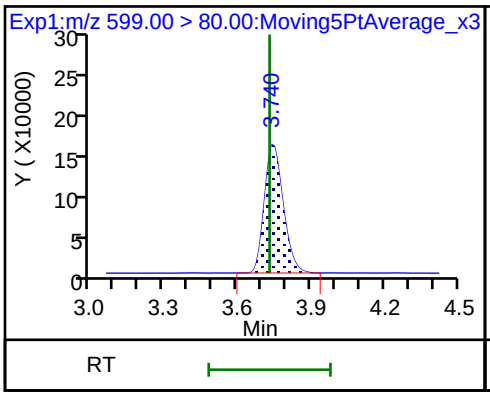
28 N-methyl perfluorooctane sulfonami



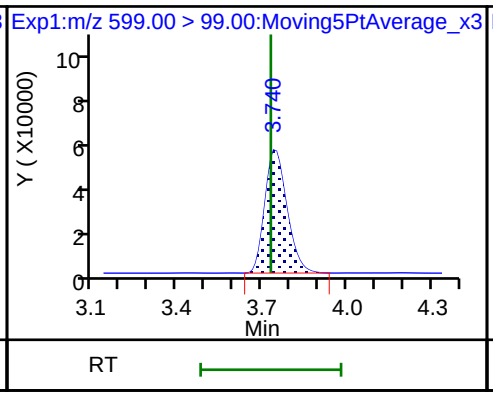
D 27 d3-NMeFOSAA



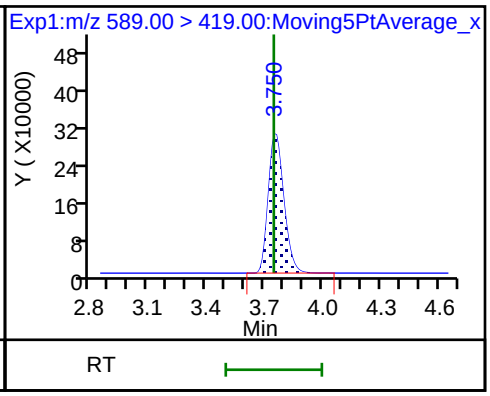
29 Perfluorodecane Sulfonic acid



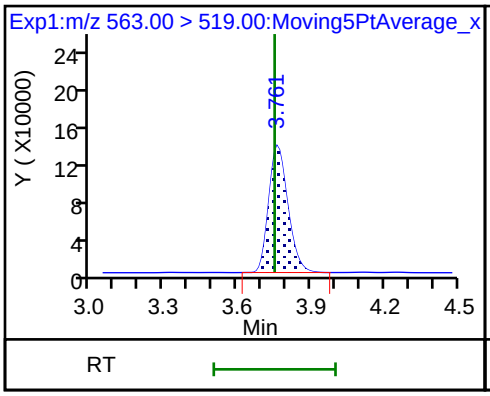
29 Perfluorodecane Sulfonic acid



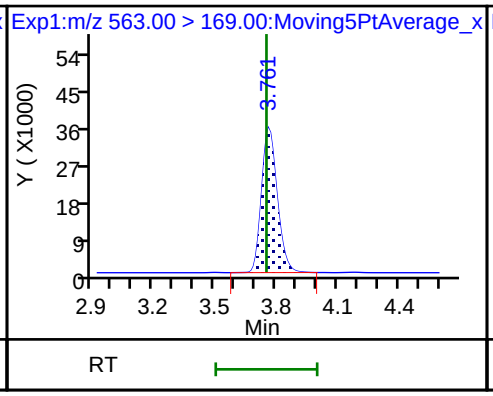
D 32 d5-NEtFOSAA



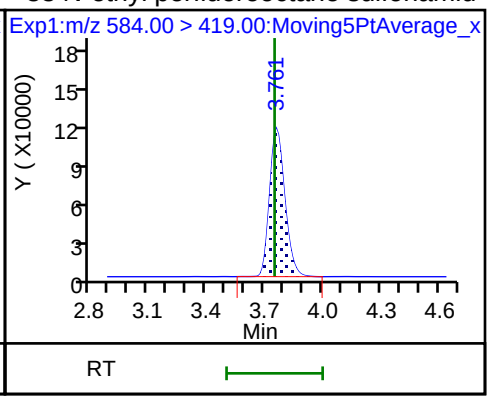
31 Perfluoroundecanoic acid



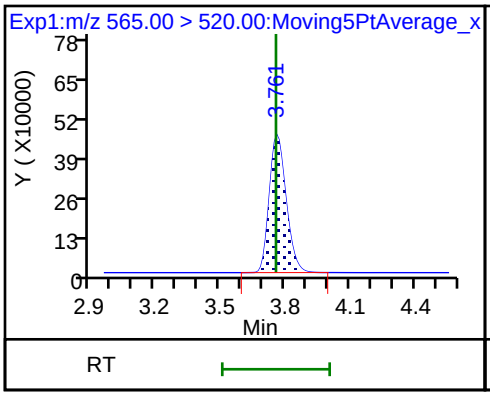
31 Perfluoroundecanoic acid



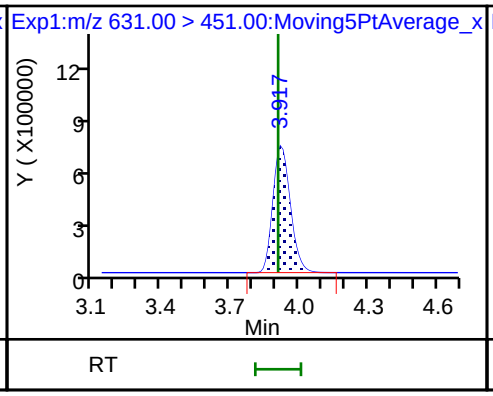
33 N-ethyl perfluorooctane sulfonamid



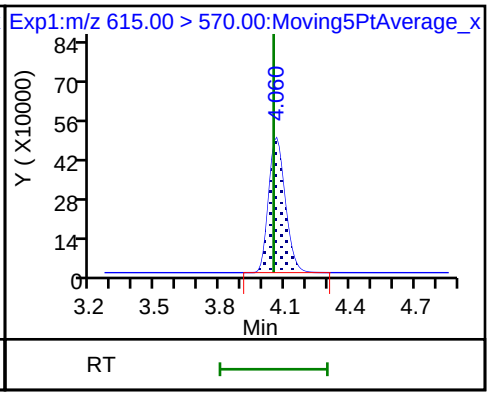
D 30 13C2 PFUnA



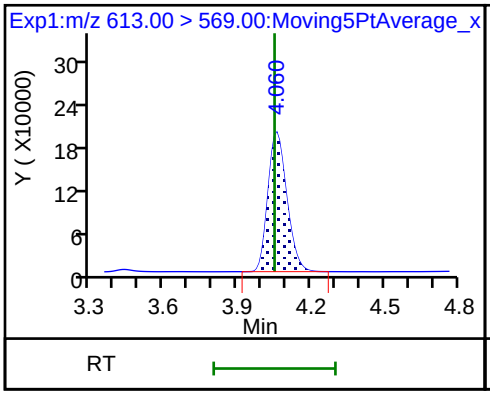
66 11-Chloroeicosafluoro-3-oxaundecan



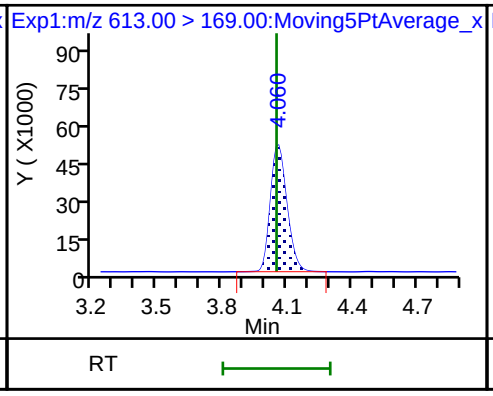
D 36 13C2 PFDoA



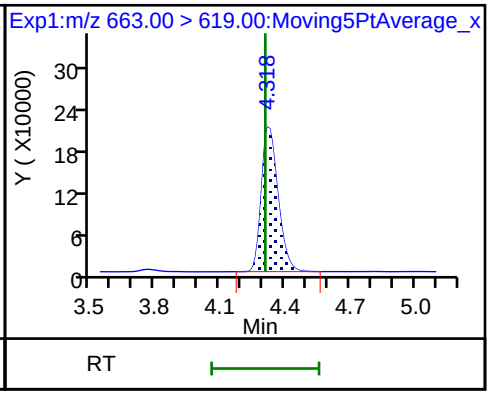
37 Perfluorododecanoic acid



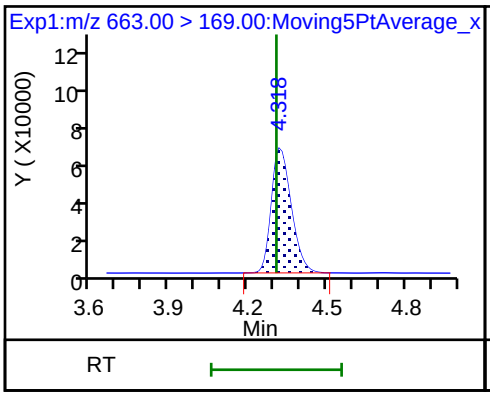
37 Perfluorododecanoic acid



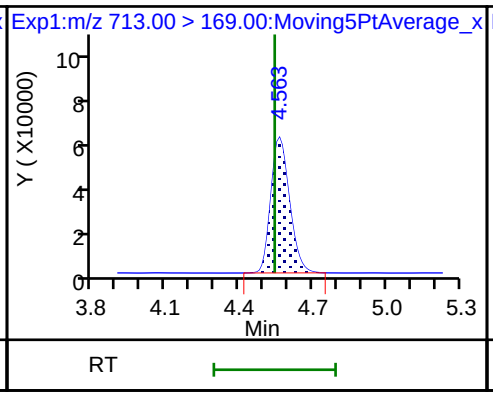
41 Perfluorotridecanoic acid



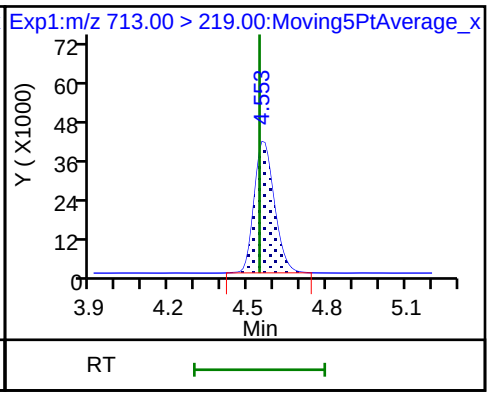
41 Perfluorotridecanoic acid



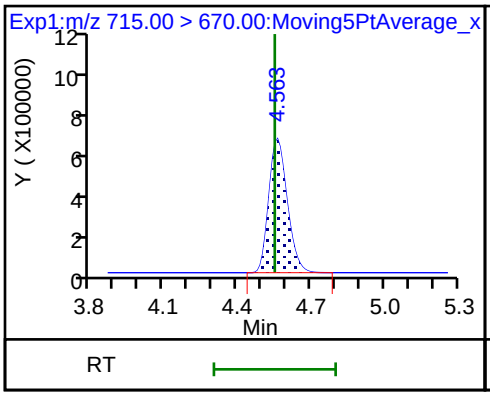
42 Perfluorotetradecanoic acid



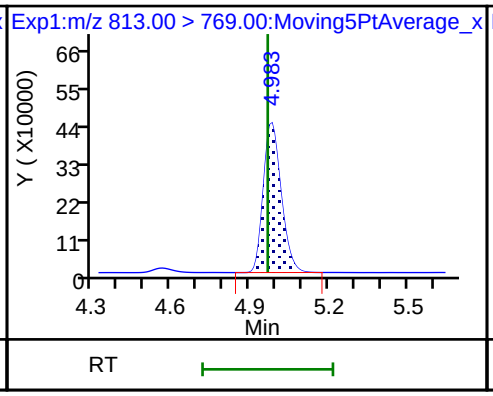
42 Perfluorotetradecanoic acid



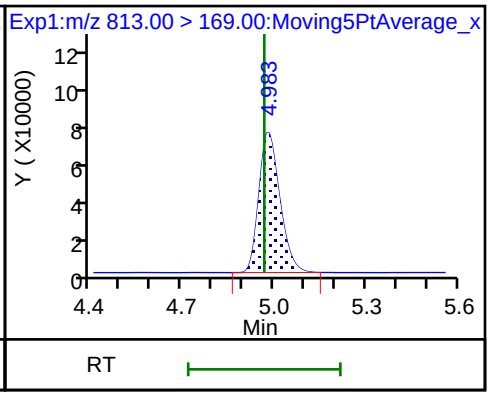
D 43 13C2-PFTeDA



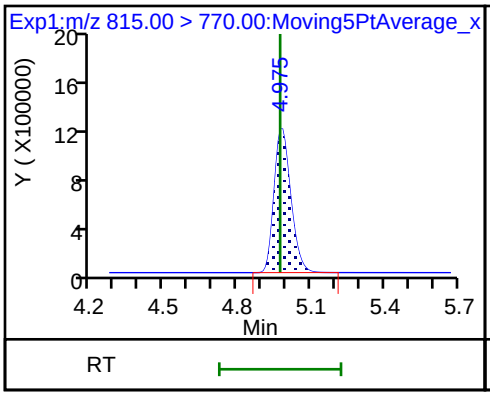
45 Perfluorohexadecanoic acid



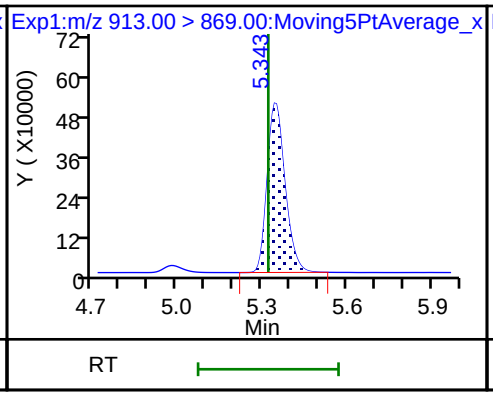
45 Perfluorohexadecanoic acid



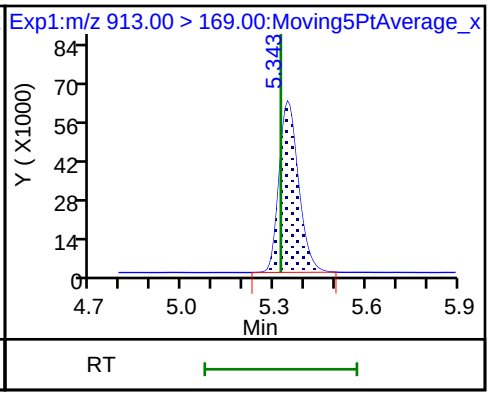
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-219273/3-A

Matrix: Solid | Lab File ID: 2018.04.25LLBX_039.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/26/2018 07:50

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	42.70		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	37.24		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	40.06		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.53		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	37.79		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	40.04		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	40.75		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	39.96		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	39.77		2.00	0.55
72629-94-8	Perfluorotridecanoic Acid (PFTriA)	37.33		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	37.41		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34.03		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.88		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.98		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.56		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	36.12		2.00	0.32
754-91-6	Perfluorooctane Sulfonamide (FOSA)	37.96		2.00	0.35
2355-31-9	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	44.87		20.0	3.10
2991-50-6	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	38.61		20.0	1.90
27619-97-2	6:2FTS	38.86		20.0	2.00
39108-34-4	8:2FTS	38.44		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-38063-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 320-219273/3-A

Matrix: Solid | Lab File ID: 2018.04.25LLBX_039.d

Analysis Method: 537 (modified) | Date Collected:

Extraction Method: 3535 | Date Extracted: 04/23/2018 10:11

Sample wt/vol: 250.0(mL) | Date Analyzed: 04/26/2018 07:50

Con. Extract Vol.: 10.0(mL) | Dilution Factor: 1

Injection Volume: 2(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 219912 | Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	93		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4-PFHpA	94		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	90		25-150
STL02116	13C2-PFTeDA	91		25-150
STL02337	13C3-PFBS	94		25-150
STL00994	18O2 PFHxS	93		25-150
STL00991	13C4 PFOS	90		25-150
STL01056	13C8 FOSA	83		25-150
STL02118	d3-NMeFOSAA	88		25-150
STL02117	d5-NEtFOSAA	95		25-150
STL02279	M2-6:2FTS	104		25-150
STL02280	M2-8:2FTS	98		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_039.d
Lims ID: LCSD 320-219273/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 26-Apr-2018 07:50:46 ALS Bottle#: 28 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-219273/3-a
Misc. Info.: Plate: 1 Rack: 4
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\A8_N.m
Limit Group: LC PFC ICAL
Last Update: 27-Apr-2018 15:27:30 Calib Date: 10-Apr-2018 19:26:34
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A8_N\20180411-56528.b\2018.04.10LLICAL_008.d

Column 1 : Det: EXP1
Process Host: XAWRK004

First Level Reviewer: barnettj Date: 27-Apr-2018 15:13:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.432	0.004	1.000	5793604	2.32		92.9	37332	
2 Perfluorobutyric acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	2297182	1.07		107	1156	
D 3 13C5-PFPeA										
267.90 > 223.00	1.694	1.697	-0.003	0.554	3863580	2.40		96.1	55188	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.703	-0.009	1.000	1714575	0.9309		93.1	1507	
D 47 13C3-PFBS										
301.90 > 83.00	1.730	1.733	-0.003	1.000	80901	2.19		94.3	797	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.730	1.739	-0.009	1.000	2317753	0.8508		96.2	8420	
298.90 > 99.00	1.730	1.739	-0.009	1.000	980754		2.36(1.25-3.74)		9635	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.950	1.950	0.0	1.000	610988	1.10		117	35360	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	1.982	0.0	1.000	1690416	1.00		100	1753	
313.00 > 119.00	1.982	1.982	0.0	1.000	153411		11.02(5.03-15.10)		1258	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.985	-0.003	1.000	4153000	2.33		93.4	88892	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.005	2.005	0.0	1.000	2164515	0.8699		92.7	17711	
349.00 > 99.00	2.005	2.005	0.0	1.000	799871		2.71(1.36-4.07)		15308	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.084	2.084	0.0	1.000	266308	NR		0.0	2078	
D 9 13C4-PFHpA										
367.00 > 322.00	2.322	2.313	0.009	1.000	4059093	2.34		93.8	65160	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.323	0.0	1.000	1687113	1.04		104	1974	
363.00 > 169.00	2.322	2.323	0.0	1.000	641279		2.63(1.13-3.40)		2779	
D 11 18O2 PFHxS										
403.00 > 84.00	2.335	2.326	0.009	1.000	4679608	2.19		92.6	94986	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.335	2.336	-0.001	1.000	1896813	0.8470		92.4	5283	
399.00 > 99.00	2.335	2.336	-0.001	1.000	626637		3.03(1.50-4.49)		4566	
65 Adona										
377.00 > 251.00	2.361	2.362	-0.001	1.000	5237274	1.12		112	57669	
377.00 > 85.00	2.361	2.362	-0.001	1.000	3110404		1.68(0.84-2.53)		73329	
D 12 M2-6:2FTS										
429.00 > 81.00	2.660	2.656	0.004	1.000	916171	2.47		104	9834	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.660	2.661	-0.001	1.000	633545	0.9715		102	13458	
D 14 13C4 PFOA										
417.00 > 372.00	2.683	2.679	0.004	1.000	4216049	2.45		98.0	69684	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.683	2.683	0.0	1.000	1840840	0.9447		93.8	1412	
413.00 > 169.00	2.683	2.683	0.0	1.000	974313		1.89(0.84-2.52)		2841	
* 62 13C2-PFOA										
415.00 > 370.00	2.683	2.683	0.0		4637562	2.50			66517	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.690	2.691	-0.001	1.000	1703733	0.9495		99.7	9907	
449.00 > 99.00	2.690	2.691	-0.001	1.000	466213		3.65(1.94-5.82)		7726	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.059	3.053	0.006	1.000	1417430	0.9640		104	7866	
499.00 > 99.00	3.059	3.053	0.006	1.000	303190		4.68(2.31-6.93)		5202	
D 18 13C4 PFOS										
503.00 > 80.00	3.059	3.056	0.003	1.000	3230263	2.16		90.3	18963	
D 19 13C5 PFNA										
468.00 > 423.00	3.059	3.056	0.003	1.000	3465008	2.34		93.7	75469	
20 Perfluorononanoic acid										
463.00 > 419.00	3.065	3.060	0.005	1.002	1446814	1.00		100	4973	
463.00 > 169.00	3.065	3.060	0.005	1.002	351947		4.11(1.90-5.69)		12722	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.272	3.266	0.006	1.000	2376479	0.9327		100	49008	
D 21 13C8 FOSA										
506.00 > 78.00	3.398	3.394	0.004	1.000	3879180	2.08		83.0	55260	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.398	3.398	0.0	1.000	1489624	0.9491		94.9	8427	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.416	3.408	0.008	1.000	1029520	0.9529		99.3	9470	
549.00 > 99.00	3.407	3.408	-0.001	0.997	381841		2.70(1.33-3.97)		8438	
25 Sodium 1H,1H,2H,2H-perfluorodecane										
527.00 > 507.00	3.416	3.408	0.008	1.000	532935	0.9610		100	25874	
D 26 M2-8:2FTS										
529.00 > 81.00	3.416	3.413	0.003	1.000	1049628	2.35		98.1	8627	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.426	3.417	0.009	1.000	1244913	1.02		102	5858	
513.00 > 169.00	3.426	3.417	0.009	1.000	231392		5.38(2.36-7.09)		3848	
D 23 13C2 PFDA										
515.00 > 470.00	3.426	3.422	0.004	1.000	2961455	2.38		95.3	53380	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.586	3.575	0.011	1.003	694213	1.12		112	6087	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.575	3.582	-0.007	1.000	1551500	2.20		88.1	16109	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.740	3.730	0.010	1.000	792433	0.9031		93.7	7461	
599.00 > 99.00	3.740	3.730	0.010	1.000	285902		2.77(1.39-4.16)		8748	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.751	3.747	0.004	1.000	1643691	2.36		94.5	19815	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.761	3.751	0.010	1.000	833211	1.00		99.4	5214	
563.00 > 169.00	3.761	3.751	0.010	1.000	186491		4.47(2.12-6.36)		4309	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.761	3.751	0.010	1.003	593065	0.9653		96.5	10594	
D 30 13C2 PFUnA										
565.00 > 520.00	3.761	3.757	0.004	1.000	2467435	2.30		92.0	65348	
66 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	3.918	3.907	0.011	1.000	3645955	0.9262		98.3	43646	
D 36 13C2 PFDoA										
615.00 > 570.00	4.050	4.046	0.004	1.000	2594991	2.24		89.6	27145	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.050	4.051	-0.001	1.000	1076278	0.99		99.4	1462	
613.00 > 169.00	4.050	4.051	-0.001	1.000	271543		3.96(2.13-6.40)		3198	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.308	0.010	1.000	1177183	0.9331		93.3	1464	
663.00 > 169.00	4.318	4.308	0.010	1.000	368067		3.20(1.25-3.76)		3208	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.543	0.010	1.000	314180	0.9352		93.5	2870	
713.00 > 219.00	4.553	4.543	0.010	1.000	233101		1.35(0.71-2.13)		4971	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.553	4.551	0.002	1.000	3344027	2.28		91.1	21347	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.974	4.967	0.007	1.000	2022067	0.99		98.5	926	
813.00 > 169.00	4.974	4.967	0.007	1.000	335445		6.03(2.86-8.58)		1838	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.974	4.974	0.0	1.000	5261675	2.20		88.1	15514	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.343	5.321	0.022	1.000	2188683	1.04		104	799	
913.00 > 169.00	5.343	5.321	0.022	1.000	266632		8.21(3.83-11.48)		1911	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Report Date: 27-Apr-2018 15:27:36 Chrom Revision: 2.2 26-Apr-2018 11:26:08

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b\2018.04.25LLBX_039.d

Injection Date: 26-Apr-2018 07:50:46 Instrument ID: A8_N

Lims ID: LCSD 320-219273/3-A

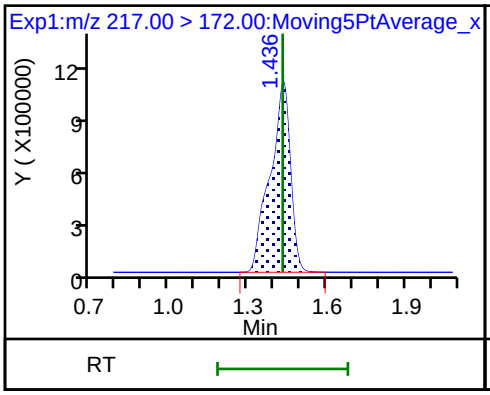
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 4

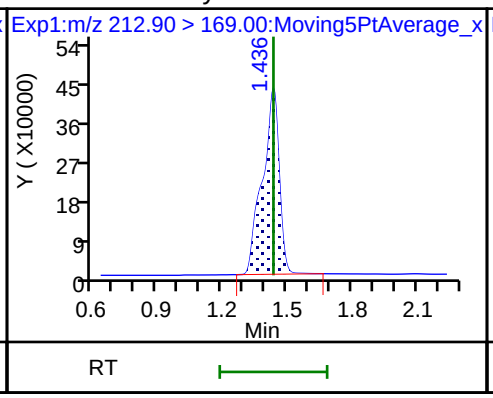
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8_N Limit Group: LC PFC ICAL

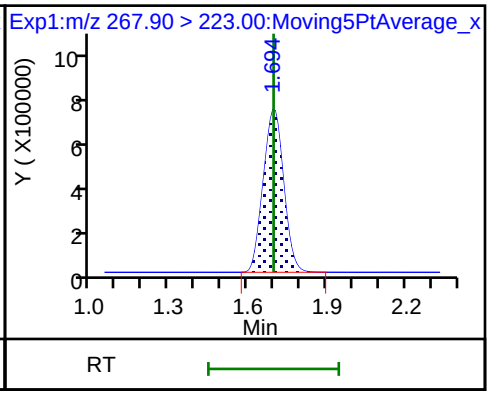
D 1 13C4 PFBA



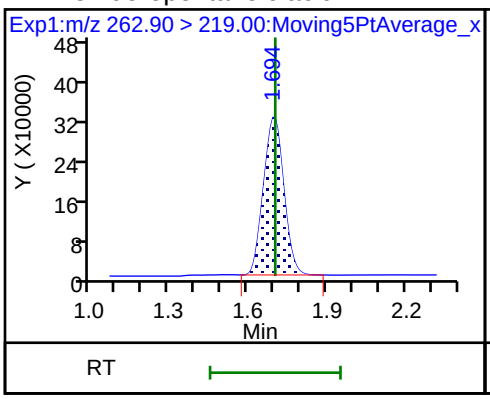
2 Perfluorobutyric acid



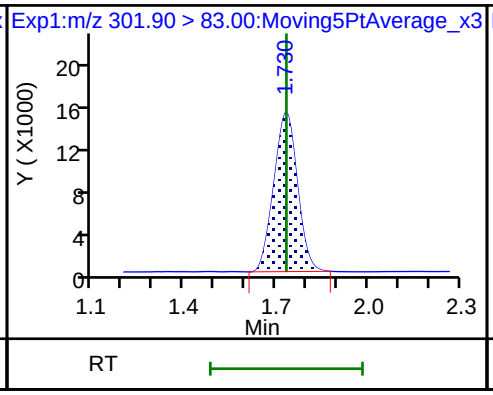
D 3 13C5-PFPeA



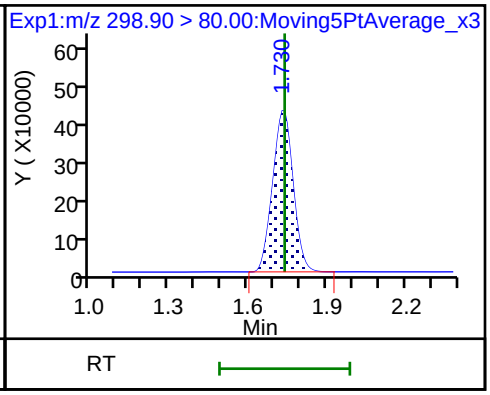
4 Perfluoropentanoic acid



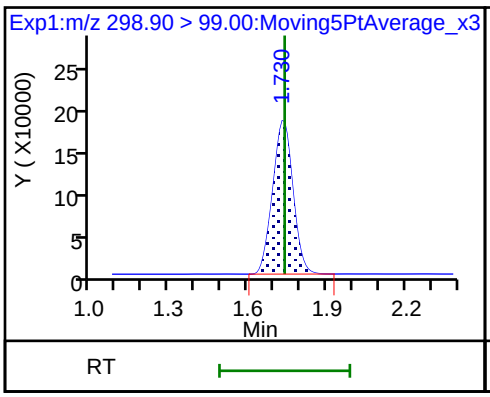
D 47 13C3-PFBS



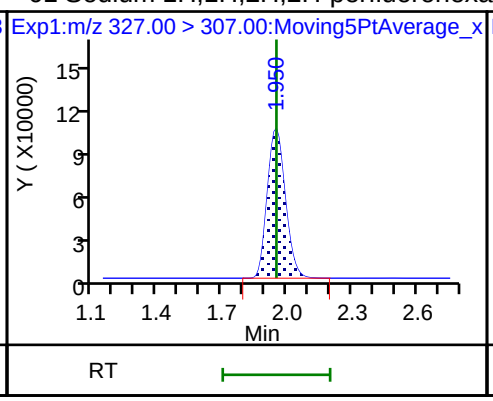
5 Perfluorobutanesulfonic acid



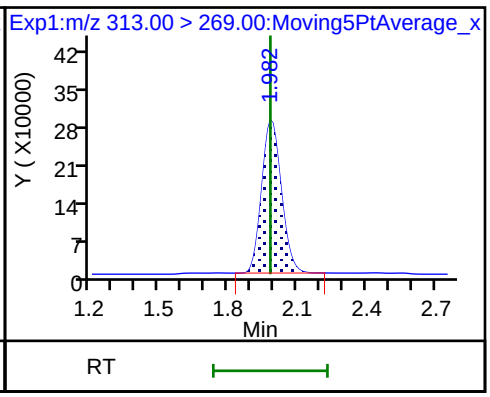
5 Perfluorobutanesulfonic acid



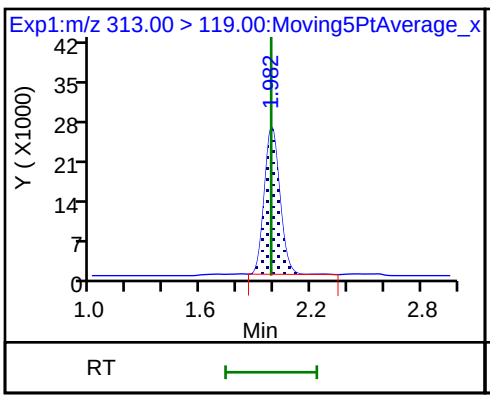
61 Sodium 1H,1H,2H,2H-perfluorohexane



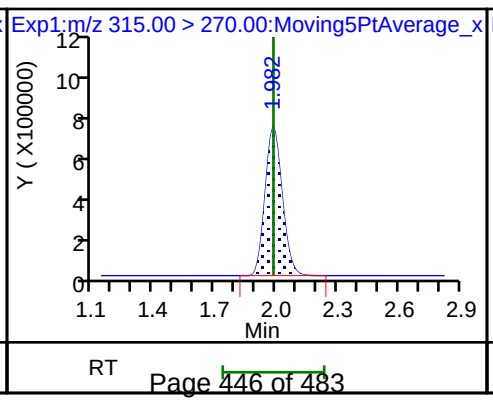
6 Perfluorohexanoic acid



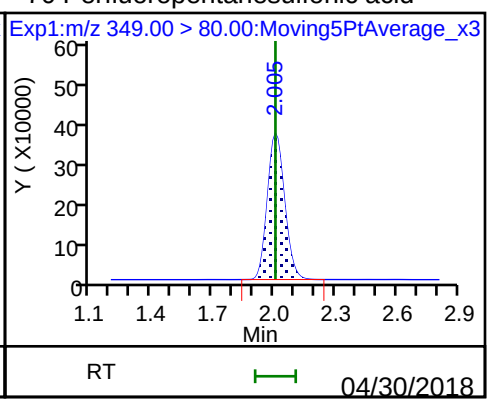
6 Perfluorohexanoic acid



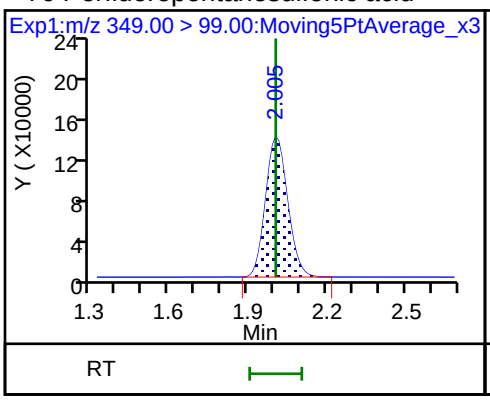
D 7 13C2 PFHxA



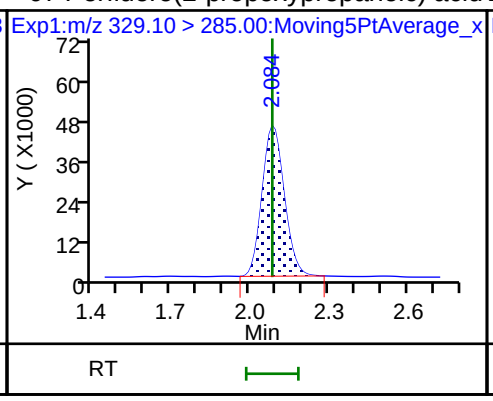
70 Perfluoropentanesulfonic acid



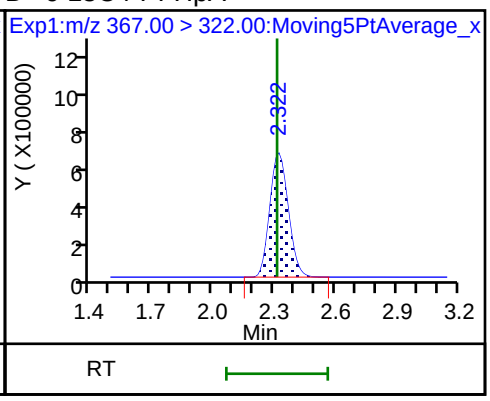
70 Perfluoropentanesulfonic acid



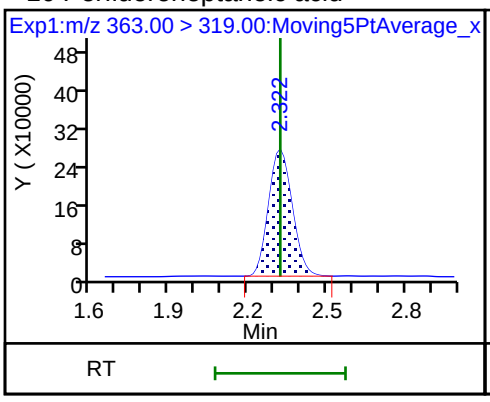
67 Perfluoro(2-propoxypropanoic) acid



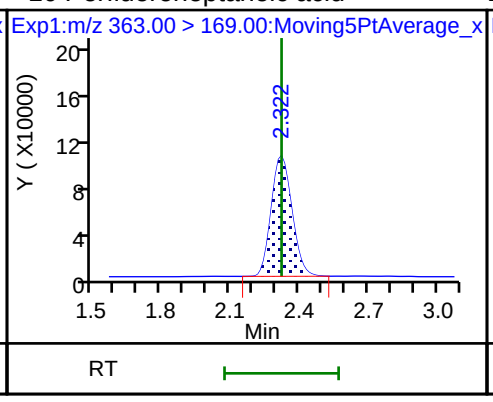
D 9 13C4-PFHpA



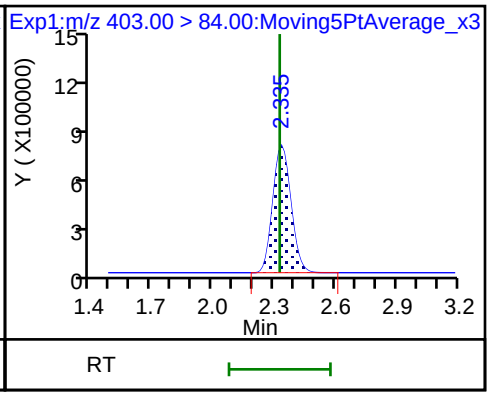
10 Perfluoroheptanoic acid



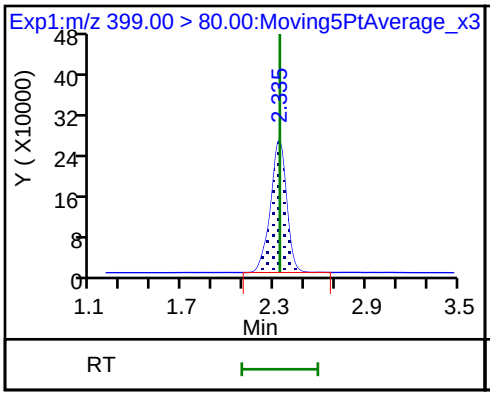
10 Perfluoroheptanoic acid



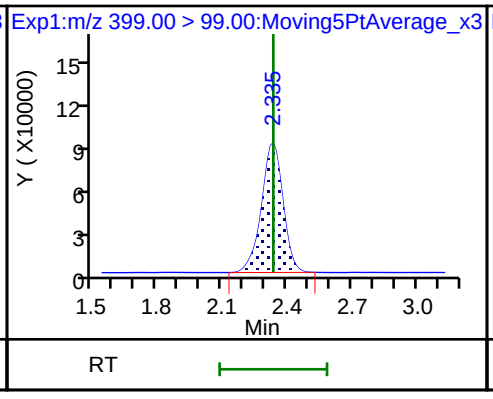
D 11 18O2 PFHxS



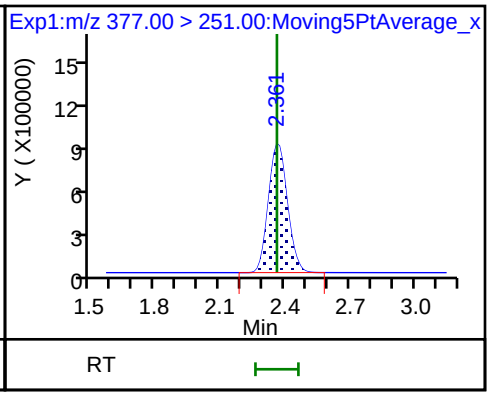
8 Perfluorohexanesulfonic acid



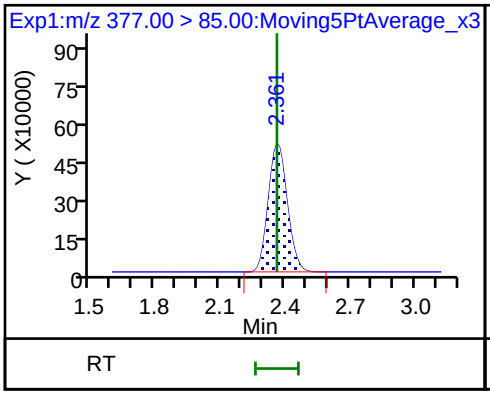
8 Perfluorohexanesulfonic acid



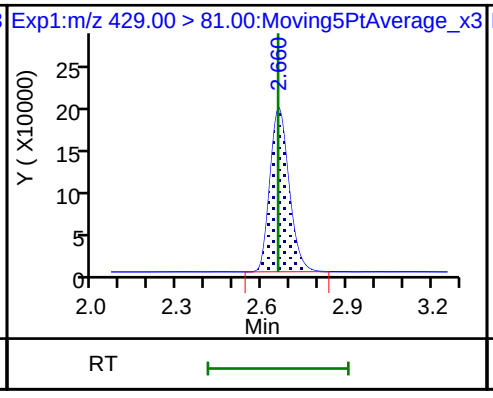
65 Adona



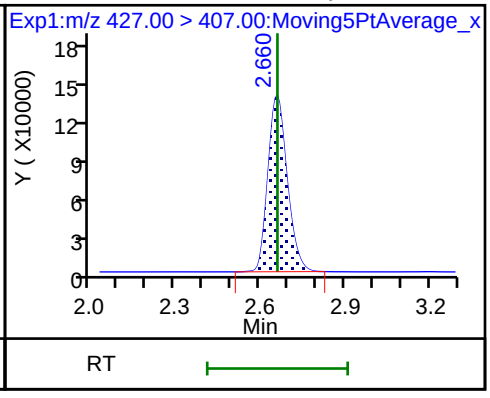
65 Adona



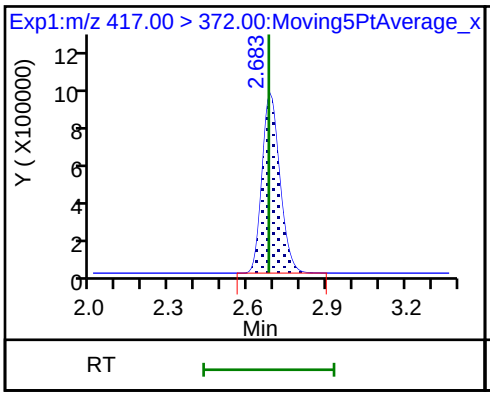
D 12 M2-6:2FTS



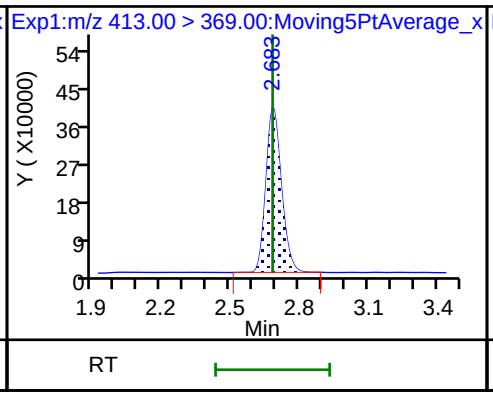
13 Sodium 1H,1H,2H,2H-perfluorooctane



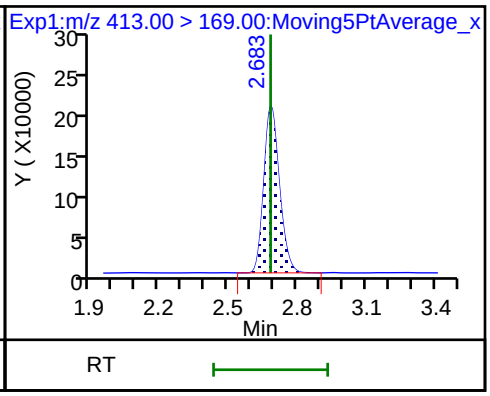
D 14 13C4 PFOA



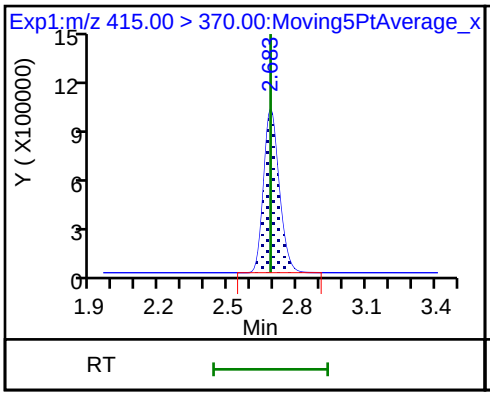
15 Perfluorooctanoic acid



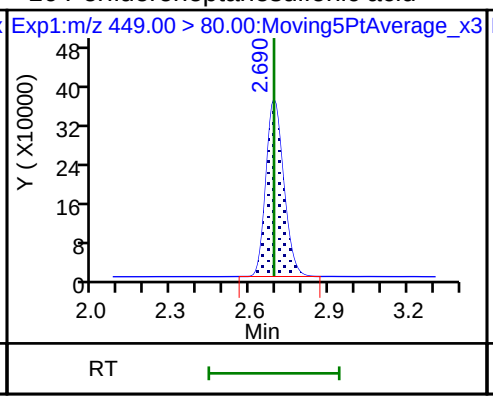
15 Perfluorooctanoic acid



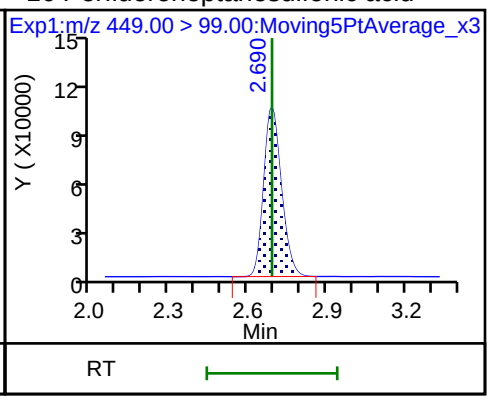
* 62 13C2-PFOA



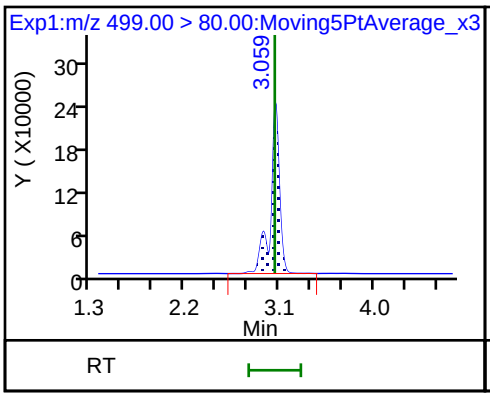
16 Perfluoroheptanesulfonic acid



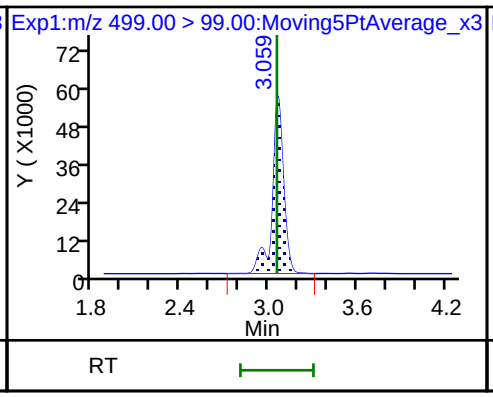
16 Perfluoroheptanesulfonic acid



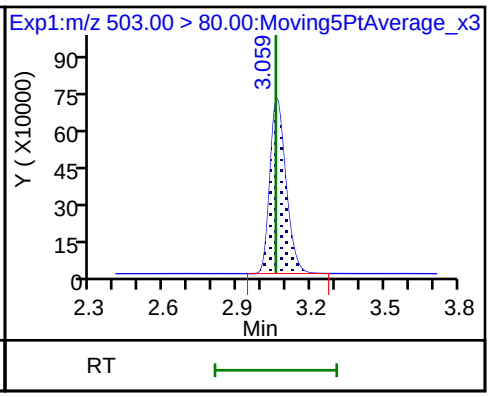
17 Perfluorooctane sulfonic acid



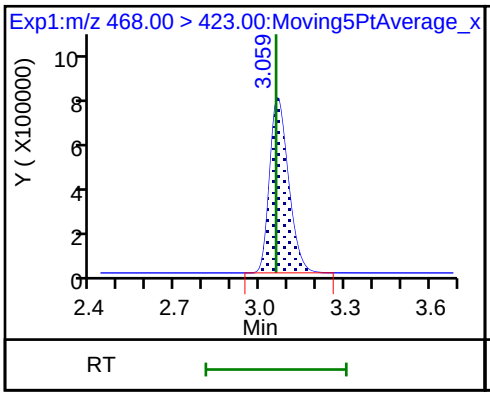
17 Perfluorooctane sulfonic acid



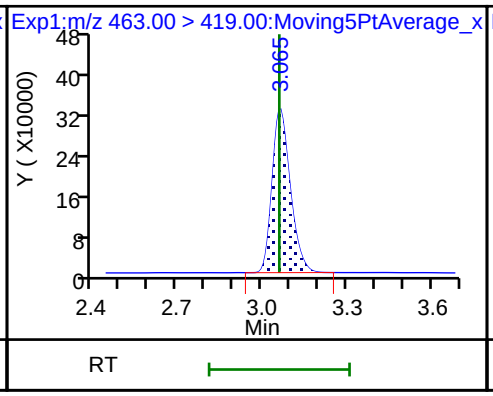
D 18 13C4 PFOS



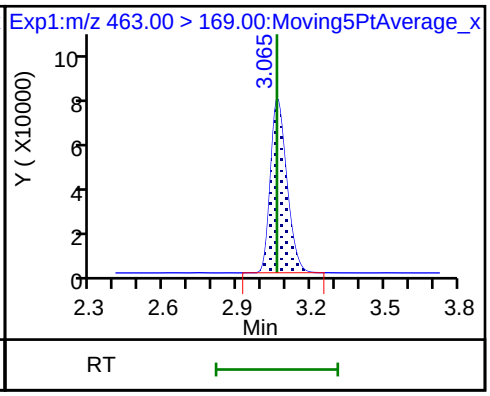
D 19 13C5 PFNA



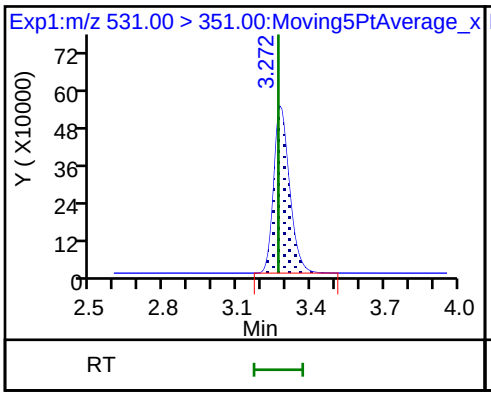
20 Perfluorononanoic acid



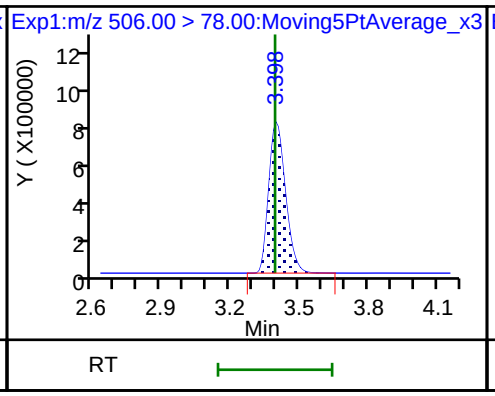
20 Perfluorononanoic acid



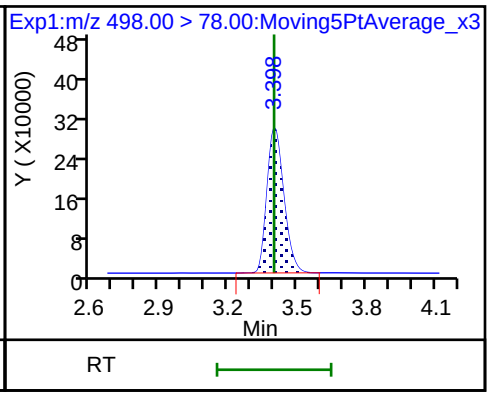
69 9-Chlorohexadecafluoro-3-oxanonane



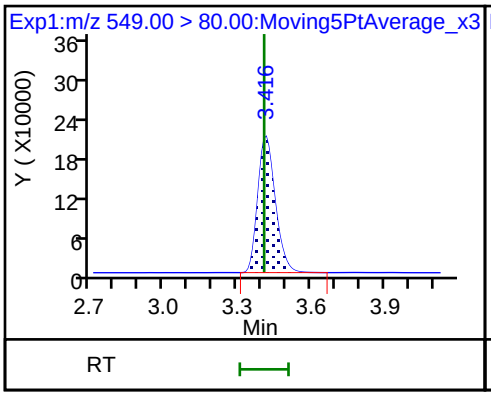
D 21 13C8 FOSA



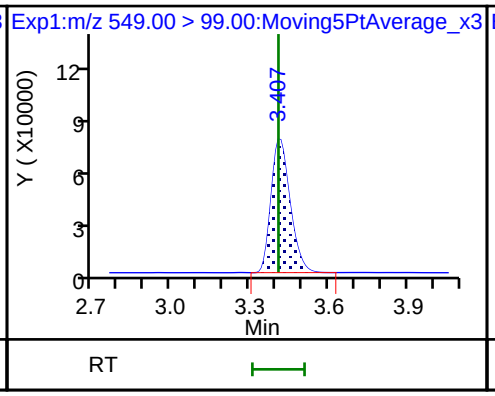
22 Perfluorooctane Sulfonamide



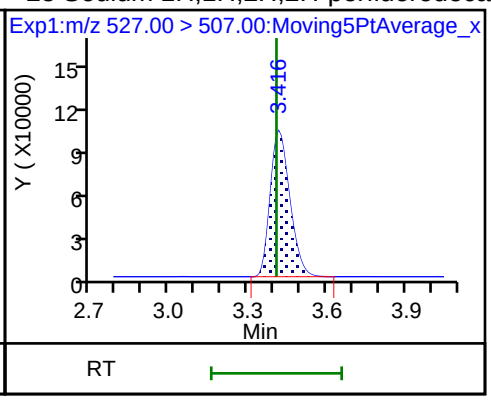
68 Perfluorononanesulfonic acid



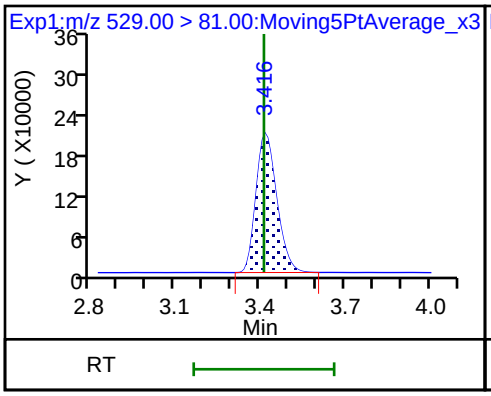
68 Perfluorononanesulfonic acid



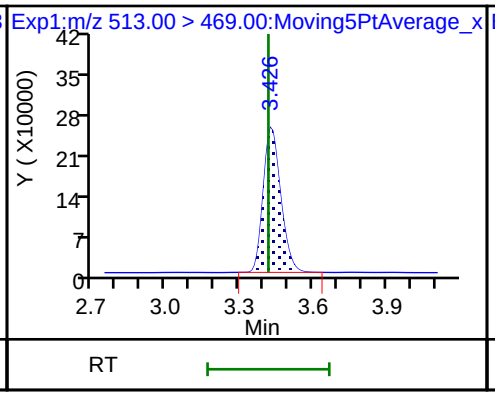
25 Sodium 1H,1H,2H,2H-perfluorodecane



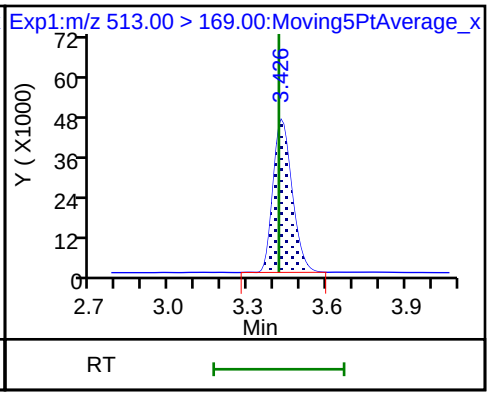
D 26 M2-8:2FTS



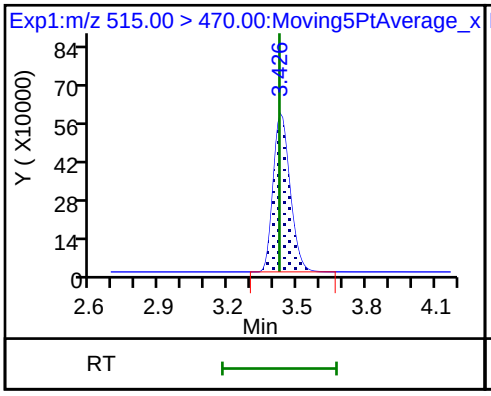
24 Perfluorodecanoic acid



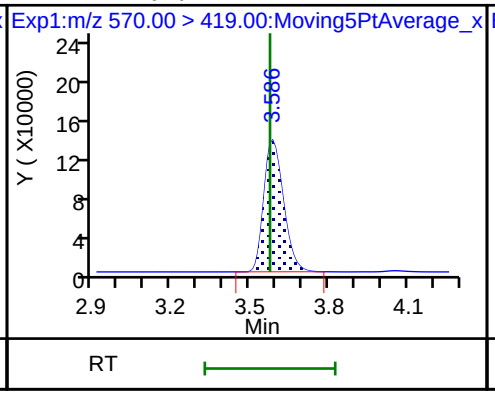
24 Perfluorodecanoic acid



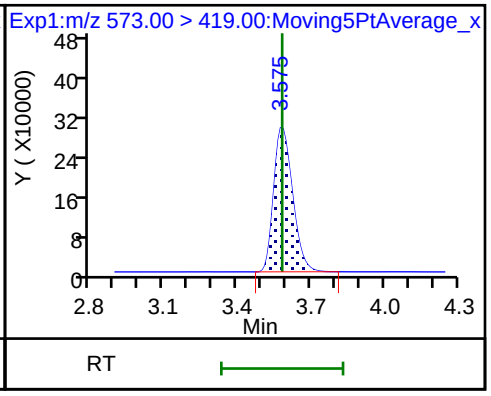
D 23 13C2 PFDA



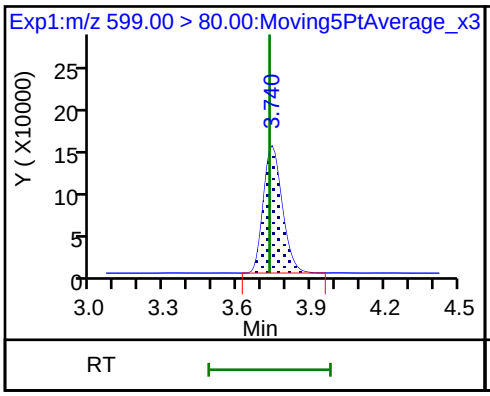
28 N-methyl perfluorooctane sulfonami



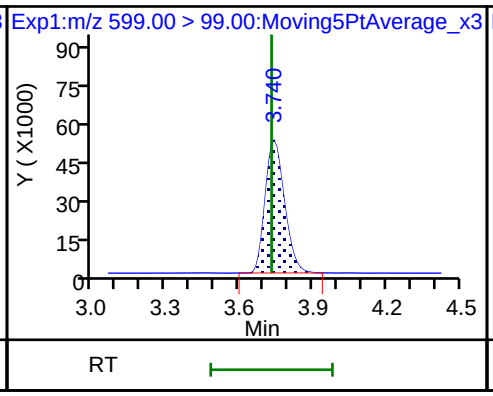
D 27 d3-NMeFOSAA



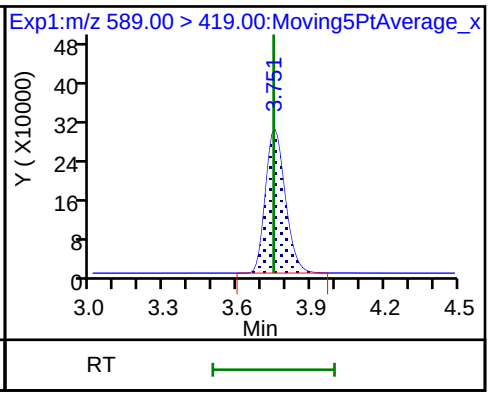
29 Perfluorodecane Sulfonic acid



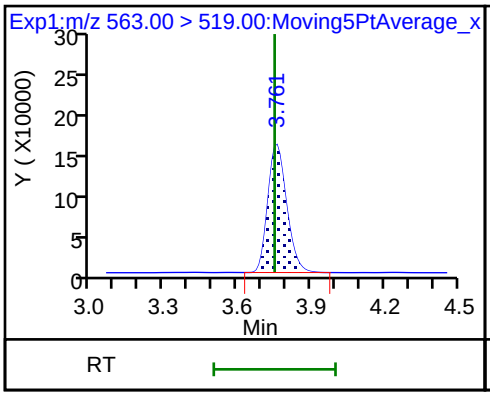
29 Perfluorodecane Sulfonic acid



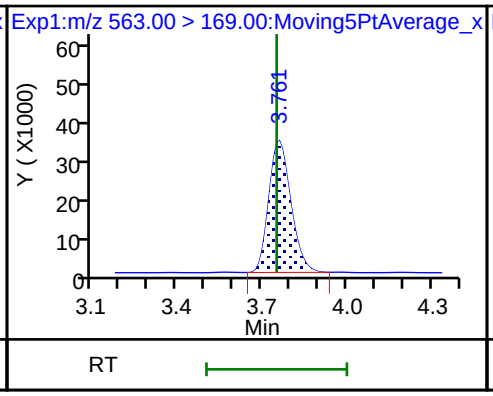
D 32 d5-NEtFOSAA



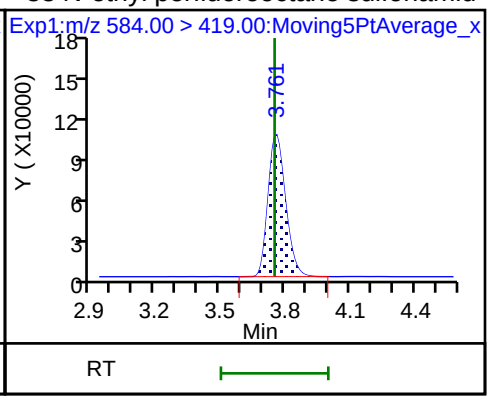
31 Perfluoroundecanoic acid



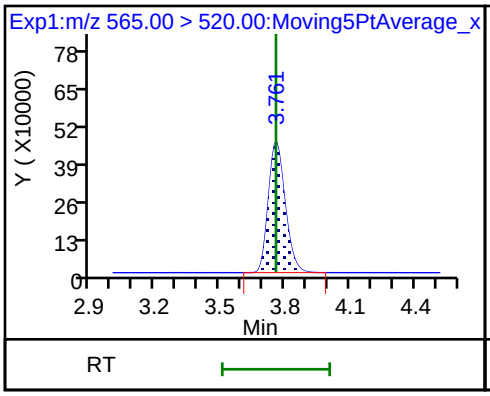
31 Perfluoroundecanoic acid



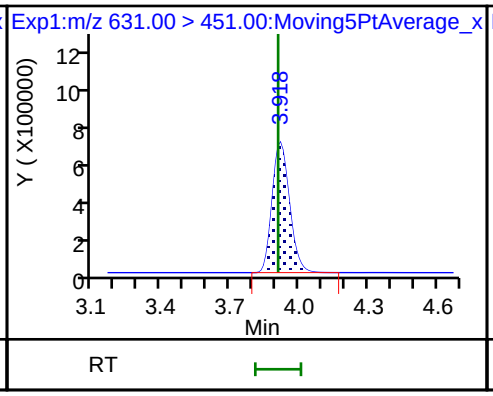
33 N-ethyl perfluorooctane sulfonamid



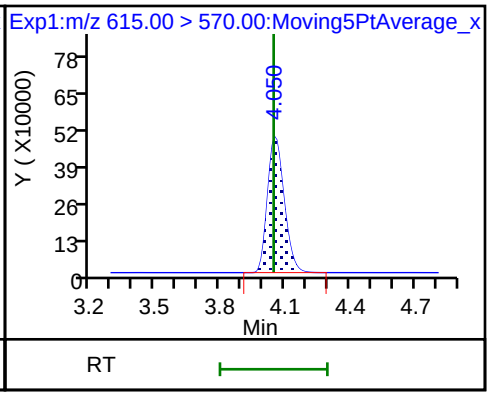
D 30 13C2 PFUnA



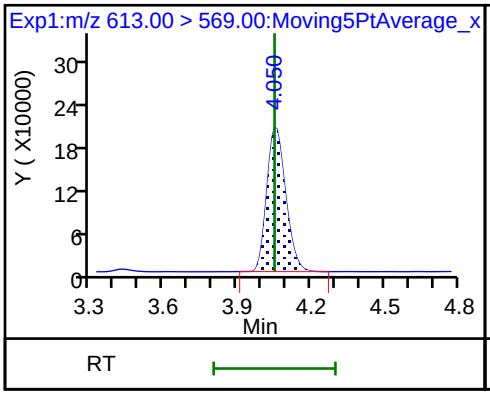
66 11-Chloroeicosafluoro-3-oxaundecan



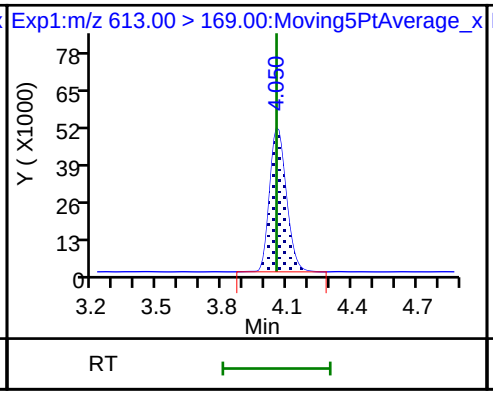
D 36 13C2 PFDoA



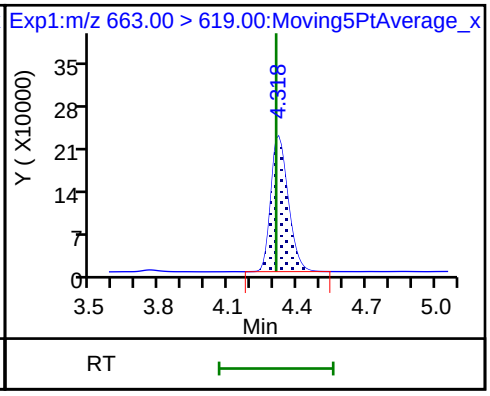
37 Perfluorododecanoic acid



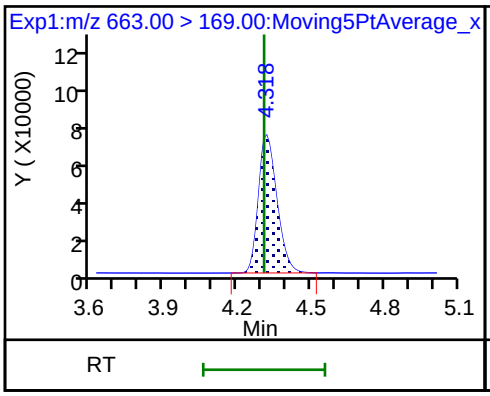
37 Perfluorododecanoic acid



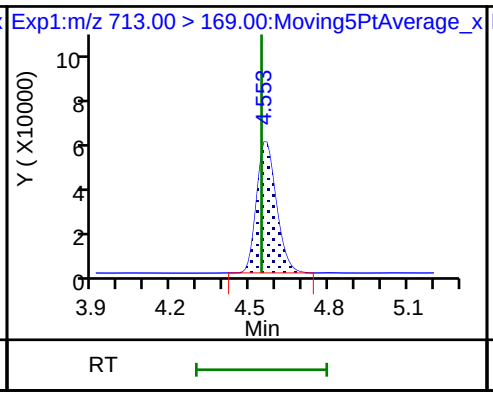
41 Perfluorotridecanoic acid



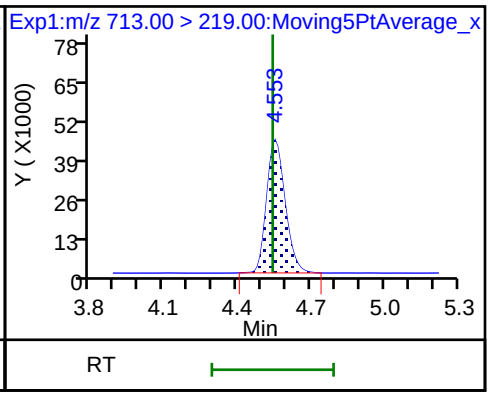
41 Perfluorotridecanoic acid



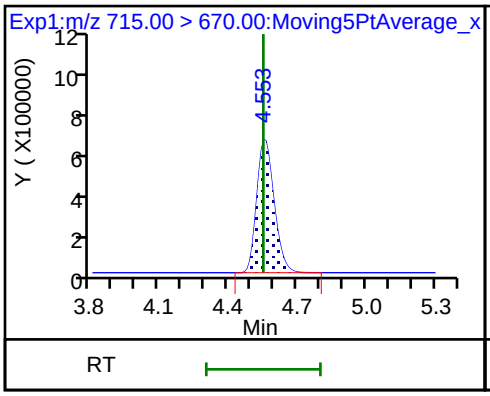
42 Perfluorotetradecanoic acid



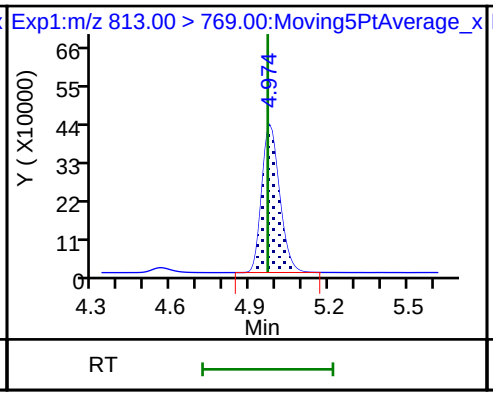
42 Perfluorotetradecanoic acid



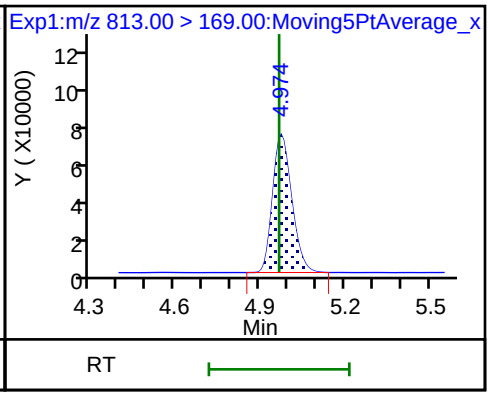
D 43 13C2-PFTeDA



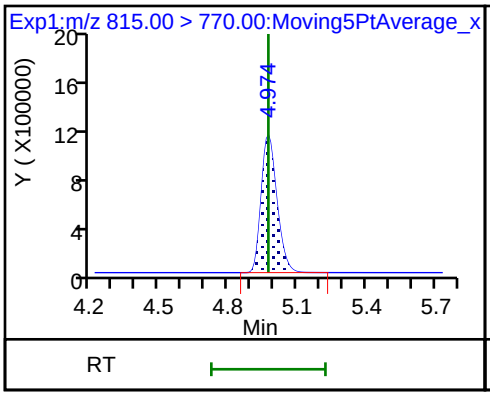
45 Perfluorohexadecanoic acid



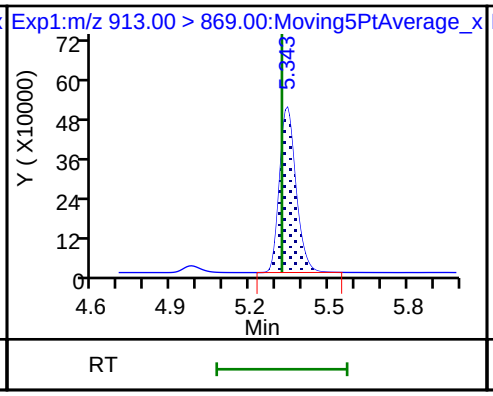
45 Perfluorohexadecanoic acid



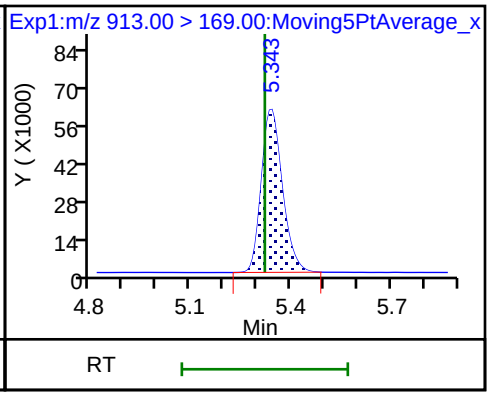
D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Instrument ID: A8_N Start Date: 04/10/2018 18:31

Analysis Batch Number: 217359 End Date: 04/10/2018 19:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/10/2018 18:31	1		GeminiC18 3x100 3(mm)
IC 320-217359/2		04/10/2018 18:39	1	2018.04.10LLICAL 002.d	GeminiC18 3x100 3(mm)
IC 320-217359/3		04/10/2018 18:47	1	2018.04.10LLICAL 003.d	GeminiC18 3x100 3(mm)
IC 320-217359/4		04/10/2018 18:55	1	2018.04.10LLICAL 004.d	GeminiC18 3x100 3(mm)
IC 320-217359/5 ICIS		04/10/2018 19:03	1	2018.04.10LLICAL 005.d	GeminiC18 3x100 3(mm)
IC 320-217359/6		04/10/2018 19:10	1	2018.04.10LLICAL 006.d	GeminiC18 3x100 3(mm)
IC 320-217359/7		04/10/2018 19:18	1	2018.04.10LLICAL 007.d	GeminiC18 3x100 3(mm)
IC 320-217359/8		04/10/2018 19:26	1	2018.04.10LLICAL 008.d	GeminiC18 3x100 3(mm)
ICB 320-217359/9		04/10/2018 19:34	1		GeminiC18 3x100 3(mm)
ICV 320-217359/10		04/10/2018 19:42	1	2018.04.10LLICAL 010.d	GeminiC18 3x100 3(mm)
CCB 320-217359/11		04/10/2018 19:50	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 05:53

Analysis Batch Number: 219909 End Date: 04/26/2018 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-219909/1		04/26/2018 05:53	1	2018.04.25LLBX_004.d	GeminiC18 3x100 3(mm)
CCVL 320-219909/2		04/26/2018 06:01	1	2018.04.25LLBX_005.d	GeminiC18 3x100 3(mm)
CCV 320-219909/3 CCVIS		04/26/2018 06:09	1	2018.04.25LLBX_070.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:17	50		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:24	5		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:32	1		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:40	50		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 06:48	10		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 07:03	5		GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 07:11	5		GeminiC18 3x100 3(mm)
CCV 320-219909/12		04/26/2018 07:19	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 07:27

Analysis Batch Number: 219912 End Date: 04/26/2018 09:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-219912/1		04/26/2018 07:27	1	2018.04.25LLBX_036.d	GeminiC18 3x100 3(mm)
MB 320-219273/1-A		04/26/2018 07:35	1	2018.04.25LLBX_037.d	GeminiC18 3x100 3(mm)
LCS 320-219273/2-A		04/26/2018 07:42	1	2018.04.25LLBX_038.d	GeminiC18 3x100 3(mm)
LCSD 320-219273/3-A		04/26/2018 07:50	1	2018.04.25LLBX_039.d	GeminiC18 3x100 3(mm)
LB 320-218620/8-B		04/26/2018 07:58	1	2018.04.25LLBX_040.d	GeminiC18 3x100 3(mm)
320-38063-1		04/26/2018 08:06	1	2018.04.25LLBX_041.d	GeminiC18 3x100 3(mm)
320-38063-2		04/26/2018 08:14	1	2018.04.25LLBX_042.d	GeminiC18 3x100 3(mm)
320-38063-3		04/26/2018 08:22	1	2018.04.25LLBX_043.d	GeminiC18 3x100 3(mm)
320-38063-4		04/26/2018 08:29	1	2018.04.25LLBX_044.d	GeminiC18 3x100 3(mm)
320-38063-5		04/26/2018 08:37	1	2018.04.25LLBX_045.d	GeminiC18 3x100 3(mm)
320-38063-6		04/26/2018 08:45	1	2018.04.25LLBX_046.d	GeminiC18 3x100 3(mm)
CCV 320-219912/12		04/26/2018 08:53	1	2018.04.25LLBX_047.d	GeminiC18 3x100 3(mm)
320-38063-7		04/26/2018 09:01	1	2018.04.25LLBX_048.d	GeminiC18 3x100 3(mm)
CCV 320-219912/14		04/26/2018 09:08	1	2018.04.25LLBX_049.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Instrument ID: A8_N Start Date: 04/26/2018 19:23

Analysis Batch Number: 220094 End Date: 04/26/2018 21:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-220094/1		04/26/2018 19:23	1	2018.04.26LLB_003.d	GeminiC18 3x100 3(mm)
CCVL 320-220094/2		04/26/2018 19:31	1	2018.04.26LLB_004.d	GeminiC18 3x100 3(mm)
CCV 320-220094/3 CCVIS		04/26/2018 19:38	1	2018.04.26LLB_005.d	GeminiC18 3x100 3(mm)
320-38063-2 DL2		04/26/2018 19:46	100	2018.04.26LLB_006.d	GeminiC18 3x100 3(mm)
320-38063-2 DL		04/26/2018 19:54	2	2018.04.26LLB_007.d	GeminiC18 3x100 3(mm)
320-38063-3 DL		04/26/2018 20:10	10	2018.04.26LLB_009.d	GeminiC18 3x100 3(mm)
ZZZZZ		04/26/2018 20:18	1		GeminiC18 3x100 3(mm)
320-38063-5 DL2		04/26/2018 20:25	100	2018.04.26LLB_011.d	GeminiC18 3x100 3(mm)
320-38063-5 DL		04/26/2018 20:33	10	2018.04.26LLB_012.d	GeminiC18 3x100 3(mm)
320-38063-6 DL		04/26/2018 20:49	10	2018.04.26LLB_014.d	GeminiC18 3x100 3(mm)
320-38063-7 DL		04/26/2018 20:57	10	2018.04.26LLB_015.d	GeminiC18 3x100 3(mm)
CCV 320-220094/14		04/26/2018 21:05	1	2018.04.26LLB_016.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Batch Number: 218620 Batch Start Date: 04/18/18 15:35 Batch Analyst: Harry, Greg S

Batch Method: 1312 Batch End Date: 04/19/18 08:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
320-38063-A-1	SB031(0-2)-SPLP	1312, 3535, 537 (modified)	E	100.03 g	2000 mL				
320-38063-A-2	SB012(2-4)-SPLP	1312, 3535, 537 (modified)	E	99.97 g	2000 mL				
320-38063-A-3	SB008(2-4)-SPLP	1312, 3535, 537 (modified)	E	100.00 g	2000 mL				
320-38063-A-4	SB007(0-2)-SPLP	1312, 3535, 537 (modified)	E	99.95 g	2000 mL				
320-38063-A-5	SB003(0-2)-SPLP	1312, 3535, 537 (modified)	E	100.04 g	2000 mL				
320-38063-A-6	SB004(8-10)-SPLP	1312, 3535, 537 (modified)	E	100.01 g	2000 mL				
320-38063-A-7	SB013(8-10)-SPLP	1312, 3535, 537 (modified)	E	100.04 g	2000 mL				
LB 320-218620/8		1312, 3535, 537 (modified)		100.00 g	2000 mL				

Batch Notes	
Balance ID	qa-068

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Batch Number: 219273 Batch Start Date: 04/23/18 10:11 Batch Analyst: Kolstad, Kate M

Batch Method: 3535 Batch End Date: 04/23/18 17:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00055	LCPFC-IS 00037
MB 320-219273/1		3535, 537 (modified)				250.0 mL	10.0 mL	500 uL	500 uL
LCS 320-219273/2		3535, 537 (modified)				250.0 mL	10.0 mL	500 uL	500 uL
LCSD 320-219273/3		3535, 537 (modified)				250.0 mL	10.0 mL	500 uL	500 uL
LB 320-218620/8-A		3535, 537 (modified)		278.85 g	28.09 g	250.8 mL	10.0 mL	500 uL	500 uL
320-38063-A-1-B	SB031(0-2)-SPLP	3535, 537 (modified)	E	283.69 g	27.73 g	256 mL	10.0 mL	500 uL	500 uL
320-38063-A-2-B	SB012(2-4)-SPLP	3535, 537 (modified)	E	280.15 g	27.46 g	252.7 mL	10.0 mL	500 uL	500 uL
320-38063-A-3-B	SB008(2-4)-SPLP	3535, 537 (modified)	E	283.23 g	28.18 g	255.1 mL	10.0 mL	500 uL	500 uL
320-38063-A-4-B	SB007(0-2)-SPLP	3535, 537 (modified)	E	279.58 g	27.86 g	251.7 mL	10.0 mL	500 uL	500 uL
320-38063-A-5-B	SB003(0-2)-SPLP	3535, 537 (modified)	E	287.45 g	26.96 g	260.5 mL	10.0 mL	500 uL	500 uL
320-38063-A-6-B	SB004(8-10)-SPLP	3535, 537 (modified)	E	281.85 g	27.83 g	254 mL	10.0 mL	500 uL	500 uL
320-38063-A-7-B	SB013(8-10)-SPLP	3535, 537 (modified)	E	280.34 g	26.91 g	253.4 mL	10.0 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00138	AnalysisComment				
MB 320-219273/1		3535, 537 (modified)							
LCS 320-219273/2		3535, 537 (modified)		500 uL					
LCSD 320-219273/3		3535, 537 (modified)		500 uL					
LB 320-218620/8-A		3535, 537 (modified)			Leachate blank.				
320-38063-A-1-B	SB031(0-2)-SPLP	3535, 537 (modified)	E						
320-38063-A-2-B	SB012(2-4)-SPLP	3535, 537 (modified)	E						
320-38063-A-3-B	SB008(2-4)-SPLP	3535, 537 (modified)	E						
320-38063-A-4-B	SB007(0-2)-SPLP	3535, 537 (modified)	E						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Batch Number: 219273 Batch Start Date: 04/23/18 10:11 Batch Analyst: Kolstad, Kate M

Batch Method: 3535 Batch End Date: 04/23/18 17:04

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00138	AnalysisComment				
320-38063-A-5-B	SB003(0-2)-SPLP	3535, 537 (modified)	E						
320-38063-A-6-B	SB004(8-10)-SPLP	3535, 537 (modified)	E						
320-38063-A-7-B	SB013(8-10)-SPLP	3535, 537 (modified)	E						

Batch Notes	
Analyst ID - Aliquot Step	KMK
Balance ID	QA-078
Batch Comment	Client labels match TA label, KMK
Analyst ID - Final Volume Step	KMK
H2O ID	04/21/18
Hexane ID	1175188
Internal Standard ID#	1208927
Manifold ID	2, 11
Methanol ID	1207206
Sodium Hydroxide ID	1196582
Pipette ID	I46360G
Analyst ID - Reagent Drop	KMK
Analyst ID - IS Reagent Drop	KMK
Analyst ID - IS Reagent Drop Witness	JER
Analyst ID - SU Reagent Drop	KMK
Analyst ID - SU Reagent Drop Witness	TWL
Solvent Lot #	1213092
Solvent Name	0.3%NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003737320A

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

West Sacramento

HPLC/LCMS Data Review Checklist

Job Number(s): 38063 | Work List ID(s): 57242, 57290

Extraction Batch: 219273 | Analysis Batch(es): 219912, 220094

Delivery Rank: 4 | Due Date: 4-30-18

A. Calibration/Instrument Run QC	1st Level	2nd Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch#	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• $RF_{average}$ criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ($r \geq 0.995$).			✓
• Quadratic fit criteria appropriate if required ($r^2 \geq 0.990$).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?		✓	✓
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.			✓
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?			✓
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted. NCM	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?			✓
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions) 123628	✓	✓	
D. Documentation 123627 123626 123622 123620			
1. Are all non-conformances documented/attached? NCM# 123619	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

**Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.*

1st Level (Analyst): JRB | Date: 4-27-18

2nd Level Reviewer: [signature] | Date: 4/30/18

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26APR2018NCB_PFC Worklist Number: 57242
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC ICAL Raw Batch: 219912
# 1 CCV L5	# 1 CCV L5
# 2 MB 320-219273/1-A	# 2 MB 320-219273/1-A
# 3 LCS 320-219273/2-A	# 3 LCS 320-219273/2-A
# 4 LCSD 320-219273/3-A	# 4 LCSD 320-219273/3-A
# 5 LB 320-218620/8-B	# 5 LB 320-218620/8-B
# 6 320-38063-A-1-C	# 6 320-38063-A-1-C
# 7 320-38063-A-2-C	# 7 320-38063-A-2-C
# 8 320-38063-A-3-C	# 8 320-38063-A-3-C
# 9 320-38063-A-4-C	# 9 320-38063-A-4-C
#10 320-38063-A-5-C	#10 320-38063-A-5-C
#11 320-38063-A-6-C	#11 320-38063-A-6-C
#12 CCV L4	#12 CCV L4
#13 320-38063-A-7-C	#13 320-38063-A-7-C
#14 CCV L5	#14 CCV L5

CCVL in AB 219909

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCB_PFC Worklist Num: 57242
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57242.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCV L5	320-0057242-001	CCV	26-Apr-2018 07:27:19	2018.04.25LLBX_036.d	29	1.0		sv
MB 320-219273/1-A	320-0057242-002	MB	26-Apr-2018 07:35:07	2018.04.25LLBX_037.d	26	1.0		sv
LCS 320-219273/2-A	320-0057242-003	LCS	26-Apr-2018 07:42:57	2018.04.25LLBX_038.d	27	1.0		sv
LCSD 320-219273/3-A	320-0057242-004	LCSD	26-Apr-2018 07:50:46	2018.04.25LLBX_039.d	28	1.0		sv
LB 320-218620/8-B	320-0057242-005	LB	26-Apr-2018 07:58:35	2018.04.25LLBX_040.d	29	1.0		sv
320-38063-A-1-C	320-0057242-006	Client	26-Apr-2018 08:06:24	2018.04.25LLBX_041.d	30	1.0	SB031(0-2)-SPLP	sv
320-38063-A-2-C	320-0057242-007	Client	26-Apr-2018 08:14:14	2018.04.25LLBX_042.d	31	1.0	SB012(2-4)-SPLP	sv
320-38063-A-3-C	320-0057242-008	Client	26-Apr-2018 08:22:03	2018.04.25LLBX_043.d	32	1.0	SB008(2-4)-SPLP	sv
320-38063-A-4-C	320-0057242-009	Client	26-Apr-2018 08:29:52	2018.04.25LLBX_044.d	33	1.0	SB007(0-2)-SPLP	sv
320-38063-A-5-C	320-0057242-010	Client	26-Apr-2018 08:37:41	2018.04.25LLBX_045.d	34	1.0	SB003(0-2)-SPLP	sv
320-38063-A-6-C	320-0057242-011	Client	26-Apr-2018 08:45:29	2018.04.25LLBX_046.d	35	1.0	SB004(8-10)-SPLP	sv
CCV L4	320-0057242-012	CCV	26-Apr-2018 08:53:18	2018.04.25LLBX_047.d	28	1.0		sv
320-38063-A-7-C	320-0057242-013	Client	26-Apr-2018 09:01:07	2018.04.25LLBX_048.d	36	1.0	SB013(8-10)-SPLP	sv
CCV L5	320-0057242-014	CCV	26-Apr-2018 09:08:57	2018.04.25LLBX_049.d	29	1.0		sv

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NCA_PFC Worklist Num: 57241
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180426-57241.b
Anaylysis Type: SemiVOA Creator: Royce, Amani A
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057241-001	CCB	26-Apr-2018 05:53:34	2018.04.25LLBX_004.d	20	1.0		sv
CCVL	320-0057241-002	CCVL	26-Apr-2018 06:01:22	2018.04.25LLBX_005.d	21	1.0		sv
CCV L4	320-0057241-003	CCVIS	26-Apr-2018 06:09:11	2018.04.25LLBX_070.d	28	1.0		sv
320-38061-A-2-A	320-0057241-004	Client	26-Apr-2018 06:17:00	2018.04.25LLBX_071.d	47	50.0	SB012(2-4)	sv
320-38061-A-3-A	320-0057241-005	Client	26-Apr-2018 06:24:48	2018.04.25LLBX_072.d	48	5.0	SB008(2-4)	sv
320-38061-A-4-A	320-0057241-006	Client	26-Apr-2018 06:32:37	2018.04.25LLBX_073.d	49	1.0	SB007(0-2)	sv
320-38061-A-5-A	320-0057241-007	Client	26-Apr-2018 06:40:27	2018.04.25LLBX_074.d	50	50.0	SB003(0-2)	sv
320-38061-A-5-A	320-0057241-008	Client	26-Apr-2018 06:48:16	2018.04.25LLBX_075.d	51	10.0	SB003(0-2)	sv
RB	320-0057241-009	RB	26-Apr-2018 06:56:05	2018.04.25LLBX_076.d	54	1.0		sv
320-38061-A-6-A	320-0057241-010	Client	26-Apr-2018 07:03:52	2018.04.25LLBX_077.d	52	5.0	SB004(8-10)	sv
320-38061-A-7-A	320-0057241-011	Client	26-Apr-2018 07:11:42	2018.04.25LLBX_078.d	53	5.0	SB013(8-10)	sv
CCV L4	320-0057241-012	CCV	26-Apr-2018 07:19:30	2018.04.25LLBX_079.d	28	1.0		sv

TestAmerica Laboratories
Worklist QC Batch Report

Worklist Name: 26APR2018NC_2A_PFC Worklist Number: 57290
Instrument Name: A8_N Chrom Method: A8_N
Data Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b
QC Batching: Disabled Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 220093	LC PFC ICAL Raw Batch: 220094	LC PFC_QSM5-1 ICAL Raw Batch: 220095
# 1 CCB	# 1 CCB	# 1 CCB	# 1 CCB
# 2 CCVL	# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L5	# 3 CCV L5	# 3 CCV L5	# 3 CCV L5
# 4 320-38063-A-2-C		# 4 320-38063-A-2-C	
# 5 320-38063-A-2-C		# 5 320-38063-A-2-C	
# 6 RB		# 6 RB	
# 7 320-38063-A-3-C		# 7 320-38063-A-3-C	
# 8 320-38063-A-4-C		# 8 320-38063-A-4-C	
# 9 320-38063-A-5-C		# 9 320-38063-A-5-C	
#10 320-38063-A-5-C		#10 320-38063-A-5-C	
#11 RB		#11 RB	
#12 320-38063-A-6-C		#12 320-38063-A-6-C	
#13 320-38063-A-7-C		#13 320-38063-A-7-C	
#14 CCV L4		#14 CCV L4	

TestAmerica Laboratories
Worklist Run Log Report

Worklist Name: 26APR2018NC_2A_PFC Worklist Num: 57290
Instrument: A8_N Method: A8_N
Batch Directory: \\ChromNa\Sacramento\ChromData\A8_N\20180427-57290.b
Anaylysis Type: SemiVOA Creator: Hannigan, Alyssa B
Inj Volume: 2.00 Inj Vol Units: ul

Lab ID	Worklist ID	Sample Type	Inj Date/Time	File Name	Vial	Dil Factor	Client ID	Fract
CCB	320-0057290-001	CCB	26-Apr-2018 19:23:17	2018.04.26LLB_003.d	20	1.0		sv
CCVL	320-0057290-002	CCVL	26-Apr-2018 19:31:05	2018.04.26LLB_004.d	21	1.0		sv
CCV L5	320-0057290-003	CCVIS	26-Apr-2018 19:38:53	2018.04.26LLB_005.d	14	1.0		sv
320-38063-A-2-C	320-0057290-004	Client	26-Apr-2018 19:46:41	2018.04.26LLB_006.d	1	100.	SB012(2-4)-SPLP	sv
320-38063-A-2-C	320-0057290-005	Client	26-Apr-2018 19:54:33	2018.04.26LLB_007.d	2	2.0	SB012(2-4)-SPLP	sv
RB	320-0057290-006	RB	26-Apr-2018 20:02:24	2018.04.26LLB_008.d	54	1.0		sv
320-38063-A-3-C	320-0057290-007	Client	26-Apr-2018 20:10:15	2018.04.26LLB_009.d	3	10.0	SB008(2-4)-SPLP	sv
320-38063-A-4-C	320-0057290-008	Client	26-Apr-2018 20:18:04	2018.04.26LLB_010.d	4	1.0	SB007(0-2)-SPLP	sv
320-38063-A-5-C	320-0057290-009	Client	26-Apr-2018 20:25:55	2018.04.26LLB_011.d	5	100.	SB003(0-2)-SPLP	sv
320-38063-A-5-C	320-0057290-010	Client	26-Apr-2018 20:33:48	2018.04.26LLB_012.d	6	10.0	SB003(0-2)-SPLP	sv
RB	320-0057290-011	RB	26-Apr-2018 20:41:39	2018.04.26LLB_013.d	54	1.0		sv
320-38063-A-6-C	320-0057290-012	Client	26-Apr-2018 20:49:30	2018.04.26LLB_014.d	7	10.0	SB004(8-10)-SPLP	sv
320-38063-A-7-C	320-0057290-013	Client	26-Apr-2018 20:57:17	2018.04.26LLB_015.d	8	10.0	SB013(8-10)-SPLP	sv
CCV L4	320-0057290-014	CCV	26-Apr-2018 21:05:05	2018.04.26LLB_016.d	13	1.0		sv

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 ✓
Method Code: 320-3535_PFC-320

Analyst: Kolstad, Kate M

Batch Open: 4/23/2018 10:11:00AM
Batch End: 4/23/2018 5:04:00PM

AS 4/25/18 AB 4/26/18

Solid-Phase Extraction (SPE)

Due: 5/2

	Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmnt FinAmnt	PHs Rcvd	PHs Adj1	PHs Adj2	Due Date	Analytical TAT	Dlv Rank	Comments	Output Sample Lab ID
1	MB~320-219273/1 N/A	N/A		250.0 mL	NA			N/A	N/A	N/A		MB 320-219273/1-A
				10.0 mL								
2	LCS~320-219273/2 N/A	N/A		250.0 mL	NA			N/A	N/A	N/A		LCS 320-219273/2-A
				10.0 mL								
3	LCSD~320-219273/3 N/A	N/A		250.0 mL	NA			N/A	N/A	N/A		LCSD 320-219273/3-A
				10.0 mL								
	LB~320-218620/8-A N/A	N/A	278.85 g	250.8 mL	NA			N/A	N/A	N/A	Leachate blank.	LB 320-218620/8-B
			28.09 g	10.0 mL								
	320-38063-A-1-B (PFC_IDA) 5/2	N/A (320-38063-1)	283.69 g	256 mL	NA			4/27/18	12_Days	4		320-38063-A-1-C
			27.73 g	10.0 mL								
6	320-38063-A-2-B (PFC_IDA)	N/A (320-38063-1)	280.15 g	252.7 mL	NA			4/27/18	12_Days	4	2x, 100x	320-38063-A-2-C
			27.46 g	10.0 mL								
7	320-38063-A-3-B (PFC_IDA)	N/A (320-38063-1)	283.23 g	255.1 mL	NA			4/27/18	12_Days	4		320-38063-A-3-C
			28.18 g	10.0 mL							10x	
8	320-38063-A-4-B (PFC_IDA)	N/A (320-38063-1)	279.58 g	251.7 mL	NA			4/27/18	12_Days	4		320-38063-A-4-C
			27.86 g	10.0 mL							1	
9	320-38063-A-5-B (PFC_IDA)	N/A (320-38063-1)	287.45 g	260.5 mL	NA			4/27/18	12_Days	4		320-38063-A-5-C
			26.96 g	10.0 mL							10x, 100x	
10	320-38063-A-6-B (PFC_IDA)	N/A (320-38063-1)	281.85 g	254 mL	NA			4/27/18	12_Days	4		320-38063-A-6-C
			27.83 g	10.0 mL							10x	

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04/30/2018

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End: 4/23/2018 5:04:00PM

11	320-38063-A-7-B (PFC_IDA)	N/A (320-38063-1)	280.34 g 26.91 g	253.4 mL 10.0 mL	NA			4/27/18	12_Days	4	10X

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End: 4/23/2018 5:04:00PM

Batch Notes

Manifold ID	2, 11
Methanol ID	1207206
Hexane ID	1175188
Sodium Hydroxide ID	1196582
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003737320A
Balance ID	QA-078
H2O ID	04/21/18
Pipette ID	I46360G
Solvent Name	0.3%NH4OH/MeOH
Solvent Lot #	1213092
Analyst ID - Reagent Drop	KMK
Analyst ID - SU Reagent Drop	KMK
Analyst ID - SU Reagent Drop Witness	TWL
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
Analyst ID - IS Reagent Drop	KMK

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End: 4/23/2018 5:04:00PM

Analyst ID - IS Reagent Drop Witness	JER
Internal Standard ID#	1208927
Analyst ID - Concentration	NA
Analyst ID - Aliquot Step	KMK
Analyst ID - Final Volume Step	KMK
SOP Number	WS-LC-0025
Batch Comment	Client labels match TA label, KMK

Comments

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End:

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-219273/1	LCMPFC_ALL_SU_00050	500 uL	10.0 mL	KMK 4-23-18	Dwc 4/23/18
LCS 320-219273/2	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
LCS 320-219273/2	LCPFCSP_00138	500 uL	10.0 mL		
LCSD 320-219273/3	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
LCSD 320-219273/3	LCPFCSP_00138	500 uL	10.0 mL		
LB MB 320-218620/8-A	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-1-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-2-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-3-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-4-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-5-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-6-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-7-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL	✓	✓

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KMK 4/24/18

04/30/2018

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End: 4/23/2018 5:04:00PM

Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-219273/1	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
MB 320-219273/1	LCPFC-IS_00037	500 uL	10.0 mL		
LCS 320-219273/2	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
LCS 320-219273/2	LCPFC-IS_00037	500 uL	10.0 mL		
LCS 320-219273/2	LCPFCSP_00138	500 uL	10.0 mL		
LCSD 320-219273/3	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
LCSD 320-219273/3	LCPFC-IS_00037	500 uL	10.0 mL		
LCSD 320-219273/3	LCPFCSP_00138	500 uL	10.0 mL		
LB 320-218620/8-A	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
LB 320-218620/8-A	LCPFC-IS_00037	500 uL	10.0 mL		
320-38063-A-1-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-1-B	LCPFC-IS_00037	500 uL	10.0 mL		
320-38063-A-2-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-2-B	LCPFC-IS_00037	500 uL	10.0 mL		
320-38063-A-3-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-3-B	LCPFC-IS_00037	500 uL	10.0 mL		
320-38063-A-4-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-4-B	LCPFC-IS_00037	500 uL	10.0 mL		

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End: 4/23/2018 5:04:00PM

320-38063-A-5-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-5-B	LCPFC-IS_00037	500 uL	10.0 mL		
320-38063-A-6-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-6-B	LCPFC-IS_00037	500 uL	10.0 mL		
320-38063-A-7-B	LCMPFC_ALL_SU_00050	500 uL	10.0 mL		
320-38063-A-7-B	LCPFC-IS_00037	500 uL	10.0 mL		

Other Reagents:

Reagent	Amount/Units	Lot#:

Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-219273 Analyst: Kolstad, Kate M Batch Open: 4/23/2018 10:11:00AM

Method Code: 320-3535_PFC-320 Batch End:

Other Reagents:

Reagent	Amount/Units	Lot#:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sacramento
Preparation Data Review Checklist

Preparation Batch Number(s) 219273 Test 3535_PFC

Earliest Holding Time 4-30-18

Batch Information	1st Level Reviewer	2nd Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary batch information complete and entered into TALS correctly	✓	✓
BD, FV, and AL initials are transcribed into the batch comment	✓	✓
Sample List Tab	1st Level Reviewer	2nd Level Reviewer
Samples identified to the correct method	✓	✓
Holding time violation NCM filed	NA	NA
MS/MSD or MS/DU NCM filed	✓	✓
NCM for any anomalies filed	✓	NA
All NCMs include method code, matrix, and prep batch	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
Batch contains no more than 20 live samples	✓	✓
Worksheet Tab	1st Level Reviewer	2nd Level Reviewer
All samples properly preserved	✓	✓
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed properly in TALS	✓	✓
All additional information is transcribed into TALS and is correct and raw data is attached	✓	✓
Comments/Observations are transcribed correctly in TALS	✓	✓
Reagents Tab	1st Level Reviewer	2nd Level Reviewer
All necessary reagents not expired and checked into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
Internal Standard is added to the reagents	✓	✓
All units are correctly transcribed into TALS	✓	✓

1st Level Reviewer: KMK Date: 4-23-18

2nd Level Reviewer: VPM Date: 4/24/18

Comments: _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Test America – Sacramento

Sample Dilution Record

Method ID PFC_IDA

Analyst (Print Name) Alyssa Hanaiyan **Reagent ID** LC-80:20 00004

Date 4/26/18

Job #	Sample #	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor
320-38063	2	10,000	100	200	2
	3		15	1500	100
	5		30	300	10
	5		30	300	10
	6		15	1500	100
	7		30	300	10
			30	300	10

4/26/18 ABK

Comments:

Q:\Document-Management\Forms\QA-747 SampleDilutionRecord.doc 1/29/20187 RE

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38063-1

SDG No.:

Project: Suffolk County Firematics Site

Client Sample ID	Lab Sample ID
SB031(0-2)-SPLP	320-38063-1
SB012(2-4)-SPLP	320-38063-2
SB008(2-4)-SPLP	320-38063-3
SB007(0-2)-SPLP	320-38063-4
SB003(0-2)-SPLP	320-38063-5
SB004(8-10)-SPLP	320-38063-6
SB013(8-10)-SPLP	320-38063-7

Comments:

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38063-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 RL Date: 01/01/2012 08:18

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-38063-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Instrument ID: NOEQUIP Method: D 2216

Start Date: 04/18/2018 11:53 End Date: 04/18/2018 11:53

Lab Sample ID	D / F	Type	Time	Analytes																				
				% Sol	Moist																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
320-38061-A-1 DU	1	T	11:53	X	X																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					
320-38063-1	1	T	11:53	X	X																			
320-38063-2	1	T	11:53	X	X																			
320-38063-3	1	T	11:53	X	X																			
320-38063-4	1	T	11:53	X	X																			
320-38063-5	1	T	11:53	X	X																			
320-38063-6	1	T	11:53	X	X																			
320-38063-7	1	T	11:53	X	X																			
ZZZZZZ			11:53																					
ZZZZZZ			11:53																					

Prep Types

T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-38063-1

SDG No.:

Batch Number: 218606 Batch Start Date: 04/18/18 11:53 Batch Analyst: Saechao, Tammy C

Batch Method: D 2216 Batch End Date: 04/19/18 09:14

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-38061-A-1 DU		D 2216	T	3	1.02 g	14.97 g	14.01 g		
320-38063-A-1	SB031(0-2)-SPLP	D 2216	T	12	1.03 g	8.40 g	7.72 g		
320-38063-A-2	SB012(2-4)-SPLP	D 2216	T	13	1.02 g	12.10 g	11.28 g		
320-38063-A-3	SB008(2-4)-SPLP	D 2216	T	14	1.01 g	9.37 g	8.53 g		
320-38063-A-4	SB007(0-2)-SPLP	D 2216	T	15	1.01 g	13.07 g	10.98 g		
320-38063-A-5	SB003(0-2)-SPLP	D 2216	T	16	1.03 g	10.49 g	9.40 g		
320-38063-A-6	SB004(8-10)-SPLP	D 2216	T	17	1.02 g	11.62 g	11.24 g		
320-38063-A-7	SB013(8-10)-SPLP	D 2216	T	18	1.03 g	10.35 g	10.02 g		

Batch Notes	
Balance ID	QA-068
Date and Time Samples in Desiccator	04/19/2018 08:21
Date and Time Samples out of Desiccator	04/19/2018 09:14
Date samples were placed in the oven	04/18/2018
Oven Temp In	112 Degrees C
Time samples were place in the oven	11:53
Date samples were removed from oven	04/19/2018
Oven Temp Out	115 Degrees C
Time Samples were removed from oven	08:21
Oven ID	Soil Prep #2
Thermometer ID	151969607

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

N
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TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916.373.5600

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Nick Russell	Lab PM: Haas, Melissa	Carrier Tracking No(s):	COC No: 460-88468-55550.1
Client Contact: Mr. Andrew Lockwood	Phone: 631-589-6353	E-Mail: melissa.haas@testamericainc.com		Page: Page of
Company: PW Grosser Consulting				Job #:

Address: 630 Johnson Ave Suite 7	Due Date Requested:	Analysis Requested
City: Bohemia	TAT Requested (days): 15 days	
State, Zip: NY, 11716		
Phone: 631-589-6353(Tel)	PO #: SHD1801	
Email: andyl@pwgrosser.com	WO #: SHD1801	
Project Name: Suffolk County Firematics Site	Project #: 46024260	
Site:	SSOW#:	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)
Other:	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	SPLP PFC_IDA - PFAS, Standard List (21 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	N		X	
SB031(0-2')-SPLP	4-10-18	915						X	2	
SB012(2-4')-SPLP		945						X	2	
SB008(2-4')-SPLP		1000						X	2	
SB007(0-2)-SPLP		1045						X	2	
SB003(0-2)-SPLP		11:11						X	2	
SB004(8-10)-SPLP		1130						X	2	
SB013(8-10)-SPLP		1215						X	2	

320-36063 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	Nick Russell	4-10-18 1420			4/10/18 1730	VA
2		4/10/18 1730	TA		4-11-18 845	TAWSC
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.7°C ice A/C-2

Login Sample Receipt Checklist

Client: PW Grosser Consulting

Job Number: 320-38063-1

Login Number: 38063
List Number: 1
Creator: Turpen, Troy

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	